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An Atlas of Uranium Emission Intensities in A Hollow Cathode Discharge

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AN ATLAS OF URANIUM EMISSION INTENSITIES

IN A HOLLOW CATHODE DISCHARGE

by

Byron A. Palmer, Richard A. Keller, and Rolf Engleman, Jr.

ABSTRACT

The uranium emission spectrum from a hollow cathode discharge is displayed from 11 000 to 26 000 cm^{-1} . This atlas lists 4928 spectral lines of uranium; 3949 are classified to the neutral spectrum and 431 are classified to the singly ionized spectrum. Listed wavenumbers are accurate to $\pm 0.003 \text{ cm}^{-1}$ and the listed relative intensities to $\pm 8\%$. The richness of the spectrum makes this atlas useful for wavenumber calibration of lasers, spectrographs, and monochromators to an accuracy of 1 part in 10^7 . This atlas is also useful as a guide to the uranium spectrum, and relative oscillator strengths (gf values) can be calculated from the intensities to a precision of $\pm 20\%$.

I. INTRODUCTION

This atlas, a series of graphs depicting the spectrum of uranium and accompanied by tables of wavenumbers, relative intensities, and assignments, provides an excellent source of information on the spectrum of uranium. Because of its wavenumber accuracy, this atlas is useful for calibration of spectrographs, monochromators, and tunable lasers (see the Appendix for a description of laser wavenumber calibration using the optogalvanic effect¹). The relative intensities of the spectral lines measured are accurate to $\pm 8\%$, a result of the spectrometer used, and are useful in mapping the spectrum and for the determination of relative oscillator strengths (gf values).

The spectral lines from our lamp, a commercially available hollow cathode discharge tube (HCDT), are sharp and are reproducible. The sharpness of the lines and the excellent wavenumber accuracy of the Fourier Transform Spectrometer (FTS) at Kitt Peak National Observatory (KPNO) results in a set of wavenumber standards superior to any other list of wavenumber standards with a comparable number of lines. The uranium emission spectrum has numerous very sharp lines that are widely distributed throughout the ir, visible, and uv spectral regions with the result that there is a selection of strong lines in any given region of the spectrum.

This report provides one of the best sources of information on the spectrum of uranium. The tables not only list the wavenumbers of the strong lines, but also the stage of ionization, energy levels and J values for most of these transitions. This detailed knowledge is useful to anyone working with uranium in plasmas, furnaces, or in isotope enrichment.

II. SOURCE AND SPECTROMETER

The spectrum of uranium was obtained from a commercial hollow cathode discharge tube* (HCDT) manufactured by the Westinghouse Electric Corporation. The HCDT was filled with a carrier gas of neon, although argon may also be

* Westinghouse Industrial and Government Tube Division, Westinghouse Circle, Horseheads, NY, 14854. Lamp order number WL-36077. There are other sources of this type of lamp, which is commonly used for atomic absorption measurements.

used. We chose to use a commercially available HCDT because it is a readily available, reproducible source. The spectral lines emitted by the HCDT are sharp, display no hyperfine structure, and have small shifts (less than our precision) due to pressure and electric field effects. Because uranium is a heavy element and the Doppler broadening for a given temperature varies inversely as the square root of the atomic weight, the spectral lines are narrow. The lines are not shifted or broadened by pressure effects because the gas pressure is low (about 5 torr). The cathode was constructed from uranium, whose composition was about 99.75% ^{238}U and 0.25% ^{235}U ; therefore, there is no hyperfine structure to broaden or split the lines (even-even isotopes have no hyperfine structure). The Stark shifts caused by the electric field are small since the electric field inside the cathode discharge region is on the order of a few tens of volts.

The HCDT is rated at 25-mA maximum current, but to obtain more sputtering and thereby increase the signal, the lamp was run at 75 mA. This required cooling the lamp envelope by circulating water through a jacket surrounding the lamp. From the results of several tests, we have concluded that the ratio of the intensities of the lines is a constant for moderate variations in the lamp current.¹ The spectrum that would be measured with 25-mA current would be very similar to that which we obtained at the higher current. The lifetime of the tube is rated in terms of amp-hours, so running at 75 mA should shorten the life of the tube by about a factor of three, which may be an important consideration for some users. For further details on line intensities, see Sec. X.

We took the spectrum on the FTS at KPNO. This spectrometer was designed by Brault² for use with the McM solar telescope. The instrument has a total path difference of ~ 1 m and is capable of a resolution approaching one million. The data are collected as an interferogram and must be Fourier-transformed to obtain the spectrum. To reduce the noise level of the data, six to eight scans of the interferogram were added point to point to form one final interferogram (time for one scan is about 7 min). To reduce noise further, optical band-pass filters were used to limit the spectral region viewed in each interferogram. In order to cover the region displayed in this atlas, we used three separate final interferograms. Table I lists the parameters for the three final interferograms.

TABLE I
PARAMETERS OF THE INTERFEROGRAMS^a

	<u>Section 1</u>	<u>Section 2</u>	<u>Section 3</u>
Start(cm ⁻¹)	11 000	18 000	22 060
End(cm ⁻¹)	18 000	22 060	25 980
FSR(cm ⁻¹)	22 219	28 920	41 239
MP (cm)	23.55	18.05	16.72
Res (mK) ^b	50	65	75
NP	1 046 394	1 044 194	1 044 546
ZP	209 280	208 840	208 910
AC	5.6236×10 ⁻⁷	6.1907×10 ⁻⁷	5.7743×10 ⁻⁷

^aThe start and end of the region covered in each section is given by the rows labeled Start and End. The free spectral range (FSR) is the maximum wavenumber that can be observed without overlap. The maximum path difference is given in the row labeled MP, and the resolution is in the row labeled Res. The total number of points in the interferogram is listed in the row labeled NP, and the number of points taken before zero path difference is listed in the row labeled ZP. The aperture correction factor minus one is listed in the row labeled AC.

^bOne mK is 0.001 cm⁻¹.

Short low-resolution interferograms of an incandescent standard lamp* were interspersed with the uranium interferogram. This allowed us to calibrate the intensity response of the system composed of the detector, filter, and instrument. The interferograms were subsequently transformed at KPNO and the transforms brought to the Los Alamos Scientific Laboratory (LASL) on magnetic tape for data reduction.

* Optronics Laboratories, Inc., 7676 Fenton Street, Silver Springs, MD, 20910. Ribbon filament lamp, Model 550 designated IR-15 operated at the rated current of 15 amp dc. This lamp is calibrated by the manufacturer against NBS standard lamps.

III. INTENSITY CORRECTION

Using the transformed interferogram of the standard lamp, and a table of intensity vs wavelength supplied by the manufacturer, we calculated a multiplicative correction curve for each section of the atlas, as shown in Fig. 1. It was convenient to fit a functional form to the tabulated data; for this purpose a modified Planck's blackbody equation was used. We introduced a λ^3 factor to convert from ergs/nm to photons/cm⁻¹:

$$R = \frac{\lambda^3}{(\lambda^5 (e^{5.0/\lambda} - 1))^{1.15}} \quad , \quad (1)$$

where R is the relative number of photons/cm⁻¹ and λ is in μm . This equation fits all the points in the tabulated data to better than 1%. We chose an arbitrary scale factor for the first section such that the strongest line was about 1000; this determined the scale factors for the other two sections. The intensities of the first and second sections were matched in a region of 1000 cm⁻¹ centered on 18 000 cm⁻¹. The variation in intensity between the two sections in this overlap region was observed to be less than 4% (1 σ). We matched the third section to the second section for 1000 cm⁻¹ centered at 22 000 cm⁻¹, and again the variation in intensity between the two sections was 4% (1 σ) over the region at the overlap. Since the intensities between the sections agreed to 4%, we claim a precision of better than 8% (2 σ) in our intensities.

The relative intensities listed were calculated from the intensity-corrected spectrum by fitting a second-degree polynomial to the top portion of the line, and using the intensity at the maximum value of this polynomial. All intensities were determined from the smoothed data (see discussion in Sec. IV).

IV. INTERPOLATION AND SMOOTHING

The transformed interferograms have several disadvantages that make them difficult to use. The minimum number of points of the digitized interferogram were transformed, which results in having only 3 or 4 points

per half-width on uranium lines. Neon lines are usually two to three times broader and have 8-12 points per half-width. To determine uranium line positions and intensities correctly, new points must be found by interpolation. Using the theory of Fourier transforms and the sampling theorem,^{3,4} we decided to interpolate with an apodized sinc function* with 3 points between primary points and spanning 25 primary points. We tested the adequacy of this interpolation by varying the number of points interpolated between primary points, and the number of points used in the interpolation. Increasing these numbers gave nearly the same results as with 3 and 25, but decreasing them affected the accuracy, especially on the weak lines near the noise level.

Due to limitations of the FTS apparatus, mainly disk space to hold the data, our interferograms do not provide full resolution for our light source. Full resolution means taking enough data points so that the interferogram, at the maximum path difference, has reached a steady state and no further information can be obtained. Stopping short of this point has two major effects--wider lines (decreased resolution), and the introduction of "ringing" due to the Gibbs phenomenon.^{3,4} Ringing is only evident on the uranium lines since the neon lines are wider and are fully resolved. The ringing of strong lines tends to mask weak lines by as much as several wavenumbers on either side, affecting the weak line positions and intensities. To decrease the ringing effect we smoothed the data by convoluting the transform with a Gaussian function. The smoothing has the effect of increasing the line widths (degrading the resolution), but allows the location of the weak lines in the spectrum. In some cases of close lines where the smoothing blended the two lines, we measured the wavenumbers of the lines without smoothing. The effective resolution (full width at half maximum) with smoothing was 50 mK in the first section, 65 mK in the second section, and 75 mK in the third section of the atlas. Without smoothing the resolution improves by a factor of 25 to 35%.

* $\text{sinc}(x) = \sin(x) / x$.

V. WAVENUMBER MEASUREMENT

We determined the positions of the spectral lines by searching for the zero crossing of the first derivative of the spectrum. The first derivative is calculated using the method of convoluting numbers.^{5,6} In essence, this technique performs a least squares fit (LSF) to the data and calculates the derivatives from the LSF function at the center of the region of fit. We chose a quadratic polynomial calculated for seven points centered on the point of interest. The line position was determined by a linear interpolation of the two derivatives on either side of the zero crossing. To ensure that only peaks were measured, we calculated the second derivative and rejected those crossings with a positive second derivative. As a final test of the measurement, lines with a very small half-width were also eliminated, thus removing the ringing of the strong lines from the preliminary line list.

The measured wavenumber was adjusted for the index of refraction and the effect of a finite entrance aperture. We used the formula given by Edlén⁷ to calculate the index of refraction, which was then corrected for the temperature and pressure using the procedure given in the Table of Wavenumbers.⁸ The effect of the finite aperture is to lengthen the path the sampled light travels with respect to the reference path. The aperture correction is a constant multiplicative factor applied to all wavenumbers. This correction can be expressed as

$$\sigma' = K\sigma = \sigma \left(1 + \frac{\Omega}{4\pi} \right) , \quad (2)$$

where σ' is the corrected wavenumber, K is the aperture correction, σ is the measured wavenumber, and Ω is the solid angle subtended by the aperture. The solid angle is defined as

$$\Omega = \frac{\pi h^2}{4 F^2} , \quad (3)$$

where h is the diameter of the aperture and F is the focal length of the

collimating optics. For the first section, this factor is 1.00000056236, which yields a maximum change of 10 mK.

We chose the first section of the atlas to be the wavenumber reference for the other two sections because it had the fewest wavenumber problems--a less dense spectrum and the best phase correction (which will be discussed in Sec. VI) of the three sections. To match the wavenumbers in the overlap regions, an additional factor was applied to the second and third sections. This changed the wavenumbers by a maximum of 1.3 mK in the second section and a maximum of 0.4 mK in the third section.

VI. WAVENUMBER ACCURACY AND PRECISION

The wavenumbers reported in this atlas are based on the vacuum wavelength of the reference He-Ne laser. This laser⁹ has an accuracy of ~1 mK and a stability better than 0.1 mK. Additional sources of systematic errors can be introduced by the measurement system. The most important of these systematic errors are due to alignment and phase correction.

Improper alignment of the source can cause wavenumber errors as large as 5 mK. However, with reasonable care, these errors are reduced to less than 2 mK. This fact is documented by the reproducibility of wavenumber measurements over many different realignments.

The other major source of systematic errors is in the determination of the phase correction. Phase errors are caused by wavelength-dependent phase shifts upon reflection at the mirrors, and the inability to locate zero path difference (ZPD). The theory of Fourier transforms⁴ requires there to be a point where the path difference for all wavelengths is equal to zero, ZPD. The phase correction adjusts the interferogram to satisfy this condition by taking a small number of points around the ZPD point, transforming them, and calculating the phase from their transform. The phase thus determined is then used to correct the interferogram. Because only a few (not more than 1024) points are used, the strong features are "smeared" out over the rest of the spectrum. As opposed to a continuous spectrum where phase corrections can be calculated precisely, the phase correction of a line spectrum is unduly influenced by the strong lines, and the phase distant from strong lines may be in error. Our study of the transform indicates that in some regions the phase problem may cause errors of several mK. In fact, we believe that the disagreement of 1.3 mK for wavenumbers of lines in the

overlap region between the first and second sections is caused by improper phase corrections in section two.

To determine the magnitude of the systematic error, we measured the wavenumbers of a group of thorium lines. The inteferogram we used for these measurements was taken on the FTS shortly before the uranium interferograms were collected. The thorium light source was a HCDT operated in a manner similar to the uranium lamps, and the data were processed using the same procedures. These measurements were over a limited spectral range of 100 cm^{-1} and the deviation from the reported wavenumbers¹⁰ for this secondary standard is $0.64 \pm 1.2\text{ mK}$. It is not clear whether this 0.64 mK is indicative of a systematic error in our measurements, in the thorium measurements, or in both. In summary, we believe that systematic errors in this atlas are less than 3 mK .

Random errors in measurements result in statistical deviations of the line positions. The random errors in our measurements have several causes:

- line position refinement problems,
- weak lines where signal to noise is low, and
- blended lines.

Using several procedures, we determined the magnitude of the random errors to be less than 1 mK for most lines.

The size of the random errors is very dependent on the signal-to-noise ratio (S/N) of the spectrum. Every line adds noise to all regions of the spectrum; thus, by limiting the spectral range, a better S/N can be achieved--this is why we separated the atlas into three sections. Therefore, the number of lines and the relative intensity of these lines partially determines the precision. Since uranium has many lines, with few strong lines, the S/N for most lines listed in this atlas is at least 100. Our experience shows that the peak positions of lines with this S/N can be determined to within 1% of the line width, which in this spectrum would be less than 1 mK . Uranium has so many lines that blending becomes a problem and shifts caused by blending may approach 15 mK . Blending becomes increasingly severe toward the blue end of the spectrum.

Two methods of determining the precision of the measurements are available to us. The first method is to determine the differences between the wavenumbers measured for the same lines in the overlap regions. In the first overlap region, the root mean square (RMS) error is 0.62 mK , and in the

second overlap region it is 0.58 mK, which leads us to believe that the precision is better than 1.2 mK (2 σ) over the entire spectrum. The second method is to examine the self-consistency of the energy levels derived from the wavenumbers. We have data in the atlas for 3949 transitions to 245 odd-parity levels and 918 even-parity levels in the neutral spectrum of uranium. We rejected 64 lines that had deviations from the calculated wavenumbers greater than three times the estimated uncertainty and whose deviations were greater than 3 mK (these lines are listed in Table II and marked in the atlas with a ?). Levels determined uniquely by one transition are irrelevant to the statistics of the calculation. Those lines that originate or terminate on such levels were discarded (a total of 633 lines). We carried out a least squares fit to the energy levels^{11,12} with the remaining 3362 transitions connecting 129 odd levels and 526 even levels. The lines for the level calculation were weighted by the reciprocal of the square of their estimated uncertainty. The uncertainty, δ , of the lines was determined by first using unit weights in the level calculation. Next we calculated the RMS deviation for small ranges in intensities. Finally the RMS deviations were fit to an equation of the form $a + b/I$, where I is the intensity of the transition as listed in the atlas. This process yielded

$$\delta = 0.5458 + \frac{0.8678}{I} , \quad (4)$$

where the δ is in mK. The lines thus weighted were used in a second level calculation. We verified that the weighting scheme used was consistent by comparing the RMS deviation computed for ranges of intensities with that predicted by Eq. (4). The actual RMS values and δ agreed to within 0.1 mK over most of the range of intensities. This comparison indicated that the higher intensities are slightly more accurate than predicted, and that the weaker lines are slightly less accurate. Therefore, we feel that Eq. (4) gives a reasonable estimate of the uncertainty in a given measurement. It does not, however, take into account the blending or misidentification of lines, although the weaker lines will tend to be more blended than stronger ones.

TABLE II
TRANSITIONS WITH LARGE DEVIATIONS^a

<u>Wavenumber</u>	<u>Even</u>	<u>Odd</u>	<u>Int</u>	<u>Dev</u>	<u>Comment</u>
11060.2463	2894310	1788209	2.02	5.98	wide
11220.8621	2262403	1140304	1.30	9.09	
11476.7091	2246406	1098706	1.93	-4.32	blend
11766.4809	2275406	1098706	1.86	-8.34	blend
11914.3539	2979708	1788209	4.47	-15.71	wide
12082.1323	2371506	1163305	0.92	-5.77	
12249.2113	2612504	1387605	1.31	9.73	
12578.1125	2278605	1020804	0.85	4.44	wide
12770.5277	2565504	1288404	0.98	-6.66	
12813.2577	1919204	3200505	0.81	-11.38	
12899.5489	2744305	1454306	1.30	-5.92	
12963.3454	2632405	1336106	0.76	7.20	wide
13298.3122	2411803	1081903	0.80	14.27	blend
14041.1721	1746804	3150905	1.08	14.28	wide
14276.3612	2240903	813304	2.03	-6.56	blend
14399.2345	2867303	1427404	0.99	8.83	wide
14594.3335	2599703	1140304	1.03	-9.08	wide
14934.1037	2203804	710303	2.81	9.31	
15242.1616	2337504	813304	1.40	7.50	
15322.7291	2318604	786405	1.64	4.93	
15771.3058	2675807	1098706	1.75	-6.53	blend
16047.8600	2703507	1098706	3.82	4.62	
16441.7849	2456007	811807	9.17	-6.94	wide
16600.6587	2392608	732607	1.25	5.50	
16637.5052	2689206	1025405	4.03	-4.54	wide
16807.2364	2494004	813304	1.79	9.17	blend
16860.6745	2066106	380007	15.8	8.72	
17532.0427	3140805	1387605	1.23	9.69	
17771.5025	2811807	1034708	1.17	-5.57	wide
17933.4053	2606605	813304	2.16	5.24	blend
18113.7209	2979007	1167707	1.58	-21.24	
18293.5823	3026205	1196805	0.82	8.12	wide
18307.9980	2859607	1028806	1.04	-5.87	wide
18322.9177	3026604	1194303	2.09	6.57	blend

^aThis table lists those lines that were excluded from the level calculation. The level designators are a combined level value and two digits representing the J value--designation 2894310 is the level at 28943 cm⁻¹ with a J value of 10. The intensity is listed in INT column with the deviation in mK given in the column under Dev. The Comment column lists the reason for the large deviation if known--a known blend of two or more lines or an unknown blend which we label as wide. The rest of the lines listed may be misassignments, blends that we cannot detect, or have other problems.

TABLE II(cont)

<u>Wavenumber</u>	<u>Even</u>	<u>Odd</u>	<u>Int</u>	<u>Dev</u>	<u>Comment</u>
18458.5662	2422005	576205	2.27	3.20	
18590.0960	3004706	1145706	1.41	-7.28	wide
18702.7095	2656606	786405	3.11	6.27	
18800.7717	3058903	1178803	1.01	8.82	
19595.6862	2346403	386803	3.26	-4.53	
19858.3377	2696204	710303	1.04	6.97	
19888.9236	2775304	786405	2.71	7.36	
20081.2970	1346305	3354404	2.27	8.08	
20525.5554	2628706	576205	2.51	-4.11	
20672.8324	1203504	3270804	1.15	8.39	blend
20722.7480	2697107	624906	7.47	6.71	
20881.4581	2788607	700506	2.95	4.22	
21073.2657	2534806	427506	3.28	4.58	
21236.4897	2510404	386803	1.64	6.58	wide
22029.4154	2630505	427506	3.31	-7.09	wide
22141.1476	1005105	3219204	2.75	13.75	
22464.6421	2979007	732607	1.66	-21.50	
22785.2191	2979007	700506	4.88	-12.89	
22865.3817	3019106	732607	4.52	6.97	wide
23030.7407	3470707	1167707	1.77	-7.39	
23818.8309	2981003	599104	2.85	-3.60	
24387.5212	2884005	445304	3.81	-5.17	
24765.5468	2856607	380007	5.13	8.73	
24960.8545	2923607	427506	15.0	7.22	blend
25156.7195	2961004	445304	6.00	-6.28	wide
25200.2792	2947507	427506	2.43	7.35	
25512.6346	2931306	380007	2.55	5.94	wide
25612.4529	2941308	380007	3.11	6.06	blend
25705.5752	3303108	732607	15.54	5.45	blend
25949.4043	3359509	764508	4.05	4.84	

TABLE III
LEVEL CALCULATION RESULTS

<u>Intensity</u>	<u>Unc. (mK)</u>	<u>Number</u>	<u>RMS (mK)</u>
> 100	0.55	52	0.54
50-100	0.56	66	0.41
20-50	0.58	168	0.46
10-20	0.61	293	0.58
5-10	0.67	433	0.65
4-5	0.74	183	0.69
3-4	0.80	332	0.88
2-3	0.91	500	0.98
1-2	1.20	981	1.31
< 1	1.70	243	1.60
rejected		64	8.51

Fig. 1

Intensity correction curves. This factor multiplies the intensities determined from the transforms. There is a curve for each section of the atlas. The dashed lines indicate the break from one section to the next. The bars near the bottom indicate the overlap regions.

Fig. 2

Wavenumber difference vs intensity as determined in the level calculation. The dashed lines indicate the uncertainty used for that intensity in the level calculation.

The resultant standard deviation in the energy levels calculated was 0.58 mK, and the lines fit to within 0.53 mK (1 σ) for the 628 lines with an intensity greater than 10. Table III lists the statistics of this fit and Fig. 2 is a plot of wavenumber deviation vs intensity that illustrates the inverse relationship between intensity and error.

The two sources of wavenumber measurements on uranium with which we can compare our measurements are the compilation¹³ in LASL report LA-4501 and a list of 523 lines proposed for use as secondary standards by Gerstenkorn, Luc, Perrin, and Chauville.¹⁴

The LASL list was based on more than 8000 lines measured on a Fabry-Perot interferometer by Steinhaus.¹⁵ He augmented this list with measurements made on a 5-m Czerny-Turner spectrograph. The Fabry-Perot measurements were compared with thorium standards¹⁰ and it was necessary to adjust the Fabry-Perot data by as much as 40 mK. These thorium-based uranium wavenumbers were then used as the standards for the 5-m spectrograph determinations. Because of the sparsity of lines in the thorium spectrum used for standards, the sizable adjustment of the Fabry-Perot measurements, and the inherent difficulties of measurements made on photographic plates taken on grating spectrographs, there are small systematic errors in the reported wavenumbers. Figure 3 shows a comparison between our measurements of 4847 lines and that of the LASL line list. The average difference between the two lists is -0.6 mK with a RMS error of 1.8 mK.

The Gerstenkorn, et al. list of uranium wavenumber standards was compiled from data taken on an FTS in France, and should be more accurate than the LASL line list. In comparing our data with this list we find a systematic error in one or the other, or both. This systematic deviation is shown in Fig. 4. A total of 514 lines were matched between the two lists, and the average difference is -0.4 mK with a RMS error of 1.2 mK. The agreement of the lists is within our estimated accuracy of 3 mK.

VII. CLASSIFICATION

The level classification for the lines listed in this atlas was obtained from the LASL line list.¹³ Those lines that differed from the LASL line list by more than 5 mK were reviewed and adjusted as needed for blending in our spectrum and for misidentifications in the LASL line list. One region of the spectrum, from 11 000 to 12 000 cm^{-1} , revealed more lines in our list than in the LASL line list. Otherwise, all the lines listed in the tables matched known uranium lines. The neon lines were removed by comparing the lines with those listed in Striganov and Sventitskii,¹⁶ and by noting that neon half-widths were approximately twice that of an unblended uranium line.

Fig. 3
Wavenumber difference between the LASL list and this atlas. The average difference between the two lists is -0.6 mK, and the RMS difference is 1.8 mK. Note the systematic variation toward the blue end of the atlas.

Fig. 4
Wavenumber difference between the list of Gerstenkorn et al. and this atlas. The average difference between the lists is -0.4 mK, and the RMS difference is 1.2 mK. If the systematic offset is removed, the RMS difference would decrease to ~0.5 mK.

VIII. URANIUM SPECTRAL LINE TABLES

The air wavelength of the measured uranium lines is listed in the LAMBDA(A) column in units of angstroms. The vacuum wavenumber is tabulated in the SIGMA(CM-1) column and is given in cm^{-1} . The INT column gives the relative intensity (photons/ cm^{-1}) reported to three digits. The ION column gives the stage of ionization, I for neutral uranium, and II for singly ionized uranium. A blank line in this column is at present an unclassified line, and a UB indicates that this line is a blend of two or more uranium lines. There are a few cases where a uranium line was close to a neon line,

and where the neon line was comparable in intensity to that of the uranium line, we listed it as NE+UB. The next four columns provide the level designation of the spectral line. The first two give the truncated energy level value for the even level involved in the transition, and the associated J value. The next two columns provide the same information for the odd level. More detailed information on the levels of neutral uranium can be found in a paper by Blaise and Radziemski.¹⁷

To keep the pages matched to the spectral plots, and to maximize the ease of use, weak lines were discarded from our list until 47 or fewer lines remained per page. The weakest line listed has a relative intensity greater than 0.7 and the strongest line has a relative intensity 912. Those lines which are evident on the plots and are not listed may usually be found in the LASL line list,¹³ but with reduced precision.

IX. SPECTRAL DISPLAYS

The graphs in this atlas display the spectrum of uranium with neon. There are two panels on each page; each panel covers 70 cm^{-1} of the spectrum. The bottom scale on the panel is the vacuum wavenumber in cm^{-1} and the top scale is the air wavelength in angstroms. The vertical scale is the relative intensity of the spectrum (photons/cm^{-1}). Five vertical scales are used for display, ranging from 0-5 to a maximum of 0-100. Although this change in scales might be confusing, we feel that this was the best way to display the spectrum, showing the weak lines as well as giving an indication of the strong lines. On any given panel there may be up to five uranium lines off-scale--intensities greater than the maximum that can be displayed. When a line goes off-scale its intensity is labeled. Neon lines are indicated in the plots with NE at the base of the line. If a neon line is off-scale, its intensity is also labeled. A linear plotting scale was chosen since most users will be recording the spectrum using linear devices.

X. RELATIVE OSCILLATOR STRENGTHS IN NEUTRAL URANIUM

Oscillator strengths (gf values) may be calculated from the intensity of the transitions if certain parameters of the discharge are known. One must first assume that the atoms are in local thermodynamic equilibrium (LTE) among the electronic energy levels, which is the same as saying that

collisions are the primary excitation and de-excitation process. If the discharge is in LTE, then Boltzmann's distribution holds. This is expressed as

$$N_u = N_0 \frac{g_u}{g_0} e^{-E_u/kT}, \quad (5)$$

where N_u (N_0) is the number of atoms in the upper (ground) level, g_u (g_0) is the statistical weight of the upper (ground) level, E_u is the energy of the upper level, k is Boltzmann's constant, and T is the excitation temperature of the discharge.

Standard equations¹⁸ relate the emission intensity to the gf value and the upper energy level (E_u). The expression for the intensity is

$$I \propto gf \sigma^2 e^{-E_u/kT} \text{ or } \frac{I \lambda^2}{gf} \propto e^{-E_u/kT}. \quad (6)$$

Note that the exponent of λ is 2, a result of our choice of units for the intensity (relative number of photons/s). Equation (6) shows that the temperature of the plasma and a proportionality constant are needed in order to calculate relative oscillator strengths. Our data are the relative intensities of the spectral lines. To determine the temperature and the proportionality constant, previous measurements of oscillator strengths are needed.

The three sets of measurements of oscillator strengths in uranium are those of Corliss,¹⁹ Klose and Voigt,²⁰ and Bieniewski.²¹ Only the first two sets of measurements overlap the range of this atlas. Corliss' list is the most extensive but has the least precision; he estimated uncertainties of greater than 35%. Klose and Voigt list only 28 lines that were usable--two lines were not used because of blending problems. They estimated their measurements were accurate to $\pm 20\%$.

To determine the temperature and the proportionality constant, we did a least squares fit (LSF) of $\log(I \lambda^2/gf)$ to the upper energy level, using both the data from Corliss and those from Klose and Voigt. The fact that we

obtain a straight line indicates the discharge is in LTE. With the Corliss data, we obtained an excitation temperature of 4100 ± 80 K with an average of $\pm 50\%$ error in the calculated gf values. Klose and Voigt's data gave a temperature of 4660 ± 230 K, but with a much closer fit to a straight line (average error of $\pm 20\%$ in calculated gf values). Figures 5 and 6 show the least square fit for the Corliss data, and for the Klose and Voigt measurements. For the lower energy levels, the LSF to Corliss' data predicts smaller gf values than the LSF to Klose and Voigt's data by 14%, and for the higher levels, the LSF of Corliss data is 30% larger. We chose the LSF to

Fig. 5

$I\lambda^2/gf$ vs energy of emitting level. The gf values used in this figure are from Corliss. Intensities are from this atlas. From these data we determined the temperature to be 4100 ± 80 K.

Fig. 6

$I\lambda^2/gf$ vs energy of emitting level. The gf values used in this figure are from Klose and Voigt. Intensities are from this atlas. From these data we determined the temperature to be 4660 ± 230 K.

Corliss' data because there were more measurements and the temperature error was smaller. The equation we calculated from the Corliss data for the gf values is

$$gf = \frac{3.15 \times 10^{-14} I \lambda^2}{e^{-3.5 \times 10^{-4} E_u}} \quad , \quad (7)$$

where I is the intensity listed in the atlas, λ is in angstroms, and E_u is in cm^{-1} . The error introduced by the uncertainty in the temperature, derived from Corliss' data, is small (2 to 4% change in gf) in comparison to the other sources of errors. The errors we see may be due to problems in the gf values used, or in small deviations from LTE. Because of the accuracy of our fit to the data of Klose and Voigt, the relative gf values calculated from Eq. (7) should be accurate to $\pm 20\%$. Absolute gf values may have a larger error, and we await accurate gf value measurements in the range of our atlas.

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AN ATLAS OF URANIUM EMISSION INTENSITIES

IN A HOLLOW CATHODE DISCHARGE

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
9083.8231	11005.5600	0.86	I	21993	6	10987	6
9083.3097	11006.1820	2.11	I	22409	3	11403	4
9082.6521	11006.9788	3.68	I	22464	6	11457	6
9082.1244	11007.6184	1.62	I	28435	7	17428	8
9080.0831	11010.0931	5.15	I	21265	6	10254	5
9077.6758	11013.0127	1.17	I	23375	4	12362	4
9073.2759	11018.3532	3.47	I	24650	5	13632	5
9064.0522	11029.5657	2.13	I	21849	2	10819	3
9054.3587	11041.3737	3.22	I	21329	5	10288	6
9052.7338	11043.3555	4.45	I	14911	2	3868	3
9051.8409	11044.4449	1.93	I	7020	4	18065	5
9051.4644	11044.9043	2.00	I	25319	5	14274	4
9050.9811	11045.4941	1.77	I	24448	5	13402	6
9050.5544	11046.0148	2.91	I	24581	8	13535	9
9047.3298	11049.9517	1.02	II	8423	9/2	19473	11/2
9044.7332	11053.1241	0.99	I ?	28943	10	17882	9
9038.9088	11060.2463	2.02	I	21409	8	10347	8
9036.9632	11062.6275	6.23	I				
9033.1721	11067.2703	1.46	I	18260	2	7191	2
9031.9379	11068.7827	8.29	I	21329	5	10254	5
9030.6623	11070.3461	0.81	I				
9026.8739	11074.5922	4.07	I	21426	7	10347	8
9025.2218	11077.0194	0.85	I	21767	7	10685	8
9023.4970	11079.1368	75.7	I				
9021.0188	11082.1804	71.7	I				
9020.8462	11082.3923	4.56					
9017.3933	11086.6359	1.86					
9016.1317	11088.1873	0.99	I	22383	4	11290	5
9012.0613	11093.1953	2.89					
9008.4842	11097.6002	0.96	I	24671	6	13567	7
9003.7470	11103.4391	1.29	I				
9002.6021	11104.8511	0.91					
9000.6851	11107.2163	1.30					
8996.8930	11111.8979	1.97					
8996.1110	11112.8638	13.9	I	17361	6	6249	6
8993.2511	11116.3977	1.18	I	17369	5	6249	6
8989.9185	11120.5186	69.7					
8989.1237	11121.5019	1.28					
8988.2669	11122.5619	1.34					
8988.1876	11122.6600	1.09					
8986.9057	11124.2467	1.58	I	23486	5	12362	4
8985.6250	11125.8322	0.84					
8985.5309	11125.9487	0.83					
8983.3172	11128.6904	0.94					
8975.7414	11138.0832	1.85	I	28566	7	17428	8
8975.4961	11138.3876	2.70	I	23082	4	11943	3
8974.9280	11139.0927	5.03	I	15007	3	3068	3

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
8973.2742	11141.1457	0.90	UB				
8970.6317	11144.4275	1.01					
8967.0742	11148.8488	1.17	II	20702	13/2	9563	11/2
8961.2536	11156.0903	1.06					
8960.8907	11156.5421	2.71	I	18260	2	7103	3
8955.3136	11163.4900	2.63	I	17154	3	5991	4
8951.9539	11167.6798	1.12	I	16929	5	5762	5
8945.1903	11176.1237	1.67					
8942.3805	11179.6354	1.92					
8942.0226	11180.0829	3.41	I	20058	2	8378	3
8941.1882	11181.1262	3.97	I	22584	4	11403	4
8939.7753	11182.8933	0.86					
8938.8408	11184.0624	1.36	I	21265	6	10081	5
8937.7642	11185.4096	2.34	I	22862	6	11677	7
8935.0584	11188.7968	0.93					
8934.8864	11189.0122	3.63	I	20046	1	8856	2
8931.8765	11192.7827	0.86					
8931.2128	11193.6145	38.4	I	18839	7	7645	8
8929.6473	11195.5770	11.9	I	18299	4	7103	5
8929.3775	11195.9152	19.5	I	21265	6	10069	7
8929.3122	11195.9970	1.44	UB				
8928.8080	11196.6292	1.25					
8927.5690	11198.1832	1.04					
8926.6194	11199.3745	17.5	I	23560	4	12362	4
8926.5224	11199.4961	1.41	I	21407	3	10208	4
8926.2127	11199.8847	8.75	I	28739	8	17540	8
8924.8154	11201.6382	1.16	I	24026	6	12826	7
8915.6765	11213.1202	2.82	I	20058	2	8856	2
8915.3760	11213.4982	3.09	I	26566	6	15353	7
8913.7101	11215.5939	1.23	I	24560	7	13346	7
8911.7182	11218.1007	2.89	I	24934	1	13719	1
8909.5251	11220.8621	1.30	I	22038	4	10819	3
8908.3026	11222.4019	0.98	I	22624	3	11403	4
8905.6963	11225.6862	1.02	I	30365	7	19142	8
8901.7390	11230.6766	1.60	UB				
8894.1598	11240.2469	2.69	I	22634	4	11403	4
8888.4556	11247.4602	4.98	I	24066	7	12826	7
8888.1232	11247.8809	3.16	I	21536	5	10288	6
8887.7635	11248.3361	19.0	I	24650	5	13402	6
8876.5266	11262.0680	1.36	I	18253	6	7005	6
8876.7936	11262.2367	3.63	I	25805	5	14543	6
8876.1866	11263.0069	1.04	I	23051	4	11788	5
8872.8356	11267.2606	18.8	I	19127	4	7864	4
8872.1941	11268.0752	1.69	I	15720	5	4453	4
8871.5843	11268.0498	2.25	I	27072	6	15804	6
8868.0606	11273.3273	3.17	I	24671	5	13402	6
8863.3484	11279.3208	1.47	I	21830	3	10557	4
				18383	4	7103	3

