UCRL 5612

MASTER

VACUUM ULTRAVIOLET EMISSION LINES

(Below 2000 Angstroms)

R A Y M O N D L. K E L L Y

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UCRL5612

A80004006

A Table of emission lines in the
vacuum ultraviolet for all elements
(6 angstroms to 2000 angstroms)

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Introduction

This report contains all the published atomic emission lines contained in the literature up to January, 1959. It has been printed from lists prepared by punching the information onto IBM punched cards, followed by sorting the cards by wavelength, etc. Each line of data contains the vacuum wavelength in Angstroms, the element and spectroscopic notation for ionization, the intensity, and reference numbers which refer to the list of ⁶¹¹references at the end of the report.

The tabulation is divided into four sections. Section I is a list of intense lines by ion; Section II is a finding list of these intense lines; Section III is a list of all the lines arranged by element; Section IV is a finding list for all elements. Sections I and II are those lines of Section III which are reported as having high intensities. Section III is the most complete list, containing 41,000 lines. Section IV has many of the weaker lines of Section III removed and contains 23,000 lines. The lines marked with an asterisk in Sections III and IV are those listed in Sections I and II. Sections I and III include the data on ionization potentials (I.P.) given in Charlotte Moore's Atomic Energy Levels (National Bureau of Standards Circular No. 467).

The intensities given in the tables are those published for spark sources. The situation with regard to intensities is unsatisfactory. In general, intensities are expressed in terms of blackening of photographic plates, so that the numbers given depend on the spectroscopic system used, the type of source, the wavelength region, etc. Further, the number used for the most intense lines may be 10, 100, 1,000 or 100,000. The recent trend is toward using the larger numbers, but generally it is not possible to convert one author's intensity scale to another's, even where there appears to be a simple ratio. Throughout this table, the original author's estimates for intensity are used.

Multiple references appear in many cases. The particular ones used were chosen for one or more of the following reasons: (1) the wavelength was the most accurate, usually the most recent, (2) the wavelength range was the most extensive so that presumably the wavelength and intensity scales were the most consistent, and (3) the transition was classified, (4) the line appeared in a critical evaluation. Not every line fits all these conditions, and a maximum of three references was used, so that choices among conflicting data had to be made. In connection with (4) above, Charlotte Moore's Ultraviolet Multiplet Table (National Bureau of Standards Circular No. 448) (UMT) does not give original data but it does provide the best and most extensive analysis of spectra. Thus, it is important to indicate which lines are listed in UMT. A list of provisional wavelength standards for the vacuum ultraviolet was published by Wilkinson in 1955. This list is fairly extensive between 875A and 1943A. The lines are not necessarily the most intense but are those which are so sharply defined and easily obtained that they are suitable as standards. They have consistent wavelength and intensity scales. However, in the case of the carbon lines

given, a comparison of Wilkinson's list (1955) with that of Edlén (1934) shows that the two sets of data have unsystematic differences. Since Edlén's list is more extensive, and is also consistent, it has been used. Wilkinson's list also appears throughout the table wherever the difference between Edlén's and Wilkinson's values is greater than 0.02 Angstrom.

It should be noted that the use of I.B.M. punched cards permits great ease of sorting and also provides great accuracy in data handling and reproduction. However, the printout is limited to capital letters, Arabic numerals, and a few symbols. For this reason, the classifications of the transitions do not appear. I have tried to give at least one reference with each line where the particular line is classified. In addition, the notation CL for "Classified Lines" is used in the list of references to indicate which spectra are classified by the authors.

This tabulation is the result of work on diagnostic techniques for the study of high temperature plasmas. The information included is all taken from published literature except for some data communicated to me by Dr. C. C. Kiess of the National Bureau of Standards and Professor A. G. Shenstone of Princeton University. They have kindly provided some extensive lists of unpublished information for which I am very grateful. I appreciate the helpful support of many persons, particularly Dr. Richard F. Post of University of California Lawrence Radiation Laboratory (Livermore) and the patient keypunch operators at Stanford Research Institute.

Periodic Chart of the Elements

I A	II A	III B	IV B	V B	VI B	VII B	VIII			IB	II B	III B	IV A	V A	VI A	VII A	INERT GASES
H 1																	HE 2
LI 3	BE 4											B 5	C 6	N 7	O 8	F 9	NE 10
NA 11	MG 12											AL 13	SI 14	P 15	S 16	CL 17	A 18
K 19	CA 20	SC 21	TI 22	V 23	CR 24	MN 25	FE 26	CO 27	NI 28	CU 29	ZN 30	GA 31	GE 32	AS 33	SE 34	BR 35	KR 36
RB 37	SR 38	Y 39	ZR 40	NB 41	MO 42	TC 43	RU 44	RH 45	PD 46	AG 47	CD 48	IN 49	SN 50	SB 51	TE 52	I 53	XE 54
CS 55	BA 56	LA 57	HF 72	TA 73	W 74	RE 75	OS 76	IR 77	PT 78	AU 79	HG 80	TL 81	PB 82	BI 83	PO 84	AT 85	RN 86
FR 87	RA 88	AC 89															

LANTHANUM
SERIES

CE 58	PR 59	ND 60	PM 61	SM 62	EU 63	GD 64	TB 65	DY 66	HO 67	ER 68	TM 69	YB 70	LU 71
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ACTINIUM
SERIES

TH 90	PA 91	U 92	NP 93	PU 94	AM 95	CM 96	BK 97	CF 98
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Alphabetical List of Symbols

<u>Symbol</u>	<u>Element</u>	<u>Z</u>	<u>Symbol</u>	<u>Element</u>	<u>Z</u>
A	Argon	18	MD	Mendelevium	101
AC	Actinium	89	MG	Magnesium	12
AG	Silver	47	MN	Manganese	25
AL	Aluminum	13	MO	Molybdenum	42
AM	Americium	95	N	Nitrogen	7
AS	Arsenic	33	NA	Sodium	11
AT	Astatine	85	NB	Niobium	41
AU	Gold	79	ND	Neodymium	60
B	Boron	5	NE	Neon	10
BA	Barium	56	NI	Nickel	28
BE	Beryllium	4	NO	Nobelium	102
BI	Bismuth	83	NP	Neptunium	93
BK	Berkelium	97	O	Oxygen	8
BR	Bromine	35	OS	Osmium	76
C	Carbon	6	P	Phosphorus	15
CA	Calcium	20	PA	Protactinium	91
CD	Cadmium	48	PB	Lead	82
CE	Cerium	58	PD	Palladium	46
CF	Californium	98	PM	Promethium	61
CL	Chlorine	17	PO	Polonium	84
CM	Curium	96	PR	Praseodymium	59
CO	Cobalt	27	PT	Platinum	78
CR	Chromium	24	PU	Plutonium	94
CS	Cesium	55	RA	Radium	88
CU	Copper	29	RB	Rubidium	37
D	Deuterium	1	RE	Rhenium	75
DY	Dysprosium	66	RH	Rhodium	45
ER	Erbium	68	RN	Radon	86
ES	Einsteinium	99	RU	Ruthenium	44
EU	Europium	63	S	Sulfur	16
F	Fluorine	9	SB	Antimony	51
FE	Iron	26	SC	Scandium	21
FM	Fermium	100	SE	Selenium	34
FR	Francium	87	SI	Silicon	14
GA	Gallium	31	SM	Samarium	62
GD	Gadolinium	64	SN	Tin	50
GE	Germanium	32	SR	Strontium	38
H	Hydrogen	1	TA	Tantalum	73
HE	Helium	2	TB	Terbium	65
HF	Hafnium	72	TC	Technetium	43
HG	Mercury	80	TE	Tellurium	52
HO	Holmium	67	TH	Thorium	90
I	Iodine	53	TI	Titanium	22
IN	Indium	49	TL	Thallium	81
IR	Iridium	77	TM	Thulium	69
K	Potassium	19	U	Uranium	92
KR	Krypton	36	V	Vanadium	23
LA	Lanthanum	57	W	Tungsten	74
LI	Lithium	3	XE	Xenon	54
LU	Lutetium	71	Y	Yttrium	39
			YB	Ytterbium	70
			ZN	Zinc	30
			ZR	Zirconium	40

SECTION I INTENSE LINES BY ELEMENT

1

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

HYDROGEN

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
H I	I.P.	109678.758 K	911.753 A
H I	920.963	10	488
H I	923.150	12	488
H I	926.226	14	488
H I	930.748	17	488
H I	937.804	22	488
H I	949.743	25	488
H I	972.537	40	488
H I	1025.722	60	488
H I	1215.670	100	488

DEUTERIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
D I	I.P.	109708.596 K	911.506 A
D I	937.548	20	487
D I	949.485	25	487
D I	972.272	40	487
D I	1025.443	60	487
D I	1215.340	100	487

HELIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HE I	I.P.	198310.4 K	504.251 A
HE I	512.094	3	65, 488
HE I	515.612	4	65, 488
HE I	522.208	5	65, 488
HE I	537.024	7	65, 488
HE I	584.331	10	65, 488
HE II	I.P.	438908.670 K	227.838 A
HE II	237.331	15	488
HE II	243.027	20	488
HE II	256.318	30	488
HE II	303.786	50	488
HE II	1215.088	5	488
HE II	1215.171	5	488
HE II	1640.332	80	488
HE II	1640.474	100	488
HE II	1640.490	1	488

LITHIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
LI I	I.P.	43487.19 K	2299.807 A
LI II	I.P.	610079. K	163.913 A
LI II	119.26		185
LI II	171.582		168, 488, 596
LI II	178.015		168, 488, 596
LI II	199.282		168, 488, 596
LI II	1132.1	1	788
LI II	1166.4	2	788
LI II	1198.0	7	788
LI II	1253.8	1	788
LI II	1420.7	1	788
LI II	1493.1	6	788
LI II	1653.3	8	788
LI II	1681.8	4	788
LI II	1755.4	5	788

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
LI III	I.P.	98765.8 K	101.250 A
LI III	108.01		185
LI III	113.93	0	185
LI III	135.02	2	185

BERYLLIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BE I	I.P.	75192.29 K	1329.923 A
BE I	1661.486	12	541
BE I	1907.12	5	541
BE I	1943.68	5	541, 658
BE I	1956.63	5	541, 658
BE I	1964.59	9	541, 658
BE I	1998.01	10	541, 658
BE II	I.P.	146881.7 K	680.820 A
BE II	842.057	7	488, 541
BE II	1036.271	8	488, 541
BE II	1143.03	7	541
BE II	1197.19	10	488, 541
BE II	1512.303	8	488, 541
BE II	1512.451	10	488, 541
BE II	1776.339	8	488, 541
BE III	I.P.	1241225. K	80.566 A
BE III	81.891		596
BE III	82.377		596
BE III	83.202		596
BE III	84.758		596
BE III	88.314		596
BE III	100.254	1	168, 596
BE IV	I.P.	1756004. K	56.947 A
BE IV	49.456		596
BE IV	50.435		596
BE IV	52.679		596
BE IV	60.313		596
BE IV	60.741		595, 765
BE IV	64.063		595, 765
BE IV	75.925		595, 765
BE V	48.585		166

BORON

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
B I	I.P.	66930. K	1494. A
B I	1378.43	3	134
B I	1378.69	5	134
B I	1378.95	3	134
B I	1573.67	5	134
B I	1600.41	5	65, 134, 658
B I	1600.83	8	65, 580, 658
B I	1666.87	8	134, 658
B I	1667.30	10	65, 134, 658
B I	1817.84	8	65, 134, 658
B I	1818.35	10	65, 134, 658
B I	1825.89	15	65, 134, 488
B I	1826.40	20	65, 134, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS				
B	II	I.P.	202895.	K	492.866 A	C	III	I.P.	386213.9	K	258.924 A
B	II	1362.460	5	65, 168, 488	C	III	371.694	10	65, 168, 488		
B	II	1623.57	4	65, 168, 488	C	III	371.747	10	65, 168, 488		
B	II	1623.77	4	65, 168	C	III	371.784	8	65, 168, 488		
B	II	1623.99	5	65, 168, 488	C	III	386.203	14	34, 65, 488		
B	II	1624.16	4	65, 168	C	III	459.462	13	65, 168, 488		
B	II	1624.37	4	65, 168, 488	C	III	459.521	14	65, 168, 488		
B	II	1842.80	3	65, 168, 658	C	III	459.633	15	65, 168, 488		
B	III	I.P.	305931.1	K	326.871 A	C	III	538.075	11	65, 168, 488	
B	III	411.810	3	65, 195	C	III	538.080	11	34, 65, 488		
B	III	510.865	3	65, 195	C	III	538.149	12	34, 65, 488		
B	III	518.253	7	65, 195	C	III	538.312	13	34, 65, 488		
B	III	677.004	5	65, 195	C	III	977.026	18	65, 168, 488		
B	III	677.147	6	65, 195	C	III	1174.916	12	168, 488		
B	III	758.476	1	65, 195	C	III	1175.248	12	168, 488		
B	IV	I.P.	2091960.	K	47.802 A	C	III	1175.566	12	168, 488	
B	IV	48.939	764		C	III	1175.700	14	168, 488		
B	IV	49.456	764, 765		C	III	1175.973	12	168, 488		
B	IV	50.435	764, 765		C	III	1176.351	12	168, 488		
B	IV	52.682	764, 65, 168		C	IV	I.P.	520177.8	K	192.242 A	
B	IV	60.313	764, 65, 168		C	IV	244.907	10	65, 168, 488		
B	IV	61.088	764		C	IV	289.143	9	65, 168, 488		
B	V	I.P.	2744063.	K	36.442 A	C	IV	289.230	10	65, 168, 488	
B	V	38.869	65, 765, 168		C	IV	312.418	15	65, 168, 488		
B	V	40.995	65, 765, 168		C	IV	312.455	14	65, 168, 488		
B	V	48.585	65, 765, 168		C	IV	384.032	16	65, 168, 488		
					C	IV	384.178	17	65, 168, 488		
					C	IV	419.525	13	65, 168, 488		
					C	IV	419.714	14	65, 168, 488		
					C	IV	1548.195	20	168, 488		
					C	IV	1550.768	19	168, 488		
					C	V	I.P.	3162450.	K	31.621 A	
						</					

CARBON

C	I	I.P.	90814.	K	1101.2	A
C	I	1277.282		9	488, 794	
C	I	1277.551		4	65, 794	
C	I	1277.617		10	488, 540	
C	I	1277.727		20	794	
C	I	1329.108		5	491, 488, 794	
C	I	1329.590		10	488, 540, 794	
C	I	1481.760		7	168, 488, 794	
C	I	1560.687		15	491, 488, 794	
C	I	1561.433		20	794	
C	I	1656.923		3	488, 668, 794	
C	I	1657.001		30	794	
C	I	1658.117		5	488, 668, 794	
C	II	I.P.	196659.0	K	508.494	A
C	II	687.059		10	65, 168, 488	
C	II	687.355		11	65, 168, 488	
C	II	858.094		8	65, 168, 488	
C	II	858.561		9	65, 168, 488	
C	II	903.609		10	65, 168, 488	
C	II	903.950		11	65, 168, 488	
C	II	904.134		12	65, 168, 488	
C	II	904.468		10	65, 168, 488	
C	II	1009.854		9	65, 168, 488	
C	II	1010.074		10	65, 168, 488	
C	II	1010.369		10	65, 168, 488	
C	II	1036.330		12	65, 168, 488	
C	II	1037.020		13	168, 488, 794	
C	II	1334.520		13	168, 488, 794	
C	II	1335.692		14	168, 488, 794	

NITROGEN

N	I	I.P.	117214.	K	059.14	A
N	I	1095.940	35	334,	794	
N	I	1096.322	35	334,	794	
N	I	1096.749	35	334,	794	
N	I	1097.245	50	334,	794	
N	I	1097.990	25	334,	794	
N	I	1098.103	40	794		
N	I	1098.264	40	334,	794	
N	I	1101.293	40	334,	794	
N	I	1199.551	50	488,	794	
N	I	1200.226	40	488,	794	
N	I	1200.708	30	488,	794	
N	I	1492.624	80	488,	794	
N	I	1492.824	30	137,	794	
N	I	1494.673	60	488,	794	
N	I	1742.724	60	488,	794	

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N II	I.P.	238751.1	K 418.927 A
N II	644.621	8	65, 168, 488
N II	644.825	9	65, 168, 488
N II	645.167	10	65, 168, 488
N II	775.957	12	65, 168, 488
N II	915.603	10	65, 168, 488
N II	915.955	10	168, 488
N II	916.004	11	168, 488
N II	916.700	12	168, 488
N II	1083.990	20	488, 794
N II	1084.579	30	488, 794
N II	1085.707	50	488, 794
N II	1740.327	15	168, 794
N II	1743.322	10	168, 794
N II	1807.303	30	191, 794
N II	1844.304	10	191, 247, 794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N III	I.P.	382625.5	K 261.352 A
N III	684.996	14	65, 168, 488
N III	685.513	15	65, 168, 488
N III	685.816	16	65, 168, 488
N III	686.335	14	65, 168, 488
N III	763.340	14	65, 168, 488
N III	764.357	15	65, 168, 488
N III	989.790	16	65, 168, 488
N III	991.514	14	65, 168, 488
N III	991.579	17	65, 168, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N IV	I.P.	624851.	K 160.234 A
N IV	247.205	10	65, 168, 488
N IV	283.420	10	65, 168, 488
N IV	283.470	11	65, 168, 488
N IV	283.579	12	65, 168, 488
N IV	335.050	11	65, 168, 488
N IV	765.140	17	65, 168, 488
N IV	921.982	10	65, 168, 488
N IV	922.507	10	65, 168, 488
N IV	923.045	10	65, 168, 488
N IV	923.211	12	65, 168, 488
N IV	923.669	10	65, 168, 488
N IV	924.274	10	65, 168, 488
N IV	955.335	10	65, 168, 488
N IV	1718.52	10	65, 168, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N V	I.P.	789532.9	K 126.657 A
N V	186.070	4	65, 168, 488
N V	186.153	5	65, 168, 488
N V	209.270	7	65, 168, 488
N V	209.303	6	65, 168, 488
N V	247.563	10	65, 168, 488
N V	247.710	11	65, 168, 488
N V	266.192	6	65, 168, 488
N V	266.375	7	65, 168, 488
N V	1238.800	8	65, 168, 488
N V	1242.778	7	65, 168, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N VI	I.P.	4452800.	K 22.458 A
N VI	23.771		764
N VI	24.898		764
N VI	28.787		764
N VI	29.084		764

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N VII	I.P.	5379860.	K 18.588 A

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

OXYGEN

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O I	I.P.	109836.7	K 910.442 A
O I	988.776	15	488, 794
O I	1027.433	20	488, 794
O I	1039.233	20	488, 794
O I	1040.941	15	488, 794
O I	1302.173	30	488, 794
O I	1304.872	30	488, 794
O I	1306.036	25	488, 794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O II	I.P.	283244.	K 353.05 A
O II	537.830	9	65, 168, 488
O II	538.256	10	65, 168, 488
O II	538.318	7	65, 168, 488
O II	644.148	12	65, 168, 488
O II	718.484	17	65, 168, 488
O II	718.562	16	65, 168, 488
O II	796.661	10	65, 168, 488
O II	832.754	14	168, 488
O II	833.326	15	168, 488
O II	834.462	15	168, 488
O II	919.78	15	63
O II	932.046	10	63

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O III	I.P.	442807.	K 225.83 A
O III	320.979	12	65, 168, 488
O III	395.558	12	65, 168, 488
O III	507.391	16	65, 168, 488
O III	507.683	17	65, 168, 488
O III	508.182	18	65, 168, 488
O III	525.795	18	65, 168, 488
O III	597.818	15	65, 168, 488
O III	599.598	18	65, 168, 488
O III	702.332	16	65, 168, 488
O III	702.822	16	65, 168, 488
O III	702.899	17	65, 168, 488
O III	703.850	18	65, 168, 488
O III	832.927	14	168, 488
O III	833.742	16	168, 488
O III	835.096	14	168, 488
O III	835.292	16	168, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O IV	I.P.	624396.5	K 160.155 A
O IV	278.361	14	65, 168, 488
O IV	238.573	15	65, 168, 488
O IV	252.564	6	168
O IV	252.948	6	65, 168
O IV	253.082	7	65, 168
O IV	553.328	16	65, 168, 488
O IV	554.074	17	65, 168, 488
O IV	554.514	18	65, 168, 488
O IV	555.262	16	65, 168, 488
O IV	608.395	14	65, 168, 488
O IV	609.829	15	65, 168, 488
O IV	625.130	14	65, 168, 488
O IV	625.852	14	65, 168, 488
O IV	787.710	15	65, 168, 488
O IV	790.103	13	65, 168, 488
O IV	790.203	16	65, 168, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O V	I.P.	918702.	K 108.85 A
O V	172.168	12	65, 168, 488
O V	192.751	12	65, 168, 488
O V	192.800	13	65, 168, 488
O V	192.906	14	65, 168, 488
O V	207.794	10	65, 168, 488
O V	220.352	13	65, 168, 488
O V	629.732	15	65, 168, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O V	758.677	10	65, 168, 488	F III	567.629	6	174, 176
O V	759.440	10	65, 168, 488	F III	567.676	10	174, 176
O V	760.229	10	65, 168, 488	F III	567.737	9	42, 174, 176
O V	760.445	12	65, 168, 488	F III	567.794	6	174, 176
O V	761.130	10	65, 168, 488	F III	656.125	10	42, 174, 176
O V	762.001	10	65, 168, 488	F III	656.878	11	42, 174, 176
O V	1371.287	10	65, 168, 488	F III	658.337	12	42, 174, 176
O VI	I.P. 1113999.5	K	89.767 A	F IV	I.P. 703020.	K	142.24 A
O VI	150.088	10	168, 488	F IV	251.026	10	42, 173, 176
O VI	150.124	9	168, 488	F IV	419.644	14	42, 173, 176
O VI	172.935	12	65, 168, 488	F IV	420.041	15	42, 173, 176
O VI	173.082	13	65, 168, 488	F IV	420.727	16	42, 173, 176
O VI	183.937	8	168, 488	F IV	430.758	15	42, 173, 176
O VI	184.117	9	168, 488	F IV	490.566	13	42, 173, 176
O VI	1031.912	10	65, 168, 488	F IV	490.997	16	42, 173, 176
O VII	I.P. 5962000.	K	16.77 A	F IV	570.636	14	42, 173, 176
O VII	17.200		764	F IV	571.307	14	173, 176
O VII	17.396		764	F IV	571.384	15	42, 173, 176
O VII	17.768		764	F IV	572.657	16	42, 173, 176
O VII	18.627		764	F IV	676.130	14	42, 173, 176
O VII	21.602		764	F IV	677.154	13	42, 173, 176
O VII	21.804		764	F IV	677.224	15	173, 176
O VII	128.412	00	164	F IV	679.003	13	173, 176
O VII	128.500	0	164	F IV	679.217	16	42, 173, 176
O VIII	I.P. 7027970.	K	14.229 A	F V	I.P. 921450.	K	108.52 A
FLUORINE							
F I	I.P. 140524.5	K	711.620 A	F V	134.539	5	172, 176
F I	806.964	150	420, 488	F V	148.002	5	172, 176
F I	809.599	125	420, 488	F V	163.456	3	172, 176
F I	951.871	500	420, 488	F V	163.501	4	172, 176
F I	955.545	750	420, 488	F V	163.558	5	172, 176
F I	958.524	500	420, 488	F V	163.596	2	172, 176
F I	973.895	350	420	F V	165.983	9	172, 176
F I	976.217	100	420	F V	166.177	10	172, 176
F I	976.505	40	420	F V	178.434	5	172, 176
F I	977.745	100	420	F V	186.715	4	172, 176
F II	I.P. 202190.2	K	354.371 A	F V	186.788	4	172, 176
F II	457.177	6	42, 176	F V	186.842	5	172, 176
F II	471.949	3	176	F V	186.879	3	172, 176
F II	471.990	6	42, 176, 488	F V	186.968	4	172, 176
F II	484.600	8	42, 176	F V	187.008	4	172, 176
F II	514.945	6	42, 176	F V	190.571	6	172, 176
F II	546.846	6	42, 176, 488	F V	190.839	7	172, 176
F II	605.668	7	42, 176, 400	F V	464.370	5	172, 176
F II	606.204	6	42, 176, 488	F V	465.374	6	172, 176
F II	606.805	8	42, 176, 488	F V	465.978	7	172, 176
F II	606.925	5	42, 176, 488	F V	466.995	5	172, 176
F II	607.472	6	42, 176, 488	F VI	I.P. 1267581.	K	79.890 A
F II	608.065	7	42, 176, 488	F VI	126.923	5	171, 176
F III	I.P. 505410.	K	197.86 A	F VI	139.758	5	171, 176
F III	322.685	7	174, 176	F VI	139.000	6	171, 176
F III	429.511	10	42, 174, 176	F VI	139.900	7	171, 176
F III	430.154	11	42, 174, 176	F VI	146.576	2	171, 176
F III	430.218	8	174, 176	F VI	146.613	3	171, 176
F III	465.113	10	42, 174, 176	F VI	146.676	4	171, 176
F III	508.384	10	174, 176	F VI	146.718	2	171, 176
				F VI	153.741	3	171, 176
				F VI	153.880	4	171, 176
				F VI	156.247	6	171, 176
				F VI	535.204	10	171, 176
F VII	I.P. 1493656.	K	66.950 A	F VII	86.728	0	171, 176
F VII	95.697	0	171, 176	F VII	95.697	0	171, 176
F VII	95.775	1	171, 176	F VII	95.775	1	171, 176
F VII	112.935	4	171, 176	F VII	112.935	4	171, 176
F VII	112.976	3	171, 176	F VII	112.976	3	171, 176
F VII	127.653	4	171, 176	F VII	127.653	4	171, 176
F VII	127.796	5	171, 176	F VII	127.796	5	171, 176
F VII	134.703	1	171, 176	F VII	134.703	1	171, 176
F VII	134.882	2	171, 176	F VII	134.882	2	171, 176

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

F	VIII	I.P.	7693400.	K	13.000 A
F	VIII		13.780		236
F	VIII		14.458		764
F	VIII		16.807		764
F	VIII		16.951		764
F	VIII		98.707	0	164
F	VIII		98.799	0	164

NEON

NE	I	I.P.	173931.7	K	574.938 A
NE	I		602.712	4	57, 65
NE	I		615.623	5	57, 65, 488
NE	I		618.668	5	57, 65, 488
NE	I		619.092	4	57, 65, 488
NE	I		626.819	6	57, 65, 488
NE	I		735.89	30	57, 65, 488
NE	I		743.70	12	57, 65, 488

NE	II	I.P.	331350.	K	301.80 A
NE	II		405.852	9	57, 65, 488
NE	II		407.136	8	57, 65, 488
NE	II		446.252	8	57, 65, 488
NE	II		447.813	8	57, 65, 488
NE	II		460.725	15	57, 65, 488
NE	II		462.388	14	57, 65, 488
NE	II		1907.56	8	68, 488
NE	II		1916.16	10	68, 488
NE	II		1930.11	8	68, 488
NE	II		1938.92	8	68, 488

NE	III	I.P.	514148.	K	194.50 A
NE	III		283.206	6	65, 338, 488
NE	III		283.690	5	65, 338, 488
NE	III		379.308	7	57, 65, 488
NE	III		488.103	8	57, 65, 488
NE	III		488.868	7	57, 65, 488
NE	III		489.501	10	57, 65, 488
NE	III		490.310	7	57, 65, 488
NE	III		491.050	9	57, 65, 488
NE	III		1255.685	5	57, 65, 488
NE	III		1257.190	6	57, 65, 488

NE	IV	I.P.	782768.	K	127.752 A
NE	IV		186.575	150	488, 544
NE	IV		194.276	100	488, 544
NE	IV		208.485	100	488, 544
NE	IV		208.734	100	488, 544
NE	IV		212.556	150	488, 544
NE	IV		358.721	200	57, 488, 544
NE	IV		388.218	100	57, 488, 544
NE	IV		421.584	150	57, 65, 488
NE	IV		421.609	150	544
NE	IV		469.817	200	57, 488, 544
NE	IV		469.865	200	57, 488, 544
NE	IV		542.073	100	57, 488, 544

NE	V	I.P.	1018634.	K	98.171 A
NE	V		173.932	50	488, 544
NE	V		357.955	40	488, 544
NE	V		358.472	50	488, 544
NE	V		359.385	50	488, 544
NE	V		365.594	100	488, 544
NE	V		416.198	80	488, 544
NE	V		482.987	50	488, 544

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

NE	V		568.418	40	488, 544
NE	V		569.759	25	488, 544
NE	V		569.830	50	488, 544
NE	V		572.106	25	488, 544
NE	V		572.336	80	488, 544

NE	VI	I.P.	1274000.	K	78.49 A
NE	VI		122.686	10	544
NE	VI		401.138	15	544
NE	VI		401.939	25	544
NE	VI		403.262	10	544
NE	VI		558.595	5	544
NE	VI		562.805	15	544

SODIUM

NA	I	I.P.	41449.65	K	2412.565 A
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NA	II	I.P.	381528.	K	262.104 A
NA	II		273.99	0	779
NA	II		275.10	0	779
NA	II		281.81	1	779
NA	II		282.827	0	65, 693
NA	II		300.151	1	65, 488, 693
NA	II		301.311	0	65, 693
NA	II		301.432	1	65, 488, 693
NA	II		302.28	0	779
NA	II		372.069	6	65, 488, 693
NA	II		376.375	3	65, 488, 693

NA	III	I.P.	578033.	K	173.000 A
NA	III		1782.817	15	758, 794
NA	III		1835.22	15	758
NA	III		1844.36	20	758
NA	III		1849.58	35	758
NA	III		1850.24	20	758
NA	III		1850.39	18	758
NA	III		1855.91	15	758
NA	III		1856.73	20	758
NA	III		1861.19	15	758
NA	III		1887.48	15	758
NA	III		1926.27	45	758
NA	III		1927.21	15	758
NA	III		1933.87	30	750
NA	III		1946.43	20	758
NA	III		1950.79	15	758
NA	III		1951.21	40	758
NA	III		1960.76	20	758
NA	III		1965.04	18	758
NA	III		1985.58	30	758

NA	IV	I.P.	797741.	K	125.354 A
NA	IV		156.536	8	65, 693
NA	IV		162.445	8	65, 693
NA	IV		168.084	10	65, 693
NA	IV		168.409	8	65, 693
NA	IV		181.758	8	65, 693
NA	IV		190.440	10	65, 693
NA	IV		190.835	8	65, 693
NA	IV		319.638	10	65, 693
NA	IV		408.682	8	65, 693
NA	IV		409.615	8	65, 693
NA	IV		410.371	10	65, 693
NA	IV		410.540	6	65, 693
NA	IV		411.333	7	65, 693
NA	IV		412.240	8	65, 693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA V	I.P. 116312.	K	859.756 A
NA V	307.152	8	65, 692
NA V	308.264	10	65, 692
NA V	332.550	8	65, 692
NA V	333.910	9	65, 692
NA V	360.319	8	65, 692
NA V	360.367	8	65, 692
NA V	400.722	10	65, 692
NA V	445.046	6	65, 692
NA V	445.190	7	65, 692
NA V	459.897	7	65, 692
NA V	461.051	10	65, 692
NA V	463.263	12	65, 692

NA VI	I.P. 1388419.	K	72.024 A
NA VI	107.227	3	692
NA VI	107.288	4	692
NA VI	107.535	3	692
NA VI	107.553	3	692
NA VI	107.600	4	692
NA VI	107.683	5	692
NA VI	109.896	5	692
NA VI	123.929	5	692
NA VI	123.970	2	692
NA VI	124.059	4	692
NA VI	124.153	4	692
NA VI	127.837	4	692
NA VI	311.921	4	692
NA VI	313.748	5	692
NA VI	317.641	6	692
NA VI	361.250	8	692
NA VI	362.444	4	692
NA VI	366.110	4	692
NA VI	415.505	4	692
NA VI	417.595	6	692
NA VI	489.580	5	692
NA VI	491.240	3	692
NA VI	491.340	6	692
NA VI	494.382	7	692

NA VII	I.P. 1681679.	K	59.464 A
NA VII	86.596	4	691
NA VII	86.652	5	691
NA VII	92.003	5	691
NA VII	93.393	4	691
NA VII	93.434	4	691
NA VII	93.486	5	691
NA VII	94.288	6	691
NA VII	94.468	7	691
NA VII	350.645	5	691
NA VII	352.275	6	691
NA VII	353.294	8	691
NA VII	354.950	4	691
NA VII	399.182	4	691
NA VII	486.740	4	691
NA VII	491.950	4	691

NA VIII	I.P. 2131139.	K	46.923 A
NA VIII	58.201	5	691
NA VIII	64.237	4	691
NA VIII	64.302	5	691
NA VIII	76.123	5	691
NA VIII	77.267	6	691
NA VIII	81.210	5	691
NA VIII	83.240	7	691
NA VIII	83.288	8	691
NA VIII	83.391	9	691
NA VIII	84.050	5	691
NA VIII	86.039	5	691
NA VIII	86.381	4	691
NA VIII	86.417	5	691
NA VIII	86.479	6	691
NA VIII	87.211	7	691
NA VIII	90.536	5	691

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA IX	I.P. 2418520.	K	41.348 A
NA IX	70.615	7	691
NA IX	70.653	6	691
NA IX	77.764	7	691
NA IX	77.911	8	691
NA IX	81.175	5	691
NA IX	81.350	5	691

MAGNESIUM

MG I	I.P. 61669.14	K	1621.556 A
MG I	1668.57	0	658
MG I	1683.51	1	658
MG I	1707.10	3	658
MG I	1827.97	0	658

MG II	I.P. 121267.41	K	824.624 A
MG II	884.697		592
MG II	884.719		592
MG II	907.375		592
MG II	907.412		592
MG II	946.703		592
MG II	946.769		592
MG II	1271.239		592
MG II	1271.940		592
MG II	1272.720		592
MG II	1273.423		592
MG II	1306.714		592
MG II	1307.875		592
MG II	1308.280		592
MG II	1309.443		592
MG II	1365.544		592
MG II	1367.256		592
MG II	1367.708		592
MG II	1737.612		592
MG II	1737.628		592

MG III	I.P. 646364.	K	154.712 A
MG III	170.802	5	693
MG III	186.510	9	488, 693
MG III	187.194	8	488, 693
MG III	231.730	14	488, 693
MG III	234.258	12	488, 693
MG III	1572.72	4	693
MG III	1738.91	6	693
MG III	1747.64	4	658, 693
MG III	1749.02	5	693
MG III	1783.36	4	693
MG III	1800.75	4	693
MG III	1879.46	4	693

MG IV	I.P. 881759.	K	113.410 A
MG IV	146.949	4	693
MG IV	147.006	4	693
MG IV	147.052	4	693
MG IV	147.746	4	693
MG IV	171.653	8	693
MG IV	172.306	7	693
MG IV	180.070	8	693
MG IV	180.617	10	693
MG IV	180.796	9	693
MG IV	181.345	8	693
MG IV	320.999	20	693
MG IV	323.310	18	693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG V	I.P. 1139421.	K	87.764 A
MG V	137.234	6	692
MG V	137.414	8	692
MG V	137.748	7	692
MG V	137.880	6	692
MG V	276.581	16	692
MG V	312.311	10	692
MG V	351.089	12	692
MG V	362.202	10	692
MG V	353.094	14	692
MG V	353.300	9	692
MG V	354.223	10	692
MG V	355.326	12	692

MG VI	I.P. 1504581.	K	66.464 A
MG VI	90.897	6	692
MG VI	102.189	5	692
MG VI	102.239	5	692
MG VI	104.519	3	692
MG VI	104.597	5	692
MG VI	111.552	5	692
MG VI	111.746	4	692
MG VI	111.864	4	692
MG VI	113.189	5	692
MG VI	116.968	5	692
MG VI	121.025	5	692
MG VI	268.986	10	692
MG VI	270.394	12	692
MG VI	349.155	10	692
MG VI	399.289	6	692
MG VI	400.676	7	692
MG VI	403.315	8	692

MG VII	I.P. 1814430.	K	55.114 A
MG VII	79.131	5	692
MG VII	79.168	5	692
MG VII	82.940	4	692
MG VII	82.969	4	692
MG VII	83.015	5	692
MG VII	83.766	5	692
MG VII	84.025	5	692
MG VII	84.087	3	692
MG VII	84.642	5	692
MG VII	85.407	7	692
MG VII	87.131	5	692
MG VII	87.175	4	692
MG VII	87.722	6	692
MG VII	87.767	4	692
MG VII	87.889	5	692
MG VII	88.680	6	692
MG VII	278.406	4	692
MG VII	319.016	4	692
MG VII	367.679	4	692

MG VIII	I.P. 2145679.	K	46.605 A
MG VIII	67.731	4	691
MG VIII	69.413	4	691
MG VIII	69.467	5	691
MG VIII	73.250	4	691
MG VIII	74.366	4	691
MG VIII	74.858	6	691
MG VIII	75.034	7	691
MG VIII	77.572	5	691
MG VIII	77.671	5	691
MG VIII	77.737	6	691
MG VIII	78.446	6	691
MG VIII	78.574	6	691
MG VIII	80.229	4	691
MG VIII	80.255	4	691
MG VIII	81.732	3	691
MG VIII	81.790	2	691
MG VIII	81.844	4	691
MG VIII	85.749	4	691

MG IX	I.P. 2645444.	K	37.801 A
MG IX	51.591	3	691
MG IX	51.654	4	691
MG IX	61.127	3	691
MG IX	61.175	2	691
MG IX	61.924	4	691
MG IX	62.751	5	691
MG IX	65.609	4	691
MG IX	67.090	5	691
MG IX	67.135	6	691
MG IX	67.239	7	691
MG IX	69.116	1	691
MG IX	69.161	3	691
MG IX	69.950	6	691
MG IX	72.226	3	691
MG IX	72.312	4	691

MG X	I.P. 2963810.	K	33.740 A
MG X	44.050	1	691
MG X	47.231	3	691
MG X	47.310	5	691
MG X	57.876	6	691
MG X	57.920	4	691
MG X	63.152	7	691
MG X	63.295	9	691
MG X	65.672	2	691
MG X	65.847	3	691

MG XI	I.P. 14209200.	K	7.038 A
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ALUMINUM

AL I	I.P. 48279.16	K	2071.287 A
AL I	1762.97	1	658
AL I	1769.19	1	658

AL II	I.P. 151860.4	K	658.500 A
AL II	1539.74	10	488, 653
AL II	1670.81	15	488, 653, 658
AL II	1721.279	10	488, 653, 658
AL II	1724.981	15	488, 653, 658
AL II	1763.79	8	488, 653
AL II	1764.01	10	488, 653, 810
AL II	1767.60	10	488, 653, 810
AL II	1828.61	10	536, 653
AL II	1832.85	8	536, 653
AL II	1934.54	10	653
AL II	1934.75	10	653

AL III	I.P. 229453.99	K	435.817 A
AL III	560.390	7	190, 488
AL III	695.817	5	190, 488
AL III	696.212	4	190, 488
AL III	856.768	5	190
AL III	893.905	5	190
AL III	1379.670	6	190
AL III	1384.144	8	190
AL III	1605.776	7	190
AL III	1611.849	9	190
AL III	1854.722	10	65, 488, 658
AL III	1862.782	10	190, 488, 810
AL III	1935.881	6	49, 538

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL	IV	I.P. 967783.	K	103.329 A
AL	IV	124.034	8	693
AL	IV	124.543	6	693
AL	IV	129.729	12	693
AL	IV	160.073	16	65, 168, 693
AL	IV	161.686	14	65, 195, 693
AL	IV	1557.24	5	693
AL	V	I.P. 1240600.	K	80.606 A
AL	V	103.805	10	233
AL	V	103.881	14	233
AL	V	104.180	14	233
AL	V	107.945	20	233
AL	V	125.525	15	233
AL	V	126.065	15	233
AL	V	130.413	20	233
AL	V	130.848	20	233
AL	V	131.003	20	233
AL	V	131.441	20	233
AL	V	278.699	16	65, 168, 693
AL	V	281.397	14	65, 693
AL	VI	I.P. 1536300.	K	65.091 A
AL	VI	85.515	20	233
AL	VI	87.655	13	233
AL	VI	88.170	20	233
AL	VI	88.273	15	233
AL	VI	88.376	15	233
AL	VI	90.200	20	233
AL	VI	90.858	12	233
AL	VI	92.626	15	233
AL	VI	92.636	4	233
AL	VI	92.875	10	233
AL	VI	92.970	5	233
AL	VI	100.616	12	233
AL	VI	104.047	20	233
AL	VI	104.344	16	233
AL	VI	107.620	14	233
AL	VI	109.514	20	233
AL	VI	109.843	12	233
AL	VI	243.760	10	168, 693
AL	VII	I.P. 1947390.	K	51.351 A
AL	VII	63.025	10	233
AL	VII	72.270	10	233
AL	VII	75.270	5	233
AL	VII	75.302	7	233
AL	VII	75.660	12	233
AL	VII	76.383	10	233
AL	VII	76.422	10	233
AL	VII	76.543	20	233
AL	VII	76.572	20	233
AL	VII	77.896	10	233
AL	VII	78.327	20	233
AL	VII	78.351	20	233
AL	VII	79.012	10	233
AL	VII	79.197	10	233
AL	VII	86.887	15	233
AL	VII	87.060	12	233
AL	VII	88.033	18	233
AL	VII	356.885	5	693
AL	VIII	I.P. 2295500.	K	43.563 A
AL	VIII	66.731	4	233
AL	VIII	66.771	7	233
AL	VIII	67.288	10	233
AL	VIII	67.408	10	233
AL	VIII	67.464	12	233
AL	VIII	67.946	10	233
AL	VIII	68.375	15	233
AL	VIII	70.161	6	233
AL	VIII	70.323	4	233
AL	VIII	77.605	6	233

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL	IX	I.P. 2663340.	K	37.547 A
AL	IX	54.457	4	233
AL	IX	56.945	5	233
AL	IX	59.761	6	233
AL	IX	60.549	4	233
AL	IX	60.588	6	233
AL	IX	60.896	6	233
AL	IX	61.069	12	233
AL	IX	62.327	5	233
AL	IX	62.369	3	233
AL	IX	63.509	10	233
AL	IX	63.632	6	233
AL	X	I.P. 3215340.	K	31.101 A
AL	X	50.762	5	233
AL	X	51.362	7	233
AL	X	51.779	6	233
AL	X	55.772	10	233, 693
AL	X	55.376	15	233
AL	X	56.964	3	233
AL	X	57.024	5	233
AL	X	57.368	7	233
AL	X	59.107	8	233
AL	XI	I.P. 3564900.	K	28.051 A
AL	XI	48.297	5	233
AL	XI	48.338	3	233
AL	XI	52.299	10	233
AL	XI	52.446	12	233
AL	XII	I.P. 16825000.	K	5.944 A
AL	XII	6.314		236
AL	XII	6.635		236
AL	XII	7.757		236
AL		72.674	6	233
AL		78.938	6	233
AL		91.023	10	233

SILICON

SI	I	I.P.	65743.00	K	1521.0	A
SI	I	1814.068	500		339, 488,	678
SI	I	1850.665	500		488, 678,	794
SI	I	1874.838	500		339, 488,	678
SI	I	1901.331	1000		339, 488,	678
SI	I	1977.591	1000		339, 488,	678
SI	I	1979.198	1000		339, 488,	678
SI	I	1980.888	1000		339, 488,	678
SI	I	1983.225	1000		339, 488,	678
SI	I	1986.352	1000		339, 488,	678
SI	I	1988.977	2000		339, 488,	678

SI	II	I.P.	131818.	K	758.622	A
SI	II	989.867	100		488, 310	
SI	II	992.679	200		488, 310	
SI	II	1057.047	100		310	
SI	II	1190.418	100		488, 310	
SI	II	1193.284	200		488, 310	
SI	II	1194.496	250		488, 310,	794
SI	II	1197.389	100		488, 310	
SI	II	1485.024	90		310	
SI	II	1516.910	90		310	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI III	I.P. 269940.6	K.	370.452 A
SI III	1108.402	300	488, 310
SI III	1109.995	350	488, 310
SI III	1113.258	400	488, 310
SI III	1294.561	300	488, 310
SI III	1298.930	300	488, 310
SI III	1417.229	300	488, 310
SI III	1500.239	300	310
SI III	1501.191	250	310
SI III	1501.876	225	310
SI III	1842.542	500	310

SI IV	I.P. 364097.7	K	274.652 A
SI IV	361.517		65, 238
SI IV	361.615		65, 238
SI IV	457.75		65, 488
SI IV	458.09		65, 238
SI IV	749.940	100	310
SI IV	815.055	300	488, 310
SI IV	818.136	300	488, 310
SI IV	1066.632	500	310
SI IV	1122.513	300	488, 310
SI IV	1128.352	400	488, 310
SI IV	1393.765	250	488, 310
SI IV	1402.764	200	488, 310
SI IV	1673.374	150	310
SI IV	1722.554	500	310

SI V	I.P. 1345100.	K	74.344 A
SI V	85.175	10	231
SI V	85.576	6	231
SI V	90.453	4	231
SI V	90.852	4	231
SI V	96.439	15	231
SI V	97.143	10	231
SI V	117.860	20	231
SI V	118.968	20	231

SI VI	I.P. 1654800.	K	60.430 A
SI VI	77.429	10	231
SI VI	80.395	5	231
SI VI	80.449	10	231
SI VI	80.491	5	231
SI VI	80.501	10	231
SI VI	80.577	12	231
SI VI	80.698	10	231
SI VI	80.725	10	231
SI VI	83.128	15	231
SI VI	84.082	12	231
SI VI	96.020	10	231
SI VI	96.488	10	231
SI VI	99.095	10	231
SI VI	99.460	15	231
SI VI	99.598	10	231
SI VI	99.966	10	231
SI VI	100.640	10	231

SI VII	I.P. 1988000.	K	50.30 A
SI VII	69.790	4	231
SI VII	70.027	5	231
SI VII	70.072	5	231
SI VII	72.324	4	231
SI VII	73.123	10	231
SI VII	81.558	5	231
SI VII	81.620	12	231
SI VII	81.895	10	231
SI VII	85.289	10	231
SI VII	85.584	10	231
SI VII	217.826	7	231

SI VIII	I.P. 2445110.	K	40.898 A
SI VIII	61.019	2	231
SI VIII	61.070	4	231
SI VIII	72.228	4	231
SI VIII	74.470	4	231
SI VIII	214.756	2	231
SI VIII	216.918	2	231
SI VIII	277.054	4	231
SI VIII	316.202	2	231
SI VIII	319.829	2	231

SI IX	I.P. 2831470.	K	35.317 A
SI IX	54.841	2	231
SI IX	54.870	2	231
SI IX	54.907	2	231
SI IX	55.094	1	231
SI IX	55.116	1	231
SI IX	55.234	1	231
SI IX	55.272	3	231
SI IX	55.305	1	231
SI IX	55.356	2	231
SI IX	55.401	2	231
SI IX	55.781	3	233
SI IX	56.027	3	231
SI IX	61.502	1	231
SI IX	61.546	2	233
SI IX	61.600	1	231
SI IX	61.649	2	231
SI IX	61.852	2	233
SI IX	225.033	0	231
SI IX	227.007	0	231

SI X	I.P. 3237400.	K	30.889 A
SI X	49.701	2	233
SI X	50.691	2	233
SI X	52.070	1	233
SI X	52.155	2	233
SI X	52.485	2	233
SI X	54.522	1	233
SI X	54.571	1	231
SI X	54.599	1	233
SI X	56.680	1	233
SI X	56.804	1	233

SI XI	I.P. 3840470.	K	26.038 A
SI XI	46.264	00	231
SI XI	46.300	1	231
SI XI	46.401	2	231
SI XI	47.489	1	231
SI XI	47.607	1	231
SI XI	47.653	1	231
SI XI	47.899	1	231
SI XI	49.222	1	231

SI XII	I.P. 4221460.	K	23.671 A
SI XII	44.021	1	231
SI XII	44.165	2	231
SI XII	45.656	00	231

PHOSPHORUS

P I	I.P. 84580.	K	1182. A
P I	1671.68	180	469, 488, 594
P I	1674.61	230	469, 488, 594
P I	1679.71	300	469, 488, 594

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P I	1774.99	250	469, 488, 594
P I	1782.87	200	469, 488, 594
P I	1787.68	180	469, 488, 594
P I	1858.91	150	469, 488, 594
P I	1859.43	150	469, 488, 594
P II	I.P. 159100.	K	628.5 A
P II	1152.134	3	594
P II	1305.48	35	469, 488, 594
P II	1309.87	25	469, 488, 594
P II	1310.70	60	469, 488, 594
P II	1452.89	30	469, 594
P II	1485.49	25	469, 594
P II	1521.62	30	469
P II	1532.51	80	469, 488, 594
P II	1535.90	120	469, 488, 594
P II	1536.39	80	469, 488, 594
P II	1542.29	120	469, 488, 594
P II	1543.09	40	469, 488, 594
P II	1879.62	25	469, 594
P III	I.P. 243290.0	K	411.032 A
P III	859.667	8	408, 597
P III	998.000	8	488, 597
P III	1003.592	10	488, 597
P III	1334.866	10	488, 597
P III	1344.343	15	488, 597
P III	1344.900	10	488, 597
P III	1380.464	10	488, 597
P III	1381.111	10	488, 597
P III	1502.273	10	488, 597
P IV	I.P. 414312.4	K	241.364 A
P IV	631.765	7	41, 488, 597
P IV	824.733	7	41, 469, 488
P IV	827.932	8	41, 488
P IV	875.132	11	597
P IV	877.493	11	597
P IV	950.669	10	41, 488
P IV	1025.579	7	41, 488
P IV	1030.545	8	41, 488
P IV	1033.135	7	41, 488
P IV	1035.505	8	41, 488, 597
P IV	1888.55	8	41, 488
P V	I.P. 524462.9	K	190.671 A
P V	255.596	7	597
P V	255.688	7	597
P V	370.700	0	597
P V	475.610	8	597
P V	542.567	7	597
P V	544.914	8	597
P V	673.888	10	597
P V	871.396	15	597
P V	1117.979	15	597
P V	1128.006	10	597
P VI	I.P. 1778250.	K	56.235 A
P VII	I.P. 2124300.	K	47.074 A
P VIII	I.P. 2495000.	K	40.08 A
P IX	I.P. 2997600.	K	33.360 A
P X	I.P. 3423000.	K	29.21 A

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P XI	I.P. 3867500.	K	25.856 A
P XII	I.P. 4520500.	K	22.121 A
P XIII	I.P. 4933060.	K	20.271 A

SULFUR

S I	I.P. 83559.3	K	1196.75 A
S I	1381.55	15	488, 599
S I	1396.10	15	488, 599
S I	1425.10	15	488, 599
S I	1433.28	15	488, 599
S I	1472.97	15	488, 599
S I	1473.98	15	488, 599
S I	1474.37	12	488, 599
S I	1474.54	6	488, 599
S I	1401.05	15	488, 599
S I	1483.05	15	488, 599
S I	1483.24	12	488, 599
S I	1485.61	12	488, 599
S I	1487.12	15	488, 599
S I	1666.68	25	488, 599
S I	1687.54	20	599
S I	1807.31	25	488, 599
S I	1820.37	25	488, 599
S I	1826.25	25	488, 599
S I	1900.27	20	488, 599
S I	1914.68	15	488, 599
S II	I.P. 188824.5	K	529.592 A
S II	937.41	3	322, 488
S II	937.69	3	322, 488
S II	1102.32	3	322, 488
S II	1234.14	3	322, 488
S II	1250.50	3	322, 488
S II	1253.79	5	322, 488
S II	1259.53	5	322, 488
S II	1936.84	3	285
S II	1950.53	3	285
S II	1958.38	3	285
S II	1970.99	4	285
S III	I.P. 282752.	K	353.667 A
S III	729.529	4	488, 598
S III	732.376	5	488, 598
S III	735.251	4	488, 598
S III	738.474	4	488, 598
S III	788.984	4	488, 598
S III	796.692	4	488, 598
S III	824.887	4	488, 598
S III	836.315	4	488, 598
S III	1077.135	8	488, 598
S III	1194.02	4	323, 488
S III	1194.40	3	323, 488
S III	1200.97	4	323, 488
S IV	I.P. 381541.4	K	259.461 A
S IV	657.34	5	485, 488
S IV	661.42	6	485, 488
S IV	744.92	5	485, 488
S IV	748.40	5	485, 488
S IV	750.23	5	485, 488
S IV	753.76	5	485, 488
S IV	815.97	5	485, 488
S IV	1062.672	6	38, 488
S IV	1072.992	6	38, 488

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
S	V	I.P. 584700.	K	171.0 A
S	V	663.155	5	41, 488
S	V	786.476	8	41, 488
S	V	849.241	6	41, 488
S	V	852.185	5	41, 488
S	V	854.792	7	41, 488
S	V	857.872	5	41, 488
S	V	860.462	5	41, 488
S	VI	I.P. 710194.	K	140.806 A
S	VI	328.605	6	598
S	VI	388.940	6	488, 598
S	VI	390.859	8	488, 598
S	VI	464.654	10	488, 598
S	VI	706.480	6	488, 598
S	VI	944.517	5	488, 598
S	VII	I.P. 2266990.	K	44.111 A
S	VII	51.807	7	233
S	VII	60.161	20	233
S	VII	60.804	15	233
S	VII	72.029	30	233
S	VII	72.663	30	233
S	VIII	I.P. 2652720.	K	37.697 A
S	VIII	52.756	6	233
S	VIII	52.789	6	233
S	VIII	52.958	7	233
S	VIII	54.118	10	233
S	VIII	61.600	10	233
S	VIII	61.978	5	233
S	VIII	63.304	10	233
S	VIII	63.886	5	233
S	IX	I.P. 3057300.	K	32.709 A
S	IX	47.433	4	233
S	IX	48.160	2	233
S	IX	49.119	2	233
S	IX	54.178	2	233
S	IX	55.540	2	233
S	X	I.P. 3606000.	K	27.73 A
S	X	44.387	0	233
S	X	47.654	0	233

CHLORINE

CL	I	I.P. 104995.46	K	952.422 A
CL	I	1188.768	12	6
CL	I	1201.358	11	6
CL	I	1347.238	12	415, 6, 488
CL	I	1351.657	10	415, 6, 488
CL	I	1363.449	10	415, 6, 488
CL	I	1379.529	11	415, 6, 488
CL	II	I.P. 192000.	K	520.8 A
CL	II	834.67	10	345, 488
CL	II	961.49	10	169, 345
CL	II	1063.83	10	345, 488

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL	II	1071.05	20	38, 345, 488
CL	II	1071.76	10	38, 345, 488
CL	II	1079.08	15	38, 345, 488
CL	II	1923.35	4	345
CL	III	I.P. 321936.	K	310.621 A
CL	III	556.232	6	43, 488
CL	III	556.605	7	43, 488
CL	III	557.118	7	43, 488
CL	III	561.530	7	43, 488
CL	III	561.680	7	43, 488
CL	III	561.738	7	43, 488
CL	III	1008.777	6	38, 488
CL	III	1015.023	7	38, 488
CL	III	1822.50	6	43, 488
CL	III	1983.61	5	43
CL	IV	I.P. 431226.	K	231.897 A
CL	IV	486.172	8	44
CL	IV	534.727	8	43
CL	IV	535.666	7	43
CL	IV	537.606	9	43
CL	IV	552.017	7	43, 535
CL	IV	553.297	6	43
CL	IV	554.619	7	43
CL	IV	984.952	7	38
CL	V	I.P. 547000.	K	182.8 A
CL	V	392.433	5	43
CL	V	538.032	5	38
CL	V	542.229	8	549
CL	V	542.297	6	38
CL	V	542.868	4	549
CL	V	545.114	10	549
CL	V	546.329	6	549
CL	V	547.630	10	549
CL	V	883.127	4	38
CL	V	894.340	4	38
CL	VI	I.P. 780000.	K	128. A
CL	VI	243.854	12	535
CL	VI	323.356	15	535
CL	VI	323.936	20	535
CL	VI	325.161	25	535
CL	VI	551.992	10	43, 535
CL	VI	555.485	20	43, 535
CL	VII	I.P. 921902.	K	108.471 A
CL	VII	196.123	10	546
CL	VII	196.388	8	546
CL	VII	225.078	10	546
CL	VII	293.253	8	546
CL	VII	294.889	10	546
CL	VII	340.229	15	546
CL	VII	340.298	18	546
CL	VII	598.211	12	546
CL	VII	604.785	20	44, 546
CL	VIII	I.P. 2810000.	K	35.6 A
CL	VIII	39.462	1	179
CL	VIII	39.655	0	179
CL	VIII	41.636	00	179
CL	VIII	42.166	0	179
CL	VIII	42.220	2	179

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL VIII	42.430	1	179	A III	I.P. 329965.80	K	303.062 A
CL VIII	44.361	2	179	A III	508.434	9	59, 65
CL VIII	44.603	2	179	A III	508.595	4	65, 337
CL VIII	49.487	7	179	A III	529.900	9	59, 65
CL VIII	50.074	5	179	A III	553.470	9	59, 65, 488
CL VIII	50.700	2	179	A III	604.152	10	59, 65
CL VIII	58.673	10	179	A III	637.282	20	59, 65, 488
CL VIII	59.191	9	179	A III	641.808	12	59, 65, 488
CL IX	I.P. 3233000.	K	30.93 A	A III	643.256	9	59, 65, 488
CL IX	44.088	4	179	A III	769.152	12	65, 169, 488
CL IX	44.267	3	179	A III	871.099	10	59, 65, 488
CL IX	45.112	4	179	A III	875.534	9	59, 65, 488
CL IX	45.378	3	179	A III	878.728	12	488, 65
CL IX	51.026	4	179	A III	883.179	9	59, 65, 488
CL IX	51.378	3	179	A III	887.404	10	59, 65, 488
CL IX	52.055	2	179	A III	1914.398	9	59, 65, 488
CL IX	52.303	4	179	A IV	I.P. 482400.	K	207.3 A
CL IX	52.426	3	179	A IV	683.278	10	59, 65, 488
CL IX	52.677	2	179	A IV	689.007	12	59, 65, 488
CL IX	52.726	3	179	A IV	700.277	8	59, 65
CL X	I.P. 3673000.	K	27.23 A	A IV	800.573	5	59, 65
CL X	39.956	1	179	A IV	801.086	10	59, 65, 488
CL X	40.085	2	179	A IV	801.409	10	59, 65, 488
CL X	40.660	1	179	A IV	801.913	5	59, 65
CL X	41.390	1	179	A IV	840.029	15	59, 65, 488
CL X	45.396	3	179	A IV	843.772	20	59, 65, 488
CL X	45.431	0	179	A IV	850.602	25	59, 65, 488
CL X	45.626	0	179	A IV	901.168	9	59, 65
CL X	46.476	2	179	A V	I.P. 605100.	K	165.3 A
CL X	46.845	1	179	A V	337.555	3	549
CL XI	40.392	0	179, 487	A V	337.998	6	488, 549
CL XI	40.787	0	179, 487	A V	446.949	8	488, 549
				A V	449.065	18	488, 549
				A V	461.227	6	488, 549
				A V	463.938	7	488, 549
				A V	527.693	6	488, 549

ARGON

A I	I.P. 127109.9	K	786.721 A	A VI	I.P. 736600.	K	135.8 A
A I	834.397	6	59, 65	A VI	282.423	6	549
A I	835.003	6	59, 65	A VI	294.052	6	549
A I	876.063	4	59, 65, 488	A VI	457.475	20	549
A I	879.949	3	59, 65	A VI	459.320	10	549
A I	1048.218	25	59, 65, 488	A VI	462.007	25	549
A I	1066.660	15	59, 65, 488	A VI	551.371	8	549
A II	I.P. 222820.	K	448.79 A	A VII	I.P. 1000400.	K	99.960 A
A II	580.261	8	59, 65, 488	A VII	176.566	10	549
A II	583.437	8	59, 65, 488	A VII	191.759	3	549
A II	661.868	15	59, 65, 488	A VII	192.041	5	549
A II	666.014	10	59, 65, 488	A VII	192.635	7	549
A II	670.947	10	59, 65, 488	A VII	250.940	7	549
A II	671.854	10	59, 65, 488	A VII	297.621	3	549
A II	679.410	8	59, 65, 488	A VII	297.658	4	549
A II	723.353	14	59, 65, 488	A VII	297.701	6	549
A II	725.542	9	59, 65, 488	A VII	475.656	8	549
A II	730.929	8	59, 65, 488	A VII	475.733	2	549
A II	740.263	12	59, 65, 488	A VII	479.379	12	549
A II	919.78	15	59, 65, 488	A VII	479.485	2	549
A II	932.046	10	59, 65, 488	A VII	585.754	15	549
A II	1560.188	3	59, 65, 488	A VIII	I.P. 1157400.	K	86.401 A
A II	1574.985	4	59, 65, 488	A VIII	137.926	3	549
				A VIII	138.440	5	549
				A VIII	158.923	8	549
				A VIII	159.175	5	549

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A VIII	179.400	10	549
A VIII	180.254	15	549
A VIII	184.315	5	549
A VIII	229.437	5	549
A VIII	230.875	7	549
A VIII	260.253	4	549
A VIII	260.332	6	549

A IX	I.P.	3400000.	K	29.4	A
A IX		48.730	5	549	
A IX		49.180	5	549	
A IX		185.883	2	762	

POTASSIUM

K I	I.P.	35009.78	K	2856.344	A
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K II	I.P.	256637.	K	389.655	A
K II		429.656	3	192	
K II		429.923	3	192	
K II		485.084	5	192	
K II		485.513	3	192	
K II		485.626	2	192	
K II		495.144	6	192	
K II		515.653	3	192	
K II		518.249	3	192	
K II		539.731	3	192	
K II		546.123	3	192	
K II		600.765	6	39, 192, 488	
K II		607.931	5	39, 192, 488	
K II		612.621	6	39, 192, 488	

K III	I.P.	369000.	K	271.	A
K III		413.792	10	192, 488, 762	
K III		434.722	15	192, 762	
K III		435.676	10	192, 762	
K III		440.429	15	192	
K III		444.344	15	182, 192, 488	
K III		448.595	15	182, 192, 488	
K III		466.793	15	192, 488, 762	
K III		470.089	20	192, 359, 488	
K III		471.569	15	192, 488, 762	
K III		497.104	15	192, 488, 762	
K III		520.611	10	192, 488, 762	

K IV	I.P.	491300.	K	203.5	A
K IV		393.142	10	192, 566	
K IV		646.188	15	169, 192	
K IV		737.144	10	39, 192	
K IV		741.950	10	39, 192	
K IV		745.264	10	39, 192	
K IV		746.350	8	39, 192	
K IV		754.673	8	39, 192	

K V	I.P.		K		A
K V		294.936	6	45, 192, 762	
K V		354.927	6	192, 762	
K V		372.148	10	192, 762	
K V		372.462	4	192, 762	
K V		387.800	6	192, 762	
K V		403.784	7	192, 547	
K V		412.000	6	192	
K V		425.588	7	45, 192, 762	
K V		456.320	8	45, 192, 762	
K V		580.319	15	45, 192, 762	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K V	586.322	10	45, 192, 762
K V	603.429	8	192, 762
K V	623.016	8	192, 793
K V	720.432	6	192, 762
K V	724.420	8	192, 762, 793
K V	731.858	12	192, 762

K VI	I.P.	804513.	K	124.299	A
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K VI		395.695	5	192, 762, 793	
K VI		400.951	5	192, 793	
K VI		428.538	5	192	
K VI		458.048	7	192, 793	
K VI		460.438	8	192, 793	
K VI		464.270	10	192, 793	
K VI		488.120	10	192, 598	
K VI		519.372	5	192	
K VI		616.136	6	192, 793	
K VI		715.999	5	192, 793	
K VI		771.103	5	192	
K VI		968.518	5	192	

K VII	I.P.	950200.	K	105.2	A
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K VII		398.931	8	547	
K VII		398.988	2	547	
K VII		403.967	5	192, 547	
K VII		479.768	5	192, 793	
K VII		484.241	5	192, 793	
K VII		487.080	8	192, 793	
K VII		491.702	6	192, 793	
K VII		517.928	5	192, 793	
K VII		526.448	4	192, 793	
K VII		671.504	5	192, 793	

K VIII	I.P.	1247000.	K	80.19	A
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K VIII		230.678	10	535	
K VIII		230.706	12	535	
K VIII		230.745	15	535	
K VIII		422.511	10	192, 535	
K VIII		564.462	12	192, 535, 793	

K IX	I.P.	1419425.	K	70.451	A
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K IX		112.113	2	361	
K IX		112.581	4	361	
K IX		131.646	6	361	
K IX		131.896	4	361	
K IX		145.702	5	361	
K IX		145.753	5	361	
K IX		147.157	6	361	
K IX		147.943	8	361	
K IX		147.973	1	361	
K IX		466.943	4	361	
K IX		621.422	5	178, 192, 361	

K X	I.P.	4064300.	K	24.604	A
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K X		35.607	4	189	
K X		35.779	2	189	
K X		41.148	7	189	
K X		41.541	7	189	

K XI		32.180	1	189	
K XI		32.339	0	189	
K XI		32.810	0	189	
K XI		36.662	0	189	
K XI		36.971	0	189	
K XI		37.435	0	189	
K XI		37.696	0	189	
K XI		37.870	00	189	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K	266.344	4	192
K	1659.7	4	659
K	1668.7	4	659
K	1669.3	4	659
K	1698.9	10	659
K	1703.5	9	659
K	1741.2	4	659
K	1749.3	8	659
K	1752.4	4	659
K	1770.8	6	659
K	1773.5	6	659
K	1787.4	4	659

CALCIUM

CA I I.P. 49304.80 K 2028.200 A

CA II I.P. 95748.0 K 1044.41 A

CA II	1369.1	3	242, 539, 648
CA II	1370.6	3	242, 539, 648
CA II	1553.5	4	186, 488, 648
CA II	1555.1	4	186, 488, 648
CA II	1840.21	8	186, 488, 648
CA II	1843.6	1	186, 488, 648

CA III I.P. 413127. K 242.056 A

CA III	357.973	8	192
CA III	403.732	20	192, 366, 488
CA III	409.971	18	192, 366, 488
CA III	528.286	8	192
CA III	575.580	6	192
CA III	1562.50	6	39, 488
CA III	1854.72	6	39, 488
CA III	1870.28	6	39, 488
CA III	1943.12	6	39, 488

CA IV I.P. 542200. K 184.4 A

CA IV	318.093	15	192, 359
CA IV	321.593	10	359
CA IV	335.374	25	359
CA IV	336.555	15	359
CA IV	341.284	15	192, 359, 567
CA IV	434.570	12	192, 762
CA IV	443.821	15	192, 567, 762
CA IV	450.565	10	192, 567, 762
CA IV	656.038	15	192, 359, 567
CA IV	669.725	10	192, 359, 567

CA V I.P. 680800. K 146.89 A

CA V	267.772	8	45, 192
CA V	280.992	8	45, 192, 358
CA V	286.965	9	45, 192, 567
CA V	322.166	10	192
CA V	352.915	9	45, 192
CA V	425.000	15	192
CA V	542.290	10	192
CA V	558.602	10	169, 192
CA V	637.928	8	192, 567
CA V	646.570	8	192, 567
CA V	973.437	6	192
CA V	1000.310	6	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VI	I.P.	K	A
CA VI	228.628	7	45, 192, 762
CA VI	229.734	7	45, 192, 762
CA VI	230.495	5	45, 192, 762
CA VI	239.535	7	45, 192
CA VI	340.528	8	45, 192
CA VI	370.022	7	45, 192, 762
CA VI	373.997	7	45, 192, 762
CA VI	505.199	8	192

CA VII	I.P. 1030000.	K	97.1 A
CA VII	204.001	9	192, 547
CA VII	205.404	6	192, 547, 762
CA VII	331.650	8	192, 547
CA VII	334.136	10	192, 547, 567
CA VII	414.663	12	192, 793
CA VII	433.609	6	192, 598
CA VII	466.227	6	192
CA VII	550.188	6	192
CA VII	551.448	6	192, 793

CA VIII I.P. 1189000. K 84.10 A

CA VIII	144.120	8	192, 547
CA VIII	144.160	3	547
CA VIII	178.641	8	192, 547
CA VIII	178.687	6	547
CA VIII	182.713	7	192, 547
CA VIII	184.160	10	547
CA VIII	354.508	9	547
CA VIII	354.985	8	547
CA VIII	357.347	12	547
CA VIII	357.497	8	547
CA VIII	357.983	8	547
CA VIII	461.700	5	192, 793

CA IX I.P. 1519000. K 65.83 A

CA IX	129.934	10	535
CA IX	184.377	6	535
CA IX	184.433	8	192, 535
CA IX	373.802	10	535
CA IX	373.979	15	535
CA IX	378.089	20	192, 535

CA X I.P. 1704660. K 58.663 A

CA X	118.174	2	361
CA X	118.223	4	361
CA X	123.733	5	361
CA X	153.012	6	178, 361, 762
CA X	166.945	8	178, 361, 762
CA X	167.034	10	178, 361, 762
CA X	557.740	4	361

CA XI I.P. 4774300. K 20.945 A

CA XI	25.327	1	189
CA XI	25.517	1	189
CA XI	26.442	00	189
CA XI	26.639	00	189
CA XI	26.962	1	189
CA XI	27.079	00	189
CA XI	30.448	6	189
CA XI	30.867	3	189
CA XI	31.257	2	189
CA XI	35.212	8	189
CA XI	35.576	8	189

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA XII	I.P.	5280000.	K 18.9 A
CA XII	27.412	00	189
CA XII	27.606	00	189
CA XII	27.978	1	189
CA XII	28.134	0	189
CA XII	31.660	1	189
CA XII	31.960	0	189
CA XII	32.280	1	189
CA XII	32.498	0	189
CA XII	32.655	00	189
CA	397.178	4	192
CA	484.368	3	192
CA	485.636	3	192
CA	486.160	3	192
CA	542.842	3	192
CA	552.005	4	192

SCANDIUM

SC I	I.P.	52750.	K 1891. A
SC II	I.P.	103240.	K 968.62 A
SC III	I.P.	199700.	K 500.8 A
SC III	627.082	1	17
SC III	627.858	2	17
SC III	730.60	0	17, 488, 688
SC III	731.66	1	17, 488, 688
SC III	1598.06	5	488, 688
SC III	1603.12	10	488, 688
SC III	1610.25	8	488, 688
SC III	1895.33	2	488
SC III	1912.48	2	488
SC III	1993.96	4	488, 688
SC IV	I.P.	596300.	K 167.7 A
SC IV	283.911	9	17
SC IV	284.263	9	17
SC IV	284.450	8	17
SC IV	284.884	6	17
SC IV	285.191	8	17
SC IV	289.589	9	17
SC IV	289.850	9	17
SC IV	291.932	10	17
SC IV	295.478	9	17
SC IV	298.428	8	17, 488
SC IV	298.557	6	17
SC IV	299.041	9	17
SC V	I.P.	741000.	K 135. A
SC V	282.209	7	17
SC V	282.497	6	17
SC V	286.927	10	17
SC V	290.732	8	17
SC V	307.083	6	17
SC V	573.356	10	17, 359
SC V	587.935	6	17, 359

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	VI	I.P.	896000.	K 112. A
SC	VI	290.700	6	17
SC	VI	292.344	6	17
SC	VI	294.292	7	17
SC	VI	297.269	7	17
SC	VI	298.194	8	17
SC	VII	I.P.		K A
SC	VII	182.987	4	17, 358
SC	VII	183.96	5	17
SC	VII	190.644	4	17, 358
SC	VII	191.602	8	358
SC	VII	192.607	8	358
SC	VII	308.180	6	17
SC	VII	314.049	4	17
SC	VII	334.138	5	17
SC	VII	571.256	4	358
SC	VIII	I.P.	1280000.	K 78.1 A
SC	VIII	164.772	3	17, 360
SC	VIII	165.395	3	17, 360
SC	VIII	165.654	4	17, 360
SC	VIII	166.022	3	17, 360
SC	VIII	166.317	3	17, 360
SC	VIII	166.916	3	17, 360
SC	VIII	315.420	12	360
SC	VIII	389.892	12	17, 547
SC	VIII	494.446	6	17, 547
SC	IX	I.P.	1456000.	K 68.68 A
SC	IX	119.444	4	17
SC	IX	120.236	5	17
SC	IX	150.09	5	17
SC	IX	318.615	8	360
SC	IX	324.199	12	360
SC	IX	390.888	8	360
SC	IX	394.652	12	17, 360
SC	X	I.P.	1819530.	K 54.959 A
SC	X	101.978	6	17
SC	X	109.765	4	17
SC	X	109.805	2	17
SC	X	119.049	4	17
SC	X	134.767	3	17, 535
SC	X	135.128	4	17, 535
SC	X	135.921	5	17, 535
SC	X	150.939	4	17, 535
SC	X	150.995	5	17, 535
SC	X	337.888	5	17, 535
SC	X	342.509	10	535
SC	X	422.850	4	17
SC	XI	I.P.	2015030.	K 49.627 A
SC	XI	94.888	6	17, 178
SC	XI	95.117	5	17, 178
SC	XI	104.435	5	17, 178, 361
SC	XI	105.140	6	17, 178, 361
SC	XI	105.170	2	17
SC	XI	127.156	5	17, 178
SC	XI	128.247	5	17, 178
SC	XI	138.283	5	17, 178
SC	XI	138.380	5	17, 178, 361

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC XII	I.P. 5539700.	K	18.052 A
SC XII	26.544		189
SC XII	26.920		189
SC XII	27.260		189
SC XII	30.480		189
SC XII	30.816		189
SC	834.66	8	17
SC	908.73	9	17
SC	924.05	8	17
SC	964.46	10	17
SC	985.20	8	17
SC	1015.50	9	17
SC	1030.32	8	17

TITANIUM

TI I	I.P. 55010.	K	1818.	A
TI II	I.P. 109506.	K	913.192	A
TI II	1906.30	3	488, 601	
TI II	1908.29	3	488, 601	
TI II	1909.33	2	488, 601	
TI II	1909.74	2	488, 601	
TI II	1911.01	0	488, 601	
TI II	1914.11	00	488, 601	
TI III	I.P. 221600.	K	451.3	A
TI III	1286.38	40	488, 604	
TI III	1289.32	30	488, 604	
TI III	1291.64	20	488, 604	
TI III	1293.26	30	488, 604	
TI III	1294.67	50	488, 604	
TI III	1295.91	30	488, 604	
TI III	1298.67	50	488, 604	
TI III	1298.95	40	488, 604	
TI III	1421.69	20	604	
TI III	1422.41	25	604	
TI III	1424.14	20	604	
TI III	1455.22	40	488, 604	
TI III	1498.65	30	488, 604	
TI III	1499.17	20	604	
TI IV	I.P. 348817.0	K	286.683	A
TI IV	729.39	0	604	
TI IV	776.82	10	488, 604	
TI IV	779.14	20	488, 604	
TI IV	781.78	20	488, 604	
TI IV	1451.75	30	488, 604	
TI IV	1467.25	30	488, 604	
TI IV	1469.21	15	488, 604	
TI V	I.P. 805500.	K	124.1	A
TI V	225.337	100	364	
TI V	228.898	75	364	

TI VI	I.P. 966000.	K	104.	A
TI VI	182.148	5	182	
TI VI	184.104	4	182	
TI VI	194.900	7	182	
TI VI	197.455	5	182	
TI VI	199.759	6	182	
TI VI	201.313	5	182	
TI VI	201.862	5	182	
TI VII	I.P. 1136000.	K	88.03	A
TI VII	164.172	3	181	
TI VII	169.300	3	181	
TI VII	170.357	5	181, 458	
TI VII	171.883	3	181	
TI VII	171.949	2	181	
TI VII	172.350	2	181	
TI VII	175.806	5	181, 358	
TI VII	177.229	4	181, 358	
TI VII	178.564	2	181	
TI VII	178.666	3	181	
TI VIII	I.P.	K		A
TI VIII	150.037	20	358	
TI VIII	150.864	20	358	
TI VIII	151.485	10	358	
TI VIII	151.863	8	358	
TI VIII	152.164	20	358	
TI VIII	155.673	10	358	
TI IX	I.P. 1560000.	K	64.1	A
TI IX	281.463	2	547	
TI IX	282.720	2	547	
TI IX	286.128	4	547	
TI IX	206.204	5	547	
TI IX	289.728	8	547	
TI IX	336.902	4	547	
TI IX	341.754	10	547	
TI X	I.P.	K		A
TI X	101.355	2	180, 487	
TI X	102.107	2	180, 487	
TI XI	I.P. 2142000.	K	46.69	A
TI XI	87.722	3	180	
TI XI	93.595	2	180	
TI XI	94.054	3	180	
TI XI	115.011	2	180	
TI XI	125.960	2	180	
TI XI	125.997	3	180	
TI XI	126.061	4	180	
TI XII	I.P. 2351530.	K	42.526	A
TI XII	60.705		178	
TI XII	60.760		178	

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

TI	XII	67.149	178
TI	XII	67.532	178
TI	XII	71.012	178
TI	XII	82.124	178
TI	XII	82.311	178
TI	XII	82.350	178
TI	XII	82.362	178
TI	XII	89.841	178
TI	XII	90.508	178
TI	XII	90.540	178
TI	XII	108.100	178
TI	XII	109.121	178
TI	XII	116.496	178
TI	XII	116.597	178

TI	XIII	I.P.	6360600.	K	15.722	A
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TI	XIII	23.356	189
TI	XIII	23.698	189
TI	XIII	23.991	189
TI	XIII	26.641	189
TI	XIII	26.960	189

VANADIUM

V	I	I.P.	54361.	K	1839.6	A
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V	I	1957.90	50	489, 488
V	I	1959.12	30	489, 488
V	I	1959.36	30	489, 488
V	I	1959.97	40	489, 488
V	I	1961.69	60	489, 488
V	I	1963.47	70	489, 488
V	I	1964.27	60	489, 488
V	I	1965.07	60	489, 488
V	I	1965.26	60	489, 488
V	I	1966.52	60	489, 488
V	I	1966.76	60	489, 488
V	I	1967.98	80	489, 488
V	I	1982.06	40	489, 488
V	I	1983.37	50	489, 488
V	I	1984.91	50	489, 488

V	II	I.P.	110200.	K	846.0	A
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V	II	1587.40	50	478, 488
V	II	1637.77	50	478, 488
V	II	1661.27	60	478
V	II	1794.62	50	478
V	II	1828.84	50	478, 791
V	II	1869.47	50	478, 488
V	II	1907.79	50	478, 488
V	II	1908.32	40	478, 488
V	II	1929.61	60	478, 488
V	II	1937.44	60	478, 488
V	II	1976.62	60	478, 488
V	II	1984.05	90	478, 488

V	III	I.P.	236500.	K	422.8	A
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V	III	1149.94	100	488, 791
V	III	1151.04	90	488, 791
V	III	1152.18	80	488, 791
V	III	1153.19	70	488, 791
V	III	1159.77	50	488, 791
V	III	1331.94	50	488, 791
V	III	1335.09	45	488, 791
V	III	1812.17	50	791

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

V	IV	I.P.	391000.	K	255.8	A
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V	IV	677.26	10	790
V	IV	677.35	50	488, 790
V	IV	678.72	35	488, 790
V	IV	684.38	80	488, 790
V	IV	684.44	50	488, 790
V	IV	737.84	100	488, 790
V	IV	1806.22	40	488, 790
V	IV	1825.85	50	488, 790
V	IV	1861.56	60	488, 790
V	IV	1939.07	100	488, 790
V	IV	1951.48	80	488, 790
V	IV	1963.13	70	488, 790
V	IV	1997.74	80	790, 488
V	IV	1999.32	60	488, 790

V	V	I.P.	526000.	K	190.	A
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V	V	481.49	2	279
V	V	482.99	5	279
V	V	484.47	4	279
V	V	1679.36	7	279

V	VI	I.P.	1040100.	K	96.145	A
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V	VI	128.382	2	364
V	VI	129.574	4	364
V	VI	179.323	20	364
V	VI	182.050	15	364

V	VII	I.P.	1216000.	K	82.24	A
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V	VII	156.608	7	182
V	VII	158.467	6	182
V	VII	161.122	6	182
V	VII	161.836	4	182
V	VII	163.135	2	182
V	VII	163.182	4	182
V	VII	456.29		359
V	VII	472.80		359

V	VIII	I.P.	1401000.	K	71.38	A
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V	VIII	135.751	1	181
V	VIII	139.730	1	181
V	VIII	140.451	3	181
V	VIII	140.665	1	181
V	VIII	141.864	1	181
V	VIII	144.653	3	181
V	VIII	145.507	2	181
V	VIII	146.613	1	181
V	VIII	146.789	1	181

V	IX	I.P.		K		A
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V	IX	125.420	12	358
V	IX	126.152	8	358
V	IX	126.732	5	358
V	IX	126.765	5	358
V	IX	126.810	0	358
V	IX	127.068	10	358

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V XI	I.P.	K	A	CR II	1858.72	15	340, 488
V XI	87.166	3	180, 487	CR II	1890.55	30	340, 488
V XI	87.868	4	180, 487	CR II	1898.92	35	340, 488
V XII	I.P.	K	41.51 A	CR II	1937.84	20	340, 488, 490
V XII	61.717	1	180	CR II	1948.51	10	340, 488
V XII	76.307	3	180	CR II	1949.00	40	340, 488
V XII	80.896	1	180	CR II	1949.22	35	340, 488
V XII	81.077	2	180	CR II	1950.06	50	340, 488
V XII	81.513	4	180	CR II	1985.52	22	340, 488
V XII	97.938	2	180	CR II	1985.72	12	340, 488, 490
V XII	98.630	3	180	CR II	1993.37	15	340, 488, 490
V XII	106.781	2	180	CR II	1993.63	25	340, 488
V XII	106.820	3	180	CR III	I.P.	K	400.5 A
V XII	106.885	4	180	CR III	249700.		
V XIII	I.P.	K	36.858 A	CR III	1017.14	50	488, 490
V XIII	52.870		178	CR III	1017.31	50	488, 490
V XIII	52.928		178	CR III	1017.57	50	488
V XIII	58.116		178	CR III	1030.47	60	47, 488, 490
V XIII	58.482		178	CR III	1033.23	50	47, 488, 490
V XIII	70.262		178	CR III	1033.45	50	47, 488, 490
V XIII	70.323		178	CR III	1033.69	100	47, 488, 490
V XIII	71.799		178	CR III	1035.93	50	47, 488, 490
V XIII	72.025		178	CR III	1036.03	100	47, 488, 490
V XIII	78.101		178	CR III	1059.13	60	47, 488, 490
V XIII	78.746		178	CR III	1060.15	60	47, 488, 490
V XIII	78.783		178	CR III	1061.04	60	47, 488, 490
V XIII	93.025		178	CR III	1062.68	50	47, 488, 490
V XIII	93.994		178	CR III	1066.23	50	488, 490
V XIII	99.523		178	CR III	1068.41	80	488, 490
V XIII	99.625		178	CR III	1136.67	50	488, 490
V XIV	I.P.	K	13.817 A	CR III	1161.43	50	488, 490
V XIV	20.716		189	CR III	1206.68	60	47, 488, 490
V XIV	21.018		189	CR III	1209.13	80	47, 488, 490
V XIV	23.490		189	CR III	1211.12	80	47, 488, 490
V XIV	23.794		189	CR III	1232.96	50	488, 490
CR I	I.P.	K	1832.7 A	CR III	1252.61	50	47, 488, 490
CR I	1886.34	10	341	CR III	1692.89	60	488, 490
CR I	1989.92	15	341, 488	CR III	1696.64	60	488, 490
CR I	1990.27	8	341, 488	CR III	1701.48	60	488, 490
CR I	1991.17	15	341, 488, 490	CR III	1707.43	80	488, 490
CR I	1994.10	8	341, 488	CR III	1707.78	40	488, 490
CR I	1994.55	15	341, 488	CR IV	I.P.	K	250. A
CR I	1997.35	10	341, 488, 490	CR IV	400000.		
CR I	1997.92	12	341, 488, 13	CR IV	618.22	40	47, 488
CR II	I.P.	K	751.54 A	CR IV	618.27	60	791
CR II	1852.13	25	340, 488	CR IV	618.81	60	791
CR II	1855.14	20	340, 488	CR IV	619.12	40	488
CR II	1858.44	20	340, 488	CR IV	620.65	100	47, 488
CR V	I.P.	K	169.6 A	CR IV	621.33	60	47, 488
CR V	438.62	30	790	CR IV	628.97	100	488
CR V	438.65	40	790	CR IV	629.73	50	488
CR V	438.66	50	790	CR IV	630.28	80	488
CR V	464.03	100	790	CR IV	666.5	100	488
CR V	1489.35	50	790, 490	CR IV	687.31	75	488
CR V	1498.02	70	790	CR IV	693.93	100	488, 791
CR V	1519.66	70	790, 490	CR IV	1819.18	60	488
CR V	1579.67	80	790	CR IV	1826.16	30	488
CR V	1591.70	70	790	CR IV	1826.81	30	488

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CR VI I.P. 730900. K 136.8 A

CR VI 209.978 4 365
 CR VI 210.288 6 365

CR VII I.P. 1299700. K 76.941 A

CR VII 104.13 1 364
 CR VII 105.14 4 364
 CR VII 146.532 25 364
 CR VII 148.736 15 364

CR VIII I.P. 1491000. K 67.07 A

CR VIII 124.184 2 182
 CR VIII 125.728 1 182
 CR VIII 129.998 7 182
 CR VIII 131.638 6 182
 CR VIII 132.321 2 182
 CR VIII 133.395 6 182
 CR VIII 134.076 3 182
 CR VIII 134.942 4 182
 CR VIII 135.185 1 182
 CR VIII 135.892 0 182
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 CR VIII 430.71 359

CR IX I.P. 1691000. K 59.14 A

CR IX 117.435 1 181
 CR IX 117.942 3 181
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 CR IX 119.269 2 181
 CR IX 119.320 1 181
 CR IX 119.569 0 181
 CR IX 121.293 3 181
 CR IX 121.781 2 181
 CR IX 122.720 1 181
 CR IX 122.964 1 181
 CR IX 123.226 00 181

CR XII I.P. K A

CR XII 75.815 2 180, 407
 CR XII 76.488 3 180, 487

CR XIII I.P. 2862000. K 34.94 A

CR XIII 53.765 1 180
 CR XIII 66.983 2 180
 CR XIII 70.792 1 180
 CR XIII 70.973 3 180
 CR XIII 71.398 3 180
 CR XIII 71.435 0 180
 CR XIII 84.616 0 180
 CR XIII 84.898 2 180
 CR XIII 85.566 3 180
 CR XIII 91.749 2 180
 CR XIII 91.792 3 180
 CR XIII 91.855 4 180

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 CR XIV 46.527 178

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CR XV 15.06 0 766
 CR XV 15.21 0 766
 CR XV 16.889 1 766
 CR XV 16.965 0 766
 CR XV 18.497 4 189, 766
 CR XV 18.782 2 189, 766
 CR XV 19.015 0 766
 CR XV 20.863 4 189, 766
 CR XV 21.153 3 189, 766

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MN I I.P. 59960. K 1668. A

MN II I.P. 126147. K 792.726 A

MN II 1162.017 50 141, 488
 MN II 1163.325 40 141, 488
 MN II 1188.502 50 141, 488
 MN II 1192.313 40 141, 488
 MN II 1197.172 40 141, 488
 MN II 1199.341 40 141, 488
 MN II 1201.570 40 141, 488
 MN II 1275.973 40 131, 141, 488
 MN II 1415.755 35 140, 488
 MN II 1419.612 40 141, 488
 MN II 1432.785 40 140, 488
 MN II 1801.272 50 131, 141, 488
 MN II 1827.079 50 141, 488
 MN II 1947.945 40 141, 488
 MN II 1948.714 200 131, 141, 488
 MN II 1953.234 40 141, 488

MN III I.P. 271800. K 367.9 A

MN III 1283.566 500 131, 488
 MN III 1287.583 400 131, 488
 MN III 1360.704 1000 131, 488
 MN III 1365.206 800 131, 488
 MN III 1369.419 400 131, 488
 MN III 1609.187 500 131, 488
 MN III 1614.170 1000 131, 488
 MN III 1620.624 2000 131, 488
 MN III 1629.124 400 131, 488
 MN III 1633.807 500 131, 488
 MN III 1653.570 400 47, 131, 488
 MN III 1804.028 400 131, 488
 MN III 1877.555 400 131, 488
 MN III 1941.227 500 131, 488
 MN III 1943.133 800 47, 131, 488
 MN III 1952.285 500 131, 488
 MN III 1952.430 1000 131, 488
 MN III 1978.879 500 131, 488
 MN III 1982.690 400 131, 488
 MN III 1989.518 400 131, 488

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS					SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS							
MN	IV	I.P.	K	A	MN	VIII	I.P.	1585000.	K	A		
MN	IV	541.860	7	47	MN	VIII	122.168	15	366			
MN	IV	581.453	7	47								
MN	IV	584.443	7	47								
MN	IV	584.826	6	47	MN	IX	I.P.	1791000.	K	55.83 A		
MN	IV	585.217	8	47	MN	IX	105.256	0	182			
MN	IV	646.815	8	47	MN	IX	109.783	5	182			
MN	IV	647.952	8	47	MN	IX	111.262	4	182			
MN	IV	648.722	8	47	MN	IX	111.500	2	182			
MN	IV	654.891	7	47	MN	IX	112.415	5	182, 359			
MN	IV	663.131	8	47	MN	IX	113.080	2	182			
MN	IV	663.897	8	47	MN	IX	113.627	3	182			
MN	IV	664.843	8	47	MN	IX	114.023	0	182			
MN	IV	666.050	7	47	MN	IX	114.472	0	182			
MN	IV	666.363	6	47								
MN	IV	666.700	8	47	MN	X	I.P.	2004000.	K	49.90 A		
MN	IV	667.009	6	47	MN	X	100.173	1	181			
MN	IV	669.799	7	47	MN	X	100.585	2	181, 358			
MN	IV	1751.60	7	47	MN	X	100.787	1	181			
MN	IV	1759.02	7	47	MN	X	101.808	0	181			
MN	IV	1795.77	7	47	MN	X	101.854	0	181			
					MN	X	102.030	0	181			
MN	V	I.P.	613200.	K	163.1	A	MN	X	103.269	3	181, 358	
MN	V	404.358	8	46			MN	X	103.571	2	181, 350	
MN	V	404.455	4	46			MN	X	104.310	0	181	
MN	V	405.094	5	46			MN	X	104.608	1	181	
MN	V	405.654	8	46			MN	X	104.806	0	181	
MN	V	406.037	7	46								
MN	V	410.311	8	46			MN	XIII	I.P.	K	A	
MN	V	410.459	5	46			MN	XIII	66.574	1	180, 487	
MN	V	410.611	8	46			MN	XIII	67.215	2	180, 487	
MN	V	410.990	8	46								
MN	V	411.329	7	46			MN	XIV	I.P.	3260000.	K	30.7 A
MN	V	411.585	7	46			MN	XIV	57.224	00	180	
MN	V	415.980	8	46			MN	XIV	59.325	1	180	
MN	V	436.174	8	46			MN	XIV	62.526	0	180	
MN	V	1446.49	60	791			MN	XIV	62.694	1	180	
MN	V	1483.09	160	791			MN	XIV	62.713	00	180	
MN	V	1486.74	30	791			MN	XIV	63.109	2	180	
MN	V	1490.68	160	791			MN	XIV	63.146	00	180	
MN	V	1491.30	30	791			MN	XIV	74.063	00	180	
MN	V	1503.59	80	791			MN	XIV	74.327	0	180	
MN	V	1504.38	200	791			MN	XIV	74.961	1	180	
MN	V	1507.11	40	791			MN	XIV	74.720	1	180	
							MN	XIV	79.761	2	180	
							MN	XIV	79.826	3	180	
MN	VI	I.P.	K	A			MN	XV	I.P.	3511210.	K	28.480 A
MN	VI	307.999	20	128			MN	XV	45.137		178	
MN	VI	308.560	20	128			MN	XV	52.977		178	
MN	VI	308.853	15	128			MN	XV	53.032		178, 361	
MN	VI	309.440	12	128			MN	XV	56.270		178	
MN	VI	309.579	10	128			MN	XV	56.484		178	
MN	VI	310.058	10	128			MN	XV	60.720		178	
MN	VI	310.908	40	128			MN	XV	61.319		178	
MN	VI	311.748	10	128			MN	XV	61.361		178	
MN	VI	321.176	11	128			MN	XV	71.038		178	
MN	VI	321.541	9	128			MN	XV	71.927		178	
MN	VI	325.146	20	128			MN	XV	75.182		178	
MN	VI	328.232	10	128			MN	XV	75.286		178	
MN	VI	328.431	20	128								
MN	VII	I.P.	962001.	K	A		MN	XV	45.137		178	
MN	VII	111.889	0	365			MN	XV	52.977		178	
MN	VII	123.799	10	365			MN	XV	53.032		178, 361	
MN	VII	124.005	15	365, 366			MN	XV	56.270		178	
MN	VII	135.177	20	365			MN	XV	56.484		178	
MN	VII	135.393	25	365			MN	XV	60.720		178	
MN	VII	162.349	80	365			MN	XV	61.319		178	
MN	VII	162.667	60	365			MN	XV	61.361		178	
MN	VII	162.707	30	365			MN	XV	71.038		178	
MN	VII	284.059	10	365			MN	XV	71.927		178	
MN	VII	462.363	15	365			MN	XV	75.182		178	
MN	VII	467.662	30	365			MN	XV	75.286		178	

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MN	XVI	I.P.	9164300.	K	10.912 A
MN	XVI		13.46		766
MN	XVI		13.61		766
MN	XVI		15.238		766
MN	XVI		15.312		766
MN	XVI		16.616		766
MN	XVI		16.882		766
MN	XVI		17.095		766
MN	XVI		18.654		766
MN	XVI		18.935		766

IRON

FE I I.P. 63700. K 1570. A

FE	I	1934.528	25	292, 488, 605
FE	I	1937.274	35	292, 488, 605
FE	I	1946.983	25	488, 795
FE	I	1951.556	25	292, 488, 605
FE	I	1952.579	30	488, 795
FE	I	1955.690	20	488, 605, 645
FE	I	1956.026	30	488, 605, 645
FE	I	1957.838	25	488, 795
FE	I	1960.139	25	488, 795
FE	I	1962.031	25	292, 488, 605
FE	I	1962.107	30	488, 795
FE	I	1962.746	15	188, 488, 605
FE	I	1962.871	20	188, 488, 605
FE	I	1963.110	25	292, 488, 605

FE II I.P. 130524. K 766.143 A

FE	II	926.220	60	292, 488
FE	II	929.538	30	292, 488
FE	II	929.612	30	292, 488
FE	II	930.030	30	292, 488
FE	II	930.165	30	292, 488
FE	II	930.219	30	292, 488
FE	II	930.558	30	292, 488
FE	II	931.142	25	292, 488
FE	II	1096.616	20	292, 488
FE	II	1096.793	20	292, 488
FE	II	1096.886	30	292, 488
FE	II	1112.086	35	488
FE	II	1143.235	25	292, 488
FE	II	1143.295	30	292
FE	II	1144.946	35	292, 488
FE	II	1608.456	35	488, 795
FE	II	1635.398	35	488, 795
FE	II	1636.321	30	488, 795
FE	II	1639.403	30	292, 488
FE	II	1785.161	40	488, 795
FE	II	1786.738	40	292, 488
FE	II	1788.072	35	488, 795

FE III I.P. 247200. K 404.5 A

FE	III	1550.196	12	188, 288, 488
FE	III	1877.989	12	188, 488
FE	III	1886.757	12	188, 292, 488
FE	III	1890.669	13	188, 292, 488
FE	III	1895.456	20	188, 292, 488
FE	III	1914.056	19	188, 292, 488
FE	III	1915.083	15	188, 292, 488
FE	III	1922.766	15	188, 292, 488
FE	III	1926.304	18	188, 292, 488
FE	III	1930.387	15	188, 292, 488
FE	III	1931.507	14	188, 488

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

FE	III	1937.345	14	188, 292, 488
FE	III	1943.481	14	188, 292, 488
FE	III	1951.007	12	188, 488
FE	III	1953.322	13	188, 488
FE	III	1953.488	10	188, 488
FE	III	1960.318	13	188, 488
FE	III	1987.503	15	188, 292, 488
FE	III	1991.613	14	188, 292, 488
FE	III	1994.073	13	188, 292, 488
FE	III	1995.563	12	188, 292, 488
FE	III	1996.420	12	188, 292, 488

FE IV I.P. K A

FE	IV	525.68	100	357
FE	IV	526.28	75	357
FE	IV	526.60	60	357
FE	IV	574.5	50	286
FE	IV	576.8	40	286
FE	IV	1259.54	30	286
FE	IV	1455.66	25	286
FE	IV	1459.92	40	286
FE	IV	1464.81	40	286
FE	IV	1472.13	35	286
FE	IV	1479.49	40	47, 286
FE	IV	1630.99	75	286
FE	IV	1640.03	65	286
FE	IV	1647.05	45	286
FE	IV	1675.78	25	286
FE	IV	1681.45	25	286

FE V I.P. K A

FE	V	365.440	6	47
FE	V	365.858	6	47
FE	V	384.957	6	47
FE	V	387.500	6	47
FE	V	392.907	6	47
FE	V	393.270	5	47
FE	V	393.911	4	47
FE	V	417.382	6	47
FE	V	418.033	6	47
FE	V	418.457	5	47
FE	V	422.287	6	47
FE	V	1373.68	6	47
FE	V	1376.45	6	47
FE	V	1402.45	6	47
FE	V	1430.61	8	47
FE	V	1448.91	6	47

FE VI I.P. K A

FE	VI	290.271	6	46
FE	VI	291.020	5	46
FE	VI	291.184	6	46
FE	VI	291.229	6	46
FE	VI	291.473	5	46
FE	VI	291.800	5	46
FE	VI	291.829	5	46
FE	VI	292.736	7	46
FE	VI	293.745	8	46
FE	VI	293.966	8	46
FE	VI	294.265	7	46
FE	VI	294.339	5	46
FE	VI	294.520	7	46
FE	VI	296.988	6	46
FE	VI	297.308	7	46
FE	VI	297.568	8	46
FE	VI	304.221	7	46
FE	VI	304.551	7	46
FE	VI	311.702	7	46
FE	VI	312.263	7	46

FE VII I.P. K A

FE	VII	233.021	10	128
FE	VII	234.339	9	128

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FE VII	234.779	15	128
FE VII	235.232	10	128
FE VII	240.075	8	128
FE VII	240.105	7	128
FE VII	243.375	50	128
FE VII	245.926	10	128
FE VIII	I.P.	1219360.	K 82.010 A
FE VIII	107.872	8	365
FE VIII	108.083	8	365
FE VIII	130.939	8	365
FE VIII	131.242	9	365
FE VIII	195.476	20	365
FE VIII	196.046	15	365
FE VIII	370.432	10	365
FE IX	I.P.	1893000.	K 52.83 A
FE IX	103.580	8	366
FE IX	105.236	6	366
FE X	I.P.	2114000.	K 47.30 A
FE X	94.012	4	182
FE X	95.338	1	182
FE X	95.374	3	182
FE X	96.122	4	182
FE X	96.788	2	182
FE X	97.122	3	182
FE X	97.591	0	182
FE X	97.838	0	182
FE XI	I.P.	2342000.	K 42.70 A
FE XI	86.149	0	181
FE XI	86.513	1	181
FE XI	86.772	2	181
FE XI	87.025	1	181
FE XI	87.995	0	181
FE XI	88.029	0	181
FE XI	88.167	0	181
FE XI	89.104	2	181
FE XI	89.185	1	181
FE XI	89.771	0	181
FE XI	90.205	1	181
FE XI	90.345	0	181
FE XIII	I.P.	2860000.	K 35.0 A
FE XIV	I.P.	3150000.	K 31.7 A
FE XIV	58.963	2	180, 487
FE XIV	99.779	1	180, 407
FE XV	I.P.	3684000.	K 27.14 A
FE XV	50.062	00	180
FE XV	50.085	0	180
FE XV	50.120	1	180
FE XV	52.911	3	180
FE XV	55.635	1	180
FE XV	55.793	2	180
FE XV	55.815	0	180
FE XV	56.200	3	180
FE XV	56.236	00	180
FE XV	69.945	2	180
FE XV	69.987	3	180
FE XV	70.054	4	180

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE XVI	I.P.	3947840.	K 25.33 A
FE XVI	39.827		178
FE XVI	40.153		178
FE XVI	46.661		178
FE XVI	46.718		178
FE XVI	50.350		178
FE XVI	50.555		178
FE XVI	54.142		178
FE XVI	54.728		178
FE XVI	54.769		178
FE XVI	62.879		178
FE XVI	63.719		178
FE XVI	66.263		178
FE XVI	66.368		178
FE XVII	I.P.	10211700.	K 9.193 A
FE XVII	12.12		766
FE XVII	12.26		766
FE XVII	13.820		766
FE XVII	13.887		766
FE XVII	15.012		766
FE XVII	15.261		766
FE XVII	15.453		766
FE XVII	16.774		766
FE XVII	17.051		766

COBALT

CO	I	I.P.	63430.	K	1577.	A
CO I	I	1971.16		30	488, 603	
CO I	I	1972.52		30	488, 603	
CO I	I	1976.97		30	488, 603	
CO I	I	1980.89		40	488, 603	
CO I	I	1987.197		30	488, 603, 673	
CO I	I	1989.80		25	488, 603	
CO I	I	1990.34		30	488, 603	
CO I	I	1847.89		30	488, 603	
CO I	I	1852.71		30	488, 603	
CO I	I	1855.05		40	488, 603	
CO I	I	1936.58		30	488, 603	
CO I	I	1954.22		30	488, 603	
CO I	I	1955.17		30	488, 603	
CO I	I	1970.71		50	488, 603	
CO II	I.P.	137572.		K	726.892	A
CO II	II	1299.574		8	488	
CO II	II	1306.966		8	488	
CO II	II	1486.483		9	488	
CO II	II	1941.28		50	234, 488	
CO II	II	1950.098		20	234, 488	
CO II	II	1957.424		30	234, 488	
CO III	I.P.	270200.		K	370.1	A
CO III	III	1760.354		5000	488, 673	
CO III	III	1773.568		5000	488, 673	
CO III	III	1777.145		1000	488, 673	
CO III	III	1780.046		2000	488, 673	
CO III	III	1782.966		2000	488, 673	
CO III	III	1787.082		1000	488, 673	
CO III	III	1789.070		1000	488, 673	
CO III	III	1823.079		1000	488, 673	
CO III	III	1830.093		1000	488, 673	
CO III	III	1831.439		1000	488, 673	
CO III	III	1835.000		1000	488, 673	
CO III	III	1861.775		1000	488, 673	
CO III	III	1863.826		2000	488, 673	
CO III	III	1881.702		1000	488, 673	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO IV	I.P.	K	A
CO IV	1349.61	3	492
CO IV	1521.61	25	492
CO IV	1533.93	15	492
CO IV	1612.16	20	492
CO V	I.P.	K	A
CO V	1277.01	50	286
CO V	1281.63	30	286
CO V	1286.626	28	286, 673
CO V	1295.87	40	286
CO V	1301.12	35	286
CO V	1345.67	50	286
CO V	1355.20	40	286
CO V	1357.67	30	286
CO V	1362.46	30	286
CO V	1364.17	30	286
CO V	1368.24	30	286
CO V	1373.09	30	286
CO V	1375.20	30	286
CO V	1482.62	25	286
CO V	1482.91	20	286
CO V	1486.02	25	286
CO VI	I.P.	K	A
CO VI	266.498	6	48
CO VI	266.634	4	48
CO VI	266.905	4	48
CO VI	266.973	8	48
CO VI	267.131	5	48
CO VI	267.297	6	48
CO VI	267.402	5	48
CO VI	272.481	7	48
CO VI	276.285	7	48
CO VI	276.721	7	48
CO VI	278.184	7	48
CO VI	278.632	7	48
CO VI	279.508	7	48
CO VI	280.003	7	48
CO VI	280.060	6	48
CO VI	283.089	8	48
CO VI	296.923	7	48
CO VI	297.372	7	48
CO VI	297.651	6	48
CO VII	I.P.	K	A
CO VII	212.15	10	3
CO VII	212.61	5	3
CO VII	212.64	10	3
CO VII	212.91	9	3
CO VII	220.62	10	3
CO VII	221.45	10	3
CO VII	221.52	10	3
CO VII	221.62	5	3
CO VII	221.75	10	3
CO VII	221.96	9	3
CO VII	222.57	10	3
CO VII	222.67	8	3
CO VII	223.08	10	3
CO VII	223.19	9	3
CO VII	223.30	10	3
CO VII	223.37	8	3
CO VII	223.54	10	3
CO VII	223.73	10	3
CO VII	223.86	8	3
CO VII	223.91	7	3
CO VII	223.99	5	3
CO VII	224.71	10	3
CO VII	226.03	10	3
CO VII	229.61	10	3
CO VII	229.87	10	3
CO VII	234.34	10	3
CO VII	234.79	10	3

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO VIII	I.P.	K	A
CO VIII	182.665	10	128
CO VIII	183.922	7	128
CO VIII	184.201	70	128
CO VIII	185.432	6	128
CO VIII	190.514	5	128
CO VIII	191.247	7	128
CO VIII	191.923	10	128
CO VIII	192.328	9	128
CO XI	I.P. 2462000.	K	40.62 A
CO XI	81.507	3	182
CO XI	82.527	0	182
CO XI	82.759	2	182
CO XI	83.190	3	182
CO XI	83.861	1	182
CO XI	84.039	2	182
CO XIV	I.P.	K	A
CO XV	I.P.	K	A
CO XV	52.583	1	180, 487
CO XV	53.173	2	180, 487
CO XVI	I.P. 4133000.	K	24.20 A
CO XVI	47.483	1	180
CO XVI	49.808	1	180
CO XVI	49.958	1	180
CO XVI	49.979	00	180
CO XVI	50.357	2	180
CO XVI	50.393	00	180
CO XVI	61.875	1	180
CO XVI	61.916	2	180
CO XVI	61.982	2	180
CO XVII	I.P. 4410480.	K	22.673 A
CO XVII	41.462		178
CO XVII	45.319		178
CO XVII	45.527		178
CO XVII	48.564		178
CO XVII	49.133		178
CO XVII	49.171		178
CO XVII	56.021		178
CO XVII	56.893		178
CO XVII	58.842		178
CO XVII	58.948		178
CO XVIII	I.P. 11316400.	K	8.837 A
CO XVIII	12.60		766
CO XVIII	12.66		766
CO XVIII	13.629		766
CO XVIII	13.862		766
CO XVIII	14.036		766
CO XVIII	15.169		766
CO XVIII	15.437		766

NICKEL

NI I	I.P. 61579.	K	1623.9 A
NI I	1849.380	5	794
NI I	1857.956	8	794
NI I	1859.406	3	794
NI I	1963.85	1	488, 602
NI I	1968.90	1	488, 602

SYMBOL				WAVELENGTH				INTENSITY				REFERENCE NUMBERS			
NI	I	1976.87	3	488,	602										
NI	I	1981.61	2	488,	602										
NI	I	1990.25	4	488,	602										
NI	I	1994.29	2	488,	602										
NI	I	1999.53	0	602											
NI	II	I.P.	146408.	K		683.023	A								
NI	II	1533.44	20	488											
NI	II	1616.91	10	482,	488										
NI	II	1617.14	20	488											
NI	II	1709.60	100	488											
NI	II	1741.581	20	488,	794										
NI	II	1748.30	20	488											
NI	II	1751.92	50	488											
NI	II	1754.81	20	488											
NI	II	1965.456	20	488,	794										
NI	III	I.P.	283700.	K		352.9	A								
NI	III	630.711	500	661											
NI	III	676.941	500	661											
NI	III	718.480	500	259											
NI	III	729.820	500	259											
NI	III	778.806	500	259											
NI	III	811.568	500	259											
NI	III	826.138	500	259											
NI	III	842.142	500	488,	661										
NI	III	1692.514	1000	488,	661										
NI	III	1709.901	800	488,	661										
NI	III	1719.458	500	488,	661										
NI	III	1738.252	500	488,	661										
NI	III	1747.011	550	488,	661										
NI	III	1764.688	800	488,	661										
NI	III	1767.938	500	488,	661										
NI	III	1769.643	2000	488,	661										
NI	III	1823.061	800	488,	661										
NI	III	1847.275	650	488,	661										
NI	III	1854.149	800	488,	661										
NI	V	I.P.		K			A								
NI	V	1244.15	30	492											
NI	V	1264.46	20	492											
NI	V	1276.90	10	492											
NI	V	1306.60	10	492											
NI	V	1318.47	20	492											
NI	VI	I.P.		K			A								
NI	VI	260.348	400	357,	487										
NI	VI	260.591	300	357,	487										
NI	VI	260.713	250	357,	487										
NI	VI	1087.97	50	286											
NI	VI	1093.37	40	286											
NI	VI	1144.32	18	286											
NI	VI	1179.80	20	286											
NI	VII	I.P.		K			A								
NI	VII	212.516	35	548											
NI	VII	212.904	30	548											
NI	VII	212.949	20	548											
NI	VII	213.096	15	548											
NI	VII	213.515	25	548											
NI	VII	213.714	25	548											
NI	VII	213.908	30	548											
NI	VII	215.759	30	548											
NI	VII	216.064	20	548											
NI	VIII	I.P.		K			A								
NI	VIII	173.41	8	3											
NI	VIII	174.24	8	3											

SYMBOL				WAVELENGTH				INTENSITY				REFERENCE NUMBERS			
NI	VIII	174.92	8	3											
NI	VIII	175.555	8	3											
NI	VIII	175.80	10	3											
NI	VIII	175.815	10	3											
NI	VIII	175.94	8	3											
NI	VIII	176.03	6	3											
NI	VIII	176.13	5	3											
NI	VIII	176.74	5	3											
NI	VIII	176.87	8	3											
NI	VIII	176.95	5	3											
NI	VIII	183.83	9	3											
NI	VIII	184.12	9	3											
NI	IX	I.P.		K			A								
NI	IX	150.844	20	128											
NI	IX	154.174	12	120											
NI	XII	I.P.	2820000.	K		35.4	A								
NI	XIII	I.P.		K			A								
NI	XV	I.P.	3670000.	K		27.2	A								
NI	XVI	I.P.		K			A								
NI	XVIII	I.P.	4897400.	K		20.419	A								
NI	XVIII	43.814		178											
NI	XVIII	44.348		178											
NI	XVIII	52.615		178											
NI	XVIII	52.720		178											
COPPER															
CU	I	I.P.	62317.2	K		1604.69	A								
CU	I	1655.318	30	488,	672										
CU	I	1685.682	25	488,	672										
CU	I	1688.093	30	488,	672										
CU	I	1691.076	30	488,	672										
CU	I	1703.843	30	488,	672										
CU	I	1713.364	50	488,	672,	684									
CU	I	1725.664	50	488,	672										
CU	I	1741.574	50	488,	672										
CU	I	1825.348	100	488,	672										
CU	II	I.P.	163665.6	K		611.002	A								
CU	II	893.676	80	488,	795										
CU	II	914.214	80	488,	795										
CU	II	1044.522	80	488,	795										
CU	II	1044.744	80	488,	795										
CU	II	1488.647	75	488,	795										
CU	II	1519.498	50	488,	795										
CU	II	1519.855	60	488,	795										
CU	II	1541.701	75	488,	670										
CU	III	I.P.	297100.	K		336.6	A								
CU	III	1543.438	500	488,	684										
CU	III	1593.758	1000	488,	684										
CU	III	1600.194	500	488,	684										
CU	III	1642.208	2000	488,	684										
CU	III	1670.140	500	488,	684										
CU	III	1671.886	500	488,	684										
CU	III	1674.602	500	488,	684										

COPPER

CU I	I.P.	62317.2	K	1604.69 A
CU I	1655.318	30	488, 672	
CU I	1685.682	25	488, 672	
CU I	1688.093	30	488, 672	
CU I	1691.076	30	488, 672	
CU I	1703.843	30	488, 672	
CU I	1713.364	50	488, 672, 684	
CU I	1725.664	50	488, 672	
CU I	1741.574	50	488, 672	
CU I	1825.348	100	488, 672	
CU II	I.P.	163665.6	K	611.002 A
CU II	893.676	80	488, 795	
CU II	914.214	80	488, 795	
CU II	1044.522	80	488, 795	
CU II	1044.744	80	488, 795	
CU II	1488.647	75	488, 795	
CU II	1519.498	50	488, 795	
CU II	1519.855	60	488, 795	
CU II	1541.701	75	488, 670	
CU III	I.P.	297100.	K	336.6 A
CU III	1543.438	500	488, 684	
CU III	1593.758	1000	488, 684	
CU III	1600.194	500	488, 684	
CU III	1642.208	2000	488, 684	
CU III	1670.140	500	488, 684	
CU III	1671.886	500	488, 684	
CU III	1674.602	500	488, 684	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU III	1684.642	500	488, 672, 684
CU III	1687.134	600	488, 684
CU III	1701.023	400	488, 672, 684
CU III	1702.102	400	488, 684
CU III	1702.190	300	488, 684
CU III	1702.994	500	488, 684
CU III	1708.958	200	488, 684
CU III	1709.036	700	488, 684
CU III	1722.679	1000	488, 684
CU III	1741.378	500	488, 684
CU III	1750.391	500	488, 684

CU IV	1411.69	30	492
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CU VII	I.P.	K	A
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CU VII	200.674	100	356, 357, 487
CU VII	200.860	75	356, 357, 487
CU VII	200.958	50	356, 357, 487

CU XIX	I.P.	5410000.	K	18.5	A
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CU XIX	47.329	178
CU XIX	47.437	178

CU	138.074	75	356
CU	138.115	50	356
CU	146.669	100	356
CU	148.846	80	356
CU	149.703	80	356
CU	252.780	75	356
CU	258.927	80	356
CU	329.047	100	356
CU	332.893	100	356
CU	342.713	80	356
CU	345.368	90	356
CU	357.997	100	356
CU	358.865	90	356

ZINC

ZN I	I.P.	75766.8	K	1319.839	A
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ZN II	I.P.	144890.6	K	690.176	A
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ZN II	888.62	8	472, 682, 754
ZN II	984.16	10	488, 682
ZN II	986.54	9	488, 682
ZN II	1306.56	6	25, 410, 682
ZN II	1439.10	8	488, 682
ZN II	1456.90	8	488, 682
ZN II	1457.40	7	488, 682
ZN II	1535.05	10	488, 682
ZN II	1747.13	6	25, 682, 754

ZN III	I.P.	320300.	K	312.2	A
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ZN III	677.56	8	25, 472
ZN III	677.93	6	25, 472
ZN III	1387.71	7	25, 472
ZN III	1473.41	7	25, 754
ZN III	1505.88	8	25, 754
ZN III	1515.78	7	25, 416
ZN III	1552.09	6	25
ZN III	1552.34	7	416
ZN III	1552.99	5	25, 472
ZN III	1553.12	3	472
ZN III	1581.46	8	25, 416
ZN III	1581.54	15	416, 754
ZN III	1629.17	7	25, 416
ZN III	1673.14	7	25, 416

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN IV	466.91	6	25
ZN IV	472.08	5	25
ZN IV	472.65	6	25
ZN IV	474.54	6	25
ZN IV	1292.45	5	25
ZN IV	1343.84	6	25
ZN IV	1347.98	5	25
ZN IV	1349.87	5	25, 697
ZN IV	1352.73	5	25, 697
ZN IV	1363.98	5	25

ZN IV	I.P.	K	A
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ZN V	1116.61	0	25, 492
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GALLIUM

GA I	I.P.	48380.	K	2067.	A
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GA II	I.P.	165458.	K	604.383	A
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GA II	1033.69	8	488, 652
GA II	1414.44	20	488, 652
GA II	1535.40	8	402, 488, 652
GA II	1813.98	10	488, 652
GA II	1845.30	15	488, 652

GA III	I.P.	247700.	K	403.7	A
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GA III	632.92	2	402
GA III	635.02	2	402
GA III	1293.50	4	402
GA III	1323.15	6	402
GA III	1353.94	8	402
GA III	1495.10	10	402, 652
GA III	1534.51	10	402

GA IV	I.P.	517600.	K	193.2	A
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GA IV	1258.75	15	467
GA IV	1264.60	10	467
GA IV	1267.11	18	402, 467
GA IV	1295.90	15	402, 467
GA IV	1299.48	15	467
GA IV	1303.48	15	467
GA IV	1338.15	15	467

GA	1535.53	15	402
GA	1611.95	10	130
GA	1670.88	12	130
GA	1854.75	20	130
GA	1862.72	20	130

GERMANIUM

GE I	I.P.	63600.	K	1570.	A
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GE I	1785.046	30	4, 581
GE I	1841.327	50	4, 581, 780
GE I	1845.872	30	4, 581, 780
GE I	1929.826	40	4, 488, 501
GE I	1934.048	25	4, 488, 581
GE I	1955.115	35	4, 480, 581

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GE I	1962.013	30	4, 488, 581
GE I	1970.880	50	4, 488, 581
GE I	1988.267	40	4, 488, 581
GE I	1998.887	80	4, 488, 581
GE II	I.P. 128518.	K	778.101 A
GE II	920.57	8	488
GE II	1106.74	10	406, 488
GE II	1237.05	20	406, 488
GE II	1261.87	18	406, 488
GE II	1264.68	10	406, 488
GE II	1401.29	10	488
GE II	1576.73	10	406, 488
GE II	1602.56	20	406, 488
GE II	1649.26	20	406, 488
GE II	1938.00	10	488
GE II	1938.90	20	488
GE II	1979.29	20	400
GE III	I.P. 276036.	K	362.272 A
GE III	988.96	12	406
GE III	995.72	15	406
GE III	996.50	10	406
GE III	1011.21	15	406
GE III	1012.31	10	406
GE III	1040.99	12	406
GE III	1058.91	12	406
GE III	1137.92	10	406
GE III	1150.55	12	406
GE III	1173.78	10	406
GE III	1183.34	15	406
GE III	1525.32	10	406
GE III	1930.10	0	406
GE IV	I.P. 368701.	K	271.222 A
GE IV	915.00	8	406
GE IV	936.70	8	406
GE IV	938.90	4	406
GE IV	1188.99	20	406
GE IV	1229.81	20	406
GE IV	1500.61	6	406
GE V	I.P. 753800.	K	132.7 A
GE V	294.506	30	363
GE V	295.636	50	363
GE V	971.3	6	130, 467
GE V	1004.2	6	130, 467
GE V	1045.5	7	130, 467
GE V	1072.5	6	130, 467
GE V	1080.5	5	130, 467
GE V	1088.3	8	130, 467
GE V	1089.4	5	130, 467
GE V	1092.0	5	130, 467
GE V	1116.8	6	130, 467
GE	787.73	6	130
GE	790.18	6	130
GE	834.5	6	130
GE	835.3	6	130
GE	1105.0	6	130
GE	1384.20	7	130
GE	1393.8	8	130
GE	1402.8	6	130
GE	1605.88	8	130
GE	1611.95	10	130

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ARSENIC			
AS I	I.P. 79165.	K	1263.2 A
AS I	1593.60	100	480, 488, 573
AS I	1758.60	100	480, 488, 573
AS I	1806.15	200	480, 488, 573
AS I	1860.40	80	480, 488
AS I	1860.46	80	480, 488, 573
AS I	1890.42	2000	480, 488, 573
AS I	1937.59	1500	480, 488, 573
AS I	1972.62	1000	480, 488, 573
AS I	1990.35	200	480, 488, 573
AS I	1995.43	100	480, 488, 573
AS II	I.P. 150290.	K	665.28 A
AS II	819.60	7	571
AS II	1002.27	8	488, 572
AS II	1009.44	8	488, 572
AS II	1015.38	10	488, 572
AS II	1021.96	10	488, 572
AS II	1082.40	10	488, 572
AS II	1243.09	8	488, 572
AS II	1263.78	10	488, 572
AS II	1266.36	10	488, 572
AS II	1267.61	10	488, 572
AS II	1281.01	8	488, 572
AS II	1287.57	9	488, 572
AS II	1305.72	10	488, 572
AS II	1375.07	10	488, 572
AS II	1660.60	8	488, 572
AS III	I.P. 228670.	K	437.31 A
AS III	849.91	15	404, 580
AS III	866.34	10	404, 542, 580
AS III	871.07	10	580
AS III	871.79	8	404, 580
AS III	877.67	7	542, 575, 580
AS III	889.03	8	404, 580
AS III	963.80	8	404, 580
AS III	1003.43	7	542, 575, 584
AS III	1172.16	10	404, 580
AS III	1209.29	10	404, 580
AS III	1274.27	9	404, 580
AS IV	I.P. 404369.	K	247.299 A
AS IV	747.57	9	584, 651
AS IV	748.33	8	584, 651
AS IV	760.80	10	584, 651
AS IV	761.99	8	584, 651
AS IV	851.74	10	584
AS IV	892.68	10	584, 651
AS IV	930.80	8	584, 651
AS IV	946.45	9	584, 651
AS IV	956.87	9	584, 651
AS IV	971.13	10	584, 651
AS IV	974.61	9	542, 575, 584
AS IV	980.58	10	584, 651
AS IV	999.25	9	584
AS IV	1299.34	10	584, 585
AS IV	1347.51	9	584
AS IV	1351.34	7	584
AS IV	1353.93	6	584
AS IV	1480.61	9	335
AS V	I.P. 505136.	K	197.966 A
AS V	600.74	3	651
AS V	615.95	4	651

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AS V	737.18	5	651
AS V	987.69	10	651
AS V	1029.50	10	651
AS V	1051.64	4	651
AS V	1056.71	5	651
AS VI	I.P. 1028800.	K	97.201 A
AS VI	219.982	40	363
AS VI	221.045	50	363
AS VI	226.836	5	363
AS VI	232.217	5	363
AS	827.4	5	411
AS	960.2	5	411

SELENIUM

SE I	I.P. 78658.22	K	1271.322 A
SE I	1530.39	25	488, 600
SE I	1606.46	25	488, 600
SE I	1671.15	25	488, 600
SE I	1675.27	25	488, 600
SE I	1690.70	25	488, 600
SE I	1793.29	25	488, 600
SE I	1795.28	30	488, 600
SE I	1855.20	30	488, 600
SE I	1858.84	25	488, 600
SE I	1898.555	40	488, 600
SE I	1913.788	35	488, 600
SE I	1919.190	30	488, 600
SE I	1960.901	50	488, 600

SE II	I.P. 173557.	K	576.180 A
SE II	832.74	9	468, 488
SE II	912.89	9	468, 488
SE II	1013.40	9	289, 468, 488
SE II	1014.01	9	468, 488
SE II	1033.60	10	468, 488
SE II	1049.65	10	468, 488
SE II	1057.41	9	289, 468, 488
SE II	1141.94	9	289, 468, 488
SE II	1192.29	10	289, 468, 488

SE III	I.P. 258000.	K	387. A
SE III	642.77	8	289, 587, 588
SE III	644.84	8	289, 587
SE III	798.30	6	289, 587
SE III	823.87	6	14, 289
SE III	1891.16	6	587
SE III	1920.34	6	587

SE IV	I.P. 346094.	K	288.939 A
SE IV	635.94	10	289, 585
SE IV	652.67	10	289, 585
SE IV	654.19	9	289, 585
SE IV	670.11	10	289, 585
SE IV	671.83	8	289, 585
SE IV	758.75	6	289, 585, 651
SE IV	959.61	6	289, 585
SE IV	996.69	6	289, 585
SE IV	1307.24	7	585
SE IV	1314.43	8	585

SE V	I.P. 589781.	K	169.554 A
SE V	600.96	5	289, 651
SE V	601.74	4	289, 651
SE V	613.00	8	289, 651
SE V	614.35	4	289, 651
SE V	804.31	5	651
SE V	808.57	0	289, 651
SE V	830.30	6	651
SE V	839.46	4	289, 651
SE V	1150.96	7	585
SE VI	I.P. 658994.	K	151.746 A
SE VI	452.83	2	289, 651
SE VI	464.80	00	289, 651
SE VI	588.01	4	651
SE VI	605.89	4	651
SE VI	608.44	1	289, 651
SE VI	886.85	0	289, 651

SE VII	I.P. 1253300.	K	79.789 A
SE VII	171.965	25	363
SE VII	172.920	35	363
SE VII	180.220	4	363
SE VII	607.17	4	289, 588
SE VII	634.56	4	289, 588
SE VII	635.80	4	588
SE VII	778.17	4	588
SE VII	854.37	6	289, 468, 588

BROMINE

BR I	I.P. 95550.	K	1047. A
BR I	1232.433	10	757
BR I	1316.738	8	757
BR I	1317.701	8	488, 757
BR I	1384.602	10	488, 757
BR I	1574.839	10	488, 757
BR I	1576.390	9	488, 757
BR I	1582.309	10	488, 757
BR I	1633.414	30	488, 757
BR I	1729.88	8	400

BR II	I.P. 174119.	K	574.320 A
BR II	889.23	20	488, 568
BR II	896.64	10	488, 568
BR II	905.99	10	488, 568
BR II	948.97	20	488, 568
BR II	949.10	10	400
BR II	984.93	10	400, 488, 568
BR II	1012.10	10	400
BR II	1015.54	20	488, 568
BR II	1040.92	10	400
BR II	1049.00	20	488, 568
BR II	1071.72	15	400
BR II	1712.43	8	400

BR III	I.P. 289529.	K	345.388 A
BR III	665.54	10	586
BR III	677.19	10	574, 586
BR III	677.70	8	586

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BR III	939.60	10	400, 577	KR I	1134.89	3	475
BR III	1295.66	20	400	KR I	1164.868	4	58, 475, 488
BR III	1308.46	10	400	KR I	1235.819	13	58, 475, 488
BR III	1313.28	10	400				
BR III	1325.38	10	400				
BR III	1328.10	15	400				
BR III	1330.55	10	400	KR II	I.P.	198182.00	K 504.587 A
BR IV	I.P.	K	A	KR II	663.039	20	58
BR IV	569.13	10	574	KR II	668.827	20	58, 69
BR IV	576.57	10	574	KR II	722.036	50	58, 69
BR IV	586.69	10	574	KR II	729.402	20	58, 69
BR IV	601.26	10	574	KR II	752.051	30	58, 69, 488
BR IV	630.12	10	574	KR II	782.084	25	58, 69, 488
BR IV	642.22	10	574	KR II	783.715	20	58, 69, 488
BR IV	663.80	10	574	KR II	818.147	25	58, 69, 488
BR IV	718.50	10	400, 574	KR II	821.161	20	58, 69, 488
BR IV	735.66	10	400, 574	KR II	826.432	22	58, 69, 488
BR V	I.P.	K	A	KR II	844.058	25	58, 69, 488
BR V	482.11	10	577	KR II	859.040	20	58, 69, 488
BR V	532.00	10	577	KR II	864.812	20	58, 69, 488
BR V	547.94	10	577	KR II	868.869	25	58, 69, 488
BR V	621.11	10	577	KR II	884.144	30	58, 69, 488
BR V	632.30	9	577	KR II	886.307	30	58, 69, 488
BR V	645.49	10	577	KR II	890.982	20	58, 69, 488
BR V	850.79	8	400, 577	KR II	911.384	25	58, 69, 488
BR VI	I.P.	K	A	KR II	917.494	20	58, 69, 488
BR VI	503.70	8	577	KR II	964.962	30	58, 69, 488
BR VI	515.16	8	577	KR III	I.P.	298020.	K 335.55 A
BR VI	516.45	8	577	KR III	646.417	20	58
BR VI	661.05	10	577	KR III	659.716	22	58
BR VI	701.46	8	577	KR III	672.330	25	58
BR VII	I.P.	K	A	KR III	676.564	25	58
BR VII	502.69	4	577	KR III	680.119	22	58
BR VII	520.26	4	577	KR III	686.254	20	58
BR VII	736.09	10	577	KR III	698.037	20	58
BR VII	779.58	8	577	KR III	785.968	25	58
BR VIII	I.P.	K	64.321 A	KR III	837.666	22	58, 65
BR VIII	138.927	15	363	KR III	854.733	25	58, 65
BR VIII	139.792	15	363	KR III	862.578	35	58, 65
BR IX	I.P.	K	A	KR III	870.825	20	58, 65
				KR III	876.674	22	58, 65
				KR III	897.801	40	58, 65
				KR III	954.774	4	58
				KR IV	I.P.	K	A
				KR IV	805.763	7	58, 65
				KR IV	816.822	18	58, 65
				KR IV	842.035	22	58, 65
				KR IX	I.P.	K	A
				KR IX	114.948	75	487
				KR IX	115.741	100	487
				KR IX	117.710	20	487

KRYPTON

KR	I	I.P.	112915.2	K	885.620 A
KR	I	945.45	1	58, 475, 488	
KR	I	946.52	1	58, 475, 488	
KR	I	951.06	0	58, 488	
KR	I	953.42	1	58, 475, 488	
KR	I	963.34	1	58, 475, 488	
KR	I	1001.048	2	58, 475, 488	
KR	I	1003.542	2	58, 475, 488	
KR	I	1030.020	2	58, 488	
KR	I	1134.15	3	475	

RUBIDIUM

RB	I	I.P.	33691.02	K	2968.149	A
RB	II	I.P.	221852.	K	450.751	A
RB	II	711.17	9	417, 488		
RB	II	741.43	15	417, 488		
RB	III	I.P.	320000.	K	310.	A
RB	III	482.45	30	758		
RB	III	489.95	25	758		

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RB III	500.25	30	758
RB III	516.78	30	758
RB III	546.56	25	758
RB III	576.43	25	758
RB III	581.26	30	758
RB III	589.42	25	758
RB III	594.93	25	758
RB III	602.09	40	758
RB III	611.77	30	758
RB III	769.03	25	758

RB IX I.P. K A

RB IX 583.37 16 465
RB IX 628.62 16 465

RB X I.P. 2235100. K 44.741 A

RB XI I.P. K A

RB XII I.P. K A

RB XIII I.P. K A

RB XIV I.P. K A

STRONTIUM

SR I I.P. 45925.6 K 2177.43 A

SR II I.P. 88964.0 K 1124.1 A

SR II 1531.28 1 488, 649
SR II 1612.98 4 488, 649
SR II 1620.35 5 488, 649
SR II 1769.63 8 488, 649
SR II 1778.39 9 488, 649

SR IV I.P. 460000. K 220. A

SR IV 403.85 25 758
SR IV 419.81 25 758
SR IV 442.77 25 758
SR IV 462.70 25 758
SR IV 488.74 30 758
SR IV 500.51 50 758
SR IV 545.55 35 758
SR IV 567.11 30 758
SR IV 576.10 25 758
SR IV 664.43 70 758
SR IV 710.35 45 758

SR XI I.P. 2613800. K 38.258 A

SR XII I.P. K A

SR XIII I.P. K A

SR XIV I.P. K A

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

YTTRIUM

Y I I.P. 51447. K 1943.75 A

Y II I.P. 98690. K 1013. A

Y III I.P. 165500. K 604.2 A

Y III 989.21 1 56, 488
Y III 996.37 2 56, 488

Y V I.P. 620000. K 160. A

Y V 333.095 40 545
Y V 333.815 30 545
Y V 336.613 40 545
Y V 399.352 40 545
Y V 424.796 40 545
Y V 456.384 100 545
Y V 482.973 60 545

Y XII I.P. 3016800. K 33.148 A

Y XIV I.P. K A

Y XV I.P. K A

ZIRCONIUM

ZR I I.P. 55145. K 1813.4 A

ZR II I.P. 113175. K 883.587 A

ZR II 1902.78 3 346, 488
ZR II 1911.32 4 346, 488
ZR II 1920.76 5 346, 488
ZR II 1938.27 3 346, 488
ZR II 1976.54 3 346, 488
ZR II 1995.88 7 346, 488
ZR II 1996.69 6 346, 488

ZR III I.P. 185400. K 539.4 A

ZR III 1612.38 100 342, 488
ZR III 1779.51 100 342, 488

ZR IV I.P. 276970. K 361.05 A

ZR IV 628.68 100 342, 347, 488
ZR IV 633.58 100 342, 347, 488
ZR IV 633.66 20 342, 347, 488
ZR IV 1183.96 100 342, 488
ZR IV 1201.77 250 342, 488
ZR IV 1219.85 150 342, 488
ZR IV 1469.50 100 342, 488
ZR IV 1546.19 150 342, 488
ZR IV 1598.98 200 342, 488
ZR IV 1607.99 100 342, 488
ZR IV 1836.14 100 342
ZR IV 1846.42 100 342

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZR VI	I.P. 798000.	K	125. A
ZR VI	263.312	200	545
ZR VI	270.474	200	545
ZR VI	270.862	180	545
ZR VI	277.630	200	545
ZR VI	294.117	50	545
ZR VI	294.398	200	545
ZR VI	298.779	200	545
ZR VI	302.103	60	545
ZR VI	302.347	250	545
ZR VI	313.392	180	545
ZR VI	326.282	250	545
ZR VI	406.481	200	545
ZR VI	522.007	300	545
ZR VI	568.277	300	545
ZR XIV	I.P.	K	A

NIOBIUM

NB I	I.P. 55511.	K	1801.44 A
NB II	I.P. 115500.	K	865.8 A
NB II	1774.75	500	318
NB II	1795.77	1000	318, 320
NB II	1864.17	5000	318
NB II	1895.95	1000	318
NB II	1926.71	500	318
NB II	1934.92	1000	318
NB II	1981.50	5000	310
NB II	1988.76	800	318
NB II	1992.23	1000	318
NB II	1993.59	1000	318, 320
NB II	1993.64	500	318
NB III	I.P. 202000.	K	495. A
NB III	1456.68	100	320
NB III	1456.83	10	320
NB III	1495.94	100	320
NB III	1501.53	50	320
NB III	1501.99	100	320
NB III	1524.91	100	320
NB III	1590.21	100	320
NB III	1682.77	100	320
NB III	1705.44	100	320
NB III	1707.14	100	320
NB III	1892.92	100	320
NB III	1938.84	100	320
NB IV	I.P. 308600.	K	324.0 A
NB IV	993.54	60	412
NB IV	1002.76	50	412
NB IV	1005.72	400	412
NB IV	1007.05	500	412, 760
NB IV	1010.19	500	412
NB IV	1116.08	100	412
NB IV	1120.02	150	412
NB IV	1447.48	50	412
NB IV	1502.30	60	412
NB IV	1524.36	60	412
NB IV	1534.06	50	412
NB IV	1922.41	60	412
NB IV	1978.22	60	412

NB V	I.P. 400000.	K	250. A
NB V	464.555	100	132
NB V	468.325	150	132, 760
NB V	753.011	50	132, 760
NB V	763.752	300	132, 760
NB V	774.017	150	132, 760
NB VI	I.P. 829750.	K	120.52 A
NB VI	164.977	75	132
NB VI	170.180	100	132
NB VI	177.552	125	132
NB VI	180.548	25	132
NB VI	248.724	250	132
NB VI	325.795	250	132
NB VII	I.P. 1005000.	K	99.50 A
NB VII	205.182	200	132
NB VII	215.444	400	132
NB VII	217.945	300	132
NB VII	219.746	500	132
NB VII	224.182	300	132
NB VII	224.737	200	132
NB VII	247.979	250	132
NB VII	262.453	250	132
NB VII	378.901	200	132
NB VII	470.590	300	132

MOLYBDENUM

MO I	I.P. 57260.	K	1746. A
MO II	I.P. 130300.	K	767.5 A
MO II	1922.357	500	343, 591
MO II	1922.643	200	343, 591
MO II	1923.075	300	591
MO II	1926.857	200	343, 591
MO II	1934.238	200	343, 591
MO II	1939.603	500	343, 591
MO II	1948.788	200	343, 591
MO II	1950.613	200	343, 591
MO II	1950.871	200	591
MO II	1955.129	300	591
MO II	1956.822	200	343, 591
MO II	1957.118	400	343, 591
MO II	1958.204	200	591
MO II	1960.156	200	591
MO II	1962.251	200	343, 591
MO II	1969.884	500	343, 591
MO II	1978.294	300	343, 591
MO II	1978.936	200	343, 591
MO II	1980.215	300	591
MO II	1984.726	200	343, 591
MO II	1987.991	500	343, 591
MO II	1988.984	200	591
MO II	1989.393	200	343, 591
MO II	1990.208	200	343, 591
MO II	1990.461	200	343, 591
MO II	1996.129	200	591
MO II	1996.399	200	343, 591
MO II	1999.179	200	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO III	I.P.	218900.	K 456.8 A
MO III	1266.187	200	591
MO III	1267.151	200	591
MO III	1277.446	200	591
MO III	1277.611	200	591
MO III	1278.102	200	591
MO III	1278.401	200	591
MO III	1281.902	150	591
MO III	1282.875	200	591
MO III	1283.590	150	591
MO III	1319.334	150	591
MO III	1917.790	150	591
MO III	1949.515	300	193, 343, 591
MO III	1960.980	300	591
MO III	1993.942	200	591
MO IV	I.P.	374180.	K 267.25 A
MO IV	696.833	100	591
MO IV	930.855	100	591
MO IV	1393.670	100	591
MO IV	1819.521	100	193, 591
MO IV	1821.641	100	343, 591
MO IV	1850.701	100	343, 591
MO IV	1926.261	500	193, 591
MO IV	1929.256	500	193, 591
MO IV	1932.273	100	591
MO IV	1935.866	100	591
MO IV	1954.440	100	591
MO IV	1962.530	200	591
MO IV	1966.082	100	193, 591
MO IV	1971.092	500	193, 591
MO IV	1976.853	100	343, 591
MO IV	1977.204	500	193, 343, 591
MO IV	1991.391	100	193, 591
MO IV	1994.669	100	343, 591
MO V	I.P.	493360.	K 202.69 A
MO V	1169.325	100	591, 761
MO V	1556.817	30	591
MO V	1574.680	30	591, 761
MO V	1586.875	40	591, 761
MO V	1590.370	30	591
MO V	1644.671	20	591, 761
MO V	1661.230	100	591, 761
MO V	1668.669	50	591, 761
MO V	1726.995	50	591
MO V	1727.351	20	591
MO V	1747.198	20	591, 761
MO V	1783.655	20	343, 591
MO VI	I.P.	549000.	K 182. A
MO VI	297.326	100	132
MO VI	298.358	150	132
MO VI	374.472	250	132
MO VI	377.540	400	132
MO VI	533.820	150	132
MO VI	541.282	1000	132
MO VI	548.234	500	132
MO VII	I.P.	1020460.	K 97.995 A
MO VII	136.675	50	132
MO VII	140.955	150	132
MO VII	149.639	75	132
MO VII	198.839	800	132
MO VII	207.774	500	132
MO VII	286.294	200	132

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO VIII	I.P.	1235000.	K 80.972 A
MO VIII	182.179	400	132
MO VIII	184.050	600	132
MO VIII	186.376	600	132
MO VIII	189.602	750	132
MO VIII	190.243	300	132
MO VIII	220.102	250	132
MO VIII	223.270	500	132
MO VIII	231.998	250	132
MO VIII	255.637	200	132
MO VIII	262.402	500	132
MO VIII	279.463	200	132
MO VIII	283.412	250	132
MO VIII	331.612	200	132
MO VIII	427.660	1000	132
MO VIII	474.941	250	132

TECHNETIUM

NO DATA REPORTED

RUTHENIUM

RU I	I.P.	59410.	K 1683. A
RU II	I.P.	135200.	K 739.6 A
RU II	1472.717	500	675
RU II	1473.151	400	675
RU II	1486.957	500	675
RU II	1488.618	200	675
RU II	1488.855	1000	675
RU II	1489.136	500	675
RU II	1494.524	500	675
RU II	1574.337	500	675
RU II	1863.404	500	675
RU II	1875.564	500	675
RU II	1888.045	500	675
RU II	1903.227	500	675
RU III	I.P.	229600.	K 435.5 A
RU III	940.090	500	301
RU III	979.428	500	301
RU III	986.838	500	301
RU III	994.557	500	301
RU III	1009.872	500	301
RU III	1014.676	500	301
RU III	1190.510	800	301
RU III	1200.067	500	301
RU III	1207.173	500	301
RU III	1209.774	500	301
RU III	1941.346	500	301

RHODIUM

RH I	I.P.	60197.	K 1661.2 A
RH I	1988.49	3	486
RH I	1994.94	2	486
RH I	1996.85	2	486

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH II	I.P.	145800. K	685.9 A
RH III	I.P.	250500. K	399.2 A
RH III	991.617	500	677
RH III	992.482	400	677
RH III	1009.600	500	677
RH III	1832.046	1000	677
RH III	1859.845	500	677
RH III	1880.656	800	677
RH III	1884.910	500	677
RH III	1887.360	500	677
RH III	1887.938	400	677
RH III	1888.624	700	677
RH III	1901.320	800	677
RH III	1910.157	500	677
RH III	1918.952	400	677
RH III	1919.369	600	677
RH III	1926.960	400	677
RH III	1927.072	500	677
RH III	1931.791	700	677
RH III	1954.748	500	677
RH III	1994.257	500	677

PALLADIUM

PD I	I.P.	67236.0 K	1487.30 A
PD I	1890.41	150	669, 674
PD I	1901.94	150	669, 674
PD I	1923.95	100	669, 674
PD I	1929.55	100	669
PD I	1945.99	200	669
PD I	1960.75	150	669, 674
PD I	1968.33	200	669, 674
PD I	1972.74	300	669, 674
PD I	1973.93	100	669
PD I	1974.90	100	669
PD I	1976.50	150	669
PD II	I.P.	156700. K	638.2 A
PD II	1174.37	20	664
PD II	1183.45	20	664
PD II	1204.00	30	664
PD II	1254.59	20	664
PD II	1320.05	35	664
PD II	1345.57	25	664
PD II	1363.76	20	664
PD II	1365.80	25	664
PD II	1367.76	25	664
PD II	1374.92	50	664
PD II	1403.59	25	664
PD II	1437.29	30	664
PD III	I.P.	265600. K	376.5 A
PD III	781.019	1000	674
PD III	878.732	900	674
PD III	889.294	1000	674
PD III	1782.548	4000	674
PD III	1851.592	1500	674
PD III	1852.274	2000	674
PD III	1859.206	1000	669, 674
PD III	1874.629	1500	674
PD III	1885.834	2000	674
PD III	1887.398	1000	669, 674
PD III	1891.341	1500	674
PD III	1930.330	1000	674
PD III	1941.639	2000	674

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SILVER			
AG I	I.P.	61106.50 K	1636.49 A
AG I	1507.37	50	667
AG I	1548.58	50	667
AG I	1651.87	100	667
AG I	1708.11	10	667
AG I	1709.26	50	667
AG I	1766.20	10	667
AG I	1847.73	20	667
AG II	I.P.	173300. K	577.0 A
AG II	730.83	25	203
AG II	752.80	30	203
AG II	1005.32	15	283
AG II	1065.49	10	283
AG II	1072.23	12	283
AG II	1555.16	10	283
AG II	1644.50	10	283
AG II	1682.82	12	283
AG II	1967.38	10	283
AG III	I.P.	280900. K	356.0 A
AG III	730.04	35	284
AG III	776.38	35	284
AG III	799.41	40	284
AG III	1693.51	50	284
AG III	1751.03	75	284
AG III	1828.83	35	284
AG III	1840.14	40	284
AG III	1867.12	35	284
AG III	1873.45	40	284
AG III	1916.92	40	284
AG III	1917.08	60	284
AG III	1957.62	70	284
AG III	1966.89	40	284
AG III	1975.92	60	284
AG III	1977.03	50	284
CADMIUM			
CD I	I.P.	72538.8 K	1378.57 A
CD II	I.P.	136374.74 K	733.274 A
CD II	1256.00	100	25, 293, 683
CD II	1296.43	150	25, 683
CD II	1326.50	100	25, 683
CD II	1370.91	150	683
CD II	1514.26	200	683
CD II	1571.58	200	25, 683
CD II	1785.84	100	683
CD II	1827.70	100	683
CD II	1922.23	300	25, 683
CD II	1943.54	100	25, 683
CD II	1995.43	200	683
CD III	I.P.	302300. K	330.8 A
CD III	1545.17	50	683
CD III	1721.93	40	25, 683

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD III	1722.95	40	25, 683
CD III	1793.40	75	25, 471, 683
CD III	1844.66	50	25, 471, 683
CD III	1856.67	200	25, 683
CD III	1874.08	150	25, 683

CD IV	I.P.	K	A
CD IV	506.61	19	25, 293
CD IV	527.06	18	25, 293
CD IV	531.08	18	25, 293
CD IV	531.50	18	25, 293
CD IV	541.73	18	25, 293
CD IV	542.59	25	25, 293
CD IV	546.53	25	25, 293
CD IV	554.04	18	293
CD IV	567.03	18	25, 293
CD IV	1118.16	24	25, 293
CD IV	1183.40	20	293

INDIUM

IN	I	I.P.	46669.93	K	2142.707	A
IN	I	1320.2	4	130,	274	
IN	I	1323.3	2	130,	274	
IN	I	1339.68	1	130,	274	
IN	I	1648.00	2	134,	274	
IN	I	1676.16	1	134,	274	
IN	I	1711.54	5	134,	274	
IN	I	1741.23	2	134,	413	
IN	I	1758.49	1	134,	274	

IN	II	I.P.	152195.	K	657.052 A
IN	II	1280.49		10	413
IN	II	1586.37		6	413
IN	II	1674.04		6	413
IN	II	1700.01		6	413
IN	II	1702.51		6	413
IN	II	1716.74		8	413
IN	II	1770.83		6	413
IN	II	1842.40		6	413
IN	II	1930.52		8	413
IN	II	1936.25		10	413, 579
IN	II	1966.88		10	413
IN	II	1977.45		20	413, 579

IN	III	I.P.	226100.	K	442.3	A
IN	III	882.21		4	410	
IN	III	915.82		7	410	
IN	III	1403.03		10	230, 408,	590
IN	III	1434.78		8	408,	583
IN	III	1487.63		12	408,	590
IN	III	1494.08		10	408,	590
IN	III	1530.17		9	408,	590
IN	III	1625.31		20	230, 408,	413
IN	III	1649.95		5	290	
IN	III	1748.71		25	230, 408,	590

IN IV	I.P.	439000.	K	228. A
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IN IV	1381.87	5	130, 274
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IN V	I.P.	K	A
IN V	372.82	10	293
IN V	372.94	10	293
IN V	378.61	17	293
IN V	381.56	11	293

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
IN V	382.76	11	293
IN V	383.05	10	293
IN V	386.21	17	293
IN V	386.70	10	293
IN V	388.91	14	293
IN V	393.89	25	293
IN V	399.79	10	293
IN V	400.05	9	293
IN V	400.57	25	293
IN V	402.39	25	293

IN	1605.78	9	130
IN	1611.90	10	130
IN	1647.6	8	130
IN	1725.00	8	130
IN	1854.75	20	130

TIN

SN	I	I.P.	59231.8	K	1688.28	A
SN	I	1815.771	100	473,	308	
SN	I	1819.273	100	473,	308	
SN	I	1823.021	200	473,	308	
SN	I	1848.768	100	308		
SN	I	1860.330	200	473,	308	
SN	I	1865.523	100	473,	308	
SN	I	1865.933	100	473,	308	
SN	I	1882.647	100	473,	308	
SN	I	1886.042	200	473,	308	
SN	I	1891.415	200	473,	308	
SN	I	1909.305	300	473,	308	
SN	I	1911.613	200	473,	308	
SN	I	1913.528	100	473,	308	
SN	I	1925.305	500	473,	308	
SN	I	1926.764	100	473,	308	
SN	I	1952.141	500	473,	308	
SN	I	1960.215	100	473,	308	
SN	I	1971.452	100	473,	308	
SN	I	1984.182	100	473,	308	

SN	II	I.P.	118017.0	K	847.34	A
SN	II	1108.128		500	448, 681	
SN	II	1161.412		500	448, 681	
SN	II	1219.090		500	448, 681	
SN	II	1290.886		1000	448, 681	
SN	II	1400.454		1000	448, 681	
SN	II	1475.008		1000	448, 681	
SN	II	1554.877		500	681	
SN	II	1574.424		1000	291, 681	
SN	II	1699.419		1000	448, 681	
SN	II	1757.904		5000	448, 681	
SN	II	1811.200		1000	448, 681	
SN	II	1831.753		500	448, 681	
SN	II	1899.890		5000	448, 681	

SN	III	I.P.	246020.0	K	406.47	A
SN	III	1139.293	1000	291,	681	
SN	III	1158.333	1000	291,	681	
SN	III	1184.254	1000	291,	681	
SN	III	1210.515	2000	291,	681	
SN	III	1243.632	500	291,	681	
SN	III	1259.916	1000	291,	681	
SN	III	1305.970	1000	291,	681	
SN	III	1327.345	1000	291,	681	
SN	III	1347.652	1000	681		
SN	III	1386.737	1000	277,	681	
SN	III	1410.613	500	291,	681	
SN	III	1570.365	1000	291,	681	
SN	III	1811.712	500	291,	681	
SN	III	1941.857	500	681		

SYMBOL						WAVELENGTH INTENSITY						REFERENCE NUMBERS					
SN	IV	I.P.	328550.0	K	304.37	A	SB	II	1436.58	4	31, 414	SB	II	1513.28	4	31, 290, 414	
							SB	II	1565.48	4	31, 414	SB	II	1584.58	4	31, 414	
							SB	II	1657.036	20	414	SB	II	1851.97	4	31	
SN	IV	956.249	500	408, 681			SB	III	I.P.	204248.	K	489.601	A				
SN	IV	1019.719	500	408, 681			SB	III	722.41	6	31, 407	SB	III	724.81	8	407	
SN	IV	1044.487	1000	408, 681			SB	III	732.33	5	31, 407	SB	III	1065.97	5	31, 407	
SN	IV	1058.370	100	681			SB	III	1078.10	5	407	SB	III	1306.81	6	31, 407	
SN	IV	1058.586	50	681			SB	III	1379.68	6	31, 407	SB	III	1711.74	5	31, 407	
SN	IV	1073.407	1000	291, 681			SB	III	1725.30	5	31, 414, 495	SB	III	1730.62	6	31	
SN	IV	1087.496	200	681			SB	III	1946.07	5	31, 407, 495						
SN	IV	1096.916	300	681													
SN	IV	1119.344	1000	408, 681													
SN	IV	1120.679	200	408, 681													
SN	IV	1437.519	1000	408, 681													
SN	IV	1532.897	100	681													
SN	V	I.P.	583000.	K	172.	A	SB	IV	I.P.	356156.	K	280.776	A				
SN	V	1089.347	200	280, 681			SB	IV	539.90	6	277	SB	IV	1042.16	7	31, 290	
SN	V	1132.794	100	408, 681			SB	IV	1051.33	10	290, 655	SB	IV	1145.86	15	290	
SN	V	1160.735	200	280, 681			SB	IV	1199.21	6	31, 277	SB	IV	1599.38	15	31	
SN	V	1176.258	100	280, 681			SB	IV	1667.01	7	31, 277						
SN	V	1189.918	100	280, 681													
SN	V	1205.723	100	291, 681													
SN	V	1251.384	2000	291, 681													
SN	V	1283.800	100	280, 681													
SN	V	1294.357	200	291, 681													
SN	V	1302.199	100	280, 681													
SN	VI	I.P.		K		A	SB	V	I.P.	449300.	K	222.6	A				
SN	VI	307.43	15	293			SB	V	830.70	5	31, 230, 408	SB	V	889.00	4	13, 31	
SN	VI	307.77	17	293			SB	V	1104.25	7	13, 31, 408	SB	V	1128.63	6	31	
SN	VI	311.15	16	293			SB	V	1133.73	7	31, 655	SB	V	1225.94	10	13, 31, 408	
SN	VI	311.80	17	293			SB	V	1796.86	3	13, 31	SB	V	1833.48	5	13, 31	
SN	VI	312.10	15	293													
SN	VI	316.23	16	293													
SN	VI	317.40	18	293													
ANTIMONY																	
SB	I	I.P.	69700.	K	1430.	A	SB	VI	I.P.	868140.	K	115.19	A				
SB	I	1413.98	100	477			SB	VI	279.757	15	31, 363	SB	VI	284.890	20	31, 363	
SB	I	1415.79	100	477			SB	VI	291.991	5	31, 363	SB	VI	292.405	15	31, 363	
SB	I	1532.74	120	477			SB	VI	897.80	3	31, 655	SB	VI	1017.65	5	655	
SB	I	1612.8	200	477			SB	VI	1035.85	10	655	SB	VI	1160.94	5	655	
SB	I	1623.3	100	477													
SB	I	1662.6	100	31, 477													
SB	I	1716.93	80	477													
SB	I	1717.45	150	477													
SB	I	1723.43	150	477													
SB	I	1736.19	100	31, 414, 477													
SB	I	1765.76	100	31, 477													
SB	I	1780.87	100	31, 477													
SB	I	1788.24	100	31, 414, 477													
SB	I	1800.18	150	477													
SB	I	1822.50	100	477													
SB	I	1871.15	300	31, 477													
SB	I	1882.56	150	31, 477													
SB	I	1927.08	100	31, 477													
SB	I	1950.39	200	31, 477													
SB	II	I.P.	133327.5	K	750.033	A	TE	I	I.P.	72667.	K	1376.14	A				
SB	II	1009.80	4	31, 414			TE	I	1675.98	8	147, 401	TE	I	1678.07	15	147	
SB	II	1024.19	4	414			TE	I	1679.37	12	147, 401	TE	I	1700.0	6	16, 147	
SB	II	1057.32	8	414			TE	I	1751.0	6	16, 147	TE	I	1795.7	6	16	
SB	II	1094.71	4	31, 414			TE	I	1796.3	6	16, 147	TE	I	1822.4	10	16, 147	
SB	II	1274.94	4	31, 414			TE	I	1825.5	6	16	TE	I	1850.6	6	16, 147	
SB	II	1404.19	7	31, 407, 414													
TELLURIUM																	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE I	1852.1	6	16, 147
TE I	1853.7	6	16, 147
TE I	1857.2	8	16, 147
TE I	1860.5	6	16, 147
TE I	1994.8	7	16, 147
TE II	I.P.	150000.	K 670. A
TE III	I.P.	247000.	K 405. A
TE III	887.01	4	30, 353
TE III	950.93	6	30, 353
TE III	965.76	3	30, 353
TE III	973.58	3	30, 353
TE III	1000.42	3	30, 353
TE III	1004.45	3	30, 353
TE III	1006.46	3	30, 353
TE III	1018.95	3	30, 353
TE III	1206.46	4	30
TE IV	I.P.	305091.	K 327.771 A
TE IV	749.30	5	30, 583
TE IV	784.50	5	30, 583, 655
TE IV	804.89	5	30, 583
TE IV	833.64	5	30, 583
TE IV	840.31	8	30, 583
TE IV	845.84	5	30, 583
TE IV	903.06	4	30, 583
TE IV	910.88	4	30, 583
TE IV	912.87	4	30, 353, 655
TE IV	996.86	4	30, 583, 655
TE IV	1077.94	6	30, 583
TE IV	1168.45	4	30, 583
TE V	I.P.	486244.	K 205.658 A
TE V	358.76	7	30
TE V	364.36	6	30
TE V	724.07	5	30, 277
TE V	726.86	5	30, 277
TE V	763.39	6	30, 277
TE V	768.38	5	30, 277
TE V	872.85	5	30, 277
TE V	895.23	8	30, 277
TE V	954.33	5	30, 277
TE V	1059.10	5	30, 277
TE V	1281.67	6	30, 277
TE V	1406.56	10	277
TE VI	I.P.	583500.	K 171.4 A
TE VI	242.27	4	30, 363
TE VI	243.90	6	30, 363
TE VI	313.90	6	30
TE VI	318.26	5	30
TE VI	540.27	4	30, 583
TE VI	577.08	6	30, 583
TE VI	690.81	4	30, 583
TE VI	743.05	4	30, 583
TE VI	1071.41	5	30, 583
TE VI	1268.01	3	583
TE VI	1313.90	3	583
TE VII	I.P.	1106860.	K 90.346 A
TE VII	227.86	6	28, 363
TE VII	232.37	6	28, 363

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE VII	236.45	3	30, 363
TE VII	237.54	4	30, 363
TE VII	826.94	3	30, 655
TE VII	830.21	2	30, 655
TE VII	852.03	3	30, 655
TE VII	877.54	3	30, 655
TE VII	995.66	2	30, 655
TE VII	1007.80	1	30, 655
TE VII	1123.46	1	30, 655

IODINE

I I	I.P.	84340.	K	1186.	A
I I	I	1300.335	10000	344	
I I	I	1336.479	10000	344	
I I	I	1425.490	8000	344	
I I	I	1457.368	5000	344	
I I	I	1457.470	5000	344	
I I	I	1457.981	10000	344	
I I	I	1518.047	15000	344	
I I	I	1702.068	15000	344	
I I	I	1782.758	12000	344	
I I	I	1830.380	75000	344	
I I	I	1844.451	15000	344	
I II	I.P.	154050.	K	649.14	A
I II	II	1034.655	10000	344	
I II	II	1139.752	1200	344	
I II	II	1139.805	10000	344	
I II	II	1160.562	10000	344	
I II	II	1166.482	20000	344	
I II	II	1178.650	10000	344	
I II	II	1187.338	15000	344	
I II	II	1190.853	10000	344	
I II	II	1200.223	7000	344	
I II	II	1220.887	20000	344	
I II	II	1234.063	20000	344	
I II	II	1336.517	20000	344	
I III	III	666.81	6	32	
I III	III	705.11	8	32	
I III	III	784.64	7	32	
I III	III	784.80	7	32	
I III	III	795.52	8	32	
I III	III	865.97	5	32	
I III	III	920.38	5	32	
I III	III	961.17	6	32	
I III	III	1078.58	6	400	
I III	III	1094.20	8	400	
I III	III	1244.66	4	400	
I III	III	1252.35	8	400	
I III	III	1306.93	5	400	
I IV	I.P.		K		A
I IV	IV	565.55	5	32	
I IV	IV	601.86	5	32	
I IV	IV	612.46	6	32	
I IV	IV	615.17	4	32	
I IV	IV	654.22	4	32	
I IV	IV	654.56	4	32	
I IV	IV	919.28	7	32	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I VII I.P.		K	A
I VII 591.51	4	32, 230	
I VII 639.82	6	32, 230	
I VII 649.12	20	32, 230	
I VII 833.63	6	32, 230	
I VII 952.74	5	32, 230	
I VIII I.P. 1370370.	K	72.973 A	
I VIII 190.14	4	32, 363	
I VIII 194.15	5	32, 363	
I VIII 196.55	3	32, 363	
I VIII 201.70	4	32, 363	
I 216.50	4	32	
I 219.07	4	32	
I 220.66	8	32	
I 225.34	5	32	
I 227.46	4	32	
I 261.09	4	32	
I 292.65	6	32	
I 297.46	4	32	

XENON

XE I I.P. 97834.4	K	1022.14 A
XE I 1027.04	10	1, 476
XE I 1088.94	10	1, 476
XE I 1100.46	15	1
XE I 1295.560	8	61, 65
XE II I.P. 171068.4	K	584.561 A
XE II 931.25	10	1
XE II 939.16	12	1
XE II 1051.920	10	61
XE II 1074.476	15	1, 61
XE II 1100.432	10	61, 65
XE III I.P. 259089.	K	385.968 A
XE III 720.80	6	1
XE III 889.28	15	335
XE III 965.540	10	65
XE III 1003.36	6	1
XE III 1017.680	25	65
XE III 1047.801	9	65
XE III 1066.391	10	65
XE III 1130.344	25	65
XE III 1232.07	25	335

CESIUM

CS I I.P. 31406.71	K	3184.032 A
CS II I.P. 202263.	K	494.406 A
CS II 639.42	12	418
CS II 668.43	12	418

CS II 808.77	20	418
CS II 813.85	20	418
CS II 901.34	20	418
CS II 926.75	20	418
CS III 547.8	2	235
CS III 550.2	2	235
CS III 595.7	2	235
CS III 645.0	4	235
CS III 722.2	2	235
CS III 782.6	3	235
CS III 877.9	7	235
CS 1884.0	6	659
CS 1889.2	6	659
CS 1914.6	4	659
CS 1915.6	3	659
CS 1935.2	8	659
CS 1947.3	4	659
CS 1996.5	5	659

BARIUM

BA I I.P. 42032.4	K	2379.12 A
BA II I.P. 80686.87	K	1239.359 A
BA II 1504.01	4	569, 649
BA II 1554.38	3	569, 649
BA II 1677.9	3	335
BA II 1694.37	4	569, 649
BA II 1849.5	4	335
BA II 1869.2	5	335
BA II 1924.70	5	569, 649
BA II 1999.54	3	569, 649
BA IV I.P.	K	A
BA IV 647.3	5	235
BA IV 659.0	5	235
BA IV 719.9	5	235
BA IV 740.0	5	235

LANTHANUM

LA I I.P. 45293.	K	2207.8 A
LA II I.P. 92240.	K	1084. A
LA III I.P. 154630.	K	646.70 A

NO DATA REPORTED

CERIUM

CE IV 741.8	40	335
CE IV 754.6	30	335
CE IV 1289.4	50	335
CE IV 1332.2	75	335
CE IV 1372.7	75	335

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CE	IV	1775.3	20 335
CE	IV	1779.03	20 335
CE	IV	1914.8	35 335

CE		740.7	5 411
CE		830.4	20 411
CE		1062.2	10 411
CE		1080.6	5 411
CE		1088.4	5 411
CE		1128.0	5 411

PRASEODYMIUM — LUTETIUM

NO DATA REPORTED

HAFNIUM

HF	I	I.P.	K	A
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HF	II	I.P.	120000.	K	830.	A
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HF	II	1623.06	12	479
HF	II	1628.91	12	479
HF	II	1774.81	10	479
HF	II	1919.52	20	479
HF	II	1922.74	12	479
HF	II	1955.66	12	479
HF	II	1964.23	15	479

TANTALUM

TA	I	I.P.	63600.	K	1570.	A
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NO DATA REPORTED

TUNGSTEN

W	I	I.P.	64400.	K	1550.	A
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W	II	I.P.	K	A
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W	II	1962.07	5	419
W	II	1973.27	4	419
W	II	1990.05	5	419

W		395.0	8	781
W		609.2	8	781
W		641.5	10	781
W		1168.2	8	781
W		1515.124	15	794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W		1724.575	20 794
W		1728.620	10 794
W		1729.325	20 794
W		1798.011	20 794

RHENIUM

RE	I	I.P.	63530.	K	1574.	A
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RE	I	1716.45	12	350
RE	I	1848.88	12	350
RE	I	1874.93	15	350
RE	I	1888.43	10	350
RE	I	1891.04	10	350
RE	I	1900.83	50	350
RE	I	1905.74	50	350
RE	I	1909.36	50	350
RE	I	1924.74	15	350
RE	I	1927.72	15	350
RE	I	1952.00	12	350
RE	I	1963.38	15	350
RE	I	1995.61	20	350

OSMIUM

OS	I	I.P.	70450.	K	1419.	A
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NO DATA REPORTED

IRIDIUM

IR	I	I.P.	75000.	K	1300.	A
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IR		1929.4	3	335
IR		1994.8	3	335
IR		1996.5	3	335

PLATINUM

PT	I	I.P.	72300.	K	1380.	A
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PT	I	1963.17	1	421
PT	I	1969.994	2	421, 671
PT	I	1989.11	2	421
PT	I	1991.59	2	421
PT	I	1995.91	3	421

PT	II	I.P.	149723.	K	667.900	A
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PT	II	1168.282	40	671
PT	II	1169.741	40	671
PT	II	1305.305	30	671
PT	II	1402.236	50	671
PT	II	1429.524	30	671
PT	II	1621.658	30	671
PT	II	1723.128	30	671
PT	II	1751.703	30	671
PT	II	1777.086	50	671
PT	II	1781.858	30	671
PT	II	1879.094	30	671
PT	II	1883.051	40	671
PT	II	1889.516	50	671
PT	II	1911.702	50	671

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT II	1929.140	10	671	HG III	I.P.	276000.	K 362.° A
PT II	1929.250	30	671	HG III	740.69	6	26, 65, 331
PT II	1929.457	10	671	HG III	790.15	6	26, 65, 331
PT II	1929.677	30	671	HG III	1280.83	9	26, 65, 331
PT II	1939.800	30	671	HG III	1414.95	6	65, 466
PT II	1949.901	30	421, 671	HG III	1467.38	6	26, 65, 331
PT II	1983.737	30	671	HG III	1527.31	7	26
<hr/>				HG III	1527.49	8	65, 331
GOLD				HG III	1592.82	10	26, 65, 331
AU I	I.P.	74410.0	K 1343.90 A	HG III	1599.42	9	26, 65, 331
AU I	1581.24	20	450, 550	HG III	1647.35	10	26, 65, 331
AU I	1646.59	20	450, 550	HG III	1652.24	8	26, 65, 331
AU I	1665.78	12	450, 550	HG III	1654.66	8	26, 331, 783
AU I	1714.57	10	550	HG III	1662.61	6	26, 65, 331
AU I	1857.21	10	450, 550, 658	HG III	1664.23	6	26
AU I	1919.64	20	450, 550	HG III	1671.07	7	26, 65, 331
AU I	1942.31	45	550	HG III	1677.85	10	26, 65, 331
AU I	1951.93	25	450, 550, 699	HG III	1738.49	10	65, 331
AU I	1978.19	30	450, 550, 658	HG III	1740.24	6	65, 331
AU I	1991.94	10	450, 658	<hr/>			
AU II	I.P.	165000.	K 606. A	HG IV	I.P.	K A	
AU II	957.73	20	550	HG IV	1206.55	5	26, 696
AU II	959.48	20	550	HG IV	1436.69	5	26
AU II	1073.09	40	550	HG IV	1442.55	6	26, 696
AU II	1103.32	20	550	HG IV	1454.21	6	26, 696
AU II	1224.57	20	550	HG IV	1461.33	5	26
AU II	1405.17	30	550	HG IV	1465.63	5	26, 696
AU II	1436.61	20	550	HG IV	1481.33	5	26
AU II	1468.97	30	550	HG IV	1560.44	8	26, 696
AU II	1486.49	25	550	HG IV	1561.43	10	26, 696
AU II	1673.61	25	550, 658	<hr/>			
AU II	1700.69	30	550	HG VI	1153.25	1	26
AU II	1725.89	25	550, 658	HG	425.26	4	26
AU II	1740.47	45	550, 658	HG	425.80	4	26
AU II	1756.10	35	550, 658	HG	426.15	5	26
AU II	1783.22	60	550, 658	HG	426.44	5	26
AU II	1793.31	35	550, 658	HG	500.48	6	26
AU II	1800.58	35	550, 658	HG	502.13	5	26
AU II	1823.24	25	550, 658	HG	511.32	5	26
AU II	1921.64	20	550, 658	HG	512.61	5	26
<hr/>				HG	523.74	5	26
MERCURY				HG	568.62	5	26
HG I	I.P.	84184.1	K 1187.87 A	HG	596.21	6	26
HG I	1212.75	2	26, 65	HG	605.81	6	26
HG I	1250.586	4	539, 794	HG	608.98	5	26
HG I	1775.677	1	331, 658, 794	HG	609.24	5	26
HG I	1832.74	1	279, 658	HG	615.51	5	26
HG I	1849.497	50	658, 794	HG	622.84	6	26
<hr/>				HG	641.19	5	26
HG II	I.P.	151280.	K 661.03 A	HG	652.09	5	26
HG II	915.827	7	65, 452	HG	1085.7	5	130
HG II	1414.427	9	26, 65, 452	<hr/>			
HG II	1649.932	10	26, 698, 794	THALLIUM			
HG II	1732.142	15	452, 794	TL I	I.P.	49264.2	K 2029.87 A
HG II	1796.897	15	527, 794	TL I	878.04	2	33
HG II	1820.336	20	527, 794	TL I	879.30	0	33
HG II	1869.548	8	658, 794	TL I	884.07	0	33
HG II	1870.547	20	698, 794	TL I	1423.2	1	134
HG II	1942.273	20	698, 794	TL I	1489.65	8	134
HG II	1973.889	8	65, 452, 527	TL I	1650.2	0	134
				TL I	1685.40	5	134

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL II	I.P. 164765.	K	606.925 A
TL II	1130.17	10	194
TL II	1183.41	10	194
TL II	1194.84	12	194
TL II	1307.50	15	194
TL II	1373.52	10	194
TL II	1499.30	10	194
TL II	1507.82	10	194
TL II	1561.58	15	194
TL II	1568.57	10	194
TL II	1792.76	10	194
TL II	1814.85	12	194
TL II	1908.64	25	194
TL III	I.P. 240600.	K	415.6 A
TL III	1231.57	7	33, 451
TL III	1266.17	6	33, 543
TL III	1457.17	3	130, 543
TL III	1476.94	9	130
TL III	1477.14	10	451, 543
TL III	1506.37	4	451, 543
TL III	1558.67	8	451, 543
TL III	1634.0	7	130, 543
TL III	1660.05	8	451, 543
TL III	1673.0	2	130, 543
TL III	1674.4	3	130, 543
TL III	1931.3	1	130, 543
TL IV	I.P. 409100.	K	244.4 A
TL IV	570.50	4	33, 466
TL IV	1028.58	4	33, 466
TL IV	1079.65	4	33, 466
TL IV	1337.16	4	33, 466
TL IV	1377.73	5	33, 466
TL IV	1404.61	4	33, 466
TL IV	1412.93	5	33, 466
TL IV	1434.72	6	466
TL IV	1449.37	5	466
TL IV	1883.2	5	466, 543
TL	263.07	4	33
TL	267.33	4	33
TL	268.00	2	33
TL	268.06	4	33
TL	276.53	4	33
TL	278.06	4	33
TL	293.21	4	33

LEAD

PB I	I.P. 59821.0	K	1671.65 A
PB I	1805.55	10	134
PB I	1824.76	8	134
PB I	1898.85	50	134
PB I	1907.70	20	134
PB I	1924.12	15	134
PB I	1936.34	20	134
PB II	I.P. 121243.	K	824.790 A
PB II	967.23	10	163
PB II	986.71	10	163
PB II	995.89	10	163
PB II	1016.61	10	163
PB II	1049.82	10	163

PB II	1050.77	10	163
PB II	1512.42	10	163
PB II	1671.53	10	163
PB II	1682.15	10	163
PB II	1726.75	20	163
PB II	1796.68	10	163
PB II	1822.03	10	163
PB III	I.P. 257592.	K	388.211 A
PB III	572.73	7	5
PB III	995.74	7	5, 686, 689
PB III	1048.89	30	5, 686
PB III	1069.12	10	5, 689
PB III	1165.03	7	5, 686
PB III	1166.96	7	5, 689
PB III	1250.45	9	5, 689
PB III	1406.48	8	5, 689
PB III	1439.26	9	5
PB III	1439.42	15	686
PB III	1553.09	10	686
PB IV	I.P. 341350.	K	292.95 A
PB IV	478.355	8	5, 139, 656
PB IV	496.37	8	5, 139
PB IV	499.95	9	5, 139
PB IV	890.72	8	5, 139
PB IV	922.49	10	5, 139, 656
PB IV	932.18	10	5, 139, 657
PB IV	1028.61	30	5, 139, 656
PB IV	1313.06	40	5, 139, 656
PB IV	1510.76	8	139
PB IV	1535.70	12	139
PB IV	1973.14	8	139
PB V	I.P. 555000.	K	180. A
PB V	438.911	10	5, 466
PB V	863.99	15	5, 466
PB V	894.40	8	5, 466
PB V	906.61	10	5, 466
PB V	915.72	9	5, 466
PB V	930.36	8	5
PB V	1157.91	9	5, 466
PB V	1185.43	8	5, 466
PB V	1189.93	9	5, 466
PB V	1233.49	10	5, 466
PB VI	356.177	5	5
PB VI	383.280	5	5
PB VI	744.52	5	5
PB VI	775.61	6	5
PB VI	782.23	8	5
PB VI	802.06	10	5
PB VI	806.16	5	5
PB VI	813.34	5	5
PB VI	815.95	6	5
PB VI	819.30	8	5
PB VI	826.76	5	5
PB VI	827.80	5	5
PB VI	829.32	6	5
PB VI	987.88	6	5
PB VI	1108.61	5	5
PB VI	1123.56	5	5
PB VII	1959.42	6	139, 656

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

BISMUTH

BI I I.P. 58790. K 1701. A

BI	I	1556.78	8	134
BI	I	1635.78	10	134
BI	I	1644.26	10	134
BI	I	1832.66	10	134
BI	I	1868.13	20	134
BI	I	1888.69	20	134
BI	I	1900.97	8	134

BI II I.P. 134600. K 742.9 A

DI	II	1099.20	10	5, 138
BI	II	1436.83	45	5, 138
RI	II	1455.11	50	5, 138
RI	II	1520.57	40	130
BI	II	1533.17	40	138
BI	II	1573.70	40	138
BI	II	1591.79	60	138
BI	II	1609.70	40	138
BI	II	1611.38	40	138
BI	II	1777.11	80	138
BI	II	1787.47	60	138
BI	II	1791.93	70	138
BI	II	1823.80	70	138
BI	II	1902.41	100	138

BI III I.P. 206180. K 485.01 A

BI	III	1007.14	5	5
BI	III	1007.24	5	5
BI	III	1224.64	10	5, 138
BI	III	1326.84	9	5, 138
BI	III	1346.12	15	5, 138
BI	III	1423.33	35	5, 138, 404
BI	III	1423.52	35	5, 138
BI	III	1461.00	60	5, 138
BI	III	1606.40	60	138

BI IV I.P. 365500. K 273.6 A

BI	IV	820.35	10	5, 449
BI	IV	872.602	15	5, 449
BI	IV	967.60	9	5, 449
BI	IV	968.79	8	5, 449
BI	IV	1103.357	8	5, 449
BI	IV	1103.473	8	5
BI	IV	1103.509	8	5
BI	IV	1316.952	20	5, 449
BI	IV	1317.076	20	5, 449
RI	IV	1317.175	20	5, 449

BI V I.P. 451700. K 221.4 A

BI	V	864.403	15	5, 656
BI	V	864.499	15	5, 656
BI	V	901.60	8	5
BI	V	1139.370	20	5, 656
BI	V	1139.548	20	5, 656

BI VI I.P. 712000. K 140. A

BI	VI	326.901	8	5, 466
BI	VI	352.070	10	5, 466
BI	VI	376.660	8	5, 657
BI	VI	391.215	8	5, 657
BI	VI	738.17	10	5, 656, 657

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

BI	VI	743.13	10	5, 466, 657
BI	VI	778.99	8	5, 466
BI	VI	1023.860	10	5, 466
BI	VI	1046.183	8	5, 466
BI	VI	1050.130	10	5, 466
BI	VI	1070.34	10	5, 466

BI	VII	268.476	3	5
BI	VII	268.653	3	5
BI	VII	271.193	3	5
BI	VII	271.400	3	5
BI	VII	271.623	3	5
BI	VII	271.663	3	5
BI	VII	272.917	5	5
BI	VII	284.672	3	5
BI	VII	309.028	3	5
BI	VII	309.134	3	5

BI		817.28	2	5
DI		017.37	2	5
RI		817.70	2	5
BI		969.85	2	5
BI		975.17	2	5
BI		1009.71	2	5
BI		1018.17	2	5
BI		1119.39	2	5
BI		1238.27	2	5

POLONIUM

PO I I.P. 67980. K 1471. A

PO	I	1919.4	3	133
PO	I	1933.8	5	133
PO	I	1942.2	5	133

ASTATINE

NO DATA REPORTED

RADON

RN I I.P. 86692.5 K 1153.5 A

NO DATA REPORTED

FRANCIUM

NO DATA REPORTED

RADIUM

RA I I.P. 42577.35 K 2348.666 A

RA II I.P. 81842.31 K 1221.861 A

RA	II	1888.7	5	570
RA	II	1908.7	8	570
RA	II	1972.6	4	570
RA	II	1976.0	2	570

SECTION I INTENSE LINES BY ELEMENT

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SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

ACTINIUM

AC II I.P. 97300. K 1030. A

NO DATA REPORTED

THORIUM

TH	III	1753.17	30	348
TH	III	1888.12	100	348
TH	III	1963.52	20	348
TH	III	1965.58	30	348
TH	III	1994.22	12	348
TH	III	1994.55	10	348

TH	IV	1565.85	100	349
TH	IV	1682.22	70	349
TH	IV	1707.37	150	349
TH	IV	1959.02	200	349

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

PROTACTINIUM

NO DATA REPORTED

URANIUM

U	718.2	10	411
U	763.7	5	411
U	790.0	5	411
U	990.0	10	411
U	1575.7	10	411
U	1579.7	5	411
U	1586.5	5	411
U	1832.8	5	411
U	1981.2	5	411
U	1985.4	5	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL XII	6.314		236	CA XI	30.448	6	189
AL XII	6.635		236	SC XII	30.480		189
AL XII	7.757		236	SC XII	30.816		189
FE XVII	12.12		766	CA XI	30.867	3	189
FE XVII	12.26		766	CA XI	31.257	2	189
CO XVIII	12.60		766	CA XII	31.660	1	189
CO XVIII	12.66		766	CA XII	31.960	0	189
MN XVI	13.46		766	C V	32.064		765
MN XVI	13.61		766	K XI	32.180	-1	189
CO XVIII	13.629		766	C V	32.188		765
F VIII	13.780		236	CA XII	32.280	1	189
FE XVII	13.820		766	K XI	32.339	0	189
CO XVIII	13.862		766	C V	32.400		764, 765
FE XVII	13.887		766	CA XII	32.498	0	189
CO XVIII	14.036		766	CA XII	32.655	00	189
F VIII	14.458		764	C V	32.754		596, 764, 765
FE XVII	15.012		766	K XI	32.810	0	189
CR XV	15.06	0	766	C V	33.426		596, 764, 765
CO XVIII	15.169		766	C VI	33.734		765
CR XV	15.21	0	766	C V	34.973		596, 764, 765
MN XVI	15.238		766	CA XI	35.212	8	189
FE XVII	15.261		766	K X	35.307	4	189
MN XVI	15.312		766	CA XI	35.576	8	189
CO XVIII	15.437		766	K X	35.779	2	189
FE XVII	15.453		766	K XI	36.662	0	189
MN XVI	16.616		766	K XI	36.971	0	189
FE XVII	16.774		766	K XI	37.435	0	189
F VIII	16.807		764	K XI	37.696	0	189
MN XVI	16.882		766	K XI	37.870	00	189
CR XV	16.889	1	766	B V	38.869		65, 765, 168
F VIII	16.951		764	CL VIII	39.462	1	179
CR XV	16.965	0	766	CL VIII	39.655	0	179
FE XVII	17.051		766	FE XVI	39.827		178
MN XVI	17.095		766	CL X	39.956	1	179
O VII	17.200		764	CL X	40.085	2	179
O VII	17.396		764	FE XVI	40.153		178
O VII	17.768		764	C V	40.270		65, 596, 764
CR XV	18.497	4	189, 766	CL XI	40.392	0	179, 487
O VII	18.627		764	CL X	40.660	1	179
MN XVI	18.654		766	C V	40.731		764
CR XV	18.782	2	189, 766	CL XI	40.787	0	179, 487
MN XVI	18.935		766	B V	40.995		65, 765, 168
CR XV	19.015	0	766	K X	41.148	7	189
V XIV	20.716		189	CL X	41.390	1	179
CR XV	20.863	4	189, 766	CO XVII	41.462		178
V XIV	21.018		189	K X	41.541	7	189
CR XV	21.153	3	189, 766	CL VIII	41.636	00	179
O VII	21.602		764	CL VIII	42.166	0	179
O VII	21.804		764	CL VIII	42.220	2	179
TI XIII	23.356		189	CL VIII	42.430	1	179
V XIV	23.490		189	NI XVIII	43.814		178
TI XIII	23.698		189	SI XII	44.021	1	231
N VI	23.771		764	MG X	44.050	1	691
V XIV	23.794		189	CL IX	44.088	4	179
TI XIII	23.991		189	SI XII	44.165	2	231
N VI	24.898		764	CL IX	44.267	3	179
CA XI	25.327	1	189	NI XVIII	44.348		178
CA XI	25.517	1	189	CL VIII	44.361	2	179
CA XI	26.442	00	189	S X	44.387	0	233
SC XII	26.544		189	CL VIII	44.603	2	179
CA XI	26.639	00	189	LL IX	45.112	4	170
TI XIII	26.641		189	MN XV	45.137		178
SC XII	26.920		189	CO XVII	45.319		178
TI XIII	26.960		189	CL IX	45.378	3	179
CA XI	26.962	1	189	CL X	45.396	3	179
C VI	26.988		765	CL X	45.431	0	179
CA XI	27.079	00	189	CO XVII	45.527		178
SC XII	27.260		189	CL X	45.626	0	179
CA XII	27.412	00	189	SI XII	45.656	00	231
CA XII	27.606	00	189	SI XI	46.264	00	231
CA XII	27.978	1	189	SI XI	46.300	1	231
CA XII	28.134	0	189	SI XI	46.401	2	231
C VI	28.464		765	CR XIV	46.468		178
N VI	28.787		764	CL X	46.476	2	179
N VI	29.084		764	CR XIV	46.527		178

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE XVI	46.661		178	FE XV	52.911	3	180
FE XVI	46.718		178	V XIII	52.928		178
CL X	46.845	1	179	S VIII	52.958	7	233
MG X	47.231	3	691	MN XV	52.977		178
MG X	47.310	5	691	MN XV	53.032		178, 361
CU XIX	47.329		178	CO XV	53.173	2	180, 487
S IX	47.433	4	233	CR XIII	53.765	1	180
CU XIX	47.437		178	S VIII	54.118	10	233
CO XVI	47.483	1	180	FE XVI	54.142		178
SI XI	47.489	1	231	S IX	54.178	2	233
SI XI	47.607	1	231	AL IX	54.457	4	233
SI XI	47.693	1	231	SI X	54.522	1	233
S X	47.654	0	233	SI X	54.571	1	231
SI XI	47.899	1	231	SI X	54.599	1	233
S IX	48.160	2	233	FE XVI	54.728		178
AL XI	48.297	5	233	FE XVI	54.769		178
AL XI	48.338	3	233	SI IX	54.841	2	231
CO XVII	48.564		178	SI IX	54.870	2	231
B V	48.585		65, 765, 168	SI IX	54.907	2	231
BE V	48.585		166	SI IX	55.094	1	231
A IX	48.730	5	549	SI IX	55.116	1	231
B IV	48.939		764	SI IX	55.234	1	231
S IX	49.119	2	233	SI IX	55.272	3	231
CO XVII	49.133		178	AL X	55.272	10	233, 693
CO XVII	49.171		178	SI IX	55.305	1	231
A IX	49.180	5	549	SI IX	55.356	2	231
SI XI	49.222	1	231	AL X	55.376	15	233
B IV	49.456		764, 765	SI IX	55.401	2	231
BE IV	49.456		596	S IX	55.540	2	233
CL VIII	49.487	7	179	FE XV	55.635	1	180
SI X	49.701	2	233	SI IX	55.781	3	233
CO XVI	49.808	1	180	FE XV	55.793	2	180
CO XVI	49.958	1	180	FE XV	55.815	0	180
CO XVI	49.979	00	180	CO XVII	56.021		178
FE XV	50.062	00	180	SI IX	56.027	3	231
CL VIII	50.074	5	179	FE XV	56.200	3	180
FE XV	50.085	0	180	FE XV	56.236	00	180
FE XV	50.120	1	180	MN XV	56.270		178
FE XVI	50.350		178	MN XV	56.484		178
CO XVI	50.357	2	180	SI X	56.680	1	233
CO XVI	50.393	00	180	SI X	56.804	1	233
B IV	50.435		764, 765	CO XVII	56.833		178
BE IV	50.435		596	AL IX	56.945	5	233
FE XVI	50.555		178	AL X	56.964	3	233
SI X	50.691	2	233	AL X	57.024	5	233
CL VIII	50.700	2	179	MN XIV	57.224	00	180
AL X	50.762	5	233	AL X	57.368	7	233
CR XIV	50.812		178	MG X	57.076	6	691
CL IX	51.026	4	179	MG X	57.920	4	691
CR XIV	51.162		178	V XIII	58.116		178
AL X	51.362	7	233	NA VIII	58.201	5	691
CL IX	51.378	3	179	V XIII	58.482		178
MG IX	51.591	3	691	CL VIII	58.673	10	179
MG IX	51.654	4	691	CO XVII	58.842		178
S VII	51.807	7	233	CO XVII	58.948		178
AL X	51.979	6	233	FE XIV	58.963	2	180, 487
CL IX	52.055	2	179	AL X	59.107	8	233
SI X	52.070	1	233	CL VIII	59.191	9	179
SI X	52.155	2	233	MN XIV	59.325	1	180
AL XI	52.299	10	233	FE XIV	59.479	2	180, 487
CL IX	52.303	4	179	AL IX	59.761	6	233
CR XIV	52.363		178	S VII	60.161	20	233
CL IX	52.426	3	179	B IV	60.313		764, 65, 168
AL XI	52.446	12	233	BE IV	60.313		596
SI X	52.485	2	233	AL IX	60.549	4	233
CO XV	52.583	1	180, 487	AL IX	60.588	6	233
NI XVIII	52.615		178	CR XIV	60.699		178
CL IX	52.677	2	179	TI XII	60.705		178
BE IV	52.679		596	MN XV	60.720		178
B IV	52.682		764, 65, 168	BE IV	60.741		595, 765
NI XVIII	52.720		178	CR XIV	60.756		178, 361
CL IX	52.726	3	179	TI XII	60.760		178
S VIII	52.756	6	233	S VII	60.804	15	233
S VIII	52.789	6	233	AL IX	60.896	6	233
V XIII	52.870		178	SI VIII	61.019	2	231

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL IX	61.069	12	233	SI VII	70.072	5	231
SI VIII	61.070	4	231	AL VIII	70.161	6	233
B IV	61.088		764	V XIII	70.262		178
MG IX	61.127	3	691	V XIII	70.323		178
MG IX	61.175	2	691	AL VIII	70.323	4	233
MN XV	61.319		178	NA IX	70.615	7	691
MN XV	61.361		178	NA IX	70.653	6	691
SI IX	61.502	1	231	CR XIII	70.792	1	180
SI IX	61.546	2	233	CR XIII	70.973	3	180
S VIII	61.600	10	233	TI XII	71.012		178
SI IX	61.600	1	231	MN XV	71.038		178
SI IX	61.649	2	231	CR XIII	71.398	3	180
V XII	61.717	1	180	CR XIII	71.435	0	180
SI IX	61.852	2	233	V XIII	71.799		178
CO XVI	61.875	1	180	MN XV	71.927		178
CO XVI	61.916	2	180	V XIII	72.025		178
MG IX	61.924	4	691	S VII	72.029	30	233
S VIII	61.978	5	233	MG IX	72.226	3	691
CO XVI	61.982	2	180	SI VIII	72.228	4	231
AL IX	62.327	5	233	AL VII	72.270	10	233
AL IX	62.369	3	233	MG IX	72.312	4	691
MN XIV	62.526	0	180	SI VII	72.324	4	231
MN XIV	62.694	1	180	S VII	72.663	30	233
MN XIV	62.713	00	180	AL	72.674	6	233
MG IX	62.751	5	691	SI VII	73.123	10	231
FE XVI	62.879		178	MG VIII	73.250	4	691
AL VII	63.025	10	233	MN XIV	74.063	00	180
MN XIV	63.109	2	180	MN XIV	74.327	0	180
MN XIV	63.146	00	180	MG VIII	74.366	4	691
MG X	63.152	7	691	SI VIII	74.420	4	231
MG X	63.295	9	691	MG VIII	74.858	6	691
S VIII	63.304	10	233	MN XIV	74.961	1	180
CR XIV	63.309		178	MG VIII	75.034	7	691
AL IX	63.509	10	233	MN XV	75.182		178
CR XIV	63.525		178	AL VII	75.270	5	233
AL IX	63.632	6	233	MN XV	75.286		178
FE XVI	63.719		178	AL VII	75.302	7	233
S VIII	63.886	5	233	AL VII	75.360	12	233
BE IV	64.063		595, 765	CR XII	75.815	2	180, 487
NA VIII	64.237	4	691	BE IV	75.925		595, 765
NA VIII	64.302	5	691	NA VIII	76.123	5	691
MG IX	65.609	4	691	V XII	76.307	3	180
MG X	65.672	2	691	AL VII	76.383	10	233
MG X	65.847	3	691	AL VII	76.422	10	233
FE XVI	66.263		178	CR XII	76.488	3	180, 487
FE XVI	66.368		178	AL VII	76.543	20	233
MN XIII	66.574	1	180, 487	AL VII	76.572	20	233
AL VIII	66.731	4	233	NA VIII	77.267	6	691
AL VIII	66.771	7	233	SI VI	77.429	10	231
CR XIII	66.983	2	180	MG VIII	77.572	5	691
MG IX	67.090	5	691	AL VIII	77.605	6	233
MG IX	67.135	6	691	MG VIII	77.671	5	691
TI XII	67.149		178	MG VIII	77.737	6	691
MN XIII	67.215	2	180, 487	NA IX	77.764	7	691
MG IX	67.239	7	691	AL VII	77.896	10	233
AL VIII	67.288	10	233	NA IX	77.911	8	691
AL VIII	67.408	10	233	V XIII	78.101		178
AL VIII	67.464	12	233	AL VII	78.327	20	233
TI XII	67.532		178	AL VII	78.351	20	233
MG VIII	67.731	4	691	MG VIII	78.446	6	691
AL VIII	67.846	10	233	MG VIII	78.574	6	691
AL VIII	68.375	15	233	V XIII	78.746		178
CR XIV	68.565		178	V XIII	78.783		178
MG IX	69.116	1	691	AL	78.938	6	233
MG IX	69.161	3	691	AL VII	79.012	10	233
CR XIV	69.183		178	MG VII	79.131	5	692
CR XIV	69.221		178	MG VII	79.168	5	692
MG VIII	69.413	4	691	AL VII	79.197	10	233
MG VIII	69.467	5	691	MN XIV	79.720	1	180
SI VII	69.790	4	231	MN XIV	79.761	2	180
FE XV	69.945	2	180	MN XIV	79.826	3	180
MG IX	69.950	6	691	MG VIII	80.229	4	691
FE XV	69.987	3	100	MG VIII	80.255	4	691
SI VII	70.027	5	231	SI VI	80.395	5	231
FE XV	70.054	4	180	SI VI	80.449	10	231

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI VI	80.491	5	231	AL VI	87.655	13	233
SI VI	80.501	10	231	TI XI	87.722	3	180
SI VI	80.577	12	231	MG VII	87.722	6	692
SI VI	80.698	10	231	MG VII	87.767	4	692
SI VI	80.725	10	231	V XI	87.868	4	180, 487
V XII	80.896	1	180	MG VII	87.889	5	692
CR XIV	80.916		178	FE XI	87.995	0	181
V XII	81.077	2	180	FE XI	88.029	0	181
NA IX	81.175	5	691	AL VII	88.033	18	233
NA VIII	81.210	5	691	FE XI	88.167	0	181
NA IX	81.350	5	691	AL VI	88.170	20	233
CO XI	81.507	3	182	AL VI	88.273	15	233
V XII	81.513	4	180	BE III	88.314		596
SI VII	81.558	5	231	AL VI	88.376	15	233
SI VII	81.620	12	231	MG VII	88.680	6	692
MG VIII	81.732	3	691	FE XI	89.104	2	181
MG VIII	81.790	2	691	FE XI	89.185	1	181
CR XIV	81.838		178	FE XI	89.771	0	181
MG VIII	81.844	4	691	TI XII	89.841		178
BE III	81.891		596	AL VI	90.200	20	233
SI VII	81.895	10	231	FC XI	90.205	1	181
TI XII	82.124		178	FE XI	90.345	0	181
TI XII	82.311		178	SI V	90.453	4	231
TI XII	82.350		178	TI XII	90.508		178
TI XII	82.362		178	NA VIII	90.536	5	691
BE III	82.377		596	TI XII	90.540		178
CO XI	82.527	0	182	SI V	90.852	4	231
CO XI	82.759	2	182	AL VI	90.858	12	233
MG VII	82.940	4	692	MG VI	90.897	6	692
MG VII	82.969	4	692	AL	91.023	10	233
MG VII	83.015	5	692	CR XIII	91.749	2	180
SI VI	83.128	15	231	CR XIII	91.792	3	180
CO XI	83.190	3	182	CR XIII	91.855	4	180
BE III	83.202		596	NA VII	92.003	5	691
NA VIII	83.240	7	691	AL VI	92.626	15	233
NA VIII	83.288	8	691	AL VI	92.636	4	233
NA VIII	83.391	9	691	AL VI	92.875	10	233
MG VII	83.766	5	692	AL VI	92.970	5	233
CO XI	83.861	1	182	V XIII	93.025		178
MG VII	84.025	5	692	NA VII	93.393	4	691
CO XI	84.039	2	182	NA VII	93.434	4	691
NA VIII	84.050	5	691	NA VII	93.486	5	691
SI VI	84.082	12	231	TI XI	93.595	2	180
MG VII	84.087	3	692	V XIII	93.994		178
CR XIII	84.616	0	180	FE X	94.012	4	182
MG VII	84.642	5	692	TI XI	94.054	3	180
BE III	84.758		596	NA VII	94.288	6	691
CR XIII	84.898	2	180	NA VII	94.468	7	691
SI V	85.175	10	231	SC XI	94.888	6	17, 178
SI VII	85.289	10	231	SC XI	95.117	5	17, 178
MG VII	85.407	7	692	FE X	95.338	1	182
AL VI	85.515	20	233	FE X	95.374	3	182
CR XIII	85.566	3	180	F VII	95.697	0	171, 176
SI V	85.576	6	231	F VII	95.775	1	171, 176
SI VII	85.584	10	231	SI VI	96.020	10	231
MG VIII	85.749	4	691	FE X	96.122	4	182
NA VIII	86.039	5	691	SI V	96.439	15	231
CR XIV	86.057		178	SI VI	96.488	10	231
FE XI	86.149	0	181	FE X	96.788	2	182
CR XIV	86.164		178, 361	FE X	97.172	1	182
NA VIII	86.381	4	691	SI V	97.143	10	231
NA VIII	86.417	5	691	FE X	97.591	0	182
NA VIII	86.479	6	691	FE X	97.838	0	182
FE XI	86.513	1	101	V XII	97.938	2	180
NA VII	86.596	4	691	V XII	98.630	3	180
NA VII	86.652	5	691	F VIII	98.707	0	164
F VII	86.728	0	171, 176	F VIII	98.799	0	164
FE XI	86.772	2	181	SI VI	99.095	10	231
AL VII	86.887	15	233	SI VI	99.460	15	231
FE XI	87.025	1	181	V XIII	99.523		178
AL VII	87.060	12	233	SI VI	99.598	10	231
MG VII	87.131	5	692	V XIII	99.625		178
V XI	87.166	3	180, 487	SI VI	99.966	10	231
MG VII	87.175	4	692	MN X	100.173	1	181
NA VIII	87.211	7	691	BE III	100.254	1	168, 596

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN X	100.585	2	181, 358	TI XII	116.597		178
AL VI	100.616	12	233	MG VI	116.968	5	692
SI VI	100.640	10	231	CR IX	117.435	1	181
MN X	100.787	1	181	KR IX	117.710	20	487
TI X	101.355	2	180, 487	SI V	117.860	20	231
MN X	101.808	0	181	CR IX	117.942	3	181
MN X	101.854	0	181	CR IX	118.165	1	181
SC X	101.978	6	17	CA X	118.174	2	361
MN X	102.030	0	181	CA X	118.223	4	361
TI X	102.107	2	180, 487	SI V	118.968	20	231
MG VI	102.189	5	692	SC X	119.049	4	17
MG VI	102.239	5	692	LI II	119.26		185
MN X	103.269	3	181, 358	CR IX	119.269	2	181
MN X	103.521	2	181, 358	CR IX	119.320	1	181
FE IX	103.580	8	366	SC IX	119.444	4	17
AL V	103.805	10	233	CR IX	119.569	0	181
AL V	103.881	14	233	SC IX	120.236	5	17
AL VI	104.047	20	233	MG VI	121.025	5	692
CR VII	104.13	1	364	CR IX	121.293	3	181
AL V	104.180	14	233	CR IX	121.781	2	181
MN X	104.310	0	181	MN VIII	122.168	15	366
AL VI	104.344	16	233	NE VI	122.686	10	544
SC XI	104.435	5	17, 178, 361	CR IX	122.720	1	181
MG VI	104.519	3	692	CR IX	122.964	1	181
MG VI	104.597	5	692	CR IX	123.226	00	181
MN X	104.608	1	181	CA X	123.733	5	361
MN X	104.806	0	181	MN VII	123.799	10	365
CR VII	105.14	4	364	NA VI	123.929	5	692
SC XI	105.140	6	17, 178, 361	NA VI	123.970	2	692
SC XI	105.170	2	17	MN VII	124.005	15	365, 366
FE IX	105.236	6	366	AL IV	124.034	8	693
MN IX	105.256	0	182	NA VI	124.059	4	692
V XII	106.781	2	180	NA VI	124.153	4	692
V XII	106.820	3	180	CR VIII	124.184	2	182
V XII	106.885	4	180	AL IV	124.543	6	693
NA VI	107.227	3	692	V IX	125.420	12	358
NA VI	107.288	4	692	AL V	125.525	15	233
NA VI	107.535	3	692	CR VIII	125.728	1	182
NA VI	107.553	3	692	TI XI	125.960	2	180
NA VI	107.608	4	692	TI XI	125.997	3	180
AL VI	107.620	14	233	TI XI	126.061	4	180
NA VI	107.683	5	692	AL V	126.065	15	233
FE VIII	107.872	8	365	V IX	126.152	8	358
AL V	107.945	20	233	V IX	126.732	5	358
LI III	108.01		185	V IX	126.765	5	358
FE VIII	108.083	8	365	V IX	126.810	0	358
TI XII	108.100		178	F VI	126.923	5	171, 176
TI XII	109.121		178	V IX	127.068	10	358
AL VI	109.514	20	233	SC XI	127.156	5	17, 178
SC X	109.765	4	17	F VII	127.653	4	171, 176
MN IX	109.783	5	182	F VII	127.796	5	171, 176
SC X	109.805	2	17	NA VI	127.837	4	692
AL VI	109.843	12	233	SC XI	128.247	5	17, 178
NA VI	109.896	5	692	V VI	128.382	2	364
MN IX	111.262	4	182	O VII	128.412	00	164
MN IX	111.500	2	182	O VII	128.500	0	164
MG VI	111.552	5	692	V VI	129.574	4	364
MG VI	111.746	4	692	AL IV	129.729	12	693
MG VI	111.864	4	692	CA IX	129.934	10	535
MN VII	111.889	0	365	CR VIII	129.998	7	182
K IX	112.113	2	361	AL V	130.413	20	233
MN IX	112.415	5	182, 359	AL V	130.848	20	233
K IX	112.581	4	361	FE VIII	130.939	8	365
F VII	112.935	4	171, 176	AL V	131.003	20	233
F VII	112.976	3	171, 176	FE VIII	131.242	9	365
MN IX	113.080	2	182	AL V	131.441	20	233
MG VI	113.189	5	692	CR VIII	131.638	6	182
MN IX	113.627	3	182	K IX	131.646	6	361
LI III	113.93	0	185	K IX	131.896	4	361
MN IX	114.023	0	182	CR VIII	132.321	2	182
MN IX	114.472	0	182	CR VIII	133.395	6	182
KR IX	114.948	75	487	CR VIII	134.076	3	182
TI XI	115.011	2	180	F V	134.539	5	172, 176
KR IX	115.741	100	487	F VII	134.703	1	171, 176
TI XII	116.496		178	SC X	134.767	3	17, 535

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
F VII	134.882	2	171, 176	V VII	156.608	7	182
CR VIII	134.942	4	182	V VII	158.467	6	182
LI III	135.02	2	185	A VIII	158.923	8	549
SC X	135.128	4	17, 535	A VIII	159.175	5	549
MN VII	135.177	20	365	AL IV	160.073	16	65, 168, 693
CR VIII	135.185	1	182	V VII	161.122	6	182
MN VII	135.393	25	365	AL IV	161.686	14	65, 195, 693
V VIII	135.751	1	181	V VII	161.836	4	182
CR VIII	135.892	0	182	MN VII	162.349	80	365
SC X	135.921	5	17, 535	NA IV	162.445	8	65, 693
MO VII	136.675	50	132	MN VII	162.667	60	365
MG V	137.234	6	692	MN VII	162.707	30	365
MG V	137.414	8	692	V VII	163.135	2	182
MG V	137.748	7	692	V VII	163.182	4	182
MG V	137.880	6	692	F V	163.456	3	172, 176
A VIII	137.926	3	549	F V	163.501	4	172, 176
CU	138.074	75	356	F V	163.558	5	172, 176
CU	138.115	50	356	F V	163.596	2	172, 176
SC XI	138.283	5	17, 178	TI VII	164.172	3	181
SC XI	138.380	5	17, 178, 361	SC VIII	164.772	3	17, 360
A VIII	138.440	5	549	NB VI	164.977	75	132
BR VIII	138.927	15	363	SC VIII	165.395	3	17, 360
V VIII	139.730	1	181	SC VIII	165.654	4	17, 360
F VI	139.758	5	171, 176	F V	165.983	9	172, 176
BR VIII	139.792	15	363	SC VIII	166.022	3	17, 360
F VI	139.800	6	171, 176	F V	166.177	10	172, 176
F VI	139.900	7	171, 176	SC VIII	166.317	3	17, 360
V VIII	140.451	3	181	SC VIII	166.916	3	17, 360
V VIII	140.665	1	181	CA X	166.945	8	178, 361, 762
MO VII	140.955	150	132	CA X	167.034	10	178, 361, 762
V VIII	141.864	1	181	NA IV	168.084	10	65, 693
CA VIII	144.120	8	192, 547	NA IV	168.409	8	65, 693
CA VIII	144.160	3	547	TI VII	169.300	3	181
V VIII	144.653	3	181	NB VI	170.180	100	132
V VIII	145.507	2	181	TI VII	170.357	5	181, 358
K IX	145.702	5	361	MG III	170.802	5	693
K IX	145.753	5	361	LI II	171.582		168, 488, 596
CR VII	146.532	25	364	MG IV	171.653	8	693
F VI	146.576	2	171, 176	TI VII	171.883	3	181
V VIII	146.613	1	181	TI VII	171.949	2	181
F VI	146.613	3	171, 176	SE VII	171.965	25	363
CU	146.669	100	356	O V	172.168	12	65, 168, 488
F VI	146.676	4	171, 176	MG IV	172.306	7	693
F VI	146.718	2	171, 176	TI VII	172.350	2	181
V VIII	146.789	1	181	SE VII	172.920	35	363
MG IV	146.949	4	693	O VI	172.935	12	65, 168, 488
MG IV	147.006	4	693	O VI	173.082	13	65, 168, 488
MG IV	147.052	4	693	NI VIII	173.41	8	3
K IX	147.157	6	361	NE V	173.932	50	488, 544
MG IV	147.746	4	693	NI VIII	174.24	8	3
K IX	147.943	8	361	NI VIII	174.92	8	3
K IX	147.973	1	361	NI VIII	175.555	8	3
F V	148.002	5	172, 176	NI VIII	175.80	10	3
CR VII	148.736	15	364	TI VII	175.806	5	181, 358
CU	148.846	80	356	NI VIII	175.815	10	3
MO VII	149.639	75	192	NI VIII	175.94	8	3
CU	149.703	80	356	NI VIII	176.03	6	3
TI VIII	150.037	20	358	NI VIII	176.13	5	3
O VI	150.088	10	168, 488	A VII	176.566	10	549
SC IX	150.09	5	17	NI VIII	176.74	5	3
O VI	150.124	9	168, 488	NI VIII	176.87	8	3
NI IX	150.844	20	128	NI VIII	176.95	5	3
TI VIII	150.864	20	358	TI VII	177.229	4	181, 358
SC X	150.939	4	17, 535	NB VI	177.552	125	132
SC X	150.995	5	17, 535	LI II	178.015		168, 488, 596
TI VIII	151.485	10	358	F V	178.434	5	172, 176
TI VIII	151.863	8	358	TI VII	178.564	2	181
TI VIII	152.164	20	358	CA VIII	178.641	8	192, 547
CA X	153.012	6	178, 361, 762	TI VII	178.666	3	181
F VI	153.741	3	171, 176	CA VIII	178.687	6	547
F VI	153.880	4	171, 176	V VI	179.323	20	364
NI IX	154.174	12	128	A VIII	179.400	10	549
TI VIII	155.673	10	358	MG IV	180.070	8	693
F VI	156.247	6	171, 176	SE VII	180.220	4	363
NA IV	156.536	8	65, 693	A VIII	180.254	15	549

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NB VI	180.548	25	132	TI VI	201.862	5	182
MG IV	180.617	10	693	CA VII	204.001	9	192, 547
MG IV	180.796	9	693	NB VII	205.182	200	132
MG IV	181.345	8	693	CA VII	205.404	6	192, 547, 762
NA IV	181.758	8	65, 693	MO VII	207.774	500	132
V VI	182.050	15	364	O V	207.794	10	65, 168, 488
TI VI	182.148	5	182	NE IV	208.485	100	488, 544
MO VIII	182.179	400	132	NE IV	208.734	100	488, 544
CO VIII	182.665	10	128	N V	209.270	7	65, 168, 488
CA VIII	182.713	7	192, 547	N V	209.303	6	65, 168, 488
SC VII	182.987	4	17, 358	CR VI	209.978	4	365
NI VIII	183.83	9	3	CR VI	210.288	6	365
CO VIII	183.922	7	128	CO VII	212.15	10	3
O VI	183.937	8	168, 488	NI VII	212.516	35	548
SC VII	183.96	5	17	NE IV	212.556	150	488, 544
MO VIII	184.050	600	132	CO VII	212.61	5	3
TI VI	184.104	4	182	CO VII	212.64	10	3
O VI	184.117	9	168, 488	NI VII	212.904	30	548
NI VIII	184.12	9	3	CO VII	212.91	9	3
CA VIII	184.160	10	547	NI VII	212.949	20	548
CO VIII	184.201	70	128	NI VII	213.096	15	548
A VIII	184.315	5	549	NI VII	213.515	25	548
CA IX	184.377	6	535	NI VII	213.714	25	548
CA IX	184.433	8	192, 535	NI VII	213.908	30	548
CO VIII	185.432	6	128	SI VIII	214.756	2	231
A IX	185.883	2	762	NB VII	215.444	400	132
N V	186.070	4	65, 168, 488	NI VII	215.759	30	548
N V	186.153	5	65, 168, 488	NI VII	216.064	20	548
MO VIII	186.376	600	132	I	216.50	4	32
MG III	186.510	9	488, 693	SI VIII	216.918	2	231
NE IV	186.575	150	488, 544	SI VII	217.826	7	231
F V	186.715	4	172, 176	NB VII	217.945	300	132
F V	186.788	4	172, 176	I	219.07	4	32
F V	186.842	5	172, 176	NB VII	219.746	500	132
F V	186.879	3	172, 176	AS VI	219.982	40	363
F V	186.968	4	172, 176	MO VIII	220.102	250	132
F V	187.008	4	172, 176	O V	220.352	13	65, 168, 488
MG III	187.194	8	488, 693	CO VII	220.62	10	3
MO VIII	189.602	750	132	I	220.66	8	32
I VIII	190.14	4	32, 363	AS VI	221.045	50	363
MO VIII	190.243	300	132	CO VII	221.45	10	3
NA IV	190.440	10	65, 693	CO VII	221.52	10	3
CO VIII	190.514	5	128	CO VII	221.62	5	3
F V	190.571	6	172, 176	CO VII	221.75	10	3
SC VII	190.644	4	17, 358	CO VII	221.96	9	3
NA IV	190.835	8	65, 693	CO VII	222.57	10	3
V V	190.839	7	172, 176	CO VII	222.67	8	3
CO VIII	191.247	7	128	CO VII	223.08	10	3
SC VII	191.602	8	358	CO VII	223.19	9	3
A VII	191.759	3	549	MO VIII	223.270	500	132
CU VIII	191.923	10	128	CO VII	223.30	10	3
A VII	192.041	5	549	CO VII	223.37	8	3
CO VIII	192.328	9	128	CO VII	223.54	10	3
SC VII	192.607	8	358	CO VII	223.73	10	3
A VII	192.635	7	549	CO VII	223.86	8	3
O V	192.751	12	65, 168, 488	CO VII	223.91	7	3
O V	192.800	13	65, 168, 488	CO VII	223.99	5	3
O V	192.906	14	65, 168, 488	NB VII	224.182	300	132
I VIII	194.15	5	32, 363	CO VII	224.71	10	3
NE IV	194.276	100	488, 544	NB VII	224.737	200	132
TI VI	194.900	7	182	SI IX	225.033	0	231
FE VIII	195.476	20	365	CL VII	225.078	10	546
FE VIII	196.046	15	365	TI V	225.337	100	364
CL VII	196.123	10	546	I	225.54	5	32
CL VII	196.388	8	546	CO VII	226.03	10	3
I VIII	196.55	3	32, 363	AS VI	226.836	5	363
TI VI	197.455	5	182	SI IX	227.007	0	231
MO VII	198.839	800	132	I	227.46	4	32
LI II	199.282		168, 488, 596	TE VII	227.86	6	28, 363
TI VI	199.759	6	182	CA VI	228.628	7	45, 192, 762
CU VII	200.674	100	356, 357, 487	TI V	228.898	75	364
CU VII	200.860	75	356, 357, 487	A VIII	229.437	5	549
CU VII	200.958	50	356, 357, 487	CO VII	229.61	10	3
TI VI	201.313	5	182	CA VI	229.734	7	45, 192, 762
I VIII	201.70	4	32, 363	CO VII	229.87	10	3

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CA VI	230.495	5	45, 192, 762	BI VII	268.653	3	5
K VIII	230.678	10	535	MG VI	268.986	10	692
K VIII	230.706	12	535	MG VI	270.394	12	692
K VIII	230.745	15	535	ZR VI	270.474	200	545
A VIII	230.875	7	549	ZR VI	270.862	180	545
MG III	231.730	14	488, 693	BI VII	271.193	3	5
MO VIII	231.998	250	132	BI VII	271.400	3	5
AS VI	232.217	5	363	BI VII	271.623	3	5
TE VII	232.37	6	28, 363	BI VII	271.663	3	5
FE VII	233.021	10	128	CO VI	272.481	7	48
MG III	234.258	12	488, 693	BI VII	272.917	5	5
FE VII	234.339	9	128	NA II	273.99	0	779
CO VII	234.34	10	3	NA II	275.10	0	779
FE VII	234.779	15	128	CO VI	276.285	7	48
CO VII	234.79	10	3	TL	276.53	4	33
FE VII	235.232	10	128	MG V	276.581	16	692
TE VII	236.45	3	30, 363	CO VI	276.721	7	48
HE II	237.331	15	488	SI VIII	277.054	4	231
TE VII	237.54	4	30, 363	ZR VI	277.630	200	545
O IV	238.361	14	65, 168, 488	TL	278.06	4	33
O IV	238.573	15	65, 168, 400	CO VI	278.104	7	48
CA VI	239.535	7	45, 192	MG VII	278.404	4	692
FE VII	240.075	8	128	CO VI	278.632	7	48
FE VII	240.105	7	128	AL V	278.699	16	65, 168, 693
TE VI	242.27	4	30, 363	MO VIII	279.463	200	132
HE II	243.027	20	488	CO VI	279.508	7	48
FE VII	243.375	50	128	SB VI	279.757	15	31, 363
AL VI	243.760	10	168, 693	CO VI	280.003	7	48
CL VI	243.854	12	535	CO VI	280.060	6	48
TE VI	243.90	6	30, 363	CA V	280.992	8	45, 192, 358
C IV	244.907	10	65, 168, 488	AL V	281.397	14	65, 693
FE VII	245.926	10	128	TI IX	281.463	2	547
N IV	247.205	10	65, 168, 488	NA II	281.81	1	779
N V	247.563	10	65, 168, 488	SC V	282.209	7	17
N V	247.710	11	65, 168, 488	A VI	282.423	6	549
NB VII	247.979	250	132	SC V	282.497	6	17
C V	248.668	0	65, 168	TI IX	282.720	2	547
NB VI	248.724	250	132	NA II	282.827	0	65, 693
C V	248.744	0	65, 168	CO VI	283.089	8	48
A VII	250.940	7	549	NE III	283.206	6	65, 338, 488
F IV	251.026	10	42, 173, 176	MO VIII	283.412	250	132
O IV	252.564	6	168	N IV	283.420	10	65, 168, 488
CU	252.780	75	356	N IV	283.470	11	65, 168, 488
O IV	252.948	6	65, 168	N IV	283.579	12	65, 168, 488
O IV	253.082	7	65, 168	NE III	283.690	5	65, 338, 488
P V	255.596	7	597	SC IV	283.911	9	17
MO VIII	255.637	200	132	MN VII	284.059	10	365
P V	255.688	7	597	SC IV	284.263	9	17
HE II	256.318	30	488	SC IV	284.450	8	17
CU	258.927	80	356	BI VII	284.672	3	5
A VIII	260.253	4	549	SC IV	284.884	6	17
A VIII	260.332	6	549	SB VI	284.890	20	31, 363
NI VI	260.348	400	357, 487	SC IV	285.191	8	17
NI VI	260.591	300	357, 487	TI IX	286.128	4	547
NI VI	260.713	250	357, 487	TI IX	286.234	5	547
I	261.09	4	32	MO VII	286.294	200	132
MO VIII	262.402	500	132	SC V	286.927	10	17
NB VII	262.453	250	132	CA V	286.965	9	45, 192, 567
TL	263.07	4	33	C IV	289.143	9	65, 168, 488
ZR VI	263.312	200	545	C IV	289.230	10	65, 168, 488
N V	266.192	6	65, 168, 488	SC IV	289.589	9	17
K	266.344	4	192	TI IX	289.728	8	547
N V	266.375	7	65, 168, 488	SC IV	289.850	9	17
CO VI	266.498	6	48	SC V	290.232	8	17
CO VI	266.634	4	48	FF VI	290.271	6	46
CO VI	266.905	4	48	SC VI	290.700	6	17
CO VI	266.973	8	48	FE VI	291.020	5	46
CO VI	267.131	5	48	FE VI	291.184	6	46
CO VI	267.297	6	48	FE VI	291.229	6	46
TL	267.33	4	33	FE VI	291.473	5	46
CO VI	267.402	5	48	FE VI	291.800	5	46
CA V	267.772	8	45, 192	FE VI	291.829	5	46
TL	268.00	2	33	SC IV	291.932	10	17
TL	268.06	4	33	SB VI	291.991	5	31, 363
BI VII	268.476	3	5	SC VI	292.344	6	17

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SB VI	292.405	15	31, 363	SC VII-I	315.420	12	360
I	292.465	6	32	SI VIII	316.202	2	231
FE VI	292.736	7	46	SN VI	316.23	16	293
TL	293.21	4	33	SN VI	317.40	18	293
CL VII-I	293.253	8	546	NA VI	317.641	6	692
FE VI	293.745	8	46	CA IV	318.093	15	192, 359
FE VI	293.966	8	46	TE VI	318.26	5	30
A VI	294.052	6	549	SC IX	318.615	8	360
ZR VI	294.117	50	545	MG VII	319.016	4	692
FE VI	294.265	7	46	NA IV	319.638	10	65, 693
SC VI	294.292	7	17	SI VIII	319.829	2	231
FE VI	294.339	5	46	O III	320.979	12	65, 168, 488
ZR VI	294.398	200	545	MG IV	320.999	20	693
GE V	294.506	30	363	MN VI	321.176	11	128
FE VI	294.520	7	46	MN VI	321.541	9	128
K V	294.836	6	45, 192, 762	CA IV	321.593	10	359
CL VII	294.889	10	546	CA V	322.166	10	192
SC IV	295.478	9	17	F III	322.685	7	174, 176
GE V	295.636	50	363	MG IV	323.310	18	693
CO VI	296.923	7	48	CL VI	323.356	15	535
FE VI	296.988	6	46	CL VI	323.936	20	535
SC VI	297.269	7	17	SC IX	324.199	12	360
FE VI	297.308	7	46	MN VI	325.146	20	128
MO VI	297.326	100	132	CL VI	325.161	25	535
CO VI	297.372	7	48	NB VI	325.795	250	132
I	297.46	4	32	ZR VI	326.282	250	545
FE VI	297.568	8	46	BI VI	326.901	8	5, 466
A VII	297.621	3	549	MN VI	328.232	10	128
CO VI	297.651	6	48	MN VI	328.431	20	128
A VII	297.658	4	549	S VI	328.605	6	598
A VII	297.701	6	549	CU	329.047	100	356
SC VI	298.194	8	17	MO VIII	331.612	200	132
MO VI	298.358	150	132	CA VII	331.650	8	192, 547
SC IV	298.428	8	17, 488	NA V	332.550	8	65, 692
SC IV	298.557	6	17	CU	332.893	100	356
ZR VI	298.779	200	545	Y V	333.095	40	545
SC IV	299.041	9	17	Y V	333.815	30	545
NA II	300.151	1	65, 488, 693	NA V	333.910	9	65, 692
NA II	301.311	0	65, 693	CA VII	334.136	10	192, 547, 567
NA II	301.432	1	65, 488, 693	SC VII	334.138	5	17
ZR VI	302.103	60	545	N IV	335.050	11	65, 168, 488
NA II	302.28	0	779	CA IV	335.374	25	359
ZR VI	302.347	250	545	CA IV	336.555	15	359
HE II	303.786	50	488	Y V	336.613	40	545
FE VI	304.221	7	46	TI IX	336.902	4	547
FE VI	304.551	7	46	A V	337.555	3	549
SC V	307.083	6	17	SC X	337.888	5	17, 535
NA V	307.152	8	65, 692	A V	337.998	6	488, 549
SN VI	307.43	15	293	CL VII	340.229	15	546
SN VI	307.77	17	293	CL VII	340.298	18	546
MN VI	307.999	20	128	CA VI	340.528	8	45, 192
SC VII	308.180	6	17	CA IV	341.284	15	192, 359, 567
NA V	308.264	10	65, 692	TI IX	341.754	10	547
MN VI	308.560	20	128	SC X	342.509	10	535
MN VI	308.853	15	128	CU	342.713	80	356
BI VII	309.028	3	5	CU	345.368	90	356
BI VII	309.134	3	5	MG VI	349.155	10	692
MN VI	309.440	12	128	NA VII	350.645	5	691
MN VI	309.579	10	128	MG V	351.089	12	692
MN VI	310.058	10	128	BI VI	352.070	10	5, 466
MN VI	310.908	40	128	MG V	352.202	10	692
SN VI	311.15	16	293	NA VII	352.275	6	691
FE VI	311.702	7	46	CA V	352.915	9	45, 192
MN VI	311.748	10	128	MG V	353.094	14	692
SN VI	311.80	17	293	NA VII	353.294	8	691
NA VI	311.921	4	692	MG V	353.300	9	692
SN VI	312.10	15	293	MG V	354.223	10	692
FE VI	312.263	7	46	CA VIII	354.508	9	547
MG V	312.311	10	692	K V	354.927	6	192, 762
C IV	312.418	15	65, 168, 488	NA VII	354.950	4	691
C IV	312.455	14	65, 168, 488	CA VIII	354.985	8	547
ZR VI	313.392	180	545	MG V	355.326	12	692
NA VI	313.748	5	692	PR VI	356.177	5	5
TE VI	313.90	6	30	AL VII	356.885	5	693
SC VII	314.049	4	17	CA VIII	357.347	12	547

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CA VIII	357.497	8	547	K VII	398.988	2	547
CU	357.897	100	356	NA VII	399.182	4	691
NE V	357.955	40	488, 544	MG VI	399.289	6	692
CA III	357.973	8	192	Y V	399.352	40	545
CA VIII	357.983	8	547	IN V	399.79	10	293
NE V	358.472	50	488, 544	IN V	400.05	9	293
NE IV	358.721	200	57, 488, 544	IN V	400.57	25	293
TE V	358.76	7	30	MG VI	400.676	7	692
CU	358.865	90	356	NA V	400.722	10	65, 692
NE V	359.385	50	488, 544	K VI	400.951	5	192, 793
NA V	360.319	8	65, 692	NE VI	401.138	15	544
NA V	360.367	8	65, 692	NE VI	401.939	25	544
NA VI	361.250	8	692	IN V	402.39	25	293
SI IV	361.517		65, 238	NE VI	403.262	10	544
SI IV	361.615		65, 238	MG VI	403.315	8	692
NA VI	362.444	4	692	CA III	403.732	20	192, 366, 488
TE V	364.36	6	30	K V	403.784	7	192, 547
FE V	365.440	6	47	SR IV	403.85	25	758
NE V	365.594	100	488, 544	K VII	403.967	5	192, 547
FE V	365.858	6	47	MN V	404.358	8	46
NA VI	366.110	4	692	MN V	404.455	4	46
MG VII	367.679	4	692	MN V	405.094	5	46
CA VI	370.022	7	45, 192, 162	MN V	405.654	8	46
FE VIII	370.432	10	365	NE II	405.852	9	57, 65, 488
C III	371.694	10	65, 168, 488	MN V	406.037	7	46
C III	371.747	10	65, 168, 488	ZR VI	406.481	200	545
C III	371.784	8	65, 168, 488	NE II	407.136	8	57, 65, 488
NA II	372.069	6	65, 488, 693	NA IV	408.682	8	65, 693
K V	372.148	10	192, 762	NA IV	409.615	8	65, 693
K V	372.462	4	192, 762	CA III	409.971	18	192, 366, 488
IN V	372.82	10	293	MN V	410.311	8	46
IN V	372.94	10	293	NA IV	410.371	10	65, 693
CA IX	373.802	10	535	MN V	410.459	5	46
CA IX	373.979	15	535	NA IV	410.540	6	65, 693
CA VI	373.997	7	45, 192, 762	MN V	410.611	8	46
MO VI	374.472	250	132	MN V	410.990	8	46
NA II	376.375	3	65, 488, 693	MN V	411.329	7	46
BI VI	376.660	8	5, 657	NA IV	411.333	7	65, 693
MO VI	377.540	400	132	MN V	411.585	7	46
CA IX	378.089	20	192, 535	B III	411.810	3	65, 195
IN V	378.61	17	293	K V	412.080	6	192
NB VII	378.901	200	132	NA IV	412.240	8	65, 693
NE III	379.308	7	57, 65, 488	CR VIII	413.01		359
IN V	381.56	11	293	K III	413.792	10	192, 488, 762
IN V	382.76	11	293	CA VII	414.663	12	192, 793
IN V	383.05	10	293	NA VI	415.505	4	692
PB VI	383.280	5	5	MN V	415.980	8	46
C IV	384.032	16	65, 168, 488	NE V	416.198	80	488, 544
C IV	384.178	17	65, 168, 488	FE V	417.382	6	47
FE V	384.957	6	47	NA VI	417.595	6	692
C III	386.203	14	34, 65, 488	FE V	418.033	6	47
IN V	386.21	17	293	FE V	418.457	5	47
IN V	386.70	10	293	C IV	419.525	13	65, 168, 488
FE V	387.500	6	47	F IV	419.644	14	42, 173, 176
K V	387.800	6	192, 762	C IV	419.714	14	65, 168, 488
NE IV	388.218	100	57, 488, 544	SR IV	419.81	25	758
IN V	388.91	14	293	F IV	420.041	15	42, 173, 176
S VI	388.940	6	488, 598	F IV	420.727	16	42, 173, 176
SC VIII	389.892	12	17, 547	NE IV	421.584	150	57, 65, 488
P V	390.700	8	597	NE IV	421.609	150	544
S VI	390.859	8	488, 598	FE V	422.287	6	47
SC IX	390.888	8	360	K VIII	422.511	10	192, 535
BI VI	391.215	8	5, 657	SC X	422.850	4	17
CL V	392.433	5	43	Y V	424.796	40	545
FE V	392.907	6	47	CA V	425.000	15	192
K IV	393.142	10	192, 566	HG	425.26	4	26
FE V	393.270	5	47	K V	425.588	7	45, 192, 762
IN V	393.89	25	293	HG	425.80	4	26
FE V	393.911	4	47	HG	426.15	5	26
SC IX	394.652	12	17, 360	MO VIII	427.660	1000	132
W	395.0	8	781	K VI	428.538	5	192
K VI	395.395	5	192, 762, 793	F III	429.511	10	42, 174, 176
O III	395.558	12	65, 168, 488	K II	429.656	3	192
CA	397.178	4	192	K II	429.923	3	192
K VII	398.931	8	547	F III	430.154	11	42, 174, 176

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F III	430.218	8	174, 176	ZN IV	474.54	6	25
CR VIII	430.71		359	MO VIII	474.941	250	132
F IV	430.758	15	42, 173, 176	P V	475.610	8	597
CA VII	433.609	6	192, 598	A VII	475.656	8	549
CA IV	434.570	12	192, 762	A VII	475.733	2	549
K III	434.722	15	192, 762	PB IV	478.355	8	5, 139, 656
K III	435.676	10	192, 762	A VII	479.379	12	549
MN V	436.174	8	46	A VII	479.485	2	549
CR V	438.62	30	790	K VII	479.768	5	192, 793
CR V	438.65	40	790	V V	481.49	2	279
CR V	438.66	50	790	BR V	482.11	10	577
PB V	438.911	10	5, 466	RB III	482.45	30	758
K III	440.429	15	192	Y V	482.973	60	545
SR IV	442.77	25	758	NE V	482.987	50	488, 544
CA IV	443.821	15	192, 567, 762	V V	482.99	5	279
K III	444.344	15	182, 192, 488	K VII	484.241	5	192, 793
NA V	445.046	6	65, 692	CA V	484.368	3	192
NA V	445.190	7	65, 692	V V	484.47	4	279
NE II	446.252	8	57, 65, 488	F II	484.600	8	42, 176
A V	446.949	8	488, 549	K II	485.084	5	192
NE II	447.813	8	57, 65, 488	K II	485.513	3	192
K III	448.595	15	182, 192, 488	K II	485.626	2	192
A V	449.065	18	488, 549	CA	485.636	3	192
CA IV	450.565	10	192, 567, 762	CA	486.160	3	192
SE VI	452.83	2	289, 651	CL IV	486.172	8	44
V VII	456.29		359	NA VII	486.740	4	691
K V	456.328	8	45, 192, 762	K VII	487.080	8	192, 793
Y V	456.384	100	545	NE III	488.103	8	57, 65, 488
F II	457.177	6	42, 176	K VI	488.120	10	192, 598
A VI	457.475	20	549	SR IV	488.74	30	758
SI IV	457.75		65, 488	NE III	488.868	7	57, 65, 488
K VI	458.048	7	192, 793	NE III	489.501	10	57, 65, 488
SI IV	458.09		65, 238	NA VI	489.580	5	692
A VI	459.320	10	549	RB III	489.95	25	758
C III	459.462	13	65, 168, 488	NE III	490.310	7	57, 65, 488
C III	459.521	14	65, 168, 488	F IV	490.566	13	42, 173, 176
C III	459.633	15	65, 168, 488	F IV	490.997	16	42, 173, 176
NA V	459.897	7	65, 692	NE III	491.050	9	57, 65, 488
K VI	460.438	8	192, 793	NA VI	491.240	3	692
NE II	460.725	15	57, 65, 488	NA VI	491.340	6	692
NA V	461.051	10	65, 692	K VII	491.702	6	192, 793
A V	461.227	6	488, 549	NA VII	491.950	4	691
CA VIII	461.700	5	192, 793	NA VI	494.382	7	692
A VI	462.007	25	549	SC VIII	494.446	6	17, 547
MN VII	462.363	15	365	K II	495.144	6	192
NE II	462.388	14	57, 65, 488	PB IV	496.37	8	5, 139
SR IV	462.70	25	758	HG	496.44	5	26
NA V	463.263	12	65, 692	K III	497.104	15	192, 488, 762
A V	463.938	7	488, 549	PB IV	499.95	9	5, 139
CR V	464.03	100	790	RB III	500.25	30	758
K VI	464.270	10	192, 793	HG	500.48	6	26
F V	464.370	5	172, 176	SR IV	500.51	50	758
NB V	464.555	100	132	HG	502.13	5	26
S VI	464.654	10	488, 598	BR VII	502.69	4	577
SE VI	464.80	00	289, 651	BR VI	503.70	8	577
F III	465.113	10	42, 174, 176	CA VI	505.199	8	192
F V	465.374	6	172, 176	CD IV	506.31	19	25, 293
F V	465.978	7	172, 176	O III	507.391	16	65, 168, 488
CA VII	466.227	6	192	O III	507.683	17	65, 168, 488
K III	466.793	15	192, 488, 762	O III	508.182	18	65, 168, 488
ZN IV	466.91	6	25	F III	508.384	10	174, 176
K IX	466.943	4	361	A III	508.434	9	59, 65
F V	466.995	5	172, 176	A III	508.595	4	65, 337
MN VII	467.662	30	365	B III	510.865	3	65, 195
NB V	468.325	150	132, 760	HG	511.32	5	26
NE IV	469.817	200	57, 488, 544	HE I	512.094	3	65, 488
NE IV	469.865	200	57, 488, 544	HG	512.61	5	26
K III	470.089	20	192, 359, 488	F II	514.945	6	42, 176
NB VII	470.590	300	132	BR VI	515.16	8	577
K III	471.569	15	192, 488, 762	HE I	515.612	4	65, 488
F II	471.949	3	176	K II	515.653	3	192
F II	471.990	6	42, 176, 488	BR VI	516.45	8	577
ZN IV	472.08	5	25	RB III	516.78	30	758
ZN IV	472.65	6	25	K VII	517.928	5	192, 793
V VII	472.80		359	K II	518.249	3	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
B III	518.253	7	65, 195	CL III	556.232	6	43, 488
K VI	519.372	5	192	CL III	556.605	7	43, 488
BR VII	520.26	4	577	CL III	557.118	7	43, 488
K III	520.611	10	192, 488, 762	CA X	557.740	4	361
ZR VI	522.007	300	545	NE VI	558.595	5	544
HE I	522.208	5	65, 488	CA V	558.602	10	169, 192
HG	523.74	5	26	AL III	560.390	7	190, 488
FE IV	525.68	100	357	CL III	561.530	7	43, 488
O III	525.795	18	65, 168, 488	CL III	561.686	7	43, 488
FE IV	526.28	75	357	CL III	561.738	7	43, 488
K VII	526.448	4	192, 793	NE VI	562.805	15	544
FE IV	526.60	60	357	K VIII	564.462	12	192, 535, 793
CD IV	527.06	18	25, 293	I IV	565.55	5	32
A V	527.693	6	488, 549	CD IV	567.03	18	25, 293
CA III	528.286	8	192	SR IV	567.11	30	758
A III	529.900	9	59, 65	F III	567.620	6	174, 176
CD IV	531.08	18	25, 293	F III	567.676	10	174, 176
CD IV	531.50	18	25, 293	F III	567.737	9	42, 174, 176
BR V	532.00	10	577	F III	567.794	6	174, 176
MO VI	533.820	190	132	ZR VI	568.277	300	545
CI IV	534.727	8	43	NE V	568.418	40	488, 544
F VI	535.204	10	171, 176	HO	568.62	5	26
CL IV	535.666	7	43	BR IV	569.13	10	574
HE I	537.024	7	65, 488	NE V	569.759	25	488, 544
CL IV	537.606	9	43	NE V	569.830	50	488, 544
O II	537.830	9	65, 168, 488	IL IV	570.50	4	33, 466
CL V	538.032	5	38	F IV	570.636	14	42, 173, 176
C III	538.075	11	65, 168, 488	SC VII	571.256	4	358
C III	538.080	11	34, 65, 488	F IV	571.302	14	173, 176
C III	538.149	12	34, 65, 488	F IV	571.384	15	42, 173, 176
O II	538.256	10	65, 168, 488	NE V	572.106	25	488, 544
C III	538.312	13	34, 65, 488	NE V	572.336	80	488, 544
O II	538.318	7	65, 168, 488	F IV	572.657	16	42, 173, 176
K II	539.731	3	192	PB III	572.73	7	5
SB IV	539.90	6	277	SC V	573.356	10	17, 359
TE VI	540.27	4	30, 583	FE IV	574.5	50	286
MO VI	541.282	1000	132	CA III	575.580	6	192
CD IV	541.73	18	25, 293	SR IV	576.10	25	758
MN IV	541.860	7	47	RB III	576.43	25	758
NE IV	542.073	100	57, 488, 544	BR IV	576.57	10	574
CL V	542.229	8	549	FE IV	576.8	40	286
CA V	542.290	10	192	TE VI	577.08	6	30, 583
CL V	542.297	6	38	A II	580.261	8	59, 65, 488
P V	542.567	7	597	K V	580.319	15	45, 192, 762
CD IV	542.59	25	25, 293	RB III	581.26	30	758
CA	542.842	3	192	MN IV	581.453	7	47
CL V	542.868	4	549	RB IX	583.37	16	465
P V	544.914	8	597	A II	583.437	8	59, 65, 488
CL V	545.114	10	549	HE I	584.331	10	65, 488
SR IV	545.55	35	758	MN IV	584.443	7	47
K II	546.123	3	192	MN IV	584.826	6	47
CL V	546.329	6	549	MN IV	585.217	8	47
CD IV	546.53	25	25, 293	A VII	585.754	15	549
RB III	546.56	25	758	K V	586.322	10	45, 192, 762
F II	546.846	6	42, 176, 488	BR IV	586.69	10	574
CL V	547.630	10	549	SC V	587.935	6	17, 359
CS III	547.8	2	235	SE VI	588.01	4	651
BR V	547.94	10	577	RB III	589.42	25	758
MO VI	548.234	500	132	I VII	591.51	4	32, 230
CA VII	550.188	6	192	RB III	594.93	25	758
C3 III	550.2	2	235	CS III	595.7	2	235
A VI	551.371	8	549	HG	596.21	6	26
CA VII	551.448	6	192, 793	O III	597.818	15	65, 168, 488
CL VI	551.992	10	43, 535	CL VII	598.211	12	546
CA	552.005	4	192	O III	599.598	18	65, 168, 488
CL IV	552.017	7	43, 535	AS V	600.74	3	651
CL IV	553.297	6	43	K II	600.765	6	39, 192, 488
O IV	553.328	16	65, 168, 488	SE V	600.96	5	289, 651
A III	553.470	9	59, 65, 488	BR IV	601.26	10	574
CD IV	554.04	18	293	SE V	601.74	4	289, 651
O IV	554.074	17	65, 168, 488	I IV	601.86	5	32
O IV	554.514	18	65, 168, 488	RB III	602.09	40	758
CL IV	554.619	7	43	NE I	602.712	4	57, 65
O IV	555.262	16	65, 168, 488	K V	603.429	8	192, 762
CL VI	555.485	20	43, 535	A III	604.152	10	59, 65

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL VII	604.785	20	44, 546	CS III	645.0	4	235
F II	605.668	7	42, 176, 488	N II	645.167	10	65, 168, 488
HG	605.81	6	26	BR V	645.49	10	577
SE VI	605.89	4	651	K IV	646.188	15	169, 192
F II	606.284	6	42, 176, 488	KR III	646.417	20	58
F II	606.805	8	42, 176, 488	CA V	646.570	8	192, 567
SE II	606.925	5	42, 176, 488	MN IV	646.815	8	47
F VII	607.17	4	289, 588	BA IV	647.3	5	235
F II	607.472	6	42, 176, 488	MN IV	647.952	8	47
K II	607.931	5	39, 192, 488	MN IV	648.722	8	47
F II	608.065	7	42, 176, 488	I VII	649.12	20	32, 230
O IV	608.395	14	65, 168, 488	HG	652.09	5	26
SE VI	608.44	1	289, 651	SE IV	652.67	10	289, 585
HG	608.98	5	26	BA IV	653.8	5	235
W	609.2	8	781	SE IV	654.19	9	289, 585
HG	609.24	5	26	I IV	654.22	4	32
O IV	609.829	15	65, 168, 488	I IV	654.56	4	32
RB III	611.77	30	758	MN IV	654.891	7	47
I IV	612.46	6	32	CA IV	656.038	15	192, 359, 567
K II	612.621	6	39, 192, 488	F III	656.125	10	42, 174, 176
SE V	613.00	8	289, 651	F III	656.878	11	42, 174, 176
SE V	614.35	4	289, 651	S IV	657.34	5	485, 488
I IV	615.17	4	32	F III	658.337	12	42, 174, 176
HG	615.51	5	26	KR III	659.716	22	58
NE I	615.623	5	57, 65, 488	BR VI	661.05	10	577
AS V	615.95	4	651	S IV	661.42	6	485, 488
K VI	616.136	6	192, 793	A II	661.868	15	59, 65, 488
CR IV	618.22	40	47, 488	KR II	663.039	20	58
CR IV	618.27	60	791	MN IV	663.131	8	47
NE I	618.668	5	57, 65, 488	S V	663.155	5	41, 488
CR IV	618.81	60	791	BR IV	663.80	10	574
NE I	619.092	4	57, 65, 488	MN IV	663.897	8	47
CR IV	619.12	40	488	SR IV	664.43	70	758
CR IV	620.65	100	47, 488	MN IV	664.843	8	47
BR V	621.11	10	577	BR III	665.54	10	586
CR IV	621.33	60	47, 488	A II	666.014	10	59, 65, 488
K IX	621.422	5	178, 192, 361	MN IV	666.050	7	47
HG	622.84	6	26	MN IV	666.363	6	47
K V	623.016	8	192, 793	CR IV	666.5	100	488
O IV	625.130	14	65, 168, 488	MN IV	666.700	8	47
O IV	625.852	14	65, 168, 488	I III	666.81	6	32
NE I	626.819	6	57, 65, 488	MN IV	667.009	6	47
SC III	627.082	1	17	CR IV	667.31	75	488
SC III	627.858	2	17	CS II	668.43	12	418
RB IX	628.62	16	465	KR II	668.827	20	58, 69
ZR IV	628.68	100	342, 347, 488	CA IV	669.725	10	192, 359, 567
CR IV	628.97	100	488	MN IV	669.799	7	47
CR IV	629.73	50	488	SE IV	670.11	10	289, 585
O V	629.732	15	65, 168, 488	A II	670.947	10	59, 65, 488
BR IV	630.12	10	574	K VII	671.504	5	192, 793
CR IV	630.28	80	488	SE IV	671.83	8	289, 585
NI III	630.711	500	661	A II	671.854	10	59, 65, 488
P IV	631.765	7	41, 488, 597	KR III	672.330	25	58
BR V	632.30	9	577	P V	673.888	10	597
GA III	632.92	2	402	F IV	676.130	14	42, 173, 176
ZR IV	633.58	100	342, 347, 488	KR III	676.564	25	58
ZR IV	633.66	20	342, 347, 488	NI III	676.941	500	661
SE VII	634.56	4	289, 588	B III	677.004	5	65, 195
GA III	635.02	2	402	B III	677.147	6	65, 195
SE VII	635.80	4	588	F IV	677.154	13	42, 173, 176
SE IV	635.94	10	289, 585	BR III	677.19	10	574, 586
A III	637.282	20	59, 65, 488	F IV	677.224	15	173, 176
CA V	637.928	8	192, 567	V IV	677.26	10	790
CS II	639.42	12	418	V IV	677.35	50	488, 790
I VII	639.82	6	32, 230	ZN III	677.56	8	25, 472
HG	641.19	5	26	RR III	677.70	8	586
W	641.5	10	781	ZN III	677.93	6	25, 472
A III	641.808	12	59, 65, 488	V IV	678.72	35	488, 790
BR IV	642.22	10	574	F IV	679.003	13	173, 176
SE III	642.77	8	289, 587, 588	F IV	679.217	16	42, 173, 176
A III	643.256	9	59, 65, 488	A II	679.410	8	59, 65, 488
O II	644.148	12	65, 168, 488	KR III	680.119	22	58
N II	644.621	8	65, 168, 488	A IV	683.278	10	59, 65, 488
N II	644.825	9	65, 168, 488	V IV	684.38	80	488, 790
SE III	644.84	8	289, 587	V IV	684.44	50	488, 790

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N III	684.996	14	65, 168, 488	K IV	745.264	10	39, 192
N III	685.513	15	65, 168, 488	K IV	746.350	8	39, 192
N III	685.816	16	65, 168, 488	AS IV	747.57	9	584, 651
KR III	686.254	20	58	AS IV	748.33	8	584, 651
N III	686.335	14	65, 168, 488	S IV	748.40	5	485, 488
C II	687.059	10	65, 168, 488	TE IV	749.30	5	30, 583
C II	687.355	11	65, 168, 488	SI IV	749.940	100	310
A IV	689.007	12	59, 65, 488	S IV	750.23	5	485, 488
TE VI	690.81	4	30, 583	KR II	752.051	30	58, 69, 488
CR IV	693.93	100	488, 791	AG II	752.80	30	283
AL III	695.817	5	190, 488	NB V	753.011	50	132, 760
AL III	696.212	4	190, 488	S IV	753.76	5	485, 488
MO IV	696.833	100	591	CE IV	754.6	30	335
KR III	698.037	20	58	K IV	754.673	8	39, 192
A IV	700.277	8	59, 65	B III	758.476	1	65, 195
BR VI	701.46	8	577	O V	758.677	10	65, 168, 488
O III	702.332	16	65, 168, 488	SE IV	758.75	6	289, 585, 651
O III	702.822	16	65, 168, 488	O V	759.440	10	65, 168, 488
O III	702.899	17	65, 168, 488	O V	760.229	10	65, 168, 488
O III	703.850	18	65, 168, 488	O V	760.445	12	65, 168, 488
I III	705.11	8	32	AS IV	760.80	10	584, 651
S VI	706.480	6	488, 598	O V	761.130	10	65, 168, 488
SR IV	710.35	45	758	AJ IV	761.99	8	584, 651
RB II	711.17	9	417, 488	O V	762.001	10	65, 168, 488
K VI	715.999	5	192, 793	N III	763.340	14	65, 168, 488
U	718.2	10	411	TE V	763.39	6	30, 277
NI III	718.480	500	259	U	763.7	5	411
O II	718.484	17	65, 168, 488	NB V	763.752	300	132, 760
BR IV	718.50	10	400, 574	N III	764.357	15	65, 168, 488
O II	718.562	16	65, 168, 488	N IV	765.140	17	65, 168, 488
BA IV	719.9	5	235	TE V	768.38	5	30, 277
K V	720.432	6	192, 762	RB III	769.03	25	758
XE III	720.80	6	1	A III	769.152	12	65, 169, 488
KR II	722.036	50	58, 69	K VI	771.103	5	192
CS III	722.2	2	235	NB V	774.017	150	132, 760
SB III	722.41	6	31, 407	PB VI	775.61	6	5
A II	723.353	14	59, 65, 488	N II	775.957	12	65, 168, 488
TE V	724.07	5	30, 277	AG III	776.38	35	284
K V	724.420	8	192, 762, 793	TI IV	776.82	10	488, 604
SB III	724.81	8	407	SE VII	778.17	4	588
A II	725.542	9	59, 65, 488	NI III	778.806	500	259
TE V	726.86	5	30, 277	BI VI	778.99	8	5, 466
TI IV	729.39	0	604	TI IV	779.14	20	488, 604
KR II	729.402	20	58, 69	BR VII	779.58	8	577
S III	729.529	4	488, 598	PD III	781.019	1000	674
NI III	729.820	500	259	TI IV	781.78	20	488, 604
AG III	730.04	35	284	KR II	782.084	25	58, 69, 488
SC III	730.60	0	17, 488, 688	PB VI	782.23	8	5
AG II	730.83	25	283	CS III	782.6	3	235
A II	730.929	8	59, 65, 488	KR II	783.715	20	58, 69, 488
SC III	731.66	1	17, 488, 688	TE IV	784.50	5	30, 583, 655
K V	731.858	12	192, 762	I III	784.64	7	32
SB III	732.33	5	31, 407	I III	784.80	7	32
S III	732.376	5	488, 598	KR III	785.968	25	58
S III	735.251	4	488, 598	S V	786.476	8	41, 488
BR IV	735.66	10	400, 574	O IV	787.710	15	65, 168, 488
NE I	735.89	30	57, 65, 488	GE	787.73	6	130
BR VII	736.09	10	577	S III	788.984	4	488, 598
K IV	737.144	10	39, 192	U	790.0	5	411
AS V	737.18	5	651	O IV	790.103	13	65, 168, 488
V IV	737.84	100	488, 790	HG III	790.15	6	26, 65, 331
BI VI	738.17	10	5, 656, 657	GE	790.18	6	130
S III	738.474	4	488, 598	O IV	790.203	16	65, 168, 488
BA IV	740.0	5	235	I III	795.52	8	32
A II	740.263	12	59, 65, 488	O II	796.661	10	65, 168, 488
HG III	740.69	6	26, 65, 331	S III	796.692	4	488, 598
CE	740.7	5	411	SE III	798.30	6	289, 587
RB II	741.43	15	417, 488	AG III	799.41	40	284
CE IV	741.8	40	335	A IV	800.573	5	59, 65
K IV	741.950	10	39, 192	A IV	801.086	10	59, 65, 488
TE VI	743.05	4	30, 583	A IV	801.409	10	59, 65, 488
BI VI	743.13	10	5, 466, 657	A IV	801.913	5	59, 65
NE I	743.70	12	57, 65, 488	PB VI	802.06	10	5
PB VI	744.52	5	5	SE V	804.31	5	651
S IV	744.92	5	485, 488	TE IV	804.89	5	30, 583

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
KR IV	805.763	7	58, 65	S V	857.872	5	41, 488
PB VI	806.16	5	5	C II	858.094	8	65, 168, 488
F I	806.964	150	420, 488	C II	858.561	9	65, 168, 488
SE V	808.57	0	289, 651	KR II	859.040	20	58, 69, 488
CS II	808.77	20	418	P III	859.667	8	488, 597
F I	809.599	125	420, 488	S V	860.462	5	41, 488
NI III	811.568	500	259	KR III	862.578	35	58, 65
PB VI	813.34	5	5	PB V	863.99	15	5, 466
CS II	813.85	20	418	BI V	864.403	15	5, 656
SI IV	815.055	300	488, 310	BI V	864.499	15	5, 656
PB VI	815.95	6	5	KR II	864.812	20	58, 69, 488
S IV	815.97	5	485, 488	I III	865.97	5	32
KR IV	816.822	18	58, 65	AS III	866.34	10	404, 542, 580
BI	817.28	2	5	KR II	868.869	25	58, 69, 488
BI	817.37	2	5	KR III	870.825	20	58, 65
BI	817.70	2	5	AS III	871.07	10	580
SI IV	818.136	300	488, 310	A III	871.099	10	59, 65, 488
KR II	818.147	25	58, 69, 488	P V	871.396	15	597
PB VI	819.30	8	5	AS III	871.79	8	404, 580
AS II	819.60	7	571	BI IV	872.602	15	5, 449
BI IV	820.35	10	5, 449	TE V	872.85	5	30, 277
KR II	821.161	20	58, 69, 488	P IV	875.132	11	597
SE III	823.87	6	14, 289	A III	875.534	9	59, 65, 488
P IV	824.733	7	41, 469, 488	A I	876.063	4	59, 65, 488
S III	824.887	4	488, 598	KR III	876.674	22	58, 65
NI III	826.138	500	259	P IV	877.493	11	597
KR II	826.432	22	58, 69, 488	TE VII	877.54	3	30, 655
PB VI	826.76	5	5	AS III	877.67	7	542, 575, 580
TE VII	826.94	3	30, 655	CS III	877.9	7	235
AS	827.4	5	411	TL I	878.04	2	33
PB VI	827.80	5	5	A III	878.728	12	488, 65
P IV	827.932	8	41, 488	PD III	878.732	900	674
PB VI	829.32	6	5	TL I	879.30	0	33
TE VII	830.21	2	30, 655	A I	879.949	3	59, 65
SE V	830.30	6	651	IN III	882.21	4	410
CE	830.4	20	411	CL V	883.127	4	38
SB V	830.70	5	31, 230, 408	A III	883.179	9	59, 65, 488
SE II	832.74	9	468, 488	TL I	884.07	0	33
O II	832.754	14	168, 488	KR II	884.144	30	58, 69, 488
O III	832.927	14	168, 488	MG II	884.697		592
O II	833.326	15	168, 488	MG II	884.719		592
I VII	833.63	6	32, 230	KR II	886.302	30	58, 69, 488
TE IV	833.64	5	30, 583	SE VI	886.85	0	289, 651
O III	833.742	16	168, 488	TE III	887.01	4	30, 353
A I	834.397	6	59, 65	A III	887.404	10	59, 65, 488
O II	834.462	15	168, 488	ZN II	888.62	8	472, 682, 754
GE	834.5	6	130	SB V	889.00	4	13, 31
SC	834.66	8	17	AS III	889.03	8	404, 580
CL II	834.67	10	345, 488	BR II	889.23	20	488, 568
A I	835.003	6	59, 65	XE III	889.28	15	335
U III	835.094	14	168, 488	PD III	889.294	1000	674
O III	835.292	16	168, 488	PB IV	890.72	8	5, 139
GE	835.3	6	130	KR II	890.982	20	50, 69, 488
S III	836.315	4	488, 598	AS IV	892.68	10	584, 651
KR III	837.666	22	58, 65	CU II	893.676	80	488, 795
SE V	839.46	4	289, 651	AL III	893.905	5	190
A IV	840.029	15	59, 65, 488	CL V	894.340	4	38
TE IV	840.31	8	30, 583	PB V	894.40	8	5, 466
KR IV	842.035	22	58, 65	TE V	895.23	8	30, 277
BE II	842.057	7	488, 541	BR II	896.64	10	488, 568
NI III	842.142	500	488, 661	SB VI	897.80	3	31, 655
A IV	843.772	20	59, 65, 488	KR III	897.801	40	58, 65
KR II	844.058	25	58, 69, 488	A IV	901.168	9	59, 65
TE IV	845.84	5	30, 583	CS II	901.34	20	418
S V	849.241	6	41, 488	BI V	901.60	8	5
AS III	849.91	15	404, 580	TE IV	903.06	4	30, 583
A IV	850.602	25	59, 65, 488	C II	903.609	10	65, 168, 488
BR V	850.79	8	400, 577	C II	903.950	11	65, 168, 488
AS IV	851.74	10	584	C II	904.134	12	65, 168, 488
TE VII	852.03	3	30, 655	C II	904.468	10	65, 168, 488
S V	852.185	5	141, 488	BR II	905.99	10	488, 568
SE VII	854.37	6	289, 468, 588	PB V	906.61	10	5, 466
KR III	854.133	25	58, 65	S II	906.87	3	322, 488
S V	854.792	7	41, 488	MG II	907.375		592
AL III	856.768	5	190	MG II	907.412		592

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	908.73	9	17	TE	V	954.33	5 30, 277
S	910.49	3	322, 488	KR	III	954.774	4 58
TE	910.88	4	30, 583	N	IV	955.335	10 65, 168, 488
KR	911.384	25	58, 69, 488	F	I	955.545	750 420, 488
S	912.74	3	322, 488	SN	IV	956.249	500 408, 681
TE	912.87	4	30, 353, 655	AS	IV	956.87	9 584, 651
SE	912.89	9	468, 488	AU	II	957.73	20 550
CU	914.214	80	488, 795	F	I	958.524	500 420, 488
GE	915.00	8	406	AU	II	959.48	20 550
N	915.603	10	65, 168, 488	SE	IV	959.61	6 289, 585
PB	915.72	9	5, 466	AS		960.2	5 411
IN	915.82	7	410	I	III	961.17	6 32
HG	915.827	7	65, 452	CL	II	961.49	10 169, 345
N	915.955	10	168, 488	KR	I	963.34	1 58, 475, 488
N	916.004	11	168, 488	AS	III	963.80	8 404, 580
N	916.700	12	168, 488	SC		964.46	10 17
KR	917.434	20	58, 69, 488	KR	II	964.962	30 58, 69, 488
I	919.28	7	32	XE	III	965.540	10 65
O	919.78	15	63	TE	III	965.76	3 30, 353
A	919.78	15	59, 65, 488	PB	II	967.23	10 163
I	920.38	5	32	DI	IV	967.60	9 5, 449
GE	920.57	8	488	K	VI	968.518	5 192
H	920.963	10	488	DI	IV	968.79	8 5, 449
N	921.962	10	65, 168, 488	BI		969.85	2 5
PB	922.49	10	5, 139, 656	AS	IV	971.13	10 584, 651
N	922.507	10	65, 168, 488	GE	V	971.3	6 130, 467
N	923.045	10	65, 168, 488	D	I	972.272	40 487
H	923.150	12	488	H	I	972.537	40 488
N	923.211	12	65, 168, 488	CA	V	973.437	6 192
N	923.669	10	65, 168, 488	TE	III	973.58	3 30, 353
SC	924.05	8	17	F	I	973.895	350 420
N	924.274	10	65, 168, 488	AS	IV	974.61	9 542, 575, 584
FE	926.220	60	292, 488	BI		975.17	2 5
H	926.226	14	488	F	I	976.217	100 420
CS	926.75	20	418	F	I	976.505	40 420
FE	929.538	30	292, 488	C	III	977.026	18 65, 168, 488
FE	929.612	30	292, 488	F	I	977.745	100 420
FE	930.030	30	292, 488	RU	III	979.428	500 301
FE	930.165	30	292, 488	AS	IV	980.58	10 584, 651
FE	930.219	30	292, 488	ZN	II	984.16	10 488, 682
PB	930.36	8	5	BR	II	984.93	10 400, 488, 568
FE	930.558	30	292, 488	CL	IV	984.952	7 38
H	930.748	17	488	SC		985.20	8 17
AS	930.80	8	584, 651	ZN	II	986.54	9 480, 682
MO	930.855	100	591	PB	II	986.71	10 163
FE	931.142	25	292, 488	RU	III	986.838	500 301
XE	931.25	10	1	AS	V	987.69	10 651
O	932.046	10	63	PB	VI	987.88	6 5
A	932.046	10	59, 65, 488	O	I	988.776	15 488, 794
PB	932.18	10	5, 139, 657	GE	III	988.96	12 406
GE	936.70	8	406	Y	III	989.21	1 56, 488
S	937.41	3	322, 488	N	III	989.790	16 65, 168, 488
U	937.548	20	487	SI	II	989.867	100 488, 310
S	937.69	3	322, 488	U		990.0	10 411
H	937.804	22	488	N	III	991.514	14 65, 168, 488
GE	938.90	4	406	N	III	991.579	17 65, 168, 488
XC	939.16	12	1	RH	III	991.617	500 677
BR	939.60	10	400, 577	RH	III	992.482	400 677
RU	940.090	500	301	SI	II	992.679	200 488, 310
S	944.517	5	488, 598	NB	IV	993.54	60 412
KR	945.45	1	58, 475, 488	RU	III	994.557	500 301
AS	946.45	9	584, 651	TE	VII	995.66	2 30, 655
KR	946.52	1	58, 475, 488	GE	III	995.72	15 406
MG	946.703		592	PB	III	995.74	7 5, 686, 689
MG	946.769		592	PB	II	995.89	10 163
BR	948.97	20	488, 568	Y	III	996.37	2 56, 488
BR	949.10	10	400	GE	III	996.50	10 406
D	949.485	25	487	SE	IV	996.69	6 289, 585
H	949.743	25	488	TE	IV	996.86	4 30, 583, 655
P	950.669	10	41, 488	P	III	998.000	8 488, 597
TE	950.93	6	30, 353	AS	IV	999.25	9 584
KR	951.06	0	58, 488	CA	V	1000.310	6 192
F	951.871	500	420, 488	TE	III	1000.42	3 30, 353
I	952.74	5	32, 230	KR	I	1001.048	2 58, 475, 488
KR	953.42	1	58, 475, 488	AS	II	1002.27	8 488, 572

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB IV	1002.76	50	412	BR II	1040.92	10	400
XE III	1003.36	6	1	O I	1040.941	15	488, 794
AS III	1003.43	7	542, 575, 584	GE III	1040.99	12	406
KR I	1003.542	2	58, 475, 488	SR IV	1042.16	7	31, 290
P III	1003.592	10	488, 597	SN IV	1044.487	1000	408, 681
GE V	1004.2	6	130, 467	CU II	1044.522	80	488, 795
TE III	1004.45	3	30, 353	CU II	1044.744	80	488, 795
AG II	1005.32	15	283	GE V	1045.5	7	130, 467
NB IV	1005.72	400	412	BI VI	1046.183	8	5, 466
TE III	1006.46	3	30, 353	XE III	1047.801	9	65
NB IV	1007.05	500	412, 760	A I	1048.218	25	59, 65, 488
BI III	1007.14	5	5	PB III	1048.89	30	5, 686
BI III	1007.24	5	5	BR II	1049.00	20	488, 568
TE VII	1007.80	1	30, 655	SE II	1049.65	10	468, 488
CL III	1008.777	6	38, 488	PB II	1049.82	10	163
AS II	1009.44	8	488, 572	RI VI	1050.130	10	5, 466
RH III	1009.600	500	677	PB II	1050.77	10	163
BI	1009.71	2	5	SB IV	1051.33	10	290, 655
SB II	1009.80	4	31, 414	AS V	1051.64	4	651
C II	1009.854	9	65, 168, 488	XE II	1051.920	10	61
RU III	1009.872	500	301	AS V	1056.71	5	651
C II	1010.074	10	65, 168, 488	SI II	1057.047	100	310
NB IV	1010.19	500	412	SB II	1057.32	8	414
C II	1010.369	10	65, 168, 488	SE II	1057.41	9	289, 468, 488
GE III	1011.21	15	406	SN IV	1058.370	100	681
BR II	1012.10	10	400	SN IV	1058.586	50	681
GE III	1012.31	10	406	GE III	1058.91	12	406
SE II	1013.40	9	289, 468, 488	CR III	1059.13	60	47, 488, 490
SE II	1014.01	9	468, 488	CR III	1060.15	60	47, 488, 490
RU III	1014.676	500	301	CR III	1061.04	60	47, 488, 490
CL III	1015.023	7	38, 488	CE	1062.2	10	411
AS II	1015.38	10	488, 572	S IV	1062.672	6	38, 488
SC	1015.50	9	17	CR III	1062.68	50	47, 488, 490
HR II	1015.54	20	488, 568	CL II	1063.83	10	345, 488
PB II	1016.61	10	163	AG II	1065.49	10	283
CR III	1017.14	50	488, 490	SB III	1065.97	5	31, 407
CR III	1017.31	50	488, 490	CR III	1066.23	50	488, 490
CR III	1017.57	50	488	XE III	1066.391	10	65
SB VI	1017.65	5	655	SI IV	1066.632	500	310
XE III	1017.680	25	65	A I	1066.660	15	59, 65, 488
BI	1018.17	2	5	CR III	1068.41	80	488, 490
TE III	1018.95	3	30, 353	PB III	1069.12	10	5, 689
SN IV	1019.719	500	408, 681	BI VI	1070.34	10	5, 466
AS II	1021.96	10	488, 572	CL II	1071.05	20	38, 345, 488
BI VI	1023.860	10	5, 466	TE VI	1071.41	5	30, 583
SB II	1024.19	4	414	BR II	1071.72	15	400
D I	1025.443	60	487	CL II	1071.76	10	38, 345, 488
P IV	1025.579	7	41, 488	AG II	1072.23	12	283
H I	1025.722	60	488	GE V	1072.5	6	130, 467
XE I	1027.04	10	1, 476	S IV	1072.992	6	38, 488
O I	1027.433	20	488, 794	AU II	1073.09	40	550
TI IV	1028.58	4	33, 466	SN IV	1073.407	1000	291, 681
PB IV	1028.61	30	5, 139, 656	XE II	1074.476	15	1, 61
AS V	1029.50	10	651	S III	1077.135	8	488, 598
KR I	1030.020	2	58, 488	TE IV	1077.94	6	30, 583
SC	1030.32	8	17	SB III	1078.10	5	407
CR III	1030.47	60	47, 488, 490	I III	1078.58	6	400
P IV	1030.545	8	41, 488	CL II	1079.08	15	38, 345, 488
O VI	1031.912	10	65, 168, 488	TL IV	1079.65	4	33, 466
TE V	1033.10	5	30, 277	CE	1080.6	5	411
P IV	1033.135	7	41, 488	AS II	1082.40	10	488, 572
CR III	1033.23	50	47, 488, 490	N II	1083.990	20	488, 794
CR III	1033.45	50	47, 488, 490	N II	1084.579	30	488, 794
SE II	1033.60	10	468, 488	HG	1085.7	5	130
CR III	1033.69	100	47, 488, 490	N II	1085.707	50	488, 794
GA II	1033.69	8	488, 652	GE V	1086.5	5	130, 467
I II	1034.655	10000	344	SN IV	1087.496	200	681
P IV	1035.505	8	41, 488, 597	NI VI	1087.97	50	286
SB VI	1035.85	10	655	GE V	1088.3	8	130, 467
CR III	1035.93	50	47, 488, 490	CE	1088.4	5	411
CR III	1036.03	100	47, 488, 490	XE I	1088.94	10	1, 476
BE II	1036.271	8	488, 541	SN V	1089.347	200	280, 681
C II	1036.330	12	65, 168, 488	GE V	1089.4	5	130, 467
C II	1037.020	13	160, 400, 794	GE V	1092.0	5	130, 467
O I	1039.233	20	488, 794	NI VI	1093.37	40	286

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I III	1094.20	8	400	HG VI	1153.25	1	26
SB II	1094.71	4	31, 414	PB V	1157.91	9	5, 466
N I	1095.940	35	334, 794	SN III	1158.333	1000	291, 681
N I	1096.322	35	334, 794	V III	1159.77	50	488, 791
FE II	1096.616	20	292, 488	I II	1160.562	10000	344
N I	1096.749	35	334, 794	SN V	1160.735	200	280, 681
FE II	1096.793	20	292, 488	SN II	1161.412	500	448, 681
FE II	1096.886	30	292, 488	CR III	1161.43	50	488, 490
SN IV	1096.916	300	681	MN II	1162.017	50	141, 488
N I	1097.245	50	334, 794	MN II	1163.325	40	141, 488
N I	1097.990	25	334, 794	KR I	1164.868	4	58, 475, 488
N I	1098.103	40	794	PB III	1165.03	7	5, 686
N I	1098.264	40	334, 794	LI II	1166.4	2	700
BI II	1099.20	10	5, 138	I II	1166.482	20000	344
XE II	1100.432	10	61, 65	PB III	1166.96	7	5, 689
XE I	1100.46	15	1	W	1168.2	8	781
N I	1101.293	40	334, 794	PT II	1168.282	40	671
S II	1102.32	3	322, 488	TE IV	1168.45	4	30, 583
AU II	1103.32	20	550	MO V	1169.325	100	591, 761
BI IV	1103.357	8	5, 440	PT II	1169.741	40	671
BI IV	1103.423	8	5	SB VI	1169.94	5	655
BI IV	1103.509	8	5	AS III	1172.16	10	404, 580
SB V	1104.25	7	13, 31, 408	GE III	1173.78	10	406
GE	1105.0	6	130	PD II	1174.37	20	664
GE II	1106.74	10	406, 488	C III	1174.916	12	168, 488
SN II	1108.128	500	448, 681	C III	1175.248	12	168, 488
SI III	1108.402	300	488, 310	C III	1175.566	12	168, 488
PB VI	1108.61	5	5	C III	1175.700	14	168, 488
SI III	1109.995	350	488, 310	C III	1175.973	12	168, 488
FE II	1112.086	35	488	SN V	1176.258	100	280, 681
SI III	1113.258	400	488, 310	C III	1176.351	12	168, 488
NB IV	1116.08	100	412	I II	1178.650	10000	344
ZN V	1116.61	0	25, 492	NI VI	1179.80	20	286
GE V	1116.8	6	130, 467	GE III	1183.34	15	406
P V	1117.979	15	597	CD IV	1183.40	20	293
CD IV	1118.16	24	25, 293	TL II	1183.41	10	194
SN IV	1119.344	1000	408, 681	PD II	1183.45	20	664
BI	1119.39	2	5	ZR IV	1183.96	100	342, 488
NB IV	1120.02	150	412	SN III	1184.254	1000	291, 681
SN IV	1120.679	200	408, 681	PB V	1185.43	8	5, 466
SI IV	1122.513	300	488, 310	I II	1187.338	15000	344
TE VII	1123.46	1	30, 655	MN II	1188.502	50	141, 488
PB VI	1123.56	5	5	CL I	1188.768	12	6
CE	1128.0	5	411	GE IV	1188.99	20	406
P V	1128.006	10	597	SN V	1189.918	100	280, 681
SI IV	1128.352	400	408, 310	PB V	1189.93	9	5, 466
SB V	1128.63	6	31	SI II	1190.418	100	488, 310
TL II	1130.17	10	194	RU III	1190.510	800	301
XE III	1130.344	25	65	I II	1190.853	10000	344
LI II	1132.1	1	788	SE II	1192.29	10	289, 468, 488
SN V	1132.794	100	408, 681	MN II	1192.313	40	141, 488
SD V	1133.73	7	31, 655	SI II	1193.284	200	488, 310
KR I	1134.15	3	475	S III	1194.02	4	323, 488
KR I	1134.89	3	475	S III	1194.40	3	323, 488
CR III	1136.67	50	488, 490	SI II	1194.496	250	488, 310, 794
GE III	1137.92	10	406	TL II	1194.84	12	194
SN III	1139.293	1000	291, 681	MN II	1197.172	40	141, 488
BI V	1139.370	20	5, 656	BE II	1197.19	10	488, 541
BI V	1139.548	20	5, 656	SI II	1197.389	100	488, 310
I II	1139.752	1200	344	LI II	1198.0	7	788
I II	1139.805	10000	344	SB IV	1199.21	6	31, 277
SE II	1141.94	9	289, 468, 488	MN II	1199.341	40	141, 488
BE II	1143.03	7	541	N I	1199.551	50	488, 794
FE II	1143.235	25	292, 488	RU III	1200.067	500	301
FE II	1143.295	30	292	I II	1200.223	7000	344
NI VI	1144.32	18	286	N I	1200.226	40	488, 794
FE II	1144.946	35	292, 488	N I	1200.708	30	488, 794
SB IV	1145.86	15	290	S III	1200.97	4	323, 488
V III	1149.94	100	488, 791	CL I	1201.358	11	6
GE III	1150.55	12	406	MN II	1201.570	40	141, 488
SE V	1150.96	7	585	ZR IV	1201.77	250	342, 488
V III	1151.04	90	488, 791	PD II	1204.00	30	664
P II	1152.134	3	594	SN V	1205.723	100	291, 681
V III	1152.18	80	488, 791	CR III	1206.38	60	47, 488, 490
V III	1153.19	70	488, 791	TE III	1206.46	4	30

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG IV	1206.55	5	26, 696	MO III	1277.611	200	591
RU III	1207.173	500	301	C I	1277.617	10	488, 540
CR III	1209.13	80	47, 488, 490	C I	1277.727	20	794
AS III	1209.29	10	404, 580	MO III	1278.102	200	591
RU III	1209.774	500	301	MO III	1278.401	200	591
SN III	1210.515	2000	291, 681	IN II	1280.49	10	413
CR III	1211.12	80	47, 488, 490	HG III	1280.83	9	26, 65, 331
HG I	1212.75	2	26, 65	AS II	1281.01	8	488, 572
HE II	1215.088	5	488	CO V	1281.63	30	286
HE II	1215.171	5	488	TE V	1281.67	6	30, 277
D I	1215.340	100	487	MO III	1281.902	150	591
H I	1215.670	100	488	MO III	1282.875	200	591
SN II	1219.090	500	448, 681	MN III	1283.566	500	131, 488
ZR IV	1219.85	150	342, 488	MO III	1283.590	150	591
I II	1220.887	20000	344	SN V	1283.808	100	280, 681
AU II	1224.57	20	550	TI III	1286.38	40	488, 604
BI III	1224.64	10	5, 138	CO V	1286.626	28	286, 673
SB V	1225.94	10	13, 31, 408	AS II	1287.57	9	488, 572
GE IV	1229.81	20	406	MN III	1287.583	400	131, 488
TL III	1231.57	7	33, 451	TI III	1289.32	30	488, 604
XE III	1232.07	25	335	CE IV	1289.4	50	335
BR I	1232.433	10	757	SN II	1290.886	1000	448, 681
CR III	1232.96	50	488, 490	TI III	1291.64	20	488, 604
PB V	1233.49	10	5, 466	ZN IV	1292.45	5	25
I II	1234.063	20000	344	TI III	1293.26	30	488, 604
S II	1234.14	3	322, 488	GA III	1293.50	4	402
KR I	1235.819	13	58, 475, 488	SN V	1294.357	200	291, 681
GE II	1237.05	20	406, 488	SI III	1294.561	300	488, 310
BI	1238.27	2	5	TI III	1294.67	50	488, 604
N V	1238.800	8	65, 168, 488	XE I	1295.560	8	61, 65
N V	1242.778	7	65, 168, 488	BR III	1295.66	20	400
AS II	1243.09	8	488, 572	CO V	1295.87	40	286
SN III	1243.632	500	291, 681	GA IV	1295.90	15	402, 467
NI V	1244.15	30	492	TI III	1295.91	30	488, 604
I III	1244.66	4	400	CD II	1296.43	150	25, 683
PB III	1250.45	9	5, 689	TI III	1298.67	50	488, 604
S II	1250.50	3	322, 488	SI III	1298.930	300	488, 310
HG I	1250.586	4	539, 794	TI III	1298.95	40	488, 604
SN V	1251.384	2000	291, 681	AS IV	1299.34	10	584, 585
I III	1252.35	8	400	GA IV	1299.48	15	467
CR III	1252.61	50	47, 488, 490	CO II	1299.574	8	488
S II	1253.79	5	322, 488	I I	1300.335	10000	344
LI II	1253.8	1	788	CO V	1301.12	35	286
PD II	1254.59	20	664	O I	1302.173	30	488, 794
NE III	1255.685	5	57, 65, 488	SN V	1302.199	100	280, 681
CD II	1256.00	100	25, 293, 683	GA IV	1303.48	15	467
NE III	1257.190	6	57, 65, 488	O I	1304.872	30	488, 794
GA IV	1258.75	15	467	PT II	1305.305	30	671
S II	1259.53	5	322, 488	P II	1305.48	35	469, 488, 594
FE IV	1259.54	30	286	AS II	1305.72	10	488, 572
SN III	1259.916	1000	291, 681	SN III	1305.970	1000	291, 681
GE II	1261.87	18	406, 488	O I	1306.036	25	488, 794
AS II	1263.78	10	488, 572	ZN II	1306.56	6	25, 410, 682
NI V	1264.46	20	492	NI V	1306.60	10	492
GA IV	1264.60	10	467	MG II	1306.714		592
GE II	1264.68	10	406, 488	SB III	1306.81	6	31, 407
TL III	1266.17	6	33, 543	I III	1306.93	5	400
MO III	1266.187	200	591	CO II	1306.966	8	488
AS II	1266.36	10	488, 572	SE IV	1307.24	7	585
GA IV	1267.11	18	402, 467	TL II	1307.50	15	194
MO III	1267.151	200	591	MG II	1307.875		592
AS II	1267.61	10	488, 572	MG II	1308.280		592
TE VI	1268.01	3	583	BR III	1308.46	10	400
MG II	1271.239		592	MG II	1309.443		592
MG II	1271.940		592	P II	1309.87	25	469, 488, 594
MG II	1272.720		592	P II	1310.70	60	469, 488, 594
MG II	1273.423		592	PB IV	1313.06	40	5, 139, 656
AS III	1274.27	9	404, 580	BR III	1313.28	10	400
SB II	1274.94	4	31, 414	TE VI	1313.90	3	583
MN II	1275.973	40	131, 141, 488	SE IV	1314.43	8	585
NI V	1276.90	10	492	BR I	1316.738	8	757
CO V	1277.01	50	286	BI IV	1316.952	20	5, 449
C I	1277.282	9	488, 794	BI IV	1317.076	20	5, 449
MO III	1277.446	200	591	BI IV	1317.175	20	5, 449
C I	1277.551	4	65, 794	BR I	1317.701	8	488, 757

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI V	1318.47	20	492	CL I	1379.529	11	415, 6, 488
MO III	1319.334	150	591	AL III	1379.670	6	190
PD II	1320.05	35	664	SB III	1379.681	6	31, 407
IN I	1320.2	4	130, 274	P III	1380.464	10	488, 597
GA III	1323.15	6	402	P III	1381.111	10	488, 597
IN I	1323.3	2	130, 274	S I	1381.55	15	488, 599
BR III	1325.38	10	400	IN IV	1381.87	5	130, 274
CD II	1326.50	100	25, 683	AL III	1384.144	8	190
BI III	1326.84	9	5, 138	GE	1384.70	7	130
SN III	1327.345	1000	291, 681	BR I	1384.602	10	488, 757
BR III	1328.10	15	400	SN III	1386.737	1000	277, 681
C I	1329.108	5	491, 488, 794	ZN III	1387.71	7	25, 472
C I	1329.590	10	488, 540, 794	MO IV	1393.670	100	591
BR III	1330.55	10	400	SI IV	1393.765	250	488, 310
V III	1331.94	50	488, 791	GE	1393.8	8	130
CE IV	1332.2	75	335	S I	1396.10	15	488, 599
C II	1334.520	13	168, 488, 794	SN II	1400.454	1000	448, 681
P III	1334.866	10	488, 597	GE II	1401.29	10	488
V III	1335.09	45	488, 791	PT II	1402.236	50	671
C II	1335.692	14	168, 488, 794	FE V	1402.45	6	47
I I	1336.479	10000	344	SI IV	1402.764	200	408, 310
I II	1336.517	20000	344	GC	1402.8	6	130
TL IV	1337.16	4	33, 466	IN III	1403.03	10	230, 408, 590
GA IV	1338.15	15	467	PD II	1403.59	25	664
IN I	1339.68	1	130, 274	SB II	1404.19	7	31, 407, 414
ZN IV	1343.84	6	25	TL IV	1404.61	4	33, 466
P III	1344.343	15	488, 597	AU II	1405.17	30	550
P III	1344.900	10	488, 597	PB III	1406.48	8	5, 689
PD II	1345.57	25	664	TE V	1406.56	10	277
CO V	1345.67	50	286	SN III	1410.613	500	291, 681
BI III	1346.12	15	5, 138	CU IV	1411.69	30	492
CL I	1347.238	12	415, 6, 488	TL IV	1412.93	5	33, 466
AS IV	1347.51	9	584	SB I	1413.98	100	477
SN III	1347.652	1000	681	HG II	1414.427	9	26, 65, 452
ZN IV	1347.98	5	25	GA II	1414.44	20	488, 652
CO IV	1349.61	3	492	HG III	1414.95	6	65, 466
ZN IV	1349.87	5	25, 697	MN II	1415.755	35	140, 488
AS IV	1351.34	7	584	SB I	1415.79	100	477
CL I	1351.657	10	415, 6, 488	SI III	1417.229	300	488, 310
ZN IV	1352.73	5	25, 697	MN II	1419.612	40	141, 488
AS IV	1353.93	6	584	LI II	1420.7	1	788
GA III	1353.94	8	402	TI III	1421.69	20	604
CO V	1355.20	40	286	TI III	1422.41	25	604
CO V	1357.67	30	286	TL I	1423.2	1	134
MN III	1360.704	1000	131, 488	BI III	1423.33	35	5, 138, 404
CO V	1362.46	30	286	BI III	1423.52	35	5, 138
B II	1362.460	5	65, 168, 488	TI III	1424.14	20	604
CL I	1363.449	10	415, 6, 488	S I	1425.10	15	488, 599
PD II	1363.76	20	664	I I	1425.490	8000	344
ZN IV	1363.98	5	25	PT II	1429.524	30	671
CO V	1364.17	30	286	FE V	1430.61	8	47
MN III	1365.206	800	131, 488	MN II	1432.785	40	140, 488
MG II	1365.544		592	S I	1433.28	15	488, 599
PD II	1365.80	25	664	TL IV	1434.72	6	466
MG II	1367.256		592	IN III	1434.78	8	408, 583
MG II	1367.708		592	SB II	1436.58	4	31, 414
PD II	1367.76	25	664	AU II	1436.61	20	550
CO V	1368.24	30	286	HG IV	1436.69	5	26
CA II	1369.1	3	242, 539, 648	BI II	1436.83	45	5, 138
MN III	1369.419	400	131, 488	PD II	1437.29	30	664
CA II	1370.6	3	242, 539, 648	SN IV	1437.519	1000	408, 681
CD II	1370.91	150	683	ZN II	1439.10	8	488, 682
O V	1371.287	10	65, 168, 488	PB III	1439.26	9	5
CE IV	1372.7	75	335	PB III	1439.42	15	606
CO V	1373.09	30	286	HG IV	1442.55	6	26, 696
TL II	1373.52	10	194	MN V	1446.49	60	791
FE V	1373.68	6	47	NB IV	1447.48	50	412
PD II	1374.92	50	664	FE V	1448.91	6	47
AS II	1375.07	10	488, 572	TL IV	1449.37	5	466
CO V	1375.20	30	286	TI IV	1451.75	30	488, 604
FE V	1376.45	6	47	P II	1452.89	30	469, 594
TL IV	1377.73	5	33, 466	HG IV	1454.21	6	26, 696
B I	1378.43	3	134	BI II	1455.11	50	5, 138
B I	1378.69	5	134	TI III	1455.22	40	488, 604
B I	1378.95	3	134	FE IV	1455.66	25	286

SECTION II FINDING LIST, INTENSE LINES

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB III	1456.68	100	320
NB III	1456.83	10	320
ZN II	1456.90	8	488, 682
TL III	1457.17	3	130, 543
I I	1457.368	5000	344
ZN II	1457.40	7	488, 682
I I	1457.470	5000	344
I I	1457.981	10000	344
FE IV	1459.92	40	286
BI III	1461.00	60	5, 138
HG IV	1461.33	5	26
FE IV	1464.81	40	286
HG IV	1465.63	5	26, 696
TI IV	1467.25	30	488, 604
HG III	1467.38	6	26, 65, 331
AU II	1468.97	30	550
TI IV	1469.21	15	488, 604
ZR IV	1469.50	100	342, 488
FE IV	1472.13	35	286
RU II	1472.717	500	675
S I	1472.97	15	488, 599
RU II	1473.151	400	675
ZN III	1473.41	7	25, 754
S I	1473.98	15	488, 599
S I	1474.37	12	488, 599
S I	1474.54	6	488, 599
SN II	1475.008	1000	448, 681
TL III	1476.94	9	130
TL III	1477.14	10	451, 543
FE IV	1479.49	40	47, 286
AS IV	1480.61	9	335
HG IV	1481.33	5	26
S I	1481.65	15	488, 599
C I	1481.760	7	168, 488, 794
CO V	1482.62	25	286
CO V	1482.91	20	286
S I	1483.05	15	488, 599
MN V	1483.09	160	791
S I	1483.24	12	488, 599
SI II	1485.024	90	310
P II	1485.49	25	469, 594
S I	1485.61	12	488, 599
CO V	1486.02	25	286
CO II	1486.483	9	488
AU II	1486.49	25	550
MN V	1486.74	30	791
RU II	1486.957	500	675
S I	1487.12	15	488, 599
IN III	1487.63	12	408, 590
RU II	1488.618	200	675
CU II	1488.647	75	488, 795
RU II	1488.855	1000	675
RU II	1489.136	500	675
CR V	1489.35	50	790, 490
TL I	1489.65	8	134
MN V	1490.68	160	791
MN V	1491.30	30	791
N I	1492.624	80	488, 794
N I	1492.824	30	137, 794
LI II	1493.1	6	788
IN III	1494.08	10	408, 590
RU II	1494.524	500	675
N I	1494.673	60	488, 794
GA III	1495.10	10	402, 652
NB III	1495.94	100	320
CR V	1498.02	70	790
TI III	1498.65	30	488, 604
TI III	1499.17	20	604
TL II	1499.30	10	194
SI III	1500.239	300	310
GE IV	1500.61	6	406
SI III	1501.191	250	310
NB III	1501.53	50	320
SI III	1501.876	225	310
NB III	1501.99	100	320

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P III	1502.273	10	488, 597
NB IV	1502.30	60	412
MN V	1503.59	80	791
BA II	1504.01	4	569, 649
MN V	1504.38	200	791
ZN III	1505.88	8	25, 754
TL III	1506.37	4	451, 543
MN V	1507.11	40	791
AG I	1507.37	50	667
TL II	1507.82	10	194
PB IV	1510.76	8	139
BE II	1512.303	8	488, 541
PB II	1512.42	10	163
BE II	1512.451	10	488, 541
SB II	1513.28	4	31, 290, 414
CD II	1514.26	200	683
W	1515.124	15	794
ZN III	1515.78	7	25, 416
SI II	1516.910	90	310
I I	1518.047	15000	344
CU II	1519.498	50	488, 795
CR V	1519.66	70	790, 490
CU II	1519.855	60	488, 795
BI II	1520.57	40	138
CO IV	1521.61	25	492
P II	1521.62	30	469
NB IV	1524.36	60	412
NB III	1524.91	100	320
GE III	1525.32	10	406
HG III	1527.31	7	26
HG III	1527.49	8	65, 331
IN III	1530.17	9	408, 590
SE I	1530.39	25	488, 600
SR II	1531.28	1	488, 649
P II	1532.51	80	469, 488, 594
SB I	1532.74	120	477
SN IV	1532.897	100	681
BI II	1533.17	40	138
NI II	1533.44	20	488
CO IV	1533.93	15	492
NB IV	1534.06	50	412
GA III	1534.51	10	402
ZN II	1535.05	10	488, 682
GA II	1535.40	8	402, 488, 652
GA	1535.53	15	402
PB IV	1535.70	12	139
P II	1535.90	120	469, 488, 594
P II	1536.39	80	469, 488, 594
AL II	1539.74	10	488, 653
CU II	1541.701	75	488, 670
P II	1542.29	120	469, 488, 594
P II	1543.09	40	469, 488, 594
CU III	1543.438	500	488, 684
CD III	1545.17	50	683
ZR IV	1546.19	150	342, 488
C IV	1548.195	20	168, 488
AG I	1548.58	50	667
FE III	1550.196	12	188, 288, 488
C IV	1550.768	19	168, 488
ZN III	1552.09	6	25
ZN III	1552.34	7	416
ZN III	1552.99	5	25, 472
PB III	1553.09	10	686
ZN III	1553.12	3	472
CA II	1553.5	4	186, 488, 648
BA II	1554.38	3	569, 649
SN II	1554.877	500	681
CA II	1555.1	4	186, 488, 648
AG II	1555.16	10	283
BI I	1556.78	8	134
MO V	1556.817	30	591
AL IV	1557.24	5	693
TL III	1558.67	8	451, 543
A II	1560.188	3	59, 65, 400
HG IV	1560.44	8	26, 696

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C I	1560.687	15	491, 488, 794	B II	1623.57	4	65, 168, 488
HG IV	1561.43	10	26, 696	B II	1623.77	4	65, 168
C I	1561.433	20	794	B II	1623.99	5	65, 168, 488
TL II	1561.58	15	194	B II	1624.16	4	65, 168
CA III	1562.50	6	39, 488	B II	1624.37	4	65, 168, 488
SB II	1565.48	4	31, 414	IN III	1625.31	20	230, 408, 413
TH IV	1565.85	100	349	HF II	1628.91	12	479
TL II	1568.57	10	194	MN III	1629.124	400	131, 488
SN III	1570.365	1000	291, 681	ZN III	1629.17	7	25, 416
CO II	1571.58	200	25, 683	FE IV	1630.99	75	286
MG III	1572.72	4	693	BR I	1633.414	30	488, 757
B I	1573.67	5	134	MN III	1633.807	500	131, 488
RI II	1573.70	40	138	TL III	1634.0	7	130, 543
RU II	1574.337	500	675	FE II	1635.398	35	488, 795
SN II	1574.424	1000	291, 681	BI I	1635.78	10	134
MO V	1574.680	30	591, 761	FE II	1636.321	30	488, 795
BR I	1574.839	10	488, 757	V II	1637.77	50	478, 488
A II	1574.985	4	59, 65, 488	FE II	1639.403	30	292, 488
U	1575.7	10	411	FE IV	1640.03	65	286
BR I	1576.390	9	488, 151	HE II	1640.332	80	488
GE II	1576.93	10	406, 488	HE II	1640.474	100	488
CR V	1579.67	80	790	HE II	1640.490	1	400
U	1579.7	5	411	CI III	1642.200	2000	488, 684
ZN III	1581.46	8	25, 416	BI I	1644.26	10	134
ZN III	1581.54	15	416, 754	AG II	1644.50	10	283
BR I	1582.309	10	488, 757	MO V	1644.671	20	591, 761
SB II	1584.58	4	31, 414	AU I	1646.59	20	450, 550
IN II	1586.37	6	413	FE IV	1647.05	45	286
U	1586.5	5	411	HG III	1647.35	10	26, 65, 331
MO V	1586.875	40	591, 761	IN	1647.6	8	130
AU I	1587.24	20	450, 550	IN I	1648.00	2	134, 274
V II	1587.40	50	478, 488	GE II	1649.26	20	406, 488
NB III	1590.21	100	320	HG II	1649.932	10	26, 698, 794
MO V	1590.370	30	591	IN III	1649.95	5	290
CR V	1591.70	70	790	TL I	1650.2	0	134
BI II	1591.79	60	138	AG I	1651.87	100	667
HG III	1592.82	10	26, 65, 331	HG III	1652.24	8	26, 65, 331
AS I	1593.60	100	480, 488, 573	LI II	1653.3	8	788
CU III	1593.758	1000	488, 684	MN III	1653.570	400	47, 131, 488
SC III	1598.06	5	488, 688	HG III	1654.66	8	26, 331, 783
ZR IV	1598.98	200	342, 488	CU I	1655.318	30	488, 672
SB IV	1599.38	15	31	C I	1656.923	3	488, 668, 794
HG III	1599.42	9	26, 65, 331	C I	1657.001	30	794
CU III	1600.194	500	488, 684	SB II	1657.036	20	414
B I	1600.41	5	65, 134, 658	C I	1658.117	5	488, 668, 794
B I	1600.83	8	65, 580, 658	K	1659.7	4	659
GE II	1602.56	20	406, 488	TL III	1660.05	8	451, 543
SC III	1603.12	10	488, 688	AS II	1660.60	8	488, 572
AL III	1605.776	7	190	MO V	1661.230	100	591, 761
IN	1605.78	9	130	V II	1661.27	60	478
GE	1605.88	8	130	BE I	1661.486	12	541
BI III	1606.40	60	138	SB I	1662.6	100	31, 477
SE I	1606.46	25	488, 600	HG III	1662.61	6	26, 65, 331
ZR IV	1607.99	100	342, 488	HG III	1664.23	6	26
FE II	1608.456	35	488, 795	AU I	1665.78	12	450, 550
MN III	1609.187	500	131, 488	S I	1666.68	25	488, 599
BI II	1609.70	40	138	B I	1666.87	8	134, 658
SC III	1610.25	8	488, 688	SB IV	1667.01	7	31, 277
BI II	1611.38	40	138	B I	1667.30	10	65, 134, 658
AL III	1611.849	9	190	MG I	1668.57	0	658
IN	1611.90	10	130	MO V	1668.669	50	591, 761
GE	1611.95	10	130	K	1668.7	4	659
GA	1611.95	10	130	K	1669.3	4	659
CO IV	1612.16	20	492	CU III	1670.140	500	488, 684
ZR III	1612.38	100	342, 488	AL II	1670.81	15	488, 653, 658
SB I	1612.8	200	477	GA	1670.88	12	130
SR II	1612.98	4	488, 649	HG III	1671.07	7	26, 65, 331
MN III	1614.170	1000	131, 488	SE I	1671.15	25	488, 600
NI II	1616.91	10	482, 488	PB II	1671.53	10	163
NI II	1617.14	20	488	P I	1671.68	180	469, 488, 594
SR II	1620.35	5	488, 649	CU III	1671.886	500	488, 684
MN III	1620.624	2000	131, 488	TL III	1673.0	2	130, 543
PT II	1621.658	30	671	ZN III	1673.14	7	25, 416
HF II	1623.06	12	479	SI IV	1673.374	150	310
SB I	1623.3	100	477	AU II	1673.61	25	550, 658

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
IN II	1674.04	6	413	CD III	1722.95	40	25, 683
TL III	1674.4	3	130, 543	PT II	1723.128	30	671
CU III	1674.602	500	488, 684	SB I	1723.43	150	477
P I	1674.61	230	469, 488, 594	W	1724.575	20	794
SE I	1675.27	25	488, 600	AL II	1724.981	15	488, 653, 658
FE IV	1675.78	25	286	IN	1725.00	8	130
TE I	1675.98	8	147, 401	SB III	1725.30	5	31, 414, 495
IN I	1676.16	1	134, 274	CU I	1725.664	50	488, 672
HG III	1677.85	10	26, 65, 331	AU II	1725.89	25	550, 658
BA II	1677.9	3	335	PB II	1726.75	20	163
TE I	1678.07	15	147	MO V	1726.995	50	591
V V	1679.36	7	279	MO V	1727.351	20	591
TE I	1679.37	12	147, 401	W	1728.620	10	794
P I	1679.71	300	469, 488, 594	W	1729.325	20	794
FE IV	1681.45	25	286	BR I	1729.88	8	400
LI II	1681.8	4	788	SB III	1730.62	6	31
PB II	1682.15	10	163	HG II	1732.142	15	452, 794
TH IV	1682.22	70	349	SB I	1736.19	100	31, 414, 477
NB III	1682.77	100	320	MG II	1737.612		592
AG II	1682.82	12	283	MG II	1737.628		592
MG I	1683.51	1	658	NI III	1738.252	500	488, 661
CU III	1684.642	500	488, 672, 684	HG III	1738.49	10	65, 331
TL I	1685.40	5	134	MG III	1738.91	6	693
CU I	1685.682	25	488, 672	HG III	1740.24	6	65, 331
CU III	1687.134	600	488, 684	N II	1740.327	15	168, 794
S I	1687.54	20	599	AU II	1740.47	45	550, 658
CU I	1688.093	30	488, 672	K	1741.2	4	659
SE I	1690.70	25	488, 600	IN I	1741.23	2	134, 413
CU I	1691.076	30	488, 672	CU III	1741.378	500	488, 684
NI III	1692.514	1000	488, 661	CU I	1741.574	50	488, 672
CR III	1692.89	60	488, 490	NI II	1741.581	20	488, 794
AG III	1693.51	50	284	N I	1742.724	60	488, 794
BA II	1694.37	4	569, 649	N II	1743.322	10	168, 794
CR III	1696.64	60	488, 490	NI III	1747.011	550	488, 661
K	1698.9	10	659	ZN II	1747.13	6	25, 682, 754
SN II	1699.419	1000	448, 681	MO V	1747.198	20	591, 761
TE I	1700.0	6	16, 147	MG III	1747.64	4	658, 693
IN II	1700.01	6	413	NI II	1748.30	20	488
AU II	1700.69	30	550	IN III	1748.71	25	230, 408, 590
CU III	1701.023	400	488, 672, 684	MG III	1749.02	5	693
CR III	1701.48	60	488, 490	K	1749.3	8	659
I I	1702.068	15000	344	CU III	1750.391	500	488, 684
CU III	1702.102	400	488, 684	TE I	1751.0	6	16, 147
CU III	1702.190	300	488, 684	AG III	1751.03	75	284
IN II	1702.51	6	413	MN IV	1751.60	7	47
CU III	1702.994	500	488, 684	PT II	1751.703	30	671
K	1703.5	9	659	NI II	1751.92	50	488
CU I	1703.843	30	488, 672	K	1752.4	4	659
NB III	1705.44	100	320	TH III	1753.17	30	348
MG I	1707.10	3	658	NI II	1754.81	20	488
NB III	1707.14	100	320	LI II	1755.4	5	788
TH IV	1707.37	150	349	AU II	1756.10	35	550, 658
CR III	1707.43	80	488, 490	SN II	1757.904	5000	448, 681
CR III	1707.78	40	488, 490	IN I	1758.49	1	134, 274
AG I	1708.11	10	667	AS I	1758.60	100	480, 488, 573
CU III	1708.958	200	488, 684	MN IV	1759.82	7	47
CU III	1709.036	700	488, 684	CO III	1760.354	5000	488, 673
AG I	1709.26	50	667	AL I	1762.97	1	658
NI II	1709.60	100	488	AL II	1763.79	8	488, 653
NI III	1709.901	800	488, 661	AL II	1764.01	10	488, 653, 810
IN I	1711.54	5	134, 274	NI III	1764.688	800	488, 661
SB III	1711.74	5	31, 407	SB I	1765.76	100	31, 477
BR II	1712.43	8	400	AG I	1766.20	10	667
CU I	1713.364	50	488, 672, 684	AL II	1767.60	10	488, 653, 810
AU I	1714.57	10	550	NI III	1767.938	500	488, 661
RE I	1716.45	12	350	AL I	1769.19	1	658
IN II	1716.74	8	413	SR II	1769.63	8	488, 649
SB I	1716.93	80	477	NI III	1769.643	2000	488, 661
SB I	1717.45	150	477	K	1770.8	6	659
N IV	1718.52	10	65, 168, 488	IN II	1770.83	6	413
NI III	1719.458	500	488, 661	K	1773.5	6	659
AL II	1721.279	10	488, 653, 658	CO III	1773.568	5000	488, 673
CD III	1721.93	40	25, 683	NB II	1774.75	500	318
CU III	1722.379	1000	488, 684	HF II	1774.81	10	479
SI IV	1722.554	500	310	P I	1774.99	250	469, 488, 594

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CE IV	1775.3	20	335	NI III	1823.061	800	488, 661
HG I	1775.677	1	331, 658, 794	CO III	1823.079	1000	488, 673
BE II	1776.339	8	488, 541	AU II	1823.24	25	550, 658
PT II	1777.086	50	671	BI II	1823.80	70	138
BI II	1777.11	80	138	PB I	1824.76	8	134
CO III	1777.145	1000	488, 673	CU I	1825.348	100	488, 672
SR II	1778.39	9	488, 649	TE I	1825.5	6	16
CE IV	1779.03	20	335	V IV	1825.85	50	488, 790
ZR III	1779.51	100	342, 488	B I	1825.89	15	65, 134, 488
CO III	1780.046	2000	488, 673	CR IV	1826.16	30	488
SB I	1780.87	100	31, 477	S I	1826.25	25	488, 599
PT II	1781.858	30	671	B I	1826.40	20	65, 134, 488
PD III	1782.548	4000	674	CR IV	1826.81	30	488
I I	1782.758	12000	344	MN II	1827.079	50	141, 488
NA III	1782.817	15	758, 794	CD II	1827.70	100	683
P I	1782.87	200	469, 488, 594	MG I	1827.97	8	658
CO III	1782.966	2000	488, 673	AL II	1828.61	10	536, 653
AU II	1783.22	60	550, 658	AG III	1828.83	35	284
MO V	1783.355	20	343, 591	V II	1828.84	50	478, 791
MG III	1783.36	4	693	SB I	1829.50	100	477
GE I	1785.046	30	4, 581	CO III	1830.093	1000	488, 673
FC II	1785.161	40	488, 795	I I	1830.200	75000	344
CD II	1785.84	100	683	CO III	1831.439	1000	488, 673
FE II	1786.738	40	292, 488	SN II	1831.753	500	448, 681
CO III	1787.082	1000	488, 673	RH III	1832.046	1000	677
K I	1787.4	4	659	BI I	1832.66	10	134
BI II	1787.47	60	138	HG I	1832.74	1	275, 658
P I	1787.68	180	469, 488, 594	U I	1832.8	5	411
FE II	1788.072	35	488, 795	AL II	1832.85	8	536, 653
SB I	1788.24	100	31, 414, 477	SB V	1833.48	5	13, 31
CO III	1789.070	1000	488, 673	CO III	1835.000	1000	488, 673
BI II	1791.93	70	138	NA III	1835.22	15	758
TL II	1792.76	10	194	ZR IV	1836.14	100	342
SE I	1793.29	25	488, 600	CR IV	1840.10	100	488
AU II	1793.31	35	550, 658	AG III	1840.14	40	284
CD III	1793.40	75	25, 471, 683	CA II	1840.21	8	186, 488, 648
V II	1794.62	50	478	GE I	1841.327	50	4, 581, 780
SE I	1795.28	30	488, 600	IN II	1842.40	6	413
TE I	1795.7	6	16	SI III	1842.542	500	310
MN IV	1795.77	7	47	B II	1842.80	3	65, 168, 658
NB II	1795.77	1000	318, 320	CA II	1843.6	1	186, 488, 648
TE I	1796.3	6	16, 147	N II	1844.304	10	191, 247, 794
PB II	1796.68	10	163	NA III	1844.36	20	758
SB V	1796.86	3	13, 31	I I	1844.451	15000	344
HG II	1796.897	15	527, 794	CD III	1844.66	50	25, 471, 683
W I	1798.011	20	794	GA II	1845.30	15	488, 652
SB I	1800.18	150	477	GE I	1845.872	30	4, 581, 780
AU II	1800.58	35	550, 658	ZR IV	1846.42	100	342
MG III	1800.75	4	693	NI III	1847.275	650	488, 661
MN II	1801.272	50	131, 141, 488	AG I	1847.73	20	667
MN III	1804.028	400	131, 488	CO I	1847.89	30	488, 603
PB I	1805.55	10	134	SN I	1848.768	100	308
AS I	1806.15	200	480, 488, 573	RE I	1848.88	12	350
V IV	1806.22	40	488, 790	NI I	1849.380	5	794
N II	1807.303	30	191, 794	HG I	1849.497	50	658, 794
S I	1807.31	25	488, 599	BA II	1849.5	4	335
SN II	1811.200	1000	448, 681	NA III	1849.58	35	758
SN III	1811.712	500	291, 681	NA III	1850.24	20	758
V III	1812.17	50	791	NA III	1850.39	18	758
GA II	1813.98	10	488, 652	TF I	1850.6	6	16, 147
SI I	1814.068	500	339, 488, 678	SI I	1850.665	500	488, 678, 794
TL II	1814.85	12	194	MO IV	1850.701	100	343, 591
SN I	1815.771	100	473, 308	PD III	1851.592	1500	674
B I	1817.84	8	65, 134, 658	SB II	1851.97	4	31
B I	1818.35	10	65, 134, 658	TE I	1852.1	6	16, 147
CR IV	1819.18	60	488	CR II	1852.13	25	340, 488
SN I	1819.273	100	473, 308	PD III	1852.274	2000	674
MO IV	1819.521	100	193, 591	CO I	1852.71	30	488, 603
HG II	1820.336	20	527, 794	TE I	1853.7	6	16, 147
S I	1820.37	25	488, 599	NI III	1854.149	800	488, 661
MO IV	1821.641	100	343, 591	CA III	1854.72	6	39, 488
PB II	1822.03	10	163	AL III	1854.722	10	65, 488, 658
TE I	1822.4	10	16, 147	IN III	1854.75	20	130
CL III	1822.50	6	43, 488	GA I	1854.75	20	130
SN I	1823.021	200	473, 308	CO I	1855.05	40	488, 603

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR II	1855.14	20	340, 488
SE I	1855.20	30	488, 600
NA III	1855.91	15	758
CD III	1856.67	200	25, 683
NA III	1856.73	20	758
TE I	1857.2	8	16, 147
AU I	1857.21	10	450, 550, 658
NI I	1857.956	8	794
CR II	1858.44	20	340, 488
CR II	1858.72	15	340, 488
SE I	1858.84	25	488, 600
P I	1858.91	150	469, 488, 594
PD III	1859.206	1000	669, 674
NI I	1859.406	3	794
P I	1859.43	150	469, 488, 594
RH III	1859.845	500	677
SN I	1860.330	200	473, 308
AS I	1860.40	80	480, 488
AS I	1860.46	80	480, 488, 573
TE I	1860.5	6	16, 147
NA III	1861.19	15	758
V IV	1861.56	60	488, 790
CO III	1861.775	1000	488, 673
GA	1862.72	20	130
AL III	1862.782	10	190, 488, 810
CR IV	1862.99	100	488
RU II	1863.404	500	675
CO III	1863.826	2000	488, 673
NB II	1864.17	5000	318
SN I	1865.523	100	473, 308
SN I	1865.933	100	473, 308
AG III	1867.12	35	284
BI I	1868.13	20	134
BA II	1869.2	5	335
V II	1869.47	50	478, 488
HG II	1869.548	8	658, 794
CA III	1870.28	6	39, 488
HG II	1870.547	20	698, 794
SB I	1871.15	300	31, 477
AG III	1873.45	40	284
CD III	1874.08	150	25, 683
PD III	1874.629	1500	674
SI I	1874.838	500	339, 488, 678
RE I	1874.93	15	350
RII II	1875.564	500	675
CR IV	1876.15	60	791
MN III	1877.555	400	131, 488
FF III	1877.989	12	188, 488
PT II	1879.094	30	671
MG III	1879.46	4	693
P II	1879.62	25	469, 594
RH III	1880.656	800	677
CO III	1881.702	1000	488, 673
SB I	1882.56	150	31, 477
SN I	1882.647	100	473, 308
PT II	1883.051	40	671
TL IV	1883.2	5	466, 543
CS	1884.0	6	659
RH III	1884.910	500	677
PD III	1885.834	2000	674
SN I	1886.042	200	473, 308
CR I	1886.34	10	341
FE III	1886.757	12	188, 292, 488
RH III	1887.360	500	677
PD III	1887.398	1000	669, 674
NA III	1887.48	15	758
RH III	1887.938	400	677
RU II	1888.045	500	675
TH III	1888.12	100	348
RE I	1888.43	10	350
P IV	1888.55	8	41, 488
RH III	1888.624	700	677
BI I	1888.69	20	134
RA II	1888.7	5	570
CS	1889.2	6	659

