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THE TOTAL NEUTRON CROSS SECTION
OF ^{243}Am FROM 0.5 eV TO 1000 eV

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ABSTRACT

Transmission measurements have been made on two high purity samples of ^{243}Am , having inverse thicknesses of 1288.2 and 279.3 b/a. Data were collected from 0.5 - 1000 eV using the Oak Ridge Electron Linear Accelerator. High resolution data were taken using 10 nsec, 140 MeV electron bursts, 10 nsec channel widths and a flight path of 18.576 meters. Single level Breit-Wigner resonance parameters were obtained from area analysis below 250 eV. The resonance parameters were also determined below 18 eV from shape analysis. Based on the analysis of 24 resonances an average value of $\Gamma_Y = 39 \pm 1$ meV was determined. The average observed level spacing between resonances was found to be 0.67 ± 0.06 eV. A neutron S-wave strength function of $(0.96 \pm 0.10) \times 10^{-4}$ was determined from the resonance parameters. The resonance-absorption integral for neutrons with energies above 0.625 eV was calculated to be 1813 ± 68 b.

SPECIAL NOTE

Partial analyses of these data have been presented in earlier reports^(1,2) and it should be understood that the final analysis given in this report supersedes any earlier quotations.

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THE TOTAL NEUTRON CROSS SECTION OF ^{243}Am FROM
0.5 TO 1000 eV

I. INTRODUCTION

Detailed, energy-dependent cross sections of many of the trans-plutonium nuclides are needed for accurate prediction of reaction rates in AEC production reactors, in the Oak Ridge HFIR reactor and in power reactors whose fuel is currently taken to exposures of $\sim 30,000$ MWd/Ton. Precise information on the ^{243}Am neutron cross sections is important because this isotope is a major link in the production chain leading to heavier nuclides having practical or scientific usefulness. Earlier measurements were made by Cote' in 1959 below 15 eV using the fast-chopper facility at Argonne National Laboratory (3). Later ^{243}Am measurements made with the Materials Testing Reactor (MTR) fast chopper (4) provided cross sections in the low-energy region and resonance parameters below 20 eV. The MTR results indicated a thermal absorption cross section half that published in BNL-325 (5) and substantially improved the low-energy resonance parameters. These improvements to the ^{243}Am cross sections supported integral cross sections inferred from Savannah River irradiation experience and thus gave increased confidence in lattice-design optimization calculations for the production of ^{252}Cf .

In the series of measurements described below, the total neutron cross section for ^{243}Am was determined from transmission measurements in the energy region of 0.5 to 1000 eV using the Oak Ridge Electron Linear Accelerator (6) (ORELA) and the associated neutron time-of-flight electronics. Breit-Wigner single-level resonance parameters were obtained below 250 eV. The two ^{243}Am transmission samples used in these measurements were originally prepared for the series of cross-section determinations made with the MTR fast-chopper time-of-flight spectrometer.

A special collimation system was designed, constructed and installed at ORELA which permitted transmission measurements to be made on the same samples used with the MTR fast chopper. The measurements were made on the ORELA in order to extend the cross section to higher energies with better neutron energy resolution.

II. EXPERIMENTAL PROCEDURES

The two oxide samples used had weights of 1.59 and 0.34 g/cm² giving inverse thicknesses of 1288.2 and 279.3 b/a of ²⁴³Am. The atom percent isotopic enrichment of the sample material was as follows: ²⁴³Am, 99.73%, ²⁴¹Am, 0.15%; ²⁴⁴Cm, 0.03%; and isotopes of Pu 0.09%.

The transmission measurements were made on each of the samples using 140 MeV electrons with a peak current of approximately 10 amperes. Two different sets of data were collected using pulse rates of 300 and 800 bursts/sec with 30 and 10 nsec durations, respectively. The bursts of electrons were directed to a water-cooled tantalum target which served both as an electron-photon converter and as a photoneutron source. The neutrons were moderated in a 3 cm thick slab of water 15 cm in diameter around the target. A shadow bar in the flight path (which was perpendicular to the surface of the moderator) shielded the neutron detector from the direct gamma flash from the Ta target. Details of the target, shadow bar and collimators have been published⁽⁷⁾. Neutrons from this target were collimated and allowed to strike a 1.25 cm thick 11.1 cm diameter ⁶Li glass scintillation detector located at a flight path of 18.576 m.

A cadmium sheet was inserted into the neutron beam to remove the overlap neutrons when the accelerator was pulsed at 300 bursts/sec. When the pulse rate was 800 bursts/sec a 0.195 cm thick (0.46 g/cm²) ¹⁰B₄C filter was used to remove the overlap neutrons.

Stop pulses from the ⁶Li glass scintillator were digitized by a TMC 10 nanosecond clock. The digitized information was transmitted to a Systems Engineering Laboratories 810B computer and eventually stored in 8192 memory locations of fast core. Since this experiment the data recording system has been updated and digitized information can now be transmitted to one of two Systems Engineering Laboratories 810B computers which has either a 720,000 word or 420,000 word semirandom access disk associated with it. The system is capable of storing approximately 4000 events/second.

The ^{243}Am samples, an open blank, and a $^{10}\text{B}_4\text{C}$ filter were placed in sample changers and cycled into and out of the neutron beam at 15 minute intervals. The backgrounds were determined from the information obtained by using the calibrated $^{10}\text{B}_4\text{C}$ filter ⁽⁸⁾ and from a "blacking-out" resonance technique.

The neutron energies were computed using time-of-flight techniques. The zero time was determined from the gamma flash in the detector. Channel widths varying from 10 to 320 nsec were used. The narrow channel widths were used for the high energy region and the wider channel widths for the low energy region. The data were collected over a period of five days.

Listed in Appendices A, B, and C are the cross sections obtained from this experiment. The operating conditions under which each set of data was collected are given at the beginning of each appendix. Appendix A gives the best resolution data for the sample having an inverse thickness of 279.3 b/a. These data were particularly better in the energy region above 60 eV. Appendix B gives the cross sections obtained for the same sample but with emphasis in the lower energy region. Appendix C gives the cross sections obtained from the thinner sample having an inverse thickness of 1288.2 b/a and also gives emphasis to the lower energy region.

III. ANALYSIS

Single level Breit-Wigner resonance parameters were obtained below 250 eV from the transmission data using shape and area analysis routines ^(9,10). Most of the resonances below 20 eV were analyzed with the shape analysis method for which the resonance energy E_o , the reduced neutron scattering width $2g\Gamma_n^o$ ($\Gamma_n^o = \Gamma_n E_o^{-1/2}$), and the radiation width Γ_γ are listed in Table I, along with the comparable parameters from the MTR data ⁽⁴⁾. A set of recommended resonance parameters derived from the MTR and ORELA data is also listed in Table I.

Plots of the total cross-section data below 24 eV are shown in Figures 1 and 2. The solid line is a Doppler and resolution-broadened, Breit-Wigner single level fit to the data points obtained from the ORELA resonance parameters of Tables I. Doppler broadening was determined with an assumed sample temperature of 320°K: the resolution broadening calculation assumed a

Gaussian function whose width was based upon the information given in the Appendices. A potential scattering cross section of 10.3 barns was determined from the equation:

$$\sigma_{\text{pot}} = 4\pi R^2$$

$$\text{where } R = 1.45 \times A^{1/3} \times 10^{-13} \text{ cm}$$

where A is the atomic weight of the sample nucleus. In the energy region above 20 eV the Doppler broadening of the levels precluded shape analysis and required the neutron scattering widths to be determined by area analysis. A constant value of 39 meV was assumed for the radiation width above 20 eV. Based upon an average width of 39 ± 1 meV for 24 resonances, among which no individual resonance deviated from the mean by more than three standard deviations. The Breit-Wigner parameters of the resonances above 20 eV derived from area analyses are listed in Table II. The area analysis was done in transmission versus neutron energy and the theoretical fits to the experimental data can be seen in Figures 3-14. The total neutron cross section as a function of neutron energy from 250-1000 eV is given in Figures 15-19.

IV. DISCUSSION AND CONCLUSIONS

The S-wave strength function $\bar{\Gamma}_n^0/D$, where $\bar{\Gamma}_n^0$ is the average reduced neutron width and D is the average distance between S-wave resonances of the same spin, may be determined from the plot of Figure 20. The strength function of $(0.96 \pm 0.10) \times 10^{-4}$ is simply one-half the slope of a plot of the summation of the neutron widths below a given energy versus that energy. The value obtained is in good agreement with values for other nuclides in this mass region.

An integral distribution of the square root of the reduced neutron widths up to 50 eV is shown in Figure 21. The solid line represents a chi-squared distribution for one degree of freedom with a $\bar{\Gamma}_n^0$ of 0.13 meV. The plot indicates that approximately 11 small resonances are being missed. The fit to the

data says that there should be 75 levels in the 50 eV energy region. Assuming that 11 small resonances have been missed below 50 eV then the average level spacing between resonances is 0.67 ± 0.06 eV. If one weights the distribution of resonances between the two compound spin states inversely as $2J + 1$ for the ground state spin of ^{243}Am (5/2), the level spacings for the respective compound spin states are: $J = I - 1/2$, 1.61 eV and $J = I + 1/2$, 1.15 eV. The number of observed levels in ^{243}Am as a function of neutron energy is plotted in Figure 22. The inverse slope of the line, i.e., the average level spacing between resonances, is 0.74 eV. This value is too large because some of the small unobserved resonances were not taken into consideration. Figure 21 predicts that 11 small resonances were missed where Figure 22 only considers 6 small levels were unobserved. Using the average level spacing of 0.67 eV and the value for $\bar{\Gamma}_n^0 = 0.13$ (assuming $g = 1/2$) yields a strength function of $\bar{\Gamma}_n^0/D = 0.96 \times 10^{-4}$ which is the same as that obtained from Figure 20.

Capture resonance integrals have been determined from the resonance parameters of Tables I and II over several energy regions. A comparison between the MTR, ORELA, and recommended parameters is presented in Table III along with the value quoted in the Neutron Cross Section barn book⁽⁵⁾.

The extension of the resolved-resonance region to much higher energies and the superior resolution attained with the ORELA for the ^{243}Am cross sections promise future improvements in heavy-nuclide production studies.

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Table I
²⁴³Am Resonance Parameters

E ₀ (eV)	2gΓ _n ⁰ (meV)		Γ _γ (meV)		Recommended	
	ORELA	MTR	ORELA	MTR	2gΓ _n ⁰ (meV)	Γ _γ (meV)
-2.0	---	0.79	--	39	0.79	39
0.420	---	0.0001	39 ± 2	39	0.0013 ± 0.0001	39 ± 2
0.983 ± 0.001	0.0143 ± 0.0007	0.0151	36 ± 2	40	0.0147 ± 0.0007	38 ± 2
1.356	0.951 ± 0.040	0.950	43 ± 2	43	0.950 ± 0.040	43 ± 2
1.744	0.182 ± 0.008	0.181	38 ± 2	40	0.182 ± 0.008	39 ± 2
3.140	0.0062 ± 0.0006	0.0066	27 ± 6	37	0.0064 ± 0.0006	32 ± 6
3.424	0.156 ± 0.006	0.154	36 ± 4	42	0.155 ± 0.006	38 ± 4
3.845	0.0066 ± 0.0006	0.0068	43 ± 6	56	0.0067 ± 0.0006	43 ± 6
5.125 ± 0.005	0.140 ± 0.006	0.137	39 ± 3	42	0.139 ± 0.006	39 ± 3
6.554	0.390 ± 0.015	0.356	37 ± 3	42	0.378 ± 0.015	37 ± 3
7.067	0.027 ± 0.002	0.027	40 ± 6	42	0.027 ± 0.002	40 ± 6
7.863	0.490 ± 0.020	0.455	39 ± 4	42	0.475 ± 0.020	39 ± 4
8.377	0.0023 ± 0.001	0.0044	39 ± 6	42	0.003 ± 0.001	39 ± 6
8.770	0.040 ± 0.002	0.041	37 ± 10	42	0.040 ± 0.002	37 ± 10
9.314 ± 0.008	0.050 ± 0.003	0.048	39 ± 9	42	0.050 ± 0.003	39 ± 9
10.314	0.149 ± 0.010	0.125	49 ± 5	42	0.140 ± 0.010	49 ± 5
10.877	0.004 ± 0.002	0.005	39	42	0.004 ± 0.002	39
11.278	0.086 ± 0.004	0.084	41 ± 6	42	0.085 ± 0.004	41 ± 6
11.693	0.030 ± 0.002	0.032	26 ± 14	42	0.031 ± 0.002	26 ± 14
12.122	0.049 ± 0.003	0.050	37 ± 11	42	0.050 ± 0.003	37 ± 11
12.877	0.680 ± 0.030	0.663	36 ± 6	42	0.670 ± 0.030	36 ± 6
13.152	0.400 ± 0.020	0.367	41 ± 8	42	0.385 ± 0.020	41 ± 8
15.143 ± 0.009	0.019 ± 0.007	0.033	39	42	0.025 ± 0.007	39
15.404	0.360 ± 0.030	0.306	44 ± 11	42	0.340 ± 0.030	44 ± 11
16.210	0.143 ± 0.007	0.132	48 ± 9	42	0.137 ± 0.007	48 ± 9
16.583	0.048 ± 0.004	0.048	36 ± 10	42	0.048 ± 0.004	36 ± 10
17.874	0.055 ± 0.030	0.052	42 ± 10	42	0.054 ± 0.030	42 ± 10
18.158	0.014 ± 0.002	0.013	39	42	0.014 ± 0.002	39
19.533	0.050 ± 0.004	0.056	39	42	0.053 ± 0.004	39
19.915 ± 0.010	0.020 ± 0.004	0.026	39	42	0.023 ± 0.004	39

Table II
²⁴³Am Resonance Parameters

E_o (eV)	$2g\Gamma_n^o$ (meV)	E_o (eV)	$2g\Gamma_n^o$ (meV)
20.974 ± 0.01	0.100 ± 0.01	63.190 ± 0.03	0.050 ± 0.010
21.115	0.240 ± 0.02	64.820	0.050 ± 0.010
21.872	0.033 ± 0.003	66.210	0.167 ± 0.017
22.011	0.011 ± 0.005	67.360	0.134 ± 0.014
22.600	0.110 ± 0.010	68.010	0.150 ± 0.015
22.739	0.280 ± 0.030	68.670	0.193 ± 0.015
24.454	0.190 ± 0.014	69.660	0.471 ± 0.020
25.415	0.032 ± 0.005	70.270	0.289 ± 0.020
26.237	0.008 ± 0.004	71.600	0.030 ± 0.015
26.750	0.320 ± 0.020	72.220	0.309 ± 0.020
27.355	0.100 ± 0.010	72.880	0.351 ± 0.020
28.735	0.203 ± 0.010	73.930	0.042 ± 0.015
29.300	0.135 ± 0.010	74.340	0.042 ± 0.015
30.130	0.100 ± 0.007	74.880	0.036 ± 0.015
31.070	0.145 ± 0.010	75.430	0.360 ± 0.020
31.490	0.031 ± 0.005	76.500	0.024 ± 0.010
32.420	0.026 ± 0.005	77.000	0.060 ± 0.020
33.200	0.170 ± 0.010	77.540	0.170 ± 0.020
33.940	0.320 ± 0.015	78.220	0.035 ± 0.010
34.990	0.170 ± 0.010	80.500	0.105 ± 0.030
36.670	0.140 ± 0.010	81.000	0.264 ± 0.030
37.030	0.330 ± 0.015	81.100	0.190 ± 0.040
37.550	0.013 ± 0.005	83.100	0.114 ± 0.030
37.930	0.100 ± 0.008	83.520	0.275 ± 0.020
39.500	0.102 ± 0.010	84.190	0.240 ± 0.020
40.500 ± 0.02	0.015 ± 0.007	85.560 ± 0.04	0.736 ± 0.040
40.950	0.050 ± 0.020	86.630	0.170 ± 0.020
41.260	0.170 ± 0.030	88.360	0.154 ± 0.020
41.540	0.390 ± 0.030	89.000	0.136 ± 0.020
42.950	0.430 ± 0.020	90.430	0.150 ± 0.020
44.110	0.065 ± 0.007	91.250	0.120 ± 0.020
45.350	0.170 ± 0.010	94.720	0.140 ± 0.020
47.110	0.058 ± 0.008	95.800	0.040 ± 0.015
48.550	0.066 ± 0.010	97.530	0.220 ± 0.020
49.290	0.108 ± 0.010	99.480	0.100 ± 0.020
50.200	0.015 ± 0.005	101.120	0.370 ± 0.040
51.280	0.150 ± 0.010	101.920	0.250 ± 0.040
52.170	0.015 ± 0.005	104.060	0.071 ± 0.020
53.030	0.290 ± 0.020	104.960	0.190 ± 0.030
53.600	0.013 ± 0.010	107.170	0.355 ± 0.050
54.020	0.090 ± 0.010	109.720	0.122 ± 0.030
54.550	0.260 ± 0.020	111.630	0.132 ± 0.030
54.930	0.023 ± 0.010	112.120	0.099 ± 0.030
55.870	0.220 ± 0.020	112.700	0.115 ± 0.030
58.740	0.058 ± 0.015	113.190	0.973 ± 0.070
59.130	0.117 ± 0.015	114.240	0.507 ± 0.050
59.980	0.100 ± 0.012	116.600	0.683 ± 0.070
60.760	0.155 ± 0.020	119.740	0.432 ± 0.050
61.200	0.370 ± 0.020	122.310	0.640 ± 0.060
62.510 ± 0.03	0.034 ± 0.010	123.370 ± 0.06	1.670 ± 0.120

Table II (Cont'd)

E_o (eV)	$2g\Gamma_n^o$ (meV)	E_o (eV)	$2g\Gamma_n^o$ (meV)
125.18 $\pm$ 0.06	0.708 $\pm$ 0.070	195.90 $\pm$ 0.10	0.010 $\pm$ 0.003
126.40	0.065 $\pm$ 0.025	196.20	0.101 $\pm$ 0.020
127.38	0.210 $\pm$ 0.030	196.90	0.164 $\pm$ 0.020
130.30	0.048 $\pm$ 0.015	197.60	0.397 $\pm$ 0.060
132.50	0.075 $\pm$ 0.020	199.20	0.085 $\pm$ 0.040
133.50	0.088 $\pm$ 0.030	199.85	0.220 $\pm$ 0.040
134.10	0.125 $\pm$ 0.030	202.10	0.025 $\pm$ 0.008
134.70	0.065 $\pm$ 0.030	203.70	0.048 $\pm$ 0.015
135.20	0.063 $\pm$ 0.030	205.00	0.237 $\pm$ 0.040
139.40	0.207 $\pm$ 0.070	206.60	0.123 $\pm$ 0.020
140.03	0.585 $\pm$ 0.080	208.20	0.260 $\pm$ 0.040
141.20	0.106 $\pm$ 0.020	209.60	0.281 $\pm$ 0.040
144.00	0.317 $\pm$ 0.030	210.95	0.392 $\pm$ 0.060
144.47	0.537 $\pm$ 0.040	211.50	0.437 $\pm$ 0.060
145.00	0.300 $\pm$ 0.040	213.40	0.127 $\pm$ 0.020
146.09	0.745 $\pm$ 0.060	214.50	0.482 $\pm$ 0.060
146.60	0.336 $\pm$ 0.050	217.00	0.193 $\pm$ 0.040
148.38	0.370 $\pm$ 0.050	220.30	0.356 $\pm$ 0.060
149.80	0.060 $\pm$ 0.020	221.20	0.185 $\pm$ 0.040
151.10	0.080 $\pm$ 0.020	222.00	0.176 $\pm$ 0.040
152.80	0.166 $\pm$ 0.040	224.30	0.160 $\pm$ 0.040
154.00	0.315 $\pm$ 0.060	225.30	0.505 $\pm$ 0.070
154.70	0.332 $\pm$ 0.060	226.20	0.196 $\pm$ 0.040
158.64	0.355 $\pm$ 0.040	227.30	0.230 $\pm$ 0.050
160.64 $\pm$ 0.08	1.194 $\pm$ 0.120	228.80 $\pm$ 0.11	0.074 $\pm$ 0.020
163.90	0.042 $\pm$ 0.020	231.80	0.095 $\pm$ 0.030
164.87	0.386 $\pm$ 0.050	232.90	0.576 $\pm$ 0.070
166.10	0.190 $\pm$ 0.040	234.10	0.538 $\pm$ 0.070
166.80	0.177 $\pm$ 0.040	236.00	0.114 $\pm$ 0.030
168.01	0.503 $\pm$ 0.070	237.50	0.185 $\pm$ 0.040
169.70	0.096 $\pm$ 0.020	238.70	0.110 $\pm$ 0.030
171.70	0.096 $\pm$ 0.020	239.50	0.254 $\pm$ 0.050
172.70	0.569 $\pm$ 0.070	241.20	0.111 $\pm$ 0.030
173.60	0.565 $\pm$ 0.070	242.80	0.292 $\pm$ 0.060
174.70	0.300 $\pm$ 0.050	244.10	0.092 $\pm$ 0.030
175.80	0.301 $\pm$ 0.050	244.60	0.295 $\pm$ 0.060
177.00	0.647 $\pm$ 0.070	246.30	0.118 $\pm$ 0.030
180.00	0.220 $\pm$ 0.040	247.10	0.396 $\pm$ 0.060
180.50	0.143 $\pm$ 0.040	248.60	0.812 $\pm$ 0.120
181.50	0.163 $\pm$ 0.040	249.70 $\pm$ 0.13	0.220 $\pm$ 0.050
183.00	0.139 $\pm$ 0.040		
184.05	0.246 $\pm$ 0.040		
184.50	0.339 $\pm$ 0.040		
186.20	0.150 $\pm$ 0.030		
186.90	0.350 $\pm$ 0.040		
188.00	0.625 $\pm$ 0.070		
190.60	0.216 $\pm$ 0.040		
191.60	0.230 $\pm$ 0.040		
192.25	0.338 $\pm$ 0.040		
193.35 $\pm$ 0.10	0.631 $\pm$ 0.070		

Table III

²⁴³Am Resonance Absorption Integral (barns)

Experiment	$\int_{0.532}^{\infty} \sigma \frac{dE}{E}$	$\int_{0.625}^{\infty} \sigma \frac{dE}{E}$
ORELA ^(a)	1825 ± 80	1819 ± 80
MTR ^(b)	1830 ± 80	1824 ± 80
Recommended ^(c)	1819 ± 68 ^(e)	1813 ± 68 ^(e)
BNL ^(d)	1500 ± 300	--

- (a) Includes the MTR resonance parameters for the -2.0 and 0.42 eV levels plus the ORELA parameters of Tables I and II, and average values for $\Gamma_{\gamma} = 39$ meV and $\Gamma_n^0 = 0.13$ meV above 250 eV.
- (b) Includes the MTR resonance parameters of Table I plus those quoted⁽⁴⁾ between 20 and 25 eV, and average values for $\Gamma_{\gamma} = 42$ meV and $\Gamma_n^0 = 0.133$ meV above 25 eV.
- (c) Obtained from an evaluation of the MTR and ORELA parameters of Table I (see recommended columns) and ORELA parameters of Table II. Average values for $\Gamma_{\gamma} = 39$ meV and $\Gamma_n^0 = 0.13$ meV obtained from ORELA data were used in the energy region above 250 eV.
- (d) This is the BNL recommended value determined from experimental integral measurements⁽⁵⁾ whose lower limits were determined by the cutoff energy of Cd (approximately 0.5 eV).
- (e) This value was obtained from the recommended set of resonance parameters (see footnote c) which do not represent an average of the MTR and ORELA parameters; therefore, one would not necessarily expect this value to lie between the ORELA and MTR numbers quoted above.

Fig. 1 The total neutron cross section of ^{243}Am from 0-12 eV. The solid line was obtained by Doppler and resolution broadening the cross sections predicted by the resonance parameters of Tables I and II.

Fig. 2 The total neutron cross section of ^{243}Am from 12-24 eV. The solid line was obtained by Doppler and resolution broadening the cross sections predicted by the resonance parameters of Tables I and II.

