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Institut für Neutronenphysik und Reaktortechnik
Projekt Schneller Brüter

Status of the Karlsruhe Evaluated Nuclear Data File KEDAK at June 1970

B. Hinkelmann, B. Krieg, I. Langner, J. J. Schmidt, D. Woll

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KARLSRUHE

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Zusammenfassung

In diesem Bericht wird eine Übersicht über die Materialien und Datentypen gegeben, die im Juni 1970 auf dem Karlsruher File für mikroskopische ausgewertete Kerndaten KEDAK vorhanden waren. Auswertungen und Verbesserungen von Kerndaten einzelner Materialien, die nach Veröffentlichung von KFK 120 (1966) durchgeführt und bisher noch nicht anderweitig dokumentiert worden sind, werden hier im Detail beschrieben.

Abstract

In this report a survey is given about materials and data types available on the Karlsruhe evaluated nuclear data file KEDAK in June 1970. Evaluations and reviaions of nuclear data for individual materials which have been carried out after publication of KFK 120 (1966) and have not yet been documented otherwise are here described in detail.

Contents

		Page
I.	Introduction	1
II.	Details about selected data previously incorporated in the KEDAK-File	1
	1. Resolved and statistical resonance parameters of ^{27}Al (Feb. 67)	1
	2. Elastic scattering angular distributions of N and Al	3
	3. Changes in the capture cross sections of ^{240}Pu	3
	4. Addition of energy points in the already existing energy scale for some KEDAK-materials	4
	5. Revision of nuclear data for ^{239}Pu	5
	a) Re-evaluation of the fission cross section	5
	b) Revision of the capture to fission ratio data	14
	c) Revision of $\bar{\nu}(E)$ in the MeV-range	16
References		19
Tables		23
Figures		39

Appendix: Computer listings of the present cross section data for ^{239}Pu on KEDAK

I. Introduction

A survey about the present status of the Karlsruhe Evaluated Nuclear Data File KEDAK is given in Table 1. It contains a complete list of the materials and data types available on KEDAK.

The physical data content of the file is documented in the references [1, 2] (concerning H bound in H_2 resp. H_2O, ^3He, ^4He, ^{12}C, ^{16}O, ^{23}Na, Cr, Fe, Ni, Mo, ^{235}U, ^{238}U, ^{239}Pu), [3] (concerning ^{240}Pu, ^{241}Pu, ^{242}Pu), [4] (Al) and [5] (Cd).

This report does not supersede any of the publications mentioned before but only parts of them. It gives the until now lacking information about the following KEDAK-data:

1) the resolved and statistical resonance parameters of ^{27}Al
2) the elastic scattering angular distribution of N and Al
3) changes in the capture cross sections of ^{240}Pu compared to the evaluation of Yiftah et al. [3]
4) the insertion of additional energy points in comparison with the energy scale tabulated in reference [2]
5) changes in the data for ^{239}Pu compared to the evaluation of Schridt [1].

II. Details about selected data previously incorporated in the KEDAK-File

1. Resolved and statistical resonance parameters of ^{27}Al (Feb. 67)

The British evaluation of Al neutron cross section by King [4] which was taken over on the KEDAK file did not contain resolved and statistical resonance parameters. These were added in the following way. The parameters of resolved resonances (resonance energy E_r, neutron half width Γ_n, neutron orbital angular momentum l and resonance spin J) were completely

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taken over from the recommendations of reference [8] and from Hibdon [9] as tabulated in reference [8]. At that time no capture widths determinations were available except for the lowest resonance at 5.9 keV. For this resonance Rohrer et al. [10], from transmission and activation measurements, obtained $\sigma_0 \Gamma_\gamma / \Gamma \geq 12b$, $\sigma_0 = 88b$ and $\Gamma \cong 12$ eV, from which $\Gamma_\gamma \cong 1.6$ eV is derived. By lack of better information we chose $\Gamma_\gamma = 1.6$ eV for all ^{27}Al resonances irrespective of l and J. The full set of resolved resonance parameters for ^{27}Al is given in Table 5.

Statistical resonance parameters, for s-wave neutrons only, were derived in the following way. ^{27}Al has a ground state spin $\frac{5}{2}$, thus for l=0 two resonance series J=2 and J=3 are possible. From five J=3 resonances a crude estimate of the average spacing of J=3 resonances was obtained first, i.e. $\bar{D}_{J=3} = 69.2$ keV. Only two resonances are assigned J=2 which was considered insufficient for an estimate of $\bar{D}_{J=2}$. Here with the above $\bar{D}_{J=3}$ value, the well known J-dependence of $\bar{D}$, i.e.

$$\bar{D}_J \sim \frac{1}{2J+1} \; e^{J(J+1)/2\sigma^2}$$

where σ is the so called spin cutoff parameter, and for $\sigma=3$ taken from Hibdon [9] we obtained $\bar{D}_{J=2} = 35.6$ keV. As average reduced neutron width of J=3 resonances $\bar{\Gamma}_n^{(o)}{}_{J=3} = 15.5$ eV was calculated which, together with $\bar{D}_{J=3}$, gives a strength function $S_{J=3} = \left(\frac{\bar{\Gamma}_n^{(o)}}{\bar{D}}\right)_{J=3} = 2.24 \cdot 10^{-4}$

As usually the strength function was considered independent of J, this gave $S_{J=2} = S_{J=3} = 2.24 \cdot 10^{-4}$ and with $\bar{D}_{J=2}$, $\bar{\Gamma}_n^{(o)}{}_{J=2} = 8.0$ eV. For the determination of the level density parameter $a = \frac{\pi^2}{6} G$, with G = total single nucleon level density at the Fermi level of the nucleus, the formula obtained by Newton [11] has been used

$$a = 0.056 \; (\bar{J}_z + \bar{J}_N + 1) \; A^{2/3} \; [\mathrm{MeV}^{-1}]$$

where $\bar{J}_N$, $\bar{J}_z$ = effective single particle angular momenta for neutrons and

protons at the Fermi level. The values of $\overline{J_N}$ and $\overline{J_Z}$ ($\overline{J_N}$ = 1.833; $\overline{J_Z}$ = 2.5) were taken from Cameron [12]. The resulting value of a is 2.69/MeV. The full set of statistical s-wave resonance parameters is given in Table 6.

2. Elastic scattering angular distributions of N and Al

For elastic scattering angular distributions for N and Al, exclusively the best curves through the available experimental data as compiled and given in reference [13] were used. The energy range covered goes from 100 keV to 15.83 MeV for N, and from 10 keV to 14.3 MeV for Al. Below 100 keV for N, and below 10 keV for Al the elastic scattering is assumed to proceed isotropically in the center-of-mass system. Table 7 documents the energies covered, the number of angular distributions and the basic references in detail.

One additional comment is needed. For Al the measurements of Fowler and Johnson [14] entail the sum of differential elastic and inelastic scattering cross sections. The measured cross sections were reduced to pure elastic scattering cross sections with the assumption of isotropic inelastic scattering angular distributions and subtraction of $\sigma_{n'}/4\pi$ from the measured differential total scattering cross sections at all angles. $\sigma_{n'}$ values were taken from the evaluation work of King [4]. All other measurements for Al and also for N do not contain inelastic scattering contributions.

3. Changes in the capture cross sections of ^{240}Pu

Only after the evaluation of Yiftah et al. [3] concerning the neutron data of the higher Pu isotopes the comprehensive Geel linear accelerator work on ^{240}Pu total and partial resonance cross sections became available [33]. This showed in particular that the s-wave capture width (32 meV) and the s-wave strength function ($1.37 \cdot 10^{-4}$) as assumed by Yiftah et al [3] in their calculations of $\langle\sigma_\gamma\rangle(E)$ for ^{240}Pu on the basis of previous much less comprehensive measurements were too high and had to be replaced by the lower values $\overline{\Gamma}_\gamma$ = 23.2 meV and $S_o = 1.05 \cdot 10^{-4}$. With these values and a (probably somewhat too low) p-wave strength function $S_1 = 1.5 \cdot 10^{-4}$ the capture cross sections of ^{240}Pu were recalculated in the range of predominant

s and p wave capture above 1 keV and extrapolated to higher energies so as to join smoothly the curve of Yiftah et al. [3] at about 800 keV. The changes in σ_γ entail, for σ_T kept constant, corresponding changes in σ_n and σ_{tr}. The changed σ_γ, σ_n and σ_{tr} data for ^{240}Pu between 1 and 800 keV are incorporated in the KEDAK file replacing the data of Yiftah et al. [3].

4. Addition of energy points in the already existing energy scale for some KEDAK-materials

The changes to be described here are due to the chosen method for the calculation of the inelastic scattering matrices in the region of discrete levels (see ref. [7]) which uses the inelastic excitation cross sections contained in KEDAK. The convention for this data type, named "SGIZ", on KEDAK is the following one (Comments to table 1: see x(b)):

An excitation cross section value of zero is only stored at 10^{-3} eV and at the highest energy for which the cross section is still equal to zero. We shall briefly call it here E_H. This is valid for the inelastic excitation cross section of each level of a material. For the excitation cross section of a fixed level the energy E_H has a value below or equal to the threshold energy of the inelastic excitation level considered. In the first case the condition of linear interpolation between neighbouring energy points on KEDAK is not fulfilled if the inelastic excitation cross section value belonging to the next energy points above E_H is unequal to zero, because a cross section value $\neq 0$ will then be obtained by interpolation at the excitation energy and this is not correct from the physical point of view. Therefore, in that case, the energy value of the corresponding excitation level had to be inserted as energy point coming next after E_H.

The mentioned defect had to be corrected on KEDAK for the following materials: Cr, Fe, Ni, Mo, Pu239, Pu240, Pu241, Pu242, U235, U238.

5. Revision of nuclear data for ^{239}Pu (B. Hinkelmann)

Recent precision measurements for nuclear data of ^{239}Pu and the importance of these data for reactor physics calculations have led to a revision of the KEDAK-data for this isotope and partly to a re-evaluation. Primary changes have been made for the following KEDAK data types in the energy range given:

σ_f: 1 keV - 10 MeV
α: 100 eV - 30 keV
$\bar{\nu}$: 3 MeV - 10 MeV

The energy ranges in which changes for the other cross section types were caused by these primary changes are quoted in Table 8. The total cross section has been assumed unchanged in the whole energy range. The meaning of the cross section type names used in Table 8 is given in reference [6].
Computer listings of the present cross section data for ^{239}Pu on KEDAK are given in the Appendix. They supersede the cross section tables for this isotope in reference [2].

a) Re-evaluation of the fission cross section

In the energy range from 1 keV to 10 keV the fission cross section values evaluated by James and Patrick [34] have been accepted. Below 10 keV these are averages over intervals of 1 keV.
The evaluation of James and Patrick takes into account almost all of the more recent data information. Corrections have been applied to the fission cross section data for deviations of the $^{10}B(n,\alpha)$ cross section from the $1/\sqrt{E}$ law assumed in the experiments if ^{10}B had been used in spectrum measurements.
In order to combine ratio measurements with absolute measurements of the fission cross section for ^{239}Pu James and Patrick have carried out a least squares fit to selected data of the ^{239}Pu and ^{235}U fission cross sections and their ratio. For their analysis below 10 keV they have chosen the ^{239}Pu fission cross section measurements by the following authors (the measured data and the corresponding references are given in reference [34]):

1) Bollinger et al.: up to about 30 keV;
James and Patrick have renormalized the data to a value of 742.4b at thermal energy and have corrected them for the revised $^{10}B(n,\alpha)$ cross section.

2) Shunk et al.: Petrel underground nuclear explosion, in the energy range from 20 eV to 30 keV.

3) James in the energy range 5 eV to 25 keV.

4) Patrick up to 30 keV.

5) *Furthermore ratio measurements of the* ^{239}Pu *to* ^{235}U *fission cross* section by Gilboy and Knoll; James and Patrick have used their revised values.

6) ^{235}U fission cross sections by Michaudon } after correction for the
7) ^{235}U fission cross sections by de Saussure } revised $^{10}B(n,\alpha)$ cross section

The measured data of Dubrovina and Shigin [36] have not been included in the evaluation of James and Patrick because of the large experimental error (10%).
James and Patrick give an average error of 5.3% for their mean values over the chosen energy intervals.
Fig. 1 shows up to 20 keV the selected experimental data as well as the fission cross section data recommended by James and Patrick. For comparison we have also plotted the results of most recent σ_f-measurements by Gwin et al. [37] in the energy range from 1 keV to 30 keV and σ_f-ratio measurements by Lehto [38] in the energy range from 0.24 to 24 keV, which have become available in the meantime. In the latter case the absolute fission cross section values plotted in Fig. 1 have been obtained from the ratio values by using the ^{235}U fission cross sections recommended on KEDAK [1, 2]. The largest deviations of the Lehto data from the recommended curve of James and Patrick are to be found in the intervals 1 - 2 keV; 2 keV - 3 keV; 7 - 8 keV. Especially in the first interval the Lehto measurements give much higher results (50%) than the averages of James and Patrick. The σ_f-data of Gwin et al. show the same tendency in this energy range but the deviations are not so large. The values plotted in Fig. 1 as Gwin data are averages of the "metal foil" and "fission chamber" measurements. For the derivation of the fission cross section values Gwin et al. have assumed the same energy dependence of the $^{10}B(n,\alpha)$ cross section as used by James and Patrick. Thus these two

most recent measurements give an indication that the average fission cross section values of James and Patrick are too low in the energy range from 1 keV to 3 keV.

In the energy range from 10 keV up to 2 MeV only most recent precision measurements for the ratio of the ^{239}Pu and ^{235}U fission cross section have been taken into consideration. This is justified by the many improvements in experimental techniques in the last years. Except those of Nesterov and Smirenkin [41] these measurements are absolute ratio measurements characterized by

1) the use of very thin targets homogeneous in thickness and isotopic composition prepared by special techniques e.g. electro-spraying [39] or vacuum evaporation [40]. This is of importance in particular for a good discrimination of fission fragment pulses and α-pulses.
2) the deletion of the fission events of the investigated and reference materials in coincidence
3) a narrow energy resolution
4) very detailed investigations of corrections which should be applied to the experimental results and of their size.

In the energy range considered the following measurement series have been selected:

Nesterov, Smirenkin; 1967 [41]

energy range:	300 keV - 2.5 MeV
measurement:	1) *ratio measurement of* $\sigma_f(^{239}Pu)$ *normalized to* experimental results using the "glass method", 2) ratio measurements of $\sigma_f(^{239}Pu)$ and $\sigma_f(^{235}U)$ with fast neutrons with the glass method using as reference value the cross section ratio for a Maxwellian spectrum at 20°C
uncertainty of the fission ratio:	2.7%
neutron source:	$T(p,n)He^3$ with van de Graaff accelerator

experimental method:	detection of fission fragments; monoenergetic neutrons, energy determination from the angle (p,n)
fission detector:	1) back-to-back double ionization chamber filled with Ar(93%), CO_2(7%) 2) glass plates
Sample:	^{239}Pu with 3.4% ^{240}Pu; 1 mg/cm^2 thick
Corrections applied to the "glass method" data:	angular anisotropy of fission isotopical impurity

Käppeler, Pfletschinger: 1969 [42]

energy range:	5 keV - 1 MeV
measurement:	absolute ratio measurement of $\sigma_f(^{239}Pu)$ and $\sigma_f(^{235}U)$
uncertainty of the fission ratio:	2 - 3% except below 10 keV
neutron source:	$^7Li(p,n)^7Be$ using the Karlsruhe 3 MeV pulsed van de Graaff accelerator
experimental method:	detection of fission fragments; neutron energy determination by TOF-method, energy spread: 20-35keV above 200 keV, below 200 keV 10% of the neutron energy.
fission detector:	gas scintillation counters filled with argon (asymmetry in the neutron flux and in the electronic examined)
sample:	96.32 ^{239}Pu, 3.5% ^{240}Pu; Pu-acetate deposited by electro-spraying on metal foils
Corrections for:	background finite foil and backing thickness electronic corrections sample mass and isotopic composition

Poenitz: 1969 [43]

energy range:	130 - 1400 keV
measurement:	absolute ratio measurement of σ_f (^{239}Pu) and $\sigma_f(^{235}U)$
uncertainty of the fission ratio:	2 - 3%

neutron source:	$^{7}Li(p,n)^{7}Be$ with 3 MeV pulsed van de Graaff
experimental method:	detection of fission fragments; energy determination by TOF-method
fission detector:	double chamber gas scintillation counter filled with argon and nitrogen (15%)
sample:	99.95% ^{239}Pu
corrections for:	total absorption of both fission fragments scattering in the sample backings and the fission counter

White, Hodgkinson, Wall; 1965 [44]

energy range:	measurements at the energy points 40, 67, 127, 312, 415, 505 keV
measurement:	absolute ratio measurement of $\sigma_f(^{239}Pu)$ and $\sigma_f(^{235}U)$
uncertainty of the ratio:	2.2%
neutron source:	$^{7}Li(p,n)^{7}Be$ using the Aldermaston 3 MeV van de Graaff accelerator
experimental method:	detection of fission fragements; neutron energy determination from the angle (p,n), energy spread: at lower energies 10%, at higher energies 5% of the neutron energy, caused by target thickness and geometrical arrangement
fission detector:	back-to-back double ionization chamber filled with krypton + CO_2(10%)
sample:	99.985% ^{239}Pu, 0.012% ^{240}Pu, 0.003 ^{241}Pu; foil thickness 0.5 and 0.1 mg/cm^2
corrections for:	loss of fission fragments due to foil thickness; neutron flux and energy variation across the fissile foil; neutron scattering in the fission counters and the neutron source

White, Warner: 1966 [45]

energy range:	at energies of 1.0, 2.25, 5.4, 14.1 MeV
measurement:	absolute ratio measurement of $\sigma_f(^{239}Pu)$ and $\sigma_f(^{235}U)$
uncertainty of the ratio:	2%
neutron source:	T(p,n), D(d,n), T(d,n) with 3 MeV van de Graaff Aldermaston

The other characteristics of the experiment are the same as in the measurement of White et al. described above.

The experimental data points of the above measurements have been fitted by a smooth curve using the computer subroutine SMØØTH [46]. For the description of such a smooth curve it determines a splinefunction of degree 3 such that

$$f(x) = a_i + b_i(x-x_i) + c_i(x-x_i)^2 + d_i(x-x_i)^3 \qquad i=1,2,\ldots,n-1$$
$$x_i \leq x \leq x_{i+1}$$

and that

$$\int_{x_1}^{x_n} [f''(x)]^2 dx \rightarrow \text{Min}$$

and

$$\sum_{i=1}^{n} \left\{ \frac{f(x_i)-y_i}{p_i} \right\} \leq s$$

(x_i, y_i) are the data points with weights p_i $i=1,n$

In general the same weighting has been adopted in the above procedure for the selected different data sets since they have almost the same accuracy. Only the data point at 40 keV measured by White et al. has been assigned less weight in comparison with the Pfletschinger and Käppeler measurements

in that range because it does not seem reliable being below all other σ_f-values in this region. Furthermore we have given less weight to the data measured by Nesterov and Smirenkin at energy points around 900 keV in order to reproduce the dip in σ_f at 0 95 MeV observed independently by two groups of experimentalists: Käppeler, Pfletschinger and Poenitz. The Poenitz experiment has unfortunately too few experimental data points in this energy region for drawing a conclusion concerning the exact position of the dip. Käppeler and Pfletschinger have repeated their measurement twice in this energy region to confirm their results. Furthermore because of the TOF-method the energy spread in this experiment is smaller than can be expected from the neutron energy determination in the measurements of Nesterov and Smirenkin. Therefore the position and depth of the dip as inferred from the measurement of Käppeler and Pfletschinger seemed us to be most reliable. The experimental results of Nesterov and Smirenkin, too, show this dip but it is shifted to higher energy at about 1.1 MeV.

Fig. 2 shows the selected experimental data and the ratio curve obtained by the fit. The error bars are plotted together with the experimental results with the exception of some data points of Nesterov and Smirenkin which have been omitted in order to avoid confusion. All of them have a quoted uncertainty of 2.7%.
The fission cross section values for ^{239}Pu were obtained by using the KEDAK-values for $\sigma_f(^{235}U)$.

In the energy range above 2 MeV up to 10 MeV the following measurements have been taken into account:

1) Hansen, McGuire, Smith [47], LA
2) Nesterov, Smirenkin [41]
3) White, Warner [45]

The last two measurements have already been described. Hansen, McGuire, Smith have recently corrected the experimental results obtained by Smith, Henkel, Nobles [48] for inscattering effects. They had performed two series of ratio measurements

1) $\sigma_f(^{239}Pu)/\sigma_f(^{235}U)$ in the energy range 0.51 MeV to 7.17 MeV
   estimated error in $\sigma_f(^{239}Pu)$: 7%

2) $\sigma_f(^{239}Pu)/\sigma_f(^{238}U)$ in the energy range 2.0 MeV to 20 MeV
range of the quoted absolute error in $\sigma_f(^{239}Pu)$: 5.6% - 8.8%

The scattering data points in this energy region have been smoothed out by a curve using the same procedure as in the lower energy range. The input data, however, have not been the ratio values but the absolute fission cross section values for ^{239}Pu. A single fit over the whole energy range in any case would not have been possible since the LA-data have only later become available to us. Furthermore because of this data set relative to $\sigma_f(^{238}U)$ anyhow, one does not obtain an independence of $\sigma_f(^{235}U)$ which is the main reason for a ratio fit. The absolute fission cross section values for ^{239}Pu have been calculated by using the revised LA-values for $\sigma_f(^{235}U)$ and $\sigma_f(^{238}U)$ as reference cross section values, since the KEDAK-data for these cross sections correspond to the old LA-results.

In Fig. 3 the experimental data points in that range as well as the evaluated curve are given. In the range from 1.2 MeV to 2 MeV the evaluated σ_f-curve has been joined smoothly to the curve corresponding to the evaluated ratio curve in this range. The error bars plotted for the Nesterov- and White-data were obtained by means of the error in the ratio values and of the uncertainty in $\sigma_f(^{235}U)$ as quoted by Hansen, McGuire, Smith [47] added in quadrature.

The estimated accuracy of the recommended σ_f-values for ^{239}Pu is tabulated below:

Energy range	$\frac{\Delta\sigma_f}{\sigma_f}$ [%]	Comments
1 - 10 keV	±5.3	average error as quoted by James and Patrick [34]
10 - 100 keV	+7 -8	uncertainty essentially due to the deviations between the White- and Käppeler-data in this range
100 - 800 keV	±6	the largest part of the uncertainty is due to the error in $\sigma_f(^{235}U)$ [1]
800 keV - 1.5 MeV	+10 - 6	mainly due to the uncertainty in $\sigma_f(^{235}U)$ and, concerning the positive error, also to the uncertainty of the exact position of the dip in σ_f in this range. If one relies for this completely on the Käppeler measurements, that means a shifting of the cross section values of Nesterov, Smirenkin to lower energies (σ_f(1.1 MeV) → σ_f(0.95 MeV)) the error could be reduced to +7%.
1.5 - 2 MeV	±7	due to the error in σ_f (^{235}U) and the deviations between the Poenitz and Nesterov results
2 - 10 MeV	±7	the error corresponds to the uncertainty of the LA-results

For comparison with other evaluations for $\sigma_f(^{239}Pu)$ and with most recent experimental results the Figs. 4 - 7 are given here. There are shown:

1) in Fig. 4 the presently and previously [1,2] on KEDAK recommended σ_f-curve for ^{239}Pu

2) in Fig. 5 the presently on KEDAK recommended σ_f-curve for ^{239}Pu, the σ_f-curve evaluated by Davey [49] and the σ_f-curve evaluated by Greene, Lucius, Craven [50] for the revised ENDF/B-file

3) in Fig. 6 the evaluated curve for the ratio $\sigma_f(^{239}Pu)/\sigma_f(^{235}U)$ with the results of a most recent ratio measurement of Soleilhac et al. [51] which could no more been considered here. In this measurement the data points were normalized at 0.61 MeV to a value of $\sigma_f(^{239}Pu)/\sigma_f(^{235}U)$ = 1.354 taken from KEDAK [2]. They have therefore been renormalized to

the new value of 1.374 before representation in this figure. With the exception of the results measured at both ends of the energy region covered the experimental data do agree within their error bars with the evaluated curve.

4) in Fig. 7 the presently on KEDAK recommended σ_f-curve for ^{239}Pu and the experimental results of a most recent absolute measurement for $\sigma_f(^{239}Pu)$ by Szabo, Leroy et al. [52] which could no more been taken into account here. Most of the data points are within their assigned error bars in good agreement with the recommended curve.

b) Revision of the capture to fission ratio data

A revision of the α-values on KEDAK has become necessary because more recent α-measurements in the keV-range have given much higher results than the KAPL-values [53, 54, 55] which had been in common use previously. Among the most recent measurements the α-measurements by Gwin et al. [37] of Oak Ridge seemed to us most reliable.

In comparison with other α-measurements the Gwin values have a small uncertainty, on the average about 12% below 20 keV. Furthermore Gwin et al. have used an approved detector, a large liquid scintillator, for detection of prompt gamma rays resulting either from fission or from neutron capture. For the detection of the fission events two different techniques have been employed:

1) An ionization chamber containing ^{239}Pu was used.

2) Metal foils of ^{239}Pu were used and the fission events detected by the difference in the pulse-height distribution for the prompt γ-rays from fission and capture (the capture pulse-height distribution does not extend beyond an upper limit given by the binding energy of the neutron in the compound nucleus ^{240}Pu)

The latter technique has been applied in order to obtain α-values in the higher energy range. These measurements have been performed with different sample thicknesses.

The Rensselaer Electron Linear Accelerator was used as pulsed neutron source. α-measurements have been carried out in two energy ranges

0.02 - 46 eV and 7 eV - 35 keV

the "ionization chamber" measurements in particular up to 3 keV, the "metal foil" measurements in the whole energy range.
The isotopic composition of Pu was 99% ^{239}Pu and 0.8% ^{240}Pu-
Normalization:

ionization chamber data:	low energy run	normalization at 0.025 eV and 0.3 eV to α-values of 0.359 and 0.66 respectively
	high energy run	normalization to the low energy ionization chamber data in this range
metal foil data:	normalized to the "ionization chamber" data of the high energy measurement	

The α-values presently recommended on KEDAK are arithmetic mean values of the ionization chamber and metal foil data averaged by Gwin et al. over intervals of 0.1 keV below 1 keV, of 1 keV below 10 keV and of 5 keV below 20 keV. The presently and previously [1, 2] on KEDAK recommended α-data for ^{239}Pu are plotted in Fig. 8.

Fig. 9 gives the comparison between the α-results of Gwin et al. [37] and most recent α-measurements by

Schomberg, Sowerby et al. [56],
Belyaw, Ignat'ev, Sukhoruchkin et al. [57]
and Czirr, Lindsey [82]

The plotted α-values are averages over energy intervals which in general correspond to the intervals chosen by Gwin et al. If this is not the case the energy limits of the range are given in Fig. 9 together with the corresponding experimental value.
The largest discrepancies between the Schomberg and Gwin measurements are to be found in the energy ranges 0.8 - 3 keV and 15 - 30 keV where the deviations from the Gwin results exceed 20% in spite of a consistent normalization of both data sets. The large deviations in the energy range 0.8 to 3 keV are not so surprising since the Schomberg measurements have the maximum background error in this range. Except the first energy interval (0.1 - 0.2 keV) and the energy range above 10 keV the Schomberg

results are in the whole energy range lower than the Gwin values. It is expected that the discrepancies in α are mainly due to errors in measuring the capture cross section because the average fission cross sections of Schomberg et al. agree well with those of Gwin et al. In the energy range 4 keV- 7 keV where previously large discrepancies had been accountered between preliminary Gwin measurements and preliminary Schomberg data the agreement has now become much better. Including the mutual uncertainties the two measurements now completely overlap in this region.
The Belyaev and Czirr measurements confirm the Gwin results. The deviations amount in general to no more than 10%.

c) *Revision of $\bar{\nu}(E)$ in the MeV-range*

Since the evaluation of $\bar{\nu}(E)$ for ^{239}Pu by J.J. Schmidt new very accurate measurements have been performed in an energy range where previously no experimental information at all had existed. This concerns in particular the experiment of Soleilhac et al. [58] which covers the energy range from 1.4 to 14.8 MeV and the experiment of Condé et al. [59] carried out at several energy points in the energy range from 4 to 15 MeV.

In both experiments the mean number of prompt neutrons per fission in ^{239}Pu has been measured relative to the neutron yield for spontaneous fission of ^{252}Cf. A large liquid scintillator has been used as neutron detector. The maximum uncertainty of the $\bar{\nu}_{49}$-values amounts to 1% in the Soleilhac experiment (0.5% maximum error due to corrections inaccuracy, statistical error 0.4 - 0.5%). In the Condé measurement the uncertainty varies between 2 and 3%. The experimental results of both measurements are in good agreement with each other. In comparison with the $\bar{\nu}_{49}(E)$-curve previously recommended on KEDAK the Soleilhac data agree to within about 0.5% with those values below 4 MeV. Above 4 MeV deviations of about 1 to 4% increasing with increasing energy are to be found. For this comparison the experimental results have been renormalized to the standard value used for the previous KEDAK data

$$\bar{\nu}^{p}_{sp}(^{252}Cf) = 3.764$$

and a value of

$$\bar{\nu}_d(^{239}Pu) = \begin{cases} 0.006 & \text{below 10 MeV} \quad [61] \\ 0.013 & \text{above 10 MeV} \quad [80] \end{cases}$$

has been added as contribution of the delayed neutrons. The above reference value recommended as best value in reference [1] has also been accepted as standard value in deriving a curve $\bar{\nu}(E)$ above 4 MeV. Recently a value of $\bar{\nu}_{sp}(^{252}Cf) = 3.765 \pm 0.012$ has been recommended by the IAEA [78] as best value for the fission neutron yield from spontaneous fission of ^{252}Cf including delayed neutrons, but it has not been adopted here aiming only at an evaluation of $\bar{\nu}$ in the MeV-range since below 1 MeV new measurements had not yet been available in the beginning of 1970. The chosen value of 3.764 is, however, in consistency with the $\bar{\nu}$-evaluation of J.J. Schmidt [1] so that his fit for the data in the low energy range could be combined with ours in the higher energy range.

Whereas the $\bar{\nu}^p_{49}$-data quoted by Condé et al. [59] referred already to this value, the other more recent experimental data had to be renormalized to it.

After addition of the contribution for delayed neutrons as described above a linear least squares fit has been carried out for the $\bar{\nu}_{49}$-data of Soleilhac et al. and Condé et al. above 3.4 MeV under the condition that the linear function passes at 3.4 MeV through the KEDAK-value of 3.3448 for $\bar{\nu}_{49}$. The inverse squares of the errors of the individual experimental data points have been used as weights. The uncertainty of the average number of prompt neutrons from spontaneous fission of ^{252}Cf has not been taken into account in the calculation of the errors on $\bar{\nu}_{49}(E_n)$. Concerning the Soleilhac measurement we have determined the error in the $\bar{\nu}_{49}$-results by adding a quoted uncertainty of 0.5% due to corrections inaccuracy to the tabulated statistical errors. Condé et al. have given the relative errors for their $\bar{\nu}^p_{49}$-values in reference [59].

The straight-line function obtained by the leastsquares fit based on data above 3.4 MeV is described by the following equation

$$3.4 - 15 \text{ MeV:} \qquad \bar{\nu}_{49}(E) = 2.81908 + 0.15463\,E \qquad \text{(E in MeV)}$$

The values presently recommended on KEDAK for the mean number of neutrons per fission in ^{239}Pu induced by neutron energies above 3.4 MeV correspond to this equation. Below 3.4 MeV incident neutron energy they are given as previously by the following relationship [1]

thermal - 3.4 MeV: $\bar{\nu}_{49}(E) = 2.89200 + 0.12791E + 0.00189E^2 - 0.00010E^3$ (E in MeV)

The experimental results of Condé et al. and Soleilhac et al. as well as the evaluated curve are shown in Fig. 10. The error bars correspond to $\bar{\nu}^p_{sp}(^{252}Cf) = 3.764 \pm 0.0$. The energy spread of the data points has been omitted in order to avoid confusion. In the Soleilhac experiment the energy spread decreases from 165 keV at 1.36 MeV incident neutron energy to 70 keV at 14.8 MeV; in the Condé experiment it varies between 20 keV at 4.22 MeV and 200 keV at 14.8 MeV. Also earlier $\bar{\nu}$-measurements for ^{239}Pu [61 - 77] are presented in Fig. 10. They are confined to the energy range below about 4 MeV and to the region from 14 to 15 MeV. The previous $\bar{\nu}$-measurements performed between 14 and 15 MeV have not been taken into account in the least squares fit because of their large uncertainties. The deviations of the Soleilhac and Condé measurements from the recommended straight-line function amount in general to no more than 1% in the energy range above 3.4 MeV up to 12 MeV. Above 12 MeV the deviations increase to about 1.5%. Peak deviations of almost 2.5% are encountered for the two data points of Condé et al. at 6.77 MeV and at 14.8 MeV.

A comparison of the $\bar{\nu}_{49}(E)$-curve presently recommended on KEDAK with most recent experimental data information which could not be taken into account here is given in

Fig. 11 with $\bar{\nu}$-measurements of Soleilhac et al. [51]

Fig. 12 with $\bar{\nu}$-measurements of Mather et al. [79]
and of Nesterov et al. [81]

The absolute $\bar{\nu}$-values and errors are based on $\bar{\nu}^p_{sp}(^{252}Cf) = 3.764 \pm 0.0$

and $\bar{\nu}_d(^{239}Pu) = \begin{cases} 0.006 \text{ below 10 MeV} \\ 0.013 \text{ above 10 MeV} \end{cases}$

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List of tables

Table 1: Materials and data types on the KEDAK-file

Table 2: Threshold energies on KEDAK

Table 3: Data type BGNC on KEDAK

Table 4: Data type RES on KEDAK

Table 5: Resolved resonance parameters for ^{27}Al

Table 6: Statistical s-wave resonance parameters for ^{27}Al

Table 7: Angular distributions for N and Al

Table 8: Changes of ^{239}Pu-data on KEDAK

Table 1: Materials and data types on the KEDAK-file

KEDAK-name of the material	Material	Data type names																Number of energy points
		SGT σ_t	SGN σ_n	SGTR σ_{tr}	SGG σ_γ	SGF σ_f	SGP σ_p	SGALP σ_α	SGA σ_a	SGI $\sigma_{n'}$	SG2N σ_{2n}	SGX σ_x	MUEL $\bar{\mu}_L$	NUE $\bar{\nu}$	ALPHA α	ETA η	CHIF χ	
Albb27	^{27}Al	x	x	x	x	-	x(b)	x(b)	x	x(b)	x(b)	x	x	-	-	-	-	372
Cbb12	^{12}C	x	x	x	x	-	x(a)	x(b)	x	x(b)	x(a)	x	x	-	-	-	-	326
Cdbbb	Cd	x	x	x	x	-	x(b)	x(b)	x	x(b)	x(b)	x	x	-	-	-	-	4380
Crbbb	Cr	x	x	x	x	-	x(b)	x(b)	x	x(b)	x(b)	x	x	-	-	-	-	569
Febbb	Fe	x	x	x	x	-	x(b)	x(b)	x	x(b)	x(b)	x	x	-	-	-	-	1151
Hbbb2	^{2}H	x	x	x	x	-	x(a)	x(a)	x	x(a)	x(b)	x	x	-	-	-	-	58
HbbH1	H bound in H_2	x	x	x	x	-	x(a)	x(a)	x	x(a)	x(a)	x	x	-	-	-	-	63
HbbØ1	H bound in H_2O	x	x	x	x	-	x(a)	x(a)	x	x(a)	x(a)	x	x	-	-	-	-	63
Hebb3	^{3}He	x(c)	x(c)	-	x(a)	-	x	x(a)	x	x(a)	x(a)	x(c)	x(c)	-	-	-	-	77
Hebb4	^{4}He	x	x	x	x(a)	-	x(a)	x(a)	x(a)	x(a)	x(a)	x(a)	x	-	-	-	-	121
Mobbb	Mo	x	x	x	x	-	x(b)	x(a)	x	x(a)	x(a)	x	x	-	-	-	-	1733
Nbbbb	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nab23	^{23}Na	x	x	x	x	-	x(b)	x(b)	x	x(b)	x(a)	x	x	-	-	-	-	859
Nibbb	Ni	x	x	x	x	-	x(b)	x(b)	x	x(b)	x(b)	x	x	-	-	-	-	1043
Obb16	^{16}O	x	x	x	x(d)	-	x(a)	x(b)	x(b)	x(b)	x(a)	x(b)	x	-	-	-	-	436
Pu239	^{239}Pu	x	x	x	x	x	x(d)	x(d)	x	x(b)	x(b)	x	x	x	x	x	x	879
Pu240	^{240}Pu	x	x	x	x	x	-	-	x	x(b)	x(b)	x	x	x	x	x	-	151
Pu241	^{241}Pu	x	x	x	x	x	-	-	x	x(b)	x(b)	x	x	x	x	x	-	171
Pu242	^{242}Pu	x	x	x	x	x(b)	-	-	x	x(b)	x(b)	x	x	x(b)	x(b)	x(b)	-	164
Ub235	^{235}U	x	x	x	x	x	x(d)	x(d)	x	x(b)	x(b)	x	x	x	x	x	x	3146
Ub238	^{238}U	x	x	x	x	x(b)	x(d)	x(d)	x	x(b)	x(b)	x	x	x(b)	-	-	x	4456

Tabel 1: continued

Material	Date type names										
	SGIZ	SGEC	CHICR	PLNUE	RFS	ST	STD	STGF	ISØT1	ISØT2	ISØT3
^{27}Al	x(b)	x	-	-	x	x(f)	x	-	x	x	-
^{12}C	x(b)	x	-	-	x	-	-	-	x	x	-
Cd	x(b)	-	-	-	x	-	-	-	x	-	-
Cr	x(b)	x	-	-	x(e)	x(f)	x(h)	-	x(e)	x(e)	x
Fe	x(b)	x	-	-	x(e)	x(f)	x(h)	-	x(e)	x(e)	x
^{2}H	-	x	-	-	-	-	-	-	x	x	-
^{3}He	-	-	-	-	-	-	-	-	-	-	-
^{4}He	-	x	-	-	-	-	-	-	x	x	-
Mo	x(b)	x	-	-	x(e)	x(f)	x(h)	-	x(e)	x(e)	x
N	-	x	-	-	-	-	-	-	-	-	-
^{23}Na	x(b)	x	-	-	x	x(f)	x	-	x	x	-
Ni	x(b)	x	-	-	x(e)	x(f)	x(h)	-	x(e)	x(e)	x
^{16}O	x(b)	x	-	-	x	-	-	-	x	x	-
^{239}Pu	x(b)	x	x	x	x	x(g)	x	x(g)	x	x	-
^{240}Pu	x(b)	x	x	x	x	x(g)	x	x(g)	x	x	-
^{241}Pu	x(b)	x	x	x	x	x(g)	x	x(g)	x	x	-
^{242}Pu	x(b)	x	x	x	x	x(g)	x	-	x	x	-
^{235}U	x(b)	x	x	x	x	x(g)	x	x(g)	x	x	-
^{238}U	x(b)	x	x	x	x	x(g)	x	-	x	x	-

Comments to table 1:

The data types on KEDAK are specified in reference [6]. In comparison with the definitions given there the alphanumerical data type name "GGI" with the numerical data type name 3 C35 0 has been changed in "GGIZ" in order to guarantee the uniqueness of the alphanumerical data type names.
The symbols used in table 1 have the following meaning

a) Concerning the different cross section types and the data types MUEL, NUE, ALPHA, ETA, GNIF data values are given in the whole energy range from 10^{-3} eV up to 10 MeV (except for Cr, Fe, Ni, Cd, Al. Here the energy range has been extended up to 15 MeV. In the near future this will also be done for the other KEDAK-materials.) The energy scale is identical for all these types of a material (number and position of energy points generally differ for different materials because of differences in the physical cross section structure)

X1

b) Concerning the type GGNG data values are stored at energy points different from a) in the range between a minimum energy (at which and below which the elastic scattering is still isotropic) and an upper energy limit in the range from 14 to 16 MeV (s. Table 3)

c) For the other types data are stored according to their definition in reference [6]

X(a): Data of this type are zero in the nuclear physics sense over the whole energy range (10^{-3} eV $\leq$ E $\leq$ 10 MeV). For this type the value zero is stored at 10^{-3} eV and at 10 MeV because of formal reasons.

