

International Atomic Energy Agency

INDC(CCP)-348

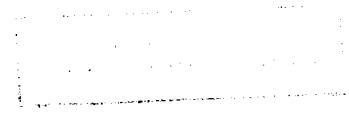
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PHOTONUCLEAR DATA INDEX 1986 - 1990

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Institute of Nuclear Physics
Centre for Photonuclear Experimental Data



July 1992

IAEA NUCLEAR DATA SECTION, WAGRAMERSTRASSE 5, A-1400 VIENNA

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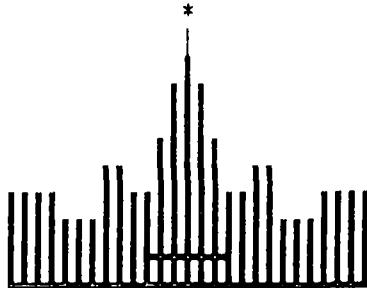
July 1992

Abstract

This issue presents a bibliographic index to experimental photonuclear data published in periodical scientific literature during the years 1986-1990. The main tabulation is sorted by nucleus and reaction. It is supplemented by a reference index, an author index, explanatory tables of terms and abbreviations used, and a table of isotopic abundances and nucleon separation energies. The index is in English with an introduction in Russian and English.

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July 1992

92-02577



ЦДФЭ

CDFE

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ЦДФЭ

CDFE

Настоящий выпуск подготовлен Центром данных фотоядерных экспериментов Научно-исследовательского института ядерной физики Московского государственного университета.

Выпуск продолжает цикл изданий ЦДФЭ по различным разделам физики электромагнитных взаимодействий. Эти издания охватывают результаты экспериментальных исследований фото- и электроядерных реакций, процессов радиационного захвата.

Информационные издания ЦДФЭ (ежегодные бюллетени, сводные указатели) содержат систематизированную информацию о самих работах, особенностях использованных экспериментальных методик, основных полученных физических результатах, библиографию и указатель авторов работ, выполненных за определенный период времени.

Тематические издания ЦДФЭ (обзоры, атласы) содержат анализ основных результатов, полученных в различных областях физики электромагнитных взаимодействий, компиляции числовых данных по фотоядерным реакциям, оцененные фотоядерные данные.

Кроме подготовки изданий Центр данных фотоядерных экспериментов компилирует в рамках международного обменного формата EXFOR экспериментальные данные по фотоядерным реакциям. Фонд числовых данных ЦДФЭ содержит данные по выходам, сечениям, функциям возбуждения реакций, угловым, энергетическим, массовым, зарядовым распределениям продуктов и другим характеристикам реакций взаимодействия фотонов, заряженных частиц и нейтронов с атомными ядрами.

The present issue has been prepared in the Centre for Photonuclear Experiments Data at the Institute of Nuclear Physics of Moscow State University.

The issue continues the series of CDFE publications on various fields of electromagnetic interaction physics. These publications cover the results of experimental studies of photo- and electronuclear reactions, of radiative capture processes.

The information CDFE publications (annual bulletins, joint indexes) include the systematized information about the works themselves, features of experimental methods used, fundamental physical results obtained, bibliography, and index of authors of the works carried out during the signed period of time.

The thematic CDFE publications (reviews, atlases) include the analysis of fundamental results obtained in various fields of electromagnetic interactions the compilations of the digital photonuclear reaction data, evaluated photonuclear data.

In addition to preparation of the publications, the Centre for Photonuclear Experiments Data compiles, by means of international exchange format EXFOR, the experimental photonuclear reaction data. The CDFE digital data fund contains the data on yields, cross sections, excitation functions of reactions, on angular, energy, mass, charge distributions of the products and on another features of the interactions of photons, charge particles and neutrons with atomic nuclei.

ЦДФЭ

CDFE

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I. ПРЕДИСЛОВИЕ

Настоящий Указатель является продолжением
Указателя "Фотоядерные данные 1976-1985",
опубликованного ранее.

Указатель включает в себя таблицу фотоядерных
данных, в которой систематизированы ре-
зультаты экспериментальных исследований, опуб-
ликованных в 1986-1990 годах, библиографию ра-
бот и авторский указатель.

При подготовке Указателя были использованы
указанные советские и иностранные журналы.

PREFACE

The present Index is the continuation of
the Index "Photonuclear Data 1976-1985" which
has been published previously.

Index includes the table of photonuclear
data, in which the results of the experimental
studies published in 1986-1990 are
systematized, bibliography of papers and
author index.

In the preparation of Index the following
soviet and foreign journals have been used.

1. Атомная энергия
2. Вестн. Моск. ун-та. Сер.: Физика. Астрономия
3. Изв. АН Каз. ССР. Сер. физико-математическая
4. Изв. АН Латв. ССР. Сер. физических и технических наук
5. Изв. АН СССР. Сер. физическая
6. Известия высших учебных заведений. Сер. Физика
7. Письма в ЖЭТФ
8. Сб. "Вопросы атомной науки и техники. Сер.: Общая и ядерная физика". Москва
9. Сб. "Вопросы атомной науки и техники. Сер.: Ядерно-физические исследования
(теория и эксперимент)". Москва
10. Сб. "Вопросы атомной науки и техники. Сер.: Ядерные константы". Москва
11. Сб. "Проблемы ядерной физики и космических лучей". Харьков
12. Украинский физический журнал
13. Ядерная физика
14. Australian Journal of Physics
15. Canadian Journal of Physics
16. Il Nuovo Cimento
17. Journal of Physical Society of Japan
18. Journal of Physics G: Nuclear Physics
19. Nuclear Instruments and Methods
20. Nuclear Physics, A
21. Nuclear Science and Engineering
22. Physical Letters, B
23. Physical Review, C
24. Physical Review Letters
25. Zeitschrift fur Physik, A

1. Atomnaya Energiya (in Russian)
2. Vestnik Moskovskogo Universiteta. Ser.: Fizika. Astronomiya
(in Russian)
3. Izvestiya AN Kaz. SSR. Ser.: Fiziko-Matematicheskaya (in Russian)
4. Izvestiya AN Latv. SSR. Ser. Fizicheskikh i Tekhnicheskikh Nauk
(in Russian)
5. Izvestiya AN SSSR. Ser. Fizicheskaya (in Russian)
6. Izvestiya Vysshikh Uchebnykh Zavedenij. Ser. Fizika (in Russian)
7. Pis'ma v ZhETF (in Russian)
8. Sb. "Voprosy Atomnoj Nauki i Techniki. Ser.: Obshchaya i Yadernaya
Fizika" (in Russian)
9. Sb. "Voprosy Atomnoj Nauki i Techniki. Ser.: Yaderno - Fizicheskie
Issledovaniya (Teoriya i Experiment)", Moskva (in Russian)
Ñóáí¿ñ
10. Sb. "Voprosy Atomnoj Nauki i Techniki. Ser.: Yadernye Konstanty".
Moskva (in Russian)

11. Sb. "Problemy Yadernoj Fiziki i Kosmicheskikh Luchei". Kharkov (in Russian)
12. Ukrainskij Fizicheskij Zhurnal (in Russian)
13. Uspekhi Fizicheskikh Nauk (in Russian)
14. Yadernaya fizika (in Russian)
15. Australian Journal of Physics
16. Canadian Journal of Physics
17. Il Nuovo Cimento
18. Journal of Physical Society of Japan
19. Journal of Physics G: Nuclear Physics
20. Nuclear Instruments and Methods
21. Nuclear Physics, A
22. Nuclear Science and Engineering
23. Physical Letters, B
24. Physical Review, C
25. Physical Review Letters
26. Zeitschrift fur Physik, A

II. ПОЯСНЕНИЯ К ТАБЛИЦЕ

В таблицу "ФОТОЯДЕРНЫЕ ДАННЫЕ" включены сведения о работах, содержащих информацию об электромагнитных возбуждениях в атомных ядрах, кроме результатов исследования процессов радиационного захвата тепловых нейтронов, имеющих весьма специфическую природу.

Включенные в таблицу экспериментальные результаты относятся, в основном, к области энергий возбуждения, заключенной между нуклонным и мезонным порогами.

Экспериментальная информация в таблице приводится, как правило, отдельно для каждого из исследованных ядер, расположенных в порядке возрастания атомного номера элемента.

Термины, обозначающие графы таблицы, имеют следующее содержание:

"NUCLEUS"- символ элемента с указанием массового числа (в случае использования мишени из естественной смеси изотопов указывается символ "0");

"REACTION"- 1 строка - символ реакции вне зависимости от способа ее исследования и исследованного канала (указано далее); реакция радиационного захвата обозначается (P,G),(A,G) и так далее, несмотря на то, что в большинстве случаев речь идет лишь о канале образования конечного ядра в основном состоянии; 2 строка - символы характеристик налетающих и вылетающих частиц; MON - (квази)монохроматичность, POL - поляризация;

"FINAL/TARGET"- FN - символ элемента с указанием заряда и массового числа конечного ядра реакции фото- и электровозбуждения; TN - в случае обратной реакции радиационного захвата указывается ядро - мишень;

EXPLANATIONS OF THE TABLE

Table "PHOTONUCLEAR DATA" contains information about the electromagnetic excitations in atomic nuclei with the exception of the results of studies of the thermal neutrons radiative capture processes, which are of highly specific nature.

The experimental results included here refer as a rule to the excitation energy region between the nucleon and meson thresholds.

Experimental information is given as a rule separately for each of the studied nuclei in the order of increasing atomic number of the element.

The terms designating the columns of the table are as follows:

"NUCLEUS"- is the element symbol with the mass number indicated, when a target made of mixture of isotopes is used, the symbol "0" is indicated;

"REACTION"- 1 line - is a symbol of reaction regardless the method of its investigation (indicated later); the radiative capture reactions are designated as (P,G),(A,G), and so forth, despite the fact that it is only the channel of formation of the final nucleus in the ground state that is discussed in most cases; 2 line - a symbols of characteristics of incident and outgoing particles; MON - (quasi) monochromativity; POL - polarization;

"FINAL/TARGET"

FN - is the element symbol with charge and mass numbers indicated the final nucleus of the photo- and electroexcitation reaction; TN - in the case of the inverse reaction of radiative capture the target nucleus is indicated;

"ENERGY"-	EN - энергия или область энергий возбуждения (в MEV); для реакций с электронами и для реакций радиационного захвата в ряде случаев приводятся энергии или области энергий налетающих частиц (при этом дается символ налетающей частицы, например, в случае реакций с электронами - EN-E);	"ENERGY"-	EN - is the excitation energy or the energy region (in MEV); for the reactions induced by electron and for radiative capture sometimes the energy or energy range of incident particles is indicated (then the incident particle is denoted by a symbol of incident particle, e.g. for reactions induced by electrons - EN-E);
"ANGLE"-	значения или диапазоны углов (в градусах), для которых проводились измерения;	"ANGLE"-	are the values or range of the angles (in degrees) at which measurements were made;
"QUANTITY"-	коды основных результатов выполненных измерений и изложение информации, извлекаемой и (или) обсуждаемой авторами (упоминаются лишь фактические результаты, приводимые в работах в виде рисунков, таблиц или числовых значений: M - измерено; D - получено; R - обзор);	"QUANTITY"-	are codes of the main results of the measurements made and the description of information extracted and (or) discussed by the authors (only the factual results given in papers as diagrams, tables, or digital values are mentioned; M - measured, D - deduced, R - reviewed);
"NUMBER"-	пятисимвольный идентификатор соответствующей работы в библиографии, образованный по принципу ГТННН и определяющий год (ГТ) опубликования работы и ее порядковый номер (ННН) в соответствующем информационном бюллетене;	"NUMBER"-	is the five-digit number of the work in the bibliography, formed on the principle YYNNN and determining the year (YY) of publication of a work and its index number (NNN) in the corresponding information bulletin;
"E"-	дополнительный условный символ, означающий наличие в фондах ЦДФЭ цифровых данных в формате EXFOR.	"E"-	is an additional symbol signifying the presence in the CDFE fund of digital data in the EXFOR format.

III. СЛОВАРЬ КОДОВ

CODE DICTIONARY

Код Code	Содержание	Contents
A	альфа-частица	alfa-particle
ABI	абсолютное значение интегрального сечения	absolute integrated cross section
ABS	поглощение	absorption
ABX	абсолютное значение сечения	absolute cross section
ABY	абсолютное значение выхода	absolute yield
ANIS	анизотропия (углового распределения)	anisotropy (of angular distribution)
ASYM	асимметрия	asymmetry
AVLSP	среднее расстояние между уровнями	average level spacing

Код Code	Содержание	Contents
A-MOM	угловой момент	angular momentum
A-POW	анализирующая способность	analyzing power
BRANCH	коэффициент ветвления	branching ratio
B(EL)	приведенная вероятность перехода	reduced transition probability
CDENC	зарядовая плотность	charge density
CDIS	зарядовое распределение	charge distribution
COINC	совпадения	coincidences
CORR	корреляция (по энергии)	correlation (energy)
D	дейtron	deuteron
D:	полученные данные	data deduced
DEF	параметр деформации	deformation parameter
DNY	выход запаздывающих нейтронов	delayed neutron yield
DST	(угловое) распределение	(angular) distribution
E	электрон	electron
E:	энергия (уровня)	energy (of level)
E-AV	средняя энергия (вторичной частицы)	average energy (of secondary particle)
EN	энергия возбуждения исследуемого ядра	excitation energy of nucleus investigated
EN-A	энергия налетающей частицы (A,D,E,N,P,T)	energy of incident particle (A,D,E,N,P,T)
EN-D		
EN-E		
EN-N		
EN-P		
EN-T		
ETOP	отношение (выходов или сечений) для реакций с электронами и позитронами	electron-to-positron ratio (of yields or cross sections)
F	деление	fission
FBAR	параметр барьера деления	fission barrier parameter
FBIL	делимость	fissionability
FMF	формфактор	form factor
FN:	конечное ядро	final nucleus
FPRB	вероятность деления	fission probability
FRRNG	пробег фрагментов деления	fission fragment range

Код Code	Содержание	Contents
G	гамма-квант	gamma-quantum
G-WIDTH	радиационная ширина	radiative width
INT	интенсивность (перехода)	intensity (of transition)
INTCFC	коэффициент интерференции	interference coefficient
IRAT	изомерное отношение	isomer ratio
ISCHR	изохромата	isochromate
ISY	выход изомера	isomer yield
ITOP	отношение (выходов или сечений) изомерного и мгновенного процессов	isomer to-prompt ratio (of yields or cross sections)
IYR	отношение выходов изомеров	isomer yield ratio
J-PI	спин-четность (уровня)	spin parity (of level)
KE	кинетическая энергия	kinetic energy
KF-DN	кинетическая функция запаздывающих нейтронов	kinetic function of delayed neutrons
LDEN	параметр плотности уровней	level density parameter
LFT	время жизни (уровня)	lifetime (of level)
LOSS	спектр энергетических потерь	energy loss spectrum
M:	измеренные величины	data measured
MATR	матричный элемент (перехода)	matrix element (of transition)
MD	распределение по угловым моментам	angular momentum distribution
MDIS	массовое распределение	mass distribution
MES	спектр недостающих энергий	missing energy spectrum
MFRP	средняя длина пробега	mean free path
MIX	коэффициент смешивания	mixing ratio
MLTPL	множественность	multiplisity
MON	монохроматичность (пучка фотонов)	monochromativity (of photon beam)
MTRN	переданный импульс	moment transfer
MULT	мультипольность	multipolarity
N	нейtron	neutron
N-AV	среднее число (нейтронов)	average number (of neutrons)

Код Code	Содержание	Contents
NOX	отсутствие данных о сечении	no cross section data
OCPR	вероятность заселения	occupation probability
P	протон	proton
PNY	выход мгновенных нейтронов	prompt neutron yield
POL	поляризация	polarisation
PTOA	отношение (выходов или сечений фото- и электрорасщепления) для протонов и альфа-частиц	proton-to-alfa ratio (of yields or cross sections for photo- and electrodisintegration)
PTOE	отношение (выходов или сечений) для реакций с фотонами и электронами	photon-to-electron ratio (of yields or cross sections)
PTON	отношение (выходов или сечений фото- и электрорасщепления) для протонов и нейтронов	proton-to-neutron ratio (of yields or cross sections for photo- and electrodisintegration)
Q	значение Q (реакции)	Q-value (of reaction)
QMOM	квадрупольный момент	quadrupole moment
R:	обсуждаемые данные	data reviewed
RDI	радиус (перехода)	radius (of transition)
RLI	относительное значение интегрального сечения	relative integrated cross section
RLX	относительное значение сечения	relative cross section
RLY	относительное значение выхода	relative yield
RMD	распределение по импульсам отдачи	recoil momentum distribution
RSP	функция отклика	response function
SCAM	амплитуда рассеяния	scattering amplitude
SEP	энергия отделения	separation energy
SIG	сечение (функция возбуждения)	cross section (excitation function)
SIG-0	сечение образования основного состояния	ground state cross section
SIG-1 SIG-2 SIG-3	сечение образования возбужденных состояний	excitation states cross sections
SIG-M	сечение образования метастабильного (изомерного) состояния	metastable (isomeric) state cross section

Код Code	Содержание	Contents
SIG-V	сечение образования различных состояний	various states cross sections
SPC	энергетический спектр	energy spectrum
SPC-A	энергетический спектр А-частиц при делении	energy spectrum of A-particles in fission
SPC-DP	энергетический спектр фотонов, снимающих возбуждение	energy spectrum of de-excitation photons
SPC-IMP	импульсное распределение	impulse distribution
SPCTF	спектроскопический фактор	spectroscopic factor
SRE	исчерпывание правила сумм	sum rule exhausten
STFUN	силовая функция	strength function
STOAS	отношение ширин для симметричного и асимметричного деления	symmetric-to-asymmetric fission width ratio
STR	сила резонанса	resonance strength
S(0)	фактор нулевой энергии	zero-energy factor
T T	триトン изоспин	triton isospin
TDIS	временное распределение	time distribution
THR	порог (реакции)	threshold (of reaction)
TN:	ядро-мишень	target nucleus
TOT	полное сечение	total cross section
TTOD	отношение (выходов или сечений фото- или электро-расщепления) для тритонов и дейтронов	triton-to-deutron ratio (of yields or cross sections for photo- and electrodisintegration)
TRDEN	плотность перехода	transition density
TRR	скорость термоядерной реакции	thermonuclear reaction rate
X	неидентифицированный продукт реакции	nonidentified reaction product
XN	некоторое число нейтронов	some number of neutrons
YP	некоторое число протонов	some number of protons

IV. ТАБЛИЦА "ФОТОЯДЕРНЫЕ ДАННЫЕ"

TABLE "PHOTONUCLEAR DATA"

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=1 HYDROGEN A=1,2,3						
H- 1 (G,ABS)						
EN = 200. R:SIG 90001						
..... 2000. R:SIG 87001						
(E,E') FN: 1- H- 1 EN-E = 537. 37.1 M:SIG,FMP 87001						
..... 730. 37.5 M:SIG 89001						
(E,E') FN: 1- H- 1 EN-E = 960. 37.5 M:SIG 89001						
..... 1500. 37.5 M:SIG 89001						
H- 2 (G,N)						
G,MON FN: 1- H- 1 EN = 14.7 4PI M:SIG 86006E						
..... 74. 30. M:SPC,DST,SIG 87006E						
(G,N) FN: 1- H- 1 EN = 2.75 30. D:MULT 87006E						
..... 135. 45. M:SPC,DST 87007E						
(G,N) FN: 1- H- 1 EN = 4. 45. M:SPC,ASYM,COINC 88001						
..... 18. 45. M:SPC,ASYM,COINC 88001						
(G,N) G, POL FN: 1- H- 1 EN = 50. 45. M:SIG,ASYM,COINC 88001						
..... 100. 90. M:SIG,ASYM,COINC 88001						
(G,N) FN: 1- H- 1 EN = 6. 30. M:DST,SIG 88003E						
..... 9. 155. M:DST,SIG 88003E						
(G,N) FN: 1- H- 1 EN = 4. 90. M:ABY 89002						
..... 8. 90. M:ABY 89002						
(G,N) FN: 1- H- 1 EN = 2.754 30. M:SIG 89006E						
..... 8.999. 30. M:SIG 89006E						
(G,N+P) FN: 1- H- 1 EN = 5.97 30. M:DST 89008						
..... 8.999. 30. M:DST 89008						
(G,N+P) FN: 1- H- 1 EN = 14.7 4PI M:SIG 86006E						
..... 74. 30. M:SIG 86006E						
(G,N+P) FN: 1- H- 1 EN = 187. 30. M:SPC,SPC-IMP,DST,SIG 87002						
..... 427. 170. D:SEP 87002						
(G,N+P) FN: 1- H- 1 EN = 40. 170. R:SIG,CORR 88005						
..... 120. 170. R:SIG,CORR 88005						
(G,P) FN: O-NN- 1 EN = 50. 45. M:ASYM 86001						
..... 100. 90. M:ASYM 86001						
(G,P) FN: O-NN- 1 EN = 100. 32.5 M:SIG,DST 86004						
..... 255. 130. M:SIG,DST 86004						
(G,P) FN: O-NN- 1 EN = 14.7 4PI M:SIG 86006E						
..... 74. 30. M:SIG 86006E						
(G,P) FN: O-NN- 1 EN = 300. 0. M:POL,SIG,DST,ASYM 86007						
..... 500. 180. M:POL,SIG,DST,ASYM 86007						
(G,P) FN: O-NN- 1 EN = 187. 30. M:SPC,SPC-IMP,DST,SIG 87002						
..... 427. 170. D:SEP 87002						
(G,P) FN: O-NN- 1 EN = 170. 0. M:SPC,DST,SIG 87008						
..... 210. 180. M:SPC,DST,SIG 87008						
(G,P) FN: O-NN- 1 EN = 50. 45. M:SIG,ASYM,COINC 88001						
..... 100. 90. M:SIG,ASYM,COINC 88001						
(G,P) FN: O-NN- 1 EN = 800. 90. M:SIG 88119						
..... 1600. 90. M:SIG 88119						
(G,P) FN: O-NN- 1 EN = 25. 0. M:SIG 89003						
..... 25. 0. M:SIG 89003						
(G,P) FN: O-NN- 1 EN = 8. 0. M:SPC,SIG 89004						
..... 18. 0. M:SPC,SIG 89004						
(G,P) FN: O-NN- 1 EN = 98. 0. M:SPC,DST,SIG 89005						
..... 243. 0. M:SPC,DST,SIG 89005						
(G,P) FN: O-NN- 1 EN = 208.2 23. M:SPC,DST,SIG 89007						
..... 337.9 57.7 M:SPC,DST,SIG 89007						
(G,P) FN: O-NN- 1 EN = 200. 25. M:DST,POL 89009						
..... 350. 75. M:DST,POL 89009						

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
H- 2	(G,P)	FN: O-NN- 1 EN = 30.	90.		M:SIG	89010
	G, POL	..... 100.	...	...	M:SIG,ASYM	89011
	(G,P)	FN: O-NN- 1 EN = 4.	90.		M:SIG,ASYM	89012
	G, POL	..... 10.	...	...	R:DST,SIG	89013
	(G,P)	FN: O-NN- 1 EN = 20.	180.	...	R:DST,SIG	89014
	G, POL	..... 400.	90.		M:SIG	89015
	(G,P)	FN: O-NN- 1 EN = 100.	...	...	R:ASYM	90001
	(G,P)	FN: O-NN- 1 EN = 1000.	...	...	...	.....
	(G,P)	FN: O-NN- 1 EN = 200.	30.		M:POL	90002
	(G,P)	..... 350.	120.	...	M:POL	90003
	G, POL	FN: O-NN- 1 EN = 4.	90.		M:SIG,ASYM	90004
	(G,P)	FN: O-NN- 1 EN = 10.	...	...	R:ASYM	90005
	(G,P)	FN: O-NN- 1 EN = 180.	73.3		M:SPC,POL	90007
	G, POL	..... 450.	76.4	...	M:SPC,POL	90008
	(G,P)	FN: O-NN- 1 EN = 290.	63.4		M:POL	90009
	(E,E)	FN: 1- H- 2 EN = 650.	420.	65.6	M:FMP,A-POW	90004
	(E,E)	FN: 1- H- 2 EN-E = 2000.	850.	...	M:A-POW	90010
	(E,E')	FN: 1- H- 2 EN-E = 220.	180.		M:SIG	86005
	(E,E')	..... 320.	...	...	M:SIG	86006
	(E,E')	FN: 1- H- 2 EN-E = 292.8	60.		M:SPC,SIG,RSP	88002
	(E,E')	..... 444.2	134.5	...	M:SPC,SIG,RSP	88004
	(E,E')	..... 1281.	...	...	D:MULT	88007
	(E,E')	FN: 1- H- 2 EN-E = 174.	60.		M:SPC,SIG,RSP	88007
	(E,E'+N+P)	..... 597.	134.5	...	M:SPC,ASYM	87005
	(E,E'+N+P)	EN = 180.	40.	50.	M:SPC-IMP	90009
	(E,E'+N+P)	..... 600.	...	...	M:SPC-IMP	90009
	(E,E'+D)	EN-E = 400.	30.	50.	M:ABYM,A-POW	86002
	(N,G)	TN: 1- H- 1 EN-N = 180.	0.		M:SIG,A-POW	86003
	N, POL	..... 270.	150.	...	M:SIG,A-POW	86003
	(N,G)	TN: 1- H- 1 EN-N = 61.	0.		M:SPC,SIG	87003
	(N,G)	TN: 1- H- 1 EN-N = 6.	90.		M:SPC,POL,A-POW	87004
	(N,G)	..... 13.43	...	...	M:SPC,POL,A-POW	87004
	(N,G)	TN: 1- H- 1 EN-N = 76.	...	...	M:SPC,SIG	88006
	(N,G)	TN: 1- H- 1 EN-N = 25.	0.	10.	M:DST,SIG	89003
	(N,G)	..... 14.	120.	...	M:DST,SIG	89003
H- 3	(G,N)	FN: 1- H- 2 EN = 10.			M:SIG	86008
	(E,E')	FN: 1- H- 3 EN-E = 25.	15.	...	D:PTON	88120
	(E,E')	..... 200.	...	...	D:SRE	88120
	(N,G)	TN: 1- H- 2 EN-N = 9.	70.		M:SIG,DST,SPC,ASYM	86008
	N, POL	..... 14.	120.	...	D:TOT,PTON	86008
	(N,G)	TN: 1- H- 2 EN-E = 9.	70.		M:SIG,DST,SPC,ASYM	86008
	(N,G)	..... 14.	120.	...	D:TOT,PTON	86008

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=2 HELIUM A=3,4,5						
HE- 3	(G,P)	FN: 1- H- 2 EN = 10.	M:SIG	86008		
		..... 15. D:PTON				
	(G,P)	FN: 1- H- 2 EN = 90.	60. M:COINC,ASYM,DST	86009E		
	G, POL	..... 350. 140.				
	(G,P)	FN: 1- H- 2 EN = ---	90. M:POL	88008E		
		..... 600.				
	(G,P)	FN: 1- H- 2 EN = 60.	90. M:SPC,SIG,ASYM	88009		
	G,MON, POL	..... 350.				
	(G,P)	FN: 1- H- 2 EN = 60.	60. M:SIG,ASYM	88011		
	G,MON, POL	..... 350. 135.				
	(G,P)	FN: 1- H- 2 EN = 60.	90. M:SPC,SIG,ASYM	88012		
	G,MON, POL	..... 350.				
	(G,P)	FN: 1- H- 2 EN = 208.2	23. M:SPC,DST,BIG	89007		
	G,MON	..... 337.9	57.7			
	(G,P)	FN: 1- H- 2 EN = 350.	72. M:POL	89015		
				
	(G,P)	FN: 1- H- 2 EN = 90.	R:ASYM	90001		
		..... 290.				
	(G,P)	FN: 1- H- 2 EN = 6.	R:SIG,ABI	90011		
		..... 92.				
	(G,2P)	FN: 0-NN- 1 EN = 231.	90. M:SIG	89014		
		..... 414.				
	(G,2P)	FN: 0-NN- 1 EN = 8.	R:SIG,ABI	90011		
		..... 112.				
	(G,P+D)	EN = 90.	60. M:COINC,ASYM,DST	86009E		
	G, POL	..... 350. 140.				
	(G,D)	FN: 1- H- 1 EN = 90.	60. M:COINC,ASYM,DST	86009E		
	G, POL	..... 350. 140.				
	(E,E')	FN: 2-HE- 3 EN-E = 538.	127. M:SPC,SIG	87010		
	(E,E')	FN: 2-HE- 3 EN-E = 538.	127. M:SPC,SIG	87013		
		.....	D:MULT			
	(E,E')	FN: 2-HE- 3 EN-E = 174.	60. M:SPC,SIG,RSP	88007		
		..... 597. 134.5 ...				
	(E,E')	FN: 2-HE- 3 EN-E = 25.	M:RSP	88120		
		..... 200.	D:SRE			
	(E,E'+P)	FN: 1- H- 2 EN-E = 390.	39.7 M:SPC-IMP,MES,SIG	87011		
				
	(E,E'+P)	FN: 1- H- 2 EN-E = 509.3	52. M:TDIS,MES,SPC-IMP	87012		
		..... 527.9 128.				
	(E,E'+P)	FN: 1- H- 2 EN-E = 560.	45. M:MES,SPC-IMP,SIG	88013		
		.....	142.5			
	(E,E'+P)	FN: 1- H- 2 EN-E = ---	M:SPC-IMP	90009		
		..... 600.				
	(E,E'+D)	FN: 1- H- 1 EN-E = 390.	39.7 M:SPC-IMP,MES,SIG	87011		
				
	(P,G)	TN: 1- H- 2 EN = 69.9	19.3 M:SPC,DST,SIG,A-POW	87009		
	P, POL	..... 133.1 154.5 ...				
	(P,G)	TN: 1- H- 2 EN-P = 800.	M:A-POW,ASYM	88014		
	P, POL	.....	....	
	(P,G)	TN: 1- H- 2 EN = ---	30. M:SPC,DST,BIG,A-POW	88015		
	P, POL	..... 7.5 150.				
	(D,G)	TN: 1- H- 1 EN-D = 29.2	90. M:SPC,SIG,A-POW	86010		
	D, POL	..... 45.3				
	(D,G)	TN: 1- H- 1 EN-D = 95.	50. M:DST,SIG,A-POW	88010		
	D, POL	.....	130.			
	(D,G)	TN: 1- H- 1 EN = ---	30. M:SPC,DST,BIG,A-POW	88015		
	D, POL	..... 7.5 150.				

