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EVALUATED NEUTRON CROSS SECTIONS
FOR COPPER-63, COPPER-65, AND
NATURAL COPPER

AEC Research and Development Report

ATOMICS INTERNATIONAL

A DIVISION OF NORTH AMERICAN ROCKWELL CORPORATION

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PHYSICS

EVALUATED NEUTRON CROSS SECTIONS FOR COPPER-63, COPPER-65, AND NATURAL COPPER

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ABSTRACT

Evaluated neutron cross-section data for copper-63, copper-65, and naturally occurring copper have been prepared for the ENDF/B nuclear data file. Calculations, based on nuclear systematics, were used to augment available experiment data, where required. A complete set of neutron cross-section data was prepared for each nuclide, for incident neutron energies between 10^{-3} and 1.5×10^7 ev. These data, in ENDF/B format, have been forwarded to the National Neutron Cross Section Center, at Brookhaven National Laboratory, for distribution.

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I. INTRODUCTION

An evaluation of available measured cross sections, resonance parameters, differential angular distributions, and other pertinent data for the two naturally occurring isotopes of copper and for natural copper has been completed. Measured values were selected when they were available, even though some wide discrepancies between measured values for natural copper and values calculated by combining values for the isotopes, weighted by their relative abundances, were found. Calculations were made to obtain parameters for negative energy resonances which provided matches to low-energy absorption and scattering cross sections. The evaluated resolved and unresolved resonance parameters were checked by comparing calculations of absorption cross sections and resonance integrals from the TRIX-1 code⁽¹⁾ with measurements. Adequate agreement was found. The unresolved parameters were used to calculate background cross sections in the resolved resonance region from p-wave neutrons.

Above the resonance region, the main source of data was the UKAEA Nuclear Data Library files for copper, as compiled by Offord and Parker.⁽²⁾ These files combined the evaluations of Benzi and Haggblom, along with several improvements. An analysis of this evaluation indicated that little improvement would be obtained by another complete evaluation at this time; thus, the UKAEA results above 100 kev were used, essentially as is. One area of improvement was the use of more recent experimental angular distributions in the evaluation of elastic neutron scattering in terms of Legendre expansion coefficients.

II. EVALUATION OF THE NEUTRON CROSS SECTIONS OF COPPER FOR THE ENDF/B LIBRARY

A. LOW-ENERGY CROSS-SECTION DATA

1. Energy Ranges and Reaction Types

The low-energy region was defined to be 0.001 ev to 100 kev. The range was divided into three parts, in each of which the cross sections are presented somewhat differently. The ranges are 0.001 to 10 ev, 10 ev to 30 kev, and 30 to 100 kev.

The significant neutron reactions in the low-energy range are radiative capture and elastic scattering. The total cross section is taken to be equal to the sum of the partial cross sections for consistency.

2. Energy Range, 0.001 to 10 ev

The evaluated cross-section data are entered as smooth data only. The data for each isotope were calculated from the resolved resonance parameters, using the Breit-Wigner multilevel scattering formula.⁽⁴⁻⁷⁾ No crystal binding effects are included. The absorption cross section of natural copper was obtained from the abundance-weighted isotopic values. The scattering cross section for natural copper, 7.7 b, was obtained from an evaluation of reported measurements, and differs from the isotopically combined value of 8.6 b by more than 10%.

3. Energy Range, 10 ev to 30 kev

Both File 3 smooth data and resolved resonance parameters are provided. All the resolved resonances are treated as $l = 0$ resonances. Components of both the radiative capture and elastic scattering cross sections from neutrons with $l > 0$ were calculated from unresolved resonance parameters, using the TRIX-1 code,⁽¹⁾ and were entered in File 3 as smooth data.

4. Energy Range, 30 to 100 kev

Cross sections are specified for the smooth data file only. The total cross sections for the isotopes, and for natural copper, were taken to be equal. The elastic scattering cross section was defined to be the difference between the total and radiative capture cross sections, with the radiative capture cross sections

taken from the evaluation of measured values in Section II-D. The radiative capture cross section of natural copper is not equal to the abundance-weighted sum of the isotopic values. The latter is from 45 to 75% larger than measured values for natural copper in this energy range, and constitutes a discrepancy which has not been resolved.

Unresolved resonance parameters for this region are not given explicitly in the ENDF/B library, since the capture cross sections are entered as smooth data, rather than being produced from resonance parameters; however, unresolved resonance parameters are given in this report. They may be used to obtain an alternate set of data, in which the natural copper capture cross section is the abundance-weighted sum of its isotopes, and to calculate self-shielded cross sections.

B. RESONANCE PARAMETERS

1. Resolved Resonances

The recommended parameters of Reference 8 were adopted for the resolved resonances with positive energies. All resolved resonances were treated as $l = 0$ resonances. The top of the resolved resonance range was chosen as 30 kev; since, below that energy, nearly every sizable resonance has been assigned to a particular isotope. Most of the resonances below 30 kev occurring in the total cross-section curves for natural copper in Reference 8 appear to exhibit the scattering interference characteristic of $l = 0$ resonances.

Although some large $l = 1$ resonances are probably included in the resolved resonances, particularly at the higher energies, some small $l = 0$ resonances are probably unresolved. Thus, the assumption that the number of resolved resonances is the number of $l = 0$ resonances below 30 kev is plausible. Furthermore, the observation of $l = 1$ resonances has an appreciable probability only in the high-energy portion of the range, so only small errors in the resonance scattering cross section below 10 ev should be introduced by using the $l = 0$ formula for all resonances (See also the discussion of Section II-D).

Parameters for one bound level for each isotope were determined by matching the evaluated scattering and absorption cross sections at $v = 2200$ m/sec. Positive energy parameters contribute only 11 and 4% of the absorption cross section, and 64 and 30% of the scattering cross section, for Cu^{63} and Cu^{65} , respectively.

TABLE 1
RESOLVED RESONANCE PARAMETERS FOR Cu⁶³

E _r (kev)	Γ _n (ev)	J	E _r (kev)	Γ _n (ev)	J
- 0.3069	4.553	2	13.70	39.44	2*
0.557	0.86	2	14.90	27.76	2*
2.06	4.35	1	15.60	17.68	2*
2.66	4.5	2	16.10	11.04	2*
4.86	14.	1	17.88	133.	1*
5.39	40.	2	18.12	133.	1*
5.82	10.4	2	21.04	200.	1*
7.64	6.8	2*	21.25	120.	2*
7.94	80.	2	22.82	112.	2*
9.20	36.	2	24.80	60.4	2*
9.93	87.	1	25.60	165.6	2*
10.85	58.	2	26.50	96.8	2*
12.54	23.	1	28.20	68.66	1*
13.17	66.	2	29.30	322.3	1*

*J value assigned, (2g Γ_n) preserved.

TABLE 2
RESOLVED RESONANCE PARAMETERS FOR Cu⁶⁵

E _r (kev)	Γ _n (ev)	J	E _r (kev)	Γ _n (ev)	J
- 0.9476	92.07	2	8.549	7.56	1
0.229	0.016	2*	13.66	75.	2
2.55	16.8	2	14.23	41.6	2*
3.92	24.	1	15.09	7.62	2*
4.40	7.	2	15.82	32.0	2*
4.50	16.	1	17.8	244.4	2*
6.48	26.	2	20.0	253.	1*
7.60	23.	2	21.8	36.53	1*
7.65	33.	1	24.1	112.	1*
7.94	50.	2	25.0	204.8	2*

*J value assigned, (2g Γ_n) preserved.

Resonance energies and scattering level widths are listed in Tables 1 and 2. Where the value of the compound nucleus spin quantum number (J) is unknown, one of the two possible $l = 0$ values was assigned to facilitate use of the Breit-Wigner multilevel scattering formula.⁽⁴⁾ In these cases, Γ_n was adjusted to preserve $(2g \Gamma_n)$. The frequency of assignment of each J value was approximately proportional to $(2J + 1)$. The chosen values of the radiative capture widths are 0.55 and 0.24 ev for Cu^{63} and Cu^{65} , respectively.⁽⁸⁾ Values of 0.65 and 0.6 ev have also been given,⁽⁹⁾ but the chosen values appear substantially confirmed by the results of calculations presented in Sections II-D and II-E.

The resonance energies in the compilation of Reference 8 indicate a peculiarly large amount of overlap between Cu^{63} and Cu^{65} resonances. Below 30 kev, eight such coincidences, which appear as single resonances in the total cross-section curves of natural copper, are found. These are listed in Table 3. Assuming that the average level spacing in natural copper is ~ 0.6 kev, and that the average reduced neutron width is ~ 0.4 ev, the expected percentage of resonances involved in overlap between isotopes is $\sim 15\%$. The observed percentage is $> 30\%$. Whether this observation is related to the discrepancies between measured natural copper values and the abundance-weighted sum of the isotopic values for some quantities (See Section II-D) is yet to be resolved.

2. Unresolved Resonances

A set of unresolved resonance parameters were formed, in the usual manner, by an averaging over the resolved resonances. Because J values were assigned to only a few resonances of each isotope, parameters for the individual J states are not known confidently. The following assumptions were made:

- 1) Average level spacings are proportional to $(2J + 1)^{-1}$, and are independent of l .
- 2) Strength functions for all the (l, J) states with a particular l value are equal. Some evidence exists that, for $l = 0$, the two J states may have significantly different strength functions.⁽¹⁰⁾ However, the accuracy to which the cross sections are known does not seem to warrant a detailed study at this time.

TABLE 3
SETS OF OVERLAPPING RESONANCES
BETWEEN Cu⁶³ AND Cu⁶⁵

E _r (kev)	
Cu ⁶³	Cu ⁶⁵
6.452*	6.48
7.64	7.65
7.94	7.94
12.54	12.53*
14.9	15.09
15.6	15.82
16.1	16.15*
17.88	17.8

*These resonances were not used, because scattering level width parameters were not available.

TABLE 4
AVERAGE RESONANCE PARAMETERS
OF RESOLVED RESONANCES

	Cu ⁶³	Cu ⁶⁵
Number of Resonances	27	19
E _{max} (kev)	29.3	25.0
E _{min} (kev)	0.6	0.2
⟨D⟩ observed (kev)	1.1	1.4
ΣΓ _n ^o (ev)	15.2	10.1
ΔE (kev)	30	30
s (b/ev at 1 ev)	5.1 x 10 ⁻⁴	3.4 x 10 ⁻⁴
s _J (b/ev at 1. ev)	2.55 x 10 ⁻⁴	1.7 x 10 ⁻⁴
⟨Γ _n ⟩ ₁ (ev)	0.747	0.634
⟨D⟩ ₁ (kev)	2.93	3.73
⟨Γ _n ^o ⟩ ₂ (ev)	0.449	0.381
⟨D⟩ ₂ (kev)	1.76	2.24

- 3) Average radiative capture widths are independent of J and ℓ . The average resolved resonance parameters, and quantities used in calculating them, are given in Table 4. The formulas used are

$$\langle D \rangle_{\text{observed}} = \frac{E_{\text{max}} - E_{\text{min}}}{(\text{number of resonances}) - 1}$$

$$s = 2s_J = \Sigma \Gamma_n^0 / \Delta E = \langle \Gamma_n^0 \rangle_J / \langle D \rangle_J$$

The calculated strength functions of 2.55×10^{-4} and 1.7×10^{-4} for Cu^{63} and Cu^{65} , respectively, compare fairly well with the ranges of values in the literature, which are 1.6 to 2.7×10^{-4} and 1.5 to 2.0×10^{-4} , respectively.^(11,12) It is not clear, however, that all the resolved resonances are $\ell = 0$ resonances. The matter is investigated in Section II-D, and the parameters mentioned previously are adopted for $\ell = 0$ neutrons.

The $\ell = 1$ strength function was chosen to be 1.0×10^{-4} , based on the calculated values of Uttley *et al.*⁽¹³⁾ for $A = 64$, which are ~ 1.0 to 1.3×10^{-4} , and of Jain,⁽¹⁴⁾ which are ~ 0.5 to 1.0×10^{-4} . The $\ell = 2$ strength function was assumed to be 1.0×10^{-4} . The three assumptions listed previously were assumed to hold for $\ell > 0$.

3. Potential Scattering Cross Section

Values of the potential scattering cross section at low energies have been measured only for natural copper. Values for the separate isotopes were assumed to be the same as for natural copper. The measured data are given in Table 5. A value of 6.7 b was chosen. This infers a scattering length of 7.3 F.

TABLE 5
POTENTIAL SCATTERING CROSS-SECTION
MEASUREMENTS FOR NATURAL COPPER

σ_{pot} (b)	Reference
6.68	41
6.88	41
6.8 ± 0.5	42
6.6 ± 0.2	43

C. THERMAL CROSS SECTIONS

1. 2200 m/sec Capture Cross Section

Measurements for the 2200 m/sec radiative capture cross sections are presented in Table 6, for both natural copper and its isotopes. The values chosen from which to derive negative energy resonance parameters were 4.5 and 2.7 b for Cu^{63} and Cu^{65} , respectively. These values give a value for natural copper of 3.79 b, in good agreement with natural copper measurements.

TABLE 6
2200-m/sec RADIATIVE CAPTURE CROSS-SECTION
MEASUREMENTS FOR Cu^{63} , Cu^{65} , AND
NATURAL COPPER

σ_c (2200 m/sec) (b)	Comment	Reference
Cu^{63}		
5.0 ± 1	Adjusted for 43% K capture	16
4.47 ± 0.36	Renormalized to $\sigma_{a2200}^{\text{Au}^{197}} = 98.8$ b	17
4.54	Renormalized to $\sigma_{a2200}^{\text{nat Cu}} = 3.75$ b	18
4.44 ± 0.26		19
4.52 ± 0.10	$\sigma_a = (2.512 \pm 0.058)\lambda^*$ extrapolated $1/v$	15
4.66 ± 0.47		20
5.4	Adjusted for 43% K capture	21
4.03 ± 0.17		22
Cu^{65}		
1.82 ± 0.36		16
2.19 ± 0.18	Renormalized to $\sigma_{a2200}^{\text{Au}^{197}} = 98.8$ b	17
2.63 ± 0.26	$\sigma_a = (1.459 \pm 0.144)\lambda^*$ extrapolated $1/v$	15
Ratio $\text{Cu}^{63}/\text{Cu}^{65}$		
2.32 ± 0.11		23
Natural Cu		
3.8 ± 0.1	Evaluation to 1966	8
3.76 ± 0.03		24

* λ is neutron wave length ($\text{\AA}$)

2. 2200 m/sec Scattering Cross Section

The low-energy scattering cross sections are nearly constant below 10 ev. For the individual isotopes, Keating et al.⁽¹⁵⁾ have obtained free atom scattering lengths of 6.72 and 11.09 F for Cu⁶³ and Cu⁶⁵, respectively. Incoherent scattering was determined to be zero, within the limits of error. The scattering cross sections for Cu⁶³ and Cu⁶⁵ are 5.67 and 15.46 b, respectively. The negative energy resonance parameters give acceptably close scattering cross-section values of 5.58 and 15.42 b, using the multilevel scattering formula.

The isotopic values infer a cross section of 8.62 b for natural copper. Measurements of the low-energy scattering cross section for natural copper are given in Table 7. Based on these measurements, the scattering cross section is indicated to be probably in the range of 7 to 8 b, which is well below the isotopically combined value. The value of 7.7 b was adopted for the natural copper data file below 10 ev.

TABLE 7
LOW-ENERGY SCATTERING CROSS SECTION OF NATURAL COPPER

σ_s (b)	Remarks	Reference
	From σ_t measurements from which σ_a is subtracted as $1/v$ with $\sigma_{a2200} = 3.8$ b	
8.1	$\sigma_t = 11.9$ b at 0.0253 ev	25
7.7 ⁵	From transmission curve and $T = \exp(-\sigma_n)$	26
	$\sigma_t = 7.94$ b at 10 ev	
7.55 $\pm$ 0.4	2 to 20 ev	27
7.72 $\pm$ 0.03	$\sigma_t = 8.21$ b at 1.44 ev	28
7.7 $\pm$ 0.3	0.1 to 1 ev	29
	<u>Scattering</u>	
8.4	Adjusted to $\sigma_s^c = 4.71$ b	25
7.3 $\pm$ 0.6		30
7.84 $\pm$ 0.32		15
7.0 $\pm$ 0.2		31

D. UNRESOLVED RESONANCE RANGE

The capture cross sections in the range 30 to 100 kev were taken from qualitative fits to experimental data shown in Figures 1 and 2. The notable inconsistency between the isotopic combination for natural copper and measurement is shown in Figure 2 also. The former values are from 35 to 75% higher than the latter, between 10 and 300 kev. Each set of experimental points represents at least three separate measurements, so the discrepancy is not easily resolved.

Figure 1.
Radiative Capture Cross Section
vs Energy for Cu^{63} and Cu^{65}

Figure 2.
Radiative Capture Cross Section
vs Energy for Natural Copper

The total cross section for natural copper has been measured in the 30 to 100 kev range.⁽⁸⁾ In order to represent the data accurately with a reasonable number of points, 130 points were selected. The isotopic total cross sections were assumed to be equal to natural copper. Elastic scattering cross sections were defined to be equal to the total minus the capture cross sections.

Capture cross sections, calculated with the TRIX-1⁽¹⁾ code, using the unresolved resonance parameters of Section II-B-2, are shown in Figures 1 and 2. The energy dependence of the potential scattering was included in the calculation. The calculated average total cross section, which is nearly all scattering, was about 20% higher than measurement. The large majority of the scattering cross section is $l = 0$ potential scattering, so the value of 6.7 b for the low-energy $l = 0$ potential scattering cross section may be too large, as well as perhaps the $l = 0$ strength function. Changes in the scattering level width (Γ_n) would not affect calculated capture cross sections appreciably, since $\Gamma_n \cong \Gamma$.

At 30 kev, more than 50% of the calculated capture cross section arises from neutrons with $l > 0$. Since the large majority of resolved resonances exhibit $l = 0$ line shapes, a high level of $l > 0$ unresolved background is indicated. Below 100 kev, the calculated capture cross section for natural copper falls between the isotopic combined and directly measured values, thus lending support to the resonance parameters used.

E. RESONANCE INTEGRALS

Measured values of the resonance integral for Cu^{63} , Cu^{65} , and natural copper are listed in Table 8. The most probable values for the isotopes appear to be about 5.1 b for Cu^{63} and 2.4 b for Cu^{65} . They yield a combined isotope value for natural copper of 4.3 b, which compares fairly well with a most probable measured value of about 3.9 b.

The isotopic resonance integrals were calculated, with the TRIX code,⁽¹⁾ from the resolved and unresolved resonance parameters. A breakdown of the results by resolution and angular momentum is given in Table 9. The values of 5.35, 2.10, and 4.35 b for Cu^{63} , Cu^{65} , and natural copper, respectively, agree well enough with the measured values, to lend some confidence to the chosen parameters.

TABLE 8
MEASURED RESONANCE INTEGRALS OF COPPER

Measured Value (b)	Cutoff Energy, E_c (ev)	Remarks	I_{∞} , Adjusted to $E_c = 0.5$ ev Including $1/v$ (b)	Reference
Cu^{63}				
4.4	0.52	$1/v$ included	4.4	32
3.09 ± 0.15	0.5	No $1/v$, restored using $\sigma_{a2200} = 4.5$ b	5.11 ± 0.2	33
3.17 ± 0.18	0.62	No $1/v$, restored using $\sigma_{a2200} = 4.5$ b	4.99 ± 0.2	34
4.2 ± 0.2	0.62	5 mil foil	5.3 ± 0.2	35
Cu^{65}				
2.2	0.52	$1/v$ included	2.2	32
1.52 ± 0.25	0.5	No $1/v$, restored using $\sigma_{a2200} = 2.2$ b	2.51 ± 0.25	33
1.53 ± 0.24	0.62	No $1/v$, restored using $\sigma_{a2200} = 2.2$ b	2.42 ± 0.24	34
Natural Cu				
3.3 ± 0.3	0.5	$1/v$ included	3.3 ± 0.3	36
4.0	0.52	$1/v$ included	4.0	32
3.7 ± 0.8	0.49	$1/v$ included	3.7 ± 0.8	37
4.96		$1/v$ included	4.96	38
1.2 ± 0.5	0.5	No $1/v$, restored using $\sigma_{a2200} = 3.8$ b	2.9 ± 0.5	39
2.6 ± 0.3	0.52	No $1/v$, restored using $\sigma_{a2200} = 3.8$ b	4.25 ± 0.3	9
1.7 ± 0.4		No $1/v$	3.7 ± 0.4	40
3.8 ± 0.3	0.55		3.9 ± 0.3	24

TABLE 9
RESONANCE INTEGRALS FOR COPPER ISOTOPES,
CALCULATED FROM RESONANCE PARAMETERS

Description	Cu ⁶³	Cu ⁶⁵
$l = 0$ resolved	3.22	0.95
$l = 0$ unresolved	0.02	0.01
"1/v" positive energy resonances	<u>0.21</u>	<u>0.04</u>
$l = 0$ Total	3.45	1.00
$l > 0$	<u>0.32</u>	<u>0.24</u>
Total positive energy resonances	3.77	1.24
Negative energy resonance	<u>1.58</u>	<u>0.86</u>
Total	5.35	2.10

F. CROSS-SECTION DATA ABOVE 100 kev

1. Neutron Reaction Data

Above 100 kev, the main source of data were the UKAEA Nuclear Data Library files for copper, as compiled by Offord and Parker.⁽²⁾ These files combined the evaluations of Benzi⁽⁴⁷⁾ and Häggblom,⁽⁴⁸⁾ along with several improvements. An analysis of this evaluation indicated that little improvement would be obtained by another complete evaluation at this time; thus, the evaluated copper data for ENDF/B essentially were derived from their results, above 100 kev.

Where given, the cross sections for the separate isotopes were used. This included data for the (n, γ), (n,n'), (n,p), and (n, α) reactions. These were abundance weighted to obtain values for the naturally occurring element.

The following reactions have been specified for copper and its isotopes:

<u>Reaction</u>	<u>Cu⁶³</u>	<u>Cu⁶⁵</u>	<u>Natural Copper</u>
Total	X	X	X
Elastic	X	X	X
Inelastic	X	X	X
First inelastic level	X	X	X
Second inelastic level	X	X	X
Third inelastic level	X	X	X
Fourth inelastic level	X	X	X

<u>Reaction</u>	<u>Cu⁶³</u>	<u>Cu⁶⁵</u>	<u>Natural Copper</u>
Fifth inelastic level	X		X
Sixth inelastic level			X
Seventh inelastic level			X
Eighth inelastic level			X
Ninth inelastic level			X
(n,2n)	X	X	X
(n, γ)	X	X	X
(n,p)	X	X	X
(n, α)	X	X	X
$\bar{\mu}_L$	X	X	X
ξ	X	X	X
γ	X	X	X

2. Differential Elastic Data

Secondary angular distributions may be expressed in terms of Legendre coefficients, $f_\ell(E)$, where the $f_\ell(E)$ are defined by

$$\frac{d\sigma(\mu, E)}{d\Omega} = \frac{\sigma_s(E)}{2\pi} \sum_{\ell=0}^{NL} \frac{2\ell+1}{2} f_\ell(E) P_\ell(\mu) \quad \dots(1)$$

Since $f_0(E) = 1$, only values for $\ell = 1, 2, \dots, NL$ are specified. The angular variable (μ) may refer to either the laboratory (L) or center-of-mass (C) coordinate system.

Data expressed as Legendre coefficients for elastic scattering above thermal energies, in either the (C) or (L) system, can be transformed to the other system with energy-independent transformation matrices ($U_{\ell m}$) or ($U_{\ell m}^{-1}$), respectively.

$$f_\ell^L(E) = \sum_{m=0}^{NM} U_{\ell m} f_m^C(E) \quad , \quad \ell = 0, NM \quad \dots(2)$$

$$f_\ell^C(E) = \sum_{m=0}^{NM} U_{\ell m}^{-1} f_m^L(E) \quad , \quad \ell = 0, NM \quad \dots(3)$$

where NM is the maximum value of NL. The appropriate transformation matrix can be included in File 4 as an array of numbers V_k , $k = 1, 2, \dots, NK$. V_k denotes either $U_{\ell m}$ or $U_{\ell m}^{-1}$, with $k = 1 + \ell + m(NM + 1)$ and $NK = (NM + 1)^2$.

Differential elastic scattering cross sections were obtained from the recent measurements of Smith,⁽⁴⁹⁾ and Holmqvist and Wiedling,⁽⁵⁰⁾ as well as from BNL-400⁽⁵¹⁾. The data was processed with the code CHAD⁽⁵²⁾ to produce center-of-mass Legendre expansion coefficients to order 20.

Legendre coefficients, as defined by Equation 1, were specified for copper and its isotopes. Since the coefficients were defined in the center-of-mass system, the transformation matrix, given by Equation 2, was specified.

The Legendre coefficients were then used to reproduce the original angular distributions and to check the criteria of non-negative differential elastic values. A single set of Legendre data was used for Cu⁶³, Cu⁶⁵, and natural copper. The Legendre data is given at 45 energies, over the range 10 kev to 15 Mev. Below 10 kev, the angular data is assumed isotropic, and has the 10-kev value.

3. Secondary Energy Distributions

Secondary energy distributions are expressed as normalized probability distributions. The energy distributions, $p(E' - E)$, are normalized such that

$$\int_0^{\infty} dE p(E' - E) = 1 \quad \dots (4)$$

with the differential cross section being obtained from

$$\frac{d\sigma(E' - E)}{dE} = \sigma(E) p(E' - E) \quad \dots (5)$$

The energy distribution is further expressed as

$$p(E' - E) = \sum_{k=1}^{NK} p_k(E) f_k(E' - E) \quad \dots (6)$$

so that both partial distributions or different distributions in different energy ranges can be accommodated. The $f_k(E' - E)$ are normalized in the same way as the $p(E' - E)$.

The inelastic discrete level data are given as separate subsections for each level; LF = 3, discrete energy loss, is the method of specification. The discrete energy loss, θ , is taken to be the absolute value of Q , the level excitation energy.

The $p_k(E)$ are defined above the reaction threshold; however, the $p_k(E)$ are zero above 1.75 Mev. The sum of the $p_k(E)$ over k is 1.0, for threshold $< E < 1.75$ Mev.

The secondary energy distribution for continuum inelastic neutrons is given by a Maxwellian with an energy dependent temperature, $LF = 9$, and is assumed to be the same for natural copper and both its constituents, i.e.,

$$f_k(E' \leftarrow E) = \left[\frac{E'}{\theta^2(E)} \right] \exp \left[\frac{-E'}{\theta(E)} \right] \quad \dots (7)$$

and

$$\theta_{inel}(E) = \left(\frac{E}{a} \right)^{1/2} \quad \dots (8)$$

where

$$a = 4.8 \text{ Mev}^{-1}$$

E is in Mev

$$p_k(E) = 1.0 \text{ for } 1.75 \text{ Mev} < E < 15.0 \text{ Mev}$$

$$p_k(E) = 0.0 \text{ for } E < 1.75 \text{ Mev.}$$

For an $(n,2n)$ reaction, it is assumed that the first neutron has an evaporation spectrum which is identical to that for continuum inelastic neutrons and $p_k(E) = 0.5$. The second neutron also obeys a Maxwellian distribution, with the following expression for the temperature,

$$\theta_{n,2n}(E) = \left(\frac{E - E_{\text{threshold}}}{a} \right)^{1/2} \quad \dots (9)$$

where

$$a = 4.8 \text{ Mev}^{-1}$$

$$p_k(E) = 0.5.$$

The $(n,2n)$ threshold for Cu^{63} is 11.01 Mev; and, for Cu^{65} , it is 10.06 Mev. For natural copper, the second neutron appears as a separate subsection for each isotope, and the $p_k(E)$ for each subsection is weighted by the appropriate abundance.

REFERENCES

1. J. M. Otter, "TRIX-1, An Improved Analytic Calculation of Resonance Integrals," NAA-SR-MEMO-11538 (July 1965)
2. S. M. Offord and K. Parker, "Neutron Cross Section of Copper in the Energy Range 0.0001 ev to 15 Mev - Sources of Data for Files 249 to 251 in the UKAEA Nuclear Data Library," AWRE 0-63/67 (December 1967)
3. H. C. Honeck and S. Pearlstein, "ENDF/B, Specifications for an Evaluated Nuclear Data File for Reactor Applications," BNL 50066 (T-467) (July 1967)
4. J. M. Otter, "UNICORN, A Program to Calculate Cross Sections From Resonance Parameters," NAA-SR-11980, Vol VI (June 1966)
5. K. Gregson, M. F. James, and D. S. Norton, "MLBW - A Multilevel Breit-Wigner Computer Programme," AEEW-M517 (1965)
6. K. Gregson and M. F. James, "TEMPO, A General Doppler Broadening Programme for Neutron Cross Sections," AEEW-M518 (1965)
7. J. M. Otter, NSE, 28 (1967) p 149
8. M. D. Goldberg et al., BNL 325, 2nd Ed., Suppl. No. 2, Vol IIA (1966)
9. S. V. Kapchigashev and Yu. P. Popov, Soviet J. Atomic Energy, 15, (1963) p 808
10. P. Chevillon-Pitollat, CEA-R-3128 (1967)
11. H. Marshak and H. W. Newson, Phys. Rev., 106 (1957) p 110
12. W. M. Good et al., Phys. Rev. 151 (1966) p 912
13. C. A. Uttley et al., Nuclear Data for Reactors, Vol 1, (IAEA, Vienna, 1967) p 165
14. A. P. Jain, Nucl. Phys. 50 (1964) p 157
15. D. T. Keating et al., Phys. Rev. 111 (1958) p 261
16. L. Seren et al., Phys. Rev. 72 (1947) p 888
17. H. Pomerance, Phys. Rev. 88 (1952) p 412
18. B. C. Purkayastha and G. R. Martin, Can. J. Chem. 34 (1956) p 293
19. H. Meister, Zeit. Natur. 13A (1958) p 820

20. W. S. Lyon, NSE 8 (1960) p 378
21. J. Shinecko et al., UJV-1368 (Inst. Nucl. Res, Prague, 1966)
22. A. Pinoncelli et al., EANDC(E) (1967) p 76 U
23. J. H. Reynolds, Phys. Rev. 79 (1950) p 789
24. J. C. Carre and R. Vidal, Nuclear Data for Reactors, Vol I (IAEA, Vienna, 1967) p 479
25. M. Goldhaber and H. Brooks, Proc. Royal Soc. (London) A162 (1937) p 127
26. G. S. Pawlicki, ORNL-1526 (1953)
27. M. S. Moore and O. B. Simpson, NSE 13 (1962) p 18
28. L. A. Rayburn and E. O. Wollan, Nucl. Phys. 61 (1965) p 381
29. H. Ataney et al., GA 7091 (1966) p 46
30. C. G. Shull and E. O. Wollan, Phys. Rev. 81 (1951) p 527
31. D. Balley et al., Rev. Sci. Instr., 33 (1962) p 916
32. R. Macklin and H. Pomerance, 5 (1955) p 96
33. R. Dahlberg, K. Jirlow, and E. Johansson, J. Nucl. Energy AB, 14 (1961) p 53
34. N. P. Baumann, DP 817 (1963)
35. L. Anderson, Health Physics, 10 (1964) p 315
36. P. E. Spivak et al., Peaceful Uses of Atomic Energy, 5 (1955) p 91
37. V. B. Klimentov and V. M. Gryayev, J. Nucl. Energy, 9 (1959) p 20
38. HW-63576, Nucl. Phys. Res. Quarterly Report (1960)
39. R. B. Tattersal et al., J. Nucl. Energy A12 (1960) p 32
40. V. Proknovov, INDSWG-64 (1964) p 75, quoted in CINDA 67, Part I (1967) p 261
41. C. T. Hibdon and C. O. Muehlhause, Phys. Rev 76 (1949) p 100
42. K. K. Seth et al., Phys. Rev. 110 (1958) p 692
43. W. Ratynski et al., Bull. Acad. Pol. Sci., C1 III, 8 (1960) p 117

44. V. A. Tolstikov et al., Atomnaya Energiya, 21 (1966) p 45
45. K. Naguib and A. Lukyanov, J. Nuc. Energy, A/B 20 (1966) p 373
46. D. J. Hughes and R. B. Schwartz, BNL 325, 2nd Ed (1958)
47. V. Benzi, "Neutron Cross Sections of Copper in the Energy Range 0.01 ev - 15 Mev," CEC (67)10 (1967)
48. H. Häggblom, AE-RFR-597 (1967)
49. A. B. Smith, C. A. Englebrecht, and D. Reitman, "Elastic and Inelastic Scattering of Fast Neutrons From Co, Cu and Zn," Phys. Rev. 135B (1964) p 76
50. B. Holmqvist and T. Wiedling; "An Optical Model Study of Neutrons Elastically Scattered by Iron, Nickel, Cobalt, and Copper in the Energy Region 1.5 to 4.6 Mev," Conference Proceedings Nuclear Data for Reactors, Vol I, Paris (1966) p 409
51. M. D. Goldberg, V. M. May, and J. Stehn, "Angular Distributions in Neutron Induced Reactions, Vol II, Z = 23 to 94," BNL-400, 2nd Ed (1962)
52. R. F. Berland, "CHAD, Code to Handle Angular Data," NAA-SR-11231 (1965)
53. R. S. Hubner, "EDIT - A Fortran IV Level H Program to Punch, Print, and Plot Selected Portions of an ENDF/B Data Tape," NAA-SR-12525 (November 1967)

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APPENDIX I

GRAPHICAL DISPLAY OF COPPER-65 ENDF/B DATA

Copper-65 was chosen to graphically illustrate the ENDF/B copper data. The computer program EDIT⁽⁵³⁾ was used to automatically plot the ENDF/B Files 1, 3, 4, and 5.

The character of the plotted output depends upon the contents of each file. Except for File 4 and for log abscissa interpolation regions, there will be one plot per interpolation region; for log abscissa interpolation regions containing more than 10 decades, there will be two plots.

The plotted results are described for each file.

A. FILE 1

The literal information, MT = 451, is printed. There is one line per record, with the first 66 columns of the record printed, and with 25 lines (or less) printed per CRT frame. An example of File 1 plotted output is given in Figures 3 through 5.

B. FILE 3

The type of grid for the plots of File 3 "smooth" cross sections depends upon the interpolation code specified in the TAB1 record. At the top of the grid appears a title, consisting of the first 48 characters of the first literal record in File 1. The abscissa title is ENERGY (EV). The ordinate title depends upon the reaction type (the MT number). For example, it might be TOTAL or (N,2N), meaning the total or the (n,2n) cross section. Figures 6 through 28 illustrate the File 3 data for Cu⁶⁵.

C. FILE 4

Angular distribution data in File 4 are given either as energy-dependent Legendre coefficients or as tabulated functions of the cosine of the scattering angle for various energies. The ordinate and the abscissa are linear and logarithmic, respectively, for the coefficient data and are logarithmic and linear, respectively, for the tabulated data. At the top of the grid appears a title, consisting of the first 48 characters of the first literal record in File 1. For

Legendre coefficient data, the abscissa title is ENERGY (EV). The ordinate title depends upon the reaction type (MT) and the index of the coefficient. For example, ELASTIC LEGENDRE COEFFICIENT F 12 means that the data plotted is the twelfth Legendre coefficient for the angular distribution of elastic scattering. There will be one plot for each coefficient. Figures 29 through 48 are examples of this type of data.