X(b): Threshold reaction or data type depending on a threshold reaction; in this case the value zero is only stored at 10^{-3} eV and at the highest energy (s. Table 2) at which the cross section is still equal to zero. Cross section values are then given up to 10 MeV and for Cr, Fe, Ni, Cd, Al up to 15 MeV. Only for the inelastic excitation cross sections there may exist an upper energy limit below 10 MeV which borders the so-called "continuum" region of residual nucleus levels (s. E_u in Table 2)

X(c): Data values of this type are from the physical point of view unequal to zero in the whole energy range. Because presently there is no need for these data they are formally set equal to zero with one zero at 10^{-3} eV and one at 10 MeV.

X(d): Data values of this type are <<1mb in the whole energy range (10^{-3} eV $\leq E \leq$ 10 MeV). Therefore they have been neglected and a value of zero is stored at 10^{-3} eV and 10 MeV.

X(e): The data type considered is available for the natural isotopic mixture and for all stable isotopes.

X(f): Data of the type ST are available only for the stable isotopes of the material concerned and only for all s-wave resonance series.

X(g): *Data of the type ST and STGF are available for all s- and p-wave* resonance series.

X(h): Data of this type are available only for the stable isotopes of the material concerned.

-: No data of this type are available on KEDAK

Explications for some special data types:

CHIF: The spectra of prompt fission neutrons are tabulated as a function of the energy E' of the outgoing neutrons (10^{-3} eV $\leq E' \leq$ 10 MeV). They are valid for fissionable materials for fission by thermal neutrons. The hardening of the fission spectrum with increasing incident neutron energy is weak; in the range of experimental accuracy of the fission spectrum measurements these "thermal" fission spectra can be used at incident neutron energies up to several MeV.

RES: Table 4 contains lowest and highest energies of resolved resonances for *each isotope resp. element concerned. In addition to* RES data sets for all stable isotopes of the materials concerned, RES data sets are contained in KEDAK for the natural elements Cr, Fe, Ni, Mo and Cd. These are ordered for each element according to increasing resonance energies. They differ from the corresponding RES data sets for the individual isotopes only by the replacement of the first functional value g_J (statistical weight factor) by the product $a_i g_J$, where a_i is the abundance in volume % of the isotope i in a given material.

Table 21 Effective threshold energies* on KEDAK (in MeV)

Material	threshold reaction type					
	SOP	SOALP	SOI E_L	SOI E_u **	SO2N	SOF
^{12}C	-	6.28	4.7	10.0	-	-
^{16}O	-	3.61	6.54	10.0	-	-
^{23}Na	3.99	5.71	0.46	4.0	-	-
^{27}Al	2.70	6.10	1.05	4.5	13.9	-
Cr	2.0	3.97	0.575	3.19	7.97	-
Fe	0.495	3.99	0.860	4.99	7.96	-
Ni	0.745	1.9	1.35	3.993	7.946	-
Mo	1.46	-	0.205	2.06	-	-
Cd	3.5	6.5	0.30	1.4	7.5	-
^{235}U	-	-	0.020997	2.4	5.3	-
^{238}U	-	-	0.0449	2.0	6.0	0.38
^{239}Pu	-	-	0.008	0.55	5.6	-
^{240}Pu	-	-	0.05	1.11	6.60	-
^{241}Pu	-	-	0.033	0.498	4.97	-
^{242}Pu	-	-	0.0452	1.11	6.26	0.0000025

* effective threshold energy - highest energy below that energy at which the corresponding cross section has a value unequal to zero (concerning SOI it corresponds to E_L)

** upper energy limit for the stored inelastic excitation cross section values (type SGIZ) on KEDAK (it corresponds to the boundary between "discrete" and "continuum" region)

Table 3: Data type SONC

Material	Lowest energy [MeV]	Highest energy [MeV]	Number of tabulated angular distributions
^{2}H	0.05	14.1	14
^{4}He	0.1	14.7	26
^{12}C	0.05	14.2	42
N	0.1	15.83	41
^{16}O	0.1	15.83	131
^{23}Na	0.01	14.3	63
^{27}Al	0.01	14.3	36
Cr	0.01	14.5	45
Fe	0.01	14.5	45
Ni	0.01	14.0	46
Mo	0.01	14.0	39
^{235}U	0.01	15.2	43
^{238}U	0.01	15.2	43
^{239}Pu	0.01	15.2	43
^{240}Pu	0.01	15.2	43
^{241}Pu	0.01	15.2	43
^{242}Pu	0.01	15.2	43

Table 4: Data type RFS on KEDAK

Material	E_L^r	E_u^r	total number of positive resonances	isotopic abundance in volume %
^{12}C	2.076MeV	12.08 MeV	14	-
^{16}O	442 keV	11.3 MeV	39	-
^{23}Na	2.85 keV	857.5 keV	230	-
^{27}Al	5.906keV	445 keV	62	-
Cr	4.25 keV	636 keV	67	-
^{50}Cr	6.6 keV	95 keV	5	4.31
^{52}Cr	51.0 keV	636 keV	58	83.76
^{53}Cr	4.25 keV	4.25 keV	1	9.55
^{54}Cr	23.5 keV	119 keV	3	2.38
Fe	1.15 keV	645 keV	95	-
^{54}Fe	8.0 keV	506.5 keV	44	5.84
^{56}Fe	1.15 keV	645 keV	49	91.68
^{57}Fe	3.9 keV	6.0 keV	2	2.17
^{58}Fe	-	-	-	0.31
Ni	4.6 keV	206.5 keV	18	-
^{58}Ni	15.5 keV	206.5 keV	8	67.76
^{60}Ni	12.5 keV	199 keV	9	26.16
^{61}Ni	-	-	-	1.25
^{62}Ni	4.6 keV	4.6 keV	1	3.66
^{64}Ni	-	-	-	1.17
Mo	12.0 eV	16.66 keV	51	-
^{92}Mo	346.8 eV	16.66 keV	5	15.86
^{94}Mo	1519 eV	5.38 keV	3	9.12
^{95}Mo	45.1 eV	7.4 keV	14	15.70
^{96}Mo	113.5 eV	3.3 keV	4	16.50
^{97}Mo	70.9 eV	1.255keV	10	9.45
^{98}Mo	12.0 eV	9.0 keV	9	23.75
^{100}Mo	97.7 eV	1.936keV	6	9.62
Cd	0.178 eV	1.125keV	60	-

Table 4 (continued)

Material	E_L^r	E_u^r	total number of positive resonances	isotopic abundance in volume %
^{235}U	0.273 eV	147.33 eV	196	0.7205
^{238}U	4.41 eV	3904.4 eV	239	99.2739
^{239}Pu	0.296 eV	298.1 eV	85	-
^{240}Pu	1.056 eV	1.0018keV	64	-
^{241}Pu	0.260 eV	62.08 eV	61	-
^{242}Pu	2.64 eV	388.0 eV	20	-

E_L^r - lowest positive energy of resolved resonances

E_u^r - highest energy of resolved resonances

Table 5: Resolved resonance parameters for ^{27}Al

E_r(eV)	l	J	Γ_n(eV)	Γ_γ(eV)
5906.0	1	2.0	20.0	1.6
3.504+4	0	3.0	1.5+3	1.6
8.83 +4	0	3.0	1.3+4	1.6
1.1966+5	1	2.0	3.0+3	1.6
1.4534+5	0	3.0	3.5+3	1.6
1.49 +5	1	2.0	3.0+3	1.6
1.5 +5	1	1.0	3.0+3	1.6
1.5835+5	1	4.0	4.0+3	1.6
1.63 +5	1	1.0	2.0+3	1.6
1.665+5	1	1.0	1.8+3	1.6
1.69 +5	2	0.0	2.5+3	1.6
1.72 +5	1	1.0	2.0+3	1.6
1.755+5	2	0.0	3.0+3	1.6
1.79 +5	1	1.0	2.0+3	1.6
1.82 +5	2	0.0	2.0+3	1.6
1.855+5	2	0.0	2.5+3	1.6
1.905+5	2	0.0	3.0+3	1.6
1.95 +5	2	0.0	2.0+3	1.6
2.058+5	1	2.0	7.0+3	1.6
2.09 +5	1	1.0	1.8+3	1.6
2.12 +5	1	2.0	2.0+3	1.6
2.17 +5	1	2.0	1.5+3	1.6
2.23 +5	1	2.0	3.0+3	1.6
2.29 +5	1	1.0	2.0+3	1.6
2.33 +5	1	1.0	2.0+3	1.6
2.375+5	1	1.0	1.5+3	1.6
2.405+5	1	1.0	1.5+3	1.6
2.43 +5	2	1.0	1.0+3	1.6

Table 5: continued

E_r(eV)	l	J	Γ_n(eV)	Γ_γ(eV)
2.455+5	1	1.0	1.5+3	1.6
2.505+5	2	0.0	3.0+3	1.6
2.575+5	1	1.0	5.0+3	1.6
2.66 +5	2	0.0	1.5+3	1.6
2.71 +5	2	0.0	1.5+3	1.6
2.824+5	0	3.0	5.0+3	1.6
2.84 +5	1	1.0	2.5+3	1.6
2.88 +5	1	2.0	3.0+3	1.6
2.92 +5	2	1.0	1.5+3	1.6
2.945+5	1	2.0	2.0+3	1.6
3.0 +5	1	2.0	4.0+3	1.6
3.055+5	1	2.0	2.0+3	1.6
3.09 +5	1	2.0	2.0+3	1.6
3.118+5	0	3.0	4.0+3	1.6
3.165+5	2	0.0	1.5+3	1.6
3.295+5	2	0.0	1.5+3	1.6
3.39 +5	2	0.0	1.5+3	1.6
3.495+5	2	0.0	1.5+3	1.6
3.67 +5	1	4.0	5.0+3	1.6
3.7 +5	2	1.0	2.0+3	1.6
3.74 +5	1	2.0	3.5+3	1.6
3.848+5	0	2.0	4.0+3	1.6
4.045+5	2	1.0	2.0+3	1.6
4.075+5	2	1.0	2.0+3	1.6
4.11 +5	2	3.0	2.0+3	1.6
4.165+5	1	3.0	3.5+3	1.6
4.205+5	2	3.0	1.5+3	1.6
4.23 +5	2	2.0	1.5+3	1.6
4.26 +5	2	2.0	2.5+3	1.6
4.33 +5	1	4.0	4.0+3	1.6

Table 5: continued

E_r(eV)	l	J	Γ_n(eV)	Γ_γ(eV)
4.375+5	2	2.0	1.5+3	1.6
4.395+5	2	2.0	1.4+3	1.6
4.42 +5	2	3.0	1.5+3	1.6
4.45 +5	2	3.0	1.5+3	1.6

Table 6: Statistical s-wave resonance parameters for ^{27}Al ($I^{\pi}=5/2^{+}$)

$S_{J=2} = S_{J=3} = 2.24 \cdot 10^{-4}$

$\bar{D}_{J=2} = 35.6$ keV

$\bar{D}_{J=3} = 69.2$ keV

$\bar{\Gamma}^{(o)}_{n_{J=2}} = 8.0$ eV

$\bar{\Gamma}^{(o)}_{n_{J=3}} = 15.5$ eV

$\bar{\Gamma}_{\gamma_{J=2}} = \bar{\Gamma}_{\gamma_{J=3}} = 1.6$ eV

$\nu_{n_{J=2}} = \nu_{n_{J=3}} = 1$

$\nu_{\gamma_{J=2}} = \nu_{\gamma_{J=3}} = \infty$

$a = 2.69$/MeV

$\sigma^2 = 3$

Table 7: Angular distribution for N and Al

N

Energy (MeV)	Number of angular distributions	Reference
0.1 - 0.5	3	isotropic
0.8 - 2.36	20	14
3.07 - 4.85	6	15
4.99	1	16
5.15	1	15
5.66 - 6.53	3	16
7.0	1	17
7.11	1	15
8.0; 11.6	2	16
14.0	1	18
14.92; 15.83	2	15

Al

Energy (MeV)	Number of angular distributions	Reference
0.01	1	isotropic
0.03 - 1.45	20	19
2.01	1	20
2.5	1	21
2.7	1	22
3.01	1	20
3.5	1	23
3.7	1	24
3.85	1	23
3.97	1	20
4.1	1	25
4.2 - 4.8	3	23
5.0	1	26
7.0	1	21, 27
14.3	1	28 - 32

Table 8: Changes of ^{239}Pu-data on KEDAK

KEDAK cross section type name	Energy range of the changes in ABN-groups [13]
ALPHA	18 - 10
ETA	18 - 10; 3 - 1
CHIF	unchanged
MUEL	unchanged
NUE	3 - 1
SGA	18 - 1
SGALP	unchanged
SGF	15 - 1
SGG	18 - 1
SGI	4 - 1
SGN	18 - 4
SGP	unchanged
SGT	unchanged
SGTR	18 - 4
SG2N	unchanged
SGX	18 - 4

Figure Captions

Fig. 1 Fission Cross Section of ^{239}Pu from 1 keV to 10 keV

Fig. 2 Experimental results for the fission ratio $\sigma_f(^{239}Pu)/\sigma_f(^{235}U)$ and the evaluated curve in the energy range 10 keV to 2 MeV

Fig. 3 Experimental data and evaluated curve for the ^{239}Pu fission cross section above 2 MeV up to 10 MeV

Fig. 4 Comparison of presently and previously on KEDAK recommended data for $\sigma_f(^{239}Pu)$

Fig. 5 Comparison of the present evaluation of the ^{239}Pu fission cross section with Davey's evaluation and the ENDF/BII-data

Fig. 6 Comparison of the present evaluation of the fission ratio $\sigma_f(^{239}Pu)/\sigma_f(^{235}U)$ with most recent experimental results of Soleilhac et al.

Fig. 7 Comparison of the present evaluation of the ^{239}Pu fission cross section with most recent experimental results of Szabo, Leroy et al.

Fig. 8 Presently and previously on KEDAK recommended α-values in the energy range 100 eV - 100 keV

Fig. 9 Comparison of the Gwin-results with other most recent α-measurements

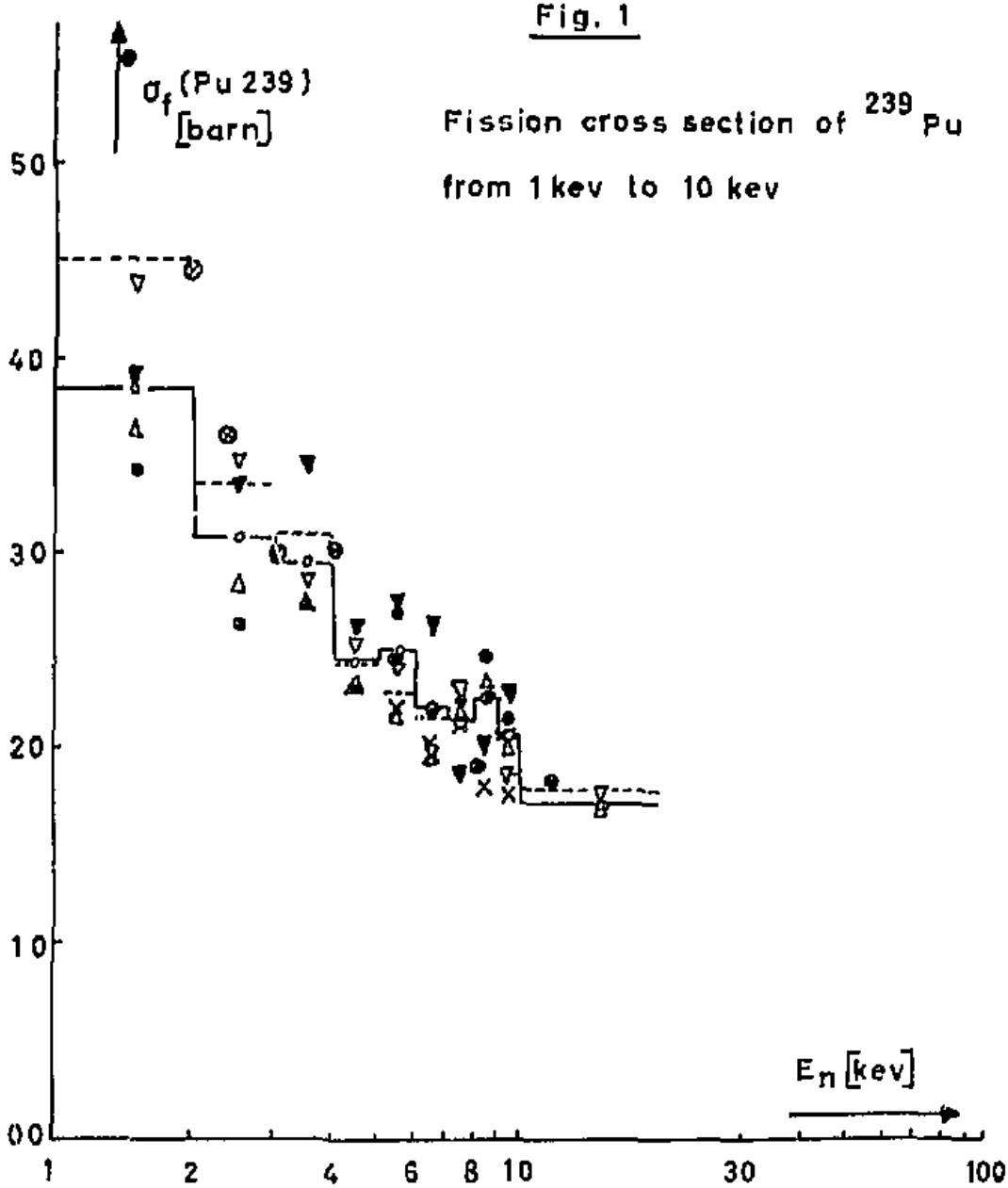
Fig. 10 $\bar{\nu}_{49}$ in the energy range 0 to 15 MeV

Fig. 11 Comparison of the $\bar{\nu}_{49}(E)$-curve recommended on KEDAK with most recent $\bar{\nu}$-measurements of Soleilhac et al.

Fig. 12 Comparison of the $\bar{\nu}_{49}(E)$-curve recommended on KEDAK with most recent $\bar{\nu}$-measurements of Mather et al.

Fig. 1

Fission cross section of ^{239}Pu from 1 kev to 10 kev



▼ Bollinger et al. [34]

Δ Patrick et al. [34]

X Gilboy and Knoll [34]

● Shunk et al. [34]

∇ James [34]

⊗ Lehto [38]

--- Gwin et al. [37]

-o- recommended by James and Patrick [34] ≡ presently recommended on KEDAK up to 10 kev

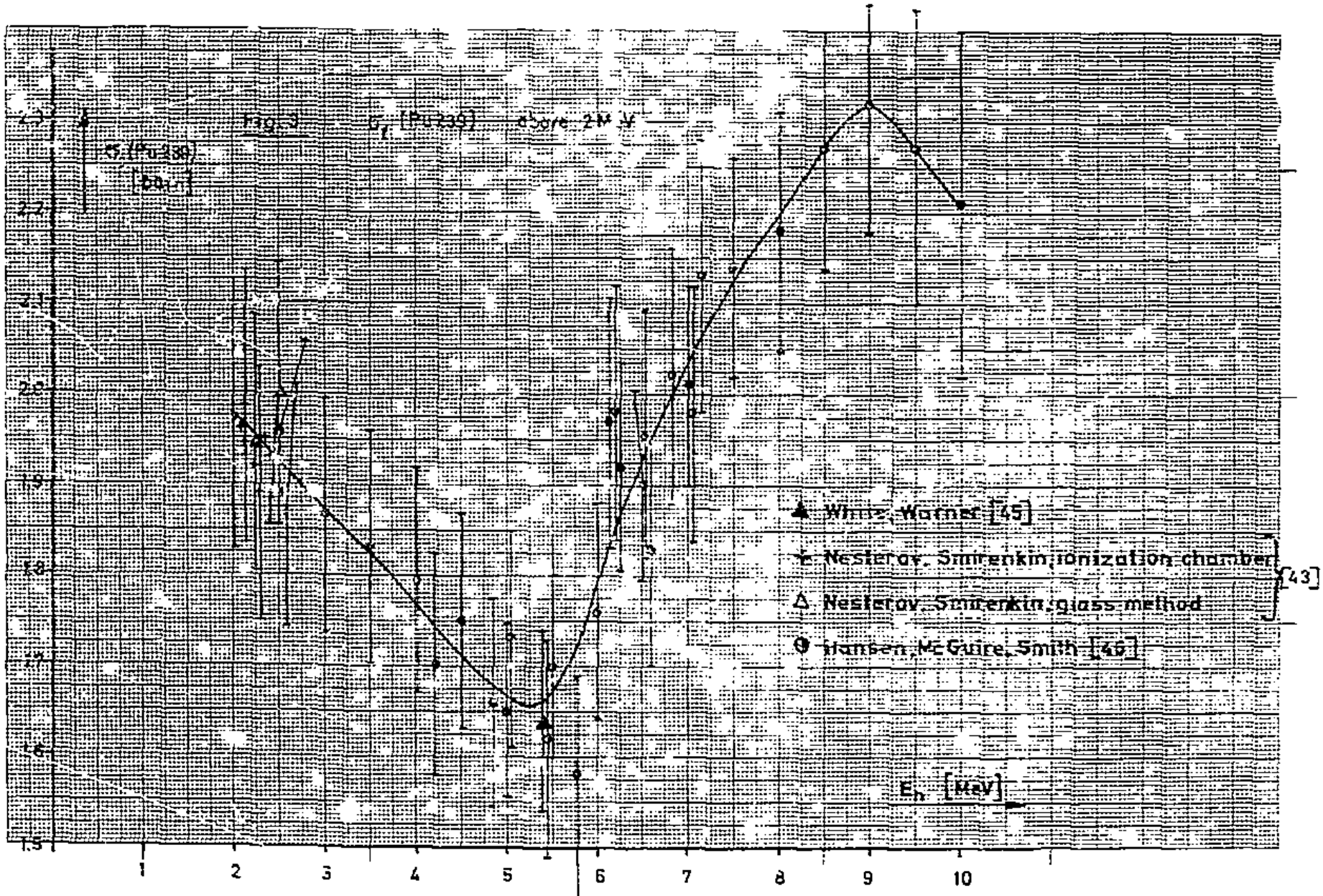


Fig. 3
σf (Pu239)
[barn]
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1
2
3
4
5
6
7
8
9
10
Eh [MeV]
White, Warner [45]
Nesterov, Smirenkin; ionization chamber
Nesterov, Smirenkin; glass method
[43]
Hansen, McGuire, Smith [46]

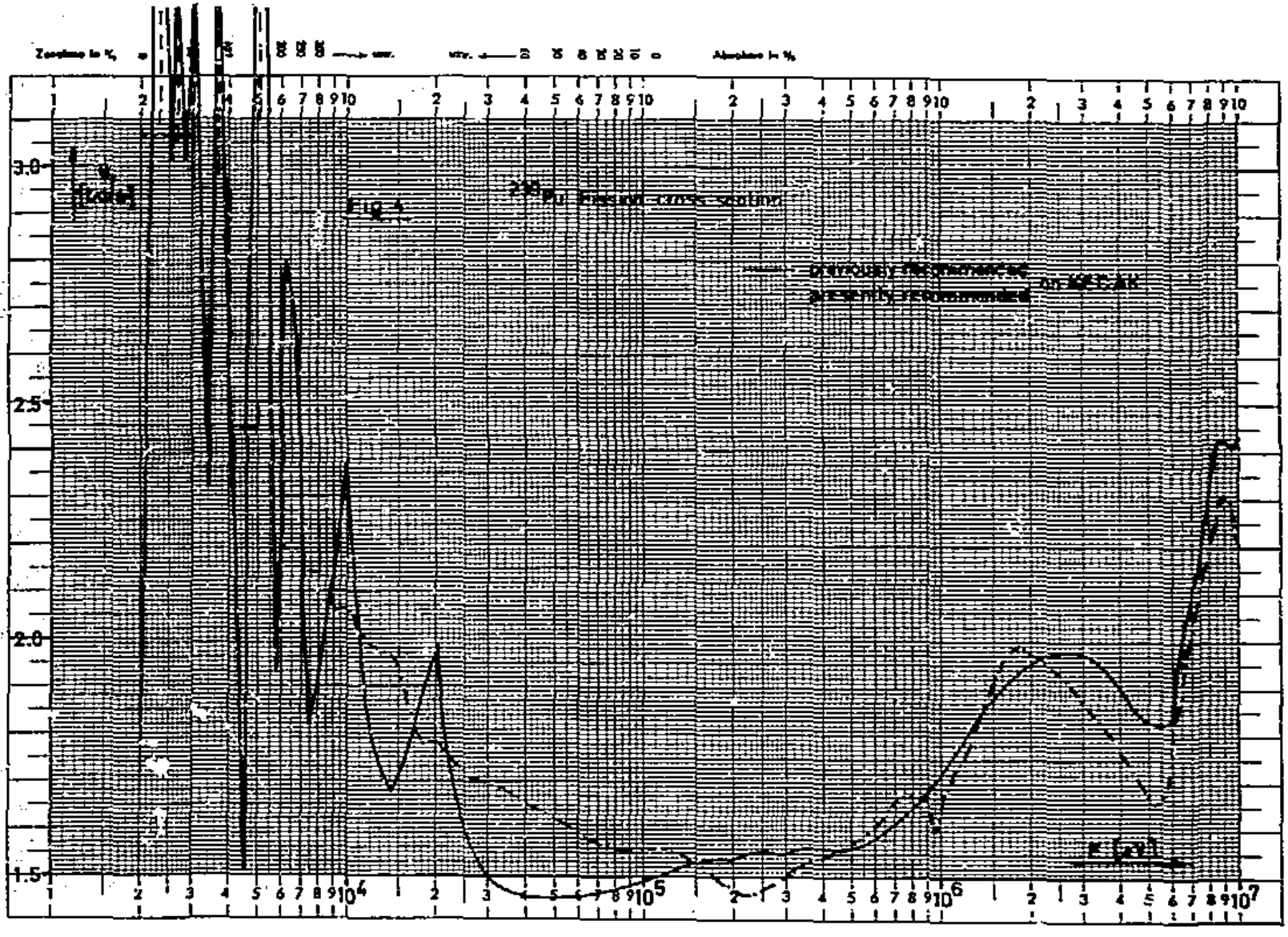


Fig. 4
^{239}Pu fission cross section
previously recommended
recently recommended
on KFK-AK
3.0
2.5
2.0
1.5
10^4
10^5
10^6
10^7

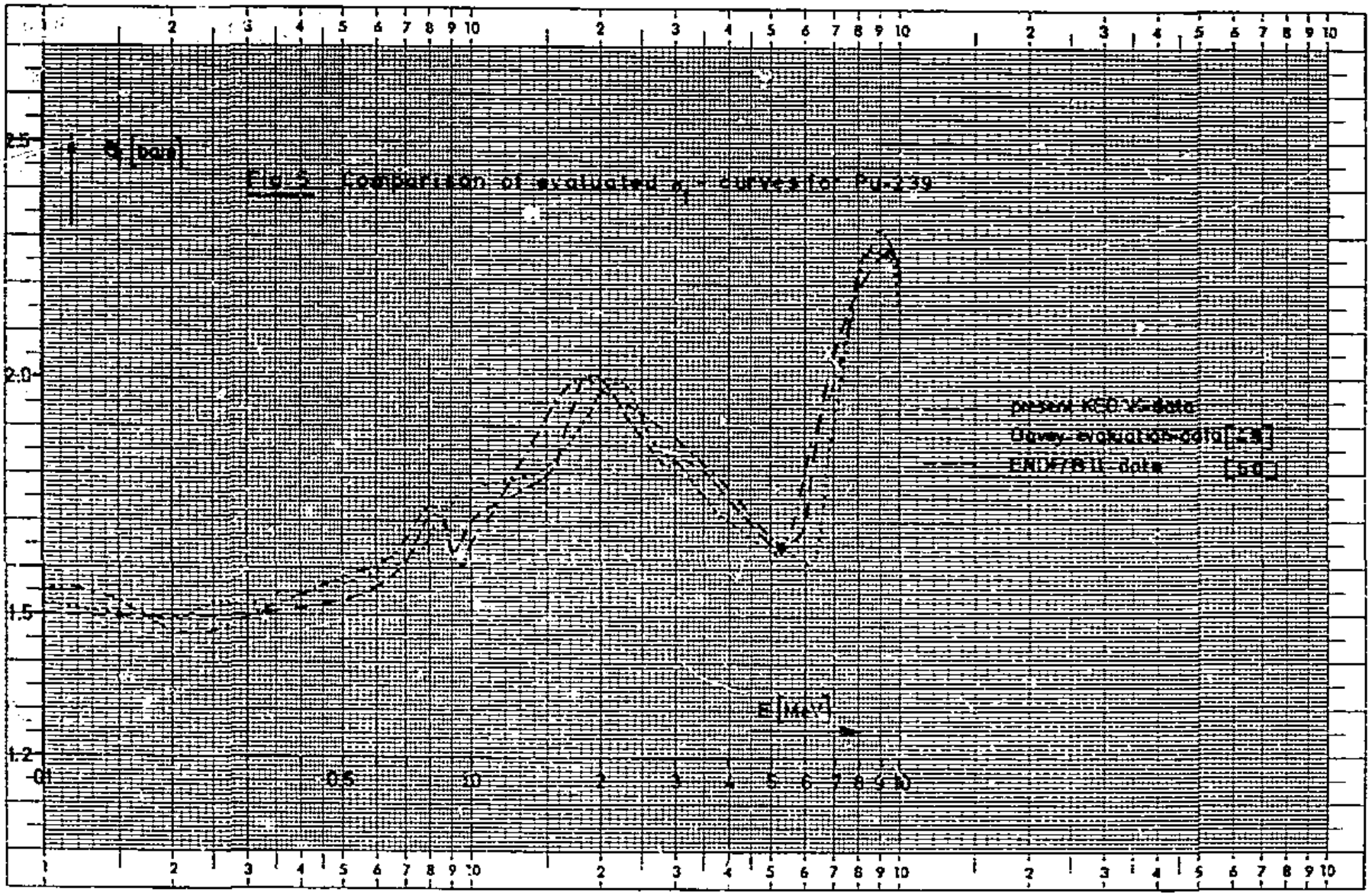
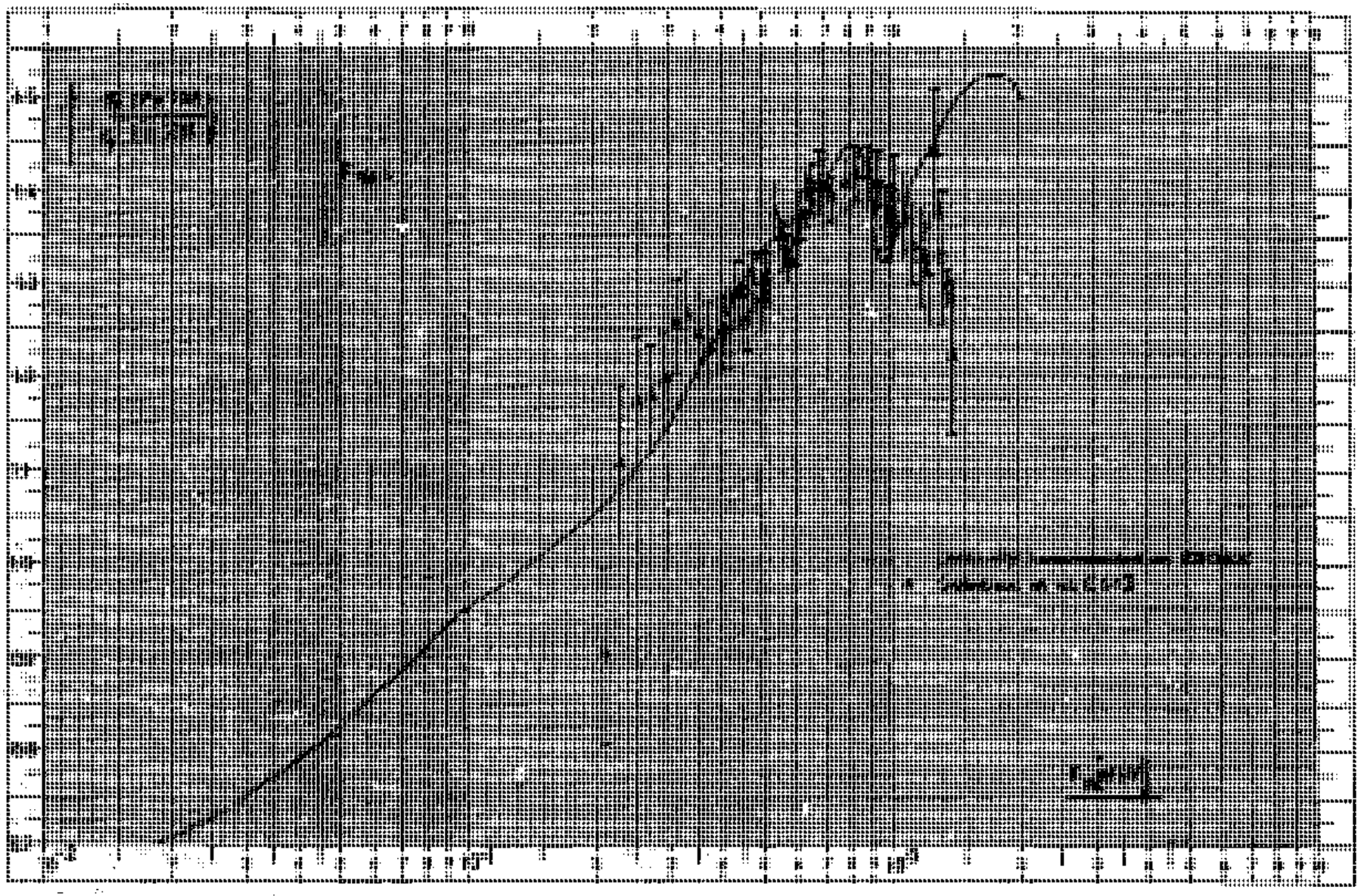
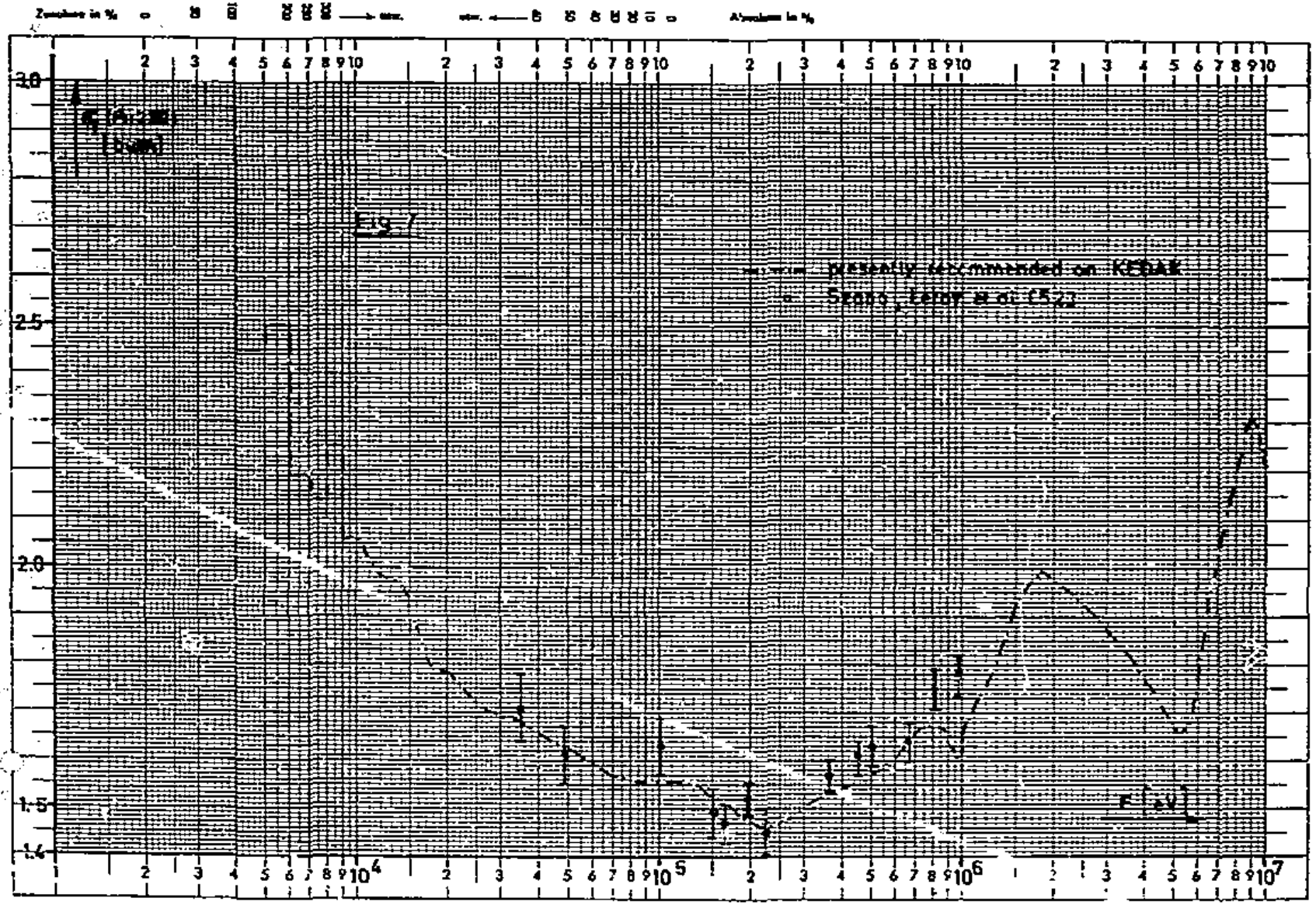