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
HE- 4 (G,G) FN: 2-HE- 4 EN = --- 30. M:SPC,DST,BIG 86016						
(G,G) FN: 2-HE- 4 EN = --- 180. 130. M:SPC,RSP,SIG 88020						
	(G,N)	FN: 2-HE- 3 EN = 155. 60. M:SIG,DST 86011				
	(G,N)	FN: 2-HE- 3 EN = 344. 122.6 ... D:PTON				
	G,MON, POL	..... 40. 45. M:SIG,ASYM 88021				
	(G,N)	FN: 2-HE- 3 EN = 40. 45. M:DST,BIG,ASYM 89016				
	G, POL	..... 135. 135.				
	(G,N)	FN: 2-HE- 3 EN = 35. 60. M:POL 89020				
	(G,N+P)	FN: 1- H- 2 EN = 40. 120. R:SIG,CORR 88005				
	(G,P)	FN: 1- H- 3 EN = 104. 60. M:SIG,DST 86011				
	(G,P)	FN: 1- H- 3 EN = 358. 123.8 ... D:PTON				
	(G,P)	FN: 1- H- 3 EN = 187. 30. M:SPC-IMP,DST,SIG 87015				
	(G,P)	FN: 1- H- 3 EN = 427. 105.				
	(G,P)	FN: 1- H- 3 EN = --- 90. M:POL 88008E				
	(G,P)	FN: 1- H- 3 EN = 600. 90. M:SPC,SIG,ASYM 88009				
	G,MON, POL	..... 350.				
	(G,P)	FN: 1- H- 3 EN = 120. 45. M:DST,SIG,ASYM 88019				
	G, POL	..... 250. 135.				
	(G,P)	FN: 1- H- 3 EN = 40. 45. M:SIG,ASYM 88021				
	G,MON, POL	.....			
	(G,P)	FN: 1- H- 3 EN = 28.6 ... 4PI M:SIG,ASYM 88022E				
	G, MON	..... 58.1 D:PTON				
	(G,P)	FN: 1- H- 3 EN = 350. 72. M:POL 89015				
	(G,P)	FN: 1- H- 3 EN = 40. 45. M:DST,SIG,ASYM 89016				
	G, POL	.....			
	(G,P)	FN: 1- H- 3 EN = 120. 45. M:COINC,DST,ASYM 89019				
	(G,P)	FN: 1- H- 3 EN = 300. 140.				
	(G,P)	FN: 1- H- 3 EN = 35. 60. M:POL 89020				
	(G,P)	FN: 1- H- 3 EN = 45. 120. M:SIG 90016				
	(G,P)	FN: 1- H- 3 EN = 21.3 ... 90. M:SIG 90016				
	(G,P)	FN: 1- H- 3 EN = 31.1 ... 135. D:PTON				
	(E,E')	FN: 2-HE- 4 EN-E = 537. 37.1 ... M:SIG,FMF 87001				
	(E,E')	..... 730.				
	(E,E')	FN: 2-HE- 4 EN-E = 174. 60. M:SPC,SIG,RSP 88007				
	(E,E')	..... 597. 134.5 ...				
	(E,E')	FN: 2-HE- 4 EN-E = 808. 17. M:SPC,DST,SIG 88018				
	(E,E')	..... 1180. 40.				
	(E,E')	FN: 2-HE- 4 EN = --- 180. M:SPC,SIG 88023				
	(E,E')	..... 54.				
	(E,E')	FN: 2-HE- 4 EN-E = 960. 37.5 ... M:SIG 89001				
	(E,E')	..... 1500.				
	(E,E')	FN: 2-HE- 4 EN-E = 589. 30. M:SPC 90017				
	(E,E')	..... 1174. 60.				
	(E,E')	FN: 2-HE- 4 EN-E = 91.4 ... 160. M:FMF 90018				
	(E,E')	..... 126.				
	(E,E'+P)	FN: 1- H- 3 EN-E = 426. 47. M:SRE 88016				
	(E,E'+P)	..... 68.				
	(E,E'+P)	FN: 1- H- 3 EN-E = 65. 35. M:SPC,SIG 89018				
	(E,E'+P)	..... 277. 119.				
	(E,E'+P)	FN: 1- H- 3 EN = 0. 20. R:SPC-IMP,SIG 90006				
	(E,E'+P) 200.				
	(E,E'+P)	FN: 1- H- 3 EN = --- 80. R:COINC,MES,SIG 90014				

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
HE- 4	(E,E'+D)	FN: 1- H- 2	EN = ----		R:COINC,MES,SIG	90014
	(E,E'+T)	FN: 1- H- 1	EN = ----	80.	...	.....
	(E,E'+X)		EN-E = 1174.	30.	M:SIG	90012
	(P,G)	TN: 1- H- 3	EN-P = 227.	5.	M:SPC,DST,SIG,A-POW	86015
	P,POL		375.	174.	...	.....
	(P,G)	TN: 1- H- 3	EN-P = 0.82	20.	M:DST,SIG,A-POW	89021
	P,POL		9.	155.	D:MULT,MATR,STR	.....
	(P,G)	TN: 1- H- 3	EN-P = 2.	90.	M:SPC,SIG	90016
			15.	...	...	.....
	(D,G)	TN: 1- H- 2	EN-D = 10.	30.	M:SPC,SIG,DST,A-POW	86012
	D,POL		150.	...	D:MULT	.....
	(D,G)	TN: 1- H- 2	EN-D = 0.7	50.	M:SPC,DST,SIG	86013
			15.	130.	...	.....
	(D,G)	TN: 1- H- 2	EN-D = 10.	30.	M:SPC,DST,SIG,A-POW	86014
	D,POL		150.	...	D:MULT	.....
	(D,G)	TN: 1- H- 2	EN-D = 0.1	0.	M:SPC,DST,SIG	87014
			1.0	90.	D:S(0)	.....
	(D,G)	TN: 1- H- 2	EN-D = 1.2	50.	M:DST,SIG,A-POW	88017
	D,POL		130.	...	D:MULT	.....
	(D,G)	TN: 1- H- 2	EN-D = 0.3	50.	M:SPC,A-POW	88117
			149.	...	...	.....
	(D,G)	TN: 1- H- 2	EN-D = 95.	55.	M:SPC,DST,A-POW	89017
	D,POL		149.	...	...	.....
	(D,G)	TN: 1- H- 2	EN-D = 0.8	30.	R:DST,A-POW,S(0)	90013
	D,POL		50.	130.	...	.....
	(D,G)	TN: 1- H- 2	EN-D = ----	0.	M:SPC,DST,SIG,A-POW	90015
	D,POL		14.7	130.	D:S(0),MULT	.....
HE- 5	(D,G)	TN: 1- H- 3	EN-D = 1.2	90.	M:SPC,SIG,BRANCH	86017
			1.43	...	...	.....

2=3		LITHIUM	A=6,7,8
LI- 6	(G,N+G')	FN: 3-LI- 5	EN = ----

LI- 6	(G,N+G')	FN: 3-LI- 5	EN = ----	135.	M:SPC-DP,ABI	87016E
	(G,N+2P)	FN: 1- H- 3	EN = 10.	...	90020	
	(G,2N+2P)	FN: 1- H- 2	EN = 30.	...	90020	
	(G,N+D)	FN: 2-HE- 3	EN = 10.	...	90020	
	(G,P+G')	FN: 2-HE- 5	EN = ----	135.	M:SPC-DP,ABI	87016E
	(G,P)	FN: 2-HE- 5	EN = 34.5	90.	M:SPC,SIG,SIG-0,SIG-1	88024
	G,NON		98.8	...	.....	.....
	(G,P)	FN: 2-HE- 5	EN = 60.	90.	M:SIG,ASYM	88026
	G,NON,POL		300.	...	.....	.....
	(G,P)	FN: 2-HE- 5	EN = 350.	72.	M:POL	89015
	(G,YP)		60.	90.	M:ASYM	87017
	G,NON,POL		300.	...	.....	.....
	(G,P+2N)	FN: 2-HE- 3	EN = 15.	...	90020	
			50.	...	.....	.....
	(G,D)	FN: 2-HE- 4	EN = 58.	90.	M:MES	90021
	G,NON		64.	...	D:T	.....
	(G,T)	FN: 2-HE- 3	EN = ----	80.	M:SPC,SIG	87018E
			70.	...	.....	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
LI- 6	(G,T)	FN: 2-HE- 3	EN = ----	90.	M:SIG	88027
	(G,T)	FN: 2-HE- 3	EN = 25.	...	...	.....
	G,POL		70.	...	...	.....
	(O,HE3)	FN: 1- H- 3	EN = 25.	...	M:SPC,COINC,ASYM	89023
	G,POL		70.	...	...	.....
	(G,X+Q')		EN = ----	135.	M:SPC-DP,ABI	87016E
	(G,XP)		32.	...	...	.....
			600.	72.	M:POL	90019
	(G,XP)		1200.	...	...	.....
			35.	...	...	90020
	(E,E')	FN: 3-LI- 6	EN-E = 160.	90.	M:SPC	87019E
	(E,E')	FN: 3-LI- 6	EN-E = 90.	140.	M:SPC,SIG	88025
			230.	42.	...	.....
	(E,E')	FN: 2-HE- 5	EN-E = 260.	140.	...	.....
	(E,E'+P)	FN: 2-HE- 5	EN-E = 322.	...	M:POL,SIG	87020
	(E,E'+P)	FN: 2-HE- 5	EN-E = 479.9	...	...	.....
	(E,E'+P)	FN: 2-HE- 5	EN-E = 320.	...	M:SPC,SPC-IMP,MES	89024
			480.	...	D:SRE	.....
	(E,E'+P)	FN: 2-HE- 5	EN = 4.	...	R:SPC-IMP	90006
	(E,E'+P)	FN: 2-HE- 5	EN-E = 20.	...	...	.....
	(E,E'+P)	FN: 2-HE- 4	EN-E = 200.	...	M:SPC-IMP	90009
	(E,E'+D)	FN: 2-HE- 4	EN-E = 480.	...	M:MES,SPC-IMP,SIG	86019
	(E,D)	FN: 2-HE- 4	EN = 10.	42.	M:DST,SIG,SIG-0	86018
			28.	138.	D:MULT,STR	.....
	(E,T)	FN: 2-HE- 3	EN = ----	90.	M:SIG	88027
	(D,G)	TN: 2-HE- 4	EN-D = 1.	20.	M:DST,SIG,A-POW	89022
	D,POL		9.	140.	D:MULT	.....
LI- 7	(G,N)	FN: 3-LI- 6	EN = 5.	...	R:SIG,SIG-0,SIG-1	87021
	(G,N)	FN: 3-LI- 6	EN = 25.	...	...	.....
			7.	4PI	M:SIG,SIG-0	89026
	(G,XN)		9.	...	...	.....
	(G,XN)		EN = 7.25	4PI	M:SIG	86021E
			19.5	...	...	.....
	(G,XN)		5.	...	R:SIG,ABI	87021
			30.	...	...	.....
	(G,2N+P+A)		10.	...	R:SIG,ABI	87021
			25.	...	...	.....
	(G,N+D+A)		5.	...	R:SIG,ABI	87021
			25.	...	...	.....
	(G,P)	FN: 2-HE- 6	EN = 10.	...	R:SIG,SIG-0,ABI	87021
			25.	...	...	.....
	(G,P+2T)		EN = ----	...	M:SPC,SIG	87023E
			27.	...	...	.....
	(G,T+A)		2.	...	R:SIG,ABI	87021
			25.	...	...	.....
	(G,ABS)		0.	...	R:SIG	90086
			60.	...	...	.....
	(E,E')	FN: 3-LI- 7	EN-E = 80.	45.	M:FNP	89026
			680.	90.	D:MULT	.....
	(E,T+G')	FN: 2-HE- 4	EN = ----	100.	M:BIG	86020E
			30.	...	...	.....
	(E,T)	FN: 2-HE- 4	EN = ----	100.	M:SIG	86020E
	(A,G)	TN: 1- H- 3	EN-A = 0.7	0.	M:SPC,SIG,SIG-0,SIG-1	87022
			2.0	...	...	.....
	(G,T)	TN: 3-LI- 7	EN-N = 25.	...	M:SPC,SIG	89027
			420.	...	...	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
LI- 8	(N,G)	TN: 3-LI- 7	EN-N = 25.
			420.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=4 BERYLLIUM A=7,8,9						
BE- 0	(G,N)		EN = 4.	90.	M:ABY	89002
			..... 8.	...	....	.....
BE- 7	(P,G)	TN: 3-LI- 6	EN-A = 0.5	0.	M:DST,SIG-0,SIG-1	87024
	(A,G)	TN: 2-HE- 3	EN = 0.195	135.	M:SPC,RSP,SIG	88028
			..... 0.686	...	D:S(0)	.....
BE- 8	(P,G)	TN: 3-LI- 7	EN-P = 7.5	90.	M:SPC	90022
			..... 8.	...	....	.....
BE- 9	(G,N)	FN: 4-BE- 8	EN = 0.		R:SIG	90086
			..... 28.		....	.....
(G,N+P)	FN: 3-LI- 7	EN = 187.	30.		M:SPC,SPC-IMP,DST,SIG	87002
G,MON		..... 427.	170.		D:SEP	.....
(G,P)	FN: 3-LI- 8	EN = 187.	30.		M:SPC,SPC-IMP,DST,SIG	87002
G,MON		..... 427.	170.		D:SEP	.....
(G,P)	FN: 3-LI- 8	EN = 350.	72.		M:POL	89015
(G,2P)	FN: 2-HE- 7	EN = 187.	30.		M:SPC,SPC-IMP,DST,SIG	87002
G,MON		..... 427.	170.		D:SEP	.....
(G,D)	FN: 3-LI- 7	EN = 360.	23.		M:SPC,SPC-IMP,DST,SIG	86022
G,MON		..... 600.	130.		D:TTOD	.....
(G,T)	FN: 3-LI- 6	EN = 360.	23.		M:SPC,SPC-IMP,DST,SIG	86022
G,MON		..... 600.	130.		D:TTOD	.....
(G,HE3)	FN: 2-HE- 6	EN = 100.	78.		M:SPC,SIG	86023
(G,A)	FN: 2-HE- 5	EN = 100.	78.		M:SPC,SIG	86023
		..... 225.	...		....	.....
(G,ABS)	EN = 10.				M:ABY,SIG	87025
G,MON		..... 20.	...		D:E,G-WIDTH,STR,RDI,Q	.....
(G,ABS)	EN = 0.				R:SIG	90086
(G,XP)		..... 28.	...		....	.....
		..... 600.	72.		M:POL	90019
		..... 1200.	...		....	.....
(E,E')	FN: 4-BE- 9	EN-E = 537.	37.1		M:SIG,FMF	87001
		..... 730.	...		....	.....
(E,E')	FN: 4-BE- 9	EN = 1450.	16.		M:SPC,DST	90024
		..... 2130.	18.		....	.....
(E,E'+A)	FN: 2-HE- 5	EN = 860.	80.		M:COINC,MES	90023
		..... 1280.	...		....	.....
(E,HE3)	FN: 2-HE- 6	EN-E = 100.	78.		M:SPC,SIG	86023
		..... 225.	...		....	.....
(E,A)	FN: 2-HE- 5	EN-E = 100.	78.		M:SPC,SIG	86023
		..... 225.	...		....	.....
(D,G)	TN: 3-LI- 7	EN-D = 0.45	90.		M:ABY	86024
		.....	...		D:E,J-PI,G-WIDTH	.....
Z=5 BORON A=10,11						
B- 10	(G,XN)		EN = 8.44	4PI	M:SIG	87027
			..... 24.5	...	....	.....
(G,N+P)	FN: 4-BE- 8	EN = 66.	45.	...	M:MES,SIG,DST	88029E
G,MON		..... 103.	90.	...	....	.....
(G,P)	FN: 4-BE- 9	EN = 66.	45.	...	M:MES,SIG,DST	88029E
G,MON		..... 103.	90.	...	....	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
B- 10 (E,E) FN: 5- B- 10						
(E,E') FN: 5- B- 10						
(A,G) TN: 3-LI- 6						
(A,G)			EN-A = 1.176		M:SPC,SIG	87026
			..... 1.085	0.	M:SPC,DST,SIG,MIX	89028
			..... 1.175	98.	D:STR,E,J-PI	.....
B- 11 (G,P+G') FN: 4-BE- 10						
(G,H3+G')			EN = ---	135.	M:SPC-DP,SIG,ABI	86025E
			..... 32.	...	M:SPC-DP,SIG,ABI	86025E
(G,X+G')			EN = ---	135.	M:SPC-DP,SIG,ABI	86025E
(E,E)			EN-E = 203.	150.	M:FMF	88030
(E,E')			EN-E = 203.	150.	M:FMF	88030
C- 0 (E,E') FN: 6- C- 0						
(E,E')			EN-E = 653.	11.9	M:SIG	88031
			..... 1850.	53.	D:MULT	.....
(P,G)			EN-E = 960.	37.5	M:SIG	89001
			..... 1800.	...	....	.....
			EN-P = 72.	90.	M:SPC,DST	88032
			..... 150.	...	....	.....
C- 12 (G,G) FN: 6- C- 12						
(G,G')			EN = 15.	60.	M:SPC,SIG	90028
G,MON			..... 140.	150.	...	.....
(G,G')			EN = 15.	60.	M:SPC,SIG	90028
G,MON			..... 140.	150.	D:MULT,STR	.....
(G,N)			EN = 30.	65.	M:SPC,DST,SIG,SIG-0	88035E
(G,N+P)			EN = 100.	...	M:SPC,SPC-IMP,DST,SIG	87002
G,MON			..... 187.	30.	...	.....
(G,N+P)			EN = 40.	170.	D:SEP	.....
(G,N+P)			EN = 40.	...	R:SIG,CORR	88005
(G,N+P)			EN = 83.	55.	M:MES,SIG,SPC-IMP	88037
G,MON			..... 133.	127.	...	.....
(G,N+P+A)			EN = 40.	...	R:SIG,CORR	88005
			..... 120.	...	...	.....
(G,P)			EN = 20.	37.	M:DST,SIG,SIG-0	86027E
			..... 29.	143.	...	.....
(G,P)			EN = 60.	30.	M:SPC,DST,SIG,SIG-0	86029
G,MON			..... 80.	135.	M:SPC,SIG-0,SIG	86030
(G,P)			EN = 30.	65.	...	.....
G,MON			..... 100.	...	M:DST,SIG,SIG	86031
(G,P)			EN = 159.	32.5	...	.....
G,MON			..... 198.	130.	M:SPC,SPC-IMP,DST,SIG	87002
(G,P)			EN = 187.	30.	...	.....
G,MON			..... 247.	170.	D:BBP	.....
(G,P)			EN = 27.	...	M:SIG,ABI	88038
			..... 140.	...	...	.....
(G,P)			EN = 41.	30.	M:A-POW	88039
G,MON,POL		 93.	90.
(G,P)			EN = 60.	65.	M:SPC,DST,SIG,SIG-0	88040E
G,MON		 116.
(G,P)			EN = 350.	72.	M:POL	89015

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
C- 12	(G,P)	FN: 5- B- 11	EN = 28.	90.	M:SPC,SIG,SIG-0,SIG-1	89032
	G,MON		.....	....	....	.....
	(G,P)	FN: 5- B- 11	EN = 61.	90.	M:SPC	90029
	G,MON		.....	77.3	....	.....
	(G,P)	FN: 5- B- 11	EN = 49.	65.	M:SPC,SPC-IMP,SIG	90030
	G,MON		.....	78.5	....	.....
	(G,2P)	FN: 4-BE- 10	EN = 187.	30.	M:SPC,SPC-IMP,DST,SIG	87002
	G,MON		.....	427.	....	.....
	(G,P+D)	FN: 4-BE- 9	EN = ----	....	M:DST,SIG	87028
			.....	80.	....	.....
	(G,P+T)	FN: 4-BE- 8	EN = 27.	....	M:SIG,ABI	88038
			.....	140.	....	.....
	(G,P+T)	FN: 4-BE- 8	EN = 27.5	....	M:SPC	89034
			.....	150.	....	.....
	(G,P+T+A)	FN: 2-HE- 4	EN = ----	....	M:SPC	90025
			.....	150.	....	.....
	(G,P+T+2A)		EN = ----	....	M:SPC,CORR(E),SIG	89029
			.....	150.	....	.....
	(G,D)	FN: 7- N- 14	EN = 360.	23.	M:SPC,SPC-IMP,DST,SIG	86022
	G,MON		.....	600.	....	.....
	(G,T)	FN: 7- N- 13	EN = 360.	23.	M:SPC,SPC-IMP,DST,SIG	86022
	G,MON		.....	600.	....	.....
	(G,T)	FN: 5- B- 9	EN = 27.	....	M:SIG,ABI	88038
			.....	140.	....	.....
	(G,HE3)	FN: 4-BE- 9	EN = 100.	78.	M:SPC,SIG	86023
			.....	225.	....	.....
	(G,A)	FN: 4-BE- 8	EN = 100.	78.	M:SPC,SIG	86023
			.....	225.	....	.....
	(G,A)	FN: 4-BE- 8	EN = 27.	....	M:SIG,ABI	88038
			.....	140.	....	.....
	(G,A)	FN: 4-BE- 8	EN = 28.	90.	M:SPC,SIG,SIG-0,SIG-1	89032
	G,MON		.....	90.	....	.....
	(G,ABS)		EN = 15.	60.	M:SIG	90028
	G,MON		.....	140.	....	.....
	(G,XP)		EN = 600.	72.	M:POL	90019
			.....	1200.	....	.....
	(E,E')	FN: 6- C- 12	EN-E = 537.	37.1	M:SIG,FMF	87001
			.....	730.	....	.....
	(E,E')	FN: 6- C- 12	EN-E = 415.	140.	M:SPC,FMF,SIG	87031
			.....	485.	....	.....
	(E,E')	FN: 6- C- 12	EN-E = 690.	26.	M:SPC,SIG,FMF	89035
			.....	36.	....	.....
	(E,E')	FN: 6- C- 12	EN = 1450.	16.	M:SPC,DST	90024
			.....	2130.	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 459.	34.	M:MES	86032
			.....	443.3	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 312.8	....	M:RSP	86033
			.....	443.3	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 288.1	....	M:RSP,MES	87029
			.....	443.1	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 280.	....	M:MES,SPC-IMP	88033
			.....	480.	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 280.	....	M:SPCTF,RDI,E	88036
			.....	480.	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 460.	20.8	M:SPC,MES,SIG	89031
			.....	647.	....	.....
	(E,E'+P)	FN: 5- B- 11	EN-E = 780.	50.1	M:SPC,DST,MES,SIG	89033
			.....	72.9	....	.....
	(E,E'+P)	FN: 5- B- 11	EN = 0.	R:SPC-IMP,STR,SPCTF	90006
			10.
	(E,E'+P)	FN: 5- B- 11	EN = 0.	M:SPC,SPC-IMP	90009
			8.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
C- 12	(E,E'+P)	FN: 5- B- 11	EN-E = 505.4	90.	M:MES	90027
	(E,E'+D)		.....	686.1	....	.....
	(E,E'+A)	FN: 5- B- 10	EN-E = 313.	100.	M:SPCTF	89030
			.....	481.	....	.....
	(E,E'+A)	FN: 4-BE- 8	EN = 860.	80.	M:COINC,MES	90023
	(E,P)	FN: 5- B- 11	EN-E = 1280.	....	D:T	.....
	(E,P)		.....	250.	....	.....
	(E,P)	FN: 5- B- 11	EN-E = 35.	60.	M:SPC	86026
			.....	55.	....	.....
	(E,D)	FN: 5- B- 10	EN-E = 100.	60.	M:SPC	86026
	(E,HE3)	FN: 4-BE- 9	EN-E = 225.	78.	M:SPC,SIG	86023
	(E,A)	FN: 4-BE- 8	EN-E = 225.	78.	M:SPC,SIG	86023
	(P,G)	TN: 5- B- 11	EN-P = 1.065.	0.	M:SPC,SIG	86028
			.....	1.085.	....	.....
	(P,G)	TN: 5- B- 11	EN-P = 20.	30.	M:SPC,SIG,SIG-0,DST	88034
	(P,G)	TN: 5- B- 11	EN = 100.	150.	....	.....
			.....	0.	55.	....
			.....	15.11	....	D:E,J-PI,T
C- 13	(E,E')	FN: 6- C- 13	EN-E = 415.	140.	M:SPC,FMF,SIG	87031
	(E,E')		.....	485.	....	D:MULT
	(E,E')	FN: 6- C- 13	EN-E = 78.	45.	M:SPC,FMF	89036
	(N,G)	TN: 6- C- 12	EN-N = 7.	36.	M:DST,BIG,SIG-0	86034
	(N,G)	TN: 6- C- 12	EN-N = 6.5	90.	M:SPC,BIG,SIG-0	87032
	(N,G)	TN: 6- C- 12	EN-N = 8.	90.	M:SPC,BIG,SIG-0	90031
			.....	11.	....	.....
C- 14	(E,E')	FN: 6- C- 14	EN-E = 81.0	180.	M:SPC,FMF,SIG	89037
			.....	268.9	....	D:MULT,E,J-PI
	(N,G)	TN: 6- C- 13	EN = ----	125.	M:SPC	90032
			.....	8.5	....	D:Q-WIDTH,MULT,TRR
Z=7 NITROGEN A=13,14,16						
N- 0	(P,G)		EN-P = 168.	30.	M:SPC,DST,SIG	89038
			.....	200.	....	.....
			.....	150.	....	.....
N- 13	(P,G)	TN: 6- C- 12	EN-P = 0.4	90.	M:SPC,SIG	87033
	(P,G)	TN: 6- C- 12	EN-P = 2.5	....	....	.....
	(P,G)	TN: 6- C- 12	EN-P = 20.	30.	M:SPC,SIG,SIG-0,DST	88034
			.....	100.	....	.....
N- 14	(G,N)	FN: 7- N- 13	EN = 12.5	4PI	M:SIG	87036E
			.....	15.5	....	.....
	(G,D)	FN: 5- B- 12	EN = 825.	50.	M:SPC,SPC-IMP,SIG	87035
	(E,E)	FN: 7- N- 14	EN-E = 372.6	150.	M:FMF	87034
	(E,E')	FN: 7- N- 14	EN-E = 372.6	180.	M:FMF	87034
	(P,G)	TN: 6- C- 13	EN-P = 1.46	180.	M:ABl,SIG,SIG-0	86036
			.....	1.46	....	D:STR,MULT,Q-WIDTH
N- 15	(G,G')	FN: 7- N- 15	EN = 6.6	9.4	D:E,J-PI,SPCTF	87037
			.....	9.4	....	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
N- 15	(G,N)	FN: 7- N- 14	EN = 10.	4PI	M:SIG,SIG-O	89039
			..... 26.5	...	D:MULT,T	.....
(G,2N)		FN: 7- N- 13	EN = 21.		M:SIG	88042
G,MON			..... 28.	...	D:T,G-WIDTH	.....
(G,XN)			EN = 10.	4PI	M:SIG	89039
			..... 26.5	...	.....	.....
(G,ABS)			EN = 10.	4PI	M:SIG	89039
			..... 26.5	...	.....	.....
(E,E)		FN: 7- N- 15	EN-E = 70.	40.	M:FMF	88041
			..... 430.	... 140.	D:CDENS	.....
(P,G)		TN: 6- C- 14	EN-P = 0.25	0.	M:SPC,DST,SIG,BRANCH	90033
			..... 0.74	... 120.	D:STE,S(0)	.....
Z=8 OXYGEN A=14,15,16,17,18						
O- 14	(P,G)	TN: 7- N- 13	EN-P = 0.544		M:SPC	90034
		
O- 15	(P,G)	TN: 7- N- 14	EN-P = 0.2	0.	M:SPC,DST,ABI,SIG	87038
			..... 3.6	... 135.	D:E,J-PI,G-WIDTH	.....
(HE3,G)		TN: 6- C- 12	EN = 16.5	90.	M:SPC,SIG,SIG-O,SIG-1	89040
			..... 25.5	...	.....	.....
O- 16	(G,G)	FN: 8- 0- 16	EN = 21.7	45.	M:SPC,DST,SIG,ABS	87041
G,MON			..... 27.5	... 135.	D:MULT	.....
(G,M)		FN: 8- 0- 15	EN = 150.	49.	M:SPC,DST,MES,SIG	89041
			.....	88.	.....	.....
(G,M)		FN: 8- 0- 15	EN = 150.	49.	M:SPC,DST,SIG	89042
			..... 250.	... 88.	.....	.....
(G,N+P)		FN: 7- N- 14	EN = 187.	30.	M:SPC,SPC-IMP,DST,SIG	87002
G,MON			..... 427.	... 170.	D:SEP	.....
(G,N+P)		FN: 7- N- 14	EN = 40.		R:SIG,CORR	88005
			..... 120.	...	.....	.....
(G,N+P)		FN: 7- N- 14	EN = 30.	0.	M:SIG,CORR(E),ABI	89043
			..... 150.	... 180.	.....	.....
(G,P)		FN: 7- N- 15	EN = 187.	30.	M:SPC,SPC-IMP,DST,SIG	87002
G,MON			..... 427.	... 170.	D:SEP	.....
(G,P)		FN: 7- N- 15	EN = ---	30.	M:DST,SIG,SIG-O	88043
			..... 25.8	... 150.	.....	.....
(G,P)		FN: 7- N- 15	EN = 196.	20.	M:SPC,DST,SIG,SIG-O	88047
			..... 361.	... 150.	.....	.....
(G,P)		FN: 7- N- 15	EN = 61.	90.	M:SPC	90029
G,MON			.....	55.	D:T	.....
(G,P)		FN: 7- N- 15	EN = ---	55.	M:SPC	90035
G,MON			..... 10.	...	.....	.....
(G,2P)		FN: 6- C- 14	EN = 187.	30.	M:SPC,SPC-IMP,DST,SIG	87002
G,MON			..... 427.	... 170.	D:SEP	.....
(G,ABS)			EN = 90.		M:SIG	88121
			..... 400.	...	.....	.....
(G,ABS)			EN = 10.		R:SIG	90086
			..... 35.	...	.....	.....
(G,X)			EN = 90.		M:SIG	88121
			..... 400.	...	.....	.....
(E,E')		FN: 8- 0- 16	EN-E = 90.	90.	M:SPC,FMF	86036
			..... 357.	... 160.	D:TRDEN	.....
(E,E')		FN: 8- 0- 16	EN-E = 537.	37.1	M:SIG,FMF	87001
			..... 730.	...	.....	.....
(E,E')		FN: 8- 0- 16	EN = 10.	90.	M:SPC,DST,FMF	87040
			..... 23.	... 160.	D:MULT,T,E,J-PI	.....
(E,E')		FN: 8- 0- 16	EN-E = 71.26	34.	M:SPC,DST,SIG	89044
			.....	57.	D:B(EL),T	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
O- 16	(E,E'+P)	FN: 7- N- 15	EN-E = 130.	0.	M:SPC,DST,COINC,SIG	87043
	(E,E'+A)	FN: 6- C- 12	EN-E = 130.	0.	M:SPC,DST,COINC,SIG	87043
(P,G)		TN: 7- N- 15	EN-P = 0.43	180.	M:ABI,SIG,SIG-O	86035
			..... 0.9	...	D:STR,MULT,G-WIDTH	.....
(P,G)		TN: 7- N- 15	EN-P = 10.	56.	M:SPC,DST,SIG,SIG-O	87042
			..... 17.	... 131.	.....	.....
(P,G)		TN: 7- N- 15	EN-P = 20.	30.	M:SPC,SIG,SIG-O,DST	88034
			..... 100.	... 150.	.....	.....
(P,G)		TN: 7- N- 15	EN-P = 20.8	30.	M:SPC,SIG,SIG-O,A-POW	88045
			.....	... 120.	.....	.....
(P,G)		TN: 7- N- 15	EN = 17.8	25.	M:SPC,DST,SIG,A-POW	88046
P, POL			..... 24.9	... 155.	D:MULT	.....
(P,G)		TN: 7- N- 15	EN-P = 20.	45.	M:SPC,DST,A-POW,SIG	89045
			..... 90.	... 120.	D:SPCTF	.....
(P,G)		TN: 7- N- 15	EN = 35.	23.	M:SPC,DST,SIG,SIG-O	89046
P, POL			..... 39.	... 155.	D:MULT	.....
(A,G)		TN: 6- C- 12	EN-A = 0.94	15.	M:SPC,DST,SIG,SIG-O	87039
			..... 2.84	... 150.	D:MULT,TRR,S(0)	.....
(A,G)		TN: 6- C- 12	EN-A = 1.29	3.	M:SPC,COINC,SIG	88044
			.....	... D:MULT	.....	.....
O- 17	(G,N)	FN: 8- 0- 16	EN = 16.5	90.	M:SPC-DP,SIG,ABI	89047E
			..... 28.	...	.....	.....
(G,P)		FN: 7- N- 16	EN = 16.5	90.	M:SPC-DP,SIG,SIG-1	89047E
			..... 28.	...	.....	.....
(E,E)		FN: 8- 0- 17	EN-E = 249.	41.7	M:FMF,SIG	88050
			..... 685.1	... 160.	D:MULT	.....
(E,E')		FN: 8- 0- 17	EN-E = 194.3	90.	M:SPC,FMF	86037
			..... 268.8	... 159.8	D:B(EL),E,G-WIDTH	.....
(E,E')		FN: 8- 0- 17	EN-E = 119.4	90.	M:SPC,DST,SIG,FMF	87044
			..... 268.8	... 159.	D:E,J-PI,T,B(EL)	.....
(N,G)		TN: 8- 0- 16	EN = ---	125.	M:SPC	88048
			..... 10.	... 125.	D:STR,E,J-PI,G-WIDTH	.....
(D,G)		TN: 7- N- 15	EN = 26.	36.	M:SPC,DST,SIG,SIG-O	88049
			..... 39.	... 135.	.....	.....
O- 18	(G,N)	FN: 8- 0- 17	EN = 14.	48.	M:DST,SIG,SIG-O,SIG-1	87045
			..... 26.	... 139.	D:T,MULT	.....
(E,E')		FN: 8- 0- 18	EN-E = 194.3	90.	M:SPC,FMF	86037
			..... 268.8	... 159.8	D:B(EL),E,J-PI	.....
(E,E')		FN: 8- 0- 18	EN-E = 120.	90.	M:SPC,DST,SIG,FMF	90036
			..... 300.	... 160.	D:B(EL),MATR	.....
(A,G)		TN: 6- C- 14	EN = ---	30.	M:SPC,DST,ABY,BRANCH	87046
			..... 8.283	... 90.	D:E,J-PI,G-WIDTH,MULT	.....
Z=9 FLUORINE A=17,18,19						
F- 17	(P,G)	TN: 8- 0- 16	EN-P = 0.4	90.	M:SPC,SIG	87033
			..... 2.5	...	.....	.....
(P,G)		TN: 8- 0- 16	EN-P = 20.	30.	M:SPC,SIG,SIG-O,DST	88034
			..... 100.	... 150.	.....	.....
(P,G)		TN: 8- 0- 16	EN-P = 20.8	30.	M:SPC,SIG,SIG-O,A-POW	88045
			.....	... 120.	.....	.....
(P,G)		TN: 8- 0- 16	EN = 17.	35.	M:SPC,DST,SIG,SIG-O	88049
		 41.	... 135.
F- 18	(A,G)	TN: 7- N- 14	EN-A = 1.63	0.	M:SPC	89048
		 D:E