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
8861.9673	11281.0787	4.20	I	21536	5	10254	5
8860.5851	11282.8384	23.9	I	27323	9	16040	10
8859.3689	11284.3873	1.12	I	25458	7	14174	6
8856.5069	11288.0339	2.34	I	22691	3	11403	4
8855.7316	11289.0220	1.38	I	24650	5	13361	6
8854.8871	11290.0987	1.12	I	21830	3	10540	3
8853.2781	11292.1505	4.71	I	22112	2	10819	3
8853.0936	11292.3860	1.30	I	22582	6	11290	5
8852.2955	11293.4040	1.07	I	23082	4	11788	3
8850.2017	11296.0758	1.75	I	21584	6	10288	6
8849.6763	11296.7465	1.46	I	22754	6	11457	6
8847.7526	11299.2036	2.20	I	7020	4	18319	4
8846.8212	11300.3922	3.26	I	26758	7	15458	8
8846.1807	11301.2105	1.20	I	26759	9	15459	8
8844.9307	11302.8076	0.95	I	17070	6	5762	5
8840.5649	11308.3892	1.63	I	24220	6	12910	6
8839.1964	11310.1400	2.13	I	26103	6	14790	7
8837.2218	11312.6671	3.58	I	26758	7	15435	6
8828.6546	11323.6447	0.98	I	24451	8	13127	9
8828.5047	11323.8371	8.53	I	24671	6	13346	7
8828.0083	11324.4738	0.94	I	22786	6	11457	6
8824.2541	11329.2917	10.8	I	22891	5	11558	4
8821.3587	11333.0103	5.31	I	19471	3	8133	4
8817.0360	11338.5664	1.36	I	18530	5	7191	4
8816.5681	11339.1681	34.2	I	21409	3	10069	2
8815.3020	11340.7967	1.77	I	24974	8	13632	7
8814.4153	11341.9376	1.15	I	25066	4	13719	5
8810.0022	11347.6189	1.76	I	21636	1	10288	1
8809.4445	11348.3373	4.70	I	21426	5	10069	6
8802.4877	11357.3062	4.27	I	19489	7	8118	7
8800.7887	11359.4987	2.30	UB	24938	8	13567	7
8792.3435	11370.4096	7.00	I	15962	13/2	4585	13/2
8791.9496	11370.9190	2.21	I	15831	3	4453	4
8787.3388	11376.8855	1.33	II	21636	5	10254	5
8796.7036	11377.7078	14.0	I	22786	5	11403	4
8783.4244	11381.9356	3.46	I	25017	4	13532	5
8782.5098	11383.1409	1.89	I	22377	9	13127	9
8781.0410	11385.0450	1.14	I	22854	5	10987	6
8777.6941	11389.3859	17.4	I	24932	8	11457	6
8777.0862	11390.1748	3.56	I	21958	5	10557	4
8771.3714	11397.5959	3.24	I	23378	2	11973	2
8771.2851	11397.7080	3.64	I	12035	4	620	5
8768.7632	11400.9859	1.93	UB	21976	4	10557	4
8768.6352	11401.1523	5.15	I				
8765.5627	11405.1487	1.55	I				
8757.7605	11415.3094	282.	I				
8754.9364	11418.9916	1.73	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
8753.6861	11420.6225	74.6	I	21767	7	10347	8
8751.8080	11423.0734	2.41	I	21980	5	10557	4
8748.8561	11426.9275	6.62	I	18530	3	7103	3
8744.9256	11432.0634	2.37	I	26274	7	14842	8
8743.0023	11434.5783	1.11	I	26225	6	14790	7
8737.4989	11441.7805	3.21	I	25009	6	13567	7
8735.0617	11444.9729	1.36	I	15720	5	4275	6
8731.8615	11449.1673	1.19	I	23082	4	11633	5
8728.7299	11453.2750	13.8	I	24581	4	13127	9
8727.1479	11455.3512	0.82	I	26997	8	15542	5
8720.7214	11463.7928	1.59	I	22754	4	11290	5
8720.4761	11464.1153	5.04	I	21545	4	10081	5
8716.2333	11459.6957	1.27	I	30767	8	19297	9
8713.8362	11472.8908	1.01	I	29013	8	17540	8
8710.9068	11476.7091	1.93	I ?	22464	6	10987	6
8710.7641	11476.8971	101.	I	17468	4	5391	4
8709.9945	11477.9112	4.73	I	21766	6	10288	6
8709.4787	11478.5909	2.08					
8708.9013	11479.3519	2.15	I	21767	7	10288	6
8707.6527	11480.9980	1.70	I	22038	4	10557	6
8707.1717	11481.6322	3.52	I	22789	8	11308	4
8702.0923	11488.3339	1.10	I 1/2	13783	11/2	2294	9
8698.9619	11492.4682	1.72	I	23051	4	11558	4
8697.3138	11494.6459	1.30	I	35168	10	23673	11
8694.9522	11497.7679	0.93	I	22038	4	10540	3
8694.7419	11498.0459	0.94	I	21753	4	10254	5
8693.3948	11499.8277	1.22	I	30642	7	19142	8
8691.2820	11502.6232	279.	I	11502	6	0	6
8690.4939	11503.6663	1.17	I	21584	6	10081	5
8685.1003	11510.8103	1.15	I	23873	3	12362	5
8684.5565	11511.5310	3.69	I	21766	6	10254	4
8683.3410	11513.1424	2.11	I	18839	7	7326	5
8683.2305	11513.2890	1.80	I	26971	7	15458	7
8681.5524	11515.5145	1.19	I	21584	6	10069	8
8675.4343	11523.6354	1.58	I	23082	4	11558	7
8673.8426	11525.7499	1.11	I				4
8670.3811	11530.3514	2.30	I	29413	8	17882	9
8664.0249	11538.8105	1.18	I	25729	3	14191	2
8659.5583	11544.7621	11.6	I	30478	10	18933	11
8659.3282	11545.0689	0.94	UB				
8658.1311	11546.6652	1.87	I	7020	4	18567	4
8652.8037	11553.7742	10.6	I	23186	4	11633	5
8651.1013	11556.0479	1.74	I	23114	3	11558	4
8649.5688	11558.0953	1.15	I	30069	9	18511	9
8649.5198	11558.1607	3.39	I	18749	3	7191	2
8648.1623	11559.9670	2.17	I	24906	6	13346	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
8645.9170	11562.9771	2.51	I	28151	3	16588	4
8645.5059	11563.5269	1.30	I	22383	4	10819	3
8644.6718	11564.6427	1.34	I	22854	5	11290	5
8642.9662	11566.9248	6.49					
8641.8471	11568.4226	2.03	I	25200	4	13632	5
8641.1259	11569.3882	17.8	I	27609	10	16040	10
8641.0360	11569.5085	2.75					
8637.6784	11574.0057	2.97	I	27818	8	16244	8
8637.4927	11574.2546	3.11	I	20452	2	8878	3
8633.5854	11579.4927	1.91	I	24207	3	12627	4
8631.9534	11581.6820	2.10	I	11502	6	23084	6
8625.9730	11589.7116	3.31	I	22409	3	10819	3
8621.9900	11595.0655	3.74	I	22582	6	10987	6
8618.9787	11598.1166	1.33	II	12513	11/2	914	9/2
8618.4599	11595.8148	16.5	I	17361	6	5762	5
8613.1624	11606.9492	7.39	I	23165	3	11558	4
8612.9858	11607.1871	1.63	I	25009	6	13402	6
8612.7765	11607.4593	19.2	I	17369	5	5762	5
8612.6392	11607.6542	2.26	I	19471	5	7864	5
8603.6654	11611.6635	1.30	I	27324	7	15712	7
8607.9503	11613.9771	912.	I	11613	5	0	6
8604.9811	11617.9846	1.58	I	26971	7	15353	7
8601.4934	11622.6954	1.21					
8600.6260	11623.8676	3.32	I	26167	5	14543	6
8599.9576	11624.7710	1.31	I	24535	5	12910	6
8597.6213	11627.9299	1.54	I	27086	8	15458	8
8594.0815	11632.7192	9.28					
8591.9849	11635.5578	1.40	I	24263	4	12627	4
8589.4391	11639.0065	2.59	I	27443	5	15804	6
8584.5986	11645.5692	2.42	I	22633	7	10987	6
8584.3397	11645.9204	2.76	I	18749	3	7103	3
8579.0510	11653.0997	2.62	I	21767	7	33421	6
8576.6234	11656.3981	5.35	I	22964	9	11308	9
8574.6051	11659.1417	46.8	I	17908	5	6249	6
8571.6837	11663.1154	1.26	I	26454	8	14790	7
8570.5168	11664.7034	112.	I	19783	6	8118	7
8567.7189	11668.5126	40.4	I	16121	4	4453	7
8566.9409	11669.5723	14.6	I	21958	5	10288	4
8565.1481	11672.0149	3.08	I	21753	4	10081	6
8559.2025	11680.1228	1.33	I	26650	4	14970	5
8557.3309	11682.6773	32.2	I	22368	4	10685	5
8555.6932	11684.9136	1.57	I	30982	7	19297	8
8551.3068	11690.9074	1.71	I	18794	9	7103	9
8550.4895	11692.0248	3.63	I	23325	4	11633	3
8548.6630	11694.5229	1.95	I	22234	5	10540	5
8547.5126	11696.0969	1.39	I	25098	2	13402	3
8546.5955	11697.3519	4.70	I	21766	5	10069	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
8542.3313	11703.1911	21.0	I	21958	5	10254	5
8540.1846	11706.1327	90.2	I	17468	4	5762	5
8538.7937	11708.0395	8.47	I	19826	6	8118	5
8536.4143	11711.3030	1.54	I	26213	9	14501	8
8534.5745	11713.8277	2.42	I	23272	3	11558	4
8533.0783	11715.8815	1.18	I	15584	3	3868	3
8531.1074	11718.5881	4.99	I	27072	6	15353	7
8529.3306	11721.0294	1.58	I	21976	4	10254	5
8526.3611	11725.1115	3.04	I	21980	5	10254	5
8525.4343	11726.3860	1.48	I	22283	4	10557	4
8521.2437	11732.1528	6.14	I	21940	3	10208	4
8519.8350	11734.0927	1.15	I	24560	7	12826	4
8513.8823	11742.2968	1.44	I	23375	4	11633	7
8513.2593	11743.1561	2.30	I	22283	4	10540	3
8508.5162	11749.7024	2.75	I	21958	5	10208	4
8504.5510	11755.1806	35.8	I	23212	5	11457	6
8501.6004	11759.2604	5.43	I	25294	8	13535	9
8501.4719	11759.4382	1.26	I	26550	6	14790	7
8500.0967	11761.3406	1.09	I	26305	5	14543	6
8498.2585	11763.8846	0.85	I	25938	6	14174	6
8496.9593	11765.6833	0.95	I	26608	7	14842	8
8496.3834	11766.4909	1.86	I?	22754	6	10987	6
8496.0939	11766.8817	60.5	I	19885	7	8118	7
8495.5177	11767.5414	2.57	I	21976	4	10208	4
8495.5125	11767.6871	5.01	I	22056	6	10288	6
8491.6382	11773.0561	4.88	I	26274	7	14501	8
8485.9319	11780.9727	2.11	I	26324	5	14543	6
8484.4441	11783.0385	3.93	I	22038	4	10254	5
8484.3165	11783.2157	2.10	I	24609	6	12826	7
8483.0883	11784.9217	1.47	I	24934	1	13149	7
8481.8177	11786.6871	1.23	I	26349	4	14562	5
8476.3875	11794.2380	2.79	UB				
8474.5925	11796.7360	0.93	I	27150	8	15353	7
8474.3949	11797.0112	0.97	I	23430	4	11633	5
8474.2290	11797.2422	1.61	I	17559	5	5762	5
8472.5143	11799.6297	2.99	I	23432	5	11633	5
8472.1931	11800.0770	1.42	I				
8471.3144	11801.3010	2.87	I	22056	6	10254	5
8466.1203	11808.5413	0.86	I	25999	1	14191	2
8465.1598	11809.8811	1.17	I				
8462.9388	11812.9804	1.22	I	17468	4	29281	5
8459.7865	11817.4939	1.29	I	26608	7	14790	7
8457.3941	11820.7251	6.36	I	22377	5	10557	4
8455.6786	11823.1232	1.13	I	26167	5	14344	5
8453.3188	11826.4238	2.36	I	22383	4	10557	4
8450.0312	11831.0249	187.	I	15631	7	3800	7
8445.3826	11837.5371	247.	I	15638	6	3800	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
8443.2005	11840.5964	3.41	I	16294	5	4453	4
8441.2048	11843.3959	69.3	I	19489	8	7645	8
8439.1120	11846.3329	1.08	I	29958	7	18111	6
8434.6434	11852.6089	4.67	I	22409	3	10557	4
8433.9881	11853.5298	6.01	I	23486	5	11633	5
8428.5903	11861.1209	1.54	I	26652	8	14790	7
8428.4633	11861.2997	1.24	I	28627	6	16766	7
8426.7471	11863.7153	11.8	I	15732	6	3868	7
8425.1021	11866.0317	3.34	I	27324	2	15458	3
8423.7945	11867.8736	4.29	I	23325	7	11457	8
8422.9546	11869.0570	0.95	I	23272	5	11403	6
8422.6930	11869.4257	2.02	I	22789	3	34659	4
8421.8535	11870.6088	2.84	I	20727	8	8856	7
8419.3793	11874.0973	1.67	I	23432	1	11558	2
8413.3257	11882.6408	2.37	I	26444	5	14562	4
8409.5097	11888.0329	0.95	I	27600	5	15712	5
8406.0602	11892.9113	3.90	I	27605	7	15712	7
8404.7865	11894.7135	3.21	I	25462	6	13567	7
8401.6428	11899.1643	2.60	I				
8400.1705	11901.2498	2.88	I	23534	5	11633	5
8399.2437	11902.5630	16.4	I	17893	4	5991	4
8397.1920	11905.4712	3.10	I	23464	3	11558	4
8396.7655	11906.0759	8.88	I	17468	4	29374	5
8392.8107	11911.6862	1.00	I	25788	4	13876	5
8392.5071	11912.1171	2.28	I	21993	6	10081	5
8390.9315	11914.3539	4.47	I	29797	8	17882	9
8389.1689	11916.8570	43.1	I	17908	5	5991	4
8387.5677	11919.1320	10.4	I	19783	6	7864	5
8387.2018	11919.6521	32.0	I	16195	6	4275	6
8385.7449	11921.7229	2.07	I	23325	5	11403	4
8384.2948	11923.7847	4.61	I	19115	3	7191	4
8384.1646	11923.9699	1.39	I	21993	6	10069	2
8381.8709	11927.2329	78.3	I	18932	5	7005	7
8381.2639	11928.0967	2.61	I	19119	6	7191	6
8381.2089	11929.1750	4.35	I	24555	2	12627	2
8380.4801	11929.2123	2.91	I	27969	3	16040	4
8379.2478	11930.9666	3.02	I	22918	9	10987	10
8374.4579	11937.7908	1.18	I	27650	7	15712	6
8373.4657	11939.2053	1.88	I	32884	6	20945	7
8372.1244	11941.1181	1.22	I		9		10
8367.2193	11948.1183	48.7					
8357.4652	11962.0630	1.36					
8357.1828	11962.4673	7.14	I	19825	6	7864	5
8357.0605	11962.6422	24.0	I	15831	3	3868	3
8350.6479	11971.8285	11.6					
8348.2485	11975.2693	1.85	I	22056	6	10081	5
8346.7576	11977.4084	46.1	I	17968	3	5991	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
8341.3257	11985.2066	0.77	I	32723	7	20738	8
8340.2053	11986.8181	0.98	I	7020	4	19007	4
8339.5506	11987.7592	1.23	I	32932	9	20945	10
8339.3315	11988.0741	1.16	I	26550	6	14562	5
8337.4399	11990.7077	3.71	II	17392	9/2	5401	7/2
8335.7005	11993.2961	0.91	I	26167	5	14174	6
8334.8043	11994.5856	1.03	I	21426	7	33421	6
8333.5634	11996.3717	3.97	I	24906	6	12910	6
8333.3099	11996.7366	1.12	I	29099	5	17102	6
8329.7525	12001.8601	21.4	I	19647	7	7645	8
8327.6847	12004.8401	7.26	I	18253	6	6249	6
8323.0364	12011.5447	1.47	I	19115	3	7103	3
8320.0502	12015.8558	6.72	I	19119	2	7103	3
8319.2401	12017.0258	2.61	I	27475	7	15458	8
8318.3520	12018.3089	104.	I	16294	5	4275	6
8316.4069	12021.1197	3.90	I	22368	7	10347	8
8314.9304	12023.2543	1.21	I	25655	4	13632	5
8311.4004	12028.3608	1.36	I	24938	7	12910	6
8311.3572	12028.4233	4.93	I	22283	4	10254	5
8310.8747	12029.1217	1.52	I	29958	7	17928	7
8310.6962	12029.3799	12.9	I	23486	5	11457	6
8308.3928	12032.7150	1.27	I	21407	3	33444	4
8305.3678	12037.0976	1.13	I	24400	3	12362	4
8304.5990	12038.2118	1.32	I	23841	4	11788	3
8294.3758	12053.0495	1.39	I				
8293.8984	12053.7433	1.01	I				
8289.5099	12060.1246	0.96	I	25462	6	13402	6
8289.1114	12060.7043	1.09	I	23464	3	11403	4
8282.6677	12070.0871	1.73	I	23057	7	10987	6
8280.9889	12072.5341	2.84	I	31006	10	18933	11
8277.8567	12077.1021	1.63	I	23534	5	11457	6
8276.7452	12078.7240	1.51	I	26269	2	14191	2
8275.9744	12079.8490	1.50	I	22368	7	10288	6
8274.4104	12082.1323	0.92	I?	23715	6	11633	5
8272.9208	12084.3076	1.58	I	25445	7	13361	6
8270.6428	12087.6361	4.09	I	26631	5	14543	6
8270.0656	12088.4798	12.8	I	19192	4	7103	3
8268.0115	12091.4830	2.38	I	25626	9	13535	9
8262.0570	12100.1973	180.	I	20218	6	8118	7
8261.1213	12101.5679	2.72	I	23734	4	11633	5
8259.4622	12103.9987	6.79	I	22789	8	10585	8
8257.6358	12106.6759	0.93	I	26608	7	14501	8
8251.4518	12115.7491	3.19	I	25462	6	13346	7
8251.2402	12116.0598	1.32	I	19307	2	7191	2

LAMBDA(Å)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
8247.3869	12121.7205	1.14	I	27475	7	15353	7
8246.6774	12122.7634	3.42	I	22377	5	10254	5
8245.2577	12124.8508	2.80	I	20258	3	8133	4
8243.1201	12127.9949	1.59	I	7020	4	19148	5
8240.5357	12131.7985	21.8	I	17893	4	5762	5
8239.6221	12133.1437	2.66	I	22421	5	10288	6
8238.7275	12134.4611	1.88	I	22691	3	10557	4
8237.1167	12136.8340	1.62	I	21407	3	33544	4
8233.3402	12142.4010	2.17	I	27600	7	15458	8
8232.6648	12143.3971	2.32	I	22700	4	10557	4
8232.3896	12143.8031	3.60	I	26645	7	14501	8
8231.9505	12144.4509	2.75	I	28184	9	16040	10
8230.8379	12145.0925	33.1	I	17908	5	5762	5
8223.1204	12157.4917	148.	I	18406	5	6249	6
8220.6555	12161.1370	1.50	I	26352	5	14191	2
8217.0169	12165.5221	1.29	I	25294	8	13127	9
8216.8548	12166.7620	1.73	I	22421	5	10254	5
8215.8607	12168.2342	1.07	I	22377	5	10208	4
8215.1593	12169.2732	1.78	I	20306	4	8133	4
8212.2606	12173.5684	2.02	I	22383	4	10208	4
8211.3131	12174.5732	3.29	I				
8210.1691	12176.6696	6.31	I				
8209.0999	12178.2557	1.05	UB				
8207.5274	12180.5988	1.10	I	20228	3	16047	4
8200.9894	12190.2995	1.94	I	26066	5	13876	5
8200.0199	12191.7407	1.19	I	30702	8	18511	9
8199.7129	12192.1972	1.48	I	23825	4	11633	5
8196.8688	12195.4275	2.07	I	23486	5	11290	5
8192.8619	12202.3924	10.1	I	22283	4	10081	5
8188.2395	12209.2809	2.14	I	18654	11/2	6445	9/2
8188.1457	12209.4208	2.98	I	23197	7	10987	6
8186.3088	12212.1504	1.16	I	22752	2	10540	3
8183.6803	12216.0827	2.80	I	26759	5	14543	6
8175.2028	12227.2548	1.21	I	26103	6	13876	5
8175.8634	12227.7623	15.1	I	28268	9	16040	10
8174.6581	12229.5653	4.38	I	22786	5	10557	4
8174.3242	12230.9648	151.	I	16505	6	4275	4
8173.5466	12231.2284	1.22	I	23051	6	10819	6
8172.2728	12233.1349	1.15	I	24022	4	11788	3
8167.7773	12239.8679	4.44	I	19885	3	7645	3
8165.9344	12242.6302	2.49	I	22311	7	10069	8
8164.9215	12244.1489	3.68	I	23534	6	11290	7
8161.5471	12249.2113	1.31	I?	26125	5	13875	5
8161.1924	12249.7435	9.89	I	23926	4	11677	5
8160.9584	12250.0948	1.88	I	20114	8	7864	7
8158.4613	12253.8442	5.57	I	25789	5	13535	9

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
8153.7375	12250.9433	15.1	1	25389	8	13127	9
8152.8487	12252.2800	1.99	1	25672	7	13402	6
8147.7650	12259.9294	1.06	1	32615	2	20345	3
8147.5094	12270.3157	0.94	1	25966	5	13632	3
8145.0079	12274.0842	1.01	1	22964	9	10685	5
8141.9031	12278.7648	1.19	1	22633	7	10347	8
8137.2340	12285.8102	14.7	1	22562	6	10288	8
8131.7900	12294.0351	8.87	1	27650	6	15353	6
8129.9279	12296.0511	1.36	1	20420	6	8118	7
8126.6017	12301.8840	12.9	1	22383	6	10081	7
8126.2404	12302.4310	11.4	1	18299	4	5991	5
8122.4411	12308.1855	7.37	1	23873	4	11558	4
8118.2351	12314.5623	3.16	1	25662	3	13346	4
8117.2833	12315.0063	1.82	1	19647	6	7326	7
8116.1944	12317.6585	1.25	1	25476	2	13149	2
8113.7380	12321.3877	4.31	1	22582	6	10254	5
8110.0877	12326.9335	1.29	1	26207	4	13876	5
8109.6126	12327.6556	4.73	1	22891	3	10557	4
8107.4551	12330.9352	0.86	1	23972	4	11633	5
8105.6190	12333.7294	1.16	1	25745	5	13402	5
8105.0013	12334.6693	1.83	1	22633	4	13632	5
8101.8838	12339.4155	6.35	1	23165	7	10288	5
8099.7206	12342.7110	1.03	1	20464	3	10919	3
8099.0854	12343.6790	1.93	1	26225	6	13876	5
8098.5210	12344.5393	4.65	1	23186	4	10919	3
8097.7517	12345.7120	0.96	1	23067	7	10685	8
8097.6337	12345.8919	26.1	1	26550	6	14174	6
8095.4875	12349.1649	1.21	1	26920	5	14543	6
8092.7186	12353.3901	0.93	1	18827	11/2	6445	9/2
8083.8104	12357.0033	3.43	1	7020	4	19403	5
8080.6205	12371.8852	7.25	1	31321	10	18935	11
8079.5505	12373.5237	1.19	1	24331	2	11947	3
8077.9784	12376.0849	0.85	1	18383	4	5991	4
8077.3167	12376.9456	2.12	1	23712	2	10819	3
8074.0370	12381.9731	1.39	1	16195	6	3800	7
8073.2302	12383.2105	1.22	1	22464	6	18069	7
8070.3545	12387.6230	5.87	1				
8070.2249	12387.8220	1.35	1				
8067.5512	12391.9274	0.82	1				
8067.4111	12392.1426	7.09	1				
8065.8572	12394.5299	17.7	1				
8065.4771	12395.1140	19.2	1

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E(ODD)	J(O)
8055.6305	12410.2648	18.8	I	20528	8	8118	7
8052.4235	12415.2074	1.34	I	18406	5	5991	4
8049.1406	12420.2709	1.62	I	26964	5	14543	6
8047.7137	12422.4732	0.90	I	14839	5	27262	4
8046.7772	12423.9189	7.84	I	18185	4	5762	5
8045.6551	12425.6517	3.26	I	22634	4	10208	4
8039.8408	12434.6377	1.13	I	26066	5	13632	5
8039.0018	12435.9354	1.95	I	20569	4	8133	4
8037.9412	12437.5763	1.45	I	27464	3	15026	4
8036.2652	12440.1702	1.14	I	26983	5	14543	6
8034.7991	12442.4402	18.3	I	22789	8	10347	8
8032.8626	12445.4396	1.15	I	22700	4	10254	5
8031.6311	12447.3480	6.95	I	20311	5	7864	5
8030.8256	12448.5964	5.50	I	19552	4	7103	3
8025.2681	12457.2171	1.21	I	19783	6	7326	7
8020.5085	12464.6094	1.43	I	24433	6	11968	5
8019.4036	12466.3267	15.2	I	19471	5	7005	6
8015.3481	12472.6342	3.02	I	26349	4	13876	5
8013.4833	12475.5367	7.17	I	23932	5	11457	6
8013.4224	12475.6315	2.64	I	23295	2	10819	3
8012.9678	12476.3393	14.3	I	16929	5	4453	4
8012.7099	12476.7409	1.96	I	19668	3	7191	2
8011.8944	12478.0109	3.15	I	27323	9	14845	10
8003.0563	12491.7908	12.4	I	18253	6	5762	5
8001.5605	12494.1260	3.28	I	23051	4	10957	4
7998.6052	12498.7422	18.8	I	25626	9	13127	9
7998.3776	12499.0979	3.52	UB	19826	6	7326	7
7997.4463	12500.5533	2.22	I	22584	4	10081	5
7995.5233	12503.5599	9.05	I	24185	7	11677	7
7992.1979	12508.7623	1.11	I	18759	6	6249	6
7991.3123	12510.1485	23.6	I	23197	7	10685	8
7990.6284	12511.2192	2.74	I	22582	6	10069	7
7939.1877	12513.4755	9.16	I				
7987.5481	12516.0441	5.87	I				
7985.1059	12519.8704	0.90	I	21407	3	8878	3
7979.0875	12529.3154	3.77	I	29958	7	17428	8
7978.7888	12529.7844	1.28	I	24892	3	12362	4
7978.5009	12530.2365	1.48	I	22786	5	10254	4
7977.6293	12531.6055	1.09	I	7020	4	19553	5
7977.1813	12532.3092	1.23	I	18200	9/2	5667	7/2
7976.8934	12532.7616	1.91	I	30416	8	17882	9
7976.3416	12533.6286	1.00	I	31468	11	18933	11
7975.4945	12534.9599	11.0	I	7020	4	19555	4
7975.4421	12535.0422	2.81	I	23843	9	11308	9
7975.0976	12535.5836	28.4	I	26103	6	13967	7
7975.0203	12535.7051	3.60	I	18299	4	5762	5
7973.9290	12537.4208	8.47	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7970.4590	12542.8806	127.	I	20661	6	8118	7
7966.8209	12548.6068	0.79	I	32310	7	19761	8
7964.5695	12552.1540	1.85	I	25462	6	12910	6
7963.9629	12553.1100	40.8	I	22634	4	10081	5
7963.1454	12554.3987	1.30	I	28798	7	16244	8
7962.4305	12555.5259	0.80	I	23375	4	10819	3
7962.1812	12555.9190	0.82	I	23543	7	10387	6
7960.3507	12558.8063	0.83	I	23378	2	10819	3
7959.9773	12559.3954	16.3	I	19885	7	7326	7
7957.9765	12562.5531	1.04	I	24195	4	11633	5
7957.0730	12563.9795	3.82	I	22633	7	10059	7
7956.7431	12564.5004	4.00	I	19668	3	7103	3
7948.1322	12578.1125	0.85	I?	22786	5	10208	4
7946.2553	12581.0835	0.77	I	26855	3	14274	4
7944.0247	12584.6161	0.99	I	27086	8	14501	8
7943.3120	12585.7453	2.98	I	20719	4	8133	4
7938.3908	12593.5473	0.85	I	20712	8	8118	7
7934.3822	12599.9099	1.44	I	22854	5	10254	5
7931.7235	12604.1333	1.22	I	24966	3	12362	4
7928.9082	12608.6086	2.23	I	23165	3	10557	4
7923.9599	12616.4824	1.01	I	18607	4	5991	4
7922.1264	12619.4022	9.53	I	22700	4	10081	5
7919.4085	12623.7331	1.48	I	16900	7	4275	6
7918.8150	12624.6792	38.2	I	24082	5	11457	6
7918.5751	12625.0617	0.87	I	19828	2	7191	6
7911.2177	12636.8030	1.65	I	20218	6	32857	2
7910.0796	12638.6210	0.95	I	24583	2	11943	3
7909.6715	12639.2731	1.48	I	19647	7	7005	6
7907.9822	12641.9732	10.8	I	12643	6	0	6
7907.1034	12643.3782	6.89	I	24322	6	11677	7
7905.5283	12645.8972	3.78	I	22854	5	10208	4
7905.2007	12646.4212	0.75	I	20766	7	8118	7
7904.2933	12647.8731	22.6	I	25533	3	12884	4
7904.0553	12648.2539	0.76	I	24207	3	11558	4
7903.9908	12648.3572	0.77	I	22752	2	10103	1
7903.5996	12648.9832	1.03	I	16929	5	4275	6
7902.8759	12650.1415	1.25	I	26192	8	13535	9
7900.4339	12654.0516	29.9	I	25789	8	13127	9
7898.4457	12657.2369	2.01	I	20525	5	7864	5
7896.0320	12661.1060	9.01	I	24220	5	11538	4
7895.9832	12661.1842	1.49	I	20218	6	32885	5
7895.5049	12661.9513	1.17	I	23212	2	10540	3
7892.5014	12666.7698	1.07	I	20805	3	8133	4
7892.1104	12667.3973	1.03	I	22754	6	10081	5
7889.3617	12671.8106	0.78	I				
7888.9307	12672.5030	0.78	I				
7888.6030	12673.0293	1.40	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(OD)
7881.9441	12683.7359	323.	I	18932	5	6249	6
7875.3929	12694.2869	30.0	I	24002	8	11308	9
7870.9918	12701.3848	7.94	I	17154	3	4453	4
7868.9655	12704.6539	1.10	I	31215	8	18511	9
7868.7878	12704.9425	44.6	I	16505	6	3800	7
7868.7396	12705.0203	12.0	I	20569	4	7864	5
7867.5655	12706.9163	3.79	I	26274	7	13567	7
7865.7692	12709.8197	1.20	I	30138	9	17428	8
7862.2627	12715.4866	1.08	I	23272	3	10557	4
7857.3091	12723.5030	3.58	I	27267	5	14543	6
7856.6547	12724.5627	1.78	I	19828	2	7103	3
7856.4145	12724.9516	0.75	I	30153	8	17428	8
7854.7156	12727.7040	1.58	I	23715	6	10987	6
7849.6382	12735.9367	1.17	I	24026	6	11290	5
7848.9201	12737.1018	9.68	I				
7845.7416	12742.2619	2.27	I	26103	6	13361	6
7845.1949	12743.1500	1.05	I	20114	5	32857	5
7844.7200	12743.9214	11.7	I	28784	9	16040	10
7837.7158	12755.3099	0.99	II	21831	9/2	9075	7/2
7835.7385	12758.5286	14.1	I	18749	3	5991	4
7835.1074	12759.5564	0.98	I	20661	6	33421	6
7834.4682	12760.5973	3.35	I	19864	3	7103	3
7832.7875	12763.3355	2.90	I	24220	5	11457	6
7832.0358	12764.5604	9.22	I	27609	10	14845	10
7830.2154	12767.5280	0.78	I				
7829.8352	12768.1479	2.68	I	23325	5	10557	4
7828.3761	12770.5277	0.98	I?	25655	4	12884	4
7827.9032	12771.2991	0.82	I	20114	5	32885	5
7823.9189	12777.8029	9.61	I	19783	6	7005	6
7821.8875	12781.1213	3.47	UB				
7820.9785	12782.6060	1.38	I	27753	4	14970	5
7816.3278	12790.2124	17.0	I	25918	8	13127	9
7815.9569	12790.8193	4.16	I				
7815.4387	12791.6675	0.75	I	23779	7	10987	6
7814.4587	12793.2717	2.85	I	22862	6	10069	7
7813.8365	12794.2903	0.86	I	24583	2	11788	3
7813.5488	12794.7614	5.49	I	17070	6	4275	6
7812.6923	12796.1641	2.06	I	23051	4	10254	5
7808.2063	12803.5158	2.78	I	18794	4	5991	5
7806.7647	12805.8801	1.21	I	27349	5	14543	6
7805.2326	12808.3936	1.98	I	27219	3	14411	4
7803.5926	12811.0854	0.94	I	32108	8	19297	9
7802.4155	12813.0182	0.81	II	23553	11/2	10740	11/2
7802.2697	12813.2577	0.81	I?	19192	4	32005	5
7800.8313	12815.6203	0.90	I	25178	5	12362	4
7799.1253	12818.4235	1.00	I	23375	4	10557	4
7798.2135	12819.9224	0.92	I	30702	8	17882	9

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7797.4747	12821.1371	2.34	I	19826	6	7005	6
7797.2341	12821.5326	0.80	I	27323	9	14501	8
7796.5129	12822.7186	0.83	I	27324	7	14501	8
7791.0570	12831.6981	0.74					
7789.2102	12834.7405	1.49	I	25745	5	12910	6
7784.1587	12843.0695	425.	I	13463	5	620	5
7782.5542	12845.7172	5.65	I	18607	4	5762	5
7782.2925	12846.1491	3.02	I	25672	7	12826	7
7780.6086	12848.9294	0.99	I	17434	11/2	4585	13/2
7780.3379	12849.3785	2.43	I	22918	7	10069	7
7780.1653	12849.6614	1.01	I	23197	7	10347	8
7779.3164	12851.0636	1.08	I	27394	5	14543	6
7777.0359	12854.8322	5.86	I	20719	4	7864	5
7775.2909	12857.7170	1.88	I	23543	7	10685	8
7765.1541	12874.5017	1.04	I	21753	4	8878	3
7764.3995	12875.7528	0.85	I	23432	5	10557	4
7763.9621	12876.4783	1.72	I	24333	7	11457	6
7763.5335	12877.1891	1.28					
7762.6479	12878.6581	1.31	I	26225	6	13346	7
7761.8507	12879.9810	30.4	I	19885	7	7005	6
7760.5734	12882.1008	1.71	I	24172	6	11290	5
7759.8806	12883.2509	18.9	I	20528	8	7645	8
7758.0040	12886.3672	5.38	I	7020	4	19907	4
7756.5944	12888.7092	2.69	I	23708	2	10819	3
7755.0691	12891.2442	1.42	I	21767	7	34659	7
7754.1869	12892.7107	23.1	I	20218	6	7326	7
7752.4716	12895.5634	1.28	I	28936	9	16040	10
7750.0763	12899.5489	1.30	I	27443	5	14543	6
7748.1903	12902.6887	14.4	I	28943	10	16040	10
7747.3064	12904.1609	2.71	I	24581	8	11677	7
7747.1136	12904.4820	5.02	I	31837	10	18933	11
7740.7656	12915.0646	1.00	UB				
7738.4572	12918.9171	1.72	I	26454	8	13535	9
7737.0918	12921.1970	2.08					
7736.2673	12922.5741	0.78	I	28635	8	15712	7
7734.0765	12926.2346	1.82	I	26287	6	13361	6
7732.0297	12929.6564	2.76	I	23486	5	10557	4
7731.9664	12929.7622	1.68					
7730.6635	12931.9413	0.88	I	23186	4	10254	5
7726.3090	12939.2296	1.88	I	7020	4	19959	5
7725.4203	12940.7182	0.75	I	26287	4	13346	7
7724.9828	12941.4511	5.02	I	18932	6	5991	4
7721.9400	12946.5506	0.78	I	26349	5	13402	6
7718.7595	12951.8181	2.98	I	21830	3	8878	3
7715.9826	12956.5463	0.88	I	20464	7	33421	6
7715.6192	12957.1566	1.24	I	23165	3	10208	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7711.9357	12563.3454	0.76	I ?	26324	5	13361	6
7711.8102	12963.5564	0.74	I	29339	5	16376	6
7707.8998	12970.1329	5.89	I	23051	4	10081	5
7707.4133	12970.9518	1.25	I	21849	2	8878	3
7704.5981	12975.6912	1.10	I	27818	8	14842	8
7704.5648	12975.7473	1.20	I	27477	8	14501	8
7703.5956	12977.3797	2.66	I	23534	5	10557	4
7697.0019	12980.4968	7.20	I	23057	7	10069	7
7695.6852	12990.7191	2.20	I	24448	5	11457	6
7691.9075	12997.0991	9.83	I	18759	6	5762	5
7691.8532	12997.1908	1.01	I	24400	3	11403	4
7689.8691	13000.5443	2.94	I	23069	6	10069	7
7681.4506	13014.7923	0.95	I	17468	4	4453	4
7675.9378	13017.2543	0.81	I	24650	5	11633	5
7678.5205	13019.7587	0.68	I	21876	1	8856	2
7678.1626	13020.3655	1.28	I	23560	4	10540	3
7675.8918	13024.2174	1.24	I				
7670.8656	13032.7511	1.89	I	18794	4	5762	5
7669.7019	13034.7286	0.93	II	22917	11/2	9882	9/2
7668.7376	13036.3677	0.97	II	18827	11/2	5790	11/2
7664.0433	13044.3525	0.81	I	26391	7	13346	7
7658.7156	13053.4266	1.86	I				
7653.6332	13062.0947	4.64	I	21940	3	8878	3
7652.4962	13064.0354	1.81	I	23272	3	10208	4
7652.2251	13064.4983	3.30	I	26192	8	13127	9
7651.0333	13066.5333	5.22	I	20712	8	7645	8
7648.8943	13070.1874	3.44	I	23325	5	10254	5
7644.3445	13077.9665	5.36	I	24535	5	11457	6
7643.6105	13079.2224	9.02	I	20943	6	7864	5
7643.2665	13079.8110	0.78	I	28621	4	15542	5
7642.4508	13081.2069	3.38	I	14839	5	27920	6
7641.6594	13082.5617	0.90	I	23639	3	10557	4
7641.4082	13082.9919	3.90	I	24760	7	11677	7
7641.0518	13083.6021	0.84	I	26444	5	13361	6
7640.1250	13085.1892	1.11	I	26213	9	13127	9
7639.5425	13086.1869	71.2	I	17361	6	4375	6
7637.3121	13090.0086	0.88	I	13710	4	620	5
7636.3123	13091.7223	1.11	I	24650	5	11558	4
7635.2951	13093.4664	6.71	I	23779	7	10685	8
7635.0768	13093.8409	7.91	I	17369	5	4275	6
7634.7522	13094.3975	28.0	I	20420	6	7326	7
7634.5254	13094.7866	1.09	I	24082	5	10987	6
7634.4449	13094.9245	0.95	I	25457	4	12362	4
7632.9550	13097.4806	0.95	I	21976	4	8878	4
7632.8159	13097.7193	0.67	II	15392	13/2	2294	11/2
7632.0197	13099.0856	0.75	I	16505	6	29604	5
7631.7452	13099.5569	68.0	I	16900	7	3000	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7628.0470	13105.9077	10.8	I	23186	4	10081	5
7626.8927	13107.8912	2.16	I	28566	7	15458	8
7626.7820	13108.0015	1.12	I	24741	5	11633	5
7626.3835	13108.7664	7.39	I	20114	5	7005	6
7621.9620	13116.3708	7.26	I				
7621.6405	13116.9240	5.25	I	26652	8	13535	9
7619.5857	13120.4614	4.06	I	23375	4	10254	5
7619.3548	13120.8589	94.4	I	20766	7	7645	8
7615.8410	13126.9126	1.57	I	27969	9	14042	8
7610.6774	13135.8186	1.44	I	34080	9	20945	10
7610.6320	13135.8971	2.56	I	19127	4	5991	4
7609.3477	13138.1141	1.23	I	28596	7	15458	8
7609.1789	13138.4055	25.1	I	20464	7	7325	7
7606.8105	13142.4962	1.16	I	20148	5	7005	6
7606.1664	13143.6091	4.99	I	24451	8	11308	9
7605.8382	13144.1762	4.00	I	23432	5	10238	6
7604.5167	13146.4605	5.29	I	21265	6	8118	7
7599.2824	13153.7846	6.84	I	29194	9	16040	10
7597.8769	13157.9491	5.81	I	23843	9	10685	8
7596.9889	13159.4871	1.50	I	22038	4	8378	3
7595.0574	13162.8336	12.3	I	23848	7	10585	8
7592.6695	13166.9734	1.50	I	23375	4	10208	4
7590.5289	13170.6866	14.5	I	18932	5	5762	5
7588.5193	13174.1745	1.27	I				
7587.9939	13175.0867	3.06	I	7020	4	20195	4
7582.0776	13185.3671	2.75	I	26313	8	13127	9
7580.9312	13187.3610	0.94	I	20353	11/2	7166	9/2
7579.9701	13189.0330	1.79	I	26550	6	13361	6
7577.8775	13192.6752	0.93	I				
7575.8766	13196.1595	6.85	I	23543	7	10347	8
7575.5662	13196.7002	1.54	I	21329	5	8133	4
7573.3384	13200.5022	0.85	I				
7573.0485	13201.0875	19.2	I	19192	4	5991	4
7572.4528	13202.1260	2.04	I	24022	3	10819	5
7572.3972	13202.2404	3.91	I	20218	6	33421	6
7572.2503	13202.4791	2.30	I	23911	1	10708	2
7572.0786	13202.7784	10.9	I	20528	8	7326	7
7570.7607	13205.0760	12.2	I	13825	4	620	5
7569.8612	13206.6459	0.99	I				
7566.0511	13213.2963	16.6	I	20218	6	7005	6
7565.3480	13214.5244	4.14	I	21078	5	7864	5
7564.9040	13215.2999	1.36	I				
7562.2101	13220.0075	0.96	I	26566	6	13346	7
7560.5961	13222.8298	3.01	I	19471	5	6249	6
7559.7526	13224.3052	3.60	I	23432	5	10208	4
7555.5307	13231.6945	1.66	I	23486	5	10254	5
7554.9390	13232.1709	0.98	I	21426	7	34659	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7550.2243	13240.9940	22.8	I	23926	8	10685	8
7545.4302	13249.4068	1.78					
7541.8328	13255.7267	4.59					
7541.7592	13255.8560	1.18	I	24932	8	11677	7
7537.3309	13263.6440	0.98	I	27538	3	14274	4
7536.6764	13264.7957	1.26	I	28107	8	14842	8
7533.9258	13269.6387	260.	I	17070	6	3800	7
7533.4751	13270.4325	1.04	I	25059	2	11788	3
7533.0645	13271.1559	0.93	I	13463	5	26734	5
7531.6118	13273.7156	1.25	I	24906	6	11633	5
7529.7058	13277.0756	0.76	I	14643	6	27920	6
7529.0541	13278.2248	0.86	II	25906	9/2	12627	7/2
7528.6731	13278.8967	8.11	I	32212	10	18933	11
7525.9998	13283.6134	1.94	I	17559	5	4275	6
7525.8194	13283.9320	3.07	I	24741	5	11457	6
7524.4676	13286.3185	7.46	I	17154	3	3868	3
7523.4097	13288.1867	0.88	I	34233	9	20945	10
7522.8214	13289.2258	0.83	UB				
7521.6234	13291.3425	4.20	I	21409	8	8118	7
7519.8764	13294.4301	2.01	I	23375	4	10081	5
7518.9188	13296.1233	2.71	I	34077	4	20781	4
7517.6812	13298.3122	0.80	I?	24118	3	10819	3
7517.3983	13298.8126	7.56	I	29339	9	16040	10
7514.9326	13303.1761	1.32	I	28761	7	15458	8
7513.3268	13306.0193	2.11	I	20311	5	7005	6
7512.5622	13307.3736	2.45	I	24940	4	11633	5
7512.2923	13307.8517	0.72	I	21426	7	8118	7
7510.7226	13310.6329	3.39	I	7020	4	20331	5
7510.0525	13311.8206	0.94	II	21691	11/2	8379	9/2
7507.3269	13316.6536	3.40	I	24002	8	10685	8
7507.0854	13317.0820	1.88	I	23572	6	10254	5
7505.1221	13320.5656	1.12					
7502.9699	13324.3865	1.72	I	7020	4	20345	3
7502.8761	13324.5530	1.44	I	26892	6	13567	7
7501.9608	13326.1787	4.23	I	26454	8	13127	9
7497.3191	13334.4291	1.70	I	24154	2	10819	3
7496.7767	13335.3939	1.75	I	20661	6	7326	7
7494.4004	13339.6222	5.76	I	28184	9	14845	10
7493.9675	13340.3928	1.54	I	28798	7	15458	8
7493.5464	13341.1425	1.30	I	24974	5	11633	5
7492.9797	13342.1515	0.80	I	28184	9	14842	8
7490.7047	13346.2036	0.73	I	24333	7	10987	6
7489.0549	13349.1437	9.52	I	23430	4	10081	5
7487.5856	13351.7632	1.26	I	23432	5	10081	5
7487.3722	13352.1438	1.82	I	23560	4	10208	4
7485.2715	13355.8909	1.20	I				
7480.5300	13364.3553	2.09	I	26274	7	12910	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
7471.3497	13380.7776	1.45	I	24066	7	10685	8
7470.3961	13382.4857	1.34	I	26208	7	12826	7
7462.2137	13397.1596	1.22					
7462.0294	13397.4905	1.30	I	26758	7	13361	6
7461.7243	13398.0382	1.03					
7460.1370	13400.8889	2.68	I	21265	6	7864	5
7457.9187	13404.8749	2.05	I	22283	4	8878	3
7456.2444	13407.8850	1.01	I	24966	3	11558	4
7454.0391	13411.8516	2.91	II	24152	11/2	10740	11/2
7453.9707	13411.9748	5.01	I	26758	7	13346	7
7452.2992	13414.9829	3.62	I	20420	6	7005	6
7451.9888	13415.5418	2.24	I	23972	4	10557	4
7447.8847	13422.9342	7.68	I	28268	9	14845	10
7446.1965	13425.9775	0.76					
7444.4778	13429.0772	1.54	I	27972	5	14543	6
7443.7872	13430.3229	19.2	I	19192	4	5762	5
7443.3508	13431.1104	0.82	I	23639	3	10208	4
7443.1706	13431.4355	1.31	I	25793	3	12362	4
7442.9084	13431.9086	7.55	I	23779	7	10347	8
7441.4672	13434.5101	0.84	I	31690	8	18256	7
7438.2135	13440.3866	15.4	I	20766	7	7326	7
7436.6668	13443.1821	1.47	I	24263	4	10819	7
7435.6138	13445.0859	1.54	I	28798	7	15353	3
7433.7004	13448.5465	0.76	I	26274	7	12826	7
7432.3560	13450.9792	3.15	I	24741	5	11290	5
7430.2721	13454.7516	1.85	I	17908	5	4453	4
7426.6505	13461.3127	1.63	I	26287	6	12826	7
7425.5033	13463.3924	144.	I	13463	5	0	6
7424.4488	13465.3046	1.87	I	20569	5	7103	3
7424.0315	13466.0515	1.95	I	21584	4	8110	7
7423.3307	13467.3328	1.74	I		6		
7419.4765	13474.3286	3.39	I	23543	7	10069	7
7416.5742	13479.6015	9.21	I	23560	4	10081	5
7416.5025	13479.7318	2.63	I	23734	4	10254	5
7416.0547	13480.5458	2.20	I	19471	5	5991	4
7412.5185	13486.9766	1.87	I	26313	8	12826	7
7411.2853	13489.2208	1.86	I	24892	3	11403	4
7410.2788	13491.0529	3.80	I	23572	6	10081	5
7405.3609	13500.0122	2.98	I	24185	7	10685	8
7404.6680	13501.2755	1.84	I	23848	7	10347	8
7404.3353	13501.8823	1.83	I	27133	4	13632	5
7403.7740	13502.9058	1.57	I	23572	6	10069	7
7402.6734	13504.9134	0.88	I	22383	4	8878	3
7396.9829	13515.3027	51.1	I	17968	3	4453	4
7394.4898	13519.8593	3.31	I	20525	5	7005	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
7392.1246	13524.1853	10.4	I	26652	8	13127	9
7388.3469	13531.1001	2.17	I	22409	3	8878	3
7387.4617	13532.7215	0.99	I	25476	2	11943	3
7386.5964	13534.3067	1.20	I	19783	6	6249	6
7386.4977	13534.4877	0.85	I	26444	5	12910	6
7385.7160	13535.9200	0.88	I	20727	1	7191	2
7384.8962	13537.4227	0.87	I				
7380.4444	13545.5882	3.69	I	26892	6	13346	7
7379.6499	13547.0467	1.09	II	24288	11/2	10740	11/2
7379.5191	13547.2868	1.29	I	20551	2	7183	3
7377.3683	13551.2362	5.76	I	27086	8	13535	9
7377.1206	13551.6913	1.42	I	28397	10	14845	10
7376.8623	13552.1657	0.98	I				
7372.5962	13560.0076	0.96	I	23849	7	10288	6
7372.5515	13560.0898	3.09	I	32493	10	18933	11
7372.0192	13561.0689	0.85	I	17361	6	3800	7
7371.9457	13561.2042	15.8	I	19552	4	5991	4
7365.6346	13572.8237	1.41	I	24560	7	10987	6
7353.0204	13577.6427	3.88	I	19826	6	6249	6
7351.2082	13579.4357	1.70	I	23926	8	10347	8
7361.6837	13580.1080	2.02	I	27148	6	13567	7
7359.1646	13584.7565	1.51	I	21448	4	7864	5
7357.9628	13586.9754	1.34	I	23841	4	10254	5
7351.3037	13599.2829	0.86	I	25961	3	12362	4
7349.1116	13603.3392	2.72	I	28448	9	14845	10
7347.7457	13605.8681	2.30	I	28448	9	14842	9
7344.8030	13611.3192	2.49	I	27885	3	14274	4
7344.5925	13611.7094	1.77	I	25555	2	11943	3
7342.4056	13615.7635	7.42	I	20621	5	7005	6
7341.8076	13616.8725	4.96	I	23825	4	10208	4
7341.5728	13617.3080	11.7	I	20943	6	7326	7
7340.0857	13620.0668	0.80	I	27252	4	13632	5
7337.5676	13624.7403	0.96	I	24932	8	11308	9
7335.9276	13627.7869	1.37	I	26454	8	12826	7
7333.7785	13631.7803	2.31	I	26759	9	13127	9
7333.4592	13632.3739	1.12	I	26979	8	13346	7
7333.4108	13632.4638	5.45	I	17908	5	4275	6
7332.0233	13635.0435	6.29	I				
7331.2490	13636.4837	3.41	I	19885	7	6249	6
7328.3966	13641.7913	1.09	I	25200	4	11558	4
7326.0761	13646.1122	1.49	I	23715	6	10069	7
7325.1180	13647.8971	2.65	I	21766	6	8118	7
7324.3451	13649.3373	3.31	I	21767	7	8118	7
7323.9820	13650.0140	1.71	I	24207	3	10557	4
7322.0039	13653.7016	1.96	I	23734	4	10081	5
7320.7823	13655.9801	0.93	I	20661	6	7005	6

LANEIDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7316.0729	13664.7704	1.95	1	23873	3	10208	4
7315.5252	13665.7934	0.95	1	29706	9	16040	10
7313.3539	13669.8509	1.18	1	27072	6	13402	6
7312.2716	13671.8740	1.29	1	21536	5	7864	5
7309.4736	13677.1075	1.59	1	19668	5	5991	5
7309.0759	13677.8516	1.09	1	23932	5	10254	4
7307.4249	13680.9419	1.53	1	21545	4	7864	5
7304.6654	13686.1101	3.78	1	25319	5	11633	5
7299.8355	13695.1655	1.54	1	26319	5	12627	4
7299.1613	13696.4305	0.71	1	25098	5	11403	4
7298.8187	13697.0733	0.61	1	26058	3	12562	4
7294.0425	13706.0422	1.43	1	21830	3	8133	4
7292.6993	13706.0422	3.21	1	22584	4	8878	3
7292.0532	13708.5667	0.93	1				
7291.8953	13709.7813	0.74	1	19471	5	5762	5
7290.9640	13710.0781	1.77	1	23779	7	10069	7
7286.9076	13711.8294	0.87	1	25388	8	11677	7
7286.1411	13719.4623	2.45	1	25009	6	11290	6
7284.4395	13720.9055	1.07	1	26631	5	12910	5
7279.9477	13724.1106	0.63	1	26550	6	12026	7
7277.2946	13732.5785	1.79	1	18185	4	4453	4
7275.6968	13737.5850	1.08	1	24026	6	10288	7
7273.7232	13740.6018	0.72	1	26566	6	12826	5
7273.0945	13744.3302	11.7	1	23825	4	10381	5
7272.9519	13745.5181	0.65	1	27148	6	13402	6
7267.7578	13745.7877	1.69	1	22624	3	8878	3
7267.4374	13755.5925	0.63	1	22634	4	11973	3
7264.9405	13756.2746	0.66	1	25729	3	11973	3
7263.7336	13760.9456	2.54	1	23841	4	10081	5
7263.2303	13763.1754	0.83	1	26125	4	12562	4
7262.2366	13764.0910	2.44	1	23972	4	10208	4
7261.8305	13765.9745	2.88	1	24451	8	10685	8
7259.5270	13766.7251	1.25	1	25555	2	11788	3
7259.4390	13771.2073	0.75	1	24026	2	10254	5
7254.4540	13780.8375	7.09	1	24591	2	10819	3
7254.0038	13781.6926	42.3	1	21426	7	7645	8
7253.7544	13782.1655	0.98	1	25458	7	11677	7
7252.8148	13783.9520	0.85	1	26608	7	12026	7
7251.9363	13785.6218	1.59	1	25462	6	11677	7
7250.6053	13788.1525	2.07	1	27323	9	13535	9
7249.4028	13790.9114	0.89	1				
7248.2480	13792.6365	2.01	1	19552	4	5762	5
7247.6269	13793.8186	0.78	1	28635	8	14842	8
		0.98	1	24613	4	10319	3

