(JAERI-M 83-025)

NEANDC(J)-89/U
(INDC(JAP)-76/L)

XN8300047

PREDICTION OF MASS EXCESS, β-DECAY ENERGY AND NEUTRON SEPARATION ENERGY FROM THE ATOMIC MASS FORMULA WITH EMPIRICAL SHELL TERMS

February 1983

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編集兼発行　日本原子力研究所
印　　刷　日立高速印刷株式会社

NEANDC (J) -- 89 - U.

(JAERI-M 83-025)

Prediction of Mass Excess, β-Decay Energy and Neutron Separation Energy from the Atomic Mass Formula with Empirical Shell Terms

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(Received January 28, 1983)

Recently we proposed two types of atomic mass formula (constant-shell-term formula, linear-shell-term formula). With use of these formulas, we calculate and tabulate mass excesses, neutron separation energies, and β-decay energies (β^--decay and/or electron capture) for about 5000 nuclides.

The mass excess values and their errors in the 1977 atomic mass evaluation by A.H. Wapstra and K. Bos which we used in constructing our formulas, are also tabulated for reference. The constant-shell-term formula is fitted to 1468 input mass data with the standard deviation of 626 keV and the linear-shell-term formura with 394 keV.

Keywords: Atomic Mass Formula, Mass Excess, β-Decay Energy, Neutron Separation Energy, New Statistical Method, Constant-shell-term Formula, Linear-shell-term Formula

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経験的殻項を持つ原子質量公式による質量超過，ベータ崩壊エネルギー，中性子分離エネルギーの予測

日本原子力研究所シグマ研究委員会

安藤　良平*・宇野　正宏**・山田　勝美***

（1983年1月28日受理）

最近われわれが提案した2つのタイプの原子質量公式（定数型殻項公式および1次型殻項公式）を用いて，約5000個の核種に対する質量超過，中性子分離エネルギー，β崩壊エネルギー（β^-崩壊あるいは電子捕獲）が計算され，表示されている。

公式を作成する際に用いたA.H.WapstraとK.Bosによる1977年の原子質量評価における質量超過値とその誤差も参考のため併記されている。1468個の入力質量データと定数型殻項とは標準偏差626 keV，1次型殻公式とは標準偏差394keVで一致している。

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1. Introduction

Operation of fission reactors is necessarily accompanied by fission product nuclides. These nuclides have a great influence on the characteristics of reactors through the absorption of neutrons, the emission of delayed neutrons, and the production of decay heat accompanying β-decay. Fission product nuclides are neutron-rich, and not a few of them lie in the nuclidic region far from the β-stability line. In order to make a proper estimation of the influence of such nuclides on the characteristics of reactors, we should use accurate values of β-decay energies and neutron separation energies of atomic nuclei. This is the reason why we need a good atomic mass formula in the nuclear energy field.

Recently we constructed two types of atomic mass formula by applying a new statistical method in determining the parameter values contained in formulas.[1),2)] Each of them consists of a gross part and a shell part. The gross part is a smooth function of proton number Z and neutron number N, representing the average tendency of the nuclear mass surface. The shell part is the sum of empirical proton and neutron shell terms, and stands for characteristic features of the mass of each nuclide arising from the so-called nuclear shell effects. One of these formulas has constant shell terms, of which the proton shell term does not depend on the neutron number N and the neutron shell term does not depend on the proton number Z.[1)] The other has linear shell terms, of which the proton shell term depends linearly on the neutron number N and the neutron shell term depends linearly on the proton number Z.[2)] The values of the gross-part parameters have been adjusted so that the shell terms remain small and accord with the charge symmetry of nuclear forces. Those of the shell-part parameters have been determined by means of a new statistical method devised in this study, of which the essential point is to take account of the errors inherent in the mass formula. This metod enables us to deal justly with the input mass data which have a great variety of errors ranging from keV to MeV. The resulting mass formulas give not only mass values but also their theoretical errors.

We use the mass values and their errors in the 1977 atomic mass evaluation by A.H.Wapstra and K.Bos[3)] without considering the correlation among errors. We also use their systematics mass values, which are denoted by SYST in the evaluation, together with errors estimated by ourselves.

The constant-shell-term formula in Ref. 1) is fitted to 1468 input mass data with the standard deviation of 626 keV, and the linear-shell-term formula in Ref. 2) with 394 keV. The linear-shell-term formula is generally more accurate than the constant-shell-term formula in the nuclidic region near the β-stability line. However, in the region far from the β-stability line, in particular, in the regions where there are no input mass data, there is not much to choose between the two formulas.

In this report we tabulate mass excesses and their theoretical errors, neutron separation energies, and β-decay energies (β^--decay and/or electron capture) for about 5000 nuclides with use of our two formulas. The mass excess values and their errors in the Wapstra-Bos mass evaluation[3)] are also tabulated for reference.

2. Mass Formula

The mass excess of the nuclide with Z protons and N neutrons is expressed in the following form :

$$M_E(Z,N) \doteq M_{Eg}(Z,N) + P_Z(N) + Q_N(Z) - \Delta M_{odd\text{-}odd}(A) \qquad (1)$$

Here, $M_{Eg}(Z,N)$ is a amooth function of Z and N, representing the gross feature of the nuclear mass surface. The terms, $P(Z)$ and $Q(N)$, are the proton and neutron shell terms respectively, each of which is necessarily smooth with respect to the subscript Z or N, but is a smooth function of the variable N or Z in the parentheses. The last term is a small correction for odd-odd nuclei.

The gross part $M_{Eg}(Z,N)$ is expressed in MeV as

$$M_{Eg}(Z,N) = 7.68023\cdot A + 0.39120\cdot I + a(A)\cdot A + b(A)\cdot|I| + c(A)\cdot I^2/A + E_c(Z,N) - 14.33 \times 10^{-6} \qquad (2)$$

with $A = N + Z$, $I = N - Z$

$$a(A) = a_1 + a_2\cdot A^{-1/3} + a_2\cdot A^{-2/3} + a_4\cdot A^{-1}$$

$$b(A) = b\cdot A^{-2/3}$$

$$c(A) = c_1 + c_2\cdot A^{-1/3} + c_3\cdot A^{-2/3}/(1 + c_4\cdot A^{-1/3})$$

The Coulomb energy $E_c(Z,N)$ is taken as that of the trapezoidal charge distribution :

$$E_c(Z,N) = \frac{0.864}{r_o}\cdot\left(\frac{R}{r_o}\right)^5\cdot\left[1 + \frac{5}{6}\left(\frac{z}{R}\right)^2 + \frac{1}{2}\left(\frac{z}{R}\right)^3 + \frac{1}{6}\left(\frac{z}{R}\right)^4 - \frac{1}{42}\left(\frac{z}{R}\right)^5\right]\cdot\left(\frac{Z}{A}\right)^2 - \frac{0.66}{r_o}\left(\frac{Z}{A}\right)^{4/3}\cdot A$$

with $R = r_o\left\{\left[\sqrt{\left(\frac{A}{2}\right)^2 + \frac{1}{27}\left(\frac{z}{r_o}\right)^6} + \frac{A}{2}\right]^{1/3} - \left[\sqrt{\left(\frac{A}{2}\right)^2 + \frac{1}{27}\left(\frac{z}{r_o}\right)^6} - \frac{A}{2}\right]^{1/3}\right\}$

The radius parameter r_o is taken to be 1.13 fm and the half surface thickness z to be 1.5 fm.[4] The last term of Eq.(2) is the binding energy of atomic electrons. The correction term for odd-odd nuclei is, on the average, expressed as[4]

$$\Delta M_{odd\text{-}odd}(A) = \frac{11719.21}{(A + 31.4113)^2} - \frac{1321495}{(A + 48.1170)^3} \qquad (3)$$

Two functional forms are used for the shell terms $P_Z(N)$ and $Q_N(Z)$. The first is the constant form[1] :

$$P_Z(N) = P_Z, \quad Q_N(Z) = Q_N \qquad (4)$$

and the second is the linear form[2] :

$$P_Z(N) = P_Z^0 + P_z^1(N - N_o(Z)), \quad Q_N(Z) = Q_N^0 + Q_N^1(Z - Z_o(N)) \qquad (5)$$

where, P_Z, Q_N, P_Z^0, P_Z^1, Q_N^0 and Q_N^1 are adjustable parameters, and $Z_o(N)$ and $N_o(Z)$ are constants representing the β-stability line.

3. Statistical Method

Values of the gross-part parameters a_i, b, c_i and the shell-part parameters (P_Z, Q_N) or $(P_Z^0, P_Z^1, Q_N^0, Q_N^1)$ have been optimized through a trial and error procedure similar to that described in Ref. 4).

In the course of determining the shell-parameter values, a new statistical method[1),2),5)] devised in this study has been applied.

The essential point of this method is to take account of the error inherent in the mass formula. This error is referred to as the intrinsic error.

The intrinsic errors are attached to the shell terms $P_Z(N)$ and $Q_N(Z)$, and are denoted by α_Z and β_N respectively in the sense of standard deviation. The intrinsic error α_Z generally depends on Z, and β_N on N. No intrinsic error is attached to the gross terms. Extrinsic errors coming from the uncertainty of the values of the shell parameters are also taken into account. The extrinsic errors of the proton shell terms are denoted by $\Delta P_Z^{ext}(N)$ and those of the neutron shell terms by $\Delta Q_N^{ext}(Z)$. The extrinsic error $\Delta P_Z^{ext}(N)$ depends on N, and $\Delta Q_N^{ext}(Z)$ on Z in the case of the linear-shell-term formula, while no such dependence exists in the case of the constant-shell-term formula, where they can be written as ΔP_Z^{ext} and ΔQ_N^{ext}.

The best values of the proton and neutron shell parameters, the extrinsic errors, and the intrinsic errors are determined with reference to the input mass data and their errors according to the principle of the probability theory.

In the following we give formulas necessary for calculating the errors in the mass values. We distinguish the constant-shell-term formula and the linear-shell-term formula with subscripts "c" and "ℓ".

The theoretical error in the nuclidic region of interpolation is as follows.

For the constant-shell-term formula,

$$\delta M(Z,N) = \{\alpha_{ZC}^2 + \beta_{NC}^2 + [\Delta P_{ZC}^{ext}]^2 + [\Delta Q_{NC}^{ext}]^2 + [\tfrac{1}{3}\Delta M_{odd\text{-}odd}(A)]^2\}^{1/2} \tag{6}$$

For the linear-shell-term formula,

$$\delta M(Z,N) = \{\alpha_{Z\ell}^2 + \beta_{N\ell}^2 + [\Delta P_{Z\ell}^{ext}(N)]^2 + [\Delta Q_{N\ell}^{ext}(Z)]^2 + [\tfrac{1}{3}\Delta M_{odd\text{-}odd}(A)]^2\}^{1/2} \tag{7}$$

with

$$\Delta P_{Z\ell}^{ext}(N) = \left[\left(\frac{N-N_0(Z)}{\sqrt{W_Z}} + \frac{1}{\sqrt{S_Z}}\right)^2 \Big/ 2\left(2+\frac{T_Z}{\sqrt{S_Z W_Z}}\right) + \left(\frac{N-N_0(Z)}{\sqrt{W_Z}} - \frac{1}{\sqrt{S_Z}}\right)^2 \Big/ 2\left(2-\frac{T_Z}{\sqrt{S_Z W_Z}}\right)\right]^{1/2} \tag{8}$$

$$\Delta Q_{N\ell}^{ext}(Z) = \left[\left(\frac{Z-Z_0(N)}{\sqrt{W_N}} + \frac{1}{\sqrt{S_N}}\right)^2 \Big/ 2\left(2+\frac{T_N}{\sqrt{S_N W_N}}\right) + \left(\frac{Z-Z_0(N)}{\sqrt{W_N}} - \frac{1}{\sqrt{S_N}}\right)^2 \Big/ 2\left(2-\frac{T_N}{\sqrt{S_N W_N}}\right)\right]^{1/2} \tag{9}$$

where the last terms in curly brackets in Eqs. (6) and (7) are added for odd-odd nuclei only.

On the other hand, the theoretical error in the nuclidic region of extrapolation is as follows.

For the constant-shell-term formula,

$$\delta M(Z,N) = \{[\alpha_{ZC} + \Delta\bar{\alpha}_{Z2}(N) + \Delta\bar{\alpha}_{Z1}(N)]^2 + [\beta_{NC} + \Delta\bar{\beta}_{N2}(Z) + \Delta\bar{\beta}_{N1}(Z)]^2 + [\Delta P^{ext}_{ZC}]^2 + [\Delta Q^{ext}_{NC}]^2 + [\tfrac{1}{3}\Delta M_{odd\text{-}odd}(A)]^2\}^{1/2} \quad (10)$$

For the linear-shell-term formula,

$$\delta M(Z,N) = \{[\alpha_{Z\ell} + \Delta\bar{\alpha}_{Z2}(N)]^2 + [\beta_{N\ell} + \Delta\bar{\beta}_{N2}(Z)]^2 + [\Delta P^{ext}_{Z}(N)]^2 + [\Delta Q^{ext}_{N}(Z)]^2 + [\tfrac{1}{3}\Delta M_{odd\text{-}odd}(A)]^2\}^{1/2} \quad (11)$$

where

$$\Delta\bar{\alpha}_{Z2}(N) = \frac{6\sqrt{5}\,k_Z(N)}{\bar{\ell}_Z}\left[\frac{k_Z(N)}{\bar{\ell}_Z} + 1\right]\frac{\bar{\alpha}_{Z\ell}}{3}$$

$$\Delta\bar{\beta}_{N2}(Z) = \frac{6\sqrt{5}\,k_N(Z)}{\bar{\ell}_N}\left[\frac{k_N(Z)}{\bar{\ell}_N} + 1\right]\frac{\bar{\beta}_{N\ell}}{3}$$

$$\Delta\bar{\alpha}_{Z1}(N) = \frac{2\sqrt{3}\,k_Z(N)}{\bar{\ell}_Z}(\bar{\alpha}_{ZC} - \bar{\alpha}_{Z\ell})$$

$$\Delta\bar{\beta}_{N1}(Z) = \frac{2\sqrt{3}\,k_N(Z)}{\bar{\ell}_N}(\bar{\beta}_{NC} - \bar{\beta}_{N\ell})$$

Here, $k_Z(N)$ is the difference between the neutron numbers of the extrapolated nucleus in question and its nearest isotope having experimental data, and $k_N(Z)$ corresponds to $k_Z(N)$ with proton and neutron interchanged. The symbol $\bar{\ell}_Z$ is equal to $\bar{\ell}_{ZC}$ in the constant-shell-term formula and $\bar{\ell}_{Z\ell}$ in the linear-shell-term formula, and $\bar{\ell}_N$, $\Delta\bar{\alpha}_{Z2}(N)$, $\Delta\bar{\beta}_{N2}(Z)$, $\Delta\bar{\alpha}_{Z1}(N)$ and $\Delta\bar{\beta}_{N1}(Z)$ should be taken likewise.

4. Parameter Values

The parameters in the constant-shell-term formula are given in Tables 1 ∿ 4 :

Contents	No. of Table
a_i, b, c_i	1
$\bar{\ell}_{ZC}$, $\bar{\ell}_{NC}$, $\bar{\alpha}_{ZC}$, $\bar{\beta}_{NC}$	2
P_Z, α_{ZC}, ΔP^{EXT}_{ZC}	3
Q_N, β_{NC}, ΔQ^{EXT}_{NC}	4

The parameters in the linear-shell-term formula are given in Tables 5 ∿ 8 :

Contents	No. of Table
a_i, b, c_i	5
$\bar{\ell}_{Z\ell}$, $\bar{\ell}_{N\ell}$, $\bar{\alpha}_{Z\ell}$, $\bar{\beta}_{N\ell}$	6
P^0_Z, P^1_Z, $N_o(Z)$, $\alpha_{Z\ell}$, W_Z, T_Z, S_Z	7
Q^0_N. Q^1_N, $Z_o(N)$, $\beta_{N\ell}$, W_N, T_N, S_N	8

In order to see the behavior of $P_Z(N)$, $Q_N(Z)$ as functions of Z and N respectively, we show P_Z, Q_N, P^0_Z, P^1_Z, Q^0_N and Q^1_N in Figs. 1 ∿ 6.

5. Main Table

Experimental[3] and calculated mass excesses, Q-values for β^--decay and electron capture, and neutron separation energies are given in Table 9.

Each nuclide is specified by its neutron number (N), atomic number (Z), mass number (A) and element symbol (EL). Errors are given for mass excesses: "25920 500" means "25920 ± 500".

Nuclides covered are, for each mass number, 5 proton-rich and 7 neutron-rich ones in addition to those having input data.

6. Calculation of reaction energies

Reaction energies for many types of nuclear reaction can be derived from the mass excess values in Table 9 with use of the following relations (in keV):

$$S(p) = -M_E(Z,N) + M_E(Z+1,N) + 7289$$
$$Q(2\beta^-) = M_E(Z,N) - M_E(Z+2,N-2)$$
$$Q(p,2n) = M_E(Z,N) - M_E(Z+1,N-2) - 8854$$
$$Q(n,2p) = M_E(Z,N) - M_E(Z-2,N+1) - 6507$$
$$S(2n) = -M_E(Z,N) + M_E(Z,N-2) + 16143$$
$$Q(d,\alpha) = M_E(Z,N) - M_E(Z-1,N-1) + 10711$$
$$S(2p) = -M_E(Z,N) + M_E(Z-2,N) + 14578$$
$$S(^3He) = -M_E(Z,N) + M_E(Z-2,N-1) + 14931$$
$$S(t) = -M_E(Z,N) + M_E(Z-1,N-2) + 14950$$
$$Q(\alpha) = M_E(Z,N) - M_E(Z-2,N-2) - 2425$$

Atomic masses in atomic mass units can be calculated from the following equation:

$$M(Z,N) = \frac{M_E(Z,N)}{931501.6} + A \qquad (A=N+Z)$$

Acknowledgment

The authors would like to express their thanks to Prof. R.Nakasima of Hosei University, the members of the decay heat working group of Japanese Nuclear Data Committee, and Drs. S.Iijima and T.Yoshida of NAIG Nuclear Research Laboratory for their valuable comments and discussion in peparing this report.

We are also deeply indebted to Prof. A.H.Wapstra, Instituut voor Kern-Physisch Onderzoek, Amsterdam, for his approval of the tabulation of the experimental mass data (*ADNDT*, 19 [3], 1977) in this report.

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Table 1 Values of parameters in $M_{Eg}(Z,N)$ for the constant-shell-term formula.

a_1	-17.080 MeV
a_2	30.138 MeV
a_3	-31.322 MeV
a_4	24.192 MeV
b	15.0 MeV
c_1	35.217 MeV
c_2	-89.811 MeV
c_3	92.940 MeV
c_4	0.56912
r_0	1.13 fm
z	1.5 fm

Table 2 Averages of ℓ_Z, ℓ_N, α_Z and β_N taken over the subscript Z or N in the case of the constant-shell-term formula.

	$\bar{\ell}_Z$	$\bar{\ell}_N$	$\bar{\alpha}_Z$(keV)	$\bar{\beta}_N$(keV)
Even	13.4	8.1	319	326
Odd	12.3	7.2	398	341

*) The values of $\bar{\ell}_Z$ and $\bar{\ell}_N$ presented in Table 2 of Ref. 2) were mistaken for those of $(\bar{\ell}_Z + 1)$ and $(\bar{\ell}_N + 1)$.

Table 3 Values of the proton shell parameter P_Z, the intrinsic error α_{ZC} and the extrinsic error ΔP_{ZC}^{EXT} in the constant-shell-term formula.

Z	P_Z (MeV)	α_{ZC} (MeV)	ΔP_{ZC}^{EXT} (MeV)	Z	P_Z (MeV)	α_{ZC} (MeV)	ΔP_{ZC}^{EXT} (MeV)	Z	P_Z (MeV)	α_{ZC} (MeV)	ΔP_{ZC}^{EXT} (MeV)
1				41	1.902	.126	.079	81	-.124	.692	.238
2	-5.549	.199	.186	42	.202	.101	.055	82	-1.707	.116	.067
3	1.673	.126	.128	43	1.174	.323	.133	83	.002	.126	.091
4	-.807	.862	.399	44	-.701	.101	.052	84	-.048	.101	.067
5	2.093	.856	.464	45	.165	.126	.074	85	1.674	.126	.103
6	-1.596	1.057	.383	46	-1.803	.101	.051	86	1.439	.101	.079
7	1.215	1.194	.517	47	-.933	.126	.071	87	3.419	.678	.234
8	-1.003	.690	.232	48	-3.045	.101	.052	88	2.990	.572	.148
9	2.506	.771	.375	49	-2.586	.706	.208	89	4.343	.329	.149
10	.579	.101	.075	50	-4.940	1.000	.200	90	3.405	.101	.056
11	2.767	.342	.162	51	-3.135	.996	.285	91	3.873	.147	.095
12	.129	.101	.067	52	-3.736	.655	.141	92	2.521	.101	.053
13	1.796	.241	.135	53	-2.118	.571	.181	93	2.907	.126	.081
14	-1.003	.519	.172	54	-2.946	.101	.051	94	1.754	.101	.048
15	.467	.605	.292	55	-1.141	.183	.089	95	2.075	.187	.098
16	-.697	.503	.164	56	-1.653	.101	.053	96	.852	.101	.050
17	1.476	.552	.230	57	.188	.126	.084	97	1.205	.126	.082
18	.050	.101	.062	58	-.490	.101	.052	98	.007	.101	.052
19	1.759	.138	.089	59	1.158	.126	.075	99	.352	.126	.085
20	-.152	.101	.066	60	.198	.101	.044	100	-.778	.196	.079
21	2.126	.223	.141	61	1.583	.170	.076	101			
22	.290	.305	.118	62	.449	.101	.041	102	-1.569	.101	.098
23	1.699	.126	.118	63	1.606	.253	.091				
24	-.481	.101	.078	64	.403	.101	.043				
25	.572	.363	.178	65	1.530	.334	.120				
26	-1.511	.305	.118	66	.309	.101	.043				
27	-.399	.222	.124	67	1.355	.216	.081				
28	-2.581	.101	.063	68	.272	.101	.046				
29	-.778	.126	.078	69	1.246	.192	.086				
30	-1.291	.168	.061	70	.322	.101	.048				
31	.616	.126	.067	71	1.414	.180	.083				
32	-.353	.101	.049	72	.554	.101	.055				
33	1.663	.126	.070	73	1.448	.126	.094				
34	.394	.101	.055	74	.390	.101	.064				
35	2.229	.126	.079	75	1.282	.261	.137				
36	.664	.166	.058	76	.355	.101	.084				
37	2.154	.276	.107	77	1.436	.394	.196				
38	.425	.101	.053	78	.455	.101	.075				
39	1.727	.269	.117	79	.743	.141	.111				
40	.356	.101	.057	80	-.749	.416	.127				

Table 4 Values of the neutron shell parameter Q_N, the intrinsic error β_{NC} and the extrinsic error ΔQ_{NC}^{EXT} in the constant-shell-term formula.

N	Q_N (MeV)	β_{NC} (MeV)	ΔQ_{NC}^{EXT} (MeV)	N	Q_N (MeV)	β_{NC} (MeV)	ΔQ_{NC}^{EXT} (MeV)	N	Q_N (MeV)	β_{NC} (MeV)	ΔQ_{NC}^{EXT} (MeV)	N	Q_N (MeV)	β_{NC} (MeV)	ΔQ_{NC}^{EXT} (MeV)
1				41	2.729	.178	.113	81	-1.148	.124	.073	121	-3.408	.168	.104
2	-6.395	2.443	1.147	42	.939	.103	.065	82	-2.881	.135	.059	122	-4.875	.103	.072
3	-1.072	1.036	.745	43	2.419	.192	.110	83	-.995	.108	.062	123	-4.556	.370	.173
4	-2.661	.103	.158	44	.387	.107	.063	84	-1.050	.103	.051	124	-6.024	.365	.139
5	-.056	1.015	.633	45	1.574	.236	.126	85	.639	.108	.060	125	-5.805	.729	.319
6	-3.443	.118	.130	46	-.572	.179	.078	86	.423	.103	.050	126	-6.779	.818	.270
7	-.476	.620	.448	47	.214	.239	.118	87	2.072	.176	.078	127	-4.626	.871	.406
8	-1.975	.103	.097	48	-2.132	.199	.074	88	1.660	.103	.054	128	-4.543	.457	.172
9	1.670	.269	.198	49	-1.635	.274	.127	89	3.228	.108	.073	129	-2.660	.461	.227
10	-.899	.103	.098	50	-4.217	.369	.113	90	2.159	.103	.059	130	-2.604	.103	.067
11	1.248	.108	.112	51	-2.626	.108	.072	91	3.198	.108	.069	131	-.874	.108	.086
12	-1.212	.103	.097	52	-2.827	.103	.059	92	1.923	.103	.058	132	-.970	.396	.147
13	.638	.230	.164	53	-1.129	.108	.068	93	2.745	.173	.094	133	.200	.729	.391
14	-2.235	.495	.195	54	-1.476	.106	.055	94	1.667	.105	.064	134	-.094	.717	.259
15	-.827	.400	.214	55	.102	.336	.138	95	2.543	.256	.123	135	.796	.744	.401
16	-2.146	.103	.082	56	-.305	.209	.076	96	1.512	.110	.063	136	.218	.651	.254
17	.148	.108	.092	57	1.542	.397	.160	97	2.318	.246	.119	137	.837	.300	.215
18	-.915	.103	.083	58	1.148	.139	.061	98	1.249	.131	.071	138	.218	.281	.129
19	.986	.108	.104	59	2.990	.163	.088	99	2.011	.157	.104	139	1.004	.237	.149
20	-.657	.228	.110	60	2.080	.103	.058	100	1.109	.103	.069	140	.293	.164	.087
21	2.120	.300	.167	61	3.848	.108	.086	101	1.836	.108	.099	141	.901	.108	.088
22	.681	.291	.121	62	2.757	.111	.069	102	.992	.103	.069	142	.295	.103	.062
23	2.320	.255	.142	63	4.460	.108	.098	103	1.694	.156	.102	143	1.002	.108	.082
24	.326	.117	.073	64	3.353	.103	.082	104	.935	.131	.070	144	.428	.103	.058
25	1.182	.274	.138	65	4.680	.448	.222	105	1.687	.158	.100	145	1.071	.126	.084
26	-.959	.138	.074	66	3.621	.131	.090	106	.909	.103	.068	146	.651	.103	.057
27	-.516	.539	.218	67	5.145	.108	.112	107	1.584	.108	.086	147	1.347	.108	.075
28	-2.958	.654	.197	68	3.764	.103	.101	108	.691	.174	.083	148	.835	.103	.059
29	-1.473	.846	.365	69	4.759	.476	.270	109	1.436	.133	.097	149	1.431	.108	.095
30	-2.192	.624	.195	70	3.313	.344	.155	110	.747	.310	.121	150	.963	.177	.081
31	-.233	.407	.202	71	4.331	.465	.268	111	1.493	.284	.147	151	1.659	.212	.129
32	-.912	.103	.071	72	2.756	.387	.172	112	.545	.473	.156	152	1.146	.165	.079
33	1.043	.202	.130	73	3.589	.460	.274	113	1.100	.356	.190	153	2.004	.204	.144
34	-.176	.103	.069	74	1.942	.366	.164	114	-.215	.482	.168	154	1.769	.114	.077
35	1.958	.251	.133	75	2.659	.498	.265	115	.416	.706	.302	155	2.675	.108	.106
36	.485	.103	.064	76	.876	.478	.172	116	-1.132	.704	.217	156	2.417	.103	.114
37	2.403	.108	.088	77	1.583	.408	.199	117	-.887	.453	.223				
38	.890	.103	.060	78	-.103	.265	.102	118	-2.340	.444	.167				
39	2.656	.253	.129	79	.442	.184	.099	119	-2.124	.108	.095				
40	1.099	.103	.063	80	-1.354	.103	.055	120	-3.631	.103	.077				

Table 5 Values of parameters in $M_{Eg}(Z,N)$ for the linear-shell-term formula.

a_1	-17.080 MeV
a_2	30.138 MeV
a_3	-31.322 MeV
a_4	24.192 MeV
b	15.0 MeV
c_1	35.493 MeV
c_2	-90.356 MeV
c_3	87.726 MeV
c_4	0.45255
r_0	1.13 fm
z	1.5 fm

Table 6 Averages of ℓ_Z, ℓ_N, α_Z and β_N taken over the subscript Z or N in the case of the linear-shell-term formula.

	$\bar{\ell}_Z$	$\bar{\ell}_N$	$\bar{\alpha}_Z$(keV)	$\bar{\beta}_N$(keV)
Even	11.5	7.0	153	141
Odd	9.9	6.3	211	187

*) The values of $\bar{\ell}_Z$ and $\bar{\ell}_N$ presented in Table 1 of Ref. 2) were mistaken for those of $(\bar{\ell}_Z + 1)$ and $(\bar{\ell}_N + 1)$.

Table 7 Values of the proton shell parameters P_z^0 and P_z^1, the constant $N_0(Z)$ representing the β-stability line, the intrinsic error $\alpha_{z\ell}$ and the quantities W_z, T_z, S_z for calculating the extrinsic error $\Delta P_{z\ell}^{EXT}(N)$ in the linear-shell-term formula.

Z	P_z^0 (MeV)	P_z^1 (MeV)	$N_0(Z)$	$\alpha_{z\ell}$ (MeV)	W_z (MeV^{-2})	T_z (MeV^{-2})	S_z (MeV^{-2})
1			1.001				
2	-7.121	-.659	2.001	.049	5.723269E+02	3.557993E+02	7.822926E+01
3	-2.476	.891	3.000	1.469	8.239777E+00	3.667317E+00	9.190383E-01
4	-2.931	.619	4.001	1.307	1.705475E+01	6.791645E+00	2.114617E+00
5	.651	.788	5.000	.658	3.266447E+01	3.748831E+00	4.821904E+00
6	-1.982	.276	6.000	.049	9.974219E+02	-7.438475E+01	2.408110E+02
7	1.390	.310	6.999	.067	4.659788E+02	-2.853952E+01	1.304154E+02
8	.221	.055	8.002	.613	1.573511E+02	3.459694E+01	1.300487E+01
9	4.770	-.101	9.000	.743	4.462732E+01	1.461522E+01	4.017284E+00
10	3.373	-.308	10.002	.049	2.274451E+03	4.347974E+02	3.057283E+02
11	5.753	-.058	11.048	.522	1.549044E+02	3.664647E+01	9.813660E+00
12	3.382	-.244	12.295	.049	1.444302E+03	-1.335077E+02	3.206462E+02
13	5.349	-.352	13.565	.067	7.329656E+02	4.145625E+01	1.565792E+02
14	2.154	-.599	14.849	.049	2.226547E+03	-4.908181E+02	3.159385E+02
15	3.139	-.554	16.143	.161	3.892832E+02	9.153380E+01	5.159187E+01
16	1.281	-.569	17.449	.049	3.748725E+03	1.776798E+02	3.544419E+02
17	2.652	-.533	18.762	.082	1.540437E+03	6.532982E+01	1.778091E+02
18	.712	-.538	20.090	.069	1.989053E+03	-2.169349E+00	2.675354E+02
19	1.927	-.447	21.428	.141	5.141826E+02	-1.263459E+02	7.408693E+01
20	-.292	-.402	22.773	.161	1.669683E+03	-9.663596E+01	1.165891E+02
21	1.783	-.346	24.133	.355	2.458297E+02	-1.724744E+01	1.719565E+01
22	.049	-.253	25.501	.049	5.091770E+03	-1.306621E+03	3.018000E+02
23	1.651	-.173	26.880	.067	1.454152E+03	-4.827637E+02	7.331509E+01
24	-.242	-.043	28.268	.049	5.935801E+03	-1.002177E+03	2.704526E+02
25	1.072	-.007	29.666	.067	1.315736E+03	4.782859E+02	1.120271E+02
26	-.752	-.045	31.074	.225	1.100014E+03	-7.752316E+00	7.558333E+01
27	.543	-.036	32.491	.067	9.893416E+02	3.368755E+02	1.828966E+02
28	-1.366	-.128	33.919	.049	3.621840E+03	1.429754E+01	4.836726E+02
29	.547	-.164	35.355	.067	2.277186E+03	-7.670271E+00	2.925137E+02
30	.055	-.133	36.801	.049	1.032709E+04	1.354646E+02	6.802988E+02
31	2.092	-.186	38.257	.071	5.016828E+03	-9.009111E+01	3.341726E+02
32	1.125	-.220	39.722	.049	1.168150E+04	4.114046E+01	7.078093E+02
33	3.100	-.273	41.196	.097	3.676068E+03	2.252650E+02	2.444878E+02
34	1.625	-.275	42.679	.049	1.026219E+04	6.041243E+02	6.969094E+02
35	3.258	-.346	44.172	.067	3.103127E+03	-4.600031E+01	3.232959E+02
36	1.455	-.317	45.674	.049	1.405622E+04	1.245567E+03	6.815532E+02
37	2.696	-.349	47.184	.181	2.779307E+03	1.567326E+02	9.923862E+01
38	.569	-.334	48.704	.049	1.082079E+04	8.373608E+02	5.988408E+02
39	1.538	-.351	50.233	.130	2.875859E+03	4.183730E+02	1.329304E+02
40	-.294	-.295	51.770	.063	6.990965E+03	1.151607E+03	4.478933E+02

Table 7 (Cont'd)

Z	P_z^0 (MeV)	P_z^1 (MeV)	$N_0(Z)$	$\alpha_{z\ell}$ (MeV)	W_z (MeV^{-2})	T_z (MeV^{-2})	S_z (MeV^{-2})
41	.951	-.245	53.316	.067	4.571375E+03	3.561367E+02	2.897744E+02
42	-.975	-.211	54.871	.049	9.450262E+03	-3.242874E+02	6.108574E+02
43	-.076	-.228	56.434	.165	1.553468E+03	-1.557036E+02	9.047440E+01
44	-2.145	-.182	58.006	.049	7.464750E+03	-7.106919E+02	6.073547E+02
45	-1.238	-.147	59.586	.067	4.420281E+03	-1.065534E+03	3.010273E+02
46	-3.129	-.076	61.175	.049	1.234048E+04	-2.032987E+03	7.606450E+02
47	-2.055	-.041	62.772	.067	5.879238E+03	-2.726313E+02	3.887974E+02
48	-3.957	-.012	64.378	.049	1.813715E+04	-7.446567E+02	9.384338E+02
49	-2.924	-.004	65.991	.067	1.636870E+04	1.143049E+03	5.343821E+02
50	-4.924	-.024	67.614	.049	3.979419E+04	2.781216E+03	1.213602E+03
51	-2.873	-.026	69.244	.131	8.327992E+03	6.196230E+02	2.343258E+02
52	-3.271	-.003	70.883	.049	3.816787E+04	4.054433E+03	1.210946E+03
53	-1.439	-.004	72.529	.067	1.571576E+04	1.946994E+03	5.042268E+02
54	-2.106	.042	74.184	.049	3.150693E+04	5.099309E+03	1.084047E+03
55	-.241	.035	75.848	.073	1.208711E+04	1.466781E+03	4.492966E+02
56	-.977	.060	77.519	.049	2.061823E+04	1.787801E+03	1.019683E+03
57	.802	.027	79.198	.067	5.115492E+03	9.291572E+02	2.723403E+02
58	-.118	.032	80.885	.049	8.370770E+03	2.038729E+03	6.833083E+02
59	1.374	.021	82.580	.067	3.525447E+03	2.886143E+02	3.043862E+02
60	.169	.027	84.283	.049	1.705879E+04	1.033119E+03	8.964661E+02
61	1.347	-.015	85.995	.082	5.173984E+03	-3.385295E+02	3.069717E+02
62	-.054	.010	87.713	.049	2.216348E+04	-1.952003E+03	1.008290E+03
63	.810	-.029	89.440	.180	4.589355E+03	-5.585898E+02	1.290612E+02
64	-.678	.000	91.175	.049	1.984611E+04	-1.940732E+03	9.894590E+02
65	-.010	-.068	92.918	.091	8.067926E+03	-1.320008E+03	3.186130E+02
66	-1.442	-.004	94.668	.049	2.175131E+04	-4.131887E+03	9.667803E+02
67	-.792	-.039	96.426	.067	1.258120E+04	-2.627510E+03	4.273162E+02
68	-1.954	.032	98.192	.049	1.719550E+04	-4.404238E+03	7.061763E+02
69	-1.175	.019	99.965	.067	2.954207E+03	-9.811245E+02	1.999196E+02
70	-2.076	.096	101.747	.049	9.835285E+03	-3.195838E+03	3.881450E+02
71	-.963	.107	103.536	.078	4.610195E+03	-1.302362E+03	1.262205E+02
72	-1.250	.236	105.332	.049	9.034973E+03	8.282346E+02	2.492881E+02
73	-.491	.212	107.136	.067	2.553811E+03	6.368730E+02	1.278548E+02
74	-1.623	.229	108.948	.049	5.916906E+03	1.559799E+03	4.195334E+02
75	-.766	.200	110.768	.201	1.390283E+03	-1.890703E+01	5.582927E+01
76	-1.970	.179	112.595	.049	4.631773E+03	-3.522231E+02	5.515735E+02
77	-1.105	.165	114.429	.067	1.385981E+03	4.100581E+01	1.488372E+02
78	-2.409	.115	116.271	.049	9.979418E+03	-1.463449E+03	5.834739E+02
79	-2.190	.047	118.121	.067	4.107609E+03	-5.645298E+02	2.186654E+02
80	-4.024	.016	119.978	.049	1.270686E+04	-2.240669E+03	5.505159E+02

Table 7 (Cont'd)

Z	P_z^0 (MeV)	P_z^1 (MeV)	$N_0(Z)$	$\alpha_{z\ell}$ (MeV)	W_z (MeV^{-2})	T_z (MeV^{-2})	S_z (MeV^{-2})
81	-3.879	-.050	121.843	.067	5.407000E+03	-1.735142E+02	2.439606E+02
82	-5.442	-.079	123.716	.049	1.624762E+04	1.297419E+03	6.322983E+02
83	-3.921	-.030	125.595	.067	7.486996E+03	-3.209307E+02	3.011160E+02
84	-4.122	-.022	127.483	.049	1.469893E+04	-4.480330E+01	6.706753E+02
85	-2.417	.018	129.377	.067	7.349195E+03	-8.489109E+02	3.149680E+02
86	-2.769	.012	131.279	.049	1.280809E+04	-1.847654E+03	6.826917E+02
87	-1.147	.023	133.189	.067	9.443301E+03	-1.195154E+03	3.846213E+02
88	-1.585	.031	135.106	.049	2.071946E+04	-3.215818E+03	8.482764E+02
89	-.015	.037	137.030	.102	8.145898E+03	-1.648385E+03	2.514076E+02
90	-.391	.052	138.962	.049	3.398844E+04	-5.504727E+03	1.031646E+03
91	1.105	.041	140.900	.067	9.983207E+03	-1.972145E+03	4.286497E+02
92	.673	.039	142.847	.049	1.620466E+04	-2.377253E+03	9.304163E+02
93	2.028	.027	144.800	.067	7.719781E+03	-1.972259E+03	3.519253E+02
94	1.708	.007	146.761	.049	1.816102E+04	-3.411966E+03	9.466748E+02
95	2.955	.017	148.729	.067	3.236775E+03	-1.100008E+03	2.969141E+02
96	2.405	-.042	150.704	.049	1.651457E+04	-4.527816E+03	8.613521E+02
97	3.409	-.076	152.687	.067	6.382992E+03	-2.229999E+03	2.989128E+02
98	2.596	-.128	154.677	.049	2.549709E+04	-6.925918E+03	7.612148E+02
99	3.207	-.184	156.674	.067	1.087279E+04	-3.119902E+03	2.759697E+02
100	2.051	-.246	158.679	.049	3.201931E+04	-7.360172E+03	5.043826E+02
101			160.691				
102	.353	-.417	162.710	.049	1.929854E+04	-3.613453E+03	1.746332E+02

Table 8 Values of the neutron shell parameters Q_N^0 and Q_N^1, the constant $Z_0(N)$ representing the β-stability line, the intrinsic error $\beta_{N\ell}$ and the quantities W_N, T_N, S_N for calculating the extrinsic error $\Delta Q_N^{EXT}(Z)$ in the linear-shell-term formula.

N	Q_N^0 (MeV)	Q_N^1 (MeV)	$Z_0(N)$	$\beta_{N\ell}$ (MeV)	W_N (MeV^{-2})	T_N (MeV^{-2})	S_N (MeV^{-2})
1			1.000				
2	-3.813	-.695	2.001	.045	5.567932E+02	2.800593E+02	5.447272E+01
3	.569	.253	3.000	.945	5.700684E+00	2.546910E+00	1.264229E+00
4	-.409	-.477	4.000	.045	5.959385E+02	1.741212E+02	1.261271E+02
5	1.765	-.296	5.000	.355	4.420514E+01	-9.764789E+00	8.519577E+00
6	-3.022	-1.003	6.000	.045	7.196404E+02	1.903117E+01	1.667736E+02
7	-1.822	-.569	6.999	.059	4.549836E+02	1.473461E+02	1.031051E+02
8	-4.585	-.381	8.000	.045	1.195744E+03	2.650288E+02	2.088147E+02
9	-1.133	-.328	8.999	.396	6.102299E+01	3.628633E+00	1.012399E+01
10	-3.595	-.737	9.995	.225	4.163503E+02	2.317879E+01	5.063062E+01
11	-1.785	-.576	10.948	.059	6.210125E+02	3.076924E+02	1.826248E+02
12	-4.414	-.533	11.774	.045	1.171818E+03	3.054585E+02	3.065913E+02
13	-2.505	-.441	12.562	.091	7.057234E+02	6.449902E+01	1.467361E+02
14	-5.189	-.411	13.344	.045	1.984412E+03	1.559141E+02	3.793918E+02
15	-3.450	-.258	14.122	.252	2.716780E+02	-9.373263E+00	3.479463E+01
16	-4.441	-.069	14.894	.338	2.584187E+02	3.653856E+01	3.484251E+01
17	-1.934	-.044	15.662	.229	2.821140E+02	4.049873E+00	3.886554E+01
18	-2.884	.108	16.424	.045	1.253558E+03	-1.027463E+01	2.988342E+02
19	-.322	.030	17.182	.197	4.375681E+02	6.385260E+01	5.031982E+01
20	-1.640	.096	17.935	.045	2.369523E+03	4.532739E+02	3.096787E+02
21	1.763	.002	18.684	.153	6.243621E+02	1.217447E+02	7.042810E+01
22	.657	-.193	19.428	.045	3.173160E+03	4.279104E+02	3.497844E+02
23	2.692	-.284	20.169	.059	1.360043E+03	5.038394E+02	1.802799E+02
24	.694	-.381	20.905	.238	4.598962E+02	3.953947E+01	5.743135E+01
25	1.684	-.491	21.638	.265	3.825317E+02	5.773389E+01	3.225128E+01
26	-.460	-.501	22.366	.374	3.865303E+02	3.416980E-01	3.346895E+01
27	-.103	-.501	23.090	.526	1.955836E+02	2.103871E+01	1.167318E+01
28	-2.663	-.408	23.811	.501	2.622002E+02	-2.790967E+00	2.093323E+01
29	-1.489	-.301	24.528	.059	1.155964E+03	6.750871E+00	1.706266E+02
30	-2.393	-.344	25.241	.207	8.399060E+02	8.634811E+01	8.669762E+01
31	-.843	-.318	25.951	.146	5.032014E+02	-4.157287E+00	6.407071E+01
32	-1.870	-.358	26.657	.045	2.478814E+03	8.445950E+02	3.943535E+02
33	-.088	-.320	27.360	.059	1.163367E+03	6.834646E+02	1.770775E+02
34	-1.389	-.376	28.059	.045	2.565457E+03	1.017318E+03	4.667993E+02
35	.504	-.293	28.755	.082	1.537042E+03	6.295654E+02	1.775244E+02
36	-.967	-.367	29.448	.045	1.855964E+03	5.051321E+02	4.654722E+02
37	.930	-.336	30.138	.120	7.130159E+02	1.652349E+02	1.004018E+02
38	-.635	-.313	30.825	.045	2.734762E+03	5.502930E+02	5.118477E+02
39	1.160	-.314	31.509	.295	2.832605E+02	4.293153E+01	2.702332E+01
40	-.375	-.336	32.190	.045	1.869103E+03	7.066751E+01	4.639492E+02

Table 8 (Cont'd)

N	Q_N^0 (MeV)	Q_N^1 (MeV)	$Z_0(N)$	$\beta_{N\ell}$ (MeV)	W_N (MeV^{-2})	T_N (MeV^{-2})	S_N (MeV^{-2})
41	1.307	-.335	32.868	.127	5.283223E+02	3.280650E+01	1.021224E+02
42	-.458	-.281	33.543	.045	2.309187E+03	-3.496235E+02	5.034783E+02
43	1.168	-.208	34.216	.170	4.423733E+02	2.621408E+01	6.699046E+01
44	-.709	-.162	34.885	.045	2.467242E+03	-2.871543E+02	4.907053E+02
45	.696	-.087	35.552	.059	1.507348E+03	-3.636226E+02	2.739648E+02
46	-1.194	-.089	36.217	.045	2.797793E+03	-8.716294E+02	4.576428E+02
47	-.166	-.073	36.879	.126	9.134377E+02	-1.649549E+02	1.114496E+02
48	-2.283	-.101	37.538	.045	5.076883E+03	-1.813235E+02	5.518118E+02
49	-1.564	-.164	38.195	.094	1.592307E+03	-7.985056E+01	1.895753E+02
50	-3.924	-.179	38.849	.267	1.030013E+03	8.061874E+00	7.512746E+01
51	-2.058	-.115	39.501	.179	6.929663E+02	6.019250E+01	7.211472E+01
52	-2.083	-.128	40.150	.065	3.379062E+03	1.027335E+02	4.140098E+02
53	-.180	-.054	40.797	.059	3.499770E+03	6.030098E+01	3.260679E+02
54	-.367	-.115	41.442	.045	5.633109E+03	3.326018E+02	5.955859E+02
55	1.395	-.049	42.084	.111	2.040024E+03	9.859927E+01	1.646030E+02
56	1.067	-.127	42.724	.126	2.482258E+03	-5.593335E+01	2.266512E+02
57	3.019	-.131	43.362	.301	5.661648E+02	-9.387922E+00	3.508389E+01
58	2.604	-.241	43.997	.045	5.630086E+03	2.904036E+02	6.448071E+02
59	4.474	-.248	44.631	.069	3.708906E+03	4.965981E+02	3 030945E+02
60	3.485	-.265	45.262	.045	5.950051E+03	1.016474E+03	6.648899E+02
61	5.207	-.259	45.891	.059	2.023423E+03	6.687129E+02	2.949526E+02
62	4.029	-.264	46.519	.045	3.562545E+03	9.834475E+02	5.718081E+02
63	5.592	-.281	47.144	.059	2.229844E+03	8.811951E+02	2.840103E+02
64	4.319	-.285	47.767	.045	2.575521E+03	8.972019E+02	4.929839E+02
65	5.683	-.259	48.388	.179	7.064907E+02	1.846098E+02	6.680827E+01
66	4.329	-.254	49.007	.045	2.668492E+03	2.758032E+02	5.347595E+02
67	5.590	-.239	49.624	.091	8.363066E+02	2.598862E+02	1.563313E+02
68	4.072	-.251	50.239	.045	1.752927E+03	-5.458258E+01	4.648057E+02
69	5.167	-.269	50.852	.064	1.116713E+03	-8.132422E+01	2.385858E+02
70	3.446	-.260	51.463	.045	2.917893E+03	-7.227227E+02	4.903870E+02
71	4.390	-.271	52.073	.059	1.076720E+03	6.808116E+01	2.499082E+02
72	2.529	-.252	52.680	.045	4.428855E+03	-7.166614E+02	6.435371E+02
73	3.358	-.214	53.286	.059	1.531526E+03	-2.178930E+02	3.005339E+02
74	1.496	-.161	53.890	.045	3.969338E+03	-1.176631E+03	6.079949E+02
75	2.216	-.118	54.492	.059	2.248529E+03	-8.702207E+02	3.068318E+02
76	.418	-.044	55.093	.045	5.677328E+03	-1.508755E+03	6.148364E+02
77	1.056	.020	55.691	.059	2.557793E+03	-9.093940E+02	2.961721E+02
78	-.717	.087	56.288	.045	6.410734E+03	-1.972648E+03	6.281267E+02
79	-.126	.161	56.884	.072	4.409656E+03	-5.830959E+02	2.962446E+02
80	-1.960	.201	57.477	.045	1.081700E+04	-1.517444E+03	7.858774E+02

Table 8 (Cont'd)