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
F- 19	(G,N)	FN: 9- F- 18	EN = 15.	48.	M:SPC,DST,SIG,SIG-O	89049
	(G,P)	FN: 8- O- 18	EN = 13.	25. ... 139. ...	D:MULT R:SIG,SIG-O,SIG-V	90086
	(G,ABS)		EN = 13.	30. ...	R:SIG	90086
			EN = 30.	30. ...		
	(E,E')	FN: 9- F- 19	EN-E = 46.	154.	M:PMF	87048
			272.	... 154. ...	D:E,J-PI,MULT	
	(P,G)	TN: 8- O- 18	EN-P = 1.167	...	M:SPC,ABY	87049
	(P,G)	TN: 8- O- 18	EN-P = ----	4PI	M:SPC,BRANCH	90037
	(A,G)	TN: 7- N- 15	EN-A = 0.536	55.	M:SPC,INT	87047
	(A,G)	TN: 7- N- 15	EN-A = 0.542	55.	M:SPC,INT	87047
	(A,G)	TN: 7- N- 15	EN-A = 5.41	90.	M:ABY	88051
			6.12 ...	... D:STR,G-WIDTH		

Z=10 NEON A=19,20,21,22,23

NE- 19	(A,G)	TN: 8- O- 15	EN-A = 4.033	...		90038
			5.092...	...	D:E,G-WIDTH,STR,TRR	
NE- 20	(P,G)	TN: 9- F- 19	EN = 16.1	40.	M:SPC,DST,SIG,SIG-O	88054
P, POL			23. ...	140. ...	D:MULT	
(A,G)	TN: 8- O- 16	EN-A = 1.7	...	M:SIG-V	87050	
		2.35 ...	...	D:STR,G-WIDTH,J-PI		
(A,G)	TN: 8- O- 16	EN-A = 1.7	...	D:S(0)	88053	
		2.3 ...	...		
NE- 21	(N,G)	TN:10-NE- 20	EN-N = 0.0025	...	M:ABY,SIG	88055
			0.2 ...	...	D:E,J-PI,G-WIDTH	
NE- 22	(A,G)	TN: 8- O- 18	EN-A = ----	4PI	M:SPC,BRANCH	90037
			0.78 ...	...	D:STR,TRR	
NE- 23	(N,G)	TN:10-NE- 22	EN-N = 0.0025	...	M:ABY,SIG	88055
			0.2 ...	...	D:E,J-PI,G-WIDTH	

Z=11 SODIUM A=20,21,22,23

NA- 20	(P,G)	TN:10-NE- 19	EN-P = 0.45	...		90039
			1.162...	...	D:E,J-PI,SPCTF,S(0)	
NA- 21	(P,G)	TN:10-NE- 20	EN-P = 0.38	...	M:ABI,SIG,SIG-O	86035
	(P,G)	TN:10-NE- 20	EN-P = 1.167	...	D:STR,MULT,G-WIDTH	
			...	...	M:SPC,ABY	87049
			...	...	D:STR	
NA- 22	(P,G)	TN:10-NE- 21	EN = 6.5	...	M:SIG	89050
			8.5 ...	...	D:STR,MULT,B(EL)	
NA- 23	(G,N+G')	FN:11-NA- 22	EN = ----	140.	M:SPC-DP,ABI	86038
(G,N+G')	FN:11-NA- 23	EN = ----	32.	...	D:E,J-PI,MULT	87051
(G,N)	FN:11-NA- 23	EN = ----	32.	...	M:ABI	87051
(G,P+G')	FN:10-NE- 22	EN = ----	32.	...	D:E,J-PI	86036
			140.	...	M:SPC-DP,ABI	
			32.	D:E,J-PI,MULT	

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
NA- 23	(G,P+G')	FN:10-NE- 22	EN = ----	32. ...	M:ABI	87051E
(G,P)	FN:10-NE- 22	EN = ----	32. ...	... D:E,J-PI	M:ABI	87051E
(G,X+G')			32. ...	140.	M:SPC-DP,ABI	86038E
(G,XP)			32. ...	15.	D:E,J-PI,MULT	90086
(P,G)	TN:10-NE- 22	EN-P = 0.6	0. ...	M:SPC,DST,ABY,SIG,INT	89051	
		1.8 ...	180. ...	D:E,J-PI,T		

Z=12 MAGNESIUM A=23,24,25,26

MG- 23	(P,G)	TN:11-NA- 22	EN-P = 0.4	0.	M:SPC,ABY,SIG	89052
(P,G)	TN:11-NA- 22	EN-P = 0.17	0.	M:SPC,SIG,BRANCH	90040	
		1.29 ...	...	D:STR,TRR	
MG- 24	(G,G)	FN:12-MG- 24	EN = 17.	135.	M:SPC,SIG	89055
	G,MON		28.		
(G,G')	FN:12-MG- 24	EN = 17.	135.	...	M:SPC,SIG,SIG-O,SIG-1	89055
G,MON		28. ...	...	D:MULT	
(G,N)	FN:12-MG- 23	EN-N = 16.	...	M:SIG-O,SIG-V,ABI	88056	
		30. ...	...	R:SIG	90086
(G,ABS)		EN = 15.	...	R:SIG	90086	
(G,XP)		28. ...	...	R:SIG	90086
(E,E')	FN:12-MG- 24	EN-E = 80.1	180.	...	M:SPC,PMF	87052
(P,G)	TN:11-NA- 23	EN-D = 200.5	...	D:E,J-PI		
		0.309 ...	90.	M:ABY	86024	
(P,G)	TN:11-NA- 23	EN-P = 0.31	...	M:ABY	88052	
(P,G)	TN:11-NA- 23	EN = ----	...	M:SPC,LFT	89053	
(P,G)	TN:11-NA- 23	EN-P = ----	11. ...	D:E		
		0.5 ...	...	M:SPC,ABY	89054
(P,G)	TN:11-NA- 23	EN-P = 1.02	90.	M:BRANCH,LFT	90041	
		1.417 ...	...	D:E,J-PI,T	
(A,G)	TN:10-NE- 20	EN-A = 0.71	90.	M:SPC,SIG	89056	
		2.25 ...	...	D:E,J-PI,G-WIDTH,STR	
MG- 25	(G,YP)		EN = 15.	...	M:SIG	86039
		28. ...	...		
(E,P)	FN:11-NA- 24	EN = 15.	90.	M:SPC,SIG,SIG-O,SIG-1	86039	
		28. ...	...	D:STR	
MG- 26	(G,ABS)		EN = 15.	...	R:SIG	90086
(E,E)	FN:12-MG- 26	EN-E = 85.	33. ...	M:PMF	88057	
		360. ...	154. ...	D:CDENS		

Z=13 ALUMINUM A=26,27

AL- 26	(P,G)	TN:12-MG- 25	EN-P = 0.31	55.	M:SPC,RLY	8604
(P,G)	TN:12-MG- 25	EN-P = 0.31	55.	...	D:STR,MULT,J-PI,T	86041

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
AL- 26	(P,G)	TN:12-MG- 25	EN-P = 1.025	0.	M:SPC,DST,SIG	87053
	(P,G)	TN:12-MG- 25	EN-P = 1.195	90.	D:STR,E,J-PI,G-WIDTH	87054
	(P,G)	TN:12-MG- 25	EN = 6.5	0.	M:SPC,DST	89050
	(P,G)	TN:12-MG- 25	EN-P = -----	8.5	D:E	-----
	(P,G)	TN:12-MG- 25	EN-P = -----	0.374...	D:STR,MULT,B(EL)	90042
	(P,G)	TN:12-MG- 25	EN-P = 0.15	0.	M:SPC,BRANCH	90043
	(P,G)	TN:12-MG- 25	EN-P = 0.36	55.	D:E, ^o I,T,TRR	-----
AL- 27	(G,G')	FN:13-AL- 27	EN = 7.66	127.	M:SPC	87055
	(G,N)	FN:13-AL- 26	EN = 10.37	... 127.	D:E,J-PI,G-WIDTH	87056E
	(G,N)	FN:13-AL- 26	EN = -----	19.5	D:IRAT	-----
	(G,N)	FN:13-AL- 26	EN = -----	30.	R:SIG,PTON	89057
	(G,N+P)	FN:12-MG- 25	EN = -----	30.	R:SIG,PTON	89057
	(G,P)	FN:12-MG- 26	EN = 350.	72.	M:POL	89015
	(G,P)	FN:12-MG- 26	EN = -----	30.	R:SIG,PTON	89057
	(G,P)	FN:12-MG- 26	EN = -----	30.	M:SIG	89059
	(G,A)	FN:11-NA- 23	EN = -----	0.	D:MULT	-----
	(G,ABS)	EN = 30.	... 0.	M:SIG	89059	
	(G,ABS)	EN = 30.	... 0.	M:SIG	87057	
	(G,ABS)	EN = 38.	... 0.	D:SRE	-----	
	(G,ABS)	EN = 15.	... 0.	R:SIG	90086	
	(G,F)	EN = 800.	... 0.	M:ABY,SIG	89058	
	(G,F)	EN = 1800.	... 0.	M:ABY,SIG	89058	
	(G,P)	EN = 800.	... 0.	M:SIG	90044	
	(G,P)	EN = 1800.	... 0.	M:SIG	-----	
	(G,XP)	EN = 600.	... 72.	M:SPC	90019	
	(G,XP)	EN = 1200.	... 0.	M:SPC	-----	
	(G,XP)	EN = 15.	... 0.	R:SIG	90086	
	(E,E'+P)	FN:12-MG- 26	EN-E = 780.	50.1	M:SPC,DST,MES,SIG	89033
	(E,P)	FN:12-MG- 26	EN-E = 16.5	0.	M:SIG	89059
	(E,A)	FN:11-NA- 23	EN-E = 16.5	0.	D:MULT	-----
	(P,G)	TN:12-MG- 26	EN-P = 2.141	0.	M:SPC,DST	87054
	(P,G)	TN:12-MG- 26	EN-P = 2.22	136.	D:E	-----
	(P,G)	TN:12-MG- 26	EN-P = 0.31	55.	M:SPC,DST,BRANCH,LFT	88058
	(P,G)	TN:12-MG- 26	EN-P = 1.84	90.	D:E,J-PI	-----
	(P,G)	TN:12-MG- 26	EN = 0.	R:E,J-PI,T,STR	88113	
	(P,G)	TN:12-MG- 26	EN-P = -----	8.1	M:SPC,ABY	89054
	(P,G)	TN:12-MG- 26	EN-P = 0.5	... 0.	M:SPC,ABY	-----
	(P,G)	TN:12-MG- 26	EN-P = 0.15	0.	M:SPC,BRANCH	90043
			EN-P = 0.36	55.	D:E,J-PI,T,TRR	-----
Z=14 SILICON A=27,28,29,30,31						
SI- 0	(P,G)		EN-P = 168.	50.	M:SPC,DST,SIG	89038
			..... 200.	... 150.	...	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
SI- 27	(P,G)	TN:13-AL- 26	EN = 4.139	... 8.387...	D:E,J-PI,TRR	86042
	(G,G')	FN:14-SI- 28	EN = 17.	135.	M:SPC,SIG	89055
	(G,G')	FN:14-SI- 28	EN = 28.	... 135.	M:SPC,SIG,SIG-0,SIG-1	89055
	(G,N)	FN:14-SI- 27	EN = -----	28.	D:MULT	-----
	(G,N)	FN:13-AL- 26	EN = -----	30.	R:SIG,PTON	89057
	(G,N+P)	FN:13-AL- 26	EN = -----	30.	R:SIG,PTON	89057
	(G,P)	FN:13-AL- 27	EN = 16.8	... 16.8	M:SPC,SIG,SIG-0,SIG-1	87058
	(G,P)	FN:13-AL- 27	EN = 25.7	... 25.7	M:SPC,SIG,SIG-0,SIG-1	87058
	(G,A)	FN:12-MG- 24	EN = 16.8	... 16.8	M:SPC,SIG,SIG-0,ABI	87058
	(G,MON)	EN = 25.7	... 25.7	M:SPC,SIG,SIG-0,ABI	87058	
	(G,ABS)	EN = 15.	... 15.	R:SIG	90086	
	(G,XP)	EN = 28.	... 28.	R:SIG	90086	
	(E,E'+P)	FN:13-AL- 27	EN-E = 183.5	0.	M:SPC,COINC,FWF	86045
	(E,E'+A)	FN:12-MG- 24	EN-E = 183.5	0.	M:SPC,COINC,FWF	86045
	(N,G)	TN:14-SI- 27	EN = -----	125.	M:SPC	88048
	(P,G)	TN:13-AL- 27	EN-P = 1.911	0.	D:STR,E,J-PI,G-WIDTH	-----
	(P,G)	TN:13-AL- 27	EN-P = 2.073	90.	M:SPC,DST,LFT,BRANCH	86043
	(P,G)	TN:13-AL- 27	EN = 14.626	90.	M:SIG,BRANCH	86044
	(P,G)	TN:13-AL- 27	EN-P = 15.04	... 90.	D:STR,E,J-PI,G-WIDTH	-----
	(P,G)	TN:13-AL- 27	EN-P = 0.988	0.	M:ABY	86046
	(P,G)	TN:13-AL- 27	EN-P = 0.998	... 0.	D:STR	-----
	(P,G)	TN:13-AL- 27	EN-P = 0.992	... 0.	M:SPC,ABY	87049
	(P,G)	TN:13-AL- 27	EN-P = 20.	30.	M:SPC,SIG,SIG-0,DST	88034
	(P,G)	TN:13-AL- 27	EN-P = 20.8	30.	M:SPC,SIG,SIG-0,A-POW	88045
	(P,G)	TN:13-AL- 27	EN-P = 100.	120.	M:SPC,SIG,SIG-0,A-POW	88045
	(P,G)	TN:13-AL- 27	EN-P = 0.2	90.	M:SPC,ABY	88059
	(P,G)	TN:13-AL- 27	EN-P = 0.36	135.	D:E,J-PI,STR,TRR	-----
	(P,G)	TN:13-AL- 27	EN-P = 0.5	0.	M:SPC,DST,SIG,SIG-0	88060
	(P,G)	TN:13-AL- 27	EN-P = 1.8	129.	M:SPC,ABY	89054
	(P,G)	TN:13-AL- 27	EN-P = -----	0.5	M:SPC,ABY	89054
	(P,G)	TN:13-AL- 27	EN-P = 0.655	55.	M:BRANCH,LFT	90041
	(P,G)	TN:13-AL- 27	EN-P = 1.317...	90.	D:E,J-PI,T	-----
	(P,G)	TN:13-AL- 27	EN-P = 0.15	0.	M:SPC,BRANCH	90043
	(A,G)	TN:12-MG- 24	EN = 5.	55.	D:E,J-PI,T,TRR	-----
	(A,G)	TN:12-MG- 24	EN = 35.	55.	M:SIG	86047
SI- 29	(G,N+G')	FN:14-SI- 28	EN = -----	135.	M:SPC-DP,ABI	86049
	(G,N)	FN:14-SI- 28	EN = -----	26.	M:SPC-DP,ABI	86049
	(G,N)	FN:14-SI- 28	EN = -----	26.	M:SPC-DP,ABI	86049
	(G,MON)	EN = 9.6	4PI	... 9.6	M:SIG	87059
	(G,P+G')	FN:13-AL- 28	EN = -----	18.8	M:SPC-DP,ABI	86049
	(G,P)	FN:13-AL- 28	EN = -----	135.	M:SPC-DP,ABI	86049
	(G,P)	FN:13-AL- 28	EN = -----	26.	M:SPC-DP,ABI	86049

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
SI- 29	(G,P)	FN:13-AL- 28	EN = 20.	M:SIG	90045	
			..... 60.	... D:MULT		
	(G,2P)	FN:13-AL- 27	EN = 20.	M:SIG	90045	
			..... 60.	... D:MULT		
	(G,X+G')		EN = ----	135. M:SPC-DP,ABI	86049	
			..... 26.			
	(N,G)	TN:14-SI- 28	EN-N = 0.485	90. M:SPC	86048	
			..... 0.806	125. D:STR,J-PI,G-WIDTH		
	(N,G)	TN:14-SI- 28	EN-N = 0.25	M:SPC,SIG	87060	
			..... 19.0	... D:TOT,STR,E,J-PI		
SI- 30	(G,N+G')	FN:14-SI- 29	EN = ----	135. M:SPC-DP,ABI	86049	
			..... 26.	... M:SPC-DP,ABI		
	(G,N)	FN:14-SI- 29	EN = ----	M:SPC-DP,ABI	86049	
			..... 26.			
	(G,2N)	FN:14-SI- 28	EN = ----	M:SPC-DP,ABI	86049	
			..... 26.			
	(G,N+P)	FN:13-AL- 28	EN = ----	135. M:SPC-DP,ABI	86049	
			..... 26.			
	(G,P+G')	FN:13-AL- 29	EN = ----	135. M:SPC-DP,ABI	86049	
			..... 26.			
	(G,P)	FN:13-AL- 29	EN = ----	M:SPC-DP,ABI	86049	
			..... 26.			
	(G,P)	FN:13-AL- 29	EN = 20.	M:SIG	90045	
			..... 60.	... D:MULT		
	(G,2P)	FN:13-AL- 28	EN = 20.	M:SIG	90045	
			..... 60.	... D:MULT		
	(G,A+G')	FN:12-MG- 26	EN = ----	135. M:SPC-DP,ABI	86049	
			..... 26.			
	(G,A)	FN:12-MG- 26	EN = ----	M:SPC-DP,ABI	86049	
			..... 26.			
	(G,X+G')		EN = ----	135. M:SPC-DP,ABI	86049	
			..... 26.			
SI- 31	(N,G)	TN:14-SI- 30	EN-N = 0.1	M:SIG	90046	
			..... 12.	... M:SIG		

Z=15 PHOSPHORUS A=29,30,31

P- 29	(P,G)	TN:14-SI- 28	EN-P = 7.	30. M:SPC,DST,ABY,SIG	86050
			..... 24.	... 130. D:STR,MULT,E,J-PI,T	
	(P,G)	TN:14-SI- 28	EN-P = 20.8	30. M:SPC,SIG,SIG-0,A-POW	88045
			..... 120.	...	
	(P,G)	TN:14-SI- 28	EN-P = 0.37	0. M:SPC,DST,SIG,SIG-0	90047
			..... 2.95	105. D:STR,SPCTF,TRR,S(0)	
P- 30	(P,G)	TN:14-SI- 29	EN-P = 2.777	0. M:SPC,DST	88114
			..... 90.	... D:STR,MULT	
	(P,G)	TN:14-SI- 29	EN = 6.5	M:SIG	89050
			..... 8.5	... D:STR,MULT,B(EL)	
P- 31	(G,N+G')	FN:15- P- 30	EN = ----	140. M:AB1	87061E
			..... 32.	... D:E,J-PI	
	(G,N+G')	FN:15- P- 30	EN = ----	R:ABY,E,J-PI,T	88061
			..... 30.	...	
	(G,N)	FN:15- P- 30	EN = ----	M:AB1	87061E
			..... 32.		
	(G,N+P+G')	FN:14-SI- 29	EN = ----	140. M:AB1	87061E
		 32.	... D:E,J-PI	
	(G,P+G')	FN:14-SI- 30	EN = ----	140. M:AB1	87061E
		 32.	... D:E,J-PI	

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
P- 31	(G,P+Q')	FN:14-SI- 30	EN = ----	30. R:ABY,E,J-PI,T	88061	
	(G,P)	FN:14-SI- 30	EN = ----	32. M:ABI	87061E	
	(G,A+Q')	FN:13-AL- 27	EN = ----	140. M:ABI	87061E	
	(G,A)	FN:13-AL- 27	EN = ----	32. D:E,J-PI	87061E	
	(G,X+G')		EN = ----	140. M:ABI	87061E	
	(G,X+G')		EN = ----	32. D:E,J-PI	87061E	
	(P,G)	TN:14-SI- 30	EN-P = 1.94	0. M:ABY,DST,MIX,BRANCH	88062	
			2.11	... 90. D:MULT,B(EL),E,J-PI		

Z=16 SULPHUR A=32,34

S- 32	(G,G)	FN:16- S- 32	EN = 17.	136. M:SPC,SIG	89055
	G,MON		..... 28.	...	
	(G,G')	FN:16- S- 32	EN = 17.	136. M:SPC,SIG,SIG-0,SIG-1	89055
	G,MON		..... 28.	...	
	(G,N+G')	FN:16- S- 31	EN = ----	140. M:SPC-DP,SIG,ABI	86051E
	(G,N)	FN:16- S- 31	EN = ----	140. M:SPC-DP	86051E
	(G,N)	FN:16- S- 31	EN = 18.	48. M:DST,SIG,SIG-0	88063
			..... 29.	... 139. ...	
	(G,P+G')	FN:15- P- 31	EN = ----	140. M:SPC-DP,SIG,ABI	86051E
	(G,P)	FN:15- P- 31	EN = ----	140. M:SPC-DP	86051E
	(G,X+G')		EN = ----	140. M:SPC-DP,ABI,SIG	86051E
	(E,E')	FN:16- S- 32	EN-E = 151.	118. M:SPC,DST	90048
			..... 258.	... 180. D:SPCTF,STR,T	
	(N,G)	TN:16- S- 31	EN = ----	125. M:SPC	88048
	(P,G)	TN:15- P- 31	EN-P = 1.25	10. D:STR,E,J-PI,G-WIDTH	88035
			.....	... M:ABI,SIG,SIG-0	
			.....	... D:STR,MULT,G-WIDTH	

Z=17 CHLORINE A=35,36,38

CL- 35	(O,N)	FN:17-CL- 34	EN = ----	18. D:IRAT	87056E
	(P,G)	TN:16- S- 34	EN-P = 0.4	0. M:ABY,DST,MIX,BRANCH	88062
			..... 0.7	... 90. D:MULT,B(EL),E,J-PI	
CL- 36	(N,G)	TN:17-CL- 35	EN-N = 0.1	M:SIG	90046
			..... 12.	... M:SIG	90046
CL- 38	(N,G)	TN:17-CL- 37	EN-N = 0.1	M:SIG	90046
			..... 12.	... M:SIG	90046

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=18 ARGON A=40						
AR- 40 (G,G) FN:18-AR- 40 EN = 4.7 90. M:SPC,ASYM,BRANCH 86054						
G,POL (G,G') FN:18-AR- 40 EN = 8.5 90. M:SPC,INT,DST 86065						
(G,G') FN:18-AR- 40 EN = 8. 90. M:SPC,DST 88115						
(A,G) TN:16- S- 36 EN-A = 2.3 55. M:SPC,ABY,BRANCH 86053						
..... 3.55 ... 90. M:STR,E,J-PI						
(A,G) TN:16- S- 36 EN-A = 2.35 0. M:SPC,DST,LFT 88064						
..... 3.5 ... 90. M:E,J-PI,MULT						
Z=19 POTASSIUM A=37,39,41						
K- 37 (P,G) TN:18-AR- 36 EN-P = 0.9 0. M:SPC,DST,ABY,BRANCH 88066						
..... 3. ... 90. M:D:E,J-PI,G-WIDTH						
K- 39 (O,O') FN:19- K- 39 EN = 6.6 90. M:SPC,DST,SPCTF 87037						
(O,O') FN:19- K- 39 EN = 6.6 127. M:SPC 88067						
(O,N+G') FN:19- K- 38 EN = 9.4 140. M:SPC,ABI 87062E						
(O,N) FN:19- K- 38 EN = 32. ... M:D:E,J-PI						
(O,N) FN:19- K- 38 EN = 20. ... M:D:IRAT						
(O,N) FN:19- K- 38 EN = 32. ... M:ABI 87062E						
(O,P+G') FN:18-AR- 38 EN = 32. ... 140. M:SPC,ABI 87062E						
(O,P) FN:18-AR- 38 EN = 32. ... M:D:E,J-PI						
(O,P) FN:18-AR- 38 EN = 32. ... M:ABI 87062E						
(O,A+O') FN:17-CL- 35 EN = 32. ... 140. M:SPC,ABI 87062E						
(O,A) FN:17-CL- 35 EN = 32. ... M:D:E,J-PI						
(O,A) FN:17-CL- 35 EN = 32. ... M:ABI 87062E						
(G,X+G') EN = 32. ... 140. M:SPC,ABI 87062E						
(P,G) TN:18-AR- 38 EN-P = 1.39 0. M:SPC,DST,ABY,LFT 86055						
..... 1.98 ... 90. M:D:E,J-PI						
K- 41 (P,G) TN:18-AR- 40 EN-P = 2.3 0. M:SPC,COINC,ABY,SIG 86056						
..... 90. M:D:E,J-PI						
Z=20 CALCIUM A=40,41,42,44,48						
CA- 0 (G,N) EN = 26. 55. M:DST,SIG,ASYM 87066						
..... 40. ... 125. M:SPC,SIG,DST,ASYM 88068						
(G,N) G,MON EN = 20. 55. M:SPC,SIG,DST,ASYM 88068						
..... 39. ... 125. M:SPC,DP,SIG,SIG-O 86059E						
CA- 40 (G,G) FN:20-CA- 40 EN = 9.604 55. M:SIG 87063						
(G,G) FN:20-CA- 40 EN = 9.669... M:D:E,J-PI,G-WIDTH						
(G,N+G') FN:20-CA- 39 EN = 32. ... 140. M:SPC,DP,SIG,SIG-O 86059E						

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
CA- 40	(G,N)	FN:20-CA- 39	EN = 13. 30.	....	M:SIG,SIG-O,SIG-1,ABI	86059E
	(G,N)	FN:20-CA- 39	EN = 18. 37.5	....	M:SPC,DST,ASYM,SIG	90050
	(G,P+G')	FN:19- K- 39	EN = 30. 156.	....	M:SPC-DP,SIG,SIG-O	86059E
	(G,2P+G')	FN:18-AR- 38	EN = 32. 140.	....	M:SPC-DP,SIG,ABI	86059E
	(G,P)	FN:19- K- 39	EN = 100. 45.	....	M:SPC,DST,SIG,SIG-O	86057
	(G,P)	FN:19- K- 39	EN = 13. 135.	....	M:SIG,SIG-O,SIG-1	86059E
	(G,P)	FN:19- K- 39	EN = 30. 90.	....	M:SPC	90029
	G,MON	FN:19- K- 39	EN = 61. D:T	....	D:T	86059E
	(G,T+G')	FN:18-AR- 37	EN = 32. 140.	....	M:SPC-DP,SIG,ABI	86059E
	(G,X+G')	EN = 32. 140.	....	....	M:SPC-DP,SIG,ABI	86059E
	(E,E')	FN:20-CA- 40	EN-E = 100. 90.	....	M:SIG,RSP	86058
	(E,E'+P)	FN:19- K- 39	EN-E = 37.5 140.	....	M:SPC,DST,COINC,MES	88069
	(E,E'+P)	FN:19- K- 39	EN-E = 700. 140.1	....	M:SIG	88071
	(E,E'+P)	FN:19- K- 39	EN-E = 100. 100.	....	D:STFNU	89060
	(P,G)	TN:19- K- 39	EN-P = 1.3072 76.	....	M:SPC-IMP,FNF	89060
	(P,G)	TN:19- K- 39	EN = 1.695... 83.	....	D:SPCTF	87063
	(P,G)	TN:19- K- 39	EN = 9. 55.	....	M:SPC,DST,SIG	87063
	(P,G)	TN:19- K- 39	EN-P = 0.3 90.	....	D:E,J-PI,G-WIDTH	88070
	(P,G)	TN:19- K- 39	EN-P = 2.9 90.	....	D:MULT,STR	90049
CA- 41	(E,E)	FN:20-CA- 41	EN-E = 175. 52.	....	M:SPC,SIG,FNF	88072
	(E,E)	FN:20-CA- 41	EN-E = 320. 155.	....	D:MULT,RDI	90051
	(E,E)	FN:20-CA- 41	EN-E = 85. 180.	....	M:SPC,SIG,FNF	90051
	(E,E)	FN:20-CA- 41	EN-E = 190. 180.	....	D:MULT	88071
CA- 42	(E,E')	FN:20-CA- 42	EN-E = 62.5 36.	....	M:SPC,DST,FNF	89061
	(P,G)	TN:19- K- 41	EN = 0.6 55.	....	D:MULT,B(BL),E,J-PI	86060
	(P,G)	TN:19- K- 41	EN = 4. 55.	....	M:SIG,AEY	86060
CA- 44	(G,G')	FN:20-CA- 44	EN = 4. 120.	....	M:SPC,DST	86061
	(E,E')	FN:20-CA- 44	EN-E = 7. 120.	....	D:STR,MULT,B(BL)	89061
	(E,E')	FN:20-CA- 44	EN-E = 62.5 35.	....	M:SPC,DST,FNF	89061
	(E,E')	FN:20-CA- 44	EN-E = 250. 115.	....	D:MULT,B(BL),E,J-PI	86061
CA- 46	(G,N)	FN:20-CA- 47	EN = 12. 12.	....	M:SIG	87064
	(G,2N)	FN:20-CA- 46	EN = 26. 12.	....	M:SIG	87064
	(G,XN)	EN = 26. 12.	....	....	M:SIG	87064
	(G,N+P)	FN:19- K- 46	EN = 26. 12.	....	D:T	87064
	(G,P)	FN:19- K- 47	EN = 15. 90.	....	M:SIG	87064
	(G,YP)	EN = 15. 90.	M:SIG	87064
	(G,ABS)	EN = 29. 90.	D:T	87064
	(G,ABS)	EN = 12. 90.	M:SIG	87064
	(G,ABS)	EN = 26. 90.	M:SIG	87064