Fig. 2 Comparison of evaluated η - curves for Pu-239




presently recommended on KODAK
Sensitometry et al. (5,2)
E (eV)
3.0
2.5
2.0
1.5
1.4
10^4
10^5
10^6
10^7

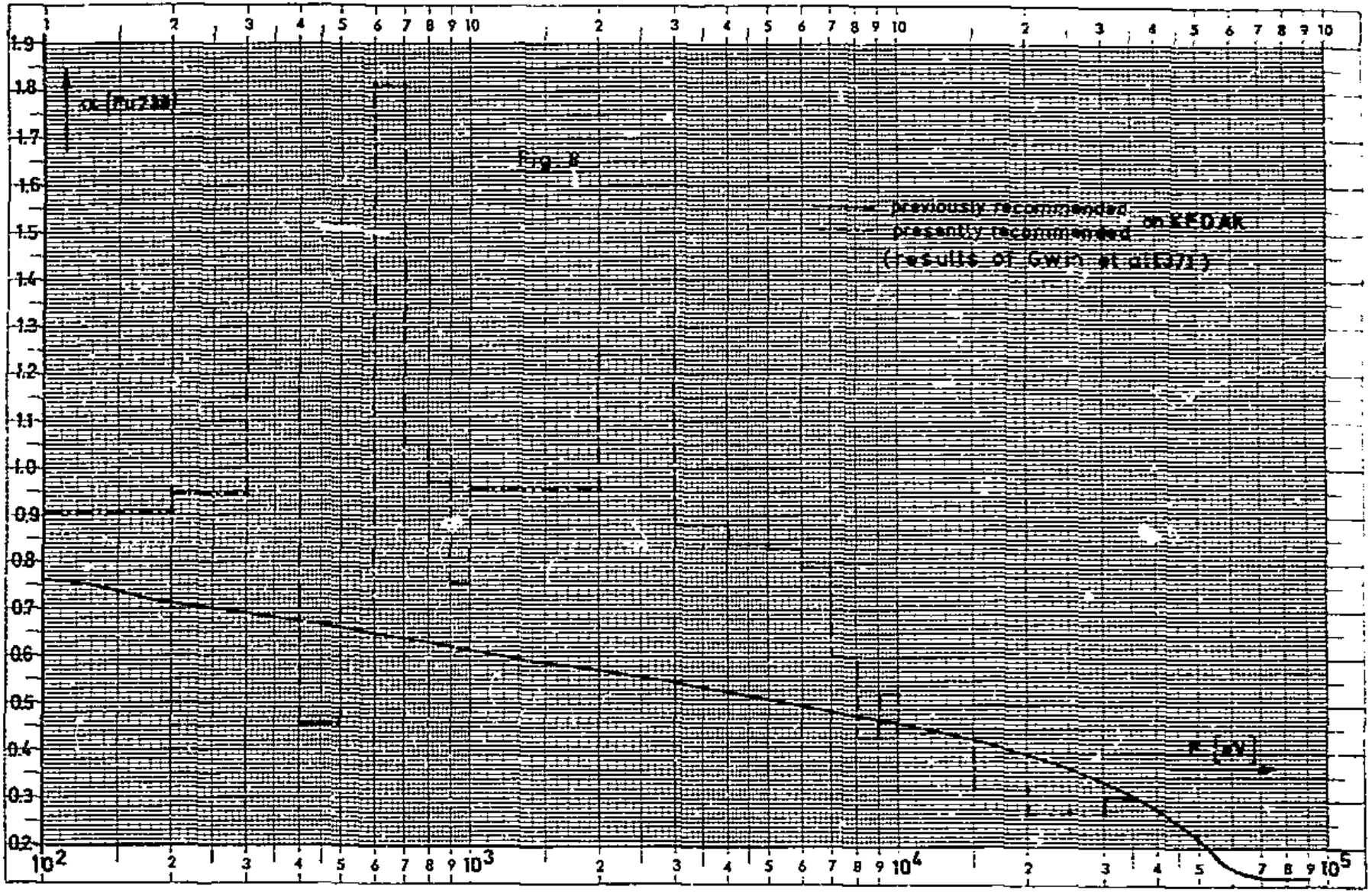
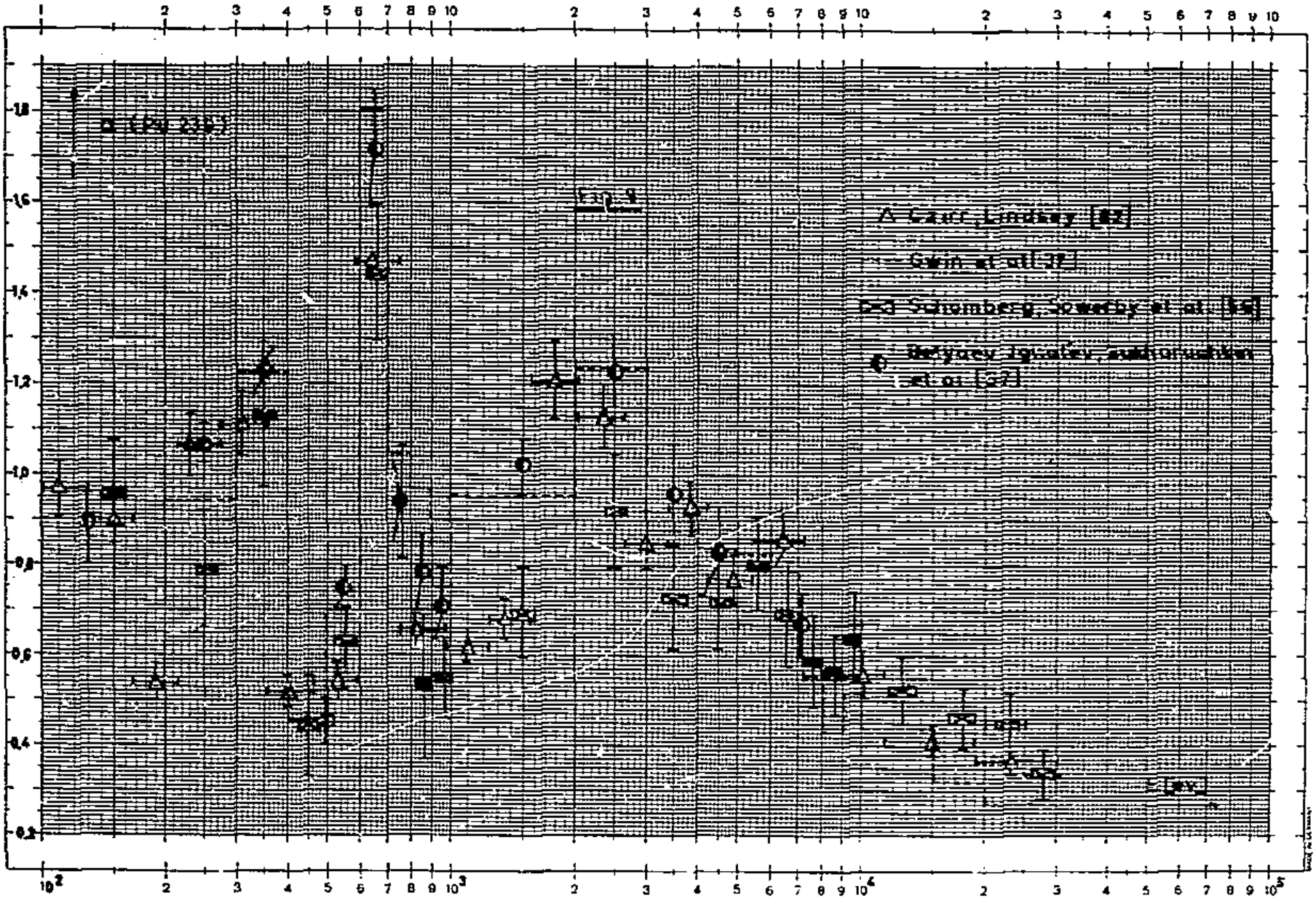


Fig. 8
σ [Pu239]
E [eV]
previously recommended on KEDAK
presently recommended
(results of GWIN et al.[37])
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
10^2
10^3
10^4
10^5


Δ Gauer, Lindsay [82]
Gwin et al. [37]
Schomberg, Sowerby et al. [55]
Betyaev, Ignatiev, Sukhorukov et al. [27]
[eV]

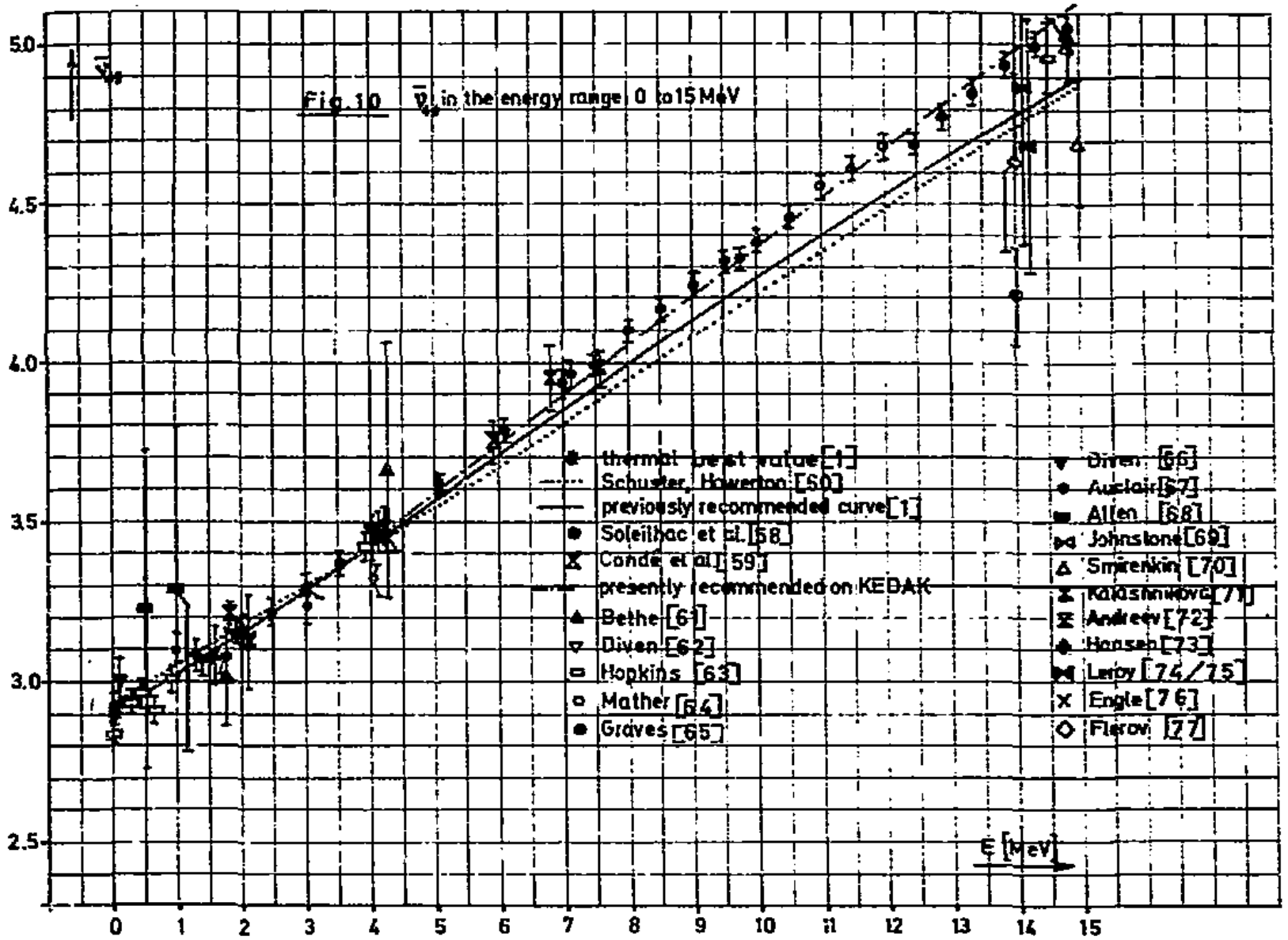


Fig.10 $\bar{\nu}_d$ in the energy range 0 to 15 MeV
5.0
4.5
4.0
3.5
3.0
2.5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
E [MeV]
thermal reset value [1]
Schuster, Howerton [60]
previously recommended curve [1]
Soleilhac et al. [58]
Conde et al. [59]
presently recommended on KEDAK
Bethe [61]
Diven [62]
Hopkins [63]
Mather [64]
Graves [65]
Diven [66]
Auclair [67]
Allen [68]
Johnstone [69]
Smirenkin [70]
Kolesnikova [71]
Andreev [72]
Hansen [73]
Leroy [74/75]
Engle [76]
Flerov [77]

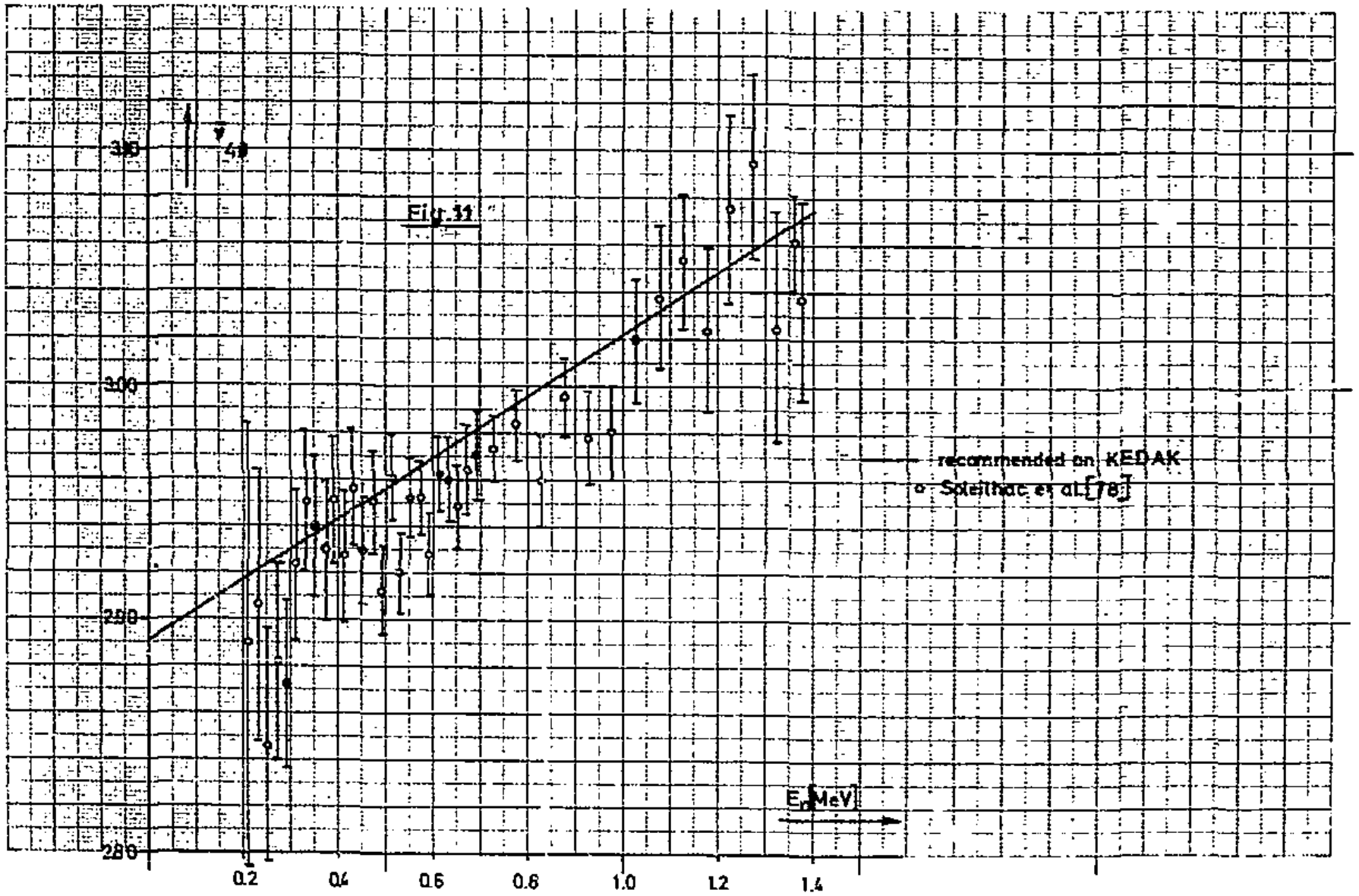


Fig.11
350
300
250
280
0.2
0.4
0.6
0.8
1.0
1.2
1.4
E_n [MeV]
recommended on KEDAK
Soleilhac et al. [78]

Appendix

Computer listings of the present cross section data for ^{239}Pu on KEDAK

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
1.0000E-3	23.0259	4829.95500	11.35000	4829.92300	868.60500	3950.00000	0.0	0.0	4818.60500
1.5000E-3	22.6204	3970.12200	11.34000	3970.09000	778.78200	3180.00000	0.0	0.0	3958.78200
2.0000E-3	22.3327	3469.91000	11.34000	3469.87800	733.57000	2725.00000	0.0	0.0	3459.57000
2.5000E-3	22.1096	3119.94800	11.34000	3119.91600	683.60300	2425.00000	0.0	0.0	3108.60800
3.0000E-3	21.9272	2879.97700	11.33000	2879.94500	653.64700	2215.00000	0.0	0.0	2868.64700
4.0000E-3	21.6396	2495.67500	11.33000	2495.64300	589.34500	1895.00000	0.0	0.0	2484.34500
5.0000E-3	21.4164	2230.19300	11.32000	2230.16100	543.87300	1675.00000	0.0	0.0	2218.87300
6.0000E-3	21.2341	2056.61400	11.31000	2056.58200	515.30400	1530.00000	0.0	0.0	2045.30400
7.0000E-3	21.0799	1917.45700	11.31000	1917.42500	491.14700	1415.00000	0.0	0.0	1906.14700
8.0000E-3	20.9464	1794.44000	11.30000	1794.40800	468.14000	1315.00000	0.0	0.0	1783.14000
9.0000E-3	20.8286	1702.66000	11.30000	1702.62800	451.36000	1240.00000	0.0	0.0	1691.36000
10.0000E-3	20.7233	1598.99300	11.29000	1598.96200	429.30300	1158.40000	0.0	0.0	1587.70300
15.0000E-3	20.3178	1321.74600	11.26000	1321.71500	359.75600	950.73000	0.0	0.0	1310.48600
20.0000E-3	20.0301	1135.31000	11.23000	1135.27800	295.14000	828.94000	0.0	0.0	1124.08000
25.3000E-3	19.7950	1021.50300	11.19000	1021.47200	268.31300	742.00000	0.0	0.0	1010.31300
30.0000E-3	19.6247	948.38200	11.16000	948.35100	250.63200	686.59000	0.0	0.0	937.22200
35.0000E-3	19.4705	888.22800	11.13000	888.19700	236.20800	640.89000	0.0	0.0	877.09800
40.0000E-3	19.3370	841.58800	11.09000	841.55700	225.74800	604.75000	0.0	0.0	830.49800
45.0000E-3	19.2192	804.02100	11.06000	803.99000	217.37100	575.59000	0.0	0.0	792.96100
50.0000E-3	19.1138	773.90900	11.03000	773.87800	210.38900	552.49000	0.0	0.0	762.87900

E	U	SGI	SG2N	SGX	MUEL	NUE	ALPHA	ETA	CHIF
1.0000E-3	23.0259	0.0	0.0	4819.60500	0.00279	2.89200	0.21990	2.37069	0.00002
1.5000E-3	22.6204	0.0	0.0	3958.78200	0.00279	2.89200	0.24490	2.32308	0.00003
2.0000E-3	22.3327	0.0	0.0	3458.57000	0.00279	2.89200	0.26920	2.27860	0.00003
2.5000E-3	22.1096	0.0	0.0	3109.60800	0.00279	2.89200	0.28150	2.25503	0.00003
3.0000E-3	21.9272	0.0	0.0	2866.64700	0.00279	2.89200	0.29510	2.23303	0.00004
4.0000E-3	21.6396	0.0	0.0	2484.34500	0.00279	2.89200	0.31100	2.20595	0.00004
5.0000E-3	21.4164	0.0	0.0	2218.87300	0.00279	2.89200	0.32470	2.18314	0.00005
6.0000E-3	21.2341	0.0	0.0	2045.30400	0.00279	2.89200	0.33680	2.16338	0.00005
7.0000E-3	21.0799	0.0	0.0	1906.14700	0.00279	2.89200	0.34710	2.14683	0.00006
8.0000E-3	20.9464	0.0	0.0	1783.14000	0.00279	2.89200	0.35600	2.13274	0.00006
9.0000E-3	20.8286	0.0	0.0	1691.36000	0.00279	2.89200	0.36400	2.12023	0.00007
10.0000E-3	20.7233	0.0	0.0	1587.70300	0.00279	2.89200	0.37060	2.11002	0.00007
15.0000E-3	20.3178	0.0	0.0	1310.48600	0.00279	2.89200	0.37840	2.09308	0.00008
20.0000E-3	20.0301	0.0	0.0	1124.08000	0.00279	2.89200	0.35604	2.13267	0.00010
25.3000E-3	19.7950	0.0	0.0	1010.31300	0.00279	2.89200	0.36161	2.12396	0.00011
30.0000E-3	19.6247	0.0	0.0	937.22200	0.00279	2.89200	0.36504	2.11362	0.00012
35.0000E-3	19.4705	0.0	0.0	877.09800	0.00279	2.89200	0.36856	2.11317	0.00013
40.0000E-3	19.3370	0.0	0.0	830.49800	0.00279	2.89200	0.37329	2.10589	0.00014
45.0000E-3	19.2192	0.0	0.0	792.96100	0.00279	2.89200	0.37765	2.09923	0.00015
50.0000E-3	19.1139	0.0	0.0	762.87900	0.00279	2.89200	0.38080	2.09444	0.00015

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
55.0000E-3	19.0185	749.91900	10.99000	749.88000	205.53900	533.39000	0.0	0.0	738.92900
60.0000E-3	18.9315	731.19200	10.96000	731.16200	202.45200	517.78000	0.0	0.0	720.23200
65.0000E-3	18.8515	716.60400	10.92000	716.57400	200.48400	505.20000	0.0	0.0	705.68400
70.0000E-3	18.7774	705.40300	10.89000	705.37200	199.64300	494.87000	0.0	0.0	694.51300
75.0000E-3	18.7084	697.73200	10.85000	697.70200	200.50200	486.38000	0.0	0.0	686.88200
80.0000E-3	18.6438	693.33900	10.82000	693.30900	202.81900	479.70000	0.0	0.0	682.51900
85.0000E-3	18.5832	692.19500	10.78000	692.16500	206.57500	474.84000	0.0	0.0	681.41500
90.0000E-3	18.5260	693.31800	10.75000	693.28800	211.06800	471.50000	0.0	0.0	682.56800
95.0000E-3	18.4720	695.61900	10.71000	695.58900	215.69900	469.21000	0.0	0.0	684.90900
100.0000E-3	18.4207	699.01900	10.68000	698.98900	220.16900	468.17000	0.0	0.0	688.33900
110.0000E-3	18.3254	709.27000	10.60000	709.24800	230.00000	468.67000	0.0	0.0	698.67800
120.0000E-3	18.2384	728.57000	10.53000	728.54000	242.30000	475.74000	0.0	0.0	718.04000
130.0000E-3	18.1583	755.22600	10.46000	755.19700	256.62600	488.14000	0.0	0.0	744.76600
140.0000E-3	18.0842	797.03500	10.39000	797.00600	276.17500	510.47000	0.0	0.0	786.64500
150.0000E-3	18.0152	847.67600	10.33000	847.64700	298.99600	538.35000	0.0	0.0	837.34600
160.0000E-3	17.9507	908.28000	10.28000	908.25100	325.50000	572.50000	0.0	0.0	898.00000
170.0000E-3	17.8901	991.75200	10.25000	991.72300	360.61200	620.89000	0.0	0.0	981.50200
180.0000E-3	17.8329	1096.37900	10.24000	1096.35000	403.77900	682.36000	0.0	0.0	1086.13900
190.0000E-3	17.7788	1223.32000	10.26000	1223.291 0	455.99000	757.07000	0.0	0.0	1213.06000
200.0000E-3	17.7275	1383.95800	10.34000	1383.93000	521.66800	851.95000	0.0	0.0	1373.61800

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
55.0000E-3	19.0185	0.0	0.0	738.92900	0.00279	2.89200	0.38534	2.08757	0.00016
60.0000E-3	18.9315	0.0	0.0	720.23200	0.00279	2.89200	0.39100	2.07308	0.00017
65.0000E-3	18.8515	0.0	0.0	705.68400	0.00279	2.89200	0.39684	2.07039	0.00017
70.0000E-3	18.7774	0.0	0.0	694.51300	0.00279	2.89200	0.40342	2.06087	0.00018
75.0000E-3	18.7084	0.0	0.0	686.88200	0.00279	2.89200	0.41223	2.04782	0.00019
80.0000E-3	18.6438	0.0	0.0	682.51900	0.00279	2.89200	0.42280	2.03261	0.00019
85.0000E-3	18.5832	0.0	0.0	681.41500	0.00279	2.89200	0.43504	2.01527	0.00020
90.0000E-3	18.5260	0.0	0.0	682.56800	0.00279	2.89200	0.44765	1.99772	0.00021
95.0000E-3	18.4720	0.0	0.0	684.90900	0.00279	2.89200	0.46971	1.98122	0.00021
100.0000E-3	18.4207	0.0	0.0	688.33900	0.00279	2.89200	0.47028	1.96398	0.00022
110.0000E-3	18.3254	0.0	0.0	698.67800	0.00279	2.89200	0.49077	1.93994	0.00023
120.0000E-3	18.2384	0.0	0.0	718.04000	0.00279	2.89200	0.50931	1.91611	0.00024
130.0000E-3	18.1583	0.0	0.0	744.76600	0.00279	2.89200	0.52572	1.89550	0.00025
140.0000E-3	18.0842	0.0	0.0	786.64500	0.00279	2.89200	0.54102	1.87668	0.00026
150.0000E-3	18.0152	0.0	0.0	837.34600	0.00279	2.89200	0.55539	1.85934	0.00027
160.0000E-3	17.9507	0.0	0.0	898.00000	0.00279	2.89200	0.56856	1.84373	0.00027
170.0000E-3	17.8901	0.0	0.0	981.50200	0.00279	2.89200	0.58080	1.82946	0.00028
180.0000E-3	17.8329	0.0	0.0	1086.13900	0.00279	2.89200	0.59174	1.81628	0.00029
190.0000E-3	17.7788	0.0	0.0	1213.06000	0.00279	2.89200	0.60231	1.80490	0.00030
200.0000E-3	17.7275	0.0	0.0	1373.61800	0.00279	2.89200	0.61232	1.79369	0.00031

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALF	SGA
210.0000E-3	17.6787	1585.53600	10.51000	1585.50700	603.96600	971.06000	0.0	0.0	1575.02600
220.0000E-3	17.6322	1843.81800	10.80000	1843.78000	709.44800	1123.57000	0.0	0.0	1833.01800
230.0000E-3	17.5878	2164.99600	11.28000	2164.96400	840.06600	1313.65000	0.0	0.0	2153.71600
240.0000E-3	17.5452	2565.57000	12.05000	2565.53600	1000.14000	1553.38000	0.0	0.0	2553.52000
250.0000E-3	17.5044	3078.90800	13.23000	3078.87100	1203.67800	1862.00000	0.0	0.0	3065.67800
260.0000E-3	17.4652	3736.64600	15.00000	3736.60500	1462.37600	2259.27000	0.0	0.0	3721.64600
270.0000E-3	17.4274	4412.29400	17.47000	4412.24500	1727.49400	2667.33000	0.0	0.0	4394.82400
280.0000E-3	17.3911	4934.09100	20.57000	4934.02300	1931.38100	2982.14000	0.0	0.0	4913.52100
290.0000E-3	17.3560	5364.95900	23.82000	5364.89300	2098.91900	3242.22000	0.0	0.0	5341.13900
292.0000E-3	17.3491	5390.57200	24.42000	5390.50400	2108.38200	3257.77000	0.0	0.0	5366.15200
294.0000E-3	17.3423	5382.26000	24.98000	5382.19000	2104.53000	3252.75000	0.0	0.0	5357.28000
296.0000E-3	17.3355	5362.54700	25.50000	5362.47500	2096.21700	3240.83000	0.0	0.0	5337.04700
298.0000E-3	17.3288	5329.38400	[illegible].97000	5329.31200	2082.64400	3220.77000	0.0	0.0	5303.41400
300.0000E-3	17.3221	5262.83900	26.39000	5262.76500	2055.98900	3180.46000	0.0	0.0	5236.44900
310.0000E-3	17.2893	4587.82400	27.62000	4587.74700	1789.91400	2771.29000	0.0	0.0	4560.20400
320.0000E-3	17.2575	3948.91000	27.50000	3948.83300	1536.71000	2384.70000	0.0	0.0	3921.41000
330.0000E-3	17.2268	3385.23300	26.51000	3385.15900	1313.32300	2045.40000	0.0	0.0	3358.72300
340.0000E-3	17.1969	2900.04000	25.15000	2899.97000	1120.47000	1754.42000	0.0	0.0	2874.89000
350.0000E-3	17.1679	2455.40800	23.75000	2455.34200	944.18800	1487.47000	0.0	0.0	2431.65800
360.0000E-3	17.1397	2059.99100	22.45000	2059.92800	787.54100	1250.00000	0.0	0.0	2037.54100

E	U	SGI	SG2N	SGX	MUEL	NUE	ALPHA	ETA	CHIF
210.0000E-3	17.6787	0.0	0.0	1575.02600	0.00279	2.89200	0.62197	1.78302	0.00031
220.0000E-3	17.6322	0.0	0.0	1833.01800	0.00279	2.89200	0.63142	1.77289	0.00032
230.0000E-3	17.5878	0.0	0.0	2153.71600	0.00279	2.89200	0.63949	1.76396	0.00033
240.0000E-3	17.5452	0.0	0.0	2553.52000	0.00279	2.89200	0.64385	1.75929	0.00034
250.0000E-3	17.5044	0.0	0.0	3065.67800	0.00279	2.89200	0.64644	1.75651	0.00034
260.0000E-3	17.4652	0.0	0.0	3721.64600	0.00279	2.89200	0.64728	1.75562	0.00035
270.0000E-3	17.4274	0.0	0.0	4394.82400	0.00279	2.89200	0.64765	1.75523	0.00036
280.0000E-3	17.3911	0.0	0.0	4913.52100	0.00279	2.89200	0.64765	1.75523	0.00036
290.0000E-3	17.3560	0.0	0.0	5341.13900	0.00279	2.89200	0.64737	1.75552	0.00037
292.0000E-3	17.3491	0.0	0.0	5366.15200	0.00279	2.89200	0.64719	1.75572	0.00037
294.0000E-3	17.3423	0.0	0.0	5357.28000	0.00279	2.89200	0.64700	1.75592	0.00037
296.0000E-3	17.3355	0.0	0.0	5337.04700	0.00279	2.89200	0.64681	1.75612	0.00037
298.0000E-3	17.3288	0.0	0.0	5303.41400	0.00279	2.89200	0.64663	1.75632	0.00037
300.0000E-3	17.3221	0.0	0.0	5236.44900	0.00279	2.89200	0.64644	1.75651	0.00038
310.0000E-3	17.2893	0.0	0.0	4560.20400	0.00279	2.89200	0.64552	1.75750	0.00038
320.0000E-3	17.2575	0.0	0.0	3921.41000	0.00279	2.89200	0.64440	1.75869	0.00039
330.0000E-3	17.2268	0.0	0.0	3358.72300	0.00279	2.89200	0.64209	1.76117	0.00039
340.0000E-3	17.1969	0.0	0.0	2874.89000	0.00279	2.89200	0.63866	1.76486	0.00040
350.0000E-3	17.1679	0.0	0.0	2431.65800	0.00279	2.89200	0.63476	1.76907	0.00041
360.0000E-3	17.1397	0.0	0.0	2037.54100	0.00279	2.89200	0.63003	1.77420	0.00041

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
370.0000E-3	17.1123	1722.59400	21.32000	1722.53400	654.05400	1047.22000	0.0	0.0	1701.27400
380.0000E-3	17.0857	1438.75500	20.35000	1438.69900	542.40500	876.00000	0.0	0.0	1418.40500
390.0000E-3	17.0597	1208.71200	19.52000	1208.65700	452.60200	736.59000	0.0	0.0	1189.19200
400.0000E-3	17.0344	1025.37900	18.01000	1025.32600	381.22900	625.34000	0.0	0.0	1006.56900
420.0000E-3	16.9856	750.15900	17.68000	750.11000	274.19900	458.28000	0.0	0.0	732.47900
440.0000E-3	16.9391	568.37500	16.84000	568.32800	204.04500	347.49000	0.0	0.0	551.53500
460.0000E-3	16.8946	446.17300	16.19000	446.12000	157.16300	272.82000	0.0	0.0	429.98300
480.0000E-3	16.8521	370.50200	15.67000	370.25800	128.02200	226.61000	0.0	0.0	354.63200
500.0000E-3	16.8112	314.54300	15.26000	314.50000	106.68300	192.60000	0.0	0.0	299.28300
520.0000E-3	16.7720	273.41900	14.91000	273.37700	90.95881	167.55000	0.0	0.0	258.50900
540.0000E-3	16.7343	240.78500	14.63000	240.74400	78.55461	147.60000	0.0	0.0	226.15500
560.0000E-3	16.6979	213.95600	14.38000	213.91500	68.42560	131.15000	0.0	0.0	199.57600
580.0000E-3	16.6628	191.74300	14.17000	191.70300	60.07282	117.50000	0.0	0.0	177.57300
600.0000E-3	16.6289	173.05300	13.98000	173.01400	53.07293	106.00000	0.0	0.0	159.07300
650.0000E-3	16.5489	137.82500	13.61000	137.78700	40.06526	84.15000	0.0	0.0	124.21500
700.0000E-3	16.4748	114.32800	13.32000	114.29100	31.40827	69.60000	0.0	0.0	101.00800
750.0000E-3	16.4058	98.35133	13.10000	98.31478	25.55133	59.70000	0.0	0.0	85.25133
800.0000E-3	16.3412	85.95076	12.91000	85.91475	21.04076	52.00000	0.0	0.0	73.04076
850.0000E-3	16.2806	76.84178	12.76000	76.80618	17.73178	46.35000	0.0	0.0	64.08178
900.0000E-3	16.2235	69.55285	12.62000	69.51764	15.08285	41.85000	0.0	0.0	56.93285

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
370.0000E-3	17.1123	0.0	0.0	1701.27400	0.00279	2.89200	0.62456	1.78017	0.00042
380.0000E-3	17.0857	0.0	0.0	1418.40500	0.00279	2.89200	0.61918	1.78508	0.00042
390.0000E-3	17.0597	0.0	0.0	1189.19200	0.00279	2.89200	0.61446	1.79132	0.00043
400.0000E-3	17.0344	0.0	0.0	1006.56900	0.00279	2.89200	0.60963	1.79668	0.00043
420.0000E-3	16.9856	0.0	0.0	732.47900	0.00279	2.89200	0.59832	1.80940	0.00044
440.0000E-3	16.9391	0.0	0.0	551.53500	0.00279	2.89200	0.58720	1.82208	0.00045
460.0000E-3	16.8946	0.0	0.0	429.98300	0.00279	2.89200	0.57607	1.83494	0.00046
480.0000E-3	16.8521	0.0	0.0	354.63200	0.00279	2.89200	0.56494	1.84799	0.00047
500.0000E-3	16.8112	0.0	0.0	299.28300	0.00279	2.89200	0.55391	1.86111	0.00048
520.0000E-3	16.7720	0.0	0.0	258.50900	0.00279	2.89200	0.54288	1.87442	0.00049
540.0000E-3	16.7343	0.0	0.0	226.15500	0.00279	2.89200	0.53221	1.88747	0.00050
560.0000E-3	16.6979	0.0	0.0	199.57600	0.00279	2.89200	0.52174	1.90046	0.00051
580.0000E-3	16.6628	0.0	0.0	177.57300	0.00279	2.89200	0.51126	1.91364	0.00052
600.0000E-3	16.6289	0.0	0.0	159.07300	0.00279	2.89200	0.50069	1.92712	0.00053
650.0000E-3	16.5489	0.0	0.0	124.21500	0.00279	2.89200	0.47612	1.95919	0.00055
700.0000E-3	16.4748	0.0	0.0	101.00800	0.00279	2.89200	0.45127	1.99274	0.00057
750.0000E-3	16.4058	0.0	0.0	85.25133	0.00279	2.89200	0.42800	2.02522	0.00059
800.0000E-3	16.3412	0.0	0.0	73.04076	0.00279	2.89200	0.40463	2.05391	0.00061
850.0000E-3	16.2806	0.0	0.0	64.08178	0.00279	2.09200	0.38256	2.09177	0.00063
900.0000E-3	16.2235	0.0	0.0	56.93285	0.00279	2.89200	0.36040	2.12584	0.00065

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
950.0000E-3	16.1694	63.50690	12.50000	63.47203	12.93690	38.07000	0.0	0.0	51.00690
1.0000E00	16.1181	58.94899	12.38000	58.91445	11.26899	35.30000	0.0	0.0	46.56899
1.2000E00	15.9358	47.09817	12.06000	47.06452	6.67817	28.36000	0.0	0.0	35.03817
1.4000E00	15.7816	39.62015	11.82000	39.58717	3.89015	23.91000	0.0	0.0	27.80015
1.6000E00	15.6481	34.83751	11.64000	34.80503	2.55751	20.64000	0.0	0.0	23.19751
1.8000E00	15.5303	31.75257	11.49000	31.72051	2.10257	18.16000	0.0	0.0	20.26257
2.0000E00	15.4249	29.39280	11.36000	29.36110	1.83280	16.20000	0.0	0.0	18.03280
2.5000E00	15.2018	25.73233	11.11000	25.70133	1.50233	13.12000	0.0	0.0	14.62233
3.0000E00	15.0195	23.48182	10.93000	23.45132	1.34182	11.21000	0.0	0.0	12.55182
3.5000E00	14.8653	21.78463	10.76000	21.75460	1.25463	9.77000	0.0	0.0	11.02463
4.0000E00	14.7318	20.68494	10.62000	20.65531	1.24494	8.82000	0.0	0.0	10.06494
4.5000E00	14.6140	19.77564	10.31000	19.74688	1.29564	8.17000	0.0	0.0	9.46564
5.0000E00	14.5087	19.29183	10.15000	19.26351	1.40183	7.74000	0.0	0.0	9.14183
5.5000E00	14.4133	19.03658	9.97000	19.00877	1.55658	7.51000	0.0	0.0	9.06658
6.0000E00	14.3263	19.21973	9.73000	19.19259	1.86973	7.62000	0.0	0.0	9.48973
6.5000E00	14.2463	20.94014	9.39000	20.91394	2.77014	8.78000	0.0	0.0	11.55014
6.8000E00	14.2012	23.95605	9.08000	23.93072	4.19605	10.68000	0.0	0.0	14.87605
7.0000E00	14.1722	27.42670	8.77000	27.40223	5.93670	12.73000	0.0	0.0	18.65670
7.2000E00	14.1440	33.40233	8.30000	33.37918	9.14233	15.96000	0.0	0.0	25.10233
7.4000E00	14.1166	48.46106	7.50000	48.44013	17.84106	23.12000	0.0	0.0	40.96106