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT II	1889.516	50	671
PD I	1890.41	150	669, 674
AS I	1890.42	2000	480, 488, 573
CR II	1890.55	30	340, 488
FE III	1890.669	13	188, 292, 488
RE I	1891.04	10	350
SE III	1891.16	6	587
PD III	1891.341	1500	674
SN I	1891.415	200	473, 308
NB III	1892.92	100	320
SC III	1895.33	2	488
FE III	1895.456	20	188, 292, 488
NB II	1895.95	1000	318
SE I	1898.555	40	488, 600
PB I	1898.85	50	134
CR II	1898.92	35	340, 488
SN II	1899.890	5000	448, 681
S I	1900.27	20	488, 599
RE I	1900.83	50	350
BI I	1900.97	8	134
RH III	1901.320	800	677
SI I	1901.331	1000	339, 488, 678
PD I	1901.94	150	669, 674
BI II	1902.41	100	138
ZR II	1902.78	3	346, 488
RU II	1903.227	500	675
RE I	1905.74	50	350
TI II	1906.30	3	488, 601
BE I	1907.12	5	541
NE II	1907.56	8	68, 488
PB I	1907.70	20	134
V II	1907.79	50	478, 488
TI II	1908.29	3	488, 601
V II	1908.32	40	478, 488
TL II	1908.64	25	194
RA II	1908.7	8	570
SN I	1909.305	300	473, 308
TI II	1909.33	2	488, 601
RE I	1909.36	50	350
TI II	1909.74	2	488, 601
RH III	1910.157	500	677
TI II	1911.01	0	488, 601
ZR II	1911.32	4	346, 488
SN I	1911.613	200	473, 308
PT II	1911.702	50	671
SC III	1912.48	2	488
SN I	1913.528	100	473, 308
SE I	1913.788	35	488, 600
FE III	1914.056	19	188, 292, 488
TI II	1914.11	00	488, 601
A III	1914.398	9	59, 65, 488
CS	1914.6	4	659
S I	1914.68	15	488, 599
CE IV	1914.8	35	335
FE III	1915.083	15	188, 292, 488
CS	1915.6	3	659
NE II	1916.16	10	68, 488
AG III	1916.92	40	284
AG III	1917.08	60	284
MO III	1917.790	150	591
RH III	1918.952	400	677
SE I	1919.190	30	488, 600
RH III	1919.369	600	677
PO I	1919.4	3	133
HF II	1919.52	20	479
AU I	1919.64	20	450, 550
SE III	1920.34	6	587
ZR II	1920.76	5	346, 488
AU II	1921.64	20	550, 658
CD II	1922.23	300	25, 683
MO II	1922.357	500	343, 591
NB IV	1922.41	60	412
MO II	1922.643	200	343, 591
HF II	1922.74	12	419
FE III	1922.766	15	188, 292, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1923.075	300	591	FE III	1943.481	14	188, 292, 488
CL II	1923.35	4	345	CD II	1943.54	100	25, 683
PD I	1923.95	100	669, 674	BE I	1943.68	5	541, 658
PB I	1924.12	15	134	PD I	1945.99	200	669
BA II	1924.70	5	569, 649	SB III	1946.07	5	31, 407, 495
RE I	1924.74	15	350	NA III	1946.43	20	758
SN I	1925.305	500	473, 308	FE I	1946.983	25	488, 795
MO IV	1926.261	500	193, 591	MN II	1947.945	40	141, 488
NA III	1926.27	45	758	MN II	1948.214	200	131, 141, 488
FE III	1926.304	18	188, 292, 488	CR II	1948.51	10	340, 488
NB II	1926.71	500	318	MO II	1948.788	200	343, 591
SN I	1926.764	100	473, 308	CR II	1949.00	40	340, 488
MO II	1926.857	200	343, 591	CR II	1949.22	35	340, 488
RH III	1926.960	400	677	MO III	1949.515	300	193, 343, 591
RH III	1927.072	500	677	PT II	1949.901	30	421, 671
SB I	1927.08	100	31, 477	CR II	1950.06	50	340, 488
NA III	1927.21	15	758	CO II	1950.098	20	234, 488
RE I	1927.72	15	350	SB I	1950.39	200	31, 477
PT II	1929.140	10	671	S II	1950.93	3	285
PT II	1929.250	30	671	MO II	1950.613	200	343, 591
MO IV	1929.256	500	193, 591	NA III	1950.79	15	750
IR	1929.4	3	335	MO II	1950.871	200	591
PT II	1929.457	10	671	FE III	1951.007	12	188, 488
PD I	1929.55	100	669	NA III	1951.21	40	758
V II	1929.61	60	478, 488	V IV	1951.48	80	488, 790
PT II	1929.677	30	671	FE I	1951.556	25	292, 488, 605
GE I	1929.826	40	4, 488, 581	AU I	1951.93	25	450, 550, 699
GE III	1930.10	0	406	RE I	1952.00	12	350
NE II	1930.11	8	68, 488	SN I	1952.141	500	473, 308
PD III	1930.330	1000	674	MN III	1952.285	500	131, 488
FE III	1930.387	15	188, 292, 488	MN III	1952.430	1000	131, 488
IN II	1930.52	8	413	FE I	1952.579	30	488, 795
TL III	1931.3	1	130, 543	MN II	1953.234	40	141, 488
FE III	1931.507	14	188, 488	FE III	1953.322	13	188, 488
RH III	1931.791	700	677	FE III	1953.488	10	188, 488
MO IV	1932.273	100	591	CO I	1954.22	30	488, 603
PO I	1933.8	5	133	RH III	1954.248	500	677
NA III	1933.87	30	758	MO IV	1954.440	100	591
GE I	1934.048	25	4, 488, 581	GE I	1955.115	35	4, 488, 581
MO II	1934.238	200	343, 591	MO II	1955.129	300	591
FE I	1934.528	25	292, 488, 605	CO I	1955.17	30	488, 603
AL II	1934.54	10	653	HF II	1955.66	12	479
AL II	1934.75	10	653	FE I	1955.690	20	488, 605, 645
NB II	1934.92	1000	318	FE I	1956.026	30	488, 605, 645
CS	1935.2	8	659	BE I	1956.63	5	541, 658
MO IV	1935.866	100	591	MO II	1956.022	200	343, 591
AL III	1935.881	6	49, 538	MO II	1957.118	400	343, 591
IN II	1936.25	10	413, 579	CO II	1957.424	30	234, 488
PB I	1936.34	20	134	AG III	1957.62	70	284
CO I	1936.58	30	488, 603	FE I	1957.838	25	488, 795
S II	1936.84	3	285	V I	1957.90	50	489, 488
FE I	1937.274	35	292, 488, 605	MO II	1958.204	200	591
FC III	1937.345	14	188, 292, 488	S II	1958.38	3	285
V II	1937.44	60	478, 488	TH IV	1959.02	200	349
AS I	1937.59	1500	480, 488, 573	V I	1959.12	30	489, 488
CR II	1937.84	20	340, 488, 490	V I	1959.36	30	489, 488
GE II	1938.00	10	488	PB VII	1959.42	6	139, 656
ZR II	1938.27	3	346, 488	V I	1959.97	40	489, 488
NB III	1938.84	100	320	FE I	1960.139	25	488, 795
GE II	1938.90	20	488	MO II	1960.156	200	591
NE II	1938.92	8	68, 488	SN I	1960.215	100	473, 308
V IV	1939.07	100	488, 790	FE III	1960.318	13	188, 488
MO II	1939.603	500	343, 591	PD I	1960.75	150	669, 674
PT II	1939.800	30	671	NA III	1960.76	20	758
MN III	1941.227	500	131, 488	SE I	1960.901	50	488, 600
CO II	1941.28	50	234, 488	MO III	1960.980	300	591
RU III	1941.346	500	301	V I	1961.69	60	489, 488
PD III	1941.639	2000	674	GE I	1962.013	30	4, 488, 581
SN III	1941.857	500	681	FE I	1962.031	25	292, 488, 605
PO I	1942.2	5	133	W II	1962.07	5	419
HG II	1942.273	20	698, 794	FE I	1962.107	30	488, 795
CS	1942.3	4	659	MO II	1962.251	200	343, 591
AU I	1942.31	45	550	MO IV	1962.530	200	591
CA III	1943.12	6	39, 488	FE I	1962.746	15	188, 488, 605
MN III	1943.133	800	47, 131, 488	FE I	1962.871	20	188, 488, 605

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE I	1963.110	25	292, 488, 605	V I	1984.91	50	489, 488
V IV	1963.13	70	488, 790	U	1985.4	5	411
PT I	1963.17	1	421	CR II	1985.52	22	340, 488
RE I	1963.38	15	350	NA III	1985.58	30	758
V I	1963.47	70	489, 488	CR II	1985.72	12	340, 488, 490
TH III	1963.52	20	348	SI I	1986.352	1000	339, 488, 678
NI I	1963.85	1	488, 602	CO I	1987.197	30	488, 603, 673
HF II	1964.23	15	479	FE III	1987.503	15	188, 292, 488
V I	1964.27	60	489, 488	MO II	1987.991	500	343, 591
BE I	1964.59	9	541, 658	GE I	1988.267	40	4, 488, 581
NA III	1965.04	18	758	RH I	1988.49	3	486
V I	1965.07	60	489, 488	NB II	1988.76	800	318
V I	1965.26	60	489, 488	SI I	1988.977	2000	339, 488, 678
NI II	1965.456	20	488, 794	MO II	1988.984	200	591
TH III	1965.58	30	348	PT I	1989.11	2	421
MO IV	1966.082	100	193, 591	MO II	1989.393	200	343, 591
V I	1966.52	60	489, 488	MN III	1989.518	400	131, 488
V I	1966.76	60	489, 488	CO I	1989.80	25	488, 603
IN II	1966.88	10	413	CR I	1989.92	15	341, 488
AG III	1966.89	40	284	W II	1990.05	5	419
AG II	1967.38	10	283	MO II	1990.208	200	343, 591
V I	1967.98	80	489, 488	NI I	1990.25	4	488, 602
PD I	1968.33	200	669, 674	CR I	1990.27	8	341, 488
NI I	1968.90	1	488, 602	CO I	1990.34	30	488, 603
MO II	1969.884	500	343, 591	AS I	1990.35	200	480, 488, 573
PT I	1969.994	2	421, 671	MO II	1990.461	200	343, 591
CO I	1970.71	50	488, 603	CR I	1991.17	15	341, 488, 490
GE I	1970.880	50	4, 488, 581	MO IV	1991.391	100	193, 591
S II	1970.99	4	285	PT I	1991.59	2	421
MO IV	1971.092	500	193, 591	FE III	1991.613	14	188, 292, 488
CO I	1971.16	30	488, 603	AU I	1991.94	10	450, 658
SN I	1971.452	100	473, 308	NB II	1992.23	1000	318
CO I	1972.57	30	488, 603	CR II	1993.37	15	340, 488, 490
RA II	1972.6	4	570	NB II	1993.59	1000	318, 320
AS I	1972.62	1000	480, 488, 573	CR II	1993.63	25	340, 488
PD I	1972.74	300	669, 674	NB II	1993.64	500	318
PB IV	1973.14	8	139	MO III	1993.942	200	591
W II	1973.27	4	419	SC III	1993.96	4	488, 688
HG II	1973.889	8	65, 452, 527	FE III	1994.073	13	188, 292, 488
PD I	1973.93	100	669	CR I	1994.10	8	341, 488
PD I	1974.90	100	669	TH III	1994.22	12	348
AG III	1975.92	60	284	RH III	1994.257	500	677
RA II	1976.0	2	570	NI I	1994.29	2	488, 602
PD I	1976.50	150	669	CR I	1994.55	15	341, 488
ZR II	1976.54	3	346, 488	TH III	1994.55	10	348
V II	1976.62	60	478, 488	MO IV	1994.669	100	343, 591
MO IV	1976.853	100	343, 591	IR	1994.8	3	335
NI I	1976.87	3	488, 602	TE I	1994.8	7	16, 147
CO I	1976.97	30	488, 603	RH I	1994.94	2	486
AG III	1977.03	50	284	CD II	1995.43	200	683
MO IV	1977.204	500	193, 343, 591	AS I	1995.43	100	480, 488, 573
IN II	1977.45	20	413, 579	FE III	1995.563	12	188, 292, 488
SI I	1977.591	1000	339, 488, 678	RE I	1995.61	20	350
AU I	1978.19	30	450, 550, 658	ZR II	1995.88	7	346, 488
NB IV	1978.22	60	412	PT I	1995.91	3	421
MO II	1978.294	300	343, 591	MO II	1996.129	200	591
MN III	1978.879	500	131, 488	MO II	1996.399	200	343, 591
MO II	1978.936	200	343, 591	FE III	1996.420	12	188, 292, 488
SI I	1979.198	1000	339, 488, 678	IR	1996.5	3	335
GE II	1979.29	20	488	CS	1996.5	5	659
MO II	1980.215	300	591	ZR II	1996.69	6	346, 488
SI I	1980.606	1000	339, 488, 678	RH I	1996.85	2	486
CO I	1980.89	40	488, 603	CR I	1997.35	10	341, 488, 490
U	1981.2	5	411	V IV	1997.74	80	790, 488
NB II	1981.50	5000	318	CR I	1997.92	12	341, 488, 13
NI I	1981.61	2	488, 602	BE I	1998.01	10	541, 658
V I	1982.06	40	489, 488	GE I	1998.887	80	4, 488, 581
MN III	1982.690	400	131, 488	MO II	1999.179	200	591
SI I	1983.225	1000	339, 488, 678	V IV	1999.32	60	488, 790
V I	1983.37	50	489, 488	NI I	1999.53	0	602
CL III	1983.61	5	43	BA II	1999.54	3	569, 649
PT II	1983.737	30	671				
V II	1984.05	90	478, 488				
SN I	1984.182	100	473, 308				
MO II	1984.726	200	343, 591				

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SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

HYDROGEN

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
H I	I.P.	109678.758 K	911.753 A
H I	914.576	2	488
H I	914.919	4	488
H I	915.329	5	488
H I	915.824	5	488
H I	916.429	6	488
H I	917.181	7	488
H I	918.129	8	488
H I	919.351	9	488
H I	920.963*	10	488
H I	923.150*	12	488
H I	926.226*	14	488
H I	930.748*	17	488
H I	937.804*	22	488
H I	949.743*	25	488
H I	972.537*	40	488
H I	1025.722*	60	488
H I	1215.670*	100	488

DEUTERIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
D I	I.P.	109708.596 K	911.506 A
D I	937.548*	20	487
D I	949.485*	25	487
D I	972.272*	40	487
D I	1025.443*	60	487
D I	1215.340*	100	487

HELIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HE I	I.P.	198310.4 K	504.251 A
HE II	I.P.	438908.6 / U K	227.830 A
HE II	229.431	0	488
HE II	229.736	0	488
HE II	230.139	1	488
HE II	230.686	2	488
HE II	231.454	4	488
HE II	232.584	7	488
HE II	234.347	10	488
HE II	237.331*	15	488
HE II	243.027*	20	488
HE II	256.318*	30	488
HE II	303.786*	50	488
HE I	506.566	1	65
HE I	507.053	1	65, 488
HE I	507.712	2	65, 488
HE I	508.639	1	65, 488
HE I	509.993	2	65, 488
HE I	512.094*	3	65, 488
HE I	515.612*	4	65, 488
HE I	522.208*	5	65, 488
HE I	537.024*	7	65, 488

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HE I	584.331*	10	65, 488
HE I	591.420	13	65, 488
HE I	601.418	5	355
HE II	949.301	0	488
HE II	949.354	0	488
HE II	958.671	0	488
HE II	958.724	0	488
HE II	972.083	0	488
HE II	972.138	0	488
HE II	992.334	0	488
HE II	992.391	1	488
HE II	1025.241	1	488
HE II	1025.302	2	488
HE II	1084.908	2	488
HE II	1084.975	2	488
HE II	1215.088*	5	488
HE II	1215.171*	5	488
HE II	1215.175	0	488
HE II	1605.321	1	794
HE II	1613.251	4	794
HE II	1640.332*	80	488
HE II	1640.474*	100	488
HE II	1640.490*	1	488

LITHIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
LI I	I.P.	43487.19 K	2299.807 A
LI II	I.P.	610079. K	163.913 A
LI III	I.P.	98765.8 K	101.250 A
LI III	108.01 *		185
LI III	113.93 *	0	185
LI II	119.26 *		185
LI III	135.02 *	2	185
LI II	171.582*		168, 488, 596
LI II	178.015*		168, 488, 596
LI II	199.282*		168, 488, 596
LI II	1132.1 *	1	788
LI II	1166.4 *	2	788
LI II	1198.0 *	7	788
LI II	1253.8 *	1	788
LI II	1420.7 *	1	788
LI II	1499.1 *	6	788
LI II	1653.3 *	8	788
LI II	1681.8 *	4	788
LI II	1755.4 *	5	788

BERYLLIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BE I	I.P.	75192.29 K	1329.923 A
BE II	I.P.	146881.7 K	680.820 A
BE III	I.P.	1241225. K	80.566 A
BE IV	I.P.	1756004. K	56.947 A
BE V	48.585*		166
BE IV	49.456*		596
DC IV	50.435*		596
BE IV	52.679*		596
BE IV	60.313*		596

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BE IV	60.741*		595, 765
BE IV	64.063*		595, 765
BE IV	75.925*		595, 765
BE III	81.891*		596
BE III	82.377*		596
BE III	83.202*		596
BE III	84.758*		596
BE III	88.314*		596
BE III	100.254*	1	168, 596
BE II	725.71	5	541
BE II	743.579	3	541
BE II	775.375	4	541
BE II	842.057*	7	488, 541
BE II	925.246	5	541
BE II	943.559	4	541
BE II	949.746	1	541
BE II	973.266	5	541
BE II	984.025	2	541
BE II	1026.926	6	541
BE II	1036.271*	8	488, 541
BE II	1048.234	6	541
BE II	1112.8	3	335
BE II	1143.03 *	7	541
BE II	1197.19 *	10	488, 541
BE I	1487.472	4	541
BE II	1512.303*	8	488, 541
BE II	1512.451*	10	488, 541
BE I	1661.486*	12	541
BE I	1721.43	1	658
BE II	1776.118	6	488, 541
BE II	1776.339*	8	488, 541
BE I	1907.12 *	5	541
BE I	1912.49	1	541, 658
BE I	1919.76	2	541, 658
BE I	1929.67	3	541, 658
BE I	1943.68 *	5	541, 658
BE I	1956.63 *	5	541, 658
BE I	1964.59 *	9	541, 658
BE I	1985.13	3	541, 658
BE I	1998.01 *	10	541, 658

BORON

B I	I.P.	66930.	K	1494.	A
B II	I.P.	202895.	K	492.866	A
B III	I.P.	305931.1	K	326.871	A
B IV	I.P.	2091960.	K	47.802	A
B V	I.P.	2744063.	K	36.442	A

B V		38.869*		65, 765, 168
B V		40.995*		65, 765, 168
B V		48.585*		65, 765, 168
B IV		48.939*		764
B IV		49.456*		764, 765
B IV		50.435*		764, 765
B IV		52.682*		764, 65, 168
B IV		60.313*		764, 65, 168
B IV		61.088*		764
B III		376.372	1	195
B III		411.810*	3	65, 195
B III		434.627	1	195
B III		458.700	1	195
B III		510.777	2	65
B III		510.865*	3	65, 195
B III		518.253*	7	65, 195
B III		528.219	0	195
B III		677.004*	5	65, 195
B III		677.147*	6	65, 195
B II		693.952	2	65, 168, 488

B II		731.357	1	65, 168
B II		731.442	1	65, 168, 195
B III		758.476*	1	65, 195
B III		758.673	2	65, 195
B II		864.08	0	65, 168
B II		882.536	2	65, 168
B II		882.670	2	65, 168, 195
B II		984.65	1	65, 168
B II		1048.67	0	65, 168
B II		1081.85	2	65, 168, 195
B II		1082.06	2	65, 168, 195
B II		1230.160	2	65, 168
B II		1362.460*	5	65, 168, 488
B I		1378.43 *	3	134
B I		1378.69 *	5	134
B I		1378.95 *	3	134
B I		1465.59	1	134
B I		1465.69	2	134
B I		1465.82	2	134
B I		1525.20	00	134
B I		1525.84	00	134
B I		1533.81	0	134
B I		1534.29	0	134
B I		1546.44	1	134
B I		1546.85	2	134
B I		1558.71	2	134, 658
B I		1559.11	3	134
B I		1566.32	2	134
B I		1566.70	3	65, 134, 658
B I		1573.31	3	65, 134, 658
B I		1573.67 *	5	134
B I		1600.41 *	5	65, 134, 658
B I		1600.83 *	8	65, 580, 658
B I		1602.99	2	134
B I		1607.78	0	65, 658
B I		1610.40	0	134
B I		1610.72	0	134
B II		1623.57 *	4	65, 168, 488
B II		1623.77 *	4	65, 168
B II		1623.99 *	5	65, 168, 488
B II		1624.16 *	4	65, 168
B II		1624.37 *	4	65, 168, 488
B I		1662.62	2	65, 134, 658
B I		1663.05	3	65, 134, 658
B I		1664.25	2	134
B I		1664.76	2	134
B I		1666.87 *	8	134, 658
B I		1667.30 *	10	65, 134, 658
B I		1817.84 *	8	65, 134, 658
B I		1818.35 *	10	65, 134, 658
B I		1825.89 *	15	65, 134, 488
B I		1826.40 *	20	65, 134, 488
B II		1842.80 *	3	65, 168, 658

CARBON

C	I	I.P.	90814.	K	1101.2	A
C	II	I.P.	196659.0	K	508.494	A
C	III	I.P.	386213.9	K	258.924	A
C	IV	I.P.	520177.8	K	192.242	A
C	V	I.P.	3162450.	K	31.621	A
C	VI	I.P.	3951950.	K	25.304	A
C	VI	26.988*		765		
C	VI	28.464*		765		
C	V	32.064*		765		
C	V	32.188*		765		
C	V	32.400*		764, 765		

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C V	32.754*		596, 764, 765	C III	358.740	4	65, 168
C V	33.426*		596, 764, 765	C III	360.557	6	65, 168
C VI	33.734*		765	C III	360.623	7	65, 168
C V	34.973*		596, 764, 765	C III	360.675	5	65, 168
C V	40.270*		65, 596, 764	C III	363.754	4	34, 65, 168
C V	40.731*		764	C III	363.785	5	34, 65, 168
C IV	197.82		168	C III	363.860	6	34, 65, 168
C IV	199.04		168	C III	365.778	1	65, 168
C IV	200.68		65, 168	C III	366.169	4	65, 168
C IV	203.057	1	65, 168	C III	369.415	5	65, 168
C IV	206.641	3	65, 168	C III	369.472	2	65, 168
C IV	212.421	5	65, 168, 488	C III	370.951	0	65, 168
C IV	222.791	7	65, 168, 488	C III	371.694*	10	65, 168, 488
C IV	228.27		65, 168	C III	371.747*	10	65, 168, 488
C IV	230.43	1	65, 168	C III	371.784*	8	65, 168, 488
C IV	233.53	2	65, 168	C III	379.065	1	65, 168
C IV	238.200	2	65, 168	C III	379.254	0	65, 168
C IV	238.250	3	65, 168	C IV	384.032*	16	65, 168, 488
C IV	239.196		65, 168	C IV	384.178*	17	65, 168, 488
C IV	244.907*	10	65, 168, 488	C III	386.203*	14	34, 65, 488
C IV	245.775	4	65, 168, 488	C III	388.969	5	34, 65, 168
C IV	245.830	5	65, 168, 488	C III	389.005	6	34, 65, 168
C IV	247.357	0	65, 168	C III	389.090	7	34, 65, 168
C IV	247.415	1	65, 168	C III	390.055	3	65, 168
C V	248.668*	0	65, 168	C III	398.168	1	65, 170
C V	248.744*	0	65, 168	C III	398.551	1	65, 170
C IV	259.471	6	65, 168, 488	C III	399.637	6	65, 168
C IV	259.542	7	65, 168, 488	C III	399.688	6	65, 168
C IV	262.553	3	65, 168	C III	409.204	0	65, 168
C IV	262.624	4	65, 168	C III	409.325	6	65, 168
C III	265.029	0	65, 168	C III	411.697	0	65, 168
C III	265.287	0	65, 168	C III	411.958	3	34, 65, 168
C III	270.324	0	65, 168	C III	414.592	0	65, 170
C III	270.583	1	65, 168	C III	416.769	5	65, 168
C III	271.014	1	65, 168	C III	418.609	2	65, 168
C III	274.051	2	65, 168	C IV	419.525*	13	65, 168, 488
C III	280.043	3	65, 168	C IV	419.714*	14	65, 168, 488
C III	280.522	2	65, 168	C II	425.326	0	65, 168
C III	281.390	2	65, 168	C III	433.339	8	34, 65, 168
C III	288.415	0	65	C II	437.102	1	65, 168
C	289.048	3	65	C II	438.910	1	65, 168
C IV	289.143*	9	65, 168, 488	C III	450.734	9	34, 65, 168
C IV	289.230*	10	65, 168, 488	C III	459.462*	13	65, 168, 488
C III	291.326	5	34, 65, 168	C III	459.521*	14	65, 168, 488
C IV	296.857	6	65, 168, 488	C III	459.633*	15	65, 168, 488
C IV	296.951	7	65, 168, 488	C III	460.049	8	34, 65, 168
C III	301.206	2	65, 168	C II	461.12	1	65, 168
C III	301.243	3	65, 168	C II	466.358	0	65, 168
C III	301.279	1	65, 168	C II	466.404	1	65, 168
C III	303.432	4	65, 168	C II	466.492	2	65, 168
C III	303.460	1	65, 168	C II	466.536	0	65, 168
C IV	307.806	1	65, 168	C III	468.931	0	65, 168
C III	310.170	7	34, 65, 488	C III	477.625	3	34, 65, 168
C III	311.157	0	65, 168	C III	483.567	3	65, 168
C IV	312.418*	15	65, 168, 488	C III	483.618	4	65, 168
C IV	312.455*	14	65, 168, 488	C III	483.733	5	65, 168
C III	314.395	1	65, 168	C III	492.650	7	34, 65, 168
C III	319.266	3	65, 168	C III	493.341	5	65, 168
C III	321.372	0	65, 168	C III	493.364	5	65, 168
C III	322.574	8	34, 65, 168	C III	493.396	5	65, 168
C III	325.570	1	65, 168	C III	493.464	5	65, 168
C III	327.112	4	65, 168	C III	493.519	5	65, 168
C III	327.176	4	65, 168	C III	493.587	7	65, 168
C III	327.784	1	65, 168	C III	497.910	1	65, 168
C III	330.637	1	65, 168	C III	499.425	7	65, 168
C III	330.687	1	65, 168	C III	499.462	8	65, 168
C III	339.773	1	65, 168	C III	499.530	9	65, 168
C III	341.143	5	65, 168	C III	499.583	7	65, 168
C III	341.179	6	65, 168	C III	506.658	0	65, 168
C III	341.242	7	65, 168	C III	511.523	10	34, 65, 168
C III	347.777	3	65, 168	C II	516.652	0	65, 168
C III	347.854	3	65, 168	C II	517.069	1	65, 168
C III	350.132	0	65, 168	C II	530.290	3	65, 168
C III	350.330	2	65, 168	C II	530.386	4	65, 168
C III	353.000	3	65, 168	C II	531.775	0	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C II	531.917	1	65, 168	C II	903.609	10	65, 168, 488
C II	532.716	3	65, 168	C II	903.950*	11	65, 168, 488
C II	533.935	1	65, 165	C II	904.134*	12	65, 168, 488
C III	535.289	10	34, 65, 168	C II	904.468*	10	65, 168, 488
C III	538.075*	11	65, 168, 488	C	936.4	1	484
C III	538.080*	11	34, 65, 488	C I	945.193	1	65, 168, 488
C III	538.149*	12	34, 65, 488	C I	945.336	2	65, 168, 488
C III	538.312*	13	34, 65, 488	C I	945.566	3	65, 168, 488
C II	543.291	2	65, 168	C II	945.981	1	65, 168
C II	543.475	3	65, 168	C II	946.208	2	65, 168
C II	547.169	0	65, 168	C IV	948.098	2	65, 168
C II	547.288	0	65, 168	C IV	948.214	1	65, 168
C II	549.317	3	65, 168	C	954.4	0	484
C II	549.375	4	65, 168	C	960.6	0	484
C II	549.507	5	65, 168	C	966.6	0	484
C II	549.568	3	65, 168	C II	968.16	0	65, 168
C II	551.894	0	65, 168	C III	977.026*	18	65, 168, 488
C III	554.655	2	65, 168	C II	1009.854*	9	65, 168, 408
C II	560.244	4	65, 168	C II	1010.074*	10	65, 168, 488
C II	560.443	5	65, 168	C II	1010.369*	10	65, 168, 408
C II	562.355	3	65, 168	C	1022.8	1	484
C II	562.498	3	65, 168	C II	1036.330*	12	65, 168, 488
C II	562.577	3	65, 168	C II	1037.020*	13	168, 488, 794
C II	564.645	5	65, 168	C II	1063.30	0	65, 168
C III	565.528	7	34, 65, 168	C II	1065.883	7	65, 168, 488
C III	566.490	4	65, 168	C II	1066.121	6	65, 168, 488
C III	574.281	12	34, 65, 488	C II	1091.930	1	65, 168
C II	576.900	1	65, 168	C II	1092.240	0	65, 168
C II	577.108	2	65, 168	C II	1092.422	0	65, 168
C III	585.261	6	65, 168	C II	1092.740	2	65, 168
C III	585.417	8	65, 168	C IV	1107.600	3	65, 168
C III	585.496	5	65, 168	C IV	1107.933	4	65, 168
C III	585.608	6	65, 168	C I	1112.051	1	65, 168
C III	585.666	6	65, 168	C I	1114.414	2	65, 168, 488
C II	594.808	6	65, 168, 488	C I	1117.706	3	65, 168, 488
C II	595.032	7	65, 168, 488	C I	1118.153	1	65, 168
C II	600.265	1	65, 168	C I	1122.179	1	65, 168, 488
C II	600.369	3	65, 168	C I	1122.325	4	65, 168, 488
C II	600.532	2	65, 168	C I	1122.776	1	65, 168
C III	609.025	4	65, 168	C I	1123.154	1	65, 168
C III	609.275	6	65, 168	C I	1128.277	1	65, 168
C	617.7	1	484	C I	1128.748	1	65, 168, 488
C III	622.144	2	65, 168	C I	1129.161	6	65, 168, 488
C II	635.988	3	65, 168	C I	1129.626	1	65, 168, 488
C II	636.247	4	65, 168	C I	1129.927	1	65, 168, 488
C II	641.591	6	65, 168	C I	1138.506	1	65, 168
C II	641.772	6	65, 168	C I	1138.625	1	65, 168, 488
C II	641.875	6	65, 168	C II	1138.936	2	65, 168
C II	651.216	7	65, 168, 488	C I	1139.037	1	65, 168, 488
C II	651.262	7	65, 168, 488	C I	1139.142	2	65, 168, 488
C II	651.342	8	65, 168, 488	C II	1139.330	3	63, 65, 168
C II	686.480	2	65, 168	C II	1139.49	0	65, 168
C II	687.059*	10	65, 168, 488	C I	1139.794	6	65, 168, 488
C II	687.355*	11	65, 168, 488	C I	1139.894	7	65, 168, 488
C III	690.526	7	65, 168, 488	C I	1140.070	1	65, 168, 488
C	711.0	0	484	C I	1140.391	1	65, 168, 488
C III	714.879	1	65, 168	C I	1140.688	3	65, 168, 488
C	743.6	0	484	C II	1141.630	3	63, 65, 168
C	749.6	0	484	C I	1141.705	1	65, 168, 488
C IV	770.379	0	65, 168	C II	1141.746	2	63, 65, 168
C III	784.393	3	65, 168	C I	1155.839	1	65, 168, 488
C II	794.964	0	65, 168	C I	1156.059	2	65, 168, 488
C II	795.134	1	65, 168	C I	1156.502	1	65, 168, 488
C II	799.664	4	65, 168	C I	1156.619	5	65, 168, 488
C II	799.947	4	65, 168	C I	1157.333	1	65, 168, 488
C II	806.384	5	65, 168, 488	C I	1157.391	2	65, 168, 488
C II	806.555	7	65, 168, 488	C I	1157.825	3	65, 168, 488
C II	806.684	4	65, 168, 488	C I	1158.017	7	65, 168, 488
C II	806.846	6	65, 168, 488	C I	1158.030	7	168, 488, 794
C II	809.682	4	65, 168	C I	1158.107	8	65, 168, 488
C II	809.770	3	65, 168	C I	1158.138	1	794
C	848.4	0	484	C I	1158.398	2	65, 168, 488
C II	858.094*	8	65, 168, 488	C I	1158.729	3	65, 168, 488
C II	858.561*	9	65, 168, 488	C I	1159.004	5	65, 168, 488
C III	884.516	8	65, 168	C III	1165.71	0	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C III	1165.87	1	65, 168	C I	1289.983	3	65, 168, 488
C IV	1168.873	3	65, 168	C I	1291.380	1	65, 168, 488
C IV	1168.990	4	65, 168	C III	1296.30	2	65, 168
C III	1174.916*	12	168, 488	C III	1308.73	2	65, 168
C III	1175.248*	12	168, 488	C I	1310.646	4	65, 168, 488
C III	1175.566*	12	168, 488	C I	1311.365	8	168, 488, 794
C III	1175.700*	14	168, 488	C I	1311.985	2	65, 168, 488
C III	1175.973*	12	168, 488	C I	1312.261	2	65, 168, 488
C III	1176.351*	12	168, 488	C I	1313.471	6	65, 168, 488
C I	1188.935	1	65, 488	C I	1315.903	4	65, 168, 488
C I	1189.074	3	65, 488	C II	1323.916	8	168, 488
C I	1189.556	4	65, 488	C I	1328.836	3	491, 488, 794
C I	1189.660	6	65, 488	C I	1329.108*	5	491, 488, 794
C I	1191.855	1	65, 488	C I	1329.590*	10	488, 540, 794
C I	1192.480	2	65, 488	C II	1334.520*	13	168, 488, 794
C I	1192.923	2	65, 488	C II	1335.692*	14	168, 488, 794
C I	1193.013	8	488, 794	C I	1354.292	0	488, 794
C I	1193.243	15	794	C I	1355.825	6	65, 168, 488
C I	1193.284	10	65, 488	C I	1357.058	3	65, 168, 488
C I	1193.388	3	794	C I	1357.140	5	794
C I	1193.460	3	65, 488	C I	1359.131	1	65, 168, 540
C I	1193.674	3	794	C I	1359.329	2	65, 168, 488
C I	1193.738	4	65, 540	C I	1364.140	6	65, 168, 488
C I	1194.060	3	65, 794	C I	1364.165	8	794
C I	1194.094	5	65, 540	C III	1426.16	0	65, 168
C I	1194.291	2	65, 540	C III	1426.45	4	65, 168
C I	1194.494	7	65, 488	C III	1426.78	1	65, 168
C I	1194.656	5	65, 540	C III	1427.85	3	65, 168
C I	1197.812	1	65, 540	C III	1428.17	2	65, 168
C IV	1198.58	1	65, 168	C III	1428.53	2	65, 168
C II	1223.59	0	65, 168	C III	1428.66	0	65, 168
C II	1223.99	1	65, 168	C III	1428.95	1	65, 168
C IV	1230.046	2	65, 168	C III	1429.08	0	65, 168
C IV	1230.511	3	65, 168	C I	1431.595	20	167, 488, 668
C III	1247.368	10	168, 488, 34	C I	1432.105	15	167, 488, 668
C I	1253.538	1	65, 168	C I	1432.530	10	167, 488, 668
C I	1253.816	5	794	C I	1459.034	2	168, 488, 794
C I	1253.880	2	65, 168	C I	1463.346	6	168, 488, 794
C III	1256.52	1	65, 168	C I	1463.838	40	794
C I	1257.218	2	65, 168	C I	1467.405	20	794
C I	1259.523	10	794	C I	1467.450	3	65, 168, 488
C I	1259.546	3	65, 540	C I	1468.5	0	65, 168
C I	1260.670	2	65, 168, 488	C I	1469.844	15	794
C I	1260.738	4	488, 794	C I	1470.082	5	794
C I	1260.930	8	794	C I	1470.20	1	65, 168, 488
C I	1260.955	2	65, 488	C I	1472.3	0	168
C I	1261.000	8	794	C III	1477.68	3	65, 168
C I	1261.128	8	488, 794	C III	1478.05	2	65, 168
C I	1261.430	8	794	C III	1478.30	1	65, 168
C I	1261.559	8	488, 794	C I	1481.760*	7	168, 488, 794
C I	1261.560	8	488, 65	C I	1510.924	1	65, 168, 540
C I	1266.449	3	65, 168, 488	C III	1531.85	2	65, 168
C I	1267.633	1	65, 168, 488	C I	1542.202	2	65, 168, 488
C I	1274.131	5	65, 488	C IV	1548.195*	20	168, 488
C I	1274.880	2	65, 168, 488	C IV	1550.768*	19	168, 488
C I	1275.021	5	65, 168, 488	C I	1560.301	8	491, 488, 794
C I	1277.154	2	65, 488	C I	1560.687*	15	491, 488, 794
C I	1277.282*	9	488, 794	C I	1561.292	2	65, 488
C I	1277.551*	4	65, 794	C I	1561.339	5	794
C I	1277.617*	10	488, 540	C I	1561.40	20	491, 488
C I	1277.727*	20	794	C I	1561.433*	20	794
C I	1277.766	3	65, 488	C III	1576.49	3	65, 168
C I	1279.230	8	794	C III	1577.32	2	65, 168
C I	1279.251	6	65, 488	C III	1577.89	2	65, 168
C I	1279.897	10	488, 794	C III	1591.48	2	65, 168
C I	1280.140	8	488, 794	C I	1602.598	15	794
C I	1280.340	6	488, 794	C I	1602.984	5	65, 168, 488
C I	1280.403	5	794	C III	1620.05	3	65, 168
C I	1280.604	8	794	C III	1620.33	2	65, 168
C I	1280.646	2	65, 488	C III	1620.59	0	65, 168
C I	1280.852	10	794	C III	1620.68	1	65, 168
C I	1280.892	4	65, 488	C III	1645.06	1	65, 168
C I	1288.055	1	65, 168, 488	C I	1654.055	5	794
C I	1288.430	5	488, 794	C I	1656.255	5	488, 668
C I	1288.633	2	65, 168, 488	C I	1656.259	15	794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C I	1656.454	4	794	N IV	181.746	1	65, 168
C I	1656.923*	3	488, 668, 794	N V	186.070*	4	65, 168, 488
C I	1656.998	10	488, 668	N V	186.153*	5	65, 168, 488
C I	1657.001*	30	794	N V	190.156	1	65, 168
C I	1657.243	1	794	N V	190.242	2	65, 168
C I	1657.374	2	488, 668, 794	N IV	196.954	0	65, 168
C I	1657.541	1	794	N IV	197.007	1	65, 168
C I	1657.899	4	488, 668, 794	N IV	197.230	3	65, 168
C I	1658.117*	5	488, 668, 794	N IV	205.960	2	65, 168
C II	1720.158	18	794	N IV	206.021	2	65, 168
C II	1720.44	0	65, 168	N V	209.270*	7	65, 168, 488
C II	1720.99	1	65, 168	N V	209.303*	6	65, 168, 488
C II	1721.081	20	794	N IV	211.396	0	65, 168
C II	1721.66	2	65, 168	N IV	217.227	1	65, 168
C II	1722.21	0	65, 168	N IV	218.085	1	65, 168
C I	1751.90	8	65, 168, 488	N IV	225.098	3	65, 168, 488
C II	1760.40	4	168, 488	N IV	225.136	4	65, 168, 488
C II	1760.81	3	168, 488	N IV	225.205	5	65, 168, 488
C I	1764.0	0	168	N IV	234.124	3	65, 168
C I	1765.4	0	168	N IV	234.195	4	65, 168
C III	1779.12	0	65, 168	N IV	234.249	2	65, 168
C III	1833.264	1	794	N IV	237.860	1	65, 168
C III	1894.49	2	65, 168, 245	N IV	237.903	2	65, 168
C III	1923.01	3	65, 168	N IV	237.983	3	65, 168
C III	1923.22	2	65, 168	N IV	239.161	1	65, 168
C III	1923.40	2	65, 168	N IV	239.210	2	65, 168
C I	1930.902	10	794	N IV	239.618	4	65, 168
C I	1930.930	10	168, 488	N IV	239.693	1	65, 168
C III	1931.027	4	65, 49	N IV	247.205*	10	65, 168, 488
C III	1979.35	4	65, 245	N V	247.563*	10	65, 168, 488
C III	1979.79	3	65, 245	N V	247.710*	11	65, 168, 488
C II	1987.33	1	287	N IV	260.455	2	65, 168
C II	1987.76	3	287	N III	264.837	1	65, 168
C II	1988.09	2	287	N III	264.948	2	65, 168
C II	1988.51	1	287	N V	266.192*	6	65, 168, 488
C I	1993.65	2	65, 168, 488	N V	266.375*	7	65, 168, 488
				N III	267.851	0	65, 168
				N III	267.952	1	65, 168
				N IV	270.995	6	65, 168, 488
				N III	282.093	1	65, 168

NITROGEN

N I	I.P.	117214.	K	853.14	A		
N II	I.P.	238751.1	K	418.927	A		
N III	I.P.	382625.5	K	761.352	A		
N IV	I.P.	624851.	K	160.234	A		
N V	I.P.	789532.9	K	126.657	A		
N VI	I.P.	4452800.	K	22.458	A		
N VII	I.P.	5379860.	K	18.588	A		
N VI		23.771*		764			
N VI		24.898*		764			
N VI		28.787*		764			
N VI		29.084*		764			
N V		133.941	1	129			
N V		136.402	3	129			
N V		140.345	0	65, 168			
N V		146.769	0	129			
N V		147.121	2	168			
N V		147.424	2	65, 129			
N V		148.188	2	129			
N V		150.127	3	129			
N V		153.124	1	129			
N V		153.180	1	129			
N V		158.091	0	65, 168			
N V		162.562	4	65, 168, 488			
N V		166.865	1	65, 168			
N V		166.947	2	65, 168			
N V		168.559	1	129			
N V		168.618	1	129			
N III		299.820	1	65, 168			
N IV		300.316	3	65, 168			
N IV		303.009	4	65, 168, 488			
N IV		303.048	5	65, 168, 488			
N IV		303.079	4	65, 168, 488			
N IV		303.123	6	65, 168, 488			
N IV		303.163	4	65, 168, 488			
N III		303.891	2	65, 168			
N III		303.981	2	65, 168			
N III		304.032	2	65, 168			
N III		304.818	4	65, 168			
N III		304.874	4	65, 168			
N III		304.912	3	65, 168			
N III		305.918	1	65, 168			
N III		311.539	2	65, 168			
N III		311.628	3	65, 168			
N III		314.715	8	65, 168, 488			
N III		314.850	9	65, 168, 488			
N III		314.877	6	65, 168, 488			
N IV		315.053	8	65, 168, 488			

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N III	321.071	1	65, 168	N II	506.057	2	65, 168
N III	321.161	2	65, 168	N II	506.160	3	65, 168
N III	321.270	1	65, 168	N II	508.459	0	65, 168
N IV	322.503	7	65, 168, 488	N II	508.700	2	65, 168
N IV	322.570	8	65, 168, 488	N II	508.903	0	65, 168
N IV	322.724	9	65, 168, 488	N II	509.018	0	65, 168
N IV	323.175	7	65, 168, 488	N III	509.586	5	65, 168, 488
N III	323.431	4	65, 168, 488	N III	509.897	4	65, 168, 488
N III	323.488	5	65, 168, 488	N II	510.757	3	65, 168
N III	323.615	6	65, 168, 488	N II	513.845	2	65, 168
N III	323.671	4	65, 168, 488	N II	529.343	3	65, 168, 488
N III	332.133	2	65, 168	N II	529.405	3	65, 168, 488
N III	332.327	3	65, 168	N II	529.481	3	65, 168, 488
N IV	335.050*	11	65, 168, 488	N II	529.627	3	65, 168, 488
N III	338.345	2	65, 168	N II	529.713	3	65, 168, 488
N IV	344.915	3	65, 168	N II	529.860	5	65, 168, 488
N IV	345.023	3	65, 168	N III	530.037	2	65, 168
N IV	345.063	5	65, 168, 488	N III	530.268	3	65, 168
N IV	345.107	3	65, 168, 488	N II	533.504	4	65, 168, 488
N IV	345.201	3	65, 168	N II	533.577	5	65, 168, 488
N III	348.690	0	65, 168	N II	533.644	4	65, 168, 488
N III	348.800	0	65, 168	N II	533.726	6	65, 168, 488
N IV	351.931	5	65, 168, 488	N II	533.809	4	65, 168, 488
N III	351.979	1	65, 168	N II	547.813	0	65, 168
N IV	352.058	4	65, 168	N II	559.760	0	65, 168
N III	358.278	3	65, 168, 488	N II	574.650	6	65, 168, 488
N III	358.327	5	65, 168, 488	N II	582.150	5	65, 168, 488
N III	358.356	5	65, 168, 488	N III	601.468	1	65, 168
N III	358.401	3	65, 168, 488	N III	601.878	0	65, 168
N III	358.469	5	65, 168, 488	N II	629.161	3	65, 168
N III	358.509	5	65, 168, 488	N II	629.434	2	65, 168
N III	358.578	6	65, 168, 488	N II	635.180	5	65, 168, 488
N III	362.833	7	65, 168, 488	N II	644.621*	8	65, 168, 488
N III	362.881	8	65, 168, 488	N II	644.825*	9	65, 168, 488
N III	362.946	8	65, 168, 488	N II	645.167*	10	65, 168, 488
N III	362.985	6	65, 168, 488	N II	657.327	1	65, 170
N III	374.204	11	65, 168, 488	N II	659.538	0	170
N III	374.441	12	65, 168, 488	N II	660.280	9	65, 168, 488
N IV	387.353	4	65, 168, 488	N II	670.289	2	65, 168
N III	398.885	3	65, 168	N II	670.508	1	65, 168
N III	399.045	4	65, 168	N II	670.881	1	65, 168
N III	399.084	1	65, 168	N II	671.014	6	65, 168, 488
N III	413.681	0	65, 168	N II	671.391	8	65, 168, 488
N III	413.797	0	65, 168	N II	671.629	6	65, 168, 488
N III	418.705	7	65, 168, 488	N II	671.770	6	65, 168, 488
N III	418.910	6	65, 168, 488	N II	671.999	6	65, 168, 488
N IV	420.758	1	65, 168	N III	684.996*	14	65, 168, 488
N III	428.180	6	65, 168, 488	N III	685.513*	15	65, 168, 488
N III	428.244	5	65, 168, 488	N III	685.816*	16	65, 168, 488
N III	433.911	6	65, 168, 488	N III	686.335*	14	65, 168, 488
N III	434.014	6	65, 168, 488	N III	691.187	2	65, 168
N III	434.066	7	65, 168, 488	N III	691.388	1	65, 168
N III	434.129	5	65, 168, 488	N II	745.836	6	65, 168, 488
N III	434.246	6	65, 168, 488	N II	746.976	8	65, 168, 488
N III	434.280	6	65, 168, 488	N III	763.340*	14	65, 168, 488
N III	451.869	10	65, 168, 488	N III	764.357*	15	65, 168, 488
N III	452.226	11	65, 168, 488	N IV	765.140*	17	65, 168, 488
N II	453.257	0	65, 168	N III	771.544	10	65, 168, 488
N II	453.340	1	65, 168	N III	771.901	11	65, 168, 488
N III	456.078	1	65, 168	N III	772.385	12	65, 168, 488
N IV	463.743	3	65, 168	N III	772.891	9	65, 168, 488
N III	472.232	4	65, 168, 488	N III	772.975	8	65, 168, 488
N III	472.392	5	65, 168, 488	N II	775.957*	12	65, 168, 488
N II	474.493	0	65, 168	N II	786.474	3	65, 170
N II	474.540	0	65, 168	N I	855.70	2	334
N II	474.601	0	65, 168	N I	856.24	2	334
N II	474.698	0	168	N I	856.80	2	334
N II	474.774	0	168	N I	857.76	2	334
N II	474.883	2	65, 168	N II	858.357	1	65, 168
N II	475.638	1	65, 168	N I	858.80	2	334
N II	475.697	2	65, 168	N I	859.35	3	334
N II	475.800	3	65, 168	N I	859.75	2	334
N II	475.876	1	65, 168	N I	860.15	4	334
N II	485.857	0	65, 168	N I	860.85	4	334
N II	505.985	1	65, 168	N I	861.15	1	334

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N	I	862.15	5 334	N	I	1028.64	2 334
N	I	862.90	5 334	N	I	1029.53	1 334
N	I	863.15	3 334	N	I	1030.72	2 334
N	I	864.93	5 334	N	I	1031.65	2 334
N	I	865.63	5 334	N	I	1032.19	1 334
N	I	865.93	3 334	N	I	1032.958	2 191
N	I	868.98	5 334	N	I	1033.48	3 334
N	I	869.66	5 334	N	I	1033.65	0 334
N	I	870.00	3 334	N	I	1034.39	2 334
N	I	870.40	3 334	N	I	1034.64	0 334
N	I	871.01	1 334	N	I	1034.96	1 334
N	III	871.850	0 65, 168	N	I	1037.38	4 334
N	I	875.092	5 334, 794	N	I	1037.64	1 334
N	I	875.25	5 334	N	I	1038.34	3 334
N	I	875.764	0 65, 334	N	I	1038.76	1 334
N	I	876.32	4 334	N	I	1038.90	1 334
N	I	876.79	2 334	N	I	1043.12	5 334
N	I	877.11	2 334	N	I	1043.58	2 334
N	I	885.36	3 334	N	I	1044.13	5 334
N	I	885.62	5 334	N	I	1044.69	4 334
N	I	885.93	3 334	N	I	1051.89	2 334
N	I	886.33	6 334	N	I	1052.07	3 334
N	I	886.80	3 334	N	I	1052.16	3 334
N	I	886.95	3 334	N	I	1052.72	2 334
N	I	887.41	4 334	N	I	1053.03	3 334
N	I	888.019	0 334, 794	N	I	1053.38	5 334
N	I	888.363	0 334, 794	N	I	1053.65	3 334
N	I	905.23	4 334	N	I	1053.90	3 334
N	I	905.53	2 334	N	I	1063.351	1 191
N	I	905.829	5 334, 794	N	I	1066.126	1 191
N	I	906.202	10 334, 794	N	I	1066.56	3 334
N	I	906.426	15 334, 794	N	I	1066.97	4 334
N	I	906.63	4 334	N	I	1067.37	4 334
N	I	906.722	1 334, 794	N	I	1067.607	35 334, 794
N	I	906.833	2 65, 334	N	I	1068.476	35 334, 794
N	I	907.278	4 65, 334	N	I	1068.66	4 334
N	I	908.23	3 334	N	I	1069.198	2 65, 334
N	I	908.83	2 334	N	I	1069.984	30 334, 794
N	I	909.692	0 334, 794	N	I	1070.821	0 334, 794
N	I	910.279	0 334, 794	N	I	1071.656	1 191
N	I	910.648	0 65, 334	N	II	1083.990*	20 488, 794
N	II	915.603*	10 65, 168, 488	N	II	1084.579*	30 488, 794
N	II	915.955*	10 168, 488	N	II	1085.442	3 794
N	II	916.004*	11 168, 488	N	II	1085.546	3 488, 794
N	II	916.700*	12 168, 488	N	II	1085.707*	50 488, 794
N	IV	921.982*	10 65, 168, 488	N	I	1093.275	0 191
N	IV	922.507*	10 65, 168, 488	N	I	1094.688	0 191
N	IV	923.045*	10 65, 168, 488	N	I	1095.279	4 191
N	IV	923.211*	12 65, 168, 488	N	I	1095.940*	35 334, 794
N	IV	923.669*	10 65, 168, 488	N	I	1096.322*	35 334, 794
N	IV	924.274*	10 65, 168, 488	N	I	1096.749*	35 334, 794
N	I	951.08	3 334	N	I	1097.245*	50 334, 794
N	I	951.35	1 334	N	I	1097.990*	25 334, 794
N	I	952.304	8 334, 794	N	I	1098.103*	40 794
N	I	952.522	4 334, 794	N	I	1098.264*	40 334, 794
N	I	952.789	3 65, 334	N	I	1098.63	2 334
N	I	953.399	6 65, 334	N	I	1098.78	1 334
N	I	953.415	15 334, 794	N	I	1098.98	2 334
N	I	953.658	15 334, 794	N	I	1099.153	25 334, 794
N	I	953.98	6 334	N	I	1099.80	2 334
N	I	954.11	3 334	N	I	1100.362	30 334, 794
N	IV	955.335*	10 65, 168, 488	N	I	1101.293*	40 334, 794
N	I	955.58	2 334	N	I	1134.176	20 488, 794
N	I	955.91	3 334	N	I	1134.426	25 488, 794
N	I	959.54	3 334	N	I	1134.788	25 488, 794
N	I	963.991	5 488, 794	N	I	1139.15	1 334
N	I	964.626	5 488, 794	N	I	1139.818	1 191
N	I	965.07	10 488, 137	N	I	1140.76	2 334
N	III	979.842	8 65, 168, 488	N	I	1141.20	1 334
N	III	979.919	9 65, 168, 488	N	I	1141.70	2 334
N	III	989.790*	16 65, 168, 488	N	I	1142.73	2 334
N	III	991.514*	14 65, 168, 488	N	I	1143.32	1 334
N	III	991.579*	17 65, 168, 488	N	I	1143.606	5 191
N	III	1006.015	6 65, 168, 488	N	I	1144.24	2 334
N	I	1008.875	1 191	N	I	1145.28	2 334

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N I	1145.92	1	334	N II	1276.754	3	168, 794
N I	1147.69	4	334	N I	1279.223	0	191
N I	1148.76	4	334	N I	1279.995	1	191
N I	1149.47	2	334	N I	1280.362	1	191
N I	1152.139	3	191	N I	1301.681	0	191
N I	1152.35	4	334	N I	1308.86	3	334
N I	1152.75	1	334	N I	1309.30	3	334
N I	1153.52	4	334	N I	1310.057	1	191
N I	1154.23	3	334	N I	1310.548	25	488, 794
N I	1154.993	0	191	N I	1310.952	25	488, 794
N I	1156.593	0	191	N I	1312.44	3	334
N I	1158.051	2	191	N I	1312.86	3	334
N I	1159.285	1	65, 191, 334	N I	1313.20	3	334
N I	1159.858	1	65, 191, 334	N I	1313.47	3	334
N I	1160.45	3	334	N I	1315.23	2	334
N I	1160.67	2	334	N I	1315.484	1	65, 191, 334
N I	1161.26	2	334	N I	1316.287	1	334, 794
N I	1163.884	12	488, 794	N I	1317.41	2	334
N I	1164.322	8	488, 794	N I	1318.13	3	334
N I	1165.566	2	65, 191, 334	N I	1319.003	20	488, 794
N I	1166.950	0	191	N I	1319.684	30	488, 794
N I	1167.450	25	488, 794	N I	1320.83	3	334
N I	1168.334	8	334, 794	N I	1321.60	4	334
N I	1168.537	20	488, 794	N III	1322.17		65, 246
N I	1169.692	1	334, 794	N III	1322.33		65, 246
N I	1170.276	1	334, 794	N III	1322.80		65, 246
N I	1171.067	0	65, 191, 334	N III	1322.90		65, 246
N I	1171.39	2	334	N III	1323.42		65, 191, 246
N I	1171.60	2	334	N III	1323.89		65, 246
N I	1172.02	2	334	N III	1324.40	3	65, 246
N I	1172.55	3	334	N III	1325.10		65, 246
N I	1174.84	3	334	N I	1326.572	15	488, 794
N I	1176.508	15	334, 794	N I	1327.927	10	488, 794
N I	1176.626	3	794	N II	1329.43	0	65, 243
N I	1177.694	15	334, 794	N II	1330.816	3	65, 191
N I	1180.428	0	191	N II	1343.37	2	65, 168
N III	1183.030	7	65, 168, 488	N II	1345.29	1	65, 168
N I	1183.998	3	191	N III	1345.69	4	65, 246
N III	1184.544	8	65, 168, 488	N III	1346.27	4	65, 246
N I	1188.972	5	334, 794	N II	1346.41	0	65, 168, 785
N I	1189.244	3	334, 794	N III	1346.70		65, 246
N I	1189.628	5	334, 794	N III	1347.56	0	65, 246
N I	1190.52	3	334	N III	1348.45		65, 246
N I	1190.84	5	334	N I	1354.286	0	191
N I	1191.03	5	334	N I	1355.887	6	191
N I	1191.99	4	334	N I	1357.359	0	191
N I	1192.55	2	334	N I	1360.566	1	191
N I	1199.551*	50	488, 794	N I	1377.787	0	191
N I	1199.718	2	794	N I	1379.003	0	191
N I	1200.226*	40	488, 794	N III	1387.31	4	65, 168, 246
N I	1200.708*	90	488, 794	N I	1411.510	1	191
N I	1223.20	3	334	N I	1411.948	30	488, 794
N I	1223.80	2	334	N I	1462.822	2	191
N I	1225.028	15	334, 794	N I	1466.723	5	191, 794
N I	1225.372	10	334, 794	N I	1467.384	3	191
N I	1225.85	2	334	N III	1470.68	0	65, 246
N I	1226.831	1	65, 334	N III	1471.02	1	65, 246
N I	1227.00	3	334	N III	1471.60		65, 246
N I	1227.226	1	65, 334	N III	1471.69	2	65, 246
N I	1227.788	2	65, 334	N III	1472.30		65, 246
N I	1228.410	5	334, 794	N III	1472.88		65, 246
N I	1228.790	10	334, 794	N I	1481.750	4	191
N I	1229.172	1	334, 794	N I	1492.624*	80	488, 794
N I	1229.40	2	334	N I	1492.824*	30	137, 794
N I	1230.288	0	65, 334	N I	1494.673*	60	488, 794
N I	1231.588	1	65, 334	N I	1527.495	0	191
N I	1233.20	2	334	N I	1542.499	1	191
N V	1238.800*	8	65, 168, 488	N I	1552.995	0	191
N V	1242.778*	7	65, 168, 488	N I	1558.834	0	191
N I	1243.179	20	488, 794	N I	1559.751	0	191
N I	1243.309	15	488, 794	N I	1572.976	0	191
N II	1258.75	3	65, 243	N II	1573.21	1	65, 243
N I	1264.761	0	191	N II	1574.035	1	243, 794
N II	1275.06	1	65, 168	N I	1577.131	1	191
N II	1276.18	1	65, 168	N II	1590.25	2	65, 243

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
O	V	133.521	3	65, 168	O	IV	180.481	2	65, 168
O	V	135.523	5	65, 168	O	IV	181.150	4	65, 168
O	V	138.030	2	65, 168	O	IV	181.275	5	65, 168
O	V	138.054	3	65, 168	O	IV	181.876	3	65, 168
O	V	138.108	4	65, 168	O	IV	181.995	4	65, 168
O	V	139.025	5	65, 168	O	V	182.205	2	65, 168
O	V	140.045	0	65, 168	O	IV	182.711	3	65, 168
O	V	140.109	0	65, 168	O	IV	182.832	4	65, 168
O	V	142.119	0	129	O	IV	183.139	0	168
O	V	144.802	1	65, 168	O	IV	183.353	0	65, 168
O	V	144.837	1	65, 168	O	IV	183.395	1	65, 168
O	V	146.345	1	65, 168	O	IV	183.454	1	65, 168
O	V	147.261	3	65, 168	O	VI	183.937*	8	168, 488
O	V	149.034	0	65, 168	O	VI	184.117*	9	168, 488
O	V	149.078	2	65, 168	O	V	185.213	1	170
O	VI	150.088*	10	168, 488	O	IV	185.384	0	65, 168
O	VI	150.124*	9	168, 488	O	V	185.455	2	168
O	V	151.449	4	65, 168	O	IV	185.544	1	65, 170
O	V	151.481	5	65, 168, 362	O	V	185.747	9	65, 168, 488
O	V	151.548	6	65, 168, 362	O	V	186.602	1	170
O	IV	152.264	0	65, 168	O	IV	186.872	1	65, 168
O	IV	152.355	0	65, 168	O	IV	186.936	2	65, 168
O		153.162	0	65, 170	O	IV	186.982	0	65, 168
O	V	153.948	3	65, 168	O	IV	188.152	2	65, 168
O	V	156.126	1	65, 168	O	IV	188.190	0	65, 168
O	V	156.158	2	65, 168	O		188.412	0	65, 170
O	V	156.225	3	65, 168	O		188.478	0	170
O	IV	158.553	0	65, 168	O	V	191.397	0	65, 168
O	IV	158.606	1	65, 168	O	V	191.458	1	65, 168
O	V	158.813	1	65, 168	O	V	191.556	2	65, 168
O	V	158.926	2	65, 168	O	IV	191.609	2	65, 168
O	V	159.343	4	65, 168	O	IV	191.640	0	65, 168
O	V	159.380	4	65, 168	O	IV	191.695	2	65, 168
O	IV	160.141	0	65, 168	O	IV	191.752	3	65, 168
O	V	162.494	4	65, 168	O	IV	192.139	4	65, 168
O	V	164.178	2	65, 168	O	IV	192.169	4	65, 168
O	V	164.578	5	65, 168	O	IV	192.206	5	65, 168
O	V	164.628	4	65, 168	O	IV	192.244	3	65, 168
O	V	164.656	6	65, 168	O	V	192.751*	12	65, 168, 488
O	V	164.710	4	65, 168	O	V	192.800*	13	65, 168, 488
O	V	164.986	2	65, 168	O	V	192.906*	14	65, 168, 488
O	V	166.113	3	65, 168	O	V	194.593	8	65, 168, 488
O	V	166.152	4	65, 168	O	IV	195.863	7	65, 168
O	V	166.234	5	65, 168	O	IV	196.009	8	65, 168
O	IV	167.145	0	65, 168	O	IV	196.348	0	65, 168
O	V	167.991	8	65, 168, 488	O	IV	196.435	0	65, 168
O	V	168.042	4	65, 168, 488	O	V	198.031	3	65, 168
O	V	168.077	4	65, 168, 488	O	V	200.827	1	65, 170
O		168.538	1	170	O	IV	200.915	1	65, 168
O		168.756	1	170	O	IV	200.966	1	65, 168
O	V	169.478	0	65, 168	O	IV	200.995	2	65, 168
O	V	169.586	0	65, 168	O	IV	201.022	0	65, 168
O	V	170.218	6	65, 168	O	IV	201.073	1	65, 168
O	IV	170.940	0	65, 168	O	IV	201.098	1	65, 168
O	IV	170.988	0	65, 168	O	V	202.158	5	65, 168
O	IV	171.071	2	65, 168	O	V	202.191	5	65, 168
O	IV	171.121	2	65, 168	O	V	202.226	5	65, 168, 488
O	IV	171.191	0	65, 168	O	V	202.282	5	65, 168, 488
O	V	172.168*	12	65, 168, 488	O	V	202.335	5	65, 168, 488
O	VI	172.935*	12	65, 168, 488	O	V	202.393	7	65, 168, 488
O	VI	173.082*	13	65, 168, 488	O	IV	202.891	4	65, 168
O	IV	173.803	0	65, 168	O	IV	203.048	5	65, 168
O	IV	173.851	1	65, 168	O	V	203.783	6	65, 168, 488
O	IV	173.917	2	65, 168	O	V	203.821	7	65, 168, 488
O	IV	173.968	0	65, 168	O	V	203.851	6	65, 168
O	IV	174.105	2	65, 168	O	V	203.890	8	65, 168, 488
O	IV	174.220	3	65, 168	O	V	203.935	6	65, 168
O	V	174.558	2	65, 168	O	IV	204.708	0	65, 168
O	IV	177.598	0	65, 168	O	IV	204.905	0	65, 168
O	IV	177.659	0	65, 168	O	IV	204.996	0	65, 168
O	IV	177.698	1	65, 168	O	V	205.102	3	65, 168
O	IV	177.761	2	65, 168	O		205.568	0	65, 170
O	IV	177.808	2	65, 168	O		205.618	0	65, 170
O	V	178.713	2	65, 168	O	IV	205.842	0	65, 168
O	IV	180.351	1	65, 168	O	IV	206.002	1	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O IV	207.183	6	65, 168	O IV	246.503	3	65, 168
O IV	207.239	7	65, 168	O IV	246.563	4	65, 168
O IV	207.348	4	65, 168	O III	247.080	1	65, 168
O V	207.794*	10	65, 168, 488	O III	248.320	1	65, 168
O IV	211.808	0	65, 168	O V	248.459	6	65, 168
O IV	212.578	2	65, 168	O III	248.538	1	65, 168
O IV	212.974	3	65, 168	O III	248.574	1	65, 168
O IV	213.061	3	65, 168	O III	248.618	2	65, 168
O	213.533	0	65, 170	O IV	249.223	3	65, 168
O	213.659	0	65, 170	O IV	249.365	4	65, 168
O IV	213.978	4	65, 168	O IV	251.114	1	65, 170
O IV	214.032	5	65, 168	O IV	251.148	1	65, 170
O IV	214.155	6	65, 168	O IV	252.564*	6	168
O IV	214.209	4	65, 168	O IV	252.948*	6	65, 168
O IV	214.249	1	65, 168	O IV	253.082*	7	65, 168
O IV	214.290	1	65, 168	O III	253.548	0	65, 168
O V	215.034	7	65, 168, 488	O III	255.044	0	65, 168
O V	215.104	8	65, 168, 488	O III	255.158	1	65, 168
O V	215.245	9	65, 168, 488	O IV	255.252	5	65, 168
O V	216.018	8	65, 168, 488	O III	255.302	0	65, 168
O IV	216.960	0	65, 168	O III	256.425	2	65, 168
O V	220.352*	13	65, 168, 488	O III	256.460	3	65, 168
O IV	221.515	0	65, 168	O III	256.500	3	65, 168
O IV	221.648	4	65, 168	O IV	258.116	2	65, 168
O V	222.235	3	65, 168	O IV	258.207	3	65, 168
O IV	222.763	5	65, 168	O IV	260.389	10	65, 168, 488
O IV	222.777	4	65, 168	O IV	260.556	9	65, 168, 488
O IV	223.728	0	65, 168	O III	261.027	4	65, 168
O IV	223.841	0	65, 168	O III	262.113	2	65, 168
O IV	225.299	5	65, 168	O III	262.289	0	65, 168
O III	226.038	1	65, 168	O III	262.729	0	65, 168
O V	227.374	5	65, 168	O III	262.882	1	65, 168
O V	227.468	5	65, 168	O III	263.692	3	65, 168
O V	227.510	7	65, 168	O III	263.728	4	65, 168
O V	227.549	5	65, 168	O III	263.768	3	65, 168
O V	227.636	5	65, 168	O III	263.818	5	65, 168
O V	227.688	5	65, 168	O III	263.861	3	65, 168
O III	228.893	0	65, 168	O III	263.903	0	65, 168
O III	228.988	0	65, 168	O III	264.257	4	65, 168
O IV	229.896	0	65, 168	O III	264.338	5	65, 168
O IV	230.040	0	65, 168	O III	264.480	6	65, 168
O IV	230.682	1	65, 168	O IV	265.062	0	65, 168
O IV	230.755	2	65, 168	O V	265.550	4	65, 168
O IV	231.031	3	65, 168	O IV	266.690	0	65, 168
O IV	231.070	7	65, 168	O IV	266.729	0	65, 168
O IV	231.101	6	65, 168	O IV	266.932	6	65, 168
O IV	231.144	4	65, 168	O III	266.985	7	65, 168
O IV	231.200	6	65, 168	O III	267.030	7	65, 168
O IV	231.240	6	65, 168	O III	267.050	3	65, 168
O IV	231.302	7	65, 168	O III	267.121	4	65, 168
O V	231.823	7	65, 168	O III	268.451	1	65, 168
O IV	233.457	7	65, 168, 488	O IV	269.559	1	65, 168
O IV	233.495	7	65, 168, 488	O V	270.982	0	65, 168
O IV	233.521	6	65, 168	O III	271.403	1	65, 168
O IV	233.561	8	65, 168, 488	O III	271.523	1	65, 168
O IV	233.596	6	65, 168	O III	271.611	0	65, 168
O IV	234.988	3	65, 168	O IV	271.989	6	65, 168
O IV	236.071	1	65, 168	O IV	272.076	6	65, 168
O III	236.710	1	65, 168	O IV	272.175	7	65, 168
O IV	238.361*	14	65, 168, 488	O IV	272.174	5	65, 168
O IV	238.573*	15	65, 168, 488	O IV	272.270	6	65, 168
O IV	239.592	3	65, 168	O IV	272.311	6	65, 168
O IV	239.935	0	65, 168	O III	275.281	2	65, 168
O IV	240.079	1	65, 168	O III	275.366	3	65, 168
O III	240.979	2	65, 168	O III	275.513	4	65, 168
O III	241.037	2	65, 168	O III	277.385	7	65, 168, 488
O III	241.819	1	65, 168	O III	277.514	1	65, 168
O III	241.875	1	65, 168	O IV	279.456	2	65, 170
O IV	242.045	2	65, 168	O IV	279.633	10	65, 168, 488
O IV	242.140	3	65, 168	O III	279.787	3	65, 168
O IV	242.183	0	65, 168	O IV	279.937	11	65, 168, 488
O III	244.049	2	65, 168	O III	280.030	2	65, 168
O IV	245.720	1	65, 168	O III	280.116	1	65, 168
O III	246.265	3	65, 168	O III	280.234	1	65, 168
O IV	246.465	2	65, 168	O III	280.265	3	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O III	280.328	1	65, 168	O III	355.469	5	65, 168
O III	280.412	1	65, 168	O III	356.558	0	65, 168
O III	280.483	1	65, 168	O III	356.625	1	65, 168
O IV	282.213	1	65, 168	O III	356.725	2	65, 168
O IV	285.714	6	65, 168	O III	356.768	0	65, 168
O IV	285.838	7	65, 168	O III	359.016	8	65, 168
O III	286.038	0	65, 168	O III	359.223	8	65, 168
O V	286.448	6	65, 168	O III	359.384	7	65, 168
O IV	289.292	3	65, 168	O III	359.462	0	65, 170
O IV	289.469	2	65, 168	O III	359.616	1	65, 170
O IV	289.590	1	65, 168	O III	364.739	3	65, 168
O IV	289.898	2	65, 168	O III	364.867	2	65, 168
O IV	289.933	1	65, 168	O III	364.940	1	65, 168
O IV	291.054	1	65, 168	O IV	367.192	2	65, 168
O IV	291.203	1	65, 168	O III	373.805	8	65, 168, 488
O IV	294.650	1	65, 168	O III	374.005	8	65, 168, 488
O IV	294.853	1	65, 168	O III	374.075	10	65, 168, 488
O IV	295.051	1	65, 168	O III	374.165	8	65, 168, 488
O IV	295.140	1	65, 168	O III	374.331	8	65, 168, 488
O III	295.511	3	65, 168	O III	374.436	8	65, 168, 488
O III	295.619	5	65, 168	O II	376.693	0	65, 168
O III	295.657	6	65, 168	O II	376.745	0	65, 168
O III	295.716	6	65, 168	O II	377.045	0	65, 168
O IV	295.874	2	65, 168	O III	379.505	4	65, 168
O III	295.944	3	65, 168	O III	379.575	3	65, 168
O III	296.012	4	65, 168	O III	379.631	2	65, 168
O III	296.270	1	65, 168	O IV	379.775	4	65, 168
O III	299.275	2	65, 168	O IV	379.919	3	65, 168
O IV	299.495	3	65, 168	O III	382.214	1	168
O IV	299.620	2	65, 168	O III	382.903	1	168
O IV	299.710	2	65, 168	O III	387.398	2	65, 168
O IV	299.850	4	65, 168	O III	387.482	3	65, 168
O III	300.455	3	65, 168	O III	387.639	4	65, 168
O III	303.411	7	65, 168, 488	O IV	387.805	0	170
O III	303.460	7	65, 168, 488	O III	390.115	0	170
O III	303.515	7	65, 168, 488	O III	390.573	0	170
O III	303.621	7	65, 168, 488	O III	390.726	0	65, 170
O III	303.693	7	65, 168, 488	O III	390.832	0	65, 170
O III	303.799	9	65, 168, 488	O II	391.912	1	65, 168
O III	305.596	8	65, 168, 488	O II	391.943	2	65, 168
O III	305.656	9	65, 168, 488	O II	392.002	3	65, 168
O III	305.703	8	65, 168, 488	O II	392.322	3	65, 168
O III	305.769	10	65, 168, 488	O III	393.150	0	170
O III	305.836	8	65, 168, 488	O III	395.558*	12	65, 168, 488
O III	305.879	4	65, 168, 488	O III	397.120	2	65, 168
O IV	306.621	8	65, 168	O III	397.231	1	65, 168
O IV	306.882	7	65, 168	O III	397.310	0	65, 168
O III	308.051	1	65, 168	O IV	399.50	3	335
O III	308.306	2	65, 168	O IV	399.62	2	335
O IV	311.490	5	65, 168	O IV	399.71	2	335
O IV	311.679	6	65, 168	O IV	399.85	4	335
O IV	311.726	3	65, 168	O II	403.035	0	65, 168
O III	316.967	3	65, 168	O II	403.087	0	65, 168
O III	317.265	1	65, 168	O II	403.273	0	65, 168
O III	319.996	3	65, 168	O II	403.372	0	65, 168
O III	320.720	2	65, 168	O II	418.598	1	65, 168
O III	320.979*	12	65, 168, 488	O II	418.812	0	65, 168
O IV	321.457	1	65, 168	O II	424.577	0	65, 168
O IV	327.320	1	65, 168	O II	425.273	0	65, 168
O IV	327.519	0	65, 168	O II	426.526	1	65, 168
O III	328.448	10	65, 168, 488	O II	429.557	2	65, 168
O III	328.742	9	65, 168	O II	429.647	5	65, 168
O IV	339.330	1	65, 168	O II	429.716	4	65, 168
O IV	339.436	0	65, 168	O II	429.918	5	65, 168, 488
O V	341.391	0	65, 168	O II	430.041	6	65, 168, 488
O III	345.309	10	65, 168, 488	O II	430.177	6	65, 168, 488
O IV	346.372	4	65, 168	O III	434.256	4	65, 168
O IV	346.688	3	65, 168	O III	434.646	3	65, 168
O III	349.825	3	65, 168	O III	434.840	2	65, 168
O III	349.918	2	65, 168	O III	434.975	10	65, 168, 488
O III	349.961	1	65, 168	O II	436.510	1	65, 168
O III	350.703	8	170	O II	436.649	0	65, 168
O III	355.137	6	65, 168	O II	437.332	3	65, 168
O III	355.293	3	65, 168	O II	437.683	3	65, 168
O III	355.333	5	65, 168	O II	440.552	3	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O II	440.598	2	65, 168	O IV	608.395*	14	65, 168, 488
O II	442.001	4	65, 168	O III	609.705	6	65, 168, 488
O II	442.048	4	65, 168	O IV	609.829*	15	65, 168, 488
O IV	442.705	1	65, 168	O III	610.043	7	65, 168, 488
O IV	442.873	0	65, 168	O III	610.746	8	65, 168, 488
O II	443.681	0	65, 168	O III	610.850	6	65, 168, 488
O II	445.601	4	65, 168	O II	616.291	7	65, 168, 488
O II	445.638	4	65, 168	O II	616.363	4	65, 168, 488
O VI	447.712	0	65, 168	O IV	616.933	8	65, 168
O VI	447.840	0	65, 168	O IV	617.033	7	65, 168
O II	456.997	1	65, 168	O II	617.051	6	65, 168, 488
O II	458.422	0	65, 168	O IV	624.617	13	65, 168, 488
O III	459.896	1	65, 170	O IV	625.130*	14	65, 168, 488
O II	464.194	2	65, 168	O IV	625.852*	14	65, 168, 488
O II	464.310	1	65, 168	O V	629.732*	15	65, 168, 488
O II	464.785	3	65, 168	O II	644.148*	12	65, 168, 488
O II	465.529	1	65, 168	O III	658.758	1	65
O II	465.760	2	65, 168	O III	659.538	0	65
O II	467.726	0	65, 168	U	661.397	3	65, 170
O II	468.766	2	168	O	663.139	2	65, 170
O II	470.408	4	65, 160	O II	672.948	8	65, 168, 488
O IV	471.273	1	65, 168	O II	673.708	1	65, 168, 488
U IV	471.603	0	65, 168	O III	702.332*	16	65, 168, 488
O III	480.955	4	65, 168	O III	702.822*	16	65, 168, 488
O III	481.354	3	65, 168	O III	702.899*	17	65, 168, 488
O III	481.381	2	65, 168	O III	703.850*	18	65, 168, 488
O II	481.587	4	65, 168, 488	O III	705.762	2	65, 168
O II	481.635	0	65, 168	O III	706.224	3	65, 168
O II	481.704	1	65, 168	O III	706.298	2	65, 168
O II	481.755	3	65, 168, 488	O III	707.315	4	65, 168
O II	483.752	4	65, 168, 488	O V	712.668	3	129
O II	483.976	5	65, 168, 488	O II	718.484*	17	65, 168, 488
O II	484.025	2	65, 168	O II	718.562*	16	65, 168, 488
O II	485.086	6	65, 168, 488	O II	739.949	1	65
O II	485.465	0	65, 168	O II	740.838	0	65
O II	485.515	5	65, 168, 488	O II	741.293	00	65
O II	485.572	1	65, 168	O I	748.4	1	65, 165, 250
O II	485.631	4	65, 168	O I	749.3	1	65, 165, 250
O III	491.000	0	65, 170	O II	749.622	1	65, 170
O III	491.714	0	65, 168	O II	750.226	2	65, 170
O III	491.980	1	65, 168	O III	752.762	4	65, 168
O VI	498.090	0	65, 168	O I	755.8	2	65, 165, 250
O VI	498.431	1	65, 168	O I	756.7	1	65, 165, 250
O II	499.871	2	65, 168	O V	758.677*	10	65, 168, 488
O II	500.343	1	65, 168	O V	759.440*	10	65, 168, 488
O III	507.391*	16	65, 168, 488	O V	760.229*	10	65, 168, 488
O III	507.683*	17	65, 168, 488	O V	760.445*	12	65, 168, 488
O III	508.182*	18	65, 168, 488	O V	761.130*	10	65, 168, 488
O II	515.498	5	65, 168, 488	O V	762.001*	10	65, 168, 488
O II	515.640	4	65, 168, 488	O I	769.355	1	165
O II	517.237	4	65, 168, 488	O I	769.411	1	165, 250
O II	518.242	5	65, 168, 488	O I	770.264	1	165, 250
O VI	519.610	2	65, 168	O I	770.294	1	165, 250
O VI	519.723	2	65, 168	O I	770.350		165
O III	525.795*	18	65, 168, 488	O I	770.698	0	165, 250
O III	528.283	0	65, 170	O V	774.522	7	65, 168, 488
O II	537.830*	9	65, 168, 488	O IV	779.821	9	65, 168, 488
O II	538.256*	10	65, 168, 488	O IV	779.905	10	65, 168, 488
O II	538.318*	7	65, 168, 488	O	786.474	3	170
O II	539.086	8	65, 168, 488	O IV	787.710*	15	65, 168, 488
O II	539.547	8	65, 168, 488	O IV	790.103*	13	65, 168, 488
O II	539.853	7	65, 168, 488	O IV	790.203*	16	65, 168, 488
O IV	553.328*	16	65, 168, 488	O I	791.516	1	165, 250
O IV	554.074*	17	65, 168, 488	O I	791.976	3	165, 250
O III	554.275	0	65	O I	792.237	1	165, 250
O IV	554.514*	18	65, 168, 488	O I	792.510	1	165, 250
O II	555.056	5	65, 168, 488	O I	792.937	3	165, 250
O II	555.121	5	65, 168, 488	O I	792.971		165
O IV	555.262*	16	65, 168, 488	O II	796.661*	10	65, 168, 488
O III	574.065	00	65	O IV	802.198	6	65, 168
O II	580.400	6	65, 168, 488	O IV	802.250	5	65, 168
O II	580.967	7	65, 168, 488	O I	810.667	1	165, 250
O III	597.818*	15	65, 168, 488	O I	811.052	4	165, 250
O III	599.598*	18	65, 168, 488	O I	811.501	1	165, 250
O II	600.585	6	65, 168, 488	O I	811.710	1	165, 250

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O I	812.096	3	165, 250
O I	812.158		165
O II	832.754*	14	168, 488
O III	832.927*	14	168, 488
O II	833.326*	15	168, 488
O III	833.742*	16	168, 488
O II	834.462*	15	168, 488
O III	835.096*	14	168, 488
O III	835.292*	16	168, 488
O I	850.74		165, 250
O I	861.63		165, 250
O III	871.099	10	63
O III	875.534	9	63
O I	877.804	1	165
O I	877.885	2	165
O III	878.728	11	63
O I	878.979	1	165
O I	879.027	1	165
O I	879.108	1	165
O I	879.553	1	165
O I	882.88		165, 250
O III	887.404	10	63
O III	898.957	8	168, 488
O II	919.78 *	15	63
O IV	921.301	4	65, 168
O IV	921.364	5	65, 168
O I	922.011		165, 488
O IV	923.353	6	65, 168
O I	925.438		65
O I	926.845		65
O I	929.517		165
O I	930.889		165
O I	931.479		165
O II	932.046*	10	63
O I	935.183	4	63, 165
O I	936.630	3	165
O I	937.841	3	165
O I	938.022		165
O I	938.621		165
O I	939.237		165
O I	939.837		165
O I	948.689	4	165
O I	950.114	0	165, 794
O I	950.732		165
O I	950.888	4	165
O I	952.414	8	165, 794
O I	952.940	4	165
O I	971.741	8	165
O I	973.240	5	165
O I	973.884	4	165
O I	976.452	5	165
O I	977.967	1	165, 794
O I	978.616	4	165
O I	988.581	3	165
O I	988.661	2	165, 794
O I	988.776*	15	488, 794
O I	990.132	1	794
O I	990.210	8	488, 794
O I	990.805	2	488, 794
O I	999.493	2	488, 491
O I	1025.766	9	165, 488
O I	1027.433*	20	488, 794
O I	1028.162	8	488, 794
O VI	1031.912*	10	65, 168, 488
O I	1037.627	5	168, 488, 794
O I	1039.233*	20	488, 794
O I	1040.941*	15	488, 794
O I	1041.688	1	488, 794
O I	1048.218	8	63
O I	1066.660	9	63
O III	1138.545	2	65, 168
O III	1149.603	1	65, 168
O III	1150.082	2	65, 168
O I	1152.149	2	488, 794
O III	1153.773	3	65, 168

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O I	1217.643	2	488, 491
O I	1302.173*	30	488, 794
O I	1304.872*	30	488, 794
O I	1306.036*	25	488, 794
O IV	1338.603	6	65, 168
O IV	1342.995	4	65, 168
O IV	1343.507	7	65, 168
O I	1355.598	2	488, 794
O I	1358.524	5	165, 488
O V	1371.287*	10	65, 168, 488
O	1760.9	8	335
O	1781.4	7	335
O III	1902.89	1	65, 240
O III	1907.06	1	65, 240
O III	1916.48	2	65, 168
O II	1957.42	0	36, 65
O II	1960.34	1	36, 65
O II	1962.24	3	36, 65
O II	1963.84	2	36, 65
O II	1964.25	0	36, 65

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F I	I.P.	140524.5	K 711.620 A
F II	I.P.	282190.2	K 354.371 A
F III	I.P.	505410.	K 197.86 A
F IV	I.P.	703020.	K 142.24 A
F V	I.P.	921450.	K 108.52 A
F VI	I.P.	1267581.	K 79.890 A
F VII	I.P.	1493656.	K 66.950 A
F VIII	I.P.	7693400.	K 13.000 A
F VIII		13.780*	236
F VIII		14.458*	764
F VIII		16.807*	764
F VIII		16.951*	764
F VII		86.728*	0 171, 176
F VII		95.697*	0 171, 176
F VII		95.775*	1 171, 176
F VIII		98.707*	0 164
F VIII		98.799*	0 164
F VI		99.044	0 171, 176
F VI		99.105	0 171, 176
F VI		99.203	0 171, 176
F VI		108.975	1 171, 176
F VI		109.040	1 171, 176
F VII		112.935*	4 171, 176
F VII		112.976*	3 171, 176
F VI		113.840	0 171, 176
F VI		116.094	0 171, 176
F V		119.986	0 172, 176
F V		120.032	0 172, 176
F VI		120.116	1 171, 176
F V		122.042	0 176
F VI		122.122	1 171, 176
F VI		122.169	0 171, 176
F VI		122.200	2 171, 176
F VI		122.251	0 171, 176
F VI		123.051	0 171, 176
F VI		123.090	0 171, 176
F VI		123.175	1 171, 176
F V		123.665	0 172, 176
F V		123.774	1 172, 176
F VI		124.387	3 171, 176
F VI		124.440	0 171, 176
F VI		124.474	0 171, 176
F VI		126.923*	5 171, 176

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F VII	127.653*	4	171, 176	F	154.968	0	176
F VII	127.796*	5	171, 176	F IV	155.624	0	173, 176
F V	131.516	0	172, 176	F IV	155.673	0	173, 176
F V	131.638	0	172, 176	F VI	156.247*	6	171, 176
F V	132.207	0	172, 176	F V	157.515	1	172, 176
F V	132.310	1	172, 176	F IV	158.398	0	173, 176
F	132.389	0	176	F V	158.537	4	172, 176
F V	132.453	2	172, 176	F IV	158.601	1	173, 176
F V	132.484	3	172, 176	F IV	158.925	1	173, 176
F V	132.511	3	172, 176	F V	159.558	00	172, 176
F V	132.699	1	172, 176	F V	159.658	0	172, 176
F V	132.819	2	172, 176	F VI	161.174	1	171, 176
F V	133.082	0	172, 176	F VI	161.257	1	171, 176
F V	133.208	1	172, 176	F VI	161.308	3	171, 176
F V	133.599	0	172, 176	F VI	161.341	1	171, 176
F V	133.662	1	172, 176	F VI	161.414	1	171, 176
F V	134.407	4	172, 176	F VI	161.477	1	171, 176
F V	134.539*	5	172, 176	F V	162.013	2	172, 176
F VII	134.703*	1	171, 176	F V	162.053	3	172, 176
F VII	134.882*	2	171, 176	F V	162.082	3	172, 176
F VI	135.397	3	171, 176	F V	162.121	2	172, 176
F V	135.621	00	172, 176	F V	162.172	3	172, 176
F V	135.692	0	172, 176	F V	162.215	3	172, 176
F V	136.902	3	172, 176	F V	162.270	4	172, 176
F V	136.955	0	172, 176	F VI	163.138	2	171, 176
F V	138.181	1	176	F V	163.456*	3	172, 176
F V	138.256	0	176	F V	163.501*	4	172, 176
F VI	139.758*	5	171, 176	F V	163.558*	5	172, 176
F VI	139.800*	6	171, 176	F V	163.596*	2	172, 176
F VI	139.900*	7	171, 176	F VI	164.015	1	171, 176
F V	140.266	0	172, 176	F IV	164.612	2	173, 176
F V	140.414	1	172, 176	F IV	165.350	0	173, 176
F IV	140.781	00	173, 176	F IV	165.479	00	173, 176
F IV	140.816	00	173, 176	F V	165.983*	9	172, 176
F VI	141.154	2	171, 176	F V	166.177*	10	172, 176
F V	142.422	1	176	F IV	166.444	2	173, 176
F V	143.794	0	176	F IV	166.499	2	173, 176
F V	143.897	1	172, 176	F V	167.858	1	172, 176
F V	143.965	0	172, 176	F IV	168.450	2	173, 176
F V	144.445	0	176	F IV	169.166	2	173, 176
F V	144.478	00	176	F IV	169.481	1	173, 176
F V	144.637	1	176	F IV	169.502	1	173, 176
F V	144.673	1	176	F IV	169.610	1	173, 176
F V	145.177	1	172, 176	F IV	169.661	2	173, 176
F V	145.392	2	172, 176	F IV	169.748	2	173, 176
F VI	145.462	1	171, 176	F IV	169.790	3	173, 176
F VI	145.489	1	171, 176	F IV	169.839	3	173, 176
F V	145.547	3	172, 176	F IV	170.187	2	173, 176
F VI	145.585	1	171, 176	F IV	171.066	3	173, 176
F VI	145.630	1	171, 176	F V	171.214	0	172, 176
F VI	145.691	3	171, 176	F V	171.241	1	172, 176
F VI	146.576*	2	171, 176	F V	171.302	2	172, 176
F VI	146.613*	3	171, 176	F IV	172.653	0	173, 176
F VI	146.676*	4	171, 176	F V	173.020	1	172, 176
F VI	146.718*	2	171, 176	F VI	173.145	1	171, 176
F V	147.946	4	172, 176	F V	173.656	0	176
F V	148.002*	5	172, 176	F V	173.714	0	176
F V	148.108	1	172, 176	F V	174.490	3	172, 176
F VI	148.653	4	171, 176	F V	174.513	3	172, 176
F IV	150.335	0	173, 176	F V	174.568	3	172, 176
F IV	150.422	0	173, 176	F V	174.698	4	172, 176
F IV	150.977	1	173, 176	F IV	175.033	0	173, 176
F IV	151.005	1	173, 176	F IV	175.132	00	173, 176
F IV	151.079	00	173, 176	F IV	176.110	0	173, 176
F V	152.339	2	172, 176	F IV	176.367	4	173, 176
F V	152.391	3	172, 176	F V	176.472	0	172, 176
F V	152.511	4	172, 176	F IV	177.971	2	173, 176
F V	152.563	2	172, 176	F IV	178.126	1	173, 176
F IV	152.997	00	173, 176	F V	178.434*	5	172, 176
F IV	153.102	0	173, 176	F IV	178.540	1	173, 176
F IV	153.141	0	173, 176	F V	178.590	4	172, 176
F VI	153.678	2	171, 176	F V	178.612	3	172, 176
F VI	153.741*	3	171, 176	F IV	178.670	3	173, 176
F VI	153.880*	4	171, 176	F IV	178.724	1	173, 176
F VI	154.506	3	171, 176	F IV	178.805	1	173, 176

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F IV	179.827	1	173, 176
F IV	179.907	00	173, 176
F IV	179.943	2	173, 176
F IV	180.029	0	173, 176
F IV	181.521	4	173, 176
F IV	181.571	4	173, 176
F IV	181.655	2	173, 176
F V	182.979	4	172, 176
F V	183.016	3	172, 176
F V	183.208	0	172, 176
F V	184.232	0	176
F V	184.282	00	176
F IV	185.484	3	173, 176
F IV	186.558	1	173, 176
F V	186.715*	4	172, 176
F V	186.788*	4	172, 176
F V	186.842*	5	172, 176
F V	186.879*	3	172, 176
F V	186.968*	4	172, 176
F V	187.008*	4	172, 176
F IV	187.105	2	173, 176
F IV	187.240	3	173, 176
F IV	187.916	1	173, 176
F IV	188.004	0	173, 176
F IV	188.656	2	173, 176
F IV	188.758	1	173, 176
F IV	188.834	0	173, 176
F V	189.943	2	172, 176
F V	190.571*	6	172, 176
F V	190.839*	7	172, 176
F V	191.892	3	172, 176
F V	191.973	4	172, 176
F V	194.108	3	172, 176
F	194.655	0	176
F VI	194.840	1	171, 176
F IV	196.351	4	173, 176
F IV	196.390	5	173, 176
F IV	196.448	6	173, 176
F V	196.713	2	176
F V	196.870	1	176
F IV	196.968	1	173, 176
F IV	197.108	2	173, 176
F	197.298	1	176
F V	197.615	00	172, 176
F V	197.780	0	172, 176
F V	198.476	1	172, 176
F V	198.765	00	172, 176
F IV	199.004	3	173, 176
F IV	199.086	3	173, 176
F IV	199.607	1	173, 176
F IV	199.761	5	42, 173, 176
F IV	199.804	5	173, 176
F IV	199.849	5	42, 173, 176
F IV	199.934	5	42, 173, 176
F IV	200.001	5	173, 176
F IV	200.089	7	42, 173, 176
F V	200.335	0	172, 176
F V	200.861	1	172, 176
F IV	201.011	6	42, 173, 176
F IV	201.063	7	42, 173, 176
F IV	201.101	6	173, 176
F IV	201.160	8	42, 173, 176
F IV	201.222	6	42, 173, 176
F IV	201.465	4	173, 176
F IV	202.989	0	173, 176
F IV	203.152	1	173, 176
F V	205.552	4	172, 176
F V	205.778	3	172, 176
F V	206.430	2	172, 176
F	206.548	0	176
F V	206.594	3	172, 176
F IV	208.254	9	173, 176
F IV	208.549	2	173, 176
F IV	210.480	1	173, 176
F IV	210.545	1	173, 176

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F IV	211.152	0	173, 176
F IV	213.848	7	173, 176
F IV	214.062	7	173, 176
F III	214.804	1	42, 174, 176
F III	214.865	1	42, 174, 176
F V	215.676	0	172, 176
F V	217.893	0	172, 176
F V	218.052	00	172, 176
F III	219.277	0	174, 176
F III	219.588	00	174, 176
F IV	220.765	7	173, 176
F IV	223.394	3	173, 176
F IV	223.456	2	173, 176
F IV	223.497	1	173, 176
F V	223.999	00	172, 176
F	225.114	0	176
F	225.627	0	176
F III	226.051	2	174, 176
F III	226.091	3	42, 174, 176
F III	226.166	4	42, 174, 176
F V	226.341	2	172, 176
F V	226.608	2	172, 176
F IV	226.944	6	173, 176
F IV	227.079	3	173, 176
F IV	227.101	5	173, 176
F IV	227.211	4	173, 176
F IV	228.496	00	173, 176
F IV	228.552	0	173, 176
F IV	228.645	1	173, 176
F IV	229.261	2	173, 176
F III	230.117	5	174, 176
F III	230.573	0	174, 176
F III	231.015	2	174, 176
F III	231.100	3	174, 176
F III	231.371	0	174, 176
F IV	233.159	2	173, 176
F IV	233.222	6	173, 176
F IV	233.297	2	173, 176
F IV	233.393	5	173, 176
F IV	233.526	4	176
F V	235.840	1	172, 176
F IV	237.913	3	173, 176
F IV	237.955	4	173, 176
F IV	238.012	3	173, 176
F IV	238.042	2	173, 176
F IV	238.099	1	173, 176
F IV	239.856	7	42, 173, 176
F IV	240.017	7	42, 173, 176
F IV	240.079	9	42, 173, 176
F IV	240.146	7	42, 173, 176
F III	240.233	1	174, 176
F IV	240.275	7	42, 173, 176
F IV	240.371	7	42, 173, 176
F III	240.550	1	174, 176
F III	240.730	2	174, 176
F III	240.855	0	174, 176
F III	241.118	0	174, 176
F V	242.324	3	172, 176
F V	242.439	2	172, 176
F III	243.364	1	42, 174, 176
F IV	243.736	2	173, 176
F IV	243.796	3	173, 176
F IV	243.922	4	173, 176
F III	244.698	2	174, 176
F III	244.768	4	42, 174, 176
F III	245.002	3	42, 174, 176
F III	245.860	1	42, 174, 176
F IV	249.228	1	173, 176
F IV	249.744	0	173, 176
F IV	251.026*	10	42, 173, 176
F III	254.162	4	42, 174, 176
F III	254.193	3	174, 176
F IV	254.491	2	173, 176
F IV	254.595	1	173, 176
F IV	254.681	0	173, 176

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F III	255.624	1 174, 176	F II	375.434	1 42, 176
F III	255.725	5 42, 174, 176	F II	375.718	1 42, 176
F III	255.772	6 42, 174, 176	F II	375.793	1 42, 176
F III	255.865	7 42, 174, 176	F II	375.928	1 42, 176
F III	256.360	5 42, 174, 176	F II	376.686	1 42, 176
F III	256.525	1 174, 176	F II	377.140	0 42, 176
F III	256.673	1 174, 176	F III	378.563	1 174, 176
F III	256.723	0 174, 176	F III	378.603	2 174, 176
F III	256.890	2 42, 174, 176	F II	380.902	2 42, 176
F III	260.313	4 42, 174, 176	F II	393.676	1 42, 176
F III	260.375	3 42, 176	F II	394.194	0 42
F III	260.498	3 42, 174, 176	F III	395.442	3 174, 176
F III	260.782	1 174, 176	F III	395.968	2 174, 176
F III	261.716	7 42, 174, 176	F III	396.247	1 176
F III	261.751	6 174, 176	F II	400.579	1 42, 176
F III	263.807	8 42, 174, 176	F II	405.644	4 42, 176
F IV	268.785	4 173, 176	F II	407.053	5 42, 176
F IV	268.817	1 173, 176	F II	407.511	4 42, 176
F IV	269.076	2 173, 176	F II	417.874	1 42, 176
F IV	269.225	2 42, 173, 176	F IV	419.644*	14 42, 173, 176
F IV	270.225	6 173, 176	F IV	420.041*	15 42, 173, 176
F III	270.675	4 42, 174, 176	F IV	420.727*	16 42, 173, 176
F III	272.710	4 42, 174, 176	F II	422.012	1 42, 176
F III	272.758	3 42, 174, 176	F II	422.618	0 42, 176
F III	272.915	3 42, 174, 176	F III	429.511*	10 42, 174, 176
F III	273.207	2 174, 176	F III	430.154*	11 42, 174, 176
F III	274.260	6 42, 174, 176	F III	430.218*	8 174, 176
F III	276.786	5 42, 174, 176	F IV	430.758*	15 42, 173, 176
F III	276.895	4 42, 174, 176	F II	430.909	4 42, 176
F III	279.692	7 42, 174, 176	F II	431.545	3 42, 176
F IV	279.834	3 173, 176	F II	431.826	2 42, 176
F III	280.010	6 42, 174, 176	F II	435.634	3 42, 176
F III	280.811	0 42, 174, 176	F II	436.279	2 42, 176
F III	280.905	1 42, 174, 176	F II	436.563	1 42, 176
F III	281.207	3 42, 174, 176	F II	457.177*	6 42, 176
F III	281.350	4 42, 174, 176	F III	464.284	9 42, 174, 176
F IV	287.994	00 173, 176	F V	464.370*	5 172, 176
F IV	288.078	0 173, 176	F III	465.113*	10 42, 174, 176
F IV	288.267	1 173, 176	F V	465.374*	6 172, 176
F IV	290.147	4 173, 176	F V	465.978*	7 172, 176
F IV	290.440	3 173, 176	F V	466.995*	5 172, 176
F IV	290.461	2 173, 176	F II	471.949*	3 176
F IV	290.608	2 173, 176	F II	471.990*	6 42, 176, 488
F III	290.848	6 42, 174, 176	F II	472.710	5 42, 176, 488
F III	290.947	5 42, 174, 176	F II	473.021	3 42, 176, 488
F III	295.365	2 42, 174, 176	F II	484.600*	8 42, 176
F III	295.405	1 174, 176	F IV	490.566*	13 42, 173, 176
F III	295.710	5 42, 174, 176	F IV	490.997*	16 42, 173, 176
F III	295.886	6 42, 174, 176	F IV	497.363	5 173, 176
F III	311.415	4 174, 176	F IV	497.802	6 173, 176
F III	315.221	8 42, 174, 176	F IV	497.842	4 173, 176
F III	315.539	7 42, 174, 176	F IV	498.790	7 173, 176
F III	315.748	6 42, 174, 176	F IV	498.911	4 173, 176
F III	316.488	4 174, 176	F V	506.163	3 172, 176
F III	316.823	3 174, 176	F V	508.079	4 172, 176
F III	316.998	2 174, 176	F III	508.284*	10 174, 176
F IV	319.695	3 173, 176	F II	513.649	4 42, 176
F IV	319.740	0 173, 176	F V	513.975	2 172, 176
F IV	320.004	2 173, 176	F V	514.087	1 172, 176
F IV	320.192	1 173, 176	F II	514.945*	6 42, 176
F III	322.650	8 42, 174, 176	F III	522.200	3 174, 176
F III	322.685*	7 174, 176	F III	523.661	4 174, 176
F IV	328.213	0 173, 176	F V	524.597	2 172, 176
F III	341.924	7 42, 174, 176	F V	525.292	3 172, 176
F III	343.892	7 42, 174, 176	F V	526.298	3 172, 176
F III	343.931	4 174, 176	F VI	535.204*	10 171, 176
F III	344.388	6 42, 174, 176	F II	546.846*	6 42, 176, 488
F II	348.800	0 176	F II	547.873	4 42, 176, 488
F II	353.421	0 42, 176	F II	548.324	3 42, 176, 488
F IV	355.045	2 173, 176	F II	548.517	2 42, 176
F IV	360.635	1 173, 176	F III	567.629*	6 174, 176
F IV	361.208	0 173, 176	F III	567.676*	10 174, 176
F III	365.874	7 42, 174, 176	F III	567.737*	9 42, 174, 176
F III	366.391	6 42, 174, 176	F III	567.794*	6 174, 176
F II	375.300	2 42, 176	F IV	570.636*	14 42, 173, 176

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
F	IV	571.302*	14
F	IV	571.384*	15
F	IV	572.657*	16
F	IV	575.633	2
F	IV	576.266	3
F	IV	576.349	2
F	IV	577.737	4
F	II	605.668*	7
F	II	606.284*	6
F	II	606.805*	8
F	II	606.925*	5
F	II	607.472*	6
F	II	608.065*	7
F	III	630.131	6
F	III	630.194	7
F	VI	643.98	1
F	VI	645.02	1
F	VI	646.10	1
F	VI	646.36	3
F	VI	647.31	1
F	V	647.771	0
F	V	647.879	1
F	VI	648.50	1
F	V	654.034	3
F	III	656.125*	10
F	III	656.878*	11
F	V	657.220	1
F	V	657.335	4
F	III	658.337*	12
F	IV	676.130*	14
F	IV	677.154*	13
F	IV	677.224*	15
F	IV	679.003*	13
F	IV	679.217*	16
F	I	680.709	2
F	I	682.581	2
F	I	732.960	1
F	I	734.642	1
F	I	734.795	1
F	I	735.154	1
F	I	735.469	1
F	I	736.987	2
F	III	742.69	0
F	I	745.767	2
F	I	746.400	1
F	I	746.627	3
F	I	747.999	2
F	I	748.134	1
F	I	748.338	2
F	I	748.580	4
F	I	748.709	2
F	I	748.946	3
F	I	750.418	1
F	I	750.610	3
F	I	750.885	1
F	I	751.861	4
F	I	752.884	4
F	I	753.303	4
F	I	754.148	2
F	I	755.603	2
F	V	757.08	4
F	I	776.926	4
F	I	777.010	5
F	I	777.531	4
F	I	778.059	6
F	I	779.192	2
F	I	779.365	6
F	I	779.910	5
F	I	779.972	2
F	I	780.134	1
F	I	780.390	15
F	I	780.519	10
F	I	780.713	5
F	I	781.654	3
F	I	782.378	10

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
F	I	782.575	2	420
F	I	782.976	5	420
F	I	790.006	7	420
F	I	791.875	12	420
F	I	792.536	10	420
F	I	793.237	1	420
F	I	794.417	10	420
F	I	795.774	2	420
F	I	796.982	3	420
F	I	806.964*	150	420, 488
F	I	809.599*	125	420, 488
F	I	951.871*	500	420, 488
F	I	954.825	10	420, 488
F	I	955.545*	750	420, 488
F	I	958.524*	500	420, 488
F	I	972.401	20	420
F	I	973.895*	350	420
F	I	976.217*	100	420
F	I	976.505*	40	420
F	I	977.745*	100	420
F	III	1071.66	0	42
F	V	1088.41	0	172, 176
F	III	1099.10	0	42
F	III	1101.55	0	42
F	III	1103.64	0	42
F	VI	1139.60	2	171, 176
F	II	1702.16	0	157
F	II	1704.90	1	157
F	II	1744.86	1	157
F	II	1745.57	2	157
F	II	1747.40	3	157

NEON

NE	I	I.P.	173931.7	K	574.938	A
NE	II	I.P.	331350.	K	301.80	A
NE	III	I.P.	514148.	K	194.50	A
NE	IV	I.P.	782768.	K	127.752	A
NE	V	I.P.	1018634.	K	98.171	A
NE	VI	I.P.	1274000.	K	78.49	A
NF	VI		110.410	2	544	
NE	VI		111.142	1	544	
NE	VI		113.870	1	544	
NE	V		118.715	5	544	
NE	V		118.841	1	544	
NE	VI		121.140	5	544	
NE	V		122.520	20	544	
NE	VI		122.686*	10	544	
NE	V		123.712	3	544	
NE	V		125.830	2	544	
NE	V		128.793	1	544	
NE	V		129.034	5	544	
NE	VI		136.089	4	544	
NE	V		136.215	2	544	
NE	VI		138.397	3	544	
NE	VI		138.630	3	544	
NE	IV		140.127	3	544	
NE	V		140.716	5	544	
NE	V		140.757	15	544	
NE	V		140.791	15	544	
NE	V		142.441	10	544	
NE	V		142.503	10	544	
NE	V		143.661	4	544	
NE	V		142.724	15	544	
NE	IV		142.929	3	544	

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NE	V	143.219	5	544	NE	IV	204.908	5	544
NE	V	143.273	10	544	NE	IV	208.485*	100	488, 544
NE	V	143.344	15	544	NE	IV	208.734*	100	488, 544
NE	IV	144.019	2	544	NE	IV	208.899	80	488, 544
NE	IV	144.151	2	544	NE	IV	212.556*	150	488, 544
NE	IV	144.288	1	544	NE	IV	215.396	5	544
NE	IV	146.262	2	544	NE	IV	215.711	3	544
NE	V	147.132	15	544	NE	IV	215.843	15	544
NE	IV	148.660	1	544	NE	IV	217.337	15	544
NE	IV	148.787	3	544	NE	IV	217.640	15	544
NE	V	148.787	3	544	NE	IV	217.777	15	544
NE	IV	148.942	4	544	NE	IV	217.830	25	544
NE	IV	149.589	2	544	NE	IV	218.131	20	544
NE	IV	150.931	1	544	NE	IV	218.184	10	544
NE	V	151.424	12	544	NE	IV	218.343	15	544
NE	IV	151.817	15	544	NE	IV	218.483	20	544
NE	IV	152.231	15	544	NE	IV	218.643	25	544
NE	IV	154.488	5	544	NE	IV	218.766	5	544
NE	IV	156.480	5	544	NE	IV	222.600	40	544
NE	V	156.610	2	544	NE	IV	223.241	25	544
NE	IV	156.873	3	544	NE	IV	223.609	25	544
NE	IV	157.626	5	544	NE	IV	234.316	25	544
NE	IV	157.781	3	544	NE	IV	234.701	25	544
NE	IV	157.862	2	544	NE	IV	247.422	10	544
NE	IV	158.063	5	544	NE	IV	247.807	8	544
NE	IV	158.105	2	544	NE	IV	248.004	8	544
NE	IV	158.646	15	544	NE	III	251.145	2	65, 338, 488
NE	IV	158.822	15	544	NE	III	251.558	2	65, 338, 488
NE	IV	160.471	10	544	NE	III	251.726	2	65, 338, 488
NE	IV	163.562	12	544	NE	III	267.059	3	65, 338, 488
NE	IV	163.602	2	544	NE	III	267.516	3	65, 338, 488
NE	V	164.023	10	544	NE	III	267.709	2	65, 338, 488
NE	V	164.145	10	544	NE	III	282.50	0	57, 65, 201
NE	V	164.294	8	544	NE	III	283.178	3	65, 338, 488
NE	V	167.483	15	544	NE	III	283.206*	6	65, 338, 488
NE	V	167.610	3	544	NE	III	283.690*	5	65, 338, 488
NE	V	167.670	25	544	NE	III	283.894	3	65, 338, 488
NE	V	167.837	5	544	NE	IV	286.688	15	544
NE	IV	167.921	5	544	NE	IV	286.934	15	544
NE	IV	168.101	2	544	NE	IV	287.206	10	544
NE	VI	171.114	5	544	NE	IV	293.123	15	544
NE	VI	171.212	2	544	NE	IV	293.429	10	544
NE	IV	172.492	40	488, 544	NE	IV	293.649	5	544
NE	IV	172.525	50	488, 544	NE	IV	293.947	1	544
NE	IV	172.620	80	488, 544	NE	IV	294.100	3	544
NE	V	173.932*	50	488, 544	NE	IV	294.390	3	544
NE	IV	174.303	3	544	NE	III	301.124	4	57, 65, 488
NE	IV	174.880	10	544	NE	III	308.559	1	57, 65, 488
NE	IV	174.920	8	544	NE	III	313.048	4	57, 65, 488
NE	IV	176.007	50	544	NE	III	313.677	3	57, 65, 488
NE	IV	177.161	80	544	NE	III	313.92	1	57, 65, 488
NE	IV	180.402	15	544	NE	II	324.56	2	57, 65
NE	IV	181.614	20	544	NE	II	326.54	5	57, 65
NE	IV	181.691	20	544	NE	II	326.77	3	57, 65
NE	IV	183.165	15	544	NE	II	327.25	2	57, 65
NE	IV	183.247	12	544	NE	II	327.33	3	57, 65
NE	V	184.730	10	544	NE	II	327.63	2	57, 65
NE	IV	185.479	20	544	NE	II	328.08	2	57, 65
NE	IV	186.575*	150	488, 544	NE	II	330.20	2	57, 65
NE	IV	186.787	5	544	NE	II	330.62	2	57, 65
NE	IV	186.915	15	544	NE	II	330.77	3	57, 65
NE	VI	188.424	3	544	NE	II	331.06	1	57, 65
NE	IV	190.565	25	544	NE	II	331.50	2	57, 65
NE	IV	190.645	15	544	NE	II	352.237	2	57, 65
NE	IV	194.276*	100	488, 544	NE	II	352.946	4	57, 65
NE	IV	194.477	40	544	NE	II	353.206	3	57, 65
NE	IV	194.623	50	544	NE	II	353.922	2	57, 65
NE	VI	194.839	2	544	NE	II	354.954	4	57, 65
NE	VI	194.936	2	544	NE	II	355.450	2	57, 65
NE	V	195.368	5	544	NE	II	355.647	3	57, 65
NE	V	195.553	3	544	NE	II	355.848	1	57, 65
NE	V	195.621	2	544	NE	II	355.946	2	57, 65
NE	IV	204.270	15	544	NE	II	356.131	4	57, 65
NE	IV	204.531	25	544	NE	II	356.436	2	57, 65
NE	IV	204.786	15	544	NE	II	356.534	3	57, 65, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NE II	356.795	5	57, 65, 488
NE II	357.534	5	57, 65, 488
NE IV	357.831	50	488, 544
NE V	357.955*	40	488, 544
NE V	358.472*	50	488, 544
NE IV	358.721*	200	57, 488, 544
NE V	359.385*	50	488, 544
NE II	361.427	5	57, 65, 488
NE II	362.456	4	57, 65, 488
NE V	365.594*	100	488, 544
NE III	379.308*	7	57, 65, 488
NE IV	387.15	1	62
NE IV	388.218*	100	57, 488, 544
NE VI	399.820	5	544
NE VI	401.138*	15	544
NE VI	401.939*	25	544
NE VI	403.262*	10	544
NE II	405.852*	9	57, 65, 488
NE II	407.136*	8	57, 65, 488
NE V	416.198*	80	488, 544
NE V	416.834	25	544
NE V	420.386	10	544
NE V	420.951	15	544
NE IV	421.584*	150	57, 65, 488
NE IV	421.609*	150	544
NE V	422.214	15	544
NE V	422.347	5	544
NE III	427.840	3	57, 65, 488
NE IV	431.472	25	544
NE VI	432.393	5	544
NE IV	433.237	50	544
NE II	445.032	7	57, 65, 488
NE II	446.252*	8	57, 65, 488
NE II	446.591	7	57, 65, 488
NE II	447.813*	8	57, 65, 488
NE II	454.648	5	57, 65, 488
NE II	455.270	7	57, 65, 488
NE II	456.344	4	57, 65, 488
NE II	456.895	5	57, 65, 488
NE II	460.725*	15	57, 65, 488
NE II	462.388*	14	57, 65, 488
NE IV	469.817*	200	57, 488, 544
NE IV	469.865*	200	57, 488, 544
NE V	480.406	25	488, 544
NE V	481.281	15	488, 544
NE V	481.361	25	488, 544
NE V	482.987*	50	488, 544
NE V	487.070	3	544
NE III	488.103*	8	57, 65, 488
NE III	488.868*	7	57, 65, 488
NE III	489.501*	10	57, 65, 488
NE III	489.641	4	57, 65, 488
NE III	490.310*	7	57, 65, 488
NE III	491.050*	9	57, 65, 488
NE IV	521.742	25	57, 65, 544
NE IV	521.813	25	57, 65, 544
NE IV	536.965	1	544
NE IV	539.731	3	544
NE IV	541.127	80	57, 488, 544
NE IV	542.073*	100	57, 488, 544
NE IV	543.891	150	57, 488, 544
NE VI	558.595*	5	544
NE VI	562.735	1	544
NE VI	562.805*	15	544
NE V	568.418*	40	488, 544
NE V	569.759*	25	488, 544
NE V	569.830*	50	488, 544
NE V	572.106*	25	488, 544
NE V	572.336*	80	488, 544
NE I	578.82		335
NE I	579.40		335
NE I	579.75		335
NE I	580.50		335
NE I	580.64		335
NE I	581.14		335

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NE I	582.46		335
NE I	585.25		335
NE I	586.30		335, 423
NE I	587.20	1	57, 65
NE I	589.16	1	57, 65
NE I	589.92	1	57, 65
NE I	591.82	2	57, 65
NE I	595.911	3	57, 65
NE I	598.698	2	57, 65
NE I	598.86	1	57, 65
NE I	600.04	2	57, 65
NE I	602.712*	4	57, 65
NE IV	602.999	2	544
NE IV	605.595	2	544
NE IV	606.527	5	544
NE IV	609.168	1	544
NE I	615.623*	5	57, 65, 488
NE I	618.668*	5	57, 65, 488
NE I	619.092*	4	57, 65, 488
NE I	626.819*	6	57, 65, 488
NE I	660.04	2	335
NE I	735.89 *	30	57, 65, 488
NE I	743.70 *	12	57, 65, 488
NE IV	758.317	3	544
NE IV	780.250	3	544
NE IV	786.141	1	544
NE I	958.86	1	335
NE III	1255.026	2	57, 65, 488
NE III	1255.685*	5	57, 65, 488
NE III	1257.190*	6	57, 65, 488
NE II	1681.70	3	57, 65, 488
NE II	1688.38	4	57, 65, 488
NE II	1732.69	3	65, 251
NE II	1853.22	1	65, 251
NE II	1854.11	1	65, 251
NE II	1880.21	3	65, 251
NE II	1883.82	1	65, 251
NE II	1888.15	1	65, 251
NE II	1889.77	1	65, 251
NE II	1907.56 *	8	68, 488
NE II	1916.16 *	10	68, 488
NE II	1928.83	1	65, 251
NE II	1930.11 *	8	68, 488
NE II	1938.92 *	8	68, 488
NE III	1973.7	2	335

SODIUM

NA	I	I.P.		K	
NA I	I	I.P.	41449.65	K	2412.565 A
NA II	I	I.P.	381528.	K	262.104 A
NA III	I	I.P.	578033.	K	173.000 A
NA IV	I	I.P.	797741.	K	125.354 A
NA V	I	I.P.	116312.	K	859.756 A
NA VI	I	I.P.	1388419.	K	72.024 A
NA VII	I	I.P.	1681679.	K	59.464 A
NA VIII	I	I.P.	2131139.	K	46.923 A
NA IX	I	I.P.	2418520.	K	41.348 A
NA IX			44.723	0	691
NA IX			46.090	1	691
NA IX			47.776	0	691
NA IX			47.836	1	691
NA IX			48.553	2	691
NA IX			49.326	1	691
NA IX			49.386	2	691
NA VIII			51.316	0	691
NA VIII			51.789	0	691
NA IX			52.116	1	691

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA IX	52.186	2	691	NA VII	74.861	3	691
NA IX	52.487	00	691	NA VIII	74.956	3	691
NA VIII	53.750	0	691	NA VII	74.980	3	691
NA IX	53.860	3	691	NA VIII	75.043	4	691
NA VIII	54.380	1	691	NA VIII	75.096	3	691
NA VIII	55.345	0	691	NA VIII	75.385	1	691
NA VIII	55.396	1	691	NA VIII	75.428	2	691
NA VIII	57.096	0	691	NA VIII	75.518	3	691
NA VIII	57.119	0	691	NA VIII	76.123*	5	691
NA VIII	57.230	0	691	NA VIII	76.173	1	691
NA VIII	58.070	0	691	NA VIII	76.217	2	691
NA VIII	58.201*	5	691	NA VII	76.501	0	691
NA IX	58.279	6	691	NA VII	76.565	0	691
NA IX	58.954	1	691	NA VII	76.626	0	691
NA VIII	59.009	1	691	NA VII	76.827	0	691
NA IX	59.042	2	691	NA VII	76.862	0	691
NA VIII	59.101	0	691	NA	77.076	0	692
NA VIII	59.204	3	691	NA VIII	77.267*	6	691
NA VIII	59.249	0	691	NA VII	77.353	1	691
NA VIII	59.759	2	691	NA	77.558	0	692
NA VIII	59.992	0	691	NA IX	77.764*	7	691
NA VIII	60.053	1	691	NA IX	77.911*	8	691
NA VIII	60.073	1	691	NA	78.023	0	692
NA VIII	61.088	2	691	NA VII	78.459	0	691
NA VIII	61.347	00	691	NA VII	78.771	0	691
NA VIII	62.276	1	691	NA VII	78.907	3	691
NA VII	62.725	0	691	NA VII	78.982	2	691
NA VII	63.185	0	692	NA VII	79.477	2	691
NA VII	63.227	0	691	NA VII	79.571	1	691
NA VII	63.361	0	691	NA	79.620	1	692
NA VII	63.442	0	691	NA VII	79.761	0	691
NA VIII	63.695	0	691	NA VII	79.786	0	691
NA VII	63.778	0	691	NA VII	79.893	3	691
NA VII	64.113	0	691	NA VII	80.008	3	691
NA VIII	64.205	2	691	NA VII	80.133	0	691
NA VIII	64.237*	4	691	NA VII	80.174	0	691
NA VIII	64.302*	5	691	NA VII	80.245	1	691
NA VII	64.904	0	691	NA VI	80.345	0	692
NA VII	65.388	1	691	NA VI	80.645	0	692
NA VII	65.474	1	691	NA VIII	80.756	0	691
NA VIII	65.672	0	691	NA IX	81.175*	5	691
NA VIII	65.730	0	691	NA VIII	81.210*	5	691
NA VIII	66.059	2	691	NA IX	81.350*	5	691
NA VIII	66.358	0	691	NA VII	81.430	1	691
NA VIII	66.433	2	691	NA VII	81.498	2	691
NA VIII	66.498	4	691	NA VI	81.543	1	692
NA	67.027	1	692	NA VI	81.584	1	692
NA	67.461	1	692	NA VII	81.855	4	691
NA VIII	67.478	1	691	NA	82.516	0	692
NA VIII	67.672	4	691	NA VII	82.636	0	691
NA VII	67.826	1	691	NA VII	82.685	0	691
NA VII	67.877	1	691	NA	83.180	1	692
NA VII	67.912	2	691	NA VIII	83.240*	7	691
NA VIII	68.193	1	691	NA VIII	83.288*	8	691
NA VII	68.422	0	691	NA VIII	83.391*	9	691
NA VII	68.514	1	691	NA VI	83.639	1	692
NA VII	68.866	0	691	NA VIII	84.050*	5	691
NA VII	68.908	1	691	NA VII	84.221	4	691
NA VIII	69.120	3	691	NA VII	84.832	0	691
NA VII	69.314	0	691	NA VII	85.260	3	691
NA VII	69.395	0	691	NA VII	85.297	3	691
NA	70.320	0	692	NA VII	85.458	4	691
NA IX	70.615*	7	691	NA VIII	85.826	2	691
NA IX	70.653*	6	691	NA VIII	85.861	3	691
NA VIII	70.741	0	691	NA VIII	85.887	3	691
NA	71.386	0	692	NA VIII	85.936	1	691
NA VII	72.020	1	691	NA VIII	85.992	3	691
NA VII	72.079	1	691	NA VIII	86.039*	5	691
NA VII	72.865	2	691	NA VIII	86.381*	4	691
NA	73.128	0	692	NA VIII	86.417*	5	691
NA VII	74.097	1	691	NA VIII	86.479*	6	691
NA VII	74.180	2	691	NA VIII	86.530	1	691
NA VII	74.217	2	691	NA VII	86.596*	4	691
NA VII	74.255	3	691	NA VII	86.652*	5	691
NA VII	74.268	3	691	NA VII	86.758	3	691

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA	86.890	0	692	NA	VII	98.016	1 691
NA	VII	87.141	1 691	NA	VII	98.080	3 691
NA	VIII	87.211*	7 691	NA	VII	98.188	3 691
NA	VII	87.471	0 691	NA		98.271	0 692
NA		87.524	2 692	NA	VI	98.309	0 692
NA	VI	88.038	1 692	NA	VII	98.378	3 691
NA	VI	88.143	2 692	NA	VII	98.394	3 691
NA	VI	88.223	1 692	NA	VI	99.004	0 692
NA	VI	88.246	2 692	NA	VII	99.421	4 691
NA	VI	88.270	3 692	NA	VI	99.500	0 692
NA	VI	88.340	1 692	NA	VII	99.556	4 691
NA	VI	88.387	0 692	NA	VI	99.617	1 692
NA	VI	88.460	1 692	NA	VII	99.680	1 691
NA		88.583	1 692	NA		100.337	1 692
NA	VII	88.698	2 691	NA	VI	100.469	2 692
NA	VII	88.747	3 691	NA	VI	100.519	3 692
NA	VII	88.865	4 691	NA	VI	100.590	1 692
NA	VII	88.914	2 691	NA	VII	100.718	2 691
NA	VIII	89.759	2 691	NA	V	100.851	0 692
NA	VIII	89.818	3 691	NA	V	100.945	0 692
NA	VIII	89.948	4 691	NA		101.201	0 692
NA	VII	90.173	1 691	NA		101.348	0 692
NA	VII	90.252	4 691	NA	VII	101.785	3 691
NA	VI	90.468	3 692	NA	VII	101.816	3 691
NA	VIII	90.536*	5 691	NA	VIII	102.043	0 691
NA	VI	90.746	0 692	NA	VII	102.226	1 691
NA	VII	90.830	0 691	NA	VII	102.390	1 691
NA	VII	91.064	2 691	NA	VII	102.448	0 691
NA	VI	91.268	1 692	NA	VI	103.002	0 692
NA	VI	91.414	0 692	NA	VI	103.078	1 692
NA	VI	91.475	0 692	NA	VI	103.210	2 692
NA	VI	91.737	0 692	NA	VII	103.354	1 691
NA	VI	91.836	0 692	NA	VII	103.400	0 691
NA	VII	92.003*	5 691	NA	V	103.482	0 692
NA		92.608	0 692	NA	VII	103.779	3 691
NA	VII	92.774	2 691	NA	VII	103.842	2 691
NA	VII	92.809	1 691	NA	VII	103.891	4 691
NA	VII	92.843	1 691	NA	VII	104.000	2 691
NA	VII	92.883	1 691	NA	VII	104.036	2 691
NA	VII	92.930	2 691	NA		104.314	0 692
NA	VII	92.976	4 691	NA		104.440	0 692
NA		93.070	0 692	NA	VII	104.871	2 691
NA	VIII	93.120	1 691	NA	VII	104.955	3 691
NA	VIII	93.197	0 691	NA	VII	105.111	3 691
NA	VIII	93.242	2 691	NA	VII	105.205	2 691
NA	VIII	93.339	0 691	NA	VII	105.354	4 691
NA	VII	93.393*	4 691	NA	VI	106.040	3 692
NA	VII	93.434*	4 691	NA	VI	106.077	3 692
NA	VII	93.486*	5 691	NA	VI	106.125	4 692
NA	VII	93.528	1 691	NA	V	106.278	1 692
NA	VIII	93.670	4 691	NA	V	106.302	1 692
NA	VIII	93.898	2 691	NA	V	106.345	2 692, 693
NA	VII	94.020	0 691	NA	V	106.399	1 692
NA	VI	94.208	1 692	NA	V	106.490	1 692
NA	VII	94.288*	6 691	NA	VI	106.580	0 692
NA	VII	94.468*	7 691	NA		106.703	0 692
NA	VI	94.827	0 692	NA	VI	107.014	2 692
NA	VI	95.182	1 692	NA	VII	107.061	3 691
NA	VI	95.263	1 692	NA	VII	107.093	3 691
NA	VI	95.319	0 692	NA	VIII	107.158	1 691
NA		95.551	2 692	NA	VI	107.227*	3 692
NA		95.796	0 692	NA	VI	107.288*	4 692
NA	VI	95.933	3 692	NA	VI	107.535*	3 692
NA		96.018	1 692	NA	VI	107.553*	3 692
NA	VI	96.124	0 692	NA	VI	107.608*	4 692
NA	VI	96.196	1 692	NA	VI	107.683*	5 692
NA	VI	96.307	1 692	NA	VI	107.742	2 692
NA	VI	96.475	3 692	NA	VI	107.934	2 692
NA		96.572	0 692	NA	V	108.017	2 692
NA	VII	96.845	1 691	NA	VII	108.079	0 691
NA	VII	96.872	2 691	NA	V	108.159	0 692, 693
NA	VII	96.922	3 691	NA	VII	108.193	2 691
NA	VI	97.636	0 692	NA	VII	108.373	1 691
NA	VII	97.790	1 691	NA	VI	108.555	4 692
NA	VII	97.907	2 691	NA	VI	108.678	0 692

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA VII	108.733	2	691	NA VI	124.059*	4	692
NA VII	108.829	1	691	NA VI	124.153*	4	692
NA VII	109.362	1	691	NA VII	124.532	0	691
NA VII	109.519	2	691	NA VI	124.850	0	692
NA VI	109.763	0	692	NA V	125.178	4	692
NA VI	109.896*	5	692	NA V	125.216	4	65, 692
NA	110.085	2	692	NA V	125.286	5	65, 692
NA	110.474	0	692	NA VI	125.383	0	692
NA	110.577	1	692	NA V	125.428	3	692
NA VII	110.647	2	691	NA V	125.461	3	692
NA VI	110.750	2	692	NA V	125.899	2	692
NA VII	110.778	3	691	NA V	126.090	0	692
NA VII	110.817	2	691	NA V	126.210	1	692
NA V	110.878	2	692	NA V	126.368	0	692
NA V	110.921	0	692	NA V	126.458	0	692
NA VII	111.211	3	691	NA V	126.557	2	65, 692
NA VII	111.390	2	691	NA V	126.608	1	65, 692
NA V	111.512	1	692	NA VII	126.779	0	691
NA V	111.552	0	692	NA VII	126.814	1	691
NA VI	111.725	1	65, 692	NA V	126.920	0	692
NA VI	111.793	1	692	NA V	126.985	0	692
NA V	111.879	0	692	NA V	127.036	0	692
NA V	112.009	3	692	NA V	127.444	4	692
NA V	112.011	0	692	NA V	127.473	4	65, 692
NA	112.186	0	692	NA VI	127.837*	4	692
NA V	112.347	0	692	NA	127.953	1	692
NA VI	112.448	3	692	NA V	128.025	4	692
NA	112.526	0	692	NA V	128.051	4	692
NA	112.641	0	692	NA	128.112	3	692
NA VI	112.950	4	692	NA VI	129.040	2	692
NA	113.061	1	692	NA IV	129.464	0	65, 693
NA VI	113.125	4	692	NA V	129.942	1	65, 692
NA V	113.574	0	692	NA V	130.680	2	692
NA	113.952	0	692	NA V	130.723	1	692
NA VI	114.666	4	692	NA V	131.345	3	692
NA V	114.700	1	692	NA V	131.413	2	692
NA V	114.738	1	692	NA V	131.635	3	692
NA VII	115.361	0	691	NA IV	132.211	1	65, 692, 693
NA VII	115.475	0	691	NA IV	132.461	0	692, 693
NA VI	115.729	2	692	NA IV	132.731	0	692, 693
NA VI	115.780	0	692	NA V	133.162	5	692
NA VI	117.491	4	692	NA V	133.388	4	692
NA VI	117.609	3	692	NA VI	133.825	2	692
NA VI	117.699	3	692	NA VI	134.021	1	692
NA V	117.876	0	65, 692	NA VI	134.135	0	692
NA VIII	117.909	0	691	NA V	134.183	0	692
NA V	117.990	4	692	NA V	134.272	2	65, 692
NA VI	118.500	0	692	NA VI	134.532	3	692
NA VI	118.585	0	692	NA V	135.791	3	65, 692
NA VII	118.840	0	691	NA V	135.854	3	65, 692
NA VII	118.902	0	691	NA IV	136.428	00	65, 692, 693
NA VII	119.014	1	691	NA IV	136.550	1	65, 692, 693
NA VII	119.100	0	691	NA IV	136.645	00	65, 692, 693
NA VII	119.204	0	691	NA IV	136.746	0	692, 693
NA VI	119.684	3	692	NA IV	136.852	1	692, 693
NA	120.040	1	692	NA IV	137.054	0	692, 693
NA	120.220	1	692	NA IV	137.144	0	65, 693
NA	120.298	1	692	NA VI	137.589	0	692
NA	120.355	0	692	NA IV	137.717	0	692, 693
NA	120.430	0	692	NA IV	137.940	00	692, 693
NA VI	120.911	3	692	NA	138.628	2	692
NA VI	120.973	2	692	NA VI	138.693	2	692
NA VI	121.004	1	692	NA V	138.812	2	692, 693
NA V	121.263	0	692	NA V	138.917	3	692
NA VI	121.773	4	692	NA IV	139.867	2	691, 692, 693
NA VI	121.913	3	692	NA V	140.171	0	692
NA VII	122.018	3	691	NA V	140.258	0	692
NA VII	122.252	1	692	NA VI	140.833	2	692
NA	122.330	0	692	NA VI	141.040	0	692
NA VII	122.352	1	691	NA IV	142.232	2	65, 692, 693
NA VI	123.134	4	692	NA IV	142.361	0	692, 693
NA VI	123.744	4	692	NA V	142.415	0	692
NA VI	123.868	3	692	NA IV	142.687	0	692, 693
NA VI	123.929*	5	692	NA V	144.330	2	692
NA VI	123.970*	2	692	NA V	144.546	2	692

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA V	144.661	1	692, 693	NA III	202.760	3	65, 693
NA IV	144.979	0	65, 692, 693	NA III	203.050	3	65, 693
NA IV	145.846	0	65, 692, 693	NA III	203.282	2	65, 693
NA IV	146.060	2	65, 692, 693	NA III	203.324	2	65, 693
NA IV	146.298	1	692, 693	NA IV	203.959	2	65, 693
NA IV	146.398	0	692, 693	NA IV	205.487	6	69, 693
NA V	147.897	2	692	NA IV	205.956	4	65, 693
NA V	148.642	4	692	NA IV	206.155	3	65, 693
NA V	148.856	3	692	NA III	206.871	0	65, 693
NA V	149.001	2	692	NA III	207.355	0	65, 693
NA VI	149.442	0	692	NA III	207.458	0	65, 693
NA VI	149.621	0	692	NA III	214.235	4	65, 693
NA IV	150.297	4	65, 693	NA III	214.596	2	65, 693
NA IV	150.545	3	65, 693	NA III	214.868	4	65, 693
NA IV	150.647	2	65, 693	NA III	215.042	2	65, 693
NA IV	150.695	2	65, 693	NA III	215.230	4	65, 693
NA V	150.968	2	65, 692, 693	NA III	215.340	4	65, 693
NA IV	151.048	0	65, 693	NA III	215.489	0	65, 693
NA V	151.127	4	65, 692	NA III	215.671	4	65, 693
NA V	151.188	1	692	NA III	216.120	1	65, 693
NA V	151.303	1	65, 692	NA	217.385	0	693
NA IV	155.090	1	65, 693	NA III	229.868	3	65, 693
NA IV	155.248	2	65, 693	NA III	230.593	2	65, 693
NA IV	155.354	0	65, 693	NA III	250.515	8	65, 693
NA IV	155.445	3	65, 693	NA III	251.371	6	65, 693
NA IV	155.515	4	65, 693	NA III	266.893	5	65, 693
NA IV	155.622	0	65, 693	NA III	267.642	8	65, 693
NA IV	155.693	2	65, 693	NA III	267.868	6	65, 693
NA IV	155.781	1	65, 693	NA III	268.623	5	65, 693
NA IV	155.832	0	65, 693	NA III	272.441	0	65, 693
NA IV	156.536*	8	65, 693	NA II	273.99 *	0	779
NA IV	156.780	5	65, 693	NA II	275.10 *	0	779
NA IV	156.887	3	65, 693	NA II	281.81 *	1	779
NA V	157.036	2	65, 692	NA II	282.827*	0	65, 693
NA IV	157.090	4	65, 693	NA II	300.151*	1	65, 488, 693
NA V	157.209	3	692	NA II	301.311*	0	65, 693
NA V	157.511	2	692	NA II	301.432*	1	65, 488, 693
NA IV	157.599	1	65, 693	NA II	302.28 *	0	779
NA IV	157.782	3	65, 693	NA V	307.152*	8	65, 692
NA IV	162.445*	8	65, 693	NA V	308.264*	10	65, 692
NA IV	163.187	6	65, 693	NA VI	311.921*	4	692
NA V	163.616	3	692	NA VI	312.608	3	692
NA IV	163.840	4	65, 693	NA VI	313.748*	5	692
NA V	163.930	2	65, 692	NA VI	317.641*	6	692
NA IV	164.841	4	65, 693	NA IV	319.638*	10	65, 693
NA V	167.510	1	692	NA V	330.718	0	65, 692
NA IV	168.084*	10	65, 693	NA V	332.550*	8	65, 692
NA IV	168.409*	8	65, 693	NA V	333.910*	9	65, 692
NA IV	168.544	5	65, 693	NA VII	350.645*	5	691
NA V	170.631	1	65, 692	NA VII	352.275*	6	691
NA V	170.923	1	65, 692	NA VII	353.294*	8	691
NA V	171.076	1	692	NA VII	354.950*	4	691
NA IV	174.008	0	65, 693	NA V	360.319*	8	65, 692
NA IV	181.758*	8	65, 693	NA V	360.367*	8	65, 692
NA IV	182.128	6	65, 693	NA IV	360.761	6	65, 693
NA IV	182.282	4	65, 693	NA VI	361.250*	8	692
NA III	183.575	0	65, 693	NA VI	362.444*	4	692
NA III	183.747	0	65, 693	NA VI	363.774	2	692
NA III	184.218	0	65, 693	NA VI	364.477	3	692
NA III	188.870	2	65, 693	NA VI	366.110*	4	692
NA III	189.346	1	65, 693	NA VI	366.240	0	692
NA IV	190.126	6	65, 693	NA V	367.557	2	65, 692
NA IV	190.440*	10	65, 693	NA V	369.743	3	65, 692
NA IV	190.835*	8	65, 693	NA II	372.069*	6	65, 488, 693
NA IV	191.000	6	65, 693	NA II	376.375*	3	65, 488, 693
NA	191.205	0	693	NA III	378.143	10	65, 693
NA	193.807	0	693	NA III	380.107	8	65, 693
NA III	194.032	1	65, 693	NA VII	381.300	3	691
NA III	194.166	0	65, 693	NA VII	385.061	0	691
NA III	194.306	1	65, 693	NA VII	385.254	0	691
NA III	195.538	0	693	NA VII	396.335	2	691
NA IV	199.769	6	65, 693	NA VII	397.490	3	691
NA III	202.184	4	65, 693	NA VII	399.182*	4	691
NA III	202.490	2	65, 693	NA V	400.722*	10	65, 692
NA III	202.720	3	65, 693	NA IV	408.682*	8	65, 693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA IV	409.615*	8	65, 693	NA III	1752.06	1	758
NA IV	410.371*	10	65, 693	NA III	1752.65	3	758
NA IV	410.540*	6	65, 693	NA III	1754.97	0	758
NA VIII	411.145	1	691	NA III	1761.05	1	758
NA IV	411.333*	7	65, 693	NA III	1762.13	0	758
NA IV	412.240*	8	65, 693	NA III	1763.84	3	758
NA VI	414.370	2	692	NA III	1767.21	0	758
NA VI	415.505*	4	692	NA	1770.8	6	335
NA VI	417.595*	6	692	NA III	1773.00	0	758
NA VI	421.465	1	692	NA III	1775.32	0	758
NA VI	423.821	2	692	NA III	1782.817*	15	758, 794
NA	425.245	0	693	NA	1787.4	4	335
NA	425.493	1	693	NA III	1791.23	10	758
NA	436.946	0	693	NA III	1791.80	8	758
NA VI	440.266	3	692	NA III	1801.27	7	758
NA V	445.046*	6	65, 692	NA III	1810.74	4	758
NA V	445.190*	7	65, 692	NA III	1811.70	5	758
NA V	459.897*	7	65, 692	NA III	1814.35	3	758
NA V	461.051*	10	65, 692	NA III	1816.83	2	758
NA V	463.263*	12	65, 692	NA III	1819.01	2	758
NA VII	483.216	2	691	NA III	1821.68	12	758
NA VII	483.328	3	691	NA III	1824.52	0	758
NA VII	486.740*	4	691	NA III	1825.44	10	758
NA VI	489.580*	5	692	NA III	1835.22 *	15	758
NA VI	491.240*	3	692	NA III	1838.11	6	758
NA VI	491.340*	6	692	NA III	1843.43	2	758
NA VII	491.950*	4	691	NA III	1844.36 *	20	758
NA VIII	492.329	0	691	NA III	1845.10	12	758
NA VI	494.160	3	692	NA III	1847.54	10	758
NA VI	494.382*	7	692	NA III	1849.58 *	35	758
NA VIII	496.249	1	691	NA III	1850.24 *	20	758
NA V	510.102	0	65, 692	NA III	1850.39 *	18	758
NA V	511.193	1	65, 692	NA III	1855.91 *	15	758
NA V	514.350	0	65, 692	NA III	1856.73 *	20	758
NA	515.952	1	693	NA III	1857.57	5	758
NA VI	528.730	0	692	NA III	1859.20	0	758
NA VI	632.90	0	692	NA III	1859.61	0	758
NA VI	638.21	0	692	NA III	1861.19 *	15	758
NA IX	681.72	0	691	NA III	1862.40	6	758
NA III	1100.49	5	758	NA III	1869.43	1	758
NA III	1122.30	0	758	NA III	1872.45	1	758
NA III	1153.04	2	758	NA III	1873.32	4	758
NA III	1180.40	8	758	NA III	1874.22	0	750
NA III	1221.12	5	758	NA III	1885.75	4	758
NA III	1223.44	4	758	NA III	1887.48 *	15	758
NA III	1224.73	4	758	NA III	1890.75	12	758
NA III	1235.40	4	758	NA III	1899.70	3	758
NA III	1256.68	1	758	NA III	1913.17	8	758
NA III	1265.66	2	758	NA III	1918.46	6	758
NA III	1337.39	6	758	NA III	1920.12	6	758
NA III	1427.27	0	758	NA III	1926.27 *	45	758
NA III	1436.21	12	758	NA III	1927.21 *	15	758
NA III	1458.15	3	758	NA III	1933.87 *	30	758
NA III	1529.67	1	758	NA III	1935.54	0	758
NA III	1541.19	1	758	NA III	1939.32	0	758
NA III	1548.68	8	758	NA III	1941.61	0	758
NA III	1602.91	5	758	NA III	1941.77	0	758
NA III	1604.47	6	758	NA III	1942.19	6	758
NA III	1610.97	4	758	NA III	1943.40	6	758
NA III	1613.77	8	758	NA III	1944.90	3	758
NA III	1621.94	5	758	NA III	1946.43 *	20	758
NA III	1624.07	12	758	NA III	1946.70	0	758
NA III	1633.64	4	758	NA III	1950.79 *	15	758
NA III	1650.91	1	758	NA III	1951.21 *	40	758
NA III	1658.71	2	758	NA III	1955.31	8	758
NA III	1669.52	3	758	NA III	1956.48	0	758
NA III	1678.74	1	758	NA III	1960.76 *	20	758
NA III	1691.70	1	758	NA III	1965.04 *	18	758
NA	1698.9	10	335	NA III	1975.58	0	758
NA	1703.5	0	335	NA III	1976.62	1	758
NA III	1718.48	0	758	NA III	1977.14	1	758
NA III	1719.60	0	758	NA III	1980.95	0	758
NA III	1731.08	0	758	NA III	1985.58 *	30	758
NA III	1741.33	1	758	NA III	1995.62	3	758
NA III	1746.39	0	758				

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

MAGNESIUM

MG	I	I.P.	61669.14	K	1621.556 A
MG	II	I.P.	121267.41	K	824.624 A
MG	III	I.P.	646364.	K	154.712 A
MG	IV	I.P.	881759.	K	113.410 A
MG	V	I.P.	1139421.	K	87.764 A
MG	VI	I.P.	1504581.	K	66.464 A
MG	VII	I.P.	1814430.	K	55.114 A
MG	VIII	I.P.	2145679.	K	46.605 A
MG	IX	I.P.	2645444.	K	37.801 A
MG	X	I.P.	2963810.	K	33.740 A
MG	XI	I.P.	14209200.	K	7.038 A

MG	XI	7.310		236
MG	XI	7.473		236
MG	XI	7.850		236
MG	XI	9.168		236
MG	X	44.050*	1	691

MG	IX	46.711	0	691
MG	X	47.231*	3	691
MG	X	47.310*	5	691
MG	IX	47.818	0	691
MG	IX	47.947	1	691

MG	IX	48.024	0	691
MG	IX	48.340	1	691
MG	IX	48.794	0	691
MG	IX	49.586	00	691
MG	IX	50.777	0	691

MG	IX	51.560	0	691
MG	IX	51.591*	3	691
MG	IX	51.654*	4	691
MG	VIII	52.395	0	691
MG	IX	53.112	0	691

MG	IX	53.188	2	691
MG	IX	53.222	2	691
MG	VIII	53.484	0	691
MG	VIII	53.512	1	691
MG	VIII	53.812	0	691

MG	VIII	53.905	1	691
MG	IX	54.011	2	691
MG		54.131	0	692
MG	IX	54.463	0	691
MG	VIII	54.886	1	691

MG	IX	55.060	2	691
MG	VIII	55.222	0	691
MG	VIII	56.358	0	691
MG	VIII	56.403	00	691
MG	IX	56.861	0	691

MG	VIII	57.590	0	691
MG	VIII	57.736	1	691
MG	X	57.876*	6	691
MG	X	57.920*	4	691
MG	VII	58.316	00	692

MG	VIII	58.537	0	691
MG	VIII	58.614	2	691
MG	VIII	58.667	3	691
MG	VIII	59.038	2	691
MG	VIII	59.153	3	691

MG	VII	59.640	00	692
MG	VII	60.138	0	692
MG	VIII	60.384	0	691
MG	VIII	60.806	0	691
MG	IX	61.038	2	691

MG	IX	61.088	1	691
MG	IX	61.127*	3	691
MG	IX	61.175*	2	691
MG	IX	61.359	0	691
MG	IX	61.393	1	691

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

MG	IX	61.489	2	691
MG	VIII	61.891	2	691
MG	IX	61.924*	4	691
MG	VIII	61.964	1	691
MG	IX	62.020	0	691

MG	VII	62.166	0	692
MG	VIII	62.291	0	691
MG		62.615	0	692
MG	VII	62.696	1	692
MG	IX	62.751*	5	691

MG	X	63.152*	7	691
MG	X	63.295*	9	691
MG	VII	63.396	1	692
MG	VII	64.122	2	692
MG	VIII	64.246	0	691

MG	VII	64.377	1	692
MG	VIII	64.488	1	691
MG	VIII	64.518	1	691
MG	VIII	64.635	2	691
MG	VIII	64.702	2	691

MG	VIII	64.811	0	691
MG	VIII	64.878	1	691
MG	IX	65.609*	4	691
MG	X	65.672*	2	691
MG	VIII	65.735	1	691

MG	VIII	65.806	2	691
MG	X	65.847*	3	691
MG	VIII	66.069	3	691
MG	VII	66.788	0	692
MG	IX	67.090*	5	691

MG	IX	67.135*	6	691
MG	IX	67.239*	7	691
MG	VII	67.453	0	692
MG	VII	67.470	1	692
MG	VII	67.497	2	692

MG	VIII	67.731*	4	691
MG	VII	67.993	1	692
MG	VII	68.064	2	692
MG	VII	68.100	2	692
MG	VII	68.144	3	692

MG	VII	68.352	2	692
MG	VIII	68.450	1	691
MG	VIII	68.550	1	691
MG	VIII	68.580	0	691
MG	VIII	68.606	2	691

MG	IX	68.949	0	691
MG	IX	68.986	1	691
MG	IX	69.009	1	691
MG	IX	69.058	0	691
MG	IX	69.116*	1	691

MG	IX	69.161*	3	691
MG		69.327	0	692
MG	IX	69.374	2	691
MG	VIII	69.413*	4	691
MG	VIII	69.467*	5	691

MG	IX	69.513	1	691
MG	VIII	69.577	1	691
MG	VII	69.615	3	692
MG	VII	69.900	0	692
MG	IX	69.950*	6	691

MG	VII	70.193	1	692
MG		70.512	0	692
MG		70.563	0	692
MG		70.762	1	692
MG		70.787	1	692

MG		70.878	0	692
MG	VIII	70.953	1	691
MG	VIII	71.007	2	691
MG	VIII	71.118	3	691
MG	VIII	71.168	1	691

MG		71.454	1	692
MG		71.621	0	692
MG		71.724	0	692
MG	VII	71.786	1	692
MG	IX	71.841	1	691

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG IX	71.901	2	691	MG VIII	80.255*	4	691
MG VIII	72.027	3	691	MG IX	80.428	1	691
MG IX	72.226*	3	691	MG	80.563	1	692
MG IX	72.312*	4	691	MG VI	80.724	0	692
MG VI	72.430	1	692	MG VIII	80.806	0	691
MG VII	72.546	0	692	MG VIII	80.889	1	691
MG VIII	72.684	1	691	MG VI	80.930	2	692
MG VII	72.787	1	692	MG VII	81.024	1	692
MG VII	72.852	0	692	MG VI	81.106	3	692
MG VII	72.896	00	692	MG VII	81.133	3	692
MG	73.112	0	692	MG VIII	81.304	1	691
MG VIII	73.250*	4	691	MG VIII	81.368	0	691
MG	73.710	0	692	MG VIII	81.732*	3	691
MG	73.773	0	692	MG VIII	81.790*	2	691
MG VIII	73.825	1	691	MG VIII	81.844*	4	691
MG VIII	73.862	2	691	MG VIII	81.943	2	691
MG VIII	73.890	1	691	MG VIII	81.979	2	691
MG VIII	73.927	1	691	MG	82.111	0	692
MG VIII	73.981	2	691	MG VI	82.238	2	692
MG VIII	74.021	3	691	MG VIII	82.317	3	691
MG VIII	74.274	2	691	MG VI	82.475	1	692
MG VI	74.319	3	692	MG VIII	82.508	2	691
MG VIII	74.366*	4	691	MG VIII	82.709	2	691
MG VIII	74.411	1	691	MG VIII	82.822	3	691
MG VI	74.461	0	692	MG VI	82.853	1	692
MG IX	74.520	1	691	MG VII	82.940*	4	692
MG VI	74.574	2	692	MG VII	82.969*	4	692
MG	74.676	1	692	MG VII	83.015*	5	692
MG IX	74.738	1	691	MG VI	83.403	4	692
MG VIII	74.858*	6	691	MG VI	83.519	3	692
MG VIII	75.034*	7	691	MG VI	83.560	2	692
MG	75.112	1	692	MG VII	83.587	2	692
MG VI	75.248	1	692	MG VII	83.635	0	692
MG VI	75.334	1	692	MG VII	83.716	3	692
MG	75.528	0	692	MG VII	83.766*	5	692
MG	75.666	3	692	MG VII	83.910	3	692
MG VI	75.834	2	692	MG VII	83.959	4	692
MG VI	75.890	0	692	MG VII	84.025*	5	692
MG VII	75.975	4	692	MG VII	84.087*	3	692
MG VIII	76.199	1	691	MG VII	84.189	0	692
MG VII	76.392	3	692	MG VII	84.642*	5	692
MG	76.459	1	692	MG VI	84.745	2	692
MG VIII	76.714	1	691	MG VIII	84.827	0	691
MG VIII	76.740	2	691	MG VIII	84.919	1	691
MG VIII	76.788	3	691	MG VIII	85.064	0	691
MG VI	76.908	00	692	MG	85.091	0	692
MG VII	77.033	1	692	MG VI	85.153	0	692
MG VII	77.144	2	692	MG VIII	85.248	2	691
MG	77.301	0	692	MG VII	85.336	0	692
MG VI	77.405	2	692	MG VII	85.407*	7	692
MG VI	77.511	1	692	MG VI	85.577	2	692
MG VIII	77.572*	5	691	MG VIII	85.599	3	691
MG VI	77.639	0	692	MG VI	85.622	3	692
MG VIII	77.671*	5	691	MG VIII	85.749*	4	691
MG VIII	77.737*	6	691	MG VII	86.032	2	692
MG VI	78.239	0	692	MG	86.147	0	692
MG	78.376	0	692	MG VIII	86.234	1	691
MG VII	78.405	0	692	MG VIII	86.359	1	691
MG VIII	78.446*	6	691	MG	86.417	2	692
MG VII	78.521	2	692	MG	86.440	2	692
MG VIII	78.574*	6	691	MG	86.762	1	692
MG	78.643	1	692	MG VI	86.807	2	692
MG	78.668	1	692	MG VIII	86.847	2	691
MG VI	79.059	0	692	MG VIII	87.017	1	691
MG VII	79.131*	5	692	MG VII	87.131*	5	692
MG VII	79.168*	5	692	MG VII	87.175*	4	692
MG VII	79.248	1	692	MG VI	87.406	0	692
MG VII	79.695	2	691	MG	87.660	0	692
MG VI	79.817	2	692	MG VII	87.722*	6	692
MG VI	79.830	4	692	MG VII	87.767*	4	692
MG VI	79.857	4	692	MG VII	87.889*	5	692
MG	79.880	2	692	MG	88.016	2	692
MG VI	80.032	2	692	MG VII	88.680*	6	692
MG VI	80.075	2	692	MG VI	88.827	2	692
MG VIII	80.229*	4	691	MG VI	88.952	2	692

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG VI	89.021	0	692
MG	89.256	1	692
MG VII	89.407	2	692
MG VII	89.448	2	692
MG VII	89.476	0	692
MG	89.556	0	692
MG VI	89.649	0	692
MG	90.165	0	692
MG	90.338	1	692
MG	90.463	0	692
MG VII	90.706	4	692
MG VII	90.815	3	692
MG VI	90.897*	6	692
MG	91.013	0	692
MG	91.129	0	692
MG	91.302	0	692
MG IX	91.385	0	691
MG VII	91.460	0	692
MG VII	91.573	1	692
MG VIII	92.123	1	691
MG VII	92.256	3	692
MG VIII	92.324	0	691
MG V	92.409	0	692
MG V	92.428	0	692
MG	92.503	0	692
MG V	92.534	0	692
MG V	92.588	0	692
MG V	92.641	0	692
MG	92.685	0	692
MG VII	92.898	2	692
MG VII	92.934	2	692
MG VI	92.964	1	692
MG V	93.109	1	692
MG VI	93.493	3	692
MG	93.650	2	692
MG	93.720	1	692
MG VIII	93.911	0	691
MG	93.972	0	692
MG VII	94.043	4	692
MG VII	94.174	3	692
MG VII	94.276	2	692
MG	94.721	1	692
MG V	94.793	0	692
MG VII	95.027	4	692
MG VII	95.089	0	692
MG VII	95.139	1	692
MG VII	95.233	1	692
MG VII	95.259	2	692
MG VI	95.385	4	692
MG VI	95.421	4	692
MG VI	95.483	5	692
MG V	95.556	1	692
MG V	95.592	0	692
MG VI	95.637	3	692
MG VI	95.675	3	692
MG V	95.803	2	692
MG V	95.909	1	692
MG V	95.965	1	692
MG V	96.019	2	692
MG V	96.085	1	692
MG V	96.159	1	692
MG VI	96.240	1	692
MG VI	96.256	2	692
MG VI	96.303	2	692
MG VI	96.388	1	692
MG VI	96.467	0	692
MG VI	96.670	2	692
MG VI	96.704	2	692
MG VI	96.797	1	692
MG VI	96.857	1	692
MG VI	96.903	0	692
MG VI	96.939	4	692
MG VI	96.973	4	692
MG VI	97.251	5	692
MG VI	97.278	5	692

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG V	97.391	1	692
MG V	97.439	2	692
MG VIII	97.465	2	691
MG VIII	97.525	00	691
MG V	97.563	1	692
MG V	97.606	2	692
MG V	97.686	1	692
MG VII	98.032	3	692
MG V	98.235	1	692
MG V	98.271	2	692
MG V	98.406	1	692
MG V	98.444	1	692
MG VI	98.508	3	692
MG V	98.636	2	692
MG V	98.805	2	692
MG V	98.872	1	692
MG V	98.983	4	692
MG VI	99.025	2	692
MG V	99.067	2	692
MG V	99.149	0	692
MG V	99.205	00	692
MG VI	99.279	4	692
MG VI	99.333	4	692
MG	99.535	1	692
MG	99.610	2	692
MG VI	99.713	3	692
MG VI	99.738	3	692
MG V	99.788	1	692
MG	100.196	1	692
MG	100.374	1	692
MG	100.421	1	692
MG	100.519	0	692
MG	100.545	2	692
MG	100.597	2	692
MG VI	100.702	5	692
MG VI	100.904	4	692
MG V	100.949	0	692
MG	101.322	1	692
MG	101.398	0	692
MG VI	101.508	2	692
MG VI	101.556	3	692
MG V	101.671	3	692
MG V	101.782	3	692
MG	101.845	1	692
MG VII	101.956	2	692
MG	102.053	0	692
MG V	102.079	2	692
MG VII	102.138	1	692
MG VI	102.189*	5	692
MG VI	102.239*	5	692
MG VII	102.471	3	692
MG	102.906	3	692
MG V	103.333	0	692
MG VII	103.743	0	692
MG VII	103.859	0	692
MG V	103.904	4	692
MG V	103.947	3	692
MG V	104.100	2	692
MG V	104.140	2	692
MG V	104.182	1	692
MG V	104.214	1	692
MG V	104.432	2	692
MG VI	104.519*	3	692
MG VI	104.597*	5	692
MG	105.066	5	692
MG VII	105.159	1	692
MG VI	105.410	2	692
MG VI	105.502	3	692
MG	105.778	1	692
MG	105.830	1	692
MG	106.453	2	692
MG VII	106.524	2	692
MG VII	106.707	1	692
MG VII	106.809	0	692
MG V	107.661	2	692

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG VI	107.820	4	692	MG V	122.034	4	692
MG VI	108.015	3	692	MG IV	123.184	0	692
MG VI	108.114	2	692	MG IV	123.273	2	692
MG VI	108.148	1	692	MG IV	123.377	1	692
MG VI	108.338	1	692	MG IV	123.418	0	692
MG VI	108.441	0	692	MG IV	123.500	3	692
MG V	109.174	0	692	MG VI	123.590	1	692
MG	109.420	1	692	MG IV	123.722	0	692
MG V	109.812	2	692	MG IV	123.770	0	692
MG V	110.029	1	692	MG IV	124.414	2	692
MG V	110.121	0	692	MG IV	124.538	2	692
MG V	110.809	2	692	MG IV	124.759	2	692
MG V	110.859	4	692	MG IV	124.870	2	692
MG V	110.939	2	692	MG IV	124.990	2	692
MG V	111.031	3	692	MG VI	125.206	3	692
MG V	111.091	3	692	MG VI	125.459	3	692
MG VI	111.160	3	692	MG V	125.600	4	692
MG V	111.199	4	692	MG IV	125.811	1	692
MG V	111.247	2	692	MG V	126.280	4	692
MG V	111.419	2	692	MG VI	126.450	1	692
MG V	111.467	2	692	MG VI	126.488	1	692
MG V	111.496	2	692	MG V	126.544	2	692
MG VI	111.552*	5	692	MG IV	126.677	0	692
MG VI	111.746*	4	692	MG	126.961	0	692
MG VI	111.864*	4	692	MG	127.013	0	692
MG VII	111.984	0	692	MG IV	129.710	2	692
MG VII	112.135	0	692	MG IV	129.855	4	692
MG VII	112.269	00	692	MG IV	129.969	3	692
MG IV	112.914	0	692	MG IV	130.085	2	692
MG VI	113.189*	5	692	MG IV	130.118	2	692
MG V	113.217	2	692	MG IV	130.243	1	692
MG	113.279	0	692	MG IV	130.294	2	692
MG V	113.414	2	692	MG IV	130.350	3	692
MG V	113.518	1	692	MG IV	130.541	0	692
MG V	113.703	4	692	MG IV	130.630	1	692
MG V	113.823	1	692	MG VI	130.701	0	692
MG V	113.934	3	692	MG V	132.171	6	692
MG V	113.990	3	692	MG V	132.485	5	692
MG V	114.029	2	692	MG V	132.623	3	692
MG V	114.059	4	692	MG IV	132.815	3	692
MG V	114.199	3	692	MG IV	133.202	3	692
MG V	114.226	3	692	MG V	135.638	2	692
MG V	114.285	3	692	MG V	135.953	1	692
MG V	114.324	3	692	MG V	136.128	0	692
MG VI	114.412	0	692	MG V	137.234*	6	692
MG	114.498	0	692	MG V	137.414*	8	692
MG VI	114.624	0	692	MG	137.509	0	692
MG VI	114.725	0	692	MG V	137.748*	7	692
MG V	114.785	6	692	MG VI	137.814	0	692
MG V	115.013	6	692	MG V	137.880*	6	692
MG V	115.093	4	692	MG IV	137.966	1	692
MG V	115.399	4	692	MG IV	138.262	3	692
MG V	115.537	4	692	MG IV	138.394	2	692
MG VI	116.968*	5	692	MG IV	138.693	1	692
MG VI	117.226	3	692	MG	139.705	0	692
MG VI	117.527	1	692	MG IV	139.995	1	692
MG	117.880	0	692	MG IV	140.120	4	693
MG V	118.083	5	692	MG IV	140.176	4	693
MG IV	118.158	0	692	MG IV	140.425	2	693
MG IV	118.420	0	692	MG IV	140.475	2	693
MG IV	118.803	1	692	MG IV	140.523	2	693
MG IV	118.740	0	692	MG IV	140.564	2	693
MG V	118.810	5	692	MG IV	140.867	4	693
MG IV	118.914	0	692	MG IV	140.918	2	693
MG V	119.401	4	692	MG IV	140.966	4	693
MG V	119.447	4	692	MG V	142.933	6	692
MG IV	119.978	0	692	MG V	145.485	5	692
MG IV	120.086	0	692	MG V	146.083	6	692
MG IV	120.283	1	692	MG V	146.464	5	692
MG IV	120.415	0	692	MG IV	146.526	4	693
MG VI	121.025*	5	692	MG V	146.621	4	692
MG VI	121.290	3	692	MG IV	146.836	3	693
MG IV	121.543	0	692	MG IV	146.949*	4	693
MG V	121.644	6	692	MG IV	147.006*	4	693
MG V	121.922	5	692	MG IV	147.052*	4	693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG IV	147.252	3	693	MG VI	349.155*	10	692
MG IV	147.321	4	693	MG V	351.089*	12	692
MG IV	147.405	5	693	MG V	352.202*	10	692
MG IV	147.535	5	693	MG V	353.094*	14	692
MG IV	147.632	0	693	MG V	353.300*	9	692
MG IV	147.746*	4	693	MG V	354.223*	10	692
MG IV	147.887	1	693	MG V	355.326*	12	692
MG IV	148.121	2	693	MG VIII	356.000	0	691
MG	151.808	0	693	MG VII	363.770	0	692
MG V	152.019	0	692	MG VII	365.230	2	692
MG V	152.149	3	692	MG VII	367.679*	4	692
MG V	152.384	1	692	MG IX	368.071	1	691
MG V	152.527	1	692	MG	376.665	1	693
MG V	152.591	0	692	MG VI	387.787	2	692
MG III	158.530	0	693	MG VI	388.020	3	692
MG III	159.209	0	693	MG VI	399.289*	6	692
MG III	159.755	0	693	MG VI	400.676*	7	692
MG IV	160.230	6	693	MG VI	403.315*	8	692
MG IV	160.804	4	693	MG VII	429.134	1	692
MG III	161.135	0	693	MG VIII	430.467	0	691
MG III	161.686	0	693	MG	430.767	0	693
MG III	163.586	0	693	MG VII	431.318	2	692
MG III	164.159	0	693	MG VII	434.710	0	692
MG III	164.384	2	693	MG VII	434.923	2	692
MG III	164.954	2	693	MG VIII	436.726	1	691
MG III	165.195	0	693	MG IX	439.180	0	691
MG III	169.150	1	693	MG IX	443.981	0	691
MG III	169.746	1	693	MG	465.972	0	693
MG III	170.802*	5	693	MG	491.045	0	693
MG III	171.395	4	693	MG II	884.697*		592
MG IV	171.653*	8	693	MG II	884.719*		592
MG III	171.896	0	693	MG II	907.375*		592
MG IV	172.306*	7	693	MG II	907.412*		592
MG IV	180.070*	8	693	MG II	946.703*		592
MG IV	180.617*	10	693	MG II	946.769*		592
MG IV	180.796*	9	693	MG II	1025.968		592
MG IV	181.345*	8	693	MG II	1026.113		592
MG III	182.240	3	693	MG II	1239.925		592
MG III	182.973	2	693	MG II	1240.395		592
MG IV	183.439	4	693	MG II	1271.239*		592
MG IV	183.915	1	693	MG II	1271.940*		592
MG IV	184.189	0	693	MG II	1272.720*		592
MG III	186.510*	9	488, 693	MG II	1273.423*		592
MG III	187.194*	8	488, 693	MG II	1306.714*		592
MG III	188.526	3	693	MG II	1307.875*		592
MG III	231.730*	14	488, 693	MG II	1308.280*		592
MG III	234.258*	12	488, 693	MG II	1309.443*		592
MG	251.600	1	693	MG II	1365.544*		592
MG VI	268.986*	10	692	MG II	1367.256*		592
MG	269.295	0	693	MG II	1367.708*		592
MG VI	270.374*	12	692	MG II	1369.423		592
MG VII	276.145	2	692	MG IV	1459.52	1	693
MG V	276.581*	16	692	MG II	1475.100		592
MG VII	277.007	3	692	MG II	1478.000		592
MG VII	278.406*	4	692	MG II	1480.880		592
MG VII	280.744	3	692	MG II	1482.890		592
MG VI	288.652	0	692	MG IV	1490.41	0	693
MG VI	291.348	3	692	MG IV	1508.82	0	693
MG VI	291.458	2	692	MG III	1572.72 *	4	693
MG VI	293.026	2	692	MG	1579.05	0	693
MG VI	293.124	4	692	MG III	1586.26	3	693
MG	295.393	0	693	MG III	1592.39	1	693
MG VIII	311.806	0	691	MG	1607.13	0	693
MG V	312.311*	10	692	MG III	1642.86	1	693
MG VIII	313.743	1	691	MG III	1648.88	0	693
MG VI	314.554	3	692	MG III	1652.26	0	693
MG VI	314.676	4	692	MG IV	1658.92	0	693
MG VIII	315.022	2	691	MG III	1659.28	0	693
MG VIII	317.029	1	691	MG I	1668.57 *	0	658
MG VII	319.016*	4	692	MG III	1675.76	0	693
MG IV	320.999*	20	693	MG III	1679.56	0	693
MG IV	323.310*	18	693	MG IV	1680.02	0	693
MG VIII	335.230	0	691	MG IV	1683.04	3	693
MG VIII	339.007	1	691	MG I	1683.51 *	1	658
MG	341.790	0	693	MG III	1697.32	2	693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG IV	1698.83	2	693	AL III	I.P.	229453.99	K 435.817 A
MG	1699.75	0	693	AL IV	I.P.	967783.	K 103.329 A
MG III	1703.43	0	693	AL V	I.P.	1240600.	K 80.606 A
MG III	1703.78	1	693	AL VI	I.P.	1536300.	K 65.091 A
MG I	1707.10 *	3	658	AL VII	I.P.	1947390.	K 51.351 A
MG III	1714.85	0	693	AL VIII	I.P.	2295500.	K 43.563 A
MG III	1722.10	2	693	AL IX	I.P.	2663340.	K 37.547 A
MG III	1730.81	1	693	AL X	I.P.	3215340.	K 31.101 A
MG III	1731.88	1	693	AL XI	I.P.	3564900.	K 28.051 A
MG II	1734.852		592	AL XII	I.P.	16825000.	K 5.944 A
MG II	1737.612*		592				
MG II	1737.628*		592				
MG III	1738.91 *	6	693				
MG III	1739.56	0	693				
MG III	1744.08	0	693				
MG III	1747.64 *	4	658, 693	AL XII	6.314*		236
MG III	1749.02 *	5	693	AL XII	6.635*		236
MG I	1750.664		592	AL XII	7.757*		236
MG II	1753.474		592	AL XI	39.100	00	233
MG III	1758.01	1	693	AL IX	43.549	0	233
MG III	1763.93	2	693				
MG III	1773.09	3	693	AL X	44.136	0	233
MG III	1783.36 *	4	693	AL X	44.902	0	233
MG III	1788.05	1	693	AL	46.896	0	233
MG III	1791.50	1	693	AL IX	47.417	00	233
				AL IX	47.489	1	233
MG III	1794.68	3	693				
MG	1800.28	1	693	AL IX	47.534	2	233
MG III	1800.75 *	4	693	AL IX	47.755	0	233
MG III	1820.47	1	693	AL IX	47.856	1	233
MG I	1827.97 *	8	658	AL XI	48.297*	5	233
				AL XI	48.338*	3	233
MG III	1838.32	1	693				
MG	1844.18	1	693	AL X	49.094	00	233
MG III	1858.19	2	693	AL X	49.854	2	233
MG	1865.64	0	693	AL X	50.670	1	233
MG III	1868.23	1	693	AL X	50.762*	5	233
				AL X	50.802	1	233
MG IV	1874.59	0	693				
MG III	1879.46 *	4	693	AL X	50.946	0	233
MG III	1887.31	0	693	AL X	51.039	0	233
MG III	1890.35	2	693	AL X	51.362*	7	233
MG IV	1893.87	1	693	AL X	51.400	00	233
				AL X	51.454	00	233
MG III	1896.26	0	693				
MG	1900.04	1	693	AL X	51.979*	6	233
MG III	1901.55	1	693	AL XI	52.299*	10	233
MG IV	1906.71	0	693	AL XI	52.446*	12	233
MG III	1908.46	3	693	AL IX	53.376	0	233
				AL	53.412	0	233
MG III	1918.76	1	693				
MG III	1923.87	2	693	AL IX	53.424	0	233
MG	1924.48	0	693	AL IX	53.488	00	233
MG IV	1925.99	0	693	AL IX	53.554	0	233
MG	1928.43	0	693	AL	53.598	0	233
				AL VIII	53.785	0	233
MG III	1930.64	3	693				
MG III	1933.59	0	693	AL VIII	53.800	0	233
MG III	1937.80	2	693	AL VIII	53.823	0	233
MG III	1938.95	0	693	AL X	54.115	4	233
MG III	1941.50	0	693	AL XI	54.217	4	233
				AL VIII	54.258	4	233
MG IV	1946.20	0	693				
MG III	1954.87	0	693	AL IX	54.312	0	233
MG IV	1956.58	0	693	AL XI	54.388	1	233
MG III	1962.18	0	693	AL IX	54.457*	4	233
MG III	1971.57	0	693	AL	55.143	0	233
				AL X	55.227	3	233
MG	1974.75	0	693				
MG III	1977.56	1	693	AL X	55.272*	10	233, 693
MG III	1979.31	1	693	AL X	55.376*	15	233
				AL	55.622	00	233
				AL IX	55.667	0	233
				AL X	55.731	1	233
				AL VIII	56.150	1	233
				AL	56.274	0	233
				AL IX	56.304	1	233
				AL	56.545	0	233
				AL X	56.650	0	233
				AL X	56.762	0	233
				AL X	56.802	4	233
				AL VIII	56.899	2	233
				AL IX	56.945*	5	233
				AL X	56.964*	3	233

ALUMINUM

AL I	I.P.	48279.16	K	2071.287 A
AL II	I.P.	151860.4	K	658.500 A

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL X	57.024*	5	233	AL	64.418	0	233
AL X	57.072	0	233	AL VII	64.481	0	233
AL	57.116	1	233	AL VII	64.513	0	233
AL	57.244	1	233	AL IX	64.625	1	233
AL	57.271	1	233	AL VII	64.704	3	233
AL X	57.368*	7	233	AL VII	64.815	2	233
AL VIII	57.553	0	233	AL IX	64.885	3	233
AL VIII	57.624	0	233	AL VII	64.904	2	233
AL	57.663	0	233	AL VII	65.014	0	233
AL IX	58.060	0	233	AL VIII	65.128	0	233
AL IX	58.112	1	233	AL VIII	65.298	0	233
AL	58.144	1	233	AL VIII	65.381	1	233
AL IX	58.222	2	233	AL VIII	65.494	1	233
AL IX	58.276	00	233	AL	65.632	1	233
AL VII	58.384	0	233	AL	65.821	1	233
AL	58.441	0	233	AL VII	65.865	1	233
AL	58.512	0	233	AL VII	65.882	1	233
AL VII	58.752	00	233	AL IX	66.038	1	233
AL X	58.808	00	233	AL IX	66.092	1	233
AL X	58.858	2	233	AL IX	66.142	2	233
AL X	58.987	3	233	AL IX	66.239	1	233
AL X	59.107*	8	233	AL IX	66.275	1	233
AL	59.298	0	233	AL VIII	66.321	1	233
AL IX	59.381	0	233	AL VIII	66.363	0	233
AL	59.481	0	233	AL IX	66.624	0	233
AL IX	59.761*	6	233	AL VIII	66.704	3	233
AL VII	59.821	0	233	AL VIII	66.731*	4	233
AL VII	59.911	0	233	AL VIII	66.771*	7	233
AL	60.052	1	233	AL IX	66.836	2	233
AL IX	60.162	0	233	AL	66.996	0	233
AL IX	60.197	1	233	AL VIII	67.044	0	233
AL IX	60.222	0	233	AL VIII	67.096	2	233
AL IX	60.262	0	233	AL VIII	67.121	2	233
AL IX	60.312	1	233	AL VIII	67.166	0	233
AL IX	60.347	2	233	AL VIII	67.244	3	233
AL IX	60.504	3	233	AL VIII	67.288*	10	233
AL IX	60.549*	4	233	AL VIII	67.360	5	233
AL IX	60.588*	6	233	AL VIII	67.408*	10	233
AL IX	60.645	0	233	AL VIII	67.437	1	233
AL X	60.700	0	233	AL VIII	67.464*	12	233
AL	60.788	1	233	AL	67.529	0	233
AL	60.809	1	233	AL VII	67.565	3	233
AL IX	60.896*	6	233	AL IX	67.828	0	233
AL IX	61.069*	12	233	AL	67.873	0	233
AL	61.262	0	233	AL VIII	67.946*	10	233
AL	61.373	1	233	AL	68.000	0	233
AL	61.472	2	233	AL VI	68.167	1	233
AL IX	61.647	0	233	AL VI	68.223	0	233
AL VIII	61.694	3	233	AL VI	68.289	00	233
AL	61.900	0	233	AL VIII	68.375*	15	233
AL	61.933	1	233	AL	68.439	1	233
AL VIII	62.016	2	233	AL	68.458	1	233
AL	62.070	1	233	AL VII	68.531	2	233
AL VII	62.296	4	233	AL VII	68.637	1	233
AL IX	62.327*	5	233	AL VII	68.681	0	233
AL IX	62.369*	3	233	AL	68.783	0	233
AL VII	62.432	0	233	AL VIII	68.825	1	233
AL VII	62.474	2	233	AL	68.904	0	233
AL IX	62.587	2	233	AL IX	68.958	1	233
AL IX	62.916	3	233	AL	69.165	4	233
AL VII	63.025*	10	233	AL IX	69.258	1	233
AL X	63.134	4	233	AL	69.379	1	233
AL VIII	63.203	0	233	AL VIII	69.420	1	233
AL IX	63.509*	10	233	AL VIII	69.502	2	233
AL	63.560	0	233	AL VIII	69.611	4	233
AL IX	63.632*	6	233	AL	69.631	4	233
AL VIII	63.714	2	233	AL IX	69.716	2	233
AL VIII	63.933	0	233	AL VIII	69.773	3	233
AL VIII	63.965	3	233	AL IX	69.850	1	233
AL VIII	64.004	4	233	AL	70.040	1	233
AL VII	64.066	0	233	AL	70.090	2	233
AL VIII	64.086	0	233	AL VIII	70.161*	6	233
AL	64.269	0	233	AL VIII	70.323*	4	233
AL VII	64.325	1	233	AL VIII	70.402	00	233
AL VII	64.358	1	233	AL VIII	70.727	5	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL	70.802	1	233	AL IX	77.381	3	233
AL	71.077	0	233	AL VII	77.448	3	233
AL	71.139	1	233	AL VIII	77.605*	6	233
AL	71.277	1	233	AL VII	77.770	6	233
AL	71.590	1	233	AL VII	77.806	1	233
AL	71.625	1	233	AL VII	77.896*	10	233
AL	71.774	0	233	AL VI	77.945	10	233
AL	71.867	0	233	AL VI	78.112	2	233
AL	71.987	0	233	AL	78.149	2	233
AL VIII	72.223	4	233	AL VI	78.178	1	233
AL VII	72.270*	10	233	AL VIII	78.225	00	233
AL VIII	72.324	4	233	AL	78.256	1	233
AL VIII	72.401	3	233	AL VII	78.327*	20	233
AL	72.674*	6	233	AL VII	78.351*	20	233
AL VI	72.714*	00	233	AL	78.421	0	233
AL VI	72.810	5	233	AL VI	78.459	1	233
AL VI	72.865	1	233	AL	78.508	3	233
AL VI	72.926	2	233	AL	78.573	1	233
AL VI	73.076	2	233	AL VI	78.628	0	233
AL	73.278	2	233	AL VI	78.712	0	233
AL VI	73.334	00	233	AL	78.836	2	233
AL IX	73.451	00	233	AL	78.938*	6	233
AL IX	73.625	00	233	AL VII	79.012*	10	233
AL VIII	73.703	3	233	AL VII	79.197*	10	233
AL VIII	73.733	2	233	AL VIII	79.455	2	233
AL VIII	73.760	0	233	AL	79.557	0	233
AL VIII	73.879	4	233	AL VII	79.635	0	233
AL	74.016	2	233	AL VII	79.690	3	233
AL VII	74.095	2	233	AL	79.783	1	233
AL	74.259	0	233	AL VII	79.919	6	233
AL	74.321	1	233	AL VII	79.952	5	233
AL VI	74.346	1	233	AL	80.014	0	233
AL VI	74.444	6	233	AL VIII	80.320	0	233
AL VI	74.504	1	233	AL	80.403	0	233
AL VI	74.592	3	233	AL VIII	80.483	0	233
AL VI	74.656	5	233	AL VIII	80.704	2	233
AL IX	74.785	1	233	AL VI	80.770	1	233
AL VI	74.813	1	233	AL VI	81.176	1	233
AL VIII	74.841	4	233	AL VII	81.234	1	233
AL VI	74.892	2	233	AL VI	81.339	0	233
AL VIII	74.965	3	233	AL	81.560	2	233
AL VIII	75.058	1	233	AL	81.667	2	233
AL	75.164	2	233	AL VI	81.738	1	233
AL	75.226	2	233	AL VII	81.806	4	233
AL VII	75.270*	5	233	AL VI	82.082	1	233
AL VII	75.302*	7	233	AL	82.105	1	233
AL VII	75.360*	12	233	AL	82.128	1	233
AL VIII	75.697	1	233	AL VI	82.267	1	233
AL VII	75.488	4	233	AL VI	82.338	0	233
AL VII	75.532	4	233	AL	82.423	1	233
AL VIII	75.577	3	233	AL VIII	82.543	3	233
AL VIII	75.623	2	233	AL	82.582	1	233
AL VIII	75.734	1	233	AL	82.908	1	233
AL VIII	75.778	5	233	AL	83.102	0	233
AL VII	75.809	2	233	AL	83.335	0	233
AL VII	75.850	2	233	AL VIII	83.465	1	233
AL VII	75.894	2	233	AL VIII	83.635	0	233
AL VIII	75.985	1	233	AL VII	83.831	7	233
AL VII	76.010	1	233	AL VII	84.007	4	233
AL VII	76.086	0	233	AL VII	84.098	2	233
AL VII	76.231	1	233	AL	84.479	0	233
AL VII	76.257	2	233	AL VI	84.650	2	233
AL VII	76.342	0	233	AL VI	84.801	0	233
AL VII	76.383*	10	233	AL VI	84.828	1	233
AL VII	76.422*	10	233	AL VI	84.928	0	233
AL VII	76.543*	20	233	AL	85.046	00	233
AL VII	76.572*	20	233	AL	85.189	0	693
AL VI	76.618	4	233	AL VI	85.423	2	233
AL VI	76.697	4	233	AL VI	85.515*	20	233
AL	76.794	4	233	AL VI	85.569	4	233
AL	76.853	4	233	AL VI	85.622	6	233
AL VI	76.953	1	233	AL V	85.662	1	233
AL	76.984	2	233	AL VI	85.724	6	233
AL	77.052	1	233	AL VI	85.764	8	233
AL	77.315	0	233	AL V	85.804	7	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL VI	85.817	7	233	AL V	94.117	2	233
AL V	85.865	2	233	AL V	94.160	2	233
AL V	85.922	0	233	AL V	94.187	2	233
AL VI	85.970	0	233	AL V	94.321	0	233
AL VI	86.020	3	233	AL V	94.394	0	233
AL VI	86.070	3	233	AL	94.970	3	233
AL VI	86.097	3	233	AL	95.405	0	233
AL VI	86.147	4	233	AL VI	95.436	2	233
AL	86.282	1	233	AL	95.624	2	233
AL	86.360	2	233	AL	95.720	4	233
AL	86.393	2	233	AL V	95.835	2	233
AL	86.427	2	233	AL	95.859	0	233
AL	86.540	0	233	AL VII	95.965	4	233
AL VIII	86.671	0	233	AL VI	96.071	0	233
AL VII	86.689	1	233	AL V	96.150	1	233
AL VII	86.887*	15	233	AL VII	96.198	1	233
AL	86.975	0	233	AL VII	96.319	0	233
AL V	87.020	2	233	AL VI	96.442	0	233
AL VII	87.060*	12	233	AL VI	96.673	1	233
AL VII	87.176	6	233	AL	96.939	0	233
AL V	87.279	1	233	AL VI	98.684	0	233
AL VI	87.334	8	233	AL V	99.200	1	233
AL VI	87.544	7	233	AL V	99.290	10	233
AL VI	87.592	10	233	AL V	99.427	4	233
AL VI	87.629	2	233	AL V	99.544	2	233
AL VI	87.655*	13	233	AL V	99.616	7	233
AL VI	87.783	5	233	AL V	99.769	0	233
AL VI	87.802	5	233	AL VI	100.616*	12	233
AL VI	87.866	7	233	AL VI	100.639	2	233
AL VI	87.887	5	233	AL VI	100.894	4	233
AL	87.932	2	233	AL VI	100.919	4	233
AL VII	88.033*	18	233	AL VI	101.027	3	233
AL	88.108	2	233	AL VI	103.062	0	233
AL VI	88.170*	20	233	AL V	103.805*	10	233
AL	88.241	0	233	AL V	103.881*	14	233
AL VI	88.273*	15	233	AL VI	103.940	6	233
AL VI	88.325	2	233	AL V	103.990	4	233
AL VI	88.376*	15	233	AL VI	104.047*	20	233
AL V	88.425	2	233	AL V	104.073	10	233
AL VI	88.469	5	233	AL V	104.121	12	233
AL V	88.539	8	233	AL V	104.180*	14	233
AL V	88.636	2	233	AL	104.227	0	233
AL V	88.688	4	233	AL VI	104.344*	16	233
AL V	88.817	1	233	AL V	104.363	10	233
AL V	88.945	00	233	AL V	104.447	10	233
AL VI	90.200*	20	233	AL VI	104.466	8	233
AL VII	90.550	6	233	AL V	104.495	8	233
AL V	90.630	5	233	AL	104.960	0	233
AL V	90.646	2	233	AL	106.471	0	233
AL V	90.701	4	233	AL VI	107.620*	14	233
AL VII	90.772	4	233	AL V	107.711	6	233
AL VI	90.858*	12	233	AL V	107.945*	20	233
AL V	90.914	4	233	AL V	108.004	5	233
AL V	90.982	1	233	AL V	108.057	12	233
AL	91.023*	10	233	AL V	108.112	12	233
AL V	91.078	0	233	AL V	108.315	4	233
AL VI	91.332	10	233	AL V	108.385	10	233
AL VIII	91.487	1	233	AL V	108.404	5	233
AL V	91.750	1	233	AL V	108.446	3	233
AL V	92.039	0	233	AL V	108.462	10	233
AL VI	92.626*	15	233	AL V	108.526	0	233
AL VI	92.636*	4	233	AL V	108.616	1	233
AL VI	92.875*	10	233	AL V	108.707	6	233
AL VI	92.970*	5	233	AL V	108.851	1	233
AL VII	93.269	0	233	AL IV	108.913	1	233
AL VII	93.295	2	233	AL V	109.021	3	233
AL VII	93.516	2	233	AL VI	109.284	7	233
AL VII	93.542	00	233	AL VI	109.514*	20	233
AL V	93.654	0	233	AL VI	109.843*	12	233
AL V	93.755	7	233	AL VI	109.974	4	233
AL V	93.855	4	233	AL IV	111.196	2	233
AL V	93.880	1	233	AL IV	111.589	3	233
AL V	93.955	6	233	AL IV	111.781	1	233
AL V	93.981	2	233	AL	113.140	1	233
AL V	94.089	1	233	AL VI	113.314	1	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL VI	113.437	3	233	AL III	560.390*	7	190, 488
AL VI	113.623	1	233	AL	656.7	0	484
AL VI	113.756	1	233	AL	658.4	0	484
AL IV	114.313	0	233	AL III	670.144	1	190
AL IV	114.737	1	233	AL III	671.198	2	190
AL IV	116.464	5	233	AL	678.	5	335
AL IV	116.921	3	233	AL III	695.817*	5	190, 488
AL IV	117.410	0	233	AL III	696.212*	4	190, 488
AL V	118.500	10	233	AL	718.9	3	335
AL V	118.984	6	233	AL III	725.716	2	190
AL IV	124.034*	8	693	AL III	726.948	3	190
AL IV	124.543*	6	693	AL	802.	0	484
AL V	125.525*	15	233	AL III	855.040	4	190
AL V	126.065*	15	233	AL III	856.768*	5	190
AL IV	129.729*	12	693	AL III	892.056	4	190
AL V	130.413*	20	233	AL III	893.905*	5	190
AL V	130.848*	20	233	AL	904.5	5	335
AL V	131.003*	20	233	AL II	933.08	0	653
AL V	131.441*	20	233	AL II	933.95	0	653
AL IV	131.652	3	693	AL II	935.20	1	653
AL V	132.630	10	233	AL II	952.43	00	653
AL V	133.013	4	233	AL II	953.18	0	653
AL V	133.242	2	233	AL II	954.35	1	653
AL	135.231	0	693	AL II	954.87	0	653
AL	135.620	1	693	AL II	955.99	1	653
AL V	136.249	1	233	AL	977.4	4	335
AL V	136.668	2	233	AL II	986.55	0	653
AL	144.3	0	484	AL II	987.80	0	653
AL IV	160.073*	16	65, 168, 693	AL II	989.70	0	653
AL IV	161.686*	14	65, 195, 693	AL II	990.88	1	653
AL	186.9	0	484	AL II	1047.82	0	653
AL	190.560	1	693	AL II	1048.53	1	653
AL	200.0	0	484	AL II	1049.93	2	653
AL	219.1	0	484	AL II	1055.28	1	653
AL	221.543	0	693	AL II	1056.68	0	653
AL	225.9	0	484	AL IV	1118.80	4	693
AL	228.911	0	693	AL IV	1136.80	3	693
AL VII	239.030	2	693	AL IV	1142.03	1	693
AL VII	240.770	4	693	AL II	1142.97	2	653
AL VI	243.760*	10	168, 693	AL	1150.27	0	693
AL VIII	250.139	0	693	AL IV	1150.85	0	693
AL VIII	251.347	0	693	AL II	1152.14	4	653
AL VII	259.035	0	693	AL IV	1156.21	1	693
AL VII	259.219	0	693	AL II	1157.13	3	653
AL VII	261.053	0	693	AL II	1158.14	1	653
AL VII	261.219	0	693	AL IV	1161.85	0	693
AL VI	275.350	6	693	AL III	1162.66	0	190
AL V	278.699*	16	65, 168, 693	AL	1165.38	0	693
AL VII	279.256	0	693	AL IV	1167.35	0	693
AL V	281.397*	14	65, 693	AL II	1177.48	4	653
AL IX	284.042	0	693	AL II	1179.38	1	653
AL VIII	285.467	1	693	AL	1183.62	0	693
AL VI	307.248	7	693	AL II	1189.21	2	653
AL VI	308.560	6	693	AL II	1190.07	4	653
AL VII	309.012	2	693	AL II	1191.86	5	653
AL VII	309.122	2	693	AL IV	1198.47	1	693
AL VI	309.596	8	693, 168	AL II	1208.35	3	653
AL VI	309.852	6	693	AL II	1209.19	1	653
AL VI	310.908	6	693	AL II	1210.15	2	653
AL VI	312.241	6	693	AL IV	1211.80	0	693
AL VIII	328.200	0	693	AL IV	1216.78	1	693
AL X	332.891	0	693	AL IV	1219.19	0	693
AL VII	343.290	0	693	AL	1220.57	1	693
AL VII	343.650	0	693	AL IV	1228.30	1	693
AL VII	352.160	2	693	AL IV	1229.94	0	693
AL VII	353.776	4	693	AL IV	1237.14	4	693
AL VII	356.885*	5	693	AL IV	1240.18	2	693
AL VIII	381.689	0	693	AL IV	1240.83	3	693
AL VIII	383.785	1	693	AL IV	1248.76	2	693
AL IX	386.070	0	693	AL IV	1251.35	1	693
AL VIII	387.970	2	693	AL IV	1257.58	3	693
AL IX	392.767	0	693	AL II	1258.88	4	653
AL X	401.183	0	693	AL IV	1262.51	1	693
AL III	486.95	1	190	AL IV	1264.14	3	693
AL III	511.215	4	190	AL	1266.23	0	693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL IV	1272.70	3	693
AL IV	1283.48	0	693
AL	1291.81	0	693
AL IV	1302.13	2	693
AL	1320.71	0	693
AL	1337.86	1	693
AL	1343.5	1	484
AL II	1350.15	6	653
AL III	1352.92	2	190
AL IV	1353.73	0	693
AL IV	1359.49	0	693
AL	1369.20	0	693
AL II	1371.26	2	653
AL III	1379.670*	6	190
AL III	1384.144*	8	190
AL IV	1388.77	2	693
AL IV	1404.72	2	693
AL IV	1409.52	0	693
AL IV	1412.24	0	693
AL IV	1417.58	0	693
AL	1422.17	0	693
AL IV	1425.00	0	693
AL	1429.57	0	693
AL IV	1431.93	2	693
AL IV	1441.81	1	693
AL IV	1447.47	2	693
AL IV	1449.70	0	693
AL	1457.92	1	693
AL	1463.34	0	693
AL IV	1481.46	0	693
AL IV	1486.87	1	693
AL IV	1526.15	1	693
AL IV	1537.52	2	693
AL II	1539.74 *	10	488, 653
AL IV	1553.00	1	693
AL II	1555.95	0	653
AL IV	1557.24 *	5	693
AL II	1560.35	1	653
AL II	1563.56	1	653
AL IV	1564.14	1	693
AL II	1569.35	1	653
AL II	1572.97	1	653
AL II	1580.93	2	653
AL IV	1582.04	3	693
AL II	1584.77	2	653, 693
AL IV	1589.27	1	693
AL II	1596.02	3	653
AL II	1599.44	3	653
AL III	1605.776*	7	190
AL III	1611.849*	9	190
AL II	1616.41	4	653
AL II	1618.38	4	653
AL II	1625.60	3	488, 653
AL IV	1639.00	2	693
AL II	1644.15	5	653
AL II	1644.78	5	653
AL II	1670.81 *	15	488, 653, 658
AL II	1681.78	5	653
AL II	1686.19	5	653
AL II	1721.279*	10	488, 653, 658
AL II	1724.981*	15	488, 653, 658
AL II	1739.64	5	653
AL	1742.4	1	456
AL	1745.2	1	456
AL II	1750.56	6	653
AL II	1760.15	7	653, 658
AL II	1762.00	5	653, 810
AL I	1762.97 *	1	658
AL II	1763.79 *	8	488, 653
AL II	1764.01 *	10	488, 653, 810
AL II	1765.82	4	653, 810
AL II	1767.60 *	10	488, 653, 810
AL I	1769.19 *	1	658
AL II	1776.24	0	653
AL II	1807.40	4	653

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL II	1807.95		653
AL IV	1818.55	1	693
AL II	1828.61 *	10	536, 653
AL II	1832.85 *	8	536, 653
AL II	1834.82	6	536, 653
AL II	1836.97	1	653
AL II	1838.27	1	653
AL II	1839.64	2	653
AL II	1848.90	2	653
AL III	1854.722*	10	65, 488, 658
AL II	1855.95	2	488, 653, 810
AL II	1858.05	4	488, 653, 810
AL II	1859.99	3	653
AL II	1862.34	6	488, 653, 810
AL III	1862.782*	10	190, 488, 810
AL II	1877.13	1	653
AL II	1878.48	3	653
AL IV	1881.19	1	693
AL II	1897.49	2	653
AL II	1899.17	4	653
AL II	1904.38	2	653
AL II	1906.57	4	653
AL II	1910.91	5	653
AL II	1924.81	4	653
AL II	1925.99	2	653
AL II	1926.99	1	653
AL II	1930.03	5	653
AL II	1932.43	5	653
AL II	1934.54 *	10	653
AL II	1934.75 *	10	653
AL III	1935.881*	6	49, 538
AL II	1936.96	4	653
AL II	1939.30	5	653
AL II	1945.35	5	653
AL II	1958.29	1	536
AL II	1959.76	0	536
AL II	1960.70	3	653
AL II	1962.67	7	653
AL II	1965.23	4	653
AL II	1983.71	0	536
AL II	1988.85	0	536
AL II	1989.85	2	488
AL II	1990.53	7	653

SILICON

SI	I	I.P.			
SI I	I.P.	65743.00	K	1521.0	A
SI II	I.P.	131010.	K	758.622	A
SI III	I.P.	269940.6	K	370.452	A
SI IV	I.P.	364097.7	K	274.652	A
SI V	I.P.	1345100.	K	74.344	A
SI VI	I.P.	1654800.	K	60.430	A
SI VII	I.P.	1988000.	K	50.30	A
SI VIII	I.P.	2445110.	K	40.898	A
SI IX	I.P.	2831470.	K	35.317	A
SI X	I.P.	3237400.	K	30.889	A
SI XI	I.P.	3840470.	K	26.038	A
SI XII	I.P.	4221460.	K	23.671	A
SI XI		43.290	00	231	
SI XI		43.763	00	231	
SI XII		44.021*	1	231	
SI XII		44.165*	2	231	
SI IX		44.215	00	231	
SI IX		44.249	00	231	
SI XI		45.398	00	231	
SI XII		45.656*	00	231	
SI XI		46.264*	00	231	
SI XI		46.300*	1	231	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI XI	46.401*	2	231	SI VII	58.580	2	231
SI XI	47.489*	1	231	SI VII	58.719	1	231
SI X	47.545	1	233	SI VII	58.782	1	231
SI XI	47.607*	1	231	SI VIIII	58.885	3	231
SI XI	47.653*	1	231	SI IX	58.906	1	231
SI XI	47.899*	1	231	SI IX	59.004	2	231
SI X	48.553	00	233	SI IX	59.077	1	231
SI XI	49.222*	1	231	SI VII	59.884	1	231
SI XI	49.265	00	231	SI VII	59.966	2	233
SI X	49.701*	2	233	SI	60.151	0	231
SI VIIII	49.987	00	231	SI VII	60.221	2	231
SI VIIII	50.019	1	231	SI	60.421	0	231
SI X	50.154	1	231	SI	60.459	0	231
SI X	50.254	1	233	SI	60.673	2	231
SI X	50.305	1	231	SI VII	60.837	2	231
SI X	50.333	1	231	SI VII	60.989	2	231
SI VIIII	50.524	1	231	SI VIIII	61.019*	2	231
SI X	50.524	1	233	SI VIIII	61.070*	4	231
SI X	50.691*	2	233	SI IX	61.109	1	231
SI IX	51.113	1	231	SI VIIII	61.175	1	231
SI IX	51.362	2	231	SI IX	61.190	1	231
SI X	51.635	00	233	SI VIIII	61.273	2	231
SI X	51.676	0	233	SI VII	61.306	1	231
SI VIIII	51.718	0	231	SI IX	61.355	1	231
SI VIIII	51.819	0	231	SI VIIII	61.395	1	231
SI X	52.070*	1	233	SI VIIII	61.446	2	231
SI X	52.155*	2	233	SI IX	61.502*	1	231
SI X	52.485*	2	233	SI IX	61.546*	2	233
SI VIIII	52.554	0	231	SI IX	61.600*	1	231
SI X	52.611	1	233	SI IX	61.649*	2	231
SI IX	52.671	00	233	SI VIIII	61.798	2	231
SI IX	52.810	0	231	SI IX	61.852*	2	233
SI IX	52.838	1	231	SI VIIII	61.895	3	231
SI	53.025	0	231	SI VIIII	61.914	3	231
SI	53.063	0	231	SI	62.154	1	231
SI X	53.463	00	233	SI	62.251	2	231
SI X	53.573	1	233	SI	62.386	1	231
SI X	53.595	1	233	SI	62.454	0	231
SI VIIII	53.770	00	231	SI VIIII	62.586	1	231
SI IX	53.992	00	231	SI VIIII	62.808	2	231
SI	54.403	1	231	SI VIIII	62.849	3	231
SI VII	54.462	1	231	SI VIIII	62.884	1	231
SI X	54.522*	1	233	SI VII	62.940	1	231
SI X	54.571*	1	231	SI IX	62.974	1	231
SI X	54.599*	1	233	SI	63.183	1	231
SI X	54.664	00	231	SI VIIII	63.229	3	231
SI X	54.702	00	231	SI VIIII	63.266	1	231
SI IX	54.841*	2	231	SI	63.478	0	231
SI IX	54.870*	2	231	SI VII	63.586	2	231
SI IX	54.907*	2	231	SI VIIII	63.732	3	231
SI IX	55.094*	1	231	SI	63.879	1	231
SI IX	55.116*	1	231	SI VIIII	63.903	3	231
SI IX	55.234*	1	231	SI VIIII	64.281	2	231
SI IX	55.272*	3	231	SI VIIII	64.327	3	231
SI IX	55.305*	1	231	SI VIIII	64.345	1	231
SI IX	55.356*	2	231	SI	64.772	1	231
SI IX	55.401*	2	231	SI VI	65.004	0	231
SI IX	55.511	1	233	SI VI	65.211	00	231
SI IX	55.781*	3	233	SI IX	65.236	00	231
SI IX	56.027*	3	231	SI VII	65.595	1	233
SI	56.145	1	231	SI	65.711	1	231
SI VII	56.528	1	231	SI VIIII	65.833	1	231
SI	56.645	1	231	SI	66.725	2	231
SI X	56.680*	1	233	SI VI	66.772	0	231
SI X	56.804*	1	233	SI VI	66.796	00	231
SI IX	57.157	1	233	SI	66.912	2	231
SI X	57.209	0	233	SI	66.977	0	231
SI VII	57.325	1	231	SI VIIII	67.157	3	231
SI VII	57.434	1	231	SI VIIII	67.318	2	231
SI IX	57.589	1	233	SI VIIII	67.408	3	231
SI IX	57.778	2	231	SI	67.574	1	231
SI	58.150	1	231	SI VII	68.026	00	231
SI VII	58.388	1	231	SI VII	68.148	5	231
SI VII	58.445	2	231	SI VII	68.190	1	231
SI VII	58.526	00	231	SI VII	68.212	1	231

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI	68.270	1	231	SI VII	79.615	2	231
SI	68.340	1	231	SI VI	80.395*	5	231
SI VII	68.408	2	231	SI VI	80.449*	10	231
SI VII	68.456	0	231	SI VI	80.491*	5	231
SI	68.497	1	231	SI VI	80.501*	10	231
SI	68.522	1	231	SI VI	80.577*	12	231
SI VII	68.593	1	231	SI VI	80.698*	10	231
SI VII	68.642	1	231	SI VI	80.725*	10	231
SI VII	68.669	1	231	SI V	80.807	2	231
SI VII	68.715	2	231	SI VI	80.821	8	231
SI	68.786	2	231	SI VI	80.908	8	231
SI	68.833	0	231	SI VI	81.030	7	231
SI	68.853	2	231	SI V	81.113	2	231
SI VI	69.204	1	231	SI VII	81.449	1	233
SI VI	69.236	5	231	SI VII	81.558*	5	231
SI VII	69.385	3	231	SI VII	81.620*	12	231
SI VI	69.421	1	231	SI VII	81.895*	10	231
SI VI	69.448	2	231	SI VII	81.998	3	231
SI VII	69.580	2	231	SI	82.622	1	231
SI VII	69.602	2	231	SI VI	83.006	4	231
SI VIII	69.632	3	231	SI VI	83.128*	15	231
SI VII	69.663	4	231	SI VI	83.258	5	231
SI VII	69.790*	4	231	SI VI	83.283	1	231
SI VII	69.861	2	231	SI VI	83.358	8	231
SI VII	69.872	2	231	SI VI	83.526	8	231
SI VIII	69.905	1	231	SI VI	83.611	8	231
SI VII	70.027*	5	231	SI VI	83.639	3	231
SI VII	70.072*	5	231	SI VI	83.684	1	231
SI VII	70.123	0	231	SI VI	83.729	1	231
SI VII	70.222	4	231	SI VI	83.802	6	231
SI VII	70.250	4	231	SI VI	83.965	00	231
SI VII	70.323	1	231	SI VI	84.082*	12	231
SI VII	70.427	1	231	SI V	85.175*	10	231
SI VIII	70.458	2	231	SI VII	85.219	2	231
SI VIII	70.473	2	231	SI VII	85.289*	10	231
SI	70.594	2	231	SI V	85.576*	6	231
SI VII	70.730	1	231	SI VII	85.584*	10	231
SI	70.771	2	231	SI	85.614	0	231
SI VI	71.181	5	231	SI VII	85.698	2	231
SI VI	71.273	2	231	SI VII	88.008	3	233
SI VI	71.304	00	231	SI V	90.453*	4	231
SI VI	71.340	1	231	SI V	90.852*	4	231
SI VI	71.366	3	231	SI VI	91.369	4	231
SI VI	71.384	4	231	SI VI	91.798	4	231
SI VI	71.474	1	231	SI	92.957	1	231
SI VI	71.534	1	231	SI VI	96.020*	10	231
SI VI	71.561	1	231	SI V	96.439*	15	231
SI VI	71.644	00	231	SI VI	96.488*	10	231
SI VI	71.718	00	231	SI V	97.143*	10	231
SI	71.900	4	231	SI V	98.209	2	231
SI VII	71.955	4	231	SI VI	99.095*	10	231
SI VIII	72.228*	4	231	SI VI	99.460*	15	231
SI VII	72.324*	4	231	SI VI	99.598*	10	231
SI VI	72.896	1	231	SI VI	99.966*	10	231
SI VII	73.123*	10	231	SI VI	100.640*	10	231
SI VII	73.350	5	231	SI VI	100.963	1	231
SI VII	73.433	4	231	SI VI	101.160	00	231
SI VIII	74.186	2	231	SI VI	102.846	1	231
SI VIII	74.371	0	231	SI VI	103.163	2	231
SI VIII	74.420*	4	231	SI	110.957	2	231
SI VII	75.193	4	233	SI V	117.860*	20	231
SI VI	75.398	3	231	SI V	118.968*	20	231
SI VI	75.486	1	231	SI VIII	214.756*	2	231
SI VI	75.587	1	231	SI VIII	216.800	0	231
SI VIII	75.986	1	231	SI VIII	216.918*	2	231
SI VIII	76.198	0	231	SI VII	217.826*	7	231
SI V	77.360	00	231	SI IX	225.033*	0	231
SI VI	77.429*	10	231	SI IX	227.007*	0	231
SI VI	77.718	6	231	SI VIII	232.864	00	231
SI V	78.611	1	231	SI VIII	233.159	00	231
SI V	78.903	1	231	SI VIII	235.221	00	231
SI VII	79.236	5	231	SI VIII	235.563	0	231
SI VII	79.262	1	231	SI VI	246.001	8	231
SI VII	79.491	2	231	SI VI	249.125	8	231
SI VII	79.523	2	231	SI VII	272.641	4	231

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI VII	274.175	4	231	SI II	818.572	2	310
SI VII	275.352	5	231	SI II	820.503	20	310
SI VII	275.665	4	231	SI II	820.918	3	310
SI VII	276.839	4	231	SI II	822.861	5	310
SI VIII	277.054*	4	231	SI III	823.418	100	310
SI VII	278.445	4	231	SI IV	836.126	1	310
SI VIII	308.192	0	693	SI IV	836.958	0	310
SI VIII	308.480	0	693	SI IV	840.901	5	310
SI VIII	316.202*	2	231	SI II	843.717	10	310
SI VIII	319.829*	2	231	SI II	845.768	20	310
SI IV	361.517*		65, 238	SI II	848.068	5	310
SI IV	361.615*		65, 238	SI IV	849.248	1	310
SI	392.7	1	65, 484	SI II	850.141	10	310
SI IV	457.75 *		65, 488	SI IV	851.718	0	310
SI IV	458.09 *		65, 238	SI IV	852.184	0	310
SI	486.6	0	65, 484	SI IV	854.789	7	310
SI IV	542.296	5	310	SI IV	860.570	20	310
SI IV	559.553	2	310	SI IV	861.120	5	310
SI IV	560.991	5	310	SI III	864.664	2	310
SI IV	561.689	1	310	SI III	883.156	1	310
SI III	566.620	50	400, 310	SI II	889.719	25	310
SI IV	608.904	1	310	SI II	892.000	50	310
SI III	612.082	2	310	SI IV	894.347	3	310
SI IV	612.082	2	310	SI II	899.404	1	310
SI IV	629.363	2	310	SI II	901.736	2	310
SI IV	629.750	2	310	SI II	906.865	1	310
SI IV	633.183	3	310	SI II	912.379	5	310
SI IV	635.312	10	310	SI II	912.461	5	310
SI IV	639.208	1	310	SI II	913.016	10	310
SI IV	645.812	5	310	SI II	913.266	3	310
SI III	651.684	5	310	SI II	913.855	20	310
SI III	652.227	15	310	SI II	914.481	2	310
SI III	653.343	30	310	SI II	928.306	5	310
SI III	653.692	1	310	SI II	929.203	1	310
SI IV	659.854	1	310	SI II	929.816	20	310
SI IV	671.354	5	310	SI II	930.216	0	310
SI III	671.713	1	310	SI II	931.219	5	310
SI III	672.291	3	310	SI II	931.660	5	310
SI III	673.480	15	310	SI IV	933.420	5	310
SI IV	676.981	1	310	SI III	939.112	35	310
SI IV	677.593	0	310	SI III	967.961	100	310
SI IV	678.035	0	310	SI IV	984.889	1	310
SI IV	678.436	0	310	SI II	989.867*	100	488, 310
SI IV	680.679	1	310	SI II	992.368	0	310
SI IV	681.911	1	310	SI II	992.679*	200	488, 310
SI IV	683.135	1	310	SI III	993.541	100	488, 310
SI IV	683.568	1	310	SI III	994.812	200	488, 310
SI IV	688.192	0	310	SI III	997.410	250	488, 310
SI IV	688.935	2	310	SI III	1015.020	2	310
SI III	690.712	4	310	SI II	1020.699	25	310
SI IV	696.636	0	310	SI II	1023.693	50	310
SI IV	700.215	00	310	SI III	1031.165	50	310
SI IV	705.235	0	310	SI II	1031.382		310
SI IV	707.398	0	310	SI III	1032.861	40	310
SI III	710.957	2	310	SI III	1033.909	100	310
SI IV	712.688	1	310	SI III	1034.279	20	310
SI IV	715.551	0	310	SI III	1035.647	40	310
SI IV	716.187	00	310	SI III	1037.020	100	310
SI IV	716.652	00	310	SI III	1050.812	1	310
SI IV	717.085	0	310	SI IV	1051.506	70	310
SI IV	719.932	0	310	SI II	1052.611		310
SI IV	728.678	0	310	SI III	1053.289	10	310
SI IV	730.241	2	310	SI II	1053.996		310
SI III	744.889	0	310	SI IV	1056.582	12	310
SI III	745.240	0	310	SI II	1056.841		310
SI III	746.995	0	310	SI II	1057.047*	100	310
SI IV	749.940*	100	310	SI II	1057.505	70	310
SI IV	751.429	00	310	SI IV	1066.632*	500	310
SI IV	753.759	0	310	SI II	1071.049		310
SI III	800.067	25	310	SI II	1074.799		310
SI II	803.237	3	310	SI III	1076.253	3	310
SI II	805.097	10	310	SI III	1076.589	10	310
SI IV	809.683	0	310	SI IV	1077.325	1	310
SI IV	815.055*	300	488, 310	SI IV	1077.935	0	310
SI IV	818.136*	300	488, 310	SI III	1078.178	2	310

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI III	1079.112	4	310	SI III	1312.597	250	488, 310
SI III	1083.218	50	310	SI III	1313.867	3	310
SI III	1092.150	0	310	SI III	1341.452	200	310
SI IV	1098.408	1	310	SI III	1342.384	180	310
SI II	1099.412		310	SI III	1343.389	150	310
SI IV	1100.050	1	310	SI II	1346.866	3	488, 310
SI II	1102.168		310	SI II	1348.536	3	488, 310
SI III	1104.015	5	310	SI II	1350.050	4	488, 310
SI II	1104.326		310	SI II	1350.513	3	488, 310
SI III	1105.118	1	310	SI II	1350.651		310
SI II	1106.980		310	SI II	1352.628	3	488, 310
SI III	1108.402*	300	488, 310	SI II	1353.711	3	488, 310
SI III	1109.995*	350	488, 310	SI III	1361.589	150	310
SI III	1113.258*	400	488, 310	SI III	1362.36	2	41
SI III	1117.686	4	310	SI III	1363.465	170	310
SI IV	1117.990	4	310	SI III	1365.250	250	310
SI IV	1122.513*	300	488, 310	SI III	1367.041	150	310
SI II	1127.442	20	310	SI III	1369.435	40	310
SI II	1127.907	40	310	SI III	1371.643	5	310
SI IV	1128.352*	400	488, 310	SI III	1373.024	50	310
SI III	1140.543	100	310	SI III	1375.028	7	310
SI III	1141.574	150	310	SI III	1375.679	4	310
SI III	1142.282	80	310	SI III	1377.045	15	310
SI III	1144.291	100	310	SI III	1377.206	5	310
SI III	1144.940	50	310	SI III	1387.975	50	310
SI III	1145.251	30	310	SI III	1388.113	5	310
SI III	1145.672	20	310	SI IV	1393.765*	250	488, 310
SI IV	1147.259	0	310	SI II	1402.385		310
SI II	1148.504		310	SI IV	1402.764*	200	488, 310
SI III	1155.003	100	310	SI II	1403.785		310
SI III	1155.959	90	310	SI II	1404.476		310
SI III	1156.773	50	310	SI IV	1407.701	3	310
SI III	1158.091	130	310	SI II	1409.073	5	488, 310
SI III	1160.234	90	310	SI II	1410.219	10	310
SI II	1161.301		310	SI IV	1410.950	1	310
SI III	1161.571	200	310	SI II	1412.834		310
SI II	1163.838		310	SI II	1416.971	5	310
SI III	1172.527	20	310	SI III	1417.229*	300	488, 310
SI III	1174.395	50	310	SI II	1417.780	5	310
SI III	1177.986	80	310	SI IV	1430.791	1	310
SI II	1182.839		310	SI II	1433.297		310
SI II	1190.418*	100	488, 310	SI III	1433.646	30	310
SI II	1193.284*	200	488, 310	SI III	1435.783	100	310
SI II	1194.496*	250	488, 310, 794	SI III	1436.171	40	310
SI II	1197.389*	100	488, 310	SI III	1436.864	2	310
SI III	1206.526	200	488, 310	SI III	1438.710	2	310
SI III	1207.511	50	310	SI II	1439.094	10	488, 310, 794
SI III	1210.449	170	310	SI III	1441.710	15	310
SI II	1223.907		310	SI III	1447.190	25	310
SI II	1224.249		310	SI III	1457.287	70	310
SI II	1224.957		310	SI II	1474.649	5	310
SI II	1226.865		310	SI II	1475.188	3	310
SI II	1226.989		310	SI II	1483.044		310
SI II	1227.604		310	SI II	1483.245		310
SI II	1228.627		310	SI II	1484.873	15	310
SI II	1228.752		310	SI II	1485.024*	90	310
SI II	1229.392		310	SI II	1485.224	30	310
SI III	1235.458	120	310	SI II	1485.600	8	310, 794
SI II	1246.738		488, 310, 794	SI III	1496.172	7	310
SI II	1248.426	5	488, 310, 794	SI III	1500.239*	300	310
SI II	1250.089		310	SI III	1501.191*	250	310
SI II	1250.433		310	SI III	1501.876*	225	310
SI II	1251.164	8	488, 310, 794	SI III	1506.065	50	310
SI II	1260.418		488, 310	SI II	1508.732	3	310
SI II	1264.730		310	SI II	1509.101	20	310
SI II	1265.001	1	488, 310, 794	SI II	1512.072	10	310
SI IV	1280.336	20	310	SI II	1513.573	40	310
SI IV	1291.969	30	310	SI II	1516.910*	90	310
SI III	1294.561*	300	488, 310	SI II	1526.719	4	339, 488, 310
SI III	1296.733	250	488, 310	SI II	1533.445	5	339, 488, 310
SI III	1298.930*	300	488, 310	SI I	1543.713	1	678
SI III	1301.152	250	488, 310	SI I	1545.095	1	678
SI III	1303.321	250	488, 310	SI I	1545.565	1	678
SI II	1304.369	1	488, 310	SI I	1546.559	1	678
SI II	1309.278	3	488, 310, 794	SI I	1547.373	1	678

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI I	1548.694	5	678	SI I	1623.574	3	678
SI I	1550.922	5	678	SI I	1625.506	15	339, 488, 678
SI I	1551.199	3	678	SI I	1625.707	30	339, 488, 678
SI I	1551.840	3	678	SI I	1627.058	5	339, 488, 678
SI I	1552.176	1	678	SI I	1627.758	8	339, 488, 678
SI I	1552.929	1	678	SI I	1629.366	200	488, 678, 794
SI I	1553.349	3	678	SI I	1629.921	200	488, 678, 794
SI I	1554.664	5	678	SI I	1630.180	2	488, 678, 794
SI I	1555.518	3	678	SI I	1631.134	75	339, 488, 678
SI I	1555.641	3	678	SI I	1633.203	15	339, 488, 678
SI I	1556.148	5	678	SI I	1633.318	15	678
SI I	1556.503	5	678	SI I	1633.978	50	339, 400, 670
SI I	1558.201	5	678	SI I	1636.993	5	339, 488, 678
SI I	1559.355	10	678	SI I	1638.274	10	678
SI I	1560.067	15	678	SI I	1640.257	20	678
SI I	1560.739	15	678	SI IV	1642.168	4	310
SI I	1561.792	10	678	SI I	1651.013	20	339, 488, 678
SI I	1561.982	10	678	SI I	1653.351	30	339, 488, 678
SI II	1562.451	10	310	SI I	1655.012	1	670
SI II	1562.845	15	488, 310	SI I	1660.484	10	339, 488, 678
SI I	1563.337	2	678	SI I	1664.521	30	339, 488, 678
SI II	1563.765	10	310	SI I	1666.369	50	339, 488, 678
SI II	1564.066	5	310	SI II	1666.683		310
SI I	1564.589	10	488, 678	SI II	1667.267	0	310
SI I	1567.703	10	678	SI I	1667.618	100	339, 488, 678
SI I	1568.172	15	678	SI I	1668.517	100	339, 488, 678
SI I	1568.582	5	678	SI I	1670.782	30	678
SI I	1569.322	10	678	SI I	1671.111	20	339, 488, 678
SI I	1570.022	2	678	SI I	1672.593	100	339, 488, 678
SI I	1570.493	3	678	SI IV	1673.374*	150	310
SI I	1571.377	10	678	SI I	1675.198	200	339, 488, 678
SI I	1571.777	5	678	SI I	1676.913	5	488, 678, 794
SI I	1572.671	2	678	SI I	1682.675	30	339, 488, 678
SI I	1573.650	20	678	SI I	1683.329	2	678
SI I	1573.874	50	339, 488, 678	SI I	1686.815	30	339, 488, 678
SI I	1574.817	50	339, 678	SI I	1687.095	15	339, 488, 678
SI I	1575.115	20	678	SI I	1689.290	50	339, 488, 678
SI I	1576.817	15	339, 488, 678	SI I	1690.786	30	339, 488, 678
SI I	1580.303	10	339, 678	SI I	1691.788	2	678
SI I	1584.015	3	339, 488, 678	SI I	1693.292	50	339, 488, 678
SI I	1584.330	5	339, 678	SI I	1693.756	15	488, 678, 794
SI I	1586.133	15	339, 488, 678	SI I	1695.507	50	339, 488, 678
SI I	1586.783	20	339, 678	SI I	1696.203	200	339, 488, 678
SI I	1587.739	5	678	SI I	1697.511	2	678
SI I	1588.745	3	678	SI I	1697.938	200	339, 488, 678
SI III	1588.932	0	310	SI I	1698.180	3	339, 488, 678
SI I	1589.174	5	678	SI I	1698.219	3	678
SI I	1589.607	2	488, 678, 794	SI I	1699.716	10	339, 488, 678
SI I	1590.453	5	339, 488, 678	SI III	1699.808	5	310
SI I	1590.551	5	678	SI I	1700.522	3	488, 678, 794
SI I	1590.606	5	678	SI I	1700.626	30	339, 488, 678
SI I	1591.126	5	339, 488, 678	SI I	1701.415	3	678
SI I	1592.011	5	339, 488, 678	SI I	1702.805	8	488, 678, 794
SI I	1592.245	4	339, 488, 794	SI I	1703.654	3	678
SI I	1592.409	50	339, 488, 678	SI I	1704.558	4	488, 678, 794
SI I	1594.548	150	339, 488, 678	SI II	1704.967		310
SI I	1594.927	50	339, 488, 678	SI IV	1705.702	0	310
SI I	1595.760	20	339, 488, 678	SI I	1707.096	5	339, 488, 678
SI I	1595.82	1	339, 488	SI III	1709.018	3	310
SI I	1597.709	10	339, 488, 678	SI I	1709.413	5	678
SI I	1597.950	30	339, 488, 678	SI II	1710.826		310
SI III	1600.144	2	339, 488, 678	SI II	1711.296		488, 310
SI I	1605.830	8	339, 488, 678	SI IV	1722.554*	500	310
SI I	1608.900	10	339, 488, 678	SI I	1724.266	5	678
SI I	1614.557	10	339, 488, 678	SI IV	1726.006	4	310
SI I	1614.650	10	339, 488, 678	SI I	1727.332	450	310, 794
SI I	1615.937	20	339, 488, 678	SI I	1727.432	3	678
SI I	1616.571	20	339, 488, 678	SI IV	1729.997	5	310
SI I	1618.015	5	678	SI I	1733.371	0	678
SI I	1619.021	5	339, 488, 678	SI I	1734.769	10	339, 678
SI I	1619.531	10	339, 488, 678	SI I	1736.582	8	794
SI I	1620.389	20	339, 488, 678	SI I	1740.378	20	339, 488, 678
SI I	1621.832	1	678	SI I	1743.884	30	339, 488, 678
SI I	1622.867	100	339, 488, 678	SI I	1745.332	15	339, 488, 678
SI I	1623.372	5	339, 488, 678	SI I	1745.678	2	678

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI I	1747.404	50	339, 488, 678	SI II	1869.213		310
SI I	1749.771	1	488, 678, 794	SI II	1869.317	20	310
SI I	1752.647	5	339, 488, 678	SI II	1870.227	15	310
SI I	1753.112	30	339, 678, 794	SI II	1870.782		310
SI I	1757.256	2	678	SI I	1873.100	100	339, 488, 678
SI I	1759.601	20	339, 488, 678	SI I	1874.838*	500	339, 488, 678
SI I	1762.889	2	678	SI I	1875.809	100	339, 488, 678
SI I	1763.664	50	339, 488, 678	SI I	1880.969	20	488, 678, 794
SI I	1765.030	40	339, 488, 678	SI I	1881.851	200	339, 488, 678
SI I	1765.456	20	678	SI I	1883.80	0	65, 241
SI I	1765.600	30	339, 488, 678	SI I	1887.700	200	339, 488, 678
SI I	1765.760	10	339, 678	SI II	1892.035		310
SI I	1766.060	30	339, 488, 678	SI I	1892.733	5	339, 488, 678
SI I	1766.346	20	339, 488, 678	SI I	1893.245	200	339, 488, 678
SI I	1769.136	1	678	SI I	1893.573	5	339, 488, 678
SI I	1769.454	3	339, 488, 678	SI I	1895.455	5	339, 488, 678
SI I	1769.658	15	488, 678, 794	SI I	1896.259	2	678
SI I	1770.629	30	339, 488, 678	SI II	1900.428		310
SI I	1770.922	100	339, 488, 678	SI I	1901.331*	1000	339, 488, 678
SI I	1772.222	5	339, 488, 678	SI I	1904.660	50	339, 488, 678
SI I	1774.941	20	339, 678, 794	SI I	1905.166	5	678
SI I	1776.826	100	339, 488, 678	SI I	1905.649	1	678
SI I	1782.824	3	678	SI I	1908.9	1	454
SI I	1783.232	50	339, 488, 678	SI I	1910.3	1	454
SI I	1784.103	5	339, 488, 678	SI I	1912.0	1	454
SI II	1786.817	4	310	SI I	1925.4	0	454
SI I	1787.805	10	678, 794	SI I	1926.3	1	454
SI I	1790.292	20	339, 488, 678	SI I	1927.4	2	454
SI I	1797.343	15	339, 488, 678	SI I	1928.6	2	454
SI I	1799.122	100	339, 488, 678	SI I	1932.0	2	454
SI I	1800.393	2	678	SI I	1934.49	00	65, 241
SI III	1803.009	30	310	SI I	1937.1	2	454
SI I	1804.390	1	678	SI I	1940.69	0	65, 241
SI II	1807.302	2	310	SI II	1941.667		310
SI II	1808.003	5	488, 310, 794	SI I	1942.37	00	65, 241
SI I	1808.301	3	678	SI I	1943.7	1	454
SI I	1808.464	5	339, 488, 678	SI I	1945.03	00	65, 241
SI I	1809.022	100	339, 488, 678	SI I	1947.01	1	65, 241
SI I	1809.549	5	678	SI II	1949.331		310
SI I	1810.393	0	678	SI II	1949.564		310
SI I	1813.247	1	678	SI I	1950.23	0	65, 241
SI I	1814.068*	500	339, 488, 678	SI I	1951.61	0	65, 241
SI II	1816.921	8	488, 310, 794	SI I	1952.53	00	65, 241
SI II	1817.445	2	339, 488, 310	SI I	1953.706	1	678
SI I	1817.856	5	339, 488, 678	SI I	1954.298	0	678
SI I	1818.090	0	678	SI I	1954.966	100	339, 488, 678
SI I	1818.775	1	678	SI I	1956.06	0	65, 241
SI II	1820.329		310	SI I	1957.900	0	339, 488, 678
SI I	1820.558	1	678	SI I	1958.65	0	65, 241
SI I	1822.452	50	339, 488, 678	SI I	1962.13	0	65, 241
SI I	1825.022	5	339, 488, 678	SI I	1963.04	00	65, 241
SI I	1826.405	1	678	SI I	1977.591*	1000	339, 488, 678
SI I	1829.893	20	339, 488, 678	SI I	1979.198*	1000	339, 488, 678
SI II	1831.634		310	SI I	1980.606*	1000	339, 488, 678
SI I	1836.506	200	339, 488, 678	SI I	1983.225*	1000	339, 488, 678
SI I	1838.006	30	339, 488, 678	SI I	1984.084	3	678
SI I	1839.995	4	488, 678, 794	SI I	1984.434	30	339, 488, 678
SI I	1841.146	100	339, 488, 678	SI I	1986.352*	1000	339, 488, 678
SI I	1841.373	10	678	SI I	1988.977*	2000	339, 488, 678
SI I	1841.440	200	339, 488, 678	SI II	1990.337		310
SI III	1842.542*	500	310	SI I	1991.848	50	339, 488, 678
SI I	1843.765	200	339, 488, 678	SI I	1996.032	1	678
SI I	1845.510	300	339, 488, 678	SI I	1999.499	2	678
SI I	1846.103	100	339, 488, 678				
SI I	1847.468	400	339, 488, 678				
SI I	1848.237	20	488, 678, 794				
SI I	1848.737	100	339, 488, 678				
SI I	1850.665*	500	488, 678, 794				
SI I	1851.791	30	339, 488, 678				
SI I	1852.464	200	339, 488, 678				
SI I	1853.260	50	488, 678, 794				
SI I	1858.891	1	678				
SI I	1859.409	1	678				
SI I	1861.750	1	488, 678, 794				
SI I	1865.033	5	339, 488, 678				

PHOSPHORUS

P I	I.P.	84580.	K	1182.	A
P II	I.P.	159100.	K	628.5	A
P III	I.P.	243290.0	K	411.032	A

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P IV	1.P. 414312.4	K	241.364 A	P II	784.464	0	37, 469, 594
P V	1.P. 524462.9	K	190.671 A	P II	784.808	1	37, 469, 594
P VI	1.P. 1778250.	K	56.235 A	P III	785.392	1	597
P VII	1.P. 2124300.	K	47.074 A	P II	786.146	1	37, 469
P VIII	1.P. 2495000.	K	40.08 A	P III	786.244	1	597
P IX	1.P. 2997600.	K	33.360 A	P II	786.52	0	469
P X	1.P. 3423000.	K	29.21 A	P II	801.35	00	469
P XI	1.P. 3867500.	K	25.856 A	P II	802.20	00	469
P XII	1.P. 4520500.	K	22.121 A	P II	808.241	0	469, 594
P XIII	1.P. 4933060.	K	20.271 A	P II	810.00	3	469
P V	210.004	00	597	P II	810.237	1	469, 594
P V	217.220	0	597	P II	811.080	0	469, 594
P V	229.832	3	597	P II	811.901	0	469, 594
P V	255.596*	7	597	P II	813.082	0	469, 594
P V	255.688*	7	597	P II	813.768	0	469, 594
P V	264.930	5	597	P IV	823.177	6	41, 488
P V	273.13	00	597	P IV	824.733*	7	41, 469, 488
P V	280.609	2	597	P IV	827.932*	0	41, 488
P IV	283.99	0	597	P II	840.04	00	469
P V	296.112	1	597	P II	841.21	2	469
P V	310.579	3	597	P II	843.984	1	469, 597
P V	311.347	4	597	P III	844.635	1	488, 597
P IV	312.443	4	597	P III	845.656	1	488, 597
P V	328.455	5	597	P IV	845.995	2	597
P V	328.768	5	597	P III	846.125	1	597
P V	347.237	2	597	P III	846.494	0	597
P V	348.194	4	597	P IV	846.999	5	597
P IV	359.628	0	597	P III	847.658	3	488, 597
P IV	388.315	6	597	P III	848.023	2	597
P V	389.500	3	597	P III	848.445	1	597
P V	390.700*	8	597	P III	848.636	3	597
P V	410.073	2	597	P IV	849.764	4	597
P IV	412.90	00	597	P IV	850.390	3	597
P IV	415.022	0	597	P IV	851.09	00	597
P IV	415.815	1	597	P III	852.679	5	597
P IV	444.249	0	597	P III	853.346	0	597
P IV	445.194	0	597	P III	854.223	1	597
P IV	472.957	2	597	P III	854.855	1	597
P V	475.610*	8	597	P III	855.618	5	488, 597
P III	497.17	00	597	P III	856.963	2	597
P IV	522.02	00	597	P III	858.139	1	597
P V	542.567*	7	597	P III	859.411	0	597
P V	544.914*	8	597	P III	859.667*	8	488, 597
P III	568.09	0	597	P IV	860.449	2	597
P III	569.90	2	597	P II	861.552	1	469, 597
P III	579.98	00	597	P IV	863.325	3	597
P III	581.898	00	597	P IV	865.04	3	597
P IV	628.983	5	41, 488, 597	P II	865.436	1	469, 594, 597
P IV	629.914	6	41, 488, 597	P IV	866.84	0	597
P IV	631.765*	7	41, 488, 597	P V	871.396*	15	597
P IV	648.507	2	597	P II	872.84	0	469
P IV	649.69	0	597	P IV	875.132*	11	597
P IV	652.79	2	41, 597	P IV	877.493*	11	597
P IV	653.51	2	41, 597	P IV	879.310	2	597
P IV	654.54	1	41, 597	P II	906.89	0	469
P IV	654.86	3	41, 597	P II	906.987	1	469, 594
P IV	655.78	2	41, 597	P IV	907.590	2	469, 597
P IV	656.55	2	41, 597	P II	907.841	1	594
P V	673.888*	10	597	P IV	908.050	4	597
P IV	680.570	0	597	P II	908.361	1	469, 594
P IV	756.510	6	597	P III	909.846	1	597
P IV	765.28	00	597	P II	910.587	1	594
P IV	776.366	3	597	P II	910.876	1	469, 594
P III	781.726	1	597	P II	913.59	1	469
P II	782.550	1	37, 469, 594	P III	913.989	5	488, 597
P II	782.642	0	37, 469, 594	P III	917.130	4	488, 597
P II	782.960	1	37, 469, 594	P III	918.706	5	488, 597
P II	783.739	2	37, 469, 594	P III	921.863	5	488, 597
P III	784.10	1	41	P II	927.771	1	469, 597
P III	784.25	1	41	P II	928.550	1	469, 597
				P II	929.642	1	469, 597
				P II	945.17	1	594
				P IV	950.669*	10	41, 488
				P II	961.024	2	37, 469
				P II	961.062	1	594

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P II	962.133	3	469, 594	P I	1245.19	2	469
P II	962.576	3	469, 594	P I	1247.31	0	469
P II	963.627	1	469, 594	P I	1248.20	00	469
P II	963.815	2	469, 594	P I	1248.61	00	469
P II	963.993	1	469, 597	P II	1249.82	20	469, 594
P III	964.251	1	597	P I	1253.74	2	469
P II	964.940	5	469, 594	P II	1264.47	3	469, 597
P II	965.43	5	469, 594	P II	1267.06	0	469
P II	966.519	5	469, 594	P II	1278.094	0	469, 594
P II	968.179	3	469, 594	P I	1278.57	1	469
P II	969.355	3	469, 594	P I	1282.61	2	469
P II	972.19	00	469, 594	P I	1282.96	2	469
P II	972.807	3	469, 594, 597	P I	1283.89	2	469, 597
P II	974.36	0	469, 594	P II	1284.31	0	469, 594
P III	974.776	3	597	P I	1284.80	1	469
P II	977.258	00	469, 594	P I	1285.84	0	469
P III	977.888	4	597	P I	1286.44	3	469
P V	997.641	3	597	P II	1289.57	3	469, 594
P III	998.000*	8	488, 597	P III	1290.134	00	597
P V	1000.360	3	597	P II	1294.64	15	469, 594
P III	1003.592*	10	488, 597	P II	1301.87	20	469, 488, 594
P IV	1006.218	1	597	P II	1304.47	20	469, 488, 594
P II	1015.458	10	469, 594	P II	1304.68	15	469, 488, 594
P IV	1025.579*	7	41, 488	P II	1305.48 *	35	469, 488, 594
P IV	1028.093	1	41, 488, 597	P II	1309.87 *	25	469, 488, 594
P II	1030.049	2	594	P II	1310.70 *	60	469, 488, 594
P IV	1030.545*	8	41, 488	P III	1318.91	0	597
P IV	1033.135*	7	41, 488	P I	1323.918	3	594
P II	1033.41	10	469	P III	1325.509	1	597
P IV	1035.505*	8	41, 488, 597	P I	1329.587	3	594
P III	1049.824	4	597	P I	1332.186	2	594
P III	1050.518	1	597	P III	1334.866*	10	488, 597
P III	1050.817	4	597	P III	1337.498	1	597
P IV	1064.60	3	41, 597	P III	1337.710	2	597
P II	1064.783	10	469, 594	P III	1343.687	1	597
P IV	1065.554	3	41, 597	P III	1344.343*	15	488, 597
P IV	1066.640	2	41, 597	P III	1344.900*	10	488, 597
P IV	1072.528	3	597	P III	1346.998	3	597
P IV	1073.373	3	597	P III	1347.508	0	597
P IV	1086.943	2	41, 597	P III	1348.449	0	597
P IV	1088.608	3	41, 597	P III	1349.110	3	597
P IV	1091.442	4	41, 597	P III	1354.957	0	597
P IV	1093.318	2	41, 597	P III	1370.39	0	597
P II	1093.627	2	594, 597	P I	1372.03	3	469, 597
P IV	1098.183	2	41, 597	P III	1372.711	3	597
P IV	1101.65	1	41, 597	P I	1373.49	20	469
P IV	1111.127	1	597	P I	1374.73	2	469, 597
P IV	1116.915	0	597	P I	1377.06	20	469
P V	1117.979*	15	597	P I	1377.93	20	469, 594
P IV	1118.586	4	597	P I	1379.40	25	469, 594
P II	1124.945	1	469, 594	P III	1379.873	5	488, 597
P V	1128.006*	10	597	P III	1380.464*	10	488, 597
P II	1130.925	1	469, 594	P III	1381.111*	10	488, 597
P II	1141.00	0	469	P I	1381.47	25	469, 594
P II	1142.88	2	469	P I	1381.65	15	469, 488, 597
P II	1143.71	00	469	P V	1385.11	0	52, 597
P II	1145.01	00	469	P I	1411.31	8	469
P II	1149.960	10	469, 488, 594	P I	1411.75	0	469
P II	1152.134*	3	594	P I	1412.857	2	594
P II	1152.803	10	469, 488, 594	P I	1415.678	1	594
P II	1153.997	10	469, 488, 594	P I	1420.00	10	469
P II	1155.020	10	469, 488, 594	P I	1425.29	10	469
P II	1156.968	10	469, 488, 594	P I	1427.77	00	469
P II	1159.085	10	469, 488, 594	P I	1428.05	00	469
P IV	1161.783	1	597	P I	1429.77	4	469
P IV	1197.822	1	597	P I	1430.13	50	469
P II	1201.67	0	594	P I	1430.73	10	469
P IV	1203.410	1	597	P I	1431.50	00	469
P II	1204.302	1	594, 597	P I	1440.24	5	469
P IV	1205.513	1	597	P I	1442.76	5	469
P III	1210.600	1	597	P I	1445.66	1	469
P II	1231.178	10	469, 594	P I	1446.01	4	469
P I	1241.49	00	469	P I	1446.33	1	469
P I	1242.02	1	469	P I	1447.50	20	469, 597
P I	1243.37	1	469	P I	1450.38	3	469

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P II	1452.89 *	30	469, 594	P I	1583.73	8	469
P I	1453.01	15	469	P I	1586.25	1	469
P II	1466.989	00	594	P I	1586.88	0	469
P I	1467.39	1	469	P I	1595.08	2	469
P I	1467.58	3	469, 594, 597	P I	1595.72	00	469
P I	1469.71	1	469	P I	1596.06	1	469
P III	1471.218	0	597	P I	1597.97	1	469
P II	1473.129	1	469, 594	P I	1598.76	1	469
P I	1473.65	2	469	P I	1599.25	5	469
P I	1476.11	3	469	P V	1610.54	2	52, 597
P IV	1484.506	6	597	P I	1611.29	10	469
P II	1485.49 *	25	469, 594	P I	1614.19	10	469
P IV	1487.796	4	597	P I	1614.67	1	469
P I	1488.01	20	469	P I	1614.87	3	469, 597
P IV	1489.101	4	597	P I	1615.79	12	469
P II	1489.834	1	469, 594	P I	1616.20	40	469, 594
P I	1491.36	50	469, 594	P I	1618.11	15	469
P III	1492.031	5	597	P III	1618.665	6	597
P I	1492.99	40	469, 594	P I	1618.93	12	469, 597
P I	1493.34	15	469, 594	P I	1621.33	3	469
P II	1494.990	1	469, 594	P I	1622.08	1	403
P II	1496.44	0	469	P I	1623.83	25	469
P I	1499.51	8	469	P I	1623.99	10	469
P III	1501.551	7	488, 597	P I	1624.43	0	469
P I	1501.81	20	469	P I	1624.67	1	469
P I	1502.17	8	469	P I	1625.40	10	469, 594
P III	1502.273 *	10	488, 597	P I	1625.80	25	469, 594
P I	1503.12	1	469	P I	1627.86	3	469
P I	1503.48	1	469	P I	1629.17	20	469, 594
P I	1504.37	12	469	P I	1629.59	5	469
P I	1504.72	2	469, 488, 597	P I	1633.69	0	469
P I	1505.84	0	469	P I	1634.10	7	469
P II	1506.44	3	469, 594	P I	1635.79	3	469, 597
P I	1506.63	7	469	P I	1636.20	3	469
P I	1506.98	6	469, 594	P III	1637.377	1	597
P II	1507.649	0	594	P I	1638.68	1	469
P I	1508.74	3	469	P I	1638.89	5	469
P II	1512.87	0	469	P I	1639.09	8	469
P II	1513.546	1	594	P IV	1640.476	3	597
P II	1514.072	2	594	P III	1645.914	2	597
P I	1515.10	2	469	P III	1647.546	3	597
P II	1521.62 *	30	469	P I	1652.97	10	469
P II	1521.683	7	594	P I	1653.68	8	469
P II	1522.11	4	469, 594	P I	1671.07	70	469, 594
P II	1522.392	1	469	P I	1671.49	35	469, 594
P I	1522.59	0	469, 594	P I	1671.68 *	180	469, 488, 594
P II	1523.44	1	469, 594	P I	1672.05	35	469, 594
P II	1525.58	00	469	P I	1672.48	90	469, 594
P I	1530.58	4	469	P I	1672.499	6	594
P II	1532.51 *	80	469, 488, 594	P IV	1673.759	0	597
P II	1534.497	0	594	P I	1673.74	1	469
P I	1534.73	5	469	P III	1674.26	00	597
P II	1535.90 *	120	469, 488, 594	P I	1674.61 *	230	469, 488, 594
P II	1536.39 *	80	469, 488, 594	P III	1678.12	0	597
P II	1539.232	00	594	P I	1679.71 *	300	469, 488, 594
P II	1540.07	00	594	P I	1683.002	00	594
P I	1541.69	10	469	P I	1685.99	120	469, 488, 594
P II	1542.29 *	120	469, 488, 594	P I	1688.64	3	469
P II	1543.09 *	40	469, 488, 594	P I	1689.25	75	469
P I	1543.26	15	469	P I	1690.17	10	469
P II	1543.61	15	469, 488, 594	P I	1690.90	3	469
P I	1545.95	15	469	P I	1691.75	20	469, 597
P I	1546.32	3	469	P I	1692.48	5	469
P I	1548.43	60	469	P III	1693.03	1	597
P I	1551.04	35	469	P I	1694.06	100	469, 488, 594
P I	1551.42	15	469	P I	1694.50	40	469, 594
P II	1552.51	0	469	P I	1695.35	15	469
P II	1552.94	00	469	P III	1696.92	1	597
P II	1553.392		469, 594	P I	1706.41	60	469
P II	1553.82	1	469	P I	1707.57	40	469
P I	1554.84	1	469	P I	1708.03	1	469
P I	1555.25	2	469	P I	1708.45	4	469
P I	1556.18	0	469	P I	1708.90	1	469
P I	1575.18	3	469	P I	1718.55	20	469
P I	1575.47	1	469	P I	1719.00	10	469

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P I	1719.31	30	469, 594
P I	1727.85	5	469
P II	1734.88	00	469
P I	1754.40	30	469
P I	1755.86	3	469
P I	1756.65	3	469, 597
P I	1757.47	20	469, 597
P I	1757.95	20	469
P I	1759.91	10	469
P I	1760.40	15	469
P I	1761.67	10	469
P I	1768.45	20	469
P I	1768.94	15	469
P II	1772.30	3	469
P II	1774.10	0	594
P I	1774.99 *	250	469, 488, 594
P I	1782.87 *	200	469, 488, 594
P I	1787.68 *	180	469, 488, 594
P II	1797.54	1	469, 594
P II	1798.37	0	469
P II	1799.10	5	469, 594
P II	1799.91	2	469, 594
P II	1800.27	2	469, 594
P II	1805.11	3	469, 594
P II	1806.12	15	469, 594
P II	1806.67	5	469, 594
P II	1828.63	3	469, 594
P I	1833.98	10	469
P I	1834.83	20	469, 594
P II	1836.47	1	469, 594
P II	1837.51	2	469, 594
P II	1844.06	0	469
P I	1844.33	20	469, 594
P I	1845.19	10	469, 594
P II	1846.78	2	469, 594
P I	1847.19	100	469, 594
P I	1849.05	1	469
P I	1849.52	3	469
P I	1849.84	35	469
P II	1850.61	2	469
P I	1851.22	80	469, 594
P I	1852.09	40	469, 594
P II	1852.27	2	469
P II	1852.65	1	469
P II	1854.59	15	469, 594
P I	1855.48	00	469
P I	1857.04	15	469
P I	1858.91 *	150	469, 488, 594
P I	1859.43 *	150	469, 488, 594
P I	1860.63	15	469
P I	1863.70	1	469
P II	1864.22	15	469
P I	1864.37	35	469, 594
P I	1864.64	1	469
P II	1872.36	00	469
P II	1876.79	10	469
P II	1879.62 *	25	469, 594
P IV	1888.55 *	8	41, 488
P IV	1902.62	597	
P IV	1904.80	1	41, 597
P I	1905.48	30	469, 594
P I	1906.40	20	469, 594
P I	1907.66	40	469, 594
P IV	1910.18	1	41, 597
P II	1928.30	0	469
P II	1945.54	5	469
P I	1954.01	4	469
P I	1954.20	7	469
P I	1955.16	7	469
P I	1955.79	7	469

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
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SULFUR

S I	I.P.	83559.3	K	1196.75	A
S II	I.P.	188824.5	K	529.592	A
S III	I.P.	282752.	K	353.667	A
S IV	I.P.	381541.4	K	259.461	A
S V	I.P.	584700.	K	171.0	A
S VI	I.P.	710194.	K	140.806	A
S VII	I.P.	2266990.	K	44.111	A
S VIII	I.P.	2652720.	K	37.697	A
S IX	I.P.	3057300.	K	32.709	A
S X	I.P.	3606000.	K	27.73	A
S VIII		44.350	0	233	
S VIII		44.374	2	233	
S X		44.387*	0	233	
S VIII		44.547	1	233	
S VIII		45.279	1	233	
S VIII		45.290	1	233	
S VIII		45.370	0	233	
S VIII		45.458	0	233	
S VIII		45.508	0	233	
S VII		46.212	00	233	
S IX		46.373	1	233	
S IX		46.413	1	233	
S IX		46.585	00	233	
S IX		46.624	00	233	
S IX		46.713	1	233	
S IX		46.765	1	233	
S IX		47.052	1	233	
S VII		47.098	1	233	
S IX		47.188	00	233	
S IX		47.249	1	233	
S VII		47.307.	1	233	
S IX		47.433*	4	233	
S IX		47.518	0	233	
S VIII		47.566	00	233	
S VIII		47.594	00	233	
S IX		47.616	00	233	
S X		47.654*	0	233	
S VIII		47.793	00	233	
S IX		48.160*	2	233	
S IX		48.362	0	233	
S IX		48.564	0	233	
S VII		48.647	3	233	
S VII		48.874	2	233	
S IX		49.119*	2	233	
S IX		49.328	1	233	
S IX		49.990	2	233	
S VII		50.027	1	233	
S VIII		51.227	2	233	
S VIII		51.470	1	233	
S VII		51.807*	7	233	
S VII		52.097	4	233	
S VIII		52.681	0	233	
S VIII		52.702	0	233	
S VIII		52.756*	6	233	
S VIII		52.789*	6	233	
S VIII		52.854	2	233	
S VIII		52.958*	7	233	
S VIII		52.985	1	233	
S VIII		53.073	1	233	
S VIII		53.239	0	233	
S VIII		54.118*	10	233	
S IX		54.178*	2	233	
S VIII		54.266	2	233	
S VIII		54.370	0	233	
S VIII		54.385	2	233	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
S IX	54.396	1	233	S	477.02	00	30
S VIII	54.424	3	233	S	477.37	1	30
S VIII	54.501	0	233	S	477.89	00	30
S VIII	54.566	1	233	S	478.26	1	30
S VIII	54.604	1	233	S	478.59	00	30
S VII	54.652	2	233	S	480.53	00	30
S VII	54.938	2	233	S	480.94	1	30
S IX	55.540*	2	233	S	481.24	1	30
S IX	56.081	1	233	S	482.47	1	30
S IX	56.125	0	233	S	482.95	2	30
S IX	56.332	0	233	S	484.15	2	30
S VIII	59.236	1	233	S III	484.58	0	30, 323
S VIII	59.593	0	233	S	484.90	1	30
S VII	60.161*	20	233	S III	485.25	3	30, 323
S VII	60.804*	15	233	S	485.79	1	30
S VII	61.547	4	233	S	488.12	00	30
S VIII	61.600*	10	233	S	489.63	00	30
S VIII	61.978*	5	233	S	497.35	00	30
S VIII	63.026	1	233	S III	499.983	3	598
S VIII	63.304*	10	233	S	500.44	4	30
S VIII	63.431	2	233	S	503.52	0	30
S VIII	63.711	1	233	S	515.96	3	30
S VIII	63.886*	5	233	S	517.50	2	30
S VIII	64.120	1	233	S IV	519.30	2	41
S VIII	64.137	2	233	S IV	520.11	2	41
S VIII	64.305	0	233	S IV	520.83	3	41
S VIII	64.874	0	233	S IV	521.13	1	41
S VIII	65.149	1	233	S IV	521.99	2	41
S VII	72.029*	30	233	S IV	522.54	2	41
S VII	72.663*	30	233	S	539.52	0	30
S VI	171.327	00	598	S	539.89	3	30
S VI	192.273	00	598	S III	543.031	2	598
S VI	192.480	00	598	S	544.75	0	30
S VI	192.560	0	598	S	545.16	1	30
S VI	204.190	0	598	S IV	551.17	2	485, 488
S VI	214.277	00	598	S	554.05	5	30
S VI	227.197	2	598	S	560.3	0	484
S VI	227.845	2	598	S	564.04	1	30
S VI	248.985	4	488, 598	S	565.87	0	30
S VI	249.271	4	488, 598	S	568.3	0	484
S VI	251.905	2	598	S	572.0	0	484
S VI	261.810	0	598	S	577.7	0	484
S VI	283.502	3	598	S	585.2	0	484
S VI	289.092	2	598	S	594.33	00	30
S VI	290.132	3	598	S	599.59	0	30
S VI	328.605*	6	598	S	600.11	1	30
S	330.76	1	30	S	600.59	0	30
S	331.37	0	30	S	607.9	0	484
S	331.85	1	30	S	611.03	3	30
S	341.09	1	30	S	611.69	3	30
S	341.51	1	30	S	625.73	00	30
S	368.25	1	30	S	620.01	0	30
S	369.60	2	30	S	634.76	3	30
S VI	388.940*	6	488, 598	S	636.63	2	30
S VI	390.859*	8	488, 598	S	637.88	2	30
S	396.72	00	30	S II	640.41	0	30, 322
S	397.79	00	30	S II	640.93	0	30, 322
S	398.45	00	30	S II	641.81	1	30, 322
S	419.95	0	30	S	644.78	0	30
S	420.85	0	30	S	645.18	00	30
S	421.77	1	30	S	645.48	00	30
S	422.44	0	30	S	645.86	0	30
S	423.34	0	30	S	647.61	4	30
S	425.96	00	30	S VI	648.628	1	598
S V	437.37	1	41, 488	S VI	650.430	1	598
S V	438.19	1	41, 488	S IV	652.523	3	41, 488
S V	439.65	1	41, 488	S IV	652.91	2	30
S	442.61	1	30	S IV	653.000	3	41
S	443.15	00	30	S IV	653.560	4	41, 488
S	444.42	00	30	S IV	653.988	3	41
S VI	464.654*	10	488, 598	S IV	654.37	1	41
S	474.46	0	30	S	655.00	0	30
S	474.93	0	30	S IV	655.553	4	30, 41, 488
S	475.30	2	30	S IV	655.887	2	41
S	476.45	3	30	S IV	656.30	1	30, 41

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
S	656.74	1	30	S	718.55	0	30
S IV	657.34 *	5	485, 488	S	721.72	4	30
S V	658.262	3	41, 488	S	722.18	0	30
S	659.27	1	30	S III	724.29	3	323, 488
S	659.56	1	30	S	724.83	1	30
S V	659.853	4	41, 488	S	725.17	0	30
S IV	660.945	3	41, 488	S III	725.86	3	323, 488
S IV	661.42 *	6	485, 488	S	727.83	0	30
S	661.85	0	30	S	728.24	0	30
S	662.27	1	30	S III	728.69	3	323, 488
S V	663.155*	5	41, 488	S	729.15	1	30
S IV	663.707	3	41, 488	S III	729.529*	4	488, 598
S	664.29	0	30	S	730.05	1	30
S IV	664.822	3	41, 488	S III	730.74	0	323
S IV	666.114	4	41, 488	S III	730.783	3	488, 598
S	669.06	0	30	S	731.12	2	30
S	669.42	0	30	S III	732.376*	5	488, 598
S	669.72	0	30	S III	732.98	0	598
S	672.66	00	30	S III	733.34	0	598
S	674.22	2	30	S III	733.92	1	598
S	674.41	3	30	S III	735.251*	4	488, 598
S	674.89	3	30	S III	736.25	2	598
S	675.85	3	30	S III	738.474*	4	488, 598
S V	676.21	1	41	S	740.86	0	30
S V	677.342	1	41	S	741.18	00	30
S III	677.75	2	323, 488	S	742.05	00	30
S V	678.08	2	41	S	742.32	00	30
S III	678.46	2	323, 488	S	743.70	0	30
S	678.89	1	30	S	743.95	3	30
S III	679.11	2	323, 488	S IV	744.92 *	5	485, 488
S	679.45	0	30	S	745.30	1	30
S V	680.326	3	41	S	745.87	1	30
S III	680.69	2	323, 488	S	746.22	1	30
S III	680.95	2	323, 488	S IV	748.40 *	5	485, 488
S III	681.50	1	323, 488	S IV	750.23 *	5	485, 488
S III	683.07	0	323, 488	S IV	753.76 *	5	485, 488
S III	683.47	1	323, 488	S	758.17	2	30
S III	685.35	0	323, 488	S	758.51	1	30
S	685.82	2	30	S	759.31	2	30
S V	686.150	1	41	S	759.85	00	30
S V	686.93	1	41	S	760.52	00	30
S	687.60	0	30	S	761.21	00	30
S V	688.04	0	41	S	763.20	1	30
S	688.96	00	30	S	763.65	2	30
S	689.43	00	30	S	764.41	3	30
S V	689.838	1	41	S	765.63	4	30
S	690.59	00	30	S	773.49	3	30
S V	691.74	1	41	S	774.29	3	30
S	692.45	1	30	S	774.43	3	30
S V	693.522	2	41	S	775.34	00	30
S II	694.71	0	322	S	775.06	00	30
S III	698.73	2	323, 488	S	781.72	0	30
S	699.27	0	30	S	782.18	00	30
S	699.67	0	30	S	783.39	00	30
S III	700.15	3	323, 488	S	784.96	00	30
S III	700.29	3	323, 488	S	785.21	0	30
S III	702.78	2	30, 488	S	786.00	1	30
S III	702.82	2	30, 488	S V	786.476*	8	41, 488
S	703.33	1	30	S III	788.984*	4	488, 598
S	703.86	1	30	S	790.06	00	30
S II	705.62	0	322	S	790.45	00	30
S	705.89	0	30	S	791.09	00	30
S VI	706.480*	6	488, 598	S	791.65	1	30
S	707.40	1	30	S III	796.692*	4	488, 598
S II	707.86	0	322	S	797.15	2	30
S	708.31	2	30	S	797.72	0	30
S	708.65	1	30	S IV	798.277	3	41, 488
S	708.92	1	30	S II	798.92	0	30, 322
S	710.98	5	30	S II	799.14	0	30, 322
S	711.45	0	30	S II	800.04	0	30, 322
S	711.81	0	30	S IV	800.477	4	41, 488
S VI	712.682	4	488, 598	S IV	803.996	4	41, 488
S VI	712.844	3	488, 598	S	804.38	1	30
S	716.67	3	30	S	808.77	5	30
S	717.08	3	30	S IV	809.69	4	485, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
S IV	815.97 *	5	485, 488	S	991.55	1	30
S	820.40	00	30	S II	995.96	2	30
S	820.90	00	30	S II	996.00	2	322, 488
S	821.72	00	30	S	999.89	00	30
S	822.13	00	30	S II	1000.48	2	322, 488, 599
S	822.58	1	30	S I	1006.15	8	599
S	823.98	1	30	S I	1006.95	1	599
S	824.36	1	30	S	1009.65	0	30
S III	824.887*	4	488, 598	S	1011.95	1	30
S	825.52	0	30	S III	1012.49	3	323, 488
S	826.86	1	30	S II	1014.07	1	30, 322
S	831.63	00	30	S II	1014.42	2	322, 488
S	835.93	1	30	S III	1015.51	2	323, 488
S III	836.315*	4	488, 598	S III	1015.76	1	323, 488
S	836.94	0	30	S	1016.30	1	30
S IV	837.42	3	30	S	1016.89	2	30
S	837.85	1	30	S II	1019.53	2	322, 488
S	840.50	1	30	S III	1021.10	1	323, 488
S	840.80	2	30	S III	1021.32	2	323, 488
S II	843.04	1	30, 322	S II	1030.87	1	322, 488
S	843.97	0	30	S II	1031.34	1	322, 488
S V	849.241*	6	41, 488	S	1031.79	0	30
S V	852.185*	5	41, 488	S I	1036.41	0	599
S IV	852.70	2	30, 38	S I	1045.74	2	599
S IV	853.11	3	30, 38	S I	1047.56	1	599
S	854.32	00	30	S I	1047.86	1	599
S V	854.792*	7	41, 488	S I	1048.43	1	599
S V	857.872*	5	41, 488	S I	1049.06	1	599
S V	860.462*	5	41, 488	S I	1049.70	0	30, 599
S II	865.86	0	30, 322	S	1050.26	0	30
S	866.24	1	30, 322	S IV	1062.672*	6	38, 488
S II	867.14	0	30, 322	S IV	1072.992*	6	38, 488
S II	867.52	0	30, 322	S IV	1073.522	4	38, 488
S	870.12	00	30	S III	1077.135*	8	488, 598
S V	873.20	1	51	S	1084.50	0	30
S	875.74	0	30, 51	S	1085.60	0	30
S	877.41	0	30	S	1086.53	00	30
S	878.68	0	30	S	1087.10	0	30
S V	883.59	2	41	S	1087.79	0	30
S V	884.46	2	41	S II	1096.57	2	322, 488
S V	885.77	1	41	S	1098.91	3	30
S	894.27	0	30	S	1099.48	2	30
S	894.61	0	30	S	1099.97	0	30
S	894.99	0	30	S II	1102.32 *	3	322, 488
S	900.28	0	30	S IV	1108.36	2	485
S V	900.93	2	30, 41	S IV	1110.90	2	485
S V	902.80	1	41	S	1113.11	00	30
S V	905.92	2	41	S	1114.8	5	335
S II	906.87 *	3	322, 488	S VI	1117.91	0	52
S II	910.49 *	3	322, 488	S	1121.79	00	30
S	911.09	00	30	S III	1122.42	2	30, 323
S III	911.77	00	598	S II	1124.39	1	322, 488
S II	912.74 *	3	322, 488	S II	1125.00	1	322, 488
S	915.39	2	30	S III	1126.42	0	30, 323
S	916.00	00	30	S III	1126.09	1	30, 323
S	916.67	1	30	S	1128.00	00	30
S	917.12	00	30	S	1128.59	1	30
S II	918.80	2	30, 322	S II	1131.05	2	322, 488
S II	919.19	0	30, 322	S II	1131.65	2	322, 488
S VI	923.382	4	400, 590	S IV	1138.22	1	38
S II	937.41 *	3	322, 488	S I	1152.11	2	599
S II	937.69 *	3	322, 488	S III	1155.41	0	30, 323
S VI	944.517*	5	488, 598	S I	1157.37	1	599
S II	957.88	1	322	S III	1162.52	00	30, 323
S	962.73	0	30	S III	1166.13	0	323
S	965.88	0	30	S I	1171.91	2	599
S II	968.30	0	30, 322	S	1172.53	1	30
S	969.00	0	30	S III	1190.17	2	323, 488, 599
S	969.64	0	30	S I	1191.80	2	599
S	970.36	0	30	S III	1194.02 *	4	323, 488
S	977.00	1	30	S III	1194.40 *	3	323, 488
S	978.65	2	30	S	1199.29	00	30
S	979.84	2	30	S III	1200.97 *	4	323, 488
S	982.01	3	30	S III	1201.71	2	323, 488
S	989.83	00	30	S III	1202.10	0	323, 488

SYMBOL				WAVELENGTH INTENSITY				REFERENCE NUMBERS				SYMBOL				WAVELENGTH INTENSITY				REFERENCE NUMBERS				
S	I	1204.23	6	30, 599	S	I	1641.30	6	599	S	I	1704.99	5	599	S	IV	1739.03	0	485	S	I	1820.37 *	25	488, 599
S		1204.66	00	30	S		1659.83	1	401	S	I	1706.38	8	488, 599	S	IV	1745.42	1	485	S	I	1826.25 *	25	488, 599
S		1206.40	1	30	S		1664.30	3	401	S	I	1707.13	8	488, 599	S	I	1782.25	12	488, 599	S		1828.58	0	401
S		1206.94	00	30	S	I	1666.68 *	25	488, 599	S	I	1713.54	1	599	S	I	1807.31 *	25	488, 599	S		1829.61	1	401
S		1212.75	00	40	S	I	1687.54 *	20	599	S	I	1728.97	1	401	S		1809.1	6	660	S		1837.76	0	401
S	II	1226.70	1	322, 488	S	I	1704.99	5	599	S	I	1739.03	0	485	S	I	1820.37 *	25	488, 599	S	I	1874.20	0	401
S	II	1227.45	1	322, 488	S	I	1706.38	8	488, 599	S	IV	1745.42	1	485	S	I	1826.25 *	25	488, 599	S	I	1900.27 *	20	488, 599
S		1228.74	00	30	S	I	1707.13	8	488, 599	S	I	1782.25	12	488, 599	S		1828.58	0	401	S		1903.6	0	660
S	II	1233.36	0	322, 488	S	I	1713.54	1	599	S	I	1807.31 *	25	488, 599	S	I	1829.61	1	401	S	I	1914.68 *	15	488, 599
S	II	1234.14 *	3	322, 488	S	I	1728.97	1	401	S		1809.1	6	660	S		1837.76	0	401	S	II	1936.84 *	3	285
S	I	1241.95	2	599	S	I	1739.03	0	485	S	II	1950.53 *	3	285	S	I	1302.32	9	488, 599	S	II	1958.38 *	3	285
S	I	1247.17	2	599	S	IV	1745.42	1	485	S	II	1958.38 *	3	285	S	I	1302.86	6	488, 599	S	II	1970.99 *	4	285
S	II	1250.50 *	3	322, 488	S	I	1782.25	12	488, 599	S	II	1970.99 *	4	285	S	I	1303.12	7	488, 599	S	II	1981.80	2	285
S	II	1253.79 *	5	322, 488	S	I	1807.31 *	25	488, 599	S	II	1981.80	2	285	S	I	1303.42	4	599	S	II	1985.17	2	285
S	II	1259.53 *	5	322, 488	S		1809.1	6	660	S	II	1985.17	2	285	S	I	1305.89	9	488, 599	S		1993.37	1	401
S	I	1262.83	2	599	S	I	1820.37 *	25	488, 599	S		1993.37	1	401	S	I	1310.21	5	599	S		1997.64	2	401
S	I	1269.20	2	599	S	I	1826.25 *	25	488, 599	S		1997.64	2	401	S	I	1313.25	4	599	S	II	1998.92	2	285
S	I	1270.78	4	599	S		1828.58	0	401	S	II	1998.92	2	285	S	I	1316.59	8	488, 599					
S	I	1272.07	1	599	S		1829.61	1	401						S	I	1318.97	4	599					
S	I	1277.24	5	599	S		1837.76	0	401						S	I	1323.52	10	488, 599					
S	I	1280.13	4	599	S		1874.20	0	401						S	I	1326.64	9	488, 599					
S	I	1283.11	0	599	S	I	1900.27 *	20	488, 599						S	I	1328.12	0	323					
S	IV	1286.063	1	38	S	I	1903.6	0	660						S	III	1328.52	0	323					
S	I	1295.62	6	488, 599	S	I	1914.68 *	15	488, 599						S	III	1343.25	0	323					
S	I	1296.18	5	488, 599	S	II	1936.84 *	3	285						S	III	1343.53	0	323					
S	I	1302.32	9	488, 599	S	II	1950.53 *	3	285						S	I	1353.47	1	599					
S	I	1302.86	6	488, 599	S	II	1958.38 *	3	285						S	I	1363.04	3	599					
S	I	1303.12	7	488, 599	S	II	1970.99 *	4	285						S	I	1373.19	00	401					
S	I	1303.42	4	599	S	II	1981.80	2	285						S	I	1381.55 *	15	488, 599					
S	I	1305.89	9	488, 599	S	II	1985.17	2	285						S	I	1385.51	12	488, 599					
S	I	1310.21	5	599											S	I	1388.39	12	488, 599					
S	I	1313.25	4	599											S	I	1389.16	5	488, 599					
S	I	1316.59	8	488, 599											S	I	1390.67	0	323					
S	I	1318.97	4	599											S	I	1392.59	12	488, 599					
S	I	1323.52	10	488, 599											S	I	1396.10 *	15	488, 599					
S	I	1326.64	9	488, 599											S	I	1401.50	10	488, 599					
S	III	1328.12	0	323											S	I	1409.32	12	488, 599					
S	III	1328.52	0	323											S	I	1412.85	12	488, 599					
S	III	1343.25	0	323											S	I	1425.10 *	15	488, 599					
S	III	1343.53	0	323											S	I	1433.28 *	15	488, 599					
S	I	1353.47	1	599											S	I	1436.94	12	488, 599					
S	I	1363.04	3	599											S	I	1444.27	6	599					
S	I	1373.19	00	401											S	I	1448.20	12	488, 599					
S	I	1381.55 *	15	488, 599											S		1465.31	0	401					
S	I	1385.51	12	488, 599											S		1465.64	0	401					
S	I	1388.39	12	488, 599											S	I	1471.82	4	599					
S	I	1389.16	5	488, 599											S	I	1472.97 *	15	488, 599					
S	III	1390.67	0	323											S	I	1473.98 *	15	488, 599					
S	I	1392.59	12	488, 599											S	I	1474.37 *	12	488, 599					
S	I	1396.10 *	15	488, 599											S	I	1474.54 *	6	488, 599					
S	I	1401.50	10	488, 599											S	I	1481.65 *	15	488, 599					
S	I	1409.32	12	488, 599											S	I	1483.05 *	15	488, 599					
S	I	1412.85	12	488, 599											S	I	1483.24 *	12	488, 599					
S	I	1425.10 *	15	488, 599											S	I	1485.61 *	12	488, 599					
S	I	1433.28 *	15	488, 599											S	I	1487.12 *	15	488, 599					
S	I	1436.94	12	488, 599											S		1583.00	1	401					
S	I	1444.27	6	599											S	I	1592.72	2	599					
S	I	1448.20	12	488, 599											S	IV	1623.62	0	485					
S		1465.31	0	401											S	IV	1624.00	2	485					
S		1465.64	0	401											S	IV	1629.20	2	485					
S	I	1471.82	4	599											S		1641.30	6	599					
S	I	1472.97 *	15	488, 599											S		1659.83	1	401					
S	I	1473.98 *	15	488, 599											S		1664.30	3	401					
S	I	1474.37 *	12	488, 599											S		1666.68 *	25	488, 599					
S	I	1474.54 *	6	488, 599											S		1687.54 *	20	599					
S	I	1481.65 *	15	488, 599											S		1704.99	5	599					
S	I	1483.05 *	15	488, 599											S		1706.38	8	488, 599					
S	I	1483.24 *	12	488, 599											S		1707.13	8	488, 599					
S	I	1485.61 *	12	488, 599											S		1713.54	1	599					
S	I	1487.12 *	15	488, 599											S		1728.97	1	401					
S		1583.00	1	401											S		1739.03	0	485					
S	I	1592.72	2	599											S		1745.42	1	485					
S	IV	1623.62	0	485											S		1782.25	12	488, 599					
S	IV	1624.00	2	485											S		1807.31 *	25	488, 599					
S	IV	1629.20	2	485											S		1809.1	6	660					
															S		1820.37 *	25	488, 599					
												</												

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL IX	43.168	1	179	EL IV	320.881	1	43
CL IX	44.003	2	179	CL VI	323.356*	15	535
CL IX	44.088*	4	179	CL VI	323.936*	20	535
CL IX	44.183	2	179	CL VI	325.161*	25	535
CL IX	44.267*	3	179	CL IV	331.835	2	44
CL VIII	44.361*	2	179	CL VII	340.229*	15	546
CL IX	44.530	1	179	CL VII	340.298*	18	546
CL VIII	44.603*	2	179	CL V	372.589	2	43
CL IX	45.112*	4	179	CL V	373.165	2	43
CL IX	45.261	2	179	CL V	373.776	3	43
CL IX	45.332	1	179	CL V	373.911	0	43
CL IX	45.378*	3	179	CL V	374.662	1	43
CL X	45.396*	3	179	CL V	375.103	2	43
CL X	45.431*	0	179	CL V	390.148	4	43
CL IX	45.465	0	179	CL V	392.433*	5	43
CL IX	45.519	2	179	CL VI	399.938	5	535
CL IX	45.539	2	179	CL VI	399.957	7	535
CL X	45.626*	0	179	CL VI	399.999	8	535
CL IX	45.657	1	179	CL III	406.274	1	43
CL IX	45.745	0	179	CL III	407.513	0	43
CL IX	46.098	1	179	CL III	411.163	3	43
CL IX	46.242	0	179	CL III	411.373	4	43
CL X	46.476*	2	179	CL III	411.812	4	43
CL X	46.845*	1	179	CL III	415.196	1	43
CL X	46.908	0	179	CL III	416.333	1	43
CL X	47.085	0	179	CL III	421.771	3	43
CL	47.990	0	179	CL III	421.990	3	43
CL IX	49.234	1	179	CL III	422.713	1	43
CL VIII	49.487*	7	179	CL III	433.664	0	43
CL IX	49.568	1	179	CL III	433.774	0	43
CL VIII	50.074*	5	179	CL IV	437.825	4	43
CL VIII	50.700*	2	179	CL IV	439.255	3	43
CL IX	51.026*	4	179	CL IV	440.245	2	43
CL IX	51.378*	3	179	CL III	441.398	3	43
CL IX	52.055*	2	179	CL III	442.947	2	43
CL IX	52.303*	4	179	CL VII	455.273	2	546
CL IX	52.426*	3	179	CL VII	456.556	1	546
CL IX	52.677*	2	179	CL III	457.169	3	43
CL IX	52.726*	3	179	CL III	457.245	2	43
CL IX	52.939	0	179	CL III	457.444	0	43
CL IX	52.959	00	179	CL IV	463.011	3	38
CL IX	53.108	00	179	CL IV	464.292	3	38
CL IX	53.448	0	179	CL IV	464.861	4	38
CL IX	53.696	1	179	CL IV	465.350	3	38
CL VIII	58.673*	10	179	CL IV	466.132	3	38
CL VIII	59.191*	9	179	CL IV	467.194	3	38
CL VII	174.035	3	546	CL IV	486.172*	8	44
CL VII	174.603	4	546	CL IV	534.727*	8	43
CL VII	190.594	2	546	CL IV	535.039	4	44
CL VII	191.283	4	546	CL V	535.455	2	43
CL VI	194.796	2	535	CL IV	535.666*	7	43
CL VI	195.227	3	535	CL V	535.916	2	43
CL VII	196.123*	10	546	CL IV	536.150	6	43
CL VII	196.388*	8	546	CL V	536.532	3	43
CL VII	207.757	4	546	CL V	537.006	4	43, 549
CL VII	224.144	6	546	CL IV	537.606*	9	43
CL VII	225.078*	10	546	CL V	538.032*	5	38
CL V	236.435	1	549	CL IV	538.119	6	43
CL V	237.231	2	549	CL IV	538.595	4	43
CL VII	240.829	6	546	CL V	538.601	4	43
CL VII	240.865	4	546	CL V	538.977	3	43
CL VI	242.885	5	535	CL V	539.441	0	43
CL VI	243.194	8	535	CL V	541.284	3	549
CL VI	243.208	2	535	CL V	542.229*	8	549
CL VI	243.854*	12	535	CL V	542.297*	6	38
CL VI	243.883	3	535	CL V	542.395	3	38
CL V	286.127	2	43	CL V	542.868*	4	549
CL V	287.327	3	43	CL V	543.818	1	549
CL VII	293.253*	8	546	CL V	545.114*	10	549
CL VII	294.889*	10	546	CL V	546.329*	6	549
CL IV	318.750	1	43	CL V	547.630*	10	549
CL IV	319.513	1	43	CL IV	549.219	5	43
CL IV	319.616	3	43	CL IV	550.020	4	43
CL IV	319.993		43	CL VI	550.355	5	535
CL IV	320.250	1	43	CL IV	550.706	3	43

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL V	551.117	2	43	CL II	620.28	1	345
CL VI	551.992*	10	43, 535	CL III	621.027	3	43, 345
CL IV	552.017*	7	43, 535	CL III	621.280	4	43
CL III	552.908	2	43	CL III	623.768	3	43
CL IV	553.297*	6	43	CL II	626.70	1	345
CL V	554.210	1	43	CL V	629.354	3	38
CL IV	554.619*	7	43	CL III	630.380	1	43
CL VI	555.485*	20	43, 535	CL III	630.746	1	43
CL VI	555.580	3	535	CL III	631.006	1	43
CL III	556.232*	6	43, 488	CL V	633.186	4	38
CL III	556.605*	7	43, 488	CL II	634.24	1	345
CL III	557.118*	7	43, 488	CL V	635.323	4	38
CL III	558.385	1	43, 345	CL II	635.87	2	345
CL III	560.636	1	43	CL II	636.62	2	345
CL III	561.530*	7	43, 488	CL II	637.06	1	345
CL III	561.680*	7	43, 488	CL II	638.23	2	345
CL III	561.738*	7	43, 488	CL II	639.42	2	38, 345
CL II	562.28	3	345	CL III	639.757	1	43
CL II	562.54	0	345	CL III	640.928	1	43
CL II	563.58	0	345	CL III	641.304	1	43
CL III	564.287	4	43	CL II	650.88	1	345
CL III	564.514	2	43	CL II	651.13	1	345
CL III	565.272	3	43	CL III	653.013	2	43
CL III	565.480	4	43, 549	CL IV	653.696	4	44, 345
CL II	565.75	0	345	CL II	655.09	1	345
CL VI	566.630	2	345, 549	CL III	656.772	2	43
CL VI	567.479	1	549	CL III	657.320	2	43
CL VI	570.025	4	549	CL III	661.414	2	38, 345
CL VI	570.529	2	549	CL III	661.836	2	38, 345
CL VI	570.881	0	549	CL IV	662.454	3	44, 345
CL VI	571.376	1	549	CL II	663.08	2	345
CL VI	571.435	0	549	CL II	663.67	2	345
CL II	571.95	1	345	CL II	664.67	2	345
CL III	572.693	4	38, 488	CL II	665.21	1	345
CL III	574.408	3	38, 345, 488	CL II	666.08	3	38, 345
CL III	575.582	3	38, 345, 488	CL II	666.17	2	38, 345
CL VI	576.419	2	549	CL II	667.49	1	345
CL VI	577.444	1	549	CL IV	668.770	2	43
CL VI	580.444	2	549	CL III	669.949	2	43
CL II	584.10	1	345	CL III	670.383	3	43
CL II	586.25	0	345	CL VI	671.37	4	51
CL III	586.874	4	43	CL IV	672.428	0	43
CL III	587.078	3	43	CL III	673.127	3	43
CL III	587.295	4	43	CL III	673.598	1	43
CL II	588.77	0	345	CL V	676.785	3	38
CL II	589.82	0	345	CL V	679.257	3	38
CL III	591.118	3	43	CL V	681.924	4	38
CL III	591.428	4	43, 488	CL V	683.171	4	38
CL III	591.646	4	43, 488	CL IV	684.490	0	43
CL III	591.962	2	43	CL II	684.83	0	345
CL III	594.636	4	43, 345	CL II	687.55	1	345
CL III	595.990	3	43	CL V	688.933	4	38
CL III	596.240	4	43	CL II	693.55	0	345
CL VII	598.211*	12	546	CL II	696.11	0	345
CL II	599.19	0	345	CL II	707.43	4	345
CL IV	599.733	2	44	CL II	709.16	2	345
CL IV	601.499	5	44	CL II	710.53	0	345
CL VII	604.785*	20	44, 546	CL II	712.66	3	345
CL VII	605.052	1	546	CL II	714.03	2	345
CL III	605.855	1	43	CL II	715.58	3	345
CL III	606.100	2	43	CL II	717.15	2	345
CL III	606.345	5	43, 488	CL II	719.26	1	345
CL IV	607.088	3	38	CL VI	724.129	3	535
CL IV	608.903	4	38	CL II	725.27	3	345
CL III	609.673	4	43, 488	CL II	725.64	2	345
CL III	609.901	0	43	CL VI	727.537	3	535
CL IV	612.070	4	38	CL II	728.94	3	345
CL II	612.73	0	345	CL II	729.39	3	345
CL III	613.643	0	38	CL II	729.52	2	345
CL III	613.874	1	38	CL VI	730.311	4	535
CL II	617.27	0	345	CL II	730.92	3	345
CL II	617.61	1	38, 345	CL VI	733.891	3	535
CL II	618.02	2	345	CL VI	736.762	3	535
CL III	619.025	1	43	CL IV	745.205	4	44
CL II	619.95	0	345	CL III	746.864	1	43

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL III	747.415	1	43	CL I	1347.238*	12	415, 6, 488
CL III	747.553	1	43	CL I	1351.657*	10	415, 6, 488
CL II	753.66	0	345	CL I	1363.449*	10	415, 6, 488
CL II	754.55	0	345	CL I	1373.118	4	6
CL IV	756.563	1	44	CL I	1379.529*	11	415, 6, 488
CL II	771.00	0	345	CL I	1389.688	6	6
CL II	774.76	0	345	CL I	1389.961	6	415, 6, 488
CL IV	776.91	0	43	CL I	1396.527	8	415, 6, 488
CL II	777.55	3	345	CL II	1401.16	0	345
CL II	787.15	1	345	CL IV	1413.39	1	43
CL II	787.62	3	345	CL IV	1421.97	1	43
CL II	788.75	4	345, 488	CL IV	1426.89	1	43
CL II	789.01	7	345, 488	CL IV	1440.95	0	43
CL II	792.19	2	345	CL	1462.3	1	484
CL II	793.34	3	345, 488	CL	1465.8	1	484
CL II	793.47	3	345, 488	CL II	1471.06	2	345
CL II	795.36	2	345, 488	CL II	1484.66	0	345
CL II	797.81	0	345	CL II	1528.91	1	345
CL VII	800.690	2	546	CL IV	1529.20	0	43
CL VII	813.002	2	546	CL IV	1532.19	1	43
CL II	827.85	1	345	CL IV	1533.25	1	43
CL IV	831.431	4	38	CL IV	1537.21	3	43
CL II	834.67 *	10	345, 488	CL IV	1539.30	2	43
CL IV	834.840	5	38	CL II	1542.94	0	345
CL IV	834.967	5	38	CL IV	1545.19	2	43
CL II	839.30	2	345	CL IV	1549.15	2	43
CL II	839.63	2	345, 488	CL IV	1551.27	1	43
CL IV	840.808	4	38	CL II	1558.05	1	345
CL IV	840.933	6	38	CL	1565.1	0	484
CL II	841.41	4	345, 488	CL	1577.7	2	484
CL II	851.70	7	345	CL	1590.7	0	484
CL II	864.67	5	345, 488	CL	1593.5	0	484
CL II	872.00	0	345, 488	CL IV	1617.43	1	43
CL V	883.127*	4	38	CL IV	1622.86	2	43
CL II	888.07	4	345, 488	CL IV	1638.95	0	43
CL II	893.56	3	345, 488	CL IV	1643.40	1	43
CL V	894.340*	4	38	CL IV	1648.04	0	43
CL V	894.910	1	38	CL IV	1651.21	1	43
CL II	895.95	3	345, 488	CL	1663.1	1	484
CL II	906.60	0	345	CL III	1683.18	0	43
CL II	910.25	0	345	CL III	1689.50	1	43
CL II	912.34	0	345	CL II	1767.24	1	345
CL II	914.90	2	345	CL II	1772.01	3	345
CL II	926.96	0	345	CL II	1785.06	1	345
CL III	930.94	1	38	CL II	1787.10	3	345
CL III	936.28	1	38	CL II	1791.91	4	345
CL III	939.31	0	38	CL III	1797.98	2	43, 345
CL III	943.22	1	38	CL III	1808.51	4	43, 488
CL III	946.97	1	38	CL III	1810.26	1	43
CL III	948.72	1	38	CL II	1813.75	0	345
CL III	953.40	2	38	CL II	1814.43	0	345
CL II	961.49 *	10	169, 345	CL II	1815.16	0	345
CL IV	973.212	5	38	CL II	1815.61	0	345
CL IV	977.560	6	38	CL III	1817.73	4	43, 488
CL IV	977.901	4	38	CL III	1822.50 *	6	43, 488
CL IV	984.952*	7	38	CL III	1824.59	3	43
CL IV	985.749	4	38	CL III	1828.40	5	43, 488
CL III	1005.280	5	38, 488	CL III	1832.08	4	43, 488
CL III	1008.777*	6	38, 488	CL III	1833.31	4	43, 488
CL III	1015.023*	7	38, 488	CL III	1848.74	0	43
CL II	1063.83 *	10	345, 488	CL III	1849.64	0	43
CL II	1067.94	4	38, 345	CL III	1852.11	2	43
CL II	1071.05 *	20	38, 345, 488	CL III	1880.10	3	43
CL II	1071.76 *	10	38, 345, 488	CL II	1883.14	3	345
CL II	1075.24	7	38, 345	CL II	1887.90	0	345
CL II	1079.08 *	15	38, 345, 488	CL III	1889.06	0	43
CL	1128.0	0	484	CL III	1897.85	3	43
CL	1145.0	2	484	CL III	1901.61	5	43, 488
CL I	1188.768*	12	6	CL II	1910.76	0	345
CL I	1201.358*	11	6	CL III	1912.90	4	43, 488
CL II	1223.71	2	345	CL III	1914.09	3	43
CL	1302.0	2	484	CL III	1916.53	4	43
CL	1305.1	2	484	CL III	1917.87	4	43, 488
CL	1331.2	2	484	CL III	1920.32	4	43
CL I	1335.723	9	415, 6, 488	CL II	1923.35 *	4	345
				CL III	1979.46	3	43
				CL III	1983.61 *	5	43

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

ARGON

A	I	I.P.	127109.9	K	786.721	A
A	II	I.P.	222820.	K	448.79	A
A	III	I.P.	329965.80	K	303.062	A
A	IV	I.P.	482400.	K	207.3	A
A	V	I.P.	605100.	K	165.3	A
A	VI	I.P.	736600.	K	135.8	A
A	VII	I.P.	1000400.	K	99.960	A
A	VIII	I.P.	1157400.	K	86.401	A
A	IX	I.P.	3400000.	K	29.4	A
A	X	I.P.		K		A
A	XI	I.P.		K		A
A	XIV	I.P.		K		A

A	IX	48.730*	5	549	
A	IX	49.180*	5	549	
A	VIII	120.093	2	549	
A	VIII	120.157	1	549	
A	VIII	122.624		549	
A	VIII	123.033	1	549	
A	VIII	137.926*	3	549	
A	VIII	138.440*	5	549	
A	VIII	148.725	2	549	
A	VIII	149.333	3	549	
A	VII	151.698	1	549	
A	VII	151.876	2	549	
A	VII	152.259	3	549	
A	VIII	158.923*	8	549	
A	VIII	159.175*	5	549	
A	VII	176.566*	10	549	
A	VIII	179.400*	10	549	
A	VI	180.074	2	549	
A	VIII	180.254*	15	549	
A	VI	180.719	3	549	
A	VIII	184.273	3	549	
A	VIII	184.315*	5	549	
A	IX	185.883*	2	762	
A	VII	191.759*	3	549	
A	VII	192.041*	5	549	
A	VII	192.635*	7	549	
A	VI	219.896	3	549	
A	VI	220.946	5	549	
A	VIII	229.437*	5	549	
A	VIII	230.875*	7	549	
A	VII	249.384	2	549	
A	VII	249.886	5	549	
A	VII	250.940*	7	549	
A	VIII	260.253*	4	549	
A	VIII	260.332*	6	549	
A	VI	281.433	3	549	
A	VI	281.915	4	549	
A	VI	282.423*	6	549	
A	VI	282.556	1	549	
A	VI	283.164	3	549	
A	VI	292.154	5	549	
A	VI	294.052*	6	549	
A	VII	297.621*	3	549	
A	VII	297.658*	4	549	
A	VII	297.701*	6	549	
A	V	336.555	3	549	
A	VIII	337.257	2	549	
A	V	337.555*	3	549	
A	V	337.998*	6	488, 549	
A	VIII	338.222		549	
A	V	338.426	2	549	
A	V	339.009	3	549	
A	V	339.886	3	549	
A	V	350.878	3	488, 549	
A	III	395.92	1	59, 65	

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

A	III	396.38	4	59, 65	
A	IV	396.869	4	59, 65	
A	III	397.67	1	59, 65	
A	IV	398.546	4	59, 65	
A	III	398.86	1	59, 65	
A	IV	399.634	3	59, 65	
A	V	445.997	5	488, 549	
A	V	446.949*	8	488, 549	
A	V	447.527	4	549	
A	V	449.065*	18	488, 549	
A	V	449.493	4	549	
A	V	450.079	1	549	
A	VI	455.813	2	549	
A	VI	456.375	3	549	
A	VI	457.007	5	549	
A	VI	457.475*	20	549	
A	VI	458.039	1	549	
A	V	458.121	3	549	
A	V	458.975	2	549	
A	VI	459.320*	10	549	
A	VI	459.603	3	549	
A	V	459.728	1	488, 549	
A	VI	460.058	1	549	
A	VI	460.202	1	549	
A	V	461.227*	6	488, 549	
A	VI	461.898	1	549	
A	VI	462.007*	25	549	
A	VI	462.146	4	549	
A	V	462.415	3	488, 549	
A	V	463.938*	7	488, 549	
A	VI	464.257	4	549	
A	VI	465.586	2	549	
A	III	466.530	5	59, 65	
A	III	467.390	6	59, 65	
A	III	468.467	4	59, 65	
A	III	468.956	3	59, 65	
A	III	469.831	4	59, 65	
A	III	469.968	4	59, 65	
A	III	473.025	6	59, 65	
A	III	473.918	6	59, 65	
A	VII	475.656*	8	549	
A	VII	475.733*	2	549	
A	III	476.432	7	59, 65	
A	VII	479.379*	12	549	
A	VII	479.485*	2	549	
A	III	481.848	6	59, 65	
A	III	482.548	8	59, 65	
A	III	484.116	5	59, 65	
A	III	484.445	5	59, 65	
A	III	485.150	6	59, 65	
A	III	485.515	4	59, 65	
A	III	487.025	7	59, 65	
A	II	487.227	2	59, 65	
A	III	487.988	7	59, 65	
A	III	488.452	7	59, 65	
A	II	488.786	3	59, 65	
A	II	488.95	1	59, 65	
A	II	489.191	3	59, 65	
A	III	490.68	3	59, 65	
A	III	491.121	4	59, 65	
A	III	492.228	3	59, 65	
A	II	499.92	1	59, 65	
A	II	500.800	1	59, 65	
A	II	501.185	2	59, 65	
A	II	501.40	1	59, 65	
A	II	502.01	1	59, 65	
A	II	502.164	2	59, 65	
A	II	503.642	2	59, 65	
A	II	504.80	1	59, 65	
A	II	505.007	1	59, 65	
A	III	508.434*	9	59, 65	
A	III	508.595*	4	65, 337	
A	III	508.655	2	65, 337	
A	II	510.550	3	59, 65	
A	III	511.497	8	59, 65	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS.	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A III	511.565	7	59, 65	A III	641.364	5	59, 65, 488
A V	511.886	0	549	A III	641.808*	12	59, 65, 488
A III	512.769	7	59, 65	A III	643.256*	9	59, 65, 488
A V	513.914	1	549	A VII	644.388	2	549
A II	514.301	2	59, 65	A II	661.868*	15	59, 65, 488
A V	517.250	0	549	A II	664.558	6	59, 65, 488
A II	518.89	2	59, 65	A II	666.014*	10	59, 65, 488
A II	519.326	6	59, 65, 488	A II	670.947*	10	59, 65, 488
A V	522.090	3	488, 549	A II	671.854*	10	59, 65, 488
A II	522.791	4	59, 65, 488	A II	672.849	3	59, 65, 488
A V	524.189	5	488, 549	A III	676.241	6	59, 65
A II	524.678	4	59, 65	A II	679.410*	8	59, 65, 488
A II	526.495	3	59, 65	A IV	683.278*	10	59, 65, 488
A VIII	526.870	1	549	A II	686.50	1	59, 65
A V	527.693*	6	488, 549	A IV	688.392	7	59, 65
A II	528.640	2	59, 65	A IV	689.007*	12	59, 65, 488
A III	529.900*	9	59, 65	A III	690.170*	8	59, 65, 488
A II	530.489	4	59, 65	A II	691.030	1	59, 65
A III	532.413	7	59, 65	A II	693.295	2	59, 65
A III	534.26	1	59, 65	A III	695.537	6	59, 65, 488
A II	535.035	1	59, 65	A II	697.484	2	59, 65
A III	535.580	7	59, 65	A III	697.74	2	59, 65
A III	536.745	8	59, 65	A II	697.944	1	59, 65
A II	537.13	3	59, 65	A II	698.760	4	59, 65, 488
A III	537.459	6	59, 65	A IV	699.408	6	59, 65
A III	538.788	6	59, 65	A III	699.72	1	60, 65
A II	541.304	1	59, 65	A IV	700.277*	8	59, 65
A II	542.910	3	59, 65	A II	704.516	3	59, 65, 488
A II	543.201	4	59, 65	A V	705.353	3	65, 488, 549
A II	543.727	3	59, 65	A V	709.195	5	65, 488, 549
A VI	544.731	4	549	A VIII	713.990		549
A II	546.176	4	59, 65	A V	715.599	4	65, 488, 549
A II	547.164	3	59, 65	A V	715.645	3	65, 488, 549
A II	547.460	4	59, 65	A II	718.083	4	59, 65, 488
A II	547.983	1	59, 65	A II	723.353*	14	59, 65, 488
A II	548.779	4	59, 65	A II	725.542*	9	59, 65, 488
A II	550.475	2	59, 65	A II	730.929*	8	59, 65, 488
A II	550.899	1	59, 65	A II	737.442	1	59, 65
A VI	551.371*	8	549	A II	740.263*	12	59, 65, 488
A II	553.122	1	59, 65	A II	744.920	5	59, 65, 488
A III	553.470*	9	59, 65, 488	A II	745.318	5	59, 65, 488
A VI	555.639	4	549	A II	748.193	4	59, 65, 488
A II	556.813	6	59, 65	A IV	754.205	4	59, 65
A III	556.893	6	59, 65, 488	A II	754.817	3	59, 65, 488
A III	558.321	5	59, 65, 488	A IV	755.212	3	59, 65
A V	558.481	5	549, 488	A IV	760.439	3	59, 65
A II	560.224	7	59, 65	A IV	761.470	5	59, 65
A II	572.015	5	59, 65, 488	A II	762.192	2	59, 65, 488
A II	573.360	6	59, 65, 488	A III	769.152*	12	65, 169, 488
A III	573.468	4	59, 65	A I	797.744	1	65, 647
A II	576.731	5	59, 65, 488	A I	799.137	0	65, 647
A III	577.153	3	59, 65	A IV	800.573*	5	59, 65
A II	578.107	4	59, 65, 488	A IV	801.086*	10	59, 65, 488
A III	578.386	4	60, 65	A I	801.359	1	65, 647
A II	578.605	4	59, 65, 488	A IV	801.409*	10	59, 65, 488
A III	579.212	3	60, 65	A IV	801.913*	5	59, 65
A II	580.261*	8	59, 65, 488	A I	806.875	2	59, 65
A II	583.437*	8	59, 65, 488	A I	807.220	2	59, 65
A VII	585.754*	15	549	A I	807.702	2	59, 65
A VI	587.006	1	549	A I	809.933	2	59, 65
A VI	588.921	5	549	A I	816.233	4	59, 65
A VI	589.783	2	549	A I	816.466	4	59, 65
A VI	594.096	3	549	A I	820.129		59, 65
A VI	596.694	4	549	A V	822.159	4	65, 488, 549
A II	597.695	5	59, 65, 488	A I	825.348	1	59, 65
A II	602.854	4	59, 65, 488	A I	826.371	2	59, 65
A III	604.152*	10	59, 65	A V	827.055	5	65, 488, 549
A II	612.59	4	135	A V	827.349	3	59, 65, 549
A III	623.767	5	60, 65	A I	834.397*	6	59, 65
A VII	630.306	2	549	A V	834.878	4	65, 488, 549
A VII	634.208	2	549	A I	835.003*	6	59, 65
A III	636.818	3	59, 65, 488	A V	835.792	1	59, 65, 549
A VII	637.052	4	549	A V	836.126	2	59, 65, 549
A III	637.282*	20	59, 65, 488	A IV	840.029*	15	59, 65, 488
A VII	641.318	2	549	A I	842.808	2	59, 65

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A IV	843.772*	20	59, 65, 488	K VI	I.P.	804513.	K 124.299 A
A IV	850.602*	25	59, 65, 488	K VII	I.P.	950200.	K 105.2 A
A I	866.805	4	59, 65	K VIII	I.P.	1247000.	K 80.19 A
A I	869.754	2	59, 65	K IX	I.P.	1419425.	K 70.451 A
A III	871.099*	10	59, 65, 488	K X	I.P.	4064300.	K 24.604 A
A III	875.534*	9	59, 65, 488				
A I	876.063*	4	59, 65, 488				
A III	878.728*	12	488, 65				
A III	879.622	8	59, 65, 488				
A I	879.949*	3	59, 65				
A III	883.179*	9	59, 65, 488	K X	29.588	1	189
A III	887.404*	10	59, 65, 488	K X	29.794	0	189
A I	894.310	4	59, 65, 488	K X	30.887	0	189
A IV	900.362	5	59, 65	K X	30.937	00	189
A IV	901.168*	9	59, 65	K X	31.062	00	189
A IV	901.804	2	59, 65	K X	31.200	00	189
A II	919.78 *	15	59, 65, 488	K XI	32.180*	1	189
A II	932.046*	10	59, 65, 488	K XI	32.339*	0	189
A	941.39	2	646	K XI	32.810*	0	189
A	946.95	2	646	K X	35.307*	4	189
A II	958.34	1	135	K X	35.779*	2	189
A III	1002.095	3	60, 65	K X	36.229	1	189
A II	1031.41	1	135	K XI	36.662*	0	189
A IV	1037.931	1	59, 65	K XI	36.971*	0	189
A I	1048.218*	25	59, 65, 488	K XI	37.435*	0	189
A I	1066.660*	15	59, 65, 488	K XI	37.696*	0	189
A IV	1187.80	1	59, 65	K XI	37.870*	00	189
A IV	1190.354	2	59, 65	K X	41.148*	7	189
A IV	1197.84	1	59, 65	K X	41.541*	7	189
A III	1205.95	1	60, 65	K IX	112.113*	2	361
A III	1460.077	4	59, 65	K IX	112.581*	4	361
A III	1460.234	2	59, 65	K IX	131.646*	6	361
A III	1465.532	2	59, 65	K IX	131.896*	4	361
A III	1465.712	3	59, 65	K IX	145.702*	5	361
A III	1467.841	3	59, 65	K IX	145.753*	5	361
A III	1468.006	2	59, 65	K IX	147.157*	6	361
A II	1560.188*	3	59, 65, 488	K IX	147.943*	8	361
A II	1574.985*	4	59, 65, 488	K IX	147.973*	1	361
A III	1669.10	1	59, 65	K VIII	155.715	5	535
A III	1669.304	5	59, 65	K VI	155.950	1	192
A III	1669.671	7	59, 65, 488	K VIII	155.985	4	535
A III	1673.14	1	59, 65	K VI	156.511	2	192
A III	1673.241	3	59, 65	K VIII	156.543	3	535
A III	1673.425	7	59, 65, 488	K VIII	156.566	1	535
A III	1675.484	7	59, 65	K VI	157.433	1	192
A III	1675.637	4	59, 65, 488	K IV	166.163	0	192
A III	1836.42	5	65, 337	K IV	166.246	1	192
A III	1839.43	3	65, 337	K IV	170.227	1	192
A III	1843.19	2	65, 337	K VI	175.189	1	192
A II	1909.58	1	59, 65	K VI	175.688	0	192
A III	1914.398*	9	59, 65, 488	K VI	176.106	1	192
A III	1914.653	3	59, 65	K VI	180.378	0	192
A III	1915.564	7	59, 65, 488	K VI	181.265	1	192
A III	1918.06	1	59, 65	K VI	181.974	0	192
A III	1918.667	4	59, 65	K VI	182.818	0	192
A III	1919.515	4	59, 65	K VI	184.587	0	192
A II	1941.062	2	59, 65, 488	K VI	185.883	2	192
A III	1957.83	1	59, 65	K VI	194.593	1	192
A II	1961.356	2	59, 65, 488	K VI	196.431	0	192
A III	1962.74	2	59, 65	K VI	196.978	1	192
A II	1973.48	1	59, 65	K VIII	198.536	5	535
A III	1973.780	4	59, 65	K VI	198.985	1	192
				K VI	199.932	2	192
				K VI	200.341	1	192
				K VI	202.883	0	192
				K VI	203.034	1	192
				K III	203.823	2	192
				K III	203.890	3	192
				K VI	205.772	2	192
				K VI	205.862	2	192
				K VI	207.350	0	192
				K V	213.121	1	192
				K V	214.351	2	192
				K VII	220.640	0	793
				K VII	221.023	0	793
K I	I.P.	35009.78	K 2856.344 A				
K II	I.P.	256637.	K 389.655 A				
K III	I.P.	369000.	K 271. A				
K IV	I.P.	491300.	K 203.5 A				
K V	I.P.		K A				

POTASSIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K VI	221.282	0	192	K V	296.169	4	45, 192, 762
K VII	221.481	1	793	K V	297.064	4	45, 192, 762
K VI	221.639	0	192	K V	300.252	4	45, 192, 762
K VII	222.139	0	793	K V	300.503	4	45, 192, 762
K VII	222.434	1	793	K VI	302.657	2	192
K VI	222.752	0	192	K VI	303.023	1	192
K VI	222.858	0	192	K	303.690	2	192
K	226.372	0	192	K	306.620	2	192
K	226.691	0	192	K	306.888	1	192
K	227.471	1	192	K	308.129	2	192
K VII	227.638	2	793	K V	311.243	4	45, 192, 762
K VII	229.268	2	793	K V	311.593	0	192
K VIII	230.678*	10	535	K V	311.688	0	192
K VIII	230.706*	12	535	K V	312.770	5	45, 192, 762
K VIII	230.745*	15	535	K VI	315.181	4	45, 192, 762
K V	232.673	1	192	K VI	315.537	3	45, 192, 762
K III	239.010	2	192	K V	318.969	1	192
K	239.608	1	192	K	322.146	1	192
K III	240.758	3	192	K	324.485	1	192
K V	246.235	1	192	K III	325.278	0	192, 762
K	247.202	2	192	K V	327.031	2	45, 192, 762
K	247.561	2	192	K V	327.376	4	45, 192, 762
K	247.708	3	192	K III	327.605	1	192, 762
K VI	247.777	1	192	K III	328.845	2	192
K VI	248.727	0	192	K V	328.933	3	45, 192
K VI	249.394	0	192	K III	329.053	2	192, 762
K	250.123	0	192	K V	329.307	1	45, 192, 762
K	252.581	0	192	K III	330.684	5	192, 762
K VI	252.965	1	192	K V	331.168	1	192
K VI	253.106	1	192	K III	331.416	1	192, 762
K	255.267	0	192	K	331.966	1	192
K	255.530	1	192	K	332.207	0	192
K	255.729	0	192	K	332.515	0	192
K	256.222	0	192	K	333.420	0	192
K	256.402	0	192	K VI	335.175	3	192
K	256.512	0	192	K VI	338.161	3	192
K VI	256.831	3	192, 566, 793	K IV	340.462	6	192, 566
K	257.131	0	192	K IV	340.745	3	192, 566
K VI	257.657	2	192, 566, 793	K III	341.924	6	192
K VI	258.018	4	192, 566, 793	K IV	342.410	3	192, 566
K VI	258.411	1	192, 566, 793	K IV	342.703	2	192, 566
K VI	258.873	3	192, 762, 793	K IV	342.805	2	192, 566
K	259.184	0	192	K IV	343.468	3	192, 566
K VI	259.609	2	192, 762, 793	K III	344.270	4	192
K	260.042	0	192, 361	K III	344.635	4	192
K IX	260.834	3	361	K III	345.197	2	192
K II	261.028	1	192	K III	345.405	2	192, 762
K II	261.200	1	192	K III	345.545	2	192, 762
K IV	263.716	2	192	K	347.063	0	192
K IV	263.819	2	192	K III	347.999	3	192, 762
K V	264.339	2	192	K V	349.504	4	192, 762
K V	264.478	2	192	K V	349.793	3	192, 762
K	265.353	1	192	K VI	350.164	2	192
K	266.344*	4	192	K	352.136	0	192
K	266.938	2	192	K V	352.463	2	192, 762
K	267.036	2	192	K V	352.750	2	192, 762
K IV	271.820	3	45	K	353.246	1	192
K IV	273.065	2	45, 192	K	353.325	3	192
K IV	274.552	3	45, 192	K	353.455	3	192
K	275.595	0	192	K IV	354.139	2	45, 192
K	276.428	0	192	K	354.397	1	192
K	276.890	0	192	K V	354.627	0	192, 762
K V	277.394	3	192	K V	354.927*	6	192, 762
K V	282.355	3	192	K	355.133	2	192
K IV	283.765	2	192	K	355.330	1	192
K VI	284.280	0	192	K VI	355.469	1	192
K VI	284.860	0	192	K VI	355.663	1	192
K	285.458	0	192	K VI	355.800	1	192
K V	285.734	1	192	K IV	356.260	3	45, 192
K V	285.850	2	192	K VI	356.372	1	192
K VI	289.241	1	192	K VI	356.615	3	192
K VI	293.050	2	192	K VI	357.645	3	192
K VI	293.332	3	192	K VI	357.685	3	192
K VI	293.438	2	192	K	357.950	0	192
K V	294.836*	6	45, 192, 762	K IV	359.730	6	192, 358

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K IV	359.907	4	192, 566	K V	398.363	4	192, 762
K IV	360.568	2	45, 192	K III	398.633	3	192, 762
K IV	362.085	5	192, 566	K V	398.878	4	192, 762
K IV	362.154	3	192, 566	K VII	398.931*	8	547
K IV	363.021	3	192, 566	K VII	398.988*	2	547
K	363.647	1	192	K VI	399.073	2	192, 793
K	364.725	0	192	K V	399.400	3	192, 762
K	364.871	0	192	K VII	399.483	1	192, 547
K VI	365.614	3	192, 566	K V	399.754	4	192, 762
K VI	367.378	2	192	K VII	400.091	1	547
K VI	368.030	2	192, 566	K III	400.210	8	192, 762
K	368.465	1	192	K VI	400.951*	5	192, 793
K	368.580	2	192	K VII	401.542	3	192, 547
K	369.392	0	192	K VII	401.764	2	192, 547
K VI	370.115	2	192	K III	402.104	4	192, 762
K V	370.523	3	192	K VII	402.267	0	547
K V	370.580	3	192	K IV	402.907	6	192, 566
K V	372.148*	10	192, 762	K V	403.784*	7	192, 547
K V	372.462*	4	192, 762	K VII	403.967*	5	192, 547
K VI	372.774	4	192	K IV	404.412	3	45, 192
K V	373.074	2	192, 762	K VI	404.684	4	192, 566
K V	373.318	3	192	K VI	405.178	2	192
K V	374.939	5	192	K VI	405.333	2	192
K IV	375.955	6	45, 192, 358	K VI	405.475	1	192
K V	376.061	3	192, 762	K VI	405.675	2	192
K	376.477	0	192	K IV	405.773	2	45, 192
K VI	377.263	2	192	K VI	406.102	2	192
K V	377.763	5	192, 762	K III	406.484	6	192, 359, 762
K V	378.219	3	192, 762	K	406.816	1	192
K III	379.118	6	192, 762	K	406.912	1	192
K IV	379.279	2	45	K IV	408.076	5	45, 192
K III	379.877	6	192	K III	408.959	8	192, 762
K III	380.477	5	45, 192, 762	K III	409.737	8	192
K IV	381.702	4	45, 192	K III	410.102	8	192, 359, 762
K III	382.229	6	192, 762	K V	412.080*	6	192
K IV	382.487	3	45	K III	412.289	5	192, 762
K IV	382.646	4	45	K VI	412.790	1	192
K IV	382.906	6	45, 192	K III	413.792*	10	192, 488, 762
K V	383.318	2	192	K V	414.465	3	192, 762
K IV	384.095	5	192, 358	K III	414.870	6	192, 762
K V	384.400	2	192	K V	415.052	5	192, 762
K V	384.516	2	192	K	415.289	0	192
K	384.689	1	192	K V	415.465	3	192, 762
K IV	384.956	3	45, 192	K V	415.793	4	192, 762
K V	385.020	1	192, 762	K III	416.001	6	192, 762
K V	385.689	2	192, 762	K VI	416.509	1	192
K VI	386.505	2	192	K VII	416.628	3	192, 535
K V	386.710	4	192	K IV	417.280	3	45, 192
K III	387.372	2	192	K III	417.535	6	192, 762
K V	387.800*	6	192, 762	K VI	418.160	2	192
K VI	388.233	4	192	K VIII	418.444	3	192, 535
K VI	388.485	2	192	K VIII	418.571	1	535
K IV	388.920	5	192, 566	K III	418.623	6	192, 762
K V	389.069	5	192, 762	K V	419.045	2	192, 762
K V	389.428	2	192, 762	K V	419.310	2	192, 762
K VI	389.531	2	192	K	419.539	0	192
K VI	389.750	2	192	K V	419.731	1	192, 762
K III	390.114	5	192	K	419.823	0	192
K IV	390.415	5	192, 566	K VI	420.807	4	192
K IV	390.574	6	192, 566	K V	421.446	3	192
K IV	391.462	4	192, 566	K V	422.178	5	45, 192, 762
K III	391.918	4	192	K VIII	422.511*	10	192, 535
K IV	392.274	2	169, 192	K VIII	422.642	2	535
K IV	392.467	4	192, 566	K	423.371	1	192
K IV	393.142*	10	192, 566	K	423.558	1	192
K	394.063	1	192	K	423.821	1	192
K VI	394.477	3	192, 793	K V	425.159	5	45, 192, 762
K V	394.909	3	192, 762	K V	425.588*	7	45, 192, 762
K VI	395.395*	5	192, 762	K VI	426.338	2	192
K VI	396.235	4	192, 793	K VI	428.315	2	192
K III	396.763	0	192, 762	K VI	428.538*	5	192
K VI	396.858	0	192	K VI	429.438	2	192
K VII	397.674	1	547	K II	429.656*	3	192
K VI	398.087	4	192, 793	K II	429.923*	3	192
K VII	398.252	0	547	K	430.895	0	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K	430.968	0	192	K VII	487.080*	8	192, 793
K	431.622	1	192, 762	K VI	488.120*	10	192, 598
K III	434.722*	15	192, 762	K VI	490.423	2	192
K III	435.676*	10	192, 762	K VI	491.062	2	192
K III	437.216	3	192	K VII	491.702*	6	192, 793
K V	438.023	5	192, 762	K II	495.144*	6	192
K V	438.647	2	192, 762	K III	497.104*	15	192, 488, 762
K III	438.869	4	192	K IV	499.993	2	192
K IX	439.047	3	192, 762	K IV	500.047	2	192
K III	440.429*	15	192	K IV	500.125	3	192
K IV	440.905	2	192	K VI	501.649	2	192, 598
K VI	441.370	3	192	K	502.798	1	192
K III	441.812	5	192, 359	K	503.697	1	192
K III	442.043	2	192	K	504.503	0	192
K IV	442.300	4	192, 566	K	504.817	0	192
K III	442.518	2	192, 359	K IV	505.761	1	192
K III	442.913	3	192	K IV	506.029	2	192
K IV	443.567	6	192, 566	K V	509.601	1	192
K III	444.344*	15	182, 192, 488	K VI	510.311	0	192
K IV	445.607	4	192	K VI	511.062	0	192
K V	445.878	1	192	K	511.371	1	192
K VI	446.009	4	192	K	512.593	0	192
K III	446.830	5	192, 359	K III	514.943	2	192
K	446.926	2	192	K V	515.320	1	192
K V	447.085	3	192	K III	515.514	4	192
K III	448.595*	15	182, 192, 488	K II	515.653*	3	192
K V	449.013	3	192, 598, 762	K VII	516.853	1	192, 793
K V	449.708	4	192, 762	K VII	517.928*	5	192, 793
K IX	451.078	1	192, 762	K II	518.249*	3	192
K VI	451.320	2	192	K VI	519.372*	5	192
K V	452.227	2	45	K	520.493	3	192
K VI	452.667	3	192, 598	K III	520.611*	10	192, 488, 762
K V	452.900	4	45, 192, 762	K IV	523.001	5	192
K IX	453.882	0	192, 762	K III	523.792	5	192, 488, 762
K V	455.670	5	45, 192, 762	K VII	524.639	2	192, 793
K V	456.328*	8	45, 192, 762	K VII	526.448*	4	192, 793
K VI	457.323	1	192	K II	527.064	2	192
K VI	457.427	0	192	K III	527.565	1	192
K VI	458.048*	7	192, 793	K IV	527.617	3	192, 566
K	458.535	0	192	K	528.519	2	192
K V	459.005	3	192	K IV	528.879	1	192
K IX	459.498	2	361	K III	529.796	8	192, 488, 762
K VI	460.438*	8	192, 793	K	533.587	0	192
K VI	461.737	3	192	K	533.726	1	192
K V	462.596	1	192	K	533.858	1	192
K VI	464.270*	10	192, 793	K	534.059	2	192
K II	465.078	1	192, 366	K	534.225	0	192
K III	466.793*	15	192, 488, 762	K V	534.873	2	192
K IX	466.943*	4	361	K V	535.287	1	192
K V	468.447	2	192	K V	536.216	2	192
K III	470.089*	20	192, 359, 488	K II	539.731*	3	192
K III	471.569*	15	192, 488, 762	K	543.225	1	192
K VI	473.207	2	192	K IV	543.640	2	192
K III	474.920	9	192, 488, 762	K IV	543.973	1	192
K II	476.029	2	192	K	544.137	1	192
K III	479.185	8	182, 192, 762	K V	544.537	1	192
K VII	479.768*	5	192, 793	K V	544.627	1	192
K VI	480.397	1	192	K IX	544.855	1	192, 762
K III	480.965	1	192, 762	K IX	545.232	1	192, 762
K VI	401.319	7	192	K II	546.123*	3	192
K	481.759	0	192	K II	550.323	1	192
K III	482.107	2	182, 192	K VII	557.029	2	192, 535, 793
K	482.281	1	192	K VIII	561.593	6	192, 535, 793
K III	482.408	2	182, 192	K VIII	564.462*	12	192, 535, 793
K V	482.706	4	192, 762	K VIII	565.112	6	192, 535, 793
K	483.405	0	192	K	566.836	0	192
K V	483.745	4	192, 762	K	568.534	0	192
K III	483.972	3	192, 762	K VIII	569.479	4	192, 535, 793
K III	484.200	1	182, 192, 762	K VI	569.696	0	192
K VII	484.241*	5	192, 793	K VI	569.915	0	192
K	484.637	1	192	K	571.643	0	192
K II	485.084*	5	192	K	572.180	0	192
K IV	485.359	2	192	K	572.451	0	192
K II	485.513*	3	192	K VIII	572.790	5	192, 535, 793
K II	485.626*	2	192	K II	574.634	1	192

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K V	580.319*	15	45, 192, 762	K VI	712.728	1	192
K III	582.140	1	192	K V	713.041	1	192
K V	585.510	5	45, 192, 762	K	713.489	1	192
K V	586.322*	10	45, 192, 762	K VI	715.999*	5	192, 793
K V	590.618	0	192	K VI	716.272	2	192, 793
K IV	591.237	1	192	K V	720.432*	6	192, 762
K IV	591.311	1	192	K V	724.420*	8	192, 762, 793
K IV	591.434	1	192	K VI	725.309	2	192, 793
K II	600.765*	6	39, 192, 488	K IV	725.848	1	192
K V	602.269	5	192, 762	K	727.295	0	192
K V	603.429*	8	192, 762	K V	731.858*	2	192, 762
K IV	605.316	1	192	K IV	737.144*	10	39, 192
K IV	605.689	0	192	K	737.761	1	192
K IV	605.908	1	192	K	738.075	1	192
K IV	606.065	0	192	K	738.696	0	192
K II	607.931*	5	39, 192, 488	K VI	739.177	1	192
K	610.850	1	192	K IV	741.950*	10	39, 192
K VI	611.862	3	192, 793	K V	743.292	2	192
K VI	612.272	1	192	K IV	745.264*	10	39, 192
K II	612.621*	6	39, 192, 488	K IV	746.350*	8	39, 192
K II	615.40	2	39	K	747.677	3	192
K VI	616.136*	6	192, 793	K VI	747.848	2	192
K VI	620.808	0	192	K	748.393	2	192
K IX	621.422*	5	178, 192, 361	K	748.783	1	192
K V	623.016*	8	192, 793	K IV	749.993	6	39, 192
K V	625.404	4	192	K V	750.230	3	192
K	626.186	0	192	K V	750.381	1	192
K VI	627.560	2	192	K	752.952	0	192
K VI	630.302	2	192	K VI	753.877	3	192
K VI	630.940	1	192	K IV	754.194	3	169, 192
K IX	636.300	3	178, 192, 361	K IV	754.673*	8	39, 192
K VI	637.195	1	192	K V	757.112	4	192
K VI	637.890	0	192	K VI	757.199	4	192
K V	638.668	5	45, 192, 762	K V	758.559	1	192
K	638.805	0	192	K III	765.314	4	192
K V	639.982	2	45, 192, 762	K III	765.644	6	192, 359, 488
K V	644.963	0	45, 192, 762	K V	769.402	2	192, 762
K IV	646.188*	15	169, 192	K VI	770.022	1	192
K	648.932	0	192	K V	770.287	3	192, 762
K VI	651.324	1	192	K VI	771.103*	5	192
K	655.188	1	192	K V	771.376	3	192
K	655.554	0	192	K V	771.456	3	192, 762
K VI	657.327	3	192	K	774.192	1	192
K VI	657.931	3	192	K	774.738	3	192
K VII	658.406	3	192, 793	K VI	776.957	4	192
K	659.135	0	192	K III	778.528	7	192, 359, 488
K VI	659.852	3	192	K	781.338	1	192
K VI	661.402	3	192	K	782.265	0	192
K	662.329	0	192	K V	784.713	2	192
K	662.832	0	192	K V	786.464	2	192
K VI	663.134	3	192	K	793.464	0	192
K VI	663.957	0	192	K	794.341	0	192
K VI	668.864	3	192	K V	802.122	2	192
K	670.987	0	192	K V	803.826	2	192
K VII	671.504*	5	192, 793	K	805.002	0	192
K IV	672.941	5	192	K V	806.373	2	192
K	675.335	1	192	K V	806.577	2	192
K	677.833	0	192	K V	809.673	2	192
K	678.458	0	192	K V	810.215	1	192
K	679.107	0	192	K V	810.893	1	192
K IV	687.495	6	192	K	812.493	1	192
K	688.085	3	192	K V	821.568	1	192
K	688.182	1	192	K V	823.047	3	192, 762
K	691.206	0	192	K V	823.358	3	192, 762
K V	694.477	2	192	K V	825.559	1	192, 762
K V	695.042	3	192	K V	826.395	1	192
K III	695.820	3	192	K V	830.785	1	192
K III	696.202	1	192	K V	839.439	1	192
K	696.608	1	192	K	843.317	1	192
K IV	705.641	3	192	K V	854.416	2	192
K III	708.838	4	192	K V	854.771	1	192
K VI	710.519	4	192, 793	K IV	855.815	2	192
K	710.645	0	192	K	858.555	1	192
K VI	710.932	1	192	K	859.455	0	192
K	711.571	0	192	K V	867.921	1	192

SECTION III EMISSION LINES BY ELEMENT

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K	V	868.140	1 192
K	V	868.552	1 192
K	V	869.965	3 192
K	VI	872.006	1 192
K	III	872.313	4 192, 762
K	III	873.865	2 192
K	III	874.045	3 192
K	V	874.883	1 192
K	V	874.985	1 192
K	V	881.405	3 192
K	VI	882.184	2 192
K	IV	892.621	2 192
K	V	898.953	3 192
K		900.266	0 192
K		902.135	0 192
K	V	917.498	1 192
K	VI	918.581	2 192
K	VI	929.374	1 192
K	VI	930.318	1 192
K		931.864	0 192
K	VI	938.287	2 192
K		940.839	1 192
K		946.534	0 192
K		961.499	1 192
K		963.538	0 192
K	VI	968.518*	5 192
K	VI	982.115	2 192
K		986.203	1 192
K		986.763	1 192
K		987.140	0 192
K		987.639	0 192
K		999.027	0 192
K	VI	1000.056	2 192
K		1003.293	0 192
K		1017.337	1 192
K		1020.566	0 192
K	V	1021.332	2 192
K		1022.202	0 192
K		1023.009	0 192
K	IV	1025.742	3 192
K	V	1027.174	2 192
K		1030.345	0 192
K		1032.768	2 192
K		1033.875	2 192
K		1602.2	0 659
K		1603.9	0 659
K		1634.6	1 659
K		1656.1	1 659
K		1659.7 *	4 659
K		1668.7 *	4 659
K		1669.3 *	4 659
K		1672.9	3 659
K		1675.1	2 659
K		1677.6	1 659
K		1692.0	0 659
K		1698.9 *	10 659
K		1703.5 *	9 659
K		1704.3	3 659
K		1709.4	3 659
K		1719.0	3 659
K		1721.6	3 659
K		1722.1	0 659
K		1723.7	1 659
K		1725.0	3 659
K		1727.6	0 659
K		1739.4	2 659
K		1741.2 *	4 659
K		1749.3 *	8 659
K		1752.4 *	4 659
K		1756.1	1 659
K		1757.7	0 659
K		1764.0	0 659
K		1765.4	3 659
K		1770.8 *	6 659
K		1772.2	0 659
K		1773.5 *	6 659
K		1778.2	0 659
K		1780.4	0 659
K		1787.4 *	4 659
K		1791.3	1 659
K		1798.6	1 659
K		1801.6	1 659
K		1808.0	0 659
K		1810.3	0 659
K		1824.8	1 659
K		1826.5	1 659
K		1828.5	0 659
K		1832.1	1 659
K		1837.1	2 659
K		1840.2	2 659
K		1843.9	2 659
K		1854.6	0 659
K		1856.7	1 659
K		1861.9	1 659
K		1866.5	1 659
K		1870.4	0 659
K		1874.2	1 659
K		1879.1	1 659
K		1887.9	2 659
K		1890.9	2 659
K		1892.7	2 659
K		1895.7	2 659

CALCIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA	I	I.P.	49304.80 K 2028.200 A
CA	II	I.P.	95748.0 K 1044.41 A
CA	III	I.P.	413127. K 242.056 A
CA	IV	I.P.	542200. K 184.4 A
CA	V	I.P.	680800. K 146.89 A
CA	VI	I.P.	K A
CA	VII	I.P.	1030000.