Fig. 3 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 4 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 5 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 6 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameter of Tables I and II.

Fig. 7 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 8 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters for Tables I and II.

Fig. 9 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The three sets of data coincide with the cross sections listed in Appendices A, B, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 10 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The two sets of data coincide with the cross sections listed in Appendices A, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 11 The neutron transmission as a function of neutron energy for two different ^{243}Am samples. The two sets of data coincide with the cross sections listed in Appendices A, and C. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 12 The neutron transmission as a function of neutron energy for ^{243}Am . The data coincide with the cross sections listed in Appendix A. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 13 The neutron transmission as a function of neutron energy for ^{243}Am . The data coincide with the cross sections listed in Appendix A. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 14 The neutron transmission as a function of neutron energy for ^{243}Am . The data coincide with the cross sections listed in Appendix A. The solid line was obtained by Doppler and resolution broadening the theoretical data as predicted by the resonance parameters of Tables I and II.

Fig. 15 The total neutron cross section of ^{243}Am (Appendix A) as a function of neutron energy. The dashed line is an visual fit to the experimental data.

Fig. 16 The total neutron cross section of ²⁴³Am (Appendix A) as a function of neutron energy. The dash-line is an visual fit to the experimental data.

Fig. 17 The total neutron cross section of ^{243}Am (Appendix A) as a function of neutron energy. The dashed line is an visual fit to the experimental data.

Fig. 18 The total neutron cross section of ^{243}Am (Appendix A) as a function of neutron energy. The dashed line is an visual fit to the experimental data.

Fig. 19 The total neutron cross section of ^{243}Am (Appendix A) as a function of neutron energy. The dashed line is an visual fit to the experimental data.

Fig. 20 The summation of the reduced neutron scattering widths as a function of neutron energy. A value of $g = 1/2$ was assumed. The strength function $\bar{\Gamma}_n^0/D$ is equal to the slope of the straight line divided by two. The division by two is necessary because the average level spacing per spin state D is equal to $2d$ where d is the average level spacing between resonances.

Fig. 21 The integral distribution of $(\Gamma_n^0)^{1/2}$ for one degree of freedom, below 50 eV. The fit to the data indicates that about 11 small levels have been missed over this energy region. A statistical weight factor of $g = 1/2$ was assumed.

Fig. 22 The number of observed levels in ^{243}Am as a function of neutron energy.

APPENDIX A

A TABULATION OF THE TOTAL NEUTRON CROSS SECTION OF ^{243}Am FROM 15-1000 eV

The total neutron cross section of ^{243}Am from 15-1000 eV. The cross sections were derived from transmission data taken with a sample having an inverse thickness of 279.3 b/a. The resolution function was assumed to have a Gaussian shape and its full width at half maximum was obtained from the information given below.

Energy Range (eV)	15-60	60-212	212-1000
Accelerator Burst (nsec)	10	10	10
Channel Width (nsec)	40	20	10
Detector Thickness (cm)	1.25	1.25	1.25
Moderator Thickness (cm)	3.18	3.18	3.18
Flight Path (m)	18.576	18.576	18.576

Note: In order for the theoretical fit to describe the experimental data, it was necessary to add the moderator and detector thicknesses together. This term was the dominant factor in determining the resolution width.

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
1003.000	33.19	837.800	24.24	710.100	23.11
999.600	23.73	834.900	20.46	707.900	37.30
995.900	30.80	832.100	17.78	705.600	27.73
992.100	27.89	829.200	13.90	703.400	26.93
988.400	15.71	826.400	20.90	701.200	29.75
984.700	27.28	823.600	27.07	699.000	27.04
981.000	18.60	820.800	26.75	696.800	28.08
977.400	27.84	818.000	14.59	694.600	25.63
973.800	27.35	815.200	19.06	692.400	27.47
970.200	29.50	812.400	16.90	690.200	28.22
966.600	25.23	809.700	15.29	688.100	26.64
963.000	19.93	806.900	7.90	685.900	27.69
959.400	21.72	804.200	12.51	684.600	26.19
955.900	25.92	801.500	18.70	683.000	23.41
952.400	22.18	798.800	19.21	681.400	17.43
948.900	20.28	796.100	23.09	679.800	20.76
945.400	26.13	793.400	24.44	678.300	28.93
942.000	23.12	790.800	17.31	676.700	32.22
938.500	21.07	788.100	17.35	675.100	33.58
935.100	30.07	785.500	17.08	673.500	19.09
931.700	15.53	782.900	23.20	672.000	7.83
928.400	18.26	780.300	34.84	670.400	20.22
925.000	15.64	777.700	49.45	668.900	30.10
921.600	25.52	775.100	39.33	667.300	21.97
918.300	17.48	772.600	25.73	665.800	26.17
915.000	17.99	770.000	27.53	664.300	20.57
911.700	20.80	767.500	27.82	662.700	15.48
908.500	21.44	765.000	22.10	661.200	8.23
905.200	23.13	762.400	22.37	659.700	24.84
902.000	27.86	759.900	20.37	658.200	20.78
898.800	31.26	757.400	21.84	656.700	12.28
895.500	16.57	755.000	15.84	655.200	20.75
892.400	24.34	752.500	21.63	653.700	32.41
889.200	22.48	750.000	21.72	652.200	41.42
886.000	14.86	747.600	33.41	650.700	23.96
882.900	18.84	745.200	25.09	649.200	20.24
879.800	32.74	742.800	19.44	647.800	21.02
876.700	21.86	740.400	18.98	646.300	11.58
873.600	22.02	738.000	12.13	644.800	18.12
870.500	19.27	735.600	27.58	643.400	25.09
867.500	24.13	733.200	19.68	641.900	36.46
864.500	11.74	730.800	15.15	640.500	18.81
861.400	19.91	728.500	27.12	639.000	20.40
858.400	27.67	726.200	25.02	637.600	13.39
855.400	16.64	723.800	22.05	636.100	17.33
852.500	28.22	721.500	16.51	634.700	32.90
849.500	31.37	719.200	17.29	633.300	27.28
846.600	33.66	716.900	13.09	631.900	30.80
843.600	29.92	714.600	19.29	630.400	21.95
840.700	22.22	712.400	20.09	629.000	16.14

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
627.600	26.05	562.900	17.43	507.600	26.88
626.200	41.34	561.700	21.53	506.600	19.78
624.800	33.34	560.500	31.39	505.600	24.05
623.400	18.55	559.300	37.08	504.600	37.40
622.000	30.03	558.100	27.61	503.600	42.74
620.600	20.61	556.900	33.64	502.600	28.08
619.300	34.29	555.800	33.91	501.500	23.74
617.900	26.23	554.600	26.11	500.500	17.59
616.500	29.33	553.400	33.71	499.500	25.46
615.200	28.05	552.300	39.19	498.500	29.33
613.800	26.33	551.100	47.01	497.600	20.24
612.400	20.78	550.000	35.80	496.600	23.04
611.100	11.24	548.800	21.38	495.600	25.51
609.700	46.32	547.700	34.07	494.600	20.36
608.400	43.25	546.500	32.14	493.600	25.77
607.100	29.52	545.400	30.18	492.600	23.18
605.700	22.35	544.200	17.91	491.700	40.87
604.400	18.10	543.100	15.46	490.700	62.16
603.100	32.92	542.000	22.19	489.700	52.89
601.700	22.43	540.900	32.66	488.800	52.17
600.400	25.44	539.700	26.13	487.800	38.28
599.100	25.02	538.600	27.25	486.800	43.49
597.800	32.04	537.500	13.25	485.900	47.32
596.500	22.66	536.400	24.40	484.900	51.97
595.200	27.48	535.300	26.91	484.000	35.38
593.900	21.47	534.200	26.75	483.000	16.02
592.600	19.50	533.100	26.78	482.100	26.75
591.300	21.23	532.000	28.93	481.100	19.56
590.100	13.36	530.900	21.01	480.200	30.66
588.800	26.90	529.800	23.50	479.200	28.75
587.500	23.59	528.700	30.18	478.300	17.01
586.200	17.46	527.600	39.74	477.400	22.83
585.000	20.08	526.500	49.58	476.400	26.38
583.700	32.50	525.500	45.39	475.500	13.48
582.400	53.92	524.400	49.22	474.600	20.90
581.200	64.33	523.300	31.03	473.700	31.06
579.900	29.43	522.200	23.49	472.700	24.12
578.700	28.48	521.200	24.79	471.800	25.09
577.500	28.79	520.100	36.14	470.900	14.08
576.200	37.15	519.100	22.84	470.000	18.42
575.000	49.23	518.000	24.22	469.100	12.43
573.700	37.57	516.900	26.80	468.200	9.65
572.500	27.61	515.900	32.06	467.300	12.32
571.300	31.91	514.900	32.81	466.400	24.04
570.100	27.82	513.800	32.66	465.500	32.65
568.900	22.99	512.800	27.24	464.600	27.12
567.700	11.80	511.700	34.43	463.700	27.99
566.500	20.18	510.700	23.89	462.800	43.63
565.200	24.88	509.700	26.68	461.900	24.59
564.100	27.04	508.600	28.89	461.000	23.74

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
460.100	31.02	419.000	24.03	383.200	27.48
459.300	37.38	418.300	40.14	382.500	37.90
458.400	49.60	417.500	58.31	381.800	30.41
457.500	27.75	416.700	32.00	381.200	31.17
456.600	22.17	416.000	26.67	380.500	46.61
455.800	28.52	415.200	20.15	379.800	37.08
454.900	23.64	414.500	50.36	379.200	36.08
454.000	31.64	413.700	60.92	378.500	32.28
453.200	31.18	413.000	40.63	377.900	25.83
452.300	27.03	412.200	25.22	377.200	23.08
451.400	32.89	411.500	31.74	376.600	22.13
450.600	25.42	410.700	58.24	375.900	23.93
449.700	18.01	410.000	55.61	375.300	14.69
448.900	21.50	409.200	26.40	374.600	20.80
448.000	7.65	408.500	34.70	374.000	26.97
447.200	15.89	407.800	22.29	373.300	20.90
446.300	28.81	407.000	32.69	372.700	24.25
445.500	21.25	406.300	32.55	372.000	31.67
444.700	23.21	405.600	28.02	371.400	50.48
443.800	19.38	404.800	35.66	370.800	87.02
443.000	21.91	404.100	20.96	370.100	68.08
442.200	15.82	403.400	20.25	369.500	45.03
441.300	26.09	402.700	16.61	368.800	38.80
440.500	45.45	401.900	10.91	368.200	37.76
439.700	49.24	401.200	21.61	367.600	31.79
438.900	40.22	400.500	35.14	367.000	21.19
438.000	31.05	399.800	15.94	366.300	28.79
437.200	18.03	399.100	15.83	365.700	18.75
436.400	23.15	398.400	24.07	365.100	20.90
435.600	11.24	397.600	27.98	364.500	28.17
434.800	17.67	396.900	22.49	363.800	32.02
434.000	21.68	396.200	24.71	363.200	53.41
433.200	17.84	395.500	28.98	362.600	49.25
432.400	26.31	394.800	48.15	362.000	36.13
431.600	28.88	394.100	31.26	361.400	28.16
430.800	26.45	393.400	27.05	360.800	23.59
430.000	29.76	392.700	21.06	360.100	6.88
429.200	40.88	392.000	19.91	359.500	19.76
428.400	64.77	391.300	23.68	358.900	27.67
427.600	37.71	390.700	34.82	358.300	22.57
426.800	23.08	390.000	35.72	357.700	17.71
426.000	33.69	389.300	40.47	357.100	18.32
425.200	60.88	388.600	18.46	356.500	16.40
424.400	53.11	387.900	20.79	355.900	15.79
423.700	25.67	387.200	15.85	355.300	7.56
422.900	20.91	386.600	19.20	354.700	15.04
422.100	16.79	385.900	29.04	354.100	10.61
421.300	21.71	385.200	29.91	353.500	12.30
420.600	11.18	384.500	18.39	352.900	23.77
419.800	24.57	383.800	27.56	352.300	15.64

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
351.700	37.14	332.400	44.47	315.100	51.47
351.200	28.80	332.100	23.84	314.800	69.36
350.600	22.18	331.700	25.11	314.400	87.98
350.100	12.42	331.400	41.29	314.100	65.38
349.700	18.23	331.000	7.00	313.800	52.40
349.300	18.96	330.600	31.60	313.400	40.29
348.900	42.39	330.300	36.79	313.100	52.50
348.500	66.19	329.900	28.05	312.800	51.29
348.100	48.84	329.600	22.74	312.400	61.04
347.700	37.46	329.200	15.08	312.100	74.97
347.400	16.41	328.900	20.48	311.800	60.02
347.000	21.63	328.500	32.85	311.500	54.96
346.600	12.70	328.100	52.75	311.100	37.55
346.200	19.20	327.800	55.18	310.800	26.17
345.800	19.08	327.400	42.21	310.500	18.34
345.400	13.33	327.100	42.29	310.200	18.91
345.100	18.17	326.700	45.71	309.800	19.48
344.700	21.66	326.400	34.95	309.500	21.33
344.300	23.08	326.000	31.65	309.200	37.71
343.900	39.99	325.700	21.07	308.900	48.50
343.500	23.90	325.300	15.31	308.500	42.15
343.200	25.65	325.000	7.27	308.200	37.46
342.800	35.26	324.600	23.02	307.900	33.65
342.400	23.07	324.300	11.60	307.600	19.61
342.000	40.36	323.900	15.75	307.200	22.77
341.600	52.00	323.600	13.41	306.900	21.81
341.300	30.37	323.200	31.46	306.600	19.41
340.900	30.32	322.900	29.17	306.300	17.38
340.500	30.89	322.600	40.27	306.000	35.67
340.200	28.42	322.200	69.22	305.600	45.21
339.800	36.13	321.900	63.69	305.300	77.78
339.400	52.90	321.500	67.29	305.000	67.73
339.000	34.47	321.200	39.83	304.700	40.53
338.700	55.98	320.800	37.60	304.400	40.02
338.300	32.69	320.500	27.89	304.100	35.98
337.900	53.32	320.200	16.84	303.700	27.96
337.500	62.97	319.800	14.81	303.400	50.81
337.200	56.41	319.500	18.87	303.100	44.94
336.800	45.36	319.100	13.48	302.800	51.33
336.400	36.75	318.800	33.75	302.500	36.39
336.100	43.90	318.500	31.82	302.200	26.32
335.700	39.45	318.100	33.37	301.900	27.47
335.300	41.69	317.800	24.57	301.600	29.17
335.000	37.93	317.400	22.15	301.200	30.87
334.600	37.36	317.100	22.26	300.900	30.80
334.200	43.40	316.800	38.36	300.600	28.39
333.900	35.94	316.400	50.88	300.300	24.66
333.500	58.32	316.100	41.76	300.000	28.45
333.200	62.43	315.800	32.00	299.700	18.98
332.800	53.05	315.400	31.73	299.400	26.54

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
299.100	33.44	284.200	37.44	270.500	14.23
298.800	26.90	284.000	72.16	270.200	24.39
298.500	28.74	283.700	101.90	270.000	24.76
298.100	31.70	283.400	93.02	269.700	23.82
297.800	14.16	283.100	91.07	269.400	13.38
297.500	23.48	282.800	68.76	269.200	33.97
297.200	19.27	282.500	48.80	268.900	19.72
296.900	34.01	282.300	49.63	268.600	37.86
296.600	33.78	282.000	30.03	268.400	28.71
296.300	50.00	281.700	40.90	268.100	37.70
296.000	30.08	281.400	30.87	267.900	46.66
295.700	27.31	281.100	44.25	267.600	57.63
295.400	15.99	280.800	52.91	267.300	70.90
295.100	17.02	280.600	44.60	267.100	84.17
294.800	15.49	280.300	41.58	266.800	79.22
294.500	13.24	280.000	42.43	266.600	66.29
294.200	25.64	279.700	45.55	266.300	56.97
293.900	23.84	279.500	44.71	266.000	49.65
293.600	6.45	279.200	34.83	265.800	35.93
293.300	16.39	278.900	36.74	265.500	26.71
293.000	20.37	278.600	31.72	265.300	26.38
292.700	29.23	278.300	37.09	265.000	10.99
292.400	47.89	278.100	37.51	264.800	20.16
292.100	63.90	277.800	40.98	264.500	14.60
291.800	67.98	277.500	32.60	264.200	14.54
291.500	62.97	277.200	24.24	264.000	9.94
291.200	45.02	277.000	7.37	263.700	23.00
290.900	43.67	276.700	18.57	263.500	17.08
290.600	51.67	276.400	26.76	263.200	9.58
290.300	77.73	276.100	37.33	263.000	5.16
290.000	60.68	275.900	43.99	262.700	12.12
289.700	38.24	275.600	37.35	262.500	16.71
289.500	43.86	275.300	43.89	262.200	14.44
289.200	51.49	275.100	77.20	262.000	16.82
288.900	51.58	274.800	91.12	261.700	28.70
288.600	40.15	274.500	84.56	261.400	48.66
288.300	32.83	274.200	52.02	261.200	45.19
288.000	19.92	274.000	49.96	260.900	37.45
287.700	24.82	273.700	35.54	260.700	55.72
287.400	21.87	273.400	32.20	260.400	73.70
287.100	23.92	273.200	40.55	260.200	90.29
286.800	13.42	272.900	56.65	259.900	90.25
286.500	25.17	272.600	77.19	259.700	84.44
286.300	21.13	272.400	79.68	259.400	56.34
286.000	24.69	272.100	53.00	259.200	50.83
285.700	21.62	271.800	36.25	258.900	39.66
285.400	13.58	271.600	31.70	258.700	35.65
285.100	26.20	271.300	25.83	258.500	39.83
284.800	24.02	271.000	13.09	258.200	38.14
284.500	26.85	270.800	23.70	258.000	20.89

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
257.700	18.42	245.800	19.96	234.700	35.65
257.500	36.60	245.600	12.77	234.500	57.54
257.200	49.22	245.400	33.84	234.300	77.52
257.000	59.95	245.100	24.34	234.100	87.85
256.700	103.40	244.900	32.52	233.900	77.15
256.500	113.00	244.700	46.70	233.700	55.25
256.200	107.70	244.400	43.74	233.400	49.97
256.000	87.16	244.200	41.01	233.200	89.06
255.800	63.60	244.000	37.72	233.000	83.49
255.500	43.84	243.800	19.76	232.800	75.40
255.300	38.16	243.500	28.36	232.600	51.89
255.000	33.84	243.300	24.08	232.400	46.56
254.800	23.75	243.100	34.48	232.200	24.33
254.500	20.99	242.900	46.13	232.000	24.26
254.300	22.28	242.600	39.53	231.800	13.08
254.100	20.68	242.400	18.68	231.500	21.62
253.800	21.07	242.200	30.77	231.300	12.68
253.600	32.10	242.000	18.49	231.100	8.54
253.300	56.74	241.700	23.45	230.900	13.70
253.100	62.88	241.500	19.86	230.700	14.42
252.900	79.40	241.300	19.39	230.500	12.55
252.600	73.94	241.100	14.09	230.300	6.63
252.400	48.89	240.800	17.50	230.100	2.90
252.100	43.23	240.600	22.51	229.900	1.59
251.900	55.12	240.400	25.02	229.700	2.13
251.700	42.27	240.200	18.62	229.500	13.12
251.400	36.95	240.000	32.29	229.300	27.28
251.200	29.87	239.700	32.50	229.000	23.07
250.900	18.52	239.500	41.20	228.800	24.87
250.700	19.16	239.300	38.56	228.600	10.80
250.500	12.61	239.100	31.13	228.400	21.44
250.200	47.72	238.900	31.64	228.200	10.89
250.000	19.05	238.600	28.90	228.000	19.57
249.800	36.47	238.400	23.91	227.800	32.07
249.500	47.27	238.200	21.26	227.600	31.02
249.300	56.68	238.000	26.10	227.400	46.32
249.100	61.95	237.800	25.76	227.200	28.99
248.800	83.38	237.500	36.16	227.000	35.62
248.600	97.89	237.300	29.02	226.800	37.46
248.400	82.65	237.100	30.76	226.600	27.94
248.100	60.06	236.900	11.82	226.400	32.10
247.900	31.09	236.700	16.18	226.200	49.17
247.700	42.47	236.500	28.53	226.000	51.45
247.400	42.67	236.200	24.51	225.800	56.12
247.200	58.61	236.000	25.80	225.600	68.65
247.000	59.04	235.800	23.75	225.400	77.49
246.700	42.50	235.600	11.45	225.200	80.13
246.500	34.02	235.400	6.27	225.000	59.45
246.300	26.98	235.200	19.86	224.800	45.08
246.000	25.95	234.900	4.99	224.600	35.42

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
224.400	30.30	214.700	56.97	205.600	26.76
224.200	33.74	214.500	76.67	205.400	28.01
224.000	4.44	214.300	60.97	205.300	40.82
223.800	17.12	214.100	44.48	205.100	34.79
223.600	18.69	213.900	32.05	204.900	41.65
223.400	22.80	213.800	26.98	204.700	37.60
223.200	15.32	213.600	33.15	204.600	26.31
223.000	13.50	213.400	20.31	204.400	28.18
222.800	23.36	213.200	20.00	204.200	17.00
222.600	22.22	213.000	22.70	204.000	21.62
222.400	19.51	212.800	19.55	203.900	20.00
222.200	34.64	212.600	9.70	203.700	22.51
222.000	30.06	212.500	11.92	203.500	7.27
221.800	28.54	212.300	26.10	203.400	13.71
221.600	36.22	212.100	51.69	203.200	16.43
221.400	36.54	211.900	54.07	203.000	12.40
221.200	48.12	211.700	78.17	202.800	10.11
221.000	41.31	211.500	89.39	202.700	11.44
220.800	44.67	211.400	85.75	202.500	22.11
220.600	31.16	211.200	80.21	202.300	18.25
220.400	45.63	211.000	91.41	202.100	25.67
220.200	58.33	210.800	73.44	202.000	9.42
220.000	43.22	210.600	58.16	201.800	8.28
219.800	23.88	210.400	34.65	201.600	16.51
219.600	30.05	210.300	31.68	201.500	12.14
219.400	18.37	210.100	31.76	201.300	1.58
219.300	10.25	209.900	31.34	201.100	6.25
219.100	21.94	209.700	47.70	201.000	5.75
218.900	14.68	209.500	52.01	200.800	12.50
218.700	14.51	209.400	45.94	200.600	9.81
218.500	9.79	209.200	38.93	200.400	28.18
218.300	5.46	209.000	34.85	200.300	31.09
218.100	16.78	208.800	28.35	200.100	42.73
217.900	8.99	208.600	28.48	199.900	65.56
217.700	12.50	208.500	32.63	199.800	50.60
217.500	13.57	208.300	46.07	199.600	57.07
217.300	30.43	208.100	41.89	199.400	39.61
217.100	20.75	207.900	38.10	199.300	39.33
217.000	37.35	207.700	33.03	199.100	35.27
216.800	33.45	207.600	28.24	198.900	18.39
216.600	30.22	207.400	17.06	198.800	11.53
216.400	19.33	207.200	22.41	198.600	17.02
216.200	12.86	207.000	26.46	198.400	31.84
216.000	20.16	206.900	21.88	198.300	33.55
215.800	6.92	206.700	24.88	198.100	49.72
215.600	20.77	206.500	27.59	197.900	54.59
215.400	19.80	206.300	25.08	197.800	74.43
215.300	20.97	206.100	14.34	197.600	65.56
215.100	38.72	206.000	21.94	197.400	63.81
214.900	45.28	205.800	18.31	197.300	46.85