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
950.0000E-3	16.1694	0.0	0.0	51.00690	0.00279	2.89200	0.33982	2.15850	0.00067
1.0000E00	16.1181	0.0	0.0	46.56899	0.00279	2.89200	0.31923	2.19218	0.00068
1.2000E00	15.9358	0.0	0.0	35.03817	0.00279	2.89200	0.23548	2.34079	0.00075
1.4000E00	15.7816	0.0	0.0	27.80015	0.00279	2.89200	0.16270	2.48731	0.00081
1.6000E00	15.6481	0.0	0.0	23.19751	0.00279	2.89200	0.12351	2.57316	0.00087
1.8000E00	15.5303	0.0	0.0	20.26257	0.00279	2.89200	0.11578	2.59191	0.00092
2.0000E00	15.4249	0.0	0.0	18.03280	0.00279	2.89200	0.11314	2.59807	0.00097
2.5000E00	15.2018	0.0	0.0	14.62233	0.00279	2.89200	0.11451	2.59487	0.00108
3.0000E00	15.0195	0.0	0.0	12.55182	0.00279	2.89200	0.11970	2.58284	0.00119
3.5000E00	14.8653	0.0	0.0	11.02463	0.00279	2.89200	0.12642	2.56288	0.00128
4.0000E00	14.7318	0.0	0.0	10.06494	0.00279	2.89200	0.14115	2.53429	0.00137
4.5000E00	14.6140	0.0	0.0	9.46564	0.00279	2.89200	0.15895	2.49615	0.00145
5.0000E00	14.5087	0.0	0.0	9.14183	0.00279	2.89200	0.18111	2.44853	0.00153
5.5000E00	14.4133	0.0	0.0	9.06658	0.00279	2.89200	0.20727	2.39549	0.00161
6.0000E00	14.3263	0.0	0.0	9.48973	0.00279	2.89200	0.24537	2.32220	0.00168
6.5000E00	14.2463	0.0	0.0	11.55014	0.00279	2.89200	0.31551	2.19839	0.00175
6.8000E00	14.2012	0.0	0.0	14.87605	0.00279	2.89200	0.39289	2.07626	0.00179
7.0000E00	14.1722	0.0	0.0	18.65670	0.00279	2.89200	0.46557	1.97329	0.00181
7.2000E00	14.1440	0.0	0.0	25.10233	0.00279	2.89200	0.57283	1.83873	0.00184
7.4000E00	14.1166	0.0	0.0	40.96106	0.00279	2.89200	0.77167	1.63236	0.00186

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
7.5000E00	14.1032	67.38762	6.82000	67.36859	28.11762	32.45000	0.0	0.0	60.56762
7.6000E00	14.0899	103.35500	5.72000	103.33900	46.53509	51.10000	0.0	0.0	97.63509
7.7000E00	14.0769	248.92800	3.78470	248.91700	120.72400	124.41900	0.0	0.0	245.14300
7.7300E00	14.0730	391.00600	3.38180	390.99600	191.18000	196.44400	0.0	0.0	387.62400
7.7600E00	14.0691	687.39500	4.00140	687.38400	337.42400	345.97000	0.0	0.0	683.39400
7.7900E00	14.0653	1367.29000	9.33250	1367.26400	671.01000	686.94700	0.0	0.0	1357.95700
7.8100E00	14.0627	2143.01600	20.63730	2142.95900	1049.00700	1073.37200	0.0	0.0	2122.37900
7.8300E00	14.0601	2649.30300	37.39110	2649.19900	1291.09700	1320.81500	0.0	0.0	2611.91200
7.8500E00	14.0576	2160.75500	43.71440	2160.63400	1046.36900	1070.67200	0.0	0.0	2117.04200
7.8700E00	14.0550	1389.92500	38.80080	1389.81700	667.59900	683.52500	0.0	0.0	1351.12400
7.9000E00	14.0512	707.35800	29.84470	707.27400	334.48600	343.02700	0.0	0.0	677.51300
7.9300E00	14.0474	406.81700	23.87060	406.75000	188.80000	194.14700	0.0	0.0	382.94600
7.9600E00	14.0437	261.89000	20.45810	261.83300	118.80700	122.62400	0.0	0.0	241.43200
8.0000E00	14.0387	165.05900	17.69290	165.01000	72.27550	75.09090	0.0	0.0	147.36600
8.1000E00	14.0262	75.94390	14.37510	75.90379	29.80750	31.76130	0.0	0.0	61.56880
8.2000E00	14.0140	47.08730	12.88240	47.05136	16.23170	17.97320	0.0	0.0	34.20490
8.4000E00	13.9899	27.65610	11.47390	27.62409	7.21540	8.96680	0.0	0.0	16.18220
8.6000E00	13.9663	21.33570	10.76560	21.30566	4.30860	6.26150	0.0	0.0	10.57010
8.8000E00	13.9433	18.74270	10.30400	18.71995	3.08760	5.35710	0.0	0.0	8.44470
9.0000E00	13.9209	17.72680	9.94770	17.69905	2.53330	5.24580	0.0	0.0	7.77910

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
7.5000E00	14.1032	0.0	0.0	60.56762	0.00279	2.89200	0.86649	1.54943	0.00188
7.6000E00	14.0899	0.0	0.0	97.63509	0.00279	2.89200	0.91067	1.51361	0.00189
7.7000E00	14.0769	0.0	0.0	245.14300	0.00279	2.89200	0.97030	1.46881	0.00190
7.7300E00	14.0730	0.0	0.0	387.62400	0.00279	2.89200	0.97320	1.46665	0.00190
7.7600E00	14.0691	0.0	0.0	683.39400	0.00279	2.89200	0.97530	1.46509	0.00191
7.7900E00	14.0653	0.0	0.0	1357.95700	0.00279	2.89200	0.97680	1.46398	0.00191
7.8100E00	14.0627	0.0	0.0	2122.37900	0.00279	2.89200	0.97730	1.46361	0.00191
7.8300E00	14.0601	0.0	0.0	2611.91200	0.00279	2.89200	0.97750	1.46346	0.00192
7.8500E00	14.0576	0.0	0.0	2117.04200	0.00279	2.89200	0.97730	1.46361	0.00192
7.8700E00	14.0550	0.0	0.0	1351.12400	0.00279	2.89200	0.97630	1.46406	0.00192
7.9000E00	14.0512	0.0	0.0	677.51300	0.00279	2.89200	0.97510	1.46524	0.00192
7.9300E00	14.0474	0.0	0.0	382.94600	0.00279	2.89200	0.97250	1.46717	0.00193
7.9600E00	14.0437	0.0	0.0	241.43200	0.00279	2.89200	0.96890	1.46986	0.00193
8.0000E00	14.0387	0.0	0.0	147.36600	0.00279	2.89200	0.96250	1.47465	0.00194
8.1000E00	14.0262	0.0	0.0	61.56080	0.00279	2.89200	0.93850	1.49291	0.00195
8.2000E00	14.0140	0.0	0.0	34.20490	0.00279	2.89200	0.90310	1.52068	0.00196
8.4000E00	13.9899	0.0	0.0	16.18220	0.00279	2.89200	0.80470	1.60359	0.00198
8.6000E00	13.9663	0.0	0.0	10.57010	0.00279	2.89200	0.68810	1.71435	0.00201
8.8000E00	13.9433	0.0	0.0	8.44470	0.00279	2.89200	0.57640	1.83583	0.00203
9.0000E00	13.9209	0.0	0.0	7.77910	0.00279	2.89200	0.46250	1.95158	0.00205

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
9.5000E00	13.8668	18.80660	9.05260	8.78134	2.47360	7.28040	0.0	0.0	9.75400
9.8000E00	13.8357	22.36020	8.50330	22.34448	3.14010	10.72480	0.0	0.0	13.86490
10.0000E00	13.8155	27.34690	8.02980	27.32450	4.11430	15.20280	0.0	0.0	19.31710
10.2000E00	13.7957	37.23080	7.38970	37.21018	6.02560	23.81550	0.0	0.0	29.84110
10.4000E00	13.7763	60.33410	6.43900	60.31614	10.37910	43.51600	0.0	0.0	53.89510
10.6000E00	13.7572	134.11400	4.89670	134.10000	23.86870	105.34900	0.0	0.0	129.21700
10.7000E00	13.7479	248.66100	3.91430	248.65000	44.41950	200.32700	0.0	0.0	244.74600
10.8000E00	13.7385	595.14000	4.23220	595.12800	105.37900	485.12500	0.0	0.0	590.90800
10.8300E00	13.7358	819.76400	5.76060	819.74800	145.27500	668.72100	0.0	0.0	813.99500
10.8600E00	13.7330	1139.89000	9.27040	1139.87200	201.31200	929.31600	0.0	0.0	1130.62800
10.8900E00	13.7303	1528.02100	15.86990	1527.97700	268.82600	1243.32600	0.0	0.0	1512.15100
10.9100E00	13.7284	1745.48300	21.85280	1745.42200	306.26100	1417.37000	0.0	0.0	1723.63000
10.9300E00	13.7266	1834.81000	27.79200	1834.73300	321.05700	1485.96200	0.0	0.0	1807.01800
10.9500E00	13.7248	1752.72500	31.99730	1752.63500	305.86300	1414.86500	0.0	0.0	1720.72700
10.9700E00	13.7229	1540.76000	33.63560	1540.66600	268.16800	1238.95600	0.0	0.0	1507.12400
11.0000E00	13.7202	1156.70400	32.42000	1156.61400	200.59800	923.68300	0.0	0.0	1124.28400
11.0300E00	13.7175	837.28600	29.44300	837.20400	144.77500	663.06800	0.0	0.0	807.84300
11.0600E00	13.7148	611.59700	26.41330	611.92400	105.61400	479.97000	0.0	0.0	585.58400
11.1000E00	13.7112	419.97500	23.09300	419.91000	72.44990	324.43200	0.0	0.0	396.88200
11.2000E00	13.7022	202.54000	17.95650	202.48900	35.55630	149.02700	0.0	0.0	184.58300

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
9.5000E00	13.8668	0.0	0.0	9.75400	0.00279	2.89200	0.33980	2.16002	0.00213
9.8000E00	13.8357	0.0	0.0	13.86490	0.00279	2.89200	0.29280	2.23855	0.00214
10.0000E00	13.8155	0.0	0.0	19.31710	0.00279	2.89200	0.27060	2.27767	0.00216
10.2000E00	13.7957	0.0	0.0	29.84110	0.00279	2.89200	0.25300	2.30966	0.00219
10.4000E00	13.7763	0.0	0.0	53.89510	0.00279	2.89200	0.23850	2.33670	0.00221
10.6000E00	13.7572	0.0	0.0	129.21700	0.00279	2.89200	0.22660	2.35937	0.00223
10.7000E00	13.7479	0.0	0.0	244.74600	0.00279	2.89200	0.22170	2.36882	0.00224
10.8000E00	13.7385	0.0	0.0	590.90800	0.00279	2.89200	0.21800	2.37603	0.00225
10.8300E00	13.7358	0.0	0.0	813.99500	0.00279	2.89200	0.21720	2.37759	0.00225
10.8600E00	13.7330	0.0	0.0	1130.62800	0.00279	2.89200	0.21680	2.37876	0.00226
10.8900E00	13.7303	0.0	0.0	1512.15100	0.00279	2.89200	0.21620	2.37954	0.00226
10.9100E00	13.7284	0.0	0.0	1723.63000	0.00279	2.89200	0.21610	2.37974	0.00226
10.9300E00	13.7266	0.0	0.0	1807.01800	0.00279	2.89200	0.21610	2.37974	0.00226
10.9500E00	13.7248	0.0	0.0	1720.72700	0.00279	2.89200	0.21620	2.37954	0.00227
10.9700E00	13.7229	0.0	0.0	1507.12400	0.00279	2.89200	0.21640	2.37915	0.00227
11.0000E00	13.7202	0.0	0.0	1124.28400	0.00279	2.89200	0.21720	2.37759	0.00227
11.0300E00	13.7175	0.0	0.0	807.84300	0.00279	2.89200	0.21830	2.37544	0.00227
11.0600E00	13.7148	0.0	0.0	585.58400	0.00279	2.89200	0.22000	2.37213	0.00228
11.1000E00	13.7112	0.0	0.0	396.88200	0.00279	2.89200	0.22330	2.36573	0.00228
11.2000E00	13.7022	0.0	0.0	184.58300	0.00279	2.89200	0.23860	2.33651	0.00229

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SCALP	SGA
11.4000E00	13.6845	87.70310	13.35530	87.66584	18.66330	55.68452	0.0	0.0	74.34780
11.6000E00	13.6671	72.95070	10.34720	72.92183	25.90840	36.69510	0.0	0.0	62.60350
11.7000E00	13.6585	101.10400	8.55430	101.08000	48.94630	43.60340	0.0	0.0	92.54970
11.8000E00	13.6500	278.87200	6.18640	278.85500	168.49700	104.18600	0.0	0.0	272.68600
11.8300E00	13.6475	495.75700	6.43310	495.73900	309.93700	179.38700	0.0	0.0	489.32300
11.8600E00	13.6449	1092.33700	12.21110	1092.30300	694.61900	385.50700	0.0	0.0	1080.12600
11.8800E00	13.6432	2003.40800	28.84130	2003.32800	1276.53800	698.02500	0.0	0.0	1974.56700
11.9000E00	13.6416	2796.39400	58.96790	2796.22900	1772.87800	964.54800	0.0	0.0	2737.42600
11.9200E00	13.6399	2033.11900	63.06490	2032.94300	1274.18500	695.86900	0.0	0.0	1970.05400
11.9400E00	13.6382	1123.34500	49.24310	1123.20800	691.86800	382.23400	0.0	0.0	1074.10200
11.9700E00	13.6357	517.14600	34.91500	517.04900	307.38000	174.85100	0.0	0.0	482.23100
12.0000E00	13.6332	293.12000	26.01345	293.04800	166.60000	100.50700	0.0	0.0	267.10700
12.1000E00	13.6249	98.55302	17.49450	98.50421	46.50230	34.55622	0.0	0.0	81.05852
12.2000E00	13.6167	57.32527	14.70810	57.28423	22.16094	20.45823	0.0	0.0	42.61717
12.4000E00	13.6004	33.95768	12.39314	33.92310	9.32919	12.23536	0.0	0.0	21.56454
12.6000E00	13.5844	26.64831	11.26139	26.61689	5.77147	9.61545	0.0	0.0	15.38692
12.8000E00	13.5687	23.50911	10.50564	23.47980	4.41001	8.59346	0.0	0.0	13.00347
13.0000E00	13.5531	22.18057	9.90316	22.15294	3.90866	8.36875	0.0	0.0	12.27741
13.2000E00	13.5379	22.01708	9.35728	21.99097	3.91508	8.74472	0.0	0.0	12.65580
13.4000E00	13.5228	22.97705	8.80581	22.95448	4.39724	9.77600	0.0	0.0	14.17324

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
11.4000E00	13.6845	0.0	0.0	74.34780	0.00279	2.89200	0.33520	2.16747	0.00231
11.6000E00	13.6671	0.0	0.0	62.60350	0.00279	2.89200	0.70600	1.69637	0.00233
11.7000E00	13.6585	0.0	0.0	92.54970	0.00279	2.89200	1.12250	1.38349	0.00234
11.8000E00	13.6500	0.0	0.0	272.68600	0.00279	2.89200	1.61720	1.10576	0.00235
11.8300E00	13.6475	0.0	0.0	489.32300	0.00279	2.89200	1.72780	1.06093	0.00235
11.8600E00	13.6449	0.0	0.0	1080.12600	0.00279	2.89200	1.80180	1.03291	0.00236
11.8800E00	13.6432	0.0	0.0	1974.56700	0.00279	2.89200	1.82880	1.02305	0.00236
11.9000E00	13.6416	0.0	0.0	2737.42600	0.00279	2.89200	1.83800	1.01973	0.00236
11.9200E00	13.6397	0.0	0.0	1970.05400	0.00279	2.89200	1.83110	1.02222	0.00236
11.9400E00	13.6382	0.0	0.0	1074.10200	0.00279	2.89200	1.81010	1.02986	0.00237
11.9700E00	13.6357	0.0	0.0	482.23100	0.00279	2.89200	1.75800	1.04931	0.00237
12.0000E00	13.6332	0.0	0.0	267.10700	0.00279	2.89200	1.65760	1.08820	0.00237
12.1000E00	13.6249	0.0	0.0	81.05852	0.00279	2.89200	1.34570	1.23289	0.00238
12.2000E00	13.6167	0.0	0.0	42.61717	0.00279	2.89200	1.08333	1.38816	0.00239
12.4000E00	13.6004	0.0	0.0	21.56454	0.00279	2.89200	0.76248	1.64087	0.00241
12.6000E00	13.5844	0.0	0.0	15.38692	0.00279	2.89200	0.60023	1.80724	0.00243
12.8000E00	13.5687	0.0	0.0	13.00347	0.00279	2.89200	0.51318	1.91120	0.00245
13.0000E00	13.5531	0.0	0.0	12.27741	0.00279	2.89200	0.46705	1.97130	0.00247
13.2000E00	13.5379	0.0	0.0	12.65580	0.00279	2.89200	0.44771	1.99764	0.00249
13.4000E00	13.5228	0.0	0.0	14.17324	0.00279	2.89200	0.44960	1.99476	0.00251

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
13.6000E00	13.5080	25.57827	8.18596	25.55543	5.58674	11.80556	0.0	0.0	17.39230
13.8000E00	13.4934	31.71684	7.39694	31.69620	8.35017	15.96973	0.0	0.0	24.31990
14.0000E00	13.4790	50.74722	6.18131	50.72997	16.86290	27.70301	0.0	0.0	44.56591
14.1000E00	13.4719	83.89006	5.18747	83.87564	31.45934	47.26325	0.0	0.0	78.72259
14.2000E00	13.4649	245.14000	3.91952	245.12900	100.78400	140.43700	0.0	0.0	241.22000
14.2400E00	13.4620	515.38100	5.46828	515.36600	215.09600	294.81700	0.0	0.0	509.91300
14.2600E00	13.4606	744.85300	9.10460	744.82800	311.12500	424.62400	0.0	0.0	735.74900
14.2800E00	13.4592	884.01600	14.86978	883.97500	367.97300	501.17400	0.0	0.0	869.14700
14.3000E00	13.4578	760.20200	18.27622	760.15100	314.28300	427.64300	0.0	0.0	741.92600
14.3200E00	13.4564	540.99000	17.90612	540.94000	221.78100	301.30300	0.0	0.0	523.08400
14.3400E00	13.4550	380.87600	16.33053	380.83100	154.95200	209.59300	0.0	0.0	364.54600
14.3600E00	13.4536	285.55400	14.89399	285.51200	115.66500	154.99500	0.0	0.0	270.66000
14.3800E00	13.4523	231.13800	13.84959	231.09900	93.70524	123.58300	0.0	0.0	217.28800
14.4000E00	13.4509	201.01200	13.17389	200.97500	82.07350	105.76500	0.0	0.0	187.83800
14.4500E00	13.4474	183.42000	12.86611	183.38400	78.10643	92.44758	0.0	0.0	170.55400
14.5000E00	13.4439	223.27600	14.93569	223.23400	100.87900	107.46100	0.0	0.0	208.34000
14.5500E00	13.4405	350.77000	22.48391	350.70700	167.42200	160.86400	0.0	0.0	328.28600
14.6000E00	13.4371	750.89200	50.38896	750.75100	371.94700	328.55600	0.0	0.0	700.50300
14.6200E00	13.4357	1143.30400	80.53964	1143.07900	570.92300	491.84100	0.0	0.0	1062.76400
14.6400E00	13.4343	1865.31400	139.93400	1864.92400	934.95200	790.42800	0.0	0.0	1725.38000

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
13.6000E00	13.5080	0.0	0.0	17.39230	0.00279	2.89200	0.47323	1.96303	0.00252
13.8000E00	13.4934	0.0	0.0	24.31990	0.00279	2.89200	0.52268	1.89904	0.00254
14.0000E00	13.4790	0.0	0.0	44.56591	0.00279	2.89200	0.60870	1.79772	0.00256
14.1000E00	13.4719	0.0	0.0	78.72259	0.00279	2.89200	0.66562	1.73629	0.00257
14.2000E00	13.4649	0.0	0.0	241.22000	0.00279	2.89200	0.71764	1.68370	0.00258
14.2400E00	13.4620	0.0	0.0	509.91300	0.00279	2.89200	0.72959	1.67207	0.00258
14.2600E00	13.4606	0.0	0.0	735.74900	0.00279	2.89200	0.73271	1.66906	0.00259
14.2800E00	13.4592	0.0	0.0	869.14700	0.00279	2.89200	0.73422	1.66761	0.00259
14.3000E00	13.4578	0.0	0.0	741.92600	0.00279	2.89200	0.73492	1.66694	0.00259
14.3200E00	13.4564	0.0	0.0	523.08400	0.00279	2.89200	0.73607	1.66583	0.00259
14.3400E00	13.4550	0.0	0.0	364.54600	0.00279	2.89200	0.73930	1.66274	0.00259
14.3600E00	13.4536	0.0	0.0	270.66000	0.00279	2.89200	0.74625	1.65612	0.00259
14.3800E00	13.4523	0.0	0.0	217.28800	0.00279	2.89200	0.75824	1.64483	0.00260
14.4000E00	13.4509	0.0	0.0	187.83800	0.00279	2.89200	0.77606	1.62838	0.00260
14.4500E00	13.4474	0.0	0.0	170.55400	0.00279	2.89200	0.84487	1.56759	0.00260
14.5000E00	13.4439	0.0	0.0	208.34000	0.00279	2.89200	0.93875	1.49168	0.00261
14.5500E00	13.4405	0.0	0.0	328.28600	0.00279	2.89200	1.04077	1.41711	0.00261
14.6000E00	13.4371	0.0	0.0	700.50300	0.00279	2.89200	1.13206	1.35643	0.00262
14.6200E00	13.4357	0.0	0.0	1062.76400	0.00279	2.89200	1.16079	1.33840	0.00262
14.6400E00	13.4343	0.0	0.0	1725.38000	0.00279	2.89200	1.18284	1.32488	0.00262

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
14.6600E00	13.4330	3044.69400	245.85600	3044.00800	1524.77400	1274.06400	0.0	0.0	2798.83800
14.6800E00	13.4316	3881.00200	339.58900	3880.05400	1932.65700	1608.75600	0.0	0.0	3541.41300
14.7000E00	13.4302	3088.57100	293.70500	3087.75200	1521.89900	1272.96700	0.0	0.0	2794.86600
14.7200E00	13.4289	1918.52300	198.21500	1917.97000	930.78500	789.52300	0.0	0.0	1720.30800
14.7400E00	13.4275	1191.03500	133.31200	1190.66300	566.09700	491.62700	0.0	0.0	1057.72400
14.7600E00	13.4262	790.93400	95.45229	790.66800	366.46800	329.01400	0.0	0.0	695.48200
14.8000E00	13.4235	423.78000	58.32549	423.61700	183.91900	181.53500	0.0	0.0	365.45400
14.9000E00	13.4167	178.99100	30.01461	178.90700	61.27156	87.70453	0.0	0.0	148.97600
15.0000E00	13.4100	126.00800	21.69764	125.94800	31.66427	72.64650	0.0	0.0	104.31100
15.1000E00	13.4034	114.60400	17.95119	114.55300	20.65217	76.00017	0.0	0.0	96.65234
15.2000E00	13.3968	119.52000	15.87874	119.47600	15.78315	87.85827	0.0	0.0	103.64100
15.3000E00	13.3902	132.32600	14.71397	132.28500	13.52924	104.08300	0.0	0.0	117.61200
15.4000E00	13.3837	145.47400	14.11875	145.43500	12.38756	118.96600	0.0	0.0	131.35500
15.4300E00	13.3818	148.08900	14.02203	148.05000	12.11200	121.95500	0.0	0.0	134.06700
15.4600E00	13.3798	149.65200	13.95296	149.61300	11.83042	123.86800	0.0	0.0	135.69900
15.4800E00	13.3785	150.02100	13.91906	149.98200	11.63198	124.47000	0.0	0.0	136.10200
15.5000E00	13.3773	149.31400	13.89254	149.77500	11.42122	124.50000	0.0	0.0	135.92100
15.5200E00	13.3760	149.01600	13.87139	148.97700	11.19617	123.94500	0.0	0.0	135.14500
15.5400E00	13.3747	147.63500	13.85369	147.59600	10.95591	122.82500	0.0	0.0	133.78100
15.5700E00	13.3727	144.52500	13.82972	144.48600	10.56754	120.12700	0.0	0.0	130.69500

E	U	SGI	SG2N	SGX	NUEL	NUE	ALFHA	ETA	CHIF
14.6600E00	13.4330	0.0	0.0	2798.83800	0.00279	2.89200	1.19678	1.32647	0.00262
14.6800E00	13.4316	0.0	0.0	3541.41300	0.00279	2.89200	1.20134	1.31375	0.00262
14.7000E00	13.4302	0.0	0.0	2794.86600	0.00279	2.89200	1.19555	1.31721	0.00262
14.7200E00	13.4289	0.0	0.0	1720.30800	0.00279	2.89200	1.17892	1.32726	0.00263
14.7400E00	13.4275	0.0	0.0	1057.72400	0.00279	2.89200	1.15148	1.34419	0.00263
14.7600E00	13.4262	0.0	0.0	695.48200	0.00279	2.89200	1.11384	1.36813	0.00263
14.8000E00	13.4235	0.0	0.0	365.45400	0.00279	2.89200	1.01313	1.43657	0.00263
14.9000E00	13.4167	0.0	0.0	148.97600	0.00279	2.89200	0.69861	1.70257	0.00264
15.0000E00	13.4100	0.0	0.0	104.31100	0.00279	2.89200	0.43587	2.01411	0.00265
15.1000E00	13.4034	0.0	0.0	96.65234	0.00279	2.89200	0.27174	2.27405	0.00266
15.2000E00	13.3968	0.0	0.0	103.64100	0.00279	2.89200	0.17964	2.45159	0.00267
15.3000E00	13.3902	0.0	0.0	117.61200	0.00279	2.89200	0.12999	2.55933	0.00268
15.4000E00	13.3837	0.0	0.0	131.35500	0.00279	2.89200	0.10413	2.61927	0.00269
15.4300E00	13.3818	0.0	0.0	134.06700	0.00279	2.89200	0.09932	2.63073	0.00269
15.4600E00	13.3798	0.0	0.0	135.69900	0.00279	2.89200	0.09551	2.63987	0.00269
15.4800E00	13.3785	0.0	0.0	136.10200	0.00279	2.89200	0.09345	2.64483	0.00269
15.5000E00	13.3773	0.0	0.0	135.92100	0.00279	2.89200	0.09174	2.64899	0.00270
15.5200E00	13.3760	0.0	0.0	135.14500	0.00279	2.89200	0.09033	2.65241	0.00270
15.5400E00	13.3747	0.0	0.0	133.78100	0.00279	2.89200	0.08920	2.65516	0.00270
15.5700E00	13.3727	0.0	0.0	130.69500	0.00279	2.89200	0.08797	2.65816	0.00270

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
15.6000E00	13.3708	140.30600	13.80432	140.26800	10.14947	116.35200	0.0	0.0	126.50200
15.7000E00	13.3644	121.03400	13.66861	120.99600	8.64562	98.71967	0.0	0.0	107.36500
15.8000E00	13.3581	99.77508	13.43416	99.73759	7.21226	79.12866	0.0	0.0	86.34092
15.9000E00	13.3518	81.29518	13.13402	81.25854	6.03266	62.12849	0.0	0.0	68.16116
16.0000E00	13.3455	66.81835	12.81014	66.78261	5.13586	48.87236	0.0	0.0	54.00822
16.2000E00	13.3331	47.81772	12.17599	47.78375	4.02576	31.61597	0.0	0.0	35.64173
16.4000E00	13.3208	37.27046	11.58811	37.23613	3.55665	22.12571	0.0	0.0	25.68235
16.6000E00	13.3087	31.50156	11.01724	31.47082	3.59013	16.89419	0.0	0.0	20.48432
16.8000E00	13.2967	29.00539	10.39975	28.97638	4.24011	14.36552	0.0	0.0	18.60564
17.0000E00	13.2849	30.18427	9.63130	30.15740	6.12872	14.42425	0.0	0.0	20.55297
17.2000E00	13.2732	40.25485	8.45281	40.23127	11.96671	19.83534	0.0	0.0	31.80204
17.3000E00	13.2674	56.64490	7.50651	56.62396	20.16954	28.98885	0.0	0.0	49.13839
17.4000E00	13.2616	104.40000	6.08437	104.38300	42.91168	55.40433	0.0	0.0	98.31601
17.5000E00	13.2559	333.18000	4.85736	333.16700	148.41400	179.90300	0.0	0.0	328.32300
17.5200E00	13.2542	576.20400	6.50625	576.18600	258.97900	310.71900	0.0	0.0	569.69800
17.5600E00	13.2525	1116.13100	14.72136	1116.09000	502.47200	598.93800	0.0	0.0	1101.41000
17.5800E00	13.2513	1703.50200	29.53908	1703.41900	764.64500	909.31800	0.0	0.0	1673.96300
17.6000E00	13.2502	2074.62200	49.23176	2074.48400	925.57700	1099.81400	0.0	0.0	2025.39000
17.6200E00	13.2491	1727.61000	55.71747	1727.45400	763.76000	908.13300	0.0	0.0	1671.89300
17.6400E00	13.2479	1147.83900	49.06712	1147.50200	501.29800	597.27400	0.0	0.0	1098.57200

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
15.6000E00	13.3708	0.0	0.0	126.50200	0.00279	2.89200	0.08723	2.65997	0.00270
15.7000E00	13.3644	0.0	0.0	107.36500	0.00279	2.89200	0.08758	2.65912	0.00271
15.8000E00	13.3581	0.0	0.0	86.34092	0.00279	2.89200	0.09115	2.65042	0.00272
15.9000E00	13.3518	0.0	0.0	68.16116	0.00279	2.89200	0.09710	2.63604	0.00273
16.0000E00	13.3455	0.0	0.0	54.00822	0.00279	2.89200	0.10509	2.61699	0.00274
16.2000E00	13.3331	0.0	0.0	35.64173	0.00279	2.89200	0.12733	2.56535	0.00276
16.4000E00	13.3208	0.0	0.0	25.68235	0.00279	2.89200	0.16075	2.49150	0.00277
16.6000E00	13.3087	0.0	0.0	20.48432	0.00279	2.89200	0.21251	2.38514	0.00279
16.8000E00	13.2967	0.0	0.0	18.60564	0.00279	2.89200	0.29516	2.23293	0.00281
17.0000E00	13.2849	0.0	0.0	20.55297	0.00279	2.89200	0.42489	2.02963	0.00282
17.2000E00	13.2732	0.0	0.0	31.80204	0.00279	2.89200	0.60330	1.80378	0.00284
17.3000E00	13.2674	0.0	0.0	49.13839	0.00279	2.89200	0.69825	1.70494	0.00285
17.4000E00	13.2616	0.0	0.0	98.31601	0.00279	2.89200	0.77452	1.62974	0.00286
17.5000E00	13.2559	0.0	0.0	328.32300	0.00279	2.89200	0.82494	1.58471	0.00286
17.5200E00	13.2542	0.0	0.0	569.69800	0.00279	2.89200	0.83348	1.57733	0.00287
17.5600E00	13.2525	0.0	0.0	1101.41000	0.00279	2.89200	0.83894	1.57265	0.00287
17.5800E00	13.2513	0.0	0.0	1673.96300	0.00279	2.89200	0.84090	1.57097	0.00287
17.6000E00	13.2502	0.0	0.0	2025.39000	0.00279	2.89200	0.84158	1.57039	0.00287
17.6200E00	13.2491	0.0	0.0	1671.89300	0.00279	2.89200	0.84102	1.57087	0.00287
17.6400E00	13.2479	0.0	0.0	1098.57200	0.00279	2.89200	0.83931	1.57233	0.00288

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
17.6700E00	13.2462	604.20400	37.35917	604.10000	257.89200	308.95300	0.0	0.0	566.84500
17.7000E00	13.2445	355.38400	29.96770	355.50100	147.48900	178.12800	0.0	0.0	325.61700
17.8000E00	13.2389	115.62700	20.12831	115.57000	42.25792	53.24027	0.0	0.0	95.49819
17.9000E00	13.2333	62.56984	16.86573	62.52279	19.57209	26.13203	0.0	0.0	45.70411
18.0000E00	13.2277	42.80151	15.27361	42.75889	11.34911	16.17879	0.0	0.0	27.52790
18.1000E00	13.2222	33.22477	14.32548	33.18481	7.48610	11.41319	0.0	0.0	18.89929
18.2000E00	13.2167	27.79419	13.68952	27.75599	5.36867	8.73600	0.0	0.0	14.10467
18.4000E00	13.2057	22.05058	12.87333	22.01466	3.24578	5.93247	0.0	0.0	9.17725
18.6000E00	13.1949	19.13172	12.35423	19.09726	2.24989	4.52760	0.0	0.0	6.77749
19.0000E00	13.1737	16.23750	11.68937	16.20488	1.28064	3.16749	0.0	0.0	4.54813
19.5000E00	13.1477	14.59799	11.14149	14.56691	0.99128	2.46522	0.0	0.0	3.45651
20.0000E00	13.1224	13.79620	10.64556	13.76649	0.89096	2.25968	0.0	0.0	3.15064
20.5000E00	13.0977	13.69350	10.20904	13.66502	0.99310	2.49136	0.0	0.0	3.48446
21.0000E00	13.0736	14.74404	9.67674	14.71704	1.46631	3.60099	0.0	0.0	5.06730
21.2000E00	13.0641	16.00020	9.39953	15.97397	1.91972	4.68095	0.0	0.0	6.60067
21.4000E00	13.0547	18.54479	9.05712	18.51952	2.76943	6.71825	0.0	0.0	9.48768
21.6000E00	13.0454	24.39190	8.62834	24.36782	4.61066	11.15290	0.0	0.0	15.76356
21.7000E00	13.0408	30.43963	8.39087	30.41621	6.45189	15.59687	0.0	0.0	22.04875
21.8000E00	13.0362	41.69559	8.19235	41.67273	9.80504	23.69820	0.0	0.0	33.50324
21.9000E00	13.0316	65.96157	8.25235	65.93854	16.88757	40.82185	0.0	0.0	57.70921

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
17.6700E00	13.2462	0.0	0.0	566.84500	0.00279	2.89200	0.83473	1.57623	0.00288
17.7000E00	13.2445	0.0	0.0	325.61700	0.00279	2.89200	0.82799	1.58206	0.00288
17.8000E00	13.2389	0.0	0.0	95.49819	0.00279	2.89200	0.79372	1.61229	0.00289
17.9000E00	13.2333	0.0	0.0	45.70411	0.00279	2.89200	0.74897	1.65355	0.00290
18.0000E00	13.2277	0.0	0.0	27.52790	0.00279	2.89200	0.70148	1.69970	0.00290
18.1000E00	13.2222	0.0	0.0	18.89929	0.00279	2.89200	0.65592	1.74646	0.00291
18.2000E00	13.2167	0.0	0.0	14.10467	0.00279	2.89200	0.61455	1.79122	0.00292
18.4000E00	13.2057	0.0	0.0	9.17725	0.00279	2.89200	0.54669	1.86980	0.00294
18.6000E00	13.1949	0.0	0.0	6.77749	0.00279	2.89200	0.49653	1.93196	0.00295
19.0000E00	13.1737	0.0	0.0	4.54813	0.00279	2.89200	0.43588	2.01410	0.00298
19.5000E00	13.1477	0.0	0.0	3.45651	0.00279	2.89200	0.40211	2.06261	0.00302
20.0000E00	13.1224	0.0	0.0	3.15064	0.00279	2.89200	0.39429	2.07418	0.00306
20.5000E00	13.0977	0.0	0.0	3.48446	0.00279	2.89200	0.39882	2.06776	0.00310
21.0000E00	13.0736	0.0	0.0	5.06730	0.00279	2.89200	0.40726	2.05515	0.00314
21.2000E00	13.0641	0.0	0.0	6.60067	0.00279	2.89200	0.41011	2.05090	0.00315
21.4000E00	13.0547	0.0	0.0	9.48768	0.00279	2.89200	0.41222	2.04783	0.00317
21.6000E00	13.0454	0.0	0.0	15.76356	0.00279	2.89200	0.41340	2.04612	0.00318
21.7000E00	13.0408	0.0	0.0	22.04875	0.00279	2.89200	0.41367	2.04575	0.00319
21.8000E00	13.0362	0.0	0.0	33.50324	0.00279	2.89200	0.41375	2.04563	0.00320
21.9000E00	13.0316	0.0	0.0	57.70921	0.00279	2.89200	0.41369	2.04571	0.00320

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
22.0000E00	13.0271	132.71200	9.70065	132.68500	35.98910	87.02265	0.0	0.0	123.01200
22.1000E00	13.0225	421.41500	21.60527	421.35500	116.94300	282.86600	0.0	0.0	399.81000
22.1300E00	13.0212	686.67500	35.44564	686.57600	190.47300	460.75700	0.0	0.0	651.23000
22.1600E00	13.0198	1164.15200	64.29654	1163.97300	321.67600	778.17900	0.0	0.0	1099.85600
22.1800E00	13.0189	1560.78900	92.73564	1560.53000	429.35700	1038.69600	0.0	0.0	1468.05300
22.2000E00	13.0180	1766.96000	114.81700	1766.54000	483.19600	1168.94700	0.0	0.0	1652.14300
22.2200E00	13.0171	1580.30600	113.57800	1579.98900	428.97200	1037.75600	0.0	0.0	1466.72800
22.2400E00	13.0162	1193.36900	95.49928	1193.10200	321.09900	776.77100	0.0	0.0	1097.86900
22.2700E00	13.0149	716.88600	67.71676	716.69700	189.87600	459.29300	0.0	0.0	649.16900
22.3000E00	13.0135	447.83400	49.83675	447.69500	116.42200	281.57600	0.0	0.0	397.99800
22.4000E00	13.0090	148.72200	26.84390	148.6[illegible]	35.67499	86.20357	0.0	0.0	121.87900
22.5000E00	13.0046	76.95835	20.06737	76.[illegible]	16.67456	40.21642	0.0	0.0	56.89098
22.6000E00	13.0001	49.92904	17.07969	49.8[illegible]	9.64552	23.19583	0.0	0.0	32.84935
22.7000E00	12.9957	36.93038	15.43785	36.8[illegible]	6.33501	15.15752	0.0	0.0	21.49253
22.8000E00	12.9913	29.67838	14.40625	29.63319	4.52374	10.74839	0.0	0.0	15.27213
23.0000E00	12.9826	22.26376	13.17611	22.2270[illegible]	[illegible]3591	6.35174	0.0	0.0	9.08765
23.2000E00	12.9739	18.75445	12.44865	18.71972	1.95616	4.34545	0.0	0.0	6.30560
23.4000E00	12.9654	16.94883	11.93809	16.9155[illegible]	1.64681	3.36394	0.0	0.0	5.01075
23.5000E00	12.9611	16.51403	11.71901	16.48133	1.65608	3.13893	0.0	0.0	4.79501
23.6000E00	12.9568	16.35690	11.31437	16.32533	1.88046	3.16208	0.0	0.0	5.04253