N	Q_N^0 (MeV)	Q_N^1 (MeV)	$Z_0(N)$	$\beta_{N\ell}$ (MeV)	W_N (MeV^{-2})	T_N (MeV^{-2})	S_N (MeV^{-2})
81	-1.654	.257	58.069	.059	4.930301E+03	-6.277598E+02	4.148350E+02
82	-3.325	.290	58.659	.060	7.546945E+03	-1.324449E+03	6.395659E+02
83	-1.314	.259	59.248	.059	5.266574E+03	-2.911697E+02	4.349282E+02
84	-1.298	.263	59.835	.045	7.443289E+03	-1.635761E+02	7.356550E+02
85	.561	.303	60.420	.126	2.657773E+03	1.999094E+01	1.707882E+02
86	.440	.306	61.004	.045	8.954238E+03	7.070945E+02	7.460854E+02
87	2.321	.324	61.586	.059	5.706156E+03	8.381052E+02	4.030005E+02
88	2.007	.306	62.167	.086	4.417137E+03	2.656814E+02	3.578176E+02
89	3.698	.321	62.746	.102	1.114971E+03	7.399048E+01	1.579418E+02
90	2.772	.298	63.324	.045	3.787674E+03	5.355391E+01	5.550457E+02
91	3.986	.343	63.900	.059	2.355338E+03	-2.069297E+02	3.292058E+02
92	2.892	.358	64.475	.045	4.373238E+03	-1.022181E+01	5.932507E+02
93	3.876	.417	65.048	.059	1.757868E+03	6.397827E+00	3.052473E+02
94	2.980	.390	65.620	.045	2.684822E+03	-1.291592E+02	5.134231E+02
95	4.005	.436	66.190	.059	1.806434E+03	3.381555E+02	2.949885E+02
96	3.096	.371	66.759	.045	3.048986E+03	5.283677E+02	5.544429E+02
97	4.024	.414	67.326	.066	1.797786E+03	7.549828E+01	2.712095E+02
98	3.080	.342	67.892	.045	2.143023E+03	1.015346E+02	4.784753E+02
99	3.935	.336	68.457	.109	4.365923E+02	-2.813924E+01	1.011465E+02
100	3.106	.262	69.020	.075	1.116174E+03	-2.078036E+02	2.612908E+02
101	3.829	.316	69.582	.090	2.742478E+02	-1.732567E+01	8.668843E+01
102	3.094	.257	70.143	.259	4.381465E+02	5.768228E+01	5.074196E+01
103	3.717	.294	70.702	.390	1.656412E+02	3.199954E+01	1.394775E+01
104	2.932	.265	71.260	.316	4.203345E+02	7.527679E+01	3.915282E+01
105	3.672	.285	71.816	.466	1.524092E+02	2.111823E+01	1.137660E+01
106	2.796	.251	72.371	.359	3.444045E+02	5.881001E+01	2.991080E+01
107	3.335	.332	72.925	.471	1.217788E+02	2.341194E+01	1.012431E+01
108	2.376	.311	73.478	.425	3.365818E+02	6.885431E+01	2.489212E+01
109	2.789	.486	74.029	.064	7.725356E+02	1.030072E+02	1.879963E+02
110	2.080	.401	74.579	.045	3.284229E+03	8.632354E+02	4.190933E+02
111	2.870	.409	75.128	.059	1.713092E+03	1.094129E+02	2.453289E+02
112	1.933	.295	75.675	.045	2.849816E+03	1.342550E+02	4.252666E+02
113	2.701	.335	76.222	.059	7.636133E+02	8.719222E+00	2.168865E+02
114	1.475	.229	76.767	.051	2.489764E+03	5.033669E+02	3.965581E+02
115	2.107	.215	77.310	.059	8.630969E+02	2.132130E+02	2.075410E+02
116	.637	.138	77.853	.079	1.718821E+03	3.659883E+02	2.615046E+02
117	1.060	.221	78.394	.158	4.762000E+02	1.045152E+02	6.795103E+01
118	-.290	.221	78.935	.142	7.697695E+02	5.526900E+01	1.207901E+02
119	.002	.247	79.474	.126	7.349448E+02	2.552373E+02	9.622260E+01
120	-1.359	.274	80.012	.046	1.870731E+03	5.024697E+02	4.203894E+02

Table 8 (Cont'd)

N	Q_N^0 (MeV)	Q_N^1 (MeV)	$Z_0(N)$	$\beta_{N\ell}$ (MeV)	W_N (MeV^{-2})	T_N (MeV^{-2})	S_N (MeV^{-2})
121	-1.007	.243	80.548	.059	2.099947E+03	5.589414E+02	2.759897E+02
122	-2.366	.280	81.084	.045	2.668168E+03	1.068671E+03	4.667581E+02
123	-2.047	.263	81.618	.120	1.748432E+03	4.272966E+02	1.406621E+02
124	-3.434	.326	82.152	.100	2.507115E+03	8.224763E+02	2.809019E+02
125	-3.273	.339	82.684	.296	5.268860E+02	1.435988E+02	3.212067E+01
126	-4.140	.407	83.215	.265	8.347051E+02	2.233618E+02	6.950861E+01
127	-2.052	.389	83.745	.178	8.883633E+02	3.060967E+02	6.986699E+01
128	-1.417	.277	84.274	.058	5.159266E+03	1.384223E+03	5.748696E+02
129	.560	.220	84.802	.060	3.063314E+03	7.640381E+02	3.440969E+02
130	.735	.093	85.328	.045	4.441246E+03	7.497583E+02	6.492373E+02
131	2.449	.031	85.854	.059	2.023981E+03	5.472844E+02	3.050703E+02
132	2.206	-.098	86.378	.045	4.965758E+03	2.347108E+02	6.609875E+02
133	3.528	-.242	86.902	.132	3.698533E+02	9.854819E+01	8.313673E+01
134	3.027	-.315	87.424	.056	3.452646E+03	6.094744E+02	5.109849E+02
135	4.031	-.424	87.945	.127	3.294272E+02	1.555627E+02	7.375868E+01
136	3.292	-.509	88.466	.045	3.051539E+03	9.583721E+03	5.431960E+02
137	4.035	-.569	88.985	.079	5.616548E+02	3.106570E+02	1.566912E+02
138	2.975	-.682	89.503	.045	3.115803E+03	1.398339E+03	5.151780E+02
139	3.537	-.779	90.020	.059	1.455951E+03	4.469001E+02	2.578984E+02
140	2.317	-.797	90.537	.045	2.494289E+03	4.449001E+02	4.954651E+02
141	2.551	-.858	91.052	.059	8.135254E+02	2.924011E+02	2.146797E+02
142	1.391	-.854	91.566	.045	2.842154E+03	9.822561E+02	5.217791E+02
143	1.653	-.885	92.079	.059	9.338557E+02	1.467250E+02	2.409587E+02
144	.528	-.874	92.591	.045	4.376734E+03	1.362147E+03	5.843594E+02
145	.707	-.886	93.103	.059	1.352604E+03	5.335996E+02	2.498505E+02
146	-.217	-.869	93.613	.045	5.877551E+03	2.041166E+03	6.366917E+02
147	.050	-.851	94.122	.059	2.102734E+03	6.899226E+02	3.053457E+02
148	-.905	-.845	94.630	.045	5.190930E+03	1.795267E+03	6.307622E+02
149	-.669	-.848	95.138	.059	4.896975E+02	1.450401E+02	1.736392E+02
150	-1.545	-.844	95.644	.045	4.578168E+03	1.849114E+03	5.518015E+02
151	-1.212	-.833	96.150	.059	7.629678E+02	1.256155E+02	2.233295E+02
152	-2.081	-.796	96.654	.045	3.481934E+03	1.238775E+03	4.934062E+02
153	-1.459	-.772	97.158	.059	7.054417E+02	3.684443E+02	2.073976E+02
154	-2.003	-.692	97.660	.045	1.615301E+03	7.042373E+02	3.502339E+02
155	-1.230	-.633	98.162	.059	6.872617E+02	4.542754E+02	1.577501E+02
156	-1.730	-.548	98.663	.045	1.527996E+02	9.164804E+01	1.516710E+02

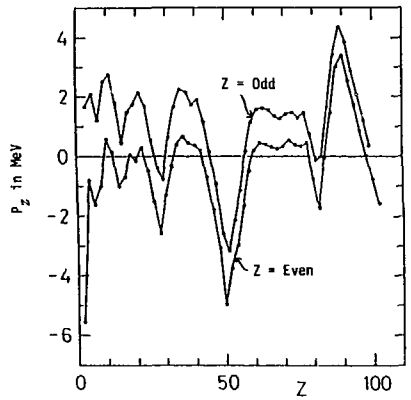

Fig 1 The proton shell term P_z in the constant-shell-term formula.

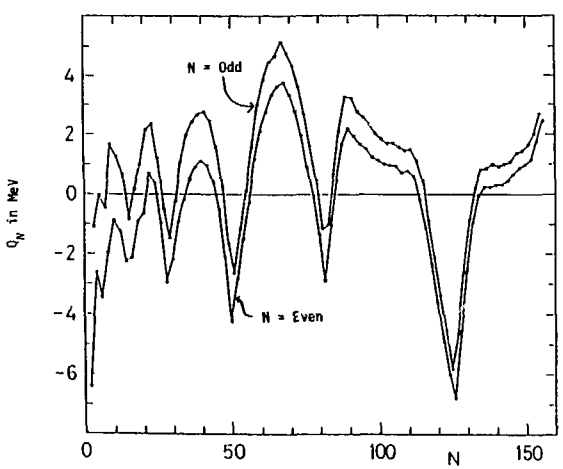

Fig 2 The neutron shell term Q_N in the constant-shell-term formula.

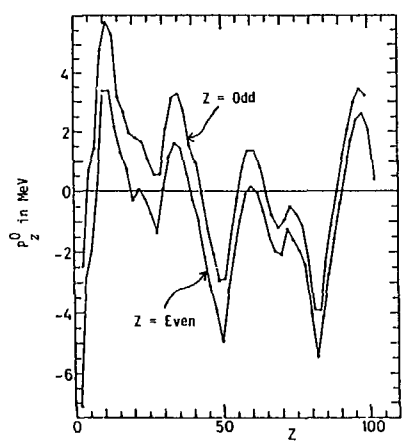

Fig 3 The proton shell parameter P_z^0 in the linear-shell-term formula.

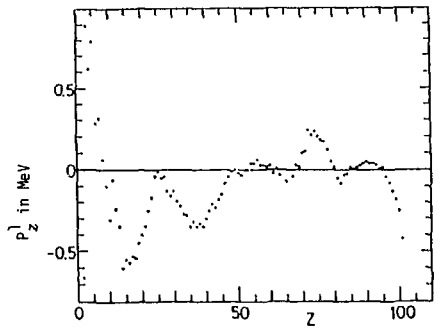

Fig 4 The proton shell parameter P_Z^1 in the linear-shell-term formula.

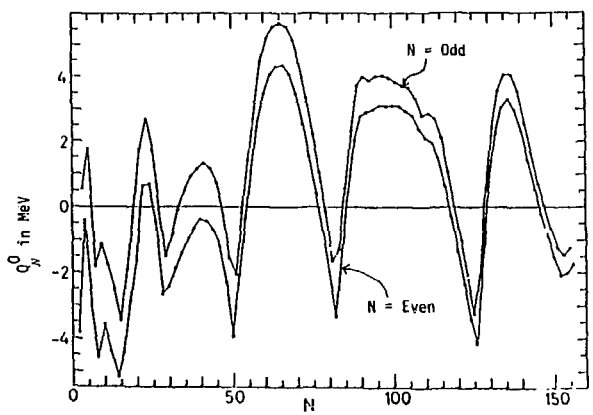

Fig 5 The neutron shell parameter Q_N^0 in the linear-shell-term formula.

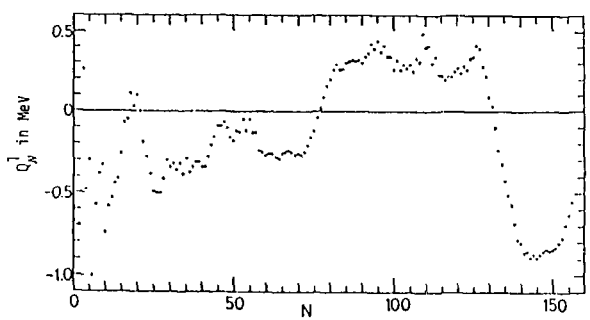

Fig 6 The neutron shell parameter Q_N^1 in the linear-shell-term formula.

TABLE 9 MAIN TABLE (MASS EXCESSES, Q-VALUES AND NEUTRON SEPARATION ENERGIES IN KEV)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
1	0	1	N	8071	0										
0	1	1	H	7289	0										
1	1	2	H	13136	0										
2	1	3	H	14950	0										
1	2	3	HE	14931	0										
3	1	4	H	25920	500										
2	2	4	HE	2425	0	1427	2712	2438	228						
1	3	4	LI	25130	300										
4	1	5	H	33790	800										
3	2	5	HE	11390	50	12508	1304	11622	1329		48			-3009	-1113
2	3	5	LI	11680	50	14760	2704	11574	1923			2252			
4	2	6	HE	17597	4	17396	331	17589	147	4815	7516			3183	2105
3	3	6	LI	14087	1	12581	1288	10073	2130					10250	9572
2	4	6	BE	18375	6	19629	2861	17332	1586			7047	7259		
5	2	7	HE	26111	30	27229	1226	26139	515	12266	11732			-1762	-478
4	3	7	LI	14908	1	14963	260	14406	1678	34	346			5689	3738
3	4	7	BE	15770	1	14929	1590	14060	1877					12771	11343
2	5	7	B	27940	100	31113	2869	27550	853			16184	13490		
6	2	8	HE	31609	12	31784	324	31611	184	9308	9189			3517	2599
5	3	8	LI	20947	1	22475	1209	22422	1706	15908	15727			559	56
4	4	8	BE	4942	0	6566	968	6694	1436					16433	15437
3	5	8	B	22922	1	24069	1605	23116	1423			17502	16422	15115	12504
2	6	8	C	35085	25	37182	2923	35093	168			13113	11976		
7	2	9	HE			43348	1207	39425	302	18288	12611			-3492	258
6	3	9	LI	24955	2	25059	251	26814	1680	13175	14340			5487	3679
5	4	9	BE	11348	0	11884	1527	12473	1465					2754	2292
4	5	9	B	12416	1	13502	991	13024	757			1618	550	18637	18163
3	6	9	C	28912	4	28138	1700	29153	1321			14635	16128	17115	14011
2	7	9	N			50845	3252	48024	647			22707	18871		
8	2	10	HE			51040	642	44481	329	16382	9795			379	3016
7	3	10	LI	33830	250	34658	819	34685	1782	22320	20885			-1527	200
6	4	10	BE	12608	1	12337	965	13799	1399	2753	3836			7618	6746

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT SHELL		LINEAR SHELL		CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
5	5	10	B	12052	1	9584	1542	9962	853					11989	11132
4	6	10	C	15703	1	15423	1139	15704	117			5839	5741	20785	21520
3	7	10	N	39500	2060	39802	2033	41115	1555			24378	25411	19114	14980
2	8	10	O			60494	3159	59088	920			20692	17973		
9	2	11	HE			64413	1413	56860	890	23680	16967			-5301	-4307
8	3	11	LI	40940	120	40732	338	39892	1925	20595	19821			1997	2864
7	4	11	BE	20176	6	20137	1219	20071	1433	12028	11210			272	1800
6	5	11	B	8668	0	8108	989	8860	740					9547	9173
5	6	11	C	10650	1	9569	1641	10413	468			1460	1552	13925	13361
4	7	11	N	25230	100	25267	1314	25175	231			15698	14762	22605	24010
3	8	11	O			47797	1850	51260	1938			22530	26084	20767	15898
2	9	11	F			76813	3687	76640	2046			29015	25379		
10	2	12	HE			72056	1109	67405	625	19682	15237			428	-2474
9	3	12	LI			52374	1046	52168	2303	28025	28805			-3570	-4204
8	4	12	BE	25030	40	24349	960	23362	1485	10463	9615			3859	4780
7	5	12	B	13370	1	13886	1239	13747	772	13929	13755			2294	3185
6	6	12	C	0	0	-43	1137	-8	97					17683	18492
5	7	12	N	17338	1	17377	1768	18099	528			17420	18107	15960	15147
4	8	12	O	32070	260	31374	792	32468	732			13996	14369	24494	26862
3	9	12	F			62347	2498	67869	2714			30972	354(0	22537	1684!
2	10	12	NE			88573	3487	89845	577			26226	21976		
11	2	13	HE			84855	1995	78331	689	26187	15808			-4728	-2854
10	3	13	LI			58668	793	62522	2508	2418C	28582			1778	-2283
9	4	13	BE	34900	1480	34487	1159	33940	1744	18012	18138			-2066	-2506
8	5	13	B	16562	4	16475	983	15802	808	12448	12677			5482	6017
7	6	13	C	3125	0	4026	1359	3124	130					4002	4939
6	7	13	N	5346	1	6051	1312	5322	121			2025	2197	19396	20848
5	8	13	O	23105	10	21844	1400	23707	906			15792	18385	17600	16832
4	9	13	F			44391	1516	46673	1588			22546	22965	26026	29266
3	10	13	NE			72717	2252	80455	2353			28325	33781	23927	17461
2	11	13	NA			105269	3895	103960	1654			32551	23505		
12	2	14	HE			93448	1669	86020	767	23540	12406			-521	382
11	3	14	LI			69907	1579	73614	2821	30796	31649			-3168	-3020
10	4	14	BE	40970	1580	39110	1229	41965	1808	14314	17155			3448	47
9	5	14	B	23657	30	24795	1030	24809	1046	20048	21796			-249	-936
8	6	14	C	3020	0	4747	1133	3013	119	2009	1446			7351	8182
7	7	14	N	2863	0	2738	1510	1567	143					11384	11825

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
6	8	14	O	8008	1	8639	748	8117	680				
5	9	14	F	33610	1980	33023	1774	36123	1432	5901	6550	21276	23661
4	10	14	NE			53060	800	56632	348	24384	28006	19438	18620
3	11	14	NA			87812	2758	94191	2976	20037	20508	27727	31893
2	12	14	MG			117909	3985	118030	736	34751	37559	25528	17839
										30097	23838		
13	2	15	HE			106715	2227	98012	922	29352	16240		
12	3	15	LI			77362	1360	81771	3156	28282	30078	-5196	-3920
11	4	15	BE			49079	1682	51692	1976	21039	20457	616	-86
10	5	15	B	29530	1330	28040	1131	31235	1055	16435	21112	-1898	-1656
9	6	15	C	9873	1	11605	1172	10122	546	9668	9941	4827	1645
8	7	15	N	102	0	1936	1308	181	123			1214	962
7	8	15	O	2855	1	3798	1055	3041	665			8872	9456
6	9	15	F	17660	940	18341	1029	18217	1106	1862	2859	12911	13147
5	10	15	NE			40290	1621	44675	781	14542	15176	22753	25977
4	11	15	NA			66852	1324	68592	1242	21948	26458	20841	20027
3	12	15	MG			99273	2934	107866	2971	26561	23916	29030	33669
2	13	15	AL			135580	4499	136740	1543	32421	39273	26706	18235
										36307	28874		
14	2	16	HE			115594	2162	106315	1030	26394	12331		
13	3	16	LI			89200	1849	93983	3522	34189	35872	-808	-231
12	4	16	BE			55011	1624	58111	2164	18660	18458	-3766	-4140
11	5	16	B	38000	2260	36350	1355	39652	1201	23211	25714	2140	1653
10	6	16	C	13693	16	13138	1133	13937	308	6147	8340	-239	-345
9	7	16	N	5682	2	6991	1344	5597	512	10738	10729	6538	4257
8	8	16	O	-4737	0	-3746	741	-5132	651			3016	2656
7	9	16	F	10692	14	11689	1150	11630	960			15616	16244
6	10	16	NE	24110	140	23879	532	24148	190	15436	16762	14722	14658
5	11	16	NA			52396	2011	55399	1353	12190	12517	24481	28598
4	12	16	MG			76754	1261	79795	468	28516	31251	22526	21264
3	13	16	AL			115472	3558	125962	3470	24358	24396	30589	36141
2	14	16	SI			149472	4716	153055	1133	38717	46166	28179	18849
										34000	27093		
15	2	17	HE			129063	3262	117816	1310	31944	14905		
14	3	17	LI			97118	1906	102910	3889	31348	33835	-5397	-3430
13	4	17	BE			65770	1945	69075	2380	24666	23956	153	-855
12	5	17	B	45270	2130	41104	1533	45118	1371	20913	24356	-2687	-2893
11	6	17	C	21060	1240	20190	1261	20761	263	12985	13026	3318	2605
10	7	17	N	7870	15	7204	1308	7735	302	7260	8996	1020	1247
9	8	17	O	-810	1	-55	800	-1261	794			7858	5934
8	9	17	F	1952	0	2775	868	2141	898			4380	4201
										2831	3402	16984	17559

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA	& BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
7	10	17	NE	16478	26	15895	775	16475	148			13119	14334	16055	15743
6	11	17	NA			34707	943	33154	914			18812	16678	25760	30316
5	12	17	MG			61093	2171	65406	992			26385	32252	23732	22460
4	13	17	AL			91839	1876	95940	1054			30745	30534	31704	38092
3	14	17	SI			128360	3915	141989	3664			36521	46049	29183	19136
2	15	17	P			168287	5675	170718	2805			39926	28728		
16	2	18	HE			140089	2759	126169	1511	30829	11378			-2955	-282
15	3	18	LI			109260	2866	114791	4312	36982	38432			-4070	-3809
14	4	18	BE			72278	2066	76358	2593	21948	21534			1563	788
13	5	18	B			50330	1973	54823	1722	26969	30632			-1155	-1633
12	6	18	C	25370	1180	23360	1396	24191	281	10777	11092			4902	4642
11	7	18	N	13274	30	12582	1312	13098	248	14116	14558			2694	2708
10	8	18	O	-783	0	-1533	741	-1459	694					9549	8269
9	9	18	F	873	1	181	923	-358	970			1714	1101	10665	10570
8	10	18	NE	5319	5	5282	189	5287	104			5101	5646	18683	19258
7	11	18	NA	25320	1410	25034	1069	24495	785			19751	19207	17743	16730
6	12	18	MG			41798	960	40677	285			16764	16182	27365	32799
5	13	18	AL			74615	2670	80074	1328			32816	39396	25294	23937
4	14	18	SI			103280	2083	109542	796			28664	29468	33150	40518
3	15	18	P			145804	4983	159289	4580			42523	49746	30554	19500
2	16	18	S			185089	5422	186989	1629			39285	27700		
17	2	19	HE			154993	4005	140259	1636	35521	16187			-6832	-6018
16	3	19	LI			119472	2520	124071	4726	35972	36864			-2140	-1209
15	4	19	BE			83500	2760	87207	2867	27672	25902			-3151	-2777
14	5	19	B			55828	2192	61305	1942	24328	28902			2574	1590
13	6	19	C	34430	1570	31499	1585	32402	386	16895	16931			-68	-140
12	7	19	N	15600	300	14604	1332	15471	279	11955	12840			6050	5699
11	8	19	O	3331	3	2648	744	2631	667	5174	4965			3889	3981
10	9	19	F	-1487	0	-2525	869	-2334	865					10778	10046
9	10	19	NE	1751	1	1455	356	1419	465			3981	3753	11898	11939
8	11	19	NA	12930	12	13216	404	12555	655			11760	11136	19889	20010
7	12	19	MG			30960	1174	31116	236			17744	18560	18909	17632
6	13	19	AL			54210	1441	53433	668			23249	22317	28476	34711
5	14	19	SI			85015	3016	92579	1297			30805	39145	26335	25034
4	15	19	P			119767	3220	125196	2162			34751	32617	34107	42163
3	16	19	S			161747	4903	175646	4410			41980	50450	31412	19413
18	2	20	HE			166786	3537	149263	1713	33653	10771			-3721	-933
17	3	20	LI			133132	3610	138492	5128	40738	43400			-5589	-6349

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
16	4	20	BE			92394	2532	95092	3126	26773	24037			-822	187
15	5	20	B			65620	2760	71054	2241	30101	34120			-1721	-1678
14	6	20	C			35518	1770	36934	437	14339	14676			4052	3540
13	7	20	N	22200	1330	21179	1503	22257	418	18097	19038			1497	1286
12	8	20	O	3799	8	3081	741	3219	672	3074	3090			7638	7484
11	9	20	F	-17	1	7	875	128	835	7118	7144			5538	5609
10	10	20	NE	-7043	1	-7110	189	-7016	253					16637	16506
9	11	20	NA	6844	7	7734	511	7350	791			14845	14367	13552	13276
8	12	20	MG	17568	27	17540	186	17592	138			9806	10242	21490	21594
7	13	20	AL			41787	1574	42628	528			24247	25035	20493	18876
6	14	20	SI			63105	1713	63491	543			21318	20862	29980	37158
5	15	20	P			100040	3938	107005	2240			36934	43514	27797	26261
4	16	20	S			134354	2749	139447	1227			34313	32441	35464	44270
3	17	20	CL			181194	5820	194648	5084			46839	55201		
19	2	21	HE			181772	5150	165280	1976	37538	16774			-6915	-7946
18	3	21	LI			144234	3337	148506	5526	38965	40023			-3030	-1943
17	4	21	BE			105258	3364	108483	3357	31622	30047			-4803	-5320
16	5	21	B			73646	2720	78435	2526	29274	33042			46	690
15	6	21	C			44371	2199	45393	689	20173	19530			-781	-388
14	7	21	N	26950	1140	24198	1472	25863	516	15590	17056			5052	4465
13	8	21	O	8120	80	8608	780	8807	701	9253	9275			2545	2483
12	9	21	F	-47	7	-644	868	-468	840	5044	5227			8723	8668
11	10	21	NE	-5733	1	-5689	200	-5696	116					6650	6751
10	11	21	NA	-2186	1	-1947	404	-2344	647			3741	3351	17752	17766
9	12	21	MG	10912	16	10963	355	11173	528			12910	13517	14647	14490
8	13	21	AL			27304	612	28134	355			16340	16960	22554	22565
7	14	21	SI			49662	1901	51863	458			22358	23729	21514	19698
6	15	21	P			77164	2666	76299	1618			27501	24435	30947	38777
5	16	21	S			113727	3870	120528	1690			36563	44229	28698	26990
4	17	21	CL			152977	3621	156924	2054			39249	36396	36288	45795
20	2	22	HE			193429	4507	175460	2100	35383	10640			-3585	-2108
19	3	22	LI			158045	4752	164819	5987	42917	47681			-5740	-3241
18	4	22	BE			115127	3192	117137	3574	29950	26456			-1787	-583
17	5	22	B			85177	3403	90681	2789	34171	39612			-3460	-4174
16	6	22	C			51005	2125	51068	852	19426	18021			1437	2396
15	7	22	N			31579	1826	33047	934	21450	22346			691	887
14	8	22	O	9490	120	10128	901	10701	711	6806	7192			6551	6177
13	9	22	F	2826	30	3322	907	3508	884	11229	11517			4104	4094
12	10	22	NE	-8026	1	-7907	189	-8009	101					10289	10384

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
11	11	22	NA	-5184	1	-6071	419	-6146	594			1835	1863	12195	11372
10	12	22	MG	-394	2	-288	186	-674	263			5782	5471	19323	19919
9	13	22	AL	18210	1240	19156	658	20102	621			19445	20777	16218	16103
8	14	22	SI			33663	876	35806	322			14506	15703	24070	24128
7	15	22	P			62226	2737	63666	1388			28562	27860	23009	20703
6	16	22	S			89431	2334	87688	911			27205	24021	32366	40911
5	17	22	CL			130972	4655	136849	2270			41540	49161	30075	28145
4	18	22	AR			168665	3395	172325	1437			37693	35475		
21	2	23	HE			209707	6607	193144	2365	40591	17118			-8207	-9613
20	3	23	LI			169116	4345	176026	6417	40848	43596			-2999	-3136
19	4	23	BE			128268	4342	132430	3867	33979	33517			-5069	-7222
18	5	23	B			94288	3436	98913	3046	32565	36894			-1040	-161
17	6	23	C			61723	2668	62018	909	24381	23935			-2646	-2879
16	7	23	N			37341	1800	38082	1160	20752	21208			2309	3036
15	8	23	O	17950	1090	16589	1197	16873	874	12705	12545			1611	1899
14	9	23	F	3350	170	3883	1009	4327	919	8812	9451			7510	7252
13	10	23	NE	-5155	2	-4928	309	-5123	149	4370	4040			5093	5186
12	11	23	NA	-9530	1	-9299	404	-9163	575					11298	11088
11	12	23	MG	-5471	2	-5425	197	-5501	103			3873	3661	13207	12897
10	13	23	AL	6768	25	6907	310	6751	294			12333	12253	20320	21421
9	14	23	SI			24543	979	26618	669			17636	19366	17190	17258
8	15	23	P			45288	1763	46913	1146			20744	20295	25008	24823
7	16	23	S			73597	2618	74588	794			28309	27674	23904	21171
6	17	23	CL			105833	3057	102502	1511			32235	27914	33209	42418
5	18	23	AR			145879	4790	151649	1974			40046	49147	30857	28746
22	2	24	HE			221959	5132	208414	2532	37681	14367			-4180	-7198
21	3	24	LI			184277	6204	194047	6899	46117	51794			-7090	-9949
20	4	24	BE			138159	4041	142253	4108	32001	29224			-1820	-1751
19	5	24	B			106158	4383	113028	3394	36639	44449			-3798	-6044
18	6	24	C			69518	2676	68579	927	22851	20873			276	1511
17	7	24	N			46667	2260	47706	1337	25735	27274			-1254	-1552
16	8	24	O			20931	1137	20432	1009	12066	11404			3729	4513
15	9	24	F	8650	1180	8865	1177	9027	1121	14724	14989			3090	3372
14	10	24	NE	-5949	10	-5859	546	-5961	114	1995	1495			9001	8909
13	11	24	NA	-8418	1	-7854	482	-7457	588	6037	6431			6627	6366
12	12	24	MG	-13931	1	-13891	186	-13889	87					16537	16458
11	13	24	AL	-52	4	231	331	451	172			14123	14340	14746	14371
10	14	24	SI	10740	120	10792	617	11120	309			10560	10669	21822	23568
9	15	24	P			34674	1756	36339	1174			23881	25219	18685	18644

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
8	16	24	S			55219	1304	56576	628			20544	20236	26449	26082
7	17	24	CL			88583	3300	88462	1292			33363	31886	25321	22110
6	18	24	AR			119393	2934	115249	1099			30810	26786	34556	44471
5	19	24	K			164032	5601	168161	2934			44638	52912		
23	2	25	HE			237468	7977	225402	2791	41434	15231			-7437	-8917
22	3	25	LI			196033	5065	210171	7359	43285	50837			-3685	-8053
21	4	25	BE			152748	5629	159334	4409	37341	36889			-6517	-9010
20	5	25	B			115407	4332	122445	3696	34724	41041			-1177	-1345
19	6	25	C			80682	3483	81403	1152	26979	27705			-3092	-4753
18	7	25	N			53702	2342	53698	1506	24253	24673			1036	2079
17	8	25	O			29449	1531	29025	1066	17089	17244			-447	-522
16	9	25	F	12840	1250	12360	1211	11780	1309	14116	13966			4576	5318
15	10	25	NE	-2150	90	-1756	470	-2185	355	7932	6724			3969	4295
14	11	25	NA	-9357	7	-9688	652	-8909	576	3679	4277			9904	9522
13	12	25	MG	-13191	1	-13367	307	-13187	127					7547	7370
12	13	25	AL	-8913	1	-9157	310	-8913	116			4210	4273	17460	17435
11	14	25	SI	3824	10	3206	568	3833	132			12363	12747	15657	15357
10	15	25	P			20032	1340	19596	809			16825	15762	22713	24814
9	16	25	S			43741	1548	45185	917			23709	25588	19548	19461
8	17	25	CL			69375	1935	69852	1039			25634	24667	27278	26680
7	18	25	AR			101357	3388	100858	978			31981	31005	26107	22461
6	19	25	K			136811	3646	130413	2144			35453	29554	35292	45819
23	3	26	LI			210475	7582	227548	7860	47095	53682			-6370	-9305
22	4	26	BE			163379	4624	173865	4671	34592	35471			-2560	-6460
21	5	26	B			128787	5659	138394	4072	40108	49268			-5309	-7878
20	6	26	C			88679	3415	89125	1223	25134	23963			75	350
19	7	26	N			63544	3041	65161	1811	28411	31591			-1771	-3392
18	8	26	O			35133	1613	33570	1106	15662	14728			2388	3527
17	9	26	F			19470	1521	18842	1462	19156	19706			961	1010
16	10	26	NE	-190	820	314	352	-864	483	7366	5322			6001	6751
15	11	26	NA	-6888	23	-7052	599	-6186	667	9618	10067			5435	5349
14	12	26	MG	-16212	1	-16670	545	-16254	95					11373	11138
13	13	26	AL	-12208	1	-13638	408	-13222	174			3031	3031	12552	12380
12	14	26	SI	-7143	3	-7656	564	-7198	99			5982	6024	18933	19103
11	15	26	P	11260	1330	10970	998	11050	491			18626	18248	17132	16617
10	16	26	S			27661	985	26588	500			16690	15538	24150	26667
9	17	26	CL			56472	2138	57132	1188			28810	30543	20974	20791
8	18	26	AR			80775	1685	81064	794			24303	23932	28652	27865
7	19	26	K			117425	4090	115204	1885			36650	34140	27456	23279

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
6	20	26	CA			151297	3745	143378	1520			33871	28173		
24	3	27	LI			222102	5990	241959	8380	44769	51569			-3555	-6339
23	4	27	BE			177332	6851	190389	4975	38467	38043			-5882	-8452
22	5	27	B			138865	5047	152346	4418	37417	48486			-2007	-5881
21	6	27	C			101448	4609	103859	1446	30569	31535			-4697	-6663
20	7	27	N			70878	3082	72324	2039	26612	28326			738	909
19	8	27	O			44266	2233	43997	1281	19860	21356			-1062	-2356
18	9	27	F			24406	1690	22641	1615	17762	17400			3136	4272
17	10	27	NE	6670	1170	6643	642	5240	459	12432	10467			1742	1966
16	11	27	NA	-5630	80	-5789	400	-5226	727	9073	9157			6808	7111
15	12	27	MG	-14585	1	-14862	469	-14384	303	2921	2817			6263	6201
14	13	27	AL	-17194	1	-17783	599	-17201	105					12215	12049
13	14	27	SI	-12385	2	-12982	615	-12497	130			4801	4703	13397	13370
12	15	27	P	-590	640	-726	846	-719	352			12256	11778	19767	19840
11	16	27	S			17781	840	17378	328			18507	18097	17950	17281
10	17	27	CL			39596	1487	37373	729			21814	19995	24946	27829
9	18	27	AR			67104	2156	67631	1130			27508	30257	21741	21504
8	19	27	K			96112	2299	94962	1595			29007	27331	29384	28312
7	20	27	CA			131221	4396	127961	1378			35109	32998	28147	23487
24	4	28	BE			187882	5380	203351	5299	36216	35557			-2478	-4891
23	5	28	B			151665	6902	167794	4819	41334	51884			-4728	-7377
22	6	28	C			110330	3949	115910	1564	27943	30168			-811	-3979
21	7	28	N			82387	4136	85741	2369	32078	36055			-3438	-5346
20	8	28	O			50309	2287	49685	1353	18113	18189			2029	2384
19	9	28	F			32195	2186	31496	1867	21979	23867			282	-783
18	10	28	NE			10216	789	7629	415	11080	7872			4499	5683
17	11	28	NA	-1130	120	-863	511	-243	712	14146	14580			3146	3088
16	12	28	MG	-15016	2	-15010	178	-14824	401	2406	1894			8219	8510
15	13	28	AL	-16848	1	-17416	541	-16718	316	4481	4737			7705	7589
14	14	28	SI	-21491	1	-21898	762	-21456	85					16986	17029
13	15	28	P	-7160	4	-7497	736	-7318	292			14400	14137	14842	14670
12	16	28	S	4190	120	4664	704	4224	228			12162	11543	21188	21224
11	17	28	CL			28299	1322	26951	526			23635	22726	19367	18493
10	18	28	AR			48849	1315	46086	644			20549	19135	26326	29616
9	19	28	K			81077	2756	80315	1682			32227	34229	23105	22718
8	20	28	CA			108591	2342	106642	1173			27514	26326	30700	29390
7	21	28	SC			149267	5545	144769	3350			40675	38127		
25	4	29	BE			201497	7075	219898	5621	39758	39545			-5544	-8475

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
24	5	29	B			161739	5914	180353	5245	39138	50125			-2003	-4487
23	6	29	C			122601	5686	130227	1778	31909	33172			-4199	-6245
22	7	29	N			90692	3653	97054	2651	29495	34918			-233	-3242
21	8	29	O			61196	3253	62136	1533	23618	25697			-2815	-4379
20	9	29	F			37578	2364	36438	2063	20265	20926			2689	3130
19	10	29	NE			17312	1255	15511	611	15325	13678			975	189
18	11	29	NA	2660	150	1987	597	1832	668	12816	12572			5220	5995
17	12	29	MG	-10750	50	-10829	186	-10739	335	7497	7091			3890	3987
16	13	29	AL	-18212	5	-18326	306	-17830	389	3977	4002			8980	9182
15	14	29	SI	-21894	1	-22304	710	-21832	286					8477	8447
14	15	29	P	-16949	2	-17188	856	-16968	229			5115	4864	17761	17721
13	16	29	S	-3160	50	-2873	599	-3056	190			14314	13912	15609	15352
12	17	29	CL			14429	1094	13130	361			17303	16186	21941	21891
11	18	29	AR			36818	1255	35091	471			22389	21961	20102	19065
10	19	29	K			62110	1802	57747	1189			25292	22655	27037	30639
9	20	29	CA			92875	3036	91415	1482			30764	33668	23787	23297
8	21	29	SC			125990	3527	123050	2989			33115	31635	31347	29790
26	4	30	BE			212321	5382	231843	5936	38070	35991			-2752	-3873
25	5	30	B			174250	7335	195851	5683	42720	54820			-4439	-7427
24	6	30	C			131529	4619	141031	2027	29772	30919			-857	-2733
23	7	30	N			101757	5194	110111	3003	33492	38344			-2994	-4985
22	8	30	O			68264	2753	71766	1638	21084	24409			1003	-1559
21	9	30	F			47179	3158	47357	2338	25791	28346			-1530	-2848
20	10	30	NE			21388	1425	19011	629	13651	10464			3996	4572
19	11	30	NA	8380	300	7736	919	8546	773	17073	18595			2322	1358
18	12	30	MG	-9790	620	-9336	351	-10048	248	6196	5161			6579	7381
17	13	30	AL	-15890	40	-15533	330	-15210	325	9070	9174			5278	5451
16	14	30	SI	-24432	1	-24604	562	-24384	370					10370	10622
15	15	30	P	-20205	3	-22183	818	-21728	365			2420	2656	13065	12830
14	16	30	S	-14062	3	-13958	750	-14078	102			8224	7649	19155	19092
13	17	30	CL	4840	1010	5494	869	4588	294			19453	18666	17005	16612
12	18	30	AR			21578	984	19946	353			16083	15358	23311	23216
11	19	30	K			48717	1748	45649	958			27139	25703	21463	20168
10	20	30	CA			72583	1925	67161	964			23865	21511	28362	32324
9	21	30	SC			108965	4079	106628	2910			36382	39467	25095	24492
8	22	30	TI			139973	3098	135540	1375			31008	28912		
27	4	31	BE			225922	7543	246302	6321	41255	38755			-5530	-6388
26	5	31	B			184666	6238	207546	6125	41083	52096			-2345	-3623
25	6	31	C			143583	5918	155450	2262	33400	35100			-3982	-6347

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
24	7	31	N			110182	4358	120349	3383	31397	36414			-353	-2167
23	8	31	O			78784	4206	83935	1815	25119	27878			-2448	-4097
22	9	31	F			53665	2912	56056	2578	23291	27038			1586	-628
21	10	31	NE			30373	2183	29018	813	19205	17294			-914	-1936
20	11	31	NA	10610	1620	11168	1133	11723	819	15423	15984			4640	4895
19	12	31	MG	-3900	930	-4254	643	-4261	431	10472	10894			2989	2284
18	13	31	AL	-15100	100	-14727	306	-15155	232	7784	7526			7266	8017
17	14	31	SI	-22949	1	-22512	564	-22682	276	2682	2067			5980	6369
16	15	31	P	-24440	1	-25194	684	-24749	407					11082	11092
15	16	31	S	-19044	2	-19666	696	-19406	300			5528	5343	13779	13398
14	17	31	CL	-7070	50	-6296	800	-7068	155			13370	12337	19862	19727
13	18	31	AR			11948	760	10802	301			18244	17871	17701	17214
12	19	31	K			32797	1363	29964	755			20849	19161	23991	23756
11	20	31	CA			58530	2002	54614	786			25732	24650	22124	20617
10	21	31	SC			88038	2916	81390	2405			29508	26775	28998	33309
9	22	31	TI			122343	4062	118662	1725			34304	37272	25701	24949
28	4	32	BE			236822	6388	256194	6617	39615	35083			-2829	-1821
27	5	32	B			197206	8011	221111	6642	44308	55590			-4468	-5493
26	6	32	C			152898	4671	165521	2481	31818	31983			-1244	-1999
25	7	32	N			121079	5506	133537	3773	35057	40900			-2826	-5116
24	8	32	O			86022	3333	92637	2023	23070	25889			834	-631
23	9	32	F			62952	4104	66748	2874	27348	30684			-1215	-2620
22	10	32	NE			35603	1845	36063	887	16742	15466			2842	1026
21	11	32	NA	16410	2120	18860	1787	20597	1000	20991	23104			379	-803
20	12	32	MG	-2890	1320	-2130	898	-2506	418	8851	8378			5948	6317
19	13	32	AL	-11290	970	-10982	531	-10885	449	12067	13174			4327	3801
18	14	32	SI	-24092	7	-23049	562	-24059	117	1417	276			8608	9448
17	15	32	P	-24305	1	-24467	696	-24335	338	2612	2313			7344	7657
16	16	32	S	-26015	1	-27080	545	-26649	364					15484	15314
15	17	32	CL	-13329	8	-13372	759	-13568	349			13707	13080	15147	14571
14	18	32	AR	-2210	130	-1193	571	-2173	195			12178	11395	21212	21046
13	19	32	K			21819	1132	19662	622			23013	21835	19048	18373
12	20	32	CA			41288	1546	37700	645			19460	18038	25312	24985
11	21	32	SC			72675	2932	67754	2106			31386	30054	23434	21706
10	22	32	TI			100139	2641	91836	1130			27464	24081	30274	34897
9	23	32	V			138985	5183	134060	3256			38845	42223		
28	5	33	B			207759	7360	230915	7090	42716	52737			-2481	-1732
27	6	33	C			165043	6385	178177	2830	35086	34984			-4073	-4585
26	7	33	N			129956	4547	143193	4165	33514	38210			-805	-1585

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
25	8	33	O			96441	4382	104983	2223	26765	30298			-2348	-4275
24	9	33	F			69675	3563	74685	3196	25331	28770			1348	135
23	10	33	NE			44344	3020	45914	1059	20828	18787			-669	-1780
22	11	33	NA			23516	1641	27127	1236	18553	21634			3416	1542
21	12	33	MG	4130	1660	4962	1435	5493	584	14440	15280			978	71
20	13	33	AL	-9370	1040	-9478	801	-9786	485	10462	10957			6567	6973
19	14	33	SI	-20570	50	-19941	566	-20744	294	5712	5413			4963	4756
18	15	33	P	-26337	2	-25653	684	-26158	203	1356	718			9256	9893
17	16	33	S	-26586	1	-27010	547	-26877	262					8002	8298
16	17	33	CL	-21003	1	-21445	612	-21239	381			5565	5637	16143	15741
15	18	33	AR	-9385	30	-8923	468	-9172	347			12521	12066	15800	15070
14	19	33	K			8033	813	6168	450			16957	15341	21856	21564
13	20	33	CA			29679	1371	26909	561			21645	20740	19679	18861
12	21	33	SC			54819	2360	50330	1831			25139	23420	25926	25495
11	22	33	TI			84183	2904	77867	934			29364	27536	24027	22040
10	23	33	V			116214	3687	106339	2677			32030	28472	30842	35791
28	6	34	C			174535	5606	186500	3000	33544	31727			-1421	-252
27	7	34	N			140990	6064	154773	4645	36813	41539			-2963	-3509
26	8	34	O			104176	3329	113234	2412	25266	27652			336	-179
25	9	34	F			78910	4439	85582	3528	29051	33239			-1163	-2826
24	10	34	NE			49859	2353	52342	1269	18846	16445			2556	1644
23	11	34	NA			31012	2649	35897	1444	22655	25512			575	-698
22	12	34	MG			8356	1270	10385	634	12031	13657			4677	3180
21	13	34	AL	-4150	1460	-3674	1249	-3272	698	16061	17847			2267	1557
20	14	34	SI	-20250	690	-19735	760	-21120	234	4129	3069			7866	8447
19	15	34	P	-24550	50	-23864	698	-24190	336	5653	5688			6283	6104
18	16	34	S	-29931	0	-29518	545	-29879	86					10579	11073
17	17	34	CL	-24438	1	-25627	625	-25654	304			3891	4225	12253	12485
16	18	34	AR	-18379	3	-18321	177	-17978	390			7306	7675	17469	16876
15	19	34	K	-1480	930	-1021	714	-1907	491			17299	16070	17126	16147
14	20	34	CA			14585	966	12187	436			15607	14095	23165	22193
13	21	34	SC			41909	2151	38390	1603			27323	26202	20981	20010
12	22	34	TI			65051	2220	59307	766			23142	20916	27203	26631
11	23	34	V			98995	3889	91351	2341			33943	32044	25290	23059
10	24	34	CR			129399	3482	116888	1617			30404	25537		
29	6	35	C			188174	7910	198374	3118	38073	35532			-5568	-3802
28	7	35	N			150101	5544	162841	5037	35309	38700			-1039	4
27	8	35	O			114791	4803	124141	2714	28599	30927			-2543	-2836
26	9	35	F			86191	3815	93214	3863	27582	30773			790	440

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
25	10	35	NE			58609	3169	62440	1463	22594	20471			-678	-2026
24	11	35	NA			36015	2163	41968	1681	20698	23623			3069	2000
23	12	35	MG			15316	2139	18344	784	16154	17582			1112	112
22	13	35	AL	-840	1430	-837	1220	762	823	13669	16280			5235	4037
21	14	35	SI	-15040	1020	-14506	1064	-15518	385	9742	9521			2843	2470
20	15	35	P	-24940	80	-24249	717	-25040	235	4081	3560			8455	8920
19	16	35	S	-28846	0	-28330	549	-28600	238	413	471			6884	6793
18	17	35	CL	-29014	0	-28744	612	-29071	116					11187	11488
17	18	35	AR	-23049	2	-23113	184	-22978	288			5630	6093	12863	13070
16	19	35	K	-11169	20	-11025	210	-11032	451			12088	11945	18074	17196
15	20	35	CA			4932	925	3716	510			15957	14749	17724	16542
14	21	35	SC			26228	1631	23172	1364			21296	19456	23751	23289
13	22	35	TI			51569	2146	46985	666			25340	23813	21553	20392
12	23	35	V			79309	3076	72364	2025			27739	25378	27756	27058
11	24	35	CR			111647	3961	101662	1399			32338	29298	25822	23297
29	7	36	N			162671	7586	173785	5417	39869	42838			-4499	-2873
28	8	36	O			122802	4220	130947	2860	27135	28121			61	1265
27	9	36	F			95666	5016	102825	4278	30940	34133			-1403	-1540
26	10	36	NE			64725	2339	68692	1645	21159	17682			1955	1819
25	11	36	NA			43566	2866	51010	1928	24464	28090			520	-970
24	12	36	MG			19102	1696	22919	977	14224	15636			4285	3497
23	13	36	AL			4877	1932	7283	1255	17804	20460			2356	1550
22	14	36	SI	-12670	1060	-12926	1075	-13177	404	7371	7581			6491	5731
21	15	36	P	-20770	900	-20297	965	-20759	408	9700	9917			4120	3791
20	16	36	S	-30666	2	-29998	586	-30677	98					9738	10147
19	17	36	CL	-29522	0	-28854	627	-29127	271	1477	1216	1143	1549	8180	8127
18	18	36	AR	-30231	0	-30331	177	-30344	111					15288	15436
17	19	36	K	-17426	8	-17118	247	-17212	372			13212	13131	14164	14250
16	20	36	CA	-6650	270	-6360	351	-6459	487			10758	10753	19363	18246
15	21	36	SC			15289	1541	13628	1233			21649	20087	19010	17615
14	22	36	TI			34621	1494	30626	513			19331	16998	25019	24429
13	23	36	V			64568	2968	58959	1762			29947	28332	22811	21475
12	24	36	CR			90727	2995	81617	1201			26159	22658	28990	28116
11	25	36	MN			127520	5187	116565	3013			36792	34947		
30	7	37	N			173986	6505	186204	5898	38980	44825			-3243	-4347
29	8	37	O			135005	6217	141378	2955	31728	32208			-4132	-2359
28	9	37	F			103277	4769	109169	4613	29506	31499			461	1728
27	10	37	NE			73771	3575	77669	1956	24544	20621			-974	-906
26	11	37	NA			49226	2284	57047	2171	23053	25860			2412	2034