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7243.7799	13801.1441	1.16	I	27148	6	13346	7
7230.8649	13825.7942	1.44	I	26552	8	12826	7
7227.8699	13831.5231	8.88	I	24517	9	10685	8
7226.3115	13834.5059	1.34	I	22691	3	8856	2
7222.0146	13842.7370	1.04	I	21976	4	8133	4
7220.2883	13846.0456	1.50	I	20851	5	7005	6
7219.8856	13846.8189	1.05	I	21980	5	8133	4
7219.0721	13848.3792	1.53	I	26758	7	12910	6
7218.0219	13850.3940	1.21	II	19517	7/2	5667	7/2
7217.5200	13851.3572	2.52	I	26979	8	13127	9
7214.2659	13857.6050	2.32	I	23926	8	10069	7
7211.9988	13861.9612	9.61	I	25319	5	11457	6
7210.5523	13864.7420	1.24	I	27267	5	13402	6
7210.2777	13865.2701	30.3	I	20114	5	6249	6
7207.4739	13870.6638	3.65	I	21062	3	7191	2
7205.4186	13874.6204	11.0	I	24560	7	10685	8
7205.1891	13875.0622	0.90	I	26759	5	12884	4
7201.9634	13881.2768	1.51	I	29921	10	16040	10
7198.0410	13888.8409	3.00	I	21753	4	7064	5
7196.9333	13890.9786	0.93	I	27252	5	13361	6
7196.7536	13891.3255	1.46	I	23972	4	10081	5
7196.6380	13891.5485	18.3	I	24449	4	10557	4
7196.2221	13892.3514	3.03	I	24581	8	10685	8
7194.6367	13893.4127	11.6	I	7020	4	20516	5
7194.5903	13895.5022	2.29	I	24884	7	10987	6
7194.0204	13896.5876	1.53	I	18932	5	32831	5
7193.1089	13898.3640	0.93	I	25457	4	11558	4
7192.9452	13898.6803	1.54	I	20148	5	6249	6
7192.7797	13899.0001	4.38	I	21766	6	7864	5
7191.0590	13902.3259	2.96	I	30149	7	16244	8
7189.5993	13905.1485	0.93	I	21011	2	7103	3
7188.5753	13907.1293	0.99	I	24118	3	10208	4
7187.2091	13909.7728	1.62	I	27261	6	13346	7
7184.6935	13914.6431	1.83	II	16211	9/2	2294	11/2
7183.4725	13917.0081	1.64	I	24172	6	10254	5
7183.2871	13917.3673	1.45	I	18932	5	32857	5
7179.5119	13924.6854	3.35	I	32859	11	18933	11
7179.2676	13925.1594	1.72	I	18383	4	4453	4
7178.8854	13925.9007	3.88	I	27499	6	13567	7
7176.8636	13929.8236	1.33	I	24002	8	10069	7
7175.9537	13931.5900	1.95	I	24757	4	10819	3
7175.0916	13933.2639	1.08	I	22056	6	8118	7
7172.9958	13937.3348	1.71	I	20943	6	7005	6
7172.8243	13937.6681	1.28	I	21265	6	7326	7
7172.7083	13937.8935	2.64	I	28784	9	14845	10
7172.1528	13938.9731	1.63	I				
7172.0909	13939.0933	7.41	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7171.2551	13940.7179	1.30	I	24195	4	10254	5
7170.7901	13941.6220	2.49	I	28784	9	14842	8
7169.2786	13944.5611	0.80	I	25577	4	11633	5
7168.2415	13946.5787	4.44	I	7020	4	20967	4
7166.8549	13949.2769	1.03	I	25352	3	11403	4
7165.0298	13952.8302	2.85	I	18932	5	32985	5
7164.8905	13953.1014	30.9	I	18406	5	4453	4
7162.8763	13957.0250	1.66	I	24026	6	10069	7
7162.1591	13958.4226	1.69	I	21062	3	7103	3
7162.1209	13958.4971	1.75	I	27086	8	13127	9
7161.5176	13959.6729	1.02	I				
7156.7033	13969.0635	1.50	I	24677	3	10708	2
7155.8385	13970.7518	2.66	I	31853	8	17882	9
7152.3224	13977.6197	0.84	I	27324	7	13345	7
7152.0448	13978.1622	0.78	I	18253	6	4275	6
7147.8871	13986.2929	27.7	I	25294	8	11308	9
7147.8206	13986.4230	0.85	I				
7142.2216	13997.3873	7.14	I	24066	7	10069	7
7141.6213	13998.5638	1.01	I	24207	3	10208	4
7140.2046	14001.3413	1.21	I	24082	5	10081	5
7138.2124	14005.2489	2.33	I	27366	6	13361	6
7134.6917	14012.1599	1.91	I	24220	5	10208	4
7130.8380	14019.7324	3.03	I	27366	6	13345	7
7130.6659	14020.0708	4.48	I	18295	7	4275	6
7130.0627	14021.2569	36.5	I	19283	6	5762	5
7129.6073	14022.1525	0.80	I	25655	4	11633	5
7129.3750	14022.6093	2.64	II	20571	7/2	34594	7/2
7128.8999	14023.5439	184.	I	14643	6	620	5
7127.9609	14025.3913	1.58	I	17893	4	3868	3
7126.2733	14028.7126	4.13	I	30059	9	16040	10
7126.1243	14029.0059	0.83	II	25084	11/2	12055	9/2
7125.6680	14029.9043	2.15					
7125.4902	14030.2543	0.89	I	22908	2	8878	3
7123.2262	14034.7137	1.06	I	22891	3	8856	2
7121.6471	14037.8257	3.83	I	27605	6	13567	7
7119.9497	14041.1721	1.08	I	17468	4	31509	5
7115.0065	14050.9272	2.47	I	24154	2	10103	1
7113.1331	14054.6279	1.68	I	24263	4	10208	4
7112.4643	14055.9496	1.77	I	22189	3	8123	4
7111.4542	14057.9459	0.96	I	20046	1	5988	0
7109.1395	14062.5232	11.7	I	20311	5	6249	6
7108.0954	14064.5887	1.61	I	19826	6	5762	5
7107.2902	14066.1822	2.85	I	26892	6	12826	7
7103.9735	14072.7493	1.08	I	24892	3	10819	3
7103.6011	14073.4870	3.61	I	24613	4	10540	3
7102.9880	14074.7018	4.43	I	27609	10	13535	9
7101.6114	14077.4302	72.3	I	18530	3	4453	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
7099.3698	14081.6770	2.66	I	21185	4	7103	3
7098.9522	14082.7034	1.21	I	27650	6	13567	7
7098.3712	14083.8560	0.93	I	21409	8	7326	7
7091.3196	14097.8608	3.35	I	28943	10	14345	10
7090.1248	14100.2367	8.99	I	17968	3	3858	5
7090.0601	14100.3652	3.01	I	21426	7	7326	7
7088.6404	14103.1892	3.89	I	24172	6	10069	7
7084.3027	14111.8245	1.42	I	21976	4	7864	5
7084.2182	14111.9929	1.13	I	25789	4	11677	7
7082.9293	14114.5608	1.12	I	25791	6	11677	7
7082.8562	14114.6865	0.35	I	24195	4	10081	5
7082.0935	14116.2266	1.85	II	19517	7/2	5401	7/2
7079.0363	14122.3228	0.80	I	21767	7	7645	8
7078.7043	14122.5951	3.63	I	20114	5	5991	4
7075.8873	14128.6076	1.11	I	27475	7	13346	4
7075.7116	14128.9585	5.46	I	21232	2	7103	7
7075.3983	14129.5842	1.84	I	25533	3	11403	3
7075.0339	14130.3118	1.17	I	20528	8	34559	4
7074.8802	14130.6189	2.26	I				7
7074.7826	14130.8139	128.	I	18406	5	4275	6
7073.5911	14133.1940	1.17	II	4663	7/2	18797	7/2
7068.6475	14143.0782	1.16					
7067.8661	14144.6419	0.94	I	24433	6	10288	6
7067.4539	14145.4669	1.82	I	26971	7	12926	7
7066.7141	14146.9477	1.09					
7063.8789	14152.6258	2.10	I	27499	6	13346	7
7063.0052	14154.3764	1.00	I	18607	4	4453	4
7054.6382	14171.1638	1.27	I	25729	3	11556	4
7054.4773	14171.4870	1.87	I	20420	6	6249	4
7053.9158	14172.6151	5.52	I	23051	4	8878	6
7052.1890	14176.0854	2.00	I				3
7052.1260	14176.2120	0.83		32059	8	17882	9
7050.2361	14180.0122	1.22	I				
7049.2053	14182.0857	4.59	I	24263	4	10081	5
7047.7274	14185.0595	1.13	I	25818	4	11633	5
7046.8550	14186.8158	1.70	I	25975	4	11788	5
7044.1958	14192.1711	1.73	I	24400	3	10208	3
7043.7676	14193.0339	2.20	I	24448	5	10254	4
7043.0946	14194.3902	1.13	I	24449	4	10254	5
7041.1129	14198.3852	2.69	I	24884	7	10685	5
7033.8414	14213.0631	15.6	I	24560	7	10347	8
7033.2556	14214.2469	6.28					
7032.8970	14215.1537	2.08	I	25672	7	11457	6
7031.8922	14217.0029	1.76	I	24757	5	10540	3
7030.7002	14219.4132	24.0	I	14839		620	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
7028.5548	14223.7535	0.96	I	17968	3	32192	4
7027.6770	14225.5302	1.36	I	32108	8	17882	9
7027.4206	14226.0491	1.87	I	24934	1	10708	2
7026.9900	14226.9210	3.81					
7026.2959	14228.3264	3.52	I	24331	2	10103	1
7025.7689	14229.3936	1.63	I	25788	4	11558	4
7025.0254	14230.8995	1.08	I	27633	5	13402	6
7023.5671	14233.8542	3.34	I	24581	8	10347	8
7022.9095	14235.1871	1.41	I	25793	3	11558	4
7020.7720	14239.5211	0.93					
7020.6827	14239.7023	1.20	II	24684	9/2	10444	7/2
7019.9939	14241.0994	4.80	I	25918	8	11677	7
7019.5963	14241.9059	0.87	I	24322	6	10081	5
7018.3324	14244.4707	7.88	I	22377	5	8133	4
7017.2531	14246.6616	6.42	I	24535	5	10288	6
7017.0338	14247.1068	3.86	I	24932	8	10685	8
7015.7322	14249.7501	1.18					
7015.6908	14249.8341	18.2	I	22368	7	8118	7
7014.6966	14251.8538	1.04	I	25655	4	11403	4
7014.0945	14253.0772	3.83	I	24938	7	10685	8
7011.2491	14258.8615	1.18	I	27605	6	13346	7
7008.4219	14264.6136	1.86	I	24333	7	10069	7
7007.3341	14266.8278	1.67	I	20258	3	5991	4
7006.1471	14269.2451	0.95	I	17968	3	32237	4
7004.8965	14271.7926	3.20	I	24560	7	10288	6
7002.6943	14276.2807	1.18	I	25096	3	10819	3
7002.6548	14276.3612	2.03	I?	22409	3	8133	4
7000.7329	14280.2804	1.01	I	24535	5	10254	5
6999.5989	14282.6144	0.99	I	28784	9	14501	8
6984.7974	14312.8600	1.05	I	20306	4	5991	4
6983.4874	14315.5448	2.52					
6983.0130	14316.5173	1.36	I	25626	9	11308	9
6982.0394	14318.5138	2.03	I	27150	8	12826	7
6979.2581	14324.2198	0.86	I	21329	5	7005	6
6979.1418	14324.4584	3.38	I	24535	5	10206	4
6978.0055	14326.7911	1.01	I	26305	5	11968	5
6973.2967	14336.4653	1.41	I	21448	4	7103	3
6969.1293	14345.0381	1.93	I				
6968.8278	14345.6587	3.50					
6967.2263	14348.9562	2.16	I	29194	9	14845	10
6966.8996	14349.6292	1.20	I	27477	8	13127	9
6966.4145	14350.6284	2.05	I	10051	5	24401	5
6965.8379	14351.8162	0.94	I	28895	7	14543	6
6965.6412	14352.2215	1.81	I	20114	5	5762	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(OD)	J(O)
6958.1001	14367.7761	1.71	I	17968	3	32336	4
6957.8264	14368.3414	1.05	I				
6955.9259	14372.2670	7.31	I	20621	5	6249	6
6955.7395	14372.6523	1.05	I	25662	6	11290	5
6951.9984	14380.3866	0.93	I	26349	4	11968	5
6951.8585	14380.6759	1.50	I	30179	5	15799	5
6951.1418	14382.1587	1.07	I	10051	5	24433	4
6949.9505	14384.6239	1.46	I	25788	4	11403	4
6949.3502	14385.8664	1.04	I				
6949.3096	14385.9504	3.93	I	20148	5	5762	5
6946.3987	14391.9789	11.2	I	18260	3	3868	3
6942.8985	14399.2345	0.99	I ?	28673	3	14274	4
6942.4344	14400.1970	6.74	I	20391	3	5991	4
6939.3338	14406.5313	7.37	I	22052	8	7545	8
6936.4220	14412.6788	0.71	I	24760	7	10347	8
6935.0493	14415.5316	0.92	I	24974	3	8856	2
6934.2139	14417.2685	0.91	I	23272	5	10557	4
6933.2762	14419.2182	4.57	I	22283	4	7864	5
6932.4436	14420.9500	1.22	I	21426	7	7005	5
6927.6090	14431.0140	3.57	I	18299	4	3868	3
6925.9236	14434.5256	6.33	I	27969	9	13535	9
6925.8707	14434.6358	0.66	I				
6925.7470	14434.8937	0.84	I				
6925.5825	14435.2365	0.83	I	27261	6	12826	7
6925.2648	14435.8980	1.41	I	24539	1	10103	1
6923.7328	14439.0930	1.28	I	25997	3	11558	4
6923.1033	14440.4058	0.72	I	21766	6	7326	7
6922.7113	14441.2236	8.13	I	21545	4	7103	3
6922.4104	14441.8512	3.24	I	21767	7	7326	7
6922.3731	14441.9290	0.71	I	24650	5	10208	4
6919.6543	14447.6035	4.08	I	22311	6	7864	5
6918.0614	14450.9299	1.12	I	18406	5	32857	5
6917.8851	14451.2983	6.65	I	22584	4	8133	4
6917.2403	14452.6287	3.40	I	24741	5	10288	6
6917.0516	14453.0397	33.4	I	18253	6	3809	7
6915.2760	14456.7506	23.9	I	20218	6	5762	5
6914.8937	14457.5498	1.02	I				
6908.2691	14471.4136	1.52	I	24760	7	10288	6
6908.1885	14471.5825	0.67	I	27818	8	13346	7
6904.4847	14479.3454	0.93	I	18932	5	4453	4
6903.7543	14480.8774	0.93	I	25789	8	11308	9
6902.5182	14483.4705	18.5	I	18759	6	4275	6
6901.1957	14486.2462	2.90	I	24741	5	10254	5
6898.8210	14491.2326	6.36	I	24560	7	10069	7
6897.0520	14494.9492	6.06	I	18295	7	3800	7
6896.1179	14496.9127	1.62	I	23375	4	8878	3
6894.8434	14499.5924	2.11	I	29958	7	15458	8

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
6893.1423	14503.1707	0.91	I	24606	1	10103	1
6891.3693	14506.9019	1.21	I	25910	4	11403	4
6890.9455	14507.7941	0.97	I	23364	1	8956	2
6888.9370	14512.0238	3.03	I	24581	8	10069	7
6888.2088	14513.5580	2.69	I	22377	5	7964	5
6887.7500	14514.5248	12.5	I	22633	7	8118	7
6887.6398	14514.7570	8.17	I	18383	4	3068	3
6887.3422	14515.3842	1.14	I	26192	8	11677	7
6887.2500	14515.5785	1.73	I	25805	5	11290	5
6886.3499	14517.4757	2.29	I	20766	7	6249	6
6885.5805	14519.0980	1.29	I	25059	2	10540	3
6885.5051	14519.2569	9.33	I	22383	4	7864	5
6884.9344	14520.4605	1.15	I	17968	3	32489	4
6879.0922	14532.7922	0.83	UB	20525	5	5991	4
6878.4836	14534.0780	1.35	I	22917	11/2	8379	9/2
6876.7443	14537.7540	1.92	II	26550	2	12107	1
6874.3389	14542.8410	1.17	I	20306	4	5762	5
6873.4224	14544.7601	8.53	I	26225	6	11677	7
6871.6507	14548.5301	0.88	I	18839	7	4275	6
6864.5616	14563.5542	4.09	I	17968	3	32532	4
6864.4088	14563.8786	1.68	I	22700	4	8133	4
6862.9707	14567.1426	2.41	I	26207	4	11633	5
6859.5594	14574.1745	1.32	I	21584	6	7005	6
6858.3918	14576.6557	0.76	I	24671	6	10081	5
6857.2137	14579.1599	1.58	I	25997	3	11403	4
6852.9692	14588.1897	0.90	I	24884	7	10288	6
6851.9517	14590.3560	1.79	I?	26566	6	11968	5
6850.0843	14594.3335	1.03	I	20851	5	6249	6
6849.5098	14595.5574	3.12	I	25294	8	10585	8
6848.2373	14598.2697	0.91	I	26066	5	11457	6
6847.3769	14600.1038	2.30	I	25918	8	11308	9
6846.2308	14602.5481	23.5	I	26287	6	11677	7
6846.0658	14602.9001	0.84	I	27972	5	13361	6
6843.3673	14608.6582	0.97	I	18932	5	33544	4
6843.0250	14609.3889	1.01	I	26583	5	11968	5
6842.7463	14609.9839	2.77	I	20621	5	5991	4
6842.4609	14610.5934	0.98	I	21636	5	7005	6
6842.0565	14611.4559	1.89	I	22754	6	8118	7
6841.8339	14611.9322	0.94	I	21830	3	7191	2
6840.4844	14614.8149	3.00	I				
6833.3925	14629.9825	0.81	I				
6832.7201	14631.4223	11.1	I				
6830.8504	14635.4271	4.08	I				
6829.3306	14638.6840	5.32	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
6826.9133	14643.0573	621.	I	14643	6	0	6
6825.7587	14646.3444	0.87	I	26103	6	11457	6
6824.4638	14649.1233	11.6	I	21753	4	7103	3
6824.3827	14649.2974	1.82	I	26207	3	11558	4
6823.9398	14650.2482	5.78	I	24938	7	10288	6
6820.7693	14657.0581	47.9	I	18932	5	4275	6
6820.1273	14658.4377	1.16	I	20420	6	5762	5
6819.3083	14660.2153	1.44	I	24741	5	10081	5
6818.3009	14662.3642	31.8	I	18530	3	3368	3
6816.1330	14667.0277	1.24	I	21993	6	7326	7
6815.0670	14669.3217	0.97	I				
6813.8453	14671.9516	2.53	I	26305	5	11633	5
6813.8005	14672.0484	3.61	I	26349	6	11677	7
6812.9911	14673.7915	6.99	I	19127	4	4453	7
6811.8547	14676.2394	1.96	I	24757	4	10081	4
6810.0322	14680.1671	1.01	I	32108	8	17428	8
6808.6256	14683.1998	1.48	I	29185	8	14501	8
6807.4720	14685.6881	1.02	I	24974	5	10288	6
6805.2108	14690.5677	1.16	I	27818	8	13127	9
6804.9452	14691.1412	2.22	I	30149	7	15458	8
6801.3459	14698.9157	0.94	I	12035	4	26734	5
6799.4195	14703.0800	3.73	I	25388	8	10685	8
6793.7615	14715.3251	1.97	I	17070	6	31785	5
6792.3193	14718.4495	0.87	I	22582	6	7864	5
6791.4274	14720.3825	0.82	I	22584	4	7864	5
6790.3029	14722.8201	35.5	I	22368	7	7645	8
6788.7632	14726.1593	1.99	I	22052	8	7326	7
6785.5774	14733.0731	0.87	I	28269	9	13535	9
6783.3966	14737.8097	0.77	I	30982	9	16244	8
6782.9570	14738.9821	14.4	I	19192	4	4453	4
6782.7057	14739.3108	6.06	I	18607	4	3868	3
6782.5998	14739.5411	11.2	I	20727	1	5988	0
6780.6326	14743.0172	8.59	I	22862	6	8118	7
6776.8899	14751.9597	0.84	I	25492	11/2	10740	11/2
6773.9256	14758.4151	0.90	I	22891	3	8133	4
6773.2378	14759.9138	3.18	I	25445	7	10685	8
6772.7421	14760.9942	3.05	I	21766	6	7005	6
6772.7172	14761.0485	3.71	I	22639	3	8878	3
6772.0801	14762.4370	0.90	I	21767	7	7005	6
6770.6686	14765.5146	2.07	I	24974	4	10208	4
6769.5009	14768.0616	1.27	I	25476	2	10708	4
6769.4112	14768.2573	2.60	I	26225	2	11457	2
6769.0652	14769.0121	1.11	I	26557	6	11788	6
6768.6418	14769.9760	10.4	I	22634	2	7864	3
6767.2626	14772.9451	2.82	I	25458	7	10685	8
6765.2110	14777.4262	0.99	I	26410	4	11633	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
6761.3716	14785.8174	0.89	I	28188	6	13402	6
6758.6111	14791.8564	0.71	I	30832	9	16040	10
6756.8536	14795.7038	0.88	I	25352	3	10557	4
6756.7935	14795.8355	1.12	I	30149	7	15353	7
6754.9279	14799.9217	7.83	I	22918	7	8118	7
6751.6314	14807.1479	7.55	I	20569	4	5762	5
6748.2896	14814.4803	9.27	I	20805	4	5991	5
6746.3573	14818.7236	1.01	I	27729	3	12910	4
6743.1152	14825.8485	2.62	I	24906	5	10081	5
6741.3641	14829.6995	44.2	I	21078	5	6249	6
6741.1849	14830.0936	0.92	I	23708	2	8878	3
6740.6747	14831.2162	3.94	I	24934	1	10103	1
6739.6650	14833.4380	0.98	I	27743	6	12910	6
6739.6083	14833.5627	3.02	I	26290	5	11457	6
6738.3971	14836.2290	0.94	I	22700	4	7864	5
6738.1747	14836.7187	6.19	I	21940	3	7103	3
6738.1420	14836.7907	0.90	I	27464	3	12627	4
6737.7280	14837.7025	0.99	I	24906	6	10069	7
6737.1542	14838.9662	0.71	I	26397	3	11558	4
6736.8046	14839.7363	26.5	I	14039	5	0	6
6735.0355	14843.6341	1.39	I	25098	5	10254	5
6733.1445	14847.8029	2.03	I	26305	5	11457	6
6732.1562	14849.9825	1.20	I	25104	4	10254	5
6729.4133	14856.0354	0.90	I	16929	5	31785	5
6728.1673	14858.7866	2.48	I	14858	7	0	6
6727.9721	14859.2177	12.9	I	20621	5	5762	5
6727.8424	14859.5041	1.58	I	24940	4	10081	5
6726.8427	14861.7124	1.01	I	26650	4	11788	3
6726.7882	14861.8328	5.81	I	28397	10	13535	9
6725.9352	14863.7177	0.79	I	24932	8	10069	7
6725.1118	14865.5376	1.33	I	26324	5	11457	6
6724.2528	14867.4365	0.76	I	26324	5	11457	6
6723.8669	14868.2897	1.24	UB	26550	6	11677	7
6721.5614	14873.3896	1.29	I	23755	2	8878	3
6719.9091	14877.0467	1.00	I	18749	3	3868	3
6717.9627	14881.3569	5.82	I	22429	9/2	7547	7/2
6717.4513	14882.4898	1.77	I	26192	8	11308	9
6716.6403	14884.2691	4.99	I	27252	4	12362	4
6714.2060	14889.6833	0.93	I	25098	5	10208	4
6714.1216	14889.8703	1.21	I	25098	5	10208	4
6713.9980	14890.1445	0.76	I	23753	3	8856	2
6713.7137	14890.7751	1.11	I	23755	2	8856	2
6711.1274	14896.5136	1.29	I	23051	4	8133	4
6710.1861	14898.6033	1.06	I	25906	5	10987	6
6701.8664	14917.0982	0.88	UB				
6701.5189	14917.8717	3.53	I				
6701.2083	14918.5632	0.77	I

LAMÉDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6700.4494	14920.2550	0.88	I	25023	2	10103	1
6700.3299	14920.5190	0.96	I	18932	5	33853	5
6697.7150	14926.3441	1.18	I	18794	4	3868	3
6694.2349	14934.1037	2.81	I?	22038	4	7103	3
6692.0222	14939.0416	5.27	I	23057	7	8118	7
6691.1991	14940.8792	8.29	I	25626	9	10685	8
6688.4019	14947.1277	2.78	I	25235	6	10288	6
6688.2412	14947.4869	0.94	I	25504	3	10557	4
6687.5464	14949.0400	3.47	I	23082	4	8133	4
6687.4400	14949.2776	0.90	I	17908	5	32857	5
6685.9286	14952.6572	2.10	I	21958	5	7005	6
6684.0064	14956.9571	1.09	I	20719	4	5762	5
6683.3848	14958.3483	33.3	I	18759	6	3800	7
6681.2000	14963.2397	1.41					
6676.1411	14974.5781	1.07	I	21980	5	7005	6
6674.9880	14977.1650	0.84	I	25534	5	10557	4
6673.3923	14980.7461	0.92	I	25235	6	10234	5
6672.6672	14982.3741	6.68	I	22174	1	7191	2
6672.3596	14983.0649	0.92					
6670.7527	14986.6740	0.70	I	25672	7	10685	8
6670.3807	14987.5098	1.28	I	22633	7	7645	8
6670.3340	14987.6147	0.72	I	21993	6	7005	6
6668.3832	14991.9992	1.99	I	25200	4	10208	4
6668.3044	14992.1763	1.45	I	27818	8	12826	7
6667.1775	14994.7104	1.91	I	23873	3	8878	7
6666.7553	14995.6601	1.65	I	28342	6	13346	7
6662.5436	15005.1392	1.92	I	26313	8	11308	9
6661.2013	15008.1630	2.12	I	22112	2	7103	3
6661.0816	15008.4326	1.15					
6657.9974	15015.3850	0.70	I	25555	2	10540	3
6657.6965	15016.0636	7.22	I	21265	6	6249	6
6657.0685	15017.4801	0.98	I	26650	4	11633	5
6657.0145	15017.6021	1.29	I	25098	5	10081	5
6656.8188	15018.0436	19.4	I	15638	6	620	5
6656.6430	15018.4400	5.16	I	19471	6	4453	4
6653.3693	15025.8501	1.19	I	31270	9	14244	8
6650.4818	15032.3536	0.77	I	23165	3	8133	4
6649.5402	15034.4822	0.92	I	26324	5	11290	4
6647.7929	15038.4337	10.6	I	18839	7	3800	7
6646.0633	15042.3475	1.84	I	22368	7	7326	7
6646.0116	15042.4644	1.07					
6642.3454	15050.7671	1.56	I	22056	6	7005	6
6641.0748	15053.6466	2.70	I	23186	4	8133	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6637.2396	15062.3450	1.55	I	27972	5	12910	6
6637.0736	15062.7217	1.09	I	27031	5	11968	5
6636.3392	15064.3885	0.73	I	17468	4	32532	4
6633.4144	15071.0308	2.30	I	21062	3	5991	4
6631.8754	15074.5280	0.86	I	28435	7	13361	6
6630.1830	15070.3760	4.09	I	23197	7	8118	7
6629.8581	15079.1149	1.61	I	26066	5	10987	6
6629.0459	15080.9624	6.53	I	21329	5	6249	6
6626.0252	15087.8374	1.41	I	26491	4	11403	4
6625.2957	15089.4987	15.4	I	20851	5	5762	5
6624.1182	15092.1810	1.40	I	27060	4	11968	5
6622.8342	15095.1070	0.77	II	22642	9/2	7547	7/2
6621.7782	15097.5143	2.20	II	17392	9/2	2294	11/2
6621.4092	15098.3556	1.80	I	25445	7	10347	8
6621.0833	15099.0988	7.46	I	19552	4	4453	4
6620.5313	15100.3577	60.0	I	15720	5	620	5
6619.2665	15103.2430	1.99	I	25789	8	10685	8
6619.0505	15103.7359	1.58	I	27072	6	11968	5
6618.8645	15104.1603	0.67	I	28451	8	13346	7
6616.7522	15108.9821	2.01	I	23987	2	8878	3
6616.4779	15109.6083	0.94	I	26566	6	11457	6
6609.2409	15126.1529	1.89	I	26583	5	11457	6
6607.3681	15129.0666	1.20	I	7020	4	22149	4
6607.4049	15130.3561	0.81	I	27492	4	12362	4
6607.3256	15130.5377	3.08	I	23987	2	8856	2
6603.9929	15138.1732	21.0	I	22464	6	7326	7
6603.3415	15139.6665	1.01	II	17434	11/2	2294	11/2
6601.6640	15143.5136	1.32	I	24022	3	8878	3
6601.3907	15144.1405	8.21	I	22789	8	7645	8
6600.6019	15145.9502	0.74	I	26454	8	11308	9
6599.6154	15148.2142	0.69	I	27092	3	11943	3
6595.7503	15157.0910	0.67	I	25445	7	10288	6
6595.6841	15157.2431	0.70	I	29033	6	13876	5
6592.7213	15164.0549	1.00	I	29339	5	14174	6
6592.0839	15165.5211	1.03	I	20571	7/2	5401	7/2
6590.0586	15170.1818	1.40	II	25729	3	10557	4
6588.9115	15172.8229	1.73	I	20702	13/2	5526	13/2
6587.8414	15175.2875	0.77	II	21426	7	6249	6
6586.9008	15177.4545	1.09	I	20943	6	5762	5
6585.2116	15181.3476	8.85	I	23051	4	7864	5
6582.7784	15186.9591	8.88	I	25745	4	10557	4
6582.2359	15188.2108	1.13	I	23325	5	8133	4
6580.6391	15191.8961	0.82	I	21185	5	5991	4
6579.5182	15194.4843	1.75	I	19471	4	4275	4
6578.7958	15196.1527	4.38	I	31442	5	16244	6
6578.1694	15197.5398	0.86	I		9		8

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
6575.2719	15204.2967	1.63	I	17468	4	32672	3
6575.0869	15204.7246	1.50	I	28739	8	13535	9
6574.7440	15205.5175	1.88	I	23069	6	7864	5
6573.8167	15207.6625	1.11	I	25462	6	10254	5
6570.7881	15214.6718	1.14	I	17070	6	32285	5
6570.6448	15215.0036	1.21	I	19668	3	4453	4
6569.3664	15217.9644	3.62	I	22409	3	7191	2
6566.8120	15223.8842	4.26	I	30069	9	14845	10
6564.1647	15230.0237	1.04	I	28114	5	12884	4
6558.9374	15242.1616	1.40	I?	23375	4	8133	4
6557.4647	15245.5848	1.53	I	25534	5	10288	6
6556.8642	15246.9810	3.32	I	19115	3	3868	3
6555.0950	15249.2350	4.38	I	28784	9	13535	9
6555.0108	15251.2920	49.7	I	19119	2	3868	3
6553.2495	15255.3910	1.25	I	29429	5	14174	6
6552.7593	15256.5345	7.80	I	22582	5	7326	6
6551.8174	15258.7255	2.97	I	19127	6	3868	7
6551.5551	15259.3364	1.12	I	26892	4	11633	3
6550.7622	15261.1832	1.50	I	25818	4	10557	5
6545.7334	15272.9078	5.78	I	22918	7	7645	4
6544.4871	15275.8163	3.46	I	24154	2	8878	6
6544.1280	15276.6544	1.23	I	26566	6	11290	5
6542.9858	15279.3213	24.0	I	25626	9	10347	8
6539.5807	15287.2769	1.26	I	26274	7	10987	6
6537.5030	15292.1354	1.42	I	25580	6	10288	6
6535.4731	15296.8851	2.30	I	23430	4	8133	4
6535.2651	15297.3720	6.33	I	24154	2	8856	2
6534.3553	15299.5018	4.46	I	23432	5	8133	4
6533.1402	15302.3474	1.14	I	26705	3	11403	4
6533.0553	15302.5462	1.23	I	26759	5	11457	6
6531.6995	15305.7225	1.97	I	22409	3	7103	3
6531.4638	15306.2749	1.41	I	22311	6	7005	6
6529.8338	15310.0956	1.14	I				
6527.1069	15316.4918	1.25	I				
6527.0395	15316.6500	11.1	I	21078	5	5762	5
6526.0780	15318.9067	11.9	I	22964	9	7645	8
6524.4500	15322.7291	1.64	I?	23186	4	7864	5
6523.1643	15325.7490	1.47	I	25580	6	10254	5
6521.9919	15328.5042	2.93	I	24207	3	8878	3
6520.9829	15330.8758	8.89	I	23464	3	8133	4
6519.5073	15334.3457	1.05	I	26791	6	11457	6
6518.9466	15335.6646	35.1	I	21584	6	6249	6
6517.6662	15338.6774	2.26	I	21329	5	5991	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
6515.9600	15342.6936	0.88	I	26652	8	11308	9
6515.4236	15343.9568	2.07					
6514.0729	15347.1384	0.76	I				
6511.4153	15353.4022	1.54	I	23486	5	8133	4
6507.9826	15361.5004	1.70	I	26349	6	10987	6
6507.6592	15362.2639	1.40	I	30153	8	14790	7
6507.3759	15362.9327	1.64	I	22368	7	7005	6
6506.2846	15365.5095	2.12	I	25905	3	10540	3
6504.9225	15368.7269	1.00					
6503.6224	15371.7991	45.5	I	19647	7	4275	6
6503.4402	15372.2298	4.49	I	22377	5	7005	6
6502.1512	15375.2771	0.83	I	28285	7	12910	6
6499.7298	15381.0050	1.23	I	27349	5	11968	5
6498.7958	15383.2155	1.41	I	22574	2	7191	2
6496.8065	15387.9259	2.96	I	21636	5	6249	6
6496.1176	15389.5577	0.92	I	25458	7	10069	7
6495.8074	15390.2925	0.96	I	26948	3	11558	4
6495.2277	15391.6661	0.91	I	19977	13/2	4585	13/2
6493.2517	15396.3501	0.85	I	28798	7	13402	6
6492.4379	15398.2800	1.42	I	26106	2	10708	2
6491.3438	15400.8753	2.10	I	28936	9	13535	9
6491.1163	15401.4150	0.83	I	27370	4	11968	5
6488.3412	15408.0022	6.69	I	28943	10	13535	9
6488.2405	15408.2413	6.06	I	22599	1	7191	2
6487.2634	15410.5620	1.50					
6487.0370	15411.0999	6.89	I	19864	3	4453	4
6486.6464	15412.0279	4.02	I	23057	7	7645	8
6482.5097	15421.0628	0.89	I	26241	3	10819	3
6481.7292	15423.7197	12.7	I	21185	4	5762	5
6481.2441	15424.8741	4.81	I	23543	7	8118	7
6479.9557	15427.9411	6.24	I	22754	6	7326	7
6477.9768	15432.6538	3.32	I	22624	3	7191	2
6477.8248	15433.0160	1.99	I	17070	6	32503	5
6476.9136	15435.1873	1.12	I	26892	6	11457	6
6476.8143	15435.4238	1.13					
6475.2071	15439.2551	1.38	I	19307	2	3868	3
6472.2909	15446.2114	0.79	I	29790	5	14344	5
6470.0537	15451.5523	1.56	I	26759	9	11308	9
6469.3734	15453.1772	2.10	UB				
6467.5030	15457.6461	2.22	I	21448	4	5991	4
6467.0376	15458.7586	1.85	I	22464	6	7005	6
6464.9842	15463.6685	84.1	I	22789	8	7326	7
6461.9307	15470.9756	7.65	I	22574	2	7103	3
6461.6569	15471.6312	2.82	I	7020	4	22492	4
6461.5002	15472.0064	1.63	I	27440	4	11968	5
6460.3446	15474.7740	2.08	I	24331	2	8856	2
6458.9637	15478.0823	1.82	I	29013	8	13535	9

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
6455.1362	15487.2539	1.02	I	28114	5	12627	4
6453.8904	15490.2493	0.67	I	25745	5	10254	5
6452.6790	15493.1573	0.76					
6451.2010	15496.7070	1.83	I	27440	4	11943	3
6449.9069	15499.8161	1.38	I	22691	3	7191	2
6449.1607	15501.6094	389.	I	16121	4	620	5
6448.5776	15503.0111	3.95	I	21265	6	5762	5
6448.0260	15504.3374	0.84	II	25437	9/2	9933	7/2
6447.2067	15506.3076	0.88	I	23639	3	8133	4
6445.8111	15509.6650	1.76	I	26066	5	17557	4
6442.5565	15517.5000	5.67	I	21766	6	6249	6
6442.0951	15518.6114	0.86	I	26058	3	10540	3
6441.9586	15518.9403	3.71	I	21767	7	6249	6
6441.3473	15520.4130	2.02	I	22624	3	7103	3
6439.3515	15525.2234	1.11	I	27469	2	11943	3
6439.2725	15525.4138	0.66	I	28435	7	12910	6
6436.4379	15532.2512	1.34	I	26352	3	10819	3
6436.2353	15532.7399	0.83	I	28094	2	13361	3
6434.6356	15536.6014	2.18	I	25791	5	10254	6
6430.9388	15545.5327	17.1	I	21536	6	5991	5
6428.6925	15550.9645	9.20	I	19826	3	4275	4
6428.5285	15551.3612	1.23	I	23197	6	4275	6
6427.5072	15553.8321	6.19	I	21545	7	7645	8
6425.4530	15558.8047	0.71	I	33099	4	5991	4
6424.8700	15560.2166	1.05	II	20961	7	17540	8
6422.2277	15566.6184	1.08		26106	7/2	5401	7/2
6421.4157	15568.5867	0.88	I	23432	2	10540	3
6420.5062	15570.7921	0.74	I	25918	5	7864	5
6419.2967	15573.7258	0.86	I	16929	8	10347	8
6417.6658	15577.6836	1.31	I		5	32503	5
6416.8757	15579.6017	1.11		25788			
6416.5131	15580.4821	0.78	I	26983	4	10208	4
6415.9342	15581.8878	1.28	I	25662	5	11403	4
6414.8546	15584.5102	0.70	I	27261	6	10081	5
6411.5941	15592.4353	15.4	I	22918	7	11677	7
6409.8584	15596.6576	6.42	I	23715	7	7326	7
6409.5714	15597.3559	1.12	I	25805	6	8118	7
6407.8924	15601.4427	0.83	I	23734	5	10208	4
6407.1343	15603.2686	1.31	I	25672	4	8133	4
6404.4590	15609.8065	7.61	I	19885	7	10069	7
6400.3373	15619.8588	0.90	II	21021	7	4275	6
					7/2	5401	7/2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
6400.1906	15620.2168	0.91	I	23753	3	8133	4
6399.9119	15620.8971	1.77	I	26608	7	10987	6
6397.2059	15627.5045	7.16	I	26313	8	10685	8
6397.1570	15627.6240	28.9	I	22633	7	7005	6
6395.4256	15631.8548	259.	I	15631	7	0	6
6393.6035	15636.3097	1.16	I	30138	9	14501	8
6392.7625	15638.3668	77.7	I	15638	6	0	6
6389.7902	15645.6410	47.8	I	21636	5	5991	4
6388.6206	15648.5055	3.01	I	22752	2	7103	3
6384.8975	15657.6302	9.47	I	7020	4	22678	3
6383.5726	15650.8790	23.9	I	20114	5	4453	4
6380.4514	15668.5708	4.25	I	25771	1	10103	1
6379.7716	15670.2103	1.08	I	23534	5	7864	5
6379.6166	15670.5910	2.08	I	5716	9/2	21387	9/2
6379.3977	15671.1288	1.34	I	26979	8	11308	9
6378.5215	15673.2813	3.21	I	15962	13/2	289	11/2
6378.3541	15673.6928	8.66	I	16294	5	620	5
6376.7259	15677.6948	1.11	I	26305	1	10708	2
6374.4738	15683.2335	3.24	I	25938	6	10254	3
6374.1493	15684.0321	5.86	I	19552	4	3868	5
6372.9914	15686.8815	16.7	I	21448	4	5762	5
6372.4507	15688.2126	124.	I	19489	8	3800	7
6371.7011	15690.0581	1.54	I	28516	8	12826	7
6369.8533	15694.6097	14.7	I	20148	5	4453	4
6369.1171	15696.4239	1.62	I	23560	4	7864	5
6367.6563	15700.0247	4.46	I	22891	3	7191	2
6364.4723	15707.8790	2.05	I	23572	6	7864	5
6364.1460	15708.6844	3.00	I	23841	4	8133	4
6360.7298	15717.1210	5.18	I	22908	2	7191	2
6360.4630	15717.7802	1.74	I				
6359.6238	15719.8543	3.95	I	25789	8	10069	7
6359.2894	15720.6810	69.6	I	15720	5	0	6
6358.5847	15722.4233	0.96	I	25791	6	10069	7
6355.5258	15729.9904	2.12	I	23848	7	8118	7
6354.8933	15731.5558	3.20	I	23057	7	7326	7
6353.9717	15733.8378	1.38	I	26290	5	10557	4
6353.4191	15735.2062	5.16	I	24613	4	6878	3
6352.8039	15736.7300	0.90	I	28364	3	12627	4
6351.0377	15741.1063	1.73	I	27031	5	11290	4
6350.0304	15743.6031	2.56	I	23069	5	7326	5
6349.8228	15744.1179	1.60	I	21993	6	6249	7
6349.6549	15744.5343	0.97	I	25825	6	10081	6
6348.0453	15748.5262	1.42	I	22714	6	7005	5
6347.8678	15748.9666	1.06	I	22940	2	7191	6
6343.7108	15759.2869	1.54	I	27548	4	11788	3