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA X	110.962	3	361	CA X	206.746	2	361
CA X	111.197	2	361	CA X	207.386		361
CA VIII	114.566	2	547	CA	207.789	1	192
CA VIII	115.107	4	547	CA	208.352	0	192
CA X	118.174*	2	361	CA	209.188	1	192
CA X	118.223*	4	361	CA	209.271	1	192
CA X	122.995	2	361	CA	209.723	3	192
CA X	123.733*	5	361	CA	214.008	0	192
CA IX	129.197	3	535	CA	214.140	1	192
CA IX	129.425	6	535	CA	216.005	1	192
CA IX	129.445	1	535	CA	217.019	1	192
CA IX	129.934*	10	535	CA	220.666	0	192
CA IX	129.970	1	535	CA	221.014	0	192
CA	135.597	1	192	CA	222.467	0	192
CA	141.623	0	192	CA	226.292	1	192
CA	141.947	0	192	CA	227.633	0	192
CA VIII	143.270	5	192, 547	CA	227.895	2	192
CA VIII	144.120*	8	192, 547	CA VI	228.628*	7	45, 192, 762
CA VIII	144.160*	3	547	CA VI	229.734*	7	45, 192, 762
CA X	151.932	3	178, 361, 762	CA VI	230.495*	5	45, 192, 762
CA X	153.012*	6	178, 361, 762	CA	231.530	1	192
CA IX	161.979	2	535	CA V	231.971	0	192
CA IX	162.371	4	535	CA	232.094	0	192
CA IX	163.229	6	535	CA VI	232.282	6	45, 192, 762
CA X	166.945*	8	178, 361, 762	CA VI	232.531	5	45, 192, 762
CA X	167.034*	10	178, 361, 762	CA	238.851	0	192
CA	170.207	0	192	CA	239.007	1	192
CA	175.963	1	192	CA VI	239.296	0	45, 762
CA VIII	177.889	4	192, 547	CA VI	239.535*	7	45, 192
CA VIII	178.247	4	192, 547	CA	240.040	2	192
CA	178.383	0	192	CA VI	240.721	6	45, 192, 762
CA	178.557	1	192	CA	240.777	2	192
CA VIII	178.641*	8	192, 547	CA	241.347	0	192
CA VIII	178.687*	6	547	CA	241.496	0	192
CA	178.929	0	192	CA VI	242.265	3	45
CA VIII	179.188	2	192, 547	CA III	242.384	3	192
CA VIII	179.510	4	192, 547	CA VI	242.592	3	45
CA VIII	182.713*	7	192, 547	CA VI	242.631	5	45
CA VIII	184.160*	10	547	CA	247.555	0	192
CA V	184.280	3	45	CA	247.706	2	192
CA IX	184.338	3	535	CA III	248.636	4	192
CA IX	184.377*	6	535	CA IV	249.408	1	192, 567, 762
CA V	184.415	1	45	CA VI	249.914	3	45
CA IX	184.433*	8	192, 535	CA IV	250.153	3	192, 762
CA V	185.102	2	45	CA VI	250.265	4	45, 192, 762
CA V	185.288	1	45	CA IV	251.354	3	192, 567, 762
CA V	185.540	2	45	CA VI	251.465	4	45, 192, 762
CA	186.605	1	192	CA VI	251.816	1	45
CA	187.515	1	192	CA	252.744	0	192
CA V	190.363	4	45	CA	252.943	0	192
CA V	190.457	5	45, 192	CA	253.621	0	192
CA V	190.558	3	45, 192	CA V	257.976	5	192, 567
CA V	191.439	3	45	CA V	258.251	3	192, 567
CA V	191.480	2	45	CA V	259.576	3	192, 567
CA V	191.801	2	45	CA V	259.856	3	192, 567
CA	192.757	1	192	CA V	259.978	3	192, 567
CA V	196.970	5	45, 192	CA V	260.446	3	192, 567
CA V	197.531	2	45	CA	263.800	1	192
CA V	197.648	2	45, 192	CA	264.348	0	192
CA	197.821	0	192	CA	264.482	0	192
CA	198.079	0	192	CA V	266.963	3	45
CA	198.401	0	192	CA V	267.772*	8	45, 192
CA	199.057	0	192	CA V	268.583	2	45
CA V	199.553	6	45, 192	CA V	270.305	6	192, 358, 567
CA V	199.890	3	45	CA V	270.494	3	192
CA V	200.512	5	45	CA V	270.570	2	45, 567
CA V	200.860	3	45	CA V	271.141	4	45
CA	201.811	0	192	CA V	271.440	1	45
CA VII	202.989	3	192, 547	CA V	272.265	5	192, 567
CA VII	203.700	4	547	CA V	272.336	3	192, 567
CA	203.896	1	192	CA VII	272.866	3	192
CA VII	204.001*	9	192, 547	CA V	272.982	4	192, 567
CA VII	204.377	2	547	CA	273.695	1	192
CA VII	204.756	0	192, 547	CA	274.461	0	192
CA VII	205.404*	6	192, 547, 762	CA	274.808	0	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VII	275.343	3	192	CA IV	340.286	4	192, 567, 762
CA V	280.992*	8	45, 192, 358	CA III	340.389	3	192
CA V	284.794	2	45, 192, 567	CA VI	340.528*	8	45, 192
CA V	286.965*	9	45, 192, 567	CA IV	341.284*	15	192, 359, 567
CA V	287.657	3	192, 567	CA IV	341.455	4	192, 567, 762
CA VI	291.976	1	192	CA IV	342.447	5	192, 567, 762
CA VII	295.171	3	192	CA IV	343.203	6	192, 359
CA VII	295.396	3	192	CA IV	343.444	8	192, 359, 567
CA IV	296.554	5	192, 359, 567	CA V	343.640	4	45
CA IV	296.958	6	192, 567	CA IV	343.933	5	192, 567, 762
CA IV	299.315	4	192, 359, 567	CA III	344.219	2	192
CA V	301.139	0	45	CA IV	344.958	6	192, 359, 567
CA III	301.741	4	192, 366	CA IV	345.130	4	192, 567, 762
CA III	304.330	3	192, 366	CA VI	346.335	2	192, 762
CA IV	304.910	3	192	CA VII	347.005	4	192, 762, 793
CA VII	307.563	2	192	CA VI	347.334	1	192
CA VII	313.478	2	192	CA VI	347.431	1	192
CA VII	314.609	2	192	CA VII	347.967	3	192, 762, 793
CA VII	315.702	2	192	CA VII	348.043	3	192
CA VI	316.115	3	192	CA VI	348.650	1	192, 762
CA VI	316.389	0	192, 762	CA VI	348.927	1	192
CA VI	316.947	3	192, 762	CA VII	348.996	1	192, 793
CA	317.287	0	192	CA VI	349.494	1	192
CA IV	318.093*	15	192, 359	CA VI	350.394	1	192
CA IV	318.392	4	192, 359	CA	350.715	0	192
CA	320.309	0	192	CA VII	351.368	3	192, 793
CA VI	320.445	2	192	CA VII	351.460	3	192
CA VI	321.110	1	192	CA VII	351.996	2	192, 793
CA IV	321.593*	10	359	CA V	352.915*	9	45, 192
CA V	322.166*	10	192	CA VIII	353.004	2	547
CA V	322.757	5	192, 567	CA VIII	353.699	4	547
CA V	323.223	6	192, 567	CA VIII	354.156	4	192, 793
CA V	324.110	3	192, 567	CA VII	354.404	4	192, 793
CA V	324.477	5	192	CA VIII	354.508*	9	547
CA V	325.020	3	192, 567	CA VIII	354.985*	8	547
CA V	325.282	5	192, 567	CA X	355.351	1	192, 762
CA VI	327.175	2	192	CA VIII	355.692	5	192, 547, 762
CA VI	327.806	4	192	CA V	356.246	5	45, 192
CA IV	328.577	1	192, 567, 762	CA	356.889	0	192
CA IV	329.116	5	192, 567, 762	CA VIII	357.347*	12	547
CA VI	329.298	3	192	CA VIII	357.497*	8	547
CA IV	329.391	5	192, 567, 762	CA III	357.973*	8	192
CA VII	330.000	5	192	CA VIII	357.983*	8	547
CA VII	330.403	5	547	CA VI	358.153	3	192
CA	330.809	1	192	CA VIII	359.364	5	192, 793
CA V	330.937	6	45, 192	CA VIII	359.640	2	192, 793
CA IV	331.442	4	192, 567, 762	CA VII	360.296	2	192
CA VII	331.650*	8	192, 547	CA VI	361.114	4	192
CA IV	331.991	5	192, 567, 762	CA VI	361.234	2	45, 192, 762
CA VII	332.184	3	547	CA	361.361	0	192
CA IV	332.531	5	192, 567, 762	CA VI	361.645	2	192
CA IV	332.808	3	192, 567, 762	CA	362.240	0	192
CA	333.137	0	192	CA VI	362.612	4	45, 192, 762
CA V	333.438	4	192	CA VI	362.788	1	192, 762
CA V	333.570	4	45, 359, 567	CA VII	363.395	2	192
CA V	333.857	3	192	CA VI	363.525	2	192, 762
CA VII	334.136*	10	192, 547, 567	CA	364.928	0	192
CA VII	334.357	5	547	CA	365.040	0	192
CA V	334.545	6	45	CA	365.432	0	192
CA VII	334.904	2	547	CA VII	366.203	3	192
CA V	335.344	5	192, 567	CA VII	367.011	3	192
CA IV	335.374*	25	359	CA VI	367.371	2	192
CA IV	336.555*	15	359	CA III	368.303	3	192
CA	337.020	1	192	CA III	368.422	1	192
CA	337.396	2	192	CA III	369.647	5	192
CA V	337.541	4	192, 567	CA VI	370.022*	7	45, 192, 762
CA V	338.056	5	192, 567	CA V	371.225	6	192, 567
CA	338.293	0	192	CA IX	371.899	5	192, 535
CA	338.508	0	192	CA V	372.904	6	192, 567, 762
CA IV	338.828	4	192	CA VI	373.418	5	45, 192, 762
CA IV	338.929	5	39, 359, 567	CA VI	373.700	3	192
CA VI	339.463	6	45, 192, 762	CA IX	373.802*	10	535
CA IV	339.800	5	192, 359	CA IX	373.979*	15	535
CA VI	339.940	4	45, 192, 762	CA VI	373.997*	7	45, 192, 762
CA VI	340.037	4	45	CA IV	374.744	5	192, 762

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA V	376.279	3	192, 567	CA	429.933	1	192
CA V	377.181	5	192	CA III	430.050	1	192
CA IX	378.089*	20	192, 535	CA	430.506	0	192
CA VII	378.258	3	192	CA VIII	432.880	6	192, 793
CA IX	378.382	2	192, 535	CA VII	433.609*	6	192, 598
CA IX	378.550	2	192, 535, 762	CA IV	434.570*	12	192, 762
CA VI	378.653	1	192	CA VIII	436.152	6	192, 793
CA VI	378.745	1	192	CA VII	436.907	0	192
CA V	379.138	2	192, 567, 762	CA IV	437.271	2	192, 567, 762
CA V	379.765	3	192	CA IV	437.773	5	192, 762
CA VI	380.003	1	192	CA IV	438.930	4	192, 762
CA V	380.396	5	192, 567	CA IV	439.700	5	192, 762
CA VI	381.464	2	192	CA	440.118	2	192
CA V	381.601	3	192	CA VIII	441.095	5	192, 793
CA VI	381.849	2	192	CA	441.356	0	192
CA	383.121	0	192	CA	441.812	0	192
CA VI	383.505	2	192	CA	442.014	0	192
CA VI	384.028	2	192	CA	442.607	1	192
CA VI	384.172	3	192	CA	442.755	0	192
CA	384.609	0	192	CA IV	443.821*	15	192, 567, 762
CA VI	385.091	2	192	CA	444.254	1	192
CA VI	385.941	1	192	CA IV	444.766	3	192
CA VI	386.106	1	192	CA IV	445.018	1	192, 762
CA VI	386.254	1	192, 762	CA	445.607	0	192
CA V	387.077	5	45, 192, 762	CA V	445.933	1	192
CA VII	387.349	2	192	CA V	446.036	1	192
CA VII	387.490	2	192	CA	446.972	0	192
CA VII	387.669	2	192	CA	447.662	0	192
CA VII	388.235	2	192	CA IV	450.565*	10	192, 567, 762
CA VII	388.685	3	192	CA	452.239	0	192
CA VII	389.195	1	192	CA	454.053	1	192
CA VI	389.495	0	192, 762	CA	454.553	1	192
CA	389.927	0	192	CA	455.341	0	192
CA VI	390.137	3	192, 762	CA	455.812	0	192
CA	391.051	0	192	CA IV	456.981	5	192, 567, 762
CA	391.237	0	192	CA	458.160	0	192
CA	391.747	0	192	CA	459.911	1	192
CA	392.014	0	192	CA	461.085	5	192
CA III	392.420	2	192	CA VIII	461.700*	5	192, 793
CA	392.841	0	192	CA VIII	462.587	3	192, 793
CA	393.024	0	192	CA	462.996	1	192
CA	393.289	0	192	CA	463.938	0	192
CA	393.618	0	192	CA	464.260	1	192
CA VII	396.044	2	192, 598	CA III	464.830	3	192
CA III	396.382	3	192	CA VIII	465.990	2	192, 793
CA	396.535	0	192	CA VII	466.227*	6	192
CA VII	396.770	3	192	CA	468.540	1	192
CA VI	396.917	2	45, 192, 762	CA VIII	471.067	3	192, 793
CA	397.178*	4	192	CA VIII	471.180	3	192, 793
CA	398.473	0	192	CA	476.177	2	192
CA VII	398.615	2	192, 598	CA V	476.606	2	192
CA VI	399.925	0	45, 192, 762	CA	477.300	1	192
CA VI	400.824	3	45, 192, 762	CA III	478.305	4	192
CA VII	402.551	2	192, 598	CA	480.345	2	192
CA III	403.732*	20	192, 366, 488	CA	480.471	3	192
CA VII	407.776	4	192, 793	CA	480.822	0	192
CA III	409.971*	18	192, 366, 488	CA	482.663	1	192
CA VII	410.499	5	192, 793	CA	482.769	2	192
CA X	411.690	3	361	CA	483.005	0	192
CA VII	412.175	2	192	CA	483.415	0	192
CA VII	414.663*	12	192, 793	CA	483.963	0	192
CA X	419.778	3	178, 192, 361	CA	484.368*	3	192
CA VI	420.191	1	192, 762	CA	485.350	0	192
CA X	420.493	1	361	CA	485.507	0	192
CA	420.700	0	192	CA	485.636*	3	192
CA VII	421.718	1	192	CA	486.160*	3	192
CA	421.935	0	192	CA VII	486.838	2	192
CA	422.088	0	192	CA VII	488.465	1	192
CA	422.463	0	192	CA VII	489.700	1	192
CA	422.661	0	192	CA III	490.546	2	39, 192, 488
CA V	425.000*	15	192	CA VII	491.097	1	192
CA	427.655	1	192	CA VII	491.370	2	192
CA VIII	428.112	6	192, 793	CA	495.676	0	192
CA VII	428.819	1	192	CA	495.968	0	192
CA	429.744	1	192	CA	496.336	0	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA IX	497.986	3	192, 535	CA VI	579.775	2	192
CA	500.812	0	192	CA VI	580.654	0	192
CA	502.120	0	192	CA VI	581.466	3	192
CA IX	503.261	2	192, 535	CA	581.789	0	192
CA VII	504.591	3	192	CA VIII	582.844	4	192, 793
CA VI	505.199*	8	192	CA	583.975	0	192
CA IX	506.163	4	192, 535	CA	584.760	0	192
CA IX	507.105	0	535	CA III	586.880	2	192
CA VI	509.293	2	192, 762	CA III	587.311	3	192
CA VII	510.435	3	192	CA VI	587.604	2	192
CA IX	512.060	0	192, 535	CA VI	587.872	1	192
CA	514.498	1	192	CA VI	590.396	3	192
CA IX	515.576	1	535	CA III	591.449	3	192
CA	520.797	0	192	CA	591.638	0	192
CA III	528.286*	8	192	CA V	593.404	1	192
CA V	528.746	3	192	CA V	593.472	1	192
CA	529.346	0	192	CA V	594.239	1	192
CA	529.651	1	192	CA III	594.640	3	192
CA V	530.303	6	192	CA III	596.223	2	192
CA	530.501	0	192	CA VIII	596.944	4	192, 793
CA	531.144	0	192	CA	597.781	0	192
CA III	534.715	4	192	CA VI	600.917	6	192, 762
CA	535.027	0	192	CA VI	601.700	5	192, 762
CA IV	535.647	4	192	CA VI	602.389	0	192, 762
CA	535.913	0	192	CA	602.664	0	192
CA	536.008	0	192	CA III	603.622	3	192
CA VI	536.132	4	192, 762	CA	604.580	2	192
CA IV	536.531	2	192	CA VII	604.766	1	192
CA IV	536.790	2	192	CA VII	605.824	1	192
CA IV	537.004	2	192	CA III	606.333	2	192
CA	537.484	2	192	CA III	607.069	3	192
CA V	537.613	6	192, 762	CA III	608.895	3	192
CA IV	538.648	3	192	CA III	610.740	3	192
CA IV	538.967	2	192	CA	611.186	1	192
CA VII	539.382	2	192, 793	CA III	612.062	5	192
CA V	542.290*	10	192	CA VI	614.015	3	192
CA	542.842*	3	192	CA VI	617.517	4	192
CA VII	544.132	3	192, 793	CA	618.080	0	192
CA VII	544.247	2	192	CA	618.301	0	192
CA III	545.091	2	192	CA	620.289	2	192
CA	546.301	0	192	CA	620.566	1	192
CA	546.535	0	192	CA III	621.279	3	192
CA	547.393	0	192	CA III	623.749	1	192
CA	547.620	2	192	CA VII	624.391	2	547
CA VI	547.898	3	192	CA VII	626.940	1	192
CA	548.920	2	192	CA III	629.355	4	192
CA V	549.070	3	192	CA VI	629.594	2	45, 192, 762
CA III	549.201	4	192	CA VII	630.533	3	192, 547
CA III	550.004	3	192	CA VII	630.772	1	547
CA VII	550.188*	6	192	CA III	633.187	5	192
CA V	551.103	2	192	CA VI	633.815	2	45
CA VII	551.448*	6	192, 793	CA IV	635.318	8	192
CA	552.005*	4	192	CA V	637.928*	8	192, 567
CA III	554.615	3	192	CA VII	639.153	5	192, 547
CA V	555.482	3	192	CA VII	640.357	1	547
CA III	556.215	2	192	CA VI	641.883	2	45
CA III	556.583	3	192	CA	642.812	2	192
CA III	557.112	3	192	CA V	643.118	6	192, 567
CA X	557.740*	4	361	CA V	646.570*	8	192, 567
CA V	558.602*	10	169, 192	CA VII	647.292	2	192
CA III	561.518	3	192	CA V	647.876	5	192, 567
CA III	561.670	3	192	CA V	651.550	5	192, 567
CA V	562.250	3	192	CA VII	651.992	0	192
CA VI	564.275	2	192	CA VII	652.634	0	192
CA IV	565.463	3	192, 762	CA III	653.720	4	192
CA III	569.122	1	192	CA IV	656.038*	15	192, 359, 567
CA III	570.291	2	192	CA V	656.763	6	192, 567
CA	571.873	0	192	CA III	659.694	1	192
CA III	572.691	4	192	CA IV	665.96	6	39
CA X	574.007	3	178, 192, 361	CA	667.126	2	192
CA III	574.398	3	192	CA	668.462	1	192
CA III	575.580*	6	192	CA	668.701	1	192
CA	576.662	1	192	CA IV	669.725*	10	192, 359, 567
CA	578.170	0	192	CA V	671.365	6	192
CA VI	578.732	4	192	CA III	672.083	1	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VI	672.315	0	192, 762	CA IV	775.526	3	192
CA VII	673.367	1	192	CA VI	775.966	3	192
CA VII	673.885	1	192	CA VI	777.508	1	192
CA VI	674.046	1	192, 762	CA VI	778.718	1	192
CA VI	674.278	2	192, 762	CA V	779.824	3	192
CA VII	676.563	3	192	CA V	779.919	4	192
CA V	676.775	1	192	CA	780.116	1	192
CA	677.820	1	192	CA	781.350	0	192
CA	679.240	0	192	CA VII	800.652	3	192
CA VII	681.363	3	192	CA V	803.325	1	192
CA III	681.908	4	192	CA V	810.937	4	192
CA III	683.149	1	192	CA VI	811.480	1	192
CA	683.581	0	192	CA VII	812.967	2	192
CA VII	684.383	2	192	CA VII	813.379	0	192
CA VII	684.743	5	192	CA VI	816.805	2	192
CA VI	685.807	4	192	CA VI	817.058	2	192
CA III	686.190	2	192	CA V	821.583	1	192
CA VII	687.985	2	192	CA VII	823.395	0	192
CA VII	688.223	1	192	CA VII	828.451	2	192
CA III	688.907	3	192	CA III	831.425	1	192
CA VI	689.539	3	192	CA III	840.807	1	192
CA VII	693.824	2	192	CA III	840.921	3	192
CA III	695.824	4	192	CA III	841.385	1	192
CA III	696.206	3	192	CA V	842.950	3	192
CA VII	697.281	2	192	CA III	846.611	3	192
CA VII	697.809	2	192	CA III	850.966	3	192
CA VII	697.972	2	192	CA VI	854.923	3	192
CA VII	698.988	0	192	CA	855.056	0	192
CA VII	700.695	0	192	CA III	856.635	4	192
CA VII	700.793	0	192	CA III	856.791	4	192
CA III	701.370	1	192	CA IV	858.855	3	192
CA VII	709.001	2	192	CA VI	860.827	2	192
CA VII	709.932	2	192	CA	860.983	1	192
CA VII	710.671	2	192	CA	863.011	0	192
CA VII	711.390	2	192	CA	863.984	0	192
CA VII	713.793	3	192	CA III	864.695	4	192
CA VII	713.972	0	192	CA III	869.981	0	192
CA VII	714.176	3	192	CA	871.036	0	192
CA VII	714.678	3	192	CA	873.834	0	192
CA VII	714.693	2	192	CA III	883.159	3	192
CA	720.946	0	192	CA	885.553	0	192
CA VII	721.514	1	192	CA	886.216	0	192
CA VII	722.456	2	192	CA	887.176	0	192
CA	722.752	0	192	CA	889.679	0	192
CA VI	724.091	0	192	CA	890.059	0	192
CA	724.470	0	192	CA III	890.892	2	192
CA	725.088	1	192	CA IV	892.671	3	192
CA VII	727.185	1	192	CA III	894.351	4	192
CA	727.529	0	192	CA III	897.972	1	192
CA V	727.646	1	192	CA	905.245	1	192
CA V	730.257	5	192	CA III	906.615	2	192
CA VII	731.286	5	192	CA	910.195	0	192
CA	732.883	0	192	CA	911.383	0	192
CA	733.327	0	192	CA	912.979	0	192
CA	733.967	0	192	CA	915.972	0	192
CA	736.738	1	192	CA VI	916.682	2	192
CA III	740.555	3	192	CA III	916.917	2	192
CA III	746.246	1	192	CA III	917.278	2	192
CA V	748.409	3	192	CA	918.768	0	192
CA	751.897	0	192	CA VII	921.956	2	192
CA III	758.465	1	192	CA	922.474	0	192
CA VI	763.344	2	192, 762	CA VII	923.179	3	192
CA VI	764.358	3	192, 762	CA VII	924.249	1	192
CA VI	765.154	6	192	CA	926.193	0	192
CA VI	766.527	1	192, 762	CA	927.428	0	192
CA VI	767.861	0	192	CA	934.329	0	192
CA	769.232	0	192	CA	934.875	1	192
CA	769.602	1	192	CA	938.699	1	192
CA VI	770.928	1	192	CA	940.398	0	192
CA	771.048	0	192	CA	946.449	0	192
CA VI	772.389	1	192	CA	948.309	0	192
CA III	772.641	2	192	CA	948.699	0	192
CA V	774.088	5	192	CA	950.817	0	192
CA V	774.354	3	192	CA VII	954.270	3	192
CA VI	774.532	3	192	CA VII	958.135	1	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA V	962.896	2	192	CA III	1317.60	2	39
CA	964.176	0	192	CA III	1334.94	3	39
CA	964.771	0	192	CA II	1342.07	1	186, 488, 648
CA V	966.466	6	192	CA III	1355.37	1	39
CA V	968.236	3	192	CA III	1359.81	1	39
CA VI	969.652	6	192	CA II	1369.1 *	3	242, 539, 648
CA VII	970.887	2	192	CA II	1370.6 *	3	242, 539, 648
CA V	973.437*	6	192	CA II	1377.9	2	335
CA VI	975.055	3	192	CA II	1379.0	3	335
CA V	975.825	4	192	CA III	1385.39	2	39
CA III	977.544	2	192	CA	1393.4	8	411
CA	981.489	0	192	CA	1400.7	4	335
CA VII	983.432	4	192	CA	1402.9	10	411
CA III	984.935	4	192	CA	1414.8	1	411
CA III	987.336	5	192	CA II	1415.8	1	335
CA V	987.680	3	192	CA II	1432.5	1	335
CA VII	987.867	3	192	CA II	1433.1		186, 488, 648
CA III	988.131	1	192	CA II	1434.3		186, 488, 640
CA VII	989.973	3	192	CA	1454.3		484
CA VI	992.740	1	192	CA III	1459.87	3	39
CA IV	994.311	6	192	CA III	1463.41	4	39
CA V	994.946	3	192	CA	1475.5	5	335
CA IV	997.579	7	192	CA III	1480.55	2	39
CA III	998.397	3	192	CA III	1484.92	4	39
CA V	1000.310*	6	192	CA III	1496.92	7	39
CA V	1001.544	3	192	CA III	1506.94	3	39
CA VII	1002.398	5	192	CA III	1528.89		39
CA VII	1003.611	2	192	CA	1534.1	1	411
CA	1004.689	0	192	CA	1545.7	3	411
CA	1004.967	0	192	CA II	1553.5 *	4	186, 488, 648
CA	1005.270	0	192	CA II	1555.1 *	4	186, 488, 648
CA III	1008.470	0	192	CA III	1555.48	4	39
CA	1008.757	2	192	CA III	1562.50 *	6	39, 488
CA V	1009.638	3	192	CA III	1571.31	5	39
CA VI	1010.852	0	192	CA III	1584.82	0	39
CA VI	1011.049	0	192	CA III	1586.19	4	39
CA V	1012.613	3	192	CA II	1592.9	6	335
CA V	1014.162	4	192	CA III	1595.24	1	39
CA III	1014.998	3	192	CA	1604.5	1	411
CA VI	1018.346	3	192	CA	1627.0	1	411
CA III	1019.371	2	192	CA II	1642.802		186
CA VII	1019.799	3	192	CA II	1643.770		186
CA V	1021.139	3	192	CA II	1644.25	0	186, 488, 648
CA VI	1021.508	4	192	CA II	1649.96	2	186, 488, 648
CA VII	1022.010	2	192	CA II	1652.02	1	186, 488, 648
CA IV	1023.820	4	192	CA	1667.7	30	411
CA IV	1024.339	5	192	CA II	1674.1	1	186, 648
CA VII	1027.110	3	192	CA II	1680.051		186
CA IV	1027.309	5	192	CA II	1680.5	1	186, 648
CA VII	1028.366	2	192	CA III	1688.81	1	39
CA III	1028.560	4	192	CA II	1692.4	1	186, 648
CA IV	1029.566	3	192	CA III	1698.95	1	39
CA IV	1030.273	4	192	CA	1708.1	1	411
CA III	1031.760	4	192	CA III	1716.23	1	39
CA VI	1032.612	2	192	CA III	1726.88	1	39
CA VII	1034.288	2	192	CA III	1738.56	3	39
CA III	1034.848	3	192	CA III	1744.61	3	39
CA III	1035.366	4	192	CA	1751.5	1	411
CA	1084.6		484	CA III	1762.14	3	39
CA	1129.5	1	411	CA III	1773.29	3	39
CA	1147.5	1	411	CA III	1777.93	0	39
CA	1149.9	1	411	CA III	1783.92	4	39
CA	1184.4	1	411	CA III	1794.31	4	39
CA	1229.5	1	411	CA III	1800.24	4	39
CA	1241.6	1	411	CA II	1807.74	1	186, 488, 648
CA	1247.0	2	411	CA III	1812.17	5	39
CA	1254.3	2	335	CA II	1815.04	1	186, 488, 648
CA	1264.6	2	411	CA	1819.7	1	411
CA III	1270.54	2	39	CA	1822.0	1	411
CA III	1278.38	2	39	CA III	1828.43	1	39
CA III	1281.50	2	39	CA	1830.5	1	411
CA	1286.7		484	CA II	1838.08	7	186, 488, 648
CA	1291.6	2	411	CA II	1840.21 *	8	186, 488, 648
CA III	1297.96	3	39	CA II	1843.6 *	1	186, 488, 648
CA III	1310.58	1	39	CA III	1849.51	2	39

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA II	1851.10	2	186, 488
CA III	1854.72 *	6	39, 488
CA III	1860.50	3	39
CA III	1870.28 *	6	39, 488
CA III	1872.39	5	39
CA III	1892.92	1	39
CA III	1894.17	3	39
CA III	1896.94	0	39
CA III	1905.98	0	39
CA III	1907.46	2	39
CA III	1910.17	4	39
CA III	1935.79	3	39
CA III	1939.72	4	39
CA III	1943.12 *	6	39, 488
CA III	1948.31	5	39
CA III	1952.16	3	39
CA III	1953.06	4	39
CA III	1958.18	2	39
CA III	1964.70	5	39
CA III	1968.03	5	39
CA III	1972.01	1	39
CA III	1978.63	3	39
CA III	1989.61	2	39

SCANDIUM

SC I	I.P.	52750.	K	1891.	A
SC II	I.P.	103240.	K	968.62	A
SC III	I.P.	199700.	K	500.8	A
SC IV	I.P.	596300.	K	167.7	A
SC V	I.P.	741000.	K	135.	A
SC VI	I.P.	896000.	K	112.	A
SC VII	I.P.		K		A
SC VIII	I.P.	1280000.	K	78.1	A
SC IX	I.P.	1456000.	K	68.68	A
SC X	I.P.	1819530.	K	54.959	A
SC XI	I.P.	2015030.	K	49.627	A
SC XII	I.P.	5539700.	K	18.052	A
SC XII		26.544*		189	
SC XII		26.920*		189	
SC XII		27.260*		189	
SC XII		30.480*		189	
SC XII		30.816*		189	
SC XI		62.132	0	17	
SC		62.247	0	17	
SC		62.272	0	17	
SC		62.556	00	17	
SC XI		64.70	00	17	
SC XI		64.98	0	17	
SC		66.850	00	17	
SC XI		69.252	0	17	
SC XI		69.575	1	17	
SC XI		70.445	2	17	
SC XI		70.509	1	17	
SC		70.528	00	17	
SC XI		71.887	0	17	
SC		71.942	0	17	
SC		75.02	0	17	
SC		75.097	00	17	
SC		75.170	0	17	
SC		75.922	00	17	
SC X		76.343	1	17	
SC XI		77.917	0	17	

SC XI		78.509	1	17	
SC		78.584	0	17	
SC XI		78.917	3	17	
SC		81.847	0	17	
SC X		83.760	0	17	
SC X		83.901	1	17	
SC XI		83.958	0	17	
SC		84.087	0	17	
SC		84.165	00	17	
SC X		84.204	2	17	
SC		84.321	00	17	
SC XI		84.351	0	17	
SC XI		84.393	0	17	
SC XI		84.433	1	17	
SC		84.734	00	17	
SC		84.777	1	17	
SC		84.820	00	17	
SC		85.635	0	17	
SC		85.648	00	17	
SC		85.735	00	17	
SC		85.793	0	17	
SC		85.860	00	17	
SC		89.736	0	17	
SC		90.57	0	17	
SC		92.48	00	17	
SC		92.507	00	17	
SC		93.393	1	17	
SC		93.889	1	17	
SC XI		94.888*	6	17, 178	
SC X		95.022	0	17	
SC X		95.052	0	17	
SC X		95.09	0	17	
SC XI		95.117*	5	17, 178	
SC		96.231	0	17	
SC		97.309	0	17	
SC XI		97.777	3	17, 361	
SC XI		97.830	4	17, 361	
SC		97.915	0	17	
SC		98.010	0	17	
SC		98.180	2	17	
SC		98.192	1	17	
SC		98.210	0	17	
SC		98.260	00	17	
SC		98.323	3	17	
SC		98.363	0	17	
SC		98.889	3	17	
SC		98.911	1	17	
SC		100.676	1	17	
SC		100.739	1	17	
SC		100.781	1	17	
SC		100.924	1	17	
SC		101.918	2	17	
SC X		101.978*	6	17	
SC		102.047	0	17	
SC		102.251	3	17	
SC		102.653	1	17	
SC		102.777	0	17	
SC		102.835	2	17	
SC		102.868	1	17	
SC		102.924	0	17	
SC		102.975	1	17	
SC		103.232	0	17	
SC		103.392	0	17	
SC		103.940	0	17	
SC XI		104.142	0	17	
SC XI		104.219	0	17	
SC XI		104.435*	5	17, 178, 361.	
SC		104.592	3	17	
SC		104.658	1	17	
SC		104.910	0	17	
SC XI		105.140*	6	17, 178, 361	
SC XI		105.170*	2	17	
SC		105.578	3	17	
SC		106.175	00	17	
SC		106.273	0	17	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUM	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	106.488	0	17	SC	XI	128.247*	5 17, 178
SC	106.557	1	17	SC		128.599	0 17
SC	106.605	0	17	SC		128.722	0 17
SC	106.655	1	17	SC		128.780	0 17
SC	107.231	0	17	SC		129.283	1 17
SC				SC			
SC	107.273	1	17	SC		129.398	0 17
SC	107.339	0	17	SC		129.454	2 17
SC	107.929	2	17	SC		130.213	2 17
SC	108.026	1	17	SC		130.304	2 17
SC	108.296	1	17	SC		130.558	1 17
SC				SC			
SC	X	109.072	1 17	SC		130.642	3 17
SC	X	109.202	0 17	SC		130.683	1 17
SC	X	109.227	1 17	SC		130.886	2 17
SC	X	109.285	3 17	SC		130.960	3 17
SC	X	109.307	00 17	SC		131.068	3 17
SC				SC			
SC		109.609	2 17	SC		131.201	0 17
SC	X	109.765*	4 17	SC		131.354	1 17
SC	X	109.805*	2 17	SC		131.951	00 17
SC		109.897	3 17	SC		132.440	0 17
SC		110.080	0 17	SC		132.714	4 17
SC				SC			
SC		110.306	1 17	SC		133.882	3 17
SC		110.498	3 17	SC	X	134.767*	3 17, 535
SC		110.718	1 17	SC		134.794	3 17
SC		110.920	2 17	SC		134.971	2 17
SC		111.402	2 17	SC	X	135.128*	4 17, 535
SC				SC			
SC		111.711	2 17	SC		135.744	0 17
SC		111.757	1 17	SC		135.829	0 17
SC		111.937	0 17	SC	X	135.921*	5 17, 535*
SC		112.028	0 17	SC		137.352	1 17
SC		112.210	3 17	SC		137.418	1 17
SC				SC			
SC		112.337	1 17	SC		137.810	3 17
SC		112.434	1 17	SC		137.870	2 17
SC		112.544	3 17	SC	XI	138.283*	5 17, 178
SC		112.677	2 17	SC	XI	138.380*	5 17, 178, 361
SC		112.895	0 17	SC		138.662	2 17
SC				SC			
SC		113.014	3 17	SC		139.319	1 17
SC		113.767	1 17	SC		139.980	1 17
SC		113.882	0 17	SC		141.197	0 17
SC		113.937	2 17	SC		142.393	0 17
SC		116.069	0 17	SC		142.598	0 17
SC				SC			
SC		116.158	3 17	SC		142.836	2 17
SC		116.770	2 17	SC		142.946	0 17
SC		117.166	0 17	SC		143.120	2 17
SC		117.373	1 17	SC		143.324	2 17
SC		118.048	2 17	SC		143.393	2 17
SC				SC			
SC		118.179	1 17	SC		143.487	1 17
SC		118.297	3 17	SC		145.035	2 17
SC		118.552	4 17	SC	IX	146.628	3 17
SC		118.616	3 17	SC		146.762	00 17
SC	X	119.049*	4 17	SC		146.825	3 17
SC				SC			
SC		119.332	1 17	SC	IX	146.954	4 17
SC	IX	119.444*	4 17	SC	IX	147.310	3 17
SC		119.519	0 17	SC		147.346	2 17
SC	IX	120.236*	5 17	SC		147.740	1 17
SC		120.324	0 17	SC	IX	147.834	2 17
SC				SC			
SC		120.403	0 17	SC	IX	148.103	2 17
SC		120.515	0 17	SC		148.249	1 17
SC		120.881	1 17	SC		148.287	2 17
SC		121.022	2 17	SC		148.434	0 17
SC		121.280	0 17	SC		148.536	1 17
SC				SC			
SC		122.676	4 17	SC		148.580	1 17
SC		122.741	1 17	SC		148.743	1 17
SC		123.000	1 17	SC		148.805	2 17
SC		123.223	2 17	SC		148.927	0 17
SC		124.464	1 17	SC		149.357	1 17
SC				SC			
SC		124.796	0 17	SC	IX	150.09 *	5 17
SC		124.960	0 17	SC	X	150.900	3 17, 535
SC		125.610	1 17	SC	X	150.939*	4 17, 535
SC	XI	127.156*	5 17, 178	SC	X	150.995*	5 17, 535
SC		127.529	0 17	SC		151.215	0 17
SC				SC			
SC		127.743	0 17	SC	IX	151.401	4 17
SC		127.844	2 17	SC		151.780	0 17
SC		127.985	0 17	SC		151.946	0 17
SC		128.035	0 17	SC		152.431	0 17
SC		128.088	1 17	SC		152.586	0 17

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	152.681	2	17	SC VII	185.532	3	17, 358
SC	153.172	3	17	SC VII	185.675	1	358
SC	153.687	0	17	SC VII	185.808	3	17, 358
SC	153.785	0	17	SC VII	190.644*	4	17, 358
SC	153.889	0	17	SC VII	191.602*	8	358
SC	154.006	2	17	SC VII	192.607*	8	358
SC	154.360	2	17	SC VII	193.004	3	17, 358
SC	154.507	1	17	SC	193.128	1	17
SC	154.643	3	17	SC	193.332	2	17
SC	154.894	2	17	SC	194.813	0	17
SC	157.173	0	17	SC	194.862	00	17
SC	158.377	0	17	SC	194.905	0	17
SC	160.337	2	17	SC	194.942	0	17
SC	160.387	2	17	SC	195.400	0	17
SC	160.637	3	17	SC	195.471	00	17
SC	160.725	3	17	SC	197.826	0	17
SC	160.833	0	17	SC VII	197.875	0	17, 358
SC	160.949	2	17	SC VII	198.232	2	17, 358
SC	161.162	2	17	SC	198.679	0	17
SC VIII	161.353	3	17	SC	198.776	0	17
SC	161.908	2	17	SC VII	199.166	0	17, 358
SC	162.072	0	17	SC VII	199.522	00	17, 358
SC	162.172	2	17	SC VI	200.810	1	358
SC	162.236	2	17	SC	201.476	0	17
SC	163.006	3	17	SC	201.672	0	17
SC	163.416	4	17	SC VI	202.638	0	358
SC	163.917	0	17	SC VI	202.921	2	17, 358
SC	164.444	1	17	SC	203.164	0	17
SC VIII	164.772*	3	17, 360	SC VI	203.216	0	17, 358
SC VIII	165.395*	3	17, 360	SC	204.128	0	17
SC VIII	165.654*	4	17, 360	SC VI	204.310	1	17, 358
SC VIII	166.022*	3	17, 360	SC VI	204.610	0	17, 358
SC VIII	166.317*	3	17, 360	SC VI	204.719	2	17, 358
SC VIII	166.916*	3	17, 360	SC	204.99	0	17
SC	166.957	2	17	SC VI	205.072	1	17, 358
SC	167.010	0	17	SC	205.899	0	17
SC	168.165	1	17	SC	206.718	1	17
SC XI	168.396	4	17, 178	SC	206.754	1	17
SC	168.458	0	17	SC	206.826	1	17
SC XI	168.942	2	17, 178	SC	207.499	0	17
SC	169.105	1	17	SC VI	209.195	1	17, 358
SC VIII	169.451	2	17	SC VI	209.821	2	17, 358
SC	169.759	4	17	SC	209.979	1	17
SC	170.105	1	17	SC	210.523	0	17, 358
SC	170.401	0	17	SC	210.550	2	17
SC	170.735	1	17	SC	210.583	1	17
SC	171.298	0	17	SC	211.257	1	17
SC	171.530	2	17	SC VI	211.416	4	17, 358
SC	171.686	0	17	SC	211.505	2	17
SC	171.823	1	17	SC VI	211.612	2	17, 358
SC	172.335	0	17	SC VI	211.696	0	358
SC	173.346	1	17	SC	211.725	2	17
SC	173.477	0	17	SC	212.022	00	17
SC	173.771	3	17	SC	212.121	0	17, 358
SC	173.858	4	17	SC	212.891	1	17
SC	174.785	0	17	SC VI	213.118	2	17, 358
SC	175.918	2	17	SC VI	213.192	1	17, 358
SC	176.325	3	17	SC VI	213.702	1	17, 358
SC	177.686	2	17	SC	213.772	0	17
SC	178.821	2	17	SC	213.830	00	17
SC	180.032	0	17	SC	213.925	00	17
SC	180.187	1	17	SC	215.317	2	366
SC	180.260	2	17	SC IV	215.522	1	17, 488
SC	181.384	1	17	SC	217.047	0	17
SC	182.392	2	17	SC IV	217.189	0	17, 488
SC	182.618	1	17	SC	218.451	0	17
SC VII	182.743	1	17	SC VI	218.837	4	17, 358
SC	182.987*	4	17, 358	SC	219.095	0	17
SC	183.593	4	17	SC VI	221.204	3	17, 358
SC	183.626	1	17	SC VI	222.844	3	358
SC	183.673	1	17	SC VI	222.850	3	17, 358
SC VII	183.96 *	5	17	SC VI	223.408	1	17, 358
SC	184.344	0	17	SC V	228.565	3	17, 359
SC VII	184.614	2	17, 358	SC V	230.848	1	17, 359
SC	185.219	1	17	SC	235.368	1	17

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	239.742	0	17	SC	301.426	4	17
SC	239.796	0	17	SC	301.820	5	17
SC	241.209	1	17	SC	302.099	1	17
SC	243.823	0	17, 359	SC	302.436	1	17
SC	243.872	5	17, 359	SC	304.456	1	17
SC	244.161	0	17	SC	304.887	2	17
SC	244.239	1	17	SC	304.986	1	17
SC	244.282	1	17	SC	305.260	1	17
SC	246.424	4	17, 359	SC	307.083*	6	17
SC	250.978	4	17, 359	SC	307.320	2	17
SC	252.846	5	17, 359	SC	307.447	0	17
SC	253.733	5	17, 359	SC	307.506	0	17
SC	255.379	1	359	SC	308.180*	6	17
SC	255.636	3	17, 359	SC	308.456	1	17
SC	256.895	0	17	SC	308.895	3	17
SC	257.157	2	17, 359	SC	309.011	1	17
SC	258.059	1	359	SC	309.161	5	17
SC	258.238	2	359	SC	310.043	1	17, 360
SC	258.808	0	17	SC	310.59	1	17
SC	259.075	1	17	SC	311.117	1	17
SC	259.087	1	17	SC	311.332	1	17, 360
SC	260.054	1	359	SC	311.947	4	17
SC	266.800	2	17	SC	312.100	1	17
SC	270.689	0	17	SC	313.252	1	17, 360
SC	277.809	2	17	SC	314.049*	4	17
SC	277.943	3	17	SC	314.53	2	17
SC	280.997	4	17	SC	315.163	1	17, 360
SC	281.327	2	17	SC	315.420*	12	360
SC	282.209*	7	17	SC	315.786	3	17
SC	282.497*	6	17	SC	315.890	2	17
SC	282.587	3	17	SC	316.181	1	17
SC	283.911*	9	17	SC	316.567	2	17
SC	283.99	0	17	SC	317.437	4	17
SC	284.263*	9	17	SC	317.659	0	17
SC	284.450*	8	17	SC	317.954	0	17
SC	284.884*	6	17	SC	318.425	1	17, 360
SC	285.191*	8	17	SC	318.615*	8	360
SC	285.966	3	17	SC	320.406	1	17
SC	286.078	3	17	SC	323.538	1	17
SC	286.677	0	17	SC	323.828	1	17
SC	286.927*	10	17	SC	324.199*	12	360
SC	287.48	0	17	SC	324.632	1	17, 360
SC	287.55	0	17	SC	324.723	1	17
SC	287.873	4	17	SC	325.121	2	17
SC	288.104	3	17	SC	325.934	1	17
SC	288.286	6	17	SC	326.030	1	17
SC	289.029	1	17	SC	326.791	4	17
SC	289.42	0	17	SC	329.640	3	17
SC	289.589*	9	17	SC	330.400	1	17
SC	289.850*	9	17	SC	331.244	2	17
SC	290.232*	8	17	SC	331.309	2	17
SC	290.487	3	17	SC	333.386	2	17
SC	290.700*	6	17	SC	333.521	2	17
SC	291.932*	10	17	SC	334.138*	5	17
SC	292.344*	6	17	SC	334.52	1	17
SC	293.248	8	17, 488	SC	335.815	2	535
SC	294.292*	7	17	SC	336.654	3	17
SC	295.478*	9	17	SC	336.881	2	17
SC	296.166	4	17	SC	337.245	1	17
SC	296.316	5	17	SC	337.888*	5	17, 535
SC	296.539	4	17	SC	338.115	1	535
SC	297.269*	7	17	SC	338.447	2	17
SC	297.637	2	17	SC	338.596	2	17
SC	297.71	1	17	SC	339.52	2	17
SC	298.027	6	366	SC	340.755	2	17
SC	298.194*	8	17	SC	341.62	2	17
SC	298.428*	8	17, 488	SC	342.509*	10	535
SC	298.557*	6	17	SC	342.877	1	535
SC	298.66	2	17	SC	343.100	1	535
SC	299.041*	9	17	SC	344.457	1	17
SC	300.004	7	17	SC	345.985	0	17
SC	300.677	3	17	SC	353.845	2	17
SC	300.817	2	17	SC	354.350	1	17
SC	301.233	2	17	SC	354.884	3	17
SC	301.301	3	17	SC	355.883	1	17

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	357.490	0	17	SC	508.533	1	17
SC VIII	358.107	2	547	SC	515.152	3	17
SC	358.522	5	17	SC	518.123	2	17
SC	360.605	0	17	SC	520.184	0	17
SC VIII	362.308	4	547	SC XI	522.863	0	17, 361
SC VIII	367.083	5	360	SC	523.490	1	17
SC VIII	368.088	1	17	SC	523.652	1	17
SC	370.034	4	17	SC	526.644	0	17
SC VIII	371.184	3	17, 360	SC	527.006	1	17
SC IV	372.415	3	17	SC	529.161	3	17
SC XI	372.507	3	361	SC	535.665	1	17
SC VIII	374.658	25	360	SC	536.559	0	17
SC	375.048	4	17	SC IX	537.612	3	17
SC VIII	375.705	3	17	SC	538.654	2	17
SC IV	376.449	3	17	SC VII	558.023	2	358
SC	376.628	2	17	SC	558.483	0	17
SC	378.677	1	17	SC VI	561.176	3	17, 358
SC XI	381.151	7	361	SC VII	562.547	3	358
SC	381.327	0	17	SC VII	563.401	2	17
SC	381.540	1	17	SC VI	566.790	1	17, 358
SC	382.650	2	17	SC	568.088	2	17
SC IX	385.883		360	SC	568.216	0	17
SC	386.816	1	17	SC VII	568.329	1	17
SC	386.967	0	17	SC	568.641	2	17
SC	387.906	0	17	SC VI	570.307	3	17, 358
SC	388.005	0	17	SC VII	571.256*	4	358
SC	388.696	0	17	SC VI	571.937	1	17, 358
SC	388.682	2	17	SC V	573.356*	10	17, 359
SC	389.772	0	17	SC VI	575.580	3	17, 358
SC VIII	389.892*	12	17, 547	SC	580.102	1	17
SC IX	390.888*	8	360	SC VI	581.404	1	17, 358
SC IX	394.652*	12	17, 360	SC	582.811	1	17
SC	394.955	2	17	SC	582.946	2	17
SC	395.317	4	17	SC	585.092	1	17
SC	396.440	4	17	SC	586.643	1	17
SC	398.939	2	17	SC V	587.935*	6	17, 359
SC	399.501	2	17	SC	592.129	2	17
SC	399.602	0	17	SC	592.841	1	17
SC	399.772	2	17	SC	603.269	0	17
SC IX	399.973	2	17, 360	SC	604.807	0	17
SC	405.839	0	17	SC	620.745	1	17
SC IX	415.963	2	17, 360	SC III	627.082*	1	17
SC X	422.850*	4	17	SC III	627.858*	2	17
SC	425.892	2	17	SC	628.111	0	17
SC IX	426.252	2	17, 360	SC	628.938	0	17
SC	430.615	1	17	SC	635.303	4	17
SC	434.091	0	17	SC	671.361	4	17
SC	438.800	2	17	SC	712.691	1	17
SC	441.505	0	17	SC III	730.60 *	0	17, 488, 688
SC	443.615	3	17	SC III	731.66 *	1	17, 488, 688
SC	446.318	1	17	SC	754.108	0	17
SC	447.554	4	17	SC	785.120	2	17
SC	448.572	0	17	SC	786.481	4	17
SC	449.007	0	17	SC	800.625	1	17
SC	450.695	2	17	SC	834.66 *	8	17
SC	453.449	2	17	SC	835.70	3	17
SC	454.106	5	17	SC	835.86	2	17
SC	456.923	0	17	SC	837.76	3	17
SC	458.132	0	17	SC	838.70	3	17
SC	458.363	0	17	SC	845.07	7	17
SC	470.255	1	17	SC	845.42	5	17
SC	470.632	0	17	SC	846.90	6	17
SC	471.785	3	17	SC	851.36	3	17
SC VIII	480.926	2	547	SC	851.51	4	17
SC	482.220	4	17	SC	861.64	6	17
SC VIII	486.192	1	547	SC	867.01	2	17
SC VIII	486.242	2	547	SC	868.32	6	17
SC VIII	486.618	2	17, 547	SC	869.13	2	17
SC	487.851	2	17	SC	874.18	3	17
SC	487.960	0	17	SC	875.07	2	17
SC VI	492.423	6	17, 169	SC	903.19	5	17
SC VIII	493.998	2	547	SC	905.28	2	17
SC VIII	494.446*	6	17, 547	SC	906.72	6	17
SC	496.460	1	17	SC	906.95	7	17
SC XI	505.117	4	361	SC	908.18	7	17

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TI XII	71.012 *		178	TI V	228.898 *	75	364
TI XI	71.591	0	180	TI	252.8	1	411
TI XII	82.124 *		178	TI IX	281.463 *	2	547
TI XII	82.311 *		178	TI IX	282.720 *	2	547
TI XII	82.350 *		178	TI IX	286.128 *	4	547
TI XII	82.362 *		178	TI IX	286.234 *	5	547
TI XI	87.722 *	3	180	TI IX	289.728 *	8	547
TI XII	89.841 *		178	TI	305.5	1	411
TI XII	90.508 *		178	TI	315.9	1	411
TI XII	90.540 *		178	TI	321.5	1	411
TI XI	90.957	0	180	TI	328.4	1	411
TI XI	93.396	0	180	TI IX	336.902 *	4	547
TI XI	93.595 *	2	180	TI IX	341.754 *	10	547
TI XI	93.621	1	180	TI	345.5	1	411
TI XI	94.054 *	3	180	TI	355.1	1	411
TI XI	94.086	0	180	TI	359.2	1	411
TI X	101.355 *	2	180, 487	TI	363.5	1	411
TI X	102.107 *	2	180, 487	TI	374.3	1	411
TI XII	108.100 *		178	TI	385.0	1	411
TI XII	109.121 *		178	TI	395.7	1	411
TI XI	113.939	0	180	TI	418.4	1	411
TI XI	114.271	1	180	TI IV	423.58	4	604
TI XI	115.011 *	2	180	TI IV	424.28	3	604
TI XII	116.496 *		178	TI	430.0	1	411
TI XII	116.597 *		178	TI	434.2	1	411
TI XI	125.960 *	2	180	TI	445.7	1	411
TI XI	125.997 *	3	180	TI	465.5	1	411
TI XI	126.061 *	4	180	TI	469.5	1	411
TI VIII	150.037 *	20	358	TI	474.6	1	411
TI VIII	150.864 *	20	358	TI	483.8	1	411
TI VIII	151.485 *	10	358	TI	488.7	1	411
TI VIII	151.527	3	358	TI	496.4	1	411
TI VIII	151.863 *	8	358	TI	502.3	1	411
TI VIII	151.915	1	358	TI VI	508.58		359
TI VIII	152.164 *	20	358	TI VI	524.11		359
TI VIII	155.673 *	10	358	TI	566.4	1	411
TI VIII	156.442	5	358	TI	580.7	1	411
TI VIII	157.107	3	358	TI	616.7	3	411
TI VIII	157.470	2	358	TI	625.2	3	411
TI VIII	160.914	0	358	TI	644.2	3	411
TI VIII	161.293	4	358	TI	663.8	1	411
TI VIII	162.019	1	358	TI	672.5	1	411
TI VIII	162.401	0	358	TI	677.4	1	411
TI V	163.140	5	366	TI	695.8	1	411
TI VII	164.172 *	3	181	TI	703.1	8	411
TI V	164.450	6	366	TI IV	729.39 *	0	604
TI VII	164.474	1	181	TI	759.5	5	411
TI VII	165.404	2	181	TI	764.6	5	411
TI VII	165.713	1	181	TI IV	776.82 *	10	488, 604
TI VII	165.836	1	181	TI IV	779.14 *	20	488, 604
TI VII	166.090	1	181	TI IV	781.78 *	20	488, 604
TI VII	168.653	2	181	TI	796.5	3	411
TI VII	169.300 *	3	181	TI	801.9	3	411
TI VII	170.357 *	5	181, 358	TI	814.7	10	411
TI VII	170.558	2	181	TI	818.2	10	411
TI VII	170.936	1	181	TI	823.6	1	411
TI VII	171.883 *	3	181	TI	827.8	1	411
TI VII	171.949 *	2	181	TI	834.0	15	411
TI VII	172.350 *	2	181	TI	865.4	1	411
TI VII	175.806 *	5	181, 358	TI	871.0	1	411
TI VII	177.229 *	4	181, 358	TI	877.0	1	411
TI VII	178.564 *	2	181	TI	883.4	1	411
TI VII	178.666 *	3	181	TI	890.1	1	411
TI VII	179.096	1	181	TI	898.1	1	411
TI VI	182.148 *	5	182	TI	918.6	1	411
TI VI	184.104 *	4	182	TI	923.00	1	411
TI VI	192.705	1	182	TI	928.2	1	411
TI VI	192.747	8	182	TI	932.6	1	411
TI VI	194.900 *	7	182	TI	945.0	1	411
TI VI	197.455 *	5	182	TI	950.5	2	411
TI VI	198.974	8	182, 359	TI	989.4	1	411
TI VI	199.759 *	6	182	TI	997.5	1	411
TI VI	201.313 *	5	182	TI III	1002.23	00	604
TI VI	201.862 *	5	182	TI III	1004.68	2	604
TI V	225.337 *	100	364	TI III	1005.75	0	604

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V XI	87.868*	4	180, 487	V	493.6	1	411
V XIII	93.025*		178	V	501.8	1	411
V XIII	93.994*		178	V	507.7	2	411
V XII	97.642	0	180	V	515.5	1	411
V XII	97.938*	2	180	V	518.7	1	411
V XII	98.630*	3	180	V	525.5	5	411
V XIII	99.523*		178	V	537.2	8	411
V XIII	99.625*		178	V	541.0	1	411
V XII	106.781*	2	180	V	543.4	1	411
V XII	106.820*	3	180	V	547.5	1	411
V XII	106.885*	4	180	V	551.5	1	411
V IX	125.420*	12	358	V	565.0	1	411
V IX	126.152*	8	358	V	568.8	1	411
V IX	126.732*	5	358	V	579.7	1	411
V IX	126.765*	5	358	V	590.5	1	411
V IX	126.810*	0	358	V	596.4	1	411
V IX	127.068*	10	358	V	599.2	1	411
V VI	128.382*	2	364	V	609.2	1	411
V VI	129.574*	4	364	V	612.4	1	411
V VIII	135.751*	1	181	V	647.6	1	411
V VIII	136.078	0	181	V	667.4	1	411
V VIII	136.867	0	181	V	670.6	1	411
V VIII	137.194	00	181	V IV	675.48	10	790
V VIII	137.316	0	181	V IV	677.26 *	10	790
V VIII	137.491	0	181	V IV	677.35 *	50	488, 790
V VIII	139.188	00	181	V IV	678.72 *	35	488, 790
V VIII	139.730*	1	181	V IV	679.65	25	488, 790
V VIII	140.451*	3	181	V IV	680.64	20	790
V VIII	140.665*	1	181	V IV	681.13	25	790
V VIII	140.934	00	181	V IV	682.46	20	790
V VIII	141.864*	1	181	V IV	682.94	20	790
V VIII	141.924	0	181	V IV	684.38 *	80	488, 790
V VIII	142.247	0	181	V IV	684.44 *	50	488, 790
V VIII	144.653*	3	181	V IV	691.54	30	790
V VIII	145.507*	2	181	V IV	699.50	15	790
V VIII	146.613*	1	181	V	705.6	1	411
V VIII	146.789*	1	181	V	715.46	1	790
V VIII	147.126	0	181	V IV	722.94	20	790
V VII	148.903	3	182	V IV	723.04	15	790
V VII	150.625	2	182	V IV	723.54	15	790
V VII	156.608*	7	182	V IV	723.65	20	790
V VII	158.467*	6	182	V IV	724.06	30	790
V VII	159.855	3	182	V IV	724.79	20	790
V VII	161.122*	6	182	V IV	734.36	8	790
V VII	161.836*	4	182	V IV	737.84 *	100	488, 790
V VII	163.135*	2	182	V IV	745.21	6	790
V VII	163.182*	4	182	V IV	746.88	5	790
V VII	164.302	1	182	V IV	749.66	15	790
V VII	164.523	0	182	V IV	750.10	30	488, 790
V VI	179.323*	20	364	V IV	750.85	12	790
V VI	182.050*	15	364	V IV	751.92	10	790
V	223.9	1	411	V IV	752.06	10	790
V	238.9	1	411	V IV	752.59	8	790
V	251.8	1	411	V	757.7	1	411
V	286.5	1	411	V	773.4	1	411
V	312.4	1	411	V	778.7	1	411
V	346.8	1	411	V	814.8	1	411
V	365.2	1	411	V	826.6	1	411
V	371.9	1	411	V	851.5	1	411
V	374.4	1	411	V	863.9	1	411
V	379.7	1	411	V	879.2	1	411
V	397.2	1	411	V	887.9	1	411
V	402.9	1	411	V	898.0	1	411
V	407.9	1	411	V	909.0	1	411
V	411.5	1	411	V	912.1	1	411
V	419.5	1	411	V	915.1	1	411
V	426.5	1	411	V	917.9	1	411
V	434.0	1	411	V	953.8	1	411
V	445.5	1	411	V	982.5	1	411
V	450.5	1	411	V	988.1	1	411
V VII	456.29 *		359	V	990.1	1	411
V VII	472.80 *		359	V	993.9	1	411
V	481.49 *	2	279	V	997.0	1	411
V	482.99 *	5	279	V	1005.6	1	411
V	484.47 *	4	279	V	1021.4	1	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V	1025.0	1	411	V	III	1398.47	3 791
V	1028.8	1	411	V	IV	1414.39	12 790
V	1029.5	1	411	V	IV	1419.56	15 790
V	1032.1	1	411	V	IV	1424.88	2 790
V	1057.4	1	411	V	IV	1426.62	17 790
V	1069.5	1	411	V	IV	1434.10	2 790
V	1091.4	1	411	V		1453.8	4 411
V	1112.1	3	411	V		1469.4	1 411
V	1114.4	1	411	V		1476.1	1 411
V	III	1117.84	3 791	V		1511.2	1 411
V	III	1119.67	10 791	V		1522.9	1 411
V	III	1121.19	8 791	V		1524.5	1 411
V	III	1122.11	15 488, 791	V		1530.4	1 411
V	III	1122.61	12 791	V		1536.5	1 411
V	III	1123.00	15 488, 791	V	II	1547.20	15 478, 488
V	III	1123.55	15 488, 791	V	II	1550.47	0 478
V	III	1125.71	30 488, 791	V	II	1553.09	15 478, 488
V	III	1131.04	8 791	V	II	1558.05	0 478
V	III	1134.14	6 791	V	II	1558.76	15 478, 488
V	III	1136.57	2 791	V	II	1562.98	10 478, 488
V	III	1139.82	5 791	V	II	1565.98	8 478, 488
V	III	1142.36	2 791	V	II	1571.74	2 478, 488
V	III	1146.75	8 791	V	II	1573.78	0 478, 488
V	III	1148.45	10 791	V	II	1581.99	8 478, 488
V	III	1149.94 *	100 488, 791	V	II	1582.32	8 478, 488
V	III	1150.26	20 791	V	II	1582.57	15 470, 488
V	III	1151.04 *	90 488, 791	V	II	1582.80	8 478, 488
V	III	1152.18 *	80 488, 791	V	II	1584.06	15 478, 488
V	III	1153.19 *	70 488, 791	V	II	1585.361	30 478, 488
V	III	1154.24	70 791, 488	V	II	1586.58	40 478, 488
V	III	1154.76	6 791	V	II	1587.40 *	50 478, 488
V	III	1155.12	6 791	V		1601.9	1 411
V	III	1159.77 *	50 488, 791	V	II	1613.20	15 478, 488
V	III	1163.27	30 488, 791	V	II	1613.40	0 478
V	III	1166.47	30 488, 791	V	II	1617.35	10 478, 488
V	III	1166.58	30 488, 791	V	II	1619.18	10 478, 488
V	III	1169.11	15 791	V	II	1630.82	20 478, 488
V	III	1169.28	20 488, 791	V	II	1633.51	25 478, 488
V	III	1171.27	4 791	V	II	1634.98	478
V	III	1172.47	1 791	V	II	1635.86	20 478, 488
V		1211.2	1 411	V	II	1636.02	40 478, 488
V	III	1248.62	3 791	V	II	1637.55	5 478
V	III	1252.12	40 488, 791	V	II	1637.77 *	50 478, 488
V	III	1253.99	30 488, 791	V	II	1637.93	10 478, 488
V	III	1257.46	4 791	V	II	1639.13	40 478, 488
V	III	1284.23	15 488, 791	V	II	1640.15	35 478, 488
V	III	1287.23	6 791	V	II	1640.86	30 478, 488
V	III	1287.36	6 791	V	II	1643.02	30 478, 488
V	III	1287.88	20 488, 791	V	II	1643.43	30 478, 488
V	III	1288.64	8 791	V	II	1660.53	8 478, 488
V	III	1289.42	30 488, 791	V	II	1661.27 *	60 478
V	III	1290.45	10 791	V	II	1662.28	0 478
V	III	1291.73	4 790, 791	V	II	1663.34	3 478, 488
V	III	1292.77	20 488, 791	V	II	1663.60	15 478, 488
V	III	1295.79	5 791	V	II	1663.80	0 478
V	III	1297.90	3 791	V	II	1664.87	0 478
V	III	1306.17	2 791	V	II	1665.42	8 478, 488
V	III	1309.54	4 790, 791	V	II	1667.66	10 478, 488
V	III	1310.79	1 791	V	II	1667.88	5 478, 488
V	IV	1312.88	4 790	V	II	1670.01	10 478, 488
V	III	1313.31	30 488, 791	V	II	1670.90	5 478, 488
V	III	1313.82	0 478	V	II	1672.44	15 478, 488
V	III	1317.25	20 488, 790, 791	V	II	1674.09	8 478
V	III	1329.21	8 791	V	II	1677.88	3 478, 488
V	III	1331.94 *	50 488, 791	V	V	1679.36 *	7 279
V	III	1335.09 *	45 488, 791	V	II	1681.22	5 478
V	III	1352.99	10 791	V	II	1682.17	0 478
V	II	1358.40	3 478	V	II	1686.19	1 478
V	III	1359.39	1 791	V	II	1687.36	1 478
V	III	1378.00	15 791	V	II	1692.11	10 478, 488
V	III	1382.53	10 791	V	II	1693.09	10 478, 488
V	III	1385.35	2 791	V	II	1693.49	12 478, 488
V	III	1389.79	20 488, 791	V	II	1697.90	2 478
V	III	1395.62	1 791	V	II	1700.47	3 478
V	III	1398.44	3 791	V	II	1711.66	0 478

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V II	1715.57	2	478, 279	V I	1872.66	5	489
V II	1716.50	0	478	V II	1873.39	10	478, 488
V II	1722.62	10	478, 488	V II	1874.45	12	478, 488
V II	1729.78	10	478, 488	V II	1874.97	1	478
V II	1737.02	0	478	V II	1876.06	20	478, 488
V II	1739.33	10	478, 488	V II	1876.47	10	478, 488
V II	1748.99	5	478, 488	V II	1877.00	10	478, 488
V II	1757.76	20	478	V II	1877.85		478
V II	1759.00		478	V II	1878.19	0	478
V II	1760.11	25	478	V II	1878.90	10	478, 488
V II	1763.20	0	478	V II	1880.43	40	478, 488
V II	1766.21	0	478	V II	1883.98	20	478, 488
V II	1767.02	0	478	V II	1885.90	10	478, 488
V II	1773.00		478	V I	1890.50	4	489
V II	1776.48		478	V I	1890.82	3	489
V II	1780.52	5	478, 488	V I	1894.47	8	489
V II	1785.07	5	478, 488	V I	1897.49	5	478, 489
V II	1786.91	0	478	V I	1897.90	2	489
V II	1788.30	25	478	V I	1898.78	5	489
V II	1789.61	5	478	V I	1900.00	6	489
V II	1792.49	5	478, 488	V II	1903.86	5	478, 488
V II	1793.13	3	478, 488	V II	1904.54		478
V III	1793.85	20	791	V II	1907.79 *	50	478, 488
V II	1794.62 *	50	478	V II	1908.32 *	40	478, 488
V II	1795.38	0	478	V II	1909.36	40	478, 488
V II	1796.26	0	478	V II	1911.88	40	478, 488
V II	1796.52	3	478	V II	1912.39	40	478, 488
V II	1796.80	20	478	V II	1913.10	20	478, 488
V III	1798.16	25	791	V II	1913.70	50	478, 488
V II	1799.47	12	478, 488	V II	1914.91	15	478, 488
V II	1799.97	3	478	V II	1915.71		478
V II	1800.13	0	478	V II	1917.79	15	478, 488
V II	1801.61	0	478	V II	1919.35	20	478, 488
V III	1804.12	40	791	V II	1920.36	12	478, 488
V II	1804.53	0	478	V II	1921.24	15	478, 488
V III	1805.23	5	791	V II	1924.87	30	478, 488
V IV	1806.22 *	40	488, 790	V II	1929.61 *	60	478, 488
V II	1806.49	8	478, 488	V II	1932.55	0	478
V II	1807.15	1	478, 488	V II	1932.99	3	478
V II	1808.66	0	478	V II	1933.28	10	478, 488
V II	1809.36	10	478, 488	V II	1933.97	30	478, 488
V II	1809.81	8	478, 488	V II	1937.44 *	60	478, 488
V IV	1809.88	15	488, 790	V II	1937.68	7	478, 488
V II	1810.31		478	V II	1938.50	10	478, 488
V II	1810.57	6	478, 790	V II	1938.70	8	478, 488
V II	1811.51		478	V IV	1939.07 *	100	488, 790
V III	1812.17 *	50	791	V II	1939.32	8	478, 488
V IV	1813.10	8	790	V II	1940.86	40	478, 488
V II	1813.87	2	478, 488	V II	1941.27	30	478, 488
V II	1814.93	5	478, 488	V II	1941.40	30	478, 488
V II	1815.32	2	478	V II	1942.35	40	478, 488
V II	1816.30	20	478	V II	1943.99		478
V II	1817.09		478	V II	1945.35	30	478, 488
V IV	1817.72	30	488, 790	V II	1945.64	30	478, 488
V III	1820.67	7	791	V I	1947.37	4	489
V II	1823.61	25	478	V II	1950.77	0	478
V IV	1825.85 *	50	488, 790	V IV	1951.48 *	80	488, 790
V II	1828.84 *	50	478, 791	V I	1957.90 *	50	489, 488
V II	1833.58	10	478, 488	V I	1958.18	12	489, 488
V II	1837.76		478	V I	1958.60		489
V II	1838.86	25	478, 488	V I	1959.12 *	30	489, 488
V II	1839.54	20	478, 488	V I	1959.36 *	30	489, 488
V II	1842.68	0	478	V I	1959.97 *	40	489, 488
V II	1843.43	5	478, 488	V II	1960.98	2	478
V II	1848.80	0	478	V I	1961.69 *	60	489, 488
V II	1858.50	2	478, 488	V IV	1963.13 *	70	488, 790
V IV	1861.56 *	60	488, 790	V I	1963.47 *	70	489, 488
V II	1862.37	30	478, 488	V I	1964.27 *	60	489, 488
V II	1862.76	25	478, 488	V I	1965.07 *	60	489, 488
V II	1865.68	2	478	V I	1965.26 *	60	489, 488
V II	1865.99	3	478, 488	V IV	1966.25	5	790
V II	1866.68	5	478, 488	V I	1966.52 *	60	489, 488
V II	1867.47	20	478	V I	1966.76 *	60	407, 488
V II	1869.47 *	50	478, 488	V I	1967.98 *	80	489, 488
V II	1871.06	12	478, 488	V I	1969.57	15	489, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V IV	1971.47	10	790	CR XIV	46.527*		178
V I	1972.48	15	489, 488	CR XIV	50.812*		178
V II	1972.62	20	478, 488	CR XIV	51.162*		178
V I	1973.55	5	489	CR XIV	52.363*		178
V I	1975.42	10	489, 488	CR XIII	53.506	0	180
V II	1976.62 *	60	478, 488	CR XIII	53.765*	1	180
V II	1977.60	0	478	CR XIV	60.699*		178
V II	1978.96	20	478, 488	CR XIV	60.756*		178, 361
V II	1980.04	40	478, 488	CR XIV	63.309*		178
V II	1980.59	25	478, 488	CR XIV	63.525*		178
V II	1981.53	8	478, 488	CR XIII	65.968	0	180
V I	1981.85	1	489	CR XIII	66.983*	2	180
V I	1982.06 *	40	489, 488	CR XIV	68.565*		178
V II	1982.21	0	478	CR XIV	69.183*		178
V II	1982.41	8	478, 488	CR XIV	69.221*		178
V I	1982.45	40	489, 488	CR XIII	70.792*	1	180
V IV	1982.49	30	488, 790	CR XIII	70.973*	3	180
V I	1983.37 *	50	489, 488	CR XIII	71.398*	3	180
V II	1984.05 *	90	478, 488	CR XIII	71.435*	0	180
V I	1984.43	6	489	CR XII	75.815*	2	180, 487
V I	1984.91 *	50	489, 488	CR XII	76.488*	3	180, 487
V IV	1986.54	0	790	CR XIV	80.916*		178
V I	1987.25	10	489	CR XIV	81.838*		178
V II	1987.82	3	478	CR XIII	84.616*	0	180
V I	1988.97	8	489	CR XIII	84.898*	2	180
V I	1989.17	0	489	CR XIII	85.566*	3	180
V I	1989.82	12	489, 488	CR XIV	86.057*		178
V IV	1990.75	30	488, 790	CR XIV	86.164*		178, 361
V I	1991.31		489	CR XIII	91.749*	2	180
V I	1991.75	2	489	CR XIII	91.792*	3	180
V I	1992.46	0	489	CR XIII	91.855*	4	180
V II	1992.80	30	478, 488	CR VII	104.13 *	1	364
V I	1994.34	20	489	CR VII	105.14 *	4	364
V II	1995.02	0	478	CR IX	117.435*	1	181
V I	1995.43	0	489	CR IX	117.942*	3	181
V IV	1997.74 *	80	790, 488	CR IX	118.165*	1	181
V IV	1999.32 *	60	488, 790	CR IX	119.269*	2	181
				CR IX	119.320*	1	181
				CR IX	119.569*	0	181
				CR IX	121.293*	3	181
				CR IX	121.781*	2	181
				CR IX	122.720*	1	181
				CR IX	122.964*	1	181
				CR IX	123.226*	00	181
				CR VIII	124.184*	2	182
				CR VIII	125.728*	1	182
				CR VIII	129.998*	7	182
				CR VIII	131.638*	6	182
				CR VIII	132.321*	2	182
				CR VIII	133.395*	6	182
				CR VIII	134.076*	3	182
				CR VIII	134.942*	4	182
				CR VIII	135.185*	1	182
				CR VIII	135.892*	0	182
				CR VII	146.532*	25	364
				CR VII	148.736*	15	364
				CR	202.6	1	484
				CR VI	209.978*	4	365
				CR VI	210.288*	6	365
				CR	222.6	0	484
				CR	226.4	1	484
				CR	231.7	0	484
				CR	238.6	2	484
				CR	253.8	1	484
				CR	263.1	1	484
				CR	269.8	2	484
				CR	278.0	0	484
				CR	294.9	0	484
				CR	308.1	1	484
				CR	322.0	1	484
				CR	328.4	1	484
				CR	336.3	3	484
				CR	345.3	0	484
				CR	352.2	2	484
				CR	361.3	0	484

CHROMIUM

CR I	I.P.	54565.	K	1832.7	A
CR II	I.P.	133060.	K	751.54	A
CR III	I.P.	249700.	K	400.5	A
CR IV	I.P.	400000.	K	250.	A
CR V	I.P.	589700.	K	169.6	A
CR VI	I.P.	730900.	K	136.8	A
CR VII	I.P.	1299700.	K	76.941	A
CR VIII	I.P.	1491000.	K	67.07	A
CR IX	I.P.	1691000.	K	59.14	A
CR XII	I.P.		K		A
CR XIII	I.P.	2862000.	K	34.94	A
CR XIV	I.P.	3099630.	K	32.262	A
CR XV	I.P.	8172300.	K	12.236	A
CR XV		15.06 *	0	766	
CR XV		15.21 *	0	766	
CR XV		16.889*	1	766	
CR XV		16.965*	0	766	
CR XV		18.497*	4	189, 766	
CR XV		18.782*	2	189, 766	
CR XV		19.015*	0	766	
CR XV		20.863*	4	189, 766	
CR XV		21.153*	3	189, 766	
CR XIV		46.468*		178	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR	369.7	1	484	CR IV	628.46	20	488
CR	378.1	1	484	CR IV	628.97 *	100	488
CR	384.1	1	484	CR IV	629.73 *	50	488
CR	394.0	0	484	CR IV	630.28 *	80	488
CR	402.2	0	484	CR IV	630.77	20	488
CR VIII	413.01 *		359	CR IV	630.92	10	488
CR VIII	430.71 *		359	CR IV	631.33	15	791
CR V	433.13	5	790	CR IV	631.60	15	791
CR V	434.22		790	CR IV	631.78	15	791
CR V	434.33	40	790	CR IV	632.60	30	488
CR V	435.16	30	790	CR IV	634.13	20	488
CR V	435.66	25	790	CR IV	635.45	10	488
CR V	436.37	25	790	CR IV	636.92	2	47
CR V	436.61	20	790	CR IV	637.40	3	47
CR V	437.43	20	790	CR IV	637.54	50	47, 488
CR V	437.69	20	790	CR IV	638.12	50	47, 488
CR V	438.62 *	30	790	CR IV	638.61	3	47
CR V	438.65 *	40	790	CR	643.5	1	484
CR V	438.66 *	50	790	CR	648.7	4	484
CR V	441.11	40	790	CR	654.9	4	484
CR V	446.71	5	790	CR	661.0	3	484
CR V	456.31	20	790	CR IV	664.97	6	791
CR V	456.36	10	790	CR IV	666.5 *	100	488
CR V	456.68	15	790	CR IV	667.31 *	75	488
CR V	456.79	15	790	CR IV	668.90	20	791
CR V	457.08	40	790	CR	673.4	3	484
CR V	457.56	15	790	CR IV	675.14	3	47
CR V	462.26	5	790	CR IV	676.47	2	47
CR V	464.03 *	100	790	CR IV	677.54	40	47, 488
CR V	469.34 *	30	790	CR IV	678.91	20	47, 488
CR V	469.65	30	790	CR IV	679.19	0	47
CR V	469.95	20	790	CR IV	680.15	20	47, 488
CR V	470.56	10	790	CR IV	680.62	8	47, 488
CR V	470.75	5	790	CR IV	681.20	2	47
CR V	471.03	4	790	CR IV	681.88	3	47
CR	483.4	0	484	CR IV	682.82	4	47
CR	487.7	0	484	CR IV	684.35	1	47
CR	498.0	2	484	CR IV	687.13	40	488
CR	508.0	2	484	CR IV	688.47	50	488
CR	515.7	2	484	CR IV	692.68	12	791
CR	524.3	2	484	CR IV	693.93 *	100	488, 791
CR	531.1	3	484	CR IV	695.22	50	488
CR	540.0	2	484	CR IV	706.00	50	488
CR	547.0	1	484	CR	710.0	2	484
CR	553.6	1	484	CR III	712.91	15	490
CR	563.0	1	484	CR	724.6	1	484
CR IV	573.82	2	47	CR	728.6	1	484
CR IV	575.11	5	47	CR III	735.89	20	490
CR IV	575.88	1	47	CR III	743.71	10	490
CR IV	576.30	3	47	CR III	748.35	8	490
CR IV	576.68	3	47	CR III	755.69	1	490
CR	585.1	2	484	CR III	756.59	1	490
CR IV	595.09	3	47	CR III	757.16	1	490
CR IV	612.70	5	47	CR III	766.66	1	490
CR IV	613.76	4	47	CR III	767.30	1	490
CR IV	614.09	4	47	CR III	767.61	1	490
CR IV	614.51	0	47	CR III	767.83	2	490
CR IV	614.95	4	47	CR III	768.21	2	490
CR IV	615.36	3	47	CR III	768.51	3	490
CR IV	615.68	3	47	CR III	769.20	4	490
CR IV	616.82	5	47	CR III	769.66	3	490
CR IV	617.05	20	47, 488	CR III	777.38	3	490
CR IV	618.22 *	40	47, 488	CR III	777.86	1	490
CR IV	618.27 *	60	791	CR III	777.97	1	490
CR IV	618.81 *	60	791	CR III	778.12	1	490
CR IV	619.12 *	40	488	CR III	778.29	1	490
CR IV	620.65 *	100	47, 488	CR III	778.40	1	490
CR IV	621.33 *	60	47, 488	CR III	779.43	1	490
CR IV	622.07	40	47, 488	CR III	780.87	5	490
CR IV	623.59	3	47	CR III	781.42	4	490
CR IV	625.08	4	47	CR III	781.88	3	490
CR IV	625.40	2	47	CR III	782.26	2	490
CR IV	625.95	4	47	CR III	782.45	1	490
CR IV	626.58	1	47	CR III	788.05	2	490
CR IV	627.70	10	488	CR III	788.30	1	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	788.90	3	490	CR III	925.03	2	47, 488, 490
CR III	789.59	1	490	CR III	925.35	15	47, 488, 490
CR III	789.81	1	490	CR III	925.49	15	488, 490
CR III	790.65	1	490	CR III	926.52	15	488, 490
CR III	796.03	1	490	CR III	927.16	10	47, 488, 490
CR III	798.31	1	490	CR III	930.78	1	490
CR III	800.57	1	490	CR III	934.91	1	490
CR III	801.04	3	490	CR III	937.06	4	490
CR III	808.9	2	484	CR III	939.93	1	490
CR III	814.71	1	490	CR III	940.39	4	490
CR III	814.90	1	490	CR III	942.86	1	490
CR III	815.40	1	490	CR III	953.94	5	490
CR III	815.99	1	490	CR III	954.07	1	490
CR III	816.57	1	490	CR III	963.34	10	490
CR III	816.92	1	490	CR III	964.80	1	490
CR III	817.25	1	490	CR III	966.28	8	47, 488, 490
CR III	817.87	1	490	CR III	967.32	0	490
CR III	818.49	1	490	CR III	967.59	10	47, 488, 490
CR III	820.88	1	490	CR III	968.06	0	47, 490
CR III	821.74	2	490	CR III	968.73	0	490
CR III	822.84	1	490	CR III	969.26	20	47, 488, 490
CR III	823.93	1	490	CR III	969.70	2	490
CR III	841.09	1	490	CR III	970.86	1	490
CR III	843.37	1	490	CR III	971.78	1	490
CR III	845.90	1	490	CR III	974.96	4	490
CR III	850.9	0	484	CR III	977.82	5	490
CR III	855.36	10	490	CR III	984.54	1	490
CR III	856.30	1	490	CR III	984.95	1	490
CR III	875.05	2	490	CR III	985.12	1	490
CR III	876.79	1	490	CR III	986.52	0	490
CR III	877.81	10	490	CR III	987.58	2	490
CR III	878.20	10	490	CR III	992.59	5	490
CR III	878.39	10	490	CR III	994.08	2	490
CR III	883.00	5	490	CR III	994.31	4	490
CR III	884.18	2	490	CR III	996.09	10	490
CR III	886.84	1	490	CR III	996.50	1	490
CR III	887.57	1	490	CR III	999.08	15	490
CR III	888.25	1	490	CR III	999.37	20	47, 488, 490
CR III	888.54	1	490	CR III	999.52	1	490
CR III	889.33	8	490	CR III	999.84	20	47, 488, 490
CR III	891.44	1	490	CR III	1000.14	0	490
CR III	892.09	1	490	CR III	1000.28	1	490
CR III	894.86	1	490	CR III	1000.86	40	47, 488, 490
CR III	895.19	1	490	CR III	1001.04	40	47, 488, 490
CR III	896.82	5	490	CR III	1001.28	10	490
CR III	905.35	5	490	CR III	1001.52	2	47, 490
CR III	905.66	10	490	CR III	1002.39	3	47, 490
CR III	905.92	1	490	CR III	1002.89	20	47, 488, 490
CR III	906.29	1	490	CR III	1003.370	3	47
CR III	906.59	0	490	CR III	1004.40	0	490
CR III	906.90	1	490	CR III	1007.23	10	490
CR III	910.75	5	490	CR III	1010.82	1	490
CR III	911.17	5	490	CR III	1014.02	1	490
CR III	912.26	1	490	CR III	1014.20	10	490
CR III	912.57	10	490	CR III	1015.03	3	490
CR III	912.83	1	490	CR III	1015.77	2	490
CR III	913.18	1	490	CR III	1016.29	4	490
CR III	913.44	0	490	CR III	1016.41	10	488, 490
CR III	913.75	3	490	CR III	1017.14 *	50	400, 490
CR III	914.08	1	490	CR III	1017.31 *	50	488, 490
CR III	914.67	1	490	CR III	1017.57 *	50	488
CR III	915.02	2	490	CR III	1018.58	0	490
CR III	916.21	2	490	CR III	1018.90	1	490
CR III	917.40	1	490	CR III	1019.60	1	490
CR III	917.75	2	490	CR III	1020.24	3	490
CR III	918.18	1	490	CR III	1020.94	20	488, 490
CR III	918.50	1	490	CR III	1021.64	15	488, 490
CR III	919.19	3	490	CR III	1023.47	2	490
CR III	920.73	3	47, 490	CR III	1025.584	4	47
CR III	922.19	5	47, 488, 490	CR III	1026.38	10	490
CR III	922.47	10	47, 490	CR III	1027.46	10	47, 488, 490
CR III	923.55	5	47, 488, 490	CR III	1028.33	30	47, 488, 490
CR III	923.81	10	47, 490	CR III	1029.57	10	47, 488, 490
CR III	924.07	20	47, 488, 490	CR III	1029.78	5	47, 490
CR III	924.32	20	47, 488, 490	CR III	1030.10	20	47, 488, 490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1030.47 *	60	47, 488, 490	CR III	1067.25	20	490
CR III	1030.74	2	490	CR III	1067.92	20	490
CR III	1030.89	30	47, 488, 490	CR III	1068.41 *	80	488, 490
CR III	1031.23	5	490	CR III	1068.67	1	490
CR III	1031.46	8	47, 490	CR III	1069.45	0	490
CR III	1031.60	1	47, 490	CR III	1070.55	3	490
CR III	1032.05	1	47, 490	CR III	1072.13	20	47, 488, 490
CR III	1032.42	5	47, 490	CR III	1073.74	20	47, 488, 490
CR III	1033.23 *	50	47, 488, 490	CR III	1074.56	5	47, 490
CR III	1033.45 *	50	47, 488, 490	CR III	1076.15	20	47, 488, 490
CR III	1033.69 *	100	47, 488, 490	CR III	1076.74	20	488, 490
CR III	1033.99	20	47, 488, 490	CR III	1077.29	1	490
CR III	1034.20	15	490	CR III	1078.80	3	490
CR III	1034.44	15	490	CR III	1079.43	15	488, 490
CR III	1034.86	20	490	CR III	1079.97	1	490
CR III	1035.29	25	47, 488, 490	CR III	1080.21	2	490
CR III	1035.57	25	47, 488, 490	CR III	1082.10	5	490
CR III	1035.77	20	47, 488, 490	CR III	1082.28	1	490
CR III	1035.93 *	50	47, 488, 490	CR III	1083.22	0	490
CR III	1036.03 *	100	47, 488, 490	CR III	1083.37	3	490
CR III	1037.80	20	47, 488, 490	CR III	1083.72	2	490
CR III	1038.06	0	490	CR III	1084.26	2	490
CR III	1038.18	0	47, 490	CR III	1084.84	2	490
CR III	1038.80	5	490	CR III	1085.27	2	490
CR III	1038.97	3	490	CR III	1085.96	2	490
CR III	1039.398	0	47	CR III	1087.70	1	490
CR III	1040.05	20	47, 488, 490	CR III	1089.30	1	490
CR III	1040.17	30	47, 488, 490	CR III	1090.27	2	490
CR III	1040.41	25	488, 490	CR III	1090.54	1	490
CR III	1040.53	40	47, 488, 490	CR III	1090.97	3	490
CR III	1040.70	5	490	CR III	1091.54	1	490
CR III	1040.79	5	490	CR III	1092.23	1	490
CR III	1041.34	15	47, 488, 490	CR III	1092.65	3	490
CR III	1042.02	1	47, 490	CR III	1093.17	5	490
CR III	1042.58	2	490	CR III	1094.38	20	490
CR III	1042.87	3	490	CR III	1094.53	0	490
CR III	1043.39	2	490	CR III	1095.96	5	488, 490
CR III	1044.74	4	490	CR III	1096.63	3	490
CR III	1045.06	40	488, 490	CR III	1096.90	3	490
CR III	1045.14	40	488, 490	CR III	1097.25	10	490
CR III	1045.71	3	490	CR III	1097.45	3	490
CR III	1047.04	0	490	CR III	1098.06	1	490
CR III	1047.56	0	490	CR III	1098.21	10	490
CR III	1048.28	0	490	CR III	1098.61	10	490
CR III	1048.88	0	490	CR III	1098.76	4	490
CR III	1049.14	1	490	CR III	1098.86	10	47, 490
CR III	1050.50	7	490	CR III	1098.95	5	490
CR III	1051.59	0	490	CR III	1099.46	10	490
CR III	1051.92	5	490	CR III	1099.82	1	490
CR III	1052.36	3	490	CR III	1100.37	1	490
CR III	1052.89	2	490	CR III	1100.61	30	47, 488, 490
CR III	1054.10	7	490	CR III	1101.26	5	490
CR III	1054.32	10	490	CR III	1101.43	30	47, 488, 490
CR III	1054.66	15	490	CR III	1101.91	15	488, 490
CR III	1055.43	1	490	CR III	1102.88	30	47, 488, 490
CR III	1055.89	40	488, 490	CR III	1103.57	1	490
CR III	1056.11	10	490	CR III	1103.68	0	490
CR III	1056.97	3	490	CR III	1104.44	15	47, 488, 490
CR III	1057.30	0	490	CR III	1104.69	3	490
CR III	1057.85	30	488, 490	CR III	1105.80	7	490
CR III	1059.13 *	60	47, 488, 490	CR III	1108.11	10	490
CR III	1060.15 *	60	47, 488, 490	CR III	1111.17	0	490
CR III	1060.68	3	490	CR III	1112.60	1	790, 490
CR III	1061.04 *	60	47, 488, 490	CR III	1113.26	10	488, 490
CR III	1062.68 *	50	47, 488, 490	CR III	1116.46	1	490
CR III	1063.11	0	490	CR III	1117.19	30	488, 490
CR III	1063.63	1	490	CR III	1117.46	1	790, 490
CR III	1064.32	30	488, 490	CR III	1117.88	2	490
CR III	1064.43	30	488, 490	CR III	1118.20	2	490
CR III	1065.12	15	488, 490	CR III	1118.55	20	488, 490
CR III	1065.40	3	490	CR III	1119.40	0	490
CR III	1066.23 *	50	488, 490	CR III	1121.35	3	790, 490
CR III	1066.36	5	490	CR III	1122.43	15	488, 490
CR III	1066.55	5	490	CR III	1122.87	3	490
CR III	1067.16	20	490	CR III	1123.37	0	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1123.59	15	790, 490	CR III	1203.59	12	490
CR III	1124.43	0	490	CR III	1203.73	0	490
CR III	1125.27	10	488, 490	CR III	1203.95	2	490
CR III	1125.73	20	488, 490	CR III	1204.46	5	490
CR III	1125.90	2	490	CR III	1204.59	1	490
CR III	1126.35	1	490	CR III	1204.93	20	47, 488, 490
CR III	1127.71	15	490	CR III	1205.15	1	490
CR III	1128.78	1	490	CR III	1205.78	10	490
CR III	1128.88	3	490	CR III	1206.12	1	490
CR III	1131.90	2	790, 490	CR III	1206.38 *	60	47, 488, 490
CR III	1132.75	30	490	CR III	1206.70	3	490
CR III	1133.91	5	490	CR III	1206.99	2	490
CR III	1136.67 *	50	488, 490	CR III	1207.13	10	490
CR III	1136.91	1	490	CR III	1207.36	4	490
CR III	1137.08	2	490	CR III	1207.58	10	490
CR III	1138.76	2	490	CR III	1209.13 *	80	47, 488, 490
CR III	1141.17	0	490	CR III	1209.42	1	490
CR III	1143.63	15	490	CR III	1209.66	1	490
CR III	1144.10	10	490	CR III	1211.12 *	80	47, 488, 490
CR III	1144.31	7	490	CR III	1211.84	1	490
CR III	1146.34	25	490	CR III	1212.90	3	490
CR III	1152.16	10	490	CR III	1213.51	5	490
CR III	1152.82	1	490	CR III	1213.82	1	490
CR III	1153.06	0	490	CR III	1217.69	10	490
CR III	1153.60	15	488, 490	CR III	1218.60	10	490
CR III	1154.12	15	488, 490	CR III	1218.89	5	490
CR III	1154.43	1	490	CR III	1219.55	5	490
CR III	1155.39	15	488, 490	CR III	1220.14	20	490
CR III	1156.42	2	490	CR III	1221.07	40	488, 490
CR III	1159.10	0	490	CR III	1221.45	1	490
CR III	1161.43 *	50	488, 490	CR III	1221.90	40	488, 490
CR III	1162.60	1	490	CR III	1222.57	1	490
CR III	1166.23	1	490	CR III	1223.28	1	490
CR III	1168.32	10	490	CR III	1223.43	0	490
CR III	1168.73	2	490	CR III	1224.43	3	490
CR III	1169.25	2	490	CR III	1225.02	10	490
CR III	1170.10	3	490	CR III	1225.27	15	490
CR III	1170.64	3	490	CR III	1225.32	15	490
CR III	1173.19	4	490	CR III	1225.65	30	488, 490
CR III	1173.34	5	490	CR III	1225.90	0	490
CR III	1173.77	10	490	CR III	1226.18	1	490
CR III	1174.82	15	490	CR III	1226.72	20	488, 490
CR III	1176.63	3	490	CR III	1226.90	1	490
CR III	1178.01	3	490	CR III	1227.11	2	490
CR III	1178.55	3	490	CR III	1227.43	1	490
CR III	1178.80	2	490	CR III	1227.77	0	490
CR III	1178.99	1	490	CR III	1228.03	1	490
CR III	1179.09	0	490	CR III	1228.37	1	490
CR III	1179.68	3	490	CR III	1228.65	30	488, 490
CR III	1179.98	0	490	CR III	1229.53	15	488, 490
CR III	1180.81	6	490	CR III	1230.35	1	490
CR III	1181.03	1	490	CR III	1230.49	1	490
CR III	1181.45	1	490	CR III	1230.80	20	488, 490
CR III	1181.63	5	490	CR III	1231.88	30	488, 490
CR III	1186.24	2	490	CR III	1232.96 *	50	488, 490
CR III	1187.36	20	490	CR III	1233.28	1	490
CR III	1187.65	30	488, 490	CR III	1233.92	20	488, 490
CR III	1192.69	5	490	CR III	1235.46	1	490
CR III	1193.47	7	490	CR III	1236.20	40	488, 490
CR III	1193.89	1	490	CR III	1236.51	1	490
CR III	1194.44	3	490	CR III	1236.71	1	490
CR III	1194.96	3	490	CR III	1237.45	0	490
CR III	1195.42	1	490	CR III	1238.51	40	488, 490
CR III	1196.04	3	490	CR III	1241.32	0	490
CR III	1196.32	5	490	CR III	1242.08		490
CR III	1197.16	3	490	CR III	1243.43	2	490
CR III	1197.37	20	488, 490	CR III	1243.60	2	490
CR III	1197.60	1	490	CR III	1243.97	4	490
CR III	1198.31	7	490	CR III	1244.41	1	490
CR III	1200.91	5	490	CR III	1244.58	10	490
CR III	1201.00	5	490	CR III	1245.09	5	490
CR III	1201.25	10	490	CR III	1245.23	15	488, 490
CR III	1201.42	15	488, 490	CR III	1246.83	10	490
CR III	1202.02	1	490	CR III	1247.86	20	47, 488, 490
CR III	1202.45	10	490	CR III	1248.61	12	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1250.33	2	490	CR III	1321.65	3	490
CR III	1250.57	2	490	CR III	1322.83	10	488, 490
CR III	1251.42	15	47, 488, 490	CR III	1323.22	1	490
CR III	1252.61 *	50	47, 488, 490	CR IV	1325.08	40	791
CR III	1253.87	0	47, 490	CR IV	1325.83	10	791
CR III	1256.066	0	47	CR III	1326.97	0	490
CR III	1256.48	1	490	CR III	1327.17	1	490
CR III	1256.73	8	490	CR III	1327.79	10	490
CR III	1258.55	20	47, 488, 490	CR III	1328.37	1	490
CR III	1259.02	40	488, 490	CR III	1328.78	1	490
CR III	1259.49	10	490	CR III	1329.11	2	490
CR III	1259.80	20	488, 490	CR III	1329.29	2	490
CR III	1261.09	1	490	CR III	1329.59	4	490
CR III	1261.53	2	490	CR III	1331.56	5	490, 791
CR III	1261.86	40	47, 488, 490	CR IV	1332.51	50	791
CR III	1262.34	30	47, 488, 490	CR IV	1338.20	2	791
CR III	1263.06	5	490	CR IV	1339.65	10	791
CR III	1263.61	35	488, 490	CR III	1341.17	1	490
CR III	1264.21	35	47, 488, 490	CR III	1341.37	0	490
CR III	1265.22	0	490	CR III	1341.70	0	490
CR III	1266.01	2	490	CR III	1342.24	4	490
CR III	1266.14	15	47, 488, 490	CR III	1345.12	10	490
CR III	1266.53	2	490	CR III	1345.46	7	490
CR III	1266.67	1	490	CR IV	1346.60	2	791
CR III	1268.01	25	47, 488, 490	CR III	1348.44	2	490
CR III	1268.15	2	490	CR III	1351.63	4	490
CR III	1269.11	25	488, 490	CR III	1351.94	1	490
CR III	1271.85	20	488, 490	CR III	1354.16	1	490
CR III	1273.31	15	47, 488, 490	CR III	1354.75	5	490
CR III	1275.344	1	47	CR III	1355.91	0	490
CR III	1276.756	2	47	CR III	1356.03	0	490
CR III	1277.23	3	490	CR III	1356.25	1	490
CR III	1277.56	4	490	CR III	1356.47	0	490
CR III	1278.71	2	47, 490	CR III	1356.86	2	490
CR III	1279.91	20	47, 488, 490	CR III	1357.20	15	488, 490
CR III	1281.98	20	490	CR III	1357.69	2	490
CR III	1283.12	5	47, 490	CR III	1357.85	0	490
CR III	1284.09	20	47, 488, 490	CR III	1358.65	3	490
CR III	1284.46	1	490	CR III	1358.75	2	490
CR III	1285.90	1	490	CR III	1359.38	0	490
CR III	1287.05	40	488, 490	CR III	1359.93	1	490
CR III	1287.58	0	490	CR III	1360.40	6	490
CR III	1289.81	20	490	CR III	1360.56	2	490
CR III	1290.43	2	490	CR III	1360.97	1	490
CR III	1290.93	20	488, 490	CR III	1361.15	20	490
CR III	1291.25	2	490	CR III	1361.30	20	490
CR III	1291.53	25	488, 490	CR III	1362.46	0	490
CR III	1291.77	25	488, 490	CR III	1362.85	5	490
CR III	1293.27	1	490	CR III	1363.23	2	490
CR III	1293.57	10	490	CR III	1363.48	1	490
CR III	1296.01	4	490	CR III	1363.73	2	490
CR III	1299.56	4	490	CR III	1364.26	5	490
CR III	1299.83	0	490	CR III	1364.49	1	490
CR III	1300.23	0	490	CR III	1365.06	4	490
CR III	1300.96	2	490	CR III	1365.29	20	488, 490
CR III	1302.45	2	490	CR III	1365.94	7	488, 490
CR III	1302.85	0	490	CR III	1366.06	7	490
CR III	1303.47	4	490	CR III	1366.63	12	490
CR III	1306.16	6	490	CR III	1366.88	2	490
CR III	1307.24	10	490	CR III	1367.13	4	490
CR III	1307.47	1	490	CR III	1367.39	15	490
CR III	1307.64	6	490	CR III	1368.10	2	490
CR III	1308.01	0	490	CR III	1368.23	2	490
CR III	1308.27	15	490	CR III	1368.60	15	488, 490
CR III	1309.34	20	488, 490	CR III	1369.58	2	490
CR III	1310.18	3	490	CR III	1370.20	2	490
CR III	1312.61	0	490	CR III	1370.74	2	490
CR III	1313.21	0	490	CR III	1372.27	6	490
CR III	1314.05	0	490	CR III	1373.02	0	490
CR III	1315.00	10	488, 490	CR III	1373.46	2	490
CR III	1315.44	2	490	CR III	1374.22	1	490
CR III	1316.16	20	490	CR III	1374.91	1	490
CR III	1316.40	20	488, 490	CR III	1375.56	20	490
CR IV	1319.71	30	791	CR III	1376.90	1	490
CR III	1320.85	4	490	CR III	1378.89	15	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1381.30	3	490	CR III	1414.79	1	490
CR III	1381.67	3	490	CR III	1415.25	5	490
CR III	1382.19	10	490	CR III	1415.81	1	490
CR III	1383.24	1	490	CR III	1416.33	5	490
CR III	1383.79	25	488, 490	CR III	1417.13	7	490
CR III	1384.44	1	490	CR III	1417.67	1	490
CR III	1385.07	1	490	CR III	1419.25	7	490
CR III	1387.03	0	490	CR III	1419.57	0	490
CR III	1388.13	4	490	CR III	1420.81	10	490
CR III	1388.24	2	490	CR III	1421.20	5	490
CR III	1388.49	2	490	CR III	1421.53	0	490
CR III	1389.55	7	490	CR III	1421.80	1	490
CR III	1389.73	15	490	CR III	1422.47	4	490
CR III	1390.01	0	490	CR III	1422.58	2	490
CR III	1390.77	4	490	CR III	1423.16	10	490
CR III	1391.26	2	490	CR III	1424.24	0	490
CR III	1391.61	15	488, 490	CR III	1424.62	10	490
CR III	1391.78	1	490	CR III	1425.30	1	490
CR III	1392.40	10	490	CR III	1426.58	1	490
CR III	1392.83	1	490	CR III	1427.00	15	490
CR III	1393.00	1	490	CR III	1427.20	1	490
CR III	1393.22	1	490	CR III	1427.71	1	490
CR III	1393.76	5	490	CR III	1428.46	1	490
CR III	1393.98	1	490	CR III	1428.66	1	490
CR III	1394.33	10	490	CR III	1429.04	5	490
CR III	1394.58	7	490	CR III	1429.17	5	490
CR III	1395.83	3	490	CR III	1429.41	1	490
CR III	1396.26	1	490	CR III	1429.71	0	490
CR III	1396.42	10	490	CR III	1430.02	4	490
CR III	1396.63	3	490	CR III	1430.15	3	490
CR III	1396.96	3	490	CR III	1430.42	5	490
CR III	1397.40	3	490	CR III	1432.55	5	490
CR III	1397.69	1	490	CR III	1433.26	5	490
CR III	1397.90	3	490	CR III	1433.50	1	490
CR III	1398.12	5	490	CR III	1434.19	1	490
CR III	1399.05	10	490	CR III	1434.42	1	490
CR III	1399.42	1	490	CR III	1436.23	2	490
CR III	1399.50	1	490	CR III	1436.65	2	490
CR III	1400.02	0	490	CR III	1437.17	7	490
CR III	1400.34	15	488, 490	CR III	1437.76	2	490
CR III	1400.62	1	490	CR III	1438.03	1	490
CR III	1400.72	1	490	CR III	1438.90	0	490
CR III	1401.03	1	490	CR III	1440.20	0	490
CR III	1401.55	10	490	CR III	1440.31	1	490
CR III	1401.81	3	490	CR III	1441.06	6	490
CR III	1402.07	3	490	CR III	1441.90	5	490
CR III	1402.31	0	490	CR III	1442.78	1	490
CR III	1402.62	4	490	CR III	1443.08	2	490
CR III	1402.99	1	490	CR III	1443.45	0	490
CR III	1403.42	7	490	CR III	1443.82	6	490
CR III	1403.92	3	490	CR III	1444.84	2	490
CR III	1404.50	1	490	CR III	1445.10	1	490
CR III	1405.37	3	490	CR III	1446.27	2	490
CR III	1405.72	2	490	CR III	1446.52	15	490
CR III	1406.31	4	490	CR III	1446.70	8	490
CR III	1406.90	10	490	CR III	1447.03	1	490
CR III	1407.22	1	490	CR III	1447.31	2	490
CR III	1407.89	4	490	CR III	1447.50	2	490
CR III	1408.71	5	490	CR III	1449.89	2	490
CR III	1409.10	1	490	CR III	1450.22	0	490
CR III	1409.51	3	490	CR III	1450.52	1	490
CR III	1409.81	2	490	CR III	1451.95	8	490
CR III	1410.03	2	490	CR III	1454.00	5	490
CR III	1410.37	2	490	CR V	1455.53	30	490, 790
CR III	1410.82	2	490	CR III	1457.22	3	490
CR III	1411.26	0	490	CR III	1458.17	1	490
CR III	1411.53	1	490	CR III	1458.41	8	490
CR III	1412.24	3	490	CR III	1459.28	0	490
CR III	1412.67	3	490	CR III	1459.74	0	490
CR III	1412.84	2	490	CR III	1460.14	0	490
CR III	1413.10	0	490	CR III	1461.04	2	490
CR III	1413.32	1	490	CR III	1462.12	3	490
CR III	1413.55	0	490	CR III	1463.36	5	490
CR III	1413.77	4	490	CR III	1463.87	1	490
CR III	1414.62	5	490	CR III	1465.00	3	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1466.14	2	490	CR III	1512.22	10	490
CR III	1466.78	0	490	CR III	1513.18	1	490
CR III	1467.04	2	490	CR III	1513.39	1	490
CR III	1467.68	5	490	CR III	1515.01	2	490
CR III	1468.05	5	490	CR III	1515.44	8	490
CR III	1468.41	5	490	CR III	1517.43	2	490
CR III	1468.53	3	490	CR III	1517.85	2	490
CR III	1469.55	5	490	CR III	1518.48	4	490
CR III	1470.60	1	490	CR V	1519.66 *	70	790, 490
CR III	1471.86	2	490	CR III	1520.01	7	490
CR III	1472.45	2	490	CR III	1520.79	4	490
CR III	1473.32	3	490	CR III	1521.29	1	490
CR III	1473.82	1	490	CR III	1521.59	3	490
CR III	1475.10	1	490	CR III	1522.29	0	490
CR III	1475.48	1	490	CR III	1523.12	5	490
CR III	1475.79	1	490	CR III	1523.21	8	490
CR III	1476.04	5	490	CR III	1524.65	2	490
CR III	1477.49	1	490	CR III	1525.27	1	490
CR III	1478.08	2	490	CR III	1525.42	0	490
CR III	1478.34	2	490	CR III	1525.78	1	490
CR III	1478.64	2	490	CR III	1526.00	15	490
CR III	1479.29	3	490	CR III	1527.19	0	490
CR III	1480.16	10	490	CR III	1527.78	1	490
CR III	1480.65	0	490	CR III	1528.38	3	490
CR III	1481.58	15	790, 490	CR III	1528.52	4	490
CR III	1481.96	0	490	CR III	1528.91	2	490
CR III	1482.07	2	490	CR III	1529.16	2	490
CR V	1482.36	25	790, 490	CR III	1530.59	0	490
CR III	1483.11	2	490	CR III	1532.09	2	490
CR III	1483.45	1	490	CR III	1532.54	1	490
CR III	1483.75	5	490	CR III	1532.94	0	490
CR V	1484.39	15	790, 490	CR III	1533.12	7	490
CR III	1485.04	15	490	CR III	1533.42	2	490
CR III	1485.59	0	490	CR III	1534.09	8	490
CR III	1486.02	1	490	CR III	1534.40	1	490
CR III	1486.54	1	490	CR III	1535.66	1	490
CR III	1486.65	3	490	CR III	1536.09	0	490
CR III	1487.03	4	490	CR III	1537.14	4	490
CR III	1487.86	1	490	CR III	1538.04	1	490
CR III	1488.72	2	490	CR III	1538.43	1	490
CR III	1489.10	2	490	CR III	1539.70	3	490
CR V	1489.35 *	50	790, 490	CR III	1540.87	1	490
CR III	1489.81	4	490	CR III	1541.57	1	490
CR III	1489.93	4	490	CR III	1542.02	0	490
CR III	1491.50	2	490	CR III	1542.52	1	490
CR III	1492.05	4	490	CR III	1543.68	1	490
CR III	1492.23	4	490	CR III	1545.03	3	490
CR III	1492.98	5	490	CR III	1546.34	3	490
CR III	1493.68	1	490	CR III	1546.55	3	490
CR III	1494.45	5	490	CR III	1547.05	3	490
CR III	1495.01	2	490	CR III	1548.86	2	490
CR III	1495.21	2	490	CR III	1549.20	2	490
CR III	1495.36	2	490	CR III	1550.09	2	490
CR III	1496.47	1	490	CR III	1550.53	0	490
CR V	1498.02 *	70	790	CR III	1550.94	1	490
CR III	1500.46	1	490	CR III	1551.20	1	490
CR III	1501.38	3	490	CR III	1551.43	5	490
CR III	1502.87	3	490	CR III	1552.31	4	490
CR III	1503.65	3	490	CR III	1552.65	3	490
CR III	1504.16	2	490	CR III	1552.95	1	490
CR III	1504.53	0	490	CR III	1553.09	1	490
CR III	1504.77	2	490	CR III	1553.30	4	490
CR III	1505.36	2	490	CR III	1553.38	5	490
CR III	1505.76	10	490	CR III	1554.25	1	490
CR III	1506.82	1	490	CR III	1554.71	3	490
CR III	1506.95	1	490	CR III	1555.94	3	490
CR III	1507.93	3	490	CR III	1557.01	3	490
CR III	1508.14	10	490	CR III	1558.14	3	490
CR III	1508.71	5	490	CR III	1559.06	3	490
CR III	1508.89	12	490	CR III	1559.67	1	490
CR III	1509.31	3	490	CR III	1560.13	0	490
CR III	1509.85	1	490	CR III	1561.72	1	490
CR III	1510.05	1	490	CR III	1562.45	2	490
CR III	1510.62	1	490	CR III	1563.88	0	490
CR III	1511.78	8	490	CR III	1564.07	1	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1564.32	1	490	CR III	1597.86	1	490
CR III	1564.72	0	490	CR III	1598.05	5	490
CR III	1565.40	2	490	CR III	1598.48	3	490
CR III	1565.54	2	490	CR III	1599.01	3	490
CR III	1567.41	8	490	CR III	1599.54	0	490
CR III	1567.80	1	490	CR III	1600.02	7	490
CR III	1568.48	2	490	CR III	1600.21	5	490
CR III	1569.07	3	490	CR III	1601.57	4	490
CR III	1569.36	2	490	CR III	1602.17	10	490
CR III	1569.51	5	490	CR III	1602.79	10	490
CR III	1570.67	4	490	CR III	1603.19	30	488, 790, 490
CR III	1571.04	10	490	CR III	1603.49	0	490
CR III	1571.38	2	490	CR III	1603.65	0	490
CR III	1571.98	5	490	CR III	1603.93	1	490
CR III	1572.13	2	490	CR III	1604.34	1	490
CR III	1572.54	1	490	CR III	1604.82	2	490
CR III	1572.89	2	490	CR III	1605.18	2	490
CR III	1573.34	1	490	CR III	1606.19	1	490
CR III	1573.87	7	490	CR III	1606.53	8	490
CR III	1574.00	4	490	CR III	1606.67	2	490
CR III	1574.27	0	490	CR III	1607.08	0	490, 790
CR III	1574.63	2	490	CR III	1607.57	1	490
CR III	1575.77	0	490	CR III	1607.78	2	490
CR III	1576.24	2	490	CR III	1607.92	3	490
CR III	1577.14	10	488, 490	CR III	1608.19	1	490
CR III	1577.36	5	490	CR III	1608.74	0	490
CR III	1577.89	5	490	CR III	1609.01	3	490
CR III	1578.01	1	490	CR III	1609.35	20	490
CR III	1578.39	1	490	CR III	1609.79	15	490
CR III	1578.61	4	490	CR III	1609.91	20	490
CR V	1579.67 *	80	790	CR III	1610.10	1	490
CR III	1580.20	1	490	CR III	1610.28	1	490
CR III	1580.34	1	490	CR III	1610.56	4	490
CR III	1580.73	20	488, 490	CR III	1610.88	1	490
CR III	1581.15	10	490	CR III	1611.08	10	490
CR III	1581.57	2	490	CR V	1611.30	0	490, 790
CR III	1582.62	25	490	CR III	1611.57	1	490
CR III	1582.93	20	490	CR III	1611.79	1	490
CR III	1583.21	2	490	CR III	1612.07	3	490
CR III	1583.70	2	490	CR III	1612.28	0	490
CR III	1584.09	1	490	CR III	1612.57	1	490
CR III	1584.60	40	488, 490	CR III	1613.02	1	490
CR III	1584.84	3	490	CR III	1613.14	2	490
CR III	1585.01	3	490	CR III	1614.04	10	490
CR III	1585.38	2	490	CR III	1614.17	8	490
CR III	1586.35	15	490	CR III	1615.11	0	490
CR III	1586.77	2	490	CR III	1615.21	1	490
CR III	1587.10	1	490	CR III	1616.28	3	490
CR III	1587.35	1	490	CR III	1616.58	1	490
CR III	1587.54	2	490	CR III	1617.23	2	490
CR III	1587.78	1	490	CR III	1617.49	1	490
CR III	1588.00	2	490	CR III	1617.72	0	490
CR III	1588.42	15	490	CR III	1617.90	1	490
CR III	1588.87	20	488, 490	CR III	1618.63	0	490
CR III	1589.91	2	490	CR III	1619.35	0	490
CR III	1590.49	2	490	CR III	1619.74	10	490
CR III	1590.77	1	490	CR III	1620.44	1	490
CR III	1591.09	5	490	CR III	1620.76	1	490
CR V	1591.70 *	70	790	CR III	1621.10	3	490
CR III	1592.39	10	490	CR III	1621.60	1	490
CR III	1592.76	1	490	CR III	1621.87	3	490
CR III	1592.90	2	490	CR V	1622.61	2	490, 790
CR III	1593.16	4	490	CR III	1623.01	1	490
CR III	1593.38	4	490	CR III	1625.32	3	490
CR III	1593.71	1	490	CR III	1625.78	1	490
CR III	1594.03	8	490	CR III	1626.33	10	490
CR III	1594.45	2	490	CR III	1626.85	5	490
CR III	1594.61	0	490	CR III	1627.25	3	490
CR III	1595.86	2	490	CR III	1627.80	2	490
CR III	1596.06	1	490	CR III	1628.39	12	490
CR III	1596.52	15	490	CR III	1628.58	1	490
CR III	1596.76	1	490	CR III	1628.98	10	490
CR III	1597.07	2	490	CR III	1629.56	10	490
CR III	1597.35	0	490	CR III	1630.29	0	490
CR III	1597.46	12	490	CR III	1630.94	10	490, 790

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1631.49	2	490	CR III	1665.18	2	490
CR III	1631.68	2	490	CR III	1665.53	7	490
CR III	1631.89	2	490	CR III	1665.62	5	490
CR III	1632.62	10	490	CR III	1665.98	2	490
CR III	1632.85	2	490	CR III	1666.66	10	490
CR III	1633.17	2	490	CR III	1667.32	2	490
CR III	1633.60	2	490	CR III	1667.44	3	490
CR III	1634.12	12	490	CR III	1667.63	12	490
CR III	1634.61	1	490	CR III	1667.92	2	490
CR III	1635.10	10	490	CR III	1668.24	10	490
CR III	1635.48	10	490	CR III	1668.33	8	490
CR III	1636.35	20	490	CR III	1668.96	7	490
CR III	1636.69	1	490	CR III	1669.58	2	490
CR III	1637.53	10	490	CR III	1669.97	15	490
CR III	1637.90	10	490	CR III	1670.10	2	490
CR III	1638.10	1	490	CR III	1670.27	5	490
CR V	1638.42	70	490, 790	CR III	1670.45	15	490
CR III	1638.78	1	490	CR III	1670.80	2	490
CR V	1639.46	50	490, 790	CR III	1671.40	1	490
CR III	1639.90	2	490	CR III	1671.85	3	490
CR III	1640.94	10	490	CR III	1672.03	1	490
CR III	1641.09	5	490	CR III	1672.64	20	490
CR III	1641.56	10	490	CR III	1673.00	2	490
CR III	1641.83	1	490	CR III	1673.58	5	490
CR III	1642.16	10	490	CR III	1673.77	10	490
CR III	1643.07	7	490	CR III	1674.73	15	490
CR III	1643.20	10	490	CR III	1675.20	0	490
CR III	1643.34	8	490	CR III	1675.72	20	490
CR V	1643.86	40	490, 790	CR III	1676.20	15	490
CR III	1644.63	5	490	CR III	1676.96	10	490
CR III	1644.78	3	490	CR III	1677.54	1	490
CR III	1645.16	5	490	CR III	1677.68	1	490
CR III	1646.15	7	490	CR III	1677.90	1	490
CR III	1646.56	2	490	CR III	1678.41	10	490
CR III	1646.87	0	490	CR III	1679.25	30	488, 490
CR III	1647.42	0	490, 790	CR III	1679.38	15	490
CR III	1648.36	5	490	CR III	1679.53	12	490
CR III	1648.58	1	490	CR III	1679.83	10	490
CR III	1649.13	5	490	CR III	1680.12	0	490
CR III	1649.51	15	490	CR III	1681.49	12	490
CR III	1649.93	4	490	CR III	1682.36	6	490
CR III	1651.32	1	490	CR III	1683.50	4	490
CR III	1651.56	10	490	CR III	1683.71	1	490
CR III	1651.92	2	490	CR III	1684.02	15	490
CR III	1652.08	5	490	CR III	1684.14	10	490
CR III	1652.46	15	490, 790	CR III	1685.02	4	490
CR III	1653.06	1	490	CR III	1685.15	0	490
CR III	1653.39	1	490	CR III	1685.38	1	490
CR III	1654.23	1	490	CR III	1685.85	15	490
CR III	1654.79	1	490	CR III	1686.24	1	490
CR V	1655.48	25	490, 790	CR III	1686.44	4	490
CR III	1656.39	1	490, 790	CR III	1686.75	1	490
CR III	1657.18	1	490	CR III	1687.03	15	490
CR III	1657.45	2	490	CR III	1687.56	7	490
CR III	1657.71	4	490	CR III	1688.15	1	490
CR III	1658.30	2	490	CR III	1688.39	4	490
CR III	1658.63	2	490	CR III	1688.61	1	490
CR III	1658.93	12	490	CR III	1689.01	0	490
CR III	1659.26	10	490	CR III	1689.14	1	490
CR III	1659.82	3	490	CR III	1689.46	10	490
CR III	1660.24	0	490	CR III	1689.77	8	490
CR III	1660.44	1	490	CR III	1690.00	3	490
CR III	1660.70	15	490	CR III	1690.28	30	488, 490
CR III	1661.02	1	490	CR III	1690.52	2	490
CR III	1661.58	2	490	CR III	1690.72	1	490
CR III	1661.93	4	490	CR III	1691.09	5	490
CR III	1662.27	0	490	CR III	1691.39	0	490
CR III	1662.59	0	490	CR III	1691.64	5	490
CR III	1663.01	2	490	CR III	1691.76	4	490
CR III	1663.25	3	490	CR III	1692.31	3	490
CR III	1663.75	4	490	CR III	1692.63	2	490
CR III	1663.94	3	490	CR III	1692.89 *	60	488, 490
CR III	1664.35	15	490	CR III	1693.43	3	490
CR III	1664.74	2	490	CR III	1693.72	2	490
CR III	1664.90	1	490	CR III	1694.16	0	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1694.53	7	490	CR III	1721.43	1	490
CR III	1694.92	7	490	CR III	1721.67	20	490, 792
CR III	1695.51	1	490	CR III	1721.84	7	490
CR III	1695.77	7	490	CR III	1722.19	7	490
CR III	1696.27	7	490	CR III	1722.38	7	490
CR III	1696.64 *	60	488, 490	CR III	1722.84	8	47, 490
CR III	1696.85	2	490	CR III	1723.16	10	490
CR III	1697.43	6	490	CR III	1723.50	10	490
CR III	1697.84	4	490	CR III	1723.83	1	490
CR III	1698.03	4	490	CR III	1724.32	12	490, 792
CR III	1698.55	3	490	CR III	1724.52	1	490
CR III	1698.75	20	490	CR III	1724.66	1	490
CR III	1698.91	1	490	CR III	1724.71	0	490
CR III	1699.35	1	490	CR III	1724.86	10	490
CR III	1699.84	2	490	CR III	1725.12	10	490
CR III	1699.98	2	490	CR III	1725.29	15	490
CR III	1700.12	2	490	CR III	1725.60	4	490
CR III	1700.29	20	488, 490	CR III	1726.00	2	490
CR III	1700.48	1	490	CR III	1726.45	3	490
CR III	1701.05	3	490	CR III	1726.61	2	490
CR III	1701.32	2	490	CR III	1726.82	3	490
CR III	1701.48 *	60	488, 490	CR III	1727.11	7	490, 792
CR III	1702.38	0	490	CR III	1727.51	1	490
CR III	1702.89	8	490	CR III	1727.78	1	490
CR III	1703.27	0	490	CR III	1727.97	1	490
CR III	1703.73	4	490	CR III	1728.24	2	490
CR III	1704.48	1	490	CR III	1728.34	8	490
CR III	1704.57	1	490	CR III	1728.55	0	490
CR III	1704.79	1	490	CR III	1728.71	1	490, 791
CR III	1705.17	2	490	CR III	1729.37	0	490
CR III	1705.36	1	490	CR III	1729.79	4	490
CR III	1705.76	1	490	CR III	1729.93	5	490, 791
CR III	1705.96	8	490	CR III	1730.34	1	490, 792
CR III	1706.15	5	490	CR III	1730.46	4	490
CR III	1706.65	3	490	CR III	1730.67	0	490
CR III	1706.82	0	490	CR III	1730.92	0	490
CR III	1707.27	3	490	CR IV	1731.22	20	488, 490
CR III	1707.43 *	80	488, 490	CR III	1731.53	2	490
CR III	1707.78 *	40	488, 490	CR III	1731.76	9	490
CR III	1708.51	1	490	CR III	1732.06	20	490
CR III	1708.73	0	490	CR III	1732.85	5	490
CR III	1708.98	6	490	CR III	1733.00	20	490
CR III	1709.89	5	490	CR III	1733.13	15	490
CR III	1710.10	3	490	CR III	1733.38	0	490
CR III	1710.60	2	490	CR III	1733.98	15	47, 490
CR III	1711.02	20	490	CR III	1734.50	5	490
CR III	1711.25	0	490	CR III	1734.68	6	490
CR III	1711.63	20	488, 490	CR III	1734.83	7	490
CR III	1711.77	1	490	CR III	1735.20	7	490
CR III	1712.24	2	490	CR III	1735.61	1	490
CR III	1712.52	1	490	CR III	1735.76	1	490, 792
CR III	1712.85	1	490	CR III	1736.49	3	490
CR III	1713.43	5	490	CR III	1736.63	20	490, 791
CR III	1713.69	5	490	CR III	1737.47	3	490
CR III	1714.01	15	490, 792	CR III	1738.23	12	490, 791
CR III	1714.26	1	490	CR III	1738.49	1	490
CR III	1714.63	4	490	CR III	1738.72	1	490
CR III	1715.04	3	490	CR III	1738.90	1	490
CR III	1715.17	3	490	CR IV	1739.22	50	47, 488, 490
CR III	1715.65	2	490	CR III	1739.54	0	490
CR III	1716.21	4	490	CR III	1739.73	2	490
CR III	1716.33	4	490	CR III	1740.06	1	490
CR III	1716.50	4	490	CR III	1740.31	2	490
CR III	1717.05	1	490	CR III	1740.78	6	490, 791
CR III	1717.25	0	490	CR III	1741.39	0	490
CR III	1717.43	20	490, 792	CR III	1741.51	0	490
CR III	1717.65	4	490	CR III	1741.62	3	490
CR III	1717.92	4	490	CR III	1741.93	3	490
CR III	1718.16	4	490	CR III	1742.19	15	490
CR III	1718.32	0	490	CR III	1742.52	2	490
CR III	1719.78	0	490	CR III	1742.96	7	490
CR III	1720.00	8	488, 490	CR III	1743.44	10	490
CR III	1720.25	8	490	CR III	1743.65	3	490
CR III	1720.51	2	490	CR III	1743.87	3	490
CR III	1721.18	15	490	CR III	1744.07	2	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1744.81	3	490	CR III	1770.96	3	490
CR III	1745.04	4	490	CR III	1772.46	4	490
CR III	1745.55	8	490	CR III	1772.60	5	490
CR III	1746.48	1	490	CR III	1773.32	2	490
CR III	1746.77	20	47, 490	CR III	1773.70	1	490
CR III	1747.14	30	490	CR III	1774.13	0	490
CR III	1747.30	7	490	CR III	1774.51	2	490
CR III	1747.68	1	490	CR III	1774.89	1	490
CR III	1748.20	2	490	CR III	1775.06	3	490
CR III	1748.74	8	490	CR III	1775.90	7	47, 490
CR III	1748.87	4	490	CR III	1776.82	7	490
CR III	1749.67	7	490	CR III	1777.27	4	490
CR III	1749.88	1	490	CR III	1777.49	1	490
CR III	1750.27	2	490	CR III	1778.93	20	490
CR III	1750.98	1	490	CR III	1779.37	0	490
CR III	1751.23	2	490	CR III	1779.91	4	490
CR III	1751.34	10	490	CR III	1779.99	4	490
CR III	1751.90	5	490	CR III	1780.14	5	490
CR III	1752.47	8	490	CR III	1781.45	2	490
CR III	1752.84	0	490	CR III	1781.73	1	490
CR III	1753.01	3	490	CR III	1782.07	10	490
CR III	1753.23	3	490	CR III	1782.99	25	490
CR III	1753.60	3	490	CR III	1783.95	20	47, 490
CR III	1753.97	3	490	CR III	1784.43	15	490
CR III	1754.36	2	490	CR III	1784.72	5	490
CR III	1754.52	2	490	CR III	1785.53	1	490
CR III	1754.76	30	47, 490	CR III	1785.83	1	490
CR III	1754.94	2	490	CR II	1786.16	3	340, 488, 490
CR III	1755.24	15	490	CR III	1786.52	2	490
CR IV	1755.46	20	488, 490	CR III	1787.18	12	490
CR III	1755.78	10	490	CR III	1789.24	3	490
CR III	1756.11	0	490	CR III	1789.37	3	490
CR III	1756.29	3	490	CR III	1789.77	4	490
CR III	1756.58	1	490	CR III	1790.10	0	490
CR III	1756.84	2	490	CR III	1790.48	4	490
CR III	1756.97	1	490	CR III	1790.71	1	47, 490
CR III	1757.33	0	490	CR II	1791.48	3	340, 488, 490
CR III	1757.45	1	490	CR IV	1791.82	30	791
CR III	1757.95	1	490	CR III	1792.73	8	490
CR III	1758.20	5	490	CR III	1793.60	1	490
CR III	1758.37	5	47, 488, 490	CR III	1793.75	5	490
CR III	1759.19	3	490	CR III	1793.95	8	490
CR III	1759.34	2	490	CR III	1794.47	1	490
CR III	1759.50	5	490	CR III	1794.99	0	490
CR III	1760.31	1	490	CR III	1795.58	3	490
CR III	1760.55	2	490	CR III	1796.37	1	47, 490
CR III	1761.38	4	490	CR III	1796.89	1	490
CR III	1761.73	2	490	CR III	1797.61	1	490
CR III	1762.52	3	490	CR III	1797.92	2	490
CR III	1762.81	45	47, 490	CR III	1798.33	5	490
CR III	1763.13	7	490	CR III	1798.97	2	490
CR III	1763.77	15	490	CR III	1799.40	1	490
CR III	1763.93	2	490	CR III	1800.84	1	490
CR III	1764.16	1	490	CR III	1801.34	0	490
CR III	1764.50	3	490	CR III	1801.46	1	490
CR III	1765.06	12	490	CR III	1802.30	3	490
CR III	1765.53	1	490	CR III	1802.60	12	490
CR III	1765.93	1	490	CR III	1803.47	1	490
CR III	1766.08	1	490	CR III	1804.85	1	490
CR III	1766.18	1	490	CR III	1805.32	0	490
CR III	1766.29	1	490	CR III	1805.39	0	490
CR III	1766.58	6	490	CR III	1806.29	1	490
CR III	1766.92	30	488, 490	CR III	1807.45	1	490
CR III	1767.18	1	490	CR II	1808.66	2	340, 488
CR III	1767.77	0	490	CR III	1809.58	1	490
CR III	1768.32	4	490	CR III	1810.14	3	340, 490
CR III	1768.50	4	490	CR III	1810.77	3	490, 791
CR III	1768.78	5	490	CR III	1810.92	4	490
CR III	1769.03	10	490	CR III	1812.24	4	490
CR III	1769.17	30	490	CR II	1812.77	0	340, 490
CR III	1769.77	1	490	CR III	1812.98	1	490
CR III	1770.10	3	490	CR III	1813.21	0	490
CR III	1770.35	2	490	CR III	1813.60	2	340, 490
CR III	1770.51	0	490	CR III	1813.73	1	490
CR III	1770.66	2	490	CR III	1815.49	8	340, 490, 791

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1816.09	1	490	CR II	1858.72 *	15	340, 488
CR III	1817.16	10	490	CR II	1860.12	12	340, 488
CR III	1817.79	2	490	CR III	1860.50	2	490
CR III	1818.28	4	490	CR III	1860.83	0	490
CR II	1818.90	1	340, 490	CR III	1861.40	0	490
CR IV	1819.18 *	60	488	CR III	1862.39	3	490
CR II	1819.79	3	340, 490	CR III	1862.69	0	490
CR III	1820.26	3	490, 790	CR IV	1862.99 *	100	488
CR II	1820.77	4	340, 488, 490	CR III	1864.42	1	490
CR II	1821.58	8	340, 791	CR II	1865.80	1	340
CR III	1822.26	2	490	CR III	1866.12	1	490
CR III	1822.49	2	490	CR II	1866.32	15	340, 488
CR II	1823.07	1	340	CR III	1866.63	2	490
CR III	1823.72	1	490	CR III	1867.52	1	490
CR II	1825.28	3	340, 488, 490	CR IV	1868.42	45	791
CR III	1825.66	1	490	CR II	1870.46	1	340
CR IV	1826.16 *	30	488	CR III	1871.00	2	490
CR IV	1826.81 *	30	488	CR III	1871.37	1	490
CR III	1827.26	30	480, 490	CR III	1873.36	2	490
CR IV	1827.39	10	488	CR IV	1873.86	25	488
CR III	1828.38	0	490	CR III	1874.45	1	490
CR II	1828.56	2	340, 490	CR III	1074.04	1	490
CR III	1828.91	0	490	CR II	1875.18	1	340, 490
CR III	1829.39	2	490	CR III	1875.52	1	490
CR III	1829.72	10	488, 490	CR IV	1876.15 *	60	791
CR IV	1830.29	10	488	CR III	1877.93	1	490
CR II	1830.54	4	340, 488, 490	CR III	1878.77	2	490
CR III	1831.15	10	490	CR II	1878.99	2	340, 488, 490
CR III	1831.60	1	490	CR I	1880.39	1	341
CR III	1832.34	1	490	CR II	1881.02	2	340, 490
CR III	1832.56	1	490	CR III	1881.33	2	490
CR III	1832.87	4	490	CR III	1881.73	2	341, 490
CR III	1833.00	1	490	CR III	1882.32	2	490
CR III	1833.66	1	490	CR I	1883.11	1	341, 791
CR IV	1833.79	15	488, 791	CR II	1883.32	4	340, 488, 490
CR III	1834.45	1	490	CR II	1884.12	1	340
CR III	1834.68	1	490	CR III	1884.30	0	490
CR II	1836.23	12	340, 488	CR III	1884.49	0	490
CR III	1837.05	10	488, 490	CR III	1885.50	5	490
CR III	1838.08	1	490	CR I	1886.34 *	10	341
CR III	1838.34	3	490	CR I	1887.60	3	341
CR III	1839.72	1	490	CR I	1887.83	0	341, 490
CR IV	1840.10 *	100	488	CR II	1887.96	6	340, 488, 490
CR III	1840.48	1	490	CR I	1888.17	3	341
CR III	1840.69	1	490	CR III	1888.83	1	490
CR III	1841.01	1	490	CR I	1889.20	1	341
CR III	1841.22	0	490	CR II	1890.55 *	30	340, 488
CR III	1841.38	0	490	CR I	1890.78	6	341
CR III	1842.09	1	490	CR I	1892.01	1	341
CR IV	1842.77	25	791	CR III	1893.30	1	490
CR IV	1843.03	25	490, 791	CR I	1893.59	1	341
CR III	1843.40	10	490, 791	CR III	1894.05	2	490
CR III	1844.99	10	490, 791	CR III	1894.68	0	490
CR III	1845.28	2	490	CR I	1895.78	1	341
CR III	1846.45	8	490	CR III	1896.09	3	490
CR III	1846.71	1	490	CR III	1896.39	1	490
CR III	1848.56	10	490	CR II	1898.92 *	35	340, 488
CR III	1848.96	3	490	CR III	1899.15	1	490
CR III	1849.76	1	490	CR III	1899.28	1	490
CR III	1849.99	3	490	CR III	1899.56	2	490
CR III	1850.45	1	490	CR III	1900.02	2	490
CR IV	1851.82	50	488	CR III	1900.66	3	490
CR II	1852.13 *	25	340, 488	CR III	1902.19	2	490
CR II	1852.31	3	340, 488, 490	CR I	1902.59	3	341, 490
CR III	1853.18	0	490	CR I	1903.29	0	341, 490
CR III	1853.36	1	490	CR I	1903.81	0	341, 490
CR III	1854.30	3	340, 490	CR III	1903.98	0	490
CR II	1854.63	2	340, 490	CR III	1904.84	3	490
CR II	1855.14 *	20	340, 488	CR III	1905.88	4	490
CR III	1855.55	0	490	CR III	1906.12	4	490
CR III	1855.90	1	490	CR III	1906.46	0	490
CR III	1856.20	1	490	CR I	1906.67	2	341
CR III	1857.59	2	490	CR III	1907.31	4	340, 341, 490
CR III	1858.03	1	490	CR III	1907.73	2	490
CR II	1858.44 *	20	340, 488	CR III	1907.94	4	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1908.17	4	490	CR III	1956.66	2	490
CR I	1908.46	4	341	CR III	1956.93	5	490
CR I	1909.72	2	341	CR III	1957.24	0	490
CR III	1910.11	5	47, 490	CR III	1957.88	1	490
CR III	1910.33	5	490	CR III	1958.05	1	490
CR III	1910.69	6	490	CR III	1958.44	0	490
CR II	1911.36	7	340, 341, 488	CR III	1958.86	0	490
CR III	1911.66	8	490	CR III	1959.26	2	490
CR III	1912.50	4	490	CR III	1959.42	0	490
CR I	1912.79	4	341	CR III	1960.18	1	490
CR III	1913.21	1	490	CR III	1960.69	1	490, 791
CR III	1913.51	0	490	CR III	1961.58	3	490
CR III	1913.85	2	490	CR III	1961.93	1	490
CR III	1914.39	0	490	CR III	1962.16	0	490
CR III	1914.87	3	490	CR III	1962.37	1	490
CR I	1916.23	2	341	CR II	1963.02	15	340, 488, 490
CR III	1917.44	0	490	CR III	1963.15	8	490
CR III	1917.52	1	490	CR III	1964.24	2	490
CR II	1918.27	4	340, 490	CR III	1964.49	2	490
CR III	1918.51	0	47, 490	CR III	1965.04	4	490
CR III	1918.61	4	490	CR III	1965.56	20	490
CR III	1919.05	3	490	CR III	1966.57	1	490
CR III	1922.72	2	490	CR IV	1968.42	3	47
CR II	1923.02	8	340, 488, 490	CR III	1969.52	4	490
CR III	1923.41	1	490	CR III	1970.14	0	490
CR III	1924.55	6	490	CR III	1970.54	0	490
CR III	1925.26	1	490	CR III	1971.11	2	490
CR III	1925.89	0	490	CR III	1972.45	10	490
CR III	1926.64	4	490	CR III	1973.20	7	490
CR III	1926.94	5	490	CR III	1974.03	5	490
CR III	1928.61	1	490	CR III	1974.43	6	490
CR III	1928.81	2	490	CR III	1974.70	1	490
CR III	1929.60	1	490	CR III	1975.09	0	490
CR II	1929.96	12	340, 488	CR III	1975.26	1	490
CR III	1930.39	2	490	CR III	1975.56	10	490
CR III	1932.40	0	490	CR III	1975.90	1	490
CR II	1932.64	5	340, 488, 490	CR III	1976.07	3	490
CR III	1933.72	1	490	CR III	1977.58	3	490
CR III	1934.13	2	490	CR III	1978.42	0	490
CR III	1934.58	1	490	CR III	1978.63	1	490
CR II	1935.54	10	340, 488, 490	CR III	1978.91	4	490
CR III	1936.60	2	490	CR III	1979.22	1	490
CR II	1937.84 *	20	340, 488, 490	CR III	1980.09	10	490
CR III	1938.29	0	490	CR III	1980.24	10	490
CR II	1938.42	3	340, 488	CR III	1981.61	4	490
CR III	1938.78	2	490	CR III	1981.82	2	490
CR II	1939.15	6	340, 488, 490	CR III	1982.06	3	490
CR III	1939.44	2	490	CR III	1982.69	4	490
CR II	1939.90	5	340, 488, 490	CR III	1983.66	2	490
CR III	1940.47	0	490	CR III	1983.83	2	490
CR III	1941.63	0	490	CR II	1985.52 *	22	340, 488
CR III	1941.74	0	490	CR II	1985.72 *	12	340, 488, 490
CR III	1942.30	5	490	CR III	1986.54	5	490
CR III	1942.73	1	490	CR III	1986.82	1	490
CR III	1943.38	2	490	CR III	1987.00	1	47, 490
CR III	1944.94	0	490	CR III	1987.19	1	490
CR III	1945.47	1	490	CR II	1987.43	5	340, 488, 490
CR II	1945.98	10	340, 488, 490	CR III	1987.62	15	490
CR IV	1946.59	3	47	CR I	1989.00	4	47, 341, 488
CR III	1948.28	2	490	CR III	1989.64	1	490
CR II	1948.51 *	10	340, 488	CR I	1989.92 *	15	341, 488
CR II	1949.00 *	40	340, 488	CR IV	1990.22	40	488
CR II	1949.22 *	35	340, 488	CR I	1990.27 *	8	341, 488
CR II	1950.06 *	50	340, 488	CR II	1990.79	10	340, 488
CR III	1950.45	0	490	CR I	1991.17 *	15	341, 488, 490
CR III	1950.75	0	490	CR III	1991.83	1	490
CR III	1951.00	4	490	CR I	1992.12	6	341, 488
CR III	1952.24	3	490	CR I	1992.57	5	341, 488, 490
CR III	1953.26	5	490	CR III	1992.72	25	488, 490
CR III	1954.87	12	490	CR II	1993.37 *	15	340, 488, 490
CR III	1955.18	0	490	CR II	1993.63 *	25	340, 488
CR III	1955.45	0	490	CR I	1994.10 *	8	341, 488
CR III	1955.65	2	490	CR I	1994.55 *	15	341, 488
CR II	1955.95	15	340, 488, 490	CR III	1995.09	5	490
CR III	1956.36	4	490	CR I	1995.73	5	341, 488, 490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1996.03	1	490
CR II	1996.70	2	340, 490
CR I	1997.12	5	341, 488, 490
CR I	1997.35 *	10	341, 488, 490
CR III	1997.77	0	490
CR I	1997.92 *	12	341, 488, 13
CR II	1998.12	2	340, 488, 490
CR III	1999.47	6	47, 490

MANGANESE

MN I	I.P.	59960.	K	1668.	A
MN II	I.P.	126147.	K	792.726	A
MN III	I.P.	271800.	K	367.9	A
MN IV	I.P.		K		A
MN V	I.P.	613200.	K	163.1	A
MN VI	I.P.		K		A
MN VII	I.P.	962001.	K		A
MN VIII	I.P.	1585000.	K		A
MN IX	I.P.	1791000.	K	55.83	A
MN X	I.P.	2004000.	K	49.90	A
MN XIII	I.P.		K		A
MN XIV	I.P.	3260000.	K	30.7	A
MN XV	I.P.	3511210.	K	28.480	A
MN XVI	I.P.	9164300.	K	10.912	A

MN XVI		13.46 *		766	
MN XVI		13.61 *		766	
MN XVI		15.238*		766	
MN XVI		15.312*		766	
MN XVI		16.616*		766	
MN XVI		16.882*		766	
MN XVI		17.095*		766	
MN XVI		18.654*		766	
MN XVI		18.935*		766	
MN XV		45.137*		178	
MN XV		52.977*		178	
MN XV		53.032*		178, 361	
MN XV		56.270*		178	
MN XV		56.484*		178	
MN XIV		57.224*	00	180	
MN XIV		59.325*	1	180	
MN XV		60.720*		178	
MN XV		61.319*		178	
MN XV		61.361*		178	
MN XIV		62.526*	0	180	
MN XIV		62.694*	1	180	
MN XIV		62.713*	00	180	
MN XIV		63.109*	2	180	
MN XIV		63.146*	00	180	
MN XIII		66.574*	1	180, 487	
MN XIII		67.215*	2	180, 487	
MN XV		71.038*		178	
MN XV		71.927*		178	
MN XIV		74.063*	00	180	
MN XIV		74.327*	0	180	
MN XIV		74.961*	1	180	
MN XV		75.182*		178	
MN XV		75.286*		178	
MN XIV		79.720*	1	180	
MN XIV		79.761*	2	180	
MN XIV		79.826*	3	180	
MN X		100.173*	1	181	
MN X		100.585*	2	181, 358	
MN X		100.787*	1	181	
MN X		101.808*	0	181	

MN X		101.854*	0	181	
MN X		102.030*	0	181	
MN X		103.269*	3	181, 358	
MN X		103.521*	2	181, 358	
MN X		104.310*	0	181	
MN X		104.608*	1	181	
MN X		104.806*	0	181	
MN IX		105.256*	0	182	
MN IX		109.783*	5	182	
MN IX		111.262*	4	182	
MN IX		111.500*	2	182	
MN VII		111.889*	0	365	
MN VII		112.260	1	365	
MN IX		112.415*	5	182, 359	
MN IX		113.080*	2	182	
MN IX		113.627*	3	182	
MN IX		114.023*	0	182	
MN VII		114.216	1	365	
MN VII		114.393	2	365	
MN IX		114.472*	0	182	
MN VII		117.808	3	365	
MN VII		117.997	5	365	
MN VII		122.160*	15	366	
MN VII		123.799*	10	365	
MN VII		124.005*	15	365, 366	
MN VII		135.177*	20	365	
MN VII		135.393*	25	365	
MN VII		135.425	2	365	
MN VII		162.349*	80	365	
MN VII		162.667*	60	365	
MN VII		162.707*	30	365	
MN VII		249.929	2	365	
MN VII		250.771	4	365	
MN VII		251.479	1	365	
MN VII		282.095	3	365	
MN VII		284.059*	10	365	
MN VI		307.109	5	128	
MN VI		307.842	3	128	
MN VI		307.999*	20	128	
MN VI		308.560*	20	128	
MN VI		308.853*	15	128	
MN VI		309.440*	12	128	
MN VI		309.579*	10	128	
MN VI		310.058*	10	128	
MN VI		310.182	9	128	
MN VI		310.908*	40	128	
MN VI		311.748*	10	128	
MN VI		312.692	8	128	
MN VI		314.979	6	128	
MN VI		320.146	6	128	
MN VI		320.598	9	128	
MN VI		320.681	9	128	
MN VI		320.874	9	128	
MN VI		320.979	9	128	
MN VI		321.176*	11	128	
MN VI		321.541*	9	128	
MN VI		325.146*	20	128	
MN VI		326.571	2	128	
MN VI		327.131	1	128	
MN VI		328.129	2	128	
MN VI		328.232*	10	128	
MN VI		328.431*	20	128	
MN VI		328.558	9	128	
MN VI		329.043	5	128	
MN VI		329.177	2	128	
MN VI		329.320	5	128	
MN IX		376.944		359	
MN V		382.061	1	46	
MN V		382.907	6	46	
MN V		382.980	1	46	
MN V		383.422	2	46	
MN V		383.681	4	46	
MN V		383.949	5	46	
MN V		393.324	3	46	
MN V		394.322	1	46	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN IX	395.703		359	MN IV	542.453	5	47
MN V	398.604	2	46	MN IV	542.650	3	47
MN V	399.538	4	46	MN IV	558.493	4	47
MN V	401.787	3	46	MN IV	569.232	5	47
MN V	402.525	4	46	MN IV	560.184	6	47
MN V	402.754	3	46	MN IV	570.130	0	47
MN V	403.007	0	46	MN IV	571.793	3	47
MN V	403.281	0	46	MN IV	572.686	4	47
MN V	403.552	3	46	MN IV	573.352	0	47
MN V	403.680	1	46	MN IV	573.697	6	47
MN V	403.754	4	46	MN IV	579.156	3	47
MN V	404.358*	8	46	MN IV	580.040	6	47
MN V	404.455*	4	46	MN IV	580.385	4	47
MN V	405.094*	5	46	MN IV	581.099	3	47
MN V	405.654*	8	46	MN IV	581.453*	7	47
MN V	406.037*	7	46	MN IV	581.652	5	47
MN V	406.240	1	46	MN IV	581.912	0	47
MN V	406.417	7	46	MN IV	582.088	0	47
MN V	406.845	6	46	MN IV	582.785	6	47
MN V	407.301	2	46	MN IV	582.994	6	47
MN V	408.322	6	46	MN IV	583.384	5	47
MN V	408.390	1	46	MN IV	583.476	1	47
MN V	408.733	4	46	MN IV	583.819	2	47
MN V	409.217	1	46	MN IV	584.059	5	47
MN V	409.335	2	46	MN IV	584.124	2	47
MN V	409.546	3	46	MN IV	584.296	5	47
MN V	409.795	4	46	MN IV	584.443*	7	47
MN V	410.311*	8	46	MN IV	584.826*	6	47
MN V	410.459*	5	46	MN IV	585.217*	8	47
MN V	410.611*	8	46	MN IV	585.582	5	47
MN V	410.990*	8	46	MN IV	585.736	5	47
MN V	411.329*	7	46	MN IV	586.240	4	47
MN V	411.585*	7	46	MN IV	586.881	4	47
MN V	411.789	3	46	MN IV	587.143	3	47
MN V	411.920	3	46	MN IV	594.243	2	47
MN V	412.534	5	46	MN IV	594.959	6	47, 131
MN V	413.384	4	46	MN IV	595.678	6	47
MN V	414.933	3	46	MN IV	596.169	6	47
MN V	415.207	5	46	MN IV	597.097	6	47
MN V	415.336	0	46	MN IV	600.249	5	47
MN V	415.622	7	46	MN III	601.147	4	47, 131
MN V	415.980*	8	46	MN IV	601.517	2	47
MN V	422.228	1	46	MN IV	602.531	4	47
MN V	428.600	5	46	MN IV	602.824	3	47
MN V	429.054	5	46	MN IV	610.958	5	47
MN V	429.984	1	46	MN IV	611.469	5	47
MN V	431.973	0	46	MN IV	612.303	5	47
MN V	433.558	7	46	MN IV	613.162	0	47
MN V	434.210	3	46	MN III	628.646	00	131
MN V	434.403	0	46	MN IV	642.204	3	47
MN V	434.575	2	46	MN IV	642.598	6	47
MN V	435.069	2	46	MN IV	643.976	3	47
MN V	435.291	1	46	MN IV	644.294	4	47
MN V	435.594	1	46	MN IV	644.701	2	47
MN V	436.093	2	46	MN IV	645.840	6	47
MN V	436.174*	8	46	MN IV	645.943	2	47
MN V	436.660	1	46	MN IV	646.152	5	47
MN V	436.857	1	46	MN IV	646.815*	8	47
MN V	438.735	5	46	MN IV	647.101	4	47
MN V	439.352	5	46	MN IV	647.952*	8	47
MN V	441.008	1	46	MN IV	648.722*	8	47
MN V	441.725	7	46	MN IV	652.211	6	47
MN V	442.495	7	46	MN IV	653.826	4	47
MN V	447.498	4	46	MN IV	654.005	4	47
MN V	448.262	3	46	MN IV	654.249	3	47
MN V	451.065	3	46	MN IV	654.891*	7	47
MN V	452.758	2	46	MN IV	655.152	5	47
MN VII	462.363*	15	365	MN IV	655.444	4	47
MN VII	467.662*	30	365	MN IV	656.162	6	47
MN IV	540.102	1	47	MN IV	657.083	6	47
MN IV	540.882	4	47	MN IV	660.359	4	47
MN IV	541.111	2	47	MN III	661.385	0	131
MN IV	541.666	4	47	MN IV	661.730	6	47
MN IV	541.860*	7	47	MN III	662.437	0	131
MN IV	542.100	4	47	MN IV	663.131*	8	47

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN	IV	663.395	1 47	MN	III	961.180	00 131
MN	IV	663.897*	8 47	MN	III	963.327	1 131
MN	IV	664.843*	8 47	MN	III	964.027	00 131
MN	IV	665.031	1 47	MN	III	969.933	1 131
MN	IV	666.050*	7 47	MN	II	972.547	10 141
MN	IV	666.363*	6 47	MN	II	975.189	8 141
MN	IV	666.700*	8 47	MN	II	976.964	7 141
MN	IV	667.009*	6 47	MN	II	978.115	5 141
MN	IV	667.745	2 47	MN	II	978.703	0 141
MN	IV	668.433	4 47	MN	III	979.928	1 131
MN	IV	668.512	6 47	MN	II	982.901	25 141, 488
MN	IV	668.743	6 47	MN	II	983.240	20 141, 488
MN	IV	669.486	3 47	MN	II	983.403	15 141, 488
MN	IV	669.799*	7 47	MN	III	984.087	1 131
MN	IV	670.607	1 47	MN	III	984.872	6 131
MN	IV	671.357	6 47	MN	III	984.948	5 131
MN	IV	671.891	1 47	MN	III	985.942	2 131
MN	IV	673.215	5 47	MN	III	986.207	0 131
MN	IV	673.449	0 47	MN	III	991.895	0 131
MN	IV	673.804	0 47	MN	III	998.782	2 131
MN	IV	674.244	6 47	MN	III	998.936	0 131
MN	IV	675.658	6 47	MN	III	999.204	2 131
MN	III	800.302	0 131	MN	II	1000.956	23 141, 488
MN	III	801.103	1 131	MN	II	1003.012	22 141, 488
MN	III	805.578	2 131	MN	III	1003.654	2 131
MN	III	828.617	2 131	MN	II	1005.019	20 141, 488
MN	III	829.635	2 131	MN	II	1005.702	22 141, 488
MN	III	892.380	20 131, 488	MN	II	1006.721	7 141
MN	III	893.768	10 131, 488	MN	II	1007.530	15 141, 488
MN	III	894.627	8 131, 488	MN	II	1007.622	15 141, 488
MN	III	914.682	1 131	MN	II	1008.859	12 141, 488
MN	III	915.789	0 131	MN	II	1009.463	10 141, 488
MN	III	915.981	0 131	MN	II	1009.562	6 141
MN	III	916.397	4 131	MN	III	1010.330	1 131
MN	III	916.623	0 131	MN	II	1011.506	5 141
MN	III	917.144	2 131	MN	III	1012.282	1 131
MN	III	917.243	4 131	MN	II	1012.713	4 141
MN	III	917.302	1 131	MN	III	1012.860	1 131
MN	III	917.735	8 131	MN	II	1013.349	0 141
MN	III	918.169	0 131	MN	III	1015.713	00 131
MN	III	918.447	1 131, 286	MN	III	1015.896	2 131
MN	III	918.647	3 131	MN	III	1017.636	2 131
MN	III	918.740	0 131	MN	II	1023.546	20 141, 488
MN	III	918.818	3 131	MN	III	1027.471	0 131
MN	III	920.351	1 131	MN	II	1027.995	18 131, 141, 488
MN	III	922.2	1 286	MN	III	1028.273	0 131
MN	III	925.2	0 286	MN	III	1028.697	0 131
MN	III	935.328	1 131	MN	III	1029.590	0 131
MN	III	940.890	00 131	MN	II	1030.866	10 141, 488
MN	III	943.367	6 131	MN	II	1032.687	2 141
MN	III	943.534	3 131	MN	III	1033.371	0 131
MN	III	943.764	2 131	MN	III	1034.543	2 131
MN	III	944.830	00 131	MN	III	1035.828	0 131
MN	III	944.874	1 131	MN	III	1037.745	0 131
MN	III	945.381	0 131	MN	II	1040.538	8 141
MN	III	946.023	3 131	MN	III	1041.083	00 131
MN	III	946.700	4 131	MN	II	1042.979	3 141
MN	III	948.119	0 131	MN	II	1043.456	3 141
MN	III	949.037	2 131	MN	III	1044.485	0 131
MN	III	949.206	3 131	MN	II	1045.887	4 141
MN	III	949.662	0 131	MN	III	1046.149	0 131
MN	III	949.709	0 131	MN	II	1047.401	1 141
MN	III	951.029	0 131	MN	II	1047.952	4 141
MN	III	951.120	5 131	MN	III	1049.793	0 131
MN	III	951.610	3 131	MN	II	1050.782	2 141
MN	II	953.039	1 141	MN	III	1051.402	1 131
MN	III	953.275	0 131	MN	III	1051.677	0 131
MN	III	954.200	00 131	MN	II	1052.037	5 141
MN	III	954.208	00 131	MN	II	1052.599	5 141
MN	III	955.301	0 131	MN	III	1055.188	2 131
MN	II	955.481	0 141	MN	II	1056.802	4 141
MN	III	955.933	3 131	MN	II	1059.530	1 141
MN	II	957.205	1 141	MN	II	1059.980	1 141
MN	III	958.995	2 131	MN	II	1061.640	1 141
MN	III	960.006	2 131	MN	II	1062.507	30 141, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1063.430	1	141	MN II	1196.333	25	141, 488
MN II	1065.564	25	141, 488	MN II	1196.517	20	141, 488
MN III	1066.809	5	131	MN II	1196.724	25	141, 488
MN II	1067.729	23	141, 488	MN II	1197.172*	40	141, 488
MN II	1069.110	20	141, 488	MN II	1197.570	10	141, 488
MN II	1069.775	10	141, 488	MN II	1197.996	10	141, 488
MN III	1071.769	0	131	MN III	1198.487	30	131
MN III	1072.097	2	131	MN II	1198.630	10	141, 488
MN III	1073.097	3	131	MN II	1199.341*	40	141, 488
MN III	1073.777	3	131	MN II	1199.388	25	141, 488
MN III	1074.815	2	131	MN II	1201.124	20	141, 488
MN II	1077.017	3	141	MN II	1201.233	5	141
MN II	1080.288	5	141	MN II	1201.570*	40	141, 488
MN III	1082.131	1	131	MN II	1203.068	8	141
MN III	1082.287	1	131	MN II	1203.252	30	141, 488
MN III	1083.263	1	131	MN II	1204.619	25	141, 488
MN III	1084.268	0	131	MN II	1205.423	20	141, 488
MN II	1085.619	2	141	MN III	1206.425	20	131, 488
MN III	1085.702	6	131	MN II	1206.874	5	140
MN III	1086.737	0	131	MN II	1207.051	2	140
MN II	1089.981	1	141	MN II	1207.116	2	140
MN II	1093.218	1	141	MN III	1208.470	10	131
MN III	1094.770	0	131	MN II	1210.335	5	140
MN III	1108.157	20	131, 488	MN II	1212.404	5	140
MN III	1111.104	10	131, 488	MN II	1213.499	0	140
MN II	1111.898	10	141, 488	MN II	1218.943	8	140
MN II	1112.195	0	141	MN III	1219.792	30	131, 488
MN III	1113.174	5	131, 488	MN II	1221.107	6	140
MN II	1113.232	9	141, 488	MN II	1222.785	30	141, 488
MN II	1113.389	0	141	MN II	1223.152	8	141
MN II	1114.437	8	141, 488	MN III	1223.825	20	131, 488
MN II	1114.500	0	131, 141	MN II	1224.733	28	141, 488
MN II	1115.529	6	141	MN II	1224.928	6	141
MN II	1116.374	6	141	MN II	1226.397	25	141, 488
MN III	1121.404	1	131	MN II	1227.638	23	141, 488
MN III	1125.063	0	131	MN II	1228.423	20	141, 488
MN II	1156.345	30	141, 488	MN III	1228.971	100	131, 488
MN II	1156.658	25	141, 488	MN II	1229.653	25	141, 488
MN II	1156.834	20	141, 488	MN II	1230.106	20	131, 141, 488
MN II	1156.900	20	141, 488	MN II	1230.152	15	141, 488
MN II	1161.295	20	141, 488	MN II	1230.457	1	141
MN II	1161.612	3	141	MN II	1230.622	1	141
MN II	1161.764	20	141, 488	MN II	1230.873	10	141, 488
MN II	1162.017*	50	141, 488	MN II	1231.101	8	141, 488
MN II	1163.325*	40	141, 488	MN II	1231.346	5	141
MN II	1164.211	30	141, 488	MN II	1233.952	30	141, 488
MN II	1165.823	25	141, 488	MN III	1234.277	1	131
MN II	1166.157	10	141, 488	MN II	1234.301	5	141
MN II	1166.810	8	141	MN II	1234.507	8	141, 488
MN II	1167.130	20	141, 488	MN II	1234.872	25	141, 488
MN II	1167.306	9	141	MN II	1235.060	8	141
MN II	1168.069	5	141	MN II	1235.273	10	141, 488
MN II	1168.254	15	141, 488	MN II	1235.463	25	141, 488
MN II	1169.280	15	140, 488	MN II	1235.793	10	141, 488
MN II	1169.531	15	140, 488	MN II	1235.869	25	141, 488
MN III	1174.803	10	131	MN II	1236.148	25	141, 488
MN III	1175.336	3	131	MN II	1236.545	15	141, 488
MN III	1175.451	3	131	MN II	1236.770	20	141, 488
MN III	1175.672	1	131	MN II	1236.873	20	141, 488
MN III	1175.923	0	131	MN II	1237.784	1	141
MN III	1177.479	6	131	MN III	1239.244	50	131, 488
MN III	1178.510	2	131	MN II	1240.037	0	141
MN III	1179.462	4	131	MN II	1241.626	10	141, 488
MN III	1179.846	20	131, 488	MN II	1244.105	0	141
MN II	1180.693	1	141	MN II	1245.551	15	131, 141, 488
MN III	1183.305	30	131, 488	MN II	1247.659	15	141, 488
MN III	1183.870	25	131, 488	MN II	1248.149	5	141
MN III	1186.133	10	131, 488	MN II	1248.827	4	141
MN III	1187.455	0	131	MN II	1249.315	6	141
MN II	1188.502*	50	141, 488	MN III	1249.963	1	131
MN III	1191.726	15	131, 488	MN II	1250.681	7	141
MN II	1192.313*	40	141, 488	MN II	1254.410	15	141, 488
MN III	1192.777	8	131, 488	MN III	1255.044	10	131
MN II	1194.998	30	141, 488	MN III	1255.102	20	131
MN II	1195.973	30	141, 488	MN II	1256.175	6	141

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1256.468	8	141, 488	MN II	1335.268	25	141, 488
MN II	1256.957	10	141, 488	MN II	1344.352	5	141
MN II	1258.028	15	141, 488	MN II	1345.619	2	141
MN II	1258.514	15	131, 141, 488	MN III	1346.562	100	131
MN II	1259.046	12	141, 488	MN III	1347.597	80	131
MN II	1259.561	8	141, 488	MN II	1349.408	2	141
MN II	1259.967	6	141	MN II	1352.171	4	140
MN II	1260.523	1	141	MN II	1352.828	1	141
MN III	1260.877	40	131, 141	MN II	1353.905	1	140
MN II	1261.282	8	141, 488	MN II	1354.084	5	141
MN II	1262.353	4	141	MN II	1357.466	3	140
MN II	1262.566	4	141	MN II	1357.915	1	141
MN II	1263.794	1	141	MN II	1358.323	1	141
MN II	1264.447	12	141, 488	MN II	1359.861	2	141
MN III	1264.710	10	131	MN II	1360.236	0	141
MN II	1265.387	10	141, 488	MN III	1360.704*	1000	131, 488
MN III	1267.380	20	131	MN III	1361.250	1	131
MN II	1268.905	10	141, 488	MN III	1364.645	5	131, 488
MN III	1269.048	30	131	MN III	1365.206*	800	131, 488
MN II	1269.417	5	141	MN III	1366.444	4	131
MN II	1271.217	2	141	MN III	1368.180	20	131, 488
MN II	1274.077	2	141	MN III	1369.419*	400	131, 488
MN II	1275.102	20	141, 488	MN III	1369.497	3	131
MN II	1275.973*	40	131, 141, 488	MN III	1371.567	5	131, 488
MN II	1276.238	20	141, 488	MN III	1371.649	300	131, 488
MN II	1276.450	8	141	MN II	1377.938	15	141, 488
MN II	1276.772	10	141, 488	MN II	1382.298	10	141, 488
MN II	1277.120	20	141, 488	MN II	1383.055	4	141, 488
MN II	1277.817	20	141, 488	MN II	1385.431	4	141
MN II	1278.369	10	141	MN II	1385.892	10	141, 488
MN II	1278.749	15	141, 488	MN II	1387.749	6	141
MN II	1279.089	10	141, 488	MN II	1388.206	2	141
MN II	1279.443	2	141	MN II	1388.877	2	141
MN III	1283.566*	500	131, 488	MN II	1397.170	3	141
MN III	1284.041	30	131, 488	MN II	1397.394	6	141
MN III	1287.583*	400	131, 488	MN II	1399.153	2	141
MN II	1287.978	15	141, 488	MN II	1399.244	3	141
MN III	1288.674	50	131, 488	MN II	1399.395	4	141
MN II	1289.132	15	141, 488	MN II	1400.538	2	141
MN II	1290.525	8	141, 488	MN II	1400.568	3	141
MN II	1290.926	10	141, 488	MN II	1400.659	2	141
MN III	1291.597	300	131, 141, 488	MN II	1411.070	25	141, 488, 794
MN III	1291.681	40	131, 488	MN II	1414.183	4	140
MN II	1291.702	10	141, 488	MN II	1414.402	30	141, 488
MN II	1292.866	15	141, 488	MN II	1414.726	6	140
MN III	1293.649	200	131, 488	MN II	1415.755*	35	140, 488
MN II	1293.932	1	141	MN II	1417.949	10	141, 488
MN II	1294.437	2	141	MN II	1418.480	15	140, 488
MN II	1294.803	10	141, 488	MN II	1418.632	12	140, 488
MN II	1295.150	10	141, 488	MN II	1419.612*	40	141, 488
MN II	1295.736	6	141	MN II	1420.239	8	141, 488
MN II	1296.031	3	141	MN II	1421.763	2	140
MN II	1296.429	6	141	MN II	1422.356	3	140
MN II	1296.669	5	141	MN II	1422.421	2	140
MN III	1298.718	1	131	MN II	1423.485	2	140
MN II	1301.061	3	141	MN II	1423.546	4	140
MN II	1302.117	1	141	MN III	1425.043	3	131, 488
MN II	1305.628	15	141, 488	MN II	1425.932	12	140, 488
MN II	1306.168	5	141	MN II	1426.149	1	140
MN II	1306.557	10	140	MN II	1426.325	10	140, 488
MN II	1306.814	10	131, 141, 488	MN II	1426.432	3	140
MN II	1307.409	1	141	MN III	1427.232	6	131, 488
MN II	1309.293	1	141	MN III	1430.790	20	131, 488
MN II	1313.407	2	141	MN II	1432.785*	40	140, 480
MN II	1313.766	10	141, 488	MN II	1432.950	5	140
MN II	1316.155	9	141, 488	MN II	1433.081	4	140
MN II	1317.392	3	141	MN II	1433.287	3	140, 794
MN II	1317.703	4	141	MN II	1433.497	15	141, 488
MN II	1318.086	3	141	MN II	1433.627	6	140
MN II	1319.209	10	141, 488	MN II	1434.257	10	140, 488
MN II	1323.745	15	488	MN II	1434.443	30	140, 488
MN II	1323.758	2	488	MN II	1434.794	1	140
MN II	1323.784	15	141, 488	MN II	1435.680	1	140
MN II	1327.476	12	141, 488	MN II	1435.866	4	140
MN II	1330.606	12	141, 488	MN II	1437.125	15	141, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1437.322	1	140	MN III	1542.554	3	131
MN II	1442.595	25	47, 141, 488	MN III	1544.235	10	131
MN IV	1444.00	0	47	MN III	1545.619	10	131
MN V	1446.49 *	60	791	MN III	1547.160	0	131
MN III	1449.075	20	131	MN III	1547.410	1	131
MN IV	1450.22	0	47	MN III	1547.640	1	131
MN III	1458.908	10	131	MN III	1548.411	1	131
MN II	1475.457	6	140	MN II	1548.635	8	321
MN II	1475.721	5	140	MN III	1549.459	3	131
MN II	1476.041	5	140	MN III	1549.847	3	131
MN II	1476.644	12	140, 488	MN III	1550.165	2	131
MN II	1476.979	5	140	MN III	1553.038	3	131
MN II	1477.608	3	140	MN II	1553.326	6	131, 141
MN II	1477.838	5	140	MN III	1553.865	2	131
MN II	1478.588	25	140, 488	MN III	1554.216	5	131
MN II	1478.795	22	140, 488	MN III	1554.453	2	131
MN II	1479.759	1	140	MN III	1555.145	1	131
MN V	1483.09 *	160	791	MN III	1555.339	3	131
MN V	1486.74 *	30	791	MN III	1556.451	10	131
MN V	1490.68 *	160	791	MN III	1558.188	5	131, 488
MN V	1491.30 *	30	791	MN III	1558.620	10	131
MN II	1494.754	20	140, 488	MN II	1559.243	6	321
MN II	1494.968	7	140	MN III	1561.594	20	131
MN II	1496.780	4	131, 140	MN III	1561.789	3	131
MN II	1498.596	8	140	MN III	1562.075	5	131
MN III	1499.053	2	131	MN III	1562.250	2	131
MN II	1499.611	1	140	MN III	1563.040	5	131
MN II	1499.843	8	140, 488	MN III	1563.200	8	131
MN II	1499.953	20	140, 488	MN III	1563.600	3	131
MN II	1500.255	5	140	MN III	1564.036	3	131
MN III	1500.465	5	131, 140	MN III	1565.184	5	131
MN III	1502.367	30	131	MN III	1565.838	30	131, 488
MN III	1502.616	10	131	MN III	1566.222	1	131
MN III	1503.106	5	131	MN II	1566.466	5	321
MN V	1503.59 *	80	791	MN III	1567.872	15	131
MN V	1504.38 *	200	791	MN III	1568.311	10	131, 488
MN V	1507.11 *	40	791	MN III	1570.799	3	131
MN III	1508.769	0	131	MN III	1571.037	2	131
MN III	1509.140	3	131	MN III	1571.907	20	131
MN III	1510.107	2	131	MN III	1572.328	10	131
MN III	1512.166	5	131	MN III	1572.602	8	131
MN III	1513.680	1	131	MN III	1574.577	1	131
MN III	1514.390	0	131	MN III	1574.873	1	131
MN III	1515.380	0	131	MN III	1576.600	20	47, 131
MN III	1516.877	20	131, 488	MN III	1577.953	100	131, 488
MN III	1518.530	5	131	MN III	1578.446	20	131
MN III	1519.633	5	131, 488	MN III	1579.287	3	131
MN II	1519.773	5	140	MN III	1579.630	2	131
MN II	1521.421	2	140	MN III	1579.785	1	131
MN II	1522.419	3	140	MN III	1580.259	10	131
MN III	1522.570	8	131, 488	MN III	1580.720	2	131
MN II	1524.712	4	140	MN III	1580.945	20	131
MN III	1525.035	3	131	MN III	1581.066	2	131
MN III	1526.045	20	131, 488	MN III	1581.959	2	131
MN III	1526.690	2	131	MN III	1582.668	50	131
MN III	1527.241	1	131	MN III	1583.086	20	131
MN III	1528.620	2	131	MN III	1583.682	5	131
MN III	1529.282	4	131	MN III	1584.971	1	131
MN III	1529.396	6	131	MN III	1585.491	3	131
MN III	1529.617	3	131	MN III	1585.720	3	131
MN III	1530.365	30	131, 488	MN III	1585.830	3	47, 131
MN III	1532.120	5	131	MN III	1591.385	2	131
MN III	1533.463	3	131	MN III	1591.616	5	131
MN II	1534.337	0	140	MN III	1591.933	5	131
MN II	1534.584	0	140	MN III	1592.170	5	131
MN II	1535.420	1	140	MN III	1592.987	80	131
MN II	1535.911	0	140	MN III	1593.427	100	131
MN II	1536.632	7	141	MN III	1594.321	5	131
MN II	1537.068	1	140	MN III	1594.701	300	131
MN II	1538.090	6	140	MN III	1595.098	100	131
MN III	1538.637	1	131	MN III	1595.361	80	131
MN II	1539.335	5	141	MN III	1596.210	80	131
MN II	1540.473	0	140	MN III	1596.966	300	131
MN II	1541.070	12	131, 141, 488	MN III	1597.450	1	131
MN III	1541.744	1	131	MN III	1597.845	3	131

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN III	1598.238	150	131	MN III	1640.13	0	286
MN III	1598.639	50	131	MN III	1641.163	2	131
MN III	1599.224	5	131	MN III	1641.395	2	131
MN III	1599.920	5	131	MN III	1641.676	5	131
MN III	1600.468	10	131	MN III	1641.739	10	131
MN III	1600.701	10	131	MN III	1642.059	10	47, 131, 286
MN III	1601.018	5	131	MN III	1642.761	30	131, 488
MN III	1601.442	5	131	MN III	1643.485	50	131
MN III	1602.364	20	131, 488	MN III	1643.709	30	131, 488
MN III	1602.540	10	131	MN III	1644.495	10	131
MN III	1602.768	1	131	MN III	1644.940	10	131, 488
MN III	1603.231	30	131, 488	MN III	1645.043	15	131
MN III	1603.604	2	131	MN III	1646.604	2	131, 488
MN III	1604.386	2	131	MN III	1647.374	200	131
MN III	1605.084	4	131	MN III	1647.492	250	131, 488
MN III	1605.545	40	131, 488	MN III	1647.661	300	47, 131
MN III	1606.552	5	131	MN III	1647.823	80	131, 488
MN III	1606.728	1	131	MN III	1648.189	1	131
MN III	1606.994	20	131	MN III	1648.408	100	131, 488
MN III	1607.990	30	131	MN III	1649.005	2	131
MN III	1609.008	20	131, 488	MN III	1649.297	1	131
MN III	1609.187*	500	131, 488	MN III	1649.493	150	131
MN III	1610.044	3	131	MN III	1649.927	2	131
MN III	1610.253	20	131	MN III	1650.162	3	131
MN III	1612.750	2	131, 286	MN III	1650.439	80	131
MN III	1613.245	3	131, 286	MN III	1651.357	80	131, 488
MN III	1613.667	20	131, 488	MN III	1652.333	100	47, 131, 286
MN III	1614.170*	1000	131, 488	MN III	1653.570*	400	47, 131, 488
MN II	1615.046	1	141	MN III	1654.405	3	131
MN III	1615.477	5	131, 286	MN III	1655.332	5	131
MN III	1616.095	2	131, 286	MN III	1655.561	0	131
MN II	1616.806	1	141	MN IV	1656.10	4	47
MN III	1617.172	5	131, 488	MN III	1656.533	3	47, 131
MN III	1617.390	8	131	MN III	1657.222	10	131
MN III	1617.783	200	131	MN III	1658.671	6	131, 488
MN II	1618.366	1	141	MN III	1659.608	100	131, 286
MN III	1618.724	0	131, 286	MN III	1660.967	2	47, 131
MN III	1619.599	40	131, 488	MN III	1661.603	50	131
MN III	1619.724	1	131	MN III	1662.530	3	131
MN III	1620.624*	2000	131, 488	MN III	1662.899	5	131
MN III	1622.090	2	131	MN III	1663.357	4	131
MN III	1622.755	5	131	MN III	1663.548	20	131
MN III	1623.921	300	131, 286	MN III	1663.970	2	131
MN III	1624.583	1	131	MN III	1664.226	10	131
MN II	1625.278	10	141, 488	MN IV	1664.74	5	47
MN II	1625.353	20	141, 488	MN III	1665.711	15	131
MN III	1626.910	5	131	MN III	1665.900	15	131
MN III	1627.029	6	131, 488	MN III	1666.286	10	131
MN III	1627.324	3	131	MN III	1667.166	300	47, 131, 286
MN III	1627.742	3	131	MN III	1667.647	20	131, 488
MN III	1628.070	3	131	MN III	1667.825	2	131
MN III	1629.124*	400	131, 488	MN III	1668.235	1	131
MN II	1629.845	20	141, 488	MN III	1668.358	1	131
MN II	1629.940	10	141, 488	MN III	1668.785	2	131
MN II	1630.004	7	131, 141	MN III	1669.010	200	131, 488
MN III	1630.373	2	131	MN III	1669.284	10	131
MN III	1630.530	2	131	MN III	1669.417	200	131
MN III	1630.758	1	131	MN III	1670.301	3	47, 131
MN III	1631.689	5	131	MN III	1671.027	200	131
MN III	1632.673	0	131	MN III	1672.220	2	131
MN III	1633.044	2	131	MN III	1672.967	200	131
MN III	1633.515	20	131	MN III	1673.211	20	131
MN III	1633.807*	500	131, 488	MN III	1673.448	200	131, 488
MN III	1635.003	3	131	MN III	1674.412	3	131
MN III	1635.686	1	131	MN III	1674.681	1	131
MN III	1636.246	6	131	MN III	1674.955	8	131
MN III	1636.544	3	131	MN III	1675.500	200	47, 131
MN II	1636.751	25	141, 488	MN III	1676.141	3	47, 131
MN II	1636.869	15	141, 488	MN III	1676.967	30	131
MN II	1636.964	6	141	MN III	1678.098	1	47, 131
MN III	1637.015	100	131	MN III	1678.859	1	131
MN III	1637.897	2	131	MN II	1679.564	15	321, 488
MN III	1638.074	2	131	MN II	1680.400	10	141, 488
MN III	1638.287	10	131	MN III	1680.875	8	131, 488
MN III	1639.77	10	286	MN III	1681.177	0	131

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MN III	1683.17	20	286	MN II	1747.996	10	141, 488
MN III	1684.10	1	286	MN II	1748.130	12	141, 488
MN II	1684.576	10	141, 488	MN II	1750.115	8	141
MN III	1686.62	25	286	MN II	1750.202	6	141
MN II	1689.488	15	141, 286, 488	MN IV	1751.60 *	7	47
MN II	1689.614	15	141, 488	MN II	1752.412	0	141
MN II	1689.845	4	141	MN II	1752.932	1	141
MN II	1691.246	8	141, 488	MN II	1754.136	1	141
MN II	1692.457	10	141, 488	MN II	1754.847	1	141
MN III	1693.22	40	286	MN II	1755.073	1	141
MN II	1694.252	3	141	MN IV	1759.82 *	7	47
MN III	1695.153	3	131, 286	MN II	1760.680	10	141
MN II	1696.516	4	141	MN II	1762.754	1	141
MN II	1697.181	20	141, 488	MN II	1765.495	3	141
MN II	1697.526	12	131, 141, 488	MN II	1766.498	5	47, 141
MN II	1698.132	2	141	MN IV	1767.11	5	47
MN III	1698.31	35	47, 286	MN II	1767.665	1	141
MN IV	1698.69	5	47	MN II	1768.591	7	141
MN IV	1699.08	5	47	MN II	1770.441	1	141
MN III	1699.433	2	131	MN II	1772.349	5	47, 140, 141
MN III	1699.903	2	131	MN IV	1773.57	5	47
MN II	1700.355	4	141	MN II	1774.202	5	141
MN II	1700.692	3	141	MN II	1775.194	2	141
MN III	1700.898	2	286, 794	MN II	1775.693	6	141
MN III	1702.488	5	131	MN II	1776.057	3	141
MN III	1702.777	0	131	MN IV	1776.58	4	47
MN II	1703.366	5	141	MN III	1777.741	3	131
MN III	1703.956	00	131	MN II	1778.024	0	141
MN III	1704.411	1	131	MN II	1778.090	6	141
MN III	1704.612	3	131	MN II	1778.595	20	141, 488
MN II	1704.862	15	141, 488	MN II	1778.686	12	141
MN IV	1705.11	1	47	MN II	1779.307	0	140
MN IV	1706.03	1	47	MN II	1780.248	1	47, 141
MN III	1707.222	3	131, 286	MN III	1781.462	5	131, 286
MN III	1707.998	2	131	MN II	1781.816	0	141
MN III	1708.503	2	131	MN III	1782.373	5	286, 794
MN II	1708.553	4	141	MN II	1782.626	5	141
MN II	1708.652	6	141	MN II	1783.184	0	141
MN III	1709.296	1	131	MN II	1783.718	20	141, 488
MN III	1709.940	1	131	MN II	1784.245	15	141, 488
MN III	1710.130	2	131	MN II	1785.026	1	141
MN III	1711.210	8	131	MN II	1785.733	1	141
MN III	1712.172	0	131	MN IV	1786.07	4	47, 286
MN II	1714.388	10	141, 488, 794	MN II	1786.322	1	141
MN III	1714.876	2	131	MN II	1787.477	1	141, 321
MN II	1715.982	12	141, 488	MN II	1788.783	1	141
MN II	1716.138	8	141	MN IV	1789.08	1	47
MN III	1716.576	5	131	MN IV	1789.65	0	47
MN III	1717.064	3	131	MN IV	1790.54	5	47, 286
MN III	1717.355	3	131	MN II	1790.788	20	141, 488
MN III	1718.300	5	47, 131	MN II	1791.884	25	141, 488
MN IV	1720.64	6	47	MN II	1792.519	1	141
MN III	1723.349	8	131	MN II	1793.262	3	131, 286, 321
MN III	1723.702	6	131	MN II	1793.755	0	141
MN III	1724.192	0	131	MN II	1793.903	4	141
MN III	1725.131	3	47, 131	MN IV	1795.77 *	7	47
MN II	1725.281	8	141, 488, 794	MN III	1796.819	100	131
MN II	1725.621	3	131, 141	MN III	1797.049	5	131
MN II	1726.481	5	131, 141	MN III	1797.862	25	131
MN III	1729.818	10	131	MN III	1798.126	80	131, 286
MN III	1730.761	15	131	MN II	1799.792	2	141
MN II	1732.707	6	141	MN II	1801.272*	50	131, 141, 488
MN II	1733.537	8	141, 488, 794	MN III	1802.419	1	131
MN IV	1733.94	2	47	MN II	1802.979	12	141
MN II	1734.491	12	141, 488	MN II	1803.023	8	141
MN III	1735.060	5	131	MN III	1804.028*	400	131, 488
MN II	1738.349	4	141, 488	MN II	1804.446	1	141
MN II	1740.155	6	47, 141	MN III	1806.425	300	131, 286
MN II	1741.535	4	141	MN II	1807.500	1	131, 141
MN II	1741.651	5	141	MN III	1807.871	3	131
MN II	1741.983	6	47, 141	MN II	1809.983	1	141
MN II	1743.349	4	141	MN III	1810.714	200	131
MN II	1744.537	2	141	MN III	1810.973	300	131
MN II	1744.659	5	141	MN II	1811.904	1	47, 141
MN II	1744.842	15	141, 488	MN II	1813.287	10	141, 488

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MN II	1813.865	15	141, 488	MN III	1877.555*	400	131, 488
MN II	1815.242	20	131, 141, 488	MN III	1877.924	2	131
MN II	1816.287	20	141, 488	MN II	1881.372	2	321
MN II	1816.866	10	141, 321, 488	MN III	1885.138	300	131
MN II	1817.493	6	141	MN III	1886.131	2	131
MN III	1817.502	0	131, 286	MN IV	1887.16	1	47
MN III	1819.354	5	131	MN IV	1888.47	1	47
MN II	1819.750	9	141, 488	MN III	1891.786	200	131, 321
MN II	1820.648	9	141, 488	MN II	1897.464	5	141
MN II	1822.212	10	141, 488	MN III	1898.234	250	131, 141
MN II	1823.049	8	141, 488	MN III	1899.030	150	131
MN II	1823.427	5	131, 321	MN III	1899.434	2	47, 131
MN II	1823.697	30	141, 488	MN III	1900.134	30	131
MN II	1827.079*	50	141, 488	MN III	1901.680	1	131
MN II	1828.250	20	141, 488	MN III	1903.688	1	131
MN III	1828.595	10	131	MN IV	1907.14	4	47
MN II	1831.917	5	321	MN II	1907.838	8	141, 488
MN III	1832.959	20	131	MN II	1909.830	5	141
MN II	1834.573	25	141, 488	MN III	1910.192	1	47, 131
MN III	1834.893	1	131	MN II	1910.946	3	321
MN II	1836.514	1	140	MN II	1911.395	12	141, 488
MN II	1838.050	4	141	MN II	1914.676	17	141, 400
MN II	1838.607	2	141	MN II	1915.095	30	131, 141, 488
MN II	1839.595	5	141	MN III	1915.845	10	131
MN II	1841.134	0	140	MN II	1916.284	3	131, 321
MN II	1841.718	3	141	MN II	1917.599	4	141
MN II	1842.871	5	141	MN II	1918.638	6	47, 141, 488
MN II	1843.121	0	140	MN II	1918.908	2	141
MN II	1843.201	0	140	MN III	1919.108	1	131
MN II	1843.498	2	321	MN II	1919.639	7	141, 488
MN II	1843.784	1	141	MN II	1920.018	3	131, 141
MN II	1844.027	6	141	MN II	1920.959	2	141
MN II	1844.080	6	141, 488	MN II	1921.245	25	141, 488
MN III	1845.048	1	131	MN II	1922.036	5	141
MN III	1845.930	3	131	MN II	1923.059	10	141, 488
MN III	1846.210	3	131	MN II	1923.341	10	141, 488
MN II	1846.930	0	140	MN III	1924.360	20	131
MN II	1847.780	10	141, 488	MN II	1925.506	10	141, 488
MN II	1848.160	10	141, 488	MN III	1925.692	5	131
MN II	1848.266	20	141, 488	MN III	1925.780	4	131
MN II	1849.125	3	131, 321	MN II	1926.579	15	141, 488
MN II	1849.937	3	141	MN II	1926.938	9	141, 488
MN II	1850.602	5	141, 321	MN III	1927.768	0	131
MN II	1851.593	15	141, 488, 794	MN II	1928.121	1	141
MN III	1851.790	3	131	MN III	1928.418	1	47, 131
MN II	1852.010	10	141, 488	MN III	1929.691	3	131
MN II	1853.271	25	141, 488	MN II	1930.033	15	321
MN II	1854.268	3	141	MN II	1930.437	8	141, 488
MN II	1854.903	20	141, 488	MN III	1931.012	2	131
MN III	1855.331	1	131	MN II	1931.408	10	141, 488
MN II	1855.942	9	141	MN III	1932.350	2	131
MN III	1856.248	3	131	MN II	1932.600	1	141
MN III	1856.549	1	131	MN III	1932.839	1	47, 131
MN II	1856.700	12	141, 488	MN III	1933.426	100	131, 488
MN II	1857.009	10	141, 488, 794	MN II	1933.915	3	286, 321
MN II	1857.918	20	141, 488	MN II	1934.790	2	141, 286
MN III	1858.382	6	131	MN III	1935.08	5	286
MN II	1859.119	10	141, 488	MN III	1935.712	2	131
MN II	1859.394	25	131, 141, 488	MN III	1936.483	200	131, 488
MN III	1859.593	2	131	MN II	1936.717	10	141, 488
MN II	1860.425	3	141, 321	MN III	1937.062	4	131
MN II	1861.663	10	141, 488	MN II	1937.582	10	321
MN II	1862.517	10	141, 488	MN II	1938.829	10	131, 286, 321
MN II	1862.816	20	141, 488	MN III	1940.142	6	131, 141, 488
MN III	1863.899	3	131	MN III	1940.380	15	131, 488
MN II	1864.403	10	141, 488	MN III	1941.227*	500	131, 488
MN II	1864.617	15	141, 488	MN II	1942.646	20	141, 488
MN II	1865.296	8	141, 488	MN III	1943.133*	800	47, 131, 488
MN II	1865.547	12	141, 488	MN II	1944.168	15	47, 141, 488
MN II	1865.831	10	141, 488	MN III	1944.557	150	131, 488
MN III	1867.054	6	131	MN II	1944.794	12	141, 488
MN II	1867.872	5	141	MN II	1945.150	25	141, 488
MN II	1868.312	0	141	MN II	1946.335	9	141, 488
MN II	1868.588	4	141	MN II	1946.919	5	141
MN II	1869.042	2	131, 141	MN III	1947.247	150	131

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MN III	1947.439	200	131, 488
MN II	1947.945*	40	141, 488
MN II	1948.214*	200	131, 141, 488
MN IV	1948.75	2	47
MN III	1949.276	200	131, 488
MN III	1949.444	1	131
MN III	1949.668	150	131
MN II	1950.433	10	321
MN II	1950.919	15	141, 488
MN III	1951.440	200	131
MN II	1952.056	3	321
MN III	1952.285*	500	131, 488
MN III	1952.430*	1000	131, 488
MN II	1953.234*	40	141, 488
MN II	1954.855	12	141, 488
MN II	1955.060	0	141
MN III	1956.552	300	131, 488
MN III	1957.391	10	131
MN II	1958.074	1	321
MN III	1958.242	8	131
MN II	1959.240	8	321
MN II	1960.358	11	141, 488
MN III	1961.966	250	131, 286
MN III	1962.806	1	131
MN III	1963.431	100	131, 488
MN III	1963.638	200	131, 488
MN II	1963.823	10	321
MN II	1964.482	3	47, 321
MN III	1964.745	5	131
MN III	1967.008	10	131
MN II	1967.760	10	321
MN III	1968.702	4	131
MN III	1969.510	50	131
MN III	1969.765	20	131
MN III	1970.567	2	131, 286
MN III	1972.131	5	131
MN III	1972.361	3	131
MN II	1972.617	8	321
MN III	1972.796	100	47, 131, 488
MN III	1974.036	20	131
MN III	1975.375	100	131, 488
MN III	1975.611	200	131
MN III	1976.415	30	131
MN III	1976.957	4	131
MN III	1978.879*	500	131, 488
MN III	1979.709	1	131, 488
MN III	1980.455	1	131
MN III	1982.138	20	131
MN III	1982.690*	400	131, 488
MN III	1983.990	2	131
MN III	1985.327	20	131
MN III	1985.717	300	131, 488
MN III	1986.770	100	131, 488
MN III	1987.57	4	286
MN III	1988.967	8	131
MN III	1989.518*	400	131, 488
MN III	1990.158	3	131, 488
MN III	1990.524	30	131
MN III	1991.230	50	131, 286
MN III	1992.404	2	131
MN III	1992.823	10	131, 286
MN III	1993.086	2	131
MN III	1993.168	80	131, 286
MN III	1994.970	0	131
MN III	1995.769	80	131
MN III	1996.836	15	131, 286
MN III	1997.037	20	131, 286
MN III	1998.061	100	131, 286
MN III	1998.824	20	131

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FE II	I.P.	130524.	K 766.143 A
FE III	I.P.	247200.	K 404.5 A
FE IV	I.P.		K A
FE V	I.P.		K A
FE VI	I.P.		K A
FE VII	I.P.		K A
FE VIII	I.P.	1219360.	K 82.010 A
FE IX	I.P.	1893000.	K 52.83 A
FE X	I.P.	2114000.	K 47.30 A
FE XI	I.P.	2342000.	K 42.70 A
FE XIII	I.P.	2860000.	K 35.0 A
FE XIV	I.P.	3150000.	K 31.7 A
FE XV	I.P.	3684000.	K 27.14 A
FE XVI	I.P.	3947840.	K 25.33 A
FE XVII	I.P.	10211700.	K 9.793 A
FE XVII		12.12 *	766
FE XVII		12.26 *	766
FE XVII		13.820*	766
FE XVII		13.887*	766
FE XVII		15.012*	766
FE XVII		15.261*	766
FE XVII		15.453*	766
FE XVII		16.774*	766
FE XVII		17.051*	766
FE XVI		39.827*	178
FE XVI		40.153*	178
FE XVI		46.661*	178
FE XVI		46.718*	178
FE XV		50.062*	00 180
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FE XV		50.120*	1 180
FE XVI		50.350*	178
FE XVI		50.555*	178
FE XV		52.911*	3 180
FE XVI		54.142*	178
FE XVI		54.728*	178
FE XVI		54.769*	178
FE XV		55.635*	1 180
FE XV		55.793*	2 180
FE XV		55.815*	0 180
FE XV		56.200*	3 180
FE XV		56.236*	00 180
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FE XVI		63.719*	178
FE XVI		66.263*	178
FE XVI		66.368*	178
FE XV		69.945*	2 180
FE XV		69.987*	3 180
FE XV		70.054*	4 180
FE XI		86.149*	0 181
FE XI		86.513*	1 181
FE XI		86.772*	2 181
FE XI		87.025*	1 181
FE XI		87.995*	0 181
FE XI		88.029*	0 181
FE XI		88.167*	0 181
FE XI		89.104*	2 181
FE XI		89.185*	1 181
FE XI		89.771*	0 181
FE XI		90.205*	1 181
FE XI		90.345*	0 181
FE VIII		93.217	3 365
FE VIII		93.374	3 365

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE X	94.012*	4	182	FE VI	290.302	5	46
FE X	95.338*	1	182	FE VI	290.499	2	46
FE X	95.374*	3	182	FE VI	290.577	4	46
FE X	96.122*	4	182	FE VI	290.737	4	46
FE X	96.788*	2	182	FE VI	290.890	2	46
FE X	97.122*	3	182	FE VI	291.020*	5	46
FE X	97.591*	0	182	FE VI	291.184*	6	46
FE X	97.838*	0	182	FE VI	291.229*	6	46
FE VIII	98.345	4	365	FE VI	291.473*	5	46
FE VIII	98.522	4	365	FE VI	291.632	2	46
FE IX	103.580*	8	366	FE VI	291.800*	5	46
FE IX	105.236*	6	366	FE VI	291.829*	5	46
FE VIII	107.872*	8	365	FE VI	291.931	0	46
FE VIII	108.083*	8	365	FE VI	292.038	2	46
FE VIII	130.939*	8	365	FE VI	292.343	1	46
FE VIII	131.242*	9	365	FE VI	292.597	4	46
FE VIII	194.762	5	365	FE VI	292.736*	7	46
FE VIII	195.476*	20	365	FE VI	292.925	5	46
FE VIII	196.046*	15	365	FE VI	293.046	2	46
FE VIII	222.189	4	365	FE VI	293.214	1	46
FE VIII	223.870	4	365	FE VI	293.292	4	46
FE VII	231.047	6	128	FE VI	293.384	4	46
FE VII	231.641	5	128	FE VI	293.488	4	46
FE VII	231.715	8	128	FE VI	293.745*	8	46
FE VII	232.248	8	128	FE VI	293.820	1	46
FE VII	232.432	6	128	FE VI	293.966*	8	46
FE VII	232.579	2	128	FE VI	294.040	0	46
FE VII	232.945	3	128	FE VI	294.265*	7	46
FE VII	233.021*	10	128	FE VI	294.339*	5	46
FE VII	233.187	2	128	FE VI	294.520*	7	46
FE VII	233.309	8	128	FE VI	294.665	4	46
FE VII	233.703	8	128	FE VI	294.850	4	46
FE VII	233.770	3	128	FE VI	294.960	4	46
FE VII	233.940	3	128	FE VI	295.014	4	46
FE VII	234.339*	9	128	FE VI	295.042	2	46
FE VII	234.779*	15	128	FE VI	295.634	4	46
FE VII	235.232*	10	128	FE VI	296.317	1	46
FE VII	236.501	4	128	FE VI	296.723	3	46
FE VII	239.605	0	128	FE VI	296.808	5	46
FE VII	240.075*	8	128	FE VI	296.988*	6	46
FE VII	240.105*	7	128	FE VI	297.131	2	46
FE VII	240.370	1	128	FE VI	297.308*	7	46
FE VII	240.451	1	128	FE VI	297.568*	8	46
FE VII	240.563	5	128	FE VI	299.579	1	46
FE VII	240.937	1	128	FE VI	299.803	1	46
FE VII	243.375*	50	128	FE VI	300.997	2	46
FE VII	244.092	4	128	FE VI	303.558	4	46
FE VII	244.524	7	128	FE VI	304.221*	7	46
FE VII	244.803	4	128	FE VI	304.551*	7	46
FE VII	245.141	8	128	FE VI	305.200	4	46
FE VII	245.481	7	128	FE VI	305.837	1	46
FE VII	245.596	3	128	FE VI	306.460	1	46
FE VII	245.926*	10	128	FE VI	306.823	2	46
FE VII	245.973	3	128	FE VI	306.922	5	46
FE VI	276.947	3	46	FE VI	307.013	2	46
FE VI	277.569	6	46	FE VI	307.375	4	46
FE VI	277.610	2	46	FE VI	307.404	3	46
FE VI	277.951	3	46	FE VI	307.800	3	46
FE VI	278.149	5	46	FE VI	307.884	0	46
FE VI	278.339	5	46	FE VI	308.007	3	46
FE VI	279.471	3	46	FE VI	308.187	2	46
FE VI	283.770	5	46	FE VI	308.383	2	46
FE VI	284.504	4	46	FE VI	308.534	4	46
FE VI	287.333	1	46	FE VI	308.644	5	46
FE VI	288.551	4	46	FE VI	308.960	3	46
FE VI	289.112	5	46	FE VI	308.993	3	46
FE VI	289.302	4	46	FE VI	309.627	1	46
FE VI	289.468	3	46	FE VI	310.274	5	46
FE VI	289.520	4	46	FE VI	310.601	4	46
FE VI	289.672	2	46	FE VI	310.807	0	46
FE VI	289.851	4	46	FE VI	311.138	1	46
FE VI	290.038	4	46	FE VI	311.236	2	46
FE VI	290.089	4	46	FE VI	311.702*	7	46
FE VI	290.146	4	46	FE VI	312.263*	7	46
FE VI	290.271*	6	46	FE VI	314.299	3	46

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE VI	314.814	1	46	FE V	421.765	4	47
FE VI	315.027	4	46	FE V	422.287*	6	47
FE VI	315.506	3	46	FE V	423.833	2	47
FE VI	317.319	3	46	FE V	424.733	3	47
FE VI	318.364	3	46	FE V	425.476	1	47
FE V	364.292	3	47	FE V	425.589	1	47
FE V	364.795	4	47	FE V	425.840	0	47
FE V	364.973	3	47	FE V	426.045	5	47
FE V	365.339	3	47	FE V	426.097	5	47
FE V	365.440*	6	47	FE V	426.609	1	47
FE V	365.634	3	47	FE V	426.745	3	47
FE V	365.858*	6	47	FE V	426.814	4	47
FE V	366.001	3	47	FE V	426.969	3	47
FE VIII	370.432*	10	365	FE V	427.190	3	47
FE V	373.720	5	47	FE V	427.320	1	47
FE V	374.240	4	47	FE V	427.442	2	47
FE V	374.464	2	47	FE V	427.782	1	47
FE V	374.864	5	47	FE V	427.918	2	47
FE V	379.032	1	47	FE V	428.000	0	47
FE V	379.294	3	47	FE V	428.131	3	47
FE V	380.664	3	47	FE V	428.292	0	47
FE V	381.152	2	47	FE V	428.763	5	47
FE V	381.260	3	47	FE V	428.909	5	47
FE V	381.467	0	47	FE V	429.206	1	47
FE V	381.671	0	47	FE V	430.053	1	47
FE V	381.881	4	47	FE V	430.624	2	47
FE V	383.484	3	47	FE V	431.541	3	47
FE V	384.212	3	47	FE V	432.340	3	47
FE V	384.610	2	47	FE V	432.919	1	47
FE V	384.826	1	47	FE	502.4	3	335
FE V	384.957*	6	47	FE	506.7	3	335
FE V	385.023	4	47	FE IV	525.68 *	100	357
FE V	385.740	5	47	FE IV	526.28 *	75	357
FE V	385.869	5	47	FE IV	526.60 *	60	357
FE V	386.156	4	47	FE	552.1	7	335
FE V	386.256	0	47	FE	565.7	3	335
FE V	386.483	1	47	FE	569.8	3	335
FE V	386.585	1	47	FE IV	574.5 *	50	286
FE V	386.737	3	47	FE IV	576.8 *	40	286
FE V	386.783	4	47	FE IV	587.6	2	286
FE V	386.897	4	47	FE	602.4	4	335
FE V	387.199	5	47	FE	666.9	4	335
FE V	387.500*	6	47	FE	669.9	4	335
FE V	387.616	4	47	FE III	679.129	3	188
FE V	387.775	4	47	FE III	680.700	2	188
FE V	387.983	3	47	FE III	682.10	2	188
FE V	388.500	2	47	FE III	684.28	1	188
FE V	388.607	2	47	FE III	684.858	1	188
FE V	392.907*	6	47	FE III	686.63	1	188
FE V	393.270*	5	47	FE III	688.53	0	188
FE V	393.911*	4	47	FE III	700.575	1	188
FE V	395.155	3	47	FE III	703.506	1	188
FE V	395.789	2	47	FE III	704.923	1	188
FE V	396.773	3	47	FE III	705.892	2	188
FE V	396.902	0	47	FE III	707.444	1	188
FE V	400.625	4	47	FE III	722.419	4	188
FE V	401.030	2	47	FE III	727.681	3	188
FE V	401.639	2	47	FE III	728.52	1	188
FE V	402.197	1	47	FE III	728.810	6	188, 488
FE V	414.790	1	47	FE III	729.349	3	188
FE V	415.006	4	47	FE III	729.996	5	188, 488
FE V	415.825	1	47	FE III	730.96	2	188, 488
FE V	415.972	3	47	FE III	731.130	1	188
FE V	416.208	5	47	FE III	731.443	1	188
FE V	416.910	2	47	FE III	731.612	2	188
FE V	417.048	1	47	FE III	731.846	2	188
FE V	417.382*	6	47	FE III	731.90	1	188
FE V	417.516	0	47	FE III	732.004	3	188
FE V	418.033*	6	47	FE III	732.425	2	188
FE V	418.457*	5	47	FE III	733.13	1	188
FE V	419.915	3	47	FE III	734.296	4	188
FE V	420.546	5	47	FE III	735.338	1	188
FE V	420.874	2	47	FE III	736.47	0	188
FE V	421.045	5	47	FE III	737.708	5	188
FE V	421.682	2	47	FE III	738.742	1	188

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE III	739.264	5	188	FE III	838.936	5	188, 488
FE III	739.594	2	188	FE III	838.997	4	188
FE III	739.724	4	188	FE III	839.092	2	188
FE III	746.247	3	188	FE III	839.195	2	188
FE III	751.427	2	188	FE III	839.319	5	188, 488
FE III	751.648	2	188	FE III	839.981	3	188
FE III	754.478	2	188	FE III	840.141	4	188, 488
FE III	757.167	2	188	FE III	840.381	5	188, 488
FE III	757.279	2	188	FE III	840.518	4	188, 488
FE III	776.097	2	188	FE III	840.629	3	188
FE III	782.035	3	188	FE III	840.741	2	188
FE III	783.069	3	188	FE III	841.088	5	188, 488
FE III	785.76	1	188	FE III	841.688	2	188
FE III	788.082	4	188	FE III	842.020	6	188, 488
FE III	788.469	2	188	FE III	842.09	5	188
FE III	792.559	3	188	FE III	842.686	5	188
FE III	794.01	1	188	FE III	844.284	10	188, 488
FE III	794.19	2	188	FE III	844.838	4	188
FE III	795.550	2	188	FE III	844.954	2	188
FE III	797.055	2	188	FE III	845.408	9	188, 488
FE III	797.16	2	188	FE III	845.686	1	188
FE III	801.37	1	188	FE III	845.925	7	188, 488
FE III	807.547	9	188, 488	FE III	846.025	3	100
FE III	807.855	8	188, 488	FE III	846.089	2	188
FE III	808.079	5	188, 488	FE III	846.534	6	188, 488
FE III	808.840	8	188, 488	FE III	847.425	8	188, 488
FE III	809.675	3	188	FE III	847.578	7	188, 488
FE III	810.940	7	188, 488	FE III	847.700	6	188, 488
FE III	811.246	4	188	FE III	847.924	6	188, 488
FE III	811.284	8	188, 488	FE III	847.984	5	188
FE III	812.931	5	188	FE III	848.07	1	188
FE III	813.288	4	188, 488	FE III	848.601	4	188
FE III	813.382	10	188, 488	FE III	848.729	4	188
FE III	813.862	5	188	FE III	848.977	3	188
FE III	814.148	1	188	FE III	849.524	5	188, 488
FE III	814.242	6	188, 488	FE III	849.569	4	188
FE III	814.565	5	188	FE III	851.150	7	188, 488
FE III	815.363	3	188	FE III	851.332	7	188, 488
FE III	815.52	1	188	FE III	851.842	6	188, 488
FE III	815.612	3	188	FE III	851.992	6	188, 488
FE III	816.163	6	188, 488	FE III	852.644	2	188
FE III	816.273	6	188, 488	FE III	853.045	1	188
FE III	817.038	7	188, 488	FE III	853.456	1	188
FE III	817.166	3	188	FE III	854.073	5	188, 488
FE III	817.348	3	188	FE III	854.205	1	188
FE III	818.383	3	188	FE III	854.367	6	188, 488
FE III	818.598	4	188, 488	FE III	854.532	2	188
FE III	818.981	1	188	FE III	855.336	1	188
FE III	819.066	4	188	FE III	855.441	3	188
FE III	819.742	1	188	FE III	855.879	2	188
FE III	819.898	3	188	FE III	855.935	2	188
FE III	820.271	3	188	FE III	856.039	2	188
FE III	820.409	3	188	FE III	856.244	1	188
FE III	820.915	3	188	FE III	856.325	5	188
FE III	821.723	3	188	FE III	856.480	1	188
FE III	822.214	3	100	FE III	857.392	5	188, 488
FE III	823.257	6	188, 488	FE III	857.690	5	188
FE III	824.800	3	188	FE III	858.565	4	188, 488
FE III	827.777	6	188, 488	FE III	858.602	6	188, 488
FE III	829.375	4	188	FE III	859.086	3	188
FE III	830.500	1	188	FE III	859.626	6	188, 488
FE III	831.464	5	188, 488	FE III	859.721	8	188, 488, 292
FE III	832.328	5	188, 488	FE III	859.838	6	188, 488
FE III	833.532	2	188	FE III	860.315	5	188, 488
FE III	834.067	4	188, 488	FE III	860.565	2	188
FE III	834.944	6	188, 488	FE III	860.889	2	188
FE III	835.627	2	188	FE III	861.087	2	188
FE III	835.917	2	188	FE III	861.284	4	188, 488
FE III	836.521	7	188, 488	FE III	861.761	8	188, 488
FE III	836.628	3	188	FE III	861.832	10	188, 488
FE III	837.439	7	188, 488	FE III	862.028	5	188, 488
FE III	837.803	3	188	FE III	862.191	2	188, 488
FE III	838.048	8	188, 488	FE III	862.326	2	188
FE III	838.498	2	188	FE III	862.468	3	188
FE III	838.869	2	188	FE III	862.735	5	188, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE III	863.004	1	188	FE III	909.279	2	188
FE III	863.232	4	188	FE III	910.639	3	188
FE III	863.302	4	188	FE III	910.693	4	188
FE III	863.730	1	188	FE III	910.961	6	188
FE III	864.034	6	188, 488	FE III	911.205	1	188
FE III	864.375	2	188	FE III	911.265	2	188
FE III	864.425	4	188, 488	FE III	912.197	2	188
FE III	865.267	1	188	FE III	912.683	5	188
FE III	865.896	4	188, 488	FE III	912.794	3	188
FE III	866.905	1	188	FE III	913.132	1	188
FE III	867.639	5	188, 488	FE III	913.324	1	188
FE III	868.450	4	188	FE III	913.919	2	188
FE III	868.836	5	188	FE III	915.455	3	188
FE III	870.041	3	188	FE III	917.684	2	188
FE III	870.235	2	188	FE III	917.932	4	188
FE III	870.274	2	188	FE II	918.118	1	292
FE III	870.621	5	188	FE III	918.800	1	188
FE III	871.552	2	188	FE II	919.095	0	292
FE III	871.968	4	188	FE III	923.215	1	188
FE III	872.027	4	188	FE II	923.884	30	292, 488
FE III	873.080	3	188	FE II	924.970	15	292, 488
FE III	873.130	2	188	FE II	926.220*	60	292, 488
FE III	873.462	8	188, 488	FE II	926.618	10	292, 488
FE III	873.988	1	188	FE II	926.900	25	292, 488
FE III	874.129	2	188	FE II	927.176	30	292, 488
FE III	874.560	1	188	FE II	927.632	8	292, 488
FE III	875.090	2	188	FE II	928.107	30	292, 488
FE III	875.423	5	188	FE II	928.470	20	292, 488
FE III	876.021	5	188	FE III	929.163	5	188
FE III	876.483	3	188	FE II	929.538*	30	292, 488
FE III	876.564	3	188	FE II	929.612*	30	292, 488
FE III	876.679	3	188	FE II	930.030*	30	292, 488
FE III	878.287	4	188	FE II	930.165*	30	292, 488
FE III	879.505	4	188	FE II	930.219*	30	292, 488
FE III	880.008	5	188	FE II	930.558*	30	292, 488
FE III	880.447	6	188, 488	FE II	931.142*	25	292, 488
FE III	880.949	6	188, 488	FE II	931.709	10	292, 488
FE III	881.088	7	188, 488	FE II	932.244	30	292, 488
FE III	881.477	3	188	FE II	932.687	30	292, 488
FE III	882.147	4	188, 488	FE III	934.703	7	188, 488
FE III	882.295	1	188	FE II	935.783	0	292, 488
FE III	883.090	3	188	FE II	936.484	8	292, 488
FE III	883.688	6	188, 488	FE II	938.967	10	292, 488
FE III	884.263	4	188	FE II	939.159	20	292, 488
FE III	884.600	5	188, 488	FE II	941.660	12	292, 488
FE III	886.138	1	188	FE III	942.363	2	188
FE III	887.372	3	188	FE II	942.589	5	292, 488
FE III	888.777	2	188	FE II	943.267	12	292, 488
FE III	890.008	2	188	FE II	943.910	15	292, 488
FE III	890.755	9	188, 488	FE II	945.095	25	292, 488
FE III	891.172	10	188, 488	FE III	946.056	6	188, 488
FE III	891.442	8	188, 488	FE II	947.564	1	292
FE III	892.417	6	188, 488	FE III	948.322	5	188
FE III	894.008	4	188	FE III	948.918	4	188
FE III	896.072	1	188	FE III	950.334	10	188, 488
FE III	896.380	1	188	FE III	950.663	4	188
FE II	896.504	1	292, 488	FE III	950.722	3	188, 488
FE III	897.580	1	188	FE II	952.470	10	292, 488
FE III	897.747	2	188	FE III	953.383	3	188
FE II	898.805	1	188, 292, 488	FE II	954.786	2	292, 488
FE III	899.052	1	188	FE III	955.141	2	188
FE III	899.417	8	188, 488	FE III	955.572	5	188, 488
FE II	900.360	5	292, 488	FE III	956.355	1	188
FE III	900.940	3	188	FE III	959.070	1	188
FE III	901.034	5	188, 488	FE III	959.329	1	188
FE III	902.869	3	188	FE III	959.552	4	188
FE III	904.320	3	188	FE III	960.454	1	188
FE III	905.338	7	188, 488	FE III	961.709	2	188
FE III	905.964	1	188	FE III	961.901	7	188, 488
FE III	907.041	1	188	FE III	962.108	1	188
FE III	907.891	4	188	FE III	962.655	5	188, 488
FE III	908.131	5	188	FE III	963.197	2	188
FE III	908.800	1	188	FE III	963.880	3	188
FE III	908.885	2	100	FE III	965.717	1	188
FE III	909.178	4	188	FE III	967.197	6	188, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE III	968.955	4	188, 488	FE III	1061.708	6	188, 488
FE III	969.423	2	188	FE III	1061.827	4	188
FE III	969.954	3	188, 488	FE III	1062.272	3	188
FE III	970.381	2	188	FE II	1062.758	20	292, 488
FE III	970.435	2	188	FE III	1063.188	4	188
FE III	971.929	3	188	FE III	1063.309	3	188
FE III	973.505	4	188	FE III	1063.872	8	188, 488
FE III	977.790	2	188	FE II	1063.982	15	292, 488
FE III	979.032	5	188	FE III	1064.611	1	188
FE III	979.704	2	188	FE III	1066.143	10	188, 488
FE III	980.416	1	188	FE III	1066.181	10	188, 488
FE III	981.084	1	188	FE III	1068.190	5	188, 488
FE III	981.373	10	188, 488	FE III	1068.299	3	188
FE III	983.510	2	188	FE II	1068.356	30	292, 488
FE III	983.877	10	188, 488	FE III	1069.019	5	188, 488
FE III	985.824	8	188, 488	FE II	1069.038	15	292, 488
FE III	986.514	4	188	FE III	1070.284	4	188
FE III	986.637	5	188	FE III	1070.556	3	188
FE III	988.148	2	188	FE II	1071.260	5	292, 488
FE III	989.467	4	188	FE II	1071.596	30	292, 488
FE III	990.235	4	188, 488	FE III	1071.746	5	188, 488
FE III	990.800	6	188, 488	FE III	1072.061	1	188
FE III	991.232	7	188, 488	FE III	1072.211	4	188
FE III	991.829	6	188, 488	FE III	1075.024	4	188, 488
FE III	992.337	2	188	FE II	1076.556	2	292, 488
FE III	993.080	7	188, 488	FE III	1082.838	4	188
FE III	994.257	3	188, 488	FE III	1083.176	2	188
FE III	994.724	6	188, 488	FE III	1086.748	5	188
FE III	995.150	6	188, 488	FE III	1088.224	1	188
FE III	995.223	2	188	FE III	1089.061	3	188
FE II	995.829	8	292, 488	FE III	1089.416	4	188
FE III	997.081	7	188	FE III	1089.671	4	188
FE III	997.599	6	188, 488	FE III	1093.32	2	188
FE III	997.794	1	188	FE III	1095.47	5	188
FE III	999.376	5	188, 488	FE II	1096.616*	20	292, 488
FE II	1000.183	2	292, 488	FE II	1096.793*	20	292, 488
FE III	1005.106	2	188	FE II	1096.886*	30	292, 488
FE III	1006.341	2	188	FE II	1097.782	2	292, 488
FE III	1007.113	3	188, 488	FE III	1098.24	5	188
FE II	1007.657	20	292, 488	FE II	1099.117	25	292, 488
FE II	1007.975	25	292, 488	FE II	1100.026	20	292, 488
FE III	1010.005	4	188, 488	FE II	1100.525	20	292, 488
FE II	1011.037	25	292, 488	FE II	1101.538	20	292, 488
FE II	1012.088	20	292, 488	FE II	1102.385	8	292, 488
FE II	1012.417	25	292, 488	FE II	1102.758	1	292, 488
FE II	1015.083	10	292, 488	FE II	1104.978	1	292, 488
FE II	1015.520	20	292, 488	FE II	1106.215	15	292, 488
FE III	1017.254	9	188, 488	FE II	1106.362	5	292, 488
FE III	1017.745	8	188, 488	FE II	1111.114	15	292, 488
FE III	1018.286	8	188, 488	FE II	1112.086*	35	488
FE III	1019.789	6	188, 488	FE II	1121.987	25	292, 488
FE III	1020.022	2	188	FE III	1122.526	9	188, 292, 488
FE III	1021.561	4	188, 488	FE II	1122.858	25	292, 488
FE III	1024.108	3	188, 488	FE II	1124.134	20	292, 488
FE III	1026.790	6	188, 488	FE III	1124.883	9	188, 292, 488
FE III	1029.551	2	188	FE II	1126.425	20	292, 488
FE III	1030.844	2	188	FE II	1126.603	20	292, 488
FE III	1030.924	6	188, 488	FE III	1126.72	6	188, 292, 488
FE III	1032.123	8	188, 488	FE II	1126.850	20	292, 488
FE III	1032.342	4	188	FE III	1128.02	8	188, 488
FE III	1033.079	1	188	FE II	1128.074	25	292, 488
FE III	1033.24	2	188	FE II	1128.180	5	292, 488
FE III	1033.298	5	188, 488	FE II	1128.530	10	292, 488
FE III	1034.054	2	188	FE III	1128.72	7	188, 292, 488
FE III	1034.654	2	188	FE II	1128.909	20	292, 488
FE III	1035.768	6	188, 488	FE III	1129.19	7	188, 292, 488
FE III	1036.659	2	188	FE II	1129.777	12	292, 488
FE III	1037.462	1	188	FE III	1130.404	5	188, 488
FE III	1038.355	6	188, 488	FE II	1130.428	25	292, 488
FE II	1055.269	25	292, 488	FE II	1130.874	2	292, 488
FE II	1059.571	20	292, 488	FE III	1131.194	7	188, 292, 488
FE III	1060.258	4	188	FE III	1131.914	3	188, 292, 488
FE III	1060.723	4	188	FE II	1133.413	25	292, 488
FE III	1061.127	4	188	FE II	1133.678	25	292, 488
FE III	1061.245	5	188, 488	FE II	1138.039	5	292, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE II	1138.642	25	292, 488	FE II	1370.985	20	645
FE III	1141.272	3	188	FE V	1373.68 *	6	47
FE II	1142.334	25	292, 488	FE II	1375.134	15	645
FE III	1142.464	4	188, 488	FE V	1376.45 *	6	47
FE III	1142.955	5	188, 488	FE II	1379.434	10	645
FE II	1143.235*	25	292, 488	FE V	1380.18	2	47
FE II	1143.295*	30	292	FE II	1381.250	10	488
FE III	1143.54	1	188	FE III	1382.857	1	188
FE III	1143.67	3	188, 488	FE II	1383.543	5	645
FE II	1144.052	5	488	FE V	1384.17	1	47
FE II	1144.946*	35	292, 488	FE V	1384.75	1	47
FE II	1146.963	15	292, 488	FE V	1385.32	2	47
FE II	1147.413	25	292, 488	FE V	1386.33	0	47
FE II	1148.295	30	488	FE V	1388.07	5	47
FE II	1148.693	8	488	FE V	1389.05	1	47
FE II	1150.292	20	292, 488	FE V	1389.97	0	47
FE II	1150.689	20	292, 488	FE III	1394.024	1	188
FE II	1151.163	25	292, 488	FE V	1394.77	3	47
FE II	1152.440	15	292, 488	FE III	1395.213	3	188
FE II	1152.882	20	292, 488	FE III	1395.382	0	188
FE II	1153.281	20	292, 488	FE III	1395.750	2	188
FE II	1153.955	15	292, 488	FE II	1397.581	12	488, 645
FE II	1154.401	20	292, 488	FE V	1400.30	4	47
FE II	1155.273	2	488	FE II	1401.761	1	645
FE II	1156.575	2	292	FE V	1402.45 *	6	47
FE II	1159.347	20	292, 488	FE II	1403.246	1	645
FE II	1162.351	2	292, 488	FE II	1405.791	1	645
FE II	1165.269	12	292, 488	FE V	1406.78	7	47
FE II	1171.606	8	488	FE II	1408.447	20	645
FE II	1175.699	1	292	FE II	1409.277	1	645
FE II	1213.149	20	292, 488	FE V	1409.51	7	47
FE II	1213.764	20	292, 488	FE II	1412.834	12	488
FE II	1214.409	10	292, 488	FE II	1413.707	25	488, 645
FE II	1220.882	5	292, 488	FE II	1417.744	20	488, 645
FE II	1233.660	8	488	FE II	1420.893	10	645
FE IV	1254.80	10	286	FE II	1424.047	8	488
FE IV	1257.29	6	286	FE II	1424.747	12	488
FE IV	1258.68	2	286	FE V	1430.61 *	8	47
FE IV	1259.54 *	30	286	FE V	1440.59	7	47
FE II	1260.542	20	292, 488	FE V	1448.91 *	6	47
FE IV	1261.72	10	286	FE IV	1453.67	15	286
FE IV	1263.47	15	286	FE II	1454.289	5	645
FE IV	1265.28	15	286	FE V	1454.71	3	47
FE II	1266.694	20	292, 488	FE IV	1455.66 *	25	286
FE II	1267.437	25	292, 488	FE V	1456.23	5	47
FE IV	1268.40	2	286	FE II	1459.311	15	292
FE IV	1271.08	15	286	FE IV	1459.92 *	40	286
FE II	1271.235	1	292, 488	FE V	1460.86	2	47
FE II	1272.001	25	292, 488	FE V	1462.67	3	47
FE II	1272.638	15	292, 488	FE II	1463.188	2	645
FE IV	1273.49	2	286	FE IV	1463.25	4	286
FE II	1275.154	15	292, 488	FE IV	1464.01 *	40	286
FE II	1275.801	20	292, 488	FE II	1465.043	20	292, 488
FE II	1277.667	3	645	FE III	1465.309	3	288
FE IV	1280.43	10	286	FE III	1465.763	3	288
FE II	1290.204	15	292, 488	FE III	1465.820	0	288
FE II	1291.594	15	292, 488	FE III	1466.492	4	288
FE II	1293.543	0	292	FE III	1467.751	4	288
FE II	1294.914	12	292, 488	FE IV	1468.11	2	286
FE II	1296.088	20	292, 488	FE III	1468.526	0	288
FE II	1298.815	2	292, 488	FE II	1468.605	1	645
FE II	1299.984	0	292, 488	FE III	1468.986	2	188
FE V	1302.99	1	47	FE III	1469.881	6	288
FE V	1303.59	1	47	FE IV	1469.92	20	286
FE II	1331.261	1	292	FE IV	1470.54	2	286
FE V	1357.28	1	47	FE III	1471.051	0	188
FE V	1359.41	1	47	FE III	1471.638	1	188
FE II	1360.870	5	488	FE II	1472.023	1	645
FE V	1361.42	5	47	FE IV	1472.13 *	35	286
FE II	1362.771	20	488	FE II	1473.834	20	292, 488
FE V	1363.00	4	47	FE IV	1474.52	2	286
FE V	1363.72	3	47	FE II	1475.686	28	286, 645
FE II	1364.590	12	408	FE II	1476.054	10	292, 488
FE V	1365.14	3	47	FE IV	1477.69	5	286
FE V	1365.73	3	47	FE IV	1479.49 *	40	47, 286

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE II	1480.437	0	645	FE III	1543.640	6	47, 288
FE III	1481.169	2	188	FE III	1544.067	3	288
FE III	1484.241	0	188	FE III	1544.232	4	47, 288
FE III	1484.546	1	188	FE III	1545.411	3	288
FE IV	1485.48	12	286	FE IV	1546.120	8	286, 288
FE III	1486.265	7	188, 288, 488	FE III	1546.570	0	288
FE IV	1487.35	5	286	FE III	1546.928	4	288
FE III	1493.640	9	188, 288, 488	FE IV	1547.494	15	286, 288
FE III	1495.210	1	288	FE III	1547.640	8	288
FE II	1495.311	15	488	FE III	1548.251	5	288
FE II	1496.515	10	645	FE II	1548.686	0	645
FE III	1498.825	1	288	FE III	1550.196*	12	188, 288, 488
FE III	1502.964	2	288	FE II	1550.260	1	292, 488
FE III	1504.002	2	188	FE III	1550.450	5	288
FE III	1505.166	10	188, 288, 488	FE III	1550.862	8	47, 288, 488
FE II	1506.861	2	645	FE III	1551.085	2	288
FE III	1507.530	2	288	FE III	1551.149	2	288
FE III	1511.133	2	288	FE III	1551.377	4	188, 288, 488
FE III	1511.617	5	288	FE IV	1552.067	15	286, 288
FE II	1512.017	1	645	FE III	1552.681	0	288
FE III	1512.192	2	288	FE V	1554.17	1	47
FE III	1512.262	0	288	FE III	1555.166	0	286, 288
FE III	1512.546	3	288	FE III	1555.861	3	288
FE III	1512.830	0	288	FE III	1556.075	5	288
FE III	1512.896	2	288	FE III	1556.427	1	288
FE III	1513.539	5	288	FE IV	1556.493	15	286, 288
FE II	1514.339	1	645	FE III	1556.756	1	288
FE III	1514.563	2	288	FE III	1556.902	2	288
FE III	1514.948	0	288	FE III	1557.561	2	288
FE III	1515.481	5	288	FE III	1558.310	0	288
FE III	1516.222	3	288	FE II	1558.543	10	292, 488
FE III	1516.591	0	288	FE II	1558.706	10	292, 488
FE III	1516.790	0	288	FE II	1559.084	20	286, 488, 795
FE III	1517.771	0	288	FE III	1559.463	2	288
FE III	1518.842	5	288	FE II	1560.260	10	286, 645
FE III	1521.891	0	288	FE III	1560.483	3	288
FE III	1524.522	5	288	FE III	1560.857	2	288
FE III	1524.658	5	288	FE III	1561.179		288
FE IV	1524.67	15	286	FE IV	1563.30	10	286
FE III	1524.799	1	288	FE II	1563.788	25	488, 795
FE III	1525.041	6	288	FE III	1564.281	0	288
FE III	1525.343	1	288	FE III	1564.512	2	288
FE III	1525.634	2	288	FE III	1565.100	3	286, 288
FE III	1525.801	6	288	FE II	1565.374	1	645
FE III	1526.016	2	288	FE IV	1566.54	3	286
FE II	1526.517	5	645	FE II	1566.821	20	488, 645
FE III	1527.145	6	288	FE III	1567.650	1	288
FE II	1527.296	5	288, 645	FE II	1568.026	8	488, 645
FE III	1527.767	1	288	FE III	1568.820	3	288
FE III	1528.884	0	288	FE III	1569.066	1	288
FE III	1529.764	3	288	FE II	1569.674	12	488, 645
FE III	1530.220	2	288	FE II	1570.244	20	488, 645
FE III	1530.431	0	288	FE IV	1571.255	10	286, 288
FE III	1531.293	6	188, 288, 488	FE II	1572.750	1	488, 795
FE III	1531.644	8	188, 288, 488	FE III	1572.776	3	288
FE III	1531.864	7	188, 288, 488	FE III	1572.841	5	288
FE V	1532.70	4	47	FE III	1572.984	0	288
FE III	1533.439	4	47, 288	FE II	1573.831	5	292, 488
FE III	1535.421	4	288	FE IV	1574.778	8	286, 292, 488
FE III	1536.421	2	288	FE II	1574.925	20	488, 795
FE III	1536.591	1	288	FE II	1577.084	1	288, 292, 488
FE III	1536.640	2	288	FE III	1577.926	2	288
FE III	1536.830	1	288	FE II	1578.497	10	645
FE III	1538.632	10	188, 288, 488	FE III	1578.759	2	288
FE III	1539.128	8	188, 288, 488	FE IV	1579.73	3	286
FE III	1539.480	5	188, 288, 488	FE III	1580.237	5	288
FE III	1540.165	7	288	FE II	1580.625	25	288, 488, 795
FE III	1540.362	0	288	FE III	1581.057	1	288
FE III	1540.428	1	288	FE II	1581.274	8	488, 795
FE III	1540.815	2	288	FE III	1582.419	0	288
FE II	1541.011	0	292	FE III	1582.621	0	288
FE III	1541.818	5	288	FE III	1583.199	3	288
FE IV	1542.15	15	286	FE III	1583.973	0	288
FE III	1542.625	1	288	FE II	1584.954	15	488, 795
FE III	1542.965	2	288	FE II	1588.295	10	488, 795

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE III	1591.803	2	288	FE II	1673.460	15	488, 795
FE III	1592.721	1	288	FE II	1674.251	2	488, 795
FE III	1592.913	1	288	FE II	1674.716	10	488, 645
FE III	1593.741	1	288	FE IV	1674.89	5	286
FE III	1593.897	1	288	FE IV	1675.78 *	25	286
FE III	1594.844	0	288	FE II	1676.871	1	292, 488
FE III	1595.180	0	288	FE II	1677.847	3	645
FE III	1595.597	6	188, 288, 488	FE II	1679.380	15	488, 795
FE III	1597.631	1	288	FE IV	1680.86	1	286
FE III	1601.211	10	188, 288, 488	FE IV	1681.45 *	25	286
FE III	1601.289	6	188, 288, 488	FE II	1684.005	2	645
FE III	1602.000	5	188, 288, 488	FE II	1684.760	0	645
FE II	1602.588	12	488, 645	FE II	1685.960	5	488, 795
FE II	1605.318	5	645	FE II	1686.450	8	488, 795
FE III	1606.014	3	188, 288, 488	FE II	1686.717	2	292, 488
FE III	1607.723	9	188, 288, 488	FE II	1688.280	1	645
FE II	1608.456*	35	488, 795	FE II	1688.401	2	286, 645
FE II	1610.924	15	488, 795	FE II	1689.830	10	488, 795
FE III	1611.723	7	188, 288, 488	FE II	1690.757	8	488, 795
FE III	1611.763	7	188, 288, 488	FE II	1691.271	8	488, 795
FE II	1612.809	20	488, 795	FE II	1692.516	0	645
FE III	1614.611	1	188	FE II	1693.477	0	292, 488
FE III	1617.171	1	188	FE II	1693.961	0	292, 488
FE II	1618.470	25	488, 795	FE III	1695.036	2	188
FE II	1621.685	30	488, 795	FE II	1696.463	3	645
FE II	1623.090	8	488, 795	FE II	1696.794	8	488, 795
FE II	1623.715	1	645	FE II	1698.190	0	292, 488
FE III	1624.206	2	188	FE II	1699.199	2	292, 488
FE II	1625.520	20	488, 795	FE II	1701.952	2	292, 488
FE II	1625.909	15	488, 795	FE II	1702.043	25	488, 795
FE II	1627.401	1	645	FE II	1704.652	3	645
FE III	1628.304	3	188	FE II	1706.179	1	292, 488
FE II	1629.154	30	488, 795	FE II	1707.411	2	488, 645
FE IV	1630.99 *	75	286	FE II	1708.259	1	488, 645
FE II	1631.120	30	488, 795	FE II	1708.627	8	488, 795
FE II	1632.672	1	292, 488	FE II	1709.560	0	292, 488
FE II	1633.904	15	488, 795	FE II	1709.678	15	488, 645
FE II	1634.345	20	488, 795	FE III	1709.892	4	188
FE II	1635.398*	35	488, 795	FE III	1710.374	3	188
FE II	1636.321*	30	488, 795	FE II	1711.658	0	645
FE II	1637.396	15	488, 795	FE II	1712.995	20	488, 795
FE II	1639.403*	30	292, 488	FE II	1715.036	4	488, 645
FE IV	1640.03 *	65	286	FE II	1715.507	12	488, 645
FE II	1640.152	12	488, 795	FE II	1716.569	2	292, 488
FE II	1641.759	25	488, 795	FE III	1717.414	2	188
FE II	1642.187	5	488	FE II	1718.123	2	292, 488
FE II	1643.574	15	488, 795	FE II	1718.986	5	645
FE II	1646.182	20	488, 795	FE II	1720.042	10	488, 645
FE IV	1647.05 *	45	286	FE II	1720.616	20	488, 795
FE II	1647.159	25	488, 795	FE II	1722.425	3	645
FE II	1649.444	15	292, 488	FE III	1722.837	4	188
FE II	1649.572	20	488, 795	FE II	1724.512	5	645
FE II	1650.704	20	488, 795	FE II	1724.856	8	488, 795
FE II	1652.489	0	292, 488	FE II	1724.967	8	488, 795
FE IV	1652.85	20	286	FE II	1725.402	5	488
FE II	1654.111	5	488, 795	FE II	1726.393	12	488, 795
FE II	1654.474	5	488, 795	FE II	1726.900	0	645
FE II	1655.042	1	292, 488	FE II	1728.275	0	645
FE IV	1656.25	10	286	FE II	1728.845	1	645
FE IV	1656.61	15	286	FE III	1730.842	4	188
FE III	1656.831	2	188	FE II	1731.038	10	488, 645
FE II	1657.049	1	645	FE II	1731.373	1	292, 795
FE II	1657.531	10	645	FE II	1731.891	3	645
FE II	1658.773	15	488, 795	FE II	1732.253	15	488
FE II	1659.479	20	488, 795	FE II	1733.375	1	645
FE IV	1660.07	20	286	FE II	1733.403	1	488, 645
FE II	1661.347	0	645	FE II	1735.503	3	645
FE IV	1662.26	20	286	FE II	1737.192	2	645
FE II	1662.369	0	292, 488	FE II	1737.943	1	645
FE II	1663.217	15	488, 795	FE III	1738.468	3	188
FE IV	1663.52	10	286	FE III	1739.201	0	188
FE IV	1669.73	2	286	FE III	1744.233	3	188
FE II	1670.742	25	488, 795	FE III	1745.638	4	188
FE II	1671.010	1	292, 488	FE II	1746.816	20	488, 645
FE IV	1672.18	5	286	FE III	1747.260	1	188

SECTION III EMISSION LINES BY ELEMENT

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE III	1748.177	2	188	FE III	1843.409	4	188
FE II	1748.910	2	645	FE III	1843.502	2	188
FE III	1749.052	1	188, 292	FE III	1843.999	3	188
FE II	1753.170	0	645	FE III	1844.263	5	188
FE III	1753.455	0	188	FE III	1844.547	6	188, 488
FE II	1760.415	20	488, 645	FE II	1844.590	5	488
FE II	1761.379	25	488, 645	FE III	1844.942	3	188, 488
FE II	1764.118	1	292	FE III	1845.304	5	188, 488
FE II	1765.325	0	292	FE III	1845.521	7	188, 488
FE II	1769.667	1	488	FE III	1845.749	1	188
FE III	1770.247	3	188	FE II	1846.581	12	292, 488
FE III	1770.554	6	188	FE III	1846.943	3	188
FE III	1771.975	2	188	FE III	1847.348	1	188
FE II	1772.505	15	488, 795	FE III	1847.637	2	188, 645
FE III	1773.098	1	188	FE III	1848.130	2	188
FE III	1775.267	1	188	FE II	1848.231	5	488
FE III	1775.590	0	188	FE III	1848.428	0	188
FE III	1775.983	6	188	FE III	1848.492	1	188
FE II	1776.661	1	292	FE II	1848.768	12	488, 795
FE III	1777.737	1	188	FE III	1848.883	1	188
FE II	1777.900	1	645	FE III	1849.172	1	100
FE II	1781.702	2	292, 488, 645	FE III	1849.407	7	188, 488
FE II	1785.161*	40	488, 795	FE III	1849.648	1	188
FE II	1786.448	1	292	FE III	1849.960	5	188, 488
FE II	1786.738*	40	292, 488	FE III	1850.200	5	188, 488
FE II	1788.072*	35	488, 795	FE III	1850.650	1	188
FE III	1791.345	0	188	FE III	1851.261	6	188
FE II	1793.360	10	488, 795	FE II	1851.517	1	292, 488
FE II	1796.931	10	645	FE II	1852.458	3	188, 645
FE III	1797.769	0	188	FE III	1852.677	6	188
FE II	1798.163	10	488, 645	FE III	1852.812	2	188
FE III	1801.766	3	188, 286	FE II	1853.754	2	645
FE III	1803.330	1	188	FE III	1854.384	3	188, 488
FE III	1805.337	2	188	FE III	1854.826	9	188, 488
FE II	1807.746	3	645	FE III	1854.975	5	188, 488
FE III	1808.203	0	188	FE III	1855.510	3	188
FE II	1809.316	10	488, 645	FE I	1855.58	15	488, 605
FE III	1811.924	3	188	FE III	1856.690	1	188, 488
FE IV	1812.53	1	286	FE II	1857.935	12	488, 645
FE III	1812.974	2	188	FE III	1858.542	5	188, 488
FE II	1813.196	0	645	FE II	1859.741	15	488, 795
FE II	1815.406	0	286, 292, 645	FE III	1859.813	5	188
FE II	1818.509	2	292, 488	FE III	1859.955	3	188, 488
FE III	1819.480	2	188, 286	FE II	1860.049	20	488, 795
FE III	1819.718	1	188	FE III	1861.665	3	188, 488
FE III	1820.496	1	188	FE I	1862.318	15	292, 488, 605
FE III	1821.865	0	188	FE III	1862.446	2	188
FE II	1822.150	1	292, 488	FE II	1862.774	2	645
FE III	1822.183	1	188, 286	FE III	1863.317	4	188, 488
FE II	1823.888	1	292	FE I	1863.54	0	488, 605
FE III	1824.659	1	188	FE III	1864.53	1	188, 488, 605
FE II	1825.316	2	286, 645	FE II	1864.656	2	488
FE III	1826.156	1	188	FE II	1864.743	20	488
FE III	1826.267	0	188	FE III	1865.202	7	188, 488
FE II	1826.991	1	292, 488	FE III	1865.445	2	188
FE II	1827.736	1	645	FE III	1865.606	2	188
FE III	1828.857	1	188	FE I	1866.07	12	488, 605
FE III	1829.172	2	188	FE III	1866.305	9	188, 488
FE III	1830.623	3	188, 645	FE III	1866.554	5	188, 488
FE II	1831.724	1	292, 488	FE I	1866.815	10	292, 488, 605
FE II	1832.494	2	645	FE III	1866.900	2	188
FE II	1833.071	0	292, 488	FE III	1869.828	10	188, 488
FE III	1834.096	1	188	FE III	1869.91	4	188
FE II	1835.868	15	488, 795	FE III	1871.152	9	188, 488
FE III	1837.422	1	188	FE III	1871.319	2	188
FE III	1837.588	4	188	FE III	1871.44	0	188
FE III	1838.309	7	188, 488	FE III	1872.214	6	188
FE III	1838.621	1	188	FE I	1872.359	15	292, 488, 605
FE III	1838.698	1	188	FE III	1872.515	4	188
FE III	1841.387	3	188, 488	FE I	1873.052	12	292, 488, 605
FE III	1841.536	5	188	FE I	1873.259	15	292, 488, 605
FE II	1841.701	10	488, 795	FE III	1873.534	2	188
FE II	1841.988	5	645	FE II	1874.931	0	292, 488
FE II	1842.256	0	292, 488	FE II	1875.536	15	488
FE III	1842.927	5	188, 488	FE II	1876.181	8	488, 795

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE I	1876.419	10	488, 795	FE I	1903.370	1	292, 488, 605
FE II	1876.839	15	488, 795	FE III	1903.706	1	188
FE II	1877.460	20	488, 795	FE III	1903.983	1	188
FE III	1877.989*	12	188, 488	FE III	1904.257	2	188
FE III	1878.550	2	188	FE III	1904.402	4	188
FE I	1878.849	1	292, 488, 605	FE II	1904.784	15	488, 795
FE I	1880.14	5	292, 488, 605	FE III	1905.214	1	188
FE III	1880.620	3	188	FE III	1905.818	2	188
FE III	1880.704	4	188	FE III	1906.457	6	188, 488
FE II	1880.976	20	488, 605	FE III	1906.814	6	188
FE III	1881.178	5	188	FE III	1907.577	10	188, 488
FE III	1881.578	3	188	FE III	1907.741	4	188
FE III	1882.047	10	188, 488	FE III	1909.782	2	188
FE III	1882.357	5	188	FE III	1909.846	2	188
FE III	1882.979	4	188, 488	FE II	1910.172	1	188, 292
FE III	1883.185	2	188	FE III	1910.401	6	188, 488
FE III	1883.394	1	188	FE II	1910.669	8	488, 645
FE III	1883.816	3	188, 488	FE III	1911.338	7	188, 488
FE III	1884.253	2	188	FE III	1911.703	2	188
FE III	1884.596	8	188, 488	FE II	1912.582	2	645
FE III	1885.125	9	188, 488	FE III	1912.920	4	188, 488
FE III	1885.947	5	188, 488	FE III	1913.386	1	188
FE III	1886.607	5	188	FE III	1913.622	4	188, 488
FE III	1886.757*	12	188, 292, 488	FE III	1914.056*	19	188, 292, 488
FE III	1887.09	1	188	FE III	1915.083*	15	188, 292, 488
FE III	1887.197	8	188, 292, 488	FE III	1915.750	2	188, 488
FE III	1887.471	8	188, 292, 488	FE III	1916.507	5	188, 488
FE III	1887.734	4	188, 292	FE III	1917.087	2	188
FE I	1887.761	15	292, 488, 605	FE III	1917.26	4	188
FE I	1888.32	12	188, 488, 605	FE II	1917.337	15	188, 292, 488
FE II	1888.731	20	292, 795	FE III	1917.453	9	188, 488
FE III	1889.451	5	188, 488	FE III	1917.665	2	188
FE III	1889.735	4	188	FE III	1917.960	6	188
FE III	1890.669*	13	188, 292, 488	FE II	1918.114	2	292, 488
FE III	1890.893	2	188, 488	FE III	1918.284	7	188, 488
FE III	1891.070	4	188, 488	FE III	1918.480	7	188, 488
FE III	1891.186	3	188, 488	FE III	1918.966	3	188
FE III	1891.339	1	188	FE III	1919.572	4	188, 488
FE III	1891.516	5	188	FE III	1920.186	4	188, 488
FE III	1891.909	3	188	FE III	1920.260	2	188
FE III	1892.073	5	188, 292, 488	FE III	1920.752	2	188
FE III	1892.140	5	188, 488	FE III	1921.132	2	188, 292
FE III	1892.247	5	188, 488	FE III	1921.990	1	188
FE III	1892.339	1	188	FE III	1922.132	1	188, 292
FE III	1892.488	1	188	FE III	1922.766*	15	188, 292, 488
FE III	1892.598	1	188	FE II	1922.797	20	292, 488
FE III	1892.890	5	188, 292, 488	FE III	1923.003	7	188, 488
FE III	1893.113	3	188	FE III	1923.877	7	188, 488
FE III	1893.981	11	188, 488	FE III	1924.119	4	188
FE II	1894.006	10	292, 488	FE III	1924.532	6	188, 488
FE III	1894.252	5	188	FL III	1925.271	4	188
FE III	1894.52	3	188	FE III	1925.855	3	188
FE III	1894.983	4	188, 488	FE II	1925.983	20	488, 795
FE III	1895.456*	20	188, 292, 488	FE III	1926.013	10	188, 488
FE II	1895.675	10	187, 488, 645	FE III	1926.304*	18	188, 292, 488
FE III	1895.912	1	188	FE III	1926.898	3	188
FE III	1896.333	4	188	FE II	1927.436	5	188, 292, 488
FE III	1896.73	4	188	FE III	1927.679	2	188
FE III	1896.803	9	188, 488	FE III	1928.178	4	188
FE III	1897.028	4	188	FE III	1928.265	5	188, 488
FE III	1897.379	3	188	FE III	1928.442	4	188
FE II	1898.538	10	292, 488	FE III	1928.837	4	188
FE III	1898.870	6	188	FE III	1928.991	1	188
FE III	1899.318	5	188	FE II	1929.194	1	292
FE III	1899.931	5	188	FE III	1929.413	4	188, 292
FE III	1900.575	1	188	FE III	1929.632	1	188
FE II	1900.667	0	488	FE III	1929.941	2	188
FE III	1901.096	9	188, 488	FE III	1930.184	2	188
FE III	1901.379	5	188	FE III	1930.387*	15	188, 292, 488
FE III	1901.540	3	188, 488	FE II	1930.917	2	188, 645
FE III	1902.076	5	188, 488	FE III	1931.309	1	188
FE III	1902.402	6	188	FE III	1931.507*	14	188, 488
FE III	1902.902	5	188	FE II	1932.477	15	292, 488
FE III	1903.18	1	188	FE III	1932.818	5	188, 488
FE III	1903.257	3	188	FE II	1933.451	3	645

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE I	1934.528*	25	292, 488, 605	FE III	1966.201	2	188, 488
FE II	1935.296	15	292, 488	FE III	1966.740	8	188, 488
FE II	1936.806	20	188, 292, 488	FE III	1967.352	4	188
FE III	1937.077	3	188, 292	FE II	1967.670	0	645
FE I	1937.274*	35	292, 488, 605	FE II	1968.060	5	645
FE III	1937.345*	14	188, 292, 488	FE II	1968.210	0	645
FE III	1937.996	4	188	FE III	1968.625	2	188
FE III	1938.775	4	188, 488	FE II	1968.872	5	645
FE II	1938.901	10	188, 292, 488	FE II	1970.329	2	645
FE III	1939.107	-1	188	FE I	1970.771	5	292, 488, 645
FE III	1940.018	8	188, 488	FE II	1970.989	1	645
FE I	1940.631	20	188, 488, 605	FE III	1972.245	2	188
FE III	1940.769	4	188	FE III	1972.638	2	188
FE III	1941.633	3	188, 488	FE III	1973.578	0	188
FE III	1943.481*	14	188, 292, 488	FE I	1973.911	1	292, 488, 605
FE III	1943.715	2	188	FE I	1974.059	1	292, 488, 605
FE I	1945.070	20	292, 488, 605	FE II	1974.489	0	645
FE I	1945.342	12	188, 488, 605	FE II	1975.542	1	292
FE III	1945.724	2	188	FE III	1976.126	8	188, 488
FE I	1946.219	10	292, 488, 605	FE III	1978.417	4	188
FE II	1946.429	1	645	FE III	1978.626	2	188
FE III	1946.769	3	188	FE III	1979.002	1	188
FE I	1946.983*	25	488, 795	FE III	1980.392	2	188
FE II	1948.280	10	188, 292, 488	FE III	1982.076	6	188, 488
FE III	1949.462	2	188, 488	FE III	1982.805	8	188, 488
FE III	1949.666	3	188, 488	FE III	1983.123	0	188
FE I	1950.223	20	292, 488, 605	FE III	1983.676	2	188, 488
FE III	1950.334	10	188, 488	FE III	1984.027	7	188, 488
FE III	1951.007*	12	188, 488	FE III	1984.288	9	188, 488
FE III	1951.318	3	188	FE III	1985.105	3	188, 488
FE I	1951.556*	25	292, 488, 605	FE II	1986.423	10	645
FE I	1952.262	20	188, 488, 605	FE III	1987.006	1	188
FE I	1952.579*	30	488, 795	FE III	1987.503*	15	188, 292, 488
FE III	1952.648	11	188, 488	FE III	1987.810	3	188, 488
FE I	1953.001	20	488, 795	FE III	1989.975	7	188, 292, 488
FE III	1953.202	4	188	FE II	1990.805	0	645
FE III	1953.322*	13	188, 488	FE III	1991.613*	14	188, 292, 488
FE III	1953.488*	10	188, 488	FE III	1992.017	9	188, 488
FE III	1953.821	1	188	FE III	1992.196	9	188, 488
FE III	1953.968	4	188	FE III	1992.427	1	188
FE III	1954.223	10	188, 488	FE III	1992.858	6	188, 488
FE III	1954.769	4	188	FE II	1993.262	7	188, 292, 488
FE III	1954.975	8	188, 488	FE III	1994.073*	13	188, 292, 488
FE I	1955.690*	20	488, 605, 645	FE III	1994.366	1	188, 292
FE III	1955.943	0	188	FE II	1994.857	20	292, 488
FE I	1956.026*	30	488, 605, 645	FE III	1995.266	7	188, 292, 488
FE III	1957.137	3	188	FE III	1995.563*	12	188, 292, 488
FE III	1957.375	2	188	FE III	1996.420*	12	188, 292, 488
FE I	1957.838*	25	488, 795	FE II	1997.034	1	645
FE III	1957.938	6	188, 488	FE III	1999.100	1	188
FE II	1958.121	5	292, 488, 645	FE II	1999.430	10	292, 488
FE I	1958.583	11	188, 488, 605	FE III	1999.588	9	188, 292, 488
FE I	1958.732	5	188, 488, 605	FE II	1999.727	1	292
FE III	1959.026	3	188	FE III	1999.893	3	188, 292
FE III	1959.324	8	188, 488				
FE I	1960.139*	25	488, 795				
FE III	1960.318*	13	188, 488				
FE III	1961.010	5	188				
FE I	1961.230	8	188, 488, 605				
FE III	1961.456	1	188				
FE III	1961.724	1	188				
FE I	1962.031*	25	292, 488, 605				
FE I	1962.107*	30	488, 795				
FE I	1962.746*	15	188, 488, 605				
FE I	1962.871*	20	188, 488, 605				
FE I	1963.110*	25	292, 488, 605				
FE III	1963.209	1	188				
FE III	1963.461	1	188				
FE I	1963.948	20	488, 795				
FE I	1964.019	5	188, 488, 605				
FE III	1964.169	8	188, 488				
FE II	1964.342	12	188, 488, 795				
FE III	1964.776	8	188, 488				
FE III	1965.309	8	188, 488				
FE III	1966.074	3	188, 288				

COBALT

CO I	I.P.	63430.	K	1577.	A
CO II	I.P.	137572.	K	726.892	A
CO III	I.P.	270200.	K	370.1	A
CO IV	I.P.		K		A
CO V	I.P.		K		A
CO VI	I.P.		K		A
CO VII	I.P.		K		A
CO VIII	I.P.		K		A
CO XI	I.P.	2462000.	K	40.62	A
CO XIV	I.P.		K		A
CO XV	I.P.		K		A
CO XVI	I.P.	4133020.	K	24.20	A
CO XVII	I.P.	4410480.	K	22.673	A
CO XVIII	I.P.	11316470.	K	0.837	A

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO XVIII	12.60 *		766	CO VII	213.06	1	3
CO XVIII	12.66 *		766	CO VII	215.26	3	3
CO XVIII	13.629*		766	CO VII	216.205	1	3
CO XVIII	13.862*		766	CO VII	216.70	5	3
CO XVIII	14.036*		766	CO VII	217.13	1	3
CO XVIII	15.169*		766	CO VII	217.88	1	3
CO XVIII	15.437*		766	CO VII	218.11	1	3
CO XVII	41.462*		178	CO VII	218.42	2	3
CO XVII	45.319*		178	CO VII	218.56	0	3
CO XVII	45.527*		178	CO VII	219.09	0	3
CO XVI	47.483*	1	180	CO VII	219.64	2	3
CO XVII	48.564*		178	CO VII	220.015	8	3
CO XVII	49.133*		178	CO VII	220.07	6	3
CO XVII	49.171*		178	CO VII	220.10	0	3
CO XVI	49.808*	1	180	CO VII	220.23	0	3
CO XVI	49.958*	1	180	CO VII	220.34	4	3
CO XVI	49.979*	00	180	CO VII	220.37	4	3
CO XVI	50.357*	2	180	CO VII	220.405	4	3
CO XVI	50.393*	00	180	CO VII	220.515	4	3
CO XV	52.583*	1	180, 487	CO VII	220.62 *	10	3
CO XV	53.173*	2	180, 487	CO VII	220.77	2	3
CO XVII	56.021*		178	CO VII	220.81	1	3
CO XVII	56.833*		178	CO VII	220.89	1	3
CO XVII	58.842*		178	CO VII	220.96	2	3
CO XVII	58.948*		178	CO VII	220.98	4	3
CO XVI	61.875*	1	180	CO VII	221.06	4	3
CO XVI	61.916*	2	180	CO VII	221.15	1	3
CO XVI	61.982*	2	180	CO VII	221.24	3	3
CO XI	81.507*	3	182	CO VII	221.30	3	3
CO XI	82.527*	0	182	CO VII	221.37	0	3
CO XI	82.759*	2	182	CO VII	221.45 *	10	3
CO XI	83.190*	3	182	CO VII	221.52 *	10	3
CO XI	83.861*	1	182	CO VII	221.62 *	5	3
CO XI	84.039*	2	182	CO VII	221.75 *	10	3
CO VIII	181.994	3	128	CO VII	221.96 *	9	3
CO VIII	182.665*	10	128	CO VII	222.37	0	3
CO VIII	183.125	4	128	CO VII	222.53	0	3
CO VIII	183.542	3	128	CO VII	222.57 *	10	3
CO VIII	183.689	2	128	CO VII	222.67 *	8	3
CO VIII	183.721	4	128	CO VII	222.72	0	3
CO VIII	183.922*	7	128	CO VII	222.84	3	3
CO VIII	183.941	3	128	CO VII	223.08 *	10	3
CO VIII	184.053	3	128	CO VII	223.19 *	9	3
CO VIII	184.201*	70	128	CO VII	223.30 *	10	3
CO VIII	184.421	3	128	CO VII	223.37 *	8	3
CO VIII	185.432*	6	128	CO VII	223.54 *	10	3
CO VIII	185.585	0	128	CO VII	223.73 *	10	3
CO VIII	187.666	2	128	CO VII	223.86 *	8	3
CO VIII	188.154	2	128	CO VII	223.91 *	7	3
CO VIII	188.232	2	128	CO VII	223.99 *	5	3
CO VIII	188.673	4	128	CO VII	224.08	3	3
CO VIII	189.249	4	128	CO VII	224.335	7	3
CO VIII	190.514*	5	128	CO VII	224.96	0	3
CO VIII	190.843	2	128	CO VII	224.60	0	3
CO VIII	190.954	1	128	CO VII	224.71 *	10	3
CO VIII	191.247*	7	128	CO VII	224.93	0	3
CO VIII	191.465	3	128	CO VII	225.12	3	3
CO VIII	191.753	2	128	CO VII	225.23	4	3
CO VIII	191.923*	10	128	CO VII	225.43	2	3
CO VIII	192.328*	9	128	CO VII	225.68	3	3
CO VIII	192.549	1	128	CO VII	225.71	2	3
CO VII	206.23	4	3	CO VII	225.83	8	3
CO VII	206.60	0	3	CO VII	225.87	0	3
CO VII	209.815	0	3	CO VII	226.03 *	10	3
CO VII	210.37	2	3	CO VII	226.83	1	3
CO VII	210.68	0	3	CO VII	226.98	4	3
CO VII	210.71	0	3	CO VII	227.11	1	3
CO VII	210.77	3	3	CO VII	227.86	1	3
CO VII	211.25	0	3	CO VII	228.425	2	3
CO VII	211.65	2	3	CO VII	229.13	0	3
CO VII	212.15 *	10	3	CO VII	229.61 *	10	3
CO VII	212.23	3	3	CO VII	229.87 *	10	3
CO VII	212.61 *	5	3	CO VII	230.36	2	3
CO VII	212.64 *	10	3	CO VII	230.45	0	3
CO VII	212.91 *	9	3	CO VII	231.32	2	3

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO VII	231.48	1	3	CO VI	280.775	3	48
CO VII	231.68	2	3	CO VI	283.089*	8	48
CO VII	231.79	1	3	CO VI	283.405	5	48
CO VII	232.35	4	3	CO VI	283.883	3	48
CO VII	232.425	2	3	CO VI	284.366	5	48
CO VII	232.51	5	3	CO VI	284.885	4	48
CO VII	232.56	9	3	CO VI	285.034	3	48
CO VII	232.65	9	3	CO VI	285.645	3	48
CO VII	232.80	3	3	CO VI	285.713	2	48
CO VII	233.06	1	3	CO VI	287.666	4	48
CO VII	233.425	1	3	CO VI	288.031	4	48
CO VII	233.75	5	3	CO VI	288.509	3	48
CO VII	234.01	2	3	CO VI	295.268	1	48
CO VII	234.05	0	3	CO VI	295.419	4	48
CO VII	234.27	1	3	CO VI	295.976	1	48
CO VII	234.34 *	10	3	CO VI	296.050	3	48
CO VII	234.79 *	10	3	CO VI	296.206	1	48
CO VII	235.13	0	3	CO VI	296.719	4	48
CO VII	236.09	5	3	CO VI	296.923*	7	48
CO VII	236.45	3	3	CO VI	297.372*	7	48
CO VII	236.51	4	3	CO VI	297.651*	6	48
CO VII	236.82	0	3	CO VI	298.318	3	48
CO VII	237.575	0	3	CO VI	298.649	3	48
CO VII	237.73	0	3	CO VI	298.989	5	48
CO VII	238.11	2	3	CO VI	299.051	2	48
CO VII	238.17	1	3	CO VI	299.157	2	48
CO VII	238.27	3	3	CO VI	299.456	5	48
CO VII	238.37	9	3	CO VI	299.586	2	48
CO VII	239.37	0	3	CO VI	299.659	2	48
CO VII	240.745	0	3	CO VI	299.822	5	48
CO VI	266.114	1	48	CO VI	300.537	5	48
CO VI	266.498*	6	48	CO VI	301.203	4	48
CO VI	266.634*	4	48	CO VI	301.604	0	48
CO VI	266.905*	4	48	CO VI	301.713	1	48
CO VI	266.973*	8	48	CO VI	301.955	5	48
CO VI	267.131*	5	48	CO VI	302.061	0	48
CO VI	267.297*	6	48	CO VI	302.123	4	48
CO VI	267.402*	5	48	CO VI	302.157	2	48
CO VI	271.595	5	48	CO VI	302.261	1	48
CO VI	271.711	0	48	CO VI	302.408	4	48
CO VI	272.022	6	48	CO VI	302.471	4	48
CO VI	272.149	0	48	CO VI	302.736	3	48
CO VI	272.481*	7	48	CO VI	303.071	1	48
CO VI	274.534	1	48	CO VI	303.191	3	48
CO VI	275.818	5	48	CO VI	303.410	2	48
CO VI	275.944	3	48	CO VI	303.565	1	48
CO VI	276.167	2	48	CO VI	303.619	2	48
CO VI	276.285*	7	48	CO VI	303.685	3	48
CO VI	276.424	0	48	CO VI	303.943	2	48
CO VI	276.570	4	48	CO VI	304.116	2	48
CO VI	276.721*	7	48	CO VI	304.374	0	48
CO VI	277.079	5	48	CO VI	304.531	0	48
CO VI	277.579	4	48	CO VI	304.607	1	48
CO VI	277.853	2	48	CO VI	305.037	4	48
CO VI	278.013	2	48	CO VI	305.322	1	48
CO VI	278.113	3	48	CO VI	305.612	1	48
CO VI	278.184*	7	48	CO VI	306.145	1	48
CO VI	278.298	2	48	CO VI	306.567	1	48
CO VI	278.360	1	48	CO V	355.523	30	357, 487
CO VI	278.632*	7	48	CO V	355.876	18	357, 487
CO VI	278.685	5	48	CO V	356.060	12	357, 487
CO VI	278.790	6	48	CO	362.6	1	411
CO VI	278.981	5	48	CO	368.0	1	411
CO VI	279.040	2	48	CO	370.5	1	411
CO VI	279.210	4	48	CO	374.6	1	411
CO VI	279.400	5	48	CO	387.4	1	411
CO VI	279.508*	7	48	CO	397.4	1	411
CO VI	279.780	5	48	CO V	412.59	10	286
CO VI	280.003*	7	48	CO V	414.52	5	286
CO VI	280.060*	6	48	CO V	415.94	1	286
CO VI	280.199	6	48	CO	470.5	1	411
CO VI	280.309	4	48	CO	486.1	1	411
CO VI	280.350	2	48	CO	508.0	1	411
CO VI	280.464	4	48	CO	518.3	1	411
CO VI	280.706	3	48	CO	587.2	1	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO	590.9	1	411	CO III	773.125	1	673
CO	594.4	1	411	CO III	775.446	2	673
CO	607.6	4	411	CO III	775.992	10	673
CO	610.7	4	411	CO III	776.688	20	488, 673
CO	617.0	2	411	CO III	776.794	5	673
CO	621.2	1	411	CO III	777.779	8	673
CO	629.6	1	411	CO III	777.952	3	673
CO III	649.342	1	673	CO III	779.436	3	673
CO III	651.323	0	673	CO III	779.683	20	488, 673
CO III	666.271	5	673	CO III	780.287	0	673
CO III	668.867	3	673	CO III	781.130	20	673
CO III	681.867	0	673	CO III	781.250	3	673
CO III	682.084	5	673	CO III	781.983	15	488, 673
CO III	683.140	3	673	CO III	783.179	10	673
CO III	708.767	15	673	CO III	785.034	00	673
CO III	709.912	10	673	CO III	785.207	10	673
CO III	709.996	15	673	CO III	785.426	1	673
CO III	710.592	0	673	CO III	785.677	1	673
CO III	711.002	0	673	CO III	785.883	15	488, 673
CO III	711.741	5	673	CO III	786.958	8	673
CO III	712.193	00	673	CO III	787.406	5	673
CO III	712.890	2	673	CO III	787.562	8	488, 673
CO III	714.836	0	673	CO III	788.057	8	673
CO III	715.125	0	673	CO III	788.693	2	673
CO III	716.055	2	673	CO III	788.815	0	673
CO III	717.490	1	673	CO III	789.447	30	488, 673
CO III	735.720	00	673	CO III	789.662	2	673
CO III	738.066	2	673	CO III	790.197	50	488, 673
CO III	741.032	1	673	CO III	790.268	3	673
CO III	745.762	0	673	CO III	790.688	25	673
CO III	745.939	0	673	CO III	791.440	3	673
CO III	747.375	00	673	CO III	792.661	5	673
CO III	748.019	1	673	CO III	792.833	5	673
CO III	748.419	0	673	CO III	793.600	2	673
CO III	752.485	0	673	CO III	794.493	1	673
CO III	752.759	3	673	CO III	795.336	3	673
CO III	754.795	2	673	CO III	795.475	5	673
CO III	755.253	5	673	CO III	796.663	20	673
CO III	755.512	0	673	CO III	797.166	2	673
CO III	755.972	1	673	CO III	797.312	2	673
CO III	756.064	1	673	CO III	799.034	0	673
CO III	756.338	5	673	CO III	799.118	1	673
CO III	758.212	20	488, 673	CO III	799.237	2	673
CO III	759.592	3	673	CO III	799.361	0	673
CO III	759.644	3	673	CO III	799.919	10	673
CO III	759.970	0	673	CO III	800.445	2	673
CO III	760.211	1	673	CO III	801.493	30	488, 673
CO III	760.825	30	488, 673	CO III	802.434	1	673
CO III	761.202	1	673	CO III	802.943	3	673
CO III	762.038	1	673	CO III	803.942	5	673
CO III	762.529	3	673	CO III	804.495	1	673
CO III	762.694	0	673	CO III	805.345	20	488, 673
CO III	762.775	50	488, 673	CO III	805.379		673
CO III	763.013	0	673	CO III	806.558	0	673
CO III	763.131	25	488, 673	CO III	806.737	0	673
CO III	764.229	00	673	CO III	806.962	3	673
CO III	764.363	2	673	CO III	807.156	1	673
CO III	764.418	2	673	CO III	807.910	15	488, 673
CO III	764.866	10	488, 673	CO III	808.033	3	673
CO III	764.959	20	488, 673	CO III	808.612	5	488, 673
CO III	765.104	3	673	CO III	809.221	15	673
CO III	765.561	3	673	CO III	809.609	10	673
CO III	766.667	10	488, 673	CO III	809.706	15	488, 673
CO III	767.703	20	488, 673	CO III	809.844	2	673
CO III	767.770	15	673	CO III	810.502	15	488, 673
CO III	768.458	20	488, 673	CO III	810.716	10	673
CO III	769.128	10	488, 673	CO III	811.951	10	673
CO III	769.343	5	673	CO III	812.869	10	488, 673
CO III	769.459	3	673	CO III	814.066	1	673
CO III	770.192	1	673	CO III	814.649	2	673
CO III	770.723	2	673	CO III	815.555	25	488, 673
CO III	770.967	0	673	CO III	816.407	00	673
CO III	771.638	10	673	CO III	816.617	10	673
CO III	771.754	2	673	CO III	816.864	1	673
CO III	771.868	30	488, 673	CO III	817.937	1	673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	818.600	20	488, 673	CO III	942.051	0	673
CO III	820.066	3	673	CO III	942.388	20	488, 673
CO III	821.771	0	673	CO III	942.696	1	673
CO III	825.403	15	488, 673	CO III	944.084	1	673
CO III	828.608	1	673	CO III	944.768	20	488, 673
CO III	829.072	10	673	CO III	945.198	0	673
CO III	832.050	5	673	CO III	946.526	10	673
CO III	836.002	2	673	CO III	946.594	20	488, 673
CO III	836.128	1	673	CO III	947.838	10	673
CO III	837.330	1	673	CO III	948.501	5	673
CO III	838.133	25	488, 673	CO III	951.264	00	673
CO III	839.284	30	488, 673	CO III	952.279	2	673
CO III	844.097	20	488, 673	CO III	952.812	2	673
CO III	844.310	8	488, 673	CO III	953.977	2	673
CO III	844.411	1	673	CO	966.7	1	411
CO III	844.866	10	488, 673	CO III	989.169	1	673
CO III	845.793	1	673	CO III	992.145	5	673
CO III	848.088	30	488, 673	CO III	996.558	8	673
CO III	849.210	0	673	CO V	1006.86	4	286
CO III	849.485	5	673	CO V	1007.51	10	286
CO III	850.067	3	673	CO V	1008.997	15	286, 673
CO III	850.424	3	673	CO V	1010.94	10	286
CO III	850.965	0	673	CO V	1013.80	10	286
CO III	858.663	1	673	CO V	1017.43	1	286
CO III	858.975	15	488, 673	CO V	1018.36	10	286
CO III	865.567	00	673	CO V	1021.14	10	286
CO III	865.898	0	488, 673	CO V	1028.08	1	286
CO III	870.007	15	488, 673	CO III	1030.280	0	673
CO III	874.294	10	488, 673	CO III	1035.645	2	673
CO III	876.594	5	673	CO III	1037.174	00	673
CO III	877.881	00	673	CO III	1043.243	15	673
CO III	878.080	0	673	CO III	1044.281	20	673
CO III	878.543	10	488, 673	CO III	1046.760	3	673
CO III	878.963	5	673	CO III	1047.471	2	673
CO III	879.480	00	673	CO III	1048.879	3	673
CO III	880.950	10	488, 673	CO III	1049.473	2	673
CO III	882.025	0	673	CO III	1050.762	20	673
CO III	883.154	5	673	CO III	1050.977	10	673
CO III	883.345	1	673	CO III	1053.257	10	673
CO III	883.703	2	673	CO III	1064.568	0	673
CO III	883.960	00	673	CO III	1077.530	2	673
CO III	884.192	2	673	CO III	1078.177	2	673
CO III	885.011	00	673	CO III	1079.908	2	673
CO III	886.378	5	673	CO III	1088.486	1	673
CO III	887.777	0	673	CO III	1089.899	1	673
CO III	887.988	0	673	CO III	1090.554	0	673
CO III	891.902	5	673	CO III	1090.668	0	673
CO III	893.045	15	488, 673	CO III	1092.581	10	488, 673
CO III	893.095	8	488, 673	CO III	1093.066	5	488, 673
CO III	893.713	8	673	CO III	1095.178	1	673
CO III	897.686	1	673	CO III	1095.443	15	488, 673
CO III	899.025	1	673	CO III	1114.405	1	673
CO III	903.730	5	673	CO	1127.6	3	411
CO III	908.491	5	673	CO	1134.9	1	411
CO III	910.415	0	673	CO	1151.3	1	411
CO III	910.721	0	673	CO III	1177.382	0	673
CO III	912.817	2	673	CO III	1180.251	0	673
CO III	913.239	2	673	CO III	1204.084	0	673
CO III	916.714	1	673	CO V	1226.31	3	286
CO III	918.233	1	673	CO V	1228.19	8	286
CO III	920.371	2	673	CO V	1231.73	15	286
CO III	923.075	10	488, 673	CO III	1234.889	0	286, 673
CO III	925.045	8	488, 673	CO V	1236.816	20	286, 673
CO III	925.230	0	673	CO V	1239.85	2	286
CO III	926.591	0	673	CO V	1246.91	8	286
CO III	927.224	5	673	CO V	1258.61	6	286
CO III	929.970	5	673	CO V	1263.28	5	286
CO III	932.733	3	673	CO III	1267.370	0	673
CO III	935.003	3	673	CO V	1270.44	2	286
CO III	936.639	30	488, 673	CO V	1270.646	20	286, 673
CO III	937.310	20	488, 673	CO V	1272.416	20	286, 673
CO III	938.077	10	488, 673	CO V	1275.52	2	286
CO III	938.647	5	488, 673	CO V	1277.01 *	50	286
CO III	939.060	30	488, 673	CO V	1281.63 *	30	286
CO III	941.756	00	673	CO V	1284.00	15	286

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO V	1286.626*	28	286, 673	CO V	1459.77	15	286
CO V	1295.55	25	286	CO III	1463.037	3	673
CO V	1295.87 *	40	286	CO III	1463.936	2	673
CO II	1299.574*	8	488	CO III	1464.733	2	673
CO V	1301.12 *	35	286	CO III	1464.932	2	673
CO III	1306.774	0	673	CO III	1465.101	2	673
CO II	1306.966*	8	488	CO III	1465.558	3	673
CO III	1308.850	1	673	CO III	1466.579	5	673
CO II	1311.856	5	488	CO III	1466.919	3	673
CO II	1315.419	4	488	CO III	1467.394	10	673
CO II	1318.180	2	488	CO III	1467.663	10	673
CO III	1320.355	0	673	CO III	1468.010	2	673
CO III	1324.903	2	673	CO II	1468.356	6	488
CO V	1345.67 *	50	286	CO III	1468.992	10	286, 673
CO IV	1349.61 *	3	492	CO III	1470.282	1	673
CO V	1351.22	6	286	CO III	1470.700	1	673
CO V	1353.42	15	286	CO III	1471.140	2	673
CO V	1355.20 *	40	286	CO III	1471.328	2	673
CO V	1356.09		286	CO III	1471.575	1	673
CO V	1357.67 *	30	286	CO II	1471.860	6	488
CO V	1361.32	20	286	CO III	1472.019	20	673
CO V	1362.46 *	30	286	CO III	1472.756	3	673
CO V	1364.17 *	30	286	CO III	1473.303	2	673
CO V	1368.24 *	30	286	CO III	1473.528	5	673
CO V	1369.30	4	286	CO III	1474.278	3	673
CO III	1371.039	5	286, 673	CO II	1475.018	2	488, 673
CO III	1371.419	2	673	CO III	1475.266	1	673
CO III	1371.779	3	673	CO III	1475.635	20	673
CO III	1372.556	0	673	CO V	1476.366	10	286, 673
CO V	1373.09 *	30	286	CO III	1476.895	5	673
CO V	1375.20 *	30	286	CO III	1477.260	2	673
CO III	1376.576	0	673	CO III	1478.367	50	673
CO V	1378.208	25	286, 673	CO III	1478.858	2	673
CO III	1378.665	10	673	CO III	1479.393	3	673
CO V	1379.05	10	286	CO III	1479.880	2	673
CO V	1380.21	10	286	CO III	1481.905	100	673
CO III	1380.775	5	673	CO V	1482.62 *	25	286
CO III	1383.971	20	673	CO V	1482.91 *	20	286
CO III	1384.187	50	673	CO III	1483.363	10	673
CO III	1386.667	0	673	CO III	1483.800	20	673
CO III	1389.079	10	286, 673	CO II	1484.251	5	488
CO III	1396.210	2	673	CO III	1484.565	1	673
CO III	1396.303	1	673	CO III	1484.780	1	673
CO III	1402.415	10	673	CO III	1485.170	15	673
CO III	1403.755	5	673	CO III	1485.510	2	673
CO III	1404.009	10	673	CO V	1486.02 *	25	286
CO III	1405.032	5	673	CO II	1486.483*	9	488
CO III	1405.451	1	673	CO III	1487.962	2	673
CO III	1408.808	5	673	CO III	1488.174	5	673
CO III	1412.012	5	673	CO III	1488.465	1	673
CO III	1412.974	10	673	CO V	1488.753	20	286, 673
CO III	1413.884	10	673	CO III	1488.975	1	673
CO III	1418.594	1	673	CO III	1489.243	0	673
CO III	1425.329	1	673	CO III	1489.550	1	673
CO III	1425.650	3	673	CO III	1489.899	20	673
CO III	1425.984	1	673	CO III	1490.344	0	673
CO III	1427.308	2	673	CO III	1490.511	1	673
CO III	1428.331	2	673	CO III	1491.273	10	488, 673
CO III	1429.236	0	673	CO III	1492.528	5	673
CO III	1429.324	0	673	CO III	1493.152	20	673
CO III	1430.530	30	673	CO III	1493.595	3	673
CO III	1431.323	30	673	CO III	1497.700	10	673
CO III	1431.800	10	673	CO III	1498.144	2	673
CO III	1432.065	10	673	CO III	1498.830	20	673
CO III	1432.556	10	673	CO III	1499.124	50	673
CO III	1434.259	200	673	CO III	1499.877	5	673
CO III	1434.642	1	673	CO III	1500.269	20	673
CO III	1435.426	100	673	CO III	1502.531	5	673, 492
CO III	1435.840	5	673	CO III	1504.362	3	673
CO III	1436.236	20	673	CO III	1505.249	10	673
CO III	1445.427	2	673	CO III	1508.683	1	673
CO III	1446.146	0	673	CO III	1510.489	2	673
CO III	1447.216	3	673	CO III	1511.404	5	673
CO III	1448.890	1	673	CO III	1511.730	3	673
CO III	1452.729	0	673	CO III	1511.920	5	673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1512.997	5	673	CO III	1601.903	3	673
CO III	1513.706	5	673	CO III	1603.563	15	673
CO III	1515.027	50	673	CO III	1604.900	0	673
CO III	1515.638	2	673	CO II	1605.962	5	488
CO III	1515.776	2	673	CO III	1607.410	5	673
CO III	1515.982	3	673	CO III	1608.777	5	673
CO III	1517.070	2	673	CO III	1608.864	5	673
CO III	1517.153	2	673	CO III	1608.950	5	673
CO III	1517.482	15	673	CO IV	1612.16 *	20	492
CO III	1517.724	10	673	CO III	1618.169	0	673
CO III	1518.636	1	673	CO III	1618.491	5	673
CO III	1519.326	15	673	CO III	1620.051	2	673
CO IV	1521.61 *	25	492	CO III	1620.254	3	673
CO III	1522.049	3	673	CO III	1622.923	3	673
CO III	1522.885	20	673	CO III	1629.157	1	673
CO III	1523.153	1	673	CO III	1629.666	5	673
CO III	1524.113	15	673	CO III	1635.521	5	673
CO III	1524.472	3	673	CO III	1645.986	30	488, 673
CO III	1524.942	2	673	CO III	1647.100	1	673
CO III	1525.163	2	673	CO III	1649.153	5	673
CO III	1525.407	15	673	CO III	1649.265	200	488, 673
CO III	1526.734	30	673	CO III	1651.783	0	673
CO III	1527.780	20	673	CO III	1652.024	5	673
CO III	1527.948	3	673	CO III	1652.182	5	673
CO III	1530.385	3	673	CO III	1652.791	10	488, 673
CO III	1530.906	10	673	CO III	1659.757	10	488, 673
CO III	1531.068	15	673	CO III	1661.422	10	488, 673
CO III	1532.032	10	673	CO III	1663.500	3	673
CO IV	1533.93 *	15	492	CO III	1665.269	50	488, 673
CO III	1534.268	200	673	CO III	1668.032	5	488, 673
CO III	1536.554	5	673	CO III	1672.133	2	673
CO III	1536.955	5	673	CO III	1673.325	10	673
CO III	1539.255	2	673	CO III	1673.679	20	673
CO III	1539.458	20	673	CO III	1677.901	15	488, 673
CO III	1542.094	100	673	CO III	1679.481	5	673
CO III	1542.616	10	673	CO III	1679.578	20	488, 673
CO III	1543.981	30	673	CO III	1680.734	1	673
CO III	1544.129	3	673	CO III	1681.074	10	488, 673
CO III	1544.411	30	673	CO III	1683.180	1	673
CO III	1544.880	40	673	CO III	1687.910	5	673
CO III	1547.309	5	673	CO III	1689.283	3	673
CO III	1548.413	20	673	CO III	1689.858	100	488, 673
CO III	1549.940	20	673	CO III	1690.399	5	673
CO III	1551.536	5	673	CO III	1693.085	30	673
CO III	1553.015	5	673	CO III	1695.090	1	673
CO III	1557.328	5	673	CO III	1696.008	1000	488, 673
CO III	1561.746	2	673	CO III	1696.875	5	673
CO III	1563.158	5	673	CO III	1696.980	5	673
CO III	1564.090	2	673	CO III	1697.988	800	488, 673
CO III	1567.173	3	673	CO III	1699.880	1	673
CO III	1567.917	0	673	CO III	1701.770	1	673
CO III	1568.308	1	673	CO III	1702.506	3	673
CO III	1569.264	1	673	CO III	1702.790	500	488, 673
CO III	1571.400	0	673	CO III	1704.817	5	673
CO III	1572.266	1	673	CO III	1705.306	0	673
CO II	1572.645	7	488	CO III	1706.422	3	673
CO III	1573.921	10	673	CO III	1706.807	100	673
CO III	1576.025	2	673	CO III	1706.875	5	673
CO III	1578.093	0	673	CO III	1707.348	1000	488, 673
CO III	1580.619	0	673	CO III	1707.951	500	488, 673
CO III	1580.735	0	673	CO III	1709.395	3	673
CO III	1581.502	5	673	CO III	1711.531	5	673
CO III	1582.044	3	673	CO III	1712.489	2	673
CO III	1584.663	1	673	CO III	1715.768	2	673
CO III	1586.180	15	673	CO III	1716.251	200	488, 673
CO III	1587.186	10	673	CO III	1718.887	2	673
CO III	1588.642	10	488, 673	CO III	1719.383	3	673
CO III	1593.306	100	488, 673	CO III	1719.612	0	673
CO III	1593.446	10	673	CO III	1720.068	20	673
CO III	1594.182	0	673	CO III	1721.151	10	673
CO III	1594.953	10	673, 492	CO III	1721.678	3	673
CO II	1595.773	6	488	CO III	1722.911	1	673
CO II	1599.308	4	488	CO III	1723.327	1	673
CO II	1599.701	3	488	CO III	1723.536	1	673
CO II	1601.282	2	488, 492	CO III	1723.970	500	488, 673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1726.134	100	488, 673	CO III	1785.965	50	488, 673
CO III	1726.726	15	673	CO III	1786.342	200	488, 673
CO III	1728.091	3	673	CO III	1786.679	50	673
CO III	1729.724	5	673	CO III	1787.082*	1000	488, 673
CO III	1730.669	250	488, 673	CO III	1787.502	50	673
CO III	1732.358	0	673	CO III	1787.575	30	673
CO III	1732.545	200	488, 673	CO III	1788.627	50	673
CO III	1733.635	10	673	CO III	1789.070*	1000	488, 673
CO III	1735.400	50	488, 673	CO III	1789.373	100	488, 673
CO III	1736.312	200	488, 673	CO III	1789.549	100	673
CO III	1736.856	3	673	CO III	1790.258	500	488, 673
CO III	1737.523	3	673	CO III	1790.389	50	673
CO III	1738.653	1	673	CO III	1790.892	25	673
CO III	1739.833	30	488, 673	CO III	1791.153	300	488, 673
CO III	1741.057	5	673	CO III	1791.277	500	488, 673
CO III	1742.372	2	673	CO III	1791.860	0	673
CO III	1743.212	10	673	CO III	1792.144	100	488, 673
CO III	1743.311	30	488, 673	CO III	1792.410	300	488, 673
CO III	1744.529	2	673	CO III	1792.655	0	673
CO III	1745.674	500	488, 673	CO III	1793.924	200	488, 673
CO III	1746.131	0	673	CO III	1794.804	100	488, 673
CO III	1746.369	20	673	CO III	1795.426	2	673
CO III	1746.853	5	673	CO III	1796.200	10	488, 673
CO III	1748.5	2	411	CO III	1796.664	5	673
CO III	1749.728	25	673	CO III	1797.095	10	673
CO III	1751.037	100	673	CO III	1798.064	500	488, 673
CO III	1751.854	200	488, 673	CO III	1798.876	5	673
CO III	1754.761	0	673	CO III	1800.469	50	673
CO III	1755.979	500	488, 673	CO III	1800.974	25	673
CO III	1756.857	30	673	CO III	1801.030	25	673
CO III	1757.531	15	673	CO III	1801.940	0	673
CO III	1758.454	00	673	CO III	1802.917	1	673
CO III	1759.144	5	673	CO III	1805.535	500	488, 673
CO III	1760.354*	5000	488, 673	CO III	1806.096	10	488, 673
CO III	1761.082	1	673	CO III	1806.350	10	673
CO III	1761.367	10	488, 673	CO III	1806.492	5	673
CO III	1763.465	100	673	CO III	1808.384	300	488, 673
CO III	1763.533	15	488, 673	CO III	1809.233	40	673
CO III	1765.414	0	673	CO III	1809.904	5	673
CO III	1765.566	1	673	CO III	1810.464	15	673
CO III	1765.858	0	673	CO III	1811.317	100	488, 673
CO III	1767.084	30	488, 673	CO III	1811.466	400	488, 673
CO III	1767.308	50	673	CO III	1811.694	3	673
CO III	1768.003	5	673	CO III	1812.336	5	673
CO III	1768.238	200	673	CO III	1812.491	15	673
CO III	1768.471	100	673	CO III	1812.550	50	673
CO III	1769.495	10	673	CO III	1813.044	50	488, 673
CO III	1769.957	500	488, 673	CO III	1813.186	300	488, 673
CO III	1770.222	2	673	CO III	1814.084	10	673
CO III	1770.500	10	673	CO I	1814.20	12	488, 603
CO III	1771.259	100	673	CO III	1814.219	100	488, 673
CO III	1771.854	200	673	CO III	1814.573	2	673
CO III	1772.233	200	673	CO III	1814.683	100	488, 673
CO III	1772.438	200	673	CO III	1814.865	100	673
CO III	1772.549	50	673	CO III	1815.063	20	488, 673
CO III	1772.671	100	673	CO III	1815.596	200	488, 673
CO III	1773.215	500	488, 673	CO III	1815.686	200	488, 673
CO III	1773.568*	5000	488, 673	CO III	1816.084	5	673
CO III	1774.418	500	488, 673	CO III	1816.250	10	673
CO III	1774.577	10	488, 673	CO III	1816.617	20	488, 673
CO III	1776.630	1	673	CO III	1817.518	100	488, 673
CO III	1777.145*	1000	488, 673	CO III	1817.626	100	488, 673
CO III	1778.091	100	488, 673	CO III	1817.750	20	673
CO III	1779.536	20	673	CO III	1818.684	200	488, 673
CO III	1779.896	3	673	CO III	1819.009	2	673
CO III	1780.046*	2000	488, 673	CO III	1819.070	1	673
CO III	1780.686	0	673	CO III	1819.261	30	488, 673
CO III	1782.195	5	673	CO III	1819.330	200	488, 673
CO III	1782.966*	2000	488, 673	CO III	1819.733	100	673
CO III	1783.118	10	673	CO III	1820.064	100	488, 673
CO III	1784.055	500	488, 673	CO I	1820.42	12	488, 603
CO III	1784.790	30	673	CO III	1821.004	1	673
CO III	1784.944	3	673	CO III	1821.262	400	488, 673
CO III	1785.116	20	673	CO III	1821.688	300	488, 673
CO III	1785.705	5	488, 673	CO III	1821.766	300	488, 673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO I	1822.03	3	603	CO III	1851.509	100	673
CO III	1822.046	200	488, 673	CO III	1851.937	200	488, 673
CO III	1822.215	1	673	CO I	1852.52	15	488, 603
CO III	1823.079*	1000	488, 673	CO III	1852.645	15	488, 673
CO III	1823.414	100	673	CO I	1852.71 *	30	488, 603
CO III	1823.622	200	673	CO III	1852.919	500	673
CO III	1824.874	100	488, 673	CO III	1853.266	20	488, 673
CO I	1825.17	1	603	CO III	1853.841	20	673
CO III	1825.365	200	673	CO III	1854.194	100	673
CO III	1825.464	100	488, 673	CO I	1854.28	8	488, 603
CO III	1825.947	400	488, 673	CO III	1854.393	400	488, 673
CO III	1826.716	1	673	CO III	1854.763	300	488, 673
CO III	1827.094	400	488, 673	CO I	1855.05 *	40	488, 603
CO III	1827.791	2	673	CO III	1855.331	30	673
CO I	1828.35	12	488, 603	CO III	1855.954	50	673
CO III	1829.392	5	673	CO I	1856.13	15	488, 603
CO III	1829.674	300	488, 673	CO III	1857.657	50	673
CO III	1830.093*	1000	488, 673	CO I	1858.26	3	603
CO III	1830.581	300	488, 673	CO III	1858.487	50	673
CO III	1830.780	20	673	CO III	1859.510	50	488, 673
CO III	1830.870	300	673	CO III	1860.428	1	673
CO III	1831.429*	1000	488, 673	CO III	1860.866	2	673
CO III	1831.916	500	400, 673	CO III	1861.775*	1000	488, 673
CU III	1832.201	200	488, 673	CO I	1862.31	25	603
CO I	1832.47	15	488, 603	CO III	1862.660	100	488, 673
CO III	1832.784	1	673	CO III	1863.134	5	488, 673
CO III	1833.876	50	673	CO III	1863.467	200	488, 673
CO I	1834.34	10	488, 603	CO III	1863.615	20	673
CO III	1834.840	50	488, 673	CO III	1863.826*	2000	488, 673
CO III	1834.99	10	488, 603	CO III	1864.187	400	488, 673
CO III	1835.000*	1000	488, 673	CO III	1864.519	50	673
CO III	1835.255	100	488	CO I	1864.92	4	603
CO III	1835.255	100	673	CO III	1865.424	100	488, 673
CO III	1835.617	100	488, 673	CO III	1865.456	100	488, 673
CO III	1835.687	20	488, 673	CO I	1866.27	6	603
CO III	1836.200	200	488, 673	CO III	1866.497	20	488, 603, 673
CO I	1836.97	3	603	CO III	1866.615	100	673
CO I	1837.13	3	603	CO III	1867.490	100	488, 673
CO III	1837.630	500	488, 673	CO III	1867.930	30	673
CO I	1837.82	8	603	CO III	1868.796	30	488, 673
CO III	1837.840	100	488, 673	CO I	1869.16	5	603
CO I	1838.28	15	488, 603	CO III	1870.012	30	488, 673
CO III	1838.659	2	673	CO I	1870.45	5	603
CO III	1839.535	50	488, 673	CO III	1870.634	75	488, 673
CO III	1839.636	20	488, 673	CO III	1871.870	500	488, 673
CO I	1840.55	10	488, 603	CO III	1871.952	300	488, 673
CO I	1840.79	10	603	CO I	1872.37	8	603
CO I	1841.47	10	488, 603	CO III	1872.532	200	488, 673
CO III	1841.582	5	673	CO III	1872.575	300	488, 673
CO I	1841.88	3	603	CO III	1873.014	1	488, 673
CO III	1841.924	15	673	CO III	1874.355	100	488, 673
CO III	1842.109	1	673	CO III	1874.822	300	488, 673
CO I	1842.34	25	488, 603	CO III	1875.094	200	488, 673
CO III	1843.332	2	673	CO I	1875.22	4	603, 673
CO III	1843.443	100	488, 603, 673	CO I	1876.01	10	603
CO III	1843.932	100	673	CO I	1876.48	7	603
CO III	1843.960	75	673	CO I	1876.88	8	603
CO III	1844.684	30	673	CO III	1877.464	50	488, 603, 673
CO III	1844.726	50	673	CO III	1877.544	50	488, 673
CO III	1845.074	100	488, 673	CO I	1878.28	25	488, 603
CO III	1845.636	2	673	CO III	1879.170	10	673
CO III	1846.050	20	673	CO III	1879.244	300	488, 673
CO III	1846.157	300	488, 673	CO III	1879.385	200	488, 673
CO III	1846.514	100	488, 673	CO III	1879.753	50	673
CO I	1846.94	4	603	CO III	1880.321	50	603, 673
CO III	1847.300	200	488, 673	CO III	1880.449	30	488, 673
CO III	1847.825	200	488, 673	CO I	1880.82	15	603
CO I	1847.89 *	30	488, 603	CO III	1880.912	50	488, 673
CO III	1848.030	100	673	CO III	1881.080	150	603, 673
CO III	1849.299	200	488, 673	CO III	1881.427	150	488, 673
CO III	1849.464	300	488, 673	CO III	1881.702*	1000	488, 673
CO III	1849.932	200	488, 673	CO III	1881.867	300	488, 673
CO III	1850.503	300	488, 673	CO III	1882.323	150	488, 673
CO III	1850.780	20	488, 603, 673	CO III	1883.286	200	488, 673
CO I	1851.49	8	603	CO III	1883.527	2	673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1884.148	3	673	CO I	1931.89	8	603
CO I	1884.45	10	488, 603, 673	CO III	1932.442	5	673
CO III	1885.476	15	673	CO III	1932.766	1	673
CO III	1886.469	50	488, 673	CO I	1933.03	3	603
CO III	1886.742	200	488, 673	CO III	1933.250	50	488, 673
CO I	1887.89	12	603	CO III	1933.742	1	673
CO III	1888.345	10	673	CO I	1934.274	12	488, 603, 673
CO III	1888.451	10	673	CO III	1934.734	50	488, 673
CO III	1889.090	10	673	CO III	1935.023	100	488, 673
CO III	1889.321	20	673	CO I	1935.46	0	603
CO I	1889.60	6	603	CO I	1935.72	0	603
CO I	1889.87	10	603	CO III	1936.392	20	488, 673
CO III	1890.642	2	673	CO I	1936.58 *	30	488, 603
CO III	1892.011	150	488, 673	CO III	1936.784	5	673
CO III	1893.095	20	673	CO III	1936.933	300	488, 673
CO I	1893.43	3	603	CO III	1937.661	100	488, 673
CO III	1893.911	5	673	CO I	1938.94	10	603
CO I	1894.07	3	603	CO I	1939.75	3	603
CO III	1895.368	500	488, 673	CO III	1940.147	500	488, 603, 673
CO III	1895.495	30	673	CO II	1941.28 *	50	234, 488
CO I	1895.78	4	603	CO III	1941.460	50	488, 673
CO III	1896.031	1	673	CO III	1941.730	100	488, 673
CO I	1897.560	10	603, 673	CO III	1942.369	200	488, 673
CO I	1897.73	8	603	CO III	1942.497	100	488, 673
CO III	1899.183	5	673	CO III	1942.796	100	488, 673
CO III	1899.795	50	488, 673	CO I	1943.64	12	488, 603
CO III	1900.763	50	488, 673	CO I	1945.09	12	488, 603
CO III	1900.813	5	673	CO III	1945.234	200	488, 673
CO III	1901.357	300	488, 673	CO I	1945.86	0	603
CO I	1901.75	20	488, 603	CO III	1946.792	300	488, 603, 673
CO I	1902.15	10	603	CO I	1947.626	5	488, 603, 673
CO III	1903.199	5	673	CO I	1948.09	10	603
CO I	1904.75	5	603	CO III	1948.655	100	488, 673
CO III	1905.354	300	488, 603, 673	CO I	1949.00	15	488, 603, 673
CO III	1905.674	20	673	CO III	1949.533	30	673
CO I	1905.810	20	488, 603, 673	CO III	1949.805	200	488, 673
CO III	1906.265	30	673	CO II	1950.098*	20	234, 488
CO I	1906.72	5	603	CO III	1950.668	2	673
CO III	1907.458	30	673	CO III	1950.911	400	488, 673
CO III	1908.152	5	673	CO III	1950.961	50	488, 673
CO III	1909.455	1	673	CO I	1951.44	12	488, 603
CO III	1909.666	150	673	CO I	1951.90	25	488, 603
CO III	1910.151	1	673	CO III	1952.158	200	488, 673
CO III	1910.840	300	488, 673	CO I	1953.50	4	603
CO III	1911.174	20	673	CO I	1953.71	8	488, 603
CO I	1911.86	8	603	CO III	1953.942	500	488, 673
CO III	1912.465	10	673	CO I	1954.22 *	30	488, 603
CO III	1912.952	30	673	CO III	1954.791	300	488, 673
CO III	1915.206	1	673	CO III	1954.876	100	488, 673
CO III	1916.112	50	673	CO I	1955.17 *	30	488, 603
CO III	1917.321	20	673	CO III	1955.505	30	488, 673
CO III	1919.120	500	488, 673	CO III	1955.793	200	488, 673
CO III	1919.980	5	673	CO III	1956.011	200	488, 673
CO III	1922.000	1	673	CO I	1956.22	15	488, 603
CO III	1923.801	2	673	CO III	1956.770	0	673
CO III	1924.529	50	603, 673	CO II	1957.424*	30	234, 488
CO III	1924.722	10	673	CO I	1957.69	12	488, 603
CO I	1925.05	12	488, 603	CO I	1958.10	8	603
CO III	1925.260	20	488, 673	CO I	1958.55	25	488, 603, 673
CO III	1925.513	5	673	CO I	1958.94	15	488, 603
CO III	1925.563	15	673	CO III	1959.414	500	488, 673
CO III	1925.910	1	673	CO I	1961.00	15	488, 603
CO III	1926.365	1	673	CO I	1961.26	8	488, 603
CO III	1926.659	2	673	CO III	1961.450	50	488, 673
CO I	1926.90	10	488, 603	CO I	1961.59	25	488, 603
CO III	1927.198	5	673	CO III	1963.243	3	673
CO III	1927.740	200	488, 673	CO I	1963.38	12	488, 603
CO III	1928.490	100	488, 673	CO I	1963.55	20	488, 603
CO III	1928.570	500	488, 673	CO III	1963.743	100	488, 673
CO III	1928.802	200	673	CO I	1963.92	8	603
CO I	1929.34	15	488, 603	CO I	1964.03	20	488, 603
CO III	1929.756	300	488, 673	CO III	1964.765	3	673
CO III	1930.479	50	488, 603, 673	CO III	1966.029	2	673
CO I	1930.90	6	603	CO I	1966.680	9	488, 603, 673
CO I	1931.00	10	603	CO I	1966.96	10	603

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO I	1967.78	10	488, 603
CO I	1968.69	25	488, 603
CO I	1968.93	25	488, 603
CO III	1969.312	20	673
CO I	1969.68	3	603
CO III	1970.054	300	488, 673
CO I	1970.71 *	50	488, 603
CO I	1970.77	0	488
CO I	1971.16 *	30	488, 603
CO I	1971.75	15	488, 603
CO III	1971.889	100	488, 673
CO I	1972.52 *	30	488, 603
CO I	1972.82	0	603
CO I	1973.667	5	603, 673
CO III	1973.767	10	673
CO I	1973.85	25	488, 603
CO III	1974.003	2	673
CO I	1974.39	15	488, 603
CO III	1974.883	200	488, 673
CO I	1975.36	6	603
CO I	1975.67	20	488, 603
CO I	1975.94	6	603
CO I	1976.97 *	30	488, 603
CO III	1977.031	200	488, 673
CO I	1978.36	10	488, 603
CO I	1978.53	12	603
CO III	1978.948	50	488, 673
CO III	1980.113	200	488, 673
CO I	1980.59	15	488, 603
CO I	1980.89 *	40	488, 603
CO III	1981.000	1	673
CO III	1981.345	100	488, 673
CO I	1982.049	20	488, 603, 673
CO III	1982.361	1	673
CO I	1982.52	20	488, 603
CO I	1982.81	8	488, 603
CO III	1984.324	30	673
CO I	1985.25	10	603
CO I	1985.36	10	488, 603
CO I	1985.88	4	603
CO I	1986.31	6	603
CO III	1986.704	3	673
CO I	1987.03	15	603
CO I	1987.197*	30	488, 603, 673
CO I	1987.65	20	488, 603
CO III	1987.952	10	673
CO III	1988.806	5	673
CO I	1989.28	10	603
CO III	1989.598	400	673
CO III	1989.645	100	488, 673
CO I	1989.80 *	25	488, 603
CO I	1990.34 *	30	488, 603
CO III	1990.841	10	673
CO I	1991.80	3	603
CO III	1991.929	1	673
CO III	1992.158	10	488, 673
CO I	1992.79	20	488, 603
CO I	1993.25	10	603
CO III	1993.625	100	488, 673
CO I	1994.98	15	603
CO III	1995.397	50	488, 673
CO I	1998.49	25	488, 603
CO III	1999.913	3	673

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NI I	I.P.	61579.	K	1623.9	A
NI II	I.P.	146408.	K	683.023	A
NI III	I.P.	283700.	K	352.5	A

NI V	I.P.		K		A
NI VI	I.P.		K		A
NI VII	I.P.		K		A
NI VIII	I.P.		K		A
NI IX	I.P.		K		A
NI XII	I.P.	2820000.	K	35.4	A
NI XIII	I.P.		K		A
NI XV	I.P.	3670000.	K	27.2	A
NI XVI	I.P.		K		A
NI XVIII	I.P.	4897400.	K	20.419	A
NI XVIII		43.814*			178
NI XVIII		44.348*			178
NI XVIII		52.615*			178
NI XVIII		52.720*			178
NI IX		146.068	6		128
NI IX		146.777	4		128
NI IX		147.154	6		128
NI IX		147.370	0		128
NI IX		147.490	0		128
NI IX		147.861	0		128
NI IX		148.215	3		128
NI IX		148.688	2		128
NI IX		150.247	1		128
NI IX		150.459	0		128
NI IX		150.844*	20		128
NI IX		152.043	1		128
NI IX		152.316	7		128
NI IX		152.700	0		128
NI IX		152.859	2		128
NI IX		152.975	6		128
NI IX		153.212	1		128
NI IX		153.296	1		128
NI IX		153.645	1		128
NI IX		154.174*	12		128
NI VIII		163.60	0		3
NI VIII		167.07	3		3
NI VIII		167.35	1		3
NI VIII		167.66	0		3
NI VIII		167.97	2		3
NI VIII		168.08	1		3
NI VIII		168.33	0		3
NI VIII		168.58	4		3
NI VIII		168.62	0		3
NI VIII		168.87	2		3
NI VIII		168.95	1		3
NI VIII		169.16	6		3
NI VIII		169.27	2		3
NI VIII		170.17	3		3
NI VIII		170.27	1		3
NI VIII		170.52	5		3
NI VIII		170.84	0		3
NI VIII		172.10	2		3
NI VIII		172.32	1		3
NI VIII		172.67	2		3
NI VIII		172.93	1		3
NI VIII		173.41 *	8		3
NI VIII		173.95	2		3
NI VIII		174.22	0		3
NI VIII		174.24 *	8		3
NI VIII		174.36	6		3
NI VIII		174.46	5		3
NI VIII		174.50	0		3
NI VIII		174.75	2		3
NI VIII		174.795	4		3
NI VIII		174.88	3		3
NI VIII		174.92 *	8		3
NI VIII		174.95	2		3
NI VIII		175.13	6		3
NI VIII		175.26	2		3
NI VIII		175.28	2		3

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI VIII	175.32	6	3	NI VIII	185.82	0	3
NI VIII	175.49	1	3	NI VIII	186.16	0	3
NI VIII	175.535	2	3	NI VIII	186.18	3	3
NI VIII	175.555*	8	3	NI VIII	186.31	0	3
NI VIII	175.62	1	3	NI VIII	186.495	5	3
NI VIII	175.64	6	3	NI VIII	186.76	0	3
NI VIII	175.67	6	3	NI VIII	186.86	0	3
NI VIII	175.80 *	10	3	NI VIII	186.93	2	3
NI VIII	175.815*	10	3	NI VIII	187.08	0	3
NI VIII	175.91	2	3	NI VIII	187.20	1	3
NI VIII	175.94 *	8	3	NI VIII	187.23	0	3
NI VIII	176.03 *	6	3	NI VIII	187.87	0	3
NI VIII	176.13 *	5	3	NI VIII	188.06	1	3
NI VIII	176.21	0	3	NI VIII	188.58	4	3
NI VIII	176.25	3	3	NI VII	205.275	5	548
NI VIII	176.29	5	3	NI VII	205.359	1	548
NI VIII	176.35	1	3	NI VII	205.582	8	548
NI VIII	176.42	2	3	NI VII	205.637	16	548
NI VIII	176.50	4	3	NI VII	205.689	0	548
NI VIII	176.69	3	3	NI VII	205.807	10	548
NI VIII	176.74 *	5	3	NI VII	205.885	12	548
NI VIII	176.87 *	8	3	NI VII	206.030	5	548
NI VIII	176.95 *	5	3	NI VII	208.182	12	548
NI VIII	176.98	2	3	NI VII	208.580	10	548
NI VIII	177.10	0	3	NI VII	208.679	4	548
NI VIII	177.19	6	3	NI VII	208.940	12	548
NI VIII	177.29	3	3	NI VII	211.037	8	548
NI VIII	177.32	2	3	NI VII	211.298	4	548
NI VIII	177.43	3	3	NI VII	211.433	12	548
NI VIII	177.63	0	3	NI VII	211.539	0	548
NI VIII	177.73	2	3	NI VII	211.649	12	548
NI VIII	177.83	0	3	NI VII	211.759	14	548
NI VIII	177.87	0	3	NI VII	211.993	9	548
NI VIII	177.97	1	3	NI VII	212.316	8	548
NI VIII	178.06	1	3	NI VII	212.516*	35	548
NI VIII	178.52	3	3	NI VII	212.560	1	548
NI VIII	178.77	6	3	NI VII	212.625	3	548
NI VIII	178.91	5	3	NI VII	212.856	1	548
NI VIII	179.77	2	3	NI VII	212.904*	30	548
NI VIII	179.965	7	3	NI VII	212.949*	20	548
NI VIII	180.125	5	3	NI VII	213.096*	15	548
NI VIII	180.385	5	3	NI VII	213.133	4	548
NI VIII	180.74	2	3	NI VII	213.258	5	548
NI VIII	181.10	2	3	NI VII	213.339	10	548
NI VIII	182.27	1	3	NI VII	213.422	12	548
NI VIII	182.44	6	3	NI VII	213.496	15	548
NI VIII	182.55	2	3	NI VII	213.515*	25	548
NI VIII	182.76	1	3	NI VII	213.714*	25	548
NI VIII	182.79	1	3	NI VII	213.908*	30	548
NI VIII	182.87	3	3	NI VII	213.924	10	548
NI VIII	182.94	2	3	NI VII	214.042	15	548
NI VIII	182.955	3	3	NI VII	214.111	7	548
NI VIII	182.99	2	3	NI VII	214.166	2	548
NI VIII	183.02	2	3	NI VII	214.237	1	548
NI VIII	183.16	0	3	NI VII	214.440	6	548
NI VIII	183.23	0	3	NI VII	214.492	7	548
NI VIII	183.39	1	3	NI VII	215.759*	30	548
NI VIII	183.44	2	3	NI VII	216.064*	20	548
NI VIII	183.51	4	3	NI VII	216.408	15	548
NI VIII	183.625	0	3	NI VII	216.550	7	548
NI VIII	183.80	2	3	NI VII	217.018	8	548
NI VIII	183.83 *	9	3	NI VII	217.138	12	548
NI VIII	183.91	3	3	NI VII	217.658	8	548
NI VIII	183.97	1	3	NI VII	217.781	0	548
NI VIII	184.12 *	9	3	NI VII	218.531	5	548
NI VIII	184.20	0	3	NI VII	218.766	5	548
NI VIII	184.40	0	3	NI VII	218.846	1	548
NI VIII	184.44	7	3	NI VII	219.127	2	548
NI VIII	184.58	0	3	NI VII	219.497	5	548
NI VIII	184.62	0	3	NI VII	219.782	1	548
NI VIII	184.68	2	3	NI VII	223.248	1	548
NI VIII	184.95	2	3	NI VII	223.377	5	548
NI VIII	185.18	1	3	NI VII	223.767	3	548
NI VIII	185.23	0	3	NI VII	223.819	3	548
NI VIII	185.65	3	3	NI VII	223.948	1	548