D. FILE 5

Plots of the energy distribution data in File 5 depend upon the $f_k(E' - E)$, which may be specified in a variety of ways; the parameter LF is used to denote the method used. A reaction type may consist of sets of data for one or more values of LF.

The first plot for any value of LF contains the $p_k(E)$. As in Files 3 and 4, a title, consisting of the first 48 characters of the first literal record in File 1, is printed at the top of each curve. The abscissa title is ENERGY (EV), and the ordinate title depends upon the reaction type (MT), the value of LF (the subsection), and a constant which may appear in the expression for $f_k(E' - E)$. For example, it might be

INELASTIC P(E) LF = 3 CONS = 1.114 + 06,

which means that the $p_k(E)$ data is for a discrete inelastic level reaction, and the $f_k(E' - E)$ uses the third method of specification; the constant (θ) for the distribution is the discrete energy loss, 1.114×10^6 ev.

For copper, two values of LF are used; they are

<u>LF</u>	<u>Description</u>	<u>CONS</u>
3	Discrete energy loss	The discrete energy loss (ev)
9	Maxwellian distribution, $\theta = \theta(E)$, and is tabulated	Undefined; value will be 0.0

LF subsection requires no further plotting; however, additional plotting is done for LF = 9. Comments on File 3 plots apply here, except as noted. For LF = 9, a plot of a tabulated $\theta(E)$ is produced. The ordinate might read

(N,2N) THETA(E) TAB. FOR MAXWELLIAN DISTRIB

Examples of File 5 plotting are given in Figures 49 through 52 for LF = 3, and in Figures 53 through 59 for LF = 9.

COPPER-65 ENDF/B MAT 1086 REF. AI-AEC-12741 SEPT. 1968

MF=1 GENERAL INFORMATION

ATOMIC MASS GIVEN AS 64.9278 FOR A NEUTRON MASS OF 1.008665

MT=453 RADIOACTIVE DECAY DATA FROM REF. 1

MF=2 RESONANCE PARAMETERS

MT=1511 ALL RESOLVED RESONANCES TREATED AS L=0 RESONANCES

2. RESOLVED RESONANCE PARAMETERS FROM REF. 2.

3. G VALUES FOR 0.229KEV AND ABOVE 14KEV ASSIGNED

4. NEGATIVE ENERGY RESONANCE GAMMA-N AND ED OBTAINED FROM FIT TO SIGS=15.4B, SIGA=2.2B AT 2200M/S. ASSUMED GAMMA-GAMMA=0.24EV.

5. L=0 UNRESOLVED RESONANCE PARAMETERS FROM AVERAGED RESOLVED RESONANCE PARAMETERS. OBSERVED LEVEL SPACING =DD=1.4KEV, STRENGTH FUNCTION/J STATE=SDJ=1.7E-04, FOR EACH J STATE D=DD/G

6. L=1,2 S1J=S2J=1.0E-04, DJ=DD/DJ, GAMMA-GAMMA=0.24EV ASSUMED.

7. OPTIONS LRU=1, LRF=2 (MLBW REF. 10) ARE USED.

MF=3 SMOOTH CROSS SECTIONS

MT=1 NO EXP. VALUES AVAILABLE FOR SEPERATE CU ISOTOPES. THE TOTAL WAS SET EQUAL TO SUM OF ITS PARTS, EXCEPT FOR 30 TO 100 KEV WHERE IT WAS ASSUMED TO BE EQUAL TO A SMOOTHING OF NATURAL COPPER GIVEN IN REF. 2

MT=2 BELOW RESONANCE REGION VALUES WERE CALCULATED FROM RESOLVED RESONANCE PARAMETERS USING UNICORN-REF. 3. IN

Figure 3

THE RESOLVED RESONANCE RANGE THE SMOOTH DATA IS THE CONTRIBUTION FROM L.GT. 0 CALCULATED FROM UNRESOLVED RESONANCE PARAMETERS USING TRIX-REF. 4.

FROM 30 TO 100 KEV VALUES ARE THE DIFFERENCE BETWEEN THE TOTAL AND NON-ELASTIC CROSS SECTIONS. ABOVE 100 KEV, VALUES WERE ASSUMED TO BE IDENTICAL TO NATURALLY OCCURING CU-REF. 5.

MT=4-8 LEVEL DATA FROM REF. 5, ABOVE 1.75MEV CONTINUUM WAS USED WHICH WAS MATCHED TO LEVEL DATA AND WHEN WEIGHTED ALONG WITH CU-63 GAVE CONTINUUM OF NATURAL CU FROM REF. 5.

MT=16 REF. 5

MT=251 HUBAR CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING CHAD-REF. 6.

MT=252 XI CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING CHAD-REF. 6.

MT=253 GAMMA CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING CHAD-REF. 6.

MT=102 BELOW RESONANCE REGION CALCULATED AS PER MT=2. FOR RESOLVED RESONANCE RANGE, L.GT. 0 CONTRIBUTION CALCULATED FROM UNRESOLVED RESONANCE PARAMETERS USING TRIX-REF. 4. THE 30 TO 100 KEV RANGE FROM EVALUATION OF REFERENCE DOCUMENT. ABOVE 100 KEV-REF. 5.

MT=103 REF. 5

MT=107 REF. 5

MF=4 SECONDARY ANGULAR DISTRIBUTIONS

Figure 4

MT=2 LEGENDRE COEFF. FOR ELASTIC SCATT. ARE GIVEN. DATA ARE AVAILABLE FOR NATURALLY OCCURING CU AND ARE ASSUMED TO BE THE SAME FOR THE SEPERATE ISOTOPES. DATA OBTAINED FROM REFERENCES 7,8,9. WHERE LEGENDRE COEFF. WERE NOT GIVEN THEY WERE OBTAINED FROM THE DATA POINTS BY USING CHAD-REF. 6.

MF=5 SECONDARY ENERGY DISTRIBUTIONS

MT=4 REF. 5

MT=16 REF. 5

REFERENCES

1. GOLDMAN, DAVID T., CHART OF THE NUCLIDES, KAPL (1966)
2. GOLDBERG, M.D., ET. AL., BNL 325 2ND. ED. SUPPL. NO. 2 VOL. IIA (1966)
3. OTTER, J., NAA-SR-11980 VOL. 6 (1966)
4. OTTER, J., NAA-SR-MEMO-11538 (1965)
5. OFFORD, SUSAN M., PARKER, K., AWRE 0-63/67 (1967)
6. BERLAND, R.F., NAA-SR-11231 (1965)
7. GOLDBERG, M.D., ET. AL., BNL 400 2ND ED. VOL. II (1962)
8. HOLMGVIST, B., WIEDLING, T., NUCLEAR DATA FOR REACTORS, VOL. I, IAEA, VIENNA (1967)
9. SMITH, A.B., ET. AL., PHY. REV. 135, B76 (1964)
10. OTTER, J.M., NSE 28, 149 (1967)

Figure 5

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Figure 6

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Figure 12

Figure 13

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Figure 14

Figure 15

Figure 16

Figure 17

Figure 18

Figure 19

Figure 20

Figure 21

Figure 22

Figure 23

Figure 24

Figure 25

Figure 26

Figure 27

Figure 28

Figure 29

Figure 30

Figure 31

Figure 32

Figure 33

Figure 34

Figure 35

Figure 36

Figure 37

Figure 38

Figure 39

Figure 40

Figure 41

Figure 42

Figure 43

Figure 44

Figure 45

Figure 46

Figure 47

Figure 48

Figure 51

Figure 52

Figure 53

Figure 54

Figure 55

Figure 56

Figure 57

Figure 58

Figure 59

APPENDIX II
LISTING OF COPPER-65 ENDF/B DATA

A listing of the data plotted in Appendix I is presented, along with the data files for copper-63 and natural copper.

OPTION CARD FOLLOWS
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00000007

0.0	0.0	0	0	0	0	1	0	0	0
2.9063	+04 6.2389	+01	1	0	0	211085	1451		1
0.0	0.0		1	0	72	01085	1451		2
COPPER-63 ENDF/B MAT 1085 REF. AI-AEC-12741 SEPT. 1963						1085	1451		3
MF=1	GENERAL INFORMATION					1085	1451		4
ATOMIC MASS GIVEN AS 62.9296 FOR A NEUTRON MASS OF 1.008665						1085	1451		5
MT=453	RADIOACTIVE DECAY DATA FROM REF. 1					1085	1451		6
MF=2	RESONANCE PARAMETERS					1085	1451		7
MT=1511	ALL RESOLVED RESONANCES TREATED AS L=0 RESONANCES					1085	1451		8
	2.RESOLVED RESONANCE PARAMETERS FROM REF.2.					1085	1451		9
	3.G VALUES FOR 7.64KEV AND ABOVE 13.5KEV ASSIGNED.					1085	1451		10
	4.NEGATIVE ENERGY RESONANCE GAMMA-N AND E0 OBTAINED FROM					1085	1451		11
	FIT TO SIGS=5.6B, SIGA=4.5B AT 2200M/S. ASSUMED GAMMA-					1085	1451		12
	GAMMA=0.55EV.					1085	1451		13
	5.L=0 UNRESOLVED RESONANCE PARAMETERS FROM AVERAGED					1085	1451		14
	RESOLVED RESONANCE PARAMETERS. OBSERVED LEVEL SPACING					1085	1451		15
	=DC=1.1KEV, STRENGTH FUNCTION/J STATE=(S0J)=2.55E-04,					1085	1451		16
	FOR EACH J STATE D=D0/G					1085	1451		17
	6.L=1,2 S1J=S2J=1.0E-04, DJ=D0/GJ, GAMMA-GAMMA=0.55EV					1085	1451		18
	ASSUMED.					1085	1451		19
	7.OPTIONS LRU=1, LRF=2 (MLBW REF. 10) ARE USED.					1085	1451		20
MF=3	SMOOTH CROSS SECTIONS					1085	1451		21
MT=1	NO EXP. VALUES AVAILABLE FOR SEPERATE CU ISOTOPES. THE					1085	1451		22
	TOTAL WAS SET EQUAL TO SUM OF ITS PARTS,EXCEPT FOR 30					1085	1451		23
	TO 100 KEV WHERE IT WAS ASSUMED TO BE EQUAL TO A					1085	1451		24
	SMOOTHING OF NATURAL COPPER GIVEN IN REF.2					1085	1451		25
MT=2	BELOW RESONANCE REGION VALUES WERE CALCULATED FROM					1085	1451		26
	RESOLVED RESONANCE PARAMETERS USING UNICORN-REF. 3. IN					1085	1451		27
	THE RESOLVED RESONANCE RANGE THE SMOOTH DATA IS THE					1085	1451		28
	CONTRIBUTION FROM L.GT. 0 CALCULATED FROM UNRESOLVED					1085	1451		29
	RESONANCE PARAMETERS USING TRIX-REF.4.					1085	1451		30
	FROM 30 TO 100 KEV VALUES ARE THE					1085	1451		31
	DIFFERENCE BETWEEN THE TOTAL AND NON-ELASTIC CROSS					1085	1451		32
	SECTIONS. ABOVE 100 KEV, VALUES WERE					1085	1451		33
	ASSUMED TO BE IDENTICAL TO NATURALLY OCCURING CJ-REF.5.					1085	1451		34
MT=4-9	LEVEL DATA FROM REF.5, ABOVE 1.75MEV CONTINUUM WAS USED					1085	1451		35
	WHICH WAS MATCHED TO LEVEL DATA AND WHEN WEIGHTED ALONG					1085	1451		36
	WITH CU-65 GAVE CONTINUUM OF NATURAL CU FROM REF.5.					1085	1451		37
MT=16	REF.5					1085	1451		38
MT=251	MUBAR CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING					1085	1451		39
	CHAD-REF.6.					1085	1451		40
MT=252	XI CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING CHAD					1085	1451		41

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	-REF.6.				1085	1451	42
MT=253	GAMMA CALCULATED FROM LEGENDRE COEFF. IN FILE 4 JSING				1085	1451	43
	CHAD-REF.6.				1085	1451	44
MT=102	BELOW RESONANCE REGION CALCULATED AS PER MT=2. FOR				1085	1451	45
	RESOLVED RESONANCE RANGE, L.G.T.O CONTRIBUTION CALCULATED				1085	1451	46
	FROM UNRESOLVED RESONANCE PARAMETERS USING TRIX-REF.4.				1085	1451	47
	THE 30 TO 100 KEV RANGE FROM EVALUATION OF REFERENCE				1085	1451	48
	DOCUMENT. ABOVE 100 KEV-REF.5.				1085	1451	49
MT=103	REF.5				1085	1451	50
MT=107	REF.5				1085	1451	51
MF=4	SECONDARY ANGULAR DISTRIBUTIONS				1085	1451	52
MT=2	LEGENDRE COEFF. FOR ELASTIC SCATT. ARE GIVEN. DATA ARE				1085	1451	53
	AVAILABLE FOR NATURALLY OCCURING CU AND ARE ASSJMED TO				1085	1451	54
	BE THE SAME FOR THE SEPERATE ISOTOPES. DATA OBTAINED				1085	1451	55
	FROM REFERENCES 7,8,9. WHERE LEGENDRE COEFF. WERE NOT				1085	1451	56
	GIVEN THEY WERE OBTAINED FROM THE DATA POINTS BY USING				1085	1451	57
	CHAD-REF.6.				1085	1451	58
MF=5	SECONDARY ENERGY DISTRIBUTIONS				1085	1451	59
MT=4	REF. 5				1085	1451	60
MT=16	REF. 5				1085	1451	61
	REFERENCES				1085	1451	62
	1. GOLDMAN,DAVID T.,CHART OF THE NUCLIDES,KAPL(1966)				1085	1451	63
	2. GOLDBERG,M.D.,ET. AL., BNL 325 2ND. ED. SUPPL. NO.2 VOL.				1085	1451	64
	IIA (1966)				1085	1451	65
	3. OTTER,J., NAA-SR-11980 VOL.6(1966)				1085	1451	66
	4. OTTER,J.,NAA-SR-MEMO-11538 (1965)				1085	1451	67
	5. OFFORD,SUSAN M.,PARKER,K.,AWRE O-63/67 (1967)				1085	1451	68
	6. BERLAND,R.F.,NAA-SR-11231 (1965)				1085	1451	69
	7. GOLDBERG,M.D.,ET. AL., BNL 400 2ND ED. VOL. II (1962)				1085	1451	70
	8. HOLMQVIST,B.,WIEDLING,T., NUCLEAR DATA FOR REACTORS, VOL.				1085	1451	71
	I, IAEA,VIENNA (1967)				1085	1451	72
	9. SMITH,A.B.,ET. AL., PHY. REV. 135, B76 (1964)				1085	1451	73
	10. OTTER,J.M., NSE 28, 149 (1967)				1085	1451	74
0.0	0.0	1	451	93	01085	1451	75
0.0	0.0	1	453	6	01085	1451	76
0.0	0.0	2	151	33	01085	1451	77
0.0	0.0	3	1	68	01085	1451	78
0.0	0.0	3	2	68	01085	1451	79
0.0	0.0	3	4	18	01085	1451	80
0.0	0.0	3	5	9	01085	1451	81
0.0	0.0	3	6	8	01085	1451	82
0.0	0.0	3	7	7	01085	1451	83

0.0	0.0		3	8	6	01085	1451	84	
0.0	0.0		3	9	6	01085	1451	85	
0.0	0.0		3	16	6	01085	1451	86	
0.0	0.0		3	102	58	01085	1451	87	
0.0	0.0		3	103	15	01085	1451	88	
0.0	0.0		3	107	10	01085	1451	89	
0.0	0.0		3	251	19	01085	1451	90	
0.0	0.0		3	252	19	01085	1451	91	
0.0	0.0		3	253	19	01085	1451	92	
0.0	0.0		4	2	303	01085	1451	93	
0.0	0.0		5	4	56	01085	1451	94	
0.0	0.0		5	16	21	01085	1451	95	
0.0	0.0		0	0	0	01085	1 0	96	
2.9063	+04 6.2389	+01	0	0	0	01085	1453	97	
0.0	0.0		0	0	24	41085	1453	98	
16.0	2.9062	+04 1.162	-03	2.8062	+04	1085	1453	99	
102.0	2.9064	+04 1.488	-05	2.8064	+04	1085	1453	100	
103.0	2.8063	+04 2.380	-10	2.9063	+04	1085	1453	101	
105.0	2.7060	+04 1.095	-03	2.8060	+04	1085	1453	102	
0.0	0.0		0	0	0	01085	1 0	103	
0.0	0.0		0	0	0	01085	0 0	104	
2.9063	+04 6.2389	+01	0	0	1	01085	2151	105	
2.9063	+04 1.0		0	0	1	01085	2151	106	
1.0	+01 3.0	+04	1	2	0	01085	2151	107	
1.5	0.7302		0	0	1	01085	2151	108	
1.078	-03 0.0		0	0	168	281085	2151	109	
-3.069	+02 2.0	5.103	+00	4.553	+00 0.55	+00	1085	2151	110
5.777	+02 2.0	1.410	+00	0.860	+0 0.55	+00	1085	2151	111
2.060	+03 1.0	4.405	+01	4.35	+01 0.55	+00	1085	2151	112
2.660	+03 2.0	5.05	+00	4.5	+00 0.55	+00	1085	2151	113
4.860	+03 1.0	1.455	+01	1.4	+01 0.55	+00	1085	2151	114
5.390	+03 2.0	4.055	+01	4.0	+01 0.55	+00	1085	2151	115
5.820	+03 2.0	1.095	+01	1.04	+01 0.55	+00	1085	2151	116
7.640	+03 2.0	0.735	+01	0.68	+01 0.55	+00	1085	2151	117
7.94	+03 2.0	8.055	+01	8.0	+01 0.55	+00	1085	2151	118
9.20	+03 2.0	3.715	+01	3.66	+01 0.55	+00	1085	2151	119
9.93	+03 1.0	8.755	+01	8.7	+01 0.55	+00	1085	2151	120
1.085	+04 2.0	5.855	+01	5.8	+01 0.55	+00	1085	2151	121
1.254	+04 1.0	2.355	+01	2.3	+01 0.55	+00	1085	2151	122
1.317	+04 2.0	6.655	+01	6.6	+01 0.55	+00	1085	2151	123
1.370	+04 2.0	3.999	+01	3.944	+01 0.55	+00	1085	2151	124
1.490	+04 2.0	2.831	+01	2.776	+01 0.55	+00	1085	2151	125

1.560	+04	2.0	1.823	+01	1.768	+01	0.55	+00	1085	2151	126			
1.610	+04	2.0	1.159	+01	1.104	+01	0.55	+00	1085	2151	127			
1.788	+04	1.0	1.3355	+02	1.33	+02	0.55	+00	1085	2151	128			
1.812	+04	1.0	13.355	+01	13.30	+01	0.55	+00	1085	2151	129			
2.104	+04	1.0	2.0055	+02	2.00	+02	0.55	+00	1085	2151	130			
2.125	+04	2.0	1.2055	+02	1.20	+02	0.55	+00	1085	2151	131			
2.282	+04	2.0	1.1255	+02	1.12	+02	0.55	+00	1085	2151	132			
2.480	+04	2.0	0.6095	+02	0.604	+02	0.55	+00	1085	2151	133			
2.560	+04	2.0	1.6615	+02	1.656	+02	0.55	+00	1085	2151	134			
2.650	+04	2.0	9.735	+01	9.68	+01	0.55	+00	1085	2151	135			
2.82	+04	1.0	6.921	+01	6.866	+01	0.55	+00	1085	2151	136			
2.93	+04	1.0	32.285	+01	32.23	+01	0.55	+00	1085	2151	137			
0.0		0.0			0		0		01085	2	0			
0.0		0.0			0		0		01085	0	0			
2.9063	+04	6.2389	+01		0		0		01085	3	1			
0.0		0.0			0		0		1951085	3	1			
	195		5		0		0		01085	3	1			
1.0000E-03	2.8204E	01	2.5300E-02	1.0076E	01	5.1265E-01	6.5704E	001085	3	1	143			
1.0000E	00	6.2816E	00	5.5000E	00	5.8299E	00	1.0000E	01	5.7130E	001085	3	1	144
1.0000E	01	4.0000E-03	5.0000E	01	9.0000E-03	1.0000E	02	1.3000E-02	1085	3	1	145		
5.0000E	02	2.9000E-02	1.0000E	03	3.8000E-02	5.0000E	03	8.2000E-02	1085	3	1	146		
1.0000E	04	1.3600E-01	2.0000E	04	1.9800E-01	3.0000E	04	2.2800E-01	1085	3	1	147		
3.0000E	04	1.0700E	01	3.0400E	04	7.1999E	00	3.0550E	04	1.0400E	011085	3	1	148
3.0600E	04	8.2000E	00	3.0800E	04	6.8000E	00	3.1000E	04	7.0000E	001085	3	1	149
3.1300E	04	4.6000E	00	3.1400E	04	1.5800E	01	3.1600E	04	6.7000E	001085	3	1	150
3.1900E	04	5.9000E	00	3.2100E	04	4.8000E	00	3.2300E	04	7.0000E	001085	3	1	151
3.2650E	04	4.4000E	00	3.3000E	04	4.5000E	00	3.3400E	04	2.5200E	011085	3	1	152
3.4000E	04	7.2000E	00	3.4300E	04	1.0500E	01	3.4700E	04	7.0000E	001085	3	1	153
3.5000E	04	1.9999E	01	3.5400E	04	8.0000E	00	3.6000E	04	5.1000E	001085	3	1	154
3.6200E	04	2.4000E	01	3.6700E	04	4.6000E	00	3.6900E	04	2.3500E	011085	3	1	155
3.7100E	04	9.2000E	00	3.7800E	04	6.1000E	00	3.8100E	04	8.2000E	001085	3	1	156
3.8200E	04	6.1000E	00	3.9300E	04	4.6000E	00	3.9700E	04	1.3000E	011085	3	1	157
4.0100E	04	6.0000E	00	4.0300E	04	7.0000E	00	4.0500E	04	5.4000E	001085	3	1	158
4.0600E	04	6.2000E	00	4.0900E	04	4.7000E	00	4.1100E	04	6.8000E	001085	3	1	159
4.1300E	04	4.5000E	00	4.1500E	04	3.9999E	00	4.1800E	04	2.7000E	001085	3	1	160
4.2000E	04	2.2000E	01	4.2300E	04	1.2000E	01	4.2600E	04	2.0500E	011085	3	1	161
4.2900E	04	1.1700E	01	4.3200E	04	1.3400E	01	4.3500E	04	8.4000E	001085	3	1	162
4.3800E	04	1.0000E	01	4.4000E	04	6.8000E	00	4.4300E	04	8.0000E	001085	3	1	163
4.4600E	04	5.6000E	00	4.4800E	04	1.2000E	01	4.5000E	04	6.8000E	001085	3	1	164
4.7300E	04	4.5000E	00	4.7900E	04	7.0000E	00	4.9000E	04	4.2000E	001085	3	1	165
4.9800E	04	3.8000E	00	5.0000E	04	2.3000E	00	5.0400E	04	9.0000E	001085	3	1	166
5.1000E	04	4.2000E	00	5.2400E	04	3.0000E	00	5.2700E	04	2.6000E	001085	3	1	167

5.3000E	04	2.8000E	00	5.3800E	04	1.6500E	01	5.4600E	04	3.8000E	001085	3	1	168
5.5000E	04	2.0000E	01	5.6000E	04	9.8000E	00	5.6500E	04	1.8600E	011085	3	1	169
5.6600E	04	1.2000E	01	5.8200E	04	7.0000E	00	5.8600E	04	1.2000E	011085	3	1	170
5.9000E	04	6.8000E	00	5.9600E	04	7.7000E	00	5.9800E	04	6.6000E	001085	3	1	171
6.0600E	04	6.5000E	00	6.1200E	04	5.0000E	00	6.1800E	04	4.3000E	001085	3	1	172
6.2200E	04	7.8000E	00	6.3000E	04	3.5000E	00	6.3300E	04	6.6000E	001085	3	1	173
6.4200E	04	3.0000E	00	6.4700E	04	5.0000E	00	6.5400E	04	1.3100E	011085	3	1	174
6.6000E	04	5.0000E	00	6.6500E	04	1.1500E	01	6.6800E	04	8.2000E	001085	3	1	175
6.7200E	04	1.2000E	01	6.7900E	04	6.2000E	00	6.8200E	04	7.2000E	001085	3	1	176
6.9200E	04	3.8000E	00	6.9800E	04	8.1000E	00	7.1000E	04	3.8000E	001085	3	1	177
7.1500E	04	4.3000E	00	7.1700E	04	2.9000E	00	7.2200E	04	3.6000E	001085	3	1	178
7.2500E	04	2.7000E	00	7.3000E	04	1.4500E	01	7.3300E	04	1.1000E	011085	3	1	179
7.4000E	04	1.5000E	01	7.4400E	04	1.0500E	01	7.5000E	04	1.5000E	011085	3	1	180
7.5800E	04	7.8000E	00	7.6100E	04	9.7000E	00	7.7600E	04	5.7000E	001085	3	1	181
7.8000E	04	5.9999E	00	7.8500E	04	5.0000E	00	7.9200E	04	7.3000E	001085	3	1	182
8.0600E	04	3.7000E	00	8.2000E	04	1.3300E	01	8.3800E	04	7.7000E	001085	3	1	183
8.4200E	04	8.8000E	00	8.5600E	04	5.3000E	00	8.6300E	04	8.2000E	001085	3	1	184
8.7300E	04	5.6000E	00	8.7600E	04	6.0000E	00	8.8400E	04	5.3000E	001085	3	1	185
8.9000E	04	3.6000E	00	9.0000E	04	1.0500E	01	9.0800E	04	4.6000E	001085	3	1	186
9.1500E	04	8.1000E	00	9.2000E	04	6.7000E	00	9.2500E	04	8.0000E	001085	3	1	187
9.3000E	04	5.9000E	00	9.4000E	04	5.2000E	00	9.5000E	04	6.0000E	001085	3	1	188
9.5600E	04	5.1000E	00	9.6200E	04	7.6000E	00	9.7700E	04	4.7000E	001085	3	1	189
9.8400E	04	6.0000E	00	9.9000E	04	4.8000E	00	9.9500E	04	6.0000E	001085	3	1	190
9.9900E	04	4.7000E	00	1.0000E	05	4.7000E	00	1.0000E	05	4.5177E	001085	3	1	191
2.0000E	05	4.8060E	00	3.0000E	05	4.9040E	00	4.0000E	05	4.6532E	001085	3	1	192
5.0000E	05	4.3532E	00	6.0000E	05	4.1030E	00	6.7900E	05	3.9167E	001085	3	1	193
7.0000E	05	3.9164E	00	7.8200E	05	3.7972E	00	8.0000E	05	3.7946E	001085	3	1	194
9.0000E	05	3.6477E	00	9.7600E	05	3.5160E	00	1.0000E	06	3.5766E	001085	3	1	195
1.1310E	06	3.5206E	00	1.3480E	06	3.3706E	00	1.4350E	06	3.3008E	001085	3	1	196
1.5000E	06	3.2150E	00	1.5720E	06	3.2523E	00	1.6480E	06	3.2353E	001085	3	1	197
1.6500E	06	3.2355E	00	1.7300E	06	3.2380E	00	1.7500E	06	3.2257E	001085	3	1	198
2.0000E	06	3.1554E	00	2.5000E	06	3.2561E	00	3.0000E	06	3.4754E	001085	3	1	199
3.5000E	06	3.6344E	00	4.0000E	06	3.7919E	00	4.5000E	06	3.9178E	001085	3	1	200
5.0000E	06	4.0008E	00	5.5000E	06	4.0420E	00	6.0000E	06	4.0553E	001085	3	1	201
6.5000E	06	4.0436E	00	7.0000E	06	4.0141E	00	7.5000E	06	3.9473E	001085	3	1	202
8.0000E	06	3.8969E	00	8.5000E	06	3.8209E	00	9.0000E	06	3.7425E	001085	3	1	203
9.5000E	06	3.6589E	00	1.0000E	07	3.5841E	00	1.0500E	07	3.5322E	001085	3	1	204
1.1000E	07	3.4057E	00	1.1500E	07	3.3341E	00	1.2000E	07	3.1973E	001085	3	1	205
1.2500E	07	3.1236E	00	1.3000E	07	3.0576E	00	1.3500E	07	2.9654E	001085	3	1	206
1.4000E	07	2.9027E	00	1.4500E	07	2.8565E	00	1.5000E	07	2.8048E	001085	3	1	207
0.0		0.0		0		0		0		01085	3	0		208
2.9063	+C4	6.2389	+01	0		0		0		01085	3	2		209

0.0	0.0	0	0	3	1951085	3	2	210
	6	5	12	135	51085	3	2	211
1.0	-03 5.5782	2.53	-02 5.5780	5.1265 -01 5.5740	1085	3	2	212
1.0	+00 5.5701	5.5	+00 5.5340	1.0 +01 5.4989	1085	3	2	213
1.0	E+01 0.0	5.0	E+01 0.0	1.0 E+02 0.0	1085	3	2	214
5.0	E+02 0.0	1.0	E+03 0.0	5.0 E+03 0.020	1085	3	2	215
1.0	E+04 0.070	2.0	E+04 0.140	3.0 E+04 0.180	1085	3	2	216
3.0000E	04 1.0555E	01 3.0400E	04 7.0958E	00 3.0550E	04 1.0296E	011085	3	2 217
3.0600E	04 8.0963E	00 3.0800E	04 6.6967E	00 3.1000E	04 6.9971E	001085	3	2 218
3.1300E	04 4.4577E	00 3.1400E	04 1.5698E	01 3.1600E	04 6.5983E	001085	3	2 219
3.1900E	04 5.7589E	00 3.2100E	04 4.6993E	00 3.2300E	04 6.8997E	001085	3	2 220
3.2650E	04 4.3003E	00 3.3000E	04 4.4010E	00 3.3400E	04 2.5102E	011085	3	2 221
3.4000E	04 7.1028E	00 3.4300E	04 1.0403E	01 3.4700E	04 6.9040E	001085	3	2 222
3.5000E	04 1.9904E	01 3.5400E	04 7.9051E	00 3.6000E	04 5.0061E	001085	3	2 223
3.6200E	04 2.3906E	01 3.6700E	04 4.5072E	00 3.6900E	04 2.0408E	011085	3	2 224
3.7100E	04 9.1078E	00 3.7800E	04 6.0089E	00 3.8100E	04 8.1093E	001085	3	2 225
3.8200E	04 6.0095E	00 3.9300E	04 4.5110E	00 3.9700E	04 1.2912E	011085	3	2 226
4.0100E	04 5.9121E	00 4.0300E	04 6.9123E	00 4.0500E	04 5.3126E	001085	3	2 227
4.0600E	04 6.1127E	00 4.0900E	04 4.6130E	00 4.1100E	04 6.7132E	001085	3	2 228
4.1300E	04 4.4134E	00 4.1500E	04 3.9136E	00 4.1800E	04 2.5140E	001085	3	2 229
4.2000E	04 2.1914E	01 4.2300E	04 1.1914E	01 4.2600E	04 2.0415E	011085	3	2 230
4.2900E	04 1.1615E	01 4.3200E	04 1.3315E	01 4.3500E	04 8.3157E	001085	3	2 231
4.3800E	04 9.9160E	00 4.4000E	04 6.7162E	00 4.4300E	04 7.9165E	001085	3	2 232
4.4600E	04 5.5168E	00 4.4800E	04 1.1917E	01 4.5000E	04 6.7172E	001085	3	2 233
4.7300E	04 4.4193E	00 4.7900E	04 6.9198E	00 4.9000E	04 4.1207E	001085	3	2 234
4.9800E	04 3.7214E	00 5.0000E	04 2.2215E	00 5.0400E	04 8.9219E	001085	3	2 235
5.1000E	04 4.1223E	00 5.2400E	04 2.9234E	00 5.2700E	04 2.5236E	001085	3	2 236
5.3000E	04 2.7239E	00 5.3800E	04 1.6424E	01 5.4600E	04 3.7250E	001085	3	2 237
5.5000E	04 1.9925E	01 5.6000E	04 9.7260E	00 5.6500E	04 1.8526E	011085	3	2 238
5.6600E	04 1.1926E	01 5.8200E	04 6.9274E	00 5.8600E	04 1.1928E	011085	3	2 239
5.9000E	04 6.7279E	00 5.9600E	04 7.6283E	00 5.9800E	04 6.5284E	001085	3	2 240
6.0600E	04 6.4289E	00 6.1200E	04 4.9293E	00 6.1800E	04 4.2296E	001085	3	2 241
6.2200E	04 7.7259E	00 6.3000E	04 3.4303E	00 6.3300E	04 6.5305E	001085	3	2 242
6.4200E	04 2.9310E	00 6.4700E	04 4.9313E	00 6.5400E	04 1.3032E	011085	3	2 243
6.6000E	04 4.5320E	00 6.6500E	04 1.1432E	01 6.6800E	04 8.1324E	001085	3	2 244
6.7200E	04 1.1933E	01 6.7900E	04 6.1330E	00 6.8200E	04 7.1331E	001085	3	2 245
6.9200E	04 3.7336E	00 6.9800E	04 8.0339E	00 7.1000E	04 3.7346E	001085	3	2 246
7.1500E	04 4.2349E	00 7.1700E	04 2.8350E	00 7.2200E	04 3.5352E	001085	3	2 247
7.2500E	04 2.6354E	00 7.3000E	04 1.4436E	01 7.3300E	04 1.0936E	011085	3	2 248
7.4000E	04 1.4936E	01 7.4400E	04 1.0436E	01 7.5000E	04 1.4937E	011085	3	2 249
7.5800E	04 7.7372E	00 7.6100E	04 9.6373E	00 7.7600E	04 5.6381E	001085	3	2 250
7.8000E	04 5.5382E	00 7.8500E	04 4.9385E	00 7.9200E	04 7.2388E	001085	3	2 251