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6342.5104	15762.2694	2.19	I	26319	3	10557	4
6340.3222	15767.7093	1.13	I	26324	5	10557	4
6340.0785	15768.3155	0.89	I	26454	8	10685	8
6338.8763	15771.3058	1.75	I ?	26758	7	10987	6
6338.7338	15771.6605	10.1	I	7020	4	22792	4
6334.9531	15781.0730	1.02	I	22736	5	7005	6
6332.2602	15787.7841	3.64	I	22831	3	7103	3
6331.6524	15789.2995	2.35	I	25937	3	10208	4
6330.7549	15791.5379	1.07	II	16706	11/2	914	9/2
6328.3779	15797.4694	0.85	I	31837	10	16040	10
6327.9728	15798.4806	2.71	I	27475	7	11677	7
6327.7174	15799.1184	0.94	I	24677	3	8878	3
6327.3895	15799.9372	4.17	I	19668	3	3868	3
6324.4540	15807.2706	7.10	I	22056	6	6249	6
6324.1028	15808.1484	1.62	I	23926	8	8118	7
6323.3759	15809.9656	2.16	I	27267	5	11457	6
6322.3629	15812.4987	1.07	II	15812	7/2	0	9/2
6321.2576	15815.2635	4.87	I	28943	10	13127	9
6319.4801	15819.7120	1.27	I				
6318.6126	15821.8839	1.27	I	27731	5	11968	5
6318.3693	15822.4932	0.90	I	21534	6	5762	5
6318.3208	15822.6147	2.62	I	23972	4	8133	4
6311.6703	15839.2864	1.06	I	26192	8	10347	8
6309.3636	15845.0772	2.09	I	22854	5	7005	6
6307.6536	15849.3727	2.00	I	23715	6	7864	5
6306.9717	15851.0865	5.67	I	28761	7	12910	6
6306.9428	15851.1590	2.08	I	19307	2	35163	3
6305.1352	15855.7034	0.91	I	25938	6	10081	5
6304.6391	15857.2025	6.54	I	27492	4	11633	5
6303.5722	15859.6340	0.93	I	28228	3	12362	4
6301.1415	15865.7525	1.68	I	23734	4	7864	5
6299.2462	15870.5264	1.26	I	20148	5	4275	6
6298.5335	15872.3221	38.2	I	26167	5	10288	6
6295.8738	15879.0272	1.42	I	24002	5	8118	7
6293.9784	15883.8091	6.48	I	27443	8	11558	4
6293.6563	15884.6221	0.86	I	16505	5	620	5
6293.3286	15885.4491	55.8	I	25130	6	9241	9/2
6292.0439	15888.6927	9.87	II	24022	7/2	8133	4
6292.0137	15888.7690	19.5	I	16804	3	914	9/2
6291.4651	15890.1544	0.86	II	31633	6	15712	7
6291.3717	15890.3901	0.84	I	25939	1	10103	1
6289.0908	15896.1533	0.92	I				
6288.9295	15896.5608	0.65	I	23543	7	7645	8
6288.4156	15897.8599	1.35	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6284.5769	15907.5705	6.73	I	24026	6	8118	7
6283.8811	15909.3319	1.23	I	27366	6	11457	6
6282.5726	15912.6453	2.78	I	26167	5	10254	5
6282.1979	15913.5945	1.81	I	28739	8	12826	7
6280.1821	15918.7023	2.60	II	21320	7/2	5401	7/2
6279.6186	15920.1309	1.11	II	21710	13/2	5790	11/2
6279.5981	15920.1828	1.27	I	26208	7	10288	6
6278.4625	15923.0523	1.35	I	23114	3	7191	2
6278.1899	15923.7537	1.31	I	17070	6	32994	5
6276.7059	15927.5161	0.94	I	26274	7	10347	8
6276.6380	15927.6907	1.14	I	16929	5	32857	5
6274.4342	15933.1327	0.96	II	20353	11/2	4420	11/2
6274.1120	15934.1034	1.54	I	27432	4	11558	4
6272.5420	15938.0916	1.22	I	20391	3	4453	4
6270.5628	15943.1220	12.5	I	20218	6	4275	6
6268.6715	15947.9323	13.2	I	24056	7	8118	7
6268.2212	15949.0780	1.02	I	24032	5	8133	4
6268.1239	15949.3254	1.25	I	21940	3	5591	4
6267.9896	15949.6673	1.15	I	19848	2	3868	3
6263.9320	15959.9990	4.47	I	26313	8	10347	8
6261.5993	15965.9471	2.41	I	26705	2	10819	3
6261.4810	15966.2463	2.56	I	26652	8	10685	8
6261.4511	15966.3225	3.06	I	27370	4	11403	4
6261.3420	15966.6006	1.35	I	21958	5	5591	4
6261.2338	15966.8766	3.12	I	27251	5	11290	5
6259.5042	15971.2085	0.98	I	23841	6	7864	5
6256.9544	15977.7713	1.01	I	23032	4	7103	3
6256.7147	15978.4090	1.61	I	19783	4	3800	7
6255.1108	15982.5060	1.16	II	22429	9/2	6445	9/2
6254.2014	15984.8301	1.42	I	26066	5	10081	5
6253.8728	15985.6700	1.32	I	26274	7	10288	6
6253.6479	15986.2449	2.11	I	21960	7	5991	4
6252.6496	15988.7971	1.26	I	21753	5	5762	5
6251.8014	15990.9563	13.6	I	26983	4	10987	6
6249.6949	15996.3562	0.89	I	26207	5	10208	5
6248.4652	15999.5043	1.75	I	21766	3	5762	4
6246.5340	16004.4508	20.7	I	26562	6	10557	5
6246.2041	16005.2961	0.90	II	23114	4	7103	4
6244.0492	16010.8196	0.97	I	23212	3	7191	3
6240.4453	16020.0659	1.36	I	27424	2	11403	2
6240.3169	16020.3954	4.42	I	26103	3	10081	4
6240.0043	16021.1979	0.89	I	20311	6	4275	5
6239.4476	16022.6273	1.60	I		5		
6238.1960	16025.8421	5.21	I				
6234.3047	16035.8449	28.8	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6232.3013	16040.9998	1.46	I	27829	4	11788	3
6231.6459	16042.6867	3.28	I	27031	5	10987	6
6231.2194	16043.7848	3.16	I	22838	4	5991	4
6230.0793	16046.7209	1.06	I	27035	7	10987	5
6229.6371	16047.8600	3.82	I	23857	7	7085	6
6227.9756	16052.1411	4.05	I	24172	6	8118	7
6227.3575	16053.7344	1.83	I	26594	3	10540	3
6227.1382	16054.2997	1.54	I	23165	3	7103	3
6224.2600	16061.7233	2.45	I	24195	4	8133	4
6223.9879	16062.4255	2.90	I	23369	6	7005	6
6223.3051	16064.1880	1.30	I	29413	8	13346	7
6222.4574	16066.3763	1.03	I	24185	7	8118	7
6222.1504	16067.1691	12.2	I	23932	5	7864	5
6221.5708	16068.6451	1.57	I	20525	5	4533	4
6220.2908	16071.9725	3.50	I	11502	6	27576	7
6219.6850	16073.5378	4.61	I	24287	5	8133	4
6219.5992	16073.7594	1.43	I	23272	3	7191	7
6216.8599	16078.8420	6.84	I	26290	5	10208	4
6216.2627	16082.3869	1.21	I	19885	7	3800	2
6215.3747	16084.6844	37.1	I	24220	5	8133	7
6214.3427	16087.3555	2.07	I	24974	4	8878	4
6211.2157	16095.4546	1.50	I	26454	8	10347	3
6209.2275	16100.6883	3.49	I	7020	4	23129	8
6206.8569	16106.7578	2.44	I	24966	4	8856	4
6206.2138	16108.4266	1.35	I	20569	3	4453	2
6205.7661	16109.5887	3.33	I	26324	4	10208	4
6203.3716	16115.8871	9.40	I	22368	5	6249	6
6203.1972	16116.2602	1.55	I	22377	7	6249	6
6201.9747	16119.4369	9.24	I	24263	4	8133	4
6198.4000	16120.7331	7.19	I	23779	7	7645	8
6197.9804	16129.8250	1.59	I	30982	9	14845	10
6196.5266	16133.6093	7.34	I	25017	4	8878	3
6195.2368	16136.9680	1.21	I	30982	9	14842	8
6194.6249	16138.5620	3.22	I	26208	7	10069	7
6194.2658	16139.4977	2.72	I	26225	6	10081	5
6194.2168	16139.6255	2.53	I	20420	6	4275	5
6192.9970	16142.8023	3.84	I	26410	4	10254	5
6192.3314	16144.5394	4.08	I	31006	10	14845	10
6192.2280	16144.8090	1.24	I	26705	3	10540	3
6188.8953	16155.5912	1.24	I	25023	2	8856	2
6186.1414	16160.6939	4.20	I	23272	3	7103	3
6184.2865	16165.5409	1.64	I	27477	8	11308	9
6183.8429	16166.7007	1.07	I	27805	4	11633	5
6183.1159	16168.6014	3.07	I	23364	1	7191	2
6182.8100	16169.4015	2.17	I				
6181.6931	16172.3230	1.62	I				
6181.3938	16173.1060	1.99	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
6176.4710	16185.9961	5.37	I	22174	1	5988	0
6175.3948	16188.8169	58.5	I	20464	1	4275	0
6174.8860	16190.1456	4.84	I	20058	2	3868	0
6174.3809	16191.4753	18.0	I	23197	7	7005	0
6172.9801	16195.3594	17.9	I	16195	6	0	0
6172.6135	16196.1114	3.20	I	21958	5	5762	0
6171.9224	16197.9249	3.88	I	22189	5	5991	4
6171.8588	16198.0919	56.7	I	23843	3	7645	4
6170.2322	16202.3725	1.66	I	25059	9	8856	0
6170.1669	16202.5334	1.91	I	27492	2	11290	2
6169.9981	16202.9788	2.85	I	23848	4	8118	5
6169.4927	16204.3040	5.71	I	24322	7	7645	0
6168.9666	16205.6855	1.55	I	26274	6	10069	7
6168.4813	16206.9609	1.30	I	23212	5	7005	6
6167.6019	16209.2716	3.56	I	27499	6	11290	5
6165.7971	16211.3870	2.13	I	29339	9	13127	5
6165.8224	16213.9498	8.75	I	21976	4	5762	5
6165.3628	16215.1585	4.68	I	24333	7	8118	7
6165.3235	16215.2619	1.12	I	22464	6	6249	6
6164.5153	16217.3877	16.8	I	23543	7	7326	7
6164.2704	16218.0321	1.11	I	21980	5	5762	5
6164.2199	16218.1650	1.82	I	24082	5	7864	5
6163.7973	16219.2767	1.70	I	26385	5	10081	5
6161.9704	16224.0853	2.38	I	26313	8	10069	7
6159.3915	16230.8783	1.85	I	23572	6	7326	7
6154.3717	16244.1167	1.90	I	20525	5	4275	6
6153.6716	16245.9649	11.1	I	20961	7/2	4706	5/2
6152.2627	16249.6852	17.3	I	26688	7	10347	8
6150.8806	16255.4507	1.15	I	26550	6	10268	6
6149.2793	16257.5690	1.32	I	23375	4	7103	6
6147.6753	16261.1373	5.46	I	23464	3	7191	3
6144.0001	16271.5380	1.13	I	23464	4	7103	3
6143.6420	16272.4864	2.04	I	23378	2	7103	3
6142.7619	16274.8179	2.21	I	22038	4	5762	5
6142.3323	16275.9562	7.64	I	23926	8	7645	8
6140.3778	16281.1368	5.60	I	29413	8	13127	8
6138.7843	16285.3631	2.08	I	26971	7	10685	8
6138.5459	16285.9954	13.3	I	26979	8	10685	8
6135.7205	16293.4949	3.76	I	27609	10	11308	9
6132.6192	16301.7346	24.9	I	24172	8	7864	9
6130.2020	16308.1635	4.21	I	16929	5	620	5
6129.7233	16309.4380	53.8	I	24433	5	8118	5
6127.7731	16314.6265	8.99	I	21021	6	4706	7
6127.5983	16315.0919	1.30	I	24449	7/2	8133	5/2
6127.2207	16316.0974	1.56	I		4		4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6125.0273	16321.9400	1.40	I	25200	4	8878	3
6123.5874	16325.7779	1.20	I	31100	4	14774	3
6121.4371	16331.5129	4.94	I	24195	4	7864	5
6120.6460	16333.6236	7.10	I	22582	6	6249	6
6117.9473	16340.8285	0.88	I	28129	4	11788	3
6116.6551	16344.2540	1.41	I				
6116.1555	16345.5890	1.35	I	20621	5	4275	6
6114.2741	16350.6453	2.36	I	34670	4	18319	4
6113.6276	16352.3743	1.12	I	20805	3	4453	4
6112.1066	16356.4436	4.12	I	24220	5	7864	5
6111.9752	16356.7953	4.37	I	24002	8	7645	8
6110.5865	16360.2447	2.52	I	23464	3	7103	3
6110.3082	16361.2577	0.86	I	26901	2	10540	3
6109.3118	16363.9261	0.82	I				
6108.5198	16366.0478	1.06	I				
6107.7422	16368.1315	5.26	I	26715	8	10347	8
6104.9739	16375.5533	2.98	I				
6101.7790	16384.1276	21.1	I	22633	7	6249	6
6101.4814	16384.9268	3.07	I	26454	8	10069	7
6101.1541	16385.8058	13.3	I	20661	6	4275	6
6099.9011	16389.1714	13.1	I	23715	5	7326	7
6099.7207	16389.6563	6.43	I	20258	3	3868	3
6098.7938	16392.1471	3.37	I	22383	4	5991	4
6095.9611	16399.7642	1.16	I	27219	3	10819	3
6095.8170	16400.1520	1.02	I				
6092.8339	16408.1815	0.88	I	27966	4	11558	4
6092.6332	16408.7220	0.86	I	26948	3	10540	3
6091.2834	16412.3581	5.80	I	26759	9	10347	8
6089.1902	16417.9997	11.6	I	20218	6	3800	7
6089.0672	16418.3314	10.5	I	22409	3	5991	4
6088.1882	16420.9177	2.04	I	24056	7	7645	8
6087.7058	16422.0005	0.83	I	26962	4	10540	3
6087.5430	16422.4424	3.07	I	24555	3	8133	4
6087.3368	16422.9987	2.16	I	22868	9/2	6445	9/2
6085.7576	16427.2602	3.37	I	23432	5	7005	6
6085.3132	16428.4597	1.50	I				
6085.2109	16428.7360	1.69	I	28107	8	11677	7
6084.5347	16430.5517	1.71	I	10051	5	26489	5
6081.6147	16438.4507	1.65	I	28228	3	11788	3
6081.3104	16439.2730	0.88	I	24560	7	8118	7
6080.3814	16441.7849	9.17	I?	23639	3	7191	2
6078.1141	16447.9180	2.84	I	17070	6	620	5
6077.2911	16450.1454	110.	I	23779	7	7326	7
6076.1864	16453.1352	3.55	I	23560	4	7103	3
6074.8669	16456.7098	9.12	I	26997	4	10540	3
6074.7193	16457.1098	1.41	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
6072.7047	16462.5691	5.44	I	24581	8	8118	7
6070.1865	16469.3986	1.94	I	26550	6	10081	5
6067.2219	16477.4459	3.50	II	17392	9/2	914	9/2
6066.7429	16478.7469	1.41					
6065.8211	16481.2511	2.58	I	26550	6	10069	7
6065.3094	16490.7981	30.6	I	20766	7	4275	6
6062.2714	16490.9015	4.36	I	24609	6	8118	7
6060.4899	16495.7488	4.59	I	25352	3	8856	2
6060.1804	16496.5914	1.37	I	28129	4	11633	5
6059.7578	16497.7418	2.68	I	26566	6	10069	7
6057.5352	16503.7950	1.49	I	27060	4	10557	4
6057.0020	16505.0297	18.7	I	22754	6	6249	6
6056.9578	16505.3683	1.21	I	26760	4	10254	5
6056.8096	16505.7721	36.3	I	16505	6	0	6
6055.1340	16510.3396	1.37	I	27818	8	11308	9
6052.7072	16516.9593	1.80	I	23708	2	7191	9
6051.7401	16519.5989	5.07	II	17434	11/2	914	2
6051.3429	16520.6832	3.62	I	16900	7	33421	9/2
6051.1010	16521.3436	1.05	I	22283	4	5762	6
6050.6759	16522.5042	16.8	I	23848	7	7326	5
6050.4851	16523.0253	19.5	I	20391	3	3868	7
6048.3415	16528.8811	1.03	I	23534	5	7005	3
6047.1763	16532.0660	1.13	I				6
6046.7679	16533.1826	1.67					
6046.4594	16534.0261	1.73	I	30069	9	13535	9
6045.0164	16537.9730	4.19	I	23543	7	7005	6
6042.6598	16544.4225	1.54	I	12643	6	29187	7
6041.7398	16546.9447	1.09	I	26650	2	10103	1
6040.7225	16549.7285	1.21	I	22311	6	5762	5
6040.5752	16550.1320	1.35	I	27370	4	10819	3
6040.1237	16551.3691	1.59	I	26759	5	10208	4
6039.9358	16551.8839	1.57	I	26760	4	10208	4
6039.6182	16552.7545	16.7	I	24671	6	8118	7
6036.3105	16561.8246	1.69	I	23753	3	7191	2
6035.5494	16563.9132	9.73	I	23755	2	7191	2
6035.2444	16564.7502	1.38	I	27273	2	10708	2
6034.5886	16566.5504	3.46	I	23572	6	7005	6
6033.5535	16569.3924	1.22	I	16121	4	32691	5
6031.9427	16573.8172	2.06	I	28542	4	11968	5
6031.6056	16574.7434	1.02	I	28543	6	11968	5
6031.1955	16575.8704	3.94	I	20851	5	4275	6
6030.9907	16576.4333	1.55	I	26645	7	10069	7
6030.2871	16578.3674	1.13	I	29706	9	13127	9
6028.6265	16582.9339	5.82	I	26652	8	10069	7
6028.1237	16584.3172	29.2	I	20452	2	3868	3
6027.5728	16585.8327	1.48	I	26840	4	10254	5
6024.7224	16593.6799	3.06	I	27133	4	10540	3

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
6022.1896	16600.6587	1.25	I ?	23926	8	7326	7
6021.3721	16602.9124	2.22	I	28236	4	11633	5
6019.5442	16607.9542	1.04	I	24741	5	8133	4
6019.1922	16608.9254	18.7	I	21062	3	4453	4
6018.6814	16610.3349	1.53	I	28067	5	11457	6
6018.1275	16611.8637	1.14	I	22599	1	5988	0
6017.6053	16613.3052	2.07	I	27600	7	10987	6
6017.5637	16613.4200	17.0	I	22862	6	6249	6
6017.3782	16613.9323	2.25	II	21320	7/2	4706	5/2
6016.7440	16615.6834	15.2	I	22377	5	5762	5
6014.0527	16623.1188	5.72	I	31468	11	14845	10
6013.5761	16624.4362	1.31	I	26971	7	10347	8
6013.2603	16625.3092	6.14	I	21078	5	4453	4
6011.2718	16630.8090	1.59	I	23734	4	7103	3
6010.8642	16631.9365	1.05	I	26979	8	10347	8
6010.4724	16633.0209	4.03	I ?	26892	6	10254	5
6008.8524	16637.5052	2.27	II	26328	7/2	9690	9/2
6008.7869	16637.5864	2.27	I	22634	4	5991	4
6006.9311	16642.8265	4.12	I	7020	4	23663	3
6006.8941	16642.9290	1.16	I	31435	7	14790	7
6006.3577	16644.4154	0.95	I	25504	3	8856	2
6005.2337	16647.5305	1.01	I	26581	9/2	9933	7/2
6004.8124	16648.6985	7.41	II	23755	2	7103	3
6003.7398	16651.6728	4.23	I	24785	3	8133	4
6003.5762	16652.1267	2.54	I	27969	9	11308	9
6001.0688	16659.0844	8.12	I	20464	7	3800	7
6000.1781	16661.5572	26.3	I	20943	6	4275	6
5999.4086	16663.6944	22.8	I	22918	7	6249	6
5997.9598	16667.7193	57.8	I	24535	5	7864	5
5997.3103	16669.5244	6.62	I	25533	3	8856	3
5996.7525	16671.0750	1.03	I	27219	3	10540	3
5994.9590	16676.0624	1.42	I	26758	7	10069	7
5993.7478	16679.4322	1.58	I	20569	4	3868	3
5990.0570	16689.7093	70.8	I	22464	6	5762	5
5985.1002	16700.7409	3.95	I	26962	4	10254	5
5985.5727	16702.2128	1.58	I	23715	6	7005	6
5983.7615	16707.2682	7.03	I	27267	5	10557	4
5982.8703	16709.7568	2.01	I	26791	6	10081	5
5982.6970	16710.2410	5.52	I	27252	4	10540	3
5982.5585	16710.6279	1.16	I	23825	4	7103	3
5982.1141	16711.8691	2.08	I	20528	8	3800	7
5980.1580	16717.3354	4.96	I	7020	4	23753	3
5978.6906	16721.4385	154.	I	23841	4	7103	3
5976.3214	16728.0675	10.1	I				
5974.7626	16732.4316	2.92	I				
5972.7557	16738.0538		I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5971.9022	16740.4459	2.55	I	24066	7	7326	7
5971.5010	16741.5709	128.	I	17361	6	620	5
5969.4498	16747.3235	1.78					
5969.0571	16748.4251	1.19	I	28151	3	11403	4
5968.7719	16749.2255	6.02	I	17369	5	620	5
5967.1495	16753.7793	2.03	I	26962	4	10208	4
5966.5157	16755.5591	1.20	I	26964	5	10208	4
5963.9404	16762.7943	1.79	I	28053	6	11290	5
5961.9008	16768.5289	1.22	I	31270	9	14501	8
5961.2529	16770.3514	1.37					
5959.9443	16774.0335	2.58	I	28451	8	11677	7
5956.8594	16782.7200	23.0	I	20651	2	3868	3
5956.8123	16782.9530	0.98	I	28341	4	11558	4
5955.6197	16786.2136	1.01	I	24650	5	7864	5
5954.8986	16788.2462	4.82	I	24906	6	8118	7
5954.6730	16788.8823	1.03	I	26997	4	10208	4
5954.3719	16789.7311	2.05	I	27475	7	10685	8
5953.6502	16791.7665	1.09	I	27477	8	10685	8
5952.0323	16796.3307	1.33	II	23241	11/2	6445	9/2
5949.6622	16803.0216	10.2	I	21078	5	4275	6
5948.5664	16806.1172	16.5	I	24451	8	7645	8
5948.1702	16807.2364	1.79	I	24940	4	8133	4
5947.6717	16808.6451	7.95	I	23057	7	6249	6
5943.4119	16820.6922	4.05	I	23069	6	6249	6
5942.7692	16822.5113	13.7	I	22584	4	5762	5
5942.0482	16824.5525	1.14					
5940.6640	16828.4726	1.70	I	28285	7	11457	6
5939.9910	16830.3793	5.18	I	24022	3	7191	2
5937.3729	16837.8007	2.45	I	27394	5	10557	4
5936.7290	16839.6269	1.03					
5935.5084	16843.0899	3.06	I	23848	7	7005	6
5935.3996	16843.3985	1.24					
5934.8436	16844.9764	1.57	I	12643	6	29488	6
5934.4462	16846.1045	1.05	II	25356	11/2	8510	11/2
5933.8177	16847.8889	34.7	I	17468	4	620	5
5929.7527	16859.4384	2.09	I	27148	6	10288	6
5929.6667	16859.6830	2.64	I	24185	7	7326	7
5929.3179	16860.6745	15.8	I	20661	6	3800	7
5928.6491	16862.5767	1.77					
5927.8793	16864.7655	1.31					
5925.4551	16871.6660	18.1	I	24517	9	7645	8
5925.3162	16872.0616	3.99	I	22634	4	5762	5
5923.7325	16876.5721	4.82	I	21329	5	4453	4
5923.6537	16876.7966	3.10	I	28184	9	11308	9
5922.8987	16878.9480	1.00	I	27133	4	10254	5

LAMEDA(A)	SIGNA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5919.6660	16819.1631	5.06	I	7020	4	23908	3
5919.2523	16809.3457	1.72	I	23566	7	11677	7
5915.3853	16900.3066	572.	I	16900	7	0	6
5915.0479	16901.3506	1.54					
5914.6002	16902.6070	5.19	I	26971	7	10069	7
5913.1307	16906.8303	3.48					
5911.9851	16910.1064	1.58	I	26979	0	10069	7
5911.5503	16911.3502	10.6	I	20712	0	3800	7
5911.0606	16912.7512	1.68					
5910.3573	16914.7638	3.77	I	24560	7	7645	0
5907.7332	16922.2196	2.73	I	30490	0	13567	7
5906.2320	16926.5781	1.76	I	24118	5	7191	7
5905.9744	16927.3161	1.59	I	23932	5	7005	0
5905.3303	16929.1624	1.62	I	27184	4	10254	5
5905.1222	16929.7590	3.17	I	16929	5	0	0
5902.6355	16936.0912	2.59	I	23793	5	8856	0
5902.4894	16937.3105	29.2	I	20605	5	3060	5
5902.1247	16938.3571	1.85	I	22700	4	5762	5
5901.9016	16939.5975	2.91	I	17559	5	620	5
5901.4551	16940.2789	1.11	I	31442	5	14501	0
5900.2237	16943.0144	2.63	I	14850	7	31802	0
5900.6028	16945.5979	2.80					
5898.7740	16947.9786	19.8	I	23197	7	6249	6
5897.3812	16951.9813	1.62	I	26355	5	11403	4
5897.2169	16952.4536	1.35	I	7020	4	23973	5
5896.6589	16954.0577	1.07					
5896.5260	16954.4399	1.21	I	21407	5	4453	4
5896.4636	16954.6020	1.09					
5895.5113	16957.9332	1.60	I	23241	11/2	6285	13/2
5895.1501	16950.3968	1.80	I	2035	0	11677	7
5893.6696	16952.6827	3.36	I	24154	2	7191	3
5892.7372	16955.3407	1.31	I	25090	5	8133	4
5892.6209	16955.6757	20.6	I	20766	7	3800	7
5891.3602	16959.5062	4.17	I	10051	5	27020	5
5890.7067	16970.9581	1.17	I	28797	0	12826	7
5890.5322	16971.6914	1.05	I	25104	4	8133	4
5887.6265	16980.0671	2.03					
5884.3973	16989.3853	1.96	I	21265	6	4275	6
5883.4983	16991.9812	1.63	I	22754	6	5762	5
5882.2660	16995.5411	1.20	I	21446	4	4453	4
5878.0703	17007.6721	1.77	I	24533	7	7326	7
5877.2687	17009.9917	1.10	I	27829	4	10819	3
5877.1986	17010.1946	1.81	I	30138	9	13127	9
5875.4110	17015.3700	1.98	I	24207	5	7191	2
5874.2032	17017.2461	2.81	I	27886	0	10069	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5871.3171	17027.2341	1.89	I	25905	3	8878	3
5871.2308	17027.4847	1.12	I	25160	3	8153	4
5870.9285	17028.3611	2.62	II	22429	9/2	5401	7/2
5869.7370	17031.8177	2.48	I	25910	4	8878	3
5868.7908	17034.5638	1.50	I				
5868.0407	17036.7412	1.44	I	23024	1	5988	0
5866.2596	17041.9139	2.64	I	10051	5	27093	6
5863.7147	17049.3101	1.78	I	27757	3	10708	2
5863.4068	17050.2054	14.1	I	7020	4	24070	5
5863.3261	17050.4401	1.27	I	24154	2	7103	3
5862.0044	17054.2842	8.36	I	21329	5	4275	6
5860.4486	17058.8116	4.40	I				
5860.0923	17059.8489	1.21	I	23051	4	5991	4
5859.6848	17061.0352	3.51	I	27349	5	16388	6
5859.0538	17062.8726	2.87	I	28739	8	11677	7
5857.5697	17067.1959	1.35	I	25200	4	0133	4
5856.4467	17070.4685	10.3	I	17070	6	0	6
5854.4956	17076.1573	3.47	I	23325	5	6249	6
5854.2630	17076.8358	1.01	I	24082	5	7005	6
5853.9029	17077.8862	2.56	II	18827	11/2	1749	13/2
5852.0039	17083.4200	23.7	I	21536	3	4453	4
5850.0136	17089.2401	1.05	I	27629	4	10540	3
5849.1629	17091.7257	4.95	I	21545	4	4453	4
5848.7850	17092.8299	1.33	I	22854	5	5762	5
5846.2060	17100.3701	4.78	I	22862	6	5762	5
5845.2491	17103.1695	3.05	II	17392	9/2	289	11/2
5843.8920	17107.1414	1.08	I	24433	6	7326	7
5843.3215	17108.8115	1.42	I				
5843.2760	17108.9423	1.17	II	23553	11/2	6445	9/2
5840.4875	17117.1133	3.89	I	25235	6	8118	7
5837.6842	17125.3331	4.07	II	21710	13/2	4585	13/2
5836.0226	17130.2086	20.7	I	27477	8	10347	8
5835.4910	17131.7692	2.14	I	29958	7	12826	7
5835.3409	17132.2100	1.37	I	31923	8	14790	7
5835.1725	17132.7044	2.40	I	27818	8	10685	8
5833.9842	17136.1940	1.46	I	13825	4	30961	5
5833.6208	17137.2613	4.19	I	21005	3	3868	3
5833.3208	17138.1429	1.83	I				
5832.7436	17139.8386	1.26	I	27394	5	10254	5
5832.5140	17140.5134	3.74	I	28448	9	11308	9
5832.4175	17140.7970	3.39	I	25997	3	8856	3
5831.8137	17142.5717	6.42	I	21011	2	3868	3
5830.8097	17145.5235	2.42	I	25009	6	7864	5
5829.0237	17150.7769	3.08	I	21426	7	4275	6
5828.7916	17151.4597	1.26	I	27691	3	10540	3
5828.0039	17153.7779	1.05	II	21860	7/2	4706	5/2
5826.1649	17159.1924	4.26	I	24263	4	7103	3

LAMEDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5825.3546	17161.5790	1.78	I	27370	4	10208	4
5823.8845	17165.9111	1.11	I	14839	5	32005	5
5821.8708	17171.8250	3.48	I	27991	2	10819	3
5821.0293	17174.3309	1.10	I	23165	3	5991	4
5820.6139	17175.5564	2.96	I	7020	4	24196	4
5819.0172	17180.2632	4.21	I	24185	7	7005	6
5818.4534	17181.9339	1.15					
5817.9112	17183.5353	4.78	I	21636	5	4453	4
5816.7709	17186.9037	4.05	I	27475	7	10288	6
5814.4179	17193.8591	11.2	I	21062	3	3868	7
5813.8212	17195.6237	12.0	I	23186	4	5991	
5811.7050	17201.0850	1.37	I	26058	3	8856	2
5809.5651	17208.2213	1.92	I	28516	8	11308	9
5809.3096	17208.9779	3.52	I	24400	3	7191	2
5808.6623	17210.0955	1.18	I	10051	5	27262	4
5805.6405	17219.0539	1.56	I	30347	9	13127	9
5805.1937	17221.1790	14.2	I	33212	5	5991	4
5802.9479	17227.0438	1.38	I	24331	2	7103	3
5802.8266	17228.2040	1.18					
5802.1053	17230.3456	18.5	I	25348	6	8118	7
5801.4911	17232.1697	1.14	I	27440	4	10208	4
5800.7769	17234.2914	6.31	I	24560	7	7326	7
5800.5954	17234.8308	1.17	I	27443	5	10208	4
5799.6010	17237.7859	1.61					
5799.3513	17238.5278	1.81	I	24884	7	7645	8
5798.5282	17240.9748	4.82	II	22642	9/2	5401	7/2
5797.7326	17243.3409	1.10	I	17369	5	34612	5
5796.5202	17246.9474	13.3	I	7020	4	24267	5
5795.4734	17250.0625	2.61					
5793.7874	17255.0822	2.13	I	24581	8	7326	7
5792.8124	17260.3700	3.99	I	21536	5	4275	6
5791.7479	17261.1585	1.31	II	26887	15/2	9626	13/2
5790.0754	17265.1444	1.05	I	27521	6	10254	5
5789.6463	17267.4240	1.11	I	29236	6	11968	5
5789.3095	17268.4287	1.33					
5788.5658	17270.6470	1.06	II	21691	11/2	4420	11/2
5787.5918	17273.5536	6.46	I	17893	4	620	5
5787.2478	17274.5804	2.30	I	28262	5	10987	6
5784.2894	17283.4153	1.47	I	24609	6	7326	7
5784.1193	17283.9238	4.04	I	27969	9	10685	8
5784.0553	17284.1151	1.23					
5783.0060	17287.2512	3.29	I	24332	8	7645	8
5782.8062	17287.8482	11.8	I	17908	5	620	5
5782.6910	17288.1928	1.49	I	32723	7	15435	6
5781.9456	17290.4215	14.0	I	7020	4	24311	4
5780.5899	17294.4766	67.4	I	23543	7	6249	6
5779.6393	17297.3208	1.28	I	17361	6	34659	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5778.4499	17300.8012	1.08	1	28120	2	10819	3
5777.5577	17303.5529	1.46	1	27860	3	10557	4
5777.2892	17304.3571	1.29	1	28761	7	11457	6
5775.4652	17309.0220	0.88	1	28129	4	10819	3
5774.1165	17313.0650	1.79	1	25178	5	7864	5
5771.9870	17320.2530	4.46	1	23082	4	5762	5
5771.0543	17323.0523	12.5	1	23572	6	6249	6
5767.4518	17333.8724	7.38	1	23325	5	5991	6
5765.3797	17340.1023	5.09	1	25458	7	5991	4
5764.0734	17344.0319	1.35	1	25462	6	8118	7
5763.6627	17345.2679	3.94	1	24671	6	8118	7
5763.5968	17345.4662	3.63	1	24671	6	7326	7
5761.9365	17350.4630	1.26	1	24449	4	7103	3
5761.8585	17350.6990	5.08	1	27890	4	10540	3
5761.8347	17350.7708	1.87					
5760.5510	17354.6373	1.23	1	27811	6	11457	6
5760.4357	17354.6373	1.95	1	28342	5	10987	5
5758.3575	17361.2479	25.6	1	21636	5	4275	6
5758.1433	17361.8937	44.5	1	17361	6	0	6
5757.3139	17364.3951	10.7	1	21232	2	3868	3
5756.8719	17365.7281	2.24	1	27469	2	10103	3
5755.6057	17369.5484	2.70	1	17369	5	0	1
5755.1585	17370.0981	4.16	1	26227	1	8856	6
5753.2265	17376.7315	1.57	1	23364	1	5988	2
5751.7361	17381.2339	17.0	1	7020	4	24401	5
5750.5549	17384.8044	7.47	1	26241	3	8856	2
5750.3642	17385.3807	1.00					
5748.4403	17391.1749	1.16	11	25667	15/2	8276	13/2
5748.1054	17392.2127	1.45	11	17392	9/2	0	9/2
5745.1115	17401.2758	1.78					
5742.7676	17408.3781	3.83	1	27477	8	10069	7
5742.4530	17409.3015	0.96					
5741.3215	17412.7629	13.1	1	7020	4	24433	4
5740.9556	17413.8725	0.96	1	30240	6	12826	7
5739.7209	17417.6185	1.90	1	28874	6	11457	6
5738.0254	17422.7651	0.93	1	16121	4	33544	4
5737.3354	17424.8603	1.96	1	23186	4	5762	5
5737.2726	17425.0513	14.1	1	7020	4	24445	5
5736.3922	17427.7255	17.3	1	24433	6	7005	5
5734.3564	17433.9127	1.86	1	24760	7	7326	7
5733.2352	17437.3219	0.84	11	25714	13/2	8276	13/2
5733.1859	17437.4720	0.80	1	28840	5	11403	4
5733.1481	17437.5869	0.89					
5732.7295	17438.8601	4.71	1	23430	4	5991	4

LAMBDA(A)	SIGMA(CH-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5732.3175	17440.1134	1.10	1	27521	6	10081	5
5731.8687	17441.4790	9.66	1	23432	5	5991	4
5731.4822	17442.6552	4.38	1	29119	8	11677	7
5730.8979	17444.4334	1.73	1	25577	4	8133	4
5730.2245	17446.4837	1.16	1	14839	5	32286	6
5730.0187	17447.1101	2.08	1	30982	9	13535	5
5728.9338	17450.4141	4.03	1	23212	5	5762	5
5726.3113	17458.4059	3.10	1	25580	6	8118	7
5725.0935	17462.1196	3.24	1	21265	6	3800	7
5724.3908	17464.2631	1.69	1	22868	9/2	5401	7/2
5723.6477	17466.5304	1.87	1	31006	10	13535	9
5722.2374	17470.8352	8.28	1	23464	3	5991	4
5721.5767	17472.8527	5.99	1	7020	4	24499	3
5719.4985	17479.2012	1.38	1	24677	3	7191	2
5717.2800	17485.9837	1.59	1	21940	3	4453	4
5716.8754	17487.2213	24.6	1	21767	6	4275	6
5715.6984	17490.8224	15.8	1	21767	7	4275	6
5715.2278	17492.2625	9.62	1	23486	5	5991	4
5714.2097	17495.3792	8.29	1				
5710.8557	17505.6542	1.11	1				
5710.1008	17507.9683	1.34	1	29185	8	11677	7
5709.4932	17509.8316	10.9	1	24613	4	7103	5
5707.2988	17516.3637	4.26	1	10051	5	27567	5
5706.9932	17517.5018	1.14	1	24684	9/2	7166	9/2
5706.6855	17518.4464	10.1	1	7020	4	24539	5
5705.6534	17521.6152	3.80	1	28341	4	8133	3
5705.5198	17522.0256	2.40	1	25655	4	10819	4
5705.3297	17522.6093	1.96	1	21976	4	4453	4
5704.6352	17524.7426	1.47	1	27605	6	10081	5
5704.0009	17526.6912	1.74	1	21980	5	8856	4
5703.1496	17529.3875	1.84	1	26386	1	6249	2
5702.8507	17530.2261	10.1	1	23779	7	13876	6
5702.2598	17532.0427	1.23	?	31408	5	3868	5
5699.8754	17539.3769	17.4	1	21407	3	24562	3
5699.2536	17541.2903	2.72	1	7020	4	10069	7
5697.5224	17546.6202	1.64	1	27615	6	14842	8
5696.0847	17551.0490	1.90	1	32393	9	8118	7
5695.1810	17553.8339	8.55	1	24560	7	7005	6
5694.8425	17554.8773	3.56	1	23325	5	5762	5
5692.1737	17563.1878	1.61	1	24010	11/2	6445	9/2
5691.4206	17565.4319	1.09	1	18185	4	5991	5
5691.3420	17565.6745	24.5	1	23560	4	13127	4
5690.1619	17569.3173	1.24	1	30702	8	12627	9
5688.3447	17574.9301	1.83	1				
5688.0996	17575.6874	1.56	1	30203	4		4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5686.4581	17580.7608	1.52	I	24906	6	7326	7
5685.9043	17582.4732	1.09	I	28268	9	10685	8
5685.2116	17584.6154	17.6	I	22038	4	4453	4
5683.1706	17590.9306	1.32	I				
5682.4464	17593.1724	2.68	I	25457	4	7864	5
5682.0544	17594.3861	1.03	I	30504	7	12910	6
5681.6791	17595.5484	1.16	I	32097	9	14501	8
5680.7409	17598.4542	0.99	I	25462	6	7864	5
5680.3732	17599.5933	6.78	I	23848	7	6249	6
5678.6841	17604.8284	1.01	I	29573	5	11868	5
5678.0556	17606.7769	1.83	I	24932	8	7326	7
5677.3315	17609.0224	0.95	I	28596	7	10987	6
5677.2302	17609.1450	5.54	I	21489	8	3800	7
5676.3856	17609.3366	2.85	I	7020	4	24630	3
5676.1301	17611.9567	2.48	I	25745	5	8133	4
5675.9435	17612.7497	2.89	I	24938	7	7326	7
5675.3287	17613.3287	0.96	I				
5674.2525	17618.5775	4.45	I	27965	7	10347	8
5673.0326	17622.3661	2.23	I	27969	9	10347	8
5671.2492	17627.9077	1.22	I	28936	9	11308	9
5673.2977	17630.8655	1.15	I				
5669.4356	17633.5465	42.1	I	18253	6	620	5
5669.2676	17634.0691	1.12	I	28454	4	10819	3
5668.7340	17635.7290	1.30	I	27890	4	10254	3
5665.7925	17644.8849	3.72	I	24650	4	7005	5
5664.7123	17648.2495	3.40	I	32493	5	14845	6
5664.2212	17649.7795	3.11	I	29107	10	11457	10
5663.0767	17653.3466	2.68	I	24757	7	7103	6
5662.0545	17656.5335	1.49	I	28213	4	10557	3
5659.7093	17663.8498	3.21	I	30490	5	12826	4
5659.2109	17665.4055	1.51	I		8		7
5659.0673	17665.8539	3.11	I	24671			
5658.3503	17668.0924	2.09	I	23430	6	7005	6
5658.2640	17668.3618	19.4	I	21536	4	5762	5
5657.7401	17669.9979	2.10	I	25534	3	3868	3
5657.5105	17670.7147	3.34	I	23432	5	7864	5
5656.7890	17672.9685	1.17	I	25791	5	5762	5
5655.6077	17676.6601	4.06	I	21545	6	8118	7
5655.4006	17677.3072	2.58	I	27965	4	3868	3
5654.8026	17679.1768	14.8	I	18299	7	10288	6
5653.7706	17682.4038	1.44	II	19977	4	620	5
5653.3268	17683.7918	2.10	I	26562	13/2	2294	11/2
5648.3791	17699.2818	2.48	I	16900	4	8878	3
5646.7446	17704.4048	1.61	I	21980	7	34599	7
5645.9389	17706.9314	5.36	I	25825	5	4275	6
5642.5901	17717.4400	1.64	I	21993	6	8118	7
5641.9276	17719.5205	1.44	I	28428	6	4275	6
					3	10708	2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5641.6602	17720.3605	2.36	I	30546	8	12826	7
5640.4126	17724.2801	2.09	I	15720	5	33444	4
5640.3061	17724.6147	10.2	I	23486	5	5762	5
5636.7767	17735.7126	8.42	I	24741	5	7005	6
5634.3907	17743.2230	23.8	I	25388	8	7645	8
5634.3291	17743.4169	6.11	I	23734	4	5991	4
5632.4563	17749.3166	8.27	I	27818	8	10069	7
5632.1976	17750.1319	1.63	I	28435	7	10685	8
5631.6889	17751.7352	1.70	I				
5630.8124	17754.4985	3.96	I	24760	7	7005	6
5629.4393	17758.0290	4.52	I	16900	7	34659	7
5628.9876	17760.2539	2.79	I	28107	8	10347	8
5628.9545	17760.3586	1.20	I	30586	7	12826	7
5628.7412	17761.0313	1.47	I	15720	5	33481	4
5628.4440	17761.9695	1.24	I	30588	6	12826	7
5628.3729	17762.1937	2.54	I	23753	3	5991	4
5628.1434	17762.9179	10.2	I	18383	4	620	5
5627.7938	17764.0213	6.72	I	7020	4	24784	5
5627.4343	17765.1562	1.82	I	29442	7	11677	7
5625.4247	17771.5025	1.17	I ?	28118	7	10347	8
5625.2350	17772.0961	1.13	I	32546	3	14774	3
5625.1117	17772.4912	1.30	I	25905	3	8133	4
5624.9958	17772.8575	6.15	I	25906	5	8133	4
5624.6082	17774.0824	1.61	I	28761	7	10987	6
5623.6614	17777.0748	1.74	I	25910	4	8133	4
5623.6302	17777.1732	1.11	I	24026	6	6249	6
5622.9713	17779.2564	2.67	I	29236	7	11457	6
5622.5485	17780.5935	7.05	I	22056	6	4275	6
5621.5143	17783.8644	40.4	I	21584	6	3800	7
5620.7767	17786.1982	127.	I	18406	5	620	5
5620.4761	17787.1495	1.09	II	12513	11/2	30301	9/2
5619.8234	17789.2153	1.05	I	15631	7	33421	6
5618.5046	17793.3908	2.70	I	26650	2	8856	2
5617.0303	17798.0611	1.84	I	28053	6	10254	5
5616.8749	17798.5532	2.90	I	23560	4	5762	5
5616.5742	17799.5063	12.5	I	25918	8	8118	7
5614.7439	17805.3083	4.90	I	28152	7	10347	8
5613.2634	17810.0046	5.61	I	23572	6	5762	5
5612.3178	17813.0052	2.99	I				
5610.8908	17817.5355	52.5	I	24066	7	6249	6
5609.2962	17822.6008	3.04	I	26679	1	8856	2
5608.8504	17824.0172	4.91	I	15720	5	33544	4
5603.9731	17839.5299	1.05	II	23241	9/2	5401	7/2
5603.0555	17842.4511	3.42	I	25975	4	8133	4
5602.8926	17842.9700	1.29	II	24298	11/2	6445	9/2
5601.7298	17846.6740	1.34	I	29790	3	11943	3
5601.6231	17847.0137	1.01	I	29250	4	11403	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E(ODD)	J(O)
5597.4795	17960.2251	1.27	I	27941	6	10081	5
5597.5637	17960.5946	1.89	II	24305	9/2	6445	9/2
5596.2040	17964.0378	2.47	I	28152	7	10289	6
5595.1424	17967.6853	1.41	I	25059	2	7191	2
5591.0038	17978.0972	1.38	I	31006	10	13127	9
5591.7133	17978.6426	1.69	I	24884	7	7005	6
5591.1023	17980.5964	3.99	I	28566	7	10685	8
5589.3722	17986.1308	1.51	I	29194	9	11308	9
5584.6215	17901.3459	7.71	I	24906	6	7005	6
5583.6276	17904.5325	1.32	I	25096	5	7191	2
5582.9906	17906.5495	1.72	I	26894	5	10987	6
5582.4929	17908.1717	1.47	I	17908	5	0	6
5582.0391	17909.6276	1.40	I	25235	6	7326	7
5581.6669	17911.8217	2.85	I	28596	6	10685	8
5581.5948	17911.0533	5.15	II	16200	9/2	269	11/2
5581.2237	17912.2440	2.72	II	18827	11/2	914	9/2
5580.0049	17913.5083	1.35	II	23315	9/2	5401	7/2
5578.5747	17921.5920	1.48	I	23911	1	5988	0
5577.6653	17923.0256	1.91	I	22377	5	4453	4
5577.4563	17924.5431	2.83	I	28745	4	10819	3
5577.0300	17925.7130	3.03	I	29604	7	11677	7
5576.5515	17927.2512	1.03	I	24938	7	7005	6
5574.6681	17933.3337	6.73	I	26066	5	8133	4
5574.6378	17933.4053	2.16	I ?	24185	7	6249	6
5573.5914	17936.7722	11.7	I	20285	7	18347	8
5573.0737	17938.4385	6.12	I	23932	5	5991	4
5572.1119	17941.5348	1.76	I	25805	5	7864	5
5572.0790	17941.6406	3.26	I	27499	11/2	9553	11/2
5570.6636	17946.1991	2.50	II	23715	6	5762	5
5569.7182	17949.2453	1.33	I	21830	5	3868	5
5572.0790	17941.5348	3.26	I	26840	4	8878	3
5568.4879	17953.2112	6.77	I	16195	6	34160	6
5565.0003	17961.6732	2.40	I	21766	6	3800	7
5565.6752	17962.2840	1.43	I	21767	6	3800	7
5564.0954	17964.0008	1.28	I	22421	7	4453	4
5564.7684	17965.2109	1.25	I	24974	5	7005	6
5564.6137	17965.7006	1.69	I	23734	5	5762	5
5564.1708	17967.1402	125.	I	28189	4	10208	4
5563.7995	17968.3393	14.4	I	21849	5	3868	5
5563.6649	17968.7739	1.65	I	20272	6	10288	6
5562.4640	17972.6935	1.22	I	18607	4	620	5
5559.9713	17980.7110	1.68	I				
5553.0762	17981.0184	4.84	I				
5558.5826	17983.9089	1.01	I				
5557.0010	17987.4734	26.1	I