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
25	12	37	MG			26173	2282	31186	1150	18011	20032	1001	-196
24	13	37	AL			8161	1694	11154	1521	15893	18665	4788	4201
23	14	37	SI	-7010	1480	-7731	1608	-7511	533	11521	11589	2877	2405
22	15	37	P	-19010	790	-19253	1048	-19100	452	7341	7948	7027	6413
21	16	37	S	-26908	30	-26595	630	-27049	216	4484	4607	4669	4444
20	17	37	CL	-31762	0	-31080	649	-31656	118			10296	10599
19	18	37	AR	-30948	1	-31006	191	-31044	236			8746	8770
18	19	37	K	-24799	1	-24903	210	-24897	200	73	612	15855	15755
17	20	37	CA	-13164	39	-13016	186	-13128	369	6103	6146	14727	14740
16	21	37	SC			3440	969	3146	1065	11887	11768	19919	18552
15	22	37	TI			23135	1568	20787	594	16457	16275	19556	17910
14	23	37	V			47086	2190	42180	1481	19694	17640	25552	24850
13	24	37	CR			75469	3059	67920	1065	23951	21393	23329	21768
12	25	37	MN			106100	4112	96103	2660	28382	25740	29490	28533
30	8	38	O			145258	5027	152436	3200	30631	28182	-2181	-2986
29	9	38	F			114381	6414	118453	4935	30876	33983	-3033	-1212
28	10	38	NE			80257	3207	82776	2083	34124	35676	1585	2965
27	11	38	NA			57116	3349	65121	2521	23141	17655	182	-2
26	12	38	MG			30657	1714	35855	1314	26458	29266	3587	3403
25	13	38	AL			14030	2193	18005	1798	16627	17849	2202	1220
24	14	38	SI			-5663	1420	-5196	711	19694	23201	6003	5756
23	15	38	P	-14560	1300	-15294	1470	-14712	624	9631	9515	4113	3683
22	16	38	S	-26862	12	-26795	615	-26841	111	11501	12129	8271	7863
21	17	38	CL	-29798	0	-28937	700	-29342	248	2141	2501	5928	5757
20	18	38	AR	-34715	1	-34494	279	-34769	101	5557	5426	11559	11796
19	19	38	K	-28802	2	-29552	253	-29553	307			12719	12727
18	20	38	CA	-22060	9	-22065	179	-21877	211	4942	5216	17120	16819
17	21	38	SC	-4460	1040	-4479	631	-4703	769	7486	7676	15991	15920
16	22	38	TI			10034	845	9340	552	17585	17173	21171	19517
15	23	38	V			34354	2222	31330	1330	14514	14043	20803	18921
14	24	38	CR			56758	2103	50075	886	24319	21990	26781	25915
13	25	38	MN			89624	4133	81320	2359	22404	18745	24547	22854
12	26	38	FE			119032	3824	109461	1592	32865	31244		
										29407	28141		
31	8	39	O			158429	7100	165005	3447	34146	36045	-5100	-4497
30	9	39	F			124282	5676	128959	5351	33301	37378	-1829	-2435
29	10	39	NE			90981	4883	91581	2148	27785	21415	-2652	-733
28	11	39	NA			63195	3180	70165	2748	25079	26851	1992	3027
27	12	39	MG			38116	2680	43313	1606	20053	21207	613	613
26	13	39	AL			18062	1917	22105	2078	18328	21276	4039	3971

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT SHELL		LINEAR SHELL		CONSTANT	LINEAR	CONSTANT	LINEAR
25	14	39	SI			-265	1791	829	863	13448	13761	2673	2046
24	15	39	P	-12300	1240	-13713	1428	-12932	822	9624	10123	6490	6292
23	16	39	S	-23000	740	-23337	947	-23055	201	6311	6746	4614	4286
22	17	39	CL	-29803	18	-29649	675	-29802	132	3223	3267	8783	8530
21	18	39	AR	-33241	5	-32872	363	-33070	198	694	573	6449	6373
20	19	39	K	-33806	1	-33566	301	-33644	175			12085	12161
19	20	39	CA	-27282	5	-27242	192	-27090	296			13247	13284
18	21	39	SC	-14080	510	-14053	477	-13764	564			17645	17132
17	22	39	TI			1595	700	1093	426			16510	16317
16	23	39	V			20743	1439	19645	1128			21681	19755
15	24	39	CR			43527	2334	39012	899			21302	19133
14	25	39	MN			70428	3087	63058	2043			27267	26332
13	26	39	FE			102087	4088	94265	1445			25016	23266
31	9	40	F			136392	7376	140336	5783	36596	39585	-4039	-3306
30	10	40	NE			99796	3950	100751	2391	26992	22538	-743	-1099
29	11	40	NA			72803	4632	78212	2951	29743	31082	-1537	24
28	12	40	MG			43059	2522	47130	1711	18699	18832	3128	4255
27	13	40	AL			24360	2704	28298	2450	21769	24799	1774	1879
26	14	40	SI			2590	1542	3498	1012	12102	11663	5215	5402
25	15	40	P			-9511	1755	-8164	1029	13452	14427	3869	3304
24	16	40	S	-22240	700	-22963	866	-22591	374	4449	4698	7697	7607
23	17	40	CL	-27540	500	-27413	778	-27290	274	7399	7664	5835	5559
22	18	40	AR	-35040	1	-34812	336	-34954	107			10010	9954
21	19	40	K	-33535	1	-33182	399	-33181	269	1922	1732	7687	7609
20	20	40	CA	-34847	1	-35104	280	-34914	189			15933	15894
19	21	40	SC	-20527	4	-20470	327	-20236	524			14488	14543
18	22	40	TI	-9040	230	-9211	566	-8951	188			18877	18115
17	23	40	V			11074	1256	10277	913			17739	17439
16	24	40	CR			28699	1388	26434	807			22898	20649
15	25	40	MN			55988	3253	50979	1849			22511	20150
14	26	40	FE			81699	2789	74807	1256			28458	27529
13	27	40	CO			117705	5203	109483	3006				
32	9	41	F			146846	6907	151255	6204	35277	39643	-2382	-2847
31	10	41	NE			111569	5642	111611	2632	30313	24383	-3702	-2788
30	11	41	NA			81256	3973	87228	3282	28974	32513	-381	-944
29	12	41	MG			52281	3854	54714	1749	23384	23019	-1151	487
28	13	41	AL			28897	2745	31694	2721	20434	22673	3535	4675
27	14	41	SI			8462	2190	9020	1286	15560	14920	2200	2550
26	15	41	P			-7098	1705	-5899	1233	12120	12502	5658	5807

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA &	BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
25	16	41	S	-18100	930	-19218	1110	-18402	483	8289	8950			4326	3883
24	17	41	CL	-27400	160	-27507	665	-27352	439	5547	5659			8165	8133
23	18	41	AR	-33068	1	-33055	315	-33012	145	2553	2639			6314	6130
22	19	41	K	-35560	1	-35608	355	-35652	180					10497	10541
21	20	41	CA	-35139	1	-35211	363	-34989	247			396	663	8177	8146
20	21	41	SC	-28644	2	-28826	365	-28427	432			6385	6561	16426	16262
19	22	41	TI	-15780	40	-16118	359	-15894	276			12707	12533	14978	15014
18	23	41	V			-217	1004	-17	644			15901	15877	19362	18365
17	24	41	CR			18552	1314	16745	657			18769	16762	18217	17759
16	25	41	MN			40692	2280	38161	1605			22139	21416	23366	20888
15	26	41	FE			66803	3237	62389	1245			26110	24227	22967	20488
14	27	41	CO			96875	3796	89624	2651			30072	27234	28900	27930
32	10	42	NE			120972	5035	121232	2831	29021	23946			-1331	-1549
31	11	42	NA			91950	5419	97286	3628	32316	34884			-2623	-1987
30	12	42	MG			59634	3183	62401	1971	22638	24244			719	384
29	13	42	AL			36996	3850	38157	2974	25136	27031			-28	1609
28	14	42	SI			11859	2220	11125	1368	14244	12614			4674	5967
27	15	42	P			-2384	2240	-1488	1551	15591	15842			3358	3660
26	16	42	S			-17975	1004	-17331	598	6972	7089			6829	7000
25	17	42	CL	-24420	570	-24948	889	-24420	606	9395	9946			5512	5140
24	18	42	AR	-34420	40	-34343	181	-34367	295	711	543			9359	9425
23	19	42	K	-35023	1	-35055	356	-34911	240	3790	3904			7518	7330
22	20	42	CA	-38544	1	-38845	337	-38815	183					11705	11897
21	21	42	SC	-32121	2	-32670	450	-32274	465			6175	6540	11915	11918
20	22	42	TI	-25122	6	-25683	413	-25132	107			6986	7141	17636	17309
19	23	42	V	-8020	980	-8332	681	-8164	560			17350	16968	16186	16218
18	24	42	CR			6060	1041	5535	417			14393	13700	20563	19280
17	25	42	MN			29351	2161	27341	1356			23290	21805	19412	18891
16	26	42	FE			50324	2034	48543	1132			20973	21201	24549	21917
15	27	42	CO			80806	4186	76198	2415			30482	27654	24140	21496
14	28	42	NI			109444	3614	103911	1731			28637	27713		
33	10	43	NE			133264	7974	132618	3129	32233	25823			-4221	-3314
32	11	43	NA			101031	5062	106794	3956	31047	34839			-1009	-1437
31	12	43	MG			69984	4484	71955	2189	26000	26626			-2278	-1482
30	13	43	AL			43983	3480	45329	3340	24409	28263			1085	900
29	14	43	SI			19574	3184	17065	1371	18963	16710			357	2131
28	15	43	P			610	2397	354	1728	14289	13703			5076	6228
27	16	43	S			-13678	1477	-13348	860	10456	10401			3775	4089
26	17	43	CL	-23140	60	-24134	618	-23750	466	8089	8236			7258	7401

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
25	18	43	AR	-31980	70	-32223	328	-31987	374	4568	4730			5952	5692
24	19	43	K	-36588	10	-36792	214	-36717	332	1955	1855			9808	9877
23	20	43	CA	-38405	1	-38748	315	-38572	194					7974	7829
22	21	43	SC	-36185	2	-36764	411	-36697	404			1983	1875	12165	12493
21	22	43	TI	-29324	7	-29989	474	-29438	201			6775	7258	12376	12376
20	23	43	V	-18020	510	-18357	591	-17713	335			11632	11725	18095	17619
19	24	43	CR			-2510	704	-3011	424			15847	14701	16641	16618
18	25	43	MN			16410	1780	15875	1062			18920	18886	21011	19537
17	26	43	FE			38543	2093	37272	975			22133	21397	19852	19341
16	27	43	CO			63899	2914	62124	2130			25355	24851	24978	22145
15	28	43	NI			92958	4305	90132	1670			29059	28008	24556	21850
33	11	44	NA			112280	7638	117424	4363	34279	37251			-3177	-2559
32	12	44	MG			78000	4120	80173	2370	24753	26457			56	-146
31	13	44	AL			53246	4546	53715	3721	27789	30871			-1192	-315
30	14	44	SI			25457	2788	22844	1575	18254	17516			2189	2293
29	15	44	P			7203	3201	5327	1874	19022	17888			1479	3099
28	16	44	S			-11819	1590	-12561	874	9168	8318			6212	7284
27	17	44	CL			-20988	1069	-20880	727	11582	11609			4925	5201
26	18	44	AR	-32271	20	-32570	196	-32459	441	3272	3034			8417	8573
25	19	44	K	-35807	39	-35843	369	-35524	407	5818	6081			7123	6879
24	20	44	CA	-41466	1	-41662	183	-41605	313					10985	11103
23	21	44	SC	-37811	2	-37850	412	-37670	420			3811	3935	9157	9044
22	22	44	TI	-37546	3	-37714	454	-37590	91			136	80	15795	16222
21	23	44	V	-23850	560	-23848	617	-23216	314			13865	14374	13562	13574
20	24	44	CR	-13500	130	-13716	403	-13542	228			10132	9673	19276	18602
19	25	44	MN			6662	1447	6111	923			20378	19654	17819	17834
18	26	44	FE			24433	1646	24753	742			17771	18642	22180	20589
17	27	44	CO			50956	2931	49727	1841			26522	24973	21013	20467
16	28	44	NI			74901	2796	75008	1511			23945	25280	26128	23195
15	29	44	CU			109038	5644	106959	3747			34136	31950		
34	11	45	NA			121356	5797	127521	4726	32415	37174			-1005	-2025
33	12	45	MG			88940	6557	90347	2645	28007	28890			-2869	-2102
32	13	45	AL			60933	4438	61456	4092	26561	30793			384	330
31	14	45	SI			34372	3695	30663	1769	21651	19918			-844	253
30	15	45	P			12721	3034	10744	2166	18327	18618			2553	2654
29	16	45	S			-5606	2335	-7874	758	13915	12480			1859	3384
28	17	45	CL			-19521	1209	-20354	701	10306	9671			6605	7546
27	18	45	AR	-29730	60	-29828	593	-30026	659	6775	6331			5329	5608
26	19	45	K	-36611	11	-36604	226	-36357	477	4530	4540			8831	8903

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
25	20	45	CA	-40810	2	-41135	329	-40897	356	57	272			7545	7363
24	21	45	SC	-41067	1	-41192	297	-41169	469					11413	11570
23	22	45	TI	-39004	3	-39232	438	-38990	101			1960	2179	9589	9470
22	23	45	V	-31879	27	-32006	359	-31914	134			7225	7075	16228	16768
21	24	45	CR	-19460	150	-19638	404	-19438	255			12368	12476	13993	13966
20	25	45	MN			-4970	1077	-4741	683			14667	14696	19704	18924
19	26	45	FE			14263	1358	14454	711			19234	19196	18240	18369
18	27	45	CO			36432	2358	36958	1512			22168	22503	22595	20840
17	28	45	NI			61554	3020	62141	1318			25121	25183	21418	20937
16	29	45	CU			90587	4115	91596	3380			29033	29455	26521	23433
35	11	46	NA			133294	8017	137939	5153	36309	38769			-3867	-2347
34	12	46	MG			96984	4695	99169	2841	26163	28661			27	-751
33	13	46	AL			70821	6486	70508	4531	29832	33461			-1816	-980
32	14	46	SI			40988	3557	37047	1931	20440	19498			1455	1687
31	15	46	P			20548	3779	17548	2469	21739	21164			244	1268
30	16	46	S			-1191	2070	-3616	931	13234	13022			3656	3814
29	17	46	CL			-14425	1906	-16638	538	15064	13899			2975	4355
28	18	46	AR	-29730	70	-29489	693	-30538	610	5510	4399			7733	8583
27	19	46	K	-35420	16	-35000	616	-34938	688	8041	7901			6468	6652
26	20	46	CA	-43138	4	-43042	197	-42839	442					9978	10013
25	21	46	SC	-41756	2	-41819	423	-41666	512	1913	1981	1223	1173	8697	8567
24	22	46	TI	-44123	1	-43732	354	-43647	264					12570	12728
23	23	46	V	-37071	2	-37057	360	-36855	184			6674	6792	13121	13011
22	24	46	CR	-29461	30	-28956	340	-29358	110			8101	7496	17388	17991
21	25	46	MN	-12470	960	-12051	991	-11849	585			16905	17508	15151	15178
20	26	46	FE			1478	865	2479	530			13529	14329	20856	20045
19	27	46	CO			25115	2057	25445	1325			23637	22965	19387	19583
18	28	46	NI			45891	2341	48295	1050			20775	22850	23733	21916
17	29	46	CU			76110	4242	77590	3015			30218	29294	22547	22077
16	30	46	ZN			104632	3425	105165	2050			28522	27574		
35	12	47	MG			108647	6790	109208	3109	30077	30336			-3591	-1968
34	13	47	AL			78569	5162	78872	4938	28007	33295			323	-293
33	14	47	SI			50562	5461	45576	2183	23728	21968			-1502	-458
32	15	47	P			26834	3832	23608	2760	20543	20754			1786	2012
31	16	47	S			6290	2710	2854	1080	16659	15600			590	1601
30	17	47	CL			-10369	1689	-12746	724	14395	14342			4015	4179
29	18	47	AR			-24764	1357	-27088	302	10278	8557			3347	4622
28	19	47	K	-35698	8	-35043	702	-35645	635	6785	6118			8113	8778
27	20	47	CA	-42343	4	-41828	593	-41764	631	2294	2194			6858	6996

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	21	47	SC	-44331	2	-44123	306	-43958	568	637	603			10375	10362
25	22	47	TI	-44931	2	-44761	448	-44561	300					9100	8984
24	23	47	V	-42001	2	-41964	220	-41934	283			2797	2627	12977	13150
23	24	47	CR	-34618	25	-34415	318	-34665	120			7549	7268	13529	13377
22	25	47	MN	-22920	670	-21774	820	-22332	399			12640	12332	17794	18553
21	26	47	FE			-6004	924	-5160	504			15770	17172	15553	15710
20	27	47	CO			11932	1462	13150	1050			17937	18310	21254	20366
19	28	47	NI			34184	2137	36224	974			22251	23074	19778	20142
18	29	47	CU			60065	3451	63480	2623			25881	27255	24115	22180
17	30	47	ZN			89783	3919	90843	1829			29717	27363	22920	22392
36	12	48	MG			116957	5306	118745	3354	27745	30879			-239	-1465
35	13	48	AL			89212	6911	87866	5400	31939	35267			-2571	-922
34	14	48	SI			57272	4092	52599	2360	21919	21432			1362	1049
33	15	48	P			35352	5414	31166	3125	23847	23377			-447	513
32	16	48	S			11505	2693	7788	1190	15477	15086			2857	3137
31	17	48	CL			-3971	2246	-7297	905	17833	17042			1674	2622
30	18	48	AR			-21805	1042	-24339	449	9619	8763			5112	5322
29	19	48	K	-32220	500	-31425	973	-33102	424	11562	10346			4453	5528
28	20	48	CA	-44216	4	-42987	693	-43448	584	1045	499			9230	9755
27	21	48	SC	-44498	6	-44033	650	-43947	733	4162	3950			7981	8061
26	22	48	TI	-48488	1	-48195	362	-47897	399					11505	11406
25	23	48	V	-44473	3	-44127	373	-44010	337			4068	3887	10234	10147
24	24	48	CR	-42818	7	-42762	187	-43149	280			1365	860	16418	16555
23	25	48	MN	-29170	660	-28369	727	-28827	331			14393	14322	14665	14565
22	26	48	FE			-16862	777	-17007	370			11507	11819	18928	19918
21	27	48	CO			3320	1463	4298	899			20182	21306	16682	16922
20	28	48	NI			19877	1389	22781	755			16556	18483	22378	21514
19	29	48	CU			47241	3211	50180	2342			27364	27398	20895	21371
18	30	48	ZN			72629	2948	75810	1540			25388	25629	25224	23104
36	13	49	AL			97257	5940	96957	5861	29625	35810			26	-1019
35	14	49	SI			67631	5711	61146	2607	25868	23266			-2288	-475
34	15	49	P			41762	4501	37879	3452	22053	22823			1662	1359
33	16	49	S			19708	4225	15056	1410	18794	17750			-132	804
32	17	49	CL			914	2295	-2694	1046	16662	16513			3185	3469
31	18	49	AR			-15748	1500	-19207	529	13068	11447			2015	2940
30	19	49	K			-28817	921	-30655	564	10913	10456			5463	5624
29	20	49	CA	-41286	5	-39730	929	-41112	242	5830	4738			4814	5735
28	21	49	SC	-46555	4	-45561	732	-45850	695	2919	2316			9598	9973
27	22	49	TI	-48559	1	-48480	667	-48166	579					8355	8339

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	23	49	V	-47957	2	-47941	233	-47654	413			538	511	11885	11715
25	24	49	CR	-45329	3	-45308	332	-45587	305			2632	2067	10617	10508
24	25	49	MN	-37613	24	-37100	427	-37754	357			8207	7832	16802	16998
23	26	49	FE	-24470	160	-23839	438	-24011	321			13261	13742	15048	15075
22	27	49	CO			-7916	1205	-8113	675			15922	15898	19308	20482
21	28	49	NI			10889	1554	13370	687			18806	21483	17058	17482
20	29	49	CU			32564	2400	36399	2004			21675	23029	22747	21851
19	30	49	ZN			59443	2908	62102	1423			26878	25703	21257	21778
18	31	49	GA			88298	4353	92972	4078			28854	30870		
37	13	50	AL			108212	8246	107262	6367	33544	38354			-2884	-2233
36	14	50	SI			74667	4663	68907	2832	23570	23377			1035	310
35	15	50	P			51097	5845	45530	3839	26019	24871			-1264	421
34	16	50	S			25078	3169	20658	1536	17013	17063			2702	2469
33	17	50	CL			8065	3683	3594	1317	19993	19309			921	1782
32	18	50	AR			-11928	1494	-15714	559	11908	10766			4252	4579
31	19	50	K			-23836	1289	-26481	696	14372	13267			3091	3897
30	20	50	CA	-39572	8	-38209	664	-39748	341	5188	4693			6550	6708
29	21	50	SC	-44539	16	-43397	966	-44442	491	7712	6540			5908	6664
28	22	50	TI	-51432	3	-51110	757	-50982	536					10700	10887
27	23	50	V	-49219	2	-49332	618	-48948	598	901	1273	1777	2034	9462	9364
26	24	50	CR	-50258	1	-50234	202	-50221	402					12996	12705
25	25	50	MN	-42626	2	-43001	522	-43617	383			7233	6604	13971	13933
24	26	50	FE	-34430	440	-33684	511	-34185	453			9316	9432	17916	18244
23	27	50	CO			-16004	841	-16307	546			17680	17878	16158	16264
22	28	50	NI			-1455	1270	-434	512			14548	15872	20416	21875
21	29	50	CU			22475	2451	25758	1755			23930	26192	18160	18712
20	30	50	ZN			43670	1827	47324	1183			21194	21565	23844	22849
19	31	50	GA			74024	4242	78047	3711			30354	30723	22344	22996
37	14	51	SI			85367	6863	78740	3110	27505	25747			-2629	-1762
36	15	51	P			57862	5224	52993	4222	23735	24901			1307	609
35	16	51	S			34127	4454	28091	1745	20992	19213			-977	639
34	17	51	CL			13134	2810	8877	1501	18225	18582			3002	2789
33	18	51	AR			-5090	2839	-9704	746	15250	13555			1233	2061
32	19	51	K			-20340	1362	-23259	794	13221	12576			4575	4850
31	20	51	CA			-33562	900	-35836	380	8656	7571			3425	4159
30	21	51	SC	-43220	20	-42218	704	-43407	548	7077	6313			6892	7036
29	22	51	TI	-49733	3	-49296	977	-49721	132	3021	2223			6258	6810
28	23	51	V	-52199	1	-52317	704	-51945	549					11055	11067
27	24	51	CR	-51448	1	-51985	595	-51742	569			332	202	9821	9591

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	25	51	MN	-48240	1	-48289	433	-48586	439			3695	3156	13359	13039
25	26	51	FE	-40228	17	-39948	448	-40557	419			8341	8028	14334	14443
24	27	51	CO	-27230	750	-26211	704	-26928	499			13736	13629	18278	18692
23	28	51	NI			-9902	896	-9168	428			16308	17760	16518	16805
22	29	51	CU			9774	2046	11368	1466			19677	20537	20771	22460
21	30	51	ZN			33230	2208	36271	1074			23456	24903	18510	19123
20	31	51	GA			57907	3144	62940	3304			24676	26668	24187	23178
19	32	51	GE			87145	4221	92160	2182			29237	29220		
38	14	52	SI			92898	5575	85456	3340	25330	23549			541	1356
37	15	52	P			67568	7035	61907	4653	27687	27452			-1634	-843
36	16	52	S			39880	3680	34455	1925	18721	19048			2318	1708
35	17	52	CL			21159	3964	15406	1780	22218	20924			46	1543
34	18	52	AR			-1058	1857	-5518	796	13491	12647			4039	3885
33	19	52	K			-14549	2515	-18165	1020	16575	15502			2280	2977
32	20	52	CA			-31124	940	-33667	377	7512	6809			5634	5903
31	21	52	SC	-40140	710	-38637	761	-40477	649	10554	9232			4490	5141
30	22	52	TI	-49469	10	-49191	730	-49709	259	2390	1865			7967	8059
29	23	52	V	-51439	2	-51582	945	-51574	236	4473	4026			7337	7700
28	24	52	CR	-55415	2	-56055	694	-55600	528					12141	11928
27	25	52	MN	-50704	2	-51127	718	-51156	600			4927	4443	10909	10641
26	26	52	FE	-48332	12	-48509	362	-48846	490			2617	2310	16632	16359
25	27	52	CO	-34230	630	-33564	638	-34490	453			14945	14356	15424	15632
24	28	52	NI			-21199	798	-21066	460			12365	13423	19367	19969
23	29	52	CU			243	1665	1424	1241			21442	22491	17602	18014
22	30	52	ZN			19448	1745	20637	875			19205	19212	21853	23705
21	31	52	GA			46393	3349	50667	2971			26945	30030	19584	20343
20	32	52	GE			69959	2878	76016	1913			23565	25349	25256	24214
38	15	53	P			74853	6231	68445	5065	25527	25321			787	1533
37	16	53	S			49325	5470	43124	2166	22686	21665			-1373	-598
36	17	53	CL			26639	3379	21459	2036	19959	20656			2592	2019
35	18	53	AR			6680	2964	802	960	17495	15043			333	1751
34	19	53	K			-10815	1801	-14241	1164	14826	14556			4337	4147
33	20	53	CA			-25641	1974	-28798	532	10875	9810			2588	3202
32	21	53	SC			-36516	847	-38608	728	9418	8373			5951	6203
31	22	53	TI	-46890	100	-45934	559	-46982	258	5874	4873			4815	5345
30	23	53	V	-51863	25	-51809	676	-51855	309	3848	3471			8297	8352
29	24	53	CR	-55284	2	-55657	930	-55327	106					7673	7798
28	25	53	MN	-54687	2	-55539	793	-55224	543			118	102	12482	12138
27	26	53	FE	-50944	2	-51692	667	-51796	628			3846	3427	11253	11021

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	27	53	CO	-42640	18	-42471	298	-43122	471			9221	8673	16977	16703
25	28	53	NI	-29410	180	-28896	436	-29171	418			13575	13950	15767	16176
24	29	53	CU			-11394	1445	-10946	1068			17501	18225	19708	20441
23	30	53	ZN			9579	1418	10297	756			20973	21243	17940	18410
22	31	53	GA			32278	2767	34453	2612			22699	24155	22186	24285
21	32	53	GE			58119	3367	63291	1752			25840	28837	19911	20796
20	33	53	AS			85667	4500	93230	4101			27548	29939		
39	15	54	P			84948	7621	78234	5576	29320	29546			-2024	-1717
38	16	54	S			55627	4503	48688	2349	20538	19487			1769	2508
37	17	54	CL			35089	4977	29200	2361	23939	23431			-379	330
36	18	54	AR			11150	2259	5768	1078	15245	14533			3601	3105
35	19	54	K			-4094	2737	-8764	1403	18843	17150			1351	2594
34	20	54	CA			-22938	1253	-25915	551	9133	8767			5368	5188
33	21	54	SC			-32071	1708	-34682	912	12790	11425			3626	4145
32	22	54	TI	-45330	570	-44861	623	-46107	243	4743	3966			6998	7197
31	23	54	V	-49930	100	-49605	501	-50074	361	7339	6506			5867	6290
30	24	54	CR	-56931	2	-56944	666	-56580	236					9357	9324
29	25	54	MN	-55554	2	-56203	1013	-55868	187	968	1007	740	712	8735	8714
28	26	54	FE	-56251	1	-57171	757	-56875	587					13550	13150
27	27	54	CO	-48010	2	-48848	646	-49256	625			8323	7619	14447	14204
26	28	54	NI	-39210	420	-38872	376	-38974	470			9975	10281	18047	17873
25	29	54	CU			-20157	1064	-20261	895			18714	18712	16833	17386
24	30	54	ZN			-3123	1244	-3202	721			17033	17059	20773	21571
23	31	54	GA			21350	2419	22912	2305			24474	26114	18999	19612
22	32	54	GE			42948	2690	45793	1522			21597	22880	23242	25569
21	33	54	AS			72778	4806	79310	3730			29830	33517	20959	21991
39	16	55	S			65485	5822	58224	2689	24344	23651			-1787	-1164
38	17	55	CL			41141	4245	34572	2644	21803	21299			2020	2700
37	18	55	AR			19337	3836	13273	1277	19237	17327			-116	567
36	19	55	K			100	2298	-4054	1617	16603	16540			3876	3361
35	20	55	CA			-16502	2087	-20595	685	13158	11497			1636	2751
34	21	55	SC			-29661	1230	-32092	1031	11056	10258			5662	5482
33	22	55	TI			-40718	1334	-42350	388	8122	7117			3928	4315
32	23	55	V	-49010	570	-48841	400	-49468	396	6214	5488			7308	7465
31	24	55	CR	-55106	2	-55055	471	-54957	197	2755	2490			6182	6448
30	25	55	MN	-57710	2	-57810	768	-57447	245	349	325			9678	9650
29	26	55	FE	-57479	2	-58159	977	-57772	257					9059	8967
28	27	55	CO	-54024	2	-54653	728	-54559	565			3505	3213	13876	13373
27	28	55	NI	-45334	11	-45576	593	-45526	610			9077	9032	14775	14622

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA &	BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	29	55	CU	-31530	930	-30459	759	-30436	657			15116	15090	18373	18245
25	30	55	ZN			-12210	823	-12920	634			18249	17515	17158	17788
24	31	55	GA			8326	2101	8941	2038			20537	21862	21094	22041
23	32	55	GE			31702	2439	33811	1358			23376	24869	19316	20052
22	33	55	AS			57296	4020	61252	3332			25593	27441	23553	26128
21	34	55	SE			85548	4389	92310	1961			28251	31057		
40	16	56	S			72287	5097	65054	2823	22255	21878			1270	1241
39	17	56	CL			50032	5418	43176	3068	25624	25494			-820	-533
38	18	56	AR			24407	2994	17681	1395	17109	15100			3002	3663
37	19	56	K			7297	3615	2581	1902	20607	19498			875	1436
36	20	56	CA			-13310	1608	-16916	769	10926	10726			4879	4393
35	21	56	SC			-24236	1918	-27643	1232	15093	13100			2647	3623
34	22	56	TI			-39330	916	-40743	413	6393	5875			6683	6464
33	23	56	V	-46210	1000	-45724	794	-46618	573	9602	8676			4954	5222
32	24	56	CR	-55265	30	-55326	178	-55294	118	1632	1502			8342	8408
31	25	56	MN	-56909	2	-56959	620	-56797	232	3852	3678			7220	7422
30	26	56	FE	-60604	1	-60811	730	-60475	326					10722	10774
29	27	56	CO	-56037	2	-56687	963	-56382	206			4124	4093	10104	9894
28	28	56	NI	-53902	11	-54506	693	-53950	563			2181	2432	17000	16495
27	29	56	CU	-38500	700	-38210	889	-38068	714			16295	15881	15821	15703
26	30	56	ZN			-23560	750	-24119	619			14649	13948	19420	19270
25	31	56	GA			-1802	1675	-1980	1774			21757	22139	18200	18993
24	32	56	GE			17637	2104	18670	1252			19440	20650	22136	23211
23	33	56	AS			45017	3725	48093	2987			27379	29423	20350	21229
22	34	56	SE			69034	3442	73025	1715			24017	24931	24584	27355
40	17	57	CL			56604	4927	49791	3336	23547	23751			1499	1457
39	18	57	AR			33057	4095	26039	1716	20943	19187			-578	-286
38	19	57	K			12113	3082	6851	2146	18491	17320			3255	3801
37	20	57	CA			-6377	2827	-10468	939	14940	13785			1138	1624
36	21	57	SC			-21317	1671	-24254	1412	12869	12144			5152	4682
35	22	57	TI			-34186	1481	-36398	544	10437	8876			2928	3727
34	23	57	V			-44624	882	-45275	681	7879	7296			6972	6728
33	24	57	CR	-52790	560	-52504	478	-52571	232	5026	4867			5249	5348
32	25	57	MN	-57487	8	-57530	423	-57438	118	2733	2702			8642	8712
31	26	57	FE	-60179	1	-60264	559	-60141	293					7525	7738
30	27	57	CO	-59342	2	-59646	701	-59427	252			617	714	11030	11116
29	28	57	NI	-56099	7	-56850	929	-56067	135			2796	3359	10415	10188
28	29	57	CU	-47620	560	-47451	735	-46746	612			9398	9321	17312	16748
27	30	57	ZN	-32630	130	-31622	608	-32030	705			15829	14715	16132	15981

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	31	57	GA			-13461	1457	-13551	1544			18160	18479	19729	19641
25	32	57	GE			7202	1701	7299	1112			20663	20850	18506	19442
24	33	57	AS			30649	3255	32501	2680			23447	25201	22438	23663
23	34	57	SE			56458	3327	59477	1544			25808	26976	20647	21618
22	35	57	BR			84533	5492	90112	4914			28075	30634		
41	17	58	CL			65909	6646	58821	3739	27235	27150			-1233	-959
40	18	58	AR			38674	3481	31670	1764	18874	17334			2455	2440
39	19	58	K			19799	4013	14336	2529	22337	21444			386	587
38	20	58	CA			-2538	2259	-7107	1023	12829	11595			4233	4711
37	21	58	SC			-15368	2659	-18703	1657	16894	15280			2123	2521
36	22	58	TI			-32263	1248	-33984	630	8218	7783			6148	5657
35	23	58	V			-40481	1357	-41768	880	11933	10395			3928	4564
34	24	58	CR	-52050	540	-52414	419	-52163	230	3306	3489			7982	7663
33	25	58	MN	-56210	100	-55721	485	-55653	272	6135	6227			6262	6286
32	26	58	FE	-62152	2	-61856	350	-61880	247					9663	9809
31	27	58	CO	-59844	2	-60121	534	-60078	235	715	195	1734	1802	8545	8722
30	28	58	NI	-60224	2	-60837	664	-60274	239					12058	12277
29	29	58	CU	-51662	3	-52847	940	-51843	210			7989	8431	13466	13167
28	30	58	ZN	-42260	470	-41892	779	-41612	624			10955	10230	18341	17652
27	31	58	GA			-22547	1218	-22538	1396			19344	19073	17157	17058
26	32	58	GE			-5481	1501	-5339	1016			17065	17199	20755	20709
25	33	58	AS			19195	2828	19948	2375			24677	25287	19525	20624
24	34	58	SE			41072	2807	42769	1432			21877	22821	23456	24779
23	35	58	BR			70947	5272	75394	4491			29874	32624	21657	22789
41	18	59	AR			47757	5174	40475	2008	22573	20672			-1012	-734
40	19	59	K			25183	3694	19803	2758	20279	19626			2687	2604
39	20	59	CA			4903	3078	177	1321	16686	15693			629	786
38	21	59	SC			-11782	2359	-15516	1867	14793	13054			4485	4885
37	22	59	TI			-26575	2093	-28570	795	12251	11044			2384	2658
36	23	59	V			-38826	1312	-39615	1055	9720	9102			6417	5919
35	24	59	CR			-48547	826	-48718	342	7366	6827			4204	4627
34	25	59	MN	-55478	30	-55914	422	-55545	138	4420	4835			8263	7964
33	26	59	FE	-60661	3	-60334	405	-60381	275	1670	1757			6549	6572
32	27	59	CO	-62226	2	-62005	283	-62139	108					9954	10131
31	28	59	NI	-61153	2	-61606	469	-61284	195			398	854	8840	9081
30	29	59	CU	-56352	2	-57131	670	-56425	260			4474	4859	12354	12652
29	30	59	ZN	-47590	540	-47585	960	-46866	190			9545	9558	13764	13325
28	31	59	GA			-33114	1126	-32376	1171			14471	14430	18638	17908
27	32	59	GE			-14863	1288	-14654	1012			18251	17721	17452	17386

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
26	33	59	AS			6218	2493	6953	2100			21081	21608	21047	21065
25	34	59	SE			29329	2455	29816	1284			23110	22862	19814	21023
24	35	59	BR			55277	4626	58233	4101			25948	28417	23740	25231
42	18	60	AR			53690	4006	45281	2168	20362	17519			2139	3266
41	19	60	K			33328	5111	27762	3121	23992	23048			-73	113
40	20	60	CA			9335	2700	4714	1330	14634	13849			3640	3534
39	21	60	SC			-5298	3045	-9134	2206	18661	17102			1588	1690
38	22	60	TI			-23960	1809	-26237	886	10154	8829			5456	5738
37	23	60	V			-34114	1990	-35067	1298	13764	12427			3360	3523
36	24	60	CR			-47878	711	-47494	402	5156	5475			7403	6847
35	25	60	MN	-52950	640	-53035	722	-52969	283	8488	8394			5193	5495
34	26	60	FE	-61437	10	-61524	349	-61363	258		226			9260	9053
33	27	60	CO	-61647	2	-61481	369	-61590	181	3013	2891	42		7548	7523
32	28	60	NI	-64470	2	-64495	172	-64481	84					10959	11267
31	29	60	CU	-58343	3	-58905	492	-58449	251			5589	6032	9845	10095
30	30	60	ZN	-54184	11	-54858	677	-54448	255			4047	4000	15343	15653
29	31	60	GA			-39814	1258	-38581	819			15044	15867	14770	14276
28	32	60	GE			-26438	1223	-25440	877			13376	13141	19646	18856
27	33	60	AS			-4165	2205	-3416	1899			22272	22023	18455	18441
26	34	60	SE			15349	2121	15808	1173			19515	19224	22050	22079
25	35	60	BR			42537	4221	44104	3716			27188	28296	20810	22200
42	19	61	K			39046	4362	32498	3444	21791	20004			2353	3335
41	20	61	CA			17255	4025	12493	1543	18357	17292			152	292
40	21	61	SC			-1101	2915	-4798	2404	16618	15206			3874	3736
39	22	61	TI			-17720	2371	-20005	1167	14030	12876			1831	1840
38	23	61	V			-31751	1929	-32882	1507	11674	10161			5708	5887
37	24	61	CR			-43425	1314	-43043	548	9206	9003			3618	3620
36	25	61	MN			-52631	725	-52046	338	6284	6966			7668	7148
35	26	61	FE	-59010	70	-58916	433	-59012	290	4029	3881			5463	5720
34	27	61	CO	-62897	2	-62946	282	-62893	107	1304	1370			9535	9374
33	28	61	NI	-64219	2	-64250	268	-64264	107					7827	7854
32	29	61	CU	-61981	2	-62076	193	-62003	110			2174	2261	11241	11625
31	30	61	ZN	-56580	200	-56916	529	-56698	249			5159	5304	10129	10321
30	31	61	GA	-47750	570	-47372	774	-46543	522			9544	10155	15628	16033
29	32	61	GE			-33422	1446	-31854	514			13950	14689	15054	14485
28	33	61	AS			-16023	1986	-14444	1630			17398	17409	19928	19099
27	34	61	SE			4685	1918	5156	1163			20708	19601	18735	18722
26	35	61	BR			28281	3745	29738	3355			23595	24581	22327	22437
25	36	61	KR			53729	3378	54465	2405			25447	24727		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
43	19	62	K			47595	6420	39826	3855	25549	23426			-477	743
42	20	62	CA			22045	3178	16400	1671	16161	14297			3281	4165
41	21	62	SC			5883	4003	2103	2726	20353	18648			1086	1169
40	22	62	TI			-14469	2223	-16545	1192	11992	10977			4821	4611
39	23	62	V			-26462	2419	-27522	1840	15561	14144			2783	2712
38	24	62	CR			-42023	1198	-41667	617	7119	6826			6670	6695
37	25	62	MN			-49143	1176	-48493	527	10343	10680			4583	4518
36	26	62	FE	-58930	50	-59486	348	-59174	276	1827	2251			8641	8232
35	27	62	CO	-61504	14	-61313	399	-61425	196	5384	5272			6439	6603
34	28	62	NI	-66745	2	-66698	171	-66698	82					10518	10504
33	29	62	CU	-62796	5	-62814	305	-62766	166			3883	3931	8809	8834
32	30	62	ZN	-61169	10	-61076	218	-61250	93			1738	1516	12230	12622
31	31	62	GA	-51770	640	-52353	709	-51743	410			8722	9507	13052	13270
30	32	62	GE			-41970	916	-40883	466			10383	10859	16618	17100
29	33	62	AS			-23992	2092	-21790	1267			17977	19093	16040	15416
28	34	62	SE			-8159	1731	-6766	1011			15833	15023	20916	19994
27	35	62	BR			16636	3441	18035	3055			24795	24801	19716	19773
26	36	62	KR			38491	2862	39138	2208			21855	21103	23308	23398
43	20	63	CA			30386	5186	23638	1923	19929	17735			-269	834
42	21	63	SC			10456	3526	5902	3015	18167	15677			3499	4272
41	22	63	TI			-7710	3183	-9774	1399	15735	14464			1312	1301
40	23	63	V			-23446	2475	-24239	2042	13530	12180			5056	4788
39	24	63	CR			-36976	1592	-36419	883	11013	10885			3025	2824
38	25	63	MN			-47989	1196	-47305	635	8262	8576			6918	6884
37	26	63	FE			-56252	699	-55882	383	5890	6027			4837	4779
36	27	63	CO	-61850	19	-62143	281	-61909	129	3186	3592			8900	8555
35	28	63	NI	-65513	2	-65329	307	-65502	128	200	56			6703	6876
34	29	63	CU	-65579	2	-65529	193	-65558	98					10786	10863
33	30	63	ZN	-62211	2	-62084	299	-62213	103			3445	3344	9079	9034
32	31	63	GA	-56690	100	-56784	189	-56659	206			5299	5554	12502	12987
31	32	63	GE	-47550	580	-47223	928	-46363	385			9560	10296	13324	13550
30	33	63	AS			-32812	1505	-31188	1067			14411	15174	16891	17468
29	34	63	SE			-16399	2063	-14276	640			16413	16911	16311	15580
28	35	63	BR			3522	3082	5865	2707			19921	20141	21184	20240
27	36	63	KR			26580	2715	27200	2084			23057	21335	19981	20008
26	37	63	RB			52417	4253	53469	3484			25837	26268		
44	20	64	CA			35485	4009	27944	2057	17599	15585			2972	3766
43	21	64	SC			17886	5172	12358	3384	21947	19109			641	1616
42	22	64	TI			-4061	2674	-6750	1535	13553	11564			4422	5048

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
41	23	64	V			-17615	3261	-18315	2361	17284	15652			2240	2147
40	24	64	CR			-34899	1576	-33967	881	8985	8996			5995	5620
39	25	64	MN			-43885	1536	-42963	937	12165	12696			3967	3730
38	26	64	FE			-56050	695	-55660	413	3811	3870			7870	7850
37	27	64	CO	-59791	20	-59862	312	-59531	244	7257	7581			5791	5693
36	28	64	NI	-67098	2	-67120	169	-67112	90					9862	9681
35	29	64	CU	-65423	2	-65122	340	-65277	174	645	721	1998	1835	7664	7790
34	30	64	ZN	-66001	2	-65767	217	-65998	82					11754	11855
33	31	64	GA	-58836	8	-58759	302	-58604	178			7008	7394	10046	10016
32	32	64	GE	-54430	250	-54522	345	-54219	217			4237	4385	15369	15927
31	33	64	AS			-39034	1477	-37662	883			15487	16557	14293	14545
30	34	64	SE			-26190	1371	-24689	577			12844	12972	17862	18484
29	35	64	BR			-5683	3209	-2573	2304			20507	22116	17276	16509
28	36	64	KR			12499	2357	14186	1865			18183	16760	22151	21084
27	37	64	RB			39546	4028	40539	3193			27046	26352	20942	21000
44	21	65	SC			22784	4428	16564	3704	19626	16903			3174	3865
43	22	65	TI			3158	4207	-339	1778	17342	15037			852	1660
42	23	65	V			-14184	3075	-15376	2652	15110	12761			4641	5133
41	24	65	CR			-29295	2281	-28138	1065	12746	12592			2467	2242
40	25	65	MN			-42041	1636	-40730	1018	10143	10865			6228	5839
39	26	65	FE			-52185	950	-51596	650	7720	7925			4206	4007
38	27	65	CO			-59905	589	-59521	331	5183	5522			8114	8062
37	28	65	NI	-65125	2	-65089	183	-65044	175	2077	2205			6040	6003
36	29	65	CU	-67262	2	-67167	191	-67249	98					10115	10043
35	30	65	ZN	-65910	2	-65617	335	-65859	113			1549	1390	7921	7932
34	31	65	GA	-62654	2	-62702	189	-62757	110			2914	3102	12013	12223
33	32	65	GE	-56410	100	-56758	265	-56421	172			5944	6335	10307	10272
32	33	65	AS	-47150	760	-46595	877	-45874	652			10163	10547	15631	16282
31	34	65	SE			-32674	1538	-31400	497			13920	14473	14554	14781
30	35	65	BR			-15734	2489	-13360	2018			16939	18039	18122	18858
29	36	65	KR			3035	2842	5628	1534			18770	18989	17534	16629
28	37	65	RB			25210	3525	27332	2841			22174	21703	22406	21278
27	38	65	SR			50646	4034	50952	2727			25435	23620		
45	21	66	SC			30477	5576	23145	4083	23321	20039			379	1491
44	22	66	TI			7155	3418	3105	1922	15025	12823			4074	4626
43	23	66	V			-7870	4305	-9717	3018	18910	16214			1757	2413
42	24	66	CR			-26780	1991	-25932	1182	10575	9851			5557	5865
41	25	66	MN			-37356	2210	-35783	1270	13915	14569			3386	3124
40	26	66	FE			-51271	1002	-50353	596	5700	6026			7157	6829

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
39	27	66	CO			-56971	836	-56379	623	9100	9663			5137	4930
38	28	66	NI	-66021	19	-66072	168	-66043	104	3	83			9054	9070
37	29	66	CU	-66257	2	-66076	233	-66127	205	2533	2694			6981	6949
36	30	66	ZN	-68898	2	-68609	215	-68821	78					11063	11033
35	31	66	GA	-63723	3	-63499	338	-63534	174			5110	5286	8867	8848
34	32	66	GE	-61621	13	-61654	167	-61615	97			1844	1918	12966	13265
33	33	66	AS	-51520	760	-51637	726	-50897	517			10016	10718	13113	13094
32	34	66	SE			-41188	786	-40608	310			10448	10289	16585	17278
31	35	66	BR			-23167	2527	-21065	1752			18021	19542	15503	15775
30	36	66	KR			-7967	1944	-6124	1379			15200	14941	19073	19823
29	37	66	RB			14800	3871	17903	2429			22767	24028	18480	17499
28	38	66	SR			35363	3467	36906	2475			20562	19002	23353	22117
46	21	67	SC			35790	4557	28459	4471	21138	18800			2758	2757
45	22	67	TI			14652	4439	9658	2137	18729	16009			575	1518
44	23	67	V			-4076	3909	-6351	3342	16601	13931			4278	4705
43	24	67	CR			-20678	3179	-20282	1403	14382	13423			1969	2422
42	25	67	MN			-35060	2130	-33705	1476	11750	11962			5776	5993
41	26	67	FE			-46811	1488	-45667	741	9477	9713			3611	3386
40	27	67	CO			-56288	964	-55381	635	7085	7848			7388	7073
39	28	67	NI	-63470	90	-63374	307	-63229	397	3925	4149			5373	5258
38	29	67	CU	-67305	8	-67299	190	-67379	108	463	501			9294	9323
37	30	67	ZN	-67880	2	-67763	226	-67881	151					7225	7131
36	31	67	GA	-66879	2	-66738	187	-66870	102			1024	1011	11310	11406
35	32	67	GE	-62450	50	-62700	305	-62593	158			4038	4276	9116	9048
34	33	67	AS	-56650	520	-56784	500	-56452	351			5915	6141	13218	13626
33	34	67	SE	-47080	690	-46483	728	-45846	267			10301	10605	13365	13309
32	35	67	BR			-31933	1796	-30635	1460			14549	15210	16836	17641
31	36	67	KR			-15650	2308	-14023	1224			16283	16612	15754	15969
30	37	67	RB			3549	2918	5827	2145			19199	19850	19322	20147
29	38	67	SR			24707	4047	27354	2131			21158	21526	18726	17623
28	39	67	Y			49193	5429	50875	5052			24485	23520		
46	22	68	TI			19086	3291	14185	2350	16550	14711			3637	3545
45	23	68	V			2536	4762	-526	3721	20316	17108			1458	2247
44	24	68	CR			-17780	2661	-17634	1528	12076	11209			5173	5424
43	25	68	MN			-29856	3089	-28843	1774	15568	15637			2867	3210
42	26	68	FE			-45424	1346	-44481	816	7314	7113			6684	6885
41	27	68	CO			-52738	1374	-51594	851	10871	11669			4521	4285
40	28	68	NI			-63610	346	-63264	224	1910	2257			8307	8105
39	29	68	CU	-65390	50	-65521	339	-65521	384	4393	4484			6293	6214

