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SUPPLEMENT TO IN-1448

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**GAMMA RAYS EMITTED BY THE FISSIONABLE
NUCLIDES AND ASSOCIATED ISOTOPES**

J.E. Cline, R.J. Gehrke and L.D. McIsaac

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PREFACE

The data presented in this report and in IN-1448 represent, in the opinion of the authors, the relevant data on the gamma rays emitted by the nuclides most often encountered in the assay of nuclear fuels. It is not intended to be a complete listing of all of the very weak gamma rays emitted in the decay of these nuclides. In cases where positive isotopic identification of a particular gamma ray was not immediately obvious, no serious attempt was made to make positive identifications. This occurred only for the weak transitions.

ABSTRACT

New data on gamma-ray energies and intensities emitted in the decay of the nuclides ^{226}Ra , ^{227}Ac , ^{238}U , ^{240}Pu , and ^{241}Pu are presented in this supplement to IN-1448. For sake of completeness, data presented in the previous report are also given in the tables here.

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GAMMA RAYS EMITTED BY THE FISSIONABLE NUCLIDES AND ASSOCIATED ISOTOPES

J. E. Cline, R. J. Gehrke, and L. D. McIsaac

I. INTRODUCTION

Since the issuance of the report "Gamma Rays Emitted by the Fissionable Nuclides and Associated Isotopes"⁽¹⁾, data on some additional nuclides have been cataloged. In addition, some significant differences are evident between portions of the data presented in IN-1448⁽¹⁾ and portions of that presented by Gunnick and Morrow⁽²⁾. As a result of these, re-investigations were made of the decay properties of ^{240}Pu , ^{241}Pu , and ^{241}Am . This supplement was prepared to report the data from the new investigations and from the three re-investigations.

II. MEASUREMENTS OF GAMMA-RAY ENERGIES AND INTENSITIES

Energies and intensities were measured using the techniques of high-resolution Ge(Li) spectrometry in current practice at this laboratory. Samples of ^{240}Pu and ^{238}U were quite large, and significant self-absorption corrections were necessary to obtain proper gamma-ray intensities. The accuracy of the measured intensities is none-the-less felt to be about $\pm 10\%$ even for the low-energy transitions.

One of the more serious discrepancies in the intensities of gamma rays as reported in the two AEC reports^(1,2) occurred for the decay of ^{240}Pu . In the re-investigation of the gamma rays from this nuclide we used plutonium sources which covered a wide range of relative isotopic

concentrations of the three plutonium isotopes 239, 240 and 241. The use of these sources permitted a consistent check of the intensity of the 160-keV gamma ray from ^{240}Pu , relative to the absolute intensities of the strong transitions from the other two isotopes.

III. BASES FOR ABSOLUTE GAMMA-RAY INTENSITIES

^{226}Ra , in equilibrium with daughter activities.

The equilibrium absolute intensity values resume an absolute intensity for the 2204.12-keV gamma ray of $0.0525^{(3)}$ gamma rays per disintegration.

^{227}Ac , in equilibrium with daughter activities.

Equilibrium absolute intensities for this chain assume an absolute intensity of $0.133^{(4)}$ gamma rays per decay for the 351.01-keV gamma ray.

^{238}U

Relative gamma-ray intensities were measured by the authors. Self-absorption of gamma rays within the relatively large ^{238}U sample was measured using the observed intensities of the relatively well known ^{228}Th decay transitions, present in the sample as a contaminant activity. Absolute intensities were obtained through the decay scheme as reported in Reference 5.

^{240}Pu , ^{241}Pu

Because of the serious discrepancy between the values for the intensities of the ^{240}Pu gamma rays listed in IN-1448⁽¹⁾ and those of Gunnick and Morrow⁽²⁾, a re-investigation was made of the decay of ^{241}Pu . Because the decay of ^{241}Pu also yields gamma rays with energies very similar to those from the decay of ^{240}Pu ⁽²⁾, a simultaneous re-investigation was made of the decay of ^{241}Pu .

To measure the relative intensities of the gamma rays from the decay of ^{241}Pu , a source was obtained which was $99.99 \pm \%$ pure in the 241 isotope. Although both ^{237}U and ^{241}Am (decay products of ^{241}Pu) were present in the sample in significant quantities, relative intensities for the ^{241}Pu gamma rays were readily obtained from data taken with the sample. These relative intensities were used in the analysis of the ^{240}Pu spectra. Absolute intensities for the gamma rays from ^{241}Pu were based as before⁽¹⁾ on the value of 0.09 148.56-keV gamma rays per ^{241}Pu alpha decay⁽⁵⁾ and the value 0.000023 alpha decays per ^{241}Pu disintegration⁽⁶⁾.

Data from one-hundred-ten samples of plutonium having different relative isotopic concentrations of ^{239}Pu , ^{240}Pu , and ^{241}Pu were used to measure the intensity of the 160.27-keV gamma ray from ^{240}Pu relative to that of the 129.27-keV gamma ray from ^{239}Pu and of the 148.56-keV gamma ray from ^{241}Pu . Isotopic analyses of these samples were made independently by Allied Chemical Company (ICPP), the New Brunswick Laboratory of the AEC, and by Atlantic Richfield Hanford Company and were accurate to better than 1% of the values quoted. The relative concentrations of ^{240}Pu in these samples varied from 8% to 42% and of ^{241}Pu , from 0.9% to 12.5%. The absolute intensity of the 160-keV gamma ray from ^{240}Pu was obtained relative to the mass assay and the absolute intensities of the 129.27-keV gamma ray of ^{239}Pu and the 148.56-keV gamma ray from ^{241}Pu . In these analyses, proper account was taken of the contribution to the observed intensity of the 160-keV peak which resulted from the presence of the 160-keV gamma rays from both ^{239}Pu and ^{241}Pu . In fact, using samples having different isotopic ratios served as an independent check on the branching ratios of the

160-keV gamma rays from these two isotopes. The value obtained for the absolute intensity of the 160.27-keV gamma ray from the decay of ^{240}Pu is $(1.04 \pm 0.14) \times 10^{-5}$ gamma rays/disintegration.

^{241}Am

Absolute intensities for the ^{241}Am gamma rays are based upon the value of 0.353 gamma rays per disintegration of ^{241}Am for the 59.536-keV⁽⁵⁾ transition. Because of the large discrepancy between the values for the remaining gamma rays as reported in IN-1448 and in UCRL-51087, a re-investigation was made of these intensities. The values reported here represent relative values measured by us, normalized to the average of absolute values reported in UCRL-51087⁽²⁾.

IV. GAMMA-RAY ENERGY INTENSITY TABLES

Table I presents gamma-ray energies and intensities listed by nuclide and in order to increasing gamma-ray energy. The atomic number (Z), name, atomic weight (A), and half-life of the parent nuclide are listed in columns 1, 2, 3, and 4, respectively. In the case of ^{228}Th (in equilibrium with all daughters) and ^{235}U (in equilibrium with ^{231}Th), gamma rays emitted in the decay of the daughter activities are labeled with the name of the primary parent (^{228}Th or ^{235}U) and the letter "D" beside the name of the element. No designation of the actual emitting radio nuclide is given in these cases. Columns 4 and 5 give the gamma-ray energy and energy uncertainty, respectively, in keV. Column 6 presents the gamma-ray intensity (in gamma rays for 100 decays) in E notation, where E-03 represents 10^{-3} . Column 7 gives an "intensity code" number. These numbers are intended to represent the relative values of that particular gamma ray in spectral analyses, the lower

numbers being assigned to the more useful gamma rays. An assignment of 1 has been given to those relatively intense gamma rays emitted from a nuclide whose presence uniquely defines the presence of that nuclide, and whose energies lie in a region where they are separated from the intense K X-rays. This assignment has generally been given to the highest energy gamma ray, commensurate with the preceding restrictions, in order to minimize gamma-ray self-absorption effects for that nuclide. The number 2 has been assigned to all other prominent gamma rays from that nuclide, the number 3 to the less prominent, etc. to number 5. The value 6 has been assigned to transitions whose presence is suspected to be associated with the decay of that nuclide, but where the assignment is not absolutely certain. The notations DE or SE before the half life in an entry denote that that entry is either a double or a single escape peak from a higher-energy gamma ray.

Table II lists all of the gamma rays in Table I, in order of increasing gamma-ray energy. The column headings in this table are the same as those in Table I.

V. PRESENTATION OF GAMMA-RAY SPECTRA

1. ^{226}Ra - in equilibrium with daughter activities
2. ^{227}Ac - in equilibrium with daughter activities
3. ^{238}U - equilibrium with ^{234}Th , ^{234}Pa , and $^{234\text{m}}\text{Pa}$ daughter
4. ^{240}Pu - with some ^{239}Pu , ^{241}Pu , and ^{237}U activities
5. ^{241}Pu - in equilibrium with ^{237}U and with some ^{241}Am activities.

VI. REFERENCES

1. J. E. Cline, USAEC Report IN-1448, January 1971.
2. R. Gunnick, R. J. Morrow, USAEC Report UCRL-51087, July 1971.
3. E. W. A. Lingeman, J. Konijn, P. Polak, and A. H. Wapstra, Nucl. Phys. A133 (1969) 630.
4. Nuclear Data Current Sheets, Vol. 5 No. 3, Academic Press, March 1971.
5. Nuclear Data Current Sheets, Vol. 4, No. 6, Academic Press, September 1970.
6. I. Ahmad, A. M. Friedman, and J. P. Unik, Nucl. Phys. A119 (1968) 27.
7. C. M. Lederer, J. M. Hollander, I. Perlman, Table of Isotopes, 6th Edition, John Wiley and Sons, Inc. (1967).

TABLE I

List of nuclides and gamma-ray energies and intensities. Columns 1-4 list the Z, name, A and half-life, respectively, of the present nuclide. The symbol D behind the name signifies that the gamma-ray originates from a daughter nuclide in an equilibrium chain. Columns 5-7 present the gamma-ray energy and uncertainty (in keV) and absolute intensity (in gamma rays per 100 decays). Column 8 lists an intensity code. For an explanation of this code, see the text.

Z	A	T(1/2)	E	SIGE	I	I CODE	
88	RAD	226	1602.Y	186.020	0.060	4.300E+00	2
88	RAD	226	1602.Y	241.910	0.030	9.000E+00	2
88	RAD	226	1602.Y	258.790	0.060	4.700E-01	3
88	RAD	226	1602.Y	274.530	0.050	5.500E-01	3
88	RAD	226	1602.Y	280.940	0.120	9.900E-02	4
88	RAD	226	1602.Y	295.170	0.020	2.130E+01	2
88	RAD	226	1602.Y	304.430	0.120	1.400E-01	4
88	RAD	226	1602.Y	314.170	0.150	1.580E-01	4
88	RAD	226	1602.Y	323.620	0.100	5.500E-02	4
88	RAD	226	1602.Y	333.610	0.120	1.060E-01	4
88	RAD	226	1602.Y	347.100	0.800	6.100E-02	4
88	RAD	226	1602.Y	351.900	0.028	4.000E+01	2
88	RAD	226	1602.Y	396.010	0.120	3.300E-02	4
88	RAD	226	1602.Y	405.740	0.030	1.900E-01	4
88	RAD	226	1602.Y	454.770	0.120	3.600E-01	4
88	RAD	226	1602.Y	461.800	0.100	2.810E-01	4
88	RAD	226	1602.Y	469.690	0.120	1.450E-01	4
88	RAD	226	1602.Y	474.380	0.100	1.310E-01	4
88	RAD	226	1602.Y	480.420	0.080	4.000E-01	3
88	RAD	226	1602.Y	487.080	0.080	4.600E-01	3
88	RAD	226	1602.Y	533.690	0.080	1.730E-01	4
88	RAD	226	1602.Y	536.940	0.200	7.400E-02	4
88	RAD	226	1602.Y	543.400	0.050	8.300E-02	4
88	RAD	226	1602.Y	572.830	0.150	9.100E-02	4
88	RAD	226	1602.Y	580.150	0.040	3.900E-01	4
88	RAD	226	1602.Y	609.318	0.020	4.690E+01	1
88	RAD	226	1602.Y	615.780	0.060	1.010E-01	4
88	RAD	226	1602.Y	633.140	0.100	6.600E-02	4
88	RAD	226	1602.Y	639.370	0.200	3.200E-02	5
88	RAD	226	1602.Y	649.180	0.070	6.100E-02	4
88	RAD	226	1602.Y	665.453	0.022	1.580E+00	3
88	RAD	226	1602.Y	683.220	0.060	7.300E-02	4
88	RAD	226	1602.Y	697.900	0.250	3.500E-02	4
88	RAD	226	1602.Y	703.110	0.040	4.500E-01	3
88	RAD	226	1602.Y	710.600	0.300	7.700E-02	4
88	RAD	226	1602.Y	719.860	0.030	3.900E-01	4
88	RAD	226	1602.Y	727.800	0.800	1.600E-02	5
88	RAD	226	1602.Y	733.650	0.100	5.400E-02	4
88	RAD	226	1602.Y	752.840	0.030	1.350E-01	4
88	RAD	226	1602.Y	768.361	0.018	4.970E+00	2
88	RAD	226	1602.Y	785.910	0.020	1.090E+00	3
88	RAD	226	1602.Y	799.760	0.150	4.400E-02	4
88	RAD	226	1602.Y	806.174	0.018	1.280E+00	3
88	RAD	226	1602.Y	815.080	0.150	4.700E-02	4
88	RAD	226	1602.Y	821.180	0.030	1.410E-01	4
88	RAD	226	1602.Y	826.120	0.030	9.300E-02	4
88	RAD	226	1602.Y	832.350	0.200	2.000E-02	5
88	RAD	226	1602.Y	839.025	0.150	5.900E-01	3
88	RAD	226	1602.Y	904.250	0.250	1.240E-01	4
88	RAD	226	1602.Y	934.052	0.200	3.190E+00	4
88	RAD	226	1602.Y	964.080	0.030	3.800E-01	4
88	RAD	226	1602.Y	1032.370	0.080	1.280E-01	4