LAMBDA(A)	SIGMA(CM ⁻¹)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5553.6861	18001.0600	2.45	I	25104	4	7103	3
5552.7189	18004.1955	2.53	I	25009	6	7005	6
5551.4237	18008.3958	1.78	II	24453	9/2	6445	9/2
5549.6780	18014.0605	1.57	I	32059	11	14845	10
5548.0435	18019.3676	1.02	II	12513	11/2	30533	9/2
5546.9686	18022.8594	1.30	I	25348	6	7326	7
5545.7498	18026.0201	2.03	I	25672	7	7645	8
5544.8542	18029.7317	2.91	I	28098	6	10069	7
5544.8063	18029.8856	1.09	II	22615	13/2	4585	13/2
5544.5417	18030.7480	3.22	I	24022	3	5991	4
5544.4154	18031.1588	6.27	I	29339	9	11308	9
5538.5196	18050.3527	1.20	II	27126	9/2	9075	7/2
5538.3715	18050.8356	1.53	I	31178	8	13127	9
5538.1883	18051.4327	1.58	I	29610	4	11558	4
5537.5888	18053.3867	1.34	I	17070	6	35123	6
5537.4150	18053.9535	1.27	I	28342	6	10288	6
5537.3632	18054.1225	2.19	I	28739	8	10685	8
5536.5264	18056.0512	1.75	I	25160	3	7103	3
5535.7766	18059.2969	1.50	II	20353	11/2	2294	11/2
5534.7180	18062.7508	9.22	I	25388	8	7326	7
5534.5554	18063.2814	1.60	I	23825	4	5762	5
5533.0910	18068.0620	2.53	I	10051	5	28119	5
5531.3844	18073.6365	1.32	I	24322	6	6249	6
5531.3009	18073.9094	2.07	I	25938	6	7864	6
5531.2639	18074.0304	11.5	I	28761	7	10685	6
5530.6977	18075.8805	3.79	I	26962	7	8878	6
5528.3004	18083.7190	1.56	I	24333	4	6249	3
5527.9817	18084.7615	19.8	I	12513	7	30599	6
5527.8180	18085.2971	3.86	II	24082	11/2	5991	9/2
5526.3352	18090.1495	4.58	UB	25098	5	7005	4
5526.0586	18091.0552	1.70	I	28448	5	10347	6
5525.4339	18093.1003	1.44	I	22377	9	4275	8
5522.9252	18101.3189	1.91	I	11502	5	29604	6
5522.7005	18102.0554	1.23	I	28451	6	10347	5
5522.6440	18102.2404	1.43	I	21976	8	3868	8
5522.1909	18103.7259	1.54	I	25975	8	7864	7
5521.0258	18107.5428	11.5	I	29790	4	11677	5
5519.8889	18111.5382	1.76	I	29797	7	11677	7
5519.1437	18113.7209	1.58	I?	29109	8	10987	7
5518.1373	18117.0245	1.19	UB	24118	6	5991	6
5517.1594	18120.2359	2.87	I	25458	3	7326	4
5516.5457	18122.2516	1.34	I	28387	7	10254	7
5515.1154	18126.9482	2.02	I	18759	4	620	5
5513.3931	18132.6139	5.15	I				
5513.2937	18132.9406	1.86	I				
5511.4961	18138.8549	101.	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5510.4157	18142.4112	12.2	I	31270	9	13127	9
5510.1197	18143.3857	1.63	I	25789	8	7645	8
5507.0633	18153.4552	1.33	UB				
5506.3528	18155.7976	1.18	I	31690	8	13535	9
5506.2212	18156.2316	1.45	I	26274	7	8118	7
5505.4756	18158.6903	2.32	I	31069	7	12910	6
5504.1289	18163.1332	2.84	II	24608	11/2	6445	9/2
5503.1702	18166.2972	1.50	I	29799	5	11633	5
5502.1853	18169.5491	12.2	I	22030	4	3868	3
5501.8154	18170.7708	8.32	I	23932	5	5762	5
5501.4940	18171.8323	1.56	II	27725	11/2	9553	11/2
5500.6843	18174.5069	31.9	I	18794	4	620	5
5500.0991	18176.4406	1.41	I	28956	4	10819	3
5499.7410	18177.6244	1.16	I	16195	6	34372	6
5498.9727	18180.1639	1.31	I				
5497.7434	18184.2291	5.21	I	24433	6	6249	6
5497.1402	18186.2242	1.04	I	29173	5	10987	6
5496.8263	18187.2628	1.59	I	14643	6	32831	5
5496.4269	18188.5844	37.9	I	22464	6	4275	6
5495.2988	18192.3181	7.96	I	21993	6	3800	7
5494.7599	18194.1023	1.29	I	16929	5	35123	6
5494.6563	18194.4456	1.06	II	22615	13/2	4420	11/2
5494.5909	18194.6621	6.39	I	26313	8	8118	7
5492.9509	18200.0941	23.3	II	18200	9/2	0	9/2
5491.2201	18205.8308	1.84	II	26716	13/2	8510	11/2
5490.0222	18209.8030	1.69	I	28895	7	10685	8
5489.8826	18213.5838	9.16	I	14643	6	32857	5
5487.2391	18219.0388	2.13	I	28566	7	10347	8
5487.0023	18219.8251	2.61	II	24010	11/2	5790	11/2
5484.1396	18229.3356	0.99	I	24220	5	5991	4
5482.5988	18234.4589	2.94	I	28523	7	10288	6
5482.5270	18234.6978	1.91	II	15392	13/2	33627	11/2
5481.0970	18239.0909	5.68	II	24684	9/2	6445	9/2
5481.0430	18239.4551	2.70	I	26103	6	7864	5
5480.4130	18241.7314	6.09	I	14643	6	32885	5
5480.2615	18242.2355	2.83	II	12513	11/2	30756	9/2
5478.3840	18248.4874	1.09	I	29236	6	10987	6
5477.8478	18250.2737	10.8	I	28936	9	10685	8
5477.4961	18251.4454	1.73	I	22052	8	3800	7
5477.1824	18252.4907	1.85	I	29072	4	10819	3
5476.7686	18253.8697	2.46	I	18253	6	0	6
5476.2886	18255.4696	1.28	I	22056	6	3800	7
5475.7051	18257.4149	4.39	II	27499	11/2	9241	9/2
5474.5043	18261.4196	1.09	I	26125	4	7864	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
5465.6766	18290.9138	2.48	II	27917	15/2	9626	13/2
5464.8792	18293.5823	0.82	I?	30262	5	11968	5
5464.2235	18295.7777	11.9	I	18295	7	0	6
5461.2877	18305.6129	0.94	I	27184	4	8878	3
5460.5762	18307.9980	1.04	I?	28596	7	10288	6
5459.5673	18311.3809	2.58	I	24560	7	6249	6
5459.2509	18312.4425	10.9	I	18932	5	620	5
5459.1319	18312.8416	1.46	I	25504	3	7191	2
5458.8639	18313.7406	2.99	I	25319	5	7085	6
5458.8133	18313.9102	1.08	I	31945	5	13632	5
5458.7388	18314.1602	1.71	I	31442	9	13127	9
5457.5304	18318.2153	1.14	I	12643	6	30961	5
5456.7734	18320.7565	1.85	I	22189	3	3868	3
5456.1504	18322.6483	2.15					
5456.1298	18322.9177	2.09	I?	30266	4	11943	3
5455.5882	18324.7365	1.37	II	24608	11/2	6283	13/2
5455.2468	18325.8833	1.22	I	29313	6	10987	6
5454.7705	18327.4834	1.14	I	29013	8	10685	8
5454.7151	18327.6662	0.85	I	32871	6	14543	6
5452.3939	18335.4721	5.93	I	26454	8	8118	7
5450.7059	18341.1502	1.91	I	27219	3	8878	3
5450.6418	18341.3660	1.36	I	25533	3	7191	2
5450.1165	18343.1336	1.45	I	26207	4	7864	5
5447.6701	18351.3709	0.97					
5447.0518	18353.4542	1.85	I	25457	4	7103	3
5446.8997	18353.9665	1.39	I	33199	10	14845	10
5445.8663	18357.4493	2.88	I	22633	7	4275	6
5444.4682	18362.1635	1.87	II	24152	11/2	5790	11/2
5444.3069	18362.7074	1.75	I	27219	3	8856	2
5443.9324	18363.9706	2.30	I	25555	2	7191	2
5443.3179	18366.0436	1.65	I	15720	5	34086	5
5443.1104	18366.7438	1.00	I	28435	7	10069	7
5443.0844	18366.8316	0.84	I	28621	4	10254	5
5441.9910	18370.5218	1.66	I	7020	4	10254	4
5441.0852	18373.5801	2.15	I	27252	4	25391	4
5439.0863	18380.3223	2.47	I	29837	4	8978	3
5438.6239	18381.8950	2.60	I	28451	7	11457	6
5438.4299	18382.5508	0.82	I	32884	8	10069	7
5435.4689	18392.5647	1.82	I	28739	9	14501	8
5432.8321	18401.4911	0.99	I	22854	8	10347	8
5431.3474	18406.5212	9.57	I	18406	5	4453	4
5430.2362	18410.2879	7.12	I	24172	5	0	4
5429.9285	18411.3312	1.08	I	32955	6	5762	6
5429.0710	18414.2392	0.93	I	30047	6	14543	5
5429.0461	18414.3234	3.06				11633	5
5428.8652	18414.9373	1.05	I	22283	4	3868	3

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E(ODD)	J(O)
5426.6783	18422.3580	2.88	I	24671	6	6249	6
5426.3636	18423.4263	1.04	I	26287	6	7864	5
5424.7092	18429.0451	1.76	I	26562	4	8133	4
5424.2683	18430.5432	1.44	I	29250	4	10819	3
5423.3574	18433.6386	7.57	I	24195	4	5762	5
5423.3339	18433.7184	3.39	I	32977	7	14543	6
5422.3470	18437.0735	1.16	I	28784	9	10347	8
5421.9901	18438.2869	2.29	I	22891	3	4453	4
5419.3713	18447.1968	2.25	I	28516	8	10069	7
5418.6467	18449.6638	1.86	I	31275	7	12826	7
5418.4967	18450.1745	2.17	I	26583	5	8133	4
5418.0954	18451.5409	2.15	I	28798	7	10347	8
5418.0401	18451.7293	2.07	I	25555	2	7103	3
5417.6078	18453.2018	1.21	I	25458	7	7005	6
5417.4024	18453.9013	1.12	I	28523	7	10069	7
5416.0333	18458.5662	2.27	I	24220	5	5762	5
5414.7579	18462.9140	3.73	I	25789	8	7326	7
5411.7862	18473.0520	1.40	I	28761	7	10288	6
5410.8602	18476.2133	1.46	I	30153	8	11677	7
5410.2340	18478.3519	10.4	I	22754	6	4275	6
5409.0749	18482.3115	1.11	II	12513	11/2	30996	9/2
5407.8232	18486.5893	1.36	I	27343	2	8856	2
5407.0824	18489.1220	1.46	I	29797	8	11308	9
5406.8690	18489.8518	10.7	I	26608	7	8118	7
5406.6357	18490.6498	1.98	I	28745	4	10254	5
5406.3817	18491.5183	4.52	I	27370	4	8878	3
5405.9754	18492.9082	1.94	II	26887	15/2	8394	15/2
5403.6770	18500.7737	1.47	I	29958	7	11457	6
5403.1867	18502.4527	2.08	II	24293	13/2	5790	11/2
5401.8918	18506.8879	4.12	I	19127	4	620	5
5401.4225	18508.4958	1.38	I	29194	9	10685	8
5400.9446	18510.1336	1.90	II	23911	9/2	5401	7/2
5400.9050	18510.2690	7.84	I	28798	7	10288	6
5400.7210	18510.9000	3.07	I	22786	5	4275	6
5400.6987	18510.9762	2.98	I	22311	6	3800	7
5399.5320	18514.9753	3.56	I	22383	4	3868	3
5398.8391	18517.3521	1.94	I	26650	4	8133	4
5396.9119	18523.9644	1.33	I	32059	8	13535	9
5395.5415	18528.6692	4.07	I	25534	5	7005	6
5394.7347	18531.4403	4.80	I	31358	7	12826	7
5394.4743	18532.3350	1.75	I	26652	8	8118	7
5394.1413	18533.4789	3.09	I	28751	3	10208	4
5391.4612	18542.6917	1.18	I	24535	5	5991	4
5391.0910	18543.9653	2.06	I				
5390.2769	18546.7659	3.00					
5389.8474	18548.2437	2.59

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5386.1898	18560.8393	2.30	II	15392	13/2	33953	11/2
5385.8114	18562.1433	3.10	UB				
5385.5456	18563.6591	3.74	I	31690	8	13127	9
5385.5178	18563.1553	3.70	I	26208	7	7645	8
5384.2662	18567.4701	2.96	I	26213	9	7645	8
5384.2178	18567.6371	6.69	I	22368	7	3800	7
5382.9301	18572.0789	20.0	I	19192	4	620	5
5382.1200	18574.8743	1.54	I	28783	4	10208	4
5382.0200	18575.2192	3.42	I	25580	6	7005	6
5381.9712	18575.3877	1.87	I	30032	5	11457	6
5381.8801	18575.7021	2.10	I	7020	4	25596	4
5380.7057	18579.7563	1.48	I	26713	5	8133	4
5380.4708	18580.5677	1.42	I	27437	1	8133	4
5378.6835	18586.7416	1.59	I	2862	6	8856	2
5378.1123	18588.7156	4.48	I	22862	9	4275	6
5377.7130	18590.0960	1.41	I ?	28936	6	10347	8
5377.1564	18592.0203	3.39	I	30047	9	11457	6
5375.7610	18596.8461	8.43	I	25918	8	7326	7
5375.5016	18597.7434	7.00	I	26715	8	8118	7
5374.2133	18602.2016	1.62	I	23051	4	4453	4
5371.3505	18612.1160	1.94	I	25793	3	7191	2
5370.9161	18613.6215	2.39	I	25938	6	7326	7
5370.7347	18614.2501	1.45	I	29921	10	11308	9
5370.1957	18616.1182	1.15	I	27492	4	8878	3
5368.4189	18622.2798	1.13	I	30585	3	11973	2
5368.3729	18622.4394	3.63	II	27698	9/2	9075	7/2
5367.0361	18627.0777	1.32	I	24613	4	5991	4
5366.9076	18627.5236	1.87	I	26760	4	8133	4
5366.5073	18628.9130	1.37	I	33470	9	14842	8
5364.7123	18635.1463	4.90	I	23082	4	4453	4
5364.0515	18637.4419	1.86	I	24884	7	6249	8
5363.8041	18638.3016	1.58	II	34881	9	16244	8
5363.2424	18640.2534	1.12	I	24305	9/2	5667	7/2
5361.6576	18645.7630	1.07	I	26758	7	8118	7
5359.4256	18653.5283	2.93	I	30589	3	11943	3
5358.3177	18657.3850	7.03	I	29339	9	10685	8
5356.5730	18663.4619	4.25	I	25662	6	7005	6
5355.5770	18666.9327	4.94	I	22454	6	3800	7
5355.3725	18667.6457	3.14	I	25672	7	7005	6
5354.3590	18671.1789	2.72	I	26313	8	7645	8
5350.2787	18685.4183	1.52	I	24433	6	5762	5
5350.1257	18685.9526	3.05	I	29673	6	10987	6
5350.0111	18686.3528	2.22	I	24448	5	5762	5
5349.9134	18686.6940	1.18	I	24677	3	5991	4
5348.9784	18689.9605	1.74	II	23107	13/2	4420	11/2
5346.6411	18698.1307	3.56	I	25793	3	7103	3
				26562	4	7864	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5346.0581	18700.1347	1.29	I ?	26566	6	7864	5
5345.3321	18702.7095	3.11	I	22574	2	3868	3
5344.2736	18706.4138	1.22	I	22584	4	3868	3
5341.5065	18716.1044	16.2	I	31853	8	13127	9
5338.7507	18725.7652	1.17	I	29413	8	10685	8
5338.2561	18727.5001	2.14	I	28811	6	10081	5
5337.2816	18730.9197	1.46	I	23186	4	4453	4
5336.5412	18733.5182	12.0	I	14643	6	33378	6
5336.1441	18734.9122	1.00	I	30416	6	11677	4
5334.8302	18739.5263	1.69	I	26391	8	7645	7
5333.0957	18745.6210	1.64	I	7020	7	25771	8
5331.5774	18750.9591	2.35	I	23212	4	4453	5
5329.2710	18759.0743	22.5	I	18759	5	0	4
5329.2419	18759.1766	8.98	I	25047	6	6283	6
5327.7572	18764.4043	2.33	II	24757	11/2	5991	13/2
5327.3170	18765.9546	2.65	I	26631	4	7864	4
5326.9614	18767.2075	1.02	I	29756	5	10987	5
5326.3954	18769.2016	1.39	I	29119	6	10347	6
5325.5033	18772.3459	2.93	I	30742	8	11968	8
5325.1553	18773.5725	1.03	I	26892	6	8118	5
5325.0716	18773.8678	1.04	I	14643	6	33421	7
5324.1259	18777.2024	6.82	I	26103	6	7326	6
5324.0305	18777.5388	5.14	I	22582	6	3800	7
5322.8162	18781.8225	3.60	I	23057	6	4275	7
5322.7752	18781.9673	10.3	I	24453	9/2	5667	6
5321.6096	18786.0811	1.91	II	28996	7	10208	7/2
5321.0981	18787.8866	1.21	I	29610	4	10819	4
5320.4432	18790.1994	4.01	I	28874	4	10081	3
5319.3954	18793.9007	3.27	I	31923	6	13127	5
5319.0050	18795.2735	2.12	I	30589	8		9
5317.7369	18799.7621	0.96	I	26454	3	11788	3
5317.4513	18800.7717	1.01	I ?	29503	8	7645	3
5315.2782	18808.4582	15.5	I	24608	13/2	4420	8
5313.7265	18813.9505	1.32	II	30451	7	10685	11/2
5312.7430	18817.4334	0.95	I	33320	11/2	5790	8
5312.7163	18817.5279	1.21	II	23272	6	11633	11/2
5312.5117	18818.2526	1.07	I	23241	9	14501	5
5312.3459	18818.8399	1.81	I	32392	3	4453	8
5312.2712	18819.1044	1.74	I	23241	11/2	4420	4
5311.8789	18820.4942	4.70	II	32392	8	13567	11/2
5311.5985	18821.4879	0.99	I	27581	13/2	8755	7
5310.6777	18824.7512	2.60	I	28895	7	10069	13/2
5310.4765	18825.4645	1.00	II	18827	11/2	0	7
5310.2085	18826.4145	1.63	I	22633	7	3800	9/2
5310.0408	18827.0090	2.73	II	18839	7	0	7
5308.5412	18832.3275	77.7	I		7		6
5306.5874	18839.2611	3.33	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5305.9769	18841.4288	1.02	I	34881	9	16040	10
5305.5263	18843.7394	1.05	I	35088	9	16244	8
5304.5694	18846.4279	3.09	I	31974	0	13127	9
5304.4257	18846.9384	1.47	I	29194	9	10347	8
5303.5479	18850.0580	1.57	I	29837	7	10987	6
5303.0930	18851.6747	5.34	I	24613	4	5762	5
5301.5407	18857.1662	1.11	I	34315	9	15458	8
5301.1274	18858.6646	1.00	I	32393	9	13535	9
5301.0061	18858.7761	1.59	I	30262	5	11403	4
5300.5690	18858.6513	14.1	I	26979	8	8118	7
5299.9672	18862.7931	1.62	I	29682	4	10819	3
5299.6055	18864.0804	1.72	I	26997	4	8133	4
5299.4405	18864.6675	3.49	I	31690	8	12826	7
5298.9895	18866.3053	1.56	I	26192	9	7326	7
5297.6222	18871.1425	1.22	I	29126	6	10254	5
5297.4463	18871.7690	17.3	I	23325	5	4453	4
5295.9548	18878.7237	1.77	I	30168	6	11290	5
5294.0317	18883.9412	3.75	I	22752	3	3869	3
5292.5513	18889.2230	1.13	I	29236	7	10347	8
5289.2753	18900.9224	1.17	I	27757	3	8856	2
5289.1502	18901.3692	1.06	I	24892	3	5991	2
5288.7795	18904.1241	1.67	I	24305	9/2	5401	7/2
5286.9267	18909.3078	8.60	I	24671	6	5762	5
5286.0957	18912.2910	2.69	I	14839	5	33752	6
5284.8325	18916.9114	1.17	I	27035	7	8118	7
5283.5705	18921.3012	15.2	I	23197	7	4275	6
5283.4245	18921.8524	0.93	I	31284	5	12362	4
5283.5719	18922.0411	2.31	I	23375	4	4453	4
5283.0575	18923.1815	1.12	I	29612	8	10685	8
5281.9943	18926.9763	2.01	I	19552	4	620	5
5280.5301	18932.1955	25.3	I	18932	4	0	5
5280.3792	18932.7653	116.	I	18932	5	0	6
5279.1691	18940.6962	2.25	I	24342	7/2	5401	7/2
5277.2327	18944.0894	1.18	I	29013	8	10069	7
5275.9260	18948.7454	18.0	I	26274	7	7326	7
5275.7933	18949.2222	1.10	I	24940	4	5991	4
5275.1932	18951.3775	2.61	I	27829	4	8878	3
5274.6718	18953.2293	3.60	I	22754	6	3800	7
5273.2417	18958.5912	2.96	I	32493	10	13535	9
5273.0052	18962.8376	14.4	I	26608	7	7645	8
5270.6201	18967.7920	17.2	I	27086	8	8118	7
5270.4253	18968.5219	1.53	I	32097	9	13127	9
5270.1735	18969.4281	1.19	I	24966	3	5991	4
5268.5510	18975.2697	5.14	I	23430	4	4453	4
5268.1388	18976.7545	2.12	I	24741	4	5762	4
5267.4694	18979.1663	5.97	I	23432	5	4453	4
5267.4120	18979.3731	9.64	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5265.9904	18984.4966	1.63	I	32331	8	13346	7
5265.3746	18986.7167	7.10	I	25235	6	6249	6
5265.2474	18987.1754	8.28	I	26313	8	7326	7
5264.7533	18988.9575	4.78	I	22709	8	3800	7
5263.8659	18992.1584	4.52	I	35032	10	16040	10
5259.9036	19006.4651	9.78	I	26652	8	7645	8
5258.7185	19010.7486	2.09	I	23464	3	4453	4
5257.5452	19014.9911	1.48	I				
5257.0443	19016.8028	3.49	II	24684	9/2	5667	7/2
5255.6904	19021.7014	2.87	I	26125	4	7103	3
5255.2711	19023.2193	3.54	I	22891	3	3868	3
5254.5551	19025.8112	1.54	I	30702	8	11677	7
5254.1273	19027.3685	2.08	I	15631	7	34659	7
5253.8690	19028.2957	4.15	I	26892	6	7864	5
5253.5575	19029.4242	1.57	I	27148	6	8118	7
5252.4946	19033.2747	1.59	I	23486	5	4453	4
5251.2143	19037.9152	5.10	I	29107	7	10069	7
5250.7417	19039.6288	3.16	I	30347	9	11308	9
5250.5521	19040.3164	1.38	I	22908	2	3868	3
5250.4562	19040.6641	1.18	I	29109	6	10069	7
5249.0437	19045.7877	1.33	I	32392	8	13346	7
5248.0265	19049.4792	3.72	I	23325	5	4275	6
5247.7477	19050.4913	5.56	II	23635	13/2	4585	13/2
5247.6433	19050.8703	2.90	I	27184	4	8133	4
5247.3524	19051.9266	2.43	II	24453	9/2	5401	7/2
5244.6840	19061.6198	5.44	I	22862	6	3800	7
5243.4952	19065.9414	2.00	I	29413	8	10347	8
5243.0886	19067.4138	1.12	I	14879	5	33907	6
5242.3121	19070.2440	2.79	I	25311	5	6249	6
5241.7847	19072.1628	17.6	I	22940	2	3868	3
5240.0110	19078.6186	2.98	I	25066	1	5988	3
5239.3583	19080.9952	11.8	I	23534	5	4453	4
5238.6158	19083.6995	1.67	II	28636	13/2	9553	11/2
5236.9953	19089.6045	1.53	I	29909	4	10819	3
5236.0871	19092.9158	1.58	I	26098	7	7005	6
5234.6592	19098.1237	2.17	I	26103	6	7005	6
5234.1589	19099.9493	14.4	I	25348	6	6249	6
5234.1397	19100.0195	3.87	I	14839	5	33939	5
5233.2110	19103.4087	2.96	I	26207	4	7103	3
5232.8026	19104.8998	12.6	I	25096	4	5991	3
5232.1692	19107.2124	6.44	I	23560	3	4453	4
5230.9992	19111.4863	4.26	I	29797	8	10685	8
5230.2951	19114.0588	3.11	I	26759	9	7645	8
5229.2922	19117.7247	6.36	I	22918	7	3800	7
5228.9874	19118.8389	2.35	I	27252	4	8133	4
5228.7413	19119.7390	1.43	I	26983	5	7864	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E(ODD)	J(O)
5226.4968	19127.9862	3.81	I	26454	8	7326	7
5226.1107	19129.3628	0.99	I	30586	7	11457	6
5225.1208	19132.9669	2.33	II	24923	13/2	5790	11/2
5224.2820	19136.0589	1.20	I	24537	7/2	5401	7/2
5223.7859	19137.8760	0.99	I	26241	3	7103	3
5221.8966	19144.8001	23.0	I	24906	6	5762	5
5221.8665	19144.9106	4.38	I	14839	5	33984	6
5221.6669	19145.6422	1.17	I	30435	5	11290	5
5221.5955	19145.9039	0.85	I	29400	5	10254	5
5218.5476	19157.0861	3.24	I	23432	5	4275	6
5216.9334	19163.0134	34.5	I	19783	6	620	5
5216.1618	19165.8483	1.22	I	28044	3	8878	3
5215.5242	19168.1911	1.27	I				
5215.1791	19169.4597	10.4	I	25160	3	5991	4
5215.0055	19170.0975	1.04	I	30478	10	11308	9
5212.7319	19178.4588	2.20	I	24940	4	5762	5
5212.4878	19179.3571	1.63	I	30636	6	11457	6
5211.5955	19182.6776	0.89	I	23051	4	3868	3
5209.4618	19190.4973	1.07	I	32537	7	13346	7
5208.8482	19192.7582	0.82	UB				
5207.7859	19196.6730	10.3	I	25445	7	6249	6
5207.1849	19198.8888	0.96	I	29884	8	10685	8
5206.5404	19201.2651	0.88	I	30878	7	11677	7
5205.9972	19203.2686	3.66	I	26208	7	7005	6
5205.1622	19206.3490	42.6	I	19826	6	620	5
5205.1195	19206.5066	17.0	I				
5204.6652	19208.1833	1.40	I	27072	6	7864	5
5204.3121	19209.4865	3.19	II	25492	11/2	6283	13/2
5204.2525	19209.7063	2.97	I	25458	7	6249	6
5204.1994	19209.9022	0.93	UB				
5203.6518	19211.9237	1.76	I	24974	4	5762	5
5203.1893	19213.6315	3.72	I	25462	6	6249	6
5203.1310	19213.8469	0.85	I	23082	4	3868	3
5202.9757	19214.4204	1.05	I	12643	6	31857	6
5202.8803	19214.7725	1.77	I	30034	4	10819	3
5202.4753	19216.2683	1.17	I				
5202.4495	19216.3637	1.92	I	27349	5	8133	4
5201.4912	19219.5040	1.27	I	12035	4	31255	5
5201.4554	19220.0364	2.42	I	26225	6	7005	6
5199.7358	19226.3924	1.12	I	29481	6	10254	5
5197.9945	19232.8332	2.53	I	32059	8	12826	7
5196.4573	19238.5224	2.62	I	30546	8	11308	9
5194.6764	19245.1178	0.97	I	26349	4	7103	3
5193.8949	19248.0136	2.52	I	27366	6	8118	7
5192.0020	19255.0308	7.88	I	25017	4	5762	5
5191.5129	19256.0450	21.5	I	23057	7	3800	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E(ODD)	J(O)
5190.2457	19261.5464	1.14	I	27394	5	8133	4
5189.2020	19265.4204	5.41	I	29612	8	10347	8
5188.5614	19267.7990	5.40	I	23543	7	4275	6
5188.2670	19268.8924	1.30	I	23069	6	3800	7
5184.7137	19282.0979	3.48	I	26287	6	7005	6
5184.5704	19282.6308	4.87	II	24684	9/2	5401	7/2
5183.8417	19285.3415	1.23	I	26290	5	7005	6
5183.0225	19288.3898	2.34	UB				
5180.8773	19296.3760	22.6	I	23572	6	4275	6
5180.6669	19297.1599	15.5	I	23165	3	3868	3
5180.2224	19298.8156	0.96	I	30286	5	10987	6
5180.0162	19299.5837	2.02	I	26305	5	7005	6
5178.9663	19303.4962	1.03	I	30936	5	11633	5
5177.2142	19310.0288	1.26	I	27443	5	8133	4
5175.6797	19315.7540	2.14	I	28194	4	8878	3
5175.4726	19316.5267	1.04	I	29605	5	10288	6
5174.5783	19319.4918	2.09	I	26645	7	7326	7
5174.3188	19320.8342	0.50	I	14839	5	34160	6
5172.6544	19327.0510	1.80	I	26518	3	7191	2
5171.6478	19330.8126	1.08	I	30150	4	10819	3
5171.2736	19332.2113	1.54	I	30965	6	11633	5
5170.8921	19333.6376	2.20	I	26979	8	7645	8
5168.7889	19341.5044	2.09	I	35585	9	16244	8
5168.4150	19342.9037	2.09	I	25104	4	5762	5
5168.2373	19343.5679	1.68	UB				
5168.0923	19344.1117	1.00	UB				
5167.2200	19347.3771	1.25					
5166.7416	19349.1684	2.74	I	32884	9	13535	9
5164.1379	19358.9238	35.9	I	27477	8	8118	7
5163.6511	19360.7489	1.89	I	32928	8	13567	7
5161.8593	19367.4695	1.04	I	33911	7	14543	6
5160.6678	19371.9411	6.32	I	23825	4	4453	4
5160.3802	19373.0207	1.04	I	29442	7	10069	7
5160.3159	19373.2621	7.26	II	25163	13/2	5790	11/2
5156.5581	19387.3798	2.31	I	26491	4	7103	3
5156.0316	19389.3596	7.28	I	26715	8	7326	7
5155.9135	19389.8038	2.04	I	27035	7	7645	8
5155.5066	19391.3341	1.10	I	30077	8	10685	8
5154.7824	19394.0582	1.17	I	13463	5	32857	5
5154.2189	19396.1786	7.16	I	23197	7	3800	7
5154.0932	19396.6518	1.06	II	24798	9/2	5401	7/2
5154.0475	19396.8238	1.07	II	21691	11/2	2294	11/2
5153.9064	19397.3548	2.76	I	27261	6	7864	5
5153.8084	19397.7236	2.02	I	32932	9	13535	9
5153.3911	19399.2944	1.96	I	28256	3	8856	2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
5152.7664	19401.6461	3.03	I	29610	4	10208	4
5152.5368	19402.5108	1.24	I	27521	6	8118	7
5152.3872	19403.0741	3.14	I	27267	5	7664	5
5152.3436	19403.2383	1.35					
5152.1312	19404.0380	1.41	I	23272	3	3868	3
5151.9506	19404.7182	1.44	I	27538	3	8133	4
5149.2432	19414.9209	4.58	I	27548	4	8133	4
5148.9596	19415.9903	2.84	I	25178	5	5762	5
5148.4250	19418.0065	1.36	I	29673	6	10254	5
5147.9397	19419.8370	1.19	I	23873	3	4453	4
5146.9856	19423.4368	12.0	I	25672	7	6249	6
5146.2359	19426.2663	1.29					
5145.0831	19430.6187	1.06	II	25714	13/2	6283	13/2
5144.5141	19432.7679	18.6	I	26758	7	7326	7
5144.1069	19434.3062	1.19	I	33778	6	14344	5
5142.7423	19439.4628	1.20	I	26444	5	7005	6
5142.7107	19439.5825	3.39	I	23715	6	4275	6
5142.3946	19440.7774	20.2	I	27086	8	7645	8
5141.4304	19444.4231	1.37	I	30432	7	10987	6
5140.7317	19447.0657	1.51	I	30004	5	10557	4
5140.0896	19449.4952	1.22	UB				
5139.9751	19449.9283	7.70	I	29797	8	10347	8
5139.3401	19452.3313	3.78	I	30138	9	10685	8
5138.2068	19456.6217	1.18	I	30276	3	10819	3
5137.0443	19461.0249	2.50	II	25906	9/2	6445	9/2
5134.1857	19471.8601	3.46	I	19471	5	0	6
5132.6143	19477.8214	2.37	I	29558	6	10081	5
5132.1907	19479.4293	11.8	I	23932	5	4453	4
5130.6035	19485.4553	1.75	I	27349	5	7864	5
5130.1596	19487.1411	2.23	I	27605	6	8118	7
5129.3285	19490.2985	1.33	I	29837	7	10347	8
5128.3605	19493.9773	5.40	I	20114	5	620	5
5127.7465	19496.3115	3.01	I	31129	5	11633	5
5126.1352	19502.4399	3.01	I	27366	6	7864	5
5125.8438	19503.5484	2.90	I	23779	7	4275	6
5125.4914	19504.8896	9.11	I	27150	8	7645	8
5125.4371	19505.0961	1.95	I	32331	8	12826	7
5124.9435	19506.9747	3.74	I	23375	4	3868	3
5124.0822	19510.2536	8.04	I	23378	2	3868	3
5123.3418	19513.0731	1.14	I	29801	7	10288	6
5120.4216	19524.2014	4.13	I	30832	9	11308	9
5119.5025	19527.7063	12.1	I	20148	5	620	5
5118.1122	19533.0110	1.63	I	30841	8	11308	5
5118.0509	19533.2448	2.33	I	14839	5	34372	6
5117.2384	19536.3462	6.06	II	21831	9/2	2294	11/2
5116.9268	19537.5360	2.84	I	30994	6	11457	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5115.8277	19541.7334	2.82	I	25533	3	5991	4
5115.6094	19542.5712	4.95	I	25791	6	6249	6
5115.5256	19542.8874	4.39	I	25534	5	5991	4
5115.1122	19544.4669	1.03	I	29799	5	10254	5
5114.9997	19544.8966	1.04	I	26550	6	7005	6
5114.8440	19545.4916	1.87	I	35585	9	16040	10
5114.5569	19546.5888	1.27	I	28403	2	8856	2
5114.4727	19546.9106	1.53	I	29801	6	10254	5
5112.0829	19556.0485	1.49	I	32902	7	13346	7
5110.6877	19561.3872	8.97	I	26566	6	7005	6
5109.3838	19566.3789	1.86	I	26892	6	7326	7
5107.6774	19572.9157	16.0	I	23848	7	4275	6
5107.3260	19574.2623	1.88	II	24159	13/2	4585	13/2
5106.7553	19576.4499	2.97	I	27440	4	7864	5
5106.7335	19576.5333	5.20	I	25825	6	6249	6
5106.3686	19577.9321	1.01	I	26583	5	7005	6
5106.0523	19579.1452	1.92	UB				
5102.8449	19591.4514	1.18	I	15631	7	35223	6
5102.7086	19591.9747	0.96	I	29673	6	10081	5
5102.6492	19592.2028	1.54	I	34434	9	14842	8
5102.6058	19592.3695	1.05	I				
5101.7421	19595.6362	3.26	I ?	23464	3	3868	3
5101.0079	19598.5067	16.6	I	20218	6	620	5
5100.7886	19599.3494	1.27	I	31232	5	11633	5
5100.6720	19599.7975	2.24	II	34199	11/2	14599	13/2
5100.0776	19602.0814	1.36	UB				
5099.8948	19602.7841	1.04					
5099.8513	19602.9513	1.41	I	26608	7	7005	6
5094.2192	19624.6238	0.99	I	27757	3	8133	4
5093.8936	19625.8785	3.57	I	26631	5	7005	6
5093.0966	19628.9496	13.5	I	24082	5	4453	4
5090.1546	19640.2942	1.09	II	27917	15/2	8276	13/2
5088.5822	19646.3633	1.87	I	32774	8	13127	9
5088.2861	19647.5064	53.9	I	19647	7	0	6
5086.8212	19653.1646	2.16	I	26979	8	7326	7
5085.8484	19656.9236	3.29	II	20571	7/2	914	9/2
5085.7927	19657.1390	3.30	I	23932	5	4275	6
5085.2134	19659.3780	1.50	I	27778	7	8118	7
5084.9549	19660.3778	1.23	I	33228	8	13567	7
5084.0185	19663.9988	1.29	I	25655	4	5991	4
5083.9320	19664.3334	1.19	I	32490	7	12826	7
5083.8007	19664.8412	0.93	I	24118	3	4453	4
5081.3972	19674.1427	5.74	I	30982	9	11308	9
5080.6130	19677.1790	1.21	I				
5080.5045	19677.5995	1.30	I	31134	6	11457	6
5080.4802	19677.6937	8.38	I	27323	9	7645	8
5079.9975	19679.5632	0.97	I	30365	7	10685	8

LAMBDA(Å)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
5078.4724	19685.5661	1.46	I	35930	9	16244	8
5078.1983	19686.5356	2.48	I	20306	4	620	5
5077.8051	19688.0600	2.78	II	19977	13/2	289	11/2
5077.2625	19690.1641	1.90	I	25678	1	5988	0
5076.9879	19691.2291	3.93	I	20311	5	620	5
5076.7514	19692.1463	23.4	I	23560	4	3868	3
5076.0095	19695.0243	2.09	II	32382	9/2	12687	9/2
5074.7632	19699.8613	12.8	I	27818	8	8118	7
5073.0288	19706.5964	2.42	I	31339	5	11633	5
5072.7923	19707.5149	1.60	I	26713	5	7005	6
5072.7557	19707.6572	2.04	II	24293	13/2	4585	13/2
5071.8717	19711.0922	1.29	I	32537	7	12826	7
5069.1708	19721.5941	1.57	I	38656	11	18933	11
5068.7994	19723.0391	1.36	II	25130	7/2	5401	7/2
5067.2117	19729.2191	1.67	I	30416	8	10685	0
5066.8119	19730.7758	1.72	I	29986	6	10254	5
5066.6717	19731.3215	2.78	I	11613	5	31347	4
5066.1056	19733.5265	1.36	I	25729	3	5991	4
5064.8182	19738.5425	1.90	I	27605	6	7864	5
5064.0415	19741.5697	1.88	I	23543	7	3800	7
5063.7576	19742.6767	39.2	I	33094	7	13346	7
5062.3757	19748.0656	2.33	I	24026	6	4275	6
5061.7529	19750.4955	3.19	I	30571	4	10819	3
5061.4957	19751.4891	2.93	I	27615	6	7864	5
5061.4721	19751.5912	2.03	I	26758	7	7005	6
5061.0205	19753.3535	7.72	I	24207	3	4453	4
5060.9491	19753.6323	11.4	I	27890	4	8133	4
5059.9744	19757.4373	1.28	I	32585	8	12826	7
5059.5516	19759.0884	3.08	I	27086	8	7326	7
5059.2399	19760.3057	1.98	I	27886	7	8118	7
5057.1778	19768.3631	5.25	I	23639	3	3868	3
5056.4751	19771.1103	3.49	I	23572	6	3800	7
5056.4383	19771.2542	1.98	I	25534	5	5762	5
5056.2163	19772.1221	4.09	I	31408	5	11633	5
5055.4060	19775.2912	2.74	I	19783	6	0	6
5053.3502	19783.3362	39.5	I	26791	6	7005	6
5052.6372	19786.1277	1.65	I	24066	7	4275	6
5051.4296	19790.8577	7.77	I	30004	5	10208	4
5050.2155	19795.6155	1.52	I	20420	6	620	5
5049.0479	19800.1932	15.1	I	25793	3	5991	4
5048.4424	19802.5682	1.82	I	32932	9	13127	9
5047.8265	19804.9843	2.57	I	22101	9/2	2294	11/2
5047.4033	19806.6447	3.33	II	25805	5	5991	4
5045.3950	19814.5286	1.58	I	27682	5	7864	5
5044.5052	19818.0235	1.69	I

LAMBDA(A)	STGMA(CM-I)	INT	ION	F(EVEN)	J(E)	E(ODD)	J(O)
5042.7930	19824.7526	0.85	II	31638	13/2	11813	13/2
5042.4390	19826.1442	3.08	I	30934	4	10208	4
5042.4186	19826.2245	1.73	I	19826	6	0	6
5042.3049	19826.6713	3.26	II	25495	7/2	5667	7/2
5041.9247	19828.1664	0.90	I	12035	4	31884	5
5036.7006	19848.7324	0.97	I	26098	7	6249	6
5036.5263	19849.4192	8.76	I	31408	5	11558	4
5036.4401	19849.7591	1.21	I	29403	11/2	9553	11/2
5035.2481	19850.5156	1.22	II	26103	6	6249	6
5035.2049	19854.6282	1.34	I	26962	4	7103	3
5034.2643	19858.3377	1.04	I ?	28745	4	8878	3
5032.0439	19867.1002	3.29	I	24293	13/2	4420	11/2
5030.7466	19872.2231	1.36	II	33448	8	13567	7
5028.6662	19880.4445	0.80	I	23753	5	3868	3
5027.5095	19885.0184	5.38	I	19885	7	0	6
5027.3841	19885.5145	382.	I	26092	6	7005	6
5027.0171	19886.9663	1.10	I	23755	2	3868	3
5026.9809	19887.1095	1.60	I	27753	4	7864	5
5026.5223	19888.9236	2.71	I ?	35930	9	16040	10
5026.3629	19889.5544	2.80	I	30978	7	10987	6
5026.0685	19890.7195	0.89	I	30179	5	10288	6
5025.9224	19891.2977	1.31	I	25655	4	5762	5
5025.4328	19893.2386	6.95	I	26997	4	7103	3
5025.3787	19893.4497	4.50	I	24172	6	4275	6
5024.5680	19896.6596	10.7	I	30191	6	10288	6
5023.5081	19900.8573	1.49	UB	24185	7	4275	6
5022.9848	19902.8909	1.35	I	28044	3	8133	4
5021.1775	19910.0943	5.53	I	30899	6	10987	6
5020.9280	19911.0914	1.11	I	23715	6	3800	7
5020.7731	19911.6980	1.09	I	25906	5	5991	4
5020.0761	19914.4623	1.76	I	26920	5	7005	6
5019.9824	19914.8342	1.90	I	13463	5	33378	6
5019.8931	19915.1284	4.84	I	25713	9/2	5790	11/2
5019.8429	19915.3875	1.16	I	24220	5	4275	6
5017.9266	19922.9931	0.85	II	24400	3	4453	4
5012.9190	19942.8985	3.48	I	32774	8	12826	7
5012.4049	19944.9399	4.50	I	20569	4	620	5
5011.8271	19947.2394	3.01	I	32764	7	12826	7
5011.6435	19947.9703	1.21	I	32317	5	12362	4
5011.4089	19948.9038	48.0	I	27060	4	7103	3
5009.9822	19954.5849	0.88	I	13463	5	33421	6
5009.7823	19955.3808	0.91	I	31416	6	11457	6
5009.3985	19956.9099	4.76	I	26208	7	6249	6
5009.2059	19957.6770	2.09	I				
5008.9335	19957.6770	1.12	I				
5008.6798	19958.7626	18.0	I				
	19959.7736		I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
5008.2101	19961.6455	13.5	I I	21710	13/2	1749	13/2
5007.0247	19966.3713	1.85	I	30047	6	10081	5
5006.0103	19970.4170	3.57	I	25961	3	5991	4
5005.3278	19973.1401	1.67	I	34943	4	14970	5
5004.0539	19978.2246	2.14	I	30047	6	10069	7
5004.0036	19978.4253	26.3	I	23779	7	3800	7
5003.0039	19979.2228	2.14					
5002.5004	19984.4285	1.43	I	25975	4	5991	4
5001.5475	19988.2360	1.93	I	34550	4	14562	5
5001.3643	19988.9682	1.72	I	28107	8	8110	7
4999.9524	19994.6126	2.87	I	24448	5	4453	4
4999.9201	19994.7420	1.25					
4999.6127	19995.9711	2.85	I	24449	4	4453	4
4999.4897	19996.4632	1.66	I	28129	4	8133	4
4998.6282	19999.9096	2.65	I	7020	4	27020	5
4997.9266	20002.7168	1.31	I	33570	7	13567	7
4997.4130	20004.7728	5.31	I	23873	3	3868	3
4997.1899	20005.5660	1.76					
4996.6211	20007.9432	3.18	I	30077	8	10069	7
4994.1099	20018.0035	1.31	I	30365	7	10347	8
4993.7770	20019.3379	2.37	I	34864	10	14845	10
4992.9304	20022.7326	2.29	I I	24608	11/2	4585	13/2
4992.1569	20025.8351	3.99	I	26274	7	6249	6
4992.1130	20026.0110	8.66	I	25788	4	5762	5
4991.6130	20028.0170	2.36	I	27219	3	7191	2
4990.1166	20034.0228	11.1	I	28152	7	8118	7
4989.9037	20034.8774	6.87					
4989.8516	20035.0865	1.64	I	20661	6	620	5
4988.3320	20041.1899	3.42	I I	20961	7/2	914	9/2
4986.8977	20046.9539	3.81	I	23848	7	3800	7
4986.6807	20047.7943	1.82	I	25818	4	5762	5
4984.6142	20056.1375	1.89	I	24333	7	4275	6
4984.0564	20058.0840	5.17	I	30266	4	10208	4
4983.6874	20059.8672	1.23	I	33595	9	13535	9
4983.4014	20061.0185	1.31	I	28194	4	8133	4
4983.1292	20062.1144	1.18	I	30747	7	10685	4
4981.9519	20066.8553	1.34	I	27072	6	7005	8
4981.2402	20069.7222	6.18					6
4980.8314	20071.3693	1.85	I	33199	10	13127	9
4980.6307	20072.1780	1.63	I	7020	4	27092	3
4979.4221	20077.0498	1.26	I	27941	6	7864	5
4978.6223	20080.2750	1.18	I	28213	5	8133	4
4978.3690	20081.2370	1.84	I	13463	5	33544	4
4978.2294	20081.8599	2.27	I ?	24535	5	4453	4
4974.0548	20098.7140	2.86	I	20719	5	620	4
4973.7835	20099.8101	1.44	I	30168	4	10069	5
		1.18	I		6		7