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
38	30	68	ZN	-70006	2	-69914	214	-70006	80					10222	10196
37	31	68	GA	-67085	2	-66818	229	-66878	197	54	90	3095	3127	8151	8079
36	32	68	GE	-66972	13	-66873	165	-66969	88					12244	12446
35	33	68	AS	-58770	420	-58762	559	-58332	274			8111	8636	10048	9950
34	34	68	SE	-54170	490	-54385	504	-54214	165			4376	4117	15973	16438
33	35	68	BR			-38160	1633	-36840	1237			16225	17374	14298	14275
32	36	68	KR			-25352	1347	-24539	1018			12808	12300	17772	18587
31	37	68	RB			-5064	3201	-3007	1882			20287	21532	16684	16906
30	38	68	SR			12523	2953	14317	1941			17588	17324	20255	21108
29	39	68	Y			37611	5774	40488	4557			25087	26171	19652	18457
47	22	69	TI			26715	4677	21635	2600	19935	17747			442	622
46	23	69	V			6780	4178	3887	4109	18145	15689			3828	3658
45	24	69	CR			-11364	3417	-11802	1722	15798	14516			1656	2240
44	25	69	MN			-27163	2836	-26318	2013	13268	13477			5379	5547
43	26	69	FE			-40431	2238	-39796	999	11137	10766			3079	3387
42	27	69	CO			-51569	1396	-50563	1015	8714	9228			6902	7040
41	28	69	NI			-60283	705	-59792	360	5701	6050			4745	4599
40	29	69	CU	-65940	70	-65985	191	-65842	205	2382	2507			8535	8392
39	30	69	ZN	-68417	2	-68367	335	-68350	344	837	919			6525	6415
38	31	69	GA	-69322	3	-69205	185	-69269	97					10457	10461
37	32	69	GE	-67096	4	-67191	178	-67219	153			2013	2050	8389	8321
36	33	69	AS	-63120	40	-63175	188	-63074	146			4015	4144	12484	12813
35	34	69	SE	-56300	40	-56605	306	-56255	148			6570	6819	10290	10111
34	35	69	BR	-46620	840	-46306	1144	-45577	803			10299	10677	16216	16808
33	36	69	KR			-31822	1369	-30918	891			14484	14659	14540	14449
32	37	69	RB			-15008	2208	-13837	1585			16814	17080	18014	18900
31	38	69	SR			3669	3460	5283	1756			18677	19120	16924	17104
30	39	69	Y			25189	4665	27153	4152			21519	21870	20492	21405
29	40	69	ZR			49163	5322	50535	3088			23973	23381		
48	22	70	TI			31467	3841	26859	2817	17919	16289			3320	2847
47	23	70	V			13548	5262	10570	4533	21542	18704			1304	1389
46	24	70	CR			-7994	2616	-8134	1915	13630	13117			4701	4404
45	25	70	MN			-21624	3475	-21252	2317	17001	16898			2533	3005
44	26	70	FE			-38626	1911	-38150	1081	8839	8534			6266	6426
43	27	70	CO			-47465	2118	-46685	1277	12547	13011			3968	4194
42	28	70	NI			-60013	624	-59696	395	3544	3607			7801	7976
41	29	70	CU	-63390	110	-63557	281	-63304	381	6181	6235			5644	5533
40	30	70	ZN	-69560	3	-69739	215	-69570	89					9442	9291
39	31	70	GA	-68905	3	-68566	337	-68573	357	1926	1961	1173	996	7432	7376

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
38	32	70	GE	-70561	2	-70493	163	-70534	79					11372	11386
37	33	70	AS	-64339	20	-64407	229	-64260	222			6085	6274	9302	9256
36	34	70	SE	-61590	200	-61938	415	-61991	216			2469	2269	13403	13806
35	35	70	BR	-51140	740	-51225	893	-50306	640			10712	11685	12990	12799
34	36	70	KR			-40887	1011	-40601	734			10337	9704	17136	17754
33	37	70	RB			-22392	2162	-21124	1368			18494	19476	15455	15358
32	38	70	SR			-7191	2313	-6490	1523			15201	14634	18932	19844
31	39	70	Y			15423	4935	17217	3768			22615	23707	17836	18007
30	40	70	ZR			35828	3975	36300	2852			20404	19082	21406	22306
48	23	71	V			18121	4933	15667	4951	19534	17159			3498	2974
47	24	71	CR			-1412	3664	-1492	2143	17034	16250			1490	1429
46	25	71	MN			-18447	3066	-17742	2627	14839	15503			4894	4562
45	26	71	FE			-33287	2448	-33246	1234	12578	11943			2733	3167
44	27	71	CO			-45866	2011	-45190	1475	10254	10859			6472	6576
43	28	71	NI			-56120	1331	-56049	572	7382	7357			4179	4424
42	29	71	CU			-63503	500	-63407	617	4029	3812			8017	8173
41	30	71	ZN	-67324	10	-67532	276	-67219	183	2629	2873			5865	5721
40	31	71	GA	-70142	3	-70162	186	-70093	102		7			9667	9590
39	32	71	GE	-69906	2	-70081	305	-70100	329			81		7660	7638
38	33	71	AS	-67893	4	-67938	187	-67837	129			2142	2263	11602	11647
37	34	71	SE	-63090	300	-63401	386	-63380	207			4536	4456	9534	9460
36	35	71	BR	-56490	560	-56791	736	-56420	465			6609	6960	13637	14185
35	36	71	KR	-46500	720	-46041	801	-45451	618			10750	10968	13224	12921
34	37	71	RB			-31692	1708	-31130	1127			14348	14321	17370	18076
33	38	71	SR			-14809	2396	-13958	1366			16882	17171	15689	15539
32	39	71	Y			4330	3850	5155	3369			19140	19114	19164	20132
31	40	71	ZR			25832	4699	26217	2625			21502	21061	18066	18154
30	41	71	NB			50014	5479	49149	4930			24181	22932		
49	23	72	V			25120	6486	23747	5409	22813	20893			1072	-8
48	24	72	CR			2307	3130	2853	2341	15029	14757			4351	3726
47	25	72	MN			-12721	3903	-11904	2978	18255	18739			2346	2233
46	26	72	FE			-30976	1893	-30644	1386	10419	10426			5761	5469
45	27	72	CO			-41395	2480	-41070	1741	14003	14408			3601	3952
44	28	72	NI			-55399	1114	-55478	615	5090	5124			7350	7500
43	29	72	CU			-60490	1086	-60602	846	7876	7522			5058	5267
42	30	72	ZN	-68134	6	-68366	216	-68125	98	476	557			8904	8976
41	31	72	GA	-68591	3	-68843	277	-68683	211	3729	3889			6752	6661
40	32	72	GE	-72583	2	-72573	164	-72572	78					10562	10542
39	33	72	AS	-68232	7	-68421	337	-68351	362			4151	4221	8553	8585

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
38	34	72	SE	-67894	12	-67833	165	-67835	93			587	514	12503	12526
37	35	72	BR	-58930	450	-59153	707	-58748	379			8680	9088	10432	10399
36	36	72	KR	-53870	610	-54261	716	-54262	495			4892	4486	16290	16881
35	37	72	RB			-37745	1462	-36828	943			16515	17433	14123	13769
34	38	72	SR			-25012	1875	-24907	1177			12733	11920	18273	19020
33	39	72	Y			-4184	3804	-3188	3028			20827	21719	16586	16415
32	40	72	ZR			13839	3298	13271	2357			18024	16460	20064	21016
31	41	72	NB			39125	6075	38247	4508			25285	24976	18960	18972
50	23	73	V			29954	5963	28983	5889	20821	18157			3238	2836
49	24	73	CR			9132	4714	10825	2581	18315	18558			1246	99
48	25	73	MN			-9182	3712	-7732	3317	16256	17283			4533	3900
47	26	73	FE			-25438	2667	-25016	1574	13840	13638			2534	2444
46	27	73	CO			-39279	2267	-38655	2012	11849	12919			5955	5656
45	28	73	NI			-51129	1496	-51574	747	8844	8651			3801	4168
44	29	73	CU			-59974	1002	-60226	999	5588	5199			7555	7695
43	30	73	ZN	-65030	200	-65563	495	-65426	274	4327	4375			5268	5372
42	31	73	GA	-69730	40	-69890	187	-69801	110	1580	1610			9118	9189
41	32	73	GE	-71294	2	-71471	238	-71411	158					6970	6911
40	33	73	AS	-70949	4	-71133	188	-71119	122			338	292	10782	10839
39	34	73	SE	-68209	11	-68539	306	-68575	338			2593	2543	8776	8810
38	35	73	BR	-63670	220	-63810	388	-63476	207			4728	5098	12727	12799
37	36	73	KR	-56980	140	-56849	847	-56756	427			6961	6720	10659	10565
36	37	73	RB			-46192	1263	-45971	751			10656	10785	16517	17213
35	38	73	SR			-31291	1684	-30735	1028			14900	15235	14350	13898
34	39	73	Y			-14613	3195	-14435	2678			16678	16299	18499	19318
33	40	73	ZR			5099	3506	4797	2157			19712	19233	16810	16545
32	41	73	NB			26909	4618	25088	4069			21810	20291	20286	21230
51	23	74	V			38538	7712	36742	6382	25404	21399			-512	312
50	24	74	CR			13133	3967	15343	2843	16326	15966			4071	3554
49	25	74	MN			-3193	4964	-623	3700	19553	21134			2082	962
48	26	74	FE			-22747	2333	-21758	1729	11843	12093			5380	4813
47	27	74	CO			-34590	2887	-33851	2324	15281	16261			3383	3268
46	28	74	NI			-49872	1089	-50112	877	6691	7031			6814	6609
45	29	74	CU			-56564	1342	-57143	1227	9352	8697			4661	4989
44	30	74	ZN	-65670	140	-65916	496	-65841	216	2040	2109			8423	8486
43	31	74	GA	-68020	100	-67956	285	-67951	310	5439	5435			6137	6221
42	32	74	GE	-73422	2	-73395	165	-73386	81					9995	10045
41	33	74	AS	-70860	3	-70906	277	-70886	210	1226	1364	2488	2499	7845	7839
40	34	74	SE	-72213	3	-72133	166	-72250	86					11665	11746

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
39	35	74	BR	-65295	15	-65396	338	-65168	375			6737	7082	9656	9762
38	36	74	KR	-62020	100	-62392	212	-62318	293			3003	2850	13614	13633
37	37	74	RB			-51381	1639	-51067	632			11011	11250	13260	13167
36	38	74	SR			-40626	1474	-40824	875			10755	10243	17405	18159
35	39	74	Y			-21775	2934	-21080	2369			18850	19743	15233	14715
34	40	74	ZR			-6214	2787	-7335	1927			15560	13744	19385	20204
33	41	74	NB			17289	4738	15821	3691			23504	23157	17691	17338
52	23	75	V			46219	7078	44741	6873	24665	21608			390	73
51	24	75	CR			21554	5733	23132	3097	20917	19387			-349	282
50	25	75	MN			636	4615	3744	4106	17571	18671			4241	3704
49	26	75	FE			-16934	3569	-14926	1930	15147	15869			2259	1240
48	27	75	CO			-32082	2850	-30796	2625	13290	14778			5563	5016
47	28	75	NI			-45372	1674	-45574	1047	10128	10339			3572	3534
46	29	75	CU			-55501	1183	-55914	1459	7203	6938			7009	6842
45	30	75	ZN	-62460	350	-62705	534	-62852	306	5807	5725			4860	5082
44	31	75	GA	-68560	200	-68512	389	-68577	318	3155	3127			8627	8697
43	32	75	GE	-71856	2	-71668	248	-71704	215	1373	1367			6344	6390
42	33	75	AS	-73034	2	-73042	188	-73072	120					10206	10256
41	34	75	SE	-72169	2	-72121	240	-72232	158			920	839	8059	8053
40	35	75	BR	-69159	20	-69207	191	-69153	117			2914	3078	11881	12055
39	36	75	KR	-64160	310	-64196	606	-64198	414			5010	4954	9874	9951
38	37	75	RB	-57510	600	-57144	507	-56858	449			7052	7340	13833	13861
37	38	75	SR			-46035	2000	-46095	767			11108	10762	13479	13342
36	39	75	Y			-31329	2594	-31478	2066			14705	14617	17625	18469
35	40	75	ZR			-13595	2659	-14059	1736			17733	17418	15452	14795
34	41	75	NB			5757	3906	3464	3301			19353	17524	19603	20428
33	42	75	MO			27528	4410	25150	2152			21770	21686		
53	23	76	V			55372	8317	52698	7402	26950	22264			-1081	114
52	24	76	CR			28421	4863	30433	3326	20181	19616			1204	770
51	25	76	MN			8240	6028	10817	4521	22173	22257			468	999
50	26	76	FE			-13932	3064	-11439	2153	13167	13409			5069	4585
49	27	76	CO			-27100	3812	-24849	2969	16604	18631			3089	2124
48	28	76	NI			-43704	1468	-43480	1179	8138	8757			6403	5977
47	29	76	CU			-51842	1652	-52237	1733	10649	10205			4413	4395
46	30	76	ZN	-62550	170	-62492	423	-62443	389	3659	3972			7859	7663
45	31	76	GA	-66440	150	-66152	505	-66416	475	6931	6760			5711	5910
44	32	76	GE	-73214	3	-73083	167	-73177	90					9486	9543
43	33	76	AS	-72291	2	-72172	285	-72228	248	2948	3001	910	948	7202	7228
42	34	76	SE	-75259	3	-75121	167	-75230	79					11071	11068

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
41	35	76	BR	-70303	15	-70058	279	-70068	209			5063	5162	8921	8985
40	36	76	KR	-69100	200	-68876	386	-69046	149			1181	1022	12751	12918
39	37	76	RB	-60610	270	-59814	776	-59638	510			9062	9408	10741	10850
38	38	76	SR			-54357	810	-54407	608			5457	5230	16392	16383
37	39	76	Y			-37606	2960	-37604	1806			16750	16803	14347	14196
36	40	76	ZR			-24021	2313	-25346	1541			13584	12257	18496	19357
35	41	76	NB			-2489	3722	-3994	2954			21531	21352	16318	15529
34	42	76	MO			15127	3409	11901	1914			17616	15896	20472	21319
54	23	77	V			63347	7797	61843	7947	25926	23401			96	-1074
53	24	77	CR			37421	6027	38442	3597	22472	20461			-928	63
52	25	77	MN			14948	5585	17981	4933	21444	22489			1364	908
51	26	77	FE			-6495	4445	-4508	2364	17775	17032			635	1140
50	27	77	CO			-24270	3656	-21541	3338	14630	16325			5242	4764
49	28	77	NI			-38901	2454	-37867	1359	11457	12525			3268	2458
48	29	77	CU			-50359	1658	-50392	1995	8664	8517			6588	6226
47	30	77	ZN	-58910	360	-59023	671	-58910	528	7110	7346			4603	4538
46	31	77	GA	-66410	260	-66133	674	-66256	619	4787	4915			8053	7912
45	32	77	GE	-71214	3	-70920	290	-71172	112	2868	2737			5909	6067
44	33	77	AS	-73916	4	-73789	190	-73910	125	667	610			9687	9752
43	34	77	SE	-74606	3	-74457	249	-74520	198					7407	7362
42	35	77	BR	-73242	4	-73265	192	-73290	102			1191	1229	11278	11293
41	36	77	KR	-70236	30	-69937	274	-70139	183			3328	3151	9131	9164
40	37	77	RB	-65110	120	-64706	546	-64751	244			5230	5387	12962	13184
39	38	77	SR	-57960	280	-57240	1116	-57386	631			7466	7365	10954	11049
38	39	77	Y			-46141	1831	-46123	1528			11098	11263	16606	16590
37	40	77	ZR			-30511	3020	-31598	1385			15630	14524	14560	14322
36	41	77	NB			-13127	3247	-15517	2612			17383	16081	18709	19594
35	42	77	MO			6668	3429	4348	1727			19796	19866	16529	15623
34	43	77	TC			27797	4499	24836	4181			21129	20487		
55	23	78	V			72815	9131	70154	8519	28214	23294			-1397	-239
54	24	78	CR			44601	5243	46860	3876	21451	21558			891	-346
53	25	78	MN			23149	6559	25301	5385	23747	23507			-130	751
52	26	78	FE			-597	3834	1794	2550	17048	17143			2173	1768
51	27	78	CO			-17645	4746	-15348	3714	19248	20139			1446	1879
50	28	78	NI			-36893	2122	-35488	1567	9484	10212			6064	5693
49	29	78	CU			-46378	2431	-45700	2301	11993	12193			4091	3380
48	30	78	ZN	-58080	320	-58371	713	-57894	605	5124	5699			7420	7056
47	31	78	GA	-63680	200	-63496	799	-63593	825	8246	8296			5435	5408
46	32	78	GE	-71760	70	-71743	225	-71889	146	723	834			8893	8788

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
45	33	78	AS	-72740	70	-72466	322	-72723	177	4454	4281			6749	6885
44	34	78	SE	-77032	3	-76921	169	-77005	78					10535	10555
43	35	78	BR	-73458	5	-73447	287	-73425	232	550	705	3474	3579	8252	8205
42	36	78	KR	-74150	8	-73998	213	-74131	92					12131	12062
41	37	78	RB	-67090	180	-66617	509	-66726	308			7380	7404	9981	10045
40	38	78	SR	-63850	500	-62988	785	-63364	393			3628	3361	13819	14048
39	39	78	Y			-51535	2194	-51629	1360			11453	11734	13464	13577
38	40	78	ZR			-39904	1538	-40895	1192			11631	10733	17463	17368
37	41	78	NB			-20470	3887	-22542	2313			19433	18353	15413	15095
36	42	78	MO			-4825	2903	-8069	1530			15644	14472	19565	20489
35	43	78	TC			18488	4482	16499	3795			23314	24568	17379	16408
55	24	79	CR			53926	6538	55222	4177	23746	21678			-1253	-291
54	25	79	MN			30179	6217	33543	5854	22732	24549			1042	-170
53	26	79	FE			7446	4708	8993	2780	19357	18207			27	872
52	27	79	CO			-11910	4517	-9214	4087	18526	20279			2337	1937
51	28	79	NI			-30437	3202	-29493	1754	14108	14055			1615	2077
50	29	79	CU			-44545	2349	-43548	2632	10025	9866			6239	5919
49	30	79	ZN			-54571	1493	-53415	748	8458	9428			4271	3592
48	31	79	GA	-62810	170	-63029	955	-62844	999	6265	6589			7605	7322
47	32	79	GE	-69570	150	-69295	336	-69433	266	4186	4256			5624	5615
46	33	79	AS	-73720	50	-73481	242	-73689	136	2313	2252			9086	9036
45	34	79	SE	-75921	4	-75795	291	-75942	94	315	192			6945	7008
44	35	79	BR	-76070	4	-76110	193	-76135	95					10734	10780
43	36	79	KR	-74439	9	-74381	282	-74365	206			1729	1770	8454	8305
42	37	79	RB	-70860	110	-70882	405	-70899	226			3499	3465	12335	12244
41	38	79	SR	-65460	570	-65105	704	-65528	354			5776	5370	10187	10235
40	39	79	Y			-57490	1553	-57853	1071			7614	7675	14025	14294
39	40	79	ZR			-45505	2263	-46553	1129			11985	11299	13672	13728
38	41	79	NB			-30069	2336	-31974	1996			15435	14579	17670	17503
37	42	79	MO			-12374	3960	-15235	1382			17695	16738	15619	15237
36	43	79	TC			6789	3827	3785	3414			19163	19021	19770	20784
56	24	80	CR			61479	5977	64311	4478	22754	23083			519	-1017
55	25	80	MN			38724	7297	41227	6350	25038	24883			-473	387
54	26	80	FE			13685	4172	16344	3018	18344	19069			1833	721
53	27	80	CO			-4659	5258	-2724	4501	20846	21542			820	1582
52	28	80	NI			-25505	2787	-24267	1916	13388	14063			3140	2846
51	29	80	CU			-38893	3209	-38330	2967	14658	13729			2420	2854
50	30	80	ZN			-53552	1276	-52060	930	6490	7234			7053	6717
49	31	80	GA	-59530	680	-60043	1510	-59295	1232	9608	10274			5085	4523

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA &	BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
48	32	80	GE	-69430	310	-69651	483	-69569	291	2205	2524			8427	8207
47	33	80	AS	-72060	300	-71856	544	-72094	291	5784	5648			6446	6476
46	34	80	SE	-77761	4	-77640	226	-77742	83					9916	9871
45	35	80	BR	-75891	4	-75813	323	-75896	150	2067	1937	1827	1845	7774	7833
44	36	80	KR	-77897	11	-77881	215	-77834	82					11570	11540
43	37	80	RB	-72190	23	-72099	384	-71926	312			5781	5907	9288	9098
42	38	80	SR	-70390	400	-70209	503	-70473	218			1889	1452	13175	13016
41	39	80	Y			-60443	1409	-60870	902			9765	9603	11024	11088
40	40	80	ZR			-53932	1474	-55215	891			6511	5654	16497	16733
39	41	80	NB			-36509	2983	-38421	1788			17423	16794	14510	14518
38	42	80	MO			-22816	1990	-25453	1180			13692	12968	18512	18288
37	43	80	TC			-1596	4851	-4205	3076			21219	21248	16456	16061
56	25	81	MN			46135	7135	50133	6858	24053	26225			660	-834
55	26	81	FE			22081	5184	23907	3278	20657	19489			-325	508
54	27	81	CO			1424	5118	4418	4931	19839	22375			1988	928
53	28	81	NI			-18415	3431	-17956	2125	15713	15364			981	1761
52	29	81	CU			-34128	3073	-33321	3302	13943	13599			3306	3062
51	30	81	ZN			-48072	2093	-46920	1067	11128	11265			2591	2931
50	31	81	GA			-59201	1723	-58186	1493	7644	8112			7229	6962
49	32	81	GE	-66340	500	-66845	842	-66299	406	5551	6198			5266	4801
48	33	81	AS	-72640	100	-72397	256	-72497	345	3806	3823			8611	8474
47	34	81	SE	-76391	4	-76203	290	-76321	163	1646	1640			6635	6651
46	35	81	BR	-77976	6	-77850	245	-77961	98					10108	10136
45	36	81	KR	-77707	18	-77777	320	-77685	94			72	276	7968	7923
44	37	81	RB	-75445	35	-75795	321	-75579	212			1982	2106	11767	11723
43	38	81	SR	-71460	50	-71625	248	-71612	257			4169	3966	9486	9209
42	39	81	Y			-65748	1113	-65978	690			5876	5633	13375	13179
41	40	81	ZR			-57087	1446	-58377	788			8661	7601	11225	11232
40	41	81	NB			-45138	2092	-47259	1462			11949	11117	16699	16908
39	42	81	MO			-29457	3078	-32068	1145			15680	15190	14711	14686
38	43	81	TC			-12239	2799	-14617	2721			17217	17451	18713	18483
57	25	82	MN			55387	8686	59653	7409	26668	27729			-1181	-1448
56	26	82	FE			28719	4834	31923	3538	19674	20642			1434	56
55	27	82	CO			9045	5968	11281	5388	22163	23034			450	1209
54	28	82	NI			-13117	3085	-11753	2342	14707	16006			2774	1868
53	29	82	CU			-27825	3631	-27759	3678	16278	14929			1768	2510
52	30	82	ZN			-44104	1815	-42689	1176	10414	11142			4103	3841
51	31	82	GA			-54518	2320	-53832	1748	12291	12212			3388	3717
50	32	82	GE	-65790	460	-66809	768	-66044	578	3587	4104			8035	7817

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
49	33	82	AS	-70190	370	-70397	575	-70149	510	7160	7419			6071	5723
48	34	82	SE	-77586	10	-77558	241	-77568	90					9425	9318
47	35	82	BR	-77498	6	-77225	322	-77409	197	3408	3133	332	159	7447	7519
46	36	82	KR	-80591	6	-80634	262	-80542	79					10927	10928
45	37	82	RB	-76213	20	-76510	412	-76204	239			4124	4337	8785	8696
44	38	82	SR	-75999	9	-76146	168	-76028	99			363	176	12591	12486
43	39	82	Y	-67910	650	-67986	707	-67882	469			8160	8145	10308	9975
42	40	82	ZR			-63219	1110	-64202	627			4766	3680	14203	13896
41	41	82	NB			-50719	2041	-52796	1254			12500	11405	13652	13608
40	42	82	MO			-38914	2001	-41723	881			11804	11073	17528	17725
39	43	82	TC			-19704	3836	-22074	2469			19210	19649	15535	15528
38	44	82	RU			-3871	2657	-7314	1529			15832	14759		
57	26	83	FE			37832	6382	41261	3850	22294	22179			-1041	-1266
56	27	83	CO			15537	5972	19081	5857	21185	24151			1580	271
55	28	83	NI			-5648	3877	-5069	2582	17036	16742			603	1388
54	29	83	CU			-22685	3577	-21812	4068	15278	15374			2932	2124
53	30	83	ZN			-37963	2259	-37186	1344	12753	12650			1931	2568
52	31	83	GA			-50717	2335	-49836	1997	11581	11996			4271	4076
51	32	83	GE			-62299	1312	-61833	669	8238	8307			3561	3860
50	33	83	AS	-69950	220	-70537	567	-70140	711	5200	5325			8211	8063
49	34	83	SE	-75410	32	-75738	323	-75466	146	3025	3474			6252	5969
48	35	83	BR	-79025	15	-78764	259	-78940	109	1432	1191			9609	9602
47	36	83	KR	-79985	4	-80196	319	-80131	152					7634	7660
46	37	83	RB	-78987	32	-79556	354	-79285	205			640	845	11117	11151
45	38	83	SR	-76737	30	-77052	290	-76756	113			2503	2529	8977	8799
44	39	83	Y	-72440	440	-72700	506	-72463	280			4352	4233	12785	12651
43	40	83	ZR			-65652	842	-66172	569			7048	6290	10503	10041
42	41	83	NB			-57047	1597	-58714	1003			8604	7457	14399	13989
41	42	83	MO			-44692	2126	-47422	795			12355	11292	13849	13769
40	43	83	TC			-29357	2646	-31965	2110			15334	15456	17724	17962
39	44	83	RU			-11532	4094	-14922	1473			17825	17042	15731	15678
58	26	84	FE			44917	5680	50370	4084	21026	22705			986	-1038
57	27	84	CO			23891	7221	27665	6370	23817	25873			-282	-512
56	28	84	NI			73	3689	1791	2821	16060	17660			2349	1210
55	29	84	CU			-15986	4256	-15869	4487	17616	16180			1373	2128
54	30	84	ZN			-33603	2041	-32049	1518	11754	13043			3711	2934
53	31	84	GA			-45357	2732	-45092	2297	13930	13581			2711	3328
52	32	84	GE			-59288	1196	-58674	735	7528	8034			5060	4812
51	33	84	AS	-66160	650	-66816	1012	-66708	875	9859	9563			4350	4039

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
50	34	84	SE	-75942	18	-76676	402	-76271	308	1064	1496			9008	8876
49	35	84	BR	-77759	26	-77740	351	-77768	186	4798	4697			7048	6899
48	36	84	KR	-82432	4	-82538	275	-82465	79					10412	10404
47	37	84	RB	-79752	4	-79920	411	-79693	263	987	940	2618	2772	8435	8478
46	38	84	SR	-80641	4	-80907	226	-80633	91					11926	11948
45	39	84	Y	-73692	30	-74413	409	-73938	227			6494	6694	9783	9546
44	40	84	ZR	-71440	590	-71178	626	-71462	406			3234	2476	13597	13361
43	41	84	NB			-60289	1309	-61372	854			10889	10090	11312	10728
42	42	84	MO			-53412	1607	-55644	618			6877	5728	16790	16292
41	43	84	TC			-35946	2772	-38490	1860			17466	17153	14659	14595
40	44	84	RU			-22000	2700	-25605	1189			13945	12885	18539	18753
39	45	84	RH			-607	5166	-4718	3729			21392	20886		
58	27	85	CO			30838	6976	36534	6853	22554	26399			1124	-798
57	28	85	NI			8283	4949	10134	3114	18697	19406			-138	-271
56	29	85	CU			-10414	4327	-9271	4918	16646	16893			2499	1474
55	30	85	ZN			-27060	2650	-26165	1718	14097	14065			1528	2187
54	31	85	GA			-41158	2815	-40231	2609	12935	13824			3872	3210
53	32	85	GE			-54093	1473	-54055	872	9881	9730			2876	3452
52	33	85	AS			-63974	998	-63785	1031	9153	9164			5230	5149
51	34	85	SE	-72570	450	-73127	594	-72950	291	5727	5886			4523	4751
50	35	85	BR	-78670	100	-78854	413	-78836	349	2840	2669			9185	9139
49	36	85	KR	-81472	4	-81695	349	-81506	126	750	763			7228	7112
48	37	85	RB	-82159	3	-82445	364	-82270	202					10595	10648
47	38	85	SR	-81095	7	-81457	289	-81196	160			988	1074	8620	8633
46	39	85	Y	-77835	12	-78455	352	-78022	182			3001	3174	12113	12154
45	40	85	ZR	-73130	540	-73080	554	-72996	323			5375	5025	9972	9604
44	41	85	NB			-66006	1002	-66758	622			7073	6238	13788	13456
43	42	85	MO			-56845	1387	-58386	584			9161	8371	11504	10813
42	43	85	TC			-44857	2138	-46867	1574			11987	11518	16982	16447
41	44	85	RU			-28780	3009	-32275	1082			16077	14592	14851	14740
40	45	85	RH			-11267	3685	-15579	3303			17513	16695	18730	18931
59	27	86	CO			39626	8426	45616	7384	25148	27568			-717	-1011
58	28	86	NI			14478	4452	18048	3325	17436	19771			1877	158
57	29	86	CU			-2958	5361	-1722	5392	19292	18655			615	522
56	30	86	ZN			-22250	2564	-20377	1916	13127	14720			3262	2284
55	31	86	GA			-35378	3329	-35098	2953	15287	14963			2292	2939
54	32	86	GE			-50665	1412	-50062	1014	8885	9856			4644	4078
53	33	86	AS			-59551	1249	-59918	1254	11514	10905			3649	4205
52	34	86	SE	-70860	490	-71066	553	-70824	229	5019	5479			6011	5945

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
51	35	86	BR	-75960	400	-76086	434	-76303	406	7510	7044			5303	5539
50	36	86	KR	-83263	5	-83597	424	-83348	292					9973	9912
49	37	86	RB	-82738	3	-82388	434	-82192	245	2387	2388	1209	1155	8014	7994
48	38	86	SR	-84512	3	-84775	241	-84581	78					11389	11455
47	39	86	Y	-79239	10	-79796	408	-79377	245			4979	5203	9411	9426
46	40	86	ZR	-77940	380	-77920	410	-77823	233			1875	1554	12910	12897
45	41	86	NB	-69340	790	-68703	906	-68961	483			9217	8861	10767	10274
44	42	86	MO			-63363	1042	-64492	399			5340	4469	14588	14176
43	43	86	TC			-50639	1923	-51902	1377			12723	12589	13852	13105
42	44	86	RU			-38493	2259	-41353	884			12146	10549	17783	17149
41	45	86	RH			-18843	3944	-23008	2970			19649	18344	15647	15500
40	46	86	PD			-2745	3581	-8575	1719			16097	14433		
59	28	87	NI			23129	5919	26894	3600	20035	20993			-580	-774
58	29	87	CU			3094	5212	5901	5836	18036	18851			2019	448
57	30	87	ZN			-14942	3588	-12950	2175	15779	16645			764	644
56	31	87	GA			-30721	3497	-29595	3306	14321	15459			3415	2569
55	32	87	GE			-45043	1853	-45055	1185	11242	11148			2450	3065
54	33	87	AS			-56286	1310	-56203	1487	10523	10847			4806	4356
53	34	87	SE			-66810	698	-67051	307	7385	7380			3815	4299
52	35	87	BR	-74210	440	-74195	500	-74432	463	6806	6462			6180	6200
51	36	87	KR	-80707	5	-81002	218	-80895	232	3464	3363			5476	5618
50	37	87	RB	-84596	3	-84466	486	-84258	344	430	473			10149	10136
49	38	87	SR	-84869	3	-84896	322	-84731	121					8192	8221
48	39	87	Y	-83007	3	-83295	362	-82988	163			1601	1742	11570	11682
47	40	87	ZR	-79430	80	-79443	290	-79289	222			3851	3699	9594	9537
46	41	87	NB	-74430	560	-73727	680	-73926	327			5716	5363	13095	13035
45	42	87	MO			-66245	1329	-66772	326			7482	7153	10953	10351
44	43	87	TC			-57344	1479	-58166	1115			8901	8606	14775	14335
43	44	87	RU			-44462	2138	-46457	826			12881	11709	14040	13175
42	45	87	RH			-28744	3073	-32184	2611			15718	14272	17971	17246
41	46	87	PD			-10509	4100	-16120	1576			18234	16063	15834	15616
60	28	88	NI			29244	5320	33265	3879	18235	19299			1957	1701
59	29	88	CU			11008	6412	13965	6329	20646	20118			157	7
58	30	88	ZN			-9637	3226	-6153	2335	14523	16819			2766	1275
57	31	88	GA			-24161	4292	-22972	3708	16982	17448			1511	1449
56	32	88	GE			-41144	1884	-40421	1351	10277	11520			4172	3437
55	33	88	AS			-51421	1711	-51941	1756	12888	12223			3206	3810
54	34	88	SE			-64310	710	-64164	390	6393	7256			5572	5185
53	35	88	BR	-71090	630	-70703	666	-71421	631	9179	8358			4580	5060

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
52	36	88	KR	-79689	14	-79883	212	-79779	110	2758	2765			6953	6956
51	37	88	RB	-82602	12	-82641	338	-82544	307	5111	5030			6247	6358
50	38	88	SR	-87911	3	-87753	402	-87575	285					10927	10915
49	39	88	Y	-84298	4	-84192	432	-83994	209			3560	3580	8968	9077
48	40	88	ZR	-83621	10	-83725	241	-83655	103			466	338	12352	12437
47	41	88	NB	-76420	500	-76031	544	-76108	285			7694	7547	10374	10252
46	42	88	MO	-72920	590	-72056	802	-72491	232			3975	3616	13881	13789
45	43	88	TC			-61009	1778	-61171	929			11046	11319	11736	11076
44	44	88	RU			-53483	1611	-54945	622			7525	6226	17091	16559
43	45	88	RH			-35497	2933	-37963	2327			17986	16981	14823	13850
42	46	88	PD			-21197	3080	-25960	1351			14299	12003	18759	17910
41	47	88	AG			678	5468	-5711	3699			21875	20248		
60	29	89	CU			16986	6204	20147	6836	18851	18354			2093	1890
59	30	89	ZN			-1864	4412	1793	2570	17137	18279			298	125
58	31	89	GA			-19002	4293	-16486	4069	15732	17501			2913	1585
57	32	89	GE			-34734	2658	-33987	1587	12942	13606			1662	1638
56	33	89	AS			-47677	1851	-47594	2031	11927	12404			4327	3724
55	34	89	SE			-59604	1037	-59998	518	8762	8832			3366	3905
54	35	89	BR			-68366	797	-68830	997	8191	8000			5735	5481
53	36	89	KR	-76790	60	-76558	217	-76831	157	5134	4813			4746	5123
52	37	89	RB	-81717	13	-81692	318	-81644	218	4408	4311			7122	7172
51	38	89	SR	-86203	4	-86101	172	-85956	212	1123	1089			6420	6453
50	39	89	Y	-87695	3	-87224	484	-87045	315					11102	11122
49	40	89	ZR	-84860	3	-84800	323	-84846	138			2423	2199	9146	9261
48	41	89	NB	-80621	19	-80492	259	-80633	119			4308	4212	12532	12596
47	42	89	MO	-75220	440	-74540	724	-74804	243			5951	5828	10555	10384
46	43	89	TC			-67002	1146	-67091	737			7538	7713	14063	13990
45	44	89	RU			-57331	2072	-58013	526			9670	9078	11919	11138
44	45	89	RH			-44701	2292	-46554	1997			12630	11459	17275	16661
43	46	89	PD			-28133	3095	-31779	1250			16567	14774	15007	13890
42	47	89	AG			-10193	4353	-15644	3301			17940	16135	18942	18004
61	29	90	CU			25267	8646	28306	7370	21884	21049			-209	-87
60	30	90	ZN			3382	3996	7257	2806	15344	16590			2824	2607
59	31	90	GA			-11961	5214	-9333	4485	18355	19053			1030	918
58	32	90	GE			-30317	2466	-28387	1706	11691	13573			3654	2471
57	33	90	AS			-42008	2516	-41960	2365	14601	14520			2403	2437
56	34	90	SE			-56610	1113	-56481	630	7800	8938			5077	4554
55	35	90	BR			-64410	1091	-65419	1230	10568	9610			4115	4660
54	36	90	KR	-75180	70	-74978	212	-75030	210	4145	4380			6492	6270

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
53	37	90	RB	-79570	60	-79123	336	-79410	244	6792	6408			5502	5837
52	38	90	SR	-85935	4	-85915	164	-85818	98	418	322			7886	7934
51	39	90	Y	-86481	3	-86334	335	-86141	264	2266	2483			7181	7167
50	40	90	ZR	-88765	3	-88600	402	-88624	290					11870	11849
49	41	90	NB	-82654	5	-82333	350	-82603	181			6267	6020	9911	10041
48	42	90	MO	-80167	6	-79774	241	-80096	102			2559	2507	13304	13362
47	43	90	TC	-70970	630	-70255	1078	-70175	496			9518	9920	11324	11154
46	44	90	RU			-64098	1322	-64663	409			6156	5511	14838	14721
45	45	90	RH			-50825	2716	-51786	1728			13273	12876	14195	13303
44	46	90	PD			-38113	2344	-41028	1026			12711	10757	18050	17319
43	47	90	AG			-17900	4304	-22127	2979			20212	18901	15778	14553
42	48	90	CD			-1563	4120	-7656	2122			16336	14470		
62	29	91	CU			31484	7571	34540	7914	19956	19222			1854	1837
61	30	91	ZN			11528	6590	15317	3068	18382	19396			-74	11
60	31	91	GA			-6854	5193	-4079	4914	16566	17340			2964	2818
59	32	91	GE			-23420	3355	-21420	1910	14319	15253			1175	1105
58	33	91	AS			-37740	2494	-36673	2637	13354	14332			3803	2784
57	34	91	SE			-51094	1711	-51006	847	10477	11202			2556	2597
56	35	91	BR			-61572	1263	-62208	1465	9609	9476			5234	4860
55	36	91	KR	-71770	110	-71182	403	-71684	322	6525	6182			4275	4725
54	37	91	RB	-77970	40	-77707	319	-77867	222	5805	5795			6656	6528
53	38	91	SR	-83666	5	-83513	171	-83662	100	2804	2540			5669	5916
52	39	91	Y	-86350	4	-86318	316	-86203	162	1564	1568			8055	8133
51	40	91	ZR	-87893	3	-87882	174	-87772	210					7353	7219
50	41	91	NB	-86637	4	-86307	413	-86522	296			1575	1250	12044	11989
49	42	91	MO	-82199	12	-81790	323	-82271	146			4516	4250	10087	10246
48	43	91	TC	-75980	200	-75666	511	-75690	322			6124	6581	13481	13585
47	44	91	RU			-67531	1331	-67865	380			8135	7825	11503	11272
46	45	91	RH			-57772	1852	-58583	1461			9759	9281	15017	14867
45	46	91	PD			-44417	3001	-46296	893			13354	12287	14374	13338
44	47	91	AG			-28059	3454	-31474	2610			16357	14821	18230	17418
43	48	91	CD			-9450	4294	-14217	1967			18609	17257	15957	14631
63	29	92	CU			40118	10250	43369	8486	23088	22507			-562	-757
62	30	92	ZN			17029	5211	20861	3322	16454	17644			2570	2528
61	31	92	GA			574	7181	3216	5372	19613	20159			643	776
60	32	92	GE			-19038	3154	-16943	2115	12530	13550			3690	3595
59	33	92	AS			-31569	3248	-30494	2978	15991	16072			1901	1892
58	34	92	SE			-47560	1601	-46566	871	9230	10976			4537	3632
57	35	92	BR			-56791	1751	-57543	1765	12295	11720			3291	3407

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
56	36	92	KR	-69150	220	-69087	468	-69263	411	5565	5965			5976	5651
55	37	92	RB	-75120	200	-74652	478	-75229	360	8193	7686			5017	5433
54	38	92	SR	-82892	34	-82846	165	-82915	90	1816	1822			7404	7324
53	39	92	Y	-84822	16	-84662	334	-84737	189	3957	3808			6416	6605
52	40	92	ZR	-88456	3	-88620	165	-88546	102					8808	8844
51	41	92	NB	-86448	3	-86340	219	-86309	237	181	620	2279	2236	8104	7858
50	42	92	MO	-86807	4	-86522	402	-86929	294					12802	12728
49	43	92	TC	-78936	26	-78438	471	-78701	275			8084	8228	10842	11081
48	44	92	RU			-73702	636	-74123	224			4735	4577	14242	14329
47	45	92	RH			-61961	1852	-62491	1246			11740	11632	12260	11978
46	46	92	PD			-53609	1990	-55270	746			8352	7221	17263	17044
45	47	92	AG			-35122	3991	-37389	2302			18487	17880	15133	13986
44	48	92	CD			-20372	3291	-24252	1713			14750	13137	18992	18106
64	29	93	CU			46718	8795	49910	9069	21184	20334			1471	1531
63	30	93	ZN			25534	8007	29575	3602	19591	21007			-434	-642
62	31	93	GA			5942	6433	8567	5838	17691	18382			2703	2720
61	32	93	GE			-11748	5276	-9814	2347	15582	16416			781	943
60	33	93	AS			-27330	3247	-26230	3329	14206	14313			3833	3808
59	34	93	SE			-41537	2267	-40544	1025	11871	12892			2048	2049
58	35	93	BR			-53408	1814	-53437	1994	11052	11290			4688	3965
57	36	93	KR	-64920	450	-64460	727	-64727	622	8254	8348			3445	3536
56	37	93	RB	-72920	170	-72715	370	-73076	274	7236	7282			6134	5919
55	38	93	SR	-80280	150	-79952	417	-80358	190	4207	3874			5178	5514
54	39	93	Y	-84227	20	-84159	316	-84233	158	2971	2883			7568	7567
53	40	93	ZR	-87117	3	-87131	172	-87116	101	116	99			6583	6642
52	41	93	NB	-87209	3	-87247	190	-87215	109					8977	8977
51	42	93	MO	-86803	4	-86726	173	-86789	214			520	426	8275	7932
50	43	93	TC	-83610	5	-83342	520	-83563	359			3384	3225	12975	12933
49	44	93	RU	-77310	400	-76648	537	-77325	205			6694	6237	11016	11273
48	45	93	RH			-68308	1065	-68917	998			8340	8408	14417	14497
47	46	93	PD			-57975	2122	-59267	665			10332	9650	12436	12068
46	47	93	AG			-44490	2896	-46507	1998			13484	12760	17439	17188
45	48	93	CD			-27610	4153	-30241	1535			16880	16265	15309	14059
44	49	93	IN			-9508	3988	-13134	4065			18102	17106		
64	30	94	ZN			31434	6206	35441	3878	17688	18932			2172	2205
63	31	94	GA			13745	8646	16508	6334	20837	21721			269	131
62	32	94	GE			-7091	4251	-5213	2569	13660	14648			3415	3470
61	33	94	AS			-20751	5045	-19861	3711	17266	17158			1492	1702
60	34	94	SE			-38018	2196	-37020	1175	10086	11193			4553	4547

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
59	35	94	BR			-48104	2355	-48213	2296	13700	13216			2768	2848
58	36	94	KR			-61805	851	-61430	605	7010	7873			5416	4774
57	37	94	RB	-69460	350	-68816	610	-69303	502	9933	9700			4172	4299
56	38	94	SR	-78960	70	-78749	249	-79003	246	3249	3356			6868	6717
55	39	94	Y	-82382	12	-81998	476	-82360	223	5369	4996			5911	6198
54	40	94	ZR	-87264	3	-87367	166	-87357	91					8307	8311
53	41	94	NB	-86367	3	-86496	217	-86400	142	1881	2019	871	956	7320	7256
52	42	94	MO	-88412	3	-88377	165	-88420	96					9721	9701
51	43	94	TC	-84156	6	-84288	384	-84119	307			4088	4300	9017	8626
50	44	94	RU	-82571	13	-82300	402	-82905	312			1988	1213	13722	13650
49	45	94	RH			-71998	1155	-72892	816			10301	10013	11761	12045
48	46	94	PD			-65071	1188	-66402	495			6926	6489	15167	15206
47	47	94	AG			-51064	2971	-52662	1741			14007	13740	14644	14225
46	48	94	CD			-37730	2858	-40082	1348			13334	12579	18190	17912
45	49	94	IN			-17493	4902	-19785	3677			20236	20297	16055	14722
65	30	95	ZN			39967	8529	43613	4207	20449	21424			-462	-101
64	31	95	GA			19517	7566	22189	6839	18938	19645			2300	2391
63	32	95	GE			578	6561	2543	2819	16810	18000			401	315
62	33	95	AS			-16231	4358	-15456	4099	15348	15332			3552	3666
61	34	95	SE			-31580	3960	-30788	1359	13150	14134			1634	1840
60	35	95	BR			-44731	2473	-44923	2608	11919	11410			4698	4781
59	36	95	KR			-56650	1331	-56333	739	9662	9968			2917	2975
58	37	95	RB	-66550	310	-66313	754	-66301	448	8692	9074			5568	5070
57	38	95	SR	-75140	90	-75005	442	-75376	455	5948	5881			4328	4444
56	39	95	Y	-81233	20	-80954	368	-81258	211	4414	4264			7027	6970
55	40	95	ZR	-85663	3	-85368	381	-85523	149	1528	1294			6072	6238
54	41	95	NB	-86787	3	-86896	190	-86817	95	895	845			8471	8488
53	42	95	MO	-87712	2	-87792	171	-87663	92					7486	7314
52	43	95	TC	-86013	8	-86106	368	-85948	208			1685	1714	9889	9899
51	44	95	RU	-83452	12	-83415	172	-83520	239			2691	2427	9186	8686
50	45	95	RH	-78340	150	-77821	472	-78622	368			5594	4898	13893	13800
49	46	95	PD			-68934	1407	-70542	421			8887	8080	11933	12210
48	47	95	AG			-58333	1985	-59963	1457			10600	10578	15340	15372
47	48	95	CD			-44476	3137	-46367	1212			13856	13596	14817	14355
46	49	95	IN			-27786	3460	-29794	3298			16690	16572	18363	18080
45	50	95	SN			-9021	5304	-10597	2129			18764	19197		
66	30	96	ZN			46309	6534	49623	4470	18946	19978			1730	2061
65	31	96	GA			27362	9438	29645	7387	21708	22156			226	616
64	32	96	GE			5653	5165	7488	3063	14912	15957			2996	3126