Z	A	T(1/2)	E	SIGE	I	I CODE
88 RAD	226	1602.Y	1051.961	0.028	3.300E-01	4
88 RAD	226	1602.Y	1069.960	0.080	2.900E-01	4
88 RAD	226	1602.Y	1104.080	0.050	1.830E-01	4
88 RAD	226	1602.Y	1120.276	0.022	1.550E+01	2
88 RAD	226	1602.Y	1133.660	0.030	2.720E-01	4
88 RAD	226	1602.Y	1155.190	0.020	1.730E+00	3
88 RAD	226	1602.Y	1173.050	0.100	7.800E-02	4
88 RAD	226	1602.Y	1207.680	0.030	4.700E-01	4
88 RAD	226	1602.Y	1238.109	0.280	6.100E+00	3
88 RAD	226	1602.Y	1280.960	0.020	1.470E+00	3
88 RAD	226	1602.Y	1303.760	0.080	1.180E-01	4
88 RAD	226	1602.Y	1316.960	0.150	8.800E-02	4
88 RAD	226	1602.Y	1377.651	0.030	4.100E+00	3
88 RAD	226	1602.Y	1385.312	0.030	8.400E-01	4
88 RAD	226	1602.Y	1401.505	0.035	1.380E+00	3
88 RAD	226	1602.Y	1407.978	0.035	2.500E+00	3
88 RAD	226	1602.Y	1479.220	0.120	7.400E-02	4
88 RAD	226	1602.Y	1509.190	0.040	2.200E+00	3
88 RAD	226	1602.Y	1538.500	0.060	3.900E-01	4
88 RAD	226	1602.Y	1543.320	0.060	4.000E-01	4
88 RAD	226	1602.Y	1583.220	0.040	7.700E-01	3
88 RAD	226	1602.Y	1594.730	0.080	2.800E-01	4
88 RAD	226	1602.Y	1599.310	0.060	3.600E-01	4
88 RAD	226	1602.Y	1661.280	0.060	1.140E+00	3
88 RAD	226	1602.Y	1683.994	0.040	2.250E-01	4
88 RAD	226	1602.Y	1729.600	0.050	3.000E+00	3
88 RAD	226	1602.Y	1764.510	0.050	1.620E+01	2
88 RAD	226	1602.Y	1838.360	0.050	3.700E-01	4
88 RAD	226	1602.Y	1847.440	0.050	2.160E+00	3
88 RAD	226	1602.Y	1873.160	0.060	2.300E-01	4
88 RAD	226	1602.Y	1890.350	0.150	8.400E-02	4
88 RAD	226	1602.Y	1896.000	1.000	1.800E-01	4
88 RAD	226	1602.Y	2010.710	0.150	6.100E-02	4
88 RAD	226	1602.Y	2021.000	1.000	2.000E-02	5
88 RAD	226	1602.Y	2052.940	0.150	6.600E-02	4
88 RAD	226	1602.Y	2089.510	0.150	5.600E-02	4
88 RAD	226	1602.Y	2109.900	0.120	8.400E-02	4
88 RAD	226	1602.Y	2118.540	0.080	1.250E+00	3
88 RAD	226	1602.Y	2147.800	0.400	2.100E-02	4
88 RAD	226	1602.Y	2192.800	0.400	5.200E-02	4
88 RAD	226	1602.Y	2204.120	0.070	5.250E+00	2
88 RAD	226	1602.Y	2259.700	0.400	1.500E-02	5
88 RAD	226	1602.Y	2266.600	0.400	1.900E-02	5
88 RAD	226	1602.Y	2293.360	0.120	3.400E-01	4
88 RAD	226	1602.Y	2331.000	0.400	2.600E-02	5
88 RAD	226	1602.Y	2376.700	0.400	1.200E-02	5
88 RAD	226	1602.Y	2447.710	0.100	1.620E+00	3
88 RAD	226	1602.Y	2505.700	0.400	5.000E-03	5
88 RAD	226	1602.Y	2694.600	0.300	3.300E-02	5
88 RAD	226	1602.Y	2768.800	0.300	2.600E-02	5
88 RAD	226	1602.Y	2786.100	0.500	6.000E-03	5
88 RAD	226	1602.Y	2827.000	1.000	4.000E-03	5

Z	A	T(1/2)	E	SIG	I	I CODE	
88	RAD	226	1602.Y	2880.100	0.400	1.000E-02	5
88	RAD	226	1602.Y	2893.300	0.500	5.600E-03	5
88	RAD	226	1602.Y	2921.700	0.400	1.600E-02	5
88	RAD	226	1602.Y	2978.500	0.300	1.500E-02	5
88	RAD	226	1602.Y	2999.600	0.500	9.000E-03	5
88	RAD	226	1602.Y	3053.600	0.300	2.200E-02	5
88	RAD	226	1602.Y	3081.600	0.600	3.800E-03	5
89	ACD	227	21.6Y	76.990	1.000	6.600E-01	3
89	AC	227	21.60Y	79.570	1.000	1.860E+00	2
89	ACD	227	21.6Y	85.290	1.000	1.460E+00	2
89	ACD	227	21.6Y	94.120	1.000	2.700E+00	2
89	AC	227	21.60Y	100.050	0.030	6.600E-01	3
89	ACD	227	21.6Y	103.060	0.030	3.200E-01	3
89	ACD	227	21.6Y	113.080	0.030	8.000E-01	3
89	ACD	227	21.6Y	117.200	0.030	1.900E-01	3
89	ACD	227	21.6Y	122.430	0.030	1.200E+00	2
89	ACD	227	21.6Y	130.660	0.040	8.000E-02	4
89	ACD	227	21.6Y	141.300	0.040	9.000E-02	4
89	ACD	227	21.6Y	144.230	0.030	3.060E+00	2
89	ACD	227	21.6Y	154.190	0.030	5.300E+00	2
89	ACD	227	21.6Y	158.620	0.030	7.300E-01	3
89	ACD	227	21.6Y	179.600	0.040	2.300E-01	3
89	ACD	227	21.6Y	184.560	0.060	1.200E-01	3
89	ACD	227	21.6Y	204.620	0.100	5.300E-01	3
89	ACD	227	21.6Y	206.250	0.100	4.000E-01	3
89	ACD	227	21.6Y	210.620	0.030	1.330E+00	2
89	ACD	227	21.6Y	212.740	0.060	1.300E-01	3
89	ACD	227	21.6Y	218.920	0.040	2.000E-01	3
89	ACD	227	21.6Y	235.940	0.030	1.330E+01	2
89	ACD	227	21.6Y	250.190	0.050	4.000E-01	3
89	ACD	227	21.6Y	256.200	0.030	7.300E+00	2
89	ACD	227	21.6Y	262.910	0.030	1.300E-01	3
89	ACD	227	21.6Y	269.450	0.050	1.300E+01	2
89	ACD	227	21.6Y	271.250	0.050	1.130E+01	2
89	ACD	227	21.6Y	279.800	0.100	5.300E-02	4
89	ACD	227	21.6Y	281.450	0.050	1.600E-01	3
89	ACD	227	21.6Y	286.090	0.020	1.860E+00	2
89	ACD	227	21.6Y	288.200	0.100	1.700E-01	3
89	ACD	227	21.6Y	293.030	0.050	5.000E-02	4
89	ACD	227	21.6Y	296.550	0.040	4.400E-01	3
89	ACD	227	21.6Y	299.550	0.040	2.260E+00	2
89	ACD	227	21.6Y	304.430	0.040	1.130E+00	2
89	ACD	227	21.6Y	308.590	0.100	1.700E-02	4
89	ACD	227	21.6Y	312.670	0.050	6.700E-01	3
89	ACD	227	21.6Y	314.770	0.050	5.300E-01	3
89	ACD	227	21.6Y	319.200	0.100	3.300E-02	4
89	ACD	227	21.6Y	323.810	0.040	3.660E+00	2
89	ACD	227	21.6Y	329.770	0.040	2.770E+00	2
89	ACD	227	21.6Y	334.250	0.040	1.090E+00	2
89	ACD	227	21.6Y	338.240	0.040	2.550E+00	2
89	ACD	227	21.6Y	342.570	0.040	6.400E-01	3
89	ACD	227	21.6Y	351.010	0.040	1.330E+01	1

Z	A	T(1/2)	E	SIGE	I	I CODE	
89	ACD	227	21.6Y	362.030	0.100	7.000E-02	4
89	ACD	227	21.6Y	371.770	0.050	5.300E-01	3
89	ACD	227	21.6Y	383.530	0.060	4.900E-02	4
89	ACD	227	21.6Y	401.830	0.040	6.000E+00	2
89	ACD	227	21.6Y	404.860	0.040	4.000E+00	2
89	ACD	227	21.6Y	427.180	0.040	2.000E+00	2
89	ACD	227	21.6Y	432.400	0.100	4.000E-02	4
89	ACD	227	21.6Y	438.900	0.100	5.300E-02	4
89	ACD	227	21.6Y	445.030	0.040	1.200E+00	2
89	ACD	227	21.6Y	517.720	0.070	4.700E-02	4
89	ACD	227	21.6Y	527.580	0.070	6.900E-02	4
89	ACD	227	21.6Y	583.000	0.070	3.300E-02	4
89	ACD	227	21.6Y	598.720	0.060	7.600E-02	4
89	ACD	227	21.6Y	609.360	0.060	1.220E-01	3
89	ACD	227	21.6Y	676.700	0.020	2.400E-02	4
89	ACD	227	21.6Y	704.600	0.040	5.100E-01	3
89	ACD	227	21.6Y	766.460	0.040	6.800E-01	3
89	ACD	227	21.6Y	832.000	0.050	3.460E+00	2
89	ACD	227	21.6Y	897.790	0.050	2.800E-01	3
89	ACD	227	21.6Y	1014.600	0.200	1.700E-02	4
89	ACD	227	21.6Y	1080.100	0.200	1.300E-02	4
89	ACD	227	21.6Y	1109.510	0.050	1.220E-01	3
89	ACD	227	21.6Y	1120.300	0.200	2.800E-02	4
89	ACD	227	21.6Y	1196.200	0.200	9.000E-03	5
89	ACD	227	21.6Y	1270.500	0.200	7.000E-03	5
90	THD	228	1.91Y	39.886	0.025	4.480E-01	4
90	THD	228	1.91Y	84.370	0.050	4.480E-01	4
90	THD	228	1.91Y	115.180	0.150	5.380E-01	3
90	TH	228	1.91Y	131.620	0.200	1.430E-01	4
90	TH	228	1.91Y	166.370	0.200	9.000E-02	4
90	THD	228	1.91Y	176.840	0.150	5.400E-02	4
90	THD	228	1.91Y	211.430	0.150	9.000E-02	4
90	TH	228	1.91Y	215.990	0.080	3.140E-01	4
90	THD	228	1.91Y	233.560	0.250	1.160E+00	3
90	THD	228	1.91Y	238.624	0.009	4.480E+01	1
90	THD	228	1.91Y	240.920	0.050	2.240E+00	3
90	THD	228	1.91Y	252.610	0.080	3.140E-01	4
90	THD	228	1.91Y	277.370	0.030	2.240E+00	3
90	THD	228	1.91Y	288.150	0.080	3.580E-01	4
90	THD	228	1.91Y	300.110	0.050	2.900E+00	3
90	THD	228	1.91Y	327.940	0.100	1.210E-01	4
90	THD	228	1.91Y	452.810	0.060	3.630E-01	4
90	THD	228	1.91Y	510.690	0.040	7.660E+00	3
90	THD	228	1.91Y	549.550	0.100	1.120E-01	4
90	THD	228	1.91Y	583.174	0.013	2.870E+01	2
90	THD	228	1.91Y	727.280	0.050	6.360E+00	2
90	THD	228	1.91Y	763.340	0.070	5.780E-01	3
90	THD	228	1.91Y	785.460	0.050	1.020E+00	3
90	THD	228	1.91Y	860.530	0.050	4.310E+00	2
90	THD	228	1.91Y	893.290	0.080	3.270E-01	4
90	THD	228	1.91Y	951.980	0.200	2.240E-01	4
90	THD	228	1.91Y	1078.710	0.100	5.200E-01	3

Z	A	T(1/2)	E	SIGE	I	I CODE
90 THD	228	1.91Y	1094.100	0.500	1.390E-01	4
90 THD	228	1.91Y	1512.800	0.300	2.780E-01	4
90 THD	228	1.91Y	1620.700	0.100	1.410E+00	3
90 THD	228	1.91Y	2614.610	0.100	3.450E+01	2
91 PA	233	27.40	103.864	0.010	6.000E-01	4
			145.420	0.050	4.400E-01	3
			271.580	0.040	8.500E-01	4
			300.124	0.020	5.800E+00	2
			311.887	0.010	3.400E+01	1
			340.470	0.020	3.900E+00	2
			375.400	0.050	6.000E-01	4
			398.490	0.020	1.300E+00	3
			415.780	0.020	1.600E+00	3
92 U	232	72.Y	57.600	0.100	2.100E-01	2
			129.100	0.100	8.200E-02	1
			270.500	0.100	3.800E-03	3
			327.800	0.100	3.400E-03	3
92 U	233	1.62*5Y	29.000	0.100	3.620E-02	4
			42.400	0.100	1.890E-01	3
			54.690	0.100	4.140E-02	3
			66.140	0.050	2.100E-03	4
			68.030	0.050	7.000E-04	4
			70.370	0.050	1.600E-03	3
			71.880	0.050	8.400E-03	3
			74.960	0.050	4.400E-03	3
			76.410	0.050	1.600E-03	3
			77.860	0.100	9.000E-04	4
			83.060	0.050	4.000E-04	4
			85.230	0.150	1.000E-04	4
			90.500	0.300	9.000E-04	4
			93.260	0.120	5.900E-03	3
			97.210	0.100	6.010E-02	2
			100.030	0.120	1.000E-04	5
			101.770	0.100	2.000E-04	5
			109.520	0.100	1.000E-03	4
			112.010	0.100	1.300E-03	4
			117.220	0.050	8.600E-03	3
			119.010	0.050	1.080E-02	2
			120.830	0.050	8.900E-03	3
			123.920	0.060	2.100E-03	3
			125.480	0.100	3.000E-04	4
			131.050	0.120	2.000E-04	5
			135.350	0.050	6.400E-03	3
			139.780	0.050	3.000E-04	4
			145.350	0.120	5.200E-03	3
			146.380	0.060	1.840E-02	2
			148.260	0.120	1.000E-03	3
			149.760	0.120	3.000E-04	4
			153.440	0.130	3.000E-04	4
			154.980	0.130	5.000E-04	4
			156.210	0.130	2.000E-04	5
			162.570	0.130	4.000E-04	4

Z	A	T(1/2)	E	SIGE	I	I CODE
92 U	233	1.62*5Y	164.600	0.050	1.770E-02	2
			165.630	0.130	1.400E-03	4
			169.030	0.130	3.000E-04	5
			170.820	0.080	5.000E-04	4
			174.180	0.060	9.000E-04	4
			187.970	0.050	5.600E-03	3
			192.140	0.060	3.000E-04	5
			206.050	0.140	2.000E-04	5
			208.180	0.050	6.800E-03	3
			212.370	0.050	3.000E-04	4
			216.500	0.300	2.600E-03	4
			217.130	0.050	8.200E-03	3
			219.360	0.080	5.000E-04	4
			223.450	0.080	1.000E-04	5
			230.120	0.080	3.000E-04	5
			240.370	0.080	9.000E-04	4
			245.340	0.050	1.070E-02	2
			248.730	0.050	4.300E-03	3
			255.940	0.100	2.000E-04	5
			259.380	0.080	6.000E-04	4
			261.920	0.080	9.000E-04	4
			268.680	0.050	8.000E-04	4
			272.350	0.060	3.000E-04	5
			274.710	0.050	1.400E-03	4
			278.100	0.050	3.200E-03	3
			288.030	0.050	2.700E-03	3
			291.340	0.050	1.600E-02	2
			294.030	0.080	4.000E-04	4
			303.010	0.080	3.000E-04	4
			309.530	0.100	3.000E-04	4
			317.150	0.050	2.310E-02	1
			320.540	0.050	8.700E-03	2
			323.360	0.050	2.500E-03	3
			328.720	0.060	3.000E-04	5
			336.600	0.050	1.700E-03	3
			354.000	0.150	3.000E-04	5
			365.790	0.060	2.500E-03	3
			383.510	0.080	3.000E-04	5
			609.200	0.200	2.000E-04	5
92 U	234	2.48*5Y	53.300	0.100	6.810E-01	2
92 U	234	2.48*5Y	120.900	0.100	2.330E-01	1
92 UD	235	7.13*8Y	26.640	0.020	1.200E+01	2
92 UD	235	7.13*8Y	42.800	0.200	1.000E-01	3
92 UD	235	7.13*8Y	58.600	0.010	1.000E-01	3
92 UD	235	7.13*8Y	72.810	0.030	4.000E-01	2
92 U	235	7.13*8Y	74.923	0.033	1.000E-03	4
92 UD	235	7.13*8Y	81.200	0.100	6.500E-01	2
92 UD	235	7.13*8Y	82.100	0.100	3.100E-01	2
92 UD	235	7.13*8Y	84.240	0.010	5.100E+00	1
92 UD	235	7.13*8Y	102.310	0.030	3.300E-01	2
92 U	235	7.13*8Y	109.120	0.008	1.510E+00	3
92 U	235	7.13*8Y	115.200	0.500	1.300E-01	4