LAMBDA(Å)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4973.6908	20100.1848	0.99	I	33228	8	13127	9
4973.6365	20100.4043	1.48	I	23972	4	3868	3
4972.7239	20104.0932	4.63	II	21021	7/2	914	9/2
4972.1050	20106.5954	5.70	I	27972	5	7864	5
4971.5973	20108.6490	1.01	I	20178	7	10069	7
4971.5112	20108.9972	2.17	I	30114	5	0	6
4970.2005	20114.3000	11.9	I	31798	7	11677	7
4968.4405	20121.4251	2.02	I	31798	7	3800	7
4967.3226	20125.9534	66.5	I	23926	8	11308	9
4965.3541	20133.9323	14.4	I	31442	9	5991	4
4965.2609	20134.3100	2.82	I	26125	4	6445	9/2
4964.6264	20136.8833	1.24	II	26581	9/2	6249	6
4963.3065	20142.2382	5.31	I	26391	7	10987	6
4962.0546	20147.3201	1.15	I	31134	6	0	6
4961.8798	20148.0297	1.68	I	20148	5	7183	3
4961.8356	20148.2092	3.85	I	27252	4	7326	7
4961.5418	20149.4022	4.31	I	27475	7	7547	7/2
4961.2379	20150.6365	1.02	II	27698	9/2	13567	7
4961.1049	20151.1768	2.34	I	33719	2	7191	2
4960.9261	20151.9028	1.02	I	27343	3	3868	3
4960.7163	20152.7552	1.41	I	24022	6	8118	7
4960.5143	20153.5757	1.96	I	28272	6	4275	6
4960.4351	20153.8975	1.14	I	24433	6	4453	4
4959.5360	20157.5513	8.29	I	24613	4	27184	5
4958.8513	20160.3344	1.21	I	7020	4	10069	7
4958.0694	20163.5137	7.60	I	11613	6	31785	5
4956.2263	20171.0120	1.16	I	30240	5	4275	6
4956.0284	20171.8173	2.64	I	11613	8	7645	8
4955.9035	20172.3258	4.18	I	24448	6	5762	5
4955.7753	20172.8476	35.3	I	25938	4	10540	3
4954.9631	20176.1540	9.06	I	30716	6	7864	5
4954.9199	20176.3299	1.61	I	28053	13/2	5790	11/2
4952.2230	20187.3178	1.95	I	30886	7	10685	8
4951.8458	20188.8555	4.25	I	33031	8	12826	7
4950.1746	20195.6712	2.47	II	30500	6	10288	6
4948.9431	20200.6964	1.16	I	25975	4	5762	5
4947.7931	20205.3917	1.97	I	20218	6	0	6
4946.6326	20210.1320	0.98	I	28355	5	8133	6
4946.2876	20211.5415	1.47	I	11613	5	31837	4
4945.7603	20213.6638	4.19	I	21975	13/2	1749	13/2
4944.5046	20218.8298	45.3	I	20851	5	620	5
4943.6918	20222.1538	4.55	I	31871	6	11633	5
4943.2621	20223.9176	1.08	I	25906	9/2	5667	7/2
4942.6375	20226.4676	3.67	II				
4941.4679	20231.2546	4.37	I				
4939.7212	20238.4087	1.25	I				
4939.6451	20238.7203	1.23	II

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
4939.9666	20241.5007	2.56	I	7020	4	27262	4
4937.0133	20249.5088	2.33	I	12035	4	32285	5
4936.9484	20249.7751	14.3	I	24118	3	3868	3
4936.7757	20250.4834	3.33	I	26241	3	5991	4
4936.7433	20250.6165	2.02	I	28114	5	7864	5
4935.9339	20253.9370	1.31	I	30334	6	10081	5
4934.5608	20259.5728	2.06	I	24535	5	4275	6
4934.0317	20261.7453	2.53	I	27267	5	7005	6
4933.6620	20263.2638	3.67	II	24684	9/2	4420	11/2
4933.0601	20265.7359	22.1	I	24066	7	3800	7
4932.9607	20266.1442	1.96	I	27370	4	7103	3
4931.3166	20272.9009	1.19	I	33099	7	12826	3
4929.5708	20280.0807	1.70	I	31100	4	10819	3
4928.4474	20284.7030	81.4	I	24560	7	4275	6
4928.1621	20285.8775	3.17	I	24154	2	3868	3
4927.6888	20287.8259	9.45	I	24741	5	4453	4
4927.4927	20288.6334	1.21	I	13463	5	33752	6
4926.4392	20292.9720	1.36	II	21207	7/2	914	9/2
4925.8421	20295.4317	1.23	I	30642	7	10347	8
4925.6617	20296.1749	2.19	I	30365	7	10069	7
4924.6451	20300.3645	2.97	II	25967	7/2	5667	7/2
4924.5052	20300.9412	1.24	I	33703	6	13402	6
4923.6121	20304.6238	1.72	I	26066	5	5762	5
4921.3876	20313.0014	11.5	I	26305	5	5991	4
4920.8421	20316.0533	1.94	I	28435	7	8118	7
4920.5427	20317.2893	1.35	I	27324	7	7005	6
4920.1300	20318.9937	3.00	I	20943	6	620	5
4919.2398	20322.6708	1.79	I	27969	9	7645	8
4919.1349	20323.1040	16.7	I	28451	8	8118	7
4918.9019	20324.0657	4.67	I	30580	6	10254	5
4918.2910	20326.5912	2.01	I	26324	5	5991	4
4916.8760	20332.4404	16.2	I	24609	6	4275	6
4916.6710	20333.2083	1.67	I	24923	13/2	4585	13/2
4916.6358	20333.4339	13.5	I	11502	6	31847	5
4916.5409	20333.6263	1.32	II				
4915.4853	20338.1930	2.38	I	22642	9/2	2294	11/2
4913.8641	20344.9028	1.57	I	20353	11/2	0	9/2
4913.8184	20345.0923	1.26	I	30702	8	10347	8
4913.2662	20347.3788	1.19	II	26000	7	6249	6
4913.1690	20347.7814	6.06	II	26125	4	5762	5
4911.6693	20353.9942	3.60	II	24172	6	3800	7
4911.3036	20355.5097	2.16	I				
4910.3518	20359.4550	57.9	I				
4909.3655	20363.5455	7.36	I				
4909.1872	20364.2850	2.46	I				
4907.4397	20371.5365	2.59	I				
4906.2552	20376.4545	1.88	UB

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4905.3724	20380.1218	1.18	I	34881	9	14501	8
4904.2054	20384.9713	3.52	I	24185	7	3800	7
4903.6507	20387.2772	1.11	I	31945	5	11558	4
4901.8829	20394.6295	3.64	I	24263	4	3868	3
4901.8408	20394.8047	1.74	I				
4901.6306	20395.6793	2.67	I	24671	6	4275	6
4901.5652	20395.9511	1.73	I	31215	4	10819	3
4900.9365	20398.5675	1.21	I				
4900.1038	20402.0089	1.14	I	33228	8	12826	7
4899.3753	20405.0678	3.38	I	30945	4	10540	3
4899.2857	20405.4407	10.6	II	21320	7/2	914	9/2
4898.5933	20408.3250	2.89	I				
4898.3660	20409.2718	1.14	I	30490	5	10081	5
4896.0017	20419.1276	2.15	I	30500	6	10081	5
4895.6686	20420.5168	14.5	I	20420	6	0	6
4895.5553	20420.9896	4.78	I	30490	8	10059	7
4893.5526	20429.3465	2.25	I	28562	5	8133	7
4892.6141	20433.2652	1.30	II	26716	13/2	6283	4
4892.1117	20435.3636	1.41	I	27627	1	7191	2
4892.0270	20435.7176	1.88	I	30504	7	10069	7
4891.1780	20439.2649	10.3	I	24892	3	4453	4
4889.1474	20447.7535	3.00	I	28566	7	8118	7
4887.7305	20453.6809	2.35	I	26444	5	5991	4
4886.6017	20458.4058	3.71	I	21078	5	620	5
4886.3255	20459.5624	1.93	II	25986	13/2	5526	13/2
4885.1407	20464.5244	124.	I	20464	7	0	6
4884.3463	20467.8526	4.18	I	12035	4	32503	5
4883.8370	20469.9872	8.27	I	27475	7	7005	6
4883.7845	20470.2070	3.70	II	23764	11/2	2294	11/2
4882.3156	20476.3656	1.16	I	13463	5	33939	5
4882.0446	20477.5023	2.20	I	30546	8	10069	7
4881.9313	20477.9774	4.08	I	28596	7	8118	7
4881.8381	20478.3685	2.75	I	28342	6	7864	5
4880.4187	20484.3242	4.35	I	28760	7	4275	6
4880.2554	20485.0095	10.2	I	30832	9	10347	8
4879.7532	20487.1178	5.96	I	24940	4	4453	4
4878.5988	20491.9656	1.11	I	34059	7	13567	7
4878.5013	20492.3752	19.2	I	27818	8	7326	7
4878.3444	20493.0341	1.56	UB				
4877.9867	20494.5370	1.78	II	26285	11/2	5790	11/2
4875.8515	20503.5115	3.25	I				
4874.9603	20507.2598	2.80	I	30588	6	10081	5
4874.5955	20508.7946	2.17	I	28627	6	8118	7
4874.3429	20509.8573	14.1	I	26758	7	6249	6
4873.7143	20512.5025	2.37	I				
4873.5573	20513.1632	2.25	I	24966	3	4453	4
4872.9764	20515.6087	1.27	UB

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4871.7951	20520.5831	7.46	I	24974	4	4453	4
4871.6347	20521.2590	1.23	I	13463	5	33984	5
4871.0466	20523.7363	1.80	I	28387	4	7864	5
4870.6535	20525.3927	3.01	I	20525	5	0	5
4870.6149	20525.5554	2.51	I	26287	6	5762	5
4869.0449	20532.1736	4.59	I	24400	3	3868	3
4868.8591	20532.9616	28.7	I	24333	7	3800	7
4866.5668	20542.6287	3.31	I	26791	6	6249	6
4866.4702	20543.0367	3.50	I	26305	5	5762	5
4865.4910	20547.1710	2.25	I	7020	4	27567	5
4863.4865	20555.6393	7.00	I	30636	6	10081	5
4861.8237	20562.6695	8.29	I	26324	5	5762	5
4861.5826	20563.6892	1.51	I	25017	4	4453	4
4861.1602	20565.4760	4.56	I	21185	4	620	5
4860.9903	20566.1949	5.28	II	25967	7/2	5401	7/2
4860.5234	20568.1705	1.45	II	20571	7/2	0	9/2
4859.6919	20571.6895	5.57	II	27023	9/2	6445	9/2
4858.0883	20578.4801	6.34	II	24449	4	3868	3
4858.0468	20578.6559	1.21	I	31270	9	10685	8
4857.5161	20580.9039	2.21	I	33412	6	12825	7
4856.6560	20584.5486	14.4	I	26349	6	5762	5
4856.3296	20585.9324	1.63	I	30878	7	10288	6
4856.0760	20587.0072	1.45	I	26583	5	5991	4
4855.4740	20589.5595	1.25	I	27605	6	7005	6
4855.4438	20589.6876	1.38	I	30687	15/2	6283	13/2
4855.4173	20589.8001	1.44	II	27615	6	10081	5
4854.8627	20592.1522	3.59	I	28739	8	7005	6
4852.9565	20600.2405	8.76	I	22917	11/2	8118	7
4852.1089	20603.8391	1.96	II	13463	5	2294	11/2
4851.4562	20606.6110	3.90	I	11613	5	34086	5
4850.5962	20610.2646	2.14	I	24906	6	32237	4
4848.0043	20621.2834	17.8	I	24433	6	4275	6
4847.6582	20622.7555	5.66	II	20635	9/2	3800	7
4847.5223	20623.3335	1.62	II	21555	9/2	0	9/2
4847.3675	20623.9922	2.80	I	21555	3	914	9/2
4845.6806	20631.1718	7.14	I	25096	7	4453	4
4845.3851	20632.4300	2.03	I	28761	6	8118	7
4844.7179	20635.2713	2.20	II	21265	5	620	5
4843.4893	20640.5059	2.73	II	25098	5	4453	4
4842.9523	20642.7942	2.16	I	24451	8	3800	7
4842.8946	20643.0404	2.00	I	27757	3	7103	3
4842.4888	20644.7703	76.7	I	32331	8	11677	7
4842.3847	20645.2138	24.3	I	26650	4	5991	4
4841.0432	20650.9347	8.45	I				
4840.3265	20653.9926	1.26	I				
4840.2381	20654.3698	1.25	I				
4839.0766	20659.3274	1.93	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4838.7566	20660.6933	3.63	I	24938	7	4275	6
4838.1793	20663.1586	3.04	I	33552	4	12884	4
4837.1423	20667.5886	1.30	I	11613	5	32285	5
4836.3057	20671.1635	1.69	I				
4836.1791	20671.7048	1.86	I				
4835.9153	20672.0324	1.15	I ?	12035	4	32708	4
4834.8342	20677.4549	1.20	I	31024	7	10347	8
4834.6450	20678.2639	2.58	I	28542	6	7864	5
4834.1797	20680.2543	5.28	I	28798	7	8118	7
4831.5446	20691.5331	1.21	I	26679	1	5988	0
4830.2268	20697.1781	2.43	I	13453	5	34160	6
4829.9340	20698.4329	2.04	I	28562	5	7864	5
4827.8528	20707.3554	2.34	I	25160	3	4453	4
4826.5365	20713.0025	1.18	I	34059	7	13345	7
4825.9170	20715.6617	1.98	I	32392	8	11677	7
4824.5028	20721.7337	5.01	I	26713	5	5991	4
4824.3193	20722.5218	4.60	I	11613	5	32336	4
4824.2667	20722.7480	7.47	I ?	26971	7	6249	6
4823.1349	20723.3139	1.15	I	35267	7	14543	6
4823.5089	20726.0037	1.53	I	27829	4	7103	3
4819.5459	20743.0323	4.36	II	25163	13/2	4420	11/2
4819.2435	20744.3473	5.53	I	33570	7	12826	7
4819.0293	20745.2692	1.23	I	24613	4	3868	3
4818.6115	20747.0679	10.2	I	25206	4	4453	4
4817.7848	20750.6280	1.37	I	31039	5	10288	6
4816.8330	20754.7282	1.36	I				
4816.4689	20756.2974	1.92	I	31442	9	10685	8
4816.3527	20756.7982	2.54	I				
4815.7072	20759.5805	31.1	I	24560	7	3800	7
4814.1013	20766.5054	9.31	I	20766	7	0	6
4813.7818	20767.8835	1.86	I	33594	8	12826	7
4813.5104	20769.0546	1.63	I	26760	4	5991	4
4812.8307	20771.9874	7.03	I	30841	8	10069	7
4812.7175	20772.4762	6.35	I	27778	7	7005	5
4811.6788	20776.5603	9.83	I	28895	7	8118	7
4811.3299	20778.4669	1.22	I	33604	7	12826	7
4810.8889	20780.3716	57.1	I	24581	8	3800	7
4810.5661	20781.7661	1.11	I	27885	3	7103	3
4810.3438	20782.7263	2.36	I	31339	5	10557	4
4809.9920	20784.2464	2.59	I	31039	5	10254	4
4808.8415	20789.2187	3.39	II	25495	7/2	4706	5/2
4808.5975	20790.2737	1.96	I	28435	7	7645	8
4808.0306	20792.7251	1.90	I	28118	7	7326	7
4807.6075	20794.5548	9.13	I	30875	6	10081	5
4806.7295	20798.3531	1.18	I	28931	5	8133	4

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
4805.6507	20803.0218	1.94	I	28448	9	7645	0
4805.2303	20804.8418	1.44	I	26566	6	5762	5
4805.1347	20805.2561	2.45					
4805.0954	20805.4262	1.95	I				
4804.2292	20809.1774	2.71	I	28451	8	7645	0
4803.2914	20813.2398	2.03	I	24677	3	3868	3
4802.1346	20818.2538	1.43	I	33639	6	12826	7
4801.4119	20821.3872	1.44	I	30999	6	10081	5
4801.0570	20822.9261	4.41	I	26583	5	5762	5
4800.9573	20823.3588	2.16	I	25098	5	4275	6
4800.2247	20826.5355	4.76	I	27072	6	6249	6
4799.7405	20828.6375	5.87	I	28152	7	7326	7
4796.3234	20843.4755	1.46	I	21448	4	620	5
4794.4967	20851.4177	3.16	I	31408	5	10557	4
4794.2015	20852.7016	1.45	I	28044	3	7191	2
4791.8410	20862.9737	1.51					
4791.8160	20863.0828	2.26	I	28996	4	8133	4
4791.5734	20864.1389	2.84	I	26855	3	5991	4
4791.1223	20866.1035	1.33	I	11613	5	32480	4
4790.5881	20868.4303	1.45	I	31215	8	10347	4
4790.3800	20869.3366	3.24	I	26631	5	5762	0
4790.0997	20870.5578	7.09	I	24571	6	3800	5
4790.0603	20870.7293	25.5	I	28516	8	7645	7
4789.7249	20872.1908	1.54					0
4789.0332	20875.2057	2.65	I	11613	5	32489	8
4787.6755	20881.1251	1.60					4
4787.5992	20881.4581	2.95	I ?				
4786.7289	20885.2545	4.26	I	27886	7	7005	6
4785.9201	20888.7841	21.1	I	31442	5	10557	4
4785.7542	20889.5082	2.78	I	24757	4	3810	4
4783.5069	20899.3217	2.59	I	11613	5	32503	3
4783.0792	20901.1906	3.81	I	25352	3	4453	5
4782.8110	20902.3625	8.47					4
4780.1911	20913.8187	17.7	I	25178	5	4275	6
4779.9181	20915.0129	1.68	I	30994	6	10081	5
4779.7484	20915.7556	4.35	I	29033	6	8118	5
4779.6290	20916.2782	4.94		21536	5	620	7
4779.4794	20916.9329	2.36	I	21831	6	914	5
4779.0931	20918.6235	4.47	I	24785	9/2		9/2
4778.5530	20920.9880	1.53		11613	3	3868	3
4778.0956	20922.9905	17.8	I	31129	5	32532	4
4777.6772	20924.8229	49.1	I	51270	5	10208	4
4776.6307	20929.4073	2.41	I	21545	9	10347	8
4775.9208	20932.5182	2.59	I	26520	4	620	5
4774.8892	20937.0404	1.68	I	27938	5	5991	5
4774.3820	20939.2647	1.97	I	32495	5	7005	6
				28803	4	11558	4
						7864	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4773.4331	20943.4268	44.1	I	20943	6	0	6
4772.6946	20946.6678	9.04	II	23241	11/2	2294	11/2
4772.4489	20947.7460	1.98	I	28811	6	7864	5
4771.7147	20950.9692	6.62	I	26713	5	5762	5
4771.2423	20953.0432	1.65	I	34080	9	13127	9
4769.9796	20958.5900	3.79	I	12035	4	32994	5
4769.8403	20959.2020	2.28	I	24760	7	3800	7
4769.6113	20960.2083	1.18	I	28151	3	7191	2
4769.2673	20961.7203	7.35	II	20961	7/2	0	9/2
4768.6642	20964.3712	57.9	I	21584	6	620	5
4767.5776	20969.1490	1.15	I	11613	5	32583	4
4766.5057	20973.8645	2.88	I	28077	4	7103	3
4766.4505	20974.1076	3.32	I	31182	5	10208	4
4765.8545	20976.7304	1.11	II	30859	7/2	9882	9/2
4764.1484	20984.2422	2.05	II	27267	11/2	6283	13/2
4762.8892	20989.7899	7.92	I	28635	8	7645	8
4761.3295	20996.6650	11.4	I	28860	6	7864	5
4761.0765	20997.7816	1.33	I	26759	5	5762	5
4760.3326	21001.0625	3.33	I	29119	8	8118	7
4759.8363	21003.2526	1.58	I	33829	8	12826	7
4759.7678	21003.5546	2.98	I	31690	8	10685	8
4759.3961	21005.1952	3.06	UB	12035	4	33045	5
4758.8586	21007.5674	1.08	I	31301	7	10288	6
4758.2497	21010.2555	1.10	I	21636	5	620	5
4757.7508	21012.4587	1.09	I	31098	6	10081	5
4756.8441	21016.4638	2.60	I	21021	7/2	0	9/2
4756.8059	21016.6327	153.	I	24892	3	3868	3
4756.7043	21017.0815	2.58	I	29158	4	8133	4
4755.7358	21021.3617	8.99	II	32709	6	11677	7
4755.0940	21024.1990	2.73	I	7020	4	28060	5
4754.7911	21025.5380	2.45	I	11613	5	32655	4
4753.2066	21032.5459	0.92	I	25319	5	4275	6
4751.6617	21039.3854	8.75	I	27037	3	5991	4
4751.1864	21041.4898	2.49	I	31134	6	10081	5
4750.7175	21043.5667	4.32	I	29185	8	8118	7
4750.1089	21046.2626	1.01	I	24940	4	3868	3
4748.3912	21053.8761	7.66	I	33899	8	12826	7
4748.1047	21055.1466	1.64	I	25348	6	4275	6
4745.5738	21066.3752	2.89	I	27324	7	6249	6
4744.2954	21072.0517	9.58	I	21070	5	0	6
4744.0537	21073.1254	1.88	I				
4744.0221	21073.2657	3.28	I?				
4743.5198	21075.4972	38.5	I				
4742.7921	21078.7307	1.75	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4742.4846	21080.0975	1.13	I	32537	7	11457	6
4742.3305	21080.7826	22.4	I	25534	5	4453	4
4741.7540	21083.3453	8.95	I	24884	7	3800	7
4741.3048	21085.3431	1.31	I	29963	3	8878	3
4741.2258	21085.5944	3.11	I	32393	3	11308	9
4739.4988	21093.3774	1.92	I	28098	6	7005	6
4739.1927	21094.7397	14.0	I	31442	9	10347	8
4738.4386	21098.0970	22.8	I	24966	3	3868	3
4738.3108	21098.6659	5.35	I	7020	4	28119	5
4737.6185	21101.7488	8.78	I				
4736.7727	21105.5167	12.4	I	24974	4	3868	3
4733.9869	21117.9365	1.10	I	29236	7	8118	7
4733.6618	21119.3869	2.06	I	32796	8	11677	7
4732.5597	21124.3050	2.96	I	25577	4	4453	4
4732.4142	21124.9544	2.95	I	28451	8	7326	7
4731.5941	21128.6161	8.10	II	25714	13/2	4585	13/2
4730.9987	21131.2749	8.07	I	31339	5	10208	4
4730.8216	21132.0660	7.97	I	24932	8	3800	7
4730.5746	21132.7225	38.2	I	21753	4	620	5
4730.1308	21135.1523	1.75	I	31955	4	10819	3
4728.4572	21142.6326	2.46	II	34593	11/2	13450	11/2
4727.6579	21146.2070	19.8	I	21766	6	620	5
4727.5284	21146.7853	2.80	I	31435	7	10288	6
4727.3366	21147.6442	15.2	I	7020	4	28168	5
4727.1174	21148.6250	11.0	I	25017	4	3868	3
4725.9504	21153.8470	1.12	I				
4725.6465	21155.2074	1.86	I	25023	2	3868	3
4725.6004	21155.4140	1.13	I	33981	8	12826	7
4724.8794	21158.6422	1.45	I	26920	5	5762	5
4724.5325	21160.1959	1.51	I	35736	3	14576	3
4722.8127	21167.9011	2.65	I	31853	8	10685	8
4722.7168	21168.3307	12.5	II	22917	11/2	1749	13/2
4721.1138	21175.5180	1.10	I	27166	3	5991	4
4720.0215	21180.4184	1.43	II	26581	9/2	5401	7/2
4718.9053	21185.4285	1.17	I	32493	10	11308	9
4718.5656	21186.9537	1.38	I	25462	6	4275	6
4717.8300	21190.2570	11.1	I	28516	8	7326	7
4715.6689	21199.9679	18.2	I	31408	5	10208	4
4715.2390	21201.9009	2.42	I				
4714.5846	21204.8435	3.72	I	37449	8	16244	8
4713.9403	21207.7390	1.88	II	21207	7/2	0	9/2
4712.5913	21213.8124	2.45	I	30070	3	8856	2
4712.2879	21215.1786	7.46	I	31296	6	10081	5
4712.1220	21215.9255	1.88	I				
4711.8493	21217.1530	2.09	I	11613	5	32831	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
4710.8029	21221.0659	2.58	I	26983	5	5762	5
4709.7767	21226.4900	2.02	I	27475	7	6249	6
4709.3563	21228.3846	3.91	I	27219	3	5991	4
4708.2007	21233.5950	2.33	I	34059	7	12826	7
4708.1545	21233.8033	5.93	I	31442	5	10208	4
4708.1325	21233.9028	1.63	I	29098	4	7864	5
4707.5589	21236.4897	1.64	I	25104	4	3868	3
4705.1309	21247.4483	2.10	UB				
4702.6860	21258.4946	1.53	I	25534	5	4275	6
4702.5122	21259.2804	6.06	II	23553	11/2	2294	11/2
4702.0380	21261.4244	3.10	II	25967	7/2	4706	5/2
4701.2267	21265.0934	66.4	I	21265	6	0	6
4700.9740	21266.2365	2.67	II	21555	9/2	289	11/2
4700.7049	21267.4540	2.71	II	26527	15/2	5259	15/2
4700.2986	21269.2921	1.44	I	33213	3	11943	3
4698.8247	21275.9639	4.35	I	27267	5	5991	4
4698.7194	21276.4407	5.59	I	25729	3	4453	4
4697.9909	21279.7400	3.43	I	31488	5	10208	4
4697.8776	21280.2531	1.92	I	28285	7	7005	6
4697.8523	21280.3675	2.04	I	31361	6	10081	5
4696.0432	21288.5654	3.85	I	31974	8	10685	8
4695.6348	21290.4169	5.75	I	28936	9	7645	8
4695.3233	21291.8296	2.26	I	25745	5	4453	4
4695.2220	21292.2888	25.5	I	25160	3	3868	4
4694.7001	21294.6557	9.79	I	29413	8	8118	3
4693.6994	21299.1956	6.12	I	29432	4	8133	7
4692.4115	21305.0417	2.37	I	25580	6	4275	4
4691.4694	21309.3198	2.25	I	28635	8	7326	6
4691.3983	21309.6425	3.72	I	31518	5	10208	7
4691.2516	21310.3090	5.93	I	27072	6	5762	4
4689.2803	21319.2673	1.87	I				5
4689.0738	21320.2063	17.9	II	21320	7/2	0	9/2
4688.5180	21322.7300	1.75	I	32310	7	10987	6
4687.4324	21327.6719	1.45	I	32731	5	11403	4
4686.9226	21329.9919	26.3	I	21329	5	0	6
4685.8123	21335.0456	4.10	I	31416	6	10081	5
4685.7246	21335.4452	1.83	II	27126	9/2	5790	11/2
4685.1926	21337.6676	6.09	I	21958	5	620	5
4684.6226	21340.4639	3.93	I	25793	3	4453	4
4683.9258	21343.6384	4.74	I	31690	8	10347	8
4682.1210	21351.8655	15.5	I	27600	7	6249	6
4681.9984	21352.4249	22.9	I	25805	5	4453	4
4681.7126	21353.7282	1.51	I				
4681.2791	21355.7055	2.98	I	21976	4	620	5
4681.0515	21356.7438	5.28	I	27605	6	6249	6
4680.9447	21357.2313	1.61	I	25810	3	4453	4
4680.3845	21359.7876	1.88	I	21980	5	620	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4680.1491	21360.8619	1.17	I	34707	7	13346	7
4679.2863	21364.8003	3.05	I	25818	4	4453	4
4678.6679	21367.6241	5.60	I	29013	8	7645	8
4677.7380	21371.8717	6.49	I	29236	6	7864	5
4677.5296	21372.8242	3.28	I	21993	6	620	5
4676.8113	21376.1064	1.23	I	31445	8	10069	7
4676.2754	21378.5564	1.61					
4675.9374	21380.1018	1.41	I	32367.			
4675.9059	21380.2455	2.39	I	11613	7	10987	6
4674.9562	21384.5888	3.94	I	29503	5	32994	5
4674.6529	21385.9765	2.27	I	27148	7	8118	7
4674.2048	21388.0265	1.10	I	36179	6	5762	5
4672.4762	21395.9388	1.11	I	28499	6	14790	7
4672.2971	21396.7592	2.85	I	25672	4	7103	3
4671.3980	21400.8774	5.80	I	25986	7	4275	6
4669.7135	21408.5971	1.57	II	34976	13/2	4585	13/2
4669.3042	21410.4738	1.29	I	29932	7	13567	7
4668.8885	21412.3801	1.51	I	32098	15/2	8521	15/2
4668.5806	21413.7920	1.67	I	28739	7	10685	8
4667.7260	21417.7125	2.88	I	22038	8	7326	7
4666.8512	21421.7274	12.6	I	21710	4	620	5
4666.6429	21422.6835	3.88	II	32108	13/2	289	11/2
4665.8152	21426.4839	13.8	I	21426	8	10685	8
4665.4110	21428.3402	1.18	I		7	0	6
4664.6334	21431.9120	1.19	I	11613	5	33045	5
4663.7487	21435.9776	93.5	I	22056	6	620	5
4663.5233	21437.0138	1.11					
4662.9883	21439.4732	1.13	I	28543	4	7103	3
4662.8264	21440.2177	3.85	I	29558	6	8118	7
4662.6586	21440.9893	1.35	I	29574	3	8133	4
4661.6454	21445.6492	11.0	I	32902	7	11457	6
4660.8023	21449.5010	2.73	I	27437	1	5988	0
4660.1070	21452.7290	4.14	I	25906	5	4453	4
4659.8209	21454.0460	1.12	I	29318	4	7864	4
4659.1908	21456.9472	1.54	I	25910	4	4453	5
4654.8330	21477.0347	3.65	I	27267	4	4453	4
4653.4369	21483.4779	1.29	II	23778	11/2	5790	11/2
4653.2688	21484.2542	1.34	I	25352	11/2	2294	11/2
4652.0135	21490.0515	1.42	I	27252	3	3868	3
4651.9612	21490.2929	1.23	I	27252	4	5762	5
4651.8378	21490.8628	1.16	I	27252	5	5762	5
4651.5391	21492.2430	1.87	UB				
4651.2415	21492.2430	1.87	II	23241	11/2	1749	13/2
4651.1300	21493.6183	1.91	I	25294	8	3800	7
4650.4078	21494.1336	6.53	I	29612	8	8118	7
4650.0002	21497.4715	1.43	I	35032	10	13535	9
	21499.3557	1.60	II	26084	11/2	4585	13/2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4649.0493	21503.7531	1.64	I	25961	3	4453	4
4648.0647	21508.3081	3.12	II	26094	13/2	4585	13/2
4647.8829	21509.1491	1.30	II	22429	9/2	914	9/2
4646.5974	21515.0998	15.3	II	34644	8	13127	9
4646.3577	21516.2100	1.36	I	28523	7	7005	6
4646.0697	21517.5437	1.58	I	31772	6	10254	5
4646.0165	21517.7900	2.26	I	31733	5	10208	4
4644.5293	21524.6801	1.33	I	27778	7	6249	6
4643.8090	21528.0187	1.39	I	37779	9	16244	8
4643.6016	21528.9798	19.0	I	21536	5	0	6
4642.3627	21534.7256	1.31	I	28542	6	7005	6
4642.0710	21536.0784	2.26	I	29932	15/2	8394	15/2
4641.8864	21536.9349	1.21	I	29194	9	7645	8
4641.6496	21538.0335	2.52	II	25825	6	4275	6
4639.9956	21545.7110	2.43	II	32237	8	10685	8
4639.3650	21548.6396	4.07	I	21555	9/2	0	9/2
4639.1026	21549.8585	1.80	I	27548	4	5991	4
4638.6220	21552.0910	2.21	I	31630	7	10069	7
4638.1270	21554.3914	2.79	I	31649	6	10081	5
4637.9367	21555.2756	3.27	II	31923	8	10347	8
4637.5876	21556.8984	2.08	I	21584	6	0	6
4636.5845	21561.5619	1.91	I	25388	8	3800	7
4635.0598	21568.6545	2.26	I	29236	7	7645	8
4633.5132	21575.8537	1.32	I	28596	7	7005	6
4633.4889	21575.9669	1.48	UB	33150	5	11558	4
4631.6154	21584.6944	235.	I	27366	6	5762	5
4630.8977	21588.0395	5.31	I	34515	7	12910	6
4630.2791	21590.9235	2.07	I	26191	13/2	4585	13/2
4630.2461	21591.0772	2.01	I	26066	5	4453	4
4630.0405	21592.0359	1.23	I	29481	6	7864	5
4627.3552	21604.5658	1.91	I	27290	7/2	5667	7/2
4627.1641	21605.4582	6.17	I	32932	9	11308	9
4627.0741	21605.8783	11.0	II	26887	15/2	5259	15/2
4625.4890	21613.2825	12.0	I	30511	4	8878	3
4624.6526	21617.1911	3.77	I	30511	5	0	6
4624.4327	21618.2190	1.99	I	33094	7	11457	6
4623.9275	21620.5810	1.45	UB	27886	7	6249	6
4623.8943	21620.7361	3.74	II				
4623.4289	21622.9127	1.44	II				
4623.0347	21624.7562	3.90	I				
4622.4226	21627.6199	4.56	II				
4621.3684	21632.5533	2.50	I				
4620.4281	21636.9558	60.9	I				
4620.2765	21637.6656	9.21	I				
4620.2124	21637.9659	84.8	I

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
4618.7379	21644.8734	8.11	I	25445	7	3800	7
4618.3919	21646.4949	1.66	II	27929	11/2	6283	13/2
4615.9588	21657.9051	2.16	I	25458	7	3800	7
4614.9747	21662.5232	3.27	I	25938	6	4275	6
4614.8519	21663.0995	3.66	I	22283	4	620	5
4614.6773	21663.9192	1.84	II	26084	11/2	4420	11/2
4612.9132	21672.2040	4.30	I	26125	4	4453	4
4611.4328	21679.1611	2.12	I				
4610.7408	21682.4149	1.66	I	30539	3	8856	2
4610.6043	21683.0570	5.17	I	29801	7	8118	7
4609.8619	21686.5486	3.27	II	21975	13/2	289	11/2
4609.0086	21690.5639	6.73					
4608.8062	21691.5163	2.10	II	21691	11/2	0	9/2
4608.7333	21691.8594	2.12	I	29825	4	8133	4
4608.3493	21693.6669	6.49	I	29339	9	7645	8
4607.9706	21695.4497	1.49					
4605.5379	21706.9092	2.62	I	32392	8	10685	8
4605.4073	21707.5248	2.15	I	29033	6	7326	7
4605.1487	21708.7436	4.77	II	27499	11/2	5790	11/2
4605.0432	21709.2413	16.9	I	25977	4	3868	3
4603.9870	21714.2211	2.76	I	26167	5	4453	4
4603.8227	21714.5964	2.07	I	34842	8	13127	9
4603.6586	21715.7704	13.6	II	24010	11/2	2294	11/2
4603.4202	21716.8949	7.40	I	27965	7	6249	6
4601.7910	21724.5834	1.66	II	27126	9/2	5401	7/2
4601.1281	21727.7134	6.55	II	22642	9/2	914	9/2
4599.0645	21737.4523	3.05	I	27499	6	5762	5
4598.3296	21740.9365	1.92	II	27267	11/2	5526	13/2
4597.9473	21742.7441	1.67	I	32562	4	10019	3
4597.2737	21745.9298	1.81	I	29610	4	7864	5
4597.1626	21746.4553	2.60					
4596.7375	21748.4663	2.33	I	29881	5	8133	4
4596.4398	21749.8748	1.92					
4595.5670	21754.0053	3.74	I	34881	9	13127	9
4595.4471	21754.5729	12.1	I	26207	3	4453	4
4595.1167	21756.1373	2.70	I	28761	7	7005	6
4594.8417	21757.4393	9.58	I	22377	5	620	5
4593.9164	21761.8216	2.26	I	27753	4	5991	4
4593.6384	21763.1384	5.16	I	22383	4	620	5
4593.5253	21763.6745	1.86					
4593.0251	21766.0445	10.6	I	29804	8	8118	7
4592.9227	21766.5300	20.9	I	21766	6	0	6
4592.6188	21767.9700	6.98	I	21767	7	0	6
4590.2768	21779.0760	1.75					
4590.0987	21779.9212	2.40	I	25580	6	3860	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4588.6428	21786.9316	11.9	I	25655	4	3868	3
4587.2773	21793.3166	3.46	I	32780	7	10987	6
4587.2228	21793.5757	6.17	I	29119	8	7326	7
4586.7889	21795.6371	2.86	I	29914	6	8118	7
4586.7726	21795.7147	1.72	I				
4586.0599	21799.1019	1.71	I	33432	6	11633	5
4585.5684	21801.4381	6.59	I	22421	5	620	5
4584.8498	21804.8550	4.72	II	23553	11/2	1749	13/2
4584.3794	21807.0925	2.28	I	11615	5	33421	6
4583.2854	21812.2977	2.49	II	22101	9/2	289	11/2
4582.3614	21816.6959	2.02	I	36091	5	14274	4
4581.9774	21818.5242	1.87	I	29682	4	7864	5
4581.7197	21819.7515	1.67	II	30341	15/2	8521	15/2
4581.5044	21820.7769	2.03					
4581.0369	21823.0038	2.24	I	34649	7	12826	7
4579.9987	21827.9505	1.67	I	26103	6	4275	6
4579.6356	21829.6808	3.09	II	26415	13/2	4585	13/2
4578.0051	21837.4559	9.14	I	26290	5	4453	4
4577.5861	21839.4547	3.05	I	29958	7	8118	7
4576.6400	21843.9690	105.	I	22464	6	620	5
4575.0216	21851.6964	8.63	I	26305	5	4453	4
4574.5982	21853.7187	1.57	I	27615	5	5762	5
4574.2596	21855.3363	4.97	I	28860	6	7005	6
4573.6797	21858.1076	13.3	II	24152	11/2	2294	11/2
4573.5162	21858.8886	8.46	I	29185	8	7326	7
4573.2726	21860.0532	2.40	II	21860	7/2	0	9/2
4572.9961	21861.3747	11.1	I	25729	3	3868	3
4572.2385	21864.9973	1.63	II	24159	13/2	2294	11/2
4571.6750	21867.6920	5.30	I	29986	6	8118	7
4571.3184	21869.3980	4.58	I	28874	6	7005	6
4571.2312	21869.8150	11.8	I	28118	7	6249	6
4570.9148	21871.3292	2.09	I	26324	5	4453	4
4570.8505	21871.6366	3.22	I	25672	7	3800	7
4569.9095	21876.1398	13.6	II	22165	9/2	289	11/2
4569.2123	21879.4782	1.82	I	33512	6	11633	5
4567.6843	21886.7972	11.1	II	23635	13/2	1749	13/2
4567.3114	21888.5844	2.15					
4567.1012	21889.5917	1.91	I	34715	7	12826	7
4566.9051	21890.5317	2.73	I	32237	8	10347	8
4566.5042	21892.4532	4.61	I	28996	4	7103	5
4563.9443	21904.7327	15.0	I	35032	10	13127	9
4563.8518	21905.1766	2.37	I	31974	8	10069	7
4563.8026	21905.4123	4.39	I	33538	6	11633	5
4563.6074	21906.3495	4.42	I	33363	7	11457	6
4561.9028	21914.5348	4.26	I	29106	7	7191	2
4561.4637	21916.6443	3.36	I	33373	7	11457	6
4561.2185	21917.8224	1.59