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI VII	224.381	16	548	NI III	660.620	10	661
NI VII	224.724	14	548	NI III	661.061	5	661
NI VII	224.919	12	548	NI III	662.366	200	661
NI VII	225.182	1	548	NI III	663.568	150	661
NI VII	225.238	3	548	NI III	664.851	100	661
NI VII	225.476	2	548	NI III	666.477	50	661
NI VII	225.734	10	548	NI III	666.585	30	661
NI VII	225.760	2	548	NI III	667.783	5	661
NI VII	225.889	3	548	NI III	667.976	1	661
NI VII	226.062	9	548	NI III	668.195	10	661
NI VII	226.215	1	548	NI III	668.697	1	661
NI VII	226.268	2	548	NI III	669.458	5	661
NI VII	226.347	7	548	NI III	669.755	5	661
NI VII	226.399	1	548	NI III	670.440	0	661
NI VII	226.658	2	548	NI III	670.640	2	661
NI VII	227.191	7	548	NI III	671.065	0	661
NI VII	227.377	2	548	NI III	676.941*	500	661
NI VII	227.570	0	548	NI III	682.947	5	661
NI VII	227.636	9	548	NI III	683.186	10	661
NI VII	227.734	2	548	NI III	683.455	10	661
NI VII	227.831	1	548	NI III	683.590	10	661
NI VII	227.849	8	548	NI III	683.918	10	661
NI VII	228.023	10	548	NI III	689.210	100	661
NI VII	228.039	4	548	NI III	700.168	200	661
NI VII	228.255	5	548	NI III	701.361	1	661
NI VII	228.299	0	548	NI III	701.778	100	661
NI VII	228.484	4	548	NI III	705.991	0	661
NI VII	228.541	5	548	NI III	707.754	0	661
NI VII	228.864	2	548	NI III	708.853	5	661
NI VII	228.927	1	548	NI III	709.021	100	661
NI VII	229.569	4	548	NI III	711.518	20	661
NI VI	260.348*	400	357, 487	NI III	711.772	100	661
NI VI	260.591*	300	357, 487	NI III	712.976	100	661
NI VI	260.713*	250	357, 487	NI III	713.332	300	661
NI III	596.050	30	661	NI III	713.385	300	661
NI III	615.164	0	661	NI III	714.254	100	661
NI III	615.554	5	661	NI III	714.965	1	661
NI III	625.306	15	661	NI III	715.563	100	661
NI III	625.682	100	661	NI III	716.708	20	661
NI III	625.938	15	661	NI III	717.318	2	661
NI III	626.548	10	661	NI III	718.287	10	661
NI III	626.923	30	661	NI III	718.480*	500	259
NI III	627.541	15	661	NI III	718.674	100	661
NI III	630.711*	500	661	NI III	720.337	15	661
NI III	635.406	1	661	NI III	721.259	200	661
NI III	637.057	15	661	NI III	721.418	100	661
NI III	637.535	200	661	NI III	722.094	300	488, 661
NI III	637.703	2	661	NI III	724.155	3	661
NI III	639.338	10	661	NI III	724.471	20	661
NI III	641.689	5	661	NI III	725.196	250	661
NI III	641.866	100	661	NI III	725.806	2	661
NI III	642.611	1	661	NI III	727.313	15	661
NI III	644.488	0	661	NI III	729.249	100	488, 661
NI III	644.948	20	661	NI III	729.820*	500	259
NI III	645.305	30	661	NI III	730.014	50	661
NI III	645.632	2	661	NI III	730.109	250	488, 661
NI III	646.890	1	661	NI III	731.481	150	661
NI III	647.319	0	661	NI III	731.696	400	661
NI III	648.271	3	661	NI III	732.158	300	661
NI III	648.745	2	661	NI III	734.807	20	661
NI III	649.006	2	661	NI III	734.100	5	661
NI III	650.701	2	661	NI III	737.419	50	488, 661
NI III	652.652	30	661	NI III	738.258	200	661
NI III	652.837	1	661	NI III	740.235	100	661
NI III	653.496	10	661	NI III	740.620	30	661
NI III	654.445	10	661	NI III	742.391	3	661
NI III	654.768	5	661	NI III	743.275	2	661
NI III	655.120	0	661	NI III	743.955	100	661
NI III	656.431	1	661	NI III	744.400	5	661
NI III	656.724	1	661	NI III	744.784	100	661
NI III	657.304	1	661	NI III	745.058	40	661
NI III	657.668	0	661	NI III	746.319	50	661
NI III	657.998	0	661	NI III	747.015	30	661
NI III	658.810	0	661	NI III	747.213	20	661
NI III	660.079	30	661	NI III	747.697	3	661

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI III	747.989	300	488, 661	NI III	827.792	2	661
NI III	749.677	200	488, 661	NI III	828.109	100	661
NI III	750.053	300	488, 661	NI III	828.491	3	661
NI III	750.983	150	488, 661	NI III	830.666	10	661
NI III	751.333	150	488, 661	NI III	831.229	100	661
NI III	751.573	150	488, 661	NI III	831.487	5	661
NI III	752.023	200	488, 661	NI III	832.284	5	661
NI III	752.603	100	661	NI III	834.058	20	661
NI III	753.252	30	661	NI III	837.025	20	661
NI III	753.378	10	661	NI III	837.266	50	661
NI III	756.687	100	488, 661	NI III	839.478	5	661
NI III	757.201	50	488, 661	NI III	841.256	20	661
NI III	757.397	5	661	NI III	841.825	2	661
NI III	757.689	10	661	NI III	842.142*	500	488, 661
NI III	757.795	300	488, 661	NI III	842.546	50	661
NI III	758.039	150	661	NI III	844.787	50	286, 661
NI III	758.273	250	661	NI III	844.859	100	661
NI III	758.733	250	488, 661	NI III	847.433	300	488, 661
NI III	759.098	100	488, 661	NI III	849.810	5	661
NI III	760.024	15	661	NI III	851.521	15	661
NI III	760.452	10	661	NI III	851.788	15	286, 661
NI III	760.684	5	661	NI III	852.867	10	661
NI III	762.951	5	661	NI III	853.398	5	661
NI III	763.313	2	661	NI III	855.719	2	661
NI III	764.014	100	661	NI III	855.922	100	661
NI III	764.354	50	661	NI III	856.506	50	488, 661
NI III	765.726	50	661	NI III	856.684	50	661
NI III	766.000	5	661	NI III	857.087	200	488, 661
NI III	766.693	100	661	NI III	857.550	50	661
NI III	767.400	5	661	NI III	858.198	20	661
NI III	767.901	2	661	NI III	858.861	20	661
NI III	770.216	400	661	NI III	859.387	20	661
NI III	772.040	200	661	NI III	859.854	50	661
NI III	773.464	100	661	NI III	860.238	150	661
NI III	775.364	5	661	NI III	860.642	300	488, 661
NI III	776.884	5	661	NI III	860.905	10	286, 661
NI III	777.181	100	661	NI III	862.882	300	488, 661
NI III	778.806*	500	259	NI III	863.217	300	488, 661
NI III	780.572	30	661	NI III	867.023	50	661
NI III	781.486	50	661	NI III	867.194	100	488, 661
NI III	783.419	30	661	NI III	867.508	300	488, 661
NI III	785.020	200	661	NI III	869.702	200	488, 661
NI III	786.145	20	661	NI III	869.926	10	661
NI III	788.039	300	661	NI III	870.845	200	488, 661
NI III	788.298	200	661	NI III	875.641	150	661
NI III	790.000	20	661	NI III	877.852		661
NI III	790.450	20	661	NI III	878.078	30	661
NI III	797.092	30	661	NI III	879.471	50	661
NI III	798.572	2	661	NI III	880.028	20	661
NI III	800.332	100	661	NI III	882.642	20	661
NI III	801.145	20	661	NI III	883.849	50	661
NI III	801.591	100	661	NI III	885.103	3	661
NI III	802.289	10	661	NI III	885.455	2	661
NI III	803.490	20	661	NI III	886.924	10	661
NI III	803.612	3	661	NI III	890.131	5	661
NI III	805.007	200	661	NI III	892.041	3	661
NI III	805.263	20	661	NI III	893.533	50	661
NI III	807.055	100	661	NI III	900.008	100	661
NI III	807.213	30	661	NI III	904.294	50	661
NI III	808.711	10	661	NI III	968.100	20	661
NI III	811.568*	500	259	NI III	970.478	50	488, 661
NI III	813.426	10	661	NI III	970.790	20	661
NI III	815.718	5	661	NI III	973.786	300	488, 661
NI III	817.544	5	661	NI III	979.589	400	488, 661
NI III	817.833	20	661	NI VI	1073.11	12	286
NI III	818.389	1	661	NI VI	1074.51	15	286
NI III	819.237	10	661	NI VI	1081.82	1	286
NI III	819.665	5	661	NI VI	1083.98	5	286
NI III	820.851	50	661	NI VI	1087.97 *	50	286
NI III	821.373	15	661	NI VI	1093.37 *	40	286
NI III	824.292	20	661	NI VI	1095.49	8	286
NI III	824.850	3	661	NI V	1123.20	0	492
NI III	825.300	10	661	NI V	1131.82	0	492
NI III	826.138*	500	259	NI VI	1141.96	10	286
NI III	826.501	200	661	NI VI	1144.32 *	18	286

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI VI	1145.53	15	286	NI III	1410.446	3	661
NI VI	1146.85	8	286	NI III	1410.642	5	661
NI VI	1150.22	10	286	NI III	1412.304	50	661
NI VI	1153.79	2	286	NI III	1413.211	5	661
NI VI	1156.36	12	286	NI III	1413.938	3	661
NI VI	1157.13	15	286	NI III	1414.389	20	661
NI VI	1161.61	2	286	NI III	1414.916	15	661
NI VI	1163.20	10	286	NI III	1415.467	3	661
NI II	1164.5		482	NI III	1415.909	5	661
NI II	1168.0		482	NI III	1416.956	75	661
NI VI	1170.08	15	286	NI III	1417.249	2	661
NI II	1171.3		482	NI III	1417.387	2	661
NI II	1173.4		482	NI III	1417.736	20	661
NI VI	1179.80 *	20	286	NI III	1417.841	10	661
NI VI	1184.56	4	286	NI III	1418.105	3	661
NI VI	1186.90	2	286	NI III	1418.292	5	661
NI VI	1191.72	5	286	NI III	1419.382	10	661
NI II	1206.3		482	NI III	1420.448	75	661
NI V	1244.15 *	30	492	NI III	1421.082	10	661
NI II	1252.86	2	405	NI III	1422.143	2	661
NI V	1264.46 *	20	492	NI III	1423.722	10	661
NI V	1276.90 *	10	492	NI III	1424.511	100	661
NI II	1298.82		482	NI III	1425.737	5	661
NI V	1300.97	5	492	NI III	1427.087	5	661
NI III	1305.344	100	661	NI III	1427.639	20	661
NI V	1306.60 *	10	492	NI III	1427.914	3	661
NI III	1315.085	3	661	NI III	1428.870	200	661
NI II	1317.221	8	488, 794	NI III	1430.438	10	661
NI V	1318.47 *	20	492	NI III	1430.630	10	661
NI III	1321.804	10	661	NI III	1434.133	30	661
NI II	1323.87		482	NI III	1434.306	200	661
NI III	1328.084	75	661	NI III	1434.446	2	661
NI III	1330.787	2	661	NI III	1435.609	10	661
NI III	1331.153	3	661	NI III	1438.152	2	661
NI III	1341.421	10	661	NI III	1439.809	20	661
NI III	1342.148	50	661	NI III	1439.938	3	661
NI II	1344.45	00	405, 488	NI III	1441.159	2	661
NI II	1345.85	3	405	NI III	1442.235	5	661
NI II	1347.70		482	NI II	1444.35	1	405
NI III	1351.256	30	661	NI III	1445.095	30	661
NI III	1352.052	20	661	NI III	1445.374	40	661
NI III	1353.512	20	661	NI III	1446.154	2	661
NI III	1357.802	50	661	NI III	1446.748	15	488, 661
NI II	1360.70		482	NI III	1448.175	30	661
NI II	1362.09		482	NI II	1449.86		482
NI III	1362.783	3	661	NI III	1451.504	200	661
NI III	1365.151	10	661	NI III	1452.532	20	661
NI II	1370.136	5	488, 794	NI III	1453.603	2	661
NI II	1374.14	3	405, 488	NI III	1453.882	50	661
NI III	1374.491	5	661	NI III	1454.845	10	488, 794
NI III	1374.660	10	661	NI III	1457.430	10	661
NI II	1375.63		482	NI III	1457.575	10	661
NI III	1376.183	15	661	NI III	1457.829	50	661
NI III	1377.077	15	661	NI III	1458.284	5	661
NI II	1381.36	4	405, 488	NI III	1461.649	10	661
NI III	1382.077	10	661	NI III	1462.239	5	661
NI III	1387.870	3	661	NI II	1463.48		482
NI III	1388.629	5	661	NI III	1464.778	2	661
NI III	1389.149	1	661	NI III	1464.989	5	661
NI III	1389.735	20	661	NI III	1465.606	10	400, 661
NI III	1392.377	30	661	NI III	1466.027	5	661
NI II	1393.36	2	405	NI III	1466.156	5	661
NI III	1395.459	10	661	NI II	1467.85	3	405, 488
NI II	1399.06	1	405	NI III	1469.844	15	661, 794
NI III	1401.214	15	661	NI III	1470.642	2	661
NI III	1403.113	15	661	NI III	1471.468	2	661
NI III	1405.279	10	661	NI III	1473.939	5	661
NI III	1405.421	10	661	NI III	1474.402	5	661
NI III	1406.061	3	661	NI III	1475.368	15	661
NI III	1406.250	50	661	NI III	1475.662	5	661
NI III	1409.000	15	661	NI III	1476.527	3	661
NI III	1409.471	2	661	NI III	1477.801	10	661
NI III	1409.974	5	661	NI III	1478.252	10	661
NI III	1410.126	10	661	NI III	1478.854	10	661
NI III	1410.344	15	661	NI III	1481.923	5	661

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI III	1483.034	10	661, 794	NI III	1632.166	100	488, 661
NI III	1484.268	3	661	NI III	1635.717	5	661
NI III	1486.456	3	661	NI III	1639.996	25	661
NI III	1488.424	3	661	NI III	1644.466	1	661
NI III	1491.111	1	661	NI III	1647.484	1	661
NI III	1491.309	2	661	NI III	1649.771	100	488, 661
NI III	1491.899	10	661	NI III	1652.866	300	661
NI III	1492.622	30	661	NI III	1653.119	200	661
NI III	1492.990	30	661	NI III	1656.126	250	661
NI III	1495.641	20	488, 661	NI III	1659.438	10	661
NI III	1498.338	5	661	NI III	1661.786	200	661
NI II	1500.44	10	488	NI III	1662.311	1	661
NI III	1501.063	3	661	NI III	1665.859	20	661
NI III	1501.311	5	661	NI III	1666.102	20	661
NI V	1501.90	3	492	NI III	1666.828	20	661
NI II	1502.14	0	405	NI III	1672.213	50	661
NI III	1503.850	2	661	NI III	1673.659	10	661
NI III	1505.165	5	661	NI III	1676.041	2	661, 794
NI III	1506.519	15	488, 661	NI III	1680.532	10	661
NI II	1510.86	5	405, 488	NI III	1682.029	10	661
NI III	1512.046	10	661	NI III	1682.443	1	661
NI V	1519.55	3	492	NI III	1683.471	2	661
NI III	1524.891	2	661	NI III	1683.688	30	661
NI III	1526.305	5	661	NI III	1684.515	1	661
NI III	1529.096	3	661	NI III	1685.085	5	661
NI II	1533.44 *	20	488	NI III	1685.546	3	661
NI III	1536.246	5	661	NI III	1685.977	5	661
NI II	1537.20	0	405	NI III	1686.216	75	661
NI III	1540.759	50	661	NI III	1687.897	400	488, 661
NI III	1547.641	20	661	NI III	1689.121	5	661
NI III	1552.365	10	661	NI III	1689.593	5	661, 794
NI III	1555.598	2	661	NI III	1690.372	20	661
NI III	1568.269	3	661	NI III	1690.634	5	661
NI III	1568.569	5	661	NI III	1690.974	15	661
NI III	1579.999	15	661	NI III	1691.275	1	661
NI II	1581.39		482	NI III	1692.219	3	661
NI II	1585.11	10	488	NI III	1692.514 *	1000	488, 661
NI III	1586.909	1	661	NI III	1693.559	3	661
NI III	1589.625	2	661	NI III	1694.307	5	661
NI II	1592.07	10	488	NI III	1694.582	2	661
NI III	1597.077	3	661	NI III	1695.599	30	661
NI III	1597.899	3	661	NI III	1695.910	5	661
NI III	1598.073	15	661	NI III	1696.195	5	661
NI III	1600.294	10	661	NI III	1698.176	50	488, 661
NI III	1601.025	2	661	NI III	1698.381	5	661
NI III	1602.505	15	661	NI III	1699.024	10	661
NI III	1604.537	300	661	NI III	1699.349	8	661
NI II	1605.57		482	NI III	1701.081	10	661
NI III	1607.000	5	661	NI III	1701.599	60	488, 661
NI II	1608.44	10	482, 488	NI III	1702.591	10	661
NI III	1609.876	100	661	NI II	1703.41	10	488
NI III	1610.534	20	661	NI III	1703.467	50	661
NI III	1612.165	30	661	NI III	1703.925	3	661
NI III	1612.474	10	661	NI III	1704.128	10	661
NI III	1612.730	30	661	NI III	1704.641	60	661
NI III	1612.966	1	661	NI III	1706.041	10	661
NI II	1614.82	15	482, 488	NI III	1706.246	15	661
NI II	1616.91 *	10	482, 488	NI III	1707.242	10	661
NI II	1617.14 *	20	488	NI III	1707.346	200	488, 661
NI III	1618.127	15	661	NI III	1707.426	200	488, 661
NI III	1618.801	20	661	NI III	1708.552	50	488, 661
NI III	1619.414	20	661	NI II	1709.60 *	100	488
NI III	1619.642	30	661	NI III	1709.901 *	800	488, 661
NI III	1620.443	100	661	NI III	1711.779	10	661
NI III	1621.830	50	661	NI III	1712.893	5	661
NI III	1621.942	50	661	NI III	1713.864	10	661
NI III	1623.622	35	661	NI III	1714.698	100	661
NI III	1624.220	20	661	NI III	1715.291	10	488, 661, 794
NI III	1626.096	100	661	NI III	1715.931	100	488, 661
NI III	1627.751	3	661	NI III	1716.886	75	488, 661
NI III	1629.000	25	661	NI III	1718.184	20	661
NI III	1630.120	3	661	NI III	1718.365	150	488, 661
NI III	1630.602	5	661	NI III	1718.873	5	488
NI III	1631.479	2	661	NI III	1719.008	20	661
NI III	1631.754	2	661	NI III	1719.458 *	500	488, 661

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI III	1719.892	50	488, 661	NI III	1778.730	30	661
NI III	1720.708	20	488, 661	NI III	1779.127	20	661
NI III	1721.256	200	488, 661	NI III	1779.442	30	488, 661
NI III	1721.799	0	661	NI III	1779.607	1	661
NI III	1722.038	15	661	NI III	1781.088	15	661
NI III	1722.283	400	488, 661	NI III	1781.279	50	488, 661
NI III	1722.790	20	488, 661	NI III	1782.747	60	488, 661
NI III	1723.793	150	661	NI III	1784.882	75	661
NI III	1724.291	75	488, 661	NI III	1786.927	60	488, 661
NI III	1724.523	50	488, 661	NI III	1787.456	2	661
NI III	1727.640	20	661	NI III	1788.301	200	488, 661
NI III	1728.127	1	661	NI III	1788.502	150	488, 661
NI III	1728.738	20	661	NI III	1789.888	3	661
NI III	1729.219	2	661	NI III	1789.983	5	661
NI III	1729.384	20	661	NI III	1790.402	250	488, 661
NI III	1730.255	10	661	NI III	1790.934	200	661
NI III	1730.483	75	488, 661	NI III	1791.644	200	488, 661
NI III	1731.733	2	661	NI III	1792.513	25	661
NI III	1733.179	250	400, 661	NI III	1792.994	100	661
NI III	1733.762	50	661	NI III	1793.972	1	661
NI III	1735.628	2	661	NI III	1794.904	200	488, 661
NI III	1735.714	5	661, 794	NI III	1795.192	20	661
NI III	1736.011	50	661	NI III	1798.366	20	661
NI III	1736.051	50	661	NI III	1799.023	5	661
NI III	1736.569	2	661	NI III	1800.031	20	661
NI III	1738.252*	500	488, 661	NI III	1800.404	1	661
NI III	1738.785	30	488	NI III	1801.506	50	488, 661
NI III	1739.747	5	661	NI III	1802.546	2	661
NI III	1739.785	300	661	NI III	1803.615	1	661
NI III	1739.979	1	661	NI III	1804.394	30	661
NI III	1740.671	15	661	NI III	1806.457	30	661
NI III	1740.718	10	661	NI III	1806.550	30	661
NI III	1740.944	30	661	NI III	1807.056	50	661
NI II	1741.581*	20	488, 794	NI III	1807.245	300	661
NI III	1741.963	300	488, 661	NI III	1809.200	5	661
NI III	1743.903	1	661	NI III	1809.335	15	661
NI III	1745.436	1	661	NI III	1810.489	150	661
NI III	1747.011*	550	488, 661	NI III	1811.689	200	661
NI III	1747.356	1	661	NI II	1812.07	10	488, 663
NI III	1747.680	50	661	NI III	1812.190	10	661
NI II	1748.30 *	20	488	NI III	1812.539	3	661
NI III	1749.203	1	661	NI III	1812.769	20	661
NI II	1751.92 *	50	488	NI III	1814.082	1	661
NI III	1752.427	300	488, 661	NI III	1815.307	20	661
NI III	1753.011	400	661	NI III	1815.398	15	661
NI III	1753.150	3	661	NI III	1815.650	2	661
NI III	1753.377	10	488, 661	NI III	1816.990	1	661
NI II	1754.81 *	20	488	NI III	1817.598	15	661
NI III	1755.757	1	661	NI III	1819.275	300	661
NI III	1756.151	1	661	NI III	1819.325	3	661
NI III	1756.826	4	661, 794	NI III	1822.918	25	661
NI III	1757.034	25	661	NI III	1823.061*	800	488, 661
NI III	1758.468	10	661	NI III	1823.936	1	661
NI III	1758.940	3	661	NI III	1825.084	20	661
NI III	1760.260	20	488, 661	NI III	1828.279	15	661
NI III	1762.394	20	661	NI III	1828.672	15	661
NI III	1763.069	2	661	NI III	1830.006	400	488, 661
NI III	1763.607	20	661	NI III	1830.075	200	488, 661
NI III	1764.688*	800	488, 661	NI III	1830.859	15	661
NI III	1765.529	1	661	NI III	1831.518	5	661
NI III	1766.387	10	661	NI III	1831.850	1	661
NI III	1767.938*	500	488, 661	NI II	1832.68	2	488
NI III	1769.643*	2000	488, 661	NI III	1833.637	20	661, 794
NI III	1770.153	1	661	NI III	1834.381	15	661
NI III	1771.493	10	488, 794	NI III	1834.890	20	661
NI III	1772.499	1	661	NI III	1836.843	30	661
NI III	1773.788	40	488, 661	NI III	1839.092	1	661
NI II	1773.96	10	488	NI III	1840.421	40	661
NI III	1774.640	10	661	NI III	1841.866	15	661
NI III	1774.992	2	661	NI III	1843.406	50	488, 661
NI III	1775.750	150	661	NI III	1843.689	1	661
NI III	1776.068	400	661	NI III	1845.141	15	661
NI III	1776.802	30	661	NI III	1847.275*	650	488, 661
NI III	1777.227	10	661	NI III	1849.319	100	661
NI III	1778.583	10	661	NI I	1849.380*	5	794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI III	1849.473	50	488, 661
NI III	1849.540	75	488, 661
NI III	1853.480	30	661
NI III	1854.149*	800	488, 661
NI III	1855.525	1	661
NI III	1855.755	1	661
NI III	1857.158	0	661
NI I	1857.956*	8	794
NI III	1858.750	300	661
NI I	1859.406*	3	794
NI III	1859.480	2	661
NI III	1860.560	150	661
NI III	1866.008	3	661
NI III	1866.163	5	661
NI III	1867.706	3	661
NI III	1868.201	20	661
NI III	1879.063	5	661
NI III	1880.498	5	661
NI II	1881.18	10	488
NI III	1882.686	25	661
NI III	1884.723	1	661
NI III	1885.864	10	661
NI II	1886.06	10	488
NI III	1890.155	15	661
NI II	1893.52	1	663
NI III	1895.479	5	661
NI II	1896.16	5	488
NI II	1897.62		482
NI II	1898.70		482
NI III	1899.098	1	661
NI III	1902.607	50	661
NI III	1903.262	15	661
NI III	1909.091	5	661
NI III	1913.890	30	661
NI III	1914.076	3	661
NI III	1914.75	1	661
NI III	1914.919	1	661
NI III	1915.409	5	661
NI III	1915.497	5	661
NI III	1915.834	2	661
NI II	1918.40		482
NI III	1922.91	1	661
NI III	1923.463	5	661
NI III	1928.57	1	661
NI III	1930.431	200	488, 661
NI III	1935.947	5	661
NI III	1936.10	2	661
NI III	1939.40	3	661
NI III	1939.588	100	661
NI II	1939.71	4	403, 488
NI III	1941.41	0	661
NI III	1941.58	0	661
NI III	1942.64	0	661
NI III	1942.886	10	661
NI III	1944.36	2	661
NI III	1946.81	3	661
NI III	1950.90	0	661
NI II	1952.23	0	403
NI III	1952.540	200	488, 661
NI II	1953.41	10	488, 663
NI III	1955.74	0	661
NI III	1956.402	3	661
NI III	1956.964	20	488, 661
NI III	1961.324	5	661
NI III	1963.73	2	661
NI I	1963.85 *	1	488, 602
NI III	1964.689	100	488, 661
NI II	1965.456*	20	488, 794
NI III	1968.053	3	661
NI I	1968.90 *	1	488, 602
NI III	1969.62	0	661
NI III	1970.54	0	661
NI III	1974.493	15	661
NI III	1974.780	15	661
NI I	1976.87 *	3	488, 602

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI III	1977.84	1	661
NI II	1980.00	5	488, 663
NI III	1980.248	2	661
NI II	1980.73	0	663
NI I	1981.61 *	2	488, 602
NI III	1982.538	50	488, 661
NI III	1987.83	1	661
NI I	1990.25 *	4	488, 602
NI III	1993.362	10	661
NI I	1994.29 *	2	488, 602
NI II	1995.74	4	488, 663
NI I	1999.53 *	0	602

COPPER

CU I	I.P.	62317.2	K	1604.69	A
CU II	I.P.	163665.6	K	611.002	A
CU III	I.P.	297100.	K	336.6	A
CU VII	I.P.		K		A
CU XIX	I.P.	5410000.	K	18.5	A
CU XIX		47.329*			178
CU XIX		47.437*			178
CU		109.123	10		356
CU		109.215	12		356
CU		109.818	7		356
CU		110.637	7		356
CU		110.741	10		356
CU		111.756	10		356
CU		112.532	12		356
CU		113.120	6		356
CU		113.928	8		356
CU		114.033	7		356
CU		115.143	7		356
CU		115.766	8		356
CU		116.099	10		356
CU		116.229	7		356
CU		117.079	7		356
CU		120.594	15		356
CU		123.286	9		356
CU		124.630	20		356
CU		126.298	20		356
CU		127.105	20		356
CU		127.444	25		356
CU		128.012	25		356
CU		128.123	25		356
CU		128.255	30		356
CU		128.523	15		356
CU		129.398	10		356
CU		129.567	40		356
CU		129.697	20		356
CU		129.890	10		356
CU		130.438	15		356
CU		130.671	18		356
CU		130.739	20		356
CU		131.015	15		356
CU		131.533	15		356
CU		131.590	35		356
CU		132.149	7		356
CU		132.528	12		356
CU		132.848	50		356
CU		133.389	40		356
CU		133.916	40		356
CU		134.550	60		356
CU		135.025	20		356
CU		135.846	30		356

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU	136.724	45	356	CU	177.809	10	356
CU	136.936	40	356	CU	178.286	5	356
CU	138.074*	75	356	CU	178.489	15	356
CU	138.115*	50	356	CU	179.223	15	356
CU	140.042	50	356	CU	179.630	15	356
CU	141.694	30	356	CU	180.384	15	356
CU	142.158	20	356	CU	180.986	20	356
CU	142.892	60	356	CU	182.019	30	356
CU	143.033	50	356	CU	182.669	8	356
CU	143.634	15	356	CU	183.396	10	356
CU	144.728	25	356	CU	183.705	7	356
CU	145.651	35	356	CU	184.938	7	356
CU	145.671	10	356	CU	186.296	15	356
CU	146.669*	100	356	CU	189.085	5	356
CU	147.544	20	356	CU	191.719	20	356
CU	148.846*	80	356	CU	192.585	7	356
CU	149.703*	80	356	CU	193.409	7	356
CU	150.662	26	356	CU	194.050	8	356
CU	151.429	70	356	CU	194.357	7	356
CU	152.312	8	356	CU	196.363	10	356
CU	152.348	8	356	CU	196.585	30	356
CU	152.382	10	356	CU	197.128	30	356
CU	152.853	8	356	CU	197.598	30	356
CU	152.929	15	356	CU	198.364	5	356
CU	154.785	40	356	CU	198.850	7	356
CU	155.136	40	356	CU	199.723	10	356
CU	155.718	15	356	CU	200.417	7	356
CU	156.153	20	356	CU	200.674*	100	356, 357, 487
CU	156.557	20	356	CU	200.860*	75	356, 357, 487
CU	156.847	20	356	CU	200.958*	50	356, 357, 487
CU	157.359	40	356	CU	201.329	15	356
CU	158.080	15	356	CU	201.615	20	356
CU	158.702	20	356	CU	202.065	20	356
CU	159.072	10	356	CU	203.010	60	356
CU	159.462	10	356	CU	203.432	60	356
CU	159.919	4	356	CU	204.056	15	356
CU	160.530	15	356	CU	204.725	40	356
CU	160.763	50	356	CU	205.278	60	356
CU	161.551	30	356	CU	205.610	30	356
CU	161.748	25	356	CU	205.984	10	356
CU	162.078	20	356	CU	206.355	60	356
CU	162.651	10	356	CU	206.842	35	356
CU	162.926	20	356	CU	207.282	20	356
CU	163.271	30	356	CU	207.733	15	356
CU	163.598	25	356	CU	207.925	35	356
CU	164.259	20	356	CU	208.502	15	356
CU	164.675	15	356	CU	208.902	60	356
CU	165.127	30	356	CU	209.241	30	356
CU	165.481	25	356	CU	209.648	30	356
CU	166.023	8	356	CU	210.217	15	356
CU	166.308	12	356	CU	210.612	15	356
CU	166.645	10	356	CU	211.109	50	356
CU	166.958	5	356	CU	211.707	20	356
CU	167.392	10	356	CU	212.339	10	356
CU	168.111	15	356	CU	212.964	10	356
CU	168.423	15	356	CU	213.617	8	356
CU	168.881	30	356	CU	214.206	20	356
CU	169.488	15	356	CU	214.460	10	356
CU	169.765	15	356	CU	214.861	10	356
CU	170.007	15	356	CU	215.611	50	356
CU	170.645	15	356	CU	216.063	50	356
CU	171.074	15	356	CU	216.454	25	356
CU	171.215	20	356	CU	217.052	8	356
CU	172.036	40	356	CU	217.743	20	356
CU	172.810	5	356	CU	219.227	4	356
CU	173.193	10	356	CU	219.927	6	356
CU	173.605	5	356	CU	220.277	6	356
CU	173.990	10	356	CU	221.065	4	356
CU	174.507	9	356	CU	222.378	15	356
CU	174.885	8	356	CU	222.718	4	356
CU	175.484	30	356	CU	223.368	4	356
CU	175.633	25	356	CU	225.497	25	356
CU	176.232	15	356	CU	225.991	10	356
CU	176.824	10	356	CU	226.785	2	356
CU	177.466	20	356	CU	228.146	10	356

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU	228.667	6	356	CU	271.443	20	356
CU	230.260	8	356	CU	272.424	15	356
CU	230.451	7	356	CU	272.807	10	356
CU	230.928	2	356	CU	273.417	20	356
CU	231.833	7	356	CU	274.269	10	356
CU	232.632	8	356	CU	274.601	15	356
CU	234.256	4	356	CU	275.244	10	356
CU	235.299	30	356	CU	275.829	10	356
CU	235.785	4	356	CU	276.805	10	356
CU	236.343	5	356	CU	277.761	10	356
CU	236.714	8	356	CU	278.128	20	356
CU	237.406	2	356	CU	279.150	10	356
CU	237.969	10	356	CU	280.802	8	356
CU	241.583	15	356	CU	281.492	50	356
CU	242.882	4	356	CU	281.744	40	356
CU	243.108	4	356	CU	282.440	20	356
CU	244.411	1	356	CU	285.798	6	356
CU	245.418	2	356	CU	285.873	10	356
CU	245.653	2	356	CU	287.215	8	356
CU	246.286	1	356	CU	289.358	0	356
CU	246.852	2	356	CU	290.259	0	356
CU	247.336	10	356	CU	291.800	2	356
CU	247.742	25	356	CU	293.257	10	356
CU	248.153	10	356	CU	293.409	3	356
CU	248.426	50	356	CU	294.094	0	356
CU	248.858	7	356	CU	294.561	5	356
CU	249.213	20	356	CU	295.350	5	356
CU	249.415	15	356	CU	295.516	1	356
CU	249.908	10	356	CU	297.057	10	356
CU	250.400	30	356	CU	297.647	10	356
CU	250.816	4	356	CU	298.017	5	356
CU	251.278	20	356	CU	298.901	20	356
CU	251.670	20	356	CU	299.217	15	356
CU	251.947	20	356	CU	300.074	5	356
CU	252.223	15	356	CU	300.823	1	356
CU	252.780*	75	356	CU	301.437	1	356
CU	253.083	15	356	CU	302.000	5	356
CU	253.465	15	356	CU	302.735	8	356
CU	253.786	15	356	CU	304.434	10	356
CU	254.510	50	356	CU	304.656	8	356
CU	254.772	70	356	CU	307.238	4	356
CU	255.214	45	356	CU	310.380	20	356
CU	255.417	35	356	CU	310.727	15	356
CU	256.365	30	356	CU	312.505	20	356
CU	256.898	40	356	CU	312.833	9	356
CU	257.315	20	356	CU	313.890	2	356
CU	257.626	20	356	CU	314.545	6	356
CU	258.004	15	356	CU	315.873	6	356
CU	258.265	45	356	CU	316.873	4	356
CU	258.609	4	356	CU	317.937	7	356
CU	258.927*	80	356	CU	318.763	2	356
CU	259.199	20	356	CU	319.845	2	356
CU	259.558	20	356	CU	320.134	5	356
CU	259.871	25	356	CU	321.534	5	356
CU	260.245	25	356	CU	322.617	15	356
CU	260.967	25	356	CU	323.816	60	356
CU	261.606	30	356	CU	324.485	70	356
CU	261.806	20	356	CU	324.607	50	356
CU	262.442	20	356	CU	325.038	20	356
CU	262.938	30	356	CU	325.687	20	356
CU	263.329	8	356	CU	326.575	20	356
CU	263.760	30	356	CU	327.383	15	356
CU	264.029	15	356	CU	327.620	20	356
CU	264.414	20	356	CU	328.412	50	356
CU	265.641	50	356	CU	328.536	25	356
CU	266.061	20	356	CU	328.737	40	356
CU	266.584	10	356	CU	328.831	20	356
CU	267.203	10	356	CU	329.047*	100	356
CU	267.562	25	356	CU	329.805	30	356
CU	268.309	60	356	CU	329.851	30	356
CU	268.773	50	356	CU	330.602	5	356
CU	269.044	40	356	CU	331.573	8	356
CU	269.653	20	356	CU	332.405	10	356
CU	270.298	30	356	CU	332.893*	100	356
CU	270.740	20	356	CU	333.562	30	356

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU	334.204	30	356	CU	453.130	20	356
CU	335.016	20	356	CU	453.425	40	356
CU	335.470	15	356	CU	454.791	10	356
CU	335.919	25	356	CU	457.760	5	356
CU	336.279	25	356	CU	458.709	10	356
CU	336.577	8	356	CU	459.511	10	356
CU	338.314	25	356	CU	459.881	15	356
CU	339.038	10	356	CU	460.653	2	356
CU	339.420	15	356	CU	461.319	10	356
CU	339.887	30	356	CU	462.545	10	356
CU	341.183	20	356	CU	463.712	20	356
CU	341.483	25	356	CU	464.640	20	356
CU	342.432	20	356	CU	464.824	20	356
CU	342.713*	80	356	CU	467.106	15	356
CU	343.059	5	356	CU	468.505	3	356
CU	344.075	8	356	CU	468.890	2	356
CU	344.179	5	356	CU	472.347	20	356
CU	344.866	8	356	CU	472.775	2	356
CU	345.368*	90	356	CU	474.137	2	356
CU	346.004	60	356	CU	474.176	2	356
CU	347.854	30	356	CU	475.500	2	356
CU	348.413	15	356	CU	476.201	20	356
CU	349.964	30	356	CU	484.5	4	484
CU	350.056	10	356	CU	491.8	4	484
CU	350.421	8	356	CU	494.4	1	484
CU	350.824	5	356	CU	496.9	3	484
CU	351.538	5	356	CU	499.6	4	484
CU	353.031	15	356	CU	505.4	8	484
CU	353.568	10	356	CU	509.1	1	484
CU	354.771	8	356	CU	513.7	0	484
CU	355.425	20	356	CU	516.5	0	484
CU	355.977	5	356	CU	521.0	0	484
CU	356.643	3	356	CU	523.8	0	484
CU	357.052	10	356	CU	526.9	0	484
CU	357.897*	100	356	CU	531.8	0	484
CU	358.865*	90	356	CU	536.8	0	484
CU	359.873	50	356	CU	540.7	2	484
CU	360.618	30	356	CU	542.4	2	484
CU	361.220	25	356	CU	547.1	2	484
CU	361.838	15	356	CU	548.5	2	484
CU	363.003	8	356	CU	550.8	2	484
CU	363.967	10	356	CU	553.1	1	484
CU	364.870	9	356	CU	555.8	1	484
CU	364.876	5	356	CU	559.5	1	484
CU	367.238	3	356	CU	568.1	0	484
CU	370.622	10	356	CU	573.1	1	484
CU	371.267	10	356	CU	584.6	1	484
CU	375.138	5	356	CU	588.4	0	484
CU	377.355	10	356	CU	598.4	1	484
CU	377.756	15	356	CU	602.7	1	484
CU	379.326	25	356	CU	606.0	1	484
CU	379.573	8	356	CU	609.4	0	484
CU	386.943	5	356	CU	611.2	0	484
CU	387.841	8	356	CU	615.8	2	484
CU	393.172	3	356	CU	617.		335
CU	394.256	3	356	CU	619.9	2	484
CU	395.202	5	356	CU	623.1	0	484
CU	406.439	8	356	CU	624.9	0	484
CU	419.355	5	356	CU	642.3	0	484
CU	420.820	5	356	CU	649.1	0	484
CU	426.668	3	356	CU	657.6	0	484
CU	438.929	1	356	CU	662.3	0	484
CU	443.233	5	356	CU	666.4	1	484
CU	443.666	10	356	CU III	672.659	50	488, 684
CU	444.214	3	356	CU II	675.601	2	670
CU	444.999	15	356	CU III	676.564	300	488, 684
CU	445.391	2	356	CU III	682.171	200	488, 684
CU	446.359	10	356	CU II	685.139	8	670
CU	446.995	25	356	CU II	685.396	2	670
CU	448.420	25	356	CU III	686.903	15	684
CU	450.015	25	356	CU III	687.987	100	488, 684
CU	451.152	25	356	CU III	690.250	75	488, 684
CU	452.223	5	356	CU III	691.557	100	488, 684
CU	452.500	4	356	CU III	693.510	50	488, 684
CU	452.654	30	356	CU III	697.930	20	684

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU III	700.182	20	684	CU II	862.822	2	670
CU III	700.271	150	488, 684	CU II	864.199	10	488, 670
CU III	701.692	15	684	CU II	865.383	40	488, 670
CU III	702.112	20	684	CU II	866.440	5	670
CU III	703.622	15	684	CU II	867.726	8	670
CU II	709.303	10	488, 670	CU II	869.062	10	488, 670
CU III	711.834	3	684	CU II	869.336	25	488, 670
CU III	712.040	5	684	CU II	870.544	8	488, 670
CU III	712.473	15	684	CU II	871.064	8	488, 670
CU III	713.262	10	684	CU II	873.264	15	488, 670
CU III	715.530	200	488, 684	CU II	876.719	20	488, 670
CU II	718.171	10	488, 670	CU II	877.007	25	488, 670
CU III	719.506	150	488, 684	CU II	877.549	20	488, 795
CU III	723.958	20	684	CU II	877.839	15	488, 670
CU II	724.487	15	488, 670	CU II	878.697	50	488, 795
CU III	726.295	10	684	CU II	879.906	2	670
CU III	728.906	2	684	CU II	880.325	5	670
CU III	730.365	150	488, 684	CU II	883.282	5	670
CU III	732.026	100	488, 684	CU II	883.837	5	488, 670
CU III	732.688	5	684	CU II	884.127	10	488, 670
CU III	735.224	100	488, 684	CU II	884.430	8	488, 670
CU II	735.519	20	488, 670	CU II	884.824	5	670
CU II	736.031	25	488, 670	CU II	885.842	25	488, 670
CU III	743.303	20	684	CU II	886.515	10	488, 670
CU III	743.970	30	684	CU II	886.941	60	488, 795
CU II	752.80	0	670	CU II	890.569	60	488, 795
CU II	763.29	0	670	CU II	892.413	50	488, 795
CU II	768.48	0	670	CU II	893.676*	80	488, 795
CU II	776.48	0	670	CU II	894.224	40	488, 795
CU III	777.125	200	488, 684	CU II	896.755	60	488, 795
CU II	777.71	0	670	CU II	896.977	40	488, 795
CU III	778.603	50	488, 684	CU II	897.790	15	488, 670
CU II	779.300	8	488, 670	CU II	899.785	50	488, 795
CU II	784.94	0	670	CU II	901.075	60	488, 795
CU III	788.073	400	488, 684	CU II	903.520	1	670
CU III	788.462	300	488, 684	CU II	906.114	40	488, 795
CU III	789.840	200	488, 684	CU II	910.518	15	488, 670
CU III	791.371	300	488, 684	CU II	911.654	1	670
CU III	793.065	100	488, 684	CU II	912.022	0	670
CU III	795.258	2	684	CU II	912.414	3	670
CU II	797.452	10	488, 670	CU II	913.47	0	670
CU III	797.566	100	488, 684	CU II	914.214*	80	488, 795
CU III	801.154	200	488, 684	CU II	917.303	20	488, 670
CU III	802.841	150	488, 684	CU II	922.019	60	488, 795
CU II	806.550	3	670	CU II	922.418	20	488, 795
CU III	808.583	20	684	CU II	924.239	50	488, 670
CU II	810.635	1	670	CU II	925.125	30	488, 670
CU II	810.997	15	488, 670	CU II	929.732	2	670
CU II	811.29	1	670	CU II	929.897	5	670
CU II	813.882	20	488, 670	CU II	932.938	60	488, 795
CU III	816.313	0	684	CU II	935.060	60	488, 795
CU II	822.500	1	670	CU II	935.232	40	488, 795
CU II	823.800	2	670	CU II	935.346	20	488, 795
CU II	824.635	2	670	CU II	935.898	60	488, 795
CU II	826.995	30	488, 670	CU II	937.812	05	670, 795
CU III	829.343	5	684	CU II	939.522	10	488, 670
CU II	836.04	0	670	CU II	943.338	60	488, 795
CU II	839.47	1	670	CU II	945.528	60	488, 795
CU II	841.105	2	670	CU II	945.880	40	488, 795
CU II	842.483	3	670	CU II	945.967	50	488, 795
CU II	844.616	3	670	CU II	947.700	2	670
CU II	844.910	5	670	CU II	951.413	5	670
CU II	848.806	15	488, 670	CU II	954.386	20	488, 795
CU II	849.354	3	670	CU II	955.321	5	670
CU II	850.76	2	670	CU II	956.286	25	488, 670
CU II	851.300	25	488, 670	CU II	958.149	40	488, 670
CU II	851.76	2	670	CU II	960.409	20	488, 670
CU II	852.898	3	670	CU II	966.231	3	670
CU II	853.56	1	670	CU II	967.866	0	670
CU II	855.474	5	670	CU II	968.037	25	488, 670
CU II	855.701	10	488, 670	CU II	972.263	2	670
CU II	858.482	25	488, 670	CU II	973.508	2	670
CU II	859.158	0	670	CU II	974.761	20	488, 795
CU II	860.740	1	670	CU II	976.540	10	488, 670
CU II	861.991	40	488, 795	CU II	976.708	10	488, 670

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	977.573	25	488, 795	CU II	1157.871	8	488, 670
CU II	979.418	5	670	CU II	1162.610	3	670
CU II	984.015	1	670	CU II	1185.899	2	670
CU II	984.530	10	488, 670	CU II	1192.261	2	670
CU II	987.656	10	488, 670	CU II	1201.626	2	670
CU II	989.245	8	488, 670	CU II	1204.642	1	670
CU II	992.951	25	488, 670	CU II	1205.179	0	670
CU II	998.310	8	488, 670	CU II	1205.900	2	670
CU II	999.799	5	670	CU II	1206.770	0	670
CU II	1001.010	8	488, 670	CU II	1214.553	1	670
CU II	1004.056	30	488, 795	CU III	1219.290	05	670, 684
CU II	1006.979	1	670	CU II	1235.931	0	670
CU II	1008.573	30	488, 795	CU III	1237.776	3	684
CU II	1008.730	30	488, 795	CU III	1238.325	1	684
CU II	1010.267	30	488, 670	CU II	1240.025	1	670
CU II	1010.453	10	488, 670	CU II	1241.961	2	670
CU II	1010.649	3	670	CU II	1243.032	1	670
CU II	1011.433	2	670, 488	CU III	1244.377	10	684
CU II	1012.600	25	488, 795	CU II	1248.790	5	670
CU II	1012.680	3	670	CU II	1250.049	10	488, 795
CU II	1013.381	1	670	CU II	1253.179	5	670
CU II	1018.066	15	488, 795	CU III	1254.717	3	684
CU II	1018.707	50	488, 795	CU II	1255.162	1	670
CU II	1019.657	15	488, 795	CU II	1257.674	1	670
CU II	1020.109	15	488, 795	CU III	1259.937	10	684
CU II	1022.100	5	488, 670	CU II	1261.213	0	670
CU II	1027.831	50	488, 795	CU II	1262.928	3	670
CU II	1028.328	25	488, 795	CU II	1265.509	15	488, 795
CU II	1029.749	10	488, 795	CU II	1266.308	10	488, 670
CU II	1030.263	20	488, 795	CU II	1268.710	0	670
CU II	1031.766	8	488, 795	CU II	1269.445	1	670
CU II	1033.567	10	488, 795	CU III	1271.234	5	670, 684
CU II	1035.160	8	488, 670	CU III	1271.839	2	684
CU II	1036.467	60	488, 795	CU II	1272.036	8	488, 670
CU II	1039.349	60	488, 795	CU II	1273.704	2	670
CU II	1039.584	60	488, 795	CU II	1274.069	3	670
CU II	1044.522*	80	488, 795	CU II	1274.463	3	670
CU II	1044.744*	80	488, 795	CU II	1275.575	30	488, 795
CU II	1049.363	20	488, 670	CU II	1279.947	0	670
CU II	1049.756	50	488, 795	CU II	1280.265	5	670
CU II	1050.153	10	488, 670	CU II	1281.098	3	670
CU II	1050.399	10	488, 670	CU II	1281.461	8	670, 795
CU II	1052.170	20	488, 670	CU II	1282.460	15	488, 795
CU II	1054.692	60	488, 795	CU II	1283.823	1	670
CU II	1055.797	40	488, 795	CU II	1284.872	8	670, 795
CU II	1056.957	60	488, 795	CU II	1285.520	1	670
CU II	1058.797	40	488, 795	CU II	1285.900	1	670
CU II	1059.096	60	488, 795	CU II	1287.469	15	488, 795
CU II	1060.632	60	488, 795	CU III	1295.700	0	684
CU II	1063.009	60	488, 795	CU II	1297.549	2	670
CU II	1065.781	20	488, 670	CU II	1297.978	1	670
CU II	1066.133	20	488, 670	CU II	1298.394	15	488, 795
CU II	1069.194	50	488, 795	CU II	1298.916	1	670
CU II	1070.308	15	488, 670	CU II	1299.269	10	488, 795
CU II	1073.745	40	488, 795	CU II	1303.656	2	670
CU II	1077.888	1	670	CU II	1303.979	2	670
CU II	1086.110	5	670	CU II	1305.554	5	670
CU II	1088.393	20	488, 670	CU III	1307.595	3	684
CU II	1089.236	3	670	CU II	1308.297	30	488, 795
CU II	1091.288	5	670	CU II	1309.464	15	488, 795
CU II	1094.401	30	488, 670	CU III	1311.863	2	670, 684
CU II	1097.049	25	488, 670	CU III	1312.400	10	684
CU II	1101.835	1	670	CU III	1313.313	2	684
CU II	1105.182	5	670	CU II	1314.147	15	488, 795
CU II	1106.446	3	670	CU II	1314.338	30	488, 795
CU II	1109.742	1	670	CU III	1316.143	5	684
CU II	1111.752	0	670	CU III	1318.582	2	684
CU II	1112.406	5	670, 795	CU II	1320.688	10	488, 795
CU II	1119.945	15	488, 670	CU II	1321.788	5	670
CU II	1123.226	5	488, 670	CU II	1322.627	6	670
CU II	1130.887	1	670	CU II	1323.187	3	670
CU II	1142.642	20	488, 670	CU II	1323.811	6	670
CU II	1144.853	30	488, 670	CU III	1324.033	5	684
CU II	1147.762	8	488, 670	CU II	1325.270	1	670
CU II	1157.021	5	670	CU II	1325.511	3	670

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU III	1326.379	3	684	CU III	1385.921	3	684
CU II	1326.396	10	488, 795	CU III	1386.714	1	684
CU III	1327.178	5	684	CU III	1388.276	1	684
CU II	1328.410	5	670, 795	CU III	1389.528	5	684
CU II	1329.654	1	670	CU III	1390.306	10	684
CU III	1330.365	2	684	CU III	1391.667	2	684
CU II	1331.890	5	670, 795	CU II	1393.126	10	488, 670, 684
CU II	1332.225	5	670, 795	CU III	1395.274	10	670, 684
CU III	1332.985	15	684	CU III	1396.417	1	684
CU II	1333.066	2	488, 795	CU III	1398.397	5	684
CU II	1334.556	2	670	CU II	1398.641	10	488, 795
CU III	1337.572	5	670, 684	CU III	1399.190	5	670, 684
CU III	1338.386	2	684	CU III	1400.539	3	684
CU III	1338.858	2	684	CU III	1401.376	2	684
CU III	1339.497	5	670, 684	CU III	1401.602	5	684
CU II	1339.777	5	670, 795	CU III	1401.655	5	684
CU II	1340.916	3	670, 795	CU III	1402.250	5	684
CU III	1341.178	2	684	CU III	1402.435	3	684
CU III	1341.497	2	684	CU II	1402.776	15	488, 795
CU III	1342.193	3	684	CU III	1403.181	10	684
CU III	1343.032	2	684	CU III	1403.763	1	684
CU III	1343.730	5	684	CU III	1405.115	2	684
CU III	1344.363	2	684	CU II	1407.170	15	488, 795
CU III	1345.506	2	684, 492	CU III	1408.310	1	684
CU III	1346.062	5	684	CU II	1408.536	2	670, 684
CU III	1347.048	3	684	CU III	1409.248	1	684
CU III	1348.077	1	684	CU II	1410.002	1	670
CU III	1348.584	3	684	CU II	1410.570	2	670
CU III	1349.441	5	684	CU IV	1411.69 *	30	492
CU II	1350.595	15	488, 795	CU III	1412.724	5	684
CU III	1351.271	3	684	CU III	1412.794	5	684
CU II	1351.841	25	488, 795	CU III	1414.086	2	684
CU III	1353.964	2	684	CU III	1414.431	3	684
CU II	1355.308	15	488, 795	CU II	1414.897	10	488, 795
CU III	1356.424	5	684	CU III	1415.478	1	684
CU III	1358.130	2	684	CU III	1417.060	2	684
CU III	1358.440	2	684	CU III	1417.124	2	684
CU II	1358.781	30	488, 795	CU III	1417.538	10	684
CU II	1359.009	20	488, 795	CU II	1418.429	25	488, 795
CU II	1359.938	5	670, 795	CU III	1418.811	5	684
CU III	1360.922	3	684	CU II	1419.742	2	670
CU II	1362.601	20	488, 795	CU II	1421.370	5	670, 795
CU II	1363.505	5	670, 795	CU II	1421.765	25	488, 795
CU III	1365.862	2	684	CU III	1423.504	10	684
CU III	1366.400	3	684	CU III	1424.020	5	684
CU III	1367.646	5	684	CU III	1425.079	2	684
CU II	1367.957	25	488, 795	CU III	1425.282	1	684
CU III	1368.923	2	684	CU II	1427.592	10	488, 795
CU III	1369.612	5	684	CU II	1427.831	20	488, 795
CU III	1369.988	1	684	CU III	1428.081	5	684
CU II	1370.255	1	670	CU II	1428.359	15	488, 795
CU II	1370.558	2	670	CU III	1429.201	5	604
CU III	1371.144	10	670, 684	CU II	1430.246	40	488, 795
CU II	1371.839	20	488, 795	CU III	1430.373	3	684
CU III	1372.899	5	684	CU III	1430.969	3	684
CU III	1372.965	3	684	CU III	1431.671	10	684
CU III	1373.305	3	684	CU III	1431.901	3	684
CU III	1374.033	3	684	CU III	1432.275	3	684
CU III	1374.298	3	684	CU II	1433.843	10	488, 795
CU III	1374.758	3	684	CU II	1434.773	15	488, 795
CU III	1375.621	5	670, 684	CU II	1434.916	25	488, 795
CU III	1376.807	30	684	CU II	1435.318	10	488, 795
CU III	1377.504	30	670, 684	CU II	1436.241	15	488, 795
CU III	1377.559	2	684	CU III	1436.376	1	684
CU III	1378.238	1	684	CU III	1436.846	2	684
CU III	1378.665	2	684	CU III	1436.994	15	684
CU III	1379.379	1	684	CU III	1437.554	2	684
CU III	1379.775	2	684	CU III	1437.645	3	684
CU III	1382.561	5	684	CU III	1438.983	2	684
CU III	1382.838	2	684	CU III	1439.275	2	684
CU III	1384.276	2	684	CU III	1440.446	3	684
CU III	1384.324	5	684	CU III	1441.102	2	684
CU III	1384.840	5	604	CU III	1441.635	3	684
CU III	1384.929	3	684	CU II	1442.138	15	488, 795
CU III	1385.380	1	684	CU II	1443.542	10	488, 795

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	1444.131	2	670, 795	CU II	1519.498*	50	488, 795
CU III	1444.692	1	684	CU II	1519.855*	60	488, 795
CU II	1445.987	20	488, 795	CU II	1520.546	20	488, 795
CU II	1446.896	1	670	CU I	1522.252	0	672
CU III	1448.512	2	684	CU II	1522.580	15	488, 795
CU II	1448.676	1	670	CU I	1523.371	1	672
CU II	1449.056	20	488, 795	CU II	1523.740	10	488, 670
CU III	1450.165	3	684	CU II	1524.857	20	488, 670
CU II	1450.304	25	488, 795	CU II	1525.653	10	488, 670
CU III	1451.478	1	684	CU II	1525.794	30	488, 670
CU II	1452.292	20	488, 795	CU II	1526.969	5	670
CU II	1452.668	0	670	CU II	1527.801	5	670
CU III	1455.200	3	684	CU II	1528.140	3	670
CU II	1455.657	3	670, 795	CU II	1528.782	2	670
CU II	1457.173	10	488, 795	CU II	1531.832	50	488, 670
CU II	1458.004	30	488, 670, 684	CU II	1532.124	30	488, 670
CU II	1459.410	25	488, 795	CU II	1533.976	25	488, 670
CU III	1459.568	0	684	CU II	1535.004	25	488, 670
CU III	1460.915	10	684	CU II	1535.515	15	488, 670
CU II	1461.554	15	488, 795	CU II	1537.560	50	488, 670
CU II	1463.771	50	488, 670	CU II	1538.488	10	488, 670
CU II	1465.542	15	488, 795	CU II	1540.231	20	488, 670
CU II	1466.000	20	488, 795	CU II	1540.391	30	488, 670
CU II	1466.519	10	488, 795	CU II	1540.589	30	488, 670
CU II	1466.751	5	670	CU II	1541.701*	75	488, 670
CU III	1469.259	0	684	CU III	1541.970	40	492, 684
CU III	1469.460	2	684	CU III	1542.562	2	684
CU II	1469.693	15	488, 795	CU III	1543.438*	500	488, 684
CU II	1470.707	40	488, 795	CU III	1544.062	2	684
CU II	1472.394	20	488, 795	CU III	1544.110	2	684
CU II	1473.531	15	488, 670	CU II	1544.674	40	488, 670
CU II	1473.978	25	488, 795	CU II	1547.950	10	488, 670
CU II	1474.937	20	488, 795	CU III	1548.867	300	488, 684
CU II	1475.846	30	488, 670	CU III	1549.203	10	684
CU II	1478.229	2	670, 795	CU II	1549.560	2	670
CU III	1481.243	20	684	CU II	1550.292	3	670
CU II	1481.540	20	488, 795	CU II	1550.644	30	488, 670
CU III	1483.831	15	684	CU II	1551.379	30	488, 670
CU III	1484.010	5	684	CU III	1551.932	2	684
CU II	1485.322	20	488, 795	CU II	1552.641	50	488, 670
CU II	1485.672	40	488, 795	CU II	1553.893	25	488, 670, 672
CU III	1486.659	25	684	CU II	1555.134	40	488, 670
CU III	1486.904	10	684	CU II	1555.698	50	488, 670
CU III	1487.566	0	684	CU II	1557.583	20	488, 670
CU II	1488.647*	75	488, 795	CU II	1558.344	30	488, 670
CU II	1492.149	10	488, 795	CU III	1561.790	3	684
CU II	1492.684	10	488, 670	CU II	1563.189	5	670
CU II	1492.832	30	488, 795	CU III	1565.194	5	684
CU II	1493.365	25	488, 795	CU II	1565.925	40	488, 670
CU II	1494.658	5	670	CU II	1566.411	40	488, 670
CU II	1495.430	25	488, 795	CU III	1568.564	2	684
CU II	1496.692	35	488, 795	CU III	1568.655	2	684
CU II	1497.956	1	670	CU II	1569.216	10	488, 670, 684
CU II	1498.570	3	670, 795	CU II	1569.426	10	488, 670
CU II	1499.507	10	488, 795	CU III	1570.202	30	670, 684
CU III	1501.173	0	684	CU II	1570.568	3	670
CU II	1501.336	10	488, 795	CU III	1571.154	3	684
CU III	1502.107	1	684	CU III	1571.390	1	684
CU II	1503.364	15	488, 795	CU II	1573.174	0	670
CU I	1504.091	0	672	CU II	1575.349	5	670
CU II	1504.762	25	488, 795	CU II	1577.282	0	670
CU II	1505.390	20	488, 795	CU III	1579.353	15	684
CU II	1505.852	5	670, 795	CU II	1579.492	30	488, 670
CU II	1508.182	25	488, 795	CU I	1579.658	5	672
CU II	1508.634	30	488, 795	CU II	1580.025	15	488, 670
CU II	1510.509	35	488, 795	CU II	1580.628	30	488, 670
CU II	1512.178	20	488, 795	CU II	1581.416	0	670
CU II	1512.465	20	488, 795	CU II	1581.991	40	488, 670
CU II	1513.366	20	488, 795	CU II	1582.849	10	488, 670
CU II	1514.222	10	488, 795	CU II	1583.683	50	488, 670
CU II	1514.501	50	488, 795	CU I	1583.799	15	488, 672
CU II	1516.896	5	670, 795	CU I	1585.871	5	488, 672
CU II	1517.160	10	488, 795	CU II	1587.046	1	670
CU II	1517.631	20	488, 795	CU II	1587.675	0	670
CU II	1517.921	10	488, 795	CU III	1588.551	3	684

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	1590.164	40	488, 670	CU III	1682.044	10	684
CU II	1593.557	60	488, 670	CU III	1682.695	30	488, 684
CU III	1593.758*	1000	488, 684	CU II	1683.15	40	488, 670
CU II	1596.745	1	670	CU III	1684.642*	500	488, 672, 684
CU III	1597.418	10	684	CU I	1685.682*	25	488, 672
CU II	1598.402	40	488, 670	CU III	1686.214	300	488, 684
CU III	1600.194*	500	488, 684	CU I	1687.043	20	488, 672
CU II	1601.200	1	670	CU III	1687.134*	600	488, 684
CU II	1602.250	15	488, 670	CU I	1688.093*	30	488, 672
CU II	1602.387	40	488, 670	CU III	1688.618	100	488, 684
CU III	1603.146	400	488, 684	CU I	1688.865	15	488, 672
CU II	1604.848	20	488, 670	CU III	1689.051	200	488, 684
CU II	1605.274	30	488, 670	CU I	1691.076*	30	488, 672
CU III	1605.969	300	488, 684	CU III	1692.706	300	488, 684
CU III	1606.730	300	488, 684	CU III	1696.202	15	684
CU II	1606.834	40	488, 670, 684	CU II	1699.09	30	488, 670, 684
CU III	1607.542	100	488, 684	CU III	1701.023*	400	488, 672, 684
CU II	1608.638	25	488, 670	CU III	1702.102*	400	488, 684
CU III	1609.599	50	488, 684	CU III	1702.190*	300	488, 684
CU III	1609.757	100	488, 684	CU III	1702.349	30	488, 684
CU II	1610.298	15	488, 670	CU III	1702.994*	500	488, 684
CU III	1610.571	75	488, 684	CU I	1703.843*	30	488, 672
CU II	1611.113	10	488, 670	CU III	1704.072	10	684
CU II	1614.145	1	670	CU III	1705.333	300	488, 684
CU III	1616.160	15	684	CU III	1705.633	400	488, 684
CU III	1616.607	300	488, 684	CU I	1707.391	5	672, 684
CU I	1616.940	20	488, 672	CU III	1708.958*	200	488, 684
CU II	1617.914	20	488, 670	CU III	1709.036*	700	488, 684
CU III	1618.408	5	684	CU III	1711.257	30	684
CU III	1620.776	1	684	CU III	1711.437	30	684
CU I	1621.316	20	488, 672	CU I	1713.364*	50	488, 672, 684
CU II	1621.426	60	488, 670, 684	CU II	1714.65	0	670
CU II	1622.44	40	488, 670	CU III	1716.189	1	684
CU II	1623.17	30	488, 670	CU III	1716.400	10	684
CU III	1625.500	1	684	CU III	1717.134	5	684
CU III	1626.139	200	488, 684	CU II	1717.72	15	488, 670
CU III	1626.411	200	488, 684	CU III	1722.379*	1000	488, 684
CU III	1628.088	50	684	CU III	1724.810	10	684
CU III	1628.295	300	488, 684	CU I	1725.664*	50	488, 672
CU III	1629.301	1	684	CU III	1726.275	5	684
CU II	1630.27	25	488, 670	CU III	1728.139	200	488, 684
CU I	1632.326	5	672	CU I	1730.576	10	488, 672
CU III	1633.192	1	684	CU I	1731.32	2	672
CU II	1636.61	10	488, 670	CU I	1732.674	20	488, 672
CU III	1638.956	300	488, 684	CU III	1732.998	5	684
CU III	1639.960	10	684	CU II	1734.21	3	670
CU I	1640.474	5	488, 672	CU II	1736.54	10	488, 670
CU III	1642.208*	2000	488, 684	CU III	1737.893	30	684
CU I	1647.030	0	672	CU III	1738.145	30	684
CU II	1649.457	25	488, 670	CU III	1738.648	10	684
CU I	1650.119	5	488, 672	CU III	1739.508	300	488, 684
CU I	1650.301	5	488, 672	CU III	1741.135	30	684
CU I	1651.721	20	488, 672, 684	CU III	1741.378*	500	488, 684
CU III	1652.010	300	488, 684	CU I	1741.574*	50	488, 672
CU III	1653.399	10	684	CU II	1744.50	20	488, 670
CU III	1654.574	300	488, 684	CU I	1749.202	2	672
CU I	1655.318*	30	488, 672	CU III	1750.391*	500	488, 684
CU II	1656.326	20	488, 670	CU II	1753.27	15	488, 670
CU III	1658.472	200	488, 684	CU III	1755.012	20	684
CU II	1660.005	20	488, 670	CU II	1759.49	1	670
CU III	1660.887	30	684	CU III	1760.586	10	684
CU II	1663.003	30	488, 670	CU III	1761.155	20	684
CU I	1664.303	10	488, 672	CU III	1762.557	30	684
CU I	1664.708	10	488, 672	CU III	1763.935	0	684
CU III	1669.273	10	684	CU I	1764.540	10	672
CU III	1670.140*	500	488, 684	CU III	1766.219	2	684
CU III	1671.886*	500	488, 684	CU III	1768.869	200	488, 684
CU II	1672.77	10	488, 670	CU III	1772.478	2	684
CU I	1673.440	5	672	CU III	1773.697	1	684
CU III	1674.602*	500	488, 684	CU I	1774.820	2	488, 672
CU III	1676.469	15	684	CU III	1776.136	20	684
CU III	1677.373	200	488, 684	CU III	1780.062	5	684
CU III	1679.151	400	488, 684	CU III	1783.799	20	684
CU II	1680.27	1	670	CU III	1783.935	5	684
CU III	1681.481	300	488, 684	CU III	1787.902	1	684

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	1790.65	5	670	ZN	314.49	4	25
CU III	1798.761	5	684	ZN	315.70	00	25
CU II	1800.95	2	670	ZN	316.89	1	25
CU II	1807.84	15	670	ZN	317.27	0	25
CU I	1817.265	20	488, 672	ZN	317.65	1	25
CU I	1817.334	20	672	ZN	318.65	0	25
CU III	1820.339	5	684	ZN	319.13	00	25
CU I	1825.348*	100	488, 672	ZN	319.98	2	25
CU III	1826.339	10	684	ZN	320.89	4	25
CU III	1840.917	200	488, 684	ZN	321.1	3	25
CU II	1856.93	0	670	ZN	324.43	1	25
CU III	1858.685	1	684	ZN	326.29	1	25
CU II	1861.56	0	670	ZN	327.29	0	25
CU III	1867.747	50	488, 684	ZN	328.29	1	25
CU III	1882.250	2	670, 684	ZN	330.22	2	25
CU II	1920.665	5	670, 684	ZN	330.73	00	25
CU II	1922.13	5	670	ZN	331.26	00	25
CU III	1928.715	2	670, 684	ZN	332.33	0	25
CU II	1929.74	25	488, 670	ZN	333.46	00	25
CU II	1944.601	25	488, 662	ZN	333.98	00	25
CU II	1946.49	10	488, 670	ZN	334.57	4	25
CU II	1952.46	5	670	ZN	336.71	2	25
CU II	1957.51	20	488, 670	ZN	336.97	00	25
CU II	1967.99	2	670	ZN	337.97	1	25
CU II	1970.497	15	488, 662	ZN	338.65	1	25
CU II	1974.47	0	670	ZN	340.77	4	25
CU II	1977.02	15	488, 670	ZN	341.63	6	25
CU II	1979.963	50	488, 662	ZN	343.33	00	25
CU II	1984.75	1	670	ZN	343.62	00	25
CU II	1989.861	30	488, 662	ZN	345.05	00	25
CU II	1990.20	5	670	ZN	346.21	00	25
CU II	1993.81	1	670	ZN	347.29	0	25
CU	1999.7	10	456	ZN	349.44	0	25
				ZN	352.17	00	25
				ZN	353.15	0	25
				ZN	356.61	00	25
				ZN	361.23	1	25
				ZN	363.38	00	25
				ZN	364.47	00	25
				ZN	367.55	2	25
				ZN	370.80	00	25
				ZN	376.75	00	25
				ZN	383.74	0	25
				ZN	387.72	0	25
				ZN	389.14	0	25
				ZN	390.08	00	25
				ZN	390.69	00	25
				ZN	412.70	00	25
				ZN	420.59	00	25
				ZN	421.04	1	25
				ZN	423.49	0	25
				ZN	425.45	3	25
				ZN	425.88	8	25
				ZN	428.11	2	25
				ZN	428.53	7	25
				ZN	429.31	4	25
				ZN	430.58	3	25
				ZN	431.53	6	25
				ZN	435.71	2	25
				ZN	436.24	0	25
				ZN	436.75	0	25
				ZN	440.13	00	25
				ZN	441.11	0	25
				ZN	441.61	0	25
				ZN	442.35	7	25
				ZN	443.40	0	25
				ZN	444.02	3	25
				ZN	444.36	5	25
				ZN	446.20	00	25
				ZN	446.55	0	25
				ZN	449.58	2	25
				ZN	449.95	5	25
				ZN	450.65	0	25
				ZN	450.93	3	25
				ZN	451.58	0	25

ZINC

ZN I	I.P.	75766.8	K	1319.839 A
ZN II	I.P.	144890.6	K	690.176 A
ZN III	I.P.	320300.	K	312.2 A
ZN		227.36	00	25
ZN		242.80	00	25
ZN		244.00	0	25
ZN		245.63	00	25
ZN		250.04	00	25
ZN		250.64	0	25
ZN		251.35	00	25
ZN		252.86	0	25
ZN		257.07	00	25
ZN		267.52	00	25
ZN		268.30	00	25
ZN		269.45	00	25
ZN		270.44	1	25
ZN		272.97	00	25
ZN		274.29	00	25
ZN		275.95	00	25
ZN		288.52	0	25
ZN		288.86	0	25
ZN		289.77	0	25
ZN		308.79	00	25
ZN		309.40	00	25
ZN		310.58	0	25
ZN		311.16	0	25
ZN		311.82	0	25
ZN		312.85	2	25

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN	452.50	0	25	ZN	566.76	00	25
ZN	452.79	3	25	ZN III	568.12	0	25, 472
ZN	454.27	0	25	ZN III	569.94	0	25, 472
ZN	456.64	0	25	ZN III	571.95	00	25, 472
ZN	457.01	00	25	ZN III	572.154	1	472
ZN	457.29	1	25	ZN III	572.211	2	472
ZN	466.56	2	25	ZN III	572.778	2	472
ZN IV	466.91 *	6	25	ZN III	573.25	00	25, 472
ZN IV	468.42	1	25	ZN III	573.326	1	472
ZN	471.73	2	25	ZN III	573.686	1	472
ZN IV	472.08 *	5	25	ZN III	574.05	0	25, 472
ZN	472.36	1	25	ZN III	574.114	2	472
ZN IV	472.65 *	6	25	ZN III	574.96	0	25, 472
ZN IV	473.00	2	25	ZN III	577.04	1	25, 472
ZN	473.24	0	25	ZN III	577.59	0	25, 472
ZN IV	473.49	2	25	ZN III	578.558	2	472
ZN	474.21	2	25	ZN III	580.976	1	472
ZN IV	474.54 *	6	25	ZN III	582.92	00	25, 472
ZN	475.75	0	25	ZN	584.64	00	25
ZN	476.40	2	25	ZN III	586.090	0	472
ZN	478.33	00	25	ZN	588.06	00	25
ZN	478.62	4	25	ZN	589.13	00	25
ZN IV	478.92	2	25	ZN	589.94	00	25
ZN	482.10	2	25	ZN III	591.474	0	472
ZN	483.42	1	25	ZN	596.38	00	25
ZN III	497.669	1	472	ZN	615.54	0	25
ZN	499.51	0	25	ZN	624.63	0	25
ZN III	499.673	1	472	ZN	634.78	00	25
ZN III	499.914	3	472	ZN	639.03	00	25
ZN	499.95	0	25	ZN	640.23	00	25
ZN	500.30	00	25	ZN	642.98	00	25
ZN	500.67	00	25	ZN	648.78	00	25
ZN III	501.32	1	25, 472	ZN III	677.56 *	8	25, 472
ZN III	502.61	00	25, 472	ZN III	677.93 *	6	25, 472
ZN III	503.52	00	25, 472	ZN II	684.636	2	472
ZN III	504.946	2	472	ZN	703.32	1	25
ZN III	505.02	0	25, 472	ZN	712.86	00	25
ZN	506.15	0	25	ZN	713.39	0	25
ZN III	506.639	2	472	ZN III	713.90	2	25, 416
ZN III	507.197	2	472	ZN	715.55	0	25
ZN III	507.338	1	472	ZN	718.06	2	25
ZN III	508.013	3	472	ZN	722.39	00	25
ZN	509.57	0	25	ZN	725.85	00	25
ZN III	510.078	2	472	ZN	726.90	00	25
ZN III	510.244	1	472	ZN II	742.699	1	472
ZN	510.71	0	25	ZN II	747.328	0	472, 682
ZN III	512.678	2	472	ZN II	755.28	00	25
ZN III	512.77	0	25, 472	ZN	764.71	00	25
ZN III	513.79	0	25, 472	ZN II	767.02	0	25, 682
ZN III	514.244	1	472	ZN	772.92	00	25
ZN	515.20	00	25	ZN	775.46	0	25
ZN III	515.813	0	472	ZN II	778.12	5	682
ZN	516.55	0	25	ZN II	779.12	00	25, 472, 682
ZN III	516.84	0	25, 472	ZN	783.91	00	25
ZN III	517.355	2	472	ZN II	806.107	1	472
ZN III	518.536	2	470	ZN III	830.924	2	472
ZN III	518.61	00	25, 472	ZN II	833.62	2	754, 682
ZN III	519.160	1	472	ZN II	834.08	3	25, 682, 754
ZN	520.10	1	25	ZN II	834.82	1	25
ZN III	521.100	2	472	ZN II	837.044	2	472
ZN III	522.646	1	472	ZN	841.98	00	25
ZN III	522.93	00	25, 472	ZN II	851.33	0	25, 472
ZN III	524.37	00	25, 472	ZN	859.29	00	25
ZN	525.52	1	25	ZN	868.04	00	25
ZN III	528.099	1	472	ZN II	870.853	0	472
ZN III	532.38	0	25, 472	ZN II	872.539	0	472
ZN III	533.525	2	472	ZN II	876.84	4	682
ZN III	533.652	1	472	ZN	877.83	0	25
ZN III	535.533	1	472	ZN	878.83	0	25
ZN III	537.031	2	472	ZN	879.63	0	25
ZN III	538.433	2	472	ZN	880.63	0	25
ZN III	539.170	1	472	ZN II	881.05	5	25, 682, 754
ZN III	542.80	00	25, 472	ZN	884.05	00	25
ZN III	549.505	1	472	ZN	884.35	00	25
ZN III	564.294	1	472	ZN	887.78	0	25

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN II	888.17	00	754	ZN	1185.66	00	25
ZN II	888.62 *	8	472, 682, 754	ZN	1186.72	1	25
ZN	891.25	00	25	ZN	1187.80	0	25
ZN II	892.83	0	25, 682, 754	ZN	1189.22	00	25
ZN	899.51	00	25	ZN IV	1190.42	00	25
ZN II	938.73	5	472, 682	ZN	1191.65	0	25
ZN	943.86	0	25	ZN II	1193.18	0	25, 754
ZN II	949.56	0	25, 682, 754	ZN	1194.45	00	25
ZN	951.43	00	25	ZN IV	1195.35	1	25, 697
ZN	953.18	00	25	ZN III	1199.44	1	25
ZN	953.73	00	25	ZN	1200.24	0	25
ZN	959.43	00	25	ZN III	1200.70	0	25, 472
ZN	972.47	0	25	ZN IV	1201.56	1	25
ZN	976.72	2	25	ZN	1203.24	00	25
ZN	979.91	1	25	ZN	1204.33	1	25
ZN II	984.16 *	10	488, 682	ZN	1206.05	0	25
ZN II	986.54 *	9	488, 682	ZN IV	1206.52	1	25
ZN	988.81	1	25	ZN IV	1212.9	1	697
ZN	990.63	0	25	ZN IV	1216.2	1	697
ZN	991.37	1	25	ZN IV	1223.15	4	25
ZN	1001.93	0	25	ZN IV	1224.12	1	25, 697
ZN	1003.64	00	25	ZN IV	1228.46	4	25
ZN	1016.11	1	25	ZN III	1230.296	0	472
ZN IV	1029.9	2	697	ZN III	1230.434	1	472
ZN IV	1037.4	2	697	ZN III	1233.928	2	472
ZN IV	1049.8	3	697	ZN	1237.21	00	25
ZN	1052.37	0	25	ZN IV	1239.00	1	25
ZN	1052.81	0	25	ZN III	1239.603	1	472
ZN	1053.95	0	25	ZN III	1240.81	0	25, 472
ZN I	1055.35	0	25	ZN III	1242.409	1	472
ZN	1056.74	0	25	ZN IV	1243.25	1	25
ZN	1057.93	0	25	ZN	1244.34	0	25
ZN	1065.91	1	25	ZN III	1247.13	00	25, 472
ZN	1088.64	1	25	ZN IV	1249.62	1	25
ZN	1092.18	0	25	ZN III	1250.375	1	472
ZN	1097.94	0	25	ZN III	1251.024	2	472
ZN	1099.27	1	25	ZN III	1253.35	2	25, 472
ZN	1102.12	0	25	ZN II	1260.91	000	754
ZN	1110.07	1	25	ZN II	1261.59	000	754
ZN	1113.26	0	25	ZN III	1262.49	3	25, 472
ZN	1115.01	0	25	ZN II	1263.43	2	682
ZN	1115.92	0	25	ZN II	1264.65	00	25, 754
ZN V	1116.61 *	0	25, 492	ZN III	1265.68	5	25, 472
ZN	1117.46	00	25	ZN IV	1267.40	0	25
ZN	1122.17	0	25	ZN III	1268.044	3	472
ZN	1123.30	0	25	ZN III	1268.38	0	25, 472
ZN	1128.44	00	25	ZN III	1270.49	0	25, 472
ZN	1132.99	00	25	ZN IV	1272.07	4	25
ZN IV	1136.35	00	25, 697	ZN IV	1272.90	4	25
ZN IV	1145.5	2	697	ZN III	1274.38	1	25, 472
ZN	1149.76	0	25	ZN III	1281.49	1	25, 472
ZN	1150.61	00	25	ZN IV	1282.38	1	25
ZN	1151.25	00	25	ZN III	1283.46	2	25, 472
ZN	1154.09	00	25	ZN IV	1284.58	2	25, 697
ZN	1155.74	00	25	ZN III	1285.781	1	472
ZN	1158.70	0	25	ZN	1286.33	0	25
ZN	1159.70	00	25	ZN IV	1288.00	0	25
ZN	1161.25	00	25	ZN III	1288.75	0	25, 472
ZN	1163.71	00	25	ZN III	1290.016	2	472
ZN	1164.18	00	25	ZN IV	1290.46	2	25
ZN	1165.16	00	25	ZN II	1291.77	5	25, 410, 682
ZN	1165.80	00	25	ZN III	1292.223	4	472
ZN IV	1170.6	1	697	ZN III	1292.232	4	472, 682
ZN	1174.34	0	25	ZN IV	1292.45 *	5	25
ZN IV	1175.28	00	25, 697	ZN II	1295.26	2	25, 472, 682
ZN	1176.93	0	25	ZN IV	1296.68	4	25
ZN	1177.55	00	25	ZN III	1298.52	1	25, 472
ZN IV	1179.30	0	25, 697	ZN III	1298.709	1	472
ZN	1180.47	0	25	ZN III	1301.12	3	25, 472
ZN	1182.15	0	25	ZN III	1303.47	2	25, 472
ZN III	1276.01	1	25, 472	ZN III	1304.82	1	25, 472
ZN II	1277.10	3	25, 682	ZN II	1306.56 *	6	25, 410, 682
ZN II	1277.54	4	472, 682	ZN III	1307.40	1	25, 472
ZN III	1279.019	2	472	ZN III	1308.65	00	25, 472
ZN IV	1280.40	4	25, 697	ZN IV	1310.14	1	25

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN III	1311.169	1	472	ZN	1383.88	00	25
ZN IV	1312.09	1	25	ZN IV	1384.63	00	25
ZN III	1312.984	1	472	ZN III	1387.71 *	7	25, 472
ZN III	1314.05	00	25, 472	ZN IV	1388.28	0	25, 697
ZN III	1314.840	1	472	ZN III	1389.59	2	25, 472
ZN IV	1317.92	4	25	ZN II	1390.434	1	472
ZN II	1319.09	4	25, 472, 682	ZN III	1391.32	2	25, 472
ZN IV	1320.62	4	25	ZN III	1392.143	0	472
ZN IV	1321.19	3	25	ZN IV	1393.02	2	25
ZN IV	1322.32	4	25	ZN III	1393.81	3	25, 472
ZN III	1323.59	2	25, 472	ZN III	1394.77	3	25, 472
ZN III	1325.891	1	472	ZN III	1395.80	1	25, 472
ZN III	1326.290	0	472	ZN	1400.06	0	25
ZN III	1326.66	4	25, 472	ZN III	1401.74	1	25, 472
ZN IV	1327.20	0	25, 697	ZN IV	1402.91	3	25
ZN II	1328.40	5	25, 472, 682	ZN I	1404.118		242, 314
ZN III	1328.561	1	472	ZN III	1406.36	2	25, 472
ZN IV	1329.15	2	25	ZN III	1407.620		472
ZN III	1329.92	00	25, 472	ZN III	1408.69	1	25, 472
ZN IV	1330.27	3	25, 472	ZN III	1409.61	00	25, 472
ZN III	1330.924	3	472	ZN IV	1411.03	2	25
ZN IV	1331.75	2	25	ZN III	1411.83	0	25, 472
ZN	1332.77	00	25	ZN	1414.09	0	25
ZN IV	1333.20	4	25	ZN III	1416.070	0	472
ZN III	1335.843	2	472	ZN III	1416.234	1	472
ZN III	1338.71	2	25, 472	ZN IV	1418.85	1	25
ZN II	1338.96	2	472, 682	ZN II	1419.99	0	25
ZN IV	1340.14	3	25, 697	ZN III	1421.13	1	25, 472
ZN	1341.27	00	25	ZN III	1421.76	0	25, 472
ZN IV	1342.69	2	25	ZN III	1423.13	1	25, 472
ZN III	1343.53	0	25, 472	ZN III	1425.11	4	25, 472
ZN IV	1343.84 *	6	25	ZN III	1426.61	2	25, 472
ZN	1344.26	1	25	ZN III	1430.17	2	25, 472
ZN III	1346.12	0	25, 472	ZN II	1430.97	2	472, 682
ZN III	1347.302	2	472	ZN III	1432.14	5	25, 416
ZN IV	1347.98 *	5	25	ZN III	1434.04	0	25, 472
ZN IV	1349.87 *	5	25, 697	ZN III	1436.118	0	472
ZN III	1350.651	2	472	ZN IV	1436.66	1	25
ZN IV	1352.73 *	5	25, 697	ZN II	1439.10 *	8	488, 682
ZN III	1353.947	2	472	ZN III	1441.54	0	25, 472
ZN III	1354.15	1	25, 472	ZN III	1442.56	2	25, 472
ZN III	1355.250	3	472	ZN III	1445.10	2	25, 472
ZN III	1355.490	0	472	ZN III	1446.088	2	472
ZN III	1355.931	3	472	ZN III	1446.266	0	472
ZN IV	1356.15	4	25	ZN III	1446.927	0	472
ZN III	1356.55	0	25, 472	ZN	1449.06	0	25
ZN IV	1357.77	4	25	ZN III	1449.46	0	25, 472
ZN II	1358.751	1	472	ZN II	1450.78	4	472, 682
ZN III	1359.618	3	472	ZN III	1451.03	4	25
ZN III	1359.67	4	25, 472	ZN II	1456.176	1	472
ZN II	1361.28	0	25	ZN II	1456.90 *	8	488, 682
ZN III	1362.010	4	472	ZN II	1457.40 *	7	488, 682
ZN III	1362.50	2	25, 472	ZN I	1457.572	4	314, 488
ZN III	1363.50	1	25, 472	ZN IV	1460.02	3	25
ZN IV	1363.98 *	5	25	ZN I	1462.737	2	472
ZN III	1364.346	4	472	ZN III	1464.13	4	25, 416
ZN III	1365.61	3	25, 472	ZN III	1465.79	3	25, 416
ZN IV	1366.04	0	25, 697	ZN III	1471.243	1	472
ZN III	1366.698	3	472	ZN II	1471.887	1	472
ZN III	1366.91	2	25, 472	ZN III	1472.767	1	472
ZN III	1368.15	2	25, 472	ZN III	1473.41 *	7	25, 754
ZN	1369.50	5	25	ZN III	1475.60	0	25
ZN III	1370.44	1	25, 472	ZN II	1476.99	3	25, 682
ZN III	1371.34	1	25	ZN II	1478.21	3	25, 682
ZN III	1372.50	0	25, 472	ZN II	1481.25	1	25, 754
ZN II	1373.66	1	25, 472	ZN IV	1481.97	0	25
ZN III	1374.53	1	25, 472	ZN	1482.184	2	472
ZN IV	1375.32	3	25	ZN III	1483.305	0	472
ZN I	1376.04	00	25, 242	ZN II	1486.05	3	25, 682, 754
ZN III	1377.394	2	472	ZN II	1488.92	2	682, 754
ZN III	1377.64	5	25, 472	ZN III	1489.32	2	25, 416
ZN	1379.55	2	25	ZN II	1490.93	1	25, 682
ZN III	1380.873	1	472	ZN	1492.203	2	472
ZN III	1381.16	00	25, 472	ZN	1492.59	00	25
ZN III	1381.310	00	472	ZN II	1493.13	3	25, 682

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GA	759.4	1	130	GA	933.0	1	130
GA	760.41	3	130	GA	934.0	2	130
GA	762.01	2	130	GA	935.73	4	130
GA	765.10	1	130	GA	938.6	4	130
GA	766.8	2	130	GA	940.9	2	130
GA	768.4	2	130	GA	943.0	3	130
GA	769.8	1	130	GA	945.1	0	130
GA	771.2	2	130	GA	947.15	4	130
GA	772.8	2	130	GA	947.8	3	130
GA	774.6	1	130	GA	949.5	2	130
GA	776.9	2	130	GA	951.98	5	130
GA	777.91	3	130	GA	953.8	2	130
GA	778.3	2	130	GA	955.4	1	130
GA	779.83	3	130	GA	956.92	5	130
GA	781.74	2	130	GA II	958.67	2	652
GA	784.8	1	130	GA II	960.57	0	652
GA	786.8	2	130	GA	963.6	1	130
GA	787.81	3	130	GA	965.3	6	130
GA	790.22	4	130	GA	967.4	1	130
GA	792.4	1	130	GA II	969.19	2	652
GA	792.9	1	130	GA	973.2	3	130
GA	795.23	3	130	GA	974.9	1	130
GA	796.6	1	130	GA	976.7	6	130
GA	798.75	2	130	GA	979.4	2	130
GA	800.48	3	130	GA	980.4	2	130
GA	802.7	0	130	GA	981.84	4	130
GA	803.9	2	130	GA	984.0	1	130
GA	804.5	2	130	GA	985.6	1	130
GA	806.6	3	130	GA	986.81	3	130
GA	809.6	1	130	GA	987.6	2	130
GA	811.3	1	130	GA	989.6	3	130
GA	812.9	1	130	GA	990.8	3	130
GA	815.3	1	130	GA	993.0	3	130
GA	817.28	3	130	GA	996.3	2	130
GA	823.5	1	130	GA II	998.52	2	652
GA	828.8	2	130	GA	999.9	1	130
GA II	829.60	2	488, 652	GA II	1002.95	3	652
GA	834.4	4	130	GA	1004.1	3	130
GA	835.4	4	130	GA	1006.5	1	130
GA	839.86	2	130	GA	1008.8	1	130
GA	841.1	1	130	GA	1010.0	3	130
GA	849.4	0	130	GA	1011.1	1	130
GA	852.0	0	130	GA II	1012.38	5	652
GA	855.9	2	130	GA	1014.43	3	130
GA	857.8	1	130	GA	1014.6	2	130
GA	860.4	3	130	GA	1017.3	2	130
GA	864.8	1	130	GA II	1019.10	3	488, 652
GA	868.7	0	130	GA	1019.66	3	130
GA	874.4	4	130	GA	1020.7	0	130
GA	875.6	3	130	GA	1022.1	2	130
GA	878.2	0	130	GA II	1023.80	5	488
GA	880.4	0	130	GA	1025.4	0	130
GA	881.0	0	130	GA	1026.6	2	130
GA	884.4	0	130	GA	1028.9	1	130
GA	889.3	3	130	GA	1030.3	1	130
GA	892.5	1	130	GA	1032.0	1	130
GA	897.6	0	130	GA	1033.5	1	130
GA	898.9	1	130	GA II	1033.69 *	8	488, 652
GA	900.3	1	130	GA	1035.0	1	130
GA	901.3	1	130	GA	1035.9	1	130
GA	904.08	4	130	GA	1037.1	0	130
GA	908.29	3	130	GA	1038.7	1	130
GA	909.34	3	130	GA	1040.2	0	130
GA	911.32	4	130	GA	1042.4	1	130
GA	912.4	1	130	GA	1044.9	0	130
GA	913.9	1	130	GA	1045.9	1	130
GA	915.9	1	130	GA	1047.4	1	130
GA	918.1	1	130	GA	1050.40	4	130
GA	920.1	2	130	GA	1052.3	0	130
GA	921.42	4	130	GA	1054.47	2	130
GA	922.9	1	130	GA	1058.09	0	130
GA	926.6	1	130	GA	1062.64	3	130
GA	927.8	3	130	GA	1063.5	0	130
GA	930.0	3	130	GA	1066.68	2	130
GA	931.0	0	130	GA	1067.6	1	130

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GA	1068.5	1	130	GA	1251.5	1	130
GA	1069.57	2	130	GA	1253.3	0	130
GA	1071.13	2	130	GA	1254.4	0	130
GA	1073.73	2	130	GA IV	1258.75 *	15	467
GA	1078.75	2	130	GA IV	1264.60 *	10	467
GA	1079.59	2	130	GA IV	1267.11 *	18	402, 467
GA	1080.8	1	130	GA	1272.8	0	130
GA	1084.98	5	130	GA	1276.9	0	130
GA	1087.28	1	130	GA IV	1279.23	10	467
GA	1090.4	1	130	GA IV	1285.28	12	467
GA	1091.67	2	130	GA II	1286.38	5	652
GA	1094.28	2	130	GA III	1293.50 *	4	402
GA	1095.09	2	130	GA IV	1295.90 *	15	402, 467
GA	1100.34	1	130	GA IV	1299.48 *	15	467
GA	1101.58	1	130	GA IV	1303.48 *	15	467
GA	1102.89	4	130	GA	1306.7	0	130
GA	1105.4	1	130	GA IV	1309.65	10	467
GA	1107.72	1	130	GA IV	1314.81	5	467
GA	1110.5	1	130	GA	1318.1	0	130
GA II	1113.87	1	652	GA	1319.1	0	130
GA	1115.4	1	130	GA III	1323.15 *	6	402
GA II	1119.25	3	652	GA	1326.6	0	130
GA	1120.78	3	130	GA II	1327.81	5	652
GA	1123.3	3	130	GA	1330.6	1	130
GA	1126.32	3	130	GA	1335.0	0	130
GA	1128.3	3	130	GA	1335.9	0	130
GA	1129.84	1	130	GA IV	1338.15 *	15	467
GA II	1130.81	5	652	GA	1340.2	0	130
GA	1133.79	3	130	GA	1341.7	0	130
GA	1136.01	2	130	GA	1343.8	1	130
GA IV	1137.05	1	467	GA IV	1346.99	3	467
GA	1138.09	2	130	GA	1348.1	0	130
GA	1143.1	0	130	GA	1350.0	0	130
GA	1144.22	2	130	GA IV	1351.03	2	467
GA	1145.70	3	130	GA	1353.1	0	130
GA	1148.4	0	130	GA III	1353.94 *	8	402
GA	1150.23	4	130	GA	1356.2	0	130
GA IV	1156.21	5	467	GA	1357.9	0	130
GA	1158.5	0	130	GA	1359.8	0	130
GA	1160.6	0	130	GA	1361.2	0	130
GA	1162.0	0	130	GA	1362.7	0	130
GA IV	1163.63	3	467	GA IV	1364.60	1	467
GA II	1167.62	1	488, 652	GA	1369.6	0	130
GA IV	1170.59	10	467	GA	1371.25	0	130
GA IV	1171.73	0	467	GA	1373.2	0	130
GA II	1173.78	2	488, 652	GA	1375.4	0	130
GA	1175.69	3	130	GA	1377.7	0	130
GA	1178.7	1	130	GA	1379.74	3	130
GA IV	1185.25	8	467	GA	1381.9	1	130
GA IV	1186.06	0	467	GA	1384.16	3	130
GA II	1186.81	3	488, 652	GA	1387.6	0	130
GA IV	1190.90	9	467	GA	1391.5	0	130
GA IV	1193.02	9	467	GA	1393.74	3	130
GA IV	1195.05	10	467	GA IV	1395.51	4	467
GA	1197.6	1	130	GA IV	1402.70	2	467
GA IV	1201.56	4	467	GA IV	1405.55	0	467
GA IV	1206.89	10	467	GA II	1414.44 *	20	488, 652
GA	1210.1	0	130	GA	1430.1	0	130
GA	1213.2	1	130	GA	1432.2	0	130
GA IV	1216.19	00	467	GA	1435.2	0	130
GA	1217.6	0	130	GA	1437.1	7	335
GA	1219.6	0	130	GA	1439.7	0	130
GA	1222.2	0	130	GA	1443.5	0	130
GA	1223.1	0	130	GA	1446.5	0	130
GA II	1227.13	0	652	GA II	1449.49	5	652
GA IV	1227.98	10	467	GA	1450.9	0	130
GA	1231.4	0	130	GA	1454.90	1	402
GA	1234.0	0	130	GA	1456.9	0	130
GA IV	1236.38	3	467	GA II	1463.65	2	652
GA IV	1238.54	5	467	GA IV	1465.93	1	467
GA IV	1241.73	1	467	GA II	1473.73	3	402, 652
GA	1243.4	0	130	GA	1477.83	0	402
GA IV	1245.50	12	467	GA	1483.15	0	402
GA	1246.5	1	130	GA II	1483.52	3	402, 652
GA	1249.9	1	130	GA II	1483.95	3	402, 652

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GA	1486.1	0	130	GA	1654.9	0	130
GA	1487.8	0	130	GA	1656.32	0	130
GA	1491.0	0	130	GA	1657.12	2	130
GA	1492.3	0	130	GA	1658.13	0	130
GA II	1494.86	0	402	GA	1660.0	0	130
GA III	1495.10 *	10	402, 652	GA	1665.66	2	130
GA	1499.5	0	130	GA	1666.67	2	130
GA	1500.7	0	130	GA	1667.61	2	130
GA	1504.12	0	402	GA II	1669.83	3	652
GA II	1504.41	4	402, 652	GA	1670.88 *	12	130
GA II	1505.01	4	402, 488, 652	GA	1671.7	1	130
GA	1512.9	0	130	GA	1673.04	3	130
GA	1514.35	0	402	GA	1674.15	3	130
GA II	1514.57	5	402, 488, 652	GA	1675.8	1	130
GA II	1515.19	3	402, 652	GA	1677.9	2	130
GA	1525.3	0	130	GA	1681.9	0	130
GA	1527.41	1	402	GA	1688.6	2	130
GA	1529.0	1	130	GA II	1695.85	5	652
GA	1531.46	1	402	GA	1698.5	0	130
GA	1533.00	1	402	GA	1700.02	4	130
GA III	1534.51 *	10	402	GA	1702.5	2	130
GA II	1535.40 *	8	402, 488, 652	GA	1706.7	2	130
GA	1535.53 *	15	402	GA	1711.6	1	130
GA	1536.09	1	402	GA	1715.3	0	130
GA II	1536.37	5	402, 488, 652	GA	1716.52	2	130
GA II	1536.91	1	402, 652	GA	1719.49	6	130
GA	1539.9	0	130	GA	1721.33	7	130
GA	1544.8	0	130	GA	1725.05	8	130
GA	1546.9	2	130	GA	1728.0	0	130
GA	1548.27	3	130	GA	1729.5	0	130
GA	1550.82	3	130	GA	1737.3	0	130
GA	1552.3	2	130	GA	1738.7	1	130
GA	1554.4	2	130	GA	1741.5	3	130
GA	1557.2	1	130	GA	1742.6	0	130
GA	1558.7	1	130	GA	1744.2	0	130
GA	1560.9	2	130	GA	1746.2	0	130
GA	1562.5	2	130	GA	1747.4	0	130
GA	1566.7	2	130	GA	1748.75	8	130
GA	1569.8	2	130	GA	1749.87	2	130
GA	1571.7	0	130	GA	1751.1	0	130
GA	1574.7	5	130	GA	1752.1	0	130
GA	1577.3	1	130	GA	1756.2	0	130
GA	1579.3	1	130	GA	1760.10	6	130
GA	1581.6	4	130	GA	1761.94	6	130
GA	1582.3	1	130	GA	1763.93	7	130
GA	1584.1	0	130	GA	1765.78	6	130
GA	1584.9	1	130	GA	1767.68	6	130
GA	1586.39	8	130	GA	1769.0	0	130
GA	1587.3	0	130	GA	1770.54	5	130
GA	1588.0	0	130	GA	1772.8	0	130
GA	1595.1	1	130	GA	1773.8	1	130
GA	1598.5	2	130	GA	1774.77	2	130
GA	1599.4	0	130	GA	1777.0	2	130
GA	1605.81	9	130	GA	1778.1	0	130
GA	1607.4	1	130	GA	1785.1	0	130
GA	1611.95 *	10	130	GA II	1799.42	5	488, 652
GA	1619.6	3	130	GA	1802.32	9	130
GA	1622.5	3	130	GA	1809.6	0	130
GA	1625.37	7	130	GA	1811.9	0	130
GA	1626.2	1	130	GA II	1813.98 *	10	488, 652
GA	1629.22	3	130	GA	1829.4	0	130
GA	1630.1	1	130	GA	1833.0	0	130
GA	1631.4	0	130	GA	1835.1	0	130
GA	1632.9	0	130	GA	1836.2	0	130
GA	1636.9	0	130	GA	1838.9	0	130
GA	1639.35	6	130	GA	1840.0	0	130
GA	1640.1	0	130	GA II	1845.30 *	15	488, 652
GA	1641.6	0	130	GA	1849.3	9	335
GA	1644.79	3	130	GA	1854.75 *	20	130
GA	1645.7	0	130	GA	1857.9	3	130
GA	1647.5	2	130	GA	1862.72 *	20	130
GA	1650.0	5	130	GA	1865.7	0	130
GA	1650.9	1	130	GA	1867.3	0	130
GA	1651.8	2	130	GA	1869.1	0	130
GA	1653.4	0	130	GA	1875.3	0	130

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GA	1881.4	0	130	GE	833.3	5	130
GA	1889.9	0	130	GE	833.7	5	130
GA	1892.8	0	130	GE	834.5 *	6	130
GA	1903.9	5	335	GE	835.3 *	6	130
GA	1905.0	5	335	GE IV	847.80	3	406
GA	1906.0	5	335	GE	850.0	0	130
GA	1909.0	1	130	GE	851.6	0	130
GA	1935.82	7	130	GE	856.9	0	130
GA	1942.3	1	130	GE II	862.23	5	488
GA	1953.0	0	130	GE	866.3	0	130
GA	1954.4	8	335	GE IV	868.30	3	406
GA	1955.4	8	335	GE	871.0	0	130
GA	1956.5	8	335	GE	871.8	0	130
GA	1966.7	2	130	GE II	875.51	7	488
GA	1977.2	0	130	GE	877.8	0	130
GA	1979.5	1	130	GE	879.1	0	130
GA	1980.5	5	335	GE	880.4	0	130
GA	1981.7	1	130	GE	889.2	0	130
GA	1990.4	7	130	GE	892.6	5	130
				GE	898.9	3	130

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GE I	I.P.	63600.	K	1570.	A
GE II	I.P.	128518.	K	778.101	A
GE III	I.P.	276036.	K	362.272	A
GE IV	I.P.	368701.	K	271.222	A
GE V	I.P.	753800.	K	132.7	A
GE V		294.506*	30	363	
GE V		295.636*	50	363	
GE V		304.967	5	363	
GE IV		440.11	1	406	
GE IV		441.95	1	406	
GE IV		528.58	1	406	
GE IV		536.54	1	406	
GE III		542.90	2	406	
GE		599.61	3	130	
GE		609.73	2	130	
GE		629.71	2	130	
GE		644.15	3	130	
GE III		660.52	1	406	
GE III		663.77	2	406	
GE III		669.28	0	406	
GE III		670.88	3	406	
GE III		671.05	00	406	
GE III		672.76	1	406	
GE III		680.28	2	406	
GE		702.32	3	130	
GE		702.87	4	130	
GE		703.88	4	130	
GE		718.53	5	130	
GE		746.7	1	130	
GE		758.5	1	130	
GE		759.48	0	130	
GE		760.3	3	130	
GE		761.10	0	130	
GE		762.02	2	130	
GE		767.9	0	130	
GE		771.9	0	130	
GE		772.92	0	130	
GE		774.49	1	130	
GE		779.86	4	130	
GE		787.73 *	6	130	
GE		790.18 *	6	130	
GE		796.66	5	130	
GE		802.2	0	130	
GE		808.3	0	130	
GE		832.9	5	130	
GE IV		915.00 *	8	406	
GE		916.0	0	130	
GE		916.8	0	130	
GE		918.9	0	130	
GE II		920.57 *	8	406	
GE		921.5	0	130	
GE		923.3	2	130	
GE		930.6	2	130	
GE IV		936.70 *	8	406	
GE IV		938.90 *	4	406	
GE V		942.7	2	130, 467	
GE		943.9	2	130	
GE		946.5	0	130	
GE		950.5	0	130	
GE		951.9	0	130	
GE III		952.76	2	406	
GE		953.2	3	130	
GE		955.7	0	130	
GE		957.0	0	130	
GE		957.6	0	130	
GE V		958.4	3	130, 467	
GE		963.5	0	130	
GE V		965.4	2	130, 467	
GE V		971.3 *	6	130, 467	
GE		980.6	1	130	
GE V		984.8	4	130, 467	
GE		987.5	5	130	
GE V		987.9	5	130, 467	
GE III		988.96 *	12	406	
GE V		990.5	5	130, 467	
GE		991.5	0	130	
GE V		992.2	4	130, 467	
GE III		995.72 *	15	406	
GE III		996.50 *	10	406	
GE		998.7	1	130	
GE II		999.14	5	406, 488	
GE V		1004.2 *	6	130, 467	
GE V		1005.2	1	130, 467	
GE V		1008.0	0	130, 467	
GE III		1011.21 *	15	406	
GE III		1012.31 *	10	406	
GE III		1013.07	2	406	
GE		1015.3	0	130	
GE II		1016.69	8	406, 488	
GE II		1017.12	2	406, 488	
GE		1021.8	0	130	
GE V		1024.4	0	130, 467	
GE		1025.5	0	130	
GE		1028.0	1	130	
GE		1029.3	5	130	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GE	1031.0	0	130	GE	IV	1185.50	0 406
GE	1031.8	0	130	GE	IV	1188.99 *	20 406
GE	1032.62	8	406	GE	II	1191.24	4 488
GE	V	3	130, 467	GE		1194.7	0 130
GE	1034.6	0	130	GE		1195.6	0 130
GE	1036.2	0	130	GE		1206.5	4 130
GE	1036.8	0	130	GE	III	1212.47	8 406
GE	V	4	130, 467	GE		1215.7	5 130
GE	III	12	406	GE		1216.6	0 130
GE	1040.99 *	4	130	GE	V	1222.4	0 130, 467
GE	1042.1	7	130, 467	GE		1225.9	0 130
GE	V	0	130	GE	IV	1229.81 *	20 406
GE	1048.6	5	130, 467	GE		1234.2	0 130
GE	V	0	130	GE	II	1237.05 *	20 406, 488
GE	1051.7	4	130, 467	GE		1247.47	0 130
GE	V	1	406, 488	GE		1249.2	0 130
GE	II	0	130	GE		1250.2	0 130
GE	1058.1	12	406	GE		1251.5	1 130
GE	III	1	130	GE	II	1261.87 *	18 406, 488
GE	1063.0	1	589	GE	II	1264.68 *	10 406, 488
GE	II	1	130	GE		1266.2	0 130
GE	1066.6	5	130, 467	GE		1294.6	1 130
GE	V	5	130, 467	GE		1296.7	0 130
GE	V	6	130, 467	GE		1299.0	3 130
GE	V	1	406	GE		1301.0	0 130
GE	IV	3	406, 488	GE		1302.2	1 130
GE	II	0	130	GE		1303.0	0 130
GE	1076.7	0	130	GE		1303.2	0 130
GE	1077.9	2	406	GE		1304.8	1 130
GE	IV	0	130	GE		1306.1	0 130
GE	1078.02	7	406, 488	GE		1314.4	0 130
GE	1084.5	5	130, 467	GE		1315.3	0 130
GE	II	1	130	GE	III	1323.24	4 406
GE	1085.55	8	130, 467	GE		1333.2	0 130
GE	V	40	406	GE		1338.7	1 130
GE	1086.5 *	5	130, 467	GE		1343.6	3 130
GE	1087.7	0	130	GE		1346.0	0 130
GE	V	0	130	GE		1352.9	2 130
GE	1088.3 *	0	130	GE		1362.5	4 130
GE	III	7	406, 488	GE		1371.3	2 130
GE	1089.4 *	3	130	GE		1373.2	0 130
GE	V	6	130	GE	II	1380.43	8 488
GE	1092.0 *	10	406, 488	GE		1384.20 *	7 130
GE	1097.1	1	130	GE		1391.6	0 130
GE	1097.9	1	130	GE	II	1392.27	4 488
GE	II	1	130	GE		1393.8 *	8 130
GE	1104.1	0	130	GE		1395.6	5 130
GE	1105.0 *	1	130	GE	II	1401.29 *	10 488
GE	II	6	130, 467	GE		1402.8 *	6 130
GE	1106.74 *	5	406, 488	GE	II	1406.19	5 488
GE	1108.2	1	130	GE		1414.8	0 130
GE	1109.1	1	130	GE		1417.2	0 130
GE	1109.8	0	130	GE	II	1420.39	4 488
GE	1110.6	1	130	GE	II	1427.85	5 488
GE	1116.6	0	130	GE		1448.3	0 130
GE	V	6	130, 467	GE	IV	1494.89	2 406
GE	II	5	406, 488	GE		1497.6	0 130
GE	1122.0	1	130	GE	III	1499.2	0 406
GE	V	1	130, 467	GE	IV	1500.61 *	6 406
GE	V	0	130	GE		1511.6	0 130
GE	1125.3	3	130	GE		1517.4	1 130
GE	1128.2	0	130	GE		1521.6	0 130
GE	1131.1	0	130	GE		1523.2	0 130
GE	1137.92 *	10	406	GE		1524.4	0 130
GE	V	0	130, 467	GE	III	1525.32 *	10 406
GE	1149.7	0	130	GE		1527.15	2 406
GE	1150.55 *	12	406	GE		1533.3	0 130
GE	1152.1	0	130	GE		1536.1	0 130
GE	1153.7	1	130	GE	II	1538.20	2 406, 488
GE	II	3	406	GE		1540.0	2 130
GE	1157.44	8	406	GE	III	1543.14	1 406
GE	1159.15	8	406	GE		1558.8	0 130
GE	1159.62	8	406	GE		1560.8	0 130
GE	1160.79	8	406	GE		1561.5	1 130
GE	1163.3	0	130	GE	III	1569.52	0 406
GE	V	4	130, 467				
GE	V	0	130, 467				
GE	1173.78 *	10	406				
GE	1174.9	0	130				
GE	1175.8	1	130				
GE	V	0	130, 467				
GE	1176.3	0	130				
GE	1179.0	0	130				
GE	1181.65	3	406				
GE	1183.34 *	15	406				

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
GE III	1572.40	0	406	GE I	1793.071	8	4, 581
GE II	1576.93 *	10	406, 488	GE I	1801.46	3	581
GE II	1581.16	3	406, 488	GE I	1802.624	15	4, 488, 581
GE III	1600.09	9	406	GE I	1804.44	2	581
GE II	1602.56 *	20	406, 488	GE I	1810.100	4	4, 581
GE	1605.88 *	8	130	GE I	1821.10	0	581
GE	1611.95 *	10	130	GE I	1824.33	2	488, 581
GE III	1613.30	1	406	GE I	1841.327*	50	4, 581, 780
GE III	1619.01	00	406	GE I	1842.43	2	488, 581
GE III	1619.92	0	406	GE I	1843.61	0	581
GE III	1620.74	0	406	GE I	1844.410	10	4, 581
GE III	1621.19	0	406	GE I	1845.04	0	581
GE	1624.1	3	130	GE I	1845.872*	30	4, 581, 780
GE I	1630.173	8	4	GE I	1846.97	2	488, 581
GE I	1635.257	8	4	GF I	1849.635	8	4, 581, 780
GE I	1640.395	00	4, 581	GE I	1850.90	1	581
GE I	1643.193	8	4	GE I	1853.14	3	581
GE I	1645.114	00	4	GE I	1860.085	12	4, 488, 581
GE I	1647.531	4	4, 581	GE I	1861.095	4	4
GE IV	1648.14	3	406	GE I	1865.053	8	4, 581, 780
GE II	1649.26 *	20	406, 488	GC I	1872.974	00	4
GE I	1650.292	8	4	GE I	1874.27	3	276, 400, 501
GE I	1651.528	6	4	GC I	1076.019	5	4
GE I	1651.954	8	4	GE I	1881.646	2	4
GE I	1658.375	4	4	GE III	1883.26	6	406
GE I	1663.52	1	581	GE I	1890.46	0	276
GE I	1665.275	6	4	GE I	1895.197	10	4, 276, 581
GE I	1667.801	8	4	GE I	1899.97	0	276
GE I	1670.50	1	581	GE I	1901.060	0	4
GE I	1671.010	5	4, 581	GE I	1902.396	00	4
GE I	1673.850	1	4	GE I	1903.562	2	4
GE I	1674.270	15	4, 581	GE I	1904.72	5	276, 488, 581
GE I	1675.560	8	4, 581	GE I	1906.76	0	581
GE I	1679.987	0	4	GE I	1908.434	7	4, 581
GE I	1681.342	8	4, 581	GE I	1912.409	2	4, 488, 581
GE I	1690.034	8	4, 581	GE I	1917.592	20	4, 488, 581
GE I	1690.902	4	4	GE III	1917.69	00	406
GE I	1691.090	15	4, 581	GE I	1923.467	10	4, 488, 581
GE I	1691.625	8	4, 780	GE I	1929.826*	40	4, 488, 581
GF I	1691.866	7	4	GE III	1930.10 *	0	406
GE I	1694.342	3	4	GE I	1930.271	1	4
GE I	1695.860	6	4	GE I	1934.048*	25	4, 488, 581
GE I	1702.387	1	4, 780	GE I	1937.145	00	4, 488, 581
GE III	1709.55	00	406	GE II	1938.00 *	10	488
GE I	1712.32	1	581	GE I	1938.300	15	4, 488, 581
GE I	1713.081	10	4, 581	GE II	1938.90 *	20	488
GE I	1714.749	00	4	GE I	1944.116	4	4, 276, 581
GE I	1715.836	9	4, 581	GE I	1944.66	2	488, 581, 276
GE I	1716.784	20	4, 581	GE I	1950.15	00	581
GE I	1718.493	4	4, 581	GE I	1953.802	2	4, 276, 581
GE I	1718.688	10	4, 780	GE I	1955.115*	35	4, 488, 581
GF I	1720.746	5	4	GE II	1959.78	6	488
GE I	1724.308	9	4	GE I	1962.013*	30	4, 488, 581
GE I	1732.959	00	4	GE I	1963.373	7	4, 276, 581
GE I	1738.118	8	4	GE I	1965.383	10	4, 488, 581
GE I	1738.479	15	4, 581	GE II	1966.33	8	488
GE I	1739.102	10	4, 581, 780	GE I	1970.880*	50	4, 488, 581
GE I	1741.18	1	581	GE I	1972.64	0	276
GE I	1742.195	20	4, 581, 780	GE III	1974.02	1	406
GE I	1744.053	8	4	GE III	1978.22	2	406
GE I	1744.255	5	4, 780	GE II	1979.29 *	20	488
GE I	1746.058	12	4, 581	GE I	1987.849	9	4, 276, 581
GE I	1748.857	7	4	GE I	1988.267*	40	4, 488, 581
GE I	1750.043	20	4, 581	GE I	1989.118	5	4, 276, 581
GE I	1750.76	1	581	GE I	1997.806	8	4, 276, 581
GE I	1756.82	0	581	GE I	1998.887*	80	4, 488, 581
GE I	1758.279	15	4, 581				
GE I	1759.271	8	4, 780				
GE I	1764.185	10	4, 581				
GE I	1765.284	9	4, 581, 780				
GE I	1766.065	9	4, 581				
GE I	1766.49	3	581				
GE I	1774.21	3	581				
GE I	1785.046*	30	4, 581				
GE I	1786.069	10	4, 581, 780				

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

ARSENIC

AS	I	I.P.	79165.	K	1263.2	A
AS	II	I.P.	150290.	K	665.38	A
AS	III	I.P.	228670.	K	437.31	A
AS	IV	I.P.	404369.	K	247.299	A
AS	V	I.P.	505136.	K	197.966	A
AS	VI	I.P.	1028800.	K	97.201	A
AS	VI		219.982*	40	363	
AS	VI		221.045*	50	363	
AS	VI		226.836*	5	363	
AS	VI		232.217*	5	363	
AS	IV		530.31	2	584	
AS	IV		537.07	3	584	
AS			541.6	1	411	
AS	IV		550.03	1	584	
AS	V		600.74 *	3	651	
AS	III		603.79	2	404, 580	
AS	III		614.38	3	404, 580	
AS	III		614.70	1	404, 580	
AS	V		615.95 *	4	651	
AS			624.8	2	411	
AS			650.3	1	411	
AS	IV		655.88	0	584	
AS			682.2	1	411	
AS	IV		692.94	5	584, 651	
AS	IV		698.50	7	584, 651	
AS	IV		711.07	8	584, 651	
AS			718.0	2	411	
AS	V		737.18 *	5	651	
AS	IV		741.93	8	584, 651	
AS	IV		747.57 *	9	584, 651	
AS	IV		748.33 *	8	584, 651	
AS	IV		760.80 *	10	584, 651	
AS	IV		761.99 *	8	584, 651	
AS	IV		762.75	4	584, 651	
AS			776.6	3	411	
AS	II		802.90	2	571	
AS	II		809.81	5	571	
AS			815.8	2	411	
AS	II		818.59	2	571	
AS	II		819.60 *	7	571	
AS	II		824.03	3	571	
AS	II		824.81	1	571	
AS			827.4 *	5	411	
AS	II		828.62	2	404, 571	
AS	II		831.28	4	571	
AS			839.6	1	411	
AS	III		845.86	2	404	
AS	II		848.74	1	571	
AS	III		849.34	1	404, 571	
AS	III		849.91 *	15	404, 580	
AS	IV		851.74 *	10	584	
AS	II		857.07	0	571	
AS	III		866.34 *	10	404, 542, 580	
AS	III		871.07 *	10	580	
AS	III		871.79 *	8	404, 580	
AS	III		877.67 *	7	542, 575, 580	
AS	II		879.62	6	571	
AS	II		883.95	1	571	
AS	III		889.03 *	8	404, 580	
AS	II		890.30	1	571	
AS	IV		892.68 *	10	584, 651	
AS	II		898.81	2	571	
AS	II		899.46	1	571	
AS	III		900.94	6	542, 575, 580	
AS	II		902.68	2	571	
AS	III		910.90	5	542, 571, 575	

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

AS	II		914.84	1	571	
AS	IV		925.04	1	584	
AS	III		927.57	4	404, 580	
AS	II		928.98	1	571	
AS	IV		930.80 *	8	584, 651	
AS	II		931.66	1	572	
AS	III		932.90	3	542, 575	
AS	III		937.26	6	404, 580	
AS	IV		941.91	5	584	
AS	IV		946.45 *	9	584, 651	
AS	III		953.55	4	404, 580, 651	
AS	IV		956.87 *	9	584, 651	
AS			960.2 *	5	411	
AS	III		963.80 *	8	404, 580	
AS	IV		971.13 *	10	584, 651	
AS	IV		974.61 *	9	542, 575, 584	
AS	IV		980.58 *	10	584, 651	
AS	II		982.80		571	
AS	II		984.92	5	572	
AS	II		985.37	4	572	
AS	V		987.69 *	10	651	
AS	II		995.79	3	572	
AS	IV		999.25 *	9	584	
AS	II		999.46	3	572, 584	
AS	II		1000.56	3	542, 572	
AS	II		1002.27 *	8	488, 572	
AS	III		1003.43 *	7	542, 575, 584	
AS	II		1009.44 *	8	488, 572	
AS	II		1010.66	2	572	
AS	II		1012.62	2	571	
AS	II		1015.38 *	10	488, 572	
AS	II		1020.39	6	488, 572	
AS	II		1021.96 *	10	488, 572	
AS	V		1029.50 *	10	651	
AS	II		1030.84	2	488, 572	
AS	III		1030.93	5	542, 575	
AS	II		1051.09	2	571	
AS	V		1051.64 *	4	651	
AS	V		1056.71 *	5	651	
AS			1065.4	1	411	
AS	IV		1079.49	7	584	
AS	II		1081.07	4	572	
AS	II		1082.40 *	10	488, 572	
AS	II		1094.20	6	488, 572	
AS	II		1107.49	6	572	
AS			1117.1	1	411	
AS	II		1124.05	2	572	
AS			1134.9	1	411	
AS	II		1139.40	2	572	
AS			1143.3	1	411	
AS	II		1149.33	4	572	
AS	II		1158.95	2	572	
AS	III		1172.16 *	10	404, 580	
AS	II		1181.55	3	572	
AS	II		1189.90	1	571	
AS	II		1196.60	1	572	
AS	II		1199.24	2	571	
AS	II		1207.50	5	572	
AS	III		1209.29 *	10	404, 580	
AS	II		1211.21	2	571	
AS	III		1214.00	2	404, 580	
AS	II		1218.14	1	572	
AS	II		1223.19	2	572	
AS	II		1241.29	3	572	
AS	II		1243.09 *	8	488, 572	
AS	II		1245.67	1	572	
AS	II		1250.07	1	572	
AS	II		1258.61	2	572	
AS	II		1263.78 *	10	488, 572	
AS	II		1266.36 *	10	488, 572	
AS	II		1267.61 *	10	488, 572	
AS	III		1268.95	6	404, 580	
AS	III		1274.27 *	9	404, 580	
AS	II		1281.01 *	8	488, 572	
AS	II		1287.57 *	9	488, 572	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AS IV	1299.34 *	10	584, 585	AS I	1547.59	3	480, 573
AS II	1305.72 *	10	488, 572	AS I	1554.19	4	480, 573
AS II	1307.76	3	572	AS I	1556.14	40	480, 573
AS I	1319.48	2	573	AS I	1557.20	30	480, 488, 573
AS I	1323.21	3	573	AS I	1558.28	4	480, 573
AS I	1325.36	2	573	AS II	1558.88	4	571
AS IV	1333.18	2	584	AS I	1559.48	4	480
AS I	1336.87	3	573, 584	AS I	1559.53	4	480, 573
AS I	1338.01	2	573	AS I	1562.95	10	480, 488, 573
AS I	1338.36	2	573	AS I	1565.05	7	480, 573
AS II	1341.53	1	572	AS I	1566.39	15	480, 573
AS IV	1342.69	7	584	AS I	1568.29	1	573, 571
AS IV	1347.51 *	9	584	AS I	1569.35	0	573
AS I	1348.92	2	573	AS I	1571.17	4	573, 571
AS I	1350.51	2	573	AS I	1572.19	1	480
AS IV	1351.34 *	7	584	AS I	1573.85	60	480, 488, 573
AS IV	1353.93 *	6	584	AS I	1574.72	30	480, 488, 573
AS IV	1355.06	2	584	AS I	1575.87	20	480, 573
AS II	1356.02	3	488, 571	AS I	1577.27	0	573
AS IV	1356.36	2	584	AS I	1579.12	0	573
AS I	1363.35	0	573	AS I	1583.90	2	480, 573
AS I	1365.25	2	573	AS I	1587.97	20	480, 573
AS II	1369.78	5	488, 572	AS I	1593.60 *	100	480, 488, 573
AS II	1373.65	4	488, 571	AS I	1594.39	1	480
AS I	1373.92	4	573	AS I	1596.13	2	480, 573
AS II	1375.07 *	10	488, 572	AS I	1597.48	2	480, 573
AS I	1375.91	1	573	AS I	1598.59	2	573
AS I	1377.37	3	573	AS I	1604.35	1	573
AS I	1379.05	4	573	AS I	1608.07	3	480, 573
AS IV	1381.76	6	335	AS I	1612.57	4	480, 573
AS I	1383.80	1	573	AS I	1614.82	5	480, 573
AS I	1389.72	0	573	AS I	1616.44	6	480, 573
AS I	1390.39	4	573	AS I	1618.06	1	573
AS II	1394.61	4	488, 571	AS I	1620.94	5	480, 573
AS II	1400.32	4	572	AS I	1623.26	2	480, 573
AS I	1402.67		573	AS I	1625.17	1	480, 573
AS I	1404.33	4	573	AS I	1630.48	4	480, 573
AS I	1407.34	2	480, 573	AS I	1633.71	5	480, 573
AS I	1412.95	2	480, 573	AS I	1638.8	3	411
AS I	1422.95	2	480, 573	AS I	1643.79	2	480, 573
AS I	1434.66	1	480	AS I	1644.33	5	480, 573
AS I	1434.77	3	480, 573	AS I	1649.55	2	480, 573
AS I	1442.69	5	480, 573	AS I	1653.92	4	480, 573
AS II	1448.64	1	572	AS II	1660.60 *	8	488, 572
AS I	1461.92	3	480, 573	AS I	1662.76	2	400, 573
AS I	1463.91	5	573	AS I	1670.12	2	480, 573
AS I	1464.10	2	480, 573	AS I	1670.79	4	480
AS I	1468.42	2	480	AS I	1671.88	2	480
AS I	1470.09	3	480	AS I	1674.59	3	480
AS I	1472.32	4	480, 573	AS I	1679.14	2	480, 573
AS IV	1480.61 *	9	335	AS I	1681.47	1	480
AS I	1484.36	5	480	AS I	1684.63	2	480
AS I	1492.34	4	480, 573	AS I	1687.12	3	480
AS I	1492.81	1	480	AS I	1691.87	7	480, 573
AS I	1496.7	1	411	AS I	1697.35	4	573
AS I	1501.87	3	573	AS I	1701.16	15	480
AS I	1503.47	1	480	AS I	1701.22	30	480, 488, 573
AS I	1504.09	2	480, 573	AS I	1702.94	3	480, 573
AS I	1506.99	2	480	AS I	1705.74	4	480, 573
AS I	1509.60	3	480	AS I	1709.03	2	480
AS I	1509.70	3	480, 573	AS I	1709.26	2	480, 573
AS I	1510.41	6	480	AS I	1710.16	7	480, 573
AS I	1510.70	6	480, 573	AS I	1712.32	10	480, 573
AS I	1515.48	20	480, 573	AS I	1718.55	1	480, 573
AS I	1516.97	1	480	AS I	1722.37	4	480
AS I	1518.10	1	480	AS I	1724.77	7	480, 573
AS I	1521.81	1	480	AS I	1727.38	4	480, 573
AS I	1526.78	2	480, 573	AS III	1728.8	1	542, 575
AS I	1528.95		573	AS I	1729.80	30	480, 488, 573
AS I	1533.60	3	480	AS I	1732.44	30	480, 488, 573
AS I	1533.67	3	480, 573	AS I	1732.86	30	480, 488, 573
AS I	1534.65	4	480, 573	AS I	1735.70	3	480, 573
AS I	1538.79	20	480, 573	AS I	1739.49	60	480, 488, 573
AS I	1542.94	4	480, 573	AS I	1740.93	3	480, 573
AS I	1546.45	2	480, 573	AS I	1741.28	10	480

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AS I	1742.59	10	480, 488, 573
AS I	1745.60	1	480
AS I	1749.72	1	480, 573
AS I	1750.37	2	480
AS I	1754.21	10	480, 573
AS I	1756.51	2	480, 573
AS I	1757.47	4	480, 573
AS I	1758.60 *	100	480, 488, 573
AS I	1760.39	1	573
AS I	1767.97	6	480, 573
AS I	1768.97	5	480, 572
AS I	1771.84	2	480, 573
AS I	1772.54	8	480, 573
AS I	1775.12	2	480, 573
AS I	1780.52	50	480, 488, 573
AS I	1781.48	50	480, 488, 573
AS I	1785.84	3	480, 573
AS I	1787.07	6	480, 573
AS I	1789.14	15	480, 573
AS I	1789.85	50	480, 488, 573
AS I	1791.77	40	480, 488, 573
AS I	1798.61	9	480, 573
AS I	1799.51	2	480, 573
AS I	1801.92	3	480, 573
AS I	1803.46	10	480, 573
AS I	1806.15 *	200	480, 488, 573
AS I	1810.73	1	573
AS I	1813.18	1	573
AS I	1816.72	10	480, 573, 582
AS I	1818.59	5	480, 573
AS I	1821.32	2	480, 573
AS I	1831.30	50	480, 488, 573
AS I	1831.74	30	480, 573
AS I	1835.0	3	411
AS I	1840.48	10	480, 573
AS I	1844.36	40	480, 488, 573
AS I	1844.57	40	480, 488
AS I	1847.32	10	480, 573
AS I	1849.31	0	573
AS I	1850.24	40	480, 488, 573
AS I	1853.21	20	480, 573
AS I	1853.95	3	480
AS I	1855.39	10	480, 488, 573
AS I	1856.24	2	480
AS I	1860.40 *	80	480, 488
AS I	1860.46 *	80	480, 488, 573
AS I	1860.87	5	480, 573
AS I	1865.10	8	480, 573
AS I	1869.94	15	480, 573
AS I	1871.14	2	480
AS I	1871.68	30	480, 488, 573
AS I	1873.02	40	480, 488, 573
AS I	1876.98	2	480, 573
AS I	1881.96	40	480, 488, 573
AS I	1889.95	5	480
AS I	1890.42 *	2000	480, 488, 573
AS I	1891.47	5	480, 573
AS I	1900.02	0	573
AS I	1901.54	5	480, 573
AS I	1902.31	6	480, 573
AS I	1908.13	1	480
AS I	1912.90	1	29
AS I	1917.21	20	480, 488, 573
AS I	1918.39	3	480, 573
AS I	1919.72	1	480
AS I	1928.30	1	480
AS I	1929.14	3	480, 573, 474
AS I	1937.59 *	1500	480, 488, 573
AS I	1941.36	5	480, 573
AS I	1943.30	2	480
AS I	1950.38	2	480
AS I	1958.82	20	480
AS I	1958.91	40	480, 488, 573
AS I	1960.89	2	480
AS I	1972.62 *	1000	480, 488, 573

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AS I	1973.65	3	480, 573
AS I	1980.85	2	29
AS I	1990.35 *	200	480, 488, 573
AS I	1991.13	100	480, 488, 573
AS I	1994.89	20	480, 488, 573
AS I	1995.43 *	100	480, 488, 573

SELENIUM

SE	I	I.P.			
SE I	I.P.	78658.22	K	1271.322	A
SE II	I.P.	173557.	K	576.180	A
SE III	I.P.	258000.	K	387.	A
SE IV	I.P.	346094.	K	288.939	A
SE V	I.P.	589781.	K	169.554	A
SE VI	I.P.	658994.	K	151.746	A
SE VII	I.P.	1253300.	K	79.789	A
SE VII		171.965*	25	363	
SE VII		172.920*	35	363	
SE VII		176.781	2	363	
SE VII		180.220*	4	363	
SE VII		332.13	00	289	
SE		338.60	00	289	
SE		350.92	0	289	
SE		356.95	0	289	
SE		360.86	0	289	
SE		362.57	0	289	
SE		364.32	0	289	
SE		366.64	0	289	
SE		404.95	00	289	
SE		405.40	00	289	
SE		415.45	2	289	
SE		416.91	2	289	
SE		418.93	1	289	
SE		419.86	1	289	
SE		420.64	2	289	
SE		421.99	3	289	
SE		423.06	2	289	
SE		424.37	2	289	
SE		426.82	1	289	
SE		428.24	3	289	
SE		433.16	00	289	
SE		439.70	00	289	
SE VI		452.83 *	2	289, 651	
SE		457.45	00	289	
SE		458.01	00	289	
SE		462.10	00	289	
SE		462.81	00	289	
SE VI		464.80 *	00	289, 651	
SE		465.62	00	289	
SE		466.24	00	289	
SE		467.04	00	289	
SE		469.51	00	289	
SE		471.05	00	289	
SE		474.53	00	289	
SE		475.23	00	289	
SE		476.90	00	289	
SE		478.64	00	289	
SE		484.04	2	289	
SE		484.67	00	289	
SE		488.09	00	289	
SE		488.74	00	289	
SE		489.34	00	289	
SE		496.61	00	289	
SE V		505.75	1	289, 651	
SE V		510.02	3	289, 651	
SE		516.60	00	289	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE	517.21	0	289	SE	III	642.77 *	8 289, 587, 588
SE	III	517.57	2 289, 587	SE	III	643.19	3 289
SE	III	518.17	0 587	SE	III	644.84 *	8 289, 587
SE	III	518.58	0 289	SE	III	652.09	0 289
SE	V	519.69	3 289, 651	SE	IV	652.67 *	10 289, 585
SE		521.27	00 289	SE		653.46	0 289
SE	III	522.09	2 289, 587	SE	IV	654.19 *	9 289, 585
SE	III	523.67	0 289, 587	SE	VII	655.23	1 289, 588
SE	III	524.01	2 587	SE	SE	657.95	00 289
SE	III	524.14	4 289, 587	SE		661.63	00 289
SE		524.47	00 289	SE	VII	665.44	1 588
SE	III	525.13	0 587	SE	SE	665.71	00 289
SE	III	525.47	00 289	SE	SE	669.43	1 289
SE	III	526.48	2 289, 587	SE	IV	670.11 *	10 289, 585
SE		526.88	00 289	SE		670.77	1 289
SE		527.21	00 289	SE		671.17	1 289
SE		528.33	00 289	SE	IV	671.83 *	8 289, 585
SE		529.14	00 289	SE	III	674.49	5 289, 587, 588
SE	III	529.41	1 587	SE	VII	679.04	1 289, 588
SE	III	530.12	0 587	SE	VII	680.49	3 289, 588
SE	III	530.56	0 587	SE		684.07	00 289
SE	III	531.21	2 289, 587	SE	VII	684.36	2 289, 588
SE	III	533.11	2 289, 587	SE	III	684.59	2 14, 289
SE		533.61	0 289	SE		685.88	1 289
SE		535.89	00 289	SE	VII	686.50	1 289, 588
SE	III	537.49	00 289, 587	SE	VII	687.67	3 289, 588
SE	III	538.59	00 289, 587	SE	III	688.99	2 289, 587
SE	III	539.41	00 289, 587	SE	VII	689.98	2 289, 588
SE		542.17	00 289	SE	III	690.50	2 289, 587, 588
SE	III	544.11	3 289, 587	SE		690.63	2 289
SE		545.08	1 289, 587	SE	III	690.89	0 30, 289
SE	III	550.51	0 289, 587	SE		691.23	00 289
SE	III	554.82	00 289, 587	SE	III	692.21	2 289, 587
SE		555.70	00 289	SE		693.14	00 289
SE	III	558.33	1 289, 587	SE	II	694.35	0 289, 468
SE		560.34	0 289	SE	III	695.00	1 14, 289
SE	VII	561.24	0 289, 588	SE		697.28	00 289
SE		562.54	0 289	SE	II	697.65	00 209, 468
SE	VII	563.70	0 289, 588	SE	III	700.50	00 14, 289
SE	III	565.21	00 289, 587	SE		701.39	0 289
SE		566.26	0 289, 587	SE		702.84	2 289
SE		570.19	0 289	SE	VII	705.27	2 289, 588
SE	VII	572.00	1 588	SE		706.75	1 289
SE	III	573.44	0 289	SE	III	709.15	4 14, 289
SE	III	573.47	0 289, 587	SE	II	709.57	7 289, 468, 488
SE	VI	588.01 *	4 651	SE	II	710.25	0 289, 468
SE	III	588.78	2 209, 507	SE	III	711.05	2 14, 289
SE	VII	591.28	0 289, 588	SE	III	711.39	2 14, 289
SE		595.92	6 289	SE		714.15	1 289, 588
SE	V	596.11	00 289, 651	SE	VII	716.74	0 289, 588
SE		597.39	00 289	SE	III	718.83	0 289, 587
SE	VII	599.91	2 289, 588	SE	III	719.99	2 14, 289
SE	V	600.96 *	5 289, 651	SE	III	720.38	2 14, 289
SE	V	601.74 *	4 289, 651	SE	III	720.65	2 14, 289, 588
SE		602.19	00 289	SE		721.78	00 289, 468
SE	VI	605.89 *	4 651	SE	IV	722.78	5 289, 585
SE	VII	607.17 *	4 289, 588	SE	III	724.26	4 14, 289
SE	VI	608.44 *	1 289, 651	SE		725.30	0 289
SE	VII	611.13	3 289, 588	SE	II	726.41	0 468, 488
SE	V	613.00 *	8 289, 651	SE	III	727.49	2 14, 289
SE	VII	614.64	3 588	SE		728.16	0 289
SE	V	614.35 *	4 289, 651	SE	VII	728.87	1 289, 588
SE	V	615.21	00 289, 651	SE		729.46	00 289
SE	VII	622.50	3 588	SE	III	730.24	2 14, 289
SE	VII	626.68	00 289, 588	SE		730.86	0 289
SE		627.63	00 289	SE	III	731.53	2 14, 289
SE	III	630.74	4 289, 587	SE		732.07	00 289
SE	III	631.17	4 289, 587	SE		732.50	00 289
SE	VII	634.56 *	4 289, 588	SE		733.42	0 289
SE	VII	635.80 *	4 588	SE	IV	734.53	4 289, 585
SE	IV	635.94 *	10 289, 585	SE		736.24	00 289
SE	III	640.59	5 289, 587	SE	II	737.30	0 289, 468, 488
SE	III	640.87	4 289, 587	SE	III	738.17	3 14, 289
SE		641.12	5 289	SE		738.52	00 289
SE	V	642.28	2 585	SE	III	739.29	2 14, 289

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE III	739.63	2	14, 289	SE III	806.92	3	14, 289
SE	740.03	1	289	SE	808.09	0	289
SE III	741.91	4	14, 289	SE V	808.57 *	0	289, 651
SE	742.33	00	289	SE	811.89	0	289
SE	742.85	0	289	SE III	813.95	4	14, 289
SE	743.54	00	289	SE II	814.64	0	289, 468, 651
SE	744.68	0	289	SE	815.07	00	289
SE II	746.02	0	468, 488, 587	SE	815.79	00	289
SE IV	746.29	5	289, 585	SE	816.33	0	289
SE III	746.83	0	289, 587	SE II	816.88	1	289, 468, 587
SE	747.35	0	289	SE VII	817.51	2	289, 588
SE	747.71	0	289	SE III	817.91	0	14, 289
SE	748.71	0	289	SE III	818.08	00	289, 587
SE	749.95	0	289	SE III	818.57	1	289, 587, 588
SE	751.05	0	289	SE VII	819.52	00	289, 588
SE III	751.81	3	14, 289	SE	820.14	0	289
SE	754.79	00	289	SE V	820.65	0	289, 468, 585
SE	755.15	00	289	SE III	823.87 *	6	14, 289
SE	755.78	0	289	SE	825.30	00	289
SE VII	756.53	0	588	SE	825.95	00	289
SE	757.26	00	289	SE	826.92	00	289
SE	757.86	00	289	SE II	828.48	8	289, 468, 488
SE IV	758.75 *	6	289, 585, 651	SE V	830.30 *	6	651
SE III	759.55	2	14, 289	SE II	832.74 *	9	468, 488
SE VII	759.80	00	289, 588	SE III	833.13	00	289, 587
SE	760.06	00	289	SE	834.86	0	289
SE	760.46	00	289	SE III	836.02	2	289, 587
SE VII	761.98	0	588	SE II	838.43	0	468
SE III	764.58	0	587	SE V	839.46 *	4	289, 651
SE VII	765.14	2	588	SE VII	840.37	0	588
SE III	769.74	2	14, 289	SE	842.30	00	289
SE III	770.83	3	14, 289	SE III	843.02	5	14, 289
SE VII	771.59	2	588	SE II	844.00	4	289, 468, 651
SE VII	772.26	3	588	SE	845.00	0	289
SE III	774.34	2	289, 468, 587	SE V	845.73	0	289, 585
SE III	775.27	2	14, 289, 468	SE II	849.60	4	468, 587
SE III	775.77	0	587	SE III	852.07	3	14, 289
SE IV	776.34	5	289, 585	SE	852.51	0	289
SE III	777.23	4	14, 289	SE VII	854.37 *	6	289, 468, 588
SE	777.99	0	289	SE II	854.46	0	468
SE VII	778.17 *	4	588	SE II	855.80	00	289, 468
SE	778.52	00	289	SE	859.88	0	289
SE VII	779.88	00	588	SE VII	860.62	3	588
SE II	781.81	0	289, 468	SE II	864.47	1	289, 468
SE II	782.80	3	289, 468, 587	SE II	865.84	1	289, 468
SE III	783.62	3	14, 289	SE	866.98	00	289
SE II	783.84	1	468	SE	867.21	1	289
SE	784.46	0	289	SE II	867.74	00	289, 468
SE	785.42	0	289	SE	868.51	00	289
SE V	785.63	00	289, 651	SE	869.22	00	289
SE II	786.21	0	289, 468	SE II	870.88	00	289, 468
SE III	788.63	4	14, 289	SE II	871.59	00	289, 468
SE	788.91	00	289	SE II	872.16	00	289, 468
SE	789.34	00	289	SE	872.84	00	289
SE	789.93	0	289	SE	873.37	1	289
SE III	790.68	4	14, 289	SE	873.77	1	289
SE III	791.29	0	14	SE	875.36	1	289
SE III	792.49	4	14, 30, 289	SE	876.86	0	289
SE	794.35	00	289	SE	877.51	00	289
SE	794.90	00	289	SE	877.77	1	289
SE IV	796.65	1	289, 585	SE	878.19	1	289
SE II	797.31	00	289, 468	SE	878.85	0	289
SE	797.94	1	289	SE III	879.15	4	14, 289
SE III	798.30 *	6	289, 587	SE III	882.13	5	587
SE VII	798.44	0	289, 588	SE II	882.59	3	289, 468
SE II	798.79	00	30	SE II	883.77	0	468
SE	799.41	2	289	SE VI	886.85 *	0	289, 651
SE III	799.77	1	14, 289	SE III	887.41	0	289, 587, 468
SE IV	800.08	0	289, 585	SE II	888.06	2	30, 289
SE II	800.54	1	468, 587	SE	888.84	1	289
SE II	801.22	0	289, 468	SE III	890.67	5	14, 289, 468
SE III	802.87	4	14, 289	SE III	891.49	4	289, 587
SE IV	803.42	5	289, 585	SE II	894.99	0	468
SE	803.96	0	289	SE	900.20	1	289
SE V	804.31 *	5	651	SE III	900.65	2	14, 289

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE	902.30	3	289	SE II	1011.18	1	289, 468
SE	903.51	0	289	SE II	1011.88	3	289, 468
SE	904.01	0	289	SE II	1013.40 *	9	289, 468, 488
SE	906.09	00	289	SE II	1014.01 *	9	468, 488
SE	906.53	1	289	SE	1017.94	0	289, 585
SE II	906.63	8	289, 468, 488	SE	1019.66	0	289
SE	907.69	1	289	SE	1021.77	2	289
SE II	912.89 *	9	468, 488	SE II	1022.12	3	289, 468
SE	913.17	1	289	SE	1024.91	3	289
SE II	917.88	1	289, 468	SE	1028.61	3	289
SE II	918.80	1	289, 354, 468	SE II	1029.55	3	289, 468
SE	919.69	0	289	SE IV	1030.57	2	585
SE	920.54	1	289	SE II	1033.60 *	10	468, 488
SE II	921.07	1	289, 354, 468	SE	1034.34	00	289
SE	922.09	0	289	SE II	1036.15	2	289, 468
SE II	922.94	1	289, 354, 468	SE II	1038.35	1	289, 468
SE II	926.35	1	289, 354	SE	1044.33	00	289
SE II	926.45	0	289, 354, 468	SE	1044.46	0	289
SE	934.06	0	289	SE	1044.64	1	289
SE	938.17	5	14, 289	SE II	1045.37	2	289, 468
SE	938.50	0	289	SE	1047.11	0	289
SE	940.76	0	289	SE II	1047.67	1	289, 468
SE II	942.50	00	209, 354, 488	SE II	1049.65 *	10	468, 488
SE II	950.07	00	289, 468	SE	1050.22	0	289
SE II	951.26	1	289, 468	SE II	1050.56	2	289, 468
SE II	953.88	4	289, 468, 587	SE II	1052.15	2	289, 468
SE III	954.45	5	14, 289	SE	1053.42	00	289
SE III	954.78	5	14, 289	SE	1053.87	00	289
SE	958.31	00	289	SE	1056.25	00	289
SE	958.53	00	289	SE	1057.05	1	289
SE IV	959.61 *	6	289, 585	SE II	1057.41 *	9	289, 468, 488
SE	960.32	0	289	SE III	1069.73	1	14, 289
SE	960.63	00	289	SE	1073.07	00	289
SE	960.96	0	289	SE	1077.49	1	289, 468
SE	961.40	0	289	SE	1078.61	0	289
SE II	961.75	1	289, 468	SE III	1079.74	5	14, 289
SE	962.22	00	289	SE	1080.54	00	289
SE	962.97	00	289	SE	1081.23	0	289
SE	964.55	0	289	SE	1081.76	2	289
SE	965.31	2	289	SE	1084.04	1	289
SE	972.73	00	289	SE II	1085.97	1	289, 468
SE	973.49	00	289	SE	1087.96	1	289
SE III	974.13	5	14, 289	SE II	1090.49	1	289, 468
SE II	974.88	7	289, 468, 14	SE V	1094.70	3	289, 585
SE	975.52	0	289	SE II	1097.82	8	289, 468, 488
SE	976.07	0	289	SE	1098.98	2	289
SE	976.78	0	289	SE III	1099.10	6	14, 289
SE	977.60	0	289	SE II	1100.10	1	289, 468
SE	980.28	1	289	SE III	1100.52	5	289, 587
SE	981.32	00	289	SE	1102.14	00	289
SE II	983.94	6	289, 468, 488	SE	1106.25	00	289
SE	985.78	00	289	SE	1108.51	00	289
SE II	986.68	00	289, 354, 468	SE	1110.08	00	289
SE	988.73	1	289	SE	1113.33	00	289
SE	989.31	1	289	SE	1114.53	00	289
SE	991.58	1	289	SE	1115.91	00	289
SE	995.29	0	289	SE	1117.73	0	289
SE	995.60	0	289	SE II	1119.20	8	14, 289, 468
SE IV	996.69 *	6	289, 585	SE	1119.98	00	289
SE II	997.06	2	468	SE	1121.62	00	209
SE II	997.24	00	289, 468	SE	1122.54	00	289
SE	997.54	00	289	SE	1122.93	00	289
SE	997.90	00	289	SE	1123.76	0	289
SE	998.20	00	289	SE III	1126.30	5	14, 289
SE	998.73	00	289	SE	1127.80	1	289
SE	999.50	0	289	SE	1128.45	00	289
SE	1000.47	3	289	SE II	1129.96	0	289, 468
SE	1000.75	1	289	SE II	1130.48	1	468
SE IV	1001.67	4	289, 585	SE	1132.46	00	289
SE	1003.02	2	289	SE II	1134.04	00	289, 354, 468
SE	1004.72	5	289	SE II	1138.36	0	468
SE	1006.23	00	289	SE II	1141.94 *	9	289, 468, 488
SE	1007.57	00	289	SE IV	1150.75	1	585
SE	1007.97	2	289	SE V	1150.96 *	7	585
SE	1010.72	0	289	SE II	1155.99	7	289, 468, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE II	1156.91	8	468, 488	SE I	1373.03	2	600
SE II	1157.32	2	289, 468, 585	SE I	1375.03	2	600
SE II	1166.53	5	289, 468, 488	SE I	1377.04	2	600
SE IV	1166.80	2	289, 585	SE I	1377.98	10	488, 600
SE II	1168.53	8	289, 468, 488	SE I	1379.50	0	600
SE II	1170.77	1	289, 468	SE II	1380.96	1	468
SE II	1177.30	1	289, 468	SE I	1382.56	3	600
SE	1177.99	2	289, 468	SE I	1384.63	2	600
SE II	1182.69	2	289, 468	SE I	1385.54	8	600
SE II	1183.98	2	289, 468	SE I	1390.99	6	600
SE	1188.21	0	289	SE I	1391.27	4	600
SE II	1192.29 *	10	289, 468, 488	SE I	1392.13	5	600
SE	1193.68	00	289	SE I	1392.97	4	468, 600
SE II	1196.46	1	289, 354, 468	SE I	1395.43	10	488, 600
SE II	1199.72	0	468	SE I	1395.88	10	488, 600
SE II	1205.27	2	289, 354, 468	SE I	1397.49	2	600
SE II	1205.69	7	289, 468, 488	SE II	1401.01	0	354, 468
SE III	1206.53	1	289, 587	SE I	1401.92	4	600
SE	1208.74	0	289	SE I	1402.63	1	600
SE II	1218.08	2	289, 354, 468	SE I	1404.45	8	488, 600
SE II	1218.27	2	289, 468, 488	SE I	1405.37	10	488, 600
SE	1220.58	2	289	SE I	1406.37	10	488, 600
SE II	1221.94	2	468, 488	SE I	1406.60	10	488, 600
SE II	1224.63	3	289, 468	SE	1411.92	1	401
SE	1226.68	1	289	SE I	1413.92	1	588
SE V	1227.68	1	289, 585	SE I	1414.26	3	468, 600
SE II	1229.04	2	468	SE I	1416.84	8	488, 600
SE	1231.00	1	289	SE I	1420.64	8	600
SE	1232.43	00	289	SE I	1426.68	5	354, 468, 600
SE II	1234.88	7	468, 488	SE I	1427.87	6	600
SE II	1237.67	0	289, 468	SE I	1430.58	6	600
SE II	1246.04	4	289, 354	SE I	1433.69	2	588
SE III	1254.79	00	289, 30	SE I	1435.28	12	488, 600
SE	1256.63	2	289	SE I	1435.75	12	488, 600
SE	1259.56	4	289, 354	SE I	1441.81	5	600
SE	1262.47	5	289	SE I	1444.85	10	488, 600
SE	1271.81	3	289	SE I	1446.78	10	488, 600
SE	1274.43	0	289	SE I	1446.98	10	488, 600
SE II	1276.81	2	289, 354, 468	SE I	1449.16	15	488, 600
SE	1285.37	1	289	SE III	1453.98	2	587
SE II	1286.41	3	468	SE I	1456.31	12	488, 600
SE II	1290.97	8	468, 488	SE I	1458.29	8	488, 600
SE	1291.56	2	289	SE I	1461.99	6	600
SE II	1294.41	3	468, 488	SE I	1496.44	3	600
SE IV	1307.24 *	7	585	SE I	1499.83	1	588
SE II	1308.89	8	468, 488	SE I	1500.91	15	488, 600
SE I	1313.53	3	600	SE I	1502.57	2	600
SE IV	1314.43 *	8	585	SE I	1506.09	3	600
SE I	1316.26	3	600	SE I	1511.27	2	600
SE II	1318.25	7	468, 488	SE I	1515.33	8	600
SE I	1322.06	1	600	SE I	1519.99	4	600
SE I	1326.83	2	600	SE I	1521.20	3	600
SE I	1327.80	1	600	SE I	1522.45	6	600
SE I	1328.75	4	600	SE I	1524.88	6	600
SE I	1330.55	4	600	SE I	1530.39 *	25	488, 600
SE II	1333.32	3	354, 468	SE I	1531.33	15	488, 600
SE II	1337.13	0	468	SE I	1531.84	20	488, 600
SE I	1342.04	4	600	SE I	1533.90	2	588
SE I	1345.54	4	600	SE III	1535.00	2	587
SE I	1346.58	0	600	SE I	1547.12	12	488, 600
SE I	1347.50	1	468, 600	SE I	1548.29	8	600
SE I	1348.40	5	600	SE I	1555.55	4	600
SE I	1351.62	4	600	SE I	1556.54	1	600
SE I	1353.02	7	600	SE I	1560.28	12	488, 600
SE I	1353.86	7	600	SE I	1562.50	2	600
SE I	1354.63	5	600	SE I	1563.28	2	600
SE II	1356.57	0	468	SE II	1571.51	3	587
SE I	1357.79	0	600	SE I	1575.26	15	488, 588, 600
SE I	1359.72	3	600	SE I	1577.61	15	488, 600
SE II	1360.86	0	468	SE I	1577.90	15	488, 600
SE I	1363.80	1	600	SE I	1579.49	15	488, 600
SE I	1364.83	3	468, 600	SE I	1580.04	20	488, 600
SE I	1366.78	1	600	SE II	1598.95	1	468
SF I	1367.91	0	600	SE I	1606.46 *	25	488, 600
SE II	1372.51	1	354, 468	SE I	1610.72	10	488, 600

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE I	1611.26	10	488, 600
SE I	1617.35	20	488, 600
SE I	1621.21	15	468, 488, 600
SE I	1622.73	10	488, 600
SE I	1623.90	5	600
SE I	1625.19	7	600
SE I	1625.45	6	600
SE I	1626.25	12	488, 600
SE I	1628.85	8	488, 600
SE I	1629.06	6	488, 600
SE I	1635.80	1	600
SE I	1643.39	15	488, 600
SE III	1644.87	1	587
SE II	1667.15	2	354, 468, 588
SE I	1671.15 *	25	488, 600
SE I	1675.27 *	25	488, 600
SE I	1688.79	3	600
SE I	1690.70 *	25	488, 600
SE I	1699.90	4	600
SE I	1706.70	2	600
SE I	1708.04	3	600
SE I	1742.75	4	600
SE I	1745.30	3	600
SE I	1750.89	6	600
SE I	1751.88	3	600
SE I	1752.94	6	600
SE I	1759.24	8	600
SE I	1772.64	5	600
SE I	1783.06	3	588
SE I	1789.43	3	588
SE I	1790.48	3	600
SE I	1793.29 *	25	488, 600
SE I	1794.55	5	600
SE I	1795.28 *	30	488, 600
SE I	1796.04	6	600
SE I	1822.15	8	600
SE I	1828.65	3	600
SE III	1829.76	1	507
SE I	1830.41	4	600
SE I	1838.38	4	588
SE I	1841.11	2	588
SE III	1844.97	3	587
SE I	1849.55	4	600
SE I	1850.51	3	600
SE I	1852.02	3	600
SE I	1855.20 *	30	488, 600
SE I	1858.84 *	25	488, 600
SE I	1859.69	5	600
SE I	1869.33	4	588
SE I	1870.72	4	588
SE I	1876.49	5	588
SE III	1885.30	2	587
SE III	1887.66	2	587
SE I	1889.56	1	588
SE III	1891.16 *	6	587
SE I	1893.50	6	600
SE III	1894.44	4	587
SE I	1897.43	8	587, 588
SE I	1898.555 *	40	488, 600
SE I	1901.41	4	588
SE III	1909.91	1	587
SE I	1913.788 *	35	488, 600
SE I	1919.190 *	30	488, 600
SE III	1920.34 *	6	587
SE III	1947.19	5	587
SE III	1950.08	5	587
SE I	1960.901 *	50	488, 600
SE IV	1967.27	4	585
SE III	1993.02	2	587
SE I	1995.112	15	488, 600

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BROMINE			
BR I	I.P.	95550.	K 1047. A
BR II	I.P.	174119.	K 574.320 A
BR III	I.P.	289529.	K 345.388 A
BR IV	I.P.		K A
BR V	I.P.		K A
BR VI	I.P.		K A
BR VII	I.P.		K A
BR VIII	I.P.	1554700.	K 64.321 A
BR II	64.76	9	488, 568
BR VIII	138.927 *	15	363
BR VIII	139.792 *	15	363
BR V	468.36	5	577
BR V	482.11 *	10	577
BR VI	499.20	4	577
BR VII	507.69 *	4	577
BR VI	503.70 *	8	577
BR VI	504.52	6	577
BR VI	515.16 *	8	577
BR VI	516.45 *	8	577
BR VI	517.29	1	577
BR VII	520.26 *	4	577
BR VII	522.60	0	577
BR V	532.00 *	10	577
BR IV	538.25	2	574
BR IV	545.43	5	574
BR V	547.94 *	10	577
BR IV	549.75	9	574, 577
BR IV	554.48	8	574
BR IV	557.94	6	574
BR IV	559.74	9	574
BR IV	563.79	9	574
BR IV	563.92	8	574
BR IV	567.40	5	574
BR IV	569.13 *	10	574
BR IV	569.27	6	574
BR IV	572.26	3	574
BR IV	573.59	8	574
BR IV	576.57 *	10	574
BR IV	582.22	6	574
BR IV	585.08	9	574
BR IV	586.69 *	10	574
BR IV	592.03	9	574
BR IV	599.60	8	574
BR IV	600.08	8	574
BR IV	601.26 *	10	574
BR IV	603.65	5	574
BR IV	605.74	5	574
BR IV	607.02	6	574
BR IV	608.56	8	574
BR IV	610.55	2	574
BR IV	618.25	5	574
BR IV	619.86	7	574
BR V	621.11 *	10	577
BR IV	625.50	4	574
BR IV	630.12 *	10	574
BR V	632.30 *	9	577
BR IV	642.22 *	10	574
BR V	645.49 *	10	577
BR IV	646.15	1	574
BR III	649.39	0	400
BR IV	649.78	6	574
BR V	657.60	6	577
BR IV	658.28	1	574
BR VI	661.05 *	10	577
BR IV	663.19	2	574
BR IV	663.80 *	10	574
BR III	665.07	0	400
BR III	665.54 *	10	586

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BR III	676.89	00	400	BR II	1029.82	2	400
BR III	677.19 *	10	574, 586	BR II	1040.92 *	10	400
BR III	677.70 *	8	586	BR II	1043.40	8	400
BR VI	678.14	5	577	BR II	1049.00 *	20	488, 568
BR III	682.76	0	400	BR III	1053.80	1	400
BR III	687.68	9	586	BR II	1056.77	5	488, 567
BR III	688.80	3	400, 586	BR II	1071.72 *	15	400
BR III	696.99	7	586	BR I	1076.95	00	757
BR VI	698.81	6	577	BR I	1077.86	00	757
BR VI	701.46 *	8	577	BR I	1078.11	00	757
BR III	706.98	4	586	BR I	1078.23	00	400, 757
BR VI	709.31	4	577	BR I	1079.31	00	757
BR II	711.68	6	568	BR I	1080.87	00	757
BR II	713.65	1	568	BR II	1082.85	0	400
BR II	718.05	0	568	BR I	1087.46	00	757
BR IV	718.50 *	10	400, 574	BR I	1087.68	00	757
BR VI	726.16	6	577	BR I	1087.80	00	757
BR II	726.71	2	568	BR I	1089.024	00	757
BR II	727.94	2	568	BR I	1089.18	00	757
BR II	729.96	2	568	BR I	1089.304	00	757
BR VI	734.91	6	577	BR I	1090.611	00	757
BR IV	735.66 *	10	400, 574	BR I	1094.706	00	757
BR VII	736.09 *	10	577	BR I	1095.466	00	757
BR III	736.33	8	586	BR I	1096.778	00	757
BR II	737.37	3	568	BR I	1098.87	00	757
BR II	740.78	4	568	BR I	1101.36	00	757
BR III	745.42	4	400, 586	BR I	1101.49	0	488, 568, 757
BR III	759.87	3	586	BR I	1103.916	00	757
BR III	761.77	0	400	BR I	1104.160	00	757
BR III	769.63	5	400, 586	BR I	1105.44	00	757
BR III	774.18	3	586	BR I	1105.83	00	757
BR VII	779.58 *	8	577	BR I	1105.98	00	757
BR III	798.76	4	400, 586	BR I	1107.52	00	757
BR III	800.93	1	400	BR I	1111.746	00	757
BR III	802.51	3	400	BR I	1112.740	00	757
BR III	809.52	3	586	BR I	1115.43	00	757
BR V	813.40	6	577	BR I	1121.469	0	757
BR II	815.48	5	568	BR I	1124.036	0	757
BR III	817.79	5	400, 586	BR I	1125.727	0	757
BR III	819.68	8	400	BR I	1129.979	00	757
BR II	822.67	1	568	BR I	1131.167	00	757
BR II	836.90	3	568	BR I	1132.819	00	757
BR I	839.01	2	400	BR I	1133.116	0	757
BR III	841.42	8	400	BR I	1133.24	00	757
BR I	843.84	2	400	BR I	1134.592	0	757
BR II	844.47	0	568	BR I	1134.889	0	757
BR II	847.35	1	568	BR I	1136.292	0	757
BR II	849.52	2	568	BR I	1139.352	00	757
BR V	850.79 *	8	400, 577	BR I	1139.552	0	757
BR V	855.79	1	577	BR I	1140.74	00	757
BR II	856.19	7	488, 568	BR I	1141.57	00	757
BR II	885.48	2	488, 568	BR I	1145.264	00	757
BR II	889.23 *	20	488, 568	BR I	1145.851	00	757
BR II	896.64 *	10	488, 568	BR I	1147.687	00	757
BR III	900.28	8	400	BR I	1147.944	00	757
BR II	905.99 *	10	488, 568	BR I	1150.318	00	757
BR II	910.73	4	568	BR I	1151.386	0	757
BR II	911.72	5	488, 568	BR I	1152.418	0	757
BR II	915.26	4	488, 568	BR I	1152.932	00	757
BR III	918.81	8	400	BR I	1152.992	00	757
BR III	920.92	8	400	BR I	1154.638	00	757
BR II	921.16	5	488, 568	BR I	1159.028	00	757
BR III	922.45	8	400	BR I	1160.330	0	757
BR II	922.56	6	488, 568	BR I	1170.479	00	757
BR III	939.60 *	10	400, 577	BR I	1173.926	00	757
BR II	940.79	3	488, 568	BR I	1177.240	0	757
BR II	948.97 *	20	488, 568	BR I	1178.899	0	757
BR II	949.10 *	10	400	BR I	1182.173	0	757
BR II	984.93 *	10	400, 488, 568	BR I	1186.166	00	757
BR II	987.66	6	400	BR I	1189.296	1	757
BR II	1005.50	8	400	BR I	1189.40	1	757
BR III	1008.72	4	400	BR I	1189.507	1	757
BR II	1012.10 *	10	400	BR I	1194.430	0	757
BR II	1015.54 *	20	488, 568	BR I	1196.375	0	757
BR II	1017.46	0	568	BR I	1196.477	0	757

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
KR IX	114.948*	75	487	KR III	612.485	6	58
KR IX	115.741*	100	487	KR II	613.366	4	58
KR IX	117.710*	20	487	KR II	615.134	4	58
KR III	516.384	4	58	KR II	615.225	4	58
KR III	525.687	4	58	KR III	616.728	5	58
KR III	528.811	4	58	KR II	617.068	6	58
KR III	530.306	6	58	KR II	617.750	4	58
KR III	531.255	4	58	KR II	618.042	4	58
KR III	538.544	8	58	KR II	618.515	2	58
KR III	540.788	5	58	KR II	618.879	3	58
KR III	540.860	4	58	KR II	619.379	2	58
KR III	543.420	8	58	KR II	619.548	2	58
KR III	544.413	5	58	KR II	621.071	5	58, 69
KR III	546.547	6	58	KR III	621.448	8	58
KR III	546.686	5	58	KR II	621.910	5	58, 69
KR III	548.652	5	58	KR III	622.795	11	58
KR III	551.689	4	58	KR III	624.268	3	58
KR III	554.794	7	58	KR III	625.011	9	58
KR III	558.634	15	58	KR III	625.758	13	58
KR II	559.320	4	58	KR III	628.581	15	58
KR II	560.788	3	58	KR III	630.037	15	58
KR III	560.986	5	58	KR III	631.550	7	58
KR III	562.690	5	58	KR III	633.082	7	58, 69
KR III	565.124	4	58	KR II	633.375	5	58, 69
KR III	565.640	5	58	KR III	633.631	5	58
KR III	565.879	4	58	KR II	634.265	4	58, 69
KR III	569.156	7	58	KR II	636.154	3	58
KR III	570.738	4	58	KR III	636.348	1	58
KR III	571.983	15	58	KR II	638.214	4	58, 69
KR III	573.228	13	58	KR II	638.952	5	58
KR III	574.956	5	58	KR II	639.263	5	58, 69
KR III	575.716	5	58	KR III	639.981	15	58
KR II	575.902	2	58, 69	KR II	640.870	5	58, 69
KR III	576.076	4	58	KR III	642.84	1	58
KR II	576.647	4	58	KR II	643.404	9	58, 69
KR II	577.01	0	58	KR III	644.521	1	58
KR III	578.09	0	58	KR III	646.417*	20	58
KR III	578.220	5	58	KR III	651.198	8	58
KR II	579.11	0	58	KR II	655.677	5	58
KR III	579.823	6	58	KR II	657.088	13	58, 69
KR II	580.342	3	58	KR II	658.637	5	58
KR III	580.577	6	58	KR III	659.716*	22	58
KR II	581.22	1	58	KR II	663.039*	20	58
KR II	581.496	3	58, 69	KR III	664.844	11	58
KR III	585.140	8	58	KR II	665.870	9	58, 69
KR II	585.684	2	58	KR II	668.827*	20	58, 69
KR III	585.950	8	58	KR III	670.300	4	58
KR II	586.269	1	58	KR III	670.813	3	58
KR III	587.374	4	58	KR III	671.058	7	58
KR III	587.543	4	58	KR III	671.175	7	58
KR II	589.262	5	58, 69	KR III	672.330*	25	58
KR III	593.699	7	58	KR III	672.826	7	58
KR III	594.090	9	58	KR III	674.828	8	58
KR II	595.530	7	58, 69	KR III	676.564*	25	58
KR III	596.401	6	58	KR III	680.119*	22	58
KR III	596.576	6	58	KR II	681.119	16	58, 69
KR II	596.944	4	58	KR II	682.791	16	58, 69
KR III	597.194	6	58	KR III	683.666	18	58
KR II	598.66	0	58	KR II	685.812	11	58, 69
KR II	598.791	3	58	KR III	686.254*	20	58
KR II	598.968	3	58	KR III	687.979	11	58
KR II	599.944	4	58, 69	KR II	690.557	11	58, 69
KR III	600.167	5	58	KR III	691.919	18	58
KR III	601.134	7	58	KR III	695.604	15	58
KR III	603.666	7	58	KR III	698.037*	20	58
KR III	603.849	6	58	KR III	704.838	4	58
KR III	604.355	4	58	KR III	708.356	8	58
KR II	605.316	5	58	KR II	712.036	8	58, 69
KR II	605.536	5	58	KR III	713.999	7	58
KR II	605.776	5	58, 69	KR III	714.772	2	58
KR III	605.862	9	58	KR III	719.85	1	58
KR III	606.460	9	58	KR II	722.036*	50	58, 69
KR II	608.124	5	58, 69	KR II	729.402*	20	58, 69
KR III	611.100	9	58	KR III	730.264	3	58
KR III	611.187	8	58	KR III	732.259	4	58

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RB	1888.4	0	659
RB	1889.5	0	659
RB	1901.6	1	659
RB	1908.7	1	659
RB	1917.5	1	659
RB	1939.4	1	659
RB	1942.3	1	659
RB	1954.2	3	659
RB	1956.5	1	659
RB	1971.4	2	659
RB	1983.2	4	659
RB	1987.0	1	659
RB	1991.5	0	659

STRONTIUM

SR	I	I.P.	45925.6	K	2177.43	A
SR	II	I.P.	88964.0	K	1124.1	A
SR	IV	I.P.	460000.	K	220.	A
SR	XI	I.P.	2613800.	K	38.258	A

SR	IV	367.95	10	758
SR	IV	381.62	12	758
SR	IV	394.90	20	758
SR	IV	400.56	3	758
SR	IV	403.85 *	25	758
SR	IV	410.67	8	758
SR	IV	416.82	1	758
SR	IV	419.81 *	25	758
SR	IV	420.37	3	758
SR	IV	429.24	15	758
SR	IV	437.69	8	758
SR	IV	442.77 *	25	758
SR	IV	447.95	6	758
SR	IV	452.18	12	758
SR	IV	456.76	20	758
SR	IV	462.70 *	25	750
SR	IV	466.52	20	758
SR	IV	473.00	8	758
SR	IV	477.26	20	758
SR	IV	477.98	5	758
SR	IV	488.74 *	30	758
SR	IV	500.51 *	50	758
SR	IV	501.29	2	750
SR	IV	537.44	15	758
SR	IV	545.55 *	35	758
SR	IV	567.11 *	30	750
SR	IV	576.10 *	25	758
SR	IV	664.43 *	70	758
SR	IV	710.35 *	45	758
SR	II	1482.69		488, 649
SR	II	1488.99		488, 649
SR	II	1531.28 *	1	488, 649
SR	II	1537.91		488, 649
SR	II	1612.98 *	4	488, 649
SR	II	1620.35 *	5	488, 649
SR	II	1762.81		488, 649
SR	II	1769.63 *	8	488, 649
SR	II	1778.39 *	9	488, 649
SR	II	1783.97		488, 649
SR	II	1793.10		488, 649

SR	II	1819.01		649
SR	II	1845.45		488, 649
SR	II	1846.76		488, 649
SR	II	1874.90		488, 649
SR	II	1964.43	0	488, 649
SR	II	1995.00	0	488, 649
SR	II	1995.78		488, 649

YTTRIUM

Y	I	I.P.	51447.	K	1943.75	A
Y	II	I.P.	98690.	K	1013.	A
Y	III	I.P.	165500.	K	604.2	A
Y	V	I.P.	620000.	K	160.	A
Y	XII	I.P.	3016800.	K	33.148	A

Y	V	313.593	1	545
Y	V	315.269	2	545
Y	V	317.028	1	545
Y	V	325.928	5	545
Y	V	326.424	1	545
Y	V	327.731	2	545
Y	V	333.095*	40	545
Y	V	333.815*	30	545
Y	V	336.613*	40	545
Y	V	336.991	1	545
Y	V	339.812	1	545
Y	V	343.581	1	545
Y	V	343.749	1	545
Y	V	345.023	5	545
Y	V	347.039	2	545
Y	V	347.827		545
Y	V	348.188	15	545
Y	V	350.877	5	545
Y	V	351.273	2	545
Y	V	355.958	10	545
Y	V	358.624	5	545
Y	V	363.450	5	545
Y	V	364.626	1	545
Y	V	379.472	20	545
Y	V	386.747	5	545
Y	V	386.821	5	545
Y	V	394.191	5	545
Y	V	399.352*	40	545
Y	V	402.660	1	545
Y	V	404.086	10	545
Y	V	405.787	5	545
Y	V	413.898	1	545
Y	V	423.210	15	545
Y	V	424.796*	40	545
Y	V	456.384*	100	545
Y	V	468.911	1	545
Y	V	482.973*	60	545
Y	V	492.848	2	545
Y	V	497.069	10	545
Y	V	584.995	20	545
Y	V	629.478	2	545
Y	III	989.21 *	1	56, 488
Y	III	996.37 *	2	56, 488
Y		1350.4	3	335

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

ZIRCONIUM

ZR	I	I.P.	55145.	K	1813.4	A
ZR	II	I.P.	113175.	K	883.587	A
ZR	III	I.P.	185400.	K	539.4	A
ZR	IV	I.P.	276970.	K	361.05	A
ZR	VI	I.P.	798000.	K	125.	A
ZR	VI		236.288	70	545	
ZR	VI		245.327	150	545	
ZR	VI		259.884	160	545	
ZR	VI		262.919	50	545	
ZR	VI		263.312*	200	545	
ZR	VI		270.474*	200	545	
ZR	VI		270.862*	180	545	
ZR	VI		274.588	100	545	
ZR	VI		277.630*	200	545	
ZR	VI		281.217	100	545	
ZR	VI		281.466	60	545	
ZR	VI		282.497	90	545	
ZR	VI		288.501	100	545	
ZR	VI		288.732	100	545	
ZR	VI		290.193	60	545	
ZR	VI		294.117*	50	545	
ZR	VI		294.398*	200	545	
ZR	VI		297.314	50	545	
ZR	VI		298.039	60	545	
ZR	VI		298.779*	200	545	
ZR	VI		302.103*	60	545	
ZR	VI		302.347*	250	545	
ZR	VI		312.993	40	545	
ZR	VI		313.392*	180	545	
ZR	VI		317.982	100	545	
ZR	VI		326.282*	250	545	
ZR	VI		333.945	100	545	
ZR	VI		334.520	70	545	
ZR	VI		337.668	90	545	
ZR	VI		337.930	80	545	
ZR	VI		342.869	40	545	
ZR	VI		345.636	90	545	
ZR	VI		346.404	20	545	
ZR	VI		346.493	20	545	
ZR	VI		352.293	60	545	
ZR	VI		352.938	50	545	
ZR	VI		356.430	90	545	
ZR	VI		362.237	50	545	
ZR	VI		365.332	25	545	
ZR	VI		401.698	130	545	
ZR	VI		406.481*	200	545	
ZR	VI		414.768	70	545	
ZR	VI		428.571	2	545	
ZR	VI		434.027	15	545	
ZR	IV		497.12	1	342	
ZR	IV		500.22	2	342	
ZR	VI		522.007*	300	545	
ZR	VI		568.277*	300	545	
ZR	IV		585.43	5	342	
ZR	IV		588.89	20	342	
ZR	IV		589.75	25	342	
ZR	IV		628.68 *	100	342, 347, 488	
ZR	IV		633.58 *	100	342, 347, 488	
ZR	IV		633.66 *	20	342, 347, 488	
ZR	III		680.69	3	342	
ZR	III		683.09	5	342	
ZR	III		684.38	2	342	
ZR	III		686.28	4	342	
ZR	III		687.64	25	342	
ZR	III		687.95	12	342	

ZR	III	690.39	50	342
ZR	III	691.19	10	342
ZR	III	691.42	15	342
ZR	III	693.65	2	342
ZR	III	694.69	8	342
ZR	III	695.06	10	342
ZR	III	695.29	12	342
ZR	III	696.91	4	342
ZR	III	700.80	2	342
ZR	III	708.40	8	342
ZR	III	710.98	10	342
ZR	III	714.18	6	342
ZR	III	715.53	7	342
ZR	III	716.28	7	342
ZR	III	717.53	3	342
ZR	III	719.16	1	342
ZR	III	720.15	3	342
ZR	III	720.50	5	342
ZR	III	720.96	2	342
ZR	III	723.13	4	342
ZR	III	723.59	15	342
ZR	III	724.30	15	342
ZR	III	724.40	12	342
ZR	III	726.99	5	342
ZR	III	731.12	10	342
ZR	III	731.98	2	342
ZR	III	733.03	18	342
ZR	III	733.29	4	342
ZR	III	736.67	20	342
ZR	III	736.97	4	342
ZR	III	744.58	4	342
ZR	III	751.16	5	342
ZR	IV	754.42	10	342
ZR	III	756.48	0	347
ZR	IV	760.18	8	342
ZR	III	760.43	3	347
ZR	III	762.90	20	342
ZR	III	763.30	10	347, 488
ZR	III	764.33	15	347, 488
ZR	III	765.11	30	347, 488
ZR	III	773.98	1	347
ZR	III	775.96	8	347
ZR	III	779.15	12	347
ZR	III	784.51	18	347
ZR	III	802.00	4	342
ZR	IV	806.98	20	342, 347
ZR	III	807.88	2	342
ZR	III	809.80	12	347
ZR	III	810.80	6	342
ZR	III	811.00	6	342
ZR	III	812.09	15	347, 488
ZR	III	814.89	12	342
ZR	III	815.53	5	342
ZR	III	816.53	6	342
ZR	III	819.14	1	342
ZR	III	819.59	25	342, 488
ZR	III	820.21	30	342, 488
ZR	III	820.91	8	342
ZR	IV	822.09	20	342, 488
ZR	IV	823.50	20	342
ZR	III	823.69	35	342, 488
ZR	III	824.16	20	342
ZR	III	825.65	18	342
ZR	III	827.90	20	342
ZR	III	829.24	15	342
ZR	III	829.50	25	342
ZR	III	832.59	15	342
ZR	III	833.51	10	342
ZR	III	834.19	8	342
ZR	III	834.85	20	342
ZR	III	836.60	18	342, 488
ZR	III	838.20	7	342
ZR	III	838.31	4	342
ZR	III	839.12	5	342
ZR	III	839.55	12	342

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZR III	840.77	1	342	ZR IV	1469.50 *	100	342, 488
ZR III	841.44	12	347, 488	ZR III	1489.13	12	342
ZR III	842.33	2	342	ZR III	1494.67	10	342
ZR III	844.00	3	342	ZR III	1495.66	2	342
ZR III	845.26	8	342	ZR III	1503.87	6	342
ZR III	845.89	18	342	ZR III	1508.38	5	342
ZR IV	846.42	4	342	ZR III	1510.52	10	342
ZR III	849.92	3	342	ZR III	1514.93	8	342
ZR III	850.61	30	342	ZR III	1539.07	3	342
ZR III	853.74	10	347, 488	ZR IV	1546.19 *	150	342, 488
ZR IV	855.69	4	347, 488	ZR III	1563.24	25	342
ZR III	857.49	4	342	ZR III	1565.45	10	342
ZR III	858.56	4	342	ZR III	1566.35	1	342
ZR III	859.42	12	342	ZR III	1583.39	20	342
ZR III	859.56	25	342, 488	ZR III	1593.59	40	342, 488
ZR III	860.04	7	342	ZR IV	1598.98 *	200	342, 488
ZR III	863.23	15	342	ZR IV	1607.99 *	100	342, 488
ZR IV	864.61	8	342	ZR III	1609.94	20	342
ZR III	864.86	30	342	ZR III	1612.38 *	100	342, 488
ZR III	865.19	4	342	ZR III	1615.33	15	342
ZR III	867.50	20	342	ZR III	1620.62	50	342, 488
ZR III	868.64	25	342	ZR III	1622.23	1	342
ZR III	868.99	25	342	ZR III	1628.04	15	342
ZR III	869.18	2	342	ZR III	1631.31	75	342, 488
ZR III	869.47	12	342	ZR III	1636.61	20	342
ZR III	870.93	5	342	ZR III	1638.33	50	342, 488
ZR III	871.46	5	347	ZR	1656.7	7	335
ZR III	872.76	12	342	ZR III	1668.35	8	342
ZR III	873.36	6	342	ZR III	1672.35	15	342
ZR III	873.61	18	342	ZR III	1675.06	35	342, 488
ZR IV	874.29	10	347, 488	ZR III	1675.75	35	342, 488
ZR III	879.04	5	342	ZR III	1687.14	3	342
ZR III	883.52	2	342	ZR III	1703.36	40	342
ZR III	885.66	15	342	ZR III	1725.03	40	342
ZR III	890.78	6	342	ZR III	1727.46	3	342
ZR III	891.00	1	342	ZR III	1729.38	6	342
ZR III	893.22	4	342	ZR III	1743.55	20	342, 346
ZR III	894.08	2	342	ZR III	1754.38	40	342, 488
ZR III	896.45	1	342	ZR III	1757.48	20	342
ZR III	901.15	2	342	ZR III	1759.12	35	342, 488
ZR III	907.18	15	342	ZR III	1763.99	20	342
ZR III	909.32	8	342	ZR III	1764.75	30	342, 488
ZR III	911.22	1	342	ZR II	1767.85	0	346
ZR III	912.28	3	342	ZR III	1770.28	20	342
ZR III	918.06	20	342	ZR III	1770.35	4	342
ZR III	919.59	25	342	ZR III	1771.96	30	342, 488
ZR III	1000.72	6	342	ZR III	1773.90	40	342, 488
ZR IV	1183.96 *	100	342, 488	ZR III	1779.51 *	100	342, 488
ZR IV	1201.77 *	250	342, 488	ZR III	1783.35	40	342, 488
ZR IV	1219.85 *	150	342, 488	ZR III	1790.19	200	342, 488
ZR III	1281.53	1	342	ZR III	1793.59	150	342, 488
ZR IV	1285.94	15	342	ZR III	1796.36	15	342
ZR IV	1290.60	20	342	ZR III	1798.13	125	342, 488
ZR IV	1291.77	1	342	ZR III	1798.36	18	342
ZR III	1320.81	30	342	ZR III	1800.03	75	342, 488
ZR III	1369.07	4	342	ZR III	1801.67	25	342
ZR III	1371.50	20	342	ZR III	1803.46	12	342
ZR III	1375.13	25	342	ZR III	1803.57	18	342
ZR III	1378.93	30	342	ZR III	1805.26	100	342, 488
ZR III	1385.75	18	342	ZR III	1822.35	10	342
ZR III	1393.20	6	342	ZR III	1831.89	35	342, 488
ZR III	1402.62	4	342	ZR III	1832.16	22	342
ZR III	1403.48	40	342	ZR III	1833.09	15	342
ZR III	1403.74	20	342	ZR IV	1836.14 *	100	342
ZR III	1408.40	15	342	ZR IV	1846.42 *	100	342
ZR IV	1417.73	75	342, 488	ZR IV	1848.06	10	342
ZR III	1418.81	6	342	ZR III	1849.84	1	342
ZR III	1420.12	35	342	ZR III	1850.06	40	342
ZR III	1420.87	25	342	ZR III	1850.35	12	342
ZR III	1426.11	5	342	ZR III	1853.38	40	342, 488
ZR IV	1440.68	18	342	ZR III	1859.12	30	342
ZR IV	1441.11	20	342	ZR III	1860.47	25	342
ZR III	1444.88	20	342	ZR III	1861.11	25	342, 346
ZR III	1451.40	8	342	ZR III	1864.06	75	342, 488
ZR III	1465.44	25	342	ZR III	1865.45	30	342

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZR III	1865.83	18	342
ZR III	1867.04	3	347
ZR III	1867.76	15	342
ZR III	1877.00	35	342, 488
ZR III	1878.56	10	342, 346, 488
ZR III	1879.92	10	342
ZR III	1881.02	20	342
ZR III	1885.28	2	347
ZR II	1887.07	1	346
ZR III	1888.70	2	342
ZR III	1892.07	50	342
ZR II	1893.52	1	346, 488
ZR III	1894.36	20	342
ZR II	1902.78 *	3	346, 488
ZR II	1911.32 *	4	346, 488
ZR III	1913.34	18	342
ZR III	1914.25	65	342
ZR II	1920.76 *	5	346, 488
ZR III	1921.96	75	342, 488
ZR III	1922.26	6	342
ZR III	1925.88	12	342
ZR III	1925.98	15	342
ZR III	1932.54	75	342, 488
ZR III	1934.32	50	342, 488
ZR III	1935.20	40	342
ZR III	1936.48	75	342, 488
ZR III	1936.67	75	342, 488
ZR III	1937.27	80	342, 488
ZR III	1937.81	12	342
ZR II	1938.27 *	3	346, 488
ZR III	1940.25	200	342, 488
ZR III	1941.08	100	342, 488
ZR III	1946.12	25	342, 488
ZR III	1946.61	80	342, 488
ZR III	1946.99	50	342
ZR II	1948.10	1	346, 488
ZR II	1948.87	1	346
ZR II	1950.29	2	346
ZR III	1951.86	8	342
ZR III	1953.95	100	342
ZR III	1956.03	10	342
ZR III	1961.32	50	342
ZR III	1962.01	100	342, 488
ZR III	1962.92	40	342
ZR III	1965.18	20	342
ZR III	1966.22	85	342, 488
ZR III	1967.81	25	342
ZR III	1972.63	22	342
ZR III	1974.99	60	342, 488
ZR II	1976.54 *	3	346, 488
ZR III	1981.21	20	342
ZR III	1981.67	20	342
ZR II	1981.85	2	346
ZR III	1982.61	12	342
ZR III	1983.14	40	342
ZR III	1986.75	20	342
ZR III	1989.83	50	342
ZR III	1990.95	30	342, 346
ZR III	1994.46	30	342
ZR III	1995.36	15	342, 346
ZR II	1995.88 *	7	346, 488
ZR II	1996.69 *	6	346, 488
ZR III	1996.92	15	342
ZR III	1997.30	3	342
ZR III	1998.51	6	342
ZR III	1999.09	3	342

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB I	I.P.	55511.	K 1801.44 A
NB II	I.P.	115500.	K 865.8 A
NB III	I.P.	202000.	K 495. A
NB IV	I.P.	308600.	K 324.0 A
NB V	I.P.	400000.	K 250. A
NB VI	I.P.	829750.	K 120.52 A
NB VII	I.P.	1005000.	K 99.50 A
NB VI	164.977*	75	132
NB VI	170.180*	100	132
NB VI	177.552*	125	132
NB VI	180.548*	25	132
NB VII	197.415	100	132
NB VII	205.182*	200	132
NB VII	215.444*	400	132
NB VII	217.945*	300	132
NB VII	219.746*	500	132
NB VII	224.182*	300	132
NB VII	224.737*	200	132
NB VII	227.463	150	132
NB VII	234.260	100	132
NB VII	234.576	15	132
NB VI	238.176	400	132
NB VII	240.351	50	132
NB VII	245.368	25	132
NB VII	245.620	35	132
NB VII	247.979*	250	132
NB VI	248.724*	250	132
NB VII	248.944	25	132
NB VII	250.737	25	132
NB VII	251.973	150	132
NB VII	252.448	25	132
NB VII	257.498	75	132
NB VII	261.434	100	132
NB VII	262.453*	250	132
NB VII	263.417	50	132
NB VII	265.293	100	132
NB VII	274.219	150	132
NB VII	286.276	100	132
NB VII	294.390	100	132
NB VII	297.556	35	132
NB VII	297.984	150	132
NB VII	301.960	150	132
NB VII	306.274	25	132
NB VII	312.010	25	132
NB VII	316.043	20	132
NB VII	320.527	75	132
NB VII	323.386	10	132
NB VI	325.795*	250	132
NB VII	353.240	35	132
NB VII	360.099	150	132
NB VII	369.197	75	132
NB VII	378.901*	200	132
NB VII	386.819	75	132
NB V	464.55	8	760
NB V	464.555*	100	132
NB V	468.325*	150	132
NB V	468.627	25	132
NB VII	470.590*	300	132
NB VII	517.281	150	132
NB IV	542.38	12	412
NB IV	543.09	12	412
NB IV	545.21	12	412

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB IV	556.08	8	412	NB III	1382.22	2	320
NB IV	559.94	10	412	NB IV	1386.23	20	412
NB IV	562.73	0	412	NB III	1396.52	15	320
NB IV	566.22	10	412	NB III	1399.98	5	320
NB IV	571.84	9	412	NB III	1411.97	20	320
NB IV	575.44	9	412	NB III	1413.41	30	320
NB V	753.011*	50	132, 760	NB IV	1418.55	15	412
NB V	763.752*	300	132, 760	NB IV	1418.86	15	412
NB V	774.017*	150	132, 760	NB III	1422.87	0	193
NB IV	952.68	7	412	NB IV	1424.35	30	412
NB IV	954.72	7	412	NB III	1431.92	60	320
NB IV	981.27	18	412	NB IV	1432.30	8	412
NB IV	982.55	1	412	NB III	1433.39	60	320
NB IV	993.17	3	412	NB III	1433.92	30	320
NB IV	993.54 *	60	412	NB III	1434.55	20	320
NB IV	996.16	18	412	NB III	1435.26	50	320
NB IV	1002.76 *	50	412	NB III	1436.50	2	320
NB IV	1005.72 *	400	412	NB IV	1438.46	5	412
NB IV	1007.05 *	500	412, 760	NB IV	1439.33	35	412
NB IV	1010.19 *	500	412	NB III	1440.48	2	320
NB IV	1013.82	30	412	NB III	1440.68	40	320
NB IV	1020.00	30	412	NB III	1441.31	1	320
NB IV	1030.27	45	412	NB III	1442.76	40	320
NB IV	1044.96	30	412, 760	NB IV	1444.88	8	412
NB IV	1049.61	20	412	NB III	1445.43	80	320
NB IV	1050.98	20	412	NB IV	1445.72	30	412
NB IV	1054.37	20	412	NB III	1445.98	80	320
NB IV	1055.88	30	412	NB III	1447.09	80	320
NB IV	1065.58	20	412	NB IV	1447.48 *	50	412
NB IV	1080.36	1	412	NB III	1448.50	50	320
NB IV	1103.05	25	412	NB IV	1450.20	6	412
NB IV	1107.86	25	412	NB III	1451.63	60	320
NB IV	1112.39	5	412	NB IV	1452.60	3	412
NB IV	1116.08 *	100	412	NB IV	1453.25	3	412
NB IV	1119.88	25	412	NB III	1453.95	30	320
NB IV	1120.02 *	150	412	NB III	1456.68 *	100	320
NB IV	1120.26	15	412	NB III	1456.83 *	10	320
NB IV	1125.27	5	412	NB III	1457.83	2	320
NB IV	1128.02	5	412	NB III	1459.62	20	320
NB IV	1128.61	5	412	NB IV	1465.99	7	412
NB IV	1135.75	8	412	NB III	1467.28	20	320
NB IV	1150.27	0	412	NB IV	1469.96	2	412
NB IV	1152.05	5	412	NB III	1470.33	20	320
NB IV	1163.62	10	412	NB III	1471.84	40	320
NB V	1212.21	7	760	NB IV	1473.43	40	412
NB V	1258.87	10	760	NB III	1475.47	20	320, 412
NB V	1267.60	4	760	NB III	1478.11	20	320
NB IV	1286.63	1	412	NB III	1479.06	30	320
NB IV	1291.58	1	412	NB III	1484.73	80	320
NB III	1294.54	1	320	NB III	1485.36	40	320
NB IV	1295.68	20	412	NB III	1486.79	50	320
NB IV	1297.81	25	412	NB IV	1487.23	40	412
NB III	1303.23	1	320, 412	NB III	1488.67	10	320
NB IV	1305.59	10	412	NB III	1489.15	40	320
NB III	1314.56	60	320	NB III	1490.45	30	320
NB IV	1316.93	10	412	NB IV	1492.56	10	412
NB III	1319.15	50	320, 412	NB III	1493.30	20	320
NB IV	1324.64	4	412	NB III	1495.52	10	320
NB III	1326.56	20	320	NB III	1495.94 *	100	320
NB III	1328.24	1	320	NB III	1497.15	1	320
NB III	1331.79	10	320	NB III	1497.53	1	320
NB IV	1332.27	1	412	NB III	1498.02	80	320
NB III	1334.08	2	320	NB III	1498.83	10	320
NB III	1335.70	30	320	NB III	1499.45	80	320
NB IV	1337.59	2	412	NB III	1501.53 *	50	320
NB III	1338.21	20	320	NB III	1501.99 *	100	320
NB III	1338.36	10	320	NB IV	1502.30 *	60	412
NB III	1340.13	40	320	NB III	1505.03	60	320
NB IV	1341.49	7	412	NB III	1507.47	20	320
NB IV	1344.17	12	412	NB III	1508.28	20	320
NB III	1345.96	40	320	NB IV	1508.73	30	412
NB IV	1349.64	10	412	NB IV	1509.06	7	412
NB IV	1363.76	25	412	NB III	1509.71	50	320
NB IV	1369.75	12	412	NB III	1512.34	50	320
NB III	1379.48	30	320	NB III	1513.25	50	320

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB III	1513.81	80	320	NB III	1716.06	10	320
NB III	1515.12	10	320	NB III	1722.94	1	320
NB III	1516.81	30	320	NB III	1724.41	60	320
NB III	1517.06	20	320	NB II	1725.75	1	318
NB III	1517.38	50	320	NB III	1727.53	8	320
NB III	1517.91	2	320	NB III	1730.92	1	320
NB III	1519.99	20	320	NB II	1733.65	25	318
NB IV	1524.36 *	60	412	NB III	1733.96	2	320
NB III	1524.91 *	100	320	NB III	1739.30	50	320
NB III	1527.28	20	320	NB II	1742.09	25	318
NB III	1529.33	20	320	NB III	1742.56	30	320
NB III	1531.07	25	320	NB III	1745.29	30	320
NB III	1531.88	40	320	NB II	1746.24	20	318
NB III	1532.98	60	320	NB III	1754.25	10	320
NB IV	1534.06 *	50	412	NB II	1754.95	10	318
NB III	1537.50	60	320	NB III	1756.28	20	320
NB III	1538.87	30	320	NB III	1758.63	50	320, 760
NB III	1540.02	10	320	NB III	1763.72	60	320
NB IV	1541.25	3	412	NB III	1765.20	1	320
NB III	1542.47	15	320	NB III	1767.43	1	320
NB III	1546.50	40	320	NB III	1772.65	40	320
NB III	1546.71	10	320	NB II	1773.98	5	318
NB III	1549.97	1	320	NB II	1774.75 *	500	318
NB III	1550.62	40	320	NB II	1776.92	25	318
NB III	1551.06	2	320	NB III	1779.93	20	320
NB III	1558.76	40	320	NB II	1783.22	1	318
NB III	1561.21	30	320	NB III	1785.20	40	320
NB III	1562.61	40	320	NB II	1789.76	1	318
NB III	1566.92	50	320	NB II	1790.28	30	318
NB III	1568.75	15	320	NB II	1795.77 *	1000	318, 320
NB III	1570.19	50	320	NB II	1796.23	20	318
NB III	1577.35	5	320	NB III	1798.16	10	320
NB II	1579.39	2	318	NB II	1799.11	10	318
NB III	1579.94	10	320	NB III	1801.06	20	318, 320
NB III	1582.99	2	320	NB III	1801.86	40	320
NB III	1586.82	50	193, 320	NB II	1802.24	1	318
NB III	1590.21 *	100	320	NB II	1802.68	50	318, 320
NB III	1594.01	20	320	NB II	1803.65	1	318
NB III	1598.86	80	193, 320	NB II	1804.28	1	318
NB III	1603.10	40	320	NB II	1807.16	1	318
NB III	1604.72	80	320	NB III	1808.70	50	320
NB III	1605.41	20	320	NB II	1809.83	200	318
NB III	1617.78	30	320	NB II	1810.10	2	318
NB III	1621.45	30	320	NB III	1811.55	10	320
NB IV	1635.68	40	412	NB II	1812.27	50	318
NB III	1637.58	25	320	NB II	1814.27	20	318
NB IV	1638.71	20	412	NB II	1815.60	2	318, 320
NB III	1639.11	10	320	NB II	1817.67	1	318
NB III	1639.51	80	320	NB III	1818.45	30	320
NB II	1642.53	1	318	NB II	1819.51	100	318
NB III	1647.81	30	320	NB III	1819.80	5	320
NB III	1650.81	2	320	NB III	1820.38	10	320
NB III	1651.44	40	320	NB II	1825.52	80	318
NB III	1652.39	40	320	NB III	1828.81	1	320
NB III	1652.83	40	320	NB II	1834.84	1	318
NB IV	1658.20	6	412	NB II	1835.36	1	318
NB II	1660.48	1	318	NB III	1836.52	20	320
NB II	1662.51	1	318	NB II	1840.14	10	318
NB III	1672.98	40	320	NB II	1843.80	1	318
NB II	1676.67	1	318	NB III	1848.59	25	320
NB III	1678.73	20	320	NB II	1848.89	1	318
NB III	1680.22	20	320	NB III	1851.88	15	320
NB III	1682.77 *	100	320	NB II	1852.40	50	318
NB III	1684.40	60	320	NB IV	1859.96	9	412
NB III	1690.13	40	320	NB III	1862.80	10	320
NB III	1690.71	1	320	NB III	1863.13	50	320
NB II	1691.54	1	318	NB II	1864.17 *	5000	318
NB III	1691.67	10	320	NB II	1865.67	10	318
NB III	1691.80	40	320	NB III	1866.24	30	320
NB III	1695.47	30	320	NB III	1869.02	40	320
NB III	1701.03	50	320	NB II	1871.60	5	318
NB III	1705.44 *	100	320	NB II	1876.00	5	318
NB III	1707.14 *	100	320	NB V	1877.34	10	760
NB II	1708.00	1	318	NB IV	1879.32	25	412
NB III	1709.80	5	320	NB III	1879.96	20	320, 412

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB II	1883.35	1	318
NB II	1884.49	60	318
NB II	1887.49	30	318
NB II	1889.18	50	318, 320
NB IV	1890.26	7	412
NB III	1892.92 *	100	320
NB III	1893.58	1	320
NB II	1894.56	100	318, 320
NB III	1894.85	15	320
NB II	1895.74	30	318
NB II	1895.95 *	1000	318
NB II	1897.22	1	318
NB II	1902.34	10	318
NB II	1903.74	1	318
NB II	1906.79	30	318
NB IV	1910.70	40	412
NB II	1914.41	30	318
NB II	1915.11	200	318
NB II	1915.93	40	318
NB III	1918.11	25	320
NB II	1918.50	80	318
NB II	1918.67	5	318
NB II	1918.77	5	318
NB II	1919.28	15	318
NB II	1921.13	15	318
NB IV	1922.41 *	60	412
NB II	1922.94	20	318
NB II	1923.40	2	318
NB III	1926.32	10	318, 320
NB II	1926.71 *	500	318
NB II	1927.06	40	318
NB II	1929.91	40	318
NB II	1930.33	10	318
NB II	1931.47	30	318
NB II	1931.70	2	318
NB II	1934.81	10	318, 320
NB II	1934.92 *	1000	318
NB II	1937.67	1	318
NB II	1938.12	30	318
NB III	1938.84 *	100	320
NB II	1940.11	30	318
NB II	1941.91	100	318
NB III	1942.31	20	318, 320
NB III	1943.01	15	320
NB II	1946.09	50	318
NB II	1946.26	5	318
NB II	1949.87	80	318
NB II	1953.56	1	318
NB II	1957.13	200	318
NB II	1957.98	1	318
NB II	1958.68	1	318
NB II	1961.56	80	318
NB II	1962.81	5	318
NB II	1965.59	1	318
NB III	1966.00	2	320
NB II	1968.85	1	318
NB III	1971.33	5	318, 320
NB III	1971.51	10	320
NB III	1972.79	40	320
NB II	1973.46	10	318
NB II	1976.24	40	318
NB IV	1978.22 *	60	412
NB III	1979.07	60	320
NB II	1979.48	5	318
NB II	1981.50 *	5000	318
NB III	1983.35	15	320
NB II	1984.83	1	318
NB III	1985.15	50	320
NB II	1987.59	1	318
NB II	1987.97	30	318
NB II	1988.76 *	800	318
NB II	1989.48	10	318
NB II	1989.73	20	318
NB II	1992.23 *	1000	318
NB II	1993.59 *	1000	318, 320

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB II	1993.64 *	500	318
NB II	1994.57	1	318
NB II	1996.28	100	318
NB II	1996.57	20	318
NB III	1997.11	50	320
NB II	1998.73	50	318
NB II	1998.95	30	318
NB II	1999.74	50	318

MOLYBDENUM

MO I	I.P.	57260.	K	1746.	A
MO II	I.P.	130300.	K	767.5	A
MO III	I.P.	218900.	K	456.8	A
MO IV	I.P.	374180.	K	267.25	A
MO V	I.P.	493360.	K	202.69	A
MO VI	I.P.	549000.	K	182.	A
MO VII	I.P.	1020460.	K	97.995	A
MO VIII	I.P.	1235000.	K	80.972	A
MO VII		136.675*	50	132	
MO VII		140.955*	150	132	
MO VII		149.639*	75	132	
MO VIII		168.050	100	132	
MO VIII		174.891	150	132	
MO VIII		182.179*	400	132	
MO VIII		184.050*	600	132	
MO VIII		186.376*	600	132	
MO VIII		189.602*	750	132	
MO VIII		190.243*	300	132	
MO VIII		192.283	75	132	
MO VIII		198.351	150	132	
MO VIII		198.686	100	132	
MO VII		198.839*	800	132	
MO VIII		203.042	100	132	
MO VII		207.774*	500	132	
MO VIII		208.319	25	132	
MO VIII		213.126	50	132	
MO VIII		220.102*	250	132	
MO VIII		223.270*	500	132	
MO VIII		224.497	75	132	
MO VIII		225.102	150	132	
MO VIII		231.998*	250	132	
MO VIII		236.004	75	132	
MO VIII		236.886	25	132	
MO VIII		237.552	100	132	
MO VIII		244.263	150	132	
MO VIII		255.637*	200	132	
MO VIII		262.402*	500	132	
MO VIII		264.629	150	132	
MO VIII		265.869	150	132	
MO VIII		269.287	100	132	
MO VIII		271.769	25	132	
MO VIII		271.871	20	132	
MO VIII		275.288	50	132	
MO VIII		279.463*	200	132	
MO VIII		283.412*	250	132	
MO VII		286.294*	200	132	
MO VIII		287.304	25	132	
MO VIII		290.111	50	132	
MO VIII		294.138	150	132	
MO VI		296.087	15	132	
MO VI		297.326*	100	132	
MO VI		298.358*	150	132	
MO VIII		313.033	25	132	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO	VIII	322.152	150 132	MO	IV	851.540	2 591
MO	VIII	331.612*	200 132	MO	IV	851.970	1 591
MO	VIII	337.631	50 132	MO	IV	852.636	2 591
MO	VIII	348.252	150 132	MO	IV	853.678	1 591
MO	VI	374.472*	250 132	MO	IV	855.841	1 591
MO	VI	377.540*	400 132	MO	IV	855.968	3 193, 591
MO	VI	378.118	75 132	MO	IV	857.722	3 193, 591
MO	V	410.35	5 761	MO	IV	858.943	1 591
MO	V	411.08	8 761	MO	IV	859.692	1 193, 591
MO	V	412.42	5 761	MO	IV	860.188	1 591
MO	V	413.11	0 761	MO	IV	863.209	10 193, 591
MO	V	414.11	0 761	MO	IV	863.509	10 193, 591
MO	V	417.49	6 761	MO	IV	863.623	10 193, 591
MO	V	420.61	5 761	MO	IV	864.649	10 591
MO	V	425.77	0 761	MO	IV	865.255	5 591
MO	VIII	427.660*	1000 132	MO	IV	866.411	5 591
MO	V	428.63	3 761	MO	IV	867.925	20 193, 591
MO	V	431.55	6 761	MO	IV	868.757	3 591
MO	V	434.52	6 761	MO	IV	870.870	10 591
MO	VIII	474.941*	250 132	MO	IV	871.912	5 591
MO	VI	533.820*	150 132	MO	IV	873.661	1 193, 591
MO	VI	541.282*	1000 132	MO	IV	875.991	5 591
MO	VI	540.254*	200 132	MO	IV	876.340	5 591
MO	V	638.51	0 761	MO	IV	877.719	5 591
MO	V	639.95	2 761	MO	IV	878.402	5 193, 591
MO	V	651.68	2 761	MO	IV	878.786	5 591
MO	V	659.31	7 761	MO	IV	882.057	2 591
MO	V	660.28	1 761	MO	IV	882.310	1 591
MO	V	661.33	4 761	MO	IV	883.309	30 591
MO	V	661.40	4 761	MO	IV	884.207	50 193, 591
MO	V	665.14	6 761	MO	IV	884.786	10 193, 591
MO	V	668.09	10 761	MO	IV	885.537	5 193, 591
MO	V	668.32	10 761	MO	IV	885.752	10 591
MO	V	668.39	10 761	MO	IV	885.982	30 193, 591
MO	V	671.37	6 761	MO	IV	887.790	30 591
MO	V	672.24	6 761	MO	IV	891.045	5 591
MO	IV	676.364	50 591, 761	MO	IV	891.674	30 193, 591
MO	IV	677.220	5 591	MO	IV	892.146	10 591
MO	IV	680.390	50 591	MO	IV	893.189	30 591
MO	IV	682.910	30 591	MO	IV	894.762	20 193, 591
MO	IV	684.702	30 591, 761	MO	IV	895.354	10 193, 591
MO	IV	687.489	20 591, 761	MO	IV	899.055	5 591
MO	IV	688.422	30 591, 761	MO	IV	899.280	1 591
MO	IV	690.551	30 591, 761	MO	IV	900.833	2 591
MO	IV	692.263	30 591, 761	MO	IV	902.177	2 591
MO	IV	696.833*	100 591	MO	IV	903.782	30 591
MO	IV	698.284	30 591, 761	MO	IV	904.999	30 591
MO	IV	700.009	10 591	MO	IV	905.597	30 591
MO	IV	701.235	1 591	MO	IV	905.801	2 591
MO	IV	709.098	10 591	MO	IV	907.701	20 591
MO	IV	713.485	20 591	MO	IV	909.822	10 591
MO	IV	716.184	10 591, 761	MO	IV	913.875	10 591
MO	IV	717.331	5 591, 761	MO	IV	913.900	10 591
MO	IV	721.834	20 591, 761	MO	IV	916.380	10 591
MO	IV	725.748	20 591, 761	MO	IV	920.496	20 591
MO	IV	729.172	2 591, 761	MO	IV	929.089	5 591
MO	IV	730.280	5 591	MO	IV	930.855*	100 591
MO	IV	731.074	30 591	MO	IV	937.267	20 591
MO	IV	731.605	1 591	MO	IV	938.072	30 591
MO	VI	760.997	15 132	MO	IV	939.230	20 591
MO	IV	782.930	5 591	MO	IV	941.135	10 591
MO	IV	790.655	5 132, 591	MO	IV	943.398	5 591
MO	IV	803.075	5 591	MO	IV	948.275	1 591
MO	IV	803.774	2 591	MO	IV	955.563	1 591
MO	IV	805.354	2 591	MO	IV	958.068	1 591
MO	IV	807.187	1 591	MO	IV	958.878	10 591
MO	IV	809.009	1 591	MO	IV	960.147	5 591
MO	IV	809.376	3 591	MO	IV	963.880	1 591
MO	IV	811.738	1 591	MO	IV	964.758	1 591
MO	IV	812.788	2 591	MO	IV	965.495	1 591
MO	IV	815.311	1 591	MO	IV	966.644	10 591
MO	IV	840.681	1 591	MO	IV	970.807	10 591
MO	IV	842.662	2 591	MO	IV	974.732	1 591
MO	IV	843.399	1 591	MO	IV	976.495	2 591
MO	IV	849.055	1 591	MO	IV	978.096	1 591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	992.108	1	591	MO III	1212.497	50	591
MO IV	994.153	1	591	MO IV	1212.764	10	591
MO IV	995.067	1	591	MO III	1213.233	30	591
MO IV	995.815	4	591, 760	MO III	1214.473	10	591
MO IV	996.415	1	591	MO II	1216.622	5	591
MO IV	998.406	1	591	MO II	1216.921	50	591
MO IV	1005.268	1	591	MO II	1218.089	30	591
MO IV	1010.607	1	591	MO IV	1219.430	1	591
MO IV	1029.956	1	591	MO IV	1219.692	3	591
MO IV	1038.636	50	591, 760	MO IV	1220.645	1	591
MO IV	1041.350	2	591	MO IV	1224.057	2	591
MO VI	1047.20	4	760	MO IV	1224.323	2	591
MO IV	1049.126	2	591	MO IV	1225.123	20	591
MO IV	1051.216	10	591	MO III	1225.462	50	591
MO IV	1062.358	1	591	MO III	1226.091	20	591
MO IV	1071.858	3	591	MO III	1227.052	50	591
MO IV	1081.464	5	591	MO III	1228.235	50	591
MO IV	1082.551	50	591	MO III	1229.112	30	591
MO IV	1083.087	1	591	MO III	1230.411	50	591
MO IV	1083.620	1	591	MO III	1231.608	10	591
MO IV	1092.153	2	591	MO III	1233.274	50	591
MO IV	1096.448	50	591	MO III	1234.640	50	591
MO IV	1097.573	1	591	MO III	1235.085	50	591
MO IV	1099.180	5	591, 761	MO III	1236.117	50	591
MO IV	1106.647	10	591	MO III	1237.339	5	591
MO IV	1108.156	30	591	MO III	1237.850	5	591
MO IV	1109.028	50	591	MO IV	1238.831	5	591
MO IV	1110.507	20	591	MO IV	1239.035	1	591
MO IV	1110.904	10	591	MO IV	1240.528	10	591
MO IV	1113.822	5	591	MO IV	1240.975	10	591
MO IV	1115.095	1	591	MO III	1242.719	40	591
MO IV	1116.621	2	591	MO III	1243.463	40	591
MO V	1127.07	0	761	MO III	1244.110	10	591
MO V	1137.963	1	591, 761	MO IV	1245.007	1	591
MO IV	1138.234	1	591	MO IV	1247.907	10	591
MO IV	1140.658	5	591	MO III	1248.149	30	591
MO V	1148.517	4	591, 761	MO III	1248.804	10	591
MO IV	1155.230	5	591, 761	MO III	1249.531	5	591
MO IV	1159.427	5	591	MO III	1250.292	1	591
MO IV	1160.265	5	591	MO III	1251.713	1	591
MO IV	1160.514	20	591	MO III	1252.749	5	591
MO IV	1161.385	2	591	MO III	1254.930	100	591
MO IV	1163.636	50	591	MO III	1256.166	50	591
MO IV	1165.066	2	591	MO III	1256.754	80	591
MO IV	1166.070	50	591	MO III	1257.954	50	591
MO IV	1167.093	5	591	MO III	1258.627	10	591
MO IV	1168.450	5	591	MO III	1262.229	100	591
MO V	1169.325*	100	591, 761	MO III	1263.768	100	591
MO III	1170.403	20	591	MO IV	1264.664	10	591
MO III	1173.672	50	591	MO III	1266.187*	200	591
MO III	1176.259	5	591	MO II	1266.686	50	591
MO IV	1176.860	1	591	MO III	1267.151*	200	591
MO IV	1178.005	5	591	MO III	1267.996	50	591
MO IV	1182.144	2	591	MO III	1268.872	20	591
MO III	1185.548	10	591	MO III	1269.066	20	591
MO IV	1186.046	10	591	MO IV	1269.862	1	591
MO IV	1186.207	10	591	MO III	1270.512	50	591
MO IV	1187.053	1	591	MO III	1271.087	10	591
MO III	1188.236	10	591	MO IV	1273.667	1	591
MO III	1188.423	10	591	MO III	1274.233	5	591
MO III	1188.841	10	591	MO III	1274.359	100	591
MO III	1189.090	5	591	MO III	1274.508	5	591
MO V	1189.96	2	761	MO III	1274.918	50	591
MO II	1191.742	10	591	MO III	1275.623	50	591
MO IV	1191.910	2	591	MO III	1276.414	100	591
MO IV	1199.014	1	591	MO III	1276.727	100	591
MO IV	1199.217	10	591	MO III	1277.446*	200	591
MO IV	1200.800	50	591	MO III	1277.611*	200	591
MO IV	1202.247	5	591	MO III	1278.102*	200	591
MO IV	1203.765	5	591	MO III	1278.401*	200	591
MO IV	1204.223	2	591	MO IV	1279.256	1	591
MO III	1206.485	10	591	MO IV	1279.556	1	591
MO III	1209.599	5	591	MO III	1280.229	10	591
MO IV	1210.720	5	591	MO III	1281.902*	150	591
MO III	1211.498	10	591	MO III	1282.875*	200	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO III	1283.590*	150	591	MO IV	1344.128	50	591
MO III	1284.233	100	591	MO IV	1344.352	20	591
MO III	1284.798	100	591	MO IV	1344.911	5	591
MO III	1285.525	100	591	MO IV	1346.007	50	591
MO III	1285.833	100	591	MO IV	1347.192	5	591
MO III	1286.295	10	591	MO IV	1347.462	10	591
MO III	1286.413	100	591	MO IV	1348.923	30	591
MO III	1286.570	10	591	MO IV	1350.709	50	591
MO III	1288.100	50	591	MO IV	1351.259	50	591
MO III	1288.278	50	591	MO III	1351.843	100	591
MO III	1289.103	20	591	MO IV	1352.825	50	591
MO III	1290.511	100	591	MO IV	1354.150	1	591
MO IV	1293.386	1	591	MO IV	1355.995	50	591
MO IV	1293.792	1	591	MO IV	1358.378	10	591
MO IV	1294.239	5	591	MO IV	1360.240	5	591
MO IV	1294.682	7	591	MO III	1360.782	100	591
MO III	1295.435	100	591	MO IV	1361.023	2	591
MO IV	1296.015	10	591	MO IV	1361.256	1	591
MO III	1296.996	50	591	MO IV	1362.271	30	591
MO III	1297.173	50	591	MO IV	1364.633	5	591
MO IV	1298.479	10	591	MO IV	1364.806	30	591
MO IV	1298.669	5	591	MO IV	1365.864	30	591
MO III	1299.054	100	591	MO IV	1366.334	10	591
MO III	1299.820	100	591	MO III	1368.319	50	591
MO IV	1301.380	10	591	MO IV	1369.454	20	591
MO III	1301.717	50	591	MO IV	1370.299	40	591
MO III	1302.851	20	591	MO III	1370.879	100	591
MO III	1303.594	20	591	MO IV	1371.620	30	591
MO III	1304.520	30	591	MO IV	1372.648	1	591
MO III	1305.058	30	591	MO IV	1373.778	5	591
MO III	1305.591	50	591	MO IV	1374.032	1	591
MO IV	1307.615	10	591	MO IV	1374.371	1	591
MO IV	1309.386	20	591	MO IV	1374.688	1	591
MO III	1310.406	50	591	MO IV	1375.023	10	591
MO III	1310.676	20	591	MO IV	1375.429	5	591
MO III	1310.863	20	591	MO IV	1376.403	5	591
MO III	1311.873	20	591	MO IV	1376.911	5	591
MO IV	1313.034	10	591	MO IV	1377.033	10	591
MO IV	1313.571	5	591	MO IV	1378.909	10	591
MO IV	1315.242	5	591	MO III	1379.501	100	591
MO III	1316.269	50	591	MO IV	1381.104	5	591
MO III	1317.883	50	591	MO IV	1381.307	5	591
MO IV	1318.597	50	591	MO III	1382.264	50	591
MO III	1318.922	50	591	MO IV	1383.661	5	591
MO III	1319.334*	150	591	MO IV	1384.613	50	591
MO IV	1320.482	5	591	MO IV	1385.299	5	591
MO IV	1321.027	1	591	MO IV	1385.977	1	591
MO IV	1321.712	1	591	MO IV	1386.501	5	591
MO IV	1322.494	5	591	MO IV	1387.212	50	591
MO IV	1322.815	1	591	MO IV	1389.015	10	591
MO IV	1323.538	10	591	MO IV	1389.409	5	591
MO IV	1323.822	10	591	MO IV	1389.896	5	591
MO IV	1323.923	10	591	MO IV	1390.370	10	591
MO IV	1325.534	10	591	MO IV	1390.979	10	591
MO III	1329.989	20	591	MO IV	1391.114	5	591
MO IV	1330.231	5	591	MO IV	1393.670*	100	591
MO IV	1330.396	10	591	MO III	1394.161	50	591
MO IV	1330.717	1	591	MO IV	1397.501	5	591
MO IV	1331.388	1	591	MO IV	1398.707	1	591
MO IV	1331.753	1	591	MO V	1399.097	10	591, 761
MO III	1335.144	50	591	MO IV	1400.917	5	591
MO IV	1336.163	50	591	MO IV	1401.078	1	591
MO IV	1336.548	20	591	MO IV	1401.285	1	591
MO IV	1336.696	50	591	MO IV	1403.139	10	591
MO II	1337.225	5	591	MO IV	1404.049	5	591
MO IV	1338.377	50	591	MO IV	1404.629	5	591
MO IV	1339.346	10	591	MO IV	1405.090	1	591
MO IV	1339.701	20	591	MO IV	1405.615	10	591
MO IV	1339.939	50	591	MO IV	1405.797	10	591
MO IV	1341.001	20	591	MO IV	1406.232	10	591
MO IV	1341.348	50	591	MO IV	1406.363	10	591
MO IV	1341.543	10	591	MO IV	1406.562	50	591
MO IV	1342.448	1	591	MO IV	1408.238	20	591
MO IV	1342.757	50	591	MO IV	1408.611	1	591
MO IV	1343.637	5	591	MO IV	1408.979	1	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	1409.423	1	591	MO IV	1474.988	1	591
MO IV	1409.788	1	591	MO V	1475.187	1	591, 761
MO IV	1410.300	1	591	MO II	1476.147	5	591
MO IV	1410.871	1	591	MO III	1476.761	20	591
MO IV	1411.218	1	591	MO IV	1476.859	50	591
MO II	1412.027	20	591	MO IV	1477.587	10	591
MO IV	1412.391	30	591	MO IV	1477.903	2	591
MO IV	1412.920	10	591	MO VI	1479.123	50	591, 761
MO IV	1414.393	5	591	MO II	1479.684	1	591
MO IV	1414.626	10	591	MO IV	1481.066	1	591
MO III	1415.625	30	591	MO II	1481.376	1	591
MO III	1416.209	50	591	MO II	1481.726	5	591
MO IV	1417.073	10	591	MO IV	1483.033	10	591
MO III	1418.025	30	591	MO III	1483.542	20	591
MO IV	1418.165	5	591	MO IV	1484.499	2	591
MO IV	1419.024	1	591	MO III	1485.807	30	591
MO III	1421.507	50	591	MO IV	1485.968	5	591
MO IV	1423.459	10	591	MO II	1487.398	30	591, 761
MO IV	1423.882	20	591	MO IV	1488.892	5	591
MO IV	1424.885	10	591	MO II	1489.673	5	591
MO IV	1425.067	1	591	MO III	1490.069	40	591
MO IV	1426.946	10	591	MO III	1490.509	40	591
MO III	1428.000	30	591	MO IV	1491.162	1	591
MO IV	1428.233	10	591	MO IV	1491.699	3	591
MO IV	1430.201	5	591	MO II	1492.249	1	591
MO IV	1431.222	10	591	MO II	1492.867	5	591
MO IV	1431.979	1	591	MO IV	1493.205	1	591
MO IV	1432.305	2	591	MO III	1493.472	20	591
MO IV	1432.953	1	591	MO II	1494.119	2	591
MO IV	1434.642	1	591	MO II	1494.318	1	591
MO III	1439.882	10	591	MO II	1495.236	1	591
MO III	1439.975	5	591	MO II	1495.579	2	591
MO IV	1436.970	20	591	MO IV	1495.841	2	591
MO IV	1437.097	10	591	MO IV	1496.150	1	591
MO IV	1437.329	10	591	MO III	1496.370	2	591
MO V	1440.153	5	591	MO III	1496.569	2	591
MO IV	1440.838	50	591	MO II	1496.793	2	591
MO IV	1441.651	10	591	MO IV	1497.140	2	591
MO III	1442.222	50	591	MO II	1497.652	2	591
MO IV	1442.997	1	591	MO II	1498.054	2	591
MO IV	1443.213	1	591	MO IV	1498.244	2	591
MO IV	1443.590	2	591	MO II	1499.539	2	591
MO IV	1444.775	2	591	MO III	1499.945	30	591
MO IV	1445.981	1	591	MO IV	1501.451	5	591
MO IV	1448.038	5	591, 761	MO IV	1501.743	3	591
MO IV	1448.677	5	591	MO III	1503.016	30	591
MO IV	1449.003	3	591	MO IV	1503.642	10	591
MO IV	1450.531	1	591	MO II	1504.632	1	591
MO IV	1450.866	5	591	MO II	1504.933	1	591
MO IV	1451.530	10	591	MO III	1505.254	30	591
MO III	1452.377	30	591	MO IV	1505.842	1	591
MO IV	1452.813	1	591	MO II	1506.236	1	591
MO IV	1454.055	1	591	MO IV	1506.413	1	591
MO III	1454.844	50	591	MO II	1507.581	1	591
MO IV	1455.856	5	591	MO II	1508.034	1	591
MO V	1456.271	10	591, 761	MO IV	1508.283	1	591
MO IV	1457.477	10	591	MO IV	1508.508	1	591
MO IV	1457.900	2	591	MO IV	1508.706	1	591
MO IV	1458.027	2	591	MO II	1509.041	1	591
MO IV	1458.565	1	591	MO II	1509.328	1	591
MO IV	1461.594	1	591	MO II	1509.620	1	591
MO IV	1462.535	10	591	MO IV	1510.060	1	591
MO III	1462.798	30	591	MO IV	1510.378	1	591
MO IV	1464.690	1	591	MO IV	1510.644	1	591
MO IV	1464.969	5	591	MO II	1511.004	1	591
MO IV	1465.113	5	591	MO IV	1511.346	1	591
MO IV	1468.952	10	591	MO IV	1511.549	1	591
MO III	1469.206	20	591	MO IV	1511.765	1	591
MO IV	1470.415	1	591	MO III	1511.968	10	591
MO IV	1470.889	1	591	MO IV	1512.738	1	591
MO IV	1471.735	1	591	MO II	1512.958	30	591
MO III	1472.186	10	591	MO III	1513.804	30	591
MO III	1473.447	20	591	MO III	1514.050	10	591
MO III	1474.222	30	591	MO III	1515.196	50	591
MO IV	1474.658	5	591	MO IV	1515.471	1	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	1515.772	2	591	MO IV	1551.859	1	591
MO II	1516.000	3	591	MO IV	1552.075	1	591
MO IV	1516.174	1	591	MO II	1552.447	2	591
MO II	1517.993	5	591	MO II	1552.642	3	343, 591
MO V	1518.758	5	591, 761	MO II	1553.636	4	591
MO IV	1519.012	1	591	MO II	1554.021	5	591
MO IV	1519.237	1	591	MO II	1554.385	20	591
MO IV	1519.550	1	591	MO III	1554.554	20	591
MO II	1519.778	5	591	MO IV	1555.425	1	591
MO II	1520.908	5	591	MO IV	1555.887	2	591
MO II	1521.128	2	591	MO II	1556.513	2	591, 761
MO IV	1521.407	10	591, 761	MO V	1556.817*	30	591
MO IV	1522.350	1	591	MO II	1557.063	2	591
MO IV	1522.871	1	591	MO II	1557.300	3	591
MO II	1523.717	5	591	MO II	1557.311	2	591
MO IV	1524.491	1	591	MO II	1558.006	2	591
MO IV	1524.783	1	591	MO II	1558.797	10	591
MO IV	1525.037	1	591	MO II	1559.123	2	591
MO IV	1525.223	1	591	MO II	1559.322	3	591
MO II	1525.625	3	591	MO II	1559.495	2	591, 761
MO IV	1525.853	1	591	MO IV	1559.918	1	591
MO IV	1526.056	1	591	MO IV	1560.109	3	591
MO II	1526.242	3	591	MO IV	1561.881	2	591
MO IV	1528.057	1	591, 761	MO IV	1562.110	1	591
MO II	1528.235	2	591	MO III	1562.314	5	591
MO V	1528.734	5	591, 761	MO II	1562.648	10	591
MO IV	1528.874	2	591	MO II	1563.819	2	591
MO II	1529.204	2	591	MO II	1564.278	1	591
MO II	1529.559	6	591	MO II	1565.118	4	591
MO IV	1530.253	5	591	MO III	1565.264	10	591
MO IV	1531.032	3	591	MO III	1565.831	10	591
MO IV	1531.146	3	591	MO III	1567.359	10	591
MO II	1531.345	6	591	MO II	1567.549	5	591
MO II	1531.759	1	591	MO IV	1568.033	1	591
MO IV	1532.144	5	591	MO IV	1568.278	1	591
MO II	1532.821	1	591	MO II	1569.784	6	591
MO IV	1533.430	2	591	MO II	1570.224	2	591
MO II	1533.849	10	591	MO II	1570.478	3	591
MO II	1533.997	1	591	MO IV	1571.383	1	591
MO IV	1534.420	3	591	MO III	1571.583	3	591
MO II	1534.835	2	591	MO II	1571.807	1	591
MO IV	1535.863	6	591	MO II	1572.043	2	591
MO II	1536.091	20	591	MO II	1572.348	2	591
MO II	1536.320	1	591	MO II	1572.708	5	591, 761
MO IV	1536.921	5	591	MO II	1573.257	3	591
MO IV	1537.073	1	591	MO II	1573.447	3	591
MO IV	1538.012	5	591	MO II	1574.513	3	591
MO V	1538.702	1	591, 761	MO V	1574.680*	30	591, 761
MO IV	1538.913	1	591	MO II	1575.008	4	591
MO IV	1539.108	1	591	MO II	1575.148	3	591
MO II	1539.654	2	591	MO II	1575.412	20	591
MO II	1539.819	3	591	MO II	1575.709	10	591
MO II	1540.546	1	591	MO V	1575.819	10	591, 761
MO II	1540.923	10	591	MO II	1576.265	2	591
MO II	1542.306	1	591	MO II	1576.624	5	591
MO II	1542.526	1	591	MO II	1577.267	1	591
MO II	1542.742	5	591	MO IV	1577.745	2	591
MO II	1543.182	1	591	MO IV	1578.080	1	591
MO II	1543.546	10	591	MO IV	1578.422	1	591
MO II	1543.601	1	591	MO II	1578.807	1	591
MO II	1543.846	3	591	MO IV	1579.713	1	591
MO II	1544.214	1	591	MO IV	1579.903	1	591
MO II	1544.379	1	591	MO II	1580.356	50	591
MO V	1544.616	5	591, 761	MO IV	1580.533	3	591
MO IV	1544.878	1	591	MO II	1580.736	6	591
MO II	1545.179	10	591	MO IV	1580.990	2	591
MO III	1545.534	10	591	MO IV	1581.257	1	591, 761
MO V	1546.063	5	591, 761	MO IV	1581.481	1	591
MO II	1546.668	2	591	MO IV	1581.887	3	591
MO II	1546.990	2	591	MO IV	1583.029	3	591
MO IV	1547.586	2	591	MO IV	1583.169	3	591
MO III	1548.060	5	591	MO II	1583.592	3	591
MO II	1549.553	10	591	MO II	1583.863	1	591
MO II	1551.246	10	591	MO II	1584.396	3	591
MO III	1551.563	5	591	MO II	1584.582	3	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1585.390	2	591	MO II	1612.737	1	591
MO IV	1585.648	2	591	MO IV	1612.951	2	591
MO II	1585.936	3	591	MO II	1613.192	1	591
MO II	1586.084	1	591	MO II	1613.530	1	591
MO IV	1586.435	2	591	MO II	1614.063	2	591
MO V	1586.875*	40	591, 761	MO II	1614.271	1	591
MO II	1587.023	6	343, 591	MO II	1614.338	1	591
MO IV	1587.984	1	591	MO II	1614.613	5	591
MO IV	1588.195	5	591	MO IV	1614.838	6	591
MO II	1589.194	1	591	MO II	1615.037	2	591
MO IV	1589.567	1	591	MO II	1615.265	6	591
MO II	1589.769	1	591	MO IV	1615.540	2	591
MO III	1590.078	10	591	MO IV	1616.162	2	591
MO V	1590.370*	30	591	MO IV	1616.369	6	591
MO II	1590.733	3	591	MO IV	1616.547	3	591
MO IV	1590.924	1	591	MO IV	1616.826	1	591
MO II	1591.237	1	591	MO IV	1617.143	1	591
MO II	1591.558	1	343, 591	MO IV	1617.588	1	591
MO II	1591.770	2	591	MO IV	1617.926	1	591
MO IV	1591.939	2	591	MO IV	1618.125	1	591
MO II	1592.206	4	591	MO IV	1618.476	1	591
MO II	1592.434	1	591	MO IV	1618.726	2	591
MO IV	1593.316	5	591	MO IV	1618.883	1	591
MO II	1595.005	2	591	MO IV	1619.635	1	591
MO II	1595.221	2	591	MO II	1620.104	3	591
MO VI	1595.423	40	591, 760	MO IV	1620.442	1	591
MO II	1595.708	3	591	MO IV	1620.781	2	591
MO IV	1596.295	10	591	MO II	1621.578	1	591
MO V	1596.688	10	591, 761	MO IV	1622.238	1	591, 761
MO II	1597.057	1	591	MO II	1622.938	1	591
MO II	1597.239	2	591	MO IV	1623.804	10	591
MO II	1597.400	2	591	MO II	1623.958	2	591
MO II	1597.633	2	591	MO II	1624.198	1	591
MO II	1597.875	2	591	MO II	1624.405	1	591
MO II	1598.390	2	591	MO II	1624.736	3	591
MO II	1598.525	1	591	MO IV	1624.841	1	591
MO II	1598.898	1	591	MO IV	1625.231	2	591
MO IV	1599.075	1	591	MO IV	1625.400	1	591
MO II	1599.304	3	591	MO IV	1625.556	1	591
MO II	1599.681	1	591	MO IV	1626.006	1	591
MO II	1599.985	1	591	MO II	1627.436	1	591
MO II	1600.137	1	591	MO II	1628.002	1	591
MO II	1600.523	5	591	MO II	1628.519	2	591
MO II	1600.759	5	591	MO II	1628.679	2	591
MO II	1600.992	4	591	MO II	1629.344	3	591
MO II	1601.614	2	591	MO II	1629.504	3	591
MO II	1601.923	3	591	MO II	1629.661	2	591
MO II	1602.176	2	591	MO II	1630.083	3	591
MO II	1602.614	5	591	MO II	1630.286	1	591
MO II	1603.111	2	591	MO II	1630.551	5	591
MO IV	1603.234	2	591	MO II	1630.737	5	591
MO II	1603.594	1	343, 591	MO II	1631.174	1	591
MO II	1604.190	10	591	MO II	1632.069	5	591
MO IV	1604.715	1	591	MO II	1632.744	3	591
MO IV	1605.682	10	591	MO II	1633.011	1	591
MO II	1606.008	1	343, 591	MO II	1633.396	1	591
MO II	1606.127	3	591	MO II	1633.707	1	591
MO II	1606.843	3	591	MO II	1633.968	2	591
MO II	1607.037	4	591	MO II	1634.418	2	591
MO IV	1607.405	2	591	MO II	1634.580	2	591
MO IV	1607.566	3	591	MO II	1635.278	1	591
MO II	1607.790	1	591	MO II	1635.693	3	591
MO II	1608.472	2	591	MO II	1637.106	1	591
MO II	1609.088	1	591	MO II	1637.393	2	591
MO II	1609.960	2	591	MO II	1637.584	1	591
MO II	1610.209	2	591	MO II	1637.841	1	591
MO II	1610.594	1	591	MO II	1638.197	1	591
MO IV	1610.722	3	591	MO II	1638.315	1	591
MO II	1610.874	3	343, 591	MO II	1639.140	1	591
MO II	1611.043	2	591	MO II	1639.436	1	591
MO II	1611.390	3	591	MO II	1640.282	3	591
MO II	1611.614	1	591	MO II	1640.402	100	591
MO IV	1611.768	10	591	MO II	1640.936	2	591
MO II	1612.151	1	591	MO II	1641.179	1	591
MO II	1612.375	1	591	MO IV	1641.989	5	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1642.135	6	591	MO II	1672.507	2	591
MO II	1642.622	1	591	MO II	1672.689	2	591
MO V	1642.956	3	591	MO II	1673.048	3	591
MO V	1643.108	10	591, 761	MO IV	1673.209	8	591
MO II	1643.284	1	591	MO IV	1673.395	8	591
MO II	1643.470	1	591	MO II	1673.526	10	591
MO II	1643.851	1	591	MO II	1673.987	2	591
MO II	1644.029	1	591	MO II	1674.055	4	591
MO IV	1644.288	2	591	MO II	1674.286	3	343, 591
MO V	1644.671*	20	591, 761	MO II	1674.769	2	591
MO IV	1645.357	2	591	MO II	1675.115	4	591
MO II	1646.855	1	591	MO II	1675.386	3	591
MO II	1647.109	1	591	MO IV	1675.475	10	591
MO IV	1647.384	2	591	MO II	1675.728	10	591
MO II	1647.786	2	591	MO II	1675.847	5	591
MO II	1648.040	1	591	MO IV	1676.147	2	591
MO II	1649.089	1	591	MO II	1676.278	1	591
MO II	1649.233	2	591	MO II	1676.536	2	591
MO II	1649.605	3	591	MO II	1677.133	2	591
MO IV	1649.806	1	591	MO II	1677.940	1	591
MO II	1649.924	5	591	MO II	1678.316	5	591
MO II	1650.020	2	591	MO II	1678.477	2	591
MO II	1650.341	2	591	MO II	1678.768	1	591
MO II	1650.608	2	591	MO II	1679.222	1	591
MO II	1650.655	1	591	MO II	1679.572	2	591
MO II	1650.815	2	591	MO II	1679.817	2	591
MO II	1651.192	2	591	MO II	1680.033	1	591
MO II	1651.399	2	591	MO II	1680.316	1	591
MO II	1652.633	3	591	MO II	1680.722	1	591
MO II	1653.090	6	591	MO II	1681.306	2	343, 591
MO IV	1653.535	5	591	MO II	1681.720	6	591
MO II	1653.865	2	591	MO II	1681.995	1	591
MO II	1654.110	1	591	MO II	1682.156	1	591
MO II	1654.355	1	591	MO IV	1682.409	2	591
MO II	1654.529	1	591	MO II	1682.680	6	591
MO II	1654.897	3	591	MO II	1682.934	1	591
MO II	1655.049	1	591	MO II	1683.310	1	591
MO II	1655.447	1	591	MO IV	1683.631	1	591
MO IV	1655.646	1	591	MO II	1683.996	10	591
MO II	1655.887	1	591	MO II	1684.265	10	591, 761
MO II	1657.214	2	591	MO IV	1684.730	3	591
MO IV	1658.461	2	591	MO II	1685.068	3	591
MO IV	1658.832	1	591	MO II	1685.436	3	591
MO IV	1659.112	1	591	MO II	1685.703	2	591
MO II	1659.264	1	591	MO II	1686.739	2	591
MO II	1659.403	1	591	MO IV	1687.390	2	591
MO II	1659.678	8	591	MO II	1687.788	30	591
MO II	1659.902	1	591	MO II	1688.155	3	591
MO II	1660.100	1	591	MO II	1689.051	5	591
MO V	1661.230*	100	591, 761	MO II	1689.216	6	591
MO II	1662.175	1	591	MO II	1689.516	1	591
MO II	1662.757	3	591	MO II	1689.939	1	591
MO IV	1663.547	1	591	MO II	1690.332	2	591
MO II	1664.748	2	591	MO II	1691.707	5	591
MO IV	1665.545	50	591	MO II	1691.930	3	591
MO IV	1665.845	50	591	MO II	1692.023	4	591
MO IV	1665.995	1	591	MO II	1692.399	10	591
MO IV	1666.654	70	591	MO II	1692.670	10	591
MO IV	1667.113	1	591	MO II	1693.444	3	343, 591
MO IV	1667.480	70	591	MO IV	1693.075	2	591
MO II	1667.784	1	591	MO IV	1693.994	2	591
MO IV	1668.098	1	591	MO II	1694.349	10	591
MO IV	1668.365	1	591	MO II	1694.755	4	591
MO II	1668.448	1	343, 591	MO II	1694.979	2	591
MO V	1668.669*	50	591, 761	MO IV	1695.254	1	591
MO II	1668.706	2	591	MO IV	1695.426	1	591
MO IV	1668.948	50	591	MO II	1695.862	2	591
MO IV	1669.255	5	591	MO II	1696.120	1	591
MO II	1669.339	2	591	MO IV	1696.408	1	591
MO IV	1669.731	1	591	MO II	1696.691	1	591
MO IV	1670.214	5	591	MO II	1696.830	1	591
MO II	1670.287	2	591	MO II	1697.262	5	591
MO II	1670.599	50	591	MO II	1697.549	2	591
MO II	1670.781	50	591	MO II	1697.651	1	591
MO II	1671.035	4	591	MO II	1697.871	1	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1698.218	1	591	MO V	1721.808	1	591, 761
MO II	1698.780	20	591	MO II	1722.071	2	591
MO II	1699.202	10	591	MO IV	1722.285	1	591, 761
MO IV	1699.430	1	591	MO II	1722.683	10	591
MO V	1699.735	10	591, 761	MO II	1723.296	2	591
MO IV	1699.984	4	591	MO II	1723.829	2	591
MO II	1700.285	1	591	MO IV	1724.070	1	591
MO II	1700.978	2	591	MO II	1724.226	2	591
MO II	1701.354	2	591	MO II	1724.374	2	591
MO II	1701.596	30	591	MO II	1724.679	2	343, 591
MO II	1701.951	2	591	MO II	1724.945	2	591
MO II	1702.289	1	591	MO V	1725.350	2	591, 761
MO II	1702.386	2	591	MO	1725.604	1	591
MO II	1702.797	10	591	MO	1726.027	2	591
MO II	1703.008	1	591	MO IV	1726.395	3	591
MO II	1703.282	2	591	MO III	1726.661	1	591
MO II	1704.521	5	591	MO V	1726.995*	50	591
MO II	1704.779	10	591	MO V	1727.351*	20	591
MO V	1705.299	5	591, 761	MO II	1727.465	2	343, 591
MO II	1705.536	1	591	MO II	1727.685	3	591
MO II	1705.938	1	591	MO II	1728.026	2	591
MO II	1706.224	2	591	MO II	1728.179	5	591
MO II	1706.465	1	591	MO II	1728.585	1	591
MO II	1706.956	2	591	MO II	1728.927	8	591
MO IV	1707.688	1	591	MO II	1729.210	5	591
MO IV	1707.874	1	591	MO II	1729.566	5	591
MO II	1708.165	1	591	MO II	1729.917	1	591
MO II	1708.423	2	591	MO II	1730.166	5	343, 591
MO II	1708.821	2	591	MO II	1731.011	1	591
MO II	1708.969	2	591	MO II	1731.269	5	591
MO II	1709.375	5	591	MO II	1731.489	50	343, 591
MO II	1709.578	1	591	MO II	1731.590	40	591
MO II	1709.751	4	591	MO II	1731.941	3	591
MO IV	1709.890	2	591	MO II	1732.220	5	591
MO IV	1710.190	1	591	MO II	1732.690	80	591
MO III	1710.469	1	591	MO II	1733.409	80	591
MO II	1710.723	1	591	MO II	1733.886	1	343, 591
MO IV	1710.998	1	591	MO II	1734.084	1	591
MO II	1711.121	1	591	MO II	1734.216	1	591
MO IV	1711.332	1	591	MO II	1734.435	2	343, 591
MO II	1711.481	1	591	MO II	1734.930	1	591
MO IV	1711.949	5	591	MO II	1735.289	3	343, 591
MO III	1712.106	1	591	MO II	1735.707	50	591
MO II	1712.639	2	591	MO IV	1735.944	3	591
MO II	1712.955	2	591	MO II	1736.211	1	591
MO II	1713.171	1	591	MO II	1736.507	1	591
MO II	1713.500	1	591	MO II	1736.828	5	591
MO II	1713.733	2	343, 591	MO II	1737.166	7	591
MO II	1713.919	1	591	MO II	1737.463	2	591
MO II	1714.101	5	591	MO II	1737.598	20	591
MO II	1714.532	1	591	MO II	1737.966	30	591
MO II	1714.896	1	591	MO II	1738.198	2	591
MO II	1715.124	1	591	MO II	1738.506	2	343, 591
MO II	1715.336	2	591	MO II	1739.043	3	343, 591
MO II	1715.907	1	591	MO II	1739.233	5	591
MO II	1716.080	1	591	MO II	1739.441	3	591
MO II	1716.346	2	591	MO II	1739.754	1	591
MO II	1716.768	5	591	MO IV	1740.007	1	591
MO II	1716.895	2	591	MO II	1740.215	4	591
MO II	1717.424	3	591	MO II	1740.692	1	591
MO II	1717.834	1	591	MO II	1740.980	2	591
MO V	1718.033	5	591, 761	MO II	1741.011	1	591
MO II	1718.299	10	591	MO II	1741.330	7	591
MO IV	1718.490	2	591	MO II	1741.546	1	591
MO II	1718.807	1	591	MO II	1741.753	20	591
MO IV	1719.229	1	591	MO II	1742.294	2	591
MO IV	1719.381	1	591	MO II	1742.510	5	591
MO II	1719.652	6	591	MO II	1742.967	1	591
MO II	1719.872	10	591	MO IV	1743.697	5	591
MO II	1720.184	9	591	MO II	1744.480	5	591
MO II	1720.366	1	591	MO II	1744.805	1	591
MO II	1720.603	3	591	MO II	1744.987	1	591
MO II	1720.980	3	591	MO II	1745.435	5	591
MO V	1721.288	2	591, 761	MO II	1745.503	2	591
MO II	1721.559	10	591	MO II	1745.786	2	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO	IV	1745.926	1 591	MO	IV	1763.439	5 591
MO	II	1746.221	30 343, 591	MO	II	1763.561	1 343, 591
MO	IV	1746.492	5 591	MO	II	1763.709	3 591
MO	II	1746.789	10 591	MO	II	1763.900	3 591
MO	IV	1746.995	1 591	MO	II	1764.102	1 591
MO	V	1747.198*	20 591, 761	MO	II	1764.347	10 591
MO	II	1747.494	10 591	MO	II	1764.567	1 591
MO	IV	1747.756	2 591	MO	II	1764.816	1 591
MO	II	1748.048	3 343, 591	MO	II	1764.892	5 343, 591
MO	II	1748.234	3 591	MO	II	1765.210	5 591
MO	II	1748.454	20 591	MO	II	1765.434	1 343, 591
MO	II	1748.724	2 591	MO	II	1765.747	1 591
MO	V	1748.973	5 591, 761	MO	IV	1766.139	1 591
MO	IV	1749.265	1 591	MO	II	1766.367	1 343, 591
MO	IV	1749.442	1 591	MO	II	1766.511	1 591
MO	II	1749.688	40 591	MO	IV	1766.655	20 591
MO	II	1749.853	1 591	MO	IV	1766.773	10 591
MO	II	1750.106	10 343, 591	MO	IV	1766.904	1 591
MO	IV	1750.314	20 591	MO	II	1767.497	5 591
MO	II	1750.479	5 591	MO	V	1767.767	4 591, 761
MO	II	1750.669	3 343, 591	MO	II	1767.987	10 591
MO	II	1750.854	1 591	MO	IV	1768.219	1 591
MO	IV	1750.993	1 591	MO	IV	1768.361	5 591
MO	IV	1751.129	2 591	MO	II	1768.549	3 591
MO	II	1751.323	2 591	MO	II	1768.815	1 591
MO	IV	1751.611	4 591	MO	II	1769.115	1 591
MO	II	1751.903	3 591	MO	II	1769.387	2 591
MO	V	1752.002	10 591	MO	III	1769.563	5 591
MO	II	1752.131	1 591	MO	IV	1769.669	3 591
MO	IV	1752.330	2 591	MO	II	1770.003	3 591
MO	V	1752.689	10 591	MO	II	1770.057	5 591
MO	IV	1752.897	2 591	MO	II	1770.324	3 343, 591
MO	II	1753.167	1 591	MO	II	1770.556	1 591
MO	IV	1753.526	1 591	MO	II	1770.709	1 591
MO	II	1753.847	20 343, 591	MO	III	1771.064	5 591
MO	II	1753.924	5 591	MO	II	1771.592	5 591
MO	II	1754.135	2 591	MO	IV	1771.825	1 193, 591
MO	II	1754.469	2 591	MO	V	1772.002	10 591
MO	II	1754.625	20 591	MO	II	1772.33	3 343
MO	II	1754.909	10 591	MO	II	1772.543	2 343, 591
MO	II	1755.208	20 591	MO	II	1772.856	3 343, 591
MO	II	1755.301	20 591	MO	II	1773.072	3 591
MO	V	1755.473	5 591	MO	II	1773.135	2 591
MO	III	1756.261	20 591, 761	MO	II	1773.279	4 591
MO	IV	1756.620	7 591	MO	II	1773.511	3 591
MO	IV	1756.760	5 591	MO	V	1773.676	1 591, 761
MO	V	1756.802	5 591, 761	MO	IV	1773.917	2 343, 591
MO	IV	1756.942	5 591	MO	II	1774.019	2 591
MO	II	1757.047	3 591	MO	V	1774.246	10 761, 591
MO	IV	1757.369	1 591	MO	II	1774.843	1 591
MO	IV	1757.582	5 591	MO	IV	1775.177	2 591
MO	IV	1757.651	1 591	MO	IV	1775.435	2 591
MO	IV	1757.841	1 591	MO	V	1775.582	10 591
MO	II	1758.053	2 591	MO	II	1775.684	2 591
MO	II	1758.442	10 343, 591	MO	II	1775.874	2 591
MO	II	1758.548	10 343, 591	MO	III	1776.360	7 591
MO	II	1758.645	2 591	MO	II	1776.732	2 591
MO	II	1759.326	5 343, 591	MO	II	1777.019	1 591
MO	II	1759.537	6 591	MO	IV	1777.273	1 591
MO	III	1759.714	50 591	MO	II	1777.553	5 591
MO	IV	1760.031	2 591	MO	II	1777.730	1 591
MO	IV	1760.276	1 591	MO	II	1778.063	2 591
MO	II	1760.547	30 591	MO	II	1778.452	3 591
MO	II	1760.830	3 591	MO	II	1778.600	3 591
MO	II	1761.207	3 591	MO	II	1778.790	5 591
MO	IV	1761.334	1 591	MO	II	1779.239	1 591
MO	IV	1761.609	2 591	MO	II	1779.315	5 591
MO	II	1761.693	3 591	MO	III	1779.624	10 591
MO	II	1761.963	1 591	MO	II	1780.105	4 591
MO	II	1762.043	3 343, 591	MO	II	1781.014	20 343, 591
MO	II	1762.398	3 591	MO	II	1782.108	10 591
MO	IV	1762.551	2 591	MO	II	1782.210	10 591
MO	V	1762.614	10 591	MO	II	1782.955	10 343, 591
MO	II	1762.813	5 591	MO	V	1783.355*	20 343, 591
MO	V	1763.016	5 591	MO	II	1783.640	5 591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1784.220	10	591	MO II	1823.75	7	343, 761
MO II	1784.338	2	591	MO II	1825.08	5	343
MO II	1784.989	2	343, 591	MO II	1825.365	10	591
MO II	1785.955	10	591	MO III	1827.518	10	591
MO IV	1786.420	20	193, 591	MO IV	1827.844	10	591
MO II	1786.814	10	591	MO II	1828.71	4	343
MO II	1787.214	5	591	MO II	1829.04	5	343
MO IV	1787.944	5	591	MO III	1829.622	10	591
MO IV	1788.223	5	591	MO IV	1829.876	20	591
MO IV	1788.372	5	591	MO III	1830.047	30	591
MO II	1789.09	15	343	MO II	1830.963	5	343, 591
MO IV	1789.336	30	591	MO IV	1831.254	20	591
MO II	1789.71	6	343	MO III	1831.568	30	591
MO IV	1789.924	30	591	MO II	1831.906	5	193, 343, 591
MO IV	1790.652	10	591	MO IV	1832.559	10	591
MO V	1790.889	10	591, 761	MO IV	1833.078	30	591
MO III	1791.199	2	591	MO IV	1833.443	30	591
MO IV	1791.637	1	591	MO IV	1835.092	10	591
MO III	1792.391	20	591	MO IV	1835.558	30	591
MO IV	1793.056	20	591	MO II	1836.815	10	591
MO IV	1793.437	10	591	MO II	1837.352	5	591
MO IV	1795.084	1	591	MO IV	1839.713	5	591
MO II	1795.210	1	343, 591	MO IV	1841.042	20	591
MO II	1795.401	10	591	MO IV	1842.112	40	591
MO IV	1795.628	10	193, 591	MO II	1843.29	4	343
MO II	1795.899	10	591	MO IV	1844.020	5	591
MO IV	1797.215	30	591	MO IV	1845.700	50	591
MO IV	1797.510	2	591	MO IV	1846.127	50	591
MO IV	1798.134	20	591	MO IV	1846.407	10	591
MO III	1798.768	20	591	MO II	1846.673	5	591
MO II	1799.532	1	591	MO IV	1847.181	30	591
MO II	1799.705	1	591	MO V	1848.59	0	761
MO III	1799.916	20	591	MO IV	1850.701*	100	343, 591
MO III	1801.160	5	591	MO III	1851.644	10	591
MO V	1801.435	10	591, 761	MO III	1852.846	10	591
MO II	1801.837	2	343, 591	MO III	1854.732	100	591
MO II	1802.297	4	343, 591	MO III	1855.422	30	591
MO II	1802.606	1	591	MO IV	1856.141	30	591
MO II	1803.029	1	591	MO IV	1856.497	20	591
MO II	1803.236	2	591	MO II	1857.66	20	343
MO II	1803.451	1	591	MO IV	1858.337	30	591
MO II	1803.743	1	591	MO II	1858.66	18	343
MO II	1803.862	1	591	MO II	1860.104	30	591
MO IV	1804.012	20	591	MO III	1861.559	20	591
MO II	1804.979	1	591	MO IV	1861.836	20	591
MO II	1805.596	1	591	MO III	1862.693	50	343, 591
MO II	1805.866	1	591	MO II	1863.002	60	591
MO IV	1805.976	20	193, 591	MO II	1863.300	20	591
MO IV	1807.414	10	591	MO IV	1864.480	10	591
MO III	1807.630	50	591	MO II	1865.53	10	343
MO III	1807.910	30	591	MO IV	1865.980	60	591
MO II	1808.249	30	591	MO II	1866.410	20	343, 591
MO II	1808.917	10	591	MO III	1868.204	40	591
MO IV	1810.067	20	591	MO IV	1870.347	30	591
MO IV	1810.395	2	591	MO II	1872.880	20	193, 591
MO IV	1810.962	5	343, 591	MO II	1873.105	20	591
MO IV	1811.202	20	343, 591	MO II	1873.347	50	591
MO II	1812.573	20	343, 591	MO II	1874.39	3	343
MO IV	1813.711	3	343, 591	MO II	1876.77	12	343
MU II	1813.074	5	591	MO IV	1877.711	20	343, 591
MO II	1814.368	5	591	MO II	1879.29	5	343
MO IV	1815.086	10	591	MO II	1879.57	10	343
MO III	1815.290	10	591	MO II	1880.263	30	591
MO IV	1815.442	10	591	MO IV	1881.185	10	343, 591
MO IV	1815.796	2	591	MO II	1883.103	30	591
MO II	1816.407	20	591	MO IV	1883.560	60	591
MO IV	1819.521*	100	193, 591	MO II	1886.100	30	591
MO IV	1819.657	20	591	MO II	1886.299	50	193, 591
MO IV	1819.982	10	591	MO IV	1886.795	40	343, 591
MO II	1820.168	2	591	MO II	1887.04	5	343
MO II	1820.498	5	343, 591	MO II	1887.96	3	343
MO II	1821.42	8	193, 343	MO II	1888.70	8	343
MO IV	1821.641*	100	343, 591	MO II	1890.072	60	591
MO III	1822.301	40	591	MO II	1890.51	3	343
MO II	1822.66	4	343	MO II	1891.20	10	343

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	1891.893	20	591	MO III	1919.830	5	591
MO II	1892.180	40	343, 591	MO III	1920.190	5	591
MO IV	1892.795	20	343, 591	MO II	1920.531	20	591
MO II	1892.900	10	591	MO II	1920.908	10	591
MO II	1893.032	10	591	MO II	1921.301	20	343, 591
MO III	1893.505	20	591	MO IV	1922.134	20	591
MO III	1894.066	10	591	MO II	1922.357*	500	343, 591
MO IV	1894.335	40	591	MO II	1922.643*	200	343, 591
MO II	1895.155	10	591	MO II	1923.075*	300	591
MO II	1895.420	10	591	MO III	1923.337	5	591
MO II	1895.619	50	343, 591	MO IV	1923.519	5	591
MO II	1895.690	30	343, 591	MO II	1923.781	20	591
MO IV	1895.909	20	343, 591	MO II	1924.445	10	343, 591
MO II	1896.00	1	343	MO III	1924.753	10	591
MO II	1896.350	30	343, 591	MO II	1925.213	20	591
MO II	1896.683	10	343, 591	MO III	1925.540	5	591
MO II	1897.054	40	343, 591	MO II	1925.767	20	591
MO IV	1897.203	5	591	MO IV	1926.261*	500	193, 591
MO IV	1897.581	30	591	MO II	1926.857*	200	343, 591
MO II	1897.997	30	343, 591	MO II	1927.165	10	591
MO II	1898.433	30	591	MO II	1927.739	500	591, 343
MO IV	1898.750	20	591	MO II	1928.167	20	591
MO IV	1899.455	20	591	MO II	1928.614	100	343, 591
MO IV	1900.065	20	591	MO II	1928.690	50	591
MO II	1900.655	2	591	MO IV	1928.885	5	591
MO II	1900.855	40	343, 591	MO II	1929.155	20	591
MO II	1901.870	10	591	MO IV	1929.256*	500	193, 591
MO IV	1902.195	20	343, 591	MO II	1929.362	10	591
MO II	1902.805	20	343, 591	MO II	1929.493	5	591
MO II	1903.980	10	343, 591	MO II	1929.988	5	591
MO II	1904.169	20	591	MO II	1930.139	10	343, 591
MO II	1905.070	30	343, 591	MO IV	1930.511	50	591
MO II	1905.530	5	343, 591	MO II	1930.562	10	591
MO II	1905.695	20	591	MO II	1930.984	30	343, 591
MO II	1906.021	10	591	MO II	1931.107	20	591
MO II	1906.229	2	591	MO II	1931.225	10	591
MO II	1906.651	20	591	MO II	1931.534	10	591
MO II	1906.751	5	591	MO II	1931.770	30	591
MO II	1907.195	20	343, 591	MO II	1932.049	100	591
MO II	1907.540	1	591	MO IV	1932.273*	100	591
MO II	1907.720	10	591	MO IV	1932.954	10	591
MO II	1908.100	10	591	MO II	1933.237	100	343, 591
MO II	1908.550	2	591	MO II	1933.422	50	591
MO II	1908.695	30	591	MO III	1933.735	50	591
MO II	1909.010	10	343, 591	MO II	1934.238*	200	343, 591
MO II	1909.300	20	343, 591	MO III	1934.449	10	591
MO III	1909.850	20	343, 591	MO IV	1934.922	20	591
MO III	1910.740	10	343, 591	MO II	1935.108	10	591
MO II	1911.110	30	343, 591	MO II	1935.214	10	591
MO II	1911.421	70	343, 591	MO II	1935.716	10	591
MO II	1911.720	10	591	MO IV	1935.866*	100	591
MO II	1911.801	20	343, 591	MO II	1936.093	20	343, 591
MO II	1912.143	20	591	MO IV	1936.337	5	591
MO II	1913.130	2	591	MO III	1936.608	1	591
MO II	1913.255	10	591	MO IV	1936.874	5	591
MO II	1913.720	60	343, 591	MO II	1937.491	5	343, 591
MO III	1914.193	10	591	MO II	1937.660	5	343, 591
MO II	1914.403	30	591	MO II	1937.842	10	343, 591
MO II	1914.615	30	591	MO III	1938.288	5	591
MO II	1915.019	10	591	MO II	1938.493	50	591
MO III	1915.119	10	591	MO IV	1938.885	20	591
MO IV	1915.559	10	591	MO II	1939.092	10	591
MO II	1915.896	50	343, 591	MO II	1939.603*	500	343, 591
MO II	1916.116	10	591	MO II	1940.114	20	591
MO III	1916.341	5	591	MO II	1940.740	10	591
MO IV	1916.720	2	591	MO II	1941.200	50	343, 591
MO III	1917.122	1	591	MO II	1941.399	100	591
MO III	1917.561	10	591	MO II	1941.648	100	591
MO III	1917.790*	150	591	MO II	1942.329	10	343, 591
MO IV	1918.174	2	591	MO II	1942.895	60	343, 591
MO II	1918.499	5	343, 591	MO II	1943.089	50	591
MO II	1918.659	10	591	MO II	1943.300	5	343, 591
MO II	1918.782	5	591	MO II	1944.166	10	591
MO III	1919.277	5	591	MO IV	1944.251	50	591
MO II	1919.480	50	591	MO II	1944.657	30	343, 591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	1945.223	1	591	MO II	1970.209	20	591
MO II	1945.481	5	591	MO IV	1970.577	5	591
MO II	1945.553	5	591	MO II	1970.843	10	343, 591
MO II	1946.123	150	343, 591	MO IV	1971.092*	500	193, 591
MO II	1946.607	1	343, 591	MO II	1971.523	10	591
MO IV	1946.612	20	591	MO II	1971.576	20	343, 591
MO II	1946.875	20	591	MO II	1971.890	5	591
MO II	1947.157	20	343, 591	MO II	1972.266	10	343, 591
MO II	1947.964	20	343, 591	MO II	1972.439	20	591
MO II	1948.437	10	343, 591	MO II	1972.710	40	591
MO II	1948.788*	200	343, 591	MO II	1972.782	40	591
MO II	1949.231	50	343, 591	MO II	1972.855	10	343, 591
MO III	1949.515*	300	193, 343, 591	MO II	1973.102	20	343, 591
MO II	1950.064	10	343, 591	MO IV	1973.623	50	591
MO IV	1950.524	10	591	MO II	1973.791	5	591
MO II	1950.613*	200	343, 591	MO II	1974.015	10	343, 591
MO II	1950.871*	200	591	MO II	1974.197	100	591
MO II	1951.547	20	343, 591	MO II	1974.471	5	591
MO II	1951.918	5	343, 591	MO IV	1974.517	50	591
MO II	1952.379	100	343, 591	MO II	1974.913	30	591
MO III	1952.653	50	343, 591, 654	MO II	1975.054	30	343, 591
MO II	1952.966	5	343, 591	MO II	1975.468	20	591
MO IV	1953.156	20	591	MO II	1976.216	50	591
MO III	1953.346	50	591	MO II	1976.405	1	591
MO III	1953.718	20	343, 591	MO III	1976.570	5	591
MO II	1954.106	20	343, 591	MO IV	1976.853*	100	343, 591
MO IV	1954.440*	100	591	MO IV	1977.204*	500	193, 343, 591
MO II	1954.778	10	591	MO II	1977.745	20	591
MO II	1955.006	5	591	MO II	1978.294*	300	343, 591
MO II	1955.129*	300	591	MO III	1978.688	10	343, 591
MO II	1955.260	5	591	MO II	1978.936*	200	343, 591
MO II	1955.623	10	591	MO II	1979.270	1	591
MO II	1955.957	10	591	MO II	1979.544	5	343, 591
MO III	1956.235	10	591	MO II	1979.882	5	343, 591
MO II	1956.413	10	591	MO II	1980.215*	300	591
MO II	1956.822*	200	343, 591	MO II	1980.452	50	343, 591
MO II	1957.118*	400	343, 591	MO II	1980.756	20	591
MO II	1957.267	20	343, 591	MO II	1980.972	50	343, 591
MO II	1957.574	20	591	MO III	1981.145	10	591
MO II	1957.917	100	591	MO II	1981.952	1	591
MO II	1958.204*	200	591	MO II	1982.179	1	591
MO II	1958.508	60	343, 591	MO II	1982.518	5	591
MO III	1959.028	6	591	MO II	1983.071	10	591
MO III	1959.222	5	591	MO II	1983.493	100	343, 591
MO II	1959.627	10	591	MO II	1984.072	100	343, 591
MO II	1960.156*	200	591	MO II	1984.165	5	591
MO III	1960.980*	300	591	MO II	1984.481	10	343, 591
MO II	1961.381	5	591	MO II	1984.726*	200	343, 591
MO II	1961.466	50	343, 591	MO III	1985.034	1	591
MO II	1961.735	50	343, 591	MO II	1985.394	10	343, 591
MO III	1962.023	10	343, 591	MO II	1985.587	20	343, 591
MO II	1962.251*	200	343, 591	MO II	1985.943	20	343, 591
MO IV	1962.530*	200	591	MO II	1986.133	5	591
MO II	1962.830	50	343, 591	MO II	1986.762	50	591
MO II	1963.074	5	591	MO III	1987.320	30	591
MO II	1963.387	2	591	MO II	1987.991*	500	343, 591
MO II	1963.650	5	591	MO II	1988.164	20	591
MO II	1963.737	10	343, 591	MO III	1988.637	20	591
MO II	1964.055	5	343, 591	MO II	1988.984*	200	591
MO IV	1964.532	1	591	MO II	1989.393*	200	343, 591
MO II	1964.845	50	343, 591	MO II	1989.549	5	591
MO II	1965.119	10	343, 591	MO II	1989.933	20	591
MO II	1965.390	5	343, 591	MO II	1990.208*	200	343, 591
MO II	1965.926	5	343, 591	MO II	1990.25	8	343
MO IV	1966.082*	100	193, 591	MO II	1990.461*	200	343, 591
MO II	1966.175	50	591	MO IV	1991.391*	100	193, 591
MO II	1966.348	50	591	MO II	1991.552	10	591
MO II	1967.007	50	343, 591	MO II	1991.940	1	591
MO III	1967.530	40	591	MO II	1992.067	2	343, 591
MO II	1968.583	10	591	MO II	1992.362	50	343, 591
MO II	1968.710	10	591	MO II	1992.903	5	343, 591
MO IV	1969.212	50	591	MO III	1993.942*	200	591
MO II	1969.552	10	343, 591	MO II	1994.214	2	591
MO II	1969.884*	500	343, 591	MO II	1994.446	30	343, 591
MO II	1970.121	20	343, 591	MO IV	1994.669*	100	343, 591

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO	II	1995.154	50	343, 591
MO	II	1996.129*	200	591
MO	II	1996.399*	200	343, 591
MO	II	1996.759	20	591
MO	II	1997.058	20	343, 591
MO	II	1997.544	50	343, 591
MO	II	1998.401	50	343, 591
MO	II	1999.179*	200	591

TECHNETIUM

NO DATA REPORTED

RUTHENIUM

RU	I	I.P.	59410.	K	1683.	A
RU	II	I.P.	135200.	K	739.6	A
RU	III	I.P.	229600.	K	435.5	A

RU	III	845.668	2	301
RU	III	846.568	5	301
RU	III	850.088	25	301
RU	III	850.298	20	301
RU	III	851.275	5	301
RU	III	851.389	1	301
RU	III	852.493	30	301
RU	III	852.882	10	301
RU	III	853.702	10	301
RU	III	854.92	1	301
RU	III	855.170	1	301
RU	III	855.452	0	301
RU	III	856.137	10	301
RU	III	856.316	30	301
RU	III	856.90	1	301
RU	III	859.11	3	301
RU	III	859.20	3	301
RU	III	859.30	3	301
RU	III	859.70	0	301
RU	III	861.846	1	301
RU	III	863.54	1	301
RU	III	863.668	3	301
RU	III	865.80	0	301
RU	III	866.10	0	301
RU	III	866.839	2	301
RU	III	867.23	0	301
RU	III	867.478	20	301
RU	III	867.57	1	301
RU	III	867.960	2	301
RU	III	868.17	1	301
RU	III	868.295	1	301
RU	III	868.683	10	301
RU	III	869.86	0	301
RU	III	870.13	1	301
RU	III	870.89	0	301

SYMBOL		WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU	III	871.135	5	301
RU	III	871.334	3	301
RU	III	871.51	1	301
RU	III	871.71	0	301
RU	III	872.00	2	301
RU	III	872.87	5	301
RU	III	873.093	10	301
RU	III	873.169	10	301
RU	III	873.413	5	301
RU	III	873.530	2	301
RU	III	874.14	10	301
RU	III	874.61	0	301
RU	III	874.94	0	301
RU	III	875.81	0	301
RU	III	876.29	20	301
RU	III	877.36	3	301
RU	III	878.59	1	301
RU	III	879.80	0	301
RU	III	879.92	3	301
RU	III	880.23	2	301
RU	III	881.020	1	301
RU	III	881.53	1	301
RU	III	881.72	1	301
RU	III	882.382	5	301
RU	III	882.680	20	301
RU	III	883.15	0	301
RU	III	883.921	5	301
RU	III	884.980	10	301
RU	III	885.20	0	301
RU	III	886.09	3	301
RU	III	886.29	5	301
RU	III	886.79	0	301
RU	III	887.14	2	301
RU	III	887.501	5	301
RU	III	889.110	5	301
RU	III	890.11	2	301
RU	III	890.21	2	301
RU	III	890.50	0	301
RU	III	890.79	0	301
RU	III	891.12	1	301
RU	III	891.50	2	301
RU	III	891.56	3	301
RU	III	891.90	5	301
RU	III	893.01	3	301
RU	III	893.15	1	301
RU	III	895.81	2	301
RU	III	896.61	1	301
RU	III	896.77	2	301
RU	III	897.17	2	301
RU	III	897.55	15	301
RU	III	897.73	1	301
RU	III	898.43	1	301
RU	III	898.55	1	301
RU	III	899.83	5	301
RU	III	900.16	0	301
RU	III	900.81	3	301
RU	III	901.44	0	301
RU	III	902.21	2	301
RU	III	902.79	1	301
RU	III	902.58	2	301
RU	III	903.07	3	301
RU	III	904.653	3	301
RU	III	906.276	5	301
RU	III	906.508	1	301
RU	III	907.591	0	301
RU	III	908.288	2	301
RU	III	908.758	0	301
RU	III	909.259	0	301
RU	III	909.887	2	301
RU	III	910.107	1	301
RU	III	910.613	0	301
RU	III	911.274	1	301
RU	III	911.692	10	301
RU	III	912.006	5	301
RU	III	912.148	1	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	914.598	10	301	RU III	944.577	1	301
RU III	914.823	0	301	RU III	944.822	20	301
RU III	915.563	0	301	RU III	945.185	2	301
RU III	915.951	1	301	RU III	945.684	100	301
RU III	916.020	1	301	RU III	946.047	75	301
RU III	916.141	30	301	RU III	947.137	30	301
RU III	916.304	0	301	RU III	947.237	10	301
RU III	916.700	5	301	RU III	947.457	1	301
RU III	917.484	1	301	RU III	948.908	20	301
RU III	917.734	1	301	RU III	949.827	50	301
RU III	917.922	1	301	RU III	950.347	10	301
RU III	918.110	100	301	RU III	950.451	30	301
RU III	918.437	1	301	RU III	950.659	10	301
RU III	919.329	1	301	RU III	951.458	5	301
RU III	919.700	10	301	RU III	952.039	5	301
RU III	919.740	100	301	RU III	952.244	15	301
RU III	920.052	3	301	RU III	952.593	30	301
RU III	920.205	1	301	RU III	953.163	5	301
RU III	920.620	15	301	RU III	953.668	10	301
RU III	921.182	2	301	RU III	954.265	2	301
RU III	921.358	1	301	RU III	954.660	1	301
RU III	921.783	75	301	RU III	955.196	2	301
RU III	922.027	50	301	RU III	955.650	2	301
RU III	922.079	1	301	RU III	955.822	30	301
RU III	923.145	1	301	RU III	956.280	0	301
RU III	923.348	1	301	RU III	956.377	30	301
RU III	924.995	10	301	RU III	956.788	10	301
RU III	925.753	10	301	RU III	957.059	50	301
RU III	927.076	1	301	RU III	957.177	50	301
RU III	927.634	10	301	RU III	957.485	2	301
RU III	927.769	2	301	RU III	957.827	2	301
RU III	927.987	10	301	RU III	958.330	50	301
RU III	928.083	100	301	RU III	958.714	20	301
RU III	928.682	15	301	RU III	959.053	30	301
RU III	929.094	5	301	RU III	959.970	5	301
RU III	929.523	3	301	RU III	960.217	1	301
RU III	929.962	2	301	RU III	960.402	10	301
RU III	930.474	2	301	RU III	960.473	2	301
RU III	930.676	0	301	RU III	960.817	10	301
RU III	931.996	5	301	RU III	960.921	2	301
RU III	932.104	2	301	RU III	961.143	1	301
RU III	932.450	10	301	RU III	961.576	20	301
RU III	932.844	3	301	RU III	961.683	200	301
RU III	933.278	1	301	RU III	962.451	30	301
RU III	933.379	1	301	RU III	962.557	30	301
RU III	933.897	5	301	RU III	962.851	10	301
RU III	934.232	10	301	RU III	963.147	10	301
RU III	934.628	1	301	RU III	963.338	20	301
RU III	934.883	2	301	RU III	963.618	10	301
RU III	935.703	5	301	RU III	964.673	1	301
RU III	935.855	5	301	RU III	964.840	2	301
RU III	936.266	20	301	RU III	964.943	2	301
RU III	936.532	1	301	RU III	965.895	1	301
RU III	937.165	100	301	RU III	965.929	1	301
RU III	937.245	5	301	RU III	966.016	1	301
RU III	937.492	2	301	RU III	966.536	200	301
RU III	937.686	10	301	RU III	966.747	30	301
RU III	938.547	1	301	RU III	966.831	1	301
RU III	938.743	2	301	RU III	967.090	100	301
RU III	939.135	3	301	RU III	967.368	0	301
RU III	939.936	2	301	RU III	967.687	15	301
RU III	940.090*	500	301	RU III	967.846	30	301
RU III	940.165	20	301	RU III	967.917	30	301
RU III	940.328	5	301	RU III	968.127	2	301
RU III	940.685	30	301	RU III	968.413	20	301
RU III	941.311	10	301	RU III	968.758	1	301
RU III	941.724	15	301	RU III	969.339	2	301
RU III	941.848	20	301	RU III	969.660	15	301
RU III	942.042	3	301	RU III	969.899	15	301
RU III	942.628	30	301	RU III	970.017	3	301
RU III	943.014	5	301	RU III	970.140	30	301
RU III	943.061	30	301	RU III	970.317	2	301
RU III	943.415	2	301	RU III	970.465	15	301
RU III	944.274	30	301	RU III	970.600	0	301
RU III	944.365	10	301	RU III	971.649	1	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	971.830	50	301	RU III	996.336	30	301
RU III	972.395	50	301	RU III	996.444	3	301
RU III	972.609	5	301	RU III	996.582	10	301
RU III	973.389	3	301	RU III	996.735	5	301
RU III	973.536	15	301	RU III	996.908	20	301
RU III	973.776	20	301	RU III	997.098	1	301
RU III	973.972	10	301	RU III	997.209	20	301
RU III	974.137	30	301	RU III	997.617	2	301
RU III	974.234	3	301	RU III	997.852	50	301
RU III	974.461	30	301	RU III	998.554	30	301
RU III	974.556	0	301	RU III	998.842	50	301
RU III	974.848	0	301	RU III	999.879	20	301
RU III	975.487	15	301	RU III	999.989	10	301
RU III	975.705	3	301	RU III	1000.128	20	301
RU III	975.960	3	301	RU III	1000.719	50	301
RU III	976.247	3	301	RU III	1000.784	30	301
RU III	976.769	2	301	RU III	1000.865	30	301
RU III	977.253	1	301	RU III	1001.059	15	301
RU III	977.510	50	301	RU III	1001.503	20	301
RU III	977.611	15	301	RU III	1001.650	50	301
RU III	978.177	15	301	RU III	1001.990	0	301
RU III	978.260	1	301	RU III	1002.08	0	301
RU III	978.690	10	301	RU III	1002.270	5	301
RU III	978.886	10	301	RU III	1002.365	2	301
RU III	979.428*	500	301	RU III	1002.547	2	301
RU III	980.198	10	301	RU III	1002.66	0	301
RU III	980.582	5	301	RU III	1002.919	15	301
RU III	980.672	10	301	RU III	1003.243	30	301
RU III	981.204	1	301	RU III	1003.318	30	301
RU III	981.350	200	301	RU III	1003.518	5	301
RU III	981.557	2	301	RU III	1003.629	5	301
RU III	982.033	30	301	RU III	1004.293	50	301
RU III	982.758	20	301	RU III	1004.446	2	301
RU III	982.985	20	301	RU III	1004.691	1	301
RU III	983.297	15	301	RU III	1005.235	3	301
RU III	983.807	200	301	RU III	1005.365	30	301
RU III	983.914	200	301	RU III	1005.633	5	301
RU III	984.34	0	301	RU III	1005.730	20	301
RU III	984.644	20	301	RU III	1005.826	5	301
RU III	984.818	20	301	RU III	1006.368	30	301
RU III	985.092	15	301	RU III	1006.900	15	301
RU III	985.262	20	301	RU III	1007.030	20	301
RU III	985.554	100	301	RU III	1007.550	10	301
RU III	986.684	15	301	RU III	1007.655	10	301
RU III	986.838*	500	301	RU III	1007.747	5	301
RU III	987.432	20	301	RU III	1008.165	10	301
RU III	987.870	20	301	RU III	1008.228	2	301
RU III	988.351	2	301	RU III	1008.504	2	301
RU III	989.160	10	301	RU III	1008.676	20	301
RU III	989.333	3	301	RU III	1008.844	20	301
RU III	989.461	5	301	RU III	1009.128	200	301
RU III	989.809	10	301	RU III	1009.668	20	301
RU III	989.934	2	301	RU III	1009.77	10	301
RU III	990.405	1	301	RU III	1009.872*	500	301
RU III	990.531	15	301	RU III	1010.604	1	301
RU III	990.697	15	301	RU III	1010.895	5	301
RU III	990.94	1	301	RU III	1011.716	10	301
RU III	991.44	1	301	RU III	1011.842	50	301
RU III	991.566	15	301	RU III	1011.900	0	301
RU III	991.669	20	301	RU III	1012.402	50	301
RU III	991.789	15	301	RU III	1012.649	1	301
RU III	991.893	5	301	RU III	1013.145	3	301
RU III	992.548	1	301	RU III	1013.208	5	301
RU III	992.647	5	301	RU III	1013.318	2	301
RU III	992.747	50	301	RU III	1013.666	20	301
RU III	993.561	30	301	RU III	1014.042	2	301
RU III	994.048	3	301	RU III	1014.341	5	301
RU III	994.201	3	301	RU III	1014.451	1	301
RU III	994.327	1	301	RU III	1014.570	1	301
RU III	994.557*	500	301	RU III	1014.676*	500	301
RU III	994.931	10	301	RU III	1015.023	75	301
RU III	994.990	2	301	RU III	1015.281	30	301
RU III	995.304	100	301	RU III	1015.593	20	301
RU III	995.670	15	301	RU III	1015.766	15	301
RU III	996.124	10	301	RU III	1015.893	10	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1016.216	1	301	RU III	1045.586	0	301
RU III	1016.448	1	301	RU III	1045.891	1	301
RU III	1016.688	10	301	RU III	1046.172	1	301
RU III	1016.904	10	301	RU III	1046.826	2	301
RU III	1017.374	1	301	RU III	1047.330	20	301
RU III	1017.710	1	301	RU III	1048.190	2	301
RU III	1018.024	20	301	RU III	1048.599	1	301
RU III	1018.124	10	301	RU III	1048.874	2	301
RU III	1018.371	20	301	RU III	1049.826	5	301
RU III	1018.721	100	301	RU III	1050.577	0	301
RU III	1019.088	5	301	RU III	1051.446	30	301
RU III	1019.329	100	301	RU III	1051.801	30	301
RU III	1019.458	30	301	RU III	1052.059	1	301
RU III	1019.597	2	301	RU III	1052.231	0	301
RU III	1020.207	200	301	RU III	1052.648	5	301
RU III	1020.381	30	301	RU III	1053.228	5	301
RU III	1020.766	100	301	RU III	1053.713	1	301
RU III	1021.029	15	301	RU III	1053.869	2	301
RU III	1021.437	50	301	RU III	1054.325	15	301
RU III	1021.975	15	301	RU II	1054.684	10	675
RU III	1022.201	20	301	RU III	1055.068	0	301
RU III	1022.844	10	301	RU III	1055.203	5	301
RU III	1023.104	30	301	RU III	1056.012	5	301
RU III	1023.261	30	301	RU III	1056.394	1	301
RU III	1023.383	1	301	RU III	1057.184	0	301
RU III	1023.968	20	301	RU III	1057.622	1	301
RU III	1024.019	10	301	RU III	1057.817	0	301
RU III	1024.407	1	301	RU III	1060.122	0	301
RU III	1024.589	10	301	RU III	1060.208	1	301
RU III	1024.705	1	301	RU III	1060.628	1	301
RU III	1024.818	15	301	RU III	1061.179	1	301
RU III	1025.012	0	301	RU III	1063.524	30	301
RU III	1025.108	0	301	RU III	1064.343	30	301
RU III	1025.325	1	301	RU III	1064.898	1	301
RU III	1026.446	5	301	RU III	1065.086	2	301
RU III	1026.751	20	301	RU III	1065.445	3	301
RU III	1026.942	30	301	RU III	1065.835	30	301
RU III	1027.328	30	301	RU III	1066.106	1	301
RU III	1027.871	30	301	RU II	1069.266	10	675
RU III	1028.491	3	301	RU III	1069.639	15	301
RU III	1029.614	3	301	RU III	1069.705	30	301
RU III	1029.772	2	301	RU III	1070.800	5	301
RU III	1030.222	3	301	RU III	1070.989	0	301
RU III	1030.397	30	301	RU III	1072.723	1	301
RU III	1030.886	10	301	RU III	1072.860	2	301
RU III	1031.19	15	301	RU III	1073.152	5	301
RU III	1031.503	2	301	RU III	1074.862	15	301
RU III	1031.989	2	301	RU III	1075.140	0	301
RU III	1032.231	15	301	RU III	1075.501	0	301
RU III	1032.451	2	301	RU III	1075.656	0	301
RU III	1033.076	15	301	RU III	1076.526	10	301
RU III	1033.791	15	301	RU III	1076.621	2	301
RU III	1034.520	1	301	RU III	1077.080	5	301
RU III	1034.914	1	301	RU III	1077.521	10	301
RU III	1035.530	15	301	RU III	1077.779	1	301
RU III	1035.687	50	301	RU III	1078.121	10	301
RU III	1037.270	5	301	RU III	1078.229	30	301
RU III	1037.675	2	301	RU III	1078.535	1	301
RU III	1037.909	5	301	RU III	1079.091	3	301
RU III	1038.039	15	301	RU III	1079.276	5	301
RU III	1038.524	1	301	RU III	1079.717	2	301
RU III	1039.680	10	301	RU III	1079.997	200	301
RU III	1040.473	0	301	RU II	1080.945	0	675
RU III	1040.691	5	301	RU III	1081.925	2	301
RU III	1040.714	2	301	RU III	1083.206	0	301
RU III	1042.252	2	301	RU II	1083.701	2	675
RU III	1042.573	1	301	RU III	1084.291	5	301
RU III	1043.198	0	301	RU III	1085.299	10	301
RU III	1043.352	3	301	RU III	1085.793	100	301
RU III	1043.445	3	301	RU III	1086.591	0	301
RU III	1043.649	2	301	RU III	1087.366	2	301
RU III	1043.844	5	301	RU III	1087.980	5	301
RU III	1044.521	3	301	RU III	1088.799	1	301
RU III	1045.169	3	301	RU III	1089.069	5	301
RU III	1045.349	10	301	RU III	1089.250	10	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1089.705	2	301	RU III	1133.461	5	301
RU III	1091.995	1	301	RU III	1133.659	3	301
RU III	1093.023	1	301	RU III	1133.792	3	301
RU II	1093.505	15	675	RU III	1135.807	0	301
RU III	1094.632	10	301	RU III	1136.547	1	301
RU III	1095.869	3	301	RU III	1137.533	5	301
RU III	1096.007	3	301	RU III	1137.746	5	301
RU III	1098.895	5	301	RU III	1138.667	1	301
RU III	1099.592	3	301	RU III	1138.946	5	301
RU III	1099.754	10	301	RU III	1139.086	5	301
RU III	1100.801	2	301	RU III	1140.474	5	301
RU III	1100.930	2	301	RU III	1140.624	5	301
RU III	1101.285	0	301	RU III	1140.984	2	301
RU III	1102.290	30	301	RU III	1141.123	0	301
RU III	1102.571	0	301	RU III	1141.373	2	301
RU III	1102.845	15	301	RU III	1141.610	5	301
RU II	1103.223	10	675	RU III	1142.170	1	301
RU III	1103.960	5	301	RU III	1142.505	2	301
RU III	1104.048	5	301	RU III	1144.948	2	301
RU III	1104.196	5	301	RU III	1145.115	10	301
RU III	1104.576	5	301	RU III	1146.127	5	301
RU II	1105.125	15	675	RU III	1146.425	5	301
RU III	1105.729	1	301	RU III	1146.729	3	301
RU III	1106.305	5	301	RU III	1146.835	3	301
RU III	1106.615	5	301	RU III	1147.565	2	301
RU III	1107.038	5	301	RU III	1148.306	2	301
RU III	1107.310	2	301	RU III	1148.752	2	301
RU III	1107.604	10	301	RU III	1151.299	1	301
RU III	1107.834	2	301	RU III	1151.570	1	301
RU III	1108.143	1	301	RU III	1151.713	3	301
RU III	1108.285	10	301	RU III	1152.317	5	301
RU III	1108.727	2	301	RU III	1152.583	2	301
RU III	1108.856	5	301	RU III	1152.682	2	301
RU II	1109.227	10	675	RU II	1153.309	1	675
RU III	1109.952	3	301	RU III	1154.260	5	301
RU III	1110.104	1	301	RU III	1154.471	10	301
RU III	1110.236	1	301	RU III	1154.735	2	301
RU III	1110.974	1	301	RU III	1154.834	1	301
RU III	1111.248	10	301	RU III	1156.344	0	301
RU III	1111.351	10	301	RU III	1156.448	0	301
RU III	1111.461	5	301	RU III	1156.857	2	301
RU III	1111.732	10	301	RU III	1157.472	0	301
RU III	1112.040	3	301	RU III	1157.698	5	301
RU III	1112.198	3	301	RU III	1158.477	2	301
RU III	1112.891	5	301	RU III	1160.268	5	301
RU III	1113.213	3	301	RU III	1160.633	3	301
RU III	1116.203	3	301	RU III	1160.789	1	301
RU III	1117.204	3	301	RU III	1160.931	10	301
RU III	1117.287	2	301	RU III	1161.379	1	301
RU III	1118.129	10	301	RU III	1162.543	5	301
RU III	1118.934	3	301	RU III	1163.098	1	301
RU III	1119.185	5	301	RU III	1163.178	1	301
RU III	1119.330	1	301	RU III	1163.753	2	301
RU III	1119.491	5	301	RU III	1164.085	0	301
RU III	1119.798	3	301	RU III	1164.736	3	301
RU III	1120.059	1	301	RU III	1165.128	3	301
RU III	1120.445	0	301	RU III	1165.242	2	301
RU III	1122.166	3	301	RU III	1165.468	1	301
RU III	1122.642	2	301	RU III	1165.719	2	301
RU III	1123.340	10	301	RU III	1166.463	2	301
RU III	1123.983	1	301	RU III	1166.691	5	301
RU III	1124.550	0	301	RU III	1166.954	0	301
RU III	1124.677	1	301	RU III	1168.993	5	301
RU III	1125.196	0	301	RU III	1169.647	2	301
RU III	1125.388	3	301	RU III	1170.556	2	301
RU III	1127.610	2	301	RU III	1171.096	5	301
RU III	1128.138	10	301	RU III	1171.762	15	301
RU III	1128.543	15	301	RU III	1171.933	5	301
RU III	1128.716	2	301	RU III	1172.195	0	301
RU III	1129.086	2	301	RU III	1172.576	5	301
RU III	1130.524	0	301	RU III	1174.497	3	301
RU III	1130.813	1	301	RU III	1174.678	20	301
RU III	1130.963	10	301	RU III	1176.951	30	301
RU III	1131.194	3	301	RU III	1177.501	5	301
RU III	1131.353	1	301	RU III	1178.312	1	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1179.372	20	301	RU II	1242.356	3	675
RU III	1180.318	1	301	RU III	1242.508	15	301
RU III	1181.550	2	301	RU II	1243.176	5	675
RU III	1181.774	1	301	RU III	1244.095	2	301
RU III	1181.993	1	301	RU III	1244.624	2	301
RU III	1182.475	3	301	RU III	1244.858	5	301
RU III	1182.625	2	301	RU II	1245.657	50	675
RU III	1184.366	100	301	RU II	1246.887	50	675
RU III	1185.178	2	301	RU II	1249.774	15	675
RU III	1185.651	0	301	RU II	1250.171	3	675
RU III	1186.388	5	301	RU II	1250.340	20	675
RU III	1186.779	1	301	RU II	1251.174	5	675
RU III	1187.636	50	301	RU II	1251.582	15	675
RU III	1187.784	1	301	RU II	1252.789	50	675
RU III	1188.125	1	301	RU II	1253.419	50	675
RU III	1188.729	1	301	RU II	1253.622	50	675
RU II	1190.243	100	675	RU II	1254.717	20	675
RU II	1190.302	10	675	RU II	1255.329	30	675
RU III	1190.510*	800	301	RU II	1255.430	10	675
RU III	1190.782	10	301	RU II	1256.082	2	675
RU III	1191.708	1	301	RU II	1256.898	2	675
RU II	1195.261	10	675	RU II	1257.443	40	675
RU II	1196.983	10	675	RU II	1258.127	15	675
RU II	1197.511	2	675	RU II	1258.351	20	675
RU III	1197.674	0	301	RU II	1259.038	10	675
RU III	1198.704	1	301	RU II	1259.539	15	675
RU III	1200.067*	500	301	RU II	1260.502	50	675
RU III	1201.458	10	301	RU II	1260.817	20	675
RU III	1201.735	10	301	RU II	1261.418	20	675
RU III	1202.363	2	301	RU III	1262.217	5	301
RU III	1202.486	1	301	RU II	1262.688	10	675
RU II	1202.726	5	675	RU II	1263.172	5	675
RU III	1204.567	100	301	RU II	1263.396	10	675
RU III	1204.876	200	301	RU II	1263.537	30	675
RU II	1204.995	30	675	RU II	1263.848	3	675
RU II	1205.200	15	675	RU II	1264.726	100	675
RU II	1206.195	10	675	RU II	1265.944	15	675
RU III	1207.173*	500	301	RU II	1266.010	10	675
RU II	1207.811	50	675	RU II	1266.099	15	675
RU III	1208.067	3	301	RU II	1267.348	20	675
RU III	1209.030	30	301	RU II	1267.674	10	675
RU III	1209.774*	500	301	RU II	1268.046	2	675
RU III	1210.083	1	301	RU II	1268.497	3	675
RU III	1211.306	300	301	RU II	1268.776	2	675
RU II	1213.028	10	675	RU II	1269.324	50	675
RU II	1213.644	5	675	RU II	1270.911	15	675
RU II	1213.863	10	675	RU II	1271.528	5	675
RU III	1214.388	30	301	RU II	1271.653	3	675
RU III	1216.238	10	301	RU II	1271.775	30	675
RU III	1217.000	10	301	RU II	1271.921	15	675
RU III	1218.966	1	301	RU II	1273.192	5	675
RU III	1221.079	1	301	RU II	1273.344	200	675
RU II	1222.201	5	675	RU II	1278.543	300	675
RU II	1223.684	3	675	RU II	1280.736	30	675
RU III	1224.303	1	301	RU II	1281.079	3	675
RU III	1225.460	10	301	RU II	1281.183	5	675
RU II	1226.736	10	675	RU II	1281.419	20	675
RU II	1226.867	5	675	RU II	1282.159	5	675
RU II	1227.101	50	675	RU III	1282.807	2	301
RU II	1228.255	20	675	RU II	1283.769	5	675
RU III	1229.748	0	301	RU II	1283.981	5	675
RU III	1230.164	20	301	RU II	1284.292	1	675
RU III	1232.571	200	301	RU II	1285.006	5	675
RU II	1232.809	10	675	RU II	1285.528	50	675
RU II	1234.347	100	675	RU II	1285.811	2	675
RU II	1234.834	3	675	RU II	1285.923	5	675
RU II	1235.247	10	675	RU II	1286.574	10	675
RU III	1236.795	1	301	RU II	1287.965	20	675
RU III	1236.985	0	301	RU II	1288.658	15	675
RU II	1239.289	10	675	RU II	1288.884	5	675
RU II	1239.467	100	675	RU II	1290.177	15	675
RU II	1239.879	50	675	RU II	1290.780	50	675
RU II	1240.647	20	675	RU II	1291.757	5	675
RU II	1241.920	3	675	RU II	1293.009	15	675
RU III	1242.153	20	301	RU II	1295.920	10	675

SECTION III EMISSION LINES BY ELEMENT

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1296.239	10	675	RU II	1392.145	5	675
RU II	1296.425	50	675	RU II	1393.535	20	675
RU II	1306.874	5	675	RU III	1394.09	7	301
RU II	1307.325	5	675	RU III	1394.85	15	301
RU II	1307.494	5	675	RU II	1396.162	1	675
RU II	1307.662	10	675	RU III	1396.30	1	301
RU II	1308.162	10	675	RU III	1397.10	1	301
RU II	1308.656	5	675	RU II	1398.472	2	675
RU III	1309.29	0	301	RU II	1399.427	5	675
RU III	1310.79	1	301	RU III	1399.65	2	301
RU II	1311.302	2	675	RU III	1400.31	2	301
RU II	1312.099	20	675	RU III	1403.73	2	301
RU II	1312.551	10	675	RU III	1404.77	2	301
RU II	1313.384	50	675	RU II	1405.338	50	675
RU II	1314.306	0	675	RU III	1408.27	5	301
RU II	1314.886	5	675	RU III	1409.28	5	301
RU II	1315.624	2	675	RU III	1409.75	5	301
RU II	1315.949	1	675	RU III	1409.97	1	301
RU II	1316.573	50	675	RU II	1411.991	10	675
RU II	1318.740	20	675	RU II	1412.206	50	675
RU III	1318.77	0	301	RU II	1413.017	100	675
RU II	1320.043	1	675	RU II	1415.500	5	675
RU II	1321.495	2	675	RU II	1415.678	5	675
RU II	1324.775	10	675	RU II	1416.358	10	675
RU II	1324.654	1	675	RU II	1418.299	1	675
RU II	1326.118	3	675	RU II	1418.909	2	675
RU II	1326.318	10	675	RU III	1420.27	30	301
RU II	1327.776	5	675	RU II	1420.606	100	675
RU II	1329.403	1	675	RU III	1420.80	5	301
RU II	1329.583	2	675	RU II	1421.828	5	675
RU II	1329.836	1	675	RU II	1422.661	3	675
RU II	1333.018	1	675	RU II	1423.056	2	675
RU II	1334.830	1	675	RU II	1424.039	10	675
RU II	1335.008	3	675	RU II	1424.272	5	675
RU II	1336.023	5	675	RU II	1424.934	50	675
RU III	1337.31	2	301	RU II	1426.391	2	675
RU III	1337.53	2	301	RU II	1426.503	5	675
RU II	1338.388	20	675	RU II	1426.706	3	675
RU II	1339.517	10	675	RU II	1427.890	3	675
RU II	1340.165	8	675	RU II	1427.964	5	675
RU II	1340.590	15	675	RU II	1428.751	100	675
RU II	1340.754	50	675	RU II	1429.002	30	675
RU II	1341.649	10	675	RU II	1429.348	0	675
RU II	1342.358	50	675	RU II	1431.278	2	675
RU II	1342.798	10	675	RU II	1431.606	1	675
RU II	1346.839	3	675	RU II	1431.705	1	675
RU III	1347.21	5	301	RU II	1431.819	1	675
RU II	1348.385	200	675	RU III	1432.30	1	301
RU III	1349.78	0	301	RU II	1433.294	2	675
RU III	1349.94	2	301	RU III	1433.45	1	301
RU II	1350.856	15	675	RU III	1433.76	0	301
RU II	1351.857	3	675	RU III	1433.86	1	301
RU III	1352.77	1	301	RU III	1433.99	1	301
RU II	1353.907	15	675	RU II	1434.330	30	675
RU II	1354.835	10	675	RU II	1435.085	20	675
RU II	1357.221	2	675	RU II	1435.286	20	675
RU II	1357.524	2	675	RU II	1437.460	50	675
RU II	1360.634	5	675	RU II	1437.839	50	675
RU II	1360.888	2	675	RU II	1439.001	1	675
RU II	1362.346	2	675	RU II	1440.514	30	675
RU II	1364.284	3	675	RU II	1440.820	5	675
RU III	1364.99	1	301	RU II	1441.012	5	675
RU II	1365.465	20	675	RU II	1441.268	5	675
RU II	1366.434	5	675	RU II	1441.344	5	675
RU III	1367.51	1	301	RU II	1442.147	30	675
RU II	1368.503	5	675	RU II	1442.373	3	675
RU II	1369.106	50	675	RU II	1444.144	50	675
RU II	1369.852	30	675	RU II	1444.645	15	675
RU II	1376.344	1	675	RU III	1444.99	1	301
RU II	1381.703	2	675	RU II	1445.491	15	675
RU II	1382.354	2	675	RU II	1445.552	30	675
RU II	1384.134	3	675	RU II	1446.144	3	675
RU II	1385.133	10	675	RU II	1447.084	2	675
RU II	1386.015	3	675	RU II	1447.292	2	675
RU II	1388.640	5	675	RU II	1447.776	10	675

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1449.323	15	675	RU II	1484.513	1	675
RU II	1449.705	2	675	RU II	1485.568	2	675
RU II	1449.955	2	675	RU II	1486.006	15	675
RU II	1450.177	10	675	RU II	1486.468	1	675
RU II	1450.466	10	675	RU II	1486.957*	500	675
RU II	1450.623	1	675	RU II	1487.138	1	675
RU II	1451.033	1	675	RU II	1487.417	10	675
RU II	1451.224	100	675	RU II	1487.688	5	675
RU II	1451.505	5	675	RU II	1487.857	2	675
RU II	1451.985	3	675	RU II	1487.992	1	675
RU II	1452.288	10	675	RU II	1488.402	2	675
RU II	1452.598	2	675	RU II	1488.618*	200	675
RU II	1452.860	10	675	RU II	1488.855*	1000	675
RU II	1453.443	5	675	RU II	1489.136*	500	675
RU II	1453.633	3	675	RU II	1489.734	20	675
RU II	1454.666	15	675	RU II	1490.707	100	675
RU III	1455.18	3	301	RU II	1491.224	5	675
RU II	1455.950	2	675	RU II	1491.497	5	675
RU II	1457.220	3	675	RU II	1492.355	30	675
RU II	1458.491	30	675	RU II	1493.188	10	675
RU II	1458.721	20	675	RU II	1493.450	2	675
RU II	1459.028	40	675	RU II	1494.524*	500	675
RU II	1459.416	5	675	RU II	1495.810	5	675
RU II	1459.974	5	675	RU II	1498.289	50	675
RU II	1461.222	5	675	RU II	1498.841	0	675
RU II	1461.699	50	675	RU II	1499.104	2	675
RU II	1462.437	30	675	RU II	1499.759	0	675
RU II	1462.619	2	675	RU II	1501.216	2	675
RU II	1463.215	100	675	RU II	1501.558	2	675
RU II	1463.515	30	675	RU II	1502.383	2	675
RU II	1464.022	50	675	RU II	1502.596	1	675
RU II	1464.426	0	675	RU II	1502.802	30	675
RU II	1464.855	15	675	RU II	1503.401	30	675
RU II	1465.195	1	675	RU II	1504.724	1	675
RU II	1466.039	50	675	RU II	1504.855	0	675
RU II	1467.127	15	675	RU II	1505.128	0	675
RU II	1467.723	30	675	RU II	1505.610	20	675
RU II	1467.933	30	675	RU II	1506.515	50	675
RU II	1467.977	100	675	RU II	1507.077	0	675
RU II	1468.158	30	675	RU II	1507.429	100	675
RU II	1468.660	10	675	RU II	1508.001	0	675
RU II	1468.725	10	675	RU II	1509.432	40	675
RU II	1468.909	200	675	RU II	1511.523	1	675
RU II	1469.805	2	675	RU II	1512.325	30	675
RU II	1469.941	100	675	RU II	1512.483	40	675
RU II	1470.674	1	675	RU II	1513.345	2	675
RU II	1470.854	1	675	RU II	1513.495	0	675
RU II	1471.057	1	675	RU II	1514.008	0	675
RU II	1471.220	10	675	RU II	1514.564	30	675
RU II	1471.328	10	675	RU II	1514.850	1	675
RU II	1471.632	2	675	RU II	1515.062	0	675
RU II	1471.735	1	675	RU II	1515.459	0	675
RU II	1471.828	1	675	RU II	1515.791	0	675
RU II	1472.234	3	675	RU II	1516.256	30	675
RU II	1472.717*	500	675	RU II	1518.374	2	675
RU II	1473.151*	400	675	RU II	1519.486	0	675
RU II	1473.739	3	675	RU II	1520.294	2	675
RU II	1473.860	2	675	RU II	1520.406	10	675
RU II	1473.999	3	675	RU II	1520.765	3	675
RU II	1475.361	50	675	RU II	1520.961	10	675
RU II	1477.025	50	675	RU II	1521.238	25	675
RU II	1477.269	1	675	RU II	1522.786	2	675
RU II	1477.632	100	675	RU II	1522.981	2	675
RU II	1478.021	30	675	RU II	1523.408	5	675
RU II	1478.960	1	675	RU II	1524.606	3	675
RU II	1479.089	1	675	RU II	1524.937	15	675
RU II	1479.242	50	675	RU II	1525.464	10	675
RU II	1479.732	15	675	RU II	1526.071	10	675
RU II	1479.858	2	675	RU II	1526.712	1	675
RU II	1480.004	5	675	RU II	1527.350	1	675
RU II	1481.435	100	675	RU II	1527.813	30	675
RU II	1482.193	10	675	RU II	1528.903	5	675
RU II	1483.033	1	675	RU II	1529.395	3	675
RU II	1483.276	2	675	RU II	1529.942	2	675
RU II	1484.035	300	675	RU II	1530.415	10	675

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1530.762	5	675	RU II	1578.728	30	675
RU II	1531.113	0	675	RU II	1579.578	10	675
RU III	1531.43	1	301	RU II	1580.816	10	675
RU II	1533.236	10	675	RU II	1580.974	1	675
RU II	1533.435	10	675	RU II	1581.328	15	675
RU II	1534.587	15	675	RU II	1581.636	10	675
RU II	1534.860	20	675	RU II	1581.791	5	675
RU II	1535.055	10	675	RU II	1582.652	10	675
RU II	1535.426	50	675	RU II	1582.903	1	675
RU II	1536.603	5	675	RU II	1583.819	200	675
RU II	1537.057	3	675	RU II	1584.256	30	675
RU II	1537.806	20	675	RU II	1585.040	50	675
RU II	1538.624	30	675	RU II	1585.740	30	675
RU II	1539.478	1	675	RU II	1585.965	15	675
RU II	1541.167	5	675	RU III	1586.56	1	301
RU II	1541.718	15	675	RU II	1586.945	1	675
RU II	1542.188	15	675	RU II	1587.517	5	675
RU II	1542.293	15	675	RU II	1587.852	1	675
RU II	1542.044	1	675	RU II	1588.797	5	675
RU II	1543.042	10	675	RU II	1589.645	15	675
RU II	1543.299	5	675	RU III	1590.20	5	301
RU II	1544.414	30	675	RU II	1590.774	30	675
RU II	1545.152	15	675	RU II	1590.882	30	675
RU II	1545.961	15	675	RU II	1591.744	15	675
RU II	1547.756	30	675	RU III	1592.47	0	301
RU II	1547.856	1	675	RU II	1593.403	40	675
RU II	1548.679	10	675	RU II	1594.398	30	675
RU II	1549.571	15	675	RU II	1594.603	30	675
RU II	1550.065	2	675	RU III	1596.03	1	301
RU II	1550.640	3	675	RU II	1596.482	10	675
RU II	1550.740	30	675	RU II	1597.172	1	675
RU III	1551.69	0	301	RU II	1597.890	0	675
RU III	1551.87	0	301	RU II	1598.491	20	675
RU III	1552.49	1	301	RU III	1598.70	10	301
RU II	1553.141	5	675	RU II	1599.309	15	675
RU II	1553.532	0	675	RU II	1599.937	10	675
RU II	1553.777	0	675	RU II	1600.183	30	675
RU II	1554.334	5	675	RU II	1602.095	100	675
RU III	1556.03	30	301	RU II	1602.447	1	675
RU III	1556.51	3	301	RU II	1602.653	15	675
RU III	1556.70	3	301	RU II	1603.572	10	675
RU III	1557.76	5	301	RU III	1603.84	10	301
RU II	1558.655	3	675	RU II	1604.029	30	675
RU III	1560.10	10	301	RU II	1604.405	100	675
RU II	1560.998	50	675	RU II	1604.767	1	675
RU II	1561.603	5	675	RU II	1605.111	20	675
RU II	1562.607	30	675	RU II	1605.616	15	675
RU II	1562.726	20	675	RU II	1605.787	30	675
RU II	1563.928	15	675	RU III	1606.92	0	301
RU III	1564.18	2	301	RU III	1607.27	1	301
RU II	1564.620	0	675	RU II	1608.733	5	675
RU II	1565.029	1	675	RU III	1609.36	5	301
RU II	1566.128	100	675	RU III	1610.06	30	301
RU III	1566.52	0	301	RU II	1610.372	10	675
RU II	1566.965	20	675	RU II	1610.465	10	675
RU II	1567.308	50	675	RU II	1611.415	50	675
RU II	1567.656	15	675	RU III	1612.56	1	301
RU II	1568.525	3	675	RU III	1612.89	0	301
RU II	1568.933	3	675	RU II	1613.158	1	675
RU II	1569.316	3	675	RU II	1613.685	3	675
RU II	1570.104	15	675	RU II	1615.064	20	675
RU II	1570.371	30	675	RU II	1615.267	20	675
RU II	1571.280	20	675	RU II	1615.656	1	675
RU II	1571.671	1	675	RU III	1616.94	5	301
RU II	1572.089	20	675	RU II	1617.663	15	675
RU II	1573.129	1	675	RU II	1618.781	1	675
RU II	1573.407	2	675	RU II	1618.986	1	675
RU II	1573.639	3	675	RU II	1619.365	20	675
RU II	1574.337*	500	675	RU III	1619.77	30	301
RU II	1575.127	1	675	RU II	1620.102	20	675
RU III	1575.44	1	301	RU II	1620.865	30	675
RU II	1576.971	15	675	RU II	1621.445	5	675
RU II	1577.115	1	675	RU II	1621.728	5	675
RU II	1577.573	10	675	RU II	1622.431	20	675
RU II	1577.816	20	675	RU II	1623.231	20	675

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1623.390	20	675	RU III	1664.72	5	301
RU III	1623.97	1	301	RU III	1664.85	5	301
RU III	1624.29	0	301	RU III	1665.01	3	301
RU II	1624.563	1	675	RU III	1666.02	10	301
RU III	1624.79	3	301	RU II	1666.312	10	675
RU III	1624.91	3	301	RU II	1667.426	2	675
RU II	1625.178	100	675	RU II	1667.912	3	675
RU II	1625.565	50	675	RU III	1668.33	2	301
RU III	1625.92	1	301	RU III	1669.77	1	301
RU III	1626.23	5	301	RU III	1669.91	2	301
RU III	1626.64	3	301	RU II	1670.788	3	675
RU II	1627.138	50	675	RU II	1671.412	5	675
RU II	1627.397	100	675	RU II	1671.819	0	675
RU III	1627.98	15	301	RU II	1672.225	30	675
RU II	1628.541	10	675	RU II	1672.445	5	675
RU III	1628.97	10	301	RU III	1672.83	1	301
RU II	1629.092	15	675	RU III	1672.95	1	301
RU II	1629.721	5	675	RU III	1673.12	1	301
RU III	1630.25	1	301	RU III	1674.66	5	301
RU II	1631.284	15	675	RU III	1674.91	3	301
RU II	1632.321	30	675	RU III	1676.68	5	301
RU III	1632.73	20	301	RU II	1676.922	3	675
RU III	1633.28	3	301	RU II	1678.781	2	675
RU III	1633.802	10	675	RU II	1679.620	30	675
RU III	1634.05	20	301	RU III	1680.22	15	301
RU III	1634.13	30	301	RU III	1680.64	20	301
RU III	1634.99	15	301	RU III	1682.23	8	301
RU II	1635.129	30	675	RU III	1683.15	0	301
RU II	1635.333	50	675	RU III	1683.62	1	301
RU III	1635.47	10	301	RU III	1683.62	3	301
RU II	1635.948	100	675	RU II	1683.985	50	675
RU III	1636.40	1	301	RU II	1684.311	1	675
RU III	1636.94	3	301	RU III	1685.07	3	301
RU II	1637.446	30	675	RU III	1685.37	1	301
RU II	1637.591	40	675	RU III	1685.64	5	301
RU II	1638.366	20	675	RU II	1686.161	15	675
RU II	1639.209	15	675	RU II	1686.691	100	675
RU II	1639.371	20	675	RU III	1687.06	2	301
RU II	1639.530	15	675	RU II	1688.357	10	675
RU II	1639.963	5	675	RU III	1689.87	3	301
RU II	1640.756	2	675	RU III	1690.81	2	301
RU II	1641.460	100	675	RU III	1691.55	2	301
RU III	1642.20	0	301	RU III	1692.00	0	301
RU III	1642.63	1	301	RU II	1692.828	1	675
RU II	1643.312	10	675	RU III	1693.81	5	301
RU III	1643.65	5	301	RU III	1694.18	1	301
RU III	1643.92	10	301	RU II	1694.677	2	675
RU II	1644.914	15	675	RU III	1695.99	2	301
RU III	1645.37	30	301	RU III	1697.27	30	301
RU II	1645.706	10	675	RU III	1697.81	10	301
RU II	1647.615	20	675	RU II	1697.943	20	675
RU II	1647.913	5	675	RU III	1698.29	10	301
RU II	1648.069	15	675	RU III	1699.04	10	301
RU II	1650.327	3	675	RU II	1699.442	20	675
RU III	1651.08	10	301	RU III	1699.84	200	301
RU II	1651.898	30	675	RU III	1700.42	50	301
RU III	1652.68	10	301	RU II	1701.080	30	675
RU III	1653.59	10	301	RU II	1702.061	3	675
RU III	1653.77	100	301	RU III	1702.34	3	301
RU III	1654.97	5	301	RU III	1702.88	50	301
RU III	1655.95	30	301	RU III	1703.29	50	301
RU III	1656.49	5	301	RU II	1703.562	50	675
RU II	1657.217	30	675	RU II	1703.818	10	675
RU II	1657.617	1	675	RU III	1704.34	3	301
RU II	1658.457	10	675	RU III	1704.69	5	301
RU III	1658.71	1	301	RU III	1704.79	2	301
RU II	1659.364	100	675	RU II	1705.263	5	675
RU II	1659.871	0	675	RU II	1705.572	2	675
RU II	1660.059	2	675	RU II	1705.735	1	675
RU III	1661.73	5	301	RU II	1705.840	1	675
RU II	1662.684	0	675	RU II	1707.608	10	675
RU III	1662.85	3	301	RU II	1708.620	15	675
RU III	1662.99	3	301	RU II	1710.299	20	675
RU III	1663.86	0	301	RU III	1710.61	5	301
RU III	1664.38	5	301	RU III	1712.10	10	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1712.21	5	301	RU III	1760.37	5	301
RU II	1712.456	20	675	RU II	1761.030	20	675
RU III	1712.66	5	301	RU II	1761.580	15	675
RU III	1712.88	5	301	RU III	1761.96	10	301
RU III	1713.22	3	301	RU II	1763.996	1	675
RU III	1713.46	2	301	RU III	1764.17	1	301
RU III	1713.70	3	301	RU II	1764.829	0	675
RU II	1714.667	3	675	RU II	1765.525	20	675
RU III	1715.97	100	301	RU II	1768.666	20	675
RU III	1716.41	3	301	RU II	1770.160	5	675
RU III	1716.56	1	301	RU II	1770.446	15	675
RU III	1716.92	5	301	RU III	1771.49	20	301
RU III	1717.38	2	301	RU III	1772.37	50	301
RU III	1717.97	5	301	RU III	1773.40	5	301
RU III	1718.17	1	301	RU II	1776.061	50	675
RU III	1718.40	3	301	RU II	1777.432	5	675
RU II	1718.975	20	675	RU II	1778.206	10	675
RU III	1719.47	50	301	RU II	1779.124	5	675
RU III	1719.68	10	301	RU II	1779.420	0	675
RU III	1719.77	5	301	RU II	1780.057	0	675
RU III	1720.02	3	301	RU III	1780.54	20	301
RU III	1720.29	10	301	RU II	1781.407	0	675
RU II	1721.171	10	675	RU II	1781.792	5	675
RU II	1721.712	15	675	RU III	1782.49	5	301
RU II	1721.778	15	675	RU II	1784.167	0	675
RU III	1722.32	10	301	RU III	1785.70	15	301
RU III	1722.73	10	301	RU II	1786.032	20	675
RU III	1723.38	50	301	RU II	1786.155	1	675
RU III	1724.09	3	301	RU II	1786.347	2	675
RU III	1724.23	10	301	RU III	1787.00	15	301
RU III	1725.13	30	301	RU II	1787.233	10	675
RU III	1726.13	10	301	RU II	1787.770	1	675
RU III	1727.34	5	301	RU II	1789.383	1	675
RU III	1727.77	1	301	RU III	1790.25	5	301
RU II	1729.417	5	675	RU II	1791.253	20	675
RU III	1730.55	1	301	RU II	1791.560	20	675
RU II	1731.110	1	675	RU II	1792.072	2	675
RU II	1731.415	50	675	RU III	1793.21	2	301
RU II	1732.209	10	675	RU III	1793.68	2	301
RU II	1733.537	20	675	RU III	1793.94	1	301
RU II	1734.069	5	675	RU III	1794.95	5	301
RU II	1735.654	15	675	RU III	1795.12	5	301
RU III	1735.94	2	301	RU III	1795.52	20	301
RU III	1736.06	3	301	RU III	1796.25	5	301
RU III	1736.27	3	301	RU III	1796.47	15	301
RU II	1737.389	10	675	RU II	1797.118	1	675
RU II	1738.666	15	675	RU II	1799.549	10	675
RU II	1740.114	15	675	RU II	1800.470	15	675
RU II	1741.262	20	675	RU III	1800.83	5	301
RU III	1741.98	20	301	RU III	1801.04	5	301
RU III	1742.46	5	301	RU III	1804.39	50	301
RU II	1743.514	1	675	RU III	1804.72	1	301
RU III	1744.35	20	301	RU II	1806.599	15	675
RU III	1744.45	50	301	RU II	1807.658	5	675
RU III	1744.72	20	301	RU III	1808.00	10	301
RU II	1746.446	30	675	RU III	1808.37	0	301
RU III	1747.36	3	301	RU III	1808.51	0	301
RU II	1747.804	3	675	RU III	1808.75	0	301
RU II	1748.310	1	675	RU III	1808.90	0	301
RU II	1748.441	0	675	RU III	1809.21	3	301
RU III	1749.16	2	301	RU III	1809.98	3	301
RU II	1750.239	3	675	RU III	1810.25	1	301
RU III	1751.30	20	301	RU III	1810.75	3	301
RU II	1752.835	1	675	RU III	1811.34	15	301
RU II	1753.173	1	675	RU III	1811.42	15	301
RU II	1753.441	30	675	RU III	1811.78	1	301
RU III	1754.33	1	301	RU III	1811.97	10	301
RU II	1754.756	5	675	RU II	1813.558	5	675
RU II	1755.728	5	675	RU III	1814.65	2	301
RU II	1757.854	10	675	RU III	1815.11	2	301
RU III	1758.71	5	301	RU III	1815.69	3	301
RU III	1759.49	200	301	RU II	1816.030	5	675
RU II	1759.769	3	675	RU III	1817.79	2	301
RU III	1759.91	2	301	RU II	1818.527	3	675
RU III	1760.12	1	301	RU II	1818.724	20	675