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	235	7.13*8Y	116.830	0.100	2.700E-02	4
92 UD	235	7.13*8Y	124.910	0.050	4.900E-02	4
92 UD	235	7.13*8Y	133.940	0.100	2.700E-02	4
92 UD	235	7.13*8Y	135.670	0.050	6.500E-02	4
92 U	235	7.13*8Y	140.750	0.100	1.730E-01	4
92 U	235	7.13*8Y	143.776	0.010	9.720E+00	2
92 UD	235	7.13*8Y	146.000	0.100	2.700E-02	4
92 U	235	7.13*8Y	150.960	0.033	1.080E-01	4
92 U	235	7.13*8Y	163.363	0.010	4.590E+00	2
92 UD	235	7.13*8Y	174.300	0.500	1.200E-02	5
92 U	235	7.13*8Y	182.720	0.200	4.050E-01	3
92 U	235	7.13*8Y	185.718	0.011	5.400E+01	1
92 U	235	7.13*8Y	194.941	0.009	6.500E-01	3
92 U	235	7.13*8Y	198.910	0.150	3.000E-02	5
92 U	235	7.13*8Y	202.133	0.014	1.000E+00	3
92 U	235	7.13*8Y	205.311	0.012	5.000E+00	2
92 UD	235	7.13*8Y	217.930	0.030	3.600E-02	4
92 U	235	7.13*8Y	221.375	0.040	1.200E-01	4
92 U	235	7.13*8Y	233.530	0.040	4.000E-02	5
92 U	235	7.13*8Y	240.930	0.040	7.000E-02	5
92 U	235	7.13*8Y	246.830	0.040	6.000E-02	5
92 U	235	7.13*8Y	266.440	0.080	7.500E-03	6
92 UD	238	4.49*9Y	131.800	0.200	2.600E-03	4
92 UD	238	4.49*9Y	144.200	0.100	1.800E-02	3
92 UD	238	4.49*9Y	152.800	0.200	9.200E-03	4
92 UD	238	4.49*9Y	163.800	0.100	8.300E-03	6
92 UD	238	4.49*9Y	186.100	0.100	1.400E-01	2
92 UD	238	4.49*9Y	194.100	0.400	1.300E-02	3
92 UD	238	4.49*9Y	205.600	0.100	1.100E-02	6
92 UD	238	4.49*9Y	227.000	0.100	1.700E-02	3
92 UD	238	4.49*9Y	248.900	0.200	9.400E-03	4
92 UD	238	4.49*9Y	258.440	0.080	2.200E-02	3
92 UD	238	4.49*9Y	294.660	0.150	2.500E-03	4
92 UD	238	4.49*9Y	352.070	0.150	2.300E-03	4
92 UD	238	4.49*9Y	369.400	0.200	1.600E-04	5
92 UD	238	4.49*9Y	388.100	0.800	3.700E-04	5
92 UD	238	4.49*9Y	427.100	0.400	4.100E-03	4
92 UD	238	4.49*9Y	450.800	0.200	5.100E-03	4
92 UD	238	4.49*9Y	458.600	0.200	3.300E-03	4
92 UD	238	4.49*9Y	468.000	0.200	3.200E-03	4
92 UD	238	4.49*9Y	475.630	0.150	1.300E-03	4
92 UD	238	4.49*9Y	520.400	0.200	2.600E-03	4
92 UD	238	4.49*9Y	544.000	0.100	2.000E-03	6
92 UD	238	4.49*9Y	564.800	0.300	6.600E-04	5
92 UD	238	4.49*9Y	569.270	0.050	1.300E-02	3
92 UD	238	4.49*9Y	602.400	0.200	1.800E-03	4
92 UD	238	4.49*9Y	624.100	0.200	9.000E-04	5
92 UD	238	4.49*9Y	628.700	0.400	6.600E-04	5
92 UD	238	4.49*9Y	654.370	0.150	2.100E-03	4
92 UD	238	4.49*9Y	666.430	0.150	1.100E-03	4
92 UD	238	4.49*9Y	669.800	0.100	1.200E-03	4
92 UD	238	4.49*9Y	691.190	0.100	7.900E-03	4

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	238	4.49*9Y	705.850	0.080	4.700E-03	4
92 UD	238	4.49*9Y	726.900	0.500	4.000E-04	6
92 UD	238	4.49*9Y	733.340	0.060	6.800E-03	4
92 UD	238	4.49*9Y	742.780	0.050	7.300E-02	3
92 UD	238	4.49*9Y	755.220	0.130	1.300E-03	4
92 UD	238	4.49*9Y	766.370	0.050	2.400E-01	2
92 UD	238	4.49*9Y	781.700	0.080	7.000E-03	4
92 UD	238	4.49*9Y	786.260	0.050	4.300E-02	3
92 UD	238	4.49*9Y	805.820	0.150	1.400E-02	3
92 UD	238	4.49*9Y	819.020	0.100	2.900E-03	4
92 UD	238	4.49*9Y	824.890	0.060	5.400E-03	4
92 UD	238	4.49*9Y	831.290	0.120	9.000E-03	4
92 UD	238	4.49*9Y	851.630	0.060	5.700E-03	4
92 UD	238	4.49*9Y	866.100	0.200	1.600E-03	6
92 UD	238	4.49*9Y	875.890	0.120	5.100E-04	5
92 UD	238	4.49*9Y	880.500	0.200	1.900E-02	3
92 UD	238	4.49*9Y	883.100	0.200	1.800E-02	3
92 UD	238	4.49*9Y	887.300	0.080	5.900E-03	4
92 UD	238	4.49*9Y	898.620	0.050	5.800E-03	4
92 UD	238	4.49*9Y	921.740	0.150	1.300E-02	3
92 UD	238	4.49*9Y	925.950	0.070	2.600E-02	3
92 UD	238	4.49*9Y	936.200	0.200	7.500E-04	6
92 UD	238	4.49*9Y	946.020	0.050	2.700E-02	3
92 UD	238	4.49*9Y	980.470	0.070	4.000E-03	4
92 UD	238	4.49*9Y	984.100	0.080	2.100E-03	4
92 UD	238	4.49*9Y	995.320	0.110	6.200E-03	6
92 UD	238	4.49*9Y	1001.040	0.050	6.000E-01	1
92 UD	238	4.49*9Y	1028.650	0.160	1.500E-03	4
92 UD	238	4.49*9Y	1042.170	0.120	1.100E-03	4
92 UD	238	4.49*9Y	1061.960	0.100	2.900E-03	6
92 UD	238	4.49*9Y	1074.000	0.500	3.300E-04	5
92 UD	238	4.49*9Y	1083.560	0.150	1.400E-03	4
92 UD	238	4.49*9Y	1125.080	0.070	3.300E-03	4
92 UD	238	4.49*9Y	1150.900	0.400	1.600E-04	6
92 UD	238	4.49*9Y	1193.790	0.050	9.900E-03	4
92 UD	238	4.49*9Y	1220.240	0.160	8.400E-04	5
92 UD	238	4.49*9Y	1226.400	0.200	4.600E-04	6
92 UD	238	4.49*9Y	1237.310	0.050	3.700E-03	4
92 UD	238	4.49*9Y	1292.870	0.120	4.000E-04	5
92 UD	238	4.49*9Y	1352.990	0.080	9.000E-04	5
92 UD	238	4.49*9Y	1393.610	0.130	2.900E-03	4
92 UD	238	4.49*9Y	1400.200	0.200	4.600E-04	5
92 UD	238	4.49*9Y	1414.050	0.060	1.900E-03	4
92 UD	238	4.49*9Y	1426.500	0.300	2.700E-04	5
92 UD	238	4.49*9Y	1434.300	0.070	7.000E-03	4
92 UD	238	4.49*9Y	1445.300	0.200	3.700E-04	5
92 UD	238	4.49*9Y	1452.740	0.110	7.100E-04	5
92 UD	238	4.49*9Y	1494.100	0.300	2.000E-04	5
92 UD	238	4.49*9Y	1510.330	0.060	9.600E-03	4
92 UD	238	4.49*9Y	1527.260	0.070	1.700E-03	4
92 UD	238	4.49*9Y	1548.360	0.150	1.200E-03	4
92 UD	238	4.49*9Y	1553.840	0.060	6.000E-03	4

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	238	4.49*9Y	1570.730	0.120	9.300E-04	5
92 UD	238	4.49*9Y	1588.000	0.400	3.500E-04	5
92 UD	238	4.49*9Y	1601.800	0.200	7.300E-04	5
92 UD	238	4.49*9Y	1637.900	0.200	8.600E-04	5
92 UD	238	4.49*9Y	1654.400	0.200	4.400E-04	5
92 UD	238	4.49*9Y	1668.320	0.080	1.100E-03	4
92 UD	238	4.49*9Y	1685.500	0.200	3.700E-04	5
92 UD	238	4.49*9Y	1694.240	0.120	1.100E-03	4
92 UD	238	4.49*9Y	1700.200	0.400	6.000E-04	5
92 UD	238	4.49*9Y	1716.900	0.600	3.300E-04	5
92 UD	238	4.49*9Y	1737.810	0.060	1.600E-02	3
92 UD	238	4.49*9Y	1750.600	0.200	1.100E-04	5
92 UD	238	4.49*9Y	1760.050	0.100	1.200E-03	6
92 UD	238	4.49*9Y	1765.520	0.060	6.200E-03	4
92 UD	238	4.49*9Y	1796.610	0.150	5.700E-04	5
92 UD	238	4.49*9Y	1809.140	0.080	2.700E-03	4
92 UD	238	4.49*9Y	1819.860	0.110	6.000E-04	6
92 UD	238	4.49*9Y	1831.490	0.060	1.300E-02	3
92 UD	238	4.49*9Y	1847.800	0.300	7.500E-05	5
92 UD	238	4.49*9Y	1849.500	0.300	5.500E-05	5
92 UD	238	4.49*9Y	1867.750	0.070	7.000E-03	4
92 UD	238	4.49*9Y	1875.240	0.090	7.000E-03	4
92 UD	238	4.49*9Y	1893.580	0.080	1.700E-03	4
92 UD	238	4.49*9Y	1911.260	0.060	4.600E-03	4
92 UD	238	4.49*9Y	1925.730	0.090	4.800E-04	5
92 UD	238	4.49*9Y	1937.120	0.070	2.100E-03	4
92 UD	238	4.49*9Y	1968.980	0.100	2.700E-04	5
92 UD	238	4.49*9Y	2001.000	0.900	7.500E-05	5
92 UD	238	4.49*9Y	2022.400	0.200	1.500E-04	6
92 UD	238	4.49*9Y	2041.100	0.500	5.500E-05	6
92 UD	238	4.49*9Y	2065.800	0.200	7.300E-05	6
92 UD	238	4.49*9Y	2118.600	0.200	1.300E-05	6
92 UD	238	4.49*9Y	2136.400	0.400	7.300E-05	6
92 UD	238	4.49*9Y	2447.900	0.200	9.200E-05	6
93 NP	237	2.14*6Y	29.375	0.020	1.200E+01	3
			57.112	0.020	1.000E+01	3
			86.486	0.010	1.600E+01	3
			106.300	0.200	1.280E-01	3
			117.720	0.020	2.240E-01	3
			131.110	0.020	1.120E-01	3
			134.280	0.020	9.600E-02	3
			143.250	0.010	5.760E-01	2
			151.410	0.010	3.200E-01	2
			155.250	0.020	1.280E-01	2
			162.520	0.030	4.800E-02	4
			169.160	0.030	9.600E-02	4
			170.640	0.050	2.400E-02	4
			172.600	0.200	6.000E-03	5
			176.060	0.050	2.100E-02	4
			180.780	0.050	2.700E-02	4
			184.400	0.100	1.100E-02	4
			187.000	1.000	5.000E-03	5

Z	A	T(1/2)	E	SIGE	I	I CODE
93 NP	237	2.14*6Y	191.420	0.030	3.800E-02	4
			193.220	0.030	7.400E-02	4
			194.970	0.020	2.560E-01	1
			196.800	0.100	3.200E-02	4
			199.900	0.100	6.000E-03	5
			201.670	0.020	6.400E-02	4
			205.000	1.000	3.000E-03	5
			209.180	0.030	2.700E-02	4
			212.330	0.020	2.240E-01	2
			213.960	0.040	5.600E-02	4
			229.900	0.100	1.300E-02	4
			237.910	0.020	8.800E-02	4
			248.800	0.500	6.000E-03	5
			257.150	0.500	8.000E-03	5
			264.420	0.500	1.000E-02	5
			280.400	0.500	3.000E-03	5
94 PU	238	86.4Y	43.490	0.050	3.800E-02	2
			99.790	0.050	8.000E-03	2
			125.150	0.030	3.800E-06	6
			152.580	0.030	1.270E-03	1
			158.800	0.200	1.900E-06	6
			197.300	0.200	1.400E-06	6
			199.350	0.060	1.900E-06	6
			201.030	0.050	4.400E-06	6
			251.000	0.300	1.100E-06	6
			338.600	0.300	7.400E-07	6
			350.690	0.050	2.400E-06	6
			416.770	0.040	2.800E-06	6
			439.860	0.060	3.600E-06	6
			742.770	0.070	6.500E-06	4
			766.350	0.050	2.800E-05	3
			786.030	0.050	7.200E-06	4
			808.700	0.300	1.200E-06	6
			810.500	0.300	1.300E-06	6
			852.200	0.400	2.100E-06	6
			883.200	0.200	1.300E-06	6
94 PU	239	24400Y	41.990	0.100	3.800E-05	5
			46.190	0.070	2.350E-04	4
			51.610	0.030	1.350E-02	3
			54.010	0.050	1.130E-04	4
			56.820	0.040	7.300E-04	4
			65.730	0.080	2.700E-05	5
			67.700	0.050	1.400E-04	4
			68.720	0.060	4.200E-04	4
			77.600	0.050	4.100E-05	5
			78.480	0.050	1.700E-04	4
			89.940	0.060	1.100E-05	5
			102.930	0.080	2.600E-04	4
			115.320	0.050	7.400E-04	4
			116.180	0.050	7.100E-04	4
			119.890	0.080	2.800E-05	5
			122.350	0.120	3.000E-06	5
			123.730	0.080	1.900E-05	5

Z	A	T(1/2)	E	SIGE	I	I CODE
94 PU	239	24400Y	124.410	0.120	4.800E-05	5
			125.000	0.120	4.800E-05	5
			129.270	0.030	5.600E-03	1
			141.660	0.060	3.300E-05	5
			144.180	0.080	2.700E-04	4
			146.070	0.080	9.800E-05	4
			159.600	0.200	2.000E-06	5
			160.070	0.130	5.000E-06	5
			161.470	0.050	1.000E-04	4
			167.950	0.180	2.000E-06	5
			171.370	0.080	9.800E-05	4
			173.610	0.100	2.900E-06	5
			179.200	0.080	2.900E-05	5
			188.130	0.100	4.200E-06	5
			189.340	0.070	7.400E-05	5
			193.130	0.120	5.900E-06	5
			195.680	0.070	8.900E-05	4
			203.550	0.040	4.800E-04	3
			209.340	0.080	1.100E-05	5
			225.460	0.080	1.100E-05	5
			237.600	0.200	7.000E-06	5
			238.200	0.200	7.000E-06	5
			242.080	0.080	9.300E-06	5
			243.380	0.070	2.000E-05	5
			244.900	0.090	4.900E-06	5
			248.820	0.080	7.500E-06	5
			255.380	0.070	6.600E-05	5
			258.200	0.100	3.800E-06	5
			263.920	0.070	1.900E-05	5
			265.680	0.120	3.000E-06	5
			297.480	0.070	4.100E-05	5
			302.840	0.100	7.200E-06	5
			307.710	0.100	3.900E-06	5
			311.740	0.060	2.000E-05	5
			316.440	0.080	9.900E-06	5
			320.830	0.060	4.600E-05	5
			323.810	0.060	4.400E-05	5
			332.840	0.040	4.300E-04	3
			336.140	0.050	9.400E-05	4
			341.510	0.060	6.000E-05	4
			345.020	0.030	5.000E-04	3
			353.020	0.100	2.700E-06	5
			361.900	0.080	1.100E-05	4
			367.080	0.080	8.200E-05	4
			368.570	0.080	8.100E-05	4
			371.670	0.100	3.900E-06	5
			375.040	0.030	1.500E-03	2
			380.190	0.050	3.000E-04	3
			382.770	0.050	2.500E-04	3
			392.700	0.200	2.700E-04	4
			393.100	0.200	2.700E-04	4
			399.540	0.090	9.000E-06	5
			410.920	0.060	1.400E-05	5