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
CA- 48	(E,E')	FN:20-CA- 48	EN-E = 100.	90.	M:SIG,RSP	86058
			..... 375.	... 140.		
(N,G)		TN:20-CA- 47	EN-N = -----		M:SIG	87065
			..... 2.	... 2.	D:STR,E,J-PI,G-WIDTH	

Z=21 SCANDIUM A=41,45

SC- 41	(P,G)	TN:20-CA- 40	EN-P = 0.64	0.	M:SPC,DST,SIG,BRANCH	87067
			..... 3.5	... 90.	D:E,J-PI,G-WIDTH	
SC- 45	(G,N)	FN:21-SC- 44	EN = -----			87056E
			..... 20.	... 20.	D:IRAT	
(G,N)		TN:21-SC- 44	EN = 11.		M:SIG,SIG-N	90052
			..... 21.	... 21.	D:IRAT	

Z=22 TITANIUM A=46,48,50

TI- 0	(G,F)		EN = 800.		M:ABY,SIG	89058
			..... 1800.	... 1800.		
(G,F)			EN = 800.	... 800.	M:SIG	90044
			..... 1800.	... 1800.		
TI- 46	(G,N+P)	FN:21-SC- 44	EN = -----			87056E
			..... 48.	... 48.	D:IRAT	
(E,E')		TN:22-TI- 46	EN-E = 40.	165.	R:SPC,STR	90053
			.....	... 165.		
TI- 48	(E,E')	FN:22-TI- 48	EN-E = 20.	85.	M:SPC,DST,FMF	89062
			..... 220.	... 165.	D:MULT,B(EL),E,J-PI	
(E,E')		TN:22-TI- 48	EN-E = 40.	165.	R:SPC,STR,MULT,PMF	90053
			.....	... 165.		
TI- 50	(E,E')	FN:22-TI- 50	EN-E = 70.	40.	M:SPC,DST,SIG,FMF	88073
			..... 361.	... 154.	D:MULT,B(EL)	

Z=23 VANADIUM A=47,49,50,51

V- 0	(G,X)		EN = -----		M:NDIS	89063
			..... 4500.	... 4500.		
V- 47	(P,G)	TN:22-TI- 46	EN-P = 0.4	0.	M:SPC,DST,ABY,MIX	86063
			..... 1.8	... 90.	D:STR,E,J-PI,T	
V- 49	(P,G)	TN:22-TI- 48	EN-P = 1.5		M:SPC,SIG,SIG-0,SIG-V	90054
			..... 3.5	... 3.5.		
V- 50	(P,G) P,POL	TN:22-TI- 49	EN-P = 1.5	55.	M:SPC,SIG,SIG-0,SIG-1	89064
			..... 3.25	... 3.25.		
V- 51	(G,A)	FN:21-SC- 47	EN = 18.		M:ABY,SIG,ABI	90055
			..... 25.	... 25.		
(E,E'+P)		FN:22-TI- 50	EN = 0.		M:SPC,SPC-IMP	86062
			..... 5.	... 5.	D:SPCTF,E,J-PI,RDI	
(E,E'+P)		FN:22-TI- 50	EN-E = 265.	31.53	M:SPC,MES	88116
		 410.	... 77.19.	D:SPCTF,RDI	
(E,E'+P)		FN:22-TI- 50	EN-E = 265.		M:MES,SPC,SPC-IMP	88122
		 410.	... 410.	D:SPCTF,RDI	

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
V- 51	(E,E'+P)	FN:22-TI- 50	EN = 0.		R:SPC-IMP,SPCTF,STR	90006
			..... 20.	... 20.	M:SPC	90009
(E,E'+P)		TN:22-TI- 50	EN = 0.		..... 22. ... D:SPCTF,STR	

Z=24 CHROMIUM A=50,52

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
CR- 50	(E,E')	FN:24-CR- 50	EN-E = 40.	165.	R:SPC	90053
			.....	... 165.		
CR- 52	(E,E')	FN:24-CR- 52	EN-E = 170.	115.	M:SPC,DST,FMF	88074
			..... 260.	... 154.	D:MULT,T	

Z=25 MANGANESE A=51,53,55

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
MN- 51	(P,G)	TN:24-CR- 50	EN-P = 1.7	0.	M:SPC,ABY,DST,BRANCH	86064
			..... 2.5	... 90.	D:STR,E,J-PI	
(P,G)		TN:24-CR- 50	EN = 7.7		M:SPC,DST	88075
			..... 8.3	... 8.3.	D:E,J-PI,T	
(P,G)		TN:24-CR- 50	EN-P = 1.059	0.	M:DST,BRANCH	88076
			..... 1.513	... 90.	D:E,J-PI	
MN- 53	(P,Q)	TN:24-CR- 52	EN-P = 1.388	0.	M:SPC,DST,ABY,INT	86065
			..... 1.901	... 90.	D:E,J-PI	
(P,Q)		TN:24-CR- 52	EN = 7.	55.	M:SPC,SIG	88077
			..... 10.	... 10.		
(P,Q)		TN:24-CR- 52	EN = 7.91	0.	M:SPC,DST,ABY,BRANCH	90056
			..... 8.19	... 90.	D:STR,E,J-PI,T	
MN- 55	(G,3N)	FN:25-MN- 52	EN = -----			87056E
			..... 49.	... 49.	D:IRAT	

Z=26 IRON A=54,55,56,57,58

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
FE- 0	(E,E')	FN:26-PE- 0	EN-E = 653.	11.9	M:SIG	88031
			..... 1650.	... 53.	D:MULT	
(E,E')		FN:26-PE- 0	EN-E = 960.	37.5	M:SIG	89001
			..... 1500.	... 1500.		
FE- 54	(G,N)	FN:26-PE- 53	EN = -----	78.	M:SPC	89065
			..... 13.58	... 13.58.	D:SPFUN	
(G,N+P)		FN:25-MN- 52	EN = -----	30.	D:IRAT	87056E
FE- 55	(N,G)	TN:26-PE- 54	EN = -----		M:SPC,INT	87068
			..... 5.775	... 5.775.	D:E,J-PI,G-WIDTH	
FE- 56	(G,N)	FN:26-PE- 55	EN = -----	78.	M:SPC	89065
			..... 12.5	... 12.5.	D:SPFUN	
(G,P)		FN:25-MN- 55	EN = 30.5	0.	M:PTOA	89059
			.....	... 30.5.	D:MULT	
(G,A)		FN:24-CR- 52	EN = 30.5	0.	M:PTOA	89059
			.....	... 30.5.	D:MULT	
(E,E')		FN:26-PE- 56	EN-E = 40.	117.	M:SPC,DST,FMF	89066
			..... 68.	... 154.	D:MULT,E,J-PI	
(E,P)		FN:25-MN- 55	EN-E = 30.5	0.	M:PTOA	89059
			.....	... 30.5.	D:MULT	

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
FE- 56	(E,A)	FN:24-CR- 52	EN-E = 30.5	0.	M:PTOA	89059
			.....	...	D:MULT	.....
FE- 57	(G,N)	FN:26-PE- 56	EN = 11.	82.	M:SPC,DST	89065
			.....	131.	D:STFNU	.....
FE- 58	(G,N)	FN:26-PE- 57	EN = ----	78.	M:SPC	89065
			.....	13.25	D:STFNU	.....

Z=27 COBALT A=55,57,58,59

CO- 0	(G,F)	EN = 800.		M:ABY,SIG	89058		
		.....	1800.	...	.....
CO- 55	(P,G)	TN:26-PE- 54	EN-P = 1.803	0.	M:SPC,DST	87054	
			.....	136.	D:E	.....
	(P,G)	TN:26-PE- 54	EN-P = 4.		M:SIG	87069	
			.....	9.	...	.....
	(P,G)	TN:26-PE- 54	EN-P = 2.35	0.	M:SPC,DST,BRANCH	89067	
			.....	3.9	D:STR,E,J-PI,T	.....
CO- 57	(P,G)	TN:26-PE- 56	EN-P = 1.248	0.	M:SPC,DST,ABY,INT	86065	
			.....	2.065	D:E,J-PI	.....
	(P,G)	TN:26-PE- 56	EN-P = 3.76	0.	M:SPC,DST,SIG,MIX	86066	
			.....	3.84	D:E,J-PI,MULT,B(EL),T	.....
	(P,G)	TN:26-PE- 56	EN-P = 1.6	0.	M:SPC,DST,SIG,LFT	87070	
			.....	1.64	D:E,J-PI	.....
CO- 58	(G,N)	FN:27-CO- 57	EN = ----			90057	
			25.	...	D:E-AV
CO- 59	(G,N)	FN:27-CO- 58	EN = ----			87056E	
			22.	...	D:IRAT
	(G,N)	FN:27-CO- 58	EN = 13.		M:ABY,SIG,SIG-M,ABI	87071E	
			25.
	(G,F)	EN = 800.		M:SIG	90044		
			1800.

Z=28 NICKEL A=58,60,64

NI- 0	(E,E'+P)	EN = 0.	0.	M:SPC,DST,SIG,COINC	88078	
		.....	70.	180.	...	
	(E,E'+A)	EN = 0.	0.	M:SPC,DST,SIG,COINC	88078	
		.....	70.	180.	...	
NI- 58	(G,N)	FN:28-NI- 57	EN = ----	78.	M:SPC,SIG	90058
			.....	12.8	...	.....
	(G,N)	FN:28-NI- 57	EN = 16.	135.	M:SPC,SIG,SIG-0,SIG-V	90059
			.....	20.	...	.....
	(G,P)	FN:27-CO- 57	EN = 30.5	0.	M:PTOA	89059
			.....	...	D:MULT	.....
	(G,A)	FN:26-PE- 54	EN = 30.5	0.	M:PTOA	89059
			.....	...	D:MULT	.....
	(E,E')	FN:28-NI- 58	EN-E = 39.	93.	M:SPC,DST,PMF,SIG	87072
			.....	57.	D:MULT,STR,B(EL),E	.....
	(E,E'+P)	FN:27-CO- 57	EN = 8.	10.	M:SPC	88079
			.....	25.	...	.....
	(E,E'+P)	FN:27-CO- 57	EN-E = 780.	50.1	M:SPC,DST,MES,SIG	89033
			.....	72.9	...	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
NI- 58	(E,E'+P)	FN:27-CO- 57	EN = 25.	0.	M:SPC,DST	89068
	(E,E'+A)	FN:26-PE- 54	EN = 8.	180.	D:MULT	.....
	(E,P)	FN:27-CO- 57	EN-E = 25.	210.	M:SPC	88079
	(E,A)	FN:26-PE- 56	EN-E = 30.5	0.	M:PTOA	89059
			.....	...	D:MULT	.....
NI- 60	(G,N)	FN:28-NI- 59	EN = 11.5	78.	M:SPC,SIG	90058
	(G,N+P)	FN:27-CO- 58	EN = ----	13.	...	.....
			.....	48.	...	D:IRAT
	(G,X)	FN: 4-BE- 7	EN = 4500.		M:ABY,SIG	90060
	(E,E'+P)	FN:27-CO- 59	EN = 12.	10.	M:SPC	88079
	(E,E'+A)	FN:26-PE- 56	EN = 12.	10.	M:SPC	88079
			.....	25.	...	.....
NI- 64	(E,E)	FN:28-NI- 64	EN-E = 147.4	29.	M:SPC,DST	88080
	(E,E')	FN:28-NI- 64	EN-E = 147.4	356.	D:MULT,E,J-PI	88080
			.....	356.	56.	M:SPC,DST
			.....	356.	56.	D:MULT,E,J-PI

Z=29 COPPER A=59,61,62,63,64,65

CU- 0	(G,G)	FN:29-CU- 0	EN = 0.344	15.	M:SIG	87076
	G,MON	FN:29-CU- 0	EN = 1.408	45.	...	.....
	(G,G)		.....	60.	5.	M:DST,SIG,PMF
			.....	662.	140.	...
	(G,BE7)		EN = 5000.		M:ABY	89069
	(G,NA24)		EN = 5000.	...	M:ABY	89069
	(N,G)		EN-N = 0.5	...	M:SPC,MLTPL,SIG	86070
	(P,G)		EN-P = 3.	...	...	.....
			EN-P = 72.	90.	M:SPC,DST	88032
	(P,G)		.....	150.	...	.....
			EN-P = 1.93	0.	M:SPC,DST	88081
	(P,G)		.....	2.45	90.	D:MULT,STR,E,J-PI
			EN = 8.33	0.	M:SPC,DST	88082
	(P,G)		EN-P = 168.	50.	D:MULT,B(EL)	89038
			.....	200.	150.	M:SPC,DST,SIG
CU- 59	(S32,G)	TN:13-AL- 27	EN = 54.	90.	M:SPC,SIG	89071
			.....	77.4	...	D:G-WIDTH
CU- 61	(P,G)	TN:28-NI- 60	EN-P = 1.	55.	M:ABY,SIG	89072
			.....	4.	...	D:STR,TRR
CU- 62	(P,G)	TN:28-NI- 61	EN = 1.05	55.	M:SIG	88083
			.....	3.98	...	D:TRR
CU- 63	(G,P)	FN:28-NI- 62	EN = 30.5	0.	M:PTOA	89059
	(G,A)	FN:27-CO- 59	EN = 30.5	0.	M:PTOA	89059
	(G,X)	FN: 4-BE- 7	EN = 4500.	...	M:ABY,SIG	90060

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
CU- 63	(G,X)	FN:11-NA- 24	EN =4500.	...	M:ABY,SIG	90060
	(E,E')	FN:29-CU- 63	EN-E = 70.	... 80. ...	M:SPC,FMF	88084
	(E,P)	FN:28-NI- 62	EN = 11.	... 30. ...	M:SPC,DST,SIG,SIG-O	86069
	(E,P)	FN:28-NI- 62	EN-E = 30.5	... 0. ...	M:PTOA	89059
	(E,A)	FN:27-CO- 59	EN-E = 30.5	... 0. ...	D:MULT	89059
	(P,G)	TN:28-NI- 62	EN-P = 1.943	... 0. ...	M:SPC,DST,SIG,ABY	86067
	(P,G)	TN:28-NI- 62	EN-P = 3.175	... 90. ...	D:E,J-PI,STR,MULT	86068
	(P,G)	TN:28-NI- 62	EN-P = 1.15	... 55. ...	M:SPC,DST,ABY,INT	86068
	(P,G)	TN:28-NI- 62	EN-P = 1.7	... 90. ...	D:STR,E,J-PI	86068
	(P,G)	TN:28-NI- 62	EN-P = 1.02	... 55. ...	M:ABY,SIG	89072
	(A,G)	TN:27-CO- 59	EN = 22.5	... 90. ...	M:SPC,SIG	87073
	(LI6,G)	TN:26-FE- 57	EN = 22.5	... 90. ...	D:LDEN,Q	87073
	(C12,G)	TN:23- V- 51	EN = 22.5	... 90. ...	M:SPC,SIG	87073
	(O18,G)	TN:21-SC- 45	EN = 22.5	... 90. ...	M:SPC,SIG	87073
			77.4	... 90. ...	D:LDEN,Q	87073
CU- 64	(N,G)	TN:29-CU- 63	EN-N = 0.5	...	M:SPC,MLTPL,SIG	86070
			3.	... 3. ...	...	...
CU- 65	(G,A)	FN:27-CO- 61	EN = 18.	...	M:ABY,SIG,ABI	90055
	(G,X)	FN:29-CU- 60	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:29-CU- 61	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:29-CU- 64	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:17-CL- 39	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:25-MN- 56	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:26-FE- 52	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:27-CO- 55	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:27-CO- 56	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:27-CO- 57	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:27-CO- 58	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:27-CO- 61	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:28-NI- 57	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:19- K- 43	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:17-CL- 38	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:24-CR- 49	EN = ---	...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:24-CR- 51	EN = ---	...	M:ABY,SIG,MDIS	89073
			4500.	... 4500.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
CU- 65	(G,X)	FN:25-MN- 54	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:18-AR- 41	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:19- K- 42	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:21-SC- 43	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:21-SC- 46	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:21-SC- 48	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:23- V- 48	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:25-MN- 52	EN = ---	... 4500. ...	M:ABY,MDIS,SIG,SIG-M	89073
	(G,X)	FN:27-CO- 62	EN = ---	... 4500. ...	M:ABY,MDIS,SIG,SIG-M	89073
	(G,X)	FN: 4-BE- 7	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:11-NA- 24	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:21-SC- 44	EN = ---	... 4500. ...	M:ABY,MDIS,SIG,SIG-M	89073
	(G,X)	FN:21-SC- 44	EN = ---	... 4500. ...	M:ABY,MDIS,SIG,SIG-M	89073
	(G,X)	FN:17-CL- 34	EN = ---	... 4500. ...	M:ABY,MDIS,SIG,SIG-M	89073
	(G,X)	FN:21-SC- 47	EN = ---	... 4500. ...	M:ABY,SIG,MDIS	89073
	(G,X)	FN:11-NA- 24	EN =4500.	... 4500. ...	M:ABY,SIG	90060
	(G,X)	FN: 4-BE- 7	EN =4500.	... 4500. ...	M:ABY,SIG	90060
	(G,X)	FN:23- V- 48	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:21-SC- 42	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:25-MN- 52	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:26-FE- 52	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:27-CO- 55	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:27-CO- 56	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:27-CO- 57	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:27-CO- 58	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:27-CO- 61	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:28-NI- 57	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:19- K- 43	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:17-CL- 38	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:24-CR- 49	EN =4500.	... 4500. ...	M:KE	90061
	(G,X)	FN:24-CR- 51	EN =4500.	... 4500. ...	M:KE	90061
	(E,E')	FN:29-CU- 65	EN-E = 150.	... 34. ...	M:SPC,DST,FMF	87074
	(E,E')	FN:29-CU- 65	EN-E = 225.	... 74. ...	D:E,G-WIDTH,B(EL),SRE	87075
	(E,E')	FN:29-CU- 65	EN = 1.	... 34. ...	D:E,G-WIDTH,B(EL),SRE	87075
				... 37. ...	D:E,G-WIDTH,B(EL),SRE	87075

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
CU- 65	(E,E')	FN:29-CU- 65	EN-E = 70.	80.	M:SPC,PMF	88084
	(E,E'+P)	FN:28-NI- 64	EN = 13.	0.	M:COINC,MES,SIG,SIG-0	88085
	(E,P)	FN:28-NI- 64	EN = 11.	30.	M:SPC,DST,SIG,SIG-0	86069
			..... 28.	140.	..... D:MULT,T,SRE	.....
CU- 66	(N,G)	TN:29-CU- 65	EN-N = 0.5		M:SPC,MLTPL,SIG	86070
			..... 3.	...	.....	.....

Z=30 ZINC A=64,66,69

ZN- 64	(E,E'+P)	FN:29-CU- 63	EN = 12.	10.	M:SPC	88079
	(E,E'+A)	FN:28-NI- 60	EN = 12.	10.	M:SPC	88079
	(P,G)	TN:29-CU- 63	EN-P = 6.5	90.	M:SPC,SIG,SIG-0,SIG-1	86071
	(P,G)	TN:29-CU- 63	EN-P = 1.3	.....	M:SIG,SIG-0,SIG-V	90062
			..... 3.2	...	.....	.....
ZN- 66	(G,N)	FN:30-ZN- 65	EN = ----			90057
			..... 25.	...	... D:E-AV	.....
ZN- 69	(G,N)	FN:30-ZN- 68	EN = ----			90057
			..... 25.	...	... D:E-AV	.....

Z=31 GALLIUM A=65,71

GA- 65	(P,G)	TN:30-ZN- 64	EN-P = 1.1		M:SPC,RLY,BRANCH	87077
	(P,G)	TN:30-ZN- 64	EN-P = 1.3	55.	M:SPC,INT	87078
			..... 4.3	...	... D:E,J-PI,STR,STFUN	.....
GA- 71	(G,N+P)	FN:30-ZN- 69	EN = ----			87056E
			..... 70.	...	... D:IRAT	.....

Z=32 GERMANIUM A=70,72,74,76

GE- 70	(E,E)	FN:32-GE- 70	EN-E = 225.	30.	M:SIG	90063
	(E,E)	FN:32-GE- 70	EN-E = 225.	82.	... D:CDENS	.....
			.....	30.		90064
			.....	180.	... D:CDENS	.....
GE- 72	(G,N)	FN:32-GE- 71	EN = ----			90057
	(E,E)	FN:32-GE- 72	EN-E = 225.	25.	... D:E-AV	.....
	(E,E)	FN:32-GE- 72	EN-E = 225.	30.	M:SIG	90063
	(E,E)	FN:32-GE- 72	EN-E = 225.	82.	... D:CDENS	.....
			.....	30.		90064
			.....	180.	... D:CDENS	.....
GE- 74	(E,E)	FN:32-GE- 74	EN-E = 225.	30.	M:SIG	90063
	(E,E)	FN:32-GE- 74	EN-E = 225.	82.	... D:CDENS	.....
			.....	30.		90064
GE- 76	(G,N)	FN:32-GE- 75	EN = ----			87056E
			..... 30.	...	... D:IRAT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
GE- 76	(G,A)	FN:30-ZN- 72	EN = 18.	25.	...	M:ABY,SIG,ABI
	(E,E)	FN:32-GE- 76	EN-E = 225.	30.	...	M:SIO
	(E,E)	FN:32-GE- 76	EN-E = 225.	82.	... D:CDENS	.....
			.....	30.	...	90064
			.....	180.	... D:CDENS	.....

Z=34 SELENIUM A=74,75,76,78,80,82

SE- 74	(G,N)	FN:34-SE- 73	EN = ----	14.5	...	D:IRAT
	(E,E)	FN:34-SE- 74	EN-E = 225.	...	...	M:SIG
	(E,E)	FN:34-SE- 74	EN-E = 225.	20.	...	D:CDENS
			.....	83.	...	M:DST,SIG
			.....	...	...	D:CDENS
SE- 75	(N,G)	TN:34-SE- 74	EN-N = 0.5		M:SIG	89074
		
SE- 76	(G,N)	FN:34-SE- 75	EN = ----	25.	...	D:E-AV
	(E,E)	FN:34-SE- 76	EN-E = 225.	...	...	M:SIG
	(E,E)	FN:34-SE- 76	EN-E = 225.	20.	...	D:CDENS
	(E,E)	FN:34-SE- 76	EN-E = 225.	88.	...	D:CDIS
			.....	20.	...	M:DST,SIG
			.....	83.	...	D:CDENS
SE- 78	(E,E)	FN:34-SE- 78	EN-E = 225.		M:SIG	87079
	(E,E)	FN:34-SE- 78	EN-E = 225.	20.	...	D:CDENS
	(E,E)	FN:34-SE- 78	EN-E = 225.	88.	...	D:CDIS
	(E,E)	FN:34-SE- 78	EN-E = 225.	20.	...	M:DST,SIG
			.....	83.	...	D:CDENS
SE- 80	(E,E)	FN:34-SE- 80	EN-E = 225.		M:SIG	87079
	(E,E)	FN:34-SE- 80	EN-E = 225.	20.	...	D:CDENS
	(E,E)	FN:34-SE- 80	EN-E = 225.	88.	...	D:CDIS
	(E,E)	FN:34-SE- 80	EN-E = 225.	20.	...	M:DST,SIG
			.....	83.	...	D:CDENS
SE- 82	(G,N)	FN:34-SE- 81	EN = ----	16.	...	D:IRAT
	(E,E)	FN:34-SE- 82	EN-E = 225.	...	...	M:SIG
	(E,E)	FN:34-SE- 82	EN-E = 225.	20.	...	D:CDENS
	(E,E)	FN:34-SE- 82	EN-E = 225.	88.	...	D:CDIS
	(E,E)	FN:34-SE- 82	EN-E = 225.	20.	...	M:DST,SIG
			.....	83.	...	D:CDENS

Z=35 BROMINE A=81,85

BR- 81	(G,G')	FN:35-BR- 81	EN = 3.	90.	M:ABY,SPC	90065
	(G,N)	FN:35-BR- 80	EN = ----	4.2	...	D:E,J-PI
			12.	...	D:IRAT
BR- 85	(G,N)	FN:37-BR- 84	EN = ----	20.	...	D:IRAT
		

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=36 KRYPTON A=83						
KR- 83 (A,G)	TN:34-SE- 79	EN-A = 11.	0.	M:SPC,DST,SIG	86072	
		..... 17.	90.	D:E,J-PI	.....
Z=37 RUBIDIUM A=85						
RB- 85 (G,N)	FN:37-RB- 84	EN = 12.		M:SIG,SIG-0,SIG-M	87081E	
		..... 25.	...	D:IRAT	.....
Z=38 STRONTIUM A=83,86,87,88						
SR- 83 (G,N)	FN:38-SR- 82	EN = ----			90057	
		..... 25.	...	D:E-AV	.....
SR- 86 (G,N)	FN:38-SR- 85	EN = ----			87056E	
(G,N)	FN:38-SR- 85	EN = 14.5	...	D:IRAT	.....
(G,N)	FN:38-SR- 85	EN = ----		D:E-AV	90057	
(G,N)	FN:38-SR- 85	EN = 11.		M:SIG,SIG-M	90066	
		..... 18.	...	D:IRAT	.....
SR- 87 (G,N)	FN:38-SR- 86	EN = ----			90057	
		..... 25.	...	D:E-AV	.....
SR- 88 (G,N)	FN:38-SR- 87	EN = ----			87056E	
(G,N)	FN:38-SR- 87	EN = 16.5	...	D:IRAT	.....
(G,N)	FN:38-SR- 87	EN = 11.		M:SIG,SIG-M	90066	
		..... 18.	...	D:IRAT	.....
Z=39 YTTRIUM A=88,89,90						
Y- 0 (G,X)	FN:39- Y- 87	EN = 275.		M:SIG-0,SIG-M	87084E	
(G,X)	FN:39- Y- 88	EN = 275.	...	M:SIG	87084E	
(G,X)	FN:36-KR- 77	EN = 275.	...	M:SIG	87084E	
(G,X)	FN:37-RB- 81	EN = 275.	...	M:SIG-0	87084E	
(G,X)	FN:38-SR- 83	EN = 275.	...	M:SIG	87084E	
(G,X)	FN:39- Y- 84	EN = 275.		M:SIG	87084E	
(G,X)	FN:39- Y- 86	EN = 275.	...	M:SIG-0,SIG-M	87084E	
Y- 88 (G,N)	FN:39- Y- 87	EN = ----			90057	
	 25.	...	D:E-AV	
Y- 89 (G,N)	FN:39- Y- 88	EN = ----			87056E	
(G,2N)	FN:39- Y- 87	EN = ----		D:IRAT	
	 23.	...	D:IRAT	

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Y- 89 (G,P)	FN:38-SR- 88	EN = 13.	30.	M:DST,SIG,SIG-0	87082E	
(G,X)	FN:37-RB- 81	EN =	31.	140.	M:SIG,SIG-0	89075
(G,X)	FN:38-SR- 83	EN =	275.	...	M:SIG	89075
(G,X)	FN:39- Y- 88	EN =	275.	...	M:SIG	89075
(G,X)	FN:36-KR- 77	EN =	275.	...	M:SIG	89075
(G,X)	FN:39- Y- 84	EN =	275.	...	M:SIG	89075
(G,X)	FN:39- Y- 86	EN =	275.	...	M:SIG,SIG-0,SIG-M	89075
(G,X)	FN:39- Y- 87	EN =	275.	...	M:SIG,SIG-0,SIG-M	89075
(E,P)	FN:38-SR- 88	EN = 13.	30.	M:DST,SIG,SIG-0	87082E	
(E,X)	FN:36-KR- 77	EN-E = 275.	31.	140.	M:SIG	89075
(E,X)	FN:38-SR- 83	EN-E = 275.	...	M:SIG	89075	
(E,X)	FN:39- Y- 87	EN-E = 275.	...	M:SIG,SIG-0,SIG-M	89075	
(E,X)	FN:37-RB- 81	EN-E = 275.	...	M:SIG,SIG-0	89075	
(E,X)	FN:39- Y- 84	EN-E = 275.	...	M:SIG	89075	
(E,X)	FN:39- Y- 88	EN-E = 275.	...	M:SIG	89075	
(E,X)	FN:39- Y- 86	EN-E = 275.	...	M:SIG,SIG-0,SIG-M	89075	
Y- 90 (N,G)	TN:39- Y- 89	EN-N = 0.5	0.5	M:SPC,MLTPL,SIG	86070	
(N,G)	TN:39- Y- 89	EN-N = 3.	3.	M:SPC,DST,SIG,ASYM	87083	
		.....	55.	M:SPC,DST,SIG,ASYM	.....
		.....	27.	D:MULT	125.	...
Z=40 ZIRCONIUM A=90,97						
ZR- 0 (G,N)		EN = 12.	4PI	M:SIG	87089	
(G,MON)		..... 17.	...	...	.....
(G,2N)		EN = 12.	4PI	M:SIG	87089	
(G,MON)		..... 17.	...	...	.....
(G,XN)		EN = 12.	4PI	M:SIG	87089	
(G,MON)		..... 17.	...	...	.....
(G,F)		EN = 800.		M:ABY,SIG	89058	
(G,F)		..... 1800.	...	M:SIG	90044	
(G,X)	FN:39- Y- 87	EN = 275.	...	M:SIG-0,SIG-M	87084E	
(G,X)	FN:40-ZR- 86	EN = 275.	...	M:SIG	87084E	
(G,X)	FN:40-ZR- 89	EN = 275.	...	M:SIG	87084E	
(G,X)	FN:39- Y- 86	EN = 275.	...	M:SIG	87084E	
(G,X)	FN:39- Y- 86	EN = ----	275.	M:SIG	89075	

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
ZR- 0	(G,X)	FN:39- Y- 87	EN = ----		M:SIG,SIG-0,SIG-M	89075
	(G,X)	FN:40-ZR- 89	EN = 275.	...	M:SIG	89075
	(G,X)	FN:40-ZR- 86	EN = ----		M:SIG	89075
	(E,X)	FN:39- Y- 87	EN-E = 275.	...	M:SIG,SIG-0,SIG-M	89075
	(E,X)	FN:40-ZR- 89	EN-E = 275.	...	M:SIG	89075
	(E,X)	FN:39- Y- 86	EN-E = 275.	...	M:SIG	89075
	(E,X)	FN:40-ZR- 86	EN-E = 275.	...	M:SIG	89075
	(N,G)		EN-N = 0.5	...	M:SPC,MLTPL,SIG	86070
			..... 3.	...		.....
ZR- 90	(G,G)	FN:40-ZR- 90	EN = 8.1	90.	M:SPC,SIG,SIG-0,SIG-I	87087
	(G,NON)		..... 10.5	...		.....
	(G,G)	FN:40-ZR- 90	EN = 8.1	90.	M:SIG,ASYM	87088
	(G,NON,POL)		..... 10.5	...	D:MULT,B(EL)	.....
	(G,N)	FN:40-ZR- 89	EN = ----			87056E
	(G,N)	FN:40-ZR- 89	EN = 14.5	...	D:IRAT	.....
	(G,N)	FN:40-ZR- 89	EN = 21.5	...	M:SIG	87086E
	(G,N)	FN:40-ZR- 89	EN = 24.5	...	D:IRAT	.....
	(G,N)	FN:40-ZR- 89	EN = 21.5	...	D:IRAT,IYR	88087
	(G,N)	FN:40-ZR- 89	EN = 11.	...	M:SIG,SIG-M	90066
	(G,2N)	FN:40-ZR- 88	EN = 18.	...	D:IRAT	.....
	(G,2N)	FN:40-ZR- 88	EN = 21.5	...	M:SIG	87086E
	(G,2N)	FN:40-ZR- 88	EN = 24.5	...	D:IRAT	88087
	(E,E'+P)	FN:39- Y- 89	EN-E = 265.		M:SPC,SPC-IMP	88122
ZR- 97	(E,E'+P)	FN:39- Y- 89	EN-E = 410.	...	D:SPCTF,RDI	.....
	(E,E'+P)	FN:39- Y- 89	EN = 0.	...	B:SPC-IMP,SPCTF	90006
	(E,E'+P)	FN:39- Y- 89	EN = 25.	...	.....	.....
	(E,E'+P)	FN:39- Y- 89	EN = 0.	...	M:SPC-IMP	90009
	(P,G)	TN:39- Y- 89	EN-P = 3.7	90.	M:SIG,SIG-0,SIG-I	87085
			..... 11.5	...	D:E,J-PI,SPCTF	.....
			..... 12.	...		.....