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1819.125	30	675	RU III	1882.19	5	301
RU II	1819.852	3	675	RU III	1882.52	1	301
RU II	1820.059	5	675	RU III	1882.860	5	301
RU II	1820.999	2	675	RU II	1883.220	5	675
RU II	1822.238	1	675	RU III	1883.56	100	301
RU II	1822.427	1	675	RU II	1884.154	10	675
RU III	1823.22	10	301	RU II	1884.484	15	675
RU II	1824.619	10	675	RU II	1884.801	15	675
RU III	1826.136	5	301	RU III	1885.123	20	301
RU III	1826.776	3	301	RU III	1885.279	30	301
RU III	1828.990	5	301	RU II	1885.559	50	675
RU II	1829.894	5	675	RU III	1885.868	10	301
RU II	1830.163	0	675	RU III	1886.86	50	301
RU II	1830.296	3	675	RU II	1887.134	15	675
RU II	1831.130	0	675	RU II	1888.045*	500	675
RU II	1832.144	20	675	RU III	1888.957	30	301
RU III	1832.625	1	301	RU III	1889.171	30	301
RU III	1833.30	20	301	RU III	1889.463	15	301
RU II	1834.262	3	675	RU II	1889.655	15	675
RU III	1835.570	3	301	RU II	1890.774	1	675
RU II	1836.013	50	675	RU II	1891.702	2	675
RU III	1838.520	5	301	RU III	1892.19	50	301
RU III	1840.633	2	301	RU II	1892.926	20	675
RU III	1840.806	10	301	RU III	1893.99	10	301
RU II	1841.375	15	675	RU III	1894.57	20	301
RU II	1842.642	5	675	RU II	1896.441	100	675
RU II	1844.138	200	675	RU II	1897.132	1	675
RU II	1844.886	2	675	RU II	1897.437	100	675
RU II	1845.368	100	675	RU III	1898.60	1	301
RU II	1845.974	30	675	RU III	1899.04	200	301
RU II	1846.147	1	675	RU III	1899.42	100	301
RU II	1846.983	1	675	RU III	1900.60	1	301
RU III	1848.286	30	301	RU III	1900.71	1	301
RU II	1848.515	15	675	RU III	1901.468	5	301
RU III	1849.496	2	301	RU III	1901.80	1	301
RU III	1849.96	15	301	RU III	1902.04	3	301
RU III	1851.15	10	301	RU III	1902.52	5	301
RU III	1852.12	1	301	RU II	1903.227*	500	675
RU II	1853.683	3	675	RU II	1903.966	2	675
RU III	1854.15	2	301	RU II	1904.393	2	675
RU III	1854.58	1	301	RU II	1904.679	3	675
RU III	1854.72	30	301	RU III	1905.421	15	301
RU II	1856.193	0	675	RU III	1906.200	10	301
RU III	1857.084	10	301	RU III	1906.848	15	301
RU III	1858.87	1	301	RU III	1907.27	1	301
RU II	1860.065	10	675	RU II	1907.601	0	675
RU III	1860.45	3	301	RU III	1908.094	15	301
RU II	1861.527	10	675	RU III	1908.312	100	301
RU III	1862.600	10	301	RU III	1908.666	20	301
RU II	1863.023	0	675	RU III	1909.033	10	301
RU II	1863.404*	500	675	RU III	1909.106	5	301
RU III	1863.81	10	301	RU III	1909.371	2	301
RU II	1864.030	5	675	RU III	1909.453	1	301
RU III	1865.01	50	301	RU II	1910.093	1	675
RU III	1865.92	30	301	RU III	1911.33	10	301
RU III	1867.260	3	301	RU II	1911.888	10	675
RU III	1867.42	2	301	RU II	1912.036	50	675
RU II	1868.088	0	675	RU II	1912.484	30	675
RU II	1868.308	10	675	RU II	1913.797	20	675
RU III	1869.05	2	301	RU II	1914.999	1	675
RU II	1869.588	2	675	RU III	1916.17	20	301
RU II	1869.763	2	675	RU III	1916.460	10	301
RU III	1870.512	20	301	RU II	1916.829	200	675
RU III	1871.05	50	301	RU III	1917.224	20	301
RU III	1871.284	20	301	RU III	1918.280	20	301
RU III	1872.992	50	301	RU II	1918.650	50	675
RU III	1873.13	2	301	RU II	1919.292	2	675
RU III	1874.122	10	301	RU II	1919.431	3	675
RU II	1875.564*	500	675	RU III	1920.071	10	301
RU II	1877.186	100	675	RU III	1921.122	2	301
RU II	1878.364	5	675	RU III	1921.582	10	301
RU III	1879.79	1	301	RU III	1922.088	2	301
RU III	1880.27	10	301	RU III	1922.092	5	301
RU III	1880.95	200	301	RU III	1922.46	5	301
RU III	1881.25	2	301	RU III	1922.460	2	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1922.633	3	301	RU II	1962.144	1	675
RU III	1923.518	2	301	RU II	1962.285	20	675
RU III	1923.522	3	301	RU II	1962.503	20	675
RU III	1923.769	3	301	RU III	1962.948	20	301
RU III	1923.771	15	301	RU III	1963.208	20	301
RU III	1924.336	10	301	RU III	1963.395	5	301
RU III	1924.429	3	301	RU III	1963.628	10	301
RU III	1924.69	2	301	RU III	1963.972	5	301
RU III	1924.696	2	301	RU III	1965.293	200	675
RU III	1925.188	1	301	RU II	1966.076	200	675
RU III	1925.191	3	301	RU II	1966.467	2	675
RU III	1925.39	20	301	RU II	1966.746	200	675
RU III	1925.691	10	301	RU III	1967.929	3	301
RU III	1927.241	1	301	RU III	1968.146	3	301
RU III	1927.406	15	301	RU III	1968.764	10	301
RU II	1927.623	100	675	RU III	1968.934	8	301
RU III	1928.685	10	301	RU III	1969.088	8	301
RU III	1929.232	5	301	RU III	1970.016	0	301
RU III	1929.234	20	301	RU III	1970.235	1	301
RU III	1929.893	3	301	RU III	1970.822	1	301
RU III	1929.90	5	301	RU III	1971.721	50	301
RU II	1930.717	100	675	RU III	1972.954	1	301
RU III	1931.476	5	301	RU III	1973.166	30	301
RU II	1931.763	15	675	RU III	1973.485	30	301
RU II	1932.118	50	675	RU III	1974.370	2	301
RU III	1932.679	2	301	RU III	1975.160	5	301
RU II	1932.897	1	675	RU III	1976.288	3	301
RU II	1933.055	15	675	RU III	1978.416	30	301
RU III	1934.041	10	301	RU III	1978.700	1	301
RU II	1934.615	20	675	RU III	1979.124	30	301
RU III	1934.993	10	301	RU III	1979.761	5	301
RU II	1935.210	2	675	RU III	1979.941	10	301
RU III	1936.208	10	301	RU III	1981.226	2	301
RU II	1937.089	100	675	RU III	1981.505	3	301
RU II	1937.715	50	675	RU III	1981.648	1	301
RU II	1938.193	20	675	RU III	1981.817	100	301
RU II	1939.056	200	675	RU III	1982.103	100	301
RU II	1939.521	200	675	RU III	1982.672	1	301
RU II	1939.911	5	675	RU III	1983.315	10	301
RU II	1940.422	30	675	RU III	1983.526	2	301
RU III	1940.757	10	301	RU III	1983.722	15	301
RU III	1941.346*	500	301	RU III	1984.760	5	301
RU II	1942.628	10	675	RU III	1985.278	5	301
RU II	1943.966	20	675	RU III	1985.734	3	301
RU III	1944.057	3	301	RU III	1985.875	3	301
RU III	1944.358	15	301	RU III	1986.267	2	301
RU III	1945.230	5	301	RU III	1987.717	15	301
RU III	1945.640	3	301	RU III	1988.069	1	301
RU III	1945.744	3	301	RU III	1988.158	1	301
RU II	1946.421	10	675	RU III	1988.783	2	301
RU III	1946.665	50	301	RU III	1989.224	200	301
RU II	1947.393	3	675	RU III	1989.844	10	301
RU II	1947.638	10	675	RU III	1990.120	10	301
RU III	1948.185	30	301	RU III	1990.912	15	301
RU III	1948.434	1	301	RU III	1991.530	5	301
RU II	1949.196	30	675	RU III	1992.526	1	301
RU II	1949.423	15	675	RU III	1992.713	15	301
RU III	1950.183	10	301	RU III	1993.322	200	301
RU III	1951.273	3	301	RU III	1994.366	0	301
RU III	1951.381	3	301	RU III	1995.335	20	301
RU III	1951.624	15	301	RU III	1996.949	3	301
RU III	1951.895	3	301	RU III	1997.184	5	301
RU III	1952.710	2	301	RU III	1997.302	3	301
RU III	1953.624	3	301	RU III	1997.946	100	301
RU III	1953.924	5	301	RU III	1998.232	2	301
RU II	1954.559	15	675	RU III	1999.388	1	301
RU III	1955.044	1	301	RU III	1999.786	10	301
RU III	1955.432	10	301				
RU III	1956.089	1	301				
RU II	1956.462	5	675				
RU III	1957.036	20	301				
RU II	1957.748	1	675				
RU III	1958.304	30	301				
RU III	1959.779	2	301				
RU III	1961.324	10	301				

RHODIUM

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH I	I.P.	60197.	K 1661.2 A
RH II	I.P.	145800.	K 685.9 A
RH III	I.P.	250500.	K 399.2 A
RH III	759.530	20.	677
RH III	762.324	10	677
RH III	763.364	4	677
RH III	764.476	3	677
RH III	766.390	10	677
RH III	767.376	1	677
RH III	768.076	6	677
RH III	770.335	4	677
RH III	771.873	10	677
RH III	773.399	6	677
RH III	773.773	8	677
RH III	774.923	1	677
RH III	775.414	2	677
RH III	775.620	2	677
RH III	776.180	3	677
RH III	780.758	30	677
RH III	781.239	30	677
RH III	782.305	20	677
RH III	782.751	8	677
RH III	783.477	0	677
RH III	783.919	0	677
RH III	784.455	20	677
RH III	784.906	10	677
RH III	787.526	8	677
RH III	791.287	6	677
RH III	792.021	8	677
RH III	793.063	10	677
RH III	794.964	20	677
RH III	796.671	6	677
RH III	798.432	0	677
RH III	801.795	1	677
RH III	802.680	1	677
RH III	803.717	0	677
RH III	804.582	1	677
RH III	805.106	1	677
RH III	805.321	1	677
RH III	806.545	0	677
RH III	806.798	0	677
RH III	809.892	10	677
RH III	810.380	30	677
RH III	811.555	1	677
RH III	813.437	50	677
RH III	814.180	1	677
RH III	815.037	10	677
RH III	815.471	10	677
RH III	815.677	1	677
RH III	816.074	6	677
RH III	816.373	0	677
RH III	816.707	0	677
RH III	817.041	15	677
RH III	817.593	20	677
RH III	817.755	2	677
RH III	818.529	0	677
RH III	818.862	4	677
RH III	818.913	0	677
RH III	822.250	8	677
RH III	823.894	2	677
RH III	824.272	1	677
RH III	824.727	6	677
RH III	825.118	20	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	826.022	30	677
RH III	826.485	6	677
RH III	826.651	4	677
RH III	826.801	2	677
RH III	827.009	1	677
RH III	827.405	8	677
RH III	828.079	10	677
RH III	829.451	0	677
RH III	830.752	-1	677
RH III	831.140	2	677
RH III	831.461	1	677
RH III	831.629	1	677
RH III	831.883	3	677
RH III	832.448	4	677
RH III	832.774	20	677
RH III	833.331	40	677
RH III	834.453	60	677
RH III	835.569	10	677
RH III	836.890	20	677
RH III	837.397	2	677
RH III	838.085	4	677
RH III	838.545	2	677
RH III	839.581	20	677
RH III	842.529	6	677
RH III	842.874	1	677
RH III	843.625	30	677
RH III	844.001	1	677
RH III	844.727	3	677
RH III	845.048	0	677
RH III	845.352	00	677
RH III	845.727	1	677
RH III	845.998	1	677
RH III	846.552	8	677
RH III	847.589	10	677
RH III	848.028	6	677
RH III	849.084	30	677
RH III	849.357	1	677
RH III	849.801	8	677
RH III	850.002	6	677
RH III	850.164	4	677
RH III	850.336	6	677
RH III	850.581	20	677
RH III	851.104	4	677
RH III	851.488	20	677
RH III	851.996	10	677
RH III	852.273	20	677
RH III	852.704	40	677
RH III	853.476	2	677
RH III	854.088	10	677
RH III	854.770	40	677
RH III	855.029	10	677
RH III	856.534	8	677
RH III	856.893	30	677
RH III	857.644	6	677
RH III	858.106	10	677
RH III	859.668	8	677
RH III	859.887	40	677
RH III	860.013	2	677
RH III	860.368	2	677
RH III	861.336	40	677
RH III	862.014	40	677
RH III	862.110	40	677
RH III	862.482	4	677
RH III	863.106	0	677
RH III	863.407	0	677
RH III	863.778	50	677
RH III	864.366	30	677
RH III	864.859	2	677
RH III	865.223	50	677
RH III	865.749	2	677
RH III	866.037	2	677
RH III	866.224	40	677
RH III	866.816	2	677
RH III	867.538	40	677
RH III	868.014	2	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	868.435	4	677	RH III	897.645	30	677
RH III	868.682	8	677	RH III	898.127	2	677
RH III	868.895	4	677	RH III	898.455	15	677
RH III	869.622	20	677	RH III	898.823	4	677
RH III	870.395	50	677	RH III	899.384	0	677
RH III	870.750	30	677	RH III	899.578	4	677
RH III	870.939	20	677	RH III	900.050	8	677
RH III	871.063	1	677	RH III	900.224	15	677
RH III	871.371	8	677	RH III	900.561	20	677
RH III	872.104	0	677	RH III	901.000	10	677
RH III	872.656	20	677	RH III	902.324	40	677
RH III	872.863	2	677	RH III	902.867	20	677
RH III	873.158	2	677	RH III	903.222	10	677
RH III	873.738	10	677	RH III	903.600	40	677
RH III	873.865	10	677	RH III	905.151	10	677
RH III	874.036	0	677	RH III	905.736	6	677
RH III	874.182	1	677	RH III	905.969	4	677
RH III	874.249	10	677	RH III	906.289	4	677
RH III	874.411	6	677	RH III	906.908	0	677
RH III	874.713	20	677	RH III	907.142	20	677
RH III	875.389	2	677	RH III	907.368	8	677
RH III	876.043	0	677	RH III	907.474	6	677
RH III	876.639	2	677	RH III	907.689	6	677
RH III	877.068	4	677	RH III	907.828	10	677
RH III	877.681	1	677	RH III	907.912	8	677
RH III	877.882	20	677	RH III	908.275	20	677
RH III	878.398	30	677	RH III	908.406	1	677
RH III	878.687	6	677	RH III	908.672	1	677
RH III	879.071	8	677	RH III	909.098	20	677
RH III	879.611	6	677	RH III	909.549	2	677
RH III	879.864	6	677	RH III	909.785	40	677
RH III	880.100	8	677	RH III	910.084	10	677
RH III	880.277	4	677	RH III	910.261	10	677
RH III	880.441	3	677	RH III	911.080	15	677
RH III	880.720	10	677	RH III	911.241	10	677
RH III	881.205	15	677	RH III	911.341	10	677
RH III	881.382	6	677	RH III	911.850	30	677
RH III	881.618	2	677	RH III	912.113	40	677
RH III	881.871	2	677	RH III	913.753	20	677
RH III	882.053	1	677	RH III	913.884	0	677
RH III	882.510	80	677	RH III	914.837	4	677
RH III	883.400	40	677	RH III	915.019	60	677
RH III	883.550	4	677	RH III	915.643	8	677
RH III	884.279	1	677	RH III	915.860	12	677
RH III	884.748	4	677	RH III	916.292	6	677
RH III	886.068	4	677	RH III	916.633	10	677
RH III	886.287	1	677	RH III	917.963	2	677
RH III	886.595	15	677	RH III	919.476	10	677
RH III	886.930	1	677	RH III	919.578	0	677
RH III	887.216	20	677	RH III	919.822	10	677
RH III	887.688	6	677	RH III	920.075	20	677
RH III	888.298	1	677	RH III	920.231	15	677
RH III	888.831	8	677	RH III	921.295	30	677
RH III	889.173	4	677	RH III	921.965	0	677
RH III	890.033	20	677	RH III	922.189	0	677
RH III	890.269	4	677	RH III	922.391	6	677
RH III	890.497	2	677	RH III	922.977	4	677
RH III	890.884	6	677	RH III	923.403	20	677
RH III	891.343	25	677	RH III	924.111	10	677
RH III	891.889	2	677	RH III	924.719	10	677
RH III	892.211	40	677	RH III	925.448	8	677
RH III	892.420	0	677	RH III	925.759	100	677
RH III	892.656	10	677	RH III	926.220	10	677
RH III	892.918	2	677	RH III	926.469	8	677
RH III	893.127	1	677	RH III	926.777	20	677
RH III	893.478	8	677	RH III	927.363	15	677
RH III	894.330	50	677	RH III	928.342	6	677
RH III	895.504	0	677	RH III	929.034	8	677
RH III	895.605	0	677	RH III	929.481	10	677
RH III	895.943	6	677	RH III	930.362	2	677
RH III	896.372	10	677	RH III	931.191	40	677
RH III	896.587	15	677	RH III	931.304	30	677
RH III	896.777	10	677	RH III	932.009	4	677
RH III	897.330	8	677	RH III	932.952	10	677
RH III	897.553	50	677	RH III	933.909	1	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	934.964	15	677	RH III	969.063	8	677
RH III	935.964	0	677	RH III	969.683	2	677
RH III	936.638	1	677	RH III	969.815	2	677
RH III	937.277	150	677	RH III	970.803	2	677
RH III	937.441	40	677	RH III	971.502	6	677
RH III	937.761	6	677	RH III	971.749	2	677
RH III	938.161	8	677	RH III	972.940	2	677
RH III	938.579	10	677	RH III	973.168	3	677
RH III	939.127	2	677	RH III	973.315	4	677
RH III	939.921	15	677	RH III	973.912	1	677
RH III	940.153	2	677	RH III	974.228	20	677
RH III	940.359	10	677	RH III	974.563	0	677
RH III	940.571	4	677	RH III	974.787	4	677
RH III	941.785	6	677	RH III	975.070	4	677
RH III	942.304	8	677	RH III	975.429	1	677
RH III	942.622	1	677	RH III	975.940	8	677
RH III	942.755	2	677	RH III	976.124	100	677
RH III	943.810	3	677	RH III	976.421	1	677
RH III	944.138	00	677	RH III	976.582	2	677
RH III	945.189	8	677	RH III	977.704	5	677
RH III	945.619	4	677	RH III	977.982	10	677
RH III	945.814	6	677	RH III	978.624	2	677
RH III	946.168	6	677	RH III	979.288	1	677
RH III	946.715	4	677	RH III	980.050	3	677
RH III	946.905	2	677	RH III	980.183	3	677
RH III	947.568	2	677	RH III	980.555	5	677
RH III	947.812	15	677	RH III	981.110	1	677
RH III	948.324	1	677	RH III	981.197	1	677
RH III	948.964	10	677	RH III	981.959	10	677
RH III	949.234	8	677	RH III	982.544	0	677
RH III	949.403	6	677	RH III	983.205	5	677
RH III	949.538	4	677	RH III	983.491	0	677
RH III	949.719	20	677	RH III	983.800	5	677
RH III	950.875	8	677	RH III	984.048	1	677
RH III	951.761	4	677	RH III	985.069	10	677
RH III	952.437	20	677	RH III	986.348	2	677
RH III	953.037	6	677	RH III	986.821	2	677
RH III	953.236	8	677	RH III	987.095	2	677
RH III	953.355	10	677	RH III	987.610	1	677
RH III	953.516	6	677	RH III	988.155	50	677
RH III	953.905	8	677	RH III	988.475	50	677
RH III	954.737	50	677	RH III	989.000	30	677
RH III	955.183	15	677	RH III	989.929	2	677
RH III	955.425	20	677	RH III	990.991	0	677
RH III	955.554	10	677	RH III	991.617*	500	677
RH III	956.602	0	677	RH III	992.482*	400	677
RH III	957.338	0	677	RH III	995.081	10	677
RH III	957.840	00	677	RH III	995.791	0	677
RH III	958.317	4	677	RH III	996.517	1	677
RH III	958.443	8	677	RH III	997.025	50	677
RH III	958.688	4	677	RH III	997.281	0	677
RH III	958.820	1	677	RH III	997.553	0	677
RH III	959.327	1	677	RH III	998.669	0	677
RH III	959.506	15	677	RH III	998.770	5	677
RH III	959.830	4	677	RH III	999.817	4	677
RH III	960.752	20	677	RH III	1000.321	5	677
RH III	961.145	30	677	RH III	1001.511	3	677
RH III	961.794	1	677	RH III	1001.725	30	677
RH III	961.921	8	677	RH III	1002.004	3	677
RH III	962.145	20	677	RH III	1002.271	20	677
RH III	962.723	2	677	RH III	1002.708	5	677
RH III	964.056	20	677	RH III	1002.911	200	677
RH III	964.170	12	677	RH III	1003.054	10	677
RH III	964.565	10	677	RH III	1003.425	30	677
RH III	965.169	8	677	RH III	1003.845	2	677
RH III	966.122	2	677	RH III	1004.092	0	677
RH III	966.270	2	677	RH III	1004.349	2	677
RH III	966.768	10	677	RH III	1006.712	5	677
RH III	967.358	8	677	RH III	1007.047	3	677
RH III	967.473	4	677	RH III	1007.370	5	677
RH III	967.633	15	677	RH III	1007.802	3	677
RH III	968.382	10	677	RH III	1008.072	10	677
RH III	968.536	6	677	RH III	1008.595	2	677
RH III	968.780	8	677	RH III	1008.874	60	677
RH III	968.987	1	677	RH III	1009.075	2	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	1009.166	2	677	RH III	1535.692	2	677
RH III	1009.600*	500	677	RH III	1535.823	3	677
RH III	1010.179	10	677	RH III	1540.268	10	677
RH III	1010.492	15	677	RH III	1544.799	0	677
RH III	1010.704	10	677	RH III	1553.814	8	677
RH III	1011.419	0	677	RH III	1556.690	10	677
RH III	1012.112	100	677	RH III	1558.744	5	677
RH III	1012.219	200	677	RH III	1570.799	0	677
RH III	1012.263	100	677	RH III	1571.063	1	677
RH III	1013.179	100	677	RH III	1577.351	2	677
RH III	1013.193	200	677	RH III	1578.439	1	677
RH III	1013.321	30	677	RH III	1585.131	1	677
RH III	1013.566	2	677	RH III	1585.655	2	677
RH III	1013.762	1	677	RH III	1586.768	3	677
RH III	1014.091	5	677	RH III	1588.673	4	677
RH III	1015.172	200	677	RH III	1589.975	20	677
RH III	1016.149	20	677	RH III	1592.352	2	677
RH III	1016.677	2	677	RH III	1592.558	5	677
RH III	1016.549	100	677	RH III	1592.883	1	677
RH III	1017.035	2	677	RH III	1594.181	3	677
RH III	1010.185	30	677	RH III	1594.411	5	677
RH III	1019.304	10	677	RH III	1598.646	5	677
RH III	1019.702	10	677	RH III	1598.999	4	677
RH III	1019.776	10	677	RH III	1601.433	2	677
RH III	1020.159	3	677	RH III	1603.764	1	677
RH III	1020.918	20	677	RH III	1609.043	3	677
RH III	1021.598	00	677	RH III	1617.160	4	677
RH III	1022.020	1	677	RH III	1621.706	0	677
RH III	1023.560	3	677	RH III	1629.612	0	677
RH III	1024.004	0	677	RH III	1629.738	60	677
RH III	1024.932	50	677	RH III	1633.712	3	677
RH III	1026.105	5	677	RH III	1636.201	10	677
RH III	1026.317	20	677	RH III	1640.794	2	677
RH III	1026.758	0	677	RH III	1645.094	0	677
RH III	1026.923	30	677	RH III	1647.078	3	677
RH III	1027.119	3	677	RH III	1650.680	0	677
RH III	1027.393	5	677	RH III	1651.011	00	677
RH III	1027.915	3	677	RH III	1653.396	3	677
RH III	1028.521	30	677	RH III	1653.810	10	677
RH III	1031.125	1	677	RH III	1654.110	3	677
RH III	1031.866	20	677	RH III	1654.501	20	677
RH III	1032.007	20	677	RH III	1654.995	0	677
RH III	1037.517	5	677	RH III	1658.930	5	677
RH III	1042.468	3	677	RH III	1660.709	10	677
RH III	1043.091	10	677	RH III	1661.822	20	677
RH III	1043.652	1	677	RH III	1664.883	10	677
RH III	1043.908	1	677	RH III	1666.425	6	677
RH III	1044.149	1	677	RH III	1667.650	1	677
RH III	1047.317	30	677	RH III	1667.964	3	677
RH III	1048.005	0	677	RH III	1668.040	3	677
RH III	1050.000	100	677	RH III	1670.377	8	677
RH III	1051.740	20	677	RH III	1671.564	0	677
RH III	1058.249	20	677	RH III	1671.772	0	677
RH III	1058.972	100	677	RH III	1671.848	0	677
RH III	1060.624	30	677	RH III	1672.557	20	677
RH III	1063.678	10	677	RH III	1675.090	0	677
RH III	1068.616	5	677	RH III	1678.310	1	677
RH III	1069.623	15	677	RH III	1679.043	1	677
RH III	1073.115	50	677	RH III	1680.910	0	677
RH III	1073.869	200	677	RH III	1682.052	3	677
RH III	1075.003	30	677	RH III	1682.493	2	677
RH III	1075.343	2	677	RH III	1682.804	8	677
RH III	1076.304	10	677	RH III	1683.794	0	677
RH III	1086.685	2	677	RH III	1683.917	3	677
RH III	1093.340	5	677	RH III	1684.331	4	677
RH III	1096.326	3	677	RH III	1688.123	1	677
RH III	1100.597	100	677	RH III	1692.834	3	677
RH III	1106.716	3	677	RH III	1694.768	20	677
RH III	1110.301	10	677	RH III	1695.491	6	677
RH III	1112.614	5	677	RH III	1697.632	10	677
RH III	1113.791	100	677	RH III	1698.955	0	677
RH III	1118.532	3	677	RH III	1700.130	1	677
RH III	1158.527	3	677	RH III	1701.232	20	677
RH III	1515.215	0	677	RH III	1702.111	1	677
RH III	1533.214	1	677	RH III	1702.221	1	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	1702.318	1	677	RH III	1788.017	50	677
RH III	1703.586	1	677	RH III	1790.113	40	677
RH III	1704.057	3	677	RH III	1795.028	1	677
RH III	1704.351	0	677	RH III	1796.502	150	677
RH III	1704.527	0	677	RH III	1797.218	1	677
RH III	1704.775	8	677	RH III	1798.396	1	677
RH III	1706.126	0	677	RH III	1798.803	1	677
RH III	1707.635	00	677	RH III	1799.011	1	677
RH III	1707.633	1	677	RH III	1801.199	10	677
RH III	1707.779	1	677	RH III	1803.042	1	677
RH III	1710.319	1	677	RH III	1803.358	200	677
RH III	1710.780	8	677	RH III	1804.707	1	677
RH III	1713.434	1	677	RH III	1805.038	30	677
RH III	1714.829	0	677	RH III	1805.705	3	677
RH III	1715.400	5	677	RH III	1805.813	6	677
RH III	1718.217	1	677	RH III	1807.116	10	677
RH III	1718.714	2	677	RH III	1807.976	8	677
RH III	1721.063	3	677	RH III	1809.640	10	677
RH III	1721.611	3	677	RH III	1810.193	2	677
RH III	1722.264	1	677	RH III	1810.365	10	677
RH III	1722.581	30	677	RH III	1810.733	15	677
RH III	1723.078	10	677	RH III	1811.299	2	677
RH III	1723.819	5	677	RH III	1812.928	20	677
RH III	1725.107	1	677	RH III	1813.498	2	677
RH III	1728.571	0	677	RH III	1815.227	2	677
RH III	1729.393	50	677	RH III	1815.523	5	677
RH III	1730.083	2	677	RH III	1816.030	200	677
RH III	1731.466	2	677	RH III	1816.486	8	677
RH III	1732.041	40	677	RH III	1816.895	3	677
RH III	1739.997	10	677	RH III	1817.163	50	677
RH III	1740.242	20	677	RH III	1818.152	20	677
RH III	1741.057	10	677	RH III	1818.861	10	677
RH III	1745.880	1	677	RH III	1819.874	1	677
RH III	1746.490	2	677	RH III	1820.505	2	677
RH III	1746.706	2	677	RH III	1820.632	4	677
RH III	1747.566	2	677	RH III	1820.778	1	677
RH III	1749.208	20	677	RH III	1821.362	5	677
RH III	1751.517	8	677	RH III	1821.806	1	677
RH III	1751.975	3	677	RH III	1821.933	1	677
RH III	1754.534	30	677	RH III	1822.085	20	677
RH III	1755.501	1	677	RH III	1822.427	0	677
RH III	1755.906	10	677	RH III	1823.044	3	677
RH III	1756.669	6	677	RH III	1824.706	2	677
RH III	1757.151	5	677	RH III	1825.399	50	677
RH III	1759.245	6	677	RH III	1826.545	10	677
RH III	1760.050	2	677	RH III	1827.355	3	677
RH III	1762.505	10	677	RH III	1827.725	15	677
RH III	1763.151	1	677	RH III	1828.361	2	677
RH III	1763.280	2	677	RH III	1828.944	1	677
RH III	1763.625	3	677	RH III	1829.734	100	677
RH III	1764.960	50	677	RH III	1830.229	2	677
RH III	1766.009	4	677	RH III	1831.264	6	677
RH III	1766.419	2	677	RH III	1832.046*	1000	677
RH III	1766.767	5	677	RH III	1832.665	2	677
RH III	1767.420	50	677	RH III	1832.983	15	677
RH III	1768.428	100	677	RH III	1833.338	2	677
RH III	1768.592	6	677	RH III	1833.863	1	677
RH III	1768.900	3	677	RH III	1834.324	10	677
RH III	1769.204	1	677	RH III	1835.380	5	677
RH III	1771.431	30	677	RH III	1835.696	3	677
RH III	1772.439	20	677	RH III	1837.932	3	677
RH III	1773.141	40	677	RH III	1838.406	5	677
RH III	1773.985	10	677	RH III	1839.227	3	677
RH III	1774.216	60	677	RH III	1839.724	30	677
RH III	1775.934	8	677	RH III	1839.974	1	677
RH III	1776.297	1	677	RH III	1840.161	2	677
RH III	1777.095	8	677	RH III	1841.098	8	677
RH III	1778.280	10	677	RH III	1841.103	8	677
RH III	1779.874	20	677	RH III	1841.533	2	677
RH III	1781.433	1	677	RH III	1841.706	1	677
RH III	1781.793	0	677	RH III	1843.160	2	677
RH III	1783.954	2	677	RH III	1844.263	50	677
RH III	1784.215	150	677	RH III	1847.122	1	677
RH III	1784.933	200	677	RH III	1847.403	1	677
RH III	1786.698	1	677	RH III	1848.476	8	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	1848.609	6	677	RH III	1889.515	200	677
RH III	1848.945	0	677	RH III	1890.901	2	677
RH III	1849.445	1	677	RH III	1891.127	10	677
RH III	1849.637	2	677	RH III	1891.889	3	677
RH III	1850.214	3	677	RH III	1892.372	6	677
RH III	1850.655	1	677	RH III	1894.063	3	677
RH III	1850.999	3	677	RH III	1894.171	0	677
RH III	1852.648	2	677	RH III	1895.064	50	677
RH III	1852.953	2	677	RH III	1895.885	30	677
RH III	1853.225	10	677	RH III	1896.875	2	677
RH III	1853.541	3	677	RH III	1897.018	8	677
RH III	1854.949	1	677	RH III	1897.508	0	677
RH III	1855.516	80	677	RH III	1897.873	4	677
RH III	1855.968	1	677	RH III	1898.062	2	677
RH III	1856.122	3	677	RH III	1898.556	3	677
RH III	1857.464	3	677	RH III	1899.370	1	677
RH III	1859.119	3	677	RH III	1899.442	2	677
RH III	1859.845*	500	677	RH III	1901.320*	800	677
RH III	1860.095	1	677	RH III	1901.521	30	677
RH III	1860.794	6	677	RH III	1902.066	5	677
RH III	1861.140	3	677	RH III	1902.080	15	677
RH III	1861.562	10	677	RH III	1902.908	10	677
RH III	1861.893	8	677	RH III	1903.440	150	677
RH III	1862.222	50	677	RH III	1904.300	60	677
RH III	1862.755	0	677	RH III	1905.093	8	677
RH III	1862.973	80	677	RH III	1905.856	1	677
RH III	1863.217	4	677	RH III	1906.351	0	677
RH III	1863.551	2	677	RH III	1907.219	300	677
RH III	1864.130	8	677	RH III	1907.365	3	677
RH III	1866.514	2	677	RH III	1908.433	100	677
RH III	1866.979	1	677	RH III	1909.320	8	677
RH III	1867.242	1	677	RH III	1910.157*	500	677
RH III	1867.372	2	677	RH III	1911.415	4	677
RH III	1867.654	7	677	RH III	1911.744	0	677
RH III	1868.386	5	677	RH III	1912.060	400	677
RH III	1868.686	15	677	RH III	1912.336	1	677
RH III	1869.035	1	677	RH III	1912.637	3	677
RH III	1869.197	2	677	RH III	1912.995	1	677
RH III	1869.414	4	677	RH III	1913.172	0	677
RH III	1871.297	50	677	RH III	1913.323	1	677
RH III	1871.719	70	677	RH III	1913.581	8	677
RH III	1871.934	2	677	RH III	1913.992	0	677
RH III	1872.856	3	677	RH III	1914.472	3	677
RH III	1873.295	3	677	RH III	1914.654	1	677
RH III	1873.694	80	677	RH III	1916.300	30	677
RH III	1874.704	100	677	RH III	1918.773	8	677
RH III	1875.359	40	677	RH III	1918.952*	400	677
RH III	1876.010	2	677	RH III	1919.078	2	677
RH III	1876.904	2	677	RH III	1919.369*	600	677
RH III	1877.048	2	677	RH III	1919.608	50	677
RH III	1877.467	30	677	RH III	1920.330	3	677
RH III	1877.998	3	677	RH III	1920.653	2	677
RH III	1878.517	10	677	RH III	1921.445	8	677
RH III	1878.745	30	677	RH III	1922.604	5	677
RH III	1879.231	0	677	RH III	1922.810	2	677
RH III	1879.350	1	677	RH III	1923.183	1	677
RH III	1879.585	40	677	RH III	1923.518	15	677
RH III	1879.750	1	677	RH III	1924.438	100	677
RH III	1879.997	3	677	RH III	1925.156	3	677
RH III	1880.656*	800	677	RH III	1925.395	15	677
RH III	1881.348	50	677	RH III	1925.590	7	677
RH III	1881.687	2	677	RH III	1926.960*	400	677
RH III	1881.924	3	677	RH III	1927.072*	500	677
RH III	1882.126	10	677	RH III	1927.251	5	677
RH III	1803.520	4	677	RH III	1927.716	0	677
RH III	1884.910*	500	677	RH III	1927.940	1	677
RH III	1885.126	3	677	RH III	1929.358	150	677
RH III	1885.301	150	677	RH III	1930.074	300	677
RH III	1885.808	8	677	RH III	1930.398	300	677
RH III	1886.816	10	677	RH III	1931.423	50	677
RH III	1887.360*	500	677	RH III	1931.791*	700	677
RH III	1887.938*	400	677	RH III	1932.032	40	677
RH III	1888.412	1	677	RH III	1932.239	300	677
RH III	1888.624*	700	677	RH III	1932.750	20	677
RH III	1889.113	2	677	RH III	1933.732	1	677

SYMBOL				WAVELENGTH INTENSITY				REFERENCE NUMBERS			
RH	III	1934.004	60	677	RH	III	1977.044	80	677		
RH	III	1934.435	80	677	RH	III	1978.200	3	677		
RH	III	1934.870	100	677	RH	III	1979.286	10	677		
RH	III	1935.419	90	677	RH	III	1980.334	2	677		
RH	III	1935.667	5	677	RH	III	1981.366	80	677		
RH	III	1936.153	5	677	RH	III	1981.777	8	677		
RH	III	1936.487	10	677	RH	III	1982.353	100	677		
RH	III	1936.935	100	677	RH	III	1982.993	40	677		
RH	III	1938.455	300	677	RH	III	1983.549	80	677		
RH	III	1939.243	150	677	RH	III	1984.020	3	677		
RH	III	1939.386	200	677	RH	III	1984.517	150	677		
RH	III	1940.172	300	677	RH	III	1985.071	20	677		
RH	III	1941.292	50	677	RH	III	1985.266	8	677		
RH	III	1941.359	40	677	RH	III	1985.665	200	677		
RH	III	1942.777	50	677	RH	III	1986.147	10	677		
RH	III	1942.888	30	677	RH	III	1987.014	200	677		
RH	III	1943.226	80	677	RH	III	1987.174	30	677		
RH	III	1944.073	1	677	RH	III	1987.828	200	677		
RH	III	1944.926	150	677	RH	III	1987.981	150	677		
RH	III	1945.310	50	677	RH	I	1988.49 *	3	486		
RH	III	1945.829	1	677	RH	III	1988.986	2	677		
RH	III	1946.476	10	677	RH	III	1989.106	100	677		
RH	III	1946.675	60	677	RH	III	1989.555	8	677		
RH	III	1947.017	20	677	RH	III	1990.003	100	677		
RH	III	1947.178	10	677	RH	III	1990.994	50	677		
RH	III	1947.798	300	677	RH	III	1991.408	200	677		
RH	III	1948.086	10	677	RH	III	1992.198	10	677		
RH	III	1948.475	30	677	RH	III	1992.377	20	677		
RH	III	1949.018	50	677	RH	III	1992.632	100	677		
RH	III	1949.175	8	677	RH	III	1992.840	50	677		
RH	III	1949.478	40	677	RH	III	1994.257*	500	677		
RH	III	1949.645	15	677	RH	III	1994.411	1	677		
RH	III	1950.858	100	677	RH	III	1994.847	100	677		
RH	III	1951.867	3	677	RH	I	1994.94 *	2	486		
RH	III	1952.253	80	677	RH	III	1995.216	15	677		
RH	III	1952.829	15	677	RH	III	1995.518	80	677		
RH	III	1953.055	3	677	RH	III	1995.716	150	677		
RH	III	1954.248*	500	677	RH	III	1995.998	3	677		
RH	III	1954.505	2	677	RH	III	1996.209	10	677		
RH	III	1954.629	2	677	RH	I	1996.85 *	2	486		
RH	III	1954.976	60	677	RH	III	1997.003	50	677		
RH	III	1955.946	300	677	RH	III	1997.281	100	677		
RH	III	1956.244	150	677	RH	III	1998.526	30	677		
RH	III	1957.593	50	677	RH	III	1998.787	30	677		
RH	III	1957.758	30	677	RH	III	1998.986	30	677		
RH	III	1958.215	5	677	RH	III	1999.315	100	677		
RH	III	1958.605	4	677	RH	III	1999.660	100	677		
RH	III	1958.752	3	677	RH	III	1999.954	2	677		
RH	III	1960.206	5	677							
RH	III	1961.262	200	677							
RH	III	1962.491	3	677							
RH	III	1963.000	200	677							
RH	III	1963.639	100	677							
RH	III	1964.183	150	677							
RH	III	1964.725	5	677							
RH	III	1964.891	70	677							
RH	III	1965.160	400	677							
RH	III	1965.533	10	677							
RH	III	1966.689	40	677							
RH	III	1966.780	50	677							
RH	III	1967.333	30	677							
RH	III	1967.547	2	677							
RH	III	1968.633	90	677							
RH	III	1968.872	10	677							
RH	III	1969.201	300	677							
RH	III	1969.631	50	677							
RH	III	1970.038	300	677							
RH	III	1970.739	30	677							
RH	III	1972.245	50	677							
RH	III	1972.806	15	677							
RH	III	1973.104	1	677							
RH	III	1973.285	3	677							
RH	III	1974.211	20	677							
RH	III	1975.405	5	677							
RH	III	1976.969	100	677							
RH	III	1977.044	80	677							
RH	III	1978.200	3	677							
RH	III	1979.286	10	677							
RH	III	1980.334	2	677							
RH	III	1981.366	80	677							
RH	III	1981.777	8	677							
RH	III	1982.353	100	677							
RH	III	1982.993	40	677							
RH	III	1983.549	80	677							
RH	III	1984.020	3	677							
RH	III	1984.517	150	677							
RH	III	1985.071	20	677							
RH	III	1985.266	8	677							
RH	III	1985.665	200	677							
RH	III	1986.147	10	677							
RH	III	1987.014	200	677							
RH	III	1987.174	30	677							
RH	III	1987.828	200	677							
RH	III	1987.981	150	677							
RH	I	1988.49 *	3	486							
RH	III	1988.986	2	677							
RH	III	1989.106	100	677							
RH	III	1989.555	8	677							
RH	III	1990.003	100	677							
RH	III	1990.994	50	677							
RH	III	1991.408	200	677							
RH	III	1992.198	10	677							
RH	III	1992.377	20	677							
RH	III	1992.632	100	677							
RH	III	1992.840	50	677							
RH	III	1994.257*	500	677							
RH	III	1994.411	1	677							
RH	III	1994.847	100	677							
RH	I	1994.94 *	2	486							
RH	III	1995.216	15	677							
RH	III	1995.518	80	677							
RH	III	1995.716	150	677							
RH	III	1995.998	3	677							
RH	III	1996.209	10	677							
RH	I	1996.85 *	2	486							
RH	III	1997.003	50	677							
RH	III	1997.281	100	677							
RH	III	1998.526	30	677							
RH	III	1998.787	30	677							
RH	III	1998.986	30	677							
RH	III	1999.315	100	677							
RH	III	1999.660	100	677							
RH	III	1999.954	2	677							
PALLADIUM											
PD	I	I.P.	67236.0	K	1487.30	A					
PD	II	I.P.	156700.	K	638.2	A					
PD	III	I.P.	265600.	K	376.5	A					
PD	III	684.922	50	674							
PD	III	695.901	50	674							
PD	III	696.939	2	674							
PD	III	704.333	10	674							
PD	III	704.518	1	674							
PD	III	704.626	50	674							
PD	III	704.850	5	674							
PD	III	705.487	200	674							
PD	III	707.797	150	674							
PD	III	708.115	15	674							

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	708.731	10	674	PD III	784.756	5	674
PD III	709.885	100	674	PD III	784.985	200	674
PD III	711.944	100	674	PD III	785.184	5	674
PD III	712.725	10	674	PD III	785.734	2	674
PD III	712.963	50	674	PD III	785.883	150	674
PD III	713.922	15	674	PD III	786.244	3	674
PD III	714.631	20	674	PD III	786.828	50	674
PD III	715.487	2	674	PD III	787.276	200	674
PD III	717.904	100	674	PD III	787.415	100	674
PD III	718.124	20	674	PD III	787.837	100	674
PD III	719.474	100	674	PD III	787.950	100	674
PD III	720.209	10	674	PD III	788.160	3	674
PD III	720.980	20	674	PD III	789.356	15	674
PD III	721.201	3	674	PD III	789.583	200	674
PD III	721.568	2	674	PD III	790.192	150	674
PD III	722.447	30	674	PD III	790.800	10	674
PD III	723.935	50	674	PD III	791.362	5	674
PD III	724.348	15	674	PD III	792.363	5	674
PD III	725.646	15	674	PD III	794.078	500	674
PD III	725.825	10	674	PD III	795.585	50	674
PD III	727.103	30	674	PD III	796.256	10	674
PD III	727.720	200	674	PD III	796.384	150	674
PD III	728.149	20	674	PD III	797.324	5	674
PD III	728.610	3	674	PD III	797.517	500	674
PD III	730.740	3	674	PD III	797.742	5	674
PD III	732.073	2	674	PD III	798.336	10	674
PD III	736.270	20	674	PD III	798.510	10	674
PD III	736.449	5	674	PD III	799.013	200	674
PD III	738.793	150	674	PD III	799.202	200	674
PD III	743.776	15	674	PD III	799.653	15	674
PD III	747.693	20	674	PD III	800.011	500	674
PD III	747.779	50	674	PD III	800.095	500	674
PD III	753.002	5	674	PD III	800.767	5	674
PD III	753.361	5	674	PD III	801.223	50	674
PD III	754.872	15	674	PD III	801.542	200	674
PD III	755.859	15	674	PD III	802.286	150	674
PD III	756.137	50	674	PD III	803.154	3	674
PD III	756.853	100	674	PD III	803.665	500	674
PD III	757.424	100	674	PD III	804.688	30	674
PD III	757.631	5	674	PD III	804.900	5	674
PD III	758.308	100	674	PD III	805.725	40	674
PD III	758.839	10	674	PD III	806.317	50	674
PD III	761.616	100	674	PD III	807.672	50	674
PD III	763.058	500	674	PD III	807.827	150	674
PD III	764.201	2	674	PD III	808.497	30	674
PD III	764.447	5	674	PD III	809.536	100	674
PD III	766.102	3	674	PD III	809.695	150	674
PD III	766.424	500	674	PD III	810.336	75	674
PD III	766.567	3	674	PD III	810.928	10	674
PD III	767.265	50	674	PD III	812.086	50	674
PD III	770.447	5	674	PD III	812.443	30	674
PD III	770.636	1	674	PD III	813.192	100	674
PD III	770.873	10	674	PD III	813.989	150	674
PD III	771.105	5	674	PD III	814.524	100	674
PD III	772.110	200	674	PD III	815.053	200	674
PD III	772.438	2	674	PD III	816.221	200	674
PD III	774.138	200	674	PD III	816.400	15	674
PD III	774.416	3	674	PD III	816.563	200	674
PD III	776.315	100	674	PD III	818.679	200	674
PD III	776.507	200	674	PD III	820.012	100	674
PD III	776.681	150	674	PD III	820.342	75	674
PD III	777.367	150	674	PD III	820.917	20	674
PD III	778.783	50	674	PD III	821.155	5	674
PD III	779.483	15	674	PD III	821.353	50	674
PD III	779.636	50	674	PD III	823.643	300	674
PD III	779.695	20	674	PD III	825.076	150	674
PD III	780.115	100	674	PD III	825.345	500	674
PD III	780.333	15	674	PD III	826.411	400	674
PD III	780.637	3	674	PD III	826.991	3	674
PD III	781.019*	1000	674	PD III	828.071	2	674
PD III	781.807	3	674	PD III	828.359	30	674
PD III	782.377	2	674	PD III	828.595	15	674
PD III	783.344	100	674	PD III	829.316	300	674
PD III	783.805	150	674	PD III	830.639	30	674
PD III	784.361	20	674	PD III	831.334	15	674

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	832.999	50	674	PD III	896.813	200	674
PD III	833.627	15	674	PD III	897.300	3	674
PD III	834.978	50	674	PD III	900.423	150	674
PD III	836.041	30	674	PD III	900.490	300	674
PD III	836.476	100	674	PD III	901.150	50	674
PD III	836.948	100	674	PD III	902.178	20	674
PD III	837.146	200	674	PD III	902.900	400	674
PD III	838.414	30	674	PD III	904.365	400	674
PD III	839.304	5	674	PD III	906.526	30	674
PD III	839.693	20	674	PD III	908.871	100	674
PD III	840.214	100	674	PD III	908.995	50	674
PD III	840.579	500	674	PD III	909.141	30	674
PD III	842.376	50	674	PD III	910.373	50	674
PD III	842.675	2	674	PD III	910.921	10	674
PD III	843.392	5	674	PD III	911.364	674	
PD III	845.268	50	674	PD III	912.376	10	674
PD III	845.525	100	674	PD III	914.858	100	674
PD III	846.687	30	674	PD III	915.134	20	674
PD III	847.342	100	674	PD III	915.582	200	674
PD III	847.582	30	674	PD III	916.467	100	674
PD III	847.943	50	674	PD III	916.779	200	674
PD III	848.868	200	674	PD III	917.136	10	674
PD III	850.733	20	674	PD III	917.442	100	674
PD III	851.247	200	674	PD III	918.578	5	674
PD III	851.593	200	674	PD III	920.136	3	674
PD III	851.743	300	674	PD III	921.026	30	674
PD III	853.610	50	674	PD III	922.492	200	674
PD III	854.354	100	674	PD III	922.845	5	674
PD III	854.766	30	674	PD III	925.612	10	674
PD III	855.294	150	674	PD III	927.512	100	674
PD III	856.071	50	674	PD III	930.142	100	674
PD III	856.276	10	674	PD III	931.641	20	674
PD III	856.470	500	674	PD III	933.573	5	674
PD III	858.238	100	674	PD III	935.623	10	674
PD III	859.309	10	674	PD III	938.315	50	674
PD III	862.182	2	674	PD III	938.429	50	674
PD III	863.200	200	674	PD III	939.009	10	674
PD III	864.044	500	674	PD III	940.829	10	674
PD III	865.285	200	674	PD III	941.150	1	674
PD III	866.075	150	674	PD III	947.606	30	674
PD III	866.896	20	674	PD III	947.795	300	674
PD III	867.087	100	674	PD III	948.652	10	674
PD III	867.699	100	674	PD III	949.719	3	674
PD III	867.992	75	674	PD III	956.077	30	674
PD III	869.211	2	674	PD III	957.681	50	674
PD III	869.330	10	674	PD III	960.643	100	674
PD III	870.437	150	674	PD III	962.753	100	674
PD III	871.061	100	674	PD III	964.618	20	674
PD III	871.491	75	674	PD III	965.295	50	674
PD III	873.057	200	674	PD III	965.506	300	674
PD III	873.977	200	674	PD III	967.854	200	674
PD III	875.587	15	674	PD III	968.223	3	674
PD III	875.931	100	674	PD III	972.682	100	674
PD III	877.897	10	674	PD III	977.805	100	674
PD III	878.226	00	674	PD III	981.503	50	674
PD III	878.732*	900	674	PD III	988.115	5	674
PD III	880.590	500	674	PD III	988.253	5	674
PD III	881.442	30	674	PD III	989.103	100	674
PD III	882.690	50	674	PD III	995.005	50	674
PD III	882.814	20	674	PD III	1005.080	15	674
PD III	884.304	50	674	PD III	1008.385	100	674
PD III	884.766	5	674	PD III	1016.947	5	674
PD III	885.913	300	674	PD III	1030.965	2	674
PD III	886.820	100	674	PD III	1031.643	1	674
PD III	888.842	500	674	PD III	1033.926	5	674
PD III	889.294*	1000	674	PD III	1038.166	3	674
PD III	889.476	10	674	PD III	1040.360	5	674
PD III	889.801	5	674	PD III	1051.679	100	674
PD III	892.029	100	674	PD III	1057.415	3	674
PD III	892.793	150	674	PD III	1077.053	10	674
PD III	894.197	30	674	PD III	1078.978	5	674
PD III	894.428	1	674	PD III	1088.450	2	674
PD III	894.614	50	674	PD III	1097.776	5	674
PD III	895.599	100	674	PD III	1109.952	3	674
PD III	895.804	30	674	PD III	1115.16	1	664

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	1145.340	10	674	PD II	1478.42	1	664
PD II	1159.05	10	664	PD II	1480.78	1	664
PD II	1162.20	15	664	PD III	1484.439	15	674
PD III	1169.323	20	674	PD III	1488.094	100	674
PD II	1174.37 *	20	664	PD III	1494.471	20	674
PD III	1182.817	50	674	PD III	1496.701	10	674
PD III	1182.886	50	674	PD III	1496.777	30	674
PD II	1183.45 *	20	664	PD III	1499.317	50	674
PD III	1183.687	200	674	PD III	1501.618	3	674
PD II	1185.27	1	664	PD III	1502.151	5	674
PD II	1196.43	10	664	PD III	1502.578	20	674
PD II	1204.00 *	30	664	PD III	1502.844	30	674
PD III	1206.840	50	674	PD III	1505.404	200	674
PD III	1207.729	15	674	PD III	1505.663	5	674
PD II	1208.68	5	664	PD III	1509.402	10	674
PD III	1209.982	30	674	PD III	1510.328	30	674
PD II	1212.88	3	664	PD III	1510.879	15	674
PD II	1214.58	10	664	PD III	1512.739	10	674
PD II	1218.66	15	664	PD III	1513.493	15	674
PD II	1225.33	10	664	PD III	1516.522	10	674
PD II	1226.19	1	664	PD III	1517.185	200	674
PD II	1226.54	5	664	PD III	1518.929	30	674
PD III	1229.836	20	674	PD III	1519.107	20	674
PD II	1235.23	15	664	PD III	1520.949	10	674
PD II	1237.12	15	664	PD III	1523.318	5	674
PD II	1245.92	5	664	PD III	1523.709	5	674
PD II	1254.59 *	20	664	PD III	1524.043	15	674
PD II	1267.27	10	664	PD III	1525.187	5	674
PD II	1269.62	10	664	PD III	1526.252	100	674
PD II	1273.60	10	664	PD III	1526.516	15	674
PD II	1281.79	1	664	PD III	1527.254	30	674
PD III	1298.942	50	674	PD III	1527.459	5	674
PD III	1300.883	50	674	PD III	1527.642	2	674
PD II	1302.66	8	664	PD III	1528.700	30	674
PD II	1302.85	7	664	PD III	1531.759	5	674
PD III	1307.345	10	674	PD II	1532.81	6	664
PD II	1314.61	5	664	PD III	1534.092	100	674
PD II	1320.05 *	35	664	PD III	1534.718	3	674
PD III	1321.334	30	674	PD III	1534.934	10	674
PD II	1329.34	5	664	PD III	1535.308	300	674
PD II	1331.61	5	664	PD III	1536.172	10	674
PD III	1333.028	20	674	PD III	1537.241	30	674
PD II	1345.57 *	25	664	PD III	1538.148	10	674
PD II	1363.76 *	20	664	PD III	1541.035	20	674
PD II	1364.81	1	664	PD III	1543.042	15	674
PD II	1365.58	15	664	PD III	1544.122	2	674
PD II	1365.80 *	25	664	PD III	1545.130	100	674
PD II	1367.76 *	25	664	PD III	1545.236	15	674
PD II	1374.92 *	50	664	PD III	1545.604	3	674
PD II	1382.23	3	664	PD III	1545.957	500	674
PD II	1384.79	3	664	PD III	1547.658	30	674
PD II	1397.46	15	664	PD III	1548.520	5	674
PD II	1403.59 *	25	664	PD III	1548.622	15	674
PD II	1407.06	5	664	PD III	1550.059	5	674
PD III	1407.802	2	674	PD III	1550.351	3	674
PD III	1413.552	2	674	PD III	1550.744	5	674
PD III	1424.901	5	674	PD III	1550.862	5	674
PD II	1426.10	3	664	PD III	1551.223	5	674
PD III	1427.592	20	674	PD II	1552.17	3	664
PD III	1433.915	20	674	PD III	1553.922	20	674
PD II	1436.53	3	664	PD III	1554.064	20	674
PD II	1437.29 *	30	664	PD III	1554.998	15	674
PD III	1440.400	2	674	PD III	1555.930	5	674
PD III	1442.230	0	674	PD III	1557.012	15	674
PD II	1445.20	5	664	PD III	1557.940	20	674
PD III	1447.179	5	674	PD III	1559.442	5	674
PD III	1448.906	5	674	PD III	1559.551	10	674
PD III	1449.625	100	674	PD III	1560.080	15	674
PD II	1453.25	10	664	PD III	1560.205	10	674
PD III	1461.680	10	674	PD III	1563.113	3	674
PD III	1465.304	20	674	PD III	1565.202	200	674
PD III	1468.827	2	674	PD III	1567.290	2	674
PD II	1471.34	5	664	PD III	1567.829	5	674
PD III	1475.850	5	674	PD III	1572.095	15	674
PD III	1477.150	20	674	PD III	1572.210	10	674

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	1573.735	10	674	PD III	1629.319	3	674
PD III	1574.837	15	674	PD III	1629.70	3	674
PD III	1574.991	10	674	PD III	1630.364	15	674
PD III	1575.103	100	674	PD III	1631.079	20	674
PD III	1575.275	50	674	PD III	1632.558	15	674
PD III	1576.365	1	674	PD III	1634.354	30	674
PD III	1579.741	100	674	PD III	1635.514	15	674
PD III	1580.265	5	674	PD III	1635.683	20	674
PD III	1581.844	30	674	PD III	1635.761	20	674
PD III	1582.055	30	674	PD III	1635.893	30	674
PD III	1582.110	30	674	PD III	1636.416	30	674
PD III	1582.856	20	674	PD III	1637.194	10	674
PD III	1583.040	20	674	PD III	1638.349	10	674
PD III	1583.211	20	674	PD III	1638.567	20	674
PD III	1584.160	50	674	PD III	1638.708	10	674
PD III	1584.437	3	674	PD III	1639.273	1	674
PD III	1584.633	20	674	PD III	1639.418	5	674
PD III	1585.033	50	674	PD III	1639.57	5	674
PD III	1585.256	50	674	PD III	1640.923	3	674
PD III	1585.557	30	674	PD III	1641.685	3	674
PD III	1586.979	10	674	PD III	1643.518	5	674
PD III	1587.112	2	674	PD III	1644.093	5	674
PD III	1591.602	5	674	PD III	1644.306	15	674
PD III	1591.908	5	674	PD III	1645.971	10	674
PD III	1594.160	5	674	PD III	1647.443	50	674
PD III	1594.827	5	674	PD III	1648.436	10	674
PD III	1601.893	100	674	PD III	1648.863	30	674
PD III	1602.310	30	674	PD III	1650.008	15	674
PD III	1602.487	50	674	PD III	1650.372	2	674
PD III	1603.165	3	674	PD III	1650.608	15	674
PD III	1604.319	100	674	PD III	1651.382	2	674
PD III	1604.751	3	674	PD III	1651.532	100	674
PD III	1605.049	5	674	PD III	1653.773	15	674
PD III	1606.093	200	674	PD III	1655.493	5	674
PD III	1606.263	50	674	PD III	1657.177	15	674
PD III	1606.414	15	674	PD III	1658.390	30	674
PD III	1607.754	50	674	PD III	1658.900	1	674
PD III	1607.917	20	674	PD III	1660.296	20	674
PD III	1608.131	2	674	PD III	1665.989	1	674
PD III	1608.840	2	674	PD III	1666.594	5	674
PD III	1610.745	50	674	PD III	1667.034	10	674
PD III	1610.958	5	674	PD III	1667.948	10	674
PD III	1612.011	10	674	PD III	1668.661	10	674
PD III	1613.793	10	674	PD III	1669.281	15	674
PD III	1613.975	5	674	PD III	1671.266	20	674
PD III	1615.562	5	674	PD III	1672.300	15	674
PD III	1615.691	10	674	PD III	1672.873	3	674
PD III	1616.290	200	674	PD III	1673.235	5	674
PD III	1616.75	2	674	PD III	1673.910	15	674
PD III	1616.936	2	674	PD III	1674.424	2	674
PD III	1617.420	2	674	PD III	1675.326	15	674
PD III	1617.690	3	674	PD III	1676.086	2	674
PD III	1617.874	2	674	PD III	1676.576	2	674
PD III	1618.690	2	674	PD III	1676.941	5	674
PD III	1619.464	10	674	PD III	1677.275	10	674
PD III	1619.595	10	674	PD III	1678.103	30	674
PD III	1619.738	1	674	PD III	1679.736	30	674
PD III	1620.343	10	674	PD III	1682.482	3	674
PD III	1620.629	100	674	PD III	1682.685	0	674
PD III	1620.903	100	674	PD III	1683.821	200	669, 674
PD III	1621.320	2	674	PD III	1685.791	20	674
PD III	1621.647	2	674	PD III	1687.121	5	674
PD III	1621.827	2	674	PD III	1687.522	3	674
PD III	1621.992	15	674	PD III	1688.169	15	674
PD III	1622.114	50	674	PD III	1689.838	50	674
PD III	1622.778	100	674	PD III	1691.297	50	674
PD III	1623.615	5	674	PD III	1693.473	200	674
PD III	1624.282	20	674	PD III	1693.763	15	674
PD III	1624.940	10	674	PD III	1695.058	3	674
PD III	1627.003	10	674	PD III	1695.271	20	674
PD III	1628.091	20	674	PD III	1695.485	3	674
PD III	1628.366	10	674	PD III	1696.486	5	674
PD III	1628.459	10	674	PD III	1696.766	50	674
PD III	1628.611	20	674	PD III	1697.005	50	674
PD III	1629.123	20	674	PD III	1698.283	5	674

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD I	1700.19	2	669	PD III	1790.772	100	674
PD III	1700.736	5	674	PD I	1791.69	5	669
PD III	1701.897	10	674	PD III	1792.274	5	674
PD I	1702.84	5	669, 674	PD I	1793.67	15	669, 674
PD III	1704.330	100	674	PD I	1794.63	10	669
PD III	1704.670	1	674	PD III	1795.083	150	674
PD III	1705.435	3	674	PD III	1796.616	100	674
PD III	1706.061	2	674	PD III	1799.107	100	674
PD III	1706.460	50	674	PD III	1800.992	5	674
PD III	1708.251	5	674	PD III	1801.877	5	674
PD III	1708.568	100	674	PD III	1803.315	150	674
PD III	1711.271	1	674	PD III	1804.176	75	674
PD III	1714.506	10	674	PD III	1804.908	400	674
PD III	1715.140	3	674	PD III	1808.544	250	674
PD III	1716.286	2	674	PD III	1809.873	3	674
PD III	1716.367	50	674	PD III	1811.605	150	674
PD III	1716.804	10	674	PD III	1811.975	200	674
PD I	1717.95	5	669	PD III	1812.094	150	674
PD III	1719.856	200	674	PD III	1812.322	3	674
PD III	1720.015	3	674	PD III	1812.713	3	674
PD III	1721.798	10	674	PD III	1813.105	3	674
PD III	1722.735	150	674	PD III	1813.523	150	674
PD I	1723.65	2	669	PD III	1814.217	3	674
PD III	1724.179	1	674	PD III	1814.441	1	674
PD III	1724.407	50	674	PD III	1815.574	250	674
PD III	1727.124	5	674	PD III	1816.147	2	674
PD III	1727.209	2	674	PD III	1816.447	50	674
PD III	1727.375	100	674	PD III	1816.900	1	674
PD III	1727.875	5	674	PD III	1818.464	200	674
PD III	1728.162	30	674	PD III	1819.274	150	674
PD III	1729.125	40	674	PD III	1821.066	3	674
PD III	1730.245	20	674	PD III	1821.839	50	674
PD III	1731.974	50	674	PD III	1822.409	50	674
PD III	1732.634	250	674	PD III	1822.515	200	674
PD III	1738.140	1	674	PD I	1823.96	10	669, 674
PD III	1738.363	5	674	PD I	1824.07	2	669
PD III	1741.619	500	674	PD I	1825.77	20	669, 674
PD III	1742.383	10	674	PD III	1829.670	3	674
PD III	1743.342	2	674	PD III	1829.918	50	674
PD III	1745.562	150	674	PD III	1830.003	150	674
PD III	1748.097	20	674	PD III	1830.311	100	674
PD III	1748.204	5	674	PD III	1831.753	200	674
PD III	1752.543	10	674	PD III	1832.067	150	674
PD III	1752.881	5	674	PD III	1832.404	5	674
PD III	1754.668	2	674	PD I	1832.80	10	669, 674
PD III	1756.322	40	674	PD III	1833.300	100	674
PD I	1757.09	5	669	PD III	1834.386	200	674
PD III	1757.561	20	674	PD III	1834.832	100	674
PD III	1758.187	400	674	PD III	1835.265	150	674
PD III	1759.356	3	674	PD III	1836.672	250	674
PD III	1761.339	3	674	PD III	1837.073	200	674
PD I	1762.77	10	669, 674	PD III	1838.101	3	674
PD I	1763.92	20	669, 674	PD III	1838.594	10	674
PD III	1764.219	50	674	PD III	1840.166	50	674
PD III	1764.883	0	674	PD III	1840.438	50	674
PD III	1765.403	200	669, 674	PD III	1842.305	10	674
PD III	1765.908	2	674	PD III	1842.546	1	674
PD III	1766.458	5	674	PD III	1843.148	150	674
PD III	1766.652	5	674	PD III	1843.440	400	674
PD III	1766.980	5	674	PD III	1843.940	250	674
PD I	1769.58	10	669	PD III	1845.020	50	674
PD III	1772.285	0	674	PD I	1845.96	10	669, 674
PD III	1775.162	300	674	PD I	1846.42	50	669, 674
PD III	1778.256	1	674	PD III	1846.842	2	674
PD III	1779.629	300	669, 674	PD III	1847.473	250	674
PD III	1780.617	200	674	PD I	1848.79	50	669
PD III	1780.952	30	674	PD III	1849.755	5	674
PD III	1781.262	150	674	PD III	1851.592*	1500	674
PD III	1782.548*	4000	674	PD III	1852.274*	2000	674
PD III	1784.367	300	674	PD III	1853.283	15	674
PD III	1786.419	150	674	PD III	1856.161	200	669, 674
PD I	1786.94	15	669, 674	PD III	1856.504	50	674
PD III	1787.091	10	674	PD III	1857.558	200	674
PD III	1789.987	200	674	PD III	1859.206*	1000	669, 674
PD III	1790.106	2	674	PD I	1860.59	5	669

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	1861.514	30	674	PD III	1933.442	30	674
PD III	1861.740	40	674	PD III	1934.439	15	674
PD III	1862.947	10	674	PD III	1937.430	10	674
PD I	1863.57	5	669	PD I	1938.62	10	669
PD III	1864.040	5	674	PD III	1939.404	1	674
PD III	1865.782	150	674	PD III	1940.447	50	669, 674
PD I	1866.79	5	669, 674	PD III	1941.262	20	674
PD I	1868.97	5	669	PD III	1941.332	100	674
PD I	1870.03	10	669	PD III	1941.639*	2000	674
PD III	1870.487	150	674	PD III	1943.000	50	674
PD III	1871.263	100	674	PD III	1944.123	50	674
PD III	1873.197	200	674	PD III	1944.537	200	674
PD III	1874.629*	1500	674	PD I	1945.99 *	200	669
PD III	1874.969	15	674	PD I	1946.97	5	669, 674
PD III	1875.469	100	674	PD III	1948.184	50	674
PD I	1876.16	15	669	PD III	1948.400	20	674
PD III	1877.027	400	674	PD III	1949.048	100	674
PD III	1879.041	15	674	PD III	1949.481	50	674
PD III	1880.064	250	674	PD III	1950.458	50	674
PD III	1880.326	300	674	PD III	1951.117	200	674
PD III	1880.547	50	674	PD III	1951.500	400	674
PD III	1881.382	3	674	PD III	1954.039	300	674
PD III	1882.072	2	674	PD III	1956.892	150	674
PD III	1883.352	500	674	PD III	1957.187	50	674
PD III	1884.080	5	674	PD III	1957.618	3	674
PD III	1885.834*	2000	674	PD III	1959.469	30	674
PD III	1886.978	50	674	PD III	1960.142	20	674
PD III	1887.398*	1000	669, 674	PD I	1960.75 *	150	669, 674
PD III	1888.070	15	674	PD III	1962.861	150	674
PD III	1888.575	1	674	PD I	1963.71	2	666
PD III	1890.047	15	674	PD III	1965.021	3	674
PD I	1890.41 *	150	669, 674	PD III	1966.481	10	674
PD III	1891.341*	1500	674	PD I	1968.33 *	200	669, 674
PD III	1891.475	10	674	PD III	1969.058	100	674
PD III	1896.003	2	674	PD III	1969.423	10	674
PD III	1896.352	5	674	PD III	1970.115	50	674
PD III	1899.486	50	674	PD III	1970.608	3	674
PD III	1901.177	5	674	PD III	1971.191	2	664, 674
PD III	1901.679	50	674	PD III	1971.752	200	674
PD I	1901.94 *	150	669, 674	PD III	1972.296	300	674
PD III	1904.255	2	674	PD I	1972.74 *	300	669, 674
PD III	1904.721	75	674	PD III	1973.250	30	674
PD I	1905.86	20	669, 674	PD I	1973.93 *	100	669
PD III	1906.127	50	674	PD I	1974.90 *	100	669
PD III	1906.529	20	674	PD III	1975.190	200	674
PD III	1906.768	5	674	PD III	1975.354	150	674
PD I	1907.22	1	669	PD I	1976.50 *	150	669
PD III	1907.874	20	674	PD I	1977.88	3	669
PD I	1911.50	2	669	PD I	1978.07	5	669
PD III	1913.729	150	674	PD III	1979.130	1	674
PD III	1915.592	5	674	PD III	1980.622	50	674
PD III	1917.281	150	674	PD III	1980.703	200	674
PD III	1917.472	200	674	PD III	1980.882	200	674
PD III	1917.580	5	674	PD III	1980.939	300	674
PD I	1919.03	20	669	PD III	1984.899	50	674
PD I	1919.58	5	669	PD I	1985.98	5	669
PD III	1920.250	1	674	PD I	1986.19	15	669
PD III	1922.443	250	674	PD III	1986.718	100	674
PD III	1922.522	100	674	PD III	1986.874	150	674
PD I	1923.95 *	100	669, 674	PD III	1988.426	200	674
PD III	1925.324	30	674	PD III	1990.482	10	674
PD III	1925.472	300	674	PD I	1993.20	50	669
PD III	1926.254	5	674	PD III	1993.845	400	669, 674
PD III	1926.770	500	674	PD III	1993.956	200	674
PD III	1927.545	10	674	PD I	1994.80	3	669
PD I	1928.59	5	669	PD III	1995.119	2	674
PD I	1929.28	5	669	PD III	1995.443	150	674
PD I	1929.55 *	100	669	PD III	1996.181	20	674
PD I	1929.63	50	669	PD III	1996.616	20	674
PD III	1930.330*	1000	674	PD III	1996.550	400	674
PD III	1931.090	400	674	PD III	1997.747	50	674
PD III	1931.293	5	674	PD III	1998.812	200	674
PD I	1932.26	50	669	PD III	1998.880	200	674
PD III	1932.729	5	674	PD III	1999.101	100	674
PD III	1933.324	40	674				

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE	NUMBERS
SILVER				
AG I	I.P.	61106.50	K	1636.49 A
AG II	I.P.	173300.	K	577.0 A
AG III	I.P.	280900.	K	356.0 A
AG	495.1	6	335	
AG	538.8	6	335	
AG	547.8	6	335	
AG	548.5	6	335	
AG	549.57	3	335	
AG	559.1	6	335	
AG	566.2	6	335	
AG	560.8	6	335	
AG	564.1	5	335	
AG	574.6	6	335	
AG	575.7	7	335	
AG	577.8	5	335	
AG	589.1	6	335	
AG	595.2	6	335	
AG	596.8	5	335	
AG	598.7	5	335	
AG III	709.80	20	284	
AG III	713.85	20	284	
AG III	717.73	10	284	
AG III	718.53	20	284	
AG III	720.15	5	284	
AG III	726.96	30	284	
AG II	720.73	3	283	
AG III	730.04 *	35	284	
AG III	730.28	15	284	
AG II	730.83 *	25	283	
AG III	730.94	15	284	
AG III	736.57	20	284	
AG III	738.13	10	284	
AG III	740.98	20	284	
AG III	742.29	20	284	
AG III	744.91	8	284	
AG III	748.30	20	284	
AG II	752.80 *	30	283	
AG III	755.73	15	284	
AG III	756.43	4	284	
AG III	758.27	10	284	
AG III	762.43	3	284	
AG III	767.19	20	284	
AG III	768.33	25	284	
AG III	769.61	15	284	
AG III	776.03	5	284	
AG III	776.38 *	35	284	
AG III	782.91	20	284	
AG III	785.76	15	284	
AG III	789.08	20	284	
AG III	792.35	25	284	
AG III	796.54	20	284	
AG III	797.91	25	284	
AG III	799.41 *	40	284	
AG III	802.99	0	284	
AG III	805.18	1	284	
AG III	806.93	5	284	
AG III	808.88	30	284	
AG III	811.30	1	284	
AG III	816.22	15	284	
AG III	819.59	3	284	
AG III	822.39	18	284	
AG III	826.00	6	284	
AG III	829.98	8	284	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE	NUMBERS
AG III	838.11	20	284	
AG III	839.34	6	284	
AG III	848.00	5	284	
AG III	851.69	0	284	
AG III	866.47	0	284	
AG III	873.13	4	284	
AG II	982.33	1	283	
AG II	997.80	5	283	
AG II	999.38	5	283	
AG II	1005.62 *	15	283	
AG II	1015.37	5	283	
AG II	1017.26	1	283	
AG II	1020.29	2	283	
AG II	1021.53	6	283	
AG II	1028.55	1	283	
AG II	1033.84	3	283	
AG II	1036.41	2	283	
AG II	1036.99	5	283	
AG II	1038.95	1	283	
AG II	1040.69	4	283	
AG II	1044.14	0	283	
AG II	1047.23	4	283	
AG II	1050.67	6	283	
AG II	1056.28	7	283	
AG II	1058.99	3	283	
AG II	1063.20	4	283	
AG II	1065.49 *	10	283	
AG II	1066.61	1	283	
AG II	1066.91	1	283	
AG II	1068.37	6	283	
AG II	1069.25	5	283	
AG II	1069.69	5	283	
AG II	1072.23 *	12	283	
AG II	1076.99	6	283	
AG II	1077.83	6	283	
AG II	1080.07	0	283	
AG II	1082.11	8	283	
AG II	1082.25	4	283	
AG II	1083.67	4	283	
AG II	1084.87	8	283	
AG II	1085.79	4	283	
AG II	1090.82	2	283	
AG II	1092.19	7	283	
AG II	1093.85	2	283	
AG II	1095.60	8	283	
AG II	1096.74	1	283	
AG II	1097.35	4	283	
AG II	1098.22	5	283	
AG II	1101.50	5	283	
AG II	1105.34	5	283	
AG II	1111.32	1	283	
AG II	1113.00	0	283	
AG II	1118.56	5	283	
AG II	1118.99	2	283	
AG II	1122.32	1	283	
AG II	1126.74	0	283	
AG II	1132.55	1	283	
AG II	1148.20	3	283	
AG II	1149.77	5	283	
AG II	1151.11	6	283	
AG II	1152.15	4	283	
AG II	1163.21	8	283	
AG II	1180.96	1	283	
AG III	1308.84	0	284	
AG II	1334.97	0	283	
AG III	1356.33	0	284	
AG II	1364.60	0	283	
AG II	1370.02	2	283	
AG II	1371.44	0	283	
AG II	1372.57	0	283	
AG II	1373.50	0	283	
AG III	1390.17	0	284	
AG II	1399.51	0	283	
AG II	1400.15	2	283	
AG III	1404.30	0	284	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG III	1405.25	6	284	AG III	1678.27	8	284
AG II	1416.26	1	283	AG III	1680.18	0	284
AG III	1420.82	1	284	AG III	1681.07	10	284
AG II	1429.40	0	283	AG III	1682.09	0	284
AG II	1431.68	0	283	AG II	1682.82 *	12	283
AG II	1441.74	0	283	AG III	1683.56	1	284
AG III	1445.34	0	284	AG III	1684.68	0	284
AG II	1449.12	0	283	AG III	1685.46	0	284
AG II	1451.28	0	283	AG II	1686.73	2	283
AG II	1453.19	0	283	AG III	1693.51 *	50	284
AG III	1453.75	1	284	AG II	1702.20	4	283
AG II	1455.62	0	283	AG III	1703.04	5	284
AG II	1457.08	1	283	AG III	1705.06	20	284
AG III	1473.40	0	284	AG III	1706.61	5	284
AG III	1479.81	0	284	AG III	1706.89	5	284
AG II	1492.23	6	283	AG III	1707.97	0	284
AG III	1493.69	0	284	AG I	1708.11 *	10	667
AG III	1506.74	0	284	AG III	1708.86	15	284
AG I	1507.37 *	50	667	AG I	1709.26 *	50	667
AG III	1511.86	1	284	AG III	1710.56	1	284
AG III	1512.64	1	284	AG III	1713.81	2	284
AG II	1514.52	0	283	AG II	1715.45	2	283
AG I	1515.63	1	667	AG II	1718.38	1	283
AG II	1525.40	1	283	AG II	1719.30	5	283
AG III	1527.06	1	284	AG III	1722.27	20	284
AG II	1527.72	0	283	AG II	1723.63	8	283
AG III	1531.71	3	284	AG III	1725.85	0	284
AG II	1532.19	0	283	AG III	1728.14	25	284
AG I	1548.58 *	50	667	AG III	1728.73	0	284
AG III	1550.94	1	284	AG III	1729.55	3	284
AG III	1551.44	1	284	AG II	1732.04	6	283
AG II	1551.65	0	283	AG III	1737.92	1	284
AG II	1555.16 *	10	283	AG III	1739.52	3	284
AG III	1560.74	1	284	AG III	1747.34	20	284
AG II	1565.35	1	283	AG III	1751.03 *	75	284
AG III	1569.16	1	284	AG III	1754.89	2	284
AG III	1570.38	1	284	AG III	1755.90	4	284
AG III	1571.07	0	284	AG III	1758.79	3	284
AG I	1574.02	5	667	AG I	1759.68	5	667
AG III	1575.26	1	284	AG III	1760.57	10	284
AG III	1581.19	0	578	AG III	1761.57	1	284
AG III	1586.26	1	284	AG I	1763.55	1	667
AG III	1587.39	1	284	AG I	1763.69	0	667
AG II	1587.75	3	283	AG III	1764.36	7	284
AG III	1590.47	1	284	AG I	1766.20 *	10	667
AG II	1594.25	5	283	AG III	1766.22	4	284
AG III	1595.69	1	284	AG III	1768.70	15	284
AG II	1601.22	8	283	AG III	1771.81	10	284
AG III	1601.48	2	284	AG III	1776.07	2	284
AG II	1604.94	4	283	AG III	1778.75	5	284
AG II	1605.22	4	283	AG III	1783.93	1	284
AG II	1607.86	3	283	AG III	1784.48	2	284
AG III	1611.90	3	284	AG III	1785.59	1	284
AG III	1612.75	1	284	AG III	1793.90	15	284
AG III	1614.26	3	284	AG III	1797.64	3	284
AG III	1615.25	0	284	AG III	1802.24	15	284
AG III	1618.34	1	284	AG II	1802.28	5	283
AG III	1627.61	1	284	AG II	1806.92	3	283
AG I	1632.88	5	667	AG III	1808.23	30	284
AG III	1634.81	1	578	AG III	1808.92	5	284
AG III	1638.75	1	284	AG III	1810.74	1	284
AG II	1639.38	1	283	AG III	1813.15	0	284
AG III	1640.22	2	284	AG III	1816.83	25	284
AG II	1644.50 *	10	283	AG III	1821.50	2	284
AG III	1644.66	2	284	AG III	1822.45	15	284
AG III	1648.54	0	284	AG III	1823.99	4	284
AG III	1650.52	2	284	AG III	1826.61	8	284
AG III	1650.97	2	284	AG II	1827.24	5	283
AG I	1651.87 *	100	667	AG III	1828.21	0	284
AG III	1655.60	0	284	AG III	1828.83 *	35	284
AG II	1665.34	5	283	AG III	1832.33	25	284
AG III	1668.20	0	284	AG III	1834.31	10	284
AG III	1668.48	1	284	AG III	1836.10	25	284
AG III	1674.34	8	284	AG III	1838.64	15	284
AG III	1674.99	6	284	AG III	1840.14 *	40	284

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG II	1842.06	1	283	CD	215.22	00	25
AG III	1846.96	10	284	CD	215.40	00	25
AG I	1847.73 *	20	667	CD	215.87	0	25
AG III	1849.93	12	284	CD	216.34	00	25
AG I	1850.47	5	667	CD	216.80	0	25
AG III	1854.04	6	284	CD	217.95	00	25
AG III	1856.33	15	284	CD	218.37	0	25
AG III	1858.91	12	284	CD	218.80	00	25
AG II	1860.38		283	CD	219.83	1	25
AG III	1860.64	10	284	CD	220.87	0	25
AG III	1863.39	8	284	CD	221.30	00	25
AG II	1866.06	1	283	CD	223.03	00	25
AG III	1867.12 *	35	284	CD	223.35	00	25
AG III	1868.10	15	284	CD	224.83	00	25
AG III	1872.55	10	284	CD	226.63	0	25
AG III	1873.45 *	40	284	CD	227.09	1	25
AG III	1874.93	5	284	CD	229.77	00	25
AG III	1880.36	25	284	CD	230.17	00	25
AG III	1882.44	2	284	CD	230.50	00	25
AG III	1885.20	2	578	CD	233.77	0	25
AG III	1889.57	30	284	CD	239.74	0	25
AG III	1894.01	7	284	CD	236.01	00	25
AG III	1896.69	7	284	CD	237.01	00	25
AG III	1898.86	2	284	CD	238.04	1	25
AG III	1901.20	0	284	CD	243.57	0	25
AG III	1908.49	6	284	CD	244.01	1	25
AG III	1913.01	6	284	CD	244.74	1	25
AG III	1916.92 *	40	284	CD	245.20	0	25
AG III	1917.08 *	60	284	CD	245.62	1	25
AG III	1925.30	20	284	CD	246.21	1	25
AG III	1932.53	5	284	CD	246.77	00	25
AG III	1933.11	7	284	CD	249.57	1	25
AG II	1933.51	1	658, 665	CD	249.83	0	25
AG III	1937.00	4	284	CD	250.05	1	25
AG II	1937.53	4	283	CD	250.29	00	25
AG III	1943.12	4	284	CD	250.62	0	25
AG III	1945.37	5	284	CD	250.77	00	25
AG III	1946.32	15	284	CD	251.06	3	25
AG III	1948.44	10	284	CD	251.31	00	25
AG III	1952.74	5	284	CD	251.54	0	25
AG III	1952.98	4	284	CD	251.78	0	25
AG III	1954.59	2	284	CD	252.07	1	25
AG III	1957.62 *	70	284	CD	252.32	1	25
AG III	1960.86	10	284	CD	253.23	0	25
AG III	1966.89 *	40	284	CD	253.91	0	25
AG II	1967.68 *	10	283	CD	254.21	2	25
AG III	1975.92 *	60	284	CD	254.36	0	25
AG III	1977.03 *	50	284	CD	254.61	00	25
AG III	1981.87	15	284	CD	254.90	0	25
AG III	1987.02	20	284	CD	255.59	00	25
AG II	1994.35	3	658, 665	CD	255.82	00	25
AG II	1998.98	4	283	CD	256.08	0	25
AG III	1999.14	7	284	CD	256.75	0	25
				CD	257.10	00	25
				CD	257.47	1	25
				CD	257.71	00	25
				CD	258.05	0	25
				CD	258.42	0	25
				CD	258.73	0	25
				CD	259.16	1	25
				CD	259.36	0	25
				CD	261.45	1	25
				CD	261.74	00	25
				CD	265.37	0	25
				CD	267.88	00	25
				CD	268.06	00	25
				CD	269.82	00	25
				CD	271.27	0	25
				CD	272.51	00	25
				CD	272.73	00	25
				CD	272.96	00	25
				CD	273.27	1	25
				CD	273.46	0	25
				CD	273.93	1	25
				CD	274.06	0	25
CD	212.06	00	25				
CD	213.37	00	25				
CD	213.70	1	25				
CD	214.61	1	25				
CD	214.94	00	25				

CADMIUM

CD I	I.P.	72538.8	K	1378.57	A
CD II	I.P.	136374.74	K	733.274	A
CD III	I.P.	302300.	K	330.8	A

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD	274.29	00	25	CD	327.81	0	25
CD	274.58	00	25	CD	328.24	1	25
CD	274.89	00	25	CD	329.02	00	25
CD	275.70	0	25	CD	329.32	2	25
CD	276.04	0	25	CD	329.77	2	25
CD	276.29	0	25	CD	330.03	2	25
CD	276.71	0	25	CD	330.29	2	25
CD	277.15	0	25	CD	330.85	2	25
CD	277.89	0	25	CD	330.95	2	25
CD	278.75	00	25	CD	331.51	0	25
CD	282.47	0	25	CD	331.71	3	25
CD	282.91	00	25	CD	331.96	0	25
CD	283.13	00	25	CD	332.33	00	25
CD	284.11	0	25	CD	332.68	00	25
CD	284.31	00	25	CD	333.04	0	25
CD	284.95	00	25	CD	333.17	0	25
CD	286.16	00	25	CD	333.72	3	25
CD	286.67	00	25	CD	334.09	0	25
CD	287.11	1	25	CD	334.50	00	25
CD	287.30	1	25	CD	335.33	1	25
CD	287.55	0	25	CD	335.66	1	25
CD	287.83	00	25	CD	335.83	1	25
CD	288.80	0	25	CD	336.12	2	25
CD	289.01	1	25	CD	336.57	0	25
CD	290.18	00	25	CD	336.70	2	25
CD	290.57	0	25	CD	337.00	00	25
CD	290.81	00	25	CD	337.42	2	25
CD	292.11	0	25	CD	337.66	1	25
CD	292.40	0	25	CD	337.95	0	25
CD	292.59	0	25	CD	338.23	0	25
CD	292.83	0	25	CD	338.66	1	25
CD	292.99	0	25	CD	338.75	2	25
CD	293.52	00	25	CD	339.06	3	25
CD	294.00	00	25	CD	339.42	2	25
CD	294.83	00	25	CD	339.63	0	25
CD	295.27	0	25	CD	340.08	00	25
CD	298.45	0	25	CD	340.35	2	25
CD	298.94	0	25	CD	340.54	2	25
CD	302.23	00	25	CD	340.81	1	25
CD	304.20	1	25	CD	341.09	1	25
CD	304.76	1	25	CD	341.38	2	25
CD	305.00	0	25	CD	341.95	1	25
CD	305.27	2	25	CD	342.55	2	25
CD	307.06	1	25	CD	342.62	0	25
CD	307.42	2	25	CD	342.94	1	25
CD	307.66	0	25	CD	343.11	0	25
CD	308.58	1	25	CD	343.25	1	25
CD	308.97	0	25	CD	343.42	1	25
CD	309.43	00	25	CD	343.97	3	25
CD	309.87	00	25	CD	344.23	0	25
CD	310.55	0	25	CD	344.68	0	25
CD	310.77	0	25	CD	345.49	00	25
CD	311.19	00	25	CD	345.63	3	25
CD	311.92	1	25	CD	345.95	00	25
CD	313.03	3	25	CD	346.88	1	25
CD	314.12	00	25	CD	347.39	0	25
CD	315.82	0	25	CD	348.44	00	25
CD	318.71	2	25	CD	348.95	0	25
CD	319.37	3	25	CD	349.29	00	25
CD	320.50	1	25	CD	349.77	2	25
CD	321.59	0	25	CD	350.15	2	25
CD	322.12	1	25	CD	350.44	0	25
CD	323.06	00	25	CD	350.71	3	25
CD	323.87	00	25	CD	351.40	3	25
CD	324.31	1	25	CD	352.28	2	25
CD	324.49	2	25	CD	352.56	1	25
CD	324.76	00	25	CD	353.46	0	25
CD	325.02	00	25	CD	353.93	2	25
CD	325.28	00	25	CD	354.40	1	25
CD	325.43	0	25	CD	354.51	3	25
CD	325.79	0	25	CD	355.87	00	25
CD	326.02	0	25	CD	356.45	2	25
CD	326.27	2	25	CD	356.85	1	25
CD	326.40	00	25	CD	357.26	1	25
CD	327.45	2	25	CD	357.38	00	25

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD	357.70	0	25	CD	405.92	1	25
CD	358.06	0	25	CD	406.05	1	25
CD	358.45	1	25	CD	406.64	5	25
CD	360.08	2	25	CD	406.91	1	25
CD	360.34	00	25	CD	407.18	3	25
CD	361.32	3	25	CD	407.71	2	25
CD	361.72	0	25	CD	407.94	2	25
CD	362.08	1	25	CD	408.24	1	25
CD	362.49	00	25	CD	408.45	0	25
CD	364.41	00	25	CD	408.58	2	25
CD	365.30	00	25	CD	408.76	1	25
CD	366.87	2	25	CD	409.09	0	25
CD	367.66	00	25	CD	409.37	00	25
CD	368.88	00	25	CD	409.78	4	25
CD	369.65	00	25	CD	410.53	1	25
CD	370.61	00	25	CD	410.84	00	25
CD	371.02	00	25	CD	411.35	1	25
CD	371.30	1	25	CD	411.57	1	25
CD	372.06	00	25	CD	411.75	2	25
CD	372.34	0	25	CD	412.07	2	25
CD	372.66	2	25	CD	412.01	0	25
CD	373.01	00	25	CD	413.33	3	25
CD	373.30	00	25	CD	413.77	2	25
CD	376.30	00	25	CD	414.00	5	25
CD	377.65	0	25	CD	414.75	3	25
CD	378.37	1	25	CD	414.92	1	25
CD	378.96	1	25	CD	415.15	0	25
CD	380.20	0	25	CD	415.51	1	25
CD	380.72	1	25	CD	415.63	0	25
CD	380.97	00	25	CD	416.17	00	25
CD	381.28	1	25	CD	416.63	2	25
CD	381.64	00	25	CD	417.31	00	25
CD	382.00	00	25	CD	417.92	1	25
CD	382.43	0	25	CD	419.27	2	25
CD	382.63	00	25	CD	420.00	5	25
CD	383.78	00	25	CD	420.85	4	25
CD	383.90	1	25	CD	421.34	00	25
CD	384.42	1	25	CD	421.49	0	25
CD	385.86	0	25	CD	421.95	00	25
CD	386.61	00	25	CD	422.17	3	25
CD	387.06	00	25	CD	422.39	1	25
CD	387.97	0	25	CD	422.60	1	25
CD	389.39	00	25	CD	422.87	0	25
CD	389.89	0	25	CD	424.38	0	25
CD	390.34	00	25	CD	425.07	2	25
CD	390.44	3	25	CD	425.31	3	25
CD	390.80	0	25	CD	425.56	1	25
CD	391.38	1	25	CD	425.76	2	25
CD	394.90	3	25	CD	426.48	00	25
CD	395.13	3	25	CD	427.01	1	25
CD	395.31	1	25	CD	427.07	3	25
CD	396.25	1	25	CD	427.51	00	25
CD	396.44	00	25	CD	428.07	2	25
CD	396.63	00	25	CD	428.30	0	25
CD	396.87	00	25	CD	428.42	3	25
CD	396.94	0	25	CD	429.45	1	25
CD	397.46	00	25	CD	431.17	1	25
CD	398.02	3	25	CD	431.30	2	25
CD	398.15	0	25	CD	431.62	00	25
CD	398.64	2	25	CD	431.80	00	25
CD	399.40	2	25	CD	433.16	2	25
CD	399.86	3	25	CD	433.53	1	25
CD	400.25	00	25	CD	435.48	2	25
CD	400.50	2	25	CD	436.05	2	25
CD	401.49	00	25	CD	437.85	1	25
CD	401.80	3	25	CD	438.27	0	25
CD	402.04	1	25	CD	438.70	3	25
CD	402.17	1	25	CD	438.85	2	25
CD	402.77	1	25	CD	439.19	00	25
CD	403.37	3	25	CD	440.97	0	25
CD	403.74	2	25	CD	441.16	1	25
CD	403.91	1	25	CD	441.87	1	25
CD	405.10	3	25	CD	442.40	1	25
CD	405.31	3	25	CD	442.72	00	25
CD	405.62	2	25	CD	443.12	0	25

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD	445.19	3	25	CD IV	560.25	14	293
CD	445.87	00	25	CD IV	564.17	11	293
CD	446.06	0	25	CD IV	564.80	3	293
CD	447.85	4	25	CD IV	567.03 *	18	25, 293
CD	448.06	1	25	CD IV	571.25	6	25, 293
CD	449.38	0	25	CD IV	571.43	3	293
CD	449.74	00	25	CD	575.32	0	25
CD	449.97	00	25	CD	578.85	1	25
CD	451.11	0	25	CD	579.50	0	25
CD	451.64	1	25	CD IV	580.09	3	293
CD	452.67	00	25	CD	581.26	0	25
CD	454.32	1	25	CD IV	583.30	3	25, 293
CD	454.98	0	25	CD	585.32	0	25
CD	455.79	0	25	CD	585.78	00	25
CD	456.33	0	25	CD	588.44	1	25
CD	457.79	0	25	CD	593.29	0	25
CD	462.84	1	25	CD	594.54	2	25
CD	466.13	00	25	CD	597.05	1	25
CD	466.74	0	25	CD	601.24	0	25
CD	471.56	00	25	CD	602.44	0	25
CD	472.74	00	25	CD	604.49	0	25
CD	473.69	00	25	CD	612.13	00	25
CD	474.13	00	25	CD	618.28	0	25
CD	475.71	00	25	CD	627.54	1	25
CD	481.48	00	25	CD	628.76	0	25
CD	485.88	00	25	CD	632.66	0	25
CD IV	489.49	10	293	CD	640.23	0	25
CD IV	489.76	2	293	CD	643.93	00	25
CD IV	493.00	17	25, 293	CD	648.05	0	25
CD IV	495.13	17	25, 293	CD	654.93	0	25
CD IV	498.15	17	293	CD	656.41	00	25
CD IV	498.53	17	25, 293	CD	658.05	0	25
CD IV	501.19	1	293	CD III	677.39	8	25, 683
CD IV	503.81	3	293	CD	678.70	00	25
CD IV	504.09	14	25, 293	CD III	684.58	15	25, 683
CD IV	504.19	11	293	CD II	710.49	0	25, 754
CD IV	504.49	17	25, 293	CD III	720.70	10	25, 683
CD IV	506.31 *	19	25, 293	CD II	735.38	00	25, 754
CD IV	508.01	17	293	CD II	761.18	1	683
CD IV	509.54	17	25, 293	CD	766.90	00	25
CD IV	509.80	3	293	CD II	767.94	10	683
CD IV	511.40	17	25, 293	CD II	769.45	1	683
CD IV	512.99	17	25, 293	CD II	773.12	20	683
CD IV	514.49	17	25, 293	CD II	780.80	5	683
CD	514.95	00	25	CD II	781.26	25	683
CD IV	516.22	1	293	CD	790.54	0	25
CD	517.01	00	25	CD	793.02	00	25
CD IV	519.41	14	25, 293	CD II	798.37	50	683
CD	519.70	00	25	CD II	798.57	15	683
CD IV	520.96	9	293	CD	804.19	0	25
CD IV	524.40	14	25, 293	CU	800.92	00	25
CD IV	524.46	14	293	CD	812.72	00	25
CD IV	524.77	14	25, 293	CD	814.80	00	25
CD IV	525.09	17	25, 293	CD	816.59	00	25
CD IV	525.18	14	293	CD	827.28	0	25
CD IV	527.06 *	18	25, 293	CD II	828.40	2	683
CD IV	530.78	14	25, 293	CD II	829.05	15	683
CD IV	531.08 *	18	25, 293	CD II	832.38	40	683
CD IV	531.50 *	18	25, 293	CD II	838.26	30	25, 683
CD IV	534.28	17	25, 293	CD II	839.94	30	683
CD IV	536.75	17	25, 293	CD	843.86	00	25
CD IV	537.22	14	25, 293	CD II	847.52	25	25, 683
CD IV	540.89	17	25, 293	CD	852.12	00	25
CD IV	541.73 *	18	25, 293	CD II	854.85	000	754
CD IV	542.59 *	25	25, 293	CD	857.40	00	25
CD IV	544.68	9	293	CD II	860.38	30	683
CD IV	546.53 *	25	25, 293	CD	861.28	00	25
CD IV	548.00	11	25, 293	CD	867.11	0	25
CD IV	548.92	10	293	CD	867.72	0	25
CD IV	551.26	11	25, 293	CD	876.97	00	25
CD	552.32	1	25	CD II	886.62	0	683
CD IV	552.89	10	25, 293	CD II	888.95	25	683
CD IV	553.06	17	25, 293	CD II	889.98	15	683
CD IV	554.04 *	18	293	CD II	891.28	25	683
CD IV	557.49	9	293	CD	903.11	0	25

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD	904.79	0	25	CD	1127.89	1	25
CD	913.72	20	25, 683	CD	1128.59	0	25
CD	917.86	00	25	CD	1129.48	00	25
CD	954.26	1	25	CD	1133.29	1	25
CD	963.25	0	25	CD	1134.08	10	293
CD	971.90	00	25	CD	1135.46	2	293
CD	975.70	00	25	CD	1139.04	8	25, 293
CD	982.32	0	25	CD	1142.25	0	25
CD	984.94	00	25	CD	1144.68	0	25
CD	985.34	0	25	CD	1146.71	2	293
CD	986.76	00	25	CD	1147.29	0	25
CD	987.46	00	25	CD	1148.03	0	25
CD	988.16	00	25	CD	1149.98	1	683
CD	988.81	0	25	CD	1153.38	1	683
CD	989.41	00	25	CD	1154.64	10	25, 293
CD	990.92	0	25	CD	1155.73	7	293
CD	995.06	0	25	CD	1157.61	0	25
CD	999.87	00	25	CD	1158.80	1	25
CD	1001.15	00	25	CD	1159.93	00	25
CD	1003.51	00	25	CD	1162.87	4	25, 293
CD	1004.63	0	25	CD	1164.65	20	25, 293
CD	1008.40	0	25	CD	1164.89	0	293
CD	1009.45	00	25	CD	1165.78	10	25, 293
CD	1011.22	00	25	CD	1167.30	14	25, 293
CD	1013.09	0	25	CD	1168.58	5	683
CD	1015.72	00	25	CD	1169.90	1	25, 683
CD	1017.23	0	25	CD	1171.21	1	25
CD	1017.87	00	25	CD	1172.33	0	25, 683
CD	1018.46	0	25	CD	1173.09	00	25
CD	1019.04	1	25	CD	1173.59	1	683
CD	1019.69	00	25	CD	1178.06	00	25
CD	1023.07	00	25	CD	1179.27	00	25
CD	1024.14	0	25	CD	1179.73	10	293
CD	1026.33	00	25	CD	1180.14	00	25
CD	1027.63	0	25	CD	1181.66	4	293
CD	1039.98	0	25	CD	1182.48	0	25
CD	1048.38	40	25, 683	CD	1183.07	8	293
CD	1049.51	0	25	CD	1183.40 *	20	293
CD	1050.66	00	25	CD	1183.67	2	683
CD	1052.54	00	25	CD	1184.05	0	25
CD	1055.02	00	25	CD	1186.11	1	25
CD	1055.83	25	683	CD	1187.40	1	683
CD	1062.23	10	293	CD	1189.60	2	25
CD	1066.54	00	25	CD	1191.44	0	25
CD	1075.06	1	25	CD	1192.17	00	25
CD	1077.25	00	25	CD	1193.54	0	25
CD	1080.84	00	25	CD	1194.13	14	293
CD	1081.50	2	293	CD	1194.56	0	25
CD	1086.97	00	25	CD	1195.63	10	293
CD	1088.60	00	25	CD	1196.69	15	293, 683
CD	1089.38	0	25	CD	1197.27	1	25
CD	1091.91	1	25	CD	1198.15	3	293
CD	1093.97	1	25	CD	1198.93	10	293
CD	1096.97	0	25	CD	1200.56	0	25
CD	1097.53	6	293	CD	1201.92	0	25
CD	1098.03	00	25	CD	1203.34	5	683
CD	1100.58	0	25	CD	1204.03	3	25
CD	1102.19	0	25	CD	1204.53	15	683
CD	1103.61	0	25	CD	1206.51	1	25
CD	1105.72	0	25	CD	1208.43	3	293
CD	1106.48	00	25	CD	1208.82	3	25, 683
CD	1107.76	0	25, 293	CD	1210.24	6	25, 293
CD	1110.53	00	25	CD	1215.38	8	293
CD	1111.23	0	25	CD	1218.04	1	293
CD	1112.64	00	25	CD	1223.52	10	293
CD	1113.28	0	25	CD	1225.02	0	25
CD	1113.76	0	25	CD	1226.23	00	25
CD	1116.22	00	25	CD	1227.07	4	293
CD	1116.88	2	293	CD	1228.07	2	25
CD	1118.16 *	24	25, 293	CD	1228.40	0	293
CD	1119.67	0	25	CD	1229.27	1	25
CD	1120.15	1	25	CD	1231.51	0	293
CD	1121.12	00	25	CD	1233.10	20	683
CD	1124.61	00	25	CD	1233.32	5	683
CD	1126.00	12	293	CD	1234.92	00	25

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD	1236.13	1	25	CD	IV	1347.59	0 25
CD	IV	1237.87	4 25, 293	CD	IV	1349.09	1 25
CD	1238.81	1	25	CD	IV	1350.98	1 25
CD	1241.18	0	25	CD	IV	1352.69	3 25
CD	II	1241.67	15 25, 683	CD	II	1353.08	40 683
CD	II	1242.54	75 25, 683	CD	IV	1353.89	3 25
CD	1243.11	1	25	CD	III	1354.304	3 471
CD	1244.77	2	25	CD	IV	1354.78	12 25, 293
CD	IV	1246.06	10 25, 293	CD	III	1356.22	2 25, 471
CD	IV	1246.56	8 25, 293	CD	IV	1358.11	10 25, 293
CD	IV	1247.39	2 25, 293	CD	IV	1358.49	6 293
CD	1248.51	1	25	CD	IV	1359.86	4 293
CD	IV	1249.94	8 25, 293	CD	IV	1360.36	2 25
CD	1252.39	0	25	CD	III	1361.412	0 471
CD	1253.24	3	25	CD	IV	1362.55	12 25, 293
CD	1254.49	00	25	CD	IV	1364.37	4 25, 293
CD	1256.00 *	100	25, 293, 683	CD	IV	1367.12	2 25
CD	III	1256.834	0 25, 471	CD	IV	1369.64	1 25
CD	1256.94	00	25	CD	IV	1370.48	16 25, 293
CD	IV	1259.14	6 293	CD	II	1370.91 *	150 683
CD	III	1261.538	1 25, 471	CD	II	1371.65	50 25, 683
CD	1262.41	0	25	CD	IV	1374.43	3 25
CD	IV	1262.98	6 293	CD	IV	1376.89	3 25
CD	1263.22	0	25	CD	IV	1378.02	0 25
CD	1263.95	00	25	CD	IV	1379.19	2 25
CD	1265.50	0	25	CD	IV	1380.98	12 25, 293
CD	IV	1266.25	2 25, 293	CD	IV	1381.88	2 25, 293
CD	IV	1266.47	12 293	CD	III	1383.60	5 25, 683
CD	III	1267.245	1 25, 471	CD	IV	1383.72	3 25
CD	1268.24	3	25	CD	III	1385.11	1 683, 471
CD	III	1268.838	0 471	CD	IV	1385.55	6 25, 293
CD	IV	1274.41	8 25, 293	CD	IV	1386.01	4 25
CD	1278.22	2	25	CD	IV	1388.41	1 25
CD	IV	1280.50	00 293	CD	IV	1390.01	2 25
CD	II	1281.73	75 25, 683	CD	III	1391.807	1 471
CD	II	1282.12	15 25, 683	CD	III	1392.10	15 25, 471, 683
CD	IV	1283.23	4 25, 293	CD	IV	1394.13	2 25
CD	IV	1285.63	10 25, 293	CD	IV	1394.99	2 25
CD	IV	1287.58	10 25, 293	CD	III	1396.78	10 25, 683
CD	1292.18	1	25	CD	IV	1397.65	10 25, 293
CD	III	1294.750	0 25, 471	CD	III	1399.27	1 471, 683
CD	II	1296.43 *	150 25, 683	CD	III	1400.70	3 25, 293, 683
CD	IV	1299.46	10 25, 293	CD	IV	1402.96	3 25
CD	1300.50	1	25	CD	IV	1403.68	12 25, 293
CD	III	1303.395	0 471	CD	II	1404.11	75 683
CD	IV	1304.36	14 25, 293	CD	III	1406.59	2 25, 293, 683
CD	IV	1306.07	12 293	CD	IV	1410.65	3 25
CD	1308.91	2	25	CD	IV	1413.39	0 25
CD	1310.27	3	25	CD	IV	1414.83	6 25, 293
CD	1311.47	0	25	CD	III	1416.28	25 25, 683
CD	1312.56	2	25	CD	IV	1418.30	1 25
CD	III	1313.718	0 25, 471	CD	IV	1418.89	16 25, 293
CD	IV	1315.12	4 25, 293	CD	III	1420.29	5 683
CD	IV	1316.89	8 293	CD	III	1420.54	8 25, 683
CD	IV	1316.99	4 25, 293	CD	IV	1421.48	2 25
CD	IV	1318.19	2 25	CD	IV	1423.90	1 25
CD	IV	1318.94	4 25, 293	CD	IV	1424.81	4 293
CD	IV	1320.64	0 25	CD	IV	1424.92	6 25, 293
CD	IV	1321.85	8 293	CD	III	1425.35	1 683
CD	IV	1322.54	1 25	CD	IV	1425.73	6 25, 293
CD	1324.08	1	25	CD	IV	1427.49	1 25
CD	IV	1325.55	10 25, 293	CD	IV	1429.28	6 293
CD	II	1326.50 *	100 25, 683	CD	III	1429.82	2 25, 293, 683
CD	IV	1327.78	2 25	CD	III	1431.17	3 683
CD	IV	1329.42	3 25	CD	IV	1431.55	4 25, 293
CD	III	1332.335	0 471	CD	IV	1432.23	4 25, 293
CD	IV	1333.53	6 293	CD	III	1432.86	5 25, 683
CD	II	1335.28	2 683	CD	III	1434.350	0 471
CD	IV	1337.44	3 25	CD	IV	1435.67	0 25
CD	IV	1339.26	3 25	CD	IV	1436.35	00 25
CD	IV	1340.17	1 25	CD	IV	1437.90	6 25, 293
CD	IV	1340.97	12 25, 293	CD	III	1438.74	1 25, 471
CD	IV	1342.20	2 25	CD	IV	1439.93	00 25
CD	IV	1346.15	8 25, 293	CD	IV	1443.02	1 25
CD	IV	1346.45	4 293	CD	III	1444.50	1 25, 471

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD III	1445.23	1	683	CD III	1550.07	10	683
CD III	1446.08	20	25, 683	CD III	1550.45	20	683
CD III	1447.55	25	25, 293, 683	CD III	1550.89	15	683
CD IV	1449.71	6	25, 293	CD III	1552.18	5	25, 683
CD	1451.08	0	25	CD IV	1553.97	0	25
CD IV	1452.63	10	25, 293	CD IV	1554.94	1	25
CD IV	1452.90	2	293	CD III	1555.21	3	25, 683
CD III	1455.74	30	25, 683	CD III	1556.48	5	25, 683
CD IV	1456.47	2	25	CD III	1557.35	3	25, 683
CD IV	1460.05	1	25	CD III	1558.531	2	471
CD	1462.15	00	25	CD III	1558.655	2	471
CD III	1466.14	8	25, 293, 683	CD III	1560.311	2	471
CD IV	1466.67	8	25, 293	CD III	1560.66	15	25, 471, 683
CD III	1468.22	2	25, 683	CD III	1561.28	3	25, 683
CD III	1468.80	2	25, 683	CD IV	1563.30	2	25
CD III	1469.51	1	683	CD III	1566.03	5	25, 471, 683
CD III	1469.79	3	25, 683	CD III	1566.508	0	471
CD III	1470.43	2	25, 683	CD III	1560.180	0	471
CD IV	1471.08	6	25, 293	CD III	1568.988	15	25, 471, 683
CD III	1471.97	5	25, 683	CD III	1569.413	4	471
CD III	1474.20	2	25, 683	CD III	1569.691	2	471
CD IV	1476.22	6	25, 293	CD IV	1570.20	10	25, 293
CD III	1477.22	2	683	CD II	1571.58 *	200	25, 683
CD IV	1478.32	6	25, 293	CD IV	1572.69	6	293, 683
CD IV	1479.37	6	25, 293	CD III	1573.11	3	25, 471
CD	1480.38	0	25	CD II	1573.42	50	683
CD	1480.95	0	25	CD IV	1575.10	2	25
CD	1481.61	0	25	CD IV	1578.32	2	25
CD III	1482.24	3	683	CD IV	1578.90	6	25, 293
CD IV	1482.95	8	25, 293	CD	1579.39	0	25
CD IV	1483.28	0	293	CD III	1582.39	10	25, 683
CD III	1483.770	0	471	CD II	1583.17	50	25, 683
CD IV	1486.94	3	25	CD II	1586.76	1	683
CD III	1491.28	1	683	CD III	1593.892	1	471
CD III	1491.81	15	25, 293, 683	CD II	1594.81	30	25, 293, 683
CD IV	1493.08	3	25	CD III	1596.209	0	471
CD IV	1496.25	3	25	CD III	1597.54	3	25, 471, 683
CD IV	1496.57	1	25	CD IV	1598.73	10	25, 293
CD IV	1498.39	4	25, 293	CD III	1599.092	1	471
CD IV	1500.11	4	25, 293	CD III	1599.444	2	471
CD III	1501.12	1	25, 293, 683	CD III	1599.62	2	25, 683
CD III	1501.54	4	25, 471	CD IV	1600.13	4	293
CD III	1502.65	2	683	CD IV	1600.42	10	25, 293
CD	1503.92	3	25	CD II	1601.04	50	683
CD IV	1505.45	0	25	CD III	1601.59	40	25, 683
CD III	1506.60	2	25, 683	CD IV	1602.20	4	293
CD III	1509.08	2	25, 683	CD	1603.09	0	25, 471
CD IV	1510.00	1	25	CD III	1604.87	20	25, 683
CD III	1511.01	5	25, 683	CD III	1606.64	20	25, 683
CD III	1511.65	10	25, 683	CD III	1607.28	10	683
CD III	1512.59	1	25, 293, 683	CD III	1608.91	15	25, 683
CD III	1513.13	5	25, 683	CD III	1609.61	10	683
CD IV	1513.75	6	293	CD II	1609.90	10	25, 683
CD IV	1513.92	6	25, 293	CD III	1611.858	0	471
CD II	1514.26 *	200	683	CD III	1612.51	15	25, 683
CD IV	1515.77	6	25, 293	CD III	1615.465	0	471, 683
CD III	1518.921	1	471	CD III	1616.822	0	471
CD IV	1519.40	0	25	CD III	1619.21	3	25, 683
CD IV	1520.88	2	25, 293	CD III	1621.13	3	25, 683
CD III	1522.988	0	471	CD II	1621.61	15	683
CD III	1523.55	10	25, 683	CD IV	1622.87	8	25, 293, 683
CD IV	1525.21	2	25	CD IV	1624.85	0	25
CD IV	1526.25	6	25, 293	CD III	1625.27	15	25, 683
CD III	1528.40	15	25, 683	CD III	1626.922	0	471
CD III	1529.30	30	25, 683	CD III	1628.528	8	25, 471, 683
CD III	1532.10	5	25, 683	CD III	1629.128	1	471
CD III	1538.46	1	25, 683	CD IV	1632.30	1	25
CD	1540.68	1	25	CD III	1633.990	1	471
CD IV	1541.92	1	25	CD IV	1635.81	0	293
CD III	1543.427	1	471	CD IV	1638.19	4	25, 293
CD IV	1544.52	2	293	CD II	1640.50	40	25, 683
CD III	1545.17 *	50	683	CD III	1642.90	00	25, 471
CD IV	1545.79	6	25, 293	CD III	1644.71	00	25, 471
CD IV	1547.01	6	25, 293	CD III	1646.66	0	25, 471
CD III	1547.57	25	25, 293, 683	CD II	1647.93	60	683

SYMBOL		WAVELENGTH INTENSITY		REFERENCE NUMBERS	
CD	IV	1648.58	2	25, 293	
CD	III	1651.245	0	471	
CD	III	1651.87	20	25, 683	
CD	IV	1652.82	1	25	
CD	II	1654.86	75	25, 683	
CD	III	1655.63	25	25, 683	
CD	III	1656.95	1	25, 471	
CD	IV	1658.08	4	25, 293	
CD	IV	1659.51	6	25, 293	
CD	III	1660.67	1	25, 471	
CD	IV	1661.18	1	25	
CD	II	1662.22	1	683	
CD	II	1664.27	60	25, 683	
CD	III	1666.77	1	25, 683	
CD	III	1667.484	1	471	
CD	II	1668.60	00	25, 683	
CD	III	1669.200	2	471	
CD	III	1670.206	1	471	
CD	III	1670.748	5	25, 471, 683	
CD	III	1673.027	1	471	
CD		1674.57	0	25	
CD	III	1675.70	1	683	
CD	III	1678.15	30	25, 471, 683	
CD	III	1678.908	1	471	
CD	III	1679.878	2	471	
CD	III	1685.846	1	471	
CD		1687.10	1	25	
CD	III	1688.13	00	25, 471	
CD		1689.63	00	25	
CD	IV	1697.16	2	25, 293	
CD	III	1699.70	10	683	
CD	IV	1700.14	4	25, 293	
CD	III	1702.04	2	25, 683	
CD	II	1702.47	50	683	
CD	III	1707.156	40	25, 471, 683	
CD	III	1708.056	1	471	
CD	III	1709.040	1	471	
CD	III	1712.040	1	471	
CD	III	1714.37	1	25, 683	
CD	IV	1715.76	0	25	
CD	IV	1718.71	1	25	
CD	IV	1719.92	0	25	
CD	III	1721.273	1	471	
CD	III	1721.93 *	40	25, 683	
CD	III	1722.95 *	40	25, 683	
CD	II	1723.39	2	683	
CD	III	1724.08	1	683	
CD	II	1724.41	50	683	
CD		1725.02	0	25	
CD	III	1725.66	30	25, 683	
CD		1732.56	0	25	
CD		1734.28	00	25	
CD	IV	1735.42	0	293	
CD		1736.09	0	25	
CD	III	1739.00	25	25, 683	
CD	IV	1739.95	2	25	
CD	III	1743.10	2	683	
CD	III	1745.69	5	683	
CD	III	1747.074	1	25, 471	
CD	III	1747.67	40	25, 683	
CD	III	1748.15	15	25, 683	
CD	IV	1754.00	1	25	
CD	IV	1755.34	3	25	
CD	III	1756.069	0	471	
CD	II	1759.78	20	683	
CD	IV	1763.67	6	25, 293	
CD	III	1768.82	30	25, 683	
CD	III	1773.06	40	25, 683	
CD	II	1774.07	1	683	
CD		1780.05	0	25	
CD		1781.17	0	25	
CD	IV	1781.79	1	25	
CD	II	1785.84 *	100	683	
CD	III	1786.990	0	471	
CD	III	1789.19	30	25, 683	
CD	III	1792.754	1	471	
CD	III	1793.40 *	75	25, 471, 683	
CD	III	1796.10	15	683	
CD	III	1797.286	0	471	
CD	III	1800.57	5	683	
CD	IV	1801.12	2	25	
CD	II	1807.57	2	683	
CD	III	1808.20	0	25, 471	
CD	II	1816.11	5	683	
CD	III	1823.41	40	25, 683	
CD	II	1827.14	10	683	
CD	II	1827.70 *	100	683	
CD	II	1833.98	10	683	
CD	II	1836.48	12	683	
CD	IV	1840.89	1	25	
CD	III	1843.938	1	471	
CD	III	1844.66 *	50	25, 471, 683	
CD	IV	1850.40	1	25, 293	
CD	III	1851.13	40	25, 683	
CD	III	1851.37	20	683	
CD	III	1855.85	40	25, 683	
CD	III	1856.67 *	200	25, 683	
CD	IV	1865.31	0	25	
CD		1871.03	00	25	
CD		1872.43	00	25	
CD	III	1874.08 *	150	25, 683	
CD	IV	1876.01	1	25	
CD	II	1880.31	10	683	
CD	II	1883.09	10	683	
CD		1884.61	0	25	
CD	III	1886.49	15	25, 683	
CD		1888.83	00	25	
CD	IV	1890.99	1	25	
CD	IV	1902.86	2	25	
CD	III	1903.48	15	25, 683	
CD	II	1908.76	15	683	
CD	III	1909.98	25	25, 683	
CD	III	1910.57	15	683	
CD	IV	1912.55	0	25	
CD	II	1922.23 *	300	25, 683	
CD	IV	1929.70	1	25, 293	
CD		1930.91	1	25	
CD	III	1939.59	10	25, 683	
CD	II	1943.54 *	100	25, 683	
CD		1959.69	00	25	
CD	II	1965.54	40	683	
CD	III	1968.25	3	683	
CD	II	1985.65	15	683	
CD	II	1986.89	30	683	
CD	III	1988.81	15	683	
CD	III	1992.77	1	683	
CD	II	1995.43 *	200	683	
INDIUM					
IN	I	I.P.	46669.93	K	2142.707 A
IN	II	I.P.	152195.	K	657.052 A
IN	III	I.P.	226100.	K	442.3 A
IN	IV	I.P.	439000.	K	228. A
IN	V		368.67	6	293
IN	V		370.10	6	293
IN	V		372.82 *	10	293
IN	V		372.94 *	10	293
IN	V		374.95	2	293

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
IN V	375.84	6	293	IN	1144.5	0	130
IN V	376.07	6	293	IN	1146.4	3	130
IN V	376.79	10	293	IN	1148.85	2	130
IN V	378.61 *	17	293	IN	1151.7	2	130
IN V	379.24	3	293	IN	1154.3	1	130
IN V	380.27	9	293	IN	1157.96	3	130
IN V	381.56 *	11	293	IN	1160.1	0	130
IN V	382.14	9	293	IN	1162.2	0	130
IN V	382.76 *	11	293	IN	1163.9	0	130
IN V	383.05 *	10	293	IN	1167.9	0	130
IN V	386.21 *	17	293	IN	1181.1	0	130
IN V	386.70 *	10	293	IN	1183.1	0	130
IN V	388.66	3	293	IN	1184.7	0	130
IN V	388.91 *	14	293	IN	1187.9	0	130
IN V	390.03	11	293	IN	1192.62	2	130
IN V	390.92	11	293	IN	1200.8	0	130
IN V	392.29	9	293	IN	1206.62	2	130
IN V	392.46	9	293	IN	1210.20	0	130
IN V	393.60	1	293	IN II	1212.71	4	413
IN V	393.89 *	25	293	IN	1214.8	3	130
IN V	395.74	11	293	IN	1222.61	0	130
IN V	397.73	3	293	IN II	1228.24	3	413
IN V	399.79 *	10	293	IN II	1228.62	2	413
IN V	400.05 *	9	293	IN	1232.0	0	130, 274
IN V	400.57 *	25	293	IN	1233.14	0	130
IN V	402.39 *	25	293	IN	1235.6	0	130
IN V	405.33	3	293	IN	1239.75	1	130
IN V	407.28	9	293	IN	1241.27	2	130
IN V	407.36	3	293	IN	1243.4	0	130
IN V	407.95	9	293	IN	1245.1	0	130
IN V	412.41	0	293	IN	1246.6	0	130
IN V	414.85	0	293	IN	1247.41	0	130
IN V	417.43	9	293	IN III	1250.43	0	290
IN V	418.45	2	293	IN III	1250.98	00	290
IN V	420.16	0	293	IN	1252.91	0	130
IN V	423.16	2	293	IN	1258.9	0	130
IN	583.5	1	335	IN	1260.67	0	130
IN	599.63	2	130	IN II	1263.23	1	413
IN	644.18	1	130	IN III	1264.69	00	290
IN II	680.30	1	413	IN II	1265.96	2	413
IN III	685.49	1	408, 590	IN II	1266.66	2	413
IN II	686.62	1	413	IN II	1267.19	0	413
IN III	691.82	1	408, 590	IN	1270.00	2	130
IN II	695.83	1	413	IN	1277.2	1	130
IN	702.30	2	130	IN	1278.85	1	130
IN	702.87	3	130	IN II	1280.49 *	10	413
IN	703.91	3	130	IN III	1289.80	2	290
IN II	710.09	0	413	IN III	1290.43	1	290
IN	718.58	4	130	IN	1295.94	5	130
IN II	734.94	0	413	IN	1300.61	3	130
IN	779.9	3	130	IN III	1305.58	0	290
IN II	783.97	1	413	IN II	1310.10	1	413
IN	787.75	4	130	IN	1313.15	2	130
IN	790.23	5	130	IN	1315.18	1	130
IN	796.7	4	130	IN I	1320.2 *	4	130, 274
IN	834.5	5	130	IN II	1322.51	2	413
IN	835.4	5	130	IN I	1323.3 *	2	130, 274
IN	843.2	0	130	IN	1326.5	2	130
IN	850.6	0	130	IN	1330.9	6	130
IN	854.9	0	130	IN I	1339.68 *	1	130, 274
IN	856.9	0	130	IN	1344.63	5	130
IN	860.2	0	130	IN	1351.10	5	130
IN	875.9	0	130	IN	1353.0	1	130
IN	878.8	0	130	IN	1355.6	1	130
IN III	882.21 *	4	410	IN	1360.5	3	130
IN	886.4	0	130	IN	1377.9	2	130
IN	889.5	1	130	IN	1379.75	3	130
IN III	891.02	1	408, 590	IN IV	1381.87 *	-5	130, 274
IN	899.0	2	130	IN	1384.18	5	130
IN	904.08	5	130	IN	1393.90	4	130
IN	906.8	1	130	IN II	1133.15	0	413
IN II	911.07	3	413	IN	1136.4	0	130
IN III	915.82 *	7	410	IN	1136.8	0	130
IN III	917.30	0	410	IN	1137.9	1	130
IN	923.4	1	130	IN	1142.9	1	130

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
IN III	926.89	2	408, 590	IN	1430.00	4	130
IN II	927.33	3	413	IN III	1434.78 *	8	408, 583
IN	933.6	1	130	IN	1439.8	3	130
IN	936.5	1	130	IN	1442.7	2	130
IN	938.0	1	130	IN	1446.1	3	130
IN	940.1	1	130	IN	1448.2	0	130
IN	942.5	1	130	IN	1454.3	2	130
IN II	947.49	0	413	IN	1461.4	2	130
IN II	950.55	0	413	IN	1465.8	2	130
IN II	951.69	00	413	IN II	1469.49	2	413
IN II	956.75	1	413	IN	1472.4	5	130
IN II	957.28	1	413	IN	1481.5	4	130
IN II	959.06	1	413	IN III	1487.63 *	12	408, 590
IN II	966.71	2	413	IN III	1494.08 *	10	408, 590
IN II	969.37	1	413	IN	1495.1	2	130
IN II	970.00	2	413	IN	1501.8	4	130
IN II	973.60	0	413	IN	1507.4	1	130
IN II	974.65	00	413	IN	1509.9	4	130
IN II	980.40	4	413	IN	1513.8	1	130
IN II	982.41	1	413	IN	1521.7	6	130
IN II	984.03	2	413	IN	1527.4	3	130
IN	987.3	2	130	IN III	1530.17 *	9	408, 590
IN II	990.37	4	413	IN	1533.6	2	130
IN II	993.08	1	413	IN	1544.2	2	130
IN	997.0	2	130	IN	1545.5	5	130
IN II	1000.63	3	413	IN	1553.1	1	130
IN II	1004.49	2	413	IN	1558.6	1	130
IN II	1006.70	1	413	IN	1561.4	1	130
IN II	1008.61	1	413	IN	1569.5	1	130
IN	1010.2	2	130	IN	1571.5	1	130
IN	1012.4	0	130	IN	1578.2	3	130
IN	1014.0	0	130	IN II	1586.37 *	6	413
IN	1015.5	0	130	IN	1593.0	6	130
IN	1016.5	0	130	IN	1599.5	4	130
IN	1018.2	1	130	IN	1605.78 *	9	130
IN	1020.1	2	130	IN II	1607.38	5	413
IN II	1022.45	2	413	IN	1611.90 *	10	130
IN	1024.8	2	130	IN	1615.8	2	130
IN	1028.6	3	130	IN III	1625.31 *	20	230, 408, 413
IN II	1032.38	2	413	IN	1632.6	1	130
IN II	1033.65	3	413	IN	1639.3	0	130
IN	1034.6	1	130	IN II	1640.10	5	413
IN	1036.8	3	130	IN	1642.2	1	130
IN	1039.5	0	130	IN	1642.8	0	130
IN II	1044.26	3	413	IN	1647.6 *	8	130
IN	1045.8	1	130	IN I	1648.00 *	2	134, 274
IN	1047.1	1	130	IN III	1649.95 *	5	290
IN	1048.9	3	130	IN	1652.4	0	130
IN	1052.3	0	130	IN	1653.1	0	130
IN	1054.5	1	130	IN	1654.7	2	130
IN II	1060.64	3	413	IN	1656.3	0	130
IN II	1060.82	0	413	IN	1656.9	0	130
IN	1063.0	1	130	IN	1657.4	0	130
IN II	1071.93	2	413	IN	1658.1	0	130
IN	1080.1	2	130	IN	1659.9	0	130
IN II	1081.66	3	413	IN	1662.7	4	130
IN	1083.0	2	130	IN	1665.58	2	130
IN	1086.5	0	130	IN	1666.62	2	130
IN II	1094.25	5	413	IN	1667.52	2	130
IN II	1094.47	1	413	IN II	1669.51	4	413
IN	1097.0	1	130	IN II	1671.89	4	413
IN II	1101.36	1	413	IN II	1674.04 *	6	413
IN	1109.9	3	130	IN I	1676.16 *	1	134, 274
IN	1113.0	0	130	IN II	1681.72	4	413
IN II	1114.55	1	413	IN	1692.6	1	130
IN	1116.3	0	130	IN II	1700.01 *	6	413
IN	1122.2	1	130	IN II	1702.51 *	6	413
IN II	1124.39	2	413	IN I	1711.54 *	5	134, 274
IN II	1124.70	1	413	IN II	1716.74 *	8	413
IN	1131.61	2	130	IN	1719.47	6	130
IN III	1403.03 *	10	230, 408, 590	IN	1721.29	7	130
IN	1406.20	5	130	IN	1729.00 *	8	130
IN	1414.9	4	130	IN	1732.7	0	130
IN	1417.1	1	130	IN	1735.3	0	130
IN II	1418.43	2	413	IN	1736.1	0	130

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
IN	1738.5	4	130
IN	1740.2	2	130, 274
IN I	1741.23 *	2	134, 413
IN III	1743.52	1	410
IN III	1748.71 *	25	230, 408, 590
IN III	1752.38	1	410
IN	1756.0	0	130
IN I	1758.49 *	1	134, 274
IN	1760.11	6	130
IN	1761.98	6	130
IN	1763.97	7	130
IN	1765.87	5	130
IN	1767.78	6	130
IN II	1770.83 *	6	413
IN II	1774.79	5	413
IN II	1777.51	2	413
IN	1796.2	4	130
IN	1798.7	3	130
IN	1802.4	0	130
IN	1803.9	0	130
IN	1810.5	1	130
IN	1818.5	2	130
IN	1820.6	2	130
IN	1822.0	2	130
IN	1826.0	2	130
IN II	1842.40 *	6	413
IN	1850.18	2	130
IN	1854.75 *	20	130
IN	1858.01	2	130
IN II	1862.90	0	413
IN	1869.2	2	130
IN	1908.9	1	130
IN II	1930.52 *	8	413
IN	1931.7	2	130
IN	1935.86	7	130
IN II	1936.25 *	10	413, 579
IN II	1966.88 *	10	413
IN II	1977.45 *	20	413, 579
IN	1990.5	4	130

TIN

SN	I	I.P.	59231.8	K	1688.28	A
SN	II	I.P.	118017.0	K	847.34	A
SN	III	I.P.	246020.0	K	406.47	A
SN	IV	I.P.	328550.0	K	304.37	A
SN	V	I.P.	583000.	K	172.	A
SN	VI		289.21		2	293
SN	VI		290.36		10	293
SN	VI		292.63		1	293
SN	VI		292.80		1	293
SN	VI		294.24		5	293
SN	VI		294.60		5	293
SN	VI		295.59		10	293
SN	VI		297.02		10	293
SN	VI		297.47		4	293
SN	VI		297.94		5	293
SN	VI		299.09		8	293
SN	VI		299.27		8	293
SN	VI		299.52		12	293
SN	VI		300.34		10	293
SN	VI		301.79		10	293
SN	VI		302.00		9	293
SN	VI		302.33		10	293
SN	VI		302.94		3	293
SN	VI		303.83		15	293
SN	VI		305.05		15	293

SN	VI	305.51	13	293
SN	VI	305.87	12	293
SN	VI	306.08	10	293
SN	VI	307.12	15	293
SN	VI	307.25	3	293
SN	VI	307.43 *	15	293
SN	VI	307.77 *	17	293
SN	VI	309.94	5	293
SN	VI	311.15 *	16	293
SN	VI	311.80 *	17	293
SN	VI	312.10 *	15	293
SN	VI	312.41	10	293
SN	VI	312.64	12	293
SN	VI	314.88	1	293
SN	VI	316.23 *	16	293
SN	VI	317.40 *	18	293
SN	VI	321.15	0	293
SN	VI	323.82	1	293
SN	VI	326.43	4	293
SN	V	355.66	12	280
SN	V	361.55	15	280
SN	V	373.14	10	280
SN		385.6	2	411
SN		401.5	1	411
SN		404.0	1	411
SN		415.8	1	411
SN		423.4	1	411
SN		432.3	1	411
SN		442.0	1	411
SN	IV	500.36	3	410
SN		502.0	8	411
SN	IV	505.89	3	410
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SN		538.4	2	411
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SN	IV	605.226	50	410, 681
SN	IV	609.835	1	681
SN	III	614.540	30	277, 681
SN	IV	619.039	50	410, 681
SN	III	623.925	2	277, 681
SN	III	624.104	20	681
SN	IV	628.726	50	410, 681
SN	IV	630.037	5	410, 681
SN	IV	635.309	0	681
SN	II	636.636	0	681
SN	III	644.748	3	681
SN	III	647.635	3	681
SN	III	651.331	2	681
SN	III	651.472	5	681
SN	III	651.655	2	681
SN	III	654.617	10	601
SN	IV	661.070	0	681
SN	III	668.689	15	681
SN	IV	669.002	1	681
SN	III	672.365	20	681
SN	III	676.575	0	681
SN	IV	685.822	2	681
SN	IV	699.014	2	681
SN	IV	702.030	5	681
SN	IV	704.439	1	681
SN	IV	707.268	3	681
SN	IV	713.004	10	681
SN	IV	715.678	0	681
SN	IV	716.850	3	681
SN	IV	729.127	0	681
SN	IV	730.751	1	681
SN	IV	731.259	1	681
SN	IV	732.674	1	681
SN	IV	732.998	1	681
SN	IV	734.265	0	681
SN	IV	734.514	0	681
SN	IV	736.972	0	681
SN	IV	740.331	1	681
SN	IV	741.817	1	681
SN	III	743.074	1	681

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SN III	744.229	30	277, 681	SN IV	912.540	1	681
SN IV	749.192	1	681	SN IV	912.713	0	681
SN III	751.195	10	681	SN IV	912.917	2	681
SN IV	751.405	15	681	SN IV	913.242	0	681
SN III	753.014	100	277, 681	SN IV	915.259	5	681
SN III	753.967	15	277, 681	SN IV	916.904	5	681
SN IV	758.683	10	681	SN II	917.370	5	448, 681
SN III	760.624	50	277, 681	SN IV	920.402	5	681
SN III	773.129	2	681	SN IV	922.835	5	681
SN IV	773.276	2	681	SN II	922.966	3	448, 681
SN IV	773.774	2	681	SN IV	923.147	20	681
SN III	775.793	75	277, 681	SN V	924.940	10	681
SN III	776.591	10	277, 681	SN III	925.198	30	681
SN III	777.083	0	681	SN V	925.326	10	681
SN III	777.472	0	681	SN IV	927.698	3	681
SN IV	778.582	2	681	SN V	929.243	30	681
SN IV	780.029	2	681	SN III	930.335	20	681
SN II	782.023	2	681	SN IV	932.854	1	681
SN III	784.684	50	277, 681	SN III	933.785	1	681
SN IV	787.73	0	681	SN V	934.337	5	681
SN IV	788.13	0	681	SN II	935.542	5	448, 681
SN IV	790.22	1	681	SN IV	935.898	30	681
SN IV	794.29	0	681	SN IV	936.240	2	681
SN IV	796.69	2	681	SN V	937.505	10	681
SN IV	801.64	0	681	SN II	939.463	1	681
SN IV	807.27	1	681	SN IV	942.060	2	681
SN V	824.477	2	681	SN III	943.955	1	681
SN V	827.177	5	681	SN V	944.372	10	681
SN IV	828.365	5	681	SN IV	944.670	1	681
SN IV	835.286	3	681	SN II	945.782	30	448, 681
SN IV	835.585	1	681	SN IV	945.936	3	681
SN IV	837.309	20	681	SN II	948.672	0	681
SN IV	839.602	0	681	SN III	950.166	20	681
SN V	839.730	10	681	SN IV	953.906	2	681
SN V	847.822	20	681	SN II	954.431	10	448, 681
SN V	847.981	30	681	SN IV	954.610	1	681
SN V	848.510	5	681	SN II	955.292	10	681
SN V	862.435	50	681	SN IV	956.249*	500	408, 681
SN IV	865.143	3	681	SN III	957.184	0	681
SN IV	868.912	0	681	SN IV	957.612	5	681
SN IV	869.058	5	681	SN IV	957.796	1	681
SN IV	870.144	0	681	SN II	960.590	5	681
SN IV	871.038	1	681	SN IV	961.170	0	681
SN IV	871.276	20	681	SN III	962.386	2	681
SN IV	872.567	0	681	SN IV	962.539	3	681
SN IV	874.612	5	681	SN III	965.277	2	681
SN III	879.090	5	681	SN IV	965.739	1	681
SN IV	879.590	10	681	SN III	966.633	1	681
SN IV	880.237	3	681	SN IV	966.794	5	681
SN IV	881.666	5	681	SN IV	967.946	0	681
SN IV	883.178	5	681	SN IV	968.522	1	681
SN IV	883.447	2	681	SN IV	968.705	3	681
SN IV	885.724	2	681	SN IV	968.946	0	681
SN IV	886.498	1	681	SN IV	969.106	1	681
SN IV	888.926	15	448, 681	SN IV	969.328	0	681
SN IV	890.272	3	681	SN IV	969.963	5	681
SN V	890.427	10	681	SN IV	974.256	5	681
SN IV	891.204	3	681	SN IV	975.967	5	681
SN IV	894.531	0	681	SN IV	976.431	2	681
SN V	896.567	3	681	SN IV	976.786	1	681
SN IV	897.599	1	681	SN IV	977.273	2	681
SN IV	897.764	3	681	SN IV	978.474	0	681
SN IV	898.479	2	681	SN IV	979.329	3	681
SN V	899.519	0	681	SN IV	983.737	1	681
SN II	899.857	3	448, 681	SN II	985.096	50	448, 681
SN IV	900.461	10	681	SN II	985.394	10	681
SN V	900.991	10	681	SN IV	992.305	5	681
SN IV	903.176	0	681	SN IV	993.316	1	681
SN III	904.919	20	681	SN IV	994.182	0	681
SN IV	907.134	2	681	SN II	994.796	0	681
SN IV	907.290	20	681	SN II	995.731	20	448, 681
SN IV	908.215	50	681	SN IV	996.004	1	681
SN IV	909.612	5	681	SN II	996.445	2	681
SN III	910.924	200	277, 681	SN II	997.167	200	448, 681
SN IV	912.359	2	681	SN II	999.200	1	681

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SN II	999.467	0	681	SN III	1124.643	10	681
SN IV	999.619	5	681	SN II	1131.286	5	681
SN III	1002.276	5	681	SN V	1131.359	50	408, 681
SN II	1006.070	1	681	SN III	1132.455	5	681
SN IV	1006.240	2	681	SN V	1132.794*	100	408, 681
SN IV	1007.053	2	681	SN IV	1136.376	5	681
SN IV	1008.569	3	681	SN III	1139.293*	1000	291, 681
SN II	1010.048	10	681	SN III	1140.871	5	681
SN III	1010.918	50	681	SN III	1141.900	15	681
SN III	1011.899	2	681	SN III	1142.842	5	681
SN II	1016.239	30	448, 681	SN III	1143.385	10	681
SN II	1016.984	3	681	SN IV	1145.104	2	681
SN IV	1017.216	30	681	SN V	1150.225	5	280, 681
SN IV	1019.719*	500	408, 681	SN II	1152.138	5	681
SN IV	1021.619	3	681	SN IV	1153.879	5	681
SN II	1023.418	5	681	SN III	1154.297	20	681
SN V	1025.009	10	280, 681	SN III	1158.333*	1000	291, 681
SN IV	1027.038	10	681	SN II	1159.010	200	448, 681
SN II	1027.417	20	681	SN V	1160.735*	200	280, 681
SN II	1028.143	2	681	SN III	1161.092	200	681
SN IV	1034.084	3	681	SN II	1161.412*	500	448, 681
SN V	1034.489	15	280, 681	SN III	1161.579	100	681
SN III	1035.553	1	681	SN II	1162.920	200	448, 681
SN IV	1036.021	2	681	SN IV	1169.156	2	681
SN II	1039.227	5	681	SN V	1171.129	10	280, 681
SN V	1040.463	10	280, 681	SN II	1171.896	2	681
SN II	1040.715	200	448, 681	SN IV	1172.715	1	681
SN II	1040.953	5	681	SN IV	1173.157	1	681
SN II	1041.300	30	448, 681	SN IV	1173.782	1	681
SN II	1041.681	0	681	SN IV	1173.902	1	681
SN III	1042.121	3	681	SN V	1176.258*	100	280, 681
SN IV	1044.487*	1000	408, 681	SN III	1176.597	2	681
SN III	1048.446	1	681	SN III	1177.167	10	681
SN III	1048.836	50	681	SN III	1178.601	10	681
SN IV	1051.595	2	681	SN III	1180.617	100	448, 681
SN IV	1052.765	20	681	SN III	1181.044	1	681
SN III	1053.875	30	681	SN III	1184.254*	1000	291, 681
SN IV	1054.477	1	681	SN II	1188.767	2	681
SN IV	1055.819	1	681	SN II	1189.628	1	681
SN III	1057.350	1	681	SN V	1189.918*	100	280, 681
SN IV	1058.370*	100	681	SN III	1189.992	200	681
SN IV	1058.586*	50	681	SN IV	1190.045	2	681
SN IV	1060.602	3	681	SN II	1193.681	1	681
SN V	1061.719	20	448, 681	SN II	1194.062	1	681
SN II	1062.126	50	681	SN II	1194.482	1	681
SN IV	1064.309	1	681	SN IV	1198.623	0	681
SN IV	1065.614	3	681	SN II	1201.355	1	681
SN III	1065.944	5	681	SN III	1204.058	200	681
SN IV	1070.927	1	681	SN V	1205.723*	100	291, 681
SN II	1071.030	1	681	SN IV	1206.031	1	681
SN IV	1073.407*	1000	291, 681	SN III	1210.515*	2000	291, 681
SN II	1079.067	0	681	SN II	1212.036	1	681
SN IV	1079.878	1	681	SN III	1212.445	5	681
SN III	1080.029	2	681	SN III	1212.692	3	681
SN IV	1084.569	3	681	SN IV	1213.037	10	681
SN IV	1085.689	3	681	SN III	1213.909	1	681
SN IV	1087.496*	200	681	SN V	1214.189	30	280, 681
SN V	1089.347*	200	280, 681	SN III	1215.105	100	291, 681
SN V	1092.524	20	280, 681	SN III	1216.779	3	681
SN V	1093.890	50	280, 681	SN V	1217.542	30	280, 681
SN II	1096.773	1	681	SN III	1218.136	100	681
SN IV	1096.916*	300	681	SN II	1219.090*	500	448, 681
SN III	1100.035	1	681	SN II	1220.264	15	681
SN V	1101.847	2	280, 681	SN II	1223.716	200	448, 681
SN IV	1103.237	50	681	SN II	1225.753	15	681
SN IV	1103.493	10	681	SN IV	1226.403	1	681
SN IV	1105.599	30	681	SN III	1230.171	100	291, 681
SN II	1108.128*	500	448, 681	SN III	1231.377	100	681
SN V	1111.521	50	280, 681	SN II	1234.746	10	681
SN IV	1114.571	3	681	SN IV	1241.160	5	681
SN IV	1116.003	3	681	SN III	1241.837	10	681
SN III	1117.268	1	681	SN II	1242.933	200	448, 681
SN IV	1119.344*	1000	408, 681	SN III	1243.632*	500	291, 681
SN IV	1120.679*	200	408, 681	SN III	1247.400	2	280, 681
SN III	1123.708	3	681	SN IV	1247.711	10	681

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SN V	1251.384*	2000	291, 681	SN II	1400.454*	1000	448, 681
SN III	1254.117	15	280, 681	SN III	1410.613*	500	291, 681
SN V	1257.606	5	681	SN IV	1418.751	2	681
SN III	1259.916*	1000	291, 681	SN II	1425.516	5	681
SN III	1260.442	1	681	SN IV	1435.114	2	681
SN II	1264.150	50	280, 681	SN IV	1437.519*	1000	408, 681
SN V	1264.753	3	681	SN III	1449.773	200	681, 277
SN III	1264.983	1	681	SN IV	1456.349	2	681
SN II	1269.329	3	681	SN II	1463.341	5	681
SN II	1269.883	5	681	SN II	1467.402	0	681
SN III	1272.089	30	681	SN II	1467.859	2	681
SN III	1276.314	40	681	SN V	1468.689	2	280, 681
SN II	1279.240	1	681	SN II	1475.008*	1000	448, 681
SN III	1282.372	5	681	SN II	1480.981	2	681
SN V	1283.808*	100	280, 681	SN II	1481.761	2	681
SN II	1285.086	2	681	SN III	1483.448	5	681
SN III	1285.528	1	681	SN III	1487.968	3	681
SN IV	1285.681	10	681	SN II	1488.507	5	681
SN IV	1286.379	1	681	SN II	1489.106	200	448, 681
SN III	1286.729	0	681	SN III	1494.900	20	681
SN III	1287.177	2	681	SN III	1495.349	30	681
SN II	1288.919	2	681	SN II	1501.903	5	681
SN II	1290.886*	1000	448, 681	SN III	1510.622	20	681
SN V	1294.357*	200	291, 681	SN II	1514.189	20	681
SN IV	1296.966	1	681	SN II	1517.960	200	681
SN III	1298.968	1	681	SN II	1520.142	100	681
SN II	1300.235	50	681	SN II	1526.711	0	681
SN V	1302.199*	100	280, 681	SN II	1527.857	20	681
SN II	1303.900	30	681	SN IV	1532.000	2	681
SN III	1305.970*	1000	291, 681	SN IV	1532.897*	100	681
SN II	1309.650	1	681	SN II	1533.134	1	291, 681
SN IV	1310.623	1	681	SN II	1533.439	1	681
SN IV	1311.146	2	681	SN II	1534.580	5	681
SN III	1311.346	2	681	SN V	1535.096	5	280, 681
SN III	1312.023	10	681	SN II	1537.568	1	681
SN II	1312.262	200	291, 681	SN III	1537.728	20	681
SN II	1313.086	20	681	SN II	1542.173	5	681
SN IV	1314.547	1000	408, 681	SN II	1542.828	5	681
SN II	1316.574	100	448, 681	SN III	1546.223	2	681
SN II	1317.905	25	681	SN III	1552.300	1	681
SN II	1319.216	0	681	SN II	1552.644	1	681
SN II	1319.594	2	681	SN III	1553.029	3	681
SN III	1325.715	3	681	SN II	1554.877*	500	681
SN III	1327.345*	1000	291, 681	SN III	1570.365*	1000	291, 681
SN III	1329.403	1	681	SN II	1574.424*	1000	291, 681
SN II	1331.741	3	681	SN III	1581.507	2	681
SN III	1334.699	200	291, 681	SN II	1585.069	30	681
SN II	1337.104	10	681	SN II	1586.574	2	681
SN IV	1339.053	2	681	SN III	1587.145	1	681
SN IV	1339.135	1	681	SN II	1587.525	10	681
SN III	1346.049	200	291, 681	SN II	1589.043	2	681
SN III	1347.652*	1000	681	SN II	1593.401	5	681
SN III	1348.751	3	681	SN III	1593.741	2	681
SN IV	1352.452	2	681	SN III	1596.483	3	681
SN II	1353.838	1	681	SN II	1602.295	30	681
SN V	1355.633	5	280, 681	SN II	1602.502	3	681
SN II	1358.702	20	681	SN IV	1607.823	1	681
SN III	1359.983	2	681	SN IV	1613.525	5	681
SN II	1363.801	30	681	SN IV	1614.485	1	681
SN II	1365.277	30	681	SN II	1621.729	15	681
SN III	1366.847	1	681	SN III	1623.000	30	277, 681
SN III	1369.712	200	277, 681	SN III	1624.605	5	681
SN II	1370.654	30	681	SN III	1628.409	20	277, 681
SN IV	1373.041	2	681	SN III	1629.164	1	681
SN II	1375.432	5	681	SN I	1633.577	1	308
SN II	1380.702	50	681	SN II	1636.015	2	681
SN III	1382.852	5	681	SN II	1636.992	50	291, 681
SN III	1384.672	1	681	SN IV	1640.624	5	681
SN III	1386.737*	1000	277, 681	SN III	1642.220	2	291, 681
SN III	1388.443	3	681	SN II	1643.230	40	681
SN III	1388.832	1	681	SN II	1645.000	10	681
SN II	1391.100	100	681	SN II	1645.753	10	681
SN II	1393.516	200	681	SN IV	1646.956	20	681
SN II	1394.783	20	681	SN II	1648.520	10	681
SN II	1396.396	5	681	SN III	1648.520	10	681

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SN II	1649.037	3	291, 681	SN I	1815.771*	100	473, 308
SN IV	1652.528	5	681	SN I	1819.273*	100	473, 308
SN I	1655.730	1	308	SN I	1820.186	2	308
SN I	1656.997	2	308	SN II	1820.345	5	681
SN II	1665.329	100	681	SN II	1822.058	1	681
SN IV	1667.500	2	681	SN I	1823.021*	200	473, 308
SN II	1670.802	1	681	SN I	1825.003	1	308
SN I	1670.887	1	308	SN II	1825.402	15	681
SN II	1671.558	0	681	SN I	1826.781	1	308
SN III	1674.294	50	291, 681	SN I	1828.183	5	473, 308
SN I	1676.316	1	308	SN I	1829.298	5	473, 308
SN II	1682.142	1	681	SN III	1829.612	15	681
SN I	1682.784	1	308	SN II	1831.753*	500	448, 681
SN III	1684.643	0	681	SN I	1833.094	10	473, 308
SN III	1687.139	1	291, 681	SN I	1833.585	0	308
SN I	1687.843	1	308	SN I	1835.414	1	308
SN I	1697.588	3	473, 308	SN I	1837.583	10	473, 308
SN II	1699.419*	1000	448, 681	SN IV	1847.283	1	681
SN I	1701.899	1	308	SN I	1848.054	15	473, 308
SN I	1702.184	1	308	SN I	1848.768*	100	308
SN I	1703.626	2	308	SN IV	1850.254	1	681
SN I	1703.073	1	308	SN I	1852.003	50	473, 308
SN I	1704.169	1	308	SN I	1854.253	30	473, 308
SN I	1706.275	10	308	SN III	1854.695	3	681
SN I	1706.630	3	308	SN II	1855.586	0	681
SN I	1708.722	10	308	SN I	1856.849	2	473, 308
SN III	1709.054	1	681	SN I	1860.330*	200	473, 308
SN I	1714.118	10	473, 308	SN I	1861.432	30	473, 308
SN I	1714.552	10	473, 308	SN I	1862.951	10	473, 308
SN I	1719.866	30	473, 308	SN I	1865.523*	100	473, 308
SN III	1722.380	2	681	SN I	1865.933*	100	473, 308
SN I	1726.067	5	308	SN I	1870.411	2	473, 308
SN I	1727.152	50	473, 308	SN I	1871.297	50	473, 308
SN I	1729.314	5	473, 308	SN I	1872.254	30	473, 308
SN I	1729.527	3	308	SN I	1873.302	50	473, 308
SN I	1733.64	5	473	SN I	1878.643	20	473, 308
SN I	1733.676	10	473, 308	SN II	1878.920	15	681
SN I	1736.021	1	308	SN I	1881.19	5	308
SN I	1737.231	50	473, 308	SN I	1882.647*	100	473, 308
SN III	1741.373	1	681	SN I	1884.256	3	473, 308
SN I	1745.718	5	473, 308	SN I	1886.042*	200	473, 308
SN I	1750.352	3	308	SN II	1886.165	1	681
SN I	1751.485	20	473, 308	SN I	1888.165	5	473, 308
SN I	1751.996	15	308	SN I	1891.415*	200	473, 308
SN I	1753.412	10	473, 308	SN I	1897.799	50	473, 308
SN II	1757.904*	5000	448, 681	SN II	1899.890*	5000	448, 681
SN I	1764.943	75	473, 308	SN I	1901.346	1	308
SN I	1765.817	1	308	SN I	1904.049	2	473, 308
SN I	1772.769	5	308	SN IV	1906.098	0	681
SN I	1773.364	50	473, 308	SN I	1907.425	3	473, 308
SN I	1774.835	3	473, 308	SN I	1909.305*	300	473, 308
SN I	1778.009	20	308	SN I	1911.613*	200	473, 308
SN II	1778.911	30	681	SN I	1913.528*	100	473, 308
SN I	1779.128	10	473, 308	SN I	1922.157	3	308
SN I	1780.491	20	473, 308	SN I	1925.305*	500	473, 308
SN IV	1785.690	3	681	SN I	1926.764*	100	473, 308
SN I	1787.407	10	473, 308	SN I	1927.966	30	473, 308
SN II	1787.562	5	681	SN I	1928.97	50	473, 308
SN I	1789.836	10	473, 308	SN I	1933.170	50	473, 308
SN I	1790.776	50	473, 308	SN III	1933.736	3	681
SN I	1792.3	10	473, 308	SN I	1936.261	1	308
SN II	1792.839	5	681	SN III	1941.857*	500	681
SN III	1795.382	0	473, 681	SN I	1942.690	50	473, 308
SN I	1795.743	5	308	SN I	1945.415	20	473, 308
SN IV	1796.141	1	681	SN I	1948.229	30	473, 308
SN I	1796.514	1	308	SN I	1948.89	2	473
SN II	1796.703	1	681	SN I	1949.885	5	308
SN I	1803.187	10	473, 308	SN I	1952.141*	500	473, 308
SN I	1804.628	75	473, 308	SN III	1955.516	50	681
SN I	1804.971	10	473, 308	SN I	1960.215*	100	473, 308
SN II	1807.317	10	681	SN II	1961.146	10	681
SN II	1811.200*	1000	448, 681	SN III	1961.146	10	681
SN III	1811.712*	500	291, 681	SN I	1967.5	10	473, 308
SN I	1813.020	50	473, 308	SN I	1969.137	10	308
SN I	1814.829	1	308	SN I	1969.986	3	473, 308

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SN	I	1971.452*	100 473, 308	SB	458.84	0	31
SN	I	1977.8	50 473, 308	SB	IV 463.56	4	31, 277
SN	I	1984.182*	100 473, 308	SB	469.54	00	31
SN	III	1991.675	15 277, 681	SB	475.24	0	31
SN	I	1991.890	30 473, 308	SB	475.82	0	31
SN	I	1993.439	5 473, 308	SB	477.13	1	31
SN	I	1994.982	30 473, 308	SB	477.91	1	31
				SB	479.93	2	31
				SB	481.95	2	31
				SB	483.14	1	31

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SB	I	I.P.	69700.	K	1430.	A	SB	490.04	0	31
SB	II	I.P.	133327.5	K	750.033	A	SB	491.98	3	31
SB	III	I.P.	204248.	K	489.601	A	SB	492.59	00	31
SB	IV	I.P.	356156.	K	280.776	A	SB	493.43	3	31
SB	V	I.P.	449300.	K	222.6	A	SB	494.32	1	31
SB	VI	I.P.	868140.	K	115.19	A	SB	495.52	1	31
							SB	496.40	0	31
							SB	497.56	3	31
							SB	498.06	00	31
							SB	503.54	3	31
							SB	504.00	0	31
							SB	504.21	3	31
							SB	508.74	00	31
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SB		240.76	3	31			SB	525.61	2	31
SB		242.80	5	31			SB	IV 531.54	2	31, 277
SB		244.18	1	31			SB	IV 531.89	1	31, 277
SB		245.91	1	31			SB	IV 539.90 *	6	277
SB		246.65	1	31			SB	IV 547.88	3	31, 277
SB		247.01	1	31			SB	IV 548.68	0	277
SB		248.77	3	31			SB	552.79	0	31
SB		251.71	3	31			SB	562.8	1	411
SB		252.12	3	31			SB	573.70	0	31
SB		256.36	2	31			SB	582.27	0	31
SB		263.46	0	31			SB	582.46	1	31
SB	VI	279.757*	15	31, 363			SB	583.70	0	31
SB	VI	284.890*	20	31, 363			SB	584.28	0	31
SB	VI	291.991*	5	31, 363			SB	600.90	0	31
SB	VI	292.405*	15	31, 363			SB	602.14	1	31
SB		299.91	8	31			SB	610.70	1	31
SB		311.35	3	31			SB	612.13	2	31
SB		316.07	6	31			SB	615.82	0	31
SB		316.81	8	31			SB	622.83	3	31
SB		320.69	4	31			SB	623.24	0	31
SB		324.62	3	31			SB	626.09	0	31
SB		326.64	3	31			SB	IV 626.51	2	31, 277
SB		326.90	1	31			SB	628.15	0	31
SB		331.83	5	31			SB	629.69	2	31
SB		332.10	5	31			SB	630.00	0	31
SB		334.66	3	31			SB	II 631.10	1	31, 351, 414
SB		335.00	1	31			SB	632.26	0	31
SB		335.51	0	31			SB	638.20	1	31
SU		337.66	6	31			SB	641.38	1	31
SB		347.40	2	31			SB	644.19	0	31
SB		357.97	00	31			SB	644.80	2	31
SB		372.02	00	31			SB	645.21	00	31
SB		373.78	2	31			SB	646.58	1	31
SB		388.19	5	31			SB	647.55	3	31
SB		393.07	5	31			SB	648.22	0	31
SB		395.49	2	31			SB	648.63	1	31
SB		397.72	1	31			SB	656.5	1	411
SB		411.85	1	31			SB	660.6	1	411
SB		433.09	00	31			SB	673.8	1	411
SB		435.38	0	31			SB	676.9	1	411
SB		440.51	0	31			SB	680.0	1	411
SB		452.18	00	31			SB	683.4	1	411
SB		452.65	0	31			SB	III 691.21	3	31, 407, 414
SB	IV	456.57	5	31, 277			SB	698.21	2	31

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SB III	698.80	4	31, 407	SB VI	959.63	2	31, 655
SB V	699.22	3	13, 408	SB IV	964.01	3	31
SB	702.7	1	411	SB	967.40	0	31
SB	706.84	1	31	SB	971.44	0	31
SB	717.67	4	31	SB II	972.16	3	31, 414, 655
SB	718.24	8	31	SB IV	978.03	4	31
SB III	722.41 *	6	31, 407	SB II	979.21	00	31, 414, 655
SB III	723.61	1	31	SB II	980.99	1	31
SB III	724.81 *	8	407	SB II	983.71	0	31, 414
SB	727.07	00	31	SB II	984.85	2	414
SB	727.62	1	31	SB II	985.54	00	31
SB	731.50	2	31	SB	987.74	00	31
SB III	732.33 *	5	31, 407	SB VI	989.75	00	31, 655
SB	744.73	2	31	SB	991.51	0	31
SB V	746.06	1	408	SB	993.76	0	31
SB	752.57	0	31	SB II	997.47	4	351, 414
SB	755.46	0	31	SB III	999.51	1	31, 407, 655
SB	757.30	0	31	SB II	1001.34	1	31, 414
SB	759.90	1	31	SB VI	1004.11	00	31, 655
SB	760.56	0	31	SB	1005.46	0	31
SB II	764.43	0	414	SB	1007.45	00	31
SB	765.59	0	31	SB	1008.48	0	31
SB	769.04	0	31	SB II	1009.80 *	4	31, 414
SB	771.07	0	31	SB VI	1010.82	2	655
SB	775.15	0	31	SB III	1011.95	4	31, 407
SB	786.08	1	31	SB II	1015.30	1	414
SB	789.12	0	31	SB VI	1017.65 *	5	655
SB	803.68	0	31	SB III	1020.56	3	31
SB IV	805.24	2	31, 290	SB II	1024.19 *	4	414
SB II	814.85	0	414	SB	1029.89	0	31
SB IV	820.19	3	31, 290	SB IV	1032.01	2	31
SB V	830.70 *	5	31, 230, 408	SB IV	1032.93	4	31, 277, 655
SB	833.38	2	31	SB VI	1035.85 *	10	655
SB	835.12	2	31	SB	1037.22	0	31
SB II	849.39	0	414	SB IV	1038.51	3	31
SB II	855.08	2	414	SB IV	1042.16 *	7	31, 290
SB IV	861.58	3	31, 290, 414	SB II	1043.19	3	31, 414
SB IV	873.68	3	31, 290	SB VI	1046.10	2	655
SB	875.90	0	31	SB III	1048.46	4	31
SB II	876.84	4	351, 414	SB IV	1051.33 *	10	290, 655
SB VI	883.45	00	655	SB IV	1051.54	0	31, 290, 655
SB	887.29	0	31	SB II	1052.39	00	31, 414
SB IV	888.41	4	31, 290, 414	SB VI	1053.31	0	31, 655
SB V	889.00 *	4	13, 31	SB II	1056.22	2	31, 351, 414
SB IV	891.26	3	31, 290	SB III	1056.90	2	31, 407
SB VI	892.87	1	31, 655	SB II	1057.32 *	8	414
SB II	896.75	1	414	SB	1061.46	0	31
SB VI	897.80 *	3	31, 655	SB	1062.70	00	31
SB II	899.63	1	31	SB	1064.05	0	31
SB	900.11	1	31	SB	1064.87	00	31
SB	901.63	1	31	SB III	1065.97 *	5	31, 407
SB II	907.36	1	414	SB	1068.16	0	31
SB	911.27	1	31	SB III	1070.25	3	31, 407
SB II	914.91	2	351, 414, 655	SB III	1070.54	3	31, 407
SB	915.41	00	31	SB VI	1073.10	00	31, 655
SB II	919.93	0	31, 414	SB II	1073.69	00	31, 351, 414
SB II	922.60	0	351, 414	SB V	1075.06	1	31
SB	924.18	0	31	SB III	1075.88	3	31, 407
SB	926.02	0	31	SB II	1076.85	1	414
SB	928.76	0	41	SB III	1078.10 *	5	407
SB IV	932.30	5	31, 290, 414	SB	1081.40	00	31
SB	935.40	1	31	SB	1082.59	00	31
SB II	937.12	3	31, 290, 414	SB III	1084.05	2	31, 407
SB IV	939.07	3	31	SB	1085.88	0	31
SB IV	940.26	0	31, 290	SB IV	1086.50	5	290
SB II	943.58	2	31, 414, 655	SB IV	1087.64	4	31, 290, 414
SB	944.68	00	31	SB II	1089.67	3	414, 655
SB	946.52	0	31	SB VI	1090.35	00	31, 655
SB	948.70	00	31	SB IV	1092.31	2	31
SB	949.40	0	31	SB II	1094.71 *	4	31, 414
SB II	950.88	0	31, 414	SB	1095.71	0	31
SB	952.36	0	31	SB	1097.01	0	31
SB VI	953.33	00	31, 655	SB III	1098.12	0	31, 407
SB	955.45	00	31	SB IV	1099.32	5	31, 277
SB II	957.78	2	351, 414	SB	1101.84	0	31

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SB	1103.08	2	31	SB	1274.94 *	4	31, 414
SB	1104.25 *	7	13, 31, 408	SB	1276.02	0	31
SB	1110.10	00	31	SB	1277.50	4	31
SB	1112.05	0	31	SB	1278.46	3	31
SB	1113.47	0	31	SB	1279.49	00	31
SB	1115.02	4	31, 290	SB	1280.56	00	31
SB	1116.22	3	655	SB	1281.79	00	31
SB	1119.21	4	31, 655	SB	1283.97	2	31
SB	1120.49	5	31, 290	SB	1285.98	2	31
SB	1121.34	0	31	SB	1287.70	0	31
SB	1122.69	0	31	SB	1288.26		31
SB	1124.46	0	31, 655	SB	1289.87	00	31, 414
SB	1127.03	0	31	SB	1293.74	00	31
SB	1128.63 *	6	31	SB	1296.41	1	31, 351, 414
SB	1130.36	3	31	SB	1299.27	1	31
SB	1132.30	1	31, 414	SB	1304.29	00	31
SB	1133.73 *	7	31, 655	SB	1306.81 *	6	31, 407
SB	1135.50	0	31, 407	SB	1309.22	00	31
SB	1145.86 *	15	290	SB	1310.79	0	31
SB	1146.28	2	31, 290, 414	SB	1313.19	0	31
SB	1151.46	4	31, 407	SB	1317.61	1	31, 414
SB	1152.17	2	31	SB	1319.76	0	31
SB	1156.52	0	31, 655	SB	1324.03	2	31
SB	1157.72	4	31, 407	SB	1325.31	2	31
SB	1160.09	2	31	SB	1327.55	2	31, 351, 414
SB	1161.05	1	31	SB	1329.67	3	31
SB	1161.97	1	31	SB	1331.55	00	31, 655
SB	1162.67	0	31	SB	1332.86	00	31
SB	1165.85	00	31	SB	1336.72	1	414
SB	1166.82	00	31, 407	SB	1338.06	2	31
SB	1167.42	0	31	SB	1342.09	0	31
SB	1168.52	4	31	SB	1344.48	0	31
SB	1169.94 *	5	655	SB	1345.79	00	31
SB	1171.40	5	31, 277	SB	1347.24	0	31
SB	1175.19	1	414	SB	1348.25	00	31
SB	1177.72	00	31	SB	1349.82	2	31, 351, 414
SB	1178.68	00	31	SB	1352.35	0	31
SB	1179.51	00	31	SB	1355.15	1	31
SB	1181.20	0	31, 414	SB	1356.41	1	31, 414
SB	1189.18	0	31	SB	1358.16	3	13, 31, 414
SB	1189.98	00	31	SB	1359.80	1	31
SB	1192.90	5	31, 290	SB	1361.12	00	31
SB	1196.69	00	31, 351, 414	SB	1365.54	2	31
SB	1199.21 *	6	31, 277	SB	1369.65	0	31
SB	1200.36	2	31, 414	SB	1371.85	1	31
SB	1200.89	1	31	SB	1372.87	1	31, 414
SB	1204.11	0	31	SB	1373.98	00	31
SB	1205.22	3	31, 407	SB	1374.93	1	31, 351, 414
SB	1207.55	3	31	SB	1379.68 *	6	31, 407
SB	1209.25	1	31	SB	1382.14	0	31
SB	1210.62	3	31, 407	SB	1383.14	1	31
SB	1214.78	5	290	SB	1384.77	3	31, 414
SB	1218.92	2	31, 414	SB	1388.91	40	31, 477
SB	1222.43	0	31	SB	1389.63	10	477
SB	1225.94 *	10	13, 31, 408	SB	1390.32	50	477
SB	1228.68	2	31	SB	1391.46	25	31, 477
SB	1230.44	00	31, 414	SB	1392.12	10	477
SB	1232.95	00	31	SB	1393.96	15	477
SB	1238.39	00	31	SB	1396.38	00	31
SB	1240.66	0	31	SB	1397.60	00	31
SB	1241.42	0	31	SB	1400.21	00	31
SB	1243.07	0	31	SB	1401.60	10	31, 477
SB	1244.20	0	31	SB	1404.19 *	7	31, 407, 414
SB	1247.38	0	31	SB	1406.68	20	477
SB	1248.57	0	31	SB	1407.89	3	31, 351, 414
SB	1250.56	1	31	SB	1410.82	5	477
SB	1251.65	0	31	SB	1413.98 *	100	477
SB	1253.88	0	31	SB	1415.79 *	100	477
SB	1255.30	0	31	SB	1416.95	10	477
SB	1258.88	00	31	SB	1420.60	10	477
SB	1259.53	0	31	SB	1429.65	3	31, 407
SB	1260.48	0	31	SB	1430.76	10	477
SB	1266.27	1	31	SB	1433.96	3	31
SB	1269.04	1	31	SB	1436.58 *	4	31, 414
SB	1272.76	0	31, 414, 655	SB	1438.26	3	31, 414

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SB I	1441.39	40	477	SB	1628.49	0	31
SB I	1442.40	10	31, 477	SB I	1629.03	10	477
SB II	1444.95	1	31	SB I	1629.17	10	477
SB	1448.76	1	31	SB II	1634.45	1	31
SB I	1449.46	5	477	SB I	1638.65	8	477
SB I	1456.62	30	477	SB I	1640.32	15	31, 477
SB I	1458.88	20	477	SB	1642.64	0	31
SB I	1459.79	8	31, 477	SB II	1643.58	1	31, 414
SB I	1462.20	20	477	SB I	1644.37	20	477
SB I	1463.08	10	477	SB	1646.06	0	31
SB I	1463.45	10	477	SB	1647.60	0	31
SB I	1463.96	15	477	SB II	1649.30	0	31, 414
SB I	1464.19	10	477	SB I	1650.70	3	31, 477
SB I	1467.05	5	31, 477	SB I	1651.20	50	477
SB I	1467.54	10	477	SB IV	1655.05	1	31, 277
SB I	1468.76	60	477	SB I	1655.52	10	477, 414
SB I	1469.60	5	31, 477	SB II	1657.036*	20	414
SB	1470.64	00	31	SB	1658.10	1	31
SB II	1472.08	2	31	SB I	1662.6 *	100	31, 477
SB I	1474.05	3	31, 477	SB	1663.28	1	31
SB I	1475.04	10	477	SB	1664.11	0	31
SB IV	1480.19	5	31, 277	SB I	1665.35	3	31, 477
SB I	1481.47	5	477	SB IV	1667.01 *	7	31, 277
SB I	1483.07	5	31, 477	SB	1668.30	2	31
SB I	1486.57	20	477	SB	1669.08	0	31
SB I	1491.36	40	31, 477	SB I	1671.21	5	31, 477
SB	1495.34	0	31	SB	1672.69	2	31
SB	1496.30	0	31	SB I	1673.98	10	31, 407, 477
SB IV	1498.72	2	31, 277	SB	1675.27	00	31
SB I	1503.50	2	477	SB I	1676.48	6	31, 477
SB II	1504.28	3	31, 414	SB I	1677.86	2	31
SB II	1505.84	2	31, 414	SB I	1679.72	5	477
SB I	1512.57	50	477	SB I	1686.84	20	477
SB II	1513.28 *	4	31, 290, 414	SB I	1688.06	30	477
SB I	1514.64	6	477	SB I	1691.02	30	477
SB I	1516.35	8	477	SB I	1695.15	7	477
SB I	1523.15	4	477	SB I	1697.34	2	477
SB II	1524.47	1	31, 408, 414	SB I	1698.85	50	31, 477
SB	1528.90	0	31	SB I	1702.22	20	31, 414, 477
SB	1530.62	1	31	SB I	1703.45	30	477
SB I	1532.38	15	477	SB	1704.80	00	31
SB I	1532.74 *	120	477	SB I	1709.21	15	477
SB I	1535.06	80	477	SB III	1710.21	1	31, 407
SB II	1540.11	1	31	SB III	1711.74 *	5	31, 407
SB	1540.58	3	31	SB I	1714.78	2	477
SB I	1543.96	20	477, 414	SB I	1715.64	2	477
SB I	1552.01	3	31, 477	SB I	1716.93 *	80	477
SB	1553.04	0	31	SB I	1717.45 *	150	477
SB II	1554.12	2	31, 351, 414	SB	1718.60	0	31
SB I	1557.13	10	477	SB I	1720.19	4	477
SB I	1557.29	30	477	SB	1721.97	0	31
SB II	1565.48 *	4	31, 414	SB I	1723.43 *	150	477
SB I	1566.76	15	477	SB I	1724.56	2	477
SB I	1571.10	15	31, 477	SB III	1725.30 *	5	31, 414, 495
SB I	1574.41	30	31, 477	SB I	1728.86	15	477
SB II	1576.22	1	31, 414	SB III	1730.62 *	6	31
SB	1577.60	0	31	SB	1731.87	0	31
SB II	1581.44	1	31, 414	SB I	1736.19 *	100	31, 414, 477
SB I	1582.46	40	477	SB	1737.95	0	31
SB II	1584.58 *	4	31, 414	SB I	1738.45	25	477
SB IV	1585.30	4	13, 31	SB I	1739.21	20	477
SB I	1588.32	8	477	SB I	1745.59	9	31, 477
SB	1593.24	0	31	SB	1747.56	1	31
SB	1595.51	00	31	SB I	1748.30	6	477
SB	1597.53	0	31	SB I	1750.06	15	477
SB IV	1599.38 *	15	31	SB I	1750.91	15	477
SB I	1599.96	80	31, 477	SB	1752.34	0	31
SB I	1600.91	3	31, 414, 477	SB I	1755.18	10	477
SB II	1607.00	3	31, 414	SB I	1757.79	50	477
SB I	1612.8 *	200	477	SB	1760.55	0	31
SB	1617.10	00	31	SB I	1762.24	20	31, 414, 477
SB I	1617.90	10	31, 477	SB I	1762.68	40	477
SB I	1622.55	8	477	SB I	1763.69	40	477
SB I	1623.3 *	100	477	SB I	1764.23	15	477
SB	1625.51	1	31	SB I	1765.76 *	100	31, 477

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SB I	1775.21	20	477
SB I	1777.50	20	477
SB I	1780.87 *	100	31, 477
SB I	1782.79	9	477
SB I	1785.64	15	31, 477
SB I	1788.24 *	100	31, 414, 477
SB	1793.53	0	31
SB I	1795.03	3	477
SB I	1795.28	10	477
SB V	1796.86 *	3	13, 31
SB I	1800.18 *	150	477
SB IV	1801.56	3	13, 31
SB	1804.81	00	31
SB I	1805.40	30	477
SB	1806.57	00	31
SB I	1807.84	8	477
SB I	1808.62	25	477
SB I	1810.50	50	31, 414, 477
SB	1812.13	00	31
SB I	1813.65	20	477
SB I	1814.20	80	31, 477
SB II	1815.12	1	31, 414
SB I	1818.02	3	31, 477
SB	1819.77	00	31
SB	1820.48	0	31
SB	1822.06	0	31
SB I	1828.78	10	477
SB I	1829.50 *	100	477
SB	1831.32	0	31
SB I	1832.21	40	414, 477
SB V	1833.48 *	5	13, 31
SB	1835.02	1	31
SB I	1836.61	20	414, 477
SB I	1839.33	7	31, 414, 477
SB I	1839.59	4	407, 477
SB	1840.57	1	31
SB II	1846.84	1	31
SB II	1847.61	3	31
SB II	1850.58	3	31
SB II	1851.97 *	4	31
SB	1856.13	1	31
SB	1856.72	0	31
SB II	1861.91	0	31
SB	1866.74	0	31
SB I	1868.17	50	31, 477
SB I	1869.23	5	31, 414, 477
SB I	1871.15 *	300	31, 477
SB I	1874.80	40	31, 414, 477
SB I	1876.29	20	31, 477
SB II	1878.45	1	31, 414
SB I	1882.56 *	150	31, 477
SB I	1887.5	40	477
SB I	1890.41	2	31, 477
SB I	1891.28	70	31, 414, 477
SB I	1893.16	2	477
SB	1894.81	2	31
SB	1895.12	0	31
SB	1895.77	1	31
SB I	1899.39	70	477
SB I	1900.72	2	477
SB I	1904.2	10	31, 477
SB I	1906.47	7	13, 31, 477
SB I	1907.82	5	477
SB	1910.89	0	31
SB I	1913.48	30	477
SB IV	1915.42	0	13, 31
SB	1918.94	0	31
SB I	1920.53	10	477
SB	1921.87	1	31
SB II	1923.47	1	31, 414
SB I	1924.74	8	477
SB I	1925.82	10	477
SB I	1927.08 *	100	31, 477
SB III	1946.07 *	5	31, 407, 495
SB I	1950.39 *	200	31, 477

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SB I	1952.15	10	477
SB	1954.07	5	31
SB I	1956.54	20	414, 477
SB I	1957.00	7	477
SB I	1959.55	2	477
SB	1961.73	3	31
SB I	1964.3	80	31, 477
SB I	1966.03	10	477
SB I	1971.34	20	31, 477
SB	1972.90	00	31
SB I	1974.07	5	31, 477
SB	1975.27	00	31
SB I	1978.23	30	477
SB I	1979.15	20	477
SB I	1982.82	15	477
SB I	1986.05	60	31, 477
SB I	1987.16	2	477
SB I	1990.67	40	31, 414, 477
SB I	1996.25	15	477
SB	1997.41	0	31

TELLURIUM

TE	I	I.P.		K	
TE I	I.P.	72667.	K	1376.14	A
TE II	I.P.	150000.	K	670.	A
TE III	I.P.	247000.	K	405.	A
TE IV	I.P.	305091.	K	327.771	A
TE V	I.P.	486244.	K	205.658	A
TE VI	I.P.	583500.	K	171.4	A
TE VII	I.P.	1106860.	K	90.346	A
TE		110.10	0	28	
TE		112.45	1	28	
TE		113.93	00	28	
TE		114.07	0	28	
TE		114.97	1	28	
TE		115.18	1	28	
TE		115.62	1	28	
TE		118.51	2	28	
TE		121.03	0	28	
TE		125.54	0	28	
TE		129.36	0	28	
TE		129.49	3	28	
TE		132.56	0	28	
TE		132.83	0	28	
TE		133.07	00	28	
TE		133.61	0	28	
TE		135.43	0	28	
TE		137.27	2	28	
TE		139.61	00	28	
TE		140.07	00	28	
TE		140.99	4	28	
TE		141.92	2	28	
TE		142.49	1	28	
TE		144.94	2	28	
TE		146.62	2	28	
TE		147.40	00	28	
TE		152.78	0	28	
TE		154.10	4	20	
TE		158.77	0	28	
TE		158.92	0	28	

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	159.19	1	28	TE	228.65	0	28
TE	160.80	00	28	TE	229.12	1	28
TE	161.08	0	28	TE VII	232.37 *	6	28, 363
TE	162.09	00	28	TE VII	236.45 *	3	30, 363
TE	162.33	00	28	TE VII	237.54 *	4	30, 363
TE	163.75	00	28	TE	241.93	0	30
TE	164.81	00	28	TE VI	242.27 *	4	30, 363
TE	165.27	0	28	TE VI	243.90 *	6	30, 363
TE	167.50	1	28	TE	244.82	1	30
TE	168.29	0	28	TE	245.18	1	30
TE	170.08	00	28	TE	246.63	3	30
TE	170.29	00	28	TE	250.02	5	30
TE	172.65	2	28	TE	251.79	0	30
TE	173.41	00	28	TE	252.40	0	30
TE	174.50	3	28	TE	252.78	3	30
TE	174.62	0	28	TE	253.98	4	30
TE	176.70	0	28	TE	254.71	5	30
TE	179.33	00	28	TE	257.64	6	30
TE	179.47	0	28	TE	259.74	4	30
TE	180.82	0	28	TE	261.73	4	30
TE	181.55	0	28	TE	263.75	1	30
TE	181.80	3	28	TE	264.03	3	30
TE	181.15	2	20	TE	264.43	0	30
TE	187.25	0	28	TE	265.80	7	30
TE	187.77	0	28	TE	268.00	00	30
TE	190.01	0	28	TE	268.38	00	30
TE	193.58	2	28	TE	268.68	5	30
TE	196.26	1	28	TE	269.90	00	30
TE	197.80	1	28	TE	271.58	2	30
TE	198.20	1	28	TE	272.09	2	30
TE	198.30	1	28	TE	272.25	1	30
TE	198.81	1	28	TE	273.58	0	30
TE	199.71	2	28	TE	274.06	1	30
TE	200.31	2	28	TE	275.65	4	30
TE	201.18	0	28	TE	278.00	0	30
TE	201.92	2	28	TE	280.05	2	30
TE	202.02	2	28	TE	281.10	0	30
TE	202.20	3	28	TE	283.98	0	30
TE	202.72	1	28	TE	286.60	00	30
TE	202.83	2	28	TE	288.39	0	30
TE	203.27	2	28	TE	292.88	0	30
TE	203.80	3	28	TE	308.15	0	30
TE	204.35	2	28	TE	309.09	0	30
TE	204.45	2	28	TE VI	313.90 *	6	30
TE	204.90	3	28	TE VI	318.26 *	5	30
TE	205.47	2	28	TE	321.37	00	30
TE	205.66	2	28	TE VI	336.11	1	30
TE	205.83	2	28	TE	339.86	1	30
TE	206.26	0	28	TE	342.51	0	30
TE	206.53	2	28	TE	345.17	0	30
TE	207.16	00	28	TE VI	350.00	2	30
TE	207.25	00	28	TE V	358.76 *	7	30
TE	208.00	0	28	TE	359.06	0	30
TE	208.47	00	28	TE	359.38	00	30
TE	208.81	3	28	TE V	364.36 *	6	30
TE	209.61	0	28	TE	374.03	4	30
TE	212.53	1	28	TE	374.36	2	30
TE	212.69	1	28	TE	379.60	1	30
TE	212.86	1	28	TE V	385.58	0	30
TE	213.70	0	28	TE V	389.96	2	30
TE	213.57	00	28	TE	399.49	00	30
TE	214.76	0	28	TE	400.41	0	30
TE	214.96	00	28	TE V	402.49	3	30
TE	217.55	0	28	TE	404.79	1	30
TE	217.60	0	28	TE	405.11	00	30
TE	218.66	1	28	TE	405.72	0	30
TE	218.76	0	28	TE	411.60	0	30
TE	218.85	1	28	TE	413.05	00	30
TE	219.91	00	28	TE	413.52	0	30
TE	221.91	00	28	TE	417.63	3	30
TE	222.57	0	28	TE	445.57	2	30
TE	224.97	0	28	TE	453.01	0	30
TE	225.73	0	28	TE	465.57	2	30
TE	227.15	00	28	TE	469.13	1	30
TE VII	227.86 *	6	28, 363	TE	469.47	00	30

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	472.58	00	30	TE	753.47	0	30
TE	485.16	2	30	TE	754.77	3	30
TE	492.79	3	30	TE	755.65	3	30
TE	498.01	1	30	TE	757.94	3	30
TE	502.03	1	30	TE	758.20	2	30
TE	507.70	3	30	TE	759.15	0	30
TE	514.71	0	30	TE V	763.39 *	6	30, 277
TE	515.13	4	30	TE	767.26	3	30
TE	516.14	0	30	TE V	768.38 *	5	30, 277
TE	522.45	2	30	TE	769.67	3	30
TE	530.12	00	30	TE V	771.47	3	30, 277
TE	538.10	00	30	TE	772.83	1	30
TE VI	540.27 *	4	30, 583	TE	774.28	2	30
TE	542.57	0	30	TE	775.38	1	30
TE	550.58	00	30	TE	776.83	3	30
TE VI	577.08 *	6	30, 583	TE	780.25	1	30
TE	592.03	0	30	TE	781.32	3	30
TE	598.97	1	30	TE	782.57	2	30
TE	603.02	00	30	TE IV	784.50 *	5	30, 583, 655
TE V	603.43	1	30, 277	TE	784.71	3	30
TE	603.70	00	30	TE	786.73	0	30
TE	613.92	1	30	TE	787.78	3	30
TE V	614.18	3	30, 277	TE	788.03	0	30
TE	632.95	0	30	TE	788.28	0	30
TE	641.63	2	30	TE	789.54	0	30
TE V	645.82	4	30, 277	TE	790.70	4	30
TE	646.50	0	30	TE	793.44	3	30
TE	649.20	1	30	TE	796.10	3	30
TE	650.56	0	30	TE	798.57	1	30
TE	653.34	00	30	TE	799.02	2	30
TE	653.87	00	30	TE	800.25	3	30
TE	655.52	0	30	TE VII	803.72	1	30, 655
TE	655.98	0	30	TE	804.47	1	30
TE	659.61	00	30	TE IV	804.89 *	5	30, 583
TE	659.86	0	30	TE	809.31	3	30
TE	677.71	00	30	TE	811.05	0	30
TE	678.46	0	30	TE	816.69	2	30
TE	679.05	00	30	TE	816.90	0	30
TE	680.66	1	30	TE	820.19	00	30
TE	680.86	0	30	TE	822.93	0	30
TE	684.66	2	30	TE	823.93	1	30
TE	685.79	00	30	TE	825.04	3	30
TE	687.36	00	30	TE	826.67	1	30
TE	687.77	00	30	TE VII	826.94 *	3	30, 655
TE	690.25	0	30	TE	828.51	0	30
TE VI	690.81 *	4	30, 583	TE	828.99	00	30
TE	693.89	1	30	TE VII	830.21 *	2	30, 655
TE	694.13	00	30	TE	830.89	5	30
TE	695.18	0	30	TE	833.09	1	30
TE	698.96	2	30	TE IV	833.64 *	5	30, 583
TE	703.78	00	30	TE	834.05	1	30
TE	705.78	00	30	TE	834.40	1	30
TE	710.73	2	30	TE	835.54	2	30
TE	711.19	0	30	TE	836.92	1	30
TE V	711.81	4	30, 277	TE	837.89	2	30
TE	713.01	2	30	TE	839.48	2	30
TE	718.59	2	30	TE III	839.78	2	30, 353
TE	719.07	0	30	TE IV	840.31 *	8	30, 583
TE	719.80	3	30	TE	841.49	0	30
TE	722.39	0	30	TE	841.90	00	30
TE V	724.07 *	5	30, 277	TE	842.56	00	30
TE	725.86	1	30	TE VII	843.51	00	30, 655
TE V	726.86 *	5	30, 277	TE	844.92	0	30
TE	727.54	1	30	TE IV	845.84 *	5	30, 583
TE	729.82	1	30	TE III	848.94	2	30, 353
TE	731.13	0	30	TE III	849.15	2	30, 353
TE	731.90	0	30	TE	849.52	1	30
TE	732.93	2	30	TE	849.70	1	30
TE	733.19	0	30	TE	851.89	1	30
TE	740.53	4	30	TE VII	852.03 *	3	30, 655
TE VI	743.05 *	4	30, 583	TE	854.75	2	30
TE	744.49	0	30	TE	856.69	2	30
TE	748.49	2	30	TE III	857.48	1	30, 353
TE IV	749.30 *	5	30, 583	TE	857.66	1	30
TE VI	752.25	1	30, 583	TE	858.58	1	30

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	858.99	1	30	TE	922.66	2	30
TE	860.03	00	30	TE	924.06	00	30
TE VII	860.93	00	30, 655	TE	924.51	00	30
TE	863.06	2	30	TE VII	924.89	00	30, 655
TE III	863.96	3	30, 353	TE VII	927.70	00	30, 655
TE	864.33	00	30	TE III	928.22	3	30, 353
TE	866.31	1	30	TE III	929.88	0	30, 353
TE VII	866.93	0	30, 655	TE III	930.79	3	30, 353
TE	868.00	1	30	TE V	931.84	4	30, 277
TE	868.57	0	30	TE III	932.31	3	30, 353
TE	869.27	00	30	TE	933.57	00	30
TE	869.88	0	30	TE	934.20	00	30
TE	870.59	3	30	TE	934.79	00	30
TE	870.84	3	30	TE	935.93	3	30
TE	872.06	2	30	TE	937.26	3	30
TE V	872.85 *	5	30, 277	TE V	938.10	4	30, 277
TE	873.33	0	30	TE	939.37	2	30
TE	873.78	0	30	TE	942.62	3	30
TE III	874.55	3	30, 353	TE III	942.89	3	30, 353
TE III	875.61	3	30, 353	TE	943.35	00	30
TE	876.23	0	30	TE	943.58	00	30
TE	876.45	0	30	TE	944.73	00	30
TE VII	877.54 *	3	30, 655	TE	945.00	0	30
TE	880.73	00	30	TE	945.33	00	30
TE	881.25	0	30	TE	947.62	0	30
TE	882.73	0	30	TE	947.97	0	30
TE	883.26	0	30	TE	948.80	1	30
TE III	884.66	3	30, 353	TE	949.03	0	30
TE	885.55	30		TE III	950.93 *	6	30, 353
TE	886.40	2	30	TE VI	951.29	1	30, 583
TE III	887.01 *	4	30, 353	TE	952.01	0	30
TE	890.47	0	30	TE	952.51	1	30
TE	891.48	1	30	TE	953.01	00	30
TE	891.80	00	30	TE	953.75	00	30
TE	893.06	2	30	TE V	954.33 *	5	30, 277
TE III	893.26	3	30, 353	TE VII	957.52	1	30, 655
TE	894.05	1	30	TE V	957.86	4	30, 277
TE	894.31	00	30	TE	962.29	1	30
TE V	895.23 *	8	30, 277	TE	963.49	2	30
TE	895.73	00	30	TE VII	964.85	0	655
TE	896.04	0	30	TE III	965.76 *	3	30, 353
TE	896.35	0	30	TE	967.46	1	30
TE IV	898.19	1	30, 655	TE	967.51	4	30
TE	899.79	0	30	TE	968.80	0	30
TE	900.25	0	30	TE	970.18	00	30
TE III	900.98	3	30, 353	TE III	971.16	2	30, 353
TE	901.15	0	30	TE	972.45	00	30
TE	901.97	1	30	TE III	973.58 *	3	30, 353
TE VII	902.58	1	30, 655	TE VII	975.42	00	30, 655
TE IV	903.06 *	4	30, 583	TE	978.12	00	30
TE III	903.95	0	30, 353	TE	978.71	2	30
TE	904.56	0	30	TE	979.05	1	30
TE	907.13	0	30	TE	979.64	0	30
TE	907.49	1	30	TE	979.94	00	30
TE	908.09	0	30	TE	982.65	1	30
TE III	908.62	2	30	TE	983.91	1	30
TE	909.81	2	30	TE	985.48	00	30
TE III	910.05	3	30, 353	TE	987.38	00	30
TE III	910.48	3	30, 353	TE	988.76	0	30
TE IV	910.00 *	4	30, 583	TE	989.48	0	30
TE VII	911.51	0	30, 655	TE	992.63	1	30
TE III	912.13	2	30, 353	TE	993.34	0	30
TE IV	912.87 *	4	30, 353, 655	TE VII	995.66 *	2	30, 655
TE III	913.53	2	30, 353	TE IV	996.86 *	4	30, 583, 655
TE	913.88	1	30	TE III	1000.42 *	3	30, 353
TE	914.48	0	30	TE	1001.77	1	30
TE	916.40	0	30	TE	1002.70	00	30
TE	917.66	00	30	TE	1003.73	00	30
TE	917.97	0	30	TE III	1004.45 *	3	30, 353
TE	918.77	0	30	TE	1004.90	1	30
TE	919.48	0	30	TE III	1006.46 *	3	30, 353
TE III	921.15	3	30, 353	TE VII	1007.80 *	1	30, 655
TE	921.82	1	30	TE	1014.27	0	30
TE	922.11	00	30	TE	1015.67	00	30
TE	922.39	00	30	TE	1016.18	0	30

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	1016.53	00	30	TE	1181.53	00	30
TE V	1018.08	4	30, 277	TE	1185.83	2	30
TE III	1018.95 *	3	30, 353	TE	1188.92	1	30
TE III	1019.82	0	30, 353, 655	TE	1193.11	0	30
TE	1022.79	0	30	TE	1196.48	00	30
TE	1023.48	1	30	TE IV	1196.96	2	30, 583
TE	1024.32	3	30	TE	1197.57	00	30
TE VII	1027.82	00	30, 655	TE	1202.75	1	30
TE III	1032.50	2	30, 353	TE	1203.27	0	30
TE V	1033.10 *	5	30, 277	TE III	1206.46 *	4	30
TE	1034.80	0	30	TE	1207.96	00	30
TE	1035.44	2	30	TE	1208.54	2	30
TE III	1035.81	2	30, 353	TE	1211.01	1	30
TE V	1037.19	4	30, 277	TE	1211.52	00	30
TE	1037.42	0	30	TE	1212.56	0	30
TE	1042.79	1	30	TE	1213.00	1	30
TE	1044.04	2	30	TE	1219.98	0	30
TE	1044.92	1	30	TE	1220.98	1	30
TE	1045.23	1	30	TE	1223.97	0	30
TE	1047.17	00	30	TE	1225.75	00	30
TE	1047.58	0	30	TE	1228.39	0	30
TE	1050.38	0	30	TE	1228.86	00	30
TE	1050.96	00	30	TE V	1236.31	3	277
TE	1054.23	0	30	TE VI	1242.11	0	583
TE	1054.63	0	30	TE	1253.62	1	30
TE	1056.65	1	30	TE	1256.38	3	30
TE	1057.00	00	30	TE VI	1268.01 *	3	583
TE	1059.51	2	30	TE	1270.01	0	30
TE	1064.55	2	30	TE	1270.52	0	30
TE	1067.97	00	30	TE	1271.06	0	30
TE	1068.86	0	30	TE	1272.76	0	30
TE	1069.45	00	30	TE	1274.72	3	30
TE	1069.96	4	30	TE	1278.62	00	30
TE VI	1071.41 *	5	30, 583	TE	1279.96	1	30
TE	1072.58	0	30	TE	1280.49	0	30
TE	1075.36	0	30	TE V	1281.67 *	6	30, 277
TE IV	1077.94 *	6	30, 583	TE	1283.35	00	30
TE	1081.29	1	30	TE	1285.66	0	30
TE	1083.39	3	30	TE	1287.52	1	30
TE	1086.62	0	30	TE	1289.61	1	30
TE	1089.02	2	30	TE	1291.96	4	30
TE	1090.11	2	30	TE	1298.33	3	30
TE	1090.80	00	30	TE	1306.85	1	30
TE	1091.80	00	30	TE	1311.02	1	30
TE	1095.21	3	30	TE VI	1313.90 *	3	583
TE III	1106.56	2	30, 353	TE	1338.31	0	401
TE	1107.54	1	30	TE	1345.20	2	401
TE	1111.55	1	30	TE	1363.24	2	401
TE	1113.18	0	30	TE	1366.73	2	401
TF	1116.84	00	30	TE	1374.80	2	401
TE	1122.24	00	30	TE	1386.13	0	401
TE VII	1123.46 *	1	30, 655	TE	1395.22	1	401
TE III	1124.10	2	30, 353	TE IV	1404.70	1	401, 583
TE	1124.48	0	30	TE	1404.99	1	401
TE	1126.16	00	30	TE V	1406.56 *	10	277
TE	1128.40	0	30	TE	1411.91	0	401
TE	1130.09	1	30	TE	1422.07	0	401
TE	1130.31	00	30	TE	1424.26	1	401
TE	1132.14	0	30	TE	1439.52	6	401
TE	1140.35	0	30	TE IV	1446.11	3	401, 583
TE	1141.10	00	30	TE	1447.99	6	401
TE	1142.58	0	30	TE IV	1458.34	2	401, 583
TE	1144.04	1	30	TE	1459.72	1	401
TE III	1144.69	1	30, 353	TE	1461.70	1	401
TE	1149.74	00	30	TE	1465.25	1	401
TE	1151.21	2	30	TE	1465.75	1	401
TE	1157.89	00	30	TE	1489.51	0	401
TE	1161.42	0	30	TE	1505.41	00	401
TE	1167.20	00	30	TE	1506.65	00	401
TE	1167.67	00	30	TE	1510.30	1	401
TE IV	1168.45 *	4	30, 583	TE	1513.39	1	401
TE	1168.95	00	30	TE	1518.77	00	401
TE	1174.34	00	30	TE	1520.34	00	401
TE	1176.70	0	30	TE	1526.05	3	401
TE	1179.41	0	30	TE	1529.46	0	401

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	1540.17	1	401
TE	1546.32	1	401
TE	1549.28	2	277
TE	1555.28	2	147
TE	1556.76	0	401
TE	1577.95	0	401
TE	1586.56	2	401
TE	1594.21	1	401
TE	1600.76	2	401
TE	1607.58	0	401
TE	1607.99	0	401
TE	1608.41	0	401
TE	1610.15	0	401
TE	1625.27	0	401
TE	1630.00	00	401
TE	1640.16	3	401
TE	1645.0	3	16
TE	1655.4	5	16
TE	1659.93	6	401
TE	1663.1	3	16
TE	1671.42	6	401
TE	1673.41	00	401
TE	1675.98 *	8	147, 401
TE	1678.07 *	15	147
TE	1679.37 *	12	147, 401
TE	1688.5	5	16
TE	1689.81	2	401
TE	1700.0 *	6	16, 147
TE	1702.26	2	147, 401
TE	1706.7	3	16, 147
TE	1708.0	5	16, 147
TE	1712.8	3	16, 147
TE	1718.58	0	401
TE	1721.2	3	16, 401
TE	1730.6	2	16
TE	1733.0	3	16
TE	1746.30	2	401
TE	1747.98	0	401
TE	1751.0 *	6	16, 147
TE	1759.4	5	16
TE	1772.53	6	401
TE	1773.8	3	16
TE	1775.0	5	16
TE	1777.4	3	16
TE	1790.1	4	16
TE	1791.8	2	16
TE	1793.67	0	401
TE	1795.7 *	6	16
TE	1796.3 *	6	16, 147
TE	1798.4	3	16
TE	1805.00	00	401
TE	1815.39	0	401
TE	1822.4 *	10	16, 147
TE	1825.5 *	6	16
TE	1827.94	1	401
TE	1828.9	4	16, 147
TE	1836.17	0	401
TE	1844.0	3	16
TE	1848.47	00	401
TE	1850.6 *	6	16, 147
TE	1852.1 *	6	16, 147
TE	1853.7 *	6	16, 147
TE	1854.9	2	16
TE	1857.2 *	8	16, 147
TE	1860.5 *	6	16, 147
TE	1862.94	0	401
TE	1885.15	0	401
TE	1896.1	4	16
TE	1908.58	0	401
TE	1909.7	3	16, 147
TE	1923.21	1	401
TE	1929.64	2	401
TE	1955.1	2	16
TE	1957.7	4	16
TE	1958.1	3	16

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	I	1960.28	3 147
TE	I	1994.8 *	7 16, 147
TE		1998.12	4 401

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I	I	I.P.	84340. K 1186. A
I	II	I.P.	154050. K 649.14 A
I	IV	I.P.	K A
I	VI	I.P.	K A
I	VII	I.P.	K A
I	VIII	I.P.	1370370. K 72.973 A
I	VIII	190.14 *	4 32, 363
I	VIII	194.15 *	5 32, 363
I	VIII	196.55 *	3 32, 363
I		201.01	0 32
I		201.50	2 32
I	VIII	201.70 *	4 32, 363
I		204.04	0 32
I		204.40	0 32
I		204.68	1 32
I		206.44	2 32
I		207.60	1 32
I		208.61	1 32
I		209.18	0 32
I		209.91	2 32
I		210.50	3 32
I		212.85	3 32
I		213.55	0 32
I		213.92	2 32
I		214.81	00 32
I		215.09	0 32
I		215.78	2 32
I		216.50 *	4 32
I		217.06	2 32
I		217.47	0 32
I		217.70	2 32
I		219.07 *	4 32
I		219.72	2 32
I		220.16	0 32
I		220.66 *	8 32
I		221.08	00 32
I		222.01	0 32
I		222.95	3 32
I		223.13	1 32
I		224.35	0 32
I		225.09	3 32
I		225.54 *	5 32
I		227.23	1 32
I		227.46 *	4 32
I		229.21	0 32
I		229.67	3 32
I		230.22	3 32
I		232.07	0 32
I		232.43	0 32
I		233.16	1 32
I		233.53	1 32
I		239.97	0 32
I		241.23	0 32
I		246.63	0 32
I		247.83	0 32
I		261.09 *	4 32

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I	262.06	0	32	I	II	516.76	0 32
I	265.12	3	32	I		517.63	00 32
I	268.67	1	32	I		519.05	00 32
I	269.91	2	32	I	IV	520.24	0 32
I	281.32	2	32	I		525.99	1 32
I				I			
I	292.65 *	6	32	I		528.29	00 32
I	296.93	0	32	I	IV	534.24	1 32
I	297.46 *	4	32	I	II	534.55	0 32
I	315.62	2	32	I	III	535.50	0 32
I	316.88	0	32	I		537.59	0 32
I				I			
I	321.63	00	32	I		538.17	2 32
I	322.50	1	32	I	II	538.86	2 32
I	327.14	0	32	I	II	540.47	2 32
I	329.46	0	32	I	III	541.83	1 32
I	330.51	1	32	I		542.22	00 32
I				I			
I	331.34	1	32	I		543.85	00 32
I	332.70	0	32	I	II	544.28	1 32
I	335.63	2	32	I		544.55	00 32
I	336.09	1	32	I		544.93	00 32
I	337.69	2	32	I	IV	546.03	0 32
I				I			
I	343.60	1	32	I		549.96	0 32
I	346.82	00	32	I	II	550.14	3 32
I	353.74	0	32	I	III	550.56	0 32
I	355.91	2	32	I	IV	550.90	3 32
I	357.94	1	32	I	II	551.34	1 32
I				I			
I	363.83	1	32	I		552.97	1 32
I	369.17	0	32	I		555.19	2 32
I	372.29	00	32	I	II	556.74	1 32
I	378.17	1	32	I		557.07	0 32
I	380.79	1	32	I		557.32	00 32
I				I			
I	III	435.62	0 32	I	IV	560.08	0 32
I		436.61	0 32	I		560.42	0 32
I	III	436.87	1 32	I		561.63	00 32
I	III	439.21	1 32	I		562.61	0 32
I		440.46	0 32	I		564.65	0 32
I				I			
I	440.83	0	32	I	IV	565.55 *	5 32
I	442.31	00	32	I	IV	570.00	2 32
I	443.45	00	32	I	II	572.01	2 32
I	III	445.30	2 32	I		572.64	00 32
I	III	446.54	3 32	I	II	572.91	2 32
I				I			
I	III	447.55	4 32	I	IV	573.15	2 32
I	III	448.89	0 32	I		575.53	0 32
I		450.44	00 32	I		575.91	0 32
I		451.85	00 32	I		576.33	0 32
I		452.86	0 32	I		576.97	0 32
I				I			
I	453.17	0	32	I	II	577.68	0 32
I	III	454.52	0 32	I	II	578.57	00 32
I	III	455.12	1 32	I	III	580.40	2 32
I	III	460.14	1 32	I	III	580.96	3 32
I		461.06	00 32	I	II	581.76	3 32
I				I			
I	III	461.69	3 32	I	III	582.66	1 32
I	III	463.25	2 32	I	III	582.80	1 32
I	III	463.86	1 32	I		586.64	00 32
I	III	466.06	4 32	I	II	586.92	0 32
I	III	469.43	1 32	I	II	587.24	00 32
I				I			
I	III	470.16	4 32	I	II	587.49	00 32
I		470.69	00 32	I	II	587.77	00 32
I		471.16	00 32	I	II	588.05	3 32
I		471.94	0 32	I	II	588.46	1 32
I		473.38	0 32	I	II	589.04	00 32
I				I			
I	474.11	0	32	I	VII	591.51 *	4 32, 230
I	II	480.49	00 32	I	II	592.36	2 32
I	IV	483.08	3 32	I	II	593.36	2 32
I		488.34	0 32	I	II	593.85	2 32
I	II	488.67	0 32	I		594.28	00 32
I				I			
I	II	490.08	0 32	I		598.11	0 32
I	III	493.40	2 32	I	IV	600.05	1 32
I		496.51	00 32	I	IV	601.31	0 32
I		496.73	00 32	I	IV	601.52	00 32
I		497.72	00 32	I	IV	601.86 *	5 32
I				I			
I	499.33	0	32	I	IV	602.37	1 32
I	502.46	00	32	I	II	602.61	0 32
I	503.86	00	32	I	IV	603.55	1 32
I	II	513.51	2 32	I		604.03	00 32
I	II	516.48	0 32	I	IV	605.23	1 32

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I IV	607.56	0	32	I II	689.817	400	32, 344
I IV	608.78	3	32	I II	690.082	5	344
I IV	612.46 *	6	32	I II	690.272	3	344
I II	613.95	1	32	I II	690.453	150	344
I III	614.11	0	32	I II	691.194	25	344
I IV	615.17 *	4	32	I II	691.295	6	344
I	615.38	0	32	I III	692.63	0	32
I	617.27	0	32	I II	693.567	60	344
I	618.39	0	32	I II	696.630	1	32, 344
I III	618.75	0	32	I II	696.840	1	32, 344
I IV	621.35	3	32	I II	697.358	1	32, 344
I	621.59	0	32	I II	697.606	15	344
I	626.51	1	32	I II	697.940	6	344
I IV	626.71	3	32	I II	698.032	4	32, 344
I IV	627.84	3	32	I II	698.650	10	32, 344
I	629.17	1	32	I II	699.697	1	344
I	629.45	1	32	I II	701.007	1	32, 344
I IV	631.19	3	32	I II	701.909	60	344
I	632.90	0	32	I II	703.12	3	32
I	632.78	0	32	I II	704.50	2	32
I II	633.75	0	32	I III	705.11 *	8	32
I	635.20	1	32	I II	706.055	1000	344
I	636.27	0	32	I II	706.319	10	344
I II	637.35	0	32	I II	706.622	3	344
I IV	639.20	3	32	I II	706.901	250	344
I VII	639.82 *	6	32, 230	I II	707.136	200	344
I III	640.11	2	32	I II	708.122	7	32, 344
I III	647.02	3	32	I II	709.733	80	32, 344
I III	647.62	3	32	I II	709.856	1	344
I VII	649.12 *	20	32, 230	I II	711.746	6	344
I	650.11	1	32	I II	712.918	400	344
I IV	650.94	2	32	I II	713.152	2	344
I	653.43	00	32	I II	713.502	30	344
I	653.96	0	32	I II	713.557	10	344
I IV	654.22 *	4	32	I II	713.654	200	344
I IV	654.56 *	4	32	I II	713.738	8	32, 344
I II	655.804	2	344	I II	714.00	3	32
I II	657.029	1	32, 344	I II	714.632	1	32, 344
I	657.48	0	32	I II	715.832	250	344
I	657.74	1	32	I II	716.161	10	344
I II	659.004	8	344	I II	716.583	250	32, 344
I II	661.412	1	32, 344	I II	717.388	120	32, 344
I	662.49	00	32	I	717.92	0	32
I	663.05	00	32	I II	718.360	1	32, 344
I II	663.977	10	344	I II	719.546	1500	32, 344
I II	664.031	3	344	I II	720.17	6	32
I II	664.520	10	344	I II	721.05	8	32
I IV	664.88	3	32	I	721.46	0	32
I II	665.055	10	344	I II	722.087	3	32, 344
I II	665.135	6	344	I II	722.169	15	344
I II	665.699	250	32, 344	I II	722.370	1	32, 344
I III	666.29	4	32	I II	722.980	1500	32, 344
I II	666.660	250	344	I III	723.63	1	32
I III	666.81 *	6	32	I II	724.550	2	344
I II	667.270	200	32, 344	I II	725.432	10	344
I II	668.264	20	344	I II	725.919	3	32, 344
I II	668.976	40	32, 344	I II	725.976	4	344
I II	672.505	60	344	I II	726.019	2	344
I II	674.063	5	344	I II	726.790	3	344
I II	675.748	1	344	I II	726.987	10	344
I II	676.493	150	344	I II	727.246	800	32, 344
I	678.00	2	32	I II	729.419	2	32, 344
I	678.41	0	32	I II	730.423	1	344
I II	678.856	400	32, 344	I II	731.005	7	344
I II	679.155	6	32, 344	I II	731.169	5	344
I II	679.618	80	344	I II	731.216	7	344
I II	680.971	25	32, 344	I II	731.860	20	32, 344
I II	681.266	8	32, 344	I II	731.961	25	344
I II	682.180	40	344	I II	732.092	50	32, 344
I II	682.685	60	344	I II	732.276	15	344
I II	683.414	1	344	I II	732.910	5	32, 344
I II	683.569	150	32, 344	I II	733.669	1	32, 344
I II	685.685	1	344	I II	734.430	1	344
I II	687.94	5	32	I II	735.402	2	344
I II	689.294	25	344	I II	735.863	2	32, 344

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I II	737.03	6	32	I II	799.065	20	32, 344
I II	737.546	500	32, 344	I III	801.47	1	32
I III	738.26	0	32	I II	801.95	8	32
I II	740.342	25	344	I II	802.618	1	344
I II	740.950	300	344	I III	804.14	4	32
I II	741.131	6	344	I II	805.361	5	344
I II	741.207	6	344	I II	805.926	2	32, 344
I II	743.054	20	344	I III	807.15	00	400
I II	743.848	60	32, 344	I II	809.188	60	32, 344
I II	744.188	40	344	I II	809.523	150	32, 344
I II	744.822	20	32, 344	I II	810.977	12	32, 344
I II	746.143	1	344	I II	812.562	2	32, 344
I II	746.523	15	32, 344	I II	813.01	1	32
I II	748.176	20	32, 344	I II	814.094	50	32, 344
I II	748.781	800	344	I II	814.459	3	344
I II	748.978	7	344	I II	814.880	12	32, 344
I II	749.160	5	32, 344	I II	816.717	15	32, 344
I II	749.552	15	32, 344	I II	818.047	700	32, 344
I II	750.197	250	344	I II	820.884	150	32, 344
I II	751.187	25	32, 344	I II	821.159	30	344
I II	752.191	1	32, 344	I II	822.594	12	32, 344
I II	752.656	6	344	I II	823.426	170	344
I II	752.798	7	344	I II	823.847	25	32, 344
I II	753.263	40	344	I II	824.841	1	32, 344
I II	753.364	3	32, 344	I II	825.122	500	344
I II	753.926	40	32, 344	I II	825.934	300	344
I II	754.342	1	344	I III	827.40	1	32
I II	754.540	8	344	I II	827.797	400	32, 344
I II	754.913	35	32, 344	I II	828.888	1	344
I II	756.935	2	344	I II	831.168	300	344
I II	758.201	25	344	I II	831.270	150	344
I III	759.85	4	32	I IV	832.14	3	32
I II	761.739	120	32, 344	I II	832.37	0	32
I II	762.621	2	32, 344	I VII	833.63 *	6	32, 230
I II	763.644	12	344	I II	834.095	1200	32, 344, 399
I II	764.71	0	32	I II	834.68	2	32
I II	765.594	600	344	I II	835.278	8	344
I II	765.61	6	32	I II	835.757	1	32, 344
I II	766.202	2	32, 344	I II	836.00	0	32
I III	766.82	00	400	I II	837.392	2	344
I II	770.771	300	32, 344	I II	838.070	700	32, 344
I II	772.078	1	344	I II	839.228	1	32, 344
I II	772.344	400	32, 344	I II	840.259	3	344
I II	773.055	500	32, 344	I II	841.097	700	32, 344, 399
I II	773.539	15	32, 344	I II	842.104	2	32, 344
I II	774.970	20	32, 344	I II	842.37	00	32
I II	776.07	7	32	I II	843.113	600	344, 399
I II	778.787	4	32, 344	I II	845.638	25	344, 399
I II	782.19	2	32	I II	846.295	900	32, 344, 399
I III	783.95	2	32	I II	847.796	600	344
I II	784.28	2	32	I II	847.926	1000	32, 344, 399
I III	784.64 *	7	32	I II	849.35	1	32
I III	784.80 *	7	32	I III	850.50	00	32
I II	785.23	2	32	I III	851.59	0	32
I II	785.733	25	32, 344	I II	855.494	400	344
I II	786.413	15	32, 344	I II	857.63	5	32
I II	786.460	20	344	I II	857.96	4	32
I II	787.13	1	32	I III	859.43	3	32
I II	787.989	1	32, 344	I II	859.85	00	32
I II	788.329	3	344	I II	861.13	7	32
I II	788.815	700	32, 344	I II	863.50	1	32
I II	791.147	350	344	I II	863.590	600	32, 344
I II	791.510	1	344	I II	863.93	0	32
I II	791.851	7	344	I II	864.326	2	32, 344
I II	791.967	15	344	I III	865.97 *	5	32
I II	792.165	120	32, 344	I II	866.988	1	32, 344
I II	792.313	70	32, 344	I II	868.380	750	344
I II	794.237	500	32, 344	I II	870.343	900	32, 344
I II	794.757	400	32, 344	I II	871.596	30	32, 344
I II	795.00	1	32	I II	872.391	800	32, 344, 399
I III	795.52 *	8	32	I II	873.489	1500	32, 344, 399
I II	797.819	2	344	I II	875.941	1000	32, 344
I II	798.158	1000	32, 344	I II	877.276	800	32, 344, 399
I II	798.427	400	32, 344	I II	878.48	0	32
I II	798.693	25	32, 344	I II	879.844	2000	32, 344

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I	880.11	0	32	I	II	994.70	4 32, 399
I	II	881.476	2 344	I	II	995.768	700 344, 399
I	II	881.881	1500 32, 344	I	II	998.579	2 344
I	II	882.027	4 344	I	II	1000.572	1200 344, 399
I	II	882.422	20 32, 344	I	II	1000.701	80 344
I	II	884.849	15 32, 344	I	II	1003.350	1000 32, 344
I	II	885.401	15 32, 344	I	II	1003.457	500 32, 344, 399
I	II	886.492	30 344, 399	I	II	1003.612	300 32, 344
I	II	890.995	1000 32, 344	I	II	1009.936	700 32, 344, 399
I	III	891.25	2 32	I	II	1016.381	20 344
I	II	893.167	1000 32, 344	I	II	1017.977	200 344
I	II	894.395	40 32, 344	I	II	1018.583	4000 344
I	II	895.844	400 32, 344, 399	I	II	1018.654	200 344
I	II	895.957	200 32, 344	I	II	1019.230	400 344
I	II	896.376	400 32, 344, 399	I	II	1019.400	800 344
I	II	896.692	400 32, 344, 399	I	II	1019.462	80 344
I	II	898.20	2 32	I	II	1023.544	200 344
I	II	901.004	200 32, 344	I	II	1026.065	350 344
I	II	902.130	400 32, 344, 399	I	II	1030.047	800 344
I	II	902.33	0 32	I	III	1031.97	1 400
I	II	903.09	1 32	I	II	1033.801	400 344, 399
I	II	903.925	5 344	I	II	1034.655*	10000 344
I	II	904.094	1 344	I	II	1042.154	100 344, 399
I	II	905.313	100 32, 344, 399	I	II	1043.430	2 344
I	II	905.692	4 32, 344	I	II	1046.373	200 344, 399
I	II	907.999	6 32, 344	I	II	1048.209	4 344
I	II	910.309	400 32, 344, 399	I	II	1052.613	3 344
I	IV	911.17	3 32	I	II	1052.730	2 344
I	II	911.83	2 32, 399	I	II	1053.647	2 344
I	II	914.957	200 32, 344, 399	I	II	1054.582	150 344
I	II	917.007	300 32, 344	I	II	1054.742	1500 344, 399
I	IV	919.28 *	7 32	I	II	1056.456	4 344
I	III	920.38 *	5 32	I	II	1059.086	3 344
I	II	921.343	400 32, 344, 399	I	II	1061.674	2 344
I	II	922.085	100 344	I	II	1063.424	1 344
I	III	922.69	3 32	I	II	1064.981	60 344, 399
I	II	925.119	1 344	I	II	1065.758	1 344
I	II	925.477	15 344, 399	I	II	1066.273	250 344, 399
I	II	925.830	1 32, 344	I	II	1066.646	4 344
I	II	926.414	2 32, 344	I	II	1067.341	2000 344
I	III	927.36	4 32	I	II	1075.210	3000 344, 399
I	II	929.143	800 32, 344, 399	I	II	1076.397	20 344
I	II	930.133	100 344, 399	I	III	1078.58 *	6 400
I	II	930.506	150 344, 399	I	III	1081.15	3 400
I	II	931.139	100 344, 399	I	II	1082.540	400 344, 399
I	II	931.52	1 399	I	III	1083.34	00 400
I	II	937.322	20 32, 344	I	III	1084.25	2 400
I	II	939.13	2 32	I	II	1085.405	700 344
I	II	940.904	200 344	I	II	1089.809	100 344
I	II	941.936	2 344, 399	I	II	1090.320	80 344
I	II	942.472	40 344, 399	I	III	1094.20 *	8 400
I	II	947.023	100 344	I	II	1099.370	50 344
I	II	947.749	15 344	I	II	1101.099	30 344
I	II	948.658	80 344	I	II	1101.239	400 344
I	III	951.92	00 400	I	III	1102.23	2 400
I	VII	952.74 *	5 32, 230	I	II	1103.590	800 344
I	II	953.199	8 344, 399	I	II	1105.000	5000 344
I	II	953.489	30 344	I	III	1109.88	00 400
I	II	956.503	10 344	I	II	1111.165	2500 344
I	II	957.673	1 32, 344	I	III	1115.68	00 400
I	II	958.333	25 344	I	II	1117.219	1500 344
I	II	959.619	100 344, 399	I	III	1120.14	1 400
I	III	961.17 *	6 32	I	II	1125.251	3500 344, 399
I	II	961.979	70 344	I	II	1129.050	10 344
I	II	963.415	4 344	I	II	1131.504	2000 344
I	II	964.127	12 32, 344	I	III	1135.28	4 400
I	II	967.378	700 344, 399	I	II	1139.752*	1200 344
I	II	968.670	100 344	I	II	1139.805*	10000 344
I	II	972.292	10 344	I	III	1150.52	00 400
I	III	973.37	2 400	I	II	1154.668	1500 344, 399
I	II	978.394	300 344, 399	I	III	1156.17	2 400
I	II	988.434	200 344, 399	I	II	1159.871	1000 344, 399
I	III	991.58	2 32	I	II	1160.562*	10000 344
I	II	992.508	150 344, 399	I	III	1164.97	2 400
I	III	993.48	3 32	I	II	1166.482*	20000 344

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I II	1167.054	1500	344, 399	I I	1265.326	40	344
I II	1168.830	800	344	I I	1266.731	150	344
I II	1171.007	50	344	I I	1267.569	600	344
I II	1175.841	5000	344, 399	I I	1267.596	600	344
I II	1178.650*	10000	344	I I	1275.255	1500	344
I III	1181.55	2	400	I II	1275.424	2000	344
I II	1184.156	200	344	I II	1275.596	1000	344
I II	1187.338*	15000	344	I II	1277.190	2500	344, 399
I III	1189.55	2	400	I III	1278.70	0	400
I II	1190.853*	10000	344	I II	1280.15	0	400
I III	1194.18	0	400	I III	1281.61	2	400
I II	1195.288	15	344	I II	1285.782	1500	344
I II	1196.786	10	344	I II	1286.084	4000	344
I II	1198.884	5000	344	I I	1289.395	3000	344
I II	1199.677	1000	344	I I	1291.143	300	344
I II	1200.223*	7000	344	I II	1296.416	3000	344
I II	1200.711	25	344	I II	1299.012	50	344
I II	1200.946	30	344	I I	1300.335*	10000	344
I II	1201.348	30	344	I II	1302.580	150	344
I I	1204.116	40	344	I I	1302.983	3000	344, 399
I II	1205.430	25	344	I III	1306.93 *	5	400
I II	1205.931	2000	344	I I	1313.432	1500	344
I II	1206.985	10	344	I I	1313.947	3000	344
I II	1207.964	20	344	I I	1317.542	3000	344
I II	1208.466	50	344	I I	1318.844	30	344
I I	1210.050	60	344	I I	1325.463	10	344
I II	1210.526	60	344	I I	1330.189	2000	344
I II	1210.872	10	344	I II	1330.714	30	344
I I	1212.177	60	344	I II	1332.533	12	344
I I	1212.242	60	344	I I	1335.238	200	344
I II	1213.203	60	344	I I	1336.479*	10000	344
I I	1213.627	40	344	I II	1336.517*	20000	344
I II	1214.631	50	344	I II	1338.210	20	344
I I	1216.021		344	I I	1339.903	800	344
I II	1216.125	3000	344, 399	I I	1340.709	1500	344
I I	1217.142	150	344	I I	1341.264	100	344
I I	1218.118	40	344	I I	1342.449	60	344
I I	1218.411	200	344	I I	1343.626	1000	344
I II	1218.711	100	344	I II	1348.772	40	344
I II	1218.909	70	344	I I	1348.903	800	344
I I	1219.087	70	344	I II	1349.698	10	344
I II	1219.327	10	344	I I	1350.206	600	344
I II	1220.887*	20000	344	I II	1351.219	20	344
I I	1223.430	100	344	I II	1354.13	10	400
I I	1224.049	600	344	I I	1355.099	5000	344
I I	1224.501	300	344	I I	1355.542	2000	344
I I	1224.856	400	344	I I	1357.971	3000	344
I II	1228.041	100	344	I I	1360.965	5000	344
I I	1228.888	500	344	I I	1361.111	3000	344, 399
I II	1230.222	600	344	I III	1363.10	0	400
I I	1230.732	400	344	I III	1365.75	0	400
I II	1232.914	10	344	I I	1366.506	800	344
I II	1233.069	100	344	I I	1367.714	2500	344
I I	1233.463	300	344	I I	1368.217	2500	344
I II	1233.517	50	344	I II	1380.501	500	344
I II	1234.063*	20000	344	I I	1382.284	1200	344
I I	1236.362	400	344	I I	1383.225	4000	344
I I	1237.231	200	344	I III	1384.78	00	400
I I	1237.892	300	344	I I	1390.750	3000	344
I II	1239.248	70	344	I I	1392.898	2000	344
I I	1239.296	70	344	I I	1395.049	30	344
I I	1239.463	70	344	I I	1400.014	2000	344
I II	1239.969	80	344	I I	1402.758	15	344
I III	1242.12	1	400	I I	1402.793	15	344, 400
I III	1244.66 *	4	400	I II	1406.138	10	344
I II	1250.559	700	344	I I	1409.46	0	400
I I	1250.826	400	344	I I	1412.180	200	344
I I	1251.335	600	344	I III	1412.34	1	400
I III	1252.35 *	8	400	I II	1415.30	10	400
I II	1252.58	0	400	I II	1418.539	25	344
I I	1259.153	2500	344	I I	1421.364	2000	344
I I	1259.510	3000	344	I I	1425.490*	8000	344
I I	1261.269	800	344	I I	1429.539	800	344
I III	1262.95	2	400	I II	1431.53	0	400
I II	1264.580	20	344	I I	1435.84	1	400

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I III	1440.94	1	400
I I	1446.260	5000	344
I I	1453.179	5000	344
I I	1457.368*	5000	344
I I	1457.470*	5000	344
I I	1457.981*	10000	344
I I	1458.794	2500	344
I I	1459.145	4000	344
I I	1465.828	2500	344
I II	1466.673	1000	344
I II	1485.734	30	344
I I	1485.918	1000	344
I I	1492.888	5000	344
I II	1504.761	10	344
I I	1507.041	5000	344
I I	1514.323	2000	344
I I	1514.678	5000	344
I I	1518.047*	15000	344
I I	1526.448	2500	344
I I	1549.794	80	344
I I	1582.610	1500	344
I I	1593.580	5000	344
I I	1607.66	1	400
I I	1617.604	5000	344
I II	1630.52	7	399
I I	1639.106	200	344
I I	1640.780	2500	344
I I	1642.137	2000	344
I I	1675.174	1500	344
I I	1702.068*	15000	344
I I	1782.758*	12000	344
I I	1789.6	00	763
I I	1799.091	5000	344
I III	1814.57	1	400
I I	1830.380*	75000	344
I I	1844.451*	15000	344
I I	1876.415	2000	344
I I	1914.81	7	400
I I	1937.97	1	400
I II	1961.04	2	494
I II	1985.07	0	494

XENON

XE I	I.P.	97834.4	K	1022.14 A
XE II	I.P.	171068.4	K	584.561 A
XE III	I.P.	259089.	K	385.968 A

XE	625.26	0	1
XE	635.51	0	1
XE	639.99	2	1
XE	640.36	2	1
XF	642.07	0	1
XE	643.19	2	1
XE	646.65	0	1
XE	647.70	0	1
XE	649.10	0	1
XE	650.43	0	1
XE	651.03	0	1
XE	665.09	4	1
XE	673.87	3	1
XF	675.02	0	1
XE	677.63	0	1

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
XE	680.58	2	1
XE	682.82	7	1
XE	686.73	1	1
XE	688.02	0	1
XE	690.40	1	1
XE	690.87	0	1
XE III	694.04	1	1
XE III	698.49	1	1
XE III	705.11	0	1
XE	716.09	2	1
XE	718.02	0	1
XE	718.89	3	1
XE	719.63	0	1
XE III	720.80 *	6	1
XE	722.62	0	1
XE	724.26	0	1
XE	726.99	2	1
XE III	732.24	1	1
XE III	733.24	0	1
XC II	740.406	3	61
XE III	742.58	0	1
XF	750.76	3	1
XE	758.44	0	1
XE	763.57	0	1
XE	774.53	4	1
XE III	779.07	1	1
XE	779.94	0	1
XE	784.09	7	1
XE II	787.31	6	1
XE III	792.83	0	1
XE	793.53	4	1
XE III	796.00	0	1
XE III	801.93	0	1
XE II	803.066	3	61
XE II	804.45	5	1
XE II	805.95	5	1
XE III	823.20	1	1
XE III	824.83	1	1
XE	839.73	2	1
XE	840.20	0	1
XE	842.35	5	1
XE III	852.91	1	1
XE II	854.71	6	1
XE	858.46	1	1
XF II	871.42	6	1
XE II	880.802	5	61
XE II	885.94	3	61
XE II	887.24	6	1
XE III	889.28 *	15	335
XE III	893.94	2	1
XE III	895.92	2	1
XE	898.12	0	1
XE II	912.71	8	1
XF II	925.866	5	61
XE II	931.25 *	10	1
XC II	935.405	2	61
XE II	939.16 *	12	1
XE	959.22	2	1
XE III	965.540*	10	65
XE II	971.84	3	1
XE II	972.769	7	61
XE II	976.678	6	61
XE	992.13	1	1
XE III	1003.36 *	6	1
XE	1014.80	0	1
XE III	1017.680*	25	65
XE I	1027.04 *	10	1, 476
XE II	1032.438	4	61
XE II	1037.680	6	1, 61
XE II	1041.306	9	61
XE III	1047.801*	9	65
XE II	1048.272	8	61
XE II	1051.920*	10	61
XC III	1066.391*	10	65
XE I	1067.10	5	1, 476

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
XE II	1074.476*	15	1, 61
XE II	1083.860	5	61
XE	1085.47	2	1
XE I	1088.94 *	10	1, 476
XE II	1100.432*	10	61, 65
XE I	1100.46 *	15	1
XE	1110.62	3	1
XE III	1130.344*	25	65
XE	1152.19	7	1
XE II	1158.474	5	61
XE II	1169.63	2	61
XE	1170.43	3	1
XE II	1183.053	7	61
XE I	1192.04	2	61
XE III	1232.07 *	25	335
XE II	1244.756	5	61, 65
XE I	1250.199	2	61
XE I	1277.50	6	1, 476
XE I	1295.560*	8	61, 65
XE I	1469.621	5	61, 65
XE II	1972.6	5	335

CESIUM

CS I	I.P.	31406.71 K	3184.032 A
CS II	I.P.	202263. K	494.406 A

CS III	529.7	0	235
CS III	547.8 *	2	235
CS III	550.2 *	2	235
CS II	564.25	3	789
CS III	571.7	1	235
CS II	575.34	1	789
CS II	591.08	3	789
CS III	592.9	0	235
CS III	595.7 *	2	235
CS II	602.95	1	789
CS II	607.98	1	789
CS II	612.82	7	410
CS II	639.42 *	12	418
CS III	645.0 *	4	235
CS III	649.4	0	235
CS II	657.15	5	418
CS II	668.43 *	12	418
CS III	686.5	0	235
CS III	708.4	1	235
CS III	722.2 *	2	235
CS III	734.5	1	235
CS III	758.9	1	235
CS III	782.6 *	3	235
CS III	802.8	00	235
CS II	808.77 *	20	418
CS II	813.85 *	20	418
CS III	817.9	1	235
CS III	877.9 *	7	235
CS II	901.34 *	20	418
CS II	926.75 *	20	418
CS	1669.5	1	659
CS	1673.2	1	659
CS	1675.5	1	659
CS	1040.6	2	659
CS	1859.3	2	659

CS	1861.3	0	659
CS	1873.2	2	659
CS	1877.6	1	659
CS	1884.0 *	6	659
CS	1889.2 *	6	659
CS	1896.8	0	659
CS	1897.1	0	659
CS	1897.7	0	659
CS	1900.7	1	659
CS	1908.1	1	659
CS	1910.2	0	659
CS	1914.6 *	4	659
CS	1915.6 *	3	659
CS	1919.3	1	659
CS	1920.0	1	659
CS	1923.4	2	659
CS	1925.0	0	659
CS	1930.9	1	659
CS	1935.2 *	8	659
CS	1936.0	0	659
CS	1937.4	1	659
CS	1938.8	2	659
CS	1941.2	0	659
CS	1942.3 *	4	659
CS	1945.1	1	659
CS	1955.3	1	659
CS	1961.4	2	659
CS	1962.3	0	659
CS II	1966.91	2	659, 789
CS II	1968.21	2	659, 789
CS II	1971.57	3	659, 789
CS	1974.5	1	659
CS	1976.8	1	659
CS	1981.5	1	659
CS	1983.7	1	659
CS	1985.1	1	659
CS	1990.1	1	659
CS	1991.9	1	659
CS	1996.5 *	5	659

BARIUM

BA I	I.P.	42032.4 K	2379.12 A
BA II	I.P.	80686.87 K	1239.359 A
BA IV	I.P.		A
BA IV	570.1	2	235
BA IV	612.5	1	235
BA IV	629.0	2	235
BA IV	631.1	2	235
BA IV	632.3	2	235
BA IV	634.0	2	235
BA IV	634.5	0	235
BA IV	638.0	2	235
BA IV	647.3 *	5	235
BA IV	653.8 *	5	235
BA IV	714.7	2	235
BA IV	719.9 *	5	235
BA IV	740.0 *	5	235
BA	1331.1	2	335
BA	1361.0	2	335

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BA II	1397.83		649
BA II	1413.35		649
BA II	1417.14	2	649
BA II	1433.15		649
BA II	1444.85		649
BA II	1461.45		649
BA II	1486.72	2	569, 649
BA II	1504.01 *	4	569, 649
BA II	1554.38 *	3	569, 649
BA II	1572.73	2	569, 649
BA II	1573.92		649
BA II	1630.40		649
BA II	1674.51	1	569, 649
BA II	1677.9 *	3	335
BA II	1694.37 *	4	569, 649
BA II	1697.16		649
BA II	1761.75		649
BA II	1771.03		649
BA II	1786.93	1	649
BA II	1849.5 *	4	335
BA II	1869.2 *	5	335
BA II	1892.65		649
BA II	1904.15	1	569, 649
BA II	1924.70 *	5	569, 649
BA II	1933.64		649
BA II	1954.21		649
BA II	1970.19		649
BA II	1985.60		649
BA II	1999.54 *	3	569, 649

LANTHANUM

LA I	I.P.	45293.	K	2207.8	A
LA II	I.P.	92240.	K	1084.	A
LA III	I.P.	154630.	K	646.70	A

NO DATA REPORTED

CERIUM

CE	398.7	1	411
CE	434.3	1	411
CE	439.6	1	411
CE	444.5	1	411
CE	447.5	1	411
CE	450.0	1	411
CE	475.1	1	411
CE	477.2	1	411
CE	484.4	1	411
CE	489.6	1	411
CE	513.4	1	411
CE	517.3	1	411
CE	519.6	1	411
CE	528.3	1	411
CE	544.4	1	411

CE	579.5	1	411
CE	598.3	1	411
CE	609.0	1	411
CE	621.9	1	411
CE	627.6	1	411
CE	631.4	1	411
CE	643.2	1	411
CE	669.7	1	411
CE	676.4	1	411
CE	740.7 *	5	411
CE IV	741.8 *	40	335
CE IV	754.6 *	30	335
CE IV	755.8	12	335
CE	791.5	1	411
CE	812.4	1	411
CE	830.4 *	20	411
CE	838.6	2	411
CE	846.1	2	411
CE	850.6	2	411
CE	852.2	2	411
CE	862.0	2	411
CE	882.3	1	411
CE	910.9	1	411
CE	915.9	1	411
CE	927.1	1	411
CE IV	949.30	3	335
CE	964.4	1	411
CE	1016.1	2	411
CE	1024.0	2	411
CE	1041.7	3	411
CE	1047.1	2	411
CE	1062.2 *	10	411
CE	1080.6 *	5	411
CE	1088.4 *	5	411
CE	1128.0 *	5	411
CE	1147.1	1	411
CE	1156.4	1	411
CE	1227.5	1	411
CE	1236.2	1	411
CE IV	1289.4 *	50	335
CE	1293.8	1	411
CE	1312.1	1	411
CE IV	1332.2 *	75	335
CE IV	1341.3	1	411
CE IV	1372.7 *	75	335
CE	1464.9	1	411
CE	1493.0	3	411
CE	1533.6	1	411
CE	1539.1	1	411
CE	1575.6	1	411
CE	1581.1	1	411
CE	1588.6	1	411
CE	1606.0	1	411
CE	1617.3	1	411
CE	1622.6	1	411
CE	1626.3	1	411
CE IV	1641.6	15	335
CE	1695.8	1	411
CE	1703.0	1	411
CE	1720.0	2	411
CE	1747.1	1	411
CE IV	1775.3 *	20	335
CE IV	1779.03 *	20	335
CE	1799.0	1	411
CE	1831.6	1	411
CE	1869.8	1	411
CE IV	1881.05	18	335
CE	1895.3	3	335
CE	1896.3	1	411
CE	1901.5	1	411
CE IV	1914.8 *	35	335
CE	1924.0	1	411
CE	1926.9	1	411
CE	1964.0	1	411
CE	1968.8	1	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CE	1974.0	1	411
CE	1987.7	1	411
CE	1996.2	1	411
CE	1996.6	1	411

PRASEODYMIUM — LUTETIUM

NO DATA REPORTED

HAFNIUM

HF	I	I.P.	K		A
HF	II	I.P.	K	830.	A

HF	II	1623.06 *	12	479
HF	II	1628.91 *	12	479
HF	II	1679.58	3	479
HF	II	1716.23	6	479
HF	II	1774.81 *	10	479
HF	II	1815.71	9	479
HF	II	1816.05	3	479
HF	II	1816.26	4	479
HF	II	1869.24	7	479
HF	II	1897.51	3	479
HF	II	1901.40	6	479
HF	II	1909.46	4	479
HF	II	1919.52 *	20	479
HF	II	1922.11	9	479
HF	II	1922.74 *	12	479
HF	II	1955.66 *	12	479
HF	II	1962.44	5	479
HF	II	1963.75	9	479
HF	II	1964.23 *	15	479
HF	II	1993.10	3	479

TANTALUM

TA	I	I.P.	K	1570.	A
TA	II	I.P.	K		A

NO DATA REPORTED

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TUNGSTEN			

W	I	I.P.	64400.	K	1550.	A
W	II	I.P.		K		A

W	211.3	2	781
W	217.0	2	781
W	218.4	2	781
W	221.1	2	781
W	223.7	4	781

W	227.3	2	781
W	229.8	2	781
W	232.6	1	781
W	235.5	1	781
W	236.4	1	781

W	237.8	4	781
W	240.6	1	781
W	244.0	1	781
W	244.9	4	781
W	248.5	2	781

W	250.2	1	781
W	251.0	1	781
W	259.0	1	781
W	265.6	1	781
W	268.9	1	781

W	269.9	1	781
W	272.8	2	781
W	274.1	2	781
W	274.6	4	781
W	278.4	2	781

W	281.4	7	781
W	284.6	1	781
W	288.5	1	781
W	293.7	4	781
W	302.5	2	781

W	308.7	1	781
W	316.3	2	781
W	325.4	2	781
W	330.7	1	781
W	333.2	1	781

W	334.3	1	781
W	337.2	1	781
W	338.3	1	781
W	340.7	4	781
W	342.6	2	781

W	348.6	3	781
W	350.2	3	781
W	351.9	1	781
W	353.9	2	781
W	356.9	2	781

W	367.4	2	781
W	372.3	3	781
W	395.0 *	8	781
W	404.3	7	781
W	407.3	2	781

W	408.0	1	781
W	410.9	1	781
W	412.6	1	781
W	414.3	1	781
W	415.0	1	781

W	421.6	1	781
W	424.5	1	781
W	432.6	1	781
W	435.6	1	781
W	438.5	2	781

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W	440.5	4	781	W	954.5	2	781
W	441.9	3	781	W	969.3	2	781
W	444.1	3	781	W	994.6	2	781
W	446.2	2	781	W	995.6	2	781
W	447.5	3	781	W	1001.6	2	781
W	449.4	2	781	W	1007.5	2	781
W	451.5	3	781	W	1014.5	2	781
W	453.8	5	781	W	1014.6	2	781
W	456.0	5	781	W	1020.6	2	781
W	456.6	3	781	W	1024.5	2	781
W	457.5	1	781	W	1033.6	2	781
W	462.7	3	781	W	1034.0	1	781
W	465.8	1	781	W	1037.5	4	781
W	467.3	2	781	W	1042.4	2	781
W	469.7	2	781	W	1049.8	1	781
W	474.4	2	781	W	1046.4	2	781
W	490.0	6	781	W	1049.2	2	781
W	492.9	4	781	W	1050.1	2	781
W	495.5	1	781	W	1051.7	2	781
W	497.3	1	781	W	1056.2	1	781
W	502.3	4	781	W	1063.8	2	781
W	503.0	4	781	W	1069.2	4	781
W	509.4	4	781	W	1071.3	2	781
W	514.3	1	781	W	1073.5	3	781
W	517.6	3	781	W	1086.4	3	781
W	518.7	3	781	W	1089.2	2	781
W	523.0	1	781	W	1093.7	3	781
W	526.5	2	781	W	1098.4	2	781
W	529.2	3	781	W	1103.8	1	781
W	549.5	3	781	W	1108.8	2	781
W	565.2	1	781	W	1112.8	2	781
W	568.2	1	781	W	1114.3	2	781
W	572.4	1	781	W	1149.5	2	781
W	579.4	1	781	W	1160.0	2	781
W	588.4	1	781	W	1161.7	3	781
W	603.3	3	781	W	1168.2	8	781
W	609.2	8	781	W	1173.6	3	781
W	613.1	1	781	W	1182.5	3	781
W	619.5	1	781	W	1191.0	2	781
W	627.6	1	781	W	1203.5	1	781
W	631.9	2	781	W	1208.7	2	781
W	641.5	10	781	W	1263.0	3	781
W	666.9	1	781	W	1264.0	3	781
W	678.5	2	781	W	1279.4	3	781
W	716.8	2	781	W	1287.0	3	781
W	723.8	3	781	W	1292.7	2	781
W	725.5	3	781	W	1311.9	4	781
W	737.4	1	781	W	1312.8	3	781
W	743.6	2	781	W	1337.3	4	781
W	756.5	1	781	W	1368.4	2	781
W	760.3	0	781	W	1374.1	3	781
W	770.9	1	781	W	1381.0	1	781
W	774.6	2	781	W	1386.1	1	781
W	779.6	2	781	W	1389.5	1	781
W	782.2	3	781	W	1391.9	1	781
W	786.3	5	781	W	1394.2	3	781
W	804.6	3	781	W	1400.6	2	781
W	809.3	4	781	W	1418.1	1	781
W	812.5	3	781	W	1424.3	2	781
W	815.4	4	781	W	1428.5	2	781
W	818.9	3	781	W	1451.4	1	781
W	821.7	2	781	W	1455.7	1	781
W	827.3	1	781	W	1468.2	6	781
W	831.4	2	781	W	1475.6	1	781
W	840.7	5	781	W	1490.1	1	781
W	846.1	3	781	W	1498.0	1	781
W	861.0	2	781	W	1502.2	2	781
W	864.7	2	781	W	1509.760	3	794
W	866.6	4	781	W	1515.124*	15	794
W	875.3	4	781	W	1515.819	5	794
W	877.4	3	781	W	1516.2	3	781
W	887.0	3	781	W	1520.2	2	781
W	923.6	2	781	W	1524.4	1	781
W	933.9	2	781	W	1529.3	2	781
W	943.9	2	781	W	1534.7	2	781

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W	1549.8	3	781
W	1551.8	3	781
W	1724.575*	20	794
W	1728.620*	10	794
W	1729.325*	20	794
W	1765.843	2	794
W	1777.051	4	794
W	1798.011*	20	794
W	1864.792	5	794
W II	1962.07 *	5	419
W II	1973.27 *	4	419
W II	1990.05 *	5	419

RHENIUM

RE	I	I.P.	63530.	K	1574.	A
RE	II	I.P.		K		A

RE	I	1716.45 *	12	350
RE	I	1758.55	0	350
RE	I	1759.83	3	350
RE	I	1763.70	0	350
RE	I	1788.96	1	350

RE	I	1845.77	1	350
RE	I	1848.88 *	12	350
RE	I	1851.23	0	350
RE	I	1857.34	3	350
RE	I	1873.03	5	350

RE	I	1874.93 *	15	350
RE	I	1876.36	4	350
RE	I	1884.70	3	350
RE	I	1888.43 *	10	350
RE	I	1891.04 *	10	350

RE	I	1900.83 *	50	350
RE	I	1905.74 *	50	350
RE	I	1909.36 *	50	350
RE	I	1912.81	2	350
RE	I	1915.01	3	350

RE	I	1924.74 *	15	350
RE	I	1927.72 *	15	350
RE	I	1941.33	8	350
RE	I	1942.61	5	350
RE	I	1952.00 *	12	350

RE	I	1953.77	5	350
RE	I	1963.38 *	15	350
RE	I	1965.83	5	350
RE	I	1969.87	0	350
RE	I	1970.80	2	350

RE	I	1977.48	2	350
RE	I	1981.62	5	350
RE	I	1995.61 *	20	350

OSMIUM

OS	I	I.P.	70450.	K	1419.	A
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NO DATA REPORTED

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
IRIDIUM			
IR	I	I.P.	75000. K 1300. A
IR		1929.4 *	3 335
IR		1994.8 *	3 335
IR		1996.5 *	3 335

PLATINUM

PT	I	I.P.	72300.	K	1380.	A
PT	II	I.P.	149723.	K	667.900	A

PT		390.4	1	411
PT		400.6	1	411
PT		406.1	1	411
PT		418.0	1	411
PT		422.3	1	411

PT		426.8	1	411
PT		452.5	1	411
PT		454.4	1	411
PT		456.0	1	411
PT		474.6	1	411

PT		479.5	1	411
PT		484.5	1	411
PT		490.5	1	411
PT		494.6	1	411
PT		504.0	1	411

PT		524.8	1	411
PT		547.6	1	411
PT		571.1	1	411
PT		582.5	1	411
PT		586.5	1	411

PT		611.3	2	411
PT		621.5	1	411
PT		630.7	1	411
PT		642.2	1	411
PT		658.4	1	411

PT		673.4	2	411
PT		684.3	1	411
PT		696.1	3	411
PT		701.7	3	411
PT		713.5	3	411

PT		718.6	3	411
PT		766.6	2	411
PT		781.6	2	411
PT		790.0	2	411
PT		805.0	3	411

PT		828.0	2	411
PT		864.8	2	411
PT		874.8	2	411
PT		878.9	2	411
PT		888.6	2	411

PT		892.5	2	411
PT		896.0	2	411
PT		907.	20	335
PT		914.9	1	411
PT		930.2	3	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT	935.4	3	411	PT	II	1213.215	3 671
PT	952.6	1	411	PT	II	1221.033	5 671
PT	961.5	2	411	PT	II	1229.007	1 671
PT	II	976.419	1 671	PT	II	1232.867	1 671
PT	994.5	2	411	PT	II	1235.878	10 671
PT	1001.8	1	411	PT	II	1237.455	5 671
PT	II	1007.964	1 671	PT	II	1238.847	3 671
PT	II	1012.862	1 671	PT	II	1239.181	3 671
PT	II	1032.714	1 671	PT	II	1242.124	0 671
PT	II	1033.450	0 671	PT	II	1246.073	1 671
PT	II	1035.685	2 671	PT	II	1246.420	2 671
PT	II	1040.400	10 671	PT	II	1247.611	2 671
PT	1055.5	3	411	PT	II	1248.600	5 671
PT	II	1062.018	3 671	PT	II	1249.122	2 671
PT	II	1062.626	5 671	PT	II	1249.881	1 671
PT	II	1063.479	5 671	PT	II	1249.951	2 671
PT	II	1075.502	0 671	PT	II	1259.494	1 671
PT	II	1077.078	5 671	PT	II	1264.337	10 671
PT	II	1078.405	10 671	PT	II	1264.561	8 671
PT	II	1080.366	3 671	PT	II	1264.688	5 671
PT	II	1080.944	0 671	PT	II	1268.752	10 671
PT	II	1082.537	5 671	PT	II	1269.801	5 671
PT	II	1084.688	1 671	PT	II	1271.784	2 671
PT	II	1086.459	10 671	PT	II	1281.340	20 671
PT	II	1087.126	2 671	PT	II	1286.442	5 671
PT	II	1100.319	2 671	PT	II	1289.940	3 671
PT	II	1105.702	3 671	PT	II	1291.137	10 671
PT	II	1109.460	3 671	PT	II	1291.695	10 671
PT	II	1112.925	1 671	PT	II	1293.082	0 671
PT	II	1117.828	3 671	PT	II	1293.953	15 671
PT	II	1120.622	3 671	PT	II	1296.821	15 671
PT	II	1122.510	1 671	PT	II	1302.446	1 671
PT	II	1125.738	1 671	PT	II	1303.118	0 671
PT	II	1127.453	1 671	PT	II	1304.421	5 671
PT	II	1128.839	1 671	PT	II	1305.305*	30 671
PT	II	1129.304	3 671	PT	II	1309.517	3 671
PT	II	1129.444	0 671	PT	II	1309.843	3 671
PT	II	1132.821	0 671	PT	II	1310.973	2 671
PT	II	1135.48	15 671	PT	II	1320.158	1 671
PT	II	1140.61	3 671	PT	II	1323.065	5 671
PT	II	1141.885	8 671	PT	II	1323.276	15 671
PT	II	1143.293	20 671	PT	II	1327.421	1 671
PT	II	1144.978	0 671	PT	II	1330.051	5 671
PT	II	1145.702	2 671	PT	II	1337.856	5 671
PT	II	1150.614	2 671	PT	II	1340.132	3 671
PT	II	1153.444	2 671	PT	II	1341.333	3 671
PT	II	1154.426	0 671	PT	II	1342.517	0 671
PT	II	1157.427	1 671	PT	II	1344.012	8 671
PT	II	1164.406	3 671	PT	II	1345.435	3 671
PT	II	1168.148	8 671	PT	II	1346.950	5 671
PT	II	1168.282*	40 671	PT	II	1348.265	0 671
PT	II	1169.741*	40 671	PT	II	1349.161	3 671
PT	II	1171.413	5 671	PT	II	1349.226	5 671
PT	II	1175.131	10 671	PT	II	1351.349	3 671
PT	II	1175.405	5 671	PT	II	1354.707	1 671
PT	II	1176.403	5 671	PT	II	1362.672	0 671
PT	II	1178.412	5 671	PT	II	1368.372	10 671
PT	II	1178.957	3 671	PT	II	1368.815	1 671
PT	II	1180.242	1 671	PT	II	1369.362	10 671
PT	II	1180.711	0 671	PT	II	1373.164	1 671
PT	II	1181.104	10 671	PT	II	1374.878	10 671
PT	II	1182.343	2 671	PT	II	1376.735	15 671
PT	II	1184.025	0 671	PT	II	1378.524	2 671
PT	II	1185.992	2 671	PT	II	1378.947	3 671
PT	II	1186.216	5 671	PT	II	1380.475	10 671
PT	II	1188.689	5 671	PT	II	1381.841	0 671
PT	II	1190.634	0 671	PT	II	1382.040	0 671
PT	II	1190.751	5 671	PT	II	1383.266	3 671
PT	II	1198.781	2 671	PT	II	1389.875	8 671
PT	II	1199.724	3 671	PT	II	1393.386	5 671
PT	II	1200.454	1 671	PT	II	1398.407	3 671
PT	II	1201.279	5 671	PT	II	1398.555	3 671
PT	II	1205.211	3 671	PT	II	1402.236*	50 671
PT	II	1207.367	5 671	PT	II	1403.480	1 671
PT	II	1207.633	5 671	PT	II	1403.896	10 671

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT II	1404.736	2	671	PT II	1588.679	5	671
PT II	1410.127	10	671	PT II	1591.778	0	671
PT II	1416.191	10	671	PT II	1594.05	5	671
PT II	1417.534	20	671	PT	1602.7	1	411
PT II	1429.524*	30	671	PT	1606.3	1	411
PT II	1431.158	0	671	PT II	1613.976	10	671
PT II	1432.905	2	671	PT II	1618.037	2	671
PT II	1435.126	2	671	PT II	1621.658*	30	671
PT II	1435.888	3	671	PT II	1622.183	3	671
PT II	1436.309	10	671	PT II	1631.584	1	671
PT II	1437.694	3	671	PT II	1633.330	3	671
PT II	1437.813	5	671	PT II	1634.265	3	671
PT II	1439.162	20	671	PT II	1641.745	3	671
PT II	1444.707	8	671	PT II	1644.186	3	671
PT II	1446.278	8	671	PT II	1644.317	5	671
PT II	1447.797	5	671	PT II	1648.256	2	671
PT II	1449.802	2	671	PT II	1650.233	5	671
PT II	1452.011	0	671	PT II	1654.724	3	671
PT II	1455.879	8	671	PT II	1659.484	20	671
PT II	1457.668	10	671	PT II	1668.987	5	671
PT II	1458.387	2	671	PT II	1674.51	1	671
PT II	1458.619	0	671	PT II	1676.688	1	671
PT II	1460.303	3	671	PT II	1678.752	5	671
PT II	1461.492	0	671	PT II	1679.193	5	671
PT II	1462.664	2	671	PT II	1680.339	1	671
PT II	1467.056	1	671	PT II	1680.596	1	671
PT II	1475.632	5	671	PT II	1686.246	10	671
PT II	1477.257	1	671	PT II	1696.278	8	671
PT II	1478.027	10	671	PT II	1703.852	3	671
PT II	1479.214	1	671	PT II	1704.765	15	671
PT II	1482.823	5	671	PT II	1705.914	5	671
PT II	1491.80	1	671	PT II	1708.736	10	671
PT II	1493.00	5	671	PT II	1710.852	3	671
PT II	1494.724	1	671	PT II	1713.380	0	671
PT II	1495.47	2	671	PT II	1717.96	1	671
PT II	1498.104	5	671	PT II	1723.128*	30	671
PT II	1498.242	8	671	PT II	1724.563	10	671
PT II	1499.380	5	671	PT II	1726.366	10	671
PT II	1505.240	20	671	PT II	1731.413	10	671
PT II	1506.279	10	671	PT II	1735.858	15	671
PT II	1507.509	2	671	PT II	1740.354	10	671
PT II	1508.790	5	671	PT II	1747.180	8	671
PT II	1509.288	10	671	PT II	1751.703*	30	671
PT II	1514.492	3	671	PT II	1752.864	5	671
PT II	1516.74	1	671	PT II	1753.823	5	671
PT II	1517.46	2	671	PT II	1754.910	3	671
PT II	1520.010	15	671	PT II	1756.204	3	671
PT II	1524.57	2	671	PT II	1756.500	3	671
PT II	1524.725	10	671	PT II	1758.118	10	671
PT II	1528.29	2	671	PT II	1764.595	3	671
PT II	1529.288	1	671	PT II	1766.023	10	671
PT II	1529.460	1	671	PT II	1767.151	8	671
PT II	1530.190	20	671	PT II	1769.486	3	671
PT II	1531.524	15	671	PT II	1775.012	20	671
PT II	1532.260	2	671	PT II	1777.086*	50	671
PT II	1532.446	2	671	PT II	1779.200	20	671
PT II	1534.90	1	671	PT II	1781.858*	30	671
PT II	1536.640	2	671	PT II	1785.867	15	671
PT II	1541.830	0	671	PT II	1794.059	5	671
PT II	1544.130	5	671	PT II	1794.287	4	671
PT II	1545.241	1	671	PT II	1796.481	3	671
PT II	1546.814	10	671	PT II	1805.013	2	671
PT II	1548.900	0	671	PT II	1808.535	5	671
PT II	1549.50	0	671	PT II	1811.038	3	671
PT II	1552.33	3	671	PT II	1813.153	10	671
PT II	1553.055	10	671	PT II	1820.799	15	671
PT II	1554.94	1	671	PT II	1821.720	8	671
PT II	1568.53	0	671	PT II	1833.375	15	671
PT II	1568.893	10	671	PT II	1835.063	20	671
PT II	1572.800	10	671	PT II	1836.497	3	671
PT II	1573.03	0	671	PT II	1837.793	10	671
PT II	1574.39	2	671	PT II	1838.810	10	671
PT II	1579.45	3	671	PT II	1838.930	10	671
PT II	1583.850	20	671	PT II	1839.517	10	671
PT II	1587.674	1	671	PT II	1840.877	10	671

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT II	1846.301	3	671	AU	458.0	1	411
PT II	1848.749	3	671	AU	463.0	1	411
PT II	1850.913	3	671	AU	470.3	1	411
PT II	1856.959	10	671	AU	470.9	1	411
PT II	1866.150	5	671	AU	487.2	1	411
PT II	1867.122	20	671	AU	504.6	1	411
PT II	1868.968	10	671	AU	518.2	1	411
PT II	1870.404	20	671	AU	523.6	1	411
PT II	1870.885	10	671	AU	527.5	1	411
PT II	1871.093	5	671	AU	531.8	1	411
PT II	1871.590	5	671	AU	540.2	1	411
PT II	1879.094*	30	671	AU	545.5	1	411
PT II	1881.505	5	671	AU	553.9	1	411
PT II	1883.051*	40	671	AU	556.4	1	411
PT II	1884.196	5	671	AU	563.4	2	411
PT II	1889.516*	50	671	AU	567.7	1	411
PT II	1890.059	8	671	AU	570.0	1	411
PT II	1891.526	10	671	AU	578.7	1	411
PT II	1894.538	8	671	AU	584.5	1	411
PT II	1894.995	10	671	AU	588.0	1	411
PT II	1896.283	8	671	AU	592.6	1	411
PT II	1897.569	5	671	AU	597.8	1	411
PT II	1901.636	10	671	AU	602.2	1	411
PT II	1903.877	8	671	AU	606.9	1	411
PT II	1909.336	15	671	AU	610.8	1	411
PT II	1911.702*	50	671	AU	614.0	1	411
PT II	1912.730	10	671	AU	621.1	1	411
PT II	1918.632	5	671	AU	627.7	1	411
PT II	1919.954	3	671	AU	631.4	1	411
PT II	1922.253	3	671	AU	633.3	1	411
PT II	1926.153	20	671	AU	640.7	1	411
PT II	1928.667	5	671	AU	645.1	2	411
PT II	1928.426	20	421, 671	AU	649.2	1	411
PT II	1929.140*	10	671	AU	655.5	3	411
PT II	1929.250*	30	671	AU	656.30	2	335
PT II	1929.457*	10	671	AU	656.88	2	335
PT II	1929.677*	30	671	AU	658.09	3	335
PT II	1933.345	10	671	AU	658.57	3	335
PT II	1934.008	10	671	AU	661.1	3	411
PT II	1939.800*	30	671	AU	664.8	3	411
PT II	1942.098	15	671	AU	669.0	1	411
PT II	1944.455	20	671	AU	673.5	1	411
PT II	1945.216	1	671	AU	682.5	3	411
PT II	1948.959	10	421, 671	AU	684.3	6	335
PT II	1949.901*	30	421, 671	AU	684.5	4	335
PT II	1951.764	5	671	AU	689.8	2	411
PT II	1954.734	20	671	AU	692.0	2	411
PT II	1958.492	10	671	AU	701.0	1	411
PT I	1963.17 *	1	421	AU	709.0	1	411
PT II	1965.426	10	671	AU	711.4	1	411
PT II	1969.266	15	671	AU	718.2	2	411
PT I	1969.994*	2	421, 671	AU	719.9	2	411
PT II	1976.776	10	671	AU	723.5	2	411
PT II	1978.690	5	671	AU	767.9	2	411
PT II	1979.872	10	421, 671	AU	772.7	2	411
PT II	1983.737*	30	671	AU	773.9	2	411
PT II	1987.846	20	421, 671	AU	811.0	3	411
PT II	1988.054	20	671	AU II	820.42	7	550
PT I	1989.11 *	2	421	AU	831.6	5	411
PT II	1990.567	20	671	AU	836.3	1	411
PT I	1991.59 *	2	421	AU	837.0	1	411
PT I	1995.91 *	3	421	AU	839.8	1	411
PT II	1997.831	5	671	AU	841.3	1	411
				AU	843.5	5	335
				AU	844.0	5	411
				AU	845.2	7	335
				AU	848.5	1	411
				AU	854.5	4	411
				AU	863.4	5	335
				AU	864.3	5	411
				AU	865.4	5	335
				AU	884.5	5	411
				AU	885.9	10	335
				AU	899.5	1	411
				AU	922.8	4	411

GOLD

AU	I	I.P.	74410.0	K	1343.90	A
AU	II	I.P.	165000.	K	606.	A

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AU	924.0	8	335	AU II	1453.88	1	550
AU	928.4	1	411	AU	1461.5	2	411
AU	934.7	1	411	AU II	1468.97 *	30	550
AU	938.9	3	411	AU	1475.1	1	411
AU II	944.19	3	550	AU II	1486.49 *	25	550
AU II	957.73 *	20	550	AU I	1494.57	7	550
AU II	959.48 *	20	550	AU I	1501.35	1	550
AU	966.2	1	411	AU II	1505.44	2	550
AU II	967.90	3	550	AU	1512.6	1	411
AU II	974.44	3	550	AU	1518.4	1	411
AU	975.5	20	411	AU	1521.5	1	411
AU II	982.21	2	550	AU II	1534.88	1	550
AU	986.6	3	411	AU	1552.6	5	335
AU	1004.5	1	411	AU	1556.1	1	411
AU	1016.7	1	411	AU II	1562.09	10	550
AU	1024.0	2	411	AU	1576.8	1	411
AU	1030.6	1	411	AU	1584.7	1	411
AU	1052.7	1	411	AU I	1587.24 *	20	450, 550
AU	1056.7	1	411	AU	1589.5	4	335
AU II	1066.96	8	550	AU II	1593.39	12	550
AU II	1073.09 *	40	550	AU II	1595.48	7	550
AU	1077.1	1	411	AU	1600.2	2	411
AU	1083.0	1	411	AU II	1611.18	12	550
AU II	1090.68	8	550	AU	1613.6	1	411
AU II	1094.86	5	550	AU	1618.0	1	411
AU	1097.1	1	411	AU II	1622.87	2	550
AU II	1103.32 *	20	550	AU I	1624.36	8	450, 550
AU	1109.5	3	411	AU II	1632.54	2	550
AU	1111.3	1	411	AU	1636.0	1	411
AU	1113.2	1	411	AU	1640.4	1	411
AU	1115.0	2	411	AU I	1646.59 *	20	450, 550
AU	1121.4	3	411	AU II	1657.09	10	550
AU	1128.5	3	411	AU I	1665.78 *	12	450, 550
AU	1133.6	3	411	AU	1670.82	1	658
AU	1139.0	5	411	AU II	1673.61 *	25	550, 658
AU	1156.2	4	411	AU II	1694.29	7	550
AU II	1166.76	3	550	AU II	1698.59	2	550
AU	1170.3	1	411	AU I	1699.38	4	550
AU II	1181.00	3	466	AU II	1700.69 *	30	550
AU	1190.0	2	411	AU	1711.47	0	658
AU II	1206.71	2	550	AU I	1714.57 *	10	550
AU II	1210.80	5	550	AU	1716.96	0	658
AU II	1224.57 *	20	550	AU I	1718.27	2	450, 658
AU	1231.0	1	411	AU II	1719.97	10	550, 658
AU II	1239.97	3	466	AU II	1721.98	1	550
AU	1244.4	1	411	AU II	1725.89 *	25	550, 658
AU II	1253.38	2	550	AU	1727.0	1	411
AU	1257.9	1	411	AU II	1731.01	1	550
AU	1271.2	1	411	AU II	1740.47 *	45	550, 658
AU	1274.3	1	411	AU	1745.7	1	411
AU	1311.6	1	411	AU II	1749.71	10	550, 658
AU	1316.4	2	411	AU II	1756.10 *	35	550, 658
AU II	1336.23	3	550	AU	1767.0	8	411
AU	1354.9	1	411	AU	1775.20	4	658
AU II	1362.36	6	550	AU II	1783.22 *	60	550, 658
AU II	1363.20	8	550	AU II	1793.31 *	35	550, 658
AU II	1364.78	10	550	AU II	1800.58 *	35	550, 658
AU	1378.5	1	411	AU	1802.6	1	411
AU II	1380.43	8	550	AU II	1811.71	4	550
AU II	1381.44	2	466	AU II	1819.05	1	550
AU	1385.5	3	411	AU II	1823.24 *	25	550, 658
AU	1391.0	1	411	AU I	1833.14	5	450, 658, 699
AU II	1393.75	6	550	AU	1834.28	5	658
AU II	1398.06	8	550	AU II	1836.28	10	550
AU II	1405.17 *	30	550	AU II	1843.50	4	550
AU II	1409.67	1	550	AU	1848.0	2	411
AU II	1410.98	7	550	AU II	1851.49	7	550, 658
AU	1414.0	2	411	AU II	1852.54	2	466
AU	1416.9	1	411	AU	1854.71	0	658
AU	1429.4	3	411	AU II	1855.46	7	550, 658
AU	1432.5	1	411	AU I	1857.21 *	10	450, 550, 658
AU	1435.4	6	335	AU II	1861.61	1	550
AU II	1436.61 *	20	550	AU	1865.5	1	411
AU	1439.5	2	411	AU	1872.42	6	558
AU II	1450.81	3	550	AU I	1879.87	6	450, 658, 699

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AU	II	1880.79	1 550	HG	249.75	1	26
AU	II	1885.72	2 550	HG	250.22	1	26
AU	II	1886.96	7 550	HG	250.59	1	26
AU	II	1887.44	7 550	HG	251.24	1	26
AU		1890.9	2 411	HG	251.81	1	26
AU		1893.9	1 411	HG	253.46	00	26
AU		1897.9	1 411	HG	253.89	0	26
AU	II	1904.43	10 550, 658	HG	254.21	0	26
AU		1912.1	1 411	HG	254.48	2	26
AU		1915.3	1 411	HG	255.14	2	26
AU	II	1918.93	7 550	HG	255.82	2	26
AU	I	1919.64 *	20 450, 550	HG	256.77	1	26
AU	II	1920.73	1 550	HG	259.00	00	26
AU	II	1921.64 *	20 550, 658	HG	259.86	00	26
AU		1924.7	5 335	HG	265.57	1	26
AU	II	1925.23	10 550, 658	HG	268.09	0	26
AU		1936.5	1 411	HG	268.41	0	26
AU	I	1939.21	2 450, 550	HG	260.67	0	26
AU	I	1942.31 *	45 550	HG	269.31	1	26
AU		1944.72	3 658	HG	270.53	00	26
AU	II	1949.24	4 550	HG	274.08	00	26
AU	I	1951.93 *	25 450, 550, 658	HG	274.37	00	26
AU	II	1965.34	0 658	HG	274.68	1	26
AU		1971.9	1 411	HG	274.89	00	26
AU	I	1978.19 *	30 450, 550, 658	HG	275.17	00	26
AU	II	1984.54	1 658	HG	275.51	0	26
AU		1988.0	2 411	HG	275.78	0	26
AU	I	1991.94 *	10 450, 658	HG	276.24	1	26
AU		1996.4	1 411	HG	276.60	1	26
				HG	277.06	0	26
				HG	278.13	0	26
				HG	278.64	0	26
				HG	279.06	1	26
				HG	279.26	0	26
				HG	280.37	00	26
				HG	280.54	00	26
				HG	280.81	00	26
				HG	281.53	2	26
				HG	282.56	1	26
				HG	282.71	1	26
				HG	282.90	1	26
				HG	283.07	0	26
				HG	283.34	00	26
				HG	283.75	0	26
				HG	284.05	0	26
				HG	284.69	0	26
				HG	284.89	0	26
				HG	285.14	00	26
				HG	285.28	00	26
				HG	286.44	0	26
				HG	286.75	1	26
				HG	287.08	0	26
				HG	287.39	1	26
				HG	287.87	1	26
				HG	289.92	0	26
				HG	290.29	0	26
				HG	290.64	00	26
				HG	291.32	2	26
				HG	291.57	1	26
				HG	291.81	1	26
				HG	293.07	00	26
				HG	293.20	0	26
				HG	293.56	0	26
				HG	294.14	00	26
				HG	296.00	0	26
				HG	296.46	1	26
				HG	298.43	0	26
				HG	298.90	0	26
				HG	300.41	00	26
				HG	301.84	2	26
				HG	302.13	0	26
				HG	302.58	0	26
				HG	302.73	0	26
				HG	303.01	0	26
				HG	306.27	00	26

MERCURY

HG	I	I.P.	84184.1	K	1187.87	A
HG	II	I.P.	151280.	K	661.03	A
HG	III	I.P.	276000.	K	362.	A
HG		222.62	0	26		
HG		222.93	0	26		
HG		223.32	1	26		
HG		224.52	0	26		
HG		225.92	0	26		
HG		226.16	00	26		
HG		228.51	00	26		
HG		229.57	00	26		
HG		229.90	00	26		
HG		231.58	00	26		
HG		233.93	00	26		
HG		235.11	00	26		
HG		236.03	00	26		
HG		236.66	00	26		
HG		238.79	0	26		
HG		241.01	1	26		
HG		243.32	0	26		
HG		243.76	00	26		
HG		244.12	00	26		
HG		245.75	0	26		
HG		246.03	0	26		
HG		246.40	1	26		
HG		246.80	0	26		
HG		248.90	1	26		
HG		249.29	1	26		

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	306.66	00	26	HG	349.68	0	26
HG	307.62	1	26	HG	350.15	0	26
HG	308.02	0	26	HG	350.58	1	26
HG	308.48	1	26	HG	350.88	0	26
HG	309.35	1	26	HG	351.10	1	26
HG	310.23	00	26	HG	351.51	2	26
HG	310.60	2	26	HG	351.94	2	26
HG	310.80	0	26	HG	352.33	3	26
HG	311.34	1	26	HG	352.67	0	26
HG	311.59	1	26	HG	352.86	0	26
HG	311.87	1	26	HG	353.25	3	26
HG	312.48	2	26	HG	353.47	3	26
HG	312.80	1	26	HG	354.05	2	26
HG	313.26	1	26	HG	355.01	2	26
HG	313.54	2	26	HG	355.82	2	26
HG	314.17	1	26	HG	356.00	0	26
HG	314.39	1	26	HG	356.49	1	26
HG	316.27	1	26	HG	356.89	3	26
HG	317.53	0	26	HG	356.96	3	26
HG	318.23	00	26	HG	360.08	2	26
HG	318.77	00	26	HG	360.33	0	26
HG	319.23	0	26	HG	360.83	0	26
HG	319.38	1	26	HG	360.99	1	26
HG	319.59	00	26	HG	361.33	2	26
HG	319.89	1	26	HG	361.63	0	26
HG	320.12	0	26	HG	361.76	1	26
HG	320.41	1	26	HG	362.05	1	26
HG	320.57	1	26	HG	362.28	0	26
HG	321.23	0	26	HG	362.44	1	26
HG	321.67	1	26	HG	363.30	2	26
HG	325.20	1	26	HG	363.58	1	26
HG	325.74	00	26	HG	363.96	2	26
HG	326.15	0	26	HG	364.24	1	26
HG	326.54	0	26	HG	364.48	1	26
HG	327.12	0	26	HG	365.11	0	26
HG	327.48	0	26	HG	365.56	0	26
HG	327.93	0	26	HG	366.01	2	26
HG	328.32	1	26	HG	366.47	2	26
HG	329.74	2	26	HG	366.69	0	26
HG	330.07	00	26	HG	366.97	1	26
HG	330.48	00	26	HG	367.27	1	26
HG	330.98	0	26	HG	367.61	2	26
HG	332.09	00	26	HG	367.95	3	26
HG	333.32	00	26	HG	368.28	0	26
HG	333.50	00	26	HG	368.52	00	26
HG	333.93	1	26	HG	369.00	00	26
HG	334.50	0	26	HG	369.21	2	26
HG	335.80	0	26	HG	369.95	1	26
HG	336.13	3	26	HG	370.28	00	26
HG	336.67	0	26	HG	370.48	2	26
HG	337.17	0	26	HG	371.34	1	26
HG	338.08	3	26	HG	372.15	0	26
HG	338.31	2	26	HG	372.50	00	26
HG	338.45	3	26	HG	373.05	0	26
HG	338.70	0	26	HG	373.30	00	26
HG	340.53	0	26	HG	374.76	1	26
HG	340.95	0	26	HG	375.02	0	26
HG	341.35	0	26	HG	375.22	00	26
HG	341.58	0	26	HG	375.75	3	26
HG	341.89	1	26	HG	376.34	2	26
HG	342.51	1	26	HG	376.72	1	26
HG	343.04	1	26	HG	377.71	2	26
HG	343.79	2	26	HG	377.96	0	26
HG	344.35	2	26	HG	378.65	3	26
HG	344.80	1	26	HG	378.88	0	26
HG	345.66	0	26	HG	379.25	3	26
HG	345.84	0	26	HG	380.02	3	26
HG	346.56	0	26	HG	380.26	00	26
HG	346.77	1	26	HG	380.95	1	26
HG	347.46	1	26	HG	381.16	3	26
HG	347.67	1	26	HG	382.20	0	26
HG	348.00	0	26	HG	382.38	3	26
HG	348.12	0	26	HG	383.74	2	26
HG	348.92	2	26	HG	384.50	0	26
HG	349.28	0	26	HG	384.78	0	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	385.17	3	26	HG	415.53	1	26
HG	385.92	0	26	HG	415.80	1	26
HG	386.43	0	26	HG	416.13	00	26
HG	386.82	0	26	HG	416.43	1	26
HG	387.25	2	26	HG	416.59	1	26
HG	387.33	3	26	HG	416.81	00	26
HG	387.54	00	26	HG	417.00	00	26
HG	387.85	0	26	HG	417.42	4	26
HG	388.33	0	26	HG	417.55	1	26
HG	388.56	00	26	HG	417.76	00	26
HG	388.93	1	26	HG	418.03	0	26
HG	389.23	2	26	HG	418.34	00	26
HG	389.36	0	26	HG	419.13	1	26
HG	389.49	00	26	HG	419.88	4	26
HG	389.89	2	26	HG	420.09	0	26
HG	391.16	00	26	HG	420.36	3	26
HG	391.88	2	26	HG	420.60	2	26
HG	392.49	1	26	HG	420.82	3	26
HG	393.64	2	26	HG	421.87	2	26
HG	394.55	4	26	HG	422.12	3	26
HG	394.69	2	26	HG	422.53	3	26
HG	395.04	1	26	HG	422.69	0	26
HG	395.18	0	26	HG	422.85	0	26
HG	395.71	1	26	HG	423.08	1	26
HG	396.43	00	26	HG	423.54	2	26
HG	397.25	1	26	HG	423.77	1	26
HG	397.56	4	26	HG	423.98	1	26
HG	398.49	2	26	HG	424.11	1	26
HG	399.12	3	26	HG	424.37	3	26
HG	399.39	1	26	HG	425.26 *	4	26
HG	399.89	3	26	HG	425.80 *	4	26
HG	400.60	3	26	HG	426.15 *	5	26
HG	400.83	0	26	HG	426.39	00	26
HG	401.14	2	26	HG	427.05	2	26
HG	401.60	1	26	HG	427.37	2	26
HG	402.43	0	26	HG	427.98	1	26
HG	402.90	2	26	HG	428.43	2	26
HG	403.10	00	26	HG	428.82	00	26
HG	403.50	00	26	HG	429.14	3	26
HG	404.09	00	26	HG	430.33	1	26
HG	404.28	00	26	HG	430.54	0	26
HG	404.64	1	26	HG	430.64	1	26
HG	405.07	0	26	HG	431.05	3	26
HG	405.23	0	26	HG	431.20	0	26
HG	405.64	4	26	HG	431.37	0	26
HG	405.99	00	26	HG	432.71	0	26
HG	406.25	2	26	HG	432.87	1	26
HG	406.77	1	26	HG	433.26	1	26
HG	406.97	0	26	HG	433.59	00	26
HG	407.46	4	26	HG	435.43	2	26
HG	407.96	2	26	HG	435.57	2	26
HG	408.35	2	26	HG	436.03	0	26
HG	408.55	1	26	HG	436.25	1	26
HG	408.94	1	26	HG	436.95	00	26
HG	409.19	1	26	HG	437.19	1	26
HG	409.57	4	26	HG	438.32	4	26
HG	409.81	00	26	HG	438.95	3	26
HG	410.10	1	26	HG	439.60	3	26
HG	410.49	0	26	HG	439.88	0	26
HG	410.63	1	26	HG	440.08	0	26
HG	411.08	3	26	HG	441.13	3	26
HG	411.42	2	26	HG	442.54	0	26
HG	411.67	2	26	HG	443.21	3	26
HG	412.19	0	26	HG	444.34	2	26
HG	412.43	1	26	HG	444.51	0	26
HG	412.59	00	26	HG	444.84	3	26
HG	412.70	1	26	HG	445.13	1	26
HG	412.86	0	26	HG	445.98	4	26
HG	413.00	2	26	HG	446.65	00	26
HG	413.65	3	26	HG	447.15	3	26
HG	413.98	3	26	HG	447.65	00	26
HG	414.63	2	26	HG	447.90	3	26
HG	414.77	3	26	HG	448.15	1	26
HG	415.00	1	26	HG	448.41	2	26
HG	415.24	1	26	HG	449.05	0	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	449.18	3	26	HG	494.93	2	26
HG	449.42	2	26	HG	495.39	4	26
HG	450.35	0	26	HG	496.17	3	26
HG	450.91	0	26	HG	496.44 *	5	26
HG	451.40	0	26	HG	496.82	3	26
HG	452.63	0	26	HG	497.40	1	26
HG	452.95	1	26	HG	497.93	0	26
HG	453.31	2	26	HG	498.19	0	26
HG	454.12	0	26	HG	498.50	1	26
HG	454.60	1	26	HG	498.66	1	26
HG	454.89	0	26	HG	499.24	3	26
HG	456.68	3	26	HG	499.58	2	26
HG	457.19	0	26	HG	500.19	3	26
HG	457.88	0	26	HG	500.48 *	6	26
HG	459.02	4	26	HG	501.43	1	26
HG	459.57	4	26	HG	501.76	3	26
HG	460.50	1	26	HG	502.13 *	5	26
HG	460.77	1	26	HG	502.80	4	26
HG	461.11	0	26	HG	503.18	3	26
HG	461.61	1	26	HG	504.14	1	26
HG	462.13	1	26	HG	504.30	2	26
HG	462.64	4	26	HG	504.66	1	26
HG	463.11	0	26	HG	506.34	1	26
HG	464.78	3	26	HG	507.14	4	26
HG	465.22	3	26	HG	508.76	4	26
HG	466.10	2	26	HG	509.93	1	26
HG	466.51	2	26	HG	510.31	2	26
HG	466.98	4	26	HG	511.08	3	26
HG	468.11	1	26	HG	511.32 *	5	26
HG	468.60	1	26	HG	511.62	2	26
HG	469.24	1	26	HG	512.36	3	26
HG	469.43	3	26	HG	512.61 *	5	26
HG	470.24	1	26	HG	513.16	2	26
HG	470.50	1	26	HG	514.18	0	26
HG	470.91	1	26	HG	514.51	00	26
HG	471.11	1	26	HG	515.85	0	26
HG	471.50	2	26	HG	516.08	3	26
HG	471.81	00	26	HG	516.13	0	26
HG	472.07	00	26	HG	516.61	2	26
HG	472.54	2	26	HG	517.85	4	26
HG	472.89	3	26	HG	518.26	1	26
HG	473.42	0	26	HG	518.40	3	26
HG	474.12	1	26	HG	518.71	1	26
HG	476.03	3	26	HG	519.23	1	26
HG	476.98	2	26	HG	519.78	2	26
HG	477.26	3	26	HG	520.00	0	26
HG	477.67	0	26	HG	521.21	1	26
HG	477.84	0	26	HG	521.58	3	26
HG	478.09	00	26	HG	522.60	4	26
HG	478.28	00	26	HG	523.74 *	5	26
HG	478.56	1	26	HG	526.45	1	26
HG	479.38	2	26	HG	526.71	1	26
HG	479.77	3	26	HG	527.40	0	26
HG	480.22	0	26	HG	527.97	4	26
HG	481.20	3	26	HG	528.57	0	26
HG	481.85	0	26	HG	528.97	0	26
HG	482.18	0	26	HG	531.19	3	26
HG	483.11	2	26	HG	531.46	2	26
HG	483.54	3	26	HG	531.77	1	26
HG	486.69	2	26	HG	532.04	0	26
HG	487.37	1	26	HG	532.20	3	26
HG	487.74	2	26	HG	533.02	1	26
HG	488.13	2	26	HG	533.10	4	26
HG	488.44	1	26	HG	534.88	1	26
HG	488.72	3	26	HG	535.35	1	26
HG	489.44	3	26	HG	535.58	1	26
HG	489.83	4	26	HG	536.30	3	26
HG	490.04	2	26	HG	537.19	3	26
HG	490.23	0	26	HG	537.43	0	26
HG	491.48	3	26	HG	538.63	1	26
HG	492.12	3	26	HG	540.91	0	26
HG	492.41	4	26	HG	541.48	1	26
HG	493.29	0	26	HG	542.39	2	26
HG	493.66	3	26	HG	542.84	2	26
HG	494.18	4	26	HG	543.47	0	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	543.65	0	26	HG	583.52	0	26
HG	544.59	1	26	HG	584.37	3	26
HG	545.17	1	26	HG	584.57	3	26
HG	545.49	4	26	HG	585.04	00	26
HG	546.54	0	26	HG	585.87	1	26
HG	546.75	0	26	HG	586.31	2	26
HG	547.17	0	26	HG	586.68	1	26
HG	547.34	0	26	HG	586.95	0	26
HG	547.71	1	26	HG	587.59	00	26
HG	547.94	2	26	HG	587.97	0	26
HG	549.24	00	26	HG	588.08	2	26
HG	550.61	0	26	HG	588.42	1	26
HG	550.84	0	26	HG	588.71	0	26
HG	551.64	1	26	HG	589.57	00	26
HG	551.84	3	26	HG	589.78	0	26, 331
HG	552.19	0	26	HG	590.51	4	26
HG	552.49	1	26	HG	591.01	00	26
HG	552.87	1	26	HG	591.32	0	26
HG	553.58	0	26	HG	591.76	1	26
HG	553.92	00	26	HG	592.35	2	26
HG	555.52	1	26	HG	592.84	00	26
HG	555.79	1	26	HG	593.00	00	26
HG	555.95	2	26	HG	593.63	3	26
HG	556.49	3	26	HG	593.78	4	26
HG	557.41	2	26	HG	594.10	1	26
HG	558.05	1	26	HG	594.44	1	26
HG	558.43	0	26	HG	595.39	1	26
HG	558.87	0	26	HG	596.21 *	6	26
HG	559.18	0	26	HG	598.30	2	26
HG	560.74	00	26	HG	598.59	2	26
HG	561.05	00	26	HG	599.25	1	26
HG	561.28	3	26	HG	600.00	0	26
HG	561.76	0	26	HG	601.47	1	26
HG	562.15	0	26	HG	602.36	00	26
HG	562.73	3	26	HG	602.79	00	26
HG	563.39	3	26	HG	602.99	0	26
HG	563.90	3	26	HG	603.66	3	26
HG	564.47	00	26	HG	604.42	1	26
HG	565.16	0	26	HG	605.42	2	26
HG	565.32	0	26	HG	605.81 *	6	26
HG	565.71	1	26	HG	606.94	00	26
HG	565.92	4	26	HG	607.63	2	26
HG	566.31	00	26	HG	608.21	0	26
HG	567.08	3	26	HG	608.40	2	26
HG	567.57	0	26	HG	608.98 *	5	26
HG	568.62 *	5	26	HG	609.24 *	5	26
HG	569.40	3	26	HG	609.62	3	26
HG	569.65	3	26	HG	609.85	3	26
HG	570.02	2	26	HG	610.46	0	26, 237
HG	570.35	0	26	HG	610.74	0	26
HG	570.71	0	26	HG	611.34	2	26
HG	570.91	0	26, 331	HG	611.65	3	26
HG	571.53	2	26	HG	612.88	2	26
HG	571.86	00	26	HG	613.23	00	26
HG	572.09	0	26, 331	HG	613.70	00	26
HG	572.38	00	26	HG	615.51 *	5	26
HG	572.90	0	26	HG	616.54	2	26
HG	573.16	1	26	HG	617.65	0	26
HG	573.35	0	26	HG	618.34	00	26
HG	573.55	0	26	HG	618.62	0	26
HG	574.25	0	26	HG	621.00	1	26
HG	575.23	4	26	HG	621.44	3	26, 237
HG	576.06	3	26	HG	622.84 *	6	26
HG	577.65	4	26	HG	624.52	1	26
HG	577.86	1	26	HG	625.09	1	26
HG	578.15	1	26	HG	625.61	0	26
HG	578.35	1	26	HG	625.90	1	26
HG	578.79	3	26	HG	626.17	5	26, 331
HG	579.07	1	26	HG	626.93	2	26, 331
HG	579.25	1	26	HG	627.34	00	26
HG	579.86	2	26	HG	628.89	1	26, 331
HG	580.20	2	26	HG	629.71	3	26
HG	581.75	2	26	HG	630.20	1	26
HG	582.47	00	26	HG	630.41	1	26
HG	582.85	00	26	HG	631.60	1	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	632.27	2	26	HG	705.31	2	26
HG	633.26	3	26	HG III	706.13	4	26, 331
HG	634.16	0	26	HG	708.76	3	26
HG	634.46	00	26	HG	709.47	0	26
HG	635.48	4	26	HG III	710.79	3	26, 331
HG	636.60	3	26	HG	712.91	1	26
HG	637.47	1	26	HG	713.09	0	26
HG	637.81	00	26	HG	713.62	00	26
HG	640.21	00	26	HG III	714.23	3	26, 331
HG III	640.76	1	26, 331	HG	715.70	0	26
HG	641.19 *	5	26	HG	716.32	2	26
HG III	641.62	2	26, 331	HG	717.07	3	26
HG III	641.97	2	26, 331	HG	717.46	0	26
HG	645.66	0	26	HG	718.06	3	26
HG	646.07	00	26	HG	720.94	0	26
HG	647.65	0	26	HG III	721.11	1	26, 331
HG	648.23	00	26	HG	721.92	0	26
HG	648.81	3	26	HG	722.67	1	26
HG III	649.35	0	26, 331	HG	722.89	2	26
HG	650.78	3	26	HG	723.26	3	26
HG	652.09 *	5	26	HG	723.92	2	26
HG	652.82	1	26	HG	724.76	2	26
HG	653.40	1	26	HG	725.54	0	26
HG	654.22	00	26	HG	727.05	2	26
HG	654.78	2	26	HG III	727.86	2	26, 331
HG	655.10	0	26	HG	728.37	0	26
HG	656.47	00	26	HG	728.88	00	26
HG	656.91	0	26	HG	729.41	0	26
HG	657.49	2	26	HG	729.81	0	26
HG	658.01	1	26	HG	730.31	1	26
HG	658.49	0	26	HG	731.01	3	26
HG	659.53	0	26	HG	733.07	0	26
HG III	660.79	0	26, 331	HG III	734.33	0	26, 331
HG	661.15	0	26	HG	735.70	00	26
HG	662.47	00	26	HG	736.98	1	26
HG	663.18	2	26	HG	737.33	0	26
HG	663.58	00	26	HG	739.82	1	26
HG	664.23	1	26	HG	740.45	0	26
HG	668.30	1	26	HG III	740.69 *	6	26, 65, 331
HG	668.67	00	26	HG	743.48	0	26
HG	668.92	00	26	HG	743.79	00	26
HG	673.25	0	26	HG	745.01	3	26, 331
HG	674.35	2	26	HG III	746.08	0	26, 331
HG	677.19	0	26	HG	747.64	1	26
HG	677.77	0	26	HG	749.44	0	26
HG	678.59	0	26	HG	749.79	00	26
HG III	679.68	2	26, 237	HG	750.39	0	26
HG	680.88	0	26	HG	752.93	4	26
HG	681.33	3	26	HG III	753.76	3	26, 331
HG	682.53	0	26	HG	755.27	1	26
HG	682.77	1	26	HG	758.70	1	130
HG	683.50	00	26	HG	759.43	1	130
HG	684.50	00	26	HG III	760.39	3	26, 331
HG	686.68	0	26	HG III	761.89	1	26, 331
HG	687.64	0	26	HG	762.38	1	26
HG	687.97	1	26	HG III	762.68	2	26, 331
HG	688.24	1	26	HG	764.86	1	26
HG	688.68	2	26	HG III	772.32	1	331
HG	688.99	0	26	HG III	772.82	1	331
HG	689.24	1	26	HG	773.64	1	26
HG	689.65	0	26	HG	774.4	1	130
HG	690.04	1	26	HG	775.93	3	130
HG	693.21	0	26	HG	779.83	4	130
HG III	693.55	2	26, 331	HG III	781.00	1	331
HG	693.87	0	26	HG	782.91	0	26
HG	694.22	00	26	HG	787.77	4	130
HG	694.63	0	26	HG III	788.46	2	26, 331
HG	695.10	1	26	HG III	790.15 *	6	26, 65, 331
HG III	695.93	1	331	HG III	792.25	1	26, 331
HG III	696.91	0	26, 331	HG III	793.91	1	331
HG	698.25	0	26	HG III	795.78	00	26, 237
HG	698.69	00	26	HG	800.42	1	26
HG	700.32	0	26	HG III	801.03	1	26
HG III	703.53	0	26, 331	HG III	801.62	2	26, 331
HG III	705.00	3	26, 331	HG	802.24	0	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	802.94	0	26	HG	III	911.03	2 331
HG	803.85	1	26	HG		912.66	0 26
HG	804.18	0	26	HG	II	915.827*	7 65, 452
HG	804.70	00	26	HG		917.30	00 26
HG	805.02	1	26	HG		917.84	0 26
HG	III	808.72	2 26, 331	HG		919.60	0 26
HG		809.19	2 26	HG		921.4	3 130
HG	III	809.85	0 26, 331	HG		922.0	3 130
HG	III	810.79	1 26, 331	HG		922.6	3 130
HG		811.46	0 26	HG	II	923.393	4 65, 452
HG		811.98	00 26	HG		924.3	3 130
HG	III	812.68	3 26, 331	HG	III	926.08	0 331
HG		814.30	0 26	HG	III	930.90	0 331
HG		815.10	0 26	HG		932.81	00 26
HG	III	815.53	0 26, 331	HG	III	935.10	1 331
HG		816.38	0 26	HG	III	935.74	1 26, 331
HG		818.19	1 26	HG		936.37	0 26
HG		818.75	0 26	HG	II	937.02	2 26, 452
HG		819.52	00 26	HG	II	937.91	2 26, 65, 696
HG	III	820.68	0 26, 331	HG	III	939.94	0 331
HG	III	822.69	2 26, 331	HG	II	940.796	6 26, 65, 452
HG	III	823.44	1 331	HG	II	942.630	2 26, 65, 452
HG		824.09	0 26	HG	III	943.70	0 331
HG	III	832.47	0 331	HG		944.83	0 26
HG		836.17	0 26	HG		945.60	0 26
HG		836.65	0 26	HG		947.40	0 26
HG	III	837.81	1 331	HG		949.65	2 26
HG	III	838.21	0 331	HG		950.05	00 26
HG	III	839.33	3 26, 331	HG		951.40	2 26
HG		840.08	0 26	HG		951.90	1 26
HG		840.28	00 26	HG	III	953.95	0 331
HG	I	840.97	0 18	HG		955.4	1 130
HG	III	841.21	2 331	HG	III	956.33	0 331
HG		842.04	0 26	HG	IV	956.46	2 26, 696
HG	III	843.12	3 26, 65, 331	HG		956.95	00 26
HG	III	844.89	0 331	HG	III	957.30	0 26, 331
HG	III	846.52	1 331	HG		957.87	3 26
HG		847.15	0 26	HG		958.11	00 26
HG		850.55	3 26	HG	III	959.26	2 331
HG	III	854.61	0 26, 237	HG	IV	961.33	1 26, 696
HG	III	855.03	3 26, 331	HG	III	961.88	0 26, 331, 696
HG	III	859.96	1 26, 331	HG	II	962.740	4 26, 65, 452
HG	III	861.67	1 331	HG	III	964.48	1 26, 331
HG		864.39	0 26	HG		965.17	3 26
HG	III	865.84	0 26	HG		965.48	0 26
HG	III	866.31	3 26, 331	HG		966.24	1 26
HG	III	866.91	1 331	HG	III	967.48	2 26, 331
HG		867.32	00 26	HG	III	967.99	0 331
HG	III	870.39	00 26, 237	HG	IV	968.46	1 26, 696
HG	III	873.90	0 331	HG	II	969.130	4 26, 65, 452
HG	III	876.17	00 26, 237	HG		969.57	1 26
HG	III	877.30	00 26, 237	HG	III	969.63	2 26, 331
HG	III	878.59	2 26, 237	HG	IV	970.24	0 26, 696
HG	III	879.29	0 331	HG		971.56	2 26
HG		880.54	00 26	HG		972.80	00 26
HG		881.17	0 26	HG	III	973.30	0 26, 237
HG	III	881.66	0 26, 331	HG		974.06	1 26
HG	III	885.38	3 26, 331	HG	II	975.63	1 26, 698
HG	III	885.86	0 331	HG	IV	976.07	1 26, 696
HG	III	888.48	1 26, 237	HG		977.35	1 26
HG		888.74	0 26	HG		978.23	0 26
HG	III	889.82	0 331	HG		979.27	0 26
HG	III	891.33	00 26, 331	HG		980.21	1 26
HG		892.52	00 26	HG		985.26	00 26
HG	II	893.079	0 26, 452, 794	HG	III	985.69	0 26, 237
HG	III	894.06	00 26, 237	HG		986.82	1 26
HG		895.09	1 26	HG		987.30	3 26
HG		896.00	1 26	HG		987.53	0 26
HG		896.88	0 26	HG	III	988.89	1 26, 237
HG		899.1	4 130	HG		990.24	0 26
HG		901.5	0 130	HG		992.15	2 26
HG	III	903.70	1 331	HG		993.45	1 26
HG	II	904.2	452	HG		994.15	0 26
HG	III	904.55	1 331	HG	III	996.25	0 331
HG		906.67	0 26	HG	III	996.51	3 26, 331

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG III	996.94	2	26, 331
HG	997.71	00	26
HG III	999.26	1	331
HG III	1001.70	00	26, 237
HG III	1002.07	2	26
HG	1002.74	1	26
HG	1004.81	1	26
HG	1007.03	0	26
HG III	1009.29	2	26, 237, 696
HG	1010.09	2	26
HG III	1010.85	0	26, 237
HG	1013.87	0	26
HG	1014.69	00	26
HG IV	1015.29	2	26, 696
HG	1016.32	3	26
HG IV	1018.21	1	26, 696
HG	1018.86	00	26
HG	1020.04	1	26
HG IV	1020.24	2	26
HG	1024.23	00	26
HG	1026.23	0	26
HG III	1029.66	2	331
HG II	1029.86	0	26
HG	1030.33	0	26
HG IV	1031.45	0	26, 696
HG	1032.21	0	26
HG III	1033.16	0	26, 237
HG III	1034.16	1	331
HG	1034.62	2	26
HG	1035.09	0	26
HG IV	1037.48	00	26, 696
HG	1039.04	1	26
HG II	1039.695	2	26, 65, 452
HG III	1040.96	2	331
HG III	1043.68	1	26, 331, 696
HG III	1044.34	0	26, 331
HG III	1045.66	1	26
HG	1046.04	0	26
HG III	1047.19	1	331
HG IV	1051.30	1	26
HG	1052.16	0	26
HG	1055.71	00	26
HG III	1058.02	0	26
HG IV	1058.73	00	26, 696
HG	1059.68	00	26
HG II	1061.49	0	26, 698
HG II	1062.803	4	26, 65, 452
HG	1063.54	00	26
HG	1064.85	00	26
HG	1065.30	00	26
HG	1066.66	00	26
HG III	1068.03	5	26, 237, 331
HG III	1068.47	0	331
HG IV	1070.56	0	26, 696
HG	1071.79	0	26
HG IV	1072.73	1	26
HG	1073.18	00	26
HG	1074.23	00	26
HG III	1074.90	0	26
HG	1077.09	0	26
HG IV	1080.01	3	26
HG	1080.69	00	26
HG III	1081.63	0	331
HG IV	1082.75	4	26
HG	1084.0	3	130
HG	1084.7	3	130
HG	1085.7 *	5	130
HG	1087.40	0	26
HG IV	1089.76	1	26, 696
HG III	1090.07	3	26, 65, 331
HG IV	1090.70	0	26, 696
HG III	1091.95	1	26
HG III	1092.54	0	26
HG III	1093.45	1	26
HG	1094.06	00	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG IV	1095.2	0	696
HG IV	1096.05	00	26, 696
HG	1097.28	00	26
HG II	1098.02	1	26, 65, 527
HG	1098.82	00	26
HG II	1099.259	0	26, 794
HG IV	1099.88	00	26, 696
HG	1101.51	0	26
HG III	1102.03	0	26
HG	1102.40	0	26
HG	1102.67	0	26
HG IV	1103.56	1	26
HG II	1104.253	2	65
HG III	1105.03	2	26, 331
HG III	1105.53	4	26, 65, 331
HG III	1106.81	1	26, 331
HG	1108.34	1	26
HG III	1109.48	2	26, 331
HG IV	1109.94	4	26
HG IV	1110.45	1	26
HG	1111.93	00	26
HG	1113.01	2	26
HG IV	1113.23	2	26
HG IV	1114.12	3	26
HG III	1115.52	1	26, 331
HG	1116.61	00	26
HG III	1121.19	2	26
HG III	1121.90	3	26, 331
HG	1122.55	1	26
HG	1123.34	2	26
HG III	1124.08	3	26, 65, 331
HG III	1125.16	2	26, 331
HG	1126.17	0	26
HG	1126.40	00	26
HG	1128.27	1	26
HG III	1129.16	1	26, 331
HG III	1130.32	0	26
HG III	1132.47	1	26
HG	1133.09	00	26
HG	1134.3	1	130
HG	1135.2	1	130
HG IV	1136.87	2	26
HG IV	1137.85	0	26
HG IV	1138.7	1	696
HG IV	1139.2	1	696
HG	1141.65	0	26
HG	1142.71	1	26
HG	1142.86	2	26
HG III	1143.42	0	26
HG	1144.70	0	26
HG III	1145.04	00	26, 237, 696
HG	1145.74	2	26
HG III	1146.21	2	26
HG III	1146.93	00	26
HG IV	1148.74	3	26
HG IV	1150.88	00	26, 696
HG IV	1151.57	0	26, 696
HG III	1152.01	2	26, 331
HG	1152.65	1	26
HG VI	1153.25 *	1	26
HG	1154.29	1	26
HG III	1154.48	2	26
HG	1154.92	0	26
HG III	1156.62	0	26
HG IV	1157.63	3	26, 696
HG IV	1158.20	3	26
HG	1160.09	0	26
HG II	1160.403	4	26, 65, 452
HG III	1161.95	2	26, 237
HG IV	1162.53	1	26, 696
HG	1163.02	00	26
HG	1163.64	00	26
HG III	1164.00	2	26
HG	1164.57	00	26
HG III	1164.94	00	26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	1166.35	0	26	HG	1244.62	1	26
HG	1166.89	0	26	HG	1245.07	00	26
HG	1167.53	2	331	HG	1245.7	1	696
HG	1167.98	00	26	HG	1246.56	0	26
HG	1170.52	0	26	HG	1247.6	1	696
HG	1170.84	0	26	HG	1249.2	0	696
HG	1172.14	00	26	HG	1250.586*	4	539, 794
HG	1173.84	0	26, 696	HG	1251.08	4	26, 696
HG	1175.7	2	696	HG	1251.73	00	26
HG	1176.99	1	26	HG	1252.70	0	26
HG	1177.74	00	26	HG	1253.93	1	26, 696
HG	1178.14	00	26	HG	1255.80	00	26
HG	1178.77	00	26	HG	1256.29	0	26
HG	1179.35	0	26	HG	1256.84	0	26
HG	1180.00	0	26, 331	HG	1257.44	00	26
HG	1180.71	00	26, 696	HG	1258.86	1	26, 331
HG	1181.58	00	26	HG	1259.24	1	65, 696
HG	1183.70	0	26	HG	1260.32	1	26
HG	1184.5	1	130	HG	1261.07	00	26
HG	1187.93	1	26, 696	HG	1261.84	00	26
HG	1188.35	0	331	HG	1262.50	00	26
HG	1189.15	00	26	HG	1263.57	0	26
HG	1189.65	00	26	HG	1263.83	1	26, 696
HG	1191.62	1	26, 696	HG	1264.68	2	26, 698
HG	1193.26	00	26	HG	1265.98	1	26, 696
HG	1193.95	1	26	HG	1268.82		65
HG	1194.51	1	26	HG	1269.78	5	331, 696
HG	1194.88	0	26	HG	1270.33	2	331
HG	1197.40	00	26	HG	1271.12	1	331
HG	1199.79	0	26	HG	1271.58	2	331
HG	1201.78	00	26	HG	1272.91	00	26, 696
HG	1202.13	2	26	HG	1273.30	00	26
HG	1203.60		65	HG	1274.91	00	26
HG	1204.24		65	HG	1277.19	5	26, 331, 696
HG	1205.195	1	65	HG	1277.59	0	26
HG	1206.55 *	5	26, 696	HG	1279.62	00	26, 698
HG	1207.34		65	HG	1280.83 *	9	26, 65, 331
HG	1208.22		65	HG	1282.41	2	26
HG	1209.52	1	331	HG	1283.33	00	26
HG	1212.75 *	2	26, 65	HG	1284.57	1	331
HG	1213.17	3	26	HG	1284.89	2	26
HG	1213.79	0	26, 65	HG	1285.93	00	26
HG	1214.19	1	26	HG	1286.73	00	26
HG	1214.62	0	26	HG	1287.66	00	26, 698
HG	1215.8	4	698	HG	1290.07	2	26, 331
HG	1216.80	1	26, 696	HG	1290.60	2	26
HG	1217.71	0	26	HG	1291.51	00	26, 696
HG	1218.96	00	26	HG	1292.92	1	26
HG	1219.60	1	26	HG	1293.35	00	26
HG	1220.35		65	HG	1294.56	1	26
HG	1222.38		65	HG	1295.19	0	26, 696
HG	1222.44	00	26, 696	HG	1296.02	00	26, 696
HG	1223.33	00	26, 696	HG	1296.67	0	26
HG	1224.06	00	26	HG	1297.04	2	26
HG	1224.58	00	26	HG	1297.65	0	26, 698
HG	1225.10	0	26	HG	1298.93	3	26
HG	1225.75	00	26	HG	1301.15	00	26
HG	1226.75	1	26, 331	HG	1302.18	0	26
HG	1227.44	00	26	HG	1303.02	1	26
HG	1228.02	0	26	HG	1303.30	0	26
HG	1230.77	0	26, 331	HG	1304.23	1	26
HG	1231.93	3	26, 696	HG	1304.85	1	26
HG	1232.22		65	HG	1305.61	3	26, 65, 331
HG	1233.9	1	696, 698	HG	1307.76		65
HG	1234.53	1	331	HG	1307.928	1	26, 698, 794
HG	1235.49	00	26, 696	HG	1308.46	0	26
HG	1235.84		65	HG	1309.074	0	26, 65
HG	1236.18	1	331	HG	1310.49	0	26, 696
HG	1237.75	2	26	HG	1311.01	00	26
HG	1238.84	2	26, 331, 696	HG	1311.23	00	26
HG	1239.80	3	26, 696	HG	1312.68	0	26, 453
HG	1241.45	1	26	HG	1313.49	1	26
HG	1241.81	3	26, 331	HG	1317.03	0	331
HG	1242.30	1	331	HG	1318.07	1	331
HG	1243.20	2	26	HG	1320.4	0	698

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG III	1321.04	1	26, 331	HG III	1426.38	00	26
HG II	1321.712	1	26, 698, 794	HG IV	1428.6	0	696
HG III	1323.22	3	26, 331	HG II	1429.97	1	26, 65, 698
HG III	1323.97	1	331	HG III	1431.42	2	26
HG III	1324.26	0	26	HG II	1433.41	00	26
HG III	1324.68	0	331	HG II	1434.2	0	698
HG III	1326.40	2	26, 65, 331	HG III	1434.98	3	331
HG III	1327.44	0	26	HG III	1435.18	3	26
HG III	1330.77	5	26, 331	HG I	1435.50	0	65, 696
HG II	1331.737	2	26, 696, 794	HG IV	1436.69 *	5	26
HG	1333.30	0	26	HG IV	1442.55 *	6	26, 696
HG	1334.14	2	26	HG IV	1443.76	0	26
HG II	1334.6	1	698	HG III	1445.39	1	26
HG	1335.184	3	26, 331, 794	HG IV	1447.10	2	26, 696
HG III	1335.50	3	331	HG IV	1448.25	4	26, 696
HG III	1336.84	5	26, 331	HG II	1451.86	00	26
HG IV	1338.7	2	696	HG IV	1454.21 *	6	26, 696
HG IV	1339.82	3	26	HG IV	1455.24	1	26
HG III	1342.16	00	26	HG III	1459.23	5	26, 331
HG II	1342.829	0	65, 527	HG II	1459.38	3	65, 331
HG IV	1343.75	2	26, 696	HG IV	1461.33 *	5	26
HG III	1344.40	0	26	HG II	1463.33	0	26
HG IV	1345.9	0	696	HG IV	1465.63 *	5	26, 696
HG IV	1346.55	00	26, 696	HG III	1467.38 *	6	26, 65, 331
HG III	1347.47	00	26, 331	HG IV	1468.72	4	26, 696
HG II	1350.074	4	26, 696, 794	HG III	1470.03	1	26, 331
HG III	1352.94	1	26, 65, 331	HG III	1472.35	5	26
HG II	1354.274	2	26, 65	HG IV	1473.98	1	26, 696
HG II	1357.321	1	26, 65, 452	HG IV	1475.9	2	696
HG III	1359.20	0	331	HG II	1477.770	4	26, 65, 331
HG III	1359.65	1	331	HG III	1478.97	1	26, 331
HG III	1360.49	3	26, 65, 331	HG III	1479.81	2	26, 331
HG III	1360.93	3	26	HG IV	1481.33 *	5	26
HG II	1361.267	0	26, 452, 794	HG IV	1482.63	3	26, 696
HG III	1362.02	0	26, 331	HG IV	1484.98	0	26
HG III	1362.45	2	26	HG IV	1488.22	4	26, 696
HG III	1367.02	1	26, 331	HG III	1490.95	2	26, 331
HG IV	1370.1	0	696	HG IV	1493.69	3	26
HG IV	1371.8	1	696	HG II	1495.199	5	26, 65, 527
HG II	1372.503	0	26, 65, 452	HG II	1496.83	0	26
HG III	1373.20	0	26	HG III	1503.19	0	26, 331
HG III	1373.60	3	331	HG III	1504.474	5	26, 331, 794
HG III	1377.85	4	26, 65, 331	HG III	1507.27	5	26
HG III	1378.95	4	26, 65, 331	HG III	1509.45	2	26, 331
HG III	1380.17	3	26	HG III	1510.79	3	26, 331
HG II	1382.25	0	26	HG II	1511.565	2	26, 65, 527
HG III	1383.19	5	26, 331	HG IV	1513.70	3	26
HG III	1384.54	2	26	HG III	1516.80	3	26, 331
HG IV	1386.22	00	26	HG III	1520.41	1	331, 696
HG II	1389.64	00	26	HG III	1521.59	0	331
HG IV	1391.56	00	26	HG III	1525.95	4	26, 331
HG IV	1392.98	3	26	HG III	1527.31 *	7	26
HG III	1393.322	1	331, 794	HG III	1527.49 *	8	65, 331
HG III	1393.94	0	26	HG III	1528.72	3	26
HG IV	1395.57	1	26	HG II	1530.267	3	26, 65, 331
HG III	1397.59	1	26	HG IV	1530.9	1	696
HG II	1400.406	2	65, 452	HG III	1531.64	4	26, 331
HG III	1400.53	4	26, 65, 453	HG II	1533.642	3	26, 65, 331
HG II	1401.68	00	26	HG III	1537.14	0	331
HG I	1402.72	00	26, 65	HG II	1539.111	1	26, 65
HG III	1403.42	2	331	HG IV	1539.9	2	696
HG II	1404.484	5	26, 65, 452	HG II	1540.36	4	26, 65, 331
HG III	1405.11	3	331	HG II	1541.79	2	65, 698
HG III	1406.49	2	26	HG II	1542.04	2	26
HG IV	1409.34	0	26	HG III	1545.31	5	26
HG IV	1412.5	0	696	HG III	1547.51	3	331
HG IV	1413.7	0	696	HG III	1549.85	4	26, 331
HG II	1414.427*	9	26, 65, 452	HG IV	1551.08	2	26
HG III	1414.95 *	6	65, 466	HG III	1553.51	2	26
HG III	1415.80	3	26	HG III	1555.92	0	26, 331
HG II	1417.002	6	26, 65, 452	HG III	1557.66	00	26
HG II	1418.29	1	26	HG IV	1558.6	0	696
HG II	1419.45	0	26	HG	1559.34	00	26
HG IV	1422.00	2	26	HG IV	1560.44 *	8	26, 696
HG IV	1424.29	1	26, 696	HG IV	1561.43 *	10	26, 696