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
197.100	54.63	189.100	14.73	181.600	35.83
196.900	47.79	189.000	24.18	181.500	33.05
196.800	48.29	188.800	30.07	181.300	35.51
196.600	42.23	188.700	32.99	181.200	32.26
196.400	41.04	188.500	38.48	181.000	29.68
196.300	33.52	188.300	68.10	180.900	25.55
196.100	24.69	188.200	102.30	180.700	36.04
196.000	25.52	188.000	110.80	180.600	52.13
195.800	24.83	187.900	105.90	180.400	64.66
195.600	13.18	187.700	86.17	180.300	43.71
195.500	18.93	187.600	56.47	180.200	59.92
195.300	3.58	187.400	59.20	180.000	57.06
195.100	18.44	187.300	72.36	179.900	52.80
195.000	15.60	187.100	66.68	179.700	32.58
194.800	18.59	187.000	68.54	179.600	26.80
194.700	9.96	186.800	68.41	179.400	22.03
194.500	4.80	186.700	63.39	179.100	12.71
194.300	27.36	186.500	44.63	178.800	14.04
194.200	19.69	186.400	50.31	178.500	18.27
194.000	28.08	186.200	37.66	178.200	13.50
193.900	52.77	186.100	45.46	177.900	18.87
193.700	72.31	185.900	31.83	177.700	33.53
193.500	115.80	185.800	20.26	177.400	78.35
193.400	122.00	185.600	20.48	177.300	90.88
193.200	86.34	185.500	13.22	177.200	103.60
193.000	72.54	185.300	23.99	177.000	113.30
192.900	65.52	185.200	22.23	176.900	100.10
192.700	45.96	185.000	33.90	176.700	77.15
192.600	60.64	184.900	57.90	176.600	66.86
192.400	73.47	184.700	65.25	176.500	40.62
192.300	77.38	184.600	82.06	176.300	37.85
192.100	71.64	184.400	81.05	176.200	43.20
191.900	64.30	184.300	61.74	175.900	64.44
191.800	52.41	184.100	78.21	175.700	57.51
191.600	65.28	184.000	68.76	175.500	52.74
191.500	59.57	183.800	56.74	175.300	46.61
191.300	48.31	183.700	43.60	175.100	47.63
191.100	30.66	183.500	32.79	174.900	55.33
191.000	49.08	183.400	33.61	174.700	75.31
190.800	41.17	183.200	27.99	174.500	52.85
190.700	50.46	183.100	29.92	174.300	41.12
190.500	43.30	182.900	32.93	174.100	43.98
190.400	37.23	182.800	34.34	173.900	80.38
190.200	21.08	182.600	27.54	173.700	119.20
190.000	26.75	182.500	17.54	173.500	112.90
189.900	15.95	182.300	13.35	173.300	99.96
189.700	7.23	182.200	13.73	173.100	83.79
189.600	16.25	182.000	24.53	172.900	108.60
189.400	10.73	181.900	33.25	172.700	112.60
189.300	19.84	181.700	39.54	172.500	87.54

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
172.200	46.12	160.500	173.00	149.200	23.29
172.000	33.20	160.400	138.70	148.900	17.63
171.700	26.26	160.300	101.40	148.800	52.04
171.300	15.59	160.200	68.71	148.600	79.46
170.900	10.12	160.000	46.30	148.400	70.49
170.500	14.92	159.900	38.36	148.300	74.67
170.100	19.99	159.800	15.96	148.100	54.97
169.800	24.98	159.700	22.19	148.000	46.47
169.400	20.27	159.600	19.33	147.800	26.22
169.000	22.04	159.400	34.32	147.600	30.11
168.600	26.56	159.300	24.57	147.500	16.41
168.300	63.26	159.200	31.14	147.300	14.36
168.200	88.24	159.100	33.21	147.200	21.28
168.100	109.90	159.000	48.64	147.100	26.18
167.900	94.95	158.800	63.50	147.000	50.03
167.800	83.58	158.700	76.62	146.900	63.35
167.700	49.89	158.600	69.74	146.800	93.04
167.500	43.15	158.500	63.94	146.700	114.30
167.400	29.79	158.400	49.00	146.500	136.30
167.200	37.17	158.200	44.12	146.400	161.70
167.000	35.61	158.100	30.25	146.300	174.10
166.700	50.19	158.000	10.08	146.200	184.80
166.400	54.18	157.800	9.27	146.100	205.30
166.200	56.81	157.400	13.80	146.000	163.80
165.900	38.03	157.100	15.95	145.900	130.70
165.700	28.51	156.700	10.65	145.800	110.20
165.500	16.19	156.400	8.42	145.700	71.04
165.400	31.63	156.000	16.75	145.600	62.48
165.200	49.41	155.700	30.07	145.500	45.18
165.100	62.21	155.300	24.47	145.400	50.02
165.000	95.70	155.000	42.84	145.300	57.29
164.900	87.17	154.800	78.90	145.200	81.44
164.700	70.64	154.600	78.43	145.100	82.11
164.600	62.97	154.400	73.00	145.000	102.40
164.500	44.43	154.100	86.82	144.900	121.00
164.400	40.17	153.900	72.89	144.800	123.60
164.200	24.55	153.700	46.23	144.700	151.30
164.000	24.49	153.400	21.50	144.600	162.50
163.600	14.55	153.200	32.92	144.500	174.30
163.200	5.90	152.800	40.04	144.400	149.70
162.900	14.61	152.500	25.82	144.300	142.40
162.500	10.73	152.100	16.49	144.100	129.70
162.100	15.87	151.800	16.47	144.000	89.35
161.700	14.51	151.500	16.05	143.900	70.70
161.400	31.88	151.100	31.72	143.800	54.42
161.100	78.34	150.800	15.52	143.700	34.35
161.000	116.90	150.500	17.72	143.600	38.15
160.900	159.40	150.200	16.84	143.400	25.44
160.800	183.20	149.800	23.38	143.100	21.30
160.600	199.50	149.500	20.56	142.800	12.68

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
142.500	21.02	130.600	18.29	123.600	284.50
142.200	13.84	130.300	20.19	123.500	343.80
141.900	7.19	130.000	20.05	123.400	385.50
141.600	24.25	129.800	14.03	123.300	395.20
141.300	26.57	129.500	14.32	123.200	340.40
141.000	37.00	129.200	15.44	123.200	261.80
140.700	31.49	129.000	11.49	123.100	199.90
140.400	71.01	128.700	11.24	123.000	143.20
140.100	139.70	128.400	9.39	122.900	91.15
139.900	132.70	128.200	25.28	122.800	83.04
139.800	111.30	128.000	15.56	122.700	89.48
139.700	93.86	127.800	26.89	122.700	67.48
139.600	97.77	127.600	52.65	122.600	102.10
139.500	63.78	127.500	58.57	122.500	124.10
139.400	69.99	127.300	59.90	122.400	159.90
139.300	46.46	127.100	43.96	122.300	176.00
139.200	40.10	126.900	25.73	122.300	155.90
139.100	23.70	126.800	25.44	122.200	131.50
139.000	22.73	126.600	26.40	122.100	134.10
138.900	27.19	126.400	30.93	122.000	82.56
138.800	21.56	126.300	30.45	121.900	70.31
138.600	11.62	126.100	24.76	121.900	35.58
138.400	10.62	125.900	24.67	121.800	40.35
138.100	12.98	125.800	22.39	121.700	15.42
137.800	8.87	125.700	39.30	121.600	24.36
137.500	19.03	125.600	53.35	121.400	14.37
137.200	9.37	125.500	72.12	121.300	17.76
136.900	3.22	125.500	94.94	121.100	13.74
136.600	10.50	125.400	138.20	120.900	7.67
136.300	9.42	125.300	179.30	120.800	11.83
136.100	6.13	125.200	188.10	120.600	-2.07
135.800	7.53	125.100	181.80	120.500	16.11
135.500	22.23	125.000	146.10	120.300	16.19
135.200	35.88	125.000	117.40	120.200	36.91
134.900	28.63	124.900	86.72	120.100	42.80
134.600	36.21	124.800	68.34	120.000	86.39
134.400	35.45	124.700	46.33	119.900	92.45
134.100	48.60	124.600	43.03	119.700	100.80
133.800	37.77	124.500	42.64	119.600	98.51
133.500	36.44	124.500	36.95	119.500	78.47
133.300	23.73	124.400	42.30	119.400	63.70
133.000	19.33	124.300	33.82	119.300	47.95
132.700	23.75	124.200	42.42	119.200	27.59
132.400	31.86	124.100	32.17	119.000	24.78
132.200	21.44	124.100	40.20	118.800	19.53
131.900	7.31	124.000	22.81	118.500	9.48
131.600	11.39	123.900	62.85	118.300	14.97
131.400	12.03	123.800	98.33	118.100	10.20
131.100	11.21	123.700	165.10	117.800	0.77
130.800	10.21	123.600	235.10	117.600	4.61

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
117.400	15.44	112.900	158.30	106.000	17.43
117.200	22.97	112.800	113.70	105.900	9.75
117.000	39.01	112.700	89.57	105.800	16.15
116.900	88.59	112.700	66.84	105.700	15.58
116.900	119.20	112.600	49.25	105.500	11.73
116.800	158.70	112.500	39.96	105.400	24.16
116.700	194.10	112.400	39.55	105.300	28.21
116.600	204.80	112.200	49.96	105.200	44.45
116.600	209.10	112.000	43.60	105.100	59.83
116.500	162.90	111.800	44.97	105.000	71.28
116.400	119.40	111.500	43.75	104.900	75.81
116.300	114.00	111.300	23.95	104.800	67.99
116.300	61.89	111.100	15.28	104.700	40.28
116.200	50.72	110.900	14.51	104.600	20.46
116.100	38.39	110.700	1.11	104.500	15.91
116.000	42.01	110.500	2.95	104.400	25.95
115.900	25.78	110.300	8.73	104.400	24.84
115.800	5.91	110.100	30.99	104.300	33.39
115.600	25.99	109.900	33.76	104.200	28.00
115.500	12.71	109.700	37.77	104.100	47.46
115.300	8.68	109.500	21.71	104.000	29.04
115.200	24.87	109.300	22.60	103.900	31.24
115.000	22.62	109.100	16.85	103.800	11.01
114.900	34.27	108.900	18.43	103.700	10.47
114.800	33.45	108.700	28.11	103.600	3.65
114.700	33.35	108.500	13.84	103.500	17.23
114.600	50.36	108.300	10.36	103.300	11.34
114.600	72.04	108.100	13.95	103.200	16.09
114.500	96.30	107.900	9.65	103.100	25.66
114.400	134.50	107.700	8.20	103.000	20.58
114.300	150.40	107.700	20.50	102.800	14.07
114.300	172.80	107.600	34.61	102.700	18.28
114.200	147.20	107.500	48.02	102.600	12.60
114.100	117.70	107.500	71.52	102.500	20.42
114.000	110.10	107.400	80.38	102.400	24.18
114.000	68.69	107.300	94.11	102.300	34.09
113.900	66.13	107.300	101.50	102.200	61.99
113.800	56.12	107.200	104.10	102.100	79.94
113.800	55.75	107.100	106.00	102.000	104.40
113.700	60.22	107.100	92.65	101.900	94.35
113.600	73.39	107.000	71.61	101.800	80.51
113.500	114.80	106.900	72.31	101.700	73.59
113.500	152.70	106.900	49.08	101.600	50.28
113.400	203.00	106.800	41.83	101.500	63.20
113.300	252.60	106.700	35.25	101.500	63.31
113.200	276.30	106.700	41.06	101.400	75.75
113.200	283.90	106.600	24.65	101.300	93.76
113.100	275.00	106.400	22.95	101.300	116.00
113.000	232.90	106.300	17.27	101.200	135.70
113.000	180.50	106.200	17.41	101.200	148.30

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
101.100	142.20	95.970	27.71	90.310	65.35
101.000	126.90	95.800	23.54	90.230	47.61
101.000	110.40	95.630	21.58	90.160	37.92
100.900	88.02	95.470	23.13	90.080	25.54
100.900	58.11	95.300	20.63	90.000	20.88
100.800	54.15	95.170	21.31	89.930	22.86
100.700	35.01	95.090	16.16	89.840	6.17
100.600	35.06	95.010	21.77	89.740	13.79
100.500	16.41	94.930	45.28	89.640	16.48
100.400	13.44	94.840	55.53	89.530	7.39
100.300	14.96	94.760	69.53	89.430	21.74
100.200	7.63	94.680	68.24	89.330	23.86
100.100	-2.00	94.600	58.63	89.230	35.33
100.100	11.08	94.510	45.33	89.140	48.63
99.970	6.60	94.430	25.94	89.070	61.03
99.880	15.60	94.350	23.62	88.990	90.14
99.790	21.13	94.270	23.96	88.920	66.98
99.700	40.26	94.150	6.76	88.840	58.29
99.610	47.21	93.980	10.04	88.770	67.05
99.520	41.77	93.820	10.13	88.690	39.27
99.430	33.53	93.660	13.24	88.620	52.87
99.340	28.35	93.500	9.51	88.550	57.46
99.260	26.42	93.340	9.79	88.470	75.17
99.170	21.77	93.170	16.82	88.400	82.97
99.060	18.49	93.010	15.95	88.320	64.40
98.950	24.55	92.850	16.69	88.250	68.59
98.830	17.47	92.690	11.83	88.170	47.10
98.710	20.84	92.530	17.58	88.100	32.67
98.600	26.74	92.380	-2.60	88.030	19.96
98.480	17.35	92.220	7.19	87.940	8.56
98.360	10.39	92.060	8.60	87.840	28.68
98.250	12.95	91.900	18.73	87.740	19.43
98.130	12.95	91.740	8.77	87.650	13.77
98.020	15.39	91.630	9.64	87.550	12.32
97.900	24.45	91.550	26.35	87.450	23.09
97.800	49.50	91.470	34.52	87.350	14.29
97.710	67.31	91.390	48.81	87.260	19.35
97.630	78.17	91.310	62.77	87.160	11.07
97.540	95.60	91.240	64.10	87.060	11.32
97.450	88.72	91.160	58.13	86.970	30.88
97.370	66.87	91.080	41.00	86.880	49.85
97.280	54.14	91.000	32.69	86.810	60.33
97.200	27.96	90.930	23.48	86.740	93.69
97.110	26.60	90.850	27.33	86.670	87.23
96.980	15.20	90.770	28.38	86.590	91.58
96.810	14.83	90.690	38.73	86.520	79.37
96.640	7.99	90.620	45.82	86.450	54.43
96.470	9.02	90.540	60.11	86.380	44.78
96.300	14.95	90.460	81.11	86.310	28.02
96.140	19.21	90.390	67.18	86.230	35.31

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
86.160	25.73	83.500	150.60	79.810	15.50
86.100	15.81	83.450	132.80	79.680	14.34
86.060	26.15	83.410	123.90	79.550	13.05
86.010	27.41	83.360	111.10	79.430	10.41
85.960	67.51	83.320	91.43	79.300	2.66
85.910	80.43	83.270	88.30	79.170	6.52
85.870	104.90	83.230	94.74	79.050	13.35
85.820	127.90	83.180	84.76	78.920	15.16
85.770	186.50	83.110	67.52	78.800	13.61
85.720	218.60	83.020	59.62	78.670	11.86
85.680	229.40	82.930	42.67	78.550	15.62
85.630	281.80	82.820	23.93	78.420	19.29
85.580	277.10	82.690	19.80	78.300	32.92
85.530	258.50	82.550	11.77	78.180	31.26
85.490	252.30	82.420	13.93	78.050	28.08
85.440	242.60	82.280	10.20	77.970	13.66
85.390	158.40	82.150	17.93	77.930	12.00
85.350	141.10	82.020	17.67	77.890	27.07
85.300	115.70	81.890	10.57	77.850	19.41
85.250	84.50	81.750	16.78	77.810	35.42
85.210	73.27	81.620	8.57	77.770	43.04
85.160	60.10	81.530	31.32	77.730	68.50
85.090	45.20	81.490	31.46	77.690	82.47
85.000	41.88	81.450	42.44	77.640	89.55
84.900	25.80	81.400	35.95	77.600	106.00
84.810	38.72	81.360	81.89	77.560	103.30
84.720	40.09	81.320	80.21	77.520	109.70
84.620	39.30	81.270	119.30	77.480	73.81
84.530	33.01	81.230	145.50	77.440	83.31
84.460	51.70	81.180	169.30	77.400	75.71
84.420	59.74	81.140	178.80	77.340	53.55
84.370	82.18	81.100	185.10	77.260	61.41
84.320	88.39	81.050	194.70	77.180	48.32
84.280	108.40	81.010	164.40	77.100	44.16
84.230	108.80	80.970	186.90	77.020	46.48
84.180	94.74	80.920	172.90	76.920	38.02
84.140	90.63	80.880	145.00	76.800	24.02
84.090	84.77	80.840	141.80	76.680	30.18
84.050	81.32	80.790	121.90	76.560	27.49
84.000	75.17	80.750	93.75	76.440	15.75
83.950	54.63	80.710	90.91	76.320	19.45
83.910	49.40	80.660	73.37	76.200	11.11
83.860	52.59	80.620	84.62	76.080	11.04
83.820	65.33	80.560	59.18	75.980	23.21
83.770	76.45	80.470	43.46	75.900	23.79
83.730	83.97	80.380	41.43	75.820	31.43
83.680	97.28	80.300	32.49	75.760	43.18
83.640	118.20	80.190	21.20	75.720	69.44
83.590	142.40	80.060	20.30	75.690	76.11
83.540	146.20	79.940	20.16	75.650	95.80

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
75.610	126.10	72.640	69.78	69.990	98.97
75.570	154.00	72.610	71.17	69.950	100.90
75.530	174.60	72.570	73.45	69.920	129.40
75.490	184.50	72.530	56.29	69.880	148.70
75.450	180.50	72.490	80.80	69.850	156.40
75.410	183.50	72.460	83.85	69.810	178.80
75.370	172.10	72.420	79.89	69.780	199.50
75.330	148.60	72.380	111.80	69.740	220.50
75.290	132.60	72.350	151.50	69.710	251.70
75.260	109.60	72.310	164.20	69.680	243.80
75.220	78.72	72.270	162.80	69.640	225.50
75.180	70.94	72.240	181.90	69.610	234.00
75.140	61.78	72.200	168.70	69.570	188.50
75.100	41.39	72.170	164.90	69.540	179.40
75.060	49.33	72.130	142.00	69.500	145.80
75.020	36.49	72.090	134.00	69.470	93.18
74.960	45.90	72.060	118.60	69.430	95.72
74.890	35.83	72.020	70.58	69.400	77.09
74.810	28.18	71.980	64.34	69.360	53.70
74.730	19.25	71.950	69.91	69.310	46.47
74.660	18.69	71.890	55.62	69.240	37.42
74.580	10.01	71.820	29.32	69.180	26.64
74.480	26.80	71.750	32.77	69.110	34.36
74.370	38.94	71.670	26.77	69.040	31.42
74.250	40.68	71.580	28.21	68.970	40.63
74.140	33.29	71.480	23.86	68.920	48.31
74.030	38.84	71.370	19.43	68.890	53.54
73.910	40.34	71.260	6.80	68.850	69.15
73.800	28.72	71.150	14.40	68.820	80.71
73.690	20.90	71.050	14.70	68.780	113.30
73.570	13.85	70.940	22.28	68.750	131.40
73.460	14.64	70.830	2.82	68.720	103.40
73.350	19.22	70.730	20.77	68.680	122.20
73.270	21.31	70.620	38.65	68.650	104.80
73.240	38.34	70.550	50.40	68.610	111.80
73.200	48.96	70.510	86.82	68.580	112.50
73.160	64.21	70.480	83.14	68.550	65.08
73.120	75.63	70.440	108.90	68.500	63.12
73.090	110.50	70.410	136.80	68.450	55.80
73.050	138.10	70.370	153.70	68.400	43.89
73.010	161.30	70.340	167.10	68.350	37.24
72.980	157.50	70.300	167.50	68.300	35.83
72.940	199.20	70.270	162.70	68.250	47.73
72.900	204.20	70.230	181.90	68.200	51.42
72.860	196.70	70.200	151.80	68.150	77.31
72.830	170.70	70.160	140.80	68.100	87.10
72.790	156.70	70.130	115.50	68.050	85.13
72.750	141.90	70.090	104.30	68.000	90.14
72.720	113.50	70.060	94.87	67.950	84.63
72.680	115.20	70.020	87.74	67.900	89.01

• E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
67.850	57.74	64.550	7.94	61.100	189.20
67.800	45.32	64.480	5.91	61.070	168.60
67.750	39.73	64.380	19.27	61.040	153.30
67.700	54.17	64.290	13.86	61.010	138.40
67.650	27.54	64.200	17.25	60.990	125.40
67.600	41.43	64.110	7.07	60.960	116.10
67.550	54.34	64.020	1.25	60.930	110.20
67.500	59.20	63.930	9.64	60.900	107.90
67.450	86.28	63.830	10.58	60.870	103.70
67.400	86.59	63.740	14.37	60.840	128.70
67.350	90.20	63.650	11.12	60.810	121.40
67.300	76.09	63.560	27.69	60.770	121.20
67.250	74.54	63.470	15.13	60.720	111.00
67.210	57.55	63.380	27.19	60.680	96.78
67.160	42.87	63.290	27.89	60.640	92.45
67.080	21.01	63.200	48.14	60.600	60.16
66.980	16.80	63.110	24.29	60.560	51.81
66.890	13.80	63.020	29.84	60.510	37.36
66.790	12.85	62.930	28.76	60.470	37.66
66.690	21.49	62.840	23.56	60.430	17.40
66.590	26.20	62.750	10.61	60.390	22.41
66.500	22.36	62.670	21.36	60.350	7.32
66.420	54.49	62.580	36.37	60.300	19.13
66.380	71.52	62.490	39.71	60.260	28.91
66.330	76.97	62.400	24.47	60.220	38.76
66.280	114.60	62.310	21.05	60.180	26.73
66.230	102.00	62.220	7.61	60.140	45.42
66.180	107.60	62.140	14.30	60.100	79.66
66.140	82.50	62.050	24.59	60.050	63.84
66.090	69.13	61.960	17.26	60.010	72.34
66.040	62.00	61.880	12.31	59.970	57.52
65.990	36.04	61.790	2.23	59.930	73.64
65.940	24.81	61.700	25.95	59.890	74.48
65.900	20.77	61.620	22.71	59.850	61.05
65.820	15.71	61.560	40.04	59.800	28.86
65.730	16.42	61.530	56.39	59.760	41.11
65.630	9.01	61.500	39.20	59.720	25.73
65.540	10.56	61.470	62.92	59.680	30.47
65.440	15.96	61.440	79.56	59.640	24.30
65.350	18.74	61.410	96.99	59.600	32.06
65.250	19.34	61.390	109.10	59.560	21.72
65.160	4.09	61.360	148.20	59.520	21.33
65.070	17.44	61.330	162.40	59.480	9.74
64.990	29.34	61.300	177.60	59.450	16.28
64.930	35.96	61.270	207.10	59.410	20.26
64.860	45.58	61.240	228.60	59.350	40.36
64.800	42.58	61.210	256.40	59.300	37.27
64.740	32.94	61.190	282.80	59.250	67.78
64.680	32.70	61.160	243.10	59.190	65.46
64.620	17.37	61.130	217.40	59.140	83.07