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
22.0000E00	13.0271	0.0	0.0	123.01200	0.00279	2.89200	0.41356	2.04590	0.00321
22.1000E00	13.0225	0.0	0.0	399.81000	0.00279	2.89200	0.41342	2.04610	0.00322
22.1300E00	13.0212	0.0	0.0	651.23000	0.00279	2.89200	0.41339	2.04614	0.00322
22.1600E00	13.0198	0.0	0.0	1099.85600	0.00279	2.89200	0.41337	2.04617	0.00322
22.1800E00	13.0189	0.0	0.0	1468.05300	0.00279	2.89200	0.41336	2.04618	0.00322
22.2000E00	13.0180	0.0	0.0	1652.14300	0.00279	2.89200	0.41336	2.04619	0.00323
22.2200E00	13.0171	0.0	0.0	1466.72800	0.00279	2.89200	0.41336	2.04618	0.00323
22.2400E00	13.0162	0.0	0.0	1097.86900	0.00279	2.89200	0.41338	2.04616	0.00323
22.2700E00	13.0149	0.0	0.0	649.16900	0.00279	2.89200	0.41341	2.04611	0.00323
22.3000E00	13.0135	0.0	0.0	397.99800	0.00279	2.89200	0.41347	2.04603	0.00323
22.4000E00	13.0090	0.0	0.0	121.87900	0.00279	2.89200	0.41385	2.04548	0.00324
22.5000E00	13.0046	0.0	0.0	56.89098	0.00279	2.89200	0.41462	2.04436	0.00325
22.6000E00	13.0001	0.0	0.0	32.84935	0.00279	2.89200	0.41593	2.04247	0.00325
22.7000E00	12.9957	0.0	0.0	21.49253	0.00279	2.89200	0.41794	2.03957	0.00326
22.8000E00	12.9913	0.0	0.0	15.27213	0.00279	2.89200	0.42098	2.03536	0.00327
23.0000E00	12.9826	0.0	0.0	9.08765	0.00279	2.89200	0.43073	2.02134	0.00328
23.2000E00	12.9739	0.0	0.0	6.30560	0.00279	2.89200	0.44975	1.99483	0.00330
23.4000E00	12.9654	0.0	0.0	5.01075	0.00279	2.89200	0.48955	1.94153	0.00331
23.5000E00	12.9611	0.0	0.0	4.79501	0.00279	2.89200	0.52759	1.89317	0.00332
23.6000E00	12.9568	0.0	0.0	5.04253	0.00279	2.89200	0.59469	1.81352	0.00333

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	ALP	SGA
23.7000E00	12.9526	17.57706	11.06376	17.54619	2.70901	3.80429	0.0	0.0	6.51330
23.8000E00	12.9484	25.50607	10.67294	25.47629	7.02086	7.81227	0.0	0.0	14.83313
23.8300E00	12.9472	34.77763	10.49128	34.74036	11.86433	12.42202	0.0	0.0	24.28635
23.8600E00	12.9459	57.73219	10.34680	57.70332	23.67386	23.71153	0.0	0.0	47.38539
23.8800E00	12.9451	86.86907	10.53245	86.83969	38.46540	37.87123	0.0	0.0	76.33662
23.9000E00	12.9442	107.96600	11.30205	107.93500	48.85365	47.81036	0.0	0.0	96.66401
23.9200E00	12.9434	88.20611	12.00201	88.17262	38.41146	37.78663	0.0	0.0	76.20409
23.9400E00	12.9425	59.25790	12.08917	59.22417	23.60272	23.56601	0.0	0.0	47.16873
23.9700E00	12.9413	35.84234	11.86793	35.80923	11.77430	12.20011	0.0	0.0	23.97441
24.0000E00	12.9400	26.08373	11.65777	26.05120	6.91221	7.51375	0.0	0.0	14.42596
24.1000E00	12.9359	17.01675	11.26221	16.98533	2.52402	3.23052	0.0	0.0	5.75454
24.2000E00	12.9317	14.93291	11.04806	14.90208	1.60328	2.28157	0.0	0.0	3.88484
24.3000E00	12.9276	14.07678	10.89063	14.04640	1.27618	1.90997	0.0	0.0	3.18315
24.4000E00	12.9235	13.61347	10.75728	13.58346	1.13390	1.72229	0.0	0.0	2.85619
24.6000E00	12.9153	13.13753	10.51953	13.10818	1.05678	1.56123	0.0	0.0	2.61801
24.8000E00	12.9073	12.[illegible]97	10.28924	12.92726	1.11868	1.54805	0.0	0.0	2.66673
25.0000E00	12.8992	13.06168	10.04263	12.97366	1.30050	1.65855	0.0	0.0	2.95905
25.2000E00	12.8913	13.37498	9.77539	13.34770	1.65873	1.94086	0.0	0.0	3.59958
25.4000E00	12.8833	14.31159	9.40552	14.28535	2.35994	2.54612	0.0	0.0	4.90607
25.6000E00	12.8755	16.72114	8.87534	16.69838	3.90847	3.93733	0.0	0.0	7.84580

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
23.7000E00	12.9526	0.0	0.0	6.51330	0.00279	2.89200	0.71209	1.68916	0.00333
23.8000E00	12.9484	0.0	0.0	14.83313	0.00279	2.89200	0.89870	1.52315	0.00334
23.8300E00	12.9472	0.0	0.0	24.28635	0.00279	2.89200	0.95510	1.47920	0.00334
23.8600E00	12.9459	0.0	0.0	47.38539	0.00279	2.89200	0.99841	1.44715	0.00334
23.8800E00	12.9451	0.0	0.0	76.33662	0.00279	2.89200	1.01569	1.43474	0.00335
23.9000E00	12.9442	0.0	0.0	96.66401	0.00279	2.89200	1.02182	1.43039	0.00335
23.9200E00	12.9434	0.0	0.0	76.20409	0.00279	2.89200	1.01669	1.43403	0.00335
23.9400E00	12.9425	0.0	0.0	47.16873	0.00279	2.89200	1.00155	1.44487	0.00335
23.9700E00	12.9413	0.0	0.0	23.97441	0.00279	2.89200	0.96510	1.47168	0.00335
24.0000E00	12.9400	0.0	0.0	14.42596	0.00279	2.89200	0.91994	1.50630	0.00335
24.1000E00	12.9359	0.0	0.0	5.75454	0.00279	2.89200	0.78131	1.62353	0.00336
24.2000E00	12.9317	0.0	0.0	3.88484	0.00279	2.89200	0.70[illegible]	1.65347	0.00337
24.3000E00	12.9276	0.0	0.0	3.18615	0.00279	2.89200	0.66816	1.73364	0.00337
24.4000E00	12.9235	0.0	0.0	2.85519	0.00279	2.89200	0.65837	1.74388	0.00338
24.6000E00	12.9153	0.0	0.0	2.61801	0.00279	2.89200	0.67669	1.72462	0.00340
24.8000E00	12.9073	0.0	0.0	2.66673	0.00279	2.89200	0.72263	1.67882	0.00341
25.0000E00	12.8992	0.0	0.0	2.95905	0.00279	2.89200	0.78412	1.62097	0.00342
25.2000E00	12.8913	0.0	0.0	3.59958	0.00279	2.89200	0.85464	1.55934	0.00344
25.4000E00	12.8833	0.0	0.0	4.90607	0.00279	2.89200	0.92689	1.50087	0.00345
25.6000E00	12.8755	0.0	0.0	7.84580	0.00279	2.89200	0.99267	1.45132	0.00346

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
25.8000E00	12.8677	24.31535	7.99425	24.29404	8.33573	7.98636	0.0	0.0	16.32209
25.9000E00	12.8639	35.37026	7.28585	35.34993	14.46308	13.62133	0.0	0.0	28.08441
26.0000E00	12.8600	67.11652	6.31651	67.09089	31.40973	29.31029	0.0	0.0	60.80001
26.1000E00	12.8562	223.63600	6.56214	223.61700	112.78700	104.28700	0.0	0.0	217.07400
26.1300E00	12.8550	399.24700	9.63829	399.22000	202.53600	187.07200	0.0	0.0	389.60500
26.1600E00	12.8539	826.86300	21.74655	826.80200	418.67000	386.44600	0.0	0.0	805.11600
26.1800E00	12.8531	1360.01900	43.25008	1359.89000	684.81400	631.95400	0.0	0.0	1316.76900
26.2100E00	12.8523	1741.10100	70.39428	1740.90500	868.92100	801.78600	0.0	0.0	1670.70700
26.2200E00	12.8516	1387.95600	72.19395	1387.75400	684.29500	631.46700	0.0	0.0	1315.76200
26.2400E00	12.8508	860.98700	57.10340	860.82800	418.03800	385.84600	0.0	0.0	803.88400
26.2700E00	12.8497	428.07000	39.50698	427.95900	202.00800	186.55500	0.0	0.0	388.56300
26.3000E00	12.8485	246.49000	30.25297	246.40600	112.37400	103.86300	0.0	0.0	216.23700
26.4000E00	12.8447	79.65564	19.33419	79.60170	31.28730	29.03415	0.0	0.0	60.32145
26.5000E00	12.8410	43.77379	16.02533	43.72908	14.36186	13.38660	0.0	0.0	27.74846
26.6000E00	12.8372	30.54116	14.47000	30.50079	8.31149	7.75967	0.0	0.0	16.07116
26.8000E00	12.8297	20.73268	12.95051	20.69654	4.08785	3.69432	0.0	0.0	7.78217
26.9000E00	12.8260	18.68423	12.49389	18.64938	3.35564	2.83471	0.0	0.0	6.19034
27.0000E00	12.8223	17.59818	12.10848	17.56440	3.19338	2.29632	0.0	0.0	5.48970
27.1000E00	12.8186	17.75596	11.71347	17.72317	4.04757	1.99481	0.0	0.0	6.04238
27.2000E00	12.8149	23.57634	10.97296	23.54573	10.37216	2.23123	0.0	0.0	12.60338

E	U	SGI	SG2N	SGX	MUEL	MUE	ALPHA	ETA	CHIF
25.8000E00	12.8677	0.0	0.0	16.32209	0.00279	2.89200	1.04375	1.41505	0.00348
25.9000E00	12.8639	0.0	0.0	28.08441	0.00279	2.89200	1.06180	1.40266	0.00348
26.0000E00	12.8600	0.0	0.0	60.80001	0.00279	2.89200	1.07436	1.39417	0.00349
26.1000E00	12.8562	0.0	0.0	217.07400	0.00279	2.89200	1.08151	1.38938	0.00350
26.1300E00	12.8550	0.0	0.0	389.60900	0.00279	2.89200	1.08266	1.38861	0.00350
26.1600E00	12.8539	0.0	0.0	805.11600	0.00279	2.89200	1.08235	1.38813	0.00350
26.1800E00	12.8531	0.0	0.0	1316.76900	0.00279	2.89200	1.08364	1.38795	0.00350
26.2100E00	12.8523	0.0	0.0	1670.70700	0.00279	2.89200	1.08373	1.38789	0.00350
26.2200E00	12.8516	0.0	0.0	1315.76200	0.00279	2.89200	1.08366	1.38794	0.00351
26.2400E00	12.8508	0.0	0.0	803.88400	0.00279	2.89200	1.08347	1.38809	0.00351
26.2700E00	12.8497	0.0	0.0	388.56300	0.00279	2.89200	1.08283	1.38849	0.00351
26.3000E00	12.8485	0.0	0.0	216.23700	0.00279	2.89200	1.08195	1.38908	0.00351
26.4000E00	12.8447	0.0	0.0	60.32145	0.00279	2.89200	1.07760	1.39199	0.00352
26.5000E00	12.8410	0.0	0.0	27.74846	0.00279	2.89200	1.07285	1.39518	0.00352
26.6000E00	12.8372	0.0	0.0	16.07116	0.00279	2.89200	1.07111	1.39635	0.00353
26.8000E00	12.8297	0.0	0.0	7.78217	0.00279	2.89200	1.10653	1.37288	0.00354
26.9000E00	12.8260	0.0	0.0	6.19034	0.00279	2.89200	1.18377	1.32432	0.00355
27.0000E00	12.8223	0.0	0.0	5.48970	0.00279	2.89200	1.29085	1.20971	0.00356
27.1000E00	12.8186	0.0	0.0	6.04238	0.00279	2.89200	2.02906	0.95475	0.00356
27.2000E00	12.8149	0.0	0.0	12.60338	0.00279	2.89200	4.64863	0.51198	0.00357

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
27.2300E00	12.8138	32.21089	10.61076	32.18928	18.82929	2.77884	0.0	0.0	21.60813
27.2600E00	12.8127	61.87598	10.05201	61.84793	47.06150	4.76247	0.0	0.0	51.82397
27.2800E00	12.8119	132.17900	9.92889	132.15100	112.77000	9.47988	0.0	0.0	122.25000
27.3000E00	12.8112	244.95800	12.83715	244.92200	215.26000	16.86041	0.0	0.0	232.12100
27.3200E00	12.8105	136.69800	14.68621	136.65700	112.61100	9.40061	0.0	0.0	122.01100
27.3400E00	12.8097	65.33612	13.88649	65.29738	46.83901	4.61062	0.0	0.0	51.44963
27.3700E00	12.8086	34.07141	13.04343	34.03502	18.51100	2.51699	0.0	0.0	21.02799
27.4000E00	12.8076	24.40744	12.60568	24.37227	9.94540	1.85637	0.0	0.0	11.80176
27.5000E00	12.8039	16.44566	11.98977	16.41220	3.20425	1.25163	0.0	0.0	4.45588
27.6000E00	12.8003	14.60600	11.71838	14.57330	1.82904	1.05858	0.0	0.0	2.88762
27.7000E00	12.7967	13.78383	11.54373	13.75162	1.29610	0.94399	0.0	0.0	2.24010
27.8000E00	12.7931	13.29237	11.41262	13.26052	1.01851	0.86124	0.0	0.0	1.87975
28.0000E00	12.7859	12.69097	11.21604	12.65968	0.73081	0.74413	0.0	0.0	1.47494
28.2000E00	12.7788	12.31082	11.06700	12.27994	0.57993	0.66381	0.0	0.0	1.24374
28.4000E00	12.7717	12.03713	10.94556	12.00659	0.48582	0.60574	0.0	0.0	1.09157
28.6000E00	12.7647	11.82630	10.84203	11.79605	0.42152	0.56275	0.0	0.0	0.98427
28.8000E00	12.7577	11.65711	10.75117	11.62711	0.37517	0.53077	0.0	0.0	0.90594
29.0000E00	12.7508	11.43161	10.54062	11.40220	0.34031	0.55068	0.0	0.0	0.89099
29.2000E00	12.7439	11.31534	10.46613	11.28614	0.31426	0.53496	0.0	0.0	0.84922
29.4000E00	12.7371	11.21706	10.39607	11.18805	0.29448	0.52562	0.0	0.0	0.82009

E	U	SG1	SGZN	SGX	NUEL	NUE	ALPHA	ETA	CHIF
27.2300E00	12.8138	0.0	0.0	21.60813	0.00279	2.89200	6.77594	0.33192	0.00357
27.2600E00	12.8127	0.0	0.0	51.82397	0.00279	2.89200	9.88174	0.26577	0.00357
27.2800E00	12.8119	0.0	0.0	122.25000	0.00279	2.89200	11.89573	0.22426	0.00358
27.3000E00	12.8112	0.0	0.0	232.12100	0.00279	2.89200	12.76721	0.21006	0.00358
27.3200E00	12.8105	0.0	0.0	122.01100	0.00279	2.89200	11.97910	0.22282	0.00358
27.3400E00	12.8097	0.0	0.0	51.44963	0.00279	2.89200	10.15895	0.25316	0.00358
27.3700E00	12.8086	0.0	0.0	21.02799	0.00279	2.89200	7.35443	0.34616	0.00358
27.4000E00	12.8076	0.0	0.0	11.80176	0.00279	2.89200	5.35745	0.43490	0.00358
27.5000E00	12.8039	0.0	0.0	4.45588	0.00279	2.89200	2.56006	0.81234	0.00359
27.6000E00	12.8003	0.0	0.0	2.88762	0.00279	2.89200	1.72781	1.06919	0.00360
27.7000E00	12.7967	0.0	0.0	2.24010	0.00279	2.89200	1.37300	1.21871	0.00360
27.8000E00	12.7931	0.0	0.0	1.87975	0.00279	2.89200	1.18260	1.32502	0.00361
28.0000E00	12.7859	0.0	0.0	1.47494	0.00279	2.89200	0.98210	1.45906	0.00362
28.2000E00	12.7788	0.0	0.0	1.24374	0.00279	2.89200	0.87363	1.54353	0.00364
28.4000E00	12.7717	0.0	0.0	1.09157	0.00279	2.89200	0.80203	1.60486	0.00365
28.6000E00	12.7647	0.0	0.0	0.98427	0.00279	2.89200	0.74904	1.65348	0.00366
28.8000E00	12.7577	0.0	0.0	0.90594	0.00279	2.89200	0.70685	1.65435	0.00367
29.0000E00	12.7508	0.0	0.0	0.89099	0.00279	2.89200	0.61358	1.78742	0.00369
29.2000E00	12.7439	0.0	0.0	0.84922	0.00279	2.89200	0.58745	1.92178	0.00370
29.4000E00	12.7371	0.0	0.0	0.82009	0.00279	2.89200	0.56025	1.85355	0.00371

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
29.6C00E00	12.73C3	11.13393	10.33185	11.10511	0.27763	0.52744	0.C	0	0.80208
29.7C00E00	12.7269	11.09753	10.30049	11.06879	0.27380	0.52324	0.C	0.0	0.79704
29.8C00E00	12.7236	11.06442	10.26976	11.03577	0.26893	0.52573	0.0	0.0	0.79466
29.8300E00	12.7226	11.05512	10.26065	11.02650	0.26765	0.52682	0.C	C.C	0.79447
29.8600E00	12.7216	11.04612	10.25158	11.01752	0.26646	0.52808	0.C	C.C	0.79454
29.8800E00	12.72C9	11.04029	10.24556	11.01170	0.26570	0.52902	0.0	0.0	0.79473
29.9C00E00	12.72C2	11.03459	10.23956	11.00602	0.26499	0.53C04	0.0	C.0	0.79503
29.920CE00	12.7196	11.02902	10.23358	11.00047	0.26431	0.53113	0.C	C.0	0.79544
29.9400E00	12.7189	11.02358	10.22761	10.99505	0.26366	0.53231	0.C	0.0	0.79597
29.97C0E00	12.7179	11.01568	10.21868	10.98717	0.26277	0.53423	0.C	0.0	0.79700
30.0C00E00	12.7169	11.00308	10.20979	10.97960	0.26195	0.53635	0.C	0.0	0.79829
30.1C00E00	12.7136	10.98504	10.18034	10.95463	0.25981	0.54489	0.C	0.0	0.80470
30.2C00E00	12.71C3	10.96567	10.15111	10.93735	0.25859	0.55597	0.C	0.0	0.81456
30.3C00E00	12.7069	10.95033	10.12200	10.92209	0.25834	0.56999	0.C	C.0	0.82833
30.4C00E00	12.7037	10.93948	10.09288	10.91132	0.25913	0.58747	0.C	0.0	0.84660
30.6C00E00	12.6971	10.93420	10.03414	10.90620	0.26434	0.63572	0.C	C.0	0.90005
30.8C00E00	12.6906	10.95368	9.97370	10.93085	0.27577	0.70921	0.C	C.C	0.98498
31.0C00E00	12.6841	11.02989	9.90988	11.00224	0.29650	0.82352	0.0	0.0	1.12001
31.2C00E00	12.6777	11.18226	9.84007	11.15481	0.33273	1.00546	0.C	0.0	1.34219
31.4C00E00	12.6713	11.49278	9.75973	11.46555	0.39828	1.33477	0.C	0.0	1.73305

E	U	SG1	SGZN	SGX	MUEL	MUE	ALPHA	ETA	CHIF
29.6C00E00	12.73C3	C.0	0.0	0.80208	0.00279	2.89200	0.53524	1.88375	0.00372
29.7C00E00	12.7269	C.0	C.0	0.79704	0.C0279	2.89200	0.52328	1.89854	0.C0373
29.8C00E00	12.7236	0.0	0.0	0.79466	0.00279	2.89200	0.51154	1.91328	C.C0374
29.8300E00	12.7226	0.0	0.0	0.79447	0.00279	2.89200	0.5C8C5	1.91771	0.00374
29.8E00E00	12.7216	0.0	0.0	0.79454	0.C0279	2.89200	0.5C457	1.92214	0.C0374
29.8800E00	12.72C9	0.0	0.0	0.79473	0.00279	2.89200	0.5C225	1.92511	C.CC374
29.9C00E00	12.7202	0.0	0.C	0.79503	0.00279	2.89200	0.49954	1.92808	0.C0374
29.9200E00	12.7196	C.0	C.0	0.79544	0.00279	2.89200	0.49763	1.93105	0.00374
29.9400E00	12.7189	0.0	0.0	0.79597	0.00279	2.89200	0.49532	1.93403	C.C0375
29.9700E00	12.7179	0.0	0.0	0.79700	0.00279	2.89200	0.491E6	1.93852	0.00375
30.0C00E00	12.7169	0.0	0.0	0.79829	0.00279	2.89200	0.48839	1.94304	0.C0375
30.1C00E00	12.7136	0.0	0.0	0.80470	0.00279	2.89200	0.47681	1.95827	0.CC376
30.2C00E00	12.71C3	0.0	0.0	0.81456	0.00279	2.89200	0.46512	1.97390	0.00376
30.3C00E00	12.7069	0.0	0.0	0.82833	0.00279	2.89200	0.45324	1.99004	0.00377
30.4C00E00	12.7037	0.0	0.0	0.84660	0.00279	2.89200	0.44110	2.0C680	C.C0377
30.6C00E00	12.6971	0.0	0.0	0.90005	0.00279	2.89200	0.41581	2.04264	0.C0379
30.8C00E00	12.69C6	0.0	0.0	0.98498	0.00279	2.89200	0.38885	2.0823C	0.C0380
31.0C00E00	12.6841	0.0	0.0	1.12001	0.00279	2.89200	0.36CC4	2.12641	C.C0381
31.2C00E00	12.6777	0.0	C.0	1.34219	0.00279	2.89200	0.32961	2.17507	C.C0382
31.4CC0EC0	12.6713	0.0	0.0	1.73305	0.00279	2.89200	0.29G39	2.22738	0.CC384

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
31.6000E00	12.6649	12.16068	9.65994	12.13373	0.52849	1.97225	0.0	0.0	2.50074
31.8000E00	12.6586	13.82936	9.52041	13.80280	0.83615	3.47280	0.0	0.0	4.30895
31.9000E00	12.6555	15.70301	9.42168	15.67672	1.17177	5.10956	0.0	0.0	6.28133
32.0000E00	12.6524	19.48584	9.28899	19.45992	1.83781	8.35904	0.0	0.0	10.19685
32.1000E00	12.6492	28.19620	9.23550	28.17043	3.31120	15.64550	0.0	0.0	18.96070
32.2000E00	12.6461	52.59700	9.15730	52.57145	7.47100	35.96870	0.0	0.0	43.43970
32.2300E00	12.6452	65.01010	9.26440	64.98425	9.56250	46.18320	0.0	0.0	55.74570
32.2600E00	12.6443	77.79240	9.51740	77.76585	11.69190	56.58310	0.0	0.0	68.27500
32.2800E00	12.6436	84.12390	9.77440	84.09663	12.72430	61.62520	0.0	0.0	74.34950
32.3000E00	12.6430	86.68040	10.07290	86.65230	13.10800	63.49550	0.0	0.0	76.60750
32.3200E00	12.6424	84.66620	10.36280	84.63729	12.71640	61.58700	0.0	0.0	74.30340
32.3400E00	12.6418	78.78710	10.59610	78.75754	11.67750	56.51290	0.0	0.0	68.19040
32.3700E00	12.6409	66.42720	10.80240	66.39706	9.54190	46.08290	0.0	0.0	55.62480
32.4000E00	12.6399	54.16820	10.86300	54.13789	7.44810	35.85710	0.0	0.0	43.30520
32.5000E00	12.6369	29.53540	10.69250	29.50557	3.29100	15.55190	0.0	0.0	18.84290
32.6000E00	12.6338	20.24030	10.49390	20.21102	1.74590	8.00050	0.0	0.0	9.74640
32.7000E00	12.6307	16.20570	10.35680	16.17680	1.08470	4.76420	0.0	0.0	5.84890
32.8000E00	12.6277	14.14990	10.26070	14.12127	0.75320	3.13600	0.0	0.0	3.88920
33.0000E00	12.6216	12.23170	10.13400	12.20343	0.45300	1.64470	0.0	0.0	2.09770
33.2000E00	12.6155	11.39110	10.04990	11.36306	0.33040	1.01080	0.0	0.0	1.34120

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
31.6000E00	12.6649	0.0	0.0	2.50074	0.00279	2.89200	0.26796	2.28083	0.00385
31.8000E00	12.6586	0.0	0.0	4.30895	0.00279	2.89200	0.24077	2.33981	0.00386
31.9000E00	12.6555	0.0	0.0	6.28133	0.00279	2.89200	0.22933	2.35250	0.00387
32.0000E00	12.6524	0.0	0.0	10.19685	0.00279	2.89200	0.21986	2.37077	0.00387
32.1000E00	12.6492	0.0	0.0	18.96070	0.00279	2.89200	0.21160	2.38858	0.00388
32.2000E00	12.6461	0.0	0.0	43.43970	0.00279	2.89200	0.20770	2.39629	0.00388
32.2300E00	12.6452	0.0	0.0	55.74570	0.00279	2.89200	0.20710	2.39748	0.00389
32.2600E00	12.6443	0.0	0.0	68.27500	0.00279	2.89200	0.20680	2.39848	0.00389
32.2800E00	12.6436	0.0	0.0	74.34950	0.00279	2.89200	0.20650	2.39867	0.00389
32.3000E00	12.6430	0.0	0.0	76.60750	0.00279	2.89200	0.20640	2.39887	0.00389
32.3200E00	12.6424	0.0	0.0	74.30340	0.00279	2.89200	0.20650	2.39867	0.00389
32.3400E00	12.6418	0.0	0.0	68.19040	0.00279	2.89200	0.20660	2.39848	0.00389
32.3700E00	12.6409	0.0	0.0	55.62480	0.00279	2.89200	0.20710	2.39748	0.00389
32.4000E00	12.6399	0.0	0.0	43.30520	0.00279	2.89200	0.20770	2.39629	0.00390
32.5000E00	12.6369	0.0	0.0	18.84290	0.00279	2.89200	0.21160	2.38858	0.00390
32.6000E00	12.6338	0.0	0.0	9.74640	0.00279	2.89200	0.21320	2.37564	0.00391
32.7000E00	12.6307	0.0	0.0	5.84890	0.00279	2.89200	0.22770	2.35725	0.00391
32.8000E00	12.6277	0.0	0.0	3.88920	0.00279	2.89200	0.24020	2.33350	0.00392
33.0000E00	12.6216	0.0	0.0	2.09770	0.00279	2.89200	0.27540	2.26909	0.00393
33.2000E00	12.6155	0.0	0.0	1.34120	0.00279	2.89200	0.32690	2.18102	0.00394

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
33.4000E00	12.6095	10.94540	9.98540	10.91754	0.27390	0.68610	0.0	0.0	0.96000
33.6000E00	12.6036	10.67840	9.93020	10.65069	0.24910	0.49510	0.0	0.0	0.74820
33.8000E00	12.5976	10.10670	9.45760	10.08031	0.26180	0.38530	0.0	0.0	0.64710
34.0000E00	12.5917	9.98410	9.40040	9.95787	0.27460	0.30910	0.0	0.0	0.58370
34.2000E00	12.5859	9.90210	9.33620	9.87605	0.30760	0.25830	0.0	0.0	0.56590
34.4000E00	12.5800	9.86050	9.26090	9.83466	0.37370	0.22590	0.0	0.0	0.59960
34.6000E00	12.5742	9.88410	9.16330	9.85853	0.50990	0.21090	0.0	0.0	0.72080
34.8000E00	12.5685	10.08250	9.01580	10.05735	0.84310	0.22360	0.0	0.0	1.06670
34.9000E00	12.5656	10.37980	8.90070	10.35497	1.22440	0.25470	0.0	0.0	1.47910
35.0000E00	12.5627	11.09780	8.72280	11.07546	2.04370	0.33330	0.0	0.0	2.37700
35.1000E00	12.5599	13.32730	8.39630	13.30387	4.35970	0.57130	0.0	0.0	4.93100
35.2000E00	12.5570	25.75560	7.56710	25.73449	16.35330	1.83520	0.0	0.0	18.18850
35.2300E00	12.5562	42.19590	7.02410	42.17630	31.71120	3.46060	0.0	0.0	35.17180
35.2600E00	12.5553	97.11250	6.32070	97.09487	82.00470	8.78710	0.0	0.0	90.79180
35.2800E00	12.5548	222.76000	6.92230	222.74000	195.07300	20.76470	0.0	0.0	215.83700
35.3000E00	12.5542	413.64900	13.72610	413.61100	361.52500	38.39210	0.0	0.0	399.92300
35.3200E00	12.5536	232.19900	16.48560	232.15300	194.96200	20.75080	0.0	0.0	215.71300
35.3400E00	12.5531	105.02800	14.34100	104.98800	81.91400	8.77310	0.0	0.0	90.68710
35.3700E00	12.5522	47.51590	12.41640	47.48126	31.65280	3.44670	0.0	0.0	35.09950
35.4000E00	12.5514	29.63170	11.50040	29.59961	16.31150	1.81580	0.0	0.0	18.13130

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
33.4000E00	12.6095	0.0	0.0	0.96000	0.00279	2.89200	0.39920	2.06833	0.00396
33.6000E00	12.6036	0.0	0.0	0.74820	0.00279	2.89200	0.49920	1.93036	0.00397
33.8000E00	12.5976	0.0	0.0	0.64710	0.00279	2.89200	0.67940	1.72324	0.00398
34.0000E00	12.5917	0.0	0.0	0.58370	0.00279	2.89200	0.88820	1.53268	0.00399
34.2000E00	12.5859	0.0	0.0	0.56590	0.00279	2.89200	1.19070	1.32104	0.00400
34.4000E00	12.5800	0.0	0.0	0.59960	0.00279	2.89200	1.65430	1.09031	0.00401
34.6000E00	12.5742	0.0	0.0	0.72080	0.00279	2.89200	2.41870	0.84664	0.00403
34.8000E00	12.5685	0.0	0.0	1.06670	0.00279	2.89200	3.77000	0.60671	0.00404
34.9000E00	12.5656	0.0	0.0	1.47910	0.00279	2.89200	4.80670	0.49839	0.00404
35.0000E00	12.5627	0.0	0.0	2.37700	0.00279	2.89200	6.13210	0.40577	0.00405
35.1000E00	12.5599	0.0	0.0	4.93100	0.00279	2.89200	7.63110	0.33530	0.00406
35.2000E00	12.5570	0.0	0.0	18.18850	0.00279	2.89200	8.90990	0.29203	0.00406
35.2300E00	12.5562	0.0	0.0	35.17180	0.00279	2.89200	9.16340	0.28475	0.00406
35.2600E00	12.5553	0.0	0.0	90.79180	0.00279	2.89200	9.33240	0.28009	0.00406
35.2800E00	12.5548	0.0	0.0	215.83700	0.00279	2.89200	9.39440	0.27842	0.00407
35.3000E00	12.5542	0.0	0.0	399.92300	0.00279	2.89200	9.41520	0.27786	0.00407
35.3200E00	12.5536	0.0	0.0	215.71300	0.00279	2.89200	9.39540	0.28839	0.00407
35.3400E00	12.5531	0.0	0.0	90.68710	0.00279	2.89200	9.33700	0.27997	0.00407
35.3700E00	12.5522	0.0	0.0	35.09950	0.00279	2.89200	9.18360	0.28418	0.00407
35.4000E00	12.5514	0.0	0.0	18.13130	0.00279	2.89200	8.96310	0.29047	0.00407

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
35.5000E00	12.5486	15.27530	10.37960	15.24634	4.34800	0.54770	0.0	0.0	4.89570
35.6000E00	12.5457	12.34100	9.99570	12.31311	2.04580	0.29550	0.0	0.0	2.34530
35.7000E00	12.5429	11.24270	9.79640	11.21537	1.23640	0.20590	0.0	0.0	1.44630
35.8000E00	12.5401	10.70030	9.66990	10.67332	0.86340	0.16700	0.0	0.0	1.03040
36.0000E00	12.5346	10.18060	9.50880	10.15437	0.54450	0.12730	0.0	0.0	0.67180
36.2000E00	12.5290	9.93100	9.40070	9.90477	0.42090	0.10540	0.0	0.0	0.53030
36.4000E00	12.5235	9.78060	9.31500	9.75461	0.36590	0.09970	0.0	0.0	0.46560
36.6000E00	12.5180	9.67610	9.24000	9.65032	0.34200	0.09410	0.0	0.0	0.43610
36.8000E00	12.5126	9.59610	9.17010	9.57052	0.33500	0.09100	0.0	0.0	0.42600
37.0000E00	12.5072	9.53050	9.10200	9.50511	0.33880	0.08970	0.0	0.0	0.42850
37.5000E00	12.4938	9.40070	8.92730	9.37579	0.38090	0.09250	0.0	0.0	0.47340
38.0000E00	12.4805	9.29820	8.72930	9.27385	0.46520	0.10370	0.0	0.0	0.56890
38.5000E00	12.4674	9.16800	8.35280	9.14470	0.61460	0.20060	0.0	0.0	0.81520
39.0000E00	12.4545	9.14130	8.03210	9.11889	0.85900	0.25020	0.0	0.0	1.10920
39.2000E00	12.4494	9.15790	7.87230	9.13594	1.00610	0.27550	0.0	0.0	1.28560
39.4000E00	12.4443	9.20320	7.68710	9.18175	1.19880	0.31730	0.0	0.0	1.51610
39.6000E00	12.4393	9.29470	7.46920	9.27386	1.45800	0.36750	0.0	0.0	1.82550
39.8000E00	12.4342	9.46250	7.20760	9.44239	1.81850	0.43640	0.0	0.0	2.25490
40.0000E00	12.4292	9.76290	6.88620	9.74369	2.34160	0.53510	0.0	0.0	2.87670
40.2000E00	12.4242	10.30760	6.48000	10.28952	3.14310	0.68450	0.0	0.0	3.82760

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
35.5000E00	12.5486	0.0	0.0	4.89570	0.00279	2.89200	7.93900	0.32375	0.00408
35.6000E00	12.5457	0.0	0.0	2.34530	0.00279	2.89200	6.53020	0.36959	0.00408
35.7000E00	12.5429	0.0	0.0	1.44630	0.00279	2.89200	5.88920	0.42008	0.00409
35.8000E00	12.5401	0.0	0.0	1.03040	0.00279	2.89200	5.17090	0.46898	0.00410
36.0000E00	12.5346	0.0	0.0	0.67180	0.00279	2.89200	4.27860	0.54825	0.00411
36.2000E00	12.5290	0.0	0.0	0.53030	0.00279	2.89200	3.84850	0.59689	0.00412
36.4000E00	12.5235	0.0	0.0	0.46560	0.00279	2.89200	3.67110	0.61955	0.00413
36.6000E00	12.5180	0.0	0.0	0.43610	0.00279	2.89200	3.63540	0.62433	0.00414
36.8000E00	12.5126	0.0	0.0	0.42600	0.00279	2.89200	3.68230	0.61807	0.00415
37.0000E00	12.5072	0.0	0.0	0.42850	0.00279	2.89200	3.77820	0.60567	0.00416
37.5000E00	12.4938	0.0	0.0	0.47340	0.00279	2.89200	4.11780	0.56548	0.00419
38.0000E00	12.4805	0.0	0.0	0.56090	0.00279	2.89200	4.48800	0.52733	0.00422
38.5000E00	12.4674	0.0	0.0	0.81520	0.00279	2.89200	3.06380	0.71214	0.00425
39.0000E00	12.4545	0.0	0.0	1.10920	0.00279	2.89200	3.43340	0.65277	0.00427
39.2000E00	12.4494	0.0	0.0	1.28550	0.00279	2.89200	3.60000	0.62913	0.00429
39.4000E00	12.4443	0.0	0.0	1.51610	0.00279	2.89200	3.77780	0.60572	0.00430
39.6000E00	12.4393	0.0	0.0	1.82550	0.00279	2.89200	3.96700	0.58265	0.00431
39.8000E00	12.4342	0.0	0.0	2.25490	0.00279	2.89200	4.16690	0.56010	0.00432
40.0000E00	12.4292	0.0	0.0	2.87670	0.00279	2.89200	4.37630	0.53829	0.00433
40.2000E00	12.4242	0.0	0.0	3.82760	0.00279	2.89200	4.59210	0.51752	0.00434