-	8.0600E	04	3.6395E	00	8.2000E	04	1.3240E	01	8.3800E	04	7.5409E	00	1085	3	2	252
	8.4200E	04	8.7411E	00	8.5600E	04	5.2417E	00	8.6300E	04	8.1420E	00	1085	3	2	253
	8.7300E	04	5.5424E	00	8.7600E	04	5.5425E	00	8.8400E	04	5.2428E	00	1085	3	2	254
	8.9000E	04	3.5431E	00	9.0000E	04	1.0443E	01	9.0800E	04	4.5438E	00	1085	3	2	255
	9.1500E	04	8.0440E	00	9.2000E	04	6.6442E	00	9.2500E	04	7.9444E	00	1085	3	2	256
	9.3000E	04	5.8446E	00	9.4000E	04	5.1449E	00	9.5000E	04	5.9453E	00	1085	3	2	257
	9.5600E	04	5.0455E	00	9.6200E	04	7.5457E	00	9.7700E	04	4.6462E	00	1085	3	2	258
	9.8400E	04	5.5465E	00	9.9000E	04	4.7467E	00	9.9500E	04	5.9468E	00	1085	3	2	259
	9.99	E+04	4.647		1.0	E+05	4.647		1.0	E+05	4.647		1085	3	2	260
	2.0	+05	4.774		3.0	+05	4.881		4.0	+05	4.6342		1085	3	2	261
	5.0	+05	4.3352		6.0	+05	4.086		6.79	+05	3.90		1085	3	2	262
	7.0	+05	3.8558		7.82	+05	3.68		8.0	+05	3.5656		1085	3	2	263
	9.0	+05	3.476		9.76	+05	3.33		1.0	+06	3.282		1085	3	2	264
	1.131	+06	3.05		1.348	+06	2.80		1.435	+06	2.70		1085	3	2	265
	1.50	+06	2.6615		1.572	+06	2.56		1.648	+06	2.45		1085	3	2	266
	1.65	+06	2.45		1.73	+06	2.38		1.75	+06	2.35		1085	3	2	267
	2.0	+06	2.077		2.5	+06	1.847		3.0	+06	1.845		1085	3	2	268
	3.5	+06	1.92		4.0	+06	2.011		4.5	+06	2.108		1085	3	2	269
	5.0	+06	2.157		5.5	+06	2.201		6.0	+06	2.214		1085	3	2	270
	6.5	+06	2.221		7.0	+06	2.215		7.5	+06	2.176		1085	3	2	271
	8.0	+06	2.133		8.5	+06	2.072		9.0	+06	2.011		1085	3	2	272
	9.5	+06	1.973		1.0	+07	1.945		1.05	+07	1.905		1085	3	2	273
	1.10	+07	1.83		1.15	+07	1.77		1.20	+07	1.70		1085	3	2	274
	1.25	+07	1.65		1.30	+07	1.60		1.35	+07	1.523		1085	3	2	275
	1.40	+07	1.465		1.45	+07	1.415		1.50	+07	1.355		1085	3	2	276
	0.0		0.0				0		0		0		01085	3	0	277
	2.9063	+04	6.2389	+01			0		0		0		01085	3	4	278
	0.0		-0.668	+06			0		0		1		431085	3	4	279
		43		2									1085	3	4	280
	6.79	+05	0.0		7.0	+05	0.0441		7.32	+05	0.101		1085	3	4	281
	8.0	+05	0.113		9.0	+05	0.1562		9.76	+05	0.1708		1085	3	4	282
	1.0	+06	0.2796		1.131	+06	0.457		1.348	+06	0.559		1085	3	4	283
	1.435	+06	0.590		1.50	+06	0.6377		1.572	+06	0.5757		1085	3	4	284
	1.648	+06	0.7673		1.65	+06	0.7674		1.73	+06	0.8380		1085	3	4	285
	1.75	+06	0.8553		2.0	+06	1.0551		2.5	+06	1.3655		1085	3	4	286
	3.0	+06	1.5710		3.5	+06	1.6401		4.0	+06	1.6953		1085	3	4	287
	4.5	+06	1.7116		5.0	+06	1.7376		5.5	+06	1.7272		1085	3	4	288
	6.0	+06	1.7188		6.5	+06	1.6962		7.0	+06	1.6688		1085	3	4	289
	7.5	+06	1.6347		8.0	+06	1.6218		8.5	+06	1.5020		1085	3	4	290
	9.0	+06	1.5821		9.5	+06	1.5338		1.0	+07	1.4854		1085	3	4	291
	1.05	+07	1.4732		1.10	+07	1.4221		1.15	+07	1.3738		1085	3	4	292
	1.20	+07	1.2659		1.25	+07	1.1379		1.30	+07	1.0185		1085	3	4	293

1.35	+07	0.9142	1.40	+07	0.8233	1.45	+07	0.7509	1085	3	4	294
1.50	+07	0.7020							1085	3	4	295
0.0		0.0		C		0		0	01085	3	0	296
2.9063	+04	6.2389	+01	0		0		0	01085	3	5	297
0.0		-0.668	+06	0		0		1	181085	3	5	298
	18		2						1085	3	5	299
6.79	+05	0.0	7.0	+05	0.0441	7.82	+05	0.101	1085	3	5	300
8.0	+05	0.113	9.0	+05	0.1562	9.76	+05	0.1708	1085	3	5	301
1.0	+06	0.1722	1.131	+06	0.182	1.348	+06	0.204	1085	3	5	302
1.435	+06	0.2070	1.50	+06	0.2077	1.572	+06	0.2087	1085	3	5	303
1.648	+06	0.2099	1.65	+06	0.2100	1.73	+06	0.2110	1085	3	5	304
1.75	+06	0.2113	1.75	+06	0.0	1.50	+07	0.0	1085	3	5	305
0.0		0.0		0		0		0	01085	3	0	306
2.9063	+04	6.2389	+01	0		0		0	01085	3	6	307
0.0		-0.561	+06	0		0		1	131085	3	6	308
	13		2						1085	3	6	309
9.76	+05	0.0	1.0	+06	0.1074	1.131	+06	0.2752	1085	3	6	310
1.348	+06	0.355	1.435	+06	0.369	1.50	+06	0.375	1085	3	6	311
1.572	+06	0.3770	1.648	+06	0.384	1.65	+06	0.384	1085	3	6	312
1.73	+06	0.389	1.75	+06	0.391	1.75	+06	0.0	1085	3	6	313
1.50	+07	0.0							1085	3	6	314
0.0		0.0		C		0		0	01085	3	0	315
2.9063	+04	6.2389	+01	0		0		0	01085	3	7	316
0.0		-1.327	+06	0		0		1	101085	3	7	317
	10		2						1085	3	7	318
1.348	+06	0.0	1.435	+06	0.014	1.50	+06	0.036	1085	3	7	319
1.572	+06	0.051	1.648	+06	0.101	1.65	+06	0.101	1085	3	7	320
1.73	+06	0.133	1.75	+06	0.139	1.75	+06	0.0	1085	3	7	321
1.50	+07	0.0							1085	3	7	322
0.0		0.0		0		0		0	01085	3	0	323
2.9063	+04	6.2389	+01	0		0		0	01085	3	8	324
0.0		-1.412	+06	0		0		1	91085	3	8	325
	9		2						1085	3	8	326
1.435	+06	0.0	1.50	+06	0.019	1.572	+06	0.039	1085	3	8	327
1.648	+06	0.062	1.65	+06	0.062	1.73	+06	0.085	1085	3	8	328
1.75	+06	0.091	1.75	+06	0.0	1.50	+07	0.0	1085	3	8	329
0.0		0.0		0		0		0	01085	3	0	330
2.9063	+04	6.2389	+01	0		0		0	01085	3	9	331
0.0		-1.547	+06	0		0		1	71085	3	9	332
	7		2						1085	3	9	333
1.572	+06	0.0	1.648	+06	0.014	1.65	+06	0.014	1085	3	9	334
1.73	+06	0.020	1.75	+06	0.023	1.75	+06	0.0	1085	3	9	335

1.50	+07	0.0						1085	3	9	336	
0.0		0.0		0		0		01085	3	0	337	
2.9063	+04	6.2389 +01		0		0		01085	3	16	338	
0.0		-10.481 +06		0		0	1	91085	3	16	339	
	9		3					1085	3	16	340	
1.10	+07	0.0	1.15	+07	0.040	1.20	+07	0.079	1085	3	16	341
1.25	+07	0.185	1.30	+07	0.290	1.35	+07	0.382	1085	3	16	342
1.40	+07	0.470	1.45	+07	0.549	1.50	+07	0.509	1085	3	16	343
0.0		0.0		0		0		01085	3	0	344	
2.9063	+04	6.2389 +01		0		0		01085	3102		345	
0.0		0.0		0		0	1	1951085	3102		346	
	195		5	0		0	0	01085	3102		347	
1.0	-03	22.626	2.53	-02	4.4977	5.1265	-01	0.9964	1085	3102	348	
1.0	+00	0.7115	5.5	+00	0.2959	1.0	+01	0.2141	1085	3102	349	
1.0	E+01	0.004	5.0	E+01	0.009	1.0	E+02	0.013	1085	3102	350	
5.0	E+02	0.029	1.0	E+03	0.038	5.0	E+03	0.062	1085	3102	351	
1.0	E+04	0.066	2.0	E+04	0.058	3.0	E+04	0.048	1085	3102	352	
3.0000E	04	1.0500E-01	3.0400E	04	1.0415E-01	3.0550E	04	1.0383E-01	1085	3102	353	
3.0600E	04	1.0373E-01	3.0800E	04	1.0332E-01	3.1000E	04	1.0291E-01	1085	3102	354	
3.1300E	04	1.0230E-01	3.1400E	04	1.0210E-01	3.1600E	04	1.0170E-01	1085	3102	355	
3.1900E	04	1.0111E-01	3.2100E	04	1.0073E-01	3.2300E	04	1.0034E-01	1085	3102	356	
3.2650E	04	9.9682E-02	3.3000E	04	9.9032E-02	3.3400E	04	9.8302E-02	21085	3102	357	
3.4000E	04	9.7233E-02	3.4300E	04	9.6711E-02	3.4700E	04	9.6025E-02	21085	3102	358	
3.5000E	04	9.5518E-02	3.5400E	04	9.4854E-02	3.6000E	04	9.3880E-02	21085	3102	359	
3.6200E	04	9.3562E-02	3.6700E	04	9.2777E-02	3.6900E	04	9.2468E-02	21085	3102	360	
3.7100E	04	9.2162E-02	3.7800E	04	9.1110E-02	3.8100E	04	9.0669E-02	21085	3102	361	
3.8200E	04	9.0523E-02	3.9300E	04	8.8959E-02	3.9700E	04	8.8408E-02	21085	3102	362	
4.0100E	04	8.7887E-02	4.0300E	04	8.7663E-02	4.0500E	04	8.7440E-02	21085	3102	363	
4.0600E	04	8.7329E-02	4.0900E	04	8.6999E-02	4.1100E	04	8.6781E-02	21085	3102	364	
4.1300E	04	8.6565E-02	4.1500E	04	8.6350E-02	4.1800E	04	8.6031E-02	21085	3102	365	
4.2000E	04	8.5820E-02	4.2300E	04	8.5507E-02	4.2600E	04	8.5197E-02	21085	3102	366	
4.2900E	04	8.4850E-02	4.3200E	04	8.4586E-02	4.3500E	04	8.4286E-02	21085	3102	367	
4.3800E	04	8.3989E-02	4.4000E	04	8.3792E-02	4.4300E	04	8.3500E-02	21085	3102	368	
4.4600E	04	8.3211E-02	4.4800E	04	8.3020E-02	4.5000E	04	8.2830E-02	21085	3102	369	
4.7300E	04	8.0734E-02	4.7900E	04	8.0213E-02	4.9000E	04	7.9282E-02	21085	3102	370	
4.9800E	04	7.8625E-02	5.0000E	04	7.8463E-02	5.0400E	04	7.8142E-02	21085	3102	371	
5.1000E	04	7.7668E-02	5.2400E	04	7.6594E-02	5.2700E	04	7.6370E-02	21085	3102	372	
5.3000E	04	7.6147E-02	5.3800E	04	7.5563E-02	5.4600E	04	7.4992E-02	21085	3102	373	
5.5000E	04	7.4711E-02	5.6000E	04	7.4022E-02	5.6500E	04	7.3685E-02	21085	3102	374	
5.6600E	04	7.3618E-02	5.8200E	04	7.2570E-02	5.8600E	04	7.2315E-02	21085	3102	375	
5.9000E	04	7.2063E-02	5.9600E	04	7.1689E-02	5.9800E	04	7.1566E-02	21085	3102	376	
6.0600E	04	7.1078E-02	6.1200E	04	7.0719E-02	6.1800E	04	7.0365E-02	21085	3102	377	

6.2200E	04	7.0133E-02	6.3000E	04	6.9673E-02	6.3300E	04	6.9503E-02	1085	3102	378
6.4200E	04	6.9001E-02	6.4700E	04	6.8726E-02	6.5400E	04	6.8347E-02	1085	3102	379
6.6000E	04	6.8027E-02	6.6500E	04	6.7763E-02	6.6800E	04	6.7607E-02	1085	3102	380
6.7200E	04	6.7400E-02	6.7900E	04	6.7041E-02	6.8200E	04	6.6890E-02	1085	3102	381
6.9200E	04	6.6391E-02	6.9800E	04	6.6097E-02	7.1000E	04	6.5427E-02	1085	3102	382
7.1500E	04	6.5145E-02	7.1700E	04	6.5033E-02	7.2200E	04	6.4756E-02	1085	3102	383
7.2500E	04	6.4591E-02	7.3000E	04	6.4318E-02	7.3300E	04	6.4156E-02	1085	3102	384
7.4000E	04	6.3782E-02	7.4400E	04	6.3571E-02	7.5000E	04	6.3258E-02	1085	3102	385
7.5800E	04	6.2847E-02	7.6100E	04	6.2694E-02	7.7600E	04	6.1946E-02	1085	3102	386
7.8000E	04	6.1750E-02	7.8500E	04	6.1508E-02	7.9200E	04	6.1173E-02	1085	3102	387
8.0600E	04	6.0518E-02	8.2000E	04	5.9880E-02	8.3800E	04	5.9086E-02	1085	3102	388
8.4200E	04	5.8913E-02	8.5600E	04	5.8318E-02	8.6300E	04	5.8027E-02	1085	3102	389
8.7300E	04	5.7617E-02	8.7600E	04	5.7496E-02	8.8400E	04	5.7175E-02	1085	3102	390
8.9000E	04	5.6538E-02	9.0000E	04	5.6548E-02	9.0800E	04	5.6241E-02	1085	3102	391
9.1500E	04	5.5976E-02	9.2000E	04	5.5789E-02	9.2500E	04	5.5603E-02	1085	3102	392
9.3000E	04	5.5419E-02	9.4000E	04	5.5056E-02	9.5000E	04	5.4699E-02	1085	3102	393
9.5600E	04	5.4487E-02	9.6200E	04	5.4278E-02	9.7700E	04	5.3764E-02	1085	3102	394
9.8400E	04	5.3528E-02	9.9000E	04	5.3329E-02	9.9500E	04	5.3164E-02	1085	3102	395
9.99	E+04	0.053	1.0	E+05	0.053	1.0	E+05	0.053	1085	3102	396
2.0	+05	0.032	3.0	+05	0.023	4.0	+05	0.019	1085	3102	397
5.0	+05	0.018	6.0	+05	0.017	6.79	+05	0.0167	1085	3102	398
7.0	+05	0.0165	7.82	+05	0.0162	8.0	+05	0.016	1085	3102	399
9.0	+05	0.0155	9.76	+05	0.0152	1.0	+06	0.015	1085	3102	400
1.131	+06	0.0136	1.348	+06	0.0116	1.435	+06	0.0108	1085	3102	401
1.50	+06	0.010	1.572	+06	0.0096	1.648	+06	0.0090	1085	3102	402
1.65	+06	0.0090	1.73	+06	0.0085	1.75	+06	0.0084	1085	3102	403
2.0	+06	0.007	2.5	+06	0.006	3.0	+06	0.0058	1085	3102	404
3.5	+06	0.0055	4.0	+06	0.0053	4.5	+06	0.0052	1085	3102	405
5.0	+06	0.005	5.5	+06	0.0048	6.0	+06	0.0045	1085	3102	406
6.5	+06	0.0044	7.0	+06	0.0043	7.5	+06	0.0041	1085	3102	407
8.0	+06	0.0040	8.5	+06	0.0039	9.0	+06	0.0038	1085	3102	408
9.5	+06	0.0036	1.0	+07	0.0035	1.05	+07	0.0033	1085	3102	409
1.10	+07	0.0032	1.15	+07	0.0031	1.20	+07	0.0030	1085	3102	410
1.25	+07	0.0029	1.30	+07	0.0029	1.35	+07	0.0028	1085	3102	411
1.40	+07	0.0027	1.45	+07	0.0027	1.50	+07	0.0026	1085	3102	412
0.0	0.0	0	0	0	0	0	0	0	01085	3	0
2.9063	+04	6.2389	+01	0	0	0	0	0	01085	3103	414
0.0	0.0	0	0	0	0	0	2	351085	3103	415	
	3	2	35	5				1085	3103	416	
1.0	-03	0.0	1.435	+06	0.0	1.50	+06	0.0058	1085	3103	417
1.572	+06	0.0070	1.648	+06	0.0090	1.650	+06	0.0091	1085	3103	418
1.73	+06	0.0115	1.75	+06	0.0120	2.0	+06	0.0203	1085	3103	419

2.5	+06	0.0376	3.0	+06	0.0536	3.5	+06	0.0688	1085	3103	420
4.0	+06	0.0803	4.5	+06	0.093	5.0	+06	0.1012	1085	3103	421
5.5	+06	0.109	6.0	+06	0.116	6.5	+06	0.118	1085	3103	422
7.0	+06	0.1182	7.5	+06	0.120	8.0	+06	0.1206	1085	3103	423
8.5	+06	0.1195	9.0	+06	0.1191	9.5	+06	0.118	1085	3103	424
1.0	+C7	0.1171	1.05	+07	0.1145	1.10	+07	0.1138	1085	3103	425
1.15	+C7	0.1100	1.20	+07	0.1114	1.25	+07	0.1097	1085	3103	426
1.30	+07	0.108	1.35	+07	0.1057	1.40	+07	0.105	1085	3103	427
1.45	+07	0.1043	1.50	+07	0.1037				1085	3103	428
0.0		0.0		0		0		0	01085	3	0 429
2.9063	+04	6.2389	+01	0		0		0	01085	3107	430
0.0		0.0		0		0		2	211085	3107	431
	3		2	21		5			1085	3107	432
1.0	-03	0.0	5.5	+06	0.0	6.0	+06	0.002	1085	3107	433
6.5	+06	0.004	7.0	+06	0.0078	7.5	+06	0.0125	1085	3107	434
8.0	+06	0.0175	8.5	+06	0.0235	9.0	+06	0.0265	1085	3107	435
9.5	+06	0.0305	1.0	+07	0.0331	1.05	+07	0.0362	1085	3107	436
1.10	+C7	0.0366	1.15	+07	0.0372	1.20	+07	0.0380	1085	3107	437
1.25	+C7	0.0381	1.30	+07	0.0382	1.35	+07	0.0377	1085	3107	438
1.40	+C7	0.0367	1.45	+07	0.0346	1.50	+07	0.0325	1085	3107	439
0.0		0.0		0		0		0	01085	3	0 440
2.9063	+04	6.2389	+C1	0		0		0	01085	3251	441
0.0		0.0		0		0		2	481085	3251	442
	4		2	48		3			1085	3251	443
1.00	-03	1.06905-02	1.00	+00	1.06905-02	1.00	+02	1.06905-02	1085	3251	444
1.00	+04	1.06905-02	5.00	+04	1.70253-02	1.00	+05	3.04146-02	1085	3251	445
2.07	+05	5.85377-02	3.00	+05	8.84765-02	3.40	+05	1.47597-01	1085	3251	446
3.90	+05	1.42243-01	4.90	+05	1.30300-01	5.50	+05	1.31714-01	1085	3251	447
5.90	+05	1.44045-01	6.40	+05	1.66883-01	6.90	+05	1.75260-01	1085	3251	448
7.40	+05	1.35665-01	7.90	+05	1.56190-01	8.40	+05	1.81237-01	1085	3251	449
8.80	+05	1.59551-01	9.80	+05	1.67237-01	9.90	+05	1.64428-01	1085	3251	450
1.04	+06	1.95775-01	1.09	+06	2.10271-01	1.14	+06	1.86825-01	1085	3251	451
1.19	+06	2.20285-01	1.25	+06	2.00881-01	1.30	+06	2.25728-01	1085	3251	452
1.35	+06	2.07540-01	1.40	+06	2.42599-01	1.46	+06	2.70667-01	1085	3251	453
1.65	+06	3.07081-01	1.85	+06	3.31293-01	2.00	+06	3.58356-01	1085	3251	454
2.25	+06	4.40397-01	2.47	+06	4.13995-01	2.80	+06	5.37858-01	1085	3251	455
2.90	+06	5.19253-01	3.00	+06	4.94172-01	3.30	+06	4.83701-01	1085	3251	456
3.49	+06	5.71854-01	3.70	+06	4.99383-01	4.00	+06	6.38750-01	1085	3251	457
4.56	+06	6.73550-01	5.00	+06	7.64323-01	6.09	+06	7.29948-01	1085	3251	458
7.05	+06	7.48037-01	8.05	+06	8.22638-01	1.50	+07	8.49821-01	1085	3251	459
0.0		0.0		0		0		0	01085	3	0 460
2.9063	+04	6.2389	+C1	0		0		0	01085	3252	461

0.0	0.0	0	0	2	481085	3252	462
	4	2	48	3	1085	3252	463
1.00	-03 3.17165-02	1.00	+00 3.17169-02	1.00	+02 3.17169-02	1085 3252	464
1.00	+04 3.17165-02	5.00	+04 3.15134-02	1.00	+05 3.10843-02	1085 3252	465
2.07	+05 3.01831-02	3.00	+05 2.92246-02	3.40	+05 2.73294-02	1085 3252	466
3.90	+05 2.75011-02	4.90	+05 2.78835-02	5.50	+05 2.78394-02	1085 3252	467
5.90	+05 2.74436-02	6.40	+05 2.67120-02	6.90	+05 2.64434-02	1085 3252	468
7.40	+05 2.75838-02	7.90	+05 2.70548-02	8.40	+05 2.62523-02	1085 3252	469
8.80	+05 2.69471-02	9.80	+05 2.67036-02	9.90	+05 2.67916-02	1085 3252	470
1.04	+06 2.57865-02	1.09	+06 2.53230-02	1.14	+06 2.50747-02	1085 3252	471
1.19	+06 2.50030-02	1.25	+06 2.56254-02	1.30	+06 2.48317-02	1085 3252	472
1.35	+06 2.54150-02	1.40	+06 2.42897-02	1.46	+06 2.33875-02	1085 3252	473
1.65	+06 2.22213-02	1.85	+06 2.14484-02	2.00	+06 2.05813-02	1085 3252	474
2.25	+06 1.79535-02	2.47	+06 1.88036-02	2.80	+06 1.48237-02	1085 3252	475
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3.49	+06 1.37345-02	3.70	+06 1.60771-02	4.00	+06 1.16059-02	1085 3252	477
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8.37415-11	9.35117-09	7.89455-07	-5.00177-05	2.28068-03	-6.76885-02	1085	4	2	536
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0.0	0.0				1085 4 2 644
0.0	7.90000+05	0	0	20	01085 4 2 645
1.46333-01	8.10000-02	1.37143-02	5.77778-03	0.0	1085 4 2 646
0.0	0.0	0.0	0.0	0.0	1085 4 2 647
0.0	0.0	0.0	0.0	0.0	1085 4 2 648
0.0	0.0				1085 4 2 649
0.0	8.40000+05	0	0	20	01085 4 2 650
1.71667-01	1.08200-01	1.47143-02	4.66666-03	0.0	1085 4 2 651
0.0	0.0	0.0	0.0	0.0	1085 4 2 652
0.0	0.0	0.0	0.0	0.0	1085 4 2 653
0.0	0.0				1085 4 2 654
0.0	8.80000+05	0	0	20	01085 4 2 655
1.49667-01	8.02000-02	2.75714-02	6.11111-03	0.0	1085 4 2 656
0.0	0.0	0.0	0.0	0.0	1085 4 2 657
0.0	0.0	0.0	0.0	0.0	1085 4 2 658
0.0	0.0				1085 4 2 659
0.0	9.80000+05	0	0	20	01085 4 2 660
1.57667-01	1.08800-01	2.04286-02	3.14444-02	0.0	1085 4 2 661
0.0	0.0	0.0	0.0	0.0	1085 4 2 662
0.0	0.0	0.0	0.0	0.0	1085 4 2 663
0.0	0.0				1085 4 2 664
0.0	9.90000+05	0	0	20	01085 4 2 665
1.55000-01	1.25000-01	4.44286-02	7.88888-03	0.0	1085 4 2 666
0.0	0.0	0.0	0.0	0.0	1085 4 2 667
0.0	0.0	0.0	0.0	0.0	1085 4 2 668
0.0	0.0				1085 4 2 669
0.0	1.04000+06	0	0	20	01085 4 2 670
1.86333-01	1.22800-01	3.45714-02	4.22222-03	0.0	1085 4 2 671

0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 672
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 673
0.0	0.0					1085 4 2 674
0.0	1.09000+06	0	0	20		01085 4 2 675
2.01000-01	1.40000-01	5.00000-02	1.30000-02	0.0	0.0	1085 4 2 676
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 677
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 678
0.0	0.0					1085 4 2 679
0.0	1.14000+06	0	0	20		01085 4 2 680
1.77667-01	1.51000-01	4.88571-02	1.32222-02	0.0	0.0	1085 4 2 681
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 682
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 683
0.0	0.0					1085 4 2 684
0.0	1.19000+06	0	0	20		01085 4 2 685
2.11000-01	1.40000-01	5.62857-02	2.40000-02	0.0	0.0	1085 4 2 686
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 687
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 688
0.0	0.0					1085 4 2 689
0.0	1.25000+06	0	0	20		01085 4 2 690
1.91667-01	1.46800-01	5.62857-02	2.73333-02	0.0	0.0	1085 4 2 691
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 692
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 693
0.0	0.0					1085 4 2 694
0.0	1.30000+06	0	0	20		01085 4 2 695
2.17000-01	1.55200-01	7.71428-02	4.64444-02	0.0	0.0	1085 4 2 696
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 697
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 698
0.0	0.0					1085 4 2 699
0.0	1.35000+06	0	0	20		01085 4 2 700
1.99000-01	2.11000-01	6.40000-02	4.81111-02	0.0	0.0	1085 4 2 701
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 702
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 703
0.0	0.0					1085 4 2 704
0.0	1.40000+06	0	0	20		01085 4 2 705
2.34000-01	2.07000-01	7.38571-02	3.12222-02	0.0	0.0	1085 4 2 706
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 707
0.0	0.0	0.0	0.0	0.0	0.0	1085 4 2 708
0.0	0.0					1085 4 2 709
0.0	1.46000+06	0	0	20		01085 4 2 710
2.62052-01	1.97263-01	9.70730-02	2.32458-02	-4.53786-03	-2.62468-03	1085 4 2 711
-7.11282-04	2.34175-03	4.52460-03	5.94908-04	-3.53525-03	-2.96770-03	1085 4 2 712
-4.65397-04	9.43701-04	0.0	0.0	0.0	0.0	1085 4 2 713

0.0	0.0					1085	4	2	714
0.0	1.65000+06	0	0	20		01085	4	2	715
2.98595-01	2.19757-01	1.11394-01	3.87804-02	1.08027-02	2.50954-03	1085	4	2	716
-4.25166-04	-1.32038-03	-1.94509-03	-1.93143-03	-6.38596-04	0.0	1085	4	2	717
0.0	0.0	0.0	0.0	0.0	0.0	1085	4	2	718
0.0	0.0					1085	4	2	719
0.0	1.85000+06	0	0	20		01085	4	2	720
3.23169-01	2.51656-01	1.33609-01	6.23372-02	3.18666-03	2.40333-03	1085	4	2	721
-2.09017-03	-7.67137-03	4.95768-04	1.73217-03	-1.74742-03	0.0	1085	4	2	722
0.0	0.0	0.0	0.0	0.0	0.0	1085	4	2	723
0.0	0.0					1085	4	2	724
0.0	2.00000+06	0	0	20		01085	4	2	725
3.50038-01	2.49274-01	1.81182-01	5.09262-02	1.13832-02	-3.25884-03	1085	4	2	726
-2.66576-03	-1.90126-03	-3.29496-03	-1.58280-03	-1.27021-03	2.01421-03	1085	4	2	727
1.88688-03	-2.30594-04	0.0	0.0	0.0	0.0	1085	4	2	728
0.0	0.0					1085	4	2	729
0.0	2.25000+06	0	0	20		01085	4	2	730
4.32580-01	2.99262-01	2.22731-01	8.22380-02	1.34998-02	2.38395-03	1085	4	2	731
-1.43280-03	-4.23137-03	-3.91557-03	-1.82715-03	1.79556-04	7.45963-04	1085	4	2	732
4.91962-04	4.78228-06	0.0	0.0	0.0	0.0	1085	4	2	733
0.0	0.0					1085	4	2	734
0.0	2.47000+06	0	0	20		01085	4	2	735
4.06120-01	3.01723-01	2.25136-01	8.89791-02	3.82766-03	-1.62345-03	1085	4	2	736
9.24940-04	7.42762-04	1.87600-03	1.93615-03	1.82429-03	7.51602-04	1085	4	2	737
-1.26153-03	-1.10041-03	0.0	0.0	0.0	0.0	1085	4	2	738
0.0	0.0					1085	4	2	739
0.0	2.80000+06	0	0	20		01085	4	2	740
5.30497-01	3.46305-01	2.36050-01	1.19235-01	-1.06137-02	-2.92197-02	1085	4	2	741
-1.49922-02	-1.53658-02	-4.28272-03	9.75414-03	8.04353-03	2.99532-03	1085	4	2	742
-1.60437-04	-3.97581-03	0.0	0.0	0.0	0.0	1085	4	2	743
0.0	0.0					1085	4	2	744
0.0	2.90000+06	0	0	20		01085	4	2	745
5.11585-01	3.39791-01	2.66502-01	1.25170-01	3.59318-02	1.71565-02	1085	4	2	746
4.64574-03	3.52580-04	1.93086-04	-1.23502-03	-1.01671-03	-1.34801-03	1085	4	2	747
8.03801-05	2.00116-03	0.0	0.0	0.0	0.0	1085	4	2	748
0.0	0.0					1085	4	2	749
0.0	3.00000+06	0	0	20		01085	4	2	750
4.87171-01	3.54532-01	2.89675-01	1.38994-01	2.56181-02	1.03331-02	1085	4	2	751
1.41054-03	-6.07385-03	-8.91232-03	-9.13731-03	-6.71542-03	-1.35803-03	1085	4	2	752
1.31457-03	1.16254-03	0.0	0.0	0.0	0.0	1085	4	2	753
0.0	0.0					1085	4	2	754
0.0	3.30000+06	0	0	20		01085	4	2	755

4.75218-01	3.33335-01	2.60433-01	1.42100-01	5.68135-02	3.43484-02	21085	4	2	756
2.29054-02	1.17773-02	1.04135-02	8.60462-03	3.08495-03	1.32363-04	1085	4	2	757
-9.71856-04	9.56442-04	C.0	0.0	0.0	0.0	1085	4	2	758
0.0	0.0					1085	4	2	759
0.0	3.49000+C6	0	0	20		01085	4	2	760
5.65486-01	4.23658-01	3.37982-01	1.96787-01	5.57735-02	2.55650-02	21085	4	2	761
1.07264-02	8.22747-05	5.97869-03	6.09187-03	5.98790-03	6.55600-03	1085	4	2	762
-3.28782-03	2.41656-03	0.0	0.0	0.0	0.0	1085	4	2	763
0.0	0.0					1085	4	2	764
0.0	3.70000+C6	0	0	20		01085	4	2	765
4.92041-01	3.79718-01	2.72320-01	1.49517-01	3.76696-02	9.86968-03	1085	4	2	766
5.17692-03	1.70624-03	2.30925-03	2.49464-04	1.73055-03	1.62953-04	1085	4	2	767
7.62181-04	3.01141-04	C.0	0.0	0.0	0.0	1085	4	2	768
0.0	0.0					1085	4	2	769
0.0	4.00000+C6	0	0	20		01085	4	2	770
6.32724-01	4.83244-01	3.75385-01	2.30434-01	9.14419-02	4.28058-02	21085	4	2	771
1.26658-02	2.64175-03	1.21992-02	1.73409-02	1.49019-02	1.08962-02	21085	4	2	772
-5.51400-03	1.01769-03	4.26007-03	3.65589-03	2.41520-03	9.34838-04	1085	4	2	773
-4.56756-04	3.99445-04					1085	4	2	774
0.0	4.56000+C6	0	0	20		01085	4	2	775
6.68466-01	5.10693-01	3.79374-01	2.41811-01	9.28479-02	3.41798-02	21085	4	2	776
2.34562-03	6.58755-03	6.96342-03	8.19915-03	8.44301-03	5.01041-03	1085	4	2	777
-2.98318-03	4.05565-03	1.21285-03	6.40170-04	7.26440-05	1.43674-03	1085	4	2	778
-1.00446-03	1.02579-03					1085	4	2	779
0.0	5.00000+C6	0	0	20		01085	4	2	780
7.58480-01	5.62545-01	3.97120-01	2.26090-01	8.32233-02	1.91948-02	21085	4	2	781
-1.41571-03	1.01356-02	9.44048-03	3.43210-03	1.69871-03	3.37224-03	1085	4	2	782
1.24266-03	1.82801-03	2.63921-03	1.17566-03	7.38773-04	1.82176-03	1085	4	2	783
1.82389-03	1.01121-03					1085	4	2	784
0.0	6.00000+C6	0	0	20		01085	4	2	785
7.24957-01	5.43923-01	3.63914-01	2.37485-01	8.26270-02	1.80235-02	21085	4	2	786
-3.61084-02	3.56442-02	2.56645-02	1.45875-02	3.70755-03	4.16637-03	1085	4	2	787
6.41013-03	6.99611-03	5.44118-03	2.65266-03	6.47796-04	1.96433-03	1085	4	2	788
-2.27576-03	2.23580-03					1085	4	2	789
0.0	7.05000+C6	0	0	20		01085	4	2	790
7.43216-01	5.58241-01	3.71379-01	2.45490-01	8.83364-02	2.49725-02	21085	4	2	791
-4.51120-02	4.05946-02	2.75864-02	1.49865-02	3.99255-03	5.17450-03	1085	4	2	792
8.66825-03	7.48574-03	3.35418-03	7.47443-04	7.54268-04	1.41192-03	1085	4	2	793
-1.33278-03	1.07566-03					1085	4	2	794
0.0	8.00000+C6	0	0	20		01085	4	2	795
8.20088-01	6.76901-01	5.02842-01	3.62960-01	2.07462-01	1.00736-01	1085	4	2	796
3.06516-02	1.58811-03	1.65056-02	2.21290-02	2.34706-02	2.09284-02	21085	4	2	797

-1.57920-02-1.01331-02-5.19032-03-1.61684-03	5.57783-04	1.41572-03	1085	4	2	798
1.24147-03	7.44733-04		1085	4	2	799
0.0	1.50000+07	0	0	20	01085	4 2 800
8.34532-01	7.29313-01	6.22396-01	5.12066-01	3.87979-01	2.73013-01	1085 4 2 801
1.84548-01	1.24207-01	7.22951-02	3.27272-02	1.34152-02	7.06104-03	1085 4 2 802
6.90277-03	8.63178-03	9.98238-03	1.03242-02	9.09703-03	6.94340-03	1085 4 2 803
4.25867-03	1.46851-03					1085 4 2 804
0.0	0.0	0	0	0		01085 4 0 805
0.0	0.0	0	0	0		01085 0 0 806
2.9063 +04	6.2389 +01	0	0	6		01085 5 4 807
0.0	0.668 +06	0	3	1		181085 5 4 808
	18	2				1085 5 4 809
6.79	+05 1.0	7.0	+05 1.0	7.82	+05 1.0	1085 5 4 810
8.0	+05 1.0	9.0	+05 1.0	9.76	+05 1.0	1085 5 4 811
1.0	+06 0.6159	1.131	+06 0.398	1.348	+06 0.355	1085 5 4 812
1.435	+06 0.351	1.50	+06 0.326	1.572	+06 0.309	1085 5 4 813
1.648	+06 0.274	1.65	+06 0.274	1.73	+06 0.252	1085 5 4 814
1.75	+06 0.247	1.75	+06 0.0	1.50	+07 0.0	1085 5 4 815
0.0	0.961 +06	0	3	1		131085 5 4 816
	13	2				1085 5 4 817
9.76	+05 0.0	1.0	+06 0.3841	1.131	+06 0.602	1085 5 4 818
1.348	+06 0.635	1.435	+06 0.625	1.50	+06 0.588	1085 5 4 819
1.572	+06 0.558	1.648	+06 0.500	1.65	+06 0.500	1085 5 4 820
1.73	+06 0.464	1.75	+06 0.457	1.75	+06 0.0	1085 5 4 821
1.50	+07 0.0					1085 5 4 822
0.0	1.327 +06	0	3	1		101085 5 4 823
	10	2				1085 5 4 824
1.348	+06 0.0	1.435	+06 0.024	1.50	+06 0.056	1085 5 4 825
1.572	+06 0.075	1.648	+06 0.132	1.65	+06 0.132	1085 5 4 826
1.73	+06 0.159	1.75	+06 0.163	1.75	+06 0.0	1085 5 4 827
1.50	+07 0.0					1085 5 4 828
0.0	1.412 +06	0	3	1		91085 5 4 829
	9	2				1085 5 4 830
1.435	+06 0.0	1.50	+06 0.030	1.572	+06 0.058	1085 5 4 831
1.648	+06 0.081	1.65	+06 0.081	1.73	+06 0.095	1085 5 4 832
1.75	+06 0.106	1.75	+06 0.0	1.50	+07 0.0	1085 5 4 833
0.0	1.547 +06	0	3	1		71085 5 4 834
	7	2				1085 5 4 835
1.572	+06 0.0	1.648	+06 0.013	1.65	+06 0.013	1085 5 4 836
1.73	+06 0.030	1.75	+06 0.027	1.75	+06 0.0	1085 5 4 837
1.50	+07 0.0					1085 5 4 838
0.0	0.0	0	9	1		301085 5 4 839