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
63	33	96	AS			-9258	6343	-8468	4518	18507	18627			1098	1084
62	34	96	SE			-27766	3185	-27096	1526	11232	12366			4257	4379
61	35	96	BR			-38998	3886	-39463	2952	14991	14280			2339	2612
60	36	96	KR			-53990	1346	-53744	868	7880	8213			5411	5482
59	37	96	RB	-62770	610	-61870	1148	-61957	602	11351	11233			3629	3728
58	38	96	SR	-73070	140	-73222	373	-73191	384	4706	5180			6289	5886
57	39	96	Y	-78430	100	-77929	527	-78371	393	7120	6798			5047	5185
56	40	96	ZR	-85445	4	-85049	250	-85169	158	571	424			7753	7718
55	41	96	NB	-85608	5	-85621	403	-85594	175	3302	3244			6796	6848
54	42	96	MO	-88795	2	-88923	165	-88838	77					9202	9246
53	43	96	TC	-85821	6	-86250	383	-85862	222		189	2673	2976	8214	7986
52	44	96	RU	-86075	9	-85968	164	-86052	112			281		10624	10602
51	45	96	RH	-79633	13	-79668	216	-79870	282			6300	6182	9918	9318
50	46	96	PD			-75494	690	-76954	429			4174	2915	14630	14482
49	47	96	AG			-62929	2114	-64864	1233			12564	12089	12667	12971
48	48	96	CD			-53925	1948	-55848	1015			9003	9015	17520	17552
47	49	96	IN			-35267	3788	-36790	2958			18658	19058	15552	15066
46	50	96	SN			-20053	3666	-21367	1912			15214	15423	19102	18840
66	31	97	GA			33582	8257	35484	7914	20210	20675			1852	2233
65	32	97	GE			13372	7074	14808	3363	17687	18521			353	752
64	33	97	AS			-4314	5347	-3712	4946	16613	16551			3128	3315
63	34	97	SE			-20928	5108	-20264	1727	14395	15723			1234	1239
62	35	97	BR			-35324	3456	-35987	3301	13077	12405			4397	4596
61	36	97	KR			-48401	2801	-48393	1030	10956	11172			2483	2720
60	37	97	RB			-59357	1263	-59565	746	9572	9426			5559	5679
59	38	97	SR	-69080	420	-68930	687	-68991	498	7369	7476			3780	3871
58	39	97	Y	-76280	130	-76299	330	-76467	184	5881	5919			6442	6168
57	40	97	ZR	-82954	4	-82181	443	-82387	346	3280	3040			5203	5289
56	41	97	NB	-85612	3	-85461	267	-85427	158	2347	2248			7912	7905
55	42	97	MO	-87545	2	-87809	381	-87676	136					6957	6909
54	43	97	TC	-87224	5	-87544	369	-87280	191			264	395	9365	9488
53	44	97	RU	-86070	100	-86277	170	-86011	148			1267	1268	8379	8031
52	45	97	RH	-82560	100	-82388	188	-82545	212			3888	3466	10790	10746
51	46	97	PD	-77760	500	-77509	446	-78235	327			4879	4309	10086	9352
50	47	97	AG			-69658	1344	-71425	1048			7850	6810	14799	14631
49	48	97	CD			-58691	2281	-60954	887			10966	10470	12836	13176
48	49	97	IN			-44886	2467	-46462	2603			13805	14491	17690	17743
47	50	97	SN			-27704	4189	-28537	1741			17181	17925	15722	15241
46	51	97	SB			-7570	4522	-8632	4133			20134	19905		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
67	31	98	GA			42024	10806	43367	8494	23114	23432			-370	188
66	32	98	GE			18909	5480	19934	3593	16188	17040			2535	2945
65	33	98	AS			2720	6999	2894	5420	19397	19100			1036	1464
64	34	98	SE			-16676	4006	-16206	1917	12501	13729			3820	4013
63	35	98	BR			-29178	5045	-29935	3682	16248	15656			1925	2020
62	36	98	KR			-45426	2226	-45592	1177	9041	9347			5097	5271
61	37	98	RB			-54468	2482	-54939	944	12656	12368			3182	3446
60	38	98	SR	-67380	410	-67124	785	-67307	605	5589	5689			6265	6388
59	39	98	Y	-73190	340	-72713	574	-72997	303	8551	8252			4485	4601
58	40	98	ZR	-81292	20	-81264	191	-81250	106	2039	2060			7155	6935
57	41	98	NB	-83530	6	-83304	462	-83311	353	5063	4960			5914	5955
56	42	98	MO	-88115	2	-88367	250	-88271	146					8629	8666
55	43	98	TC	-86434	6	-87146	512	-86785	238	1147	1382	1221	1486	7673	7576
54	44	98	RU	-88226	6	-88293	164	-88167	85					10087	10226
53	45	98	RH	-83168	12	-83415	214	-83114	159			4877	5052	9098	8639
52	46	98	PD	-81270	350	-80953	343	-81579	166			2462	1535	11515	11414
51	47	98	AG			-72395	1249	-73329	846			8558	8249	10807	9975
50	48	98	CD			-66147	1329	-68228	804			6247	5101	15526	15345
49	49	98	IN			-51796	2843	-53767	2297			14350	14460	14981	15375
48	50	98	SN			-38051	2637	-38985	1517			13745	14782	18417	18519
47	51	98	SB			-15945	5055	-16512	3755			22106	22473	16445	15951
67	32	99	GE			27229	8193	27678	3899	19097	19833			-248	328
66	33	99	AS			8131	5869	7845	5866	17903	17551			2661	3121
65	34	99	SE			-9771	5585	-9706	2175	15288	16381			1167	1572
64	35	99	BR			-25060	4353	-26087	4071	14358	13579			3954	4224
63	36	99	KR			-39418	3807	-39667	1357	12216	12651			2064	2146
62	37	99	RB			-51635	2114	-52318	1129	10744	10489			5239	5451
61	38	99	SR			-62380	1910	-62808	746	8675	8688			3327	3572
60	39	99	Y	-71500	220	-71055	544	-71496	393	6773	6387			6414	6570
59	40	99	ZR	-77890	100	-77829	218	-77883	179	4711	4507			4637	4705
58	41	99	NB	-82346	16	-82541	212	-82390	108	3824	3891			7309	7151
57	42	99	MO	-85970	2	-86366	443	-86282	330	1496	1352			6070	6082
56	43	99	TC	-87326	3	-87862	414	-87634	225	192	86			8787	8920
55	44	99	RU	-87620	3	-88055	380	-87721	140					7833	7625
54	45	99	RH	-85517	10	-85594	188	-85458	109			2461	2262	10249	10415
53	46	99	PD	-82112	23	-82144	170	-82167	117			3449	3290	9262	8659
52	47	99	AG	-76510	630	-76004	735	-76816	466			6139	5351	11680	11558
51	48	99	CD			-69050	1386	-70207	670			6954	6609	10973	10049
50	49	99	IN			-59419	1769	-61216	2019			9630	8990	15693	15519
49	50	99	SN			-45129	3241	-46540	1355			14290	14676	15148	15626

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
48	51	99	SB			-26459	3421	-27159	3361			18669	19381	18585	18717
47	52	99	TE			-5454	5303	-6404	2830			21004	20754		
67	33	100	AS			15781	8176	14879	6371	20820	20311			421	1037
66	34	100	SE			-5039	4268	-5431	2342	13794	14881			3339	3797
65	35	100	BR			-18833	5682	-20312	4506	17153	16167			1845	2296
64	36	100	KR			-35987	2947	-36480	1526	10325	10648			4640	4885
63	37	100	RB			-46313	3466	-47128	1361	13927	13742			2749	2881
62	38	100	SR			-60240	1551	-60871	872	6763	6829			5932	6135
61	39	100	Y			-67003	1527	-67700	556	9867	9342			4019	4275
60	40	100	ZR	-76600	200	-76871	344	-77042	230	2933	2637			7113	7231
59	41	100	NB	-79960	130	-79804	342	-79680	228	6503	6462			5334	5351
58	42	100	MO	-86189	6	-86308	190	-86142	83	256	225			8014	7932
57	43	100	TC	-86019	3	-86564	559	-86368	382	2916	2942			6773	6806
56	44	100	RU	-89222	3	-89480	249	-89311	147					9496	9661
55	45	100	RH	-85592	20	-86062	401	-85617	180			3418	3693	8539	8230
54	46	100	PD	-85230	15	-85035	164	-85215	95			1027	402	10961	11118
53	47	100	AG	-77930	400	-77905	533	-78005	339			7130	7210	9971	9259
52	48	100	CD			-73374	941	-74394	497			4530	3610	12395	12257
51	49	100	IN			-63033	1875	-63835	1740			10340	10559	11685	10689
50	50	100	SN			-54869	2015	-56142	1226			8163	7693	17811	17672
49	51	100	SB			-34248	3977	-35492	3016			20621	20650	15860	16404
48	52	100	TE			-16684	3373	-17772	2562			17564	17719	19301	19439
68	33	101	AS			21270	6682	20335	6868	18784	18844			2583	2616
67	34	101	SE			2485	6561	1490	2602	16716	17725			547	1149
66	35	101	BR			-14230	4850	-16235	4914	15663	14548			3468	3994
65	36	101	KR			-29894	4239	-30783	1764	13124	13331			1978	2375
64	37	101	RB			-43019	2864	-44115	1589	12039	11709			4777	5058
63	38	101	SR			-55059	2782	-55825	1031	9948	10104			2890	3025
62	39	101	Y			-65008	1270	-65929	695	7957	7402			6076	6301
61	40	101	ZR	-73050	570	-72966	1171	-73331	334	6029	5625			4166	4361
60	41	101	NB	-78950	100	-78995	189	-78957	314	4727	4601			7263	7348
59	42	101	MO	-83516	6	-83723	218	-83558	110	2937	2953			5487	5487
58	43	101	TC	-86327	24	-86660	380	-86511	194	1678	1649			8167	8214
57	44	101	RU	-87952	3	-88339	442	-88160	329					6930	6921
56	45	101	RH	-87410	18	-87646	266	-87408	160			692	752	9655	9861
55	46	101	PD	-85428	18	-85664	380	-85398	150			1982	2009	8699	8254
54	47	101	AG	-81330	340	-80957	388	-81241	206			4706	4157	11123	11306
53	48	101	CD	-75530	560	-75437	776	-75643	392			5519	5597	10134	9319
52	49	101	IN			-67521	1344	-68191	1455			7916	7451	12558	12427

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
51	50	101	SN			-58648	2264	-58881	1065			8873	9310	11849	10810
50	51	101	SB			-44154	2612	-45276	2697			14494	13605	17976	17855
49	52	101	TE			-24639	4203	-26310	2344			19515	18965	16025	16608
48	53	101	I			-4112	4751	-5041	5829			20526	21269		
68	34	102	SE			7309	4834	6266	2817	14680	16301			3248	3295
67	35	102	BR			-7371	6725	-10034	5379	18593	17311			1212	1871
66	36	102	KR			-25964	3139	-27345	1910	11634	11753			4141	4633
65	37	102	RB			-37598	3984	-39099	1890	14846	14382			2651	3055
64	38	102	SR			-52445	2190	-53481	1180	8060	8115			5458	5728
63	39	102	Y			-60505	2348	-61597	891	11151	10599			3569	3739
62	40	102	ZR			-71656	989	-72196	410	4118	3680			6762	6936
61	41	102	NB	-76360	570	-75775	876	-75876	475	7831	7633			4851	4991
60	42	102	MO	-83562	21	-83606	164	-83510	94	1159	1132			7955	8023
59	43	102	TC	-84600	230	-84766	523	-84642	313	4365	4423			6177	6202
58	44	102	RU	-89101	3	-89131	189	-89065	77					8863	8975
57	45	102	RH	-86777	7	-87199	461	-86920	348	749	976	1932	2144	7624	7583
56	46	102	PD	-87925	9	-87948	249	-87897	155					10355	10569
55	47	102	AG	-82330	50	-82283	401	-82020	197			5664	5876	9396	8850
54	48	102	CD	-79430	420	-79193	624	-79615	292			3090	2405	11826	12042
53	49	102	IN	-70130	840	-70284	1201	-70058	627			8908	9557	10834	9937
52	50	102	SN			-63840	1662	-63975	871			6443	6082	13263	13165
51	51	102	SB			-50017	2881	-50039	2381			13823	13936	13934	12833
50	52	102	TE			-35249	2552	-36792	2149			14767	13246	18681	18552
49	53	102	I			-12768	5444	-14345	5365			22481	22446	16726	17375
48	54	102	XE			6581	5111	4513	4160			19349	18858		
69	34	103	SE			14708	7101	13987	3075	17380	19454			672	350
68	35	103	BR			-2672	5604	-5466	5838	16561	1576[illegible]			3373	3504
67	36	103	KR			-19233	5062	-21228	2148	14567	14592			1341	1955
66	37	103	RB			-33800	3197	-35821	2121	13359	12741			4274	4794
65	38	103	SR			-47160	3204	-48562	1397	10870	10851			2787	3152
64	39	103	Y			-58031	1898	-59414	1077	9265	8553			5597	5889
63	40	103	ZR			-67296	1910	-67967	531	7314	6874			3712	3843
62	41	103	NB	-75410	520	-74611	790	-74842	618	5922	5695			6907	7037
61	42	103	MO	-80610	390	-80534	596	-80538	172	4265	4240			4999	5100
60	43	103	TC	-84910	100	-84799	368	-84778	208	2590	2531			8104	8207
59	44	103	RU	-87261	3	-87389	217	-87310	100	756	744			6329	6316
58	45	103	RH	-88024	4	-88146	210	-88054	94					9018	9205
57	46	103	PD	-87478	9	-87656	442	-87499	338			489	555	7780	7674
56	47	103	AG	-84800	50	-84725	265	-84719	176			2931	2779	10513	10769

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
55	48	103	CD	-80600	140	-80678	476	-80460	249			4047	4259	9556	8916
54	49	103	IN	-74100	660	-74199	992	-74244	456			6478	6216	11986	12257
53	50	103	SN			-66765	1587	-65949	734			7434	8295	10995	10044
52	51	103	SB			-55371	2149	-55311	2059			11393	10638	13425	13343
51	52	103	TE			-41275	3059	-41630	1939			14096	13680	14096	12909
50	53	103	I			-23541	3767	-25006	4924			17733	16623	18844	18732
49	54	103	XE			-2236	6009	-4970	3877			21305	20036	16888	17554
69	35	104	BR			4074	7462	1511	6333	19269	18815			1324	1093
68	36	104	KR			-15194	3618	-17303	2343	12534	13077			4033	4147
67	37	104	RB			-27729	4826	-30381	2441	16300	15552			2000	2631
66	38	104	SR			-44030	2365	-45933	1522	9382	9219			4941	5442
65	39	104	Y			-53412	2797	-55153	1344	12083	11253			3453	3811
64	40	104	ZR			-65495	1545	-66406	634	5428	4848			6271	6510
63	41	104	NB			-70923	1577	-71255	812	9125	8899			4384	4484
62	42	104	MO	-80500	390	-80049	561	-80154	217	2355	2341			7587	7688
61	43	104	TC	-82700	320	-82404	485	-82496	326	5702	5605			5677	5789
60	44	104	RU	-88099	6	-88106	163	-88101	82					8788	8862
59	45	104	RH	-86952	4	-87085	251	-86953	143	2206	2408	1020	1147	7011	6971
58	46	104	PD	-89400	5	-89291	189	-89362	78					9706	9933
57	47	104	AG	-85150	30	-85119	460	-84976	365			4172	4385	8464	8327
56	48	104	CD	-83850	270	-83811	434	-83899	200			1308	1076	11204	11510
55	49	104	IN	-75850	650	-76373	928	-75703	359			7437	8195	10244	9530
54	50	104	SN	-71150	800	-71373	1353	-70910	603			4999	4793	12679	13031
53	51	104	SB			-58985	2075	-57903	1783			12387	13006	11685	10662
52	52	104	TE			-48689	2158	-48953	1707			10296	8949	15485	15393
51	53	104	I			-30257	4168	-30474	4492			18432	18479	14787	13538
50	54	104	XE			-13704	4148	-16295	3611			16553	14178	19538	19396
49	55	104	CS			10960	7868	8247	6333			24664	24543		
70	35	105	BR			9107	6340	5956	6835	17679	16397			3039	3626
69	36	105	KR			-8571	5555	-10440	2581	15247	16189			1449	1208
68	37	105	RB			-23819	3793	-26629	2737	14271	13966			4161	4320
67	38	105	SR			-38090	3894	-40595	1738	12326	12076			2132	2734
66	39	105	Y			-50417	2127	-52671	1532	10598	9531			5076	5590
65	40	105	ZR			-61015	2325	-62202	826	8248	7587			3591	3868
64	41	105	NB			-69264	1355	-69790	1001	7241	6904			6412	6607
63	42	105	MO	-77140	510	-76505	1207	-76694	318	5560	5586			4528	4611
62	43	105	TC	-82540	200	-82066	451	-82280	425	3794	3635			7733	7856
61	44	105	RU	-85938	6	-85860	178	-85916	109	2093	1960			5825	5887
60	45	105	RH	-87855	6	-87953	187	-87877	98	430	473			8938	8994

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
59	46	105	PD	-88422	5	-88384	217	-88351	97					7164	7061
58	47	105	AG	-87075	10	-86909	209	-87068	104			1475	1282	9860	10163
57	48	105	CD	-84336	11	-84360	442	-84288	359			2548	2780	8620	8459
56	49	105	IN	-79340	460	-79663	928	-79370	251			4697	4917	11361	11737
55	50	105	SN	-73090	760	-73705	1291	-72481	511			5958	6888	10402	9642
54	51	105	SB			-63753	1732	-63087	1520			9951	9394	12838	13255
53	52	105	TE			-52463	2205	-51607	1518			11289	11479	11844	10725
52	53	105	I			-37832	3181	-37972	4063			14631	13635	15645	15569
51	54	105	XE			-20580	4722	-21813	3340			17251	16158	14947	13588
50	55	105	CS			-667	6012	-3260	5853			19912	18553	19698	19578
70	36	106	KR			-4186	4050	-6603	2808	13656	13860			3686	4235
69	37	106	RB			-17843	5440	-20464	3079	16991	17032			2096	1907
68	38	106	SR			-34834	2796	-37496	1913	10297	10493			4816	4973
67	39	106	Y			-45132	3464	-47989	1814	13549	12332			2786	3390
66	40	106	ZR			-58681	1708	-60322	891	6762	5850			5738	6191
65	41	106	NB			-65444	2043	-66172	1261	10068	9694			4252	4454
64	42	106	MO			-75512	1040	-75866	396	3675	3654			7079	7244
63	43	106	TC	-80030	480	-79187	961	-79521	581	7006	6812			5193	5312
62	44	106	RU	-86333	10	-86193	173	-86333	96	183				8404	8487
61	45	106	RH	-86372	10	-86377	218	-86321	146	3550	3575		11	6495	6516
60	46	106	PD	-89913	5	-89928	163	-89897	75					9615	9617
59	47	106	AG	-86929	6	-86675	250	-86704	144	154	438	3253	3193	7837	7707
58	48	106	CD	-87131	6	-86829	189	-87142	89					10539	10925
57	49	106	IN	-80586	31	-80889	855	-80431	387			5940	6710	9297	9132
56	50	106	SN	-76990	610	-77677	1277	-76928	414			3212	3503	12043	12517
55	51	106	SB	-66190	1100	-66763	1579	-65274	1079			10913	11653	11081	10258
54	52	106	TE			-57915	1777	-57514	1336			8848	7760	13522	13077
53	53	106	I			-43634	3168	-42582	3670			14280	14931	13873	12681
52	54	106	XE			-28839	3620	-29963	3055			14795	12619	16329	16221
51	55	106	CS			-8224	6419	-9402	5384			20615	20561	15627	14212
50	56	106	BA			10608	4973	6868	3896			18832	16270		
71	36	107	KR			2862	5725	418	3073	16443	17193			1023	1049
70	37	107	RB			-13581	4388	-16775	3423	15404	14689			3810	4382
69	38	107	SR			-28986	4378	-31464	2130	13020	13586			2223	2039
68	39	107	Y			-42006	2611	-45050	2070	11523	10652			4946	5133
67	40	107	ZR			-53530	2882	-55703	1071	9716	8672			2920	3452
66	41	107	NB			-63246	1618	-64375	1457	8585	7954			5874	6275
65	42	107	MO			-71832	1627	-72330	575	6504	6526			4391	4535
64	43	107	TC	-79510	540	-78337	910	-78857	729	5123	4832			7221	7408

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA &	BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
63	44	107	RU	-83710	300	-83460	598	-83689	171	3397	3164			5338	5428
62	45	107	RH	-86860	40	-86857	196	-86854	111	1642	1560			8551	8603
61	46	107	PD	-88371	6	-88500	178	-88414	92					6644	6589
60	47	107	AG	-88404	6	-88369	186	-88383	95			130	31	9765	9749
59	48	107	CD	-86987	7	-86748	217	-86909	104			1621	1473	7990	7839
58	49	107	IN	-83500	150	-83512	799	-83542	310			3235	3366	10693	11182
57	50	107	SN	-78400	480	-79058	1195	-78168	474			4453	5374	9452	9311
56	51	107	SB	-70400	900	-70892	1435	-69957	878			8166	8210	12199	12753
55	52	107	TE			-61082	1678	-59770	1182			9809	10187	11238	10326
54	53	107	I			-49243	2620	-48710	3293			11838	11059	13680	14198
53	54	107	XE			-34799	3708	-34611	2804			14444	14098	14031	12719
52	55	107	CS			-16641	5243	-17731	4915			18158	16880	16487	16400
51	56	107	BA			2894	5874	656	3617			19535	18387	15785	14282
71	37	108	RB			-7168	5790	-10431	3808	18199	17962			1658	1728
70	38	108	SR			-25367	3212	-28394	2338	11433	11302			4453	5001
69	39	108	Y			-36800	4008	-39696	2374	14253	13672			2865	2717
68	40	108	ZR			-51054	2094	-53369	1199	7689	6971			5596	5738
67	41	108	NB			-58743	2605	-60340	1735	11546	10809			3568	4036
66	42	108	MO			-70290	1219	-71150	610	5020	4816			6529	6891
65	43	108	TC			-75310	1420	-75966	951	7959	7677			5045	5181
64	44	108	RU	-83820	600	-83269	556	-83644	219	1512	1206			7881	8026
63	45	108	RH	-85020	600	-84782	435	-84851	229	4862	4695			5995	6069
62	46	108	PD	-89523	5	-89645	172	-89546	79					9215	9203
61	47	108	AG	-87602	6	-87604	217	-87522	135	1506	1723	2040	2024	7306	7210
60	48	108	CD	-89251	6	-89110	163	-89245	80					10433	10406
59	49	108	IN	-84100	80	-84096	763	-83975	220			5014	5269	8654	8503
58	50	108	SN	-81900	370	-82352	1133	-82080	209			1743	1894	11364	11983
57	51	108	SB	-72400	790	-72941	1347	-71872	792			9410	10208	10120	9985
56	52	108	TE	-65320	1030	-65883	1511	-65180	1026			7058	6691	12872	13481
55	53	108	I			-53080	2468	-51572	2945			12803	13608	11907	10932
54	54	108	XE			-42413	3085	-42760	2561			10666	8811	15685	16219
53	55	108	CS			-23271	5226	-22983	4484			19142	19777	14701	13323
52	56	108	BA			-6196	4427	-8335	3318			17074	14647	17162	17062
51	57	108	LA			16402	8316	14821	9679			22598	23156		
72	37	109	RB			-2637	5130	-6635	4188	16439	15536			3541	4275
71	38	109	SR			-19077	4538	-22171	2581	14231	14589			1781	1849
70	39	109	Y			-33308	3118	-36761	2679	12669	11347			4579	5136
69	40	109	ZR			-45978	3358	-48108	1375	10422	9994			2995	2911
68	41	109	NB			-56400	2094	-58103	1996	9522	9098			5729	5334

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
67	42	109	MO			-65922	2063	-67201	769	7984	7736			3704	4123
66	43	109	TC			-73906	1176	-74938	1108	6477	5886			6668	7043
65	44	109	RU	-80810	560	-80384	808	-80824	386	4351	4093			5186	5251
64	45	109	RH	-85110	300	-84735	502	-84918	318	2980	2718			8024	8137
63	46	109	PD	-87606	5	-87715	184	-87636	105	1181	1134			6142	6161
62	47	109	AG	-88722	4	-88896	194	-88771	92					9363	9320
61	48	109	CD	-88540	5	-88494	178	-88499	92			402	271	7456	7326
60	49	109	IN	-86524	10	-86609	745	-86470	102			1885	2028	10584	10566
59	50	109	SN	-82620	360	-83088	1088	-82692	158			3521	3778	8806	8682
58	51	109	SB	-76120	620	-76388	1249	-76051	523			6699	6641	11517	12249
57	52	109	TE	-67470	810	-68086	1360	-67230	957			8301	8820	10274	10121
56	53	109	I			-58036	2179	-57217	2608			10050	10013	13027	13716
55	54	109	XE			-46406	2989	-45666	2339			11630	11550	12063	10976
54	55	109	CS			-31041	4484	-31357	4068			15364	14309	15841	16445
53	56	109	BA			-12983	4722	-13644	3056			18058	17712	14857	13380
52	57	109	LA			7155	6875	5626	9061			20138	19271	17318	17265
72	38	110	SR			-15177	3762	-18973	2806	12471	12223			4172	4874
71	39	110	Y			-27648	4268	-31197	3026	15474	14547			2412	2508
70	40	110	ZR			-43123	2497	-45745	1539	8837	7703			5217	5708
69	41	110	NB			-51961	3171	-53449	2299	12262	12136			3632	3418
68	42	110	MO			-64223	1577	-65586	876	5958	6047			6372	6456
67	43	110	TC			-70181	1855	-71633	1345	9447	8760			4346	4767
66	44	110	RU			-79629	730	-80394	389	2867	2289			7316	7641
65	45	110	RH	-82930	100	-82496	527	-82684	517	5824	5605			5833	5838
64	46	110	PD	-88335	20	-88321	173	-88289	91					8676	8724
63	47	110	AG	-87456	4	-87618	221	-87494	137	2825	2887	703	795	6793	6795
62	48	110	CD	-90349	4	-90443	173	-90382	76					10019	9954
61	49	110	IN	-86409	30	-86648	753	-86366	141			3795	4016	8109	7967
60	50	110	SN	-85834	16	-86261	1026	-85884	89			386	481	11244	11263
59	51	110	SB	-77430	550	-77781	1207	-77330	400			8480	8553	9464	9350
58	52	110	TE	-71760	600	-72195	1140	-72159	727			5585	5171	12179	12999
57	53	110	I			-60899	2240	-59932	2328			11296	12227	10933	10786
56	54	110	XE			-52025	2653	-52007	2119			8873	7925	13690	14411
55	55	110	CS			-37009	4303	-36180	3682			15016	15827	14038	12893
54	56	110	BA			-21417	3846	-22719	2803			15591	13460	16505	17146
53	57	110	LA			-291	6967	-302	8475			21126	22417	15517	13999
73	38	111	SR			-8671	5692	-13213	3065	15200	14907			1565	2311
72	39	111	Y			-23871	3753	-28121	3368	13717	12142			4295	4905
71	40	111	ZR			-37589	3514	-40263	1742	11645	10893			2538	2590

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
70	41	111	NB			-49235	2620	-51157	2607	10680	9892			5346	5780
69	42	111	MO			-59915	2546	-61050	1030	8701	9132			3764	3535
68	43	111	TC			-68616	1600	-70182	1568	7424	6983			6507	6621
67	44	111	RU			-76041	1315	-77166	526	5840	5187			4484	4844
66	45	111	RH	-82530	460	-81881	413	-82354	616	4343	3748			7456	7741
65	46	111	PD	-86030	50	-86224	512	-86102	257	2143	2158			5975	5884
64	47	111	AG	-88226	5	-88367	195	-88260	98	942	979			8820	8837
63	48	111	CD	-89254	4	-89310	184	-89240	91					6939	6930
62	49	111	IN	-88405	11	-88744	747	-88393	97			566	846	10167	10098
61	50	111	SN	-85941	8	-86448	1029	-85943	106			2295	2450	8258	8129
60	51	111	SB	-80840	360	-81104	1072	-80692	264			5344	5250	11394	11432
59	52	111	TE	-73470	70	-73740	695	-73574	607			7364	7117	9615	9486
58	53	111	I			-65160	1674	-65126	1988			8579	8448	12332	13264
57	54	111	XE			-55041	2771	-54834	1955			10118	10292	11086	10897
56	55	111	CS			-42782	3832	-42759	3306			12258	12074	13844	14650
55	56	111	BA			-27539	3877	-27606	2572			15243	15153	14192	12957
54	57	111	LA			-8880	6009	-9627	7907			18658	17979	16659	17395
73	39	112	Y			-17984	5423	-22959	3749	16454	14780			2184	2909
72	40	112	ZR			-34438	2999	-37739	1924	9888	8524			4920	5547
71	41	112	NB			-44326	3476	-46263	2951	13495	13083			3163	3177
70	42	112	MO			-57821	1980	-59347	1175	7118	6966			5978	6368
69	43	112	TC			-64939	2408	-66313	1832	10173	10005			4395	4202
68	44	112	RU			-75113	1045	-76319	612	3815	3391			7144	7224
67	45	112	RH			-78929	1251	-79711	818	7321	6628			5119	5429
66	46	112	PD	-86326	26	-86251	195	-86339	98	659	313			8097	8307
65	47	112	AG	-86620	29	-86911	527	-86653	243	3795	3974			6615	6464
64	48	112	CD	-90578	3	-90706	173	-90628	77					9466	9459
63	49	112	IN	-88000	7	-88254	754	-87905	134	938	739	2451	2723	7582	7583
62	50	112	SN	-88658	6	-89193	1028	-88644	85					10816	10772
61	51	112	SB	-81740	100	-81938	1048	-81394	205			7255	7250	8904	8773
60	52	112	TE	-77550	400	-77715	812	-77582	485			4223	3812	12046	12078
59	53	112	I	-67440	830	-67353	1102	-67200	1714			10361	10382	10264	10144
58	54	112	XE			-59956	2142	-60746	1702			7396	6453	12985	13983
57	55	112	CS			-46449	3861	-46248	2985			13507	14497	11737	11559
56	56	112	BA			-35266	3372	-36192	2342			11182	10055	15798	16657
55	57	112	LA			-15653	5888	-15132	7363			19613	21060	14843	13576
54	58	112	CE			1689	5448	410	4467			17342	15542		
74	39	113	Y			-13882	4397	-20058	4136	14790	12546			3970	5171
73	40	113	ZR			-28673	4534	-32605	2143	12627	11192			2306	2938

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
72	41	113	NB			-41301	3241	-43797	3297	11740	10761			5046	5606
71	42	113	MO			-53041	2721	-54559	1356	9935	10190			3291	3284
70	43	113	TC			-62977	2096	-64750	2103	8593	7807			6109	6508
69	44	113	RU			-71570	1790	-72557	745	6567	6419			4528	4310
68	45	113	RH			-78137	1221	-78977	999	5299	4773			7280	7337
67	46	113	PD	-83640	360	-83437	600	-83750	206	3640	3241			5258	5482
66	47	113	AG	-87040	20	-87078	214	-86991	103	2313	2119			8238	8409
65	48	113	CD	-89050	4	-89391	512	-89111	212	402	323			6757	6554
64	49	113	IN	-89372	5	-89794	747	-89434	93					9610	9599
63	50	113	SN	-88332	5	-88850	1030	-88339	94			944	1094	7728	7766
62	51	113	SB	-84443	32	-84831	1044	-84251	169			4019	4088	10963	10927
61	52	113	TE	-78540	450	-78697	745	-78404	390			6133	5846	9053	8893
60	53	113	I	-71440	630	-71478	1096	-71376	1451			7219	7028	12195	12247
59	54	113	XE			-62300	1549	-62932	1516			9177	8443	10414	10257
58	55	113	CS			-51515	3141	-52430	2609			10785	10501	13137	14252
57	56	113	BA			-39085	3663	-39813	2171			12430	12617	11889	11691
56	57	113	LA			-23532	5248	-23982	6834			15552	15830	15950	16921
55	58	113	CE			-5235	5564	-5176	4171			18297	18805	14996	13658
74	40	114	ZR			-25186	3489	-30210	2354	10963	8980			4585	5677
73	41	114	NB			-36150	4514	-39190	3677	14486	13471			2920	3465
72	42	114	MO			-50636	2448	-52662	1519	8180	7948			5667	6175
71	43	114	TC			-58816	2716	-60610	2408	11417	10954			3911	3932
70	44	114	RU			-70234	1428	-71565	870	4985	4258			6735	7079
69	45	114	RH			-75219	1814	-75823	1225	8057	7764			5153	4918
68	46	114	PD			-83276	421	-83588	219	1616	1392			7911	7910
67	47	114	AG	-85160	140	-84893	437	-84980	244	5300	5070			5887	6060
66	48	114	CD	-90020	3	-90194	195	-90051	78					8873	9011
65	49	114	IN	-88576	5	-89113	893	-88516	228	1915	2013	1080	1534	7390	7154
64	50	114	SN	-90560	4	-91028	1028	-90530	80					10249	10261
63	51	114	SB	-84870	50	-85124	1049	-84602	191			5904	5928	8363	8421
62	52	114	TE	-82190	310	-82231	728	-81884	289			2892	2717	11604	11550
61	53	114	I	-73070	640	-73099	922	-72833	1218			9132	9051	9692	9528
60	54	114	XE	-67090	730	-67068	1537	-67722	1335			6030	5110	12839	12861
59	55	114	CS			-54499	2523	-55272	2296			12568	12450	11055	10912
58	56	114	BA			-44796	2813	-46725	1903			9703	8546	13782	14983
57	57	114	LA			-29276	5361	-29565	6343			15519	17160	13814	13653
56	58	114	CE			-13760	4839	-14745	3878			15515	14819	16596	17639
55	59	114	PR			7562	8480	7670	8480			21322	22415		
75	40	115	ZR			-19138	4779	-24950	2590	13647	11865			2023	2811

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
74	41	115	NB			-32785	3875	-36816	4065	12825	11291			4707	5697
73	42	115	MO			-45610	3610	-48108	1716	10929	10731			3045	3518
72	43	115	TC			-56539	2657	-58840	2715	9664	8681			5794	6302
71	44	115	RU			-66203	1962	-67522	1029	7812	7397			4041	4029
70	45	115	RH			-74016	1717	-74919	1456	6477	5600			6868	7168
69	46	115	PD			-80493	1047	-80520	310	4376	4414			5288	5003
68	47	115	AG	-84910	100	-84870	204	-84934	312	3278	3202			8048	8025
67	48	115	CD	-88093	8	-88148	192	-88136	136	1908	1449			6026	6157
66	49	115	IN	-89541	8	-90057	752	-89586	91	433	164			9014	9140
65	50	115	SN	-90035	4	-90490	1135	-89750	206					7533	7292
64	51	115	SB	-87005	20	-87446	1044	-86944	162			3043	2806	10393	10413
63	52	115	TE	-82420	50	-82670	685	-82376	214			4776	4568	8509	8562
62	53	115	I	-76620	380	-76780	760	-76467	992			5889	5908	11752	11705
61	54	115	XE	-68700	630	-68838	1375	-69276	1172			7942	7190	9840	9624
60	55	115	CS			-59417	2386	-60236	1995			9421	9040	12988	13035
59	56	115	BA			-47930	2137	-49700	1707			11486	10536	11205	11045
58	57	115	LA			-35137	4452	-36772	5831			12792	12928	13932	15278
57	58	115	CE			-19655	5255	-20478	3631			15482	16293	13965	13804
56	59	115	PR			-1113	7659	-2138	7912			18541	18339	16746	17879
76	40	116	ZR			-15396	3872	-22524	2823	11943	9543			4330	5645
75	41	116	NB			-27339	4949	-32068	4482	15515	14189			2626	3323
74	42	116	MO			-42855	2908	-46257	1907	9266	8617			5316	6221
73	43	116	TC			-52122	3608	-54875	3057	12419	11428			3654	4106
72	44	116	RU			-64542	1849	-66304	1172	6057	5162			6410	6853
71	45	116	RH			-70599	2168	-71467	1723	9310	8689			4655	4619
70	46	116	PD			-79910	759	-80156	387	2795	2311			7488	7708
69	47	116	AG	-82620	300	-82706	615	-82468	466	6044	6230			5907	5605
68	48	116	CD	-88718	4	-88750	183	-88698	88					8672	8632
67	49	116	IN	-88253	8	-88634	756	-88270	157	3427	3193	115	427	6649	6756
66	50	116	SN	-91526	4	-92061	1032	-91463	76					9642	9783
65	51	116	SB	-86930	40	-87534	1153	-86768	261			4527	4695	8158	7895
64	52	116	TE	-85370	110	-85624	726	-85330	142			1910	1437	11024	11025
63	53	116	I	-77610	170	-77847	688	-77606	799			7776	7723	9138	9210
62	54	116	XE	-73270	260	-73152	1161	-73503	1010			4695	4103	12385	12297
61	55	116	CS	-62630	1150	-61817	2173	-62423	1724			11335	11080	10470	10257
60	56	116	BA			-53482	2118	-55291	1515			8334	7131	13623	13662
59	57	116	LA			-38903	3790	-40419	5362			14578	14871	11837	11718
58	58	116	CE			-27421	4216	-29696	3318			11482	10723	15837	17289
57	59	116	PR			-7640	7793	-8519	7383			19780	21176	14597	14452
56	60	116	ND			9466	5224	7855	4470			17106	16375		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS									
								Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
77	40	117	ZR			-8974	4960	-17415	3080	14741	12224			1650	2962
76	41	117	NB			-23716	4465	-29639	4910	13815	11915			4448	5642
75	42	117	MO			-37531	3872	-41554	2121	11960	11558			2748	3369
74	43	117	TC			-49491	3236	-53113	3407	10759	9268			5441	6310
73	44	117	RU			-60251	2717	-62382	1348	8815	7942			3781	4150
72	45	117	RH			-69067	2258	-70324	1992	7558	6452			6539	6929
71	46	117	PD			-76626	1160	-76777	508	5630	5417			4788	4692
70	47	117	AG	-82240	100	-82256	404	-82195	612	4465	4164			7622	7798
69	48	117	CD	-86416	13	-86722	558	-86359	114	2651	2615			6043	5733
68	49	117	IN	-88944	9	-89374	750	-88975	94	1405	1317			8810	8775
67	50	117	SN	-90399	4	-90779	1031	-90292	120					6789	6901
66	51	117	SB	-88654	18	-89247	1048	-88621	155			1531	1671	9784	9923
65	52	117	TE	-85164	35	-85855	835	-85249	217			3392	3371	8301	7990
64	53	117	I	-80850	110	-80946	756	-80711	612			4909	4537	11169	11175
63	54	117	XE	-74480	380	-74365	980	-74760	866			6580	5951	9283	9327
62	55	117	CS	-66850	960	-66278	1850	-66809	1460			8087	7951	12532	12457
61	56	117	BA			-56030	2319	-57595	1344			10247	9213	10618	10374
60	57	117	LA			-44604	3576	-46209	4908			11425	11385	13771	13860
59	58	117	CE			-31336	3567	-33496	3059			13268	12713	11986	11870
58	59	117	PR			-15556	6713	-18009	6832			15780	15486	15986	17560
57	60	117	ND			2790	5974	1327	4203			18346	19336	14747	14599
77	41	118	NB			-17887	5369	-25009	5365	16620	14608			2242	3442
76	42	118	MO			-34507	3298	-39618	2335	10258	9365			5047	6135
75	43	118	TC			-44766	4039	-48983	3784	13459	12143			3346	3942
74	44	118	RU			-58225	2263	-61126	1519	7155	5806			6045	6816
73	45	118	RH			-65380	2947	-66932	2295	10322	9223			4385	4680
72	46	118	PD			-75703	1105	-76156	604	3877	3243			7149	7450
71	47	118	AG			-79581	776	-79400	805	7305	7262			5396	5277
70	48	118	CD	-86707	20	-86886	394	-86663	91	1071	596			8235	8374
69	49	118	IN	-87450	300	-87958	920	-87260	211	4178	4386			6656	6357
68	50	118	SN	-91654	4	-92136	1029	-91647	76					9428	9425
67	51	118	SB	-87967	5	-88580	1050	-88053	194			3556	3593	7405	7504
66	52	118	TE	-87671	24	-88188	688	-87695	87			391	357	10404	10517
65	53	118	I	-81370	240	-81795	784	-81226	503			6393	6469	8920	8585
64	54	118	XE	-78070	320	-78087	942	-78446	728			3708	2779	11792	11757
63	55	118	CS	-68670	830	-68111	1626	-68711	1226			9975	9735	9904	9973
62	56	118	BA			-61116	1695	-62587	1171			6995	6124	13157	13062
61	57	118	LA			-47774	3631	-49163	4480			13342	13423	11241	11025
60	58	118	CE			-37663	3426	-39925	2806			10110	9238	14398	14500
59	59	118	PR			-21348	6044	-23705	6324			16315	16219	13863	13767

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
58	60	118	ND			-5752	4557	-8894	3868			15596	14810	16613	18292
78	41	119	NB			-13788	4960	-22250	5832	15008	12759			3973	5312
77	42	119	MO			-28796	4081	-35009	2570	13066	12103			2361	3463
76	43	119	TC			-41863	3799	-47112	4174	11760	9920			5169	6201
75	44	119	RU			-53624	2978	-57032	1712	9857	8682			3470	3978
74	45	119	RH			-63481	2826	-65715	2607	8664	7069			6172	6854
73	46	119	PD			-72146	1777	-72785	740	6643	6072			4514	4700
72	47	119	AG			-78789	713	-78857	993	5554	5127			7280	7529
71	48	119	CD	-84230	300	-84344	574	-83985	172	3913	3696			5529	5394
70	49	119	IN	-87730	18	-88258	827	-87682	96	2599	2426			8371	8493
69	50	119	SN	-90067	4	-90858	1157	-90108	96					6793	6533
68	51	119	SB	-89483	12	-90077	1045	-89561	151			781	547	9567	9579
67	52	119	TE	-87189	13	-87662	687	-87230	127			2414	2331	7545	7606
66	53	119	I	-83820	100	-84271	619	-83812	311			3391	3418	10546	10657
65	54	119	XE	-78830	160	-79079	736	-79033	638			5191	4778	9063	8657
64	55	119	CS	-72530	650	-71978	1482	-72554	1003			7101	6479	11937	11913
63	56	119	BA	-64530	860	-63095	1576	-64627	1018			8882	7926	10050	10111
62	57	119	LA			-53007	2933	-54340	4064			10088	10287	13303	13247
61	58	119	CE			-40980	3708	-43016	2571			12026	11324	11388	11161
60	59	119	PR			-27823	5692	-30310	5832			13157	12705	14546	14676
59	60	119	ND			-11693	3902	-14740	3589			16130	15570	14011	13916
58	61	119	PM			6933	7134	4471	6847			18627	19212		
79	41	120	NB			-7742	5802	-17605	6323	17543	15133			2026	3426
78	42	120	MO			-25286	3541	-32738	2805	11453	10307			4561	5800
77	43	120	TC			-36740	4462	-43045	4590	14575	12592			2948	4005
76	44	120	RU			-51315	2640	-55637	1906	8157	6499			5763	6676
75	45	120	RH			-59473	3421	-62137	2946	11372	9907			4063	4493
74	46	120	PD			-70845	1443	-72044	867	4984	3966			6771	7331
73	47	120	AG			-75829	1339	-76011	1220	8326	7988			5112	5225
72	48	120	CD	-83981	30	-84156	438	-83999	97	2161	1610			7884	8085
71	49	120	IN	-85700	100	-86317	914	-85610	218	5448	5538			6131	5999
70	50	120	SN	-91102	4	-91766	1087	-91148	76					8978	9111
69	51	120	SB	-88421	8	-89404	1174	-88650	178	365	688	2361	2498	7399	7160
68	52	120	TE	-89404	21	-89770	685	-89338	84					10178	10179
67	53	120	I	-84000	200	-84353	690	-83941	235			5416	5396	8153	8200
66	54	120	XE	-82050	280	-82169	522	-82182	486			2184	1758	11160	11220
65	55	120	CS	-73640	320	-73581	1111	-73734	838			8587	8448	9674	9251
64	56	120	BA	-69050	690	-67577	1475	-69065	869			6003	4668	12552	12508
63	57	120	LA			-55599	2733	-57044	3673			11978	12020	10663	10775

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
62	58	120	CE			-46831	2905	-48810	2336			8768	8234	13921	13865
61	59	120	PR			-31755	5760	-34022	5365			15075	14788	12002	11782
60	60	120	ND			-20026	3687	-23214	3314			11728	10807	16404	16545
59	61	120	PM			378	6475	-2038	6339			20405	21176	14626	14581
79	42	121	MO			-19356	4260	-28101	3058	13992	12742			2141	3434
78	43	121	TC			-33348	4284	-40843	5019	12965	10739			4679	5369
77	44	121	RU			-46313	3191	-51582	2120	10974	9174			3069	4016
76	45	121	RH			-57287	3406	-60757	3297	9675	7722			5886	6692
75	46	121	PD			-66963	1987	-68479	1019	7694	6831			4189	4507
74	47	121	AG			-74658	1049	-75310	1452	6669	5906			6900	7371
73	48	121	CD			-81327	967	-81217	173	4935	4513			5242	5290
72	49	121	IN	-85842	28	-86262	849	-85731	100	3697	3511			8017	8192
71	50	121	SN	-89202	4	-89960	1152	-89242	103	488	577			6266	6165
70	51	121	SB	-89588	4	-90448	1102	-89820	149					9115	9241
69	52	121	TE	-88508	15	-89235	865	-88561	99			1213	1258	7537	7295
68	53	121	I	-86140	40	-86600	616	-86203	110			2634	2357	10317	10332
67	54	121	XE	-82350	110	-82392	643	-82392	400			4207	3811	8294	8280
66	55	121	CS	-77150	420	-76813	943	-77029	622			5579	5363	11302	11365
65	56	121	BA	-70570	410	-69325	946	-70339	773			7488	6689	9818	9344
64	57	121	LA			-60225	2474	-61664	3296			9099	8675	12697	12690
63	58	121	CE			-49568	2836	-51673	2120			10657	9991	10808	10933
62	59	121	PR			-37751	4895	-39978	4911			11817	11694	14066	14027
61	60	121	ND			-24104	4329	-27060	3060			13646	12917	12148	11916
60	61	121	PM			-8101	6045	-10718	5847			16002	16341	16550	16751
80	42	122	MO			-15581	4384	-25246	3316	12413	11481			4297	5217
79	43	122	TC			-27995	4904	-36727	5472	15509	13124			2719	3955
78	44	122	RU			-43505	2886	-49852	2335	9363	7333			5263	6341
77	45	122	RH			-52868	3898	-57186	3675	12498	10359			3652	4500
76	46	122	PD			-65367	1767	-67545	1171	5996	4710			6475	7138
75	47	122	AG			-71363	1554	-72256	1715	9335	8773			4777	5017
74	48	122	CD			-80749	637	-81030	213	3276	2465			7493	7884
73	49	122	IN	-83600	150	-84025	913	-83495	219	6477	6467			5834	5836
72	50	122	SN	-89946	4	-90502	1104	-89963	78					8613	8791
71	51	122	SB	-88323	4	-89238	1169	-88524	176	1641	1776	1264	1438	6862	6775
70	52	122	TE	-90304	4	-90880	768	-90300	78					9716	9810
69	53	122	I	-86160	40	-86664	814	-86047	145			4215	4253	8135	7915
68	54	122	XE	-85160	210	-85243	353	-85224	290			1421	822	10921	10903
67	55	122	CS	-78010	580	-77638	1048	-77832	488			7604	7391	8896	8874
66	56	122	BA	-74260	430	-73163	963	-74211	606			4475	3621	11909	11942

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
65	57	122	LA			-62576	1927	-63550	2954			10586	10661	10421	9957
64	58	122	CE			-54802	2583	-56900	1909			7774	6650	13305	13293
63	59	122	PR			-41093	4694	-43475	4481			13708	13424	11413	11567
62	60	122	ND			-30709	3160	-33625	2804			10383	9849	14676	14636
61	61	122	PM			-14012	6409	-16434	5381			16697	17191	13981	13786
81	42	123	MO			-9623	5230	-20399	3590	14712	13567			2113	3225
80	43	123	TC			-24336	5207	-33966	5941	13934	11768			4412	5311
79	44	123	RU			-38270	3389	-45734	2567	11910	9739			2837	3954
78	45	123	RH			-50181	3936	-55474	4065	10890	8489			5384	6360
77	46	123	PD			-61071	2150	-63964	1344	8821	7376			3776	4490
76	47	123	AG			-69893	1412	-71340	1989	7689	6692			6601	7156
75	48	123	CD			-77582	1065	-78032	304	5994	5344			4905	5074
74	49	123	IN	-83440	40	-83577	838	-83377	109	4820	4463			7623	7953
73	50	123	SN	-87821	4	-88397	1151	-87841	105	1517	1521			5966	5950
72	51	123	SB	-89218	4	-89914	1119	-89363	149					8747	8909
71	52	123	TE	-89166	4	-89806	858	-89128	91			108	234	6997	6900
70	53	123	I	-87970	100	-88447	707	-87916	188			1358	1212	9853	9939
69	54	123	XE	-85290	100	-85446	558	-85180	220			3000	2736	8273	8027
68	55	123	CS	-80890	420	-80629	665	-80824	327			4816	4355	11061	11062
67	56	123	BA	-75390	680	-74129	1254	-75116	515			6500	5708	9037	8975
66	57	123	LA			-66557	1811	-67593	2605			7572	7522	12051	12113
65	58	123	CE			-57296	2002	-58899	1733			9260	8693	10564	10070
64	59	123	PR			-46471	4277	-48861	4067			10824	10037	13449	13457
63	60	123	ND			-34196	3311	-37278	2568			12275	11583	11557	11723
62	61	123	PM			-20762	5236	-23191	4926			13434	14086	14821	14828
82	42	124	MO			-5426	5025	-17006	3870	13519	12642			3874	4673
81	43	124	TC			-18945	5936	-29648	6433	16239	13815			2681	3753
80	44	124	RU			-35185	3614	-43463	2804	10334	8357			4986	5800
79	45	124	RH			-45519	4407	-51820	4480	13443	10873			3410	4418
78	46	124	PD			-58963	1961	-62694	1517	7212	5543			5963	6802
77	47	124	AG			-66175	1761	-68238	2290	10520	9361			4354	4969
76	48	124	CD			-76695	858	-77599	385	4297	3312			7185	7638
75	49	124	IN	-81100	90	-80993	930	-80912	221	7543	7365			5487	5606
74	50	124	SN	-88240	5	-88537	1095	-88278	84					8210	8507
73	51	124	SB	-87613	4	-88395	1168	-87792	178	2678	2725	141	486	6553	6501
72	52	124	TE	-90518	4	-91073	792	-90517	74					9338	9460
71	53	124	I	-87361	5	-87962	807	-87347	131		241	3111	3170	7587	7503
70	54	124	XE	-87450	140	-87823	429	-87588	141			139		10447	10479
69	55	124	CS	-81530	480	-81424	808	-81399	239			6398	6189	8866	8645