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
59.080	77.27	55.470	20.33	52.680	36.60
59.030	62.43	55.420	18.33	52.630	22.75
58.980	61.62	55.350	20.30	52.590	21.60
58.920	48.05	55.250	13.47	52.540	21.16
58.870	45.07	55.150	18.58	52.500	17.76
58.810	56.28	55.050	15.59	52.450	18.46
58.760	46.89	54.980	34.82	52.400	17.03
58.710	52.60	54.930	20.64	52.340	21.95
58.650	37.93	54.880	34.78	52.250	20.09
58.600	20.52	54.840	44.89	52.160	24.59
58.550	20.50	54.790	77.51	52.070	20.70
58.470	11.85	54.740	93.84	51.980	11.77
58.360	11.30	54.690	113.20	51.890	13.36
58.250	3.37	54.640	164.80	51.800	8.63
58.150	13.16	54.600	190.00	51.710	9.55
58.040	3.35	54.550	189.10	51.620	18.28
57.940	8.94	54.500	194.10	51.560	17.00
57.830	15.47	54.450	162.60	51.510	36.20
57.730	7.87	54.400	125.30	51.470	59.02
57.620	12.03	54.360	102.40	51.420	47.50
57.520	9.14	54.310	69.88	51.380	92.84
57.420	16.86	54.260	67.88	51.340	117.90
57.310	9.00	54.210	35.48	51.290	128.90
57.210	7.24	54.170	68.42	51.250	126.10
57.110	19.56	54.120	67.68	51.210	121.60
57.000	15.95	54.070	72.79	51.160	89.44
56.900	13.17	54.020	82.35	51.120	78.31
56.800	8.50	53.980	81.39	51.070	48.80
56.700	2.25	53.930	66.78	51.030	40.55
56.590	6.47	53.880	69.19	50.990	42.60
56.490	10.87	53.830	46.79	50.940	15.84
56.420	23.82	53.790	45.00	50.880	15.03
56.370	15.53	53.720	28.87	50.790	11.03
56.320	8.25	53.620	19.96	50.710	12.91
56.270	20.53	53.530	24.67	50.620	9.74
56.220	41.58	53.440	21.16	50.540	3.29
56.170	40.86	53.340	35.93	50.450	10.71
56.120	37.41	53.270	67.24	50.360	26.01
56.070	76.65	53.230	106.40	50.280	15.86
56.020	118.30	53.180	134.20	50.190	29.71
55.970	134.30	53.140	179.10	50.110	19.88
55.920	160.60	53.090	218.70	50.030	8.97
55.870	165.80	53.040	206.70	49.940	13.99
55.820	150.50	53.000	231.00	49.860	19.83
55.770	138.90	52.950	184.80	49.770	9.88
55.720	100.90	52.910	132.20	49.690	-2.88
55.670	71.31	52.860	119.70	49.630	-3.58
55.620	41.30	52.810	73.06	49.590	18.84
55.570	41.47	52.770	45.87	49.540	40.96
55.520	36.56	52.720	41.69	49.500	40.71

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
49.460	48.37	47.100	82.61	44.340	45.46
49.420	74.45	47.070	48.62	44.310	49.19
49.380	76.88	47.030	53.04	44.270	42.17
49.340	91.74	46.990	40.20	44.240	50.50
49.300	100.30	46.950	18.42	44.200	68.73
49.250	98.84	46.910	25.15	44.170	66.88
49.210	79.98	46.870	24.39	44.130	84.76
49.170	61.32	46.840	7.61	44.100	68.48
49.130	45.20	46.800	21.41	44.060	74.78
49.090	32.34	46.740	11.83	44.030	61.87
49.050	42.44	46.660	14.36	43.990	41.34
49.010	14.40	46.590	5.28	43.960	48.90
48.970	17.91	46.510	11.97	43.920	31.85
48.930	28.10	46.440	18.84	43.890	32.49
48.890	13.75	46.360	8.00	43.840	13.35
48.850	17.09	46.290	6.61	43.770	14.24
48.800	18.50	46.210	6.79	43.700	10.02
48.760	33.62	46.140	13.96	43.630	22.68
48.720	20.51	46.060	21.18	43.560	10.40
48.680	46.44	45.990	10.99	43.490	13.79
48.640	58.62	45.910	14.71	43.430	20.24
48.600	62.08	45.840	6.94	43.360	21.38
48.560	59.17	45.770	23.21	43.290	36.82
48.520	62.58	45.690	15.14	43.240	27.63
48.480	59.73	45.620	29.47	43.200	52.38
48.440	49.10	45.560	39.44	43.170	110.50
48.400	38.60	45.530	63.60	43.140	125.70
48.360	47.17	45.490	93.28	43.100	171.10
48.320	9.70	45.450	109.90	43.070	237.60
48.280	34.34	45.420	147.90	43.040	293.70
48.240	22.12	45.380	145.20	43.000	340.40
48.200	17.15	45.340	171.00	42.970	398.50
48.160	8.53	45.310	137.20	42.930	369.00
48.120	1.61	45.270	121.30	42.900	358.30
48.060	10.31	45.240	102.20	42.870	319.30
47.980	3.88	45.200	94.21	42.830	247.50
47.900	7.63	45.160	75.56	42.800	173.50
47.820	10.31	45.130	54.94	42.770	141.80
47.750	10.72	45.090	40.03	42.730	90.79
47.670	16.90	45.050	23.81	42.700	95.09
47.590	9.41	45.000	26.07	42.670	62.26
47.510	12.33	44.930	12.38	42.630	54.10
47.430	6.56	44.860	13.18	42.600	27.80
47.370	16.38	44.790	11.19	42.550	33.56
47.340	12.65	44.710	7.40	42.490	26.50
47.300	36.84	44.640	16.14	42.420	22.83
47.260	48.05	44.570	13.33	42.350	18.10
47.220	57.39	44.500	15.53	42.290	18.22
47.180	61.63	44.430	14.42	42.220	23.65
47.140	66.10	44.380	27.54	42.160	25.32

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
42.090	17.88	40.120	6.27	37.870	105.50
42.030	14.53	40.060	0.92	37.840	103.80
41.960	16.30	39.990	7.12	37.810	75.22
41.900	32.30	39.930	12.19	37.790	73.70
41.850	28.38	39.870	2.73	37.760	45.09
41.820	55.13	39.810	13.20	37.730	44.25
41.790	76.75	39.750	25.48	37.700	44.18
41.750	120.00	39.700	25.99	37.660	32.00
41.720	146.00	39.650	35.95	37.610	31.12
41.690	203.20	39.620	35.92	37.550	31.92
41.660	247.00	39.590	62.82	37.500	26.71
41.620	302.40	39.560	98.63	37.440	22.00
41.590	331.20	39.530	104.00	37.390	27.54
41.560	347.70	39.500	94.07	37.330	36.20
41.530	364.80	39.470	118.90	37.290	57.67
41.500	350.50	39.440	111.90	37.270	60.10
41.470	354.40	39.410	69.95	37.240	95.93
41.430	313.00	39.380	65.72	37.210	112.40
41.400	289.30	39.350	60.39	37.180	170.10
41.370	294.10	39.330	53.84	37.160	203.10
41.340	262.50	39.300	42.03	37.130	252.90
41.310	226.80	39.270	49.24	37.100	294.20
41.280	219.10	39.220	26.05	37.080	313.80
41.240	238.00	39.160	12.99	37.050	351.10
41.210	189.10	39.110	11.77	37.020	370.70
41.180	158.20	39.050	17.75	37.000	370.90
41.150	116.20	38.990	5.08	36.970	306.90
41.120	107.60	38.930	20.13	36.940	286.50
41.090	79.78	38.870	7.49	36.920	250.00
41.050	94.13	38.820	5.95	36.890	204.30
41.020	79.92	38.760	8.20	36.860	186.40
40.990	83.38	38.700	12.31	36.840	141.40
40.960	83.74	38.640	20.69	36.810	160.70
40.930	67.32	38.590	14.40	36.780	173.80
40.900	67.56	38.530	9.90	36.760	166.30
40.870	56.77	38.470	3.33	36.730	166.20
40.840	44.27	38.420	12.61	36.700	167.70
40.810	36.83	38.360	7.72	36.680	174.30
40.770	35.49	38.300	10.27	36.650	168.00
40.740	22.36	38.250	23.82	36.620	162.50
40.710	26.71	38.190	25.81	36.600	148.60
40.670	23.71	38.130	33.76	36.570	129.10
40.600	37.88	38.090	49.64	36.540	103.60
40.540	23.05	38.060	60.16	36.520	61.62
40.480	28.89	38.040	74.12	36.490	51.54
40.420	17.05	38.010	101.50	36.470	37.93
40.360	20.06	37.980	101.00	36.440	37.16
40.300	9.09	37.950	137.20	36.400	33.83
40.240	10.43	37.920	111.80	36.350	20.68
40.180	10.42	37.900	107.30	36.300	17.70

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
36.240	17.38	34.120	114.50	32.730	14.91
36.190	11.80	34.100	135.30	32.680	1.19
36.130	16.98	34.070	195.90	32.640	25.65
36.050	13.26	34.050	236.70	32.590	10.86
35.970	9.13	34.020	279.80	32.550	34.35
35.890	4.40	34.000	305.10	32.500	34.32
35.820	18.95	33.980	354.60	32.460	52.16
35.740	22.27	33.950	328.70	32.420	39.96
35.670	2.49	33.930	362.20	32.370	35.26
35.590	19.44	33.910	356.30	32.330	30.39
35.530	11.37	33.880	312.80	32.280	24.55
35.480	18.58	33.860	259.80	32.240	14.16
35.430	17.02	33.840	204.50	32.190	14.28
35.380	27.40	33.810	184.70	32.120	27.77
35.330	19.06	33.790	139.60	32.060	17.42
35.280	22.79	33.770	127.00	31.990	7.13
35.240	36.06	33.740	81.55	31.930	6.62
35.210	43.40	33.720	81.45	31.860	9.18
35.190	54.37	33.700	44.70	31.800	11.23
35.160	62.67	33.660	48.37	31.730	9.19
35.140	81.15	33.610	44.61	31.680	19.56
35.110	109.20	33.570	25.64	31.640	22.62
35.090	133.50	33.520	22.97	31.600	37.92
35.060	159.70	33.480	33.27	31.550	41.82
35.040	207.80	33.430	48.97	31.510	55.59
35.010	203.90	33.390	76.98	31.470	64.78
34.990	200.80	33.370	73.21	31.430	53.63
34.970	217.80	33.350	89.21	31.390	46.05
34.940	191.80	33.330	90.82	31.340	42.02
34.920	164.90	33.300	134.70	31.300	46.66
34.890	134.20	33.280	175.00	31.260	59.78
34.870	104.40	33.260	167.80	31.220	70.81
34.840	99.22	33.230	207.80	31.190	110.00
34.820	56.86	33.210	200.10	31.170	145.40
34.780	53.29	33.190	204.20	31.150	156.50
34.730	31.57	33.170	198.90	31.130	163.70
34.680	19.33	33.140	183.40	31.110	195.80
34.640	24.38	33.120	162.10	31.080	196.40
34.590	30.35	33.100	129.90	31.060	200.20
34.540	17.89	33.070	122.70	31.040	179.10
34.490	21.11	33.050	82.03	31.020	184.40
34.440	13.29	33.030	61.47	31.000	166.20
34.390	11.24	33.010	52.83	30.980	120.30
34.350	12.86	32.980	44.55	30.960	115.70
34.300	20.64	32.960	36.33	30.940	103.40
34.250	21.09	32.940	25.54	30.920	96.67
34.210	48.06	32.910	21.82	30.900	56.87
34.190	54.18	32.860	16.34	30.880	54.41
34.170	77.77	32.820	11.47	30.860	51.13
34.140	95.03	32.770	12.18	30.840	30.47

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
30.820	30.48	29.570	17.81	28.640	157.90
30.790	26.26	29.550	22.47	28.620	128.70
30.750	19.76	29.530	32.21	28.600	114.90
30.710	31.07	29.520	44.69	28.580	86.65
30.670	16.62	29.500	36.64	28.560	82.43
30.630	25.74	29.480	45.01	28.550	63.22
30.580	14.67	29.460	78.56	28.530	43.21
30.540	19.66	29.440	74.45	28.510	38.27
30.500	1.19	29.420	101.10	28.490	47.05
30.460	18.36	29.400	118.30	28.470	35.48
30.420	12.31	29.380	140.90	28.460	22.39
30.380	12.42	29.360	137.20	28.440	34.75
30.340	24.97	29.340	174.30	28.420	35.38
30.300	48.59	29.330	194.00	28.400	29.57
30.270	48.71	29.310	213.40	28.380	15.78
30.260	80.42	29.290	203.20	28.370	24.60
30.240	95.50	29.270	209.40	28.350	22.94
30.220	115.80	29.250	182.60	28.330	7.06
30.200	119.60	29.230	144.20	28.310	12.22
30.180	124.60	29.210	179.50	28.290	0.50
30.160	144.70	29.190	108.90	28.280	-3.53
30.140	147.30	29.170	101.10	28.260	22.55
30.120	126.60	29.160	62.22	28.240	14.05
30.100	151.20	29.140	66.87	28.220	2.09
30.080	134.50	29.120	58.16	28.200	14.21
30.060	109.10	29.100	59.63	28.190	-2.41
30.040	105.20	29.080	43.52	28.170	25.25
30.020	80.96	29.060	53.08	28.150	13.16
30.000	75.29	29.040	47.23	28.130	16.94
29.980	49.72	29.020	26.68	28.120	20.52
29.960	33.12	29.010	41.98	28.100	4.59
29.940	25.88	28.990	53.11	28.080	21.47
29.920	23.51	28.970	64.21	28.060	10.50
29.900	11.99	28.950	48.47	28.040	18.70
29.880	31.53	28.930	68.90	28.030	19.55
29.860	26.57	28.910	84.62	28.010	10.21
29.840	35.49	28.890	100.80	27.990	1.46
29.820	17.52	28.880	142.00	27.970	10.16
29.800	19.74	28.860	164.20	27.960	19.42
29.780	6.85	28.840	189.60	27.940	16.94
29.770	-0.96	28.820	226.30	27.920	5.61
29.750	10.62	28.800	267.50	27.900	25.78
29.730	13.21	28.780	265.20	27.890	3.57
29.710	18.23	28.770	304.70	27.870	25.78
29.690	28.62	28.750	286.00	27.850	16.01
29.670	17.51	28.730	268.70	27.830	10.59
29.650	24.67	28.710	304.90	27.820	10.13
29.630	22.77	28.690	266.80	27.800	16.29
29.610	30.11	28.670	233.90	27.780	10.86
29.590	28.10	28.660	202.40	27.760	28.48

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
27.750	13.89	26.880	218.80	25.680	27.53
27.730	12.66	26.860	238.90	25.650	1.88
27.710	11.78	26.850	274.20	25.620	20.09
27.690	32.27	26.830	340.20	25.590	23.46
27.680	-4.82	26.810	364.30	25.570	23.97
27.660	14.27	26.800	374.00	25.550	23.84
27.640	11.37	26.780	434.00	25.540	31.89
27.620	26.00	26.760	418.30	25.520	26.95
27.610	23.44	26.750	432.20	25.510	58.92
27.590	24.09	26.730	432.00	25.490	47.77
27.570	33.13	26.710	400.10	25.480	34.23
27.560	37.60	26.700	343.60	25.460	67.38
27.540	39.05	26.680	318.70	25.440	50.41
27.520	36.38	26.660	269.90	25.430	66.26
27.500	51.91	26.650	213.40	25.410	45.95
27.470	82.76	26.630	190.30	25.400	55.92
27.450	85.83	26.620	147.60	25.380	53.72
27.440	100.40	26.600	137.70	25.370	47.72
27.420	108.30	26.580	113.20	25.350	58.30
27.400	139.60	26.570	90.39	25.340	57.67
27.380	145.60	26.550	80.44	25.320	27.74
27.370	138.60	26.530	76.23	25.310	28.56
27.350	160.90	26.520	58.10	25.290	41.61
27.330	145.60	26.500	48.10	25.250	14.72
27.320	151.40	26.480	20.47	25.220	15.59
27.300	132.00	26.470	13.54	25.190	14.02
27.280	125.10	26.440	33.93	25.160	12.57
27.260	111.00	26.410	28.65	25.130	7.21
27.250	86.18	26.380	27.06	25.100	5.36
27.230	83.46	26.350	24.40	25.070	24.52
27.210	48.32	26.320	24.84	25.040	16.51
27.200	58.65	26.280	32.42	25.010	27.44
27.180	32.25	26.250	26.80	24.980	21.81
27.160	35.33	26.220	24.85	24.960	28.25
27.150	28.13	26.190	30.89	24.930	7.15
27.130	39.69	26.160	31.93	24.900	13.38
27.110	25.43	26.120	16.78	24.870	21.28
27.100	30.53	26.090	17.67	24.840	8.33
27.080	35.20	26.060	20.87	24.810	17.00
27.060	41.21	26.030	-5.86	24.780	12.95
27.050	31.75	26.000	1.32	24.750	25.01
27.030	48.01	25.960	14.31	24.730	28.64
27.010	32.81	25.930	9.69	24.710	40.03
27.000	55.43	25.900	7.93	24.700	36.16
26.980	72.76	25.870	6.99	24.680	42.67
26.960	76.59	25.840	13.66	24.670	44.91
26.950	108.10	25.810	28.93	24.650	48.82
26.930	136.20	25.780	7.57	24.640	61.41
26.910	144.90	25.750	23.08	24.620	82.62
26.900	190.40	25.710	4.24	24.610	114.40

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
24.600	129.90	23.590	8.88	22.650	428.70
24.580	144.70	23.560	16.34	22.640	449.40
24.570	175.60	23.530	35.66	22.630	439.10
24.550	184.70	23.510	16.59	22.620	347.40
24.540	245.50	23.480	25.49	22.600	338.50
24.520	263.00	23.450	8.96	22.590	330.50
24.510	269.70	23.430	6.78	22.580	255.20
24.490	295.10	23.400	26.92	22.560	246.80
24.480	364.70	23.370	27.71	22.550	187.00
24.460	376.30	23.340	16.11	22.540	181.50
24.450	343.90	23.320	16.15	22.530	174.20
24.440	316.70	23.290	9.17	22.510	131.10
24.420	313.50	23.260	30.16	22.500	103.40
24.410	271.20	23.240	28.18	22.490	92.67
24.390	260.50	23.210	16.99	22.480	104.90
24.380	187.70	23.180	23.33	22.460	65.69
24.360	164.40	23.160	34.84	22.450	51.45
24.350	159.60	23.130	12.57	22.440	65.54
24.340	128.60	23.100	29.40	22.430	49.45
24.320	92.53	23.080	19.41	22.410	39.47
24.310	95.43	23.050	26.07	22.400	32.80
24.290	82.50	23.030	8.96	22.390	51.39
24.280	45.61	23.020	19.58	22.370	17.07
24.260	30.97	23.010	31.95	22.360	20.15
24.250	46.19	22.990	28.02	22.350	40.47
24.240	49.15	22.980	36.18	22.330	14.31
24.220	7.00	22.970	68.95	22.310	11.93
24.210	11.01	22.950	48.59	22.280	37.75
24.190	43.20	22.940	68.63	22.260	27.70
24.170	23.85	22.930	61.20	22.230	17.58
24.140	30.84	22.910	93.31	22.210	14.03
24.120	17.75	22.900	140.10	22.180	24.85
24.090	23.02	22.890	185.00	22.160	14.74
24.060	15.85	22.870	202.30	22.130	23.05
24.030	21.52	22.860	212.30	22.110	21.24
24.000	4.20	22.850	283.90	22.090	23.25
23.970	19.35	22.840	306.40	22.070	46.21
23.950	20.86	22.820	353.00	22.060	19.62
23.920	0.93	22.810	429.60	22.050	27.90
23.890	26.04	22.800	446.70	22.040	46.82
23.860	9.58	22.780	475.50	22.030	18.85
23.840	19.88	22.770	494.50	22.010	50.67
23.810	10.93	22.760	602.20	22.000	45.45
23.780	23.00	22.740	599.70	21.990	63.13
23.750	5.50	22.730	546.00	21.980	45.31
23.730	11.35	22.720	613.50	21.970	69.40
23.700	-1.15	22.710	511.90	21.960	86.40
23.670	30.57	22.690	573.20	21.950	57.30
23.640	2.70	22.680	508.40	21.930	79.29
23.620	16.93	22.670	447.00	21.920	84.21

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
21.910	84.94	21.210	296.30	20.540	13.03
21.900	75.42	21.190	333.70	20.520	-0.96
21.880	99.58	21.180	408.90	20.500	19.41
21.870	80.20	21.170	422.00	20.470	19.43
21.860	64.36	21.160	432.70	20.450	35.64
21.850	95.67	21.150	546.40	20.430	19.32
21.840	55.87	21.140	532.20	20.410	8.13
21.820	54.48	21.120	512.60	20.390	14.09
21.810	35.67	21.110	538.00	20.360	22.32
21.800	77.55	21.100	570.60	20.340	20.62
21.790	34.32	21.090	492.90	20.320	12.86
21.780	32.72	21.080	509.40	20.300	18.11
21.760	19.16	21.070	553.00	20.280	25.38
21.750	21.17	21.060	467.90	20.260	22.16
21.740	27.92	21.040	500.10	20.230	19.17
21.730	46.35	21.030	436.60	20.210	11.69
21.710	19.58	21.020	457.50	20.190	14.28
21.700	29.12	21.010	372.10	20.170	4.95
21.690	24.59	21.000	302.60	20.150	14.65
21.670	20.62	20.990	312.40	20.130	24.18
21.650	14.93	20.970	318.80	20.100	34.31
21.620	28.85	20.960	296.30	20.080	31.42
21.600	25.29	20.950	246.10	20.060	30.58
21.580	25.27	20.940	241.00	20.050	42.41
21.550	18.74	20.930	204.70	20.030	16.34
21.530	21.74	20.920	217.70	20.020	40.26
21.510	20.23	20.910	183.20	20.010	43.43
21.480	36.39	20.890	180.80	20.000	32.79
21.460	1.30	20.880	137.70	19.990	42.17
21.450	36.64	20.870	187.00	19.980	41.97
21.440	56.65	20.860	87.22	19.970	44.83
21.430	35.88	20.850	97.17	19.960	35.00
21.420	28.98	20.840	57.47	19.950	32.01
21.400	26.73	20.830	96.29	19.940	52.60
21.390	36.23	20.820	54.69	19.930	46.46
21.380	30.34	20.800	55.43	19.920	66.84
21.370	45.46	20.790	41.55	19.910	38.33
21.360	70.56	20.780	56.41	19.900	29.61
21.350	54.20	20.770	38.12	19.890	68.57
21.330	71.19	20.760	22.13	19.880	46.65
21.320	60.31	20.750	23.37	19.870	57.09
21.310	70.51	20.740	25.18	19.850	55.65
21.300	81.64	20.720	14.89	19.840	45.61
21.290	111.00	20.700	8.32	19.830	33.93
21.280	125.40	20.670	8.63	19.820	51.04
21.260	109.80	20.650	15.49	19.810	33.37
21.250	165.60	20.630	14.37	19.800	30.75
21.240	229.20	20.610	13.32	19.790	36.31
21.230	220.10	20.590	33.09	19.780	26.56
21.220	248.80	20.560	0.17	19.770	35.55

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
19.760	43.24	19.150	13.49	18.250	5.34
19.750	23.07	19.130	25.71	18.240	47.81
19.740	32.60	19.110	20.68	18.230	27.61
19.730	27.42	19.090	13.58	18.220	5.25
19.720	19.70	19.070	16.43	18.210	29.35
19.710	31.47	19.050	-0.61	18.200	41.71
19.700	44.55	19.030	18.56	18.200	50.86
19.690	43.55	19.010	15.04	18.190	65.27
19.680	54.37	18.990	19.67	18.180	29.63
19.670	41.99	18.970	17.33	18.170	19.90
19.660	39.41	18.950	13.58	18.160	33.87
19.650	73.32	18.930	8.14	18.150	65.82
19.630	73.17	18.910	21.13	18.140	49.23
19.620	78.74	18.890	18.53	18.130	35.15
19.610	98.09	18.880	2.51	18.120	53.26
19.600	95.52	18.860	3.59	18.110	38.39
19.590	110.30	18.840	11.42	18.100	63.60
19.580	98.53	18.820	12.74	18.090	31.58
19.570	93.84	18.800	12.58	18.090	3.61
19.560	125.30	18.780	4.78	18.080	49.14
19.550	126.10	18.760	13.10	18.070	25.64
19.540	116.40	18.740	14.93	18.060	26.60
19.530	107.30	18.720	17.47	18.050	46.96
19.520	103.40	18.700	11.45	18.040	31.88
19.510	128.00	18.680	11.87	18.030	40.37
19.500	121.80	18.660	16.36	18.020	15.09
19.490	48.98	18.640	9.74	18.010	44.26
19.480	102.90	18.620	6.11	18.010	45.71
19.470	50.64	18.600	17.74	18.000	72.59
19.460	92.25	18.590	13.57	17.990	86.82
19.450	72.50	18.570	-0.74	17.980	48.98
19.440	63.84	18.550	15.40	17.970	70.69
19.430	58.21	18.530	19.51	17.960	76.89
19.420	31.10	18.510	14.46	17.950	86.48
19.410	18.16	18.490	19.41	17.940	86.22
19.400	35.52	18.470	8.39	17.930	104.50
19.390	37.85	18.450	5.50	17.930	111.30
19.380	9.21	18.430	16.82	17.920	147.90
19.370	16.11	18.410	11.58	17.910	114.10
19.360	16.46	18.400	15.81	17.900	127.90
19.350	43.85	18.380	24.43	17.890	134.00
19.330	14.17	18.360	33.79	17.880	145.10
19.310	-5.96	18.340	15.70	17.870	146.50
19.290	12.91	18.320	18.89	17.860	150.80
19.270	6.95	18.310	-4.67	17.850	140.80
19.250	3.65	18.300	22.70	17.840	126.60
19.230	7.77	18.290	30.54	17.840	133.30
19.210	-2.24	18.280	25.07	17.830	117.80
19.190	16.80	18.270	33.46	17.820	99.48
19.170	5.40	18.260	18.26	17.810	105.60