Z=41 NIOBIUM A=91,93,94

NB- 0	(G,X)	FN:41-NB- 89	EN = 275.	M:SIG	87084E
	(G,X)	FN:41-NB- 90	EN = 275.	M:SIG	87084E
	(G,X)	FN:41-NB- 92	EN = 275.	M:SIG-M	87084E
	(G,X)	FN:39- Y- 87	EN = 275.	M:SIG-0,SIG-M	87084E
	(G,X)	FN:39- Y- 90	EN = 275.	M:SIG-M	87084E
	(G,X)	FN:40-ZR- 86	EN = 275.	M:SIG	87084E
	(G,X)	FN:40-ZR- 89	EN = 275.	M:SIG	87084E

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
NB- 0	(G,X)	FN:37-RB- 81	EN = 275.	...	M:SIG-0	87084E
	(G,X)	FN:39- Y- 84	EN = 275.	...	M:SIG	87084E
	(G,X)	FN:39- Y- 86	EN = 275.	...	M:SIG-0,SIG-M	87084E
	NB- 91	(P,G)	TN:40-ZR- 90	EN-P = 1.9	M:SIG,SIG-0,SIG-I	87090
			..... 5.7	...	D:STR,STFUN	.....
	NB- 93	(G,A)	FN:39- Y- 89	EN = 18.	M:ABY,SIG-M,ABI	90055
	(G,BE7)	FN:37-RB- 86	EN = 5000.	...	M:ABY	89069
	(G,NA24)	FN:30-ZN- 69	EN = 5000.	...	M:ABY	89069
NB- 93	(G,F)		EN = 800.	...	M:SIG	90044
	(G,X)	FN:37-RB- 81	EN = 1800.	...	M:SIG,SIG-0	89075
	(G,X)	FN:39- Y- 87	EN = ----	275.	M:SIG,SIG-0,SIG-M	89075
	(G,X)	FN:39- Y- 90	EN = ----	275.	M:SIG,SIG-M	89075
	(G,X)	FN:41-NB- 92	EN = ----	275.	M:SIG,SIG-M	89075
	(G,X)	FN:40-ZR- 89	EN = ----	275.	M:SIG	89075
	(G,X)	FN:41-NB- 90	EN = ----	275.	M:SIG	89075
	(G,X)	FN:39- Y- 86	EN = ----	275.	M:SIG,SIG-0,SIG-M	89075
	(G,X)	FN:40-ZR- 86	EN = ----	275.	M:SIG	89075
	(G,X)	FN:41-NB- 89	EN = ----	275.	M:SIG	89075
	(G,X)	FN:39- Y- 84	EN = ----	275.	M:SIG	89075
	(G,X)	FN:39- Y- 86	EN-E = 275.	...	M:SIG,SIG-0,SIG-M	89075
	(E,X)	FN:41-NB- 92	EN-E = 275.	...	M:SIG,SIG-M	89075
NB- 94	(E,X)	FN:39- Y- 84	EN-E = 275.	...	M:SIG	89075
	(E,X)	FN:41-NB- 89	EN-E = 275.	...	M:SIG	89075
	(E,X)	FN:39- Y- 90	EN-E = 275.	...	M:SIG,SIG-M	89075
	(E,X)	FN:39- Y- 87	EN-E = 275.	...	M:SIG,SIG-0,SIG-M	89076
	(E,X)	FN:41-NB- 90	EN-E = 275.	...	M:SIG	89075
	(E,X)	FN:37-RB- 81	EN-E = 275.	...	M:SIG,SIG-0	89075
	(E,X)	FN:40-ZR- 86	EN-E = 275.	...	M:SIG	89075
	(M,G)	TN:41-NB- 93	EN-N = 0.5	...	M:SPC,MLTPL,SIG	86070
		 3.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=42		MOLIBDENIUM	A=92,94,96,98,100			
MO- 0	(G,G)	FN:42-MO- 0	EN = 0.344	15.	M:9PC,DST,SIG	87091
	G,NON		..... 1.408...	45.	.....	.....
	(G,G)	FN:42-MO- 0	EN = 60.	5.	M:DST,SIG,PMF	89070
			..... 662.	.... 140.	.....	.....
	(G,X)	FN:42-MO- 99	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:39- Y- 86	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:39- Y- 87	EN = 150.	.....	M:SIG-0	87084E
			..... 275.	....	....	.....
	(G,X)	FN:39- Y- 87	EN = 150.	.....	M:SIG-M	87084E
			..... 275.	....	....	.....
	(G,X)	FN:39- Y- 91	EN = 150.	.....	M:SIG-M	87084E
			..... 275.	....	....	.....
	(G,X)	FN:40-ZR- 86	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:40-ZR- 89	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:41-NB- 89	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:41-NB- 90	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:41-NB- 96	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:41-NB- 97	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:42-MO- 90	EN = 150.	.....	M:SIG	87084E
			..... 275.	....	....	.....
	(G,X)	FN:42-MO- 93	EN = 150.	.....	M:SIG-M	87084E
			..... 275.	....	....	.....
	(G,X)	FN:41-NB- 97	EN = ---	.....	M:SIG	89075
			..... 275.	....	....	.....
	(G,X)	FN:40-ZR- 89	EN = 150.	.....	M:SIG	89075
			..... 225.	....	....	.....
	(G,X)	FN:39- Y- 87	EN = 150.	.....	M:SIG,SIG-0,SIG-M	89075
			..... 225.	....	....	.....
	(G,X)	FN:41-NB- 89	EN = ---	.....	M:SIG	89075
			..... 275.	....	....	.....
	(G,X)	FN:42-MO- 90	EN = 150.	.....	M:SIG	89075
			..... 225.	....	....	.....
	(G,X)	FN:42-MO- 99	EN = 150.	.....	M:SIG	89075
			..... 225.	....	....	.....
	(G,X)	FN:41-NB- 96	EN = 150.	.....	M:SIG	89075
			..... 225.	....	....	.....
	(G,X)	FN:40-ZR- 86	EN = ---	.....	M:SIG	89075
			..... 275.	....	....	.....
	(G,X)	FN:39- Y- 86	EN = ---	.....	M:SIG	89075
			..... 275.	....	....	.....
	(G,X)	FN:42-MO- 93	EN = 150.	.....	M:SIG,SIG-M	89075
			..... 225.	....	....	.....
	(G,X)	FN:41-NB- 90	EN = 150.	.....	M:SIG	89075
			..... 225.	....	....	.....
	(E,X)	FN:41-NB- 96	EN-E = 150.	M:SIG	89075
		 225.
	(E,X)	FN:41-NB- 97	EN-E = 275.	M:SIG	89075
		 225.
	(E,X)	FN:40-ZR- 89	EN-E = 150.	M:SIG	89075
		 225.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
MO- 0	(E,X)	FN:42-MO- 99	EN-E = 150. 225.	M:SIG M:SIG,SIG-0,SIG-M M:SIG M:SIG M:SIG M:SIG M:SIG,M:SIG-M M:SIG M:SIG	89075 89075 89075 89075 89075 89075 89075 89075 89075
MO- 92	(G,N)	FN:42-MO- 91	EN = ---- 14.5	... ... ... ... ... ... ... ... ...	D:IRAT M:SIG,SIG-M D:IRAT M:SPC,FMP D:CDIS M:SPC,FMP D:CDIS,CDENS	87056E 90066 90067 90067 90067
MO- 94	(G,3N)	FN:42-MO- 91	EN = ---- 70.	... ... ... ... ... ...	D:IRAT	87056E
MO- 96	(G,P)	FN:41-NB- 95	EN = ---- 30.	... ... ... ... ...	D:IRAT	87056E
MO- 98	(G,P)	FN:41-NB- 97	EN = ---- 22.	... ... ... ...	D:IRAT	87056E
MO-100	(G,N)	FN:42-MO- 99	EN = ---- 55.	... ... ... ...	D:IRAT	87056E
Z=43 TECHNETIUM A=93						
TC- 93	(P,G)	TN:42-MO- 92	EN-P = 3. 9.	... ... ... ...	M:SIG-M D:IRAT	87092
Z=44 RUTHENIUM A=102,104						
RU-102	(G,P)	FN:43-TC-101	EN = ---- 55.	... ... ... ...	D:IRAT M:SIG	87056E 89076
RU-104	(N,G)	TN:44-RU-103	EN-N = 0.5 2.2	.........	.....	.....
Z=45 RHODIUM A=103						
RH-103	(G,N)	FN:44-RH-102	EN = ---- 50.	... ... ... ...	D:IRAT	87056E

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=46 PALLADIUM A=108,110						
PD- 0	(G,ABS) G,MON		EN = 0.09	0.	M:SIG D:TOT	87096
		
PD-108	(G,N)	FN:46-PD-107	EN = ----			87056E
			.....	55.	... D:IRAT	.....
PD-110	(G,N)	FN:46-PD-109	EN = ----			87056E
			.....	55.	... D:IRAT	.....
	(E,E')	FN:46-PD-110	EN-E = 20.	117.	M:SPC,DST,FMF	89077
			.....	63.	... 141. D:MULT,B(EL),E,J-PI	.....
Z=47 SILVER A=107,108,110						
AG- 0	(G,G)	FN:47-AG- 0	EN = 60.	5.	M:DST,SIG,FMF	89070
	(G,F)		..... 662.	... 140.	... M:SIG	90044
			EN = 800.			.....
	(G,X)	FN:43-TC- 95	EN = ----		M:ABY,SIG-M,MDIS	88088
			..... 1800.	...		.....
	(G,X)	FN:47-AG-106	EN = ----		M:ABY,SIG-M,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:45-RH-102	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:46-PD-100	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:47-AG-105	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:47-AG-104	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:43-TC- 95	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:44-RU-103	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:47-AG-103	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:41-NB- 95	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:42-MO- 90	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:44-RU- 97	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:46-PD-101	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:41-NB- 92	EN = ----		M:ABY,SIG-M,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:43-TC- 96	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:44-RU- 95	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:45-RH-101	EN = ----		M:ABY,SIG-M,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:45-RH-101	EN = ----		M:ABY,SIG,MDIS	88088
			..... 4500.	...		.....
	(G,X)	FN:42-MO- 93	EN = ----		M:ABY,SIG-M,MDIS	88088
			..... 4500.	...		.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=48 CADMIUM A=107,110,111,116,117						
CD- 0	(G,G)	FN:48-CD- 0	EN = 60.	5.	M:DST,SIG,FMF	89070
	(G,N)		..... 662.	... 140.	... M:DST,SIG,ASYM	87066
			EN = 20.	55.		.....
			..... 30.	... 125.		.....
	(G,X)		EN = 20.	55.	M:SPC,DST,SIG,SIG-V	87095
	(G,MON)		..... 30.	... 125.		.....
	(G,N)		EN = 20.	55.	M:SPC,SIG,DST,ASYM	88068
	(G,MON)		..... 39.	... 125.		.....
	(G,ABS)		EN = 0.122.	0.	M:SIG	87096
	(G,MON)		..... 0.136.	...	D:TOT	.....
CD-107	(N,G)	TN:48-CD-106	EN-N = 0.5		M:SIG	89074
		
CD-110	(E,E')	FN:48-CD-110	EN-E = 70.		M:FMF	90068
			..... 440.	...	D:CDENS,B(EL)	.....
CD-111	(G,G)	FN:48-CD-111	EN = 1.33		M:SIG,SIG-M	87094
	(G,MON)		.....	...		.....
CD-116	(G,N)	FN:48-CD-115	EN = ----	22.	... D:IRAT	87056E
		
CD-117	(N,G)	TN:48-CD-116	EN-N = 0.4		M:SIG	86070E
			..... 2.0	...		.....
Z=49 INDIUM A=113,114,115						
IN- 0	(G,F)		EN = 800.		M:SIG	90044
			..... 1800.	...		.....
IN-113	(G,N)	FN:49-IN-112	EN = ----	30.	... D:IRAT	87056E
		
IN-114	(G,N)	FN:49-IN-113	EN = ----	25.	... D:E-AV	90057
		
IN-115	(G,G')	FN:49-IN-115	EN = 5.		M:SIG	86074
			..... 11.	...		.....
	(G,G')	FN:49-IN-115	EN = 0.2		M:SPC,SIG-M,AB1	88089
		 1.5
	(G,N)	FN:49-IN-114	EN = ----	16.	... D:IRAT	87056E
		
	(P,G)	TN:48-CD-114	EN-P = 4.		M:SIG-M	87069
		 9.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=50 TIN A=112-125						
SN- 0	(G,G)	FN:50-SN- 0	EN = 0.344	15.	M:SPC,DST,SIG	87091
	G,MON		..... 1.408	45.		
	(G,G)	FN:50-SN- 0	EN = 0.272	10.5	M:DST,SIG	87097
	G,MON		..... 0.662	59.		
	(G,G)	FN:50-SN- 0	EN = 60.	5.	M:DST,SIG,FMF	89070
			..... 662.	140.		
	(N,G)		EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-112	(G,N)	FN:50-SN-111	EN = ----	....	M:SIG	89078
			..... 4500.	....	
	(G,2N)	FN:50-SN-110	EN = ----	....	M:SIG	89078
			..... 4500.	....	
	(G,N+P)	FN:49-IN-110	EN = ----	....	M:SIG-0,SIG-M	89078
			..... 4500.	....	
	(G,P)	FN:49-IN-111	EN = ----	....	D:IRAT	87056E
			..... 22.	....	
	(G,P)	FN:49-IN-111	EN = ----	....	M:SIG	89078
			..... 4500.	....	
	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
			..... 4500.	....	
SN-113	(N,G)	TN:50-SN-112	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-114	(G,N)	FN:50-SN-113	EN = ----	....	M:SIG-M	89078
			..... 4500.	....	
	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
			..... 4500.	....	
	(A,G)	TN:48-CD-110	EN-A = 24.	....	M:SPC,ISY,COINC	88091
			..... 4500.	....	D:MULT,E,J-PI	
SN-115	(N,G)	TN:50-SN-114	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-116	(G,N+P)	FN:49-IN-114	EN = ----	....	M:SIG-M	89078
			..... 4500.	....	
	(G,P)	FN:49-IN-115	EN = ----	....	M:SIG-M	89078
			..... 4500.	....	
	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
			..... 4500.	....	
	(E,E')	FN:50-SN-116	EN-E = 360.	41.5	M:SPC,DST,FMF	86075
			..... 154.	....	D:E,J-PI	
	(E,E'+N)	FN:50-SN-115	EN = 10.	55.	M:COINC,SIG	90069
			..... 20.	....	D:STR,MULT	
	(N,G)	TN:50-SN-115	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-117	(N,G)	TN:50-SN-116	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-118	(G,N+P)	FN:49-IN-116	EN = ----	....	M:SIG-M	89078
		 4500.		
	(G,P)	FN:49-IN-117	EN = ----	D:IRAT	87056E
		 22.	M:SIG-0,SIG-M	89078
	(G,P)	FN:49-IN-117	EN = ----		
		 4500.		

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
SN-118	(G,X)	FN:11-NA- 24	EN = 4500.	M:ABY,SIG	90060
	(G,X)	FN: 4-BE- 7	EN = 4500.	....	M:ABY,SIG	90060
	(N,G)	TN:50-SN-117	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-119	(G,N+P)	FN:49-IN-117	EN = ----	....	M:SIG-0,SIG-M	89078
	(G,P)	FN:49-IN-118	EN = ----	....	M:SIG-M	89078
	(G,2P)	FN:48-CD-117	EN = ----	....	M:SIG-M	89078
	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
			..... 4500.	....	
	(N,G)	TN:50-SN-118	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-120	(G,G)	FN:50-SN-120	EN = 7.3	....	M:SIG,ASYM	89080
	G,MON, POL		..... 9.3	....	D:MULT,B(EL)	
	(G,N)	FN:50-SN-119	EN = ----	....	M:SIG-M	89078
	(G,N+P)	FN:49-IN-118	EN = ----	....	M:SIG-M	89078
	(G,P)	FN:49-IN-119	EN = ----	17.5	....	87056E
	(G,P)	FN:49-IN-119	EN = ----	....	D:IRAT	
	(G,2P)	FN:48-CD-118	EN = ----	....	M:SIG	89078
	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
	(G,X)	FN:11-NA- 24	EN = 4500.	....	M:ABY,SIG	90060
	(N,G)	TN:50-SN-119	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-121	(N,G)	TN:50-SN-120	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-122	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
			..... 4500.	....	
SN-123	(N,G)	TN:50-SN-122	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	
SN-124	(G,N)	FN:50-SN-123	EN = ----	....	D:IRAT	87056E
	(G,N)	FN:50-SN-123	EN = ----	....	M:SIG-0,SIG-M	89078
	(G,X)		EN = ----	....	M:ABY,SIG,MDIS	88090
	(G,X)	FN:11-NA- 24	EN = 4500.	....	M:ABY,SIG	90060
	(N,G)	TN:50-SN-124	EN-N = 20.	....	M:SIG	89079
			..... 450.	....	D:STPFUN	

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=51 ANTIMONY A=113,121						
SB- 0 (G,N)		EN = ----				90057
		..... 25. ...			M: E-AV	.....
SB-113 (P,G)	TN:50-SN-112	EN-P = 4.			M: SIG	87069
		..... 9. ...				.....
SB-121 (G,N)	FN:51-SB-120	EN = ----				87056E
		..... 14.5 ...			D: IRAT	.....
Z=52 TELLURIUM A=120,121						
TE-120 (G,N)	FN:52-TE-119	EN = ----				87056E
		..... 30. ...			D: IRAT	.....
TE-121 (N,G)	TN:52-TE-120	EN-N = 0.5			M: SIG	89074
	
Z=53 IODINE A=127						
I-127 (G,N)	FN:53- I-126	EN = 9.72			M: SPC, INT	86103
G,MON		.....	..	D: E,J-PI	.....
(G,N)	FN:53- I-126	EN = 12.	4PI		M: SIG	87089
G,MON		..... 17. ...				.....
(G,2N)	FN:53- I-125	EN = 12.	4PI		M: SIG	87089
G,MON		..... 17. ...				.....
(G,2N)	FN:53- I-125	EN = 8.	4PI		M: SIG	89081
		..... 23. ...				.....
(G,XN)		EN = 12.	4PI		M: SIG	87089
G,MON		..... 17. ...				.....
(G,XN)		EN = 8.	4PI		M: SIG	89081
		..... 23. ...				.....
Z=54 XENON A=124,136						
XE-124 (G,N)	FN:54-XE-123	EN = 22.			M: SIG	86076
		..... 25. ...				.....
(G,N+X)	FN:53- 1-123	EN = 22.			M: SPC-DP, SIG	86076
		..... 25. ...				.....
XE-136 (G,N)	FN:54-XE-135	EN = ----				87056E
		..... 22. ...			D: IRAT	.....
Z=56 BARIUM A=138						
BA- 0 (G,G)	FN:56-BA- 0	EN = 4.5	135.		M: SIG, ABS	86077
G,MON		..... 9. ...			D: TOT	.....
BA-138 (G,N)	FN:56-BA-137	EN = ----				87056E
		..... 15.3 ...			D: IRAT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=57 LANTHANUM A=140						
LA-140 (N,G)	TN:57-LA-139	EN-N = 0.5			M: SPC,MLTPL,SIG	86070
		..... 3. ...				.....
Z=58 CERIUM A=138,140,142						
CE- 0 (G,G)	FN:58-CE- 0	EN = 4.5	135.		M: SIG, ABS	86077
G,MON		..... 9. ...			D: TOT	.....
CE-138 (G,N)	FN:58-CE-137	EN = ----			D: IRAT	87056E
		..... 70. ...				.....
CE-140 (G,G)	FN:58-CE-140	EN = 6.7	90.		M: SIG, ASYM	86078
G,POL		..... 8.7 ...			D: MULT,B(EL)	.....
(G,N)	FN:58-CE-139	EN = ----				87056E
		..... 20. ...			D: IRAT	87056E
(G,3N)	FN:58-CE-137	EN = ----				.....
		..... 30. ...			D: IRAT	88092
(E,E')	FN:58-CE-140	EN-E = 100.	40.		M: SPC,SIG	.....
		..... 370. ...	155.		D: MULT	.....
(N,G)	TN:58-CE-139	EN-N = 0.5			M: SIG	89076
		..... 2.2 ...				.....
CE-142 (N,G)	TN:58-CE-141	EN-N = 0.5			M: SIG	89076
		..... 2.2 ...				.....
Z=59 PRASEODYMIUM A=140,141,143						
PR-140 (G,N)	FN:59-PR-139	EN = ----			D: E-AV	90057
		..... 25. ...				.....
PR-141 (G,N)	FN:59-PR-140	EN = 12.	4PI		M: SIG	87089
G,MON		..... 17. ...				.....
(G,2N)	FN:59-PR-139	EN = 12.	4PI		M: SIG	87089
G,MON		..... 17. ...				.....
(G,XN)	FN:59-PR-140	EN = 12.	4PI		M: SIG	87089
G,MON		..... 17. ...				.....
PR-142 (N,G)	TN:59-PR-141	EN-N = 0.01	125.		M: SPC,SIG	86079
		..... 0.8 ...				.....
Z=60 NEODYMIUM A=142,144,146,147,148,150						
ND- 0 (G,F)		EN = 800.			M: SIG	90044
		..... 1800. ...				.....
ND-142 (G,G')	FN:60-ND-142	EN = ----	100.		M: SPC,DST,BRANCH	90070
		..... 4.1 ...	150.		D: E,G-WIDTH,MULT	.....
(G,N)	FN:60-ND-141	EN = ----				87056E
	 55. ...			D: IRAT
(E,E')	FN:60-ND-142	EN-E = 112.	36.		M: PMF	89082
	 450. ...	83.		D: CDENS,E,MULT,B(EL)

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
ND-144	(G,3N)	FN:60-ND-141	EN = ---- 70.	...	D:IRAT	87056
ND-146	(G,G')	FN:60-ND-146	EN = ---- 4.1	100. 150.	M:SPC,DST,BRANCH D:E,G-WIDTH,MULT	90070
ND-147	(N,G)	TN:60-ND-146	EN-N = 0.1 12.	...	M:SIG	90046
ND-148	(G,G')	FN:60-ND-148	EN = ---- 4.1	100. 150.	M:SPC,DST,BRANCH D:E,G-WIDTH,MULT	90070
ND-150	(G,G')	FN:60-ND-150	EN = ---- 3.	90.	M:SPC,SIG,ASYM	89083
	(G,G')	FN:60-ND-150	EN = ---- 4.1	100. 150.	M:SPC,DST,BRANCH D:E,G-WIDTH,MULT	90070
Z=62 SAMARIUM A=148,150,152,154						
SM- 0	(G,P)		EN = 800. 1800.	...	M:SIG	90044
SM-148	(G,G')	FN:62-SM-148	EN = 2.5 4.5	127.	R:SPC,MULT,STR	90053
	(G,G')	FN:62-SM-148	EN = 4.6	127.	M:SPC D:STR,MULT,DEF	90071
SM-150	(G,G')	FN:62-SM-150	EN = 2.5 4.5	127.	R:SPC,MULT,STR	90053
	(G,G')	FN:62-SM-150	EN = 4.6	127.	M:SPC D:STR,MULT,DEF	90071
SM-152	(G,G')	FN:62-SM-152	EN = 2.5 4.5	127.	R:SPC,MULT,STR	90053
	(G,G')	FN:62-SM-152	EN = 4.6	127.	M:SPC D:STR,MULT,DEF	90071
	(E,E')	FN:62-SM-152	EN-E = 80. 300.	45. 107.	M:SPC,PMF,SIG,SIG-O D:CDENS	88093
SM-154	(G,G')	FN:62-SM-154	EN = 2.5 4.5	127.	R:SPC,MULT,STR	90053
	(G,G')	FN:62-SM-154	EN = 4.6	127.	M:SPC D:STR,MULT,DEF	90071
	(G,ABS)		EN = 8. 20.	...	R:SIG	90086
	(E,E')	FN:62-SM-154	EN-E = 27.	165.	R:SPC	90053
Z=63 EUROPIUM A=152,154						
EU- 0	(N,G)		EN-N = 0.1 2.	...	M:SIG	90072
EU-152	(N,G)	TN:63-EU-151	EN-N = 0.5 2.2	...	M:SPC,SIG D:IYR	88094
	(N,G)	TN:63-EU-151	EN-N = 0.1 2.	...	M:SIG	90072
EU-154	(N,G)	TN:63-EU-153	EN-N = 0.1 2.	...	M:SIG	90072

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=64 GADOLINIUM A=153,154,155,156,157,158,159,160,161						
GD- 0	(N,G)		EN-N = 0.5 3.	...	M:SPC,MLTPL,SIG	86070
GD-153	(N,G)	TN:64-GD-152	EN-N = 0.012 2.411...	...	M:SIG	87098
	(N,G)	TN:64-GD-152	EN-N = 0.5	...	M:SIG	89074
GD-154	(E,E')	FN:64-GD-154	EN-E = 78. 380.	20. 73.	M:SPC,SIG,SIG-O,SIG-V	86080
	(E,E')	FN:64-GD-154	EN-E = 25. 48.	117. 165.	M:SPC,SIG,PMF D:MULT,B(EL),E,J-PI	89084
	(N,G)	TN:64-GD-153	EN-N = 0.003 0.5	...	M:SIG,branch	88095
GD-155	(N,G)	TN:64-GD-154	EN-N = 0.49 2.76	...	M:SIG	87098
	(N,G)	TN:64-GD-154	EN-N = 0.003 0.5	...	M:SPC,MLTPL,G-WIDTH D:STR,LBEN,G-WIDTH	88095
GD-156	(G,G')	FN:64-GD-156	EN = 2.8 3.4	0. 150.	M:SPC,SIG	86081
	(G,G')	FN:64-GD-156	EN = 3.5 4.1	90. 127.	M:SPC,DST,INT D:E,J-PI,B(EL)	89085
	(E,E')	FN:64-GD-156	EN-E = 24.6 56.	165.	M:SPC,SIG,PMF	86081
	(N,G)	TN:64-GD-155	EN-N = 0.5 3.	...	M:SPC,MLTPL,SIG	86070
	(N,G)	TN:64-GD-155	EN-N = 0.003 0.5	...	M:SIG,branch	88095
GD-157	(N,G)	TN:64-GD-156	EN-N = 0.5 3.	...	M:SPC,MLTPL,SIG	86070
GD-158	(G,G')	FN:64-GD-158	EN = 3.5 4.1	90. 127.	M:SPC,DST,INT D:E,J-PI,B(EL)	89085
	(N,G)	TN:64-GD-157	EN-N = 0.5 3.	...	M:SPC,MLTPL,SIG	86070
	(N,G)	TN:64-GD-157	EN-N = 0.003 0.5	...	M:SIG,branch	88095
GD-159	(N,G)	TN:64-GD-158	EN-N = 0.5 3.	...	M:SPC,MLTPL,SIG	86070
GD-160	(G,G')	FN:64-GD-160	EN = 3.5 4.1	90. 127.	M:SPC,DST,INT D:E,J-PI,B(EL)	89085
GD-161	(N,G)	TN:64-GD-160	EN-N = 0.5 3.	...	M:SPC,MLTPL,SIG	86070
	(N,G)	TN:64-GD-160	EN-N = 0.46 3.05	...	M:SPC,SIG	88096
Z=65 TERBIUM A=159,160						
TB-159	(G,N) G,MON	FN:65-TB-158	EN = 7. 11.4	40. 150.	M:SPC,DST,SIG,SIG-O D:MULT,INTCFc	86082

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
TB-159	(P,G)	TN:64-GD-158	EN-P = 168. 200.	50. 150.	M:SPC,DST,SIG	89038
TB-160	(N,G)	TN:65-TB-159	EN-N = 0.5 3.	....	M:SPC,MLTPL,SIG	86070
(N,G)	TN:65-TB-159	EN-N = 0.01 0.8	125. ....	....	M:SPC,SIG	86079
Z=66 DYSPROSIUM A=156,157,160,161,162,163,164,165						
DY-0	(N,G)		EN-N = 0.016 0.46	....	M:SIG	88098
DY-156	(AR40,G)	TN:48-CD-116	EN = 90.	90.	M:SPC,SIG D:MULT	89086
DY-157	(N,G)	TN:66-DY-156	EN-N = 0.5 .....	....	M:SIG	89074
DY-160	(G,G')	FN:66-DY-160	EN = ---- 4.1	100. 150.	M:SPC,DST D:E,J-PI,B(EL)	88097
DY-161	(N,G)	TN:66-DY-160	EN-N = 0.016 0.46	....	M:SIG	88098
DY-162	(G,G')	FN:66-DY-162	EN = ---- 4.1	100. 150.	M:SPC,DST D:E,J-PI,B(GL)	88097
(N,G)	TN:66-DY-161	EN-N = 0.016 0.46	....	M:SIG	88098	
DY-163	(N,G)	TN:66-DY-162	EN-N = 0.016 0.46	....	M:SIG	88098
DY-164	(G,G')	FN:66-DY-164	EN = ---- 4.1	100. 150.	M:SPC,DST D:E,J-PI,B(EL)	88097
(G,G')	FN:66-DY-164	EN = 2. 4.	....	R:SPC	90053	
(E,E')	FN:66-DY-164	EN-E = 24.3 139.3	154. 165.	M:SPC,DST,SIG,FMF D:B(EL)	87099	
(E,E')	FN:66-DY-164	EN-E = 20. 220.	85. 165.	M:SPC,DST,FMF D:MULT,B(EL),E,J-PI	89062	
(E,E')	FN:66-DY-164	EN-E = 24. .....	....	R:SPC,FMF	90053	
(N,G)	TN:66-DY-163	EN-N = 0.016 0.46	....	M:SIG	88098	
DY-165	(N,G)	TN:66-DY-164	EN-N = 0.016 0.46	....	M:SIG	88098
Z=67 HOLMIUM A=166						
HO-166	(N,G)	TN:67-HO-165	EN-N = 0.01 0.8	125.	M:SPC,SIG	86079

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=68 ERBIUM A=163,167,168,170						
ER-0	(G,ABS) G,MON		EN = 0.122 0.136	0.	M:SIG D:TOT	87096
ER-163	(N,G)	TN:68-ER-162	EN-N = 0.5 .....	....	M:SIG	89074
ER-167	(G,G') (G,G')	FN:68-ER-167	EN = ---- 6.5 EN = 4. 12.	....	D:IRAT M:SIG,SIG-M	87056E 89087
ER-168	(G,N) (E,E')	FN:68-ER-167	EN = ---- 12. EN-E = 25. .....	....	D:IRAT R:SPC,FMF	87056E 90053
ER-170	(G,A)	FN:66-DY-166	EN = 18. 25.	....	M:ABY,SIG,ABI	90055
Z=69 THULIUM A=169						
TM-169	(G,N) G,MON	FN:69-TM-168	EN = 8.999 .....	....	M:SPC D:Q,E	86083
Z=70 YTTERBIUM A=169						
YB-169	(N,G)	TN:70-YB-168	EN-N = 0.5 .....	....	M:SIG	89074
Z=71 LUTETIUM A=ECTECTB.CMEC[
Lu-0	(N,G)		EN-N = 0.01 0.8	125.	M:SPC,SIG	86079
Z=72 HAFNIUM A=179,180						
HF-179	(G,G') (G,G')	FN:72-HF-179	EN = ---- 6. EN = 4. 12.	....	D:IRAT M:SIG,SIG-M	87056E 89087
HF-180	(G,N)	FN:72-HF-179	EN = ---- 11.	D:IRAT	87056E
Z=73 TANTALUM A=180,181,182						
TA-0	(G,F)		EN = 800. 1800.	M:SIG	90044

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
TA-180	(G,G')	FN:73-TA-180	EN = ----		M:ABI	88112
			..... 6.	....		.....
	(G,G')	FN:73-TA-180	EN = 6.	....	M:SPC,ABI	90073
		
	(G,N)	FN:73-TA-179	EN = ----			90057
			..... 25.	....	D:E-AV	.....
TA-181	(G,G)	FN:73-TA-181	EN = 0.344	15.	M:SPC,DST,SIG	87091
G,MON			..... 1.408	45.		.....
(G,G)	FN:73-TA-181	EN = 8.	62.	....	M:SPC,DST,SIG	89088
G,MON			..... 18.	137.	D:MULT	.....
(G,G')	FN:73-TA-181	EN = 2.8	90.	....	M:SPC,ABY,SIG	87100E
			..... 4.	....		.....
	(G,G')	FN:73-TA-181	EN = 3.	90.	M:SPC-DP,ABY	90074
			..... 5.5	....		.....
	(G,N)	FN:73-TA-180	EN = ----			87056E
			..... 30.	....	D:IRAT	.....
	(G,3N)	FN:73-TA-178	EN = 24.	....		87056E
			..... 32.	....	D:IRAT	.....
	(G,P)	FN:72-HF-180	EN = ----			87056E
			..... 23.	....	D:IRAT	.....
	(G,A)	FN:71-LU-177	EN = 18.	....	M:ABY,SIG,ABI	90055
			..... 25.	....		.....
	(G,BE7)	FN:69-TM-174	EN = 5000.	....	M:ABY	89069
		
	(G,NA24)	FN:62-SM-157	EN = 5000.	....	M:ABY	89069
		
	(E,E'+P)	FN:72-HF-180	EN-E = 780.	50.1	M:SPC,DST,MES,SIG	89033
			.....	72.9	....	.....
TA-182	(N,G)	TN:73-TA-181	EN-N = 0.5	....	M:SPC,MLTPL,SIG	86070
			..... 3.	....		.....
	(N,G)	TN:73-TA-181	EN-N = 0.01	125.	M:SPC,SIG	86079
			..... 0.8	....		.....