Z	A	T(1/2)	E	SIGE	I	I CODE
94 PU	239	24400Y	413.710	0.030	1.500E-03	1
			422.620	0.050	1.200E-04	3
			426.710	0.080	3.300E-05	4
			430.120	0.120	4.800E-06	5
			445.780	0.120	7.500E-06	5
			451.490	0.050	1.800E-04	3
			457.570	0.100	1.200E-06	5
			461.090	0.100	3.000E-06	5
			481.580	0.100	5.100E-06	5
			558.310	0.120	2.400E-06	5
			617.450	0.100	2.100E-06	5
			618.600	0.200	2.100E-06	5
			633.300	0.200	1.200E-06	5
			640.050	0.080	5.700E-06	5
			645.800	0.060	1.300E-05	4
			651.980	0.100	5.100E-06	5
			655.200	0.200	1.500E-06	5
			658.820	0.100	9.600E-06	5
			703.520	0.100	4.800E-06	5
			717.590	0.150	1.800E-06	5
			756.100	0.200	3.900E-06	5
			769.120	0.150	9.600E-06	5
94 PU	240	6580.Y	45.273	0.020	4.500E-02	3
			104.150	0.020	1.000E-02	1
			160.270	0.020	1.040E-03	1
			642.480	0.150	4.100E-05	2
			688.010	0.150	8.100E-06	3
94 PU	241	13.2Y	38.604	0.100	1.000E-05	3
			44.175	0.030	4.800E-05	3
			56.418	0.030	2.600E-05	3
94 PUD	241	13.2Y	59.536	0.008	8.280E-04	2
94 PUD	241	13.2Y	64.935	0.015	3.000E-05	3
94 PU	241	13.2Y	71.672	0.040	1.200E-06	4
94 PU	241	13.2Y	77.014	0.040	1.000E-04	3
94 PU	241	13.2Y	103.540	0.040	1.010E-04	2
94 PU	241	13.2Y	115.342	0.040	1.800E-05	3
94 PUD	241	13.2Y	118.410	0.050	2.100E-05	3
94 PU	241	13.2Y	121.220	0.040	8.050E-07	5
94 PU	241	13.2Y	148.560	0.020	2.070E-04	1
94 PU	241	13.2Y	159.960	0.020	7.450E-06	3
94 PUD	241	13.2Y	164.590	0.050	4.600E-05	3
94 PUD	241	13.2Y	208.000	0.050	5.360E-04	1
94 PUD	241	13.2Y	222.710	0.100	4.600E-07	3
94 PUD	241	13.2Y	234.230	0.100	6.900E-07	3
94 PUD	241	13.2Y	267.530	0.050	1.910E-05	2
94 PUD	241	13.2Y	332.340	0.050	2.990E-05	3
94 PUD	241	13.2Y	335.400	0.050	2.760E-06	3
94 PUD	241	13.2Y	368.630	0.080	1.080E-06	3
94 PUD	241	13.2Y	370.980	0.080	3.150E-06	3
95 AM	241	458.Y	59.537	0.001	3.530E+01	2
95 AM	241	458.Y	98.930	0.030	2.200E-02	2
95 AM	241	458.Y	102.930	0.030	1.940E-02	2

Z.	A	T(1/2)	E	SIGE	I	I CODE
95 AM	241	458.Y	109.760	0.040	1.300E-05	6
			122.990	0.030	9.900E-04	3
			125.260	0.030	2.650E-03	3
			139.420	0.130	4.320E-06	6
			146.540	0.030	3.600E-04	3
			150.100	0.030	5.840E-05	3
			164.600	0.030	5.390E-05	3
			165.930	0.040	1.980E-05	6
			169.540	0.030	1.510E-04	3
			175.080	0.030	1.800E-05	6
			191.890	0.040	2.160E-05	6
			201.700	0.140	9.000E-07	6
			208.000	0.030	7.020E-04	2
			221.450	0.030	4.420E-05	4
			232.850	0.070	6.000E-06	6
			246.600	0.140	4.000E-06	6
			249.100	0.160	2.500E-06	6
			264.880	0.050	1.010E-05	6
			267.540	0.030	2.650E-05	4
			275.640	0.060	7.200E-06	6
			292.780	0.040	1.470E-05	4
			300.190	0.040	1.000E-05	6
			311.940	0.030	6.130E-05	3
			322.540	0.030	1.490E-04	3
			332.390	0.030	1.530E-04	3
			335.430	0.030	4.830E-04	2
			340.430	0.070	4.900E-06	6
			351.030	0.210	4.300E-06	6
			368.680	0.030	2.210E-04	3
			371.000	0.030	5.250E-05	6
			376.680	0.030	1.370E-04	3
			383.830	0.040	2.880E-05	4
			390.650	0.080	6.900E-06	6
			416.790	0.070	1.140E-05	6
			419.320	0.040	2.940E-05	4
			426.500	0.040	2.410E-05	4
			440.110	0.080	1.250E-05	6
			454.870	0.090	1.250E-05	4
			459.490	0.090	5.200E-06	6
			590.570	0.160	4.000E-06	6
			597.400	0.090	9.100E-06	4
			619.010	0.030	6.000E-05	4
			641.430	0.080	9.700E-06	4
			652.940	0.050	3.620E-05	4
			662.420	0.030	3.560E-04	3
			679.870	0.210	5.500E-05	4
			688.800	0.050	3.080E-05	4
			696.600	0.100	1.030E-05	4
			709.330	0.100	8.200E-06	4
			721.960	0.040	1.900E-04	1
			737.290	0.090	8.400E-06	4
			755.960	0.090	8.400E-06	4
			767.100	0.120	6.100E-06	4
			770.620	0.130	7.800E-06	4
			786.580	0.150	4.900E-06	4

TABLE II

List of gamma rays from Table I, presented in order of increasing energy.

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	235	7.13*8Y	26.640	0.020	1.200E+01	2
92 U	233	1.62*5Y	29.000	0.100	3.620E-02	4
93 NP	237	2.14*6Y	29.375	0.020	1.200E+01	3
94 PU	241	13.2Y	38.604	0.100	1.000E-05	3
90 THD	228	1.91Y	39.886	0.025	4.480E-01	4
94 PU	239	24400Y	41.990	0.100	3.800E-05	5
92 U	233	1.62*5Y	42.400	0.100	1.890E-01	3
92 UD	235	7.13*8Y	42.800	0.200	1.000E-01	3
94 PU	238	86.4Y	43.490	0.050	3.800E-02	2
94 PU	241	13.2Y	44.175	0.030	4.800E-05	3
94 PU	240	6580.Y	45.273	0.020	4.500E-02	3
94 PU	239	24400Y	46.190	0.070	2.350E-04	4
94 PU	239	24400Y	51.610	0.030	1.350E-02	3
92 U	234	2.48*5Y	53.300	0.100	6.810E-01	2
94 PU	239	24400Y	54.010	0.050	1.130E-04	4
92 U	233	1.62*5Y	54.690	0.100	4.140E-02	3
94 PU	241	13.2Y	56.418	0.030	2.600E-05	3
94 PU	239	24400Y	56.820	0.040	7.300E-04	4
93 NP	237	2.14*6Y	57.112	0.020	1.000E+01	3
92 U	232	72.Y	57.600	0.100	2.100E-01	2
92 UD	235	7.13*8Y	58.600	0.010	1.000E-01	3
94 PUD	241	13.2Y	59.536	0.008	8.280E-04	2
95 AM	241	458.Y	59.537	0.001	3.530E+01	2
94 PUD	241	13.2Y	64.935	0.015	3.000E-05	3
94 PU	239	24400Y	65.730	0.080	2.700E-05	5
92 U	233	1.62*5Y	66.140	0.050	2.100E-03	4
94 PU	239	24400Y	67.700	0.050	1.400E-04	4
92 U	233	1.62*5Y	68.030	0.050	7.000E-04	4
94 PU	239	24400Y	68.720	0.060	4.200E-04	4
92 U	233	1.62*5Y	70.370	0.050	1.600E-03	3
94 PU	241	13.2Y	71.672	0.040	1.200E-06	4
92 U	233	1.62*5Y	71.880	0.050	8.400E-03	3
92 UD	235	7.13*8Y	72.810	0.030	4.000E-01	2
92 U	235	7.13*8Y	74.923	0.033	1.000E-03	4
92 U	233	1.62*5Y	74.960	0.050	4.400E-03	3
92 U	233	1.62*5Y	76.410	0.050	1.600E-03	3
89 ACD	227	21.6Y	76.990	1.000	6.600E-01	3
94 PU	241	13.2Y	77.014	0.040	1.000E-04	3
94 PU	239	24400Y	77.600	0.050	4.100E-05	5
92 U	233	1.62*5Y	77.860	0.100	9.000E-04	4
94 PU	239	24400Y	78.480	0.050	1.700E-04	4
89 AC	227	21.60Y	79.570	1.000	1.860E+00	2
92 UD	235	7.13*8Y	81.200	0.100	6.500E-01	2
92 UD	235	7.13*8Y	82.100	0.100	3.100E-01	2
92 U	233	1.62*5Y	83.060	0.050	4.000E-04	4
92 UD	235	7.13*8Y	84.240	0.010	5.100E+00	1
90 THD	228	1.91Y	84.370	0.050	4.480E-01	4
92 U	233	1.62*5Y	85.230	0.150	1.000E-04	4
89 ACD	227	21.6Y	85.290	1.000	1.460E+00	2
93 NP	237	2.14*6Y	86.486	0.010	1.600E+01	3
94 PU	239	24400Y	89.940	0.060	1.100E-05	5
92 U	233	1.62*5Y	90.500	0.300	9.000E-04	4

Z	A	T(1/2)	E	SIGE	I	I CODE
92 U	233	1.62*5Y	93.260	0.120	5.900E-03	3
89 ACD	227	21.6Y	94.120	1.000	2.700E+00	2
92 U	233	1.62*5Y	97.210	0.100	6.010E-02	2
95 AM	241	458.Y	98.930	0.030	2.200E-02	2
94 PU	238	86.4Y	99.790	0.050	8.000E-03	2
92 U	233	1.62*5Y	100.030	0.120	1.000E-04	5
89 AC	227	21.60Y	100.050	0.030	6.600E-01	3
92 U	233	1.62*5Y	101.770	0.100	2.000E-04	5
92 UD	235	7.13*8Y	102.310	0.030	3.300E-01	2
94 PU	239	24400Y	102.930	0.080	2.600E-04	4
95 AM	241	458.Y	102.930	0.030	1.940E-02	2
89 ACD	227	21.6Y	103.060	0.030	3.200E-01	3
94 PU	241	13.2Y	103.540	0.040	1.010E-04	2
91 PA	233	27.4D	103.864	0.010	6.000E-01	4
94 PU	240	6580.Y	104.150	0.020	1.000E-02	1
93 NP	237	2.14*6Y	106.300	0.200	1.280E-01	3
92 U	235	7.13*8Y	109.120	0.008	1.510E+00	3
92 U	233	1.62*5Y	109.520	0.100	1.000E-03	4
95 AM	241	458.Y	109.760	0.040	1.300E-05	6
92 U	233	1.62*5Y	112.010	0.100	1.300E-03	4
89 ACD	227	21.6Y	113.080	0.030	8.000E-01	3
90 THD	228	1.91Y	115.180	0.150	5.380E-01	3
92 U	235	7.13*8Y	115.200	0.500	1.300E-01	4
94 PU	239	24400Y	115.320	0.050	7.400E-04	4
94 PU	241	13.2Y	115.342	0.040	1.800E-05	3
94 PU	239	24400Y	116.180	0.050	7.100E-04	4
92 UD	235	7.13*8Y	116.830	0.100	2.700E-02	4
89 ACD	227	21.6Y	117.200	0.030	1.900E-01	3
92 U	233	1.62*5Y	117.220	0.050	8.600E-03	3
93 NP	237	2.14*6Y	117.720	0.020	2.240E-01	3
94 PUD	241	13.2Y	118.410	0.050	2.100E-05	3
92 U	233	1.62*5Y	119.010	0.050	1.080E-02	2
94 PU	239	24400Y	119.890	0.080	2.800E-05	5
92 U	233	1.62*5Y	120.830	0.050	8.900E-03	3
92 U	234	2.48*5Y	120.900	0.100	2.330E-01	1
94 PU	241	13.2Y	121.220	0.040	8.050E-07	5
94 PU	239	24400Y	122.350	0.120	3.000E-06	5
89 ACD	227	21.6Y	122.430	0.030	1.200E+00	2
95 AM	241	458.Y	122.990	0.030	9.900E-04	3
94 PU	239	24400Y	123.730	0.080	1.900E-05	5
92 U	233	1.62*5Y	123.920	0.060	2.100E-03	3
94 PU	239	24400Y	124.410	0.120	4.800E-05	5
92 UD	235	7.13*8Y	124.910	0.050	4.900E-02	4
94 PU	239	24400Y	125.000	0.120	4.800E-05	5
94 PU	238	86.4Y	125.150	0.030	3.800E-06	6
95 AM	241	458.Y	125.260	0.030	2.650E-03	3
92 U	233	1.62*5Y	125.480	0.100	3.000E-04	4
92 U	232	72.Y	129.100	0.100	8.200E-02	1
94 PU	239	24400Y	129.270	0.030	5.600E-03	1
89 ACD	227	21.6Y	130.660	0.040	8.000E-02	4
92 U	233	1.62*5Y	131.050	0.120	2.000E-04	5
93 NP	237	2.14*6Y	131.110	0.020	1.120E-01	3

	Z	A	T(1/2)	E	SIGE	I	I CODE
90	TH	228	1.91Y	131.620	0.200	1.430E-01	4
92	UD	238	4.49*9Y	131.800	0.200	2.600E-03	4
92	UD	235	7.13*8Y	133.940	0.100	2.700E-02	4
93	NP	237	2.14*6Y	134.280	0.020	9.600E-02	3
92	U	233	1.62*5Y	135.350	0.050	6.400E-03	3
92	UD	235	7.13*8Y	135.670	0.050	6.500E-02	4
95	AM	241	458.Y	139.420	0.130	4.320E-06	6
92	U	233	1.62*5Y	139.780	0.050	3.000E-04	4
92	U	235	7.13*8Y	140.750	0.100	1.730E-01	4
89	ACD	227	21.6Y	141.300	0.040	9.000E-02	4
94	PU	239	24400Y	141.660	0.060	3.300E-05	5
93	NP	237	2.14*6Y	143.250	0.010	5.760E-01	2
92	U	235	7.13*8Y	143.776	0.010	9.720E+00	2
94	PU	239	24400Y	144.180	0.080	2.700E-04	4
92	UD	238	4.49*9Y	144.200	0.100	1.800E-02	3
89	ACD	227	21.6Y	144.230	0.030	3.060E+00	2
92	U	233	1.62*5Y	145.350	0.120	5.200E-03	3
91	PA	233	27.4D	145.420	0.050	4.400E-01	3
92	UD	235	7.13*8Y	146.000	0.100	2.700E-02	4
94	PU	239	24400Y	146.070	0.080	9.800E-05	4
92	U	233	1.62*5Y	146.380	0.060	1.840E-02	2
95	AM	241	458.Y	146.540	0.030	3.600E-04	3
92	U	233	1.62*5Y	148.260	0.120	1.000E-03	3
94	PU	241	13.2Y	148.560	0.020	2.070E-04	1
92	U	233	1.62*5Y	149.760	0.120	3.000E-04	4
95	AM	241	458.Y	150.100	0.030	5.840E-05	3
92	U	235	7.13*8Y	150.960	0.033	1.080E-01	4
93	NP	237	2.14*6Y	151.410	0.010	3.200E-01	2
94	PU	238	86.4Y	152.580	0.030	1.270E-03	1
92	UD	238	4.49*9Y	152.800	0.200	9.200E-03	4
92	U	233	1.62*5Y	153.440	0.130	3.000E-04	4
89	ACD	227	21.6Y	154.190	0.030	5.300E+00	2
92	U	233	1.62*5Y	154.980	0.130	5.000E-04	4
93	NP	237	2.14*6Y	155.250	0.020	1.280E-01	2
92	U	233	1.62*5Y	156.210	0.130	2.000E-04	5
89	ACD	227	21.6Y	158.620	0.030	7.300E-01	3
94	PU	238	86.4Y	158.800	0.200	1.900E-06	6
94	PU	239	24400Y	159.600	0.200	2.000E-06	5
94	PU	241	13.2Y	159.960	0.020	7.450E-06	3
94	PU	239	24400Y	160.070	0.130	5.000E-06	5
94	PU	240	6580.Y	160.270	0.020	1.040E-03	1
94	PU	239	24400Y	161.470	0.050	1.000E-04	4
93	NP	237	2.14*6Y	162.520	0.030	4.800E-02	4
92	U	233	1.62*5Y	162.570	0.130	4.000E-04	4
92	U	235	7.13*8Y	163.363	0.010	4.590E+00	2
92	UD	238	4.49*9Y	163.800	0.100	8.300E-03	6
94	PUD	241	13.2Y	164.590	0.050	4.600E-05	3
92	U	233	1.62*5Y	164.600	0.050	1.770E-02	2
95	AM	241	458.Y	164.600	0.030	5.390E-05	3
92	U	233	1.62*5Y	165.630	0.130	1.400E-03	4
95	AM	241	458.Y	165.930	0.040	1.980E-05	6
90	TH	228	1.91Y	166.370	0.200	9.000E-02	4