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
17.800	97.69	17.040	24.56	16.500	50.85
17.790	90.12	17.030	11.51	16.490	52.03
17.780	87.56	17.010	26.32	16.480	80.90
17.770	66.17	16.990	38.03	16.470	45.70
17.760	83.22	16.980	16.32	16.470	37.25
17.760	41.96	16.960	18.80	16.460	70.41
17.750	34.34	16.940	26.74	16.450	38.47
17.740	24.53	16.930	26.92	16.440	76.11
17.730	32.34	16.910	31.17	16.430	46.73
17.720	33.62	16.890	5.06	16.430	60.96
17.710	29.21	16.880	6.94	16.420	42.86
17.700	40.53	16.860	16.56	16.410	24.78
17.690	47.84	16.840	25.85	16.400	40.46
17.680	26.19	16.830	32.69	16.390	78.48
17.660	51.41	16.810	20.65	16.390	70.53
17.640	9.69	16.790	36.51	16.380	58.91
17.630	31.45	16.780	26.09	16.370	42.01
17.610	15.09	16.760	12.06	16.360	105.80
17.590	33.52	16.760	45.11	16.360	50.12
17.570	8.37	16.750	14.47	16.350	102.90
17.560	28.44	16.740	62.44	16.340	105.90
17.540	22.41	16.730	41.09	16.330	121.00
17.520	16.96	16.720	28.22	16.320	151.70
17.500	14.89	16.720	52.16	16.320	155.90
17.490	22.59	16.710	53.38	16.310	187.60
17.470	7.96	16.700	47.19	16.300	203.10
17.450	14.77	16.690	46.69	16.290	203.90
17.430	12.83	16.680	74.40	16.280	236.60
17.420	9.38	16.680	59.63	16.280	241.30
17.400	0.62	16.670	73.52	16.270	256.10
17.380	8.78	16.660	84.45	16.260	287.40
17.370	11.66	16.650	122.70	16.250	284.60
17.350	13.99	16.640	87.37	16.250	319.10
17.330	3.03	16.630	111.50	16.240	353.80
17.310	-3.99	16.630	89.39	16.230	375.90
17.300	0.21	16.620	94.59	16.220	351.10
17.280	12.76	16.610	128.90	16.210	341.40
17.260	22.35	16.600	129.90	16.210	386.40
17.250	4.09	16.590	123.40	16.200	279.80
17.230	31.95	16.590	117.70	16.190	346.90
17.210	5.78	16.580	117.00	16.180	333.40
17.190	5.22	16.570	140.90	16.180	297.50
17.180	11.79	16.560	126.00	16.170	282.30
17.160	-3.16	16.550	93.68	16.160	237.00
17.140	-16.65	16.550	143.10	16.150	215.30
17.130	0.74	16.540	131.30	16.140	230.60
17.110	6.39	16.530	102.70	16.140	234.40
17.090	23.93	16.520	97.27	16.130	164.90
17.080	12.60	16.510	81.47	16.120	172.50
17.060	-2.12	16.510	84.51	16.110	185.30

$E(\text{eV})$	$\sigma(\text{b})$
16.110	133.80
16.100	155.50
16.090	95.80
16.080	101.60
16.080	119.80
16.070	79.18
16.060	74.45
16.050	80.58
16.040	44.09
16.040	47.93
16.030	72.54
16.020	58.58
16.010	53.22
16.010	55.57
16.000	50.14
15.990	41.12
15.980	45.06
15.980	25.69
15.970	13.39
15.960	16.28
15.950	25.41
15.950	37.69
15.940	13.66
15.930	30.00
15.910	31.86
15.900	35.81
15.880	32.00
15.870	20.41
15.850	40.13
15.840	24.55
15.820	28.31
15.810	17.95
15.790	29.64

APPENDIX B

A TABULATION OF THE TOTAL NEUTRON CROSS SECTION OF ^{243}Am FROM 0.5-57 eV

The total neutron cross section of ^{243}Am from 0.5-57 eV. The cross sections were derived from transmission data taken with a sample having an inverse thickness of 279.3 b/a. The resolution function was assumed to have a Gaussian shape and its full width at half maximum was obtained from the information given below.

Energy Range (eV)	<1.0	1-10	10-30	30-58
Accelerator Burst (nsec)	30	30	30	30
Channel Width (nsec)	640	320	160	80
Detector Thickness (cm)	1.25	1.25	1.25	1.25
Moderator Thickness (cm)	3.18	3.18	3.18	
Flight Path (m)	18.576	18.576	18.576	18.576

Note: In order for the theoretical fit to describe the experimental data, it was necessary to add the moderator and detector thicknesses together. This term was the dominant factor in determining the resolution width.

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
57.750	12.54	54.430	136.80	51.440	73.24
57.650	22.15	54.380	111.60	51.400	83.38
57.540	27.75	54.330	69.06	51.360	113.90
57.440	19.44	54.280	57.68	51.310	113.50
57.340	28.08	54.230	65.90	51.270	145.30
57.230	13.17	54.190	52.83	51.230	105.50
57.130	12.80	54.140	62.57	51.180	89.14
57.030	19.95	54.090	66.37	51.140	67.81
56.920	17.96	54.040	88.97	51.090	61.91
56.820	21.45	54.000	87.69	51.050	38.56
56.720	15.85	53.950	67.16	51.010	26.52
56.620	1.82	53.900	80.59	50.960	33.05
56.520	18.40	53.860	43.79	50.900	6.23
56.440	7.03	53.810	53.48	50.810	11.99
56.390	14.56	53.740	37.83	50.730	13.95
56.340	12.87	53.640	37.05	50.640	20.23
56.290	22.46	53.550	29.98	50.560	19.84
56.240	28.95	53.460	27.11	50.470	6.05
56.190	50.38	53.370	31.74	50.380	24.20
56.140	43.43	53.300	52.24	50.300	26.43
56.090	70.01	53.250	82.94	50.210	29.42
56.040	63.15	53.200	131.90	50.130	31.40
55.990	126.20	53.160	159.00	50.050	17.67
55.940	172.40	53.110	184.80	49.960	14.53
55.890	187.10	53.060	237.40	49.880	24.86
55.840	163.50	53.020	209.40	49.790	13.07
55.790	132.20	52.970	190.30	49.710	20.95
55.740	114.00	52.930	175.90	49.630	26.59
55.690	80.92	52.880	125.90	49.560	29.31
55.640	59.33	52.830	91.18	49.520	31.29
55.590	40.36	52.790	62.94	49.480	40.63
55.540	39.40	52.740	50.60	49.440	59.02
55.490	18.76	52.700	27.48	49.400	66.98
55.440	39.30	52.650	47.72	49.360	97.29
55.370	33.15	52.610	21.83	49.310	106.00
55.270	14.81	52.560	32.09	49.270	114.90
55.170	24.34	52.520	24.59	49.230	84.04
55.080	22.42	52.470	6.59	49.190	72.46
55.000	37.53	52.430	9.82	49.150	70.82
54.960	34.77	52.360	24.61	49.110	63.50
54.910	43.86	52.270	12.91	49.070	31.45
54.860	52.83	52.180	27.71	49.030	26.17
54.810	76.83	52.090	19.22	48.990	3.72
54.760	71.21	52.000	7.98	48.950	22.24
54.710	127.20	51.910	12.66	48.900	21.32
54.670	146.10	51.820	8.50	48.860	14.14
54.620	139.20	51.730	24.43	48.820	24.85
54.570	183.70	51.640	17.56	48.780	23.85
54.520	166.80	51.550	33.45	48.740	42.71
54.470	185.80	51.490	56.57	48.700	37.50

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
48.660	60.93	45.930	17.84	43.470	5.35
48.620	51.99	45.860	8.46	43.410	30.14
48.580	60.42	45.780	17.76	43.340	22.24
48.540	71.66	45.710	20.29	43.270	36.67
48.500	69.32	45.640	44.35	43.220	50.27
48.460	51.91	45.580	40.84	43.190	85.37
48.420	39.13	45.540	55.18	43.150	118.60
48.380	39.20	45.510	71.06	43.120	163.60
48.340	37.92	45.470	112.00	43.080	217.50
48.300	22.00	45.430	142.80	43.050	283.30
48.260	19.76	45.400	136.70	43.020	355.80
48.220	20.62	45.360	185.70	42.980	380.50
48.180	13.40	45.320	182.20	42.950	430.50
48.140	17.29	45.290	164.60	42.920	372.30
48.080	8.87	45.250	103.30	42.880	360.50
48.000	12.63	45.220	106.10	42.850	296.60
47.920	3.31	45.180	75.89	42.820	236.00
47.840	17.06	45.140	79.00	42.780	152.90
47.760	24.60	45.110	43.44	42.750	118.70
47.690	7.93	45.070	36.57	42.720	71.34
47.610	10.67	45.020	18.43	42.680	82.54
47.530	4.99	44.950	30.18	42.650	32.19
47.450	13.78	44.870	29.32	42.620	49.23
47.390	13.86	44.800	24.73	42.570	40.72
47.350	20.24	44.730	14.25	42.500	21.25
47.310	53.24	44.660	17.33	42.440	33.90
47.280	38.42	44.590	11.37	42.370	22.98
47.240	36.30	44.520	20.12	42.300	10.01
47.200	63.44	44.450	11.52	42.240	31.11
47.160	47.09	44.390	1.21	42.170	16.23
47.120	50.30	44.360	30.74	42.110	21.17
47.080	56.00	44.320	17.13	42.040	17.19
47.040	49.35	44.290	26.04	41.980	26.86
47.010	44.90	44.250	37.47	41.910	39.85
46.970	60.62	44.220	66.35	41.860	35.95
46.930	29.82	44.180	69.62	41.830	42.78
46.890	30.84	44.150	80.08	41.800	68.99
46.850	27.89	44.110	90.59	41.770	104.10
46.810	17.05	44.080	98.01	41.740	124.10
46.760	20.29	44.040	55.44	41.700	182.60
46.680	19.09	44.010	67.62	41.670	214.60
46.610	17.50	43.970	47.07	41.640	282.40
46.530	16.66	43.940	35.83	41.610	337.70
46.450	10.76	43.910	16.41	41.580	394.40
46.380	12.59	43.870	13.04	41.540	391.60
46.300	23.03	43.820	27.41	41.510	393.60
46.230	9.66	43.750	33.30	41.480	387.60
46.150	22.02	43.680	20.07	41.450	354.20
46.080	16.10	43.610	18.91	41.420	296.70
46.010	19.29	43.540	21.84	41.380	284.40

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
41.350	253.00	39.310	32.04	37.140	211.20
41.320	246.10	39.280	31.67	37.120	265.00
41.290	209.50	39.240	18.50	37.090	324.50
41.260	206.00	39.180	7.84	37.060	333.90
41.230	200.40	39.120	13.09	37.030	383.90
41.200	185.10	39.060	16.96	37.010	381.20
41.160	132.50	39.000	19.44	36.980	372.40
41.130	120.50	38.950	6.94	36.950	333.70
41.100	98.76	38.890	23.19	36.930	261.80
41.070	106.70	38.830	10.64	36.900	217.40
41.040	87.96	38.770	14.55	36.870	176.70
41.010	84.76	38.710	16.55	36.850	180.10
40.980	66.50	38.660	12.74	36.820	184.50
40.940	81.29	38.600	12.88	36.790	170.80
40.910	57.29	38.540	-1.12	36.770	171.80
40.880	78.40	38.490	0.42	36.740	154.80
40.850	37.32	38.430	16.03	36.710	181.60
40.820	50.58	38.370	27.77	36.690	186.00
40.790	29.04	38.320	0.32	36.660	157.90
40.760	14.14	38.260	3.06	36.640	183.10
40.730	39.85	38.200	16.08	36.610	140.90
40.680	27.92	38.150	42.81	36.580	131.30
40.620	23.46	38.100	50.04	36.560	102.40
40.560	27.43	38.080	40.79	36.530	97.45
40.500	30.93	38.050	80.36	36.500	73.56
40.430	27.86	38.020	97.20	36.480	68.39
40.370	35.12	37.990	127.90	36.450	48.51
40.310	24.68	37.960	138.00	36.410	42.85
40.250	17.17	37.940	103.90	36.360	28.64
40.190	13.83	37.910	143.60	36.310	11.49
40.130	24.45	37.880	113.10	36.260	37.85
40.070	19.94	37.850	108.90	36.200	11.33
40.010	11.99	37.830	90.07	36.140	10.67
39.950	12.52	37.800	80.82	36.060	19.81
39.890	10.05	37.770	72.91	35.980	11.14
39.830	10.82	37.740	55.88	35.910	14.66
39.770	17.30	37.720	62.32	35.830	21.04
39.710	26.73	37.690	30.66	35.750	8.83
39.660	27.88	37.650	39.09	35.680	21.89
39.630	62.63	37.590	36.76	35.600	13.49
39.600	81.99	37.540	43.28	35.540	2.91
39.580	98.55	37.480	34.29	35.490	19.77
39.550	115.10	37.430	26.25	35.440	17.85
39.520	126.80	37.370	15.25	35.390	24.48
39.490	121.90	37.320	41.35	35.340	17.91
39.460	102.70	37.280	53.91	35.290	8.47
39.430	101.20	37.250	83.20	35.250	34.18
39.400	82.99	37.220	109.60	35.220	59.83
39.370	83.40	37.200	123.90	35.200	53.20
39.340	46.23	37.170	186.00	35.170	55.74

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
35.150	89.10	33.620	30.32	31.690	21.28
35.120	102.60	33.580	39.50	31.650	23.59
35.100	131.20	33.530	24.31	31.610	32.64
35.080	172.90	33.490	36.65	31.560	47.87
35.050	195.90	33.440	46.36	31.520	37.31
35.030	191.20	33.410	39.20	31.480	59.46
35.000	203.10	33.380	76.44	31.440	61.01
34.980	204.90	33.360	79.11	31.400	46.73
34.950	185.10	33.340	113.40	31.350	42.51
34.930	181.80	33.310	130.50	31.310	48.45
34.900	155.00	33.290	161.30	31.270	48.49
34.880	135.30	33.270	153.80	31.230	68.64
34.850	104.20	33.240	192.40	31.200	101.80
34.830	78.81	33.220	210.00	31.160	129.00
34.790	49.52	33.200	212.20	31.160	147.90
34.740	44.08	33.180	231.60	31.140	148.00
34.690	24.20	33.150	215.00	31.110	189.50
34.650	19.23	33.130	171.70	31.090	197.90
34.600	19.68	33.110	167.50	31.070	203.30
34.550	29.17	33.090	132.30	31.050	200.00
34.500	14.20	33.060	105.20	31.030	190.70
34.450	12.87	33.040	96.33	31.000	156.40
34.400	27.34	33.020	68.05	30.960	128.20
34.360	31.57	32.990	62.20	30.920	76.15
34.310	21.54	32.970	38.94	30.880	55.23
34.260	30.51	32.950	62.39	30.840	42.59
34.230	32.78	32.920	36.73	30.800	35.97
34.200	43.79	32.870	28.33	30.740	23.22
34.180	56.03	32.830	8.47	30.650	7.14
34.150	83.01	32.780	18.22	30.570	11.11
34.130	109.00	32.740	-2.04	30.490	18.16
34.110	129.10	32.690	11.65	30.410	14.66
34.080	158.70	32.650	14.96	30.350	32.59
34.060	225.90	32.600	31.82	30.310	39.62
34.030	239.90	32.560	26.98	30.270	58.68
34.010	311.80	32.510	33.03	30.230	76.58
33.990	339.90	32.470	46.91	30.190	133.00
33.960	383.60	32.430	36.10	30.160	150.80
33.940	402.70	32.380	60.66	30.120	149.00
33.920	384.30	32.340	34.28	30.080	128.60
33.890	354.10	32.290	30.90	30.040	109.80
33.870	334.20	32.250	20.67	30.000	89.68
33.850	256.50	32.200	13.66	29.960	39.80
33.820	223.00	32.130	14.82	29.920	28.74
33.800	173.80	32.070	8.64	29.860	20.49
33.780	105.60	32.000	11.38	29.780	24.68
33.750	101.90	31.940	11.84	29.710	14.20
33.730	68.28	31.870	27.54	29.630	13.48
33.710	58.17	31.810	20.77	29.570	11.66
33.670	44.48	31.740	19.26	29.530	35.54

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
29.500	37.49	27.300	134.90	25.170	26.34
29.460	71.51	27.260	124.00	25.110	5.22
29.420	103.50	27.230	77.48	25.050	16.57
29.380	137.70	27.200	56.73	24.990	19.93
29.340	190.60	27.160	57.93	24.930	16.31
29.310	213.50	27.130	33.63	24.870	15.49
29.270	199.10	27.100	36.58	24.810	13.95
29.230	160.90	27.060	47.00	24.760	19.94
29.190	115.60	27.030	38.08	24.710	21.78
29.160	84.00	26.990	50.93	24.680	37.59
29.120	57.49	26.960	88.22	24.650	50.44
29.080	43.51	26.930	130.20	24.620	90.37
29.040	33.71	26.890	167.10	24.590	122.50
29.010	43.99	26.860	271.40	24.570	173.80
28.970	49.04	26.830	338.40	24.540	237.00
28.930	73.12	26.800	455.50	24.510	268.90
28.890	111.40	26.760	499.70	24.480	326.30
28.860	161.80	26.730	467.50	24.450	311.00
28.820	215.80	26.700	383.30	24.420	280.50
28.780	284.70	26.660	296.20	24.390	250.70
28.750	289.30	26.630	195.70	24.360	180.80
28.710	316.60	26.600	115.00	24.340	134.30
28.670	244.90	26.570	79.77	24.310	99.01
28.640	164.80	26.530	52.58	24.280	58.39
28.600	115.80	26.500	44.40	24.250	51.15
28.560	68.45	26.450	35.20	24.220	35.99
28.530	53.04	26.390	28.48	24.180	21.76
28.490	46.25	26.320	31.96	24.120	21.46
28.440	11.09	26.260	21.07	24.070	21.41
28.370	13.70	26.190	26.89	24.010	14.11
28.290	17.73	26.130	21.79	23.950	16.83
28.220	11.86	26.070	20.05	23.900	20.68
28.150	13.93	26.000	17.37	23.840	13.76
28.080	7.78	25.940	21.13	23.790	25.01
28.010	7.23	25.880	13.63	23.730	10.85
27.940	17.28	25.820	22.03	23.680	18.60
27.870	23.47	25.750	16.38	23.620	14.39
27.800	22.55	25.690	10.03	23.570	15.36
27.730	23.79	25.630	21.95	23.510	20.02
27.680	29.74	25.580	30.33	23.460	23.97
27.640	35.57	25.550	41.13	23.400	23.38
27.610	51.29	25.520	45.11	23.350	19.37
27.570	45.92	25.490	55.32	23.300	16.05
27.540	37.80	25.460	60.74	23.240	17.19
27.500	47.50	25.430	69.51	23.190	22.28
27.470	69.90	25.400	59.02	23.140	36.55
27.430	118.50	25.370	55.21	23.080	16.35
27.400	141.00	25.340	48.81	23.040	27.24
27.370	179.60	25.290	28.52	23.020	34.75
27.330	175.10	25.230	29.82	22.990	43.24

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
22.970	62.11	21.480	18.24	19.990	41.15
22.940	87.01	21.450	33.70	19.970	58.81
22.910	112.40	21.420	37.03	19.940	52.03
22.890	152.00	21.400	36.04	19.920	54.60
22.860	230.60	21.370	39.52	19.900	60.74
22.830	307.70	21.350	32.99	19.880	51.68
22.810	361.90	21.330	57.27	19.860	32.73
22.780	482.50	21.300	83.06	19.840	29.85
22.760	560.40	21.280	116.30	19.820	38.91
22.730	556.90	21.260	150.90	19.800	42.85
22.710	581.60	21.230	210.20	19.780	19.54
22.680	562.20	21.210	301.50	19.750	31.81
22.650	523.00	21.190	365.30	19.730	19.79
22.630	451.30	21.160	434.60	19.710	30.47
22.600	364.00	21.140	520.70	19.690	27.60
22.580	310.40	21.120	504.20	19.670	54.43
22.550	229.00	21.100	545.60	19.650	53.55
22.530	157.00	21.070	485.80	19.630	77.15
22.500	119.40	21.050	484.30	19.610	77.37
22.480	73.49	21.030	435.40	19.590	90.35
22.450	67.89	21.000	403.70	19.570	117.50
22.420	44.51	20.980	346.40	19.550	113.70
22.400	41.35	20.960	285.30	19.530	105.00
22.370	33.34	20.930	224.00	19.510	113.10
22.340	27.60	20.910	177.40	19.490	85.97
22.290	23.68	20.890	157.40	19.460	67.50
22.240	16.76	20.870	111.40	19.440	56.71
22.190	24.66	20.840	72.82	19.420	32.81
22.140	26.23	20.820	62.05	19.400	34.61
22.100	34.32	20.800	65.60	19.380	31.26
22.070	12.62	20.780	36.70	19.360	30.35
22.050	47.94	20.750	27.49	19.340	18.79
22.030	53.76	20.730	20.50	19.310	13.79
22.000	55.28	20.700	17.45	19.270	25.80
21.980	45.05	20.650	15.88	19.230	12.05
21.950	68.64	20.610	11.65	19.190	11.39
21.930	80.44	20.560	27.01	19.150	17.47
21.900	67.13	20.520	17.28	19.110	9.07
21.880	86.00	20.470	12.32	19.070	15.15
21.850	84.03	20.430	16.93	19.030	11.18
21.830	67.94	20.390	14.46	18.990	10.93
21.810	60.24	20.340	22.16	18.950	9.27
21.780	46.09	20.300	-1.57	18.910	8.63
21.760	44.07	20.260	22.76	18.870	8.66
21.730	32.92	20.210	18.86	18.840	12.43
21.710	33.87	20.170	14.74	18.800	13.50
21.670	15.37	20.130	17.63	18.760	5.10
21.620	14.78	20.080	10.51	18.720	10.07
21.580	10.56	20.040	27.85	18.680	14.47
21.530	17.50	20.010	34.24	18.640	15.34