Z=74 TUNGSTEN A=181,182,183,184,185,187						
W- 0	(G,G)	FN:74- W- 0	EN = 0.344	15.	M:SIG	87076
G,MON			..... 1.408	45.		.....
(G,G)	FN:74- W- 0	EN = 60.	5.	....	M:DST,SIG,FMF	89070
		..... 662.	140.	....		.....
(N,G)		EN-N = 0.5	....		M:SPC,MLTPL,SIG	86070
		..... 3.	....			.....
(N,G)		EN-N = 0.005	....		M:SIG	86084
		..... 0.4	....			.....
W-181	(E,E')	FN:74- W-181	EN-E = 960.	37.5	M:SIG	89001
		..... 1500.	....			.....
(N,G)	TN:74- W-180	EN-N = 0.005	....		M:SIG	86084
		..... 0.4	....			.....
W-182	(G,N)	FN:74- W-181	EN = ----			87056E
			..... 12.	....	D:IRAT	.....
	(G,N)	FN:74- W-181	EN = ----			90057
			..... 25.	....	D:E-AV	.....
W-183	(G,G')	FN:74- W-183	EN = ----			87056E
			..... 6.	....	D:IRAT	.....
	(G,G')	FN:74- W-183	EN = 4.	....	M:SIG,SIG-M	89087
			..... 12.	....		.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
W-183	(N,G)	TN:74- W-182	EN-N = 0.5	3.	M:SPC,MLTPL,SIG	86070
	(N,G)	TN:74- W-182	EN-N = 0.005	0.4	M:SIG	86084
		
W-184	(G,N)	FN:74- W-183	EN = ----	10.	D:IRAT	87056E
	(N,G)	TN:74- W-183	EN-N = 0.5	3.	M:SPC,MLTPL,SIG	86070
	(N,G)	TN:74- W-183	EN-N = 0.005	0.4	M:SIG	86084
		
W-185	(N,G)	TN:74- W-184	EN-N = 0.002	0.024	M:SPC,INT	87101
			.....	....	D:E,J-PI	.....
W-187	(N,G)	TN:74- W-186	EN-N = 0.5	3.	M:SPC,MLTPL,SIG	86070
	(N,G)	TN:74- W-186	EN-N = 0.005	0.4	M:SIG	86084
	(N,G)	TN:74- W-186	EN-N = 0.002	0.024	M:SPC,INT	87101
			.....	....	D:E,J-PI	.....
Z=75 RHENIUM A=185						
RE- 0	(N,G)		EN-N = 0.5	....	M:SPC,MLTPL,SIG	86070
			..... 3.0	....	M:SIG	87102
			..... 0.003	....		.....
			..... 1.9	....		.....
RE-185	(G,N)	FN:75-RE-184	EN = ----	30.	M:SIG,SIG-M	89089
			.....	....	D:IRAT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
OS-188	(E,E')	FN:76-OS-188	EN-E = 200.	30.	M:DST,SIG	87103
	(E,E')	FN:76-OS-188	..... 500.	74.	....	.....
			..... 200.	25.	M:DST	88104
			..... 500.	74.	.... D:TRDEN,RDI,E,J-PI	.....
OS-190	(E,E')	FN:76-OS-190	EN-E = 200.	30.	M:DST,SIG	87103
	(E,E')	FN:76-OS-190	..... 500.	74.	....	.....
			..... 200.	25.	M:DST	88104
			..... 500.	74.	.... D:TRDEN,RDI,E,J-PI	.....
OS-192	(E,E')	FN:76-OS-192	EN-E = 200.	30.	M:DST,SIG	87103
	(E,E')	FN:76-OS-192	..... 500.	74.	....	.....
			..... 200.	25.	M:DST	88104
			..... 500.	74.	.... D:TRDEN,RDI,E,J-PI	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=76 OSMIUM A=188,190,192						
PT- 0	(G,G)	FN:78-PT- 0	EN = 60.	5.	M:DST,SIG,FMF	89070
			..... 662.	140.	....	.....
	(G,ABS)		EN = 0.122	0.	M:SIG	87096
	C,MON		..... 0.136	....	D:TOT	.....
	(N,G)		EN-N = 0.5	3.0	M:SPC,MLTPL,SIG	86070
		

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=78 PLATINUM A=194,195,196,197,198						
PT- 0	(G,G)	FN:78-PT- 0	EN = 60.	5.	M:DST,SIG,FMF	89070
			..... 662.	140.	....	.....
	(G,ABS)		EN = 0.122	0.	M:SIG	87096
	C,MON		..... 0.136	....	D:TOT	.....
	(N,G)		EN-N = 0.5	3.0	M:SPC,MLTPL,SIG	86070
		

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
PT-194	(E,E')	FN:78-PT-194	EN-E = 200.	30.	M:DST,SIG	87103
			..... 500.	... 74.	.....	.....
PT-194	(E,E')	FN:78-PT-194	EN-E = 200.	25.	M:SPC,DST	88104
			..... 500.	... 74.	D:TRDEN,RDI,E,J-PI	.....
PT-195	(N,G)	TN:78-PT-194	EN-N = 0.1		M:SIG,SIG-M	90046
			..... 12.	...	.....	.....
PT-196	(E,E')	FN:78-PT-196	EN-E = 200.	30.	M:DST,SIG	87103
			..... 500.	... 74.	.....	.....
PT-196	(E,E')	FN:78-PT-196	EN-E = 200.	25.	M:SPC,DST	88104
			..... 500.	... 74.	D:TRDEN,RDI,E,J-PI	.....
PT-197	(N,G)	TN:78-PT-196	EN-N = 0.1		M:SIG	90046
			..... 12.	...	.....	.....
PT-198	(G,N)	FN:78-PT-197	EN = ----			87056E
			..... 30.	...	D:IRAT	.....

Z=79 GOLD A=197						
AU- 0	(N,G)		EN-N = 0.01	125.	M:SPC,SIG	86079
			..... 0.8	...	.....	.....
(P,G)			EN-P = 72.	30.	M:SPC,DST	88032
			.....	150.	...	.....
AU-197	(G,N)	FN:79-AU-196	EN = ----			87056E
			..... 12.	...	D:IRAT	.....
(G,N)		FN:79-AU-196	EN = 12.	4PI	M:SIG	87089
			..... 17.	...	.....	.....
(G,2N)		FN:79-AU-195	EN = 12.	4PI	M:SIG	87089
			..... 17.	...	.....	.....
(G,XN)			EN = 12.	4PI	M:SIG	87089
			..... 17.	...	.....	.....
(G,F)			EN = 60.		M:SIG,FBIL,FPRB	89090E
			..... 64.	...	.....	.....
(G,F,MON,POL)			EN = 100.		M:ABY,SIG,FPRB,FBIL	89091
			..... 300.	...	.....	.....
(G,F)			EN = ----		M:SPC-IMP,MDIS,FBIL	89092
			..... 200.	...	.....	.....
(P,G)		TN:78-PT-196	EN-P = 168.	50.	M:SPC,DST,SIG	89038
			..... 200.	... 150.	...	.....

Z=80 MERCURY A=198						
HG-198	(G,N)	FN:80-HG-197	EN = ----			87056E
			..... 30.	...	D:IRAT	.....

Z=81 THALLIUM A=203,205						
TL- 0	(G,G)	FN:81-TL- 0	EN = 8.	134.	M:SPC,DST,SIG	89088
	G,MON		..... 18.	... 136.	D:MULT	.....
(N,G)			EN-N = 0.5		M:SPC,MLTPL,SIG	86070
			..... 3.0	...	.....	.....
TL-203	(G,G)	FN:81-TL-203	EN = 8.	134.	M:SPC,DST,SIG	89088
	G,MON		..... 18.	... 136.	D:MULT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
TL-203	(G,N)	FN:81-TL-202	EN = 11.	90.	M:SPC-DP,SIG,SIG-M	90075
	(G,2N)	FN:81-TL-201	EN = 11.	90.	M:SPC-DP,SIG,SIG-M	90075
TL-205	(G,G)	FN:81-TL-205	EN = 8.	134.	M:SPC,DST,SIG	89088
	G,MON		..... 18.	... 136.	D:MULT	.....
(E,E)		FN:81-TL-205	EN-E = 150.	180.	M:FNF	87104
	(E,E'+P)	FN:80-HG-204	EN-E = 410.	...	D:MULT	.....
			.....	...	M:SPC,SIG	87105
			.....	...	D:STR	.....

Z=82	LEAD	A=206,207,208
------	------	---------------

PB- 0	(G,G)	FN:82-PB- 0	EN = 0.847	7.7	M:SPC,DST,SIG	86088
	G,MON		..... 3.253...	45.	D:SCAM	.....
	(G,G)	FN:82-PB- 0	EN = 0.344	15.	M:SIG	87076
	G,MON		..... 1.408...	45.	.....	.....
	(G,G)	FN:82-PB- 0	EN = 0.344	15.	M:SPC,DST,SIG	87091
	G,MON		..... 1.408...	45.	.....	.....
	(G,G)	FN:82-PB- 0	EN = 0.272	10.5	M:DST,SIG	87097
	G,MON		..... 0.682...	59.	.....	.....
	(G,G)	FN:82-PB- 0	EN = 60.	5.	M:DST,SIG,FNF	89070
			..... 662.	... 140.	.....	.....
	(G,N)		EN = 20.	55.	M:DST,SIG,ASYM	87066
			..... 35.	... 125.	.....	.....
	(G,N)		EN = 12.	4PI	M:SIG	87089
	G,MON		..... 17.	...	.....	.....
	(G,N)		EN = 20.	55.	M:SPC,DST,SIG,SIG-V	87095
	G,MON		..... 30.	... 125.	.....	.....
	(G,N)		EN = 20.	55.	M:SPC,SIG,DST,ASYM	88068
	G,MON		..... 39.	... 125.	.....	.....
	(G,2N)		EN = 12.	4PI	M:SIG	87089
	G,MON		..... 17.	...	.....	.....
	(G,XN)		EN = 12.	4PI	M:SIG	87089
	G,MON		..... 17.	...	.....	.....
	(G,ABS)		EN = 0.2764	0.	M:SIG	87106
	G,MON		..... 0.612...	D:TOT	.....	.....
	(G,F)		EN = 60.		M:SIG,FBIL,FPRB	89090E
	G,MON,POL		..... 64.	...	.....	.....
PB-206	(G,G)	FN:82-PB-206	EN = ----	90.	M:SPC,DST,ASYM	86085
	G,POL		..... 12.	... 127.	D:E,J-PI,MULT,G-WIDTH	.....
	(G,G)	FN:82-PB-206	EN = 12.	60.	M:SPC,DST,SIG,FNF,ABI	86086
	G,MON		..... 30.	... 135.	D:TOT	.....
	(G,ABS)		EN = 12.	...	M:SIG	86086
	G,MON		..... 48.	...	D:TOT	.....
	(E,E'+P)	FN:81-TL-205	EN-E = 350.		M:SPC	86087
			..... 410.	...	D:STR,SPCTF	.....
PB-207	(E,E)	FN:81-TL-205	EN-E = 150.	180.	M:FNF	87104
			.....	...	D:MULT	.....
PB-208	(G,G')	FN:82-PB-208	EN = 10.	30.	M:DST,SIG	88105
	G,MON	 100.	... 150.	D:TOT
	(G,N)	FN:82-PB-207	EN = ----	14.	D:IRAT
	(G,ABS)		EN = 7.	R:SIG	90086	
	(G,F)		EN = 35.	...	M:SIG	90076
		 250.

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NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
PB-208	(E,E'+N)	FN:82-PB-207	EN = 9.	90.	M:SPC,COINC,RSP	88123
			..... 16.	...	D:STFNU,MULT	.....
	(E,E'+P)	FN:81-TL-207	EN-E = 350.	...	M:SPC	86087
			..... 410.	...	D:STR,SPCTF	.....
	(E,E'+P)	FN:81-TL-207	EN-E = 410.	...	M:SPC,SIG	87105
			.....	...	D:STR	.....
	(E,E'+P)	FN:81-TL-207	EN = 0.	...	R:RSP,SPC-IMP	90006
			..... 10.	...	.....	.....
	(E,E'+P)	FN:81-TL-207	EN = 0.	...	M:SPC,SPC-IMP	90009
			..... 30.	...	D:SPCTF,STR	.....
	(E,F)		EN-E = 35.	20.	M:DST,ANIS	89093
			.....	80.	...	.....
	(E,F)		EN = 35.	...	M:SIG	90076
			..... 250.	...	.....	.....

Z=83 BISMUTH A=208,209,210						
BI-208	(G,N)	FN:83-BI-207	EN = ----	90057		
			..... 25.	...	D:E-AV	.....
BI-209	(G,G)	FN:83-BI-209	EN = 8.	60.	M:SPC,DST,SIG	89088
	G,MON		..... 18.	135.	D:MULT	.....
	(G,N)	FN:83-BI-208	EN = 7.	40.	M:SPC,DST,SIG,SIG-O	86082
	G,MON		..... 11.4	150.	D:MULT,INTCP	.....
	(G,P)		EN = 43.	...	M:SIG,FPRB	86089
			..... 250.	...	.....	.....
	(G,F)		EN = 100.	...	M:ABY,SIG,FPRB	87107
	G,MON		..... 300.	...	.....	.....
	(G,F)		EN = 60.	...	M:SIG,FBIL,FPRB	89090E
	G,MON,POL		..... 64.	...	.....	.....
	(G,F)		EN = 100.	...	M:ABY,SIG,FPRB,FBIL	89091
	G,MON		..... 300.	...	.....	.....
	(G,F)		EN = ----	...	M:SPC-IMP,NDIS,FBIL	89092
			..... 200.	...	.....	.....
	(E,F)		EN-E = 43.	...	M:SIG,FPRB	86089
			..... 250.	...	.....	.....
BI-210	(N,G)	TN:83-BI-209	EN-N = 0.5	...	M:SPC,MTP,(SIG	86070
			..... 3.	...	.....	.....
	(N,G)	TN:83-BI-209	EN-N = 17.7	55.	M:SPC,SIG,ASYM	90077
			..... 22.	125.	D:MULT	.....

Z=90 THORIUM A=232,233,235,238						
TH-232	(G,G')	FN:90-TH-232	EN = 2.9	117.	M:SPC,DST,PMF	88107
			..... 4.1	165.	D:B(EL),PTOE	.....
	(G,XN)		EN = 5.	...	M:SIG	87110
	G,MON		..... 11.	...	.....	.....
	(G,NA24)	FN:80-HG-208	EN = 18.	0.	M:SPC-DP,ABY,SIG	86090E
			..... 28.	...	.....	.....
	(G,F)		EN = 5.5	...	M:SIG,N-AV	86091
			..... 7.	...	.....	.....
	(G,F)		EN = 5.8	90.	M:SIG,FPRB	86092E
	G,MON		..... 12.	...	D:FBAR	.....
	(G,F)		EN = 20.	...	M:SIG,FPRB	87108E
	G,MON		..... 110.	...	.....	.....
	(G,F)		EN-E = 5.	...	M:SIG,FPRB	87109
			..... 35.	...	D:MULT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
TH-232	(G,F)		EN = 5.	...	M:SIG	87110
	G,MON		..... 11.	...	M:DST,ANIS	88099E
	(G,F)		EN = 6.	...	.....	.....
			..... 10.	...	M:SIG,PNY	89094
	(G,F)		EN = 6.	...	M:SIG,ASYM	89095
			..... 20.	...	D:MULT	.....
	(G,F)		EN = 5.5	90.	M:SPC,ASYM	89095
	G,POL		..... 20.	...	.....	.....
	(E,E')	FN:90-TH-232	EN-E = 20.2	117.	M:SPC,DST,PMF	88107
			..... 55.9	165.	D:B(EL),PTOE	.....
	(E,E')	FN:90-TH-232	EN-E = 20.	85.	M:SPC,DST,PMF	89062
			..... 220.	165.	D:MULT,B(EL),E-J-PI	.....
	(E,F)		EN-E = 5.	...	M:SIG,FPRB	87109
			..... 35.	...	D:MULT	.....
	(E,F)		EN-E = 4.54	14.	M:DST,SIG	90078
			..... 6.64	110.	...	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
TH-233	(N,G)	TN:90-TH-232	EN-N = 3.	...	M:SIG	88106
		
TH-235	(N,G)	TN:90-TH-234	EN-N = 3.	...	M:SIG	88106
		
TH-238	(N,G)		EN-N = 3.	...	M:SIG	88106
		

Z=91 PROTACTINIUM A=231,233						
PA-231	(G,F)		EN = 4.8	...	M:ABY,SIG	87111
			..... 7.	...	...	.....
PA-233	(P,G)	TN:90-TH-232	EN-P = 7.	...	M:SIG	86093
			..... 20.	...	...	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
U- 0	(G,G)	FN:92- U- 0	EN = 0.344	15.	M:SPC,DST,SIG	87091
	G,MON		..... 1.408	45.	...	.....
	(G,G)		EN = 60.	5.	M:DST,SIG,PMF	89070
			..... 662.	140.	...	.....
	(G,G)		EN = 0.465	1.02	M:SPC,SIG	89100
	G,MON		..... 2.842	1.8	...	.....
	(G,F)		EN = 100.	...	M:ABY,SIG,FPRB,FBIL	89091
	G,MON		..... 300.	...	...	.....
	(G,F)		EN = 200.	...	M:SPC-IMP,NDIS,FBIL	89092
U-233	(G,N)	FN:92- U-232	EN = 5.	4PI	M:SIG,ABI	86094E
	G,MON		..... 18.	...	D:TOT	.....
	(G,F)		EN = 5.	4PI	M:SIG,ABI,N-AV	86094E
	G,MON		..... 18.	...	...	.....
	(G,F)		EN = 5.43	...	M:SIG,FBIL	89096E
	G,MON		..... 9.72	...	D:FBAR	.....
	(G,F)		EN = 5.	...	M:ABY,SIG	90079
			..... 11.	...	...	.....
	(E,E'+F)		EN = 150.	...	M:SPC,COINC,SIG,FPRB	90080
			..... 550.	...	...	.....
U-234	(G,N)	FN:92- U-233	EN = 7.	4PI	M:SIG,ABI	86094E
	G,MON		..... 18.	...	D:TOT	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
U-234	(G,F)		EN = 5.	4PI	M:SIG,ABI,N-AV	86094E
	G,MON		..... 18.	...	.....	.....
	(G,F)		EN = 6.4		M:DST	87112E
			..... 9.	...	.....	.....
	(G,F)		EN = 6.	...	M:DST,ANIS	88099E
			..... 10.	...	.....	.....
	(G,F)		EN = 5.5	...	M:DST	88108
			..... 6.5	...	.....	.....
	(G,F)		EN = 5.5	0.	M:DST,SIG	90081
			..... 7.	180.	D:MULT	.....
	(G,F)		EN = 12.		M:KE,MDIS	90082
			..... 20.	...	.....	.....
	(E,F)		EN-E = 5.		M:SIG	86095
			..... 7.	...	D:MULT,B(EL)	.....
U-235	(G,F)		EN = ---		M:RLY,FBIL,PPRB	86096E
			..... 11.5	...	.....	.....
	(G,F)		EN = 20.		M:SIG,PPRB	87108E
	G,MON		..... 110.	...	.....	.....
	(G,F)		EN = ---		M:ABY	89097
			..... 4320.	...	.....	.....
	(G,F)		EN = 5.		M:ABY,SIG	90079
			..... 11.	...	.....	.....
	(G,F)		EN = 300.		M:SIG	90083
	G,MON		..... 3500.	...	.....	.....
	(E,E'+F)		EN-E = 185.		M:MDIS,ASYM,SIG	89098
			..... 185.	...	D:MULT	.....
	(E,E'+F)		EN-E = 185.		M:COINC	89099
			..... 185.	...	D:MULT,STOAS	.....
	(E,E'+F)		EN-E = 78.	0.	M:COINC,SPC,DST,SIG	90084
			..... 183.	180.	D:MULT,SRE,STR	.....
	(E,F)		EN-E = 1330.		M:SIG	89097
			..... 4320.	...	.....	.....
U-236	(G,F)		EN = 6.		M:DST,ANIS	88099E
			..... 10.	...	.....	.....
	(G,F)		EN = ---		M:SIG,MDIS,DST	88100
			..... 16.	...	.....	.....
	(G,F)		EN = 5.7	4PI	M:DST,MDIS	89099
			..... 16.	...	.....	.....
	(E,F)		EN-E = 5.		M:SIG	86095
			..... 7.	...	D:MULT,B(EL)	.....
U-237	(G,F)		EN = ---		M:RLY,FBIL,PPRB	86096E
			..... 11.5	...	.....	.....
(N,G)	TN:92- U-236	EN = 0.96			M:SIG	86097E
		..... 3.3	...	.....	.....	.....
(N,G)	TN:92- U-236	EN-N = 0.001			R:SIG	86098
		..... 14.	...	.....	.....	.....
(N,G)	TN:92- U-236	EN-N = 0.3			M:SIG	88109
		..... 2.2	...	.....	.....	.....
U-238	(G,G)	TN:92- U-238	EN = 4.8	0.	M:SPC,DST,SIG	87114E
	G,MON		..... 6.4	135.	...	.....
(G,G)	TN:92- U-238	EN = ---			M:SIG	88110
			..... 10.	...	D:MULT	.....
(G,G)	TN:92- U-238	EN = 8.	60.		M:SPC,DST,SIG	89088
	G,MON		..... 18.	90.	D:MULT	.....
(G,G')	TN:92- U-238	EN = 2.9	117.		M:SPC,DST,PPF	88107
		..... 4.1	165.	...	D:B(EL),PTOE	.....
(G,N)	TN:92- U-237	EN = 4.	90.		M:ABY	89002
		..... 8.	...	.....	.....	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
U-238	(G,XM)		EN = 5.		M:SIG	87110
	G,MON		..... 11.	...	.....	.....
	(G,ABS)		EN = 10.		M:SIG	88111
			..... 20.	...	.....	.....
	(G,F)		EN = 20.		M:SIG,PPRB	87108E
	G,MON		..... 110.	...	.....	.....
	(G,F)		EN = 5.		M:SIG	87110
	G,MON		..... 11.	...	.....	.....
	(G,F)		EN = 6.4		M:DST	87112E
			..... 9.	...	.....	.....
	(G,F)		EN = 6.		M:DST,ANIS	88099E
			..... 10.	...	.....	.....
	(G,F)		EN = 46.4		M:SIG,ABX	88101E
	G,MON,POL		..... 71.9	...	.....	.....
	(G,F)		EN = 5.5		M:DST	88108
			..... 6.5	...	.....	.....
	(G,F)		EN = 6.		M:SIG,PNY	89094
			..... 20.	...	D:MULT	.....
	(G,F)		EN = ---		M:ABY	89097
			..... 4320.	...	.....	.....
	(G,F)		EN = 5.		M:ABY,SIG	90079
			..... 11.	...	D:MULT,SIG	90081
	(G,F)		EN = 5.5	0.	M:DST,SIG	90083
	G,MON		..... 300.		M:SIG	90083
	(G,F)		EN = 11.	15.	M:SIG,MDIS,DST,ANIS	90085
	G,MON		..... 16.	165.	...	.....
(E,E')	TN:92- U-238	EN-E = 100.	60.		M:RSP	86099
		..... 690.	160.	...	.....	.....
(E,E')	TN:92- U-238	EN-E = 20.2	117.		M:SPC,DST,PPF	88107
		..... 55.9	185.	...	D:B(EL),PTOE	.....
(E,E')	TN:92- U-238	EN-E = 20.	85.		M:SPC,DST,PPF	89062
		..... 220.	165.	...	D:MULT,B(EL),E,J-PI	.....
(E,E'+F)		EN-E = 80.3	55.		M:SPC,DST,COINC,PPF	86100
		..... 163.8	174.	...	D:MULT	.....
(E,E'+F)		EN-E = 78.			M:SPC,SIG,PPF	87113
		..... 183.	...	D:MULT,STR	.....
(E,E'+F)		EN = 5.5	0.		M:DST,COINC,SIG	88118
		..... 15.	180.	...	D:MULT,E,J-PI	.....
(E,E'+F)		EN-E = 185.			M:MDIS,ASYM,SIG	89098
		..... 185.	...	D:MULT	.....
(E,E'+F)		EN-E = 185.			M:COINC	89099
		..... 185.	...	D:MULT,STOAS	.....
		EN = 150.			M:SPC,COINC,SIG,PPF	90080
		..... 550.	...	.....	.....	.....
(E,E'+F)		EN-E = 78.	0.		M:COINC,SPC,DST,SIG	90084
		..... 183.	180.	...	D:MULT,SRE,STR	.....
(E,F)		EN-E = 5.			M:SIG	86095
		..... 7.	...	D:MULT,B(EL)	.....
(E,F)		EN-E = 1330.			M:SIG	89097
		..... 4320.	...	.....	.....	.....
U-239	(N,G)	TN:92- U-238	EN-N = 0.001		R:SIG	86098
	(N,G)	TN:92- U-238	EN-N = 0.004		M:SIG	86101E
	(N,G)	TN:92- U-238	EN-N = 0.1		M:SIG	90046
			..... 12.	...	.....	.....

NUCLEUS	REACTION	FINAL/TARGET	ENERGY	ANGLE	QUANTITY	NUMBER
Z=93 NEPTUNIUM A=237,238						

NP-237	(G,N)	FN:93-NP-236	EN = 5.	4PI	M:SIG,ABI	86094E
	G,MON		..... 18.	...	D:TOT	.....
	(G,2N)	FN:93-NP-235	EN = 12.	4PI	M:SIG,ABI	86094E
	G,MON		..... 18.	...	.....	.....
	(G,F)		EN = 5.	4PI	M:SIG,ABI,N-AV	86094E
	G,MON		..... 18.	...	.....	.....
	(G,F)		EN = ----		M:RLY,FBIL,FPRB	86096E
			..... 11.5	...	.....	.....
	(G,F)		EN = 5.58	0.	M:DST	86102
	G,MON		..... 8.99	90.	.....	.....
	(G,F)		EN = 6.	10.	M:SIG	88102
			..... 60.	100.	D:MULT	.....
	(E,F)		EN-E = 6.	10.	M:SIG	88102
			..... 60.	100.	D:MULT	.....
NP-238	(N,G)	TN:93-NP-237	EN-N = 0.001		R:SIG	86098
			..... 14.	...	.....	.....

PU-239	(G,N)	FN:94-PU-238	EN = 5.	4PI	M:SIG,ABI	86094E
	G,MON		..... 18.	...	D:TOT	.....
	(G,2N)	FN:94-PU-237	EN = 5.	4PI	M:SIG,ABI	86094E
	G,MON		..... 18.	...	.....	.....
	(G,F)		EN = 5.	4PI	M:SIG,ABI,N-AV	86094E
	G,MON		..... 18.	...	.....	.....
	(G,F)		EN = ----		M:RLY,FBIL,FPRB	86096E
			..... 11.5	...	.....	.....
	(G,F)		EN = 5.43		M:SIG,FBIL	89096E
	G,MON		..... 9.72	...	D:FBAR	.....