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
4560.7331	21920.1550	1.66	UB				
4559.9348	21923.9926	1.54				3868	3
4559.6427	21925.3973	26.5	I	25793	3	7864	5
4559.4075	21926.5281	1.89	I	29790	5	8118	7
4558.9413	21928.7704	1.97	I	30047	6	4275	6
4558.0421	21933.0962	23.2	I	26208	7	6283	13/2
4557.8001	21934.2611	1.75	II	28217	15/2	8394	15/2
4555.0900	21947.3109	3.81	II	30341	15/2	3868	3
4554.5871	21949.7342	3.84	I	25810	4	914	9/2
4553.8537	21953.2688	6.72	II	22868	9/2	0	6
4552.8330	21958.1907	10.5	I	21958	5	8118	7
4552.7711	21958.4891	3.05	I	30077	8	13127	9
4552.3949	21960.3035	3.98	I	35088	9	620	5
4551.9748	21962.3303	88.4	I	22582	6	620	5
4551.5734	21964.2674	25.6	I	22584	4		
4550.9784	21967.1390	8.45					
4549.8400	21972.6352	2.96	II	27499	11/2	5526	13/2
4548.2926	21980.1103	2.32	I	21980	5	0	6
4546.6187	21988.2025	6.11	I	25789	8	3800	7
4546.2529	21989.5717	4.86	I	32059	8	10069	7
4546.0876	21990.7710	7.03	I	25791	6	3800	7
4545.5964	21993.1475	93.6	I	21993	6	0	6
4545.5631	21993.3088	7.15	II	24288	11/2	2294	11/2
4545.3762	21994.2129	1.70	UB				
4544.3547	21999.1568	21.0	I	26274	7	4275	6
4543.6255	22002.6873	37.2	II	22917	11/2	914	9/2
4541.7188	22011.9244	4.95	I	26287	6	4275	6
4541.6849	22012.0886	1.78	II	31638	13/2	9626	13/2
4541.3282	22013.8175	14.8	I	22634	4	620	5
4540.5777	22017.4563	1.36	I	30150	4	8133	4
4539.3317	22023.4995	1.31	I	28272	6	6249	6
4539.0760	22024.7366	8.95	I	25825	6	3800	7
4538.1876	22029.0520	11.0	II	23778	11/2	1749	13/2
4538.1127	22029.4154	3.31	I ?	26305	5	4275	6
4537.7850	22031.0060	1.48	I	29036	5	7005	6
4537.4905	22032.4363	2.82					
4536.6010	22036.7560	16.3	I	28285	7	6249	6
4536.0780	22039.2927	2.09	I	32108	8	10069	7
4535.9014	22040.1549	1.75	I	35168	10	13127	9
4535.5463	22041.8805	4.11	I	25910	4	3868	3
4535.0348	22044.3653	2.28					
4534.8324	22045.3502	1.51	I	32392	8	10347	8
4534.5955	22046.5021	3.18	I	32393	9	10347	8
4534.0732	22049.0414	3.43	I	26324	5	4275	6
4533.7108	22050.8041	2.74	I	35585	9	13535	9
4533.5523	22051.5749	1.52	I	33341	6	11290	5
4532.5809	22056.3006	18.1	I	22056	6	0	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4531.6977	22060.6478	1.98	I	29706	9	7645	8
4531.1371	22063.3287	10.1	I	29255	3	7191	2
4529.7031	22070.3133	8.06	I	33703	6	11633	5
4527.6929	22080.1121	5.75	I	22700	4	620	5
4527.4565	22081.2649	1.46	I	33538	6	11457	6
4526.2458	22087.1709	5.78	I	29413	8	7326	7
4525.9733	22088.5011	5.11	I	32774	8	10685	8
4525.9148	22088.7865	2.05	UB				
4525.0013	22093.2454	3.71	I	25961	3	3868	3
4524.9640	22093.4276	3.37	I	30226	5	8133	4
4524.8369	22094.0485	1.98	I	29099	5	7005	6
4523.3443	22101.3387	2.24	II	22101	9/2	0	9/2
4522.9494	22103.2685	1.61	I	29967	4	7864	5
4522.1338	22107.2549	1.27	I	25975	4	3868	3
4521.5863	22109.9318	1.33	II	31736	13/2	9626	13/2
4521.4419	22110.6376	2.86	I	32796	8	10685	8
4520.4352	22115.5614	3.15	I	26391	7	4275	6
4520.0781	22117.3090	17.4	I	25918	8	3800	7
4519.7546	22118.8919	3.57	I	38363	7	16244	8
4519.2105	22121.5549	2.41	I	30240	6	8118	7
4518.8119	22123.5061	1.99	I	23114	5	5991	4
4517.4764	22130.0463	2.78	I	25583	5	4533	4
4517.2281	22131.2628	2.67	II	26716	13/2	4585	13/2
4516.7231	22133.7370	91.9	I	22754	6	620	5
4515.9750	22137.4036	7.08	I	25938	6	3800	7
4515.2772	22140.8246	18.3	II	22429	9/2	289	11/2
4515.2114	22141.1476	2.75	I	10051	5	32192	4
4514.2912	22145.6605	3.92	I	33778	6	11633	5
4514.1088	22146.5554	8.96	I	29250	4	7103	3
4513.6782	22148.6681	2.89	I	36993	10	14845	10
4513.3605	22150.2272	1.98	I	34976	7	12826	7
4513.1849	22151.0890	1.55	I	29255	3	7103	3
4511.7151	22158.3050	1.46	II	28441	13/2	6283	13/2
4511.2531	22160.5744	2.61	I	28151	3	5991	4
4511.1560	22161.0516	1.98	II	26581	9/2	4420	11/2
4510.3156	22165.1804	7.51	II	22165	9/2	0	9/2
4510.0915	22166.2817	17.2	I	22786	5	620	5
4509.4799	22169.2881	5.15	I	26444	5	4275	6
4509.3484	22169.9348	5.42					
4509.2230	22170.5512	1.76	I	34533	5	12362	4
4508.1207	22175.9722	2.18	I	27938	5	5762	5
4505.1911	22190.3922	2.60	I	26058	3	3868	3
4504.8649	22191.9989	3.13	I	29837	7	7645	8
4504.7255	22192.6857	2.25	II	32391	15/2	10198	15/2
4504.1583	22195.4805	2.15	I	28444	5	6249	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4502.2679	22204.7996	2.88	I	27966	4	5762	5
4501.4698	22208.7365	3.33					
4499.9249	22216.3609	4.11	I	10051	5	32267	6
4499.1324	22220.2744	3.18	I	30353	5	8133	4
4498.7311	22222.2561	3.67	I	28213	5	5991	4
4497.8813	22226.4548	3.07	I	53859	6	11633	5
4497.5096	22228.2915	2.44					
4496.6110	22232.7338	1.97	I	29559	6	7326	7
4496.2362	22234.5867	3.60	I	22854	5	620	5
4495.7716	22236.8848	1.18	I	28229	3	5991	4
4495.5340	22238.0596	1.47	I	32585	8	10347	8
4494.7120	22242.1268	60.2	I	22862	6	620	5
4494.5546	22242.9055	4.24	I	32928	8	10685	8
4493.8964	22246.1633	1.73	I	33703	6	11457	6
4493.7841	22246.7195	3.42	I	30365	7	8118	7
4493.0408	22250.3995	2.98	II	22250	7/2	0	9/2
4492.8716	22251.2375	1.39	UB				
4492.6393	22252.3880	9.11	I	26705	3	4453	4
4490.8316	22261.3450	7.48	I	24010	11/2	1749	13/2
4490.7363	22261.8176	2.18	II	33719	7	11457	6
4490.6533	22262.2290	2.85	I	32331	8	10069	7
4490.2239	22264.3579	1.30					
4488.2713	22274.0436	1.44	I	28523	7	6249	6
4485.7329	22286.6480	1.21	I	29612	8	7326	7
4485.6821	22286.9006	3.34	I	33595	9	11308	9
4485.2096	22289.2483	1.77	II	31364	9/2	9075	7/2
4484.8142	22291.2133	5.41	I	26565	6	4275	6
4484.4529	22293.0090	1.16					
4483.8745	22295.8849	6.92	I	29487	2	7191	2
4483.5256	22297.6197	2.13	I	26098	7	3800	7
4483.4628	22297.9325	14.1	I	30416	8	8118	7
4482.6736	22301.8579	1.90	UB				
4482.4785	22302.8286	4.50	I	26103	6	3800	7
4481.6504	22306.5494	2.23	I	26760	4	4453	4
4481.4878	22307.7589	1.50	I	26583	5	4275	6
4481.0716	22309.8309	3.34	I	35656	8	13346	7
4480.8497	22310.9355	1.49	I	29502	3	7191	2
4480.6744	22311.0083	2.27	I	22311	6	0	6
4480.5474	22312.4410	1.60	I	29950	7	7645	8
4480.3588	22313.3799	1.82	I	30432	7	8118	7
4479.8923	22315.7036	2.12	I	30179	5	7864	5
4478.3008	22323.6338	1.91	I	31180	2	8856	2
4477.7709	22326.2759	1.93	II	22615	13/2	289	11/2
4477.7059	22326.5996	6.05	II	23241	11/2	914	9/2
4477.5650	22327.3023	1.47	I	30191	6	7864	5
4476.4672	22332.7777	19.5	I	26609	7	4275	6
4475.6549	22336.8310	1.45	I	28093	6	5762	5

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4472.3297	22353.4380	37.5	II	22642	9/2	289	11/2
4472.3026	22353.5740	1.89	I	7020	4	29374	5
4471.5908	22357.1321	2.51					
4470.0562	22364.8069	2.97	I	7020	4	29385	5
4469.8449	22365.8641	1.97	I	30499	4	8133	4
4469.3248	22368.4671	98.9	I	22368	7	0	6
4468.8970	22370.6084	1.75					
4468.7117	22371.5356	2.82	I	30490	8	8118	7
4467.4677	22377.7655	1.53	I	22377	5	0	6
4466.7170	22381.5263	2.24	I	30500	6	8118	7
4466.2935	22383.6486	1.97	I	29487	2	7103	3
4465.1393	22389.4343	4.31	II	24684	9/2	2294	11/2
4465.1113	22389.5746	2.18	II	22389	11/2	0	9/2
4464.4533	22392.8745	2.19					
4462.9681	22400.3263	8.93	II	23315	9/2	914	9/2
4462.7794	22401.2737	4.25	I	28650	5	6249	6
4462.6279	22402.0339	4.56	I	26855	3	4453	4
4461.8146	22406.1175	1.75	I	30539	3	8133	4
4461.7282	22406.5512	1.58					
4461.4449	22407.9739	16.9	I	26208	7	3800	7
4461.3921	22408.2393	2.05					
4460.9272	22410.5746	2.56	II	24159	13/2	1749	13/2
4458.7015	22421.7615	53.2	I	22421	5	0	6
4458.2154	22424.2058	3.66	I	29429	5	7005	6
4458.1092	22424.7402	2.77	I	26225	6	3800	7
4457.4521	22428.0460	18.8	I	30545	8	8118	7
4456.9299	22430.6737	1.91	I	29756	6	7326	7
4456.8967	22430.8406	3.89	I	23051	4	620	5
4456.7708	22431.4743	1.62	I	30077	8	7645	8
4456.6054	22437.3416	2.22	I	26713	5	4275	6
4455.4467	22438.1406	3.47	I	30571	4	8133	4
4455.2391	22439.1858	2.03	I	33124	8	10685	8
4454.3112	22443.8605	1.87					
4453.2123	22449.3986	21.0	I	23069	6	620	5
4452.9302	22450.8210	7.26	I	26319	3	3868	5
4452.7972	22451.4912	1.52	I	28213	5	5762	5
4451.4935	22458.0667	4.93	I	35585	9	13127	9
4450.2597	22464.2928	2.20	I	22464	6	0	6
4450.1905	22464.6421	1.66	I ?	29790	7	7326	7
4449.6637	22467.3018	3.71	I	26920	5	4453	4
4449.5170	22468.0426	2.93	I	30565	7	8118	7
4449.0381	22470.4612	5.89	I	29475	7	7005	6
4448.9782	22470.7633	2.33	I	30334	6	7864	5
4448.9002	22471.1573	6.48	I	29797	8	7326	7
4448.3307	22474.0343	29.0	I	26274	7	3800	7
4447.9687	22475.8632	1.80	II	22764	11/2	289	11/2
4447.4167	22478.6530	2.55	I	29484	5	7005	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4447.0407	22480.5532	11.0	I	26349	4	3868	3
4446.5213	22483.1795	11.3	I	26758	7	4275	6
4446.4182	22483.7008	4.60	I	26352	2	3868	3
4446.3291	22484.1509	10.4	I	26759	5	4275	6
4444.6838	22492.4741	17.9	I	30138	9	7645	8
4443.6536	22497.6884	1.60	I	29503	7	7005	6
4441.9709	22506.2111	2.48	I	29610	7	7103	6
4441.5100	22508.5465	2.87	I	28499	4	5991	3
4441.1937	22510.1494	3.07	I		4		4
4441.1342	22510.4512	3.26	I	28272	6	5762	5
4441.0995	22510.6269	1.72	I	26954	5	4453	4
4441.0674	22510.7893	10.2	I	7020	4	29531	5
4440.7369	22512.4646	53.1	I	26313	8	3800	7
4440.3447	22514.4535	3.64					
4439.9946	22516.2286	2.30	I	32505	8	10069	7
4438.4338	22524.1466	3.78	I	30642	7	8118	7
4437.9648	22526.5267	1.97	I	33346	4	10819	3
4435.9006	22537.0089	2.81	I	32884	9	10347	8
4435.5318	22538.8827	2.55	II	24288	11/2	1749	13/2
4435.1686	22540.7286	2.73	I	29614	3	7103	3
4434.9009	22542.0894	4.12	UB				
4434.5324	22543.9623	16.5	II	24293	13/2	1749	13/2
4433.8858	22547.2499	3.23	II	30941	15/2	8394	15/2
4433.6746	22548.3241	1.54	I	30681	5	8133	4
4431.8664	22557.5234	9.34	I	29749	3	7191	2
4431.6630	22558.5588	4.03	I	29804	8	7326	7
4430.4500	22564.7349	1.93					
4430.0808	22565.6155	32.1	I	23186	4	620	5
4429.6123	22569.0020	4.30	II	27828	13/2	5259	15/2
4428.3658	22575.3548	2.03	I	35922	8	13346	7
4427.0560	22577.9538	1.45	I	27031	5	4453	4
4427.6522	22578.9932	7.28	II	22868	9/2	289	11/2
4427.3581	22580.4929	2.25	I	28342	6	5762	5
4426.9346	22592.6533	104.	I	22582	6	0	6
4426.6767	22583.9688	4.20	II	27250	7/2	4706	5/2
4426.6271	22584.2218	6.08	UB				
4426.3643	22585.5625	3.21	I	32932	9	10347	8
4425.8572	22588.1504	4.78	I	29914	6	7326	7
4425.4089	22590.4386	15.1	I	26351	7	3800	7
4425.1213	22591.9068	3.49	I	28840	5	6249	6
4425.0695	22592.1710	9.93	I	23212	5	620	5
4423.9351	22597.9643	1.99					
4422.9852	22602.8173	3.41	II	27023	9/2	4420	11/2
4420.4018	22616.0267	5.14	I	38656	11	16040	10
4420.2521	22616.7926	5.79	I	26892	6	4275	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4418.4725	22625.9017	14.5	I	28874	6	6249	6
4417.7053	22629.8309	2.01					
4416.7241	22634.8582	2.54	I	33320	9	10585	8
4416.5602	22635.5981	1.96	II	31391	11/2	8755	13/2
4415.8744	22639.2136	2.19	II	23553	11/2	914	9/2
4415.2376	22642.4789	7.92	II	22642	9/2	0	9/2
4415.1568	22642.8933	2.03					
4414.8963	22644.2290	1.63	I	30777	4	8133	4
4414.7433	22645.0142	7.21	I	26920	5	4275	6
4414.6217	22645.6375	9.66					
4414.4414	22646.5627	3.34	I	28895	7	6249	6
4414.1930	22647.8370	1.51	I	35994	8	13346	7
4414.0740	22648.4477	7.25	I	30767	8	8118	7
4413.7507	22650.1062	1.80	I	32731	5	10081	5
4413.7233	22650.2469	3.88	I	26518	3	3868	3
4413.4189	22651.8092	2.84					
4413.1332	22653.2754	22.7	I	26454	8	3800	7
4412.8581	22654.6876	2.13	I	33962	9	11308	9
4409.5199	22671.8382	1.94					
4409.2985	22672.9765	1.72					
4408.2619	22678.3079	1.64	NE+UB				
4407.9539	22679.8926	2.28	II	28347	7/2	5667	7/2
4407.4860	22682.3003	1.99	I	28623	3	5991	4
4406.0967	22689.4522	5.73	I	26537	2	3868	3
4405.9518	22690.1985	2.01	II	29787	5/2	7017	3/2
4405.7268	22691.5371	5.04	I	38731	10	16040	10
4404.8105	22696.0771	8.97	I	26971	7	4275	6
4404.0220	22700.1406	1.51	UB				
4403.6345	22702.1382	1.86	I	30347	9	7645	8
4403.2206	22704.2720	1.58					
4403.0575	22705.1132	2.53	I	32774	8	10069	7
4402.6029	22707.4575	1.80	I	34164	6	11457	6
4402.4784	22708.0999	4.69	I	28470	6	5762	5
4402.4292	22708.3535	1.87	II	31219	11/2	8510	11/2
4401.5931	22712.6670	2.00					
4400.2291	22719.7072	1.85	I	30365	7	7645	8
4399.9239	22721.2833	3.81	I	30047	6	7326	7
4399.6818	22722.5335	2.36	I	30841	8	8118	7
4399.6294	22722.8041	2.21	II	27143	13/2	4420	11/2
4398.0930	22730.7420	4.58	I	27184	4	4453	4
4394.4473	22749.5996	1.90	I	26550	6	3800	7
4394.1271	22751.2572	1.76	I	29795	6	7005	6
4394.0086	22751.8708	1.84	I	33039	7	10347	8
4393.5858	22754.0599	284.	I	22754	6	0	6
4393.3778	22755.1375	7.76	I	23375	4	620	5
4392.5010	22759.6796	7.68	UB

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4391.0016	22763.3038	4.87	I	7020	4	29784	5
4391.4935	22764.9006	2.52	II	22764	11/2	0	9/2
4391.2277	22766.2791	3.96	I	27219	3	4453	4
4390.0835	22772.2124	2.29	I	29963	3	7191	2
4390.0346	22772.4660	2.44	I	30636	6	7864	5
4389.9676	22772.8137	1.78	I	34080	9	11308	9
4388.1670	22782.1580	2.53	I	26650	4	3868	3
4388.1139	22782.4336	1.62	I	33770	7	10987	6
4387.7082	22784.5397	2.67	I	33470	9	10685	8
4387.5774	22785.2191	4.88	I?	29790	7	7005	6
4387.3106	22786.6047	22.5	I	22786	5	0	6
4386.2661	22792.0307	2.37					
4385.4723	22796.1563	5.86	I	29001	7	7005	6
4385.3715	22796.6804	10.1	I	27072	6	4275	6
4385.0410	22798.3982	2.24	I	30931	5	8133	4
4384.9345	22798.9523	3.27	I	27252	5	4453	4
4384.0853	22803.3682	1.62	I	30936	5	8133	4
4383.2613	22807.6548	58.6	I	26608	7	3800	7
4382.8391	22809.8521	8.14	I	23430	4	620	5
4382.3360	22812.4705	53.0	I	23432	5	620	5
4382.0694	22813.8985	15.7	I	27267	5	4453	4
4381.3870	22817.4116	2.12	II	30681	5	7864	5
4380.2653	22823.2547	2.05	I	27244	13/2	4420	11/2
4380.2303	22823.4370	4.43	I	30687	6	7864	5
4379.7772	22825.7980	6.60	I	28817	5	5991	4
4379.5200	22827.1344	4.52	I	30153	8	7326	7
4378.5096	22832.4060	2.96	II	28623	9/2	5790	11/2
4376.1377	22844.7813	8.50	I	26645	7	3800	7
4375.5769	22847.7093	2.09					
4374.8933	22851.2792	1.85	I	26652	8	3800	7
4374.5625	22853.0071	2.10					
4373.5950	22858.0625	3.49	I	29107	7	6249	6
4373.4067	22859.0464	9.24	II	24608	11/2	1749	13/2
4373.3160	22859.5207	2.65	I	32928	8	10069	7
4373.2712	22859.7549	1.88	I	28621	4	5762	5
4373.2282	22859.9795	3.47					
4373.0699	22860.8072	3.96	I	29109	6	6249	6
4372.7557	22862.4497	138.	II	22862	6	0	6
4372.5723	22863.4087	14.3	I?	23778	11/2	914	9/2
4372.1950	22865.3817	4.52	I	30191	6	7326	7
4372.0050	22866.3707	18.0	I	23486	5	620	5
4371.7577	22867.6684	41.9	I	30986	8	8118	7
4369.9531	22877.1120	13.4	I	29126	6	6249	6
4369.5690	22879.1230	1.97	I	30070	3	7191	2
4367.1333	22891.8829	2.61	I	26760	4	3868	3
4366.8409	22893.4156	3.17

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4365.5538	22900.1655	2.16	II	28159	13/2	5259	15/2
4364.4103	22906.1650	7.70	I	31024	7	8118	7
4363.9999	22908.3191	1.88	I	32977	7	10069	7
4363.9206	22908.7356	4.79	I	29914	6	7005	6
4363.8196	22909.2660	5.98	I	33595	9	10685	8
4363.1815	22912.6162	8.65	I	26781	3	3869	3
4363.0543	22913.2842	2.12					
4362.9272	22913.9514	5.78	II	27499	11/2	4585	13/2
4362.9008	22914.0902	14.5	I	23534	5	620	5
4362.7945	22914.6486	35.5	I	26715	8	3800	7
4362.7305	22914.9845	1.55	II	28441	13/2	5526	13/2
4362.2607	22917.4526	19.1	II	22917	11/2	0	9/2
4362.2143	22917.6964	2.70	I	26786	2	3868	3
4362.0510	22918.5541	303.	I	22918	7	0	6
4360.9176	22924.5108	1.25					
4358.8897	22935.1755	1.53	I	33620	8	10685	8
4357.9138	22940.3115	25.4	I	23560	4	620	5
4357.6236	22941.8395	1.69	II	27527	13/2	4585	13/2
4356.5440	22947.5244	2.07	I	37449	8	14501	8
4355.7400	22951.7604	211.	I	23572	6	620	5
4355.6326	22952.3259	4.87	II	23241	11/2	289	11/2
4355.5837	22952.5838	1.29	II	32028	7/2	9075	7/2
4354.9165	22956.1003	1.34	I	33025	7	10069	7
4354.7287	22957.0903	3.31					
4354.5457	22958.0549	26.0	I	26758	7	3800	7
4354.3652	22959.0065	1.51	II	31235	15/2	8276	13/2
4352.7594	22967.4763	1.45	II	28758	11/2	5790	11/2
4352.5855	22968.3938	1.91	I	33788	4	10819	3
4351.8367	22972.3461	2.15	I	26840	4	3868	3
4351.6559	22973.3001	11.7	I	33320	9	10347	8
4349.7002	22983.6293	1.68	I	29232	5	6249	6
4349.2563	22985.9749	4.10					
4349.0684	22986.9684	5.73	I	26855	3	3868	3
4349.0174	22987.2379	3.01	I	27440	4	4453	4
4348.5139	22989.8993	3.16	I	27443	5	4453	4
4348.3384	22990.8274	1.18	I	26791	6	3800	7
4347.4238	22995.6637	1.29	II	27581	13/2	4585	13/2
4347.3428	22996.0924	1.67	I	28987	5	5991	4
4347.1955	22996.8716	8.44	II	23911	9/2	914	9/2
4343.9220	23014.2013	5.15	I	7020	4	30034	5
4343.5252	23016.3037	1.87	I	33563	7	10347	8
4343.2440	23017.7939	2.30					
4341.6865	23026.0508	35.2	II	23315	9/2	289	11/2
4340.9343	23030.0407	1.30	I	33099	7	10069	7
4340.8024	23030.7407	1.77	I ?	34707	7	11677	7
4340.5668	23031.9907	1.91					
4340.4399	23032.6642	1.41	II	29316	11/2	6283	13/2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4337.6266	23047.6022	8.37	I	31166	7	8118	7
4337.3975	23048.8154	26.6	I	27324	7	4275	6
4336.6766	23052.6507	1.86	I	34509	7	11457	6
4335.9016	23056.7712	1.88	I				
4335.8192	23057.2093	6.44	I	30702	8	7645	8
4335.7318	23057.6745	101.	I	23057	7	0	6
4335.5781	23058.4914	1.87	I				
4335.2702	23060.1293	17.8	I	31178	8	8118	7
4333.9541	23067.1318	4.00	I				
4333.4680	23069.7195	4.54	I	23069	6	0	6
4332.6732	23073.9512	3.31	I	27349	5	4275	6
4331.4433	23080.5030	12.4	I	25948	3	3868	3
4330.7026	23084.4503	1.81	I				
4329.5781	23090.4460	4.08	I	30416	8	7326	7
4329.3486	23091.6702	3.49	I	26892	6	3800	7
4328.7305	23094.9671	52.2	I	23715	6	620	5
4328.0123	23098.7993	3.36	UB				
4326.9186	23104.6382	1.65	II	28636	13/2	5526	13/2
4325.8884	23110.1400	4.67	I				
4325.6718	23111.2976	2.01	I	28874	6	5762	5
4325.3812	23112.8500	1.78	I	23734	4	620	5
4325.0895	23114.4086	9.83	I				
4324.5922	23117.0669	1.84	I				
4323.9888	23120.2926	1.96	I	29111	5	5991	4
4323.7754	23121.4336	5.05	I	30767	8	7645	8
4323.4862	23122.9806	3.35	I	33470	9	10347	8
4323.0525	23125.3003	1.54	I	30451	6	7326	7
4322.3823	23128.8854	22.8	I	26997	4	3868	3
4322.0541	23130.6419	2.48	I	30994	6	7864	5
4320.4063	23139.4638	3.15	I	29130	3	5991	4
4319.7712	23142.8658	3.95	II	25437	9/2	2294	11/2
4318.5167	23149.5885	1.54	I	34137	7	10987	6
4318.0904	23151.8738	14.2	I	29400	6	6249	6
4317.5811	23154.6051	3.32	I				
4317.0694	23157.3495	15.3	I	31275	7	8118	7
4316.4822	23160.4995	18.2	I	31279	8	8118	7
4316.0315	23162.9179	2.10	UB				
4315.9310	23163.4572	4.82	I	30168	6	7005	6
4315.8208	23164.0488	6.28	I	30490	8	7326	7
4315.1752	23167.5143	3.41	I	29158	4	5991	4
4315.1573	23167.6103	5.04	I	27443	5	4275	6
4314.8817	23169.8902	2.96	I	27037	3	3868	3
4314.5345	23170.9546	3.17	I	26971	7	3800	7
4314.2217	23172.6344	1.54	I	30276	3	7103	3
4313.8733	23174.5061	9.50	II	24923	13/2	1749	13/2
4313.1386	23178.4536	84.6	I	26979	8	3800	7
4313.0790	23178.7735	3.96	I	30504	7	7326	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4312.3873	23182.4917	6.28	I	29173	5	5991	4
4312.3252	23182.8255	3.03					
4311.7393	23185.9754	3.80	I	30191	6	7005	6
4311.6025	23186.7110	2.12	I	30832	9	7645	8
4310.5549	23192.3462	1.79	I	27060	4	3868	3
4310.4022	23193.1679	2.07	I	29442	7	6249	6
4310.3753	23193.3124	2.07	II	29476	13/2	6283	13/2
4309.9039	23195.8492	1.97					
4309.6885	23197.0084	44.6	I	23197	7	0	6
4309.1675	23199.8128	29.0	I	27475	7	4275	6
4308.3672	23204.1224	6.18	I	7020	4	30224	5
4308.1972	23205.0379	7.79	I	23825	4	620	5
4306.8134	23212.4936	44.2	I	23212	5	0	6
4306.7360	23212.9110	11.1					
4305.2013	23221.1856	1.75	I	30226	5	7005	6
4304.6735	23224.0328	2.39					
4304.1298	23226.9665	3.32	I	29475	7	6249	6
4304.0607	23227.3394	3.64	I	27095	3	3868	3
4303.7891	23228.8049	5.09	I	27682	5	4453	4
4302.7718	23234.2972	5.87	I	28996	4	5762	5
4302.7111	23234.6245	9.60	I	27035	7	3800	7
4302.6257	23235.0858	3.00					
4301.7121	23240.0206	11.5	I	31358	7	8118	7
4301.4640	23241.3612	11.1	II	23241	11/2	0	9/2
4300.8955	23244.4332	1.90	I	36070	6	12826	7
4300.7096	23245.4375	4.43	I	27521	6	4275	6
4300.2893	23247.7095	13.5	I	33595	9	10347	8
4299.4139	23252.4428	2.31	UB				
4299.0496	23254.4134	2.50	I	38712	9	15458	8
4297.9141	23260.5570	6.73	I	30586	7	7326	7
4297.3342	23263.6958	2.55	I	29255	3	5991	4
4297.1050	23264.9366	9.49	II	23553	11/2	289	11/2
4295.8786	23271.5782	3.05	UB				
4295.6512	23272.8101	2.15	I	33353	5	10081	5
4295.0974	23275.8107	19.0	I	27725	5	4453	4
4293.2928	23285.5941	27.6	I	27086	8	3800	7
4290.8753	23298.7134	4.71	II	25047	11/2	1749	13/2
4290.6905	23299.7164	3.75	I	27753	4	4453	4
4289.8717	23304.1634	2.99	II	27725	11/2	4420	11/2
4289.5510	23305.9062	1.95	II	24220	9/2	914	9/2
4288.9909	23308.9494	3.67					
4288.8303	23309.8222	65.9	I	29558	6	6249	6
4288.6963	23310.5506	6.04	I	30636	6	7326	7
4288.3328	23312.5262	10.2	I	23932	5	620	5
4287.8608	23315.0924	11.6	II	23315	9/2	0	9/2
4287.7537	23315.6752	6.48	I	27184	4	3868	3
4287.5519	23316.7722	3.57	I	31435	7	8118	7

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
4286.8291	23320.7034	12.1					
4286.2704	23323.7432	2.31					
4286.0045	23325.1903	5.96	I	23325	5	0	6
4285.7351	23326.6567	3.80	I	31445	8	8118	7
4285.4607	23328.1068	4.16					
4285.2247	23329.4346	10.9	I	30334	6	7005	6
4283.8996	23336.6509	12.1	I	30982	9	7645	8
4283.3489	23339.6512	2.95					
4282.4608	23344.4914	5.50	II	27929	11/2	4585	13/2
4282.4029	23344.8068	3.41	II	27930	13/2	4585	13/2
4282.0229	23346.8785	15.7	II	23635	13/2	289	11/2
4281.8675	23347.7260	2.02	I	30539	3	7191	2
4281.8113	23348.0325	2.55	I	30353	5	7005	6
4281.5378	23349.5236	2.24	I	29111	5	5762	5
4281.5043	23349.7066	4.04	I	27150	8	3800	7
4281.2283	23351.2118	6.95	I	27219	3	3868	3
4281.1423	23351.6810	3.03	I	31215	4	7864	5
4281.0370	23352.2553	3.91	I	23972	4	620	5
4280.6507	23354.3628	6.73	I	39394	11	16040	10
4280.0337	23357.7292	7.44	I	27633	5	4275	6
4279.3230	23361.6083	9.73	I	31480	8	8118	7
4276.5958	23376.5057	2.22	I	27829	4	4453	4
4276.4628	23377.2331	2.94	II	28636	13/2	5259	15/2
4276.0996	23379.2184	1.95	I	33448	8	10069	7
4274.9726	23379.8422	1.91	UB				
4274.9306	23385.6115	4.03	I	33466	5	10081	5
4274.8779	23385.8998	2.25	I	31504	7	8118	7
4273.9709	23390.8624	6.34	II	24305	9/2	914	9/2
4273.1823	23395.1790	2.66	I	34080	9	10685	8
4272.8953	23396.7506	2.31	I	29158	4	5762	5
4271.4133	23404.0681	2.83	I	27273	2	3868	3
4271.2287	23405.8795	26.7	I	24026	6	620	5
4271.1121	23406.5183	3.36	I	27682	5	4275	6
4270.9925	23407.1741	2.68	I	30511	4	7103	3
4270.8833	23407.7725	2.42	II	27828	13/2	4420	11/2
4269.7464	23414.0050	3.08					
4269.6054	23414.7784	10.9	II	25163	13/2	1749	13/2
4269.0673	23417.7295	2.49	II	25713	9/2	2294	11/2
4268.8474	23418.9358	5.87					
4267.9736	23423.7303	5.85	I	29673	6	6249	6
4267.9290	23423.9753	32.0					
4267.6463	23425.5268	3.62	II	24342	7/2	914	9/2
4267.2987	23427.4350	5.78	I	23432	5	0	6
4266.3228	23432.7935	61.3					
4265.3010	23438.4070	2.34	I	33786	9	10347	8
4265.1783	23439.0817	6.32	II	25200	11/2	1749	13/2
4262.8905	23451.6603	1.93

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4261.0033	23462.0459	2.63	I	24082	5	620	5
4260.0062	23467.5385	2.59	I	33548	5	10081	5
4259.8792	23468.2384	6.53	I	27743	6	4275	6
4259.4539	23470.5812	10.00	I	29232	5	5762	5
4259.3567	23471.1169	1.58					
4257.5026	23481.3381	2.00					
4256.9058	23484.6301	6.52	I	27938	5	4453	4
4256.5318	23486.6937	4.41	I	23486	5	0	6
4256.2228	23488.3985	1.49	I	29250	4	5762	5
4255.0949	23494.6248	3.74	I	30500	6	7005	6
4254.2373	23499.3605	1.50	I	30504	7	7005	6
4254.0786	23500.2376	1.82	I	32378	4	8878	3
4253.8524	23501.4871	5.26	I	33570	7	10059	7
4253.7053	23502.2997	8.11	I	27778	7	4275	6
4252.4260	23509.3702	7.01	II	27930	13/2	4420	11/2
4252.2318	23510.4438	2.49					
4252.0751	23511.3099	2.23	UB				
4251.5304	23512.1100	2.60	I	31630	7	8118	7
4251.3996	23515.0457	8.50	I	30841	8	7326	7
4251.3292	23515.4352	14.7	I	27791	5	4275	6
4250.5233	23519.8933	1.81					
4250.1795	23521.7962	2.47					
4249.8360	23523.6971	3.95	I	27324	7	3800	7
4247.9006	23534.4147	9.12	I	23534	5	0	6
4247.6852	23535.6079	2.13	I	33604	7	10069	7
4247.1337	23538.6639	2.00	II	24453	9/2	914	9/2
4246.2602	23543.5064	183.	I	33543	7	0	6
4244.7119	23552.0936	5.07	I	33899	8	10347	8
4244.6951	23552.1872	5.14	I	30878	7	7326	7
4244.4439	23553.5807	2.69	I	7020	4	30574	5
4244.3724	23553.9775	27.1	II	23553	11/2	0	9/2
4243.9159	23556.5111	4.94	I	34864	10	11308	9
4243.3435	23559.6890	2.04	II	31836	15/2	8276	13/2
4243.2213	23560.3672	5.01	I	30886	7	7326	7
4241.6646	23569.0136	19.8	II	28154	11/2	4585	13/2
4241.4634	23570.1317	3.92	I	33778	3	10208	4
4241.1120	23572.0845	17.4	I	23572	6	0	6
4241.0970	23572.1684	6.93	I	27440	4	3868	3
4240.8573	23573.5001	1.81					
4240.5864	23575.0061	3.78	II	28834	13/2	5259	15/2
4240.5165	23575.3949	3.28	I	24195	4	620	5
4239.1551	23582.9660	1.81	I	29574	3	5991	4
4238.0660	23589.0261	1.61	I	33797	5	10208	4
4238.0007	23589.3899	3.48					
4237.7178	23590.9645	2.60	I	28044	3	4453	4
4237.5199	23592.0660	1.65					
4237.2532	23593.5508	2.04

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4236.0365	23600.3274	12.8	I	24220	5	620	5
4235.9740	23600.6754	2.29	II	31877	15/2	8276	13/2
4235.5301	23603.1491	2.77					
4234.5298	23608.7247	3.65					
4234.4215	23609.3284	2.18	I	11613	5	35223	6
4234.1248	23610.9831	3.24	I	31744	5	8153	4
4234.0593	23611.3482	2.11	UB				
4233.5430	23614.2278	12.8	I	28067	5	4453	4
4233.3159	23615.4941	2.18	I	33962	9	10347	8
4233.1321	23616.5199	28.9	I	29865	6	6249	6
4232.0421	23622.6024	5.47	II	23911	9/2	289	11/2
4231.6679	23624.6911	42.9	I	31270	9	7645	8
4230.5138	23631.1356	4.63	I	30636	6	7005	6
4229.2694	23638.0891	8.25	I	27506	2	3068	3
4228.7560	23640.9584	4.17	II	28347	7/2	4706	5/2
4228.4279	23642.7932	31.9	I	24263	4	620	5
4227.3244	23648.9644	3.72	II	29932	15/2	6283	13/2
4227.1837	23649.7518	6.74	I	33730	6	10081	5
4226.5430	23653.3368	2.66	I	29644	3	5991	4
4225.4413	23659.5039	3.01	I	30851	3	7191	2
4225.3671	23659.9191	2.15	II	31936	15/2	8276	13/2
4225.3204	23660.1808	3.33	I	30986	8	7326	7
4224.4173	23665.2388	10.4	I	29914	6	6249	6
4224.3623	23665.5468	5.10	I	27941	6	4275	6
4223.9852	23667.6597	2.65	I	29429	5	5762	5
4223.6522	23669.5256	5.37	I	27538	3	3868	3
4222.7308	23674.6902	10.1	I	27475	7	3800	7
4222.3677	23676.7259	112.	I	27477	0	3807	7
4221.8137	23679.8326	6.93	I	31798	7	8118	7
4221.3035	23682.6948	2.79	I	29674	5	5991	7
4219.9631	23690.2170	28.8	I	27965	7	4275	4
4219.7495	23691.4161	2.98	I	29682	7	5991	6
4219.1788	23694.6655	2.21	I	34042	4	10347	4
4218.8791	23696.3038	2.28	I		8		0
4218.4560	23698.6804	6.37	I	31024	7	7326	7
4217.7561	23702.6132	58.4	I	24322	6	620	7
4216.6099	23709.0559	4.90	I	29958	7	6249	5
4215.9858	23712.5658	3.22	I	34059	7	10347	6
4215.8850	23713.1267	3.10	I		7		8
4215.5015	23715.2900	8.67	I	23715	6	0	6
4215.2881	23716.4906	7.42	I	33797	5	10081	5
4214.4189	23721.4265	4.93	II	24010	11/2	289	11/2
4214.2747	23722.1933	5.08					
4213.8644	23724.5029	15.9	I	35032	10	11308	9
4212.2470	23733.6126	7.29	UB				
4211.6585	23736.9289	4.26	II	28322	11/2	4585	13/2
4211.5943	23737.2909	44.3	I	29986	6	6249	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
4210.5681	23743.0759	7.24	I	31069	7	7326	7
4210.4404	23743.7961	6.16	II	25492	11/2	1749	13/2
4209.4799	23749.2136	4.85	I	34434	9	10685	8
4207.9117	23750.0641	2.17	I	34105	8	10347	8
4207.2213	23761.9628	4.67	I	29753	5	5991	4
4206.3961	23766.6240	1.97	II	31364	9/2	7598	11/2
4206.0888	23768.3604	2.37	I	29530	4	5762	5
4204.9597	23774.7428	2.97	UB				
4204.3528	23778.1746	6.68	II	23778	11/2	0	9/2
4204.2996	23778.4753	3.09	I	31897	7	8118	7
4204.1617	23779.2554	20.6	I	23779	7	0	6
4203.9668	23780.3575	10.3	I	23768	1	5988	0
4203.6309	23782.2577	2.37					
4202.6745	23787.6700	5.83					
4202.3053	23789.7598	2.41	I	31435	7	7645	8
4201.4040	23794.8631	2.34	II	32316	13/2	8521	15/2
4201.1256	23796.4402	32.9	I	31442	9	7645	8
4199.9912	23802.3294	2.47	II	30085	11/2	6283	13/2
4199.6249	23802.8671	3.34	I	28256	3	4453	4
4198.9536	23804.9432	11.7	I	27605	6	3800	7
4198.5216	23811.1984	2.06	I	28262	5	4453	4
4198.2153	23812.9356	2.39	I	38656	11	14845	10
4197.5061	23816.9591	85.2	I	24433	6	620	5
4197.4091	23817.5095	2.92	II	32211	13/2	8394	15/2
4197.1762	23818.8309	3.87	II	23817	9/2	0	9/2
4196.6990	23821.5393	2.85	I?	29810	3	5991	4
4196.6542	23821.7939	6.17	I	34507	9	10685	8
4196.3993	23823.2410	3.63	I	31555	4	8133	4
4195.6125	23827.7083	11.8	I	27591	3	3868	3
4195.1799	23830.1652	6.29	I	24448	5	620	5
4193.6052	23839.1133	6.32	I	34515	7	10685	8
4193.4288	23840.1159	3.45	I	28114	5	4275	6
4192.9279	23842.9641	2.63	I	31166	7	7326	7
4192.8976	23843.1364	3.36					
4191.9331	23848.6224	8.16	I	28118	7	4275	6
4191.7709	23849.5453	55.2	I	23848	7	0	6
4191.0076	23853.8885	2.74	I	7020	4	30870	5
4189.9467	23859.9285	2.06	I	31987	4	8133	4
4189.2733	23863.7634	3.15	I	35168	10	11308	9
4189.1962	23864.2026	10.4	II	24152	11/2	289	11/2
4189.1206	23864.6333	3.13	II	26158	11/2	2294	11/2
4188.8929	23865.9307	5.25	I	33945	5	10081	5
4188.8680	23866.0723	8.11	I	7020	4	30886	4
4188.0637	23870.6558	2.47	I	36993	10	13127	9
4186.9601	23876.9473	7.28	II	24159	13/2	289	11/2
4186.7892	23877.9228	54.5	I	28152	7	4275	6
		3.07

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4185.2822	23880.8141	3.37	I	27749	2	3868	3
4186.1056	23881.8214	4.41					
4186.8139	23882.3446	2.27					
4185.6099	23884.6496	3.09	I	27753	4	3868	3
4184.7726	23889.4287	4.80	I	27757	3	3868	3
4184.7320	23889.6602	2.54	I	31215	8	7326	7
4183.2569	23898.0838	12.7	I	32016	7	8118	7
4182.3457	23903.2908	3.32	I	29665	4	5762	5
4180.3056	23914.9558	46.8	I	24535	5	620	5
4179.4311	23919.9595	10.5	I	30168	6	6249	6
4179.0308	23922.2506	3.63					
4178.9960	23922.4498	2.72	II	28507	11/2	4585	13/2
4177.1801	23932.8493	4.26	I	23932	5	0	6
4177.0950	23933.3370	3.88	I	10051	5	33984	6
4176.4556	23937.0006	12.1	I	27805	4	3868	3
4175.7784	23940.8829	5.17	I	7820	4	30961	5
4175.3890	23943.1157	5.55	I	27743	4	3800	7
4174.2124	23949.8641	4.48	I	31275	7	7326	7
4174.1896	23949.9952	7.40	II	29476	13/2	5526	13/2
4173.6633	23953.0152	6.27	I	31279	8	7326	7
4172.9715	23956.9858	3.28	II	30240	11/2	6283	13/2
4172.1958	23961.4399	4.92	I	27829	4	3868	3
4171.5886	23964.9277	26.4	II	25714	13/2	1749	13/2
4170.9989	23968.3157	2.21	I	34315	8	10347	8
4170.2114	23972.8419	2.37	I	34042	8	10069	7
4170.1474	23973.2095	2.95	I	31077	3	7103	3
4170.0207	23973.9381	2.68					
4169.8875	23974.7042	2.69	I	28428	3	4453	4
4169.8432	23974.9585	3.99	I	31301	7	7326	7
4169.5193	23976.8208	3.22					
4169.4571	23977.1785	5.33	I	27778	7	3800	7
4169.0469	23979.5376	29.9	I	32098	7	8118	7
4168.8727	23985.1426	3.14					
4167.3659	23989.2104	8.92	I	24609	6	620	5
4167.1011	23990.7346	5.34	I	34059	7	10069	7
4167.0276	23991.1577	16.9	I	30240	6	7243	6
4166.8633	23992.1040	2.50	I	27860	3	3868	3
4166.7336	23992.8504	6.05	II	33546	9/2	9553	11/2
4166.6329	23993.4305	33.3	I	24513	4	620	5
4165.6723	23998.9635	19.1	I	24288	11/2	289	11/2
4164.7890	24004.0531	4.21	II	24293	13/2	289	11/2
4164.2141	24007.3669	2.65	I	31871	6	7864	5
4163.7440	24010.0774	43.2	I	28285	7	4275	6
4163.6762	24010.4686	8.87	II	24010	11/2	0	9/2
4162.5086	24017.2032	4.00	I	27885	3	3868	3
4162.4289	24017.6638	66.3	I	27818	8	3800	7
4162.1049	24019.5326	5.69

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4161.9046	24020.6884	5.23	I	34706	9	10685	8
4161.6350	24022.2449	3.30	I	27890	4	3868	3
4160.9495	24026.2023	64.7	I	24026	6	0	6
4160.8362	24026.8568	1.70	I	29790	5	5762	5
4160.5250	24028.6535	3.00	I	24650	5	620	5
4150.2755	24030.8948	7.87	I	31039	5	7005	5
4159.6499	24033.7086	1.82	I	34118	5	10081	5
4159.0789	24037.0082	2.74	I	32161	6	8118	7
4158.3209	24041.3897	3.98	I	30034	4	5991	4
4157.9742	24043.3945	5.21	I	31690	4	7645	8
4157.7977	24044.4151	2.29	I	28499	4	4453	4
4157.6381	24045.3376	5.10	I	28503	5	4453	4
4157.4472	24046.4421	1.86	I	24671	6	620	5
4157.3348	24047.0923	1.87	I	30341	15/2	6283	12/2
4156.8267	24050.0310	3.88	I	24066	7	0	6
4156.6483	24051.0636	172.	I	28342	6	4275	6
4155.4050	24058.2596	6.84	I	31722	7	7645	8
4153.9710	24066.5645	229.	I	24062	5	0	6
4153.9195	24066.8631	28.6	I	34434	9	10347	8
4153.4823	24069.3939	2.27	I	27966	4	3868	3
4152.2641	24076.4577	1.76	I	7020	4	31121	5
4151.2448	24082.3691	13.3	I	29865	6	5762	5
4150.3540	24087.5381	3.50	I	30353	5	6249	6
4150.3341	24087.6536	2.43	I	31435	7	7326	7
4148.4847	24098.3916	5.53	I	32252	4	8133	4
4148.0291	24101.0384	17.6	I	26415	13/2	2294	11/2
4147.6106	24103.4701	2.46	I	24741	5	620	5
4147.4272	24104.5362	1.68	I	34205	5	10081	5
4146.6107	24109.2822	19.1	I	24757	4	620	5
4145.3894	24116.3851	1.76	UB	27941	6	3800	7
4144.9327	24119.0422	2.01	I	32535	13/2	8394	15/2
4144.6955	24120.4224	4.79	I	30143	5	5991	4
4144.6097	24120.5216	5.63	I	22914	6	5762	5
4143.9141	24124.9704	6.10	I	7020	11/2	0	9/2
4141.8581	24136.9452	66.7	I	26450	4	31174	5
4141.2615	24140.4231	5.00	I	30150	9/2	2294	11/2
4141.2211	24140.6589	4.98	I		4	5991	4
4141.0169	24141.8488	2.17	I				
4140.7337	24143.5000	2.45					
4139.3030	24151.8449	9.50	I				
4139.2441	24152.1883	2.47	I				
4139.1379	24152.8081	10.2	I				
4138.9623	24153.8331	10.1	I				
4138.6546	24155.6287	2.61	I				
4138.0031	24159.4316	2.85	I				
4137.9098	24159.9762	2.29	UB