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
18.600	12.93	17.390	0.05	16.260	314.60
18.570	20.05	17.350	14.94	16.250	315.40
18.530	10.58	17.320	12.19	16.230	354.00
18.490	17.70	17.280	13.09	16.210	360.40
18.450	3.52	17.250	11.70	16.200	347.90
18.410	6.35	17.210	22.02	16.180	321.30
18.380	17.92	17.180	12.81	16.170	289.30
18.340	17.30	17.150	24.06	16.150	251.10
18.300	18.82	17.110	8.55	16.140	212.70
18.270	26.41	17.080	12.31	16.120	185.50
18.260	39.07	17.050	20.60	16.110	110.90
18.240	35.97	17.010	17.69	16.090	101.30
18.220	54.01	16.980	17.09	16.070	84.93
18.200	51.39	16.950	9.09	16.060	61.14
18.180	40.91	16.910	20.35	16.040	51.64
18.160	44.91	16.880	19.86	16.030	48.17
18.140	54.89	16.850	25.85	16.010	37.26
18.130	39.08	16.810	22.06	16.000	21.48
18.110	37.35	16.780	26.51	15.980	53.62
18.090	23.93	16.760	26.67	15.970	38.19
18.070	30.11	16.740	41.89	15.950	29.11
18.050	29.40	16.720	47.98	15.940	12.38
18.030	35.52	16.710	41.91	15.910	25.23
18.020	42.05	16.690	47.12	15.880	25.75
18.000	60.55	16.670	71.78	15.850	19.20
17.980	67.89	16.660	96.61	15.820	22.00
17.960	72.75	16.640	98.14	15.790	19.16
17.940	109.10	16.630	142.80	15.770	28.78
17.930	112.90	16.610	122.50	15.760	35.34
17.910	127.50	16.590	141.50	15.740	33.90
17.890	130.60	16.580	153.10	15.730	36.85
17.870	141.10	16.560	133.80	15.710	38.39
17.850	121.50	16.550	129.10	15.700	33.86
17.840	125.40	16.530	106.00	15.680	31.01
17.820	96.35	16.510	105.00	15.670	31.36
17.800	95.11	16.500	73.98	15.650	48.55
17.780	65.71	16.480	58.48	15.640	56.02
17.760	53.65	16.470	50.22	15.620	63.00
17.750	49.26	16.450	47.64	15.610	59.03
17.730	36.76	16.430	44.49	15.590	88.05
17.710	27.12	16.420	40.26	15.580	115.90
17.690	19.32	16.400	51.48	15.570	134.60
17.670	24.54	16.390	66.39	15.550	169.20
17.630	18.99	16.370	71.70	15.540	210.40
17.600	14.13	16.360	84.44	15.520	271.20
17.560	4.33	16.340	102.50	15.510	339.50
17.530	18.24	16.320	145.10	15.490	438.00
17.490	10.08	16.310	170.80	15.480	523.90
17.460	3.73	16.290	208.00	15.460	610.90
17.420	26.60	16.280	255.10	15.450	656.80

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
15.430	747.90	14.520	18.16	13.380	74.61
15.420	866.40	14.490	20.83	13.370	74.72
15.410	929.10	14.460	14.83	13.360	103.50
15.390	944.70	14.440	20.67	13.350	100.00
15.380	836.10	14.410	18.72	13.340	119.20
15.360	743.00	14.390	9.65	13.320	123.50
15.350	637.40	14.360	22.14	13.310	158.50
15.330	536.50	14.330	7.64	13.300	215.30
15.320	420.10	14.310	16.81	13.290	228.10
15.310	323.80	14.280	23.85	13.280	282.80
15.290	268.70	14.260	12.70	13.270	360.20
15.280	219.40	14.230	21.66	13.250	411.40
15.260	160.30	14.210	11.24	13.240	492.10
15.250	135.10	14.180	15.24	13.230	603.30
15.230	122.40	14.150	15.70	13.220	655.00
15.220	108.30	14.130	-4.82	13.210	841.30
15.210	101.60	14.100	28.59	13.200	903.60
15.190	84.84	14.080	21.05	13.190	935.50
15.180	93.62	14.050	21.26	13.170	1175.00
15.160	83.65	14.030	17.25	13.160	1347.00
15.150	78.15	14.000	26.32	13.150	1084.00
15.140	77.00	13.980	19.16	13.140	1417.00
15.120	86.04	13.950	23.28	13.130	1782.00
15.110	85.04	13.930	18.13	13.120	1145.00
15.090	60.82	13.900	22.93	13.110	1249.00
15.080	63.01	13.880	22.92	13.100	913.40
15.070	51.76	13.850	20.62	13.080	693.70
15.050	40.07	13.830	15.82	13.070	642.70
15.040	38.20	13.810	20.22	13.060	539.30
15.020	36.82	13.780	23.98	13.050	555.20
15.010	27.20	13.760	34.46	13.040	507.00
15.000	31.66	13.730	24.04	13.030	513.60
14.980	37.44	13.710	24.08	13.020	494.70
14.970	20.00	13.680	21.04	13.010	578.20
14.950	20.62	13.660	29.91	12.990	609.20
14.920	28.83	13.640	4.92	12.980	703.10
14.890	22.33	13.610	27.90	12.970	820.80
14.870	13.59	13.590	25.97	12.960	893.80
14.840	17.97	13.560	23.86	12.950	1050.00
14.810	7.51	13.540	32.31	12.940	1067.00
14.780	11.01	13.520	33.32	12.930	1125.00
14.760	14.07	13.490	48.44	12.920	1142.00
14.730	14.97	13.480	39.30	12.910	1613.00
14.700	14.32	13.460	26.38	12.890	1492.00
14.680	21.15	13.450	49.50	12.880	1319.00
14.650	24.61	13.440	63.76	12.870	1237.00
14.620	24.75	13.430	63.97	12.860	1366.00
14.600	13.96	13.420	37.19	12.850	1142.00
14.570	12.49	13.410	53.20	12.840	1128.00
14.540	12.50	13.390	62.24	12.830	1064.00

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
12.820	1436.00	12.140	180.90	11.530	24.02
12.810	1166.00	12.120	190.10	11.510	40.82
12.800	892.20	12.110	186.90	11.490	25.01
12.780	717.10	12.100	167.20	11.470	34.87
12.770	522.80	12.090	167.20	11.450	36.39
12.760	483.00	12.080	151.60	11.440	33.24
12.750	351.00	12.070	126.40	11.430	36.09
12.740	315.70	12.060	128.60	11.420	55.59
12.730	248.30	12.050	85.93	11.410	59.22
12.720	188.50	12.040	94.61	11.400	70.05
12.710	176.60	12.030	79.45	11.400	76.83
12.700	149.60	12.030	72.09	11.390	90.21
12.690	121.40	12.020	40.56	11.380	102.10
12.680	99.61	12.000	43.55	11.370	125.70
12.670	84.21	11.980	24.41	11.360	137.60
12.650	89.18	11.960	29.46	11.350	165.30
12.640	77.66	11.940	30.85	11.340	198.50
12.630	68.13	11.920	23.32	11.330	214.60
12.620	59.10	11.900	32.58	11.320	235.80
12.610	55.57	11.880	27.89	11.310	261.80
12.600	56.13	11.860	19.27	11.300	297.80
12.590	66.07	11.840	20.78	11.290	328.00
12.570	43.43	11.820	29.05	11.290	287.50
12.550	48.13	11.800	36.90	11.280	321.10
12.530	39.03	11.790	69.34	11.270	320.00
12.510	43.79	11.780	59.05	11.260	324.80
12.490	30.45	11.770	59.06	11.250	293.80
12.470	36.65	11.760	75.38	11.240	274.20
12.450	40.30	11.750	81.75	11.230	247.40
12.430	31.64	11.740	106.80	11.220	217.80
12.410	25.91	11.730	89.76	11.210	199.60
12.390	12.68	11.720	124.80	11.210	175.80
12.360	26.03	11.710	125.00	11.200	139.70
12.340	31.98	11.700	125.00	11.190	139.90
12.320	42.35	11.690	143.10	11.180	93.19
12.300	34.14	11.680	137.40	11.170	71.15
12.280	30.96	11.680	102.60	11.160	73.93
12.270	30.98	11.670	115.60	11.150	60.27
12.260	41.37	11.660	126.60	11.140	57.29
12.250	62.75	11.650	129.50	11.130	42.17
12.240	60.70	11.640	83.05	11.110	26.35
12.230	61.77	11.630	77.14	11.090	25.45
12.220	79.16	11.620	76.07	11.080	28.64
12.210	86.24	11.610	40.99	11.060	25.72
12.200	112.20	11.600	52.46	11.040	19.63
12.190	133.50	11.590	46.45	11.020	27.35
12.180	137.10	11.580	45.50	11.010	32.50
12.170	142.60	11.570	44.62	10.990	16.81
12.160	165.20	11.560	37.97	10.970	23.73
12.150	159.40	11.550	31.67	10.950	23.99

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
10.940	15.94	9.495	24.04	8.470	28.68
10.920	36.03	9.460	30.52	8.424	32.70
10.900	31.62	9.446	38.07	8.377	41.90
10.890	26.64	9.432	64.07	8.331	30.56
10.870	36.68	9.419	58.23	8.286	34.90
10.850	30.94	9.405	76.70	8.240	29.65
10.830	28.31	9.391	102.60	8.195	38.55
10.820	21.68	9.377	131.80	8.151	45.11
10.800	19.47	9.364	153.10	8.107	66.60
10.780	17.44	9.350	186.30	8.079	77.96
10.770	24.37	9.336	217.50	8.068	75.93
10.750	16.03	9.323	212.90	8.057	106.20
10.740	16.87	9.309	210.60	8.046	87.60
10.710	14.41	9.296	228.90	8.036	128.70
10.660	18.56	9.282	194.50	8.025	142.70
10.610	21.64	9.269	151.40	8.014	169.90
10.560	25.53	9.255	127.10	8.003	207.80
10.510	30.61	9.242	104.30	7.992	283.40
10.460	70.03	9.209	53.78	7.982	324.80
10.430	119.40	9.156	28.69	7.971	430.20
10.410	163.60	9.103	27.02	7.960	515.30
10.400	215.80	9.051	19.51	7.949	641.10
10.380	291.80	8.999	14.90	7.939	777.70
10.370	369.10	8.948	25.87	7.928	912.70
10.350	429.30	8.916	22.11	7.918	1108.00
10.330	507.10	8.903	26.73	7.907	1158.00
10.320	506.30	8.891	33.45	7.896	1548.00
10.300	546.70	8.878	48.57	7.886	1278.00
10.290	492.50	8.866	56.76	7.875	1349.00
10.270	432.90	8.853	88.38	7.865	1233.00
10.260	354.60	8.840	103.10	7.854	1465.00
10.240	302.50	8.828	119.90	7.844	1655.00
10.220	218.10	8.815	156.20	7.833	1571.00
10.210	165.40	8.803	158.20	7.823	1561.00
10.190	126.40	8.791	180.80	7.812	1344.00
10.180	75.37	8.778	208.30	7.802	1083.00
10.160	59.26	8.766	198.30	7.792	919.90
10.150	50.41	8.753	194.80	7.781	700.10
10.130	37.87	8.741	188.50	7.771	529.50
10.120	25.51	8.729	156.80	7.761	403.50
10.080	26.86	8.717	130.20	7.750	321.10
10.020	24.08	8.704	107.90	7.740	259.50
9.957	19.13	8.692	87.00	7.730	195.70
9.897	18.61	8.680	65.67	7.720	164.60
9.838	15.46	8.668	59.53	7.709	168.10
9.780	13.71	8.656	41.51	7.699	134.90
9.722	21.61	8.643	36.08	7.689	107.30
9.664	18.03	8.613	24.88	7.679	115.10
9.607	18.43	8.565	24.92	7.669	90.17
9.551	14.96	8.518	30.81	7.659	83.10

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
7.649	74.48	6.724	105.00	6.196	24.16
7.638	71.44	6.715	120.00	6.138	18.06
7.608	58.40	6.707	132.00	6.084	16.78
7.559	39.59	6.699	144.00	6.030	19.77
7.509	33.39	6.691	176.20	5.974	16.73
7.461	29.71	6.682	202.20	5.919	17.20
7.412	25.74	6.674	255.70	5.865	18.27
7.364	26.83	6.666	283.30	5.814	20.09
7.317	28.28	6.658	348.40	5.764	19.30
7.270	21.37	6.650	403.40	5.712	13.98
7.224	27.50	6.641	508.90	5.660	18.12
7.196	23.07	6.633	620.80	5.609	13.32
7.187	33.43	6.625	709.20	5.559	14.88
7.178	41.44	6.617	847.10	5.512	17.11
7.168	46.57	6.609	959.30	5.466	25.12
7.159	63.93	6.601	1117.00	5.418	25.19
7.150	57.29	6.593	1192.00	5.370	28.07
7.141	69.10	6.585	1204.00	5.323	35.75
7.132	61.20	6.577	1366.00	5.280	56.29
7.123	88.23	6.569	1320.00	5.256	70.80
7.114	97.87	6.561	1283.00	5.251	103.40
7.105	124.50	6.553	1226.00	5.245	107.00
7.096	129.80	6.545	1287.00	5.239	102.60
7.087	151.40	6.537	1278.00	5.234	116.40
7.078	149.10	6.529	1427.00	5.228	127.70
7.069	157.90	6.521	1240.00	5.222	152.80
7.060	175.20	6.513	1237.00	5.217	187.20
7.051	156.60	6.505	1157.00	5.211	207.40
7.042	156.50	6.497	1048.00	5.205	226.40
7.033	135.40	6.489	795.80	5.200	256.60
7.024	122.40	6.481	693.90	5.194	329.10
7.015	104.50	6.473	584.00	5.188	370.50
7.007	93.75	6.466	451.90	5.183	450.90
6.998	75.76	6.458	375.20	5.177	456.90
6.989	66.74	6.450	307.10	5.171	553.00
6.980	62.78	6.442	245.60	5.166	576.10
6.971	64.84	6.434	217.10	5.160	669.70
6.963	58.96	6.427	188.70	5.155	714.80
6.954	59.35	6.419	148.70	5.149	780.10
6.945	45.48	6.411	116.60	5.143	821.20
6.936	32.87	6.403	105.40	5.138	892.20
6.915	31.26	6.396	103.00	5.132	881.90
6.880	41.07	6.388	94.02	5.127	863.90
6.846	43.02	6.380	92.85	5.121	970.50
6.812	51.32	6.373	77.84	5.116	890.50
6.778	60.61	6.365	64.72	5.110	1016.00
6.757	64.69	6.357	54.59	5.105	843.70
6.749	77.65	6.350	56.26	5.099	772.50
6.740	95.94	6.315	44.72	5.094	773.20
6.732	95.19	6.255	34.42	5.088	693.10

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
5.083	615.30	3.926	12.48	3.506	263.40
5.077	504.70	3.919	35.95	3.502	310.80
5.072	490.00	3.912	37.13	3.499	321.10
5.067	398.70	3.904	36.43	3.496	336.40
5.061	343.40	3.897	45.85	3.493	382.20
5.056	291.30	3.889	55.30	3.490	428.30
5.050	242.40	3.882	57.30	3.487	435.30
5.045	222.00	3.875	62.47	3.484	488.30
5.039	186.50	3.868	57.20	3.481	546.00
5.034	169.30	3.860	77.00	3.478	594.90
5.029	141.70	3.853	73.28	3.474	661.20
5.023	122.30	3.846	72.42	3.471	642.90
5.018	114.40	3.839	73.38	3.468	789.50
5.013	95.63	3.832	65.57	3.465	757.00
4.997	74.39	3.825	80.32	3.462	843.70
4.970	52.94	3.817	63.55	3.459	1022.00
4.944	36.57	3.810	51.01	3.456	866.10
4.918	31.31	3.803	55.77	3.453	1213.00
4.892	30.58	3.796	54.91	3.450	935.60
4.866	26.14	3.789	41.57	3.447	1090.00
4.841	23.18	3.777	36.61	3.444	1086.00
4.803	18.41	3.759	40.00	3.441	1313.00
4.753	17.76	3.742	31.81	3.438	1117.00
4.704	18.41	3.725	28.07	3.435	1352.00
4.656	17.21	3.708	30.00	3.432	1272.00
4.608	17.63	3.691	21.26	3.429	1691.00
4.562	10.99	3.674	32.76	3.426	1177.00
4.515	11.27	3.657	43.61	3.423	1163.00
4.470	14.59	3.641	36.85	3.420	2173.00
4.425	11.10	3.624	44.69	3.417	1362.00
4.381	18.17	3.608	44.49	3.414	1316.00
4.338	15.44	3.595	51.42	3.411	1328.00
4.295	12.60	3.585	63.05	3.408	2086.00
4.253	16.62	3.575	78.96	3.405	1073.00
4.212	20.34	3.566	78.54	3.402	1137.00
4.171	16.96	3.556	90.22	3.399	1140.00
4.130	19.27	3.550	91.56	3.396	1124.00
4.101	17.88	3.547	82.65	3.393	1010.00
4.081	11.18	3.543	108.80	3.390	928.00
4.061	16.53	3.540	120.80	3.387	857.00
4.042	15.35	3.537	125.50	3.384	838.70
4.023	10.64	3.534	127.70	3.381	744.30
4.003	18.18	3.531	145.40	3.378	655.60
3.984	28.04	3.528	145.60	3.375	644.90
3.971	22.16	3.524	152.90	3.372	567.20
3.964	7.89	3.521	186.40	3.369	522.70
3.956	29.68	3.518	171.20	3.366	493.70
3.949	25.60	3.515	204.90	3.363	442.20
3.941	17.82	3.512	220.80	3.360	402.20
3.934	33.98	3.509	230.30	3.357	356.90

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
3.354	307.50	2.797	14.16	1.846	246.20
3.351	293.80	2.764	21.40	1.841	278.80
3.348	266.80	2.731	17.91	1.836	306.30
3.345	253.20	2.699	22.87	1.832	317.90
3.343	221.80	2.668	19.61	1.828	355.40
3.340	204.00	2.637	23.43	1.826	381.90
3.337	195.70	2.607	22.31	1.823	387.90
3.334	183.70	2.577	25.01	1.821	433.30
3.331	160.80	2.547	17.75	1.819	443.10
3.328	160.10	2.519	22.69	1.816	509.40
3.325	148.30	2.490	25.61	1.814	505.00
3.322	134.90	2.462	27.19	1.812	524.40
3.317	140.70	2.435	24.02	1.809	545.90
3.308	107.40	2.408	23.61	1.807	569.80
3.299	87.21	2.382	31.70	1.805	662.50
3.291	81.93	2.355	29.97	1.802	638.10
3.282	76.35	2.330	25.31	1.800	706.00
3.274	79.28	2.305	32.57	1.798	759.50
3.265	62.67	2.280	34.05	1.796	794.40
3.257	59.24	2.255	36.43	1.793	901.30
3.249	49.94	2.231	30.59	1.791	916.70
3.240	46.34	2.208	37.54	1.789	966.20
3.232	50.44	2.185	37.89	1.786	1135.00
3.224	50.21	2.162	33.83	1.784	1106.00
3.215	50.46	2.139	38.81	1.782	1151.00
3.207	46.24	2.117	43.15	1.780	1176.00
3.199	52.28	2.095	43.13	1.777	3105.00
3.191	55.77	2.077	49.48	1.775	1199.00
3.183	68.63	2.063	43.59	1.772	1629.00
3.174	70.57	2.049	51.56	1.767	2127.00
3.166	79.63	2.035	47.20	1.763	1385.00
3.158	88.51	2.021	63.03	1.758	1614.00
3.150	93.00	2.008	64.43	1.754	1697.00
3.142	100.80	1.994	66.66	1.749	1403.00
3.134	97.50	1.981	68.45	1.745	1841.00
3.126	103.70	1.969	82.09	1.741	1446.00
3.119	92.72	1.958	87.51	1.736	1301.00
3.111	75.83	1.948	90.79	1.732	1429.00
3.103	64.88	1.938	94.96	1.728	1318.00
3.095	55.99	1.927	101.20	1.723	1324.00
3.081	46.93	1.917	101.60	1.719	1376.00
3.060	30.08	1.907	112.50	1.715	1492.00
3.040	28.22	1.897	127.70	1.710	1210.00
3.020	25.67	1.887	140.30	1.706	1202.00
3.000	28.80	1.877	156.30	1.702	1036.00
2.972	24.78	1.870	168.30	1.698	1006.00
2.936	24.22	1.865	188.10	1.693	921.90
2.900	18.69	1.860	196.60	1.689	787.80
2.865	21.27	1.855	225.50	1.685	691.90
2.831	17.78	1.851	235.30	1.681	600.20

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
1.678	565.40	1.405	1316.00	1.123	254.10
1.675	567.50	1.398	1441.00	1.118	248.80
1.672	518.90	1.392	2011.00	1.112	242.50
1.669	488.70	1.386	1326.00	1.106	223.40
1.666	463.10	1.380	1264.00	1.101	223.10
1.663	438.40	1.373	1234.00	1.095	210.90
1.660	399.10	1.367	1679.00	1.090	216.40
1.657	392.20	1.361	1793.00	1.084	208.70
1.654	377.70	1.355	1732.00	1.079	214.40
1.651	351.70	1.349	2281.00	1.074	201.30
1.648	336.50	1.343	1294.00	1.069	206.30
1.645	330.50	1.337	1521.00	1.063	205.20
1.641	348.50	1.332	1771.00	1.058	206.70
1.636	325.70	1.326	1906.00	1.053	216.60
1.631	314.40	1.320	1738.00	1.048	205.70
1.626	305.80	1.314	1596.00	1.043	212.00
1.621	323.10	1.308	1545.00	1.038	226.50
1.614	296.50	1.303	1728.00	1.033	223.30
1.607	282.80	1.297	1215.00	1.028	239.70
1.599	305.50	1.291	1901.00	1.023	252.70
1.591	292.00	1.286	1682.00	1.018	266.70
1.584	297.50	1.280	1612.00	1.013	312.00
1.576	315.70	1.275	1179.00	1.008	352.00
1.569	323.60	1.269	1217.00	1.003	367.90
1.561	336.50	1.264	1840.00	0.998	386.40
1.554	351.30	1.259	1188.00	0.994	408.00
1.546	389.20	1.253	1243.00	0.989	457.80
1.539	408.20	1.248	1002.00	0.984	489.50
1.532	438.10	1.243	1039.00	0.980	495.60
1.525	457.40	1.237	1071.00	0.975	468.20
1.520	503.80	1.232	828.80	0.970	436.10
1.515	535.80	1.227	747.70	0.966	385.70
1.509	558.60	1.222	676.60	0.961	350.50
1.504	590.70	1.217	635.80	0.957	312.10
1.499	631.90	1.211	607.40	0.953	265.80
1.494	673.10	1.206	574.30	0.948	232.00
1.488	676.80	1.201	552.40	0.944	212.70
1.483	814.80	1.196	518.50	0.939	177.40
1.478	860.10	1.191	472.80	0.935	178.30
1.473	938.60	1.186	461.60	0.931	157.60
1.468	1027.00	1.182	438.60	0.929	157.10
1.463	1156.00	1.176	404.70	0.920	135.20
1.457	2010.00	1.170	390.90	0.912	116.40
1.450	1699.00	1.164	362.00	0.904	103.20
1.444	1269.00	1.158	343.50	0.895	96.20
1.437	1105.00	1.152	321.00	0.887	103.30
1.430	1569.00	1.146	305.40	0.879	88.82
1.424	1188.00	1.140	282.50	0.872	85.03
1.417	1254.00	1.135	275.80	0.864	86.56
1.411	1697.00	1.129	265.90	0.856	83.63

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
0.849	75.42	0.571	48.58
0.841	76.24	0.567	47.77
0.834	70.59	0.563	38.69
0.827	70.75	0.559	54.51
0.820	65.84	0.555	32.75
0.813	68.81	0.551	59.39
0.806	62.40	0.547	52.40
0.799	69.32	0.543	41.49
0.792	63.42	0.539	43.62
0.786	70.99	0.535	46.16
0.779	60.27	0.532	43.85
0.772	59.62	0.528	56.06
0.766	65.76	0.524	53.71
0.760	62.77	0.521	49.21
0.753	51.72	0.517	52.38
0.747	59.27	0.514	39.57
0.741	52.62	0.510	61.19
0.735	57.77	0.507	53.28
0.729	47.64	0.503	27.44
0.723	49.72	0.500	29.77
0.717	54.58		
0.712	58.96		
0.706	53.10		
0.700	44.80		
0.695	48.37		
0.689	47.99		
0.684	53.92		
0.678	42.35		
0.673	48.76		
0.668	53.21		
0.663	44.10		
0.658	52.60		
0.653	44.68		
0.648	50.67		
0.643	50.27		
0.638	43.05		
0.633	47.43		
0.628	53.70		
0.623	44.87		
0.619	35.29		
0.614	41.73		
0.610	40.88		
0.605	47.04		
0.601	44.45		
0.596	43.52		
0.592	40.14		
0.588	34.54		
0.583	35.31		
0.579	47.81		
0.575	36.92		

APPENDIX C

A TABULATION OF THE TOTAL NEUTRON CROSS SECTION OF ^{243}Am FROM 0.5-76 eV

The total neutron cross section of ^{243}Am from 0.5-76 eV. The cross sections were derived from transmission data taken with a sample having an inverse thickness of 1288.2 b/a. The resolution function was assumed to have a Gaussian shape and its full width at half maximum was obtained from the information given below.