AM-241	(G,F)		EN = ----		M:RLY,FBIL,FPRB	86096E
			..... 11.5	...	.....	.....
AM-243	(G,N)	FN:95-AM-242	EN = 450.		M:SIG	88103
			..... 950.	...	D:PTOE,ITOP	.....
	(G,F)		EN = ----		M:RLY,FBIL,FPRB	86096E
			..... 11.5	...	.....	.....
	(G,F)		EN = 450.		M:SIG,ISY	88103
			..... 950.	...	D:IRAT,PTOE	.....
	(E,N)	FN:95-AM-242	EN = 450.		M:SIG	88103
		 950.	...	D:PTOE,ITOP
	(E,F)		EN = 450.		M:SIG	88103
		 950.	...	D:PTOE

V. БИБЛЮГРАФИЯ

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COTTMAN B.H.	86032 87001 87029 89031 90027
COUNTRYMAN P.J.	86100
CRANNELL H.	89036
CRAWFORD G.I.	86029 88037 90050
CRESPO R.	89022
CRONA S.	87083
CSEH J.	88064
CUPPS V.R.	87009
CURRAN A.R.	90050
CZERSKI K.	87022

D D'ANGELO A.	90001
D'ANGELO S.	86006E 88022E 88101E 89090E 90011
D'HOSE N.	89007
DALE D.S.	89080
DALLAKJAN K.R.	90007
DANAGULIAN A.S.	88090 89073 89078 90060 90061
DANAGULIAN S.S.	90007
DANCER S.N.	88037
DAVIDSON W.F.	87057 88063 89049
DAVINSON T.	90030
DAVIS N.	88015
DAVLETSHIN A.N.	86097E
DAVYDOV M.G.	87056E 87071E 87081E 87086E 88087
DAY D.B.	88120 89001
DE BARROS S.	89070
DE BOTON N.	89007
DE CLERCQ A.	90082
DE ESCH H.P.L.	86063 86068 88066
DE FOREST T.	86033 87020
DE FRENNÉ D.	90078 90082
DE GRAEVE A.	86027E 88043 89004 89032
DE JAGER C.W.	86075 87099 88030 88041 88057 88074 89035 89062 89066
DE JONG M.	89082 90048 90068
DE LEO R.	88033
DE LIMA D.A.	90068
DE MINIAC A.	89058 90044
DE MORAES M.A.P.V.	88024
DE OLIVEIRA V.C.	89096E
DE PASCALE M.P.	88101E
DE SANCTIS E.	86006E 88022E 88101E 89090E 90011
DE SANCTIS M.	86004 86031 87008 87012 87107 88013 88071 89005 89012
DE SOUSA E.V.	89018 89091 89092
DE VOIGT M.J.A.	90011
DE VRIES C.	89058
DE VRIES H.	88086
DE VRIES J.W.	88073
DE WIT P.	86040 86041 88058 88113
DE WITT HUBERTS P.K.A.	86019 86033 86062 86087 87011 87020 87105 88016 88033
DEADY M.	88036 88072 88073 88116 88122 89024 89030 89060 89062
DEBEBE B.	90006 90009
DEBEVEC P.T.	86004
DECHAMBRIER G.	86046
DEININGER J.R.	86086
DEL BIANCO W.	88004
DELLI CARPINI D.	88004
DEMENKHINA N.A.	88088 89063 89069
DEMENTIJ S.V.	88018
DEMOS P.	88120
DEN HEIJER P.	88075
DEN HERDER J.W.A.	86019 86033 86062 86087 87011 87020 87105 88116 88122
DENJAK V.V.	89011 89095 90003
DENNIS L.C.	89001
DEOM C.	88006
DESCOUEVEMENT P.	88053
DEVIS C.A.	86003 86015
DHUGA K.S.	90048
DI GIACOMO P.	86004 86031
DIAS J.F.	90045
DIETRICH F.S.	86034 88004
DIETRICH S.S.	86094E 87089

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DIXIT S.	88050				
DIJKOV S.N.	88027				
DMITRIEV V.F.	87043				
DODGE W.	88120				
DODGE W.R.	87001	88117	90080		
DODSON G.W.	86016	88020	88120	89033	89042
DOERFLER R.	88123				
DOGJUST I.V.	87028	88005	88038	89029	89034
DOLBILKIN B.S.	88079				
DOLFINI S.M.	90069				
DONNE A.J.H.	87048				
DONOGHUE T.R.	86042	87014	87039	87050	88034
DOORNHOF D.	88041				
DOW K.	88120				
DOWDY E.J.	86094E				
DOWELL D.H.	86047	87066	87095	88068	
DOZONO Y.	90032				
DRAKE D.M.	86017	86034	90031		
DREUX P.	88072				
DREXLER J.	86081				
DRISI S.	88032	89038			
DUBACH J.	87034	88023	88030	89025	89037
DUBENSKIJ A.P.	87100E	90065	90074		
DUBENSKIJ V.P.	87100E	90065	90074		
DUBUC J.	86072				
DUNN P.C.	88013				
DUPONT C.	87003	88006			
DYTLAWSKI N.	86021E				
DYTMAN S.A.	88002	88007	88120		
DZILAVJAN L.	89071				

E EBBING H.	89054				
EBERHARD C.D.	88089	88112			
EBISAWA K.	86050				
EDEN J.	88029E	88039			
EGANOV V.S.	90007				
EGERLHOF P.	86010	87103	88104		
EICHLER J.	89070				
EIRO A.M.	86013	89022			
EL-KATEB S.	86066				
ELBAKJAN G.M.	90007				
ELWYN A.J.	88060				
EMERY G.T.	86075				
EMMA V.	87107	89091			
EMRICH H.J.	86045	87113	89035	89098	89099
ENDO I.	86022				
ENDT P.M.	86040	86041	88058	88113	90041
ENRICH H.J.	88118				
ENT R.	86019	87020	87105	88016	89024
EPSTEIN M.B.	89031	90027			
ERAMZHJAN R.A.	87021	89023	90086		
ERAN L.V.	89020				
ERLANDSSON B.	87078				
ERMAN V.P.	88021	89016			
ESAULOV A.S.	87010	87013			
ESKOLA K.	87078				
EVANS H.C.	87054	88044			
EVSEEV I.G.	86023	87018E	87019E	87074	87075
	89095	90003	90023		

F FABENE R.	86056				
FACC1 M.J.	87036E				

FAGG L.W.	88074	89036	90048		
FAGOT J.	87108E	88024			
FALLOU J.L.	87108E	88024			
FARKHONDEH M.	88120	90048			
FARTUSHNYJ V.A.	86023	87018E	87074	87075	88027
FATYGA M.	87009				
FELDMAN G.	86047	87073	88017	90016	
FERDINANDE H.	86027E	87058	88043	89004	89032
FETTWEIS P.	89088				
FIELDING H.	86003				
FILATENKOV A.A.	88106				
FILIPPONE B.F.	88031				
FILIPPONE B.W.	87050	88044	88052	88119	89052
FINDLAY D.J.S.	86057	86091			
FINN J.M.	86032	86036	86037	86080	87029
	90027	90036			
FISCHER B.	86081				
FISHER G.A.	88054				
FLANZ J.B.	88120	89031	90051		
FLEMOV G.N.	86076				
FLYNN D.	87090				
FOMINENKO V.P.	86020E				
FORNAL B.	89071				
FREDERIC M.	90034				
FREEDMAN S.J.	88119	90005			
FREYTAG A.	87066	88068			
FRICKE B.	88121				
FRICKE G.	86045				
FRIEDRICH J.	88079	89044	89068		
FRODYZMA M.	88004	90051			
FROIS B.	86087	87103	87104	87105	88072
FRUHLANI S.	86006E	87012	88013	88071	89018
FUHRBERG K.	89088				
FUJI1 Y.	86030	87015	88035E		
FUKUMA H.	86022				
G GABBARD F.	87090				
GABELKO A.S.	86038E	86059E	87051E	87061E	87062E
GAI M.	87046				
GALL K.P.	88020				
GANENKO V.B.	86009E	87017	88009	88011	88012
	89013	89016	89019	89023	
GANGRSKIJ J.U.P.	86090E	90055			
GANICH P.P.	88108	89094	90081		
GANN A.V.	90017				
GARCON M.	89041	89042	90004		
GARG U.	89082				
GARGANNE P.	87108E	88024			
GARIBALDI F.	87012	88013	88071	89018	
GARIBJAN J.U.A.	90007				
CARINO G.	89033				
GARMAN E.F.	86047	87071	88051		
GARMAN M.	86066				
GAUTAM R.P.	88096				
GEARHART R.A.	88004				
GEESAMAN D.F.	88031	88074	88119	89033	90005
GERACE W.J.	89061				
GERALDO L.P.	86102				
GERARD A.	88013	88071	89018		
GET'MAN V.A.	86009E	87010	87013	88011	88019
GHELIRA L.	89007	89011	90027		
GHOSE A.M.	87097				
GIANNINI M.M.	88049				
GILAD S.	89041				

GILMAN R.	88119	89033	90005	90010					
GIMM H.	88121								
GIORDANO G.	86006E								
GIOVANETTI K.L.	88120	89001							
GIROD M.	87103	88093	88104						
GIROLAMI B.	86006E	88022E	88101E	89090E 90001					
GIUSTI C.	86033	87020	88071						
GLATKY I.M.	90059								
GLATZ F.	86043								
GLATZEL H.K.	87073								
GLAVANAKOV I.V.	86001	88001							
GLESENER J.W.	88112								
GLOVER C.W.	86075								
GOBEL R.	87108E								
GOGNY D.	88093								
GOLOSKIE R.	88120								
GOLOVKOV V.M.	89002								
GONCALVES O.D.	89070								
GOODMAN C.D.	88072								
GORBENKO E.S.	88021	89016							
GORBENKO V.G.	86007	86009E							
GORJACHEV A.M.	90057								
GORGES J.	87038	88052	89052	90033	90039	90047			
GOSSETT C.A.	87066	87073	88068						
GOUTTE D.	86087	87103	87105	88072	88092	88093	88104		
GRABMAYR P.	86087	87105	89068						
GRAFF S.M.	89052	90033	90039	90047					
GRAMEGNA F.	89071								
GRAMMATICO B.	88093								
GREEN M.C.	88031	88119	89033	90005					
GRENIER G.	86070								
GRIFFIORI K.A.	86100								
GRIGORIAN E.O.	88088	89063	89069						
GRIGORIAN N.K.	89097	90083							
GROTZ K.	86071	87085							
GU MU	87063								
GU XI-LIANG	87063								
GUARALDO C.	86004	86031	87008	87107	89005	89012	89091	89092	
GUDKOV A.N.	86097E								
GUHR T.	89062								
GUILLOT J.	89038								
GUNDLACH J.H.	87073								
GUO ZHEN-DI	87063								
GUSHCHIN V.A.	86007	86009E	87017	88009	88011	88012	88019	88021	88026
GUSHTAN M.N.	89010	89013	89016	89019	89023				
	86001								

H HAEBERLI W. 86012 86014
HAGBERG E. 87054
HAHN K.H. 87050
HAISHAW X. 90072
HAKANSSON A. 87083 90031 90077
HALDERSON D. 88023
HALL J.R. 87009
HALL S.J. 88037 90030 90050
HALLIN E. 88120
HALPERN I. 87066 87095 88068
HAMILTON W.D. 87094
HAMMER J.W. 87039 88028 89056
HAN Y. 90051
HANN K.H. 88044
HANNA S.S. 87025 88046 88054
HANSEN K. 87001 90080
HANSPER V.Y. 88083 89072

HARAKEH M.N.	86047	86075	89082	89086	90068				
HARDIE G.	88060	90047							
HARDY J.C.	87054								
HARMS V.	89056								
HARTMANN U.	89084								
HARTUNG G.	89066								
HARTY P.D.	86030	88035E	89026						
HARVEY J.A.	87065								
HASINOFF M.D.	86050								
HAUSMAN H.J.	88034	88045	89045	89046	90042				
HAWKES N.P.	86091								
HAYWARD E.	88117								
HEIL R.D.	86081	87113	88097	88100	88107	88118	89083	89085	89098
HEISENBERG J.H.	87104	88092	90067						
HEMMERT H.	86024								
HENDRIKS J.A.	86062								
HENNEBERG J.M.	88105	90028							
HENNECK R.	86010								
HERDADE S.B.	86095	87109	88102						
HERSBERGER R.L.	87090								
HERSMAN F.W.	86032	86036	86037	86080	87029	87040	87044	87104	88092
HESMONDHALGH S.K.B.	89031	89035	90036	90067	90080				
HESSELINK W.H.A.	88051								
HEYDE K.	89068								
HICKS D.	87101								
HICKS R.S.	86005	87031	87034	87052	87104	88004	88023	88030	88041
HILGEMEIER M.	88028								
HINO T.	88069								
HIROOKA M.	86039								
HITCHISON D.A.	86003	86015							
HOBBLIT S.D.	86078	86086	87041E	87087	87088	87114E	89055	89083	90070
HOIBRATEN S.	89033	89041	89042						
HOISTAD B.	88014								
HOLLICK H.	86081								
HOLLIDAY V.	90035								
HOLT R.J.	87007E	88031	88119	89033	90005	90010			
HOMMA S.	87002	87015							
HORNSHØJ P.	86093								
HOSE N.D.	89014								
HOTTA A.	86005	87052	880D4	88023	88030				
HOWARD A.J.	90038								
HU YU-DE	87063								
HUANG Z.D.	86013								
HUBER M.	90073								
HUFFMAN R.L.	86005	87031	87034	87052	88023	88030	89037		
HUGI M.	87009	88010	89017						
HUMBERT F.	89084								
HUMMEL K.D.	88107	89062							
HUSSEIN A.H.	86015								
HUXEL N.	90073								
HYDE-WRIGHT C.E.	86032	86036	86037	86080	87029	87040	87044	88050	89031
HYNES M.V.	86036	86037	86080	8704D	87044	88050	90036		
I ICHINOHE T.	86030								
IGASHIRA M.	86048	86079	88048	90032					

I ICHINOHE T. 86030
IGASHIRA M. 86048 86079 88048 90032

IL'INOV A.S.	89091	89092
ILIADIS CH.	90043	
IMANISHI A.	87035	
INCICCHITTI A.	86006E	88022E 90011
INOUE K.	86022	
IORGENSEN TERN J.	88013	
IRGASHEV K.M.	86025E	86038E 87051E 87061E 87062E 88056
ISAKOV A.G.	89079	
ISAKSSON L.	90021	90029 90035
ISHKHANOV B.S.	86038E	86051E 86059E 87021 87051E 87061E 87062E 88056 88061
ITO K.	89057	90020 90086
IVANOV D.I.	89061	
IVRI J.	88103	
IZOSIMOV I.N.	88081	88082
 J JACKSON H.E.	88031	88071 88119 89018 90005
JACOBS E.	90078	90082
JAKOVLEV M.P.	89002	
JAMMES L.	89007	89014
JANS E.	86019	86033 86062 86087 87011 87012 87020 87105 88016
JANSEN F.P.	88033	88036 88116 88122 89024 89030 89060 90014
JANZEN V.P.	90026	
JARASRANGSICHOL J.	86064	
JARMIE N.	87076	
JENNEWEIN P.	86017	
JIANFENG L.	86029	88040E 90030
JOHNSON C.H.	90072	
JOLY S.	87065	
JONES K.	86070	
JONES R.T.	88014	
JONES W.P.	90085	
JOURDAN J.	86075	
JOZSA M.	86010	88031 88119 90005
JUDIN N.P.	86053	88064
JUHASZ S.	90086	
JUKHAS SH.	88099E	
JULIEN J.	87112E	
JUNG A.	89038	
JUR'EV B.A.	86085	
JURY J.W.	86026	
	87045	87059 87089 87108E 88024 88063 89049
 K KACHAN A.S.	87053	88114 89050
KAHANE S.	86082	88003E 89008 89100
KAILAS S.	88096	
KAJRYS G.	86072	89040
KALANTAR-NAYESTANAKI N.	86032	87029 88050 89031 89035 90027 90048
KALEN J.D.	88034	88045 89045
KALININ B.N.	86001	
KAMMERAAD J.	87014	
KANAZAWA M.	87002	
KAPITONOV I.M.	86038E	86051E 86059E 87051E 87061E 87062E 88056 88061 89057
KAPPELER F.	90086	
KARAPETJAN A.P.	89027	
KARASEV S.P.	90007	
KARASEV V.I.	86007	88008E
KARATAGLIDIS S.	90046	
KARBAN O.	89026	
KARNAUKHOV I.M.	88074	
KARWOWSKI H.J.	86009E	
KASATKIN J.U.A.	86075	87009 88010 89017
	88019	89010 89011 89013 89019 89020 90003

KASILOV V.I.	89011	89095 90003
KASTEN B.	86088	89083
KATO S.	87035	
KATRAMATOU A.T.	88004	
KAVANAGH R.W.	86046	90037 90040
KAWAIJARA H.	88069	88085 89093 90076
KAHAMOTO T.	86022	
KAWAZOE Y.	86018	86069 87082E 88069 88085
KAZAKOV L.E.	86084	86101E 87093 88098 89079
KAZARJAN G.B.	90024	
KECHJAN K.P.-A.	90024	
KEDDY R.J.	87046	88070
KEINONEN J.	86053	88064 89053
KEIJER P.H.M.	86019	86033 86062 86087 87011 88116 88122
KELLIE J.D.	88037	90030 90050
KELLOGG S.E.	89052	90037
KELLY J.J.	86032	86036 86037 86080 87029 87040 87044 88050 90036
KEMPER K.W.	89001	
KENNEDY T.J.	86083	86103 89006E
KERKHOVE E.	86027E	87058 88043 89032
KEBN J.	88032	
KERN TH.	86043	
KEROJPAN I.A.	90007	90008
KHAMRAEV F.SH.	86025E	87071E 87081E 87086E 88087
KHAN SH.	88079	
KHATUN S.	86065	
KHIMICH I.V.	90075	
KHOJDACHIKH A.F.	87028	88038 89029 89043
KHOMICH A.A.	87079	87080 88025 88086 90018 90063 90064
KHOMJAKOV G.K.	87053	
KHRISTOV KH.G.	86090E	90055
KHUDAVERDJAN A.G.	88090	89073 89078 90060 90061
KHVAROSTJAN V.M.	88021	
KHVASTUNOV V.M.	86023	87018E 88027 89011 89023 89095 90003
KIAM TH.	88079	
KICINSKA-HABIOR M.	86071	87073
KIHM TH.	86045	87113 89098 89099 90084
KIKSTRA S.W.	87025	90043 90049
KILGUS G.	87099	88107 89062
KIM J.C.	88029E	89040
KIM T.	88118	
KIM W.	88034	88045 89045 90042 90080
KING J.	90047	
KING J.O.	87024	87038 87047
KINNEY E.R.	88047	88119 90005 90010
KIOUS M.	89048	
KIRICHENKO I.K.	89011	90003
KIRICHENKO V.V.	87028	88038 89029 89034 89043 90025
KISS A.Z.	86053	88064 89053
KISSEL L.	86088	
KITAEV V.JA.	89065	90058
KITAZAWA H.	86048	86079 88048 90032
KITCHING P.	86003	86015
KITWANCA S.W.	88006	
KIZOGJAN O.S.	90007	
KLAPDOR H.V.	86071	87085
KLEIN A.	86010	
KLEIN F.	86029	
KLEIN S.	86087	
KNEISSL U.	86081	87108E 87113 88097 88100 88107 88118 89083 89085
KNILL E.	88120	
KNIAZJAN S.G.	89097	90083
KNOPEL K.T.	86045	86100 87113 88079 88118 89068 89098 89099 90084
KNUTSON L.D.	87004	

KOBAYASHI T.	89093	90076
KOCH J.H.	87001	
KOESTER L.J.	88123	
KOHLER R.	87060	
KOIKE M.	87002	87015
KOLDOSKIJ A.B.	86097E	
KOLESNIKOV L.JA.	86007	86009E 87017 88009 88011 88012 88019 88021 88026
KOLLEWE D.	89010	89013 89016 89019 89023
KOLOMENSKIJ G.A.	86020E	89059
KOLTAY E.	86053	88064
KOMANO H.	86079	
KONDEV F.G.	90055	
KONDRAT'EV R.L.	88079	
KONNO O.	86030	88029E 88035E 88039
KONONOV V.N.	86084	86101E 87093 88098 89079
KONOVALOV O.G.	86007	88008E 89009 89015 90002 90019
KORCHIN A.JU.	90012	90017
KORDA L.P.	87053	
KOSLOWSKY V.T.	87054	
KOSTJU J.A.E.	90075	
KOTIKOV E.A.	87023E	
KOTLJAR V.V.	86009E	88011
KOUNO S.	86022	
KOVALENKO V.V.	86097E	
KOVALSKI S.	90036	
KOVASH M.A.	86036	86037 86080 87040 87044 88034 88045 89045 89046
KOWALCZYK R.S.	90036	
KOWALSKI S.	88119	90005 90010
KRAFT O.E.	86032	86036 86037 86080 87029 87040 87044 88050 88120
KRAMER G.J.	86067	88081
KRAMER L.H.	86062	87020 87105 88016 89024 89030 89060
KRATZ K.L.	90016	
KRAUSHAAR J.J.	88052	89056
KRECHETOV JU.F.	88080	
KREMER R.M.	86001	88001
KRIVASHEEV S.V.	88044	
KRIVKHATSKIJ A.S.	86097E	
KUENHER J.A.	86096E	
KUENHER J.A.	88015	
KUHLMANN E.	86024	
KUHN S.	88117	
KULISH JU.V.	86007	
KUO P.C.-K.	87045	88063 89049
KUPCOV G.N.	89064	90062
KUPLENNIKOV E.L.	90012	90017
KUPRIKOV V.I.	87080	90064
KURITA K.	87035	
KURJAN P.M.	88054	
KURONEN A.	89053	
KUSA RAJU G.	87106	
KWAENGSOBHA S.	87076	
KWATO NJOCK M.	88032	89038
L LAGET J.M.	88002	88013 88014 88024 89007 89014
LAIRD C.E.	87090	
LAKOVICHEV E.F.	86020E	
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 SMIRENkin G.N. 87111 87112E 88099E 88108 90079 90081
 SMIT F.D. 87006E
 SMITH M.S. 87047 90038
 SNOVER K.A. 86047 87073
 SOBER D.I. 88074 89036 90048
 SODERMAN P.-O. 90031
 SODERSTRUM J.P. 87004
 SOGA F. 87002
 SOKOLJUK I.V. 89087 90052 90066
 SOLDATOV A.S. 87111 87112E 88099E 88108 90079 90081
 SOLOSHENKOV P.S. 86096E
 SOMORJAI E. 86053 88064 89053 90040 90043
 SOOS T. 88047
 SOROKIN P.V. 86007 86009E 87017 88008E 88009 88011 88012 88019 88021
 88026 89009 89010 89013 89015 89016 89019 89023 9002
 90019
 SORVIN V.M. 86025E
 SOUKUP J. 86003 86015
 SOUNDRA-NAYAGAM R. 88057
 SOWINSKI J. 88010 89017
 SPAMER E. 89066
 SPANIER L. 87078
 SPECHT J.R. 87007E
 SPIELER C. 90071 90073
 SPOROV E.A. 86009E 87010 87013
 SPRINGHAM S.V. 88037 88040E 90030
 ST-PIERRE C. 86044
 STARCEV V.I. 90017
 STARODUB G.JA. 86076
 STEININGER R. 89027
 STEIPER F. 88100 89099
 STEPANENKO V.A. 87018E
 STEPHENSON K.E. 87007E
 STETZ A.W. 86003 86016
 STIBUNOV V.N. 86001 87005 88001
 STOCK R. 86054 86081 86085 88097 89085 90070
 STOCK W. 87072
 STOLER P. 89007 89014
 STOLK A. 88091 89086
 STORIZHKO V.E. 88077 88114 89050
 STORM D.W. 87066 87095 88068
 STOROZHENKO JU.O. 86007 88008E 89009 89015 90002 90019
 STROHER H. 87108E 88100 89099 90086
 SUDA T. 86030 88029E 88035E 88039
 SUDO M. 87015
 SUDOV A.S. 88103
 SUGAWARA M. 86089 88069 88085 89093 90076
 SUJKOWSKI Z. 89086
 SUKIASJAN YU.Z. 90007
 SUMI Y. 86022
 SUN C. 89014
 SURGUTANOV V.V. 87021
 SUTTON D.C. 88065 88067 88115
 SUTTON R.A. 86039
 SUZUKI T. 88029E 88039 90051
 SYCHOV S.I. 89094
 SZALATA Z.M. 88004
 SZCZUREK A. 90022
 SZEFLINSKA G. 86071 87085
 SZEFLINSKI Z. 86071 87085

SZERYPO J.	86093
SZWERYN B.	86093
T TABACHENKO A.N.	86001 88001
TAIUTI M.	86031 87008 88049 89005 89071
TAKAHASHI K.	87035
TAKESHITA T.	86022
TAKEUCHI Y.	87035
TAMEE T.	86089 88069 88085 89093 90076
TAMAS G.	89007 89014
TANAKA A.	88069 88085
TANAKA T.	86039
TANEICHI H.	86018
TARASKO M.Z.	87111 90079
TAROJAN S.P.	90007
TATEVOSJAN V.O.	90024
TAVERES O.A.P.	88101E 89058 89090E 90044
TAYLOR R.W.	90073
TAYLOR R.B.	87091
TEANSOMPRASONG P.	87091
TELEGIM JU.N.	86009E
TEMNYKH A.B.	90010
TENG P.K.	86032 87029 89031
TENISHEV A.E.	86007 88008E 89009 89015 90002 90019
TERASAWA T.	86030 88029E 88035E 88039
TERAZU K.	86048
TERNES J.R.	89046
THE I.	88120
THEKKUMTHALA J.	86015
THIBAUD J.P.	89048
THIES H.H.	86021E 87027
THOMPSON W.N.	86030 86039 88049 86052 87036E 87059 87064 87089 88029E
THORNTON S.T.	88035E 88039 88042E 89026 89039 89047E 89081
TIEGER D.R.	87066 88068 88120
TIKHONOV S.V.	86097E
TIKKANEN P.	88064 89053
TILLEY D.R.	86008 86013 87032 88017 88117 89021 90015 90016
TIMMERMAN R.	88059
TIMOFEEV G.A.	90046
TIMOKHOV V.M.	86084 86101E 87093 88098 89079
TIMS S.G.	88083 89072
TINGWELL C.I.W.	86060 87024 88083 89072
TIPUNKOV A.O.	86097E
TITOV JU.I.	87010 87013
TOLSTIKOV V.A.	86097E 86098
TOPORKOV D.K.	86002 87005 87043 88078 90010
TORIKOSHI M.	87015
TORIZUKA Y.	86030 88029E 88035E 88039 89061
TORLEY R.S.	88047
TORRE J.	86010
TRAUTVETTER H.P.	87038 87039 87049 88028 88059 89054 89056 90040 90043
TRICE J.H.	89046
TROFIMOV JU.N.	86073E 88094 88109 89074 89076
TROSHENKOVA I.A.	90024
TRUDEL A.J.	88015
TRUKHOV A.V.	87056E
TSAI J.-S.	86083 86103
TSUBOTA H.	86069 87082E 88069 88085
TSUKAMOTO T.	86018 86069 87082E
TUNG T.-Y.	88119 90005
TURCHINETZ W.	86036 88120
TURCK-CHIEZE S.	87012 88013 88071 89018
TURLEY R.S.	86011

U UEGAKI J.	86003 86015
UEHARA S.	86022
UENG T.S.	88002 88007 88120
UENO H.	86018
UKAI K.	87035
ULMER P.E.	86032 87029 88050 89031 90027
URBAN F.-J.	86086
URCIUOLI G.M.	89012
URIN M.G.	88077
V VAN BIBBER K.	86100 88004
VAN CAMP E.	86027E 87058 88043
VAN DE VYVER R.	86027E 87058 88043 89004 89032 90021 90029
VAN DER BERG A.M.	87020 87105 89024
VAN DEN BRAND J.F.J.	86019 86033 86087 87011 87020 87105 88016 89024 89030
VAN DER LEUN C.	86028 86035 86055 86063 86068 87025 87067 88062 88066
VAN DER POEL C.J.	89051 90026 90049
VAN DER STEENHoven G.	86019 86033 86062 86087 87020 87105 88016 88033 88036
VAN DER WERF S.Y.	86075
VAN HEERDEN I.J.	86003 88010 89017
VAN HEES A.G.M.	87048 87072 89024 90041 90049
VAN HIENEN J.F.A.	86019 88074
VAN HOOREBEKE L.	88043 89004 89032 90021 90029
VAN NECK D.	89068
VAN OTTEN P.	86027E 87058 88043 89004
VAN PARIJS I.	87060
VAN PRUSSEN O.P.	88062
VAN PUT L.B.	86055
VAN SCHAGEN J.P.S.	89086
VARHUE W.J.	86074 87110
VARLAMOV V.V.	87021 90020
VARTANIAN G.S.	90083
VARTAPETJAN G.A.	88088 89069
VAS'KO V.M.	86090E
VASINA T.N.	89002
VDOVIN A.I.	89082
VERBICKIJ S.S.	90059
VERBOVEN M.	90082
VERHEUL H.	88091 89086
VERNIN P.	88013 88071 89018
VESELOVSKIJ A.V.	90059
VETTERLI M.C.	88015
VEYSSIERE A.	87108E 88024
VIDELA N.	88120
VIEIRA J.L.	89090E
VIERIEN K.	87077 87078
VIESTI G.	89071
VINOKUROV E.A.	88021 89016
VIRTUE C.	87054
VISE J.	87038 87047 90047
VISHNEVSKIJ I.N.	89089
VLADIMIROV JU.V.	86023 87018E 87084E 88027 89011 89023 89075 89095 90003
VLIJKS A.	90023
VNUKOV I.E.	86001 88001
VODHANEL R.	87055 88065 88115
VODIN A.N.	87053
VOEGLER N.	89044 89068
VOEVODSKIJ A.A.	86084 86101E 87093

VOGELAAR R.B.	88052	89052	90037
VOGT J.M.	86029	88037	
VOIGNIER J.	86070		
VOJCEKHOVSKIJ B.B.	86002	87005	87043 88078 90010
VOLKOV JU.M.	86020E	89059	
VOLOSHCHUK V.I.	87028	88021	88038 89016 89020 89029 89043
VON BRETANO P.	88097	88107	89085 90070
VON REDEN K.	88120		
VORLET J.P.	88032	89038	
VORUGANTI P.	86045		
VOSKANJAN A.R.	90083		
W MAANDERS F.B.	90040		
WACHTER B.	88017		
WADA Y.	87035		
WAGENAAR D.J.	89021		
WAGNER G.J.	86087	87105	89060 89068
WALKER R.C.	88031	88119	90005
WALLACE P.A.	88037		
WANG T.R.	86012	86014	88046 89052 90033 90037 90047
WARBURTON E.K.	87046		
WARNER D.D.	87101	88020	
WARQUIER M.	86075	89068	
WARTENA J.A.	87060		
WAUTERS P.	88006		
WEBER TH.	87113	88100	88118 89083 89098 89099 90084 90085
WEIGMANN H.	87060		
WEIL J.L.	89046		
WEINSTEIN L.	87029	88050	89031 90027
WELLER H.R.	86008	86013	87032 87045 88015 88017 88117 89021 90013
WENDER S.A.	90015	90016	
WENES G.	86017	86034	87066 87095 88068 90031
WESICK J.	86003		
WESSELBORG C.	88097	88107	89083 89085 90070
WESSELING J.	90068		
WHISNANT C.S.	88014		
WHITEHOUSE D.A.	86016	88020	
WHITLOW S.M.	88014		
WHITNEY R.R.	86058	88002	88007 88120
WHITTINGHAM I.B.	87091		
WHITTLE B.	88070		
WHITTON R.M.	88015	88117	
WICKERT H.	86054	86085	
WIELOCH-LAUFENBERG N.	88105	90028	
WIESCHER M.	86042	88045	88052 89027 89052 89056 90033 90039 90042
WIGGINS J..	90047		
WIJEKUMAR V.	86032		
WILDENTHAL B.H.	86042	90042	
WILHELMI Z.	86043	87055	88067 88113 89053
WILKE W.	86071	87085	
WILKERSON J.F.	87108E	87113	88100 88118 89098 89099 90084 90085
WILLIAMS J.Z.	86017		
WILLIAMSON C.F.	86016		
WILLIAMSON S.E.	86058	86099	88120 89033 89036 89041
WILLIAMSON T.G.	87103	88093	88104 88123 90069
WILSON H.S.	86074	87110	
WILSON K.E.	86003	86015	
WINHOLD E.J.	89042		
WINTERS R.R.	86032	87029	89031 90027
WISE J.E.	88055		
WISSINK S.W.	87104	88092	90027 90067
WITTE D.J.P.	88046		
	89086		