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
40.4000E00	12.4193	11.34100	5.94730	11.32441	4.46530	0.92840	0.0	0.0	5.39370
40.6000E00	12.4143	13.47310	5.21580	13.45855	6.88590	1.37140	0.0	0.0	8.25730
40.8000E00	12.4094	18.55370	4.15330	18.54211	12.08360	2.31680	0.0	0.0	14.40040
40.9000E00	12.4070	23.97350	3.43210	23.96392	17.28180	3.25960	0.0	0.0	20.54140
41.0000E00	12.4045	34.32720	2.55400	34.32007	26.79150	4.98170	0.0	0.0	31.77320
41.1000E00	12.4021	57.37910	1.61410	57.37460	47.10770	8.65730	0.0	0.0	55.76500
41.2000E00	12.3997	124.07400	1.31930	124.06900	103.58600	18.86900	0.0	0.0	122.45500
41.3000E00	12.3972	456.70600	14.76490	456.66400	374.16300	67.77780	0.0	0.0	441.94100
41.3300E00	12.3965	833.68100	37.01100	833.57700	674.59100	122.07900	0.0	0.0	796.67000
41.3600E00	12.3958	1763.69700	104.08700	1763.40700	1405.43500	254.17500	0.0	0.0	1659.61000
41.3800E00	12.3953	2945.72000	206.37200	2945.14400	2319.89100	419.45800	0.0	0.0	2739.34900
41.4000E00	12.3948	3810.41300	312.60400	3809.54000	2962.24900	535.56000	0.0	0.0	3497.80900
41.4200E00	12.3943	3025.02900	286.99300	3024.22800	2318.77600	419.25800	0.0	0.0	2738.03400
41.4400E00	12.3938	1859.74900	201.73000	1859.18700	1404.08500	253.93500	0.0	0.0	1658.01900
41.4700E00	12.3931	914.30700	118.95600	913.97500	673.46900	121.88200	0.0	0.0	795.35100
41.5000E00	12.3924	520.53400	79.61820	520.31200	373.28800	67.62800	0.0	0.0	440.91600
41.6000E00	12.3900	159.26300	37.31450	159.15900	103.14300	18.80560	0.0	0.0	121.94900
41.7000E00	12.3876	81.23470	25.74550	81.16287	46.85300	8.63620	0.0	0.0	55.48920
41.8000E00	12.3852	52.27340	20.63450	52.21983	26.64940	4.98950	0.0	0.0	31.63890
41.9000E00	12.3828	38.30470	17.79300	38.25506	17.22120	3.29050	0.0	0.0	20.51170

E	U	SGI	SG2N	SGX	MUEL	NUE	ALPHA	ETA	CHIF
40.4000E00	12.4193	0.0	0.0	5.39370	0.00279	2.89200	4.80970	0.49813	0.00435
40.6000E00	12.4143	0.0	0.0	8.25730	0.00279	2.89200	5.02120	0.48064	0.00436
40.8000E00	12.4094	0.0	0.0	14.40040	0.00279	2.89200	5.21560	0.46560	0.00437
40.9000E00	12.4070	0.0	0.0	20.54140	0.00279	2.89200	5.30190	0.45923	0.00438
41.0000E00	12.4045	0.0	0.0	31.77320	0.00279	2.89200	5.37790	0.45375	0.00438
41.1000E00	12.4021	0.0	0.0	55.76500	0.00279	2.89200	5.44140	0.44928	0.00439
41.2000E00	12.3997	0.0	0.0	122.45500	0.00279	2.89200	5.48970	0.44594	0.00439
41.3000E00	12.3972	0.0	0.0	441.94100	0.00279	2.89200	5.52040	0.44386	0.00440
41.3300E00	12.3965	0.0	0.0	796.67000	0.00279	2.89200	5.52580	0.44347	0.00440
41.3600E00	12.3958	0.0	0.0	1659.61000	0.00279	2.89200	5.52940	0.44323	0.00440
41.3800E00	12.3953	0.0	0.0	2739.34900	0.00279	2.89200	5.53070	0.44314	0.00440
41.4000E00	12.3948	0.0	0.0	3497.80900	0.00279	2.89200	5.53110	0.44311	0.00440
41.4200E00	12.3943	0.0	0.0	2738.03400	0.00279	2.89200	5.53070	0.44314	0.00441
41.4400E00	12.3938	0.0	0.0	1658.01900	0.00279	2.89200	5.52930	0.44323	0.00441
42.4700E00	12.3931	0.0	0.0	795.35100	0.00279	2.89200	5.52560	0.44348	0.00441
41.5000E00	12.3924	0.0	0.0	440.91600	0.00279	2.89200	5.51970	0.44389	0.00441
41.6000E00	12.3900	0.0	0.0	121.94900	0.00279	2.89200	5.48470	0.44628	0.00442
41.7000E00	12.3876	0.0	0.0	55.48920	0.00279	2.89200	5.42520	0.45041	0.00442
41.8000E00	12.3852	0.0	0.0	31.63890	0.00279	2.89200	5.34110	0.45639	0.00443
41.9000E00	12.3828	0.0	0.0	20.51170	0.00279	2.89200	5.23360	0.46426	0.00443

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
42.0000E00	12.3804	30.44450	15.98610	30.39990	12.08990	2.36850	0.0	0.0	14.45840
42.2000E00	12.3757	22.25960	13.79940	22.23110	7.00860	1.46160	0.0	0.0	8.47020
42.4000E00	12.3709	18.24780	12.48810	18.21296	4.70240	1.05730	0.0	0.0	5.75970
42.6000E00	12.3662	15.93780	11.57310	15.90551	3.50930	0.85540	0.0	0.0	4.36470
42.8000E00	12.3616	14.48060	10.85890	14.45030	2.86750	0.75420	0.0	0.0	3.62170
43.0000E00	12.3569	13.20890	9.87530	13.18135	2.59460	0.73900	0.0	0.0	3.33360
43.2000E00	12.3523	12.59150	9.30200	12.56555	2.54250	0.74700	0.0	0.0	3.28950
43.4000E00	12.3476	12.30350	8.74000	12.27912	2.76100	0.80250	0.0	0.0	3.56350
43.6000E00	12.3430	12.48510	8.17600	12.46229	3.38370	0.92540	0.0	0.0	4.30910
43.8000E00	12.3385	13.66800	7.66160	13.64662	4.82740	1.17900	0.0	0.0	6.00640
44.0000E00	12.3339	17.90860	7.58060	17.88745	8.54440	1.78360	0.0	0.0	10.32800
44.1000E00	12.3316	23.62150	8.28800	23.59838	12.87150	2.46200	0.0	0.0	15.33350
44.2000E00	12.3294	37.11050	10.98520	37.07985	22.22330	3.90200	0.0	0.0	26.12530
44.3000E00	12.3271	78.45330	21.85000	78.39234	48.67510	7.92820	0.0	0.0	56.60330
44.4000E00	12.3249	306.47500	94.29090	306.21200	183.80800	28.37660	0.0	0.0	212.18500
44.4300E00	12.3242	600.77700	194.94700	600.23300	352.02900	53.80170	0.0	0.0	405.83000
44.4600E00	12.3235	1522.80200	524.11400	1521.34000	867.06500	131.62400	0.0	0.0	998.68900
44.4800E00	12.3231	3332.55600	1195.01400	3329.22200	1856.43900	281.10400	0.0	0.0	2137.54200
44.5000E00	12.3226	5510.11100	2059.75100	5504.36400	2996.94100	453.41800	0.0	0.0	3450.36000
44.5200E00	12.3222	3500.71700	1364.12900	3498.91100	1855.59500	280.99200	0.0	0.0	2136.58700

E	U	SGI	SGZN	SGX	NUEL	NUE	ALPHA	ETA	CHIF
42.0000E00	12.3804	0.0	0.0	14.45840	0.00279	2.89200	5.10450	0.47403	0.00444
42.2000E00	12.3757	0.0	0.0	8.47020	0.00279	2.89200	4.79530	0.49937	0.00445
42.4000E00	12.3709	0.0	0.0	5.75970	0.00279	2.89200	4.44740	0.53126	0.00446
42.6000E00	12.3662	0.0	0.0	4.36470	0.00279	2.89200	4.10240	0.56718	0.00447
42.8000E00	12.3616	0.0	0.0	3.62170	0.00279	2.89200	3.80210	0.60265	0.00448
43.0000E00	12.3569	0.0	0.0	3.33360	0.00279	2.89200	3.51090	0.64154	0.00449
43.2000E00	12.3523	0.0	0.0	3.28950	0.00279	2.89200	3.40310	0.65728	0.00450
43.4000E00	12.3476	0.0	0.0	3.56350	0.00279	2.89200	3.44070	0.65170	0.00451
43.6000E00	12.3430	0.0	0.0	4.30910	0.00279	2.89200	3.65660	0.62148	0.00452
43.8000E00	12.3385	0.0	0.0	6.00640	0.00279	2.89200	4.09450	0.56306	0.00453
44.0000E00	12.3339	0.0	0.0	10.32800	0.00279	2.89200	4.79050	0.49978	0.00454
44.1000E00	12.3316	0.0	0.0	15.33350	0.00279	2.89200	5.22800	0.46468	0.00455
44.2000E00	12.3294	0.0	0.0	26.12530	0.00279	2.89200	5.69530	0.43224	0.00455
44.3000E00	12.3271	0.0	0.0	56.60330	0.00279	2.89200	6.13950	0.40535	0.00456
44.4000E00	12.3249	0.0	0.0	212.18500	0.00279	2.89200	6.47740	0.38703	0.00456
44.4300E00	12.3242	0.0	0.0	405.83000	0.00279	2.89200	6.54310	0.38366	0.00456
44.4600E00	12.3235	0.0	0.0	998.68900	0.00279	2.89200	6.58750	0.38142	0.00456
44.4800E00	12.3231	0.0	0.0	2137.54200	0.00279	2.89200	6.60410	0.38053	0.00457
44.5000E00	12.3226	0.0	0.0	3450.36000	0.00279	2.89200	6.60970	0.38030	0.00457
44.5200E00	12.3222	0.0	0.0	2136.58700	0.00279	2.89200	6.60370	0.38060	0.00457

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
44.5400E00	12.3217	1679.77300	681.97000	1677.87000	866.27000	131.53400	0.0	0.0	997.80200
44.5700E00	12.3210	712.11600	306.90400	711.26000	351.44500	53.76670	0.0	0.0	405.21200
44.6000E00	12.3204	389.32400	177.58500	388.82800	183.35400	28.38400	0.0	0.0	211.73800
44.7000E00	12.3181	121.72800	65.31840	121.54600	48.37420	8.03540	0.0	0.0	56.40960
44.8000E00	12.3159	66.06330	40.02270	65.95164	21.94870	4.09190	0.0	0.0	26.04060
44.9000E00	12.3137	45.23870	29.92000	45.15522	12.58680	2.73190	0.0	0.0	15.31870
45.0000E00	12.3114	35.05470	24.68690	34.98582	8.23290	2.13490	0.0	0.0	10.36780
45.2000E00	12.3070	25.59130	19.45270	25.53703	4.43310	1.70550	0.0	0.0	6.13860
45.4000E00	12.3026	21.39360	16.86410	21.34655	2.87420	1.65530	0.0	0.0	4.52950
45.6000E00	12.2982	19.19030	15.31090	19.14758	2.09890	1.78050	0.0	0.0	3.87940
45.8000E00	12.2938	17.97320	14.25650	17.93342	1.67470	2.04200	0.0	0.0	3.71670
46.0000E00	12.2895	17.37140	13.47280	17.33381	1.44030	2.45830	0.0	0.0	3.89860
46.2000E00	12.2851	16.53460	11.99570	16.50113	1.42580	3.11310	0.0	0.0	4.53890
46.4000E00	12.2808	16.96330	11.42880	16.93141	1.42760	4.10690	0.0	0.0	5.53450
46.6000E00	12.2765	18.19560	10.89890	18.16519	1.55220	5.74450	0.0	0.0	7.29670
46.8000E00	12.2722	20.92560	10.36100	20.89669	1.87370	8.69090	0.0	0.0	10.56460
47.0000E00	12.2679	27.12200	9.76070	27.09477	2.61670	14.74460	0.0	0.0	17.36130
47.1000E00	12.2658	33.19030	9.41600	33.16403	3.33780	20.43650	0.0	0.0	23.77430
47.2000E00	12.2637	43.60090	9.03500	43.57569	4.56160	30.00430	0.0	0.0	34.56590
47.3000E00	12.2616	62.85270	8.64710	62.82857	6.79700	47.40860	0.0	0.0	54.20560

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
44.5400E00	12.3217	0.0	0.0	997.80300	0.00279	2.89200	6.58590	0.38150	0.00457
44.5700E00	12.3210	0.0	0.0	405.21200	0.00279	2.89200	6.53650	0.38400	0.00457
44.6000E00	12.3204	0.0	0.0	211.73800	0.00279	2.89200	6.45980	0.38795	0.00457
44.7000E00	12.3181	0.0	0.0	56.40960	0.00279	2.89200	6.02010	0.41225	0.00458
44.8000E00	12.3159	0.0	0.0	26.04060	0.00279	2.89200	5.36390	0.45475	0.00458
44.9000E00	12.3137	0.0	0.0	15.31870	0.00279	2.89200	4.60730	0.51611	0.00459
45.0000E00	12.3114	0.0	0.0	10.36780	0.00279	2.89200	3.85640	0.59591	0.00459
45.2000E00	12.3070	0.0	0.0	6.13860	0.00279	2.89200	2.59930	0.80405	0.00460
45.4000E00	12.3026	0.0	0.0	4.52950	0.00279	2.89200	1.73640	1.05759	0.00461
45.6000E00	12.2982	0.0	0.0	3.87940	0.00279	2.89200	1.17880	1.32825	0.00462
45.8000E00	12.2938	0.0	0.0	3.71670	0.00279	2.89200	0.82010	1.59002	0.00463
46.0000E00	12.2895	0.0	0.0	3.89860	0.00279	2.89200	0.58590	1.82483	0.00464
46.2000E00	12.2851	0.0	0.0	4.53090	0.00279	2.89200	0.45800	1.98491	0.00465
46.4000E00	12.2808	0.0	0.0	5.53450	0.00279	2.89200	0.34760	2.14752	0.00466
46.6000E00	12.2765	0.0	0.0	7.29670	0.00279	2.89200	0.27020	2.27838	0.00467
46.8000E00	12.2722	0.0	0.0	10.56460	0.00279	2.89200	0.21560	2.38072	0.00468
47.0000E00	12.2679	0.0	0.0	17.36130	0.00279	2.89200	0.17750	2.45775	0.00469
47.1000E00	12.2658	0.0	0.0	23.77430	0.00279	2.89200	0.16330	2.48775	0.00470
47.2000E00	12.2637	0.0	0.0	34.56590	0.00279	2.89200	0.15200	2.51215	0.00470
47.3000E00	12.2616	0.0	0.0	54.20560	0.00279	2.89200	0.14340	2.53103	0.00471

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
47.4000E00	12.2595	100.93300	8.44140	100.90900	11.16030	81.33090	0.0	0.0	92.49120
47.5000E00	12.2574	171.35700	9.21970	171.33100	19.10000	143.03700	0.0	0.0	162.13700
47.5300E00	12.2567	195.96500	9.88410	195.95700	21.83230	164.26800	0.0	0.0	186.10000
47.5600E00	12.2561	216.57500	10.77620	216.54500	24.07910	181.72000	0.0	0.0	205.79900
47.5800E00	12.2557	225.48400	11.45490	225.45200	25.01870	189.01100	0.0	0.0	214.03000
47.6000E00	12.2553	229.04200	12.14470	229.00800	25.34750	191.55000	0.0	0.0	216.89700
47.6200E00	12.2548	226.74200	12.78830	226.70700	25.01460	188.93900	0.0	0.0	213.95400
47.6400E00	12.2544	218.99100	13.33560	218.95300	24.07160	181.58300	0.0	0.0	205.65500
47.6700E00	12.2538	199.79100	13.91400	199.75200	21.82240	164.05500	0.0	0.0	185.87700
47.7000E00	12.2532	176.06600	14.19720	176.02600	19.09170	142.77700	0.0	0.0	161.86900
47.8000E00	12.2511	106.11800	13.86930	106.07900	11.17780	81.07040	0.0	0.0	92.24820
47.9000E00	12.2490	67.14330	13.05720	67.10687	6.85260	47.23350	0.0	0.0	54.08610
48.0000E00	12.2469	46.93890	12.35970	46.90442	4.65830	29.92090	0.0	0.0	34.57920
48.1000E00	12.2448	35.72730	11.81000	35.69435	3.47800	20.43930	0.0	0.0	23.91730
48.2000E00	12.2427	29.00070	11.36650	28.96899	2.80410	14.83010	0.0	0.0	17.63420
48.4000E00	12.2386	21.70710	10.66510	21.75734	2.17520	8.94680	0.0	0.0	11.12200
48.6000E00	12.2345	18.30020	10.08170	18.27207	2.01360	6.20490	0.0	0.0	8.21850
48.8000E00	12.2304	17.56580	10.89720	17.53540	1.87010	4.79850	0.0	0.0	6.66860
49.0000E00	12.2263	15.21670	8.44040	15.19315	2.48690	4.28940	0.0	0.0	6.77630
49.2000E00	12.2222	15.61580	7.76110	15.59415	3.40330	4.45140	0.0	0.0	7.35470

E	U	SGI	SGZN	SGX	NUEL	NUE	ALPHA	ETA	CHIF
47.4000E00	12.2595	0.0	0.0	92.49120	0.00279	2.89200	0.13720	2.54485	0.00471
47.5000E00	12.2574	0.0	0.0	162.13700	0.00279	2.89200	0.12350	2.55316	0.00472
47.5300E00	12.2567	0.0	0.0	186.10000	0.00279	2.89200	0.13290	2.55451	0.00472
47.5600E00	12.2561	0.0	0.0	205.79900	0.00279	2.89200	0.13250	2.55541	0.00472
47.5800E00	12.2557	0.0	0.0	214.03000	0.00279	2.89200	0.13240	2.55564	0.00472
47.6000E00	12.2553	0.0	0.0	216.89700	0.00279	2.89200	0.13230	2.55586	0.00472
47.6200E00	12.2548	0.0	0.0	213.95400	0.00279	2.89200	0.13240	2.55564	0.00472
47.6400E00	12.2544	0.0	0.0	205.65500	0.00279	2.89200	0.13260	2.55518	0.00472
47.6700E00	12.2538	0.0	0.0	185.87700	0.00279	2.89200	0.13300	2.55428	0.00473
47.7000E00	12.2532	0.0	0.0	161.86900	0.00279	2.89200	0.13370	2.55270	0.00473
47.8000E00	12.2511	0.0	0.0	92.24820	0.00279	2.89200	0.13790	2.54328	0.00473
47.9000E00	12.2490	0.0	0.0	54.08610	0.00279	2.89200	0.14510	2.52729	0.00474
48.0000E00	12.2469	0.0	0.0	34.57920	0.00279	2.89200	0.15570	2.50411	0.00474
48.1000E00	12.2448	0.0	0.0	23.91730	0.00279	2.89200	0.17020	2.47308	0.00475
48.2000E00	12.2427	0.0	0.0	17.63420	0.00279	2.89200	0.18910	2.43377	0.00475
48.4000E00	12.2386	0.0	0.0	11.12200	0.00279	2.89200	0.24310	2.32805	0.00476
48.6000E00	12.2345	0.0	0.0	8.21850	0.00279	2.89200	0.32450	2.18493	0.00477
48.8000E00	12.2304	0.0	0.0	6.66860	0.00279	2.89200	0.38970	2.08246	0.00478
49.0000E00	12.2263	0.0	0.0	6.77630	0.00279	2.89200	0.57980	1.83188	0.00479
49.2000E00	12.2222	0.0	0.0	7.85470	0.00279	2.89200	0.76450	1.64013	0.00480

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.41400	5.74300	0.0	0.0	11.21700
49.5000E00	12.2161	21.19380	6.31750	21.17617	7.56860	7.30770	0.0	0.0	14.87630
49.6000E00	12.2141	27.40400	5.65700	27.38022	11.40970	10.33730	0.0	0.0	21.74700
49.7000E00	12.2121	41.58250	4.97120	41.56863	19.61740	16.93290	0.0	0.0	36.61130
49.8000E00	12.2101	83.10720	4.97890	83.09331	42.40730	35.72100	0.0	0.0	78.12830
49.9000E00	12.2081	250.72000	14.17200	290.68100	151.07800	125.47100	0.0	0.0	276.54800
49.9300E00	12.2075	524.73800	29.51200	524.65500	270.79500	224.43100	0.0	0.0	495.22600
49.9600E00	12.2069	1094.84300	74.38270	1094.63000	557.98600	461.87100	0.0	0.0	1019.85700
49.9800E00	12.2065	1804.68800	142.73500	1804.29000	939.46900	752.48400	0.0	0.0	1661.95400
50.0000E00	12.2061	2315.56300	211.79600	2314.97200	1151.32100	952.44500	0.0	0.0	2103.76600
50.0200E00	12.2057	1857.07800	195.80400	1857.53100	909.11800	752.15500	0.0	0.0	1661.27300
50.0400E00	12.2053	1159.03400	140.02400	1158.64300	557.56400	461.44600	0.0	0.0	1019.01000
50.0700E00	12.2047	579.06000	84.58370	579.82400	270.45900	224.01800	0.0	0.0	494.47700
50.1000E00	12.2041	333.78500	57.86760	333.62300	150.83800	125.07500	0.0	0.0	275.91700
50.2000E00	12.2021	106.55100	28.89400	106.47000	42.36270	35.29420	0.0	0.0	77.65690
50.3000E00	12.2001	57.04210	20.89350	57.98381	19.68970	16.45890	0.0	0.0	36.14860
50.4000E00	12.1981	38.55160	17.31150	38.50330	11.57680	9.66330	0.0	0.0	21.24010
50.5000E00	12.1961	29.57570	15.27920	29.53307	7.82450	6.47200	0.0	0.0	14.29650
50.6000E00	12.1941	24.49130	13.94960	24.45238	5.81940	4.72230	0.0	0.0	10.54170
50.8000E00	12.1902	19.16490	12.24630	19.13073	3.94660	2.97200	0.0	0.0	6.91860

E	U	SGI	SG2M	SGX	NUEL	NUE	ALPHA	ETA	CHIF
49.4000E00	12.2181	0.0	0.0	11.21700	0.00279	2.89200	0.95320	1.48167	0.00481
49.5000E00	12.2161	0.0	0.0	14.87630	0.00279	2.89200	1.03570	1.42162	0.00482
49.6000E00	12.2141	0.0	0.0	21.74700	0.00279	2.89200	1.10370	1.37567	0.00482
49.7000E00	12.2121	0.0	0.0	36.61130	0.00279	2.89200	1.15440	1.34330	0.00483
49.8000E00	12.2101	0.0	0.0	78.12830	0.00279	2.89200	1.18720	1.32315	0.00483
49.9000E00	12.2081	0.0	0.0	276.54800	0.00279	2.89200	1.20410	1.31301	0.00484
49.9300E00	12.2075	0.0	0.0	495.22600	0.00279	2.89200	1.20660	1.31152	0.00484
49.9600E00	12.2069	0.0	0.0	1019.85700	0.00279	2.89200	1.20810	1.31063	0.00484
49.9800E00	12.2065	0.0	0.0	1661.95400	0.00279	2.89200	1.20860	1.31033	0.00484
50.0000E00	12.2061	0.0	0.0	2103.76600	0.00279	2.89200	1.20880	1.31021	0.00484
50.0200E00	12.2057	0.0	0.0	1661.27300	0.00279	2.89200	1.20870	1.31027	0.00484
50.0400E00	12.2053	0.0	0.0	1019.01000	0.00279	2.89200	1.20830	1.31051	0.00484
50.0700E00	12.2047	0.0	0.0	494.47700	0.00279	2.89200	1.20730	1.31110	0.00484
50.1000E00	12.2041	0.0	0.0	275.91700	0.00279	2.89200	1.20590	1.31194	0.00485
50.2000E00	12.2021	0.0	0.0	77.65690	0.00279	2.89200	1.20030	1.31528	0.00485
50.3000E00	12.2001	0.0	0.0	36.14860	0.00279	2.89200	1.19630	1.31767	0.00485
50.4000E00	12.1981	0.0	0.0	21.24010	0.00279	2.89200	1.19800	1.31665	0.00486
50.5000E00	12.1961	0.0	0.0	14.29650	0.00279	2.89200	1.20900	1.31010	0.00486
50.6000E00	12.1941	0.0	0.0	10.54170	0.00279	2.89200	1.23220	1.29642	0.00487
50.8000E00	12.1902	0.0	0.0	6.91860	0.00279	2.89200	1.22790	1.24318	0.00488

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
51.0000E00	12.1863	16.55520	11.10440	16.52422	3.27750	2.17730	0.0	0.0	5.45080
51.2000E00	12.1824	15.14490	10.17950	15.11650	3.18950	1.77590	0.0	0.0	4.96540
51.4000E00	12.1785	13.75340	8.64120	13.72929	3.51250	1.59970	0.0	0.0	5.11220
51.6000E00	12.1746	13.79960	7.74710	13.77799	4.03690	1.61560	0.0	0.0	6.05250
51.8000E00	12.1707	14.95820	6.70530	14.93949	6.37670	1.87620	0.0	0.0	8.25290
52.0000E00	12.1669	18.82960	5.41910	18.81448	10.76470	2.64580	0.0	0.0	13.41050
52.1000E00	12.1649	23.40410	4.69170	23.39101	15.22900	3.48340	0.0	0.0	18.71240
52.2000E00	12.1630	32.56400	4.04060	32.55273	23.46030	5.06310	0.0	0.0	28.52340
52.3000E00	12.1611	53.74280	4.05870	53.73148	41.17890	8.50520	0.0	0.0	49.68410
52.4000E00	12.1592	117.38300	8.04370	117.36000	91.08280	18.25630	0.0	0.0	109.33900
52.5000E00	12.1573	458.55800	48.53630	458.42300	342.52500	67.49710	0.0	0.0	410.02200
52.5300E00	12.1567	885.27700	110.17200	884.96900	647.80200	127.30300	0.0	0.0	775.10500
52.5600E00	12.1561	2146.12400	312.81600	2145.25100	1532.64500	300.66300	0.0	0.0	1833.30700
52.5800E00	12.1558	4345.16300	700.61500	4343.20800	3047.15200	597.39400	0.0	0.0	3644.54600
52.6000E00	12.1554	6608.29600	1173.49600	6605.02200	4544.11200	890.68800	0.0	0.0	5434.80000
52.6200E00	12.1550	4523.60000	880.45700	4521.14300	3045.98500	597.15800	0.0	0.0	3643.14300
52.6400E00	12.1546	2325.53600	493.65800	2324.15900	1531.46300	300.41500	0.0	0.0	1831.87800
52.6700E00	12.1540	1017.84000	243.82600	1017.16000	646.91400	127.10000	0.0	0.0	774.01400
52.7000E00	12.1535	558.53200	149.37900	558.11500	341.83400	67.32010	0.0	0.0	409.15400
52.8000E00	12.1516	269.65400	61.34730	269.48300	173.65600	34.65020	0.0	0.0	208.30700

E	U	SG1	SG2N	SG2	NUEL	NUE	ALPHA	ETA	CHIF
51.0000E00	12.1863	0.0	0.0	5.45080	0.00279	2.89200	1.50800	1.15391	0.00489
51.2000E00	12.1824	0.0	0.0	4.96540	0.00279	2.89200	1.75600	1.03505	0.00490
51.4000E00	12.1785	0.0	0.0	5.11220	0.00279	2.89200	2.19580	0.90556	0.00491
51.6000E00	12.1746	0.0	0.0	6.05250	0.00279	2.89200	2.74620	0.77250	0.00492
51.8000E00	12.1707	0.0	0.0	8.25290	0.00279	2.89200	3.39880	0.65791	0.00493
52.0000E00	12.1669	0.0	0.0	13.41050	0.00279	2.89200	4.06860	0.57097	0.00494
52.1000E00	12.1649	0.0	0.0	18.71240	0.00279	2.89200	4.37190	0.53873	0.00494
52.2000E00	12.1630	0.0	0.0	28.52340	0.00279	2.89200	4.63360	0.51370	0.00495
52.3000E00	12.1611	0.0	0.0	49.68410	0.00279	2.89200	4.84160	0.49541	0.00495
52.4000E00	12.1592	0.0	0.0	109.33900	0.00279	2.89200	4.98910	0.48321	0.00496
52.5000E00	12.1573	0.0	0.0	410.02200	0.00279	2.89200	5.07470	0.47640	0.00496
52.5300E00	12.1567	0.0	0.0	775.10500	0.00279	2.89200	5.08870	0.47531	0.00496
52.5600E00	12.1561	0.0	0.0	1833.30700	0.00279	2.89200	5.09760	0.47461	0.00496
52.5800E00	12.1558	0.0	0.0	3644.54600	0.00279	2.89200	5.10070	0.47437	0.00496
52.6000E00	12.1554	0.0	0.0	5434.80000	0.00279	2.89200	5.10180	0.47429	0.00496
52.6200E00	12.1550	0.0	0.0	3643.14300	0.00279	2.89200	5.10080	0.47436	0.00497
52.6400E00	12.1546	0.0	0.0	1831.87800	0.00279	2.89200	5.09780	0.47460	0.00497
52.6700E00	12.1540	0.0	0.0	774.01400	0.00279	2.89200	5.08980	0.47522	0.00497
52.7000E00	12.1535	0.0	0.0	409.15400	0.00279	2.89200	5.07770	0.47617	0.00497
52.8000E00	12.1516	0.0	0.0	208.30700	0.00279	2.89200	5.01170	0.48139	0.00497

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
52.9000E00	12.1497	190.74700	39.84100	190.63600	125.38600	25.51980	0.0	0.0	150.90600
53.0000E00	12.1478	146.37300	30.82040	146.28700	95.60170	19.95110	0.0	0.0	115.55300
53.1000E00	12.1459	117.17700	25.98290	117.10500	75.06810	16.12600	0.0	0.0	91.19410
53.2000E00	12.1440	98.44960	22.99870	98.38543	61.75670	13.69420	0.0	0.0	75.45090
53.4000E00	12.1403	74.23610	19.53560	74.18160	44.20520	10.49530	0.0	0.0	54.70050
53.6000E00	12.1365	59.35860	17.59470	59.30951	33.28340	8.48050	0.0	0.0	41.76390
53.8000E00	12.1328	49.82870	16.35360	49.78307	26.29190	7.18320	0.0	0.0	33.47510
54.0000E00	12.1291	44.43340	16.27800	44.38798	21.78930	6.36610	0.0	0.0	28.15540
54.5000E00	12.1199	38.84000	16.22000	38.79475	16.71000	5.91000	0.0	0.0	22.62000
55.0000E00	12.1108	41.51000	16.18000	41.46486	17.59000	7.74000	0.0	0.0	25.33000
55.5000E00	12.1017	49.97000	16.14000	49.92497	21.60000	12.23000	0.0	0.0	33.83000
56.0000E00	12.0927	66.73000	16.11000	66.68505	28.68000	21.94000	0.0	0.0	50.62000
56.5000E00	12.0839	93.50000	16.08000	93.45514	39.02000	38.40000	0.0	0.0	77.42000
57.0000E00	12.0750	130.38000	16.05000	130.33500	55.13000	59.20000	0.0	0.0	[illegible]
57.5000E00	12.0663	176.68000	16.03000	176.63500	75.15000	85.50000	0.0	[illegible]	160.65000
58.0000E00	12.0577	239.46000	16.02000	239.41500	102.44000	121.00000	0.0	0.0	223.44000
58.5000E00	12.0491	324.40000	16.01000	324.43500	139.47000	169.00000	0.0	0.0	308.47000
59.0000E00	12.0406	356.52000	16.01000	356.47500	152.51000	188.00000	0.0	0.0	340.51000
59.5000E00	12.0321	277.07000	16.00000	277.02500	116.07000	145.00000	0.0	0.0	261.07000
60.0000E00	12.0238	159.63000	16.00000	159.58500	63.53000	80.10000	0.0	0.0	143.63000

E	U	SGI	SG2N	SGK	NUEL	NUE	ALPHA	ETA	CHIF
52.9000E00	12.1497	0.0	0.0	150.90600	0.00279	2.89200	4.91330	0.48941	0.00499
53.0000E00	12.1478	0.0	0.0	115.55300	0.00279	2.89200	4.79180	0.49967	0.00498
53.1000E00	12.1459	0.0	0.0	91.19410	0.00279	2.89200	4.65510	0.51175	0.00499
53.2000E00	12.1440	0.0	0.0	75.45090	0.00279	2.89200	4.50970	0.52526	0.00499
53.4000E00	12.1403	0.0	0.0	54.70050	0.00279	2.89200	4.21190	0.55527	0.00500
53.6000E00	12.1365	0.0	0.0	41.76390	0.00279	2.89200	3.92470	0.58765	0.00501
53.8000E00	12.1328	0.0	0.0	33.47510	0.00279	2.89200	3.66020	0.62100	0.00502
54.0000E00	12.1291	0.0	0.0	28.15540	0.00279	2.89200	3.42270	0.65435	0.00503
54.5000E00	12.1199	0.0	0.0	22.62000	0.00279	2.89200	2.82700	0.75621	0.00505
55.0000E00	12.1108	0.0	0.0	25.33000	0.00279	2.89200	2.27300	0.88420	0.00508
55.5000E00	12.1017	0.0	0.0	33.83000	0.00279	2.89200	1.76800	1.04628	0.00510
56.0000E00	12.0927	0.0	0.0	50.62000	0.00279	2.89200	1.30700	1.25444	0.00512
56.5000E00	12.0839	0.0	0.0	77.42000	0.00279	2.89200	1.01620	1.43537	0.00515
57.0000E00	12.0750	0.0	0.0	114.33000	0.00279	2.89200	0.93120	1.49855	0.00517
57.5000E00	12.0663	0.0	0.0	160.65000	0.00279	2.89200	0.87850	1.54026	0.00519
58.0000E00	12.0577	0.0	0.0	223.44000	0.00279	2.89200	0.84660	1.56721	0.00521
58.5000E00	12.0491	0.0	0.0	308.47000	0.00279	2.89200	0.82530	1.58549	0.00524
59.0000E00	12.0406	0.0	0.0	340.51000	0.00279	2.89200	0.81120	1.59784	0.00526
59.5000E00	12.0321	0.0	0.0	261.07000	0.00279	2.89200	0.80050	1.60733	0.00528
60.0000E00	12.0238	0.0	0.0	143.63000	0.00279	2.89200	0.79310	1.61397	0.00530

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
61.0000E00	12.0072	79.80000	15.99000	79.75539	28.21000	35.60000	0.0	0.0	63.81000
62.0000E00	11.9910	92.48000	15.98000	92.43542	33.80000	42.70000	0.0	0.0	76.50000
63.0000E00	11.9750	121.08000	15.97000	121.03500	46.41000	58.70000	0.0	0.0	105.11000
64.0000E00	11.9592	157.71000	15.95000	157.66500	62.56000	79.20000	0.0	0.0	141.76000
65.0000E00	11.9437	210.95000	15.94000	210.90600	86.01000	109.00000	0.0	0.0	195.01000
65.5000E00	11.9360	223.42000	15.93000	223.37000	91.49000	116.00000	0.0	0.0	207.49000
66.0000E00	11.9284	198.33000	15.92000	198.28600	80.41000	102.00000	0.0	0.0	182.41000
67.0000E00	11.9134	114.76000	15.91000	114.71600	43.55000	55.30000	0.0	0.0	98.85000
68.0000E00	11.8986	69.50000	15.90000	69.45564	23.60000	30.00000	0.0	0.0	53.60000
69.0000E00	11.8840	37.36000	15.89000	37.31567	9.45000	12.02000	0.0	0.0	21.47000
70.0000E00	11.8696	31.57000	15.88000	31.52569	6.90000	8.79000	0.0	0.0	15.69000
71.0000E00	11.8554	36.35000	15.87000	36.30572	9.00000	11.48000	0.0	0.0	20.48000
72.0000E00	11.8414	67.76000	15.86000	67.71575	22.80000	29.10000	0.0	0.0	51.90000
73.0000E00	11.8276	135.28000	15.85000	135.23600	52.43000	67.00000	0.0	0.0	119.43000
74.0000E00	11.8140	256.38000	15.84000	256.33600	105.54000	135.00000	0.0	0.0	240.54000
75.0000E00	11.8006	416.56000	15.83000	416.51600	175.73000	225.00000	0.0	0.0	400.73000
76.0000E00	11.7874	250.61000	15.82000	250.76600	102.99000	132.00000	0.0	0.0	234.99000
77.0000E00	11.7743	106.56000	15.81000	106.51600	39.75000	51.00000	0.0	0.0	90.75000
78.0000E00	11.7614	33.76000	15.80000	33.71592	7.86000	10.10000	0.0	0.0	17.96000
79.0000E00	11.7486	33.21000	15.79000	33.16595	7.62000	9.80000	0.0	0.0	17.42000

E	U	SG1	SG2N	SGX	MUEL	NUE	ALPHA	ETA	CHIF
61.0000E00	12.0072	0.0	0.0	63.81000	0.00279	2.89200	0.79230	1.61469	0.00535
62.0000E00	11.9910	0.0	0.0	76.50000	0.00279	2.89200	0.79150	1.61541	0.00539
63.0000E00	11.9750	0.0	0.0	105.11000	0.00279	2.89200	0.79070	1.61613	0.00543
64.0000E00	11.9592	0.0	0.0	141.76000	0.00279	2.89200	0.78990	1.61685	0.00548
65.0000E00	11.9437	0.0	0.0	195.01000	0.00279	2.89200	0.78910	1.61757	0.00552
65.5000E00	11.9360	0.0	0.0	207.49000	0.00279	2.89200	0.78870	1.61794	0.00554
66.0000E00	11.9284	0.0	0.0	182.41000	0.00279	2.89200	0.78830	1.61830	0.00556
67.0000E00	11.9134	0.0	0.0	98.85000	0.00279	2.89200	0.78750	1.61902	0.00560
68.0000E00	11.8986	0.0	0.0	53.60000	0.00279	2.89200	0.78670	1.61975	0.00564
69.0000E00	11.8840	0.0	0.0	21.47000	0.00279	2.89200	0.78590	1.62047	0.00569
70.0000E00	11.8696	0.0	0.0	15.69000	0.00279	2.89200	0.78500	1.62129	0.00573
71.0000E00	11.8554	0.0	0.0	20.48000	0.00279	2.89200	0.78420	1.62202	0.00577
72.0000E00	11.8414	0.0	0.0	51.90000	0.00279	2.89200	0.78340	1.62274	0.00581
73.0000E00	11.8276	0.0	0.0	119.43000	0.00279	2.89200	0.78260	1.62347	0.00585
74.0000E00	11.8140	0.0	0.0	240.54000	0.00279	2.89200	0.78180	1.62420	0.00589
75.0000E00	11.8006	0.0	0.0	400.73000	0.00279	2.89200	0.78100	1.62493	0.00593
76.0000E00	11.7874	0.0	0.0	234.99000	0.00279	2.89200	0.78020	1.62565	0.00597
77.0000E00	11.7743	0.0	0.0	90.75000	0.00279	2.89200	0.77940	1.62639	0.00601
78.0000E00	11.7614	0.0	0.0	17.96000	0.00279	2.89200	0.77860	1.62712	0.00605
79.0000E00	11.7486	0.0	0.0	17.42000	0.00279	2.89200	0.77780	1.62786	0.00608