Energy Range (eV)	1.0	1-10	10-30	30-58
Accelerator Burst (nsec)	30	30	30	30
Channel Width (nsec)	640	320	160	80
Detector Thickness (cm)	1.25	1.25	1.25	1.25
Moderator Thickness (cm)	3.18	3.18	3.18	3.18
Flight Path (m)	18.576	18.576	18.576	18.576

Note: In order for the theoretical fit to describe the experimental data, it was necessary to add the moderator and detector thicknesses together. This term was the dominant factor in determining the resolution width.

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
75.810	46.24	68.520	43.65	62.230	-5.78
75.660	98.41	68.390	47.99	62.120	20.70
75.500	173.50	68.250	29.98	62.000	-2.94
75.340	169.20	68.120	141.50	61.880	1.22
75.190	25.06	67.980	34.09	61.770	12.03
75.030	33.20	67.850	52.84	61.650	52.38
74.880	39.98	67.720	11.30	61.540	48.58
74.720	12.35	67.580	84.58	61.420	97.36
74.570	17.46	67.450	51.52	61.310	216.80
74.420	48.60	67.320	59.42	61.190	258.50
74.260	42.91	67.190	11.00	61.080	174.00
74.110	0.63	67.060	52.56	60.960	182.60
73.960	35.37	66.930	1.69	60.850	106.80
73.810	46.01	66.800	-39.39	60.740	80.17
73.660	49.88	66.670	50.75	60.630	56.67
73.510	63.67	66.540	53.88	60.510	68.62
73.360	16.49	66.410	71.81	60.400	24.83
73.210	27.11	66.280	105.20	60.290	24.99
73.060	134.00	66.150	105.20	60.180	44.87
72.910	191.40	66.020	54.01	60.070	52.22
72.760	124.40	65.900	-7.48	59.960	80.49
72.610	86.37	65.770	-2.76	59.850	113.70
72.470	69.55	65.640	11.65	59.740	54.94
72.320	165.20	65.510	34.19	59.650	-28.28
72.170	193.10	65.390	-19.96	59.600	70.75
72.030	87.61	65.260	7.92	59.540	-2.22
71.880	33.63	65.140	-15.64	59.490	45.11
71.740	32.38	65.010	26.67	59.430	36.62
71.590	47.85	64.890	93.19	59.380	48.32
71.450	13.79	64.760	48.97	59.330	116.30
71.310	48.32	64.640	46.28	59.270	33.52
71.160	-19.81	64.520	36.33	59.220	22.83
71.020	-1.61	64.390	-4.01	59.160	56.20
70.880	16.36	64.270	5.68	59.110	41.92
70.740	0.06	64.150	18.11	59.050	82.41
70.590	55.69	64.020	4.97	59.000	118.00
70.450	133.00	63.900	35.47	58.950	59.51
70.310	150.40	63.780	27.71	58.890	27.91
70.170	167.20	63.660	39.07	58.840	76.09
70.030	108.00	63.540	27.96	58.780	54.21
69.890	204.90	63.420	16.43	58.730	20.87
69.750	267.00	63.300	69.51	58.680	28.74
69.610	274.20	63.180	45.57	58.620	16.50
69.480	94.43	63.060	30.96	58.570	22.15
69.340	26.86	62.940	13.61	58.490	14.14
69.200	17.08	62.820	23.27	58.380	23.59
69.060	12.07	62.700	11.70	58.280	6.18
68.930	36.63	62.580	12.99	58.170	19.63
68.790	84.21	62.470	48.76	58.070	79.82
68.660	100.70	62.350	20.56	57.960	38.72

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
57.860	40.95	54.470	206.90	51.490	0.73
57.750	65.18	54.430	40.85	51.440	21.50
57.650	17.84	54.380	96.96	51.400	73.39
57.540	14.70	54.330	19.00	51.360	87.53
57.440	23.61	54.280	40.82	51.310	60.25
57.340	31.76	54.230	62.91	51.270	170.40
57.230	10.50	54.190	51.63	51.230	177.60
57.130	15.64	54.140	101.40	51.180	56.04
57.030	-41.63	54.090	128.40	51.140	149.10
56.920	17.71	54.040	118.40	51.090	55.03
56.820	-21.64	54.000	164.00	51.050	62.17
56.720	10.57	53.950	153.60	51.010	80.44
56.620	-11.95	53.900	93.33	50.960	9.52
56.520	7.42	53.860	61.50	50.900	39.68
56.440	53.51	53.810	9.97	50.810	-17.02
56.390	67.18	53.740	-12.87	50.730	78.19
56.340	10.81	53.640	-7.82	50.640	19.73
56.290	51.05	53.550	21.64	50.560	39.75
56.240	-10.70	53.460	47.91	50.470	21.58
56.190	-41.94	53.360	60.62	50.380	-33.71
56.140	-10.26	53.300	81.96	50.300	21.25
56.090	139.60	53.250	166.20	50.210	35.92
56.040	125.70	53.200	42.97	50.130	62.98
55.990	114.30	53.160	162.20	50.050	14.58
55.940	122.20	53.110	257.20	49.960	-14.53
55.890	140.90	53.060	245.40	49.880	42.57
55.840	140.00	53.020	272.20	49.790	-14.92
55.790	192.10	52.970	239.40	49.710	68.13
55.740	137.10	52.930	131.10	49.630	12.90
55.690	13.01	52.880	93.99	49.560	72.50
55.640	49.82	52.830	26.41	49.520	37.36
55.590	6.77	52.790	80.72	49.480	156.30
55.540	-51.90	52.740	45.53	49.440	38.13
55.490	36.61	52.700	32.18	49.400	105.40
55.440	-12.30	52.650	51.21	49.360	91.35
55.370	72.18	52.610	-29.18	49.310	111.00
55.270	0.60	52.560	14.43	49.270	91.37
55.170	36.41	52.520	15.10	49.230	73.91
55.080	40.86	52.470	-0.29	49.190	79.92
55.000	62.08	52.430	60.66	49.150	55.57
54.960	32.71	52.360	-5.62	49.110	-16.82
54.910	74.19	52.270	8.80	49.070	7.88
54.860	49.20	52.180	14.23	49.030	26.17
54.810	93.25	52.090	42.66	48.990	53.61
54.760	68.38	52.000	22.96	48.950	-59.66
54.710	87.77	51.910	28.35	48.900	19.02
54.670	171.10	51.820	47.02	48.860	19.27
54.620	111.00	51.730	23.63	48.820	48.10
54.570	199.40	51.640	-18.59	48.780	6.69
54.520	186.80	51.550	14.47	48.740	108.30

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
48.700	58.35	46.010	21.98	43.540	32.50
48.660	17.10	45.930	2.99	43.470	20.14
48.620	87.75	45.860	31.56	43.410	20.90
48.580	42.83	45.780	59.92	43.340	29.13
48.540	88.17	45.710	18.55	43.270	45.20
48.500	50.33	45.640	33.65	43.220	73.75
48.460	58.81	45.580	78.81	43.190	142.00
48.420	19.72	45.540	34.12	43.150	113.80
48.380	69.65	45.510	155.60	43.120	172.10
48.340	-11.83	45.470	70.42	43.080	236.00
48.300	67.12	45.430	100.20	43.050	369.20
48.260	83.87	45.400	151.90	43.020	348.40
48.220	37.50	45.360	139.70	42.980	453.40
48.180	10.04	45.320	177.70	42.950	427.40
48.140	54.45	45.290	123.40	42.920	390.20
48.080	65.65	45.250	115.30	42.880	434.00
48.000	34.09	45.220	86.41	42.850	285.60
47.920	-25.11	45.180	55.33	42.820	363.60
47.840	17.84	45.140	55.01	42.780	205.10
47.760	15.00	45.110	2.37	42.750	116.40
47.690	-28.06	45.070	67.86	42.720	144.10
47.610	-15.41	45.020	52.31	42.680	117.40
47.530	74.51	44.950	49.42	42.650	-24.36
47.450	3.68	44.870	24.69	42.620	52.57
47.390	34.65	44.800	26.93	42.570	8.96
47.350	60.47	44.730	52.99	42.500	-7.62
47.310	16.15	44.660	32.44	42.440	28.57
47.280	18.88	44.590	-19.98	42.370	37.08
47.240	38.12	44.520	-40.29	42.300	4.80
47.200	85.40	44.450	-23.12	42.240	36.26
47.160	47.23	44.390	30.80	42.170	25.35
47.120	37.55	44.360	9.84	42.110	-15.42
47.080	78.72	44.320	97.91	42.040	3.14
47.040	20.55	44.290	-11.20	41.980	-2.68
47.010	6.59	44.250	73.04	41.910	-16.81
46.970	-3.60	44.220	8.45	41.860	32.40
46.930	9.88	44.180	20.77	41.830	95.03
46.890	74.73	44.150	73.24	41.800	119.40
46.850	50.57	44.110	62.73	41.770	38.75
46.810	-10.76	44.080	103.90	41.740	86.21
46.760	10.38	44.040	93.62	41.700	147.20
46.680	25.83	44.010	97.24	41.670	207.30
46.610	5.45	43.970	10.58	41.640	285.70
46.530	25.32	43.940	-14.54	41.610	410.20
46.450	17.68	43.910	35.23	41.580	506.50
46.380	37.47	43.870	25.67	41.540	463.60
46.300	10.66	43.820	40.30	41.510	430.50
46.230	11.63	43.750	-7.42	41.480	439.90
46.150	33.47	43.680	-8.15	41.450	373.80
46.080	6.06	43.610	-21.98	41.420	333.30

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
41.380	268.50	39.340	133.90	37.170	167.40
41.350	287.80	39.310	83.06	37.140	304.30
41.320	213.80	39.280	57.86	37.120	313.10
41.290	236.40	39.240	76.41	37.090	378.70
41.260	199.60	39.180	11.17	37.060	435.60
41.230	281.30	39.120	0.37	37.030	400.90
41.200	138.60	39.060	7.56	37.010	341.60
41.160	118.50	39.000	21.92	36.980	375.70
41.130	173.00	38.940	27.87	36.950	289.80
41.100	73.73	38.890	53.96	36.930	272.20
41.070	83.74	38.830	6.66	36.900	188.10
41.040	69.38	38.770	6.54	36.870	224.10
41.010	37.35	38.710	-4.59	36.850	180.60
40.980	101.70	38.660	27.18	36.820	267.10
40.940	106.00	38.600	-5.36	36.790	147.70
40.910	84.24	38.540	25.74	36.770	190.20
40.880	74.90	38.490	-17.63	36.740	138.60
40.850	18.97	38.430	-12.44	36.710	85.57
40.820	-32.00	38.370	-2.24	36.690	222.60
40.790	15.16	38.320	41.76	36.660	123.50
40.760	-14.08	38.260	6.99	36.640	181.00
40.730	13.88	38.200	62.06	36.610	118.10
40.680	18.96	38.150	40.33	36.580	58.49
40.620	40.05	38.100	78.33	36.560	125.80
40.560	0.38	38.080	48.88	36.530	33.33
40.500	24.58	38.050	99.69	36.500	87.58
40.430	33.21	38.020	140.50	36.480	56.88
40.370	23.38	37.990	112.00	36.450	31.48
40.310	30.29	37.960	13.30	36.410	16.01
40.250	-0.72	37.940	145.00	36.360	13.67
40.190	20.68	37.910	177.90	36.310	35.24
40.130	1.28	37.880	79.14	36.260	13.99
40.070	-4.36	37.850	23.79	36.200	-19.71
40.010	6.88	37.830	145.70	36.140	-42.86
39.950	35.34	37.800	62.30	36.060	13.22
39.890	52.96	37.770	94.33	35.980	1.00
39.830	51.22	37.740	72.00	35.910	56.37
39.770	51.19	37.720	71.54	35.830	-30.08
39.710	32.61	37.690	34.65	35.750	-4.95
39.660	76.70	37.650	4.53	35.680	55.51
39.630	115.70	37.590	39.18	35.600	-19.54
39.600	141.10	37.540	41.30	35.540	7.82
39.580	57.94	37.480	82.13	35.490	74.18
39.550	121.30	37.430	29.33	35.440	27.41
39.520	154.30	37.370	52.54	35.390	-28.64
39.490	144.90	37.320	13.10	35.340	43.09
39.460	151.30	37.280	56.11	35.290	18.33
39.430	150.40	37.250	-28.07	35.250	27.50
39.400	76.42	37.220	97.71	35.220	-22.09
39.370	21.35	37.200	150.60	35.200	16.56

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E (eV)	$\sigma(b)$
35.170	37.45	33.670	65.47	31.740	25.40
35.150	129.80	33.620	37.08	31.690	12.52
35.120	128.50	33.580	1.79	31.650	49.75
35.100	144.10	33.530	0.50	31.610	48.03
35.080	162.40	33.490	50.37	31.560	70.99
35.050	270.00	33.440	24.17	31.520	75.21
35.030	324.90	33.410	92.45	31.480	80.31
35.000	254.00	33.380	-21.68	31.440	28.46
34.980	198.90	33.360	68.47	31.400	70.76
34.950	179.80	33.340	108.00	31.350	74.93
34.930	219.90	33.310	78.90	31.310	33.58
34.900	139.90	33.290	154.70	31.270	-9.77
34.880	127.30	33.270	130.00	31.230	105.80
34.850	112.90	33.240	204.10	31.200	79.31
34.830	7.49	33.220	264.60	31.180	144.10
34.790	44.56	33.200	230.80	31.160	233.90
34.740	3.16	33.180	174.30	31.140	204.60
34.690	64.43	33.150	226.10	31.110	184.30
34.650	38.75	33.130	198.70	31.090	198.40
34.600	10.01	33.110	155.70	31.070	244.10
34.550	-3.94	33.090	95.78	31.050	233.60
34.500	4.57	33.060	85.13	31.030	189.60
34.450	28.95	33.040	119.00	31.010	188.00
34.400	38.28	33.020	125.80	30.990	21.48
34.360	-21.98	32.990	10.75	30.970	131.10
34.310	22.10	32.970	94.74	30.950	103.80
34.260	52.90	32.950	48.97	30.930	130.40
34.230	-3.82	32.920	32.14	30.910	95.22
34.200	28.36	32.870	-9.42	30.890	23.91
34.180	71.88	32.830	58.17	30.870	20.53
34.150	3.95	32.780	7.53	30.850	31.69
34.130	153.60	32.740	-0.79	30.830	48.80
34.110	113.80	32.690	77.71	30.800	55.41
34.080	207.50	32.650	7.85	30.760	32.99
34.060	264.20	32.600	36.87	30.720	59.26
34.030	296.60	32.560	-0.83	30.670	24.60
34.010	383.90	32.510	47.38	30.630	45.96
33.990	406.20	32.470	46.43	30.590	40.65
33.960	356.50	32.430	42.72	30.550	27.88
33.940	463.60	32.380	36.13	30.510	-44.75
33.920	381.20	32.340	57.34	30.470	13.41
33.890	336.60	32.290	2.86	30.430	-13.00
33.870	292.30	32.250	-25.80	30.390	41.36
33.850	228.50	32.200	39.60	30.350	-18.13
33.820	238.80	32.130	-2.76	30.310	2.17
33.800	223.90	32.070	17.95	30.280	46.36
33.780	115.10	32.000	7.53	30.260	37.16
33.750	131.60	31.940	-15.40	30.240	62.59
33.730	140.90	31.870	-2.84	30.220	115.20
33.710	37.47	31.810	3.00	30.200	48.11

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
30.190	53.85	28.470	56.03	26.310	29.08
30.170	156.60	28.420	-3.98	26.240	48.71
30.150	156.80	28.350	-0.84	26.180	27.59
30.130	97.66	28.280	34.76	26.110	-29.37
30.110	180.40	28.200	29.33	26.050	22.88
30.090	127.10	28.130	1.50	25.990	-38.42
30.070	152.70	28.060	35.07	25.920	11.06
30.050	125.50	27.990	33.18	25.860	-6.15
30.030	167.70	27.920	21.30	25.800	35.25
30.010	55.54	27.850	24.55	25.740	-4.25
29.990	115.60	27.780	-5.38	25.680	46.73
29.970	82.53	27.710	22.66	25.610	7.01
29.950	93.39	27.660	42.71	25.570	6.44
29.930	9.90	27.620	-9.16	25.540	41.56
29.910	22.00	27.590	102.40	25.510	36.07
29.890	-4.62	27.550	29.10	25.470	113.50
29.870	8.90	27.520	76.32	25.440	69.02
29.850	-17.90	27.490	143.90	25.410	110.80
29.760	19.42	27.450	94.62	25.380	63.08
29.690	16.18	27.420	86.28	25.350	21.03
29.610	36.53	27.380	240.40	25.320	31.44
29.550	75.48	27.350	149.30	25.280	39.38
29.510	54.17	27.320	187.10	25.220	27.63
29.480	57.41	27.280	146.40	25.160	6.68
29.440	71.98	27.250	80.37	25.100	38.76
29.400	128.10	27.210	67.36	25.040	28.29
29.360	137.10	27.180	30.79	24.980	25.30
29.320	183.60	27.150	41.83	24.920	4.35
29.290	204.70	27.110	45.49	24.860	17.48
29.250	155.20	27.080	-14.17	24.800	-2.47
29.210	116.40	27.050	10.42	24.740	-2.02
29.170	76.74	27.010	55.97	24.700	96.54
29.140	81.24	26.980	74.20	24.670	83.11
29.100	51.18	26.940	112.20	24.640	20.12
29.060	37.10	26.910	197.00	24.610	130.10
29.020	9.01	26.880	237.40	24.580	157.30
28.990	25.71	26.850	374.50	24.550	310.40
28.950	62.19	26.810	383.80	24.520	257.30
28.910	120.20	26.780	412.30	24.490	284.00
28.880	165.60	26.750	490.20	24.460	273.30
28.840	221.00	26.710	408.50	24.440	305.10
28.800	256.40	26.680	348.60	24.410	312.20
28.770	353.00	26.650	246.30	24.380	151.60
28.730	258.40	26.610	211.00	24.350	171.70
28.690	257.50	26.580	175.30	24.320	134.90
28.660	196.10	26.550	124.30	24.290	60.90
28.620	149.80	26.520	63.27	24.260	22.45
28.580	144.60	26.480	7.27	24.240	83.89
28.550	58.00	26.440	-22.28	24.210	42.42
28.510	113.50	26.370	-45.29	24.160	-36.12

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
24.110	23.50	22.170	10.08	20.830	15.61
24.050	14.01	22.120	1.71	20.810	42.84
24.000	60.38	22.090	82.92	20.790	5.99
23.940	29.57	22.060	-7.47	20.760	8.25
23.880	30.44	22.040	11.39	20.740	45.75
23.830	-20.61	22.010	53.28	20.710	9.70
23.770	10.81	21.990	68.62	20.660	59.15
23.720	-31.92	21.960	69.72	20.620	-13.00
23.660	8.95	21.940	44.37	20.570	8.39
23.610	-19.92	21.910	35.91	20.530	25.29
23.550	26.64	21.890	82.75	20.490	40.34
23.500	10.90	21.870	46.65	20.440	22.65
23.440	-19.56	21.840	53.31	20.400	-12.88
23.390	-23.77	21.820	152.90	20.350	11.63
23.340	-13.21	21.790	29.28	20.310	-11.77
23.280	10.63	21.770	-33.41	20.270	-1.65
23.230	42.24	21.740	95.53	20.220	-8.44
23.180	22.99	21.720	43.29	20.180	1.80
23.120	37.94	21.700	20.48	20.140	43.21
23.070	4.46	21.660	61.36	20.090	59.24
23.030	34.62	21.610	33.64	20.050	41.09
23.000	49.72	21.560	29.71	20.020	60.56
22.980	39.57	21.520	1.26	20.000	-6.06
22.950	20.88	21.470	46.78	19.980	55.04
22.930	97.38	21.430	-7.91	19.950	70.67
22.900	150.70	21.410	1.64	19.930	79.33
22.870	239.70	21.390	-23.88	19.910	12.63
22.850	281.10	21.360	23.92	19.890	131.50
22.820	346.10	21.340	55.25	19.870	31.60
22.800	506.70	21.320	114.60	19.850	70.23
22.770	562.10	21.290	115.90	19.830	27.90
22.740	588.60	21.270	97.01	19.810	36.38
22.720	546.70	21.250	192.20	19.790	3.55
22.690	563.90	21.220	330.30	19.760	-37.10
22.670	546.70	21.200	343.70	19.740	29.06
22.640	452.20	21.180	461.10	19.720	14.08
22.620	401.10	21.150	517.50	19.700	-1.58
22.590	351.20	21.130	502.50	19.680	44.02
22.560	257.60	21.110	544.70	19.660	56.32
22.540	176.60	21.080	564.80	19.640	67.53
22.510	243.20	21.060	511.20	19.620	63.85
22.490	123.10	21.040	390.50	19.600	147.50
22.460	116.80	21.010	449.90	19.580	92.37
22.440	9.21	20.990	398.70	19.560	85.59
22.410	47.56	20.970	345.10	19.540	107.30
22.390	54.12	20.950	229.80	19.520	112.90
22.360	42.89	20.920	170.00	19.500	116.60
22.320	14.98	20.900	171.60	19.470	121.00
22.270	26.00	20.880	93.14	19.450	82.46
22.220	31.94	20.850	43.43	19.430	17.83

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
19.410	47.90	17.930	78.77	16.620	172.50
19.390	32.49	17.920	152.00	16.600	135.80
19.370	20.76	17.900	83.23	16.590	175.30
19.350	-8.19	17.880	218.80	16.570	138.50
19.320	54.33	17.860	174.10	16.550	96.66
19.280	-39.55	17.840	147.60	16.540	93.01
19.240	31.94	17.830	133.40	16.520	111.00
19.200	62.75	17.810	99.54	16.510	55.63
19.160	42.45	17.790	104.80	16.490	40.78
19.120	49.61	17.770	61.16	16.470	163.60
19.080	56.27	17.750	50.40	16.460	112.00
19.040	-16.92	17.740	10.85	16.440	127.00
19.000	62.83	17.720	79.63	16.430	9.40
18.960	4.53	17.700	60.00	16.410	84.39
18.920	46.32	17.670	23.29	16.390	7.64
18.880	46.85	17.640	32.26	16.380	59.64
18.850	14.38	17.600	-15.65	16.360	131.70
18.810	43.87	17.570	25.44	16.350	74.71
18.770	21.32	17.530	57.67	16.330	132.30
18.730	43.29	17.500	40.49	16.320	193.60
18.690	-4.17	17.460	10.12	16.300	113.90
18.650	-13.99	17.430	13.62	16.280	265.60
18.610	50.39	17.400	4.21	16.270	263.60
18.580	3.02	17.360	63.18	16.250	279.10
18.540	-19.35	17.330	-10.90	16.240	302.40
18.500	44.98	17.290	-59.83	16.220	369.10
18.460	2.71	17.260	-7.21	16.210	413.60
18.420	-34.80	17.220	49.65	16.190	394.70
18.390	54.24	17.190	-6.39	16.180	284.20
18.350	-25.02	17.160	-7.98	16.160	267.30
18.310	-10.12	17.120	-13.14	16.140	252.30
18.280	-38.44	17.090	38.80	16.130	168.90
18.260	32.11	17.050	42.17	16.110	123.40
18.250	-18.19	17.020	13.82	16.100	159.00
18.230	50.98	16.990	18.83	16.080	70.77
18.210	18.56	16.950	25.10	16.070	99.95
18.190	42.99	16.920	47.70	16.050	58.56
18.170	19.30	16.890	34.93	16.040	112.50
18.150	106.00	16.850	10.97	16.020	16.44
18.140	-3.80	16.820	11.89	16.010	59.56
18.120	53.51	16.790	-8.57	15.990	22.79
18.100	11.32	16.760	-14.44	15.980	27.52
18.080	-6.69	16.750	69.45	15.960	5.94
18.060	120.60	16.730	28.05	15.950	26.86
18.040	63.77	16.720	81.58	15.920	-17.51
18.030	-21.92	16.700	57.00	15.890	-4.65
18.010	22.32	16.680	61.97	15.860	23.96
17.990	54.37	16.670	90.16	15.830	-3.39
17.970	49.00	16.650	53.55	15.800	-4.69
17.950	68.85	16.630	94.17	15.780	-7.99