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
68	56	124	BA	-78750	510	-77717	789	-78692	392			3707	2706	11658	11647
67	57	124	LA			-68118	1988	-69110	2296			9599	9582	9631	9588
66	58	124	CE			-61876	1973	-63532	1521			6241	5577	12650	12704
65	59	124	PR			-49562	3668	-51444	3686			12313	12088	11161	10653
64	60	124	ND			-40175	2903	-43263	2336			9386	8180	14049	14056
63	61	124	PM			-24847	5215	-27501	4498			15328	15761	12155	12381
83	42	125	MO			2565	6366	-8715	4164	17425	17637			80	-219
82	43	125	TC			-14860	6028	-26353	6941	15049	12805			3987	4776
81	44	125	RU			-29910	4221	-39158	3058	12642	10434			2796	3767
80	45	125	RH			-42552	4778	-49593	4910	11869	9423			5104	5844
79	46	125	PD			-54422	2308	-59017	1708	9767	7972			3530	4394
78	47	125	AG			-64189	1682	-66989	2603	8913	7540			6086	6823
77	48	125	CD			-73103	1101	-74530	499	7130	5995			4479	5003
76	49	125	IN	-80500	300	-80233	894	-80526	311	5848	5393			7312	7685
75	50	125	SN	-85902	5	-86082	1165	-85920	106	2584	2390			5617	5713
74	51	125	SB	-88252	5	-88666	1110	-88310	152	1021	708			8341	8589
73	52	125	TE	-89019	4	-89688	857	-89018	90					6686	6573
72	53	125	I	-88841	5	-89365	733	-88854	92			323	164	9473	9578
71	54	125	XE	-87110	40	-87474	548	-87121	102			1890	1733	7723	7604
70	55	125	CS	-84040	40	-83939	428	-83943	124			3535	3177	10585	10615
69	56	125	BA	-79460	250	-78651	628	-79400	313			5287	4543	9004	8778
68	57	125	LA			-71845	1438	-72872	1992			6805	6527	11798	11832
67	58	125	CE			-63577	2320	-65171	1356			8267	7701	9772	9709
66	59	125	PR			-54283	3465	-56226	3298			9294	8944	12792	12852
65	60	125	ND			-43408	2179	-45957	2141			10874	10268	11303	10765
64	61	125	PM			-30969	4655	-33676	4083			12439	12281	14192	14245
84	42	126	MO			8786	5909	-2811	4465	16214	15857			1850	2167
83	43	126	TC			-7427	7127	-18669	7470	18961	17681			638	387
82	44	126	RU			-26389	4207	-36350	3318	11451	9409			4551	5263
81	45	126	RH			-37840	5333	-45760	5363	14183	11490			3360	4238
80	46	126	PD			-52024	2573	-57250	1903	8192	6521			5674	6305
79	47	126	AG			-60217	2013	-63772	2941	11474	9990			4099	4854
78	48	126	CD			-71691	917	-73762	604	5522	4196			6660	7303
77	49	126	IN	-77900	120	-77214	867	-77958	465	8687	8100			5052	5504
76	50	126	SN	-86024	12	-85901	1139	-86058	88	887	430			7890	8209
75	51	126	SB	-86402	32	-86788	1181	-86489	180	3752	3554			6193	6250
74	52	126	TE	-90066	4	-90541	780	-90043	75					8923	9095
73	53	126	I	-87911	6	-88559	806	-87900	127	903	1250	1981	2143	7266	7117
72	54	126	XE	-89162	8	-89462	438	-89150	80					10058	10099

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
71	55	126	CS	-84330	140	-84173	578	-84079	223			5288	5071	8305	8206
70	56	126	BA	-82560	250	-81753	429	-82498	215			2420	1580	11173	11169
69	57	126	LA			-73365	1189	-74218	1719			8388	8280	9590	9417
68	58	126	CE			-67895	1691	-69531	1177			5469	4687	12388	12430
67	59	126	PR			-56573	3631	-58448	2952			11322	11082	10360	10293
66	60	126	ND			-48721	2219	-51321	1906			7851	7127	13384	13434
65	61	126	PM			-34791	3957	-36976	3706			13930	14344	11893	11371
85	42	127	MO			16920	6751	4417	4785	18236	17305			-62	843
84	43	127	TC			-1315	7048	-12888	8017	17753	15875			1960	2291
83	44	127	RU			-19068	5218	-28764	3590	15366	14235			751	485
82	45	127	RH			-34435	5582	-43000	5833	12994	10408			4666	5311
81	46	127	PD			-47430	3004	-53408	2115	10509	8643			3477	4229
80	47	127	AG			-57939	2335	-62051	3293	9902	8512			5794	6351
79	48	127	CD			-67841	1141	-70564	735	8085	6675			4221	4874
78	49	127	IN	-77170	130	-75927	788	-77240	611	7080	6334			6785	7353
77	50	127	SN	-83600	100	-83008	1116	-83574	158	3728	3111			5179	5587
76	51	127	SB	-86704	7	-86736	1153	-86686	157	2057	1600			8019	8268
75	52	127	TE	-88285	5	-88790	875	-88287	91	751	718			6324	6315
74	53	127	I	-88980	5	-89544	720	-89006	90					9556	9176
73	54	127	XE	-88316	6	-88790	547	-88245	92			753	760	7400	7167
72	55	127	CS	-86206	21	-86296	469	-86232	107			2493	2013	10194	10224
71	56	127	BA	-82760	100	-82124	548	-82757	167			4172	3474	8442	8329
70	57	127	LA	-77760	540	-76605	918	-77479	800			5519	5278	11311	11331
69	58	127	CE			-69554	1458	-71030	1026			7051	6448	9729	9570
68	59	127	PR			-61030	2930	-62972	2608			8523	8058	12528	12594
67	60	127	ND			-51152	2946	-53062	1723			9878	9309	10501	10412
66	61	127	PM			-40246	3779	-42519	3314			10906	11143	13525	13613
65	62	127	SM			-27688	3072	-30932	2150			12557	11587		
86	42	128	MO			23314	6357	10502	5101	17045	16688			1677	1986
85	43	128	TC			6269	7797	-6186	8588	19781	17304			486	1369
84	44	128	RU			-13511	5006	-23490	3871	14157	12473			2514	2797
83	45	128	RH			-27668	6409	-35963	6324	16915	15143			1305	1035
82	46	128	PD			-44584	3093	-51106	2334	9319	7570			5226	5769
81	47	128	AG			-53904	2740	-58677	3670	12224	10664			4036	4697
80	48	128	CD			-66128	1411	-69342	864	6512	5182			6358	6879
79	49	128	IN	-74340	250	-72640	842	-74525	800	9649	8853			4785	5306
78	50	128	SN	-83440	150	-82290	1058	-83378	206	2120	1330			7354	7875
77	51	128	SB	-84730	150	-84411	1133	-84708	272	4902	4253			5746	6094
76	52	128	TE	-86992	4	-89314	840	-88961	78					8591	8745

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
75	53	128	I	-87734	5	-88368	826	-87780	126	1983	2048	945	1151	6895	6846
74	54	128	XE	-89861	2	-90352	416	-89829	77					9632	9654
73	55	128	CS	-85935	6	-86199	577	-85871	138			4152	3957	7974	7711
72	56	128	BA	-85482	20	-84827	438	-85447	91			1372	424	10773	10760
71	57	128	LA	-78680	490	-77554	927	-78359	631			7273	7087	9019	8951
70	58	128	CE			-73376	1185	-74859	870			4177	3500	11892	11899
69	59	128	PR			-63268	2610	-65081	2297			10107	9777	10308	10180
68	60	128	ND			-56193	2003	-58775	1521			7075	6305	13112	13183
67	61	128	PM			-43257	4271	-45469	2971			12936	13306	11082	11020
66	62	128	SM			-33728	3044	-37031	1908			9529	8437	14110	14170
87	42	129	MO			31736	7225	18457	5437	19179	18680			-350	117
86	43	129	TC			12556	7789	-222	9170	18592	16589			1784	2108
85	44	129	RU			-6035	5607	-13811	4170	16187	13951			596	1393
84	45	129	RH			-22223	6545	-30763	6832	15709	13382			2627	2072
83	46	129	PD			-37933	3864	-44145	2565	13243	12280			1420	1110
82	47	129	AG			-51176	2944	-56426	4062	11037	9577			5344	5820
81	48	129	CD			-62213	1700	-66003	1016	8836	7374			4156	4732
80	49	129	IN	-73120	180	-71050	990	-73378	991	8078	7354			5481	6925
79	50	129	SN	-80640	130	-79128	1040	-80733	298	4691	3841			4909	5426
78	51	129	SB	-84630	22	-83819	1074	-84575	164	3297	2450			7480	7938
77	52	129	TE	-87007	4	-87116	809	-87025	97	1901	1488			5874	6135
76	53	129	I	-88505	4	-89018	785	-88514	91	288	132			8721	8804
75	54	129	XE	-88698	2	-89307	575	-88646	90					7027	6889
74	55	129	CS	-87563	24	-87893	449	-87542	102			1413	1104	9765	9742
73	56	129	BA	-85116	19	-84864	547	-85157	109			3029	2385	8107	7782
72	57	129	LA	-81120	350	-80391	595	-81200	458			4472	3957	10908	10911
71	58	129	CE			-74461	1243	-75883	741			5930	5316	9156	9095
70	59	129	PR			-67228	2240	-69049	1993			7232	6833	12030	12039
69	60	129	ND			-58569	1790	-61037	1351			8658	8012	10447	10332
68	61	129	PM			-48437	3283	-50776	2626			10131	10261	13251	13378
67	62	129	SM			-36879	4037	-40081	1732			11558	10694	11222	11121
88	42	130	MO			38255	8320	25088	5782	17816	17896			1552	1440
87	43	130	TC			20438	8569	7192	9777	20733	18538			189	656
86	44	130	RU			-294	5447	-11346	4466	14998	13208			2330	2606
85	45	130	RH			-15293	7125	-24554	7364	17745	14868			1141	1863
84	46	130	PD			-33038	3799	-39423	2804	12035	10587			3177	3349
83	47	130	AG			-45074	3630	-50010	4476	14966	14237			1970	1656
82	48	130	CD			-60041	1836	-64247	1171	7648	6281			5899	6316
81	49	130	IN	-70080	480	-67689	1121	-70529	1217	10407	9597			4711	5223

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
80	50	130	SN	-80380	130	-78097	1118	-80127	379	3118	2289			7040	7466
79	51	130	SB	-82380	80	-81215	1059	-82417	198	5873	4948			5468	5914
78	52	130	TE	-87348	5	-87089	727	-87366	82	294				8044	8411
77	53	130	I	-86897	10	-87383	755	-87078	128	3141	2750		287	6437	6636
76	54	130	XE	-89881	2	-90525	520	-89829	75					9288	9253
75	55	130	CS	-86863	12	-87414	604	-86891	134		430	3110	2937	7592	7420
74	56	130	BA	-87303	12	-87128	416	-87322	86			285		10335	10235
73	57	130	LA	-81600	390	-80997	606	-81474	336			6131	5847	8676	8345
72	58	130	CE			-77872	884	-79274	605			3125	2200	11481	11461
71	59	130	PR			-68884	2168	-70667	1721			8987	8606	9726	9688
70	60	130	ND			-63104	1391	-65565	1173			5779	5102	12605	12598
69	61	130	PM			-51386	2991	-53671	2316			11717	11893	11019	10966
68	62	130	SM			-42636	2796	-45953	1526			8750	7718	13828	13942
88	43	131	TC			26853	9657	13683	10402	19373	17658			1656	1581
87	44	131	RU			7480	6081	-3975	4781	17141	15185			297	701
86	45	131	RH			-9661	7314	-19161	7908	16559	14055			2440	2678
85	46	131	PD			-26220	4211	-33216	3062	14074	12148			1253	1865
84	47	131	AG			-40295	3726	-45365	4907	13761	12586			3293	3426
83	48	131	CD			-54056	2429	-57952	1340	11579	10902			2087	1776
82	49	131	IN			-65636	1366	-68854	1452	9221	8509			6019	6396
81	50	131	SN	-77480	290	-74858	1170	-77364	491	5450	4535			4833	5308
80	51	131	SB	-82100	200	-80308	1071	-81899	260	4302	3337			7164	7554
79	52	131	TE	-85201	5	-84611	701	-85237	109	2872	2244			5594	5943
78	53	131	I	-87451	5	-87483	662	-87481	94	1535	931			8170	8474
77	54	131	XE	-88421	5	-89019	467	-88413	89					6566	6656
76	55	131	CS	-88066	8	-88763	547	-88138	97			256	274	9419	9318
75	56	131	BA	-86726	19	-86781	575	-86735	104			1981	1403	7724	7485
74	57	131	LA	-83770	100	-83395	428	-83752	206			3386	2982	10469	10349
73	58	131	CE	-79470	510	-78612	900	-79640	498			4783	4112	8811	8437
72	59	131	PR			-72430	1736	-74187	1455			6181	5452	11617	11590
71	60	131	ND			-64897	1649	-67325	1024			7533	6861	9863	9831
70	61	131	PM			-56059	2502	-58370	2010			8837	8955	12743	12770
69	62	131	SM			-45724	2632	-48982	1358			10334	9388	11158	11100
68	63	131	EU			-33987	3415	-37037	2121			11737	11944		
89	43	132	TC			34979	11577	21257	11053	21620	19252			-54	497
88	44	132	RU			13359	7209	2005	5106	15781	14278			2193	2091
87	45	132	RH			-2422	7931	-12273	8477	18708	16019			833	1184
86	46	132	PD			-21130	4189	-28292	3316	12887	11[illegible]2			2981	3147
85	47	132	AG			-34018	4126	-39624	5363	15806	14197			1794	2331

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
84	48	132	CD			-49824	2441	-53822	1516	10373	9304			3839	3942
83	49	132	IN			-60197	1874	-63127	1713	13158	13100			2633	2344
82	50	132	SN	-76390	220	-73356	1234	-76228	602	4262	3403			6570	6935
81	51	132	SB	-79610	200	-77619	1092	-79631	392	6639	5580			5382	5804
80	52	132	TE	-85213	21	-84258	680	-85212	84	1300	621			7719	8047
79	53	132	I	-85706	21	-85559	638	-85834	138	4118	3428			6147	6424
78	54	132	XE	-89286	5	-89677	305	-89262	75					8729	8920
77	55	132	CS	-87175	23	-87814	502	-87223	129	877	1223	1863	2038	7123	7156
76	56	132	BA	-88453	10	-88691	520	-88447	79					9980	9782
75	57	132	LA	-83740	50	-83608	588	-83716	158			5083	4730	8283	8036
74	58	132	CE	-82340	420	-81574	698	-82425	386			2033	1291	11033	10856
73	59	132	PR			-73732	1804	-75089	1222			7841	7336	9373	8972
72	60	132	ND			-69010	1101	-71387	865			4722	3701	12184	12133
71	61	132	PM			-58416	2603	-60749	1741			10593	10638	10427	10449
70	62	132	SM			-50965	2065	-54216	1177			7451	6532	13311	13304
69	63	132	EU			-37640	3245	-40691	1854			13324	13525	11724	11724
89	44	133	RU			21380	9075	9535	5451	18031	15919			51	541
88	45	133	RH			3348	8985	-6383	9064	17350	15043			2300	2182
87	46	133	PD			-14001	4643	-21427	3590	15039	13348			943	1207
86	47	133	AG			-29040	4276	-34776	5830	14621	13352			3094	3223
85	48	133	CD			-43662	2687	-48128	1716	12420	10975			1909	2373
84	49	133	IN			-56082	1931	-59104	1988	11954	11566			3956	4049
83	50	133	SN			-68037	1587	-70670	730	8201	7917			2752	2514
82	51	133	SB	-78980	210	-76239	1146	-78588	522	5453	4401			6691	7028
81	52	133	TE	-82930	70	-81693	685	-82989	152	3638	2909			5506	5848
80	53	133	I	-85902	31	-85332	610	-85898	98	2547	1723			7845	8135
79	54	133	XE	-87662	9	-87880	237	-87622	100	720	520			6274	6431
78	55	133	CS	-88089	8	-88601	349	-88142	96					8858	8989
77	56	133	BA	-87569	9	-87872	468	-87573	94			728	568	7253	7198
76	57	133	LA	-85570	230	-85649	577	-85520	195			2223	2053	10112	9874
75	58	133	CE	-82170	400	-81920	643	-82475	304			3729	3044	8416	8121
74	59	133	PR	-77970	680	-76829	934	-77967	464			5090	4508	11167	10949
73	60	133	ND			-70447	1561	-72381	738			6381	5586	9508	9064
72	61	133	PM			-62665	1993	-64971	1472			7782	7409	12320	12293
71	62	133	SM			-53458	2461	-56719	1033			9206	8251	10564	10573
70	63	133	EU			-43019	2557	-46092	1583			10439	10626	13449	13472
69	64	133	GD			-30939	3733	-35150	1924			12079	10942		
90	44	134	RU			26923	7647	15339	5782	16080	14669			2528	2267
89	45	134	RH			10842	10495	669	9675	19606	16689			578	1018

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
88	46	134	PD			-8763	5797	-16019	3873	13680	12371			2833	2664
87	47	134	AG			-22443	4726	-28391	6321	16778	15396			1475	1686
86	48	134	CD			-39222	2735	-43787	1904	11234	10112			3632	3730
85	49	134	IN			-50457	2113	-53899	2294	14007	13307			2446	2867
84	50	134	SN			-64464	1662	-67207	864	6996	6398			4438	4608
83	51	134	SB	-73870	600	-71461	1178	-73605	687	9398	8831			3293	3089
82	52	134	TE	-82670	230	-80859	737	-82437	210	2452	1728			7237	7519
81	53	134	I	-83970	60	-83311	619	-84165	138	4891	3985			6051	6339
80	54	134	XE	-88125	7	-88203	162	-88151	77					8393	8600
79	55	134	CS	-86909	8	-87351	299	-86984	135	1861	1969	851	1167	6822	6913
78	56	134	BA	-88968	8	-89212	306	-88954	76					9411	9451
77	57	134	LA	-85268	31	-85382	483	-85168	142			3830	3785	7804	7719
76	58	134	CE	-84770	270	-84517	547	-84757	211			864	410	10668	10353
75	59	134	PR	-78470	600	-77728	862	-78540	347			6788	6217	8970	8643
74	60	134	ND			-74102	986	-75758	605			3626	2782	11725	11448
73	61	134	PM			-64658	2299	-66524	1242			9443	9233	10064	9624
72	62	134	SM			-58268	1708	-61459	869			6390	5064	12880	12811
71	63	134	EU			-46070	2987	-49204	1359			12197	12255	11122	11182
70	64	134	GD			-36879	2966	-41075	1711			9190	8128	14010	13996
90	45	135	RH			16280	9796	6380	10293	17657	15369			2634	2361
89	46	135	PD			-1377	7315	-8988	4178	15938	14088			685	1040
88	47	135	AG			-17315	5851	-23077	6831	15422	14392			2943	2758
87	48	135	CD			-32738	3036	-37469	2117	13394	12193			1587	1754
86	49	135	IN			-46132	2212	-49662	2602	12823	12436			3747	3835
85	50	135	SN			-58955	1745	-62099	1026	9051	8161			2563	2964
84	51	135	SB			-68007	1582	-70260	1060	8194	7322			4618	4727
83	52	135	TE	-77600	250	-76202	742	-77583	295	6398	6123			3414	3218
82	53	135	I	-83796	29	-82600	616	-83706	115	3706	2734			7360	7613
81	54	135	XE	-86506	11	-86307	183	-86441	95	1494	1167			6176	6361
80	55	135	CS	-87665	9	-87801	234	-87609	97	290	216			8520	8695
79	56	135	BA	-87870	7	-88091	238	-87825	98					6950	6943
78	57	135	LA	-86670	12	-86851	321	-86645	102			1240	1180	9540	9547
77	58	135	CE	-84550	100	-84380	467	-84468	159			2470	2176	7935	7782
76	59	135	PR	-80990	140	-80458	576	-80893	212			3922	3574	10800	10423
75	60	135	ND	-76290	490	-75135	599	-76416	501			5323	4477	9103	8728
74	61	135	PM			-68447	1649	-70025	1015			6687	6390	11860	11572
73	62	135	SM			-60396	2341	-63086	747			8051	6939	10199	9697
72	63	135	EU			-51015	2101	-54101	1122			9380	8984	13016	12968
71	64	135	GD			-40068	3514	-44305	1536			10947	9795	11259	11301
70	65	135	TB			-27864	4219	-31216	3324			12203	13089		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
91	45	136	RH			23569	11256	12716	10939	20033	16472			782	1736
90	46	136	PD			3536	6182	-3755	4467	13989	12764			3158	2838
89	47	136	AG			-10453	7181	-16519	7366	17685	16156			1209	1514
88	48	136	CD			-28138	4245	-32675	2338	12037	11172			3472	3278
87	49	136	IN			-40176	2464	-43848	2941	14988	14565			2116	2257
86	50	136	SN			-55164	1838	-58413	1169	7866	7234			4280	4386
85	51	136	SB			-63031	1686	-65647	1292	10254	9102			3096	3459
84	52	136	TE	-74830	460	-73285	942	-74750	383	5193	4671			5155	5238
83	53	136	I	-79430	100	-78479	615	-79422	215	7657	7024			3951	3787
82	54	136	XE	-86425	8	-86137	185	-86446	93	307				7902	8076
81	55	136	CS	-86358	8	-86445	258	-86390	130	2640	2541		56	6716	6852
80	56	136	BA	-88906	7	-89085	163	-88931	74					9065	9176
79	57	136	LA	-86040	70	-86273	267	-86018	318	124	402	2812	2912	7493	7445
78	58	136	CE	-86500	40	-86398	305	-86421	91					10088	10024
77	59	136	PR	-81400	60	-80867	481	-81097	169			5530	5323	8480	8275
76	60	136	ND	-79190	70	-78414	519	-79240	384			2453	1857	11350	10895
75	61	136	PM			-70028	1234	-71231	826			8385	8008	9651	9276
74	62	136	SM			-64738	1551	-67062	610			5290	4168	12412	12047
73	63	136	EU			-53694	2805	-56278	940			11043	10784	10749	10248
72	64	136	GD			-45567	2531	-49709	1341			8127	6569	13570	13474
71	65	136	TB			-31603	4653	-35078	2978			13963	14631	11810	11933
91	46	137	PD			10720	7652	2589	4783	16367	13972			888	1727
90	47	137	AG			-5647	6429	-11382	7907	15739	14802			3266	2935
89	48	137	CD			-21386	5483	-26185	2583	14303	12993			1319	1581
88	49	137	IN			-35689	3685	-39178	3296	13633	13538			3585	3402
87	50	137	SN			-49323	1980	-52716	1341	10033	9363			2230	2374
86	51	137	SB			-59356	1862	-62079	1519	9072	8113			4397	4504
85	52	137	TE			-68428	946	-70193	513	7255	6515			3215	3515
84	53	137	I	-76720	200	-75684	754	-76709	314	6455	5560			5276	5359
83	54	137	XE	-82215	22	-82139	168	-82269	102	4260	4226			4074	3894
82	55	137	CS	-86560	7	-86400	251	-86495	110	1455	1261			8026	8176
81	56	137	BA	-87733	7	-87856	183	-87757	88					6842	6897
80	57	137	LA	-87130	160	-87395	388	-87246	304			460	510	9192	9299
79	58	137	CE	-85910	190	-85949	452	-85845	149			1446	1401	7622	7496
78	59	137	PR	-83210	290	-83015	520	-83125	199			2934	2719	10218	10099
77	60	137	ND	-79410	280	-78955	548	-79506	305			4059	3619	8611	8336
76	61	137	PM	-74210	530	-73440	910	-74157	634			5514	5348	11483	10997
75	62	137	SM			-66452	1118	-68335	513			6988	5822	9785	9343
74	63	137	EU			-58170	1878	-60376	748			8282	7959	12546	12168
73	64	137	GD			-48381	3344	-51955	1186			9789	8420	10884	10316

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
72	65	137	TB			-37239	3591	-40668	2631			11141	11286	13706	13661
71	66	137	DY			-24534	4538	-29902	1926			12704	10766		
92	46	138	PD			15749	6613	7296	5102	14727	12770			3043	3364
91	47	138	AG			1021	7711	-5473	8475	18122	16090			1403	2162
90	48	138	CD			-17101	4531	-21564	2806	12355	11620			3786	3451
89	49	138	IN			-29457	4789	-33184	3681	15904	15426			1839	2078
88	50	138	SN			-45361	3142	-48610	1521	8678	8281			4110	3966
87	51	138	SB			-54039	2030	-56892	1782	11243	10237			2755	2884
86	52	138	TE			-65283	1093	-67129	603	6071	5512			4926	5008
85	53	138	I	-71730	510	-71355	682	-72642	482	8521	7398			3743	4005
84	54	138	XE	-80030	180	-79877	342	-80040	141	3056	2847			5809	5843
83	55	138	CS	-82770	210	-82933	465	-82888	213	5413	5454			4605	4464
82	56	138	BA	-88273	7	-88347	186	-88342	87					8562	8656
81	57	138	LA	-86524	7	-86700	219	-86584	124	909	985	1646	1757	7376	7409
80	58	138	CE	-87565	13	-87609	162	-87570	78					9731	9795
79	59	138	PR	-83128	16	-83103	264	-83025	145			4506	4544	8159	7971
78	60	138	ND	-82030	260	-81644	349	-82003	209			1458	1021	10760	10568
77	61	138	PM	-75030	450	-74521	795	-74942	490			7123	7061	9151	8855
76	62	138	SM			-70408	945	-71708	390			4112	3233	12027	11444
75	63	138	EU			-60426	1429	-62187	610			9982	9521	10327	9882
74	64	138	GD			-53402	2313	-56516	1019			7023	5670	13092	12632
73	65	138	TB			-40596	4301	-43488	2323			12806	13028	11428	10890
72	66	138	DY			-30716	3247	-35958	1709			9879	7530	14253	14126
92	47	139	AG			5944	7078	-823	9060	16485	14867			3149	3421
91	48	139	CD			-10540	5733	-15690	3061	14741	12999			1511	2198
90	49	139	IN			-25282	3985	-28690	4063	13959	14044			3897	3577
89	50	139	SN			-39242	4071	-42734	1727	10951	10188			1952	2195
88	51	139	SB			-50193	3055	-52923	2060	9890	9095			4225	4102
87	52	139	TE			-60083	1164	-62018	735	8245	7678			2871	2961
86	53	139	I			-68329	986	-69696	614	7339	6311			5045	5126
85	54	139	XE	-75750	90	-75669	167	-76008	252	5124	4778			3863	4039
84	55	139	CS	-80630	70	-80794	233	-80786	113	4210	4078			5932	5970
83	56	139	BA	-84925	7	-85005	168	-84865	94	2312	2431			4729	4594
82	57	139	LA	-87231	6	-87317	211	-87297	103					8687	8783
81	58	139	CE	-86966	8	-87042	183	-86973	89			274	323	7504	7475
80	59	139	PR	-84854	13	-84893	187	-84850	101			2149	2123	9860	9896
79	60	139	ND	-82050	50	-81862	236	-81952	152			3030	2897	8289	8021
78	61	139	PM	-77500	210	-77341	424	-77546	335			4521	4406	10891	10675
77	62	139	SM	-72300	450	-71621	928	-72537	320			5720	5008	9283	8899

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
76	63	139	EU			-64515	1182	-65659	450			7105	6877	12160	11543
75	64	139	GD			-55793	1891	-58390	886			8722	7269	10461	9944
74	65	139	TB			-45753	3180	-48200	2019			10039	10189	13227	12783
73	66	139	DY			-34209	4363	-38811	1534			11543	9389	11563	10924
72	67	139	HO			-21392	4371	-26407	3297			12817	12403		
93	47	140	AG			12719	9235	4848	9669	18849	16358			1296	2400
92	48	140	CD			-6130	4863	-11510	3317	13103	11765			3661	3891
91	49	140	IN			-19233	5061	-23276	4478	16350	15524			2023	2657
90	50	140	SN			-35584	3311	-38800	1905	9005	8749			4414	4138
89	51	140	SB			-44589	3839	-47550	2369	12168	11016			2468	2699
88	52	140	TE			-56758	2260	-58566	874	6891	6524			4746	4620
87	53	140	I			-63649	1104	-65090	802	9518	8449			3391	3465
86	54	140	XE	-73180	260	-73167	342	-73539	291	3941	3705			5570	5603
85	55	140	CS	-77240	250	-77109	465	-77245	255	6283	6018			4387	4530
84	56	140	BA	-83285	12	-83393	161	-83264	85	1108	1146			6460	6471
83	57	140	LA	-84320	6	-84501	207	-84410	127	3688	3770			5256	5185
82	58	140	CE	-88081	6	-88190	186	-88181	86					9219	9278
81	59	140	PR	-84693	8	-84854	216	-84739	127			3335	3442	8033	7960
80	60	140	ND	-84220	40	-84186	160	-84267	82			668	471	10394	10385
79	61	140	PM	-78180	110	-78092	287	-77995	236			6094	6271	8821	8520
78	62	140	SM	-75480	260	-74977	349	-75587	218			3114	2408	11427	11120
77	63	140	EU			-66262	1211	-66998	366			8715	8588	9818	9409
76	64	140	GD			-60420	1584	-62299	735			5842	4699	12698	11979
75	65	140	TB			-48679	2745	-50636	1751			11741	11662	10997	10507
74	66	140	DY			-39905	3019	-43946	1345			8773	6690	13767	13206
73	67	140	HO			-25422	5393	-29795	2951			14483	14150	12101	11459
94	47	141	AG			18151	8242	10719	10291	17612	16578			2640	2200
93	48	141	CD			538	7077	-5858	3596	15470	13323			1402	2420
92	49	141	IN			-14931	4355	-19182	4907	14714	14289			3769	3978
91	50	141	SN			-29645	4221	-33472	2119	11398	10283			2133	2743
90	51	141	SB			-41044	3354	-43755	2671	10224	9515			4526	4277
89	52	141	TE			-51269	2932	-53270	1042	9171	8506			2583	2775
88	53	141	I			-60440	2060	-61776	1002	8165	7212			4863	4757
87	54	141	XE	-69000	140	-68606	363	-68989	393	6122	5913			3510	3521
86	55	141	CS	-75000	100	-74728	233	-74902	319	5102	4878			5690	5729
85	56	141	BA	-79980	60	-79831	168	-79780	192	3182	3183			4509	4588
84	57	141	LA	-83008	31	-83013	190	-82964	102	2486	2482			6584	6625
83	58	141	CE	-85438	6	-85500	168	-85446	88	629	606			5381	5337
82	59	141	PR	-86018	6	-86129	207	-86053	103					9345	9385

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
81	60	141	ND	-84203	10	-84276	181	-84221	93			1853	1831	8160	8025
80	61	141	PM	-80470	40	-80544	219	-80443	122			3731	3778	10523	10518
79	62	141	SM	-75910	60	-75858	235	-76069	161			4686	4373	8951	8553
78	63	141	EU	-69880	100	-69750	391	-70152	244			6107	5917	11558	11224
77	64	141	GD			-62299	1649	-63677	626			7450	6474	9950	9449
76	65	141	TB			-53440	2330	-54674	1482			8859	9002	12831	12108
75	66	141	DY			-42966	2650	-46409	1192			10473	8265	11131	10534
74	67	141	HO			-31253	3941	-35048	2608			11712	11360	13901	13324
73	68	141	ER			-17833	5515	-24235	1925			13419	10813		
95	47	142	AG			25293	9906	16905	10938	19826	17396			930	1886
94	48	142	CD			5466	5799	-490	3874	14232	13477			3144	2703
93	49	142	IN			-8765	6384	-13968	5364	17086	15924			1906	2858
92	50	142	SN			-25852	3516	-29893	2333	9761	9000			4278	4492
91	51	142	SB			-35614	4119	-38893	3010	12622	11096			2641	3209
90	52	142	TE			-48236	2399	-49989	1173	7226	6989			5039	4790
89	53	142	I			-55463	2627	-56979	1238	10450	9185			3095	3274
88	54	142	XE	-66050	170	-65914	1453	-66165	501	4768	4692			5380	5247
87	55	142	CS	-70950	130	-70682	287	-70858	470	7287	7073			4026	4027
86	56	142	BA	-77820	100	-77970	161	-77931	206	2000	2061			6211	6222
85	57	142	LA	-80018	9	-79970	206	-79992	183	4565	4523			5028	5100
84	58	142	CE	-84535	6	-84535	161	-84515	78					7107	7141
83	59	142	PR	-83790	6	-83961	203	-83882	122	2115	2141	574	633	5903	5901
82	60	142	ND	-85949	5	-86077	183	-86024	89					9871	9873
81	61	142	PM	-81060	60	-81159	244	-80907	146			4917	5116	8685	8535
80	62	142	SM	-78978	16	-78840	159	-78982	89			2319	1924	11052	10984
79	63	142	EU	-71480	350	-71158	570	-71126	334			7681	7856	9478	9045
78	64	142	GD			-66318	801	-67266	495			4839	3859	12089	11659
77	65	142	TB			-55848	2356	-56587	1255			10470	10679	10479	9983
76	66	142	DY			-48259	2173	-50843	1019			7588	5743	13364	12504
75	67	142	HO			-34843	3560	-38036	2301			13415	12806	11661	11058
74	68	142	ER			-24197	3807	-29898	1716			10645	8137	14435	13733
95	48	143	CD			12504	7436	5664	4172	16448	14391			1034	1916
94	49	143	IN			-3944	5314	-8726	5831	15851	16023			3250	2829
93	50	143	SN			-19795	5395	-24749	2572	12135	10664			2014	2928
92	51	143	SB			-31931	3719	-35413	3361	10988	9759			4389	4592
91	52	143	TE			-42919	3059	-45172	1345	9626	8665			2754	3255
90	53	143	I			-52546	2303	-53838	1456	8507	7584			5154	4931
89	54	143	XE			-61054	1909	-61423	640	7055	6755			3211	3330
88	55	143	CS	-68360	250	-68109	1176	-68178	629	5935	5785			5498	5392

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
87	56	143	BA	-74010	230	-74044	658	-73964	297	4186	4331			4146	4105
86	57	143	LA	-78310	80	-78231	189	-78296	196	3384	3327			6333	6375
85	58	143	CE	-81610	6	-81615	167	-81623	153	1506	1462			5152	5179
84	59	143	PR	-83065	6	-83121	186	-83085	94	913	918			7232	7274
83	60	143	ND	-84000	5	-84035	166	-84004	88					6030	6052
82	61	143	PM	-82959	7	-83087	237	-82848	121			947	1155	9999	10011
81	62	143	SM	-79511	11	-79583	180	-79495	103			3504	3352	8813	8583
80	63	143	EU	-74410	50	-74269	293	-74169	219			5313	5325	11182	11114
79	64	143	GD	-68510	480	-67856	834	-68268	395			6412	5901	9609	9072
78	65	143	TB			-59998	1479	-60309	1024			7858	7958	12221	11793
77	66	143	DY			-50799	2404	-52759	888			9198	7549	10611	9987
76	67	143	HO			-40269	2963	-42566	1994			10529	10193	13497	12600
75	68	143	ER			-27922	3542	-32906	1541			12347	9659	11795	11078
74	69	143	TM			-14559	7065	-20327	6838			13362	12579		
96	48	144	CD			17789	6490	12070	4468	15190	15083			2787	1666
95	49	144	IN			2598	6799	-3013	6325	18072	17042			1529	2358
94	50	144	SN			-15474	4310	-20055	2807	10899	10659			3751	3377
93	51	144	SB			-26374	5287	-30714	3741	13367	11446			2515	3372
92	52	144	TE			-39741	2577	-42161	1517	7991	7322			4894	5060
91	53	144	I			-47732	2862	-49483	1718	10912	9285			3258	3717
90	54	144	XE			-58645	1544	-58769	733	5111	5168			5663	5418
89	55	144	CS	-63930	640	-63757	1540	-63937	826	8227	7854			3719	3830
88	56	144	BA	-72030	290	-71984	938	-71792	395	2833	3064			6011	5899
87	57	144	LA	-74930	320	-74817	481	-74856	327	5575	5578			4657	4632
86	58	144	CE	-80431	6	-80392	161	-80435	86	323	242			6848	6884
85	59	144	PR	-80750	6	-80716	202	-80678	173	2998	3038			5666	5665
84	60	144	ND	-83746	5	-83714	159	-83716	74					7751	7784
83	61	144	PM	-81416	7	-81562	233	-81418	135	469	482	2151	2298	6547	6642
82	62	144	SM	-81964	6	-82032	183	-81901	95					10520	10476
81	63	144	EU	-75636	30	-75531	311	-75184	231			6500	6717	9333	9085
80	64	144	GD	-71940	400	-71491	501	-71766	290			4040	3417	11705	11569
79	65	144	TB			-62058	1459	-61827	829			9433	9939	10130	9588
78	66	144	DY			-55475	1258	-56876	737			6582	4950	12746	12187
77	67	144	HO			-43333	3163	-44978	1727			12141	11898	11134	10483
76	68	144	ER			-33874	2845	-37818	1347			9458	7159	14023	12983
75	69	144	TM			-18808	6669	-23830	6333			15066	13938	12319	11574
97	48	145	CD			25061	8855	18463	4786	17283	15232			799	1679
96	49	145	IN			7778	6060	3230	6830	16817	17653			2891	1828
95	50	145	SN			-9039	5648	-14422	3064	13123	11735			1636	2439

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
94	51	145	SB			-22162	4575	-26158	4131	12133	11333	3859	3516
93	52	145	TE			-34295	4112	-37491	1716	10372	9080	2625	3402
92	53	145	I			-44667	2618	-46572	1991	9279	7868	5007	5161
91	54	145	XE			-53947	2000	-54438	874	7518	6992	3373	3741
90	55	145	CS	-61720	650	-61465	1295	-61431	1002	6284	6197	5780	5565
89	56	145	BA	-67820	520	-67750	1205	-67629	518	5126	5227	3837	3909
88	57	145	LA	-72920	310	-72876	783	-72857	464	4223	4239	6131	6072
87	58	145	CE	-77120	90	-77100	223	-77096	151	2516	2526	4779	4732
86	59	145	PR	-79625	11	-79616	186	-79622	101	1816	1765	6971	7016
85	60	145	ND	-81430	5	-81433	165	-81387	147			5790	5743
84	61	145	PM	-81270	6	-81367	218	-81295	106			7876	7949
83	62	145	SM	-80656	6	-80634	165	-80605	93		65 91	6674	6775
82	63	145	EU	-77936	16	-78109	306	-77725	215		732 690	10648	10612
81	64	145	GD	-72940	380	-72882	457	-72825	219		2525 2879	9462	9129
80	65	145	TB	-66240	550	-65822	911	-65486	482		5226 4900	11835	11730
79	66	145	DY			-57665	1449	-58387	614		7060 7338	10261	9581
78	67	145	HO			-48140	1958	-49196	1458		8156 7098	12878	12289
77	68	145	ER			-37070	3292	-40228	1196		9525 9191	11267	10480
76	69	145	TM			-24894	5914	-28816	5838		11069 8967	14157	13057
75	70	145	YB			-10683	5335	-17897	3335		12176 11411		
											14211 10919		
97	49	146	IN			14562	8216	9184	7362	18914	17942	1287	2117
96	50	146	SN			-4352	4865	-8757	3319	11867	12218	3385	2406
95	51	146	SB			-16219	5703	-20975	4548	14361	12461	2128	2889
94	52	146	TE			-30581	3297	-33437	1908	9137	8906	4357	4017
93	53	146	I			-39718	3905	-42343	2295	11665	9626	3122	3842
92	54	146	XE			-51383	1683	-51969	1014	5883	5594	5508	5602
91	55	146	CS			-57266	1768	-57564	1227	8696	8062	3873	4204
90	56	146	BA	-65560	550	-65963	1038	-65627	605	3183	3588	6285	6069
89	57	146	LA	-69460	530	-69146	1010	-69216	639	6520	6402	4341	4430
88	58	146	CE	-75750	120	-75667	502	-75618	226	1163	1165	6639	6594
87	59	146	PR	-76840	100	-76830	250	-76784	209	4013	4050	5286	5233
86	60	146	ND	-80923	5	-80844	158	-80835	75			7483	7519
85	61	146	PM	-79442	8	-79596	232	-79479	176	1357	1490	6300	6255
84	62	146	SM	-80984	8	-80953	158	-80969	77		1248 1356	8389	8435
83	63	146	EU	-77111	11	-77223	303	-77011	221			7186	7357
82	64	146	GD	-75910	260	-75976	368	-75822	151		3729 3958	11164	11067
81	65	146	TB	-67810	550	-67728	853	-67071	356		1247 1189	9976	9655
80	66	146	DY			-61948	940	-62461	489		8248 8750	12353	12145
79	67	146	HO			-50847	2103	-51185	1223		5779 4609	10777	10060
78	68	146	ER			-42397	1803	-44828	1023		11100 11276	13397	12670
											8449 6356		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
77	69	146	TM			-28607	5985	-31694	5372			13789	13133	11784	10948
76	70	146	YB			-17290	4441	-23255	3065			11317	8439	14677	13428
97	50	147	SN			2327	6898	-2885	3595	13966	12599			1392	2200
96	51	147	SB			-11638	5266	-15485	4976	13107	12809			3491	2581
95	52	147	TE			-24746	4345	-28294	2125	11367	10134			2237	2929
94	53	147	I			-36114	3391	-38429	2606	10432	9319			4468	4157
93	54	147	XE			-46546	2941	-47748	1132	8271	7454			3235	3851
92	55	147	CS			-54818	1638	-55203	1460	7063	6604			5623	5710
91	56	147	BA			-61881	1312	-61807	735	5596	5581			3990	4252
90	57	147	LA	-67540	520	-67477	999	-67388	797	4579	4689			6403	6244
89	58	147	CE	-72240	320	-72056	637	-72077	324	3462	3381			4461	4531
88	59	147	PR	-75440	200	-75519	386	-75459	321	2662	2637			6760	6746
87	60	147	ND	-78144	5	-78181	221	-78096	91	950	994			5408	5333
86	61	147	PM	-79040	5	-79131	218	-79090	105	175	123			7607	7683
85	62	147	SM	-79265	5	-79307	164	-79213	148					6425	6316
84	63	147	EU	-77535	8	-77668	292	-77538	202			1638	1675	8516	8597
83	64	147	GD	-75207	26	-75218	166	-75236	106			2450	2301	7313	7486
82	65	147	TB	-70510	380	-70950	689	-70233	234			4267	5003	11293	11233
81	66	147	DY	-64210	620	-63983	1000	-64055	394			6967	6178	10106	9664
80	67	147	HO			-55260	1507	-55387	996			8723	8668	12483	12272
79	68	147	ER			-45235	2201	-46803	880			10024	8583	10908	10046
78	69	147	TM			-34066	4801	-36373	4916			11169	10430	13529	12749
77	70	147	YB			-21136	4959	-26124	2822			12930	10248	11916	10940
76	71	147	LU			-7154	6250	-13529	5856			13981	12495		
97	51	148	SB			-5444	6970	-10059	5430	15212	13277			1877	2645
96	52	148	TE			-20656	3802	-23337	2337	10113	10395			3981	3114
95	53	148	I			-30769	4281	-33732	2948	12667	10577			2726	3375
94	54	148	XE			-43436	2342	-44309	1343	7037	7115			4962	4632
93	55	148	CS			-50474	2689	-51424	1726	9455	8479			3728	4293
92	56	148	BA			-59929	1196	-59904	866	3962	4149			6120	6169
91	57	148	LA			-63892	1247	-64054	1219	6996	6716			4486	4737
90	58	148	CE	-70710	320	-70888	622	-70770	385	1519	1643			6903	6764
89	59	148	PR	-72510	260	-72408	530	-72413	474	4965	4873			4961	5026
88	60	148	ND	-77407	5	-77373	160	-77287	112					7264	7263
87	61	148	PM	-76870	10	-76970	275	-76878	132	2378	2426	402	408	5911	5860
86	62	148	SM	-79335	5	-79348	158	-79305	74					8112	8162
85	63	148	EU	-76235	22	-76527	302	-76286	246			2821	3018	6930	6820
84	64	148	GD	-76258	6	-76172	158	-76240	88			355	45	9024	9074
83	65	148	TB	-70640	80	-70699	381	-70255	164			5472	5985	7820	8092

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
82	66	148	DY	-67770	490	-67716	811	-67633	299			2982	2622	11804	11648
81	67	148	HO			-57804	1799	-57469	804			9912	10163	10615	10153
80	68	148	ER			-50161	1473	-51408	735			7643	6061	12996	12675
79	69	148	TM			-37414	4788	-38798	4484			12746	12609	11419	10496
78	70	148	YB			-27108	3349	-31174	2573			10306	7624	14043	13120
77	71	148	LU			-11511	6617	-16936	5391			15596	14237	12428	11377
98	51	149	SB			-591	6019	-4093	5899	13977	13858			3218	2106
97	52	149	TE			-14568	5470	-17952	2573	12219	10997			1984	2687
96	53	149	I			-26788	4017	-28950	3297	11414	10681			4090	3290
95	54	149	XE			-38202	3152	-39632	1529	9274	8500			2837	3394
94	55	149	CS			-47477	2330	-48133	1999	8223	8024			5074	4780
93	56	149	BA			-55700	2120	-56157	1022	6356	6129			3842	4325
92	57	149	LA			-62057	1310	-62287	1454	5364	5217			6236	6305
91	58	149	CE	-67470	410	-67421	776	-67505	494	3938	3756			4604	4806
90	59	149	PR	-71370	200	-71359	637	-71261	613	3024	3080			7023	6919
89	60	149	ND	-74374	5	-74383	170	-74342	144	1901	1911			5081	5126
88	61	149	PM	-76063	6	-76285	219	-76253	134	1026	922			7386	7446
87	62	149	SM	-77135	5	-77311	221	-77176	87					6035	5942
86	63	149	EU	-76439	7	-76694	292	-76539	198			617	636	8237	8324
85	64	149	GD	-75131	7	-75157	165	-75045	156			1537	1493	7056	6877
84	65	149	TB	-71434	16	-71780	373	-71452	133			3376	3593	9152	9267
83	66	149	DY	-67530	380	-67593	443	-67749	221			4186	3702	7949	8187
82	67	149	HO	-61530	610	-61666	1134	-61180	620			5927	6568	11933	11781
81	68	149	ER			-52835	2014	-53493	617			8831	7687	10745	10155
80	69	149	TM			-42471	4103	-43509	4069			10364	9983	13127	12781
79	70	149	YB			-30588	3764	-33580	2344			11882	9928	11550	10477
78	71	149	LU			-17616	5009	-22040	4934			12972	11540	14175	13174
77	72	149	HF			-2950	6120	-11645	4786			14665	10394		
98	52	150	TE			-10197	4354	-12518	2810	10984	11489			3701	2638
97	53	150	I			-21181	5421	-24008	3675	13525	11348			2465	3129
96	54	150	XE			-34707	2801	-35357	1710	8020	8546			4577	3796
95	55	150	CS			-42728	3019	-43903	2301	10465	9455			3323	3842
94	56	150	BA			-53193	1774	-53358	1173	5123	5646			5565	5272
93	57	150	LA			-58317	2035	-59004	1718	7762	7208			4331	4789
92	58	150	CE			-66079	810	-66213	605	2304	2241			6730	6779
91	59	150	PR	-68680	360	-68384	815	-68454	799	5447	5248			5096	5265
90	60	150	ND	-73682	6	-73831	161	-73703	89		127			7519	7433
89	61	150	PM	-73550	80	-73790	235	-73830	169	3335	3214	40		5577	5648
88	62	150	SM	-77049	5	-77125	159	-77045	107					7885	7941