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4137.8692	24160.2136	3.92	I	28435	7	4275	6
4137.7133	24161.1239	6.17	I	34846	9	10685	8
4137.0334	24165.0945	5.27	I	27965	7	3800	7
4136.8113	24166.3921	2.83	II	28587	11/2	4420	11/2
4136.7759	24166.5986	8.80	I	28620	4	4453	4
4136.7479	24166.7619	3.06	I	37234	9	13127	9
4136.4652	24168.4140	2.10	I	28621	4	4453	4
4136.4322	24168.6067	8.59	I				
4135.7553	24172.5623	1.95	II	30455	11/2	6283	13/2
4135.1849	24175.0964	2.22	I	28044	3	3868	3
4133.4914	24185.8010	98.0	I	24185	7	0	6
4133.2006	24187.5027	3.61	II	29978	13/2	5790	11/2
4132.0102	24194.4706	10.9	I	28470	6	4275	6
4130.6585	24202.3882	10.6	I	30451	6	6249	6
4128.8859	24212.7781	2.81	I	32331	8	8118	7
4128.3344	24216.0126	10.8	II	28636	13/2	4420	11/2
4127.9385	24218.3355	3.12	I	31322	4	7103	3
4127.6218	24220.1932	2.84	I	28673	3	4453	4
4127.5443	24220.6481	4.69	I	24220	5	0	6
4127.3316	24221.8964	12.5	I	7020	4	31242	5
4126.6387	24225.9631	2.24	I				
4126.3357	24227.7420	1.92	I	28503	5	4275	6
4125.7751	24231.0340	2.71	I	7020	4	31255	5
4125.1298	24234.8244	21.0	I	25986	13/2	1749	13/2
4124.7273	24237.1896	10.3	II				
4124.0256	24241.3131	6.05					
4123.9605	24241.6962	4.15	I	30004	5	5762	5
4123.9046	24242.0246	4.25	I	28523	7	4275	6
4122.9958	24247.3681	10.3	I	30500	6	6249	6
4122.3566	24251.1278	17.8	I	28053	6	3800	7
4122.1692	24252.2298	6.06	I	28120	2	3868	3
4122.1532	24252.3240	3.22	I	28542	6	4275	6
4119.7011	24266.7592	3.61	I				
4119.0758	24270.4431	4.55	I	30262	5	5991	4
4118.9936	24270.9270	2.55	I	32392	8	8118	7
4118.4607	24274.0679	4.90	I	30266	4	5991	4
4118.2084	24275.5548	2.98	I				
4117.9000	24277.3727	4.31	I	32413	3	8133	4
4117.4171	24280.2200	3.50	I				
4116.9178	24283.1646	1.98	UB				
4116.8776	24283.4015	15.9	I	28151	3	3868	3
4116.5525	24285.3193	2.52	I	30047	6	5762	5
4116.3430	24286.5553	26.1	I	24906	6	620	5
4116.0974	24288.0044	30.0	II	24288	11/2	0	9/2
4116.0593	24288.2293	2.42	UB				
4115.6445	24290.6774	16.7	I	28566	7	4275	6
4114.6092	24296.7892	10.2	I	34644	8	10347	8

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4113.1129	24305.6278	2.65	II	24305	9/2	0	9/2
4112.9194	24306.7713	3.47	I	28107	8	3800	7
4111.0179	24318.0138	21.3	I	28118	7	3800	7
4110.8297	24319.1270	2.87	II	24608	11/2	289	11/2
4110.6460	24320.2137	8.89	I	24940	4	620	5
4110.5297	24320.9022	5.80	I	28596	7	4275	6
4109.6981	24325.8235	6.15	I	28194	4	3868	3
4109.5343	24326.7928	7.75	I	7020	4	31347	4
4109.2107	24328.7085	2.26	I	31974	8	7645	8
4108.6831	24331.8324	3.20	I	32450	6	8118	7
4108.3525	24333.7906	50.7	I	24333	7	0	6
4107.5232	24338.7031	11.0	I	28614	5	4275	6
4107.4292	24339.2605	2.98	I	30568	6	6249	6
4107.3767	24339.5714	8.67					
4106.9495	24342.1030	2.55		24342	7/2	0	9/2
4106.5333	24342.1991	6.11	II	26094	13/2	1749	13/2
4106.8910	24342.4498	7.35	II				
4106.3831	24345.4605	7.56					
4106.2776	24346.0858	22.9					
4105.5589	24350.3480	3.51	I	35807	6	11457	6
4105.3275	24351.7206	5.62	I	28627	6	4275	6
4105.3098	24351.8252	8.13	I	28152	7	3800	7
4104.9461	24353.9829	17.7	I	24974	5	620	5
4104.0786	24359.1306	2.52	I	34706	9	10347	8
4103.9804	24359.7133	12.7	I	28228	3	3868	3
4103.1126	24364.8657	39.2	I	31690	8	7326	7
4102.6540	24367.5891	4.69	I	28236	4	3868	3
4102.1485	24370.5915	2.66					
4101.9047	24372.0401	41.5	I	7020	4	31392	5
4099.3008	24387.5212	3.81	I?	28840	5	4453	4
4099.2539	24387.8003	11.6	I	28256	3	3868	3
4098.9843	24389.4039	5.91	I	25009	6	620	5
4098.2543	24393.7484	2.52	I	30642	7	6249	6
4098.0283	24395.0934	10.3	II	24684	9/2	289	11/2
4097.9672	24395.4573	4.55					
4097.8785	24395.9856	4.61	I	31722	7	7326	7
4097.7440	24396.7861	38.6	I	25017	4	620	5
4096.7125	24402.9290	3.56	II	25317	9/2	914	9/2
4096.3501	24405.0874	32.0	I	7020	4	31425	5
4095.7157	24408.0677	2.57					
4094.8906	24413.7861	3.56	II	28834	13/2	4420	11/2
4094.0536	24418.7771	2.53	I	32537	7	8118	7
4093.9902	24419.1551	3.45	I	34707	7	10288	6
4092.1943	24429.8717	2.67	I	31435	7	7005	6
4091.6270	24433.2585	99.2	I	24433	6	0	6
4091.4928	24434.0600	3.14	II	34632	17/2	10198	15/2
4090.7309	24438.6108	2.88	I	30687	6	6249	6

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4090.3779	24440.7195	7.24	I	28894	5	4453	4
4090.1319	24442.1899	37.3	II	26191	13/2	1749	13/2
4089.3645	24445.7760	3.22	II	33999	11/2	9553	11/2
4089.1546	24448.0312	19.2	I	24448	5	0	6
4088.2949	24453.1721	3.67	I				
4088.2517	24453.4304	7.06	II	24453	9/2	0	9/2
4087.0962	24460.3436	2.71	I	28913	3	4453	4
4086.6821	24462.8224	6.68	I	32108	8	7645	8
4085.1937	24471.6990	8.02	I	28272	6	3800	7
4085.0917	24472.3459	9.28	I	31798	7	7326	7
4084.9721	24473.0623	4.45	I	28341	4	3868	3
4084.9264	24473.3365	2.91	II	30263	9/2	5790	11/2
4084.4122	24476.4171	4.53	I				
4084.0966	24478.3084	31.3	I	25098	5	620	5
4083.6270	24481.1231	2.96	I				
4083.0374	24484.6585	28.7	I	25104	4	620	5
4082.9880	24484.9548	5.72	I	28285	7	3800	7
4082.8200	24485.9625	19.9	I	28761	7	4275	6
4082.3656	24488.6878	7.62	I	7020	4	31509	5
4081.2170	24495.5794	11.6	I	34842	8	10347	8
4081.0368	24496.6611	5.09	I	37624	10	13127	9
4080.0126	24502.8102	6.11	I				
4079.8118	24504.0130	3.48	I	37631	9	13127	9
4077.7849	24516.1958	40.4	I	7020	4	31536	5
4076.7032	24522.7006	6.01	II				
4076.6877	24522.7939	5.96	I	25437	9/2	914	9/2
4076.6236	24523.1799	25.1	I	28798	7	4275	6
4075.9999	24526.9323	3.39	I				
4075.8937	24527.5713	13.6	I	31853	8	7326	7
4075.4813	24530.0529	4.18	I	31633	4	7103	3
4074.6133	24535.2783	23.2	I	24535	5	0	6
4074.4843	24536.0554	5.16	II	26285	11/2	1749	13/2
4074.4531	24536.2430	8.86	I	28811	6	4275	6
4073.5402	24541.7414	20.7	I	28342	6	3800	7
4072.8318	24546.0101	8.10	I	31551	6	7005	6
4072.4862	24548.0933	3.47	I	30539	3	5991	4
4072.2465	24549.5381	3.64	I	39394	11	14845	10
4070.8854	24557.7459	28.8	I	25178	5	620	5
4070.5713	24559.6409	4.15	I	28428	3	3868	3
4070.4439	24560.4098	10.5	I	24560	7	0	6
4070.0068	24563.0473	23.0	I	7020	4	31583	5
4069.6455	24565.2278	13.9	I	28840	5	4275	6
4068.7008	24570.9317	12.6	I				
4068.3773	24572.8854	4.72	I	30334	6	5762	5
4068.1690	24574.1438	7.90					
4067.9655	24575.3726	3.01	II	30860	11/2	6283	13/2
4067.7473	24576.6912	6.85

LAMBDA(CA)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4067.1963	24580.0207	5.62	I	31906	6	7326	7
4066.2867	24585.5188	24.9	I	28454	4	3868	3
4066.1646	24586.2568	3.61	I	32450	6	7854	5
4064.3752	24597.0814	10.3	I	31923	8	7326	7
4064.3432	24597.2746	7.74	I				
4064.2698	24597.7188	6.46	I	31603	6	7005	6
4064.1698	24598.3243	3.06	I	30589	5	5991	4
4064.0212	24599.2234	8.60	I	28874	6	4275	6
4063.0895	24604.8644	22.9	I				
4062.5440	24608.1680	30.0	II	24608	11/2	0	9/2
4062.4485	24608.7466	5.37	I	32472	6	7864	5
4062.3186	24609.5332	42.4	I	24609	6	0	6
4061.7606	24612.9145	3.74	I				
4061.3468	24615.4220	54.9	I	25235	6	620	5
4060.7587	24618.9868	4.17	I	34966	7	10347	8
4060.6106	24619.8846	4.93	I	28895	7	4275	6
4060.2785	24621.8986	4.19	I	35930	9	11308	9
4059.5107	24626.5550	2.95	I	30875	6	6249	6
4058.7155	24631.3739	2.98	I	28499	4	3868	3
4058.1872	24634.5867	6.61	II	24923	13/2	289	11/2
4058.1041	24635.0907	62.4	I	28435	7	3800	7
4056.5232	24644.6912	3.13	I	29098	4	4453	4
4056.2812	24646.1617	3.24	I	29099	5	4453	4
4055.9400	24648.2353	9.37	I	31974	8	7326	7
4055.5809	24650.4174	18.7	I	24650	5	0	6
4055.4373	24651.2903	3.30	I	37779	9	13127	9
4055.1895	24652.7967	4.29	I	29106	3	4453	4
4054.8889	24654.6242	2.89	I				
4054.6731	24655.9361	28.1	I	28931	5	4275	6
4054.3039	24658.1817	4.81	II	30941	15/2	6283	13/2
4053.0200	24665.9922	5.37	II	26415	13/2	1749	13/2
4052.8953	24666.7515	6.94	I	10051	5	34718	6
4052.7970	24667.3499	7.04	I				
4052.6102	24668.4868	4.54	I				
4051.9110	24672.7436	9.57	II	29932	15/2	5259	15/2
4051.7321	24673.8329	4.14	I	30435	5	5762	5
4051.5556	24674.9078	3.83	I	28543	4	3868	3
4051.0795	24677.8072	4.93	I				
4050.0412	24684.1341	30.1	II	24684	9/2	0	9/2
4049.7742	24685.7613	12.6	I	32331	8	7645	8
4049.1873	24689.3391	17.1	I	30451	6	5762	5
4048.0304	24696.3953	3.44	I				
4047.6117	24698.9501	131.	I				
4044.8938	24715.5457	8.56	I	25319	5	620	5
4044.4288	24718.3872	3.64	I	28516	8	3800	7
4044.4121	24718.4892	9.42	I	29978	13/2	5259	15/2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4042.8189	24728.2300	2.14	I	25348	6	620	5
4042.7496	24728.6541	139.	I	34812	6	10081	5
4042.3437	24731.1370	2.19	I	35088	9	10347	8
4040.7514	24740.8823	3.38	I	24741	5	0	6
4040.6922	24741.2448	24.6	I				
4039.7851	24746.8002	4.34	I				
4039.7436	24747.0542	8.49	I	32392	8	7645	8
4039.6949	24747.3526	2.12	I	35433	7	10685	8
4039.0123	24751.5347	1.94	I	28620	4	3868	3
4037.9678	24757.9369	14.2	I	29033	6	4275	6
4036.8654	24764.6383	8.77	I	7020	4	31785	5
4036.8018	24765.0883	2.07	I	28566	7	3800	7
4036.7270	24765.5468	5.13	I	32096	7	7326	7
4035.6671	24772.0509	2.46	I	31024	7	6249	6
4035.0617	24775.7679	2.32	I	29232	5	4453	4
4034.4963	24779.2396	27.0	I	38314	10	13535	9
4034.4374	24779.6014	2.06	I	32108	8	7326	7
4033.9904	24782.3470	2.37	I	32382	9/2	7598	11/2
4033.7263	24783.9701	2.95	II	29206	11/2	4420	11/2
4033.4233	24785.8316	2.62	II				
4032.3701	24792.3054	3.64	I	28596	7	3800	7
4031.8051	24795.7796	12.4	I				
4031.5882	24797.1133	4.36	II	25713	9/2	914	9/2
4031.3031	24798.8669	4.33	I	29673	3	3868	3
4030.8955	24801.3749	3.50	I				
4030.2860	24805.1254	7.81	I	30571	4	5762	5
4029.9386	24807.2634	2.90	I	32928	8	8118	7
4029.5992	24809.3532	2.73	I	31920	3	7103	3
4028.4616	24810.0542	4.32	I	31921	4	7103	3
4028.3296	24817.1721	4.41	I	30588	6	5762	5
4026.8630	24826.2103	3.62	I	28627	6	3800	7
4026.8003	24826.5969	2.18	I	7020	4	31847	5
4026.7647	24826.8161	2.22	I				
4026.4469	24828.7756	6.53	I				
4026.0218	24831.3973	16.2	II	27126	9/2	2294	11/2
4025.5792	24834.1274	3.18	I	29109	6	4275	6
4025.2001	24836.4662	2.57	I	32955	6	8118	7
4025.1050	24837.0528	13.9	I	25457	4	620	5
4025.0359	24837.4792	3.71	I	30828	5	5991	4
4025.0150	24837.6085	7.92	I				
4024.2488	24842.3371	7.13	I	25462	6	620	5
4024.0117	24843.8008	3.19	I				
4022.9376	24850.4339	5.64	I	29126	6	4275	6
4022.8249	24851.1303	3.51	I	36528	8	11677	7
4022.2230	24854.8487	1.91					
4021.7456	24857.7992	2.39

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
4019.0308	24874.5901	6.15	I	30636	6	5762	5
4018.9868	24874.8622	7.10	II	25163	13/2	289	11/2
4018.2967	24879.1340	12.1	I	7020	4	31899	4
4017.7163	24882.7284	6.27	II	5716	9/2	30599	9/2
4017.4855	24884.1578	2.91	UB				
4017.4524	24884.3624	3.71					
4016.2878	24891.5785	2.30	I	31897	7	7005	6
4015.2352	24898.1034	13.3	I	29173	5	4275	6
4014.8320	24900.6041	2.50	I	31906	6	7005	6
4014.8056	24900.7675	15.6	I	32546	8	7645	8
4014.5374	24902.4308	11.1					
4013.8206	24906.8781	14.2	I	24906	6	0	6
4013.0128	24911.8916	2.01					
4012.8218	24913.0775	3.22	I	33031	8	8118	7
4012.1572	24917.2038	2.32	I	31166	7	6249	6
4011.7811	24919.5398	5.63	I	30681	5	5762	5
4011.4496	24921.5990	3.94	II	30323	7/2	5401	7/2
4010.8119	24925.5618	15.7	I	30687	6	5762	5
4009.5031	24933.6974	5.03	I	28802	3	3868	3
4009.2965	24934.9828	5.14	I	35004	7	10069	7
4009.1672	24935.7864	2.80	I	31219	11/2	6283	13/2
4008.9171	24937.3420	5.20	II				
4008.7751	24938.2259	4.37	I	32802	6	7864	5
4008.6723	24938.8649	7.27	I	24938	7	0	6
4008.4295	24940.3757	5.33	I	30931	5	5991	4
4007.9295	24943.4869	3.31					
4006.2384	24954.0157	2.38	I	30945	4	5991	4
4005.6949	24957.4013	66.8	I	25577	4	620	5
4005.2739	24960.0248	3.40					
4005.2094	24960.4267	98.6	I	25580	6	620	5
4005.1408	24960.8545	15.0	I ?	29236	7	4275	6
4005.0015	24961.7226	2.41					
4004.8956	24962.3822	3.39	I	32288	6	7326	7
4004.4140	24965.3848	6.71	I	31970	7	7005	6
4004.0628	24967.5743	6.63	II	26716	13/2	1749	13/2
4003.9696	24968.1556	10.9	I	7020	4	31988	5
4003.6261	24970.2979	2.01	I	35656	7	10685	8
4003.1964	24972.9777	2.32	I	27267	11/2	2294	11/2
4003.1514	24973.2583	5.24	I	35320	9	10347	8
4002.9836	24974.3056	7.52	I	24974	5	0	6
4002.5850	24976.7924	10.2	I	7020	4	31997	6
4002.3384	24978.3312	3.49	II	29684	7/2	4706	5/2
4001.3990	24984.1955	4.13	I	32310	7	7326	7
4001.2800	24984.9380	17.1	I	7020	4	32005	5
4000.7344	24988.3455	4.36	I	30979	4	5991	4
3999.1803	24998.0560	29.4	I	28798	7	3800	7

202	LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
	3998.6491	25001.3767	2.97					
	3998.3958	25002.9604	3.18					
	3998.2364	25003.9572	2.75	11	11389	11/2	36393	13/2
	3997.3142	25009.7257	4.82	1	25009	6	0	6
	3997.6817	25011.1803	13.5	1	32016	7	7005	6
	3995.9779	25018.0888	6.28					
	3995.5280	25020.9063	5.40	1	29474	3	4453	4
	3995.1819	25023.0736	3.10					
	3994.5628	25026.9518	3.47	1	31275	7	6249	6
	3994.2906	25028.6571	3.96	11	25317	9/2	289	11/2
	3993.8423	25031.4663	4.71	1	38159	9	13127	9
	3992.8379	25037.7629	8.70	1	29313	6	4275	6
	3592.7051	25038.5956	3.83	1	32044	6	7005	6
	3992.5345	25039.6655	4.48	11	5716	9/2	30756	9/2
	3992.2304	25041.5733	6.00	1	32367	7	7326	7
	3990.8809	25050.0404	2.34	1	32153	4	7103	3
	3990.4203	25052.9317	13.2	11	25967	7/2	914	9/2
	3990.1510	25054.6226	2.33		31499	7/2	6445	9/2
	3990.0441	25055.2939	2.74	11				
	3989.8897	25056.2635	2.87					
	3989.2887	25060.0385	9.36	1	28860	6	3800	7
	3988.8834	25062.5843	5.72	11	27357	11/2	2294	11/2
	3988.6336	25064.1541	5.49					
	3987.1129	25073.7135	3.93	1	7020	4	32094	4
	3987.0512	25074.1014	5.04	1	28874	6	3800	7
	3986.3766	25078.3446	3.30					
	3985.7924	25082.0204	12.9	11	30341	15/2	5259	15/2
	3985.0477	25086.7072	5.35	1	32412	6	7326	7
	3984.8538	25087.9280	2.33					
	3984.6491	25089.2165	6.16	1	28957	2	3868	3
	3984.1785	25092.1300	5.79					
	3983.7686	25094.7618	13.8	1	28895	7	3800	7
	3983.0175	25099.4943	2.66					
	3982.0986	25105.2860	2.32					
	3981.5567	25108.7025	3.66	1	31100	4	5991	4
	3980.7952	25113.5053	16.2	1	30875	6	5762	5
	3980.4932	25115.3728	6.62	1	7020	4	32136	4
	3979.9343	25118.9379	4.56	1	29573	5	4453	4
	3979.7568	25120.0583	3.97	1	28996	4	3868	3
	3978.5165	25127.8894	7.52	1	32774	8	7645	8
	3978.3972	25128.6425	14.0					
	3978.2661	25129.4706	6.15					
	3978.1595	25130.1440	5.20					
	3978.1322	25130.3167	2.40	1	33987	3	8856	2
	3977.7984	25132.4253	3.07	1	33265	4	8133	4
	3977.3507	25135.2541	4.96	1	32780	7	7645	8
	3977.0422	25137.2039	2.79	1	30899	6	5762	5

LAMEDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
3976.5648	25140.2217	2.32	I	32796	8	7645	8
3974.8955	25150.7792	6.92	I	29605	5	4453	4
3974.7463	25151.7232	4.00	I ?	29610	4	4453	4
3973.9569	25156.7195	6.00	I	25788	4	620	5
3972.2127	25167.7658	25.9	I	25791	6	620	5
3971.6586	25171.2764	7.92	I	7020	4	32192	4
3971.5815	25171.7655	7.83	I	25178	5	0	6
3970.5872	25178.0687	19.0	I	25805	5	620	5
3969.4124	25185.5204	31.8	I	33588	5/2	8400	3/2
3969.0213	25188.0022	2.55	II	10051	5	35242	5
3968.5715	25190.8569	6.59	I				
3968.5092	25191.2522	3.55					
3968.2545	25192.8692	3.57	UB				
3968.0317	25194.2837	2.77					
3967.4628	25197.8959	43.1	I	25818	4	620	5
3967.0876	25200.2792	2.43	I ?	29475	7	4275	6
3966.6117	25203.3023	4.24	I	30965	6	5762	5
3966.5494	25203.6982	6.26	II	8423	9/2	33627	11/2
3966.5125	25203.9331	12.1	I	29072	4	3868	3
3966.3069	25205.2392	7.53	I	25825	6	620	5
3965.2721	25211.8172	3.93	I	36519	9	11308	9
3965.1745	25212.4374	2.35	I	29013	8	3800	7
3964.9611	25213.7944	2.56	UB				
3964.6628	25215.6912	2.55	II	32382	9/2	7166	9/2
3964.4167	25217.2564	3.40	I	7020	4	32237	4
3964.2064	25218.5941	4.65	I	31467	6	6249	6
3963.8938	25220.5835	2.36	I	29674	5	4453	4
3963.4813	25223.2083	2.37	I	33341	6	8118	7
3962.8050	25227.5123	18.2	I	29503	7	4275	6
3962.4733	25229.6244	3.29	I	29098	4	3868	3
3962.2683	25230.9295	2.96	I	30993	5	5762	5
3962.1498	25231.6841	3.48	I	36688	7	11457	6
3961.9792	25232.7703	5.49	I	30994	6	5762	5
3961.5122	25235.7453	46.0	I	25235	6	0	6
3961.4122	25236.3819	16.4	I	7020	4	32257	5
3961.2007	25237.7298	6.96	I	29106	3	3868	3
3961.0565	25238.6480	7.94	I	35585	9	10347	8
3960.7981	25240.2947	3.48	II	31523	13/2	6283	13/2
3960.6563	25241.1985	12.3	I	31232	5	5991	4
3960.1747	25244.2678	2.57	I	35930	9	10685	8
3959.2054	25250.4484	15.4	I	32255	7	7005	6
3958.4988	25254.9552	2.44					
3958.0595	25257.7586	2.94					
3957.0145	25264.4282	3.22	I	7020	4	32285	5
3954.6671	25279.4248	4.18	II	8347	11/2	33627	11/2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
3954.1002	25283.0488	4.25	I	32928	8	7645	8
3953.6661	25285.8245	18.7	I	25906	5	620	5
3953.5752	25286.4062	4.80	II	27581	13/2	2294	11/2
3953.4746	25287.0494	3.00					
3953.0068	25290.0418	5.40	I	25910	4	620	5
3952.9597	25290.3430	7.47	I	29158	4	3868	3
3952.9223	25290.5824	6.46	I	33154	6	7864	5
3952.5466	25292.9863	5.80	II	31083	11/2	5790	11/2
3952.4487	25293.6130	6.18	I	33412	6	8118	7
3951.4733	25299.8562	14.2	I	29753	5	4453	4
3950.7048	25304.7777	2.99	I	32310	7	7005	6
3950.4731	25306.2614	18.1	I	29107	7	3800	7
3950.0514	25308.9635	2.31	I	35994	8	10685	8
3949.9540	25309.5874	2.50	I	32413	3	7103	3
3949.7436	25310.9353	2.78	I	33175	4	7864	5
3949.3227	25313.6332	3.14	I	33432	6	8118	7
3948.9866	25315.7872	12.7	I	7020	4	32336	4
3948.6558	25317.9079	7.72	I	25938	6	620	5
3948.5070	25318.8625	6.72	I	29119	8	3800	7
3948.4430	25319.2726	48.0	I	25319	5	0	6
3948.3947	25319.5822	5.34					
3947.5015	25325.3113	3.62	I	29126	6	3800	7
3947.4426	25325.6892	2.89					
3946.6236	25330.9443	5.01					
3945.9670	25335.1595	2.51	I	35590	6	10254	5
3944.6090	25343.8817	6.32	I	32670	6	7326	7
3944.1297	25346.9614	5.76	II	29932	15/2	4585	13/2
3943.8161	25348.9765	153.	I	25348	6	0	6
3943.5935	25350.4073	3.46	I	29218	3	3868	3
3942.8394	25355.2559	12.4	II	31145	11/2	5790	11/2
3942.8138	25355.4202	4.32	I	25975	4	620	5
3942.6112	25356.7236	3.90	I	29810	3	4453	4
3942.5400	25357.1815	4.37	II	34112	13/2	8755	13/2
3942.0430	25360.3783	6.32					
3941.7653	25362.1581	5.71	I	32367	7	7005	6
3940.6061	25369.6252	2.91					
3940.4838	25370.4124	5.46	II	26285	11/2	914	9/2
3938.3471	25384.1765	13.8	I	29185	8	3800	7
3937.9833	25386.5218	2.69	I	29255	3	3868	3
3937.5713	25389.1780	3.83					
3936.3095	25397.3164	3.19	I	32723	7	7326	7
3935.9983	25399.3245	6.70	I	32591	3	7191	2
3935.3802	25403.3133	9.99	II	27698	9/2	2294	11/2
3934.8911	25406.4709	10.4	I	7020	4	32427	4
3933.9784	25412.3653	10.6	I	32417	7	7005	6
3933.7903	25413.5808	4.62	II	26328	7/2	914	9/2
3933.0281	25418.5056	3.24	II	30678	15/2	5259	15/2

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J (E)	E (ODD)	J (O)
3932.0221	25425.0083	44.4	II	25714	13/2	289	11/2
3931.5074	25428.3370	14.2	I	29881	5	4453	4
3930.9777	25431.7635	2.87	II	25720	13/2	289	11/2
3930.4396	25435.2453	17.0	I	29236	6	3800	7
3930.3633	25435.7389	17.3	I	29236	7	3800	7
3930.2718	25436.3308	2.65					
3929.8151	25439.2869	3.28					
3928.8244	25445.7015	40.6	I	25445	7	0	6
3928.4433	25448.1699	5.94	I	32774	8	7326	7
3927.7577	25452.6118	3.07	II	31736	13/2	6283	13/2
3927.6108	25453.5637	3.37	I	33099	7	7645	8
3927.2166	25456.1186	5.87	I	29909	4	4453	4
3927.1411	25456.6083	7.22					
3926.9351	25457.9438	2.75	II	30859	7/2	5401	7/2
3926.8133	25458.7335	18.2	I	25458	7	0	6
3926.7153	25459.3686	24.9	I	7020	4	32480	4
3926.6040	25460.0905	2.97					
3926.2078	25462.6595	77.4	I	25462	6	0	6
3924.7856	25471.0860	3.48	I	31463	4	5991	4
3924.2608	25475.2921	2.92	II	30060	11/2	4585	13/2
3924.1040	25476.3101	2.92	I	32802	6	7326	7
3923.6394	25479.3272	7.79	I	33124	8	7645	8
3923.0225	25483.3331	25.8	I	26103	6	620	5
3922.5168	25486.6185	3.43					
3921.5476	25492.9178	5.31	II	25492	11/2	0	9/2
3921.1897	25495.2445	5.60	I	31744	5	6249	6
3921.0762	25495.9821	6.06					
3920.5001	25499.7289	3.76					
3919.2174	25508.0740	7.35	I	10051	5	35559	4
3918.9458	25509.8417	7.30	I	10051	5	35561	5
3918.5168	25512.6346	2.55	I?	29313	6	3800	7
3918.2993	25514.0510	3.30	I	29967	4	4453	4
3918.1486	25515.0319	7.62	I	29790	7	4275	6
3917.9668	25516.2158	5.38	I	32842	6	7326	7
3917.6083	25518.5513	2.93	II	27267	11/2	1749	13/2
3917.4702	25519.4507	2.91	II	26434	7/2	914	9/2
3917.2431	25520.9303	7.73	I	33639	6	8118	7
3917.2280	25521.0285	3.33					
3917.1556	25521.4998	5.92	I	29389	3	3868	3
3917.0450	25522.2204	7.63	I	31284	5	5762	5
3916.5205	25525.6385	14.1	I	7020	4	32546	3
3916.3399	25526.8156	10.9	I	31518	5	5991	4
3915.8775	25529.8300	3.47	II	8423	9/2	33953	11/2
3915.5641	25531.8731	4.58	I	32537	7	7005	6
3915.2072	25534.2009	20.0	I	25534	5	0	6
3913.5025	25545.3226	4.66	I	32871	6	7326	7
3911.6445	25557.4565	5.08

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E (EVEN)	J(E)	E (ODD)	J(O)
3910.9589	25561.9363	9.42	I	29837	7	4275	6
3910.8853	25562.4174	17.6	I	7020	4	32583	4
3909.1466	25573.7870	2.87	I	33437	5	7864	5
3909.0600	25574.3533	2.51	UB				
3908.3078	25579.2752	16.8	I	30032	5	4453	4
3908.0824	25580.7508	8.83	I	25580	6	0	6
3907.1258	25587.0134	3.59	I	26207	4	620	5
3906.8369	25589.9060	4.36	I	31580	4	5991	4
3906.6940	25589.8416	5.11	I	29865	6	4275	6
3906.4530	25591.4203	12.8	I	29459	4	3868	3
3904.5622	25613.8125	3.51	II	30863	13/2	5259	15/2
3904.3439	25605.2446	12.9	I	26225	6	620	5
3904.2940	25605.5714	3.57	UB				
3904.2211	25606.0494	13.8	I	29881	5	4275	6
3903.2721	25612.2751	2.50	I	31374	4	5762	5
3903.2577	25612.3694	4.18	I	33730	6	8118	7
3903.2450	25612.4529	3.11	I	29413	8	3800	7
3902.5507	25617.0098	6.22	II	25906	9/2	289	11/2
3902.4925	25617.3913	5.33	I	30070	3	4453	4
3901.5462	25623.6051	7.56	I	10851	5	35674	5
3899.7775	25635.2262	8.59	II	27929	11/2	2294	11/2
3899.4733	25637.2253	5.47	II	4663	7/2	30301	9/2
3899.2704	25638.5597	21.5	I	29914	6	4275	6
3898.8433	25641.3681	3.42	I	29442	7	3800	7
3898.8162	25641.5462	2.90	I	33287	7	7645	8
3898.5245	25643.4651	3.51	II	37699	11/2	12055	9/2
3897.7690	25648.4349	3.42	I	33512	6	7864	5
3897.3222	25651.3757	4.19	I	32977	7	7326	7
3897.2576	25651.8009	13.1	I	7020	4	32672	3
3896.9721	25653.6801	4.15	I	30107	4	4453	4
3896.7742	25654.9825	4.15	II	30240	11/2	4585	13/2
3895.7157	25661.9533	9.45	I	29530	4	3868	3
3895.2700	25664.8893	3.65	II	30085	11/2	4420	11/2
3894.9034	25667.3054	18.8	I	26287	6	620	5
3894.1206	25672.4640	139.	I	25672	7	0	6
3893.8253	25674.4116	4.62	I				
3893.7114	25675.1626	10.6	I	29475	7	3800	7
3892.8924	25680.5644	9.33	I	29481	6	3800	7
3892.6810	25681.9584	7.48	II	30941	15/2	5259	15/2
3892.2517	25684.7912	5.11	I	26305	5	620	5
3892.0925	25695.8417	3.98	I	36993	10	11308	9
3891.8015	25687.7627	22.7	I	7020	4	32708	4
3891.6734	25688.6078	11.7	I				
3891.5021	25689.7384	7.21	I	30143	5	4453	4
3890.4109	25696.9444	2.74	I	31945	5	6249	6
3890.3615	25697.2707	29.8	UB				
3890.1267	25698.9217	3.10

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
3809.5867	25702.3889	8.83	I	29503	7	3800	7
3809.3367	25704.0414	2.89	I	32709	6	7005	6
3809.2790	25704.4226	15.9	I	26324	5	620	5
3809.1046	25705.5752	5.45	I?	33031	8	7326	7
3808.5992	25708.9163	6.85	I	10051	5	35760	5
3807.6927	25714.9105	2.55	UB				
3807.4399	25716.5829	14.3	I	7020	4	32737	3
3805.9946	25726.1473	9.10	I	31488	5	5762	5
3805.6675	25728.3128	3.41	I	33373	7	7645	8
3805.2606	25731.0070	3.80	I	33057	6	7326	7
3804.9333	25733.1752	2.59					
3804.3263	25737.1963	2.43	I	31728	4	5991	4
3803.6548	25741.6458	5.26	I	29610	4	3868	3
3803.6247	25741.8459	9.32	I	31733	5	5991	4
3803.1117	25745.2465	8.86	I	25745	5	0	6
3802.9398	25746.3861	3.32					
3802.6155	25748.5368	2.87					
3802.3556	25750.2604	6.84	II	27499	11/2	1749	13/2
3801.4546	25756.2376	8.41	II	30341	15/2	4585	13/2
3801.1417	25758.3139	3.71					
3879.7110	25767.8123	17.8	I	7020	4	32788	4
3879.5340	25768.9882	18.1	I	30222	3	4453	4
3878.5738	25775.3671	12.1	I	32780	7	7005	6
3878.4536	25776.1659	13.6	I	29544	3	3868	3
3878.0847	25778.6183	4.32	I?	34632	17/2	8853	17/2
3877.7550	25780.8095	2.93	I	33899	8	8118	7
3877.2745	25784.0048	4.18	I	32033	5	6249	6
3877.0753	25785.3294	3.60					
3876.4539	25789.4627	3.04	I	31551	6	5762	5
3876.3335	25790.2640	3.73	I	26410	4	620	5
3876.1329	25791.5986	71.5	I	25791	6	0	6
3876.0909	25791.8780	2.43	I	33118	6	7326	7
3875.3370	25796.8950	4.51	I	32802	6	7005	6
3875.1458	25798.1683	4.45	I	33916	6	8118	7
3874.5764	25801.9591	2.79	I	31793	4	5991	4
3874.4580	25802.7476	10.6	I	33448	8	7645	8
3874.3514	25803.4577	22.0	I	29604	7	3800	7
3874.0387	25805.5402	11.1	II	26094	13/2	289	11/2
3873.9933	25805.8426	19.9	I	25805	5	0	6
3873.8199	25806.9980	2.83	II	4663	7/2	30470	9/2
3873.4275	25809.6118	2.51					
3873.0789	25811.9352	23.2	I	29612	8	3800	7
3872.8517	25813.4492	6.63	I	30265	4	4453	4
3871.1687	25824.6713	21.9	I	26444	5	620	5
3871.0353	25825.5613	189	I	25825	6	0	6
3869.7434	25834.1828	2.61	I	36519	9	10585	8

LAMBDA(A)	SIGMA(CM-1)	INT	ION	E(EVEN)	J(E)	E(ODD)	J(O)
3868.6969	25841.1712	17.1	I	31603	6	5762	5
3868.5164	25842.3768	3.39	I	36528	8	10685	8
3867.9843	25845.9316	3.81	I	33979	4	8133	4
3867.5047	25849.1366	6.10	I	32098	7	6249	6
3867.1716	25851.3633	19.2	I	7020	4	32872	3
3866.9575	25852.7945	6.41					
3866.8005	25853.8440	6.37					
3865.9176	25859.7484	15.2	II	28154	11/2	2294	11/2
3864.4696	25869.4378	3.18	II	4663	7/2	30533	9/2
3864.2399	25870.9756	3.79	I	26491	4	620	5
3863.0935	25878.6529	19.3	I	29747	3	3868	3
3862.6131	25881.8709	2.54	I	34000	6	8118	7
3862.0514	25885.6358	3.08	I	32891	5	7005	6
3861.7581	25887.6017	6.18	I	31649	6	5762	5
3861.1670	25891.5644	6.87					
3861.1107	25891.9418	4.32	II	28186	9/2	2294	11/2
3861.0403	25892.4137	2.54		32142	5	6249	6
3860.9438	25893.0609	4.48	I				
3860.7802	25894.1584	2.38					
3859.5716	25902.2669	52.0	II	26191	13/2	289	11/2
3859.0082	25906.0480	3.48	II	25906	9/2	0	9/2
3858.9936	25906.1460	6.32	I	25906	5	0	6
3857.5563	25915.7986	3.09	I	30191	6	4275	6
3856.7413	25921.2749	8.67	I	31683	5	5762	5
3856.0799	25925.7210	9.73	I	31687	6	5762	5
3855.4282	25930.1032	20.7	I	26550	6	620	5
3855.3447	25930.6645	3.78					
3854.6448	25935.3731	16.5	II	4663	7/2	30599	9/2
3854.2202	25938.2297	135.	I	25938	6	0	6
3853.7113	25941.6549	10.8	I	29810	3	3868	3
3853.6586	25942.0098	4.58	I	26562	4	620	5
3853.1127	25945.6852	2.52	I	31707	4	5762	5
3852.9775	25946.5958	7.25	I	26566	6	620	5
3852.6872	25948.5507	6.85	I	33594	8	7645	8
3852.5604	25949.4043	4.05	I	33595	9	7645	8
3852.3222	25951.0090	6.19	I	30226	5	4275	6
3851.9521	25953.5023	5.46	I				
3851.7268	25955.0206	13.7		7020	4	32975	3
3851.6649	25955.4375	3.14	I	30408	4	4453	4
3851.5233	25956.3922	3.30	I	33282	6	7326	7
3851.4834	25956.6607	2.95	I	29825	4	3868	3
3850.5223	25963.1397	6.86	I	26583	5	620	5
3850.3236	25964.4796	12.2	I	30240	6	4275	6
3849.8468	25967.6951	4.43	II	25967	7/2	0	9/2
3849.2146	25971.9598	7.14	I	32977	7	7005	6
3848.7187	25975.3061	2.92	UB				
3848.6042	25976.0787	2.61	II	31235	15/2	5259	15/2

APPENDIX

Atlas for optogalvanic wavelength calibration

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There is considerable interest in the use of the optogalvanic effect for laser wavelength calibration.¹ For this use a portion of the laser beam is deflected into a commercial hollow cathode discharge tube. When the laser wavelength corresponds to an optical transition of a species present in the discharge, the voltage across the discharge changes.^{2,3} These voltage changes are easily measured and form the basis for a calibration process. Commercial hollow cathode discharge tubes are available for all the well-known calibration sources—iron, thorium, rare gases, etc.

As an aid to this calibration it is useful to know how the relative magnitude of the induced voltage change compares to the relative intensity of the corresponding emission line. It was demonstrated in an uranium hollow cathode discharge at constant current that the ratio of the voltage change to the laser intensity for cw excitation is given by⁴

$$\frac{\Delta V_{ij}}{I} \propto \lambda_{ij} f_{ij} g_i \exp(-E_i/kT). \quad (1)$$

ΔV_{ij} is the observed voltage change when the laser wavelength (λ_{ij}) corresponds to the $E_i \rightarrow E_j$ transition, f_{ij} is the oscillator strength of this transition, g_i is the degeneracy of the initial (i th) state, E_i is the energy of this state, and I is the laser intensity. Care must be taken to avoid laser powers in excess of 100 mW because of saturation effects. This can be a serious problem when using pulsed excitation. The intensity of an emission line is given by⁵

$$F_{ji} \propto \frac{g_i}{g_j} \cdot \frac{f_{ij}}{(\lambda_{ij})^3} \cdot g_j \exp(-E_j/kT). \quad (2)$$

In this case the initial state is the j th state. In both (1) and (2) we are interested in calibration over a small wavelength region ($<50 \text{ \AA}$) so λ_{ij} does not change appreciably. $E_j = E_i + h\nu_{ij}$. Thus, (1) and (2) can be rewritten for comparison over small wavelength regions as

$$\frac{\Delta V_{ij}}{I} \propto f_{ij} \cdot g_i \cdot \exp(-E_i/kT), \quad (3)$$

$$F_{ji} \propto f_{ij} \cdot g_i \cdot \exp(-E_i/kT), \quad (4)$$

Fig. 1. Comparison of the optical emission spectrum (a) with the optogalvanic spectrum (b). Discharge tube current: (a) 75 mA; (b) 25 mA. Laser power: 50–150 mW. Laser linewidth: three modes with an intermode spacing of 1.2 GHz. Source: neon-filled uranium hollow cathode discharge tube manufactured by Westinghouse Corporation.

where the factors λ^n and $\exp(-h\nu/kT)$ have been incorporated into the proportionality constant. Inspection of (3) and (4) indicates that there should be a correspondence between the laser-induced voltage change and the intensity of the emission line. This is usually the case as can be seen in Fig. 1. In this figure both the emission spectrum (a) and the optogalvanic spectrum (b) are displayed. With the exception of line 7 the agreement of intensities in the two spectra is within a factor of 2. Measurements over a more extensive range show that this agreement is good to $\pm 30\%$. Care must be taken on lines that appear to be single but are really blends of more than one line. Occasionally a line such as 7 appears that has anomalous intensity in optogalvanic or emission spectrum (or both). Note that the optogalvanic signals from the neon carrier gas are much larger than those from the sputtered atomic species, even when the neon emission is barely visible in the spectrum. Note also that the discharge currents in the two spectra are different [75 mA in (a) and 25 mA in (b)]. Although the absolute intensities of the emission lines and the optogalvanic signals increase with increasing discharge current, the relative intensities within a spectrum are essentially unchanged over this current region. An operating current of 25 mA was used, as suggested by the tube manufacturer, for the optogalvanic measurements.

The correspondence between laser-induced voltage changes and emission intensities means that an atlas of emission lines is useful for optogalvanic wavelength calibration. Such an atlas exists⁶ for the uranium transitions in the 3848–9085-Å wavelength region. Current plans include the preparation of a similar atlas for thorium and extension of both atlases into the UV and IR regions.

The uranium emission intensities are displayed as recorded on the Fourier transform spectrometer (FTS) at Kitt Peak National Observatory. The presentation in Fig. 1 is similar to that in the atlas. The wavelength can be read from these tracings to an accuracy of better than 0.1 Å. The wave numbers of the stronger transitions are tabulated with an estimated accuracy of 0.005 cm⁻¹ or better. Both uranium and thorium make excellent wavelength standards because they are heavy, essentially monoisotopic, and have no hyperfine structure. Doppler widths in the commercial hollow cathode discharges were measured to be ~0.03 cm⁻¹.⁷ Uranium has the advantage of having a denser spectrum over the visible and IR region. For additional reference, a list of intensities and wave numbers of over 100,000 uranium transitions is available.⁸

Transitions associated with the rare gas carrier are often used for optogalvanic wavelength calibration because of their high intensity. For this reason, the neon lines are also included in the atlas. They have larger Doppler widths and tend to saturate easier. The optogalvanic signal intensity has no direct correlation to the emission intensity for the neon lines in the atlas.

When the optogalvanic effect is used for wavelength calibration in the UV spectral region, often photoelectric emission from the cathode masks the optogalvanic signal. This is especially true for pulsed excitation where it can even be a problem in the visible region. Construction of a uranium hollow cathode tube with a clear optical path through the cathode would be very useful for optogalvanic wavelength calibration at shorter wavelengths. When working in the UV region with frequency doubled lasers, it is usually better to do the wavelength calibration in the visible region on the fundamental laser beam.

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