	30		2					1085	5	4	840
6.79	+05 0.0		1.75	+06 0.0		1.75	+06 1.0	1085	5	4	841
2.0	+06 1.0		2.5	+06 1.0		3.0	+06 1.0	1085	5	4	842
3.5	+06 1.0		4.0	+06 1.0		4.5	+06 1.0	1085	5	4	843
5.0	+06 1.0		5.5	+06 1.0		6.0	+06 1.0	1085	5	4	844
6.5	+06 1.0		7.0	+06 1.0		7.5	+06 1.0	1085	5	4	845
8.0	+06 1.0		8.5	+06 1.0		9.0	+06 1.0	1085	5	4	846
9.5	+06 1.0		1.0	+07 1.0		1.05	+07 1.0	1085	5	4	847
1.10	+07 1.0		1.15	+07 1.0		1.20	+07 1.0	1085	5	4	848
1.25	+07 1.0		1.30	+07 1.0		1.35	+07 1.0	1085	5	4	849
1.40	+07 1.0		1.45	+07 1.0		1.50	+07 1.0	1085	5	4	850
0.0	0.0			0	0		1	301085	5	4	851
	30		3					1085	5	4	852
6.79	+05 0.10	+05 1.75		+06 0.10	+05 1.75	+06 0.6038	+061085	5	4	853	
2.0	+06 0.6455	+06 2.5		+06 0.7212	+06 3.0	+06 0.7906	+061085	5	4	854	
3.5	+06 0.8539	+06 4.0		+06 0.9129	+06 4.5	+06 0.9682	+061085	5	4	855	
5.0	+06 1.0206	+06 5.5		+06 1.0704	+06 6.0	+06 1.1180	+061085	5	4	856	
6.5	+06 1.1637	+06 7.0		+06 1.2076	+06 7.5	+06 1.2500	+061085	5	4	857	
8.0	+06 1.2910	+06 8.5		+06 1.3307	+06 9.0	+06 1.3693	+061085	5	4	858	
9.5	+06 1.4068	+06 10.0		+06 1.4434	+06 10.5	+06 1.4790	+061085	5	4	859	
11.0	+06 1.5138	+06 11.5		+06 1.5478	+06 12.0	+06 1.5811	+061085	5	4	860	
12.5	+06 1.6138	+06 13.0		+06 1.6459	+06 13.5	+06 1.6771	+061085	5	4	861	
14.0	+06 1.7078	+06 14.5		+06 1.7380	+06 15.0	+06 1.7678	+061085	5	4	862	
0.0	0.0			0	0	0	01085	5	0	863	
2.9063	+04 6.2389	+01		0	0	2	01085	5	16	864	
0.0	0.0			0	9	1	91085	5	16	865	
	9		2				1085	5	16	866	
1.10	+07 0.5		1.15	+07 0.5		1.20	+07 0.5	1085	5	16	867
1.25	+07 0.5		1.30	+07 0.5		1.35	+07 0.5	1085	5	16	868
1.40	+07 0.5		1.45	+07 0.5		1.50	+07 0.5	1085	5	16	869
0.0	0.0			0	0		1	91085	5	16	870
	9		3					1085	5	16	871
1.10	+07 1.515	+06 1.15		+07 1.547	+06 1.20	+07 1.581	+061085	5	16	872	
1.25	+07 1.614	+06 1.30		+07 1.646	+06 1.35	+07 1.677	+061085	5	16	873	
1.40	+07 1.708	+06 1.45		+07 1.738	+06 1.50	+07 1.768	+061085	5	16	874	
0.0	0.0			0	9	1	91085	5	16	875	
	9		2				1085	5	16	876	
1.10	+07 0.5		1.15	+07 0.5		1.20	+07 0.5	1085	5	16	877
1.25	+07 0.5		1.30	+07 0.5		1.35	+07 0.5	1085	5	16	878
1.40	+07 0.5		1.45	+07 0.5		1.50	+07 0.5	1085	5	16	879
0.0	0.0			0	0		1	91085	5	16	880
	9		3					1085	5	16	881

1.10	+07 0.10	+05 1.15	+07 0.323	+06 1.20	+07 0.456	+061085 5 16	882
1.25	+07 0.557	+06 1.30	+07 0.644	+06 1.35	+07 0.720	+061085 5 16	883
1.40	+07 0.785	+06 1.45	+07 0.853	+06 1.50	+07 0.911	+061085 5 16	884
0.0	0.0		0	0	0	01085 5 0	885
0.0	0.0		0	0	0	01085 0 0	886
0.0	0.0		0	0	0	0 0 0 0	887
2.9065	+04 6.4373	+01	1	0	0	201086 1451	1
0.0	0.0		1	0	72	01086 1451	2
COPPER-65 ENDF/B MAT 1086 REF. AI-AEC-12741						1086 1451	3
SEPT. 1968						1086 1451	4
MF=1	GENERAL INFORMATION					1086 1451	5
ATOMIC MASS GIVEN AS 64.9278 FOR A NEUTRON MASS OF 1.008665						1086 1451	6
MT=453	RADIOACTIVE DECAY DATA FROM REF. 1					1086 1451	7
MF=2	RESONANCE PARAMETERS					1086 1451	8
MT=1511	ALL RESOLVED RESONANCES TREATED AS L=0 RESONANCES					1086 1451	9
2.RESOLVED RESONANCE PARAMETERS FROM REF.2.						1086 1451	10
3.G VALUES FOR 0.229KEV AND ABOVE 14KEV ASSIGNED						1086 1451	11
4.NEGATIVE ENERGY RESONANCE GAMMA-N AND EO OBTAINED FROM						1086 1451	12
FIT TO SIGS=15.48, SIGA=2.2B AT 2200M/S. ASSUMED GAMMA-						1086 1451	13
GAMMA=0.24EV.						1086 1451	14
5.L=C UNRESOLVED RESONANCE PARAMETERS FROM AVERAGED						1086 1451	15
RESOLVED RESONANCE PARAMETERS. OBSERVED LEVEL SPACING						1086 1451	16
=DC=1.4KEV, STRENGTH FUNCTION/J STATE=SOJ=1.7E-04, FOR						1086 1451	17
EACH J STATE D=D0/G						1086 1451	18
6.L=1,2 SIJ=S2J=1.0E-04, DJ=D0/DJ, GAMMA-GAMMA=0.24EV						1086 1451	19
ASSUMED.						1086 1451	20
7.OPTIONS LRU=1, LRF=2 (MLBW REF. 10) ARE USED.						1086 1451	21
MF=3	SMOOTH CROSS SECTIONS					1086 1451	22
MT=1	NO EXP. VALUES AVAILABLE FOR SEPERATE CU ISOTOPES. THE					1086 1451	23
TOTAL WAS SET EQUAL TO SUM OF ITS PARTS,EXCEPT FOR 30						1086 1451	24
TO 100 KEV WHERE IT WAS ASSUMED TO BE EQUAL TO A						1086 1451	25
SMOOTHING OF NATURAL COPPER GIVEN IN REF.2						1086 1451	26
MT=2	BELOW RESONANCE REGION VALUES WERE CALCULATED FROM					1086 1451	27
RESOLVED RESONANCE PARAMETERS USING UNICORN-REF. 3. IN						1086 1451	28
THE RESOLVED RESONANCE RANGE THE SMOOTH DATA IS THE						1086 1451	29
CONTRIBUTION FROM L.GT. 0 CALCULATED FROM UNRESOLVED						1086 1451	30
RESONANCE PARAMETERS USING TRIX-REF.4.						1086 1451	31
FROM 30 TO 100 KEV VALUES ARE THE						1086 1451	32
DIFFERENCE BETWEEN THE TOTAL AND NON-ELASTIC CROSS						1086 1451	33
SECTIONS. ABOVE 100 KEV, VALUES WERE						1086 1451	34
ASSUMED TO BE IDENTICAL TO NATURALLY OCCURING CU-REF.5.						1086 1451	35
MT=4-8	LEVEL DATA FROM REF.5, ABOVE 1.75MEV CONTINUUM WAS USED					1086 1451	36
WHICH WAS MATCHED TO LEVEL DATA AND WHEN WEIGHTED ALONG						1086 1451	36

	WITH CU-63 GAVE CONTINUUM OF NATURAL CU FROM REF.5.	1086	1451	37			
MT=16	REF.5	1086	1451	38			
MT=251	MUBAR CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING	1086	1451	39			
	CHAD-REF.6.	1086	1451	40			
MT=252	XI CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING CHAD	1086	1451	41			
	-REF.6.	1086	1451	42			
MT=253	GAMMA CALCULATED FROM LEGENDRE COEFF. IN FILE 4 USING	1086	1451	43			
	CHAD-REF.6.	1086	1451	44			
MT=102	BELOW RESONANCE REGION CALCULATED AS PER MT=2. FOR	1086	1451	45			
	RESOLVED RESONANCE RANGE, L.GT.0 CONTRIBUTION CALCULATED	1086	1451	46			
	FROM UNRESOLVED RESONANCE PARAMETERS USING TRIX-REF.4.	1086	1451	47			
	THE 30 TO 100 KEV RANGE FROM EVALUATION OF REFERENCE	1086	1451	48			
	DOCUMENT. ABOVE 100 KEV-REF.5.	1086	1451	49			
MT=103	REF.5	1086	1451	50			
MT=107	REF.5	1086	1451	51			
MF=4	SECONDARY ANGULAR DISTRIBUTIONS	1086	1451	52			
MT=2	LEGENDRE COEFF. FOR ELASTIC SCATT. ARE GIVEN. DATA ARE	1086	1451	53			
	AVAILABLE FOR NATURALLY OCCURING CU AND ARE ASSJMED TO	1086	1451	54			
	BE THE SAME FOR THE SEPERATE ISOTOPES. DATA OBTAINED	1086	1451	55			
	FROM REFERENCES 7,8,9. WHERE LEGENDRE COEFF. WERE NOT	1086	1451	56			
	GIVEN THEY WERE OBTAINED FROM THE DATA POINTS BY USING	1086	1451	57			
	CHAD-REF.6.	1086	1451	58			
MF=5	SECONDARY ENERGY DISTRIBUTIONS	1086	1451	59			
MT=4	REF. 5	1086	1451	60			
MT=16	REF. 5	1086	1451	61			
	REFERENCES	1086	1451	62			
	1. GOLDMAN, DAVID T., CHART OF THE NUCLIDES, KAPL (1966)	1086	1451	63			
	2. GOLDBERG, M.D., ET. AL., BNL 325 2ND. ED. SUPPL. NO.2 VOL.	1086	1451	64			
	IIA (1966)	1086	1451	65			
	3. OTTER, J., NAA-SR-11980 VOL.6 (1966)	1086	1451	66			
	4. OTTER, J., NAA-SR-MEMO-11538 (1965)	1086	1451	67			
	5. OFFORD, SUSAN M., PARKER, K., A&RE O-63/67 (1967)	1086	1451	68			
	6. BERLAND, R.F., NAA-SR-11231 (1965)	1086	1451	69			
	7. GOLDBERG, M.D., ET. AL., BNL 400 2ND ED. VOL. II (1962)	1086	1451	70			
	8. HOLMQVIST, B., WIEDLING, T., NUCLEAR DATA FOR REACTORS, VOL.	1086	1451	71			
	I, IAEA, VIENNA (1967)	1086	1451	72			
	9. SMITH, A.B., ET. AL., PHY. REV. 135, 876 (1964)	1086	1451	73			
	10. OTTER, J.M., NSE 28, 149 (1967)	1086	1451	74			
0.0	0.0	1	451	92	01086	1451	75
0.0	0.0	1	453	6	01086	1451	76
0.0	0.0	2	151	25	01086	1451	77
0.0	0.0	3	1	68	01086	1451	78

0.0	0.0		3	2	68	01086	1451	79	
0.0	0.0		3	4	17	01086	1451	80	
0.0	0.0		3	5	9	01086	1451	81	
0.0	0.0		3	6	7	01086	1451	82	
0.0	0.0		3	7	6	01086	1451	83	
0.0	0.0		3	8	5	01086	1451	84	
0.0	0.0		3	16	7	01086	1451	85	
0.0	0.0		3	102	68	01086	1451	86	
0.0	0.0		3	103	12	01086	1451	87	
0.0	0.0		3	107	10	01086	1451	88	
0.0	0.0		3	251	19	01086	1451	89	
0.0	0.0		3	252	19	01086	1451	90	
0.0	0.0		3	253	19	01086	1451	91	
0.0	0.0		4	2	303	01086	1451	92	
0.0	0.0		5	4	48	01086	1451	93	
0.0	0.0		5	16	25	01086	1451	94	
0.0	0.0		0	0	0	01086	1 0	95	
2.9065	+04 6.4373	+01	0	0	0	01086	1453	96	
0.0	0.0		0	0	24	41086	1453	97	
16.0	2.9064	+04 1.488	-05	2.8064	+04	1086	1453	98	
102.0	2.9066	+04 2.255	-03	3.0066	+04	1086	1453	99	
103.0	2.8065	+04 7.500	-05	2.9065	+04	1086	1453	100	
107.0	2.7062	+04 6.053	-03	2.8062	+04	1086	1453	101	
0.0	0.0		0	0	0	01086	1 0	102	
0.0	0.0		0	0	0	01086	0 0	103	
2.9065	+04 6.4373	+01	0	0	1	01086	2151	104	
2.9065	+04 1.0		0	0	1	01086	2151	105	
1.0	+01 3.0	+04	1	2	0	01086	2151	106	
1.5	7.302	-01	0	0	1	01086	2151	107	
1.090	-03 0.0		0	0	120	201086	2151	108	
-9.476	+02 2.0	9.231	+01	9.207	+01 0.24	+00	1086	2151	109
2.290	+02 2.0	2.6	-01	1.60	-02 0.24	+00	1086	2151	110
2.55	+03 2.0	1.704	+01	1.68	+01 0.24	+00	1086	2151	111
3.92	+03 1.0	2.424	+01	2.40	+01 0.24	+00	1086	2151	112
4.4	+03 2.0	7.24	+00	7.0	+00 0.24	+00	1086	2151	113
4.5	+03 1.0	1.624	+01	1.6	+01 0.24	+00	1086	2151	114
6.48	+03 2.0	2.624	+01	2.6	+01 0.24	+00	1086	2151	115
7.6	+03 2.0	2.324	+01	2.3	+01 0.24	+00	1086	2151	116
7.65	+03 1.0	3.324	+01	3.3	+01 0.24	+00	1086	2151	117
7.94	+03 2.0	5.024	+01	5.0	+01 0.24	+00	1086	2151	118
8.549	+03 1.0	7.80	+00	7.56	+00 0.24	+00	1086	2151	119
1.366	+04 2.0	7.524	+01	7.5	+01 0.24	+00	1086	2151	120

1.423	+04	2.0		4.184	+01	4.16	+01	0.24	+00		1086	2151	121
1.509	+04	2.0		0.786	+01	0.762	+01	0.24	+00		1086	2151	122
1.582	+04	2.0		3.224	+01	3.2	+01	0.24	+00		1086	2151	123
1.780	+04	2.0		2.4468	+02	2.4444	+02	0.24	+00		1086	2151	124
2.0	+04	1.0		2.5356	+02	2.5332	+02	0.24	+00		1086	2151	125
2.18	+04	1.0		3.677	+01	3.653	+01	0.24	+00		1086	2151	126
2.41	+04	1.0		1.1224	+02	1.12	+02	0.24	+00		1086	2151	127
2.5	+04	2.0		2.0504	+02	2.048	+02	0.24	+00		1086	2151	128
0.0		0.0				0		0			01086	2	0 129
0.0		0.0				0		0			01086	0	0 130
2.9065	+04	6.4373	+01			0		0			01086	3	1 131
0.0		0.0				0		0	1		1951086	3	1 132
	195		5			0		0			01086	3	1 133
1.0	-03	26.486		2.53	-02	17.6182		5.1265	-01	15.8983	1086	3	1 134
1.0	+00	15.7512		5.5	+00	15.4756		1.0	+01	15.3636	1086	3	1 135
1.0000E	C1	4.0000E-03		5.0000E	01	9.0000E-03		1.0000E	02	1.3000E-02	1086	3	1 136
5.0000E	02	2.9000E-02		1.0000E	03	4.7000E-02		5.0000E	03	8.6000E-02	1086	3	1 137
1.0000E	04	1.3700E-01		2.0000E	04	1.9600E-01		3.0000E	04	2.3200E-01	1086	3	1 138
3.0000E	04	1.0700E	01	3.0400E	04	7.2000E	00	3.0550E	04	1.0400E	011086	3	1 139
3.0600E	04	8.2000E	00	3.0800E	04	6.8000E	00	3.1000E	04	7.0000E	001086	3	1 140
3.1300E	04	4.6000E	00	3.1400E	04	1.5800E	01	3.1600E	04	6.6999E	001086	3	1 141
3.1900E	04	5.9000E	00	3.2100E	04	4.8000E	00	3.2300E	04	7.0000E	001086	3	1 142
3.2650E	04	4.4000E	00	3.3000E	04	4.5000E	00	3.3400E	04	2.5200E	011086	3	1 143
3.4000E	04	7.2000E	00	3.4300E	04	1.0500E	01	3.4700E	04	7.0000E	001086	3	1 144
3.5000E	04	2.0000E	01	3.5400E	04	8.0000E	00	3.6000E	04	5.1000E	001086	3	1 145
3.6200E	04	2.4000E	01	3.6700E	04	4.6000E	00	3.6900E	04	2.0500E	011086	3	1 146
3.7100E	04	9.2000E	00	3.7800E	04	6.1000E	00	3.8100E	04	8.2000E	001086	3	1 147
3.8200E	04	6.1000E	00	3.9300E	04	4.6000E	00	3.9700E	04	1.3000E	011086	3	1 148
4.0100E	04	6.0000E	00	4.0300E	04	7.0000E	00	4.0500E	04	5.4000E	001086	3	1 149
4.0600E	04	6.2000E	00	4.0900E	04	4.7000E	00	4.1100E	04	6.8000E	001086	3	1 150
4.1300E	04	4.5000E	00	4.1500E	04	4.0000E	00	4.1800E	04	2.7000E	001086	3	1 151
4.2000E	04	2.2000E	01	4.2300E	04	1.2000E	01	4.2600E	04	2.0500E	011086	3	1 152
4.2900E	04	1.1700E	01	4.3200E	04	1.3400E	01	4.3500E	04	8.4000E	001086	3	1 153
4.3800E	04	1.0000E	01	4.4000E	04	6.7999E	00	4.4300E	04	8.0000E	001086	3	1 154
4.4600E	04	5.6000E	00	4.4800E	04	1.2000E	01	4.5000E	04	6.3000E	001086	3	1 155
4.7300E	04	4.5000E	00	4.7900E	04	7.0000E	00	4.9000E	04	4.2000E	001086	3	1 156
4.9800E	04	3.8000E	00	5.0000E	04	2.3000E	00	5.0400E	04	9.0000E	001086	3	1 157
5.1000E	04	4.2000E	00	5.2400E	04	3.0000E	00	5.2700E	04	2.6000E	001086	3	1 158
5.3000E	04	2.8000E	00	5.3800E	04	1.6500E	01	5.4600E	04	3.9000E	001086	3	1 159
5.5000E	04	2.0000E	01	5.6000E	04	9.8000E	00	5.6500E	04	1.8600E	011086	3	1 160
5.6600E	04	1.2000E	01	5.8200E	04	7.0000E	00	5.8600E	04	1.2000E	011086	3	1 161
5.9000E	04	6.8000E	00	5.9600E	04	7.7000E	00	5.9800E	04	6.6000E	001086	3	1 162

6.0600E	04	6.50CCE	00	6.120CE	04	5.0000E	00	6.1800E	04	4.3000E	001086	3	1	163
6.2200E	04	7.80CCE	00	6.3000E	04	3.5000E	00	6.3300E	04	6.5000E	001086	3	1	164
6.4200E	04	3.00CCE	00	6.470CE	04	5.0000E	00	6.5400E	04	1.3100E	011086	3	1	165
6.6000E	04	5.00CCE	00	6.6500E	04	1.1500E	01	6.6800E	04	8.2000E	001086	3	1	166
6.7200E	04	1.20CCE	01	6.79CCE	04	6.2000E	00	6.8200E	04	7.2000E	001086	3	1	167
6.9200E	04	3.80CCE	00	6.9800E	04	8.1000E	00	7.1000E	04	3.8000E	001086	3	1	168
7.1500E	04	4.30CCE	00	7.170CE	04	2.9000E	00	7.2200E	04	3.6000E	001086	3	1	169
7.2500E	04	2.70CCE	00	7.3000E	04	1.4500E	01	7.3300E	04	1.1000E	011086	3	1	170
7.4000E	04	1.50CCE	01	7.44CCE	04	1.0500E	01	7.5000E	04	1.5000E	011086	3	1	171
7.5800E	04	7.80CCE	00	7.61CCE	04	9.7000E	00	7.7600E	04	5.7000E	001086	3	1	172
7.8000E	04	6.00CCE	00	7.850CE	04	5.0000E	00	7.9200E	04	7.2999E	001086	3	1	173
8.0600E	04	3.70CCE	00	8.200CE	04	1.3300E	01	8.3800E	04	7.7000E	001086	3	1	174
8.4200E	04	8.80CCE	00	8.5600E	04	5.3000E	00	8.6300E	04	8.2000E	001086	3	1	175
8.7300E	04	5.60CCE	00	8.760CE	04	6.0000E	00	8.8400E	04	5.3000E	001086	3	1	176
8.9000E	04	3.60CCE	00	9.000CE	04	1.0500E	01	9.0800E	04	4.6000E	001086	3	1	177
9.1500E	04	8.10CCE	00	9.200CE	04	6.7000E	00	9.2500E	04	8.0000E	001086	3	1	178
9.3000E	04	5.90CCE	00	9.40CCE	04	5.2000E	00	9.5000E	04	6.0000E	001086	3	1	179
9.5600E	04	5.10CCE	00	9.620CE	04	7.6000E	00	9.7700E	04	4.7000E	001086	3	1	180
9.8400E	04	6.00CCE	00	9.900CE	04	4.7999E	00	9.9500E	04	6.0000E	001086	3	1	181
9.9900E	04	4.70CCE	00	1.000CE	05	4.7000E	00	1.0000E	05	4.4857E	001086	3	1	182
2.0000E	05	4.787CE	00	3.00CCE	05	4.8910E	00	4.0000E	05	4.6427E	001086	3	1	183
5.0000E	05	4.3429E	00	6.000CE	05	4.0934E	00	6.7900E	05	3.9072E	001086	3	1	184
7.0000E	05	3.8633E	00	7.820CE	05	3.6876E	00	8.0000E	05	3.6833E	001086	3	1	185
9.0000E	05	3.5579E	00	9.760CE	05	3.4367E	00	1.0000E	06	3.3940E	001086	3	1	186
1.1310E	06	3.1867E	00	1.3480E	06	3.1516E	00	1.4350E	06	3.1140E	001086	3	1	187
1.5000E	06	3.1C54E	00	1.5720E	06	3.0520E	00	1.6480E	06	3.0070E	001086	3	1	188
1.6500E	06	3.010CE	00	1.730CE	06	3.0300E	00	1.7500E	06	3.0220E	001086	3	1	189
2.0000E	06	2.9C30E	00	2.500CE	06	2.9134E	00	3.0000E	06	3.0704E	001086	3	1	190
3.5000E	06	3.1986E	00	4.000CE	06	3.3336E	00	4.5000E	06	3.4436E	001086	3	1	191
5.00CCE	06	3.5137E	00	5.500CE	06	3.5488E	00	6.0000E	06	3.5601E	001086	3	1	192
6.5000E	06	3.5523E	00	7.000CE	06	3.5297E	00	7.5000E	06	3.4694E	001086	3	1	193
8.0000E	06	3.4223E	00	8.500CE	06	3.3534E	00	9.0000E	06	3.2822E	001086	3	1	194
9.5000E	06	3.2123E	00	1.000CE	07	3.1510E	00	1.0500E	07	3.1065E	001086	3	1	195
1.1000E	07	3.1633E	00	1.1500E	07	3.2372E	00	1.2000E	07	3.2078E	001086	3	1	196
1.2500E	07	3.2145E	00	1.300CE	07	3.1956E	00	1.3500E	07	3.1379E	001086	3	1	197
1.4000E	07	3.0889E	00	1.450CE	07	3.0339E	00	1.5000E	07	3.0539E	001086	3	1	198
0.0		0.0		0		0		0		01086	3	0		199
2.9065	+04	6.4373	+01	0		0		0		01086	3	2		200
0.0		0.0		0		0		3		1951086	3	2		201
	6		5		11		2	195		51086	3	2		202
1.0	-03	15.418		2.53	-02	15.418		5.1265	-01	15.410	1086	3	2	203
1.0	+00	15.402		5.5	+00	15.328		1.0	+01	15.255	1086	3	2	204

1.0	E+C1	0.0		5.0	E+01	0.0		1.0	E+02	0.0	1086	3	2	205
5.0	E+02	0.0		1.0	E+03	0.01		5.0	E+03	0.04	1086	3	2	206
1.0	E+04	0.10		2.0	E+04	0.17		3.0	E+04	0.21	1086	3	2	207
3.0000E	04	1.0656E	C1	3.0400E	04	7.1563E	00	3.0550E	04	1.0356E	011086	3	2	208
3.0600E	04	8.1564E	00	3.0800E	04	6.7566E	00	3.1000E	04	6.9567E	001086	3	2	209
3.1300E	04	4.5569E	00	3.1400E	04	1.5757E	01	3.1600E	04	6.6571E	001086	3	2	210
3.1900E	04	5.8574E	00	3.2100E	04	4.7575E	00	3.2300E	04	6.9576E	001086	3	2	211
3.2650E	04	4.3579E	00	3.3000E	04	4.4581E	00	3.3400E	04	2.5158E	011086	3	2	212
3.4000E	04	7.1587E	00	3.4300E	04	1.0459E	01	3.4700E	04	6.9591E	001086	3	2	213
3.5000E	04	1.9959E	01	3.5400E	04	7.9596E	00	3.6000E	04	5.0599E	001086	3	2	214
3.6200E	04	2.3560E	C1	3.6700E	04	4.5603E	00	3.6900E	04	2.0460E	011086	3	2	215
3.7100E	04	9.1605E	00	3.7800E	04	6.0609E	00	3.8100E	04	8.1610E	001086	3	2	216
3.8200E	04	6.0611E	00	3.9300E	04	4.5617E	00	3.9700E	04	1.2962E	011086	3	2	217
4.0100E	04	5.5621E	00	4.0300E	04	6.9622E	00	4.0500E	04	5.3623E	001086	3	2	218
4.0600E	04	6.1623E	00	4.0900E	04	4.6625E	00	4.1100E	04	6.7626E	001086	3	2	219
4.1300E	04	4.4627E	00	4.1500E	04	3.5628E	00	4.1800E	04	2.6630E	001086	3	2	220
4.2000E	04	2.1963E	01	4.2300E	04	1.1963E	01	4.2600E	04	2.0463E	011086	3	2	221
4.2900E	04	1.1664E	01	4.3200E	04	1.3364E	01	4.3500E	04	8.3639E	001086	3	2	222
4.3800E	04	9.5640E	00	4.4000E	04	6.7641E	00	4.4300E	04	7.9643E	001086	3	2	223
4.4600E	04	5.5644E	00	4.4800E	04	1.1965E	01	4.5000E	04	6.7646E	001086	3	2	224
4.7300E	04	4.4657E	00	4.7900E	04	6.9660E	00	4.9000E	04	4.1664E	001086	3	2	225
4.9800E	04	3.7668E	00	5.0000E	04	2.2668E	00	5.0400E	04	8.9670E	001086	3	2	226
5.1000E	04	4.1672E	00	5.2400E	04	2.9678E	00	5.2700E	04	2.5679E	001086	3	2	227
5.3000E	04	2.7680E	00	5.3800E	04	1.6468E	01	5.4600E	04	3.7686E	001086	3	2	228
5.5000E	04	1.9969E	01	5.6000E	04	9.7691E	00	5.6500E	04	1.8569E	011086	3	2	229
5.6600E	04	1.1965E	01	5.8200E	04	6.9698E	00	5.8600E	04	1.1970E	011086	3	2	230
5.9000E	04	6.7700E	00	5.9600E	04	7.6702E	00	5.9800E	04	6.5703E	001086	3	2	231
6.0600E	04	6.4705E	00	6.1200E	04	4.9707E	00	6.1800E	04	4.2709E	001086	3	2	232
6.2200E	04	7.7710E	00	6.3000E	04	3.4712E	00	6.3300E	04	6.5713E	001086	3	2	233
6.4200E	04	2.5715E	00	6.4700E	04	4.9717E	00	6.5400E	04	1.3072E	011086	3	2	234
6.6000E	04	4.5720E	00	6.6500E	04	1.1472E	01	6.6800E	04	8.1722E	001086	3	2	235
6.7200E	04	1.1972E	C1	6.7900E	04	6.1725E	00	6.8200E	04	7.1726E	001086	3	2	236
6.9200E	04	3.7728E	00	6.9800E	04	8.0730E	00	7.1000E	04	3.7733E	001086	3	2	237
7.1500E	04	4.2734E	00	7.1700E	04	2.8735E	00	7.2200E	04	3.5736E	001086	3	2	238
7.2500E	04	2.6737E	00	7.3000E	04	1.4474E	01	7.3300E	04	1.0974E	011086	3	2	239
7.4000E	04	1.4974E	C1	7.4400E	04	1.0474E	01	7.5000E	04	1.4974E	011086	3	2	240
7.5800E	04	7.7745E	00	7.6100E	04	9.6745E	00	7.7600E	04	5.6749E	001086	3	2	241
7.8000E	04	5.9750E	00	7.8500E	04	4.9751E	00	7.9200E	04	7.2752E	001086	3	2	242
8.0600E	04	3.6756E	00	8.2000E	04	1.3276E	01	8.3800E	04	7.5762E	001086	3	2	243
8.4200E	04	8.7763E	00	8.5600E	04	5.2766E	00	8.6300E	04	8.1767E	001086	3	2	244
8.7300E	04	5.5769E	00	8.7600E	04	5.5769E	00	8.8400E	04	5.2771E	001086	3	2	245
8.9000E	04	3.5772E	00	9.0000E	04	1.0477E	01	9.0800E	04	4.5775E	001086	3	2	246

9.1500E 04	8.0776E 00	9.2000E 04	6.6777E 00	9.2500E 04	7.9778E 00	1086 3 2	247
9.3000E 04	5.8779E 00	9.4000E 04	5.1781E 00	9.5000E 04	5.9782E 00	1086 3 2	248
9.5600E 04	5.0783E 00	9.6200E 04	7.5784E 00	9.7700E 04	4.6787E 00	1086 3 2	249
9.8400E 04	5.5788E 00	9.9000E 04	4.7783E 00	9.9500E 04	5.9789E 00	1086 3 2	250
9.99 E+04	4.679	1.0 E+05	4.679	1.0 E+05	4.4647	1086 3 2	251
2.0 +05	4.774	3.0 +05	4.881	4.0 +05	4.6342	1086 3 2	252
5.0 +05	4.3352	6.0 +05	4.086	6.79 +05	3.30	1086 3 2	253
7.0 +05	3.8558	7.82 +05	3.68	8.0 +05	3.6556	1086 3 2	254
9.0 +05	3.476	9.76 +05	3.33	1.0 +06	3.282	1086 3 2	255
1.131 +06	3.05	1.348 +06	2.80	1.435 +06	2.70	1086 3 2	256
1.50 +06	2.6615	1.572 +06	2.56	1.648 +06	2.45	1086 3 2	257
1.65 +06	2.45	1.73 +06	2.38	1.75 +06	2.35	1086 3 2	258
2.0 +06	2.077	2.5 +06	1.847	3.0 +06	1.845	1086 3 2	259
3.5 +06	1.92	4.0 +06	2.011	4.5 +06	2.108	1086 3 2	260
5.0 +06	2.157	5.5 +06	2.201	6.0 +06	2.214	1086 3 2	261
6.5 +06	2.221	7.0 +06	2.215	7.5 +06	2.176	1086 3 2	262
8.0 +06	2.133	8.5 +06	2.072	9.0 +06	2.011	1086 3 2	263
9.5 +06	1.972	1.0 +07	1.945	1.05 +07	1.905	1086 3 2	264
1.10 +07	1.83	1.15 +07	1.77	1.20 +07	1.70	1086 3 2	265
1.25 +07	1.65	1.30 +07	1.60	1.35 +07	1.523	1086 3 2	266
1.40 +07	1.465	1.45 +07	1.415	1.50 +07	1.355	1086 3 2	267
0.0	0.0	0	0	0	0	01086 3 0	268
2.9065 +04	6.4373 +01	0	0	0	0	01086 3 4	269
0.0	-0.770 +06	0	0	1	1	411086 3 4	270
41	2					1086 3 4	271
7.82 +05	0.0	8.0 +05	0.010	9.0 +05	0.074	1086 3 4	272
9.76 +05	0.0987	1.0 +06	0.104	1.131 +06	0.129	1086 3 4	273
1.348 +06	0.3445	1.435 +06	0.407	1.50 +06	0.4370	1086 3 4	274
1.572 +06	0.4857	1.648 +06	0.5508	1.65 +06	0.5538	1086 3 4	275
1.73 +06	0.6439	1.75 +06	0.6660	2.0 +06	0.8204	1086 3 4	276
2.5 +06	1.0618	3.0 +06	1.2216	3.5 +06	1.2753	1086 3 4	277
4.0 +06	1.3183	4.5 +06	1.3309	5.0 +06	1.3512	1086 3 4	278
5.5 +06	1.3413	6.0 +06	1.3365	6.5 +06	1.3190	1086 3 4	279
7.0 +06	1.2977	7.5 +06	1.2711	8.0 +06	1.2611	1086 3 4	280
8.5 +06	1.2457	9.0 +06	1.2302	9.5 +06	1.1927	1086 3 4	281
1.0 +07	1.1550	1.05 +07	1.1457	1.10 +07	1.1058	1086 3 4	282
1.15 +07	1.0683	1.20 +07	0.9844	1.25 +07	0.8848	1086 3 4	283
1.30 +07	0.7920	1.35 +07	0.7109	1.40 +07	0.6402	1086 3 4	284
1.45 +07	0.5839	1.50 +07	0.5459			1086 3 4	285
0.0	0.0	0	0	0	0	01086 3 0	286
2.9065 +04	6.4373 +01	0	0	0	0	01086 3 5	287
0.0	-0.770 +06	0	0	1	1	161086 3 5	288