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
87	63	150	EU	-74756	11	-75155	336	-74929	212	670	839	1970	2115	6532	6462
86	64	150	GD	-75765	11	-75825	158	-75769	79					8739	8794
85	65	150	TB	-71098	11	-71265	380	-70786	196			4559	4983	7556	7405
84	66	150	DY	-69140	260	-69178	341	-69382	145			2086	1403	9655	9704
83	67	150	HO	-62040	540	-62045	754	-61865	465			7132	7517	8450	8755
82	68	150	ER	-57940	910	-57202	1339	-57606	500			4842	4258	12438	12184
81	69	150	TM			-45648	4191	-46055	3677			11554	11551	11248	10616
80	70	150	YB			-36151	2900	-38682	2120			9497	7372	13634	13173
79	71	150	LU			-21601	5269	-24867	4503			14550	13815	12055	10397
78	72	150	HF			-9563	4085	-17062	4467			12037	7804	14683	13487
77	73	150	TA			7494	9908	-1022	9681			17057	16039		
99	52	151	TE			-3840	6660	-6120	3104	13077	12635			1715	1673
98	53	151	I			-16918	4707	-18755	4067	12292	11680			3808	2819
97	54	151	XE			-29210	4162	-30435	1914	10133	9376			2575	3150
96	55	151	CS			-39344	2889	-39812	2612	9213	9359			4688	3980
95	56	151	BA			-48557	2346	-49171	1348	7366	7209			3436	3884
94	57	151	LA			-55924	1929	-56380	1992	6531	6603			5679	5447
93	58	151	CE			-62455	1440	-62983	739	4704	4294			4448	4842
92	59	151	PR	-67440	310	-67160	971	-67278	995	3815	3688			6848	6895
91	60	151	ND	-70945	6	-70975	169	-70966	108	2383	2412			5216	5334
90	61	151	PM	-73386	11	-73359	220	-73378	118	1393	1326			7640	7620
89	62	151	SM	-74574	5	-74753	169	-74705	130	339	275			5699	5731
88	63	151	EU	-74650	5	-75092	292	-74980	212					8029	8121
87	64	151	GD	-74168	9	-74410	221	-74237	89			681	742	6657	6540
86	65	151	TB	-71608	8	-72059	372	-71701	122			2351	2536	8864	8986
85	66	151	DY	-68601	27	-68790	165	-68739	170			3269	2962	7683	7428
84	67	151	HO	-63440	370	-63758	583	-63659	317			5031	5079	9783	9865
83	68	151	ER	-58200	740	-57710	986	-58379	398			6047	5280	8578	8844
82	69	151	TM	-50800	1390	-50145	1739	-50280	1730			7564	8099	12568	12296
81	70	151	YB			-39459	3444	-41225	1914			10686	9054	11378	10613
80	71	151	LU			-27294	4324	-30050	4087			12164	11175	13764	13254
79	72	151	HF			-13679	4781	-19817	4165			13615	10233	12187	10825
78	73	151	TA			749	8198	-6528	9072			14429	13288	14815	13577
77	74	151	W			16859	8260	7373	5793			16109	13901		
99	53	152	I			-11036	6638	-12839	4506	14390	12848			2189	2156
98	54	152	XE			-25426	3310	-25688	2120	8899	9646			4287	3324
97	55	152	CS			-34325	4032	-35334	2952	11330	10269			3053	3594
96	56	152	BA			-45656	2202	-45604	1519	5113	7059			5170	4504
95	57	152	LA			-51770	2417	-52663	2294	8779	8205			3918	4354

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
94	58	152	CE			-60549	1298	-60868	870	3472	3618			6165	5956
93	59	152	PR			-64022	1611	-64487	1220	6219	5771			4933	5281
92	60	152	ND	-70146	31	-70241	161	-70258	97	750	868			7337	7364
91	61	152	PM	-71290	130	-70991	376	-71127	224	3822	3617			5704	5820
90	62	152	SM	-74761	5	-74814	161	-74744	79					8131	8110
89	63	152	EU	-72884	5	-73210	304	-73155	232	1632	1618	1603	1589	6190	6246
88	64	152	GD	-74703	6	-74842	159	-74773	109					8503	8606
87	65	152	TB	-70853	16	-71138	408	-70714	141			3704	4058	7150	7085
86	66	152	DY	-70116	8	-70081	158	-70085	89			1056	629	9361	9417
85	67	152	HO	-63710	80	-63865	268	-63507	255			6216	6577	8177	7919
84	68	152	ER	-60410	610	-59922	784	-60598	300			3943	2908	10282	10290
83	69	152	TM	-51810	1190	-51150	1392	-51595	1474			8771	9003	9075	9385
82	70	152	YB			-44457	2603	-45843	1713			6693	5751	13068	12688
81	71	152	LU			-31101	4723	-33024	3695			13355	12818	11877	11045
80	72	152	HF			-19875	3620	-25334	3870			11226	7690	14266	13588
79	73	152	TA			-3865	8402	-9733	8486			16009	15601	12686	11275
78	74	152	W			9612	6015	1447	5442			13477	11180	15318	13997
100	53	153	I			-6295	5673	-6984	4917	13355	12856			3331	2216
99	54	153	XE			-19651	5232	-19841	2384	10999	10934			2296	2224
98	55	153	CS			-30650	3513	-30776	3304	10098	10394			4397	3513
97	56	153	BA			-40749	3225	-41170	1713	8233	8136			3164	3638
96	57	153	LA			-48982	2478	-49307	2607	7527	7908			5283	4715
95	58	153	CE			-56510	1687	-57215	1024	5721	5311			4032	4419
94	59	153	PR			-62232	1697	-62527	1456	4988	4994			6282	6111
93	60	153	ND	-67360	290	-67220	440	-67521	170	3155	3045			5051	5334
92	61	153	PM	-70760	100	-70376	220	-70566	327	2190	1978			7456	7511
91	62	153	SM	-72557	5	-72567	168	-72545	94	826	834			5824	5872
90	63	153	EU	-73363	6	-73393	293	-73379	200					8253	8295
89	64	153	GD	-73119	6	-73084	170	-73026	130			309	352	6313	6325
88	65	153	TB	-71329	9	-71694	373	-71462	140			1389	1564	8627	8818
87	66	153	DY	-69155	8	-69285	221	-69142	97			2409	2319	7275	7129
86	67	153	HO	-64954	34	-65282	257	-65013	114			4002	4128	9488	9577
85	68	153	ER	-60310	450	-60155	443	-60462	267			5126	4551	8304	7935
84	69	153	TM	-53870	1030	-53490	1094	-53953	1232			6665	6509	10410	10429
83	70	153	YB	-47210	1180	-45590	2303	-47240	1525			7899	6712	9204	9468
82	71	153	LU			-36223	3789	-37728	3319			9362	9512	13198	12775
81	72	153	HF			-23811	4462	-28253	3590			12416	9475	12007	10989
80	73	153	TA			-10191	7315	-15366	7917			13619	12886	14397	13704
79	74	153	W			4865	6804	-1798	5109			15057	13568	12817	11317
78	75	153	RE			20919	8601	13323	9212			16054	15122		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
100	54	154	XE			-15383	4120	-14487	2580	9964	10927			3803	2717
99	55	154	CS			-25347	5118	-25414	3704	12202	11720			2768	2710
98	56	154	BA			-37550	2678	-37135	1909	6999	8205			4872	4036
97	57	154	LA			-44550	3307	-45340	2946	9651	9059			3639	4105
96	58	154	CE			-54201	1694	-54400	1175	4469	4918			5763	5256
95	59	154	PR			-58671	2047	-59318	1719	7241	6746			4510	4863
94	60	154	ND			-65912	554	-66064	219	1923	2230			6764	6615
93	61	154	PM	-68450	100	-67836	277	-68295	477	4600	4137			5532	5800
92	62	154	SM	-72454	5	-72437	160	-72432	83					7942	7958
91	63	154	EU	-71726	7	-71630	303	-71658	216	2124	2074	806	773	6308	6351
90	64	154	GD	-73704	5	-73754	161	-73733	76					8741	8777
89	65	154	TB	-70240	50	-70421	382	-70255	170		79	3332	3477	6799	6865
88	66	154	DY	-70392	12	-70331	159	-70334	116			90		9117	9253
87	67	154	HO	-64635	12	-64974	306	-64578	134			5356	5756	7764	7636
86	68	154	ER	-62440	330	-62065	341	-62387	151			2909	2190	9980	9995
85	69	154	TM	-54530	810	-54214	739	-54280	1027			7850	8106	8795	8398
84	70	154	YB	-50050	1040	-48423	1955	-50013	1344			5790	4267	10904	10843
83	71	154	LU			-37853	3673	-39637	2965			10570	10375	9696	9980
82	72	154	HF			-29433	3320	-33291	3317			8419	6345	13693	13109
81	73	154	TA			-14621	7640	-18746	7371			14812	14544	12500	11450
80	74	154	W			-1957	5447	-7873	4783			12664	10872	14893	14146
79	75	154	RE			15578	9147	9628	8626			17635	17502	13311	11766
101	54	155	XE			-9331	6470	-9347	2880	11855	10903			2019	2932
100	55	155	CS			-21186	4395	-20250	4078	11169	11614			3911	2908
99	56	155	BA			-32355	4167	-31865	2155	9106	9655			2877	2802
98	57	155	LA			-41462	3089	-41521	3299	8419	8977			4984	4252
97	58	155	CE			-49882	2431	-50499	1348	6594	6194			3752	4171
96	59	155	PR			-56476	2231	-56693	1993	5991	6226			5877	5447
95	60	155	ND			-62467	826	-62920	315	4178	4104			4626	4927
94	61	155	PM	-67100	290	-66646	420	-67025	630	3369	3171			6882	6802
93	62	155	SM	-70196	5	-70016	225	-70196	107	1604	1493			5651	5836
92	63	155	EU	-71825	6	-71620	293	-71690	205	492	369			8062	8103
91	64	155	GD	-72071	5	-72113	168	-72060	89					6430	6399
90	65	155	TB	-71256	15	-71215	374	-71177	114			897	883	8864	8992
89	66	155	DY	-69157	13	-69182	170	-69172	144			2032	2004	6923	6909
88	67	155	HO	-66055	24	-66146	258	-65950	135			3036	3222	9242	9443
87	68	155	ER	-62057	27	-61883	222	-61989	117			4262	3961	7890	7673
86	69	155	TM	-56450	600	-56250	569	-56344	813			5633	5645	10107	10134
85	70	155	YB	-50450	880	-49275	1645	-50351	1188			6974	5992	8922	3409
84	71	155	LU	-42600	1290	-40815	2739	-42524	2627			8460	7826	11032	10958

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
83	72	155	HF			-31188	3431	-35231	3057			9627	7293	9825	10010
82	73	155	TA			-20373	6558	-23907	6841			10814	11323	13823	13231
81	74	155	W			-6517	6378	-11311	4472			13856	12596	12630	11508
80	75	155	RE			8724	7733	3432	8057			15242	14743	15024	14267
79	76	155	OS			25524	8514	19699	6140			16799	16267		
101	55	156	CS			-15599	6374	-15529	4524	13065	11691			2484	3350
100	56	156	BA			-28664	3409	-27220	2347	8071	9539			4380	3427
99	57	156	LA			-36735	4277	-36760	3692	10530	10460			3345	3310
98	58	156	CE			-47266	2137	-47220	1523	5362	6013			5456	4792
97	59	156	PR			-52628	2809	-53234	2293	8120	7596			4223	4612
96	60	156	ND			-60749	860	-60830	393	2927	3521			6353	5982
95	61	156	PM			-63676	784	-64352	818	5628	5056			5101	5399
94	62	156	SM	-69368	14	-69304	164	-69408	96	372	504			7360	7283
93	63	156	EU	-70083	11	-69676	338	-69913	224	2907	2617			6128	6294
92	64	156	GD	-72536	5	-72584	161	-72530	76					8542	8541
91	65	156	TB	-70098	7	-70053	381	-70008	137	406	528	2531	2522	6910	6903
90	66	156	DY	-70527	9	-70459	161	-70537	82					9347	9435
89	67	156	HO	-65430	240	-65479	487	-65290	238			4980	5246	7405	7412
88	68	156	ER	-63930	260	-63540	501	-63794	390			1939	1496	9727	9376
87	69	156	TM	-56940	80	-56552	291	-56426	639			6987	7368	8373	8153
86	70	156	YB	-53060	810	-51799	1420	-52823	1018			4753	3603	10594	10542
85	71	156	LU	-43810	1130	-42152	2384	-43297	2318			9646	9525	9408	8844
84	72	156	HF			-34638	2582	-38475	2804			7514	4822	11521	11314
83	73	156	TA			-22615	6409	-26389	6333			12023	12086	10312	10552
82	74	156	W			-12759	5025	-16914	4169			9855	9474	14313	13674
81	75	156	RE			3677	8431	-466	7511			16436	16448	13118	11969
80	76	156	OS			18080	6850	13029	5783			14403	13495	15515	14740
102	55	157	CS			-11071	5118	-10111	4951	12112	12418			3544	2653
101	56	157	BA			-23184	5276	-22529	2627	9969	9804			2592	3380
100	57	157	LA			-33153	3906	-32333	4071	9497	10239			4489	3645
99	58	157	CE			-42651	3244	-42572	1745	7474	7578			3457	3424
98	59	157	PR			-50125	2826	-50151	2608	6889	7286			5569	4989
97	60	157	ND			-57015	1435	-57437	505	5057	5048			4338	4678
96	61	157	PM			-62073	918	-62486	1012	4378	4297			6469	6206
95	62	157	SM	-66860	200	-66451	349	-66783	167	2632	2526			5218	5446
94	63	157	EU	-69465	16	-69084	295	-69309	214	1676	1476			7479	7468
93	64	157	GD	-70825	5	-70761	225	-70786	92					6248	6327
92	65	157	TB	-70767	6	-70646	374	-70654	113			114	131	8663	8717
91	66	157	DY	-69425	9	-69420	168	-69382	95			1225	1272	7032	6916

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
90	67	157	HO	-66890	50	-66879	259	-66839	106			2540	2543	9471	9619
89	68	157	ER	-63090	370	-62998	637	-63173	322			3881	3665	7529	7450
88	69	157	TM	-58490	490	-58334	789	-58390	486			4663	4783	9853	10035
87	70	157	YB	-53270	760	-52227	1165	-52937	872			6107	5452	8499	8185
86	71	157	LU	-46470	1030	-44803	2052	-45883	2012			7424	7054	10721	10656
85	72	157	HF	-38960	1420	-36104	2303	-39207	2571			8699	6675	9536	8802
84	73	157	TA			-26194	5571	-29783	5842			9910	9423	11650	11464
83	74	157	W			-15129	5219	-19540	3877			11064	10243	10441	10696
82	75	157	RE			-2694	7009	-6195	6982			12435	13344	14442	13800
81	76	157	OS			12902	8046	9036	5441			15597	15232	13248	12064
80	77	157	IR			29931	9842	25014	14453			17028	15978		
102	56	158	BA			-19118	3952	-17606	2862	9016	10475			4006	3149
101	57	158	LA			-28135	5413	-28082	4509	11399	10599			3053	3821
100	58	158	CE			-39534	2787	-38681	1919	6440	7304			4955	4181
99	59	158	PR			-45975	3661	-45986	2961	9005	8902			3921	3907
98	60	158	ND			-54981	1217	-54889	614	3825	4671			6038	5523
97	61	158	PM			-58807	1376	-59561	1236	6513	5869			4806	5146
96	62	158	SM			-65320	417	-65430	215	1381	1718			6940	6719
95	63	158	EU	-67240	80	-66701	395	-67148	239	3941	3506			5689	5910
94	64	158	GD	-70691	5	-70642	164	-70655	81					7953	7941
93	65	158	TB	-69475	6	-69295	410	-69393	136	1194	1033	1346	1261	6721	6811
92	66	158	DY	-70410	6	-70489	161	-70427	77					9140	9115
91	67	158	HO	-66433	8	-66315	270	-66150	130			4174	4276	7508	7383
90	68	158	ER	-65030	260	-64877	343	-65153	209			1438	997	9950	10050
89	69	158	TM	-58430	680	-58270	959	-58245	383			6607	6907	8007	7927
88	70	158	YB	-55530	700	-54490	1155	-55325	741			3779	2920	10334	10458
87	71	158	LU	-47230	990	-45711	1734	-46448	1736			8779	8876	8978	8636
86	72	158	HF	-42220	1340	-39237	1955	-42143	2333			6473	4304	11204	11007
85	73	158	TA			-28140	5326	-30980	5375			11097	11163	10017	9267
84	74	158	W			-19192	4189	-23398	3594			8947	7581	12133	11929
83	75	158	RE			-5546	7077	-9363	6473			13645	14035	10923	11238
82	76	158	OS			6046	6377	2831	5106			11593	12194	14927	14275
81	77	158	IR			24270	10716	20580	13714			18224	17748	13701	12505
103	56	159	BA			-13353	5525	-12503	3222	10824	10856			2306	2968
102	57	159	LA			-24177	4618	-23360	4940	10448	11122			4114	3349
101	58	159	CE			-34626	4221	-34482	2173	8344	7810			3163	3872
100	59	159	PR			-42970	3576	-42293	3303	7974	8544			5066	4379
99	60	159	ND			-50944	2106	-50838	791	5943	6403			4034	4020
98	61	159	PM			-56888	1362	-57241	1472	5282	5313			6152	5752

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
97	62	159	SM			-62170	816	-62555	306	3517	3462			4921	5196
96	63	159	EU	-65930	50	-65687	297	-66018	228	2690	2520			7058	6941
95	64	159	GD	-68562	6	-68378	304	-68538	104	918	940			5808	5954
94	65	159	TB	-69536	6	-69297	375	-69478	116					8072	8155
93	66	159	DY	-69171	6	-69260	225	-69164	90			36	313	6842	6809
92	67	159	HO	-67318	11	-67507	259	-67339	96			1753	1824	9262	9259
91	68	159	ER	-64390	100	-64436	169	-64472	155			3070	2867	7631	7391
90	69	159	TM	-60190	510	-60273	570	-60386	237			4163	4086	10074	10212
89	70	159	YB	-55290	680	-54551	1386	-55213	634			5722	5173	8131	7960
88	71	159	LU	-49490	890	-48100	1651	-48970	1479			6451	6243	10460	10592
87	72	159	HF	-42800	1280	-40271	1681	-42690	2114			7828	6280	9105	8617
86	73	159	TA			-31400	4688	-34066	4919			8871	8623	11331	11157
85	74	159	W			-21266	4211	-24667	3329			10133	9398	10145	9339
84	75	159	RE			-9738	5959	-13376	5982			11528	11290	12262	12084
83	76	159	OS			3064	6751	-516	4783			12802	12859	11052	11419
82	77	159	IR			17284	9022	14263	12992			14219	14780	15057	14387
104	56	160	BA			-8896	4552	-7691	3384	9970	11017			3615	3259
103	57	160	LA			-18866	5891	-18709	5449	12260	11564			2761	3420
102	58	160	CE			-31127	3298	-30273	2393	7392	8236			4573	3863
101	59	160	PR			-38519	4673	-38510	3700	9881	9166			3621	4288
100	60	160	ND			-48401	1773	-47676	886	4910	6024			5528	4910
99	61	160	PM			-53312	2052	-53700	1750	7404	7048			4496	4531
98	62	160	SM			-60716	727	-60748	391	2285	2854			6617	6265
97	63	160	EU	-63540	340	-63002	617	-63603	335	4830	4307			5386	5657
96	64	160	GD	-67943	5	-67833	167	-67911	91					7526	7445
95	65	160	TB	-67840	6	-67500	458	-67851	143	2232	1831	332	60	6274	6444
94	66	160	DY	-69674	6	-69732	164	-69683	77					8543	8589
93	67	160	HO	-66388	16	-66747	308	-66524	123			2985	3158	7311	7256
92	68	160	ER	-66052	29	-66101	162	-66049	88			646	475	9735	9647
91	69	160	TM	-60130	60	-60304	253	-60146	186			5796	5902	8101	7832
90	70	160	YB	-57550	560	-57029	941	-57776	496			3274	2370	10549	10633
89	71	160	LU	-49930	850	-48633	1883	-49305	1253			8395	8470	8604	8406
88	72	160	HF	-45750	1190	-43137	1689	-45577	1907			5496	3727	10936	10958
87	73	160	TA	-35780	1700	-32909	3380	-35094	4488			10227	10483	9580	9098
86	74	160	W			-25004	3459	-28212	3060			7904	6881	11809	11616
85	75	160	RE			-12288	5874	-15109	5516			12716	13103	10620	9804
84	76	160	OS			-1605	5447	-5027	4469			10682	10082	12741	12581
83	77	160	IR			13825	9212	10393	12290			15431	15420	11529	11941
82	78	160	PT			26944	7373	25306	5780			13118	14913		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT SHELL	LINEAR SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
104	57	161	LA			-14516	5400	-14066	5868	11408	11623			3721	3429
103	58	161	CE			-25924	4489	-25689	2727	9206	8791			2869	3488
102	59	161	PR			-35130	4276	-34481	4094	8931	9463			4683	4043
101	60	161	ND			-44061	2945	-43945	1095	6820	6824			3732	4340
100	61	161	PM			-50881	1963	-50769	2013	6372	6535			5641	5140
99	62	161	SM			-57254	1356	-57305	544	4408	4718			4610	4628
98	63	161	EU			-61663	624	-62024	442	3600	3519			6733	6492
97	64	161	GD	-65507	6	-65264	294	-65543	116	1808	1934			5503	5703
96	65	161	TB	-67466	6	-67072	376	-67477	124	982	588			7644	7698
95	66	161	DY	-68056	6	-68055	304	-68065	91					6394	6454
94	67	161	HO	-67203	6	-67340	261	-67226	95			714	839	8663	8773
93	68	161	ER	-65197	12	-65463	226	-65226	104			1877	2000	7433	7249
92	69	161	TM	-61680	290	-62091	436	-61845	215			3371	3380	9858	9770
91	70	161	YB	-57400	450	-57183	628	-57539	400			4907	4306	8225	7834
90	71	161	LU	-52080	720	-51236	1326	-52005	1019			5947	5533	10673	10771
89	72	161	HF	-46130	1110	-43796	2135	-45894	1719			7440	6111	8729	8387
88	73	161	TA	-38840	1590	-35901	3183	-38151	4076			7894	7742	11062	11128
87	74	161	W			-26640	3384	-29334	2811			9260	8817	9706	9192
86	75	161	RE			-16154	5017	-18809	5060			10486	10524	11936	11770
85	76	161	OS			-4284	5607	-6870	4173			11870	11938	10749	9913
84	77	161	IR			9026	7854	5742	11607			13310	12612	12870	12722
83	78	161	PT			23356	8034	21226	5436			14330	15483	11658	12151
105	57	162	LA			-8847	7218	-8780	6412	13179	12743			2403	2786
104	58	162	CE			-22026	3864	-21524	2873	8352	8800			4174	3906
103	59	162	PR			-30379	5209	-30324	4563	10749	10100			3320	3915
102	60	162	ND			-41128	2196	-40424	1260	5868	7056			5138	4551
101	61	162	PM			-46997	2894	-47481	2334	8285	7402			4187	4784
100	62	162	SM			-55283	1196	-54883	621	3376	4200			6100	5650
99	63	162	EU			-58659	1127	-59084	618	5727	5384			5003	5132
98	64	162	GD	-64360	120	-64387	252	-64468	150	577	1128			7195	6996
97	65	162	TB	-65760	70	-64964	451	-65596	156	3127	2560			5963	6190
96	66	162	DY	-68181	6	-68091	167	-68157	79					8107	8162
95	67	162	HO	-66047	7	-66125	370	-66062	119	396	287	1966	2094	6857	6908
94	68	162	ER	-66335	6	-66522	165	-66350	85					9130	9195
93	69	162	TM	-61540	60	-61918	293	-61443	161			4603	4907	7898	7669
92	70	162	YB	-59340	390	-59439	622	-59615	297			2478	1827	10326	10147
91	71	162	LU	-52340	630	-51857	977	-52179	825			7581	7435	8692	8245
90	72	162	HF	-48760	980	-46869	1474	-46958	1519			4988	3220	11144	11135
89	73	162	TA	-39710	1500	-37028	3410	-38945	3689			9840	10013	9198	8865
88	74	162	W	-34130	1590	-30104	3076	-32865	2572			6924	6079	11534	11602

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
87	75	162	RE			-18260	4845	-20412	4629			11844	12453	10176	9673
86	76	162	OS			-8622	4623	-11062	3874			9637	9350	12409	12262
85	77	162	IR			5877	7859	3454	10946			14500	14516	11220	10359
84	78	162	PT			18083	6357	16053	5101			12206	12599	13343	13243
83	79	162	AU			34293	11268	34517	10937			16209	18464		
105	58	163	CE			-16464	5645	-16321	3223	10125	9987			2509	2868
104	59	163	PR			-26589	5043	-26308	4945	9897	10026			4282	4055
103	60	163	ND			-36487	3147	-36335	1572	7688	7838			3430	3982
102	61	163	PM			-44175	2510	-44173	2656	7336	7457			5250	4764
101	62	163	SM			-51511	2062	-51630	802	5290	5260			4300	4819
100	63	163	EU			-56802	1098	-56891	748	4696	4730			6214	5878
99	64	163	GD			-61499	683	-61621	279	2705	3157			5183	5225
98	65	163	TB	-64680	50	-64204	384	-64778	138	1897	1509			7312	7254
97	66	163	DY	-66382	6	-66101	294	-66288	101	179	86			6081	6202
96	67	163	HO	-66379	6	-66281	263	-66375	94					8227	8383
95	68	163	ER	-65168	7	-65427	304	-65190	93			853	1184	6977	6911
94	69	163	TM	-62770	240	-63098	438	-62730	202			2328	2460	9251	9358
93	70	163	YB	-59170	360	-59388	497	-59200	230			3710	3529	8021	7657
92	71	163	LU	-54370	520	-54236	914	-54354	636			5151	4846	10450	10246
91	72	163	HF	-48770	840	-47614	1153	-49083	1344			6622	5270	8816	8196
90	73	163	TA	-42370	1360	-40226	2693	-42183	3308			7387	6900	11269	11309
89	74	163	W	-34850	1500	-31357	3564	-33754	2353			8869	8428	9324	8959
88	75	163	RE			-21849	4398	-24118	4218			9507	9635	11660	11777
87	76	163	OS			-10855	4644	-12796	3593			10994	11322	10304	9805
86	77	163	IR			1411	6793	-877	10299			12266	11919	12537	12402
85	78	163	PT			14806	6751	13626	4784			13395	14503	11348	10497
84	79	163	AU			28891	9612	29151	10292			14085	15524	13472	13437
106	58	164	CE			-12280	4427	-11827	3397	9192	9716			3888	3577
105	59	164	PR			-21473	6408	-21543	5449	11674	11249			2955	3306
104	60	164	ND			-33147	2678	-32792	1617	6835	7746			4731	4529
103	61	164	PM			-39982	3274	-40538	3056	9159	8271			3879	4437
102	62	164	SM			-49142	1575	-48810	957	4340	5264			5702	5251
101	63	164	EU			-53482	1809	-54075	965	6614	5854			4751	5256
100	64	164	GD			-60097	622	-59930	311	1673	2532			6670	6380
99	65	164	TB	-62110	150	-61770	405	-62462	279	4029	3474			5638	5755
98	66	164	DY	-65967	6	-65799	185	-65936	87					7769	7720
97	67	164	HO	-64937	6	-64748	362	-64956	125	1296	1000	1051	979	6538	6653
96	68	164	ER	-65940	6	-66044	168	-65957	78					8687	8837
95	69	164	TM	-61978	21	-62463	357	-61997	136			3580	3959	7436	7339

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
94	70	164	YB	-60880	270	-61031	505	-60900	154			1431	1096	9714	9770
93	71	164	LU	-54580	520	-54646	784	-54331	488			6384	6569	8481	8048
92	72	164	HF	-51280	760	-50457	1110	-51580	1172			4189	2751	10914	10567
91	73	164	TA	-43080	1200	-41434	2337	-42750	2955			9022	8829	9279	8638
90	74	164	W	-38040	1350	-35021	2736	-37465	2122			6413	5285	11734	11782
89	75	164	RE			-23567	4775	-25484	3832			11454	11980	9788	9437
88	76	164	OS			-14912	4190	-17010	3323			8654	8474	12127	12284
87	77	164	IR			-1287	6679	-3073	9675			13625	13936	10769	10267
86	78	164	PT			9872	5447	8778	4464			11159	11852	13005	12919
85	79	164	AU			25148	9753	26230	9671			15276	17451	11814	10992
106	59	165	PR			-17396	5837	-17201	5874	10742	10908			3994	3730
105	60	165	ND			-28138	4168	-28110	1938	8614	9067			3063	3389
104	61	165	PM			-36752	3125	-37177	3353	8308	8049			4841	4710
103	62	165	SM			-45061	2261	-45226	1246	6164	6238			3990	4488
102	63	165	EU			-51226	1538	-51465	1181	5665	5680			5815	5462
101	64	165	GD			-56891	1253	-57145	460	3592	3884			4866	5287
100	65	165	TB			-60484	688	-61029	352	2998	2649			6785	6639
99	66	165	DY	-63611	6	-63482	217	-63679	164	1081	1151			5754	5814
98	67	165	HO	-64896	6	-64564	274	-64831	100	65				7887	7546
97	68	165	ER	-64518	6	-64630	294	-64545	97				285	6657	6559
96	69	165	TM	-62924	6	-63200	245	-62963	105			1429	1581	8807	9037
95	70	165	YB	-60161	21	-60517	305	-60167	113			2682	2796	7557	7338
94	71	165	LU	-56160	360	-56412	741	-56170	340			4105	3996	9836	9909
93	72	165	HF	-51260	700	-50991	1044	-51492	1020			5421	4677	8604	7984
92	73	165	TA	-45360	1100	-44402	2123	-45381	2617			6588	6111	11038	10701
91	74	165	W	-38670	1180	-36354	2452	-38097	1916			8047	7283	9403	8702
90	75	165	RE			-27356	3843	-29374	3450			8997	8723	11860	11960
89	76	165	OS			-16756	4876	-18508	3073			10600	10865	9914	9569
88	77	165	IR			-5470	6080	-7447	9069			11285	11061	12254	12444
87	78	165	PT			7046	5651	6421	4163			12517	13869	10896	10428
86	79	165	AU			20085	8425	21188	9062			13039	14756	13133	13112
107	59	166	PR			-12049	6967	-13205	6428	12455	11035			2725	4075
106	60	166	ND			-24504	3154	-24240	2016	7681	8720			4438	4202
105	61	166	PM			-32186	4307	-32960	3787	10090	9356			3505	3855
104	62	166	SM			-42277	2010	-42317	1273	5313	6012			5287	5162
103	63	166	EU			-47590	2108	-48330	1500	7494	6684			4436	4936
102	64	166	GD			-55084	941	-55014	606	2642	3693			6264	5941
101	65	166	TB			-57726	1145	-58708	529	4921	4000			5314	5750
100	66	166	DY	-62583	8	-62648	165	-62709	123	49	357			7237	7102

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA	& BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
99	67	166	HO	-63067	6	-62697	302	-63067	171	2202	1806			6205	6308
98	68	166	ER	-64921	6	-64900	185	-64874	80					8341	8400
97	69	166	TM	-61874	13	-62238	349	-61976	130			2661	2897	7110	7084
96	70	166	YB	-61582	9	-61710	169	-61578	90			528	397	9263	9482
95	71	166	LU	-56100	160	-56353	350	-55834	236			5357	5743	8012	7736
94	72	166	HF	-53480	580	-53214	983	-53687	870			3138	2147	10294	10265
93	73	166	TA	-46100	1040	-45392	1968	-45716	2304			7822	7970	9060	8406
92	74	166	W	-41480	1090	-39781	2258	-41157	1713			5610	4559	11498	11131
91	75	166	RE			-29147	3739	-30448	3098			10633	10708	9862	9145
90	76	166	OS			-21006	3799	-22904	2811			8140	7543	12321	12466
89	77	166	IR			-7773	6583	-9405	8488			13232	13499	10374	10028
88	78	166	PT			2400	5006	1515	3873			10174	10920	12717	12977
87	79	166	AU			16799	8410	18320	8476			14399	16804	11357	10939
107	60	167	ND			-19265	4329	-20263	2383	9395	9013			2832	4094
106	61	167	PM			-28661	3764	-29276	4127	9159	8890			4546	4388
105	62	167	SM			-37820	3148	-38167	1570	7096	7433			3615	3921
104	63	167	EU			-44917	2048	-45600	1645	6643	6326			5399	5342
103	64	167	GD			-51561	1427	-51926	875	4472	4892			4548	4983
102	65	167	TB			-56033	1063	-56819	723	3972	3566			6378	6183
101	66	167	DY			-60005	597	-60386	230	1973	1939			5429	5748
100	67	167	HO	-62316	21	-61979	261	-62325	130	1171	838			7354	7329
99	68	167	ER	-63286	6	-63151	218	-63164	143					6323	6362
98	69	167	TM	-62537	6	-62627	257	-62510	101			525	654	8460	8604
97	70	167	YB	-60583	7	-60869	295	-60591	108			1758	1918	7230	7085
96	71	167	LU	-57450	70	-57666	235	-57421	134			3202	3170	9384	9657
95	72	167	HF	-53150	430	-53277	569	-53299	735			4389	4122	8133	7683
94	73	167	TA	-47950	910	-47738	1754	-48085	2005			5538	5213	10417	10439
93	74	167	W	-41950	1030	-40894	2211	-41541	1530			6843	6543	9184	8455
92	75	167	RE	-34650	1290	-32699	2961	-33647	2759			8195	7894	11622	11270
91	76	167	OS			-22922	3865	-24080	2573			9776	9566	9987	9247
90	77	167	IR			-12150	5429	-13964	7916			10772	10116	12447	12530
89	78	167	PT			-28	6027	-603	3603			12121	13360	10500	10.90
88	79	167	AU			12026	7625	13200	7910			12055	13803	12843	13190
87	80	167	HG			25585	6451	28008	5434			13558	14808		
108	60	168	ND			-15442	3739	-16331	2459	8414	9365			4249	4139
107	61	168	PM			-23857	4705	-25697	4611	10877	9237			3268	4492
106	62	168	SM			-34735	2442	-34934	1629	6165	6975			4986	4839
105	63	168	EU			-40900	2986	-41909	1991	8430	7731			4055	4380
104	64	168	GD			-49331	1316	-49641	856	3620	4564			5842	5786

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
103	65	168	TB			-52952	1442	-54206	1013	5805	4731			4991	5458
102	66	168	DY			-58758	414	-58937	379	1023	1491			6824	6623
101	67	168	HO	-60270	100	-59782	278	-60429	250	3099	2445			5874	6175
100	68	168	ER	-62985	6	-62881	166	-62874	109					7802	7782
99	69	168	TM	-61306	6	-61326	287	-61267	166	382	303	1555	1606	6770	6829
98	70	168	YB	-61565	7	-61708	186	-61571	87					8910	9050
97	71	168	LU	-57100	80	-57274	341	-56831	241			4433	4740	7679	7481
96	72	168	HF	-55100	320	-55043	350	-55274	605			2231	1556	9837	10046
95	73	168	TA	-48400	790	-48251	1337	-48127	1729			6791	7147	8584	8112
94	74	168	W	-44500	910	-43695	1992	-44375	1348			4556	3751	10871	10904
93	75	168	RE	-35700	1230	-34265	2892	-34455	2447			9429	9920	9637	8878
92	76	168	OS			-26929	3250	-27743	2339			7335	6712	12077	11733
91	77	168	IR			-14520	5398	-15564	7369			12409	12178	10441	9671
90	78	168	PT			-4862	4609	-5693	3319			9658	9870	12904	13161
89	79	168	AU			9142	8328	10572	7369			14004	16266	10955	10698
88	80	168	HG			20354	5547	22380	5103			11211	11808	13301	13699
109	60	169	ND			-9834	5505	-13610	2588	10308	8326			2463	5350
108	61	169	PM			-20142	4508	-21936	4980	9898	9421			4356	4311
107	62	169	SM			-30040	3311	-31358	1967	7884	7502			3377	4495
106	63	169	EU			-37925	2580	-38860	2185	7500	7152			5096	5022
105	64	169	GD			-45426	2179	-46013	1133	5409	6118			4166	4444
104	65	169	TB			-50835	1508	-52132	1105	4955	4205			5955	5997
103	66	169	DY			-55791	739	-56338	624	2858	2852			5105	5472
102	67	169	HO	-58793	21	-58650	261	-59190	321	2150	1778			6939	6833
101	68	169	ER	-60917	6	-60800	183	-60969	150	373	214			5990	6167
100	69	169	TM	-61269	6	-61174	244	-61184	127					7919	7988
99	70	169	YB	-60361	7	-60525	219	-60378	154			648	806	6889	6878
98	71	169	LU	-57881	26	-58233	247	-57991	123			2291	2386	9030	9231
97	72	169	HF	-54530	100	-54771	296	-54634	497			3461	3357	7800	7431
96	73	169	TA	-50030	700	-50139	1043	-50314	1468			4632	4319	9958	10258
95	74	169	W	-44890	770	-44331	1593	-44478	1183			5808	5836	8707	8173
94	75	169	RE	-38130	1090	-37188	2560	-37468	2148			7142	7009	10994	11084
93	76	169	OS	-30550	1440	-28619	3300	-28638	2125			8568	8830	9761	8966
92	77	169	IR			-18651	4668	-19351	6839			9968	9286	12202	11858
91	78	169	PT			-7357	4876	-7425	3061			11294	11926	10566	9802
90	79	169	AU			4183	6888	5254	6833			11540	12690	13029	13378
89	80	169	HG			17343	7058	19611	4790			13160	14346	11081	10840
88	81	169	TL			31274	7135	35320	12982			13931	15709		
110	60	170	ND			-5512	4688	-8270	2809	9451	11243			3750	2732

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
109	61	170	PM			-14964	5905	-19513	5386	11795	8516			2893	5649
108	62	170	SM			-26759	2978	-28029	2030	6904	7646			4790	4743
107	63	170	EU			-33664	3301	-35676	2579	9223	7731			3810	4887
106	64	170	GD			-42888	1689	-43407	1146	4478	5582			5533	5465
105	65	170	TB			-47366	2168	-48990	1419	6747	5678			4602	4929
104	66	170	DY			-54114	727	-54669	556	2007	2360			6395	6403
103	67	170	HO	-56100	200	-56122	444	-57029	553	3988	3131			5543	5910
102	68	170	ER	-60104	6	-60110	166	-60161	301					7382	7263
101	69	170	TM	-59791	6	-59534	261	-59681	165	1283	1056	576	480	6432	6568
100	70	170	YB	-60759	6	-60818	166	-60737	113					8363	8430
99	71	170	LU	-57319	21	-57494	278	-57237	195			3323	3500	7332	7317
98	72	170	HF	-56120	250	-56177	621	-56183	387			1316	1053	9476	9620
97	73	170	TA	-50120	670	-50313	884	-50100	1234			5864	6082	8244	7858
96	74	170	W	-46920	710	-46667	1286	-47162	1022			3645	2938	10407	10755
95	75	170	RE	-38920	950	-38271	2129	-38001	1873			8395	9161	9154	8603
94	76	170	OS	-33530	1300	-31993	2931	-32149	1912			6278	5851	11444	11582
93	77	170	IR			-20790	4920	-20651	6332			11203	11498	10209	9370
92	78	170	PT			-11940	4013	-11700	2806			8850	8950	12653	12346
91	79	170	AU			1238	6980	3059	6326			13178	14760	11015	10275
90	80	170	HG			11932	5197	13796	4466			10693	10736	13482	13386
89	81	170	TL			27813	8525	32049	12285			15881	18253	11532	11342
110	61	171	PM			-10748	5539	-14406	5849	10940	11108			3856	2965
109	62	171	SM			-21688	4351	-25515	2135	8803	7001			3000	5557
108	63	171	EU			-30491	3219	-32517	2806	8245	7705			4899	4913
107	64	171	GD			-38736	2319	-40222	1456	6203	6376			3920	4887
106	65	171	TB			-44940	1981	-46599	1564	5818	4957			5645	5680
105	66	171	DY			-50758	1356	-51556	812	3801	3984			4715	4959
104	67	171	HO			-54559	591	-55540	496	3138	2467			6509	6582
103	68	171	ER	-57714	6	-57698	216	-58008	494	1262	1053			5659	5918
102	69	171	TM	-59205	6	-58960	244	-59061	304	334	159			7498	7452
101	70	171	YB	-59302	6	-59295	184	-59221	140					6549	6555
100	71	171	LU	-57821	6	-57905	233	-57779	145			1390	1442	8482	8613
99	72	171	HF	-55300	350	-55557	2730	-55426	1908			2347	2352	7451	7315
98	73	171	TA	-51600	580	-51839	756	-51867	1011			3717	3559	9597	9837
97	74	171	W	-46900	670	-46962	1178	-47012	880			4877	4854	8366	7921
96	75	171	RE	-41100	850	-40730	1727	-40902	1611			6232	6109	10529	10972
95	76	171	OS	-34160	1130	-33199	2546	-32781	1716			7530	8121	9276	8702
94	77	171	IR	-26180	1940	-24287	3887	-24328	3688			8912	8453	11568	11747
93	78	171	PT			-14203	4632	-13116	2572			10084	11211	10333	9487
92	79	171	AU			-3469	6021	-1394	5834			10733	11722	12778	12524

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
91	80	171	HG			8861	5780	11479	4167			12331	12873	11141	10388
90	81	171	TL			22276	6556	26018	11597			13414	14539	13608	14101
89	82	171	PB			36871	9269	42558	6508			14594	16539		
111	61	172	PM			-5272	6525	-9186	6341	12628	11712			2596	2851
110	62	172	SM			-17901	3839	-20898	2337	7946	9397			4284	3454
109	63	172	EU			-25848	4346	-30295	3073	10147	7192			3428	5850
108	64	172	GD			-35995	2166	-37488	1484	5223	6344			5330	5337
107	65	172	TB			-41219	2485	-43832	1919	7546	5737			4351	5305
106	66	172	DY			-48765	1042	-49570	772	2870	3307			6079	6085
105	67	172	HO			-51635	1104	-52877	765	4935	4036			5148	5409
104	68	172	ER	-56491	13	-56571	185	-56913	377	411	407			6945	6977
103	69	172	TM	-57380	11	-56983	286	-57321	483	2177	1701			6094	6331
102	70	172	YB	-59250	6	-59161	166	-59023	289					7937	7873
101	71	172	LU	-56726	6	-56820	252	-56636	183			2340	2387	6987	6928
100	72	172	HF	-56330	260	-56409	2019	-56355	2111			411	280	8922	9000
99	73	172	TA	-51410	570	-51659	743	-51581	835			4750	4774	7891	7785
98	74	172	W	-48810	600	-48931	1061	-49277	740			2727	2303	10039	10335
97	75	172	RE	-41510	830	-41466	1597	-41180	1378			7464	8096	8807	8349
96	76	172	OS	-36840	1050	-36101	2111	-36213	1523			5364	4966	10973	11503
95	77	172	IR	-27320	1750	-25936	3473	-25371	3316			10165	10842	9719	9114
94	78	172	PT			-18145	3689	-17317	2338			7790	8053	12013	12271
93	79	172	AU			-6176	6429	-3264	5367			11969	14052	10777	9941
92	80	172	HG			3706	4591	6561	3870			9883	9825	13225	12989
91	81	172	TL			18760	7089	23234	10935			15053	16673	11586	10855
90	82	172	PB			30885	7130	36025	6133			12125	12791	14056	14603
112	61	173	PM			-1028	6239	-3449	6847	11503	12303			3827	2334
111	62	173	SM			-12531	4722	-15752	2570	9636	10157			2701	2926
110	63	173	EU			-22168	4133	-25909	3417	9292	9261			4391	3686
109	64	173	GD			-31460	3223	-35171	1537	7127	6126			3537	5755
108	65	173	TB			-38588	2555	-41298	2107	6568	5470			5440	5538
107	66	173	DY			-45156	1474	-46769	1054	4599	4305			4462	5271
106	67	173	HO			-49755	955	-51074	767	4006	3199			6192	6269
105	68	173	ER	-53730	200	-53762	429	-54274	598	2210	2111			5262	5432
104	69	173	TM	-56226	31	-55972	257	-56386	380	1327	900			7060	7136
103	70	173	YB	-57546	6	-57300	217	-57286	455					6210	6335
102	71	173	LU	-56871	6	-56803	233	-56603	303			496	683	8054	8038
101	72	173	HF	-55270	250	-55443	633	-55148	2331			1360	1454	7105	6864
100	73	173	TA	-52370	420	-52630	2900	-52728	2941			2812	2419	9042	9218
99	74	173	W	-48470	570	-48871	1104	-49102	651			3759	3626	8011	7696

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
98	75	173	RE	-43370	720	-43556	1410	-43667	1156			5314	5434	10161	10557
97	76	173	OS	-37410	1010	-36960	2041	-36592	1350			6596	7074	8929	8450
96	77	173	IR	-29910	1660	-28961	2934	-29005	2958			7998	7587	11096	11705
95	78	173	PT	-21790	1760	-19918	3359	-18488	2121			9043	10517	9843	9242
94	79	173	AU			-10243	5399	-7684	4913			9674	10804	12137	12490
93	80	173	HG			875	5589	4593	3594			11118	12277	10902	10038
92	81	173	TL			13480	5766	18138	10289			12605	13545	13350	13166
91	82	173	PB			27244	7847	33130	5782			13763	14991	11712	10966
90	83	173	BI			43256	10877	46893	11597			16011	13762		
112	62	174	SM			-8709	4267	-10528	2806	8510	10689			4250	2848
111	63	174	EU			-17219	4886	-21217	3793	10986	10050			3123	3379
110	64	174	GD			-28206	2939	-31267	1709	6271	8033			4817	4168
109	65	174	TB			-34477	3379	-39301	2325	8475	5320			3961	6074
108	66	174	DY			-42953	1457	-44621	1045	3620	4034			5869	5924
107	67	174	HO			-46573	1316	-48656	1070	5739	4209			4890	5653
106	68	174	ER			-52313	414	-52866	486	1279	1304			6622	6663
105	69	174	TM	-53850	50	-53592	286	-54171	579	3129	2565			5692	5857
104	70	174	YB	-56940	6	-56721	185	-56737	358					7493	7522
103	71	174	LU	-55562	6	-55374	277	-55251	460	486	229	1347	1485	6642	6720
102	72	174	HF	-55830	8	-55861	169	-55480	290					8489	8403
101	73	174	TA	-51980	80	-52098	221	-51926	3298			3763	3554	7539	7269
100	74	174	W	-50080	470	-50279	856	-50746	513			1818	1180	9479	9714
99	75	174	RE	-43580	710	-43932	1478	-43964	988			6347	6782	8446	8367
98	76	174	OS	-39620	920	-39489	1835	-39612	1179			4442	4351	10599	11090
97	77	174	IR	-30890	1590	-30257	2821	-29795	2626			9231	9817	9366	8860
96	78	174	PT	-24930	1680	-23383	2740	-22680	1908			6873	7115	11536	12262
95	79	174	AU			-12454	5283	-9316	4483			10929	13363	10282	9703
94	80	174	HG			-3633	4311	-326	3319			8821	8990	12579	12990
93	81	174	TL			10209	6724	15723	9667			13842	16049	11342	10486
92	82	174	PB			21521	6403	27576	5434			11312	11853	13793	13624
91	83	174	BI			39173	11256	43650	10936			17651	16074	12153	11313
113	62	175	SM			-3240	5941	-5522	3073	10263	10730			2603	3066
112	63	175	EU			-13503	4742	-16253	4184	9861	10393			4355	3107
111	64	175	GD			-23365	3572	-26646	1911	7966	9013			3231	3451
110	65	175	TB			-31332	3364	-35660	2631	7621	6835			4926	4430
109	66	175	DY			-38953	2242	-42496	1034	5529	4182			4071	5946
108	67	175	HO			-44482	1424	-46678	1141	4761	3729			5980	6094
107	68	175	ER			-49243	699	-50408	729	3013	2517			5002	5613
106	69	175	TM	-52290	50	-52257	243	-52925	450	2199	1615			6736	6826