E	U	SGT	SGM	SGTR	SGG	SGF	SGP	SGALP	SGA
80.0000E00	11.7361	34.63000	15.79000	34.58595	8.24000	10.60000	0.0	0.0	18.84000
81.0000E00	11.7236	46.33000	15.78000	46.28597	13.35000	17.20000	0.0	0.0	30.55000
82.0000E00	11.7114	85.91000	15.77000	85.86600	30.64000	39.50000	0.0	0.0	70.14000
83.0000E00	11.6993	144.45000	15.76000	144.40600	56.19000	72.50000	0.0	0.0	128.69000
84.0000E00	11.6873	235.76000	15.75000	235.71600	96.01000	124.00000	0.0	0.0	220.01000
85.0000E00	11.6754	258.72000	15.74000	258.67600	105.98000	137.00000	0.0	0.0	242.98000
86.0000E00	11.6637	228.49000	15.73000	228.44600	92.76000	120.00000	0.0	0.0	212.76000
87.0000E00	11.6522	124.72000	15.72000	124.67600	47.50000	61.50000	0.0	0.0	109.00000
88.0000E00	11.6408	64.78000	15.71000	64.73617	21.37000	27.70000	0.0	0.0	49.07000
89.0000E00	11.6295	61.75000	15.70000	61.70620	20.05000	26.00000	0.0	0.0	46.05000
90.0000E00	11.6183	62.96000	15.69000	62.91622	20.57000	26.70000	0.0	0.0	47.27000
91.0000E00	11.6072	71.42000	15.68000	71.37625	24.24000	31.50000	0.0	0.0	55.74000
92.0000E00	11.5963	85.55000	15.67000	85.50628	30.38000	39.50000	0.0	0.0	69.88000
93.0000E00	11.5855	92.77000	15.67000	92.72628	33.50000	43.60000	0.0	0.0	77.10000
94.0000E00	11.5748	81.59000	15.66000	81.54631	28.63000	37.30000	0.0	0.0	65.93000
95.0000E00	11.5642	58.76000	15.65000	58.71634	18.71000	24.40000	0.0	0.0	43.11000
96.0000E00	11.5537	45.67000	15.64000	45.62636	13.03000	17.00000	0.0	0.0	30.03000
97.0000E00	11.5434	39.65000	15.64000	39.60636	10.41000	13.60000	0.0	0.0	24.01000
98.0000E00	11.5331	38.04000	15.63000	37.99639	9.71000	12.70000	0.0	0.0	22.41000
99.0000E00	11.5230	40.85000	15.62000	40.80642	10.93000	14.30000	0.0	0.0	25.23000

E	U	SGI	SG2M	SGX	NUEL	NUE	ALPHA	ETA	CHIF
80.0000E00	11.7361	0.0	0.0	18.84000	0.00279	2.89200	0.77700	1.62859	0.00612
81.0000E00	11.7236	0.0	0.0	30.55000	0.00279	2.89200	0.77630	1.62923	0.00616
82.0000E00	11.7114	0.0	0.0	70.14000	0.00279	2.89200	0.77570	1.62978	0.00620
83.0000E00	11.6993	0.0	0.0	128.69000	0.00279	2.89200	0.77500	1.63042	0.00624
84.0000E00	11.6873	0.0	0.0	220.01000	0.00279	2.89200	0.77430	1.63107	0.00627
85.0000E00	11.6754	0.0	0.0	242.98000	0.00279	2.89200	0.77360	1.63171	0.00631
86.0000E00	11.6637	0.0	0.0	212.76000	0.00279	2.89200	0.77300	1.63226	0.00635
87.0000E00	11.6522	0.0	0.0	109.00000	0.00279	2.89200	0.77230	1.63291	0.00638
88.0000E00	11.6408	0.0	0.0	49.07000	0.00279	2.89200	0.77160	1.63355	0.00642
89.0000E00	11.6295	0.0	0.0	46.05000	0.00279	2.89200	0.77100	1.63411	0.00646
90.0000E00	11.6183	0.0	0.0	47.27000	0.00279	2.89200	0.77030	1.63475	0.00649
91.0000E00	11.6072	0.0	0.0	55.74000	0.00279	2.89200	0.76960	1.63540	0.00653
92.0000E00	11.5963	0.0	0.0	69.88000	0.00279	2.89200	0.76900	1.63595	0.00657
93.0000E00	11.5855	0.0	0.0	77.10000	0.00279	2.89200	0.76830	1.63660	0.00660
94.0000E00	11.5748	0.0	0.0	65.93000	0.00279	2.89200	0.76760	1.63725	0.00664
95.0000E00	11.5642	0.0	0.0	43.11000	0.00279	2.89200	0.76650	1.63790	0.00667
96.0000E00	11.5537	0.0	0.0	30.03000	0.00279	2.89200	0.76630	1.63845	0.00671
97.0000E00	11.5434	0.0	0.0	24.01000	0.00279	2.89200	0.76560	1.63910	0.00674
98.0000E00	11.5331	0.0	0.0	22.41000	0.00279	2.89200	0.76450	1.63975	0.00678
99.0000E00	11.5230	0.0	0.0	25.23000	0.00279	2.89200	0.76430	1.64031	0.00681

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
100.0000E00	11.5129	49.12000	12.92500	49.08394	17.19500	19.00000	0.0	0.0	36.19500
101.0000E00	11.5030	61.44000	11.91000	61.40677	23.53000	26.00000	0.0	0.0	49.53000
102.0000E00	11.4931	73.40000	10.91600	73.36954	29.68400	32.80000	0.0	0.0	62.48400
103.0000E00	11.4834	77.25000	10.57500	77.22050	31.67500	35.00000	0.0	0.0	66.67500
104.0000E00	11.4737	70.88000	11.06300	70.84913	28.41700	31.40000	0.0	0.0	59.81700
105.0000E00	11.4641	50.78000	12.68000	50.74462	18.10000	20.00000	0.0	0.0	38.10000
106.0000E00	11.4547	40.73000	13.48850	40.69237	12.94150	14.30000	0.0	0.0	27.24150
107.0000E00	11.4453	34.90000	13.94500	34.86109	9.95500	11.00000	0.0	0.0	20.95500
108.0000E00	11.4360	32.26000	14.16250	32.22049	8.59750	9.50000	0.0	0.0	18.09750
109.0000E00	11.4267	31.72000	14.19400	31.68040	8.32600	9.20000	0.0	0.0	17.52600
110.0000E00	11.4176	34.34000	13.95650	34.30106	9.68350	10.70000	0.0	0.0	20.38350
111.0000E00	11.4086	54.18000	12.27000	54.14577	19.91000	22.00000	0.0	0.0	41.91000
112.0000E00	11.3996	94.57000	8.84500	94.54532	40.72500	45.00000	0.0	0.0	85.72500
113.0000E00	11.3907	125.27000	6.20750	125.25300	56.56250	62.50000	0.0	0.0	119.06300
114.0000E00	11.3819	131.36000	5.63000	131.34400	59.73000	66.00000	0.0	0.0	125.73000
115.0000E00	11.3732	131.32000	5.59000	131.30400	59.73000	66.00000	0.0	0.0	125.73000
116.0000E00	11.3645	119.88000	6.53250	119.86200	53.84750	59.50000	0.0	0.0	113.34800
117.0000E00	11.3559	97.39000	8.42650	97.36649	42.26350	46.70000	0.0	0.0	88.96350
118.0000E00	11.3474	74.21000	10.39250	74.18100	30.31750	33.50000	0.0	0.0	63.81750
119.0000E00	11.3390	56.84000	11.88200	56.80685	21.35800	23.60000	0.0	0.0	44.95800

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
100.0000E00	11.5129	0.0	0.0	36.19500	0.00279	2.89200	0.90500	1.51811	0.00684
101.0000E00	11.5030	0.0	0.0	49.53000	0.00279	2.89200	0.90500	1.51811	0.00688
102.0000E00	11.4931	0.0	0.0	62.48400	0.00279	2.89200	0.90500	1.51811	0.00691
103.0000E00	11.4834	0.0	0.0	66.67500	0.00279	2.89200	0.90500	1.51811	0.00695
104.0000E00	11.4737	0.0	0.0	59.81700	0.00279	2.89200	0.90500	1.51811	0.00698
105.0000E00	11.4641	0.0	0.0	38.10000	0.00279	2.89200	0.90500	1.51811	0.00701
106.0000E00	11.4547	0.0	0.0	27.24150	0.00279	2.89200	0.90500	1.51811	0.00705
107.0000E00	11.4453	0.0	0.0	20.95500	0.00279	2.89200	0.90500	1.51811	0.00708
108.0000E00	11.4360	0.0	0.0	18.09750	0.00279	2.89200	0.90500	1.51811	0.00711
109.0000E00	11.4267	0.0	0.0	17.52600	0.00279	2.89200	0.90500	1.51811	0.00715
110.0000E00	11.4176	0.0	0.0	20.18350	0.00279	2.89200	0.90500	1.51811	0.00718
111.0000E00	11.4086	0.0	0.0	41.91000	0.00279	2.89200	0.90500	1.51811	0.00721
112.0000E00	11.3996	0.0	0.0	85.72500	0.00279	2.89200	0.90500	1.51811	0.00724
113.0000E00	11.3907	0.0	0.0	119.06300	0.00279	2.89200	0.90500	1.51811	0.00728
114.0000E00	11.3819	0.0	0.0	125.73000	0.00279	2.89200	0.90500	1.51811	0.00731
115.0000E00	11.3732	0.0	0.0	125.73000	0.00279	2.89200	0.90500	1.51811	0.00734
116.0000E00	11.3645	0.0	0.0	113.34800	0.00279	2.89200	0.90500	1.51811	0.00737
117.0000E00	11.3559	0.0	0.0	88.96350	0.00279	2.89200	0.90500	1.51811	0.00740
118.0000E00	11.3474	0.0	0.0	63.81750	0.00279	2.89200	0.90500	1.51811	0.00744
119.0000E00	11.3390	0.0	0.0	44.95000	0.00279	2.89200	0.90500	1.51811	0.00747

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
120.0000E00	11.3306	44.90000	12.89600	44.86402	15.20400	16.80000	0.0	0.0	32.00400
121.0000E00	11.3223	37.70000	13.50650	37.66232	11.49350	12.70000	0.0	0.0	24.19350
122.0000E00	11.3141	34.19000	13.80650	34.15148	9.68350	10.70000	0.0	0.0	20.38350
123.0000E00	11.3059	33.30000	13.86900	33.26131	9.23100	10.20000	0.0	0.0	19.43100
124.0000E00	11.2978	35.21000	13.68350	35.17182	10.22650	11.30000	0.0	0.0	21.52650
125.0000E00	11.2898	43.42000	12.94000	43.38390	14.48000	16.00000	0.0	0.0	30.48000
126.0000E00	11.2818	59.67000	11.47350	59.63799	22.89650	25.30000	0.0	0.0	48.19650
127.0000E00	11.2739	63.32000	11.12300	63.28897	24.79700	27.40000	0.0	0.0	52.19700
128.0000E00	11.2661	61.20000	11.28900	61.16850	23.71100	26.20000	0.0	0.0	49.91100
129.0000E00	11.2583	52.98000	12.02250	52.94646	19.45750	21.50000	0.0	0.0	40.95750
130.0000E00	11.2506	45.09000	12.70500	45.05455	15.38500	17.00000	0.0	0.0	32.38500
131.0000E00	11.2429	40.88000	13.06700	40.84354	13.21300	14.60000	0.0	0.0	27.81300
132.0000E00	11.2353	37.91000	13.33550	37.87279	11.67450	12.90000	0.0	0.0	24.57450
133.0000E00	11.2277	36.49000	13.43950	36.45250	10.95050	12.10000	0.0	0.0	23.05050
134.0000E00	11.2203	36.14000	13.47050	36.10242	10.76950	11.90000	0.0	0.0	22.66950
135.0000E00	11.2128	36.50000	13.44000	36.26250	10.86000	12.00000	0.0	0.0	22.86000
136.0000E00	11.2054	37.50000	13.30650	37.44287	11.49350	12.70000	0.0	0.0	24.19350
137.0000E00	11.1981	41.16000	12.96600	41.12382	13.39400	14.80000	0.0	0.0	28.19400
138.0000E00	11.1908	48.46000	12.26500	48.42578	17.19500	19.00000	0.0	0.0	36.19500
139.0000E00	11.1836	56.47000	11.51200	56.43788	21.35800	23.60000	0.0	0.0	44.95800

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
120.0000E00	11.3306	0.0	0.0	32.00400	0.00279	2.89200	0.90500	1.51811	0.00750
121.0000E00	11.3223	0.0	0.0	24.19350	0.00279	2.89200	0.90500	1.51811	0.00753
122.0000E00	11.3141	0.0	0.0	20.38350	0.00279	2.89200	0.90500	1.51811	0.00756
123.0000E00	11.3059	0.0	0.0	19.43100	0.00279	2.89200	0.90500	1.51811	0.00759
124.0000E00	11.2978	0.0	0.0	21.52650	0.00279	2.89200	0.90500	1.51811	0.00762
125.0000E00	11.2898	0.0	0.0	30.48000	0.00279	2.89200	0.90500	1.51811	0.00765
126.0000E00	11.2818	0.0	0.0	48.19650	0.00279	2.89200	0.90500	1.51811	0.00768
127.0000E00	11.2739	0.0	0.0	52.19700	0.00279	2.89200	0.90500	1.51811	0.00771
128.0000E00	11.2661	0.0	0.0	49.91100	0.00279	2.89200	0.90500	1.51811	0.00774
129.0000E00	11.2583	0.0	0.0	40.95750	0.00279	2.89200	0.90500	1.51811	0.00777
130.0000E00	11.2506	0.0	0.0	32.38500	0.00279	2.89200	0.90500	1.51811	0.00780
131.0000E00	11.2429	0.0	0.0	27.81300	0.00279	2.89200	0.90500	1.51811	0.00783
132.0000E00	11.2353	0.0	0.0	24.57450	0.00279	2.89200	0.90500	1.51811	0.00786
133.0000E00	11.2277	0.0	0.0	23.05050	0.00279	2.89200	0.90500	1.51811	0.00789
134.0000E00	11.2203	0.0	0.0	22.66950	0.00279	2.89200	0.90500	1.51811	0.00792
135.0000E00	11.2128	0.0	0.0	22.86000	0.00279	2.89200	0.90500	1.51811	0.00795
136.0000E00	11.2054	0.0	0.0	24.19350	0.00279	2.89200	0.90500	1.51811	0.00798
137.0000E00	11.1981	0.0	0.0	28.19400	0.00279	2.89200	0.90500	1.51811	0.00801
138.0000E00	11.1908	0.0	0.0	36.19500	0.00279	2.89200	0.90500	1.51811	0.00804
139.0000E00	11.1836	0.0	0.0	44.95800	0.00279	2.89200	0.90500	1.51811	0.00807

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
140.0000E00	11.1765	58.02000	11.34750	57.98834	22.17250	24.50000	0.0	0.0	46.67250
141.0000E00	11.1693	55.30000	11.56500	55.34773	20.81500	23.00000	0.0	0.0	43.81500
142.0000E00	11.1623	46.67000	12.38000	46.63546	16.29000	18.00000	0.0	0.0	34.29000
143.0000E00	11.1553	39.16000	13.06150	39.12356	12.39850	13.70000	0.0	0.0	26.09850
144.0000E00	11.1483	34.46000	13.50500	34.42232	9.95500	11.00000	0.0	0.0	20.95500
145.0000E00	11.1414	32.35000	13.68100	32.31183	8.86900	9.80000	0.0	0.0	18.66900
146.0000E00	11.1345	31.31000	13.78400	31.27154	8.32600	9.20000	0.0	0.0	17.52600
147.0000E00	11.1277	30.94000	13.79500	30.90151	8.14500	9.00000	0.0	0.0	17.14500
148.0000E00	11.1209	31.81000	13.71250	31.77174	8.59750	9.50000	0.0	0.0	18.09750
149.0000E00	11.1141	35.97000	13.30050	35.93289	10.76950	11.90000	0.0	0.0	22.66950
150.0000E00	11.1075	44.82000	12.43500	44.78531	15.38500	17.00000	0.0	0.0	32.38500
151.0000E00	11.1008	63.92000	10.58000	63.89048	25.34000	28.00000	0.0	0.0	53.34000
152.0000E00	11.0942	67.04000	10.27100	67.01134	26.96900	29.80000	0.0	0.0	56.76900
153.0000E00	11.0877	64.23000	10.50900	64.20068	25.52100	28.20000	0.0	0.0	53.72100
154.0000E00	11.0811	46.86000	12.18900	46.82599	16.47100	18.20000	0.0	0.0	34.67100
155.0000E00	11.0747	39.20000	12.91100	39.16398	12.48900	13.80000	0.0	0.0	26.28900
156.0000E00	11.0682	35.90000	13.23050	35.86309	10.76950	11.90000	0.0	0.0	22.66950
157.0000E00	11.0618	33.11000	13.48850	33.07237	9.32150	10.30000	0.0	0.0	19.62150
158.0000E00	11.0555	31.20000	13.67400	31.16185	8.32600	9.20000	0.0	0.0	17.52600
159.0000E00	11.0492	29.62000	13.80850	29.58147	7.51150	8.30000	0.0	0.0	15.81150

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
140.0000E00	11.1765	0.0	0.0	46.67250	0.00279	2.89200	0.90500	1.51811	0.00810
141.0000E00	11.1693	0.0	0.0	43.81500	0.00279	2.89200	0.90500	1.51811	0.00813
142.0000E00	11.1623	0.0	0.0	34.29000	0.00279	2.89200	0.90500	1.51811	0.00816
143.0000E00	11.1553	0.0	0.0	26.09850	0.00279	2.89200	0.90500	1.51811	0.00818
144.0000E00	11.1483	0.0	0.0	20.95500	0.00279	2.89200	0.90500	1.51811	0.00821
145.0000E00	11.1414	0.0	0.0	18.66900	0.00279	2.89200	0.90500	1.51811	0.00824
146.0000E00	11.1345	0.0	0.0	17.52600	0.00279	2.89200	0.90500	1.51811	0.00827
147.0000E00	11.1277	0.0	0.0	17.14500	0.00279	2.89200	0.90500	1.51811	0.00830
148.0000E00	11.1209	0.0	0.0	18.09750	0.00279	2.89200	0.90500	1.51811	0.00833
149.0000E00	11.1141	0.0	0.0	22.66950	0.00279	2.89200	0.90500	1.51811	0.00835
150.0000E00	11.1075	0.0	0.0	32.38500	0.00279	2.89200	0.90500	1.51811	0.00838
151.0000E00	11.1008	0.0	0.0	53.34000	0.00279	2.89200	0.90500	1.51811	0.00841
152.0000E00	11.0942	0.0	0.0	56.76900	0.00279	2.89200	0.90500	1.51811	0.00844
153.0000E00	11.0877	0.0	0.0	53.72100	0.00279	2.89200	0.90500	1.51811	0.00847
154.0000E00	11.0811	0.0	0.0	34.67100	0.00279	2.89200	0.90500	1.51811	0.00849
155.0000E00	11.0747	0.0	0.0	26.28900	0.00279	2.89200	0.90500	1.51811	0.00852
156.0000E00	11.0682	0.0	0.0	22.66950	0.00279	2.89200	0.90500	1.51811	0.00855
157.0000E00	11.0618	0.0	0.0	19.62150	0.00279	2.89200	0.90500	1.51811	0.00858
158.0000E00	11.0555	0.0	0.0	17.52600	0.00279	2.89200	0.90500	1.51811	0.00860
159.0000E00	11.0492	0.0	0.0	15.81150	0.00279	2.89200	0.90500	1.51811	0.00863

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
160.0000E00	11.0429	28.58000	13.91150	28.54119	6.96850	7.70000	0.0	0.0	14.66850
165.0000E00	11.0122	25.76000	14.13950	25.72055	5.52050	6.10000	0.0	0.0	11.62050
170.0000E00	10.9823	26.94000	13.98600	26.90098	6.15400	6.80000	0.0	0.0	12.95400
172.0000E00	10.9706	29.52000	13.70850	29.48175	7.51150	8.30000	0.0	0.0	15.81150
174.0000E00	10.9590	36.24000	12.99900	36.20373	11.04100	12.20000	0.0	0.0	23.24100
175.0000E00	10.9533	38.13000	12.79350	38.09431	12.03650	13.30000	0.0	0.0	25.33650
176.0000E00	10.9476	35.88000	13.02000	35.84367	10.86000	12.00000	0.0	0.0	22.86000
178.0000E00	10.9363	29.30000	13.67900	29.26184	7.42100	8.20000	0.0	0.0	15.62100
180.0000E00	10.9251	28.94000	13.70000	28.90178	7.24000	8.00000	0.0	0.0	15.24000
182.0000E00	10.9141	29.78000	13.58750	29.74209	7.69250	8.50000	0.0	0.0	16.19250
184.0000E00	10.9032	33.91000	13.14550	33.87332	9.86450	10.90000	0.0	0.0	20.76450
186.0000E00	10.8923	46.13000	11.84000	46.09697	16.29000	18.00000	0.0	0.0	34.29000
188.0000E00	10.8817	72.64000	9.01300	72.61485	30.22700	33.40000	0.0	0.0	63.62700
189.0000E00	10.8763	79.35000	8.29350	79.32686	33.75650	37.30000	0.0	0.0	71.05650
190.0000E00	10.8711	80.53000	8.14000	80.50729	34.39000	38.00000	0.0	0.0	72.39000
191.0000E00	10.8658	79.31000	8.25350	79.28697	33.75650	37.30000	0.0	0.0	71.05650
192.0000E00	10.8606	72.74000	8.92250	72.71511	30.31750	33.50000	0.0	0.0	63.81750
194.0000E00	10.8502	48.10000	11.52400	48.06785	17.37600	19.20000	0.0	0.0	36.57600
197.0000E00	10.8349	36.27000	12.55250	38.23498	12.21750	13.50000	0.0	0.0	25.71750
200.0000E00	10.8198	33.43000	12.61850	33.39479	10.11150	10.70000	0.0	0.0	20.81150

E	U	SGI	SGZN	SGX	NUEL	NUE	ALPHA	ETA	CHIF
160.0000E00	11.0429	0.0	0.0	14.66850	0.00279	2.89200	0.90500	1.51811	0.00866
165.0000E00	11.0122	0.0	0.0	11.62050	0.00279	2.89200	0.90500	1.51811	0.00879
170.0000E00	10.9823	0.0	0.0	12.95400	0.00279	2.89200	0.90500	1.51811	0.00892
172.0000E00	10.9706	0.0	0.0	15.81150	0.00279	2.89200	0.90500	1.51811	0.00898
174.0000E00	10.9590	0.0	0.0	23.24100	0.00279	2.89200	0.90500	1.51811	0.00903
175.0000E00	10.9533	0.0	0.0	25.33650	0.00279	2.89200	0.90500	1.51811	0.00905
176.0000E00	10.9476	0.0	0.0	22.86000	0.00279	2.89200	0.90500	1.51811	0.00908
178.0000E00	10.9363	0.0	0.0	15.62100	0.00279	2.89200	0.90500	1.51811	0.00913
180.0000E00	10.9251	0.0	0.0	15.24000	0.00279	2.89200	0.90500	1.51811	0.00918
182.0000E00	10.9141	0.0	0.0	16.19250	0.00279	2.89200	0.90500	1.51811	0.00923
184.0000E00	10.9032	0.0	0.0	20.76450	0.00279	2.89200	0.90500	1.51811	0.00928
186.0000E00	10.8923	0.0	0.0	34.29000	0.00279	2.89200	0.90500	1.51811	0.00933
188.0000E00	10.8817	0.0	0.0	63.62700	0.00279	2.89200	0.90500	1.51811	0.00938
189.0000E00	10.8763	0.0	0.0	71.05650	0.00279	2.89200	0.90500	1.51811	0.00941
190.0000E00	10.8711	0.0	0.0	72.39000	0.00279	2.89200	0.90500	1.51811	0.00943
191.0000E00	10.8658	0.0	0.0	71.05650	0.00279	2.89200	0.90500	1.51811	0.00946
192.0000E00	10.8606	0.0	0.0	63.81750	0.00279	2.89200	0.90500	1.51811	0.00948
194.0000E00	10.8502	0.0	0.0	36.57600	0.00279	2.89200	0.90500	1.51811	0.00953
197.0000E00	10.8349	0.0	0.0	25.71750	0.00279	2.89200	0.90500	1.51811	0.00961
200.0000E00	10.8198	0.0	0.0	20.81150	0.00279	2.89200	0.94500	1.48689	0.00968

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
205.0000E00	10.7951	29.44000	13.10200	29.40345	7.93800	8.40000	0.0	0.0	16.33800
210.0000E00	10.7710	28.21000	13.23350	28.17308	7.27650	7.70000	0.0	0.0	14.97650
212.0000E00	10.7615	29.57000	13.03750	29.53363	8.03250	8.50000	0.0	0.0	16.53250
214.0000E00	10.7521	33.50000	12.49400	33.46514	10.20600	10.80000	0.0	0.0	21.00600
216.0000E00	10.7428	38.63000	11.78900	38.59711	13.04100	13.80000	0.0	0.0	26.84100
218.0000E00	10.7336	43.41000	11.12300	43.37897	15.68700	16.60000	0.0	0.0	32.28700
220.0000E00	10.7245	44.42000	10.96600	44.38940	16.25400	17.20000	0.0	0.0	33.45400
222.0000E00	10.7154	43.37000	11.08300	43.33908	15.68700	16.60000	0.0	0.0	32.28700
224.0000E00	10.7064	38.57000	11.72900	38.53728	13.04100	13.80000	0.0	0.0	26.84100
226.0000E00	10.6976	33.42000	12.41400	33.38536	10.20600	10.80000	0.0	0.0	21.00600
228.0000E00	10.6887	29.48000	12.94750	29.44388	8.03250	8.50000	0.0	0.0	16.53250
230.0000E00	10.6800	28.78000	13.02550	28.74366	7.65450	8.10000	0.0	0.0	15.75450
232.0000E00	10.6714	28.76000	13.00550	28.72371	7.65450	8.10000	0.0	0.0	15.75450
234.0000E00	10.6628	29.26000	12.92200	29.22395	7.93800	8.40000	0.0	0.0	16.33800
236.0000E00	10.6543	30.62000	12.72600	30.58449	8.69400	9.20000	0.0	0.0	17.89400
238.0000E00	10.6458	33.51000	12.30950	33.47566	10.30050	10.90000	0.0	0.0	21.20050
240.0000E00	10.6375	37.08000	11.79500	37.04709	12.28500	13.00000	0.0	0.0	25.28500
245.0000E00	10.6168	47.28000	10.32500	47.25119	17.95500	19.00000	0.0	0.0	36.95500
250.0000E00	10.5966	57.81000	8.79600	57.78546	23.81400	25.20000	0.0	0.0	49.01400
255.0000E00	10.5768	68.49000	7.22250	68.46785	29.76750	31.50000	0.0	0.0	61.26750

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
205.0000E00	10.7951	0.0	0.0	16.33800	0.00279	2.89200	0.94500	1.48689	0.00580
210.0000E00	10.7710	0.0	0.0	14.97650	0.00279	2.89200	0.94500	1.48689	0.00592
212.0000E00	10.7615	0.0	0.0	16.53250	0.00279	2.89200	0.94500	1.48689	0.00597
214.0000E00	10.7521	0.0	0.0	21.00600	0.00279	2.89200	0.94500	1.48689	0.01001
216.0000E00	10.7428	0.0	0.0	26.84100	0.00279	2.89200	0.94500	1.48689	0.01006
218.0000E00	10.7336	0.0	0.0	32.28700	0.00279	2.89200	0.94500	1.48689	0.01011
220.0000E00	10.7245	0.0	0.0	33.45400	0.00279	2.89200	0.94500	1.48689	0.01015
222.0000E00	10.7154	0.0	0.0	32.28700	0.00279	2.89200	0.94500	1.48689	0.01020
224.0000E00	10.7064	0.0	0.0	26.84100	0.00279	2.89200	0.94500	1.48689	0.01024
226.0000E00	10.6976	0.0	0.0	21.00600	0.00279	2.89200	0.94500	1.48689	0.01029
228.0000E00	10.6887	0.0	0.0	16.53250	0.00279	2.89200	0.94500	1.48689	0.01033
230.0000E00	10.6800	0.0	0.0	15.75450	0.00279	2.89200	0.94500	1.48689	0.01038
232.0000E00	10.6714	0.0	0.0	15.75450	0.00279	2.89200	0.94500	1.48689	0.01042
234.0000E00	10.6628	0.0	0.0	16.33800	0.00279	2.89200	0.94500	1.48689	0.01047
236.0000E00	10.6543	0.0	0.0	17.89400	0.00279	2.89200	0.94500	1.48689	0.01051
238.0000E00	10.6458	0.0	0.0	21.20050	0.00279	2.89200	0.94500	1.48689	0.01056
240.0000E00	10.6375	0.0	0.0	25.28500	0.00279	2.89200	0.94500	1.48689	0.01060
245.0000E00	10.6168	0.0	0.0	36.95500	0.00279	2.89200	0.94500	1.48689	0.01071
250.0000E00	10.5966	0.0	0.0	49.01400	0.00279	2.89200	0.94500	1.48689	0.01082
255.0000E00	10.5768	0.0	0.0	61.26750	0.00279	2.89200	0.94500	1.48689	0.01093

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
260.0000E00	10.5574	79.83000	5.53100	79.81457	36.09900	38.20000	0.0	0.0	74.29900
265.0000E00	10.5384	88.61000	4.19700	88.59829	41.01300	43.40000	0.0	0.0	84.41300
270.0000E00	10.5197	64.41000	7.61600	64.38875	27.59400	29.20000	0.0	0.0	56.79400
275.0000E00	10.5013	37.20000	11.52600	37.16784	12.47400	13.20000	0.0	0.0	25.67400
280.0000E00	10.4833	37.17000	11.49600	37.13793	12.47400	13.20000	0.0	0.0	25.67400
290.0000E00	10.4482	37.44000	11.37700	37.40826	12.66300	13.40000	0.0	0.0	26.06300
300.0000E00	10.4143	36.03000	7.93200	36.00787	15.49800	[illegible]000	0.0	0.0	28.09800
310.0000E00	10.3815	33.78000	8.58100	33.75606	13.89900	.000	0.0	0.0	25.19900
320.0000E00	10.3498	32.22000	9.02800	32.19481	12.79200	[illegible]0000	0.0	0.0	23.19200
330.0000E00	10.3190	28.96000	10.00500	28.93209	10.45500	8.50000	0.0	0.0	18.95500
340.0000E00	10.2892	24.88000	11.27700	24.84854	7.50300	6.10000	0.0	0.0	13.60300
350.0000E00	10.2602	20.97000	12.49600	20.93514	4.67400	3.80000	0.0	0.0	8.47400
360.0000E00	10.2320	23.97000	11.48200	23.93797	6.88800	5.60000	0.0	0.0	12.48800
370.0000E00	10.2046	25.45000	10.95500	25.41944	7.99500	6.50000	0.0	0.0	14.49500
380.0000E00	10.1779	39.66000	6.21000	39.64267	18.45000	15.00000	0.0	0.0	33.45000
385.0000E00	10.1649	41.98000	5.40800	41.96491	20.17200	16.40000	0.0	0.0	36.57200
390.0000E00	10.1519	39.62000	6.17000	39.60279	18.45000	15.00000	0.0	0.0	33.45000
400.0000E00	10.1266	23.34000	15.62850	23.29640	2.41150	5.30000	0.0	0.0	7.71150
410.0000E00	10.1019	22.22000	15.45425	22.17688	2.11575	4.65000	0.0	0.0	6.76575
420.0000E00	10.0778	23.45000	15.59300	23.40650	2.45700	5.40000	0.0	0.0	7.85700

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
260.0000E00	10.5574	0.0	0.0	74.29900	0.00279	2.89200	0.94500	1.48689	0.01104
265.0000E00	10.5384	0.0	0.0	84.41300	0.00279	2.89200	0.94500	1.48689	0.01114
270.0000E00	10.5197	0.0	0.0	56.79400	0.00279	2.89200	0.94500	1.48689	0.01125
275.0000E00	10.5013	0.0	0.0	25.67400	0.00279	2.89200	0.94500	1.48689	0.01135
280.0000E00	10.4833	0.0	0.0	25.67400	0.00279	2.89200	0.94500	1.48689	0.01145
290.0000E00	10.4482	0.0	0.0	26.06300	0.00279	2.89200	0.94500	1.48689	0.01165
300.0000E00	10.4143	0.0	0.0	28.09800	0.00279	2.89200	1.23000	1.29686	0.01185
310.0000E00	10.3815	0.0	0.0	25.19900	0.00279	2.89200	1.23000	1.29686	0.01205
320.0000E00	10.3498	0.0	0.0	23.19200	0.00279	2.89200	1.23000	1.29686	0.01224
330.0000E00	10.3190	0.0	0.0	18.95500	0.00279	2.89200	1.23000	1.29686	0.01243
340.0000E00	10.2892	0.0	0.0	13.60300	0.00279	2.89200	1.23000	1.29686	0.01262
350.0000E00	10.2602	0.0	0.0	8.47400	0.00279	2.89200	1.23000	1.29686	0.01280
360.0000E00	10.2320	0.0	0.0	12.48800	0.00279	2.89200	1.23000	1.29686	0.01298
370.0000E00	10.2046	0.0	0.0	14.49500	0.00279	2.89200	1.23000	1.29686	0.01316
380.0000E00	10.1779	0.0	0.0	33.45000	0.00279	2.89200	1.23000	1.29686	0.01334
385.0000E00	10.1649	0.0	0.0	36.57200	0.00279	2.89200	1.23000	1.29686	0.01343
390.0000E00	10.1519	0.0	0.0	33.45000	0.00279	2.89200	1.23000	1.29686	0.01351
400.0000E00	10.1266	0.0	0.0	7.71150	0.00279	2.89200	0.45500	1.98763	0.01369
410.0000E00	10.1019	0.0	0.0	6.76575	0.00279	2.89200	0.45500	1.98763	0.01386
420.0000E00	10.0778	0.0	0.0	7.85700	0.00279	2.89200	0.45500	1.98763	0.01402

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
430.0000E00	10.0543	28.59000	16.22250	28.54474	3.86750	8.50000	0.0	0.0	12.36750
440.0000E00	10.0313	29.89000	16.35850	29.84436	4.23150	9.30000	0.0	0.0	13.53150
450.0000E00	10.0088	31.19000	16.49450	31.14398	4.59550	10.10000	0.0	0.0	14.69550
460.0000E00	9.9869	32.16000	16.59150	32.11371	4.86850	10.70000	0.0	0.0	15.56850
470.0000E00	9.9654	32.80000	16.64950	32.75355	5.05050	11.10000	0.0	0.0	16.15050
480.0000E00	9.9443	35.92000	17.00500	35.87256	5.91500	13.00000	0.0	0.0	18.91500
490.0000E00	9.9237	40.04000	17.48750	39.99121	7.05250	15.50000	0.0	0.0	22.55250
500.0000E00	9.9035	43.15000	13.57000	43.11214	12.18000	17.40000	0.0	0.0	29.58000
520.0000E00	9.8643	41.09000	13.55000	41.05220	11.34000	16.20000	0.0	0.0	27.54000
540.0000E00	9.8265	36.72000	13.60000	36.68206	9.52000	13.60000	0.0	0.0	23.12000
560.0000E00	9.7902	28.07000	13.79000	28.03153	5.88000	8.40000	0.0	0.0	14.28000
580.0000E00	9.7551	22.25000	13.92000	22.21116	3.43000	4.90000	0.0	0.0	8.33000
600.0000E00	9.7212	18.75000	10.86000	18.71968	5.08200	2.80000	0.0	0.0	7.88200
620.0000E00	9.6884	19.54000	10.25050	19.51140	5.98950	3.30000	0.0	0.0	9.28950
640.0000E00	9.6566	20.33000	9.63300	20.30312	6.69700	3.80000	0.0	0.0	10.69700
660.0000E00	9.6259	21.28000	8.69400	21.25519	7.98600	4.40000	0.0	0.0	12.38600
680.0000E00	9.5960	22.73000	7.81050	22.70821	9.61950	5.30000	0.0	0.0	14.91950
700.0000E00	9.5670	23.67000	11.57500	23.63771	6.19500	5.90000	0.0	0.0	12.09500
720.0000E00	9.5388	24.29000	11.37500	24.25826	6.61500	6.30000	0.0	0.0	12.91500
740.0000E00	9.5114	24.41000	11.29000	24.37050	6.72000	6.40000	0.0	0.0	13.12000

E	U	SGI	SG2N	SCX	MUEL	NUE	ALPHA	ETA	CHIF
430.0000E00	10.0543	0.0	0.0	12.36750	0.00279	2.89200	0.45500	1.98763	0.01419
440.0000E00	10.0313	0.0	0.0	13.53150	0.00279	2.89200	0.45500	1.98763	0.01435
450.0000E00	10.0088	0.0	0.0	14.69550	0.00279	2.89200	0.45500	1.98763	0.01452
460.0000E00	9.9869	0.0	0.0	15.56850	0.00279	2.89200	0.45500	1.98763	0.01468
470.0000E00	9.9654	0.0	0.0	16.15050	0.00279	2.89200	0.45500	1.98763	0.01484
480.0000E00	9.9443	0.0	0.0	18.91500	0.00279	2.89200	0.45500	1.98763	0.01499
490.0000E00	9.9237	0.0	0.0	22.55250	0.00279	2.89200	0.45500	1.98763	0.01515
500.0000E00	9.9035	0.0	0.0	29.58000	0.00279	2.89200	0.70000	1.70118	0.01530
520.0000E00	9.8643	0.0	0.0	27.54000	0.00279	2.89200	0.70000	1.70118	0.01560
540.0000E00	9.8265	0.0	0.0	23.12000	0.00279	2.89200	0.70000	1.70118	0.01590
560.0000E00	9.7902	0.0	0.0	14.28000	0.00279	2.89200	0.70000	1.70118	0.01619
580.0000E00	9.7551	0.0	0.0	8.33000	0.00279	2.89200	0.70000	1.70118	0.01648
600.0000E00	9.7212	0.0	0.0	7.88200	0.00279	2.89200	1.81500	1.02735	0.01676
620.0000E00	9.6884	0.0	0.0	9.28950	0.00279	2.89200	1.81500	1.02735	0.01704
640.0000E00	9.6566	0.0	0.0	10.69700	0.00279	2.89200	1.81500	1.02735	0.01731
660.0000E00	9.6259	0.0	0.0	12.38600	0.00279	2.89200	1.81500	1.02735	0.01758
680.0000E00	9.5960	0.0	0.0	14.91950	0.00279	2.89200	1.81500	1.02735	0.01784
700.0000E00	9.5670	0.0	0.0	12.09500	0.00279	2.89200	1.05000	1.41073	0.01810
720.0000E00	9.5388	0.0	0.0	12.91500	0.00279	2.89200	1.05000	1.41073	0.01836
740.0000E00	9.5114	0.0	0.0	13.12000	0.00279	2.89200	1.05000	1.41073	0.01861