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG III	1565.67	1	26, 331	HG III	1681.40	4	26, 237, 331
HG II	1568.459	2	26, 65, 527	HG	1686.05	00	26
HG III	1569.51	1	26, 331	HG III	1688.02	0	331
HG III	1570.87	1	331	HG II	1692.55	3	26, 331, 527
HG III	1571.36	0	331	HG II	1695.18	2	26, 65
HG III	1573.12	5	26, 331	HG II	1702.733	1	527, 794
HG III	1575.73	3	26, 331	HG III	1703.98	0	331
HG II	1577.083	1	65	HG II	1705.47	4	26, 65, 452
HG III	1577.58	1	331	HG II	1707.397	4	26, 452, 794
HG III	1577.95	1	26, 331	HG II	1711.86	1	26
HG III	1580.10	1	26, 331	HG III	1713.68	2	26, 331
HG III	1581.76	0	26, 331	HG III	1716.92	4	26, 331
HG III	1582.46	2	331	HG III	1720.71	4	26, 331
HG II	1584.60	0	26	HG III	1724.21	2	26, 331
HG III	1586.36	1	331	HG II	1727.17	2	65, 331, 527
HG IV	1587.00	0	26, 696	HG III	1727.69	4	26
HG IV	1590.36	0	26	HG I	1732.142*	15	452, 794
HG II	1591.82	0	65, 527	HG I	1736.16	1	331
HG III	1592.82 *	10	26, 65, 331	HG III	1738.49 *	10	65, 331
HG III	1594.17	4	26	HG III	1739.11	0	331
HG III	1595.85	3	26, 331	HG III	1740.24 *	6	65, 331
HG III	1596.71	1	331	HG III	1741.02	3	331
HG II	1597.59	00	26	HG II	1742.7	0	698
HG III	1599.42 *	9	26, 65, 331	HG	1749.8	4	130
HG II	1601.33	4	26, 65	HG II	1755.4	1	698
HG III	1604.47	4	26, 331	HG II	1756.07	3	65, 331, 527
HG II	1605.52	1	26, 65, 527	HG III	1759.44	0	331
HG II	1607.54	00	26	HG III	1759.75	5	237, 331
HG II	1608.80	00	26	HG II	1760.445	2	65
HG II	1611.86	0	26	HG II	1764.0	1	698
HG II	1613.355	1	65	HG III	1767.22	0	331
HG II	1614.13	0	26, 65	HG I	1775.677*	1	331, 658, 794
HG II	1617.65	1	26, 65, 527	HG II	1780.00	0	65, 452
HG II	1619.40	2	26, 65, 331	HG II	1783.79	1	65, 527
HG II	1623.11	00	26	HG II	1792.46	3	65, 698
HG II	1623.91	5	26, 65, 452	HG II	1793.962	5	65, 452
HG III	1624.63	1	331	HG II	1796.897*	15	527, 794
HG II	1625.44	1	26	HG II	1798.736	0	65, 452
HG II	1628.247	1	65	HG II	1800.837	0	65, 452
HG III	1630.30	1	26, 331	HG II	1803.888	2	331, 527, 794
HG IV	1632.47	3	26	HG III	1806.55	0	331
HG II	1634.28	1	26	HG II	1808.289	6	65, 452
HG III	1634.68	1	331	HG II	1820.336*	20	527, 794
HG II	1635.88	0	65, 527	HG III	1825.59	0	331
HG II	1636.06	0	26	HG III	1826.08	5	331
HG IV	1638.38	0	26, 696	HG I	1832.74 *	1	275, 658
HG IV	1639.35	1	26, 696	HG II	1840.592	0	65
HG II	1640.61	1	26	HG III	1848.95	3	331
HG III	1642.33	1	26	HG I	1849.497*	50	658, 794
HG II	1644.50	2	26	HG II	1853.329	2	65, 331, 783
HG II	1644.526	1	65	HG II	1868.027	0	65, 527
HG III	1647.35 *	10	26, 65, 331	HG II	1869.548*	8	658, 794
HG II	1649.932*	10	26, 698, 794	HG II	1870.547*	20	698, 794
HG III	1652.24 *	8	26, 65, 331	HG II	1875.541	3	65, 452
HG III	1653.14	2	331	HG II	1886.60	0	698
HG II	1653.644	2	527, 794	HG III	1894.77	1	237, 331
HG III	1654.66 *	8	26, 331, 783	HG III	1898.30	1	331
HG II	1654.78	6	65, 527	HG II	1900.284	5	527, 794
HG II	1655.41	00	26	HG II	1904.755	4	65, 452, 527
HG II	1656.03	4	26, 696	HG III	1905.41	1	331
HG IV	1658.11	4	26, 696	HG III	1906.93	0	331
HG III	1658.85	0	331	HG III	1916.56	1	331
HG III	1661.18	0	65, 453	HG III	1925.43	0	331
HG III	1662.61 *	6	26, 65, 331	HG II	1927.64	1	65, 452, 527
HG III	1664.23 *	6	26	HG II	1933.80	2	698
HG II	1665.3	1	698	HG II	1942.273*	20	698, 794
HG II	1667.07	0	26	HG II	1947.65	2	65, 698
HG III	1669.62	3	26, 331	HG II	1948.66	2	65, 527
HG III	1671.07 *	7	26, 65, 331	HG III	1952.16	1	331
HG II	1672.405	2	26, 452, 794	HG II	1952.60	1	698
HG II	1674.37	0	26	HG II	1957.386	1	65, 452, 527
HG II	1675.898	3	26, 65, 452	HG II	1958.52	1	65
HG III	1676.01	3	331	HG III	1970.64	0	331
HG III	1677.85 *	10	26, 65, 331	HG II	1972.94	3	658, 698
HG III	1679.42	5	26	HG II	1973.889*	8	65, 452, 527

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG II	1974.95	2	698
HG II	1977.94		65, 452, 698
HG II	1979.00	4	65, 452, 527
HG II	1980.80	2	698
HG II	1981.45	2	65, 331, 452
HG II	1987.08	6	698
HG II	1987.978	6	65, 452, 527
HG II	1995.576	4	65, 527

THALLIUM

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TL II	I.P.	164765.	K	606.925	A
TL III	I.P.	240600.	K	415.6	A
TL IV	I.P.	409100.	K	244.4	A

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TL	268.62	1	33
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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
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TL	271.07	2	33	TL	326.55	1	33
TL	271.20	4	33	TL	326.69	1	33
TL	272.12	2	33	TL	327.02	2	33
TL	272.42	1	33	TL	327.11	1	33
TL	272.90	2	33	TL	327.55	1	33
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TL	273.36	3	33	TL	328.17	2	33
TL	273.61	3	33	TL	329.23	1	33
TL	274.26	2	33	TL	329.42	0	33
TL	274.41	0	33	TL	330.38	1	33
TL	274.94	3	33	TL	330.61	1	33
TL	275.18	2	33	TL	331.88	2	33
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TL	284.70	2	33	TL	342.21	1	33
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TL	285.64	3	33	TL	343.03	2	33
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TL	290.92	2	33	TL	349.87	1	33
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TL	293.21 *	4	33	TL	352.61	1	33
TL	293.52	1	33	TL	353.21	0	33
TL	293.70	2	33	TL	353.40	0	33
TL	294.33	2	33	TL	353.79	1	33
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TL	303.31	1	33	TL	364.32	1	33
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TL	304.47	0	33	TL	366.10	3	33
TL	306.64	0	33	TL	367.05	0	33
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TL	317.66	2	33	TL	367.69	0	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
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TL	369.66	1	33	TL	403.67	0	33
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TL	373.40	3	33	TL	406.58	0	33
TL	374.19	0	33	TL	407.13	0	33
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FL	376.00	2	33	TL	407.67	3	33
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TL	383.14	0	33	TL	415.03	2	33
TL	383.65	3	33	TL	415.34	1	33
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TL	389.58	3	33	TL	423.56	0	33
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TL	390.37	0	33	TL	424.60	3	33
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TL	390.83	3	33	TL	425.25	0	33
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TL	400.30	2	33	TL	433.79	00	33
TL	400.87	2	33	TL	434.08	00	33
TL	401.94	2	33	TL	434.28	00	33
TL	402.06	3	33	TL	434.78	0	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
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TL	435.71	2	33	TL	469.76	2	33
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TL	436.63	0	33	TL	471.16	4	33
TL	436.72	3	33	TL	472.31	4	33
TL	437.21	2	33	TL	473.55	0	33
TL	437.51	0	33	TL	474.66	1	33
TL	437.85	2	33	TL	474.98	1	33
TL	438.37	3	33	TL	475.19	2	33
TL	438.53	3	33	TL	475.49	2	33
TL	438.61	3	33	TL	475.90	2	33
TL	438.88	0	33	TL	476.11	0	33
TL	439.04	1	33	TL	476.21	3	33
TL	439.36	1	33	TL	477.44	0	33
TL	439.75	2	33	TL	477.67	0	33
TL	440.05	3	33	TL	478.11	2	33
TL	440.38	1	33	TL	479.59	0	33
TL	441.23	2	33	TL	479.81	3	33
TL	441.51	0	33	TL	480.13	0	33
TL	442.23	1	33	TL	480.41	0	33
TL	443.01	0	33	TL	480.51	1	33
TL	443.31	0	33	TL	481.62	4	33
TL	443.55	0	33	TL	481.86	1	33
TL	445.45	0	33	TL	482.10	2	33
TL	445.69	1	33	TL	482.21	0	33
TL	445.99	1	33	TL	482.52	3	33
TL	446.25	3	33	TL	482.81	1	33
TL	446.72	2	33	TL	485.09	1	33
TL	447.05	1	33	TL	485.38	2	33
TL	447.33	1	33	TL	485.49	2	33
TL	448.34	2	33	TL	486.28	1	33
TL	448.54	0	33	TL	486.50	0	33
TL	449.33	3	33	TL	486.86	1	33
TL	449.80	4	33	TL	487.00	1	33
TL	450.33	4	33	TL	487.27	0	33
TL	450.63	2	33	TL	487.62	2	33
TL	451.69	0	33	TL	487.89	1	33
TL	451.78	0	33	TL	488.17	4	33
TL	451.87	0	33	TL	488.35	1	33
TL	452.30	1	33	TL	488.52	1	33
TL	452.51	1	33	TL	488.74	1	33
TL	453.06	2	33	TL	488.96	1	33
TL	453.80	0	33	TL	489.46	1	33
TL	454.26	1	33	TL	490.20	0	33
TL	454.49	2	33	TL	490.85	3	33
TL	455.36	2	33	TL	491.26	0	33
TL	455.56	1	33	TL	491.45	0	33
TL	456.74	1	33	TL	492.05	1	33
TL	457.05	2	33	TL	492.77	1	33
TL	457.55	2	33	TL	493.47	1	33
TL	457.78	2	33	TL	493.78	2	33
TL	458.29	1	33	TL	494.09	2	33
TL	459.04	2	33	TL	494.54	1	33
TL	459.29	1	33	TL	494.93	1	33
TL	460.03	1	33	TL	495.01	1	33
TL	460.51	0	33	TL	495.47	0	33
TL	460.83	1	33	TL	495.67	1	33
TL	461.17	3	33	TL	495.90	0	33
TL	461.39	1	33	TL	496.14	1	33
TL	461.64	0	33	TL	496.38	1	33
TL	461.97	3	33	TL	496.57	0	33
TL	462.27	2	33	TL	496.78	1	33
TL	462.54	2	33	TL	496.93	2	33
TL	463.26	0	33	TL	497.23	1	33
TL	463.59	1	33	TL	497.73	2	33
TL	464.08	0	33	TL	497.98	1	33
TL	464.43	0	33	TL	498.44	1	33
TL	464.88	1	33	TL	498.69	1	33
TL	465.11	1	33	TL	499.28	0	33
TL	465.47	4	33	TL	500.39	0	33
TL	465.76	0	33	TL	500.85	0	33
TL	465.84	0	33	TL	501.56	0	33
TL	465.98	0	33	TL	501.88	1	33
TL	466.37	0	33	TL	502.68	0	33
TL	467.95	1	33	TL	503.03	1	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	503.13	0	33	TL	540.58	1	33
TL	503.55	1	33	TL	542.47	2	33
TL	504.03	1	33	TL	543.10	1	33
TL	504.43	1	33	TL	544.03	1	33
TL	505.08	1	33	TL	545.53	1	33
TL	505.37	2	33	TL	546.35	1	33
TL	505.82	2	33	TL	547.36	3	33
TL	506.00	0	33	TL	547.69	2	33
TL	506.18	1	33	TL	547.87	0	33
TL	507.31	2	33	TL	548.12	00	33
TL	507.56	1	33	TL	549.98	1	33
TL	508.79	0	33	TL	550.98	0	33
TL	510.62	1	33	TL	551.23	0	33
TL	511.09	0	33	TL	551.60	2	33
TL	511.31	0	33	TL	552.73	1	33
TL	511.58	1	33	TL	553.45	1	33
TL	511.82	2	33	TL	553.53	1	33
TL	512.31	0	33	TL	553.84	0	33
TL	512.78	1	33	TL	554.07	0	33
TL	513.06	1	33	TL	556.30	3	33
TL	513.56	1	33	TL	557.83	1	33
TL	513.88	1	33	TL	558.14	1	33
TL	514.52	0	33	TL	558.44	1	33
TL	514.69	0	33	TL	559.65	1	33
TL	514.81	0	33	TL	560.07	0	33
TL	515.02	0	33	TL	560.78	0	33
TL	515.46	1	33	TL	561.62	2	33
TL	515.64	0	33	TL	561.96	1	33
TL	516.73	2	33	TL	562.17	1	33
TL	516.95	00	33	TL	562.47	2	33
TL	517.28	0	33	TL	562.66	0	33
TL	517.52	2	33	TL	563.02	3	33
TL	518.04	0	33	TL	563.24	0	33
TL	518.77	0	33	TL	563.88	0	33
TL	519.09	1	33	TL	564.12	1	33
TL	519.83	2	33	TL	564.62	0	33
TL	520.12	1	33	TL	565.08	1	33
TL	520.33	0	33	TL	565.28	0	33
TL	520.53	0	33	TL	565.78	1	33
TL	520.89	0	33	TL	567.85	2	33
TL	521.29	1	33	TL	568.56	2	33
TL	522.05	1	33	TL	569.05	00	33
TL	522.26	1	33	TL	569.51	1	33
TL	522.63	0	33	TL	570.19	0	33
TL	522.92	1	33	TL IV	570.50 *	4	33, 466
TL	523.73	1	33	TL	572.28	0	33
TL	523.95	00	33	TL	572.56	00	33
TL	524.21	2	33	TL	573.12	2	33
TL	524.98	0	33	TL	573.66	1	33
TL	525.23	0	33	TL	573.99	0	33
TL	525.67	1	33	TL	579.99	0	33
TL	526.86	0	33	TL	580.42	0	33
TL	527.29	0	33	TL	580.98	0	33
TL	528.64	1	33	TL	583.01	0	33
TL	528.95	0	33	TL	584.81	1	33
TL	529.15	1	33	TL	585.13	1	33
TL	529.59	1	33	TL	587.84	0	33
TL	529.76	0	33	TL	588.12	0	33
TL	530.19	1	33	TL	590.14	0	33
TL	530.70	2	33	TL	593.33	1	33
TL IV	531.26	3	33, 466	TL	593.69	1	33
TL	532.80	2	33	TL	595.44	1	33
TL	534.46	1	33	TL	595.83	2	33
TL	534.88	1	33	TL IV	597.02	2	33, 466
TL	535.20	0	33	TL	597.27	2	33
TL	535.46	2	33	TL	599.06	1	33
TL	536.60	2	33	TL	599.24	00	33
TL	537.69	1	33	TL	599.88	1	33
TL	537.80	0	33	TL	600.37	2	33
TL	538.13	1	33	TL	601.68	1	33
TL	538.81	2	33	TL	603.36	1	33
TL	539.54	0	33	TL	603.71	0	33
TL	539.78	3	33	TL	603.97	0	33
TL	540.05	1	33	TL	604.22	0	33
TL	540.32	1	33	TL	604.69	3	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	605.44	1	33	TL	672.95	00	33
TL	605.76	1	33	TL	673.31	00	33, 194
TL	606.13	0	33	TL	681.68	0	33
TL	607.40	0	33	TL	682.23	00	33
TL	608.29	0	33	TL	683.68	1	33
TL	608.45	1	33	TL	686.42	00	33
TL	608.69	1	33	TL	688.30	00	33
TL	609.15	0	33	TL	695.35	0	33
TL	610.45	1	33	TL	695.65	0	33, 194
TL	610.84	2	33	TL	701.38	0	33
TL	612.34	2	33	TL	703.31	0	33
TL	612.65	1	33	TL	704.23	1	33
TL	613.02	0	33	TL	707.13	00	33
TL	614.27	00	33	TL II	710.16	00	33, 194
TL	616.21	0	33	TL	712.00	1	33
TL	616.56	00	33	TL	714.17	1	33
TL	616.76	00	33	TL	714.43	0	33
TL	617.18	00	33	TL II	718.22	0	33, 194
TL	617.71	1	33	TL	719.29	0	33
TL	617.98	00	33	TL	719.73	0	33
TL	618.58	00	33	TL	720.40	00	33
TL	618.81	0	33	TL	720.66	00	33
TL	622.60	00	33	TL	721.05	0	33
TL	624.05	00	33	TL	726.39	00	33
TL	624.49	1	33	TL	738.79	0	33
TL	624.91	1	33	TL	742.28	1	33
TL	625.11	1	33	TL	742.76	00	33
TL	625.49	1	33	TL	743.18	00	33
TL	628.15	2	33	TL II	744.18	00	33, 194
TL	628.77	0	33	TL	747.95	2	33
TL	629.05	0	33	TL	748.64	0	33
TL	629.74	00	33	TL	748.85	0	33
TL	630.13	00	33	TL	749.68	1	33
TL	631.91	0	33	TL	752.34	0	33
TL	635.18	3	33	TL	757.15	0	33
TL	635.87	0	33	TL	758.14	0	33
TL	636.25	0	33	TL	758.92	00	33
TL	636.89	0	33	TL	760.38	0	33
TL	637.79	1	33	TL	762.61	00	33
TL	638.09	2	33, 194	TL	763.17	1	33
TL	640.06	0	33	TL	763.89	0	33
TL	641.12	0	33	TL	764.60	1	33
TL	641.59	2	33	TL	765.89	1	33
TL	642.23	1	33	TL	769.15	0	33
TL	642.53	1	33	TL	770.52	0	33
TL	643.24	1	33	TL	772.37	00	33
TL	643.80	1	33	TL	781.97	1	33
TL	647.17	0	33	TL	782.23	1	33
TL	647.35	00	33	TL	783.47	1	33
TL	647.68	0	33	TL	783.88	0	33
TL	648.22	1	33	TL	784.62	00	33
TL	649.09	1	33	TL	786.03	2	33
TL	649.37	2	33	TL	786.48	1	33
TL	649.75	0	33	TL II	791.08	0	33, 194
TL	649.98	1	33	TL	798.06	1	33
TL	650.17	0	33	TL	801.34	0	33
TL II	650.76	1	33, 194	TL	801.49	0	33
TL	651.34	00	33	TL	807.80	1	33
TL	651.64	0	33	TL	809.20	0	33
TL	652.31	0	33	TL	812.67	0	33
TL	655.68	1	33	TL	814.05	1	33
TL	656.71	1	33	TL	815.11	0	33
TL	656.91	1	33	TL	816.19	0	33
TL	657.28	0	33	TL	816.67	0	33
TL	657.49	1	33	TL II	817.36	1	33, 194
TL	657.96	0	33	TL	817.64	0	33
TL	658.12	0	33	TL	818.54	1	33
TL	662.91	3	33	TL	819.17	0	33
TL	666.60	00	33	TL	821.00	1	33
TL	666.87	00	33	TL	821.32	0	33
TL	667.21	00	33	TL	826.30	1	33
TL	667.69	3	33	TL	829.02	0	33
TL	667.81	0	33	TL	829.28	1	33
TL	667.98	00	33	TL	830.96	2	33
TL II	671.73	0	33, 194	TL	831.56	1	33

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	832.46	0	33	TL	928.18	2	33
TL II	834.76	00	33, 194	TL	929.08	00	33
TL	841.57	0	33	TL	932.95	4	33
TL	842.64	00	33	TL	934.70	0	33
TL	843.34	1	33	TL	937.39	2	33
TL	843.98	1	33	TL	937.72	0	33
TL	845.32	1	33	TL II	938.51	00	33, 194
TL	847.29	00	33	TL	939.94	0	33
TL	848.14	1	33	TL	940.80	1	33
TL	848.95	0	33	TL	943.13	0	33
TL	849.98	0	33	TL II	943.68	0	33, 194
TL	850.46	1	33	TL II	943.93	2	33, 194
TL	852.54	1	33	TL	948.27	0	33
TL	853.86	00	33	TL II	949.67	1	33, 194
TL	855.16	0	33	TL	954.45	1	33
TL	858.41	0	33	TL	955.59	1	33
TL	858.97	00	33	TL	956.92	1	33
TL	859.24	00	33	TL	957.15	0	33
TL	860.06	0	33	TL	957.35	00	33
TL	861.02	1	33	TL	958.22	2	33
TL	861.43	0	33	TL	958.58	3	33
TL	861.96	2	33	TL II	961.48	1	33, 194
TL	862.95	2	33	TL	964.19	2	33
TL	866.37	00	33	TL II	965.41	4	194
TL	866.65	00	33	TL	966.11	0	33
TL	867.68	2	33	TL II	967.36	0	33, 194
TL IV	868.94	0	33, 466	TL	968.47	3	33
TL	869.95	0	33	TL	971.34	0	33
TL	870.84	1	33	TL	975.09	00	33
TL	873.26	1	33	TL II	979.30	3	194
TL	877.57	1	33	TL	983.81	00	33
TL I	878.04 *	2	33	TL	984.44	2	33
TL I	879.30 *	0	33	TL	985.91	00	33
TL I	884.07 *	0	33	TL	986.65	00	33
TL	885.22	2	33	TL	986.99	2	33
TL	886.29	00	33	TL II	989.57	0	33, 194
TL IV	888.04	1	33, 466	TL	993.57	4	33
TL	888.59	1	33	TL II	996.98	2	33, 194
TL	889.45	0	33	TL	999.74	1	33
TL	890.13	2	33	TL	1000.93	2	33
TL	891.25	1	33	TL	1001.95	0	33
TL	893.83	0	33	TL	1005.00	3	33
TL	894.13	1	33	TL II	1007.59	0	33, 194
TL	894.53	00	33	TL	1013.68	1	33
TL	895.27	1	33	TL	1017.38	00	33
TL	895.51	0	33	TL II	1017.83	0	33, 194
TL IV	895.81	00	33	TL	1019.16	1	33
TL	896.92	1	33, 466	TL	1021.41	3	33
TL	897.71	0	33	TL IV	1028.58 *	4	33, 466
TL	897.94	1	33	TL	1032.53	00	33
TL	900.35	1	33	TL IV	1034.76	00	33, 466, 543
TL	902.59	1	33	TL	1035.68	1	33
TL	902.87	1	33	TL IV	1036.60	2	33, 466
TL	903.77	2	33	TL II	1038.36	0	33, 194
TL	904.75	0	33	TL II	1039.88	0	33, 194
TL	905.68	0	33	TL II	1041.44	0	33, 194
TL	906.36	1	33	TL II	1044.37	2	194
TL	906.63	1	33	TL II	1049.73	0	33, 194, 466
TL	909.36	2	33	TL II	1050.30	2	33, 194
TL	910.20	0	33	TL	1056.35	0	33
TL	911.71	1	33	TL	1056.62	1	33
TL IV	912.59	0	33, 466	TL IV	1057.57	0	33, 466
TL	913.02	1	33	TL	1057.76	00	33
TL	913.91	0	33	TL	1058.23	2	33
TL	915.89	1	33	TL	1059.25	1	33
TL	916.23	0	33	TL II	1060.53	3	194
TL	917.12	1	33, 466	TL II	1060.93	2	194
TL	918.04	1	33	TL	1063.62	00	33
TL	919.31	0	33	TL	1064.02	00	33
TL	921.41	1	33	TL	1065.16	0	33
TL	921.78	00	33	TL	1067.02	00	33
TL	922.01	00	33	TL	1067.77	0	33
TL	923.60	1	33	TL IV	1068.02	3	33, 466
TL	926.31	1	33	TL	1068.52	0	33
TL	927.91	0	33	TL IV	1070.45	1	33, 466

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL II	1070.63	0	33, 194	TL	1210.1	00	130
TL II	1072.99	3	194	TL II	1211.72	00	33, 194
TL II	1074.97	5	194	TL	1214.29	0	130
TL III	1078.5	00	130, 543	TL III	1215.75	0	130, 543
TL IV	1079.65 *	4	33, 466	TL	1216.54	0	130
TL	1081.85	2	33	TL	1218.5	0	130
TL	1082.28	0	33	TL II	1220.93	3	33, 194
TL	1082.57	00	33	TL III	1221.98	0	130, 543
TL	1085.31	00	33	TL	1223.03	00	130
TL	1088.01	3	33	TL	1223.84	00	130
TL	1089.07	1	33	TL IV	1225.54	3	33, 466
TL IV	1090.63	3	33, 466	TL	1226.5	0	130
TL II	1092.72	3	33, 194, 466	TL	1227.51	00	130
TL IV	1094.411	1	466	TL III	1231.57 *	7	33, 451
TL II	1096.01	1	33, 194	TL II	1231.81	8	33, 194
TL II	1097.24	4	33, 194	TL	1232.57	2	33
TL IV	1099.53	3	33, 466	TL	1234.08	1	33
TL	1102.19	2	130	TL	1236.40	00	33
TL	1103.69	1	130	TL	1236.70	1	33
TL	1104.98	00	33	TL	1237.19	2	33
TL	1109.43	4	130	TL	1237.60	2	33
TL II	1112.0	0	130	TL	1238.68	00	33
TL II	1113.84	00	33, 194	TL II	1241.40	00	33, 194
TL	1114.12	0	33	TL	1243.82	1	130
TL	1114.42	0	33	TL II	1246.42	1	33, 194
TL	1118.39	0	33	TL	1247.60	0	130
TL	1118.85	1	33	TL	1249.56	2	130
TL	1119.58	00	33	TL	1250.93	2	130
TL	1121.92	0	33	TL III	1252.49	1	33, 543
TL	1122.19	0	33	TL II	1254.34	2	194
TL IV	1125.44	3	33, 466	TL	1257.32	0	130
TL	1127.90	0	130	TL	1258.24	0	130
TL II	1130.17 *	10	194	TL	1259.15	0	33
TL	1134.22	0	33	TL	1260.94	2	33
TL	1134.73	1	33	TL	1263.55	2	130
TL IV	1139.24	3	33, 466	TL	1264.96	00	33
TL	1141.9	1	130	TL	1265.51	1	33
TL IV	1144.07	3	466	TL III	1266.17 *	6	33, 543
TL	1147.2	00	130	TL	1270.01	00	33
TL	1148.3	00	130	TL	1271.28	2	33
TL	1150.2	00	130	TL IV	1272.85	1	33, 466
TL II	1153.17	4	33, 194	TL	1273.03	3	130
TL	1155.59	0	130	TL	1275.04	0	33
TL	1156.40	0	130	TL III	1276.37	1	130, 543
TL	1157.7	0	130	TL	1278.68	1	130
TL	1158.62	0	130	TL	1281.37	0	130
TL	1160.7	00	130	TL III	1282.83	0	543
TL II	1162.59	00	33, 194	TL	1283.91	00	130
TL II	1163.80	4	194	TL	1285.51	0	130
TL II	1164.06	1	33, 194	TL	1286.98	2	130
TL	1166.48	00	33	TL	1288.10	00	33
TL II	1166.98	00	33, 194	TL II	1288.88	00	33, 194
TL	1168.76	2	33	TL	1291.53	00	33
TL II	1169.49	2	33, 194	TL	1292.7	1	130
TL	1170.49	1	33	TL	1295.59	1	130
TL	1173.36	00	33	TL IV	1304.55	0	33, 466
TL	1173.64	0	33	TL	1305.51	0	130
TL	1175.10	0	130	TL II	1307.50 *	15	194
TL	1175.86	1	130	TL II	1308.50	4	194
TL	1176.50	1	130	TL	1309.46	00	33
TL	1178.00	3	33	TL II	1310.20	8	194
TL	1179.05	1	33	TL II	1312.42	2	194
TL	1181.15	00	33	TL III	1313.20	1	33, 543
TL II	1183.41 *	10	194	TL	1315.19	0	130
TL	1184.80	00	33	TL	1316.09	0	130
TL II	1188.83	3	194	TL II	1317.75	3	194
TL	1190.68	0	130	TL II	1321.71	3	33, 194
TL	1192.18	1	130	TL IV	1323.58	1	33, 466
TL	1193.49	0	130	TL	1325.52	00	130
TL II	1194.84 *	12	194	TL	1326.93	0	130
TL	1197.11	1	33	TL	1326.94	1	33
TL	1201.11	00	33	TL	1327.87	0	33
TL	1202.26	0	33	TL II	1330.40	0	33, 194
TL	1203.87	00	33	TL	1331.56	00	33
TL	1209.07	1	130	TL III	1332.08	00	33, 451

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL III	1332.36	0	33, 543	TL	1532.37	1	130
TL	1332.96	0	33	TL	1534.33	2	130
TL	1334.59	2	130	TL II	1538.19	4	194
TL	1335.79	3	130	TL	1548.21	3	130
TL	1336.74	0	33	TL	1550.75	2	130
TL IV	1337.16 *	4	33, 466	TL	1553.09	1	130
TL	1338.71	2	130	TL	1554.01	3	130
TL	1344.66	0	130	TL III	1558.67 *	8	451, 543
TL	1345.36	00	33	TL II	1561.58 *	15	194
TL	1346.92	00	33	TL	1564.0	1	130
TL	1348.5	0	130	TL	1565.6	1	130
TL III	1349.47	1	130, 543	TL II	1568.57 *	10	194
TL	1350.56	00	33	TL II	1572.16	4	194, 543
TL	1352.65	0	33	TL	1579.1	0	130
TL	1353.22	00	33	TL	1580.63	1	130
TL	1353.72	00	33	TL	1584.9	0	130
TL	1354.34	00	33	TL	1588.5	0	130
TL	1355.92	0	33	TL II	1593.26	7	194
TL	1357.92	00	33	TL	1594.5	0	130
TL IV	1358.52	1	33, 466	TL	1595.8	0	130
TL	1361.82	1	33	TL	1596.95	6	130
TL	1366.30	0	33	TL	1598.4	1	130
TL	1366.88	00	33	TL	1599.6	0	130
TL	1367.72	3	130	TL II	1602.54	1	194
TL	1368.29	00	33	TL II	1606.21	1	194
TL	1369.45	00	33	TL	1611.9	00	130
TL II	1370.88	3	194	TL I	1616.	5	134
TL II	1373.52 *	10	194	TL	1618.6	0	130
TL IV	1374.61	3	33, 466	TL	1621.88	0	130
TL IV	1377.73 *	5	33, 466	TL	1623.3	6	130
TL	1381.34	1	130	TL II	1633.23	4	194
TL	1382.70	3	130	TL III	1634.0 *	7	130, 543
TL	1385.85	00	130	TL III	1637.6	1	130, 543
TL	1387.1	00	130	TL	1640.1	4	130
TL II	1389.08	0	194	TL	1641.8	2	130
TL II	1390.05	1	194	TL	1643.82	6	130
TL II	1391.88	4	194	TL	1646.5	1	130
TL	1394.83	1	130	TL	1647.2	5	130
TL III	1395.80	1	130, 543	TL	1648.2	3	130
TL	1397.00	1	130	TL I	1650.2 *	0	134
TL	1401.60	3	130	TL	1651.4	0	130
TL IV	1404.61 *	4	33, 466	TL	1652.8	1	130
TL	1407.4	0	130	TL	1653.9	4	130
TL	1408.6	0	130	TL	1656.87	0	130
TL IV	1412.93 *	5	33, 466	TL	1659.1	0	130
TL I	1423.2 *	1	134	TL III	1660.05 *	8	451, 543
TL	1424.63	1	130	TL	1661.0	3	130
TL	1427.0	0	130	TL	1663.7	2	130
TL	1428.3	0	130	TL	1671.2	1	130
TL II	1430.00	2	194	TL III	1673.0 *	2	130, 543
TL II	1433.60	3	194	TL	1674.1	5	130
TL IV	1434.72 *	6	466	TL III	1674.4 *	3	130, 543
TL	1444.9	1	130	TL	1674.67	5	130
TL III	1448.0	00	130, 543	TL	1677.1	0	130
TL IV	1449.37 *	5	466	TL	1678.0	0	130
TL III	1457.17 *	3	130, 543	TL	1680.3	0	130
TL	1458.6	00	130	TL	1682.29	1	130
TL	1460.67	2	130	TL I	1685.40 *	5	134
TL	1462.2	0	130	TL	1691.4	0	130
TL	1464.5	1	130	TL	1693.47	1	130
TL	1469.59	2	130	TL	1693.9	1	130
TL III	1476.94 *	9	130	TL	1696.1	1	130
TL III	1477.14 *	10	451, 543	TL	1699.4	0	130
TL II	1485.1	0	130, 543	TL	1701.36	5	130
TL	1487.50	0	130	TL	1703.4	4	130
TL I	1489.65 *	8	134	TL II	1705.55	3	194
TL II	1490.50	5	194	TL	1708.1	4	130
TL	1495.3	0	130	TL	1709.5	00	130
TL II	1499.30 *	10	194	TL	1710.89	2	130
TL	1502.05	0	130	TL	1711.3	2	130
TL	1503.82	1	130	TL	1715.0	3	130
TL III	1506.37 *	4	451, 543	TL	1721.4	00	130
TL II	1507.82 *	10	194	TL	1723.3	3	130
TL	1509.23	1	130	TL	1725.1	0	130
TL	1511.27	1	130	TL I	1728.	0	134

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	1729.75	3	130	PB VI	251.978	2	5
TL	1734.0	1	130	PB V	254.420	2	5
TL	1736.7	0	130	PB V	257.366	1	5
TL	1744.3	00	130	PB V	258.100	1	5
TL	1747.8	00	130	PB V	275.540	0	5
TL	1784.97	5	130	PB V	275.628	3	5
TL	1789.6	3	130	PB VI	282.741	3	5
TL II	1792.76 *	10	194	PB V	284.329	2	5, 657
TL II	1798.36	4	194	PB VI	334.388	4	5
TL	1801.7	3	130	PB VI	348.783	4	5
TL	1804.4	5	130	PB VI	348.840	4	5
TL	1805.4	2	130	PB VI	350.102	4	5
TL	1808.3	1	130	PB VI	350.605	4	5
TL	1809.7	1	130	PB VI	351.958	4	5
TL II	1814.85 *	12	194	PB VI	356.177*	5	5
TL	1822.9	1	130	PB VI	357.120	3	5
TL	1825.26	4	130	PB V	358.626	5	5, 657
TL II	1827.86	5	194	PB	360.500	1	5
TL	1831.67	3	130	PR	360.930	2	5
TL	1834.3	0	130	PB VI	362.125	3	5
TL II	1837.45	3	194	PB VI	364.385	3	5
TL I	1847.	3	134	PB V	367.695	7	5
TL	1854.91	4	130	PB V	370.685	5	5
TL	1861.6	3	130	PB V	372.534	4	5
TL	1862.95	2	130	PB V	373.830	5	5
TL	1865.9	1	130	PB V	375.957	6	5
TL	1866.9	1	130	PB VI	376.590	3	5
TL	1869.1	0	130	PB VI	378.058	3	5
TL II	1871.39	4	194	PB V	380.196	5	5
TL	1873.5	1	130	PB V	380.497	6	5
TL	1875.0	1	130	PB V	381.932	0	5
TL	1877.8	1	130	PB V	382.825	0	5
TL II	1881.15	3	194	PB VI	383.280*	5	5
TL IV	1883.2 *	5	466, 543	PB VI	385.023	4	5
TL	1888.1	0	130	PB	385.230	0	5
TL II	1892.72	8	194	PB V	387.070	3	5
TL II	1908.64 *	25	194	PB V	387.129	0	5
TL	1913.0	1	130	PB V	387.870	4	5, 657
TL	1916.5	1	130	PB VI	388.147	1	5
TL	1917.1	1	130	PB	388.800	0	5
TL	1918.2	00	130	PB V	389.745	5	5, 657
TL	1919.8	0	130	PB V	390.882	0	657
TL	1921.5	0	130	PB V	392.880	3	5
TL	1922.1	0	130	PB V	393.102	2	5
TL	1922.8	0	130	PB VI	394.336	2	5
TL	1923.6	0	130	PB VI	394.384	3	5
TL	1930.7	1	130	PB V	394.955	1	5
TL III	1931.3 *	1	130, 543	PB V	395.280	1	5, 657
TL	1933.5	1	130	PB V	395.770	3	5, 657
TL III	1934.8	00	130, 543	PD	396.441	3	5
TL	1936.8	0	130	PB V	400.655	5	5
TL	1940.6	0	130	PB VI	402.402	1	5
TL	1942.5	2	130	PB VI	402.847	0	5
TL	1964.6	3	130	PR VI	403.057	1	5
TL IV	1974.6	3	466	PD V	403.217	2	5, 657
TL	1989.1	00	130	PB	404.085	1	5
TL	1999.1	00	130	PD V	404.535	1	5
				PB V	404.644	3	5, 657
				PR V	404.776	0	5
				PB V	406.215	3	5
				PB V	406.810	0	5
				PB V	407.700	7	5, 466
				PB V	408.480	2	5
				PR V	409.729	1	5, 657
				PB V	409.915	3	5
				PB V	410.026	2	5
				PB V	410.705	3	5, 657
				PB V	411.055	1	5
				PB	411.875	0	5
				PB V	413.607	2	5
PB I	I.P.	59821.0	K	1671.65	A		
PB II	I.P.	121243.	K	824.790	A		
PB III	I.P.	257592.	K	388.211	A		
PB IV	I.P.	341350.	K	292.95	A		
PB V	I.P.	555000.	K	180.	A		
PB V				PB V	413.941	1	5
				PB V	414.492	4	5
				PB V	415.600	3	5
				PB V	415.825	4	5
				PB	416.810	0	5

LEAD

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
PB	V	416.950	2	5, 657	PB	555.05	0	5	
PB	V	417.667	3	5	PB	555.80	0	5	
PB		417.954	0	5	PB	557.68	0	5	
PB	V	418.264	0	5, 657	PB	558.16	0	5	
PB		418.920	2	5	PB	561.14	1	5	
PB	V	419.137	5	5	PB	564.41	0	5	
PB	V	419.650	1	5, 657	PB	569.60	1	5	
PB		420.084	1	5	PB	IV	570.16	6	5, 139
PB	V	420.920	3	5	PB	IV	570.64	0	5
PB	V	421.063	3	5	PB		571.77	0	5
PB	V	421.570	3	5	PB	III	572.73 *	7	5
PB	V	422.514	5	5	PB	VI	573.60	2	5
PB	V	423.822	0	5	PB	IV	573.90	2	5, 656
PB	V	423.906	2	5, 657	PB		574.67	0	5
PB	V	424.640	6	5	PB		575.35	0	5
PB		425.92	2	5	PB		575.85	0	5
PB		427.33	0	5	PB		576.20	0	5
PB		427.67	1	5	PB	IV	576.43	2	5, 139, 656
PB	V	428.99	1	5, 657	PB		577.41	1	5
PB	V	429.51	2	5, 657	PB		577.84	0	5
PB		429.65	0	5	PB		578.14	0	5
PB	V	431.02	2	5	PB		578.30	0	5
PB	V	431.86	2	5, 657	PB		578.53	2	5
PB		432.23	0	5	PB		579.25	1	5
PB	IV	432.880	3	5, 139	PB		580.41	0	5
PB	V	433.487	3	5, 657	PB		580.96	1	5
PB		433.58	0	5	PB		582.19	2	5
PB	V	436.10	0	5, 657	PB		583.49	1	5
PB	V	436.61	1	5	PB		584.08	0	5
PB	V	436.74	2	5	PB	IV	584.51	4	5, 139
PB	V	438.911*	10	5, 466	PB		584.84	0	5
PB	V	440.11	1	5, 657	PB		588.69	0	5
PB	V	444.626	4	5	PB		589.42	0	5
PB		445.23	0	5	PB		590.12	0	5
PB	V	446.56	0	5, 657	PB		590.83	0	5
PB	V	448.06	0	5	PB		591.24	0	5
PB		449.50	0	5	PB		603.33	1	5
PB		449.91	0	5	PB		611.75	1	5
PB	V	450.07	2	5	PB		620.69	1	5
PB		451.15	0	5	PB		621.49	1	5
PB		452.24	0	5	PB		621.62	0	5
PB		452.94	0	5	PB		623.02	0	5
PB	V	453.45	3	5	PB		623.59	0	5
PB		455.38	0	5	PB		632.03	0	5
PB	V	455.61	1	5, 466	PB		633.41	0	5
PB	IV	459.04	6	5, 139, 656	PB		633.96	1	5
PB	IV	461.72	3	5	PB		636.91	0	5
PB	V	462.97	0	5, 657	PB		639.47	1	5
PB	V	464.01	1	5	PB		639.63	0	5
PB	V	464.20	1	5, 657	PB		640.27	2	5
PB	IV	465.450	7	5, 139, 657	PB		642.01	0	5
PB	IV	465.495	7	5	PB		642.56	1	5
PB	IV	466.81	2	5	PB		642.62	1	5
PB		467.98	0	5	PB		643.47	0	5
PB	IV	473.45	1	5, 656	PB		643.94	0	5
PB	IV	474.68	0	5	PB		646.29	1	5
PB	IV	475.36	7	5, 139, 656	PB		646.78	1	5
PB	IV	475.47	3	5	PB		647.24	0	5
PB	IV	476.68	1	139	PB		647.46	0	5
PB	IV	478.355*	8	5, 139, 656	PB	V	647.71	3	5, 657
PB	V	483.97	0	5	PB	IV	648.50	2	5, 139, 656
PB	V	485.51	1	5	PB		650.14	2	5
PB	IV	496.37 *	8	5, 139	PB	IV	652.81	3	5, 656
PB	IV	496.63	2	5	PB	VI	653.10	3	5
PB	IV	498.14	2	5, 656	PB		653.35	0	5
PB	IV	499.95 *	9	5, 139	PB		653.51	2	5
PB	IV	506.79	1	5	PB		654.12	0	5
PB		509.87	1	5	PB		654.24	0	5
PB	III	515.08	5	5, 139	PB		654.65	3	5
PB		515.58	1	5, 139	PB		655.25	0	5
PB	IV	529.78	4	5, 139	PB		655.94	0	5
PB		537.84	1	5	PB	IV	656.09	2	5, 139, 656
PB		539.09	0	5	PB		656.82	1	5
PB		539.55	0	5	PB		657.13	2	5
PB	IV	542.69	4	5	PB		657.33	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB	658.54	1	5	PB V	710.75	3	5
PB	659.14	5	5	PB	712.16	2	5
PB	659.83	3	5	PB	715.41	3	5
PB	661.33	1	5	PB III	716.70	2	5
PB VI	661.40	2	5	PB	717.60	3	5
PB	662.47	1	5	PB	717.83	1	5
PB	663.15	2	5	PB	718.63	5	5
PB	663.52	0	5	PB	719.42	0	5
PB IV	663.69	00	5	PB	719.93	0	5
PB	663.82	0	5	PB	720.21	7	5
PB	666.15	1	5	PB	720.85	1	5
PB	666.27	1	5	PB VI	723.61	0	5
PB	666.91	0	5	PB	724.45	1	5
PB	667.20	0	5	PB	724.98	1	5
PB	667.93	2	5	PB VI	726.05	0	5
PB	668.41	1	5	PB	726.72	1	5
PB	668.46	1	5	PB	727.16	0	5
PB	669.07	1	5	PB	727.32	0	5
PB V	670.70	0	5, 657	PB	728.17	1	5
PB V	671.08	0	657	PB	728.78	4	5
PB	672.42	1	5	PB	729.90	1	5
PB	672.63	0	5	PB V	730.19	2	5
PB	672.88	0	5	PB III	730.35	2	5
PB	673.09	1	5	PB	730.42	2	5
PB	673.25	0	5	PB III	730.71	1	5
PB	673.95	0	5	PB V	730.84	1	5, 466
PB	674.60	1	5	PB	731.17	0	5
PB	675.05	0	5	PB	731.70	1	5
PB V	675.94	4	5, 657	PB	734.33	0	5
PB	677.16	0	5	PD	734.59	6	5
PB V	677.62	1	5	PB	734.93	1	5
PB V	677.93	0	5	PB	736.62	5	5
PB	678.33	1	5	PB	738.12	1	5
PB	678.47	0	5	PB	738.29	0	5
PB V	678.58	1	5, 657	PB V	738.72	1	5, 466
PB	678.92	1	5	PB V	739.51	2	5, 466
PB	679.07	2	5	PB VI	739.71	0	5
PB	679.40	0	5	PD	740.38	2	5
PB	680.66	1	5	PB	740.50	1	5
PB	681.10	0	5	PB	741.02	1	5
PB	681.63	0	5	PB V	742.01	5	5, 466
PB	684.45	0	5	PB	742.67	2	5
PB	685.95	1	5	PB	742.99	1	5
PB	687.92	1	5	PB VI	744.52 *	5	5
PB	688.69	0	5	PB	745.76	2	5
PB	689.98	0	5	PB	748.41	1	5
PB	691.88	0	5	PB	748.75	1	5
PB V	692.37	0	5, 466	PB III	749.06	2	5
PB	693.23	0	5	PB V	749.46	5	5, 657
PB	693.45	0	5	PB	750.25	3	5
PB	693.60	0	5	PB	751.19	0	5
PB	693.85	0	5	PB	751.56	0	5
PB V	694.37	2	5, 466	PB	752.33	0	5
PB	694.87	0	5	PB V	752.51	1	5, 466
PB V	695.02	0	5, 657	PB V	752.99	2	5, 466
PB	695.16	0	5	PB	754.38	0	5
PB	695.27	0	5	PB V	755.05	4	5, 466
PB	695.66	0	5	PB	755.19	2	5
PB V	696.41	0	5, 466	PB VI	755.81	4	5
PB V	697.22	1	5, 466	PA	756.11	2	5
PB	698.16	0	5	PB	757.39	2	5
PB	700.55	1	5	PB V	762.76	2	5, 657
PB	701.46	2	5	PB VI	764.77	3	5
PB	701.90	0	5	PB V	765.86	1	5, 466
PB	703.22	1	5	PB	765.96	0	5
PB V	703.71	3	5, 466	PB	767.13	0	5
PB	704.18	0	5	PB V	767.45	7	5, 466
PB	704.33	0	5	PB	769.23	2	5
PB	704.48	0	5	PB V	769.50	5	5, 466
PB	704.74	0	5	PB	770.47	0	5
PB V	707.64	2	5, 466	PB V	771.40	6	5
PB	707.88	0	5	PB	772.22	2	5
PB	708.95	0	5	PB	772.30	1	5
PB V	709.20	2	5, 466	PB VI	772.77	2	5
PB	710.60	1	5	PB	773.01	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB VI	775.61 *	6	5	PB	822.98	4	5
PB	776.81	1	5	PB	824.52	0	5
PB V	778.50	1	5, 657	PB	825.54	0	5
PB VI	781.29	3	5	PB	826.00	0	5
PB V	781.48	2	5, 657	PB V	826.35	4	5, 657
PB VI	781.82	3	5	PB VI	826.76 *	5	5
PB VI	782.23 *	8	5	PB IV	827.44	0	5
PB	782.38	1	5	PB VI	827.80 *	5	5
PB V	782.79	3	5, 657	PB IV	828.67	1	5
PB	783.26	1	5	PB VI	829.32 *	6	5
PB VI	783.43	1	5	PB IV	829.89	0	5, 656
PB	784.11	0	5	PB IV	830.11	7	5, 139, 656
PB	784.28	0	5	PB	830.82	0	5
PB	785.76	0	5	PB	831.75	0	5
PB	786.05	0	5	PB V	832.57	0	5, 657
PB VI	786.48	4	5	PB III	834.61	1	5
PB	787.92	2	5	PB V	835.89	1	5, 657
PB	788.30	2	5	PB	836.06	0	5
PB	788.77	0	5	PB	838.29	1	5
PB	789.17	1	5	PB	838.87	0	5
PB	790.60	1	5	PB VI	839.16	2	5
PB	791.45	3	5	PB II	840.40	1	5, 163
PB	792.77	2	5	PB III	840.99	2	5
PB	793.48	0	5	PB VI	842.35	2	5
PB V	793.79	1	5, 657	PB V	842.57	0	5, 657
PB V	794.41	2	5, 657	PB II	842.86	1	5, 163, 657
PB	795.39	4	5	PB VI	843.03	1	5
PB V	795.58	5	5, 657	PB	844.34	0	5
PB	797.20	0	5	PB IV	844.79	2	5, 656
PB	797.56	1	5	PB VI	845.21	1	5
PB	797.79	1	5	PB II	845.96	3	5, 139, 163
PB	798.91	2	5	PB II	849.56	3	5, 163
PB	799.44	2	5	PB VI	850.74	1	5
PB	799.81	5	5	PB V	852.00	3	5, 466
PB	800.37	1	5	PB V	852.98	0	5
PB	801.36	0	5	PB V	853.14	0	5
PB	801.78	1	5	PB VI	854.66	0	5
PB VI	802.06 *	10	5	PB VI	854.79	0	5
PB	802.87	1	5	PB V	855.31	1	5, 657
PB	803.01	2	5	PB II	855.40	1	5, 163
PB	803.51	1	5	PB IV	857.65	7	5, 139, 656
PB	803.73	1	5	PB V	859.02	2	5, 466
PB	803.95	1	5	PB IV	862.34	6	5, 139
PB VI	804.56	4	5	PB II	863.00	3	163
PB VI	804.80	4	5	PB V	863.99 *	15	5, 466
PB	805.22	0	5	PB	864.79	0	5
PB	805.84	0	5	PB II	865.97	1	163
PB	805.96	1	5	PB IV	866.31	0	5, 466, 656
PB VI	806.16 *	5	5	PB V	867.11	2	5, 466
PB	807.16	1	5	PB V	867.90	1	5, 466
PB	808.45	1	5	PB	868.59	1	5
PB	808.97	2	5	PB V	870.45	7	5, 466
PB V	809.62	2	5	PB II	873.71	6	163
PB	810.25	1	5	PB V	877.06	0	5, 657
PB	810.62	1	5	PB	877.45	0	5
PB	811.92	4	5	PB II	877.96	2	163
PB	812.29	2	5	PB	878.17	0	5
PB V	812.60	4	5, 657	PB V	879.08	1	5, 657
PB V	813.09	4	5	PB V	879.45	1	5, 657
PB VI	813.34 *	5	5	PB IV	879.98	1	5, 139
PB V	814.10	1	5, 466	PB V	881.23	0	5, 466
PB V	814.45	1	5, 657	PB V	883.85	7	5, 466
PB	815.02	2	5	PB V	883.94	7	5, 466
PB V	815.25	1	5	PB IV	884.98	6	5
PB III	815.58	0	5	PB V	885.75	0	5, 466
PB V	815.70	0	5, 657	PB V	887.12	0	5, 466
PB VI	815.95 *	6	5	PB	887.33	0	5
PB V	817.01	1	5	PB V	888.37	7	5, 466
PB	818.12	3	5	PB	889.20	0	5
PB V	818.58	0	5, 466	PB II	889.68	8	163
PB	818.85	0	5	PB IV	890.72 *	8	5, 139
PB VI	819.30 *	8	5	PB V	891.22	1	5
PB	820.14	0	5	PB V	891.70	2	5
PB	821.40	3	5	PB V	893.42	1	5, 466
PB	822.80	0	5	PB	893.59	0	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB V	894.40 *	8	5, 466	PB VI	968.68	1	5
PB V	896.07	7	5, 466	PB VI	970.17	2	5
PB II	896.30	3	163	PB V	970.30	2	5, 466
PB V	897.67	1	5, 466	PB VI	970.75	1	5
PB	898.21	1	5	PB V	971.07	0	5, 657
PB	898.40	1	5	PB II	972.56	9	163
PB	899.84	0	5	PB IV	974.10	0	5
PB	904.92	0	5	PB VI	974.27	1	5
PB	905.67	0	5	PB V	974.47	2	5
PB V	906.61 *	10	5, 466	PB V	974.91	0	5, 657
PB IV	908.51	6	5, 139, 656	PB II	975.35	1	163
PB V	915.10	2	5, 466	PB VI	975.74	2	5
PB V	915.72 *	9	5, 466	PB V	976.93	5	5, 466, 657
PB IV	917.89	7	5, 139, 656	PB V	977.46	2	5, 657
PB V	918.12	4	5	PB VI	978.16	1	5
PB V	918.56	0	5, 466	PB V	978.69	1	5, 657
PB V	918.74	0	5, 657	PB VI	979.08	1	5
PR	918.97	0	5	PR V	979.38	2	5, 657
PB	919.42	1	5	PB V	981.08	5	5
PB	919.97	1	5	PB VI	981.19	2	5
PB V	920.27	7	5, 466	PB V	981.71	0	5
PB V	920.65	1	5	PB II	982.18	1	5, 163, 657
PB V	920.87	2	5, 466	PB VI	982.48	0	5
PB	921.12	0	5	PB V	983.06	2	5, 657
PB V	921.61	0	5, 466	PB VI	983.94	0	5
PB IV	922.12	2	5, 139, 466	PB VI	986.42	0	5
PB IV	922.49 *	10	5, 139, 656	PB II	986.71 *	10	163
PB V	922.84	1	5	PB VI	987.88 *	6	5
PB V	923.41	4	5	PB VI	988.71	2	5
PB V	924.51	2	5, 657	PB VI	988.94	0	5, 657
PB V	925.99	1	5	PB V	989.15	4	5, 657
PB II	926.25	2	5, 163	PB V	990.88	2	5, 466
PB IV	927.62	7	5, 139, 656	PB V	991.35	4	5
PB V	930.36 *	8	5	PB VI	992.15	0	5
PB IV	932.18 *	10	5, 139, 657	PB VI	993.43	1	5
PB VI	933.69	1	5	PB IV	994.53	0	5, 656
PB	936.05	0	5, 656	PB V	994.74	1	5
PB V	936.96	5	5, 657	PB III	995.74 *	7	5, 686, 689
PB V	937.16	3	5, 657	PB II	995.89 *	10	163
PB V	940.15	1	5, 466	PB V	996.23	0	5, 657
PB V	940.53	1	5	PB V	996.73	1	5, 657
PB V	940.72	1	5, 466	PB VI	997.03	2	5, 657
PB V	943.49	0	5, 466	PB V	997.24	1	5
PB	944.51	0	5	PB VI	998.11	2	5
PB V	944.76	0	5, 466	PB VI	998.62	2	5, 657
PB VI	946.18	2	5	PB VI	999.18	1	5
PB	949.46	0	5	PB VI	1001.39	0	5
PB V	952.84	4	5, 163, 466	PB II	1001.87	4	5, 163
PB V	953.30	0	5, 657	PB VI	1002.55	1	5, 657
PB V	953.70	0	5	PB V	1003.01	2	5, 657
PB V	954.34	7	5, 466	PB VI	1004.41	0	5
PB VI	954.95	0	5	PB III	1005.56	6	5, 657
PB VI	955.12	0	5	PB VI	1006.75	1	5, 657
PB V	955.27	1	5	PB VI	1007.78	1	5
PB V	955.42	1	5, 466	PB VI	1008.82	3	5, 657
PB VI	955.60	0	5	PB VI	1009.48	3	5
PB II	955.91	1	163	PB V	1011.01	3	5
PB IV	956.70	2	5, 466	PB V	1012.23	0	5, 657
PB VI	957.75	1	5	PB IV	1012.47	3	5, 139, 656
PH II	958.76	2	163	PH V	1013.24	1	5
PB V	959.08	3	5, 657	PB	1013.38	0	5
PB VI	959.85	4	5	PB V	1015.53	0	5, 657
PB II	960.21	2	163	PB V	1015.97	1	5, 657
PB V	960.98	2	5, 657	PB V	1016.17	1	5
PB III	961.01	1	687	PB II	1016.61 *	10	163
PB VI	961.48	0	5	PB V	1016.92	2	5
PB V	961.95	1	5	PB V	1018.70	2	5, 657
PB V	964.37	1	5	PB V	1019.74	3	5, 657
PB VI	964.95	0	5	PB V	1021.26	0	5, 657
PB II	965.36	3	163	PB V	1021.51	0	5, 657
PB V	966.89	1	5, 466	PB	1021.79	0	5
PB IV	967.15	0	5, 656	PB V	1022.14	4	5, 657
PB II	967.23 *	10	163	PB V	1022.57	1	5, 657
PB VI	967.59	1	5	PB V	1023.47	0	5, 657
PB V	968.25	0	5	PB V	1023.86	0	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB V	1024.33	3	5, 656, 657	PB II	1108.44	4	5, 163
PB V	1026.38	3	5, 657	PB VI	1108.61 *	5	5
PB	1026.93	0	5	PB	1109.57	0	5
PB IV	1028.61 *	30	5, 139, 656	PB II	1109.75	1	5, 163
PB IV	1029.66	3	5	PB V	1111.49	1	5
PB III	1030.44	5	5, 689	PB VI	1112.92	1	5
PB IV	1032.06	3	5, 139	PB III	1114.99	5	5, 689
PB V	1033.23	0	5, 657	PB VI	1115.30	2	5
PB VI	1034.56	2	5	PB IV	1116.08	7	5, 139, 656
PB VI	1035.01	0	5	PB VI	1117.15	3	5
PB V	1036.01	0	5	PB VI	1117.59	0	5
PB VI	1037.26	1	5	PB VI	1117.91	0	5
PB VI	1038.36	1	5	PB	1118.15	0	5
PB V	1041.21	6	5, 657	PB III	1118.66	4	5, 687
PB VI	1041.53	2	5	PB	1118.83	0	5
PB VI	1042.02	0	5	PB II	1119.64	4	5, 163
PB V	1043.04	2	5, 657	PB II	1121.32	0	5, 163
PB V	1043.70	3	5, 657	PB VI	1123.56 *	5	5
PB IV	1044.14	3	5, 139, 656	PB VI	1129.33	2	5
PB V	1044.82	1	5	PB IV	1131.76	4	5, 656
PB V	1045.31	0	5	PB V	1132.76	3	5, 657
PB V	1046.05	0	5	PB II*	1133.17	7	5, 163
PB	1048.34	0	5	PB VI	1135.31	0	5
PB III	1048.89 *	30	5, 686	PB V	1136.08	0	5
PB IV	1049.50	1	139	PB V	1137.51	5	5, 466
PB II	1049.82 *	10	163	PB IV	1137.86	7	5, 139, 656
PB II	1050.77 *	10	163	PB IV	1138.94	1	5, 139
PB V	1051.26	2	5, 466	PB III	1142.95	5	5, 686
PB IV	1052.25	4	5, 656, 657	PB VI	1143.32	2	5
PB IV	1056.54	2	5, 139	PB VI	1144.34	2	5
PB V	1057.40	0	5, 466	PB IV	1144.95	6	5, 139, 656
PB V	1059.22	0	5, 657	PB II	1145.91	4	163
PB II	1060.61	4	5, 163	PB IV	1146.45	0	5, 139, 466
PB VI	1063.22	0	5	PB VI	1146.95	1	5
PB V	1065.44	1	5, 657	PB V	1148.29	3	5, 466, 657
PB II	1065.58	9	163	PB V	1150.75	1	5
PB VI	1067.81	3	5	PB V	1151.63	1	5, 657
PB	1068.57	0	5	PB V	1152.40	1	5, 466
PB III	1069.12 *	10	5, 689	PB	1154.65	0	5
PB V	1069.67	2	5, 657	PB V	1154.71	0	5, 657
PB III	1070.82	1	5, 687	PB VI	1154.89	0	5
PB III	1074.66	6	5	PB VI	1155.53	0	5
PB	1075.66	0	5, 689	PB VI	1155.73	0	5
PB V	1076.71	6	5	PB V	1156.01	2	5
PB V	1076.91	1	5	PB IV	1156.29	2	139
PB V	1078.74	0	5, 139, 657	PB V	1157.91 *	9	5, 466
PB VI	1079.06	2	5	PB V	1159.95	0	5, 657
PB VI	1079.57	2	5	PB III	1165.03 *	7	5, 686
PB IV	1079.88	2	5, 139, 656	PB III	1166.96 *	7	5, 689
PB IV	1080.80	3	5, 139	PB V	1170.56	0	5, 657
PB V	1082.56	0	5	PB VI	1170.74	0	5
PB VI	1082.81	0	5	PB V	1171.76	3	5
PB V	1083.10	0	5, 657	PB V	1178.54	1	5
PB IV	1084.18	2	5	PB	1183.05	0	5
PB VI	1086.06	2	5	PB V	1183.18	0	5, 657
PB VI	1087.44	4	5	PB V	1184.34	0	5, 657
PB V	1088.87	5	5, 466	PB	1185.32	2	5
PB	1089.41	1	5	PB V	1185.43 *	8	5, 466
PB V	1089.93	4	5, 657	PB V	1185.63	0	5, 657
PB VI	1093.95	3	5	PB V	1188.30	0	5, 657
PB VI	1094.30	3	5	PB V	1189.93 *	9	5, 466
PB IV	1096.21	3	5, 687	PB V	1191.83	0	657
PB V	1096.52	4	5, 466	PB V	1192.08	0	5, 657
PB III	1098.41	5	5, 689	PB V	1197.71	6	5, 466
PB VI	1098.97	4	5	PB V	1199.53	0	5
PB VI	1099.23	3	5	PB V	1203.47	6	5, 657
PB IV	1099.46	1	5, 139, 656	PB II	1203.62	4	5, 163
PB	1099.98	0	5	PB V	1209.81	0	5, 657
PB V	1100.25	0	5, 657	PB V	1213.20	7	5, 466
PB V	1100.52	1	5	PB	1213.41	0	5
PB V	1103.32	4	5, 657	PB VI	1215.50	2	5
PB II	1103.87	5	5, 163	PB VI	1215.72	2	5
PB V	1104.80	3	5, 466	PB VI	1221.14	0	5
PB VI	1105.44	2	5	PB VI	1221.49	0	5
PB	1107.57	0	5	PB	1230.01	0	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB II	1231.18	9	5, 163	PB IV	1437.47	0	656
PB V	1233.49 *	10	5, 466	PB III	1439.03	3	5
PB	1233.71	1	5	PB III	1439.26 *	9	5
PB V	1235.77	0	5, 657	PB III	1439.42 *	15	686
PB	1236.62	0	5	PB II	1449.35	3	163
PB V	1245.29	1	5	PB	1492.72	00	130
PB	1248.07	0	5	PB	1494.75	00	130
PB V	1248.47	6	5, 466	PB	1496.8	00	130
PB V	1249.28	0	5, 657	PB	1498.9	00	130
PB III	1250.45 *	9	5, 689	PB	1500.4	00	130
PB	1252.51	0	5	PB	1501.8	00	130
PB V	1252.99	0	5, 657	PB IV	1510.76 *	8	139
PB	1254.72	0	5	PB II	1512.42 *	10	163
PB V	1258.12	0	5, 657	PB	1534.8	00	130
PB IV	1260.82	0	5, 656	PB IV	1535.70 *	12	139
PB V	1260.98	1	5	PB	1548.22	2	130
PB IV	1264.51	2	5	PB	1550.74	0	130
PB V	1264.72	0	5, 657	PB III	1553.09 *	10	686
PB V	1265.10	1	5	PB	1561.4	0	130
PB III	1266.25	1	5	PB	1564.4	0	130
PB III	1266.78	6	5, 689	PB	1577.3	1	411
PB IV	1267.52	2	5, 139	PB III	1597.96	2	686
PB III	1274.53	4	5, 689	PB	1605.86	7	130
PB III	1279.41	6	5, 689	PB III	1610.34	2	686
PB	1279.64	0	5	PB IV	1613.66	3	139
PB IV	1283.12	0	5	PB	1623.9	0	130
PB V	1290.32	0	5, 657	PB	1636.53	0	134
PB V	1290.81	0	5	PB	1638.5	00	130
PB IV	1291.08	2	5, 139, 656	PB	1644.4		282
PB V	1291.26	0	5	PB	1650.0	0	130
PB	1291.91	0	5	PB	1657.3	00	130
PB	1294.87	0	5	PB	1660.1	00	130
PB V	1296.43	3	5, 657	PB	1665.40	0	130
PB IV	1298.93	1	5, 656	PB	1666.45	0	130
PB	1299.28	0	5	PB	1667.48	0	130
PB	1302.15	0	5	PB	1668.87	0	130
PB V	1302.47	3	5	PB II	1671.53 *	10	163
PB V	1308.10	6	5, 657	PB I	1676.11	1	134
PB IV	1309.13	0	5, 656	PB II	1682.15 *	10	163
PB VI	1309.34	0	5	PB	1689.8	1	411
PB IV	1313.06 *	40	5, 139, 656	PB	1700.3	00	130
PB	1313.30	1	5	PB III	1711.23	4	687
PB VI	1318.27	2	5	PB IV	1715.39	1	656
PB IV	1321.04	0	5	PB I	1715.93	1	134
PB	1321.63	0	5	PB	1718.5	00	130
PB IV	1323.92	1	656	PB	1719.43	3	130
PB III	1327.14	0	5	PB	1721.47	4	130
PB V	1328.21	0	5, 657	PB I	1722.66	5	134
PB II	1331.62	1	5, 163	PB	1725.01	5	130
PB II	1335.29	8	5, 163	PB	1726.5	3	130
PB	1341.55	0	5	PB II	1726.75 *	20	163
PB	1341.80	0	5	PB	1740.5	0	130
PB IV	1343.09	4	5, 139	PB	1749.9	00	130
PB II	1348.30	4	5, 163	PB I	1759.57	2	134
PB IV	1348.87	6	5, 139, 656	PB	1760.08	4	130
PB	1352.9	00	130	PB	1761.94	4	130
PB	1362.6	0	130	PB	1763.93	5	130
PB III	1371.75	6	5, 657	PB	1765.80	3	130
PB IV	1381.68	0	5	PB III	1768.67	6	686
PB IV	1388.97	5	5, 139, 657	PB	1776.3	00	130
PB IV	1395.14	1	5, 656	PB IV	1777.71	0	139
PB V	1396.35	0	5	PB	1781.0	00	130
PB IV	1397.03	2	5, 139	PB	1788.3	1	130
PB IV	1400.26	6	5, 139	PB	1791.7	0	130
PB V	1401.56	0	5, 657	PB II	1796.68 *	10	163
PB IV	1404.34	1	5, 139, 656	PB IV	1798.44	3	139
PB IV	1405.14	1	5	PB I	1805.55 *	10	134
PB III	1406.48 *	8	5, 689	PB I	1810.91	5	134
PB V	1415.31	0	5	PB	1812.6	2	130
PB V	1418.38	0	5	PB	1816.4	00	130
PB VI	1430.81	1	5	PB II	1822.03 *	10	163
PB VI	1433.41	0	5	PB I	1824.76 *	0	134
PB II	1433.89	8	5, 163	PB III	1826.86	2	686
PB IV	1434.47	0	5	PB	1830.8	0	130
PB IV	1435.00	1	5	PB IV	1835.88	4	656

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB	1840.0	1	130
PB	1844.2	0	130
PB	1851.4	1	411
PB	1854.91	20	130
PB	1862.93	20	130
PB IV	1864.47	6	656
PB	1873.3	0	130
PB	1890.0	4	456
PB IV	1893.22	5	139
PB I	1898.85 *	50	134
PB	1904.8	4	456
PB I	1907.70 *	20	134
PB	1913.7	4	335
PB II	1921.66	7	163
PB I	1924.12 *	15	134
PB	1931.9	1	130
PB I	1936.34 *	20	134
PB	1958.6	4	456
PB VII	1959.42 *	6	139, 656
PB	1963.1	2	411
PB IV	1973.14 *	8	139
PB IV	1981.64	1	139

BISMUTH

BI I	I.P.	58790.	K	1701.	A
BI II	I.P.	134600.	K	742.9	A
BI III	I.P.	206180.	K	485.01	A
BI IV	I.P.	365500.	K	273.6	A
BI V	I.P.	451700.	K	221.4	A
BI VI	I.P.	712000.	K	140.	A

BI VI	175.863	1	5
BI VI	176.584	2	5
BI VI	189.274	2	657
BI VI	191.777	2	5
BI VI	192.170	3	5
BI VI	192.458	2	5
BI VI	209.255	2	5
BI VI	210.750	0	5
BI VI	210.956	0	5
BI VI	214.318	2	5, 657
BI VI	223.541	0	5
BI VI	224.202	0	5
BI VI	224.467	0	5
BI VI	230.710	1	657
BI V	234.002	3	5
BI V	234.913	3	5
BI VI	245.515	1	5
BI VII	264.955	1	5
BI VII	268.190	1	5
BI VII	268.253	1	5
BI VII	268.476*	3	5
BI VII	268.653*	3	5
BI VII	268.945	2	5
BI VII	269.119	1	5
BI VII	269.166	1	5
BI VII	269.960	1	5
BI VII	270.212	2	5
BI VII	270.255	2	5
BI VII	270.376	1	5
BI VII	270.778	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI VII	271.193*	3	5
BI VII	271.400*	3	5
BI VII	271.623*	3	5
BI VII	271.663*	3	5
BI VII	272.880	2	5
BI VII	272.917*	5	5
BI VII	273.575	2	5
BI VII	273.850	1	5
BI VII	274.312	2	5
BI VII	274.807	1	5
BI VII	274.867	1	5
BI VII	274.993	1	5
BI VII	275.037	1	5
BI VI	275.777	3	5
BI VII	275.829	1	5
BI VI	276.175	3	5
BI VI	276.397	2	5, 657
BI VI	277.591	1	5, 657
BI VI	278.095	1	5, 657
BI VI	279.070	3	5
BI VI	282.653	3	5
BI VII	284.672*	3	5
BI VI	286.432	3	5
BI VI	286.610	3	5
BI VI	286.730	3	5
BI VII	287.964	2	5
BI VI	288.452	2	5
BI VI	288.858	2	5
BI VI	291.240	1	5
BI VI	291.810	4	5
BI VI	292.030	1	5
BI VI	292.080	1	5, 657
BI VI	293.052	2	5
BI VII	295.376	2	5
BI VI	295.530	3	5, 657
BI VII	297.020	1	5
BI VII	297.650	0	5
BI VI	298.270	1	5
BI VII	298.810	1	5
BI VI	300.225	0	5, 657
BI	300.345	1	5
BI VI	302.011	6	5
BI VI	302.216	6	5
BI VI	304.278	4	5, 657
BI VI	305.962	3	5
BI VI	306.718	6	5, 657
BI VI	308.405	1	5
BI VII	309.028*	3	5
BI VII	309.134*	3	5
BI VI	309.510	1	5
BI VI	309.976	5	5, 657
BI VI	311.300	5	5
BI VI	311.660	4	5
BI VI	313.314	1	5
BI VI	313.596	1	5
BI VI	314.982	2	5, 657
BI VI	315.495	6	5
BI VI	316.670	2	5
BI VI	316.918	3	5
BI VI	318.250	1	5
BI VI	318.723	1	5
BI VI	319.930	1	5
BI VI	320.335	1	5
BI VI	320.470	4	5
BI VI	320.515	5	5
BI VI	321.636	1	5
BI VI	324.037	1	5
BI VI	324.385	2	5
BI VI	325.445	2	5
BI VI	326.695	3	5, 657
BI VI	326.901*	8	5, 466
BI VI	327.270	2	5
BI VI	328.582	2	5
BI VI	331.045	1	5
BI VI	331.149	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI VI	331.295	2	5	BI IV	445.222	5	5, 449
BI VI	331.427	3	5	BI IV	445.530	6	5
BI VI	332.063	1	5	BI V	488.39	2	5, 656
BI VI	332.620	0	5	BI V	492.72	1	5, 656
BI VI	332.985	3	5	BI IV	508.63	2	5, 449
BI VI	333.115	1	5	BI IV	521.01	2	5, 449
BI VI	334.448	1	5	BI V	521.80	1	5
BI VI	334.560	1	5	BI IV	524.24	2	5, 449
BI VI	335.704	1	5	BI	538.10	2	5
BI VI	336.290	3	5	BI VI	547.15	0	466
BI VI	337.212	3	5	BI VI	548.51	2	5, 466
BI VI	337.590	3	5, 657	BI VI	549.85	3	5, 466
BI VI	337.885	3	5	BI VI	550.42	1	5, 466
BI	338.503	0	5	BI	551.86	1	5
BI VI	339.727	4	5	BI	556.36	1	5
BI VI	339.808	4	5	BI VI	558.74	2	5
BI	341.388	1	5	BI VI	559.70	1	5, 466
BI VI	341.697	4	5	BI	561.99	1	5
BI VI	342.060	4	5	BI	562.25	0	5
BI VI	342.722	4	5	BI V	563.62	3	5, 656
BI V	343.938	5	5	BI	564.98	1	5
BI V	344.958	1	5	BI	566.62	1	5
BI VI	345.479	1	5, 657	BI IV	580.50	3	5, 449
BI VI	346.612	1	5	BI IV	587.36	3	5, 449
BI VI	347.112	1	5	BI III	590.73	1	5, 138
BI VI	347.163	1	5	BI	605.04	1	5
BI VI	347.835	1	5	BI V	616.78	2	5
BI VI	348.060	1	5	BI VI	619.13	4	5, 657
BI VI	348.267	1	5	BI	621.14	1	5
BI VI	348.515	1	5	BI	621.46	1	5
BI	348.910	1	5	BI V	625.26	4	5
BI	349.095	1	5	BI VI	628.41	1	5, 466
BI VI	352.070*	10	5, 466	BI V	628.63	4	5
BI	353.156	1	5	BI	630.58	1	5
BI	353.272	1	5	BI V	630.98	4	5
BI IV	353.484	0	5	BI	633.88	2	5
BI	353.600	2	5	BI	634.95	2	5
BI V	355.148	1	5	BI	635.69	1	5
BI V	355.769	1	5, 656	BI	636.45	2	5
BI V	356.358	1	5	BI VI	637.42	0	466
BI IV	357.512	2	5	BI	638.96	2	5
BI IV	363.675	7	5	BI	639.08	2	5
BI VI	364.752	7	5, 466	BI V	639.20	6	5
BI IV	365.849	7	5	BI	640.99	1	5
BI V	369.515	1	5, 656	BI	643.30	1	5
BI V	370.820	1	5	BI V	643.91	3	5
BI V	371.531	1	5	BI IV	644.50	2	5, 449
BI IV	372.715	5	5	BI	645.32	1	5
BI VI	376.660*	8	5, 657	BI VI	645.68	1	5, 466
BI IV	378.667	4	5	BI V	647.11	3	5
BI IV	378.970	4	5	BI V	647.23	2	5
BI V	382.600	1	5	BI	648.10	1	5
BI IV	384.270	2	5	BI	648.57	1	5
BI IV	389.000	2	5	BI	649.62	1	5
BI IV	389.835	2	5	BI VI	650.19	2	5
BI VI	391.215*	8	5, 657	BI IV	651.08	1	5, 449
BI IV	392.445	3	5	BI	651.52	1	5
BI IV	393.840	8	5	BI VI	651.82	6	5, 657
BI	394.817	1	5	BI	654.92	0	5
BI	398.043	1	5	BI	655.08	0	5
BI IV	404.802	6	5	BI	655.80	2	5
BI IV	415.935	5	5	BI	656.62	0	5
BI IV	420.697	6	5, 449	BI	656.53	0	5
BI IV	421.25	0	5	BI	656.95	1	5
BI IV	421.38	0	5	BI VI	657.16	1	5, 466
BI IV	426.32	1	5	BI	657.25	1	5
BI IV	426.54	1	5	BI	658.30	2	5
BI IV	426.84	2	5	BI VI	659.92	3	5, 466
BI IV	427.58	2	5	BI	660.30	1	5
BI V	429.78	1	5, 656	BI VI	660.52	3	5, 657
BI IV	431.200	6	5, 449	BI	663.44	1	5
BI V	432.67	2	5	BI	663.60	0	5
BI V	435.63	1	5, 656	BI	664.88	1	5
BI V	435.73	1	5	BI	665.41	2	5
BI IV	438.347	5	5, 449	BI	667.37	0	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
BI		667.58	0	5	BI	VI	708.87	3	5
BI	VI	669.99	2	5, 657	BI	VI	710.32	4	5, 657
BI		670.56	0	5	BI		710.50	0	5
BI	III	670.76	5	5, 138	BI	VI	710.66	2	5
BI		671.42	0	5	BI		712.58	1	5
BI	III	671.74	2	5, 138	BI	VI	713.08	5	5, 657
BI	VI	672.41	3	5, 466	BI	VI	713.82	2	5
BI		672.62	0	5	BI		714.57	2	5
BI	VI	673.99	3	5	BI		715.54	2	5
BI		675.03	0	5	BI	VI	717.02	2	5
BI		675.41	0	5	BI	VI	717.43	3	5
BI		675.77	0	5	BI	VI	720.07	3	5
BI		676.31	1	5	BI	VI	722.48	5	5
BI	VI	677.32	4	5, 466	BI	VI	723.56	2	5, 657
BI	VI	677.62	3	5	BI	VI	724.15	4	5
BI	V	677.90	1	5	BI	V	730.71	5	5, 656
BI	V	678.07	1	5	BI	V	733.92	6	5
BI	V	678.59	2	5	BI	V	735.86	4	5
BI	V	678.87	2	5, 656	BI	VI	738.17 *	10	5, 656, 657
BI		679.41	1	5	BI	VI	743.13 *	10	5, 466, 657
BI		680.54	1	5	BI	VI	748.53	7	5, 466
BI		680.93	1	5	BI		749.58	0	5
BI	V	682.05	1	5	BI	VI	750.26	3	5
BI	VI	682.39	1	5, 466	BI		751.00	2	5
BI		682.49	1	5	BI		752.17	1	5
BI	VI	683.15	1	5, 466	BI		752.51	2	5
BI	VI	683.94	2	5	BI		752.78	0	5
BI	VI	684.30	2	5	BI		753.73	1	5
BI	VI	686.60	1	5, 466	BI	V	754.12	2	5
BI	V	686.88	6	5, 656	BI		754.35	2	5
BI		688.31	1	5	BI		754.51	1	5
BI	III	688.56	2	5, 138	BI	V	757.03	5	5
BI	VI	689.19	3	5	BI	IV	759.12	6	5
BI		689.56	1	5	BI	VI	760.78	4	5, 466
BI		689.62	1	5	BI		761.49	0	5
BI		689.84	1	5	BI		761.73	1	5
BI	VI	690.49	3	5	BI	III	763.56	2	5, 138
BI		690.90	1	5	BI	VI	764.03	3	5, 466
BI		691.05	0	5	BI		764.71	1	5
BI		691.32	0	5	BI	VI	767.340	6	5, 466
BI		691.55	3	5	BI	VI	767.468	5	5, 466
BI		691.98	1	5	BI	VI	768.44	4	5, 466, 657
BI		692.63	0	5	BI	VI	773.03	1	5
BI	VI	692.95	0	5, 466	BI	VI	773.34	3	5
BI	VI	693.29	4	5, 657	BI	VI	773.76	1	5, 657
BI		693.46	0	5	BI		774.05	0	5
BI	VI	694.24	3	5	BI	III	775.16	4	5, 138
BI	VI	695.23	0	5	BI	VI	775.43	3	5, 657
BI		696.29	0	5	BI		775.74	0	5
BI		696.77	1	5	BI		776.68	0	5
BI		696.89	1	5	BI		776.86	0	5
BI	VI	697.12	1	5, 466	BI	VI	777.05	1	5, 657
BI	VI	697.23	1	5, 466	BI	V	777.36	5	5
BI		698.23	1	5	BI		777.55	0	5
BI		698.87	1	5	BI		778.08	0	5
BI		699.50	1	5	BI	VI	778.99 *	8	5, 466
BI	VI	699.94	1	5	BI	V	781.04	5	5
BI	VI	700.12	1	5	BI		781.64	2	5
BI	VI	700.90	5	5, 657	BI		781.79	1	5
BI		701.08	2	5	BI		782.68	0	5
BI	VI	701.60	2	5, 466	BI	VI	784.80	2	5, 466
BI		701.82	2	5	BI		785.24	1	5
BI		702.17	1	5	BI		785.45	1	5
BI	VI	703.43	1	5	BI	VI	786.15	7	5, 466
BI	IV	704.73	1	5, 449	BI	VI	786.82	3	5
BI	V	704.87	1	5	BI		787.98	0	5
BI	V	704.97	1	5	BI	V	788.40	2	5
BI		705.13	0	5	BI	VI	788.69	7	5, 466
BI		705.55	1	5	BI		789.04	1	5
BI	VI	706.49	1	5	BI		789.25	1	5
BI	V	706.54	1	5, 656	BI	VI	790.425	2	5, 657
BI		707.03	1	5	BI	IV	790.465	2	5
BI		707.71	1	5	BI	IV	790.511	2	5, 449
BI		707.98	1	5	BI	IV	790.566	2	5, 449
BI	VI	708.38	1	5	BI	IV	790.621	2	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
BI	IV	790.658	2	5	BI	847.52	0	5	
BI	V	791.01	4	5	BI	848.20	1	5	
BI		791.75	1	5	BI	849.07	1	5	
BI		792.07	2	5	BI	849.59	0	5	
BI	IV	792.47	8	5, 449	BI	V	849.86	6	5, 656
BI		793.20	0	5	BI	VI	850.66	3	5, 657
BI		793.45	0	5	BI		853.93	1	5
BI		794.01	1	5	BI		854.04	0	5
BI		794.31	0	5	BI	VI	855.68	5	5, 466, 656
BI		794.66	1	5	BI		859.31	0	5
BI	VI	795.30	0	5	BI		859.59	0	5
BI		795.46	0	5	BI		859.83	0	5
BI	IV	795.84	1	5, 449	BI		860.19	1	5
BI		797.14	0	5	BI	V	864.403*	15	5, 656
BI		797.64	0	5	BI	V	864.499*	15	5, 656
BI		798.67	0	5	BI		865.38	0	5
BI		799.08	0	5	BI	IV	865.91	0	5
BI	III	803.65	6	5, 138	BI	VI	870.72	2	5
BI		805.66	0	5	BI	IV	872.602*	15	5, 449
DI		806.10	1	5	BI	IV	875.33	1	5
BI	VI	807.47	3	5, 466	DI	IV	876.80	8	5, 449
BI		807.66	0	5	BI		877.08	0	5
BI		808.00	0	5	BI	IV	878.13	2	5
BI		808.23	0	5	BI	V	880.17	6	5, 656
BI		808.82	0	5	BI	IV	881.49	1	5
BI		809.13	0	5	BI	IV	890.32	5	5
BI	VI	809.82	1	5, 657	BI	V	890.66	1	5
BI		810.00	1	5	BI	V	892.01	2	5
BI		812.47	0	5	BI	V	892.73	1	5
BI		812.66	1	5	DI	V	895.45	1	5
BI		814.12	1	5	BI	V	895.82	1	5
BI		814.36	2	5	BI		899.17	1	5
BI		814.61	1	5	BI		900.40	0	5
BI		814.69	1	5	BI	V	901.60 *	8	5
BI		815.68	1	5	BI	V	902.84	2	5
BI		815.89	2	5	BI		903.31	0	5
BI		816.65	1	5	BI		905.14	1	5
BI		816.95	1	5	BI	IV	907.417	1	5, 138
BI		817.28 *	2	5	BI	III	907.510	1	5, 138
BI		817.37 *	2	5	BI	III	907.635	5	5, 138
BI		817.70 *	2	5	BI		910.96	0	5
BI		819.54	1	5	BI		911.72	0	5
DI	IV	820.35 *	10	5, 449	BI		913.20	1	5
BI		821.88	0	5	BI		915.57	1	5
BI	IV	822.868	3	5	BI	IV	916.639	3	5
BI	IV	822.910	3	5, 449	BI	IV	916.680	3	5
BI	IV	822.960	3	5	BI	IV	916.742	3	5, 449
BI	IV	823.73	4	5, 449	BI	III	920.93	7	5, 138
BI	IV	824.11	2	5	BI	IV	923.861	4	5
BI	IV	824.875	6	5	BI	IV	923.900	4	5
BI	IV	824.965	6	5, 449	BI	IV	923.948	4	5, 449
BI		826.48	0	5	BI		925.25	0	5
BI		827.02	0	5	BI	III	925.48	6	5, 138
BI		827.63	0	5	BI		927.35	2	5
BI		828.63	1	5	BI		928.42	0	5
BI		829.22	1	5	BI	V	929.81	6	5, 656
BI		829.92	0	5	BI		930.03	0	5
BI	VI	830.42	6	5, 466	BI	VI	930.65	4	657, 5
BI		830.64	0	5	BI	IV	932.42	1	5
BI		830.91	1	5	BI	V	934.45	4	5
BI		831.17	0	5	BI		935.83	0	5
BI		836.47	0	5	BI	II	937.95	1	138, 5
BI		836.97	0	5	BI	IV	943.262	5	5, 449
BI		837.34	1	5	BI	IV	943.314	5	5, 449
BI		837.70	0	5	BI	IV	943.370	5	5, 449
BI		839.05	0	5	BI	IV	945.60	2	5
BI		839.46	0	5	BI	V	946.28	1	5
BI		839.75	0	5	BI	VI	947.35	3	5, 466
BI		841.58	0	5	BI		948.00	0	5
BI		842.09	0	5	BI		948.63	0	5
BI		842.70	1	5	BI		950.87	0	5
BI	VI	843.64	4	5	BI		951.33	1	5
BI		844.27	0	5	BI		955.33	1	5
BI		845.39	0	5	BI		955.81	1	5
BI		846.40	0	5	BI		956.45	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI VI	963.74	3	5	BI	1061.70	0	5
BI VI	964.01	1	5	BI	1062.59	1	5
BI VI	964.51	5	5	BI	1063.40	1	5
BI IV	967.60 *	9	5, 449	BI	1065.06	1	5
BI IV	968.79 *	8	5, 449	BI VI	1070.34 *	10	5, 466
BI	969.15	0	5	BI V	1079.66	0	5
BI	969.85 *	2	5	BI IV	1080.54	2	5
BI	970.82	1	5	BI III	1085.47	7	5, 466, 138
BI III	971.00	2	5	BI	1088.62	0	5
BI V	971.62	4	5	BI	1090.40	0	5
BI	975.17 *	2	5	BI	1092.15	0	5
BI VI	975.66	3	5	BI	1093.12	1	5
BI VI	976.00	2	5, 466	BI V	1096.36	3	5
BI	977.66	0	5	BI	1097.03	0	5
BI	978.12	1	5	BI	1097.50	0	5
BI V	981.10	2	5	BI II	1097.76	5	5, 138
BI	981.62	1	5	BI IV	1098.24	4	5
BI IV	981.99	3	5	BI VI	1099.09	4	5, 466
BI VI	982.61	2	5	BI II	1099.20 *	10	5, 138
BI VI	983.59	2	5	BI IV	1101.89	3	5
BI IV	986.12	5	5, 449	BI IV	1103.657*	8	5, 449
BI III	986.84	2	5	BI IV	1103.423*	8	5
BI III	987.35	2	5	BI IV	1103.509*	8	5
BI V	987.78	2	5	BI	1105.77	1	5
BI IV	989.83	8	5, 449	BI	1109.55	0	5
BI	990.48	1	5	BI	1110.00	0	5
BI IV	992.68	1	5, 449	BI	1110.27	1	5
BI IV	992.87	1	5, 449	BI	1111.04	0	5
BI VI	993.10	1	5, 657	BI II	1112.54	1	5, 138
BI	993.45	0	5	BI	1119.39 *	2	5
BI	994.33	0	5	BI IV	1119.94	3	5
BI III	994.56	2	5	BI II	1123.54	3	5, 138
BI V	994.80	4	5	BI IV	1128.78	7	5, 449
BI V	998.14	4	5	BI VI	1131.39	2	5, 657
BI III	1000.36	4	5	BI VI	1131.79	3	5
BI	1000.91	0	5	BI IV	1138.562	6	5, 449
BI	1001.01	1	5	BI IV	1139.015	4	5, 138
BI VI	1004.75	7	5, 657	BI V	1139.370*	20	5, 656
BI III	1007.14 *	5	5	BI V	1139.548*	20	5, 656
BI III	1007.24 *	5	5	BI IV	1139.772	6	5, 449
BI V	1007.51	3	5	BI VI	1142.11	0	5, 657
BI	1008.48	1	5	BI	1144.21	0	5
BI VI	1008.66	1	5, 466	BI III	1145.91	6	5, 138
BI	1008.84	0	5	BI II	1147.19	4	5, 138
BI	1009.71 *	2	5	BI IV	1149.69	7	5, 449
BI	1010.56	0	5	BI III	1151.33	2	5
BI	1013.29	1	5	BI V	1156.22	0	5
BI	1013.95	0	5	BI VI	1159.41	3	5
BI III	1014.12	2	5	BI VI	1159.90	4	5
BI	1015.87	0	5	BI	1160.96	0	5
BI	1016.84	0	5	BI IV	1161.72	0	5
BI	1018.17 *	2	5	BI II	1163.19	9	5, 138
BI II	1020.85	5	5	BI II	1167.06	8	5, 138
BI	1023.34	0	5	BI V	1171.28	6	5
BI VI	1023.860*	10	5, 466	BI II	1172.33	5	5, 138
BI	1025.50	1	5	BI V	1178.46	0	5
BI IV	1028.17	3	5	BI V	1180.17	2	5
BI IV	1036.30	3	5	BI II	1186.06	3	138
BI	1037.25	0	5	BI VI	1188.45	4	5, 404, 657
BI VI	1039.17	3	5	BI V	1190.18	1	5
BI VI	1039.61	4	5	BI	1195.97	0	5
BI III	1039.99	4	5, 138	BI	1198.15	5	5, 138
BI VI	1045.066	4	5, 466, 657	BI	1198.64	0	5
BI VI	1045.117	4	5, 466	BI	1199.76	0	5
BI VI	1045.168	4	5, 466	BI IV	1201.52	0	5, 449
BI VI	1045.231	4	5, 466	BI V	1203.50	0	5
BI III	1045.76	8	5, 138	BI III	1204.28	8	5, 138
BI VI	1046.183*	8	5, 466	BI	1205.80	0	5
BI	1048.50	5	5	BI V	1206.008	5	5
BI VI	1050.130*	10	5, 466	BI V	1206.943	1	5
BI III	1051.810	8	5, 138	BI IV	1207.093	0	5, 449
BI II	1058.88	7	5, 138, 404	BI V	1207.203	0	5
BI	1059.17	0	5	BI V	1210.82	1	5
BI	1059.79	0	5	BI IV	1211.41	3	5, 449
BI	1060.50	0	5	BI VI	1214.25	6	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI	1219.19	1	5	BI	1447.15	0	5
BI II	1219.80	5	138	BI	1447.50	0	5
BI	1220.81	0	5	BI II	1447.94	25	5, 138
BI III	1224.64 *	10	5, 138	BI I	1451.67	2	134
BI II	1225.43	6	5, 138	BI I	1454.28	1	134
BI	1226.23	0	5	BI II	1455.11 *	50	5, 138
BI	1230.15	0	5	BI I	1455.53	1	134
BI II	1232.78	2	5, 138	BI	1459.00	0	5
BI VI	1234.86	2	5	BI I	1459.65	0	134
BI	1237.21	0	5	BI III	1461.00 *	60	5, 138
BI	1238.27 *	2	5	BI II	1462.14	25	5, 138
BI II	1241.05	10	5, 138	BI I	1468.73	3	134
BI III	1245.37	4	5	BI I	1469.57	3	134
BI	1254.35	0	5	BI I	1473.86	1	134
BI	1262.00	1	5	BI I	1474.28	3	134
BI	1264.25	0	5	BI I	1485.28	2	134
BI II	1265.35	10	138	BI II	1486.93	35	5, 138
BI III	1274.56	10	404	BI I	1487.74	1	134
BI III	1279.00	0	5, 404	BI III	1488.44	4	138
BI IV	1283.08	2	5	BI I	1489.94	5	134
BI II	1283.73	6	5, 138	UI	1497.6	2	456
BI VI	1287.25	2	5	BI II	1502.50	20	138
BI V	1287.85	2	5	BI III	1512.06	1	138
BI	1288.35	0	5	BI II	1520.57 *	40	138
BI II	1291.83	5	138	BI I	1523.45	5	134
BI	1298.95	0	5	BI I	1524.03	2	134
BI	1304.14	0	5	BI I	1527.16	3	134
BI	1305.25	0	5	BI II	1533.17 *	40	138
BI II	1306.18	6	5, 138	BI II	1536.77	30	138
BI	1306.96	0	5	BI II	1538.06	35	134, 138
BI V	1313.28	2	5	BI I	1539.27	5	134
BI IV	1316.952 *	20	5, 449	BI I	1549.1	3	134
BI IV	1317.076 *	20	5, 449	BI I	1555.80	3	134
BI IV	1317.175 *	20	5, 449	BI I	1556.78 *	8	134
BI II	1325.46	5	5, 138	BI I	1559.52	5	134
BI III	1326.84 *	9	5, 138	BI I	1561.95	2	134
BI V	1328.48	2	5	BI II	1563.67	20	138
BI II	1329.47	8	5, 138	BI I	1565.98	2	134
BI VI	1330.19	0	5, 657	BI II	1573.70 *	40	138
BI III	1346.12 *	15	5, 138	BI	1586.2	1	411
BI II	1347.94	8	138	BI II	1591.79 *	60	138
BI II	1350.07	20	138, 404	BI I	1593.8	0	134
BI	1352.50	0	5	BI II	1601.58	25	138
BI V	1354.61	0	5	BI III	1606.40 *	60	138
BI V	1355.21	0	5	BI II	1609.70 *	40	138
BI V	1357.13	00	5	BI II	1611.38 *	40	138
BI V	1357.72	0	5	BI I	1617.80	5	134
BI III	1362.73	2	138	BI I	1621.31	1	134
BI I	1362.84	0	134	BI I	1626.14	3	134
BI I	1367.94	3	134	BI III	1630.11	3	138
BI III	1370.86	3	138	BI I	1635.78 *	10	134
BI II	1372.61	25	5, 138	BI I	1644.26 *	10	134
BI I	1373.05	0	134	BI II	1652.81	20	138
BI II	1376.02	15	5, 138	BI III	1659.3	3	138
BI I	1377.31	0	134	BI I	1664.45	0	134
BI I	1380.01	1	134	BI III	1673.98	3	138
BI V	1388.48	0	5	BI I	1682.13	1	134
BI II	1393.92	20	5, 138	BI I	1684.74	1	134
BI VI	1394.46	0	5, 657	BI I	1685.65	5	134
BI II	1396.91	5	138	BI I	1686.99	3	134
BI I	1397.67	1	134	BI II	1691.5	20	138
BI I	1408.54	00	134	BI I	1699.90	1	134
BI I	1409.81	3	134	BI I	1716.09	1	134
BI IV	1420.21	2	5, 449	BI III	1722.9	3	138, 449
BI I	1422.91	1	134	BI	1729.6	4	411
BI III	1423.33 *	35	5, 138, 404	BI I	1731.10	1	134
BI III	1423.52 *	35	5, 138	BI I	1733.23	1	134
BI I	1430.46	0	134	BI I	1735.93	3	134
BI I	1433.91	1	134	BI I	1743.79	3	134
BI I	1435.75	0	134	BI I	1744.45	1	134
BI II	1436.83 *	45	5, 138	BI II	1749.29	20	138
BI IV	1437.62	2	5, 449	BI I	1752.08	5	134
BI I	1442.31	0	134	BI I	1756.43	2	134
BI I	1445.11	2	134	BI I	1757.62	2	134
BI I	1446.66	1	134	BI I	1764.67	2	134

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI	I	1765.81	1 134
BI	I	1767.05	1 134
BI	I	1767.75	5 134
BI	I	1772.54	0 134
BI	I	1775.31	0 134, 138
BI	II	1777.11 *	80 138
BI	I	1782.27	0 134
BI	II	1787.47 *	60 138
BI	I	1788.70	3 134
BI	I	1791.33	1 134
BI	II	1791.93 *	70 138
BI	I	1795.53	5 134
BI	I	1802.64	5 134
BI	I	1804.23	1 134
BI	I	1806.07	0 134
BI		1816.7	3 411
BI	I	1822.12	1 134
BI	II	1823.80 *	70 138
BI	I	1828.71	3 134
BI	I	1832.66 *	10 134
BI	III	1834.32	20 138
BI	I	1841.63	0 134
BI	I	1845.39	5 134
BI	I	1849.47	1 134
BI	I	1850.47	1 134
BI	I	1852.64	5 134
BI	III	1852.72	8 138
BI	I	1856.06	5 134
BI	I	1857.31	1 134
BI	I	1860.03	2 134
BI	III	1863.9	10 138
BI	IV	1867.8	2 449
BI	I	1868.13 *	20 134
BI	I	1875.13	5 134
BI	I	1876.66	2 134
BI	III	1880.23	3 138
BI	I	1881.27	5 134
BI	III	1883.63	3 138
BI	I	1888.69 *	20 134
BI	I	1892.00	2 134
BI	I	1897.40	5 134
BI	I	1898.51	1 134
BI	I	1899.39	5 134
BI	I	1900.97 *	8 134
BI	II	1902.41 *	100 138
BI	I	1904.22	0 134
BI	I	1904.79	1 134
BI	I	1906.20	0 134
BI	I	1906.99	3 134
BI	I	1908.66	5 134
BI	IV	1910.0	6 449
BI	III	1912.12	10 138
BI	I	1912.97	1 134
BI	I	1913.67	5 134
BI	IV	1925.0	2 449
BI	I	1927.08	0 134
BI	III	1927.50	2 138
BI	III	1927.88	2 138
BI	I	1930.42	3 134
BI	I	1933.12	2 134
BI	I	1934.94	2 134
BI		1954.0	5 335
BI		1959.6	3 335
BI		1973.2	2 335
BI		1981.4	2 411
BI	III	1988.26	10 138
BI	II	1989.35	25 138

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
POLONIUM			
PO	I	I.P.	67980. K 1471. A
PO	I	1919.4 *	3 133
PO	I	1933.8 *	5 133
PO	I	1942.2 *	5 133
ASTATINE			
NO DATA REPORTED			
RADON			
RN	I	I.P.	86692.5 K 1153.5 A
NO DATA REPORTED			
FRANCIUM			
NO DATA REPORTED			
RADIUM			
RA	I	I.P.	42577.35 K 2348.666 A
RA	II	I.P.	81842.31 K 1221.861 A
RA	II	1888.7 *	5 570
RA	II	1908.7 *	8 570
RA	II	1972.6 *	4 570
RA	II	1976.0 *	2 570

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

ACTINIUM

AC II I.P. 97300. K 1030. A

NO DATA REPORTED

THORIUM

TH	IV	797.53	4	349
TH	IV	895.55	1	349
TH	IV	946.9	30	335
TH	IV	854.02	1	349
TH	IV	882.4	30	335
TH	IV	886.7	12	335
TH	III	1450.60	6	348
TH	III	1554.64	15	348
TH	III	1564.71	7	348
TH	IV	1565.85 *	100	349
TH	III	1617.48	1	348
TH	III	1636.06	2	348
TH	IV	1682.22 *	70	349
TH	IV	1684.01	30	349
TH	IV	1707.37 *	150	349
TH	III	1707.88	15	348
TH	III	1753.17 *	30	348
TH	III	1802.15	10	348
TH	III	1888.12 *	100	348
TH	III	1937.71	10	348
TH	III	1941.88	15	348
TH	III	1943.48	15	348
TH	III	1947.70	10	348
TH	IV	1959.02 *	200	349
TH	III	1963.52 *	20	348
TH	III	1965.58 *	30	348
TH	III	1971.45	10	348
TH	III	1978.37	6	348
TH	III	1981.89	7	348
TH	III	1987.93	8	348
TH	III	1994.22 *	12	348
TH	III	1994.55 *	10	348
TH	III	1999.97	8	348

PROTACTINIUM

NO DATA REPORTED

SYMBOL WAVELENGTH INTENSITY REFERENCE NUMBERS

URANIUM

U	374.4	1	411
U	397.2	1	411
U	398.4	1	411
U	401.9	1	411
U	404.0	1	411
U	411.0	1	411
U	419.0	1	411
U	424.1	1	411
U	429.3	1	411
U	437.9	1	411
U	442.9	1	411
U	462.5	1	411
U	471.4	1	411
U	507.4	1	411
U	525.7	2	411
U	581.1	1	411
U	610.0	2	411
U	625.1	1	411
U	630.1	1	411
U	634.6	1	411
U	652.9	2	411
U	657.0	1	411
U	665.5	1	411
U	668.3	1	411
U	672.0	1	411
U	718.2 *	10	411
U	747.5	1	411
U	752.9	1	411
U	763.7 *	5	411
U	790.0 *	5	411
U	796.1	2	411
U	823.8	1	411
U	827.6	1	411
U	866.2	1	411
U	873.2	1	411
U	892.0	1	411
U	898.5	1	411
U	990.0 *	10	411
U	998.0	1	411
U	1002.8	1	411
U	1112.5	2	411
U	1135.2	1	411
U	1148.0	1	411
U	1153.4	1	411
U	1198.7	1	411
U	1201.5	1	411
U	1210.8	1	411
U	1225.0	1	411
U	1227.8	1	411
U	1233.6	1	411
U	1237.1	1	411
U	1240.7	1	411
U	1244.2	1	411
U	1251.0	2	411
U	1264.8	1	411
U	1272.3	1	411
U	1279.1	1	411
U	1282.5	1	411
U	1291.6	1	411
U	1298.9	1	411
U	1302.7	1	411
U	1350.0	1	411
U	1362.2	1	411
U	1408.5	3	411
U	1422.6	1	411

SECTION III EMISSION LINES BY ELEMENT

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
U	1464.0	1	411
U	1498.1	1	411
U	1502.2	1	411
U	1509.1	1	411
U	1513.1	1	411
U	1575.7	* 10	411
U	1579.7	* 5	411
U	1586.5	* 5	411
U	1613.4	1	411
U	1627.4	1	411
U	1632.6	1	411
U	1636.2	3	411
U	1650.1	1	411
U	1690.6	1	411
U	1705.6	1	411
U	1720.0	1	411
U	1747.9	1	411
U	1755.3	1	411
U	1761.2	1	411
U	1774.6	1	411
U	1786.2	1	411
U	1832.8	* 5	411
U	1838.4	1	411
U	1878.6	1	411
U	1902.5	3	411
U	1961.5	1	411
U	1981.2	* 5	411
U	1985.4	* 5	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL XII	6.314*		236	CA XII	28.134*	0	189
AL XII	6.635*		236	C VI	28.464*		765
MG IX	7.310		236	N VI	28.787*		764
MG IX	7.473		236	N VI	29.084*		764
AL XII	7.757*		236	K X	29.588	1	189
MG IX	7.850		236	K X	29.794	0	189
MG IX	9.168		236	CA XI	30.448*	6	189
FE XVII	12.12 *		766	SC XII	30.480*		189
FE XVII	12.26 *		766	SC XII	30.816*		189
CO XVIII	12.60 *		766	CA XI	30.867*	3	189
CO XVIII	12.66 *		766	K X	30.887	0	189
MN XVI	13.46 *		766	K X	30.937	00	189
MN XVI	13.61 *		766	K X	31.062	00	189
CO XVIII	13.629*		766	K X	31.200	00	189
F VIII	13.780*		236	CA XI	31.257*	2	189
FE XVII	13.820*		766	CA XII	31.660*	1	189
CO XVIII	13.862*		766	CA XII	31.960*	0	189
FE XVII	13.887*		766	C V	32.064*		765
CO XVIII	14.036*		766	K XI	32.180*	1	189
F VIII	14.458*		764	C V	32.188*		765
FE XVII	15.012*		766	CA XII	32.280*	1	189
CR XV	15.06 *	0	766	K XI	32.339*	0	189
CO XVIII	15.169*		766	C V	32.400*		764, 765
CR XV	15.21 *	0	766	CA XII	32.498*	0	189
MN XVI	15.238*		766	CA XII	32.655*	00	189
FE XVII	15.261*		766	C V	32.754*		596, 764, 765
MN XVI	15.312*		766	K XI	32.810*	0	189
CO XVIII	15.437*		766	C V	33.426*		596, 764, 765
FE XVII	15.453*		766	C VI	33.734*		765
MN XVI	16.616*		766	C V	34.973*		596, 764, 765
FE XVII	16.774*		766	CA XI	35.212*	8	189
F VIII	16.807*		764	K X	35.307*	4	189
MN XVI	16.882*		766	CA XI	35.576*	8	189
CR XV	16.889*	1	766	K X	35.779*	2	189
F VIII	16.951*		764	K X	36.229	1	189
CR XV	16.965*	0	766	K XI	36.662*	0	189
FE XVII	17.051*		766	K XI	36.971*	0	189
MN XVI	17.095*		766	K XI	37.435*	0	189
O VII	17.200*		764	K XI	37.696*	0	189
O VII	17.396*		764	K XI	37.870*	00	189
O VII	17.768*		764	B V	38.869*		65, 765, 168
CR XV	18.497*	4	189, 766	AL XI	39.180	00	233
O VII	18.627*		764	CL X	39.293	0	179
MN XVI	18.654*		766	CL VIII	39.462*	1	179
CR XV	18.782*	2	189, 766	CL VIII	39.655*	0	179
MN XVI	18.935*		766	FE XVI	39.827*		178
CR XV	19.015*	0	766	CL X	39.956*	1	179
V XIV	20.716*		189	CL X	40.085*	2	179
CR XV	20.863*	4	189, 766	CL X	40.136	00	179
V XIV	21.018*		189	FE XVI	40.153*		178
CR XV	21.153*	3	189, 766	C V	40.270*		65, 596, 764
O VII	21.602*		764	CL XI	40.392*	0	179, 487
O VII	21.804*		764	CL X	40.660*	1	179
TI XIII	23.356*		189	C V	40.731*		764
V XIV	23.490*		189	CL XI	40.787*	0	179, 487
TI XIII	23.698*		189	CL X	40.994	0	179
N VI	23.771*		764	B V	40.995*		65, 765, 168
V XIV	23.794*		189	K X	41.148*	7	189
TI XIII	23.991*		189	CL X	41.390*	1	179
N VI	24.898*		764	CO XVII	41.462*		178
CA XI	25.327*	1	189	K X	41.541*	7	189
CA XI	25.517*	1	189	CL X	41.589	0	179
CA XI	26.442*	00	189	CL VIII	41.636*	00	179
SC XII	26.544*		189	CL VIII	42.166*	0	179
CA XI	26.639*	00	189	CL VIII	42.220*	2	179
TI XIII	26.641*		189	CL VIII	42.430*	1	179
SC XII	26.920*		189	CL IX	42.940	1	179
TI XIII	26.960*		189	CL IX	43.168	1	179
CA XI	26.962*	1	189	SI XI	43.290	00	231
C VI	26.988*		765	AL IX	43.549	0	233
CA XI	27.079*	00	189	SI XI	43.763	00	231
SC XII	27.260*		189	NI XVIII	43.814*		178
CA XII	27.412*	00	189	CL IX	44.003	2	179
CA XII	27.606*	00	189	SI XII	44.021*	1	231
CA XII	27.978*	1	189	MG X	44.050*	1	691

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL IX	44.088*	4	179	MG IX	47.818	0	691
AL X	44.136	0	233	NA IX	47.836	1	691
SI XII	44.165*	2	231	AL IX	47.856	1	233
CL IX	44.183	2	179	SI XI	47.899*	1	231
SI IX	44.215	00	231	MG IX	47.947	1	691
SI IX	44.249	00	231	MG IX	48.024	0	691
CL IX	44.267*	3	179	S IX	48.160*	2	233
NI XVIII	44.348*		178	AL XI	48.297*	5	233
CL VIII	44.361*	2	179	AL XI	48.338*	3	233
S VIII	44.374	2	233	MG IX	48.340	1	691
S X	44.387*	0	233	NA IX	48.553	2	691
CL IX	44.530	1	179	SI X	48.553	00	233
S VIII	44.547	1	233	CO XVII	48.564*		178
CL VIII	44.603*	2	179	BE V	48.585*		166
NA IX	44.723	0	691	B V	48.585*		65, 765, 168
AL X	44.902	0	233	S VII	48.647	3	233
CL IX	45.112*	4	179	A IX	48.730*	5	549
MN XV	45.137*		178	MG IX	48.794	0	691
CL IX	45.261	2	179	S VII	48.874	2	233
S VIII	45.279	1	233	B IV	48.939*		764
S VIII	45.290	1	233	AL X	49.094	00	233
CO XVII	45.319*		178	S IX	49.119*	2	233
CL IX	45.332	1	179	CO XVII	49.133*		178
CL IX	45.378*	3	179	CO XVII	49.171*		178
CI X	45.396*	3	179	A IX	49.180*	5	549
SI XI	45.398	00	231	SI XI	49.222*	1	231
CL X	45.431*	0	179	CL IX	49.234	1	179
CL IX	45.465	0	179	SI XI	49.265	00	231
CL IX	45.519	2	179	NA IX	49.326	1	691
CO XVII	45.527*		178	NA IX	49.386	2	691
CL IX	45.539	2	179	B IV	49.456*		764, 765
CL X	45.626*	0	179	BE IV	49.456*		596
SI XII	45.656*	00	231	CL VIII	49.487*	7	179
CL IX	45.657	1	179	CL IX	49.568	1	179
CL IX	45.745	0	179	MG IX	49.586	00	691
NA IX	46.090	1	691	SI X	49.701*	2	233
CL IX	46.098	1	179	CO XVI	49.808*	1	180
S VII	46.212	00	233	AL X	49.854	2	233
CL IX	46.242	0	179	CO XVI	49.958*	1	180
SI XI	46.264*	00	231	CO XVI	49.979*	00	180
SI XI	46.300*	1	231	S	49.990	2	233
S IX	46.373	1	233	SI VIII	50.019	1	231
SI XI	46.401*	2	231	S VII	50.027	1	233
S IX	46.413	1	233	FE XV	50.062*	00	180
CR XIV	46.468*		178	CL VIII	50.074*	5	179
CL X	46.476*	2	179	FE XV	50.085*	0	180
CR XIV	46.527*		178	FE XV	50.120*	1	180
FE XVI	46.661*		178	SI X	50.154	1	231
MG IX	46.711	0	691	SI X	50.254	1	233
S	46.713	1	233	SI X	50.305	1	231
FE XVI	46.718*		178	SI X	50.333	1	231
S	46.765	1	233	FE XVI	50.350*		178
CL X	46.845*	1	179	CO XVI	50.357*	2	180
CL X	46.908	0	179	CO XVI	50.393*	00	180
G IX	47.052	1	233	B IV	50.435*		764, 765
CL X	47.085	0	179	BE IV	50.435*		596
S VII	47.098	1	233	SI VIII	50.524	1	231
MG X	47.231*	3	691	SI X	50.524	1	233
S IX	47.249	1	233	FE XVI	50.566*		170
S VII	47.307	1	233	AL X	50.670	1	233
MG X	47.310*	5	691	SI X	50.691*	2	233
CU XIX	47.329*		178	CL VIII	50.700*	2	179
AL IX	47.417	00	233	AL X	50.762*	5	233
S IX	47.433*	4	233	MG IX	50.777	0	691
CU XIX	47.437*		178	AL X	50.802	1	233
CO XVI	47.483*	1	180	CR XIV	50.812*		178
AL IX	47.489	1	233	AL X	50.946	0	233
SI XI	47.489*	1	231	CL IX	51.026*	4	179
AL IX	47.534	2	233	AL X	51.039	0	233
SI X	47.545	1	233	SI IX	51.113	1	231
SI XI	47.607*	1	231	CR XIV	51.162*		178
SI XI	47.653*	1	231	S VIII	51.227	2	233
S X	47.654*	0	233	AL X	51.362*	7	233
AL IX	47.755	0	233	SI IX	51.362	2	231
NA IX	47.776	0	691	CL IX	51.378*	3	179

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL X	51.400	00	233	AL XI	54.217	4	233
AL X	51.454	00	233	AL VIII	54.258	4	233
S VIII	51.470	1	233	S VIII	54.266	2	233
MG IX	51.560	0	691	AL IX	54.312	0	233
MG IX	51.591*	3	691	AL XI	54.388	1	233
SI X	51.635	00	233	S IX	54.396	1	233
MG IX	51.654*	4	691	S VIII	54.424	3	233
SI X	51.676	0	233	AL IX	54.457*	4	233
S VII	51.807*	7	233	SI VII	54.462	1	231
AL X	51.979*	6	233	MG IX	54.463	0	691
CL IX	52.055*	2	179	SI X	54.522*	1	233
SI X	52.070*	1	233	S VIII	54.566	1	233
S VII	52.097	4	233	SI X	54.571*	1	231
NA IX	52.116	1	691	SI X	54.599*	1	233
SI X	52.155*	2	233	S VIII	54.604	1	233
NA IX	52.186	2	691	S VII	54.652	2	233
AL XI	52.299*	10	233	SI X	54.664	00	231
CL IX	52.303*	4	179	SI X	54.702	00	231
CR XIV	52.363*		178	FE XVI	54.728*		178
CL IX	52.426*	3	179	FE XVI	54.769*		178
AL XI	52.446*	12	233	SI IX	54.841*	2	231
SI X	52.485*	2	233	SI IX	54.870*	2	231
NA IX	52.487	00	691	MG VIII	54.886	1	691
CO XV	52.583*	1	180, 487	SI IX	54.907*	2	231
SI X	52.611	1	233	S VII	54.938	2	233
NI XVIII	52.615*		178	MG IX	55.060	2	691
SI IX	52.671	00	233	SI IX	55.094*	1	231
CL IX	52.677*	2	179	SI IX	55.116*	1	231
BE IV	52.679*		596	AL X	55.227	3	233
B IV	52.682*		764, 65, 168	SI IX	55.234*	1	231
NI XVIII	52.720*		178	AL X	55.272*	10	233, 693
CL IX	52.726*	3	179	SI IX	55.272*	3	231
S VIII	52.756*	6	233	SI IX	55.305*	1	231
S VIII	52.789*	6	233	SI IX	55.356*	2	231
SI IX	52.810	0	231	AL X	55.376*	15	233
SI IX	52.838	1	231	SI IX	55.401*	2	231
S VIII	52.854	2	233	SI IX	55.511	1	233
V XIII	52.870*		178	S IX	55.540*	2	233
FE XV	52.911*	3	180	FE XV	55.635*	1	180
V XIII	52.928*		178	AL IX	55.667	0	233
CL IX	52.939	0	179	AL X	55.731	1	233
S VIII	52.958*	7	233	SI IX	55.781*	3	233
CL IX	52.959	00	179	FE XV	55.793*	2	180
MN XV	52.977*		178	FE XV	55.815*	0	180
S VIII	52.985	1	233	CO XVII	56.021*		178
MN XV	53.032*		178, 361	SI IX	56.027*	3	231
S VIII	53.073	1	233	AL VIII	56.150	1	233
CL IX	53.108	00	179	FE XV	56.200*	3	180
MG IX	53.112	0	691	FE XV	56.236*	00	180
CO XV	53.173*	2	180, 487	MN XV	56.270*		178
MG IX	53.188	2	691	AL IX	56.304	1	233
MG IX	53.222	2	691	MN XV	56.484*		178
AL IX	53.376	0	233	SI VII	56.528	1	231
AL IX	53.424	0	233	AL X	56.650	0	233
CL IX	53.448	0	179	SI X	56.680*	1	233
SI X	53.463	00	233	AL X	56.762	0	233
AL IX	53.488	00	233	AL X	56.802	4	233
CR XIII	53.506	0	180	SI X	56.804*	1	233
MG VIII	53.512	1	691	CO XVII	56.833*		178
AL IX	53.554	0	233	MG IX	56.861	0	691
SI X	53.573	1	233	AL VIII	56.899	2	233
SI X	53.595	1	233	AL IX	56.945*	5	233
CL IX	53.696	1	179	AL X	56.964*	3	233
CR XIII	53.765*	1	180	AL X	57.024*	5	233
AL VIII	53.785	0	233	AL X	57.072	0	233
AL VIII	53.800	0	233	AL	57.116	1	233
AL VIII	53.823	0	233	SI IX	57.157	1	233
NA IX	53.860	3	691	SI X	57.209	0	233
MG VIII	53.905	1	691	MN XIV	57.224*	00	180
SI IX	53.992	00	231	AL	57.244	1	233
MG IX	54.011	2	691	AL	57.271	1	233
AL X	54.115	4	233	SI VII	57.325	1	231
S VIII	54.118*	10	233	AL X	57.368*	7	233
FE XVI	54.142*		178	SI VII	57.434	1	231
S IX	54.178*	2	233	AL VIII	57.553	0	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI IX	57.589	1	233	TI XII	60.760*		178
AL VIII	57.624	0	233	AL	60.788	1	233
MG VIII	57.736	1	691	S VII	60.804*	15	233
SI IX	57.778	2	231	AL	60.809	1	233
MG X	57.876*	6	691	SI VII	60.837	2	231
MG X	57.920*	4	691	AL IX	60.896*	6	233
AL IX	58.060	0	233	SI VII	60.989	2	231
AL IX	58.112	1	233	SI VIII	61.019*	2	231
V XIII	58.116*		178	MG IX	61.038	2	691
AL	58.144	1	233	AL IX	61.069*	12	233
NA VIII	58.201*	5	691	SI VIII	61.070*	4	231
AL IX	58.222	2	233	MG IX	61.088	1	691
AL IX	58.276	00	233	NA VIII	61.088	2	691
NA IX	58.279	6	691	B IV	61.088*		764
AL VII	58.384	0	233	SI IX	61.109	1	231
SI VII	58.388	1	231	MG IX	61.127*	3	691
SI VII	58.445	2	231	MG IX	61.175*	2	691
V XIII	58.482*		178	SI VIII	61.175	1	231
SI VII	58.580	2	231	SI IX	61.190	1	231
MG VIII	58.614	2	691	SI VIII	61.223	2	231
MG VIII	58.667	3	691	SI VII	61.306	1	231
CL VIII	58.673*	10	179	MN XV	61.210*		170
SI VII	58.719	1	231	SI IX	61.355	1	231
AL VII	58.752	00	233	MG IX	61.359	0	691
SI VII	58.782	1	231	MN XV	61.361*		178
AL X	58.808	00	233	AL	61.373	1	233
CO XVII	58.842*		178	MG IX	61.393	1	691
AL X	58.858	2	233	SI VIII	61.395	1	231
SI VIII	58.885	3	231	SI VIII	61.446	2	231
SI IX	58.906	1	231	V XII	61.455	0	100
CO XVII	58.948*		178	AL	61.472	2	233
NA IX	58.954	1	691	MG IX	61.489	2	691
FE XIV	58.963*	2	180, 487	SI IX	61.502*	1	231
AL X	58.987	3	233	SI IX	61.546*	2	233
SI IX	59.004	2	231	S VII	61.547	4	233
NA VIII	59.009	1	691	S VIII	61.600*	10	233
MG VIII	59.038	2	691	SI IX	61.600*	1	231
NA IX	59.042	2	691	AL IX	61.647	0	233
SI IX	59.077	1	231	SI IX	61.649*	2	231
AL X	59.107*	8	233	AL VIII	61.694	3	233
MG VIII	59.153	3	691	V XII	61.717*	1	180
CL VIII	59.191*	9	179	SI VIII	61.798	2	231
NA VIII	59.204	3	691	SI IX	61.852*	2	233
S VIII	59.236	1	233	CO XVI	61.875*	1	180
MN XIV	59.325*	1	180	MG VIII	61.891	2	691
AL IX	59.361	0	233	SI VIII	61.895	3	231
FE XIV	59.579*	3	180, 487	SI VIII	61.914	3	231
NA VIII	59.759	2	691	CO XVI	61.916*	2	180
AL IX	59.761*	6	233	MG IX	61.924*	4	691
AL VII	59.821	0	233	AL	61.933	1	233
SI VII	59.884	1	231	MG VIII	61.964	1	691
AL VII	59.911	0	233	S VIII	61.978*	5	233
SI VII	59.966	2	233	CO XVI	61.982*	2	180
AL	60.052	1	233	AL VIII	62.016	2	233
NA VIII	60.053	1	691	MG IX	62.020	0	691
S VII	60.161*	20	233	AL	62.070	1	233
AL IX	60.162	0	233	SC XI	62.132	0	17
AL IX	60.197	1	233	NA VIII	62.276	1	691
SI VII	60.221	2	231	AL VII	62.296	4	233
AL IX	60.222	0	233	AL IX	62.327*	5	231
AL IX	60.262	0	233	AL IX	62.369*	3	233
AL IX	60.312	1	233	AL VII	62.432	0	233
B IV	60.313*		764, 65, 168	AL VII	62.474	2	233
BE IV	60.313*		596	MN XIV	62.526*	0	180
AL IX	60.347	2	233	SI VIII	62.586	1	231
AL IX	60.504	3	233	AL IX	62.587	2	233
AL IX	60.549*	4	233	MN XIV	62.694*	1	180
AL IX	60.588*	6	233	MG VII	62.696	1	692
AL IX	60.645	0	233	MN XIV	62.713*	00	180
CR XIV	60.699*		178	MG IX	62.751*	5	691
AL X	60.700	0	233	SI VIII	62.808	2	231
TI XII	60.705*		178	SI VIII	62.849	3	231
MN XV	60.720*		178	FE XVI	62.879*		178
BE IV	60.741*		595, 765	SI VIII	62.884	1	231
CR XIV	60.756*		178, 361	AL IX	62.916	3	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI VII	62.940	1	231	MG X	65.847*	3	691
SI IX	62.974	1	231	AL VII	65.865	1	233
AL VII	63.025*	10	233	AL VII	65.882	1	233
S VIII	63.026	1	233	CR XIII	65.968	0	180
MN XIV	63.109*	2	180	AL IX	66.038	1	233
AL X	63.134	4	233	NA VIII	66.059	2	691
MN XIV	63.146*	00	180	MG VIII	66.069	3	691
MG X	63.152*	7	691	AL IX	66.092	1	233
AL VIII	63.203	0	233	AL IX	66.142	2	233
SI VIII	63.229	3	231	AL IX	66.239	1	233
SI VIII	63.266	1	231	FE XVI	66.263*		178
MG X	63.295*	9	691	AL IX	66.275	1	233
S VIII	63.304*	10	233	AL VIII	66.321	1	233
CR XIV	63.309*		178	AL VIII	66.363	0	233
MG VII	63.396	1	692	FE XVI	66.368*		178
S VIII	63.431	2	233	NA VIII	66.498	4	691
AL IX	63.509*	10	233	MN XIII	66.574*	1	180, 487
CR XIV	63.525*		178	AL IX	66.624	0	233
SI VII	63.586	2	231	AL VIII	66.704	3	233
AL IX	63.632*	6	233	AL VIII	66.731*	4	233
S VIII	63.711	1	233	AL VIII	66.771*	7	233
AL VIII	63.714	2	233	AL IX	66.836	2	233
FE XVI	63.719*		178	CR XIII	66.983*	2	180
SI VIII	63.732	3	231	AL VIII	67.044	0	233
S VIII	63.886*	5	233	MG IX	67.090*	5	691
SI VIII	63.903	3	231	AL VIII	67.096	2	233
AL VIII	63.933	0	233	AL VIII	67.121	2	233
AL VIII	63.965	3	233	MG IX	67.135*	6	691
AL VIII	64.004	4	233	TI XII	67.149*		178
BE IV	64.063*		595, 765	SI VIII	67.157	3	231
AL VII	64.066	0	233	AL VIII	67.166	0	233
AL VIII	64.086	0	233	MN XIII	67.215*	2	180, 487
S VIII	64.120	1	233	MG IX	67.239*	7	691
MG VII	64.122	2	692	AL VIII	67.244	3	233
S VIII	64.137	2	233	AL VIII	67.288*	10	233
NA VIII	64.205	2	691	SI VIII	67.318	2	231
NA VIII	64.237*	4	691	AL VIII	67.360	5	233
SI VIII	64.281	2	231	AL VIII	67.408*	10	233
NA VIII	64.302*	5	691	SI VIII	67.408	3	231
AL VII	64.325	1	233	AL VIII	67.437	1	233
SI VIII	64.327	3	231	AL VIII	67.464*	12	233
SI VIII	64.355	1	231	MG VII	67.470	1	692
AL VII	64.358	1	233	MG VII	67.497	2	692
MG VII	64.377	1	692	TI XII	67.532*		178
AL VII	64.481	0	233	AL VII	67.565	3	233
MG VIII	64.488	1	691	NA VIII	67.672	4	691
AL VII	64.513	0	233	MG VIII	67.731*	4	691
MG VIII	64.518	1	691	NA VII	67.826	1	691
AL IX	64.625	1	233	AL IX	67.828	0	233
MG VIII	64.635	2	691	NA VII	67.912	2	691
SC XI	64.70	00	17	AL VIII	67.946*	10	233
MG VIII	64.702	2	691	MG VII	67.993	1	692
AL VII	64.704	3	233	MG VII	68.064	2	692
BR II	64.76	9	488, 568	MG VII	68.100	2	692
AL VII	64.815	2	233	MG VII	68.144	3	692
MG VIII	64.878	1	691	SI VII	68.148	5	231
AL IX	64.885	3	233	AL VI	68.167	1	233
AL VII	64.904	2	233	SI VII	68.190	1	231
SC XI	64.98	0	17	SI VII	68.212	1	231
AL VII	65.014	0	233	AL VI	68.223	0	233
AL VIII	65.128	0	233	AL VI	68.289	00	233
S VIII	65.149	1	233	MG VII	68.352	2	692
SI IX	65.236	00	231	AL VIII	68.375*	15	233
AL VIII	65.298	0	233	SI VII	68.408	2	231
AL VIII	65.381	1	233	AL	68.439	1	233
NA VII	65.388	1	691	MG VIII	68.450	1	691
AL VIII	65.494	1	233	AL	68.458	1	233
SI VII	65.595	1	233	NA VII	68.519	1	691
MG IX	65.609*	4	691	AL VII	68.531	2	233
AL	65.632	1	233	MG VIII	68.550	1	691
MG X	65.672*	2	691	CR XIV	68.565*		178
MG VIII	65.735	1	691	SI VII	68.593	1	231
MG VIII	65.806	2	691	MG VIII	68.606	2	691
AL	65.821	1	233	AL VII	68.637	1	233
SI VIII	65.833	1	231	SI VII	68.642	1	231

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI VII	68.669	1	231	AL	70.802	1	233
AL VII	68.681	0	233	MG VIII	70.953	1	691
SI VII	68.715	2	231	CR XIII	70.973*	3	180
AL VIII	68.825	1	233	MG VIII	71.007	2	691
NA VII	68.908	1	691	TI XII	71.012*		178
MG IX	68.949	0	691	MN XV	71.038*		178
AL IX	68.958	1	233	MG VIII	71.118	3	691
MG IX	68.986	1	691	AL	71.139	1	233
MG IX	69.009	1	691	MG VIII	71.168	1	691
MG IX	69.058	0	691	SI VI	71.181	5	231
MG IX	69.116*	1	691	SI VI	71.273	2	231
NA VIII	69.120	3	691	AL	71.277	1	233
MG IX	69.161*	3	691	SI VI	71.340	1	231
AL	69.165	4	233	SI VI	71.366	3	231
CR XIV	69.183*		178	SI VI	71.384	4	231
SI VI	69.204	1	231	CR XIII	71.398*	3	180
CR XIV	69.221*		178	CR XIII	71.435*	0	180
SI VI	69.236	5	231	MG	71.454	1	692
SC XI	69.252	0	17	SI VI	71.474	1	231
AL IX	69.258	1	233	SI VI	71.534	1	231
MG IX	69.374	2	691	SI VI	71.561	1	231
AL	69.379	1	233	AL	71.590	1	233
SI VII	69.385	3	231	TI XI	71.591*	0	180
MG VIII	69.413*	4	691	AL	71.625	1	233
AL VIII	69.420	1	233	MG VII	71.786	1	692
SI VI	69.421	1	231	V XIII	71.799*		178
SI VI	69.448	2	231	MG IX	71.841	1	691
MG VIII	69.467*	5	691	SC XI	71.887	0	17
AL VIII	69.502	2	233	SI	71.900	4	231
MG IX	69.513	1	691	MG IX	71.901	2	691
SC XI	69.575	1	17	MN XV	71.927*		178
MG VIII	69.577	1	691	SI VII	71.955	4	233
SI VII	69.580	2	231	NA VII	72.020	1	691
SI VII	69.602	2	231	V XIII	72.025*		178
AL VIII	69.611	4	233	MG VIII	72.027	3	691
MG VII	69.615	3	692	S VII	72.029*	30	233
AL	69.631	4	233	NA VII	72.079	1	691
SI VIII	69.632	3	231	AL VIII	72.223	4	233
SI VII	69.663	4	231	MG IX	72.226*	3	691
AL IX	69.716	2	233	SI VIII	72.228*	4	231
AL VIII	69.773	3	233	AL VII	72.270*	10	233
SI VII	69.790*	4	231	MG IX	72.312*	4	691
AL IX	69.850	1	233	AL VIII	72.324	4	233
SI VII	69.861	2	231	SI VII	72.324*	4	231
SI VII	69.872	2	231	AL VIII	72.401	3	233
SI VIII	69.905	1	231	MG VI	72.430	1	692
FE XV	69.945*	2	180	S VII	72.663*	30	233
MG IX	69.950*	6	691	AL	72.674*	6	233
FE XV	69.987*	3	180	MG VIII	72.684	1	691
SI VII	70.027*	5	231	AL VI	72.714	00	233
AL	70.040	1	233	MG VII	72.787	1	692
FE XV	70.054*	4	180	AL VI	72.810	5	233
SI VII	70.072*	5	231	NA VII	72.865	2	691
AL	70.090	2	233	AL VI	72.865	1	233
AL VIII	70.161*	6	233	GI VI	72.896	1	231
MG VII	70.193	1	692	AL VI	72.926	2	233
SI VII	70.222	4	231	AL VI	73.076	2	233
SI VII	70.250	4	231	SI VII	73.123*	10	231
V XIII	70.262*		178	MG VIII	73.250*	4	691
AL VIII	70.322*	4	233	AL	73.278	2	233
SI VII	70.323	1	231	AL VI	73.334	00	233
V XIII	70.323*		178	SI VII	73.350	5	231
AL VIII	70.402	00	233	SI VII	73.433	4	231
SI VII	70.427	1	231	AL IX	73.451	00	233
SC XI	70.445	2	17	AL IX	73.625	00	233
SI VIII	70.458	2	231	AL VIII	73.703	3	233
SI VIII	70.473	2	231	AL VIII	73.733	2	233
SC XI	70.509	1	17	AL VIII	73.760	0	233
NA IX	70.615*	7	691	MG VIII	73.825	1	691
NA IX	70.653*	6	691	MG VIII	73.862	2	691
AL VIII	70.727	5	233	AL VIII	73.879	4	233
SI VII	70.730	1	231	MG VIII	73.890	1	691
MG	70.762	1	692	MG VIII	73.927	1	691
MG	70.787	1	692	MG VIII	73.981	2	691
CR XIII	70.792*	1	180	AL	74.016	2	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG VIII	74.021	3	691	NA VIII	76.123*	5	691
MN XIV	74.063*	00	180	NA VIII	76.173	1	691
AL VII	74.095	2	233	MG VIII	76.199	1	691
NA VII	74.097	1	691	AL VII	76.221	1	233
NA VII	74.180	2	691	AL VII	76.257	2	233
SI VIII	74.186	2	231	V XII	76.307*	3	180
NA VII	74.217	2	691	AL VII	76.342	0	233
NA VII	74.255	3	691	SC X	76.343	1	17
NA VII	74.268	3	691	AL VII	76.383*	10	233
MG VIII	74.274	2	691	MG VII	76.392	3	692
MG VI	74.319	3	692	AL VII	76.422*	10	233
AL	74.321	1	233	MG	76.459	1	692
MN XIV	74.327*	0	180	CR XII	76.488*	3	180, 487
AL VI	74.346	1	233	AL VII	76.543*	20	233
MG VIII	74.366*	4	691	AL VII	76.572*	20	233
MG VIII	74.411	1	691	AL VI	76.618	4	233
SI VIII	74.420*	4	231	AL VI	76.697	4	233
AL VI	74.444	6	233	MG VIII	76.714	1	691
AL VI	74.504	1	233	MG VIII	76.740	2	691
MG IX	74.520	1	691	MG VIII	76.788	3	691
MG VI	74.574	2	692	AL	76.794	4	233
AL VI	74.592	3	233	AL	76.853	4	233
AL VI	74.656	5	233	AL VI	76.953	1	233
MG	74.676	1	692	V XII	76.960	0	180
MG IX	74.738	1	691	AL	76.984	2	233
AL IX	74.785	1	233	MG VII	77.033	1	692
AL VI	74.813	1	233	AL	77.052	1	233
MG VIII	74.841	4	233	MG VII	77.144	2	692
MG VIII	74.858*	6	691	NA VIII	77.267*	6	691
NA VII	74.861	3	691	NA VII	77.353	1	691
AL VI	74.892	2	233	SI V	77.360	00	231
NA VIII	74.956	3	691	AL IX	77.381	3	233
MN XIV	74.961*	1	180	MG VI	77.405	2	692
AL VIII	74.965	3	233	SI VI	77.429*	10	231
NA VII	74.980	3	691	AL VII	77.448	3	233
MG VIII	75.034*	7	691	MG VI	77.511	1	692
NA VIII	75.043	4	691	MG VIII	77.572*	5	691
AL VIII	75.058	1	233	AL VIII	77.605*	6	233
NA VIII	75.096	3	691	MG VIII	77.671*	5	691
MG	75.112	1	692	SI VI	77.718	6	231
AL	75.164	2	233	MG VIII	77.737*	6	691
MN XV	75.182*	1	178	NA IX	77.764*	7	691
SI VII	75.193	4	233	AL VII	77.770	6	233
AL	75.226	2	233	AL VII	77.806	1	233
MG VI	75.248	1	692	AL VII	77.896*	10	233
AL VII	75.270*	5	233	NA IX	77.911*	8	691
MN XV	75.286*	1	178	SC XI	77.917	0	17
AL VII	75.302*	7	233	AL VI	77.945	10	233
MG VI	75.334	1	692	V XIII	78.101*	1	178
AL VII	75.360*	12	233	AL VI	78.112	2	233
NA VIII	75.385	1	691	AL	78.149	2	233
AL VIII	75.397	1	233	AL VI	78.178	1	233
SI VI	75.398	3	231	AL VIII	78.225	00	233
NA VIII	75.428	2	691	AL	78.256	1	233
SI VI	75.486	1	231	AL VII	78.327*	20	233
AL VII	75.488	4	233	AL VII	78.351*	20	233
NA VIII	75.518	3	691	MG VIII	78.446*	6	691
AL VII	75.532	4	233	AL VI	78.459	1	233
AL VIII	75.577	3	233	AL	78.508	3	233
SI VI	75.587	1	231	SC XI	78.509	1	17
AL VIII	75.623	2	233	MG VII	78.521	2	692
MG	75.666	3	692	AL	78.573	1	233
AL VIII	75.734	1	233	MG VIII	78.574*	6	691
AL VIII	75.778	5	233	SI V	78.611	1	231
AL VII	75.809	2	233	AL VI	78.628	0	233
CR XII	75.815*	2	180, 487	MG	78.643	1	692
MG VI	75.834	2	692	MG	78.668	1	692
AL VII	75.850	2	233	AL VI	78.712	0	233
AL VII	75.894	2	233	V XIII	78.746*	1	178
BE IV	75.925*		595, 765	V XIII	78.783*	1	178
MG VII	75.975	4	692	AL	78.836	2	233
AL VIII	75.985	1	233	SI V	78.903	1	231
SI VIII	75.986	1	231	NA VII	78.907	3	691
AL VII	76.010	1	233	SC XI	78.917	3	17
AL VII	76.086	0	233	AL	78.938*	6	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA VII	78.982	2	691	SI VII	81.620*	12	231
AL VII	79.012*	10	233	AL	81.667	2	233
MG VII	79.131*	5	692	MG VIII	81.732*	3	691
MG VII	79.168*	5	692	AL VI	81.738	1	233
AL VII	79.197*	10	233	MG VIII	81.790*	2	691
SI VII	79.236	5	231	AL VII	81.806	4	233
MG VII	79.248	1	692	CR XIV	81.838*		178
SI VII	79.262	1	231	MG VIII	81.844*	4	691
AL VIII	79.455	2	233	NA VII	81.855	4	691
NA VII	79.477	2	691	BE III	81.891*		596
SI VII	79.491	2	231	SI VII	81.895*	10	231
SI VII	79.523	2	231	MG VIII	81.943	2	691
NA VII	79.571	1	691	MG VIII	81.979	2	691
SI VII	79.615	2	231	SI VII	81.998	3	231
AL VII	79.635	0	233	AL VI	82.082	1	233
AL VII	79.690	3	233	AL	82.105	1	233
MG VIII	79.695	2	691	TI XII	82.124*		178
MN XIV	79.720*	1	180	AL	82.128	1	233
MN XIV	79.761*	2	180	MG VI	82.238	2	692
AL	79.783	1	233	AL VI	82.267	1	233
MG VI	79.017	2	692	TI XII	82.311*		178
MN XIV	79.826*	3	180	MG VIII	82.317	3	691
MG VI	79.830	4	692	AL VI	82.338	0	233
MG VI	79.857	4	692	TI XII	82.350*		178
MG	79.880	2	692	TI XII	82.362*		178
NA VII	79.093	3	691	DC III	82.377*		596
AL VII	79.919	6	233	AL	82.423	1	233
AL VII	79.952	5	233	MG VI	82.475	1	692
NA VII	80.008	3	691	CO XI	82.527*	0	182
MG VI	80.032	2	692	AL VIII	82.543	3	233
MG VI	80.075	2	692	AL	82.582	1	233
MG VIII	80.229*	4	691	MG VIII	82.598	2	691
MG VIII	80.255*	4	691	MG VIII	82.709	2	691
AL VIII	80.320	0	233	CO XI	82.759*	2	182
SI VI	80.395*	5	231	MG VIII	82.822	3	691
MG IX	80.428	1	691	MG VI	82.853	1	692
SI VI	80.449*	10	231	AL	82.908	1	233
AL VIII	80.483	0	233	MG VII	82.940*	4	692
SI VI	80.491*	5	231	MG VII	82.969*	4	692
SI VI	80.501*	10	231	SI VI	83.006	4	231
MG	80.563	1	692	MG VII	83.015*	5	692
SI VI	80.577*	12	231	SI VI	83.128*	15	231
SI VI	80.648*	10	231	CO XI	83.190*	3	182
AL VIII	80.704	2	233	RF III	83.202*		596
SI VI	80.725*	10	231	NA VIII	83.240*	7	691
AL VI	80.770	1	233	SI VI	83.258	5	231
SI V	80.807	2	231	SI VI	83.283	1	231
SI VI	80.821	8	231	NA VIII	83.288*	8	691
MG VIII	80.889	1	691	SI VI	83.358	8	231
V XII	80.896*	1	180	NA VIII	83.391*	9	691
SI VI	80.908	8	231	MG VI	83.403	4	692
CR XIV	80.916*		178	AL VIII	83.465	1	233
MG VI	80.930	2	692	MG VI	83.519	3	692
MG VII	81.024	1	692	SI VI	83.576	8	231
SI VI	81.030	7	231	MG VI	83.560	2	692
V XII	81.077*	2	180	MG VII	83.587	2	692
V XII	81.098	0	180	SI VI	83.611	8	231
MG VI	81.106	3	692	AL VIII	83.635	0	233
SI V	81.113	2	231	SI VI	83.639	9	231
MG VII	81.133	3	692	SI VI	83.684	1	231
NA IX	81.175*	5	691	MG VII	83.716	3	692
AL VI	81.176	1	233	SI VI	83.729	1	231
NA VIII	81.210*	5	691	SC X	83.760	0	17
AL VII	81.234	1	233	MG VII	83.766*	5	692
MG VIII	81.304	1	691	SI VI	83.802	6	231
AL VI	81.339	0	233	AL VII	83.831	7	233
NA IX	81.350*	5	691	CO XI	83.861*	1	182
NA VII	81.430	1	691	SC X	83.901	1	17
SI VII	81.449	1	233	MG VII	83.910	3	692
CO XI	81.507*	3	182	SC XI	83.958	0	17
V XII	81.513*	4	180	MG VII	83.959	4	692
V XII	81.550	0	180	AL VII	84.007	4	233
SI VII	81.558*	5	231	MG VII	84.025*	5	692
AL	81.560	2	233	CO XI	84.039*	2	182
NA VI	81.584	1	692	NA VIII	84.050*	5	691

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SI VI	84.082*	12	231	AL VII	86.689	1	233
MG VII	84.087*	3	692	F VII	86.728*	0	171, 176
AL VII	84.098	2	233	NA VII	86.758	3	691
SC X	84.204	2	17	MG	86.762	1	692
NA VII	84.221	4	691	FE XI	86.772*	2	181
SC XI	84.351	0	17	MG VI	86.807	2	692
SC XI	84.393	0	17	MG VIII	86.847	2	691
SC XI	84.433	1	17	AL VII	86.887*	15	233
CR XIII	84.616*	0	180	MG VIII	87.017	1	691
MG VII	84.642*	5	692	AL V	87.020	2	233
AL VI	84.650	2	233	FE XI	87.025*	1	181
MG VI	84.745	2	692	AL VII	87.060*	12	233
BE III	84.758*		596	MG VII	87.131*	5	692
AL VI	84.801	0	233	V XI	87.166*	3	180, 487
AL VI	84.828	1	233	MG VII	87.175*	4	692
CR XIII	84.898*	2	180	AL VII	87.176	6	233
MG VIII	84.919	1	691	NA VIII	87.211*	7	691
AL VI	84.928	0	233	AL V	87.279	1	233
SI V	85.175*	10	231	AL VI	87.334	8	233
SI VII	85.219	2	231	NA	87.524	2	692
MG VIII	85.248	2	691	AL VI	87.544	7	233
NA VII	85.260	3	691	AL VI	87.592	10	233
SI VII	85.289*	10	231	AL VI	87.629	2	233
NA VII	85.297	3	691	AL VI	87.655*	13	233
MG VII	85.407*	7	692	MG VII	87.722*	6	692
AL VI	85.423	2	233	TI XI	87.722*	3	180
NA VII	85.458	4	691	MG VII	87.767*	4	692
AL VI	85.515*	20	233	AL VI	87.783	5	233
CR XIII	85.566*	3	180	AL VI	87.802	5	233
AL VI	85.569	4	233	AL VI	87.866	7	233
SI V	85.576*	6	231	V XI	87.868*	4	180, 487
MG VI	85.577	2	692	AL VI	87.887	5	233
SI VII	85.584*	10	231	MG VII	87.889*	5	692
MG VIII	85.599	3	691	AL	87.932	2	233
MG VI	85.622	3	692	FE XI	87.995*	0	181
AL VI	85.622	6	233	SI VII	88.008	3	233
AL V	85.662	1	233	MG	88.016	2	692
SI VII	85.698	2	231	FE XI	88.029*	0	181
AL VI	85.724	6	233	AL VII	88.033*	18	233
MG VIII	85.749*	4	691	NA VI	88.038	1	692
AL VI	85.764	8	233	AL	88.108	2	233
AL V	85.804	7	233	FE XI	88.167*	0	181
AL VI	85.817	7	233	AL VI	88.170*	20	233
NA VIII	85.826	2	691	NA VI	88.223	1	692
NA VIII	85.861	3	691	NA VI	88.246	2	692
AL V	85.865	2	233	NA VI	88.270	3	692
AL V	85.922	0	233	AL VI	88.273*	15	233
NA VIII	85.936	1	691	BE III	88.314*		596
AL VI	85.970	0	233	AL VI	88.325	2	233
NA VIII	85.992	3	691	NA VI	88.340	1	692
AL VI	86.020	3	233	AL VI	88.376*	15	233
MG VII	86.032	2	692	AL V	88.425	2	233
NA VIII	86.039*	5	691	NA VI	88.460	1	692
CR XIV	86.057*		178	AL VI	88.469	5	233
AL VI	86.070	3	233	AL V	88.539	8	233
AL VI	86.097	3	233	AL V	88.636	2	233
AL VI	86.147	4	233	MG VII	88.680*	6	692
FE XI	86.149*	0	181	AL V	88.688	4	233
CR XIV	86.164*		178, 361	NA VII	88.698	2	691
MG VIII	86.234	1	691	NA VII	88.747	3	691
AL	86.282	1	233	AL V	88.817	1	233
MG VIII	86.359	1	691	MG VI	88.827	2	692
AL	86.360	2	233	NA VII	88.865	4	691
NA VIII	86.381*	4	691	NA VII	88.914	2	691
AL	86.393	2	233	AL V	88.945	00	233
MG	86.417	2	692	MG VI	88.952	2	692
NA VIII	86.417*	5	691	FE XI	89.104*	2	181
AL	86.427	2	233	FE XI	89.185*	1	181
MG	86.440	2	692	MG	89.256	1	692
NA VIII	86.479*	6	691	MG VII	89.407	2	692
FE XI	86.513*	1	181	MG VII	89.448	2	692
NA VIII	86.530	1	691	NA VIII	89.759	2	691
NA VII	86.596*	4	691	FC XI	89.771*	0	181
NA VII	86.652*	5	691	NA VIII	89.818	3	691
AL VII	86.671	0	233	TI XII	89.841*		178

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NA VIII	89.948	4	691	MG	93.720	1	692
AL VI	90.200*	20	233	AL V	93.755	7	233
FE XI	90.205*	1	181	AL V	93.855	4	233
NA VII	90.252	4	691	AL V	93.880	1	233
MG	90.338	1	692	NA VIII	93.898	2	691
FE XI	90.345*	0	181	AL V	93.955	6	233
SI V	90.453*	4	231	AL V	93.981	2	233
NA VI	90.468	3	692	V XIII	93.994*		178
TI XII	90.508*		178	FE X	94.012*	4	182
NA VIII	90.536*	5	691	MG VII	94.043	4	692
TI XII	90.540*		178	TI XI	94.054*	3	180
AL VII	90.550	6	233	TI XI	94.086	0	180
AL V	90.630	5	233	AL V	94.089	1	233
AL V	90.646	2	233	AL V	94.117	2	233
AL V	90.701	4	233	AL V	94.160	2	233
MG VII	90.706	4	692	MG VII	94.174	3	692
AL VII	90.772	4	233	AL V	94.187	2	233
MG VII	90.815	3	692	MG VII	94.276	2	692
SI V	90.852*	4	231	NA VII	94.288*	6	691
AL VI	90.858*	12	233	AL V	94.321	0	233
MG VI	90.877*	6	692	AL V	94.394	0	233
AL V	90.914	4	233	NA VII	94.468*	7	691
TI XI	90.957	0	180	MG	94.721	1	692
AL V	90.982	1	233	SC XI	94.888*	6	17, 178
AL	91.023*	10	233	AL	94.970	3	233
NA VII	91.064	2	691	SC X	95.022	0	17
AL V	91.078	0	233	MG VII	95.027	4	692
NA VI	91.268	1	692	SC X	95.052	0	17
AL VI	91.332	10	233	SC X	95.09	0	17
SI VI	91.369	4	231	SC XI	95.117*	5	17, 178
MG IX	91.385	0	691	MG VII	95.139	1	692
AL VIII	91.487	1	233	MG VII	95.233	1	692
MG VII	91.573	1	692	MG VII	95.259	2	692
CR XIII	91.749*	2	180	NA VI	95.263	1	692
AL V	91.750	1	233	FE X	95.338*	1	182
CR XIII	91.792*	3	180	FE X	95.374*	3	182
SI VI	91.798	4	231	MG VI	95.385	4	692
CR XIII	91.855*	4	180	MG VI	95.421	4	692
NA VII	92.003*	5	691	AL VI	95.436	2	233
AL V	92.039	0	233	MG VI	95.483	5	692
MG VIII	92.123	1	691	NA	95.551	2	692
MG VII	92.256	3	692	MG V	95.556	1	692
AL VI	92.626*	15	233	AL	95.624	2	233
AL VI	92.636*	4	233	MG VI	95.637	3	692
NA VII	92.774	2	691	MG VI	95.675	3	692
NA VII	92.809	1	691	F VII	95.697*	0	171, 176
AL VI	92.875*	10	233	AL	95.720	4	233
NA VII	92.883	1	691	F VII	95.775*	1	171, 176
MG VII	92.898	2	692	MG V	95.803	2	692
MG VII	92.934	2	692	AL V	95.835	2	233
MG VI	92.964	1	692	MG V	95.909	1	692
AL VI	92.970*	5	233	NA VI	95.933	3	692
NA VII	92.976	4	691	AL VII	95.965	4	233
V XIII	93.025*		178	MG V	95.965	1	692
CA X	93.069	1	361	MG V	96.019	2	692
MG V	93.109	1	692	SI VI	96.020*	10	231
NA VIII	93.120	1	691	AL VI	96.071	0	233
FE VIII	93.217	3	365	MG V	96.085	1	692
NA VIII	93.242	2	691	FE X	96.122*	4	182
AL VII	93.269	0	233	AL V	96.150	1	233
AL VII	93.295	2	233	MG V	96.159	1	692
FE VIII	93.374	3	365	NA VI	96.196	1	692
NA VII	93.393*	4	691	AL VII	96.198	1	233
TI XI	93.396	0	180	MG VI	96.240	1	692
NA VII	93.434*	4	691	MG VI	96.256	2	692
NA VII	93.486*	5	691	MG VI	96.303	2	692
MG VI	93.493	3	692	NA VI	96.307	1	692
CA X	93.502	2	361	AL VII	96.319	0	233
AL VII	93.516	2	233	MG VI	96.388	1	692
AL VII	93.542	00	233	SI V	96.439*	15	231
TI XI	93.595*	2	180	AL VI	96.442	0	233
TI XI	93.621	1	180	NA VI	96.475	3	692
MG	93.650	2	692	SI VI	96.488*	10	231
AL V	93.654	0	233	MG VI	96.670	2	692
NA VIII	93.670	4	691	AL VI	96.673	1	233

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG VI	96.704	2	692	SI VI	99.966*	10	231
FE X	96.788*	2	182	MN X	100.173*	1	181
MG VI	96.797	1	692	MG	100.196	1	692
MG VI	96.857	1	692	BE III	100.254*	1	168, 596
NA VII	96.872	2	691	MG	100.374	1	692
NA VII	96.922	3	691	MG	100.421	1	692
MG VI	96.939	4	692	NA VI	100.469	2	692
MG VI	96.973	4	692	NA VI	100.519	3	692
FE X	97.122*	3	182	MG	100.545	2	692
SI V	97.143*	10	231	MN X	100.585*	2	181, 358
MG VI	97.251	5	692	NA VI	100.590	1	692
MG VI	97.278	5	692	MG	100.597	2	692
MG V	97.391	1	692	AL VI	100.616*	12	233
MG V	97.439	2	692	AL VI	100.639	2	233
MG VIII	97.465	2	691	SI VI	100.640*	10	231
MG V	97.563	1	692	CA IX	100.645	1	535
FE X	97.591*	0	182	MG VI	100.702	5	692
MG V	97.606	2	692	NA VII	100.718	2	691
V XII	97.642	0	180	MN X	100.787*	1	181
MG V	97.686	1	692	AL VI	100.894	4	233
SC XI	97.777	3	17, 361	MG VI	100.904	4	692
NA VII	97.790	1	691	AL VI	100.919	4	233
SC XI	97.830	4	17, 361	CA IX	100.958	2	535
FE X	97.838*	0	182	SI VI	100.963	1	231
V XII	97.938*	2	180	AL VI	101.027	3	233
NA VII	98.016	1	691	MG	101.322	1	692
MG VII	98.032	3	692	TI X	101.355*	2	180, 487
NA VII	98.080	3	691	MG VI	101.508	2	692
SC	98.180	2	17	MG VI	101.556	3	692
NA VII	98.188	3	691	MG V	101.671	3	692
SI V	98.209	2	231	MG V	101.782	3	692
MG V	98.235	1	692	NA VII	101.785	3	691
MG V	98.271	2	692	MN X	101.808*	0	181
SC	98.323	3	17	NA VII	101.816	3	691
FE VIII	98.345	4	365	MG	101.845	1	692
NA VII	98.378	3	691	MN X	101.854*	0	181
NA VII	98.394	3	691	SC	101.918	2	17
MG V	98.406	1	692	MG VII	101.956	2	692
MG V	98.444	1	692	CA X	101.977	2	361
MG VI	98.508	3	692	SC X	101.978*	6	17
FE VIII	98.522	4	365	MN X	102.030*	0	181
V XII	98.630*	3	180	MG V	102.079	2	692
MG V	98.636	2	692	TI X	102.107*	2	180, 487
AL VI	98.684	0	233	MG VII	102.138	1	692
F VIII	98.707*	0	164	MG VI	102.189*	5	692
F VIII	98.799*	0	164	MG VI	102.239*	5	692
MG V	98.805	2	692	SC	102.251	3	17
MG V	98.872	1	692	NA VII	102.390	1	691
SC	98.889	3	17	MG VII	102.471	3	692
MG V	98.983	4	692	SC	102.835	2	17
MG VI	99.025	2	692	SI VI	102.846	1	231
F VI	99.044	0	171, 176	MG	102.906	3	692
MG V	99.067	2	692	AL VI	103.062	0	233
SI VI	99.095*	10	231	NA VI	103.078	1	692
F VI	99.105	0	171, 176	SI VI	103.163	2	231
AL V	99.200	1	233	NA VI	103.210	2	692
F VI	99.203	0	171, 176	MN X	103.269*	3	181, 358
MG VI	99.279	4	692	NA VII	103.354	1	691
AL V	99.290	10	233	MN X	103.521*	2	181, 358
MG VI	99.333	4	692	FE IX	103.580*	8	366
NA VII	99.421	4	691	NA VII	103.779	3	691
AL V	99.427	4	233	AL V	103.805*	10	233
SI VI	99.460*	15	231	AL V	103.881*	14	233
V XIII	99.523*		178	NA VII	103.891	4	691
MG	99.535	1	692	MG V	103.904	4	692
AL V	99.544	2	233	AL VI	103.940	6	233
NA VII	99.556	4	691	MG V	103.947	3	692
SI VI	99.598*	10	231	AL V	103.990	4	233
MG	99.610	2	692	NA VII	104.000	2	691
AL V	99.616	7	233	NA VII	104.036	2	691
V XIII	99.625*		178	AL VI	104.047*	20	233
MG VI	99.719	3	692	AL V	104.073	10	233
MG VI	99.738	3	692	MG V	104.100	2	692
AL V	99.769	0	233	AL V	104.121	12	233
MG V	99.788	1	692	CR VII	104.13 *	1	364

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG V	104.140	2	692	MG VI	108.338	1	692
SC XI	104.142	0	17	NA VII	108.373	1	691
AL V	104.180*	14	233	AL V	108.385	10	233
MG V	104.182	1	692	AL V	108.404	5	233
MG V	104.214	1	692	AL V	108.446	3	233
SC XI	104.219	0	17	AL V	108.462	10	233
MN X	104.310*	0	181	AL V	108.526	0	233
AL VI	104.344*	16	233	NA VI	108.555	4	692
AL V	104.363	10	233	AL V	108.616	1	233
MG V	104.432	2	692	AL V	108.707	6	233
SC XI	104.435*	5	17, 178, 361	NA VII	108.733	2	691
AL V	104.447	10	233	NA VII	108.829	1	691
AL VI	104.466	8	233	AL V	108.851	1	233
AL V	104.495	8	233	AL IV	108.913	1	233
MG VI	104.519*	3	692	F VI	108.975	1	171, 176
SC	104.592	3	17	AL V	109.021	3	233
MG VI	104.597*	5	692	F VI	109.040	1	171, 176
MN X	104.608*	1	181	SC X	109.072	1	17
MN X	104.806*	0	181	TI XII	109.121*	1	178
O VI	104.811	2	35, 168	CU	109.129	10	356
NA VII	104.955	3	691	SC X	109.202	0	17
MG	105.066	5	692	CU	109.215	12	356
NA VII	105.111	3	691	SC X	109.227	1	17
CR VII	105.14 *	4	364	AL VI	109.284	7	233
SC XI	105.140*	6	17, 178, 361	SC X	109.285	3	17
MG VII	105.159	1	692	SC X	109.307	00	17
SC XI	105.170*	2	17	NA VII	109.362	1	691
NA VII	105.205	2	691	MG	109.420	1	692
FE IX	105.236*	6	366	AL VI	109.514*	20	233
MN IX	105.256*	0	182	NA VII	109.519	2	691
NA VII	105.354	4	691	SC	109.609	2	17
MG VI	105.410	2	692	SC X	109.765*	4	17
MG VI	105.502	3	692	MN IX	109.783*	5	182
SC	105.578	3	17	SC X	109.805*	2	17
MG	105.778	1	692	MG V	109.812	2	692
MG	105.830	1	692	AL VI	109.843*	12	233
NA VI	106.040	3	692	NA VI	109.896*	5	692
NA VI	106.077	3	692	SC	109.897	3	17
NA VI	106.125	4	692	AL VI	109.974	4	233
NA V	106.302	1	692	MG V	110.029	1	692
MG	106.453	2	692	O VI	110.220	1	65, 168
NA V	106.490	1	692	NE VI	110.410	2	544
MG VII	106.524	2	692	SC	110.498	3	17
MG VII	106.707	1	692	NA VII	110.647	2	691
V XII	106.781*	2	180	CU	110.741	10	356
V XII	106.820*	3	180	NA VI	110.750	2	692
V XII	106.885*	4	180	NA VII	110.778	3	691
NA VI	107.014	2	692	MG V	110.809	2	692
NA VII	107.061	3	691	NA VII	110.817	2	691
NA VI	107.227*	3	692	MG V	110.859	4	692
NA VI	107.288*	4	692	NA V	110.878	2	692
NA VI	107.535*	3	692	SC	110.920	2	17
NA VI	107.553*	3	692	MG V	110.939	2	692
NA VI	107.608*	4	692	CA X	110.962	3	361
AL VI	107.620*	14	233	MG V	111.031	3	692
MG V	107.661	2	692	MG V	111.091	3	692
NA VI	107.683*	5	692	NE VI	111.142	1	544
AL V	107.711	6	233	MG VI	111.160	3	692
NA VI	107.742	2	692	AL IV	111.196	2	233
MG VI	107.820	4	692	CA X	111.197	2	361
FE VIII	107.872*	8	365	MG V	111.199	4	692
SC	107.929	2	17	NA VII	111.211	3	691
NA VI	107.934	2	692	MG V	111.247	2	692
AL V	107.945*	20	233	MN IX	111.262*	4	182
AL V	108.004	5	233	NA VII	111.390	2	691
LI III	108.01 *		185	SC	111.402	2	17
MG VI	108.015	3	692	MG V	111.419	2	692
AL V	108.057	12	233	MG V	111.467	2	692
FE VIII	108.083*	8	365	MG V	111.496	2	692
TI XII	108.100*		178	MN IX	111.500*	2	182
AL V	108.112	12	233	NA V	111.512	1	692
MG VI	108.114	2	692	MG VI	111.552*	5	692
MG VI	108.148	1	692	AL IV	111.589	3	233
NA VII	108.193	2	691	SC	111.711	2	17
AL V	108.315	4	233	NA VI	111.725	1	65, 692

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG VI	111.746*	4	692	AL IV	116.464	5	233
CU	111.756	10	356	TI XII	116.496*		178
AL IV	111.781	1	233	TI XII	116.597*		178
MG VI	111.864*	4	692	SC	116.770	2	17
MN VII	111.889*	0	365	AL IV	116.921	3	233
NA V	112.009	3	692	MG VI	116.968*	5	692
K IX	112.113*	2	361	MG VI	117.226	3	692
SC	112.210	3	17	AL IV	117.410	0	233
MN VII	112.260	1	365	CR IX	117.435*	1	181
MN IX	112.415*	5	182, 359	NA VI	117.491	4	692
NA VI	112.448	3	692	MG VI	117.527	1	692
TE	112.45	1	28	NA VI	117.609	3	692
CU	112.532	12	356	NA VI	117.699	3	692
SC	112.544	3	17	KR IX	117.710*	20	487
K IX	112.581*	4	361	MN VII	117.808	3	365
SC	112.677	2	17	SI V	117.860*	20	231
F VII	112.935*	4	171, 176	CR IX	117.942*	3	181
NA VI	112.950	4	692	NA V	117.990	4	692
F VII	112.976*	3	171, 176	MN VII	117.992	5	365
SC	113.014	3	17	SC	118.048	2	17
MN IX	113.080*	2	182	MG V	118.083	5	692
NA VI	113.125	4	692	CR IX	118.165*	1	181
AL	113.140	1	233	CA X	118.174*	2	361
MG VI	113.189*	5	692	CA X	118.223*	4	361
MG V	113.217	2	692	SC	118.297	3	17
AL VI	113.314	1	233	AL V	118.500	10	233
MG V	113.414	2	692	TE	118.51	2	28
AL VI	113.437	3	233	SC	118.552	4	17
MG V	113.518	1	692	MG IV	118.603	1	692
AL VI	113.623	1	233	SC	118.616	3	17
MN IX	113.627*	3	182	MG V	118.810	5	692
MG V	113.703	4	692	SI V	118.968*	20	231
AL VI	113.756	1	233	AL V	118.984	6	233
MG V	113.823	1	692	NA VII	119.014	1	691
F VI	113.840	0	171, 176	SC X	119.049*	4	17
NE VI	113.870	1	544	LI II	119.26 *		185
LI III	113.93 *	0	185	CR IX	119.269*	2	181
MG V	113.934	3	692	CR IX	119.320*	1	181
SC	113.937	2	17	MG V	119.401	4	692
TI XI	113.939	0	180	SC IX	119.444*	4	17
MG V	113.990	3	692	MG V	119.447	4	692
MN IX	114.023*	0	182	CR IX	119.569*	0	181
MG V	114.029	2	692	NA VI	119.684	3	692
MG V	114.059	4	692	A VIII	120.093	2	549
MG V	114.199	3	692	F VI	120.116	1	171, 176
MN VII	114.216	1	365	A VIII	120.157	1	549
MG V	114.226	3	692	SC IX	120.236*	5	17
TI XI	114.271	1	180	MG IV	120.283	1	692
MG V	114.285	3	692	O VII	120.331	00	164
AL IV	114.313	0	233	CU	120.594	15	356
MG V	114.324	3	692	NA VI	120.931	1	692
MN VII	114.393	2	365	NA VI	120.973	2	692
MN IX	114.472*	0	182	NA VI	121.004	1	692
CA VIII	114.566	2	547	SC	121.022	2	17
NA VI	114.666	4	692	MG VI	121.025*	5	692
AL IV	114.737	1	233	NE VI	121.140	5	544
NA V	114.738	1	692	MG VI	121.290	3	692
MG V	114.785	6	692	CR IX	121.293*	3	181
KR IX	114.948*	75	487	MG V	121.644	6	692
TE	114.97	1	28	NA VI	121.773	4	692
TI XI	115.011*	2	180	CR IX	121.781*	2	181
MG V	115.013	6	692	NA VI	121.913	3	692
MG V	115.093	4	692	MG V	121.922	5	692
CA VIII	115.107	4	547	NA VII	122.018	3	691
TE	115.18	1	28	MG V	122.034	4	692
MG V	115.399	4	692	F VI	122.122	1	171, 176
MG V	115.537	4	692	MN VIII	122.168*	15	366
TE	115.62	1	28	F VI	122.169	0	171, 176
NA VI	115.729	2	692	F VI	122.200	2	171, 176
KR IX	115.741*	100	487	F VI	122.251	0	171, 176
O VI	115.824	4	168	NA VII	122.252	1	692
F VI	116.094	0	171, 176	NA VII	122.352	1	691
CU	116.099	10	356	NE V	122.520	20	544
SC	116.158	3	17	A VIII	122.624		549
O VI	116.419	2	65, 168	SC	122.676	4	17

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NE VI	122.686*	10	544	F VII	127.796*	5	171, 176
CR IX	122.720*	1	181	NA VI	127.837*	4	692
CR IX	122.964*	1	181	SC	127.844	2	17
CA X	122.995	2	361	CU	128.012	25	356
A VIII	123.033	1	549	NA V	128.025	4	692
F VI	123.051	0	171, 176	NA V	128.051	4	692
F VI	123.090	0	171, 176	NA	128.112	3	692
NA VI	123.134	4	692	CU	128.123	25	356
F VI	123.175	1	171, 176	SC XI	128.247*	5	17, 178
SC	123.223	2	17	CU	128.255	30	356
CR IX	123.226*	00	181	V VI	128.382*	2	364
MG IV	123.273	2	692	O VII	128.412*	00	164
MG IV	123.377	1	692	O VII	128.500*	0	164
MG IV	123.500	3	692	CU	128.523	15	356
MG VI	123.590	1	692	NA VI	129.040	2	692
CA X	123.733*	5	361	CA IX	129.197	3	535
NA VI	123.744	4	692	CU	129.398	10	356
F V	123.774	1	172, 176	CA IX	129.425	6	535
MN VII	123.799*	10	365	CA IX	129.445	1	535
NA VI	123.868	3	692	SC	129.454	2	17
NA VI	123.929*	5	692	TF	129.49	3	28
NA VI	123.970*	2	692	CU	129.567	40	356
MN VII	124.005*	15	365, 366	V VI	129.574*	4	364
AL IV	124.034*	8	693	CU	129.697	20	356
NA VI	124.059*	4	692	MO IV	129.710	2	692
NA VI	124.153*	4	692	AL IV	129.729*	12	693
CR VIII	124.184*	2	182	O VI	129.786	5	65, 168, 488
F VI	124.387	3	171, 176	MG IV	129.855	4	692
MG IV	124.414	2	692	O VI	129.872	6	168, 488
F VI	124.440	0	171, 176	CU	129.890	10	356
F VI	124.474	0	171, 176	CA IX	129.934*	10	535
MG IV	124.538	2	692	MG IV	129.969	3	692
AL IV	124.543*	6	693	CA IX	129.970	1	535
O V	124.598	3	65, 168	CR VIII	129.998*	7	182
CU	124.630	20	356	MG IV	130.085	2	692
MG IV	124.759	2	692	MG IV	130.118	2	692
MG IV	124.870	2	692	SC	130.213	2	17
MG IV	124.990	2	692	MG IV	130.243	1	692
NA V	125.178	4	692	MG IV	130.294	2	692
MG VI	125.206	3	692	SC	130.304	2	17
NA V	125.216	4	65, 692	MG IV	130.350	3	692
NA V	125.286	5	65, 692	AL V	130.413*	20	233
V IX	125.420*	12	358	CU	130.438	15	356
NA V	125.428	3	692	MG IV	130.630	1	692
MG VI	125.459	3	692	SC	130.642	3	17
NA V	125.461	3	692	CU	130.671	18	356
AL V	125.525*	15	233	NA V	130.680	2	692
MG V	125.600	4	692	NA V	130.723	1	692
CR VIII	125.728*	1	182	CU	130.739	20	356
MG IV	125.811	1	692	AL V	130.848*	20	233
NA V	125.899	2	692	SC	130.886	2	17
TI XI	125.960*	2	180	FE VIII	130.939*	8	365
TI XI	125.997*	3	180	SC	130.960	3	17
TI XI	126.061*	4	180	AL V	131.003*	20	233
AL V	126.065*	15	233	CU	131.015	15	356
V IX	126.152*	8	358	SC	131.068	3	17
NA V	126.210	1	692	FE VIII	131.242*	9	365
MG V	126.280	4	692	NA V	131.345	3	692
CU	126.298	20	356	NA V	131.413	2	692
MG VI	126.420	1	692	AL V	131.441*	20	233
MG VI	126.488	1	692	CU	131.533	15	356
MG V	126.544	2	692	CU	131.590	35	356
NA V	126.557	2	65, 692	NA V	131.635	3	692
V IX	126.732*	5	358	CR VIII	131.638*	6	182
V IX	126.765*	5	358	K IX	131.646*	6	361
V IX	126.810*	0	358	AL IV	131.652	3	693
NA VII	126.814	1	691	O V	131.807	1	65, 168
F VI	126.923*	5	171, 176	K IX	131.896*	4	361
V IX	127.068*	10	358	MG V	132.171	6	692
CU	127.105	20	356	NA IV	132.211	1	65, 692, 693
SC XI	127.156*	5	17, 178	F V	132.310	1	172, 176
NA V	127.444	4	692	O VI	132.312	2	65, 168
CU	127.444	25	356	CR VIII	132.321*	2	182
NA V	127.473	4	65, 692	F V	132.453	2	172, 176
F VII	127.653*	4	171, 176	F V	132.484	3	172, 176

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MG V	132.485	5	692	MG V	137.748*	7	692
F V	132.511	3	172, 176	SC	137.810	3	17
CU	132.528	12	356	SC	137.870	2	17
MG V	132.623	3	692	MG V	137.880*	6	692
AL V	132.630	10	233	A VIII	137.926*	3	549
F V	132.699	1	172, 176	MG IV	137.966	1	692
SC	132.714	4	17	O V	138.030	2	65, 168
MG IV	132.815	3	692	O V	138.054	3	65, 168
F V	132.819	2	172, 176	CU	138.074*	75	356
CU	132.848	50	356	O V	138.108	4	65, 168
O V	132.851	2	65, 168	CU	138.115*	50	356
AL V	133.013	4	233	F V	138.181	1	176
NA V	133.162	5	692	MG IV	138.262	3	692
MG IV	133.202	3	692	SC XI	138.283*	5	17, 178
F V	133.208	1	172, 176	SC XI	138.380*	5	17, 178, 361
AL V	133.242	2	233	MG IV	138.394	2	692
NA V	133.388	4	692	NE VI	138.397	3	544
CU	133.389	40	356	A VIII	138.440*	5	549
CR VIII	133.395*	6	182	NE VI	138.630	3	544
O V	133.521	3	65, 168	SC	138.662	2	17
F V	133.662	1	172, 176	NA VI	138.693	2	692
NA VI	133.825	2	692	MG IV	138.693	1	692
SC	133.882	3	17	NA V	138.917	3	692
CU	133.916	40	356	BR VIII	138.927*	15	363
N V	133.941	1	129	O V	139.025	5	65, 168
NA VI	134.021	1	692	V VIII	139.188	00	181
CR VIII	134.076*	3	182	V VIII	139.730*	1	181
NA V	134.272	2	65, 692	F VI	139.758*	5	171, 176
F V	134.407	4	172, 176	BR VIII	139.792*	15	363
NA VI	134.532	3	692	F VI	139.800*	6	171, 176
F V	134.539*	5	172, 176	NA IV	139.867	2	691, 692, 693
CU	134.550	60	356	F VI	139.900*	7	171, 176
F VII	134.703*	1	171, 176	MG IV	139.995	1	692
SC X	134.767*	3	17, 535	CU	140.042	50	356
SC	134.794	3	17	MG IV	140.120	4	693
F VII	134.882*	2	171, 176	MG IV	140.176	4	693
CR VIII	134.942*	4	182	N V	140.345	0	65, 168
SC	134.971	2	17	F V	140.414	1	172, 176
LI III	135.02 *	2	185	MG IV	140.425	2	693
CU	135.025	20	356	V VIII	140.451*	3	181
SC X	135.128*	4	17, 535	MG IV	140.475	2	693
MN VII	135.177*	20	365	MG IV	140.523	2	693
CR VIII	135.185*	1	182	MG IV	140.564	2	693
MN VII	135.393*	25	365	V VIII	140.665*	1	181
F VI	135.397	3	171, 176	NE V	140.757	15	544
MN VII	135.425	2	365	NE V	140.791	15	544
O V	135.523	5	65, 168	NA VI	140.833	2	692
CA	135.597	1	192	MG IV	140.867	4	693
AL	135.620	1	693	MG IV	140.918	2	693
MG V	135.638	2	692	V VIII	140.934	00	181
V VIII	135.751*	1	181	MO VII	140.955*	150	132
NA V	135.791	3	65, 692	MG IV	140.966	4	693
CU	135.846	30	356	TE	140.99	4	28
NA V	135.854	3	65, 692	F VI	141.154	2	171, 176
CR VIII	135.892*	0	182	CU	141.694	30	356
SC X	135.921*	5	17, 535	V VIII	141.864*	1	181
MG V	135.953	1	692	TE	141.92	2	28
V VIII	136.078	0	181	V VIII	141.924	0	181
NE VI	136.089	4	544	CU	142.158	20	356
AL V	136.249	1	233	NA IV	142.232	2	65, 692, 693
N V	136.402	3	129	V VIII	142.247	0	181
NA IV	136.550	1	65, 692, 693	F V	142.422	1	176
AL V	136.668	2	233	NE V	142.441	10	544
MO VII	136.675*	50	132	TE	142.49	1	28
CU	136.724	45	356	NE V	142.503	10	544
NA IV	136.852	1	692, 693	NE V	142.724	15	544
V VIII	136.867	0	181	SC	142.836	2	17
F V	136.902	3	172, 176	CU	142.892	60	356
CU	136.936	40	356	MG V	142.933	6	692
V VIII	137.194	00	181	CU	143.033	50	356
MG V	137.234*	6	692	SC	143.120	2	17
TE	137.27	2	28	CA VIII	143.270	5	192, 547
V VIII	137.316	0	181	NE V	143.273	10	544
MG V	137.414*	8	692	SC	143.324	2	17
V VIII	137.491	0	181	NE V	143.344	15	544

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	143.393	2	17	K IX	147.943*	8	361
CU	143.634	15	356	F V	147.946	4	172, 176
F V	143.897	1	172, 176	K IX	147.973*	1	361
CA VIII	144.120*	8	192, 547	F V	148.002*	5	172, 176
CA VIII	144.160*	3	547	SC IX	148.103	2	17
NA V	144.330	2	692	F V	148.108	1	172, 176
NA V	144.546	2	692	MG IV	148.121	2	693
F V	144.637	1	176	N V	148.188	2	129
V VIII	144.653*	3	181	NI IX	148.215	3	128
NA V	144.661	1	692, 693	SC	148.287	2	17
F V	144.673	1	176	NA V	148.642	4	692
CU	144.728	25	356	F VI	148.653	4	171, 176
O V	144.802	1	65, 168	NI IX	148.688	2	128
TE	144.94	2	28	A VIII	148.725	2	549
SC	145.035	2	17	CR VII	148.736*	15	364
F V	145.177	1	172, 176	SC	148.805	2	17
F V	145.392	2	172, 176	CU	148.846*	80	356
F VI	145.462	1	171, 176	NA V	148.856	3	692
MG V	145.485	5	692	V VII	148.903	3	182
F VI	145.489	1	171, 176	NA V	149.001	2	692
V VIII	145.507*	2	181	O V	149.078	2	65, 168
F V	145.547	3	172, 176	A VIII	149.333	3	549
F VI	145.585	1	171, 176	MO VII	149.639*	75	132
F VI	145.630	1	171, 176	CU	149.703*	80	356
CU	145.651	35	356	TI VIII	150.037*	20	358
CU	145.671	10	356	O VI	150.088*	10	168, 488
F VI	145.691	3	171, 176	SC IX	150.09 *	5	17
K IX	145.702*	5	361	O VI	150.124*	9	168, 488
K IX	145.753*	5	361	N V	150.127	3	129
NA IV	146.060	2	65, 692, 693	NI IX	150.247	1	128
NI IX	146.068	6	128	NA IV	150.297	4	65, 693
MG V	146.083	6	692	NI IX	150.459	0	128
NA IV	146.298	1	692, 693	NA IV	150.545	3	65, 693
O V	146.345	1	65, 168	V VII	150.625	2	182
MG V	146.464	5	692	NA IV	150.647	2	65, 693
MG IV	146.526	4	693	CU	150.662	26	356
CR VII	146.532*	25	364	NA IV	150.695	2	65, 693
F VI	146.576*	2	171, 176	NI IX	150.844*	20	128
F VI	146.613*	3	171, 176	TI VIII	150.864*	20	358
V VIII	146.613*	1	181	SC X	150.900	3	17, 535
TE	146.62	2	28	SC X	150.939*	4	17, 535
MG V	146.621	4	692	NA V	150.968	2	65, 692, 693
SC IX	146.628	3	17	SC X	150.995*	5	17, 535
CU	146.669*	100	356	NA V	151.127	4	65, 692
F VI	146.676*	4	171, 176	NA V	151.188	1	692
F VI	146.718*	2	171, 176	NA V	151.303	1	65, 692
N V	146.769	0	129	SC IX	151.401	4	17
NI IX	146.777	4	128	NE V	151.424	12	544
V VIII	146.789*	1	181	CU	151.429	70	356
SC	146.825	3	17	O V	151.449	4	65, 168
MG IV	146.836	3	693	O V	151.481	5	65, 168, 362
MG IV	146.949*	4	693	TI VIII	151.485*	10	358
SC IX	146.954	4	17	TI VIII	151.527	3	358
MG IV	147.006*	4	693	O V	151.548	6	65, 168, 362
MG IV	147.052*	4	693	A VII	151.698	1	549
N V	147.121	2	168	NE IV	151.817	15	544
V VIII	147.126	0	181	CA X	151.832	3	178, 361, 762
NE V	147.132	15	544	TI VIII	151.863*	8	358
NI IX	147.154	6	128	A VII	151.876	2	549
K IX	147.157*	6	361	TI VIII	151.915	1	358
MG IV	147.252	3	693	NI IX	152.043	1	128
O V	147.261	3	65, 168	MG V	152.149	3	692
SC IX	147.310	3	17	TI VIII	152.164*	20	358
MG IV	147.321	4	693	NE IV	152.231	15	544
SC	147.346	2	17	A VII	152.259	3	549
NI IX	147.370	0	128	NI IX	152.316	7	128
MG IV	147.405	5	693	F V	152.339	2	172, 176
N V	147.424	2	65, 129	CU	152.383	10	356
NI IX	147.490	0	128	MG V	152.384	1	692
MG IV	147.535	5	693	F V	152.391	3	172, 176
CU	147.544	20	356	F V	152.511	4	172, 176
MG IV	147.746*	4	693	MG V	152.527	1	692
SC IX	147.834	2	17	F V	152.563	2	172, 176
NI IX	147.861	0	128	SC	152.681	2	17
MG IV	147.887	1	693	NI IX	152.700	0	128

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI- IX	152.859	2	128	MG IV	160.230	6	693
CU	152.929	15	356	SC	160.337	2	17
NI IX	152.975	6	128	SC	160.387	2	17
CA X	153.012*	6	178, 361, 762	NE IV	160.471	10	544
N V	153.124	1	129	CU	160.530	15	356
SC	153.172	3	17	SC	160.637	3	17
N V	153.180	1	129	SC	160.725	3	17
NI IX	153.212	1	128	CU	160.763	50	356
NI IX	153.296	1	128	MG IV	160.804	4	693
NI IX	153.645	1	128	TI VIII	160.914	0	358
F VI	153.678	2	171, 176	SC	160.949	2	17
F VI	153.741*	3	171, 176	V VII	161.122*	6	182
F VI	153.880*	4	171, 176	SC	161.162	2	17
O V	153.948	3	65, 168	F VI	161.174	1	171, 176
SC	154.006	2	17	F VI	161.257	1	171, 176
TE	154.10	4	28	TI VIII	161.293	4	358
NI IX	154.174*	12	128	F VI	161.308	3	171, 176
SC	154.360	2	17	F VI	161.341	1	171, 176
F VI	154.506	3	171, 176	SC VIII	161.353	3	17
SC	154.643	3	17	F VI	161.414	1	171, 176
CU	154.785	40	356	F VI	161.477	1	171, 176
SC	154.894	2	17	CU	161.551	30	356
NA IV	155.090	1	65, 693	AL IV	161.686*	14	65, 195, 693
CU	155.136	40	356	CU	161.748	25	356
NA IV	155.248	2	65, 693	V VII	161.836*	4	182
NA IV	155.445	3	65, 693	SC	161.908	2	17
NA IV	155.515	4	65, 693	CA IX	161.979	2	535
TI VIII	155.673*	10	358	F V	162.013	2	172, 176
NA IV	155.693	2	65, 693	TI VIII	162.019	1	358
K VIII	155.715	5	535	F V	162.053	3	172, 176
CU	155.718	15	356	CU	162.078	20	356
K VI	155.950	1	192	F V	162.082	3	172, 176
K VIII	155.985	4	535	F V	162.121	2	172, 176
CU	156.153	20	356	F V	162.172	3	172, 176
O V	156.158	2	65, 168	SC	162.172	2	17
O V	156.225	3	65, 168	F V	162.215	3	172, 176
F VI	156.247*	6	171, 176	SC	162.236	2	17
TI VIII	156.442	5	358	F V	162.270	4	172, 176
K VI	156.511	2	192	MN VII	162.349*	80	365
NA IV	156.536*	8	65, 693	CA IX	162.371	4	535
K VIII	156.543	3	535	TI VIII	162.401	0	358
CU	156.557	20	356	NA IV	162.445*	8	65, 693
K VIII	156.566	1	535	O V	162.494	4	65, 168
V VII	156.608*	7	182	N V	162.562	4	65, 168, 488
NA IV	156.780	5	65, 693	CU	162.651	10	356
CU	156.847	20	356	MN VII	162.667*	60	365
NA IV	156.887	3	65, 693	MN VII	162.707*	30	365
NA IV	157.090	4	65, 693	CU	162.926	20	356
TI VIII	157.107	3	358	SC	163.006	3	17
NA V	157.209	3	692	V VII	163.135*	2	182
CU	157.359	40	356	F VI	163.138	2	171, 176
K VI	157.433	1	192	TI V	163.140	5	366
TI VIII	157.470	2	358	V VII	163.182*	4	182
F V	157.515	1	172, 176	NA IV	163.187	6	65, 693
NA IV	157.599	1	65, 693	CA IX	163.229	6	535
NA IV	157.782	3	65, 693	CU	163.271	30	356
CU	158.080	15	356	SC	163.416	4	17
N V	158.091	0	65, 168	F V	163.456*	3	172, 176
V VII	158.467*	6	182	F V	163.501*	4	172, 176
F V	158.537	4	172, 176	F V	163.558*	5	172, 176
O IV	158.606	1	65, 168	NE IV	163.562	12	544
NE IV	158.646	15	544	F V	163.596*	2	172, 176
CU	158.702	20	356	CU	163.598	25	356
O V	158.813	1	65, 168	NA V	163.616	3	692
NE IV	158.822	15	544	NA IV	163.840	4	65, 693
A VIII	158.923*	8	549	NA V	163.930	2	65, 692
O V	158.926	2	65, 168	F VI	164.015	1	171, 176
CU	159.072	10	356	NE V	164.023	10	544
A VIII	159.175*	5	549	NE V	164.145	10	544
TE	159.19	1	28	TI VII	164.172*	3	181
O V	159.343	4	65, 168	O V	164.178	2	65, 168
O V	159.380	4	65, 168	CU	164.259	20	356
CU	159.462	10	356	NE V	164.294	8	544
V VII	159.855	3	182	V VII	164.302	1	182
AL IV	160.073*	16	65, 168, 693	MG III	164.384	2	693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TI V	164.450	6	366	CU	169.488	15	356
TI VII	164.474	1	181	F IV	169.661	2	173, 176
V VII	164.523	0	182	MG III	169.746	1	693
O V	164.578	5	65, 168	F IV	169.748	2	173, 176
F IV	164.612	2	173, 176	SC VIII	169.759	4	17
O V	164.628	4	65, 168	CU	169.765	15	356
O V	164.656	6	65, 168	F IV	169.790	3	173, 176
CU	164.675	15	356	F IV	169.839	3	173, 176
O V	164.710	4	65, 168	CU	170.007	15	356
SC VIII	164.772*	3	17, 360	NI VIII	170.17	3	3
NA IV	164.841	4	65, 693	Nb VI	170.180*	100	132
MG III	164.954	2	693	F IV	170.187	2	173, 176
NB VI	164.977*	75	132	O V	170.218	6	65, 168
O V	164.986	2	65, 168	K IV	170.227	1	192
CU	165.127	30	356	NI VIII	170.27	1	3
SC VIII	165.395*	3	17, 360	TI VII	170.357*	5	181, 358
TI VII	165.404	2	181	NI VIII	170.52	5	3
CU	165.481	25	356	TI VII	170.558	2	181
SC VIII	165.654*	4	17, 360	CU	170.645	15	356
TI VII	165.713	1	181	MG III	170.802*	5	693
TI VII	165.836	1	181	NA V	170.923	1	65, 692
F V	165.903*	9	172, 176	TI VII	170.936	1	181
SC VIII	166.022*	3	17, 360	F IV	171.066	3	173, 176
TI VII	166.090	1	181	O IV	171.071	2	65, 168
O V	166.152	4	65, 168	CU	171.074	15	356
K IV	166.163	0	192	NA V	171.076	1	692
F V	166.177*	10	172, 176	NE VI	171.114	5	544
O V	166.234	5	65, 168	O IV	171.121	2	65, 168
K IV	166.246	1	192	NE VI	171.212	2	544
CU	166.308	12	356	CU	171.215	20	356
SC VIII	166.317*	3	17, 360	F V	171.241	1	172, 176
F IV	166.444	2	173, 176	F V	171.302	2	172, 176
F IV	166.499	2	173, 176	S VI	171.327	00	598
CU	166.645	10	356	MG III	171.395	4	693
N V	166.865	1	65, 168	SC	171.530	2	17
SC VIII	166.916*	3	17, 360	LI II	171.582*		168, 488, 596
CA X	166.945*	8	178, 361, 762	MG IV	171.653*	8	693
N V	166.947	2	65, 168	TI VII	171.883*	3	181
SC	166.957	2	17	TI VII	171.949*	2	181
CA X	167.034*	10	178, 361, 762	SE VII	171.965*	25	363
NI VIII	167.07	3	3	CU	172.036	40	356
NI VIII	167.35	1	3	NI VIII	172.10	2	3
CU	167.392	10	356	O V	172.168*	12	65, 168, 488
NE V	167.483	15	544	MG IV	172.306*	7	693
TE	167.50	1	28	NI VIII	172.32	1	3
NA V	167.510	1	692	TI VII	172.350*	2	181
NE V	167.670	25	544	NE IV	172.492	40	488, 544
F V	167.858	1	172, 176	NE IV	172.525	50	488, 544
NI VIII	167.97	2	3	NE IV	172.620	80	488, 544
O V	167.991	8	65, 168, 488	TE	172.65	2	28
O V	168.042	4	65, 168, 488	NI VIII	172.67	2	3
MO VIII	168.050	100	132	SE VII	172.920*	35	363
O V	168.077	4	65, 168, 488	NI VIII	172.93	1	3
NI VIII	168.08	1	3	O VI	172.935*	12	65, 168, 488
NA IV	168.084*	10	65, 693	F V	173.020	1	172, 176
CU	168.111	15	356	O VI	173.082*	13	65, 168, 488
SC XI	168.396	4	17, 178	F VI	173.145	1	171, 176
NA IV	168.409*	8	65, 693	CU	173.193	10	356
CU	168.423	15	356	NI VIII	173.41	8	3
F IV	168.430	2	173, 176	SC	173.771	3	17
NA IV	168.544	5	65, 693	SC	173.858	4	17
N V	168.559	1	129	O IV	173.917	2	65, 168
NI VIII	168.58	4	3	NE V	173.932*	50	488, 544
N V	168.618	1	129	NI VIII	173.95	2	3
TI VII	168.653	2	181	CU	173.990	10	356
NI VIII	168.87	2	3	CL VII	174.035	3	546
CU	168.881	30	356	O IV	174.105	2	65, 168
SC XI	168.942	2	17, 178	O IV	174.220	3	65, 168
NI VIII	168.95	1	3	NI VIII	174.24 *	8	3
MG III	169.150	1	693	NI VIII	174.36	6	3
NI VIII	169.16	6	3	NI VIII	174.46	5	3
F IV	169.166	2	173, 176	F V	174.490	3	172, 176
NI VIII	169.27	2	3	TE	174.50	3	28
TI VII	169.300*	3	181	F V	174.513	3	172, 176
SC	169.451	2	17	O V	174.558	2	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
F V	174.568	3	172, 176	F V	178.590	4	172, 176
CL VII	174.603	4	546	F V	178.612	3	172, 176
F V	174.698	4	172, 176	CA VIII	178.641*	8	192, 547
NI VIII	174.75	2	3	TI VII	178.666*	3	181
NI VIII	174.795	4	3	F IV	178.670	3	173, 176
NI VIII	174.88	3	3	CA VIII	178.687*	6	547
NE IV	174.880	10	544	O V	178.713	2	65, 168
MO VIII	174.891	150	132	NI VIII	178.77	6	3
NI VIII	174.92 *	8	3	SC	178.821	2	17
NI VIII	174.95	2	3	NI VIII	178.91	5	3
NI VIII	175.13	6	3	TI VII	179.096	1	181
NI VI	175.189	1	192	CA VIII	179.188	2	192, 547
NI VIII	175.26	2	3	CU	179.223	15	356
NI VIII	175.28	2	3	V VI	179.323*	20	364
NI VIII	175.32	6	3	A VIII	179.400*	10	549
CU	175.484	30	356	CA VIII	179.510	4	192, 547
NI VIII	175.49	1	3	CU	179.630	15	356
NI VIII	175.535	2	3	NI VIII	179.77	2	3
NI VIII	175.555*	8	3	F IV	179.943	2	173, 176
NI VIII	175.62	1	3	NI VIII	179.965	7	3
CU	175.633	25	356	MG IV	180.070*	8	693
NI VIII	175.64	6	3	A VI	180.074	2	549
NI VIII	175.67	6	3	NI VIII	180.125	5	3
NI VIII	175.80 *	10	3	SE VII	180.220*	4	363
TI VII	175.806*	5	181, 358	A VIII	180.254*	15	549
NI VIII	175.815*	10	3	SC	180.260	2	17
BI VI	175.863	1	5	CU	180.384	15	356
NI VIII	175.91	2	3	NI VIII	180.385	5	3
SC	175.918	2	17	NE IV	180.402	15	544
NI VIII	175.94 *	8	3	O IV	180.481	2	65, 168
CA	175.963	1	192	NB VI	180.548*	25	132
NE IV	176.007	50	544	MG IV	180.617*	10	693
NI VIII	176.03 *	6	3	A VI	180.719	3	549
K VI	176.106	1	192	NI VIII	180.74	2	3
NI VIII	176.13 *	5	3	MG IV	180.796*	9	693
CU	176.232	15	356	CU	180.986	20	356
NI VIII	176.25	3	3	NI VIII	181.10	2	3
NI VIII	176.29	5	3	O IV	181.150	4	65, 168
SC	176.325	3	17	K VI	181.265	1	192
F IV	176.367	4	173, 176	O IV	181.275	5	65, 168
NI VIII	176.42	2	3	MG IV	181.345*	8	693
NI VIII	176.50	4	3	F IV	181.521	4	173, 176
A VII	176.566*	10	549	F IV	181.571	4	173, 176
BI VI	176.584	2	5	NE IV	181.614	20	544
NI VIII	176.69	3	3	F IV	181.655	2	173, 176
NI VIII	176.74 *	5	3	NE IV	181.691	20	544
SE VII	176.781	2	363	N IV	181.746	1	65, 168
CU	176.824	10	356	NA IV	181.758*	8	65, 693
NI VIII	176.87 *	8	3	TE	181.80	3	28
NI VIII	176.95 *	5	3	O IV	181.876	3	65, 168
NI VIII	176.98	2	3	CO VIII	181.994	3	128
NE IV	177.161	80	544	O IV	181.995	4	65, 168
NI VIII	177.19	6	3	CU	182.019	30	356
TI VII	177.229*	4	181, 358	V VI	182.050*	15	364
NI VIII	177.29	3	3	NA IV	182.128	6	65, 693
NI VIII	177.32	2	3	TI VI	182.148*	5	182
NI VIII	177.43	3	3	MO VIII	182.179*	400	132
CU	177.466	20	356	O V	182.205	2	65, 168
NB VI	177.552*	125	132	MG III	182.240	3	693
SC	177.686	2	17	NI VIII	182.27	1	3
O IV	177.698	1	65, 168	NA IV	182.282	4	65, 693
NI VIII	177.73	2	3	SC	182.392	2	17
O IV	177.761	2	65, 168	NI VIII	182.44	6	3
O IV	177.808	2	65, 168	NI VIII	182.55	2	3
CU	177.809	10	356	CO VIII	182.665*	10	128
CA VIII	177.889	4	192, 547	O IV	182.711	3	65, 168
F IV	177.971	2	173, 176	CA VIII	182.713*	7	192, 547
LI II	178.015*		168, 488, 596	NI VIII	182.79	1	3
NI VIII	178.06	1	3	O IV	182.832	4	65, 168
CA VIII	178.247	4	192, 547	NI VIII	182.87	3	3
F V	178.434*	5	172, 176	NI VIII	182.94	2	3
CU	178.489	15	356	NI VIII	182.955	3	3
NI VIII	178.52	3	3	MG III	182.973	2	693
CA	178.557	1	192	F V	182.979	4	172, 176
TI VII	178.564 *	2	181	SC VII	182.987*	4	17, 358

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI VIII	182.99	2	3	NE IV	186.915	15	544
F V	183.016	3	172, 176	NI VIII	186.93	2	3
CO VIII	183.125	4	128	O IV	186.936	2	65, 168
NE IV	183.165	15	544	F V	186.968*	4	172, 176
NE IV	183.247	12	544	F V	187.008*	4	172, 176
NI VIII	183.39	1	3	F IV	187.105	2	173, 176
O IV	183.395	1	65, 168	TE	187.15	2	28
CU	183.396	10	356	MG III	187.194*	8	488, 693
MG IV	183.439	4	693	NI VIII	187.20	1	3
NI VIII	183.44	2	3	F IV	187.240	3	173, 176
NI VIII	183.51	4	3	CA	187.515	1	192
CO VIII	183.542	3	128	CO VIII	187.666	2	128
SC	183.593	4	17	NI VIII	188.06	1	3
CO VIII	183.689	2	128	O IV	188.152	2	65, 168
CO VIII	183.721	4	128	CO VIII	188.154	2	128
NI VIII	183.80	2	3	CO VIII	188.232	2	128
NI VIII	183.83 *	9	3	NE VI	188.424	3	544
NI VIII	183.91	3	3	MG III	188.526	3	693
MG IV	183.915	1	693	NI VIII	188.58	4	3
CO VIII	183.922*	7	128	F IV	188.656	2	173, 176
O VI	183.937*	8	160, 400	CO VIII	188.673	4	128
CO VIII	183.941	3	128	NA III	188.870	2	65, 693
SC VII	183.96 *	5	17	CO VIII	189.249	4	128
NI VIII	183.97	1	3	BI VI	189.274	2	657
MO VIII	184.050*	600	132	MO VIII	189.602*	750	132
CO VIII	184.053	3	128	F V	189.943	2	172, 176
TI VI	184.104*	4	182	NA IV	190.126	6	65, 693
O VI	184.117*	9	168, 488	I VIII	190.14 *	4	32, 363
NI VIII	184.12 *	9	3	N V	190.156	1	65, 168
CA VIII	184.160*	10	547	N V	190.242	2	65, 168
CO VIII	184.201*	70	128	MO VIII	190.243*	300	132
A VIII	184.273	3	549	CA V	190.363	4	45
CA V	184.280	3	45	NA IV	190.440*	10	65, 693
A VIII	184.315*	5	549	CA V	190.457	5	45, 192
CA IX	184.338	3	535	CO VIII	190.514*	5	128
CA IX	184.377*	6	535	CA V	190.558	3	45, 192
CA V	184.415	1	45	AL	190.560	1	693
CO VIII	184.421	3	128	NE IV	190.565	25	544
CA IX	184.433*	8	192, 535	F V	190.571*	6	172, 176
NI VIII	184.44	7	3	CL VII	190.594	2	546
SC VII	184.614	2	17, 358	SC VII	190.644*	4	17, 358
NI VIII	184.68	2	3	NE IV	190.645	15	544
NE V	184.730	10	544	NA IV	190.835*	8	65, 693
NI VIII	184.95	2	3	F V	190.839*	7	172, 176
CA V	185.102	2	45	CO VIII	190.843	2	128
O V	185.213	1	170	CO VIII	190.954	1	128
CA V	185.288	1	45	NA IV	191.000	6	65, 693
CO VIII	185.432*	6	128	CO VIII	191.247*	7	128
O V	185.455	2	168	CL VII	191.283	4	546
NE IV	185.479	20	544	CA V	191.439	3	45
F IV	185.484	3	173, 176	O V	191.458	1	65, 168
SC VII	185.532	3	17, 358	CO VIII	191.465	3	128
CA V	185.540	2	45	CA V	191.480	2	45
CO VIII	185.585	0	128	O V	191.556	2	65, 168
NI VIII	185.65	3	3	SC VII	191.602*	8	358
SC VII	185.675	1	358	O IV	191.609	2	65, 168
O V	185.747	9	65, 168, 488	O IV	191.695	2	65, 168
SC VII	185.808	3	17, 358	CU	191.719	20	356
A IX	185.883*	2	762	O IV	191.752	3	65, 168
F VI	185.883	2	197	CO VIII	191.753	2	128
N V	186.070*	4	65, 168, 488	A VII	191.759*	3	549
N V	186.153*	5	65, 168, 488	BI VI	191.777	2	5
NI VIII	186.18	3	3	CA V	191.801	2	45
CU	186.296	15	356	F V	191.892	3	172, 176
MO VIII	186.376*	600	132	CO VIII	191.923*	10	128
NI VIII	186.495	5	3	F V	191.973	4	172, 176
MG III	186.510*	9	488, 693	A VII	192.041*	5	549
NE IV	186.575*	150	488, 544	O IV	192.139	4	65, 168
O V	186.602	1	170	O IV	192.169	4	65, 168
CA	186.605	1	192	BI VI	192.170	3	5
F V	186.715*	4	172, 176	O IV	192.206	5	65, 168
F V	186.788*	4	172, 176	O IV	192.244	3	65, 168
F V	186.842*	5	172, 176	S VI	192.273	00	598
O IV	186.872	1	65, 168	MO VIII	192.283	75	132
F V	186.879*	3	172, 176	CO VIII	192.328*	9	128

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI VI	192.458	2	5	CA V	199.553	6	45, 192
S VI	192.480	00	598	TE	199.71	2	28
CO VIII	192.549	1	128	CU	199.723	10	356
S VI	192.560	0	598	TI VI	199.759*	6	182
SC VII	192.607*	8	358	F IV	199.761	5	42, 173, 176
A VII	192.635*	7	549	NA IV	199.769	6	65, 693
TI VI	192.705	1	182	F IV	199.804	5	173, 176
TI VI	192.747	8	182	F IV	199.849	5	42, 173, 176
O V	192.751*	12	65, 168, 488	CA V	199.890	3	45
CA	192.757	1	192	K VI	199.932	2	192
O V	192.800*	13	65, 168, 488	F IV	199.934	5	42, 173, 176
O V	192.906*	14	65, 168, 488	F IV	200.001	5	173, 176
SC VII	193.004	3	17, 358	F IV	200.089	7	42, 173, 176
SC	193.332	2	17	TE	200.31	2	28
TE	193.58	2	28	K VI	200.341	1	192
F V	194.108	3	172, 176	CA V	200.512	5	45
I VIII	194.15 *	5	32, 363	CU VII	200.674*	100	356, 357, 487
NE IV	194.276*	100	488, 544	SC VI	200.810	1	358
NE IV	194.477	40	544	O V	200.827	1	65, 170
O V	194.593	8	65, 168, 488	CU VII	200.860*	75	356, 357, 487
K	194.593	1	192	CA V	200.860	3	45
NE IV	194.623	50	544	F V	200.861	1	172, 176
FE VIII	194.762	5	365	O IV	200.915	1	65, 168
CL VI	194.796	2	535	CU VII	200.958*	50	356, 357, 487
NE VI	194.839	2	544	O IV	200.995	2	65, 168
F VI	194.840	1	171, 176	F IV	201.011	6	42, 173, 176
TI VI	194.900*	7	182	F IV	201.063	7	42, 173, 176
NE VI	194.936	2	544	O IV	201.073	1	65, 168
CL VI	195.227	3	535	O IV	201.098	1	65, 168
FE VIII	195.476*	20	365	F IV	201.101	6	173, 176
O IV	195.863	7	65, 168	F IV	201.160	8	42, 173, 176
O IV	196.009	8	65, 168	F IV	201.222	6	42, 173, 176
FE VIII	196.046*	15	365	TI VI	201.313*	5	182
CL VII	196.123*	10	546	CU	201.329	15	356
TE	196.26	1	28	F IV	201.465	4	173, 176
F IV	196.351	4	173, 176	I	201.50	2	32
CU	196.363	10	356	CU	201.615	20	356
CL VII	196.388*	8	546	I VIII	201.70 *	4	32, 363
F IV	196.390	5	173, 176	TI VI	201.862*	5	182
F IV	196.448	6	173, 176	TE	201.92	2	28
I VIII	196.55 *	3	32, 363	TE	202.02	2	28
CU	196.585	30	356	CU	202.065	20	356
F V	196.713	2	176	O V	202.158	5	65, 168
F V	196.870	1	176	NA III	202.184	4	65, 693
N IV	196.954	0	65, 168	O V	202.191	5	65, 168
CA V	196.970	5	45, 192	TE	202.20	3	28
K VI	196.978	1	192	O V	202.226	5	65, 168, 488
N IV	197.007	1	65, 168	O V	202.282	5	65, 168, 488
F IV	197.108	2	173, 176	O V	202.335	5	65, 168, 488
CU	197.128	30	356	O V	202.393	7	65, 168, 488
N IV	197.230	3	65, 168	NA III	202.490	2	65, 693
NB VII	197.415	100	132	SC VI	202.638	0	358
TI VI	197.455*	5	182	TE	202.72	1	28
CA V	197.531	2	45	NA III	202.720	3	65, 693
CU	197.598	30	356	NA III	202.760	3	65, 693
CA V	197.648	2	45, 192	TE	202.83	2	28
TE	197.80	1	28	O IV	202.891	4	65, 168
SC VII	197.875	0	17, 358	SC VI	202.921	2	17, 358
O V	198.031	3	65, 168	CA VII	202.989	3	192, 547
TE	198.20	1	28	CU	203.010	60	356
SC VII	198.232	2	17, 358	K	203.034	1	192
TE	198.30	1	28	MO VIII	203.042	100	132
MO VIII	198.351	150	132	O IV	203.048	5	65, 168
F V	198.476	1	172, 176	NA III	203.050	3	65, 693
K VIII	198.536	5	535	C IV	203.057	1	65, 168
MO VIII	198.686	100	132	SC VI	203.216	0	17, 358
TE	198.81	1	28	TE	203.27	2	28
MO VII	198.839*	800	132	NA III	203.282	2	65, 693
TI VI	198.974	8	182, 359	NA III	203.324	2	65, 693
K VI	198.985	1	192	CU	203.432	60	356
F IV	199.004	3	173, 176	CA VII	203.700	4	547
F IV	199.086	3	173, 176	O V	203.783	6	65, 168, 488
SC VII	199.166	0	17, 358	TE	203.80	3	28
LI II	199.282*		168, 488, 596	O V	203.821	7	65, 168, 488
SC VII	199.522	00	17, 358	K III	203.823	2	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O V	203.851	6	65, 168	NI VII	208.580	10	548
O V	203.890	8	65, 168, 488	I	208.61	1	32
K III	203.890	3	192	NI VII	208.679	4	548
CA	203.896	1	192	NE IV	208.734*	100	488, 544
O V	203.935	6	65, 168	TE	208.81	3	28
NA IV	203.959	2	65, 693	NE IV	208.899	80	488, 544
CA VII	204.001*	9	192, 547	CU	208.902	60	356
CU	204.056	15	356	NI VII	208.940	12	548
S VI	204.190	0	598	CA	209.188	1	192
NE IV	204.270	15	544	SC VI	209.195	1	17, 358
SC VI	204.310	1	17, 358	CU	209.241	30	356
TE	204.35	2	28	BI VI	209.255	2	5
CA VII	204.377	2	547	N V	209.270*	7	65, 168, 488
TE	204.45	2	28	CA	209.271	1	192
NE IV	204.531	25	544	N V	209.303*	6	65, 168, 488
SC VI	204.610	0	17, 358	CU	209.648	30	356
I	204.68	1	32	CA	209.723	3	192
SC VI	204.719	2	17, 358	SC VI	209.021	2	17, 358
CU	204.725	40	356	I	209.91	2	32
NE IV	204.786	15	544	CR VI	209.978*	4	365
TE	204.90	9	28	CU	210.217	15	356
SC VI	205.072	1	17, 358	CR VI	210.288*	6	365
O V	205.102	3	65, 168	CO VII	210.37	2	3
NB VII	205.182*	200	132	I	210.50	3	32
NI VII	205.275	5	548	SC	210.550	2	17
CU	205.278	60	356	CU	210.612	15	356
NI VII	205.359	1	548	CO VII	210.77	3	3
CA VII	205.404*	6	192, 547, 762	NI VII	211.037	8	548
TE	205.47	2	28	CU	211.109	50	356
NA IV	205.487	6	65, 693	NI VII	211.298	4	548
F V	205.552	4	172, 176	W	211.3	2	781
NI VII	205.582	8	548	N IV	211.396	0	65, 168
CU	205.610	30	356	SC VI	211.416	4	17, 358
NI VII	205.637	16	548	NI VII	211.433	12	548
TE	205.66	2	28	SC	211.505	2	17
K VI	205.772	2	192	SC VI	211.612	2	17, 358
F V	205.778	3	172, 176	NI VII	211.649	12	548
NI VII	205.807	10	548	CO VII	211.65	2	3
TE	205.83	2	28	SC VI	211.696	0	358
K VI	205.862	2	192	CU	211.707	20	356
NI VII	205.885	12	548	SC	211.725	2	17
NA IV	205.956	4	65, 693	NI VII	211.759	14	548
N IV	205.960	2	65, 168	NI VII	211.993	9	548
CU	205.984	10	356	CO VII	212.15 *	10	3
O IV	206.002	1	65, 168	CO VII	212.23	3	3
N IV	206.021	2	65, 168	NI VII	212.316	8	548
NI VII	206.030	5	548	CU	212.339	10	356
NA IV	206.155	3	65, 693	C IV	212.421	5	65, 168, 488
CO VII	206.23	4	3	NI VII	212.516*	35	548
CU	206.355	60	356	TE	212.53	1	28
F V	206.430	2	172, 176	NE IV	212.556*	150	488, 544
I	206.44	2	32	NI VII	212.560	1	548
TE	206.53	2	28	O IV	212.578	2	65, 168
F V	206.594	3	172, 176	CO VII	212.61 *	5	3
C IV	206.641	3	65, 168	NI VII	212.625	3	548
CA X	206.746	2	361	CO VII	212.64 *	10	3
CU	206.842	35	356	TE	212.69	1	28
O IV	207.183	6	65, 168	I	212.85	3	32
O IV	207.239	7	65, 168	TE	212.86	1	28
CU	207.282	20	356	NI VII	212.704*	10	548
O IV	207.348	4	65, 168	CO VII	212.91 *	9	3
CA X	207.386		361	NI VII	212.949*	20	548
I	207.60	1	32	CU	212.964	10	356
CU	207.733	15	356	O IV	212.974	3	65, 168
CL VII	207.757	4	546	CO VII	213.06	1	3
MO VII	207.774*	500	132	NI VII	213.096*	15	548
CA	207.789	1	192	SC VI	213.118	2	17, 358
O V	207.794*	10	65, 168, 488	K V	213.121	1	192
CU	207.925	35	356	MO VIII	213.126	50	132
NI VII	208.182	12	548	NI VII	213.133	4	548
F IV	208.254	9	173, 176	SC VI	213.192	1	17, 358
MO VIII	208.319	25	132	NI VII	213.258	5	548
NE IV	208.485*	100	488, 544	NI VII	213.339	10	548
CU	208.502	15	356	NI VII	213.422	12	548
F IV	208.549	2	173, 176	NI VII	213.496	15	548

SECTION IV FINDING LIST, ALL ELEMENTS

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI VII	213.515*	25	548	N IV	218.085	1	65, 168
SC VI	213.702	1	17, 358	CO VII	218.11	1	3
NI VII	213.714*	25	548	NE IV	218.131	20	544
F IV	213.848	7	173, 176	NE IV	218.184	10	544
NI VII	213.908*	30	548	NE IV	218.343	15	544
I	213.92	2	32	W	218.4	2	781
NI VII	213.924	10	548	CO VII	218.42	2	3
O IV	213.978	4	65, 168	NE IV	218.483	20	544
O IV	214.032	5	65, 168	NI VII	218.531	5	548
NI VII	214.042	15	548	NE IV	218.643	25	544
F IV	214.062	7	173, 176	TE	218.66	1	28
NI VII	214.111	7	548	NI VII	218.766	5	548
CA	214.140	1	192	SC VI	218.837	4	17, 358
O IV	214.155	6	65, 168	NI VII	218.846	1	548
NI VII	214.166	2	548	TE	218.85	1	28
CU	214.206	20	356	I	219.07 *	4	32
O IV	214.209	4	65, 168	NI VII	219.497	5	548
NA III	214.235	4	65, 693	CO VII	219.64	2	3
O IV	214.249	1	65, 168	I	219.72	2	32
S VI	214.277	00	598	NB VII	219.746*	500	132
BI VI	214.318	2	5, 657	A VI	219.896	3	549
K V	214.351	2	192	AS VI	219.982*	40	363
NI VII	214.440	6	548	CO VII	220.015	8	3
CU	214.460	10	356	CO VII	220.07	6	3
NI VII	214.492	7	548	MO VIII	220.102*	250	132
NA III	214.596	2	65, 693	CO VII	220.34	4	3
SI VIII	214.756*	2	231	O V	220.352*	13	65, 168, 488
F III	214.804	1	42, 174, 176	CO VII	220.37	4	3
CU	214.861	10	356	CO VII	220.405	4	3
F III	214.865	1	42, 174, 176	CO VII	220.515	4	3
NA III	214.868	4	65, 693	CO VII	220.62 *	10	3
O V	215.034	7	65, 168, 488	K VII	220.640	0	793
NA III	215.042	2	65, 693	I	220.66 *	8	32
O V	215.104	8	65, 168, 488	F IV	220.765	7	173, 176
NA III	215.230	4	65, 693	CO VII	220.77	2	3
O V	215.245	9	65, 168, 488	CO VII	220.81	1	3
CO VII	215.26	3	3	CO VII	220.89	1	3
SC IV	215.317	2	366	A VI	220.946	5	549
NA III	215.340	4	65, 693	CO VII	220.96	2	3
NB VII	215.444*	400	132	CO VII	220.98	4	3
SC IV	215.522	1	17, 488	K VII	221.023	0	793
CU	215.611	50	356	AS VI	221.045*	50	363
NA III	215.671	4	65, 693	CO VII	221.06	4	3
NI VII	215.759*	30	548	W	221.1	2	781
I	215.78	2	32	CO VII	221.15	1	3
NE IV	215.843	15	544	SC VI	221.204	3	17, 358
CA	216.005	1	192	CO VII	221.24	3	3
O V	216.018	8	65, 168, 488	CO VII	221.30	3	3
CU	216.063	50	356	CO VII	221.45 *	10	3
NI VII	216.064*	20	548	K VII	221.481	1	793
CO VII	216.205	1	3	CU VII	221.52 *	10	3
NI VII	216.408	15	548	CO VII	221.62 *	5	3
CU	216.454	25	356	O IV	221.648	4	65, 168
I	216.50 *	4	32	CO VII	221.75 *	10	3
NI VII	216.550	7	548	CO VII	221.96 *	9	3
CO VII	216.70	5	3	K VII	222.139	0	793
SI VIII	216.918*	2	231	FE VIII	222.189	4	365
W	217.0	2	781	O V	222.235	3	65, 168
NI VII	217.018	8	548	CU	222.378	15	356
CA	217.019	1	192	K VII	222.434	1	793
I	217.06	2	32	CO VII	222.57 *	10	3
CO VII	217.13	1	3	NE IV	222.600	40	544
NI VII	217.138	12	548	CO VII	222.67 *	8	3
SC IV	217.189	0	17, 488	O IV	222.763	5	65, 168
N IV	217.227	1	65, 168	O IV	222.777	4	65, 168
NE IV	217.337	15	544	C IV	222.791	7	65, 168, 488
NE IV	217.640	15	544	CO VII	222.84	3	3
NI VII	217.658	8	548	SC VI	222.844	3	358
I	217.70	2	32	SC VI	222.850	3	17, 358
CU	217.743	20	356	I	222.95	3	32
NE IV	217.777	15	544	CO VII	223.08 *	10	3
SI VII	217.826*	7	231	I	223.13	1	32
NE IV	217.830	25	544	CO VII	223.19 *	9	3
CU VII	217.88	1	3	NE IV	223.241	25	544
NB VII	217.945*	300	132	NI VII	223.248	1	548

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO VIII	223.270*	500	132	W	227.3	2	781
CO VII	223.30 *	10	3	O V	227.374	5	65, 168
CO VII	223.37 *	8	3	I	227.46 *	4	32
NI VII	223.377	5	548	NB VII	227.463	150	132
F IV	223.394	3	173, 176	O V	227.468	5	65, 168
SC VI	223.408	1	17, 358	K	227.471	1	192
F IV	223.456	2	173, 176	O V	227.510	7	65, 168
CO VII	223.54 *	10	3	O V	227.549	5	65, 168
NE IV	223.605	25	544	NI VII	227.636	9	548
W	223.7	4	781	O V	227.636	5	65, 168
CO VII	223.73 *	10	3	K VII	227.638	2	793
NI VII	223.819	3	548	O V	227.688	5	65, 168
CO VII	223.86 *	8	3	NI VII	227.734	2	548
FE VIII	223.870	4	365	S VI	227.845	2	598
CO VII	223.91 *	7	3	TE VII	227.86 *	6	28, 363
NI VII	223.948	1	548	CO VII	227.86	1	3
CO VII	223.99 *	5	3	NI VII	227.889	8	548
CO VII	224.08	3	3	CA	227.895	2	192
CL VII	224.144	6	546	NI VII	228.023	10	548
NB VII	224.182*	300	132	NI VII	228.039	4	548
CO VII	224.335	7	3	CU	228.146	10	356
NI VII	224.381	16	548	NI VII	228.255	5	548
MO VIII	224.497	75	132	CO VII	228.425	2	3
CO VII	224.71 *	10	3	NI VII	228.484	4	548
NI VII	224.724	14	548	NI VII	228.541	5	548
NB VII	224.737*	200	132	SC V	228.565	3	17, 359
NI VII	224.919	12	548	CA VI	228.628*	7	45, 192, 762
SI IX	225.033*	0	231	TI V	228.898*	75	364
CL VII	225.078*	10	546	NI VII	228.927	1	548
I	225.09	3	32	TE	229.12	1	28
N IV	225.098	3	65, 168, 488	F IV	229.261	2	173, 176
MO VIII	225.102	150	132	K VII	229.268	2	793
CO VII	225.12	3	3	A VIII	229.437*	5	549
N IV	225.136	4	65, 168, 488	NI VII	229.569	4	548
NI VII	225.182	1	548	CO VII	229.61 *	10	3
N IV	225.205	5	65, 168, 488	I	229.67	3	32
CO VII	225.23	4	3	CA VI	229.734*	7	45, 192, 762
NI VII	225.238	3	548	TL	229.75	2	33
O IV	225.299	5	65, 168	W	229.8	2	781
TI V	225.337*	100	364	P V	229.832	3	597
CO VII	225.43	2	3	NA III	229.868	3	65, 693
NI VII	225.476	2	548	CO VII	229.87 *	10	3
CU	225.497	25	356	F III	230.117	5	174, 176
I	225.54 *	5	32	I	230.22	3	32
CO VII	225.68	3	3	CO VII	230.36	2	3
CO VII	225.71	2	3	C IV	230.43	1	65, 168
NI VII	225.734	10	548	CA VI	230.495*	5	45, 192, 762
NI VII	225.760	2	548	NA III	230.593	2	65, 693
CO VII	225.83	8	3	K VIII	230.678*	10	535
NI VII	225.889	3	548	O IV	230.682	1	65, 168
CU	225.991	10	356	K VIII	230.706*	12	535
CO VII	226.03 *	10	3	BI VI	230.710	1	657
F III	226.051	2	174, 176	K VIII	230.745*	15	535
NI VII	226.062	9	548	SC V	230.848	1	17, 359
F III	226.091	3	42, 174, 176	A VIII	230.875*	7	549
F III	226.166	4	42, 174, 176	F III	231.015	2	174, 176
NI VII	226.268	2	548	O IV	231.031	3	65, 168
CA	226.292	1	192	FE VII	231.047	6	128
F V	226.341	2	172, 176	O IV	231.070	7	65, 168
NI VII	226.347	7	548	F III	231.100	3	174, 176
NI VII	226.399	1	548	O IV	231.101	6	65, 168
F V	226.608	2	172, 176	O IV	231.144	4	65, 168
NI VII	226.658	2	548	O IV	231.200	6	65, 168
CO VII	226.83	1	3	O IV	231.240	6	65, 168
AS VI	226.836*	5	363	O IV	231.302	7	65, 168
F IV	226.944	6	173, 176	CO VII	231.32	2	3
CO VII	226.98	4	3	TL	231.42	2	33
SI IX	227.007*	0	231	CO VII	231.48	1	3
F IV	227.079	3	173, 176	CA	231.530	1	192
F IV	227.101	5	173, 176	FE VII	231.641	5	128
CO VII	227.11	1	3	CO VII	231.68	2	3
NI VII	227.191	7	548	FE VII	231.715	8	128
S VI	227.197	2	598	MG III	231.730*	14	488, 693
F IV	227.211	4	173, 176	CO VII	231.79	1	3
I	227.23	1	32	O V	231.823	7	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA V	231.971	0	192	TE VII	236.45 *	3	30, 363
MO VIII	231.998*	250	132	CO VII	236.45	3	3
TL	232.11	2	33	FE VII	236.501	4	128
AS VI	232.217*	5	363	CO VII	236.51	4	3
FE VII	232.248	8	128	TL	236.66	2	33
CA VI	232.282	6	45, 192, 762	O III	236.710	1	65, 168
CO VII	232.35	4	3	MO VIII	236.886	25	132
TE VII	232.37 *	6	28, 363	TL	236.97	2	33
CO VII	232.425	2	3	TL	237.18	2	33
FE VII	232.432	6	128	CL V	237.231	2	549
CO VII	232.51	5	3	HE II	237.331*	15	488
CA VI	232.531	5	45, 192, 762	TE VII	237.54 *	4	30, 363
CO VII	232.56	9	3	MO VIII	237.552	100	132
FE VII	232.579	2	128	W	237.8	4	781
HE II	232.584	7	488	N IV	237.860	1	65, 168
W	232.6	1	781	N IV	237.903	2	65, 168
CO VII	232.65	9	3	F IV	237.913	3	173, 176
K V	232.673	1	192	F IV	237.955	4	173, 176
CO VII	232.80	3	3	CU	237.969	10	356
TL	232.81	2	33	N IV	237.983	3	65, 168
FE VII	232.945	3	128	F IV	238.012	3	173, 176
FE VII	233.021*	10	128	F IV	238.042	2	173, 176
TL	233.03	2	33	CO VII	238.11	2	3
CO VII	233.06	1	3	CO VII	238.17	1	3
F IV	233.159	2	173, 176	NB VI	238.176	400	132
I	233.16	1	32	C IV	238.200	2	65, 168
FE VII	233.187	2	128	C IV	238.250	3	65, 168
F IV	233.222	6	173, 176	CO VII	238.27	3	3
F IV	233.297	2	173, 176	O IV	238.361*	14	65, 168, 488
FE VII	233.309	8	128	CO VII	238.37	9	3
F IV	233.393	5	173, 176	O IV	238.573*	15	65, 168, 488
CO VII	233.425	1	3	CA	239.007	1	192
O IV	233.457	7	65, 168, 488	K III	239.010	2	192
O IV	233.495	7	65, 168, 488	AL VII	239.030	2	693
O IV	233.521	6	65, 168	N IV	239.161	1	65, 168
F IV	233.526	4	176	N IV	239.210	2	65, 168
C IV	233.53	2	65, 168	CA VI	239.535*	7	45, 192
I	233.53	1	32	O IV	239.592	3	65, 168
O IV	233.561	8	65, 168, 488	FE VII	239.605	0	128
O IV	233.596	6	65, 168	K	239.608	1	192
FE VII	233.703	8	128	N IV	239.618	4	65, 168
CO VII	233.75	5	3	N IV	239.693	1	65, 168
FE VII	233.770	3	128	TL	239.70	2	33
FE VII	233.940	3	128	SB	239.82	2	31
BI V	234.002	3	5	F IV	239.856	7	42, 173, 176
CO VII	234.01	2	3	F IV	240.017	7	42, 173, 176
N IV	234.124	3	65, 168	CA	240.040	2	192
N IV	234.195	4	65, 168	FE VII	240.075*	8	128
N IV	234.249	2	65, 168	F IV	240.079	9	42, 173, 176
MG III	234.258*	12	488, 693	FE VII	240.105*	7	128
TL	234.26	2	33	F IV	240.146	7	42, 173, 176
NB VII	234.260	100	132	F III	240.233	1	174, 176
CO VII	234.27	1	3	F IV	240.275	7	42, 173, 176
NE IV	234.316	25	544	NB VII	240.351	50	132
FE VII	234.339*	9	128	FE VII	240.370	1	128
CO VII	234.34 *	10	3	F IV	240.371	7	42, 173, 176
HE II	234.347	10	488	TL	240.43	2	33
NB VII	234.576	15	132	FE VII	240.451	1	128
NE IV	234.701	25	544	F III	240.550	1	174, 176
FE VII	234.779*	15	128	FE VII	240.563	5	128
CO VII	234.79 *	10	3	W	240.6	1	781
BI V	234.913	3	5	CA VI	240.721	6	45, 192, 762
O IV	234.988	3	65, 168	F III	240.730	2	174, 176
TL	235.10	2	33	K III	240.758	3	192
FE VII	235.232*	10	128	SB	240.76	3	31
CU	235.299	30	356	AL VII	240.770	4	693
W	235.5	1	781	CA	240.777	2	192
F V	235.840	1	172, 176	CL VII	240.829	6	546
MO VIII	236.004	75	132	CL VII	240.865	4	546
O IV	236.071	1	65, 168	FE VII	240.937	1	128
CO VII	236.09	5	3	O III	241.037	2	65, 168
TL	236.23	2	33	CU	241.583	15	356
ZR VI	236.288	70	545	O III	241.875	1	65, 168
W	236.4	1	781	O IV	242.045	2	65, 168
CL V	236.435	1	549	O IV	242.140	3	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VI	242.265	3	45	O III	248.320	1	65, 168
TE VI	242.27 *	4	30, 363	CU	248.426	50	356
F V	242.324	3	172, 176	O V	248.459	6	65, 168
CA III	242.384	3	192	W	248.5	2	781
F V	242.439	2	172, 176	O III	248.574	1	65, 168
CA VI	242.592	3	45	O III	248.618	2	65, 168
CA VI	242.631	5	45	CA III	248.636	4	192
SB	242.80	5	31	C V	248.668*	0	65, 168
CL VI	242.885	5	535	NB VI	248.724*	250	132
HE II	243.027*	20	488	C V	248.744*	0	65, 168
CL VI	243.194	8	535	SB	248.77	3	31
CL VI	243.208	2	535	NB VII	248.944	25	132
FE VII	243.375*	50	128	S VI	248.985	4	488, 598
F IV	243.736	2	173, 176	SI VI	249.125	8	231
AL VI	243.760*	10	168, 693	CU	249.213	20	356
F IV	243.796	3	173, 176	O IV	249.223	3	65, 168
SC V	243.823	0	17, 359	S VI	249.271	4	488, 598
CL VI	243.854*	12	535	O IV	249.365	4	65, 168
SC V	243.872	5	17, 359	A VII	249.384	2	549
CL VI	243.883	3	535	CA IV	249.408	1	192, 567, 762
TF VI	243.90 *	6	30, 363	CU	249.415	15	356
F IV	243.922	4	173, 176	A VII	249.886	5	549
W	244.0	1	781	CU	249.908	10	356
O III	244.049	2	65, 168	CA VI	249.914	3	45
FE VII	244.092	4	128	MN VII	249.929	2	365
SB	244.18	1	31	TL	249.96	2	33
MO VIII	244.263	150	132	TE	250.02	5	30
FE VII	244.524	7	128	AL VIII	250.139	0	693
TL	244.60	3	33	CA IV	250.153	3	192, 762
F III	244.698	2	174, 176	W	250.2	1	781
F III	244.768	4	42, 174, 176	CA VI	250.265	4	45, 192, 762
FE VII	244.803	4	128	CU	250.400	30	356
TE	244.82	1	30	NA III	250.515	8	65, 693
W	244.9	4	781	TL	250.56	2	33
C IV	244.907*	10	65, 168, 488	NB VII	250.737	25	132
F III	245.002	3	42, 174, 176	MN VII	250.771	4	365
FE VII	245.141	8	128	A VII	250.940*	7	549
TE	245.18	1	30	SC V	250.978	4	17, 359
ZR VI	245.327	150	545	W	251.0	1	781
NB VII	245.368	25	132	F IV	251.026*	10	42, 173, 176
FE VII	245.481	7	128	CD	251.06	3	25
BI VI	245.515	1	5	O IV	251.114	1	65, 170
TL	245.54	2	33	NE III	251.145	2	65, 338, 488
FE VII	245.596	3	128	TL	251.18	2	33
NB VII	245.620	35	132	CU	251.278	20	356
C IV	245.775	4	65, 168, 488	AL VIII	251.347	0	693
C IV	245.830	5	65, 168, 488	CA IV	251.354	3	192, 567, 762
F III	245.860	1	42, 174, 176	NA III	251.371	6	65, 693
SB	245.91	1	31	CA VI	251.465	4	45, 192, 762
FE VII	245.926*	10	128	MN VII	251.479	1	365
FE VII	245.973	3	128	NE III	251.558	2	65, 338, 488
SI VI	246.001	8	231	MG	251.600	1	693
K V	246.235	1	192	CU	251.670	20	356
O III	246.265	3	65, 168	SB	251.71	3	31
SC V	246.424	4	17, 359	NE III	251.726	2	65, 338, 488
O IV	246.465	2	65, 168	CA VI	251.816	1	45
O IV	246.503	3	65, 168	S VI	251.905	2	598
O IV	246.563	4	65, 168	CU	251.947	20	356
TE	246.63	3	30	NB VII	251.973	150	132
SR	246.65	1	31	SB	252.12	3	31
SB	247.01	1	31	CU	252.223	15	356
K	247.202	2	192	NB VII	252.448	25	132
N IV	247.205*	10	65, 168, 488	O IV	252.564*	6	168
CU	247.336	10	356	TE	252.78	3	30
C IV	247.415	1	65, 168	CU	252.780*	75	356
NE IV	247.422	10	544	SC V	252.846	5	17, 359
K	247.561	2	192	O IV	252.948*	6	65, 168
N V	247.563*	10	65, 168, 488	K VI	252.965	1	192
CA	247.706	2	192	O IV	253.082*	7	65, 168
K	247.708	3	192	CU	253.083	15	356
N V	247.710*	11	65, 168, 488	K VI	253.106	1	192
CU	247.742	25	356	CU	253.465	15	356
K VI	247.777	1	192	TL	253.66	3	33
NB VII	247.979*	250	132	SC V	253.733	5	17, 359
CU	248.153	10	356	CU	253.786	15	356

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	253.98	4	30
F III	254.162	4	42, 174, 176
F III	254.193	3	174, 176
CD	254.21	2	25
TL	254.29	2	33
PB V	254.420	2	5
HG	254.48	2	26
F IV	254.491	2	173, 176
CU	254.510	50	356
TL	254.61	2	33
TE	254.71	5	30
CU	254.772	70	356
HG	255.14	2	26
O III	255.158	1	65, 168
CU	255.214	45	356
O IV	255.252	5	65, 168
SC V	255.379	1	359
CU	255.417	35	356
K	255.530	1	192
P V	255.596*	7	597
F III	255.624	1	174, 176
SC V	255.636	3	17, 359
MO VIII	255.637*	200	132
P V	255.688*	7	597
F III	255.725	5	42, 174, 176
F III	255.772	6	42, 174, 176
HG	255.82	2	26
F III	255.865	7	42, 174, 176
HE II	256.318*	30	488
SB	256.36	2	31
F III	256.360	5	42, 174, 176
CU	256.365	30	356
O III	256.425	2	65, 168
O III	256.460	3	65, 168
O III	256.506	3	65, 168
F III	256.525	1	174, 176
F III	256.673	1	174, 176
K VI	256.831	3	192, 566, 793
F III	256.890	2	42, 174, 176
CU	256.898	40	356
SC V	257.157	2	17, 359
CU	257.315	20	356
PB V	257.366	1	5
NB VII	257.498	75	132
CU	257.626	20	356
TE	257.64	6	30
K VI	257.657	2	192, 566, 793
CA V	257.976	5	192, 567
CU	258.004	15	356
K VI	258.018	4	192, 566, 793
SC V	258.059	1	359
PB V	258.100	1	5
O IV	258.116	2	65, 168
O IV	258.207	3	65, 168
SC V	258.238	2	359
CA V	258.251	3	192, 567
CU	258.265	45	356
K VI	258.411	1	192, 566, 793
SC V	258.808	0	17
K VI	258.873	3	192, 762, 793
CU	258.927*	80	356
W	259.0	1	781
AL VII	259.035	0	693
TL	259.14	2	33
CU	259.199	20	356
AL VII	259.219	0	693
C IV	259.471	6	65, 168, 488
C IV	259.542	7	65, 168, 488
CU	259.558	20	356
CA V	259.576	3	192, 567
K VI	259.609	2	192, 762, 793
TE	259.74	4	30
CA V	259.856	3	192, 567
CU	259.871	25	356
ZR VI	259.884	160	545

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA V	259.978	3	192, 567
SC V	260.054	1	359
CU	260.245	25	356
A VIII	260.253*	4	549
F III	260.313	4	42, 174, 176
A VIII	260.332*	6	549
NI VI	260.348*	400	357, 487
F III	260.375	3	42, 176
O IV	260.389	10	65, 168, 488
CA V	260.446	3	192, 567
N IV	260.455	2	65, 168
F III	260.498	3	42, 174, 176
O IV	260.556	9	65, 168, 488
NI VI	260.591*	300	357, 487
NI VI	260.713*	250	357, 487
F III	260.782	1	174, 176
K IX	260.834	3	361
TL	260.92	3	33
CU	260.967	25	356
O III	261.027	4	65, 168
K II	261.028	1	192
AL VII	261.053	0	693
I	261.09 *	4	32
K II	261.200	1	192
AL VII	261.219	0	693
NB VII	261.434	100	132
CU	261.606	30	356
TL	261.62	2	33
F III	261.716	7	42, 174, 176
TE	261.73	4	30
F III	261.751	6	174, 176
CU	261.806	20	356
S VI	261.810	0	598
O III	262.113	2	65, 168
TL	262.25	3	33
MO VIII	262.402*	500	132
CU	262.442	20	356
NB VII	262.453*	250	132
C IV	262.553	3	65, 168
C IV	262.624	4	65, 168
TL	262.74	2	33
O III	262.882	1	65, 168
ZR VI	262.919	50	545
CU	262.938	30	356
TL	263.07 *	4	33
ZR VI	263.312*	200	545
NB VII	263.417	50	132
O III	263.692	3	65, 168
K IV	263.716	2	192
O III	263.728	4	65, 168
TE	263.75	1	30
CU	263.760	30	356
O III	263.768	3	65, 168
CA	263.800	1	192
F III	263.807	8	42, 174, 176
O III	263.818	5	65, 168
K IV	263.819	2	192
O III	263.861	3	65, 168
CU	264.029	15	356
TE	264.03	3	30
TL	264.16	2	33
TL	264.23	3	33
O III	264.257	4	65, 168
O III	264.338	5	65, 168
K V	264.339	2	192
CU	264.414	20	356
K V	264.478	2	192
O III	264.480	6	65, 168
MO VIII	264.629	150	132
N III	264.837	1	65, 168
P V	264.938	5	597
N III	264.948	2	65, 168
BI VII	264.955	1	5
I	265.12	3	32
NB VII	265.293	100	132

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K	265.353	1	192	BI VII	269.960	1	5
TL	265.45	2	33	BI VII	270.212	2	5
O V	265.550	4	65, 168	F IV	270.225	6	173, 176
W	265.6	1	781	BI VII	270.255	2	5
CU	265.641	50	356	CU	270.298	30	356
TL	265.75	2	33	CA V	270.305	6	192, 358, 567
TE	265.80	7	30	BI VII	270.376	1	5
MO VIII	265.869	150	132	MG VI	270.394*	12	692
CU	266.061	20	356	TL	270.41	2	33
CO VI	266.114	1	48	ZN	270.44	1	25
N V	266.192*	6	65, 168, 488	ZR VI	270.474*	200	545
TL	266.24	3	33	CA V	270.494	3	192
K	266.344*	4	192	TL	270.54	2	33
N V	266.375*	7	65, 168, 488	CA V	270.570	2	45, 567
TL	266.49	3	33	C III	270.583	1	65, 168
CO VI	266.498*	6	48	F III	270.675	4	42, 174, 176
CU	266.584	10	356	CU	270.740	20	356
TL	266.59	7	33	TL	270.75	3	33
CO VI	266.634*	4	48	BI VII	270.778	1	5
SC	266.800	2	17	ZR VI	270.862*	180	545
CA V	266.863	3	45	N IV	270.925	6	65, 168, 488
NA III	266.893	5	65, 693	C III	271.014	1	65, 168
CO VI	266.905*	4	48	TL	271.07	2	33
O IV	266.932	6	65, 168	CA V	271.141	4	45
K	266.938	2	192	BI VII	271.193*	3	5
CO VI	266.973*	8	48	TL	271.20	4	33
O III	266.985	7	65, 168	BI VII	271.400*	3	5
TL	267.01	2	33	O III	271.403	1	65, 168
O III	267.030	7	65, 168	CA V	271.440	1	45
K	267.036	2	192	CU	271.443	20	356
O III	267.050	3	65, 168	TE	271.58	2	30
NE III	267.059	3	65, 338, 488	CO VI	271.595	5	48
O III	267.121	4	65, 168	BI VII	271.623*	3	5
CO VI	267.131*	5	48	BI VII	271.663*	3	5
CU	267.203	10	356	MO VIII	271.769	25	132
CO VI	267.297*	6	48	K IV	271.820	3	45
TL	267.33*	4	33	MO VIII	271.871	20	132
CO VI	267.402*	5	48	O IV	271.989	6	65, 168
NE III	267.516	3	65, 338, 488	CO VI	272.022	6	48
CU	267.562	25	356	O IV	272.076	6	65, 168
NA III	267.642	8	65, 693	TE	272.09	2	30
NE III	267.709	2	65, 338, 488	TL	272.12	2	33
CA V	267.772*	8	45, 192	O IV	272.125	7	65, 168
NA III	267.868	6	65, 693	O IV	272.174	5	65, 168
TL	267.89	3	33	TE	272.25	1	30
TL	268.00 *	2	33	CA V	272.265	5	192, 567
TL	268.06 *	4	33	O IV	272.270	6	65, 168
BI VII	268.190	1	5	O IV	272.311	6	65, 168
BI VII	268.253	1	5	CA V	272.336	3	192, 567
CU	268.309	60	356	CU	272.424	15	356
BI VII	268.476*	3	5	CO VI	272.481*	7	48
TL	268.55	2	33	SI VII	272.641	4	231
CA V	268.583	2	45	F III	272.710	4	42, 174, 176
NA III	268.623	5	65, 693	F III	272.758	3	42, 174, 176
BI VII	268.653*	3	5	W	272.8	2	781
I	268.67	1	32	CU	272.807	10	356
TE	268.68	5	30	CA VII	272.866	3	192
CU	268.773	50	356	BI VII	272.880	2	5
F IV	268.785	4	173, 176	TL	272.90	4	33
W	268.9	1	781	F III	272.915	3	42, 174, 176
BI VII	268.945	2	5	BI VII	272.917*	5	5
MG VI	268.986*	10	692	CA V	272.982	4	192, 567
CU	269.044	40	356	K IV	273.065	2	45, 192
F IV	269.076	3	173, 176	F III	273.207	2	174, 176
BI VII	269.119	1	5	TL	273.26	3	33
BI VII	269.166	1	5	TL	273.36	3	33
TL	269.18	2	33	CU	273.417	20	356
F IV	269.225	2	42, 173, 176	BI VII	273.575	2	5
MO VIII	269.287	100	132	TL	273.61	3	33
TL	269.34	3	33	CA	273.695	1	192
O IV	269.559	1	65, 168	BI VII	273.850	1	5
TL	269.58	3	33	C III	274.051	2	65, 168
CU	269.653	20	356	TE	274.06	1	30
W	269.9	1	781	W	274.1	2	781
I	269.91	2	32	SI VII	274.175	4	231

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB VII	274.219	150	132	CO VI	278.360	1	48
TL	274.26	2	33	W	278.4	2	781
F III	274.260	6	42, 174, 176	MG VII	278.406*	4	692
CU	274.269	10	356	SI VII	278.445	4	231
BI VII	274.312	2	5	FE VI	278.471	3	46
CO VI	274.534	1	48	CO VI	278.632*	7	48
K IV	274.552	3	45, 192	CO VI	278.685	5	48
ZR VI	274.588	100	545	AL V	278.699*	16	65, 168, 693
W	274.6	4	781	CO VI	278.790	6	48
CU	274.601	15	356	CO VI	278.981	5	48
BI VII	274.807	1	5	CO VI	279.040	2	48
BI VII	274.867	1	5	BI VI	279.070	3	5
TL	274.94	3	33	CU VI	279.150	10	356
BI VII	274.993	1	5	CO VI	279.210	4	48
BI VII	275.037	1	5	AL VII	279.256	0	693
TL	275.18	2	33	CO VI	279.400	5	48
CU	275.244	10	356	O IV	279.456	2	65, 170
O	275.281	2	65, 168	MO VIII	279.463*	200	132
MO VIII	275.288	50	132	CO VI	279.508*	7	48
TL	275.29	2	33	O IV	279.633	10	65, 168, 488
CA VII	275.343	3	192	F III	279.692	7	42, 174, 176
AL VI	275.350	6	693	SB VI	279.757*	15	31, 363
SI VII	275.352	5	231	CO VI	279.780	5	48
O III	275.366	3	65, 168	O III	279.787	3	65, 168
O III	275.513	4	65, 168	F IV	279.834	3	173, 176
PB V	275.628	3	5	O IV	279.937	11	65, 168, 488
TE	275.65	4	30	CO VI	280.003*	7	48
SI VII	275.665	4	231	F III	280.010	6	42, 174, 176
BI VI	275.777	3	5	O III	280.030	2	65, 168
CO VI	275.818	5	48	C III	280.043	3	65, 168
CU	275.829	10	356	TE	280.05	2	30
BI VII	275.829	1	5	CO VI	280.060*	6	48
CO VI	275.944	3	48	CO VI	280.199	6	48
TL	276.02	3	33	TL	280.21	2	33
MG VII	276.145	2	692	O III	280.234	1	65, 168
CO VI	276.167	2	48	O III	280.265	3	65, 168
CO VI	276.175	3	5	CO VI	280.309	4	48
CO VI	276.285*	7	48	O III	280.328	1	65, 168
BI VI	276.397	2	5, 657	CO VI	280.350	2	48
TL	276.53 *	4	33	CO VI	280.464	4	48
CO VI	276.570	4	48	O III	280.483	1	65, 168
MG V	276.581*	16	692	C III	280.522	2	65, 168
CO VI	276.721*	7	48	P V	280.609	2	597
F III	276.786	5	42, 174, 176	CO VI	280.706	3	48
CU	276.805	10	356	MG VII	280.744	3	692
SI VII	276.839	4	231	CO VI	280.775	3	48
F III	276.895	4	42, 174, 176	F III	280.905	1	42, 174, 176
FE VI	276.947	3	46	CA V	280.992*	8	45, 192, 358
MG VII	277.007	3	692	SC V	280.997	4	17
SI VIII	277.054*	4	231	F III	281.207	3	42, 174, 176
CO VI	277.079	5	48	ZR VI	281.217	100	545
TL	277.34	2	33	I	281.32	2	32
O III	277.385	7	65, 168, 488	SC VI	281.327	2	17
K V	277.394	3	192	F III	281.350	4	42, 174, 176
O III	277.514	1	65, 168	C III	281.390	2	65, 168
FE VI	277.569	6	46	AL V	281.397*	14	65, 693
CO VI	277.579	4	48	W	281.4	7	781
BI VI	277.591	1	5, 657	A VI	281.433	3	549
FE VI	277.610	2	46	TI IX	281.463*	2	547
ZR VI	277.630*	200	545	ZR VI	281.466	60	545
CU	277.761	10	356	CU	281.492	50	356
SC	277.809	2	17	HG	281.53	2	26
TL	277.84	2	33	CU	281.744	40	356
CO VI	277.853	2	48	NA II	281.81 *	1	779
SC VI	277.943	3	17	A VI	281.915	4	549
FE VI	277.951	3	46	N III	282.093	1	65, 168
CO VI	278.013	2	48	MN VII	282.095	3	365
TL	278.06 *	4	33	SC V	282.209*	7	17
BI VI	278.095	1	5, 657	N III	282.213	2	65, 168
CO VI	278.113	3	48	K V	282.355	3	192
CU	278.128	20	356	ZR VI	282.397	90	545
FE VI	278.149	5	46	A VI	282.423*	6	549
CO VI	278.184*	7	48	CU	282.440	20	356
CO VI	278.298	2	48	SC V	282.497*	6	17
FE VI	278.339	5	46	NE III	282.50	0	57, 65, 201

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A VI	282.556	1	549	CA V	287.657	3	192, 567
SC	282.587	3	17	CO VI	287.666	4	48
BI VI	282.653	3	5	TL	287.70	2	33
TI IX	282.720*	2	547	SC	287.873	4	17
PB VI	282.741	3	5	BI VII	287.964	2	5
CO VI	283.089*	8	48	CO VI	288.031	4	48
A VI	283.164	3	549	SC	288.104	3	17
NE III	283.178	3	65, 338, 488	TL	288.21	2	33
NE III	283.206*	6	65, 338, 488	SC IV	288.286	6	17
CO VI	283.405	5	48	TL	288.30	3	33
MO VIII	283.412*	250	132	BI VI	288.452	2	5
N IV	283.420*	10	65, 168, 488	W	288.5	1	781
N IV	283.470*	11	65, 168, 488	ZR VI	288.501	100	545
S VI	283.502	3	598	CO VI	288.509	3	48
N IV	283.579*	12	65, 168, 488	FE VI	288.551	4	46
NE III	283.690*	5	65, 338, 488	ZR VI	288.732	100	545
TL	283.74	2	33	BI VI	288.858	2	5
K IV	283.765	2	192	C	289.048	3	65
FE VI	283.770	5	46	TL	289.06	2	33
CO VI	283.883	3	48	S VI	289.092	2	598
NE III	283.894	3	65, 338, 488	FE VI	289.112	5	46
SC IV	283.911*	9	17	C IV	289.143*	9	65, 168, 488
SC V	283.99	0	17	SN VI	289.21	2	293
AL IX	284.042	0	693	C IV	289.230*	10	65, 168, 488
MN VII	284.059*	10	365	K VI	289.241	1	192
TL	284.09	3	33	O IV	289.292	3	65, 168
TL	284.22	2	33	FE VI	289.302	4	46
SC IV	284.263*	9	17	FE VI	289.468	3	46
N III	284.296	1	65, 168	O IV	289.469	2	65, 168
PB V	284.320	2	5, 657	FE VI	289.520	4	46
CO VI	284.366	5	48	SC IV	289.589*	9	17
SC IV	284.450*	8	17	O IV	289.590	1	65, 168
FE VI	284.504	4	46	FE VI	289.672	2	46
W	284.6	1	781	TI IX	289.728*	8	547
BI VII	284.672*	3	5	SC IV	289.850*	9	17
TL	284.70	2	33	FE VI	289.851	4	46
CA V	284.794	2	45, 192, 567	O IV	289.898	2	65, 168
SC IV	284.884*	6	17	O IV	289.933	1	65, 168
CO VI	284.885	4	48	FE VI	290.038	4	46
SB VI	284.890*	20	31, 363	FE VI	290.089	4	46
TL	284.98	2	33	MO VIII	290.111	50	132
CO VI	285.034	3	48	S VI	290.132	3	598
SC IV	285.191*	8	17	FE VI	290.146	4	46
AL VII	285.467	1	693	F IV	290.147	4	173, 176
N IV	285.563	5	65, 168, 488	ZR VI	290.193	60	545
TL	285.64	3	33	SC V	290.232*	8	17
CO VI	285.645	3	48	FE VI	290.271*	6	46
CO VI	285.713	2	48	FE VI	290.302	5	46
O IV	285.714	6	65, 168	SN VI	290.36	10	293
K V	285.734	1	192	F IV	290.440	3	173, 176
O IV	285.838	7	65, 168	F IV	290.461	2	173, 176
K V	285.850	2	192	SC IV	290.487	3	17
CU	285.873	10	356	FE VI	290.499	2	46
SC	285.966	3	17	FE VI	290.577	4	46
SC	286.078	3	17	F IV	290.608	2	173, 176
CL V	286.127	2	43	SC VI	290.700*	6	17
TI IX	286.128*	4	547	FE VI	290.737	4	46
TI IX	286.234*	5	547	TL	290.79	2	33
NB VII	286.276	100	132	F III	290.848	6	42, 174, 176
MO VII	286.294*	200	132	FE VI	290.890	2	46
BI VI	286.432	3	5	TL	290.92	2	33
O V	286.448	6	65, 168	F III	290.947	5	42, 174, 176
TL	286.56	3	33	FE VI	291.020*	5	46
BI VI	286.610	3	5	FE VI	291.184*	6	46
SC IV	286.677	0	17	O IV	291.203	1	65, 168
NE IV	286.688	15	544	FE VI	291.229*	6	46
BI VI	286.730	3	5	BI	291.240	1	5
SC V	286.927*	10	17	HG	291.32	2	26
NE IV	286.934	15	544	C III	291.326	5	34, 65, 168
CA V	286.965*	9	45, 192, 567	MG VI	291.348	3	692
NE IV	287.206	10	544	MG VI	291.458	2	692
MO VIII	287.304	25	132	FE VI	291.473*	5	46
CL V	287.327	3	43	FE VI	291.632	2	46
TL	287.33	2	33	FE VI	291.800*	5	46
FE VI	287.333	1	46	BI VI	291.810	4	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE VI	291.829*	5	46	TL	295.56	3	33
SC IV	291.932*	10	17	SN VI	295.59	10	293
CA VI	291.976	1	192	O III	295.619	5	65, 168
SB VI	291.991*	5	31, 363	FE VI	295.634	4	46
BI VI	292.030	1	5	GE V	295.636*	50	363
FE VI	292.038	2	46	O III	295.657	6	65, 168
BI VI	292.080	1	5, 657	F III	295.710	5	42, 174, 176
A VI	292.154	5	549	O III	295.716	6	65, 168
FE VI	292.343	1	46	O IV	295.874	2	65, 168
SC VI	292.344*	6	17	F III	295.886	6	42, 174, 176
SB VI	292.405*	15	31, 363	O III	295.944	3	65, 168
N III	292.447	3	65, 168	CO VI	295.976	1	48
N III	292.595	4	65, 168	O III	296.012	4	65, 168
FE VI	292.597	4	46	TL	296.05	2	33
SN VI	292.63	1	293	CO VI	296.050	3	48
I	292.65 *	6	32	MO VI	296.087	15	132
TL	292.70	3	33	P V	296.112	1	597
FE VI	292.736*	7	46	SC IV	296.166	4	17
SN VI	292.80	1	293	K V	296.169	4	45, 192, 762
FE VI	292.925	5	46	CO VI	296.206	1	48
MG VI	293.026	2	692	SC IV	296.316	5	17
FE VI	293.046	2	46	FE VI	296.317	1	46
K VI	293.050	2	192	SC VI	296.539	4	17
BI VI	293.052	2	5	CA IV	296.554	5	192, 359, 567
NE IV	293.123	15	544	CO VI	296.719	4	48
MG VI	293.124	4	692	FE VI	296.723	3	46
TL	293.21 *	4	33	FE VI	296.808	5	46
FE VI	293.214	1	46	C IV	296.857	6	65, 168, 488
SC IV	293.248	8	17, 488	CO VI	296.923*	7	48
CL VII	293.253*	8	546	C IV	296.951	7	65, 168, 488
CU	293.257	10	356	CA IV	296.958	6	192, 567
FE VI	293.292	4	46	FE VI	296.988*	6	46
K VI	293.332	3	192	SN VI	297.02	10	293
FE VI	293.384	4	46	BI VII	297.020	1	5
NE IV	293.429	10	544	CU	297.057	10	356
K VI	293.438	2	192	K V	297.064	4	45, 192, 762
FE VI	293.488	4	46	FE VI	297.131	2	46
W	293.7	4	781	TL	297.25	2	33
TL	293.70	2	33	SC VI	297.269*	7	17
FE VI	293.745*	8	46	FE VI	297.308*	7	46
FE VI	293.820	1	46	ZR VI	297.314	50	545
FE VI	293.966*	8	46	MO VI	297.326*	100	132
A VI	294.052*	6	549	CO VI	297.372*	7	48
ZR VI	294.117*	50	545	I	297.46 *	4	32
MO VIII	294.138	150	132	SN VI	297.47	4	293
SN VI	294.24	5	293	NB VII	297.556	35	132
FE VI	294.265*	7	46	FE VI	297.568*	8	46
SC VI	294.292*	7	17	N IV	297.595	3	65, 168
TL	294.33	2	33	A VII	297.621*	3	549
FE VI	294.339*	5	46	SC	297.637	2	17
NB VII	294.390	100	132	N IV	297.644	4	65, 168, 488
ZR VI	294.398*	200	545	CU	297.647	10	356
TL	294.42	2	33	BI VII	297.650	0	5
GE V	294.506*	30	363	CO VI	297.651*	6	48
FE VI	294.520*	7	46	A VII	297.658*	4	549
SN VI	294.60	5	293	A VII	297.701*	6	549
FE VI	294.665	4	46	SC V	297.71	1	17
K V	294.836*	6	45, 192, 762	N IV	297.712	3	65, 168
FE VI	294.850	4	46	N IV	297.768	3	65, 168
O IV	294.853	1	65, 168	N IV	297.815	5	65, 168, 488
CL VII	294.889*	10	546	TL	297.83	3	33
FE VI	294.960	4	46	SN VI	297.94	5	293
FE VI	295.014	4	46	NB VII	297.984	150	132
FE VI	295.042	2	46	SC IV	298.027	6	366
O IV	295.140	1	65, 168	ZR VI	298.039	60	545
CA VII	295.171	3	192	SC VI	298.194*	8	17
CO VI	295.268	1	48	BI VI	298.270	1	5
F III	295.365	2	42, 174, 176	CO VI	298.318	3	48
BI VII	295.376	2	5	MO VI	298.358*	150	132
CA VII	295.396	3	192	SC IV	298.428*	8	17, 488
F III	295.405	1	174, 176	SC IV	298.557*	6	17
CO VI	295.419	4	48	CO VI	298.649	3	48
SC IV	295.478*	9	17	SC	298.66	2	17
O III	295.511	3	65, 168	ZR VI	298.779*	200	545
BI VI	295.530	3	5, 657	BI VII	298.810	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU	298.901	20	356	N	IV	303.163	4 65, 168, 488
TL	298.97	2	33	CO	VI	303.191	3 48
CO	VI	298.989	5 48	CO	VI	303.410	2 48
SC	IV	299.041*	9 17	O	III	303.411	7 65, 168, 488
CO	VI	299.051	2 48	C	III	303.432	4 65, 168
SN	VI	299.09	8 293	O	III	303.460	7 65, 168, 488
CO	VI	299.157	2 48	C	III	303.468	1 65, 168
CU	299.217	15	356	O	III	303.515	7 65, 168, 488
SN	VI	299.27	8 293	FE	VI	303.558	4 46
O	III	299.275	2 65, 168	CO	VI	303.565	1 48
CA	IV	299.315	4 192, 359, 567	CO	VI	303.619	2 48
CO	VI	299.456	5 48	O	III	303.621	7 65, 168, 488
O	IV	299.495	3 65, 168	CO	VI	303.685	3 48
SN	VI	299.52	12 293	K	303.690	2 192	
FE	VI	299.579	1 46	O	III	303.693	7 65, 168, 488
CO	VI	299.586	2 48	HE	II	303.786*	50 488
O	IV	299.620	2 65, 168	O	III	303.799	9 65, 168, 488
CO	VI	299.659	2 48	SN	VI	303.803	15 293
O	IV	299.710	2 65, 168	N	III	303.891	2 65, 168
FE	VI	299.803	1 46	CO	VI	303.943	2 48
CO	VI	299.822	5 48	N	III	303.981	2 65, 168
O	IV	299.850	4 65, 168	N	III	304.032	2 65, 168
SD	299.91	8 31		CO	VI	304.116	2 48
SC	300.004	7 17		FE	VI	304.221*	7 46
K	V	300.252	4 45, 192, 762	BI	VI	304.278	4 5, 657
N	IV	300.316	3 65, 168	CA	III	304.330	3 192, 366
SN	VI	300.34	10 293	CU	304.434	10 356	
BI	300.345	1 5		FE	VI	304.551*	7 46
O	III	300.455	3 65, 168	CO	VI	304.607	1 48
TL	300.49	3 33		N	III	304.818	4 65, 168
K	V	300.503	4 45, 192, 762	N	III	304.874	4 65, 168
CO	VI	300.537	5 48	SC	304.887	2 17	
SC	300.677	3 17		CA	IV	304.910	3 192
SC	300.817	2 17		GE	V	304.967	5 363
FE	VI	300.997	2 46	CO	VI	305.037	4 48
NE	III	301.124	4 57, 65, 488	SN	VI	305.05	15 293
CA	V	301.139	0 45	FE	VI	305.200	4 46
TL	301.14	2 33		CD	305.27	2 25	
CO	VI	301.203	4 48	CO	VI	305.322	1 48
C	III	301.206	2 65, 168	SN	VI	305.51	13 293
SC	301.233	2 17		O	III	305.596	8 65, 168, 488
C	III	301.243	3 65, 168	CO	VI	305.612	1 48
TL	301.26	3 33		O	III	305.656	9 65, 168, 488
C	III	301.279	1 65, 168	O	III	305.703	8 65, 168, 488
SC	301.301	3 17		O	III	305.769	10 65, 168, 488
SC	301.426	4 17		O	III	305.836	8 65, 168, 488
NA	II	301.432*	1 65, 488, 693	FE	VI	305.837	1 46
CO	VI	301.713	1 48	SN	VI	305.87	12 293
CA	III	301.741	4 192, 366	O	III	305.879	4 65, 168, 488
SN	VI	301.79	10 293	N	III	305.918	1 65, 168
SC	301.820	5 17		BI	VI	305.962	3 5
HG	301.84	2 26		SN	VI	306.08	10 293
CO	VI	301.955	5 48	CO	VI	306.145	1 48
NB	VII	301.960	150 132	NB	VII	306.274	25 132
SN	VI	302.00	9 293	FE	VI	306.460	1 46
BI	VI	302.011	6 5	CO	VI	306.567	1 48
ZR	VI	302.103*	60 545	K	306.620	2 192	
CO	VI	302.123	4 48	O	IV	306.621	8 65, 168
CO	VI	302.157	2 48	BI	VI	306.718	6 65, 168
BI	VI	302.216	6 5	FE	VI	306.823	2 46
CO	VI	302.261	1 48	O	IV	306.882	7 65, 168
SN	VI	302.33	10 293	K	306.888	1 192	
ZR	VI	302.347*	250 545	FE	VI	306.922	5 46
CO	VI	302.408	4 48	FE	VI	307.013	2 46
CO	VI	302.471	4 48	SC	V	307.083*	6 17
W	302.5	2 781		MN	VI	307.109	5 128
K	VI	302.657	2 192	SN	VI	307.12	15 293
CO	VI	302.736	3 48	NA	V	307.152*	8 65, 692
SN	VI	302.94	3 293	AL	VI	307.248	7 693
N	IV	303.009	4 65, 168, 488	SN	VI	307.25	3 293
K	VI	303.023	1 192	SC	307.320	2 17	
N	IV	303.048	5 65, 168, 488	FE	VI	307.375	4 46
CO	VI	303.071	1 48	FE	VI	307.404	3 46
N	IV	303.079	4 65, 168, 488	CD	307.42	2 25	
N	IV	303.123	6 65, 168, 488	SN	VI	307.43 *	15 293

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VII	307.563	2	192	AL VI	312.241	6	693
SN VI	307.77 *	17	293	FE VI	312.263*	7	46
FE VI	307.800	3	46	MG V	312.311*	10	692
C IV	307.806	1	65, 168	SN VI	312.41	10	293
MN VI	307.842	3	128	C IV	312.418*	15	65, 168, 488
MN VI	307.999*	20	128	P IV	312.443	4	597
FE VI	308.007	3	46	C IV	312.455*	14	65, 168, 488
O III	308.051	1	65, 168	HG	312.48	2	26
K	308.129	2	192	CU	312.505	20	356
SC VII	308.180*	6	17	NA VI	312.608	3	692
FE VI	308.187	2	46	SN VI	312.64	12	293
NA V	308.264*	10	65, 692	MN VI	312.692	8	128
O III	308.306	2	65, 168	K V	312.770	5	45, 192, 762
FE VI	308.383	2	46	ZN	312.85	2	25
BI VI	308.405	1	5	ZR VI	312.993	40	545
FE VI	308.534	4	46	CD	313.03	3	25
NE III	308.559	1	57, 65, 488	MO VIII	313.033	25	132
MN VI	308.560*	20	128	NE III	313.048	4	57, 65, 488
AL VI	308.560	6	693	SC VIII	313.252	1	17, 360
FE VI	308.644	5	46	BI	313.314	1	5
W	308.7	1	781	ZR VI	313.392*	180	545
MN VI	308.853*	15	128	CA VII	313.478	2	192
SC	308.895	3	17	HG	313.54	2	26
FE VI	308.960	3	46	BI VI	313.596	1	5
FE VI	308.993	3	46	NE III	313.677	3	57, 65, 488
AL VII	309.012	2	693	MG VIII	313.743	1	691
BI VII	309.028*	3	5	NA VI	313.748*	5	692
AL VII	309.122	2	693	TE VI	313.90 *	6	30
BI VII	309.134*	3	5	NE III	313.92	1	57, 65, 488
SC VIII	309.161	5	17	SC VII	314.049*	4	17
MN VI	309.440*	12	128	FE VI	314.299	3	46
BI VI	309.510	1	5	C III	314.395	1	65, 168
MN VI	309.579*	10	128	ZN	314.49	4	25
AL VI	309.596	8	693, 168	SC VII	314.53	2	17
FE VI	309.627	1	46	MG VI	314.554	3	692
AL VI	309.852	6	693	CA VII	314.609	2	192
SN VI	309.94	5	293	MG VI	314.676	4	692
BI VI	309.976	5	5, 657	N III	314.715	8	65, 168, 488
SC VIII	310.043	1	17, 360	FE VI	314.814	1	46
MN VI	310.058*	10	128	N III	314.850	9	65, 168, 488
C III	310.170	7	34, 65, 488	N III	314.877	6	65, 168, 488
MN VI	310.182	9	128	SN VI	314.88	1	293
FE VI	310.274	5	46	MN VI	314.979	6	128
CU	310.380	20	356	BI VI	314.982	2	5, 657
P V	310.579	3	597	MG VIII	315.022	2	691
HG	310.60	2	26	FE VI	315.027	4	46
FE VI	310.601	4	46	N IV	315.053	8	65, 168, 488
CU	310.727	15	356	SC VIII	315.163	1	17, 360
MN VI	310.908*	40	128	K VI	315.181	4	45, 192, 762
AL VI	310.908	6	693	F III	315.221	8	42, 174, 176
SC VII	311.117	1	17	SL VIII	315.420*	17	360
FE VI	311.138	1	46	BI VI	315.495	6	5
SN VI	311.15 *	16	293	FE VI	315.506	3	46
FE VI	311.236	2	46	K VI	315.537	3	45, 192, 762
K V	311.243	4	45, 192, 762	F III	315.539	7	42, 174, 176
BI VI	311.300	5	5	I	315.62	2	32
SC VIII	311.332	1	17, 360	CA VII	315.702	2	192
P V	311.347	4	597	F III	315.748	6	42, 174, 176
SB	311.35	3	31	SC	315.786	3	17
F III	311.415	4	174, 176	SC	315.890	2	17
O IV	311.490	5	65, 168	NB VII	316.043	20	132
N III	311.539	2	65, 168	SB	316.07	6	31
K V	311.593	0	192	CA VI	316.115	3	192
N III	311.628	3	65, 168	SI VIII	316.202*	2	231
BI VI	311.660	4	5	SN VI	316.23 *	16	293
O IV	311.679	6	65, 168	W	316.3	2	781
K V	311.688	0	192	F III	316.488	4	174, 176
FE VI	311.702*	7	46	SC	316.567	2	17
O IV	311.726	3	65, 168	BI VI	316.670	2	5
MN VI	311.748*	10	128	SB	316.81	8	31
SN VI	311.80 *	17	293	F III	316.823	3	174, 176
NA VI	311.921*	4	692	ZN	316.89	1	25
SC	311.947	4	17	BI VI	316.918	3	5
NB VII	312.010	25	132	CA VI	316.947	3	192, 762
SN VI	312.10 *	15	293	O III	316.967	3	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
F III	316.998	2	174, 176	N IV	322.724	9	65, 168, 488
MG VIII	317.029	1	691	CA V	322.757	5	192, 567
FE VI	317.319	3	46	N IV	323.175	7	65, 168, 488
SN VI	317.40 *	18	293	CA V	323.223	6	192, 567
SC VIII	317.437	4	17	MG IV	323.310*	18	693
NA VI	317.641*	6	692	CL VI	323.356*	15	535
ZN	317.65	1	25	N III	323.431	4	65, 168, 488
SC IX	317.659	0	17	N III	323.488	5	65, 168, 488
TL	317.66	2	33	SC IX	323.538	1	17
SC IX	317.954	0	17	N III	323.615	6	65, 168, 488
ZR VI	317.982	100	545	N III	323.671	4	65, 168, 488
CA IV	318.093*	15	192, 359	CU	323.816	60	356
BI VI	318.250	1	5	SN VI	323.82	1	293
TE VI	318.26 *	5	30	SC IX	323.828	1	17
FE VI	318.364	3	46	CL VI	323.936*	20	535
CA IV	318.392	4	192, 359	BI VI	324.037	1	5
SC VII	318.425	1	17, 360	CA V	324.110	3	192, 567
SC IX	318.615*	8	360	SC IX	324.199*	12	360
CD	318.71	2	25	BI VI	324.385	2	5
BI VI	318.723	1	5	ZN	324.43	1	25
CL IV	318.750	1	43	CA V	324.477	5	192
K V	318.969	1	192	K	324.485	1	192
MG VII	319.016*	4	692	CU	324.485	70	356
TL	319.06	2	33	CD	324.49	2	25
C III	319.266	3	65, 168	NE II	324.56	2	57, 65
CD	319.37	3	25	CU	324.607	50	356
CL IV	319.513	1	43	SB	324.62	3	31
CL IV	319.616	3	43	SC IX	324.632	1	17, 360
NA IV	319.638*	10	65, 693	CA V	325.020	3	192, 567
F IV	319.695	3	173, 176	CU	325.038	20	356
SI VIII	319.829*	2	231	SC VII	325.121	2	17
BI VI	319.930	1	5	MN VI	325.146*	20	128
ZN	319.98	2	25	CL VI	325.161*	25	535
CL IV	319.993	4	43	K III	325.278	0	192, 762
O III	319.996	3	65, 168	CA V	325.282	5	192, 567
F IV	320.004	2	173, 176	NB VII	325.386	10	132
MN VI	320.146	6	128	W	325.4	2	781
CL IV	320.250	1	43	BI VI	325.445	2	5
BI VI	320.335	1	5	C III	325.570	1	65, 168
SC VII	320.406	1	17	CU	325.687	20	356
CA VI	320.445	2	192	NB VI	325.795*	250	132
BI VI	320.470	4	5	CD	326.27	2	25
BI VI	320.515	5	5	ZR VI	326.282*	250	545
NB VII	320.527	35	132	ZN	326.29	1	25
MN VI	320.598	9	128	SN VI	326.43	4	293
MN VI	320.681	9	128	NE II	326.54	5	57, 65
SB	320.69	4	31	MN VI	326.571	2	128
O III	320.720	2	65, 168	CU	326.575	20	356
MN VI	320.874	9	128	SB	326.64	3	31
CL IV	320.881	1	43	BI VI	326.695	3	5, 657
ZN	320.89	4	25	NE II	326.77	3	57, 65
MN VI	320.979	9	128	SC	326.791	4	17
O III	320.979*	12	65, 168, 488	SB	326.90	1	31
MG IV	320.999*	20	693	BI VI	326.901*	8	5, 466
N III	321.071	1	65, 168	TL	327.02	2	33
ZN	321.1	3	25	K V	327.031	2	45, 192, 762
CA VI	321.110	1	192	C III	327.112	4	65, 168
SN VI	321.15	0	293	MN VI	327.131	1	128
N III	321.161	2	65, 168	CA VI	327.175	2	192
MN VI	321.174*	11	128	C III	327.176	4	65, 168
O IV	321.457	1	65, 168	NE II	327.25	2	57, 65
MN VI	321.541*	9	128	BI VI	327.270	2	5
CA IV	321.593*	10	359	O IV	327.320	1	65, 168
BI VI	321.636	1	5	NE II	327.33	3	57, 65
TL	322.14	4	33	K V	327.376	4	45, 192, 762
K	322.146	1	192	CU	327.383	15	356
MO VIII	322.152	150	132	CD	327.45	2	25
CA V	322.166*	10	192	K III	327.605	1	192, 762
I	322.50	1	32	CU	327.620	20	356
N IV	322.503	7	65, 168, 488	NE II	327.63	2	57, 65
N IV	322.570	8	65, 168, 488	C III	327.784	1	65, 168
C III	322.574	8	34, 65, 168	CA VI	327.806	4	192
CU	322.617	15	356	NE II	328.08	2	57, 65
F III	322.650	8	42, 174, 176	MN VI	328.129	2	128
F III	322.685*	7	174, 176	TL	328.17	2	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AL VIII	328.200	0	693
MN VI	328.232*	10	128
ZN	328.29	1	25
CU	328.412	50	356
MN VI	328.431*	20	128
O III	328.448	10	65, 168, 488
P V	328.455	5	597
CU	328.536	25	356
MN VI	328.558	9	128
CA IV	328.577	1	192, 567, 762
BI VI	328.582	2	5
S VI	328.605*	6	598
CU	328.737	40	356
O III	328.742	9	65, 168
P V	328.768	5	597
CU	328.831	20	356
K III	328.845	2	192
K V	328.933	3	45, 192
MN VI	329.043	5	128
CU	329.047*	100	356
K III	329.053	2	192, 762
CA IV	329.116	5	192, 567, 762
MN VI	329.177	2	128
CA VI	329.298	3	192
K V	329.307	1	45, 192, 762
CD	329.32	2	25
MN VI	329.320	5	128
CA IV	329.391	5	192, 567, 762
SC VII	329.640	3	17
HG	329.74	2	26
CD	329.77	2	25
CU	329.805	30	356
CU	329.851	30	356
CA VII	330.000	5	192
CD	330.03	2	25
NE II	330.20	2	57, 65
ZN	330.22	2	25
CD	330.29	2	25
CA VII	330.403	5	547
I	330.51	1	32
NE II	330.62	2	57, 65
C III	330.637	1	65, 168
K III	330.684	5	192, 762
C III	330.687	1	65, 168
W	330.7	1	781
S	330.76	1	30
NE II	330.77	3	57, 65
CA	330.809	1	192
CD	330.85	2	25
CA V	330.937	6	45, 192
CD	330.95	2	25
BI VI	331.045	1	5
NE II	331.06	1	57, 65
BI VI	331.149	1	5
K V	331.168	1	192
SC	331.244	2	17
BI VI	331.295	2	5
SC	331.309	2	17
I	331.34	1	32
K III	331.416	1	192, 762
BI VI	331.427	3	5
CA IV	331.442	4	192, 567, 762
NE II	331.50	2	57, 65
MO VIII	331.612*	200	132
CA VII	331.650*	8	192, 547
CD	331.71	3	25
SB	331.83	5	31
CL IV	331.835	2	44
S	331.85	1	30
TL	331.88	2	33
K	331.966	1	192
CA IV	331.991	5	192, 567, 762
BI VI	332.063	1	5
SB	332.10	5	31
N III	332.133	2	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VII	332.184	3	547
N III	332.327	3	65, 168
CU	332.405	10	356
CA IV	332.531	5	192, 567, 762
NA V	332.550*	8	65, 692
CA IV	332.808	3	192, 567, 762
AL X	332.891	0	693
CU	332.893*	100	356
BI VI	332.985	3	5
Y V	333.095*	40	545
BI VI	333.115	1	5
W	333.2	1	781
SC VII	333.386	2	17
CA V	333.438	4	192
SC X	333.521	2	17
CU	333.562	30	356
CA V	333.570	4	45, 359, 567
CD	333.72	3	25
Y V	333.815*	30	545
CA V	333.857	3	192
NA V	333.910*	9	65, 692
ZR VI	333.945	100	545
CA VII	334.136*	10	192, 547, 567
SC VII	334.138*	5	17
CU	334.204	30	356
W	334.3	1	781
CA VII	334.357	5	547
PB VI	334.388	4	5
BI VI	334.448	1	5
ZR VI	334.520	70	545
CA V	334.545	6	45
BI VI	334.560	1	5
ZN	334.57	4	25
SB	334.66	3	31
CA VII	334.904	2	547
TL	334.97	2	33
SB	335.00	1	31
CU	335.016	20	356
N IV	335.050*	11	65, 168, 488
K VI	335.175	3	192
CA V	335.344	5	192, 567
CA IV	335.374*	25	359
CU	335.470	15	356
I	335.63	2	32
BI VI	335.704	1	5
SC X	335.815	2	535
CU	335.919	25	356
I	336.09	1	32
TE VI	336.11	1	30
CD	336.12	2	25
HG	336.13	3	26
CU	336.279	25	356
BI VI	336.290	3	5
CA IV	336.555*	15	359
A V	336.555	3	549
Y V	336.613*	40	545
SC	336.654	3	17
CD	336.70	2	25
ZN	336.71	2	25
SC	336.881	2	17
TI IX	336.902*	4	547
CA	337.020	1	192
W	337.2	1	781
BI VI	337.212	3	5
A VIII	337.257	2	549
CA	337.396	2	192
CD	337.42	2	25
CA V	337.541	4	192, 567
TL	337.55	2	33
A V	337.555*	3	549
BI VI	337.590	3	5, 657
MO VIII	337.631	50	132
SB	337.66	6	31
ZR VI	337.668	90	545
I	337.69	2	32

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	337.84	3	33	CU	342.432	20	356
BI VI	337.885	3	5	CA IV	342.447	5	192, 567, 762
SC X	337.888*	5	17, 535	SC X	342.509*	10	535
ZR VI	337.930	80	545	CD	342.55	2	25
ZN	337.97	1	25	W	342.6	2	781
A V	337.998*	6	488, 549	K IV	342.703	2	192, 566
CA V	338.056	5	192, 567	CU	342.713*	80	356
HG	338.08	3	26	BI VI	342.722	4	5
SC X	338.115	1	535	TL	342.76	3	33
K VI	338.161	3	192	K IV	342.805	2	192, 566
A VIII	338.222		549	ZR VI	342.869	40	545
W	338.3	1	781	SC X	342.877	1	535
HG	338.31	2	26	TL	343.03	2	33
CU	338.314	25	356	SC X	343.100	1	535
N III	338.345	2	65, 168	CA IV	343.203	6	192, 359
A V	338.426	2	549	AL VII	343.290	0	693
SC	338.447	2	17	CA IV	343.444	8	192, 359, 567
HG	338.45	3	26	K IV	343.468	3	192, 566
SC	338.596	2	17	I	343.60	1	32
ZN	338.65	1	25	CA V	343.640	4	45
CD	339.75	2	25	AL VII	343.650	0	693
CA IV	339.828	4	192	HG	343.70	2	26
CA IV	339.929	5	39, 359, 567	F III	343.892	7	42, 174, 176
MG VIII	339.007	1	691	F III	343.931	4	174, 176
A V	339.009	3	549	CA IV	343.933	5	192, 567, 762
CU	339.038	10	356	BI V	343.938	5	5
CD	339.06	3	25	CD	343.97	3	25
O IV	339.330	1	65, 168	CA III	344.219	2	192
CD	339.42	2	25	K III	344.270	4	192
CU	339.420	15	356	HG	344.35	2	26
CA VI	339.463	6	45, 192, 762	F III	344.388	6	42, 174, 176
SC	339.52	2	17	TL	344.50	2	33
BI VI	339.727	4	5	K III	344.635	4	192
C III	339.773	1	65, 168	N IV	344.915	3	65, 168
CA IV	339.800	5	192, 359	CA IV	344.958	6	192, 359, 567
BI VI	339.808	4	5	BI V	344.958	1	5
TE	339.86	1	30	N IV	345.023	3	65, 168
A V	339.886	3	549	N IV	345.063	5	65, 168, 488
CU	339.887	30	356	N IV	345.107	3	65, 168, 488
CA VI	339.940	4	45, 192, 762	CA IV	345.130	4	192, 567, 762
TL	339.95	2	33	K III	345.197	2	192
CA VI	340.037	4	45	N IV	345.201	3	65, 168
CL VII	340.229*	15	546	O III	345.309	10	65, 168, 488
CA IV	340.286	4	192, 567, 762	TL	345.33	2	33
CL VII	340.298*	18	546	CU	345.368*	90	356
CD	340.35	2	25	K III	345.405	2	192, 762
CA III	340.389	3	192	BI VI	345.479	1	5, 657
TL	340.46	2	33	K III	345.545	2	192, 762
K IV	340.462	6	192, 566	CD	345.63	3	25
CA VI	340.528*	8	45, 192	ZR VI	345.636	90	545
CD	340.54	2	25	TL	345.98	3	33
W	340.7	4	781	CU	346.004	60	356
K IV	340.745	3	192, 566	CA VI	346.335	2	192, 762
SC	340.755	2	17	O IV	346.372	4	65, 168
ZN	340.77	4	25	BI VI	346.612	1	5
S	341.09	1	30	O IV	346.688	3	65, 168
C III	341.143	5	65, 168	CA VII	347.005	4	192, 762, 793
C III	341.179	6	65, 168	BI VI	347.112	1	5
CU	341.183	20	356	BI VI	347.163	1	5
C III	341.242	7	65, 168	P V	347.717	7	197
CA IV	341.284*	15	192, 359, 567	CA VI	347.334	1	192
CD	341.38	2	25	SB	347.40	2	31
BI	341.388	1	5	CA VI	347.431	1	192
CA IV	341.455	4	192, 567, 762	C III	347.777	3	65, 168
CU	341.483	25	356	BI VI	347.835	1	5
S	341.51	1	30	CU	347.854	30	356
SC	341.62	2	17	C III	347.854	3	65, 168
ZN	341.63	6	25	CA VII	347.967	3	192, 762, 793
BI VI	341.697	4	5	K III	347.999	3	192, 762
TI IX	341.754*	10	547	CA VII	348.043	3	192
K III	341.924	6	192	BI VI	348.060	1	5
F III	341.924	7	42, 174, 176	Y V	348.188	15	545
TL	341.97	3	33	P V	348.194	4	597
BI VI	342.060	4	5	MO VIII	348.252	150	132
K IV	342.410	3	192, 566	BI VI	348.267	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	348.41	2	33	K	353.455	3	192
CU	348.413	15	356	HG	353.47	3	26
BI VI	348.515	1	781	CU	353.568	10	356
W	348.6	3	781	BI	353.600	2	5
CA VI	348.650	1	192, 762	CA VIII	353.699	4	547
PB VI	348.783	4	5	AL VII	353.776	4	693
F II	348.800	0	176	SC	353.845	2	17
TL	348.84	3	33	W	353.9	2	781
PB VI	348.840	4	5	NE II	353.922	2	57, 65
BI	348.910	1	5	CD	353.93	2	25
HG	348.92	2	26	HG	354.05	2	26
CA VI	348.927	1	192	K IV	354.139	2	45, 192
CA VII	348.996	1	192, 793	CA VIII	354.156	4	192, 793
BI	349.095	1	5	MG V	354.223*	10	692
MG VI	349.155*	10	692	K	354.397	1	192
CA VI	349.494	1	192	CA VII	354.404	4	192, 793
K V	349.504	4	192, 762	CA VIII	354.508*	9	547
CD	349.77	2	25	CD	354.51	3	25
K V	349.793	3	192, 762	K V	354.627	0	192, 762
O III	349.825	3	65, 168	SC	354.884	3	17
O III	349.918	2	65, 168	K V	354.927*	6	192, 762
CU	349.964	30	356	NA VII	354.950*	4	691
TE VI	350.00	2	30	NE II	354.954	4	57, 65
CU	350.056	10	356	CA VIII	354.985*	8	547
PB VI	350.102	4	5	HG	355.01	2	26
CD	350.15	2	25	F IV	355.045	2	173, 176
K VI	350.164	2	192	K	355.133	2	192
W	350.2	3	781	O III	355.137	6	65, 168
C III	350.330	2	65, 168	BI V	355.148	1	5
CA VI	350.394	1	192	O III	355.293	3	65, 168
PB VI	350.605	4	5	MG V	355.326*	12	692
NA VII	350.645*	5	691	K	355.330	1	192
O III	350.703	8	170	O III	355.333	5	65, 168
CD	350.71	3	25	CA X	355.351	1	192, 762
A V	350.878	3	488, 549	CU	355.425	20	356
MG V	351.089*	12	692	NE II	355.450	2	57, 65
TL	351.14	2	33	K VI	355.469	1	192
CA VII	351.368	3	192, 793	O III	355.469	5	65, 168
CD	351.40	3	25	CO V	355.523	20	357, 487
CA VII	351.460	3	192	NE II	355.647	3	57, 65
HG	351.51	2	26	SN V	355.66	12	280
W	351.9	1	781	K VI	355.663	1	192
N IV	351.931	5	65, 168, 488	CA VIII	355.692	5	192, 547, 762
HG	351.94	2	26	BI V	355.769	1	5, 656
PB VI	351.958	4	5	K VI	355.800	1	192
N III	351.979	1	65, 168	HG	355.82	2	26
CA VII	351.996	2	192, 793	NE II	355.848	1	57, 65
N IV	352.058	4	65, 168	CO V	355.876	18	357, 487
BI VI	352.070*	10	5, 466	I	355.91	2	32
AL VII	352.160	2	693	NE II	355.946	2	57, 65
MO V	352.202*	10	692	Y V	355.958	10	545
NE II	352.237	2	57, 65	CO V	356.060	12	357, 487
NA VII	352.275*	6	691	NE II	356.131	4	57, 65
CD	352.28	2	25	PB VI	356.177*	5	5
ZR VI	352.293	60	545	TL	356.19	2	33
HG	352.33	3	26	CA V	356.246	5	45, 192
K V	352.463	2	192, 762	K IV	356.260	3	45, 192
K V	352.750	2	192, 762	BI V	356.358	1	5
CA V	352.915*	9	45, 192	K VI	356.372	1	192
ZR VI	352.938	50	545	ZR VI	356.430	90	545
NE II	352.946	4	57, 65	NE II	356.436	2	57, 65
C III	353.000	3	65, 168	CD	356.45	2	25
CA VIII	353.004	2	547	NE II	356.534	3	57, 65, 488
CU	353.031	15	356	K VI	356.615	3	192
MG V	353.094*	14	692	O III	356.725	2	65, 168
BI	353.156	1	5	NE II	356.795	5	57, 65, 488
NE II	353.206	3	57, 65	AL VII	356.885*	5	693
NB VII	353.240	35	132	HG	356.89	3	26
K	353.246	1	192	W	356.9	2	781
HG	353.25	3	26	HG	356.96	3	26
BI	353.272	1	5	CU	357.052	10	356
NA VII	353.294*	8	691	PB VI	357.120	3	5
MG V	353.300*	9	692	CA VIII	357.347*	12	547
K	353.325	3	192	CA VIII	357.497*	8	547
F II	353.421	0	42, 176	BI IV	357.512	2	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NE II	357.534	5	57, 65, 488	CA VI	363.525	2	192, 762
K VI	357.645	3	192	K	363.647	1	192
K VI	357.685	3	192	BI IV	363.675	7	5
NE IV	357.831	50	488, 544	C III	363.754	4	34, 65, 168
CU	357.897*	100	356	NA VI	363.774	2	692
I	357.94	1	32	C III	363.785	5	34, 65, 168
NE V	357.955*	40	488, 544	I	363.83	1	32
CA III	357.973*	8	192	C III	363.860	6	34, 65, 168
CA VIII	357.983*	8	547	HG	363.96	2	26
SC VIII	358.107	2	547	CU	363.967	10	356
CA VI	358.153	3	192	FE V	364.292	3	47
N III	358.278	3	65, 168, 488	IE V	364.36 *	6	30
N III	358.327	5	65, 168, 488	PB VI	364.385	3	5
N III	358.356	5	65, 168, 488	NA VI	364.477	3	692
N III	358.401	3	65, 168, 488	O III	364.739	3	65, 168
N III	358.469	5	65, 168, 488	BI VI	364.752	7	5, 466
NE V	358.472*	50	488, 544	FE V	364.795	4	47
N III	358.509	5	65, 168, 488	O III	364.867	2	65, 168
SC	358.522	5	17	FE V	364.913	3	47
N III	358.578	6	65, 168, 488	MG VII	365.230	2	692
PB V	358.636	5	5, 657	FE V	365.337	3	47
NE IV	358.721*	200	57, 488, 544	FE V	365.440*	6	47
C III	358.740	4	65, 168	NE V	365.594*	100	488, 544
TE V	358.76 *	7	30	K VI	365.614	3	192, 566
CU	358.865*	90	356	FE V	365.634	3	47
O III	359.016	8	65, 168	C III	365.778	1	65, 168
O III	359.223	8	65, 168	BI IV	365.849	7	5
CA VIII	359.364	5	192, 793	FE V	365.858*	6	47
O III	359.384	7	65, 168	F III	365.874	7	42, 174, 176
NE V	359.385*	50	488, 544	FE V	366.001	3	47
O III	359.616	1	65, 170	HG	366.01	2	26
CA VIII	359.640	2	192, 793	TL	366.10	3	33
K IV	359.730	6	192, 358	NA VI	366.110*	4	692
CU	359.873	50	356	C III	366.169	4	65, 168
K IV	359.907	4	192, 566	CA VII	366.203	3	192
HG	360.08	2	26	F III	366.391	6	42, 174, 176
CD	360.08	2	25	HG	366.47	2	26
NB VII	360.099	150	132	CD	366.87	2	25
CA VII	360.296	2	192	CA VII	367.011	3	192
NA V	360.319*	8	65, 692	SC VIII	367.083	5	360
NA V	360.367*	8	65, 692	O IV	367.192	2	65, 168
C III	360.557	6	65, 168	CA VI	367.371	2	192
K IV	360.568	2	45, 192	K VI	367.378	2	192
CU	360.618	30	356	PB V	367.395	7	5
C III	360.623	7	65, 168	W	367.4	2	781
C III	360.675	5	65, 168	ZN	367.55	2	25
NA IV	360.761	6	65, 693	NA V	367.557	2	65, 692
PB	360.930	2	5	HG	367.61	2	26
CA VI	361.114	4	192	MG VII	367.679*	4	692
CU	361.220	25	356	HG	367.95	3	26
ZN	361.23	1	25	SR IV	367.95	10	758
CA VI	361.234	2	45, 192, 762	K VI	368.030	2	192, 566
NA VI	361.250*	8	692	MG IX	368.071	1	691
CD	361.32	3	25	SC VIII	368.088	1	17
HG	361.33	2	26	S	368.25	1	30
NE II	361.427	5	57, 65, 488	CA III	368.303	3	192
SN V	361.55	15	280	CA III	368.422	1	192
CA VI	361.645	2	192	K	368.465	1	192
CU	361.838	15	356	K	368.580	2	192
K IV	362.086	5	192, 566	IN V	368.67	6	293
PB VI	362.125	3	5	NB VII	369.197	75	132
K IV	362.154	3	192, 566	HG	369.21	2	26
ZR VI	362.237	50	545	C III	369.415	5	65, 168
SC VIII	362.308	4	547	C III	369.472	2	65, 168
NA VI	362.444*	4	692	BI V	369.515	1	5, 656
NE II	362.456	4	57, 65, 488	TL	369.59	2	33
CA VI	362.612	4	45, 192, 762	S	369.60	2	30
CA VI	362.788	1	192, 762	CA III	369.647	5	192
N III	362.833	7	65, 168, 488	NA V	369.743	3	65, 692
N III	362.881	8	65, 168, 488	CA VI	370.022*	7	45, 192, 762
N III	362.946	8	65, 168, 488	SC	370.034	4	17
N III	362.985	6	65, 168, 488	IN V	370.10	6	293
K IV	363.021	3	192, 566	K VI	370.115	2	192
HG	363.30	2	26	FE VIII	370.432*	10	365
CA VII	363.395	2	192	TL	370.47	2	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	370.48	2	26	K	V	376.061	3 192, 762
K	V	370.523	3 192	IN	V	376.07	6 293
K	V	370.580	3 192	CA	V	376.279	3 192, 567
CU	370.622	10	356	HG		376.34	2 26
PB	V	370.685	5 5	B	III	376.372	1 195
BI	V	370.820	1 5	NA	II	376.375*	3 65, 488, 693
SC	VIII	371.184	3 17, 360	SC	IV	376.449	3 17
CA	V	371.225	6 192, 567	PB	VI	376.590	3 5
CU		371.267	10 356	SC		376.628	2 17
BI	V	371.531	1 5	BI	VI	376.660*	8 5, 657
C	III	371.694*	10 65, 168, 488	MG		376.665	1 693
C	III	371.747*	10 65, 168, 488	F	II	376.686	1 42, 176
C	III	371.784*	8 65, 168, 488	IN	V	376.79	10 293
CA	IX	371.899	5 192, 535	MN	IX	376.944	359
NA	II	372.069*	6 65, 488, 693	TL		377.08	2 33
K	V	372.148*	10 192, 762	F	II	377.140	0 42, 176
W		372.3	3 781	CA	V	377.181	5 192
SC	IV	372.415	3 17	K	VI	377.263	2 192
K	V	372.462*	4 192, 762	CU		377.355	10 356
SC	XI	372.507	3 361	MO	VI	377.540*	400 132
PB	V	372.534	4 5	HG		377.71	2 26
CL	V	372.589	2 43	CU		377.756	15 356
CD		372.66	2 25	K	V	377.763	5 192, 762
BI	IV	372.715	5 5	TL		378.00	2 33
K	VI	372.774	4 192	PB	VI	378.058	3 5
IN	V	372.82 *	10 293	CA	IX	378.089*	20 192, 535
CA	V	372.904	6 192, 567, 762	MO	VI	378.118	75 132
IN	V	372.94 *	10 293	NA	III	378.143	10 65, 693
K	V	373.074	2 192, 762	I		378.17	1 32
SN	V	373.14	10 280	K	V	378.219	3 192, 762
CL	V	373.165	2 43	CA	VII	378.258	3 192
K	V	373.318	3 192	CA	IX	378.382	2 192, 535
TL		373.40	3 33	CA	IX	378.550	2 192, 535, 762
CA	VI	373.418	5 45, 192, 762	F	III	378.563	1 174, 176
CA	VI	373.700	3 192	F	III	378.603	2 174, 176
FE	V	373.720	5 47	IN	V	378.61 *	17 293
CL	V	373.776	3 43	HG		378.65	3 26
SB		373.78	2 31	CA	VI	378.653	1 192
CA	IX	373.802*	10 535	BI	IV	378.667	4 5
O	III	373.805	8 65, 168, 488	CA	VI	378.745	1 192
PB	V	373.830	5 5	NB	VII	378.901*	200 132
CL	V	373.911	0 43	TL		378.95	3 33
CA	IX	373.979*	15 535	BI	IV	378.970	4 5
CA	VI	373.997*	7 45, 192, 762	C	III	379.065	1 65, 168
O	III	374.005	8 65, 168, 488	K	III	379.118	6 192, 762
TE		374.03	4 30	CA	V	379.138	2 192, 567, 762
O	III	374.075	10 65, 168, 488	HG		379.25	3 26
O	III	374.165	8 65, 168, 488	K	IV	379.279	2 45
N	III	374.204	11 65, 168, 488	FE	V	379.294	3 47
FE	V	374.240	4 47	NE	III	379.308*	7 57, 65, 488
O	III	374.331	8 65, 168, 488	CU		379.326	25 356
TE		374.36	2 30	Y	V	379.472	20 545
O	III	374.436	8 65, 168, 488	O	III	379.505	4 65, 168
N	III	374.441	12 65, 168, 488	O	III	379.575	3 65, 168
FE	V	374.464	2 47	TE		379.60	1 30
MO	VI	374.472*	250 132	O	III	379.631	2 65, 168
SC	VIII	374.658	25 360	CA	V	379.765	3 192
CL	V	374.662	1 43	O	IV	379.775	4 65, 168
CA	IV	374.744	5 192, 762	K	III	379.877	6 192
FE	V	374.864	5 47	O	IV	379.919	3 65, 168
K	V	374.939	5 192	CA	VI	380.003	1 192
SC		375.048	4 17	HG		380.02	3 26
CL	V	375.103	2 43	NA	III	380.107	8 65, 693
F	II	375.300	2 42, 176	PB	V	380.196	5 5
F	II	375.434	1 42, 176	IN	V	380.27	9 293
SC	VIII	375.705	3 17	CA	V	380.396	5 192, 567
TL		375.71	2 33	K	III	380.477	5 45, 192, 762
F	II	375.718	1 42, 176	PB	V	380.497	6 5
HG		375.75	3 26	FE	V	380.664	3 47
F	II	375.793	1 42, 176	I		380.79	1 32
IN	V	375.84	6 293	F	II	380.902	2 42, 176
F	II	375.928	1 42, 176	TL		380.94	2 33
K	IV	375.955	6 45, 192, 358	SC	XI	381.151	7 361
PB	V	375.957	6 5	FE	V	381.152	2 47
TL		376.00	2 33	HG		381.16	3 26

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	381.20	2	33	FE	V	386.737	3 47
FE	V	381.260	3 47	FE	V	386.783	4 47
NA	VII	381.300	3 691	NB	VII	386.819	75 132
CA	VI	381.464	2 192	FE	V	386.897	4 47
IN	V	381.56 *	11 293	PB	V	387.070	3 5
CA	V	381.601	3 192	CA	V	387.077	5 45, 192, 762
SR	IV	381.62	12 758	FE	V	387.199	5 47
AL	VIII	381.689	0 693	HG		387.25	2 26
K	IV	381.702	4 45, 192	HG		387.33	3 26
CA	VI	381.849	2 192	CA	VII	387.349	2 192
FE	V	381.881	4 47	N	IV	387.353	4 65, 168, 488
MN	V	382.061	1 46	K	III	387.372	2 192
IN	V	382.14	9 293	O	III	387.398	2 65, 168
O	III	382.214	1 168	O	III	387.482	3 65, 168
K	III	382.229	6 192, 762	CA	VII	387.490	2 192
HG		382.38	3 26	FE	V	387.500*	6 47
K	IV	382.487	3 45	FE	V	387.616	4 47
RI	V	382.600	1 5	O	III	387.639	4 65, 168
K	IV	382.646	4 45	CA	VII	387.669	2 192
SC		382.650	2 17	TL		387.70	2 33
IN	V	382.76 *	11 293	FC	V	387.775	4 47
U	III	382.903	1 160	MG	VI	387.787	2 692
K	IV	382.906	6 45, 192	K	V	387.800*	6 192, 762
MN	V	382.907	6 46	PB	V	387.870	4 5, 657
MN	V	382.980	1 46	AL	VIII	387.970	2 693
IN	V	383.05 *	10 293	FE	V	387.983	3 47
PB	VI	383.280*	5 5	MG	VI	388.020	3 692
K	V	383.318	2 192	TL		388.10	3 33
MN	V	383.422	2 46	PB	VI	388.147	1 5
FE	V	383.484	3 47	SB		388.19	5 31
CA	VI	383.505	2 192	NE	IV	388.218*	100 57, 488, 544
TL		383.65	3 33	K	VI	388.233	4 192
MN	V	383.681	4 46	CA	VII	388.235	2 192
HG		383.74	2 26	P	IV	388.315	6 597
AL	VIII	383.785	1 693	K	VI	388.485	2 192
MN	V	383.939	5 46	FE	V	388.500	2 47
CA	VI	384.028	2 192	FE	V	388.607	2 47
C	IV	384.032*	16 65, 168, 488	SC		388.682	2 17
K	IV	384.095	5 192, 358	CA	VII	388.685	3 192
CA	VI	384.172	3 192	IN	V	388.91 *	14 293
C	IV	384.178*	17 65, 168, 488	K	IV	388.920	5 192, 566
FE	V	384.212	3 47	S	VI	388.940*	6 488, 598
BI	IV	384.270	2 5	C	III	388.969	5 34, 65, 168
TL		384.39	4 33	BI	IV	389.000	2 5
K	V	384.400	2 192	C	III	389.005	6 34, 65, 168
K	V	384.516	2 192	K	V	389.069	5 192, 762
FE	V	384.610	2 47	C	III	389.090	7 34, 65, 168
K		384.689	1 192	CA	VII	389.195	1 192
TL		384.75	2 33	HG		389.23	2 26
K	IV	384.956	3 45, 192	K	V	389.428	2 192, 762
FE	V	384.957*	6 47	P	V	389.500	3 597
K	V	385.020	1 192, 762	K	VI	389.531	2 192
FE	V	385.023	4 47	TL		389.58	3 33
PB	VI	385.023	4 5	PB	V	389.745	5 5, 657
CA	VI	385.091	2 192	K	VI	389.750	2 192
TL		385.11	2 33	BI	IV	389.835	2 5
HG		385.17	3 26	HG		389.89	2 26
TL		385.51	3 33	SC	VIII	389.892*	12 17, 547
TE	V	385.58	0 30	TE	V	389.96	2 30
TL		385.64	2 33	IN	V	390.03	11 293
K	V	385.689	2 192, 762	C	III	390.055	3 65, 168
FE	V	385.740	5 47	K	III	390.114	5 192
FE	V	385.869	5 47	CA	VI	390.137	3 192, 762
SC	IX	385.883	360 43	CL	V	390.148	4 43
CA	VI	385.941	1 192	PT		390.4	1 411
TL		385.96	2 33	K	IV	390.415	5 192, 566
AL	IX	386.070	0 693	CD		390.44	3 25
CA	VI	386.106	1 192	K	IV	390.574	6 192, 566
FE	V	386.156	4 47	TL		390.59	3 33
C	III	386.203*	14 34, 65, 488	P	V	390.700*	8 597
IN	V	386.21 *	17 293	TL		390.83	3 33
CA	VI	386.254	1 192, 762	S	VI	390.859*	8 488, 598
K	VI	386.505	2 192	SC	IX	390.888*	8 360
IN	V	386.70 *	10 293	IN	V	390.92	11 293
K	V	386.710	4 192	BI	VI	391.215*	8 5, 657

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K IV	391.462	4	192, 566
TL	391.56	3	33
HG	391.88	2	26
O II	391.912	1	65, 168
K III	391.918	4	192
O II	391.943	2	65, 168
O II	392.002	3	65, 168
K IV	392.274	2	169, 192
IN V	392.29	9	293
O II	392.322	3	65, 168
CA III	392.420	2	192
CL V	392.433*	5	43
BI IV	392.445	3	5
IN V	392.46	9	293
K IV	392.467	4	192, 566
AL IX	392.767	0	693
PB V	392.880	3	5
FE V	392.907*	6	47
SB V	393.07	5	31
PB V	393.102	2	5
K IV	393.142*	10	192, 566
TL	393.16	3	33
FE V	393.270*	5	47
MN V	393.324	3	46
TL	393.51	2	33
HG	393.64	2	26
F II	393.676	1	42, 176
BI IV	393.840	8	5
IN V	393.89 *	25	293
FE V	393.911*	4	47
K	394.063	1	192
F II	394.194	0	42
TL	394.24	2	33
MN V	394.322	1	46
PB VI	394.336	2	5
PB VI	394.384	3	5
K VI	394.477	3	192, 793
HG	394.55	4	26
SC IX	394.652*	12	17, 360
HG	394.69	2	26
BI	394.817	1	5
SR IV	394.90	20	758
CD	394.90	3	25
K V	394.909	3	192, 762
SC	394.955	2	17
PB V	394.955	1	5
W	395.0 *	8	781
CD	395.13	3	25
FE V	395.155	3	47
PB V	395.280	1	5, 657
SC	395.317	4	17
K VI	395.395*	5	192, 762, 793
F III	395.442	3	174, 176
SB	395.49	2	31
O III	395.558*	12	65, 168, 488
MN IX	395.703		359
TL	395.73	3	33
IN V	395.74	11	293
FE V	395.789	2	47
A III	395.92	1	59, 65
TL	395.95	3	33
F III	395.968	2	174, 176
CA VII	396.044	2	192, 598
TL	396.15	3	33
K VI	396.235	4	192, 793
F III	396.247	1	176
A III	396.38	4	59, 65
CA III	396.382	3	192
SC	396.440	4	17
PB	396.441	3	5
K III	396.763	0	192, 762
CA VII	396.770	3	192
FE V	396.773	3	47
A IV	396.869	4	59, 65
TL	396.91	4	33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VI	396.917	2	45, 192, 762
O III	397.120	2	65, 168
CA	397.178*	4	192
NA VII	397.490	3	691
HG	397.56	4	26
A III	397.67	1	59, 65
K VII	397.674	1	547
SB	397.72	1	31
TL	397.86	2	33
CD	398.02	3	25
BI	398.043	1	5
K VI	398.087	4	192, 793
C III	398.168	1	65, 170
K VII	398.252	0	547
TL	398.36	4	33
K V	398.363	4	192, 762
HG	398.49	2	26
A IV	398.546	4	59, 65
C III	398.551	1	65, 170
TL	398.59	3	33
MN V	398.604	2	46
CA VII	398.615	2	192, 598
K III	398.633	3	192, 762
CD	398.64	2	25
TL	398.84	4	33
A III	398.86	1	59, 65
K V	398.878	4	192, 762
N III	398.885	3	65, 168
K VII	398.931*	8	547
SC	398.939	2	17
K VII	398.988*	2	547
N III	399.045	4	65, 168
K VI	399.073	2	192, 793
N III	399.084	1	65, 168
HG	399.12	3	26
NA VII	399.182*	4	691
MG VI	399.289*	6	692
Y V	399.352*	40	545
CD	399.40	2	25
K V	399.400	3	192, 762
K VII	399.483	1	192, 547
O IV	399.50	3	335
SC	399.501	2	17
TL	399.53	3	33
MN V	399.538	4	46
O IV	399.62	2	335
A IV	399.634	3	59, 65
C III	399.637	6	65, 168
C III	399.688	6	65, 168
O IV	399.71	2	335
K V	399.754	4	192, 762
SC	399.772	2	17
IN V	399.79 *	10	293
NE VI	399.820	5	544
O IV	399.85	4	335
CD	399.86	3	25
HG	399.89	3	26
CL VI	399.938	5	535
CL VI	399.957	7	535
SC IX	399.973	2	17, 360
CL VI	399.995	8	535
IN V	400.05 *	9	293
K VII	400.091	1	547
K III	400.210	8	192, 762
TL	400.30	2	33
CD	400.50	2	25
SR IV	400.56	3	758
IN V	400.57 *	25	293
F II	400.579	1	42, 176
HG	400.60	3	26
FE V	400.625	4	47
PB V	400.655	5	5
MG VI	400.676*	7	692
NA V	400.722*	10	65, 692
CA VI	400.824	3	45, 192, 762