7.82	+05	0.0	2	8.0	+05	0.010	9.0	+05	0.074	1086	3	5	289
9.76	+05	0.0987		1.0	+06	0.104	1.131	+06	0.129	1086	3	5	290
1.348	+06	0.1375		1.435	+06	0.155	1.50	+06	0.165	1086	3	5	291
1.572	+06	0.1663		1.648	+06	0.1676	1.65	+06	0.1676	1086	3	5	292
1.73	+06	0.1679		1.75	+06	0.168	1.75	+06	0.0	1086	3	5	293
1.50	+07	0.0								1086	3	5	294
0.0		0.0				0	0		0	1086	3	5	295
2.9065	+04	6.4373	+01			0	0		0	01086	3	0	296
0.0		-1.114	+06			0	0		1	01086	3	6	297
										111086	3	6	298
										1086	3	6	299
1.131	+06	0.0	2	1.348	+06	0.207	1.435	+06	0.252	1086	3	6	300
1.50	+06	0.272		1.572	+06	0.288	1.648	+06	0.314	1086	3	6	301
1.65	+06	0.314		1.73	+06	0.327	1.75	+06	0.330	1086	3	6	302
1.75	+06	0.0		1.50	+07	0.0				1086	3	6	303
0.0		0.0				0	0		0	01086	3	0	304
2.9065	+04	6.4373	+01			0	0		0	01086	3	7	305
0.0		-1.482	+06			0	0		1	81086	3	7	306
										1086	3	7	307
1.50	+06	0.0	2	1.572	+06	0.0314	1.648	+06	0.0692	1086	3	7	308
1.65	+06	0.0692		1.73	+06	0.107	1.75	+06	0.116	1086	3	7	309
1.75	+06	0.0		1.50	+07	0.0				1086	3	7	310
0.0		0.0				0	0		0	01086	3	0	311
2.9065	+04	6.4373	+01			0	0		0	01086	3	8	312
0.0		-1.623	+06			0	0		1	61086	3	8	313
										1086	3	8	314
1.648	+06	0.0	2	1.65	+06	0.003	1.73	+06	0.042	1086	3	8	315
1.75	+06	0.052		1.75	+06	0.0	1.50	+07	0.0	1086	3	8	316
0.0		0.0				0	0		0	01086	3	0	317
2.9065	+04	6.4373	+01			0	0		0	01086	3	16	318
0.0		-9.91	+06			0	0		1	101086	3	16	319
										1086	3	16	320
1.05	+07	0.0	3	1.10	+07	0.170	1.15	+07	0.34	1086	3	16	321
1.20	+07	0.462		1.25	+07	0.617	1.30	+07	0.740	1086	3	16	322
1.35	+07	0.840		1.40	+07	0.920	1.45	+07	0.973	1086	3	16	323
1.50	+07	1.090								1086	3	16	324
0.0		0.0				0	0		0	01086	3	0	325
2.9065	+04	6.4373	+01			0	0		0	01086	3	102	326
0.0		0.0				0	0		1	1951086	3	102	327
										01086	3	102	328
1.0	-03	11.068	5	2.53	-02	2.2002	5.1265	-01	0.48832	1086	3	102	329
1.0	+00	0.3493		5.5	+00	0.14764	10.0	+00	0.10855	1086	3	102	330

1.0	E+01	0.004	5.0	E+01	0.009	1.0	E+02	0.013	1086	3102	331
5.0	E+02	0.029	1.0	E+03	0.037	5.0	E+03	0.046	1086	3102	332
1.0	E+04	0.037	2.0	E+04	0.026	3.0	E+04	0.022	1086	3102	333
3.0000E	04	4.4000E-02	3.0400E	04	4.3704E-02	3.0550E	04	4.3594E-02	1086	3102	334
3.0600E	04	4.3558E-02	3.0800E	04	4.3414E-02	3.1000E	04	4.3271E-02	1086	3102	335
3.1300E	04	4.3059E-02	3.1400E	04	4.2989E-02	3.1600E	04	4.2850E-02	1086	3102	336
3.1900E	04	4.2644E-02	3.2100E	04	4.2509E-02	3.2300E	04	4.2374E-02	1086	3102	337
3.2650E	04	4.2142E-02	3.3000E	04	4.1914E-02	3.3400E	04	4.1657E-02	1086	3102	338
3.4000E	04	4.1281E-02	3.4300E	04	4.1097E-02	3.4700E	04	4.0855E-02	1086	3102	339
3.5000E	04	4.0676E-02	3.5400E	04	4.0441E-02	3.6000E	04	4.0096E-02	1086	3102	340
3.6200E	04	3.9983E-02	3.6700E	04	3.9704E-02	3.6900E	04	3.9595E-02	1086	3102	341
3.7100E	04	3.9486E-02	3.7800E	04	3.9111E-02	3.8100E	04	3.8954E-02	1086	3102	342
3.8200E	04	3.8902E-02	3.9300E	04	3.8343E-02	3.9700E	04	3.8146E-02	1086	3102	343
4.0100E	04	3.7942E-02	4.0300E	04	3.7827E-02	4.0500E	04	3.7713E-02	1086	3102	344
4.0600E	04	3.7656E-02	4.0900E	04	3.7487E-02	4.1100E	04	3.7376E-02	1086	3102	345
4.1300E	04	3.7265E-02	4.1500E	04	3.7155E-02	4.1800E	04	3.6992E-02	1086	3102	346
4.2000E	04	3.6884E-02	4.2300E	04	3.6724E-02	4.2500E	04	3.6566E-02	1086	3102	347
4.2900E	04	3.6410E-02	4.3200E	04	3.6255E-02	4.3500E	04	3.6102E-02	1086	3102	348
4.3800E	04	3.5951E-02	4.4000E	04	3.5851E-02	4.4300E	04	3.5703E-02	1086	3102	349
4.4600E	04	3.5556E-02	4.4800E	04	3.5459E-02	4.5000E	04	3.5363E-02	1086	3102	350
4.7300E	04	3.4302E-02	4.7900E	04	3.4039E-02	4.9000E	04	3.3571E-02	1086	3102	351
4.9800E	04	3.3240E-02	5.0000E	04	3.3159E-02	5.0400E	04	3.2998E-02	1086	3102	352
5.1000E	04	3.2760E-02	5.2400E	04	3.2223E-02	5.2700E	04	3.2111E-02	1086	3102	353
5.3000E	04	3.2000E-02	5.3800E	04	3.1708E-02	5.4600E	04	3.1424E-02	1086	3102	354
5.5000E	04	3.1284E-02	5.6000E	04	3.0942E-02	5.6500E	04	3.0774E-02	1086	3102	355
5.6600E	04	3.0741E-02	5.8200E	04	3.0222E-02	5.8600E	04	3.0096E-02	1086	3102	356
5.9000E	04	2.9971E-02	5.9600E	04	2.9787E-02	5.9800E	04	2.9726E-02	1086	3102	357
6.0600E	04	2.9485E-02	6.1200E	04	2.9309E-02	6.1800E	04	2.9134E-02	1086	3102	358
6.2200E	04	2.9020E-02	6.3000E	04	2.8794E-02	6.3300E	04	2.8711E-02	1086	3102	359
6.4200E	04	2.8464E-02	6.4700E	04	2.8330E-02	6.5400E	04	2.8144E-02	1086	3102	360
6.6000E	04	2.7988E-02	6.6500E	04	2.7859E-02	6.6800E	04	2.7783E-02	1086	3102	361
6.7200E	04	2.7682E-02	6.7900E	04	2.7507E-02	6.8200E	04	2.7433E-02	1086	3102	362
6.9200E	04	2.7190E-02	6.9800E	04	2.7047E-02	7.1000E	04	2.6731E-02	1086	3102	363
7.1500E	04	2.6600E-02	7.1700E	04	2.6547E-02	7.2200E	04	2.6418E-02	1086	3102	364
7.2500E	04	2.6341E-02	7.3000E	04	2.6213E-02	7.3300E	04	2.6138E-02	1086	3102	365
7.4000E	04	2.5963E-02	7.4400E	04	2.5865E-02	7.5000E	04	2.5719E-02	1086	3102	366
7.5800E	04	2.5527E-02	7.6100E	04	2.5456E-02	7.7600E	04	2.5109E-02	1086	3102	367
7.8000E	04	2.5018E-02	7.8500E	04	2.4905E-02	7.9200E	04	2.4750E-02	1086	3102	368
8.0600E	04	2.4446E-02	8.2000E	04	2.4152E-02	8.3800E	04	2.3785E-02	1086	3102	369
8.4200E	04	2.3705E-02	8.5600E	04	2.3431E-02	8.6300E	04	2.3297E-02	1086	3102	370
8.7300E	04	2.3109E-02	8.7600E	04	2.3053E-02	8.8400E	04	2.2906E-02	1086	3102	371
8.9000E	04	2.2797E-02	9.0000E	04	2.2618E-02	9.0800E	04	2.2478E-02	1086	3102	372

9.1500E 04	2.2356E-C2	9.200CE 04	2.2271E-02	9.2500E 04	2.2186E-02	1086	3102	373
9.3000E 04	2.2102E-02	9.4000E 04	2.1936E-02	9.5000E 04	2.1773E-02	1086	3102	374
9.5600E 04	2.1676E-C2	9.620CE 04	2.1581E-02	9.7700E 04	2.1347E-02	1086	3102	375
9.8400E 04	2.1240E-C2	9.900CE 04	2.1149E-02	9.9500E 04	2.1074E-02	1086	3102	376
9.99 E+04	0.021	1.0 E+05	0.021	1.0 E+05	0.0210	1086	3102	377
2.0	+05 0.013	3.0	+05 0.01	4.0	+05 0.0085	1086	3102	378
5.0	+05 0.0077	6.0	+05 0.0074	6.79	+05 0.0072	1086	3102	379
7.0	+05 0.0075	7.82	+05 0.0076	8.0	+05 0.0077	1086	3102	380
9.0	+05 0.0079	9.76	+05 0.0080	1.0	+06 0.0080	1086	3102	381
1.131	+06 0.0077	1.348	+06 0.0071	1.435	+06 0.0070	1086	3102	382
1.50	+06 0.0069	1.572	+06 0.0063	1.648	+06 0.0062	1086	3102	383
1.65	+06 0.0062	1.73	+06 0.0061	1.75	+06 0.0060	1086	3102	384
2.0	+06 0.0056	2.5	+06 0.0046	3.0	+06 0.0038	1086	3102	385
3.5	+06 0.0033	4.0	+06 0.0027	4.5	+06 0.0022	1086	3102	386
5.0	+06 0.0019	5.5	+06 0.0017	6.0	+06 0.0015	1086	3102	387
6.5	+06 0.0016	7.0	+06 0.0017	7.5	+06 0.0018	1086	3102	388
8.0	+06 0.0020	8.5	+06 0.0022	9.0	+06 0.0025	1086	3102	389
9.5	+06 0.0027	1.0	+07 0.0030	1.05	+07 0.0033	1086	3102	390
1.10	+07 0.0035	1.15	+07 0.0037	1.20	+07 0.0040	1086	3102	391
1.25	+07 0.0044	1.30	+07 0.0048	1.35	+07 0.0053	1086	3102	392
1.40	+07 0.0060	1.45	+07 0.0066	1.50	+07 0.0076	1086	3102	393
0.0	0.0	0	0	0	0	01086	3	0 394
2.9065	+04 6.4373 +01	0	0	0	0	01086	3103	395
0.0	-1.347 +06	0	0	2	2	251086	3103	396
	3	25	5			1086	3103	397
1.348	+06 0.0	3.5	+06 0.0	4.0	+06 0.0016	1086	3103	398
4.5	+06 0.0025	5.0	+06 0.0036	5.5	+06 0.0048	1086	3103	399
6.0	+06 0.0061	6.5	+06 0.0067	7.0	+06 0.0075	1086	3103	400
7.5	+06 0.0080	8.0	+06 0.0087	8.5	+06 0.0100	1086	3103	401
9.0	+06 0.0120	9.5	+06 0.0134	1.0	+07 0.0149	1086	3103	402
1.05	+07 0.0163	1.10	+07 0.0174	1.15	+07 0.0180	1086	3103	403
1.20	+07 0.0194	1.25	+07 0.0202	1.30	+07 0.0206	1086	3103	404
1.35	+07 0.0210	1.40	+07 0.0210	1.45	+07 0.0208	1086	3103	405
1.50	+07 0.0202					1086	3103	406
0.0	0.0	0	0	0	0	01086	3	0 407
2.9065	+04 6.4373 +01	0	0	0	0	01086	3107	408
0.0	-0.091 +06	0	0	2	2	211086	3107	409
	3	21	5			1086	3107	410
9.2	+04 0.0	5.5	+06 0.0	6.0	+06 0.002	1086	3107	411
6.5	+06 0.004	7.0	+06 0.0078	7.5	+06 0.0125	1086	3107	412
8.0	+06 0.0175	8.5	+06 0.0235	9.0	+06 0.0265	1086	3107	413
9.5	+06 0.0305	1.0	+07 0.0331	1.05	+07 0.0362	1086	3107	414

1.10	+07	0.0366	1.15	+07	0.0372	1.20	+07	0.0380	1086	3107	415
1.25	+07	0.0381	1.30	+07	0.0382	1.35	+07	0.0377	1086	3107	416
1.40	+07	0.0367	1.45	+07	0.0346	1.50	+07	0.0352	1086	3107	417
0.0		0.0		0		0		0	01086	3	0 418
2.9065	+04	6.4373	+01	0		0		0	01086	3251	419
0.0		0.0		0		0		2	481086	3251	420
	4		2	48		3			1086	3251	421
1.00	-03	1.03608-02	1.00	+00	1.03608-02	1.00	+02	1.03608-02	1086	3251	422
1.00	+04	1.03608-02	5.00	+04	1.66959-02	1.00	+05	3.00850-02	1086	3251	423
2.07	+05	5.82107-02	3.00	+05	8.81535-02	3.40	+05	1.47281-01	1086	3251	424
3.90	+05	1.41527-01	4.90	+05	1.29982-01	5.50	+05	1.31405-01	1086	3251	425
5.90	+05	1.43736-01	6.40	+05	1.66578-01	6.90	+05	1.74954-01	1086	3251	426
7.40	+05	1.39361-01	7.90	+05	1.55886-01	8.40	+05	1.80942-01	1086	3251	427
8.80	+05	1.59247-01	9.80	+05	1.66942-01	9.90	+05	1.64138-01	1086	3251	428
1.04	+06	1.95484-01	1.09	+06	2.09987-01	1.14	+06	1.86544-01	1086	3251	429
1.19	+06	2.20004-01	1.25	+06	2.00599-01	1.30	+06	2.25460-01	1086	3251	430
1.35	+06	2.07278-01	1.40	+06	2.42335-01	1.46	+06	2.70400-01	1086	3251	431
1.65	+06	3.06820-01	1.85	+06	3.31042-01	2.00	+06	3.58104-01	1086	3251	432
2.25	+06	4.40161-01	2.47	+06	4.13760-01	2.80	+06	5.37637-01	1086	3251	433
2.90	+06	5.19029-01	3.00	+06	4.93953-01	3.30	+06	4.83476-01	1086	3251	434
3.49	+06	5.71657-01	3.70	+06	4.99173-01	4.00	+06	6.38572-01	1086	3251	435
4.56	+06	6.73380-01	5.00	+06	7.64170-01	6.09	+06	7.29789-01	1086	3251	436
7.05	+06	7.47883-01	8.05	+06	8.22521-01	1.50	+07	8.49721-01	1086	3251	437
0.0		0.0		0		0		0	01086	3	0 438
2.9065	+04	6.4373	+01	0		0		0	01086	3252	439
0.0		0.0		0		0		2	481086	3252	440
	4		2	48		3			1086	3252	441
1.00	-03	3.07494-02	1.00	+00	3.07494-02	1.00	+02	3.07494-02	1086	3252	442
1.00	+04	3.07494-02	5.00	+04	3.05523-02	1.00	+05	3.01364-02	1086	3252	443
2.07	+05	2.92628-02	3.00	+05	2.83337-02	3.40	+05	2.64968-02	1086	3252	444
3.90	+05	2.66631-02	4.90	+05	2.70338-02	5.50	+05	2.69908-02	1086	3252	445
5.90	+05	2.66073-02	6.40	+05	2.58979-02	6.90	+05	2.56377-02	1086	3252	446
7.40	+05	2.67432-02	7.90	+05	2.62302-02	8.40	+05	2.54522-02	1086	3252	447
8.80	+05	2.61259-02	9.80	+05	2.58896-02	9.90	+05	2.59748-02	1086	3252	448
1.04	+06	2.50007-02	1.09	+06	2.45512-02	1.14	+06	2.52796-02	1086	3252	449
1.19	+06	2.42411-02	1.25	+06	2.48443-02	1.30	+06	2.40745-02	1086	3252	450
1.35	+06	2.46397-02	1.40	+06	2.35491-02	1.46	+06	2.26747-02	1086	3252	451
1.65	+06	2.15443-02	1.85	+06	2.07949-02	2.00	+06	1.99546-02	1086	3252	452
2.25	+06	1.74073-02	2.47	+06	1.82312-02	2.80	+06	1.43734-02	1086	3252	453
2.90	+06	1.49717-02	3.00	+06	1.57342-02	3.30	+06	1.60946-02	1086	3252	454
3.49	+06	1.33170-02	3.70	+06	1.55879-02	4.00	+06	1.12534-02	1086	3252	455
4.56	+06	1.01414-02	5.00	+06	7.37328-03	6.09	+06	8.40256-03	1086	3252	456

7.05	+06	7.0448E-03	8.05	+06	5.49997-03	1.50	+07	5.07349-03	1086	3252	457
0.0		0.0			0	0		0	01086	3	0 458
2.9065	+04	6.4373 +C1			0	0		0	01086	3253	459
0.0		0.0			0	0		2	481086	3253	460
	4		2	48	3				1086	3253	461
1.00	-03	2.06065-02	1.00	+00	2.06065-02	1.00	+02	2.06065-02	1086	3253	462
1.00	+04	2.06065-02	5.00	+04	2.05489-02	1.00	+05	2.04071-02	1086	3253	463
2.07	+05	2.01874-02	3.00	+05	1.99781-02	3.40	+05	1.94742-02	1086	3253	464
3.90	+05	1.95633-02	4.90	+05	1.96501-02	5.50	+05	1.99113-02	1086	3253	465
5.90	+05	1.97662-02	6.40	+05	1.96595-02	6.90	+05	1.94954-02	1086	3253	466
7.40	+05	1.98605-02	7.90	+05	1.98267-02	8.40	+05	1.98323-02	1086	3253	467
8.80	+05	1.97695-02	9.80	+05	2.00249-02	9.90	+05	2.02556-02	1086	3253	468
1.04	+06	1.98159-02	1.09	+06	1.98453-02	1.14	+06	2.02932-02	1086	3253	469
1.19	+06	1.96919-02	1.25	+06	2.00515-02	1.30	+06	2.03465-02	1086	3253	470
1.35	+06	2.07975-02	1.40	+06	2.02736-02	1.46	+06	1.97207-02	1086	3253	471
1.65	+06	1.94665-02	1.85	+06	1.95425-02	2.00	+06	1.90127-02	1086	3253	472
2.25	+06	1.81852-02	2.47	+06	1.88012-02	2.80	+06	1.65533-02	1086	3253	473
2.90	+06	1.69722-02	3.00	+06	1.79473-02	3.30	+06	1.78143-02	1086	3253	474
3.49	+06	1.72370-02	3.70	+06	1.83432-02	4.00	+06	1.64177-02	1086	3253	475
4.56	+06	1.57005-02	5.00	+06	1.22486-02	6.09	+06	1.38442-02	1086	3253	476
7.05	+06	1.3218E-02	8.05	+06	1.24707-02	1.50	+07	1.40511-02	1086	3253	477
0.0		0.0			0	0		0	01086	3	0 478
0.0		0.0			0	0		0	01086	0	0 479
2.90650	+04	6.43730+C1			1	1		0	01086	4	2 480
0.0		6.43730+C1			0	2		441	201086	4	2 481
1.00000	+00	1.03563-02	4.82656-05	1.74861-09	0.0	0.0		0.0	1086	4	2 482
0.0		0.0	0.0	0.0	0.0	0.0		0.0	1086	4	2 483
0.0		0.0	0.0	0.0	0.0	0.0		0.0	1086	4	2 484
0.0		0.0	0.0	0.0	0.0	9.99855-01		1.86401-02	1086	4	2 485
1.65410-04		7.20567-07	3.89576-07	1.08930-08	0.0	0.0		0.0	1086	4	2 486
0.0		0.0	0.0	0.0	0.0	0.0		0.0	1086	4	2 487
0.0		0.0	0.0	0.0	0.0	0.0		0.0	1086	4	2 488
0.0		-1.03542-02	9.99621-01	2.66255-02	3.44096-04	2.58793-06		1086	4	2 489	
-8.00287-07		3.82494-08	1.09372-08	3.29895-09	0.0	0.0		1086	4	2 490	
0.0		0.0	0.0	0.0	0.0	0.0		0.0	1086	4	2 491
0.0		0.0	0.0	0.0	1.44759-04	-1.86344-02		1086	4	2 492	
9.99260-01		3.45083-02	5.83817-04	6.08243-06	-8.27961-07	-5.21653-08		1086	4	2 493	
4.87644-08		1.38874-08	0.0	0.0	0.0	0.0		1086	4	2 494	
0.0		0.0	0.0	0.0	0.0	0.0		1086	4	2 495	
0.0		-2.14166-06	3.30829-04	-2.66141-02	9.98777-01	4.23409-02		1086	4	2 496	
8.84560-04		1.17026-05	7.69867-07	-4.42268-08	0.0	0.0		1086	4	2 497	
0.0		0.0	0.0	0.0	0.0	0.0		1086	4	2 498	

0.0	0.0	0.0	0.0	3.23453-08-5.71029-061086	4	2	499
5.74242-04-3.44894-02	9.98175-01	5.01425-02	1.24569-03	1.99179-051086	4	2	500
-1.07485-06-5.37945-08	0.0	0.0	0.0	1086	4	2	501
0.0	0.0	0.0	0.0	1086	4	2	502
0.0	-4.53330-10	9.67706-08-1.13537-05	8.76813-04-4.23126-021086	4	2	503	
9.97452-01	5.79215-02	1.66651-03	3.11545-05-1.39620-06-7.88415-081086	4	2	504	
0.0	0.0	0.0	0.0	1086	4	2	505
0.0	0.0	0.0	0.0	7.56535-12-1.61892-091086	4	2	506
2.13685-07-1.55591-05	1.23899-03-5.01030-02	9.96603-01	6.56815-021086	4	2	507	
2.14731-03	4.58833-05-1.47033-06-1.09291-07	0.0	0.0	1086	4	2	508
0.0	0.0	0.0	0.0	1086	4	2	509
0.0	-1.16404-13	2.68256-11-3.89490-09	4.05133-07-3.07982-051086	4	2	510	
1.66090-03-5.78689-02	9.95644-01	7.34241-02	2.68821-03	6.45795-051086	4	2	511
-1.25804-06-1.05165-07	0.0	0.0	0.0	1086	4	2	512
0.0	0.0	0.0	0.0	1.79498-15-4.41196-131086	4	2	513
6.94034-11-7.99664-09	6.96580-07-4.55378-05	2.14251-03-6.56139-021086	4	2	514		
9.94561-01	8.11497-02	3.28906-03	8.77457-05-1.06369-06-1.46141-071086	4	2	515	
-6.67069-08-6.39808-08	0.0	0.0	0.0	1086	4	2	516
0.0	-2.77210-17	7.21514-15-1.21582-12	1.52557-10-1.48082-081086	4	2	517	
1.11705-06-6.42429-05	2.68377-03-7.33396-02	9.93358-01	8.88582-021086	4	2	518	
3.94936-03	1.15760-04-3.51240-07-2.18708-07	0.0	0.0	1086	4	2	519
0.0	0.0	0.0	0.0	4.28580-19-7.38630-171086	4	2	520
2.10255-14-2.83725-12	3.01248-10-2.54522-08	1.69915-06-8.73763-051086	4	2	521		
3.28457-03-8.10466-02	9.92035-01	9.65489-02	4.66944-03	1.49098-041086	4	2	522
1.16542-06-1.20733-07	0.0	0.0	0.0	1086	4	2	523
0.0	-6.63145-21	8.79552-19-2.38726-16	5.17409-14-5.92949-121086	4	2	524	
5.50126-10-4.13178-08	2.47903-06-1.15399-04	3.94477-03-8.87345-021086	4	2	525		
9.90594-01	1.04221-01	5.44953-03	1.88419-04	2.26316-06-1.18426-071086	4	2	526
-1.12071-07	1.53901-08	0.0	0.0	1.02673-22-1.07108-201086	4	2	527
3.03214-18-8.01516-16	1.13749-13-1.14272-11	9.45714-10-6.40884-081086	4	2	528		
3.49644-06-1.48772-04	4.66422-03-9.64028-02	9.89033-01	1.11874-011086	4	2	529	
6.28792-03	2.33503-04	3.75210-06-8.14671-08	0.0	0.0	1086	4	530
0.0	-1.59042-24	1.29481-22-3.88832-20	9.35626-18-2.00325-151086	4	2	531	
2.30080-13-2.06771-11	1.54880-09-9.57696-08	4.79465-06-1.87952-041086	4	2	532		
5.44275-03-1.04051-01	9.87354-01	1.19506-01	7.18532-03	2.86142-041086	4	2	533
5.50500-06-7.67705-08-3.37129-08	0.0	2.46455-26-1.52176-241086	4	2	534		
4.91422-22-1.21596-19	2.24747-17-4.37674-15	4.36038-13-3.55582-111086	4	2	535		
2.43704-09-1.38716-07	6.42047-06-2.33395-04	6.28017-03-1.11677-011086	4	2	536		
9.85556-01	1.27116-01	8.14130-03	3.45517-04	7.89103-06-2.14094-081086	4	2	537
0.0	-3.82030-28	1.69109-26-6.00797-24	1.59204-21-2.93606-191086	4	2	538	
4.77217-17-8.78464-15	7.83831-13-5.86233-11	3.70779-09-1.95659-071086	4	2	539		
8.42421-06-2.85556-04	7.17627-03-1.19281-01	9.83640-01	1.34703-011086	4	2	540	

9.15598-03	4.12564-C4	1.07524-05	0.0	5.92340-30	-1.58080-28	1086	4	2	541
6.91893-26	-2.04629-23	3.91242-21	-6.23793-19	9.35695-17	-1.65711-14	1086	4	2	542
1.34855-12	-9.32622-11	5.48108-09	-2.69733-07	1.08597-05	-3.44886-04	1086	4	2	543
8.13084-03	-1.26862-01	9.81607-01	1.42267-01	1.02289-02	4.87690-04	1086	4	2	544
0.0	-9.18622-32	1.25889-30	-7.10512-28	2.52701-25	-5.15436-23	1086	4	2	545
8.39881-21	-1.22071-18	1.73005-16	-2.97612-14	2.23515-12	-1.43895-10	1086	4	2	546
7.90292-09	-3.64504-C7	1.37842-05	-4.11835-04	9.14363-03	-1.34418-01	1086	4	2	547
9.79456-01	1.49804-C1	1.13558-02	0.0	1.42489-33	0.0	1086	4	2	548
5.48480-30	-2.90075-27	6.56533-25	-1.12448-22	1.65375-20	-2.24961-18	1086	4	2	549
4.73134-16	-5.13280-14	3.58715-12	-2.16177-10	1.11487-08	-4.83995-07	1086	4	2	550
1.72586-05	-4.86852-04	1.02144-02	-1.41948-01	9.77188-01	1.57315-01	1086	4	2	551
0.0	0.0	0.0	0.0	2.87109-29	-7.84465-27	1086	4	2	552
1.46196-24	-2.23962-22	3.05846-20	-5.29151-18	9.79507-16	-8.55271-14	1086	4	2	553
5.59732-12	-3.17248-10	1.54268-08	-6.32712-07	2.13469-05	-5.70380-04	1086	4	2	554
1.13429-02	-1.49450-01	9.74804-C1				1086	4	2	555
0.0	0.0	0	0	1	451086	4	2	556	
	45	3			1086	4	2	557	
0.0	1.00000+C4	0	0	20	01086	4	2	558	
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	559
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	560
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	561
0.0	0.0					1086	4	2	562
0.0	5.00000+C4	0	0	20	01086	4	2	563	
6.34264-03	8.43592-C4	6.39361-04	-1.22418-04	1.21652-04	3.68765-05	1086	4	2	564
-1.20106-C4	-6.38784-05	8.62309-06	5.24049-05	3.50277-05	0.0	1086	4	2	565
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	566
0.0	0.0					1086	4	2	567
0.0	1.00000+C5	0	0	20	01086	4	2	568	
1.97342-02	8.95482-C4	7.61572-05	5.77761-05	1.55075-05	-1.36968-04	1086	4	2	569
7.35834-05	-1.64656-05	2.12771-05	4.63779-05	-5.80651-05	0.0	1086	4	2	570
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	571
0.0	0.0					1086	4	2	572
0.0	2.07000+C5	0	0	20	01086	4	2	573	
4.79401-02	9.39365-C3	2.08017-03	4.26246-04	1.50004-04	7.27308-05	1086	4	2	574
-5.96914-05	4.45709-C5	8.78794-C5	-4.49652-05	7.51001-05	0.0	1086	4	2	575
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	576
0.0	0.0					1086	4	2	577
0.0	3.00000+C5	0	0	20	01086	4	2	578	
7.79995-02	2.20000-C2	1.08571-02	9.66666-03	0.0	0.0	1086	4	2	579
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	580
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	581
0.0	0.0					1086	4	2	582

0.0	3.40000+05	0	0	20	01086 4 2 583
1.37333-01	4.28000-02	1.38571-02	3.55556-03	0.0	1086 4 2 584
0.0	0.0	0.0	0.0	0.0	1086 4 2 585
0.0	0.0	0.0	0.0	0.0	1086 4 2 586
0.0	0.0				1086 4 2 587
0.0	3.90000+05	0	0	20	01086 4 2 588
1.32000-01	4.42000-02	9.14285-03	3.77778-03	0.0	1086 4 2 589
0.0	0.0	0.0	0.0	0.0	1086 4 2 590
0.0	0.0	0.0	0.0	0.0	1086 4 2 591
0.0	0.0				1086 4 2 592
0.0	4.90000+05	0	0	20	01086 4 2 593
1.20000-01	3.84000-02	6.42857-03	6.66666-04	0.0	1086 4 2 594
0.0	0.0	0.0	0.0	0.0	1086 4 2 595
0.0	0.0	0.0	0.0	0.0	1086 4 2 596
0.0	0.0				1086 4 2 597
0.0	5.50000+05	0	0	20	01086 4 2 598
1.21667-01	6.18000-02	4.57143-03	9.88889-03	0.0	1086 4 2 599
0.0	0.0	0.0	0.0	0.0	1086 4 2 600
0.0	0.0	0.0	0.0	0.0	1086 4 2 601
0.0	0.0				1086 4 2 602
0.0	5.90000+05	0	0	20	01086 4 2 603
1.34000-01	6.30000-02	1.17143-02	4.33333-03	0.0	1086 4 2 604
0.0	0.0	0.0	0.0	0.0	1086 4 2 605
0.0	0.0	0.0	0.0	0.0	1086 4 2 606
0.0	0.0				1086 4 2 607
0.0	6.40000+05	0	0	20	01086 4 2 608
1.57000-01	7.90000-02	1.61429-02	4.66666-03	0.0	1086 4 2 609
0.0	0.0	0.0	0.0	0.0	1086 4 2 610
0.0	0.0	0.0	0.0	0.0	1086 4 2 611
0.0	0.0				1086 4 2 612
0.0	6.90000+05	0	0	20	01086 4 2 613
1.65333-01	7.50000-02	1.65714-02	4.55555-03	0.0	1086 4 2 614
0.0	0.0	0.0	0.0	0.0	1086 4 2 615
0.0	0.0	0.0	0.0	0.0	1086 4 2 616
0.0	0.0				1086 4 2 617
0.0	7.40000+05	0	0	20	01086 4 2 618
1.29667-01	6.60000-02	3.85714-03	3.77778-03	0.0	1086 4 2 619
0.0	0.0	0.0	0.0	0.0	1086 4 2 620
0.0	0.0	0.0	0.0	0.0	1086 4 2 621
0.0	0.0				1086 4 2 622
0.0	7.90000+05	0	0	20	01086 4 2 623
1.46333-01	8.10000-02	1.37143-02	5.77778-03	0.0	1086 4 2 624

0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	625
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	626
0.0	0.0					1086	4	2	627
0.0	8.4CCCC+05	0	0		20	01086	4	2	628
1.71667-01	1.C820C-01	1.47143-02	4.66666-03	0.0	0.0	1086	4	2	629
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	630
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	631
0.0	0.0					1086	4	2	632
0.0	8.80CCCC+05	0	0		20	01086	4	2	633
1.49667-01	8.C2CCC-02	2.75714-02	6.11111-03	0.0	0.0	1086	4	2	634
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	635
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	636
0.0	0.0					1086	4	2	637
0.0	9.8CCCC+05	0	0		20	01086	4	2	638
1.57667-01	1.C8800-01	2.C4286-02	3.14444-02	0.0	0.0	1086	4	2	639
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	640
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	641
0.0	0.0					1086	4	2	642
0.0	9.90CCCC+05	0	0		20	01086	4	2	643
1.5500C-01	1.25CCC-01	4.44286-02	7.88888-03	0.0	0.0	1086	4	2	644
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	645
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	646
0.0	0.0					1086	4	2	647
0.0	1.C4CCC+06	0	0		20	01086	4	2	648
1.86333-01	1.2280C-01	3.45714-02	4.22222-03	0.0	0.0	1086	4	2	649
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	650
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	651
0.0	0.0					1086	4	2	652
0.0	1.C9CCC+06	0	0		20	01086	4	2	653
2.0100C-01	1.40CCC-01	5.00000-02	1.30000-02	0.0	0.0	1086	4	2	654
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	655
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	656
0.0	0.0					1086	4	2	657
0.0	1.14C00+06	0	0		20	01086	4	2	658
1.77667-01	1.51C0C-01	4.88571-02	1.32222-02	0.0	0.0	1086	4	2	659
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	660
0.0	0.0	C.C	0.0	0.0	0.0	1086	4	2	661
0.0	0.0					1086	4	2	662
0.0	1.19CCC+06	0	0		20	01086	4	2	663
2.1100C-01	1.40CCC-01	5.62857-02	2.40000-02	0.0	0.0	1086	4	2	664
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	665
0.0	0.0	0.0	0.0	0.0	0.0	1086	4	2	666