E	U	SGF	SGN	SGTR	SGG	SGF	SGP	SGXLP	SGA
800.0000E00	9.4335	24.31000	11.70200	24.27735	6.20800	6.40000	0.0	0.0	12.60800
850.0000E00	9.3729	24.23000	11.62200	24.19757	6.20800	6.40000	0.0	0.0	12.60800
900.0000E00	9.3157	24.00000	12.94950	23.96389	4.75650	6.30000	0.0	0.0	11.05650
950.0000E00	9.2616	23.77000	12.88900	23.73404	4.68100	6.20000	0.0	0.0	10.88100
1.0000E 3	9.2103	23.50300	16.74625	23.45611	2.90675	3.85000	0.0	0.0	6.75675
1.0300E 3	9.1808	26.42300	18.89625	26.37009	3.67675	3.85000	0.0	0.0	7.52675
1.0950E 3	9.1196	20.39200	12.86525	20.35598	3.67675	3.85000	0.0	0.0	7.52675
1.1350E 3	9.0837	20.84300	13.31625	20.80571	3.67675	3.85000	0.0	0.0	7.52675
1.1800E 3	9.0448	25.52000	17.99325	25.46962	3.67675	3.85000	0.0	0.0	7.52675
1.2200E 3	9.0115	23.80400	16.27725	23.75842	3.67675	3.85000	0.0	0.0	7.52675
1.2800E 3	8.9635	22.61200	15.08525	22.56976	3.67675	3.85000	0.0	0.0	7.52675
1.3250E 3	8.9289	20.88400	13.35725	20.84660	3.67675	3.85000	0.0	0.0	7.52675
1.3800E 3	8.8883	17.59400	10.06725	17.56581	3.67675	3.85000	0.0	0.0	7.52675
1.4500E 3	8.8388	21.74200	14.21525	21.70220	3.67675	3.85000	0.0	0.0	7.52675
1.5050E 3	8.8015	17.36900	9.84225	17.34144	3.67675	3.85000	0.0	0.0	7.52675
1.5800E 3	8.7529	18.41900	10.89225	18.38850	3.67675	3.85000	0.0	0.0	7.52675
1.6500E 3	8.7096	19.44700	11.92025	19.41363	3.67675	3.85000	0.0	0.0	7.52675
1.7500E 3	8.6507	19.12100	11.59425	19.08854	3.67675	3.85000	0.0	0.0	7.52675
1.8000E 3	8.6226	17.83400	10.30725	17.80514	3.67675	3.85000	0.0	0.0	7.52675
1.9000E 3	8.5685	15.92800	8.40125	15.90448	3.67675	3.85000	0.0	0.0	7.52675

E	U	SG1	SG2N	SGX	RUEL	NUE	ALPHA	ETA	CHIF
800.0000E00	9.4335	0.0	0.0	12.60800	0.00279	2.89200	0.97000	1.46802	0.01935
850.0000E00	9.3729	0.0	0.0	12.60800	0.00279	2.89200	0.97000	1.46802	0.01995
900.0000E00	9.3157	0.0	0.0	11.05650	0.00279	2.89200	0.75500	1.64786	0.02052
950.0000E00	9.2616	0.0	0.0	10.88100	0.00279	2.89200	0.75500	1.64786	0.02108
1.0000E 3	9.2103	0.0	0.0	6.75675	0.00280	2.89210	0.75500	1.64792	0.02163
1.0300E 3	9.1808	0.0	0.0	7.52675	0.00280	2.89210	0.55500	1.47934	0.02195
1.0950E 3	9.1196	0.0	0.0	7.52675	0.00280	2.89210	0.55500	1.47934	0.02263
1.1350E 3	9.0837	0.0	0.0	7.52675	0.00280	2.89210	0.55500	1.47934	0.02304
1.1800E 3	9.0448	0.0	0.0	7.52675	0.00280	2.89210	0.55500	1.47934	0.02349
1.2200E 3	9.0115	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02389
1.2800E 3	8.9635	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02447
1.3250E 3	8.9289	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02489
1.3800E 3	8.8883	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02540
1.4500E 3	8.8388	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02604
1.5050E 3	8.8015	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02653
1.5800E 3	8.7529	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02718
1.6500E 3	8.7096	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02777
1.7500E 3	8.6507	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02860
1.8000E 3	8.6226	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02901
1.9000E 3	8.5685	0.0	0.0	7.52675	0.00280	2.89220	0.55500	1.47939	0.02980

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
2.0000E 3	8.5172	15.80200	9.00520	15.85679	3.80680	3.07000	0.0	0.0	6.87680
2.1300E 3	8.4542	17.25400	10.37720	17.22494	3.80680	3.07000	0.0	0.0	6.87680
2.2500E 3	8.3994	18.55800	11.68120	18.52527	3.80680	3.07000	0.0	0.0	6.87680
2.3500E 3	8.3559	20.58600	13.70920	20.54761	3.80680	3.07000	0.0	0.0	6.87680
2.5100E 3	8.2901	17.70400	10.82720	17.67368	3.80680	3.07000	0.0	0.0	6.87680
2.6400E 3	8.2396	18.85000	11.97320	18.81648	3.80680	3.07000	0.0	0.0	6.87680
2.8000E 3	8.1807	17.59800	10.72120	17.56798	3.80680	3.07000	0.0	0.0	6.87680
2.9600E 3	8.1252	18.31800	11.44120	18.28596	3.80680	3.07000	0.0	0.0	6.87680
3.1550E 3	8.0614	18.28700	12.74100	18.25133	2.59600	2.95000	0.0	0.0	5.54600
3.3800E 3	7.9925	16.34400	10.79800	16.31377	2.59600	2.95000	0.0	0.0	5.54600
3.6200E 3	7.9239	20.38300	14.83700	20.34146	2.59600	2.95000	0.0	0.0	5.54600
3.8700E 3	7.8571	17.44000	11.89400	17.40670	2.59600	2.95000	0.0	0.0	5.54600
4.1250E 3	7.7933	17.54600	11.03000	17.50949	2.05800	2.45000	0.0	0.0	4.50800
4.4800E 3	7.7107	14.86000	10.35200	14.83101	2.05800	2.45000	0.0	0.0	4.50800
4.8400E 3	7.6334	17.52700	13.01900	17.49055	2.05800	2.45000	0.0	0.0	4.50800
5.2200E 3	7.5578	18.20900	13.63400	18.17082	2.07500	2.50000	0.0	0.0	4.57500
5.7000E 3	7.4699	15.29300	10.71800	15.26299	2.07500	2.50000	0.0	0.0	4.57500
6.2800E 3	7.3730	16.50800	12.58790	16.47275	1.73010	2.19000	0.0	0.0	3.92010
6.7500E 3	7.3008	16.17800	12.25790	16.14368	1.73010	2.19000	0.0	0.0	3.92010
7.4500E 3	7.2021	14.90700	11.48300	14.87485	1.28400	2.14000	0.0	0.0	3.42400

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
2.0000E 3	8.5172	0.0	0.0	6.87680	0.00280	2.89230	1.24000	1.29121	0.03057
2.1300E 3	8.4542	0.0	0.0	6.87680	0.00280	2.89230	1.24000	1.29121	0.03155
2.2500E 3	8.3994	0.0	0.0	6.87680	0.00280	2.89230	1.24000	1.29121	0.03242
2.3500E 3	8.3559	0.0	0.0	6.87680	0.00280	2.89230	1.24000	1.29121	0.03313
2.5100E 3	8.2901	0.0	0.0	6.87680	0.00280	2.89230	1.24000	1.29121	0.03424
2.6400E 3	8.2396	0.0	0.0	6.87680	0.00280	2.89230	1.24000	1.29121	0.03511
2.8000E 3	8.1807	0.0	0.0	6.87680	0.00280	2.89240	1.24000	1.29125	0.03615
2.9600E 3	8.1252	0.0	0.0	6.87680	0.00280	2.89240	1.24000	1.29125	0.03717
3.1550E 3	8.0614	0.0	0.0	5.54600	0.00280	2.89240	0.88000	1.53851	0.03837
3.3800E 3	7.9925	0.0	0.0	5.54600	0.00280	2.89240	0.88000	1.53851	0.03971
3.6200E 3	7.9239	0.0	0.0	5.54600	0.00280	2.89250	0.88000	1.53856	0.04108
3.8700E 3	7.8571	0.0	0.0	5.54600	0.00280	2.89250	0.88000	1.53856	0.04247
4.1250E 3	7.7933	0.0	0.0	4.50800	0.00280	2.89250	0.84000	1.57201	0.04384
4.4800E 3	7.7107	0.0	0.0	4.50800	0.00280	2.89260	0.84000	1.57207	0.04569
4.8400E 3	7.6334	0.0	0.0	4.50800	0.00280	2.89260	0.84000	1.57207	0.04747
5.2200E 3	7.5578	0.0	0.0	4.57500	0.00280	2.89270	0.83000	1.58071	0.04928
5.7000E 3	7.4699	0.0	0.0	4.57500	0.00280	2.89270	0.83000	1.58071	0.05148
6.2800E 3	7.3730	0.0	0.0	3.92010	0.00280	2.89280	0.79000	1.61609	0.05402
6.7500E 3	7.3008	0.0	0.0	3.92010	0.00280	2.89290	0.79000	1.61615	0.05598
7.4500E 3	7.2021	0.0	0.0	3.42400	0.00280	2.89300	0.60000	1.80313	0.05879

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
8.0000E 3	7.1309	15.03600	11.43600	15.00398	1.35000	2.25000	0.0	0.0	3.60000
8.5000E 3	7.0703	15.18300	11.93050	15.14959	0.96750	2.25000	0.0	0.0	3.21750
9.0000E 3	7.0131	15.32100	11.84000	15.28785	1.17000	2.25000	0.0	0.0	3.42000
9.5000E 3	6.9590	15.45900	12.24580	15.42471	1.07120	2.06000	0.0	0.0	3.13120
10.0000E 3	6.9070	15.29000	12.05880	15.25624	1.07120	2.06000	0.0	0.0	3.13120
12.0000E 3	6.7254	14.94000	11.93064	14.90659	0.87186	1.98150	0.0	0.0	2.85336
14.0000E 3	6.5713	14.66000	11.64049	14.62741	0.86671	1.96580	0.0	0.0	2.83651
16.0000E 3	6.4378	14.43000	11.75913	14.39707	0.59997	1.87490	0.0	0.0	2.47487
18.0000E 3	6.3200	14.24000	11.68402	14.20728	0.57018	1.78180	0.0	0.0	2.35198
20.0000E 3	6.2146	14.08000	11.50831	14.04778	0.57229	1.78840	0.0	0.0	2.36069
25.0000E 3	5.9915	13.78000	11.37881	13.74814	0.46329	1.71590	0.0	0.0	2.17919
30.0000E 3	5.8091	13.54000	11.15418	13.50877	0.45833	1.69750	0.0	0.0	2.15583
35.0000E 3	5.6550	13.36000	10.92719	13.31957	0.51971	1.67810	0.0	0.0	2.19781
40.0000E 3	5.5215	13.20000	10.84538	13.11066	0.45852	1.65710	0.0	0.0	2.11562
45.0000E 3	5.4037	13.07000	10.78365	12.86295	0.40045	1.64390	0.0	0.0	2.04435
50.0000E 3	5.2983	12.94000	10.72790	12.60851	0.34220	1.62490	0.0	0.0	1.96710
55.0000E 3	5.2030	12.82000	10.68042	12.40240	0.28528	1.60630	0.0	0.0	1.89158
57.0000E 3	5.1673	12.77200	10.65977	12.32109	0.26208	1.60040	0.0	0.0	1.86343
60.0000E 3	5.1160	12.70000	10.62686	12.20054	0.22994	1.59020	0.0	0.0	1.82014
65.0000E 3	5.0360	12.60000	10.54099	12.02068	0.22701	1.57100	0.0	0.0	1.79801

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
8.0000E 3	7.1309	0.0	0.0	3.60000	0.00280	2.89300	0.30000	1.80813	0.05090
8.5000E 3	7.0703	0.03500	0.0	3.25250	0.00280	2.89310	0.43000	2.02315	0.06275
9.0000E 3	7.0131	0.06100	0.0	3.48100	0.00280	2.89320	0.52000	1.90342	0.06455
9.5000E 3	6.9590	0.08200	0.0	3.21520	0.00280	2.89320	0.52000	1.90342	0.06629
10.0000E 3	6.9070	0.10000	0.0	3.23120	0.00280	2.89320	0.52000	1.90349	0.06799
12.0000E 3	6.7254	0.15600	0.0	3.00936	0.00280	2.89350	0.44000	2.00938	0.07438
14.0000E 3	6.5713	0.18300	0.0	3.01951	0.00280	2.89360	0.44000	2.00958	0.08024
16.0000E 3	6.4378	0.19600	0.0	2.67087	0.00280	2.89400	0.32000	2.19242	0.08566
18.0000E 3	6.3200	0.20400	0.0	2.55598	0.00280	2.89430	0.32000	2.19265	0.09074
20.0000E 3	6.2146	0.21100	0.0	2.57169	0.00280	2.89460	0.32000	2.19288	0.09552
25.0000E 3	5.9915	0.22200	0.0	2.40119	0.00280	2.89520	0.27000	2.27969	0.10644
30.0000E 3	5.8091	0.23000	0.0	2.38583	0.00280	2.89580	0.27000	2.28016	0.11621
35.0000E 3	5.6550	0.23500	0.0	2.43281	0.00370	2.89650	0.30970	2.21158	0.12510
40.0000E 3	5.5215	0.23900	0.0	2.35462	0.00750	2.89710	0.27670	2.26921	0.13329
45.0000E 3	5.4037	0.24200	0.0	2.28635	0.01920	2.89780	0.24360	2.33017	0.14090
50.0000E 3	5.2983	0.24500	0.0	2.21210	0.03090	2.89840	0.21060	2.39418	0.14803
55.0000E 3	5.2030	0.24800	0.0	2.13958	0.03510	2.89900	0.17760	2.46179	0.15474
57.0000E 3	5.1673	0.24880	0.0	2.11223	0.04230	2.89940	0.16435	2.49010	0.15729
60.0000E 3	5.1160	0.25100	0.0	2.07314	0.04700	2.89970	0.14460	2.53337	0.16108
65.0000E 3	5.0360	0.26100	0.0	2.05901	0.05420	2.90030	0.14450	2.53412	0.16709

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
70.0000E 3	4.9618	12.50000	10.43841	11.86117	0.22619	1.56640	0.0	0.0	1.79259
75.0000E 3	4.8929	12.40000	10.33818	11.70011	0.22532	1.56150	0.0	0.0	1.78682
76.0000E 3	4.8796	12.37600	10.31395	11.66537	0.2251[illegible]	1.56050	0.0	0.0	1.78565
80.0000E 3	4.8283	12.28000	10.21651	11.52704	0.2243[illegible]	1.55610	0.0	0.0	1.78049
85.0000E 3	4.7677	12.17000	10.10070	11.36598	0.22411	1.55520	0.0	0.0	1.77930
90.0000E 3	4.7105	12.06000	9.98368	11.20839	0.22372	1.55360	0.0	0.0	1.77732
95.0000E 3	4.6565	11.97000	9.88630	11.07133	0.22362	1.55400	0.0	0.0	1.77762
100.0000E 3	4.6052	11.89000	9.79862	10.94933	0.22358	1.55480	0.0	0.0	1.77838
110.0000E 3	4.5099	11.70200	9.59067	10.68027	0.22393	1.55940	0.0	0.0	1.78333
120.0000E 3	4.4228	11.53600	9.41087	10.45093	0.22363	1.55550	0.0	0.0	1.78313
130.0000E 3	4.3428	11.39100	9.26201	10.24158	0.22209	1.55090	0.0	0.0	1.77299
140.0000E 3	4.2687	11.25200	9.12381	10.03945	0.22009	1.53910	0.0	0.0	1.75919
150.0000E 3	4.1997	11.11900	8.98794	9.85260	0.21856	1.53050	0.0	0.0	1.74906
160.0000E 3	4.1352	11.00000	8.86862	9.67945	0.21682	1.52050	0.0	0.0	1.73732
164.0000E 3	4.1105	10.95600	8.82623	9.61618	0.21597	1.51540	0.0	0.0	1.73137
170.0000E 3	4.0745	10.89000	8.76160	9.52144	0.21470	1.50770	0.0	0.0	1.72240
180.0000E 3	4.0174	10.76900	8.64810	9.35504	0.20900	1.49390	0.0	0.0	1.70290
190.0000E 3	3.9633	10.65700	8.54555	9.20169	0.20025	1.48220	0.0	0.0	1.69345
200.0000E 3	3.9120	10.54000	8.43846	9.04639	0.19154	1.47000	0.0	0.0	1.68154
210.0000E 3	3.8632	10.45000	8.33325	8.92085	0.18585	1.48090	0.0	0.0	1.66675

E	U	SG1	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
70.0000E 3	4.9618	0.26900	0.0	2.06159	0.06120	2.90100	0.14440	2.53495	0.17282
75.0000E 3	4.8929	0.27500	0.0	2.06182	0.06770	2.90160	0.14430	2.53570	0.17829
76.0000E 3	4.8796	0.27640	0.0	2.06205	0.06890	2.90200	0.14428	2.53600	0.17934
80.0000E 3	4.8283	0.28300	0.0	2.06349	0.07370	2.90220	0.14420	2.53644	0.18352
85.0000E 3	4.7677	0.29000	0.0	2.06930	0.07960	2.90290	0.14410	2.53728	0.18853
90.0000E 3	4.7105	0.29900	0.0	2.07632	0.08530	2.90350	0.14400	2.53302	0.19335
95.0000E 3	4.6565	0.30600	0.0	2.08362	0.09090	2.90420	0.14390	2.53386	0.19798
100.0000E 3	4.6052	0.31300	0.0	2.09138	0.09600	2.90480	0.14380	2.53960	0.20245
110.0000E 3	4.5099	0.32000	0.0	2.11133	0.10510	2.90610	0.14360	2.54119	0.21091
120.0000E 3	4.4228	0.34200	0.0	2.12513	0.11530	2.90740	0.14340	2.54277	0.21881
130.0000E 3	4.3428	0.35600	0.0	2.12899	0.12410	2.90870	0.14320	2.54435	0.22622
140.0000E 3	4.2687	0.36900	0.0	2.12819	0.13290	2.90590	0.14300	2.54584	0.23319
150.0000E 3	4.1997	0.38200	0.0	2.13106	0.14090	2.91120	0.14280	2.54743	0.23975
160.0000E 3	4.1352	0.39400	0.0	2.13132	0.14890	2.91250	0.14260	2.54901	0.24595
164.0000E 3	4.1105	0.39840	0.0	2.12977	0.15190	2.91340	0.14252	2.55000	0.24850
170.0000E 3	4.0745	0.40600	0.0	2.12840	0.15620	2.91380	0.14240	2.55060	0.25182
180.0000E 3	4.0174	0.41800	0.0	2.12090	0.16350	2.91510	0.13990	2.55733	0.25738
190.0000E 3	3.9633	0.42900	0.0	2.11145	0.17030	2.91640	0.13510	2.56929	0.26266
200.0000E 3	3.9120	0.44000	0.0	2.10154	0.17700	2.91770	0.13030	2.58135	0.26767
210.0000E 3	3.8632	0.45000	0.0	2.11675	0.18350	2.91890	0.12550	2.59343	0.27243

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGPLP	SGA
220.0000E 3	3.8167	10.35000	8.25691	8.78201	0.17599	1.45810	0.0	0.0	1.63409
230.0000E 3	3.7723	10.25000	8.15123	8.65073	0.16927	1.46050	0.0	0.0	1.62977
240.0000E 3	3.7297	10.15000	8.04691	8.52131	0.16259	1.46250	0.0	0.0	1.62609
250.0000E 3	3.6889	10.05000	7.94084	8.39116	0.15596	1.46720	0.0	0.0	1.62316
260.0000E 3	3.6497	10.00000	7.88058	8.30252	0.15392	1.47150	0.0	0.0	1.62542
270.0000E 3	3.6119	9.92000	7.78902	8.19239	0.15208	1.47790	0.0	0.0	1.62998
280.0000E 3	3.5756	9.85000	7.70616	8.09145	0.15024	1.48460	0.0	0.0	1.63484
286.0000E 3	3.5543	9.80800	7.65794	8.03136	0.14916	1.48890	0.0	0.0	1.63806
290.0000E 3	3.5405	9.78000	7.62255	7.99175	0.14845	1.49200	0.0	0.0	1.64045
300.0000E 3	3.5066	9.70000	7.52096	7.88745	0.14664	1.49540	0.0	0.0	1.64604
320.0000E 3	3.4420	9.60000	7.37146	7.74976	0.14624	1.52330	0.0	0.0	1.66954
331.0000E 3	3.4082	9.50100	7.25642	7.64045	0.14523	1.52770	0.0	0.0	1.67293
340.0000E 3	3.3814	9.42000	7.16072	7.59177	0.14428	1.53000	0.0	0.0	1.67428
360.0000E 3	3.3242	9.31000	7.02315	7.41234	0.14195	1.53290	0.0	0.0	1.67485
380.0000E 3	3.2702	9.20000	6.88598	7.27675	0.13982	1.53820	0.0	0.0	1.67802
392.0000E 3	3.2391	9.14600	6.81811	7.20420	0.13849	1.54080	0.0	0.0	1.67929
400.0000E 3	3.2189	9.11000	6.76869	7.15723	0.13761	1.54270	0.0	0.0	1.68031
450.0000E 3	3.1011	8.87000	6.46733	6.87159	0.12987	1.56280	0.0	0.0	1.69267
500.0000E 3	2.9957	8.66000	6.21526	6.61145	0.12124	1.57450	0.0	0.0	1.69574
550.0000E 3	2.9004	8.46000	5.97327	6.38369	0.11313	1.59560	0.0	0.0	1.70873

E	U	SGI	SG2N	SGX	NUEL	NUE	ALPHA	ETA	CHIF
220.0000E 3	3.8167	0.45900	0.0	2.09309	0.18990	2.92020	0.12070	2.60569	0.27696
230.0000E 3	3.7723	0.46900	0.0	2.09877	0.19620	2.92150	0.11590	2.61807	0.28128
240.0000E 3	3.7297	0.47700	0.0	2.10309	0.20240	2.92280	0.11110	2.63155	0.28539
250.0000E 3	3.6889	0.48600	0.0	2.10916	0.20890	2.92410	0.10630	2.64313	0.28931
260.0000E 3	3.6497	0.49400	0.0	2.11942	0.21540	2.92540	0.10460	2.64838	0.29305
270.0000E 3	3.6119	0.50100	0.0	2.13098	0.22180	2.92670	0.10250	2.65364	0.29661
280.0000E 3	3.5756	0.50900	0.0	2.14384	0.22820	2.92800	0.10120	2.65892	0.30001
286.0000E 3	3.5543	0.51200	0.0	2.15006	0.23200	2.92860	0.10018	2.66190	0.30196
290.0000E 3	3.5405	0.51700	0.0	2.15745	0.23460	2.92930	0.09950	2.66421	0.30326
300.0000E 3	3.5066	0.53300	0.0	2.17904	0.24100	2.93050	0.09780	2.66943	0.30636
320.0000E 3	3.4420	0.55900	0.0	2.22054	0.25100	2.93310	0.09600	2.67619	0.31213
331.0000E 3	3.4082	0.57165	0.0	2.24458	0.25640	2.93465	0.09507	2.67990	0.31502
340.0000E 3	3.3814	0.58500	0.0	2.25928	0.26090	2.93570	0.09430	2.68272	0.31739
360.0000E 3	3.3242	0.61200	0.0	2.28685	0.27020	2.93830	0.09260	2.68927	0.32217
380.0000E 3	3.2702	0.63600	0.0	2.31402	0.27930	2.94090	0.09090	2.69585	0.32651
392.0000E 3	3.2391	0.64860	0.0	2.32789	0.28480	2.94280	0.08988	2.70010	0.32887
400.0000E 3	3.2189	0.66100	0.0	2.34131	0.28850	2.94350	0.08920	2.70244	0.33045
450.0000E 3	3.1011	0.71000	0.0	2.40267	0.30900	2.94990	0.08310	2.72397	0.33871
500.0000E 3	2.9957	0.74900	0.0	2.44474	0.32960	2.95640	0.07700	2.74503	0.34499
550.0000E 3	2.9004	0.77800	0.0	2.48673	0.34760	2.96290	0.07090	2.76674	0.34960

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
600.0000E 3	2.8134	8.28000	5.77355	6.18016	0.10415	1.60730	0.0	0.0	1.71145
650.0000E 3	2.7334	8.10000	5.57688	5.98915	0.09502	1.62710	0.0	0.0	1.72212
700.0000E 3	2.6593	7.93000	5.37058	5.82366	0.08662	1.66580	0.0	0.0	1.75242
750.0000E 3	2.5903	7.76000	5.16372	5.66766	0.07798	1.70630	0.0	0.0	1.78428
775.0000E 3	2.5575	7.68100	5.07211	5.59986	0.07569	1.72220	0.0	0.0	1.79789
800.0000E 3	2.5257	7.61000	4.98670	5.53055	0.07310	1.73220	0.0	0.0	1.80530
825.0000E 3	2.4950	7.55500	4.93235	5.47306	0.07015	1.73200	0.0	0.0	1.80215
850.0000E 3	2.4651	7.50000	4.89016	5.41092	0.06674	1.72010	0.0	0.0	1.78684
900.0000E 3	2.4079	7.42000	4.88808	5.28733	0.05822	1.64470	0.0	0.0	1.70292
925.0000E 3	2.3805	7.38500	4.88530	5.23229	0.05360	1.61460	0.0	0.0	1.66820
950.0000E 3	2.3539	7.35000	4.86846	5.18393	0.04954	1.59800	0.0	0.0	1.64754
975.0000E 3	2.3279	7.32000	4.81801	5.15190	0.04669	1.61830	0.0	0.0	1.66499
1.0000E 6	2.3026	7.29000	4.75851	5.12488	0.04399	1.64750	0.0	0.0	1.69149
1.2000E 6	2.1203	7.12000	4.44505	4.81302	0.03295	1.76200	0.0	0.0	1.79495
1.4000E 6	1.9661	7.01000	4.17733	4.61054	0.02857	1.86710	0.0	0.0	1.89567
1.6000E 6	1.8326	7.00000	4.01554	4.53968	0.02516	1.96530	0.0	0.0	1.99046
1.7000E 6	1.7720	7.06000	4.02736	4.61378	0.02364	1.98650	0.0	0.0	2.01014
1.8000E 6	1.7148	7.12000	4.05932	4.67648	0.02189	1.98880	0.0	0.0	2.01068
2.0000E 6	1.6094	7.34000	4.23813	4.98784	0.01857	1.97530	0.0	0.0	1.99387
2.2000E 6	1.5141	7.52000	4.36145	5.08369	0.01643	1.95560	0.0	0.0	1.97203

E	U	SGI	SG2N	SCX	MUEL	NUE	ALPHA	ETA	CHIF
600.0000E 3	2.8134	0.79500	0.0	2.50645	0.36370	2.96540	0.06490	2.78369	0.35277
650.0000E 3	2.7334	0.80100	0.0	2.52312	0.37350	2.97590	0.05840	2.81170	0.35469
700.0000E 3	2.6593	0.80700	0.0	2.55942	0.39220	2.98245	0.05200	2.83498	0.35554
750.0000E 3	2.5903	0.81200	0.0	2.59528	0.40520	2.98500	0.04570	2.85937	0.35549
775.0000E 3	2.5575	0.81500	0.0	2.61289	0.41110	2.99225	0.04355	2.86628	0.35500
800.0000E 3	2.5257	0.81800	0.0	2.62330	0.41700	2.99550	0.04220	2.87421	0.35454
825.0000E 3	2.4950	0.82050	0.0	2.62265	0.42210	2.99875	0.04050	2.88203	0.35373
850.0000E 3	2.4651	0.82300	0.0	2.60984	0.42720	3.00200	0.03880	2.88987	0.35291
900.0000E 3	2.4079	0.82900	0.0	2.53192	0.43630	3.00860	0.03540	2.90574	0.35065
925.0000E 3	2.3805	0.83150	0.0	2.49970	0.44065	3.01185	0.03320	2.91507	0.34925
950.0000E 3	2.3539	0.83400	0.0	2.48154	0.44500	3.01510	0.03100	2.92444	0.34784
975.0000E 3	2.3279	0.83700	0.0	2.50199	0.45000	3.01840	0.02885	2.93376	0.34620
1.0000E 6	2.3026	0.84000	0.0	2.53149	0.45500	3.02170	0.02670	2.94312	0.34455
1.2000E 6	2.1203	0.88000	0.0	2.67495	0.51900	3.04800	0.01870	2.99205	0.32765
1.4000E 6	1.9661	0.93700	0.0	2.83267	0.57440	3.07450	0.01530	3.02817	0.30887
1.6000E 6	1.8326	0.99400	0.0	2.98446	0.61270	3.10110	0.01280	3.06191	0.28414
1.7000E 6	1.7720	1.02250	0.0	3.03264	0.60740	3.11445	0.01190	3.07782	0.27245
1.8000E 6	1.7148	1.05100	0.0	3.06168	0.60210	3.12780	0.01100	3.09377	0.26075
2.0000E 6	1.6094	1.10800	0.0	3.10187	0.55500	3.15460	0.00940	3.12522	0.23797
2.2000E 6	1.5141	1.18652	0.0	3.15055	0.55860	3.18150	0.00840	3.15500	0.21516

E	U	SGT	SGN	SGTR	SGC	SGF	SGP	SGALP	SGA
2.4000E 6	1.4271	7.67000	4.44015	5.15332	0.01452	1.93600	0.0	0.0	1.95052
2.6000E 6	1.3471	7.82000	4.52934	5.07296	0.01322	1.91570	0.0	0.0	1.92892
2.8000E 6	1.2730	7.95000	4.59853	4.90486	0.01194	1.89450	0.0	0.0	1.90644
3.0000E 6	1.2040	8.00000	4.58752	4.70662	0.01087	1.87390	0.0	0.0	1.88477
3.2000E 6	1.1394	8.00000	4.53536	4.71957	0.01001	1.85430	0.0	0.0	1.86431
3.4000E 6	1.0788	8.00000	4.48281	4.73338	0.00954	1.83500	0.0	0.0	1.84454
3.6000E 6	1.0217	7.99000	4.43249	4.73655	0.00889	1.81470	0.0	0.0	1.82359
3.8000E 6	0.9676	7.98000	4.41098	4.71852	0.00843	1.79290	0.0	0.0	1.80133
4.0000E 6	0.9163	7.96000	4.39945	4.68329	0.00796	1.76960	0.0	0.0	1.77756
4.2000E 6	0.8675	7.94000	4.38810	4.65155	0.00733	1.74550	0.0	0.0	1.75283
4.4000E 6	0.8210	7.92000	4.39756	4.60468	0.00690	1.72380	0.0	0.0	1.73070
4.6000E 6	0.7765	7.91000	4.41701	4.56058	0.00647	1.70290	0.0	0.0	1.70937
4.8000E 6	0.7340	7.89000	4.41641	4.52116	0.00606	1.68290	0.0	0.0	1.68896
5.0000E 6	0.6931	7.86000	4.40578	4.47989	0.00567	1.66710	0.0	0.0	1.67277
5.2000E 6	0.6539	7.82000	4.40518	4.47009	0.00530	1.65740	0.0	0.0	1.66270
5.4000E 6	0.6162	7.78000	4.41436	4.35358	0.00514	1.65560	0.0	0.0	1.66474
5.6000E 6	0.5798	7.74000	4.42472	4.28518	0.00488	1.68290	0.0	0.0	1.68778
5.8000E 6	0.5447	7.70000	4.39788	4.24679	0.00485	1.73110	0.0	0.0	1.73595
6.0000E 6	0.5108	7.62000	4.34722	4.18700	0.00466	1.80090	0.0	0.0	1.80558
6.2000E 6	0.4780	7.52000	4.15132	4.22344	0.00448	1.86850	0.0	0.0	1.87298

E	U	SGI	SG2N	SGX	MUEL	NUE	ALPHA	ETA	CHIF
2.4000E 6	1.4271	1.27933	0.0	3.22985	0.56680	3.20850	0.00750	3.18462	0.19388
2.6000E 6	1.3471	1.36174	0.0	3.29066	0.60650	3.23560	0.00690	3.21343	0.17395
2.8000E 6	1.2730	1.44504	0.0	3.35147	0.66220	3.26280	0.00630	3.24237	0.15548
3.0000E 6	1.2040	1.52772	0.0	3.41248	0.71790	3.29100	0.00580	3.27103	0.13851
3.2000E 6	1.1394	1.60032	0.0	3.46464	0.72330	3.31740	0.00540	3.29958	0.12303
3.4000E 6	1.0788	1.67269	0.0	3.51719	0.72870	3.34480	0.00520	3.32750	0.10898
3.6000E 6	1.0217	1.73391	0.0	3.55751	0.73400	3.37570	0.00490	3.35924	0.09631
3.8000E 6	0.9676	1.76770	0.0	3.56902	0.73940	3.40660	0.00470	3.39066	0.08492
4.0000E 6	0.9163	1.78299	0.0	3.56[illegible]	0.74480	3.43760	0.00450	3.42220	0.07473
4.2000E 6	0.8675	1.79906	0.0	3.55[illegible]	0.74940	3.46850	0.00420	3.45399	0.06564
4.4000E 6	0.8210	1.79174	0.0	3.52244	0.75390	3.49540	0.00400	3.48546	0.05756
4.6000E 6	0.7765	1.78362	0.0	3.49299	0.75830	3.53030	0.00380	3.51694	0.05039
4.8000E 6	0.7340	1.78463	0.0	3.47359	0.76280	3.56130	0.00360	3.54853	0.04405
5.0000E 6	0.6931	1.78145	0.0	3.45422	0.76720	3.59220	0.00340	3.58003	0.03845
5.2000E 6	0.6539	1.75212	0.0	3.41482	0.77180	3.62310	0.00320	3.61154	0.03352
5.4000E 6	0.6162	1.70090	0.0	3.36864	0.77620	3.65400	0.00310	3.64271	0.02919
5.6000E 6	0.5798	1.62750	0.0	3.31928	0.78080	3.68500	0.00290	3.67434	0.02539
5.8000E 6	0.5447	1.52418	0.04200	3.30212	0.78520	3.71590	0.00280	3.70552	0.02206
6.0000E 6	0.5108	1.32720	0.14000	3.27273	0.78970	3.74680	0.00260	3.73708	0.01915
6.2000E 6	0.4780	1.17770	0.31900	3.36868	0.79410	3.77770	0.00240	3.76866	0.01660

E	U	SGT	SGN	SGTR	SGG	SGF	SGP	SGALP	SGA
6.4000E 6	0.4463	7.40000	4.01162	4.19632	0.00421	1.91300	0.0	0.0	1.91721
6.6000E 6	0.4155	7.30000	3.93096	4.14344	0.00389	1.94630	0.0	0.0	1.95019
6.8000E 6	0.3857	7.20000	3.80009	4.12535	0.00377	1.98370	0.0	0.0	1.98747
7.0000E 6	0.3567	7.10000	3.67941	4.11305	0.00244	2.02530	0.0	0.0	2.02874
7.2000E 6	0.3285	7.00000	3.57150	4.08882	0.00331	2.06870	0.0	0.0	2.07201
7.4000E 6	0.3011	6.90000	3.47772	4.05558	0.00316	2.10780	0.0	0.0	2.11096
7.6000E 6	0.2744	6.80000	3.37786	4.02846	0.00300	2.14110	0.0	0.0	2.14410
7.8000E 6	0.2485	6.70000	3.29202	3.99165	0.00282	2.17000	0.0	0.0	2.17282
8.0000E 6	0.2231	6.60000	3.19395	3.96595	0.00286	2.19760	0.0	0.0	2.20046
8.2000E 6	0.1985	6.53000	3.14413	3.93169	0.00267	2.22610	0.0	0.0	2.22877
8.4000E 6	0.1744	6.47000	3.11134	3.89381	0.00248	2.25550	0.0	0.0	2.25798
8.6000E 6	0.1508	6.42000	3.10834	3.84257	0.00251	2.28500	0.0	0.0	2.28751
8.8000E 6	0.1278	6.38000	3.09957	3.80674	0.00231	2.30940	0.0	0.0	2.31171
9.0000E 6	0.1054	6.33000	3.08264	3.76332	0.00225	2.31930	0.0	0.0	2.32155
9.2000E 6	0.0834	6.28000	3.07775	3.72857	0.00215	2.30830	0.0	0.0	2.31045
9.4000E 6	0.0619	6.26000	3.08286	3.69414	0.00203	2.28410	0.0	0.0	2.28613
9.6000E 6	0.0408	6.22000	3.06495	3.66781	0.00192	2.25730	0.0	0.0	2.25922
9.8000E 6	0.0202	6.18000	3.03404	3.65098	0.00181	2.23300	0.0	0.0	2.23481
10.0000E 6	0.0000	6.15000	3.01813	3.63530	0.00170	2.21000	0.0	0.0	2.21170

E	U	SGI	SG2N	SGX	MUBL	NUE	ALPHA	ETA	CHIF
6.4000E 6	0.4463	0.97117	0.50000	3.36038	0.78050	3.80870	0.00220	3.80034	0.01438
6.6000E 6	0.4155	0.79385	0.62000	3.36904	0.80300	3.83960	0.00200	3.83194	0.01245
6.8000E 6	0.3857	0.71444	0.69000	3.39191	0.80740	3.87050	0.00190	3.86316	0.01076
7.0000E 6	0.3567	0.65684	0.73500	3.42059	0.81180	3.90140	0.00170	3.89478	0.00930
7.2000E 6	0.3285	0.59343	0.76400	3.42844	0.81510	3.93240	0.00160	3.92512	0.00803
7.4000E 6	0.3011	0.53132	0.78000	3.42224	0.81790	3.96330	0.00150	3.95736	0.00693
7.6000E 6	0.2744	0.50004	0.77800	3.42214	0.82050	3.99420	0.00140	3.98662	0.00597
7.8000E 6	0.2485	0.47016	0.76500	3.40798	0.82270	4.02510	0.00130	4.01587	0.00515
8.0000E 6	0.2231	0.46060	0.74500	3.40606	0.82470	4.05510	0.00130	4.05033	0.00443
8.2000E 6	0.1985	0.43510	0.72200	3.38587	0.82640	4.08700	0.00120	4.08210	0.00381
8.4000E 6	0.1744	0.40568	0.69500	3.35866	0.82800	4.11790	0.00110	4.11338	0.00328
8.6000E 6	0.1508	0.35615	0.66800	3.31168	0.82920	4.14880	0.00110	4.14424	0.00282
8.8000E 6	0.1278	0.32972	0.63900	3.28043	0.83020	4.17980	0.00100	4.17562	0.00242
9.0000E 6	0.1054	0.31[illegible]	0.61500	3.24736	0.83100	4.21070	0.00097	4.20662	0.00208
9.2000E 6	0.0834	0.30480	0.59500	3.21025	0.83170	4.24160	0.00093	4.23766	0.00178
9.4000E 6	0.0619	0.31301	0.57800	3.17714	0.83230	4.27250	0.00089	4.26870	0.00153
9.6000E 6	0.0408	0.33483	0.56100	3.15505	0.83270	4.30250	0.00085	4.29985	0.00131
9.8000E 6	0.0202	0.36515	0.54400	3.14396	0.83300	4.33440	0.00081	4.33089	0.00112
10.0000E 6	0.0000	0.39517	0.52500	3.13167	0.83320	4.36530	0.00077	4.36194	0.00096