Z	A	T(1/2)	E	SIGE	I	I CODE	
94	PU	239	24400Y	167.950	0.180	2.000E-06	5
92	U	233	1.62*5Y	169.030	0.130	3.000E-04	5
93	NP	237	2.14*6Y	169.160	0.030	9.600E-02	4
95	AM	241	458.Y	169.540	0.030	1.510E-04	3
93	NP	237	2.14*6Y	170.640	0.050	2.400E-02	4
92	U	233	1.62*5Y	170.820	0.080	5.000E-04	4
94	PU	239	24400Y	171.370	0.080	9.800E-05	4
93	NP	237	2.14*6Y	172.600	0.200	6.000E-03	5
94	PU	239	24400Y	173.610	0.100	2.900E-06	5
92	U	233	1.62*5Y	174.180	0.060	9.000E-04	4
92	UD	235	7.13*8Y	174.300	0.500	1.200E-02	5
95	AM	241	458.Y	175.080	0.030	1.800E-05	6
93	NP	237	2.14*6Y	176.060	0.050	2.100E-02	4
90	THD	228	1.91Y	176.840	0.150	5.400E-02	4
94	PU	239	24400Y	179.200	0.080	2.900E-05	5
89	ACD	227	21.6Y	179.600	0.040	2.300E-01	3
93	NP	237	2.14*6Y	180.780	0.050	2.700E-02	4
92	U	235	7.13*8Y	182.720	0.200	4.050E-01	3
93	NP	237	2.14*6Y	184.400	0.100	1.100E-02	4
89	ACD	227	21.6Y	184.560	0.060	1.200E-01	3
92	U	235	7.13*8Y	185.718	0.011	5.400E+01	1
88	RAD	226	1602.Y	186.020	0.060	4.300E+00	2
92	UD	238	4.49*9Y	186.100	0.100	1.400E-01	2
93	NP	237	2.14*6Y	187.000	1.000	5.000E-03	5
92	U	233	1.62*5Y	187.970	0.050	5.600E-03	3
94	PU	239	24400Y	188.130	0.100	4.200E-06	5
94	PU	239	24400Y	189.340	0.070	7.400E-05	5
93	NP	237	2.14*6Y	191.420	0.030	3.800E-02	4
95	AM	241	458.Y	191.890	0.040	2.160E-05	6
92	U	233	1.62*5Y	192.140	0.060	3.000E-04	5
94	PU	239	24400Y	193.130	0.120	5.900E-06	5
93	NP	237	2.14*6Y	193.220	0.030	7.400E-02	4
92	UD	238	4.49*9Y	194.100	0.400	1.300E-02	3
92	U	235	7.13*8Y	194.941	0.009	6.500E-01	3
93	NP	237	2.14*6Y	194.970	0.020	2.560E-01	1
94	PU	239	24400Y	195.680	0.070	8.900E-05	4
93	NP	237	2.14*6Y	196.800	0.100	3.200E-02	4
94	PU	238	86.4Y	197.300	0.200	1.400E-06	6
92	U	235	7.13*8Y	198.910	0.150	3.000E-02	5
94	PU	238	86.4Y	199.350	0.060	1.900E-06	6
93	NP	237	2.14*6Y	199.900	0.100	6.000E-03	5
94	PU	238	86.4Y	201.030	0.050	4.400E-06	6
93	NP	237	2.14*6Y	201.670	0.020	6.400E-02	4
95	AM	241	458.Y	201.700	0.140	9.000E-07	6
92	U	235	7.13*8Y	202.133	0.014	1.000E+00	3
94	PU	239	24400Y	203.550	0.040	4.800E-04	3
89	ACD	227	21.6Y	204.620	0.100	5.300E-01	3
93	NP	237	2.14*6Y	205.000	1.000	3.000E-03	5
92	U	235	7.13*8Y	205.311	0.012	5.000E+00	2

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	238	4.49*9Y	205.600	0.100	1.100E-02	6
92 U	233	1.62*5Y	206.050	0.140	2.000E-04	5
89 ACD	227	21.6Y	206.250	0.100	4.000E-01	3
94 PUD	241	13.2Y	208.000	0.050	5.360E-04	1
95 AM	241	458.Y	208.000	0.030	7.020E-04	2
92 U	233	1.62*5Y	208.180	0.050	6.800E-03	3
93 NP	237	2.14*6Y	209.180	0.030	2.700E-02	4
94 PU	239	24400Y	209.340	0.080	1.100E-05	5
89 ACD	227	21.6Y	210.620	0.030	1.330E+00	2
90 THD	228	1.91Y	211.430	0.150	9.000E-02	4
93 NP	237	2.14*6Y	212.330	0.020	2.240E-01	2
92 U	233	1.62*5Y	212.370	0.050	3.000E-04	4
89 ACD	227	21.6Y	212.740	0.060	1.300E-01	3
93 NP	237	2.14*6Y	213.960	0.040	5.600E-02	4
90 TH	228	1.91Y	215.990	0.080	3.140E-01	4
92 U	233	1.62*5Y	216.500	0.300	2.600E-03	4
92 U	233	1.62*5Y	217.130	0.050	8.200E-03	3
92 UD	235	7.13*8Y	217.930	0.030	3.600E-02	4
89 ACD	227	21.6Y	218.920	0.040	2.000E-01	3
92 U	233	1.62*5Y	219.360	0.080	5.000E-04	4
92 U	235	7.13*8Y	221.375	0.040	1.200E-01	4
95 AM	241	458.Y	221.450	0.030	4.420E-05	4
94 PUD	241	13.2Y	222.710	0.100	4.600E-07	3
92 U	233	1.62*5Y	223.450	0.080	1.000E-04	5
94 PU	239	24400Y	225.460	0.080	1.100E-05	5
92 UD	238	4.49*9Y	227.000	0.100	1.700E-02	3
93 NP	237	2.14*6Y	229.900	0.100	1.300E-02	4
92 U	233	1.62*5Y	230.120	0.080	3.000E-04	5
95 AM	241	458.Y	232.850	0.070	6.000E-06	6
92 U	235	7.13*8Y	233.530	0.040	4.000E-02	5
90 THD	228	1.91Y	233.560	0.250	1.160E+00	3
94 PUD	241	13.2Y	234.230	0.100	6.900E-07	3
89 ACD	227	21.6Y	235.940	0.030	1.330E+01	2
94 PU	239	24400Y	237.600	0.200	7.000E-06	5
93 NP	237	2.14*6Y	237.910	0.020	8.800E-02	4
94 PU	239	24400Y	238.200	0.200	7.000E-06	5
90 THD	228	1.91Y	238.624	0.009	4.480E+01	1
92 U	233	1.62*5Y	240.370	0.080	9.000E-04	4
90 THD	228	1.91Y	240.920	0.050	2.240E+00	3
92 U	235	7.13*8Y	240.930	0.040	7.000E-02	5
88 RAD	226	1602.Y	241.910	0.030	9.000E+00	2
94 PU	239	24400Y	242.080	0.080	9.300E-06	5
94 PU	239	24400Y	243.380	0.070	2.000E-05	5
94 PU	239	24400Y	244.900	0.090	4.900E-06	5
92 U	233	1.62*5Y	245.340	0.050	1.070E-02	2
95 AM	241	458.Y	246.600	0.140	4.000E-06	6
92 U	235	7.13*8Y	246.830	0.040	6.000E-02	5
92 U	233	1.62*5Y	248.730	0.050	4.300E-03	3
93 NP	237	2.14*6Y	248.800	0.500	6.000E-03	5
94 PU	239	24400Y	248.820	0.080	7.500E-06	5
92 UD	238	4.49*9Y	248.900	0.200	9.400E-03	4

Z	A	T(1/2)	E	SIGE	I	I CODE	
93	NP	237	2.14*6Y	280.400	0.500	3.000E-03	5
88	RAD	226	1602.Y	280.940	0.120	9.900E-02	4
89	ACD	227	21.6Y	281.450	0.050	1.600E-01	3
88	RAD	226	DE 1602.Y	281.610	0.080	1.180E-01	4
89	ACD	227	21.6Y	286.090	0.020	1.860E+00	2
92	U	233	1.62*5Y	288.030	0.050	2.700E-03	3
90	THD	228	1.91Y	288.150	0.080	3.580E-01	4
89	ACD	227	21.6Y	288.200	0.100	1.700E-01	3
92	U	233	1.62*5Y	291.340	0.050	1.600E-02	2
95	AM	241	458.Y	292.780	0.040	1.470E-05	4
89	ACD	227	21.6Y	293.030	0.050	5.000E-02	4
92	U	233	1.62*5Y	294.030	0.080	4.000E-04	4
92	UD	238	4.49*9Y	294.660	0.150	2.500E-03	4
88	RAD	226	DE 1602.Y	294.810	0.150	8.800E-02	4
88	RAD	226	1602.Y	295.170	0.020	2.130E+01	2
89	ACD	227	21.6Y	296.550	0.040	4.400E-01	3
94	PU	239	24400Y	297.480	0.070	4.100E-05	5
89	ACD	227	21.6Y	299.550	0.040	2.260E+00	2
90	THD	228	1.91Y	300.110	0.050	2.900E+00	3
91	PA	233	27.4D	300.124	0.020	5.800E+00	2
95	AM	241	458.Y	300.190	0.040	1.000E-05	6
94	PU	239	24400Y	302.840	0.100	7.200E-06	5
92	U	233	1.62*5Y	303.010	0.080	3.000E-04	4
88	RAD	226	1602.Y	304.430	0.120	1.400E-01	4
89	ACD	227	21.6Y	304.430	0.040	1.130E+00	2
94	PU	239	24400Y	307.710	0.100	3.900E-06	5
89	ACD	227	21.6Y	308.590	0.100	1.700E-02	4
92	U	233	1.62*5Y	309.530	0.100	3.000E-04	4
94	PU	239	24400Y	311.740	0.060	2.000E-05	5
91	PA	233	27.4D	311.887	0.010	3.400E+01	1
95	AM	241	458.Y	311.940	0.030	6.130E-05	3
89	ACD	227	21.6Y	312.670	0.050	6.700E-01	3
88	RAD	226	1602.Y	314.170	0.150	1.580E-01	4
89	ACD	227	21.6Y	314.770	0.050	5.300E-01	3
94	PU	239	24400Y	316.440	0.080	9.900E-06	5
92	U	233	1.62*5Y	317.150	0.050	2.310E-02	1
89	ACD	227	21.6Y	319.200	0.100	3.300E-02	4
92	U	233	1.62*5Y	320.540	0.050	8.700E-03	2
94	PU	239	24400Y	320.830	0.060	4.600E-05	5
95	AM	241	458.Y	322.540	0.030	1.490E-04	3
92	U	233	1.62*5Y	323.360	0.050	2.500E-03	3
88	RAD	226	1602.Y	323.620	0.100	5.500E-02	4
89	ACD	227	21.6Y	323.810	0.040	3.660E+00	2
94	PU	239	24400Y	323.810	0.060	4.400E-05	5
92	U	232	72.Y	327.800	0.100	3.400E-03	3
90	THD	228	1.91Y	327.940	0.100	1.210E-01	4
92	U	233	1.62*5Y	328.720	0.060	3.000E-04	5
89	ACD	227	21.6Y	329.770	0.040	2.770E+00	2
92	UD	238	DE 4.49*9Y	330.840	0.080	9.000E-04	5
94	PUD	241	13.2Y	332.340	0.050	2.990E-05	3

Z	A	T(1/2)	E	SIGE	I	I CODE	
95	AM	241	458.Y	332.390	0.030	1.530E-04	3
94	PU	239	24400Y	332.840	0.040	4.300E-04	3
88	RAD	226	1602.Y	333.610	0.120	1.060E-01	4
89	ACD	227	21.6Y	334.250	0.040	1.090E+00	2
94	PUD	241	13.2Y	335.400	0.050	2.760E-06	3
95	AM	241	458.Y	335.430	0.030	4.830E-04	2
94	PU	239	24400Y	336.140	0.050	9.400E-05	4
92	U	233	1.62*5Y	336.600	0.050	1.700E-03	3
89	ACD	227	21.6Y	338.240	0.040	2.550E+00	2
94	PU	238	86.4Y	338.600	0.300	7.400E-07	6
95	AM	241	458.Y	340.430	0.070	4.900E-06	6
91	PA	233	27.4D	340.470	0.020	3.900E+00	2
94	PU	239	24400Y	341.510	0.060	6.000E-05	4
89	ACD	227	21.6Y	342.570	0.040	6.400E-01	3
94	PU	239	24400Y	345.020	0.030	5.000E-04	3
88	RAD	226	1602.Y	347.100	0.800	6.100E-02	4
94	PU	238	86.4Y	350.690	0.050	2.400E-06	6
89	ACD	227	21.6Y	351.010	0.040	1.330E+01	1
95	AM	241	458.Y	351.030	0.210	4.300E-06	6
88	RAD	226	1602.Y	351.900	0.028	4.000E+01	2
92	UD	238	4.49*9Y	352.070	0.150	2.300E-03	4
94	PU	239	24400Y	353.020	0.100	2.700E-06	5
92	U	233	1.62*5Y	354.000	0.150	3.000E-04	5
88	RAD	226	DE 1602.Y	355.501	0.030	4.100E+00	3
94	PU	239	24400Y	361.900	0.080	1.100E-05	4
89	ACD	227	21.6Y	362.030	0.100	7.000E-02	4
88	RAD	226	DE 1602.Y	363.162	0.030	8.400E-01	4
92	U	233	1.62*5Y	365.790	0.060	2.500E-03	3
94	PU	239	24400Y	367.080	0.080	8.200E-05	4
94	PU	239	24400Y	368.570	0.080	8.100E-05	4
94	PUD	241	13.2Y	368.630	0.080	1.080E-06	3
95	AM	241	458.Y	368.680	0.030	2.210E-04	3
92	UD	238	4.49*9Y	369.400	0.200	1.600E-04	5
94	PUD	241	13.2Y	370.980	0.080	3.150E-06	3
95	AM	241	458.Y	371.000	0.030	5.250E-05	6
92	UD	238	DE 4.49*9Y	371.460	0.130	2.900E-03	4
94	PU	239	24400Y	371.670	0.100	3.900E-06	5
89	ACD	227	21.6Y	371.770	0.050	5.300E-01	3
94	PU	239	24400Y	375.040	0.030	1.500E-03	2
91	PA	233	27.4D	375.400	0.050	6.000E-01	4
95	AM	241	458.Y	376.680	0.030	1.370E-04	3
92	UD	238	DE 4.49*9Y	378.050	0.200	4.600E-04	5
88	RAD	226	DE 1602.Y	379.355	0.035	1.380E+00	3
94	PU	239	24400Y	380.190	0.050	3.000E-04	3
94	PU	239	24400Y	382.770	0.050	2.500E-04	3
92	U	233	1.62*5Y	383.510	0.080	3.000E-04	5
89	ACD	227	21.6Y	383.530	0.060	4.900E-02	4
95	AM	241	458.Y	383.830	0.040	2.880E-05	4
88	RAD	226	DE 1602.Y	385.828	0.035	2.500E+00	3
92	UD	238	4.49*9Y	388.100	0.800	3.700E-04	5