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	400.87	2	33	K	III	406.484	6 192, 359, 762
K	VI	400.951*	5 192, 793	CD		406.64	5 25
FE	V	401.030	2 47	K		406.816	1 192
NE	VI	401.138*	15 544	MN	V	406.845	6 46
HG		401.14	2 26	K		406.912	1 192
AL	X	401.183	0 693	F	II	407.053	5 42, 176
K	VII	401.542	3 192, 547	NE	II	407.136*	8 57, 65, 488
FE	V	401.639	2 47	CD		407.18	3 25
ZR	VI	401.698	130 545	IN	V	407.28	9 293
K	VII	401.764	2 192, 547	W		407.3	2 781
MN	V	401.787	3 46	MN	V	407.301	2 46
CD		401.80	3 25	HG		407.46	4 26
NE	VI	401.939*	25 544	F	II	407.511	4 42, 176
TL		401.94	2 33	TL		407.67	3 33
TL		402.06	3 33	PB	V	407.700	7 5, 466
K	III	402.104	4 192, 762	CD		407.71	2 25
K	VII	402.267	0 547	CA	VII	407.776	4 192, 793
IN	V	402.39 *	25 293	CD		407.94	2 25
TL		402.39	2 33	IN	V	407.95	9 293
PB	VI	402.402	1 5	HG		407.96	2 26
TE	V	402.49	3 30	W		408.0	1 781
MN	V	402.525	4 46	K	IV	408.076	5 45, 192
CA	VII	402.551	2 192, 598	MN	V	408.322	6 46
MN	V	402.754	3 46	HG		408.35	2 26
HG		402.90	2 26	MN	V	408.390	1 46
K	IV	402.907	6 192, 566	PB	V	408.480	2 5
TL		403.05	2 33	TL		408.51	3 33
PB	VI	403.052	1 5	CD		408.58	2 25
PB	V	403.217	2 5, 657	NA	IV	408.682*	8 65, 693
NE	VI	403.262*	10 544	MN	V	408.733	4 46
TL		403.27	2 33	K	III	408.959	8 192, 762
MG	VI	403.315*	8 692	MN	V	409.217	1 46
CD		403.37	3 25	C	III	409.325	6 65, 168
MN	V	403.552	3 46	MN	V	409.335	2 46
MN	V	403.680	1 46	MN	V	409.546	3 46
CA	III	403.732*	20 192, 366, 488	HG		409.57	4 26
CD		403.74	2 25	NA	IV	409.615*	8 65, 693
MN	V	403.754	4 46	PB	V	409.729	1 5, 657
K	V	403.784*	7 192, 547	K	III	409.737	8 192
SR	IV	403.85 *	25 758	CD		409.78	4 25
K	VII	403.967*	5 192, 547	MN	V	409.795	4 46
Y	V	404.086	10 545	PB	V	409.915	3 5
W		404.3	7 781	CA	III	409.971*	18 192, 366, 488
MN	V	404.358*	8 46	PB	V	410.026	2 5
TL		404.40	3 33	P	V	410.073	2 597
K	IV	404.412	3 45, 192	K	III	410.102	8 192, 359, 762
MN	V	404.455*	4 46	MN	V	410.311*	8 46
PB	V	404.535	1 5	MO	V	410.35	5 761
PB	V	404.644	3 5, 657	NA	IV	410.371*	10 65, 693
K	VI	404.684	4 192, 566	MN	V	410.459*	5 46
TE		404.79	1 30	CA	VII	410.499	5 192, 793
BI	IV	404.802	6 5	NA	IV	410.540*	6 65, 693
MN	V	405.094*	5 46	MN	V	410.611*	8 46
CD		405.10	3 25	SR	IV	410.67	8 758
K	VI	405.178	2 192	TL		410.77	2 33
CD		405.31	3 25	W		410.9	1 781
K	VI	405.333	2 192	MN	V	410.990*	8 46
TL		405.40	3 33	PB	V	411.055	1 5
K	VI	405.475	1 192	HG		411.08	3 26
CD		405.62	2 25	MO	V	411.08	8 761
HG		405.64	4 26	CL	III	411.163	3 43
F	II	405.644	4 42, 176	MN	V	411.329*	7 46
MN	V	405.654*	8 46	NA	IV	411.333*	7 65, 693
K	VI	405.675	2 192	CL	III	411.373	4 43
K	IV	405.773	2 45, 192	HG		411.42	2 26
NE	II	405.852*	9 57, 65, 488	MN	V	411.585*	7 46
MN	V	406.037*	7 46	HG		411.67	2 26
PT		406.1	1 411	CA	X	411.690	3 361
K	VI	406.102	2 192	CD		411.75	2 25
PB	V	406.215	3 5	MN	V	411.789	3 46
MN	V	406.240	1 46	B	III	411.810*	3 65, 195
HG		406.25	2 26	CL	III	411.812	4 43
CL	III	406.274	1 43	SB		411.85	1 31
MN	V	406.417	7 46	MN	V	411.920	3 46
ZR	VI	406.481*	200 545	C	III	411.958	3 34, 65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CD	412.07	2	25	F II	417.874	1	42, 176
K V	412.080*	6	192	FE V	418.033*	6	47
CA VII	412.175	2	192	K VI	418.160	2	192
NA IV	412.240*	8	65, 693	K VIII	418.444	3	192, 535
K III	412.289	5	192, 762	FE V	418.457*	5	47
TL	412.37	3	33	K VIII	418.571	1	535
MO V	412.42	5	761	O II	418.598	1	65, 168
MN V	412.534	5	46	C III	418.609	2	65, 168
CO V	412.59	10	286	K III	418.623	6	192, 762
W	412.6	1	781	N III	418.705	7	65, 168, 488
K VI	412.790	1	192	N III	418.910	6	65, 168, 488
HG	413.00	2	26	PB	418.920	2	5
CR VIII	413.01 *	359		K V	419.045	2	192, 762
CD	413.33	3	25	PB V	419.137	5	5
MN V	413.384	4	46	CD	419.27	2	25
PB V	413.607	2	5	K V	419.310	2	192, 762
HG	413.65	3	26	C IV	419.525*	13	65, 168, 488
CD	413.77	2	25	F IV	419.644*	14	42, 173, 176
K III	413.792*	10	192, 488, 762	PB V	419.650	1	5, 657
PB V	413.941	1	5	C IV	419.714*	14	65, 168, 488
HG	413.98	3	26	K V	419.731	1	192, 762
CD	414.00	5	25	CA X	419.778	3	178, 192, 361
W	414.3	1	781	SR IV	419.81 *	25	758
K V	414.465	3	192, 762	HG	419.88	4	26
PB V	414.492	4	5	FE V	419.915	3	47
CO V	414.52	5	286	CD	420.00	5	25
HG	414.63	2	26	F IV	420.041*	15	42, 173, 176
CA VII	414.663*	12	192, 793	CA VI	420.191	1	192, 762
CD	414.75	3	25	HG	420.36	3	26
ZR VI	414.768	70	545	SR IV	420.37	3	758
HG	414.77	3	26	NE V	420.386	10	544
K III	414.870	6	192, 762	CA X	420.493	1	361
MN V	414.933	3	46	FE V	420.546	5	47
W	415.0	1	781	HG	420.60	2	26
FE V	415.006	4	47	MO V	420.61	5	761
TL	415.03	2	33	TL	420.63	2	33
K V	415.052	5	192, 762	SE	420.64	2	289
CL III	415.196	1	43	BI IV	420.697	6	5, 449
MN V	415.207	5	46	F IV	420.727*	16	42, 173, 176
CL III	415.333	1	43	N IV	420.758	1	65, 168
SE	415.45	2	289	K VI	420.807	4	192
K V	415.465	3	192, 762	HG	420.82	3	26
NA VI	415.505*	4	692	CD	420.85	4	25
PB V	415.600	3	5	FE V	420.874	2	47
TL	415.61	3	33	PB V	420.920	3	5
MN V	415.622	7	46	NE V	420.951	15	544
K V	415.793	4	192, 762	ZN	421.04	1	25
P IV	415.815	1	597	FE V	421.045	5	47
PB V	415.825	4	5	PB V	421.063	3	5
BI IV	415.935	5	5	K V	421.446	3	192
SC IX	415.963	2	17, 360	NA VI	421.465	1	692
FE V	415.972	3	47	TL	421.54	2	33
MN V	415.980*	8	46	PB V	421.570	3	5
K III	416.001	6	192, 762	NE IV	421.584*	150	57, 65, 488
NE V	416.198*	80	488, 544	W	421.6	1	781
FE V	416.208	5	47	NE IV	421.609*	150	544
K VI	416.509	1	192	FE V	421.682	2	47
K VIII	416.628	3	192, 535	CA VII	421.718	1	192
CD	416.63	2	25	FE V	421.765	4	47
C III	416.769	5	65, 168	S	421.77	1	30
SR IV	416.82	1	758	CL III	421.771	3	43
NE V	416.834	25	544	HG	421.87	2	26
SE	416.91	2	289	SE	421.99	3	289
FE V	416.910	2	47	CL III	421.990	3	43
PB V	416.950	2	5, 657	F II	422.012	1	42, 176
K IV	417.280	3	45, 192	HG	422.12	3	26
FE V	417.382*	6	47	CD	422.17	3	25
HG	417.42	4	26	K V	422.178	5	45, 192, 762
IN V	417.43	9	293	NE V	422.214	15	544
MO V	417.49	6	761	MN V	422.228	1	46
K III	417.535	6	192, 762	FE V	422.287*	6	47
NA VI	417.595*	6	692	PT	422.3	1	411
TE	417.63	3	30	GA IV	422.49	4	467
PB V	417.667	3	5	K VIII	422.511*	10	192, 535
TL	417.69	4	33	PB V	422.514	5	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG	422.53	3	26	CA VII	428.819	1	192
F II	422.618	0	42, 176	FE V	428.909	5	47
K VIII	422.642	2	535	PB V	428.99	1	5, 657
CL III	422.713	1	43	MN V	429.054	5	46
TL	422.76	2	33	TL	429.09	2	33
SC X	422.850*	4	17	MG VII	429.134	1	692
SE	423.06	2	289	HG	429.14	3	26
Y V	423.210	15	545	SR IV	429.24	15	758
K	423.371	1	192	ZN	429.31	4	25
HG	423.54	2	26	K VI	429.438	2	192
K	423.558	1	192	F III	429.511*	10	42, 174, 176
TI IV	423.58	4	604	O II	429.557	2	65, 168
GA IV	423.59	5	467	O II	429.647	5	65, 168
K	423.821	1	192	K II	429.656*	3	192
FE V	423.833	2	47	O II	429.716	4	65, 168
PB V	423.906	2	5, 657	CA	429.744	1	192
TI IV	424.28	3	604	BI V	429.78	1	5, 656
HG	424.37	3	26	O II	429.918	5	65, 168, 488
SE	424.37	2	289	K II	429.923*	3	192
W	424.5	1	781	CA	429.933	1	192
TL	424.60	3	33	MN V	429.984	1	46
PB V	424.640	6	5	O II	430.041	6	65, 168, 488
FE V	424.733	3	47	CA III	430.050	1	192
Y V	424.796*	40	545	F III	430.154*	11	42, 174, 176
CA V	425.000*	15	192	O II	430.177	6	65, 168, 488
CD	425.07	2	25	F III	430.218*	8	174, 176
K V	425.159	5	45, 192, 762	ZN	430.58	3	25
HG	425.26 *	4	26	FE V	430.624	2	47
CD	425.31	3	25	CR VIII	430.71 *		359
ZN	425.45	3	25	F IV	430.758*	15	42, 173, 176
K V	425.588*	7	45, 192, 762	F II	430.909	4	42, 176
CD	425.76	2	25	PB V	431.02	2	5
HG	425.80 *	4	26	HG	431.05	3	26
ZN	425.88	8	25	BI IV	431.200	6	5, 449
SC	425.892	2	17	CD	431.30	2	25
PB	425.92	2	5	MG VII	431.318	2	692
FE V	426.045	5	47	NE IV	431.472	25	544
FE V	426.097	5	47	ZN	431.53	6	25
HG	426.15 *	5	26	FE V	431.541	3	47
SC IX	426.252	2	17, 360	F II	431.545	3	42, 176
BI IV	426.32	1	5	MO V	431.55	6	761
K VI	426.338	2	192	K	431.622	1	192, 762
O II	426.526	1	65, 168	F II	431.826	2	42, 176
BI IV	426.54	1	5	PB V	431.86	2	5, 657
TL	426.68	2	33	TL	431.89	3	33
FE V	426.745	3	47	FE V	432.340	3	47
FE V	426.814	4	47	NE VI	432.393	5	544
BI IV	426.84	2	5	W	432.6	1	781
FE V	426.969	3	47	BI V	432.67	2	5
HG	427.05	2	26	CA VIII	432.880	6	192, 793
CD	427.07	3	25	PR IV	432.880	3	5, 139
FE V	427.190	3	47	TL	433.01	2	33
HG	427.37	2	26	CD	433.16	2	25
FE V	427.442	2	47	NE IV	433.237	50	544
BI IV	427.58	2	5	C III	433.339	8	34, 65, 168
CA	427.655	1	192	PB V	433.487	3	5, 657
MO VIII	427.660*	1000	132	MN V	433.558	7	46
TL	427.83	2	33	CA VII	433.609*	6	192, 598
NE III	427.840	3	57, 65, 488	N III	433.911	6	65, 168, 488
FP V	427.918	2	47	N III	434.014	6	65, 168, 488
CD	428.07	2	25	N III	434.066	7	65, 168, 488
ZN	428.11	2	25	N III	434.129	5	65, 168, 488
CA VIII	428.112	6	192, 793	MN V	434.210	3	46
TL	428.13	2	33	N III	434.246	6	65, 168, 488
FE V	428.131	3	47	O III	434.256	4	65, 168
N III	428.180	6	65, 168, 488	N III	434.280	6	65, 168, 488
SE	428.24	3	289	CR V	434.33	40	790
N III	428.244	5	65, 168, 488	MO V	434.52	6	761
K VI	428.315	2	192	CA IV	434.570*	12	192, 762
CD	428.42	3	25	MN V	434.575	2	46
HG	428.43	2	26	B III	434.627	1	195
ZN	428.53	7	25	O III	434.646	3	65, 168
K VI	428.538*	5	192	K III	434.722*	15	192, 762
MN V	428.600	5	46	O III	434.840	2	65, 168
FE V	428.763	5	47	MG VII	434.923	2	692

SECTION IV FINDING LIST, ALL ELEMENTS

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SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O III	434.975	10	65, 168, 488
MN V	435.069	2	46
CR V	435.16	30	790
MN V	435.291	1	46
TL	435.32	2	33
HG	435.43	2	26
CD	435.48	2	25
HG	435.57	2	26
MN V	435.594	1	46
W	435.6	1	781
BI V	435.63	1	5, 656
F II	435.634	3	42, 176
CR V	435.66	25	790
K III	435.676*	10	192, 762
TL	435.71	2	33
ZN	435.71	2	25
BI V	435.73	1	5
CD	436.05	2	25
MN V	436.053	2	46
CA VIII	436.152	6	192, 793
MN V	436.174*	8	46
F II	436.279	2	42, 176
CR V	436.37	25	790
O II	436.510	1	65, 168
F II	436.563	1	42, 176
CR V	436.61	20	790
PB V	436.61	1	5
MN V	436.660	1	46
TL	436.72	3	33
MG VIII	436.726	1	691
PB V	436.74	2	5
MN V	436.857	1	46
I III	436.87	1	32
C II	437.102	1	65, 168
TL	437.21	2	33
K III	437.216	3	192
CA IV	437.271	2	192, 567, 762
O II	437.332	3	65, 168
S V	437.37	1	41, 488
CR V	437.43	20	790
O II	437.683	3	65, 168
CR V	437.69	20	790
SR IV	437.69	8	758
CA IV	437.773	5	192, 762
CL IV	437.825	4	43
TL	437.85	2	33
K V	438.023	5	192, 762
S V	438.19	1	41, 488
HG	438.32	4	26
BI IV	438.347	5	5, 449
TL	438.37	3	33
W	438.5	2	781
TL	438.53	3	33
TL	438.61	3	33
CR V	438.62 *	30	790
K V	438.647	2	192, 762
CR V	438.65 *	40	790
CR V	438.66 *	50	790
CD	438.70	3	25
MN V	438.735	5	46
SC	438.800	2	17
CD	438.85	2	25
K III	438.869	4	192
C II	438.910	1	65, 168
PB V	438.911*	10	5, 466
CA IV	438.930	4	192, 762
HG	438.95	3	26
K IX	439.047	3	192, 762
MG IX	439.180	0	691
I III	439.21	1	32
CL IV	439.255	3	43
MN V	439.352	5	46
HG	439.60	3	26
S V	439.65	1	41, 488
CA IV	439.700	5	192, 762

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	439.75	2	33
TL	440.05	3	33
GE IV	440.11	1	406
CA	440.118	2	192
CL IV	440.245	2	43
NA VI	440.266	3	692
GA IV	440.27	1	467
K III	440.429*	15	192
W	440.5	4	781
O II	440.552	3	65, 168
O II	440.598	2	65, 168
K IV	440.905	2	192
MN V	441.008	1	46
CA VIII	441.095	5	192, 793
CR V	441.11	40	790
HG	441.13	3	26
TL	441.23	2	33
K VI	441.370	3	192
CL III	441.398	3	43
MN V	441.725	7	46
K III	441.812	5	192, 359
W	441.9	3	781
GE IV	441.95	1	406
O II	442.001	4	65, 168
K III	442.043	2	192
O II	442.048	4	65, 168
K IV	442.300	4	192, 566
ZN	442.35	7	25
MN V	442.495	7	46
K III	442.518	2	192, 359
CA	442.607	1	192
S	442.61	1	30
SR IV	442.77 *	25	758
K III	442.913	3	192
CL III	442.947	2	43
HG	443.21	3	26
K IV	443.567	6	192, 566
SC	443.615	3	17
CU	443.666	10	356
CA IV	443.821*	15	192, 567, 762
MG IX	443.981	0	691
ZN	444.02	3	25
W	444.1	3	781
CA	444.254	1	192
HG	444.34	2	26
K III	444.344*	15	182, 192, 488
ZN	444.36	5	25
PB V	444.626	4	5
CA IV	444.766	3	192
HG	444.84	3	26
CU	444.999	15	356
CA IV	445.018	1	192, 762
NE II	445.032	7	57, 65, 488
NA V	445.046*	6	65, 692
CD	445.19	3	25
NA V	445.190*	7	65, 692
BI IV	445.222	5	5, 449
I III	445.30	2	32
BI IV	445.530	6	5
TE	445.57	2	30
O II	445.601	4	65, 168
K IV	445.607	4	192
O II	445.638	4	65, 168
K V	445.878	1	192
CA V	445.933	1	192
HG	445.98	4	26
A V	445.997	5	488, 549
K VI	446.009	4	192
CA V	446.036	1	192
W	446.2	2	781
TL	446.25	3	33
NE II	446.252*	8	57, 65, 488
CU	446.359	10	356
I III	446.54	3	32
NE II	446.591	7	57, 65, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TL	446.72	2	33	PB	V	455.61	1, 5, 466
K	III	446.830	5, 192, 359	K	V	455.670	5, 45, 192, 762
K		446.926	2, 192	A	VI	455.813	2, 549
A	V	446.949*	8, 488, 549	PT		456.0	1, 411
CU		446.995	25, 356	W		456.0	5, 781
K	V	447.085	3, 192	V	VII	456.29 *	359
HG		447.15	3, 26	CR	V	456.31	20, 790
MN	V	447.498	4, 46	K	V	456.328*	8, 45, 192, 762
W		447.5	3, 781	NE	II	456.344	4, 57, 65, 488
A	V	447.527	4, 549	CR	V	456.36	10, 790
I	III	447.55	4, 32	A	VI	456.375	3, 549
SC		447.554	4, 17	Y	V	456.384*	100, 545
NE	II	447.813*	8, 57, 65, 488	CL	VII	456.556	1, 546
CD		447.85	4, 25	SB	IV	456.57	5, 31, 277
HG		447.90	3, 26	W		456.6	3, 781
SR	IV	447.95	6, 758	HG		456.68	3, 26
MN	V	448.262	3, 46	CR	V	456.68	15, 790
TL		448.34	2, 33	SR	IV	456.76	20, 798
HG		448.41	2, 26	CR	V	456.79	15, 790
CU		448.420	25, 356	NE	II	456.895	5, 57, 65, 488
K	III	448.595*	15, 182, 192, 408	CA	IV	456.981	5, 192, 567, 762
K	V	449.013	3, 192, 598, 762	A	VI	457.001	5, 549
A	V	449.065*	18, 488, 549	TL		457.05	2, 33
HG		449.18	3, 26	CR	V	457.08	40, 790
TL		449.33	3, 33	CL	III	457.169	3, 43
W		449.4	2, 781	F	II	457.177*	6, 42, 176
HG		449.42	2, 26	CL	III	457.245	2, 43
A	V	449.493	4, 549	ZN		457.29	1, 25
ZN		449.58	2, 25	K	VI	457.323	1, 192
K	V	449.708	4, 192, 762	A	VI	457.475*	20, 549
TL		449.80	4, 33	W		457.5	1, 781
ZN		449.95	5, 25	TL		457.55	2, 33
CU		450.015	25, 356	CR	V	457.56	15, 790
PB	V	450.07	2, 5	TL		457.78	2, 33
A	V	450.079	1, 549	AU		458.0	1, 411
TL		450.33	4, 33	A	VI	458.039	1, 549
CA	IV	450.565*	10, 192, 567, 762	K	VI	458.048*	7, 192, 793
TL		450.63	2, 33	A	V	458.121	3, 549
SC		450.695	2, 17	B	III	458.700	1, 195
C	III	450.734	9, 34, 65, 168	CU		458.709	10, 356
ZN		450.93	3, 25	A	V	458.975	2, 549
MN	V	451.065	3, 46	K	V	459.005	3, 192
K	IX	451.078	1, 192, 762	HG		459.02	4, 26
CU		451.152	25, 356	TL		459.04	2, 33
K	VI	451.320	2, 192	PB	IV	459.04	6, 5, 139, 656
W		451.5	3, 781	A	VI	459.320*	10, 549
N	III	451.869	10, 65, 168, 488	C	III	459.462*	13, 65, 168, 488
SR	IV	452.18	12, 758	K	IX	459.498	2, 361
N	III	452.226	11, 65, 168, 488	CU		459.511	10, 356
K	V	452.227	2, 45	C	III	459.521*	14, 65, 168, 488
PT		452.5	1, 411	HG		459.57	4, 26
CU		452.654	30, 356	A	VI	459.603	3, 549
K	VI	452.667	3, 192, 598	C	III	459.633*	15, 65, 168, 488
MN	V	452.758	2, 46	A	V	459.728	1, 488, 549
ZN		452.79	3, 25	CA		459.811	1, 192
SE	VI	452.83 *	2, 289, 651	CU		459.881	15, 356
K	V	452.900	4, 45, 192, 762	NA	V	459.897*	7, 65, 692
TL		453.06	2, 33	C	III	460.049	8, 34, 65, 168
CU		453.130	20, 356	A	VI	460.058	1, 549
HG		453.31	2, 76	I	III	460.14	1, 32
CU		453.425	40, 356	A	VI	460.202	1, 549
SC		453.449	2, 17	K	VI	460.438*	8, 192, 793
PB	V	453.45	3, 5	NE	II	460.725*	15, 57, 65, 488
W		453.8	5, 781	NA	V	461.051*	10, 65, 692
K	IX	453.882	0, 192, 762	CA		461.085	5, 192
CA		454.053	1, 192	C	II	461.12	1, 65, 168
SC		454.106	5, 17	TL		461.17	3, 33
TL		454.49	2, 33	A	V	461.227*	6, 488, 549
CA		454.553	1, 192	CU		461.319	10, 356
NE	II	454.648	5, 57, 65, 488	I	III	461.69	3, 32
CU		454.791	10, 356	CA	VIII	461.700*	5, 192, 793
I	III	455.12	1, 32	PB	IV	461.72	3, 5
NE	II	455.270	7, 57, 65, 488	K	VI	461.737	3, 192
CL	VII	455.273	2, 546	A	VI	461.898	1, 549
TL		455.36	2, 33	TL		461.97	3, 33

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A VI	462.007*	25	549
A VI	462.146	4	549
TL	462.27	2	33
MN VII	462.363*	15	365
NE II	462.388*	14	57, 65, 488
A V	462.415	3	488, 549
TL	462.54	2	33
CU	462.545	10	356
CA VIII	462.587	3	192, 793
K V	462.596	1	192
HG	462.64	4	26
W	462.7	3	781
SR IV	462.70 *	25	758
CA	462.996	1	192
AU	463.0	1	411
CL IV	463.011	3	38
I III	463.25	2	32
NA V	463.263*	12	65, 692
SB IV	463.56	4	31, 277
CU	463.712	20	356
N IV	463.743	3	65, 168
I III	463.86	1	32
A V	463.938*	7	488, 549
PB V	464.01	1	5
CR V	464.03 *	100	790
O II	464.194	2	65, 168
PB V	464.20	1	5, 657
A VI	464.257	4	549
CA	464.260	1	192
K VI	464.270*	10	192, 793
F III	464.284	9	42, 174, 176
CL IV	464.292	3	38
O II	464.310	1	65, 168
F V	464.370*	5	172, 176
NB V	464.55	8	760
NB V	464.555*	100	132
CU	464.640	20	356
S VI	464.654*	10	488, 598
HG	464.78	3	26
O II	464.785	3	65, 168
SE VI	464.80 *	00	289, 651
CU	464.824	20	356
CA III	464.830	3	192
CL IV	464.861	4	38
K II	465.078	1	192, 366
F III	465.113*	10	42, 174, 176
HG	465.22	3	26
CL IV	465.350	3	38
F V	465.374*	6	172, 176
PB IV	465.450	7	5, 139, 657
TL	465.47	4	33
PB IV	465.495	7	5
O II	465.529	1	65, 168
TE	465.57	2	30
A VI	465.586	2	549
W	465.8	1	781
F V	465.978*	7	172, 176
CA VIII	465.990	2	192, 793
I III	466.06	4	32
HG	466.10	2	26
CL IV	466.132	3	38
CA VII	466.227*	6	192
C II	466.404	1	65, 168
C II	466.492	2	65, 168
HG	466.51	2	26
SR IV	466.52	20	758
A III	466.530	5	59, 65
ZN	466.56	2	25
K III	466.793*	15	192, 488, 762
PB IV	466.81	2	5
ZN IV	466.91 *	6	25
K IX	466.943*	4	361
HG	466.98	4	26
F V	466.995*	5	172, 176
CU	467.106	15	356

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CL IV	467.194	3	38
W	467.3	2	781
A III	467.390	6	59, 65
MN VII	467.662*	30	365
NB V	468.325*	150	132, 760
TL	468.34	4	33
BR V	468.36	5	577
ZN IV	468.42	1	25
K V	468.447	2	192
A III	468.467	4	59, 65
CA	468.540	1	192
NB V	468.627	25	132
O II	468.766	2	168
A III	468.956	3	59, 65
TE	469.13	1	30
CR V	469.34	30	790
HG	469.43	3	26
I III	469.43	1	32
CR V	469.65	30	790
W	469.7	2	781
TL	469.76	2	33
NE IV	469.817*	200	57, 488, 544
A III	469.831	4	59, 65
NE IV	469.865*	200	57, 488, 544
CR V	469.95	20	790
A III	469.968	4	59, 65
K III	470.089*	20	192, 359, 488
I III	470.16	4	32
AU	470.3	1	411
O II	470.408	4	65, 168
CR V	470.56	10	790
NB VII	470.590*	300	132
TL	470.88	2	33
AU	470.9	1	411
CA VIII	471.067	3	192, 793
TL	471.16	4	33
CA VIII	471.180	3	192, 793
HG	471.50	2	26
K III	471.569*	15	192, 488, 762
ZN	471.73	2	25
SC	471.785	3	17
F II	471.949*	3	176
F II	471.990*	6	42, 176, 488
ZN IV	472.08 *	5	25
N III	472.232	4	65, 168, 488
TL	472.31	4	33
CU	472.342	20	356
ZN	472.36	1	25
N III	472.392	5	65, 168, 488
HG	472.54	2	26
ZN IV	472.65 *	6	25
F II	472.710	5	42, 176, 488
V VII	472.80 *	3	359
HG	472.89	3	26
P IV	472.957	2	597
SR IV	473.00	8	758
ZN IV	473.00	2	25
F II	473.021	3	42, 176, 488
A III	473.025	6	59, 65
K VI	473.207	2	192
PB IV	473.45	1	5, 656
ZN IV	473.49	2	25
A III	473.918	6	59, 65
ZN	474.21	2	25
W	474.4	2	781
ZN IV	474.54 *	6	25
K III	474.920	9	192, 488, 762
MO VIII	474.941*	250	132
TL	475.19	2	33
S	475.30	2	30
PB IV	475.36	7	5, 139, 656
PB IV	475.47	3	5
TL	475.49	2	33
P V	475.610*	8	597
A VII	475.656*	8	549

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A VII	475.733*	2	549	I IV	483.08	3	32
N II	475.800	3	65, 168	HG	483.11	2	26
TL	475.90	2	33	SB	483.14	1	31
K II	476.029	2	192	NA VII	483.216	2	691
HG	476.03	3	26	NA VII	483.328	3	691
CA	476.177	2	192	ZN	483.42	1	25
CU	476.201	20	356	HG	483.54	3	26
TL	476.21	3	33	C III	483.567	3	65, 168
ZN	476.40	2	25	C III	483.618	4	65, 168
A III	476.432	7	59, 65	C III	483.733	5	65, 168
S	476.45	3	30	K V	483.745	4	192, 762
CA V	476.606	2	192	O II	483.752	4	65, 168, 488
HG	476.98	2	26	K III	483.972	3	192, 762
SB	477.13	1	31	O II	483.976	5	65, 168, 488
HG	477.26	3	26	O II	484.025	2	65, 168
SR IV	477.26	20	758	SE	484.04	2	289
CA	477.300	1	192	A III	484.116	5	59, 65
S	477.37	1	30	S	484.15	2	30
C III	477.625	3	34, 65, 168	K III	484.200	1	182, 192, 762
SB	477.91	1	31	K VII	484.241*	5	192, 793
SR IV	477.98	5	758	CA	484.360*	3	192
TL	478.11	2	33	A III	484.445	5	59, 65
S	478.26	1	30	V V	484.47*	4	279
CA III	478.305	4	192	F II	484.600*	8	42, 176
PB IV	478.355*	8	5, 139, 656	K	484.637	1	192
ZN	478.62	4	25	S	484.90	1	30
ZN IV	478.92	2	25	K II	485.084*	5	192
K III	479.185	8	182, 192, 762	O II	485.086	6	65, 168, 488
A VII	479.379*	12	549	A III	485.150	6	59, 65
HG	479.38	2	26	TE	485.16	2	30
A VII	479.485*	2	549	S III	485.25	3	30, 323
PT	479.5	1	411	K IV	485.359	2	192
K VII	479.768*	5	192, 793	TL	485.38	2	33
HG	479.77	3	26	TL	485.49	2	33
TL	479.81	3	33	PB V	485.51	1	5
SB	479.93	2	31	K II	485.513*	3	192
CA	480.345	2	192	O II	485.515	5	65, 168, 488
K VI	480.397	1	192	A III	485.515	4	59, 65
NE V	480.406	25	488, 544	O II	485.572	1	65, 168
CA	480.471	3	192	K II	485.626*	2	192
SC VIII	480.926	2	547	O II	485.631	4	65, 168
S	480.94	1	30	CA	485.636*	3	192
O III	480.955	4	65, 168	S	485.79	1	30
K III	480.965	1	192, 762	SB	485.05	3	31
HG	481.20	3	26	CA	486.160*	3	192
S	481.24	1	30	CL IV	486.172*	8	44
NE V	481.281	15	488, 544	SC VIII	486.192	1	547
K VI	481.313	2	192	SC VIII	486.242	2	547
O III	481.354	3	65, 168	SC VIII	486.618	2	17, 547
NE V	481.361	25	488, 544	HG	486.69	2	26
O III	481.381	2	65, 168	NA VII	486.740*	4	691
V V	481.49*	2	279	CA VII	486.838	2	192
O II	481.587	4	65, 168, 488	Al III	486.95	1	190
TL	481.62	4	33	A III	487.025	7	59, 65
O II	481.755	3	65, 168, 488	K VII	487.080*	8	192, 793
A III	481.848	6	59, 65	AU	487.2	1	411
SB	481.95	2	31	A II	487.227	2	59, 65
TL	482.10	2	33	SB	487.34	1	31
ZN	482.10	2	25	TL	487.62	2	33
K III	482.107	2	182, 192	HG	487.74	2	26
BR V	482.11*	10	577	SC	487.851	2	17
SC	482.220	4	17	A III	487.988	7	59, 65
K	482.281	1	192	NE III	488.103*	8	57, 65, 488
K III	482.408	2	182, 192	K VI	488.120*	10	192, 598
RB III	482.45*	30	758	HG	488.13	2	26
S	482.47	1	30	TL	488.17	4	33
TL	482.52	3	33	SB	488.39	2	31
A III	482.548	8	59, 65	BI V	488.39	2	5, 656
CA	482.663	1	192	A III	488.452	7	59, 65
K V	482.706	4	192, 762	CA VII	488.465	1	192
CA	482.769	2	192	HG	488.72	3	26
S	482.95	2	30	SR IV	488.74*	30	758
Y V	482.973*	60	545	A II	488.786	3	59, 65
NE V	482.987*	50	488, 544	NE III	488.868*	7	57, 65, 488
V V	482.99*	5	279	A II	488.95	1	59, 65

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A II	489.191	3	59, 65
SB	489.21	1	31
HG	489.44	3	26
CD	489.49	10	293
NE III	489.501*	10	57, 65, 488
NA VI	489.580*	5	692
NE III	489.641	4	57, 65, 488
CA VII	489.700	1	192
CD IV	489.76	2	293
HG	489.83	4	26
RB III	489.95 *	25	758
W	490.0	6	781
HG	490.04	2	26
NE III	490.310*	7	57, 65, 488
K VI	490.423	2	192
PT	490.5	1	411
CA III	490.546	2	39, 192, 488
F IV	490.566*	13	42, 173, 176
A III	490.68	3	59, 65
TL	490.85	3	33
F IV	490.997*	16	42, 173, 176
NE III	491.050*	9	57, 65, 488
K VI	491.062	2	192
CA VII	491.097	1	192
A III	491.121	4	59, 65
NA VI	491.240*	3	692
NA VI	491.340*	6	692
CA VII	491.370	2	192
HG	491.48	3	26
K VII	491.702*	6	192, 793
NA VII	491.950*	4	691
SB	491.98	3	31
O III	491.980	1	65, 168
HG	492.12	3	26
A III	492.228	3	59, 65
HG	492.41	4	26
SC VI	492.423	6	17, 169
C III	492.650	7	34, 65, 168
BI V	492.72	1	5, 656
TE	492.79	3	30
W	492.9	4	781
CD IV	493.00	17	25, 293
C III	493.341	5	65, 168
C III	493.364	5	65, 168
C III	493.396	5	65, 168
I III	493.40	2	32
SB	493.43	3	31
C III	493.464	5	65, 168
C III	493.519	5	65, 168
C III	493.587	7	65, 168
HG	493.66	3	26
TL	493.78	2	33
SC VIII	493.998	2	547
TL	494.09	2	33
NA VI	494.160	3	692
HG	494.18	4	26
SB	494.32	1	31
NA VI	494.382*	7	692
SC VIII	494.446*	6	17, 547
HG	494.93	2	26
AG	495.1	6	335
CD IV	495.13	17	25, 293
K II	495.144*	6	192
HG	495.39	4	26
W	495.5	1	781
SB	495.52	1	31
HG	496.17	3	26
NA VIII	496.249	1	691
PB IV	496.37 *	8	5, 139
HG	496.44 *	5	26
PB IV	496.63	2	5
HG	496.82	3	26
TL	496.93	2	33
Y V	497.069	10	545
K III	497.104*	15	192, 488, 762

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W	497.3	1	781
F IV	497.363	5	173, 176
SB	497.56	3	31
ZN III	497.669	1	472
TL	497.73	2	33
F IV	497.802	6	173, 176
RB III	497.81	20	758
F IV	497.842	4	173, 176
C III	497.910	1	65, 168
CA IX	497.986	3	192, 535
TE	498.01	1	30
PB IV	498.14	2	5, 656
CD IV	498.15	17	293
O VI	498.431	1	65, 168
CD IV	498.53	17	25, 293
F IV	498.790	7	173, 176
F IV	498.911	4	173, 176
BR VI	499.20	4	577
HG	499.24	3	26
C III	499.425	7	65, 168
C III	499.462	8	65, 168
C III	499.530	9	65, 168
HG	499.58	2	26
C III	499.583	7	65, 168
ZN III	499.673	1	472
O II	499.871	2	65, 168
ZN III	499.914	3	472
A II	499.92	1	59, 65
PB IV	499.95 *	9	5, 139
S III	499.983	3	598
K IV	499.993	2	192
K IV	500.047	2	192
K IV	500.125	3	192
HG	500.19	3	26
RB III	500.25 *	30	758
S	500.44	4	30
HG	500.48 *	6	26
SR IV	500.51 *	50	758
A II	500.800	1	59, 65
A II	501.185	2	59, 65
SR IV	501.29	2	758
ZN III	501.32	1	25, 472
A II	501.40	1	59, 65
K VI	501.649	2	192, 598
HG	501.76	3	26
SN	502.0	8	411
A II	502.01	1	59, 65
TE	502.03	1	30
HG	502.13 *	5	26
A II	502.164	2	59, 65
W	502.3	4	781
BR VII	502.69 *	4	577
K	502.798	1	192
HG	502.80	4	26
W	503.0	4	781
HG	503.18	3	26
CA IX	503.261	2	192, 535
SB	503.54	3	31
A II	503.642	2	59, 65
K	503.697	1	192
BR VI	503.70 *	8	577
CD IV	503.81	3	293
PT	504.0	1	411
CD IV	504.09	14	25, 293
CD IV	504.19	11	293
SB	504.21	3	31
HG	504.30	2	26
CD IV	504.49	17	25, 293
BR VI	504.52	6	577
CA VII	504.591	3	192
AU	504.6	1	411
A II	504.80	1	59, 65
ZN III	504.946	2	472
A II	505.007	1	59, 65
SC XI	505.117	4	361

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA VI	505.199*	8	192	CD IV	512.99	17	25, 293
TL	505.37	2	33	HG	513.16	2	26
SE V	505.75	1	289, 651	F II	513.649	4	42, 176
K IV	505.761	1	192	A V	513.914	1	549
TL	505.82	2	33	F V	513.975	2	172, 176
K IV	506.029	2	192	F V	514.087	1	172, 176
N II	506.057	2	65, 168	ZN III	514.244	1	472
N II	506.160	3	65, 168	W	514.3	1	781
F V	506.163	3	172, 176	A II	514.301	2	59, 65
CA IX	506.163	4	192, 535	CD IV	514.49	17	25, 293
CD IV	506.31 *	19	25, 293	CA	514.498	1	192
HE I	506.566	1	65	K III	514.943	2	192
ZN III	506.639	2	472	F II	514.945*	6	42, 176
PB IV	506.79	1	5	PB III	515.08	5	5, 139
HE I	507.053	1	65, 488	TE	515.13	4	30
CA IX	507.105	0	535	SC	515.152	3	17
HG	507.14	4	26	BR VI	515.16 *	8	577
ZN III	507.197	2	472	K V	515.320	1	192
TL	507.31	2	33	O II	515.498	5	65, 168, 488
ZN III	507.338	1	472	K III	515.514	4	192
O III	507.391*	16	65, 168, 488	CA IX	515.576	1	535
O III	507.683*	17	65, 168, 488	HE I	515.617*	4	65, 488
V	507.7	2	411	U II	515.640	4	65, 168, 488
IL	507.70	3	30	K II	515.653*	3	192
HE I	507.712	2	65, 488	S	515.96	3	30
CD IV	508.01	17	293	HG	516.08	3	26
ZN III	508.013	3	472	KR III	516.384	4	58
F V	508.079	4	172, 176	BR VI	516.45 *	8	577
U III	508.182*	18	65, 168, 488	HG	516.61	2	26
RB III	508.33	8	758	TL	516.73	2	33
F III	508.384*	10	174, 176	RB III	516.78 *	30	758
A III	508.434*	9	59, 65	K VII	516.853	1	192, 793
TI VI	508.58		359	C II	517.069	1	65, 168
A III	508.595*	4	65, 337	SB IV	517.20	1	31, 277
BI IV	508.63	2	5, 449	A V	517.250	0	549
HE I	508.639	1	65, 488	NB VII	517.281	150	132
A III	508.655	2	65, 337	BR VI	517.29	1	577
HG	508.76	4	26	ZN III	517.355	2	472
CA VI	509.293	2	192, 762	S	517.50	2	30
W	509.4	4	781	TL	517.52	2	33
CD IV	509.54	17	25, 293	SE III	517.57	2	289, 587
N III	509.586	5	65, 168, 488	W	517.6	3	781
K V	509.601	1	192	HG	517.85	4	26
GA	509.8	3	335	K VII	517.928*	5	192, 793
CD IV	509.80	3	293	O II	517.937	4	65, 168, 488
N III	509.897	4	65, 168, 488	SC	518.123	2	17
HE I	509.993	2	65, 488	AU	518.2	1	411
SE V	510.02	3	289, 651	O II	518.242	5	65, 168, 488
ZN III	510.078	2	472	K II	518.249*	3	192
ZN III	510.244	1	472	B III	518.253*	7	65, 195
HG	510.31	2	26	HG	518.40	3	26
CA VII	510.435	3	192	ZN III	518.536	2	470
A II	510.550	3	59, 65	W	518.7	3	781
N II	510.757	3	65, 168	A II	518.89	2	59, 65
B III	510.777	2	65	ZN III	519.160	1	477
R III	510.885*	3	65, 195	S IV	519.30	2	41
HG	511.08	3	26	A II	519.326	6	59, 65, 488
AL III	511.215	4	190	K VI	519.372*	5	192
GA	511.3	3	335	CD IV	519.41	14	25, 293
HG	511.32 *	5	26	O VI	519.610	2	65, 168
K	511.371	1	192	SE V	519.69	3	289, 651
CD IV	511.40	17	25, 293	HG	519.78	2	26
A III	511.497	8	59, 65	TL	519.83	2	33
C III	511.523	10	34, 65, 168	ZN	520.10	1	25
A III	511.565	7	59, 65	S IV	520.11	2	41
HG	511.62	2	26	BR VII	520.26 *	4	577
TL	511.82	2	33	K	520.493	3	192
A V	511.886	0	549	K III	520.611*	10	192, 488, 762
CA IX	512.060	0	192, 535	S IV	520.83	3	41
HE I	512.094*	3	65, 488	CD IV	520.96	9	293
HG	512.36	3	26	BI IV	521.01	2	5, 449
SB	512.56	1	31	ZN III	521.100	2	472
HG	512.61 *	5	26	S IV	521.13	1	41
ZN III	512.678	2	472	HG	521.58	3	26
A III	512.769	7	59, 65	NE IV	521.742	25	57, 65, 544

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI V	521.80	1	5	N II	529.627	3	65, 168, 488
NE IV	521.813	25	57, 65, 544	CA	529.651	1	192
S IV	521.99	2	41	N II	529.713	3	65, 168, 488
ZR VI	522.007*	300	545	PB IV	529.78	4	5, 139
A V	522.090	3	488, 549	K III	529.796	8	192, 488, 762
SE III	522.09	2	289, 587	N II	529.860	5	65, 168, 488
HE I	522.208*	5	65, 488	A III	529.900*	9	59, 65
F III	522.288	3	174, 176	N III	530.037	2	65, 168
TE	522.45	2	30	N III	530.268	3	65, 168
S IV	522.54	2	41	C II	530.290	3	65, 168
HG	522.60	4	26	CA V	530.303	6	192
BR VII	522.60	0	577	KR III	530.306	6	58
ZN III	522.646	1	472	AS IV	530.31	2	584
A II	522.791	4	59, 65, 488	C II	530.386	4	65, 168
SC XI	522.863	0	17, 361	A II	530.489	4	59, 65
W	523.0	1	781	TL	530.70	2	33
K IV	523.001	5	192	CD IV	530.78	14	25, 293
SB IV	523.36	2	31, 277	CD IV	531.08 *	18	25, 293
AU	523.6	1	411	HG	531.19	3	26
F III	523.661	4	174, 176	SE III	531.21	2	289, 587
HG	523.74 *	5	26	KR III	531.255	4	58
K III	523.792	5	192, 488, 762	TL IV	531.26	3	33, 466
SE III	524.01	2	587	HG	531.46	2	26
TI VI	524.11	359		CD IV	531.50 *	18	25, 293
SE III	524.14	4	289, 587	SB IV	531.54	2	31, 277
A V	524.189	5	488, 549	AU	531.8	1	411
TL	524.21	2	33	SB IV	531.89	1	31, 277
BI IV	524.24	2	5, 449	C II	531.917	1	65, 168
CD IV	524.40	14	25, 293	BR V	532.00 *	10	577
CD IV	524.46	14	293	HG	532.20	3	26
F V	524.597	2	172, 176	A III	532.413	7	59, 65
K VII	524.639	2	192, 793	C II	532.716	3	65, 168
A II	524.678	4	59, 65	TL	532.80	2	33
CD IV	524.77	14	25, 293	HG	533.10	4	26
CD IV	525.09	17	25, 293	SE III	533.11	2	289, 587
CD IV	525.18	14	293	N II	533.504	4	65, 168, 488
F V	525.292	3	172, 176	ZN III	533.525	2	472
V	525.5	5	411	N II	533.577	5	65, 168, 488
ZN	525.52	1	25	N II	533.644	4	65, 168, 488
SB	525.61	2	31	ZN III	533.652	1	472
FE IV	525.68 *	100	357	K	533.726	1	192
KR III	525.687	4	58	N II	533.726	6	65, 168, 488
U	525.7	2	411	N II	533.809	4	65, 168, 488
O III	525.795*	18	65, 168, 488	MO VI	533.820*	150	132
I	525.99	1	32	K	533.858	1	192
FE IV	526.28 *	75	357	C II	533.935	1	65, 165
F V	526.298	3	172, 176	K	534.059	2	192
K VII	526.448*	4	192, 793	I IV	534.24	1	32
SE III	526.48	2	289, 587	A III	534.26	1	59, 65
A II	526.495	3	59, 65	CD IV	534.28	17	25, 293
W	526.5	2	781	CA III	534.715	4	192
FE IV	526.60 *	60	357	CL IV	534.727*	8	43
A VIII	526.870	1	549	K V	534.873	2	192
CD IV	527.06 *	18	25, 293	A II	535.035	1	59, 65
K II	527.064	2	192	CL IV	535.039	4	44
AU	527.5	1	411	F VI	535.204*	10	171, 176
K III	527.565	1	192	K V	535.287	1	192
K IV	527.617	3	192, 566	C III	535.289	10	34, 65, 168
A V	527.693*	6	488, 549	CL V	535.455	2	43
HG	527.97	4	26	TL	535.46	2	33
ZN III	528.099	1	472	ZN III	535.533	1	472
B III	528.219	0	195	A III	535.580	7	59, 65
CA III	528.286*	8	192	CA IV	535.647	4	192
K	528.519	2	192	CL IV	535.666*	7	43
GE IV	528.58	1	406	CL V	535.916	2	43
A II	528.640	2	59, 65	CA VI	536.132	4	192, 762
CA V	528.746	3	192	CL IV	536.150	6	43
KR III	528.811	4	58	K V	536.216	2	192
K IV	528.879	1	192	HG	536.30	3	26
SC	529.161	3	17	CA IV	536.531	2	192
W	529.2	3	781	CL V	536.532	3	43
N II	529.343	3	65, 168, 488	GF IV	536.54	1	406
N II	529.405	3	65, 168, 488	TL	536.60	2	33
SE III	529.41	1	587	A III	536.745	8	59, 65
N II	529.481	3	65, 168, 488	CD IV	536.75	17	25, 293

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CA IV	536.790	2	192	P V	542.567*	7	597
CA IV	537.004	2	192	CD IV	542.59 *	25	25, 293
CL V	537.006	4	43, 549	MN IV	542.650	3	47
HE I	537.024*	7	65, 488	PB IV	542.69	4	5
ZN III	537.031	2	472	HG	542.84	2	26
AS IV	537.07	3	584	CA	542.842*	3	192
A II	537.13	3	59, 65	CL V	542.868*	4	549
HG	537.19	3	26	GE III	542.90	2	406
V	537.2	8	411	A II	542.910	3	59, 65
CD IV	537.22	14	25, 293	S III	543.031	2	598
SR IV	537.44	15	758	A II	543.201	4	59, 65
A III	537.459	6	59, 65	K	543.225	1	192
CA	537.484	2	192	C II	543.291	2	65, 168
CL IV	537.606*	9	43	KR III	543.420	8	58
SC IX	537.612	3	17	C II	543.475	3	65, 168
CA V	537.613	6	192, 762	K IV	543.640	2	192
O II	537.830*	9	65, 168, 488	A II	543.727	3	59, 65
CL V	538.032*	5	38	CL V	543.818	1	549
C III	538.075*	11	65, 168, 488	NE IV	543.891	150	57, 488, 544
C III	538.080*	11	34, 65, 488	K IV	543.973	1	192
BI	538.10	2	5	SE III	544.11	3	289, 587
CL IV	538.119	6	43	CA VII	544.132	3	192, 793
C III	538.149*	12	34, 65, 488	K	544.137	1	192
I	538.17	2	32	CA VII	544.247	2	192
BR IV	538.25	2	574	KR III	544.413	5	58
O II	538.256*	10	65, 168, 488	K V	544.537	1	192
C III	538.312*	13	34, 65, 488	K V	544.627	1	192
O II	538.318*	7	65, 168, 488	CD IV	544.68	9	293
ZN III	538.433	2	472	A VI	544.731	4	549
KR III	538.544	8	58	K IX	544.855	1	192, 762
CL IV	538.595	4	43	P V	544.914*	8	597
CA IV	538.648	3	192	CA III	545.091	2	192
SC	538.654	2	17	CL V	545.114*	10	549
CL V	538.681	4	43	S	545.16	1	30
A III	538.788	6	59, 65	K IX	545.232	1	192, 762
AG	538.8	6	335	BR IV	545.43	5	574
TL	538.81	2	33	HG	545.49	4	26
CA IV	538.967	2	192	AU	545.5	1	411
CL V	538.977	3	43	SR IV	545.55 *	35	758
O II	539.086	8	65, 168, 488	K II	546.123*	3	192
ZN III	539.170	1	472	A II	546.176	4	59, 65
CA VII	539.382	2	192, 793	CL V	546.329*	6	549
CL V	539.441	0	43	CD IV	546.53 *	25	25, 293
O II	539.547	8	65, 168, 488	KR III	546.547	6	58
K II	539.731*	3	192	RB III	546.56 *	25	758
TL	539.78	3	33	KR III	546.686	5	58
O II	539.853	7	65, 168, 488	F II	546.846*	6	42, 176, 488
S	539.89	3	30	A II	547.164	3	59, 65
SB IV	539.90 *	6	277	TL	547.36	3	33
MN IV	540.102	1	47	A II	547.460	4	59, 65
AU	540.2	1	411	PT	547.6	1	411
TE VI	540.27 *	4	30, 583	CA	547.620	2	192
KR III	540.788	5	58	CL V	547.630*	10	549
KR III	540.860	4	58	TL	547.69	2	33
MN IV	540.882	4	47	AG	547.8	6	335
CD IV	540.89	17	25, 293	CS III	547.8 *	2	235
MN IV	541.111	2	47	F II	547.873	4	42, 176, 488
NE IV	541.127	80	57, 488, 544	SB IV	547.88	3	31, 277
MO VI	541.282*	1000	132	CA VI	547.898	3	192
CL V	541.284	3	549	HR	547.94	2	26
A II	541.304	1	59, 65	BR V	547.94 *	10	577
AS	541.6	1	411	A II	547.983	1	59, 65
MN IV	541.666	4	47	CD IV	548.00	11	25, 293
CD IV	541.73 *	18	25, 293	MO VI	548.234*	500	132
I III	541.83	1	32	F II	548.324	3	42, 176, 488
MN IV	541.860*	7	47	AG	548.5	6	335
NF IV	542.073*	100	57, 488, 544	BI VI	548.51	2	5, 466
MN IV	542.100	4	47	F II	548.517	2	42, 176
CL V	542.229*	8	549	KR III	548.652	5	58
CA V	542.290*	10	192	A II	548.779	4	59, 65
CL V	542.297*	6	38	CD IV	548.92	10	293
HG	542.39	2	26	CA	548.920	2	192
CL V	542.395	3	38	CA V	549.070	3	192
MN IV	542.453	5	47	CA III	549.201	4	192
TL	542.47	2	33	CL IV	549.219	5	43

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C II	549.317	3	65, 168	CA III	557.112	3	192
C II	549.375	4	65, 168	CL III	557.118*	7	43, 488
W	549.5	3	781	HG	557.41	2	26
ZN III	549.505	1	472	CD IV	557.49	9	293
C II	549.507	5	65, 168	CA X	557.740*	4	361
C II	549.568	3	65, 168	BR IV	557.94	6	574
AG	549.57	3	335	SC VII	558.023	2	358
BR IV	549.75	9	574, 577	A III	558.321	5	59, 65, 488
BI VI	549.85	3	5, 466	SE III	558.33	1	289, 587
CA III	550.004	3	192	CL III	558.385	1	43, 345
CL IV	550.020	4	43	A V	558.481	5	549, 488
AS IV	550.03	1	584	MN IV	558.493	4	47
CA VII	550.188*	6	192	NE VI	558.595*	5	544
CS III	550.2 *	2	235	CA V	558.602*	10	169, 192
K II	550.323	1	192	KR III	558.634	15	58
CL VI	550.355	5	535	BI VI	558.74	2	5
BI VI	550.42	1	5, 466	MN IV	559.232	5	47
A II	550.475	2	59, 65	KR II	559.320	4	58
CL IV	550.706	3	43	BI VI	559.70	1	5, 466
A II	550.899	1	59, 65	BR IV	559.74	9	574
I IV	550.90	3	32	MN IV	560.184	6	47
CA V	551.103	2	192	A II	560.224	7	59, 65
CL V	551.117	2	43	C II	560.244	4	65, 168
S IV	551.17	2	485, 488	CD IV	560.25	14	293
CD IV	551.26	11	25, 293	AL III	560.390*	7	190, 488
A VI	551.371*	8	549	C II	560.443	5	65, 168
CA VII	551.448*	6	192, 793	CL III	560.636	1	43
TL	551.60	2	33	KR II	560.788	3	58
KR III	551.689	4	58	AG	560.8	6	335
HG	551.84	3	26	KR III	560.986	5	58
BI	551.86	1	5	SC VI	561.176	3	17, 358
CL VI	551.992*	10	43, 535	SE VII	561.24	0	289, 588
CA	552.005*	4	192	HG	561.28	3	26
CL IV	552.017*	7	43, 535	CA III	561.518	3	192
CD IV	552.89	10	25, 293	CL III	561.530*	7	43, 488
CL III	552.908	2	43	K VIII	561.593	6	192, 535, 793
I	552.97	1	32	TL	561.62	2	33
CD IV	553.06	17	25, 293	CA III	561.670	3	192
AG	553.1	6	335	CL III	561.680*	7	43, 488
A II	553.122	1	59, 65	CL III	561.738*	7	43, 488
CL IV	553.297*	6	43	BI	561.99	1	5
O IV	553.328*	16	65, 168, 488	CA V	562.250	3	192
A III	553.470*	9	59, 65, 488	CL II	562.28	3	345
AU	553.9	1	411	C II	562.355	3	65, 168
CD IV	554.04 *	18	293	TL	562.47	2	33
S	554.05	5	30	C II	562.498	3	65, 168
O IV	554.074*	17	65, 168, 488	SC VII	562.547	3	358
CL V	554.210	1	43	C II	562.577	3	65, 168
BR IV	554.48	8	574	KR III	562.690	5	58
O IV	554.514*	18	65, 168, 488	HG	562.73	3	26
CA III	554.615	3	192	NE VI	562.735	1	544
CL IV	554.619*	7	43	NE VI	562.805*	15	544
C III	554.655	2	65, 168	TL	563.02	3	33
KR III	554.794	7	58	HG	563.39	3	26
O II	555.056	5	65, 168, 488	AU	563.4	2	411
O II	555.121	5	65, 168, 488	SC VII	563.401	2	17
I	555.19	2	32	BI V	563.62	3	5, 656
O IV	555.262*	16	65, 168, 488	SE VII	563.70	0	289, 588
CA V	555.482	3	192	BR IV	563.79	9	574
CL VI	555.485*	20	43, 535	HG	563.90	3	26
CL VI	555.580	3	535	BR IV	563.92	8	574
A VI	555.639	4	549	S	564.04	1	30
HG	555.95	2	26	AG	564.1	5	335
AG	556.2	6	335	CD IV	564.17	11	293
CA III	556.215	2	192	CS II	564.25	3	789
CL III	556.232*	6	43, 488	CA VI	564.275	2	192
TL	556.30	3	33	CL III	564.287	4	43
BI	556.36	1	5	ZN III	564.294	1	472
AU	556.4	1	411	K VIII	564.462*	12	192, 535, 793
HG	556.49	3	26	CL III	564.514	2	43
CA III	556.583	3	192	BI	564.58	1	5
CL III	556.605*	7	43, 488	C II	564.645	5	65, 168
A II	556.813	6	59, 65	CD IV	564.80	3	293
A III	556.893	6	59, 65, 488	RB III	564.81	10	758
K VIII	557.029	2	192, 535, 793	K VIII	565.112	6	192, 535, 793

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
KR III	565.124	4	58	ZN III	572.154	1	472
W	565.2	1	781	ZN III	572.211	2	472
CL III	565.272	3	43	BR IV	572.26	3	574
CA IV	565.463	3	192, 762	NE V	572.336*	80	488, 544
CL III	565.480	4	43, 549	W	572.4	1	781
C III	565.528	7	34, 65, 168	F IV	572.657*	16	42, 173, 176
I IV	565.55 *	5	32	MN IV	572.686	4	47
KR III	565.640	5	58	CA III	572.691	4	192
KR III	565.879	4	58	CL III	572.693	4	38, 488
HG	565.92	4	26	PB III	572.73 *	7	5
C III	566.490	4	65, 168	ZN III	572.778	2	472
BI	566.62	1	5	K VIII	572.790	5	192, 535, 793
ST III	566.620	50	488, 310	TL	573.12	2	33
CL VI	566.630	2	345, 549	I IV	573.15	2	32
SC VI	566.790	1	17, 358	KR III	573.228	13	58
CD IV	567.03 *	18	25, 293	ZN III	573.326	1	472
HG	567.08	3	26	SC V	573.356*	10	17, 359
SR IV	567.11 *	30	758	A II	573.360	6	59, 65, 488
BR IV	567.40	5	574	A III	573.468	4	59, 65
CI VI	567.479	1	549	BR IV	573.59	8	574
F III	567.629*	6	174, 176	PB VI	573.60	2	5
F III	567.676*	10	174, 176	ZN III	573.686	1	472
AU	567.7	1	411	MN IV	573.697	6	47
F III	567.737*	9	42, 174, 176	PB IV	573.90	2	5, 656
F III	567.794*	6	174, 176	CA X	574.007	3	178, 192, 361
TL	567.85	2	33	ZN III	574.114	2	472
SC	568.088	2	17	C III	574.281	12	34, 65, 488
W	568.2	1	781	CA III	574.398	3	192
ZR VI	568.277*	300	545	CL III	574.408	3	38, 345, 488
SC VII	568.329	1	17	FE IV	574.5 *	50	286
NE V	568.418*	40	488, 544	AG	574.6	6	335
TL	568.56	2	33	K II	574.634	1	192
HG	568.62 *	5	26	N II	574.650	6	65, 168, 488
SC	568.641	2	17	KR III	574.956	5	58
CA III	569.122	1	192	HG	575.23	4	26
BR IV	569.13 *	10	574	CS II	575.34	1	789
KR III	569.156	7	58	SC VI	575.580	3	17, 358
BR IV	569.27	6	574	CA III	575.580*	6	192
HG	569.40	3	26	CL III	575.582	3	38, 345, 488
K VIII	569.479	4	192, 535, 793	F IV	575.633	2	173, 176
RB III	569.53	5	758	AG	575.7	7	335
HG	569.65	3	26	KR III	575.716	5	58
NE V	569.759*	25	488, 544	KR II	575.902	2	58, 69
NE V	569.830*	50	488, 544	HG	576.06	3	26
P III	569.90	2	597	KR III	576.076	4	58
AU	570.0	1	411	SR IV	576.10 *	25	758
I IV	570.00	2	32	F IV	576.266	3	173, 176
HG	570.02	2	26	F IV	576.349	2	173, 176
CL VI	570.025	4	549	CL VI	576.419	2	549
BA IV	570.1	2	235	PB IV	576.43	2	5, 139, 656
RB III	570.14	20	758	RB III	576.43 *	25	758
PB IV	570.16	6	5, 139	BR IV	576.57 *	10	574
CA III	570.291	2	192	KR II	576.647	4	58
SC VI	570.307	3	17, 358	CA	576.662	1	192
TL IV	570.50 *	4	33, 466	A II	576.731	5	59, 65, 488
CL VI	570.529	2	549	FE IV	576.8 *	40	286
F IV	570.636*	14	42, 173, 176	C II	576.900	1	65, 168
KR III	570.738	4	58	ZN III	577.04	1	25, 472
CL VI	570.881	0	549	TE VI	577.08 *	6	30, 583
CD IV	571.25	6	25, 293	C II	577.108	2	65, 168
SC VII	571.256*	4	358	A III	577.153	3	59, 65
F IV	571.302*	14	173, 176	CL VI	577.444	1	549
CL VI	571.376	1	549	HG	577.65	4	26
F IV	571.384*	15	42, 173, 176	F IV	577.737	4	173, 176
CD IV	571.43	3	293	AG	577.8	5	335
CL VI	571.435	0	549	A II	578.107	4	59, 65, 488
HG	571.53	2	26	KR III	578.220	5	58
CS III	571.7	1	235	A III	578.386	4	60, 65
MN IV	571.793	3	47	PB	578.53	2	5
SC VI	571.937	1	17, 358	ZN III	578.558	2	472
CL II	571.95	1	345	A II	578.605	4	59, 65, 488
KR III	571.983	15	58	AU	578.7	1	411
SE VII	572.00	1	588	CA VI	578.732	4	192
A II	572.015	5	59, 65, 488	HG	578.79	3	26
NE V	572.106*	25	488, 544	MN IV	579.156	3	47

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A III	579.212	3	60, 65	K V	586.322*	10	45, 192, 762
W	579.4	1	781	BR IV	586.69 *	10	574
CA VI	579.775	2	192	RB III	586.78	20	758
KR III	579.823	6	58	CL III	586.874	4	43
HG	579.86	2	26	CA III	586.880	2	192
MN IV	580.040	6	47	MN IV	586.881	4	47
CD IV	580.09	3	293	A VI	587.006	1	549
HG	580.20	2	26	CL III	587.078	3	43
A II	580.261*	8	59, 65, 488	MN IV	587.143	3	47
K V	580.319*	15	45, 192, 762	NE I	587.20	1	57, 65
KR II	580.342	3	58	CL III	587.295	4	43
MN IV	580.385	4	47	CA III	587.311	3	192
O II	580.400	6	65, 168, 488	BI IV	587.36	3	5, 449
I III	580.40	2	32	KR III	587.374	4	58
CL VI	580.444	2	549	KR III	587.543	4	58
BI IV	580.50	3	5, 449	CA VI	587.604	2	192
KR III	580.577	6	58	CA VI	587.872	1	192
I III	580.96	3	32	SC V	587.935*	6	17, 359
O II	580.967	7	65, 168, 488	AU	588.0	1	411
ZN III	580.976	1	472	SE VI	588.01 *	4	651
MN IV	581.099	3	47	HG	588.08	2	26
RB III	581.26 *	30	758	W	588.4	1	781
SC VI	581.404	1	17, 358	SE III	588.78	2	289, 587
MN IV	581.453*	7	47	ZR IV	588.89	20	342
CA VI	581.466	3	192	A VI	588.921	5	549
KR II	581.496	3	58, 69	AG	589.1	6	335
MN IV	581.652	5	47	KR II	589.262	5	58, 69
HG	581.75	2	26	RB III	589.42 *	25	758
K III	582.140	1	192	ZR IV	589.75	25	342
N II	582.150	5	65, 168, 488	A VI	589.783	2	549
PB	582.19	2	5	NE I	589.92	1	57, 65
BR IV	582.22	6	574	CA VI	590.396	3	192
SB	582.46	1	31	HG	590.51	4	26
PT	582.5	1	411	K V	590.618	0	192
I III	582.66	1	32	BI III	590.73	1	5, 138
MN IV	582.785	6	47	CS II	591.08	3	789
I III	582.80	1	32	CL III	591.118	3	43
CA VIII	582.844	4	192, 793	K IV	591.237	1	192
SC	582.946	2	17	SE VII	591.28	0	289, 588
MN IV	582.994	6	47	K IV	591.311	1	192
CD IV	583.30	3	25, 293	HE I	591.420	13	65, 488
RB IX	583.37 *	16	465	CL III	591.428	4	43, 488
MN IV	583.384	5	47	K IV	591.434	1	192
A II	583.437*	8	59, 65, 488	CA III	591.449	3	192
MN IV	583.476	1	47	I VII	591.51 *	4	32, 230
MN IV	583.819	2	47	CL III	591.646	4	43, 488
MN IV	584.059	5	47	CL III	591.962	2	43
CL II	584.10	1	345	BR IV	592.03	9	574
MN IV	584.124	2	47	SC	592.129	2	17
MN IV	584.296	5	47	HG	592.35	2	26
HE I	584.331*	10	65, 488	AU	592.6	1	411
HG	584.37	3	26	CA V	593.404	1	192
MN IV	584.443*	7	47	CA V	593.472	1	192
AU	584.5	1	411	HG	593.63	3	26
PB IV	584.51	4	5, 139	KR III	593.699	7	58
HG	584.57	3	26	HG	593.78	4	26
MN IV	584.826*	6	47	KR III	594.090	9	58
Y V	584.995	20	545	A VI	594.096	3	549
BR IV	585.08	9	574	CA V	594.239	1	192
KR III	585.140	8	58	MN IV	594.243	2	47
MN IV	585.217*	8	47	CD	594.54	2	25
C III	585.261	6	65, 168	CL III	594.636	4	43, 345
RB III	585.29	8	758	CA III	594.640	3	192
C III	585.417	8	65, 168	C II	594.808	6	65, 168, 488
C III	585.496	5	65, 168	RB III	594.93 *	25	758
K V	585.510	5	45, 192, 762	MN IV	594.959	6	47, 131
MN IV	585.582	5	47	SN IV	595.001	30	410, 681
C III	585.608	6	65, 168	C II	595.032	7	65, 168, 488
C III	585.666	6	65, 168	RB III	595.18	15	758
KR II	585.684	2	58	AG	595.2	6	335
MN IV	585.736	5	47	KR II	595.530	7	58, 69
A VII	585.754*	15	549	MN IV	595.678	6	47
KR III	585.950	8	58	CS III	595.7 *	2	235
MN IV	586.240	4	47	TL	595.83	2	33
HG	586.31	2	26	NE I	595.911	3	57, 65

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE	595.92	6	289	HG	603.66	3	26
CL III	595.990	3	43	KR III	603.666	7	58
NI III	596.050	30	661	AS III	603.79	2	404, 580
SE V	596.11	00	289, 651	KR III	603.849	6	58
MN IV	596.169	6	47	A III	604.152*	10	59, 65
HG	596.21 *	6	26	KR III	604.355	4	58
CA III	596.223	2	192	CA	604.580	2	192
CL III	596.240	4	43	TL	604.69	3	33
KR III	596.401	6	58	CA VII	604.766	1	192
KR III	596.576	6	58	CL VII	604.785*	20	44, 546
A VI	596.694	4	549	BI	605.04	1	5
AG	596.8	5	335	CL VII	605.052	1	546
KR II	596.944	4	58	SN IV	605.226	50	410, 681
CA VIII	596.944	4	192, 793	I IV	605.23	1	32
TL IV	597.02	2	33, 466	K IV	605.316	1	192
MN IV	597.097	6	47	KR II	605.316	5	58
KR III	597.194	6	58	HG	605.42	2	26
TL	597.27	2	33	KR II	605.536	5	58
A II	597.695	5	59, 65, 488	F II	605.668*	7	42, 176, 488
AU	597.8	1	411	K IV	605.689	0	192
O III	597.818*	15	65, 160, 488	BR IV	605.74	5	574
CL VII	598.211*	17	546	KR II	605.776	5	50, 69
HG	598.30	2	26	IN	605.81 *	6	26
HG	598.59	2	26	CA VII	605.824	1	192
AG	598.7	5	335	CL III	605.855	1	43
KR II	598.791	3	58	KR III	605.862	9	58
NE I	598.86	1	57, 65	SE VI	605.89 *	4	651
KR II	598.968	3	58	K IV	605.908	1	192
TE	598.97	1	30	K IV	606.065	0	192
O III	599.598*	18	65, 168, 488	CL III	606.100	2	43
BR IV	599.60	8	574	F II	606.284*	6	42, 176, 488
GE	599.61	3	130	CA III	606.333	2	192
IN	599.63	2	130	CL III	606.345	5	43, 488
CL IV	599.733	2	44	KR III	606.460	9	58
SE VII	599.91	2	289, 588	F II	606.805*	8	42, 176, 488
KR II	599.944	4	58, 69	AU	606.9	1	411
I IV	600.05	1	32	F II	606.925*	5	42, 176, 488
BR IV	600.08	8	574	BR IV	607.02	6	574
S	600.11	1	30	CA III	607.069	3	192
KR III	600.167	5	58	CL IV	607.088	3	38
MN IV	600.249	5	47	SE VII	607.17 *	4	289, 588
C II	600.265	1	65, 168	RB III	607.28	15	758
C II	600.369	3	65, 168	F II	607.472*	6	42, 176, 488
TL	600.37	2	33	HG	607.63	2	26
C II	600.532	2	65, 168	RB III	607.88	15	758
O II	600.585	6	65, 168, 488	K' II	607.931*	5	39, 192, 488
AS V	600.74 *	3	651	CS II	607.98	1	789
K II	600.765*	6	39, 192, 488	F II	608.065*	7	42, 176, 488
CA VI	600.917	6	192, 762	KR II	608.124	5	58, 69
SE V	600.96 *	5	289, 651	O IV	608.395*	14	65, 168, 488
KR III	601.134	7	58	HG	608.40	2	26
BR IV	601.26 *	10	574	SE VI	608.44 *	1	289, 651
HE I	601.418	5	355	BR IV	608.56	8	574
N III	601.468	1	65, 168	I IV	608.78	3	32
CL IV	601.499	5	44	CA III	608.895	3	192
MN IV	601.517	2	47	CL IV	608.903	4	38
CA VI	601.700	5	192, 762	HG	608.98 *	5	26
SE V	601.74 *	4	289, 651	C III	609.025	4	65, 168
I IV	601.86 *	5	32	W	609.2 *	8	781
RB III	602.09 *	40	758	HG	609.24 *	5	26
RB	602.14	1	31	C III	609.275	6	65, 168
AU	602.2	1	411	HG	609.62	3	26
K V	602.269	5	192, 762	CL III	609.673	4	43, 488
I IV	602.37	1	32	O III	609.705	6	65, 168, 488
MN IV	602.531	4	47	GE	609.73	2	130
NE I	602.712*	4	57, 65	O IV	609.829*	15	65, 168, 488
MN IV	602.824	3	47	HG	609.85	3	26
A II	602.854	4	59, 65, 488	U	610.0	2	411
CS II	602.95	1	789	O III	610.043	7	65, 168, 488
W	603.3	3	781	BR IV	610.55	2	574
K V	603.429*	8	192, 762	CA III	610.740	3	192
TE V	603.43	1	30, 277	O III	610.746	8	65, 168, 488
I IV	603.55	1	32	AU	610.8	1	411
CA III	603.622	3	192	TL	610.84	2	33
BR IV	603.65	5	574	K	610.850	1	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O III	610.850	6	65, 168, 488	SN IV	619.039	50	410, 681
MN IV	610.958	5	47	NE I	619.092*	4	57, 65, 488
S	611.03	3	30	CR IV	619.12 *	40	488
KR III	611.100	9	58	BI VI	619.13	4	5, 657
SE VII	611.13	3	289, 588	KR II	619.379	2	58
CA	611.186	1	192	W	619.5	1	781
KR III	611.187	8	58	KR II	619.548	2	58
PT	611.3	2	411	BR IV	619.86	7	574
HG	611.34	2	26	CL II	620.28	1	345
MN IV	611.469	5	47	CA	620.289	2	192
HG	611.65	3	26	CA	620.566	1	192
S	611.69	3	30	CR IV	620.65 *	100	47, 488
RB III	611.77 *	30	758	CL III	621.027	3	43, 345
K VI	611.862	3	192, 793	KR II	621.071	5	58, 69
CA III	612.062	5	192	AU	621.1	1	411
CL IV	612.070	4	38	BR V	621.11 *	10	577
SB	612.13	2	31	BI	621.14	1	5
K VI	612.272	1	192	CA III	621.279	3	192
MN IV	612.303	5	47	CL III	621.280	4	43
TL	612.34	2	33	CR IV	621.33 *	60	47, 488
I IV	612.46 *	6	32	I IV	621.35	3	32
KR III	612.485	6	58	K IX	621.422*	5	178, 192, 361
BA IV	612.5	1	235	HG III	621.44	3	26, 237
A II	612.59	4	135	KR III	621.448	8	58
K II	612.621*	6	39, 192, 488	BI	621.46	1	5
CS II	612.82	7	418	KR II	621.910	5	58, 69
HG	612.88	2	26	CR IV	622.07	40	47, 488
SE V	613.00 *	8	289, 651	C III	622.144	2	65, 168
W	613.1	1	781	RB III	622.26	18	758
RB III	613.33	6	758	SE VII	622.50	3	588
KR II	613.366	4	58	KR III	622.795	11	58
SE VII	613.64	3	588	SB	622.83	3	31
CL III	613.874	1	38	HG	622.84 *	6	26
TE	613.92	1	30	K V	623.016*	8	192, 793
AU	614.0	1	411	CA III	623.749	1	192
CA VI	614.015	3	192	A III	623.767	5	60, 65
TE V	614.18	3	30, 277	CL III	623.768	3	43
SE V	614.35 *	4	289, 651	KR III	624.268	3	58
AS III	614.38	3	404, 580	CA VII	624.391	2	547
SN III	614.540	30	277, 681	O IV	624.617	13	65, 168, 488
AS III	614.70	1	404, 580	AS	624.8	2	411
KR II	615.134	4	58	KR III	625.011	9	58
I IV	615.17 *	4	32	O IV	625.130*	14	65, 168, 488
SE V	615.21	00	289, 651	TI	625.2	3	411
KR II	615.225	4	58	BI V	625.26	4	5
K II	615.40	2	39	NI III	625.306	15	661
HG	615.51 *	5	26	K V	625.404	4	192
NE I	615.623*	5	57, 65, 488	BR IV	625.50	4	574
AS V	615.95 *	4	651	NI III	625.682	100	661
K VI	616.136*	6	192, 793	KR III	625.758	13	58
O II	616.291	7	65, 168, 488	O IV	626.852*	14	65, 168, 488
O II	616.363	4	65, 168, 488	NI III	625.938	15	661
HG	616.54	2	26	HG III	626.17	5	26, 331
TI	616.7	3	411	I	626.51	1	32
KR III	616.728	5	58	SB IV	626.51	2	31, 277
BI V	616.78	2	5	SE VII	626.68	00	289, 588
O IV	616.933	8	65, 168	CL II	626.70	1	345
O IV	617.033	7	65, 168	I IV	626.71	3	32
CR IV	617.05	20	47, 488	NE I	626.819*	6	57, 65, 488
O II	617.051	6	65, 168, 488	NI III	626.923	30	661
KR II	617.068	6	58	HG III	626.93	2	26, 331
CA VI	617.517	4	192	CA VII	626.940	1	192
CL II	617.61	1	38, 345	SC III	627.082*	1	17
C	617.7	1	484	NI III	627.541	15	661
KR II	617.750	4	58	K VI	627.560	2	192
CL II	618.02	2	345	W	627.6	1	781
KR II	618.042	4	58	AU	627.7	1	411
CR IV	618.22 *	40	47, 488	CR IV	627.70	10	488
BR IV	618.25	5	574	I IV	627.84	3	32
CR IV	618.27 *	60	791	SC III	627.858*	2	17
KR II	618.515	2	58	TL	628.15	2	33
NE I	618.668*	5	57, 65, 408	RI VI	628.41	1	5, 466
CR IV	618.81 *	60	791	CR IV	628.46	20	488
KR II	618.879	3	58	KR III	628.581	15	58
CL III	619.025	1	43	RB IX	628.62 *	16	465

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI V	628.63	4	5
ZR IV	628.68 *	100	342, 347, 488
SN IV	628.726	50	410, 681
HG III	628.89	1	26, 331
CR IV	628.97 *	100	488
P IV	628.983	5	41, 488, 597
BA IV	629.0	2	235
N II	629.161	3	65, 168
I	629.17	1	32
CL V	629.354	3	38
CA III	629.355	4	192
N II	629.434	2	65, 160
I	629.45	1	32
CA VI	629.594	2	45, 192, 762
SB	629.69	2	31
HG	629.71	3	26
GE	629.71	2	130
CR IV	629.73 *	50	488
O V	629.732*	15	65, 168, 480
GA	629.79	2	130
P IV	629.914	6	41, 488, 597
KR III	630.037	15	58
BR IV	630.12 *	10	574
F III	630.131	6	42, 174, 176
F III	630.194	7	174, 176
CR IV	630.28 *	80	488
K VI	630.302	2	192
A VII	630.306	2	549
CL III	630.380	1	43
CA VII	630.533	3	192, 547
BI	630.58	1	5
PT	630.7	1	411
NI III	630.711*	500	661
SE III	630.74	4	289, 587
CL III	630.76	1	43
CR IV	630.77	20	488
CA VII	630.772	1	547
CR IV	630.92	10	488
K VI	630.940	1	192
BI V	630.98	4	5
CL III	631.006	1	43
BA IV	631.1	2	235
SB II	631.10	1	31, 351, 414
SE III	631.17	4	289, 587
I IV	631.19	3	32
CR IV	631.33	15	791
AU	631.4	1	411
KR III	631.550	7	58
CR IV	631.60	15	791
P IV	631.765*	7	41, 488, 597
CR IV	631.78	15	791
W	631.9	2	781
HG	632.27	2	26
BA IV	632.3	2	235
BR V	632.30 *	9	577
CR IV	632.60	30	488
GA III	632.92 *	2	402
KR III	633.082	7	58, 69
CL V	633.186	4	38
CA III	633.187	5	192
HG	633.26	3	26
AU	633.3	1	411
KR II	633.375	5	58, 69
ZR IV	633.58 *	100	342, 347, 488
KR III	633.631	5	58
ZR IV	633.66 *	20	342, 347, 488
CA VI	633.815	2	45
BI	633.88	2	5
BA IV	634.0	2	235
CR IV	634.13	20	488
A VII	634.208	2	549
CL II	634.24	1	345
KR II	634.265	4	58, 69
BA IV	634.5	0	235
SE VII	634.56 *	4	289, 588

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
S	634.76	3	30
BI	634.95	2	5
GA III	635.02 *	2	402
TL	635.18	3	33
N II	635.180	5	65, 168, 488
I	635.20	1	32
SC	635.303	4	17
SI IV	635.312	10	310
CA IV	635.318	8	192
CL V	635.323	4	38
CR IV	635.45	10	488
HG	635.48	4	26
BI	635.69	1	5
SE VII	635.80 *	4	588
CL II	635.87	2	345
SE IV	635.94 *	10	289, 585
C II	635.988	3	65, 168
KR II	636.154	3	58
C II	636.247	4	65, 168
K IX	636.300	3	178, 192, 361
RD III	636.42	3	758
BI	636.45	2	5
HG	636.60	3	26
CL II	636.62	2	345
S	636.63	2	30
A III	636.818	3	59, 65, 488
A VII	637.052	4	549
NI III	637.057	15	661
CL II	637.06	1	345
K VI	637.195	1	192
A III	637.282*	20	59, 65, 488
NI III	637.535	200	661
CR IV	637.54	50	47, 488
S	637.88	2	30
CA V	637.928*	8	192, 567
BA IV	638.0	2	235
TL	638.09	2	33, 194
CR IV	638.12	50	47, 488
KR II	638.214	4	58, 69
CL II	638.23	2	345
K V	638.668	5	45, 192, 762
KR II	638.952	5	58
BI	638.96	2	5
BI	639.08	2	5
CA VII	639.153	5	192, 547
I IV	639.20	3	32
BI V	639.20	6	5
KR II	639.263	5	58, 69
CS II	639.42 *	12	418
CL II	639.42	2	38, 345
CL III	639.757	1	43
I VII	639.82 *	6	32, 230
KR III	639.981	15	58
K V	639.982	2	45, 192, 762
XE	639.99	2	1
I III	640.11	2	32
PB	640.27	2	5
CA VII	640.357	1	547
XE	640.36	2	1
SE III	640.59	5	289, 587
AU	640.7	1	411
HG III	640.76	1	26, 331
KR II	640.870	5	58, 69
SE III	640.87	4	289, 587
CL III	640.928	1	43
BI	640.99	1	5
SE	641.12	5	289
HG	641.19 *	5	26
CL III	641.304	1	43
A VII	641.318	2	549
A III	641.364	5	59, 65, 488
SB	641.38	1	31
W	641.5 *	10	781
TL	641.59	2	33
C II	641.591	6	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG III	641.62	2	26, 331
TE	641.63	2	30
C II	641.772	6	65, 168
A III	641.808*	12	59, 65, 488
NI III	641.866	100	661
C II	641.875	6	65, 168
CA VI	641.883	2	45
HG III	641.97	2	26, 331
MN IV	642.204	3	47
BR IV	642.22 *	10	574
SE V	642.28	2	585
MN IV	642.598	6	47
SE III	642.77 *	8	289, 587, 588
CA	642.812	2	192
CA V	643.118	6	192, 567
XE	643.19	2	1
SE	643.19	3	289
A III	643.256*	9	59, 65, 488
BI	643.30	1	5
KR II	643.404	9	58, 69
BI V	643.91	3	5
MN IV	643.976	3	47
F VI	643.98	1	171, 176
O II	644.148*	12	65, 168, 488
GE	644.15	3	130
TI	644.2	3	411
MN IV	644.294	4	47
A VII	644.388	2	549
BI IV	644.50	2	5, 449
N II	644.621*	8	65, 168, 488
MN IV	644.701	2	47
SB	644.80	2	31
N II	644.825*	9	65, 168, 488
SE III	644.84 *	8	289, 587
NI III	644.948	20	661
K V	644.963	0	45, 192, 762
CS III	645.0 *	4	235
F VI	645.02	1	171, 176
AU	645.1	2	411
N II	645.167*	10	65, 168, 488
NI III	645.305	30	661
BI	645.32	1	5
BR V	645.49 *	10	577
BI VI	645.68	1	5, 466
TE V	645.82	4	30, 277
MN IV	645.840	6	47
MN IV	645.943	2	47
F VI	646.10	1	171, 176
BR IV	646.15	1	574
MN IV	646.152	5	47
K IV	646.188*	15	169, 192
F VI	646.36	3	171, 176
KR III	646.417*	20	58
CA V	646.570*	8	192, 567
SB	646.58	1	31
MN IV	646.815*	8	47
I III	647.02	3	32
MN IV	647.101	4	47
BI V	647.11	3	5
BI V	647.23	2	5
CA VII	647.292	2	192
BA IV	647.3 *	5	235
F VI	647.31	1	171, 176
SB	647.55	3	31
S	647.61	4	30
I III	647.62	3	32
RB III	647.66	15	758
PB V	647.71	3	5, 657
CA V	647.876	5	192, 567
F V	647.879	1	172, 176
MN IV	647.952*	8	47
BI	648.10	1	5
F VI	648.50	1	171, 176
PB IV	648.50	2	5, 139, 656
P IV	648.507	2	597

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI	648.57	1	5
S VI	648.628	1	598
SB	648.63	1	31
MN IV	648.722*	8	47
HG	648.81	3	26
I VII	649.12 *	20	32, 230
AU	649.2	1	411
TE	649.20	1	30
TL	649.37	2	33
BI	649.62	1	5
BR IV	649.78	6	574
I	650.11	1	32
PB	650.14	2	5
BI VI	650.19	2	5
AS	650.3	1	411
S VI	650.430	1	598
HG	650.78	3	26
CL II	650.88	1	345
I IV	650.94	2	32
BI IV	651.08	1	5, 449
CL II	651.13	1	345
KR III	651.198	8	58
C II	651.216	7	65, 168, 488
C II	651.262	7	65, 168, 488
K VI	651.324	1	192
C II	651.342	8	65, 168, 488
BI	651.52	1	5
CA V	651.550	5	192, 567
BI VI	651.82	6	5, 657
HG	652.09 *	5	26
MN IV	652.211	6	47
SI III	652.227	15	310
S IV	652.523	3	41, 488
NI III	652.652	30	661
SE IV	652.67 *	10	289, 585
P IV	652.79	2	41, 597
PB IV	652.81	3	5, 656
U	652.9	2	411
S IV	652.91	2	30
S IV	653.000	3	41
CL III	653.013	2	43
PB VI	653.10	3	5
SI III	653.343	30	310
P IV	653.51	2	41, 597
PB	653.51	2	5
S IV	653.560	4	41, 488
CL IV	653.696	4	44, 345
CA III	653.720	4	192
BA IV	653.8 *	5	235
MN IV	653.826	4	47
S IV	653.988	3	41
MN IV	654.003	4	47
F V	654.034	3	172, 176
SE IV	654.19 *	9	289, 585
I IV	654.22 *	4	32
MN IV	654.249	3	47
S IV	654.37	1	41
I IV	654.56 *	4	32
PB	654.65	3	5
HG	654.78	2	26
P IV	654.86	3	41, 597
MN IV	654.891*	7	47
CL II	655.09	1	345
MN IV	655.152	5	47
K	655.188	1	192
SE VII	655.23	1	289, 588
MN IV	655.444	4	47
AU	655.5	3	411
S IV	655.553	4	30, 41, 488
KR II	655.677	5	58
P IV	655.78	2	41, 597
BI	655.80	2	5
AS IV	655.88	0	584
S IV	655.887	2	41
CA IV	656.038*	15	192, 359, 567

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB IV	656.09	2	5, 139, 656	PB	663.15	2	5
F III	656.125*	10	42, 174, 176	S V	663.155*	5	41, 488
MN IV	656.162	6	47	HG	663.18	2	26
S IV	656.30	1	30, 41	BR IV	663.19	2	574
AU	656.30	2	335	MN IV	663.395	1	47
RB III	656.34	15	758	BI	663.44	1	5
SB	656.5	1	411	NI III	663.568	150	661
P IV	656.55	2	41, 597	CL II	663.67	2	345
S	656.74	1	30	S IV	663.707	3	41, 488
CA V	656.763	6	192, 567	GE III	663.77	2	406
CL III	656.772	2	43	BR IV	663.80 *	10	574
F III	656.878*	11	42, 174, 176	MN IV	663.897*	8	47
AU	656.88	2	335	SR IV	664.43 *	70	758
BI	656.95	1	5	A II	664.558	6	59, 65, 488
MN IV	657.083	6	47	CL II	664.67	2	345
KR II	657.088	13	58, 69	AU	664.8	3	411
PB	657.13	2	5	S IV	664.822	3	41, 488
CS II	657.15	5	418	MN IV	664.843*	8	47
BI VI	657.16	1	5, 466	KR III	664.844	11	58
F V	657.220	1	172, 176	NI III	664.851	100	661
BI	657.25	1	5	I IV	664.88	3	32
CL III	657.320	2	43	BI	664.88	1	5
K VI	657.327	3	192	MN IV	665.031	1	47
F V	657.335	4	172, 176	XE	665.09	4	1
S IV	657.34 *	5	485, 488	MO V	665.14	6	761
HG	657.49	2	26	CL II	665.21	1	345
BR V	657.60	6	577	BI	665.41	2	5
I	657.74	1	32	SE VII	665.44	1	588
K VI	657.931	3	192	BR III	665.54 *	10	586
AU	658.09	3	335	I II	665.699	250	32, 344
S V	658.262	3	41, 488	KR II	665.870	9	58, 69
BR IV	658.28	1	574	CA IV	665.96	6	39
BI	658.30	2	5	A II	666.014*	10	59, 65, 488
F III	658.337*	12	42, 174, 176	MN IV	666.050*	7	47
PT	658.4	1	411	CL II	666.08	3	38, 345
K VII	658.406	3	192, 793	S IV	666.114	4	41, 488
AU	658.57	3	335	CL II	666.17	2	38, 345
KR II	658.637	5	58	I III	666.29	4	32
O III	658.758	1	65	MN IV	666.363*	6	47
PB	659.14	5	5	NI III	666.477	50	661
S	659.27	1	30	CR IV	666.5 *	100	488
MO V	659.31	7	761	NI III	666.585	30	661
S	659.56	1	30	I II	666.660	250	344
CA III	659.694	1	192	MN IV	666.700*	8	47
KR III	659.716*	22	58	I III	666.81 *	6	32
PB	659.83	3	5	W	666.9	1	781
K VI	659.852	3	192	MN IV	667.009*	6	47
S V	659.853	4	41, 488	CA	667.126	2	192
BI VI	659.92	3	5, 466	I II	667.270	200	32, 344
NE I	660.04	2	335	CR IV	667.31 *	75	488
NI III	660.079	30	661	CL II	667.49	1	345
N II	660.280	9	65, 168, 488	TL	667.69	3	33
BI	660.30	1	5	MN IV	667.745	2	47
MN IV	660.359	4	47	MO V	668.09	10	761
BI VI	660.52	3	5, 657	MO V	668.32	10	761
S IV	660.945	3	41, 488	MO V	668.39	10	761
DR VI	661.05 *	10	577	CS II	668.43 *	12	418
AU	661.1	3	411	MN IV	668.433	4	47
O	661.397	3	65, 170	CA	668.462	1	192
PB VI	661.40	2	5	MN IV	668.512	6	47
K VI	661.402	3	192	CA	668.701	1	192
CL III	661.414	2	38, 345	MN IV	668.743	6	47
S IV	661.42 *	6	485, 488	CL IV	668.770	2	43
MN IV	661.730	6	47	KR II	668.827*	20	58, 69
CL III	661.836	2	38, 345	K VI	668.864	3	192
A II	661.868*	15	59, 65, 488	CR IV	668.90	20	791
S	662.27	1	30	AU	669.0	1	411
NI III	662.366	200	661	MN IV	669.486	3	47
CL IV	662.454	3	44, 345	CA IV	669.725*	10	192, 359, 567
TL	662.91	3	33	MN IV	669.799*	7	47
KR II	663.039*	20	58	CL III	669.949	2	43
CL II	663.08	2	345	BI VI	669.99	2	5, 657
MN IV	663.131*	8	47	SE IV	670.11 *	10	289, 585
K VI	663.134	3	192	AL III	670.144	1	190
O	663.139	2	65, 170	N II	670.289	2	65, 168

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
KR III	670.300	4	58	F IV	677.154*	13	42, 173, 176
CL III	670.383	3	43	BR III	677.19 *	10	574, 586
GA	670.6	4	335	F IV	677.224*	15	173, 176
MN IV	670.607	1	47	V IV	677.26 *	10	790
BI III	670.76	5	5, 138	BI VI	677.32	4	5, 466
KR III	670.813	3	58	S V	677.342	1	41
GE III	670.88	3	406	V IV	677.35 *	50	488, 790
A II	670.947*	10	59, 65, 488	CD III	677.39	8	25, 683
N II	671.014	6	65, 168, 488	CR IV	677.54	40	47, 488
KR III	671.058	7	58	ZN III	677.56 *	8	25, 472
KR III	671.175	7	58	PB V	677.62	1	5
AL III	671.198	2	190	BI VI	677.62	3	5
MN IV	671.357	6	47	BR III	677.70 *	8	586
SC	671.361	4	17	S III	677.75	2	323, 488
CA V	671.365	6	192	CA	677.820	1	192
MO V	671.37	6	761	BI V	677.90	1	5
CL VI	671.37	4	51	ZN III	677.93 *	6	25, 472
N II	671.391	8	65, 168, 488	AL	678.	5	335
K VII	671.504*	5	192, 793	I	678.00	2	32
N II	671.629	6	65, 168, 488	BI V	678.07	1	5
BI III	671.74	2	5, 138	S V	678.08	2	41
N II	671.770	6	65, 168, 488	BR VI	678.14	5	577
SE IV	671.83 *	8	289, 585	S III	678.46	2	323, 488
A II	671.854*	10	59, 65, 488	W	678.5	2	781
MN IV	671.891	1	47	PB V	678.58	1	5, 657
N II	671.999	6	65, 168, 488	BI V	678.59	2	5
CA III	672.083	1	192	V IV	678.72 *	35	488, 790
MO V	672.24	6	761	I II	678.856	400	32, 344
KR III	672.330*	25	58	BI V	678.87	2	5, 656
BI VI	672.41	3	5, 466	S	678.89	1	30
CL IV	672.428	0	43	CR IV	678.91	20	47, 488
CU III	672.659	50	488, 684	F IV	679.003*	13	173, 176
KR III	672.826	7	58	SE VII	679.04	1	289, 588
A II	672.849	3	59, 65, 488	PB	679.07	2	5
K IV	672.941	5	192	S III	679.11	2	323, 488
O II	672.948	8	65, 168, 488	F IV	679.217*	16	42, 173, 176
CL III	673.127	3	43	CL V	679.257	3	38
MN IV	673.215	5	47	A II	679.410*	8	59, 65, 488
CA VII	673.367	1	192	BI	679.41	1	5
SI III	673.480	15	310	V IV	679.65	25	488, 790
AU	673.5	1	411	HG III	679.68	2	26, 237
CL III	673.598	1	43	GA	679.7	2	335
O II	673.768	7	65, 168, 488	SB	680.0	1	411
SB	673.8	1	411	KR III	680.119*	22	58
XE	673.87	3	1	CR IV	680.15	20	47, 488
CA VII	673.885	1	192	RB III	680.16	10	758
P V	673.888*	10	597	GE III	680.28	2	406
BI VI	673.99	3	5	IN II	680.30	1	413
CA VI	674.046	1	192, 762	S V	680.326	3	41
S	674.22	2	30	MO IV	680.390	50	591
MN IV	674.244	6	47	SF VII	680.49	3	289, 588
CA VI	674.278	2	192, 762	BI	680.54	1	5
HG	674.35	2	26	XE	680.58	2	1
S	674.41	3	30	V IV	680.64	20	790
SE III	674.49	5	289, 587, 588	TE	680.66	1	30
KR III	674.828	8	58	S III	680.69	2	323, 488
S	674.89	3	30	F I	680.709	2	420
K	675.335	1	192	BI	680.93	1	5
V IV	675.48	10	790	S III	680.95	2	323, 488
MN IV	675.658	6	47	KR II	681.119	16	58, 69
S	675.85	3	30	V IV	681.13	25	790
PB V	675.94	4	5, 657	HG	681.33	3	26
F IV	676.130*	14	42, 173, 176	CA VII	681.363	3	192
S V	676.21	1	41	S III	681.50	1	323, 488
A III	676.241	6	59, 65	NA IX	681.72	0	691
BI	676.31	1	5	CA III	681.908	4	192
MO IV	676.364	50	591, 761	CL V	681.924	4	38
CA VII	676.563	3	192	BI V	682.05	1	5
KR III	676.564*	25	58	CU III	682.171	200	488, 684
CU III	676.564	300	488, 684	AS	682.2	1	411
CA V	676.775	1	192	BI VI	682.39	1	5, 466
CL V	676.785	3	38	V IV	682.46	20	790
NI III	676.941*	500	661	BI	682.49	1	5
B III	677.004*	5	65, 195	AU	682.5	3	411
B III	677.147*	6	65, 195	F I	682.581	2	420

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
KR II	682.791	16	58, 69	BI	689.62	1	5
XE	682.82	7	1	AU	689.8	2	411
MO IV	682.910	30	591	RB III	689.80	12	758
V IV	682.94	20	790	I II	689.817	400	32, 344
CA III	683.149	1	192	S V	689.838	1	41
BI VI	683.15	1	5, 466	BI	689.84	1	5
CL V	683.171	4	38	SE VII	689.98	2	289, 588
A IV	683.278*	10	59, 65, 488	A III	690.170	8	59, 65, 488
S III	683.47	1	323, 488	CU III	690.250	75	488, 684
KR III	683.666	18	58	ZR III	690.39	50	342
BI VI	683.94	2	5	BI VI	690.49	3	5
AU	684.3	6	335	SE III	690.50	2	289, 587, 588
BI VI	684.30	2	5	C III	690.526	7	65, 168, 488
SE VII	684.36	2	289, 588	MO IV	690.551	30	591, 761
V IV	684.38 *	80	488, 790	KR II	690.557	11	58, 69
CA VII	684.383	2	192	SE	690.63	2	289
V IV	684.44 *	50	488, 790	TE VI	690.81 *	4	30, 583
CL IV	684.490	0	43	BI	690.90	1	5
AU	684.5	4	335	A II	691.030	1	59, 65
CU III	684.58	15	25, 683	N III	691.187	2	65, 168
SE III	684.59	2	14, 289	ZR III	691.19	10	342
ZN II	684.636	2	472	SR III	691.21	3	31, 407, 414
TE	684.66	2	30	ZR III	691.42	15	342
MO IV	684.702	30	591, 761	V IV	691.54	30	790
CA VII	684.743	5	192	BI	691.55	3	5
N III	684.996*	14	65, 168, 488	CU III	691.557	100	488, 684
IN III	685.49	1	408, 590	S V	691.74	1	41
N III	685.513*	15	65, 168, 488	IN III	691.82	1	408, 590
CA VI	685.807	4	192	KR III	691.919	18	58
KR II	685.812	11	58, 69	BI	691.98	1	5
N III	685.816*	16	65, 168, 488	AU	692.0	2	411
S	685.82	2	30	SE III	692.21	2	289, 587
S V	686.150	1	41	MO IV	692.263	30	591, 761
CA III	686.190	2	192	S	692.45	1	30
KR III	686.254*	20	58	CR IV	692.68	12	791
N III	686.335*	14	65, 168, 488	AS IV	692.94	5	584, 651
C II	686.480	2	65, 168	BI VI	693.29	4	5, 657
A II	686.50	1	59, 65	A II	693.295	2	59, 65
SE VII	686.50	1	289, 588	CU III	693.510	50	488, 684
BI VI	686.60	1	5, 466	S V	693.522	2	41
IN II	686.62	1	413	HG III	693.55	2	26, 331
BI V	686.88	6	5, 656	CA VII	693.824	2	192
S V	686.93	1	41	TE	693.89	1	30
C II	687.059*	10	65, 168, 488	CR IV	693.93 *	100	488, 791
CR IV	687.13	40	488	B II	693.952	2	65, 168, 488
C II	687.355*	11	65, 168, 488	XE III	694.04	1	1
MO IV	687.489	20	591, 761	BI VI	694.24	3	5
K IV	687.495	6	192	PB V	694.37	2	5, 466
CL II	687.55	1	345	K V	694.477	2	192
ZR III	687.64	25	342	SE III	695.00	1	14, 289
SE VII	687.67	3	289, 588	K V	695.042	3	192
BR III	687.68	9	586	ZR III	695.06	10	342
ZR III	687.95	12	342	CR IV	695.22	50	488
KR III	687.979	11	58	ZR III	695.29	12	342
CA VII	687.985	2	192	A III	695.537	4	59, 65, 400
CU III	687.987	100	488, 684	KR III	695.604	15	58
S V	688.04	0	41	AL III	695.817*	5	190, 488
K	688.085	3	192	K III	695.820	3	192
K	688.182	1	192	CA III	695.824	4	192
CA VII	688.223	1	192	IN II	695.83	1	413
BI	688.31	1	5	HG III	695.93	1	331
A IV	688.392	7	59, 65	PT	696.1	3	411
MO IV	688.422	30	591, 761	K III	696.202	1	192
CR IV	688.47	50	488	CA III	696.206	3	192
BI III	688.56	2	5, 138	AL III	696.212*	4	190, 488
HG	688.68	2	26	K	696.608	1	192
RR III	688.80	3	400, 586	BI	696.77	1	5
CA III	688.907	3	192	MO IV	696.833*	100	591
CL V	688.933	4	38	BI	696.89	1	5
SE III	688.99	2	289, 587	BR III	696.99	7	586
A IV	689.007*	12	59, 65, 488	RB II	697.04	5	417, 488
BI VI	689.19	3	5	BI VI	697.12	1	5, 466
NI III	689.210	100	661	PB V	697.22	1	5, 466
CA VI	689.539	3	192	BI VI	697.23	1	5, 466
BI	689.56	1	5	CA VII	697.281	2	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A II	697.484	2	59, 65	K IV	705.641	3	192
A III	697.74	2	59, 65	CR IV	706.00	50	488
CA VII	697.809	2	192	I II	706.055	1000	344
CU III	697.930	20	684	HG III	706.13	4	26, 331
A II	697.944	1	59, 65	O III	706.224	3	65, 168
CA VII	697.972	2	192	O III	706.298	2	65, 168
KR III	698.037*	20	58	S VI	706.480*	6	488, 598
SB	698.21	2	31	BI VI	706.49	1	5
BI	698.23	1	5	BI V	706.54	1	5, 656
MO IV	698.284	30	591, 761	I II	706.901	250	344
XE III	698.49	1	1	BR III	706.98	4	586
AS IV	698.50	7	584, 651	BI	707.03	1	5
S III	698.73	2	323, 488	I II	707.136	200	344
A II	698.760	4	59, 65, 488	O III	707.315	4	65, 168
SB III	698.80	4	31, 407	S	707.40	1	30
BR VI	698.81	6	577	CL II	707.43	4	345
BI	698.87	1	5	PB V	707.64	2	5, 466
TE	698.96	2	30	BI	707.71	1	5
SB V	699.22	3	13, 408	PD III	707.797	150	674
A IV	699.408	6	59, 65	BI	707.98	1	5
V IV	699.50	15	790	S	708.31	2	30
BI	699.50	1	5	KR III	708.356	8	58
A III	699.72	1	60, 65	BI VI	708.38	1	5
BI VI	699.94	1	5	CS III	708.4	1	235
BI VI	700.12	1	5	S	708.65	1	30
S III	700.15	3	323, 488	HG	708.76	3	26
NI III	700.168	200	661	CO III	708.767	15	673
CU III	700.182	20	684	K III	708.838	4	192
CU III	700.271	150	488, 684	BI VI	708.87	3	5
A IV	700.277*	8	59, 65	S	708.92	1	30
S III	700.29	3	323, 488	AU	709.0	1	411
BI VI	700.90	5	5, 657	CA VII	709.001	2	192
AU	701.0	1	411	NI III	709.027	100	661
BI	701.08	2	5	SE III	709.15	4	14, 289
CA III	701.370	1	192	CL II	709.16	2	345
BR VI	701.46 *	8	577	A V	709.195	5	65, 488, 549
PB	701.46	2	5	PB V	709.20	2	5, 466
BI VI	701.60	2	5, 466	CU II	709.303	10	488, 670
NI III	701.778	100	661	BR VI	709.31	4	577
BI	701.82	2	5	SE II	709.57	7	289, 468, 488
CU III	702.112	20	684	AG III	709.80	20	284
BI	702.17	1	5	PD III	709.885	100	674
IN	702.30	2	130	CO III	709.912	10	673
GE	702.32	3	130	CA VII	709.932	2	192
O III	702.332*	16	65, 168, 488	CO III	709.996	15	673
GA	702.6	3	130	BI VI	710.32	4	5, 657
SB	702.7	1	411	SR IV	710.35 *	45	758
S III	702.78	2	30, 488	K VI	710.519	4	192, 793
S III	702.82	2	30, 488	BI VI	710.66	2	5
O III	702.822*	16	65, 168, 488	CA VII	710.671	2	192
SE	702.84	2	289	TE	710.73	2	40
IN	702.87	3	130	PB V	710.75	3	5
GE	702.87	4	130	HG III	710.79	3	26, 331
O III	702.899*	17	65, 168, 488	K VI	710.932	1	192
TI	703.1	8	411	S	710.98	5	30
ZN	703.32	1	25	ZR III	710.98	10	342
S	703.33	1	30	SE III	711.05	2	14, 289
BI VI	703.43	1	5	AS IV	711.07	8	584, 651
O III	703.850*	18	65, 168, 488	RB II	711.17 *	9	417, 488
GA	703.86	3	130	CA VII	711.390	2	192
S	703.86	1	30	SE III	711.39	2	14, 289
GE	703.88	4	130	AU	711.4	1	411
IN	703.91	3	130	NI III	711.518	20	661
A II	704.516	3	59, 65, 488	BR II	711.68	6	568
BI IV	704.73	1	5, 449	NI III	711.772	100	661
KR III	704.838	4	58	TE V	711.81	4	30, 277
BI V	704.87	1	5	PD III	711.944	100	674
BI V	704.97	1	5	KR II	712.036	8	58, 69
HG III	705.00	3	26, 331	PB	712.16	2	5
I III	705.11 *	8	32	BI	712.58	1	5
SE VII	705.27	2	289, 588	CL II	712.66	3	345
HG	705.31	2	26	O V	712.668	3	129
A V	705.353	3	65, 488, 549	S VI	712.682	4	488, 598
PD III	705.487	200	674	K VI	712.728	1	192
BI	705.55	1	5	S VI	712.844	3	488, 598

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	712.91	15	490	NI III	718.674	100	661
I II	712.918	400	344	XE	718.89	3	1
NI III	712.976	100	661	AL	718.9	3	335
SN IV	713.004	10	681	CL II	719.26	1	345
TE	713.01	2	30	PD III	719.474	100	674
K V	713.041	1	192	CU III	719.506	150	488, 684
BI VI	713.08	5	5, 657	I II	719.546	1500	32, 344
NI III	713.332	300	661	TE	719.80	3	30
NI III	713.385	300	661	BA IV	719.9 *	5	235
MO IV	713.485	20	591	AU	719.9	2	411
K	713.489	1	192	SE III	719.99	2	14, 289
PT	713.5	3	411	BI VI	720.07	3	5
BR II	713.65	1	568	AG III	720.15	5	284
I II	713.654	200	344	PB	720.21	7	5
CA VII	713.793	3	192	NI III	720.337	15	661
BI VI	713.82	2	5	SE III	720.38	2	14, 289
AG III	713.85	20	284	K V	720.432*	6	192, 762
ZN III	713.90	2	25, 416	SF III	720.65	2	14, 289, 588
A VIII	713.990		549	CD III	720.70	10	25, 683
KR III	713.999	7	58	XE III	720.80 *	6	1
CL II	714.03	2	345	HG III	721.11	1	26, 331
CA VII	714.176	3	192	NI III	721.259	200	661
HG III	714.23	3	26, 331	NI III	721.418	100	661
NI III	714.254	100	661	CA VII	721.514	1	192
BI	714.57	2	5	S	721.72	4	30
CA VII	714.678	3	192	MO IV	721.834	20	591, 761
CA VII	714.693	2	192	KR II	722.036*	50	58, 69
BA IV	714.7	2	235	NI III	722.094	300	488, 661
KR III	714.772	2	58	CS III	722.2 *	2	235
C III	714.879	1	65, 168	SB III	722.41 *	6	31, 407
PB	715.41	3	5	CA VII	722.456	2	192
CU III	715.530	200	488, 684	BI VI	722.48	5	5
BI	715.54	2	5	SE IV	722.78	5	289, 585
NI III	715.563	100	661	HG	722.89	2	26
CL II	715.58	3	345	V IV	722.94	20	790
A V	715.599	4	65, 488, 549	I II	722.980	1500	32, 344
A V	715.645	3	65, 488, 549	V IV	723.04	15	790
I II	715.832	250	344	HG	723.26	3	26
K VI	715.999*	5	192, 793	A II	723.353*	14	59, 65, 488
XE	716.09	2	1	AU	723.5	2	411
K VI	716.272	2	192, 793	V IV	723.54	15	790
HG	716.32	2	26	BI VI	723.56	2	5, 657
I II	716.583	250	32, 344	ZR III	723.59	15	342
S	716.67	3	30	SB III	723.61	1	31
PB III	716.70	2	5	I III	723.63	1	32
NI III	716.708	20	661	V IV	723.65	20	790
SE VII	716.74	0	289, 588	W	723.8	3	781
W	716.8	2	781	HG	723.92	2	26
BI VI	717.02	2	5	CU III	723.958	20	684
HG	717.07	3	26	Y IV	724.06	30	790
S	717.08	3	30	TE V	724.07 *	5	30, 277
CL II	717.15	2	345	CL VI	724.129	3	535
BI VI	717.43	3	5	BI VI	724.15	4	5
PB	717.60	3	5	SE III	724.26	4	14, 289
SB	717.67	4	31	S III	724.29	3	323, 488
AG III	717.73	10	284	ZR III	724.30	15	342
PD III	717.904	100	674	ZR III	724.40	12	342
AS	718.0	2	411	K V	724.420*	8	192, 762, 793
HG	718.06	3	26	NI III	724.471	20	661
ZN	718.06	2	26	CU II	724.487	15	488, 670
A II	718.083	4	59, 65, 488	HG	724.76	2	26
CU II	718.171	10	488, 670	V IV	724.79	20	790
U	718.2 *	10	411	SB III	724.81 *	8	407
AU	718.2	2	411	S	724.83	1	30
SB	718.24	8	31	CA	725.088	1	192
NI III	718.480*	500	259	NI III	725.196	250	661
O II	718.484*	17	65, 168, 488	CL II	725.27	3	345
BR IV	718.50 *	10	400, 574	K VI	725.309	2	192, 793
GE	718.53	5	130	W	725.5	3	781
AG III	718.53	20	284	A II	725.542*	9	59, 65, 488
O II	718.562*	16	65, 168, 488	CL II	725.64	2	345
IN	718.58	4	130	BE II	725.71	5	541
TE	718.59	2	30	AL III	725.716	2	190
PB	718.63	5	5	MO IV	725.748	20	591, 761
GA	718.66	3	130	K IV	725.848	1	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	725.86	1	30	SB	III	732.33 *	5 31, 407
S	III	725.86	3 323, 488	S	III	732.376*	5 488, 598
BR	VI	726.16	6 577	TE		732.93	2 30
BR	II	726.71	2 568	F	I	732.960	1 420
TE	V	726.86 *	5 30, 277	ZR	III	733.03	18 342
AL	III	726.948	3 190	NI	III	733.807	20 661
AG	III	726.96	30 284	CL	VI	733.891	3 535
XE		726.99	2 1	BI	V	733.92	6 5
HG		727.05	2 26	S	III	733.92	1 598
CA	VII	727.185	1 192	V	IV	734.36	8 790
I	II	727.246	800 32, 344	CS	III	734.5	1 235
NI	III	727.313	15 661	SE	IV	734.53	4 289, 585
SE	III	727.49	2 14, 289	PB		734.59	6 5
CL	VI	727.537	3 535	F	I	734.642	1 420
TE		727.54	1 30	F	I	734.795	1 420
CA	V	727.646	1 192	BR	VI	734.91	6 577
PD	III	727.720	200 674	F	I	735.154	1 420
HG	III	727.86	2 26, 331	CU	III	735.224	100 488, 684
BR	II	727.94	2 568	S	III	735.251*	4 488, 598
S	III	728.69	3 323, 488	F	I	735.469	1 420
AG	II	728.73	3 283	CU	II	735.519	20 488, 670
PB		728.78	4 5	BR	IV	735.66 *	10 400, 574
FE	III	728.810	6 188, 488	BI	V	735.86	4 5
SE	VII	728.87	1 289, 588	NE	I	735.89 *	30 57, 65, 488
CL	II	728.94	3 345	CR	III	735.89	20 490
S		729.15	1 30	CU	II	736.031	25 488, 670
NI	III	729.249	100 488, 661	BR	VII	736.09 *	10 577
TI	IV	729.39 *	0 604	S	III	736.25	2 598
CL	II	729.39	3 345	BR	III	736.33	8 586
KR	II	729.402*	20 58, 69	AG	III	736.57	20 284
CL	II	729.52	2 345	PB		736.62	5 5
S	III	729.529*	4 488, 598	ZR	III	736.67	20 342
TE		729.82	1 30	CA		736.738	1 192
NI	III	729.820*	500 259	CL	VI	736.762	3 535
BR	II	729.96	2 568	F	I	736.987	2 420
FE	III	729.996	5 188, 488	K	IV	737.144*	10 39, 192
NI	III	730.014	50 661	AS	V	737.18 *	5 651
AG	III	730.04 *	35 284	BR	II	737.37	3 568
S		730.05	1 30	W		737.4	1 781
NI	III	730.109	250 488, 661	NI	III	737.419	50 488, 661
PB	V	730.19	2 5	A	II	737.442	1 59, 65
SE	III	730.24	2 14, 289	I	II	737.546	500 32, 344
CA	V	730.257	5 192	FE	III	737.708	5 188
KR	III	730.264	3 58	K		737.761	1 192
AG	III	730.28	15 284	V	IV	737.84 *	100 488, 790
CL	VI	730.311	4 535	K		738.075	1 192
PB	III	730.35	2 5	AG	III	738.13	10 284
CU	III	730.365	150 488, 684	BI	VI	738.17 *	10 5, 656, 657
PB		730.42	2 5	SE	III	738.17	3 14, 289
SC	III	730.60 *	0 17, 488, 688	NI	III	738.258	200 661
BI	V	730.71	5 5, 656	S	III	738.474*	4 488, 598
PB	III	730.71	1 5	PB	V	738.72	1 5, 466
S	III	730.783	3 488, 598	PD	III	738.793	150 674
AG	II	730.83 *	25 283	K	VI	739.177	1 192
PB	V	730.84	1 5, 466	FE	III	739.264	5 188
CL	II	730.92	3 345	SE	III	739.29	2 14, 289
A	II	730.929*	8 59, 65, 488	PB	V	739.51	2 5, 466
AG	III	730.94	15 284	SE	III	739.63	2 14, 289
HG		731.01	3 26	O	II	739.949	1 65
MO	IV	731.074	30 591	BA	IV	740.0 *	5 235
S		731.12	2 30	NI	III	740.235	100 661
ZR	III	731.12	10 342	A	II	740.263*	12 59, 65, 488
CA	VII	731.286	5 192	PB		740.38	2 5
B	II	731.357	1 65, 168	XE	II	740.406	3 61
B	II	731.442	1 65, 168, 195	TE		740.53	4 30
NI	III	731.481	150 661	CA	III	740.555	3 192
SB		731.50	2 31	NI	III	740.620	30 661
SE	III	731.53	2 14, 289	HG	III	740.69 *	6 26, 65, 331
SC	III	731.66 *	1 17, 488, 688	CE		740.7 *	5 411
NI	III	731.696	400 661	BR	II	740.78	4 568
K	V	731.858*	12 192, 762	I	II	740.950	300 344
CU	III	732.026	100 488, 684	AG	III	740.98	20 284
NI	III	732.158	300 661	RB	II	741.43 *	15 417, 488
XE	III	732.24	1 1	CE	IV	741.8 *	40 335
KR	III	732.259	4 58	SE	III	741.91	4 14, 289

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AS IV	741.93	8	584, 651	K	748.783	1	192
K IV	741.950*	10	39, 192	F I	748.946	3	420
PB V	742.01	5	5, 466	O I	749.3	1	65, 165, 250
AG III	742.29	20	284	TE IV	749.30 *	5	30, 583
PB	742.67	2	5	PB V	749.46	5	5, 657
ZN II	742.699	1	472	O II	749.622	1	65, 170
KR II	742.821	9	58	V IV	749.66	15	790
TE VI	743.05 *	4	30, 583	NI III	749.677	200	488, 661
KR II	743.122	9	58, 69, 488	SI IV	749.940*	100	310
BI VI	743.13 *	10	5, 466, 657	K IV	749.993	6	39, 192
K V	743.292	2	192	NI III	750.053	300	488, 661
CU III	743.303	20	684	V IV	750.10	30	488, 790
BE II	743.579	3	541	I II	750.197	250	344
W	743.6	2	781	O II	750.226	2	65, 170
NE I	743.70 *	12	57, 65, 488	S IV	750.23 *	5	485, 488
CR III	743.71	10	490	K V	750.230	3	192
KR III	743.870	3	58	PB	750.25	3	5
S	743.95	3	30	BI VI	750.26	3	5
NI III	743.955	100	661	K V	750.381	1	192
CU III	743.970	30	684	F I	750.418	1	420
SN III	744.229	30	277, 681	F I	750.610	3	420
PB VI	744.52 *	5	5	XE	750.76	3	1
SB	744.73	2	31	V IV	750.85	12	790
NI III	744.784	100	661	F I	750.885	1	420
AG III	744.91	8	284	NI III	750.983	150	488, 661
S IV	744.92 *	5	485, 488	KR III	750.986	4	58
A II	744.920	5	59, 65, 488	BI	751.00	2	5
HG	745.01	3	26, 331	NI III	751.333	150	488, 661
NI III	745.058	40	661	SN IV	751.405	15	681
CL IV	745.205	4	44	NI III	751.573	150	488, 661
K IV	745.264*	10	39, 192	SE III	751.81	3	14, 289
S	745.30	1	30	F I	751.861	4	420
A II	745.318	5	59, 65, 488	V IV	751.92	10	790
BR III	745.42	4	400, 586	NI III	752.023	200	488, 661
PB	745.76	2	5	KR II	752.051*	30	58, 69, 488
KR III	745.763	3	58	V IV	752.06	10	790
F I	745.767	2	420	BI	752.17	1	5
N II	745.836	6	65, 168, 488	TE VI	752.25	1	30, 583
S	745.87	1	30	PB V	752.51	1	5, 466
SB V	746.06	1	408	BI	752.51	2	5
S	746.22	1	30	V IV	752.59	8	790
CA III	746.246	1	192	NI III	752.603	100	661
SE IV	746.29	5	289, 585	O III	752.762	4	65, 168
NI III	746.319	50	661	AG II	752.80 *	30	283
K IV	746.350*	8	39, 192	F I	752.884	4	420
F I	746.400	1	420	HG	752.93	4	26
F I	746.627	3	420	NB V	753.011*	50	132, 760
KR III	746.695	7	58	SN III	753.014	100	277, 681
KR III	746.834	5	58	NI III	753.252	30	661
CL III	746.864	1	43	F I	753.303	4	420
N II	746.976	8	65, 168, 488	BI	753.73	1	5
NI III	747.015	30	661	S IV	753.76 *	5	485, 488
NI III	747.213	20	661	HG III	753.76	3	26, 331
CL III	747.415	1	43	K VI	753.877	3	192
CL III	747.553	1	43	RI V	754.12	2	5
AS IV	747.57 *	9	584, 651	F I	754.148	2	420
K	747.677	3	192	K IV	754.194	3	169, 192
K VI	747.848	2	192	A IV	754.205	4	59, 65
TL	747.95	2	33	BI	754.35	2	5
NI III	747.989	300	400, 661	BI	754.51	1	5
F I	747.999	2	420	CE IV	754.6 *	30	335
F I	748.134	1	420	K IV	754.673*	8	39, 192
A II	748.193	4	59, 65, 488	TE	754.77	3	30
AG III	748.30	20	284	A II	754.817	3	59, 65, 488
AS IV	748.33 *	8	584, 651	PB V	755.05	4	5, 466
F I	748.338	2	420	PB	755.19	2	5
K	748.393	2	192	A IV	755.212	3	59, 65
O I	748.4	1	65, 165, 250	F I	755.603	2	420
S IV	748.40 *	5	485, 488	TE	755.65	3	30
CA V	748.409	3	192	AG III	755.73	15	284
TE	748.49	2	30	O I	755.8	2	65, 165, 250
BI VI	748.53	7	5, 466	CE IV	755.8	12	335
F I	748.580	4	420	PB VI	755.81	4	5
F I	748.709	2	420	PB	756.11	2	5
I II	748.781	800	344	AG III	756.43	4	284

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W	756.5	1	781	PD	III	763.058	500 674
P	IV	756.510	6 597	CO	III	763.131	25 488, 673
SE	VII	756.53	0 588	S		763.20	1 30
CL	IV	756.563	1 44	ZR	III	763.30	10 347, 488
NI	III	756.687	100 488, 661	N	III	763.340*	14 65, 168, 488
O	I	756.7	1 65, 165, 250	CA	VI	763.344	2 192, 762
PD	III	756.853	100 674	TE	V	763.39 *	6 30, 277
BI	V	757.03	5 5	BI	III	763.56	2 5, 138
F	V	757.08	4 172, 176	S		763.65	2 30
K	V	757.112	4 192	U		763.7 *	5 411
K	VI	757.199	4 192	NB	V	763.752*	300 132, 760
NI	III	757.201	50 488, 661	KR	II	763.976	11 58, 69, 488
PB		757.39	2 5	NI	III	764.014	100 661
PD	III	757.424	100 674	BI	VI	764.03	3 5, 466
NI	III	757.795	300 488, 661	ZR	III	764.33	15 347, 488
TE		757.94	3 30	NI	III	764.354	50 661
NI	III	758.039	150 661	N	III	764.357*	15 65, 168, 488
S		758.17	2 30	CA	VI	764.358	3 192, 762
TE		758.20	2 30	S		764.41	3 30
CO	III	758.212	20 488, 673	TI		764.6	5 411
AG	III	758.27	10 284	BI		764.71	1 5
NI	III	758.273	250 661	PB	VI	764.77	3 5
PD	III	758.308	100 674	CO	III	764.866	10 488, 673
GA		758.41	2 130	CO	III	764.959	20 488, 673
CA	III	758.465	1 192	ZR	III	765.11	30 347, 488
B	III	758.476*	1 65, 195	SE	VII	765.14	2 588
S		758.51	1 30	N	IV	765.140*	17 65, 168, 488
K	V	758.559	1 192	CA	VI	765.154	6 192
B	III	758.673	2 65, 195	K	III	765.314	4 192
O	V	758.677*	10 65, 168, 488	I	II	765.594	600 344
SN	IV	758.683	10 681	S		765.63	4 30
NI	III	758.733	250 488, 661	K	III	765.644	6 192, 359, 488
SE	IV	758.75 *	6 289, 585, 651	NI	III	765.726	50 661
CS	III	758.9	1 235	KR	II	766.202	9 58, 69, 488
NI	III	759.098	100 488, 661	RH	III	766.390	10 677
BI	IV	759.12	6 5	PD	III	766.424	500 674
S		759.31	2 30	CA	VI	766.522	1 192, 762
O	V	759.440*	10 65, 168, 488	PT		766.6	2 411
TI		759.5	5 411	CO	III	766.667	10 488, 673
RH	III	759.530	20 677	NI	III	766.693	100 661
SE	III	759.55	2 14, 289	GA		766.8	2 130
SE	VII	759.80	00 289, 588	AG	III	767.19	20 284
I	III	759.85	4 32	TE		767.26	3 30
BR	III	759.87	3 586	BI	VI	767.340	6 5, 466
NI	III	760.024	15 661	PB	V	767.45	7 5, 466
O	V	760.229*	10 65, 168, 488	BI	VI	767.468	5 5, 466
GE		760.3	3 130	CO	III	767.703	20 488, 673
W		760.3	6 781	CO	III	767.770	15 673
HG	III	760.39	3 26, 331	AU		767.9	2 411
GA		760.41	3 130	CD	II	767.94	10 683
A	IV	760.439	3 59, 65	AG	III	768.33	25 284
O	V	760.445*	12 65, 168, 488	TE	V	768.38 *	5 30, 277
SN	III	760.624	50 277, 681	GA		768.4	2 130
BI	VI	760.78	4 5, 466	BI	VI	768.44	4 5, 466, 657
AS	IV	760.80 *	10 584, 651	CO	III	768.458	20 488, 673
CO	III	760.825	30 488, 673	RB	III	769.03 *	25 758
MU	VI	760.997	15 132	CO	III	769.128	10 488, 673
KR	II	761.050	18 58, 69, 488	A	III	769.152*	12 65, 169, 488
O	V	761.130*	10 65, 168, 488	PB		769.23	2 5
A	IV	761.470	5 59, 65	O	I	769.355	1 165
PD	III	761.616	100 674	K	V	769.402	2 192, 762
BI		761.73	1 5	O	I	769.411	1 165, 250
HG	III	761.89	1 26, 331	PB	V	769.50	5 5, 466
SE	VII	761.98	0 588	CA		769.602	1 192
AS	IV	761.99 *	8 584, 651	AG	III	769.61	15 284
O	V	762.001*	10 65, 168, 488	BR	III	769.63	5 400, 586
GA		762.01	2 130	TE		769.67	3 30
GE		762.02	2 130	SE	III	769.74	2 14, 289
A	II	762.192	2 59, 65, 488	K	VI	770.022	1 192
RH	III	762.324	10 677	NI	III	770.216	400 661
AG	III	762.43	3 284	O	I	770.264	1 165, 250
HG	III	762.68	2 26, 331	K	V	770.287	3 192, 762
AS	IV	762.75	4 584, 651	O	I	770.294	1 165, 250
CO	III	762.775	50 488, 673	I	II	770.771	300 32, 344
ZR	III	762.90	20 342	SE	III	770.83	3 14, 289

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W	770.9	1	781	CO	III	776.688	20 488, 673
CA	VI	770.928	1 192	TI	IV	776.82 *	10 488, 604
KR	II	771.024	18 58, 69, 488	TE		776.83	3 30
K	VI	771.103*	5 192	GA		776.9	2 130
GA		771.2	2 130	CL	IV	776.91	0 43
K	V	771.376	3 192	F	I	776.926	4 420
PB	V	771.40	6 5	K	VI	776.957	4 192
K	V	771.456	3 192, 762	F	I	777.010	5 420
TE	V	771.47	3 30, 277	BI	VI	777.05	1 5, 657
N	III	771.544	10 65, 168, 488	CU	III	777.125	200 488, 684
SE	VII	771.59	2 588	NI	III	777.181	100 661
CO	III	771.638	10 673	SE	III	777.23	4 14, 289
CO	III	771.868	30 488, 673	BI	V	777.36	5 5
RH	III	771.873	10 677	PD	III	777.367	150 674
N	III	771.901	11 65, 168, 488	CA	VI	777.508	1 192
NI	III	772.040	200 661	F	I	777.531	4 420
PD	III	772.110	200 674	CL	II	777.55	3 345
PB		772.22	2 5	GA		777.91	3 130
SE	VII	772.26	1 588	F	I	778.059	6 420
HG	III	772.32	1 331	ZN	II	778.12	5 682
I	II	772.344	400 32, 344	SE	VII	778.17 *	4 588
N	III	772.385	12 65, 168, 488	GA		778.3	2 130
CA	VI	772.309	1 192	PB	V	778.50	1 5, 657
CA	III	772.641	2 192	K	III	778.528	7 192, 359, 488
AU		772.7	2 411	CU	III	778.603	50 488, 684
PB	VI	772.77	2 5	CA	VI	778.718	1 192
GA		772.8	2 130	NI	III	778.806*	500 259
HG	III	772.82	1 331	BI	VI	778.99 *	8 5, 466
TE		772.83	1 30	XE	III	779.07	1 1
N	III	772.891	9 65, 168, 488	TI	IV	779.14 *	20 488, 604
N	III	772.975	8 65, 168, 488	ZR	III	779.15	12 347
BI	VI	773.03	1 5	F	I	779.192	2 420
I	II	773.055	500 32, 344	F	I	779.365	6 420
CD	II	773.12	20 683	BR	VII	779.58 *	8 577
BI	VI	773.34	3 5	W		779.6	2 781
NI	III	773.464	100 661	CO	III	779.683	20 488, 673
S		773.49	3 30	O	IV	779.821	9 65, 168, 488
KR	II	773.684	18 58, 69	CA	V	779.824	3 192
BI	VI	773.76	1 5, 657	HG		779.83	4 130
AU		773.9	2 411	GA		779.83	3 130
NB	V	774.017*	150 132, 760	GE		779.86	4 130
CA	V	774.088	5 192	SE	VII	779.88	00 588
PD	III	774.138	200 674	IN		779.9	3 130
BR	III	774.18	3 586	O	IV	779.905	10 65, 168, 488
K		774.192	1 192	F	I	779.910	5 420
TE		774.28	2 30	CA	V	779.919	4 192
S		774.29	3 30	F	I	779.972	2 420
SE	III	774.34	2 289, 468, 587	PD	III	780.115	100 674
CA	V	774.354	3 192	CA		780.116	1 192
S		774.43	3 30	F	I	780.134	1 420
O	V	774.522	7 65, 168, 488	TE		780.25	1 30
XE		774.53	4 1	F	I	780.390	15 420
CA	VI	774.532	3 192	F	I	780.519	10 420
W		774.6	2 781	NI	III	780.572	30 661
K		774.738	3 192	F	I	780.713	5 420
BI	III	775.16	4 5, 138	RH	III	780.758	30 677
SE	III	775.27	2 14, 289, 468	CD	II	780.80	5 683
BE	II	775.375	4 541	HG	III	781.00	1 331
TE		775.38	1 30	PD	III	781.019*	1000 674
BI	VI	775.43	3 5, 657	RI	V	781.04	5 5
CA	IV	775.526	3 192	CO	III	781.130	20 673
PB	VI	775.61 *	6 5	RH	III	781.239	30 677
SN	III	775.793	75 277, 681	CD	II	781.26	25 683
HG		775.93	3 130	TE		781.32	3 30
N	II	775.957*	12 65, 168, 488	K		781.338	1 192
CA	VI	775.966	3 192	PB	V	781.48	2 5, 657
CO	III	775.992	10 673	NI	III	781.486	50 661
AG	III	776.03	5 284	BI		781.64	2 5
PD	III	776.315	100 674	F	I	781.654	3 420
SE	IV	776.34	5 289, 585	P	III	781.726	1 597
P	IV	776.366	3 597	GA		781.74	2 130
AG	III	776.38 *	35 284	TI	IV	781.78 *	20 488, 604
PD	III	776.507	200 674	BI		781.79	1 5
AS		776.6	3 411	PB	VI	781.82	3 5
PD	III	776.681	150 674	CO	III	781.983	15 488, 673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
KR II	782.084*	25	58, 69, 488
W	782.2	3	781
PB VI	782.23 *	8	5
RH III	782.305	20	677
F I	782.378	10	420
TE	782.57	2	30
F I	782.575	2	420
CS III	782.6 *	3	235
PB V	782.79	3	5, 657
SE II	782.80	3	289, 468, 587
AG III	782.91	20	284
F I	782.976	5	420
CO III	783.179	10	673
PD III	783.344	100	674
NI III	783.419	30	661
PB VI	783.43	1	5
SE III	783.62	3	14, 289
KR II	783.715*	20	58, 69, 488
PD III	783.805	150	674
SE II	783.84	1	468
I III	783.95	2	32
IN II	783.97	1	413
XE	784.09	2	1
P III	784.25	1	41
I	784.28	2	32
C III	784.393	3	65, 168
RH III	784.455	20	677
TE IV	784.50 *	5	30, 583, 655
ZR III	784.51	18	347
I III	784.64 *	7	32
SN III	784.684	50	277, 681
TE	784.71	3	30
K V	784.713	2	192
BI VI	784.80	2	5, 466
I III	784.80 *	7	32
RH III	784.906	10	677
PD III	784.985	200	674
NI III	785.020	200	661
SC	785.120	2	17
CO III	785.207	10	673
I	785.23	2	32
BI	785.24	1	5
BI	785.45	1	5
SE V	785.63	00	289, 651
AG III	785.76	15	284
PD III	785.883	150	674
CO III	785.883	15	488, 673
KR III	785.968*	25	58
S	786.00	1	30
TL	786.03	2	33
NI III	786.145	20	661
BI VI	786.15	7	5, 466
P III	786.244	1	597
W	786.3	5	781
K V	786.464	2	192
O	786.474	3	170
N	786.474	3	65, 170
S V	786.476*	8	41, 488
PB VI	786.48	4	5
SC	786.481	4	17
GA	786.8	2	130
BI VI	786.82	3	5
CL II	787.15	1	345
PD III	787.276	200	674
XE II	787.31	6	1
PD III	787.415	100	674
CL II	787.62	3	345
O IV	787.710*	15	65, 168, 488
GE	787.73 *	6	130
IN	787.75	4	130
HG	787.77	4	130
TE	787.70	3	30
GA	787.81	3	130
PD III	787.837	100	674
PB	787.92	2	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	787.950	100	674
NI III	788.039	300	661
CU III	788.073	400	488, 684
NI III	788.298	200	661
PB	788.30	2	5
BI V	788.40	2	5
HG III	788.46	2	26, 331
CU III	788.462	300	488, 684
SE III	788.63	4	14, 289
BI VI	788.69	7	5, 466
CL II	788.75	4	345, 488
I II	788.815	700	32, 344
S III	788.984*	4	488, 598
CL II	789.01	7	345, 488
BI	789.04	1	5
AG III	789.08	20	284
BI	789.25	1	5
CO III	789.447	30	488, 673
PD III	789.583	200	674
CU III	789.840	200	488, 684
PT	790.0	2	411
U	790.0 *	5	411
NI III	790.000	20	661
F I	790.006	7	420
O IV	790.103*	13	65, 168, 488
HG III	790.15 *	6	26, 65, 331
GE	790.18 *	6	130
PD III	790.192	150	674
CO III	790.197	50	488, 673
O IV	790.203*	16	65, 168, 488
GA	790.22	4	130
IN	790.23	5	130
BI VI	790.425	2	5, 657
NI III	790.450	20	661
BI IV	790.465	2	5
BI IV	790.511	2	5, 449
BI IV	790.566	2	5, 449
BI IV	790.621	2	5
BI IV	790.658	2	5
SE III	790.68	4	14, 289
CO III	790.688	25	673
TE	790.70	4	30
BI V	791.01	4	5
I II	791.147	350	344
CU III	791.371	300	488, 684
PB	791.45	3	5
O I	791.516	1	165, 250
S	791.65	1	30
BI	791.75	1	5
F I	791.875	12	420
O I	791.976	3	165, 250
BI	792.07	2	5
CL II	792.19	2	345
O I	792.237	1	165, 250
HG III	792.25	1	26, 331
AG III	792.35	25	284
BI IV	792.47	8	5, 449
SE III	792.49	4	14, 30, 289
O I	792.510	1	165, 250
F I	792.536	10	420
PB	792.77	2	5
O I	792.937	3	165, 250
RH III	793.063	10	677
CU III	793.065	100	488, 684
F I	793.237	1	420
CL II	793.34	3	345, 488
TE	793.44	3	30
CL II	793.47	3	345, 488
XE	793.53	4	1
HG III	793.91	1	331
BI	794.01	1	5
PD III	794.078	500	674
I II	794.237	500	32, 344
PB V	794.41	2	5, 657
F I	794.417	10	420

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI	794.66	1	5	CO	III	801.493	30 488, 673
I	II	794.757	400 32, 344	PD	III	801.542	200 674
RH	III	794.964	20 677	NI	III	801.591	100 661
C	II	795.134	1 65, 168	HG	III	801.62	2 26, 331
GA		795.23	3 130	TI		801.9	3 411
CL	II	795.36	2 345, 488	A	IV	801.913*	5 59, 65
PB		795.39	4 5	PB	VI	802.06 *	10 5
I	III	795.52 *	8 32	K	V	802.122	2 192
PB	V	795.58	5 5, 657	O	IV	802.198	6 65, 168
F	I	795.774	2 420	O	IV	802.250	5 65, 168
BI	IV	795.84	1 5, 449	PD	III	802.286	150 674
U		796.1	2 411	BR	III	802.51	3 400
TE		796.10	3 30	CU	III	802.841	150 488, 684
PD	III	796.384	150 674	SE	III	802.87	4 14, 289
TI		796.5	3 411	AS	II	802.90	2 571
AG	III	796.54	20 284	PB		803.01	2 5
SE	IV	796.65	1 289, 585	XE	II	803.066	3 61
GE		796.66	5 130	CA	V	803.325	1 192
O	II	796.661*	10 65, 168, 488	SE	IV	803.42	5 289, 585
CO	III	796.663	20 673	NI	III	803.490	20 661
KR	II	796.678	6 58, 488	BI	III	803.65	6 5, 130
S	III	796.692*	4 408, 598	PU	III	803.665	500 674
IN		796.7	4 130	TE	VII	803.72	1 30, 655
F	I	796.982	3 420	K	V	803.826	2 192
NI	III	797.092	30 661	GA		803.9	2 130
S		797.15	2 30	S	IV	803.996	4 41, 408
CU	II	797.457	10 488, 670	I	III	804.14	4 32
PD	III	797.517	500 674	SE	V	804.31 *	5 651
CU	III	797.566	100 488, 684	S		804.38	1 30
A	I	797.744	1 65, 647	XE	II	804.45	5 1
AG	III	797.91	25 284	TE		804.47	1 30
I	II	798.158	1000 32, 344	GA		804.5	2 130
S	IV	798.277	3 41, 488	PB	VI	804.56	4 5
SE	III	798.30 *	6 289, 587	W		804.6	3 781
CD	II	798.37	50 683	PB	VI	804.80	4 5
I	II	798.427	400 32, 344	TE	IV	804.89 *	5 30, 583
SE	VII	798.44	0 289, 588	NI	III	805.007	200 661
TE		798.57	1 30	SI	II	805.097	10 310
CU	II	798.57	15 683	AG	III	805.18	1 284
GA		798.75	2 130	SB	IV	805.24	2 31, 290
BR	III	798.76	4 400, 586	NI	III	805.263	20 661
PB		798.91	2 5	CO	III	805.345	20 488, 673
PD	III	799.013	200 674	KR	IV	805.763*	7 58, 65
TE		799.02	2 30	XE	II	805.95	5 1
KR	II	799.083	9 58, 69, 480	BI		806.10	1 5
A	I	799.137	0 65, 647	ZN	II	806.107	1 472
PD	III	799.202	200 674	PB	VI	806.16 *	5 5
SE		799.41	2 289	K	V	806.373	2 192
AG	III	799.41 *	40 284	C	II	806.384	5 65, 168, 488
PB		799.44	2 5	C	II	806.555	7 65, 168, 488
C	II	799.664	4 65, 168	K	V	806.577	2 192
SE	III	799.77	1 14, 289	GA		806.6	3 130
PB		799.81	5 5	C	II	806.684	4 65, 168, 488
CO	III	799.919	10 673	C	II	806.846	6 65, 168, 488
C	II	799.947	4 65, 168	A	I	806.875	2 59, 65
PD	III	800.011	500 674	SE	III	806.92	3 14, 289
SI	III	800.067	25 310	AG	III	806.93	5 284
SE	IV	800.08	0 289, 585	F	I	806.964*	150 420, 488
PD	III	800.095	500 674	2R	IV	806.98	20 942, 347
TE		800.25	3 30	NI	III	807.055	100 661
NI	III	800.332	100 661	NI	III	807.213	30 661
S	IV	800.477	4 41, 488	A	I	807.220	2 59, 65
GA		800.48	3 130	BI	VI	807.47	3 5, 466
SE	II	800.54	1 468, 587	FE	III	807.547	9 188, 488
A	IV	800.573*	5 59, 65	A	I	807.702	2 59, 65
CA	VII	800.652	3 192	PD	III	807.827	150 674
CL	VII	800.698	3 546	FE	III	807.855	8 188, 488
BR	III	800.93	1 400	CO	III	807.910	15 488, 673
HG	III	801.03	1 26	FE	III	808.079	5 188, 488
A	IV	801.086*	10 59, 65, 488	SE	V	808.57 *	0 289, 651
NI	III	801.145	20 661	CU	III	808.583	20 684
CU	III	801.154	200 488, 684	HG	III	808.72	2 26, 331
A	I	801.359	1 65, 647	CS	II	808.77 *	20 418
A	IV	801.409*	10 59, 65, 488	S		808.77	5 30
I	III	801.47	1 32	FE	III	808.840	8 188, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG III	808.88	30	284	TI	814.7	10	411
PB	808.97	2	5	ZR III	814.89	12	342
HG	809.19	2	26	PB	815.02	2	5
CO III	809.221	15	673	RH III	815.037	10	677
W	809.3	4	781	PD III	815.053	200	674
TE	809.31	3	30	SI IV	815.055*	300	488, 310
BR III	809.52	3	586	PB V	815.25	1	5
PD III	809.536	100	674	RB III	815.27	18	758
F I	809.599*	125	420, 488	W	815.4	4	781
CO III	809.609	10	673	RH III	815.471	10	677
PB V	809.62	2	5	BR II	815.48	5	568
K V	809.673	2	192	CO III	815.555	25	488, 673
C II	809.682	4	65, 168	BI	815.68	1	5
S IV	809.69	4	485, 488	AS	815.8	2	411
FD III	809.695	150	674	BI	815.89	2	5
CO III	809.706	15	488, 673	PB VI	815.95 *	6	5
C II	809.770	3	65, 168	S IV	815.97 *	5	485, 488
ZR III	809.80	12	347	FE III	816.163	6	188, 488
AS II	809.81	5	571	AG III	816.22	15	284
BI VI	809.82	1	5, 657	PD III	816.221	200	674
RH III	809.892	10	677	A I	816.233	4	59, 65
A I	809.933	2	59, 65	FE III	816.273	6	188, 488
BI	810.00	1	5	A I	816.466	4	59, 65
K V	810.215	1	192	PD III	816.563	200	674
RH III	810.380	30	677	CO III	816.617	10	673
CO III	810.502	15	488, 673	BI	816.65	1	5
O I	810.667	1	165, 250	TE	816.69	2	30
CO III	810.716	10	673	CA VI	816.805	2	192
HG III	810.79	1	26, 331	KR IV	816.822*	18	58, 65
K V	810.893	1	192	SE II	816.88	1	289, 468, 587
CA V	810.937	4	192	BI	816.95	1	5
FE III	810.940	7	188, 488	PB V	817.01	1	5
CU II	810.997	15	488, 670	FE III	817.038	7	188, 488
AU	811.0	3	411	RH III	817.041	15	677
O I	811.052	4	165, 250	CA VI	817.058	2	192
FE III	811.284	8	188, 488	GA	817.28	3	130
AG III	811.30	1	284	BI	817.28 *	2	5
CA VI	811.480	1	192	BI	817.37 *	2	5
O I	811.501	1	165, 250	SE VII	817.51	2	289, 588
NI III	811.568*	500	259	RH III	817.593	20	677
O I	811.710	1	165, 250	BI	817.70 *	2	5
PB	811.92	4	5	BR III	817.79	5	400, 586
CO III	811.951	10	673	NI III	817.833	20	661
ZR III	812.09	15	347, 488	CS III	817.9	1	235
O I	812.096	3	165, 250	I II	818.047	700	32, 344
PB	812.29	2	5	PB	818.12	3	5
K	812.493	1	192	SI IV	818.136*	300	488, 310
W	812.5	3	781	KR II	818.147*	25	58, 69, 488
PB V	812.60	4	5, 657	TI	818.2	10	411
BI	812.66	1	5	SE III	818.57	1	289, 587, 588
HG III	812.68	3	26, 331	AG II	818.59	2	571
CO III	812.869	10	488, 673	CO III	818.600	20	488, 673
FE III	812.931	5	188	PD III	818.679	200	674
CA VII	812.967	2	192	W	818.9	3	781
CL VII	813.002	2	546	PB VI	819.30 *	8	5
PB V	813.09	4	5	SE VII	819.52	00	289, 588
PD III	813.192	100	674	BI	819.54	1	5
PB VI	813.34 *	5	5	AG III	819.59	3	284
FE III	813.382	10	188, 488	ZR III	819.59	25	342, 488
BR V	813.40	6	577	AS II	819.60 *	7	571
RH III	813.437	50	677	BR III	819.68	8	400
CS II	813.85 *	20	418	PD III	820.012	100	674
FE III	813.862	5	188	A I	820.129		59, 65
CU II	813.882	20	488, 670	SB IV	820.19	3	31, 290
SE III	813.95	4	14, 289	ZR III	820.21	30	342, 488
PD III	813.989	150	674	BI IV	820.35 *	10	5, 449
PB V	814.10	1	5, 466	AU II	820.42	7	550
BI	814.12	1	5	SI II	820.503	20	310
FE III	814.242	6	188, 488	SE V	820.65	0	289, 468, 585
BI	814.36	2	5	NI III	820.851	50	661
PB V	814.45	1	5, 657	KR II	821.161*	20	58, 69, 488
PD III	814.524	100	674	NI III	821.373	15	661
FE III	814.565	5	188	PB	821.40	3	5
BI	814.61	1	5	K V	821.568	1	192
BI	814.69	1	5	CA V	821.583	1	192

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W	821.7	2	781	SE	828.48	8	289, 468, 488
ZR	822.09	20	342, 488	AS	828.62	2	404, 571
A	822.159	4	65, 488, 549	BI	828.63	1	5
AG	822.39	18	284	PB	828.67	1	5
S	822.58	1	30	GA	828.8	2	130
BR	822.67	1	568	CD	829.05	15	683
HG	822.69	2	26, 331	CO	829.072	10	673
BI	822.868	3	5	BI	829.22	1	5
BI	822.910	3	5, 449	ZR	829.24	15	342
BI	822.960	3	5	PD	829.316	300	674
PB	822.98	4	5	PB	829.32 *	6	5
K	823.047	3	192, 762	ZR	829.50	25	342
P	823.177	6	41, 488	GA	829.60	2	488, 652
XE	823.20	1	1	AG	829.98	8	284
FE	823.257	6	188, 488	PB	830.11	7	5, 139, 656
K	823.358	3	192, 762	TE	830.21 *	2	30, 655
SI	823.418	100	310	SE	830.30 *	6	651
HG	823.44	1	331	KR	830.377	18	50, 69, 488
ZR	823.50	20	342	CE	830.4 *	20	411
PD	823.643	300	674	BI	830.42	6	5, 466
ZR	823.69	35	342, 488	SB	830.70 *	5	31, 230, 408
BI	823.73	4	5, 449	K	830.785	1	192
JC	823.87 *	6	14, 289	TE	830.89	5	30
TE	823.93	1	30	BI	830.91	1	5
S	823.98	1	30	ZN	830.924	2	472
AS	824.03	3	571	TL	830.96	2	33
BI	824.11	2	5	I	831.168	300	344
ZR	824.16	20	342	NI	831.229	100	661
NI	824.292	20	661	AS	831.28	4	571
S	824.36	1	30	W	831.4	2	781
P	824.733*	7	41, 469, 488	CA	831.425	1	192
AS	824.81	1	571	CL	831.431	4	38
XE	824.83	1	1	FE	831.464	5	188, 488
BI	824.875	6	5	AU	831.6	5	411
S	824.887*	4	488, 598	I	832.14	3	32
BI	824.965	6	5, 449	FE	832.328	5	188, 488
TE	825.04	3	30	CD	832.38	40	683
PD	825.076	150	674	ZR	832.59	15	342
RH	825.118	20	677	SE	832.74 *	9	468, 488
I	825.122	500	344	O	832.754*	14	168, 488
PD	825.345	500	674	RH	832.774	20	677
A	825.348	1	59, 65	GE	832.9	5	130
CO	825.403	15	488, 673	O	832.927*	14	168, 488
K	825.559	1	192, 762	TE	833.09	1	30
ZR	825.65	18	342	GE	833.3	5	130
I	825.934	300	344	O	833.326*	15	168, 488
AG	826.00	6	284	RH	833.331	40	677
RH	826.022	30	677	SB	833.38	2	31
NI	826.138*	500	259	ZR	833.51	10	342
PB	826.35	4	5, 657	ZN	833.62	2	754, 682
A	826.371	2	59, 65	I	833.63 *	6	32, 230
K	826.395	1	192	TE	833.64 *	5	30, 583
PD	826.411	400	674	GE	833.7	5	130
KR	826.432*	22	58, 69, 488	O	833.742*	16	168, 488
NI	826.501	200	661	TI	834.0	15	411
TE	826.67	1	30	TE	834.05	1	30
PB	826.76 *	5	5	NI	834.058	20	661
S	826.86	1	30	ZN	834.08	3	25, 682, 754
TE	826.94 *	3	30, 655	I	834.095	1200	32, 344, 399
CU	826.995	30	488, 670	A	834.397*	6	59, 65
A	827.055	5	65, 488, 549	GA	834.4	4	130
W	827.3	1	781	TE	834.40	1	30
A	827.349	3	59, 65, 549	RH	834.453	60	677
AS	827.4 *	5	411	O	834.462*	15	168, 488
I	827.40	1	32	IN	834.5	5	130
FE	827.777	6	188, 488	GE	834.5 *	6	130
I	827.797	400	32, 344	SC	834.66 *	8	17
PB	827.80 *	5	5	CL	834.67 *	10	345, 488
CL	827.85	1	345	ZN	834.82	1	25
ZR	827.90	20	342	CL	834.840	5	38
P	827.932*	8	41, 488	ZR	834.85	20	342
PT	828.0	2	411	A	834.878	4	65, 488, 549
RH	828.079	10	677	FE	834.944	6	188, 488
NI	828.109	100	661	CL	834.967	5	38
CA	828.451	2	192	A	835.003*	6	59, 65

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
O III	835.096*	14	168, 488	CL IV	840.933	6	38
O III	835.292*	16	168, 488	HG I	840.97	0	18
GE	835.3 *	6	130	PB III	840.99	2	5
IN	835.4	5	130	FE III	841.088	5	188, 488
GA	835.4	4	130	I II	841.097	700	32, 344, 399
TE	835.54	2	30	HG III	841.21	2	331
RH III	835.569	10	677	NI III	841.256	20	661
SC	835.70	3	17	AU	841.3	1	411
A V	835.792	1	59, 65, 549	CA III	841.385	1	192
SC	835.86	2	17	CL II	841.41	4	345, 488
S	835.93	1	30	BR III	841.42	8	400
SE III	836.02	2	289, 587	ZR III	841.44	12	347, 488
A V	836.126	2	59, 65, 549	FE III	842.020	6	188, 488
AU	836.3	1	411	KR IV	842.035*	22	58, 65
S III	836.315*	4	488, 598	BE II	842.057*	7	488, 541
PD III	836.476	100	674	FE III	842.09	5	188
FE III	836.521	7	188, 488	NI III	842.142*	500	488, 661
ZR III	836.60	18	342, 488	XE	842.35	5	1
RH III	836.890	20	677	PB VI	842.35	2	5
BR II	836.90	3	568	NI III	842.546	50	661
TE	836.92	1	30	FE III	842.686	5	188
PD III	836.948	100	674	BI	842.70	1	5
AU	837.0	1	411	A I	842.808	2	59, 65
NI III	837.025	20	661	PB II	842.86	1	5, 163, 657
ZN II	837.044	2	472	CA V	842.950	3	192
PD III	837.146	200	674	SE III	843.02	5	14, 289
NI III	837.266	50	661	PB VI	843.03	1	5
SN IV	837.309	20	681	I II	843.113	600	344, 399
BI	837.34	1	5	HG III	843.12	3	26, 65, 331
S IV	837.42	3	30	K	843.317	1	192
FE III	837.439	7	188, 488	AU	843.5	5	335
KR III	837.666*	22	58, 65	RH III	843.625	30	677
SC	837.76	3	17	BI VI	843.64	4	5
HG III	837.81	1	331	SI II	843.717	10	310
S	837.85	1	30	A IV	843.772*	20	59, 65, 488
TE	837.89	2	30	BR I	843.84	2	400
FE III	838.048	8	188, 488	S II	843.84	1	30, 322
I II	838.070	700	32, 344	AU	844.0	5	411
AG	838.11	20	284	SE II	844.00	4	289, 468, 651
CO III	838.133	25	488, 673	KR II	844.058*	25	58, 69, 488
CD II	838.26	30	25, 683	CO III	844.097	20	488, 673
SC	838.70	3	17	FE III	844.284	10	188, 488
FE III	838.936	5	188, 488	NI III	844.787	50	286, 661
BR I	839.01	2	400	PB IV	844.79	2	5, 656
PB VI	839.16	2	5	NI III	844.859	100	661
CO III	839.284	30	488, 673	CO III	844.866	10	488, 673
CL II	839.30	2	345	SC	845.07	7	17
FE III	839.319	5	188, 488	AU	845.2	7	335
HG III	839.33	3	26, 331	PB VI	845.21	1	5
AG III	839.34	6	284	FE III	845.408	9	188, 488
K V	839.439	1	192	SC	845.47	5	17
SE V	839.46 *	4	289, 651	PD III	845.525	100	674
TE	839.48	2	30	P III	845.656	1	488, 597
ZR III	839.55	12	342	SE V	845.73	0	289, 585
RH III	839.581	20	677	SI II	845.768	20	310
AS	839.6	1	411	TE IV	845.84 *	5	30, 583
CL II	839.63	2	345, 488	AS III	845.86	2	404
XE	839.73	2	1	ZR III	845.89	18	342
SN V	839.730	10	681	FE III	845.925	7	188, 488
TE III	839.78	2	30, 353	PB II	845.96	3	5, 139, 163
AU	839.8	1	411	P IV	845.995	2	597
GA	839.86	2	130	W	846.1	3	781
CD II	839.94	30	683	I II	846.295	900	32, 344, 399
A IV	840.029*	15	59, 65, 488	HG III	846.52	1	331
PD III	840.214	100	674	FE III	846.534	6	188, 488
TE IV	840.31 *	8	30, 583	CA III	846.611	3	192
SE VII	840.37	0	588	TH IV	846.9	30	335
FE III	840.381	5	188, 488	SC	846.90	6	17
PD III	840.579	500	674	P IV	846.999	5	597
S	840.58	1	30	PD III	847.342	100	674
W	840.7	5	781	BR II	847.35	1	568
S	840.80	2	30	FE III	847.425	8	188, 488
CA III	840.807	1	192	NI III	847.433	300	488, 661
CL IV	840.808	4	38	CD II	847.52	25	25, 683
CA III	840.921	3	192	FE III	847.578	7	188, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	847.589	10	677	ZR III	853.74	10	347, 488
P III	847.658	3	488, 597	BI III	853.93	1	5
FE III	847.700	6	188, 488	FE III	854.073	5	188, 488
I II	847.796	600	344	RH III	854.088	10	677
GE IV	847.80	3	406	P III	854.223	1	597
SN V	847.822	20	681	PD III	854.354	100	674
FE III	847.924	6	188, 488	FE III	854.367	6	188, 488
I II	847.926	1000	32, 344, 399	SE VII	854.37 *	6	289, 468, 588
SN V	847.981	30	681	K V	854.416	2	192
FE III	847.984	5	188	AU	854.5	4	411
AG III	848.00	5	284	XE II	854.71	6	1
P III	848.023	2	597	KR III	854.733*	25	58, 65
CO III	848.088	30	488, 673	TE	854.75	2	30
BI	848.20	1	5	RH III	854.770	40	677
P III	848.445	1	597	K V	854.771	1	192
AU	848.5	1	411	S V	854.792*	7	41, 488
P III	848.636	3	597	P III	854.855	1	597
AS II	848.74	1	571	CA VI	854.923	3	192
CU II	848.806	15	488, 670	RH III	855.029	10	677
PD III	848.868	200	674	HG III	855.03	3	26, 331
TE III	848.94	2	30, 353	AL III	855.040	4	190
DI	849.07	1	5	SB II	855.08	2	414
RH III	849.084	30	677	PD III	855.294	150	674
TE III	849.15	2	30, 353	CR III	855.36	10	490
S V	849.241*	6	41, 488	PB II	855.40	1	5, 163
AS III	849.34	1	404, 571	I II	855.494	400	344
BR II	849.52	2	568	P III	855.610	5	488, 597
TE	849.52	1	30	RI VI	855.68	5	5, 466, 656
FE III	849.524	5	188, 488	CU II	855.701	10	488, 670
PB II	849.56	3	5, 163	BR V	855.79	1	577
SE II	849.60	4	468, 587	K IV	855.815	2	192
TE	849.70	1	30	GA	855.9	2	130
P IV	849.764	4	597	NI III	855.922	100	661
BI V	849.86	6	5, 656	BR II	856.19	7	488, 568
AS III	849.91 *	15	404, 580	RU III	856.316	30	301
RU III	850.088	25	301	FE III	856.325	5	188
SI II	850.141	10	310	PD III	856.470	500	674
RU III	850.298	20	301	NI III	856.506	50	488, 661
KR II	850.318	6	58, 69, 488	CA III	856.635	4	192
P IV	850.390	3	597	NI III	856.684	50	661
HG	850.55	3	26	TE	856.69	2	30
RH III	850.581	20	677	AL III	856.768*	5	190
A IV	850.602*	25	59, 65, 488	CA III	856.791	4	192
ZR III	850.61	30	342	RH III	856.893	30	677
BI VI	850.66	3	5, 657	P III	856.963	2	597
PB VI	850.74	1	5	AS II	857.07	0	571
BR V	850.79 *	8	400, 577	NI III	857.087	200	488, 661
CA III	850.966	3	192	FE III	857.392	5	188, 488
FE III	851.150	7	188, 488	TE III	857.48	1	30, 353
PD III	851.247	200	674	NI III	857.550	50	661
CU II	851.300	25	488, 670	PB IV	857.65	7	5, 139, 656
FE III	851.332	7	188, 488	TE	857.66	1	30
SC	851.36	3	17	FE III	857.690	5	188
RH III	851.488	20	677	S V	857.872*	5	41, 488
SC	851.51	4	17	C II	858.094*	8	65, 160, 400
PD III	851.593	200	674	RH III	858.106	10	677
CL II	851.70	7	345	P III	858.139	1	597
AS IV	851.74 *	10	584	NI III	858.198	20	661
PD III	851.743	300	674	PD III	858.238	100	674
NI III	851.788	15	286, 661	CU II	858.4A7	25	400, 670
FE III	851.842	6	188, 488	K	858.555	1	192
TE	851.89	1	30	C II	858.561*	9	65, 168, 488
FE III	851.992	6	188, 488	TE	858.58	1	30
RH III	851.996	10	677	FE III	858.602	6	188, 488
PB V	852.00	3	5, 466	CA IV	858.855	3	192
TE VII	852.03 *	3	30, 655	NI III	858.861	20	661
SE III	852.07	3	14, 289	CO III	858.975	15	488, 673
S V	852.185*	5	41, 488	TE	858.99	1	30
RH III	852.273	20	677	PB V	859.02	2	5, 466
RU III	852.493	30	301	KR II	859.040*	20	58, 69, 488
P III	852.679	5	597	N I	859.35	3	334
S IV	852.70	2	30, 38	NI III	859.387	20	661
RH III	852.704	40	677	ZR III	859.42	12	342
XE III	852.91	1	1	I III	859.43	3	32
S IV	853.11	3	30, 38	ZR III	859.56	25	342, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE III	859.626	6	188, 488	SE II	865.84	1	289, 468
P III	859.667*	8	488, 597	PB II	865.97	1	163
FE III	859.721	8	188, 488, 292	I III	865.97 *	5	32
FE III	859.838	6	188, 488	PD III	866.075	150	674
NI III	859.854	50	661	RH III	866.224	40	677
RH III	859.887	40	677	S	866.24	1	30, 322
HG III	859.96	1	26, 331	TE	866.31	1	30
N I	860.15	4	334	HG III	866.31	3	26, 331
BI	860.19	1	5	AS III	866.34 *	10	404, 542, 580
NI III	860.238	150	661	W	866.6	4	781
FE III	860.315	5	188, 488	A I	866.805	4	59, 65
CD II	860.38	30	683	HG III	866.91	1	331
GA	860.4	3	130	SC	867.01	2	17
P IV	860.449	2	597	NI III	867.023	50	661
S V	860.462*	5	41, 488	PD III	867.087	100	674
SI IV	860.570	20	310	PB V	867.11	2	5, 466
SE VII	860.62	3	588	NI III	867.194	100	488, 661
NI III	860.642	300	488, 661	RU III	867.478	20	301
CA VI	860.827	2	192	ZR III	867.50	20	342
N I	860.85	4	334	NI III	867.508	300	488, 661
CA	860.983	1	192	RH III	867.538	40	677
W	861.0	2	781	FE III	867.639	5	188, 488
RH III	861.336	40	677	TL	867.68	2	33
SB IV	861.58	3	31, 290, 414	PD III	867.699	100	674
SC	861.64	6	17	PB V	867.90	1	5, 466
HG III	861.67	1	331	K V	867.921	1	192
FE III	861.761	8	188, 488	MO IV	867.925	20	193, 591
FE III	861.832	10	188, 488	TE	868.00	1	30
TL	861.96	2	33	K V	868.140	1	192
CU II	861.991	40	488, 795	GE IV	868.30	3	406
RH III	862.014	40	677	SC	868.32	6	17
FE III	862.028	5	188, 488	I II	868.380	750	344
RH III	862.110	40	677	K V	868.552	1	192
N I	862.15	5	334	ZR III	868.64	25	342
GE II	862.23	5	488	FE III	868.836	5	188
PB IV	862.34	6	5, 139	KR II	868.869*	25	58, 69, 488
SN V	862.435	50	681	N I	868.98	5	334
KR III	862.578*	35	58, 65	ZR III	868.99	25	342
FE III	862.735*	5	188, 488	CU II	869.062	10	488, 670
NI III	862.882	300	488, 661	SC	869.13	2	17
N I	862.90	5	334	CU II	869.336	25	488, 670
TL	862.95	2	33	ZR III	869.47	12	342
PB II	863.00	3	163	RH III	869.622	20	677
TE	863.06	2	30	N I	869.66	5	334
N I	863.15	3	334	NI III	869.702	200	488, 661
PD III	863.200	200	674	A I	869.754	2	59, 65
NI III	863.217	300	488, 661	K V	869.965	3	192
ZR III	863.23	15	342	CA III	869.981	0	192
P IV	863.325	3	597	N I	870.00	3	334
AU	863.4	5	335	CO III	870.007	15	488, 673
I II	863.590	600	22, 344	I II	870.343	900	32, 344
RH III	863.778	50	677	RH III	870.395	50	677
TE III	863.96	3	30, 353	N I	870.40	3	334
PB V	863.99*	15	5, 466	PD III	870.437	150	674
FE III	864.034	6	188, 488	PB V	870.45	7	5, 466
PD III	864.044	500	674	TE	870.59	3	30
B II	864.08	0	65, 168	FE III	870.621	5	188
CU II	864.199	10	488, 670	BI VI	870.72	2	5
AU	864.3	5	411	RH III	870.750	30	677
RH III	864.366	30	677	KR III	870.825*	20	58, 65
BI V	864.403*	15	5, 656	TE	870.84	3	30
SE II	864.47	1	289, 468	NI III	870.845	200	488, 661
BI V	864.499*	15	5, 656	RH III	870.939	20	677
CL II	864.67	5	345, 488	PD III	871.061	100	674
CA III	864.695	4	192	AS III	871.07 *	10	580
W	864.7	2	781	O III	871.099	10	63
KR II	864.812*	20	58, 69, 488	A III	871.099*	10	59, 65, 488
ZR III	864.86	30	342	SN IV	871.276	20	681
N I	864.93	5	334	P V	871.396*	15	597
P IV	865.04	3	597	XE II	871.42	6	1
RH III	865.223	50	677	AS III	871.79 *	8	404, 580
PD III	865.285	200	674	K VI	872.006	1	192
CU II	865.383	40	488, 670	TE	872.06	2	30
AU	865.4	5	335	K III	872.313	4	192, 762
N I	865.63	5	334	I II	872.391	800	32, 344, 399

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI	IV	872.602*	15 5, 449	A	III	878.728*	12 488, 65
RH	III	872.656	20 677	PD	III	878.732*	900 674
ZR	III	872.76	12 342	O	I	878.979	1 165
TE	V	872.85 *	5 30, 277	O	I	879.027	1 165
PD	III	873.057	200 674	PB	V	879.08	1 5, 657
AG	III	873.13	4 284	O	I	879.108	1 165
S	V	873.20	1 51	SE	III	879.15	4 14, 289
CU	II	873.264	15 488, 670	TL	I	879.30 *	0 33
FE	III	873.462	8 188, 488	P	IV	879.310	2 597
I	II	873.489	1500 32, 344, 399	PB	V	879.45	1 5, 657
ZR	III	873.61	18 342	NI	III	879.471	50 661
SB	IV	873.68	3 31, 290	O	I	879.553	1 165
PB	II	873.71	6 163	SN	IV	879.590	10 681
RH	III	873.738	10 677	AS	II	879.62	6 571
K	III	873.865	2 192	A	III	879.622	8 59, 65, 488
RH	III	873.865	10 677	I	II	879.844	2000 32, 344
PD	III	873.977	200 674	A	I	879.949*	3 59, 65
K	III	874.045	3 192	FE	III	880.008	5 188
SC		874.18	3 17	NI	III	880.028	20 661
RH	III	874.249	10 677	BI	V	880.17	6 5, 656
CO	III	874.294	10 488, 673	FF	III	880.447	6 100, 488
GA		874.4	4 130	PD	III	880.500	500 674
TE	III	874.55	3 30, 353	RH	III	880.720	10 677
RH	III	874.713	20 677	XE	II	880.802	5 61
PT		874.8	2 411	FE	III	880.949	6 188, 488
K	V	874.883	1 192	CO	III	880.950	10 488, 673
K	V	874.985	1 192	ZN	II	881.05	5 25, 682, 754
SC		875.07	2 17	FE	III	881.088	7 188, 488
N	I	875.092	5 334, 794	RH	III	881.205	15 677
P	IV	875.132*	11 597	K	V	881.405	3 192
N	I	875.25	5 334	BI	IV	881.49	1 5
W		875.3	4 781	I	II	881.881	1500 32, 344
BI	IV	875.33	1 5	SE	III	882.13	5 587
FE	III	875.423	5 188	K	VI	882.184	2 192
GE	II	875.51	7 488	IN	III	882.21 *	4 410
O	III	875.534	9 63	TH	IV	882.4	30 335
A	III	875.534*	9 59, 65, 488	RH	III	882.510	80 677
GA		875.6	3 130	B	II	882.536	2 65, 168
TE	III	875.61	3 30, 353	SE	II	882.59	3 289, 468
NI	III	875.641	150 661	NI	III	882.642	20 661
PD	III	875.931	100 674	B	II	882.670	2 65, 168, 195
I	II	875.941	1000 32, 344	RU	III	882.680	20 301
FE	III	876.021	5 188	CL	V	883.127*	4 38
A	I	876.063*	4 59, 65, 488	CA	III	883.159	3 192
RU	III	876.29	20 301	A	III	883.179*	9 59, 65, 488
N	I	876.32	4 334	MO	IV	883.309	30 591
KR	III	876.674*	22 58, 65	RH	III	883.400	40 677
CU	II	876.719	20 488, 670	S	V	883.59	2 41
BI	IV	876.80	8 5, 449	FE	III	883.688	6 188, 488
SB	II	876.84	4 351, 414	NI	III	883.849	50 661
ZN	II	876.84	4 682	PB	V	883.85	7 5, 466
CU	II	877.007	25 488, 670	PB	V	883.94	7 5, 466
I	II	877.276	800 32, 344, 399	AS	II	883.95	1 571
W		877.4	3 781	TL	I	884.07 *	0 33
P	IV	877.493*	11 597	CU	II	884.127	10 488, 670
TE	VII	877.54 *	3 30, 655	KR	II	884.144*	30 58, 69, 488
CU	II	877.549	20 488, 795	MO	IV	884.207	50 193, 591
AS	III	877.67 *	7 542, 575, 580	S	V	884.46	2 41
O	I	877.804	1 165	AU		884.5	5 411
CR	III	877.81	10 490	C	III	884.516	8 65, 168
CU	II	877.839	15 488, 670	FE	III	884.600	5 188, 488
RH	III	877.882	20 677	TE	III	884.66	3 30, 353
O	I	877.885	2 165	MG	II	884.697*	592
CS	III	877.9 *	7 235	MG	II	884.719*	592
PB	II	877.96	2 163	PB	IV	884.98	6 5
TL	I	878.04 *	2 33	TL		885.22	2 33
NI	III	878.078	30 661	N	I	885.36	3 334
BI	IV	878.13	2 5	HG	III	885.38	3 26, 331
CR	III	878.20	10 490	BR	II	885.48	2 488, 568
CR	III	878.39	10 490	XE	II	885.54	3 61
RH	III	878.398	30 677	N	I	885.62	5 334
CO	III	878.543	10 488, 673	ZR	III	885.66	15 342
HG	III	878.59	2 26, 237	S	V	885.77	1 41
CU	II	878.697	50 488, 795	CU	II	885.842	25 488, 670
O	III	878.728	11 63	AU		885.9	10 335

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PD III	885.913	300	674	RH III	892.656	10	677
MO IV	885.982	30	193, 591	CA IV	892.671	3	192
KR II	886.302*	30	58, 69, 488	AS IV	892.68 *	10	584, 651
N I	886.33	6	334	BI V	892.73	1	5
TE	886.40	2	30	PD III	892.793	150	674
HG III	886.48	1	26, 237	SB VI	892.87	1	31, 655
CU II	886.515	10	488, 670	CO III	893.045	15	488, 673
RH III	886.595	15	677	TE	893.06	2	30
N I	886.80	3	334	I II	893.167	1000	32, 344
PD III	886.820	100	674	MO IV	893.189	30	591
SE VI	886.85 *	0	289, 651	TE III	893.26	3	30, 353
CU II	886.941	60	488, 795	PB V	893.42	1	5, 466
N I	886.95	3	334	NI III	893.533	50	661
W	887.0	3	781	CL II	893.56	3	345, 488
TE III	887.01 *	4	30, 353	CU II	893.676*	80	488, 795
RH III	887.216	20	677	AL III	893.905*	5	190
XE II	887.24	6	1	XE III	893.94	2	1
O III	887.404	10	63	TE	894.05	1	30
A III	887.404*	10	59, 65, 488	CU II	894.224	40	488, 795
N I	887.41	4	334	A I	894.310	4	59, 65, 488
MO IV	887.790	30	591	RH III	894.330	50	677
TL IV	888.04	1	33, 466	CL V	894.340*	4	38
SE II	888.06	2	30, 289	CA III	894.351	4	192
CL II	888.07	4	345, 488	PB V	894.40 *	8	5, 466
PB V	888.37	7	5, 466	MO IV	894.762	20	193, 591
SB IV	888.41	4	31, 290, 414	CL V	894.910	1	38
PT	888.6	2	411	TE V	895.23 *	8	30, 277
ZN II	888.62 *	8	472, 682, 754	BI V	895.45	1	5
PD III	888.842	500	674	PD III	895.599	100	674
SN IV	888.926	15	448, 681	BI V	895.82	1	5
CD II	888.95	25	683	I II	895.844	400	32, 344, 399
SB V	889.00 *	4	13, 31	XE III	895.92	2	1
AS III	889.03 *	8	404, 580	CL II	895.95	3	345, 488
BR II	889.23 *	20	488, 568	I II	895.957	200	32, 344
XE III	889.28 *	15	335	PT	896.0	2	411
PD III	889.294*	1000	674	PB V	896.07	7	5, 466
GA	889.3	3	130	PB II	896.30	3	163
PB II	889.68	8	163	RH III	896.372	10	677
SI II	889.719	25	310	I II	896.376	400	32, 344, 399
CD II	889.98	15	683	RH III	896.587	15	677
RH III	890.033	20	677	BR II	896.64 *	10	488, 568
TL	890.13	2	33	I II	896.692	400	32, 344, 399
AS II	890.30	1	571	SB II	896.75	1	414
BI IV	890.32	5	5	CU II	896.755	60	488, 795
SN V	890.427	10	681	RH III	896.777	10	677
CU II	890.569	60	488, 795	PD III	896.813	200	674
BI V	890.66	1	5	TL IV	896.92	1	33, 466
SE III	890.67	5	14, 289, 468	CU II	896.977	40	488, 795
PB IV	890.72 *	8	5, 139	RH III	897.553	50	677
FE III	890.755	9	188, 488	RH III	897.645	30	677
CA III	890.892	2	192	PB V	897.67	1	5, 466
KR II	890.982*	20	58, 69, 488	CU II	897.790	15	488, 670
I II	890.995	1000	32, 344	SB VI	897.80 *	3	31, 655
IN III	891.02	1	408, 590	KR III	897.801*	40	58, 65
FE III	891.172	10	188, 488	CA III	897.972	1	192
PB V	891.22	1	5	TE IV	898.19	1	30, 655
I III	891.25	2	32	RH III	898.455	15	677
SB IV	891.26	3	31, 290	AS II	898.81	2	571
CD II	891.28	25	683	GE	898.9	3	130
RH III	891.343	25	677	K V	898.953	3	192
FE III	891.442	8	188, 488	O III	898.957	8	168, 488
TE	891.48	1	30	IN	899.0	2	130
SE III	891.49	4	289, 587	HG	899.1	4	130
MO IV	891.674	30	193, 591	BI	899.17	1	5
PB V	891.70	2	5	FE III	899.417	8	188, 488
SI II	892.000	50	310	AS II	899.46	1	571
BI V	892.01	2	5	AU	899.5	1	411
PD III	892.029	100	674	SB II	899.63	1	31
AL III	892.056	4	190	CU II	899.785	50	488, 795
RH III	892.211	40	677	NI III	900.008	100	661
CU II	892.413	50	488, 795	SB	900.11	1	31
FC III	892.417	6	188, 488	RH III	900.224	15	677
PT	892.5	2	411	BR III	900.28	8	400
GE	892.6	5	130	A IV	900.362	5	59, 65
K IV	892.621	2	192	PD III	900.423	150	674

SYMBOL				WAVELENGTH INTENSITY				REFERENCE NUMBERS			
SN	IV	900.461	10	681	MG	II	907.412*		592		
PD	III	900.490	300	674	BI	IV	907.417	1	5, 138		
RH	III	900.561	20	677	TE	IV	907.49	1	30		
SE	III	900.65	2	14, 289	BI	III	907.510	1	5, 138		
S	V	900.93	2	30, 41	P	IV	907.590	2	469, 597		
AS	III	900.94	6	542, 575, 580	BI	III	907.635	5	5, 138		
TE	III	900.98	3	30, 353	MO	IV	907.701	20	591		
SN	V	900.991	10	681	RH	III	907.828	10	677		
RH	III	901.000	10	677	P	IV	908.050	4	597		
I	II	901.004	200	32, 344	FE	III	908.131	5	188		
FE	III	901.034	5	188, 488	SC		908.18	7	17		
CU	II	901.075	60	488, 795	SN	IV	908.215	50	681		
A	IV	901.168*	9	59, 65	N	I	908.23	3	334		
CS	II	901.34 *	20	418	SC		908.23	7	17		
BI	V	901.60 *	8	5	RH	III	908.275	20	677		
A	IV	901.804	2	59, 65	GA		908.29	3	130		
TE		901.97	1	30	PB	IV	908.51	6	5, 139, 656		
I	II	902.130	400	32, 344, 399	TE	III	908.67	2	30		
SE		902.30	3	289	SC		908.73 *	9	17		
RH	III	902.324	40	677	PD	III	908.871	100	674		
TE	VII	902.58	1	30, 655	RH	III	909.098	20	677		
AS	II	902.68	7	571	GA		909.34	3	130		
S	V	902.80	1	41	TL		909.36	2	33		
BI	V	902.84	2	5	RH	III	909.785	40	677		
RH	III	902.867	20	677	TE		909.81	7	30		
PD	III	902.900	400	674	TE	III	910.05	3	30, 353		
TE	IV	903.06 *	4	30, 583	RH	III	910.084	10	677		
SC		903.19	5	17	RH	III	910.261	10	677		
RH	III	903.222	10	677	I	II	910.309	400	32, 344, 399		
RH	III	903.600	40	677	TE	III	910.48	3	30, 353		
C	II	903.609*	10	65, 168, 488	S	II	910.49 *	3	322, 488		
HG	III	903.70	1	331	CU	II	910.518	15	488, 670		
TL		903.77	2	33	BR	II	910.73	4	568		
MO	IV	903.782	30	591	TE	IV	910.88 *	4	30, 583		
C	II	903.950*	11	65, 168, 488	AS	III	910.90	5	542, 571, 575		
TE	III	903.95	0	30, 353	SN	III	910.924	200	277, 681		
IN		904.08	5	130	FE	III	910.961	6	188		
GA		904.08	4	130	HG	III	911.03	2	331		
GE		904.1	3	130	IN	II	911.07	3	413		
C	II	904.134*	12	65, 168, 488	RH	III	911.080	15	677		
NI	III	904.294	50	661	I	IV	911.17	3	32		
PD	III	904.365	400	674	RH	III	911.241	10	677		
C	II	904.468*	10	65, 168, 488	SB		911.27	1	31		
AL		904.5	5	335	GA		911.32	4	130		
HG	III	904.55	1	331	RH	III	911.341	10	677		
MO	IV	904.999	30	591	KR	II	911.384*	25	58, 69, 488		
BI		905.14	1	5	SC		911.50	2	17		
RH	III	905.151	10	677	BR	II	911.72	5	488, 568		
N	I	905.23	4	334	RH	III	911.850	30	677		
CA		905.245	1	192	SC		912.00	4	17		
SC		905.28	2	17	RH	III	912.113	40	677		
FE	III	905.338	7	108, 488	TE	III	912.13	2	30, 353		
MO	IV	905.597	30	591	SC		912.15	2	17		
CR	III	905.66	10	490	CR	III	912.57	10	490		
N	I	905.829	5	334, 794	FE	III	912.683	5	188		
S	V	905.92	2	41	XE	II	912.71	8	1		
GE	II	905.98	6	488	S	II	912.74 *	3	322, 488		
BR	II	905.99 *	10	488, 568	TE	IV	912.87 *	4	30, 353, 655		
CU	II	906.114	40	488, 795	SE	II	912.89 *	9	468, 488		
N	I	906.202	10	334, 794	SI	II	913.016	10	310		
N	I	906.426	15	334, 794	BI		913.20	1	5		
PB	V	906.61 *	10	5, 466	TE	III	913.53	2	30, 353		
CA	III	906.615	2	192	CD	II	913.72	20	25, 683		
N	I	906.63	4	334	RH	III	913.753	20	677		
SE	II	906.63	8	289, 468, 488	SI	II	913.855	20	310		
SC		906.72	6	17	TE		913.88	1	30		
S	II	906.87 *	3	322, 488	P	III	913.989	5	488, 597		
SC		906.95	7	17	CU	II	914.214*	80	488, 795		
PT		907.	20	335	H	I	914.576	2	488		
RH	III	907.142	20	677	AS	II	914.84	1	571		
ZR	III	907.18	15	342	PD	III	914.858	100	674		
N	I	907.278	4	65, 334	CL	II	914.90	2	345		
SN	IV	907.290	20	681	SB	II	914.91	2	351, 414, 655		
SB	II	907.36	1	414	SC		914.91	4	17		
MG	II	907.375*	592		H	I	914.919	4	488		

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I II	914.957	200	32, 344, 399	O IV	921.301	4	65, 168
GE IV	915.00 *	8	406	I II	921.343	400	32, 344, 399
RH III	915.019	60	677	O IV	921.364	5	65, 168
PB V	915.10	2	5, 466	HG	921.4	3	130
BR II	915.26	4	488, 568	GA	921.42	4	130
H I	915.329	5	488	RU III	921.783	75	301
S	915.39	2	30	TE	921.82	1	30
BI	915.57	1	5	P III	921.863	5	488, 597
PD III	915.582	200	674	CA VII	921.956	2	192
N II	915.603*	10	65, 168, 488	N IV	921.982*	10	65, 168, 488
PB V	915.72 *	9	5, 466	HG	922.0	3	130
IN III	915.82 *	7	410	CU II	922.019	60	488, 795
H I	915.824	5	488	RU III	922.027	50	301
HG II	915.827*	7	65, 452	PB IV	922.12	2	5, 139, 466
SC	915.85	2	17	CU II	922.418	20	488, 795
RH III	915.860	12	677	BR III	922.45	8	400
N II	915.955*	10	168, 488	CR III	922.47	10	47, 490
N II	916.004*	11	168, 488	PB IV	922.49 *	10	5, 139, 656
RU III	916.141	30	301	PD III	922.492	200	674
SC	916.41	3	17	N IV	922.507*	10	65, 168, 488
H I	916.429	6	488	BR II	922.56	6	488, 568
PD III	916.467	100	674	HG	922.6	3	130
RH III	916.633	10	677	TE	922.66	2	30
BI IV	916.639	3	5	I III	922.69	3	32
S	916.67	1	30	AU	922.8	4	411
BI IV	916.680	3	5	PB V	922.84	1	5
CA VI	916.682	2	192	SE II	922.94	1	289, 354, 468
N II	916.700*	12	168, 488	N IV	923.045*	10	65, 168, 488
BI IV	916.742	3	5, 449	CO III	923.075	10	488, 673
PD III	916.779	200	674	SN IV	923.147	20	681
CA III	916.917	2	192	H I	923.150*	12	488
I II	917.007	300	32, 344	CA VII	923.179	3	192
P III	917.130	4	488, 597	N IV	923.211*	12	65, 168, 488
H I	917.181	7	488	GE	923.3	2	130
CA III	917.278	2	192	O IV	923.353	6	65, 168
CU II	917.303	20	488, 670	HG II	923.393	4	65, 452
KR II	917.434*	20	58, 69, 488	RH III	923.403	20	677
PD III	917.442	100	674	PB V	923.41	4	5
K V	917.498	1	192	W	923.6	2	781
SE II	917.88	1	289, 468	N IV	923.669*	10	65, 168, 488
PB IV	917.89	7	5, 139, 656	CR III	923.81	10	47, 490
ZR III	918.06	20	342	BI IV	923.861	4	5
RU III	918.110	100	301	FE II	923.884	30	292, 488
PB V	918.12	4	5	BI IV	923.900	4	5
H I	918.129	8	488	BI IV	923.948	4	5, 449
K VI	918.581	2	192	AU	924.0	8	335
P III	918.706	5	488, 597	SC	924.05 *	8	17
SE II	918.80	1	289, 354, 468	CR III	924.07	20	47, 488, 490
S II	918.80	2	30, 322	RH III	924.111	10	677
BR III	918.81	8	400	CU II	924.239	50	488, 670
KR III	919.143	2	58	CA VII	924.249	1	192
I IV	919.28 *	7	32	N IV	924.274*	10	65, 168, 488
H I	919.351	9	488	HG	924.3	3	130
RH III	919.476	10	677	CR III	924.32	20	47, 488, 490
ZR III	919.59	25	342	PB V	924.51	2	5, 657
RU III	919.740	100	301	RH III	924.719	10	677
A II	919.78 *	15	59, 65, 488	SN V	924.940	10	681
O II	919.78 *	15	63	FE II	924.970	15	292, 488
RH III	919.822	10	677	AS IV	925.04	1	584
RH III	920.075	20	677	CU II	925.125	30	488, 670
GA	920.1	2	130	SN III	925.198	30	681
RH III	920.231	15	677	BE II	925.246	5	541
PB V	920.27	7	5, 466	SN V	925.326	10	681
I III	920.38 *	5	32	SC	925.33	4	17
MO IV	920.496	20	591	CR III	925.35	15	47, 488, 490
GE II	920.57 *	8	488	BI III	925.48	6	5, 138
PB V	920.65	1	5	CR III	925.49	15	488, 490
PB V	920.87	2	5, 466	RH III	925.759	100	677
BR III	920.92	8	400	XE II	925.866	5	61
BI III	920.93	7	5, 138	PB V	925.99	1	5
H I	920.963*	10	488	FE II	926.220*	60	292, 488
SE II	921.07	1	289, 354, 468	H I	926.226*	14	488
TE III	921.15	3	30, 353	RH III	926.228	10	677
BR II	921.16	5	488, 568	PB II	926.25	2	5, 163
RH III	921.295	30	677	SE II	926.35	1	289, 354

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	926.52	15	488, 490	W	933.9	2	781
FE II	926.618	10	292, 488	GA	934.0	2	130
CS II	926.75 *	20	418	BI V	934.45	4	5
RH III	926.777	20	677	AU	934.7	1	411
IN III	926.89	2	408, 590	FE III	934.703	7	188, 488
FE II	926.900	25	292, 488	CA	934.875	1	192
CR III	927.16	10	47, 488, 490	RH III	934.964	15	677
FE II	927.176	30	292, 488	CU II	935.060	60	488, 795
IN II	927.33	3	413	HG III	935.10	1	331
BI	927.35	2	5	O I	935.183	4	63, 165
I III	927.36	4	32	AL II	935.20	1	653
RH III	927.363	15	677	CU II	935.232	40	488, 795
PD III	927.512	100	674	CU II	935.346	20	488, 795
SC	927.54	4	17	PT	935.4	3	411
AS III	927.57	4	404, 580	XE II	935.405	2	61
PB IV	927.62	7	5, 139, 656	GA	935.73	4	130
FE II	927.632	8	292, 488	HG III	935.74	1	26, 331
GA	927.8	3	130	CU II	935.898	60	488, 795
RU III	928.083	100	301	SN IV	935.898	30	681
FE II	928.107	30	292, 488	TE	935.93	3	30
TL	928.18	2	33	RU III	936.266	20	301
TE III	928.22	3	30, 353	CL III	936.28	1	38
AU	928.4	1	411	C	936.4	1	484
FE II	928.470	20	292, 488	FE II	936.484	8	292, 488
AS II	928.98	1	571	O I	936.630	3	165
I II	929.143	800	32, 344, 399	CO III	936.639	30	488, 673
FE III	929.163	5	188	GE IV	936.70 *	8	406
SN V	929.243	30	681	SC	936.77	6	17
K VI	929.374	1	192	PB V	936.96	5	5, 657
RH III	929.481	10	677	HG II	937.02	2	26, 452
FE II	929.538*	30	292, 488	SB II	937.12	3	31, 290, 414
FE II	929.612*	30	292, 488	PB V	937.16	3	5, 657
BI V	929.81	6	5, 656	RU III	937.165	100	301
SI II	929.816	20	310	TE	937.26	3	30
TE III	929.88	0	30, 353	AS III	937.26	6	404, 580
GA	930.0	3	130	MO IV	937.267	20	591
FE II	930.030*	30	292, 488	RH III	937.277	150	677
PD III	930.142	100	674	SC	937.30	7	17
FE II	930.165*	30	292, 488	CO III	937.310	20	488, 673
PT	930.2	3	411	TL	937.39	2	33
FE II	930.219*	30	292, 488	S II	937.41 *	3	322, 488
K VI	930.318	1	192	RH III	937.441	40	677
PB V	930.36 *	8	5	SN V	937.505	10	681
FE II	930.558*	30	292, 488	D I	937.548*	20	487
GE	930.6	2	130	S II	937.69 *	3	322, 488
BI VI	930.65	4	657, 5	H I	937.804*	22	488
SC	930.67	5	17	O I	937.841	3	165
H I	930.748*	17	488	HG II	937.91	2	26, 65, 696
TE III	930.79	3	30, 353	BI II	937.95	1	138, 5
AS IV	930.80 *	8	584, 651	MO IV	938.072	30	591
MO IV	930.855*	100	591	CO III	938.077	10	488, 673
CL III	930.94	1	38	TE V	938.10	4	30, 277
FE II	931.142*	25	292, 488	SE	938.17	5	14, 289
RH III	931.191	40	677	K VI	938.287	2	192
XE II	931.25 *	10	1	RH III	938.579	10	677
RH III	931.304	30	677	GA	938.6	4	130
AS II	931.66	1	572	CA	938.699	1	192
FE II	931.709	10	292, 488	ZN II	938.73	5	472, 682
TE V	931.84	4	30, 277	AU	938.9	3	411
A II	932.046*	10	59, 65, 488	GE IV	938.90 *	4	406
O II	932.046*	10	63	FE II	938.967	10	292, 488
PB IV	932.18 *	10	5, 139, 657	CO III	939.060	30	488, 673
FE II	932.244	30	292, 488	SB IV	939.07	3	31
SB IV	932.30	5	31, 290, 414	SI III	939.112	35	310
TE III	932.31	3	30, 353	FE II	939.159	20	292, 488
SC	932.40	3	17	XE II	939.16 *	12	1
BI IV	932.42	1	5	MO IV	939.230	20	591
SC	932.58	3	17	TE	939.37	2	30
FE II	932.687	30	292, 488	CU II	939.522	10	488, 670
AS III	932.90	3	542, 575	BR III	939.60 *	10	400, 577
CU II	932.938	60	488, 795	RH III	939.921	15	677
TL	932.95	4	33	RU III	940.090*	500	301
RH III	932.952	10	677	PB V	940.15	1	5, 466
S VI	933.382	4	488, 598	RU III	940.165	20	301
PB VI	933.39	1	5	RH III	940.359	10	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB V	940.53	1	5	BR II	948.97 *	20	488, 568
RU III	940.685	30	301	BR II	949.10 *	10	400
BR II	940.79	3	488, 568	CE IV	949.30	3	335
HG II	940.796	6	26, 65, 452	D I	949.485*	25	487
K	940.839	1	192	GA	949.5	2	130
GA	940.9	2	130	HG	949.65	2	26
I II	940.904	200	344	RH III	949.719	20	677
A	941.39	2	646	H I	949.743*	25	488
FE II	941.660	12	292, 488	BE II	949.746	1	541
RU III	941.848	20	301	RU III	949.827	50	301
AS IV	941.91	5	584	FE III	950.334	10	188, 488
CO III	942.388	20	488, 673	RU III	950.451	30	301
TE	942.62	3	30	TI	950.5	2	411
RU III	942.628	30	301	P IV	950.669*	10	41, 488
HG II	942.630	2	26, 65, 452	O I	950.888	4	165
TE III	942.89	3	30, 353	TE III	950.93 *	6	30, 353
GA	943.0	3	130	KR I	951.06 *	0	58, 488
RU III	943.061	30	301	N I	951.08	3	334
CL III	943.22	1	38	SE II	951.26	1	289, 468
BI IV	943.262	5	5, 449	TE VI	951.29	1	30, 583
FE II	943.267	12	292, 488	BI	951.33	1	5
BI IV	943.314	5	5, 449	HG	951.40	2	26
CU II	943.338	60	488, 795	F I	951.871*	500	420, 488
BI IV	943.370	5	5, 449	GA	951.98	5	130
BE II	943.559	4	541	N I	952.304	8	334, 794
SB II	943.58	2	31, 414, 655	O I	952.414	8	165, 794
GE	943.9	2	130	RH III	952.437	20	677
W	943.9	2	781	FE II	952.470	10	292, 488
FE II	943.910	15	292, 488	TE	952.51	1	30
TL II	943.93	2	33, 194	N I	952.522	4	334, 794
AU II	944.19	3	550	RU III	952.593	30	301
RU III	944.274	30	301	PT	952.6	1	411
SN V	944.372	10	681	I VII	952.74 *	5	32, 230
S VI	944.517*	5	488, 598	GE III	952.76	2	406
CO III	944.768	20	488, 673	N I	952.789	3	65, 334
RU III	944.822	20	301	PB V	952.84	4	5, 163, 466
FE II	945.095	25	292, 488	O I	952.940	4	165
K I	945.336	2	65, 168, 488	GE	953.2	3	130
CR I	945.45 *	1	58, 475, 488	RH III	953.355	10	677
CU II	945.528	60	488, 795	N I	953.399	6	65, 334
C I	945.566	3	65, 168, 488	CL III	953.40	2	38
BI IV	945.60	2	5	N I	953.415	15	334, 794
RU III	945.684	100	301	KR I	953.42 *	1	58, 475, 488
SN II	945.782	30	448, 681	AS III	953.55	4	404, 580, 651
CU II	945.880	40	488, 795	N I	953.658	15	334, 794
CU II	945.967	50	488, 795	GA	953.8	2	130
C II	945.981	1	65, 168	SE II	953.88	4	289, 468, 587
RU III	946.047	75	301	N I	953.98	6	334
FE III	946.056	6	188, 488	N I	954.11	3	334
PB VI	946.18	2	5	CA VII	954.270	3	192
C II	946.208	2	65, 168	TE V	954.33 *	5	30, 277
BI V	946.28	1	5	PB V	954.34	7	5, 466
AS IV	946.45 *	9	584, 651	AL II	954.35	1	653
KR I	946.52 *	1	58, 475, 488	CU II	954.386	20	488, 795
CO III	946.526	10	673	SE III	954.45	5	14, 289
CO III	946.594	20	488, 673	W	954.5	2	781
MG II	946.703*	592	592	RH III	954.737	50	677
MG II	946.769*	592	592	KR III	954.774*	4	58
A	946.95	2	646	SE III	954.78	5	14, 289
CL III	946.97	1	38	F I	954.825	10	420, 488
RU III	947.137	30	301	RH III	955.183	15	677
GA	947.15	4	130	PB V	955.27	1	5
BI VI	947.35	3	5, 466	BI	955.33	1	5
PD III	947.795	300	674	N IV	955.335*	10	65, 168, 488
GA	947.8	3	130	RH III	955.425	20	677
RH III	947.812	15	677	F I	955.545*	750	420, 488
CO III	947.838	10	673	RH III	955.554	10	677
C IV	948.098	2	65, 168	FE III	955.572	5	188, 488
C IV	948.214	1	65, 168	BI	955.81	1	5
FE III	948.322	5	188	RU III	955.822	30	301
O I	948.689	4	165	N I	955.91	3	334
CL III	948.72	1	38	AL II	955.99	1	653
TE	948.80	1	30	SN IV	956.249*	500	408, 681
RU III	948.908	20	301	CU II	956.286	25	488, 670
RH III	948.964	10	677	RU III	956.377	30	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI	956.45	1	5	PB	V	964.37	1 5
HG	956.46	2	26, 696	SC		964.46 *	10 17
PB	956.70	2	5, 466	HG	III	964.48	1 26, 331
IN	956.75	1	413	BI	VI	964.51	5
AS	956.87 *	9	584, 651	RH	III	964.565	10 677
GA	956.92	5	130	N	I	964.626	5 488, 794
RU	957.059	50	301	SC		964.79	2 17
RU	957.177	50	301	KR	II	964.962*	30 58, 69, 488
IN	957.28	1	413	N	I	965.07	10 488, 137
TE	957.52	1	30, 655	HG		965.17	3 26
AU	957.73 *	20	550	GA		965.3	6 130
PB	957.75	1	5	SE		965.31	2 289
SB	957.78	2	351, 414	PB	II	965.36	3 163
TE	957.86	4	30, 277	TL	II	965.41	4 194
HG	957.87	3	26	PD	III	965.506	300 674
S	957.88	1	322	XE	III	965.540*	10 65
CA	958.135	1	192	TE	III	965.76 *	3 30, 353
CU	958.149	40	488, 670	AU		966.2	1 411
TL	958.22	2	33	CA	V	966.466	6 192
RU	958.330	50	301	RU	III	966.536	200 301
A	958.34	1	135	IN	II	966.71	2 413
F	958.524*	500	420, 488	RU	III	966.747	30 301
TL	958.58	3	33	RH	III	966.768	10 677
GA	958.67	2	652	PB	V	966.89	1 5, 466
RU	958.714	20	301	RU	III	967.070	100 301
PB	958.76	2	163	FE	III	967.197	6 188, 488
RU	959.053	30	301	PB	II	967.23 *	10 163
IN	959.06	1	413	I	II	967.378	700 344, 399
PB	959.08	3	5, 657	TE		967.46	1 30
XE	959.22	2	1	HG	III	967.48	2 26, 331
HG	959.26	2	331	TE		967.51	4 30
AU	959.48 *	20	550	PB	VI	967.59	1 5
RH	959.506	15	677	CR	III	967.59	10 47, 488, 490
SE	959.61 *	6	289, 585	BI	IV	967.60 *	9 5, 449
SB	959.63	2	31, 655	RH	III	967.633	15 677
PB	959.85	4	5	RU	III	967.846	30 301
AS	960.2 *	5	411	PD	III	967.854	200 674
PB	960.21	2	163	AU	II	967.90	3 550
CU	960.409	20	488, 670	RU	III	967.917	30 301
PD	960.643	100	674	SI	III	967.961	100 310
RH	960.752	20	677	CU	II	968.037	25 488, 670
PB	960.98	2	5, 657	NI	III	968.100	20 661
PB	961.01	1	687	CA	V	968.236	3 192
RH	961.145	30	677	RH	III	968.382	10 677
I	961.17 *	6	32	RU	III	968.413	20 301
SC	961.32	6	17	HG	IV	968.46	1 26, 696
HG	961.33	1	26, 696	TL		968.47	3 33
CL	961.49 *	10	169, 345	K	VI	968.518*	5 192
K	961.499	1	192	PB	VI	968.68	1 5
RU	961.576	20	301	BI	IV	968.79 *	8 5, 449
RU	961.683	200	301	SC		968.98	2 17
SE	961.75	1	289, 468	HG	II	969.130	4 26, 65, 452
FE	961.901	7	188, 400	GA	II	969.19	2 652
PB	961.95	1	5	CR	III	969.26	20 47, 488, 490
RH	962.145	20	677	W		969.3	2 701
TE	962.29	1	30	IN	II	969.37	1 413
RU	962.451	30	301	HG	III	969.63	2 26, 331
RU	962.557	30	301	CA	VI	969.652	6 192
FE	962.655	5	188, 488	BI		969.85 *	2 5
HG	962.740	4	26, 65, 452	IN	II	970.00	2 413
PD	962.753	100	674	RU	III	970.140	30 301
CA	962.896	2	192	PB	VI	970.17	2 5
RU	963.338	20	301	NI	III	970.478	50 488, 661
KR	963.34 *	1	58, 475, 488	PB	VI	970.75	1 5
CR	963.34	10	490	NI	III	970.790	20 661
TE	963.49	2	30	BI		970.82	1 5
BI	963.74	3	5	CA	VII	970.887	2 192
AS	963.80 *	8	404, 580	BI	III	971.00	2 5
N	963.991	5	488, 794	AS	IV	971.13 *	10 584, 651
SB	964.01	3	31	TE	III	971.16	2 30, 353
BI	964.01	1	5	GE	V	971.3 *	6 130, 467
RH	964.056	20	677	HG		971.56	2 26
RH	964.170	12	677	BI	V	971.62	4 5
TL	964.19	2	33	O	I	971.741	8 165
P	964.251	1	597	RU	III	971.830	50 301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
XE II	971.84	3	1
SB II	972.16	3	31, 414, 655
D I	972.272*	40	487
RU III	972.395	50	301
F I	972.401	20	420
H I	972.537*	40	488
MN II	972.547	10	141
PB II	972.56	9	163
PD III	972.682	100	674
XE II	972.769	7	61
GA	973.2	3	130
CL IV	973.212	5	38
O I	973.240	5	165
BE II	973.266	5	541
I III	973.37	2	400
CA V	973.437*	6	192
TE III	973.58 *	3	30, 353
RU III	973.776	20	301
NI III	973.786	300	488, 661
O I	973.884	4	165
F I	973.895*	350	420
SE III	974.13	5	14, 289
RU III	974.137	30	301
RH III	974.228	20	677
PB VI	974.27	1	5
AU II	974.44	3	550
RU III	974.461	30	301
PB V	974.47	2	5
AS IV	974.61 *	9	542, 575, 584
SC	974.65	3	17
CU II	974.761	20	488, 795
P III	974.776	3	597
SC	974.81	6	17
SE II	974.88	7	289, 468, 14
SC	975.04	2	17
CA VI	975.055	3	192
BI	975.17 *	2	5
MN II	975.189	8	141
PB II	975.35	1	163
AU	975.5	20	411
HG II	975.63	1	26, 698
BI VI	975.66	3	5
CA V	975.825	4	192
BI VI	976.00	2	5, 466
HG IV	976.07	1	26, 696
RH III	976.124	100	677
F I	976.217*	100	420
PT II	976.419	1	671
O I	976.452	5	165
F I	976.505*	40	420
CU II	976.540	10	488, 670
XE II	976.678	6	61
GA	976.7	6	130
CU II	976.708	10	488, 670
ZN	976.72	2	25
PB V	976.93	5	5, 466, 657
MN II	976.964	7	141
S	977.00	1	30
C III	977.026*	18	65, 168, 488
AL	977.4	4	335
PB V	977.46	2	5, 657
RU III	977.510	50	301
CA III	977.544	2	192
CL IV	977.560	6	38
CU II	977.573	25	488, 795
F I	977.745*	100	420
PD III	977.805	100	674
P III	977.888	4	597
CL IV	977.901	4	38
O I	977.967	1	165, 794
RH III	977.982	10	677
SB IV	978.03	4	31
MN II	978.115	5	141
BI	978.12	1	5
PB VI	978.16	1	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I II	978.394	300	344, 399
O I	978.616	4	165
S	978.65	2	30
TE	978.71	2	30
FE III	979.032	5	188
TE	979.05	1	30
TL II	979.30	3	194
PB V	979.38	2	5, 657
GA	979.4	2	130
RU III	979.428*	500	301
NI III	979.589	400	488, 661
S	979.84	2	30
N III	979.842	8	65, 168, 488
ZN	979.91	1	25
N III	979.919	9	65, 168, 488
GA	980.4	2	130
IN II	980.40	4	413
AS IV	980.58 *	10	584, 651
SB II	980.99	1	31
PB V	981.08	5	5
BI V	981.10	2	5
PB VI	981.19	2	5
RU III	981.350	200	301
FE III	981.373	10	188, 488
BI	981.62	1	5
GA	981.84	4	130
RH III	981.959	10	677
BI IV	981.99	3	5
S	982.01	3	30
RU III	982.033	30	301
K VI	982.115	2	192
PB II	982.18	1	5, 163, 657
AU II	982.21	2	550
AG II	982.33	1	283
IN II	982.41	1	413
BI VI	982.61	2	5
TE	982.65	1	30
RU III	982.758	20	301
AS II	982.80		571
MN II	982.901	25	141, 488
RU III	982.985	20	301
PB V	983.06	2	5, 657
MN II	983.240	20	141, 488
MN II	983.403	15	141, 488
CA VII	983.432	4	192
BI VI	983.59	2	5
RU III	983.807	200	301
FE III	983.877	10	188, 488
TE	983.91	1	30
RU III	983.914	200	301
SE II	983.94	6	289, 468, 488
BE II	984.025	2	541
IN II	984.03	2	413
ZN II	984.16 *	10	488, 682
TL	984.44	2	33
SC	984.49	3	17
CU II	984.530	10	488, 670
RU III	984.644	20	301
B II	984.65	1	65, 168
RU III	984.818	20	301
SB II	984.85	2	414
AS II	984.92	5	572
BR II	984.93 *	10	400, 488, 568
CA III	984.935	4	192
CL IV	984.952*	7	38
RH III	985.069	10	677
SN II	985.096	50	448, 681
SC	985.20 *	8	17
RU III	985.262-	20	301
AS II	985.37	4	572
RU III	985.554	100	301
CL IV	985.749	4	38
SC	985.76	7	17
FE III	985.824	8	188, 488
BI IV	986.12	5	5, 449

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
K	986.203	1	192	BI	IV	992.87	1 5, 449
ZN	986.54 *	9	488, 682	CU	II	992.951	25 488, 670
AU	986.6	3	411	GA		993.0	3 130
FE	986.637	5	188	IN	II	993.08	1 413
PB	986.71 *	10	163	FE	III	993.080	7 188, 488
K	986.763	1	192	BI	VI	993.10	1 5, 657
GA	986.81	3	130	PB	VI	993.43	1 5
RU	986.838*	500	301	I	III	993.48	3 32
BI	986.84	2	5	NB	IV	993.54 *	60 412
TL	986.99	2	33	SI	III	993.541	100 488, 310
KR	987.281	18	58	RU	III	993.561	30 301
IN	987.3	2	130	TL		993.57	4 33
HG	987.30	3	26	CA	IV	994.311	6 192
CA	987.336	5	192	SC		994.36	3 17
BI	987.35	2	5	PT		994.5	2 411
RU	987.432	20	301	RU	III	994.557*	500 301
GE	987.5	5	130	BI	III	994.56	2 5
GA	987.6	2	130	W		994.6	2 781
CU	987.656	10	488, 670	FE	III	994.724	6 188, 488
BR	987.66	6	400	PB	V	994.74	1 5
CA	987.680	3	192	BI	V	994.80	4 5
AS	987.69 *	10	651	SI	III	994.812	200 488, 310
BI	987.7A	2	5	SC		994.86	4 17
CA	987.867	3	192	CA	V	994.946	3 192
RU	987.870	20	301	RH	III	995.081	10 677
PB	987.88 *	6	5	FE	III	995.150	6 188, 488
GE	987.9	5	130, 467	RU	III	995.304	100 301
CA	988.131	1	192	SC		995.52	2 17
RH	988.155	50	677	W		995.6	2 781
I	988.434	200	344, 399	TE	VII	995.66 *	2 30, 655
RH	988.475	50	677	GE	III	995.72 *	15 406
O	988.581	3	165	PB	III	995.74 *	7 5, 686, 689
O	988.661	2	165, 794	I	II	995.768	700 344, 399
PB	988.71	2	5	AS	II	995.79	3 572
O	988.776*	15	488, 794	FE	II	995.829	8 292, 488
ZN	988.81	1	25	PB	II	995.89 *	10 163
HG	988.89	1	26, 237	S	II	995.96	2 30
GE	988.96 *	12	406	S	II	996.00	2 322, 488
RH	989.000	30	677	SC		996.01	3 17
PD	989.103	100	674	CR	III	996.09	10 490
PB	989.15	4	5, 657	GA		996.3	2 130
Y	989.21 *	1	56, 488	RU	III	996.336	30 301
GA	989.6	3	130	Y	III	996.37 *	2 56, 488
N	989.790*	16	65, 168, 488	GE	III	996.50 *	10 406
BI	989.83	8	5, 449	HG	III	996.51	3 26, 331
SI	989.867*	100	488, 310	SE	IV	996.69 *	6 289, 585
CA	989.973	3	192	PB	V	996.73	1 5, 657
U	990.0 *	10	411	TE	IV	996.86 *	4 30, 583, 655
O	990.132	1	794	RU	III	996.908	20 301
O	990.210	8	488, 794	HG	III	996.94	2 26, 331
IN	990.37	4	413	TL	II	996.98	2 33, 194
BI	990.48	1	5	IN		997.0	2 130
GE	990.5	5	130, 467	RH	III	997.025	50 677
GA	990.8	3	130	SE	II	997.06	2 468
FE	990.800	6	188, 488	FE	III	997.081	7 188
O	990.805	2	488, 794	SN	II	997.167	200 448, 681
AL	990.88	1	653	RU	III	997.209	20 301
PB	990.88	2	5, 466	PB	V	997.24	1 5
FE	991.232	9	188, 488	SI	III	997.410	250 488, 310
PR	991.35	4	5	SB	II	997.47	4 351, 414
ZN	991.37	1	25	CA	IV	997.579	7 192
N	991.514*	14	65, 168, 488	SC		997.58	2 17
S	991.55	1	30	FE	III	997.599	6 188, 488
N	991.579*	17	65, 168, 488	P	V	997.641	3 597
I	991.58	2	32	AG	II	997.80	5 283
RH	991.617*	500	677	RU	III	997.852	50 301
RU	991.669	20	301	P	III	998.000*	8 488, 597
FE	991.829	6	188, 488	PB	VI	998.11	2 5
HG	992.15	2	26	BI	V	998.14	4 5
RH	992.482*	400	677	CA	III	998.397	3 192
TE	992.63	1	30	GA	II	998.52	2 652
SI	992.679*	200	488, 310	RU	III	998.554	30 301
BI	992.68	1	5, 449	PB	VI	998.62	2 5, 657
CA	992.740	1	192	RU	III	998.842	50 301
RU	992.747	50	301	CR	III	999.08	15 490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SC	999.12	2	17	AU	1004.5	1	411
GE	999.14	5	406, 488	TI	1004.68	2	604
PB	999.18	1	5	SE	1004.72	5	289
AS	999.25 *	9	584	BI	1004.75	7	5, 657
HG	999.26	1	331	TE	1004.90	1	30
CR	999.37	20	47, 488, 490	TL	1005.00	3	33
FE	999.376	5	188, 488	MN	1005.019	20	141, 488
AG	999.38	5	283	CL	1005.280	5	38, 488
AS	999.46	3	572, 584	AG	1005.32 *	15	283
O	999.493	2	488, 491	RU	1005.365	30	301
SB	999.51	1	31, 407, 655	BR	1005.50	8	400
CR	999.84	20	47, 488, 490	PB	1005.56	6	5, 657
RU	999.879	20	301	MN	1005.702	22	141, 488
K	1000.056	2	192	NB	1005.72 *	400	412
RU	1000.128	20	301	RU	1005.730	20	301
CA	1000.310*	6	192	N	1006.015	6	65, 168, 488
P	1000.360	3	597	S	1006.15	8	599
BI	1000.36	4	5	P	1006.218	1	597
TE	1000.42 *	3	30, 353	RU	1006.368	30	301
SE	1000.47	3	289	TE	1006.46 *	3	30, 353
S	1000.48	2	322, 488, 599	IN	1006.70	1	413
AS	1000.56	3	542, 572	MN	1006.721	7	141
I	1000.572	1200	344, 399	PB	1006.75	1	5, 657
IN	1000.63	3	413	S	1006.95	1	599
RU	1000.719	50	301	RU	1007.030	20	301
RU	1000.784	30	301	NB	1007.05 *	500	412, 760
CR	1000.86	40	47, 488, 490	BI	1007.14 *	5	5
RU	1000.865	30	301	CR	1007.23	10	490
TL	1000.93	2	33	BI	1007.24 *	5	5
MN	1000.956	25	141, 488	W	1007.5	2	781
BI	1001.01	1	5	CO	1007.51	10	286
CR	1001.04	40	47, 488, 490	BI	1007.51	3	5
KR	1001.048*	2	58, 475, 488	MN	1007.530	15	141, 488
CR	1001.28	10	490	MN	1007.622	15	141, 488
SB	1001.34	1	31, 414	FE	1007.657	20	292, 488
RU	1001.503	20	301	PB	1007.78	1	5
CA	1001.544	3	192	TE	1007.80 *	1	30, 655
W	1001.6	2	781	PT	1007.964	1	671
RU	1001.650	50	301	SE	1007.97	2	289
SE	1001.67	4	289, 585	FE	1007.975	25	292, 488
RH	1001.725	30	677	RH	1008.072	10	677
TE	1001.77	1	30	PD	1008.385	100	674
PB	1001.87	4	5, 163	CA	1008.470	0	192
HG	1002.07	2	26	BI	1008.48	1	5
A	1002.095	3	60, 65	CU	1008.573	30	488, 795
AS	1002.27 *	8	488, 572	IN	1008.61	1	413
RH	1002.271	20	677	BI	1008.66	1	5, 466
CA	1002.398	5	192	RU	1008.676	20	301
PB	1002.55	1	5, 657	BR	1008.72	4	400
NB	1002.76 *	50	412	CU	1008.730	30	488, 795
CR	1002.89	20	47, 488, 490	CA	1008.757	2	192
RH	1002.911	200	677	CL	1008.777*	6	38, 488
GA	1002.95	3	652	PB	1008.82	3	5, 657
SC	1003.00	7	17	RU	1008.844	20	301
PB	1003.01	2	5, 657	MN	1008.859	12	141, 488
MN	1003.012	22	141, 488	RH	1008.874	60	677
SE	1003.02	2	289	CO	1008.997	15	286, 673
RH	1003.054	10	677	RU	1009.128	200	301
RU	1003.243	30	301	HG	1009.29	2	26, 237, 696
RU	1003.318	30	301	RU	1009.368	20	301
I	1003.350	1000	32, 344	AS	1009.44 *	8	488, 572
XE	1003.36 *	6	1	MN	1009.463	10	141, 488
RH	1003.425	30	677	PB	1009.48	3	5
AS	1003.43 *	7	542, 575, 584	MN	1009.562	6	141
I	1003.457	500	32, 344, 399	RH	1009.600*	500	677
KR	1003.542*	2	58, 475, 488	CA	1009.638	3	192
P	1003.592*	10	488, 597	BI	1009.71 *	2	5
CA	1003.611	2	192	SB	1009.80 *	4	31, 414
I	1003.612	300	32, 344	C	1009.854*	9	65, 168, 488
CU	1004.056	30	488, 795	RU	1009.872*	500	301
GA	1004.1	3	130	I	1009.936	700	32, 344, 399
GE	1004.2 *	6	130, 467	GA	1010.0	3	130
RU	1004.293	50	301	C	1010.074*	10	65, 168, 488
TE	1004.45 *	3	30, 353	HG	1010.09	2	26
IN	1004.49	2	413	RH	1010.179	10	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NB IV	1010.19 *	500	412	PB V	1015.97	1	5, 657
IN	1010.2	2	130	SC	1016.04	5	17
CU II	1010.267	30	488, 670	ZN	1016.11	1	25
C II	1010.369*	10	65, 168, 488	RH III	1016.149	20	677
CU II	1010.453	10	488, 670	PB V	1016.17	1	5
RH III	1010.492	15	677	SN II	1016.239	30	448, 681
AS II	1010.66	2	572	S	1016.30	1	30
RH III	1010.704	10	677	HG	1016.32	3	26
SB VI	1010.82	2	655	CR III	1016.41	10	488, 490
SN III	1010.918	50	681	RH III	1016.549	100	677
CO V	1010.94	10	286	PB II	1016.61 *	10	163
PB V	1011.01	3	5	GE II	1016.69	8	406, 488
FE II	1011.037	25	292, 488	AU	1016.7	1	411
SE II	1011.18	1	289, 468	SC	1016.72	4	17
GE III	1011.21 *	15	406	S	1016.89	2	30
MN II	1011.506	5	141	PB V	1016.92	2	5
RU III	1011.842	50	301	GE II	1017.12	2	406, 488
SE II	1011.88	3	289, 468	CR III	1017.14 *	50	488, 490
S	1011.95	1	30	SN IV	1017.216	30	681
SB III	1011.95	4	31, 407	FE III	1017.254	9	188, 488
FE II	1012.088	20	292, 488	AG II	1017.26	1	283
BR II	1012.10 *	10	400	GA	1017.3	2	130
RH III	1012.112	100	677	CK III	1017.31 *	50	488, 490
RH III	1012.219	200	677	K	1017.337	1	192
RH III	1012.263	100	677	CR III	1017.57 *	50	488
GE III	1012.31 *	10	406	SB VI	1017.65 *	5	655
GA II	1012.38	5	652	XE III	1017.680*	25	65
RU III	1012.402	50	301	FE III	1017.745	8	188, 488
FE II	1012.417	25	292, 488	I II	1017.977	200	344
PB IV	1012.47	3	5, 139, 656	RU III	1018.024	20	301
S III	1012.49	3	323, 488	CU II	1018.066	15	488, 795
CU II	1012.600	25	488, 795	TE V	1018.08	4	30, 277
CA V	1012.613	3	192	BI	1018.17 *	2	5
AS II	1012.62	2	571	RH III	1018.185	30	677
PT II	1012.862	1	671	HG IV	1018.21	1	26, 696
GE III	1013.07	2	406	FE III	1018.286	8	188, 488
RH III	1013.179	100	677	CA VI	1018.346	3	192
RH III	1013.193	200	677	CO V	1018.36	10	286
PB V	1013.24	1	5	RU III	1018.371	20	301
BI	1013.29	1	5	I II	1018.583	4000	344
RH III	1013.321	30	677	I II	1018.654	200	344
SE II	1013.40 *	9	289, 468, 488	CU II	1018.707	50	488, 795
RU III	1013.666	20	301	RU III	1018.721	100	301
CO V	1013.80	10	286	TE III	1018.95 *	3	30, 353
NB IV	1013.82	30	412	GA II	1019.10	3	488, 652
SE II	1014.01 *	9	468, 488	I II	1019.230	400	344
S II	1014.07	1	30, 322	RH III	1019.304	10	677
BI III	1014.12	2	5	RU III	1019.329	100	301
CA V	1014.162	4	192	CA III	1019.371	2	192
CR III	1014.20	10	490	I II	1019.400	800	344
S II	1014.42	2	322, 488	RU III	1019.458	30	301
GA	1014.43	3	130	S II	1019.53	2	322, 488
W	1014.5	2	781	CU II	1019.657	15	488, 795
GA	1014.6	2	130	GA	1019.66	3	130
W	1014.6	2	781	RH III	1019.702	10	677
RU III	1014.676*	500	301	SN IV	1019.719*	500	408, 681
CA III	1014.998	3	192	PB V	1019.74	3	5, 657
RU III	1015.023	75	301	RH III	1019.776	10	677
CL III	1015.023*	7	38, 488	FE III	1019.789	6	188, 488
FE II	1015.083	10	292, 488	CA VII	1019.799	3	192
RH III	1015.172	200	677	TE III	1019.82	0	30, 353, 655
RU III	1015.281	30	301	NB IV	1020.00	30	412
HG IV	1015.29	2	26, 696	IN	1020.1	2	130
AG II	1015.37	5	283	CU II	1020.109	15	488, 795
SB II	1015.38	1	414	RU III	1020.207	200	301
AS II	1015.38 *	10	488, 572	HG IV	1020.24	2	26
P II	1015.458	10	469, 594	AG II	1020.29	2	283
SC	1015.50 *	9	17	RU III	1020.381	30	301
S III	1015.51	2	323, 488	AS II	1020.39	6	488, 572
FE II	1015.520	20	292, 488	SB III	1020.56	3	31
BR II	1015.54 *	20	488, 568	W	1020.6	2	781
RU III	1015.593	20	301	SI II	1020.699	25	310
SC	1015.71	5	17	RU III	1020.766	100	301
S III	1015.76	1	323, 488	BI II	1020.85	5	5
TI	1015.8	2	411	RH III	1020.918	20	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1020.94	20	488, 490
S III	1021.10	1	323, 488
CA V	1021.139	3	192
CO V	1021.14	10	286
S III	1021.32	2	323, 488
K V	1021.332	2	192
TL	1021.41	3	33
RU III	1021.437	50	301
CA VI	1021.508	4	192
AG II	1021.53	6	283
CR III	1021.64	15	488, 490
SE	1021.77	2	289
AS II	1021.96 *	10	488, 572
CA VII	1022.010	2	192
GA	1022.1	2	130
SE II	1022.12	3	289, 468
PB V	1022.14	4	5, 657
RU III	1022.201	20	301
IN II	1022.45	2	413
PB V	1022.57	1	5, 657
C	1022.8	1	484
RU III	1023.104	30	301
RU III	1023.261	30	301
TE	1023.48	1	30
I II	1023.544	200	344
MN II	1023.546	20	141, 488
SI II	1023.693	50	310
SC	1023.72	3	17
GA II	1023.80	5	488
CA IV	1023.820	4	192
BI VI	1023.860*	10	5, 466
SC	1023.90	2	17
RU III	1023.968	20	301
AU	1024.0	2	411
SB II	1024.19 *	4	414
TE	1024.32	3	30
PB V	1024.33	3	5, 656, 657
CA IV	1024.339	5	192
W	1024.5	2	781
IN	1024.8	2	130
SE	1024.91	3	289
RH III	1024.932	50	677
SN V	1025.009	10	280, 681
D I	1025.443*	60	487
BI	1025.50	1	5
P IV	1025.579*	7	41, 488
H I	1025.722*	60	488
K IV	1025.742	3	192
O I	1025.766	9	165, 488
MG II	1025.968		592
I II	1026.065	350	344
MG II	1026.113		592
RH III	1026.317	20	677
PB V	1026.38	3	5, 657
CR III	1026.38	10	490
GA	1026.6	2	130
RU III	1026.751	20	301
FE III	1026.790	6	188, 488
RH III	1026.923	30	677
BE II	1026.926	6	541
RU III	1026.942	30	301
SN IV	1027.038	10	681
XE I	1027.04 *	10	1, 476
CA VII	1027.110	3	192
K V	1027.174	2	192
CA IV	1027.309	5	192
RU III	1027.328	30	301
O I	1027.433*	20	488, 794
CR III	1027.46	10	47, 488, 490
CU II	1027.831	50	488, 795
RU III	1027.871	30	301
MN II	1027.995	18	131, 141, 488
P IV	1028.093	1	41, 488, 597
O I	1028.162	8	488, 794
BI IV	1028.17	3	5

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	1028.328	25	488, 795
CR III	1028.33	30	47, 488, 490
CA VII	1028.366	2	192
RH III	1028.521	30	677
AG II	1028.55	1	283
CA III	1028.560	4	192
TL IV	1028.58 *	4	33, 466
IN	1028.6	3	130
SE	1028.61	3	289
PB IV	1028.61 *	30	5, 139, 656
GE	1029.3	5	130
AS V	1029.50 *	10	651
SE II	1029.55	3	289, 468
CA IV	1029.566	3	192
CR III	1029.57	10	47, 488, 490
PB IV	1029.66	3	5
HG III	1029.66	2	331
CU II	1029.749	10	488, 795
BR II	1029.82	2	400
ZN IV	1029.9	2	697
KR I	1030.020*	2	58, 488
I II	1030.047	800	344
CR III	1030.10	20	47, 488, 490
CU II	1030.263	20	488, 795
NB IV	1030.27	45	412
CA IV	1030.273	4	192
SC	1030.32 *	8	17
RU III	1030.397	30	301
PB III	1030.44	5	5, 689
CR III	1030.47 *	60	47, 488, 490
SC	1030.50	2	17
P IV	1030.545*	8	41, 488
SE IV	1030.57	2	585
AU	1030.6	1	411
AS II	1030.84	2	488, 572
MN II	1030.866	10	141, 488
S II	1030.87	1	322, 488
CR III	1030.89	30	47, 488, 490
FE III	1030.924	6	188, 488
AS III	1030.93	5	542, 575
SI III	1031.165	50	310
S II	1031.34	1	322, 488
A II	1031.41		135
CA III	1031.760	4	192
RH III	1031.866	20	677
O VI	1031.912*	10	65, 168, 488
I III	1031.92	1	400
RH III	1032.007	20	677
SB IV	1032.01	2	31
PB IV	1032.06	3	5, 139
FE III	1032.123	8	188, 488
IN II	1032.30	2	413
XE II	1032.438	4	61
TE III	1032.50	2	30, 353
CA VI	1032.612	2	192
GE III	1032.62	8	406
PT II	1032.714	1	671
K	1032.768	2	192
SI III	1032.861	40	310
SB IV	1032.93	4	31, 277, 655
TE V	1033.10 *	5	30, 277
P IV	1033.135*	7	41, 488
CR III	1033.23 *	50	47, 488, 490
FE III	1033.298	5	188, 488
SC	1033.38	4	17
P II	1033.41	10	469
CR III	1033.45 *	50	47, 488, 490
N I	1033.48*	3	334
CU II	1033.567	10	488, 795
W	1033.6	2	781
SE II	1033.60 *	10	468, 488
IN II	1033.65	3	413
GA II	1033.69 *	8	488, 652
CR III	1033.69 *	100	47, 488, 490
I II	1033.801	400	344, 399

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG II	1033.84	3	283	HG III	1040.96	2	331
K	1033.875	2	192	GE III	1040.99 *	12	406
SI III	1033.909	100	310	PB V	1041.21	6	5, 657
CR III	1033.99	20	47, 488, 490	SN II	1041.300	30	448, 681
W	1034.0	1	781	XE II	1041.306	9	61
HG III	1034.16	1	331	CR III	1041.34	15	47, 488, 490
CR III	1034.20	15	490	KR	1041.38	2	756
SI III	1034.279	20	310	PB VI	1041.53	2	5
CA VII	1034.288	2	192	GE	1042.1	4	130
CR III	1034.44	15	490	SB IV	1042.16 *	7	31, 290
SN V	1034.489	15	280, 681	W	1042.4	2	781
PB VI	1034.56	2	5	TE	1042.79	1	30
HG	1034.62	2	26	RH III	1043.091	10	677
I	1034.655*	10000	344	N I	1043.12	5	334
CA III	1034.848	3	192	SB II	1043.19	3	31, 414
CR III	1034.86	20	490	CO III	1043.243	15	673
CR III	1035.29	25	47, 488, 490	BR II	1043.40	8	400
CA III	1035.366	4	192	HG III	1043.68	1	26, 331, 696
TE	1035.44	7	30	PB V	1043.70	3	5, 657
P IV	1035.505*	8	41, 488, 597	W	1043.8	1	781
CR III	1035.57	25	47, 488, 490	TE	1044.04	2	90
SI III	1035.647	40	310	N I	1044.13	5	334
PT II	1035.685	2	671	AG II	1044.14	0	283
RU III	1035.687	50	301	PB IV	1044.14	3	5, 139, 656
FE III	1035.768	6	188, 488	IN II	1044.26	3	413
CR III	1035.77	20	47, 488, 490	CO III	1044.281	20	673
TE III	1035.81	2	30, 353	TL II	1044.37	2	194
SB VI	1035.85 *	10	655	SN IV	1044.487*	1000	408, 681
CR III	1035.93 *	50	47, 488, 490	CU II	1044.522*	80	488, 795
CR III	1036.03 *	100	47, 488, 490	N I	1044.69	4	334
SE II	1036.15	2	289, 468	CU II	1044.744*	80	488, 795
BE II	1036.271*	8	488, 541	PB V	1044.82	1	5
BI IV	1036.30	3	5	TE	1044.92	1	30
C II	1036.330*	12	65, 168, 488	NB IV	1044.96	30	412, 760
AG II	1036.41	2	283	CR III	1045.06	40	488, 490
CU II	1036.467	60	488, 795	BI VI	1045.066	4	5, 466, 657
TL IV	1036.60	2	33, 466	BI VI	1045.117	4	5, 466
IN	1036.8	3	130	CR III	1045.14	40	488, 490
AG II	1036.99	5	283	BI VI	1045.168	4	5, 466
C II	1037.020*	13	168, 488, 794	TE	1045.23	1	30
SI III	1037.020	100	310	BI VI	1045.231	4	5, 466
TE V	1037.19	4	30, 277	SE II	1045.37	2	289, 468
PB VI	1037.26	1	5	GE V	1045.5 *	7	130, 467
N I	1037.38	4	334	HG III	1045.66	1	26
ZN IV	1037.4	2	697	S I	1045.74	2	599
W	1037.5	4	781	BI III	1045.76	8	5, 138
O	1037.627	5	168, 488, 794	SB VI	1046.10	2	655
XE II	1037.680	6	1, 61	BI VI	1046.183*	8	5, 466
CR III	1037.80	20	47, 488, 490	I II	1046.373	200	344, 399
A IV	1037.931	1	59, 65	W	1046.4	2	781
N I	1038.34	3	334	HG III	1047.19	1	331
SE II	1038.35	1	289, 468	MO VI	1047.20	4	760
FE III	1038.355	6	188, 488	AG II	1047.23	4	283
PB VI	1038.36	1	5	RH III	1047.317	30	677
SB IV	1038.51	3	31	RU III	1047.330	20	301
MO IV	1038.636	50	591, 760	S I	1047.56	1	599
AG II	1038.95	1	283	SE II	1047.67	1	289, 468
BI VI	1039.17	3	5	XE III	1047.801*	9	65
O I	1039.233*	20	488, 794	S I	1047.86	1	599
CU II	1039.349	60	488, 795	O I	1048.218	0	61
CU II	1039.584	60	488, 795	A I	1048.218*	25	59, 65, 488
BI VI	1039.61	4	5	BE II	1048.234	6	541
HG II	1039.695	2	26, 65, 452	XE II	1048.272	8	61
BI III	1039.99	4	5, 138	CD II	1048.38	40	25, 683
CR III	1040.05	20	47, 488, 490	S I	1048.43	1	599
CR III	1040.17	30	47, 488, 490	SB III	1048.46	4	31
PT II	1040.400	10	671	AL II	1048.53	1	653
CR III	1040.41	25	488, 490	B II	1048.67	0	65, 168
SN V	1040.463	10	280, 681	SN III	1048.836	50	681
CR III	1040.53	40	47, 488, 490	SC	1048.89	3	17
MN II	1040.538	8	141	PB III	1048.89 *	30	5, 686
AG II	1040.69	4	283	IN	1048.9	3	130
SN II	1040.715	200	448, 681	BR II	1049.00 *	20	488, 568
BR II	1040.92 *	10	400	S I	1049.06	1	599
O I	1040.941*	15	488, 794	W	1049.2	2	781

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	1049.363	20	488, 670
PB IV	1049.50	1	139
NB IV	1049.61	20	412
SE II	1049.65 *	10	468, 488
CU II	1049.756	50	488, 795
ZN IV	1049.8	3	697
PB II	1049.82 *	10	163
P III	1049.824	4	597
GE V	1049.9	5	130, 467
AL II	1049.93	2	653
RH III	1050.000	100	677
W	1050.1	2	781
BI VI	1050.130*	10	5, 466
CU II	1050.153	10	488, 670
TL II	1050.30	2	33, 194
CU II	1050.399	10	488, 670
GA	1050.40	4	130
P III	1050.518	1	597
SE II	1050.56	2	289, 468
AG II	1050.67	6	283
CO III	1050.762	20	673
PB II	1050.77 *	10	163
P III	1050.817	4	597
CO III	1050.977	10	673
NB IV	1050.98	20	412
AS II	1051.09	2	571
PB V	1051.26	2	5, 466
HG IV	1051.30	1	26
SB IV	1051.33 *	10	290, 655
RU III	1051.446	30	301
SI IV	1051.596	70	310
AS V	1051.64 *	4	651
PD III	1051.679	100	674
W	1051.7	2	781
RH III	1051.740	20	677
RU III	1051.801	30	301
BI III	1051.810	8	5, 138
XE II	1051.920*	10	61
KR	1051.97	3	756
MN II	1052.037	5	141
N I	1052.07	3	334
SE II	1052.15	2	289, 468
CU II	1052.170	20	488, 670
PB IV	1052.25	4	5, 656, 657
MN II	1052.599	5	141
AU	1052.7	1	411
SN IV	1052.765	20	681
N I	1053.03	3	334
CO III	1053.257	10	673
SI III	1053.289	10	310
N I	1053.38	5	334
BR III	1053.80	1	400
SN III	1053.875	30	681
N I	1053.90	3	334
CR III	1054.32	10	490
NB IV	1054.37	20	412
GA	1054.47	2	130
CR III	1054.66	15	490
CU II	1054.692	60	488, 795
I II	1054.742	1500	344, 399
GE II	1055.08	1	406, 488
FE II	1055.269	25	292, 488
AL II	1055.28	1	653
ZN I	1055.35	0	25
PT	1055.5	3	411
CU II	1055.797	40	488, 795
CD II	1055.83	25	683
NB IV	1055.88	30	412
CR III	1055.89	40	488, 490
CR III	1056.11	10	490
W	1056.2	1	781
SB II	1056.22	2	31, 351, 414
AG II	1056.28	7	203
SI IV	1056.582	12	310
TE	1056.65	1	30

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AU	1056.7	1	411
AS V	1056.71 *	5	651
BR II	1056.77	5	488, 567
SB III	1056.90	2	31, 407
CU II	1056.957	60	488, 795
SI II	1057.047*	100	310
SB II	1057.32 *	8	414
SE II	1057.41 *	9	289, 468, 488
SI II	1057.505	70	310
CR III	1057.85	30	488, 490
TL	1058.23	2	33
RH III	1058.249	20	677
SN IV	1058.370*	100	681
SN IV	1058.586*	50	681
CU II	1058.797	40	488, 795
BI II	1058.88	7	5, 138, 404
GE III	1058.91 *	12	406
RH III	1058.972	100	677
AG II	1058.99	3	283
CU II	1059.096	60	488, 795
CR III	1059.13 *	60	47, 488, 490
TE	1059.51	2	30
FE II	1059.571	20	292, 488
CR III	1060.15 *	60	47, 488, 490
TL II	1060.53	3	194
PB II	1060.61	4	5, 163
RH III	1060.624	10	677
CU II	1060.632	60	488, 795
IN II	1060.64	3	413
TL II	1060.93	2	194
CR III	1061.04 *	60	47, 488, 490
FE III	1061.245	5	188, 488
FE III	1061.708	6	188, 488
SN V	1061.719	20	448, 681
PT II	1062.018	3	671
SN II	1062.126	50	681
CE	1062.2 *	10	411
CD IV	1062.23	10	293
MN II	1062.507	30	141, 488
BI	1062.59	1	5
PT II	1062.626	5	671
GA	1062.64	3	130
S IV	1062.672*	6	38, 488
CR III	1062.68 *	50	47, 488, 490
FE II	1062.758	20	292, 488
HG II	1062.803	4	26, 65, 452
CU II	1063.009	60	488, 795
AG II	1063.20	4	283
BI	1063.40	1	5
PT II	1063.479	5	671
RU III	1063.524	30	301
RH III	1063.678	10	677
W	1063.8	2	781
CL II	1063.83 *	10	345, 488
FE III	1063.872	8	188, 488
FE II	1063.982	15	292, 488
CR III	1064.32	30	488, 490
RU III	1064.343	30	301
CR III	1064.43	30	488, 490
TE	1064.55	2	30
P IV	1064.60	3	41, 597
P II	1064.783	10	469, 594
BI	1065.06	1	5
CR III	1065.12	15	488, 490
AS	1065.4	1	411
PB V	1065.44	1	5, 657
AG II	1065.49 *	10	283
P IV	1065.554	3	41, 597
MN II	1065.564	25	141, 488
NB IV	1065.58	20	412
PB II	1065.58	9	163
CU II	1065.781	20	488, 670
RU III	1065.035	30	301
C II	1065.883	7	65, 168, 488
GE II	1065.9	1	589

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN	1065.91	1	25	TL	1072.99	3	194
SB	1065.97 *	5	31, 407	S	1072.992*	6	38, 488
C	1066.121	6	65, 168, 488	AU	1073.09 *	40	550
CU	1066.133	20	488, 670	NI	1073.11	12	286
FE	1066.143	10	188, 488	RH	1073.115	50	677
FE	1066.181	10	188, 488	P	1073.373	3	597
CR	1066.23 *	50	488, 490	SN	1073.407*	1000	291, 681
I	1066.273	250	344, 399	GE	1073.44	1	406
XE	1066.391*	10	65	W	1073.5	3	781
N	1066.56	3	334	S	1073.522	4	38, 488
AG	1066.61	1	283	GA	1073.73	2	130
SI	1066.632*	500	310	CR	1073.74	20	47, 488, 490
P	1066.640	2	41, 597	CU	1073.745	40	488, 795
O	1066.660	9	63	RH	1073.869	200	677
A	1066.660*	15	59, 65, 488	XE	1074.476*	15	1, 61
GA	1066.68	2	130	NI	1074.51	15	286
AG	1066.91	1	283	KR	1074.52	2	756
AU	1066.96	8	550	PB	1074.66	6	5
N	1066.97	4	334	TL	1074.97	5	194
XE	1067.10	5	1, 476	RH	1075.003	30	677
KR	1067.11	2	756	SB	1075.06	1	31
CR	1067.16	20	490	GE	1075.14	3	406, 488
CR	1067.25	20	490	I	1075.210	3000	344, 399
I	1067.341	2000	344	CL	1075.24	7	38, 345
N	1067.37	4	334	SB	1075.88	3	31, 407
N	1067.607	35	334, 794	CR	1076.15	20	47, 488, 490
MN	1067.729	23	141, 488	RH	1076.304	10	677
PB	1067.81	3	5	SI	1076.589	10	310
CR	1067.92	20	490	PB	1076.71	6	5
CL	1067.94	4	38, 345	CR	1076.74	20	488, 490
TL	1068.02	3	33, 466	SB	1076.85	1	414
HG	1068.03	5	26, 237, 331	PB	1076.91	1	5
FE	1068.190	5	188, 488	AG	1076.99	6	283
GE	1068.3	5	130, 467	PT	1077.078	5	671
FE	1068.356	30	292, 488	AU	1077.1	1	411
AG	1068.37	6	283	S	1077.135*	8	488, 598
CR	1068.41 *	80	488, 490	AG	1077.83	6	283
N	1068.476	35	334, 794	IE	1077.94 *	6	30, 583
N	1068.66	4	334	GE	1078.02	2	406
FE	1069.019	5	188, 488	SB	1078.10 *	5	407
FE	1069.038	15	292, 488	RU	1078.229	30	301
GE	1069.1	5	130, 467	PT	1078.405	10	671
MN	1069.110	20	141, 488	I	1078.58 *	6	400
PB	1069.12 *	10	5, 689	GA	1078.75	2	130
CU	1069.194	50	488, 795	PB	1079.06	2	5
W	1069.2	4	781	CL	1079.08 *	15	38, 345, 488
AG	1069.25	5	283	CR	1079.43	15	488, 490
GA	1069.57	2	130	AS	1079.49	7	584
RH	1069.623	15	677	PB	1079.57	2	5
PB	1069.67	2	5, 657	GA	1079.59	2	130
AG	1069.69	5	283	TL	1079.65 *	4	33, 466
RU	1069.705	30	301	SE	1079.74	5	14, 289
SE	1069.73	1	14, 289	PB	1079.88	7	5, 139, 656
MN	1069.775	10	141, 488	RU	1079.997	200	301
TE	1069.96	4	30	HG	1080.01	3	26
N	1069.984	30	334, 794	AG	1080.07	0	283
SB	1070.25	3	31, 407	IN	1080.1	2	130
CU	1070.308	15	488, 670	MN	1080.288	5	141
BI	1070.34 *	10	5, 466	PT	1080.366	3	671
TL	1070.45	1	33, 466	BI	1080.54	7	5
SB	1070.54	3	31, 407	CE	1080.6 *	5	411
CL	1071.05 *	20	38, 345, 488	PB	1080.80	3	5, 139
GA	1071.13	2	130	AS	1081.07	4	572
W	1071.3	2	781	I	1081.15	3	400
TE	1071.41 *	5	30, 583	TE	1081.29	1	30
FE	1071.596	30	292, 488	CD	1081.50	2	293
BR	1071.72 *	15	400	IN	1081.66	3	413
FE	1071.746	5	188, 488	SE	1081.76	2	289
CL	1071.76 *	10	38, 345, 488	NI	1081.82	1	286
IN	1071.93	2	413	TL	1081.85	2	33
CR	1072.13	20	47, 488, 490	B	1081.85	2	65, 168, 195
AG	1072.23 *	12	283	B	1082.06	2	65, 168, 195
GE	1072.5 *	6	130, 467	AG	1082.11	8	283
P	1072.528	3	597	AG	1082.25	4	283
HG	1072.73	1	26	AS	1082.40 *	10	488, 572

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT II	1082.537	5	671	C II	1092.740	2	65, 168
I II	1082.540	400	344, 399	BI	1093.12	1	5
MO IV	1082.551	50	591	P IV	1093.318	2	41, 597
SC	1082.62	2	17	NI VI	1093.37 *	40	286
HG IV	1082.75	4	26	HG III	1093.45	1	26
IN	1083.0	2	130	W	1093.7	3	781
AU	1083.0	1	411	AG II	1093.85	2	283
SI III	1083.218	50	310	SN V	1093.890	50	280, 681
TE	1083.39	3	30	PB VI	1093.95	3	5
AG II	1083.67	4	283	AS II	1094.20	6	488, 572
XE II	1083.860	5	61	I III	1094.20 *	8	400
NI VI	1083.98	5	286	IN II	1094.25	5	413
N II	1083.990*	20	488, 794	GA	1094.28	2	130
HG	1084.0	3	130	PB VI	1094.30	3	5
SB III	1084.05	2	31, 407	CR III	1094.38	20	490
PB IV	1084.18	2	5	CU II	1094.401	30	488, 670
I III	1084.25	2	400	TL IV	1094.411	1	466
N II	1084.579*	30	488, 794	IN II	1094.47	1	413
HG	1084.7	3	130	SE V	1094.70	3	289, 585
AG II	1084.87	8	283	SB II	1094.71 *	4	31, 414
GA	1084.98	5	130	AU II	1094.86	5	550
I II	1085.405	700	344	GA	1095.09	2	130
N II	1085.442	3	794	TE	1095.21	3	30
XE	1085.47	2	1	N I	1095.279	4	191
BI III	1085.47	7	5, 466, 138	CO III	1095.443	15	488, 673
N II	1085.546	3	488, 794	FE III	1095.47	5	188
GE II	1085.55	7	406, 488	NI VI	1095.49	8	286
HG	1085.7 *	5	130	AG II	1095.60	8	283
N II	1085.707*	50	488, 794	N I	1095.940*	35	334, 794
AG II	1085.79	4	283	PB IV	1096.21	3	5, 687
RU III	1085.793	100	301	N I	1096.322*	35	334, 794
SE II	1085.97	1	289, 468	BI V	1096.36	3	5
PB VI	1086.06	2	5	MO IV	1096.448	50	591
W	1086.4	3	781	PB V	1096.52	4	5, 466
PT II	1086.459	10	671	S II	1096.57	2	322, 488
GE V	1086.5 *	5	130, 467	FE II	1096.616*	20	292, 488
SB IV	1086.50	5	290	AG II	1096.74	1	283
FE III	1086.748	5	188	N I	1096.749*	35	334, 794
P IV	1086.943	2	41, 597	FE II	1096.793*	20	292, 488
PB VI	1087.44	4	5	FE II	1096.886*	30	292, 488
SN IV	1087.496*	200	681	SN IV	1096.916*	300	681
SB IV	1087.64	4	31, 290, 414	CU II	1097.049	25	488, 670
NI VI	1087.97 *	50	286	AU	1097.1	1	411
TL	1088.01	3	33	TL II	1097.24	4	33, 194
GE V	1088.3 *	8	130, 467	N I	1097.245*	50	334, 794
CU II	1088.393	20	488, 670	CR III	1097.25	10	490
CE	1088.4 *	5	411	AG II	1097.35	4	283
GE III	1088.45	40	406	CD IV	1097.53	6	293
P IV	1088.608	3	41, 597	BI II	1097.76	5	5, 138
ZN	1088.64	1	25	SE II	1097.82	8	289, 468, 488
PB V	1088.87	5	5, 466	N I	1097.990*	25	334, 794
XE I	1088.94 *	10	1, 476	HG II	1098.02	1	26, 65, 527
TE	1089.02	2	30	N I	1098.103*	40	794
W	1089.2	2	781	P IV	1098.183	2	41, 597
SN V	1089.347*	200	280, 681	CR III	1098.21	10	490
GE V	1089.4 *	5	130, 467	AG II	1098.22	5	283
SB II	1089.67	3	414, 655	BI IV	1098.24	4	5
HG IV	1089.76	1	26, 696	FE III	1098.24	5	188
PB V	1089.93	4	5, 657	N I	1098.264*	40	334, 794
HG III	1090.07	3	26, 65, 331	W	1098.4	2	781
TE	1090.11	2	30	PB III	1098.41	5	5, 689
SE II	1090.49	1	289, 468	CR III	1098.61	10	490
TL IV	1090.63	3	33, 466	GE II	1098.76	7	406, 488
AU II	1090.68	8	550	CR III	1098.86	10	47, 490
AG II	1090.82	2	283	S	1098.91	3	30
P IV	1091.442	4	41, 597	PB VI	1098.97	4	5
GA	1091.67	2	130	SE	1098.98	2	289
C II	1091.930	1	65, 168	BI VI	1099.09	4	5, 466
HG III	1091.95	1	26	SE III	1099.10	6	14, 289
GE V	1092.0 *	5	130, 467	FE II	1099.117	25	292, 488
AG II	1092.19	7	283	N I	1099.153	25	334, 794
SB IV	1092.31	2	31	BI II	1099.20 *	10	5, 138
SN V	1092.524	20	280, 681	PB VI	1099.23	3	5
CO III	1092.581	10	488, 673	ZN	1099.27	1	25
TL II	1092.72	3	33, 194, 466	SB IV	1099.32	5	31, 277

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1099.46	10	490	MO IV	1109.028	50	591
S	1099.48	2	30	SC	1109.40	2	17
TL IV	1099.53	3	33, 466	TL	1109.43	4	130
FE II	1100.026	20	292, 488	HG III	1109.48	2	26, 331
SE II	1100.10	1	289, 468	AlI	1109.5	3	411
PT II	1100.319	2	671	IN	1109.9	3	130
N I	1100.362	30	334, 794	HG IV	1109.94	4	26
XE II	1100.432*	10	61, 65	SI III	1109.995*	350	488, 310
XE I	1100.46 *	15	1	ZN	1110.07	1	25
NA III	1100.49	5	758	BI	1110.27	1	5
PB V	1100.52	1	5	RH III	1110.301	10	677
SE III	1100.52	5	289, 587	HG IV	1110.45	1	26
FE II	1100.525	20	292, 488	MO IV	1110.507	20	591
RH III	1100.597	100	677	XE	1110.62	3	1
CR III	1100.61	30	47, 488, 490	S IV	1110.90	2	485
I II	1101.239	400	344	SC	1110.96	2	17
N I	1101.293*	40	334, 794	FE II	1111.114	15	292, 488
IN II	1101.36	1	413	I II	1111.165	2500	344
CR III	1101.43	30	47, 488, 490	AU	1111.3	1	411
AG II	1101.50	5	283	AG II	1111.32	1	283
FE II	1101.538	20	292, 488	PB V	1111.49	1	5
BI IV	1101.89	3	5	SN V	1111.571	50	280, 681
CR III	1101.91	15	488, 490	TE	1111.55	1	30
TL	1102.19	2	130	MN II	1111.898	10	141, 488
I III	1102.23	2	400	FE II	1112.086*	35	488
RU III	1102.290	30	301	V	1112.1	3	411
S II	1102.32 *	3	322, 488	U	1112.5	2	411
FE II	1102.385	8	292, 488	BI II	1112.54	1	5, 130
CR III	1102.88	30	47, 488, 490	W	1112.8	2	781
GA	1102.89	4	130	BE	1112.8	3	335
NB IV	1103.05	25	412	PB VI	1112.92	1	5
SB	1103.08	2	31	AG II	1113.00	0	283
SN IV	1103.237	50	681	HG	1113.01	2	26
AU II	1103.32 *	20	550	AU	1113.2	1	411
PB V	1103.32	4	5, 657	HG IV	1113.23	2	26
BI IV	1103.357*	8	5, 449	MN II	1113.232	9	141, 488
BI IV	1103.423*	8	5	SI III	1113.258*	400	488, 310
SN IV	1103.493	10	681	CR III	1113.26	10	488, 490
BI IV	1103.509*	8	5	TI	1113.4	10	411
HG IV	1103.56	1	26	RH III	1113.791	100	677
I II	1103.590	800	344	HG IV	1114.12	3	26
W	1103.8	1	781	W	1114.3	2	781
PB II	1103.87	5	5, 163	C I	1114.414	2	65, 168, 488
GE	1104.1	3	130	MN II	1114.437	8	141, 408
SB V	1104.25 *	7	13, 31, 408	IN II	1114.55	1	413
HG II	1104.253	2	65	S	1114.8	5	335
CR III	1104.44	15	47, 488, 490	PB III	1114.99	5	5, 689
PB V	1104.80	3	5, 466	AU	1115.0	2	411
GE	1105.0 *	6	130	SB IV	1115.02	4	31, 290
I II	1105.000	5000	344	PB VI	1115.30	2	5
HG III	1105.03	2	26, 331	HG III	1115.52	1	26, 331
AG II	1105.34	5	283	MN II	1115.529	6	141
PB VI	1105.44	2	5	NB IV	1116.08 *	100	412
HG III	1105.53	4	26, 65, 331	PB IV	1116.08	7	5, 139, 656
SN IV	1105.599	30	681	SB VI	1116.22	3	655
BI	1105.77	1	5	MN II	1116.374	6	141
FE II	1106.215	15	292, 488	ZN V	1116.61 *	0	25, 492
TE III	1106.56	2	30, 353	GE V	1116.8 *	6	130, 467
GE II	1106.74 *	10	406, 488	CD IV	1116.88	2	293
HG III	1106.81	1	26, 331	AS	1117.1	1	411
SC	1107.13	2	17	PB VI	1117.15	3	5
AS II	1107.49	6	572	CR III	1117.19	30	488, 490
TE	1107.54	1	30	I II	1117.219	1500	344
C IV	1107.600	3	65, 168	C I	1117.706	3	65, 168, 488
SC	1107.77	2	17	PT II	1117.828	3	671
NB IV	1107.86	25	412	S VI	1117.91	0	52
C IV	1107.933	4	65, 168	P V	1117.979*	15	597
CR III	1108.11	10	490	CD IV	1118.16 *	24	25, 293
SN II	1108.128*	500	448, 681	CR III	1118.55	20	488, 490
MO IV	1108.156	30	591	AG II	1118.56	5	283
S IV	1108.36	2	485	P IV	1118.586	4	597
SI III	1108.402*	300	488, 310	PB III	1118.66	4	5, 687
PB II	1108.44	4	5, 163	AL IV	1118.80	4	693
PB VI	1108.61 *	5	5	AG II	1118.99	2	283
W	1108.8	2	781	SE II	1119.20	8	14, 289, 468

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SB VI	1119.21	4	31, 655	GE	1128.2	3	130
GA II	1119.25	3	652	GA	1128.3	3	130
SN IV	1119.344*	1000	408, 681	SI IV	1128.352*	400	488, 310
BI	1119.39 *	2	5	SC	1128.36	2	17
PB II	1119.64	4	5, 163	AU	1128.5	3	411
V III	1119.67	10	791	FE II	1128.530	10	292, 488
NB IV	1119.88	25	412	S	1128.59	1	30
BI IV	1119.94	3	5	SB V	1128.63 *	6	31
CU II	1119.945	15	488, 670	FE III	1128.72	7	188, 292, 488
NB IV	1120.02 *	150	412	BI IV	1128.78	7	5, 449
I III	1120.14	1	400	SC	1128.79	4	17
GE II	1120.45	5	406, 488	FE II	1128.909	20	292, 488
SB IV	1120.49	5	31, 290	HG III	1129.16	1	26, 331
TI	1120.5	10	411	C I	1129.161	6	65, 168, 488
PT II	1120.622	3	671	FE III	1129.19	7	188, 292, 488
SN IV	1120.679*	200	408, 681	PT II	1129.304	3	671
GA	1120.78	3	130	PB VI	1129.33	2	5
HG III	1121.19	2	26	CA	1129.5	1	411
V III	1121.19	8	791	FE II	1129.777	12	292, 488
AU	1121.4	3	411	TE	1130.09	1	30
HG III	1121.90	3	26, 331	TL II	1130.17 *	10	194
FE II	1121.987	25	292, 488	XE III	1130.344*	25	65
V III	1122.11	15	488, 791	SB III	1130.36	3	31
SC	1122.32	2	17	FE III	1130.404	5	188, 488
AG II	1122.32	1	283	FE II	1130.428	25	292, 488
C I	1122.325	4	65, 168, 488	SE II	1130.48	1	468
S III	1122.42	2	30, 323	GA II	1130.81	5	652
CR III	1122.43	15	488, 490	V III	1131.04	8	791
PT II	1122.510	1	671	S II	1131.05	2	322, 488
SI IV	1122.513*	300	488, 310	FE III	1131.194	7	188, 292, 488
FE III	1122.526	9	188, 292, 488	SN V	1131.359	50	408, 681
V III	1122.61	12	791	BI VI	1131.39	2	5, 657
FE II	1122.858	25	292, 488	I II	1131.504	2000	344
V III	1123.00	15	488, 791	IN	1131.61	2	130
NI V	1123.20	0.	492	S II	1131.65	2	322, 488
GA	1123.3	3	130	PB IV	1131.76	4	5, 656
HG	1123.34	2	26	BI VI	1131.79	3	5
TE VII	1123.46 *	1	30, 655	NI V	1131.82	0	492
BI II	1123.54	3	5, 138	LI II	1132.1 *	1	788
V III	1123.55	15	488, 791	SB II	1132.30	1	31, 414
PB VI	1123.56 *	5	5	HG III	1132.47	1	26
CR III	1123.59	15	790, 490	AG II	1132.55	1	283
SC	1123.96	2	17	CR III	1132.75	30	490
AS II	1124.05	2	572	PB V	1132.76	3	5, 657
HG III	1124.08	3	26, 65, 331	SN V	1132.794*	100	408, 681
TE III	1124.10	2	30, 353	PB II	1133.17	7	5, 163
FE II	1124.134	20	292, 488	FE II	1133.413	25	292, 488
IN II	1124.39	2	413	SC	1133.53	2	17
S II	1124.39	1	322, 488	AU	1133.6	3	411
IN II	1124.70	1	413	FE II	1133.678	25	292, 488
FE III	1124.883	7	188, 292, 488	SB V	1133.73 *	7	31, 655
S II	1125.00	1	322, 488	GA	1133.79	3	130
HG III	1125.16	2	26, 331	CD IV	1134.08	10	293
I II	1125.251	3500	344, 399	V III	1134.14	6	791
CR III	1125.27	10	488, 490	KR I	1134.15 *	3	475
TL IV	1125.44	3	33, 466	N I	1134.176	20	488, 794
V III	1125.71	30	488, 791	N I	1134.426	25	488, 794
CR III	1125.73	20	488, 490	KR I	1134.89 *	3	475
CD IV	1126.00	12	293	AS	1134.9	1	411
SE III	1126.30	5	14, 289	N I	1134.988	25	488, 794
GA	1126.32	3	130	I III	1135.28	4	400
FE II	1126.425	20	292, 488	CD IV	1135.46	2	293
FE II	1126.603	20	292, 488	PT II	1135.48	15	671
FE III	1126.72	6	188, 292, 488	GA	1136.01	2	130
AG II	1126.74	0	283	CR III	1136.67 *	50	488, 490
FE II	1126.850	20	292, 488	AL IV	1136.80	3	693
S III	1126.89	1	30, 323	HG IV	1136.87	2	26
SI II	1127.442	20	310	GA IV	1137.05	1	467
PT II	1127.453	1	671	PB V	1137.51	5	5, 466
CR III	1127.71	15	490	PB IV	1137.86	7	5, 139, 656
SI II	1127.907	40	310	GE III	1137.92 *	10	406
CE	1128.0 *	5	411	GA	1138.09	2	130
P V	1128.006*	10	597	S IV	1138.227	1	38
FE III	1128.02	8	188, 488	O III	1138.545	2	65, 168
FE II	1128.074	25	292, 488	BI IV	1138.562	6	5, 449

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE II	1138.642	25	292, 488	PB VI	1146.95	1	5
HG IV	1138.7	1	696	FE II	1146.963	15	292, 488
C II	1138.936	2	65, 168	BI II	1147.19	4	5, 138
AU	1139.0	5	411	FE II	1147.413	25	292, 488
BI IV	1139.015	4	5, 138	CA	1147.5	1	411
CD IV	1139.04	8	25, 293	N I	1147.69	4	334
C I	1139.142	2	65, 168, 488	SC	1147.69	3	17
HG IV	1139.2	1	696	AG II	1148.20	3	283
TL IV	1139.24	3	33, 466	PB V	1148.29	3	5, 466, 657
SN III	1139.293*	1000	291, 681	FE II	1148.295	30	488
C II	1139.330	3	63, 65, 168	V III	1148.45	10	791
RI V	1139.370*	20	5, 656	FE II	1148.693	8	488
AS II	1139.40	2	572	HG IV	1148.74	3	26
SC	1139.53	2	17	N I	1148.76	4	334
BI V	1139.548*	20	5, 656	IN	1148.85	2	130
F VI	1139.60	2	171, 176	AS II	1149.33	4	572
I II	1139.752*	1200	344	W	1149.5	2	781
BI IV	1139.772	6	5, 449	BI IV	1149.69	7	5, 449
C I	1139.794	6	65, 168, 488	AG II	1149.77	5	283
I II	1139.805*	10000	344	CA	1149.9	1	411
V III	1139.82	5	791	V III	1149.94 *	100	488, 791
C I	1139.894	7	65, 168, 488	P II	1149.960	10	469, 488, 594
SI III	1140.543	100	310	NI VI	1150.22	10	286
PT II	1140.61	3	671	GA	1150.23	4	130
C I	1140.688	3	65, 168, 488	V III	1150.26	20	791
SI III	1141.574	150	310	FE II	1150.292	20	292, 488
C II	1141.630	3	63, 65, 168	GE III	1150.55 *	12	406
C II	1141.746	2	63, 65, 168	PT II	1150.614	2	671
PT II	1141.885	8	671	FE II	1150.689	20	292, 488
SE II	1141.94 *	9	289, 468, 488	SE IV	1150.75	1	585
NI VI	1141.96	10	286	PB V	1150.75	1	5
AL IV	1142.03	1	693	AL IV	1150.85	0	693
SI III	1142.282	80	310	O III	1150.882	2	65, 168
FE II	1142.334	25	292, 488	SE V	1150.96 *	7	585
CU II	1142.642	20	488, 670	V III	1151.04 *	90	488, 791
HG	1142.86	2	26	SC	1151.09	2	17
PB III	1142.95	5	5, 686	AG II	1151.11	6	283
FE III	1142.955	5	188, 488	FE II	1151.163	25	292, 488
AL II	1142.97	2	653	TE	1151.21	2	30
BE II	1143.03 *	7	541	BI III	1151.33	2	5
FE II	1143.235*	25	292, 488	SB III	1151.46	4	31, 407
PT II	1143.293	20	671	IN	1151.7	2	130
FE II	1143.295*	30	292	HG III	1152.01	2	26, 331
AS	1143.3	1	411	S I	1152.11	2	599
PB VI	1143.32	2	5	N I	1152.139	3	191
N I	1143.606	5	191	AL II	1152.14	4	653
CR III	1143.63	15	490	O I	1152.149	2	488, 794
TE	1144.04	1	30	AG II	1152.15	4	283
TL IV	1144.07	3	466	CR III	1152.16	10	490
CR III	1144.10	10	490	SB	1152.17	2	31
GA	1144.22	2	130	V III	1152.18 *	80	488, 791
SI III	1144.291	100	310	XE	1152.19	7	1
NI VI	1144.32 *	18	286	N I	1152.35	4	334
TE III	1144.69	1	30, 353	FE II	1152.440	15	292, 488
CU II	1144.853	30	488, 670	P II	1152.803	10	460, 480, 594
SI III	1144.940	50	310	FE II	1152.882	20	292, 488
FE II	1144.946*	35	292, 488	NA III	1153.04	2	758
PB IV	1144.95	6	5, 139, 656	TL II	1153.17	4	33, 194
SI III	1145.251	30	310	V III	1153.19 *	70	488, 791
ZN IV	1145.5	2	697	HG VI	1153.25 *	1	26
NI VI	1145.53	15	286	FE II	1153.281	20	292, 488
SI III	1145.672	20	310	PT II	1153.444	2	671
GA	1145.70	3	130	N I	1153.52	4	334
PT II	1145.702	2	671	CR III	1153.60	15	488, 490
HG	1145.74	2	26	O III	1153.773	3	65, 168
SB IV	1145.86 *	15	290	NI VI	1153.79	2	286
PB II	1145.91	4	163	FE II	1153.955	15	292, 488
BI III	1145.91	6	5, 138	P II	1153.997	10	469, 488, 594
HG III	1146.21	2	26	CR III	1154.12	15	488, 490
SB II	1146.28	2	31, 290, 414	N I	1154.23	3	334
CR III	1146.34	25	490	V III	1154.24	70	791, 488
IN	1146.4	3	130	FE II	1154.401	20	292, 488
CD IV	1146.71	2	293	HG III	1154.48	2	26
V III	1146.75	8	791	CD IV	1154.64	10	25, 293
NI VI	1146.85	8	286	I II	1154.668	1500	344, 399

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V III	1154.76	6	791	SN III	1161.579	100	681
SI III	1155.003	100	310	NI VI	1161.61	2	286
P II	1155.020	10	469, 488, 594	W	1161.7	3	781
V III	1155.12	6	791	MN II	1161.764	20	141, 488
CR III	1155.39	15	488, 490	P IV	1161.783	1	597
CD IV	1155.73	7	293	AL IV	1161.85	0	693
SI III	1155.959	90	310	HG III	1161.95	2	26, 237
SE II	1155.99	7	289, 468, 488	SB IV	1161.97	1	31
PB V	1156.01	2	5	MN II	1162.017*	50	141, 488
C I	1156.059	2	65, 168, 488	PD II	1162.20	15	664
I III	1156.17	2	400	HG IV	1162.53	1	26, 696
AU	1156.2	4	411	AL III	1162.66	0	190
GA IV	1156.21	5	467	SC	1162.77	2	17
AL IV	1156.21	1	693	CD IV	1162.87	4	25, 293
PB IV	1156.29	2	139	SN II	1162.920	200	448, 681
MN II	1156.345	30	141, 488	BI II	1163.19	9	5, 138
NI VI	1156.36	12	286	NI VI	1163.20	10	286
C I	1156.619	5	65, 168, 488	AG II	1163.21	8	283
MN II	1156.658	25	141, 488	V III	1163.27	30	488, 791
SI III	1156.773	50	310	MN II	1163.325*	40	141, 488
MN II	1156.834	20	141, 488	GA IV	1163.63	3	467
MN II	1156.900	20	141, 488	MO IV	1163.636	50	591
SE II	1156.91	8	468, 488	TL II	1163.80	4	194
P II	1156.968	10	469, 488, 594	N I	1163.884	12	488, 794
NI VI	1157.13	15	286	HG III	1164.00	2	26
AL II	1157.13	3	653	MN II	1164.211	30	141, 488
SE II	1157.32	2	289, 468, 585	N I	1164.322	8	488, 794
S I	1157.37	1	599	CD IV	1164.65	20	25, 293
C I	1157.391	2	65, 168, 488	KR I	1164.868*	4	58, 475, 488
PT II	1157.427	1	671	I III	1164.97	2	400
GE II	1157.44	3	406	PB III	1165.03 *	7	5, 686
HG IV	1157.63	3	26, 696	FE II	1165.269	12	292, 488
SB III	1157.72	4	31, 407	CD IV	1165.78	10	25, 293
C I	1157.825	3	65, 168, 488	MN II	1165.823	25	141, 488
PB V	1157.91 *	9	5, 466	C III	1165.87	1	65, 168
IN	1157.96	3	130	MO IV	1166.070	50	591
C I	1158.017	7	65, 168, 488	MN II	1166.157	10	141, 488
C I	1158.030	7	168, 488, 794	LI II	1166.4 *	2	788
SI III	1158.091	130	310	V III	1166.47	30	488, 791
C I	1158.107	8	65, 168, 488	I II	1166.482*	20000	344
AL II	1158.14	1	653	SE II	1166.53	5	289, 468, 488
HG IV	1158.20	3	26	V III	1166.58	30	488, 791
SN III	1158.333*	1000	291, 681	AU II	1166.76	3	550
C I	1158.398	2	65, 168, 488	SE IV	1166.80	2	289, 585
XE II	1158.474	5	61	MN II	1166.810	8	141
KR III	1158.724	6	58	PB III	1166.96 *	7	5, 689
C I	1158.729	3	65, 168, 488	I II	1167.054	1500	344, 399
AS II	1158.95	2	572	BI II	1167.06	8	5, 138
C I	1159.004	5	65, 168, 488	MN II	1167.130	20	141, 488
SN II	1159.010	200	448, 681	CD IV	1167.30	14	25, 293
PD II	1159.05	10	664	MN II	1167.306	9	141
P II	1159.085	10	469, 488, 594	AL IV	1167.35	0	693
GE III	1159.15	8	406	N I	1167.450	25	488, 794
FE II	1159.347	20	292, 488	HG III	1167.53	2	331
BI VI	1159.41	3	5	MN II	1168.069	5	141
GE III	1159.62	8	406	PT II	1168.148	8	671
V III	1159.77 *	50	488, 791	W	1168.2 *	8	781
I II	1159.871	1000	344, 399	MN II	1168.254	15	141, 488
BI VI	1159.90	4	5	PT II	1168.282*	40	671
W	1160.0	2	781	CR III	1168.32	10	490
SB IV	1160.09	2	31	N I	1168.334	8	334, 794
SI III	1160.234	90	310	TE IV	1168.45 *	4	30, 583
HG II	1160.403	4	26, 65, 452	SB IV	1168.52	4	31
N I	1160.45	3	334	SE II	1168.53	8	289, 468, 488
MO IV	1160.514	20	591	N I	1168.537	20	488, 794
I II	1160.562*	10000	344	CD II	1168.58	5	683
SN V	1160.735*	200	280, 681	TL	1168.76	2	33
GE III	1160.79	8	406	I II	1168.830	800	344
SC	1160.91	2	17	C IV	1168.873	3	65, 168
SB II	1161.05	1	31	C IV	1168.990	4	65, 168
SN III	1161.092	200	681	V III	1169.11	15	791
MN II	1161.295	20	141, 488	MN II	1169.280	15	140, 488
SN II	1161.412*	500	440, 601	V III	1169.28	20	488, 791
CR III	1161.43 *	50	488, 490	MO V	1169.325*	100	591, 761
SI III	1161.571	200	310	TL II	1169.49	2	33, 194

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1169.531	15	140, 488	AS II	1181.55	3	572
XE II	1169.63	2	61	I III	1181.55	2	400
PT II	1169.741*	40	671	GE II	1181.65	3	406
SB VI	1169.94 *	5	655	CD IV	1181.66	4	293
NI VI	1170.08	15	286	SC	1181.91	3	17
AU	1170.3	1	411	PT II	1182.343	2	671
MO III	1170.403	20	591	W	1182.5	3	781
XE	1170.43	3	1	SE II	1182.69	2	289, 468
GA IV	1170.59	10	467	N III	1183.030	7	65, 168, 488
ZN IV	1170.6	1	697	XE II	1183.053	7	61
SE II	1170.77	1	289, 468	CD IV	1183.07	8	293
SN V	1171.129	10	280, 681	GE III	1183.34 *	15	406
V III	1171.27	4	791	CD IV	1183.40 *	20	293
BI V	1171.28	6	5	TL II	1183.41 *	10	194
SB IV	1171.40	5	31, 277	PD II	1183.45 *	20	664
PT II	1171.413	5	671	TI IV	1183.63	5	604
FE II	1171.606	8	488	PD III	1183.687	200	674
GA IV	1171.73	0	467	ZR IV	1183.96 *	100	342, 488
FD V	1171.76	5	5	SE II	1183.98	2	289, 468
S I	1171.91	2	599	N I	1183.998	3	191
AS III	1172.16 *	10	404, 580	I II	1184.156	200	344
BI II	1172.33	5	5, 138	SN III	1184.254*	1000	291, 601
SI III	1172.527	20	310	RU III	1184.366	100	301
S	1172.53	1	30	CA	1184.4	1	411
N I	1172.55	3	334	N III	1184.544	8	65, 168, 488
SC	1173.03	3	17	NI VI	1184.56	4	286
W	1173.6	3	781	GA IV	1185.25	8	467
MO III	1173.672	50	591	PB	1185.32	2	5
CR III	1173.77	10	490	PB V	1185.43 *	8	5, 466
GA II	1173.78	2	488, 652	GE IV	1185.50	0	406
GE III	1173.78 *	10	406	TE	1185.83	2	30
PD II	1174.37 *	20	664	PT II	1185.992	2	671
SI III	1174.395	50	310	GA IV	1186.06	0	467
RU III	1174.678	20	301	BI II	1186.06	3	138
CR III	1174.82	15	490	PT II	1186.216	5	671
N I	1174.84	3	334	ZN	1186.72	1	25
C III	1174.916*	12	168, 488	GA II	1186.81	3	488, 652
PT II	1175.131	10	671	NI VI	1186.90	2	286
SB II	1175.19	1	414	I II	1187.338*	15000	344
C III	1175.248*	12	168, 488	CR III	1187.36	20	490
PT II	1175.405	5	671	RU III	1187.636	50	301
C III	1175.566*	12	168, 488	CR III	1187.65	30	488, 490
GA	1175.69	3	130	A IV	1187.80	1	59, 65
HG IV	1175.7	2	696	HG IV	1187.93	1	26, 696
C III	1175.700*	14	168, 488	BI VI	1188.45	4	5, 404, 657
I II	1175.841	5000	344, 399	MN II	1188.502*	50	141, 488
C III	1175.973*	12	168, 488	PT II	1188.689	5	671
SN V	1176.258*	100	280, 681	CL I	1188.768*	12	6
C III	1176.351*	12	168, 488	TL II	1188.83	3	194
PT II	1176.403	5	671	TE	1188.92	1	30
N I	1176.508	15	334, 794	N I	1188.972	5	334, 794
N I	1176.626	3	794	GE IV	1188.99 *	20	406
RU III	1176.951	30	301	C I	1189.074	3	65, 488
HG IV	1176.99	1	26	AL II	1189.21	2	653
SC	1177.14	2	17	N I	1189.244	3	334, 794
SE II	1177.30	1	289, 468	BR I	1189.296	1	757
AL II	1177.48	4	653	BR I	1189.40	1	757
N I	1177.694	15	334, 794	BR I	1189.507	1	757
SI III	1177.986	80	310	I III	1189.55	2	400
SF	1177.99	2	289, 460	C I	1189.556	4	65, 488
TL	1178.00	3	33	CD	1189.60	2	25
PT II	1178.412	5	671	N I	1189.628	5	334, 794
PB V	1178.54	1	5	C I	1189.660	6	65, 488
I II	1178.650*	10000	344	AS II	1189.90	1	571
PT II	1178.957	3	671	SN V	1189.918*	100	280, 681
RU III	1179.372	20	301	PB V	1189.93 *	9	5, 466
AL II	1179.38	1	653	SN III	1189.992	200	681
CD IV	1179.73	10	293	AU	1190.0	2	411
NI VI	1179.80 *	20	286	AL II	1190.07	4	653
BI V	1180.17	2	5	S III	1190.17	2	323, 488, 599
NA III	1180.40	8	758	BI V	1190.18	1	5
SN III	1180.617	100	448, 681	RU II	1190.243	100	675
AG II	1180.96	1	283	A IV	1190.354	2	59, 65
AU II	1181.00	3	466	SI II	1190.418*	100	488, 310
PT II	1181.104	10	671	RU III	1190.510*	800	301

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT	II	1190.751	5 671	MN	II	1199.388	25 141, 488
N	I	1190.84	5 334	ZN	III	1199.44	1 25
I	II	1190.853*	10000 344	N	I	1199.551*	50 488, 794
GA	IV	1190.90	9 467	I	II	1199.677	1000 344
W		1191.0	2 781	PT	II	1199.724	3 671
N	I	1191.03	5 334	RU	III	1200.067*	500 301
GE	II	1191.24	4 488	I	II	1200.223*	7000 344
HG	IV	1191.62	1 26, 696	N	I	1200.226*	40 488, 794
NI	VI	1191.72	5 286	SB	II	1200.36	2 31, 414
S	I	1191.80	2 599	N	I	1200.708*	30 488, 794
AL	II	1191.86	5 653	MO	IV	1200.800	50 591
N	I	1191.99	4 334	SB		1200.89	1 31
XE	I	1192.04	2 61	S	III	1200.97 *	4 323, 488
SE	II	1192.29 *	10 289, 468, 488	MN	II	1201.124	20 141, 488
MN	II	1192.313*	40 141, 488	MN	II	1201.233	5 141
C	I	1192.480	2 65, 488	CR	III	1201.25	10 490
IN		1192.62	2 130	PT	II	1201.279	5 671
SB	IV	1192.90	5 31, 290	CL	I	1201.358*	11 6
C	I	1192.923	2 65, 488	CR	III	1201.42	15 488, 490
C	I	1193.013	8 488, 794	GA	IV	1201.56	4 467
GA	IV	1193.02	9 467	ZN	IV	1201.56	1 25
C	I	1193.243	15 794	MN	II	1201.570*	40 141, 488
SI	II	1193.284*	200 488, 310	S	III	1201.71	2 323, 488
C	I	1193.284	10 65, 488	ZR	IV	1201.77 *	250 342, 488
C	I	1193.388	3 794	HG		1202.13	2 26
C	I	1193.460	3 65, 488	CR	III	1202.45	10 490
C	I	1193.674	3 794	TE		1202.75	1 30
SC		1193.69	4 17	MN	II	1203.068	8 141
C	I	1193.738	4 65, 540	MN	II	1203.252	30 141, 488
HG	III	1193.95	1 26	CD	II	1203.34	5 683
S	III	1194.02 *	4 323, 488	P	IV	1203.410	1 597
C	I	1194.060	3 65, 794	PB	V	1203.47	6 5, 657
C	I	1194.094	5 65, 540	W		1203.5	1 781
CD	IV	1194.13	14 293	CR	III	1203.59	12 490
SC		1194.22	2 17	HG	I	1203.60	65
C	I	1194.291	2 65, 540	PB	II	1203.62	4 5, 163
S	III	1194.40 *	3 323, 488	PD	II	1204.00 *	30 664
C	I	1194.494	7 65, 488	CD		1204.03	3 25
SI	II	1194.496*	250 488, 310, 794	SN	III	1204.058	200 681
C	I	1194.656	5 65, 540	S	I	1204.23	6 30, 599
TL	II	1194.84 *	12 194	HG	I	1204.24	65
MN	II	1194.998	30 141, 488	BI	III	1204.28	8 5, 138
GA	IV	1195.05	10 467	ZN		1204.33	1 25
TI	IV	1195.25	5 604	CD	II	1204.53	15 683
ZN	IV	1195.35	1 25, 697	RU	III	1204.567	100 301
CD	IV	1195.63	10 293	MN	II	1204.619	25 141, 488
MN	II	1195.973	30 141, 488	RU	III	1204.876	200 301
MN	II	1196.333	25 141, 488	CR	III	1204.93	20 47, 488, 490
PD	II	1196.43	10 664	RU	II	1204.995	30 675
SE	II	1196.46	1 289, 354, 468	HG	II	1205.195	1 65
MN	II	1196.517	20 141, 488	PT	II	1205.211	3 671
AS	II	1196.60	1 572	SB	III	1205.22	3 31, 407
CD	II	1196.69	15 293, 683	SE	II	1205.27	2 289, 354, 468
MN	II	1196.724	25 141, 488	MN	II	1205.423	20 141, 488
TE	IV	1196.96	2 30, 583	SE	II	1205.69	7 289, 468, 488
MN	II	1197.172*	40 141, 488	SN	V	1205.723*	100 291, 681
BE	II	1197.19 *	10 488, 541	CR	III	1205.78	10 490
CR	III	1197.37	20 488, 490	I	II	1205.931	2000 344
SI	II	1197.389*	100 488, 310	A	III	1205.95	1 60, 65
MN	II	1197.570	10 141, 488	BI	V	1206.008	5 5
PB	V	1197.71	6 5, 466	KR	III	1206.346	5 58
A	IV	1197.84	1 59, 65	CR	III	1206.38 *	60 47, 488, 490
MN	II	1197.996	10 141, 488	S		1206.40	1 30
LI	II	1198.0 *	7 788	TE	III	1206.46 *	4 30
CD	IV	1198.15	3 293	GE		1206.5	4 130
BI	II	1198.15	5 5, 138	ZN	IV	1206.52	1 25
AL	IV	1198.47	1 693	SI	III	1206.526	200 488, 310
C	IV	1198.58	1 65, 168	SE	III	1206.53	1 289, 587
MN	II	1198.630	10 141, 488	HG	IV	1206.55 *	5 26, 696
PT	II	1198.781	2 671	IN		1206.62	2 130
I	II	1198.884	5000 344	AU	II	1206.71	2 550
CU	IV	1190.93	10 293	MN	II	1206.874	5 140
SB	IV	1199.21 *	6 31, 277	GA	IV	1206.89	10 467
AS	II	1199.24	2 571	BI	V	1206.943	1 5
MN	II	1199.341*	40 141, 488	CR	III	1207.13	10 490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1207.173*	500	301	GA IV	1216.19	00	467
HG I	1207.34		65	ZN IV	1216.2	1	697
PT II	1207.367	5	671	AL IV	1216.78	1	693
AS II	1207.50	5	572	HG IV	1216.80	1	26, 696
SI III	1207.511	50	310	KR III	1216.896	5	58
SB IV	1207.55	3	31	MO II	1216.921	50	591
CR III	1207.58	10	490	SN V	1217.542	30	280, 681
PT II	1207.633	5	671	O I	1217.643	2	488, 491
RU II	1207.811	50	675	CR III	1217.69	10	490
HG I	1208.22		65	SE II	1218.08	2	289, 354, 468
AL II	1208.35	3	653	MO II	1218.089	30	591
CO IV	1208.43	3	293	SN III	1218.136	100	681
TE	1208.54	2	30	AS II	1218.14	1	572
PD II	1208.68	5	664	SE II	1218.27	2	289, 468, 488
W	1208.7	2	781	CR III	1218.60	10	490
RU III	1209.030	30	301	PD II	1218.66	15	664
CR III	1209.13 *	80	47, 488, 490	SB II	1218.92	2	31, 414
AL II	1209.19	1	653	MN II	1218.943	8	140
SB	1209.25	1	31	SN II	1219.090*	500	448, 681
AG III	1209.29 *	10	404, 580	AL IV	1219.19	0	693
HG III	1209.52	1	331	BI	1219.19	1	5
RII III	1209.774*	500	301	HG III	1219.60	1	26
AL II	1210.15	2	653	BI II	1219.80	5	138
CD IV	1210.24	6	25, 293	ZR IV	1219.85 *	150	342, 488
MN II	1210.335	5	140	CR III	1220.14	20	490
JI III	1210.449	170	310	HG I	1220.35		65
SN III	1210.515*	2000	291, 681	AL	1220.57	1	693
P III	1210.600	1	597	SE	1220.58	2	289
SB III	1210.62	3	31, 407	I II	1220.887*	20000	344
BR I	1210.75	1	757	TL II	1220.93	3	33, 194
AU II	1210.80	5	550	TE	1220.98	1	30
BI V	1210.82	1	5	PT II	1221.033	5	671
TE	1211.01	1	30	CR III	1221.07	40	488, 490
CR III	1211.12 *	80	47, 488, 490	MN II	1221.107	6	140
AS I	1211.21	2	571	NA III	1221.12	5	758
RU III	1211.306	300	301	BR I	1221.141	1	757
BI IV	1211.41	3	5, 449	CR III	1221.90	40	488, 490
AL IV	1211.80	0	693	SF II	1221.94	2	468, 488
NB V	1212.21	7	760	HG I	1222.38		65
MN II	1212.404	5	140	MN II	1222.785	30	141, 488
GE III	1212.47	8	406	ZN IV	1223.15	4	25
MO III	1212.497	50	591	MN II	1223.152	8	141
IN II	1212.71	4	413	AS II	1223.19	2	572
HG I	1212.75 *	2	26, 65	N I	1223.20	3	334
PD II	1212.88	3	664	BR I	1223.251	1	757
ZN IV	1212.9	1	697	NA III	1223.44	4	758
TE	1213.00	1	30	CD IV	1223.52	10	293
SN IV	1213.032	10	681	CL II	1223.71	2	345
FE II	1213.149	20	292, 488	SN II	1223.716	200	448, 681
HG	1213.17	3	26	C II	1223.99	1	65, 168
PB V	1213.20	7	5, 466	I I	1224.049	600	344
PT II	1213.215	3	671	ZN IV	1224.12	1	25, 697
MO III	1213.233	30	591	BR I	1224.416	1	757
FE II	1213.764	20	292, 488	AU II	1224.57 *	20	550
HG I	1213.79	0	26, 65	SE II	1224.63	3	289, 468
AS III	1214.00	2	404, 580	BI III	1224.64 *	10	5, 138
SN V	1214.189	30	280, 681	NA III	1224.73	4	758
HG IV	1214.19	1	26	MN II	1224.733	28	141, 488
BI VI	1214.25	6	5	MN II	1224.928	6	141
RU III	1214.388	30	301	CR III	1225.02	10	490
FE II	1214.409	10	292, 488	N I	1225.028	15	334, 794
PD II	1214.58	10	664	MO IV	1225.123	20	591
SB IV	1214.78	5	290	CR III	1225.27	15	490
IN	1214.8	3	130	CR III	1225.32	15	490
HE II	1215.088*	5	488	PD II	1225.33	10	664
SN III	1215.105	100	291, 681	N I	1225.372	10	334, 794
HE II	1215.171*	5	488	BI II	1225.43	6	5, 138
D I	1215.340*	100	487	MO III	1225.462	50	591
CD IV	1215.38	8	293	TL IV	1225.54	3	33, 466
PB VI	1215.50	2	5	CR III	1225.65	30	488, 490
H I	1215.670*	100	488	SB V	1225.94 *	10	13, 31, 408
GE	1215.7	5	130	MO III	1226.091	20	591
PB VI	1215.72	2	5	MN II	1226.397	25	141, 488
HG II	1215.8	4	698	PD II	1226.54	5	664
I II	1216.125	3000	344, 399	S II	1226.70	1	322, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1226.72	20	488, 490	MN II	1234.301	5	141
HG III	1226.75	1	26, 331	RU II	1234.347	100	675
BR I	1226.908	1	757	MN II	1234.507	8	141, 488
N I	1227.00	3	334	HG III	1234.53	1	331
MO III	1227.052	50	591	MO III	1234.640	50	591
CD IV	1227.07	4	293	BI VI	1234.86	2	5
RU II	1227.101	50	675	MN II	1234.872	25	141, 488
S II	1227.45	1	322, 488	SE II	1234.88	7	468, 488
MN II	1227.638	23	141, 488	MN II	1235.060	8	141
SE V	1227.68	1	289, 585	MO III	1235.085	50	591
GA IV	1227.98	10	467	PD II	1235.23	15	664
BR I	1228.06	1	757	MN II	1235.273	10	141, 488
CD	1228.07	2	25	NA III	1235.40	4	758
CO V	1228.19	8	286	SI III	1235.458	120	310
MO III	1228.235	50	591	MN II	1235.463	25	141, 488
IN II	1228.24	3	413	MN II	1235.793	10	141, 488
RU II	1228.255	20	675	KR I	1235.819*	13	58, 475, 488
AL IV	1228.30	1	693	HG I	1235.84		65
N I	1228.410	5	334, 794	MN II	1235.869	25	141, 488
MN II	1228.423	20	141, 488	PT II	1235.878	10	671
ZN IV	1228.46	4	25	MO III	1236.117	50	591
IN II	1228.62	2	413	MN II	1236.148	25	141, 488
CR III	1228.65	30	488, 490	HG III	1236.18	1	331
SB	1228.68	2	31	CR III	1236.20	40	488, 490
N I	1228.790	10	334, 794	TE V	1236.31	3	277
MN III	1228.971	100	131, 488	GA IV	1236.38	3	467
PT II	1229.007	1	671	MN II	1236.545	15	141, 488
SE II	1229.04	2	468	MN II	1236.770	20	141, 488
MO III	1229.112	30	591	CO V	1236.816	20	286, 673
CA	1229.5	1	411	MN II	1236.873	20	141, 488
CR III	1229.53	15	488, 490	GE II	1237.05 *	20	406, 488
MN II	1229.653	25	141, 488	PD II	1237.12	15	664
GE IV	1229.81 *	20	406	AL IV	1237.14	4	693
AL IV	1229.94	0	693	TL	1237.19	2	33
C IV	1230.046	2	65, 168	PT II	1237.455	5	671
MN II	1230.106	20	131, 141, 488	TL	1237.60	2	33
MN II	1230.152	15	141, 488	HG	1237.75	2	26
B II	1230.160	2	65, 168	CD IV	1237.87	4	25, 293
RU III	1230.164	20	301	BI	1238.27 *	2	5
SN III	1230.171	100	291, 681	CR III	1238.51	40	488, 490
I II	1230.222	600	344	GA IV	1238.54	5	467
MO III	1230.411	50	591	N V	1238.800*	8	65, 168, 488
ZN III	1230.434	1	472	HG III	1238.84	2	26, 331, 696
C IV	1230.511	3	65, 168	PT II	1238.847	3	671
CR III	1230.80	20	488, 490	ZN IV	1239.00	1	25
MN II	1230.873	10	141, 488	PT II	1239.181	3	671
AU	1231.0	1	411	MN III	1239.244	50	131, 488
MN II	1231.101	8	141, 488	RU II	1239.467	100	675
P II	1231.178	10	469, 594	ZN III	1239.603	1	472
PB II	1231.18	9	5, 163	HG IV	1239.80	3	26, 696
MN II	1231.346	5	141	RU II	1239.877	50	675
SN III	1231.377	100	681	MG II	1239.925		592
TL III	1231.57 *	7	33, 451	AU II	1239.97	3	466
CO V	1231.73	15	286	AL IV	1240.18	2	693
TL II	1231.81	8	33, 194	MG II	1240.395		592
CR III	1231.88	30	488, 490	RU II	1240.647	20	675
HG IV	1231.93	3	26, 696	AL IV	1240.83	3	693
XE III	1232.07 *	25	335	BI II	1241.05	10	5, 138
HG I	1232.22		65	IN	1241.27	2	130
BR I	1232.433*	10	757	AS II	1241.29	3	572
TL	1232.57	2	33	CA	1241.6	1	411
RU III	1232.571	200	301	MN II	1241.626	10	141, 488
BI II	1232.78	2	5, 138	CD II	1241.67	15	25, 683
CR III	1232.96 *	50	488, 490	GA IV	1241.73	1	467
CD II	1233.10	20	683	HG III	1241.81	3	26, 331
MO III	1233.274	50	591	S I	1241.95	2	599
CO II	1233.32	5	683	TE VI	1242.11	0	583
PB V	1233.49 *	10	5, 466	I III	1242.12	1	400
FE II	1233.660	8	488	RU III	1242.153	20	301
HG II	1233.9	1	696, 698	HG III	1242.30	1	331
CR III	1233.92	20	488, 490	ZN III	1242.409	1	472
ZN III	1233.928	2	472	CD II	1242.54	75	25, 683
MN II	1233.952	30	141, 488	MU III	1242.719	40	591
I II	1234.063*	20000	344	N V	1242.778*	7	65, 168, 488
S II	1234.14 *	3	322, 488	SN II	1242.933	200	448, 681

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AS	1243.09 *	8	488, 572	NI	1252.86	2	405
N	1243.179	20	488, 794	BR	1253.24	6	400
HG	1243.20	2	26	CD	1253.24	3	25
ZN	1243.25	1	25	ZN	1253.35	2	25, 472
N	1243.309	15	488, 794	AU	1253.38	2	550
MO	1243.463	40	591	RU	1253.419	50	675
SN	1243.632*	500	291, 681	TE	1253.62	1	30
BR	1243.897	1	757	RU	1253.622	50	675
NI	1244.15 *	30	492	S	1253.79 *	5	322, 488
AU	1244.4	1	411	LI	1253.8 *	1	788
CR	1244.58	10	490	C	1253.816	5	794
I	1244.66 *	4	400	C	1253.880	2	65, 168
XE	1244.756	5	61, 65	HG	1253.93	1	26, 696
CD	1244.77	2	25	V	1253.99	30	488, 791
CR	1245.23	15	488, 490	CA	1254.3	2	335
PB	1245.29	1	5	TL	1254.34	2	194
BI	1245.37	4	5	MN	1254.410	15	141, 488
GA	1245.50	12	467	PD	1254.59 *	20	664
MN	1245.551	15	131, 141, 488	RU	1254.717	20	675
RU	1245.657	50	675	FE	1254.80	10	286
AS	1245.67	1	572	MO	1254.930	100	591
HG	1245.7	1	696	NE	1255.026	2	57, 65, 488
PD	1245.72	5	664	RU	1255.320	30	675
SE	1246.04	4	289, 354	NE	1255.685*	5	57, 65, 488
CD	1246.06	10	25, 293	CD	1256.00 *	100	25, 293, 683
PT	1246.420	2	671	MO	1256.166	50	591
CD	1246.56	8	25, 293	MN	1256.175	6	141
TI	1246.8	5	411	TE	1256.38	3	30
CR	1246.83	10	490	MN	1256.468	8	141, 488
RU	1246.887	50	675	C	1256.52	1	65, 168
CO	1246.91	8	286	SE	1256.63	2	289
CA	1247.0	2	411	MO	1256.754	80	591
S	1247.17	2	599	MN	1256.957	10	141, 488
C	1247.368	10	168, 488, 34	NE	1257.190*	6	57, 65, 488
CD	1247.39	2	25, 293	C	1257.218	2	65, 168
HG	1247.6	1	696	RU	1257.443	40	675
MN	1247.659	15	141, 488	V	1257.46	4	791
SN	1247.711	10	681	AL	1257.58	3	693
CR	1247.86	20	47, 488, 490	AU	1257.9	1	411
MN	1248.149	5	141	MO	1257.954	50	591
MO	1248.149	30	591	MN	1258.028	15	141, 488
PB	1248.47	6	5, 466	RU	1258.351	20	675
PT	1248.600	5	671	MN	1258.514	15	131, 141, 488
CR	1248.61	12	490	CR	1258.55	20	47, 488, 490
AL	1248.76	2	693	AS	1258.61	2	572
MN	1249.315	6	141	CO	1258.61	6	286
TL	1249.56	2	130	KR	1258.745	3	58
ZN	1249.62	1	25	N	1258.75	3	65, 243
P	1249.82	20	469, 594	GA	1258.75 *	15	467
PT	1249.881	1	671	HG	1258.86	1	26, 331
CD	1249.94	8	25, 293	NB	1258.87	10	760
CU	1250.049	10	488, 795	AL	1258.88	4	653
AS	1250.07	1	572	CR	1259.02	40	488, 490
XE	1250.199	2	61	MN	1259.046	12	141, 488
RU	1250.340	20	675	CD	1259.14	6	293
ZN	1250.375	1	472	I	1259.153	2500	344
PB	1250.45 *	9	5, 689	BR	1259.196	1	757
S	1250.50 *	3	322, 488	HG	1259.24	1	65, 696
I	1250.559	700	344	KR	1259.309	3	58
HG	1250.586*	4	539, 794	CR	1259.49	10	490
MN	1250.681	7	141	PT	1259.494	1	671
TL	1250.93	2	130	I	1259.510	3000	344
U	1251.0	2	411	C	1259.523	10	794
ZN	1251.024	2	472	S	1259.53 *	5	322, 488
HG	1251.08	4	26, 696	FE	1259.54 *	30	286
I	1251.335	600	344	C	1259.546	3	65, 540
AL	1251.35	1	693	SE	1259.56	4	289, 354
SN	1251.384*	2000	291, 681	MN	1259.561	8	141, 488
CR	1251.42	15	47, 488, 490	CR	1259.80	20	488, 490
BR	1251.668	1	757	SN	1259.916*	1000	291, 681
V	1252.12	40	488, 791	MN	1259.967	6	141
I	1252.35 *	8	400	RU	1260.502	50	675
TL	1252.49	1	33, 543	FE	1260.542	20	292, 488
CR	1252.61 *	50	47, 488, 490	C	1260.670	2	65, 168, 488
RU	1252.789	50	675	C	1260.738	4	488, 794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1260.817	20	675
C I	1260.930	8	794
TL	1260.94	2	33
C I	1260.955	2	65, 488
C I	1261.000	8	794
C I	1261.128	8	488, 794
I I	1261.269	800	344
MN II	1261.282	8	141, 488
RU II	1261.418	20	675
C I	1261.430	8	794
C I	1261.559	8	488, 794
C I	1261.560	8	488, 65
BR I	1261.659	2	757
FE IV	1261.72	10	286
CR III	1261.86	40	47, 488, 490
GE II	1261.87 *	18	406, 488
BI	1262.00	1	5
MO III	1262.229	100	591
CR III	1262.34	30	47, 488, 490
SE	1262.47	5	289
ZN III	1262.49	3	25, 472
AL IV	1262.51	1	693
S I	1262.83	2	599
I III	1262.95	2	400
CD IV	1262.98	6	293
W	1263.0	3	781
IN II	1263.23	1	413
BR II	1263.24	1	400
CO V	1263.28	5	286
ZN II	1263.43	2	682
FE IV	1263.47	15	286
RU II	1263.537	30	675
TL	1263.55	2	130
CR III	1263.61	35	488, 490
MO III	1263.768	100	591
AS II	1263.78 *	10	488, 572
HG IV	1263.83	1	26, 696
W	1264.0	3	781
AL IV	1264.14	3	693
SN II	1264.150	50	280, 681
CR III	1264.21	35	47, 488, 490
PT II	1264.337	10	671
MN II	1264.447	12	141, 488
NI V	1264.46 *	20	492
PB IV	1264.51	2	5
PT II	1264.561	8	671
TI	1264.6	10	411
CA	1264.6	2	411
GA IV	1264.60 *	10	467
HG II	1264.68	2	26, 698
GE II	1264.68 *	10	406, 488
PT II	1264.688	5	671
RU II	1264.726	100	675
PB V	1265.10	1	5
FE IV	1265.28	15	286
KR III	1265.315	4	58
BI II	1265.35	10	138
MN II	1265.387	10	141, 488
CU II	1265.509	15	488, 795
NA III	1265.66	2	758
ZN III	1265.68	5	25, 472
IN II	1265.96	2	413
HG IV	1265.98	1	26, 696
CR III	1266.14	15	47, 488, 490
TL III	1266.17 *	6	33, 543
MO III	1266.187*	200	591
BR I	1266.201	1	757
CD IV	1266.25	2	25, 293
PB III	1266.25	1	5
SB	1266.27	1	31
CU II	1266.308	10	488, 670
AS II	1266.36 *	10	488, 572
C I	1266.449	3	65, 168, 488
CU IV	1266.47	12	293
IN II	1266.66	2	413

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1266.686	50	591
FE II	1266.694	20	292, 488
PB III	1266.78	6	5, 689
GA IV	1267.11 *	18	402, 467
MO III	1267.151*	200	591
PD II	1267.27	10	664
RU II	1267.348	20	675
FE II	1267.437	25	292, 488
PB IV	1267.52	2	5, 139
I I	1267.569	600	344
I I	1267.596	600	344
NB V	1267.60	4	760
AS II	1267.61 *	10	488, 572
MO III	1267.996	50	591
TE VI	1268.01 *	3	583
CR III	1268.01	25	47, 488, 490
ZN III	1268.044	3	472
CD	1268.24	3	25
PT II	1268.752	10	671
HG I	1268.82		65
MO III	1268.872	20	591
MN II	1268.905	10	141, 488
AS III	1268.95	6	404, 580
SB	1269.04	1	31
MO III	1269.066	20	591
CR III	1269.11	25	488, 490
S I	1269.20	2	599
RU II	1269.324	50	675
MN II	1269.417	5	141
PD II	1269.62	10	664
HG III	1269.78	5	331, 696
PT II	1269.801	5	671
IN	1270.00	2	130
KR III	1270.204	5	58
BR II	1270.27	4	400
HG III	1270.33	2	331
MO III	1270.512	50	591
CA III	1270.54	2	39
CO V	1270.646	20	286, 673
S I	1270.78	4	599
FE IV	1271.08	15	286
HG III	1271.12	1	331
AU	1271.2	1	411
MG II	1271.239*		592
TL	1271.28	2	33
HG III	1271.58	2	331
RU II	1271.775	30	675
PT II	1271.784	2	671
SE	1271.81	3	289
CR III	1271.85	20	488, 490
MG II	1271.940*		592
FE II	1272.001	25	292, 488
S I	1272.07	1	599
ZN IV	1272.07	4	25
SN III	1272.089	30	681
CO V	1272.416	20	286, 673
FE II	1272.638	15	292, 488
AL IV	1272.70	3	693
MG II	1272.720*		592
TL IV	1272.85	1	33, 466
ZN IV	1272.90	4	25
TL	1273.03	3	130
CR III	1273.31	15	47, 488, 490
RU II	1273.344	200	675
MG II	1273.423*		592
PD II	1273.60	10	664
C I	1274.131	5	65, 488
AS III	1274.27 *	9	404, 580
AU	1274.3	1	411
MO III	1274.359	100	591
ZN III	1274.38	1	25, 472
CD IV	1274.41	8	25, 293
PB III	1274.53	4	5, 689
BI III	1274.56	10	404
TE	1274.72	3	30

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C I	1274.880	2	65, 168, 488	C I	1280.852	10	794
MO III	1274.918	50	591	C I	1280.892	4	65, 488
SB II	1274.94 *	4	31, 414	AS II	1281.01 *	8	488, 572
C I	1275.021	5	65, 168, 488	PT II	1281.340	20	671
MN II	1275.102	20	141, 488	RU II	1281.419	20	675
FE II	1275.154	15	292, 488	ZN III	1281.49	1	25, 472
I I	1275.255	1500	344	CA III	1281.50	2	39
I II	1275.424	2000	344	I III	1281.61	2	400
CU II	1275.575	30	488, 795	CO V	1281.63 *	30	286
I II	1275.596	1000	344	TE V	1281.67 *	6	30, 277
MO III	1275.623	50	591	CD II	1281.73	75	25, 683
BR I	1275.71	1	400	MO III	1281.902*	150	591
FE II	1275.801	20	292, 488	CR III	1281.98	20	490
MN II	1275.973*	40	131, 141, 488	CD II	1282.12	15	25, 683
ZN III	1276.01	1	25, 472	ZN IV	1282.38	1	25
MN II	1276.238	20	141, 488	HG III	1282.41	2	26
SN III	1276.314	40	681	CU II	1282.460	15	488, 795
TL III	1276.37	1	130, 543	TI III	1282.49	3	488, 604
MO III	1276.414	100	591	MO III	1282.875*	200	591
MN II	1276.450	8	141	BI IV	1283.08	2	5
MO III	1276.727	100	591	CD IV	1283.23	4	25, 293
N II	1276.754	3	168, 794	KR III	1283.313	3	58
MN II	1276.772	10	141, 488	ZN III	1283.46	2	25, 472
SE II	1276.81	2	289, 354, 468	AL IV	1283.48	0	693
NI V	1276.90 *	10	492	MN III	1283.566*	500	131, 488
CO V	1277.01 *	50	286	MO III	1283.590*	150	591
ZN II	1277.10	3	25, 682	BI II	1283.73	6	5, 138
MN II	1277.120	20	141, 488	KR III	1283.798	3	58
C I	1277.154	2	65, 488	SN V	1283.808*	100	280, 681
I II	1277.190	2500	344, 399	SB	1283.97	2	31
HG III	1277.19	5	26, 331, 696	CO V	1284.00	15	286
S I	1277.24	5	599	CR III	1284.09	20	47, 488, 490
C I	1277.282*	9	488, 794	V III	1284.23	15	488, 791
MO III	1277.446*	200	591	MO III	1284.233	100	591
XE I	1277.50	6	1, 476	HG III	1284.57	1	331
SB III	1277.50	4	31	ZN IV	1284.58	2	25, 697
ZN II	1277.54	4	472, 682	MO III	1284.798	100	591
C I	1277.551*	4	65, 794	HG IV	1284.89	2	26
MO III	1277.611*	200	591	GA IV	1285.28	12	467
C I	1277.617*	10	488, 540	MO III	1285.525	100	591
C I	1277.727*	20	794	RU II	1285.528	50	675
C I	1277.766	3	65, 488	CD IV	1285.63	10	25, 293
MN II	1277.817	20	141, 488	SN IV	1285.681	10	681
MO III	1278.102*	200	591	ZN III	1285.781	1	472
CD	1278.22	2	25	I II	1285.782	1500	344
MN II	1278.369	10	141	MO III	1285.833	100	591
CA III	1278.38	2	39	ZR IV	1285.94	15	342
MO III	1278.401*	200	591	SB IV	1285.98	2	31
SB III	1278.46	3	31	S IV	1286.063	1	38
RU II	1278.543	300	675	I II	1286.084	4000	344
MN II	1278.749	15	141, 488	BR I	1286.258	1	757
BI III	1279.00	0	5, 404	GA II	1286.38	5	652
ZN III	1279.019	2	472	TI III	1286.38 *	40	488, 604
MN II	1279.089	10	141, 488	SE II	1286.41	3	468
GA IV	1279.23	10	467	MO III	1286.413	100	591
C I	1279.230	8	794	PT II	1286.442	5	671
C I	1279.251	6	65, 488	CO V	1286.626*	28	286, 673
W	1279.4	3	781	TL	1286.98	2	130
PB III	1279.41	6	5, 689	W	1287.0	3	781
C I	1279.897	10	488, 794	CR III	1287.05	40	488, 490
CR III	1279.91	20	47, 488, 490	V III	1287.23	6	791
TE	1279.96	1	30	BI VI	1287.25	2	5
S I	1280.13	4	599	V III	1287.36	6	791
C I	1280.140	8	488, 794	CU II	1287.469	15	488, 795
BR I	1280.27	4	400	TE	1287.52	1	30
SI IV	1280.336	20	310	AS II	1287.57 *	9	488, 572
C I	1280.340	6	488, 794	CD IV	1287.58	10	25, 293
ZN IV	1280.40	4	25, 697	MN III	1287.583*	400	131, 488
C I	1280.403	5	794	BI V	1287.85	2	5
FE IV	1280.43	10	286	V III	1287.88	20	488, 791
IN II	1280.49 *	10	413	RU II	1287.965	20	675
C I	1280.604	8	794	MN II	1287.978	15	141, 488
C I	1280.646	2	65, 488	MO III	1288.100	50	591
RU II	1280.736	30	675	MO III	1288.278	50	591
HG III	1280.83 *	9	26, 65, 331	C I	1288.430	5	488, 794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C I	1288.633	2	65, 168, 488
V III	1288.64	8	791
MN III	1288.674	50	131, 488
MO III	1289.103	20	591
MN II	1289.132	15	141, 488
TI III	1289.32 *	30	488, 604
I I	1289.395	3000	344
CE IV	1289.4 *	50	335
V III	1289.42	30	488, 791
TE	1289.61	1	30
IN III	1289.80	2	290
CR III	1289.81	20	490
PT II	1289.940	3	671
C I	1289.983	3	65, 168, 488
ZN III	1290.016	2	472
HG III	1290.07	2	26, 331
FE II	1290.204	15	292, 488
IN III	1290.43	1	290
V III	1290.45	10	791
ZN IV	1290.46	2	25
MO III	1290.511	100	591
MN II	1290.525	8	141, 488
HG IV	1290.60	2	26
ZR IV	1290.60	20	342
RU II	1290.780	50	675
SN II	1290.886*	1000	448, 681
MN II	1290.926	10	141, 488
CR III	1290.93	20	488, 490
SE II	1290.97	8	468, 488
PB IV	1291.08	2	5, 139, 656
PT II	1291.137	10	671
CR III	1291.53	25	488, 490
SE II	1291.56	2	289
FE II	1291.594	15	292, 488
MN III	1291.597	300	131, 141, 488
CA	1291.6	2	411
TI III	1291.64 *	20	488, 604
PT II	1291.695	10	671
MN II	1291.702	10	141, 488
V III	1291.73	4	790, 791
ZN II	1291.77	5	25, 410, 682
CR III	1291.77	25	488, 490
BI II	1291.83	5	138
TE	1291.96	4	30
SI IV	1291.969	30	310
ZN III	1292.223	4	472
ZN III	1292.232	4	472, 682
ZN IV	1292.45 *	5	25
W	1292.7	2	781
V III	1292.77	20	488, 791
MN II	1292.866	15	141, 488
HG IV	1292.92	1	26
TI III	1293.26 *	30	488, 604
GA III	1293.50 *	4	402
CR III	1293.57	10	490
MN III	1293.649	200	131, 488
PT II	1293.953	15	671
KR III	1293.988	3	58
SN V	1294.357*	200	291, 681
SE II	1294.41	3	468, 488
BR III	1294.42	4	400
HG II	1294.56	1	26
SI III	1294.561*	300	488, 310
P II	1294.64	15	469, 594
TI III	1294.67 *	50	488, 604
MN II	1294.803	10	141, 488
FE II	1294.914	12	292, 488
MN II	1295.150	10	141, 488
ZN II	1295.26	2	25, 472, 682
MO III	1295.435	100	591
CO V	1295.55	25	286
XE I	1295.560*	8	61, 65
S I	1295.62	6	488, 599
BR III	1295.66 *	20	400
NB IV	1295.68	20	412

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1295.736	6	141
V III	1295.79	5	791
CO V	1295.87 *	40	286
GA IV	1295.90 *	15	402, 467
TI III	1295.91 *	30	488, 604
IN	1295.94	5	130
FE II	1296.088	20	292, 488
S I	1296.18	5	488, 599
C III	1296.30	2	65, 168
SB II	1296.41	1	31, 351, 414
I II	1296.416	3000	344
RU II	1296.425	50	675
MN II	1296.429	6	141
CD II	1296.43 *	150	25, 683
PB V	1296.43	3	5, 657
MN II	1296.669	5	141
ZN IV	1296.68	4	25
SI III	1296.733	250	488, 310
PT II	1296.821	15	671
MO III	1296.996	50	591
HG IV	1297.04	2	26
MO III	1297.173	50	591
NB IV	1297.81	25	412
CA III	1297.96	3	39
TE	1298.33	3	30
CU II	1298.394	15	488, 795
ZN III	1298.52	1	25, 472
TI III	1298.67 *	50	488, 604
ZN III	1298.709	1	472
HG	1298.93	3	26
PB IV	1298.93	1	5, 656
SI III	1298.930*	300	488, 310
SC	1298.95	2	17
TI III	1298.95 *	40	488, 604
GE	1299.0	3	130
MO III	1299.054	100	591
CU II	1299.269	10	488, 795
SB	1299.27	1	31
AS IV	1299.34 *	10	584, 585
CD IV	1299.46	10	25, 293
GA IV	1299.48 *	15	467
CO II	1299.574*	8	488
MO III	1299.820	100	591
BR III	1299.87	4	400
SN II	1300.235	50	681
I I	1300.335*	10000	344
IN	1300.61	3	130
NI V	1300.97	5	492
CO V	1301.12 *	35	286
ZN III	1301.12	3	25, 472
SI III	1301.152	250	488, 310
MO III	1301.711	50	591
P II	1301.87	20	469, 488, 594
AL IV	1302.13	2	693
O I	1302.173*	30	488, 794
SN V	1302.199*	100	280, 681
S I	1302.32	9	488, 599
PB V	1302.47	3	5
KR III	1302.586	2	58
PD II	1302.66	8	664
PD II	1302.85	7	664
MO III	1302.851	20	591
S I	1302.86	6	488, 599
I I	1302.983	3000	344, 399
S I	1303.12	7	488, 599
SI III	1303.321	250	488, 310
S I	1303.42	4	599
ZN III	1303.47	2	25, 472
GA IV	1303.48 *	15	467
MO III	1303.594	20	591
SN II	1303.900	30	681
CD IV	1304.36	14	25, 293
PT II	1304.421	5	671
P II	1304.47	20	469, 488, 594
MO III	1304.520	30	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
P II	1304.68	15	469, 488, 594	C I	1311.985	2	65, 168, 488
ZN III	1304.82	1	25, 472	ZN IV	1312.09	1	25
HG II	1304.85	1	26	RU II	1312.099	20	675
O I	1304.872*	30	488, 794	C I	1312.261	2	65, 168, 488
MO III	1305.058	30	591	SN II	1312.262	200	291, 681
PT II	1305.305*	30	671	TL II	1312.42	2	194
NI III	1305.344	100	661	N I	1312.44	3	334
P II	1305.48 *	35	469, 488, 594	CD	1312.56	2	25
MO III	1305.591	50	591	SI III	1312.597	250	488, 310
HG III	1305.61	3	26, 65, 331	W	1312.8	3	781
MN II	1305.628	15	141, 488	N I	1312.86	3	334
AS II	1305.72 *	10	488, 572	ZN III	1312.984	1	472
S I	1305.89	9	488, 599	PB IV	1313.06 *	40	5, 139, 656
SN III	1305.970*	1000	291, 681	IN	1313.15	2	130
O I	1306.036*	25	488, 794	N I	1313.20	3	334
CD IV	1306.07	12	293	TL III	1313.20	1	33, 543
MN II	1306.168	5	141	S I	1313.25	4	599
BI II	1306.18	6	5, 138	BI V	1313.28	2	5
MN II	1306.557	10	140	BR III	1313.28 *	10	400
ZN II	1306.56 *	6	25, 410, 682	V III	1313.31	30	488, 791
NI V	1306.60 *	10	492	RU II	1313.384	50	675
MG II	1306.714*	592	31, 407	I I	1313.432	1500	344
SB III	1306.81 *	6	131, 141, 488	N I	1313.47	3	334
MN II	1306.814	10	30	C I	1313.471	6	65, 168, 488
TE	1306.85	1	400	HG IV	1313.49	1	26
I III	1306.93 *	5	488	SE I	1313.53	3	600
CO II	1306.966*	8	585	MN II	1313.766	10	141, 488
SE IV	1307.24 *	7	490	TE VI	1313.90 *	3	583
CR III	1307.24	10	25, 472	I I	1313.947	3000	344
ZN III	1307.40	1	194	CU II	1314.147	15	488, 795
TL II	1307.50 *	15	65	CU II	1314.338	30	488, 795
HG I	1307.76	3	572	SE IV	1314.43 *	8	585
AS II	1307.76	3	592	SN IV	1314.547	1000	408, 681
MG II	1307.875*	1	26, 698, 794	NB III	1314.56	60	320
HG II	1307.928	1	490	PD II	1314.61	5	664
PB V	1308.10	6	5, 657	GA IV	1314.81	5	467
CR III	1308.27	15	592	ZN III	1314.840	1	472
MG II	1308.280*	30	488, 795	CR III	1315.00	10	488, 490
CU II	1308.297	10	400	CO IV	1315.12	4	25, 293
BR III	1308.46 *	4	194	CO II	1315.419	4	488
TL II	1308.50	2	65, 168	C I	1315.903	4	65, 168, 488
C III	1308.73	3	334	MN II	1316.155	9	141, 488
N I	1308.86	8	468, 488	CR III	1316.16	20	490
SE II	1308.89	2	25	SE I	1316.26	3	600
CD	1308.91	20	488, 490	MO III	1316.269	50	591
CR III	1309.34	20	591	AU	1316.4	2	411
MO IV	1309.386	592	469, 488, 594	CR III	1316.40	20	488, 490
MG II	1309.443*	15	488, 795	RU II	1316.573	50	675
CU II	1309.464	4	790, 791	SN II	1316.574	100	448, 681
V III	1309.54	10	467	S I	1316.59	8	488, 599
GA IV	1309.65	3	671	BR I	1316.738*	8	757
PT II	1309.843	25	469, 488, 594	RU II	1316.740	20	675
P II	1309.87 *	5	757	CD IV	1316.89	8	293
BR I	1309.902	1	413	BI IV	1316.952*	20	5, 449
IN II	1310.10	1	25	CD IV	1316.99	4	25, 293
ZN IV	1310.14	8	194	BI IV	1317.076*	20	5, 449
TL II	1310.20	5	599	BI IV	1317.175*	20	5, 449
S I	1310.21	3	25	NI II	1317.221	8	488, 794
CD	1310.27	50	591	V III	1317.25	20	488, 790, 791
MO III	1310.406	25	488, 794	RR I	1317.402	3	400, 757
N I	1310.548	1	39	I I	1317.542	3000	344
CA III	1310.58	4	65, 168, 488	CA III	1317.60	2	39
C I	1310.646	20	591	SB II	1317.61	1	31, 414
MO III	1310.676	60	469, 488, 594	BR I	1317.701*	8	488, 757
P II	1310.70 *	20	591	TL II	1317.75	3	194
MO III	1310.863	25	488, 794	MO III	1317.883	50	591
N I	1310.952	2	671	SN II	1317.905	25	681
PT II	1310.973	1	30	ZN IV	1317.92	4	25
TE	1311.02	1	472	HG III	1318.07	1	331
ZN III	1311.169	8	168, 488, 794	N I	1318.13	3	334
C I	1311.365	1	411	CO II	1318.180	2	488
AU	1311.6	5	488	CD IV	1318.19	2	25
CO II	1311.856	20	591	SE II	1318.25	7	468, 488
MO III	1311.873	4	781	PB VI	1318.27	2	5
W	1311.9			NI V	1318.47 *	20	492