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
15.760	47.25	15.040	7.34	13.810	28.21
15.750	23.34	15.030	12.10	13.790	12.50
15.730	39.76	15.020	39.72	13.760	25.89
15.720	41.68	15.000	-8.56	13.740	28.53
15.710	42.94	14.990	50.33	13.710	60.70
15.690	34.23	14.980	3.07	13.690	-4.33
15.680	36.72	14.950	12.26	13.670	51.56
15.660	-38.95	14.930	-19.61	13.640	1.38
15.650	91.03	14.900	42.91	13.620	9.84
15.630	89.28	14.870	-12.63	13.590	5.54
15.620	19.53	14.850	-0.60	13.570	76.19
15.600	64.55	14.820	30.81	13.550	0.56
15.590	85.42	14.790	21.00	13.520	38.12
15.570	133.00	14.760	25.49	13.500	22.12
15.560	208.70	14.740	-34.25	13.480	10.87
15.540	86.83	14.710	71.12	13.470	53.95
15.530	270.80	14.680	34.77	13.460	30.62
15.510	353.20	14.660	-1.64	13.450	63.01
15.500	430.20	14.630	-19.36	13.430	98.65
15.490	467.50	14.600	-1.09	13.420	41.58
15.470	635.00	14.580	49.60	13.410	7.95
15.460	731.00	14.550	43.15	13.400	14.82
15.440	755.50	14.520	-10.16	13.390	-24.17
15.430	864.30	14.500	-51.91	13.380	78.38
15.410	969.30	14.470	-18.73	13.360	38.46
15.400	945.90	14.440	-9.95	13.350	81.35
15.380	877.30	14.420	-7.79	13.340	108.40
15.370	824.30	14.390	5.68	13.330	77.85
15.360	771.40	14.370	-4.75	13.320	197.20
15.340	605.20	14.340	38.10	13.310	203.00
15.330	552.30	14.310	38.17	13.290	227.80
15.310	387.40	14.290	38.41	13.280	273.80
15.300	324.20	14.260	14.18	13.270	333.10
15.280	303.00	14.240	15.37	13.260	411.50
15.270	214.90	14.210	16.52	13.250	556.70
15.260	159.20	14.190	37.31	13.240	648.60
15.240	111.50	14.160	18.13	13.230	711.00
15.230	171.40	14.140	17.51	13.210	881.90
15.210	88.03	14.110	43.26	13.200	966.00
15.200	70.05	14.090	33.00	13.190	1077.00
15.180	96.12	14.060	-6.35	13.180	1073.00
15.170	78.23	14.030	22.95	13.170	1236.00
15.160	63.11	14.010	-45.23	13.160	1390.00
15.140	89.81	13.980	26.97	13.150	1234.00
15.130	120.50	13.960	36.64	13.130	1231.00
15.110	84.49	13.940	23.09	13.120	1163.00
15.100	95.36	13.910	25.94	13.110	1062.00
15.090	68.84	13.890	34.01	13.100	947.20
15.070	112.80	13.860	9.98	13.090	806.20
15.060	62.56	13.840	37.61	13.080	704.70

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
13.070	633.70	12.450	39.39	11.760	139.20
13.060	509.80	12.430	9.73	11.750	47.33
13.040	471.50	12.410	62.10	11.740	102.90
13.030	418.60	12.390	-16.04	11.730	167.30
13.020	477.60	12.370	49.45	11.720	167.20
13.010	549.90	12.350	8.36	11.710	93.24
13.000	577.70	12.330	34.75	11.700	173.10
12.990	673.40	12.310	55.66	11.690	83.08
12.980	772.90	12.290	56.13	11.680	138.80
12.970	910.90	12.270	7.67	11.670	94.64
12.960	1156.00	12.260	7.76	11.660	93.88
12.940	1366.00	12.250	18.69	11.650	106.50
12.930	1494.00	12.240	20.27	11.640	88.05
12.920	1677.00	12.230	43.17	11.630	47.91
12.910	1934.00	12.220	166.50	11.620	71.50
12.900	2043.00	12.210	89.64	11.610	31.23
12.890	2162.00	12.200	18.39	11.600	5.94
12.880	2124.00	12.190	30.43	11.590	52.09
12.870	2247.00	12.180	123.70	11.590	66.08
12.860	2034.00	12.170	88.17	11.580	56.52
12.840	1791.00	12.160	154.70	11.570	47.28
12.830	1703.00	12.150	198.10	11.550	9.14
12.820	1548.00	12.140	253.70	11.530	71.46
12.810	1275.00	12.130	167.70	11.520	20.71
12.800	1020.00	12.120	165.60	11.500	29.00
12.790	867.70	12.110	210.80	11.480	33.72
12.780	685.00	12.100	267.50	11.460	6.13
12.770	536.10	12.090	150.90	11.450	-27.67
12.760	426.00	12.080	55.39	11.440	51.29
12.750	315.10	12.070	160.80	11.430	62.95
12.740	292.20	12.060	104.70	11.420	101.70
12.720	235.80	12.050	1.37	11.410	66.69
12.710	211.40	12.040	69.06	11.400	20.85
12.700	153.30	12.030	91.82	11.390	66.97
12.690	79.62	12.020	59.26	11.380	104.70
12.680	116.40	12.010	89.16	11.370	146.00
12.670	54.33	11.990	31.15	11.360	117.20
12.660	70.53	11.970	22.09	11.350	166.50
12.650	30.57	11.950	38.86	11.340	138.20
12.640	41.67	11.930	-34.44	11.340	231.30
12.630	104.90	11.910	1.75	11.330	234.30
12.620	108.50	11.890	46.82	11.320	238.50
12.610	67.29	11.870	44.73	11.310	248.20
12.600	32.92	11.850	-0.23	11.300	361.10
12.580	42.80	11.830	16.93	11.290	234.60
12.560	27.14	11.810	16.41	11.280	328.80
12.540	52.44	11.790	-28.00	11.270	286.90
12.520	-1.15	11.790	15.13	11.260	289.50
12.500	30.30	11.780	3.88	11.250	226.40
12.470	23.51	11.770	5.76	11.250	281.60

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
11.240	198.80	10.280	458.80	8.862	20.95
11.230	346.20	10.270	372.70	8.850	86.06
11.220	178.90	10.250	378.50	8.837	123.20
11.210	246.80	10.240	270.60	8.825	109.40
11.200	203.50	10.220	156.20	8.812	123.80
11.190	165.70	10.200	174.60	8.800	133.10
11.180	60.12	10.190	97.62	8.787	230.00
11.170	133.20	10.170	84.92	8.775	195.30
11.160	11.10	10.160	37.05	8.763	203.40
11.160	-0.65	10.140	66.94	8.750	194.10
11.150	69.49	10.130	53.39	8.738	228.10
11.130	25.12	10.110	21.82	8.726	123.60
11.120	40.99	10.070	35.40	8.713	124.00
11.100	57.60	10.010	17.53	8.701	42.27
11.080	60.79	9.953	12.58	8.689	95.45
11.060	42.38	9.894	15.99	8.677	54.46
11.050	-10.65	9.835	43.01	8.665	-15.34
11.030	0.42	9.776	26.32	8.652	10.30
11.010	11.01	9.718	41.28	8.640	-0.86
10.990	26.80	9.661	6.02	8.610	28.59
10.980	52.19	9.604	-4.93	8.562	41.30
10.960	-9.55	9.547	19.49	8.515	27.96
10.940	66.69	9.491	29.77	8.468	4.23
10.920	-1.57	9.456	43.29	8.421	10.47
10.910	34.67	9.443	-1.18	8.374	52.29
10.890	59.14	9.429	77.78	8.328	26.67
10.870	15.41	9.415	41.59	8.283	35.39
10.860	2.25	9.401	71.90	8.237	22.65
10.840	50.07	9.388	98.25	8.193	27.84
10.820	22.78	9.374	121.20	8.148	38.79
10.800	11.36	9.360	196.30	8.104	40.12
10.790	52.58	9.347	261.20	8.076	72.03
10.770	58.04	9.333	252.00	8.066	80.68
10.750	72.30	9.319	246.90	8.055	140.50
10.740	33.11	9.306	227.50	8.044	115.60
10.700	-4.86	9.292	202.00	8.033	129.80
10.650	-2.93	9.279	186.60	8.022	143.70
10.600	25.57	9.265	119.70	8.011	177.80
10.560	18.13	9.252	118.70	8.000	243.00
10.510	28.17	9.239	104.50	7.990	333.80
10.460	98.42	9.205	47.44	7.979	336.20
10.430	169.60	9.152	13.56	7.968	455.20
10.410	166.40	9.100	23.07	7.957	590.30
10.390	264.50	9.048	21.66	7.947	768.10
10.380	343.00	8.996	20.07	7.936	945.80
10.360	372.20	8.945	29.57	7.926	1213.00
10.350	463.60	8.913	45.46	7.915	1383.00
10.330	484.70	8.900	8.07	7.904	1722.00
10.310	513.20	8.888	17.34	7.894	1974.00
10.300	498.30	8.875	4.78	7.883	2245.00

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
7.873	2374.00	7.040	162.60	6.495	1040.00
7.862	2313.00	7.031	111.50	6.487	903.00
7.852	2320.00	7.022	152.30	6.479	747.70
7.841	2233.00	7.013	111.00	6.471	559.90
7.831	1996.00	7.004	99.93	6.464	438.40
7.820	1696.00	6.996	46.03	6.456	386.70
7.810	1439.00	6.987	88.90	6.448	329.80
7.799	1143.00	6.978	69.02	6.440	265.10
7.789	880.00	6.969	31.36	6.432	307.20
7.779	670.50	6.960	25.66	6.425	191.30
7.768	502.40	6.952	-0.11	6.417	234.10
7.758	358.40	6.943	28.59	6.409	171.50
7.748	335.60	6.934	-20.86	6.401	136.40
7.738	263.20	6.912	56.98	6.394	74.53
7.727	229.60	6.878	58.05	6.386	90.92
7.717	162.80	6.844	34.81	6.378	93.78
7.707	73.85	6.810	68.53	6.371	106.90
7.697	117.10	6.776	84.65	6.363	152.40
7.686	100.40	6.755	92.51	6.355	26.11
7.676	175.70	6.747	44.80	6.348	68.08
7.666	65.77	6.738	92.53	6.314	35.41
7.656	4.53	6.730	80.48	6.253	26.96
7.646	113.30	6.722	106.10	6.194	31.00
7.636	52.30	6.713	167.00	6.136	31.38
7.606	62.50	6.705	188.40	6.078	0.45
7.556	46.80	6.697	189.10	6.022	25.27
7.507	25.05	6.689	215.90	5.966	17.61
7.458	26.76	6.680	203.40	5.911	22.35
7.410	11.35	6.672	291.30	5.856	15.65
7.362	9.16	6.664	295.20	5.803	26.85
7.315	13.45	6.656	368.70	5.750	8.17
7.268	45.92	6.648	474.90	5.697	9.53
7.221	38.06	6.639	509.70	5.646	0.57
7.194	54.54	6.631	691.20	5.595	9.63
7.184	37.04	6.623	799.20	5.545	5.40
7.175	43.33	6.615	1053.00	5.496	23.61
7.166	11.35	6.607	1209.00	5.447	10.43
7.157	116.50	6.599	1448.00	5.399	7.63
7.148	39.54	6.591	1569.00	5.351	28.68
7.139	115.50	6.583	1863.00	5.304	34.03
7.130	130.90	6.575	1933.00	5.258	78.92
7.121	57.89	6.567	2167.00	5.232	179.50
7.112	140.00	6.559	2174.00	5.226	129.50
7.103	27.25	6.551	2166.00	5.221	91.28
7.094	193.20	6.543	2239.00	5.215	206.80
7.085	105.00	6.535	1972.00	5.209	176.20
7.076	144.30	6.527	1870.00	5.204	248.40
7.067	175.30	6.519	1669.00	5.198	267.30
7.058	149.80	6.511	1487.00	5.192	292.60
7.049	181.00	6.503	1287.00	5.187	350.80

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
5.181	442.40	4.294	18.89	3.584	17.44
5.176	534.70	4.252	-5.37	3.575	57.40
5.170	553.10	4.211	15.07	3.565	76.68
5.164	624.50	4.170	19.35	3.555	103.40
5.159	719.80	4.129	17.02	3.549	157.00
5.153	812.70	4.100	12.64	3.546	108.50
5.148	812.70	4.080	32.61	3.543	97.47
5.142	876.20	4.060	37.74	3.539	72.06
5.137	925.70	4.041	29.68	3.536	109.50
5.131	1019.00	4.022	40.18	3.533	152.90
5.125	986.40	4.002	21.02	3.530	104.60
5.120	1017.00	3.983	11.12	3.527	142.20
5.114	920.60	3.970	15.96	3.524	53.66
5.109	946.80	3.963	-14.54	3.520	188.60
5.103	896.30	3.955	21.26	3.517	138.30
5.098	822.10	3.948	-2.99	3.514	239.70
5.092	674.10	3.940	14.25	3.511	247.60
5.087	653.00	3.933	42.49	3.508	277.10
5.082	581.60	3.925	65.40	3.505	272.40
5.076	572.80	3.918	12.30	3.502	296.10
5.071	466.20	3.911	44.04	3.499	306.50
5.065	343.30	3.903	76.85	3.495	395.30
5.060	354.50	3.896	82.45	3.492	371.20
5.054	272.20	3.889	32.38	3.489	416.30
5.049	245.90	3.881	56.19	3.486	450.40
5.044	219.90	3.874	40.17	3.483	537.50
5.038	195.40	3.867	73.11	3.480	499.60
5.033	145.80	3.860	33.32	3.477	662.80
5.027	151.90	3.852	59.18	3.474	709.20
5.022	155.20	3.845	92.05	3.471	736.80
5.017	106.50	3.838	74.16	3.468	760.90
5.011	95.02	3.831	66.55	3.464	825.30
4.995	73.55	3.824	51.17	3.461	980.70
4.969	74.05	3.817	41.95	3.458	999.60
4.943	10.79	3.809	71.68	3.455	1181.00
4.916	32.08	3.802	55.36	3.452	1169.00
4.891	55.59	3.795	57.62	3.449	1210.00
4.865	3.92	3.788	-3.81	3.446	1338.00
4.839	24.21	3.776	56.06	3.443	1422.00
4.802	9.17	3.759	5.44	3.440	1443.00
4.752	11.15	3.741	25.58	3.437	1429.00
4.703	23.48	3.724	36.06	3.434	1522.00
4.655	17.75	3.707	16.13	3.431	1540.00
4.607	14.94	3.690	7.47	3.428	1608.00
4.560	10.40	3.673	36.76	3.425	1558.00
4.514	13.14	3.657	32.12	3.422	1630.00
4.469	18.59	3.640	62.84	3.419	1559.00
4.424	-6.16	3.623	51.34	3.416	1520.00
4.380	-28.81	3.607	54.01	3.413	1570.00
4.337	11.68	3.594	61.61	3.410	1496.00

R(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
3.407	1456.00	3.150	74.95	1.991	79.94
3.404	1343.00	3.142	108.10	1.978	63.15
3.401	1305.00	3.134	134.70	1.966	85.73
3.398	1224.00	3.126	80.93	1.955	88.53
3.395	1127.00	3.118	82.06	1.945	65.18
3.392	1079.00	3.110	62.09	1.935	85.11
3.389	1009.00	3.102	102.50	1.924	81.13
3.386	976.70	3.088	42.95	1.914	118.90
3.383	846.30	3.067	31.91	1.904	132.10
3.380	747.80	3.047	40.38	1.894	117.20
3.377	712.60	3.027	14.27	1.884	142.60
3.374	621.40	3.007	5.58	1.877	187.40
3.371	505.10	2.979	37.73	1.872	152.30
3.368	511.60	2.942	29.80	1.867	180.80
3.365	434.80	2.906	20.54	1.862	182.30
3.362	419.00	2.871	11.87	1.858	181.60
3.359	355.90	2.837	25.57	1.853	205.40
3.356	403.40	2.803	33.23	1.848	236.80
3.354	273.20	2.770	4.33	1.843	224.10
3.351	298.10	2.737	2.59	1.838	304.20
3.348	209.60	2.705	21.66	1.834	285.50
3.345	307.10	2.673	14.53	1.829	381.70
3.342	262.10	2.642	35.46	1.825	362.70
3.339	199.00	2.612	41.66	1.823	353.50
3.336	136.60	2.582	33.37	1.821	382.10
3.333	170.20	2.553	9.85	1.818	417.50
3.330	91.55	2.524	14.55	1.816	444.50
3.327	141.50	2.495	43.72	1.814	607.00
3.324	95.96	2.467	16.03	1.811	483.80
3.322	66.11	2.440	33.65	1.809	640.60
3.316	119.50	2.413	19.98	1.807	626.90
3.307	88.15	2.386	13.65	1.804	612.90
3.299	113.00	2.360	34.15	1.802	670.00
3.290	59.04	2.335	25.90	1.800	776.20
3.282	67.85	2.309	28.23	1.798	932.40
3.273	46.79	2.284	16.71	1.795	839.70
3.265	33.82	2.260	38.05	1.793	944.70
3.256	8.01	2.236	38.55	1.791	1034.00
3.248	54.48	2.212	22.90	1.788	1091.00
3.239	38.64	2.189	40.14	1.786	1171.00
3.231	47.21	2.166	36.60	1.784	1291.00
3.223	85.60	2.143	52.73	1.782	1342.00
3.215	45.18	2.121	30.05	1.779	1410.00
3.206	59.49	2.099	37.78	1.777	1653.00
3.198	39.66	2.077	42.46	1.775	1762.00
3.190	68.51	2.060	35.42	1.771	1985.00
3.182	76.90	2.046	65.58	1.767	2149.00
3.174	83.92	2.032	67.48	1.762	2460.00
3.166	122.30	2.018	62.31	1.758	2770.00
3.158	83.71	2.005	78.44	1.754	3054.00

E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$	E(eV)	$\sigma(b)$
1.749	3021.00	1.504	566.50	1.216	640.70
1.745	3134.00	1.499	632.60	1.211	580.80
1.740	3055.00	1.493	660.00	1.206	561.80
1.736	3321.00	1.488	708.50	1.201	510.50
1.732	2808.00	1.483	770.00	1.196	517.30
1.727	2692.00	1.478	833.60	1.191	462.80
1.723	2449.00	1.473	892.10	1.186	427.80
1.719	2100.00	1.468	1002.00	1.181	417.10
1.714	1888.00	1.463	1064.00	1.176	398.90
1.710	1688.00	1.457	1249.00	1.170	374.40
1.706	1312.00	1.450	1427.00	1.164	363.00
1.702	1203.00	1.443	1700.00	1.158	309.10
1.697	1060.00	1.437	2059.00	1.152	319.40
1.693	932.80	1.430	2297.00	1.146	325.00
1.689	788.40	1.424	2842.00	1.140	276.10
1.685	677.90	1.417	3362.00	1.134	260.70
1.681	615.20	1.411	4030.00	1.129	254.90
1.678	586.20	1.405	5333.00	1.123	274.00
1.675	521.10	1.398	6432.00	1.117	239.60
1.672	481.30	1.392	6912.00	1.112	211.60
1.669	522.70	1.386	8018.00	1.106	222.60
1.666	483.30	1.379	5945.00	1.101	193.10
1.663	426.70	1.373	6249.00	1.095	202.40
1.660	416.10	1.367	12400.00	1.090	215.40
1.657	424.40	1.361	6318.00	1.084	219.90
1.653	336.10	1.355	6860.00	1.079	226.10
1.650	348.60	1.349	7131.00	1.074	209.40
1.647	385.20	1.343	5865.00	1.068	207.50
1.644	349.90	1.337	7635.00	1.063	193.10
1.640	353.80	1.331	7815.00	1.058	204.50
1.635	321.10	1.326	5942.00	1.053	201.10
1.630	312.90	1.320	6290.00	1.048	202.70
1.625	283.80	1.314	5302.00	1.043	229.80
1.621	237.50	1.308	5388.00	1.038	209.30
1.614	279.80	1.303	4723.00	1.032	195.80
1.606	278.20	1.297	3830.00	1.028	208.70
1.599	323.80	1.291	2994.00	1.023	265.50
1.591	285.10	1.286	2624.00	1.018	291.60
1.583	271.40	1.280	2169.00	1.013	276.20
1.576	281.80	1.275	1954.00	1.008	285.00
1.568	301.90	1.269	1702.00	1.003	352.10
1.561	351.70	1.264	1530.00	0.998	414.50
1.553	381.90	1.258	1272.00	0.994	433.60
1.546	351.50	1.253	1120.00	0.989	441.00
1.539	410.30	1.248	1061.00	0.984	451.60
1.532	417.60	1.242	943.60	0.980	479.90
1.525	446.60	1.237	892.20	0.975	471.20
1.520	474.90	1.232	797.40	0.970	422.80
1.514	505.50	1.227	737.90	0.966	373.10
1.509	538.80	1.222	685.50	0.961	325.70

$\bar{E}(\text{eV})$	$\sigma(\text{b})$	$E(\text{eV})$	$\sigma(\text{b})$
0.957	294.00	0.648	18.61
0.952	308.80	0.643	58.97
0.948	223.80	0.638	18.18
0.944	216.70	0.633	32.38
0.939	193.40	0.628	39.18
0.935	169.50	0.624	55.07
0.931	198.40	0.619	25.45
0.929	147.70	0.614	17.93
0.920	160.80	0.610	23.31
0.912	92.06	0.605	42.68
0.904	106.10	0.601	14.10
0.896	73.77	0.596	71.10
0.888	104.10	0.592	72.64
0.880	69.96	0.588	43.54
0.872	102.30	0.583	32.58
0.864	74.11	0.579	70.39
0.857	32.88	0.575	-0.18
0.849	76.84	0.571	9.45
0.842	79.22	0.567	23.45
0.834	78.52	0.563	46.83
0.827	93.64	0.559	25.25
0.820	81.71	0.555	47.62
0.813	94.13	0.551	52.42
0.806	67.62	0.547	-1.93
0.799	56.83	0.543	-22.12
0.792	62.15	0.539	-59.52
0.786	41.45	0.536	50.13
0.779	54.82	0.532	42.29
0.773	58.38	0.528	-66.81
0.766	68.75	0.525	40.79
0.760	20.26	0.521	87.59
0.754	57.64	0.517	39.25
0.747	47.87	0.514	59.92
0.741	64.74	0.510	86.73
0.735	61.50	0.507	-14.21
0.729	45.88	0.503	-4.67
0.723	35.93	0.500	57.62
0.718	50.31		
0.712	49.98		
0.706	57.68		
0.700	42.39		
0.695	45.29		
0.689	24.16		
0.684	7.15		
0.679	18.16		
0.673	52.06		
0.668	72.32		
0.663	18.34		
0.658	54.92		
0.653	43.81		