Z	A	T(1/2)	E	SIGE	I	I CODE	
95	AM	241	458.Y	390.650	0.080	6.900E-06	6
92	UD	238	DE 4.49*9Y	391.900	0.060	1.900E-03	4
94	PU	239	24400Y	392.700	0.200	2.700E-04	4
94	PU	239	24400Y	393.100	0.200	2.700E-04	4
88	RAD	226	1602.Y	396.010	0.120	3.300E-02	4
91	PA	233	27.4D	398.490	0.020	1.300E+00	3
94	PU	239	24400Y	399.540	0.090	9.000E-06	5
89	ACD	227	21.6Y	401.830	0.040	6.000E+00	2
92	UD	238	DE 4.49*9Y	404.350	0.300	2.700E-04	5
89	ACD	227	21.6Y	404.860	0.040	4.000E+00	2
88	RAD	226	1602.Y	405.740	0.030	1.900E-01	4
94	PU	239	24400Y	410.920	0.060	1.400E-05	5
92	UD	238	DE 4.49*9Y	412.150	0.070	7.000E-03	4
94	PU	239	24400Y	413.710	0.030	1.500E-03	1
91	PA	233	27.4D	415.780	0.020	1.600E+00	3
94	PU	238	86.4Y	416.770	0.040	2.800E-06	6
95	AM	241	458.Y	416.790	0.070	1.140E-05	6
95	AM	241	458.Y	419.320	0.040	2.940E-05	4
94	PU	239	24400Y	422.620	0.050	1.200E-04	3
92	UD	238	DE 4.49*9Y	423.150	0.200	3.700E-04	5
95	AM	241	458.Y	426.500	0.040	2.410E-05	4
94	PU	239	24400Y	426.710	0.080	3.300E-05	4
92	UD	238	4.49*9Y	427.100	0.400	4.100E-03	4
89	ACD	227	21.6Y	427.180	0.040	2.000E+00	2
94	PU	239	24400Y	430.120	0.120	4.800E-06	5
92	UD	238	DE 4.49*9Y	430.590	0.110	7.100E-04	5
89	ACD	227	21.6Y	432.400	0.100	4.000E-02	4
89	ACD	227	21.6Y	438.900	0.100	5.300E-02	4
94	PU	238	86.4Y	439.860	0.060	3.600E-06	6
95	AM	241	458.Y	440.110	0.080	1.250E-05	6
89	ACD	227	21.6Y	445.030	0.040	1.200E+00	2
94	PU	239	24400Y	445.780	0.120	7.500E-06	5
92	UD	238	4.49*9Y	450.800	0.200	5.100E-03	4
94	PU	239	24400Y	451.490	0.050	1.800E-04	3
90	THD	228	1.91Y	452.810	0.060	3.630E-01	4
88	RAD	226	1602.Y	454.770	0.120	3.600E-01	4
95	AM	241	458.Y	454.870	0.090	1.250E-05	4
88	RAD	226	DE 1602.Y	457.070	0.120	7.400E-02	4
94	PU	239	24400Y	457.570	0.100	1.200E-06	5
92	UD	238	4.49*9Y	458.600	0.200	3.300E-03	4
95	AM	241	458.Y	459.490	0.090	5.200E-06	6
94	PU	239	24400Y	461.090	0.100	3.000E-06	5
88	RAD	226	1602.Y	461.800	0.100	2.810E-01	4
92	UD	238	4.49*9Y	468.000	0.200	3.200E-03	4
88	RAD	226	1602.Y	469.690	0.120	1.450E-01	4
92	UD	238	DE 4.49*9Y	471.950	0.300	2.000E-04	5
88	RAD	226	1602.Y	474.380	0.100	1.310E-01	4
92	UD	238	4.49*9Y	475.630	0.150	1.300E-03	4
88	RAD	226	1602.Y	480.420	0.080	4.000E-01	3
94	PU	239	24400Y	481.580	0.100	5.100E-06	5

Z	A	T(1/2)	E	SIGE	I	I CODE	
88	RAD	226	DE 1602.Y	487.040	0.040	2.200E+00	3
88	RAD	226	1602.Y	487.080	0.080	4.600E-01	3
92	UD	238	DE 4.49*9Y	488.180	0.060	9.600E-03	4
90	THD	228	DE 1.91Y	490.650	0.300	2.780E-01	4
92	UD	238	DE 4.49*9Y	505.110	0.070	1.700E-03	4
90	THD	228	1.91Y	510.690	0.040	7.660E+00	3
88	RAD	226	DE 1602.Y	516.350	0.060	3.900E-01	4
89	ACD	227	21.6Y	517.720	0.070	4.700E-02	4
92	UD	238	4.49*9Y	520.400	0.200	2.600E-03	4
88	RAD	226	DE 1602.Y	521.170	0.060	4.000E-01	4
92	UD	238	DE 4.49*9Y	526.210	0.150	1.200E-03	4
89	ACD	227	21.6Y	527.580	0.070	6.900E-02	4
92	UD	238	DE 4.49*9Y	531.690	0.060	6.000E-03	4
88	RAD	226	1602.Y	533.690	0.080	1.730E-01	4
88	RAD	226	1602.Y	536.940	0.200	7.400E-02	4
88	RAD	226	1602.Y	543.400	0.050	8.300E-02	4
92	UD	238	4.49*9Y	544.000	0.100	2.000E-03	6
92	UD	238	DE 4.49*9Y	548.580	0.120	9.300E-04	5
90	THD	228	1.91Y	549.550	0.100	1.120E-01	4
94	PU	239	24400Y	558.310	0.120	2.400E-06	5
88	RAD	226	DE 1602.Y	561.070	0.040	7.700E-01	3
92	UD	238	4.49*9Y	564.800	0.300	6.600E-04	5
92	UD	238	DE 4.49*9Y	565.850	0.400	3.500E-04	5
92	UD	238	4.49*9Y	569.270	0.050	1.300E-02	3
88	RAD	226	DE 1602.Y	572.580	0.080	2.800E-01	4
88	RAD	226	1602.Y	572.830	0.150	9.100E-02	4
88	RAD	226	DE 1602.Y	577.160	0.060	3.600E-01	4
92	UD	238	DE 4.49*9Y	579.650	0.200	7.300E-04	5
88	RAD	226	1602.Y	580.150	0.040	3.900E-01	4
89	ACD	227	21.6Y	583.000	0.070	3.300E-02	4
90	THD	228	1.91Y	583.174	0.013	2.870E+01	2
95	AM	241	458.Y	590.570	0.160	4.000E-06	6
95	AM	241	458.Y	597.400	0.090	9.100E-06	4
90	THD	228	DE 1.91Y	598.550	0.100	1.410E+00	3
89	ACD	227	21.6Y	598.720	0.060	7.600E-02	4
92	UD	238	4.49*9Y	602.400	0.200	1.800E-03	4
92	U	233	1.62*5Y	609.200	0.200	2.000E-04	5
88	RAD	226	1602.Y	609.318	0.020	4.690E+01	1
89	ACD	227	21.6Y	609.360	0.060	1.220E-01	3
92	UD	238	DE 4.49*9Y	615.750	0.200	8.600E-04	5
88	RAD	226	1602.Y	615.780	0.060	1.010E-01	4
94	PU	239	24400Y	617.450	0.100	2.100E-06	5
94	PU	239	24400Y	618.600	0.200	2.100E-06	5
95	AM	241	458.Y	619.010	0.030	6.000E-05	4
92	UD	238	4.49*9Y	624.100	0.200	9.000E-04	5
92	UD	238	4.49*9Y	628.700	0.400	6.600E-04	5
92	UD	238	DE 4.49*9Y	632.250	0.200	4.400E-04	5
88	RAD	226	1602.Y	633.140	0.100	6.600E-02	4
94	PU	239	24400Y	633.300	0.200	1.200E-06	5
88	RAD	226	DE 1602.Y	639.130	0.060	1.140E+00	3

Z	A	T(1/2)	E	SIGE	I	I CODE	
88	RAD	226	1602.Y	639.370	0.200	3.200E-02	5
94	PU	239	24400Y	640.050	0.080	5.700E-06	5
95	AM	241	458.Y	641.430	0.080	9.700E-06	4
94	PU	240	6580.Y	642.480	0.150	4.100E-05	2
94	PU	239	24400Y	645.800	0.060	1.300E-05	4
92	UD	238	DE 4.49*9Y	646.170	0.080	1.100E-03	4
88	RAD	226	1602.Y	649.180	0.070	6.100E-02	4
94	PU	239	24400Y	651.980	0.100	5.100E-06	5
95	AM	241	458.Y	652.940	0.050	3.620E-05	4
92	UD	238	4.49*9Y	654.370	0.150	2.100E-03	4
94	PU	239	24400Y	655.200	0.200	1.500E-06	5
94	PU	239	24400Y	658.820	0.100	9.600E-06	5
88	RAD	226	DE 1602.Y	661.844	0.040	2.250E-01	4
95	AM	241	458.Y	662.420	0.030	3.560E-04	3
92	UD	238	DE 4.49*9Y	663.350	0.200	3.700E-04	5
88	RAD	226	1602.Y	665.453	0.022	1.580E+00	3
92	UD	238	4.49*9Y	666.430	0.150	1.100E-03	4
92	UD	238	4.49*9Y	669.800	0.100	1.200E-03	4
92	UD	238	DE 4.49*9Y	672.090	0.120	1.100E-03	4
89	ACD	227	21.6Y	676.700	0.020	2.400E-02	4
92	UD	238	DE 4.49*9Y	678.050	0.400	6.000E-04	5
95	AM	241	458.Y	679.870	0.210	5.500E-05	4
88	RAD	226	1602.Y	683.220	0.060	7.300E-02	4
94	PU	240	6580.Y	688.010	0.150	8.100E-06	3
95	AM	241	458.Y	688.800	0.050	3.080E-05	4
92	UD	238	4.49*9Y	691.190	0.100	7.900E-03	4
92	UD	238	DE 4.49*9Y	694.750	0.600	3.300E-04	5
95	AM	241	458.Y	696.600	0.100	1.030E-05	4
88	RAD	226	1602.Y	697.900	0.250	3.500E-02	4
88	RAD	226	1602.Y	703.110	0.040	4.500E-01	3
94	PU	239	24400Y	703.520	0.100	4.800E-06	5
89	ACD	227	21.6Y	704.600	0.040	5.100E-01	3
92	UD	238	4.49*9Y	705.850	0.080	4.700E-03	4
88	RAD	226	DE 1602.Y	707.450	0.050	3.000E+00	3
95	AM	241	458.Y	709.330	0.100	8.200E-06	4
88	RAD	226	1602.Y	710.600	0.300	7.700E-02	4
92	UD	238	DE 4.49*9Y	715.660	0.060	1.600E-02	3
94	PU	239	24400Y	717.590	0.150	1.800E-06	5
88	RAD	226	1602.Y	719.860	0.030	3.900E-01	4
95	AM	241	458.Y	721.960	0.040	1.900E-04	1
92	UD	238	4.49*9Y	726.900	0.500	4.000E-04	6
90	THD	228	1.91Y	727.280	0.050	6.360E+00	2
88	RAD	226	1602.Y	727.800	0.800	1.600E-02	5
92	UD	238	DE 4.49*9Y	728.450	0.200	1.100E-04	5
92	UD	238	4.49*9Y	733.340	0.060	6.800E-03	4
88	RAD	226	1602.Y	733.650	0.100	5.400E-02	4
95	AM	241	458.Y	737.290	0.090	8.400E-06	4
92	UD	238	DE 4.49*9Y	737.900	0.100	1.200E-03	6
88	RAD	226	DE 1602.Y	742.360	0.050	1.620E+01	2
94	PU	238	86.4Y	742.770	0.070	6.500E-06	4

Z	A	T(1/2)	E	SIGE	I	I CODE	
92	UD	238	4.49*9Y	742.780	0.050	7.300E-02	3
92	UD	238	DE 4.49*9Y	743.370	0.060	6.200E-03	4
88	RAD	226	1602.Y	752.840	0.030	1.350E-01	4
92	UD	238	4.49*9Y	755.220	0.130	1.300E-03	4
95	AM	241	458.Y	755.960	0.090	8.400E-06	4
94	PU	239	24400Y	756.100	0.200	3.900E-06	5
90	THD	228	1.91Y	763.340	0.070	5.780E-01	3
94	PU	238	86.4Y	766.350	0.050	2.800E-05	3
92	UD	238	4.49*9Y	766.370	0.050	2.400E-01	2
89	ACD	227	21.6Y	766.460	0.040	6.800E-01	3
95	AM	241	458.Y	767.100	0.120	6.100E-06	4
88	RAD	226	1602.Y	768.361	0.018	4.970E+00	2
94	PU	239	24400Y	769.120	0.150	9.600E-06	5
95	AM	241	458.Y	770.620	0.130	7.800E-06	4
92	UD	238	DE 4.49*9Y	774.460	0.150	5.700E-04	5
92	UD	238	4.49*9Y	781.700	0.080	7.000E-03	4
90	THD	228	1.91Y	785.460	0.050	1.020E+00	3
88	RAD	226	1602.Y	785.910	0.020	1.090E+00	3
94	PU	238	86.4Y	786.030	0.050	7.200E-06	4
92	UD	238	4.49*9Y	786.260	0.050	4.300E-02	3
95	AM	241	458.Y	786.580	0.150	4.900E-06	4
92	UD	238	DE 4.49*9Y	786.990	0.080	2.700E-03	4
88	RAD	226	SE 1602.Y	792.680	0.080	1.180E-01	4
92	UD	238	DE 4.49*9Y	797.710	0.110	6.000E-04	6
88	RAD	226	1602.Y	799.760	0.150	4.400E-02	4
92	UD	238	4.49*9Y	805.820	0.150	1.400E-02	3
88	RAD	226	SE 1602.Y	805.880	0.150	8.800E-02	4
88	RAD	226	1602.Y	806.174	0.018	1.280E+00	3
94	PU	238	86.4Y	808.700	0.300	1.200E-06	6
92	UD	238	DE 4.49*9Y	809.340	0.060	1.300E-02	3
94	PU	238	86.4Y	810.500	0.300	1.300E-06	6
88	RAD	226	1602.Y	815.080	0.150	4.700E-02	4
88	RAD	226	DE 1602.Y	816.210	0.050	3.700E-01	4
92	UD	238	4.49*9Y	819.020	0.100	2.900E-03	4
88	RAD	226	1602.Y	821.180	0.030	1.410E-01	4
92	UD	238	4.49*9Y	824.890	0.060	5.400E-03	4
88	RAD	226	DE 1602.Y	825.290	0.050	2.160E+00	3
92	UD	238	DE 4.49*9Y	825.650	0.300	7.500E-05	5
88	RAD	226	1602.Y	826.120	0.030	9.300E-02	4
92	UD	238	DE 4.49*9Y	827.350	0.300	5.500E-05	5
92	UD	238	4.49*9Y	831.290	0.120	9.000E-03	4
89	ACD	227	21.6Y	832.000	0.050	3.460E+00	2
88	RAD	226	1602.Y	832.350	0.200	2.000E-02	5
88	RAD	226	1602.Y	839.025	0.150	5.900E-01	3
92	UD	238	SE 4.49*9Y	841.910	0.080	9.000E-04	5
92	UD	238	DE 4.49*9Y	845.600	0.070	7.000E-03	4
88	RAD	226	DE 1602.Y	851.010	0.060	2.300E-01	4
92	UD	238	4.49*9Y	851.630	0.060	5.700E-03	4
94	PU	238	86.4Y	852.200	0.400	2.100E-06	6
92	UD	238	DE 4.49*9Y	853.090	0.090	7.000E-03	4
90	THD	228	1.91Y	860.530	0.050	4.310E+00	2