0.0	0.0						1086	4	2	667
0.0	1.25000+06	0	0	20			01086	4	2	668
1.91667-01	1.46800-01	5.62857-02	2.73333-02	0.0	0.0		1086	4	2	669
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	670
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	671
0.0	0.0						1086	4	2	672
0.0	1.30000+06	0	0	20			01086	4	2	673
2.17000-01	1.95200-01	7.71428-02	4.64444-02	0.0	0.0		1086	4	2	674
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	675
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	676
0.0	0.0						1086	4	2	677
0.0	1.35000+06	0	0	20			01086	4	2	678
1.99000-01	2.11000-01	6.40000-02	4.81111-02	0.0	0.0		1086	4	2	679
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	680
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	681
0.0	0.0						1086	4	2	682
0.0	1.40000+06	0	0	20			01086	4	2	683
2.34000-01	2.07000-01	7.38571-02	3.12222-02	0.0	0.0		1086	4	2	684
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	685
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	686
0.0	0.0						1086	4	2	687
0.0	1.46000+06	0	0	20			01086	4	2	688
2.62052-01	1.97263-01	9.70730-02	2.32458-02	-4.63785-03	-2.62468-03	01086	4	2	689	
-7.11282-04	2.34179-03	4.52460-03	5.94908-04	-3.53526-03	-2.96770-03	01086	4	2	690	
-4.65397-04	9.43701-04	0.0	0.0	0.0	0.0		1086	4	2	691
0.0	0.0						1086	4	2	692
0.0	1.65000+06	0	0	20			01086	4	2	693
2.98595-01	2.19757-01	1.11394-01	3.87804-02	1.08027-02	2.50954-03	01086	4	2	694	
-4.25166-04	1.32038-03	1.94509-03	1.93143-03	-6.38596-04	0.0		1086	4	2	695
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	696
0.0	0.0						1086	4	2	697
0.0	1.85000+06	0	0	20			01086	4	2	698
3.23169-01	2.51656-01	1.33609-01	6.23372-02	3.18666-03	2.40333-03	01086	4	2	699	
-2.09017-03	7.67137-03	4.95768-04	1.73217-03	-1.74742-03	0.0		1086	4	2	700
0.0	0.0	0.0	0.0	0.0	0.0		1086	4	2	701
0.0	0.0						1086	4	2	702
0.0	2.00000+06	0	0	20			01086	4	2	703
3.50038-01	2.49274-01	1.81182-01	5.09262-02	1.13832-02	-3.25884-03	01086	4	2	704	
-2.66576-03	1.90126-03	3.29496-03	1.58280-03	-1.27021-03	2.01421-03	01086	4	2	705	
1.88688-03	2.30594-04	0.0	0.0	0.0	0.0		1086	4	2	706
0.0	0.0						1086	4	2	707
0.0	2.25000+06	0	0	20			01086	4	2	708

4.32580-01	2.55262-01	2.22731-01	8.22880-02	1.34998-02	2.38395-03	1086	4	2	709
-1.43280-03	-4.23137-03	-3.91557-03	-1.82715-03	1.79555-04	7.45963-04	1086	4	2	710
4.91562-04	4.78228-06	C.0	0.0	0.0	0.0	1086	4	2	711
0.0	0.0					1086	4	2	712
0.0	2.47000+06	0	0	20	0	1086	4	2	713
4.06120-01	3.01722-01	2.25136-01	8.89791-02	3.82766-03	-1.62345-03	1086	4	2	714
9.24940-04	7.42762-04	1.87600-03	1.93615-03	1.82429-03	7.51602-04	1086	4	2	715
-1.26153-03	-1.10041-03	C.0	0.0	0.0	0.0	1086	4	2	716
0.0	0.0					1086	4	2	717
0.0	2.80000+06	0	0	20	0	1086	4	2	718
5.30497-01	3.46309-01	2.36050-01	1.19235-01	-1.06137-02	-2.92197-02	1086	4	2	719
-1.49922-02	-1.53658-02	-4.28272-03	9.75414-03	8.04353-03	2.99532-03	1086	4	2	720
-1.60437-04	-3.97581-03	C.0	0.0	0.0	0.0	1086	4	2	721
0.0	0.0					1086	4	2	722
0.0	2.90000+06	0	0	20	0	1086	4	2	723
5.11585-01	3.39751-01	2.66502-01	1.25170-01	3.59318-02	1.71565-02	1086	4	2	724
4.64574-03	3.52580-04	1.93086-04	-1.23502-03	-1.01671-03	-1.34801-03	1086	4	2	725
8.03801-05	2.00116-03	C.0	0.0	0.0	0.0	1086	4	2	726
0.0	0.0					1086	4	2	727
0.0	3.00000+06	0	0	20	0	1086	4	2	728
4.87171-01	3.54932-01	2.89675-01	1.38994-01	2.56181-02	1.03331-02	1086	4	2	729
1.41054-03	-6.07385-03	-8.91232-03	-9.13731-03	-6.71542-03	-1.35803-03	1086	4	2	730
1.31457-03	1.16254-03	C.0	0.0	0.0	0.0	1086	4	2	731
0.0	0.0					1086	4	2	732
0.0	3.30000+06	0	0	20	0	1086	4	2	733
4.75218-01	3.33335-01	2.60433-01	1.42100-01	5.68136-02	3.43484-02	1086	4	2	734
2.29054-02	1.17773-02	1.04135-02	8.60462-03	3.08495-03	-1.32363-04	1086	4	2	735
-9.71856-04	-9.96442-04	C.0	0.0	0.0	0.0	1086	4	2	736
0.0	0.0					1086	4	2	737
0.0	3.49000+06	0	0	20	0	1086	4	2	738
5.65486-01	4.23658-01	3.37982-01	1.96787-01	5.57736-02	2.55650-02	1086	4	2	739
1.07264-02	-8.22747-05	-5.57869-03	-6.09187-03	-5.98790-03	-6.56600-03	1086	4	2	740
-3.28782-03	-2.41656-03	C.0	0.0	0.0	0.0	1086	4	2	741
0.0	0.0					1086	4	2	742
0.0	3.70000+06	0	0	20	0	1086	4	2	743
4.92041-01	3.79718-01	2.72320-01	1.49517-01	3.76695-02	9.86968-03	1086	4	2	744
5.17692-03	1.70624-03	2.30925-03	2.49464-04	-1.73065-03	1.62953-04	1086	4	2	745
7.62181-04	-3.01141-04	C.0	0.0	0.0	0.0	1086	4	2	746
0.0	0.0					1086	4	2	747
0.0	4.00000+06	0	0	20	0	1086	4	2	748
6.32724-01	4.83244-01	3.75385-01	2.30434-01	9.14419-02	4.28058-02	1086	4	2	749
1.26658-02	-2.64175-03	-1.21992-02	-1.73409-02	-1.49019-02	-1.08962-02	1086	4	2	750

-5.5140C-03	1.01769-03	4.26007-03	3.65589-03	2.41520-03	9.34838-04	1086	4	2	751
-4.56756-04	3.99445-04					1086	4	2	752
0.0	4.56000+06	0	0	20		01086	4	2	753
6.68466-01	5.10692-01	3.79374-01	2.41811-01	9.28479-02	3.41798-02	1086	4	2	754
2.34562-03	6.58755-03	6.96342-03	8.19915-03	8.44301-03	5.01041-03	1086	4	2	755
-2.98318-03	4.05569-03	1.21285-03	6.40170-04	7.26440-05	1.43674-03	1086	4	2	756
-1.00446-03	1.02979-03					1086	4	2	757
0.0	5.00000+06	0	0	20		01086	4	2	758
7.58480-01	5.62545-01	3.97120-01	2.26090-01	8.32233-02	1.91948-02	1086	4	2	759
-1.41571-03	1.01356-02	9.44048-03	3.43210-03	1.69871-03	3.37224-03	1086	4	2	760
1.24266-03	1.82801-03	2.63921-03	1.17566-03	7.38773-04	1.82176-03	1086	4	2	761
1.82389-03	1.01121-03					1086	4	2	762
0.0	6.09000+06	0	0	20		01086	4	2	763
7.24957-01	5.43922-01	3.63914-01	2.37485-01	8.26270-02	1.80235-03	1086	4	2	764
-3.61084-02	3.56442-02	2.56645-02	1.45875-02	3.70766-03	4.16637-03	1086	4	2	765
6.41013-03	6.99611-03	5.44118-03	2.65266-03	6.47796-04	1.96433-03	1086	4	2	766
-2.27576-03	2.23580-03					1086	4	2	767
0.0	7.05000+06	0	0	20		01086	4	2	768
7.43216-01	5.58341-01	3.71379-01	2.45490-01	8.83364-02	2.49725-03	1086	4	2	769
-4.51120-02	4.05946-02	2.75864-02	1.49865-02	3.99266-03	5.17450-03	1086	4	2	770
8.66825-03	7.48574-03	3.35418-03	7.47443-04	7.54268-04	1.41192-03	1086	4	2	771
-1.33278-03	1.07966-03					1086	4	2	772
0.0	8.05000+06	0	0	20		01086	4	2	773
8.20088-01	6.76901-01	5.02842-01	3.62960-01	2.07462-01	1.00736-01	1086	4	2	774
3.06516-02	1.58811-03	1.65056-02	2.21290-02	2.34706-02	2.09284-02	1086	4	2	775
-1.57920-02	1.01331-02	5.19032-03	1.61684-03	5.57783-04	1.41572-03	1086	4	2	776
1.24147-03	7.44733-04					1086	4	2	777
0.0	1.50000+07	0	0	20		01086	4	2	778
8.34532-01	7.29313-01	6.22396-01	5.12066-01	3.87979-01	2.73013-01	1086	4	2	779
1.84548-01	1.24207-01	7.22951-02	3.27272-02	1.34152-02	7.06104-03	1086	4	2	780
6.90277-03	8.63178-03	9.98238-03	1.03242-02	9.09703-03	6.94340-03	1086	4	2	781
4.25867-03	1.46851-03					1086	4	2	782
0.0	0.0	0	0	0		01086	4	0	783
0.0	0.0	0	0	0		01086	0	0	784
2.9065 +04	6.4373 +01	0	0	5		01086	5	4	785
0.0	0.770 +06	0	3	1		161086	5	4	786
	16	2				1086	5	4	787
7.82	+05 1.0	8.0	+05 1.0	9.0	+05 1.0	1086	5	4	788
9.76	+05 1.0	1.0	+06 1.0	1.131	+06 1.0	1086	5	4	789
1.348	+06 0.399	1.435	+06 0.381	1.50	+06 0.378	1086	5	4	790
1.572	+06 0.342	1.648	+06 0.304	1.65	+06 0.303	1086	5	4	791
1.73	+06 0.261	1.75	+06 0.252	1.75	+06 0.0	1086	5	4	792

1.50	+07 0.0						1086 5 4 793
0.0	1.114 +06		0	3	1		111086 5 4 794
	11	2					1086 5 4 795
1.131	+06 0.0		1.348 +06 0.601		1.435 +06 0.619		1086 5 4 796
1.50	+06 0.622		1.572 +06 0.593		1.648 +06 0.570		1086 5 4 797
1.65	+06 0.567		1.73 +06 0.508		1.75 +06 0.495		1086 5 4 798
1.75	+06 0.0		1.50 +07 0.0				1086 5 4 799
0.0	1.482 +06		0	3	1		81086 5 4 800
	8	2					1086 5 4 801
1.50	+06 0.0		1.572 +06 0.065		1.648 +06 0.126		1086 5 4 802
1.65	+06 0.125		1.73 +06 0.166		1.75 +06 0.174		1086 5 4 803
1.75	+06 0.0		1.50 +07 0.0				1086 5 4 804
0.0	1.623 +06		0	3	1		61086 5 4 805
	6	2					1086 5 4 806
1.648	+06 0.0		1.65 +06 0.005		1.73 +06 0.065		1086 5 4 807
1.75	+06 0.079		1.75 +06 0.0		1.50 +07 0.0		1086 5 4 808
0.0	0.0		C	9	1		301086 5 4 809
	30	2					1086 5 4 810
7.82	+05 0.0		1.75 +06 0.0		1.75 +06 1.0		1086 5 4 811
2.0	+06 1.0		2.5 +06 1.0		3.0 +06 1.0		1086 5 4 812
3.5	+06 1.0		4.0 +06 1.0		4.5 +06 1.0		1086 5 4 813
5.0	+06 1.0		5.5 +06 1.0		6.0 +06 1.0		1086 5 4 814
6.5	+06 1.0		7.0 +06 1.0		7.5 +06 1.0		1086 5 4 815
8.0	+06 1.0		8.5 +06 1.0		9.0 +06 1.0		1086 5 4 816
9.5	+06 1.0		1.0 +07 1.0		1.05 +07 1.0		1086 5 4 817
1.10	+07 1.0		1.15 +07 1.0		1.20 +07 1.0		1086 5 4 818
1.25	+07 1.0		1.30 +07 1.0		1.35 +07 1.0		1086 5 4 819
1.40	+07 1.0		1.45 +07 1.0		1.50 +07 1.0		1086 5 4 820
0.0	0.0		0	0	2		301086 5 4 821
	3	2	30	5			1086 5 4 822
7.82	+05 0.10 +05 1.75		+06 0.10 +05 1.75		+06 0.6038 +061086 5 4 823		
2.0	+06 0.6455 +06 2.5		+06 0.7212 +06 3.0		+06 0.7906 +061086 5 4 824		
3.5	+06 0.8539 +06 4.0		+06 0.9129 +06 4.5		+06 0.9682 +061086 5 4 825		
5.0	+06 1.0206 +06 5.5		+06 1.0704 +06 6.0		+06 1.1180 +061086 5 4 826		
6.5	+06 1.1627 +06 7.0		+06 1.2076 +06 7.5		+06 1.2500 +061086 5 4 827		
8.0	+06 1.2910 +06 8.5		+06 1.3307 +06 9.0		+06 1.3693 +061086 5 4 828		
9.5	+06 1.4068 +06 10.0		+06 1.4434 +06 10.5		+06 1.4790 +061086 5 4 829		
11.0	+06 1.5138 +06 11.5		+06 1.5478 +06 12.0		+06 1.5811 +061086 5 4 830		
12.5	+06 1.6138 +06 13.0		+06 1.6459 +06 13.5		+06 1.6771 +061086 5 4 831		
14.0	+06 1.7078 +06 14.5		+06 1.7380 +06 15.0		+06 1.7678 +061086 5 4 832		
0.0	0.0		0	0	0		01086 5 0 833
2.9065	+04 6.4373 +01		0	0	2		01086 5 16 834

0.0	0.0	0	9	1	111086	5	16	835
	11	2			1086	5	16	836
1.0	+07 0.5	1.05	+07 0.5	1.10	+07 0.5	1086	5	16 837
1.15	+07 0.5	1.20	+07 0.5	1.25	+07 0.5	1086	5	16 838
1.30	+07 0.5	1.35	+07 0.5	1.40	+07 0.5	1086	5	16 839
1.45	+07 0.5	1.50	+07 0.5			1086	5	16 840
0.0	0.0	0	0	1	111086	5	16	841
	11	3			1086	5	16	842
1.0	+07 1.448	+06 1.05	+07 1.479	+06 1.10	+07 1.514	+061086	5	16 843
1.15	+07 1.547	+06 1.20	+07 1.581	+06 1.25	+07 1.614	+061086	5	16 844
1.30	+07 1.646	+06 1.35	+07 1.677	+06 1.40	+07 1.708	+061086	5	16 845
1.45	+07 1.738	+06 1.50	+07 1.768	+06		1086	5	16 846
0.0	0.0	0	9	1	111086	5	16	847
	11	2			1086	5	16	848
1.0	+07 0.5	1.05	+07 0.5	1.10	+07 0.5	1086	5	16 849
1.15	+07 0.5	1.20	+07 0.5	1.25	+07 0.5	1086	5	16 850
1.30	+07 0.5	1.35	+07 0.5	1.40	+07 0.5	1086	5	16 851
1.45	+07 0.5	1.50	+07 0.5			1086	5	16 852
0.0	0.0	0	0	1	111086	5	16	853
	11	3			1086	5	16	854
1.0	+07 0.10	+05 1.05	+07 0.299	+06 1.10	+07 0.440	+061086	5	16 855
1.15	+07 0.546	+06 1.20	+07 0.634	+06 1.25	+07 0.711	+061086	5	16 856
1.30	+07 0.781	+06 1.35	+07 0.846	+06 1.40	+07 0.905	+061086	5	16 857
1.45	+07 0.961	+06 1.50	+07 1.013	+06		1086	5	16 858
0.0	0.0	0	0	0		01086	5	0 859
0.0	0.0	0	0	0		01086	0	0 860
0.0	0.0	0	0	0		0	0	0 861
2.9000	+04 6.2954	+01	1	0	0	241087	1451	1
0.0	0.0	1	0	83		01087	1451	2
COPPER	ENDF/B MAT 1087 REF. AI-AEC-12741	SEPT. 1969				1087	1451	3
MF=1	GENERAL INFORMATION					1087	1451	4
	ATOMIC MASS GIVEN AS 63.54 FOR A NEUTRON MASS OF 1.008665					1087	1451	5
	FOR RADIOACTIVE DECAY SEE SEPERATE ISOTOPES OF COPPER					1087	1451	6
MF=2	RESONANCE PARAMETERS					1087	1451	7
MT=151	CU-63					1087	1451	8
	1.ALL RESOLVED RESONANCES TREATED AS L=0 RESONANCES					1087	1451	9
	2.RESOLVED RESONANCE PARAMETERS FROM REF.2.					1087	1451	10
	3.G VALUES FOR 7.64KEV AND ABOVE 13.5KEV ASSIGNED.					1087	1451	11
	4.NEGATIVE ENERGY RESONANCE GAMMA-N AND E0 OBTAINED FROM					1087	1451	12
	FIT TO SIGS=5.6B, SIGA=4.5B AT 2200M/S. ASSUMED GAMMA-					1087	1451	13
	GAMMA=0.55EV.					1087	1451	14
	5.L=0 UNRESOLVED RESONANCE PARAMETERS FROM AVERAGED					1087	1451	15

	RESOLVED RESONANCE PARAMETERS. OBSERVED LEVEL SPACING	1087 1451	16
	=D0=1.1KEV, STRENGTH FUNCTION/J STATE=(S0J)=2.55E-04,	1087 1451	17
	FOR EACH J STATE D=D0/G	1087 1451	18
	6.L=1,2 S1J=S2J=1.0E-04, DJ=D0/GJ, GAMMA-GAMMA=0.55EV	1087 1451	19
	ASSUMED.	1087 1451	20
	7.OPTIONS LRU=1, LRF=2 (MLBW REF. 10) ARE USED.	1087 1451	21
	CU-65	1087 1451	22
	1.ALL RESOLVED RESONANCES TREATED AS L=0 RESONANCES	1087 1451	23
	2.RESOLVED RESONANCE PARAMETERS FROM REF.2.	1087 1451	24
	3.G VALUES FOR C.225KEV AND ABOVE 14KEV ASSIGNED	1087 1451	25
	4.NEGATIVE ENERGY RESONANCE GAMMA-N AND E0 OBTAINED FROM	1087 1451	26
	FIT TO SIGS=15.48, SIGA=2.28 AT 2200M/S. ASSUMED GAMMA-	1087 1451	27
	GAMMA=0.24EV.	1087 1451	28
	5.L=0 UNRESOLVED RESONANCE PARAMETERS FROM AVERAGED	1087 1451	29
	RESOLVED RESONANCE PARAMETERS. OBSERVED LEVEL SPACING	1087 1451	30
	=D0=1.4KEV, STRENGTH FUNCTION/J STATE=S0J=1.7E-04, FOR	1087 1451	31
	EACH J STATE D=D0/G	1087 1451	32
	6.L=1,2 S1J=S2J=1.0E-04, DJ=D0/GJ, GAMMA-GAMMA=0.24EV	1087 1451	33
	ASSUMED.	1087 1451	34
	7.OPTIONS LRU=1, LRF=2 (MLBW REF. 10) ARE USED.	1087 1451	35
MF=3	SMOOTH CROSS SECTIONS	1087 1451	36
MT=1	TOTAL IS EQUAL TO THE SUM OF PARTIAL CROSS SECTIONS. 30	1087 1451	37
	TO 100 KEV EXPERIMENTAL DATA OF REF.2 USED AT 130	1087 1451	38
	POINTS. ABOVE RESONANCE REGION RESULT AGREE WITH REF.5.	1087 1451	39
MT=2	BELOW RESONANCE REGION =7.7BARNs, REF. DOC. NOTE- THE	1087 1451	40
	ABUNDANCE WEIGHTED VALUE IS 8.64BARNs. IN	1087 1451	41
	THE RESOLVED RESONANCE RANGE THE SMOOTH DATA IS THE	1087 1451	42
	CONTRIBUTION FROM L.GT. 0 CALCULATED FROM UNRESOLVED	1087 1451	43
	RESONANCE PARAMETERS USING TRIX-REF. 4. FROM 30 TO 100	1087 1451	44
	KEV VALUES ARE THE DIFFERENCE BETWEEN THE TOTAL AND	1087 1451	45
	NON-ELASTIC CROSS SECTIONS. ABOVE 100 KEV, REF. 5.	1087 1451	46
MT=4-13	LEVEL DATA TO 1.75 MEV. CONTINUUM ABOVE 1.75 MEV. BOTH	1087 1451	47
	FROM REF. 5.	1087 1451	48
MT=16	REF. 5	1087 1451	49
MT=251	MUBAR CALCULATED FROM LEGENDRE COEFFICIENTS IN FILE 4	1087 1451	50
	USING CHAD-REF. 6.	1087 1451	51
MT=252	XI CALCULATED FROM LEGENDRE COEFFICIENTS IN FILE 4	1087 1451	52
	USING CHAD-REF. 6.	1087 1451	53
MT=253	GAMMA CALCULATED FROM LEGENDRE COEFFICIENTS IN FILE 4	1087 1451	54
	USING CHAD-REF. 6.	1087 1451	55
MT=102	BELOW RES. REGION CALCULATED USING UNICORN-REF. 3. FOR	1087 1451	56
	RESOLVED RES. RANGE, L.GT. 0 CONTRIBUTION CALCULATED	1087 1451	57

		FROM UNRESOLVED RES. PARAMETERS USING TRIX-REF. 4.	1087	1451	58
		THE 30 TO 100 KEV RANGE FROM EVALUATION OF REFERENCE	1087	1451	59
		DOCUMENT. ABOVE 100 KEV, ABUNDANCE WEIGHTED ISOTOPIC	1087	1451	60
		VALUES-REF. 5. NOTE- ABUNDANCE	1087	1451	61
		WEIGHTED ISOTOPIC DATA ARE 45-80 PERCENT HIGHER THAN	1087	1451	62
		EVALUATED NATURAL CU MEASUREMENTS IN UNRESOLVED REGION.	1087	1451	63
MT=103	REF.5		1087	1451	64
MT=107	REF.5		1087	1451	65
MF=4		SECONDARY ANGULAR DISTRIBUTIONS	1087	1451	66
MT=2		LEGENDRE COEFF. FOR ELASTIC SCATT. ARE GIVEN. DATA ARE	1087	1451	67
		FROM REFERENCES 7,8,9. WHERE LEGENDRE COEFF. WERE NOT	1087	1451	68
		GIVEN THEY WERE OBTAINED FROM THE DATA POINTS BY USING	1087	1451	69
		CHAD-REF.6.	1087	1451	70
MF=5		SECONDARY ENERGY DISTRIBUTIONS	1087	1451	71
MT=4	REF. 5		1087	1451	72
MT=16	REF. 5		1087	1451	73
		REFERENCES	1087	1451	74
		1. GOLDMAN, DAVID T., CHART OF THE NUCLIDES, KAPL (1966)	1087	1451	75
		2. GOLDBERG, M.D., ET. AL., BNL 325 2ND. ED. SUPPL. NO.2 VOL.	1087	1451	76
		3. OTTER, J., NAA-SR-11980 VOL.6 (1966)	1087	1451	77
		4. OTTER, J., NAA-SR-MEMO-11538 (1965)	1087	1451	78
		5. OFFORD, SUSAN M., PARKER, K., AWRD 0-63/67 (1967)	1087	1451	79
		6. BERLAND, R.F., NAA-SR-11231 (1965)	1087	1451	80
		7. GOLDBERG, M.D., ET. AL., BNL 400 2ND ED. VOL. II (1962)	1087	1451	81
		8. HOLMQUIST, B., WIEDLING, T., NUCLEAR DATA FOR REACTORS, VOL.	1087	1451	82
		I, IAEA, VIENNA (1967)	1087	1451	83
		9. SMITH, A.B., ET. AL., PHY. REV. 135, B76 (1964)	1087	1451	84
		10. OTTER, J.M., NSE 28, 149 (1967)	1087	1451	85
0.0	0.0	1 451 107	01087	1451	86
0.0	0.0	2 151 57	01087	1451	87
0.0	0.0	3 1 68	01087	1451	88
0.0	0.0	3 2 68	01087	1451	89
0.0	0.0	3 4 18	01087	1451	90
0.0	0.0	3 5 9	01087	1451	91
0.0	0.0	3 6 9	01087	1451	92
0.0	0.0	3 7 8	01087	1451	93
0.0	0.0	3 8 7	01087	1451	94
0.0	0.0	3 9 7	01087	1451	95
0.0	0.0	3 10 6	01087	1451	96
0.0	0.0	3 11 6	01087	1451	97
0.0	0.0	3 12 6	01087	1451	98
0.0	0.0	3 13 5	01087	1451	99

0.0	0.0		3	16	7	01087	1451	100
0.0	0.0		3	102	68	01087	1451	101
0.0	0.0		3	103	15	01087	1451	102
0.0	0.0		3	107	10	01087	1451	103
0.0	0.0		3	251	19	01087	1451	104
0.0	0.0		3	252	19	01087	1451	105
0.0	0.0		3	253	19	01087	1451	106
0.0	0.0		4	2	303	01087	1451	107
0.0	0.0		5	4	79	01087	1451	108
0.0	0.0		5	16	35	01087	1451	109
0.0	0.0		0	0	0	01087	1 0	110
0.0	0.0		0	0	0	01087	0 0	111
2.9000	+04 6.2954	+01	0	0	2	01087	2151	112
2.9063	+04 0.6842		0	0	1	01087	2151	113
1.0	+01 3.0	+04	1	2	0	01087	2151	114
1.5	0.7302		0	0	1	01087	2151	115
1.078	-03 0.0		0	0	168	281087	2151	116
-3.069	+02 2.0	5.103	+00 4.553	+00 0.55	+00	1087	2151	117
5.777	+02 2.0	1.410	+00 0.860	+0 0.55	+00	1087	2151	118
2.060	+03 1.0	4.405	+01 4.35	+01 0.55	+00	1087	2151	119
2.660	+03 2.0	5.05	+00 4.5	+00 0.55	+00	1087	2151	120
4.860	+03 1.0	1.455	+01 1.4	+01 0.55	+00	1087	2151	121
5.390	+03 2.0	4.055	+01 4.0	+01 0.55	+00	1087	2151	122
5.820	+03 2.0	1.095	+01 1.04	+01 0.55	+00	1087	2151	123
7.640	+03 2.0	0.735	+01 0.68	+01 0.55	+00	1087	2151	124
7.94	+03 2.0	8.055	+01 8.0	+01 0.55	+00	1087	2151	125
9.20	+03 2.0	3.715	+01 3.66	+01 0.55	+00	1087	2151	126
9.93	+03 1.0	8.755	+01 8.7	+01 0.55	+00	1087	2151	127
1.085	+04 2.0	5.855	+01 5.8	+01 0.55	+00	1087	2151	128
1.254	+04 1.0	2.355	+01 2.3	+01 0.55	+00	1087	2151	129
1.317	+04 2.0	6.655	+01 6.6	+01 0.55	+00	1087	2151	130
1.370	+04 2.0	3.999	+01 3.944	+01 0.55	+00	1087	2151	131
1.490	+04 2.0	2.831	+01 2.776	+01 0.55	+00	1087	2151	132
1.560	+04 2.0	1.823	+01 1.768	+01 0.55	+00	1087	2151	133
1.610	+04 2.0	1.159	+01 1.104	+01 0.55	+00	1087	2151	134
1.788	+04 1.0	1.3355	+02 1.33	+02 0.55	+00	1087	2151	135
1.812	+04 1.0	13.355	+01 13.30	+01 0.55	+00	1087	2151	136
2.104	+04 1.0	2.0055	+02 2.00	+02 0.55	+00	1087	2151	137
2.125	+04 2.0	1.2055	+02 1.20	+02 0.55	+00	1087	2151	138
2.282	+04 2.0	1.1255	+02 1.12	+02 0.55	+00	1087	2151	139
2.480	+04 2.0	0.6095	+02 0.604	+02 0.55	+00	1087	2151	140
2.560	+04 2.0	1.6615	+02 1.656	+02 0.55	+00	1087	2151	141

2.650	+04	2.0	9.735	+01	9.68	+01	0.55	+00	1087	2151	142
2.82	+04	1.0	6.921	+01	6.866	+01	0.55	+00	1087	2151	143
2.93	+04	1.0	32.285	+01	32.23	+01	0.55	+00	1087	2151	144
2.9065	+04	0.3158		0		0		1	01087	2151	145
1.0	+01	3.0		1		2		0	01087	2151	146
1.5		0.7302		0		0		1	01087	2151	147
1.090	-03	0.0		0		0		120	201087	2151	148
-9.476	+02	2.0	9.231	+01	9.207	+01	0.24	+00	1087	2151	149
2.290	+02	2.0	2.6	-01	1.60	-02	0.24	+00	1087	2151	150
2.55	+03	2.0	1.704	+01	1.68	+01	0.24	+00	1087	2151	151
3.92	+03	1.0	2.424	+01	2.40	+01	0.24	+00	1087	2151	152
4.4	+03	2.0	7.24	+00	7.0	+00	0.24	+00	1087	2151	153
4.5	+03	1.0	1.624	+01	1.6	+01	0.24	+00	1087	2151	154
6.48	+03	2.0	2.624	+01	2.6	+01	0.24	+00	1087	2151	155
7.6	+03	2.0	2.324	+01	2.3	+01	0.24	+00	1087	2151	156
7.65	+03	1.0	3.324	+01	3.3	+01	0.24	+00	1087	2151	157
7.94	+03	2.0	5.024	+01	5.0	+01	0.24	+00	1087	2151	158
8.549	+03	1.0	7.80	+00	7.56	+00	0.24	+00	1087	2151	159
1.366	+04	2.0	7.524	+01	7.5	+01	0.24	+00	1087	2151	160
1.423	+04	2.0	4.184	+01	4.16	+01	0.24	+00	1087	2151	161
1.509	+04	2.0	0.786	+01	0.762	+01	0.24	+00	1087	2151	162
1.582	+04	2.0	3.224	+01	3.2	+01	0.24	+00	1087	2151	163
1.780	+04	2.0	2.4468	+02	2.4444	+02	0.24	+00	1087	2151	164
2.0	+04	1.0	2.5356	+02	2.5332	+02	0.24	+00	1087	2151	165
2.18	+04	1.0	3.677	+01	3.653	+01	0.24	+00	1087	2151	166
2.41	+04	1.0	1.1224	+02	1.12	+02	0.24	+00	1087	2151	167
2.5	+04	2.0	2.0504	+02	2.048	+02	0.24	+00	1087	2151	168
0.0		0.0		0		0		0	01087	2	0 169
0.0		0.0		0		0		0	01087	0	0 170
2.9000	+04	6.2994	+01	0		0		0	01087	3	1 171
0.0		0.0		0		0		1	1951087	3	1 172
	195		5	0		0		0	01087	3	1 173
1.0	E-03	26.7534	2.53	E-02	11.4876	5.1265E-01	8.5393		1087	3	1 174
1.0000E	00	8.2956E	00	5.5000E	00	7.9500E	00	1.0000E	01	7.8815E	001087 3 1 175
1.0000E	01	4.0000E-03	5.0000E	01	9.0000E-03	1.0000E	02	1.3000E-02	01087	3	1 176
5.0000E	02	2.9000E-02	1.0000E	03	3.8000E-02	5.0000E	03	8.7000E-02	01087	3	1 177
1.0000E	04	1.3700E-01	2.0000E	04	1.9800E-01	3.0000E	04	2.3000E-01	01087	3	1 178
3.0000E	04	1.0700E	01	3.0400E	04	7.2000E	00	3.0550E	04	1.0400E	011087 3 1 179
3.0600E	04	8.2000E	00	3.0800E	04	6.8000E	00	3.1000E	04	7.0000E	001087 3 1 180
3.1300E	04	4.6000E	00	3.1400E	04	1.5800E	01	3.1600E	04	6.7000E	001087 3 1 181
3.1900E	04	5.9000E	00	3.2100E	04	4.8000E	00	3.2300E	04	7.0000E	001087 3 1 182
3.2650E	04	4.4000E	00	3.3000E	04	4.5000E	00	3.3400E	04	2.5200E	011087 3 1 183

3.4000E	04	7.2000E	00	3.4300E	04	1.0500E	01	3.4700E	04	7.0000E	001087	3	1	184
3.5000E	04	2.0000E	01	3.5400E	04	7.9999E	00	3.6000E	04	5.1000E	001087	3	1	185
3.6200E	04	2.4000E	01	3.6700E	04	4.6000E	00	3.6900E	04	2.0500E	011087	3	1	186
3.7100E	04	9.2000E	00	3.7800E	04	6.1000E	00	3.8100E	04	8.2000E	001087	3	1	187
3.8200E	04	6.1000E	00	3.9300E	04	4.6000E	00	3.9700E	04	1.3000E	011087	3	1	188
4.0100E	04	6.0000E	00	4.0300E	04	7.0000E	00	4.0500E	04	5.4000E	001087	3	1	189
4.0600E	04	6.2000E	00	4.0900E	04	4.7000E	00	4.1100E	04	6.3000E	001087	3	1	190
4.1300E	04	4.5000E	00	4.1500E	04	4.0000E	00	4.1800E	04	2.7000E	001087	3	1	191
4.2000E	04	2.2000E	01	4.2300E	04	1.2000E	01	4.2600E	04	2.0500E	011087	3	1	192
4.2900E	04	1.1700E	01	4.3200E	04	1.3400E	01	4.3500E	04	8.4000E	001087	3	1	193
4.3800E	04	1.0000E	01	4.4000E	04	6.8000E	00	4.4300E	04	8.0000E	001087	3	1	194
4.4600E	04	5.6000E	00	4.4800E	04	1.2000E	01	4.5000E	04	6.3000E	001087	3	1	195
4.7300E	04	4.5000E	00	4.7900E	04	7.0000E	00	4.9000E	04	4.2000E	001087	3	1	196
4.9800E	04	3.8000E	00	5.0000E	04	2.2999E	00	5.0400E	04	9.0000E	001087	3	1	197
5.1000E	04	4.2000E	00	5.2400E	04	3.0000E	00	5.2700E	04	2.6000E	001087	3	1	198
5.3000E	04	2.8000E	00	5.3800E	04	1.6500E	01	5.4600E	04	3.8000E	001087	3	1	199
5.5000E	04	2.0000E	01	5.6000E	04	9.8000E	00	5.6500E	04	1.8600E	011087	3	1	200
5.6600E	04	1.2000E	01	5.8200E	04	7.0000E	00	5.8600E	04	1.2000E	011087	3	1	201
5.9000E	04	6.8000E	00	5.9600E	04	7.7000E	00	5.9800E	04	6.6000E	001087	3	1	202
6.0600E	04	6.5000E	00	6.1200E	04	5.0000E	00	6.1800E	04	4.3000E	001087	3	1	203
6.2200E	04	7.8000E	00	6.3000E	04	3.5000E	00	6.3300E	04	6.6000E	001087	3	1	204
6.4200E	04	3.0000E	00	6.4700E	04	5.0000E	00	6.5400E	04	1.3100E	011087	3	1	205
6.6000E	04	5.0000E	00	6.6500E	04	1.1500E	01	6.6800E	04	8.2000E	001087	3	1	206
6.7200E	04	1.2000E	01	6.7900E	04	6.2000E	00	6.8200E	04	7.2000E	001087	3	1	207
6.9200E	04	3.8000E	00	6.9800E	04	8.1000E	00	7.1000E	04	3.8000E	001087	3	1	208
7.1500E	04	4.3000E	00	7.1700E	04	2.9000E	00	7.2200E	04	3.6000E	001087	3	1	209
7.2500E	04	2.7000E	00	7.3000E	04	1.4500E	01	7.3300E	04	1.1000E	011087	3	1	210
7.4000E	04	1.5000E	01	7.4400E	04	1.0500E	01	7.5000E	04	1.5000E	011087	3	1	211
7.5800E	04	7.8000E	00	7.6100E	04	9.7000E	00	7.7600E	04	5.7000E	001087	3	1	212
7.8000E	04	6.0000E	00	7.8500E	04	5.0000E	00	7.9200E	04	7.3000E	001087	3	1	213
8.0600E	04	3.7000E	00	8.2000E	04	1.3300E	01	8.3800E	04	7.7000E	001087	3	1	214
8.4200E	04	8.8000E	00	8.5600E	04	5.3000E	00	8.6300E	04	8.2000E	001087	3	1	215
8.7300E	04	5.6000E	00	8.7600E	04	6.0000E	00	8.8400E	04	5.3000E	001087	3	1	216
8.9000E	04	3.6000E	00	9.0000E	04	1.0500E	01	9.0800E	04	4.6000E	001087	3	1	217
9.1500E	04	8.1000E	00	9.2000E	04	6.7000E	00	9.2500E	04	8.0000E	001087	3	1	218
9.3000E	04	5.9000E	00	9.4000E	04	5.2000E	00	9.5000E	04	6.0000E	001087	3	1	219
9.5600E	04	5.1000E	00	9.6200E	04	7.6000E	00	9.7700E	04	4.7000E	001087	3	1	220
9.8400E	04	6.0000E	00	9.9000E	04	4.8000E	00	9.9500E	04	6.0000E	001087	3	1	221
9.9900E	04	4.7000E	00	1.0000E	05	4.7000E	00	1.0000E	05	4.4927E	001087	3	1	222
2.0000E	05	4.8000E	00	3.0000E	05	4.9000E	00	4.0000E	05	4.6499E	001087	3	1	223
5.0000E	05	4.3500E	00	6.0000E	05	4.1000E	00	6.7900E	05	3.9138E	001087	3	1	224
7.0000E	05	3.9000E	00	7.8200E	05	3.7633E	00	8.0000E	05	3.7601E	001087	3	1	225