WOERTCHE H.	89066		
WORR A.	89056		
WOLF A.	86061	86082	88003E 89008
WOLF F.	88105	90028	
WOLINEC E.	90045		
WOLKE K.	89056	90043	
WOLTERS A.A.	90041	90049	
WOOD S.A.	89033	89041	89042
WOODWARD C.	88119	90005	
WOODWORTH J.G.	86100		
WRIGHT D.H.	86086		
WUSTENBECKER S.	87049	89054	
Y YAMAMURO N.	86079		
YAMAZAKI M.	86032	87029	89031
YANG FU-JIA	87063		
YANO Y.	86022		
YEARIAN M.R.	86100		
YEH T.R.	86092E		
YEXIANG L.	90072		
YOKOKAWA J.	8819E	88039	
YONEAMA M.L.	89093	90076	
YORKSTON J.	88040E	90030	
YOSHIKAWA N.	87002		
YOUNG L.	90010		
YOUNG P.G.	87102		
YUNSHAN M.	90072		
Z ZACERKLJANYJ A.E.	90017		
ZACHAROV I.E.	88073		
ZAJAC A.A.	86023	88019	89010 89011 89013 89019 89020 90003
ZALESNYJ G.N.	90057		
ZAVADA L.M.	89095		
ZEIDMAN B.	88031	88074	88119 89033 90005
ZELEVINSKIJ V.G.	87005	87043	
ZELL K.O.	88097		
ZETTL F.	86029		
ZGHICHE A.	89018		
ZHALILOV M.KH.	86025E	86059E	87061E 87062E
ZHANG D.	90027		
ZHANG H.X.	86092E		
ZHEBROVSKIJ JU.V.	86007	86009E	87017 88009 88011 88012 88019 88021 88026
ZHETLONOZHJSKIJ V.A.	89010	89013	89016 89019 89023
ZHENGYU X.	89089	90052	
ZHIVUN V.M.	90072		
ZHUSUPOV M.A.	86097E		
ZIAKAS K.	89023		
ZIEGER A.	90021	90029	
ZIEGLER B.	89004		
ZIEGLER W.	88105	89004	90028
ZIJDERHAND F.	90073		
ZILGES A.	86028	86035	86055 87025 87067 90026 90041
ZIMMERMAN P.D.	86058	86099	
ZOLENKO V.A.	87028	88019	88021 89016 89019 89020 89034 90025
ZORRO R.	86034	87083	90077
ZUBANOV D.	89026	89047E	
ZUCCHIATTI A.	86004	89071	
ZUPRANSKI P.	87022		
ZURMUHL U.	88105	90028	
ZWARTS D.	87048		
ZYBALOV A.A.	86007	88008E	89009 89016 90002 90019

VII. ТАБЛИЦА "РАСПРОСТРАНЕННОСТИ ИЗОТОПОВ И
ЭНЕРГИИ ОТДЕЛЕНИЯ НУКЛЮНОВ"

TABLE "ABUNDANCES OF ISOTOPES AND
NUCLEON SEPARATION ENERGIES"

Использованы данные работы The data used of publication
"Photonuclear Data Index, 1973-1981", NBSIR 82-2543-1, 1983

NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)							
		G,N	G,P	G,T	G,HE3	G,A	G,2N	G,NP	G,2P
1-H - 1	99.99	*	*	*	*	*	*	*	*
2	1.5(-2)	2.2	2.2	*	*	*	2.2	*	
3	*	6.3	8.5	*	*	*	8.5	8.5	*
2-HE - 3	1.4(-4)	7.7	5.5	*	*	*	*	7.7	7.7
4	99.99	20.6	19.8	19.8	20.6	*	28.3	26.1	28.3
3-LI - 6	7.50	5.7	4.6	15.8	15.8	1.5	27.2	3.7	26.4
7	92.50	7.3	10.0	2.5	25.9	2.5	12.9	11.8	33.5
4-BE - 9	100.00	1.7	16.9	17.7	21.2	2.5	20.6	18.9	29.3
5-B - 10	20.00	8.4	6.6	18.7	17.8	4.5	27.0	8.3	23.5
80.00	11.5	11.2	11.2	27.2	8.7	19.9	18.0	30.9	
6-C - 12	98.89	18.7	16.0	27.4	26.3	7.4	31.8	27.4	27.2
13	1.11	4.9	17.5	23.9	24.4	10.6	23.7	20.9	31.6
7-N - 14	99.63	10.6	7.6	22.7	20.7	11.6	30.6	12.5	25.1
15	0.37	10.8	10.2	14.8	28.2	11.0	21.4	18.4	31.0
8-O - 16	99.76	15.7	12.1	25.0	22.8	7.2	28.9	23.0	22.3
17	0.04	4.1	13.8	18.6	18.8	6.4	19.8	16.3	25.3
18	0.20	8.0	15.9	15.8	25.6	6.2	12.2	21.8	29.1
9-F - 19	100.00	10.4	8.0	11.7	22.1	4.0	19.6	16.0	23.9
10-NE - 20	90.51	16.9	12.8	23.9	21.2	4.7	28.5	23.3	20.8
21	0.27	6.3	13.0	21.6	19.9	7.3	23.6	19.6	23.6
22	9.22	10.4	15.3	21.5	26.3	9.7	17.1	23.4	26.4
11-NA - 23	100.00	12.4	8.8	17.4	24.4	10.5	23.5	19.2	24.1
12-MG - 24	78.99	16.5	11.7	26.7	23.1	9.3	29.7	24.1	20.5
25	10.00	7.3	12.1	23.0	20.1	9.9	23.9	19.0	22.6
26	11.01	11.1	14.1	21.6	26.0	10.6	18.4	23.2	24.8
13-AL - 27	100.00	13.1	8.3	18.2	23.7	10.1	24.4	19.4	22.4
14-SI - 28	92.23	17.2	11.6	27.5	23.2	10.0	30.5	24.6	19.9
29	4.67	8.5	12.3	24.6	20.6	11.1	25.7	20.1	21.9
30	3.10	10.6	13.5	22.2	24.8	10.6	19.1	22.9	24.0
15-P - 31	100.00	12.3	7.3	17.9	22.5	9.7	23.6	17.9	20.8
16-S - 32	95.02	15.0	8.9	24.0	19.1	6.9	28.1	21.2	16.2
33	0.75	8.6	9.6	21.3	17.1	7.1	23.7	17.5	18.2
34	4.21	11.4	10.9	20.4	21.9	7.9	20.1	21.0	20.4
36	0.02	9.9	13.0	19.3	25.0	9.0	16.9	21.5	25.0
17-CL - 35	75.77	12.6	6.4	17.9	19.6	7.0	24.2	17.8	17.3
37	24.23	10.3	8.4	16.8	22.1	7.8	18.9	18.3	21.4

NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)							
		G,N	G,P	G,T	G,HE3	G,A	G,2N	G,NP	G,2P
18-AR - 36	0.34	15.3	8.5	24.2	18.6	6.6	28.0	21.2	14.9
	38	0.06	11.8	10.2	20.7	20.8	7.2	20.6	18.6
	40	99.60	9.9	12.5	18.2	23.1	6.8	16.5	20.6
19-K - 39	93.26	13.1	6.4	18.5	19.2	7.2	25.2	18.2	16.6
	40	0.01	7.8	7.6	17.5	16.7	6.4	20.9	14.2
	41	6.73	10.1	7.8	15.8	20.7	6.2	17.9	20.3
20-CA - 40	96.94	15.6	8.3	25.0	18.8	7.0	29.0	21.4	14.7
	42	0.65	11.5	10.3	19.7	20.2	6.2	19.8	20.4
	43	0.14	7.9	10.7	19.8	23.3	7.6	19.4	18.2
	44	2.09	11.1	12.2	20.9	11.1	19.1	21.8	21.6
	46	0.00	10.4	13.8	21.5	26.1	11.1	17.8	22.7
	48	0.19	9.9	15.8	22.6	29.4	14.4	17.2	24.2
21-SC - 45	100.00	11.3	6.9	17.5	21.0	7.9	21.0	18.0	19.1
22-Tl - 46	8.10	13.2	10.3	22.9	20.6	8.0	22.7	21.7	17.2
	47	7.40	8.9	10.5	22.1	18.4	9.0	22.1	18.7
	48	73.80	11.6	11.4	22.4	22.6	9.4	20.5	22.1
	49	5.40	8.1	11.4	21.7	20.4	10.2	19.8	19.6
	50	5.30	10.9	12.2	22.1	24.0	10.7	19.1	21.8
23-V - 50	0.25	9.3	7.9	19.2	19.8	9.9	20.9	16.1	19.3
	51	99.75	11.1	8.1	18.7	22.6	10.3	20.4	19.0
24-CR - 50	4.35	13.0	9.6	23.2	20.3	8.6	23.6	21.1	16.3
	52	83.79	12.0	10.5	22.4	21.8	9.4	21.3	21.6
	53	9.50	7.9	11.1	21.0	18.8	9.1	20.0	18.4
	54	2.36	9.7	12.4	19.7	22.1	7.9	17.7	20.9
25-MN - 55	100.00	10.2	8.1	17.2	21.2	7.9	19.2	17.8	20.4
26-FE - 54	5.80	13.4	8.9	23.0	19.7	8.4	24.1	20.9	15.4
	56	91.80	11.2	10.2	20.9	20.3	7.6	20.5	20.4
	57	2.10	7.6	10.6	19.6	18.2	7.3	17.8	19.6
	58	0.30	10.0	11.9	19.4	22.0	7.6	17.7	20.6
27-CO - 59	100.00	10.5	7.4	16.6	20.3	7.0	19.0	17.4	19.3
28-NI - 58	68.27	12.2	8.2	21.2	17.7	6.4	22.5	19.6	14.2
	60	26.10	11.4	9.5	20.1	19.2	6.3	20.4	20.0
	61	1.13	7.8	9.9	19.3	17.0	6.5	19.2	17.4
	62	3.59	10.6	11.1	19.5	21.0	7.0	18.4	20.5
	64	0.91	9.7	12.5	19.1	23.0	8.1	16.5	20.9
29-CU - 63	69.17	10.9	6.1	16.1	18.9	5.8	19.7	16.7	17.2
	65	30.83	9.9	7.4	15.5	20.7	6.8	17.8	17.1
30-ZN - 64	48.60	11.9	7.7	19.0	16.7	4.0	21.0	18.6	13.8
	66	27.90	11.1	8.9	18.3	18.3	4.6	19.0	18.8
	67	4.10	7.1	8.9	17.4	15.7	4.8	18.1	16.0
	68	18.80	10.2	10.0	17.7	19.8	5.3	17.3	19.1
	70	0.60	9.2	10.9	17.2	21.0	6.0	15.7	19.5
31-GA - 69	60.10	10.3	6.6	15.4	18.0	4.5	16.8	16.6	
	71	39.90	9.3	7.9	15.1	19.7	5.3	17.0	17.1

NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)							
		G,N	G,P	G,T	G,HE3	G,A	G,ZN	G,NP	G,2P
32-GE-	70 20.50	11.5	8.5	18.6	17.6	4.1	19.7	18.8	15.1
	72 27.40	10.7	9.7	18.2	19.1	5.0	18.2	19.0	17.6
	73 7.80	6.8	10.0	17.3	16.7	5.3	17.5	16.5	18.5
	74 36.50	10.2	11.0	18.2	21.0	6.3	17.0	20.2	19.9
	76 7.80	9.4	12.0	18.4	23.1	7.5	15.9	20.6	22.1
33-AS-	75 100.00	10.2	6.9	15.4	19.4	5.3	18.2	17.1	17.9
34-SE-	74 0.90	12.1	8.5	19.3	17.2	4.1	20.7	19.3	14.2
	76 9.00	11.2	9.5	19.3	18.9	5.1	19.2	19.8	16.4
	77 7.60	7.4	9.6	18.7	16.1	5.7	18.6	16.9	17.3
	78 23.50	10.5	10.4	18.9	20.1	6.0	17.9	20.1	18.4
	80 49.60	9.9	11.3	18.8	21.5	7.0	16.9	20.4	20.6
	82 9.40	9.3	12.2	18.8	23.0	8.2	16.0	20.2	22.7
35-BR-	79 50.69	10.7	6.3	15.8	18.7	5.5	19.0	16.8	16.7
	81 49.31	10.2	7.5	15.9	20.2	6.5	18.0	17.4	18.9
								114 28.70	9.0
								116 7.50	8.7
36-KR-	78 0.35	12.0	8.2	19.9	16.9	4.4	21.2	19.4	13.5
	80 2.25	11.5	9.1	19.6	18.2	5.1	19.9	19.8	15.4
	82 11.60	11.0	9.9	19.5	19.6	6.0	18.8	20.1	17.4
	83 11.50	7.5	9.8	19.1	17.2	6.5	18.4	17.4	18.2
	84 57.00	10.5	10.7	19.4	21.0	7.1	18.0	20.3	19.4
	86 17.30	9.9	11.9	19.2	22.8	8.1	17.0	20.9	21.9
37-RB-	85 72.17	10.5	7.0	16.5	19.6	6.6	19.4	17.5	17.7
	87 27.83	9.9	8.6	17.1	21.8	8.0	18.6	18.5	20.5
38-SR-	84 0.50	12.0	9.0	20.2	17.9	5.2	21.2	19.8	14.6
	86 9.90	11.5	9.6	20.5	19.5	6.3	20.0	20.1	16.7
	87 7.00	8.4	9.4	20.1	17.4	7.3	19.9	18.1	18.0
	88 81.60	11.1	10.6	20.7	21.4	7.9	19.5	20.5	19.2
39-Y -	89 100.00	11.5	7.1	18.1	19.9	8.0	20.8	18.2	17.7
								51-SB-121 57.30	9.2
								123 42.70	9.0
40-ZR-	90 51.50	12.0	8.4	20.7	18.8	6.7	21.3	19.8	15.4
	91 11.20	7.2	8.7	18.6	14.9	5.5	19.2	15.6	16.3
	92 17.10	8.6	9.4	15.7	17.2	3.0	15.8	17.3	17.1
	94 17.40	8.2	10.3	15.9	18.5	3.8	14.9	17.8	18.9
	96 2.80	7.8	11.5	16.1	20.4	4.9	14.3	18.5	21.3
41-NB-	93 100.00	8.8	6.0	13.4	15.7	1.9	16.7	14.7	15.4
								126 18.70	9.1
								128 31.70	8.8
42-MO-	92 14.84	12.7	7.5	20.8	16.9	5.6	22.8	19.5	12.6
	94 9.25	9.7	8.5	16.7	15.4	2.1	17.7	17.3	14.5
	95 15.92	7.4	8.6	16.2	14.2	2.2	17.0	15.9	15.1
	96 16.88	9.2	9.3	16.5	16.6	2.8	16.5	17.8	16.1
	97 9.55	6.8	9.2	16.1	15.2	2.8	16.0	16.1	16.5
	98 24.13	8.6	9.8	16.3	17.4	3.3	15.5	17.9	17.3
	100 9.63	8.3	10.6	15.5	18.2	3.2	14.2	18.0	19.5
44-RU-	96 5.50	10.7	7.4	17.4	14.2	1.7	19.6	17.3	12.2
	98 1.90	10.3	8.3	17.2	15.4	2.2	18.3	17.7	14.0
	99 12.70	7.5	8.4	16.7	13.8	2.3	17.7	15.8	14.7
	100 12.60	9.7	9.2	17.0	16.6	2.9	17.1	18.1	15.7
	101 17.00	6.8	9.4	16.4	14.8	2.8	16.5	16.0	16.6
	102 31.60	9.2	10.1	16.7	18.1	3.4	16.0	18.6	17.5
	104 18.70	8.9	10.5	16.7	19.5	4.3	15.1	18.9	19.1
45-RH-103	100.00	8.1	5.3	14.5	13.3	2.2	18.6	12.7	13.7

NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)							
		G,N	G,P	G,T	G,HE3	G,A	G,ZN	G,NP	G,2P
46-PD-102	1.00	10.6	7.8	17.3	15.2	2.1	18.9	17.7	13.3
	104	11.00	10.0	8.7	17.0	16.4	2.6	17.6	18.0
	105	22.20	7.1	8.8	16.6	14.2	2.9	17.1	15.8
	106	27.30	9.6	9.3	16.9	17.6	3.2	18.6	18.3
	108	26.70	9.2	10.0	16.6	18.5	3.9	15.8	18.5
	110	11.80	8.8	10.5	16.4	19.6	4.4	15.0	18.7
47-AG-107	51.83	9.6	5.8	13.9	16.4	2.8	17.5	15.4	15.1
	109	48.17	9.2	6.5	13.8	17.3	3.3	16.5	15.7
48-CD-106	1.30	10.9	7.3	17.3	14.6	1.6	19.3	17.2	12.3
	108	0.90	10.0	8.1	17.1	15.8	2.3	18.3	17.7
	110	12.50	9.9	8.9	16.9	16.9	2.9	17.2	18.1
	111	12.80	7.0	9.1	16.6	14.7	3.3	16.9	15.9
	112	24.10	9.4	9.6	16.8	17.9	3.5	16.4	18.5
	113	12.20	6.5	9.8	16.5	15.6	3.9	15.9	16.2
	114	28.70	9.0	10.3	16.7	18.9	4.1	15.6	18.8
	116	7.50	8.7	11.1	16.6	16.6	4.9	14.8	19.1
49-IN-113	4.30	9.4	6.1	13.9	16.8	3.0	17.1	15.5	15.7
	115	95.70	9.0	6.8	13.9	17.9	3.7	16.3	15.9
50-SN-112	1.00	10.8	7.5	17.1	15.0	1.8	19.0	17.6	12.9
	114	0.70	10.3	8.5	17.1	16.2	2.6	18.1	17.9
	115	0.40	7.5	8.7	17.0	14.4	3.2	17.9	16.0
	116	14.70	9.6	9.3	17.1	17.4	3.4	17.1	18.3
	117	7.70	6.9	9.4	16.8	15.3	3.8	16.5	16.2
	118	24.30	9.3	10.0	17.1	18.5	4.1	16.3	18.8
	119	8.60	6.5	9.9	16.8	16.3	4.4	15.8	16.5
	120	32.40	9.1	10.7	17.1	19.6	4.8	15.6	19.0
	122	4.60	8.8	11.4	17.2	20.7	5.7	15.0	19.8
	124	5.60	8.5	12.1	17.4	*	6.7	14.4	20.0
	125	7.00	6.6	8.7	15.7	14.0	2.2	16.0	15.2
	126	18.70	9.1	9.1	15.8	17.2	2.6	15.7	17.8
	128	31.70	8.8	9.6	15.7	18.0	3.2	15.1	18.0
	130	34.50	8.4	10.0	15.6	18.8	3.8	14.5	18.0
53-I-127	100.00	9.1	6.2	13.4	16.3	2.2	16.2	15.3	15.3
54-XE-124	0.10	10.2	6.8	16.2	13.8	0.5	18.5	16.6	11.7
	126	0.10	10.1	7.6	16.2	14.9	1.3	17.9	17.2
	132	26.90	8.9	9.1	15.7	17.2	2.7	15.5	17.8
	134	10.40	8.5	9.6	15.6	17.9	3.2	15.0	17.8
	136	8.90	8.0	9.9	15.5	18.5	3.7	14.4	17.8
55-CS-133	100.00	9.0	6.1	13.2	16.1	2.0	16.2	15.0	15.2

NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)									
		G,N	G,P	G,T	G,HE3	G,A	G,2N	G,np	G,2P		
56-BA-130	0.10	10.2	7.0	16.0	13.9	0.6	18.2	16.7	12.0		
132	0.10	9.8	7.7	15.8	14.7	1.0	17.3	17.0	13.1		
134	2.40	9.5	8.2	15.9	15.5	1.5	16.7	17.1	14.3		
135	6.60	7.0	8.3	15.6	13.5	1.9	16.4	15.1	14.8		
136	7.90	9.1	8.5	15.8	16.2	2.1	16.1	17.4	15.4		
137	11.20	6.9	8.7	15.8	14.5	2.5	16.0	15.4	15.8		
138	71.70	8.6	9.0	15.6	16.7	2.6	15.5	17.3	16.4		
57-LA-138	0.09	7.3	6.0	13.6	13.8	2.0	16.6	12.9	14.7		
139	99.91	8.8	6.2	13.2	15.8	2.0	16.1	14.8	15.2		
58-CE-136	0.20	10.0	6.9	15.7	13.8	0.4	17.9	16.6	12.1		
138	0.30	9.6	7.6	15.7	14.6	1.0	17.2	16.9	13.2		
140	88.40	9.2	8.1	15.8	15.2	1.6	16.7	16.9	14.3		
142	11.10	7.2	8.8	12.3	14.5	-1.4	12.6	15.6	15.8		
59-PR-141	100.00	9.4	5.2	13.4	14.4	1.2	17.3	14.4	13.4		
60-ND-142	27.16	9.8	7.2	16.1	13.9	0.8	17.9	16.6	12.5		
143	12.18	6.1	7.5	14.3	10.9	-0.5	15.9	13.4	13.1		
144	23.80	7.8	8.0	12.7	13.2	-1.9	13.9	15.3	13.8		
145	8.29	5.8	8.0	12.6	11.8	-1.6	13.6	13.7	14.4		
146	17.19	7.6	8.6	12.8	14.2	-1.2	13.3	15.5	15.1		
148	5.75	7.3	9.2	12.7	15.2	-0.6	12.6	15.9	16.2		
150	5.63	7.4	9.6	13.2	16.4	0.4	12.4	16.5	17.6		
62-SM-144	3.10	10.6	6.3	16.4	12.7	-0.1	19.0	16.2	10.6		
147	15.10	6.4	7.1	12.9	10.5	-2.3	14.8	13.4	12.4		
148	11.30	8.1	7.6	13.0	12.8	-2.0	14.5	15.3	13.0		
149	13.90	5.9	7.6	12.6	11.2	-1.9	14.0	13.5	13.6		
150	7.40	8.0	8.3	13.0	13.8	-1.4	13.9	15.5	14.2		
152	26.60	8.3	8.7	13.7	15.3	-0.2	13.9	16.6	15.7		
154	22.60	8.0	9.0	14.0	16.5	1.2	13.8	16.5	16.9		
63-EU-151	47.90	8.0	4.9	10.3	12.7	-2.0	14.4	12.9	13.2		
153	52.10	8.6	5.9	11.3	14.8	-0.3	14.9	14.2	14.6		
64-GD-152	0.20	8.6	7.4	13.3	12.5	-2.2	15.1	15.3	12.2		
154	2.10	8.7	7.6	14.0	14.1	-0.9	15.1	16.2	13.5		
155	14.80	6.4	7.6	14.2	12.2	-0.1	15.1	14.1	14.1		
156	20.60	8.5	8.0	14.1	14.9	0.2	15.0	16.2	14.7		
157	15.70	6.4	8.0	14.1	13.3	0.7	14.9	14.4	15.2		
158	24.80	7.9	8.5	13.8	15.4	0.7	14.3	16.0	15.9		
160	21.80	7.5	9.3	13.4	16.0	1.0	13.4	16.0	*		
65-TB-159	100.00	8.1	6.1	11.9	14.4	0.1	14.9	14.0	14.6		
66-DY-156	0.06	9.4	6.6	14.1	12.3	-1.8	16.3	15.6	11.4		
158	0.10	9.1	6.9	14.1	13.3	-0.9	16.0	15.5	12.4		
160	2.34	8.6	7.4	13.8	13.8	-0.5	15.4	15.6	13.5		
161	19.00	6.5	7.5	13.5	12.3	-0.4	15.0	13.9	14.1		
162	25.50	8.2	8.0	13.6	14.5	-0.1	14.6	15.7	14.8		
163	24.90	6.3	8.0	13.5	13.3	0.2	14.5	14.3	15.4		
164	28.10	7.7	8.6	13.4	15.4	0.4	13.9	15.6	16.2		
67-HO-165	100.00	8.0	6.2	11.7	14.1	-0.1	14.7	13.9	14.8		
68-ER-162	0.10	9.2	6.4	13.8	12.1	-1.7	16.5	14.9	11.2		
164	1.60	8.9	6.9	13.7	12.8	-1.3	15.8	15.3	12.3		
166	33.40	8.5	7.3	13.5	13.5	-0.8	15.1	15.3	13.5		
167	22.90	6.4	7.5	13.3	12.3	-0.7	14.9	13.8	14.3		
168	27.10	7.8	8.0	13.0	14.3	-0.5	14.2	15.3	15.0		
170	14.90	7.3	8.6	12.7	*	0.0	13.3	15.3	*		

NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)									
		G,N	G,P	G,T	G,HE3	O,A	O,2N	G,np	G,2P		
69-TM-169	100.00	8.1	5.6	11.3	13.1	-1.2	14.9	13.3	13.5		
70-YB-168	0.10	9.1	6.3	13.6	12.0	-1.9	16.1	15.0	11.2		
170	3.10	8.5	6.8	13.2	12.4	-1.7	15.3	14.8	12.4		
171	14.40	6.6	6.8	13.0	11.3	-1.6	15.1	13.4	13.0		
172	21.90	8.0	7.3	12.9	13.3	-1.3	14.6	14.8	13.7		
173	16.20	6.4	7.5	12.7	12.4	-0.9	14.4	13.7	14.4		
174	31.70	7.5	8.0	12.7	14.2	-0.7	13.8	14.9	15.0		
176	12.60	6.9	8.5	12.7	15.0	-0.6	12.7	15.0	*		
71-LU-175	97.39	7.7	5.5	10.9	12.7	-1.6	14.4	13.0	13.5		
176	2.61	6.3	6.0	10.8	12.1	-1.6	14.0	11.8	14.1		
72-HF-174	0.20	8.6	6.2	12.8	11.4	-2.6	15.6	14.4	11.1		
176	5.20	8.1	6.7	12.7	12.0	-2.3	14.9	14.4	12.2		
177	18.60	6.4	6.8	12.3	10.9	-2.2	14.5	13.1	12.8		
178	27.10	7.6	7.3	12.2	12.7	-2.1	14.0	14.4	13.5		
179	13.70	6.1	7.6	12.0	11.9	-1.8	13.7	13.4	14.1		
180	35.20	7.4	8.0	12.3	13.7	-1.3	13.5	15.0	14.9		
74-W-180	0.10	8.5	6.6	12.9	11.7	-2.5	15.4	14.5	11.8		
182	26.30	8.1	7.1	12.8	12.7	-1.8	14.7	14.7	13.0		
183	14.30	6.2	7.2	12.4	11.5	-1.7	14.2	13.3	13.5		
184	30.70	7.4	7.7	12.2	13.2	-1.7	13.6	14.6	14.3		
186	28.60	7.2	8.4	12.2	14.2	-1.0	13.0	15.2	15.6		
75-RE-185	37.40	7.8	5.4	10.5	12.3	-2.2	14.1	12.8	13.1		
187	62.60	7.4	6.0	10.5	13.5	-1.7	13.6	13.2	14.4		
76-OS-184	0.02	8.9	5.7	12.7	10.9	-3.1	16.1	14.2	10.5		
186	1.58	8.3	6.5	12.1	11.6	-2.8	14.9	14.3	11.9		
187	1.60	6.3	6.6	12.1	10.4	-2.7	14.6	12.8	12.4		
188	13.30	8.0	7.2	12.3	12.7	-2.1	14.3	14.6	13.2		
189	16.10	5.9	7.3	12.0	11.4	-2.0	13.9	13.1	13.7		
190	26.40	7.8	8.0	12.4	13.7	-1.4	13.7	15.1	14.6		
192	41.00	7.6	8.8	12.9	15.3	-0.4	13.3	15.7	15.7		
193	62.70	7.8	5.9	10.8	13.9	-1.0	14.0	13.5	14.6		
78-PT-190	0.01	8.8	6.1	12.6	11.0	-3.2	15.7	14.4	10.8		
192	0.79	8.7	6.9	12.8	12.2	-2.4	15.1	15.0	12.2		
194	32.90	8.4	7.5	13.0	13.3	-1.5	14.6	15.3	13.5		
195	33.80	6.1	7.6	12.9	11.9	-1.2	14.5	13.6	14.0		
196	25.30	7.9	8.1	13.1	14.2	-0.8	14.0	15.5	14.8		
198	7.20	7.6	8.8	13.0	15.0	-0.1	13.4	15.8	*		
79-AU-197	100.00	8.1	5.8	11.4	13.6	-0.9	14.8	13.7	13.9		
198	10.10	8.3	7.1	13.4	13.1	-1.3	15.3	15.2	12.9		
199	17.00	6.6	7.2	13.3	11.8	-0.8	14.9	13.8	13.7		
200	23.10	8.0	7.7	13.3	14.0	-0.7	14.7	15.3	14.2		
201	13.20	6.2	7.6	13.0	12.7	-0.3	14.3	13.9	14.8		
202	29.60	7.8	8.5	13.2	14.9	-0.1	14.0	16.4	16.3		
204	6.80	7.5	9.0	13.2	15.9	0.5	13.5	16.2	*		
80-HG-196	0.20	8.8	6.6	13.4	12.3	-2.0	15.8	16.0	11.7		
199	17.00	8.3	7.1	13.4	13.1	-1.3	15.3	15.2	12.9		
200	23.10	8.0	7.7	13.3	14.0	-0.7	14.7	15.3	14.2		
201	13.20	6.2	7.6	13.0	12.7	-0.3	14.3	13.9	14.8		
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NUCLEUS	ABUNDANCE (%)	SEPARATION ENERGIES (MEV)							
		G,N	G,P	G,T	G,HE3	G,A	G,2N	G,NP	G,2P
82-PB-204	1.40	8.4	6.6	12.8	12.4	-2.0	15.2	14.4	12.3
206	24.10	8.1	7.3	13.0	13.4	-1.1	14.8	14.8	13.7
207	22.10	6.7	7.5	13.1	12.7	-0.4	14.8	14.0	14.7
208	52.40	7.4	8.0	12.9	14.4	-0.5	14.1	14.9	15.4
83-BI-209	100.00	7.5	3.8	9.4	10.9	-3.1	14.4	11.2	0.8
88-RA-226	-----	6.4	7.4	9.7	*	-4.9	11.3	13.4	*
89-AC-227	-----	6.7	4.5	9.4	7.9	-5.0	11.9	11.5	12.5
90-TH-232	100.00	6.4	7.8	10.2	12.2	-4.1	11.6	13.7	13.7
92-U-234	0.005	6.8	6.6	10.2	10.6	-4.9	12.6	13.1	11.9
235	0.720	5.3	6.7	10.0	9.5	-4.7	12.1	11.9	12.4
238	99.275	6.1	7.6	10.0	11.8	-4.3	11.3	13.6	*
93-NP-237	-----	6.6	4.9	8.2	10.4	-5.0	12.3	11.4	12.0
94-PU-238	-----	7.0	6.0	9.8	9.7	-5.6	12.9	12.6	10.9
239	-----	5.1	6.2	9.8	8.8	-5.2	12.7	11.6	11.4
240	-----	6.5	6.5	9.7	10.2	-5.3	12.2	12.7	11.8
242	-----	6.3	6.9	9.5	10.8	-5.0	11.5	12.9	12.6
95-AM-241	-----	6.7	4.5	8.2	9.5	-5.6	12.6	11.0	11.0