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	238	4.49*9Y	866.100	0.200	1.600E-03	6
88 RAD	226	SE 1602.Y	866.571	0.030	4.100E+00	3
88 RAD	226	DE 1602.Y	868.200	0.150	8.400E-02	4
92 UD	238	DE 4.49*9Y	871.430	0.080	1.700E-03	4
88 RAD	226	DE 1602.Y	873.850	1.000	1.800E-01	4
88 RAD	226	SE 1602.Y	874.232	0.030	8.400E-01	4
92 UD	238	4.49*9Y	875.890	0.120	5.100E-04	5
92 UD	238	4.49*9Y	880.500	0.200	1.900E-02	3
92 UD	238	SE 4.49*9Y	882.530	0.130	2.900E-03	4
92 UD	238	4.49*9Y	883.100	0.200	1.800E-02	3
94 PU	238	86.4Y	883.200	0.200	1.300E-06	6
92 UD	238	4.49*9Y	887.300	0.080	5.900E-03	4
92 UD	238	DE 4.49*9Y	889.110	0.060	4.600E-03	4
92 UD	238	SE 4.49*9Y	889.120	0.200	4.600E-04	5
88 RAD	226	SE 1602.Y	890.425	0.035	1.380E+00	3
90 THD	228	1.91Y	893.290	0.080	3.270E-01	4
88 RAD	226	SE 1602.Y	896.898	0.035	2.500E+00	3
89 ACD	227	21.6Y	897.790	0.050	2.800E-01	3
92 UD	238	4.49*9Y	898.620	0.050	5.800E-03	4
92 UD	238	SE 4.49*9Y	902.970	0.060	1.900E-03	4
92 UD	238	DE 4.49*9Y	903.580	0.090	4.800E-04	5
88 RAD	226	1602.Y	904.250	0.250	1.240E-01	4
92 UD	238	DE 4.49*9Y	914.970	0.070	2.100E-03	4
92 UD	238	SE 4.49*9Y	915.420	0.300	2.700E-04	5
92 UD	238	4.49*9Y	921.740	0.150	1.300E-02	3
92 UD	238	SE 4.49*9Y	923.220	0.070	7.000E-03	4
92 UD	238	4.49*9Y	925.950	0.070	2.600E-02	3
88 RAD	226	1602.Y	934.052	0.200	3.190E+00	4
92 UD	238	SE 4.49*9Y	934.220	0.200	3.700E-04	5
92 UD	238	4.49*9Y	936.200	0.200	7.500E-04	6
92 UD	238	SE 4.49*9Y	941.660	0.110	7.100E-04	5
92 UD	238	4.49*9Y	946.020	0.050	2.700E-02	3
92 UD	238	DE 4.49*9Y	946.830	0.100	2.700E-04	5
90 THD	228	1.91Y	951.980	0.200	2.240E-01	4
88 RAD	226	1602.Y	964.080	0.030	3.800E-01	4
88 RAD	226	SE 1602.Y	968.140	0.120	7.400E-02	4
92 UD	238	DE 4.49*9Y	978.850	0.900	7.500E-05	5
92 UD	238	4.49*9Y	980.470	0.070	4.000E-03	4
92 UD	238	SE 4.49*9Y	983.020	0.300	2.000E-04	5
92 UD	238	4.49*9Y	984.100	0.080	2.100E-03	4
88 RAD	226	DE 1602.Y	988.560	0.150	6.100E-02	4
92 UD	238	4.49*9Y	995.320	0.110	6.200E-03	6
88 RAD	226	SE 1602.Y	998.110	0.040	2.200E+00	3
88 RAD	226	DE 1602.Y	998.850	1.000	2.000E-02	5
92 UD	238	SE 4.49*9Y	999.250	0.060	9.600E-03	4
92 UD	238	DE 4.49*9Y	1000.250	0.200	1.500E-04	6
92 UD	238	4.49*9Y	1001.040	0.050	6.000E-01	1
90 THD	228	SE 1.91Y	1001.720	0.300	2.780E-01	4
89 ACD	227	21.6Y	1014.600	0.200	1.700E-02	4
92 UD	238	SE 4.49*9Y	1016.180	0.070	1.700E-03	4
92 UD	238	DE 4.49*9Y	1018.950	0.500	5.500E-05	6

Z	A	T(1/2)	E	SIGE	I	I CODE	
88	RAD	226	SE 1602.Y	1027.420	0.060	3.900E-01	4
92	UD	238	4.49*9Y	1028.650	0.160	1.500E-03	4
88	RAD	226	DE 1602.Y	1030.790	0.150	6.600E-02	4
88	RAD	226	SE 1602.Y	1032.240	0.060	4.000E-01	4
88	RAD	226	1602.Y	1032.370	0.080	1.280E-01	4
92	UD	238	SE 4.49*9Y	1037.280	0.150	1.200E-03	4
92	UD	238	4.49*9Y	1042.170	0.120	1.100E-03	4
92	UD	238	SE 4.49*9Y	1042.760	0.060	6.000E-03	4
92	UD	238	DE 4.49*9Y	1043.650	0.200	7.300E-05	6
88	RAD	226	1602.Y	1051.961	0.028	3.300E-01	4
92	UD	238	SE 4.49*9Y	1059.650	0.120	9.300E-04	5
92	UD	238	4.49*9Y	1061.960	0.100	2.900E-03	6
88	RAD	226	DE 1602.Y	1067.360	0.150	5.600E-02	4
88	RAD	226	1602.Y	1069.960	0.080	2.900E-01	4
88	RAD	226	SE 1602.Y	1072.140	0.040	7.700E-01	3
92	UD	238	4.49*9Y	1074.000	0.500	3.300E-04	5
92	UD	238	SE 4.49*9Y	1076.920	0.400	3.500E-04	5
90	THD	228	1.91Y	1078.710	0.100	5.200E-01	3
89	ACD	227	21.6Y	1080.100	0.200	1.300E-02	4
92	UD	238	4.49*9Y	1083.560	0.150	1.400E-03	4
88	RAD	226	SE 1602.Y	1083.650	0.080	2.800E-01	4
88	RAD	226	DE 1602.Y	1087.750	0.120	8.400E-02	4
88	RAD	226	SE 1602.Y	1088.230	0.060	3.600E-01	4
92	UD	238	SE 4.49*9Y	1090.720	0.200	7.300E-04	5
90	THD	228	1.91Y	1094.100	0.500	1.390E-01	4
88	RAD	226	DE 1602.Y	1096.390	0.080	1.250E+00	3
92	UD	238	DE 4.49*9Y	1096.450	0.200	1.300E-05	6
88	RAD	226	1602.Y	1104.080	0.050	1.830E-01	4
89	ACD	227	21.6Y	1109.510	0.050	1.220E-01	3
90	THD	228	SE 1.91Y	1109.620	0.100	1.410E+00	3
92	UD	238	DE 4.49*9Y	1114.250	0.400	7.300E-05	6
88	RAD	226	1602.Y	1120.276	0.022	1.550E+01	2
89	ACD	227	21.6Y	1120.300	0.200	2.800E-02	4
92	UD	238	4.49*9Y	1125.080	0.070	3.300E-03	4
88	RAD	226	DE 1602.Y	1125.650	0.400	2.100E-02	4
92	UD	238	SE 4.49*9Y	1126.820	0.200	8.600E-04	5
88	RAD	226	1602.Y	1133.660	0.030	2.720E-01	4
92	UD	238	SE 4.49*9Y	1143.320	0.200	4.400E-04	5
88	RAD	226	SE 1602.Y	1150.200	0.060	1.140E+00	3
92	UD	238	4.49*9Y	1150.900	0.400	1.600E-04	6
88	RAD	226	1602.Y	1155.190	0.020	1.730E+00	3
92	UD	238	SE 4.49*9Y	1157.240	0.080	1.100E-03	4
88	RAD	226	DE 1602.Y	1170.650	0.400	5.200E-02	4
88	RAD	226	SE 1602.Y	1172.914	0.040	2.250E-01	4
88	RAD	226	1602.Y	1173.050	0.100	7.800E-02	4
92	UD	238	SE 4.49*9Y	1174.420	0.200	3.700E-04	5
88	RAD	226	DE 1602.Y	1181.970	0.070	5.250E+00	2
92	UD	238	SE 4.49*9Y	1183.160	0.120	1.100E-03	4
92	UD	238	SE 4.49*9Y	1189.120	0.400	6.000E-04	5
92	UD	238	4.49*9Y	1193.790	0.050	9.900E-03	4
89	ACD	227	21.6Y	1196.200	0.200	9.000E-03	5

Z	A	T(1/2)	E	SIGE	I	I CODE	
92	UD	238	SE 4.49*9Y	1205.820	0.600	3.300E-04	5
88	RAD	226	1602.Y	1207.680	0.030	4.700E-01	4
88	RAD	226	SE 1602.Y	1218.520	0.050	3.000E+00	3
92	UD	238	4.49*9Y	1220.240	0.160	8.400E-04	5
92	UD	238	4.49*9Y	1226.400	0.200	4.600E-04	6
92	UD	238	SE 4.49*9Y	1226.730	0.060	1.600E-02	3
92	UD	238	4.49*9Y	1237.310	0.050	3.700E-03	4
88	RAD	226	DE 1602.Y	1237.550	0.400	1.500E-02	5
88	RAD	226	1602.Y	1238.109	0.280	6.100E+00	3
92	UD	238	SE 4.49*9Y	1239.520	0.200	1.100E-04	5
88	RAD	226	DE 1602.Y	1244.450	0.400	1.900E-02	5
92	UD	238	SE 4.49*9Y	1248.970	0.100	1.200E-03	6
88	RAD	226	SE 1602.Y	1253.430	0.050	1.620E+01	2
92	UD	238	SE 4.49*9Y	1254.440	0.060	6.200E-03	4
89	ACD	227	21.6Y	1270.500	0.200	7.000E-03	5
88	RAD	226	DE 1602.Y	1271.210	0.120	3.400E-01	4
88	RAD	226	1602.Y	1280.960	0.020	1.470E+00	3
92	UD	238	SE 4.49*9Y	1285.530	0.150	5.700E-04	5
92	UD	238	4.49*9Y	1292.870	0.120	4.000E-04	5
92	UD	238	SE 4.49*9Y	1298.060	0.080	2.700E-03	4
88	RAD	226	1602.Y	1303.760	0.080	1.180E-01	4
92	UD	238	SE 4.49*9Y	1308.780	0.110	6.000E-04	6
88	RAD	226	DE 1602.Y	1308.850	0.400	2.600E-02	5
88	RAD	226	1602.Y	1316.960	0.150	8.800E-02	4
92	UD	238	SE 4.49*9Y	1320.410	0.060	1.300E-02	3
88	RAD	226	SE 1602.Y	1327.280	0.050	3.700E-01	4
88	RAD	226	SE 1602.Y	1336.360	0.050	2.160E+00	3
92	UD	238	SE 4.49*9Y	1336.720	0.300	7.500E-05	5
92	UD	238	SE 4.49*9Y	1338.420	0.300	5.500E-05	5
92	UD	238	4.49*9Y	1352.990	0.080	9.000E-04	5
88	RAD	226	DE 1602.Y	1354.550	0.400	1.200E-02	5
92	UD	238	SE 4.49*9Y	1356.670	0.070	7.000E-03	4
88	RAD	226	SE 1602.Y	1362.080	0.060	2.300E-01	4
92	UD	238	SE 4.49*9Y	1364.160	0.090	7.000E-03	4
88	RAD	226	1602.Y	1377.651	0.030	4.100E+00	3
88	RAD	226	SE 1602.Y	1379.270	0.150	8.400E-02	4
92	UD	238	SE 4.49*9Y	1382.500	0.080	1.700E-03	4
88	RAD	226	SE 1602.Y	1384.920	1.000	1.800E-01	4
88	RAD	226	1602.Y	1385.312	0.030	8.400E-01	4
92	UD	238	4.49*9Y	1393.610	0.130	2.900E-03	4
92	UD	238	SE 4.49*9Y	1400.180	0.060	4.600E-03	4
92	UD	238	4.49*9Y	1400.200	0.200	4.600E-04	5
88	RAD	226	1602.Y	1401.505	0.035	1.380E+00	3
88	RAD	226	1602.Y	1407.978	0.035	2.500E+00	3
92	UD	238	4.49*9Y	1414.050	0.060	1.900E-03	4
92	UD	238	SE 4.49*9Y	1414.650	0.090	4.800E-04	5
88	RAD	226	DE 1602.Y	1425.560	0.100	1.620E+00	3
92	UD	238	DE 4.49*9Y	1425.750	0.200	9.200E-05	6
92	UD	238	SE 4.49*9Y	1426.040	0.070	2.100E-03	4
92	UD	238	4.49*9Y	1426.500	0.300	2.700E-04	5

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	238	4.49*9Y	1434.300	0.070	7.000E-03	4
92 UD	238	4.49*9Y	1445.300	0.200	3.700E-04	5
92 UD	238	4.49*9Y	1452.740	0.110	7.100E-04	5
92 UD	238	SE 4.49*9Y	1457.900	0.100	2.700E-04	5
88 RAD	226	1602.Y	1479.220	0.120	7.400E-02	4
88 RAD	226	DE 1602.Y	1483.550	0.400	5.000E-03	5
92 UD	238	SE 4.49*9Y	1489.920	0.900	7.500E-05	5
92 UD	238	4.49*9Y	1494.100	0.300	2.000E-04	5
88 RAD	226	SE 1602.Y	1499.630	0.150	6.100E-02	4
88 RAD	226	1602.Y	1509.190	0.040	2.200E+00	3
88 RAD	226	SE 1602.Y	1509.920	1.000	2.000E-02	5
92 UD	238	4.49*9Y	1510.330	0.060	9.600E-03	4
92 UD	238	SE 4.49*9Y	1511.320	0.200	1.500E-04	6
90 THD	228	1.91Y	1512.800	0.300	2.780E-01	4
92 UD	238	4.49*9Y	1527.260	0.070	1.700E-03	4
92 UD	238	SE 4.49*9Y	1530.020	0.500	5.500E-05	6
88 RAD	226	1602.Y	1538.500	0.060	3.900E-01	4
88 RAD	226	SE 1602.Y	1541.860	0.150	6.600E-02	4
88 RAD	226	1602.Y	1543.320	0.060	4.000E-01	4
92 UD	238	4.49*9Y	1548.360	0.150	1.200E-03	4
92 UD	238	4.49*9Y	1553.840	0.060	6.000E-03	4
92 UD	238	SE 4.49*9Y	1554.720	0.200	7.300E-05	6
92 UD	238	4.49*9Y	1570.730	0.120	9.300E-04	5
88 RAD	226	SE 1602.Y	1578.430	0.150	5.600E-02	4
88 RAD	226	1602.Y	1583.220	0.040	7.700E-01	3
92 UD	238	4.49*9Y	1588.000	0.400	3.500E-04	5
90 THD	228	DE 1.91Y	1592.460	0.100	3.450E+01	2
88 RAD	226	1602.Y	1594.730	0.080	2.800E-01	4
88 RAD	226	SE 1602.Y	1598.820	0.120	8.400E-02	4
88 RAD	226	1602.Y	1599.310	0.060	3.600E-01	4
92 UD	238	4.49*9Y	1601.800	0.200	7.300E-04	5
88 RAD	226	SE 1602.Y	1607.460	0.080	1.250E+00	3
92 UD	238	SE 4.49*9Y	1607.520	0.200	1.300E-05	6
90 THD	228	1.91Y	1620.700	0.100	1.410E+00	3
92 UD	238	SE 4.49*9Y	1625.320	0.400	7.300E-05	6
88 RAD	226	SE 1602.Y	1636.720	0.400	2.100E-02	4
92 UD	238	4.49*9Y	1637.900	0.200	8.600E-04	5
92 UD	238	4.49*9Y	1654.400	0.200	4.400E-04	5
88 RAD	226	1602.Y	1661.280	0.060	1.140E+00	3
92 UD	238	4.49*9Y	1668.320	0.080	1.100E-03	4
88 RAD	226	DE 1602.Y	1672.450	0.300	3.300E-02	5
88 RAD	226	SE 1602.Y	1681.720	0.400	5.200E-02	4
88 RAD	226	1602.Y	1683.994	0.040	2.250E-01	4
92 UD	238	4.49*9Y	1685.500	0.200	3.700E-04	5
88 RAD	226	SE 1602.Y	1693.040	0.070	5.250E+00	2
92 UD	238	4.49*9Y	1694.240	0.120	1.100E-03	4
92 UD	238	4.49*9Y	1700.200	0.400	6.000E-04	5
92 UD	238	4.49*9Y	1716.900	0.600	3.300E-04	5
88 RAD	226	1602.Y	1729.600	0.050	3.000E+00	3