9.0000E	05	3.6200E	00	5.7600E	05	3.4915E	00	1.0000E	06	3.5201E	001087	3	1	226
1.1310E	06	3.4175E	00	1.3480E	06	3.3027E	00	1.4350E	06	3.2587E	001087	3	1	227
1.5000E	06	3.2600E	00	1.5720E	06	3.2051E	00	1.6480E	06	3.1647E	001087	3	1	228
1.6500E	06	3.1658E	00	1.7300E	06	3.1744E	00	1.7500E	06	3.1629E	001087	3	1	229
2.0000E	06	3.0800E	00	2.5000E	06	3.1500E	00	3.0000E	06	3.3500E	001087	3	1	230
3.5000E	06	3.4954E	00	4.0000E	06	3.6495E	00	4.5000E	06	3.7703E	001087	3	1	231
5.0000E	06	3.8459E	00	5.5000E	06	3.8895E	00	6.0000E	06	3.9020E	001087	3	1	232
6.5000E	06	3.8914E	00	7.0000E	06	3.8641E	00	7.5000E	06	3.7994E	001087	3	1	233
8.0000E	06	3.7500E	00	8.5000E	06	3.6762E	00	9.0000E	06	3.6000E	001087	3	1	234
9.5000E	06	3.5205E	00	1.0000E	07	3.4500E	00	1.0500E	07	3.4009E	001087	3	1	235
1.1000E	07	3.3310E	00	1.1500E	07	3.3071E	00	1.2000E	07	3.2010E	001087	3	1	236
1.2500E	07	3.1520E	00	1.3000E	07	3.0999E	00	1.3500E	07	3.0189E	001087	3	1	237
1.4000E	07	2.5600E	00	1.4500E	07	2.9102E	00	1.5000E	07	2.8810E	001087	3	1	238
0.0		0.0		0		0		0		01087	3	0	239	
2.9000	+04	6.2954	+01	0		0		0		01087	3	2	240	
0.0		0.0		0		0		3		1951087	3	2	241	
	6		5		12		2		195	51087	3	2	242	
1.0	E-03	7.7		2.53	E-02	7.7		5.1265E-01	7.7	1087	3	2	243	
1.0	E+00	7.7		5.50	E+00	7.7		1.0	E+01	7.7	1087	3	2	244
1.0	E+01	0.0		5.0	E+01	0.0		1.0	E+02	0.0	1087	3	2	245
5.0	E+02	0.0		1.0	E+03	0.0		5.0	E+03	0.03	1087	3	2	246
1.0	E+04	0.08		2.0	E+04	0.15		3.0	E+04	0.19	1087	3	2	247
3.0000E	04	1.0652E	01	3.0400E	04	7.1523E	00	3.0550E	04	1.0352E	011087	3	2	248
3.0600E	04	8.1524E	00	3.0800E	04	6.7526E	00	3.1000E	04	6.9527E	001087	3	2	249
3.1300E	04	4.5529E	00	3.1400E	04	1.5753E	01	3.1600E	04	6.6531E	001087	3	2	250
3.1900E	04	5.8523E	00	3.2100E	04	4.7535E	00	3.2300E	04	6.9536E	001087	3	2	251
3.2650E	04	4.3538E	00	3.3000E	04	4.4541E	00	3.3400E	04	2.5154E	011087	3	2	252
3.4000E	04	7.1547E	00	3.4300E	04	1.0455E	01	3.4700E	04	6.9551E	001087	3	2	253
3.5000E	04	1.5955E	01	3.5400E	04	7.9555E	00	3.6000E	04	5.0559E	001087	3	2	254
3.6200E	04	2.3956E	01	3.6700E	04	4.5563E	00	3.6900E	04	2.0456E	011087	3	2	255
3.7100E	04	9.1565E	00	3.7800E	04	6.0569E	00	3.8100E	04	8.1570E	001087	3	2	256
3.8200E	04	6.0571E	00	3.9300E	04	4.5577E	00	3.9700E	04	1.2958E	011087	3	2	257
4.0100E	04	5.5580E	00	4.0300E	04	6.9581E	00	4.0500E	04	5.3582E	001087	3	2	258
4.0600E	04	6.1583E	00	4.0900E	04	4.6584E	00	4.1100E	04	6.7585E	001087	3	2	259
4.1300E	04	4.4586E	00	4.1500E	04	3.9587E	00	4.1800E	04	2.6588E	001087	3	2	260
4.2000E	04	2.1959E	01	4.2300E	04	1.1959E	01	4.2600E	04	2.0459E	011087	3	2	261
4.2900E	04	1.1659E	01	4.3200E	04	1.3359E	01	4.3500E	04	8.3595E	001087	3	2	262
4.3800E	04	9.5556E	00	4.4000E	04	6.7597E	00	4.4300E	04	7.9598E	001087	3	2	263
4.4600E	04	5.5559E	00	4.4800E	04	1.1960E	01	4.5000E	04	6.7601E	001087	3	2	264
4.7300E	04	4.4609E	00	4.7900E	04	6.9611E	00	4.9000E	04	4.1615E	001087	3	2	265
4.9800E	04	3.7618E	00	5.0000E	04	2.2618E	00	5.0400E	04	8.9620E	001087	3	2	266
5.1000E	04	4.1622E	00	5.2400E	04	2.9626E	00	5.2700E	04	2.5527E	001087	3	2	267

5.3000E	04	2.7628E	00	5.3800E	04	1.6463E	01	5.4600E	04	3.7633E	001087	3	2	268
5.5000E	04	1.9963E	01	5.6000E	04	9.7637E	00	5.6500E	04	1.8564E	011087	3	2	269
5.6600E	04	1.1964E	01	5.8200E	04	6.9643E	00	5.8600E	04	1.1964E	011087	3	2	270
5.9000E	04	6.7645E	00	5.9600E	04	7.6646E	00	5.9800E	04	6.5647E	001087	3	2	271
6.0600E	04	6.4645E	00	6.1200E	04	4.9650E	00	6.1800E	04	4.2652E	001087	3	2	272
6.2200E	04	7.7653E	00	6.3000E	04	3.4655E	00	6.3300E	04	6.5655E	001087	3	2	273
6.4200E	04	2.5657E	00	6.4700E	04	4.9659E	00	6.5400E	04	1.3066E	011087	3	2	274
6.6000E	04	4.9662E	00	6.6500E	04	1.1466E	01	6.6800E	04	8.1663E	001087	3	2	275
6.7200E	04	1.1966E	01	6.7900E	04	6.1666E	00	6.8200E	04	7.1666E	001087	3	2	276
6.9200E	04	3.7668E	00	6.9800E	04	8.0670E	00	7.1000E	04	3.7672E	001087	3	2	277
7.1500E	04	4.2673E	00	7.1700E	04	2.8674E	00	7.2200E	04	3.5675E	001087	3	2	278
7.2500E	04	2.6675E	00	7.3000E	04	1.4468E	01	7.3300E	04	1.0968E	011087	3	2	279
7.4000E	04	1.4968E	01	7.4400E	04	1.0468E	01	7.5000E	04	1.4968E	011087	3	2	280
7.5800E	04	7.7682E	00	7.6100E	04	9.6682E	00	7.7600E	04	5.5685E	001087	3	2	281
7.8000E	04	5.5686E	00	7.8500E	04	4.9687E	00	7.9200E	04	7.2688E	001087	3	2	282
8.0600E	04	3.6691E	00	8.2000E	04	1.3269E	01	8.3800E	04	7.6696E	001087	3	2	283
8.4200E	04	8.7697E	00	8.5600E	04	5.2699E	00	8.6300E	04	8.1700E	001087	3	2	284
8.7300E	04	5.5702E	00	8.7600E	04	5.5702E	00	8.8400E	04	5.2704E	001087	3	2	285
8.9000E	04	3.5705E	00	9.0000E	04	1.0471E	01	9.0800E	04	4.5707E	001087	3	2	286
9.1500E	04	8.0708E	00	9.2000E	04	6.6709E	00	9.2500E	04	7.9710E	001087	3	2	287
9.3000E	04	5.8710E	00	9.4000E	04	5.1712E	00	9.5000E	04	5.9713E	001087	3	2	288
9.5600E	04	5.0714E	00	9.6200E	04	7.5715E	00	9.7700E	04	4.6717E	001087	3	2	289
9.8400E	04	5.9718E	00	9.9000E	04	4.7719E	00	9.9500E	04	5.9719E	001087	3	2	290
9.99	E+04	4.672		1.0	E+05	4.672		1.0	E+05	4.6647	1087	3	2	291
2.0	+05	4.774		3.0	+05	4.881		4.0	+05	4.6342	1087	3	2	292
5.0	+05	4.3352		6.0	+05	4.086		6.79	+05	3.90	1087	3	2	293
7.0	+05	3.8558		7.82	+05	3.68		8.0	+05	3.6656	1087	3	2	294
9.0	+05	3.476		9.76	+05	3.33		1.0	+06	3.282	1087	3	2	295
1.131	+06	3.05		1.348	+06	2.80		1.435	+06	2.70	1087	3	2	296
1.50	+06	2.6615		1.572	+06	2.56		1.648	+06	2.45	1087	3	2	297
1.65	+06	2.45		1.73	+06	2.38		1.75	+06	2.35	1087	3	2	298
2.0	+06	2.077		2.5	+06	1.847		3.0	+06	1.845	1087	3	2	299
3.5	+06	1.92		4.0	+06	2.011		4.5	+06	2.108	1087	3	2	300
5.0	+06	2.157		5.5	+06	2.201		6.0	+06	2.214	1087	3	2	301
6.5	+06	2.221		7.0	+06	2.215		7.5	+06	2.176	1087	3	2	302
8.0	+06	2.133		8.5	+06	2.072		9.0	+06	2.011	1087	3	2	303
9.5	+06	1.972		1.0	+07	1.945		1.05	+07	1.905	1087	3	2	304
1.10	+07	1.83		1.15	+07	1.77		1.20	+07	1.70	1087	3	2	305
1.25	+07	1.65		1.30	+07	1.60		1.35	+07	1.523	1087	3	2	306
1.40	+07	1.465		1.45	+07	1.415		1.50	+07	1.355	1087	3	2	307
0.0		0.0				0				0	01087	3	0	308
2.9000	+04	6.2954	+01			0				0	01087	3	4	309

0.0	-0.668	+06	0	0	1	431087	3	4	310
	43	2				1087	3	4	311
6.79	+05 0.0		7.0	+05 0.0305	7.82	+05 0.0598	1087	3	4 312
8.0	+05 0.081		9.0	+05 0.1309	9.76	+05 0.1485	1087	3	4 313
1.0	+06 0.2252		1.131	+06 0.3561	1.348	+06 0.4925	1087	3	4 314
1.435	+06 0.5490		1.50	+06 0.5855	1.572	+06 0.6318	1087	3	4 315
1.648	+06 0.7004		1.65	+06 0.7014	1.73	+06 0.7787	1087	3	4 316
1.75	+06 0.7970		2.0	+06 0.9824	2.5	+06 1.2714	1087	3	4 317
3.0	+06 1.4628		3.5	+06 1.5271	4.0	+06 1.5785	1087	3	4 318
4.5	+06 1.5537		5.0	+06 1.6179	5.5	+06 1.5082	1087	3	4 319
6.0	+06 1.6004		6.5	+06 1.5793	7.0	+06 1.5538	1087	3	4 320
7.5	+06 1.5221		8.0	+06 1.5101	8.5	+06 1.4916	1087	3	4 321
9.0	+06 1.4731		9.5	+06 1.4281	1.0	+07 1.3831	1087	3	4 322
1.05	+07 1.3717		1.10	+07 1.3241	1.15	+07 1.2791	1087	3	4 323
1.20	+07 1.1787		1.25	+07 1.0595	1.30	+07 0.9483	1087	3	4 324
1.35	+07 0.8512		1.40	+07 0.7666	1.45	+07 0.6992	1087	3	4 325
1.50	+07 0.6536						1087	3	4 326
0.0	0.0		0	0	0	0	1087	3	0 327
2.9000	+04 6.2954	+01	0	0	0	0	01087	3	5 328
0.0	-0.668	+06	0	0	1	181087	3	5	329
	18	2				1087	3	5	330
6.79	+05 0.0		7.0	+05 0.0305	7.82	+05 0.0698	1087	3	5 331
8.0	+05 0.078		9.0	+05 0.1079	9.76	+05 0.1180	1087	3	5 332
1.0	+06 0.1190		1.131	+06 0.126	1.348	+06 0.141	1087	3	5 333
1.435	+06 0.1430		1.50	+06 0.1435	1.572	+06 0.1442	1087	3	5 334
1.648	+06 0.1450		1.65	+06 0.1450	1.73	+06 0.1458	1087	3	5 335
1.75	+06 0.1460		1.75	+06 0.0	1.50	+07 0.0	1087	3	5 336
0.0	0.0		0	0	0	0	01087	3	0 337
2.9000	+04 6.2954	+01	0	0	0	0	01087	3	6 338
0.0	-0.770	+06	0	0	1	161087	3	6	339
	16	2				1087	3	6	340
7.82	+05 0.0		8.0	+05 0.003	9.0	+05 0.023	1087	3	6 341
9.76	+05 0.0305		1.0	+06 0.032	1.131	+06 0.040	1087	3	6 342
1.348	+06 0.0425		1.435	+06 0.048	1.50	+06 0.051	1087	3	6 343
1.572	+06 0.0514		1.648	+06 0.0518	1.65	+06 0.0518	1087	3	6 344
1.73	+06 0.0519		1.75	+06 0.052	1.75	+06 0.0	1087	3	6 345
1.50	+07 0.0						1087	3	6 346
0.0	0.0		0	0	0	0	01087	3	0 347
2.9000	+04 6.2954	+01	0	0	0	0	01087	3	7 348
0.0	-0.561	+06	0	0	1	131087	3	7	349
	13	2				1087	3	7	350
9.76	+05 0.0		1.0	+06 0.0742	1.131	+06 0.1901	1087	3	7 351

1.348	+06	0.245	1.435	+06	0.255	1.50	+06	0.259	1087	3	7	352
1.572	+06	0.2605	1.648	+06	0.265	1.65	+06	0.265	1087	3	7	353
1.73	+06	0.269	1.75	+06	0.270	1.75	+06	0.0	1087	3	7	354
1.50	+07	0.0							1087	3	7	355
0.0		0.0		0		0		0	01087	3	0	356
2.9000	+C4	6.2954 +01		0		0		0	01087	3	8	357
0.0		-1.114 +C6		0		0		1	111087	3	8	358
	11	2							1087	3	8	359
1.131	+06	0.0	1.348	+06	0.064	1.435	+06	0.078	1087	3	8	360
1.50	+06	0.084	1.572	+06	0.089	1.648	+06	0.097	1087	3	8	361
1.65	+06	0.097	1.73	+06	0.101	1.75	+06	0.102	1087	3	8	362
1.75	+06	0.0	1.50	+07	0.0				1087	3	8	363
0.0		0.0		0		0		0	01087	3	0	364
2.9000	+C4	6.2954 +01		0		0		0	01087	3	9	365
0.0		-1.327 +C6		0		0		1	101087	3	9	366
	10	2							1087	3	9	367
1.348	+06	0.0	1.435	+06	0.025	1.50	+06	0.035	1087	3	9	368
1.572	+06	0.050	1.648	+06	0.070	1.65	+06	0.070	1087	3	9	369
1.73	+06	0.092	1.75	+06	0.096	1.75	+06	0.0	1087	3	9	370
1.50	+07	0.0							1087	3	9	371
0.0		0.0		0		0		0	01087	3	0	372
2.9000	+04	6.2954 +01		C		0		0	01087	3	10	373
0.0		-1.412 +C6		0		0		1	91087	3	10	374
	9	2							1087	3	10	375
1.435	+C6	0.0	1.50	+06	0.013	1.572	+06	0.027	1087	3	10	376
1.648	+06	0.043	1.65	+06	0.043	1.73	+06	0.059	1087	3	10	377
1.75	+06	0.063	1.75	+06	0.0	1.50	+07	0.0	1087	3	10	378
0.0		0.0		0		0		0	01087	3	0	379
2.9000	+04	6.2954 +01		0		0		0	01087	3	11	380
0.0		-1.482 +06		0		0		1	81087	3	11	381
	8	2							1087	3	11	382
1.50	+06	0.0	1.572	+06	0.0097	1.648	+06	0.0214	1087	3	11	383
1.65	+06	0.0214	1.73	+06	0.033	1.75	+06	0.036	1087	3	11	384
1.75	+06	0.0	1.50	+07	0.0				1087	3	11	385
0.0		0.0		0		0		0	01087	3	0	386
2.9000	+C4	6.2954 +01		0		0		0	01087	3	12	387
0.0		-1.547 +06		0		0		1	71087	3	12	388
	7	2							1087	3	12	389
1.572	+06	0.0	1.648	+06	0.0072	1.65	+06	0.0072	1087	3	12	390
1.73	+06	0.014	1.75	+06	0.016	1.75	+06	0.0	1087	3	12	391
1.50	+07	0.0							1087	3	12	392
0.0		0.0		0		0		0	01087	3	0	393

2.9000	+04	6.2954	+01	0	0	0	01087	3	13	394
0.0		-1.623	+06	0	0	1	61087	3	13	395
	6		2				1087	3	13	396
1.648	+06	0.0		1.65	+06	0.001	1.73	+06	0.013	1087 3 13 397
1.75	+06	0.016		1.75	+06	0.0	1.50	+07	0.0	1087 3 13 398
0.0		0.0		0		0	0		0	01087 3 0 399
2.9000	+04	6.2954	+01	0	0	0	0		0	01087 3 16 400
0.0		-9.910	+06	0	0	1	111087	3	16	401
	11		3				1087	3	16	402
1.0	+07	0.0		1.05	+07	0.0	1.10	+07	0.053	1087 3 16 403
1.15	+07	0.134		1.20	+07	0.198	1.25	+07	0.319	1087 3 16 404
1.30	+07	0.429		1.35	+07	0.524	1.40	+07	0.609	1087 3 16 405
1.45	+07	0.679		1.50	+07	0.758				1087 3 16 406
0.0		0.0		0		0	0		0	01087 3 0 407
2.9000	+04	6.2954	+01	0	0	0	0		0	01087 3102 408
0.0		0.0		0	0	1	1951087	3102		409
	195		5	0	0	0	01087	3102		410
1.0	-03	19.0534		2.53	-02	3.7876	5.1265	-01	0.8393	1087 3102 411
1.0	+00	0.5956		5.5	+00	0.2500	1.0	+01	0.1815	1087 3102 412
1.0	E+01	0.004		5.0	E+01	0.009	1.0	E+02	0.013	1087 3102 413
5.0	E+02	0.029		1.0	E+03	0.038	5.0	E+03	0.057	1087 3102 414
1.0	E+04	0.057		2.0	E+04	0.048	3.0	E+04	0.040	1087 3102 415
3.0000E 04		4.8000E-02		3.0400E 04		4.7706E-02	3.0550E 04		4.7597E-02	1087 3102 416
3.0600E 04		4.7561E-02		3.0800E 04		4.7417E-02	3.1000E 04		4.7275E-02	1087 3102 417
3.1300E 04		4.7064E-02		3.1400E 04		4.6994E-02	3.1600E 04		4.6856E-02	1087 3102 418
3.1900E 04		4.6651E-02		3.2100E 04		4.6516E-02	3.2300E 04		4.6382E-02	1087 3102 419
3.2650E 04		4.6151E-02		3.3000E 04		4.5923E-02	3.3400E 04		4.5567E-02	1087 3102 420
3.4000E 04		4.5251E-02		3.4300E 04		4.5107E-02	3.4700E 04		4.4864E-02	1087 3102 421
3.5000E 04		4.4685E-02		3.5400E 04		4.4450E-02	3.6000E 04		4.4105E-02	1087 3102 422
3.6200E 04		4.3952E-02		3.6700E 04		4.3713E-02	3.6900E 04		4.3602E-02	1087 3102 423
3.7100E 04		4.3453E-02		3.7800E 04		4.3117E-02	3.8100E 04		4.2959E-02	1087 3102 424
3.8200E 04		4.2907E-02		3.9300E 04		4.2346E-02	3.9700E 04		4.2147E-02	1087 3102 425
4.0100E 04		4.1955E-02		4.0300E 04		4.1865E-02	4.0500E 04		4.1776E-02	1087 3102 426
4.0600E 04		4.1731E-02		4.0900E 04		4.1599E-02	4.1100E 04		4.1512E-02	1087 3102 427
4.1300E 04		4.1425E-02		4.1500E 04		4.1339E-02	4.1800E 04		4.1211E-02	1087 3102 428
4.2000E 04		4.1126E-02		4.2300E 04		4.1000E-02	4.2600E 04		4.0875E-02	1087 3102 429
4.2900E 04		4.0752E-02		4.3200E 04		4.0630E-02	4.3500E 04		4.0509E-02	1087 3102 430
4.3800E 04		4.0389E-02		4.4000E 04		4.0310E-02	4.4300E 04		4.0192E-02	1087 3102 431
4.4600E 04		4.0075E-02		4.4800E 04		3.9998E-02	4.5000E 04		3.9921E-02	1087 3102 432
4.7300E 04		3.9073E-02		4.7900E 04		3.8861E-02	4.9000E 04		3.8483E-02	1087 3102 433
4.9800E 04		3.8215E-02		5.0000E 04		3.8149E-02	5.0400E 04		3.8018E-02	1087 3102 434
5.1000E 04		3.7825E-02		5.2400E 04		3.7386E-02	5.2700E 04		3.7294E-02	1087 3102 435

5.3000E	04	3.7203E-02	5.3800E	04	3.6964E-02	5.4600E	04	3.6729E-02	1087	3102	436
5.5000E	04	3.6614E-02	5.6000E	04	3.6331E-02	5.6500E	04	3.6192E-02	1087	3102	437
5.6600E	04	3.6164E-02	5.8200E	04	3.5733E-02	5.8600E	04	3.5627E-02	1087	3102	438
5.9000E	04	3.5523E-02	5.9600E	04	3.5368E-02	5.9800E	04	3.5317E-02	1087	3102	439
6.0600E	04	3.5116E-02	6.1200E	04	3.4967E-02	6.1800E	04	3.4820E-02	1087	3102	440
6.2200E	04	3.4724E-02	6.3000E	04	3.4533E-02	6.3300E	04	3.4462E-02	1087	3102	441
6.4200E	04	3.4253E-02	6.4700E	04	3.4139E-02	6.5400E	04	3.3981E-02	1087	3102	442
6.6000E	04	3.3847E-02	6.6500E	04	3.3738E-02	6.6800E	04	3.3672E-02	1087	3102	443
6.7200E	04	3.3586E-02	6.7900E	04	3.3436E-02	6.8200E	04	3.3373E-02	1087	3102	444
6.9200E	04	3.3164E-02	6.9800E	04	3.3041E-02	7.1000E	04	3.2785E-02	1087	3102	445
7.1500E	04	3.2679E-02	7.1700E	04	3.2637E-02	7.2200E	04	3.2533E-02	1087	3102	446
7.2500E	04	3.2471E-02	7.3000E	04	3.2368E-02	7.3300E	04	3.2307E-02	1087	3102	447
7.4000E	04	3.2166E-02	7.4400E	04	3.2086E-02	7.5000E	04	3.1968E-02	1087	3102	448
7.5800E	04	3.1812E-02	7.6100E	04	3.1754E-02	7.7600E	04	3.1470E-02	1087	3102	449
7.8000E	04	3.1395E-02	7.8500E	04	3.1303E-02	7.9200E	04	3.1175E-02	1087	3102	450
8.0600E	04	3.0925E-02	8.2000E	04	3.0680E-02	8.3800E	04	3.0375E-02	1087	3102	451
8.4200E	04	3.0308E-02	8.5600E	04	3.0079E-02	8.6300E	04	2.9966E-02	1087	3102	452
8.7300E	04	2.9808E-02	8.7600E	04	2.9761E-02	8.8400E	04	2.9636E-02	1087	3102	453
8.9000E	04	2.9544E-02	9.0000E	04	2.9392E-02	9.0800E	04	2.9273E-02	1087	3102	454
9.1500E	04	2.9169E-02	9.2000E	04	2.9096E-02	9.2500E	04	2.9024E-02	1087	3102	455
9.3000E	04	2.8952E-02	9.4000E	04	2.8810E-02	9.5000E	04	2.8669E-02	1087	3102	456
9.5600E	04	2.8586E-02	9.6200E	04	2.8504E-02	9.7700E	04	2.8302E-02	1087	3102	457
9.8400E	04	2.8209E-02	9.9000E	04	2.8130E-02	9.9500E	04	2.8065E-02	1087	3102	458
9.99	E+04	0.028	1.0	E+05	0.028	1.0	E+05	0.0280	1087	3102	459
2.0	+05	0.02612	3.0	+05	0.01899	4.0	+05	0.01573	1087	3102	460
5.0	+05	0.01478	6.0	+05	0.01399	6.79	+05	0.0138	1087	3102	461
7.0	+05	0.01372	7.82	+05	0.0135	8.0	+05	0.01348	1087	3102	462
9.0	+05	0.01315	9.76	+05	0.0130	1.0	+06	0.01287	1087	3102	463
1.131	+06	0.0118	1.348	+06	0.0102	1.435	+06	0.01097	1087	3102	464
1.50	+06	0.00904	1.572	+06	0.0085	1.648	+06	0.0081	1087	3102	465
1.65	+06	0.0081	1.73	+06	0.0078	1.75	+06	0.0076	1087	3102	466
2.0	+06	0.00656	2.5	+06	0.00557	3.0	+06	0.00518	1087	3102	467
3.5	+06	0.00482	4.0	+06	0.00449	4.5	+06	0.0043	1087	3102	468
5.0	+06	0.00404	5.5	+06	0.0038	6.0	+06	0.00357	1087	3102	469
6.5	+06	0.0035	7.0	+06	0.00346	7.5	+06	0.0034	1087	3102	470
8.0	+06	0.00338	8.5	+06	0.00337	9.0	+06	0.00336	1087	3102	471
9.5	+06	0.00335	1.0	+07	0.00335	1.05	+07	0.00334	1087	3102	472
1.10	+07	0.00332	1.15	+07	0.00332	1.20	+07	0.00331	1087	3102	473
1.25	+07	0.00338	1.30	+07	0.00345	1.35	+07	0.00355	1087	3102	474
1.40	+07	0.00372	1.45	+07	0.00387	1.50	+07	0.00415	1087	3102	475
0.0	0.0		0		0	0		0	01087	3	0
2.9000	+04	6.2954	+01	0		0		0	01087	3103	477

0.0	0.0	0	0	2	351087 3103 478
1.0	3	2	35	5	1087 3103 479
1.572	-03 0.0	1.435	+06 0.0	1.50	+06 0.0040 1087 3103 480
1.73	+06 0.0048	1.648	+06 0.0062	1.65	+06 0.0063 1087 3103 481
2.5	+06 0.0079	1.75	+06 0.00829	2.0	+06 0.0140 1087 3103 482
4.0	+06 0.0260	3.0	+06 0.0370	3.5	+06 0.0475 1087 3103 483
5.5	+06 0.0555	4.5	+06 0.0643	5.0	+06 0.0710 1087 3103 484
7.0	+06 0.0765	6.0	+06 0.0820	6.5	+06 0.0836 1087 3103 485
8.5	+06 0.0840	7.5	+06 0.0854	8.0	+06 0.0860 1087 3103 486
1.0	+06 0.0857	9.0	+06 0.0860	9.5	+06 0.0856 1087 3103 487
1.15	+07 0.0855	1.05	+07 0.0847	1.10	+07 0.0840 1087 3103 488
1.30	+07 0.0835	1.20	+07 0.0830	1.25	+07 0.0820 1087 3103 489
1.45	+07 0.0810	1.35	+07 0.0795	1.40	+07 0.0790 1087 3103 490
0.0	+07 0.0785	1.50	+07 0.0778		1087 3103 491
2.9000	0.0	0	0	0	01087 3 0 492
0.0	+04 6.2954 +01	0	0	0	01087 3107 493
0.0	0.0	0	0	2	211087 3107 494
1.0	3	2	21	5	1087 3107 495
6.5	-03 0.0	5.5	+06 0.0	6.0	+06 0.002 1087 3107 496
8.0	+06 0.004	7.0	+06 0.0078	7.5	+06 0.0125 1087 3107 497
9.5	+06 0.0175	8.5	+06 0.0235	9.0	+06 0.0265 1087 3107 498
1.10	+06 0.0305	1.0	+07 0.0331	1.05	+07 0.0362 1087 3107 499
1.25	+07 0.0366	1.15	+07 0.0372	1.20	+07 0.0380 1087 3107 500
1.40	+07 0.0381	1.30	+07 0.0382	1.35	+07 0.0377 1087 3107 501
0.0	+07 0.0367	1.45	+07 0.0346	1.50	+07 0.0325 1087 3107 502
2.9000	0.0	0	0	0	01087 3 0 503
0.0	+04 6.2954 +01	0	0	0	01087 3251 504
0.0	0.0	0	0	2	481087 3251 505
1.00	4	2	48	3	1087 3251 506
1.00	-03 1.055 -02 1.00	+00 1.059 -02 1.00	+02 1.059 -02 1.00	+02 1.059 -02 1.00	21087 3251 507
2.07	+04 1.055 -02 5.0	+04 1.692 -02 1.00	+05 3.031 -02 1.00	+05 3.031 -02 1.00	21087 3251 508
3.90	+05 5.844 -02 3.0	+05 8.838 -02 3.40	+05 1.475 -01 1087 3251 509	+05 1.475 -01 1087 3251 509	
5.90	+05 1.42144-01 4.90	+05 1.30201-01 5.50	+05 1.31618-01 1087 3251 510	+05 1.31618-01 1087 3251 510	
7.40	+05 1.43549-01 6.40	+05 1.66788-01 6.90	+05 1.75164-01 1087 3251 511	+05 1.75164-01 1087 3251 511	
8.80	+05 1.39574-01 7.90	+05 1.56095-01 8.40	+05 1.81145-01 1087 3251 512	+05 1.81145-01 1087 3251 512	
1.04	+05 1.59456-01 9.80	+05 1.67145-01 9.90	+05 1.64338-01 1087 3251 513	+05 1.64338-01 1087 3251 513	
1.19	+06 1.55684-01 1.09	+06 2.10182-01 1.14	+06 1.86738-01 1087 3251 514	+06 1.86738-01 1087 3251 514	
1.35	+06 2.20200-01 1.25	+06 2.00793-01 1.30	+06 2.25644-01 1087 3251 515	+06 2.25644-01 1087 3251 515	
1.65	+06 2.07458-01 1.40	+06 2.42516-01 1.46	+06 2.706 -01 1087 3251 516	+06 2.706 -01 1087 3251 516	
2.25	+06 3.070 -01 1.85	+06 3.312 -01 2.00	+06 3.58277-01 1087 3251 517	+06 3.58277-01 1087 3251 517	
2.90	+06 4.40323-01 2.47	+06 4.13922-01 2.80	+06 5.37790-01 1087 3251 518	+06 5.37790-01 1087 3251 518	
	+06 5.19183-01 3.00	+06 4.94104-01 3.30	+06 4.83631-01 1087 3251 519	+06 4.83631-01 1087 3251 519	