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	1318.597	50	591
MO III	1318.922	50	591
CD IV	1318.94	4	25, 293
S I	1318.97	4	599
N I	1319.003	20	488, 794
ZN II	1319.09	4	25, 472, 682
NB III	1319.15	50	320, 412
MN II	1319.209	10	141, 488
MO III	1319.334*	150	591
N I	1319.684	30	488, 794
CR IV	1319.71	30	791
PD II	1320.05 *	35	664
PT II	1320.158	1	671
IN I	1320.2 *	4	130, 274
ZN IV	1320.62	4	25
CU II	1320.688	10	488, 795
ZR III	1320.81	30	342
N I	1320.83	3	334
HG III	1321.04	1	26, 331
ZN IV	1321.19	3	25
N I	1321.60	4	334
TL II	1321.71	3	33, 194
HG II	1321.712	1	26, 698, 794
CD IV	1321.85	8	293
ZN IV	1322.32	4	25
IN II	1322.51	2	413
CR III	1322.83	10	488, 490
PT II	1323.065	5	671
GA III	1323.15 *	6	402
HG III	1323.22	3	26, 331
GE III	1323.24	4	406
PT II	1323.276	15	671
IN I	1323.3 *	2	130, 274
S I	1323.52	10	488, 599
TL IV	1323.58	1	33, 466
ZN III	1323.59	2	25, 472
MN II	1323.745	15	488
MN II	1323.784	15	141, 488
C II	1323.916	8	168, 488
PB IV	1323.92	1	656
HG III	1323.97	1	331
SB III	1324.03	2	31
N III	1324.40	3	65, 246
CR IV	1325.08	40	791
SB II	1325.31	2	31
BR III	1325.38 *	10	400
BI II	1325.46	5	5, 138
CD IV	1325.55	10	25, 293
CR IV	1325.83	10	791
ZN III	1325.891	1	472
CU II	1326.396	10	488, 795
HG III	1326.40	2	26, 65, 331
IN I	1326.5	2	130
CD II	1326.50 *	100	25, 683
NB III	1326.56	20	320
N I	1326.572	15	488, 794
S I	1326.64	9	488, 599
Zn III	1326.66	4	25, 472
BI III	1326.84 *	9	5, 138
SN III	1327.345*	1000	291, 681
PT II	1327.421	1	671
MN II	1327.476	12	141, 488
SB II	1327.55	2	31, 351, 414
TI III	1327.60	15	488, 604
CD IV	1327.78	2	25
CR III	1327.79	10	490
GA II	1327.81	5	652
N I	1327.927	10	488, 794
NI III	1328.084	75	661
BR III	1328.10 *	15	400
ZN II	1328.40	5	25, 472, 682
BI V	1328.48	2	5
ZN III	1328.561	1	472
SE I	1328.75	4	600
C I	1328.836	3	491, 488, 794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C I	1329.108*	5	491, 488, 794
ZN IV	1329.15	2	25
V III	1329.21	8	791
PD II	1329.34	5	664
CD IV	1329.42	3	25
BI II	1329.47	8	5, 138
C I	1329.590*	10	488, 540, 794
SB III	1329.67	3	31
MO III	1329.989	20	591
PT II	1330.051	5	671
I I	1330.189	2000	344
ZN IV	1330.27	3	25, 472
SE I	1330.55	4	600
BR III	1330.55 *	10	400
MN II	1330.606	12	141, 488
HG III	1330.77	5	26, 331
IN I	1330.9	6	130
ZN III	1330.924	3	472
BA	1331.1	2	335
PD II	1331.61	5	664
HG II	1331.737	2	26, 696, 794
ZN IV	1331.75	2	25
NB III	1331.79	10	320
V III	1331.94 *	50	488, 791
CE IV	1332.2 *	75	335
CR IV	1332.51	50	791
AS IV	1333.18	2	584
ZN IV	1333.20	4	25
SE II	1333.32	3	354, 468
CD IV	1333.53	6	293
HG	1334.14	2	26
C II	1334.520*	13	168, 488, 794
TL	1334.59	2	130
HG II	1334.6	1	698
SN III	1334.699	200	291, 681
P III	1334.866*	10	488, 597
CA III	1334.94	3	39
AG II	1334.97	0	283
V III	1335.09 *	45	488, 791
MO III	1335.144	50	591
HG	1335.184	3	26, 331, 794
MN II	1335.268	25	141, 488
PB II	1335.29	8	5, 163
HG III	1335.50	3	331
C II	1335.692*	14	168, 488, 794
NB III	1335.70	30	320
CL I	1335.723	9	415, 6, 488
TL	1335.79	3	130
ZN III	1335.843	2	472
MO IV	1336.163	50	591
AU II	1336.23	3	550
I I	1336.479*	10000	344
I II	1336.517*	20000	344
MO IV	1336.548	20	591
MO IV	1336.696	50	591
SB II	1336.72	1	414
HG III	1336.84	5	26, 331
TL IV	1337.16 *	4	33, 466
W	1337.3	4	781
NA III	1337.39	6	758
CD IV	1337.44	3	25
P III	1337.498	1	597
P III	1337.710	2	597
PT II	1337.856	5	671
AL	1337.86	1	693
SB V	1338.06	2	31
GA IV	1338.15 *	15	467
NB III	1338.21	20	320
NB III	1338.36	10	320
MO IV	1338.377	50	591
RU II	1338.388	20	675
O IV	1338.603	6	65, 168
HG IV	1338.7	2	696
TL	1338.71	2	130
ZN III	1338.71	2	25, 472

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN II	1338.96	2	472, 682	PB IV	1348.87	6	5, 139, 656
CD IV	1339.26	3	25	I I	1348.903	800	344
CR IV	1339.65	10	791	MO IV	1348.923	30	591
IN I	1339.68 *	1	130, 274	P III	1349.110	3	597
MO IV	1339.701	20	591	PT II	1349.161	3	671
TI III	1339.72	2	604	PT II	1349.226	5	671
HG IV	1339.82	3	26	TL III	1349.47	1	130, 543
I I	1339.903	800	344	CO IV	1349.61 *	3	492
MO IV	1339.939	50	591	SB II	1349.82	2	31, 351, 414
NB III	1340.13	40	320	ZN IV	1349.87 *	5	25, 697
ZN IV	1340.14	3	25, 697	BI II	1350.07	20	138, 404
I I	1340.709	1500	344	HG II	1350.074	4	26, 696, 794
RU II	1340.754	50	675	AL II	1350.15	6	653
CD IV	1340.97	12	25, 293	I I	1350.206	600	344
MO IV	1341.001	20	591	Y	1350.4	3	335
MO IV	1341.348	50	591	CU II	1350.595	15	488, 795
SI III	1341.452	200	310	ZN III	1350.651	2	472
AS II	1341.53	1	572	MO IV	1350.709	50	591
SF I	1342.04	4	600	GA IV	1351.03	2	467
CA II	1342.07	1	186, 488, 648	IN	1351.10	5	130
NI III	1342.148	50	661	CO V	1351.22	6	286
CD IV	1342.20	2	25	NI III	1351.256	30	661
RU II	1342.350	50	675	MO IV	1351.259	50	591
SI III	1342.384	180	310	AS IV	1351.34 *	7	584
ZN IV	1342.69	2	25	BR II	1351.53	3	400
AS IV	1342.69	7	584	SC I	1351.62	4	600
MO IV	1342.757	50	591	CL I	1351.657*	10	415, 6, 488
O IV	1342.995	4	65, 168	CU II	1351.841	25	488, 795
PB IV	1343.09	4	5, 139	MO III	1351.843	100	591
N II	1343.37	2	65, 168	NI III	1352.052	20	661
SI III	1343.389	150	310	CD IV	1352.69	3	25
AL	1343.5	1	484	ZN IV	1352.73 *	5	25, 697
O IV	1343.507	7	65, 168	MO IV	1352.825	50	591
GE	1343.6	3	130	GE	1352.9	2	130
I I	1343.626	1000	344	AL III	1352.92	2	190
P III	1343.687	1	597	HG III	1352.94	1	26, 65, 331
HG IV	1343.75	2	26, 696	V III	1352.99	10	791
ZN IV	1343.84 *	6	25	SE I	1353.02	7	600
PI II	1344.012	8	671	CD II	1353.08	40	683
MO IV	1344.128	50	591	CO V	1353.42	15	286
ZN	1344.26	1	25	S I	1353.47	1	599
P III	1344.343*	15	488, 597	NI III	1353.512	20	661
MN II	1344.352	5	141	AL IV	1353.73	0	693
MO IV	1344.352	20	591	SE I	1353.86	7	600
IN	1344.63	5	130	CD IV	1353.89	3	25
P III	1344.900*	10	488, 597	AS IV	1353.93 *	6	584
CR III	1345.12	10	490	GA III	1353.94 *	8	402
TE	1345.20	2	401	ZN III	1353.947	2	472
PT II	1345.435	3	671	MN II	1354.084	5	141
SE I	1345.54	4	600	ZN III	1354.15	1	25, 472
PD II	1345.57 *	25	664	HG II	1354.274	2	26, 65
CO V	1345.67 *	50	286	SE I	1354.63	5	600
N III	1345.69	4	65, 246	CD IV	1354.78	12	25, 293
NB III	1345.96	40	320	AU	1354.9	1	411
MO IV	1346.007	50	591	AS IV	1355.06	2	584
SN III	1346.049	200	291, 681	I I	1355.099	5000	344
BI III	1346.12 *	15	5, 138	SB II	1355.15	1	31
CD IV	1346.15	8	25, 293	CO V	1355.20 *	40	286
N III	1346.27	4	65, 246	ZN III	1355.250	3	472
CD IV	1346.45	4	293	CU II	1355.308	15	488, 795
MN III	1346.562	100	131	CA III	1355.37	1	39
PT II	1346.950	5	671	I I	1355.542	2000	344
GA IV	1346.99	3	467	O I	1355.598	2	488, 794
P III	1346.998	3	597	C I	1355.825	6	65, 168, 488
CL I	1347.238*	12	415, 6, 488	N I	1355.887	6	191
BR	1347.3	1	763	ZN III	1355.931	3	472
ZN III	1347.302	2	472	MO IV	1355.995	50	591
AS IV	1347.51 *	9	584	AS II	1356.02	3	488, 571
MN III	1347.597	80	131	ZN IV	1356.15	4	25
SN III	1347.652*	1000	681	AS IV	1356.36	2	584
BI II	1347.94	8	138	SB II	1356.41	1	31, 414
ZN IV	1347.98 *	5	25	BR III	1356.73	5	400
PB II	1348.30	4	5, 163	C I	1357.058	3	65, 168, 488
RU II	1348.385	200	675	C I	1357.140	5	794
SE I	1348.40	5	600	CR III	1357.20	15	488, 490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
HG II	1357.321	1	26, 65, 452	MN III	1365.206*	800	131, 488
CO V	1357.67 *	30	286	SI III	1365.250	250	310
ZN IV	1357.77	4	25	SN II	1365.277	30	681
NI III	1357.802	50	661	CR III	1365.29	20	488, 490
BR III	1357.91	3	400	RU II	1365.465	20	675
I I	1357.971	3000	344	SB II	1365.54	2	31
CD IV	1358.11	10	25, 293	MG II	1365.544*		592
SB II	1358.16	3	13, 31, 414	PD II	1365.58	15	664
CD IV	1358.49	6	293	ZN III	1365.61	3	25, 472
TL IV	1358.52	1	33, 466	FE V	1365.73	3	47
O I	1358.524	5	165, 488	PD II	1365.80 *	25	664
ZN II	1358.751	1	472	MO IV	1365.864	30	591
CU II	1358.781	30	488, 795	I I	1366.506	800	344
CU II	1359.009	20	488, 795	CR III	1366.63	12	490
C I	1359.329	2	65, 168, 488	ZN III	1366.698	3	472
AL IV	1359.49	0	693	TE	1366.73	2	401
ZN III	1359.618	3	472	ZN III	1366.91	2	25, 472
HG III	1359.65	1	331	HG III	1367.02	1	26, 331
ZN III	1359.67	4	25, 472	SI III	1367.041	150	310
SE I	1359.72	3	600	CD IV	1367.12	2	25
SB	1359.80	1	31	MG II	1367.256*		592
CA III	1359.81	1	39	CR III	1367.39	15	490
CD IV	1359.86	4	293	MG II	1367.708*		592
BR III	1360.19	3	400	I I	1367.714	2500	344
CD IV	1360.36	2	25	TL	1367.72	3	130
HG III	1360.49	3	26, 65, 331	PD II	1367.76 *	25	664
IN	1360.5	3	130	BI I	1367.94	3	134
MN III	1360.704*	1000	131, 488	CU II	1367.957	25	488, 795
MO III	1360.782	100	591	BR III	1368.03	7	400
HG III	1360.93	3	26	ZN III	1368.15	2	25, 472
I I	1360.965	5000	344	I I	1368.217	2500	344
BA	1361.0	2	335	CO V	1368.24 *	30	286
I I	1361.111	3000	344, 399	MO III	1368.319	50	591
CR III	1361.15	20	490	PT II	1368.372	10	671
CR III	1361.30	20	490	W	1368.4	2	781
CO V	1361.32	20	286	CR III	1368.60	15	488, 490
FE V	1361.42	5	47	PT II	1368.815	1	671
SI III	1361.589	150	310	CA II	1369.1 *	3	242, 539, 648
ZN III	1362.010	4	472	RU II	1369.106	50	675
MO IV	1362.271	30	591	PT II	1369.362	10	671
AU II	1362.36	6	550	MN III	1369.419*	400	131, 488
HG III	1362.45	2	26	MG II	1369.423		592
CO V	1362.46 *	30	286	SI III	1369.435	40	310
B II	1362.460*	5	65, 168, 488	MO IV	1369.454	20	591
GE	1362.5	4	130	ZN	1369.50	5	25
ZN III	1362.50	2	25, 472	SN III	1369.712	200	277, 681
CD IV	1362.55	12	25, 293	AS II	1369.78	5	488, 572
CU II	1362.601	20	488, 795	RU II	1369.852	30	675
BI III	1362.73	2	138	AG II	1370.02	2	283
FE II	1362.771	20	488	NI II	1370.136	5	488, 794
FE V	1363.00	4	47	MO IV	1370.299	40	591
S I	1363.04	3	599	ZN III	1370.44	1	25, 472
AU II	1363.20	8	550	CD IV	1370.48	16	25, 293
TE	1363.24	2	401	CA II	1370.6 *	3	242, 539, 648
CL I	1363.449*	10	415, 6, 488	SN II	1370.654	30	681
SI III	1363.465	170	310	BI III	1370.86	3	138
ZN III	1363.50	1	25, 472	MO III	1370.879	100	591
FE V	1363.72	3	47	TL II	1370.88	3	194
NB IV	1363.76	25	412	CD II	1370.91 *	150	683
PD II	1363.76 *	20	664	FE II	1370.985	20	645
SN II	1363.801	30	681	AL II	1371.26	2	653
KR III	1363.851	2	80	O V	1371.287*	10	65, 168, 488
ZN IV	1363.98 *	5	25	GE	1371.3	2	130
C I	1364.140	6	65, 168, 488	ZN III	1371.34	1	25
C I	1364.165	8	794	AG II	1371.44	0	283
CO V	1364.17 *	30	286	ZR III	1371.50	20	342
ZN III	1364.346	4	472	MO IV	1371.620	30	591
CD IV	1364.37	4	25, 293	MN III	1371.649	300	131, 488
FE II	1364.590	12	488	CD II	1371.65	50	25, 683
GA IV	1364.60	1	467	PB III	1371.75	6	5, 657
AG II	1364.60	0	283	HG IV	1371.8	1	696
AU II	1364.78	10	550	CU II	1371.839	20	488, 795
MO IV	1364.806	30	591	SB	1371.85	1	31
SE I	1364.83	3	468, 600	SE II	1372.51	1	354, 468
FE V	1365.14	3	47	AG II	1372.57	0	283

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
BI	II	1372.61	25	5, 138	SB	III	1379.68 *	6	31, 407
CE	IV	1372.7 *	75	335	GA		1379.74	3	130
P	III	1372.711	3	597	IN		1379.75	3	130
BR	II	1372.72	4	400	P	III	1379.873	5	488, 597
SB	II	1372.87	1	31, 414	BI	I	1380.01	1	134
SJ	III	1373.024	50	310	HG	III	1380.17	3	26
CO	V	1373.09 *	30	286	FE	V	1380.18	2	47
CL	I	1373.118	4	6	CO	V	1380.21	10	286
PT	II	1373.164	1	671	GE	II	1380.43	8	488
P	I	1373.49	20	469	AU	II	1380.43	8	550
AG	II	1373.50	0	283	P	III	1380.464*	10	488, 597
TL	II	1373.52 *	10	194	PT	II	1380.475	10	671
HG	III	1373.60	3	331	I	II	1380.501	500	344
AS	II	1373.65	4	488, 571	SN	II	1380.702	50	681
ZN	II	1373.66	1	25, 472	ZN	III	1380.873	1	472
FE	V	1373.68 *	6	47	SE	II	1380.96	1	468
W		1374.1	3	781	CD	IV	1380.98	12	25, 293
NI	II	1374.14	3	405, 488	W		1381.0	1	781
CD	IV	1374.43	3	25	P	III	1381.111*	10	488, 597
ZN	III	1374.53	1	25, 472	FC	II	1381.250	10	488
TL	IV	1374.61	3	33, 466	NI	II	1381.36	4	405, 488
TE		1374.80	2	401	AI	II	1381.44	2	466
PT	II	1374.878	10	671	P	I	1381.47	25	469, 594
PD	II	1374.92 *	50	664	S	I	1381.55 *	15	488, 599
SB	II	1374.93	1	31, 351, 414	P	I	1381.65	15	469, 488, 597
AS	II	1375.07 *	10	488, 572	AS	IV	1381.76	6	335
ZR	III	1375.13	25	342	IN	IV	1381.87 *	5	130, 274
FE	II	1375.134	15	645	CD	IV	1381.88	2	25, 293
CO	V	1375.20 *	30	286	CR	III	1382.19	10	490
ZN	IV	1375.32	3	25	PD	II	1382.23	3	664
CR	III	1375.56	20	490	MO	III	1382.264	50	591
BI	II	1376.02	15	5, 138	I	I	1382.284	1200	344
ZN	I	1376.04	00	25, 242	MN	II	1382.298	10	141, 488
NI	III	1376.183	15	661	V	III	1382.53	10	791
FE	V	1376.45 *	6	47	SE	I	1382.56	3	600
PT	II	1376.735	15	671	TL		1382.70	3	130
CU	III	1376.807	30	684	SR	II	1383.14	1	31
CD		1376.89	3	25	HG	III	1383.19	5	26, 331
SI	III	1377.045	15	310	I	I	1383.225	4000	344
P	I	1377.06	20	469	PT	II	1383.266	3	671
NI	III	1377.077	15	661	CD	III	1383.60	5	25, 683
ZN	III	1377.394	2	472	CD		1383.72	3	25
CU	III	1377.504	30	670, 684	CR	III	1383.79	25	488, 490
ZN	III	1377.64	5	25, 472	CO	III	1383.971	20	673
TL	IV	1377.73 *	5	33, 466	AI	III	1384.144*	8	190
KR	III	1377.833	2	58	GA		1384.16	3	130
HG	III	1377.85	4	26, 65, 331	IN		1384.10	5	130
BR	III	1377.89	8	400	CO	III	1384.187	50	673
IN		1377.9	2	130	GE		1384.20 *	7	130
CA	II	1377.9	2	335	HG	III	1384.54	2	26
P	I	1377.93	20	469, 594	BR	I	1384.602*	10	488, 757
MN	II	1377.938	15	141, 488	MO	IV	1384.613	50	591
SE	I	1377.98	10	488, 600	SB	II	1384.77	3	31, 414
V	III	1378.00	15	791	PD	II	1384.79	3	664
CO	V	1378.208	25	286, 673	FE	V	1385.32	2	47
B	I	1378.43 *	3	134	CA	III	1385.30	2	39
AI		1378.5	1	411	AU		1385.5	3	411
CO	III	1378.665	10	673	S	I	1385.51	12	488, 599
B	I	1378.69 *	5	134	SE	I	1385.54	8	600
CR	III	1378.89	15	490	CD	IV	1385.55	6	25, 293
ZR	III	1378.93	30	342	ZR	III	1385.75	10	342
PT	II	1378.947	3	671	MN	II	1385.892	10	141, 488
B	I	1378.95 *	3	134	CD	IV	1386.01	4	25
HG	III	1378.95	4	26, 65, 331	W		1386.1	1	781
CA	II	1379.0	3	335	NB	IV	1386.23	20	412
CO	V	1379.05	10	286	SN	III	1386.737*	1000	277, 681
CD	IV	1379.19	2	75	BR	II	1387.12	6	400
P	I	1379.40	25	469, 594	MO	IV	1387.212	50	591
FE	II	1379.434	10	645	N	III	1387.31	4	65, 168, 246
NB	III	1379.48	30	320	ZN	III	1387.71 *	7	25, 472
MO	III	1379.501	100	591	MN	II	1387.749	6	141
CL	I	1379.529*	11	415, 6, 488	SI	III	1387.975	50	310
ZN		1379.55	2	25	FE	V	1388.07	5	47
BR		1379.6	1	763	S	I	1388.39	12	488, 599
AL	III	1379.670*	6	190	AL	IV	1388.77	2	693

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SB I	1388.91	40	31, 477
PB IV	1388.97	5	5, 139, 657
CO III	1389.079	10	286, 673
S I	1389.16	5	488, 599
W	1389.5	1	781
ZN III	1389.59	2	25, 472
CL I	1389.688	6	6
CR III	1389.73	15	490
NI III	1389.735	20	661
V III	1389.79	20	488, 791
PT II	1389.875	8	671
CL I	1389.961	6	415, 6, 488
CD IV	1390.01	2	25
SB I	1390.32	50	477
ZN II	1390.434	1	472
I I	1390.750	3000	344
SE I	1390.99	6	600
AU	1391.0	1	411
SN II	1391.100	100	681
SE I	1391.27	4	600
ZN III	1391.32	2	25, 472
SB I	1391.46	25	31, 477
CR III	1391.61	15	488, 490
TL II	1391.88	4	194
W	1391.9	1	781
CD III	1392.10	15	25, 471, 683
SE I	1392.13	5	600
GE II	1392.27	4	488
NI III	1392.377	30	661
CR III	1392.40	10	490
S I	1392.59	12	488, 599
I I	1392.898	2000	344
SE I	1392.97	4	468, 600
HG IV	1392.98	3	26
ZN IV	1393.02	2	25
CU II	1393.126	10	488, 670, 684
HG III	1393.322	1	331, 794
NI II	1393.36	2	405
PT II	1393.386	5	671
TI	1393.4	40	411
CA	1393.4	8	411
SN II	1393.516	200	681
RU II	1393.535	20	675
MO IV	1393.670*	100	591
GA	1393.74	3	130
AU II	1393.75	6	550
SI IV	1393.765*	250	488, 310
GE	1393.8 *	8	130
ZN III	1393.81	3	25, 472
IN	1393.90	4	130
BI II	1393.92	20	5, 138
SB I	1393.96	15	477
CD IV	1394.13	2	25
MO III	1394.161	50	591
W	1394.2	3	781
CR III	1394.33	10	490
AS II	1394.61	4	488, 571
FE V	1394.77	3	47
ZN III	1394.77	3	25, 472
CD IV	1394.99	2	25
PB IV	1395.14	1	5, 656
TE	1395.22	1	401
SE I	1395.43	10	488, 600
GA IV	1395.51	4	467
HG IV	1395.57	1	26
GE	1395.6	5	130
TL III	1395.80	1	130, 543
ZN III	1395.80	1	25, 472
SE I	1395.88	10	488, 600
S I	1396.10 *	15	488, 599
CR III	1396.42	10	490
NB III	1396.52	15	320
CL I	1396.527	8	415, 6, 488
CD III	1396.78	10	25, 683
BI II	1396.91	5	138

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PB IV	1397.03	2	5, 139
MN II	1397.394	6	141
PD II	1397.46	15	664
FE II	1397.581	12	488, 645
HG III	1397.59	1	26
CD IV	1397.65	10	25, 293
BI I	1397.67	1	134
BA II	1397.83		649
AU II	1398.06	8	550
PT II	1398.407	3	671
PT II	1398.555	3	671
CU II	1398.641	10	488, 795
CR III	1399.05	10	490
MO V	1399.097	10	591, 761
AG II	1399.51	0	283
I I	1400.014	2000	344
AG II	1400.15	2	283
PB IV	1400.26	6	5, 139
FE V	1400.30	4	47
AS II	1400.32	4	572
CR III	1400.34	15	488, 490
HG II	1400.406	2	65, 452
SN II	1400.454*	1000	448, 681
HG III	1400.53	4	26, 65, 453
W	1400.6	2	781
CA	1400.7	4	335
NI III	1401.214	15	661
GE II	1401.29 *	10	488
S I	1401.50	10	488, 599
CR III	1401.55	10	490
TL	1401.60	3	130
ZN III	1401.74	1	25, 472
SE I	1401.92	4	600
BR II	1402.01	4	400
PT II	1402.236*	50	671
CO III	1402.415	10	673
FE V	1402.45 *	6	47
GA IV	1402.70	2	467
HG I	1402.72	00	26, 65
SI IV	1402.764*	200	488, 310
CU II	1402.776	15	488, 795
GE	1402.8 *	6	130
CA	1402.9	10	411
ZN IV	1402.91	3	25
CD IV	1402.96	3	25
IN III	1403.03 *	10	230, 408, 590
NI III	1403.113	15	661
TI	1403.2	40	411
HG III	1403.42	2	331
ZR III	1403.48	40	342
PD II	1403.59 *	25	664
CD IV	1403.68	12	25, 293
ZR III	1403.74	20	342
PT II	1403.896	10	671
CO III	1404.009	10	673
CD II	1404.11	75	683
ZN I	1404.118		242, 314
SB II	1404.19 *	7	31, 407, 414
PB IV	1404.34	1	5, 139, 656
SE I	1404.45	8	488, 600
HG II	1404.484	5	26, 65, 452
TL IV	1404.61 *	4	33, 466
TE IV	1404.70	1	401, 583
AL IV	1404.72	2	693
PT II	1404.736	2	671
TE	1404.99	1	401
HG III	1405.11	3	331
PB IV	1405.14	1	5
AU II	1405.17 *	30	550
AG III	1405.25	6	284
RU II	1405.338	50	675
SE I	1405.37	10	488, 600
GA IV	1405.55	0	467
GE II	1406.19	5	488
IN	1406.20	5	130

SYMBOL				WAVELENGTH INTENSITY				REFERENCE NUMBERS			
NI	III	1406.250	50	661	AG	II	1416.26	1	283		
ZN	III	1406.36	2	25, 472	CD	III	1416.28	25	25, 683		
SE	I	1406.37	10	488, 600	BR		1416.5	2	763		
PB	III	1406.48 *	8	5, 689	SE	I	1416.84	8	488, 600		
HG	III	1406.49	2	26	AU		1416.9	1	411		
TE	V	1406.56 *	10	277	NI	III	1416.956	75	661		
MO	IV	1406.562	50	591	HG	II	1417.002	6	26, 65, 452		
SE	I	1406.60	10	488, 600	BA	II	1417.14	2	649		
SB	I	1406.68	20	477	SI	III	1417.229*	300	488, 310		
FE	V	1406.78	7	47	PT	II	1417.534	20	671		
CR	III	1406.90	10	490	AL	IV	1417.58	0	693		
PD	II	1407.06	5	664	ZR	IV	1417.73	75	342, 488		
CU	II	1407.170	15	488, 795	NI	III	1417.736	20	661		
SB	II	1407.89	3	31, 351, 414	FE	II	1417.744	20	488, 645		
MO	IV	1408.238	20	591	MN	II	1417.949	10	141, 488		
ZR	III	1408.40	15	342	MO	III	1418.025	30	591		
FE	II	1408.447	20	645	W		1418.1	1	781		
U		1408.5	3	411	HG	II	1418.29	1	26		
ZN	III	1408.69	1	25, 472	CU	II	1418.429	25	488, 795		
S	I	1409.92	12	488, 599	IN	II	1418.43	2	413		
FE	V	1409.51	7	47	MN	II	1418.480	15	140, 488		
AL	IV	1409.52	0	693	MN	II	1418.632	12	140, 488		
AU	II	1409.67	1	550	ZN	IV	1418.05	1	25		
BI	I	1409.81	3	134	CD	IV	1418.89	16	25, 293		
BR	II	1410.10	4	400	V	IV	1419.56	15	790		
PT	II	1410.127	10	671	MN	II	1419.612*	40	141, 488		
SI	II	1410.219	10	310	BR	II	1419.77	2	400		
NI	III	1410.344	15	661	TI	III	1420.04	15	604		
SN	III	1410.613*	500	291, 681	ZR	III	1420.12	35	342		
CD	IV	1410.65	3	25	BI	IV	1420.21	2	5, 449		
AU	II	1410.98	7	550	MN	II	1420.239	8	141, 488		
ZN	IV	1411.03	2	25	RU	III	1420.27	30	301		
MN	II	1411.070	25	141, 488, 794	CD	III	1420.29	5	683		
BR	II	1411.29	5	400	GE	II	1420.39	4	488		
CU	IV	1411.69 *	30	492	TI	III	1420.42	15	604		
N	I	1411.948	30	488, 794	NI	III	1420.448	75	661		
NB	III	1411.97	20	320	CD	III	1420.54	8	25, 683		
MO	II	1412.027	20	591	RU	II	1420.606	100	675		
RU	II	1412.206	50	675	SE	I	1420.64	8	600		
AL	IV	1412.24	0	693	LI	II	1420.7 *	1	788		
NI	III	1412.304	50	661	CR	III	1420.81	10	490		
I	III	1412.34	1	400	AG	III	1420.82	1	284		
MO	IV	1412.391	30	591	ZR	III	1420.87	25	342		
FE	II	1412.834	12	488	FE	II	1420.893	10	645		
S	I	1412.85	12	488, 599	ZN	III	1421.13	1	25, 472		
TL	IV	1412.93 *	5	33, 466	I	I	1421.364	2000	344		
CO	III	1412.974	10	673	CD	IV	1421.48	2	25		
RU	II	1413.017	100	675	MO	III	1421.507	50	591		
BA	II	1413.35		649	TI	III	1421.69 *	20	604		
CL	IV	1413.39	1	43	CU	II	1421.765	25	488, 795		
NB	III	1413.41	30	320	CL	IV	1421.97	1	43		
FE	II	1413.707	25	488, 645	HG	IV	1422.00	2	26		
CO	III	1413.884	10	673	TI	III	1422.41 *	25	604		
SB	I	1413.98 *	100	477	BI	I	1422.91	1	134		
AU		1414.0	2	411	BR		1423.0	2	763		
SE	I	1414.26	3	468, 600	ZN	III	1423.13	1	25, 472		
NI	III	1414.389	20	661	CR	III	1423.16	10	490		
V	IV	1414.39	12	790	TL	I	1423.2 *	1	134		
MN	II	1414.402	30	141, 488	BI	III	1423.33 *	35	5, 138, 404		
HG	II	1414.427*	9	26, 65, 452	BI	III	1423.52 *	35	5, 138		
GA	II	1414.44 *	20	488, 652	MO	IV	1423.882	20	591		
MN	II	1414.726	6	140	FE	II	1424.047	8	488		
CA		1414.8	1	411	TI	III	1424.14 *	20	604		
CD	IV	1414.83	6	25, 293	TE		1424.26	1	401		
CU	II	1414.897	10	400, 795	HG	IV	1424.29	1	26, 696		
IN		1414.9	4	130	W		1424.3	2	781		
HG	III	1414.95 *	6	65, 466	NB	IV	1424.35	30	412		
MO	III	1415.625	30	591	NI	III	1424.511	100	661		
MN	II	1415.755*	35	140, 488	CR	III	1424.62	10	490		
SB	I	1415.79 *	100	477	FE	II	1424.747	12	488		
CA	II	1415.8	1	335	CD	IV	1424.81	4	293		
HG	III	1415.80	3	26	CD	IV	1424.92	6	25, 293		
PT	II	1416.191	10	671	RU	II	1424.934	50	675		
MO	III	1416.209	50	591	AL	IV	1425.00	0	693		
ZN	III	1416.234	1	472	S	I	1425.10 *	15	488, 599		

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZN III	1425.11	4	25, 472	PB II	1433.89	8	5, 163
I I	1425.490*	8000	344	BI I	1433.91	1	134
CD IV	1425.73	6	25, 293	NB III	1433.92	30	320
MN II	1425.932	12	140, 488	SB II	1433.96	3	31
PD II	1426.10	3	664	NI III	1434.133	30	661
MN II	1426.325	10	140, 488	MN II	1434.257	10	140, 488
C III	1426.45	4	65, 168	CO III	1434.259	200	673
ZN III	1426.61	2	25, 472	CA II	1434.3		186, 488, 648
V IV	1426.62	17	790	NI III	1434.306	200	661
SE I	1426.68	5	354, 468, 600	RU II	1434.330	30	675
C III	1426.78	1	65, 168	MN II	1434.443	30	140, 488
CL IV	1426.89	1	43	NB III	1434.55	20	320
CR III	1427.00	15	490	TL IV	1434.72 *	6	466
CU II	1427.592	10	488, 795	CU II	1434.773	15	488, 795
NI III	1427.639	20	661	IN III	1434.78 *	8	408, 583
CU II	1427.831	20	488, 795	CU II	1434.916	25	488, 795
GE II	1427.85	5	488	HG III	1434.98	3	331
C III	1427.85	3	65, 168	PB IV	1435.00	1	5
SE I	1427.87	6	600	RU II	1435.085	20	675
MO III	1428.000	30	591	PT II	1435.126	2	671
BR II	1428.04	3	400	HG III	1435.18	3	26
C III	1428.17	2	65, 168	NB III	1435.26	50	320
CU II	1428.359	15	488, 795	SE I	1435.28	12	488, 600
W I	1428.5	2	781	RU II	1435.286	20	675
C III	1428.53	2	65, 168	CU II	1435.318	10	488, 795
RU II	1428.751	100	675	AU	1435.4	6	335
NI III	1428.870	200	661	CO III	1435.426	100	673
C III	1428.95	1	65, 168	HG I	1435.50	0	65, 696
RU II	1429.002	30	675	SE I	1435.75	12	488, 600
CD IV	1429.28	6	293	SI III	1435.783	100	310
AU	1429.4	3	411	I	1435.84	1	400
AG II	1429.40	0	283	PT II	1435.888	3	671
PT II	1429.524*	30	671	BR I	1435.99	3	400
I I	1429.539	800	344	SI III	1436.171	40	310
SB III	1429.65	3	31, 407	NA III	1436.21	12	758
HG II	1429.97	1	26, 65, 698	CO III	1436.236	20	673
IN	1430.00	4	130	CU II	1436.241	15	488, 795
TL II	1430.00	2	194	PT II	1436.309	10	671
P I	1430.13	50	469	PD II	1436.53	3	664
ZN III	1430.17	2	25, 472	SB II	1436.58 *	4	31, 414
CU II	1430.246	40	488, 795	AU	1436.61 *	20	550
CO III	1430.530	30	673	ZN IV	1436.66	1	25
SE I	1430.58	6	600	HG IV	1436.69 *	5	26
FE V	1430.61 *	8	47	BI II	1436.83 *	45	5, 138
ZN II	1430.97	2	472, 682	S I	1436.94	12	488, 599
CO III	1431.323	30	673	MO IV	1436.970	20	591
HG III	1431.42	2	26	GA	1437.1	7	335
CD IV	1431.55	4	25, 293	MN II	1437.125	15	141, 488
C I	1431.595	20	167, 488, 668	PD II	1437.29 *	30	664
AG II	1431.68	0	283	TI	1437.3	10	411
CO III	1431.800	10	673	RU II	1437.460	50	675
NB III	1431.92	60	320	SN IV	1437.519*	1000	408, 681
AL IV	1431.93	2	693	BI IV	1437.62	2	5, 449
CO III	1432.065	10	673	PT II	1437.694	3	671
C I	1432.105	15	167, 488, 668	PT II	1437.813	5	671
ZN III	1432.14	5	25, 416	RU II	1437.839	50	675
CD IV	1432.23	4	25, 293	CO IV	1437.90	6	25, 293
AU	1432.5	1	411	SB II	1438.26	3	31, 414
CA II	1432.5	1	335	PB III	1439.03	3	5
C I	1432.530	10	167, 488, 668	SI II	1439.094	10	488, 310, 794
CO III	1432.556	10	673	ZN II	1439.10 *	8	488, 682
MN II	1432.785*	40	140, 488	PT II	1439.162	20	671
CD III	1432.86	5	25, 683	PB III	1439.26 *	9	5
PT II	1432.905	2	671	NB IV	1439.33	35	412
MN II	1432.950	5	140	PB III	1439.42 *	15	686
CA II	1433.1		186, 488, 648	AU	1439.5	2	411
BA II	1433.15		649	TE	1439.52	6	401
S I	1433.28 *	15	488, 599	IN	1439.8	3	130
NB III	1433.39	60	320	NI III	1439.809	20	661
MN II	1433.497	15	141, 488	MO V	1440.153	5	591
TL II	1433.60	3	194	RU II	1440.514	30	675
MN II	1433.627	6	140	FE V	1440.59	7	47
SI III	1433.646	30	310	ZR IV	1440.68	18	342
CU II	1433.843	10	488, 795	NB III	1440.68	40	320
TI III	1433.85	2	604	MO IV	1440.838	50	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
I III	1440.94	1	400	BR I	1449.91	1	488, 757
CL IV	1440.95	0	43	TI III	1450.29	2	604
ZR IV	1441.11	20	342	CU II	1450.304	25	488, 795
SB I	1441.39	40	477	ZN II	1450.78	4	472, 682
SI III	1441.710	15	310	AU II	1450.81	3	550
AG II	1441.74	0	283	ZN III	1451.03	4	25
SE I	1441.81	5	600	RU II	1451.224	100	675
AL IV	1441.81	1	693	AG II	1451.28	0	283
CU II	1442.138	15	488, 795	W	1451.4	1	781
RU II	1442.147	30	675	NI III	1451.504	200	661
MO III	1442.222	50	591	NB III	1451.63	60	320
HG IV	1442.55 *	6	26, 696	BI I	1451.67	2	134
ZN III	1442.56	2	25, 472	TI IV	1451.75 *	30	488, 604
MN II	1442.595	25	47, 141, 488	CU II	1452.292	20	488, 795
IN	1442.7	2	130	MO III	1452.377	30	591
NB III	1442.76	40	320	NI III	1452.532	20	661
CU II	1443.542	10	488, 795	CD IV	1452.63	10	25, 293
RU II	1444.144	50	675	P II	1452.89 *	30	469, 594
S I	1444.27	6	599	CD IV	1452.90	2	293
NI II	1444.35	1	405	P I	1453.01	15	469
PT II	1444.701	8	671	I I	1453.179	5000	344
SE I	1444.85	10	488, 600	AG II	1453.19	0	283
DA II	1444.05	0	42	PD II	1453.25	10	664
ZR III	1444.88	20	342	FE IV	1453.67	15	286
SB II	1444.95	1	31	AG III	1453.75	1	284
NI III	1445.095	30	661	V	1453.8	4	411
ZN III	1445.10	2	25, 472	AU II	1453.88	1	550
BI I	1445.11	2	134	NI III	1453.002	50	661
PD II	1445.20	5	664	NB III	1453.95	30	320
NI III	1445.374	40	661	SE III	1453.98	2	587
HG III	1445.39	1	26	HG IV	1454.21 *	6	26, 696
NB III	1445.43	80	320	BI I	1454.28	1	134
RU II	1445.552	30	675	IN	1454.3	2	130
NB IV	1445.72	30	412	FE V	1454.71	3	47
NB III	1445.98	80	320	MO III	1454.844	50	591
CU II	1445.987	20	488, 795	BI II	1455.11 *	50	5, 138
CD III	1446.08	20	25, 683	TI III	1455.22 *	40	488, 604
ZN III	1446.088	2	472	HG IV	1455.24	1	26
IN	1446.1	3	130	CR V	1455.53	30	490, 790
TE IV	1446.11	3	401, 583	BI I	1455.53	1	134
I I	1446.260	5000	344	AG II	1455.62	0	283
PT II	1446.278	8	671	FE IV	1455.66 *	25	286
MN V	1446.49 *	60	791	W	1455.7	1	781
CR III	1446.52	15	490	CD III	1455.74	30	25, 683
BI I	1446.66	1	134	PI II	1455.819	8	671
SE I	1446.78	10	488, 600	ZN II	1456.176	1	472
SE I	1446.98	10	488, 600	FE V	1456.23	5	47
NB III	1447.09	80	320	MO V	1456.271	10	591, 761
HG IV	1447.10	2	26, 696	SE I	1456.31	12	488, 600
SI III	1447.190	25	310	CD IV	1456.47	2	25
AL IV	1447.47	2	693	SB I	1456.62	30	477
NB IV	1447.48 *	50	412	NB III	1456.68 *	100	320
P I	1447.50	20	469, 597	NB III	1456.83 *	10	320
CD III	1447.55	25	25, 293, 683	ZN II	1456.90 *	8	488, 682
PT II	1447.797	5	671	BR	1457.0	1	763
BI II	1447.94	25	5, 138	AG II	1457.08	1	283
TE	1447.99	6	401	TL III	1457.17 *	3	130, 543
NI III	1448.175	30	661	CU II	1457.173	10	488, 795
S I	1448.20	12	488, 599	SI III	1457.287	70	310
HG IV	1448.25	4	26, 696	I I	1457.368*	5000	344
NB III	1448.50	50	320	ZN II	1457.40 *	7	488, 682
AS II	1448.64	1	572	I I	1457.470*	5000	344
SB	1448.76	1	31	ZN I	1457.572	4	314, 488
FE V	1448.91 *	6	47	PT II	1457.668	10	671
CU II	1449.056	20	488, 795	NI III	1457.829	50	661
AG II	1449.12	0	283	AL	1457.92	1	693
SC I	1449.16	15	400, 600	I I	1457.981*	10000	344
PB II	1449.35	3	163	CU II	1458.004	30	488, 670, 684
TL IV	1449.37 *	5	466	NA III	1458.15	3	758
GA II	1449.49	5	652	SE I	1458.29	8	488, 600
PD III	1449.625	100	674	TE IV	1458.34	2	401, 583
AL IV	1449.70	0	693	PT II	1458.387	2	671
CD IV	1449.71	6	25, 293	RU II	1458.491	30	675
SN III	1449.773	200	681, 277	RU II	1458.721	20	675
PT II	1449.802	2	671	I I	1458.794	2500	344

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SB I	1458.88	20	477
RU II	1459.028	40	675
C I	1459.034	2	168, 488, 794
I I	1459.145	4000	344
HG III	1459.23	5	26, 331
FE II	1459.311	15	292
HG II	1459.38	3	65, 331
CU II	1459.410	25	488, 795
MG IV	1459.52	1	693
NB III	1459.62	20	320
TE	1459.72	1	401
CO V	1459.77	15	286
CA III	1459.87	3	39
FE IV	1459.92 *	40	286
ZN IV	1460.02	3	25
A III	1460.077	4	59, 65
A III	1460.234	2	59, 65
PT II	1460.303	3	671
TL	1460.67	2	130
FE V	1460.86	2	47
BI III	1461.00 *	60	5, 138
HG IV	1461.33 *	5	26
IN	1461.4	2	130
BA II	1461.45		649
AU	1461.5	2	411
CU II	1461.554	15	488, 795
RU II	1461.699	50	675
TE	1461.70	1	401
SE I	1461.99	6	600
BI II	1462.14	25	5, 138
SB I	1462.20	20	477
RU II	1462.437	30	675
PT II	1462.664	2	671
FE V	1462.67	3	47
ZN I	1462.737	2	472
MO III	1462.798	30	591
RU II	1463.215	100	675
C I	1463.346	6	168, 488, 794
BR	1463.4	4	763
CA III	1463.41	4	39
RU II	1463.515	30	675
GA II	1463.65	2	652
CU II	1463.771	50	488, 670
C	1463.838	40	794
SB I	1463.96	15	477
RU II	1464.022	50	675
ZN III	1464.13	4	25, 416
FE IV	1464.81 *	40	286
FE II	1465.043	20	292, 488
TE	1465.25	1	401
ZR III	1465.44	25	342
A III	1465.532	2	59, 65
CU II	1465.542	15	488, 795
B I	1465.59	1	134
HG IV	1465.63 *	5	26, 696
B I	1465.69	2	134
A III	1465.712	3	59, 65
TE	1465.75	1	401
ZN III	1465.79	3	25, 416
IN	1465.8	2	130
B I	1465.82	2	134
I I	1465.828	2500	344
GA IV	1465.93	1	467
RU II	1466.039	50	675
CU II	1466.066	20	488, 795
CD III	1466.14	8	25, 293, 683
CU II	1466.519	10	488, 795
CD IV	1466.67	8	25, 293
I II	1466.673	1000	344
N I	1466.723	5	191, 794
TI IV	1467.25 *	30	488, 604
NB III	1467.28	20	320
HG III	1467.38 *	6	26, 65, 331
N I	1467.384	3	191
CO III	1467.394	10	673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
C I	1467.405	20	794
C I	1467.450	3	65, 168, 488
CO III	1467.663	10	673
RU II	1467.723	30	675
A III	1467.841	3	59, 65
NI II	1467.85	3	405, 488
RU II	1467.933	30	675
RU II	1467.977	100	675
A III	1468.006	2	59, 65
RU II	1468.158	30	675
W	1468.2	6	781
CO II	1468.356	6	488
HG IV	1468.72	4	26, 696
BI I	1468.73	3	134
SB I	1468.76	60	477
RU II	1468.909	200	675
AU II	1468.97 *	30	550
CO III	1468.992	10	286, 673
MO III	1469.206	20	591
TI IV	1469.21 *	15	488, 604
IN II	1469.49	2	413
ZR IV	1469.50 *	100	342, 488
BI I	1469.57	3	134
TL	1469.59	2	130
XE I	1469.621	5	61, 65
CU II	1469.693	15	488, 795
C I	1469.844	15	794
FE III	1469.881	6	288
FE IV	1469.92	20	286
RU II	1469.941	100	675
HG III	1470.03	1	26, 331
C I	1470.082	5	794
NB III	1470.33	20	320
CU II	1470.707	40	488, 795
N III	1471.02	1	65, 246
CL II	1471.06	2	345
CD IV	1471.08	6	25, 293
ZN III	1471.243	1	472
PD II	1471.34	5	664
N III	1471.69	2	65, 246
S I	1471.82	4	599
NB III	1471.84	40	320
CO II	1471.860	6	488
ZN II	1471.887	1	472
CD III	1471.97	5	25, 683
CO III	1472.019	20	673
SB II	1472.08	2	31
FE IV	1472.13 *	35	286
HG III	1472.35	5	26
CU II	1472.394	20	488, 795
IN	1472.4	5	130
RU II	1472.717*	500	675
ZN III	1472.767	1	472
S I	1472.97 *	15	488, 599
RU II	1473.151*	400	675
ZN III	1473.41 *	7	25, 754
NB IV	1473.43	40	412
MO III	1473.447	20	591
CU II	1473.531	15	488, 670
GA II	1473.73	3	402, 652
FE II	1473.834	20	292, 488
BI I	1473.86	1	134
CU II	1473.978	25	488, 795
HG IV	1473.98	1	26, 696
S I	1473.98 *	15	488, 599
MO III	1474.222	30	591
BI I	1474.28	3	134
S I	1474.37 *	12	488, 599
S I	1474.54 *	6	488, 599
CU II	1474.937	20	488, 795
SN II	1475.008*	1000	448, 681
CO II	1475.018	2	488, 673
AU	1475.1	1	411
MG II	1475.100		592
RU II	1475.361	50	675

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1475.457	6	140	KR III	1483.429	2	58
NB III	1475.47	20	320, 412	GA II	1483.52	3	402, 652
CA	1475.5	5	335	MO III	1483.542	20	591
W	1475.6	1	781	CO III	1483.800	20	673
PT II	1475.632	5	671	GA II	1483.95	3	402, 652
CO III	1475.635	20	673	RU II	1484.035	300	675
FE II	1475.686	28	286, 645	CO II	1484.251	5	488
MN II	1475.721	5	140	CR V	1484.39	15	790, 490
CU II	1475.846	30	488, 670	P IV	1484.506	6	597
HG IV	1475.9	2	696	NB III	1484.73	80	320
MN II	1476.041	5	140	SI II	1484.873	15	310
FE II	1476.054	10	292, 488	CA III	1484.92	4	39
CD IV	1476.22	6	25, 293	SI II	1485.024*	90	310
CO V	1476.366	10	286, 673	CR III	1485.04	15	490
MN II	1476.644	12	140, 488	CO III	1485.170	15	673
MO III	1476.761	20	591	SI II	1485.224	30	310
MO IV	1476.859	50	591	BI I	1485.28	2	134
TL III	1476.94 *	9	130	CU II	1485.322	20	400, 795
MN II	1476.979	5	140	NB III	1485.36	40	320
ZN II	1476.99	3	25, 682	FE IV	1485.48	12	286
RII II	1477.025	50	675	P II	1485.49 *	25	469, 594
BR	1477.1	2	763	S I	1485.61 *	12	488, 599
TL III	1477.14 *	10	451, 543	CU II	1485.672	40	488, 795
RU II	1477.632	100	675	MO III	1485.807	30	591
C III	1477.68	3	65, 168	I I	1485.918	1000	344
HG II	1477.770	4	26, 65, 331	CO V	1486.02 *	25	286
MN II	1477.838	5	140	ZN II	1486.05	3	25, 682, 754
MG II	1478.000		592	FE III	1486.265	7	188, 288, 488
RU II	1478.021	30	675	CO II	1486.483*	9	488
PT II	1478.027	10	671	AU II	1486.49 *	25	550
C III	1478.05	2	65, 168	SB I	1486.57	20	477
NB III	1478.11	20	320	CU III	1486.659	25	684
ZN II	1478.21	3	25, 682	BA II	1486.72	2	569, 649
C III	1478.30	1	65, 168	MN V	1486.74 *	30	791
CD IV	1478.32	6	25, 293	NB III	1486.79	50	320
CO III	1478.367	50	673	AL IV	1486.87	1	693
MN II	1478.588	25	140, 488	BI II	1486.93	35	5, 138
MN II	1478.795	22	140, 488	CD IV	1486.94	3	25
HG III	1478.97	1	26, 331	RU II	1486.957*	500	675
NB III	1479.06	30	320	S I	1487.12 *	15	488, 599
MO VI	1479.123	50	591, 761	NB IV	1487.23	40	412
RU II	1479.242	50	675	MO II	1487.398	30	591, 761
CD IV	1479.37	6	25, 293	BE I	1487.472	4	541
FF IV	1479.49 *	40	47, 286	IN III	1487.63 *	12	408, 590
HG III	1479.81	2	26, 331	BI I	1487.74	1	134
CR III	1480.16	10	490	P IV	1487.796	4	597
SB IV	1480.19	5	31, 277	P I	1488.01	20	469
CA III	1480.55	2	39	PD III	1488.094	100	674
AS IV	1480.61 *	9	335	HG IV	1488.22	4	26, 696
MG II	1480.880		592	BI III	1488.44	4	138
CU III	1481.243	20	684	BR I	1488.450	3	488, 757
ZN II	1481.25	1	25, 754	RU II	1488.618*	200	675
HG IV	1481.33 *	5	26	CU II	1488.647*	75	488, 795
RU II	1481.435	100	675	NB III	1488.67	10	320
AL IV	1481.46	0	693	CO V	1488.753	20	206, 673
IN	1481.5	4	130	RU II	1488.855*	1000	675
CU II	1481.540	20	488, 795	ZN II	1488.92	2	682, 754
CR III	1481.58	15	790, 490	SR II	1488.99		488, 649
S I	1481.65 *	15	488, 599	P IV	1489.101	4	597
N I	1481.750	4	141	SN II	1489.106	200	448, 681
C I	1481.760*	7	168, 488, 794	ZR III	1489.13	12	342
CO III	1481.905	100	673	RU II	1489.136*	500	675
ZN	1482.184	2	472	NB III	1489.15	40	320
CR V	1482.36	25	790, 490	ZN III	1489.32	2	25, 416
CO V	1482.62 *	25	286	CR V	1489.35 *	50	790, 490
HG IV	1482.63	3	26, 696	TL I	1489.65 *	8	134
SR II	1482.69		488, 649	RU II	1489.734	20	675
PT II	1482.823	5	671	CO III	1489.899	20	673
MG II	1482.890		592	BI I	1489.94	5	134
CO V	1482.91 *	20	286	MO III	1490.069	40	591
CD IV	1482.95	8	25, 293	W	1490.1	1	781
S I	1483.05 *	15	488, 599	NB III	1490.45	30	320
MN V	1483.09 *	160	791	TL II	1490.50	5	194
S I	1483.24 *	12	488, 599	MO III	1490.509	40	591
CO III	1483.363	10	673	MN V	1490.60 *	160	791

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1490.707	100	675
ZN II	1490.93	1	25, 682
HG III	1490.95	2	26, 331
CO III	1491.273	10	488, 673
MN V	1491.30 *	30	791
P I	1491.36	50	469, 594
SB I	1491.36	40	31, 477
CD III	1491.81	15	25, 293, 683
TI III	1491.98	5	604
P III	1492.031	5	597
CU II	1492.149	10	488, 795
ZN	1492.203	2	472
AG II	1492.23	6	283
RU II	1492.355	30	675
NI III	1492.622	30	661
N I	1492.624 *	80	488, 794
CU II	1492.684 *	10	488, 670
N I	1492.824 *	30	137, 794
CU II	1492.832	30	488, 795
I I	1492.888	5000	344
P I	1492.99	40	469, 594
NI III	1492.990	30	661
PT II	1493.00	5	671
CD IV	1493.08	3	25
LI II	1493.1 *	6	788
ZN II	1493.13	3	25, 682
CO III	1493.152	20	673
NB III	1493.30	20	320
P I	1493.34	15	469, 594
CU II	1493.365	25	488, 795
MO III	1493.472	20	591
FE III	1493.640	9	188, 288, 488
HG IV	1493.69	3	26
IN III	1494.08 *	10	408, 590
RU II	1494.524 *	500	675
AU I	1494.57	7	550
ZR III	1494.67	10	342
N I	1494.673 *	60	488, 794
MN II	1494.754	20	140, 488
GE IV	1494.89	2	406
MN II	1494.968	7	140
IN	1495.1	2	130
GA III	1495.10 *	10	402, 652
HG II	1495.199	5	26, 65, 527
FE II	1495.311	15	488
SN III	1495.349	30	681
CU II	1495.430	25	488, 795
PT II	1495.47	2	671
NB III	1495.52	10	320
NI III	1495.641	20	488, 661
NB III	1495.94 *	100	320
CD IV	1496.25	3	25
SE I	1496.44	3	600
FE II	1496.515	10	645
CU II	1496.692	35	488, 795
AS	1496.7	1	411
CA III	1496.92	2	39
BI	1497.6	2	456
CO III	1497.700	10	673
W	1498.0	1	781
CR V	1498.02 *	70	790
NB III	1498.02	80	320
PT II	1498.104	5	671
PT II	1498.242	8	671
RU II	1498.289	50	675
CD IV	1498.39	4	25, 293
MN II	1498.596	8	140
ZN III	1498.61	5	25, 416
TI III	1498.65 *	30	488, 604
SB IV	1498.72	2	31, 277
NB III	1498.83	10	320
CO III	1498.830	20	673
CO III	1499.124	50	673
TI III	1499.17 *	20	604
TL II	1499.30 *	10	194

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
PT II	1499.380	5	671
ZN III	1499.38	5	25, 416
NB III	1499.45	80	320
CU II	1499.507	10	488, 795
MN II	1499.843	8	140, 488
MO III	1499.945	30	591
MN II	1499.953	20	140, 488
CD IV	1500.11	4	25, 293
SI III	1500.239 *	300	310
MN II	1500.255	5	140
CO III	1500.269	20	673
ZN III	1500.41	5	25, 416
NI II	1500.44	10	488
GE IV	1500.61 *	6	406
SE I	1500.91	15	488, 600
SI III	1501.191 *	250	310
CU II	1501.336	10	488, 795
AU I	1501.35	1	550
NB III	1501.53 *	50	320
P III	1501.551	7	488, 597
IN	1501.8	4	130
P I	1501.81	20	469
SI III	1501.876 *	225	310
NI V	1501.90	3	492
NB III	1501.99 *	100	320
W	1502.2	2	781
P III	1502.273 *	10	488, 597
NB IV	1502.30 *	60	412
TI III	1502.36	10	604
BI II	1502.50	20	138
RU II	1502.802	30	675
MO III	1503.016	30	591
CU II	1503.364	15	488, 795
RU II	1503.401	30	675
MN V	1503.59 *	80	791
CD	1503.92	3	25
BA II	1504.01 *	4	569, 649
SB II	1504.28	3	31, 414
MN V	1504.38 *	200	791
GA II	1504.41	4	402, 652
HG III	1504.474	5	26, 331, 794
TI III	1504.59	10	604
CU II	1504.762	25	488, 795
TI III	1504.91	5	604
GA II	1505.01	4	402, 488, 652
NB III	1505.03	60	320
FE III	1505.166	10	188, 288, 488
PT II	1505.240	20	671
CO III	1505.249	10	673
MO III	1505.254	30	591
ZN II	1505.39	2	472, 682
CU II	1505.390	20	488, 795
PD III	1505.404	200	674
AU II	1505.44	2	550
RU II	1505.610	20	675
CR III	1505.76	10	490
SB II	1505.84	2	31, 414
ZN III	1505.88 *	8	25, 754
SI III	1506.065	50	310
TI III	1506.07	10	604
SE I	1506.09	3	600
PT II	1506.279	10	671
TL III	1506.37 *	4	451, 543
RU II	1506.515	50	675
BR II	1506.71	7	400
CA III	1506.94	3	39
I I	1507.041	5000	344
MN V	1507.11 *	40	791
HG III	1507.27	5	26
AG I	1507.37 *	50	667
RU II	1507.429	100	675
NB III	1507.47	20	320
PT II	1507.509	2	671
TL II	1507.82 *	10	194
CR III	1508.14	10	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU II	1508.182	25	488, 795	ZN III	1515.78 *	7	25, 416
NB III	1508.28	20	320	W	1515.819	5	794
CU II	1508.634	30	488, 795	W	1516.2	3	781
ZN III	1508.705	2	472	RU II	1516.256	30	675
NB IV	1508.73	30	412	PT II	1516.74	1	671
PT II	1508.790	5	671	HG III	1516.80	3	26, 331
CR III	1508.89	12	490	NB III	1516.81	30	320
SI II	1509.101	20	310	SI II	1516.910*	90	310
PT II	1509.288	10	671	NB III	1517.06	20	320
RU II	1509.432	40	675	CU II	1517.160	10	488, 795
HG III	1509.45	2	26, 331	PD III	1517.185	200	674
NB III	1509.71	50	320	NB III	1517.38	50	320
W	1509.760	3	794	CO III	1517.482	15	673
IN	1509.9	4	130	CU II	1517.631	20	488, 795
TE	1510.30	1	401	BR II	1517.66	7	400
ZN II	1510.35	2	25, 682	CO III	1517.724	10	673
AS I	1510.41	6	480	CU II	1517.921	10	488, 795
CU II	1510.509	35	488, 795	SN II	1517.960	200	681
ZR III	1510.52	10	342	I	1518.047*	15000	344
AS I	1510.70	6	480, 573	AU	1518.4	1	411
PB IV	1510.76 *	8	139	MO V	1518.758	5	591, 761
HG III	1510.79	3	26, 331	FE III	1518.842	5	288
NI II	1510.86	5	405, 488	CU III	1519.326	15	673
CD III	1511.01	5	25, 683	CU II	1519.498*	50	488, 795
HG II	1511.565	2	26, 65, 527	NI V	1519.55	3	492
FE III	1511.617	5	288	CR V	1519.66 *	70	790, 490
CD III	1511.65	10	25, 683	MN II	1519.773	5	140
AG III	1511.86	1	284	CU II	1519.855*	60	488, 795
SI II	1512.072	10	310	SE I	1519.99	4	600
CU II	1512.178	20	488, 795	NB III	1519.99	20	320
CR III	1512.22	10	490	PT II	1520.010	15	671
BE II	1512.303*	8	488, 541	SN II	1520.142	100	681
RU II	1512.325	30	675	W	1520.2	2	781
NB III	1512.34	50	320	HG III	1520.41	1	331, 696
PB II	1512.42 *	10	163	CU II	1520.546	20	488, 795
BE II	1512.451*	10	488, 541	BI II	1520.57 *	40	138
CU II	1512.465	20	488, 795	CD IV	1520.88	2	25, 293
RU II	1512.483	40	675	SE I	1521.20	3	600
SB I	1512.57	50	477	RU II	1521.238	25	675
AU	1512.6	1	411	AU	1521.5	1	411
AG III	1512.64	1	284	CO IV	1521.61 *	25	492
MO II	1512.958	30	591	P II	1521.62 *	30	469
BI III	1513.06	1	138	IN	1521.7	6	130
CD III	1513.13	5	25, 683	SE I	1522.45	6	600
NB III	1513.25	50	320	CU II	1522.580	15	488, 795
SB II	1513.28 *	4	31, 290, 414	CO III	1522.885	20	673
CU II	1513.366	20	488, 795	ZN II	1522.951	3	472
TE	1513.39	1	401	BI I	1523.45	5	134
FE III	1513.539	5	288	CD III	1523.55	10	25, 683
SI II	1513.573	40	310	CU II	1523.740	10	488, 670
HG IV	1513.70	3	26	ZN II	1523.90	4	25, 682
CD IV	1513.75	6	293	BI I	1524.03	2	134
MO III	1513.804	30	591	CO III	1524.113	15	673
NB III	1513.81	80	320	NB IV	1524.36 *	60	412
CD IV	1513.92	6	25, 293	W	1524.4	1	781
CU II	1514.222	10	488, 795	SB II	1524.47	1	31, 408, 414
CD II	1514.26 *	200	683	FE III	1524.522	5	288
I I	1514.323	2000	344	FE III	1524.658	5	288
PT II	1514.492	3	671	FE IV	1524.67	15	286
CU II	1514.501	50	488, 795	PT II	1524.725	10	671
AG II	1514.52	0	283	CU II	1524.857	20	488, 670
RU II	1514.564	30	675	SE I	1524.88	6	600
GA II	1514.57	5	402, 488, 652	NB III	1524.91 *	100	320
I I	1514.678	5000	344	FE III	1525.041	6	288
ZN II	1514.75	5	488, 682	B I	1525.20	00	134
CO III	1515.027	50	673	CD IV	1525.21	2	25
NB III	1515.12	10	320	GE III	1525.32 *	10	406
W	1515.124*	15	794	HG III	1525.35	4	26, 331
GA II	1515.19	3	402, 652	AG II	1525.40	1	283
MO III	1515.196	50	591	CO III	1525.407	15	673
SE I	1515.33	8	600	CU II	1525.653	10	488, 670
AS I	1515.48	20	480, 573	CU II	1525.794	30	488, 670
FE III	1515.481	5	288	FE III	1525.801	6	288
AG I	1515.63	1	667	B I	1525.84	00	134
CD IV	1515.77	6	25, 293	CR III	1526.00	15	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	1526.05	3	401	PD	1534.092	100	674
AL	1526.15	1	693	CA	1534.1	1	411
CD	1526.25	6	25, 293	CO	1534.268	200	673
PD	1526.252	100	674	B	1534.29	0	134
I	1526.448	2500	344	TL	1534.33	2	130
CO	1526.734	30	673	GA	1534.51 *	10	402
ZN	1526.857	2	472	W	1534.7	2	781
AG	1527.06	1	284	RU	1534.860	20	675
FE	1527.145	6	288	AU	1534.88	1	550
GE	1527.15	2	406	PT	1534.90	1	671
BI	1527.16	3	134	SE	1535.00	2	587
NB	1527.28	20	320	CU	1535.004	25	488, 670
HG	1527.31 *	7	26	ZN	1535.05 *	10	488, 682
IN	1527.4	3	130	SB	1535.06	80	477
HG	1527.49 *	8	65, 331	PD	1535.308	300	674
AG	1527.72	0	283	GA	1535.40 *	8	402, 488, 652
CO	1527.780	20	673	RU	1535.426	50	675
RU	1527.813	30	675	CU	1535.515	15	488, 670
ZN	1527.977	3	472	GA	1535.53 *	15	402
PT	1528.29	2	671	PB	1535.70 *	12	139
CD	1528.40	15	25, 683	P	1535.90 *	120	469, 488, 594
HG	1528.72	3	26	MO	1536.091	20	591
MO	1528.734	5	591, 761	GA	1536.37	5	402, 488, 652
CA	1528.89		39	P	1536.39 *	80	469, 488, 594
CL	1528.91	1	345	MN	1536.632	7	141
CL	1529.28	0	43	BI	1536.77	30	138
PT	1529.288	1	671	CL	1537.21	3	43
W	1529.3	2	781	NB	1537.50	60	320
CD	1529.30	30	25, 683	AL	1537.52	2	693
NB	1529.33	20	320	CU	1537.560	50	488, 670
IN	1530.17 *	9	408, 590	RU	1537.806	20	675
PT	1530.190	20	671	SR	1537.91		488, 649
HG	1530.267	3	26, 65, 331	BI	1538.06	35	134, 138
SE	1530.39 *	25	488, 600	MN	1538.090	6	140
SB	1530.62	1	31	TL	1538.19	4	194
HG	1530.9	1	696	GE	1538.20	2	406, 488
CO	1530.906	10	673	CU	1538.488	10	488, 670
CO	1531.068	15	673	RU	1538.624	30	675
NB	1531.07	25	320	FE	1538.632	10	188, 288, 488
SR	1531.28 *	1	488, 649	AS	1538.79	20	480, 573
FE	1531.293	6	188, 288, 488	NB	1538.87	30	320
SE	1531.33	15	488, 600	HG	1539.111	1	26, 65
PT	1531.524	15	671	FE	1539.128	8	188, 288, 488
HG	1531.64	4	26, 331	BI	1539.27	5	134
FE	1531.644	8	188, 288, 488	CL	1539.30	2	43
AG	1531.71	3	284	MN	1539.335	5	141
BR	1531.732	5	488, 757	CO	1539.458	20	673
CU	1531.832	50	488, 670	FE	1539.480	5	188, 288, 488
SE	1531.84	20	488, 600	AL	1539.74 *	10	488, 653
C	1531.85	2	65, 168	HG	1539.9	2	696
FE	1531.864	7	188, 288, 488	GE	1540.0	2	130
NB	1531.88	40	320	NB	1540.02	10	320
CO	1532.032	10	673	SB	1540.11	1	31
CO	1532.10	5	25, 683	FE	1540.165	7	288
CU	1532.124	30	488, 670	TE	1540.17	1	401
AG	1532.19	0	283	CU	1540.231	20	488, 670
CL	1532.19	1	43	RH	1540.268	10	677
PT	1532.260	2	671	HG	1540.36	4	26, 65, 331
SB	1532.38	15	477	CU	1540.391	30	488, 670
P	1532.51 *	80	469, 488, 594	SB	1540.58	3	31
FE	1532.70	4	47	CU	1540.589	30	488, 670
SB	1532.74 *	120	477	BR	1540.653	5	488, 757
PD	1532.81	6	664	NI	1540.759	50	661
SN	1532.897*	100	681	MN	1541.070	12	131, 141, 488
NB	1532.98	60	320	CU	1541.701*	75	488, 670
ZN	1533.15	1	472	ZN	1541.71	1	472
BI	1533.17 *	40	138	HG	1541.79	2	65, 698
CL	1533.25	1	43	FE	1541.818	5	288
NI	1533.44 *	20	488	CU	1541.970	40	492, 684
IN	1533.6	2	130	HG	1542.04	2	26
HG	1533.642	3	26, 65, 331	CO	1542.094	100	673
B	1533.81	0	134	FE	1542.15	15	786
CO	1533.93 *	15	492	C	1542.202	2	65, 168, 488
CU	1533.976	25	488, 670	P	1542.29 *	120	469, 488, 594
NB	1534.06 *	50	412	NB	1542.47	15	320

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1542.616	10	673	CD III	1550.89	15	683
P II	1543.09 *	40	469, 488, 594	AG III	1550.94	1	284
P I	1543.26	15	469	ZN II	1550.97	4	682, 754
CU III	1543.438*	500	488, 684	P I	1551.04	35	469
P II	1543.61	15	469, 488, 594	HG IV	1551.08	2	26
FE III	1543.640	6	47, 288	CL IV	1551.27	1	43
SB I	1543.96	20	477, 414	CU II	1551.379	30	488, 670
CO III	1543.981	30	673	P I	1551.42	15	469
PT II	1544.130	5	671	AG III	1551.44	1	284
IN	1544.2	2	130	AG II	1551.65	0	283
CO III	1544.411	30	673	W	1551.8	3	781
RU II	1544.414	30	675	FE IV	1552.067	15	286, 288
CD IV	1544.52	2	293	ZN III	1552.09 *	6	25
MO V	1544.616	5	591, 761	CO III	1552.18	5	25, 683
CU II	1544.674	40	488, 670	PD II	1552.19	3	664
CO III	1544.880	40	673	GA	1552.3	2	130
PD III	1545.130	100	674	PT II	1552.33	3	671
CO III	1545.17 *	50	683	ZN III	1552.34 *	7	416
CL IV	1545.19	2	43	AU	1552.6	5	335
PT II	1545.241	1	671	CU II	1552.641	50	488, 670
HG III	1545.31	5	26	ZN III	1552.99 *	5	25, 477
IN	1545.5	5	130	AL IV	1553.00	1	693
CA	1545.7	3	411	PT II	1553.055	10	671
CD IV	1545.79	6	25, 293	V II	1553.09	15	478, 488
P I	1545.95	15	469	PB III	1553.09 *	10	686
PD III	1545.957	500	674	ZN III	1553.12 *	3	472
MO V	1546.063	5	591, 761	MN II	1553.326	6	131, 141
ZR IV	1546.19 *	150	342, 488	CA II	1553.5 *	4	186, 488, 648
TE	1546.32	1	401	HG III	1553.51	2	26
B I	1546.44	1	134	CU II	1553.893	25	488, 670, 672
NB III	1546.50	40	320	TL	1554.01	3	130
ZN	1546.647	2	472	SB II	1554.12	2	31, 351, 414
NB III	1546.71	10	320	BA II	1554.38 *	3	569, 649
PT II	1546.814	10	671	MO II	1554.385	20	591
B I	1546.85	2	134	GA	1554.4	2	130
GA	1546.9	2	130	MO III	1554.554	20	591
CD IV	1547.01	6	25, 293	TH III	1554.64	15	348
SE I	1547.12	12	488, 600	SN II	1554.877*	500	681
V II	1547.20	15	478, 488	PT II	1554.94	1	671
FE IV	1547.494	15	286, 288	CA II	1555.1 *	4	186, 488, 648
HG III	1547.51	3	331	CU II	1555.134	40	488, 670
CD III	1547.57	25	25, 293, 683	AG II	1555.16 *	10	283
FE III	1547.640	8	288	TE I	1555.28	2	147
NI III	1547.641	20	661	CA III	1555.48	4	39
RU II	1547.756	30	675	SE I	1555.55	4	600
CU II	1547.950	10	488, 670	CU II	1555.698	50	488, 670
C IV	1548.195*	20	168, 488	BI I	1555.80	3	134
TL	1548.21	3	130	RU III	1556.03	30	301
PB	1548.22	2	130	FE III	1556.075	5	288
FE III	1548.251	5	288	AU	1556.1	1	411
GA	1548.27	3	130	AS I	1556.14	40	480, 573
SE I	1548.29	8	600	CD III	1556.48	5	25, 683
CO III	1548.413	20	673	FE IV	1556.493	15	286, 288
P I	1548.43	60	469	RH III	1556.690	10	677
AG I	1548.58 *	50	667	BI I	1556.70 *	0	134
MN II	1548.635	8	321	MO V	1556.817*	30	591
NA III	1548.68	8	758	AS I	1557.20	30	480, 488, 573
CU III	1548.867	300	488, 684	AL IV	1557.24 *	5	693
BI I	1549.1	3	134	SB I	1557.29	30	477
CL IV	1549.15	2	41	CU II	1557.585	20	488, 670
TE V	1549.28	2	277	CL II	1558.05	1	345
W	1549.8	3	781	CU II	1558.344	30	488, 670
HG III	1549.85	4	26, 331	FE II	1558.543	10	292, 488
CO III	1549.940	20	673	TL III	1558.67 *	8	451, 543
CD III	1550.07	10	683	TI	1558.7	20	411
FE III	1550.196*	12	188, 288, 488	FE II	1558.706	10	292, 488
CD III	1550.45	20	683	B I	1558.71	2	134, 658
FE III	1550.450	5	288	V II	1558.76	15	478, 488
NB III	1550.62	40	320	NB III	1558.76	40	320
CU II	1550.644	30	488, 670	KR III	1558.802	2	58
RU II	1550.740	30	675	AS II	1558.88	4	571
TL	1550.75	2	130	FE II	1559.084	20	286, 488, 795
C IV	1550.768*	19	168, 488	B I	1559.11	3	134
GA	1550.82	3	130	MN II	1559.243	6	321
FE III	1550.862	8	47, 288, 488	BI I	1559.52	5	134

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A II	1560.188*	3	59, 65, 488	KR III	1569.886	2	58
FE II	1560.260	10	286, 645	NB III	1570.19	50	320
SE I	1560.28	12	488, 600	CD IV	1570.20	10	25, 293
C I	1560.301	8	491, 488, 794	CU III	1570.202	30	670, 684
AL II	1560.35	1	653	FE II	1570.244	20	488, 645
HG IV	1560.44 *	8	26, 696	SN III	1570.365*	1000	291, 681
CD III	1560.66	15	25, 471, 683	RU II	1570.371	30	675
C I	1560.687*	15	491, 488, 794	AG III	1570.38	1	284
AG III	1560.74	1	284	HG III	1570.87	1	331
ZN III	1560.83	5	25, 416	CR III	1571.04	10	490
GA	1560.9	2	130	SB I	1571.10	15	31, 477
RU II	1560.998	50	675	FE IV	1571.255	10	286, 288
NB III	1561.21	30	320	RU II	1571.280	20	675
C I	1561.292	2	65, 488	CA III	1571.31	5	39
C I	1561.339	5	794	SE III	1571.51	3	587
C I	1561.40	20	491, 488	CD II	1571.58 *	200	25, 683
HG IV	1561.43 *	10	26, 696	RU II	1572.089	20	675
C I	1561.433*	20	794	TL II	1572.16	4	194, 543
TL II	1561.58 *	15	194	CO II	1572.645	7	488
BI I	1561.95	2	134	CD IV	1572.69	6	293, 683
AU II	1562.09	10	550	MG III	1572.72 *	4	693
SI II	1562.451	10	310	BA II	1572.73	2	569, 649
GA	1562.5	2	130	PT II	1572.800	10	671
CA III	1562.50 *	6	39, 488	FE III	1572.841	5	288
ZN III	1562.57	4	25, 416	AL II	1572.97	1	653
RU II	1562.607	30	675	HG III	1573.12	5	26, 331
NB III	1562.61	40	320	B I	1573.31	3	65, 134, 658
RU II	1562.726	20	675	CD II	1573.42	50	683
SI II	1562.845	15	488, 310	B I	1573.67 *	5	134
AS I	1562.95	10	480, 488, 573	BI II	1573.70 *	40	138
V II	1562.98	10	478, 488	AS I	1573.85	60	480, 488, 573
ZR III	1563.24	25	342	SI I	1573.874	50	339, 488, 678
FE IV	1563.30	10	286	BA II	1573.92		649
CD IV	1563.30	2	25	CO III	1573.921	10	673
AL II	1563.56	1	653	AG I	1574.02	5	667
BI II	1563.67	20	138	RU II	1574.337*	500	675
SI II	1563.765	10	310	PT II	1574.39	2	671
FE II	1563.788	25	488, 795	SB I	1574.41	30	31, 477
AL IV	1564.14	1	693	SN II	1574.424*	1000	291, 681
AS I	1565.05	7	480, 573	MO V	1574.680*	30	591, 761
PD III	1565.202	200	674	GA	1574.7	5	130
AG III	1565.35	1	283	AS I	1574.72	30	480, 488, 573
ZR III	1565.45	10	342	SI I	1574.817	50	339, 678
SB II	1565.48 *	4	31, 414	BR I	1574.839*	10	488, 757
HG III	1565.67	1	26, 331	FE II	1574.925	20	488, 795
TH IV	1565.85 *	100	349	A II	1574.985*	4	59, 65, 488
CU II	1565.925	40	488, 670	CD IV	1575.10	2	25
V II	1565.98	8	478, 488	PD III	1575.103	100	674
BI I	1565.98	2	134	SE I	1575.26	15	488, 588, 600
CD III	1566.03	5	25, 471, 683	AG III	1575.26	1	284
RU II	1566.128	100	675	MO II	1575.412	20	591
B I	1566.32	2	134	U	1575.7 *	10	411
AS I	1566.39	15	480, 573	HG III	1575.73	3	26, 331
CU II	1566.411	40	488, 670	MO V	1575.819	10	591, 761
MN II	1566.466	5	321	AS I	1575.87	20	480, 573
GA	1566.7	2	130	SB II	1576.22	1	31, 414
B I	1566.70	3	65, 134, 658	BR I	1576.390*	9	488, 757
SB I	1566.76	15	477	C III	1576.49	3	65, 168
FE II	1566.821	20	488, 645	AU	1576.8	1	411
NB III	1566.92	50	320	GE II	1576.93 *	10	406, 488
RU II	1566.965	20	675	HG II	1577.083	1	65
RU II	1567.308	50	675	CR III	1577.14	10	488, 490
FE II	1568.026	8	488, 645	C III	1577.32	2	65, 168
HG II	1568.459	2	26, 65, 527	HG III	1577.58	1	331
TL II	1568.57 *	10	194	SE I	1577.61	15	488, 600
NB III	1568.75	15	320	RU II	1577.816	20	675
PT II	1568.893	10	671	C III	1577.89	2	65, 168
CD III	1568.988	15	25, 471, 683	SE I	1577.90	15	488, 600
AG III	1569.16	1	284	HG III	1577.95	1	26, 331
CU II	1569.216	10	488, 670, 684	MN III	1577.953	100	131, 488
AL II	1569.35	1	653	IN	1578.2	3	130
CU II	1569.426	10	488, 670	CU IV	1578.32	2	25
HG III	1569.51	1	26, 331	FE II	1578.497	10	645
FE II	1569.674	12	488, 645	RU II	1578.728	30	675
GA	1569.8	2	130	CD IV	1578.90	6	25, 293

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SE I	1579.49	15	488, 600	CO III	1587.186	10	673
CU II	1579.492	30	488, 670	AU I	1587.24 *	20	450, 550
CR V	1579.67 *	80	790	AG III	1587.39	1	284
U	1579.7 *	5	411	V II	1587.40 *	50	478, 488
PD III	1579.741	100	674	PT II	1587.674	1	671
NB III	1579.94	10	320	AG II	1587.75	3	283
NI III	1579.999	15	661	AS I	1587.97	20	480, 573
CU II	1580.025	15	488, 670	FE II	1588.295	10	488, 795
SE I	1580.04	20	488, 600	CR III	1588.42	15	490
HG III	1580.10	1	26, 331	BR II	1588.60	1	400
FE III	1580.237	5	288	CO III	1588.642	10	488, 673
MO II	1580.356	50	591	PT II	1588.679	5	671
FE II	1580.625	25	288, 488, 795	CR III	1588.87	20	488, 490
CU II	1580.628	30	488, 670	AL IV	1589.27	1	693
CR III	1580.73	20	488, 490	AU	1589.5	4	335
AL II	1580.93	2	653	ZN II	1589.54	5	25, 682
CR III	1581.15	10	490	ZN II	1589.76	2	488, 682
GE II	1581.16	3	406, 488	RII III	1589.75	20	677
FE II	1581.274	8	488, 795	ZN III	1590.01	1	472
SB II	1581.44	1	31, 414	CU II	1590.164	40	488, 670
ZN III	1581.46 *	8	25, 416	NB III	1590.21 *	100	320
ZN III	1581.49 *	15	416, 754	N II	1590.25	2	65, 243
GA	1581.6	4	130	MO V	1590.370*	30	591
V II	1581.99	8	478, 488	AG III	1590.47	1	284
CU II	1581.991	40	488, 670	RU II	1590.774	30	675
AL IV	1582.04	3	693	RU II	1590.882	30	675
ZN III	1582.15	4	25, 416	C III	1591.48	2	65, 168
BR I	1582.309*	10	488, 757	CR V	1591.70 *	70	790
V II	1582.32	8	478, 488	SI II	1591.79 *	60	138
CD III	1582.39	10	25, 683	NI II	1592.07	10	488
SB I	1582.46	40	477	HG III	1592.39	1	693
HG III	1582.46	2	331	CR III	1592.39	10	490
V II	1582.57	15	478, 488	SI I	1592.409	50	339, 488, 678
I I	1582.610	1500	344	ZN II	1592.42	2	25, 682
CR III	1582.62	25	490	S I	1592.72	2	599
MN III	1582.668	50	131	HG III	1592.82 *	10	26, 65, 331
V II	1582.80	8	478, 488	N I	1592.867	3	191
CU II	1582.849	10	488, 670	CA II	1592.9	6	335
CR III	1582.93	20	490	BR I	1592.90	3	400
S	1583.00	1	401	MN III	1592.987	80	131
CD II	1583.17	50	25, 683	IN	1593.0	6	130
ZR III	1583.39	20	342	TL II	1593.26	7	194
CU II	1583.683	50	488, 670	CO III	1593.306	100	488, 673
CU I	1583.799	15	488, 672	AU II	1593.39	12	550
RU II	1583.819	200	675	RU II	1593.403	40	675
PT II	1583.850	20	671	MN III	1593.427	100	131
V II	1584.06	15	478, 488	CO III	1593.446	10	673
RU II	1584.256	30	675	CU II	1593.557	60	488, 670
SB II	1584.58 *	4	31, 414	I I	1593.580	5000	344
CR III	1584.60	40	488, 490	ZR III	1593.59	40	342, 488
AU	1584.7	1	411	AS I	1593.60 *	100	480, 488, 573
AL II	1584.77	2	653, 693	CU III	1593.758*	1000	488, 684
CA III	1584.82	0	39	NB III	1594.01	20	320
FE II	1584.954	15	488, 795	PT II	1594.05	5	671
RU II	1585.040	50	675	HG III	1594.17	4	26
SN II	1585.069	30	681	TE	1594.21	1	401
NI II	1585.11	10	488	AG II	1594.25	5	283
SB IV	1585.30	4	13, 31	RU II	1594.398	30	675
V II	1585.361	30	478, 488	SI I	1594.548	150	320, 488, 678
ZN II	1585.37	3	682, 794	RU II	1594.603	30	675
RU II	1585.740	30	675	MN III	1594.701	300	131
CO III	1586.180	15	673	CD II	1594.81	30	25, 293, 683
CA III	1586.19	4	39	SI I	1594.927	50	339, 488, 678
BI	1586.2	1	411	CO III	1594.953	10	673, 492
MG III	1586.26	3	693	MN III	1595.098	100	131
AG III	1586.26	1	284	CA III	1595.24	1	39
CR III	1586.35	15	490	MN III	1595.361	80	131
HG III	1586.36	1	331	MO VI	1595.423	40	591, 760
IN II	1586.37 *	6	413	AU II	1595.48	7	550
GA	1586.39	8	130	FE III	1595.597	6	188, 288, 488
U	1586.5 *	5	411	AG III	1595.69	1	284
TE	1586.56	2	401	CO II	1595.773	6	488
V II	1586.58	40	478, 488	HG III	1595.85	3	26, 331
NB III	1586.82	50	193, 320	AL II	1596.02	3	653
MO V	1586.875*	40	591, 761	HG III	1596.21	1	331

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN III	1596.210	80	131
CR III	1596.52	15	490
MO V	1596.688	10	591, 761
TL	1596.95	6	130
MN III	1596.966	300	131
HK I	1597.26	3	400
CR III	1597.46	12	490
PB III	1597.96	2	686
SC III	1598.06 *	5	488, 688
NI III	1598.073	15	661
MN III	1598.238	150	131
CU II	1598.402	40	488, 670
ZN III	1598.46	5	25, 472
RU II	1598.491	20	675
GA	1598.5	2	130
MN III	1598.639	50	131
CD IV	1598.73	10	25, 293
NB III	1598.86	80	193, 320
SE II	1598.95	1	468
ZR IV	1598.98 *	200	342, 488
CO II	1599.308	4	488
SB IV	1599.38 *	15	31
HG III	1599.42 *	9	26, 65, 331
AL II	1599.44	3	653
BR I	1599.46	3	400
IN	1599.5	4	130
CO II	1599.701	3	488
SB I	1599.96	80	31, 477
GE III	1600.09	9	406
CD IV	1600.13	4	293
RU II	1600.183	30	675
CU III	1600.194 *	500	488, 684
AU	1600.2	2	411
B I	1600.41 *	5	65, 134, 658
CD IV	1600.42	10	25, 293
TE	1600.76	2	401
B I	1600.83 *	8	65, 580, 658
ZN III	1600.84	5	25, 416
CD II	1601.04	50	683
FE III	1601.211	10	188, 288, 488
AG II	1601.22	8	283
CO II	1601.282	2	488, 492
FE III	1601.289	6	188, 288, 488
HG II	1601.33	4	26, 65
AG III	1601.48	2	284
BI II	1601.58	25	138
CD III	1601.59	40	25, 683
ZN III	1601.62	1	472
PD III	1601.893	100	674
FE III	1602.000	5	188, 288, 488
RU II	1602.095	100	675
CR III	1602.17	10	490
PT	1602.2	1	411
CD IV	1602.20	4	293
CU II	1602.250	15	488, 670
SN II	1602.295	30	681
CU II	1602.387	40	488, 670
GE II	1602.56 *	20	406, 488
FE II	1602.588	12	488, 645
C I	1602.598	15	794
CR III	1602.79	10	490
NA III	1602.91	5	758
C I	1602.984	5	65, 168, 488
B I	1602.99	2	134
NB III	1603.10	40	320
SC III	1603.12 *	10	488, 688
CU III	1603.146	400	488, 684
CR III	1603.19	30	488, 790, 490
CO III	1603.563	15	673
RU II	1604.029	30	675
PD III	1604.319	100	674
RU II	1604.405	100	675
NA III	1604.47	6	758
HG III	1604.47	4	26, 331
CA	1604.5	1	411

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
NI III	1604.537	300	661
NB III	1604.72	80	320
CU II	1604.848	20	488, 670
CD III	1604.87	20	25, 683
AG II	1604.94	4	283
RU II	1605.111	20	675
AG II	1605.22	4	283
CU II	1605.274	30	488, 670
NB III	1605.41	20	320
HG II	1605.52	1	26, 65, 527
AL III	1605.776 *	7	190
IN	1605.78 *	9	130
RU II	1605.787	30	675
GA	1605.81	9	130
PB	1605.86	7	130
GE	1605.88 *	8	130
CO II	1605.962	5	488
CU III	1605.969	300	488, 684
PD III	1606.093	200	674
BI III	1606.40 *	60	138
SE I	1606.46 *	25	488, 600
CD III	1606.64	20	25, 683
CU III	1606.730	300	488, 684
CU II	1606.834	40	488, 670, 684
SB II	1607.00	3	31, 414
CD III	1607.28	10	683
IN II	1607.38	5	413
CU III	1607.542	100	488, 684
I	1607.66	1	400
BR I	1607.70	2	400
FE III	1607.723	9	188, 288, 488
B	1607.78	0	65, 658
AG II	1607.86	3	283
ZR IV	1607.99 *	100	342, 488
NI II	1608.44	10	482, 488
FE II	1608.456 *	35	488, 795
CU II	1608.638	25	488, 670
CD III	1608.91	15	25, 683
MN III	1609.187 *	500	131, 488
CR III	1609.35	20	490
CU III	1609.599	50	488, 684
CD III	1609.61	10	683
BI II	1609.70 *	40	138
CU III	1609.757	100	488, 684
CR III	1609.79	15	490
NI III	1609.876	100	661
CD II	1609.90	10	25, 683
CR III	1609.91	20	490
ZR III	1609.94	20	342
RU III	1610.06	30	301
SC III	1610.25 *	8	488, 688
CU II	1610.298	15	488, 670
PD	1610.34	2	686
B I	1610.40	0	134
NI III	1610.534	20	661
P V	1610.54	2	52, 597
CU III	1610.571	75	488, 684
SE I	1610.72	10	488, 600
B I	1610.72	0	134
FE II	1610.924	15	488, 795
NA III	1610.97	4	758
CR III	1611.08	10	490
CU II	1611.113	10	488, 670
AU II	1611.18	12	550
SE I	1611.26	10	488, 600
RI II	1611.38 *	40	138
RU II	1611.415	50	675
FE III	1611.723	7	188, 288, 488
FE III	1611.763	7	188, 288, 488
AL III	1611.849 *	9	190
IN	1611.90 *	10	130
AG III	1611.90	3	284
GA	1611.95 *	10	130
GE	1611.95 *	10	130
CO IV	1612.16 *	20	492

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
NI	III	1612.165	30	661	NB	III	1621.45	30	320
ZR	III	1612.38 *	100	342, 488	CD	II	1621.61	15	683
CD	III	1612.51	15	25, 683	PT	II	1621.658*	30	671
NI	III	1612.730	30	661	FE	II	1621.685	30	488, 795
AG	III	1612.75	1	284	NI	III	1621.830	50	661
SB	I	1612.8 *	200	477	NA	III	1621.94	5	758
FE	II	1612.809	20	488, 795	NI	III	1621.942	50	661
SR	II	1612.98 *	4	488, 649	RU	II	1622.431	20	675
SC		1613.11	3	17	CU	II	1622.44	40	488, 670
V	II	1613.20	15	478, 488	ZN	III	1622.48	6	25, 416
HG	II	1613.355	1	65	GA		1622.5	3	130
BR	I	1613.51	2	400	SE	I	1622.73	10	488, 600
AU		1613.6	1	411	PD	III	1622.778	100	674
PB	IV	1613.66	3	139	CL	IV	1622.86	2	43
NA	III	1613.77	8	758	SI	I	1622.867	100	339, 488, 678
PT	II	1613.976	10	671	AU	II	1622.87	2	550
CR	III	1614.04	10	490	CD	IV	1622.87	8	25, 293, 683
MN	III	1614.170*	1000	131, 488	SN	III	1623.000	30	277, 681
AG	III	1614.26	3	784	HF	II	1623.06 *	12	479
NI	II	1614.82	15	482, 488	FE	II	1623.090	8	488, 795
RU	II	1615.064	20	675	CU	II	1623.17	30	488, 670
RU	II	1615.267	20	675	RU	II	1623.231	20	675
ZR	III	1615.33	15	342	SR	I	1623.3 *	100	477
IN		1615.8	2	130	TL		1623.3	6	130
TL	I	1616.	5	134	RU	II	1623.390	20	675
P	I	1616.20	40	469, 594	O	II	1623.57 *	4	65, 168, 488
PD	III	1616.290	200	674	S	IV	1623.62	0	485
AL	II	1616.41	4	653	NI	III	1623.622	35	661
AS	I	1616.44	6	480, 573	B	II	1623.77 *	4	65, 168
CU	III	1616.607	300	488, 684	P	I	1623.83	25	469
NI	II	1616.91 *	10	482, 488	SE	I	1623.90	5	600
CU	I	1616.940	20	488, 672	HG	II	1623.91	5	26, 65, 452
NI	II	1617.14 *	20	488	MN	III	1623.921	300	131, 286
SE	I	1617.35	20	488, 600	B	II	1623.99 *	5	65, 168, 488
V	II	1617.35	10	478, 488	S	IV	1624.00	2	485
CL	IV	1617.43	1	43	NA	III	1624.07	12	758
I	I	1617.604	5000	344	GE		1624.1	3	130
HG	II	1617.65	1	26, 65, 527	B	II	1624.16 *	4	65, 168
NB	III	1617.78	30	320	NI	III	1624.220	20	661
MN	III	1617.787	200	131	AU	I	1624.36	8	450, 550
BI	I	1617.80	5	134	B	II	1624.37 *	4	65, 168, 488
CU	II	1617.914	20	488, 670	HG	III	1624.63	1	331
AU		1618.0	1	411	RU	II	1625.178	100	675
P	I	1618.11	15	469	SE	I	1625.19	7	600
NI	III	1618.127	15	661	CD	III	1625.27	15	25, 683
AG	III	1618.34	1	284	MN	II	1625.278	10	141, 488
AL	II	1618.38	4	653	IN	III	1625.31 *	20	230, 408, 413
FE	II	1618.470	25	488, 795	MN	II	1625.353	20	141, 488
P	III	1618.665	6	597	GA		1625.37	7	130
NI	III	1618.801	20	661	HG	II	1625.44	1	26
ZN	II	1618.97	2	682	SE	I	1625.45	6	600
V	II	1619.18	10	478, 488	FE	II	1625.520	20	488, 795
RU	II	1619.365	20	675	RU	II	1625.565	50	675
HG	II	1619.40	2	26, 65, 331	AL	II	1625.60	3	488, 653
NI	III	1619.414	20	661	P	I	1625.80	25	469, 594
ZN	III	1619.59	5	25, 416	FE	II	1625.909	15	488, 795
GA		1619.6	3	130	NI	III	1626.096	100	661
NI	III	1619.642	30	661	CU	III	1626.139	200	488, 684
RU	III	1619.77	30	301	BI	I	1626.14	3	134
CR	III	1619.94	10	490	SE	I	1626.25	12	488, 600
C	III	1620.05	3	65, 168	CR	III	1626.33	10	490
RU	II	1620.102	20	675	CU	III	1626.411	200	488, 684
C	III	1620.33	2	65, 168	CA		1627.0	1	411
SR	II	1620.35 *	5	488, 649	RU	II	1627.138	50	675
NI	III	1620.443	100	661	RU	II	1627.397	100	675
ZR	III	1620.62	50	342, 488	AG	III	1627.61	1	284
MN	III	1620.624*	2000	131, 488	ZR	III	1628.04	15	342
PD	III	1620.629	100	674	CU	III	1628.088	50	684
C	III	1620.68	1	65, 168	HG	II	1628.247	1	65
RU	II	1620.865	30	675	CU	III	1628.295	300	488, 684
PD	III	1620.903	100	674	CR	III	1628.39	12	490
SE	I	1621.21	15	468, 488, 600	CD	III	1628.528	8	25, 471, 683
BI	I	1621.31	1	134	SE	I	1628.85	8	488, 600
CU	I	1621.316	20	488, 672	HF	II	1628.91 *	12	479
CU	II	1621.426	60	488, 670, 684	CR	III	1628.98	10	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS		
NI	III	1629.000	25	661	MN	II	1636.869	15	141, 488
SE	I	1629.06	6	488, 600	MN	II	1636.964	6	141
MN	III	1629.124*	400	131, 488	SN	II	1636.992	50	291, 681
FE	II	1629.154	30	488, 795	MN	III	1637.015	100	131
P	I	1629.17	20	469, 594	FE	II	1637.396	15	488, 795
ZN	III	1629.17 *	7	25, 416	RU	II	1637.446	30	675
S	IV	1629.20	2	485	CR	III	1637.53	10	490
GA	I	1629.22	3	130	V	II	1637.55	5	478
SI	I	1629.366	200	488, 678, 794	NB	III	1637.58	25	320
CR	III	1629.56	10	490	RU	II	1637.591	40	675
RH	III	1629.738	60	677	TL	III	1637.6	1	130, 543
N	II	1629.830	4	168, 794	V	II	1637.77 *	50	478, 488
MN	II	1629.845	20	141, 488	CR	III	1637.90	10	490
SI	I	1629.921	200	488, 678, 794	V	II	1637.93	10	478, 488
MN	II	1629.940	10	141, 488	CD	IV	1638.19	4	25, 293
MN	II	1630.004	7	131, 141	ZR	III	1638.33	50	342, 488
BI	III	1630.11	3	138	RU	II	1638.366	20	675
GE	I	1630.173	8	4	CR	V	1638.42	70	490, 790
CU	II	1630.27	25	488, 670	NB	IV	1638.71	20	412
HG	III	1630.30	1	26, 331	AG	III	1638.75	1	284
BA	II	1630.40		649	AS		1638.8	3	411
Br	I	1630.67	3	400	KR	III	1638.816	3	58
V	II	1630.82	20	478, 488	CL	IV	1638.95	0	43
CR	III	1630.94	10	490, 790	CU	III	1638.956	300	488, 684
FE	IV	1630.99 *	75	286	AL	IV	1639.00	2	693
FE	II	1631.120	30	488, 795	NB	III	1639.11	10	320
SI	I	1631.134	75	339, 488, 678	V	II	1639.13	40	478, 488
ZR	III	1631.31	75	342, 488	GA		1639.35	6	130
ZN	I	1632.11	4	242, 488	HG	IV	1639.35	1	26, 696
NI	III	1632.166	100	488, 661	ZN	III	1639.35	6	25, 416
RU	II	1632.321	30	675	RU	II	1639.371	20	675
HG	IV	1632.47	3	26	AG	II	1639.38	1	283
AU	II	1632.54	2	550	FE	II	1639.403*	30	292, 488
CR	III	1632.62	10	490	CR	V	1639.46	50	490, 790
RU	III	1632.73	20	301	NB	III	1639.51	80	320
AG	I	1632.88	5	667	NI	III	1639.996	25	661
TL	II	1633.23	4	194	FE	IV	1640.03 *	65	286
PT	II	1633.330	3	671	TL		1640.1	4	130
BR	I	1633.414*	30	488, 757	IN	II	1640.10	5	413
V	II	1633.51	25	478, 488	V	II	1640.15	35	478, 488
NA	III	1633.64	4	758	FE	II	1640.152	12	488, 795
MN	III	1633.807*	500	131, 488	TE		1640.16	3	401
FE	II	1633.904	15	488, 795	AG	III	1640.22	2	284
SI	I	1633.978	50	339, 488, 678	SB	I	1640.32	15	31, 477
TL	III	1634.0 *	7	130, 543	HE	II	1640.332*	80	488
RU	III	1634.05	20	301	AU		1640.4	1	411
CR	III	1634.12	12	490	MO	II	1640.402	100	591
RU	III	1634.13	30	301	HE	II	1640.474*	100	488
HG	II	1634.28	1	26	P	IV	1640.476	3	597
FE	II	1634.345	20	488, 795	CD	II	1640.50	40	25, 683
SB	II	1634.45	1	31	HG	II	1640.61	1	26
K		1634.6	1	659	I	I	1640.780	2500	344
HG	III	1634.68	1	331	V	II	1640.86	30	478, 488
AG	III	1634.81	1	578	CR	III	1640.94	10	490
CR	III	1635.10	10	490	S	I	1641.30	6	599
RU	II	1635.129	30	675	RU	II	1641.460	100	675
GE	I	1635.257	8	4	CR	III	1641.56	10	490
RU	II	1635.333	50	675	CE	IV	1641.6	15	335
FE	II	1635.398*	35	488, 795	FE	II	1641.759	25	488, 795
CR	III	1635.48	10	490	TL		1641.8	2	130
BR	II	1635.52	2	400	I	I	1642.137	2000	344
NR	IV	1635.68	40	412	CR	III	1642.16	10	490
BI	I	1635.78 *	10	134	CU	III	1642.208*	2000	488, 684
V	II	1635.86	20	478, 488	HG	III	1642.33	1	26
RU	II	1635.948	100	675	CA	II	1642.802		186
AU		1636.0	1	411	MG	III	1642.86	1	693
V	II	1636.02	40	478, 488	V	II	1643.02	30	478, 488
U		1636.2	3	411	MO	V	1643.108	10	591, 761
RH	III	1636.201	10	677	GE	I	1643.193	8	4
FE	II	1636.321*	30	488, 795	CR	III	1643.20	10	490
CR	III	1636.35	20	490	SN	II	1643.230	40	681
PB	I	1636.53	0	134	SE	I	1643.39	15	488, 600
CU	II	1636.61	10	488, 670	CL	IV	1643.40	1	43
ZR	III	1636.61	20	347	V	II	1643.43	30	470, 400
MN	II	1636.751	25	141, 488	MN	III	1643.485	50	131

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
FE II	1643.574	15	488, 795	NB III	1651.44	40	320
SB II	1643.58	1	31, 414	GE I	1651.528	6	4
CA II	1643.770		186	PD III	1651.532	100	674
TL	1643.82	6	130	CR III	1651.56	10	490
CR V	1643.86	40	490, 790	CU I	1651.721	20	488, 672, 684
AL II	1644.15	5	653	GA	1651.8	2	130
PT II	1644.186	3	671	ZN III	1651.83	6	25, 416
CA II	1644.25	0	186, 488, 648	AG I	1651.87 *	100	667
BI I	1644.26 *	10	134	CD III	1651.87	20	25, 683
PT II	1644.317	5	671	RU II	1651.898	30	675
SB I	1644.37	20	477	GE I	1651.954	8	4
HG II	1644.50	2	26	CU III	1652.010	300	488, 684
AG II	1644.50 *	10	283	CA II	1652.02	1	186, 488, 648
HG II	1644.526	1	65	HG III	1652.24 *	8	26, 65, 331
AG III	1644.66	2	284	MN III	1652.333	100	47, 131, 286
MO V	1644.671*	20	591, 761	NB III	1652.39	40	320
AL II	1644.78	5	653	CR III	1652.46	15	490, 790
GA	1644.79	3	130	CO III	1652.791	10	488, 673
ZN III	1644.79	6	25, 416	DI II	1652.81	20	138
SE III	1644.87	1	587	NB III	1652.83	40	320
TE I	1645.0	3	16	FE IV	1652.85	20	286
C III	1645.06	1	65, 168	NI III	1652.866	300	661
RU III	1645.37	30	301	NI III	1653.119	200	661
P III	1645.914	2	597	HG III	1653.14	2	331
CO III	1645.986	30	488, 673	LI II	1653.3 *	8	788
FE II	1646.182	20	488, 795	MN III	1653.570*	400	47, 131, 488
AU I	1646.59 *	20	450, 550	HG II	1653.644	2	527, 794
SN IV	1646.956	20	681	RU III	1653.77	100	301
FE IV	1647.05 *	45	286	RH III	1653.810	10	677
FE II	1647.159	25	488, 795	TL	1653.9	4	130
TL	1647.2	5	130	C I	1654.055	5	794
HG III	1647.35 *	10	26, 65, 331	RH III	1654.501	20	677
KR III	1647.359	2	58	CU III	1654.574	300	488, 684
MN III	1647.374	200	131	HG III	1654.66 *	8	26, 331, 783
MN III	1647.492	250	131, 488	IN	1654.7	2	130
N I	1647.493	3	191	HG II	1654.78	6	65, 527
GA	1647.5	2	130	CD II	1654.86	75	25, 683
GE I	1647.531	4	4, 581	SB IV	1655.05	1	31, 277
P III	1647.546	3	597	CU I	1655.318*	30	488, 672
IN	1647.6 *	8	130	TE I	1655.4	5	16
RU II	1647.615	20	675	CR V	1655.48	25	490, 790
MN III	1647.661	300	47, 131	CD III	1655.63	25	25, 683
NB III	1647.81	30	320	RU III	1655.95	30	301
MN III	1647.823	80	131, 488	K	1656.1	1	659
CD II	1647.93	60	683	MN IV	1656.10	4	47
IN I	1648.00 *	2	134, 274	NI III	1656.126	250	661
CL IV	1648.04	0	43	FE IV	1656.25	10	286
GE IV	1648.14	3	406	C I	1656.255	5	488, 668
TL	1648.2	3	130	C I	1656.259	15	794
PT II	1648.256	2	671	CU II	1656.326	20	488, 670
MN III	1648.408	100	131, 488	C I	1656.454	4	794
CD IV	1648.58	2	25, 293	FE IV	1656.61	15	286
GE II	1649.26 *	20	406, 488	ZR	1656.7	7	335
CO III	1649.265	200	488, 673	HG II	1656.83	5	26, 696
FE II	1649.444	15	292, 488	C I	1656.923*	3	488, 668, 794
CU II	1649.457	25	488, 670	ZN II	1656.99	1	25
MN III	1649.493	150	131	C I	1656.998	10	488, 668
CR III	1649.51	15	490	C I	1657.001*	30	794
FE II	1649.572	20	488, 795	SB II	1657.036*	20	414
ZN II	1649.66	2	682	AU II	1657.09	10	550
NI III	1649.771	100	488, 661	GA	1657.12	2	130
HG II	1649.932*	10	26, 698, 794	RU II	1657.217	30	675
IN III	1649.95 *	5	290	C I	1657.374	2	488, 668, 794
CA II	1649.96	2	186, 488, 648	FE II	1657.531	10	645
GA	1650.0	5	130	C I	1657.899	4	488, 668, 794
TL I	1650.2 *	0	134	CD IV	1658.08	4	25, 293
PT II	1650.233	5	671	SB	1658.10	1	91
GE I	1650.292	8	4	HG IV	1658.11	4	26, 696
MN III	1650.439	80	131	C I	1658.117*	5	488, 668, 794
AG III	1650.52	2	284	GE I	1658.375	4	4
FE II	1650.704	20	488, 795	CU III	1658.472	200	488, 684
AG III	1650.97	2	284	NA III	1658.71	2	758
SB I	1651.20	50	477	FE II	1658.773	15	488, 795
CL IV	1651.21	1	43	CR III	1658.93	12	490
MN III	1651.357	80	131, 488	CR III	1659.26	10	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
BI III	1659.3	3	138	B I	1667.30 *	10	65, 134, 658
RU II	1659.364	100	675	MO IV	1667.480	70	591
FE II	1659.479	20	488, 795	IN	1667.52	2	130
PT II	1659.484	20	671	GA	1667.61	2	130
CD IV	1659.51	6	25, 293	SI I	1667.618	100	339, 488, 678
MN III	1659.608	100	131, 286	CR III	1667.63	12	490
K	1659.7 *	4	659	V II	1667.66	10	478, 488
CO III	1659.757	10	488, 673	CA	1667.7	30	411
KR III	1659.809	2	58	GE I	1667.801	8	4
S	1659.83	1	401	V II	1667.88	5	478, 488
TE	1659.93	6	401	CR III	1668.24	10	490
CU II	1660.005	20	488, 670	SB	1668.30	2	31
TL III	1660.05 *	8	451, 543	AG III	1668.48	1	284
FE IV	1660.07	20	286	SI I	1668.517	100	339, 488, 678
V II	1660.53	8	478, 488	MG I	1668.57 *	0	658
AS II	1660.60 *	8	488, 572	MO V	1668.669 *	50	591, 761
CR III	1660.70	15	490	K	1668.7 *	4	659
RH III	1660.709	10	677	MO IV	1668.948	50	591
CU III	1660.887	30	684	PT II	1668.987	5	671
TL	1661.0	3	130	MN III	1669.010	200	131, 488
MO V	1661.230 *	100	591, 761	A III	1669.10	1	59, 65
V II	1661.27 *	60	478	K	1669.3 *	4	659
CO III	1661.422	10	488, 673	A III	1669.304	5	59, 65
BE I	1661.486 *	12	541	MN III	1669.417	200	131
MN III	1661.603	50	131	IN II	1669.51	4	413
NI III	1661.786	200	661	NA III	1669.52	3	758
RH III	1661.822	20	677	HG III	1669.62	3	26, 331
FE IV	1662.26	20	286	A III	1669.671	7	59, 65, 488
SB I	1662.6 *	100	31, 477	GA II	1669.83	3	652
HG III	1662.61 *	6	26, 65, 331	CR III	1669.97	15	490
B I	1662.62	2	65, 134, 658	V II	1670.01	10	478, 488
IN	1662.7	4	130	CU III	1670.140 *	500	488, 684
CU II	1663.003	30	488, 670	CR III	1670.45	15	490
B I	1663.05	3	65, 134, 658	GE I	1670.50	1	581
TE I	1663.1	3	16	MO II	1670.599	50	591
FE II	1663.217	15	488, 795	FE II	1670.742	25	488, 795
SB	1663.28	1	31	CD III	1670.748	5	25, 471, 683
FE IV	1663.52	10	286	MO II	1670.781	50	591
GE I	1663.52	1	581	AL II	1670.81 *	15	488, 653, 658
V II	1663.60	15	478, 488	AU	1670.82	1	658
TL	1663.7	2	130	GA	1670.88 *	12	130
HG III	1664.23 *	6	26	V II	1670.90	5	478, 488
B I	1664.25	2	134	GE I	1671.010	5	4, 581
CD II	1664.27	60	25, 683	MN III	1671.027	200	131
S	1664.30	3	401	P I	1671.07	70	469, 594
CU I	1664.303	10	488, 672	HG III	1671.07 *	7	26, 65, 331
CR III	1664.35	15	490	SE I	1671.15 *	25	488, 600
CU I	1664.708	10	488, 672	BR I	1671.17	2	400
MN IV	1664.74	5	47	TI	1671.2	20	411
B I	1664.76	2	134	TE	1671.42	6	401
RH III	1664.883	10	677	P I	1671.49	35	469, 594
CO III	1665.269	50	488, 673	PB II	1671.53 *	10	163
GE I	1665.275	6	4	ZN	1671.54	3	658
HG II	1665.3	1	698	P I	1671.68 *	180	469, 488, 594
SN II	1665.329	100	681	CU III	1671.886 *	500	488, 684
AG II	1665.34	5	283	IN II	1671.89	4	413
V II	1665.42	8	478, 488	P I	1672.05	35	469, 594
MO IV	1665.545	50	591	NI III	1672.213	50	661
IN	1665.58	2	130	RU II	1672.225	30	675
GA	1665.66	2	130	ZR III	1672.35	15	342
AU I	1665.78 *	12	450, 550	HG II	1672.405	2	26, 452, 794
MO IV	1665.845	50	591	V II	1672.44	15	478, 488
NI III	1665.859	20	661	P I	1672.48	90	469, 594
NI III	1666.102	20	661	RH III	1672.557	20	677
SI I	1666.369	50	339, 488, 678	SI I	1672.593	100	339, 488, 678
IN	1666.62	2	130	CR III	1672.64	20	490
MO IV	1666.654	70	591	SB	1672.69	2	31
CR III	1666.66	10	490	CU II	1672.77	10	488, 670
GA	1666.67	2	130	K	1672.9	3	659
S I	1666.68 *	25	488, 599	MN III	1672.967	200	131
NI III	1666.828	20	661	NB III	1672.98	40	320
B I	1666.87 *	8	134, 658	TL III	1673.0 *	2	130, 543
SB IV	1667.01 *	7	31, 277	GA	1673.04	3	130
SE II	1667.15	2	354, 468, 588	A III	1673.14	1	59, 65
MN III	1667.166	300	47, 131, 286	ZN III	1673.14 *	7	25, 416

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
A III	1673.241	3	59, 65	NB III	1680.22	20	320
CO III	1673.325	10	673	PT II	1680.339	1	671
SI IV	1673.374*	150	310	MN II	1680.400	10	141, 488
A III	1673.425	7	59, 65, 488	CA II	1680.5	1	186, 648
MN III	1673.448	200	131, 488	RU III	1680.64	20	301
FE II	1673.460	15	488, 795	AG III	1681.07	10	284
AU II	1673.61*	25	550, 658	CO III	1681.074	10	488, 673
CO III	1673.679	20	673	V II	1681.22	5	478
CR III	1673.77	10	490	GE I	1681.342	8	4, 581
GE I	1673.850	1	4	HG III	1681.40	4	26, 237, 331
BI III	1673.98	3	138	FE IV	1681.45*	25	286
IN II	1674.04*	6	413	CU III	1681.481	300	488, 684
V II	1674.09	8	478	CR III	1681.49	12	490
TL	1674.1	5	130	NE II	1681.70	3	57, 65, 488
CA II	1674.1	1	186, 648	IN II	1681.72	4	413
GA	1674.15	3	130	AL II	1681.78	5	653
GE I	1674.270	15	4, 581	LI II	1681.8*	4	788
SN III	1674.294	50	291, 681	ZN	1682.11	5	658
AG III	1674.34	8	284	BI I	1682.13	1	134
TL III	1674.4*	3	130, 543	PB II	1682.15*	10	163
BA II	1674.51	1	569, 649	TH IV	1682.22*	70	349
CU III	1674.602*	500	488, 684	CU III	1682.695	30	488, 684
P I	1674.61*	230	469, 488, 594	NB III	1682.77*	100	320
TL	1674.67	5	130	AG II	1682.82*	12	283
FE II	1674.716	10	488, 645	MG IV	1683.04	3	693
CR III	1674.73	15	490	CU II	1683.15	40	488, 670
AG III	1674.99	6	284	MG I	1683.51*	1	658
ZR III	1675.06	35	342, 488	AG III	1683.56	1	284
K	1675.1	2	659	NI III	1683.688	30	661
I I	1675.174	1500	344	PD III	1683.821	200	669, 674
SI I	1675.198	200	339, 488, 670	RU II	1683.985	50	675
SE I	1675.27*	25	488, 600	TH IV	1684.01	30	349
A III	1675.484	7	59, 65	CR III	1684.02	15	490
MN III	1675.500	200	47, 131	CR III	1684.14	10	490
GE I	1675.560	8	4, 581	NB III	1684.40	60	320
A III	1675.637	4	59, 65, 488	MN II	1684.576	10	141, 488
CR III	1675.72	20	490	CU III	1684.642*	500	488, 672, 684
ZR III	1675.75	35	342, 488	BI I	1684.74	1	134
FE IV	1675.78*	25	286	TL I	1685.40*	5	134
N II	1675.83	5	65, 168	BI I	1685.65	5	134
HG II	1675.898	3	26, 65, 452	CU I	1685.682*	25	488, 672
TE I	1675.98*	8	147, 401	CR III	1685.85	15	490
HG III	1676.01	3	331	P I	1685.99	120	469, 488, 594
PB I	1676.11	1	134	AL II	1686.19	5	653
IN I	1676.16*	1	134, 274	CU III	1686.214	300	488, 684
CR III	1676.20	15	490	NI III	1686.216	75	661
CR III	1676.96	10	490	PT II	1686.246	10	671
CU III	1677.373	200	488, 684	FE II	1686.450	8	488, 795
K	1677.6	1	659	RU II	1686.691	100	675
HG III	1677.85*	10	26, 65, 331	AG II	1686.73	2	283
GA	1677.9	2	130	SB I	1686.84	20	477
BA II	1677.9*	3	335	BI I	1686.99	3	134
CO III	1677.901	15	488, 673	CR III	1687.03	15	490
N I	1677.906	4	191	CU I	1687.043	20	488, 672
TE I	1678.07*	15	147	CU III	1687.134*	600	488, 684
CD III	1678.15	30	25, 471, 683	S I	1687.54*	20	599
AG III	1678.27	8	284	MN II	1687.700	30	591
CR III	1678.41	10	490	NI III	1687.897	400	488, 661
NB III	1678.73	20	320	SJ I	1688.06	30	477
PT II	1678.752	5	671	CU I	1688.093*	30	488, 672
CU III	1679.151	400	488, 684	NE II	1688.38	4	57, 65, 488
PT II	1679.193	5	671	TE I	1688.5	5	16
CR III	1679.25	30	488, 490	GA	1688.6	2	130
V V	1679.36*	7	279	CU III	1688.618	100	488, 684
TE I	1679.37*	12	147, 401	ZN III	1688.69	6	25, 416
FE II	1679.380	15	488, 795	SE I	1688.79	3	600
CR III	1679.38*	15	490	CA III	1688.81	1	39
HG III	1679.42	5	26	CU I	1688.865	15	488, 672
CR III	1679.53	12	490	CU III	1689.051	200	488, 684
MN II	1679.564	15	321, 488	P I	1689.25	35	469
CO III	1679.578	20	488, 673	SI I	1689.290	50	339, 488, 678
RU II	1679.620	30	675	CR III	1689.46	10	490
P I	1679.71*	300	469, 488, 594	MN II	1689.488	15	141, 286, 488
CR III	1679.83	10	490	CL III	1689.50	1	43
CA II	1680.051		186	MN II	1689.614	15	141, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
TE	1689.81	2	401	K	1698.9 *	10	659
FE	1689.830	10	488, 795	CA	1698.95	1	39
CO	1689.858	100	488, 673	N	1699.00	2	65, 246
GE	1690.034	8	4, 581	MN	1699.08	5	47
NB	1690.13	40	320	CU	1699.09	30	488, 670, 684
CR	1690.28	30	488, 490	N	1699.32	5	65, 246
NI	1690.372	20	661	AU	1699.38	4	550
SE	1690.70 *	25	488, 600	SN	1699.419*	1000	448, 681
FE	1690.757	8	488, 795	RU	1699.442	20	675
GE	1690.902	4	4	CD	1699.70	10	683
NI	1690.974	15	661	MO	1699.735	10	591, 761
SB	1691.02	30	477	RU	1699.84	200	301
CU	1691.076*	30	488, 672	SE	1699.90	4	600
GE	1691.090	15	4, 581	BI	1699.90	1	134
MN	1691.246	8	141, 488	N	1699.95	4	65, 246
FE	1691.271	8	488, 795	TE	1700.0 *	6	16, 147
BI	1691.5	20	138	IN	1700.01 *	6	413
GE	1691.625	8	4, 780	GA	1700.02	4	130
NB	1691.67	10	320	CD	1700.14	4	25, 293
P	1691.75	20	469, 597	CR	1700.29	20	488, 490
NB	1691.80	40	320	RU	1700.42	50	301
GE	1691.866	7	4	AU	1700.69 *	30	550
AS	1691.87	7	480, 573	CU	1701.023*	400	488, 672, 684
V	1692.11	10	478, 488	NB	1701.03	50	320
CA	1692.4	1	186, 648	RU	1701.080	30	675
MN	1692.457	10	141, 488	AS	1701.16	15	480
NI	1692.514*	1000	488, 661	AS	1701.22	30	480, 488, 573
HG	1692.55	3	26, 331, 527	RH	1701.232	20	677
CU	1692.706	300	488, 684	TL	1701.36	5	130
CR	1692.89 *	60	488, 490	CR	1701.48 *	60	488, 490
P	1693.03	1	597	MO	1701.596	30	591
CO	1693.085	30	673	NI	1701.599	60	488, 661
V	1693.09	10	478, 488	FE	1702.043	25	488, 795
SI	1693.292	50	339, 488, 678	I	1702.068*	15000	344
PD	1693.473	200	674	CU	1702.102*	400	488, 684
V	1693.49	12	478, 488	F	1702.16	0	157
AG	1693.51 *	50	284	CU	1702.190*	300	488, 684
P	1694.06	100	469, 488, 594	AG	1702.20	4	283
AU	1694.29	7	550	SB	1702.22	20	31, 414, 477
GE	1694.342	3	4	TE	1702.26	2	147, 401
BA	1694.37 *	4	569, 649	CU	1702.349	30	488, 684
P	1694.50	40	469, 594	GE	1702.387	1	4, 780
RH	1694.768	20	677	CD	1702.47	50	683
HG	1695.18	2	26, 65	GA	1702.5	2	130
P	1695.35	15	469	IN	1702.51 *	6	413
NB	1695.47	30	320	HG	1702.733	1	527, 794
SI	1695.507	50	339, 488, 678	CO	1702.790	500	488, 673
ZN	1695.54	3	25, 416	RU	1702.88	50	301
NI	1695.599	30	661	CU	1702.994*	500	488, 684
GA	1695.85	5	652	AG	1703.04	5	284
GE	1695.860	6	4	RII	1703.29	50	301
CO	1696.008	1000	488, 673	ZR	1703.36	40	342
SI	1696.203	200	339, 488, 678	MN	1703.366	5	141
PT	1696.278	8	671	TL	1703.4	4	130
N	1696.54	3	65, 246	NI	1703.41	10	488
CR	1696.64 *	60	488, 490	SB	1703.45	30	477
FE	1696.794	8	488, 795	NI	1703.467	50	661
BA	1697.16		649	K	1703.5 *	9	659
CD	1697.16	2	25, 293	RU	1703.562	50	675
MN	1697.181	20	141, 488	MG	1703.78	1	693
RU	1697.27	30	301	CU	1703.843*	30	488, 672
MG	1697.32	2	693	K	1704.3	3	659
MN	1697.526	12	131, 141, 488	PD	1704.330	100	674
RH	1697.632	10	677	NI	1704.641	60	661
SI	1697.938	200	339, 488, 678	PT	1704.765	15	671
RU	1697.943	20	675	MN	1704.862	15	141, 488
CO	1697.988	800	488, 673	F	1704.90	1	157
NI	1698.176	50	488, 661	S	1704.99	5	599
AU	1698.59	2	550	AG	1705.06	20	284
MN	1698.69	5	47	MN	1705.11	1	47
CR	1698.75	20	490	CU	1705.299	5	591, 761
MO	1698.780	20	591	CO	1705.333	300	488, 684
MG	1698.83	2	693	NB	1705.44 *	100	320
SB	1698.85	50	31, 477	HG	1705.47	4	26, 65, 452
NA	1698.9	10	335	TL	1705.55	3	194

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CU III	1705.633	400	488, 684	PB IV	1715.39	1	656
MN IV	1706.03	1	47	AG II	1715.45	2	283
S I	1706.38	8	488, 599	FE II	1715.507	12	488, 645
P I	1706.41	60	469	GE I	1715.836	9	4, 581
AG III	1706.61	5	284	PB I	1715.93	1	134
GA	1706.7	2	130	NI III	1715.931	100	488, 661
TE I	1706.7	3	16, 147	RU III	1715.97	100	301
ZN III	1706.78	6	25, 416	MN II	1715.982	12	141, 488
CO III	1706.807	100	673	NB III	1716.06	10	320
AG III	1706.89	5	284	BI I	1716.09	1	134
MG I	1707.10 *	3	658	MN II	1716.138	8	141
S I	1707.13	8	488, 599	HF II	1716.23	6	479
NB III	1707.14 *	100	320	CA III	1716.23	1	39
ZN	1707.155	2	472	CO III	1716.251	200	488, 673
CD III	1707.156	40	25, 471, 683	RE I	1716.45 *	12	350
NI III	1707.346	200	488, 661	GA	1716.52	2	130
CO III	1707.348	1000	488, 673	IN II	1716.74 *	8	413
TH IV	1707.37 *	150	349	GE I	1716.784	20	4, 581
HG II	1707.397	4	26, 452, 794	NI III	1716.886	75	488, 661
NI III	1707.476	200	488, 661	HG III	1716.92	4	26, 331
CR III	1707.43 *	80	480, 490	SB I	1716.93 *	80	477
P I	1707.57	40	469	AU	1716.96	0	658
CR III	1707.78 *	40	488, 490	CR III	1717.43	20	490, 792
TH III	1707.88	15	348	SB I	1717.45 *	150	477
CO III	1707.951	500	488, 673	CU II	1717.72	15	488, 670
TE I	1708.0	5	16, 147	PT II	1717.96	1	671
SE I	1708.04	3	600	MO V	1718.033	5	591, 761
TL	1708.1	4	130	NI III	1718.184	20	661
CA	1708.1	1	411	AU I	1718.27	2	450, 658
AG I	1708.11 *	10	667	NI III	1718.365	150	488, 661
NI III	1708.552	50	488, 661	AG II	1718.38	1	283
PD III	1708.568	100	674	GE I	1718.493	4	4, 581
FE II	1708.627	8	488, 795	N IV	1718.52 *	10	65, 168, 488
MN II	1708.652	6	141	P I	1718.55	20	469
PT II	1708.736	10	671	GE I	1718.688	10	4, 780
AG III	1708.86	15	284	ZN	1718.80	1	25
CU III	1708.958*	200	488, 684	RU II	1718.975	20	675
CU III	1709.036*	700	488, 684	NI III	1719.008	20	661
SB I	1709.21	15	477	AG II	1719.30	5	283
AG I	1709.26 *	50	667	P I	1719.31	30	469, 594
K	1709.4	3	659	PB	1719.43	3	130
NI II	1709.60 *	100	488	NI III	1719.458*	500	488, 661
FE II	1709.678	15	488, 645	IN	1719.47	6	130
NI III	1709.901*	800	488, 661	RU III	1719.47	50	301
AS I	1710.16	7	480, 573	GA	1719.49	6	130
SB III	1710.21	1	31, 407	K	1719.8	3	659
RU II	1710.299	20	675	PD III	1719.856	200	674
AG III	1710.56	1	284	SN I	1719.866	30	473, 308
TL	1710.89	2	130	NI III	1719.892	50	488, 661
CR III	1711.02	20	490	AU II	1719.97	10	550, 658
PB III	1711.23	4	687	FE II	1720.042	10	488, 645
CU III	1711.257	30	684	CO III	1720.068	20	673
TL	1711.3	2	130	C II	1720.158	18	794
CU III	1711.437	30	684	FE II	1720.616	20	488, 795
AU	1711.47	0	658	MN IV	1720.64	6	47
IN I	1711.54 *	5	134, 274	NI III	1720.708	20	488, 661
CR III	1711.63	20	488, 490	HG III	1720.71	4	26, 331
SB III	1711.74 *	5	31, 407	GE I	1720.746	5	4
HG II	1711.86	1	26	C II	1720.99	1	65, 168
GE I	1712.32	1	581	C II	1721.081	20	794
AS I	1712.32	10	480, 573	CO III	1721.151	10	673
BR II	1712.43 *	8	400	CR III	1721.18	15	490
RU II	1712.456	20	675	TE I	1721.2	3	16, 401
TE I	1712.8	3	16, 147	NI III	1721.256	200	488, 661
FE II	1712.995	20	488, 795	AL II	1721.279*	10	488, 653, 658
GE I	1713.081	10	4, 581	IN	1721.29	7	130
CU I	1713.364*	50	488, 672, 684	GA	1721.33	7	130
S I	1713.54	1	599	8E	1721.43	1	658
HG III	1713.68	2	26, 331	PB	1721.47	4	130
AG III	1713.81	2	284	K	1721.6	3	659
CR III	1714.01	15	490, 792	C II	1721.66	2	65, 168
MN II	1714.388	10	141, 488, 794	CR III	1721.67	20	490, 792
AU I	1714.57 *	10	550	N I	1721.746	3	191
NI III	1714.698	100	661	CD III	1721.93 *	40	25, 683
TL	1715.0	3	130	ZN III	1721.95	1	472

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AU II	1721.98	1	550
NI III	1722.038	15	661
MG III	1722.10	2	693
AG III	1722.27	20	284
NI III	1722.283	400	488, 661
CU III	1722.379*	1000	488, 684
SI IV	1722.554*	500	310
RH III	1722.581	30	677
V II	1722.62	10	478, 488
PB I	1722.66	5	134
PD III	1722.735	150	674
NI III	1722.790	20	488, 661
BI III	1722.9	3	138, 449
CD III	1722.95 *	40	25, 683
RH III	1723.078	10	677
PT II	1723.128*	30	671
CR III	1723.16	10	490
TL	1723.3	3	130
RU III	1723.38	50	301
SB I	1723.43 *	150	477
CR III	1723.50	10	490
AG II	1723.63	8	283
K	1723.7	1	659
NI III	1723.793	150	661
CO III	1723.970	500	488, 673
HG III	1724.21	2	26, 331
NI III	1724.291	75	488, 661
GE I	1724.308	9	4
CR III	1724.32	12	490, 792
CD II	1724.41	50	683
NB III	1724.41	60	320
NI III	1724.523	50	488, 661
PT II	1724.563	10	671
W	1724.575*	20	794
AS I	1724.77	7	480, 573
BR II	1724.8	2	400
FE II	1724.856	8	488, 795
CR III	1724.86	10	490
FE II	1724.967	8	488, 795
AL II	1724.981*	15	488, 653, 658
K	1725.0	3	659
IN	1725.00 *	8	130
PB	1725.01	5	130
ZR III	1725.03	40	342
GA	1725.05	8	130
CR III	1725.12	10	490
RU III	1725.13	30	301
MN II	1725.281	8	141, 488, 794
CR III	1725.29	15	490
SB III	1725.30 *	5	31, 414, 495
MO	1725.604	1	591
CD III	1725.66	30	25, 683
CU I	1725.664*	50	488, 672
AU II	1725.89 *	25	550, 658
MO	1726.027	2	591
CO III	1726.134	100	488, 673
PT II	1726.366	10	671
FE II	1726.393	12	488, 795
MN II	1726.481	5	131, 141
PB	1726.5	3	130
CO III	1726.726	15	673
PB II	1726.75 *	20	163
ZN	1726.79	1	658
CA III	1726.88	1	39
MO V	1726.995*	50	591
AU	1727.0	1	411
SN I	1727.152	50	473, 308
HG II	1727.17	2	65, 331, 527
SI I	1727.332	450	310, 794
MO V	1727.351*	20	591
PD III	1727.375	100	674
NI III	1727.640	20	661
HG III	1727.69	4	26
TL I	1728.	0	134
CU III	1728.139	200	488, 684

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG III	1728.14	25	284
W	1728.620*	10	794
NI III	1728.738	20	661
AS III	1728.8	1	542, 575
SB I	1728.86	15	477
S	1728.97	1	401
W	1729.325*	20	794
NI III	1729.384	20	661
RH III	1729.393	50	677
AG III	1729.55	3	284
BI	1729.6	4	411
TL	1729.75	3	130
V II	1729.78	10	478, 488
AS I	1729.80	30	480, 488, 573
BR I	1729.88 *	8	400
N III	1730.04	8	65, 168
NI III	1730.483	75	488, 661
CU I	1730.576	10	488, 672
TE I	1730.6	2	16
SB III	1730.62 *	6	31
CO III	1730.669	250	488, 673
MG III	1730.81	1	693
AU II	1731.01	1	550
FE II	1731.038	10	488, 645
BI I	1731.10	1	134
CR IV	1731.22	20	488, 490
PT II	1731.413	10	671
RU II	1731.415	50	675
MO II	1731.489	50	343, 591
MO II	1731.590	40	591
MG III	1731.88	1	693
AG II	1732.04	6	283
RH III	1732.041	40	677
CR III	1732.06	20	490
HG II	1732.142*	15	452, 794
FE II	1732.253	15	488
AS I	1732.44	30	480, 488, 573
CO III	1732.545	200	488, 673
PD III	1732.634	250	674
CU I	1732.674	20	488, 672
NE II	1732.69	3	65, 251
MO II	1732.690	80	591
MN II	1732.707	6	141
AS I	1732.86	30	480, 488, 573
TE I	1733.0	3	16
CR III	1733.00	20	490
NI III	1733.129	250	488, 661
CR III	1733.13	15	490
BI I	1733.23	1	134
MO II	1733.409	80	591
MN II	1733.537	8	141, 488, 794
RU II	1733.537	20	675
CO III	1733.635	10	673
NI III	1733.762	50	661
MN IV	1733.94	2	47
CR III	1733.98	15	47, 490
MN II	1734.491	12	141, 488
MG II	1734.852		592
CO III	1735.400	50	488, 673
ZN II	1735.628	2	472
MO II	1735.707	50	591
PT II	1735.858	15	671
BI I	1735.93	3	134
NI III	1736.011	50	661
NI III	1736.051	50	661
HG III	1736.16	1	331
SB I	1736.19 *	100	31, 414, 477
CO III	1736.312	200	488, 673
CU II	1736.54	10	488, 670
CR III	1736.63	20	490, 791
SN I	1737.231	50	473, 308
MO II	1737.598	20	591
MG II	1737.612*		592
MG II	1737.628*		592
CU III	1737.893	30	684

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG III	1737.92	1	284	CA III	1744.61	3	39
MO II	1737.966	30	591	MN II	1744.659	5	141
GE I	1738.118	8	4	RU III	1744.72	20	301
CU III	1738.145	30	684	MN II	1744.842	15	141, 488
CR III	1738.23	12	490, 791	F II	1744.86	1	157
NI III	1738.252*	500	488, 661	AL	1745.2	1	456
GE I	1738.479	15	4, 581	N I	1745.246	30	488, 794
HG III	1738.49 *	10	65, 331	NB III	1745.29	30	320
IN	1738.5	4	130	SE I	1745.30	3	600
CA III	1738.56	3	39	S IV	1745.42	1	485
NI III	1738.785	30	488	PD III	1745.562	150	674
MG III	1738.91 *	6	693	F II	1745.57	2	157
SB I	1738.95	25	477	CO III	1745.674	500	488, 673
CD III	1739.00	25	25, 683	CD III	1745.69	5	683
S IV	1739.03	0	485	AU	1745.7	1	411
GE I	1739.102	10	4, 581, 780	GE I	1746.058	12	4, 581
SB I	1739.21	20	477	MO II	1746.221	30	343, 591
CR IV	1739.22	50	47, 488, 490	TE	1746.30	2	401
NB III	1739.30	50	320	CO III	1746.369	20	673
V II	1739.33	10	478, 488	RU II	1746.446	30	675
K	1739.4	2	659	CR III	1746.77	20	47, 490
AS I	1739.49	60	480, 488, 573	FE II	1746.816	20	488, 645
CU III	1739.508	300	488, 684	NI III	1747.011*	550	488, 661
AG III	1739.52	3	284	ZN II	1747.13 *	6	25, 682, 754
AL II	1739.64	5	653	CR III	1747.14	30	490
NI III	1739.785	300	661	PT II	1747.180	8	671
CO III	1739.833	30	488, 673	MO V	1747.198*	20	591, 761
CD IV	1739.95	2	25	AG III	1747.34	20	284
RH III	1739.997	10	677	F II	1747.40	3	157
MN II	1740.155	6	47, 141	SI I	1747.404	50	339, 488, 678
IN	1740.2	2	130, 274	SB	1747.56	1	31
HG III	1740.24 *	6	65, 331	MG III	1747.64 *	4	658, 693
RH III	1740.242	20	677	CD III	1747.67	40	25, 683
N II	1740.327*	15	168, 794	NI III	1747.680	50	661
PT II	1740.354	10	671	N III	1747.86	9	65, 168, 488
AU II	1740.47 *	45	550, 658	MN II	1747.996	10	141, 488
NI III	1740.944	30	661	MN II	1748.130	12	141, 488
HG III	1741.02	3	331	CD III	1748.15	15	25, 683
RH III	1741.057	10	677	NI II	1748.30 *	20	488
CU III	1741.135	30	684	MO II	1748.454	20	591
GE I	1741.18	1	581	IN III	1748.71 *	25	230, 408, 590
K	1741.2 *	4	659	GA	1748.75	8	130
IN I	1741.23 *	2	134, 413	GE I	1748.857	7	4
RU II	1741.262	20	675	MO V	1748.973	5	591, 761
AS I	1741.28	10	480	V II	1748.99	5	478, 488
CU III	1741.378*	500	488, 684	MG III	1749.02 *	5	693
GA	1741.5	3	130	RH III	1749.208	20	677
CU I	1741.574*	50	488, 672	BI II	1749.29	20	138
NI II	1741.581*	20	488, 794	K	1749.3 *	8	659
PD III	1741.619	500	674	MO II	1749.688	40	591
MN II	1741.651	5	141	AU II	1749.71	10	550, 658
MO II	1741.753	20	591	CO III	1749.728	25	673
NI III	1741.963	300	488, 661	ZN III	1749.74	6	25, 416
RU III	1741.98	20	301	HG	1749.8	4	130
MN II	1741.983	6	47, 141	GA	1749.87	2	130
CH III	1742.19	15	490	GE I	1750.043	20	4, 581
GE I	1742.195	20	4, 581, 780	SB I	1750.06	15	477
AL	1742.4	1	456	MN II	1750.115	8	141
NB III	1742.56	30	320	MN II	1750.202	6	141
AS I	1742.59	10	480, 488, 573	MQ IV	1750.314	20	591
N I	1742.724*	60	488, 794	CU III	1750.391*	500	488, 684
SE I	1742.75	4	600	AL II	1750.56	6	653
CO III	1743.212	10	673	MG II	1750.664	592	
CO III	1743.311	30	488, 673	GE I	1750.76	1	581
N II	1743.322*	10	168, 794	SE I	1750.89	6	600
CR III	1743.44	10	490	SB I	1750.91	15	477
IN III	1743.52	1	410	TE I	1751.0 *	6	16, 147
ZR III	1743.55	20	342, 346	AG III	1751.03 *	75	284
BI I	1743.79	3	134	CO III	1751.037	100	673
GE I	1744.053	8	4	N III	1751.24	6	65, 168, 488
GE I	1744.255	5	4, 780	RU III	1751.30	20	301
RU III	1744.35	20	301	CR III	1751.34	10	490
BI I	1744.45	1	134	SN I	1751.485	20	473, 308
RU III	1744.45	50	301	CA	1751.5	1	411
CU II	1744.50	20	488, 670	MN IV	1751.60 *	7	47

SYMBOL				WAVELENGTH INTENSITY				REFERENCE NUMBERS			
PT	II	1751.703*	30	671	GE	I	1759.271	8	4, 780		
N	III	1751.75	10	65, 168, 488	TE	I	1759.4	5	16		
ZN	II	1751.84	1	682	RU	III	1759.49	200	301		
CO	III	1751.854	200	488, 673	PB	I	1759.57	2	134		
SE	I	1751.88	3	600	AG	I	1759.68	5	667		
C	I	1751.90	8	65, 168, 488	MO	III	1759.714	50	591		
NI	II	1751.92 *	50	488	HG	III	1759.75	5	237, 331		
SN	I	1751.996	15	308	CD	II	1759.78	20	683		
MO	V	1752.002	10	591	MN	IV	1759.82 *	7	47		
BI	I	1752.08	5	134	RE	I	1759.83	3	350		
IN	III	1752.38	1	410	PB		1760.08	4	130		
K		1752.4 *	4	659	GA		1760.10	6	130		
NI	III	1752.427	300	488, 661	IN		1760.11	6	130		
NA	III	1752.65	3	758	V	II	1760.11	25	478		
MO	V	1752.689	10	591	AL	II	1760.15	7	653, 658		
PT	II	1752.864	5	671	NI	III	1760.260	20	488, 661		
SE	I	1752.94	6	600	CO	III	1760.354*	5000	488, 673		
NI	III	1753.011	400	661	P	I	1760.40	15	469		
TH	III	1753.17 *	30	348	C	II	1760.40	4	168, 488		
CU	II	1753.27	15	488, 670	FE	II	1760.415	20	488, 645		
RU	II	1753.441	30	675	HG	II	1760.445	2	65		
MG	II	1753.474		592	MO	II	1760.547	30	591		
PT	II	1753.823	5	671	AG	III	1760.57	10	284		
MO	II	1753.847	20	343, 591	MN	II	1760.680	10	141		
ZN	II	1754.12	1	25, 416, 682	C	II	1760.81	3	168, 488		
AS	I	1754.21	10	480, 573	O		1760.9	8	335		
NB	III	1754.25	10	320	RU	II	1761.030	20	675		
ZR	III	1754.38	40	342, 488	CU	III	1761.155	20	684		
P	I	1754.40	30	469	CO	III	1761.367	10	488, 673		
RH	III	1754.534	30	677	FE	II	1761.379	25	488, 645		
MO	II	1754.625	20	591	AG	III	1761.57	1	284		
CR	III	1754.76	30	47, 490	BA	II	1761.75		649		
NI	II	1754.81 *	20	488	PB		1761.94	4	130		
AG	III	1754.89	2	284	GA		1761.94	6	130		
CU	III	1755.012	20	684	IN		1761.98	6	130		
MO	II	1755.208	20	591	AL	II	1762.00	5	653, 810		
CR	III	1755.24	15	490	CA	III	1762.14	3	39		
MO	II	1755.301	20	591	SB	I	1762.24	20	31, 414, 477		
CD	IV	1755.34	3	25	NI	III	1762.394	20	661		
HG	II	1755.4	1	698	RH	III	1762.505	10	677		
LI	II	1755.4 *	5	788	CU	III	1762.557	30	684		
CR	IV	1755.46	20	488, 490	MO	V	1762.614	10	591		
MO	V	1755.473	5	591	SB	I	1762.68	40	477		
CR	III	1755.78	10	490	SR	II	1762.81		488, 649		
AG	III	1755.90	4	284	CR	III	1762.81	45	47, 490		
RH	III	1755.906	10	677	AL	I	1762.97 *	1	658		
CO	III	1755.979	500	488, 673	MO	V	1763.016	5	591		
HG	II	1756.07	3	65, 331, 527	CO	III	1763.465	100	673		
K		1756.1	1	659	CO	III	1763.533	15	488, 673		
AU	II	1756.10 *	35	550, 658	AG	I	1763.55	1	667		
PI	II	1756.204	3	671	NI	III	1763.607	20	661		
MO	III	1756.261	20	591, 761	SI	I	1763.664	50	339, 488, 678		
NB	III	1756.28	20	320	CD	IV	1763.67	6	25, 293		
BI	I	1756.43	2	134	SB	I	1763.69	40	477		
MO	V	1756.802	5	591, 761	AG	I	1763.69	0	667		
CO	III	1756.857	30	673	NB	III	1763.72	60	320		
NI	III	1757.034	25	661	CR	III	1763.77	15	490		
P	I	1757.47	20	469, 597	AL	II	1763.79 *	8	488, 653		
ZR	III	1757.48	20	342	NA	III	1763.84	3	758		
CO	III	1757.531	15	673	PD	I	1763.92	20	669, 674		
BI	I	1757.62	2	134	PB		1763.93	5	130		
V	II	1757.76	20	478	GA		1763.93	7	130		
SB	I	1757.79	50	477	MG	III	1763.93	2	693		
SN	II	1757.904*	5000	448, 681	IN		1763.97	7	130		
P	I	1757.95	20	469	ZR	III	1763.99	20	342		
MG	III	1758.01	1	693	HG	II	1764.0	1	698		
PT	II	1758.118	10	671	AL	II	1764.01 *	10	488, 653, 810		
PD	III	1758.187	400	674	GE	I	1764.185	10	4, 581		
GE	I	1758.279	15	4, 581	SB	I	1764.23	15	477		
IN	I	1758.49 *	1	134, 274	AG	III	1764.36	7	284		
AS	I	1758.60 *	100	480, 488, 573	CU	I	1764.540	10	672		
NB	III	1758.63	50	320, 760	BI	I	1764.67	2	134		
AG	III	1758.79	3	284	NI	III	1764.688*	800	488, 661		
ZR	III	1759.12	35	342, 488	ZR	III	1764.75	30	342, 488		
SE	I	1759.24	8	600	SN	I	1764.943	75	473, 308		

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	1764.960	50	677	CO III	1772.438	200	673
CR III	1765.06	12	490	RH III	1772.439	20	677
GE I	1765.284	9	4, 581, 780	FE II	1772.505	15	488, 795
K	1765.4	3	659	TE	1772.53	6	401
PD III	1765.403	200	669, 674	AS I	1772.54	8	480, 573
RU II	1765.525	20	675	CO III	1772.549	50	673
SB I	1765.76 *	100	31, 477	SE I	1772.64	5	600
GA	1765.78	6	130	NB III	1772.65	40	320
PB	1765.80	3	130	CO III	1772.671	100	673
BI I	1765.81	1	134	CD III	1773.06	40	25, 683
AL II	1765.82	4	653, 810	MG III	1773.09	3	693
W	1765.843	2	794	RH III	1773.141	40	677
IN	1765.87	5	130	CO III	1773.215	500	488, 673
PT II	1766.023	10	671	CA III	1773.29	3	39
GE I	1766.065	9	4, 581	SN I	1773.364	50	473, 308
AG I	1766.20 *	10	667	K	1773.5 *	6	659
AG III	1766.22	4	284	CO III	1773.568*	5000	488, 673
GE I	1766.49	3	581	MN IV	1773.57	5	41
MN II	1766.498	5	47, 141	NI III	1773.788	40	488, 661
MO IV	1766.655	20	591	TE I	1773.8	3	16
CR III	1766.92	30	488, 490	7R III	1773.90	40	342, 488
AU	1767.0	8	411	NI II	1773.96	10	488
BI I	1767.05	1	134	RH III	1773.985	10	677
CO III	1767.084	30	488, 673	MN II	1774.202	5	141
MN IV	1767.11	5	47	GE I	1774.21	3	501
PT II	1767.151	4	671	RH III	1774.216	60	677
CL II	1767.24	1	345	MO V	1774.246	10	761, 591
CO III	1767.308	50	673	CO III	1774.418	500	488, 673
RH III	1767.420	50	677	CO III	1774.577	10	488, 673
AL II	1767.60 *	10	488, 653, 810	NB II	1774.75 *	500	318
GA	1767.68	6	130	GA	1774.77	2	130
BI I	1767.75	5	134	IN II	1774.79	5	413
IN	1767.78	6	130	HF II	1774.81 *	10	479
ZN III	1767.80	4	25, 416	P I	1774.99 *	250	469, 488, 594
ZR II	1767.85	0	346	TE I	1775.0	5	16
NI III	1767.938*	500	488, 661	PT II	1775.012	20	671
AS I	1767.97	6	480, 573	PD III	1775.162	300	674
CO III	1768.238	200	673	AU	1775.20	4	658
RH III	1768.428	100	677	SB I	1775.21	20	477
P I	1768.45	20	469	CE IV	1775.3 *	20	335
CO III	1768.471	100	673	MO V	1775.582	10	591
MN II	1768.591	7	141	HG I	1775.677*	1	331, 658, 794
RU II	1768.666	20	675	MN II	1775.693	6	141
PB III	1768.67	6	686	NI III	1775.750	150	661
AG III	1768.70	15	284	FE III	1775.983	6	188
CD III	1768.82	30	25, 683	RU II	1776.061	50	675
CU III	1768.869	200	488, 684	NI III	1776.068	400	661
P I	1768.94	15	469	AG III	1776.07	2	284
CR III	1769.03	10	490	BE II	1776.118	6	488, 541
CR III	1769.17	30	490	CU III	1776.136	20	684
AL I	1769.19 *	1	658	BE II	1776.339*	8	488, 541
CO III	1769.495	10	673	BR III	1776.50	2	400
SR II	1769.63 *	8	488, 649	MN IV	1776.58	4	47
NI III	1769.643*	2000	488, 661	NI III	1776.802	30	661
CO III	1769.957	500	488, 673	SI I	1776.826	100	339, 488, 678
ZR III	1770.20	20	342	GA	1777.0	2	130
CO III	1770.500	10	673	W	1777.051	4	794
GA	1770.54	5	130	PT II	1777.086*	50	671
FE III	1770.554	6	188	BI II	1777.11 *	80	138
NA	1770.8	6	335	CO III	1777.145*	1000	488, 673
K	1770.8 *	6	659	ZN II	1777.241	1	472
IN II	1770.83 *	6	413	TE I	1777.4	3	16
SI I	1770.922	100	339, 488, 678	SB I	1777.50	20	477
BA II	1771.03	649		IN II	1777.51	2	413
CO III	1771.259	100	673	CA III	1777.93	0	39
RH III	1771.431	30	677	SN I	1778.009	20	308
RU III	1771.49	20	301	MN II	1778.090	6	141
AG III	1771.81	10	284	CO III	1778.091	100	488, 673
CO III	1771.854	200	673	RH III	1778.280	10	677
ZR III	1771.96	30	342, 488	SR II	1778.39 *	9	488, 649
MO V	1772.002	10	591	MN II	1778.595	20	141, 488
CL II	1772.01	3	345	MN II	1778.686	12	141
CO III	1772.233	200	673	NI III	1778.730	30	661
MN II	1772.349	5	47, 140, 141	AG III	1778.75	5	284
RU III	1772.37	50	301	SN II	1778.911	30	681

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CR III	1778.93	20	490	PD III	1786.419	150	674
CE IV	1779.03 *	20	335	MO IV	1786.420	20	193, 591
NI III	1779.127	20	661	CO III	1786.679	50	673
PT II	1779.200	20	671	FE II	1786.738*	40	292, 488
NI III	1779.442	30	488, 661	NI III	1786.927	60	488, 661
ZR III	1779.51 *	100	342, 488	BA II	1786.93	1	649
CO III	1779.536	20	673	AS I	1787.07	6	480, 573
PD III	1779.629	300	669, 674	CO III	1787.082*	1000	488, 673
RH III	1779.874	20	677	CL II	1787.10	3	345
NB III	1779.93	20	320	CR III	1787.18	12	490
CO III	1780.046*	2000	488, 673	TI III	1787.32	2	604
SN I	1780.491	20	473, 308	NA	1787.4	4	335
V II	1780.52	5	478, 488	K	1787.4 *	4	659
AS I	1780.52	50	480, 488, 573	BI II	1787.47 *	60	138
RU III	1780.54	20	301	CO III	1787.502	50	673
PD III	1780.617	200	674	CO III	1787.575	30	673
SB I	1780.87 *	100	31, 477	P I	1787.68 *	180	469, 488, 594
MO II	1781.014	20	343, 591	RH III	1788.017	50	677
NI III	1781.088	15	661	MG III	1788.05	1	693
PD III	1781.262	150	674	FE II	1788.072*	35	488, 795
NI III	1781.279	50	488, 661	SB I	1788.24 *	100	31, 414, 477
O	1781.4	7	335	V II	1788.30	25	478
AS I	1781.48	50	480, 488, 573	NI III	1788.301	200	488, 661
PT II	1781.858*	30	671	NI III	1788.502	150	488, 661
CR III	1782.07	10	490	CO III	1788.627	50	673
S I	1782.25	12	488, 599	BI I	1788.70	3	134
PD III	1782.548*	4000	674	CO III	1789.070*	1000	488, 673
MN II	1782.626	5	141	MN IV	1789.08	1	47
NI III	1782.747	60	488, 661	MO II	1789.09	15	343
I I	1782.758*	12000	344	AS I	1789.14	15	480, 573
NA III	1782.817*	15	758, 794	CD III	1789.19	30	25, 683
P I	1782.87 *	200	469, 488, 594	MO IV	1789.336	30	591
CO III	1782.966*	2000	488, 673	CO III	1789.373	100	488, 673
CR III	1782.99	25	490	SE I	1789.43	3	588
SE I	1783.06	3	588	CO III	1789.549	100	673
CO III	1783.118	10	673	TL	1789.6	3	130
AU II	1783.22 *	60	550, 658	V II	1789.61	5	478
SI I	1783.232	50	339, 488, 678	AS I	1789.85	50	480, 488, 573
ZR III	1783.35	40	342, 488	MO IV	1789.924	30	591
MO V	1783.355*	20	343, 591	PD III	1789.987	200	674
MG III	1783.36 *	4	693	TE I	1790.1	4	16
MN II	1783.718	20	141, 488	RH III	1790.113	40	677
HG II	1783.79	1	65, 527	ZR III	1790.19	200	342, 488
CU III	1783.799	20	684	CO III	1790.258	500	488, 673
CA III	1783.92	4	39	CO III	1790.389	50	673
AG III	1783.93	1	284	NI III	1790.402	250	488, 661
CR III	1783.95	20	47, 490	SE I	1790.48	3	600
SR II	1783.97		488, 649	MN IV	1790.54	5	47, 286
CO III	1784.055	500	488, 673	PD III	1790.772	100	674
RH III	1784.235	150	677	SN I	1790.776	50	473, 308
MN II	1784.245	15	141, 488	MN II	1790.788	20	141, 488
PD III	1784.367	300	674	MO V	1790.889	10	591, 761
CR III	1784.43	15	490	CO III	1790.892	25	673
AG III	1784.48	2	284	NI III	1790.934	200	661
CO III	1784.790	30	673	CO III	1791.153	300	488, 673
NI III	1784.882	75	661	NA III	1791.23	10	758
RH III	1784.933	200	677	RU II	1791.253	20	675
TL	1784.97	5	130	CO III	1791.277	500	488, 673
GE I	1785.046*	30	4, 581	K	1791.3	1	659
CL II	1785.06	1	345	BI I	1791.33	1	134
V II	1785.07	5	478, 488	CR II	1791.48	3	340, 488, 490
CO III	1785.116	20	673	MG III	1791.50	1	693
FE II	1785.161*	40	488, 795	RU II	1791.560	20	675
NB III	1785.20	40	320	NI III	1791.644	200	488, 661
AG III	1785.59	1	284	AS I	1791.77	40	480, 488, 573
SB I	1785.64	15	31, 477	TE I	1791.8	2	16
CD II	1785.84 *	100	683	NA III	1791.80	8	758
PT II	1785.867	15	671	CR IV	1791.82	30	791
ZN II	1785.96	2	682	MN II	1791.884	25	141, 488
CO III	1785.965	50	488, 673	CL II	1791.91	4	345
RU II	1786.032	20	675	BI II	1791.93 *	70	138
GE I	1786.069	10	4, 581, 780	CO III	1792.144	100	488, 673
MN IV	1786.07	4	47, 286	MO III	1792.391	20	591
CR II	1786.16	3	340, 488, 490	CO III	1792.410	300	488, 673
CO III	1786.342	200	488, 673	HG II	1792.46	3	65, 698

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V II	1792.49	5	478, 488	ZR III	1800.03	75	342, 488
NI III	1792.513	25	661	NI III	1800.031	20	661
TI III	1792.56	2	604	SB I	1800.18 *	150	477
TL II	1792.76 *	10	194	CA III	1800.24	4	39
NI III	1792.994	100	661	MG	1800.28	1	693
MO IV	1793.056	20	591	CO III	1800.469	50	673
GE I	1793.071	8	4, 581	CD III	1800.57	5	683
SR II	1793.10		488, 649	AU II	1800.58 *	35	550, 658
SE I	1793.29 *	25	488, 600	MG III	1800.75 *	4	693
AU II	1793.31 *	35	550, 658	CO III	1800.974	25	673
FE II	1793.360	10	488, 795	CO III	1801.030	25	673
CD III	1793.40 *	75	25, 471, 683	NB III	1801.06	20	318, 320
ZR III	1793.59	150	342, 488	CD IV	1801.12	2	25
V III	1793.85	20	791	RH III	1801.199	10	677
AG III	1793.90	15	284	NA III	1801.27	7	758
CO III	1793.924	200	488, 673	MN II	1801.272*	50	131, 141, 488
HG II	1793.962	5	65, 452	MO V	1801.435	10	591, 761
PT II	1794.059	5	671	GE I	1801.46	3	581
PT II	1794.287	4	671	NI III	1801.506	50	488, 661
CA III	1794.31	4	39	SB IV	1801.56	3	13, 31
SE I	1794.55	5	600	K	1801.6	1	659
V II	1794.62 *	50	478	ZR III	1801.67	25	342
MG III	1794.68	3	693	TL	1801.7	3	130
CO III	1794.804	100	488, 673	NB III	1801.86	40	320
NI III	1794.904	200	488, 661	TH III	1802.15	10	348
PD III	1795.083	150	674	AG III	1802.24	15	284
NI III	1795.192	20	661	AG II	1802.28	5	283
SE I	1795.28 *	30	488, 600	GA	1802.32	9	130
RU III	1795.52	20	301	AU	1802.6	1	411
BI I	1795.53	5	134	CR III	1802.60	12	490
TE I	1795.7	6	16	GE I	1802.624	15	4, 488, 581
NB II	1795.77 *	1000	318, 320	BI I	1802.64	5	134
MN IV	1795.77 *	7	47	NB II	1802.68	50	318, 320
SE I	1796.04	6	600	BR III	1802.88	1	400
CD III	1796.10	15	683	MN II	1802.979	12	141
IN	1796.2	4	130	SI III	1803.009	30	310
CO III	1796.200	10	488, 673	MN II	1803.023	8	141
TE I	1796.3 *	6	16, 147	PD III	1803.315	150	674
ZR III	1796.36	15	342	RH III	1803.358	200	677
RH III	1796.502	150	677	AS I	1803.46	10	480, 573
PD III	1796.616	100	674	ZR III	1803.46	12	342
PB II	1796.68 *	10	163	ZR III	1803.57	18	342
ZN	1796.68	2	658	HG II	1803.888	2	331, 527, 794
V II	1796.80	20	478	MO IV	1804.012	20	591
MN III	1796.819	100	131	MN III	1804.028*	400	131, 488
SB V	1796.86 *	3	13, 31	V III	1804.12	40	791
HG II	1796.897*	15	527, 794	BI I	1804.23	1	134
FE II	1796.931	10	645	N III	1804.3	6	65, 168, 488
CO III	1797.095	10	673	RU III	1804.39	50	301
MO IV	1797.215	30	591	NI III	1804.394	30	661
AG III	1797.64	3	284	TL	1804.4	5	130
CL III	1797.98	2	43, 345	GE I	1804.44	2	581
W	1798.011*	20	794	SN I	1804.628	75	473, 308
CO III	1798.064	500	488, 673	PD III	1804.908	400	674
MN III	1798.126	80	131, 286	PT II	1805.013	2	671
ZR III	1798.13	125	342, 488	RH III	1805.038	30	677
MO IV	1798.134	20	591	V III	1805.23	5	791
NB III	1798.16	10	320	ZR III	1805.26	100	342, 488
V III	1798.16	25	791	TL	1805.4	2	130
FE II	1798.163	10	488, 645	SB I	1805.40	30	477
TL II	1798.36	4	194	N III	1805.5	7	65, 168, 488
ZR III	1798.36	18	342	CO III	1805.535	500	488, 673
NI III	1798.366	20	661	PB I	1805.55 *	10	134
TE I	1798.4	3	16	MO IV	1805.976	20	193, 591
PB IV	1798.44	3	139	CO III	1806.096	10	488, 673
K	1798.6	1	659	P II	1806.12	15	469, 594
AS I	1798.61	9	480, 573	AS I	1806.15 *	200	480, 488, 573
IN	1798.7	3	130	V IV	1806.22 *	40	488, 790
MO III	1798.768	20	591	CO III	1806.350	10	673
I I	1799.091	5000	344	MN III	1806.425	300	131, 286
PD III	1799.107	100	674	NI III	1806.457	30	661
SI I	1799.122	100	339, 488, 678	V II	1806.49	8	478, 488
GA II	1799.42	5	488, 652	NI III	1806.550	30	661
V II	1799.47	12	478, 488	AG II	1806.92	3	283
MO III	1799.916	20	591	NI III	1807.056	50	661

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RH III	1807.116	10	677	V IV	1813.10	8	790
NI III	1807.245	300	661	PT II	1813.153	10	671
N II	1807.303*	30	191, 794	CO III	1813.186	300	488, 673
S I	1807.31 *	25	488, 599	MN II	1813.287	10	141, 488
AL II	1807.40	4	653	PD III	1813.523	150	674
MO III	1807.630	50	591	SB I	1813.65	20	477
CA II	1807.74	1	186, 488, 648	MN II	1813.865	15	141, 488
CU II	1807.84	15	670	V II	1813.87	8	478, 488
MO III	1807.910	30	591	GA II	1813.98 *	10	488, 652
AG III	1808.23	30	284	SI I	1814.068*	500	339, 488, 678
MO II	1808.249	30	591	CO III	1814.084	10	673
HG II	1808.289	6	65, 452	SB I	1814.20	80	31, 477
CO III	1808.384	300	488, 673	CO I	1814.20	12	488, 603
CL III	1808.51	4	43, 488	CO III	1814.219	100	488, 673
PT II	1808.535	5	671	NA III	1814.35	3	758
PD III	1808.544	250	674	ZN	1814.53	1	25
SB I	1808.62	25	477	I III	1814.57	1	400
CR II	1808.66	2	340, 488	CO III	1814.683	100	488, 673
NB III	1808.70	50	320	TL II	1814.85 *	12	194
AG III	1808.92	5	284	CO III	1814.865	100	673
SI I	1809.022	100	339, 488, 678	V II	1814.93	5	478, 488
S	1809.1	6	660	CA II	1815.04	1	186, 488, 648
CO III	1809.233	40	673	CO III	1815.063	20	488, 673
FE II	1809.316	10	488, 645	SB II	1815.12	1	31, 414
NI III	1809.335	15	661	MN II	1815.242	20	131, 141, 488
V II	1809.36	10	478, 488	NI III	1815.307	20	661
RH III	1809.640	10	677	NI III	1815.398	15	661
V II	1809.81	8	478, 488	PD III	1815.574	250	674
NB II	1809.83	200	318	CO III	1815.596	200	488, 673
V IV	1809.88	15	488, 790	CO III	1815.686	200	488, 673
MO IV	1810.067	20	591	HF II	1815.71	9	479
GE I	1810.100	4	4, 581	SN I	1815.771*	100	473, 308
CL III	1810.26	1	43	RH III	1816.030	200	677
RH III	1810.365	10	677	CO II	1816.11	5	683
CO III	1810.464	15	673	CO III	1816.250	10	673
NI III	1810.489	150	661	MN II	1816.287	20	141, 488
RB	1810.5	1	659	V II	1816.30	20	478
IN	1810.5	3	130	MO II	1816.407	20	591
SB I	1810.50	50	31, 414, 477	CO III	1816.617	20	488, 673
V II	1810.57	6	478, 790	BI	1816.7	3	411
MN III	1810.714	200	131	AS I	1816.72	10	480, 573, 582
RH III	1810.733	15	677	NA III	1816.83	2	758
NA III	1810.74	4	758	AG III	1816.83	25	284
AG III	1810.74	1	284	MN II	1816.866	10	141, 321, 488
PB I	1810.91	5	134	CR III	1817.16	10	490
MN III	1810.973	300	131	RH III	1817.163	50	677
ZN II	1811.036	2	472	CU I	1817.265	20	488, 672
PT II	1811.038	3	671	CU I	1817.334	20	672
TI III	1811.09	2	604	MN II	1817.493	6	141
SN II	1811.200*	1000	448, 681	CO III	1817.518	100	488, 673
MO IV	1811.202	20	343, 591	NI III	1817.598	15	661
CO III	1811.317	100	488, 673	CO III	1817.626	100	488, 673
CO III	1811.466	400	488, 673	V IV	1817.72	30	488, 790
NB III	1811.55	10	320	CL III	1817.73	4	43, 488
PD III	1811.605	150	674	CO III	1817.750	20	673
NI III	1811.689	200	661	B I	1817.84 *	8	65, 134, 658
NA III	1811.70	5	758	RH III	1818.152	20	677
AU II	1811.71	4	550	B I	1818.35 *	10	65, 134, 658
SN III	1811.712*	500	291, 681	NB III	1818.45	30	320
PD III	1811.975	200	674	PD III	1818.464	200	674
NI II	1812.07	10	488, 663	IN	1818.5	2	130
PD III	1812.094	150	674	AL IV	1818.55	1	693
CA III	1812.17	5	39	CO III	1818.684	200	488, 673
V III	1812.17 *	50	791	RU II	1818.724	20	675
NB II	1812.27	50	318	RH III	1818.861	10	677
CO III	1812.491	15	673	CR II	1818.90	1	340, 490
CO III	1812.550	50	673	SR II	1819.01		649
MO II	1812.573	20	343, 591	NA III	1819.01	2	758
PB	1812.6	2	130	AU II	1819.05	1	550
NI III	1812.769	20	661	RU II	1819.125	30	675
CR II	1812.77	0	340, 490	CR IV	1819.18 *	60	488
RH III	1812.928	20	677	CO III	1819.261	30	488, 673
SN I	1813.020	50	473, 308	SN I	1819.273*	100	473, 308
ZN	1813.04	1	658	PD III	1819.274	150	674
CO III	1813.044	50	488, 673	NI III	1819.275	300	661

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1819.330	200	488, 673	B I	1825.89 *	15	65, 134, 488
NB II	1819.51	100	318	CO III	1825.947	400	488, 673
MO IV	1819.521*	100	193, 591	IN	1826.0	2	130
MO IV	1819.657	20	591	HG III	1826.08	5	331
CA	1819.7	1	411	CR IV	1826.16 *	30	488
CO III	1819.733	100	673	S I	1826.25 *	25	488, 599
MN II	1819.750	9	141, 488	B I	1826.40 *	20	65, 134, 488
CR II	1819.79	3	340, 490	K	1826.5	1	659
CO III	1820.064	100	488, 673	RH III	1826.545	10	677
HG II	1820.336*	20	527, 794	AG III	1826.61	8	284
S I	1820.37 *	25	488, 599	CR IV	1826.81 *	30	400
NB III	1820.38	10	320	MN II	1827.079*	50	141, 488
CU I	1820.42	12	488, 603	CO III	1827.094	400	488, 673
MG III	1820.47	1	693	CD II	1827.14	10	683
IN	1820.6	2	130	AG II	1827.24	5	283
MN II	1820.648	9	141, 488	CR III	1827.26	30	488, 490
V III	1820.67	7	791	CR IV	1827.39	10	488
CR II	1820.77	4	340, 488, 490	CD II	1827.70 *	100	603
PT II	1820.799	15	671	RH III	1827.725	15	677
CU III	1821.262	400	488, 673	TL II	1827.86	5	194
AG III	1821.50	2	284	TC	1827.94	1	401
CR II	1821.58	8	340, 791	MG I	1827.97 *	8	658
MO IV	1821.641*	100	343, 591	MN II	1828.250	20	141, 488
NA III	1821.68	12	758	CO I	1828.35	12	488, 603
CO III	1821.688	300	488, 673	CL III	1828.40	5	42, 488
PT II	1821.720	8	671	CA III	1828.43	1	39
CO III	1821.766	300	488, 673	CR II	1828.56	2	340, 490
IN	1822.0	2	130	AL II	1828.61 *	10	536, 653
CA	1822.0	1	411	SE I	1828.65	3	600
PB II	1822.03 *	10	163	BI I	1828.71	3	134
CO III	1822.046	200	488, 673	AG III	1828.83 *	35	284
ZN	1822.05	5	658	V II	1828.84 *	50	478, 791
RH III	1822.085	20	677	TE I	1828.9	4	16, 147
BI I	1822.12	1	134	SB I	1829.50 *	100	477
SE I	1822.15	8	600	S	1829.61	1	401
MN II	1822.212	10	141, 488	CO III	1829.674	300	488, 673
MO III	1822.301	40	591	CR III	1829.72	10	488, 490
ZR III	1822.35	10	342	RH III	1829.734	100	677
TE I	1822.4 *	10	16, 147	SE III	1829.76	1	587
AG III	1822.45	15	284	MO IV	1829.876	20	591
SI I	1822.452	50	339, 488, 678	PD III	1830.003	150	674
CL III	1822.50 *	6	43, 488	NI III	1830.006	400	488, 661
PD III	1822.515	200	674	MO III	1830.047	30	591
NI III	1822.918	25	661	NI III	1830.075	200	488, 661
SN I	1823.021*	200	473, 308	CO III	1830.093*	1000	488, 673
MN II	1823.049	8	141, 400	CR IV	1830.29	10	488
NI III	1823.061*	800	488, 661	PD III	1830.311	100	674
CR II	1823.07	1	340	I I	1830.380*	75000	344
CO III	1823.079*	1000	488, 673	SE I	1830.41	4	600
AU II	1823.24 *	25	550, 658	N II	1830.458	4	243, 794
CD III	1823.41	40	25, 683	CA	1830.5	1	411
CO III	1823.414	100	673	BR II	1830.54	3	400
MN II	1823.427	5	131, 321	CR II	1830.54	4	340, 488, 490
V II	1823.61	25	478	CO III	1830.581	300	488, 673
CO III	1823.622	200	673	CO III	1830.780	20	673
MN II	1823.697	30	141, 488	NI III	1830.859	15	661
BI II	1823.80 *	70	138	CO III	1830.870	300	673
AG III	1823.99	4	284	CR III	1831.15	10	490
GE I	1824.33	2	488, 581	MO IV	1831.254	20	591
CL III	1824.59	3	43	AS I	1831.30	50	480, 488, 573
PB I	1824.76 *	8	134	CO III	1831.439*	1000	488, 673
K	1824.8	1	659	MO III	1831.568	30	591
CO III	1824.874	100	488, 673	TL	1831.67	3	130
NI III	1825.084	20	661	AS I	1831.74	30	480, 573
TL	1825.26	4	130	SN II	1831.753*	500	448, 681
CR II	1825.28	3	340, 488, 490	PD III	1831.753	200	674
CU I	1825.348*	100	488, 672	ZR III	1831.89	35	342, 488
CO III	1825.365	200	673	CO III	1831.916	500	488, 673
RH III	1825.399	50	677	MN II	1831.917	5	321
NA III	1825.44	10	758	N II	1831.973	5	243, 794
CO III	1825.464	100	488, 673	RH III	1832.046*	1000	677
TE I	1825.5 *	6	16	PD III	1832.067	150	674
NB II	1825.52	80	318	CL III	1832.08	4	43, 488
PD I	1825.77	20	669, 674	K	1832.1	1	659
V IV	1825.85 *	50	488, 790	RU II	1832.144	20	675

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
ZR III	1832.16	22	342	TL II	1837.45	3	194
CO III	1832.201	200	488, 673	CO III	1837.630	500	488, 673
SB I	1832.21	40	414, 477	PT II	1837.793	10	671
AG III	1832.33	25	284	CO I	1837.82	8	603
CO I	1832.47	15	488, 603	CO III	1837.840	100	488, 673
BI I	1832.66 *	10	134	CA II	1838.08	7	186, 488, 648
NI II	1832.68	2	488	NA III	1838.11	6	758
HG I	1832.74 *	1	275, 658	AL II	1838.27	1	653
U	1832.8 *	5	411	CO I	1838.28	15	488, 603
AL II	1832.85 *	8	536, 653	FE III	1838.309	7	188, 488
RH III	1832.983	15	677	MG III	1838.32	1	693
MO IV	1833.078	30	591	SE I	1838.38	4	588
ZR III	1833.09	15	342	AG III	1838.64	15	284
AU I	1833.14	5	450, 658, 699	PT II	1838.810	10	671
C	1833.264	1	794	V II	1838.86	25	478, 488
RU III	1833.30	20	301	PT II	1838.930	10	671
PD III	1833.300	100	674	A III	1839.43	3	65, 337
CL III	1833.31	4	43, 488	PT II	1839.517	10	671
PT II	1833.375	15	671	CO III	1839.535	50	488, 673
MO IV	1833.443	30	591	V II	1839.54	20	478, 488
SB V	1833.48 *	5	13, 31	ZN III	1839.58	5	25, 416
ZN II	1833.48	4	488, 682	N III	1839.59	2	65, 246
V II	1833.58	10	478, 488	MN II	1839.595	5	141
NI III	1833.637	20	661, 794	CO III	1839.636	20	488, 673
CR IV	1833.79	15	488, 791	AL II	1839.64	2	653
CO III	1833.876	50	673	RH III	1839.724	30	677
CD II	1833.98	10	683	CR IV	1840.10 *	100	488
ZN II	1834.27	4	682, 754	AG III	1840.14 *	40	284
AU	1834.28	5	658	K	1840.2	2	659
AG III	1834.31	10	284	CA II	1840.21 *	8	186, 488, 648
BI III	1834.32	20	138	NI III	1840.421	40	661
RH III	1834.324	10	677	AS I	1840.48	10	480, 573
CO I	1834.34	10	488, 603	CO I	1840.55	10	488, 603
PD III	1834.386	200	674	SB	1840.57	1	31
MN II	1834.573	25	141, 488	CS	1840.6	2	659
AL II	1834.82	6	536, 653	CO I	1840.79	10	603
P I	1834.83	20	469, 594	PT II	1840.877	10	671
PD III	1834.832	100	674	CU III	1840.917	200	488, 684
CO III	1834.840	50	488, 673	MO IV	1841.042	20	591
NI III	1834.890	20	661	SI I	1841.146	100	339, 488, 678
CO III	1834.99	10	488, 603	GE I	1841.327*	50	4, 581, 780
AS	1835.0	3	411	SI I	1841.440	200	339, 488, 678
CO III	1835.000*	1000	488, 673	CO I	1841.47	10	488, 603
SB	1835.02	1	31	FE III	1841.536	5	188
PT II	1835.063	20	671	FE II	1841.701	10	488, 795
NA III	1835.22 *	15	758	NI III	1841.866	15	661
CO III	1835.255	100	488	CO III	1841.924	15	673
CO III	1835.255	100	673	AG II	1842.06	1	283
PD III	1835.265	150	674	MO IV	1842.112	40	591
MO IV	1835.558	30	591	CO I	1842.34	25	488, 603
N III	1835.587	6	65, 246	IN II	1842.40 *	6	413
CO III	1835.617	100	488, 673	GE I	1842.43	2	488, 581
CO III	1835.687	20	488, 673	SI III	1842.542*	500	310
FE II	1835.868	15	488, 795	CR IV	1842.77	25	791
PB IV	1835.88	4	656	B II	1842.80 *	3	65, 168, 658
RU II	1836.013	50	675	MN II	1842.871	5	141
AG III	1836.10	25	284	FE III	1842.927	5	188, 488
ZR IV	1836.14 *	100	342	CR IV	1843.03	25	490, 791
CO III	1836.200	200	488, 673	PD III	1843.148	150	674
CR II	1836.23	12	340, 488	A III	1843.19	2	65, 337
AU II	1836.28	10	550	CR III	1843.40	10	490, 791
A III	1836.42	5	65, 337	NI III	1843.406	50	488, 661
CD II	1836.48	12	683	V II	1843.43	5	478, 488
PT II	1836.497	3	671	NA III	1843.43	2	758
SI I	1836.506	200	339, 488, 678	CO III	1843.443	100	488, 603, 673
NB III	1836.52	20	320	PD III	1843.490	400	674
SB I	1836.61	20	414, 477	AU II	1843.50	4	550
ZN II	1836.66	5	682, 754	CO III	1843.532	100	673
PD III	1836.672	250	674	CA II	1843.6 *	1	186, 488, 648
N I	1836.739	4	65, 334, 488	SI I	1843.765	200	339, 488, 678
NI III	1836.843	30	661	K	1843.9	2	659
AL II	1836.97	1	653	PD III	1843.940	250	674
CR III	1837.05	10	488, 490	CU III	1843.960	75	673
PD III	1837.073	200	674	TE I	1844.0	3	16
K	1837.1	2	659	MN II	1844.027	6	141

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN II	1844.080	6	141, 488
RU II	1844.138	200	675
MG	1844.18	1	693
FE III	1844.263	5	188
RH III	1844.263	50	677
N II	1844.304*	10	191, 247, 794
P I	1844.33	20	469, 594
AS I	1844.36	40	480, 488, 573
NA III	1844.36 *	20	758
GE I	1844.410	10	4, 581
I I	1844.451*	15000	344
FE III	1844.547	6	188, 488
AS I	1844.57	40	480, 488
CD III	1844.66 *	50	25, 471, 683
CO III	1844.684	30	673
CO III	1844.726	50	673
SE III	1844.97	3	587
CR III	1844.99	10	490, 791
CO III	1845.074	100	488, 673
NA III	1845.10	12	758
NI III	1845.141	15	661
GA II	1845.30 *	15	488, 652
FE III	1845.304	5	188, 488
RU II	1845.368	100	675
BI I	1845.39	5	134
SK II	1845.45		488, 649
SI I	1845.510	300	339, 488, 678
FE III	1845.521	7	188, 488
N III	1845.64	5	65, 168
MO IV	1845.700	50	591
GE I	1845.872*	30	4, 581, 780
RU II	1845.974	30	675
N III	1846.014	8	168, 794
CO III	1846.050	20	673
SI I	1846.103	100	339, 488, 678
MO IV	1846.127	50	591
CO III	1846.157	300	488, 673
N I	1846.399	6	191
PD I	1846.42	50	669, 674
ZR IV	1846.42 *	100	342
CO III	1846.514	100	488, 673
FE II	1846.581	12	292, 488
SR II	1846.76		488, 649
SB II	1846.84	1	31
AG III	1846.96	10	284
GE I	1846.97	2	488, 581
IL I	1847.	3	134
MO IV	1847.181	30	591
P I	1847.19	100	469, 594
NI III	1847.275*	650	488, 661
CO III	1847.300	200	488, 673
AS I	1847.32	10	480, 573
SI I	1847.468	400	339, 488, 678
PD III	1847.473	250	674
NA III	1847.54	10	758
SB II	1847.61	3	31
AG I	1847.73 *	20	667
MN II	1847.780	10	141, 488
CO III	1847.825	200	488, 673
CO I	1847.89 *	30	488, 603
AU	1848.0	2	411
CO III	1848.030	100	673
SN I	1848.054	15	473, 308
MN II	1848.160	10	141, 488
MN II	1848.266	20	141, 488
RU III	1848.286	30	301
NB III	1848.53	25	320
CR III	1848.56	10	490
SI I	1848.737	100	339, 488, 678
FE II	1848.768	12	488, 795
SN I	1848.768*	100	308
PD I	1848.79	50	669
RE I	1848.88 *	12	350
AL II	1848.90	2	653
HG III	1848.95	3	331

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1849.299	200	488, 673
GA	1849.3	9	335
NI III	1849.319	100	661
NI I	1849.380*	5	794
FE III	1849.407	7	188, 488
CO III	1849.464	300	488, 673
BI I	1849.47	1	134
NI III	1849.473	50	488, 661
HG I	1849.497*	50	658, 794
BA II	1849.5 *	4	335
CA III	1849.51	2	39
NI III	1849.540	75	488, 661
SE I	1849.55	4	600
NA III	1849.58 *	35	758
GE I	1849.635	8	4, 581, 780
P I	1849.84	35	469
AG III	1849.93	12	284
CO III	1849.932	200	488, 673
FE III	1849.960	5	188, 488
ZR III	1850.06	40	342
IN	1850.18	2	130
FE III	1850.200	5	188, 488
AS I	1850.24	40	480, 488, 573
NA III	1850.24 *	20	758
ZR III	1850.35	12	342
NA III	1850.39 *	18	758
AG I	1850.47	5	667
BI I	1850.47	1	134
CO III	1850.503	300	488, 673
SE I	1850.51	3	600
SB II	1850.58	3	31
TE I	1850.6 *	6	16, 147
MN II	1850.602	5	141, 321
SI I	1850.665*	500	488, 678, 794
MO IV	1850.701*	100	343, 591
CO III	1850.780	20	488, 603, 673
GE I	1850.90	1	581
CA II	1851.10	2	186, 488
CD III	1851.13	40	25, 683
P I	1851.22	80	469, 594
FE III	1851.261	6	188
CO III	1851.37	20	683
AU II	1851.49	7	550, 658
CO I	1851.49	8	603
CO III	1851.509	100	673
PD III	1851.592*	1500	674
MN II	1851.593	15	141, 488, 794
CR IV	1851.82	50	488
NB III	1851.88	15	320
CO III	1851.937	200	488, 673
SB II	1851.97 *	4	31
SN I	1852.003	50	473, 308
SE I	1852.02	3	600
P I	1852.09	40	469, 594
TE I	1852.1 *	6	16, 147
CL III	1852.11	2	43
CR II	1852.13 *	25	340, 488
PD III	1852.274*	2000	674
CR II	1852.31	2	340, 488, 490
NB II	1852.40	50	318
SI I	1852.464	200	339, 488, 678
CO I	1852.52	15	488, 603
AU II	1852.54	2	466
BI I	1852.64	5	134
CO III	1852.645	15	488, 673
FE III	1852.677	6	188
CO I	1852.71 *	30	488, 603
BI III	1852.72	8	138
MN II	1852.810	10	141, 488
CO III	1852.919	500	673
GE I	1853.14	3	581
AS I	1853.21	20	480, 573
NE II	1853.22	1	65, 251
RH III	1853.225	10	677
SI I	1853.260	50	488, 678, 794

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
CO III	1853.266	20	488, 673	MO IV	1858.337	30	591
MN II	1853.271	25	141, 488	CR II	1858.44 *	20	340, 488
HG II	1853.329	2	65, 331, 783	N II	1858.47	2	65, 243
ZR III	1853.38	40	342, 488	CO III	1858.487	50	673
NI III	1853.480	30	661	FE III	1858.542	5	188, 488
TE I	1853.7 *	6	16, 147	MO II	1858.66	18	343
CO III	1853.841	20	673	CR II	1858.72 *	15	340, 488
AG III	1854.04	6	284	NI III	1858.750	300	661
NE II	1854.11	1	65, 251	SE I	1858.84 *	25	488, 600
NI III	1854.149 *	800	488, 661	P I	1858.91 *	150	469, 488, 594
CO III	1854.194	100	673	AG III	1858.91	12	284
SN I	1854.253	30	473, 308	MN II	1859.119	10	141, 488
CO I	1854.28	8	488, 603	ZR III	1859.12	30	342
CO III	1854.393	400	488, 673	PD III	1859.206 *	1000	669, 674
P II	1854.59	15	469, 594	N II	1859.22	5	65, 243
CR II	1854.63	2	340, 490	CS	1859.3	2	659
AU	1854.71	0	658	MN II	1859.394	25	131, 141, 488
RU III	1854.72	30	301	NI I	1859.406 *	3	794
CA III	1854.72 *	6	39, 488	P I	1859.43 *	150	469, 488, 594
AL III	1854.722 *	10	65, 488, 658	CO III	1859.510	50	488, 673
MO III	1854.732	100	591	SE I	1859.69	5	600
GA	1854.75 *	20	130	FE II	1859.741	15	488, 795
IN	1854.75 *	20	130	FE III	1859.813	5	188
CO III	1854.763	300	488, 673	RH III	1859.845 *	500	677
FE III	1854.826	9	188, 488	AL II	1859.99	3	653
TE I	1854.9	2	16	BI I	1860.03	2	134
MN II	1854.903	20	141, 488	FE II	1860.049	20	488, 795
PB	1854.91	20	130	GE I	1860.085	12	4, 488, 581
TL	1854.91	4	130	MO II	1860.104	30	591
FE III	1854.975	5	188, 488	CR II	1860.12	12	340, 488
CO I	1855.05 *	40	488, 603	SN I	1860.330 *	200	473, 308
CR II	1855.14 *	20	340, 488	AG II	1860.38		283
SE I	1855.20 *	30	488, 600	AS I	1860.40 *	80	480, 488
CO III	1855.331	30	673	AS I	1860.46 *	80	480, 488, 573
AS I	1855.39	10	480, 488, 573	ZR III	1860.47	25	342
MO III	1855.422	30	591	TE I	1860.5 *	6	16, 147
AU II	1855.46	7	550, 658	CA III	1860.50	3	39
RH III	1855.516	80	677	NI III	1860.560	150	661
FE I	1855.58	15	488, 605	P I	1860.63	15	469
CD III	1855.85	40	25, 683	AG III	1860.64	10	284
NA III	1855.91 *	15	758	GE I	1861.095	4	4
MN II	1855.942	9	141	NA III	1861.19 *	15	758
AL II	1855.95	2	488, 653, 810	SN I	1861.432	30	473, 308
CO III	1855.954	50	673	MO III	1861.559	20	591
BI I	1856.06	5	134	V IV	1861.56 *	60	488, 790
SB	1856.13	1	31	RH III	1861.562	10	677
CO I	1856.13	15	488, 603	TL	1861.6	3	130
MO IV	1856.141	30	591	AIJ II	1861.61	1	550
PD III	1856.161	200	669, 674	MN II	1861.663	10	141, 488
AG III	1856.33	15	284	ZR III	1861.77	25	342, 346
MO IV	1856.497	20	591	CO III	1861.775 *	1000	488, 673
CD III	1856.67 *	200	25, 683	MO IV	1861.836	20	591
FE III	1856.690	7	188, 488	K	1861.9	1	659
K	1856.7	1	659	N II	1861.94	2	243
MN II	1856.700	12	141, 488	RH III	1862.222	50	677
NA III	1856.73 *	20	758	CO I	1862.31	25	603
PT II	1856.959	10	671	FE I	1862.318	15	292, 488, 605
MN II	1857.009	10	141, 488, 794	AL II	1862.34	6	488, 653, 810
P I	1857.04	15	469	V II	1862.37	30	478, 488
TE I	1857.2 *	8	16, 147	NA III	1862.40	6	758
AU I	1857.21 *	10	450, 550, 658	MN II	1862.517	10	141, 488
BI I	1857.31	1	134	CO III	1862.660	100	488, 673
RE I	1857.34	3	350	MO III	1862.693	50	343, 591
PD III	1857.558	200	674	GA	1862.72 *	20	130
NA III	1857.57	5	758	V II	1862.76	25	478, 488
CO III	1857.657	50	673	AL III	1862.782 *	10	190, 488, 810
MO II	1857.66	20	343	NB III	1862.80	10	320
N II	1857.83	3	65, 243	N II	1862.806	2	243, 794
GA	1857.9	3	130	MN II	1862.816	20	141, 488
MN II	1857.918	20	141, 488	PB	1862.93	20	130
FE II	1857.935	12	488, 645	TL	1862.95	2	130
NI I	1857.956 *	8	794	RH III	1862.973	80	677
IN	1858.01	2	130	CR IV	1862.99 *	100	488
AL II	1858.05	4	488, 653, 810	MO II	1863.002	50	591
MG III	1858.19	2	693	NB III	1863.13	50	320

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1863.300	20	591	BA II	1869.2 *	5	335
AG III	1863.39	8	284	HF II	1869.24	7	479
RU II	1863.404*	500	675	SI II	1869.317	20	310
CO III	1863.467	200	488, 673	SE I	1869.33	4	588
FE I	1863.54	0	488, 605	V II	1869.47 *	50	478, 488
CO III	1863.615	20	673	HG II	1869.548*	8	658, 794
CO III	1863.826*	2000	488, 673	FE III	1869.828	10	188, 488
BI III	1863.9	10	138	AS I	1869.94	15	480, 573
ZR III	1864.06	75	342, 488	CO III	1870.012	30	488, 673
NB II	1864.17 *	5000	318	SI II	1870.227	15	310
CO III	1864.187	400	488, 673	CA III	1870.28 *	6	39, 488
P II	1864.22	15	469	MO IV	1870.347	30	591
P I	1864.37	35	469, 594	PT II	1870.404	20	671
MN II	1864.403	10	141, 488	CO I	1870.45	5	603
PB IV	1864.47	6	656	CR II	1870.46	1	340
CO III	1864.519	50	673	PD III	1870.487	150	674
MN II	1864.617	15	141, 488	RU III	1870.512	20	301
N II	1864.742	5	794	HG II	1870.547*	20	698, 794
FF II	1864.743	20	488	CO III	1870.634	75	488, 673
W	1864.792	5	794	SC I	1870.72	4	588
RU III	1865.01	50	301	PT II	1870.885	10	671
GE I	1865.054	8	4, 501, 780	RU II	1871.05	50	301
AS I	1865.10	8	480, 573	V II	1871.08	12	478, 488
FE III	1865.202	7	188, 488	PT II	1871.093	5	671
MN II	1865.296	8	141, 488	SB I	1871.15 *	300	31, 477
CO III	1865.424	100	488, 673	FE III	1871.152	9	188, 488
ZR III	1865.45	30	342	PD III	1871.263	100	674
CO III	1865.456	100	488, 673	RU III	1871.284	20	301
AU	1865.5	1	411	SN I	1871.297	50	473, 308
SN I	1865.523*	100	473, 308	RH III	1871.297	50	677
MN II	1865.547	12	141, 488	TL II	1871.39	4	194
PD III	1865.782	150	674	PT II	1871.590	5	671
CR II	1865.80	1	340	AS I	1871.68	30	480, 488, 573
ZR III	1865.83	18	342	RH III	1871.719	70	677
MN II	1865.831	10	141, 488	CO III	1871.870	500	488, 673
RU III	1865.92	30	301	CO III	1871.952	300	488, 673
SN I	1865.933*	100	473, 308	FE III	1872.214	6	188
MO IV	1865.980	60	591	SN I	1872.254	30	473, 308
AG II	1866.06	1	283	FE I	1872.359	15	292, 488, 605
FE I	1866.07	12	488, 605	CO I	1872.37	8	603
PT II	1866.150	5	671	CA III	1872.39	5	39
NB III	1866.24	30	320	AU	1872.42	6	658
CO I	1866.27	6	603	CO III	1872.532	200	488, 673
FE III	1866.305	9	188, 488	AG III	1872.55	10	284
CR II	1866.32	15	340, 488	CO III	1872.575	300	488, 673
MO II	1866.410	20	343, 591	V I	1872.66	5	489
CO III	1866.497	20	488, 603, 673	MO II	1872.880	20	193, 591
K	1866.5	1	659	RU III	1872.992	50	301
FE III	1866.554	5	188, 488	AS I	1873.02	40	480, 488, 573
CO III	1866.615	100	673	RE I	1873.03	5	350
V II	1866.68	5	478, 488	FE I	1873.052	12	292, 488, 605
FE I	1866.815	10	292, 488, 605	SI I	1873.100	100	339, 400, 678
AG III	1867.12 *	35	284	MO II	1873.105	20	591
PT II	1867.122	20	671	PD III	1873.197	200	674
V II	1867.47	20	478	CS	1873.2	2	659
CO III	1867.490	100	488, 673	FE I	1873.259	15	292, 488, 605
CU III	1867.747	50	488, 684	SN I	1873.302	50	473, 308
ZR III	1867.76	15	342	NA III	1873.32	4	758
BI IV	1867.8	2	449	MO II	1873.347	50	591
MN II	1867.872	5	141	V II	1873.39	10	478, 488
CO III	1867.930	30	673	AG III	1873.45 *	40	204
AG III	1868.10	15	284	RH III	1873.694	80	677
BI I	1868.13 *	20	134	CR IV	1873.86	25	488
SB I	1868.17	50	31, 477	CD III	1874.08 *	150	25, 683
NI III	1868.201	20	661	K	1874.7	1	659
MO III	1868.204	40	591	GE I	1874.27	3	276, 488, 581
MG III	1868.23	1	693	CO III	1874.355	100	488, 673
CR IV	1868.42	45	791	V II	1874.45	12	478, 488
RH III	1868.686	15	677	PD III	1874.629*	1500	674
CO III	1868.796	30	488, 673	RH III	1874.704	100	677
ZN	1868.82	1	658	SB I	1874.80	40	31, 414, 477
PT II	1868.968	10	671	CO III	1874.822	300	488, 673
NB III	1869.02	40	320	SI I	1874.838*	500	339, 488, 678
CO I	1869.16	5	603	SR II	1874.90		488, 649
IN	1869.2	2	130	RE I	1874.93 *	15	350

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AG III	1874.93	5	284	V II	1880.43	40	478, 488
CO III	1875.094	200	488, 673	CO III	1880.449	30	488, 673
BI I	1875.13	5	134	RH III	1880.656*	800	677
CR II	1875.18	1	340, 490	AU II	1880.79	1	550
RH III	1875.359	40	677	CO I	1880.82	15	603
PD III	1875.469	100	674	CO III	1880.912	50	488, 673
FE II	1875.536	15	488	RU III	1880.95	200	301
HG II	1875.541	3	65, 452	FE II	1880.976	20	488, 605
RU II	1875.564*	500	675	CR II	1881.02	2	340, 490
SI I	1875.809	100	339, 488, 678	ZR III	1881.02	20	342
CO I	1876.01	10	603	CE IV	1881.05	18	335
GE I	1876.010	5	4	CO III	1881.080	150	603, 673
V II	1876.06	20	478, 488	TL II	1881.15	3	194
CR IV	1876.15 *	60	791	FE III	1881.178	5	188
FE II	1876.181	8	488, 795	NI II	1881.18	10	488
SB I	1876.29	20	31, 477	AL IV	1881.19	1	693
RE I	1876.36	4	350	BI I	1881.27	5	134
I I	1876.415	2000	344	RH III	1881.348	50	677
FE I	1876.419	10	488, 795	CO III	1881.427	150	488, 673
V II	1876.47	10	478, 488	PT II	1881.505	5	671
CO I	1876.48	7	603	GE I	1881.646	2	4
SE I	1876.49	5	588	CO III	1881.702*	1000	488, 673
BI I	1876.66	2	134	SI I	1881.851	200	339, 488, 678
MO II	1876.77	12	343	CO III	1881.867	300	488, 673
P II	1876.79	10	469	AS I	1881.96	40	480, 488, 573
FE II	1876.839	15	488, 795	FE III	1882.047	10	188, 488
CO I	1876.88	8	603	RH III	1882.126	10	677
V II	1877.00	10	478, 488	ZN IV	1882.15	1	25
ZR III	1877.00	35	342, 488	CO III	1882.323	150	488, 673
PD III	1877.027	400	674	FE III	1882.357	5	188
AL II	1877.13	1	653	AG III	1882.44	2	284
RU II	1877.186	100	675	SB I	1882.56 *	150	31, 477
NB V	1877.34	10	760	SN I	1882.647*	100	473, 308
FE II	1877.460	20	488, 795	NI III	1882.686	25	661
CO III	1877.464	50	488, 603, 673	PT II	1883.051*	40	671
RH III	1877.467	30	677	CD II	1883.09	10	683
CO III	1877.544	50	488, 673	MO II	1883.103	30	591
MN III	1877.555*	400	131, 488	CR I	1883.11	1	341, 791
MO IV	1877.711	20	343, 591	CL II	1883.14	3	345
FE III	1877.989*	12	188, 488	TL IV	1883.2 *	5	466, 543
CO I	1878.28	25	488, 603	GE III	1883.26	6	406
SB II	1878.45	1	31, 414	CO III	1883.286	200	488, 673
AL II	1878.48	3	653	CR II	1883.32	4	340, 488, 490
RH III	1878.517	10	677	PD III	1883.352	500	674
ZR III	1878.56	10	342, 346, 488	MO IV	1883.560	60	591
N II	1878.60	2	65, 168	RU III	1883.56	100	301
SN I	1878.643	20	473, 308	BI III	1883.63	3	138
RH III	1878.745	30	677	NE II	1883.82	1	65, 251
FE I	1878.849	1	292, 488, 605	V II	1883.98	20	478, 488
V II	1878.90	10	478, 488	CS	1884.0 *	6	659
CR II	1878.99	2	340, 488, 490	CR II	1884.12	1	340
PT II	1879.094*	30	671	PI II	1884.196	5	671
K	1879.1	1	659	CO I	1884.45	10	488, 603, 673
CO III	1879.170	10	673	NB II	1884.49	60	318
CO III	1879.244	300	488, 673	FE III	1884.596	8	188, 488
NB IV	1879.32	25	412	RE I	1884.70	3	350
CO III	1879.385	200	488, 673	RH III	1884.910*	500	677
MG III	1879.46 *	4	693	RU III	1885.123	20	301
RH III	1879.585	40	677	FE III	1885.125	9	188, 488
P II	1879.62 *	25	469, 594	MN III	1885.138	300	131
CO III	1879.753	50	673	AG III	1885.20	2	578
AU I	1879.87	6	450, 658, 699	N III	1885.25	10	65, 168, 488
ZR III	1879.92	10	342	RU III	1885.279	30	301
NB III	1879.96	20	320, 412	SE III	1885.30	2	587
PD III	1880.064	250	674	RH III	1885.301	150	677
CL III	1880.10	3	43	CO III	1885.476	15	673
FE I	1880.14	5	292, 488, 605	RU II	1885.559	50	675
NE II	1880.21	3	65, 251	AU II	1885.72	2	550
BI III	1880.23	3	138	NA III	1885.75	4	758
MO II	1880.263	30	591	PD III	1885.834*	2000	674
CD II	1880.31	10	683	V II	1885.90	10	478, 488
CO III	1880.321	50	603, 673	FE III	1885.947	5	188, 488
PD III	1880.326	300	674	SN I	1886.042*	200	473, 308
AG III	1880.36	25	284	NI II	1886.06	10	488
CR I	1880.39	1	341	MO II	1886.100	30	591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1886.299	50	193, 591	SB I	1891.28	70	31, 414, 477
CR I	1886.34 *	10	341	PD III	1891.341*	1500	674
CO III	1886.469	50	488, 673	SN I	1891.415*	200	473, 308
CD III	1886.49	15	25, 683	FE III	1891.516	5	188
FE III	1886.607	5	188	PT II	1891.526	10	671
CO III	1886.742	200	488, 673	MN III	1891.786	200	131, 321
FE III	1886.757*	12	188, 292, 488	MO IV	1891.893	20	591
MO IV	1886.795	40	343, 591	BI I	1892.00	2	134
RH III	1886.816	10	677	CR I	1892.01	1	341
RU III	1886.86	50	301	CO III	1892.011	150	488, 673
AU II	1886.96	7	550	ZR III	1892.07	50	342
ZR II	1887.07	1	346	FE III	1892.073	5	188, 292, 488
MN IV	1887.16	1	47	FE III	1892.140	5	188, 488
FE III	1887.197	8	188, 292, 488	MO II	1892.180	40	343, 591
RH III	1887.360*	500	677	RU III	1892.19	50	301
PD III	1887.398*	1000	669, 674	FE III	1892.247	5	188, 488
N II	1887.434	4	65, 168, 488	BA II	1892.65		649
AU II	1887.44	7	550	K	1892.7	2	659
FE III	1887.471	8	188, 292, 488	TL II	1892.72	8	194
NA III	1887.48 *	15	758	MO IV	1892.795	20	343, 591
SB I	1887.5	40	477	FE III	1892.890	5	188, 292, 488
CR I	1887.60	3	341	NB III	1892.92 *	100	320
SE III	1887.66	2	587	CA III	1892.92	1	39
SI I	1887.700	200	339, 488, 678	RU II	1892.926	20	675
FE I	1887.761	15	292, 488, 605	CO III	1893.095	20	673
CR I	1887.83	0	341, 490	PB IV	1893.22	5	139
CO I	1887.89	12	603	SI I	1893.245	200	339, 488, 678
K	1887.9	2	659	SE I	1893.50	6	600
RH III	1887.938*	400	677	MO III	1893.505	20	591
CR II	1887.96	6	340, 488, 490	NI II	1893.52	1	663
RU II	1888.045*	500	675	ZR II	1893.52	1	346, 488
TH III	1888.12 *	100	348	CR I	1893.59	1	341
NE II	1888.15	1	65, 251	MG IV	1893.87	1	693
CR I	1888.17	3	341	AU	1893.9	1	411
FE I	1888.32	12	188, 488, 605	FE III	1893.981	11	188, 488
CO III	1888.345	10	673	FE II	1894.006	10	292, 488
RE I	1888.43 *	10	350	AG III	1894.01	7	284
CO III	1888.451	10	673	CA III	1894.17	3	39
MN IV	1888.47	1	47	FE III	1894.252	5	188
P IV	1888.55 *	8	41, 488	MO IV	1894.335	40	591
RH III	1888.624*	700	677	ZR III	1894.36	20	342
BI I	1888.69 *	20	134	SE III	1894.44	4	587
RA II	1888.7 *	5	570	V I	1894.47	8	489
FE II	1888.731	20	292, 795	C III	1894.49	2	65, 168, 245
RU III	1888.957	30	301	PT II	1894.538	8	671
CO III	1889.090	10	673	NB II	1894.56	100	318, 320
RU III	1889.171	30	301	RU III	1894.57	20	301
NB II	1889.18	50	318, 320	HG III	1894.77	1	237, 331
CS	1889.2 *	6	659	SB	1894.81	2	31
CR I	1889.20	1	341	NB III	1894.85	15	320
CO III	1889.321	20	673	PT II	1894.995	10	671
FE III	1889.451	5	188, 488	RH III	1895.064	50	677
RH III	1889.515	200	677	GE I	1895.197	10	4, 276, 581
PT II	1889.516*	50	671	SC III	1895.33 *	2	488
AG III	1889.57	30	284	CO III	1895.368	500	488, 673
CO I	1889.60	6	603	FE III	1895.456*	20	188, 292, 488
NE II	1889.77	1	65, 251	CO III	1895.495	30	673
CO I	1889.87	10	603	MO II	1895.619	50	343, 591
PB	1890.0	4	456	FE II	1895.675	10	187, 488, 645
PT II	1890.059	8	671	MO II	1895.690	30	343, 591
MO II	1890.072	60	591	K	1895.7	2	659
MG III	1890.35	2	693	SB	1895.77	1	31
PD I	1890.41 *	150	669, 674	CR I	1895.78	1	341
AS I	1890.42 *	2000	480, 488, 573	RH III	1895.885	30	677
V I	1890.50	4	489	MO IV	1895.909	20	343, 591
CR II	1890.55 *	30	340, 488	NB II	1895.95 *	1000	318
FE III	1890.669*	13	188, 292, 488	TE I	1896.1	4	16
NA III	1890.75	12	758	NI II	1896.16	5	488
CR I	1890.78	6	341	PT II	1896.283	8	671
V I	1890.82	3	489	MO II	1896.350	30	343, 591
K	1890.9	2	659	RU II	1896.441	100	675
AU	1890.9	2	411	AG III	1896.69	7	284
RE I	1891.04 *	10	350	FE III	1896.803	9	188, 488
RH III	1891.127	10	677	CA III	1896.94	0	39
SE III	1891.16 *	6	587	MO II	1897.054	40	343, 591

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
SN I	1897.299	50	473, 308	FE III	1902.902	5	188
BI I	1897.40	5	134	RH III	1902.908	10	677
SE I	1897.43	8	587, 588	RU II	1903.227*	500	675
RU II	1897.437	100	675	NI III	1903.262	15	661
MN II	1897.464	5	141	CR I	1903.29	0	341, 490
V I	1897.49	5	478, 489	FE I	1903.370	1	292, 488, 605
AL II	1897.49	2	653	RH III	1903.440	150	677
CO I	1897.560	10	603, 673	CD III	1903.48	15	25, 683
MO IV	1897.581	30	591	GE I	1903.562	2	4
CO I	1897.73	8	603	CR I	1903.81	0	341, 490
CL III	1897.85	3	43	V II	1903.86	5	478, 488
AU I	1897.9	1	411	PT II	1903.877	8	671
MO II	1897.997	30	343, 591	GA I	1903.9	5	335
MN III	1898.234	250	131, 141	BA II	1904.15	1	569, 649
HG III	1898.30	1	331	MO II	1904.169	20	591
MO II	1898.433	30	591	RH III	1904.300	60	677
BI I	1898.51	1	134	AL II	1904.38	2	653
FE II	1898.538	10	292, 488	AU II	1904.43	10	550, 658
SE I	1898.555*	40	488, 600	SI I	1904.660	50	339, 488, 678
MO IV	1898.750	20	591	GE I	1904.72	5	276, 488, 581
V I	1898.78	5	489	CO I	1904.75	5	603
PB I	1898.85 *	50	134	HG II	1904.755	4	65, 452, 527
AG III	1898.86	2	284	FE II	1904.784	15	488, 795
FE III	1898.870	6	188	BI I	1904.79	1	134
ZN I	1898.92	1	658	PB I	1904.8	4	456
CR II	1898.92 *	35	340, 488	P IV	1904.80	1	41, 597
MN III	1899.030	150	131	ZN I	1904.82	2	658
RU III	1899.04	200	301	GA I	1905.0	5	335
AL II	1899.17	4	653	MO II	1905.070	30	343, 591
FE III	1899.318	5	188	CO III	1905.354	300	488, 603, 673
SB I	1899.39	70	477	HG III	1905.41	1	331
BI I	1899.39	5	134	P I	1905.48	30	469, 594
RU III	1899.42	100	301	CO III	1905.674	20	673
MO IV	1899.455	20	591	MO II	1905.695	20	591
NA III	1899.70	3	758	RE I	1905.74 *	50	350
CO III	1899.795	50	488, 673	CO I	1905.810	20	488, 603, 673
SN II	1899.890*	5000	448, 681	PD I	1905.86	20	669, 674
FE III	1899.931	5	188	CA III	1905.98	0	39
V I	1900.00	6	489	GA I	1906.0	5	335
MG I	1900.04	1	693	CO III	1906.265	30	673
MO IV	1900.065	20	591	TI II	1906.30 *	3	488, 601
S I	1900.27 *	20	488, 599	P I	1906.40	20	469, 594
HG II	1900.284	5	527, 794	FE III	1906.457	6	188, 488
CO III	1900.763	50	488, 673	AL II	1906.57	4	653
RE I	1900.83 *	50	350	MO II	1906.651	20	591
MO II	1900.855	40	343, 591	CR I	1906.67	2	341
BI I	1900.97 *	8	134	CO I	1906.72	5	603
FE III	1901.096	9	188, 488	FE III	1906.814	6	188
TI III	1901.31	3	604	BI I	1906.99	3	134
RH III	1901.320*	800	677	N III	1907.05	1	65, 168
SI I	1901.331*	1000	339, 488, 678	BE I	1907.12 *	5	541
CO III	1901.357	300	488, 673	MN IV	1907.14	4	47
FE III	1901.379	5	188	MO II	1907.195	20	343, 591
HF II	1901.40	6	479	RH III	1907.219	300	677
SE I	1901.41	4	588	ZN I	1907.41	1	25
RH III	1901.521	30	677	N III	1907.44	4	65, 168
MG III	1901.55	1	693	CO III	1907.458	30	673
CL III	1901.61	5	43, 488	CA III	1907.46	2	39
PT II	1901.636	10	671	NE II	1907.56 *	8	68, 488
CO I	1901.75	20	488, 603	FE III	1907.577	10	188, 488
PD I	1901.94 *	150	669, 674	P I	1907.66	40	469, 594
FE III	1902.076	5	180, 488	PB I	1907.70 *	20	134
RH III	1902.080	15	677	V II	1907.79 *	50	478, 488
CO I	1902.15	10	603	MN II	1907.838	8	141, 488
MO IV	1902.195	20	343, 591	N III	1908.11	7	168, 177, 488
AS I	1902.31	6	480, 573	TI II	1908.29 *	3	488, 601
FE III	1902.402	6	188	RU III	1908.312	100	301
BI II	1902.41 *	100	138	V II	1908.32 *	40	478, 488
U I	1902.5	3	411	RH III	1908.433	100	677
CR I	1902.59	3	341, 490	GE I	1908.434	7	4, 581
NI III	1902.607	50	661	CR I	1908.46	4	341
ZR II	1902.78 *	3	346, 488	MG III	1908.46	3	693
MO II	1902.805	20	343, 591	AG III	1908.49	6	284
CD IV	1902.86	2	25	IL II	1908.64 *	25	194
O III	1902.89	1	65, 240	BI I	1908.66	5	134

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU III	1908.666	20	301	KR III	1914.086	3	58
MO II	1908.695	30	591	CL III	1914.09	3	43
RA II	1908.7 *	8	570	TI II	1914.11 *	00	488, 601
RB	1908.7	1	659	ZR III	1914.25	65	342
CD II	1908.76	15	683	A III	1914.398*	9	59, 65, 488
N III	1908.96	1	177, 246	MO II	1914.403	30	591
MO II	1909.300	20	343, 591	CS	1914.6 *	4	659
SN I	1909.305*	300	473, 308	MO II	1914.615	30	591
TI II	1909.33 *	2	488, 601	A III	1914.653	3	59, 65
PT II	1909.336	15	671	MN II	1914.676	12	141, 488
RE I	1909.36 *	50	350	S I	1914.68 *	15	488, 599
V II	1909.36	40	478, 488	CE IV	1914.8 *	35	335
A II	1909.58	1	59, 65	I	1914.81	7	400
CO III	1909.666	150	673	V II	1914.91	15	478, 488
TE I	1909.7	3	16, 147	RE I	1915.01	3	350
CR I	1909.72	2	341	FE III	1915.083*	15	188, 292, 488
TI II	1909.74 *	2	488, 601	MN II	1915.095	30	131, 141, 488
MN II	1909.830	5	141	NB II	1915.11	200	318
MO III	1909.850	20	343, 591	AU	1915.3	1	411
SE III	1909.91	1	587	A III	1915.564	7	59, 65, 488
CD III	1909.98	25	25, 683	CS	1915.6 *	3	659
BI IV	1910.0	6	449	MO II	1915.896	50	343, 591
RH III	1910.151*	500	511	CU III	1916.112	50	615
CA III	1910.17	4	39	NE II	1916.16 *	10	68, 488
FE III	1910.401	6	188, 488	RU III	1916.17	20	301
CD III	1910.57	15	683	CR I	1916.23	2	341
FE II	1910.669	8	488, 645	RH III	1916.300	30	677
NB IV	1910.70	40	412	O III	1916.48	2	65, 168
CO III	1910.840	300	488, 673	FE III	1916.507	5	188, 488
AL II	1910.91	5	653	CL III	1916.53	4	43
TI II	1911.01 *	0	488, 601	HG III	1916.56	1	331
MO II	1911.110	30	343, 591	RU II	1916.829	200	675
CO III	1911.174	20	673	AG III	1916.92 *	40	284
ZR II	1911.32 *	4	346, 488	AG III	1917.08 *	60	284
FE III	1911.338	7	188, 488	AS I	1917.21	20	480, 488, 573
CR II	1911.36	7	340, 341, 488	RU III	1917.224	20	301
MN II	1911.395	12	141, 488	PD III	1917.281	150	674
MO II	1911.421	70	343, 591	CO III	1917.321	20	673
SN I	1911.613*	200	473, 308	FE II	1917.337	15	188, 292, 488
PT II	1911.702*	50	671	FE III	1917.453	9	108, 488
MO II	1911.801	20	343, 591	PD III	1917.472	200	674
CO I	1911.86	8	603	GE I	1917.592	20	4, 488, 581
V II	1911.88	40	478, 488	V II	1917.79	15	478, 488
RU II	1912.036	50	675	MO III	1917.790*	150	591
RH III	1912.060	400	677	CL III	1917.87	4	43, 488
AU	1912.1	1	411	FE III	1917.960	6	188
BI III	1912.12	10	138	A III	1918.06	1	59, 65
MO II	1912.143	20	591	NB III	1918.11	25	320
V II	1912.39	40	478, 488	CR II	1918.27	4	340, 490
GE I	1912.409	8	4, 488, 581	RU III	1918.280	20	301
CO III	1912.465	10	673	FE III	1918.284	7	188, 488
SC III	1912.48 *	2	488	NA III	1918.46	6	758
RU II	1912.484	30	675	FE III	1918.480	7	188, 488
BE I	1912.49	1	541, 658	NB II	1918.50	80	318
PT. II	1912.730	10	671	PT II	1918.632	5	671
CR I	1912.79	4	341	MN II	1918.638	6	47, 141, 488
AS	1912.90	1	29	RU II	1918.650	50	675
CL III	1912.90	4	43, 488	A III	1918.667	4	59, 65
CO III	1912.952	30	673	MG III	1918.76	1	693
BI I	1912.97	1	134	AU II	1918.93	7	550
AG III	1913.01	5	784	ZN	1918.94	5	582, 754
V II	1913.10	20	478, 488	RH III	1918.952*	400	677
NA III	1913.17	8	758	PD I	1919.03	20	669
ZR III	1913.34	18	342	CO III	1919.120	500	488, 673
SB I	1913.48	30	477	SE I	1919.190*	30	488, 600
SN I	1913.528*	100	473, 308	ZN III	1919.32	2	25
BI I	1913.67	5	134	V II	1919.35	20	478, 488
PB	1913.7	4	335	RH III	1919.369*	600	677
V II	1913.70	50	478, 488	PO I	1919.4 *	3	133
MO II	1913.720	60	343, 591	N III	1919.44	1	65, 177
PD III	1913.729	150	674	MO II	1919.480	50	591
SE I	1913.788*	35	488, 600	A III	1919.515	4	59, 65
RU II	1913.797	20	675	HF II	1919.52 *	20	479
NI III	1913.890	30	661	RH III	1919.608	50	677
FE III	1914.056*	19	188, 292, 488	MN II	1919.639	7	141, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
AU I	1919.64 *	20	450, 550	CO III	1925.563	15	673
N III	1919.71	2	65, 177	MO II	1925.767	20	591
BE I	1919.76	2	541, 658	ZR III	1925.88	12	342
N III	1919.99	2	65, 177	ZR III	1925.98	15	342
NA III	1920.12	6	758	FE II	1925.983	20	488, 795
CL III	1920.32	4	43	AL II	1925.99	2	653
SE III	1920.34 *	6	587	FE III	1926.013	10	188, 488
V II	1920.36	12	478, 488	PT II	1926.153	20	671
MO II	1920.531	20	591	MO IV	1926.261*	500	193, 591
AU II	1920.73	1	550	NA III	1926.27 *	45	758
ZR II	1920.76 *	5	346, 488	FE III	1926.304*	18	188, 292, 488
N III	1920.86	8	65, 168, 488	NB III	1926.32	10	318, 320
ZN	1921.05	1	658	MN II	1926.579	15	141, 488
V II	1921.24	15	478, 488	NB II	1926.71 *	500	318
MN II	1921.245	25	141, 488	SN I	1926.764*	100	473, 308
MO II	1921.301	20	343, 591	PD III	1926.770	500	674
BR II	1921.39	1	400	MO II	1926.857*	200	343, 591
N III	1921.49	4	65, 177, 488	CO I	1926.90	10	488, 603
AU II	1921.64 *	20	550, 658	MN II	1926.938	9	141, 488
PB II	1921.66	7	163	RH III	1926.960*	400	677
ZR III	1921.96	75	342, 488	AL II	1926.99	1	653
MN II	1922.036	5	141	RH III	1927.072*	500	677
HF II	1922.11	9	479	SP I	1927.08 *	100	31, 477
MO IV	1922.134	20	591	NA III	1927.21 *	15	758
CD II	1922.23 *	300	25, 683	BI III	1927.50	2	138
MO II	1922.357*	500	343, 591	RU II	1927.623	100	675
NB IV	1922.41 *	60	412	HG II	1927.64	1	65, 452, 527
PD III	1922.443	250	674	RE I	1927.72 *	15	350
PD III	1922.522	100	674	MO II	1927.739	500	591, 343
MO II	1922.643*	200	343, 591	CO III	1927.740	200	488, 673
HF II	1922.74 *	12	479	BI III	1927.88	2	138
FE III	1922.766*	15	188, 292, 488	SN I	1927.966	30	473, 308
FE II	1922.797	20	292, 488	MO II	1928.167	20	591
FE III	1923.003	7	188, 488	FE III	1928.265	5	188, 488
C III	1923.01	3	65, 168	PT II	1928.367	5	671
CR II	1923.02	8	340, 488, 490	PT II	1928.426	20	421, 671
MN II	1923.059	10	141, 488	CO III	1928.490	100	488, 673
MO II	1923.075*	300	591	CO III	1928.570	500	488, 673
N III	1923.11	2	65, 246	MO II	1928.614	100	343, 591
TE	1923.21	1	401	MO II	1928.690	50	591
C III	1923.22	2	65, 168	CO III	1928.802	200	673
BR II	1923.32	2	400	NE II	1928.83	1	65, 251
MN II	1923.341	10	141, 488	SN I	1928.97	50	473, 308
CL II	1923.35 *	4	345	PT II	1929.140*	10	671
CS	1923.4	2	659	MO II	1929.155	20	591
C III	1923.40	2	65, 168	RU III	1929.234	20	301
GE I	1923.467	10	4, 488, 581	PT II	1929.250*	30	671
SB II	1923.47	1	31, 414	MO IV	1929.256*	500	193, 591
RH III	1923.518	15	677	CO I	1929.34	15	488, 603
MO II	1923.781	20	591	RH III	1929.358	150	677
MG III	1923.87	3	693	IR	1929.4 *	3	335
FE III	1923.877	7	188, 488	PT II	1929.457*	10	671
PD I	1923.95 *	100	669, 674	PD I	1929.55 *	100	669
PB I	1924.12 *	15	134	V II	1929.61 *	60	478, 488
RH III	1924.438	100	677	PD I	1929.63	50	669
CO III	1924.529	50	603, 673	TE	1929.64	2	401
FE III	1924.532	6	188, 488	ZN II	1929.67	4	488, 682
AU	1924.7	5	335	BE I	1929.67	3	541, 658
BA II	1924.70 *	5	569, 649	PT II	1929.677*	30	671
CO III	1924.722	10	673	CU II	1929.74	25	488, 670
RE I	1924.74 *	15	350	CO III	1929.756	300	488, 673
AL II	1924.81	4	653	GE I	1929.826*	40	4, 488, 581
V II	1924.87	30	478, 488	CR II	1929.96	12	340, 488
BI IV	1925.0	2	449	AL II	1930.03	5	653
CO I	1925.05	12	488, 603	MN II	1930.033	15	321
BR II	1925.13	1	400	RH III	1930.074	300	677
MO II	1925.213	20	591	NE II	1930.11 *	8	68, 488
AU II	1925.23	10	550, 658	GE I	1930.271	1	4
CO III	1925.260	20	488, 673	PD III	1930.330*	1000	674
AG III	1925.30	20	284	FE III	1930.387*	15	188, 292, 488
SN I	1925.305*	500	473, 308	RH III	1930.398	300	677
RU III	1925.39	20	301	BI I	1930.42	3	134
RH III	1925.395	15	677	NI III	1930.431	200	488, 661
PD III	1925.412	300	674	MN II	1930.437	8	141, 488
MN II	1925.506	10	141, 488	CO III	1930.479	50	488, 603, 673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO IV	1930.511	50	591	IN	1935.86	7	130
IN II	1930.52 *	8	413	MO IV	1935.866*	100	591
MG III	1930.64	3	693	AL III	1935.881*	6	49, 538
RU II	1930.717	100	675	MO II	1936.093	20	343, 591
CO I	1930.90	6	603	IN II	1936.25 *	10	413, 579
C I	1930.902	10	794	PB I	1936.34 *	20	134
C I	1930.930	10	168, 488	CO III	1936.392	20	488, 673
MO II	1930.984	30	343, 591	ZR III	1936.48	75	342, 488
CO I	1931.00	10	603	MN III	1936.483	200	131, 488
C III	1931.027	4	65, 49	RH III	1936.487	10	677
PD III	1931.090	400	674	AU	1936.5	1	411
MO II	1931.107	20	591	CO I	1936.58 *	30	488, 603
ZN III	1931.17	1	25	ZR III	1936.67	75	342, 488
TL III	1931.3 *	1	130, 543	MN II	1936.717	10	141, 488
MN II	1931.408	10	141, 488	FE II	1936.806	20	188, 292, 488
RH III	1931.423	50	677	S II	1936.84 *	3	285
FE III	1931.507*	14	188, 488	CO III	1936.933	300	488, 673
IN	1931.7	2	130	RH III	1936.935	100	677
MO II	1931.770	30	591	AL II	1936.96	4	653
RH III	1931.791*	700	677	AG III	1937.00	4	284
CO I	1931.89	8	603	RU II	1937.089	100	675
RH III	1932.032	40	677	ZR III	1937.27	80	342, 488
MO II	1932.049	100	591	FE I	1937.274*	35	292, 488, 605
RU II	1932.118	50	675	FE III	1937.345*	14	188, 292, 488
RH III	1932.239	300	677	V II	1937.44 *	60	478, 488
PD I	1932.26	50	669	AG II	1937.53	4	283
MO IV	1932.273*	100	591	MN II	1937.582	10	321
AL II	1932.43	5	653	AS I	1937.59 *	1500	480, 488, 573
FE II	1932.477	15	292, 488	CO III	1937.661	100	488, 673
AG III	1932.53	5	284	V II	1937.68	7	478, 488
ZR III	1932.54	75	342, 488	TH III	1937.71	10	348
CR II	1932.64	5	340, 488, 490	RU II	1937.715	50	675
RH III	1932.750	20	677	MG III	1937.80	2	693
FE III	1932.818	5	188, 488	ZR III	1937.81	12	342
AG III	1933.11	7	284	CR II	1937.84 *	20	340, 488, 490
BI I	1933.12	2	134	I	1937.97	1	400
SN I	1933.178	50	473, 308	GE II	1938.00 *	10	488
MO II	1933.237	100	343, 591	RU II	1938.193	20	675
CO III	1933.250	50	488, 673	ZR II	1938.27 *	3	346, 488
V II	1933.28	10	478, 488	GE I	1938.300	15	4, 488, 581
PT II	1933.345	10	671	CR II	1938.42	3	340, 488
MO II	1933.422	50	591	RH III	1938.455	300	677
MN III	1933.426	100	131, 488	MO II	1938.493	50	591
AG II	1933.51	1	658, 665	V II	1938.50	10	478, 488
BA II	1933.64		649	V II	1938.70	8	478, 488
MO III	1933.735	50	591	CS	1938.8	2	659
PO I	1933.8 *	5	133	MN II	1938.829	10	131, 286, 321
HG II	1933.80	2	698	NB III	1938.84 *	100	320
NA III	1933.87 *	30	758	MO IV	1938.885	20	591
V II	1933.97	30	478, 488	GE II	1938.90 *	20	488
RH III	1934.004	60	677	FE II	1938.901	10	188, 292, 488
PT II	1934.008	10	671	NE II	1938.92 *	8	68, 488
GE I	1934.048*	25	4, 488, 581	CO I	1938.94	10	603
MO II	1934.238*	200	343, 591	RU II	1939.056	200	675
CO I	1934.274	12	488, 603, 673	V IV	1939.07 *	100	488, 790
ZR III	1934.32	50	342, 488	CR II	1939.15	6	340, 488, 490
RH III	1934.435	80	677	AU I	1939.21	2	450, 550
FE I	1934.528*	25	292, 488, 605	RH III	1939.243	150	677
AL II	1934.54 *	10	653	AL II	1939.30	5	653
RU II	1934.615	20	675	V II	1939.32	8	478, 488
CO III	1934.734	50	488, 673	RH III	1939.386	200	677
AL II	1934.75 *	10	653	RB	1939.4	1	659
RH III	1934.870	100	677	RU II	1939.521	200	675
NB II	1934.92 *	1000	318	NI III	1939.588	100	661
MO IV	1934.922	20	591	CD III	1939.59	10	25, 683
BI I	1934.94	2	134	MO II	1939.603*	500	343, 591
CO III	1935.023	100	488, 673	NI II	1939.71	4	403, 488
TI III	1935.18	3	604	CA III	1939.72	4	39
CS	1935.2 *	8	659	PT II	1939.800*	30	671
ZR III	1935.20	40	342	CR II	1939.90	5	340, 488, 490
FE II	1935.296	15	292, 488	FE III	1940.018	8	188, 488
RH III	1935.419	90	677	MO II	1940.114	20	591
CR II	1935.54	10	340, 488, 490	CO III	1940.147	500	488, 603, 673
CA III	1935.79	3	39	RH III	1940.172	300	677
GA	1935.82	7	130	ZR III	1940.25	200	342, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
RU II	1940.422	30	675
FE I	1940.631	20	188, 488, 605
V II	1940.86	40	478, 488
A II	1941.062	2	59, 65, 488
ZR III	1941.08	100	342, 488
MO II	1941.200	50	343, 591
MN III	1941.227*	500	131, 488
V II	1941.27	30	478, 488
CO II	1941.28 *	50	234, 488
RH III	1941.292	50	677
RE I	1941.33	8	350
PD III	1941.332	100	674
RU III	1941.346*	500	301
RH III	1941.359	40	677
MO II	1941.399	100	591
V - II	1941.40	30	478, 488
TI III	1941.40	4	604
CO III	1941.460	50	488, 673
PD III	1941.639*	2000	674
MO II	1941.648	100	591
CO III	1941.730	100	488, 673
SN III	1941.857*	500	681
TH III	1941.88	15	348
NB II	1941.91	100	318
PT II	1942.098	15	671
NA III	1942.19	6	758
PO I	1942.2 *	5	133
ZN II	1942.26	3	682
HG II	1942.273*	20	698, 794
CS	1942.3 *	4	659
AU I	1942.31 *	45	550
NB III	1942.31	20	318, 320
V II	1942.35	40	478, 488
CO III	1942.369	200	488, 673
CO III	1942.497	100	488, 673
TL	1942.5	2	130
RE I	1942.61	5	350
MN II	1942.646	20	141, 488
SN I	1942.690	50	473, 308
RH III	1942.777	50	677
CO III	1942.796	100	488, 673
RH III	1942.888	30	677
MO II	1942.895	60	343, 591
NB III	1943.01	15	320
MO II	1943.089	50	591
AG III	1943.12	4	284
CA III	1943.12 *	6	39, 488
MN III	1943.133*	800	47, 131, 488
RH III	1943.226	80	677
NA III	1943.40	6	758
TH III	1943.48	15	348
FE III	1943.481*	14	188, 292, 488
CD II	1943.54 *	100	25, 683
CO I	1943.64	12	488, 603
BE I	1943.68 *	5	541, 658
RU II	1943.966	20	675
GE I	1944.116	4	4, 276, 581
MN II	1944.168	15	47, 141, 488
MO IV	1944.251	50	591
PT II	1944.455	20	671
PD III	1944.537	200	674
MN III	1944.557	150	131, 488
CU II	1944.601	25	488, 662
MO II	1944.657	30	343, 591
GE I	1944.66	2	488, 581, 276
AU	1944.72	3	658
MN II	1944.794	12	141, 488
RH III	1944.926	150	677
NA III	1944.99	3	758
FE I	1945.070	20	292, 488, 605
CO I	1945.09	12	488, 603
MN II	1945.150	25	141, 488
CO III	1945.234	200	488, 673
RH III	1945.310	50	677
FE I	1945.342	12	188, 488, 605

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V II	1945.35	30	478, 488
AL II	1945.35	5	653
AG III	1945.37	5	284
SN I	1945.415	20	473, 308
V II	1945.64	30	478, 488
CR II	1945.98	10	340, 488, 490
PD I	1945.99 *	200	669
SB III	1946.07 *	5	31, 407, 495
NB II	1946.09	50	318
ZR III	1946.12	25	342, 488
MO II	1946.123	150	343, 591
FE I	1946.219	10	292, 488, 605
AG III	1946.32	15	284
MN II	1946.335	9	141, 488
NA III	1946.43 *	20	758
RH III	1946.476	10	677
CU II	1946.49	10	488, 670
ZR III	1946.61	80	342, 488
MO IV	1946.612	20	591
RU III	1946.665	50	301
RH III	1946.675	60	677
CO III	1946.792	300	488, 603, 673
MO II	1946.875	20	591
MN II	1946.919	5	141
FE I	1946.983*	25	488, 795
N III	1946.99	5	65, 246
ZR III	1946.99	50	342
RH III	1947.017	20	677
MO II	1947.157	20	343, 591
RH III	1947.178	10	677
SE III	1947.19	5	587
MN III	1947.247	150	131
V I	1947.37	4	489
MN III	1947.439	200	131, 488
CO I	1947.626	5	488, 603, 673
HG II	1947.65	2	65, 698
TH III	1947.70	10	348
RH III	1947.798	300	677
MN II	1947.945*	40	141, 488
MO II	1947.964	20	343, 591
RH III	1948.086	10	677
CO I	1948.09	10	603
ZR II	1948.10	1	346, 488
RU III	1948.185	30	301
MN II	1948.214*	200	131, 141, 488
SN I	1948.229	30	473, 308
FE II	1948.280	10	188, 292, 488
CA III	1948.31	5	39
AG III	1948.44	10	284
ZN II	1948.46	3	682, 754
RH III	1948.475	30	677
CR II	1948.51 *	10	340, 488
CO III	1948.655	100	488, 673
HG II	1948.66	2	65, 527
MN IV	1948.75	2	47
MO II	1948.788*	200	343, 591
TI III	1948.79	5	604
ZR II	1948.87	1	346
PT II	1948.959	10	421, 671
CO I	1949.00	15	488, 603, 673
CR II	1949.00 *	40	340, 488
RH III	1949.018	50	677
PD III	1949.048	100	674
RU II	1949.196	30	675
CR II	1949.22 *	35	340, 488
N III	1949.22	6	65, 246
MO II	1949.231	50	343, 591
AU II	1949.24	4	550
MN III	1949.276	200	131, 488
RH III	1949.478	40	677
MO III	1949.515*	300	193, 343, 591
CO III	1949.533	30	673
RH III	1949.645	15	677
MN III	1949.668	150	131
CO III	1949.805	200	488, 673

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
N III	1949.81	4	65, 246	MO IV	1954.440*	100	591
NB II	1949.87	80	318	AG III	1954.59	2	284
PT II	1949.901*	30	421, 671	PT II	1954.734	20	671
CR II	1950.06 *	50	340, 488	CO III	1954.791	300	488, 673
SE III	1950.08	5	587	MN II	1954.855	12	141, 488
CO II	1950.098*	20	234, 488	CR III	1954.87	12	490
FF I	1950.223	20	292, 488, 605	CO III	1954.876	100	488, 673
ZK II	1950.29	2	346	SI I	1954.966	100	339, 488, 678
FE III	1950.334	10	188, 488	FE III	1954.975	8	188, 488
SB I	1950.39 *	200	31, 477	RH III	1954.976	60	677
MN II	1950.433	10	321	TE I	1955.1	2	16
S II	1950.53 *	3	285	GE I	1955.115*	35	4, 488, 581
MO II	1950.613*	200	343, 591	MO II	1955.129*	300	591
NA III	1950.79 *	15	758	CO I	1955.17 *	30	488, 603
RH III	1950.858	100	677	NA III	1955.31	8	758
MO II	1950.871*	200	591	GA	1955.4	8	335
CO III	1950.911	400	488, 673	CO III	1955.505	30	488, 673
MN II	1950.919	15	141, 488	SN III	1955.516	50	681
CO III	1950.961	50	488, 673	HF II	1955.66 *	12	479
FE III	1951.007*	12	188, 488	FE I	1955.690*	20	488, 605, 645
PD III	1951.117	200	674	CO III	1955.793	200	488, 673
NA III	1951.21 *	40	750	RH III	1955.946	300	677
CO I	1951.44	12	488, 603	CR II	1955.95	15	340, 488, 490
MN III	1951.440	200	131	CO III	1956.011	200	488, 673
V IV	1951.48 *	80	488, 790	FE I	1956.026*	30	488, 605, 645
PD III	1951.500	400	674	ZR III	1956.03	10	342
MO II	1951.547	20	343, 591	CO I	1956.22	15	488, 603
FE I	1951.556*	25	292, 488, 605	RH III	1956.244	150	677
PT II	1951.764	5	671	GA	1956.5	8	335
CO I	1951.90	25	488, 603	SB I	1956.54	20	414, 477
AU I	1951.93 *	25	450, 550, 699	MN III	1956.552	300	131, 488
RE I	1952.00 *	12	350	BE I	1956.63 *	5	541, 658
SN I	1952.141*	500	473, 308	MO II	1956.822*	200	343, 591
CO III	1952.158	200	488, 673	PD III	1956.892	150	674
HG III	1952.16	1	331	NI III	1956.964	20	488, 661
CA III	1952.16	3	39	RU III	1957.036	20	301
RH III	1952.253	80	677	MO II	1957.118*	400	343, 591
FE I	1952.262	20	188, 488, 605	NB II	1957.13	200	318
MN III	1952.285*	500	131, 488	MO II	1957.267	20	343, 591
MO II	1952.379	100	343, 591	HG II	1957.386	1	65, 452, 527
MN III	1952.430*	1000	131, 488	CO II	1957.424*	30	234, 488
NI III	1952.540	200	488, 661	CU II	1957.51	20	488, 670
FE I	1952.579*	30	488, 795	MO II	1957.574	20	591
HG II	1952.60	1	698	RH III	1957.593	50	677
FE III	1952.648	11	188, 488	AG III	1957.62 *	70	284
MO III	1952.653	50	343, 591, 654	CO I	1957.69	12	488, 603
AG III	1952.74	5	284	TE I	1957.7	4	16
RH III	1952.829	15	677	RH III	1957.758	30	677
AG III	1952.98	4	284	A III	1957.83	1	59, 65
FE I	1953.001	20	488, 795	FE I	1957.838*	25	488, 795
CA III	1953.06	4	39	V I	1957.90 *	50	489, 488
MO IV	1953.156	20	591	MO II	1957.917	100	591
MN II	1953.234*	40	141, 488	FE III	1957.938	6	188, 488
FE III	1953.322*	13	188, 488	TE I	1958.1	3	16
MO III	1953.346	50	591	CO I	1958.10	8	603
NI II	1953.41	10	488, 663	V I	1958.10	12	489, 488
FE III	1953.488*	10	188, 488	CA III	1958.18	2	39
N III	1953.66	3	65, 246	MO II	1958.204*	200	591
CO I	1953.71	8	488, 603	AL II	1958.29	1	536
MO III	1953.718	20	343, 591	PB	1958.3	4	456
RE I	1953.77	5	350	KU III	1958.304	30	301
N III	1953.80	3	65, 246	S II	1958.38 *	3	285
GE I	1953.802	2	4, 276, 581	PT II	1958.492	10	671
CO III	1953.942	500	488, 673	MO II	1958.508	60	343, 591
ZR III	1953.95	100	342	HG II	1958.52	1	65
BI	1954.0	5	335	CO I	1958.55	25	488, 603, 673
PD III	1954.039	300	674	FE I	1958.583	11	188, 488, 605
SB	1954.07	5	31	FE I	1958.732	5	188, 488, 605
MO II	1954.106	20	343, 591	AS I	1958.82	20	480
RB	1954.2	3	659	AS I	1958.91	40	480, 488, 573
BA II	1954.21		649	CO I	1958.94	15	488, 603
CO I	1954.22 *	30	488, 603	TH IV	1959.02 *	200	349
FE III	1954.223	10	188, 488	V I	1959.12 *	30	489, 488
RH III	1954.248*	500	677	MN II	1959.240	8	321
GA	1954.4	8	335	FE III	1959.324	8	188, 488

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V I	1959.36 *	30	489, 488	FE I	1963.948	20	488, 795
CO III	1959.414	500	488, 673	FE I	1964.019	5	188, 488, 605
PB VII	1959.42 *	6	139, 656	CO I	1964.03	20	488, 603
RI	1959.6	3	335	FE III	1964.169	8	188, 488
GE II	1959.78	6	488	RH III	1964.183	150	677
V I	1959.97 *	40	489, 488	HF II	1964.23 *	15	479
FE I	1960.139*	25	488, 795	V I	1964.27 *	60	489, 488
MO II	1960.156*	200	591	SB I	1964.3	80	31, 477
SN I	1960.215*	100	473, 308	FE II	1964.342	12	188, 488, 795
TE I	1960.28	3	147	SR II	1964.43	0	488, 649
FE III	1960.318*	13	188, 488	BE I	1964.59 *	9	541, 658
O II	1960.34	1	36, 65	TL	1964.6	3	130
MN II	1960.358	11	141, 488	NI III	1964.689	100	488, 661
AL II	1960.70	3	653	CA III	1964.70	5	39
PD I	1960.75 *	150	669, 674	FE III	1964.776	8	188, 488
NA III	1960.76 *	20	758	MO II	1964.845	50	343, 591
AG III	1960.86	10	284	RH III	1964.891	70	677
SE I	1960.901*	50	488, 600	NA III	1965.04 *	18	758
MO III	1960.980*	300	591	V I	1965.07 *	60	489, 488
CO I	1961.00	15	488, 603	RH III	1965.160	400	677
FE III	1961.010	5	188	ZR III	1965.18	20	342
FE I	1961.230	8	188, 488, 605	AL II	1965.23	4	653
CO I	1961.26	8	488, 603	V I	1965.26 *	60	489, 488
RH III	1961.262	200	677	RU II	1965.293	200	675
ZR III	1961.32	50	342	FE III	1965.309	8	188, 488
A II	1961.356	2	59, 65, 488	AU II	1965.34	0	658
CS	1961.4	2	659	GE I	1965.383	10	4, 488, 581
CO III	1961.450	50	488, 673	PT II	1965.426	10	671
MO II	1961.466	50	343, 591	NI II	1965.456*	20	488, 794
NB II	1961.56	80	318	RH III	1965.533	10	677
CO I	1961.59	25	488, 603	CD II	1965.54	40	683
V I	1961.69 *	60	489, 488	CR III	1965.56	20	490
SB	1961.73	3	31	TH III	1965.58 *	30	348
MO II	1961.735	50	343, 591	RE I	1965.83	5	350
MN III	1961.966	250	131, 286	RU II	1966.076	200	675
ZR III	1962.01	100	342, 488	MO IV	1966.082*	100	193, 591
GE I	1962.013*	30	4, 488, 581	MO II	1966.175	50	591
FE I	1962.031*	25	292, 488, 605	ZR III	1966.22	85	342, 488
W II	1962.07 *	5	419	GE II	1966.33	8	488
FE I	1962.107*	30	488, 795	MO II	1966.348	50	591
O II	1962.24	3	36, 65	V I	1966.52 *	60	489, 488
MO II	1962.251*	200	343, 591	CO I	1966.680	9	488, 603, 673
RU II	1962.285	20	675	RH III	1966.689	40	677
RU II	1962.503	20	675	GA	1966.7	2	130
MO IV	1962.530*	200	591	FE III	1966.740	8	188, 488
AL II	1962.67	7	653	RU II	1966.746	200	675
A III	1962.74	2	59, 65	V I	1966.76 *	60	489, 488
FE I	1962.746*	15	188, 488, 605	RH III	1966.780	50	677
MO II	1962.830	50	343, 591	IN II	1966.88 *	10	413
PD III	1962.861	150	674	AG III	1966.89 *	40	284
FE I	1962.871*	20	188, 488, 605	CS II	1966.91	2	659, 789
ZR III	1962.92	40	342	CO I	1966.96	10	603
RU III	1962.948	20	301	MO II	1967.007	50	343, 591
RH III	1963.000	200	677	SE IV	1967.27	4	585
CR II	1963.02	15	340, 488, 490	RH III	1967.333	30	677
PB	1963.1	2	411	AG II	1967.38 *	10	283
FE I	1963.110*	25	292, 488, 605	MO III	1967.530	40	591
V IV	1963.13 *	70	488, 790	MN II	1967.760	10	321
PT I	1963.17 *	1	421	CO I	1967.78	10	488, 603
RU III	1963.208	20	301	ZR III	1967.81	25	342
GE I	1963.373	7	4, 276, 581	V I	1967.98 *	80	489, 488
RE I	1963.38 *	15	350	CA III	1968.03	5	30
CO I	1963.38	12	488, 603	CS II	1968.21	2	659, 789
MN III	1963.431	100	131, 488	PD I	1968.33 *	200	669, 674
V I	1963.47 *	70	489, 488	RH III	1968.633	90	677
TH III	1963.52 *	20	348	CO I	1968.69	25	488, 603
CO I	1963.55	20	488, 603	RH III	1968.872	10	677
MN III	1963.638	200	131, 488	NI I	1968.90 *	1	488, 602
RH III	1963.639	100	677	CO I	1968.93	25	488, 603
CO III	1963.743	100	488, 673	PD III	1969.058	100	674
HF II	1963.75	9	479	RH III	1969.201	300	677
MN II	1963.823	10	321	MO IV	1969.212	50	591
O II	1963.84	2	36, 65	PT II	1969.266	15	671
NI I	1963.85 *	1	488, 602	CO III	1969.312	20	673
CO I	1963.92	8	603	ZN II	1969.39	4	682, 754

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MN III	1969.510	50	131	MO IV	1974.517	50	591
V I	1969.57	15	489, 488	TL IV	1974.6	3	466
RH III	1969.631	50	677	NI III	1974.780	15	661
MO II	1969.884*	500	343, 591	CO III	1974.883	200	488, 673
PT I	1969.994*	2	421, 671	PD I	1974.90 *	100	669
RH III	1970.038	300	677	MO II	1974.913	30	591
CO III	1970.054	300	488, 673	HG II	1974.95	2	698
MO II	1970.121	20	343, 591	ZR III	1974.99	60	342, 488
BA II	1970.19		649	MO II	1975.054	30	343, 591
MO II	1970.209	20	591	PD III	1975.190	200	674
CU II	1970.497	15	488, 662	PD III	1975.354	150	674
CO I	1970.71 *	50	488, 603	CO I	1975.36	6	603
RH III	1970.739	30	677	MN III	1975.375	100	131, 488
FE I	1970.771	5	292, 488, 645	V I	1975.42	10	489, 488
RE I	1970.80	2	350	MO II	1975.468	20	591
GE I	1970.880*	50	4, 488, 581	CR III	1975.56	10	490
S II	1970.99 *	4	285	MN III	1975.611	200	131
MO IV	1971.092*	500	193, 591	CO I	1975.67	20	488, 603
CO I	1971.16 *	30	400, 603	AG III	1975.92 *	60	284
SB I	1971.34	20	31, 477	CO I	1975.94	6	603
RD	1971.4	2	659	RA II	1976.0 *	2	570
TH III	1971.45	10	348	FE III	1976.126	8	188, 488
SN I	1971.452*	100	473, 308	MO II	1976.216	50	591
V IV	1971.47	10	790	PD I	1976.50 *	150	669
NB III	1971.51	10	320	ZR II	1976.54 *	3	346, 488
CS II	1971.57	3	659, 789	V II	1976.62 *	60	478, 488
MO II	1971.576	20	343, 591	PT II	1976.776	10	671
RU III	1971.721	50	301	MO IV	1976.853*	100	343, 591
CO I	1971.75	15	488, 603	NI I	1976.87 *	3	488, 602
PD III	1971.752	200	674	RH III	1976.969	100	677
CO III	1971.889	100	488, 673	CO I	1976.97 *	30	488, 603
AU	1971.9	1	411	CU II	1977.02	15	488, 670
CA III	1972.01	1	39	AG III	1977.03 *	50	284
RH III	1972.245	50	677	CO III	1977.031	200	488, 673
PD III	1972.296	300	674	RH III	1977.044	80	677
MO II	1972.439	20	591	MO IV	1977.204*	500	193, 343, 591
CR III	1972.45	10	490	IN II	1977.45 *	20	413, 579
ZN	1972.46	2	658	RE I	1977.48	2	350
V I	1972.48	15	489, 488	MG III	1977.56	1	693
CO I	1972.52 *	30	488, 603	SI I	1977.591*	1000	339, 488, 678
RA II	1972.6 *	4	570	MO II	1977.745	20	591
XE II	1972.6	5	335	SN I	1977.8	50	473, 308
MN II	1972.617	8	321	AU I	1978.19 *	30	450, 550, 658
V II	1972.62	20	478, 488	NB IV	1978.22 *	60	412
AS I	1972.62 *	1000	480, 488, 573	GE III	1978.22	2	406
ZR III	1972.63	22	342	SB I	1978.23	30	477
MO II	1972.710	40	591	MO II	1978.294*	300	343, 591
PD I	1972.74 *	300	669, 674	CO I	1978.36	10	488, 603
MO II	1972.782	40	591	RU III	1978.416	30	301
NB III	1972.79	40	320	CO I	1978.53	12	603
MN III	1972.796	100	47, 131, 488	CA III	1978.63	3	39
RH III	1972.806	15	677	PT II	1978.690	5	671
HG II	1972.94	3	658, 698	MN III	1978.879*	500	131, 488
MO II	1973.102	20	343, 591	MO II	1978.936*	200	343, 591
PB IV	1973.14 *	8	139	CO III	1978.948	50	488, 673
RU III	1973.166	30	301	V II	1978.96	20	478, 488
BI	1973.2	2	335	HG II	1979.00	4	65, 452, 527
W II	1973.27 *	4	419	NB III	1979.07	60	320
A II	1973.48	1	59, 65	RU III	1979.124	30	301
RU III	1973.485	30	301	SB I	1979.15	20	477
V I	1973.55	5	489	SI I	1979.198*	1000	339, 488, 678
MO IV	1973.623	50	591	RH III	1979.286	10	677
CO I	1973.667	5	603, 673	GE II	1979.29 *	20	488
NE III	1973.7	2	335	MG III	1979.31	1	693
CO III	1973.767	10	673	C III	1979.35	4	65, 245
A III	1973.780	4	59, 65	CL III	1979.46	3	43
CO I	1973.85	25	488, 603	C III	1979.79	3	65, 245
HG II	1973.889*	8	65, 452, 527	PT II	1979.872	10	421, 671
FE I	1973.911	1	292, 488, 605	CU II	1979.963	50	488, 662
PD I	1973.93 *	100	669	NI II	1980.00	5	488, 663
FE I	1974.059	1	292, 488, 605	V II	1980.04	40	478, 488
MO II	1974.197	100	591	CR III	1980.09	10	490
RH III	1974.211	20	677	CO III	1980.113	200	488, 673
CO I	1974.39	15	488, 603	MO II	1980.215*	300	591
NI III	1974.493	15	661	CR III	1980.24	10	490

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
MO II	1980.452	50	343, 591	MO II	1985.587	20	343, 591
GA	1980.5	5	335	BA II	1985.60		649
V II	1980.59	25	478, 488	CD II	1985.65	15	683
CO I	1980.59	15	488, 603	RH III	1985.665	200	677
SI I	1980.606*	1000	339, 488, 678	MN III	1985.717	300	131, 488
PD III	1980.703	200	674	CR II	1985.72 *	12	340, 488, 490
MO II	1980.756	20	591	MO II	1985.943	20	343, 591
HG II	1980.80	2	698	SB I	1986.05	60	31, 477
AS	1980.85	2	29	RH III	1986.147	10	677
PD III	1980.882	200	674	CO I	1986.31	6	603
CO I	1980.89 *	40	488, 603	SI I	1986.352*	1000	339, 488, 678
PD III	1980.939	300	674	FE II	1986.423	10	645
MO II	1980.972	50	343, 591	PD III	1986.718	100	674
U	1981.2 *	5	411	ZR III	1986.75	20	342
ZR III	1981.21	20	342	MO II	1986.762	50	591
CO III	1981.345	100	488, 673	MN III	1986.770	100	131, 488
RH III	1981.366	80	677	PD III	1986.874	150	674
BI	1981.4	2	411	CD II	1986.89	30	683
HG II	1981.45	2	65, 331, 452	RH III	1987.014	200	677
NB II	1981.50 *	5000	318	AG III	1987.02	20	284
V II	1981.53	8	478, 488	CO I	1987.03	15	603
NI I	1981.61 *	2	488, 602	HG II	1987.08	6	698
RE I	1981.62	5	350	RH III	1987.174	30	677
PB IV	1981.64	1	139	CO I	1987.197*	30	488, 603, 673
ZR III	1981.67	20	342	V I	1987.25	10	489
S II	1981.80	2	285	MO III	1987.320	30	591
RU III	1981.817	100	301	C II	1987.33	1	287
ZR II	1981.85	2	346	CR II	1987.43	5	340, 488, 490
AG III	1981.87	15	284	FE III	1987.503*	15	188, 292, 488
CO I	1982.049	20	488, 603, 673	CR III	1987.62	15	490
V I	1982.06 *	40	489, 488	CO I	1987.65	20	488, 603
FE III	1982.076	6	188, 488	C II	1987.76	3	287
ZN II	1982.082	2	472	RH III	1987.828	200	677
RU III	1982.103	100	301	PT II	1987.846	20	421, 671
RH III	1982.353	100	677	GE I	1987.849	9	4, 276, 581
V II	1982.41	8	478, 488	CO III	1987.952	10	673
V I	1982.45	40	489, 488	HG II	1987.978	6	65, 452, 527
V IV	1982.49	30	488, 790	RH III	1987.981	150	677
CO I	1982.52	20	488, 603	MO II	1987.991*	500	343, 591
NI III	1982.538	50	488, 661	AU	1988.0	2	411
ZR III	1982.61	12	342	PT II	1988.054	20	671
MN III	1982.690*	400	131, 488	C II	1988.09	2	287
FE III	1982.805	8	188, 488	MO II	1988.164	20	591
CO I	1982.81	8	488, 603	BI III	1988.26	10	138
SB I	1982.82	15	477	GE I	1988.267*	40	4, 488, 581
RH III	1982.993	40	677	PD III	1988.426	200	674
ZR III	1983.14	40	342	RH I	1988.49 *	3	486
RB	1983.2	4	659	C II	1988.51	1	287
SI I	1983.225*	1000	339, 488, 678	MO III	1988.637	20	591
NB III	1983.35	15	320	NB II	1988.76 *	800	318
V I	1983.37 *	50	489, 488	CD III	1988.81	15	683
MO II	1983.493	100	343, 591	V I	1988.97	8	489
RH III	1983.549	80	677	SI I	1988.977*	2000	339, 488, 678
CL III	1983.61 *	5	43	MO II	1988.984*	200	591
PT II	1983.737*	30	671	CR I	1989.00	4	47, 341, 488
FE III	1984.027	7	188, 488	RH III	1989.106	100	677
V II	1984.05 *	90	478, 488	PT I	1989.11 *	2	421
MO II	1984.072	100	343, 591	GE I	1989.118	5	4, 276, 581
SN I	1984.182*	100	473, 308	RU III	1989.224	200	301
FE III	1984.288	9	188, 488	CO I	1989.28	10	603
CO III	1984.324	30	673	BI II	1989.35	25	130
V I	1984.43	6	489	MO II	1989.393*	200	343, 591
RH III	1984.517	150	677	MN III	1989.518*	400	131, 488
AU II	1984.54	1	658	CO III	1989.596	400	673
MO II	1984.726*	200	343, 591	CA III	1989.61	2	39
V I	1984.91 *	50	489, 488	CO III	1989.645	100	488, 673
RH III	1985.071	20	677	CO I	1989.80 *	25	488, 603
BE I	1985.13	3	541, 658	V I	1989.82	12	489, 488
NB III	1985.15	50	320	ZR III	1989.83	50	342
S II	1985.17	2	285	AL II	1989.85	2	488
CO I	1985.25	10	603	CU II	1989.861	30	488, 662
CO I	1985.36	10	488, 603	CR I	1989.92 *	15	341, 488
U	1985.4 *	5	411	MO II	1989.933	20	591
CR II	1985.52 *	22	340, 488	FE III	1989.975	7	188, 292, 488
NA III	1985.58 *	30	758	RH III	1990.003	100	677

SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL	WAVELENGTH	INTENSITY	REFERENCE NUMBERS
W II	1990.05 *	5	419	FE II	1994.857	20	292, 488
MO II	1990.208*	200	343, 591	AS I	1994.89	20	480, 488, 573
CR IV	1990.22	40	488	RH I	1994.94 *	2	486
NI I	1990.25 *	4	488, 602	CO I	1994.98	15	603
CR I	1990.27 *	8	341, 488	SN I	1994.982	30	473, 308
CO I	1990.34 *	30	488, 603	SR II	1995.00	0	488, 649
AS I	1990.35 *	200	480, 488, 573	SE I	1995.112	15	488, 600
GA I	1990.4	7	130	MO II	1995.154	50	343, 591
MO II	1990.461*	200	343, 591	RH III	1995.216	15	677
IN I	1990.5	4	130	FE III	1995.266	7	188, 292, 488
AL II	1990.53	7	653	RU III	1995.335	20	301
PT II	1990.567	20	671	ZR III	1995.36	15	342, 346
SB I	1990.67	40	31, 414, 477	CO III	1995.397	50	488, 673
V IV	1990.75	30	488, 790	AS I	1995.43 *	100	480, 488, 573
CR II	1990.79	10	340, 488	CD II	1995.43 *	200	683
CO III	1990.841	10	673	PD III	1995.443	150	674
ZR III	1990.95	30	342, 346	RH III	1995.518	80	677
RH III	1990.994	50	677	FE III	1995.563*	12	188, 292, 488
AS I	1991.13	100	480, 488, 573	HG II	1995.516	4	65, 527
CR I	1991.17 *	15	341, 488, 490	RE I	1995.61 *	20	350
MN III	1991.230	50	131, 286	NA III	1995.62	3	758
MO IV	1991.391*	100	193, 591	RH III	1995.716	150	677
RH III	1991.408	200	677	CR I	1995.73	5	341, 488, 490
PT I	1991.59 *	2	421	NI II	1995.74	4	488, 663
FE III	1991.613*	14	188, 292, 488	MN III	1995.769	80	131
SI I	1991.848	50	339, 488, 678	SR II	1995.78		488, 649
SN I	1991.890	30	473, 308	ZR II	1995.88 *	7	346, 488
AU I	1991.94 *	10	450, 658	PT I	1995.91 *	3	421
FE III	1992.017	9	188, 488	MO II	1996.129*	200	591
CR I	1992.12	6	341, 488	RH III	1996.209	10	677
CO III	1992.158	10	488, 673	SB I	1996.25	15	477
FE III	1992.196	9	188, 488	NB II	1996.28	100	318
RH III	1992.198	10	677	MO II	1996.399*	200	343, 591
NB II	1992.23 *	1000	318	AU I	1996.4	1	411
MO II	1992.362	50	343, 591	FE III	1996.420*	12	188, 292, 488
RH III	1992.377	20	677	CS I	1996.5 *	5	659
CR I	1992.57	5	341, 488, 490	IR I	1996.5 *	3	335
RH III	1992.632	100	677	PD III	1996.550	400	674
CR III	1992.72	25	488, 490	ZR II	1996.69 *	6	346, 488
CO I	1992.79	20	488, 603	CR II	1996.70	2	340, 490
V II	1992.80	30	478, 488	MO II	1996.759	20	591
RH III	1992.840	50	677	RH I	1996.85 *	2	486
FE III	1992.858	6	188, 488	ZR III	1996.92	15	342
SE III	1993.02	2	587	RH III	1997.003	50	677
MN III	1993.168	80	131, 286	MO II	1997.058	20	343, 591
PD I	1993.20	50	669	NB III	1997.11	50	320
CO I	1993.25	10	603	CR I	1997.12	5	341, 488, 490
FE II	1993.262	7	188, 292, 488	RH III	1997.281	100	677
RU III	1993.322	200	301	CR I	1997.35 *	10	341, 488, 490
S I	1993.37	1	401	MO II	1997.544	50	343, 591
CR II	1993.37 *	15	340, 488, 490	S I	1997.64	2	401
NB II	1993.59 *	1000	318, 320	V IV	1997.74 *	80	790, 488
CO III	1993.625	100	488, 673	GE I	1997.806	8	4, 276, 581
CR II	1993.63 *	25	340, 488	PT II	1997.831	5	671
NB II	1993.64 *	500	318	CR I	1997.92 *	12	341, 488, 13
C I	1993.65	2	65, 168, 488	RU III	1997.946	100	301
PD III	1993.845	400	669, 674	BE I	1998.01 *	10	541, 658
MO III	1993.942*	200	591	MN III	1998.061	100	131, 286
PD III	1993.956	200	674	TE I	1998.12	4	401
SC III	1993.96 *	4	488, 688	CR II	1998.12	2	340, 488, 490
FE III	1994.073*	13	188, 292, 488	MO II	1998.401	50	343, 591
CR I	1994.10 *	8	341, 488	CO I	1998.49	25	488, 603
TH III	1994.22 *	12	348	RH III	1998.526	30	677
RH III	1994.257*	500	677	NB II	1998.73	50	318
NI I	1994.29 *	2	488, 602	RH III	1998.787	30	677
V I	1994.34	20	489	PD III	1998.812	200	674
AG II	1994.35	3	658, 665	PD III	1998.880	200	674
MO II	1994.446	30	343, 591	GE I	1998.887*	80	4, 488, 581
ZR III	1994.46	30	342	S II	1998.92	2	285
CR I	1994.55 *	15	341, 488	AG II	1998.98	4	283
TH III	1994.55 *	10	348	RH III	1998.986	30	677
MO IV	1994.669*	100	343, 591	PD III	1999.101	100	674
IR I	1994.8 *	3	335	AG III	1999.14	7	284
TE I	1994.8 *	7	16, 147	MO II	1999.179*	200	591
RH III	1994.847	100	677	RH III	1999.315	100	677

SYMBOL				WAVELENGTH	INTENSITY	REFERENCE NUMBERS	SYMBOL				WAVELENGTH	INTENSITY	REFERENCE NUMBERS
V	IV	1999.32	*	60		488, 790	FE	III	1999.588		9		188, 292, 488
FE	II	1999.430		10		292, 488	RH	III	1999.660		100		677
NI	I	1999.53	*	0		602	CU		1999.7		10		456
BA	II	1999.54	*	3		562, 649	NB	II	1999.74		50		318

List of References

1. Abbink, J. H. and H. B. Dorgelo, Z. Physik 47, 221-32 (1928).
3. Anderson, E. E. and J. E. Mack, Phys. Rev. 59, 717-23 (1941); CL(Co VII, Ni VIII).
4. Andrew, K. L. and K. W. Meissner, J. Opt. Soc. Amer. 48, 31-3 (1958); CL(Ge I).
5. Arvidsson, G., Ann. Phys. (Leipzig) 12, 787-820 (1932).
6. Avelen, S., Ark. Fys. 8, 211-12 (1954); CL(Cl I).
13. Badami, J. S., Proc. Phys. Soc. (London) 43, 538-44 (1931); CL(Sb IV).
14. Badami, J. S. and K. R. Rao, Proc. Roy. Soc. (London) 140A, 387-98 (1933); CL(Se III).
15. Balloffet, G., and J. Romand, C. R. Acad. Sci. (Paris) 242, 2333-5 (1956).
16. Bartelt, O., Z. Physik 88, 522-31 (1934); CL(Te I).
17. Beckman, A., Bidrag till Kannedomen om Skandiums Spektrum i Yttersta Ultraviolet, Akademisk Avhandling, Almqvist and Wiksells Boktryckeri -A, -B, Ippsala (1937); CL(Sc IV-XI).
18. Beutler, H., Z. Physik 86, 710-18 (1933); (Absorption, Hg I).
19. Beutler, H., Z. Physik 87, 19-27 (1933); (Absorption, Cd I).
20. Beutler, H., Z. Physik 91, 131-42 (1934); (Absorption, Rb I).
21. Beutler, H., Z. Physik 93, 177-96 (1934); (Absorption, A I, K I, Xe I).
22. Beutler, H. and W. Demeter, Z. Physik 91, 202-18 (1934); (Absorption, Tl I).
23. Beutler, H. and K. Guggenheimer, Z. Physik 87, 188-91 (1933); (Absorption, K I).
24. Beutler, H. and K. Guggenheimer, Z. Physik 88, 25-42 (1934); (Absorption, Cs I).
25. Bloch, L. and E. Bloch, Ann. Phys. (Paris) 5, 325-54 (1936); CL(Cd IV, Zn IV).
26. Bloch, L. and E. Bloch, Ann. Phys. (Paris) 6, 561-74 (1936).
27. Bloch, L. and E. Bloch, C. R. Acad. Sci. (Paris) 171, 709-11 (1920).

28. Bloch, L. and E. Bloch, C. R. Acad. Sci. (Paris) 208, 336 (1939).
29. Bloch, L. and E. Bloch, J. Phys. Radium 4, 622 (1914).
30. Bloch, L. and E. Bloch, J. Phys. Radium 6, 441-50 (1935);
CL(Se II, Se III, Te IV, Te V).
31. Bloch, L. and E. Bloch, J. Phys. Radium 8, 217-28 (1937); CL(Sb VI, Te VII).
32. Bloch, L., E. Bloch, and N. Felici, J. Phys. Radium 8, 355-62 (1937);
CL(I II, I VIII, Te VII).
33. Bloch, L., E. Bloch, and R. Walden, J. Phys. Radium 10, 49-59 (1939).
34. Bockasten, K., Ark. Fys. 9, 457-81 (1955); CL(C III, C IV).
35. Bockasten, K., Ark. Fys. 10, 567-82 (1956); CL(C IV).
36. Bowen, I. S., Phys. Rev. 29, 231-47 (1927); CL(B I, C I, C II, F I, F II,
F III, F IV, N II, N III, O II, O III, O IV).
37. Bowen, I. S., Phys. Rev. 29, 510-12 (1927); CL(P II).
38. Bowen, I. S., Phys. Rev. 31, 34-8 (1928); CL(Cl II-V, Si II, Si IV, P III, S IV).
39. Bowen, I. S., Phys. Rev. 31, 497-502 (1928); CL(A II, A III, Ca III, Ca IV, Ca V,
Cl I, Cl II, K II, K III, K IV).
40. Bowen, I. S., Phys. Rev. 31, 967-8 (1928); CL(Na II).
41. Bowen, I. S., Phys. Rev. 39, 8-15 (1932); CL(Si II, Si III, P III, P IV, S V).
42. Bowen, I. S., Phys. Rev. 45, 82-6 (1934); CL(F II, F III, F IV).
43. Bowen, I. S., Phys. Rev. 45, 401-4 (1934); CL(Cl III, Cl IV, Cl V).
44. Bowen, I. S., Phys. Rev. 46, 377 (1934); CL(Cl IV).
45. Bowen, I. S., Phys. Rev. 46, 791-2 (1934); CL(K IV, K V, Ca V, Ca VI).
46. Bowen, I. S., Phys. Rev. 47, 924-5 (1935); CL(Mn V, Fe VI).
47. Bowen, I. S., Phys. Rev. 52, 1153-6 (1937); CL(Cr III, Cr IV, Mn IV, Fe III, Fe V).
48. Bowen, I. S., Phys. Rev. 53, 889-90 (1938); CL(Co VI).
49. Bowen, I. S. and S. B. Ingram, Phys. Rev. 28, 444-8 (1926).
50. Bowen, I. S. and R. A. Millikan, Phil. Mag. 48, 259-64 (1924).
51. Bowen, I. S. and R. A. Millikan, Phys. Rev. 25, 591-9 (1925); CL(P IV, S V, Cl VI).
52. Bowen, I. S. and R. A. Millikan, Phys. Rev. 25, 295-305 (1925);
CL(P V, S VI, Cl VII).
53. Bowen, I. S. and R. A. Millikan, Phys. Rev. 26, 150-64 (1925).
54. Bowen, I. S. and R. A. Millikan, Phys. Rev. 27, 144-9 (1926);
CL(Al II, Al III, O V, O VI).
55. Bowen, I. S. and R. A. Millikan, Phys. Rev. 28, 256-8 (1926); CL(Be I, Be II).
56. Bowen, I. S. and R. A. Millikan, Phys. Rev. 28, 923-6 (1926); CL(Y III, Zr IV).
57. Boyce, J. C., Phys. Rev. 46, 378-81 (1934); CL(Ne I-IV).
58. Boyce, J. C., Phys. Rev. 47, 718-30 (1935); CL(Kr I-IV).
59. Boyce, J. C., Phys. Rev. 48, 396-402 (1935); CL(A I-V).
60. Boyce, J. C., Phys. Rev. 49, 351 (1936); CL(A III).
61. Boyce, J. C., Phys. Rev. 49, 730-2 (1936); CL(Xe I, Xe II).
62. Boyce, J. C. and K. T. Compton, Proc. Nat. Acad. Sci. U.S.A. 15, 658-8 (1929);
CL(A III, A IV, Ne III, Ne IV).
63. Boyce, J. C. and C. A. Riecke, Phys. Rev. 47, 653-7 (1935).
64. Boyce, J. C. and J. T. Moore, MIT, unpublished (1941).
65. Boyce, J. C. and H. A. Robinson, J. Opt. Soc. Amer. 26, 133-43 (1936).

66. de Bruin, T. L., Proc. Roy. Acad. Amsterdam 33, 198-212 (1930); CL(A II).
67. de Bruin, T. L., Z. Physik 61, 307-20 (1930); CL(A II).
68. de Bruin, T. L. and C. J. Bakker, Z. Physik 69, 19-35 (1931); CL(Ne II).
69. de Bruin, T. L., C. J. Humphreys and W. F. Meggers, J. Res. Nat. Bur. Stand. 11, 409-40 (1933); CL(Kr II).
70. Burns, K. and F. M. Walters, Jr., Publ. Allegheny Obs. 8, 27-35 (1930); CL(Cu I, Cu II).
128. Cady, W. M., Phys. Rev. 43, 322-8 (1933); CL(Mn VI, Fe VII, Co VIII, Ni IX).
129. Cady, W. M., Phys. Rev. 44, 821-5 (1933); CL(N III, N IV, N V, O III, O IV, O V).
130. Carroll, J. A., Trans. Roy. Soc. (London) 225A, 357-420 (1925); CL(Hg II, Ga III, In III, Tl III, Ge IV, Sn IV, Pb IV).
131. Catalán, M. A., An. Real Soc. Españ. Fis. Quim. 53, 179-84 (1957).
132. Charles, G. W., Phys. Rev. 77, 120-4 (1950); CL (Cb V-VII, Mo VI-VIII).
133. Charles, G. W., D. J. Hunt, G. Pish and D. L. Timma, J. Opt. Soc. Amer. 45, 869-72 (1955); CL(Po I).
134. Clearman, H. E., J. Opt. Soc. Amer. 42, 373-9 (1952); CL(B I, In I, Tl I, Pb I, Bi I).
135. Compton, K. T. and J. C. Boyce, J. Franklin Inst. 205, 497-513 (1928); CL(At I, At II, Ne I, Ne II).
135. Compton, K. T., J. C. Boyce and H. N. Russell, Phys. Rev. 32, 179-85 (1928); CL(A II).
137. Compton, K. T. and J. C. Boyce, Phys. Rev. 33, 145-53 (1929); CL(N I).
138. Crawford, M. F. and A. B. McLay, Proc. Roy. Soc. (London) 143A, 540-57 (1934); CL(Bi II, Bi III).
139. Crawford, M. F., A. B. McLay and A. M. Crooker, Proc. Roy. Soc. (London) 158A, 455-63 (1937); CL(Pb IV).
140. Curtis, C. W., J. Opt. Soc. Amer. 42, 300-5 (1952); CL(Mn II).
141. Curtis, C. W., Phys. Rev. 53, 474-81 (1938); CL(Mn II).
147. Krishnamurty, S. G., Indian J. Phys. 10, 365-73 (1936), CL(Te I).
155. Deb, S. C., Bull. Acad. Sci. United Provinces Agra and Oudh, India 2, 43-50 (1932); CL(Cl IV, Cl V).
156. Dingle, H., Proc. Roy. Soc. (London) 122A, 144-61 (1929); CL(F III).
157. Dingle, H., Proc. Roy. Soc. (London) 128A, 600-24 (1930); CL(F II).
158. Dorgelo, H. B. and J. H. Abbink, Naturwissenschaften 14, 755-6 (1926).
163. Earls, L. T. and R. A. Sawyer, Phys. Rev. 47, 115-22 (1934); CL(Pb II).
164. Edlén, B., Ark. Fys. 4, 441-52 (1952); CL(O VII, F VIII).
165. Edlén, B., Svenska Vet. Akad. Handl. 20, No. 10, 31 pp (1943); CL(Q I).
166. Edlén, B., Nature 127, 405-6 (1931); CL(Be III-V, C V).
167. Edlén, B., Nature 159, 129-30 (1947); CL(C I).
168. Edlén, B., Nova Acta Reg. Soc. Sci. Upsalla (IV) 9, No. 6, 153 (1934); CL(Li II, Li III, Be III, Be IV, B II-V, C I-VI, N II-V, O II-VI).
169. Edlén, B., Phys. Rev. 62, 434-7 (1942); CL(Cl II, A III, K IV, Ca V, Sc VI).
170. Edlén, B., Z. Physik 85, 85-106 (1933).
171. Edlén, B., Z. Physik 89, 179-82 (1934); CL(F VI, F VII).
172. Edlén, B., Z. Physik 89, 597-600 (1934); CL(F V).
173. Edlén, B., Z. Physik 92, 19-26 (1934); CL(F IV).

174. Edlén, B., Z. Physik 93, 433-49 (1935); CL(F III).
175. Edlén, B., Z. Physik 93, 726-30 (1935); CL(O II-IV).
176. Edlén, B., Z. Physik 94, 47-57 (1935); CL(F V).
177. Edlén, B., Z. Physik 98, 561-8 (1936); CL(N II, N III).
178. Edlén, B., Z. Physik 100, 621-35 (1936); CL(K IX, Ca X, Sc XI, Ti XII, V XIII, Cr XIV, Mn XV, Fe XVI, Co XVII, Ni XVIII, Cu XIX).
179. Edlén, B., Z. Physik 100, 726-33 (1936); CL(Cl VIII-XI).
180. Edlén, B., Z. Physik 103, 536-41 (1936); CL(Ti XI, V XII, Cr XIII, Mn XIV, Fe XV, Co XVI).
181. Edlén, B., Z. Physik 104, 188-93 (1937); CL(Ti VII, V VIII, Cr IX, Mn X, Fe XI).
182. Edlén, B., Z. Physik 104, 407-16 (1937); CL(A II, K III, Ti VI, V VII, Cr VIII, Mn IX, Fe X, Co XI).
183. Edlén, B. and A. Ericson, C. R. Acad. Sci. (Paris) 190, 116-8 (1930).
184. Edlén, B. and A. Ericson, C. R. Acad. Sci. (Paris) 190, 173-4 (1930); CL(F II, Ne III, Na IV, Mg V, Al VI).
185. Edlén, B. and A. Ericson, Nature 125, 233-4 (1930).
186. Edlén, B. and P. Risberg, Ark. Fys. 10, 533-66 (1956); CL(Ca II).
187. Edlén, B. and J. Soderqvist, Z. Physik 87, 217-19 (1933); CL(Si IV).
188. Edlén, B. and P. Swings, Astrophys. J. 95, 532-54 (1942); CL(Fe III).
189. Edlén, B. and F. Tyron, Z. Physik 101, 206-13 (1936); CL(K X, K XI, Ca XII, Sc XII, Ti XIII, V XIV, Cr XV).
190. Ekefors, E., Z. Physik 51, 471-80 (1938); CL(Al III).
191. Ekefors, E., Z. Physik 63, 437-43 (1930); CL(N I).
192. Ekefors, E., Z. Physik 71, 53-88 (1931).
193. Eliason A. Y., Phys. Rev. 43, 745-8 (1933); CL(Cb III, Mo IV).
194. Ellis, C. B. and R. A. Sawyer, Phys. Rev. 49, 145-50 (1936); CL(Tl II).
195. Ericson, A. and B. Edlén, Z. Physik 59, 656-79 (1930); CL(Li II, Be II, B II, B III).
196. Eriksson, K. B. S., Ark. Fys. 13, 429-39 (1958).
230. Fernando, I., Curr. Sci. (India) 17, 362 (1948); CL(In III, Sn IV, Sb V, Te VI, I VII).
231. Ferner, E., Ark. Mat. Astron. Fysik 28A, No. 4, 21 pp (1942); CL(Si V-XII).
233. Ferner, E., Ark. Mat. Astron. Fysik 36A, No. 1, 65 pp (1948); CL(Al V-XI, Si VII, Si IX, Si X, S VII-X).
234. Findlay, J. H., Phys. Rev. 36, 5-12 (1930); CL(Co II).
235. Fitzgerald, Sister M. A. and R. A. Sawyer, Phys. Rev. 46, 576-80 (1934); CL(Cs III, Ba IV).
236. Flemberg, H., Ark. Mat. Astron. Fysik 28A, No. 18, 1-47 (1942); CL(F VIII, Mg IX, Al XII).
237. Foster, E. W., Proc. Roy. Soc. (London) 200A, 429-37 (1950); CL(Hg III).
238. Fowler, A., Trans. Roy. Soc. (London) 225A, 1-48 (1925); CL(Si I-IV).
239. Fowler, A., Proc. Roy. Soc. (London) 110A, 476-501 (1926); CL(O II).
240. Fowler, A., Proc. Roy. Soc. (London) 117A, 317-30 (1928); CL(O III).
241. Fowler, A., Proc. Roy. Soc. (London) 123A, 422-39 (1929); CL(Si I).
242. Fowler, A., Report on Series in Line Spectra, Fleetway Press Ltd., London, 183 pp (1922).

243. Fowler, A. and L. J. Freeman, Proc. Roy. Soc. (London) 114A, 662-89 (1927); CL(N II).
244. Fowler, A. and E. W. H. Selwyn, Proc. Roy. Soc. (London) 118A, 34-51 (1928); CL(C I).
245. Fowler, A. and E. W. H. Selwyn, Proc. Roy. Soc. (London) 120A, 312-26 (1928); CL(C II).
246. Freeman, L. J., Proc. Roy. Soc. (London) 121A, 318-43 (1928); CL(N III).
247. Freeman, L. J., Proc. Roy. Soc. (London) 124A, 654-67 (1929); CL(N II).
248. Freeman, L. J., Proc. Roy. Soc. (London) 127A, 330-8 (1930); CL(N IV).
249. Frerichs, R., Phys. Rev. 34, 1239-46 (1929).
250. Frerichs, R., Phys. Rev. 36, 398-409 (1930); CL(O I).
251. Frisch, S., Z. Physik 64, 499 (1930).
273. Garton, W. R. S., Proc. Phys. Soc. (London) 65A, 268-76 (1952).
274. Garton, W. R. S., Proc. Phys. Soc. (London) 67A, 864-8 (1954).
275. Garton, W. R. S. and A. Rajaratnam, Proc. Phys. Soc. (London) 68A, 1107-12 (1955); CL(Hg I).
276. Gartlein, C. M., Phys. Rev. 31, 782-92 (1928); CL(Ge I).
277. Gibbs, R. C. and A. M. Vieweg, Phys. Rev. 34, 400-5 (1929); CL(Sn III, Sb IV, Te V).
278. Gibbs, R. C., A. M. Vieweg, and C. W. Gartlein, Phys. Rev. 34, 406-8 (1929).
279. Gibbs, R. C. and H. E. White, Proc. Nat. Acad. Sci. U.S.A. 12, 598-601 (1926); CL(Sc III, Ti IV, V V).
280. Gibbs, R. C. and H. E. White, Proc. Nat. Acad. Sci. U.S.A. 14, 345-8 (1928); CL(Sn V).
281. Gibbs, R. C. and H. E. White, Proc. Nat. Acad. Sci. U.S.A. 14, 559-64 (1928).
282. Gieseler, H., and W. Grotrian, Z. Physik 39, 377-90 (1926).
283. Gilbert, W. P., Phys. Rev. 47, 847-50 (1935); CL(Ag II).
284. Gilbert, W. P., Phys. Rev. 48, 338-42 (1935); CL(Ag III).
285. Gilles, M., Ann. Phys. (Paris) 15, 267-408 (1931); CL(S II, S III).
286. Gilroy, H. T., Phys. Rev. 38, 2217-33 (1931); CL(Mn III, Fe IV, Co V, Ni VI).
287. Glad, S., Ark. Fys. 7, No. 2, 7-32 (1953); CL(C II).
288. Glad, S., Ark. Fys. 10, 291-334 (1956); CL(Fe III).
289. Goudet, G., J. Phys. Radium 6, 433-8 (1935).
290. Green, J. B. and R. J. Lang, Proc. Nat. Acad. Sci. U.S.A. 14, 706-10 (1928); CL(In III, Sb IV).
291. Green, J. B. and R. A. Loring, Phys. Rev. 30, 574-91 (1927); CL(Sn I-III).
292. Green, L. C., Phys. Rev. 55, 1209-17 (1939); CL(Fe I-III).
293. Green, M., Phys. Rev. 60, 117-21 (1941); CL(Cd IV, In V, Sn VI).
301. Shenstone, A. G., Unpublished Data (1958).
314. Hetzler, C. W., R. W. Boreman, and K. Burns, Phys. Rev. 48, 656-9 (1935); CL(Zn I).
315. Hopfield, J. J., Astrophys. J. 72, 133-45 (1930); CL(He I).
318. Iglesias, L., An. Real Soc. Espan. Fis. Quim. 50A, 135-44 (1954); CL(Nb II).
319. Iglesias, L., An. Real Soc. Espan. Fis. Quim. 53A, 249-52 (1957).
320. Iglesias, L., J. Opt. Soc. Amer. 45, 856-61 (1955); CL(Nb III).
321. Iglesias, L., J. Opt. Soc. Amer. 47, 852-7 (1957); CL(Mn II).

322. Ingram, S. B., Phys. Rev. 32, 172-8 (1928); CL(S II).
323. Ingram, S. B., Phys. Rev. 33, 907-13 (1929); CL(S III).
330. Jog, D. S., Indian J. Phys. 3, 451-61 (1929); CL(C I).
331. Johns, M. W., Canad. J. Res. 15A, 193-201 (1937); CL(Hg III).
334. Kamiyama, M., Sci. Papers Inst. Phys. Chem. Res. (Tokyo) 36, 375-84 (1939); CL(N I).
335. Kayser, H. and R. Ritschl, Tabelle der Hauptlinien der Linienspektren aller Elemente (Julius Springer, Berlin, 1939).
336. Kebler, R. W., W. W. McCormick, and R. A. Sawyer, J. Opt. Soc. Amer. 44, 270 (1954); CL(Al V-VII).
337. Keussler, V., Z. Physik 84, 42-55 (1933); CL(A III).
338. Keussler, V., Z. Physik 85, 1-3 (1933); CL(Ne III).
339. Kiess, C. C., J. Res. Nat. Bur. Stand. 21, 185-265 (1938); CL(SI I).
340. Kiess, C. C., J. Res. Nat. Bur. Stand. 47, 385-426 (1951); CL(Cr II).
341. Kiess, C. C., J. Res. Nat. Bur. Stand. 51, 247-305 (1953); CL(Cr I).
342. Kiess, C. C., J. Res. Nat. Bur. Stand. 56, 167-77 (1956); CL(Zr III, Zr IV).
343. Kiess, C. C., J. Res. Nat. Bur. Stand. 60, 375-422 (1958); CL(Mo II).
344. Kiess, C. C., Unpublished Data (1958).
345. Kiess, C. C. and T. L. de Bruin, J. Res. Nat. Bur. Stand. 23, 443-70 (1939); CL(Cl II).
346. Kiess, C. C. and H. K. Kiess, J. Res. Nat. Bur. Stand. 5, 1205-41 (1930); CL(Zr II).
347. Kiess, C. C. and R. J. Lang, J. Res. Nat. Bur. Stand. 5, 305-24 (1930); CL(Zr III, Zr IV).
348. Klinkenberg, P. F. A., Physica 16, 618-50 (1950); CL(Th III).
349. Klinkenberg, P. F. A. and R. J. Lang, Physica 15, 774-88 (1949); CL(Th IV).
350. Klinkenberg, P. F. A., W. F. Meggers, R. Velasco, and M. A. Catalan, J. Res. Nat. Bur. Stand. 59, 319-48 (1957); CL(Re I).
351. Krishnamurty, S. G., Indian J. Phys. 10, 83-90 (1936); CL(Sb II).
147. Krishnamurty, S. G., Indian J. Phys. 10, 365-73 (1936); CL(Te I).
353. Krishnamurty, S. G., Proc. Roy. Soc. (London) 151, 178-187 (1936); CL(Te III).
354. Krishnamurty, S. G. and K. R. Rao, Proc. Roy. Soc. (London) 149A, 56-70 (1935); CL(Se II).
355. Kruger, P. G., Phys. Rev. 36, 855-9 (1930); CL(He I, He II).
356. Kruger, P. G. and F. S. Cooper, Phys. Rev. 44, 826-30 (1933).
357. Kruger, P. G. and H. T. Gilroy, Phys. Rev. 48, 720-1 (1935); CL(Mn III, Fe IV, Co V, Ni VI, Cu VII).
358. Kruger, P. G. and H. S. Pattin, Phys. Rev. 52, 621-5 (1937); CL(Sc VI, Sc VII, Ti VIII, V IX).
359. Kruger, P. G. and L. W. Phillips, Phys. Rev. 51, 1087-9 (1937); CL(K III, Ca IV, Sc V).
360. Kruger, P. G. and L. W. Phillips, Phys. Rev. 52, 97-9 (1937); CL(Sc VIII).
361. Kruger, P. G. and L. W. Phillips, Phys. Rev. 55, 352-7 (1939); CL(K IX, Ca X, Sc XI).
362. Kruger, P. G. and W. E. Shoupp, Phys. Rev. 44, 105-8 (1933); CL(O III-V, C III).
363. Kruger, P. G. and W. E. Shoupp, Phys. Rev. 46, 124-9 (1934); CL(Ge V, As VI, Se VII, Br VIII, Sb VI, Te VII, I VIII).
364. Kruger, P. G. and S. G. Weissberg, Phys. Rev. 48, 659-63 (1935); CL(Ti V, V VI, Cr VII, Mn VIII).

365. Kruger, P. G. and S. G. Weissberg, Phys. Rev. 52, 314-17 (1937); CL(Cr VI, Mn VII, Fe VIII).
366. Kruger, P. G., S. G. Weissberg and L. W. Phillips, Phys. Rev. 51, 1090-1 (1937); CL(Sc IV, Ti V, Mn VIII, Fe IX).
399. Lacroute, P., Ann. Astrophys. 2, 318-26 (1939); CL(I II).
400. Lacroute, P., Ann. Phys. (Paris) (11) 3, 5-96 (1935); CL(I II).
401. Lacroute, P., J. Phys. Radium 9, 180-4 (1928).
402. Lang, R. J., Phys. Rev. 30, 762-9 (1927); CL(Ga II, Ga III, Ge III, Ge IV, In II).
403. Lang, R. J., Phys. Rev. 31, 773-5 (1928); CL(Cu II, Ni II).
404. Lang, R. J., Phys. Rev. 32, 737-45 (1928); CL(As III, Bi III).
405. Lang, R. J., Phys. Rev. 33, 547-8 (1929); CL(Ni II).
406. Lang, R. J., Phys. Rev. 34, 697-711 (1929); CL(Ge II-IV).
407. Lang, R. J., Phys. Rev. 35, 445-51 (1930); CL(Sn II, Sb III).
408. Lang, R. J., Proc. Nat. Acad. Sci. U.S.A. 13, 341-6 (1927); CL(In III, Sn IV, Sb V, Te VI).
409. Lang, R. J., Proc. Nat. Acad. Sci. U.S.A. 14, 32-6 (1928); CL(Ge II, Ge III).
410. Lang, R. J., Proc. Nat. Acad. Sci. U.S.A. 15, 414-8 (1929); CL(Zn II, Cd II, In III, Sn IV).
411. Lang, R. J., Trans. Roy. Soc. (London) 224A, 371-419 (1924).
412. Lang, R. J., in Verhandelingen, Peter Zeeman, pub. by Martinus Nyhoff, May, 1935; CL(Cb IV).
413. Lang, R. J. and R. A. Sawyer, Z. Physik 71, 453-9 (1931); CL(In II).
414. Lang, R. J. and E. H. Vestine, Phys. Rev. 42, 233-41 (1932); CL(Sb II).
415. LaPorte, O., Nature 121, 1021 (1928); CL(Cl I).
416. LaPorte, O. and R. J. Lang, Phys. Rev. 30, 378-86 (1927); CL(Zn III).
417. LaPorte, O., G. R. Miller, and R. A. Sawyer, Phys. Rev. 38, 843-53 (1931); CL(Rb II).
418. LaPorte, O., G. R. Miller, and R. A. Sawyer, Phys. Rev. 39, 458-66 (1932); CL(Cs II).
419. Laun, D. D., J. Res. Nat. Bur. Stand. 21, 207-24 (1938); CL(W II).
420. Liden, K., Ark. Fys. 1, 229-267 (1949); CL(F I).
421. Livingood, J. J., Phys. Rev. 34, 185-98 (1929); CL(Pt I).
422. Lyman, T., Astrophys. J. 60, 1-14 (1924); CL(He I, He II).
423. Lyman, T. and F. A. Saunders, Proc. Nat. Acad. Sci. U.S.A. 12, 92-6 (1926); CL(Na I).
448. McCormick, W. W. and R. A. Sawyer, Phys. Rev. 54, 71-5 (1938); CL(Sn II).
449. McLay, A. B. and M. F. Crawford, Phys. Rev. 44, 986-96 (1933); CL(Bi IV).
450. McLennan, J. C. and A. B. McLay, Proc. Roy. Soc. (London) 134A, 35-41 (1931); CL(Au I).
451. McLennan, J. C., A. B. McLay, and M. F. Crawford, Proc. Roy. Soc. (London) 125A, 50-3 (1929); CL(Tl III).
452. McLennan, J. C., A. B. McLay, and M. F. Crawford, Proc. Roy. Soc. (London) 134A, 41-7 (1931); CL(Hg II).
453. McLennan, J. C., A. B. McLay, and M. F. Crawford, Trans. Roy. Soc. Canada 22 (3), Sec. III, 247-51 (1928); CL(Hg III).

454. McLennan, J. C. and W. W. Shaver, Trans. Roy. Soc. Canada 18 (3), Sec. III, 1-22 (1924).
455. McLennan, J. C. and J. F. T. Young, Phil. Mag. 36, 450-61 (1918).
456. McLennan, J. C., J. F. T. Young, and H. J. C. Ireton, Proc. Roy. Soc. (London) 98A, 95-108 (1920).
465. Mack, J. E., Phys. Rev. 38, 193-4 (1931); CL(Rb IX).
466. Mack, J. E. and M. Fromer, Phys. Rev. 48, 357-66 (1935); CL(Au II, Hg III, Tl IV, Pb V, Bi VI).
467. Mack, J. E., O. LaPorte, and R. J. Lang, Phys. Rev. 31, 748-72 (1928); CL(Ga IV, Ge V).
468. Martin, D. C., Phys. Rev. 48, 938-44 (1935); CL(Se II).
469. Martin, W. C., Univ. Microfilms (Ann Arbor, Mich.) Publ. No. 20133, 126 pp., Dissertation. Princeton Univ. (June 1956); CL(P I, P II).
470. Mazumder, K. C., Indian J. Phys. 10, 171-87 (1936); CL(Zn III).
471. Mazumder, K. C., Indian J. Phys. 17, 229-38 (1943); CL(Cd III).
472. Mazumder, K. C., Trans. Bose Res. Inst. Calcutta 10, 181-207 (1934-5); CL(Zn II, Zn III).
473. Meggers, W. F., J. Res. Nat. Bur. Stand. 24, 153-73 (1940); CL(Sn I).
474. Meggers, W. F. and T. L. de Bruin, J. Res. Nat. Bur. Stand. 3, 765-81 (1929); CL(As I).
475. Meggers, W. F., T. L. de Bruin and C. J. Humphreys, J. Res. Nat. Bur. Stand. 3, 129-62 (1929); CL(Kr I).
476. Meggers, W. F., T. L. de Bruin and C. J. Humphreys, J. Res. Nat. Bur. Stand. 3, 731-63 (1929); CL(Xe I).
477. Meggers, W. F. and C. J. Humphreys, J. Res. Nat. Bur. Stand. 28, 463-78 (1942); CL(Sb I).
478. Meggers, W. F. and C. E. Moore, J. Res. Nat. Bur. Stand. 25, 83-132 (1940); CL(V II).
479. Meggers, W. F. and B. F. Scribner, J. Res. Nat. Bur. Stand. 13, 625-57 (1934); CL(Hf II).
480. Meggers, W. F., A. G. Shenstone and C. E. Moore, J. Res. Nat. Bur. Stand. 45, 346-56 (1950); CL(As I).
481. Meissner, K. W., Z. Physik 40, 839-75 (1927); CL(A I).
482. Menzies, A. C., Proc. Roy. Soc. (London) 122A, 134-43 (1929); CL(Ni II).
483. Mihul, C., Ann. Phys. (Paris) (10) 9, 261-380 (1928).
484. Millikan, R. A. and I. S. Bowen, Phys. Rev. 23, 1-34 (1924); CL(Mg II, Al II, Al III, Si IV, P V).
485. Millikan, R. A. and I. S. Bowen, Phys. Rev. 25, 600-5 (1925); CL(P III, S IV, Cl V).
486. Molnar, J. P. and W. J. Hitchcock, J. Opt. Soc. Amer. 30, 523-35 (1940); CL(Rh I).
487. Moore, C. E., U.S. Nat. Bur. Stand., Circ. 467. Atomic-energy Levels. Vol. I, 309 pp (1949), Vol. II, 227 pp (1952), Vol. III, 245 pp (1958).
488. Moore, C. E., U.S. Nat. Bur. Stand., Circ. 488. Sec. I, 78 pp (1950); Sec. II, 115 pp (1952); CL(H I-Nb II).
489. Moore, C. E., Phys. Rev. 55, 710-13 (1939); CL(V I).
490. Moore, F. L., Jr., Thesis, Princeton 1949, Univ. Microfilm Publ. No. 10, 972, 172 pp (Ann Arbor, Mich.); CL(Cr III).

491. More, K. R. and C. A. Rieke, *Phys. Rev.* 50, 1054-6 (1936).
492. Morell, L., Thesis, Cornell (1928); CL(Fe III, Co IV, Ni V, Ni III, Cu IV, Zn V, Co II).
493. Murakawa, K., *Proc. Phys. Math. Soc. Japan* 17, 14-33 (1935).
494. Murakawa, K., *Z. Physik* 109, 162-74 (1938); CL(I II).
495. Murakawa, K. and S. Suma, *Reports Inst. Sci. Tech. Tokyo Univ.* 1, 121-4 (1947); CL(Sb III).
526. Narayan, A. L. and K. R. Rao, *Z. Physik* 45, 350-63 (1927); CL(Sn II).
527. Naudé, S. M., *Ann. Phys. (Paris)* (5) 3, 1-26 (1929); CL(Hg II).
530. Olthoff, J. and R. A. Sawyer, *Phys. Rev.* 42, 766 (1932); CL(Cs II).
535. Parker, W. L. and L. W. Phillips, *Phys. Rev.* 57, 140-1 (1940); CL(Cl VI, K VIII, Ca IX, Sc X).
536. Paschen, F., *Ann. Phys. (Leipzig)* 12, 509-27 (1932); CL(Al II).
537. Paschen, F., *Ann. Phys. (Leipzig)* 32, 148-54 (1938).
538. Paschen, F., *Ann. Phys. (Leipzig)* 71, 142-61 (1923); CL(Al III).
539. Paschen, F. and R. Götze, *Seriengesetze der Linienspektren* (Julius Springer, Berlin, 1922).
540. Paschen, F. and P. G. Kruger, *Ann. Phys. (Leipzig)* 7, 1-8 (1930); CL(C I).
541. Paschen, F. and P. G. Kruger, *Ann. Phys. (Leipzig)* 8, 1005-16 (1931); CL(Be I).
542. Pattabhiramiah, P. and A. S. Rao, *Indian J. Phys.* 3, 437-44 (1928); CL(As III).
543. Pattabhiramayya, P. and A. S. Rao, *Indian J. Phys.* 5, 407-16 (1930); CL(Tl III).
544. Paul, F. W. and H. D. Polster, *Phys. Rev.* 59, 424-30 (1941); CL(Ne IV-VI).
545. Paul, F. W. and W. A. Rense, *Phys. Rev.* 56, 1110-13 (1939); CL(Y V, Zr VI).
546. Phillips, L. W., *Phys. Rev.* 53, 248-9 (1938); CL(Cl VII).
547. Phillips, L. W., *Phys. Rev.* 55, 708-9 (1939); CL(K VII, Ca VII, Ca VIII, Sc VIII, Ti IX).
548. Phillips, L. W. and P. G. Kruger, *Phys. Rev.* 54, 839-41 (1938); CL(Ni VII).
549. Phillips, L. W. and W. L. Parker, *Phys. Rev.* 60, 301-7 (1941); CL(A V-IX, Cl V, Cl VI).
550. Platt, J. R. and R. A. Sawyer, *Phys. Rev.* 60, 866-76 (1941); CL(Au I, Au II).
566. Ram, M., *Indian J. Phys.* 8, 151-61 (1933); CL(K III, K IV, K VI).
567. Ram, M., *Indian J. Phys.* 8, 163-70 (1933); CL(Ca IV, Ca V).
568. Ramanadham, R., and K. R. Rao, *Indian J. Phys.* 18, 317-22 (1944); CL(Br II).
569. Rasmussen, E., *Z. Physik* 83, 404-11 (1933); CL(Ba II).
570. Rasmussen, E., *Z. Physik* 86, 24-32 (1933); CL(Ra II).
571. Rao, A. S., *Indian J. Phys.* 7, 561-84 (1932); CL(As II).
572. Rao, A. S., *Proc. Phys. Soc. (London)* 44, 343-8 (1932); CL(As II).
573. Rao, A. S., *Proc. Phys. Soc. (London)* 44, 594-607 (1932); CL(As I).
574. Rao, A. S. and S. G. Krishnamurty, *Proc. Phys. Soc. (London)* 46, 531-6 (1934); CL(Br IV).
575. Rao, A. S. and A. L. Narayan, *Z. Physik* 57, 865-8 (1929); CL(As III).
576. Rao, A. S. and A. L. Narayan, *Z. Physik* 59, 687-9 (1930); CL(Pb III).
577. Rao, A. S. and K. R. Rao, *Proc. Phys. Soc. (London)* 46, 163-8 (1934); CL(Br V-VII).

578. Rao, B. V. R., Proc. Indian Acad. Sci. 1A, 28-33 (1934); CL(Ag III).
579. Rao, K. R., Proc. Phys. Soc. (London) 39, 161-8 (1927); CL(In II, Ga II).
580. Rao, K. R., Proc. Phys. Soc. (London) 43, 68-71 (1931); CL(As III).
581. Rao, K. R., Proc. Roy. Soc. (London) 124A, 465-77 (1929); CL(Ge I).
582. Rao, K. R., Proc. Roy. Soc. (London) 125A, 238-46 (1929); CL(As I).
583. Rao, K. R., Proc. Roy. Soc. (London) 133A, 220-8 (1931); CL(Te IV, Te VI).
584. Rao, K. R., Proc. Roy. Soc. (London) 134A, 604-13 (1932); CL(As IV).
585. Rao, K. R. and J. S. Badami, Proc. Roy. Soc. (London) 131A, 154-69 (1931); CL(Se IV, Se V).
586. Rao, K. R. and S. G. Krishnamurty, Proc. Roy. Soc. (London) 161A, 38-48 (1937); CL(Br III).
587. Rao, K. R. and S. G. K. Murti, Proc. Roy. Soc. (London) 145A, 681-94 (1934); CL(Se III).
588. Rao, K. R. and S. G. K. Murti, Proc. Roy. Soc. (London) 145A, 694-8 (1934); CL(Se I, Se VII).
589. Rao, K. R. and A. L. Narayan, Proc. Roy. Soc. (London) 119A, 607-27 (1928); CL(Ge II-IV).
590. Rao, K. R., A. L. Narayan and A. S. Rao, Indian J. Phys. 2, 477-83 (1928); CL(In III).
591. Rico, F. R., An. Real Soc. Españ. Fis. Quim. 53A, 185-200 (1957).
592. Risberg, P., Ark. Fys. 9, 483-94 (1955); CL(Mg II).
594. Robinson, H. A., Phys. Rev. 49, 297-305 (1936); CL(P I, P II).
595. Robinson, H. A., Phys. Rev. 50, 99 (1936); CL(Be III, B IV).
596. Robinson, H. A., Phys. Rev. 51, 14-18 (1937); CL(Li II, Be III, B IV, C V).
597. Robinson, H. A., Phys. Rev. 51, 726-35 (1937); CL(P II-V).
598. Robinson, H. A., Phys. Rev. 52, 724-5 (1937); CL(S III, S VI, K VI, Ca VII).
599. Ruedy, J. E., Phys. Rev. 44, 757-60 (1933); CL(S I).
600. Ruedy, J. E. and R. C. Gibbs, Phys. Rev. 46, 880-8 (1934); CL(Se I).
601. Russell, H. N., Astrophys. J. 66, 283-328 (1927); CL(Ti I).
602. Russell, H. N., Phys. Rev. 34, 821-57 (1929); CL(Ni I).
603. Russell, H. N., R. B. King, and C. E. Moore, Phys. Rev. 58, 407-36 (1940); CL(Co I).
604. Russell, H. N. and R. J. Lang, Astrophys. J. 66, 13-42 (1927); CL(Ti III, Ti IV).
605. Russell, H. N. and C. E. Moore, Trans. Amer. Phil. Soc. 34, II, 113-79 (1944); CL(Fe I).
645. Sales, M., An. Real Soc. Españ. Fis. Quim. 49A, 15-30 (1953); CL(Fe II).
646. Saunders, F. A., Proc. Nat. Acad. Sci. U.S.A. 12, 556-60 (1926).
647. Saunders, F. A., Proc. Nat. Acad. Sci. U.S.A. 13, 596-600 (1927).
648. Saunders, F. A. and H. N. Russell, Astrophys. J. 62, 1-7 (1925); CL(Ca II).
649. Saunders, F. A., E. G. Schneider, and E. Buckingham, Proc. Nat. Acad. Sci. U.S.A. 20, 291-6 (1934); CL(Ba II, Sr II).
650. Sawyer, R. A., J. Opt. Soc. Amer. 13, 431-42 (1926).
651. Sawyer, R. A. and C. J. Humphreys, Phys. Rev. 32, 583-92 (1928); CL(As IV, As V, Se V, Se VI).
652. Sawyer, R. A., and R. J. Lang, Phys. Rev. 34, 712-9 (1929); CL(Ga II).
653. Sawyer, R. A. and F. Paschen, Ann. Phys. (Leipzig) 84, 1-19 (1927); CL(Al II).

654. Schauls, Sister M. R. and R. A. Sawyer, Phys. Rev. 58, 781-83 (1940); CL(Mo I, Mo II).
655. Schoepfle, G. K., Phys. Rev. 43, 742-4 (1933); CL(Sb VI, Te VII).
656. Schoepfle, G. K., Phys. Rev. 47, 232-4 (1935); CL(Pb IV, Bi V).
657. Schoepfle, G. K., Phys. Rev. 50, 538-42 (1936); CL(Pb V, Bi VI).
658. Selwyn, E. W. H., Proc. Phys. Soc. (London) 41, 392-403 (1929); CL(Cu II, Ag II, Au I, Au II, Be I, Be II, Mg I, Ca II, Sr II, Ba II, Hg I, Hg II, B I, B II, Al I-III).
659. Shaver, W. W., Trans. Roy. Soc. Canada 18, III, 23-34 (1924).
660. Shaver, W. W., Trans. Roy. Soc. Canada 18, III, 145-50 (1924).
661. Shenstone, A. G., J. Opt. Soc. Amer. 44, 749-59 (1954); CL(Ni III).
662. Shenstone, A. G., J. Opt. Soc. Amer. 45, 868 (1955).
663. Shenstone, A. G., Phys. Rev. 30, 255-65 (1927); CL(Ni II).
664. Shenstone, A. G., Phys. Rev. 31, 30-8 (1928); CL(Pd II).
665. Shenstone, A. G., Phys. Rev. 31, 317-22 (1928); CL(Ag II).
666. Shenstone, A. G., Phys. Rev. 36, 669-78 (1930); CL(Pd I).
667. Shenstone, A. G., Phys. Rev. 57, 894-8 (1940); CL(Ag I).
668. Shenstone, A. G., Phys. Rev. 72, 411-4 (1947); CL(C I).
669. Shenstone, A. G., Proc. Roy. Soc. (London) 219A, 419-25 (1953); CL(Pd I).
670. Shenstone, A. G., Trans. Roy. Soc. (London) 235A, 195-243 (1936); CL(Cu II).
671. Shenstone, A. G., Trans. Roy. Soc. (London) 237A, 453-70 (1938); CL(Pt II).
672. Shenstone, A. G., Trans. Roy. Soc. (London) 241A, 297-322 (1948); CL(Cu I).
301. Shenstone, A. G., Unpublished Data (1958).
673. Shenstone, A. G., Unpublished Data (1958).
674. Shenstone, A. G., Unpublished Data (1958).
675. Shenstone, A. G., Unpublished Data (1958).
677. Shenstone, A. G., Unpublished Data (1958).
678. Shenstone, A. G., Unpublished Data (1958).
681. Shenstone, A. G., Unpublished Data (1958).
682. Shenstone, A. G., Unpublished Data (1958).
683. Shenstone, A. G. and J. T. Pittenger, J. Opt. Soc. Amer. 39, 210-25 (1949); CL(Cd II, Cd III).
684. Shenstone, A. G. and L. Wilets, Phys. Rev. 83, 104-8 (1951); CL(Cu III).
685. Smith, S., Nature 127, 855 (1931).
686. Smith, S., Phys. Rev. 34, 393-9 (1929); CL(Pb III, Tl II).
687. Smith, S., Phys. Rev. 36, 1-4 (1930); CL(Pb III, Pb IV).
688. Smith, S., Proc. Nat. Acad. Sci. U.S.A. 13, 65-7 (1927); CL(Sc III).
689. Smith, S., Proc. Nat. Acad. Sci. U.S.A. 14, 878-9 (1928); CL(Pb III).
690. Smith, S. and R. J. Lang, Phys. Rev. 28, 36-45 (1926).
691. Soderqvist, J., Ark. Mat. Astron. Fysik 30A, No. 11, 1-20 (1944); CL(Na VII-IX, Mg VIII-X).
692. Soderqvist, J., Ark. Mat. Astron. Fysik 32A, No. 19, 1-33 (1946); CL(Na V-VI, Mg V-VII).
693. Soderqvist, J., Nova Acta Reg. Soc. Sci. Uppsala 9, No. 7, 102 pp (1934); CL(Na III-IX, Mg III-IX, Al IV-X, Si V-VIII).

694. Sommer, L. A., Z. Physik 39, 711-50 (1926); CL(Cu II).
695. Spomer, H., Proc. Nat. Acad. Sci. U.S.A. 13, 100-4 (1927).
696. Subbaraya, T. S., Proc. Indian Acad. Sci. 1A, 39-43 (1934), CL(Hg IV).
697. Subbaraya, T. S., Proc. Indian Acad. Sci. 2A, 113-18 (1935); CL(Zn IV).
698. Subbaraya, T. S., Z. Physik 78, 541-54 (1932); CL(Hg II).
699. Symons, A. S. M. and J. Daley, Proc. Phys. Soc. (London) 41, 431-41 (1929); CL(Au I).
754. Takahashi, Y., Ann. Phys. (Leipzig) (5) 3, 27-48 (1929); CL(Cd II, Zn II).
755. Takamine, T. and S. Nitta, Mem. Co. Sci. Kyoto Imp. Univ. 2, 117-35 (1917).
756. Taylor, L. B., Proc. Nat. Acad. Sci. U.S.A. 12, 658-9 (1926).
757. Tech, J. L., Unpublished Data on Br I (1958).
758. Tombouliau, D. H., Phys. Rev. 54, 347-50 (1938); CL(Na III, Rb III, Sr IV).
759. Tombouliau, D. H., Phys. Rev. 54, 350-4 (1938); CL(Rb III, Sr IV).
760. Trawick, M. W., Phys. Rev. 46, 63-5 (1934); CL(Cb V, Mo VI).
761. Trawick, M. W., Phys. Rev. 48, 223-5 (1935); CL(Mo V).
762. Tsien, W. Z., Chinese J. Phys. 3, 117-47 (1939); CL(K III-V, K VIII-IX, Ca IV-VI, Ca IX-X).
763. Turner, L. A., Phys. Rev. 27, 397-406 (1926).
764. Tyrén, F., Nova Acta Reg. Soc. Sci. Uppsala 12, No. 1, 7-66 (1940).
765. Tyrén, F., Z. Physik 98, 768-74 (1936).
766. Tyrén, F., Z. Physik 111, 314-17 (1938); CL(Cr XV, Mn XVI, Fe XVII, Co XVIII).
779. Vance, B. B., Phys. Rev. 41, 480-5 (1932); CL(Na II-IV).
780. VanVeld, R. D. and K. W. Meissner, J. Opt. Soc. Amer. 46, 598-604 (1956); CL(Ge I).
781. Vasiliev, R. I. and A. V. Yakovlieva, Optikai Spektroskopiya 5, 620 (1958).
783. Venkatesachar, B. and T. S. Subbaraya, Z. Physik 73, 412-18 (1931); CL(Hg II).
785. Weber, R. L. and W. W. Watson, J. Opt. Soc. Amer. 26, 307-9 (1936).
786. Werner, S., Nature 116, 574 (1925); CL(Li II).
787. Werner, S., Nature 118, 154-5 (1926); CL(Li II).
788. Werner, S., Studier över Spektroskopiske Lyskilder til Frembringelse af Gnist-spektre med Resultater for Lithiums Gnist-spektrum (Oaschehoug and Co., Dansk Forlag, Kovenhavn, 1927); CL(Li II).
789. Wheatley, M. A. and R. A. Sawyer, Phys. Rev. 61, 591-600 (1942); CL(Cs II).
790. White, H. E., Phys. Rev. 33, 538-46 (1929); CL(V IV, Cr V).
791. White, H. E., Phys. Rev. 33, 672-83 (1929); CL(V III, Cr IV, Mn V).
792. White, H. E., Phys. Rev. 33, 914-24 (1929); CL(Cr III).
793. Whitford, A. E., Phys. Rev. 46, 793 (1934); CL(K VI-IX, Ca VII, Ca VIII).
794. Wilkinson, P. G., J. Opt. Soc. Amer. 45, 862-7 (1955).
795. Wilkinson, P. G., J. Opt. Soc. Amer. 47, 182-5 (1957).
806. Zeeman, P., Transactions, Martinus Nijhoff, The Hague, (1935).
810. Zumstein, R. V., Phys. Rev. 38, 2214-6 (1931); CL(Al II, Al III, Si II, Bi II).
811. Zumstein, R. V. and D. S. Marston, Phys. Rev. 38, 305-8 (1931).