Z	A	T(1/2)	E	SIGE	I	I CODE
92 UD	238	4.49*9Y	1737.810	0.060	1.600E-02	3
88 RAD	226	DE 1602.Y	1746.650	0.300	2.600E-02	5
88 RAD	226	SE 1602.Y	1748.620	0.400	1.500E-02	5
92 UD	238	4.49*9Y	1750.600	0.200	1.100E-04	5
88 RAD	226	SE 1602.Y	1755.520	0.400	1.900E-02	5
92 UD	238	4.49*9Y	1760.050	0.100	1.200E-03	6
88 RAD	226	DE 1602.Y	1763.950	0.500	6.000E-03	5
88 RAD	226	1602.Y	1764.510	0.050	1.620E+01	2
92 UD	238	4.49*9Y	1765.520	0.060	6.200E-03	4
88 RAD	226	SE 1602.Y	1782.280	0.120	3.400E-01	4
92 UD	238	4.49*9Y	1796.610	0.150	5.700E-04	5
88 RAD	226	DE 1602.Y	1804.850	1.000	4.000E-03	5
92 UD	238	4.49*9Y	1809.140	0.080	2.700E-03	4
92 UD	238	4.49*9Y	1819.860	0.110	6.000E-04	6
88 RAD	226	SE 1602.Y	1819.920	0.400	2.600E-02	5
92 UD	238	4.49*9Y	1831.490	0.060	1.300E-02	3
88 RAD	226	1602.Y	1838.360	0.050	3.700E-01	4
88 RAD	226	1602.Y	1847.440	0.050	2.160E+00	3
92 UD	238	4.49*9Y	1847.800	0.300	7.500E-05	5
92 UD	238	4.49*9Y	1849.500	0.300	5.500E-05	5
88 RAD	226	DE 1602.Y	1857.950	0.400	1.000E-02	5
88 RAD	226	SE 1602.Y	1865.620	0.400	1.200E-02	5
92 UD	238	4.49*9Y	1867.750	0.070	7.000E-03	4
88 RAD	226	DE 1602.Y	1871.150	0.500	5.600E-03	5
88 RAD	226	1602.Y	1873.160	0.060	2.300E-01	4
92 UD	238	4.49*9Y	1875.240	0.090	7.000E-03	4
88 RAD	226	1602.Y	1890.350	0.150	8.400E-02	4
92 UD	238	4.49*9Y	1893.580	0.080	1.700E-03	4
88 RAD	226	1602.Y	1896.000	1.000	1.800E-01	4
88 RAD	226	DE 1602.Y	1899.550	0.400	1.600E-02	5
92 UD	238	4.49*9Y	1911.260	0.060	4.600E-03	4
92 UD	238	4.49*9Y	1925.730	0.090	4.800E-04	5
88 RAD	226	SE 1602.Y	1936.630	0.100	1.620E+00	3
92 UD	238	SE 4.49*9Y	1936.820	0.200	9.200E-05	6
92 UD	238	4.49*9Y	1937.120	0.070	2.100E-03	4
88 RAD	226	DE 1602.Y	1956.350	0.300	1.500E-02	5
92 UD	238	4.49*9Y	1968.980	0.100	2.700E-04	5
88 RAD	226	DE 1602.Y	1977.450	0.500	9.000E-03	5
88 RAD	226	SE 1602.Y	1994.620	0.400	5.000E-03	5
92 UD	238	4.49*9Y	2001.000	0.900	7.500E-05	5
88 RAD	226	1602.Y	2010.710	0.150	6.100E-02	4
88 RAD	226	1602.Y	2021.000	1.000	2.000E-02	5
92 UD	238	4.49*9Y	2022.400	0.200	1.500E-04	6
88 RAD	226	DE 1602.Y	2031.450	0.300	2.200E-02	5
92 UD	238	4.49*9Y	2041.100	0.500	5.500E-05	6
88 RAD	226	1602.Y	2052.940	0.150	6.600E-02	4
88 RAD	226	DE 1602.Y	2059.450	0.600	3.800E-03	5
92 UD	238	4.49*9Y	2065.800	0.200	7.300E-05	6
88 RAD	226	1602.Y	2089.510	0.150	5.600E-02	4

90 THD	228	SE 1.91Y	2103.530	0.100	3.450E+01	2
88 RAD	226	1602.Y	2109.900	0.120	8.400E-02	4
88 RAD	226	1602.Y	2118.540	0.080	1.250E+00	3
92 UD	238	4.49*9Y	2118.600	0.200	1.300E-05	6
92 UD	238	4.49*9Y	2136.400	0.400	7.300E-05	6
88 RAD	226	1602.Y	2147.800	0.400	2.100E-02	4
88 RAD	226	SE 1602.Y	2183.520	0.300	3.300E-02	5
88 RAD	226	1602.Y	2192.800	0.400	5.200E-02	4
88 RAD	226	1602.Y	2204.120	0.070	5.250E+00	2
88 RAD	226	SE 1602.Y	2257.720	0.300	2.600E-02	5
88 RAD	226	1602.Y	2259.700	0.400	1.500E-02	5
88 RAD	226	1602.Y	2266.600	0.400	1.900E-02	5
88 RAD	226	SE 1602.Y	2275.020	0.500	6.000E-03	5
88 RAD	226	1602.Y	2293.360	0.120	3.400E-01	4
88 RAD	226	SE 1602.Y	2315.920	1.000	4.000E-03	5
88 RAD	226	1602.Y	2331.000	0.400	2.600E-02	5
88 RAD	226	SE 1602.Y	2369.020	0.400	1.000E-02	5
88 RAD	226	1602.Y	2376.700	0.400	1.200E-02	5
88 RAD	226	SE 1602.Y	2382.220	0.500	5.600E-03	5
88 RAD	226	SE 1602.Y	2410.620	0.400	1.600E-02	5
88 RAD	226	1602.Y	2447.710	0.100	1.620E+00	3
92 UD	238	4.49*9Y	2447.900	0.200	9.200E-05	6
88 RAD	226	SE 1602.Y	2467.420	0.300	1.500E-02	5
88 RAD	226	SE 1602.Y	2488.520	0.500	9.000E-03	5
88 RAD	226	1602.Y	2505.700	0.400	5.000E-03	5
88 RAD	226	SE 1602.Y	2542.520	0.300	2.200E-02	5
88 RAD	226	SE 1602.Y	2570.520	0.600	3.800E-03	5
90 THD	228	1.91Y	2614.610	0.100	3.450E+01	2
88 RAD	226	1602.Y	2694.600	0.300	3.300E-02	5
88 RAD	226	1602.Y	2768.800	0.300	2.600E-02	5
88 RAD	226	1602.Y	2786.100	0.500	6.000E-03	5
88 RAD	226	1602.Y	2827.000	1.000	4.000E-03	5
88 RAD	226	1602.Y	2880.100	0.400	1.000E-02	5
88 RAD	226	1602.Y	2893.300	0.500	5.600E-03	5
88 RAD	226	1602.Y	2921.700	0.400	1.600E-02	5
88 RAD	226	1602.Y	2978.500	0.300	1.500E-02	5
88 RAD	226	1602.Y	2999.600	0.500	9.000E-03	5
88 RAD	226	1602.Y	3053.600	0.300	2.200E-02	5
88 RAD	226	1602.Y	3081.600	0.600	3.800E-03	5

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1104.08	(5)	0.183	(19)
1120.276	(22)	15.5	(8)
1133.66	(3)	0.272	(28)
1155.19	(2)	1.73	(9)
1173.05	(10)	0.078	(9)
1207.68	(3)	0.47	(3)
1238.109	(28)	6.1	(4)
1280.96	(2)	1.47	(9)
1303.76	(8)	0.118	(16)
1316.96	(15)	0.088	(12)
1377.651	(30)	4.1	(2)
1385.312	(30)	0.84	(6)
1401.505	(35)	1.38	(9)
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1479.22	(12)	0.074	(9)
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1594.73	(8)	0.28	(3)
1599.31	(6)	0.36	(3)
1661.28	(6)	1.14	(8)
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1764.51	(5)	16.2	(8)
1838.36	(5)	0.37	(3)
1847.44	(5)	2.16	(14)
1873.16	(6)	0.23	(2)
1890.35	(15)	0.084	(14)
1896.	(1)	0.18	(5)
2010.71	(15)	0.061	(9)
2021.	(1)	0.020	(7)
2052.94	(15)	0.066	(9)
2089.51	(15)	0.056	(9)
2109.90	(12)	0.084	(9)
2118.54	(8)	1.25	(7)
2147.8	(4)	0.021	(7)
2192.8	(4)	0.052	(14)
2204.12	(7)	5.25	(33)
2259.7	(4)	0.015	(19)
2266.6	(4)	0.019	(9)
2293.36	(12)	0.34	(3)
2331.0	(4)	0.026	(5)
2376.7	(4)	0.012	(2)
2447.71	(10)	1.62	(9)
2505.7	(4)	0.005	(1)
2694.6	(3)	0.033	(3)
2768.8	(3)	0.026	(3)
2786.1	(5)	0.006	(2)
2827.	(1)	0.004	(2)
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2893.3	(5)	0.0056	(20)
2921.7	(4)	0.0160	(9)
2978.5	(3)	0.0150	(9)
2999.6	(5)	0.009	(2)
3053.6	(3)	0.022	(2)
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• ANN RAD + GAMMA RAY

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238 U

4.49x10⁹-YR ²³⁸U
AND PA DAUGHTERS
8-CM³ PLANAR GE(LI)
SOURCE DIST. 2 CM
11-5-71

E(KEV)	I(ABS.)
131.80 (20)	2.6(E-3)
144.20 (10)	1.8(E-2)
152.80 (20)	9.2(E-3)
163.80 (10)	8.3(E-3)
186.10 (10)	1.4(E-1)
194.10 (40)	1.3(E-2)
205.60 (10)	1.1(E-2)
227.00 (10)	1.7(E-2)
248.90 (20)	9.4(E-3)
258.44 (8)	2.2(E-2)
294.66 (15)	2.5(E-3)
352.07 (15)	2.3(E-3)
369.40 (20)	1.6(E-4)
388.10 (80)	3.7(E-4)
427.10 (40)	4.1(E-3)
450.80 (20)	5.1(E-3)
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475.63 (15)	1.3(E-3)
520.40 (20)	2.6(E-3)
544.00 (10)	2.0(E-3)
564.80 (30)	6.6(E-4)
569.27 (5)	1.3(E-2)
602.40 (20)	1.8(E-3)
624.10 (20)	9.0(E-4)
628.70 (40)	6.6(E-4)
654.37 (15)	2.1(E-3)
666.43 (15)	1.1(E-3)
669.80 (10)	1.2(E-3)
691.19 (10)	7.9(E-3)
699.03 (8)	4.7(E-3)
702.06 (8)	5.1(E-3)
705.85 (8)	4.7(E-3)
726.90 (50)	4.0(E-4)
733.34 (6)	6.8(E-3)
742.78 (5)	7.3(E-2)
755.22 (13)	1.3(E-3)
766.37 (5)	2.4(E-1)
781.70 (8)	7.0(E-3)
786.26 (5)	4.3(E-2)
805.82 (15)	1.4(E-2)
819.02 (10)	2.9(E-3)
824.89 (6)	5.4(E-3)
831.29 (12)	9.0(E-3)
851.63 (6)	5.7(E-3)
866.10 (20)	1.6(E-3)
875.89 (12)	5.1(E-4)
880.50 (20)	1.9(E-2)
883.10 (20)	1.8(E-2)
887.30 (8)	5.9(E-3)
898.62 (5)	5.8(E-3)
921.74 (15)	1.3(E-2)
925.95 (7)	2.6(E-2)
936.20 (20)	7.5(E-4)
946.02 (5)	2.7(E-2)
980.47 (7)	4.0(E-3)
984.10 (8)	2.1(E-3)
995.32 (11)	6.2(E-3)

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1001.04	(5)	6.0(E-1)
1028.65	(16)	1.5(E-3)
1042.17	(12)	1.1(E-3)
1061.96	(10)	2.9(E-3)
1074.00	(50)	3.3(E-4)
1083.56	(15)	1.4(E-3)
1125.08	(7)	3.3(E-3)
1150.90	(40)	1.6(E-4)
1193.79	(5)	9.9(E-3)
1220.24	(16)	8.4(E-4)
1226.40	(20)	4.6(E-4)
1237.31	(5)	3.7(E-3)
1292.87	(12)	4.0(E-4)
1352.99	(8)	9.0(E-4)
1393.61	(13)	2.9(E-3)
1400.20	(20)	4.6(E-4)
1414.05	(6)	1.9(E-3)
1426.50	(30)	2.7(E-4)
1434.30	(7)	7.0(E-3)
1445.30	(20)	3.7(E-4)
1452.74	(11)	7.1(E-4)
1494.10	(30)	2.0(E-4)
1510.33	(6)	9.6(E-3)
1527.26	(7)	1.7(E-3)
1548.36	(15)	1.2(E-3)
1553.84	(6)	6.0(E-3)
1570.73	(12)	9.3(E-4)
1588.00	(40)	3.5(E-4)
1601.80	(20)	7.3(E-4)
1637.90	(20)	8.6(E-4)
1654.40	(20)	4.4(E-4)
1668.32	(8)	1.1(E-3)
1685.50	(20)	3.7(E-4)
1694.24	(12)	1.1(E-3)
1700.20	(40)	6.0(E-4)
1716.90	(60)	3.3(E-4)
1737.81	(6)	1.6(E-2)
1750.60	(20)	1.1(E-4)
1760.05	(10)	1.2(E-3)
1765.52	(6)	6.2(E-3)
1796.61	(15)	5.7(E-4)
1809.14	(8)	2.7(E-3)
1819.86	(11)	6.0(E-4)
1831.49	(6)	1.3(E-2)
1847.80	(30)	7.5(E-5)
1849.50	(30)	5.5(E-5)
1863.43	(10)	1.1(E-3)
1867.75	(7)	7.0(E-3)
1875.24	(3)	7.0(E-3)
1893.58	(8)	1.7(E-3)
1911.26	(6)	4.6(E-3)
1925.73	(9)	4.8(E-4)
1937.12	(7)	2.1(E-3)
1968.98	(10)	2.7(E-4)
2001.00	(90)	7.5(E-5)
2022.40	(20)	1.5(E-4)
2041.10	(50)	5.5(E-5)
2065.80	(20)	7.3(E-5)
2118.60	(20)	1.3(E-5)
2136.40	(40)	7.3(E-5)
2447.90	(20)	9.2(E-5)

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E (KEV)	I (ABS.)
104.15 (2)	1.0(E-2)
160.27 (2)	1.0(E-3)
642.48 (15)	4.1(E-5)
688.01 (15)	8.1(E-6)

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