3.49	+06	5.71753-C1	3.70	+06	4.99318-01	4.00	+06	6.38695-011087	3251	520
4.56	+06	6.73497-01	5.00	+06	7.64276-01	6.09	+06	7.29898-011087	3251	521
7.05	+06	7.47590-01	8.05	+06	8.22601-01	1.50	+07	8.49791-011087	3251	522
0.0		0.0		0		0		01087	3	0
2.9000	+04	6.2954 +01		0		0		01087	3252	524
0.0		0.0		0		0	2	481087	3252	525
	4		2	48		3		1087	3252	526
1.00	-03	3.142 -02	1.00	+00	3.142 -02	1.00	+02	3.142 -021087	3252	527
1.00	+04	3.142 -02	5.0	+04	3.121 -02	1.00	+05	3.079 -021087	3252	528
2.07	+05	2.990 -02	3.0	+05	2.895 -02	3.40	+05	2.707 -021087	3252	529
3.90	+05	2.72400-02	4.90	+05	2.76188-02	5.50	+05	2.75750-021087	3252	530
5.90	+05	2.71831-02	6.40	+05	2.64583-02	6.90	+05	2.51923-021087	3252	531
7.40	+05	2.73215-02	7.90	+05	2.67979-02	8.40	+05	2.60030-021087	3252	532
8.80	+05	2.66912-02	9.80	+05	2.64500-02	9.90	+05	2.65372-021087	3252	533
1.04	+06	2.55417-02	1.09	+06	2.50826-02	1.14	+06	2.58270-021087	3252	534
1.19	+06	2.47656-02	1.25	+06	2.53821-02	1.30	+06	2.45958-021087	3252	535
1.35	+06	2.51735-02	1.40	+06	2.40589-02	1.46	+06	2.317 -021087	3252	536
1.65	+06	2.201 -02	1.85	+06	2.124 -02	2.00	+06	2.03860-021087	3252	537
2.25	+06	1.77834-02	2.47	+06	1.86252-02	2.80	+06	1.46834-021087	3252	538
2.90	+06	1.52548-02	3.00	+06	1.60740-02	3.30	+06	1.64422-021087	3252	539
3.49	+06	1.36045-02	3.70	+06	1.59247-02	4.00	+06	1.14961-021087	3252	540
4.56	+06	1.03600-02	5.00	+06	7.53160-03	6.09	+06	8.58331-031087	3252	541
7.05	+06	8.01345-03	8.05	+06	5.61810-03	1.50	+07	5.18268-031087	3252	542
0.0		0.0		0		0		01087	3	0
2.9000	+04	6.2954 +01		0		0		01087	3253	544
0.0		0.0		0		0	2	481087	3253	545
	4		2	48		3		1087	3253	546
1.00	-03	2.106 -02	1.00	+00	2.106 -02	1.00	+02	2.106 -021087	3253	547
1.00	+04	2.106 -02	5.0	+04	2.100 -02	1.0	+05	2.085 -021087	3253	548
2.07	+05	2.063 -02	3.0	+05	2.041 -02	3.40	+05	1.990 -021087	3253	549
3.90	+05	1.99893-02	4.90	+05	2.00779-02	5.50	+05	2.03451-021087	3253	550
5.90	+05	2.01968-02	6.40	+05	2.00878-02	6.90	+05	1.99200-021087	3253	551
7.40	+05	2.02532-02	7.90	+05	2.02586-02	8.40	+05	2.02646-021087	3253	552
8.80	+05	2.02002-02	9.80	+05	2.04613-02	9.90	+05	2.06971-021087	3253	553
1.04	+06	2.02477-02	1.09	+06	2.02778-02	1.14	+06	2.07356-021087	3253	554
1.19	+06	2.01210-02	1.25	+06	2.04885-02	1.30	+06	2.07902-021087	3253	555
1.35	+06	2.12512-02	1.40	+06	2.07158-02	1.46	+06	2.015 -021087	3253	556
1.65	+06	1.585 -02	1.85	+06	1.997 -02	2.00	+06	1.94268-021087	3253	557
2.25	+06	1.85812-02	2.47	+06	1.92108-02	2.80	+06	1.69138-021087	3253	558
2.90	+06	1.73416-02	3.00	+06	1.83381-02	3.30	+06	1.82022-021087	3253	559
3.49	+06	1.76124-02	3.70	+06	1.87431-02	4.00	+06	1.67754-021087	3253	560
4.56	+06	1.60428-02	5.00	+06	1.25154-02	6.09	+06	1.41465-021087	3253	561

7.05	+06	1.35075-02	8.05	+06	1.27438-02	1.50	+07	1.43588-02	1087	3253	562
0.0		0.0			0				01087	3	0 563
0.0		0.0			0				01087	0	0 564
2.90000+04		6.29540+01			1				01087	4	2 565
0.0		6.29540+01			0		441		201087	4	2 566
1.00000+00		1.05830-02	5.04019-05		1.78687-09	0.0		0.0	1087	4	2 567
0.0		0.0			0.0			0.0	1087	4	2 568
0.0		0.0			0.0			0.0	1087	4	2 569
0.0		0.0			0.0		9.99849-01	1.90481-02	1087	4	2 570
1.72734-04		7.68641-07	3.89417-07		1.11321-08	0.0		0.0	1087	4	2 571
0.0		0.0			0.0			0.0	1087	4	2 572
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-7.99165-07		3.50843-08	1.09102-08		3.37086-09	0.0		0.0	1087	4	2 575
0.0		0.0			0.0			0.0	1087	4	2 576
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9.99227-01		3.52631-02	6.09700-04		6.49219-06	-8.24090-07		-5.32890-08	1087	4	2 578
4.86867-08		1.41505-08	0.0		0.0			0.0	1087	4	2 579
0.0		0.0			0.0			0.0	1087	4	2 580
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9.23745-04		1.24858-05	7.60118-07		4.51303-08	0.0		0.0	1087	4	2 582
0.0		0.0			0.0			0.0	1087	4	2 583
0.0		0.0			0.0		3.52716-08	-6.09347-06	1087	4	2 584
5.99643-04		3.52430-02	9.98094-01		5.12381-02	1.30083-03		2.12555-05	1087	4	2 585
-1.05440-06		5.47582-08	0.0		0.0			0.0	1087	4	2 586
0.0		0.0			0.0			0.0	1087	4	2 587
0.0		-5.49738-10	1.05525-07		1.21154-05	9.15588-04		-4.32365-02	1087	4	2 588
9.97339-01		5.91861-02	1.74028-03		3.32460-05	-1.35828-06		-8.01771-08	1087	4	2 589
0.0		0.0			0.0			0.0	1087	4	2 590
0.0		0.0			0.0		8.61493-12	-1.80402-09	1087	4	2 591
2.33014-07		2.08712-05	1.29377-03		5.11960-02	9.96458-01		6.71143-02	1087	4	2 592
2.24234-03		4.89633-05	1.40588-06		1.10903-07	0.0		0.0	1087	4	2 593
0.0		0.0			0.0			0.0	1087	4	2 594
0.0		-1.35455-13	3.05471-11		4.34019-09	4.41775-07		-3.28639-05	1087	4	2 595
1.73430-03		5.91300-02	9.95452-01		7.50242-02	2.80712-03		6.89139-05	1087	4	2 596
-1.15548-06		1.06059-07	0.0		0.0			0.0	1087	4	2 597
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7.90311-11		8.91075-09	7.59576-07		4.85916-05	2.23717-03		-6.70421-02	1087	4	2 599
9.94321-01		8.29161-02	3.43449-03		9.36320-05	-9.08203-07		-1.46934-07	1087	4	2 600
-6.66411-08		0.0			0.0			0.0	1087	4	2 601
0.0		-3.36857-17	8.57974-15		1.41478-12	1.73719-10		-1.65009-08	1087	4	2 602
1.21806-06		6.85502-05	2.80229-03		7.49341-02	9.93065-01		9.07900-02	1087	4	2 603

4.1239C-03	1.23525-04	1.64953-07	0.0	0.0	0.0	1087	4	2	604
0.0	0.0	0.0	0.0	5.32197-19	8.97553-17	1087	4	2	605
2.5001E-14	3.30153-12	3.43032-10	2.83613-08	1.85277-06	9.32332-05	1087	4	2	606
3.42955-03	8.28061-02	9.91684-01	9.86450-02	4.87569-03	1.59099-04	1087	4	2	607
1.4834E-06	1.05452-07	0.0	0.0	0.0	0.0	1087	4	2	608
0.0	-8.41499-21	1.09224-18	2.90088-16	6.15256-14	6.89973-12	1087	4	2	609
6.26424-10	4.6039E-08	2.70313-06	1.23133-04	4.11880-03	9.06580-02	1087	4	2	610
9.9017E-01	1.06480-01	5.69006-03	2.01048-04	2.69726-06	1.13595-07	1087	4	2	611
-1.1029E-07	1.5872E-08	0.0	0.0	1.33139-22	1.35914-20	1087	4	2	612
3.76517-18	9.73957-16	1.35258-13	1.32969-11	1.07687-09	7.14119-08	1087	4	2	613
3.8124E-06	1.58739-04	4.86988-03	9.84892-02	9.88549-01	1.14295-01	1087	4	2	614
6.56530-03	2.4957E-04	4.33143-06	1.57800-07	0.0	0.0	1087	4	2	615
0.0	-2.10749-24	1.67901-22	4.93402-20	1.16181-17	2.43421-15	1087	4	2	616
2.735E5-13	2.40600-11	1.76357-09	1.06712-07	5.22792-06	2.00540-04	1087	4	2	617
5.6826C-03	1.06295-01	9.86796-01	1.22087-01	7.50208-03	3.05308-04	1087	4	2	618
6.26389-06	1.70045-07	3.19798-08	0.0	3.33730-26	2.01650-24	1087	4	2	619
6.37233-22	1.54255-19	2.79076-17	5.31829-15	5.18480-13	4.13754-11	1087	4	2	620
2.77495-09	1.54563-07	7.00054-06	2.49021-04	6.55674-03	1.14085-01	1087	4	2	621
9.84919-01	1.29E57-01	8.49997-03	3.68654-04	8.86818-06	2.35386-07	1087	4	2	622
0.0	-5.28641-28	2.28993-26	7.96114-24	2.06440-21	3.72561-19	1087	4	2	623
5.92571-17	1.06743-14	9.32126-13	6.82132-11	4.22184-09	2.18008-07	1087	4	2	624
9.18516-06	3.0466E-04	7.49209-03	1.21848-01	9.82919-01	1.37602-01	1087	4	2	625
9.55907-03	4.40180-04	1.19921-05	0.0	8.37604-30	2.32581-28	1087	4	2	626
9.36892-26	2.71152-23	5.07321-21	7.91534-19	1.16186-16	2.01339-14	1087	4	2	627
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8.48841-03	1.2958E-01	9.80797-01	1.45321-01	1.06789-02	5.20322-04	1087	4	2	629
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1.0890E-20	1.54855-18	3.26846-16	3.61598-14	2.65789-12	1.57431-10	1087	4	2	631
8.99836-09	4.0612E-07	1.50288-05	4.39380-04	9.54544-03	1.37297-01	1087	4	2	632
9.78552-01	1.53013-01	1.18592-02	0.0	2.10406-33	0.0	1087	4	2	633
7.7556E-30	4.01388-27	8.89001-25	1.49001-22	2.14437-20	3.76767-18	1087	4	2	634
6.96133-16	6.23636-14	4.26542-12	2.51531-10	1.26933-08	5.39255-07	1087	4	2	635
1.88164-05	5.19400-04	1.06629-02	1.44981-01	9.76185-01	1.60677-01	1087	4	2	636
0.0	0.0	0.0	0.0	4.05980-29	1.08548-26	1087	4	2	637
1.9796C-24	2.56762-22	5.080E7-20	7.59869-18	1.32207-15	1.03916-13	1087	4	2	638
6.65550-12	3.69127-10	1.75646-08	7.04939-07	2.32733-05	6.08496-04	1087	4	2	639
1.18405-02	1.52E36-01	5.73656-01				1087	4	2	640
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	45	3				1087	4	2	642
0.0	1.00000+04	0	0	20	0	1087	4	2	643
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0.0	0.0	0.0	0.0	0.0	0.0	1087	4	2	645

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6.34264-03	8.43592-04	6.39361-04	1.22418-04	1.21652-04	3.68765-05	1087	4	2	649
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0.0	1.00000+05	0	0	20	0	1087	4	2	653
1.97342-02	8.95482-04	7.61572-05	5.77761-05	1.55075-05	1.36968-04	1087	4	2	654
7.35834-05	1.64656-05	2.12771-05	4.63779-05	5.80661-05	0.0	1087	4	2	655
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4.79401-02	9.39369-03	2.08017-03	4.26246-04	1.50004-04	7.27308-05	1087	4	2	659
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0.0	3.00000+05	0	0	20	0	1087	4	2	663
7.79999-02	2.20000-02	1.08571-02	9.66666-03	0.0	0.0	1087	4	2	664
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0.0	3.40000+05	0	0	20	0	1087	4	2	668
1.37332-01	4.28000-02	1.38571-02	3.55556-03	0.0	0.0	1087	4	2	669
0.0	0.0	0.0	0.0	0.0	0.0	1087	4	2	670
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0.0	3.90000+05	0	0	20	0	1087	4	2	673
1.32000-01	4.42000-02	9.14285-03	3.77778-03	0.0	0.0	1087	4	2	674
0.0	0.0	0.0	0.0	0.0	0.0	1087	4	2	675
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0.0	4.90000+05	0	0	20	0	1087	4	2	678
1.20000-01	3.84000-02	6.42857-03	6.66666-04	0.0	0.0	1087	4	2	679
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0.0	0.0					1087	4	2	682
0.0	5.50000+05	0	0	20	0	1087	4	2	683
1.21667-01	6.18000-02	4.57143-03	9.88889-03	0.0	0.0	1087	4	2	684
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0.0	0.0					1087	4	2	687

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1.34000-01	6.30000-02	1.17143-02	4.33333-03	0.0	1087 4 2 689
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0.0	0.0	0.0	0.0	0.0	1087 4 2 691
0.0	0.0				1087 4 2 692
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1.57000-01	7.90000-02	1.61429-02	4.66666-03	0.0	1087 4 2 694
0.0	0.0	0.0	0.0	0.0	1087 4 2 695
0.0	0.0	0.0	0.0	0.0	1087 4 2 696
0.0	0.0				1087 4 2 697
0.0	6.90000+05	0	0	20	01087 4 2 698
1.65333-01	7.50000-02	1.65714-02	4.55555-03	0.0	1087 4 2 699
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0.0	0.0				1087 4 2 702
0.0	7.40000+C5	0	0	20	01087 4 2 703
1.29667-01	6.60000-02	3.85714-03	3.77778-03	0.0	1087 4 2 704
0.0	0.0	0.0	0.0	0.0	1087 4 2 705
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0.0	7.50000+C5	0	0	20	01087 4 2 708
1.46333-01	8.10000-02	1.37143-02	5.77778-03	0.0	1087 4 2 709
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0.0	0.0				1087 4 2 712
0.0	8.40000+C5	0	0	20	01087 4 2 713
1.71667-01	1.08200-01	1.47143-02	4.66666-03	0.0	1087 4 2 714
0.0	0.0	0.0	0.0	0.0	1087 4 2 715
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0.0	0.0				1087 4 2 717
0.0	8.80000+C5	0	0	20	01087 4 2 718
1.49667-01	8.02000-02	2.75714-02	6.11111-03	0.0	1087 4 2 719
0.0	0.0	0.0	0.0	0.0	1087 4 2 720
0.0	0.0	0.0	0.0	0.0	1087 4 2 721
0.0	0.0				1087 4 2 722
0.0	9.80000+C5	0	0	20	01087 4 2 723
1.57667-01	1.08800-01	2.04286-02	3.14444-02	0.0	1087 4 2 724
0.0	0.0	0.0	0.0	0.0	1087 4 2 725
0.0	0.0	0.0	0.0	0.0	1087 4 2 726
0.0	0.0				1087 4 2 727
0.0	9.90000+C5	0	0	20	01087 4 2 728
1.55000-01	1.25000-01	4.44286-02	7.88888-03	0.0	1087 4 2 729

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0.0	1.04000+06	0	0		20	01087 4 2 733
1.86333-01	1.22800-01	3.45714-02	4.22222-03	0.0	0.0	1087 4 2 734
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0.0	1.09000+06	0	0		20	01087 4 2 738
2.01000-01	1.40800-01	5.00000-02	1.30000-02	0.0	0.0	1087 4 2 739
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0.0	0.0	0.0	0.0	0.0	0.0	1087 4 2 741
0.0	0.0					1087 4 2 742
0.0	1.14000+06	0	0		20	01087 4 2 743
1.77667-01	1.51000-01	4.88571-02	1.32222-02	0.0	0.0	1087 4 2 744
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0.0	1.19000+06	0	0		20	01087 4 2 748
2.11000-01	1.40000-01	5.62857-02	2.40000-02	0.0	0.0	1087 4 2 749
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0.0	1.25000+06	0	0		20	01087 4 2 753
1.91667-01	1.46800-01	5.62857-02	2.73333-02	0.0	0.0	1087 4 2 754
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0.0	0.0					1087 4 2 757
0.0	1.30000+06	0	0		20	01087 4 2 758
2.17000-01	1.95200-01	7.71428-02	4.64444-02	0.0	0.0	1087 4 2 759
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1.99000-01	2.11000-01	6.40000-02	4.81111-02	0.0	0.0	1087 4 2 764
0.0	0.0	0.0	0.0	0.0	0.0	1087 4 2 765
0.0	0.0	0.0	0.0	0.0	0.0	1087 4 2 766
0.0	0.0					1087 4 2 767
0.0	1.40000+06	0	0		20	01087 4 2 768
2.34000-01	2.07000-01	7.38571-02	3.12222-02	0.0	0.0	1087 4 2 769
0.0	0.0	0.0	0.0	0.0	0.0	1087 4 2 770
0.0	0.0	0.0	0.0	0.0	0.0	1087 4 2 771

0.0	0.0					1087	4	2	772
0.0	1.46000+06	0	0	20		01087	4	2	773
2.62052-01	1.97263-01	9.70730-02	2.32458-02	-4.63785-03	-2.62468-03	1087	4	2	774
-7.11282-04	2.34175-03	4.52460-03	5.94908-04	-3.53525-03	-2.96770-03	1087	4	2	775
-4.65397-04	9.43701-04	0.0	0.0	0.0		1087	4	2	776
0.0	0.0					1087	4	2	777
0.0	1.65000+06	0	0	20		01087	4	2	778
2.98595-01	2.19757-01	1.11394-01	3.87804-02	1.08027-02	2.50954-03	1087	4	2	779
-4.25166-04	-1.32038-03	-1.94509-03	-1.93143-03	-6.38596-04	0.0	1087	4	2	780
0.0	0.0	0.0	0.0	0.0	0.0	1087	4	2	781
0.0	0.0					1087	4	2	782
0.0	1.85000+06	0	0	20		01087	4	2	783
3.23165-01	2.51656-01	1.33609-01	6.23372-02	3.18666-03	2.40333-03	1087	4	2	784
-2.09017-03	-7.67137-03	4.95768-04	1.73217-03	-1.74742-03	0.0	1087	4	2	785
0.0	0.0	0.0	0.0	0.0	0.0	1087	4	2	786
0.0	0.0					1087	4	2	787
0.0	2.00000+06	0	0	20		01087	4	2	788
3.50038-01	2.49274-01	1.81182-01	5.09262-02	1.13832-02	-3.25884-03	1087	4	2	789
-2.66576-03	-1.90126-03	-3.29496-03	-1.58280-03	-1.27021-03	2.01421-03	1087	4	2	790
1.88688-03	-2.30594-04	0.0	0.0	0.0	0.0	1087	4	2	791
0.0	0.0					1087	4	2	792
0.0	2.25000+06	0	0	20		01087	4	2	793
4.32580-01	2.99262-01	2.22731-01	8.22880-02	1.34998-02	2.38395-03	1087	4	2	794
-1.43280-03	-4.23137-03	-3.91557-03	-1.82715-03	1.79555-04	7.45963-04	1087	4	2	795
4.91962-04	4.78328-06	0.0	0.0	0.0	0.0	1087	4	2	796
0.0	0.0					1087	4	2	797
0.0	2.47000+06	0	0	20		01087	4	2	798
4.06120-01	3.01723-01	2.25136-01	8.89791-02	3.82766-03	-1.62345-03	1087	4	2	799
9.24940-04	7.42762-04	1.87600-03	1.93615-03	1.82429-03	7.51602-04	1087	4	2	800
-1.26153-03	-1.10041-03	0.0	0.0	0.0	0.0	1087	4	2	801
0.0	0.0					1087	4	2	802
0.0	2.80000+06	0	0	20		01087	4	2	803
5.30497-01	3.46305-01	2.36050-01	1.19235-01	-1.06137-02	-2.92197-02	1087	4	2	804
-1.49922-02	-1.53658-02	-4.28272-03	9.75414-03	8.04353-03	2.99532-03	1087	4	2	805
-1.60437-04	-3.57581-03	0.0	0.0	0.0	0.0	1087	4	2	806
0.0	0.0					1087	4	2	807
0.0	2.90000+06	0	0	20		01087	4	2	808
5.11585-01	3.39791-01	2.66502-01	1.25170-01	3.59318-02	1.71565-02	1087	4	2	809
4.64574-03	3.52580-04	1.93086-04	-1.23502-03	-1.01671-03	-1.34801-03	1087	4	2	810
8.03801-05	2.00116-03	0.0	0.0	0.0	0.0	1087	4	2	811
0.0	0.0					1087	4	2	812
0.0	3.00000+06	0	0	20		01087	4	2	813

4.87171-01	3.54532-01	2.89675-01	1.38994-01	2.56181-02	1.03331-02	1087	4	2	814
1.41054-03	6.07385-03	8.91232-03	9.13731-03	6.71542-03	1.35803-03	1087	4	2	815
1.31457-03	1.16254-03	C.0	0.0	0.0	0.0	1087	4	2	816
0.0	0.0					1087	4	2	817
0.0	3.30000+06	0	0	20		01087	4	2	818
4.75218-01	3.33335-01	2.60433-01	1.42100-01	5.68135-02	3.43484-02	1087	4	2	819
2.29054-02	1.17773-02	1.04135-02	8.60462-03	3.08495-03	1.32363-04	1087	4	2	820
-9.71856-04	9.56442-04	0.0	0.0	0.0	0.0	1087	4	2	821
0.0	0.0					1087	4	2	822
0.0	3.49000+06	0	0	20		01087	4	2	823
5.65486-01	4.23658-01	3.37982-01	1.96787-01	5.57736-02	2.55650-02	1087	4	2	824
1.07264-02	8.22747-05	5.97869-03	6.09187-03	5.98790-03	6.56600-03	1087	4	2	825
-3.28783-03	2.41656-03	0.0	0.0	0.0	0.0	1087	4	2	826
0.0	0.0					1087	4	2	827
0.0	3.70000+06	0	0	20		01087	4	2	828
4.92041-01	3.79718-01	2.72320-01	1.49517-01	3.76695-02	9.86968-03	1087	4	2	829
5.17692-03	1.70624-03	2.30925-03	2.49464-04	1.73065-03	1.62953-04	1087	4	2	830
7.62181-04	3.01141-04	0.0	0.0	0.0	0.0	1087	4	2	831
0.0	0.0					1087	4	2	832
0.0	4.00000+06	0	0	20		01087	4	2	833
6.32724-01	4.83244-01	3.75385-01	2.30434-01	9.14419-02	4.28058-02	1087	4	2	834
1.26656-02	2.64175-03	1.21992-02	1.73409-02	1.49019-02	1.08962-02	1087	4	2	835
-5.51400-03	1.01769-03	4.26007-03	3.65589-03	2.41520-03	9.34838-04	1087	4	2	836
-4.56756-04	3.99445-04					1087	4	2	837
0.0	4.56000+06	0	0	20		01087	4	2	838
6.68466-01	5.10693-01	3.79374-01	2.41811-01	9.28479-02	3.41798-02	1087	4	2	839
2.34562-03	6.58755-03	6.56342-03	8.19915-03	8.44301-03	5.01041-03	1087	4	2	840
-2.98318-03	4.05565-03	1.21285-03	6.40170-04	7.26440-05	1.43674-03	1087	4	2	841
-1.00446-03	1.02579-03					1087	4	2	842
0.0	5.00000+06	0	0	20		01087	4	2	843
7.58480-01	5.62545-01	3.97120-01	2.26090-01	8.32233-02	1.91948-02	1087	4	2	844
-1.41571-03	1.01356-02	9.44048-03	3.43210-03	1.69871-03	3.37224-03	1087	4	2	845
1.24266-03	1.82801-03	2.63921-03	1.17566-03	7.38773-04	1.82176-03	1087	4	2	846
1.82385-03	1.01121-03					1087	4	2	847
0.0	6.09000+06	0	0	20		01087	4	2	848
7.24957-01	5.43923-01	3.63914-01	2.37485-01	8.26270-02	1.80235-03	1087	4	2	849
-3.61084-02	3.56443-02	2.56645-02	1.45875-02	3.70766-03	4.15637-03	1087	4	2	850
6.41013-03	6.59611-03	5.44118-03	2.65266-03	6.47796-04	1.96433-03	1087	4	2	851
-2.27576-03	2.23580-03					1087	4	2	852
0.0	7.05000+06	0	0	20		01087	4	2	853
7.43216-01	5.58241-01	3.71379-01	2.45490-01	8.83364-02	2.49725-03	1087	4	2	854
-4.51120-02	4.05546-02	2.75864-02	1.49865-02	3.99256-03	5.17450-03	1087	4	2	855

8.66825-03	7.48574-03	3.35418-03	7.47443-04	7.54268-04	1.41192-03	1087	4	2	856
-1.33278-03	-1.07566-03					1087	4	2	857
0.0	8.05000+06	0	0	20		01087	4	2	858
8.20088-01	6.76901-01	5.02842-01	3.62960-01	2.07462-01	1.00736-01	1087	4	2	859
3.06516-02	1.58811-03	1.65056-02	2.21290-02	2.34706-02	2.09284-02	1087	4	2	860
-1.57520-02	-1.01331-02	-5.19032-03	-1.61684-03	5.57783-04	1.41572-03	1087	4	2	861
1.24147-03	7.44733-04					1087	4	2	862
0.0	1.50000+07	0	0	20		01087	4	2	863
8.34532-01	7.29313-01	6.22396-01	5.12066-01	3.87979-01	2.73013-01	1087	4	2	864
1.84548-01	1.24207-01	7.22951-02	3.27272-02	1.34152-02	7.06104-03	1087	4	2	865
6.90277-03	8.63178-03	9.98238-03	1.03242-02	9.09703-03	6.94340-03	1087	4	2	866
4.25867-03	1.46851-03					1087	4	2	867
0.0	0.0	0	0	0		01087	4	0	868
0.0	0.0	0	0	0		01087	0	0	869
2.9000	+04 6.2994	+01	0	0	10	01087	5	4	870
0.0	0.668	+06	0	3	1	181087	5	4	871
	18	2				1087	5	4	872
6.79	+05 1.0	7.0	+05 1.0	7.82	+05 1.0	1087	5	4	873
8.0	+05 0.96	9.0	+05 0.824	9.76	+05 0.795	1087	5	4	874
1.0	+06 0.528	1.131	+06 0.354	1.348	+06 0.286	1087	5	4	875
1.435	+06 0.260	1.50	+06 0.245	1.572	+06 0.228	1087	5	4	876
1.648	+06 0.207	1.65	+06 0.207	1.73	+06 0.187	1087	5	4	877
1.75	+06 0.182	1.75	+06 0.0	1.50	+07 0.0	1087	5	4	878
0.0	0.770	+06	0	3	1	161087	5	4	879
	16	2				1087	5	4	880
7.82	+05 0.0	8.0	+05 0.04	9.0	+05 0.176	1087	5	4	881
9.76	+05 0.205	1.0	+06 0.142	1.131	+06 0.112	1087	5	4	882
1.348	+06 0.086	1.435	+06 0.087	1.50	+06 0.087	1087	5	4	883
1.572	+06 0.081	1.648	+06 0.074	1.65	+06 0.074	1087	5	4	884
1.73	+06 0.067	1.75	+06 0.065	1.75	+06 0.0	1087	5	4	885
1.50	+07 0.0					1087	5	4	886
0.0	0.561	+06	0	3	1	131087	5	4	887
	13	2				1087	5	4	888
9.76	+05 0.0	1.0	+06 0.330	1.131	+06 0.534	1087	5	4	889
1.348	+06 0.498	1.435	+06 0.465	1.50	+06 0.442	1087	5	4	890
1.572	+06 0.412	1.648	+06 0.378	1.65	+06 0.378	1087	5	4	891
1.73	+06 0.345	1.75	+06 0.339	1.75	+06 0.0	1087	5	4	892
1.50	+07 0.0					1087	5	4	893
0.0	1.114	+06	0	3	1	111087	5	4	894
	11	2				1087	5	4	895
1.131	+06 0.0	1.348	+06 0.130	1.435	+06 0.142	1087	5	4	896
1.50	+06 0.144	1.572	+06 0.141	1.648	+06 0.139	1087	5	4	897

1.65	+06	0.138	1.73	+06	0.130	1.75	+06	0.128	1087	5	4	898		
1.75	+06	0.0	1.50	+07	0.0				1087	5	4	899		
0.0		1.327	+06	0		3	1		101087	5	4	900		
	10		2						1087	5	4	901		
1.348	+06	0.0	1.435	+06	0.046	1.50	+06	0.060	1087	5	4	902		
1.572	+06	0.079	1.648	+06	0.100	1.65	+06	0.100	1087	5	4	903		
1.73	+06	0.118	1.75	+06	0.120	1.75	+06	0.0	1087	5	4	904		
1.50	+07	0.0							1087	5	4	905		
0.0		1.412	+06	0		3	1		91087	5	4	906		
	9		2						91087	5	4	907		
1.435	+06	0.0	1.50	+06	0.022	1.572	+06	0.043	1087	5	4	908		
1.648	+06	0.061	1.65	+06	0.061	1.73	+06	0.076	1087	5	4	909		
1.75	+06	0.079	1.75	+06	0.0	1.50	+07	0.0	1087	5	4	910		
0.0		1.482	+06	0		3	1		81087	5	4	911		
	8		2						1087	5	4	912		
1.50	+06	0.0	1.572	+06	0.016	1.648	+06	0.031	1087	5	4	913		
1.65	+06	0.031	1.73	+06	0.042	1.75	+06	0.045	1087	5	4	914		
1.75	+06	0.0	1.50	+07	0.0				1087	5	4	915		
0.0		1.547	+06	0		3	1		71087	5	4	916		
	7		2						1087	5	4	917		
1.572	+06	0.0	1.648	+06	0.010	1.65	+06	0.010	1087	5	4	918		
1.73	+06	0.018	1.75	+06	0.021	1.75	+06	0.0	1087	5	4	919		
1.50	+07	0.0							1087	5	4	920		
0.0		1.623	+06	0		3	1		61087	5	4	921		
	6		2						1087	5	4	922		
1.648	+06	0.0	1.65	+06	0.001	1.73	+06	0.017	1087	5	4	923		
1.75	+06	0.020	1.75	+06	0.0	1.50	+07	0.0	1087	5	4	924		
0.0		0.0		0		9	1		301087	5	4	925		
	30		2						1087	5	4	926		
6.79	+05	0.0	1.75	+06	0.0	1.75	+06	1.0	1087	5	4	927		
2.0	+06	1.0	2.5	+06	1.0	3.0	+06	1.0	1087	5	4	928		
3.5	+06	1.0	4.0	+06	1.0	4.5	+06	1.0	1087	5	4	929		
5.0	+06	1.0	5.5	+06	1.0	6.0	+06	1.0	1087	5	4	930		
6.0	+06	1.0	7.0	+06	1.0	7.5	+06	1.0	1087	5	4	931		
8.0	+06	1.0	8.5	+06	1.0	9.0	+06	1.0	1087	5	4	932		
9.5	+06	1.0	10.0	+06	1.0	10.5	+06	1.0	1087	5	4	933		
11.0	+06	1.0	11.5	+06	1.0	12.0	+06	1.0	1087	5	4	934		
12.5	+06	1.0	13.0	+06	1.0	13.5	+06	1.0	1087	5	4	935		
14.0	+06	1.0	14.5	+06	1.0	15.0	+06	1.0	1087	5	4	936		
0.0		0.0		0		0	2		301087	5	4	937		
	3		2	30		5			1087	5	4	938		
6.79	+05	0.10	+05	1.75	+06	0.10	+05	1.75	+06	0.6038	+061087	5	4	939

2.0	+06	0.6455	+06	2.5	+06	0.7212	+06	3.0	+06	0.7906	+061087	5	4	940
3.5	+06	0.8539	+06	4.0	+06	0.9129	+06	4.5	+06	0.9682	+061087	5	4	941
5.0	+06	1.0206	+06	5.5	+06	1.0704	+06	6.0	+06	1.1180	+061087	5	4	942
6.5	+06	1.1637	+06	7.0	+06	1.2076	+06	7.5	+06	1.2500	+061087	5	4	943
8.0	+06	1.2910	+06	8.5	+06	1.3307	+06	9.0	+06	1.3693	+061087	5	4	944
9.5	+06	1.4068	+06	10.0	+06	1.4434	+06	10.5	+06	1.4790	+061087	5	4	945
11.0	+06	1.5138	+06	11.5	+06	1.5478	+06	12.0	+06	1.5811	+061087	5	4	946
12.5	+06	1.6138	+06	13.0	+06	1.6459	+06	13.5	+06	1.6771	+061087	5	4	947
14.0	+06	1.7078	+06	14.5	+06	1.7380	+06	15.0	+06	1.7678	+061087	5	4	948
0.0		0.0				0		0		0	01087	5	0	949
2.9000	+04	6.2954	+01			0		0		3	01087	5	16	950
0.0		0.0				0		9		1	111087	5	16	951
	11		2								1087	5	16	952
1.0	+07	0.5		1.05	+07	0.5		1.10	+07	0.5	1087	5	16	953
1.15	+07	0.5		1.20	+07	0.5		1.25	+07	0.5	1087	5	16	954
1.30	+07	0.5		1.35	+07	0.5		1.40	+07	0.5	1087	5	16	955
1.45	+07	0.5		1.50	+07	0.5					1087	5	16	956
0.0		0.0				0		0		1	111087	5	16	957
	11		3								1087	5	16	958
1.0	+07	1.448	+06	1.05	+07	1.479	+06	1.10	+07	1.514	+061087	5	16	959
1.15	+07	1.547	+06	1.20	+07	1.581	+06	1.25	+07	1.614	+061087	5	16	960
1.30	+07	1.646	+06	1.35	+07	1.677	+06	1.40	+07	1.708	+061087	5	16	961
1.45	+07	1.738	+06	1.50	+07	1.768	+06				1087	5	16	962
0.0		0.0				0		9		1	91087	5	16	963
	9		2								1087	5	16	964
1.10	+07	0.345		1.15	+07	0.345		1.20	+07	0.345	1087	5	16	965
1.25	+07	0.345		1.30	+07	0.345		1.35	+07	0.345	1087	5	16	966
1.40	+07	0.345		1.45	+07	0.345		1.50	+07	0.345	1087	5	16	967
0.0		0.0				0		0		1	91087	5	16	968
	9		3								1087	5	16	969
1.10	+07	0.10	+05	1.15	+07	0.323	+06	1.20	+07	0.456	+061087	5	16	970
1.25	+07	0.557	+06	1.30	+07	0.644	+06	1.35	+07	0.720	+061087	5	16	971
1.40	+07	0.785	+06	1.45	+07	0.853	+06	1.50	+07	0.911	+061087	5	16	972
0.0		0.0				0		9		1	111087	5	16	973
	11		2								1087	5	16	974
1.0	+07	0.155		1.05	+07	0.155		1.10	+07	0.155	1087	5	16	975
1.15	+07	0.155		1.20	+07	0.155		1.25	+07	0.155	1087	5	16	976
1.30	+07	0.155		1.35	+07	0.155		1.40	+07	0.155	1087	5	16	977
1.45	+07	0.155		1.50	+07	0.155					1087	5	16	978
0.0		0.0				0		0		1	111087	5	16	979
	11		3								1087	5	16	980
1.0	+07	0.10	+05	1.05	+07	0.299	+06	1.10	+07	0.440	+061087	5	16	981

1.15	+07 0.546	+06 1.20	+07 0.634	+06 1.25	+07 0.711	+061087 5 16	982
1.30	+07 0.781	+06 1.35	+07 0.846	+06 1.40	+07 0.905	+061087 5 16	983
1.45	+07 0.961	+06 1.50	+07 1.013	+06		1087 5 16	984
0.0	0.0		0	0	0	01087 5 0	985
0.0	0.0		0	0	0	01087 0 0	986
0.0	0.0		0	0	0	0 0 0 0	987
0.0	0.0		0	0	0	0 -1 0 0	0

INPUT CARD COUNT = 2737