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
105	70	175	YB	-54691	6	-54457	217	-54541	547	454	295			5807	5876
104	71	175	LU	-55159	5	-54912	247	-54836	370					7609	7657
103	72	175	HF	-54548	10	-54549	219	-54080	439			363	756	6760	6671
102	73	175	TA	-52350	250	-52634	1994	-52459	3676			1914	1620	8607	8604
101	74	175	W	-49450	420	-49866	535	-49992	447			2767	2466	7658	7318
100	75	175	RE	-45150	570	-45460	1141	-45831	788			4405	4160	9599	9938
99	76	175	OS	-39710	880	-39985	1969	-40057	1056			5474	5774	8567	8516
98	77	175	IR	-33160	1490	-32907	2512	-33022	2307			7077	7035	10721	11298
97	78	175	PT	-25640	1610	-24801	2785	-23599	1714			8105	9422	9489	8990
96	79	175	AU	-17160	1790	-16042	4010	-13764	3675			8758	9835	11659	12518
95	80	175	HG			-5967	4516	-2068	3061			10075	11696	10405	9313
94	81	175	TL			5576	5306	10585	9060			11544	12654	12703	13208
93	82	175	PB			18125	7539	25064	5105			12549	14479	11467	10582
92	83	175	BI			33326	9797	38035	10290			15200	12970	13918	13086
91	84	175	PO			50123	9260	54572	6502			16797	16537		
114	62	176	SM			499	5135	-256	3320	8951	11407			4331	2805
113	63	176	EU			-8451	6125	-11663	4606	11617	10524			3019	3482
112	64	176	GD			-20069	3335	-22188	2116	6841	9331			4775	3613
111	65	176	TB			-26910	3905	-31520	2969	9319	7778			3650	3931
110	66	176	DY			-36230	2142	-39299	1174	4674	5537			5348	4874
109	67	176	HO			-40904	2066	-44836	1231	6673	3969			4493	6229
108	68	176	ER			-47577	758	-48806	659	2034	2018			6405	6470
107	69	176	TM	-49590	320	-49612	472	-50824	671	3937	2856			5427	5971
106	70	176	YB	-53490	6	-53549	166	-53681	421					7164	7212
105	71	176	LU	-53381	5	-53074	277	-53037	549	1442	958	475	644	6234	6272
104	72	176	HF	-54567	6	-54516	187	-53996	342					8039	7987
103	73	176	TA	-51470	100	-51751	249	-51476	4082			2765	2519	7188	7088
102	74	176	W	-50570	290	-50834	2212	-51000	1922			916	475	9038	9078
101	75	176	RE	-44970	570	-45477	796	-45484	667			5356	5516	8088	7724
100	76	176	OS	-41810	770	-41947	1577	-42455	886			3530	3028	10032	10468
99	77	176	IR	-33840	1430	-33836	2631	-33921	2033			8111	8534	8999	8969
98	78	176	PT	-28540	1520	-27887	2462	-27384	1523			5949	6536	11156	11855
97	79	176	AU	-18400	1730	-17894	3964	-15144	3304			9992	12240	9922	9450
96	80	176	HG			-9992	3243	-7049	2806			7901	8095	12095	13051
95	81	176	TL			2806	5506	8388	8475			12799	15437	10840	10268
94	82	176	PB			13055	5997	19433	4779			10248	11044	13141	13702
93	83	176	BI			29494	10536	35194	9668			16438	15761	11903	10911
92	84	176	PO			43837	7422	48539	6133			14343	13345	14357	14104
114	63	177	EU			-4815	5708	-6647	5030	10307	10989			4436	3055

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
113	64	177	GD			-15122	4656	-17636	2351	8598	9716			3125	3519
112	65	177	TB			-23721	3943	-27352	3321	8195	7843			4883	3904
111	66	177	DY			-31917	2568	-35196	1346	6374	6674			3759	3969
110	67	177	HO			-38291	2127	-41870	1458	5819	4959			5459	5106
109	68	177	ER			-44110	1335	-46830	521	3948	2540			4605	6095
108	69	177	TM			-48058	597	-49371	620	2959	2165			6518	6618
107	70	177	YB	-50986	6	-51018	177	-51536	604	1262	779			5540	5927
106	71	177	LU	-52382	5	-52281	233	-52316	433	513				7279	7351
105	72	177	HF	-52879	6	-52794	219	-52164	517				151	6349	6240
104	73	177	TA	-51721	7	-51835	216	-51563	361			959	601	8155	8157
103	74	177	W	-49720	240	-50068	3601	-50082	2154			1766	1480	7306	7154
102	75	177	RE	-46120	360	-46564	785	-46698	569			3504	3384	9157	9285
101	76	177	OS	-41620	730	-42084	1260	-42195	790			4480	4503	8208	7811
100	77	177	IR	-35820	1310	-35918	2134	-36528	1740			6165	5666	10153	10678
99	78	177	PT	-29350	1450	-28937	2785	-28462	1383			6981	8066	9120	9148
98	79	177	AU	-21190	1610	-21101	3507	-19191	2947			7835	9271	11278	12117
97	80	177	HG	-12650	1980	-11967	3500	-8540	2570			9134	10650	10045	9562
96	81	177	TL			-1341	4112	3152	7906			10625	11693	12219	13306
95	82	177	PB			10162	6315	17127	4469			11503	13974	10964	10376
94	83	177	BI			24299	8986	29460	9060			14137	12332	13265	13805
93	84	177	PO			39880	8955	45639	5784			15581	16179	12027	10971
92	85	177	AT			56582	11107	60136	11598			16701	14496		
115	63	178	EU			599	6877	-1149	5490	12501	11962			2656	2573
114	64	178	GD			-11901	4116	-13111	2567	7287	10132			4850	3547
113	65	178	TB			-19189	4997	-23243	3705	9956	8253			3539	3962
112	66	178	DY			-29145	2507	-31496	1519	5249	6716			5300	4372
111	67	178	HO			-34394	2504	-38213	1719	7522	6084			4175	4414
110	68	178	ER			-41917	1360	-44298	614	3093	3355			5878	5540
109	69	178	TM			-45011	1070	-47653	512	4876	2797			5024	6354
108	70	178	YB	-49660	50	-49887	222	-50451	521	284	49			6940	6986
107	71	178	LU	-50300	40	-50171	246	-50500	597	2255	1273			5962	6256
106	72	178	HF	-52434	6	-52426	168	-51773	391					7703	7681
105	73	178	TA	-50520	100	-50537	249	-50159	550	43	449	1889	1613	6773	6668
104	74	178	W	-50430	100	-50580	190	-50609	2351					8582	8597
103	75	178	RE	-45770	210	-46224	679	-46198	589			4355	4410	7731	7572
102	76	178	OS	-43350	540	-43599	1199	-43918	692			2625	2280	9585	9793
101	77	178	IR	-36270	1220	-36482	1807	-36656	1510			7116	7262	8634	8198
100	78	178	PT	-31630	1330	-31449	2197	-31625	1189			5033	5030	10583	11234
99	79	178	AU	-22410	1550	-22580	3754	-20772	2636			8869	10853	9549	9652
98	80	178	HG	-15930	1870	-15605	3010	-13121	2338			6974	7650	11709	12652

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
97	81	178	TL			-3745	4355	1207	7360			11860	14328	10475	10016
96	82	178	PB			5581	4818	11364	4163			9326	10156	12651	13834
95	83	178	BI			20975	9081	26818	8476			15393	15454	11395	10713
94	84	178	PO			34252	7009	39451	5437			13277	12633	13698	14258
93	85	178	AT			52193	12180	56903	10938			17941	17451	12459	11304
115	64	179	GD			-6590	5203	-7702	2822	9483	11297			2761	2663
114	65	179	TB			-16074	4816	-18999	4090	8646	8391			4956	3828
113	66	179	DY			-24720	3517	-27391	1723	7011	7382			3646	3966
112	67	179	HO			-31732	2612	-34773	1993	6399	5899			5409	4631
111	68	179	ER			-38131	1617	-40673	743	4797	4659			4285	4446
110	69	179	TM			-42929	1195	-45332	649	4022	3262			5990	5750
109	70	179	YB			-46951	620	-48594	277	2202	944			5136	6215
108	71	179	LU	-49110	40	-49153	276	-49539	523	1277	322			7054	7111
107	72	179	HF	-50462	6	-50431	179	-49862	543		81			6076	6160
106	73	179	TA	-50347	8	-50284	199	-49944	397			146		7819	7856
105	74	179	W	-49283	17	-49398	221	-49287	523			886	656	6890	6750
104	75	179	RE	-46590	50	-46853	330	-46901	433			2544	2385	8699	8773
103	76	179	OS	-42890	490	-43377	1105	-43522	697			3475	3379	7850	7675
102	77	179	IR	-37890	1010	-38116	1657	-38571	1283			5260	4950	9705	9986
101	78	179	PT	-32010	1220	-32133	1931	-31870	1081			5983	6701	8755	8315
100	79	179	AU	-24750	1420	-25213	3048	-24199	2303			6920	7670	10704	11498
99	80	179	HG	-16800	1790	-17205	3623	-14862	2152			8007	9337	9671	9811
98	81	179	TL			-7506	3735	-3634	6830			9699	11228	11832	12912
97	82	179	PB			3054	5153	9308	3874			10560	12942	10597	10126
96	83	179	BI			16271	7614	20914	7907			13216	11606	12775	13974
95	84	179	PO			30804	7597	36738	5106			14533	15823	11519	10784
94	85	179	AT			46441	10269	50604	10292			15637	13865	13823	14369
116	64	180	GD			-3318	4599	-4189	3063	7853	9893			4799	4558
115	65	180	TB			-11171	5725	-14082	4511	10845	9519			3169	3154
114	66	180	DY			-22017	3201	-23602	1908	5701	7474			5368	4282
113	67	180	HO			-27718	3452	-31076	2300	8164	6615			4058	4374
112	68	180	ER			-35883	1674	-37691	873	3673	4436			5823	5089
111	69	180	TM			-39556	1421	-42127	831	5730	4571			4699	4866
110	70	180	YB			-45286	740	-46698	331	1347	1215			6407	6175
109	71	180	LU	-46680	70	-46634	262	-47914	268	3198	1299			5552	6446
108	72	180	HF	-49779	6	-49832	224	-49213	468					7473	7423
107	73	180	TA	-48914	13	-48707	215	-48394	537	859	1117	1125	819	6494	6521
106	74	180	W	-49624	8	-49566	171	-49511	390					8239	8295
105	75	180	RE	-45829	31	-46091	352	-46009	584			3475	3502	7310	7179

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA	& BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
104	76	180	OS	-44220	350	-44429	624	-44699	527			1661	1310	9122	9247
103	77	180	IR	-37930	930	-38317	1566	-38575	1144			6112	6123	8271	8074
102	78	180	PT	-34120	1000	-34192	1774	-34319	945			4124	4255	10130	10520
101	79	180	AU	-25630	1330	-26320	2758	-24882	2038			7871	9437	9178	8753
100	80	180	HG	-19860	1660	-20264	2783	-18821	1919			6055	6060	11130	12030
99	81	180	TL			-9531	4827	-5872	6335			10733	12949	10095	10309
98	82	180	PB			-1133	4457	3937	3590			8397	9810	12259	13441
97	83	180	BI			13318	7707	18523	7361			14452	14586	11023	10461
96	84	180	PO			25671	5706	30348	4779			12353	11824	13203	14461
95	85	180	AT			42566	10589	47550	9669			16894	17201	11945	11125
116	65	181	TB			-8003	5511	-10759	4938	9217	7980			4904	4749
115	66	181	DY			-17221	4041	-18740	2132	7901	8796			3276	3210
114	67	181	HO			-25122	3369	-27536	2607	6855	6455			5476	4532
113	68	181	ER			-31978	2435	-33991	1037	5440	5392			4166	4372
112	69	181	TM			-37418	1586	-39384	1022	4606	4137			5933	5328
111	70	181	YB			-42025	854	-43521	424	3056	2683			4810	4894
110	71	181	LU			-45081	680	-46205	400	2344	1193			6519	6362
109	72	181	HF	-47403	6	-47426	200	-47398	121	796	507			5666	6256
108	73	181	TA	-48425	6	-48223	248	-47906	464		73			7588	7584
107	74	181	W	-48237	9	-48105	182	-47979	525			118		6610	6540
106	75	181	RE	-46440	190	-46376	1996	-46414	455			1728	1565	8356	8475
105	76	181	OS	-43410	350	-43785	569	-43926	616			2591	2487	7427	7299
104	77	181	IR	-39340	760	-39487	989	-39914	897			4297	4011	9241	9410
103	78	181	PT	-34060	910	-34512	1786	-34457	923			4975	5457	8390	8208
102	79	181	AU	-27640	1100	-28499	2468	-27578	1763			6012	6878	10250	10767
101	80	181	HG	-20790	1540	-21493	2644	-19602	1765			7006	7976	9299	8851
100	81	181	TL			-12711	3393	-10094	5835			8781	9507	11251	12293
99	82	181	PB			-3280	5652	1540	3348			9431	11635	10217	10468
98	83	181	BI			9007	6888	13007	6831			12287	11467	12381	13587
97	84	181	PO			22595	6297	27883	4470			13588	14875	11146	10535
96	85	181	AT			37310	8773	41011	9061			14714	13128	13327	14609
117	65	182	TB			-3201	6762	-6215	5408	11258	9562			3269	3527
116	66	182	DY			-14459	3651	-15777	2342	6272	7353			5310	5109
115	67	182	HO			-20732	4100	-23130	2952	9059	7766			3681	3666
114	68	182	ER			-29791	2276	-30897	1179	4130	5170			5885	4977
113	69	182	TM			-33921	2222	-36067	1253	6377	5160			4575	4755
112	70	182	YB			-40298	998	-41227	519	1932	2192			6345	5778
111	71	182	LU			-42231	813	-43420	533	4056	2639			5221	5287
110	72	182	HF	-45990	50	-46288	352	-46059	145		294			6933	6732

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
109	73	182	TA	-46417	6	-46230	232	-46353	137	1806	1560	57		6079	6519
108	74	182	W	-48228	6	-48037	226	-47914	454					8003	8006
107	75	182	RE	-45430	270	-45329	2697	-45244	620			2707	2669	7025	6902
106	76	182	OS	-44580	280	-44488	2021	-44805	1743			841	439	8773	8949
105	77	182	IR	-38980	690	-39259	934	-39554	854			5228	5251	7844	7711
104	78	182	PT	-35980	750	-36101	1061	-36296	722			3158	3257	9660	9910
103	79	182	AU	-28180	1030	-29237	2456	-28166	1579			6864	8130	8808	8658
102	80	182	HG	-23210	1300	-24093	2346	-22810	1575			5144	5356	10671	11278
101	81	182	TL			-14359	4575	-11307	5382			9733	11502	9718	9284
100	82	182	PB			-6883	4109	-3209	3066			7476	8098	11673	12820
99	83	182	BI			6439	7746	10231	6340			13323	13440	10638	10847
98	84	182	PO			17861	5340	21878	4166			11421	11647	12805	14075
97	85	182	AT			33812	9075	38207	8477			15950	16328	11568	10875
118	65	183	TB			339	6363	-2715	5867	10101	8535			4531	4572
117	66	183	DY			-9762	4862	-11251	2606	8314	9076			3374	3546
116	67	183	HO			-18077	3973	-20328	3301	7431	6213			5413	5269
115	68	183	ER			-25508	2921	-26541	1362	6335	6660			3789	3716
114	69	183	TM			-31844	2225	-33201	1480	5068	4703			5994	5206
113	70	183	YB			-36912	1540	-37905	649	3703	3436			4685	4749
112	71	183	LU			-40616	1037	-41341	680	2933	1908			6456	5993
111	72	183	HF	-43269	32	-43550	339	-43250	119	1655	1987			5333	5263
110	73	183	TA	-45279	12	-45205	368	-45237	113	953	1047			7046	6955
109	74	183	W	-46347	6	-46158	203	-46285	103					6193	6443
108	75	183	RE	-45791	10	-45377	352	-45345	502			781	939	8118	8171
107	76	183	OS	-43490	260	-43558	2235	-43693	1971			1819	1652	7141	6959
106	77	183	IR	-40090	540	-40080	871	-40599	626			3478	3093	8891	9116
105	78	183	PT	-35630	700	-35992	1105	-36085	773			4087	4513	7962	7860
104	79	183	AU	-30010	830	-30946	1636	-30222	1289			5045	5862	9779	10126
103	80	183	HG	-23690	1200	-24950	2542	-23512	1486			5995	6709	8928	8773
102	81	183	TL	-15830	1190	-17080	2861	-14761	4498			7870	8751	10791	11524
101	82	183	PB			-8652	5382	-4519	2854			8427	10241	9840	9381
100	83	183	BI			2715	6205	5334	5837			11367	9853	11795	12968
99	84	183	PO			15171	6934	18980	3906			12456	13646	10760	10969
98	85	183	AT			28955	8020	32048	7909			13783	13067	12928	14229
97	86	183	RN			43831	7589	48710	5109			14876	16662		
119	65	184	TB			5390	7864	1905	6363	12013	9994			3020	3451
118	66	184	DY			-6623	4247	-8089	2826	7157	8126			4932	4910
117	67	184	HO			-13780	4978	-16216	3697	9477	7072			3775	3960
116	68	184	ER			-23257	2678	-24088	1530	4706	5188			5820	5619

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
115	69	184	TM			-27964	2795	-29277	1748	7276	6198	4192	4147
114	70	184	YB			-35240	1506	-35475	759	2394	2898	6400	5642
113	71	184	LU			-37635	1469	-38374	866	4708	3192	5090	5104
112	72	184	HF	-41480	60	-42343	511	-41566	149	531	1287	6865	6387
111	73	184	TA	-42821	27	-42874	359	-42854	135	2669	2795	5741	5688
110	74	184	W	-45687	7	-45544	353	-45649	85			7457	7435
109	75	184	RE	-44191	9	-43908	341	-43981	244	109	268	1635	1667	6603	6707
108	76	184	OS	-44233	7	-44018	233	-44249	456					8531	8627
107	77	184	IR	-39510	250	-39561	939	-39831	651			4456	4418	7553	7304
106	78	184	PT	-37210	610	-37226	1040	-37630	572			2334	2201	9305	9616
105	79	184	AU	-30220	800	-31250	1647	-30473	1185			5976	7156	8374	8321
104	80	184	HG	-26040	1000	-27075	1523	-26045	1250			4174	4428	10195	10603
103	81	184	TL	-16900	1130	-18352	3106	-15908	4121			8723	10137	9343	9217
102	82	184	PB			-11790	3553	-8478	2607			6561	7429	11208	12030
101	83	184	BI			530	7181	3710	5391			12320	12189	10256	9694
100	84	184	PO			11028	4984	13596	3601			10498	9886	12214	13454
99	85	184	AT			25848	9224	28766	7380			14819	15169	11178	11352
98	86	184	RN			38554	6318	42052	4783			12706	13286	13347	14728
119	66	185	DY			-1675	5733	-3483	3087	9070	9712			3124	3466
118	67	185	HO			-10746	4696	-13196	4077	8321	6794			5037	5051
117	68	185	ER			-19067	3600	-19990	1757	6753	6973			3882	3973
116	69	185	TM			-25821	2737	-26963	2018	5649	4633			5928	5758
115	70	185	YB			-31470	1990	-31597	909	4603	4553			4301	4193
114	71	185	LU			-36073	1584	-36150	1053	3400	2391			6510	5848
113	72	185	HF			-39473	848	-38541	241	2306	2879			5202	5047
112	73	185	TA	-41360	21	-41780	522	-41421	120	1546	1934			6977	6639
111	74	185	W	-43370	7	-43327	341	-43355	98	81	218			5855	5778
110	75	185	RE	-43802	7	-43408	444	-43574	229					7572	7664
109	76	185	OS	-42787	7	-42665	210	-42848	114			743	725	6718	6670
108	77	185	IR	-40290	320	-40137	562	-40541	3322			2527	2307	8647	8780
107	78	185	PT	-36490	540	-36825	1207	-36949	652			3312	3591	7670	7391
106	79	185	AU	-31730	690	-32602	1476	-32239	915			4222	4710	9423	9837
105	80	185	HG	-26140	950	-27497	1743	-26426	1215			5105	5812	8493	8452
104	81	185	TL	-19110	910	-20596	1946	-18656	3698			6901	7770	10315	10819
103	82	185	PB	-11740	1630	-13182	3852	-9739	2446			7413	8916	9463	9331
102	83	185	BI			-2728	5385	-379	4934			10454	9360	11329	12161
101	84	185	PO			8721	6662	11912	3373			11450	12291	10377	9755
100	85	185	AT			21582	7308	23226	6838			12860	11313	12336	13611
99	86	185	RN			35325	8358	38634	4505			13742	15408	11300	11489
98	87	185	FR			50828	7167	53881	9062			15502	15246		

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
120	66	186	DY			1685	4863	-451	3322	7880	8545			4710	5039
119	67	186	HO			-6194	5920	-8997	4497	10237	8301			3519	3872
118	68	186	ER			-16432	3173	-17298	1933	5597	5956			5436	5379
117	69	186	TM			-22029	3508	-23255	2339	7699	6370			4280	4363
116	70	186	YB			-29728	1859	-29626	1046	2975	3049			6329	6100
115	71	186	LU			-32703	2014	-32675	1279	5612	4023			4702	4597
114	72	186	HF			-38316	905	-36699	301	997	2085			6914	6229
113	73	186	TA	-38600	60	-39313	435	-38784	164	3325	3642			5605	5435
112	74	186	W	-42498	7	-42639	512	-42427	86					7383	7143
111	75	186	RE	-41910	7	-41596	437	-41707	239	976	1248	1042	720	6259	6204
110	76	186	OS	-42987	7	-42572	357	-42955	83					7979	8177
109	77	186	IR	-39156	21	-39191	472	-39386	181			3381	3568	7125	6917
108	78	186	PT	-37830	380	-37811	618	-38141	506			1379	1245	9056	9262
107	79	186	AU	-31690	660	-32609	1654	-31953	878			5201	6187	8078	7786
106	80	186	HG	-28350	850	-29261	1578	-28669	984			3348	3283	9834	10314
105	81	186	TL	-19860	890	-21428	2212	-19494	3370			7832	9175	8903	8909
104	82	186	PB	-14330	1400	-15839	2613	-12959	2169			5589	6535	10727	11291
103	83	186	BI			-4532	5891	-1966	4545			11307	10993	9874	9657
102	84	186	PO			5049	4382	7356	3101			9581	9322	11743	12626
101	85	186	AT			18863	8646	21223	6356			13814	13866	10789	10073
100	86	186	RN			30644	5954	32597	4178			11781	11373	12751	14108
99	87	186	FR			47184	9318	50053	8496			16539	17456	11714	11898
120	67	187	HO			-2936	5460	-6078	4912	9048	7030			4814	5153
119	68	187	ER			-11985	4330	-13108	2154	7514	7574			3625	3882
118	69	187	TM			-19500	3327	-20683	2639	6544	5242			5542	5500
117	70	187	YB			-26044	2521	-25926	1242	5026	4893			4387	4372
116	71	187	LU			-31070	2061	-30819	1509	3985	2399			6438	6216
115	72	187	HF			-35056	1262	-33219	414	3210	3964			4812	4592
114	73	187	TA			-38267	790	-37183	324	2017	2663			7025	6471
113	74	187	W	-39893	7	-40284	420	-39847	114	737	1188			5717	5491
112	75	187	RE	-41205	7	-41021	578	-41035	231		180			7496	7400
111	76	187	OS	-41208	7	-40875	345	-41216	95			146		6374	6333
110	77	187	IR	-39710	210	-39214	551	-39708	210			1660	1508	8094	8392
109	78	187	PT	-36810	290	-36981	2193	-36978	1900			2233	2729	7241	6909
108	79	187	AU	-32870	470	-33712	946	-33352	663			3268	3625	9173	9469
107	80	187	HG	-28060	760	-29386	1938	-28452	984			4326	4900	8195	7854
106	81	187	TL	-21930	770	-23311	1952	-21957	2980			6075	6494	9953	10533
105	82	187	PB	-14940	1340	-16791	2902	-13928	2047			6520	8029	9022	9039
104	83	187	BI			-7309	4290	-5286	4095			9482	8641	10847	11391
103	84	187	PO			3124	5417	5692	2926			10434	10979	9995	9734

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
102	85	187	AT			15070	6429	16528	5858			11945	10835	11864	12766
101	86	187	RN			27804	8082	30519	3934			12734	13990	10911	10148
100	87	187	FR			42382	6685	43830	7915			14578	13310	12873	14294
121	67	188	HO			1899	6483	-835	5364	11020	9650			3235	2829
120	68	188	ER			-9121	3688	-10485	2343	6324	6390			5208	5448
119	69	188	TM			-15446	4285	-16876	2982	8464	6798			4018	4264
118	70	188	YB			-23911	2247	-23674	1385	3870	3807			5939	5820
117	71	188	LU			-27782	2597	-27482	1790	6039	4168			4783	4734
116	72	188	HF			-33821	1206	-31650	506	1583	2489			6837	6503
115	73	188	TA			-35405	1122	-34139	479	4233	4597			5210	5027
114	74	188	W	-38657	7	-39638	524	-38737	105		107			7426	6962
113	75	188	RE	-39006	7	-39066	501	-38845	246	1635	2239	571		6117	5881
112	76	188	OS	-41125	7	-40702	515	-41084	80					7899	7939
111	77	188	IR	-38323	13	-37918	546	-38378	144			2784	2705	6775	6742
110	78	188	PT	-37788	11	-37408	355	-37840	93			509	537	8498	8933
109	79	188	AU	-32490	450	-33286	733	-32487	350			4122	5353	7645	7206
108	80	188	HG	-29880	520	-30895	1095	-30310	781			2390	2177	9580	9929
107	81	188	TL	-22290	730	-23841	2392	-22130	2697			7054	8180	8600	8243
106	82	188	PB	-17500	1230	-19081	2549	-16863	1781			4759	5266	10361	11006
105	83	188	BI			-8667	4706	-6593	3755			10414	10269	9429	9377
104	84	188	PO			-60	3318	1940	2621			8606	8533	11256	11823
103	85	188	AT			12738	7217	14533	5433			12798	12592	10403	10065
102	86	188	RN			23600	5306	25347	3638			10862	10814	12274	13242
101	87	188	FR			39133	8961	41407	7396			15532	16059	11320	10493
122	67	189	HO			5466	6280	2205	5834	9856	7512			4504	5031
121	68	189	ER			-4389	4628	-5306	2574	8298	9038			3340	2893
120	69	189	TM			-12688	3960	-14345	3317	7276	5527			5313	5541
119	70	189	YB			-19964	3105	-19872	1574	5792	5455			4125	4269
118	71	189	LU			-25757	2567	-25327	2051	4885	2942			6047	5917
117	72	189	HF			-30642	1632	-28270	674	3638	4452			4892	4692
116	73	189	TA			-34281	1168	-32722	630	2607	3079			6947	6655
115	74	189	W	-35470	200	-36888	795	-35802	179	1645	2180			5321	5136
114	75	189	RE	-37970	11	-38533	589	-37983	242	327	1005			7538	7210
113	76	189	OS	-38978	7	-38861	424	-38989	95					6230	5976
112	77	189	IR	-38480	170	-37860	664	-38489	197			1000	499	8013	8182
111	78	189	PT	-36570	160	-36227	383	-36670	150			1632	1819	6891	6901
110	79	189	AU	-33410	220	-33829	446	-33619	208			2398	3050	8614	9202
109	80	189	HG	-29210	340	-30585	958	-29419	510			3243	4200	7761	7180
108	81	189	TL	-24020	490	-25468	1407	-24194	2344			5117	5224	9697	10135

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
107	82	189	PB	-17860	1120	-19729	3027	-17102	1692			5738	7091	8719	8310
106	83	189	BI	-9870	1470	-11076	3906	-9633	3340			8653	7469	10480	11111
105	84	189	PO			-1538	4265	540	2482			9537	10173	9548	9471
104	85	189	AT			9431	5208	10671	4942			10970	10131	11377	11932
103	86	189	RN			21147	6704	23261	3448			11715	12589	10523	10157
102	87	189	FR			34807	5931	36067	6858			13660	12806	12396	13411
101	88	189	RA			48796	9620	51052	4533			13988	14985		
123	67	190	HO			10668	7199	7515	6328	11879	10063			2869	2761
122	68	190	ER			-1211	4257	-2547	2813	7133	7052			4893	5313
121	69	190	TM			-8344	4762	-9599	3692	9253	8029			3728	3326
120	70	190	YB			-17597	2657	-17629	1731	4603	4251			5705	5828
119	71	190	LU			-22201	3248	-21880	2354	6810	4500			4515	4624
118	72	190	HF			-29011	1475	-26381	767	2483	3357			6440	6182
117	73	190	TA			-31494	1513	-29738	846	4665	5044			5285	5087
116	74	190	W	-34220	360	-36159	799	-34782	234	18	702			7343	7052
115	75	190	RE	-35520	200	-36177	823	-35485	264	2547	3166			5716	5574
114	76	190	OS	-38699	7	-38725	527	-38652	88					7936	7735
113	77	190	IR	-36700	200	-36415	598	-36766	317	153	580	2309	1886	6627	6348
112	78	190	PT	-37318	21	-36569	513	-37346	87					8412	8747
111	79	190	AU	-32876	26	-33047	369	-32908	151			3522	4438	7289	7361
110	80	190	HG	-30960	80	-31530	547	-31068	384			1516	1839	9016	9720
109	81	190	TL	-24160	310	-25558	1369	-23595	1997			5972	7473	8161	7472
108	82	190	PB	-20220	910	-21759	1939	-19621	1442			3798	3973	10100	10590
107	83	190	BI	-10850	1370	-12126	4241	-10144	3048			9632	9476	9121	8582
106	84	190	PO			-4352	3288	-2931	2191			7774	7212	10884	11543
105	85	190	AT			7550	5892	8927	4565			11903	11859	9952	9814
104	86	190	RN			17435	4119	18956	3115			9884	10029	11782	12375
103	87	190	FR			31950	7470	33623	6398			14514	14666	10928	10514
102	88	190	RA			44064	6302	45253	4214			12113	11630	12802	13869
123	68	191	ER			3887	5076	2712	3071	9158	9636			2972	2611
122	69	191	TM			-5270	4673	-6923	4084	8088	6020			4997	5395
121	70	191	YB			-13359	3360	-12944	1930	6581	6762			3833	3387
120	71	191	LU			-19940	3119	-19706	2651	5621	3181			5811	5897
119	72	191	HF			-25562	2062	-22888	916	4409	5094			4623	4578
118	73	191	TA			-29972	1519	-27982	1023	3510	3887			6549	6316
117	74	191	W			-33483	1017	-31870	382	2077	2753			5395	5159
116	75	191	RE	-34343	12	-35560	793	-34623	268	921	1679			7454	7209
115	76	191	OS	-36388	7	-36482	779	-36303	109		360			5828	5722
114	77	191	IR	-36698	7	-36393	673	-36663	108			88		8049	7969

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
113	78	191	PT	-35698	16	-35239	422	-35748	106			1154	915	6741	6473
112	79	191	AU	-33870	50	-33504	529	-33882	123			1734	1865	8527	9045
111	80	191	HG	-30480	70	-30864	539	-30497	300			2639	3384	7405	7500
110	81	191	TL	-25670	210	-26620	803	-25512	1711			4244	4984	9132	9988
109	82	191	PB	-20230	810	-21967	1860	-18[illegible]95	1185			4652	6517	8278	7445
108	83	191	BI	-13050	1120	-14274	3113	-12755	2664			7692	6240	10218	10681
107	84	191	PO			-5521	4037	-3473	2090			8753	9281	9239	8612
106	85	191	AT			4617	4832	5341	4109			10139	8815	11004	11657
105	86	191	RN			15434	5419	17105	2960			10816	11763	10072	9922
104	87	191	FR			28118	4625	29179	5865			12683	12074	11903	12514
103	88	191	RA			41085	8123	42732	4008			12967	13552	11049	10592
123	69	192	TM			-554	5395	-2077	4501	10116	8464			3356	3226
122	70	192	YB			-10671	3154	-10541	2137	5416	4885			5384	5669
121	71	192	LU			-16088	3710	-15427	2986	7602	5518			4219	3793
120	72	192	HF			-23691	1773	-20946	1022	3220	3930			6200	6130
119	73	192	TA			-26912	1986	-24877	1251	5439	5612			5011	4966
118	74	192	W			-32352	977	-30489	433	922	1618			6940	6691
117	75	192	RE			-33274	814	-32107	416	2983	3765			5785	5556
116	76	192	OS	-35875	7	-36258	748	-35873	122					7847	7641
115	77	192	IR	-34826	7	-34542	886	-34734	127	1069	1463	1715	1138	6220	6142
114	78	192	PT	-36283	7	-35612	525	-36198	85					8443	8520
113	79	192	AU	-32768	17	-32568	444	-32706	147			3044	3491	7135	6896
112	80	192	HG	-31970	260	-31718	661	-32014	2107			849	692	8924	9587
111	81	192	TL	-25590	260	-26349	799	-25396	1455			5368	6617	7801	7955
110	82	192	PB	-22290	620	-23427	1081	-21426	1013			2922	3969	9531	10501
109	83	192	BI	-13670	980	-14879	2961	-12302	2298			8547	9123	8676	7619
108	84	192	PO			-8068	2596	-6498	1805			6810	5803	10613	11096
107	85	192	AT			3050	5413	4522	3783			11119	11021	9638	8889
106	86	192	RN			12100	4120	13076	2643			9050	8553	11405	12100
105	87	192	FR			25717	6076	26959	5452			13616	13852	10471	10291
104	88	192	RA			36851	5013	37865	3649			11133	10906	12305	12938
124	69	193	TM			2786	5388	436	4930	8847	6177			4730	5558
123	70	193	YB			-6060	3767	-5741	2365	7445	7342			3460	3271
122	71	193	LU			-13506	3773	-13084	3339	6439	3593			5490	5728
121	72	193	HF			-19946	2272	-16677	1181	5202	6364			4326	3802
120	73	193	TA			-25148	1929	-23041	1465	4252	4411			6308	6235
119	74	193	W			-29400	1314	-27452	549	2852	3414			5120	5034
118	75	193	RE			-32253	846	-30867	501	1829	2600			7050	6831
117	76	193	OS	-33387	8	-34083	521	-33467	222	347	981			5897	5666

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
116	77	193	IR	-34519	6	-34430	858	-34448	132					7959	7785
115	78	193	PT	-34458	7	-33873	778	-34446	95			556	2	6333	6320
114	79	193	AU	-33360	140	-33054	541	-33445	194			819	1001	8557	8809
113	80	193	HG	-31020	270	-30896	593	-30945	2328			2158	2500	7250	7003
112	81	193	TL	-27020	310	-27318	885	-27209	1213			3577	3735	9040	9884
111	82	193	PB	-22070	630	-23273	966	-21449	871			4045	5760	7917	8093
110	83	193	BI	-15560	590	-16457	2153	-14887	1990			6816	6562	9648	10655
109	84	193	PO	-8310	1130	-8791	2668	-5983	1535			7665	8904	8793	7556
108	85	193	AT			384	3949	1397	3354			9176	7380	10737	11196
107	86	193	RN			10413	5188	12212	2530			10029	10814	9757	8935
106	87	193	FR			22263	4581	22786	4954			11849	10573	11524	12243
105	88	193	RA			34330	6718	35550	3478			12066	12764	10592	10385
104	89	193	AC			47821	6859	49033	6903			13491	13482		
125	69	194	TM			7671	6850	4980	5418	10772	8449			3187	3528
124	70	194	YB			-3100	3634	-3469	2590	6175	5201			5111	5800
123	71	194	LU			-9276	4320	-8671	3718	8471	5881			3841	3659
122	72	194	HF			-17748	2197	-14552	1347	4038	4658			5874	5947
121	73	194	TA			-21786	2358	-19210	1725	6237	6748			4709	4241
120	74	194	W			-28023	1198	-25959	615	1664	2259			6695	6579
119	75	194	RE			-29688	1098	-28219	648	3762	4417			5506	5424
118	76	194	OS	-32417	7	-33450	492	-32636	194					7439	7241
117	77	194	IR	-32514	6	-32643	671	-32422	222	1509	2195	807	214	6284	6046
116	78	194	PT	-34765	6	-34152	747	-34618	107					8349	8243
115	79	194	AU	-32256	16	-31706	789	-32165	126	69	48	2446	2453	6723	6791
114	80	194	HG	-32206	26	-31775	670	-32213	96					8949	9339
113	81	194	TL	-26810	350	-26888	836	-26558	1001			4886	5654	7641	7421
112	82	194	PB	-23810	500	-24636	949	-23801	730			2252	2757	9433	10422
111	83	194	BI	-15980	310	-16695	1946	-15246	1716			7940	8554	8309	8430
110	84	194	PO	-10810	910	-10764	1532	-9040	1340			5931	6205	10043	11128
109	85	194	AT			-732	4260	1734	2953			10031	10775	9188	7735
108	86	194	RN			7351	3346	8661	2214			8084	6927	11133	11621
107	87	194	FR			20181	5809	21619	4594			12830	12957	10152	9238
106	88	194	RA			30478	5059	30952	3136			10297	9333	11922	12668
105	89	194	AC			44904	8338	46347	6453			14425	15394	10988	10756
126	69	195	TM			11769	6453	8105	5869	10088	7046			3974	4946
125	70	195	YB			1680	5095	1059	2893	8101	7489			3290	3542
124	71	195	LU			-6420	4452	-6430	4108	7202	3703			5216	5831
123	72	195	HF			-13623	2637	-10134	1535	6071	7047			3947	3653
122	73	195	TA			-19695	2474	-17181	2001	5074	5070			5981	6043

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
121	74	195	W			-24769	1522	-22252	743	3650	4585			4817	4364
120	75	195	RE			-28420	1110	-26837	772	2575	3258			6804	6690
119	76	195	OS	-29690	500	-30995	392	-30096	247	1126	1621			5616	5531
118	77	195	IR	-31692	31	-32121	647	-31717	198	355	1015			7550	7367
117	78	195	PT	-32802	6	-32477	520	-32733	192					6396	6186
116	79	195	AU	-32572	6	-32097	758	-32536	122			379	197	8462	8441
115	80	195	HG	-31050	50	-30540	882	-31092	151			1556	1443	6837	6950
114	81	195	TL	-27850	210	-27882	892	-28114	793			2658	2977	9064	9626
113	82	195	PB	-23550	530	-24321	813	-23256	620			3560	4858	7757	7526
112	83	195	BI	-17680	210	-18174	1640	-17780	1455			6146	5475	9550	10604
111	84	195	PO	-11060	970	-11120	1492	-9503	1178			7054	8277	8426	8533
110	85	195	AT			-2823	2802	-1486	2606			8296	8017	10161	11291
109	86	195	RN			6115	4060	9046	1928			8939	10533	9306	7686
108	87	195	FR			17000	3729	17938	4121			10884	8891	11252	11751
107	88	195	RA			28277	6494	29754	3009			11277	11816	10272	9268
106	89	195	AC			40932	6577	41601	5915			12655	11846	12042	12817
126	70	196	YB			5401	4522	3952	3111	7417	6206			4351	5178
125	71	196	LU			-2016	5625	-2254	4556	9131	5826			3667	3896
124	72	196	HF			-11147	2631	-8080	1718	4802	5103			5595	6018
123	73	196	TA			-15950	2884	-13184	2305	7110	7369			4326	4074
122	74	196	W			-23060	1576	-20553	877	2486	3018			6362	6372
121	75	196	RE			-25547	1394	-23572	955	4564	5520			5193	4806
120	76	196	OS			-30111	559	-29092	230		457			7187	7068
119	77	196	IR	-29440	60	-30049	465	-29550	225	2291	2915	61		5999	5904
118	78	196	PT	-32652	6	-32341	490	-32465	170					7936	7804
117	79	196	AU	-31162	9	-30807	537	-31081	202	512	817	1534	1383	6781	6617
116	80	196	HG	-31846	10	-31319	855	-31899	110					8849	8878
115	81	196	TL	-27350	230	-27034	1061	-27459	618			4285	4439	7223	7417
114	82	196	PB	-25150	400	-25704	672	-25337	489			1329	2122	9453	10152
113	83	196	BI	-17760	530	-18248	1573	-17535	1226			7456	7801	8144	7826
112	84	196	PO	-13210	750	-12990	1154	-12535	1016			5258	5000	9940	11103
111	85	196	AT	-4050	1180	-3568	2653	-2290	2293			9421	10245	8816	8875
110	86	196	RN			3633	2085	5342	1709			7201	7632	10553	11775
109	87	196	FR			15373	4592	18118	3683			11740	12775	9697	7892
108	88	196	RA			24702	4220	25666	2662			9328	7548	11645	12159
107	89	196	AC			38339	7888	40098	5520			13636	14432	10664	9573
106	90	196	TH			49548	6033	50471	3670			11209	10373		
127	70	197	YB			12380	6387	11038	3371	10778	10424			1093	986
126	71	197	LU			1601	5445	613	4969	8448	4481			4454	5204

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				-- Q(BETA-) --		--- Q(EC) ----		---- S(N) ----	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT SHELL	LINEAR SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
125	72	197	HF			-6847	3841	-3868	1992	6732	7329			3771	3659
124	73	197	TA			-13580	3065	-11197	2618	5842	5465			5701	6085
123	74	197	W			-19422	1881	-16663	1037	4523	5310			4433	4182
122	75	197	RE			-23945	1548	-21973	1152	3401	4015			6470	6473
121	76	197	OS			-27347	753	-25989	314	1928	2655			5308	4968
120	77	197	IR	-28430	200	-29275	521	-28644	225	1104	1790			7298	7165
119	78	197	PT	-30431	6	-30380	191	-30434	179	403	559			6110	6041
118	79	197	AU	-31150	6	-30783	507	-30994	176					8048	7984
117	80	197	HG	-30735	21	-30142	666	-30566	190			641	427	6894	6739
116	81	197	TL	-28330	190	-27926	1038	-28464	3290			2215	2102	8963	9075
115	82	197	PB	-24630	360	-24970	834	-24841	397			2955	3623	7338	7575
114	83	197	BI	-19410	550	-19746	1314	-19789	996			5224	5051	9569	10324
113	84	197	PO	-13230	640	-13179	1353	-12359	887			6566	7429	8260	7896
112	85	197	AT	-6030	840	-5555	2211	-5513	1993			7624	6846	10057	11294
111	86	197	RN			2770	2464	4420	1528			8325	9934	8933	8992
110	87	197	FR			12773	2332	14220	3297			10002	9800	10671	11968
109	83	197	RA			22957	5248	25909	2358			10184	11688	9815	7828
108	89	197	AC			34644	5543	35874	5003			11687	9965	11765	12294
107	90	197	TH			46835	7886	48943	3531			12190	13069	10784	9598
128	70	198	YB			17417	4849	18166	3605	9210	10847			3034	943
127	71	198	LU			8207	6946	7319	5419	11812	8498			1465	1365
126	72	198	HF			-3605	3462	-1178	2163	6048	6193			4829	5382
125	73	198	TA			-9654	4053	-7371	2998	7774	7604			4146	4245
124	74	198	W			-17428	1994	-14975	1187	3254	3531			6078	6384
123	75	198	RE			-20683	1843	-18507	1381	5441	6248			4809	4605
122	76	198	OS			-26125	858	-24755	402	764	1208			6850	6838
121	77	198	IR	-25520	300	-26890	588	-25964	345	3097	3968			5686	5392
120	78	198	PT	-29921	20	-29987	179	-29933	99					7679	7570
119	79	198	AU	-29591	6	-29202	234	-29387	182	1299	1506	784	546	6491	6464
118	80	198	HG	-30964	6	-30501	643	-30893	167					8430	8398
117	81	198	TL	-27500	80	-27131	890	-27557	3668			3370	3335	7276	7165
116	82	198	PB	-25900	270	-26248	769	-26277	302			883	1280	9348	9507
115	83	198	BI	-19300	540	-19396	1209	-19641	805			6851	6635	7722	7924
114	84	198	PO	-15070	520	-15064	1082	-15099	733			4332	4542	9955	10810
113	85	198	AT	-6670	310	-6130	1843	-5643	1727			8934	9456	8645	8200
112	86	198	RN			396	1633	687	1344			6526	6330	10445	11803
111	87	198	FR			11523	2839	12930	2946			11127	12243	9320	9361
110	88	198	RA			19967	2800	21545	2117			8444	8614	11060	12434
109	89	198	AC			32512	6477	35910	4529			12544	14364	10203	8036
108	90	198	TH			42750	5094	44321	3154			10238	8411	12155	12693

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
[illegible]	71	199	LU			13143	6054	14244	5868	10245	8709	3136	1147
[illegible]	72	199	HF			2897	5001	5534	2380	9414	10278	1568	1358
1[illegible]	73	199	TA			-6516	3970	-4743	3331	7092	6483	4934	5444
[illegible]5	74	199	W			-13609	2942	-11226	1439	5188	5665	4252	4322
[illegible]24	75	199	RE			-18797	2055	-16892	1614	4173	4543	6185	6457
123	76	199	OS			-22971	1070	-21436	526	2805	3382	4917	4752
122	77	199	IR			-25777	842	-24818	629	1934	2627	6959	6926
121	78	199	PT	-27420	25	-27712	234	-27445	118	1208	1592	5796	5584
120	79	199	AU	-29104	6	-28921	220	-29038	110	111	366	7790	7723
119	80	199	HG	-29557	6	-29033	458	-29404	157			6603	6583
118	81	199	TL	-28080	220	-27603	872	-28064	4061			8543	8577
117	82	199	PB	-25280	90	-25566	522	-25492	282			7390	7286
116	83	199	BI	-20610	430	-20788	1050	-21161	621			9462	9890
115	84	199	PO	-15050	590	-14829	939	-15073	623			7837	8046
114	85	199	AT	-8470	210	-8130	1644	-8564	1457			10071	10992
113	86	199	RN			-295	2358	473	1197			8762	8284
112	87	199	FR			9032	1825	8976	2607			10562	12024
111	88	199	RA			18600	3418	20152	1915			9438	9464
110	89	199	AC			29404	4012	31348	4103			11178	12632
109	90	199	TH			40499	6493	44426	2830			10322	7966
129	71	200	LU			19740	7228	21735	6360	12278	9629	1474	581
128	72	200	HF			7462	3701	12105	2567	7846	10548	3506	1501
127	73	200	TA			-383	5229	1557	3703	10460	10445	1938	1771
126	74	200	W			-10844	2769	-8888	1575	4505	4644	5306	5733
125	75	200	RE			-15349	2861	-13532	1928	6110	6622	4624	4711
124	76	200	OS			-21460	1233	-20154	630	1537	1750	6560	6790
123	77	200	IR			-22997	1051	-21905	823	3978	4786	5292	5158
122	78	200	PT	-26600	180	-26976	350	-26691	157	45	334	7335	7317
121	79	200	AU	-27300	50	-27021	270	-27026	134	2108	2412	6172	6059
120	80	200	HG	-29514	6	-29129	453	-29438	82			8167	8104
119	81	200	TL	-27060	10	-26512	747	-26994	173			6980	7002
118	82	200	PB	-26160	190	-26419	524	-26409	2113			8923	8988
117	83	200	BI	-20460	420	-20486	768	-20684	501			7769	7594
116	84	200	PO	-16740	520	-16603	849	-16985	501			9844	9982
115	85	200	AT	-8670	540	-8276	1546	-8893	1229			8217	8399
114	86	200	RN	-3740	750	-2678	1161	-2944	1020			10454	11489
113	87	200	FR			7958	2737	8430	2304			9144	8616
112	88	200	RA			15724	2295	15706	1710			10947	12516
111	89	200	AC			27653	4511	29585	3714			9821	9834
110	90	200	TH			37005	3446	39408	2567			11564	13089

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
109	91	200	PA			50076	9221	55727	7370			13071	16318		
130	71	201	LU			24903	6746	28877	6867	10945	9312			2909	929
129	72	201	HF			13958	4869	19565	2810	9880	11677			1576	612
128	73	201	TA			4077	4454	7887	4072	8893	10581			3610	1741
127	74	201	W			-4815	3971	-2694	1758	7875	8566			2043	1878
126	75	201	RE			-12690	2869	-11260	2177	5428	5649			5412	5800
125	76	201	OS			-18119	2014	-16910	870	3474	3772			4731	4827
124	77	201	IR			-21594	1262	-20683	1016	2711	3272			6603	6850
123	78	201	PT	-23740	110	-24305	514	-23955	258	2090	2458			5401	5335
122	79	201	AU	-26400	100	-26395	219	-26414	203	945	1185			7445	7460
121	80	201	HG	-27672	6	-27341	477	-27600	98					6283	6233
120	81	201	TL	-27185	16	-26721	742	-27179	100			619	420	8279	8256
119	82	201	PB	-25327	35	-25441	196	-25457	162			1280	1722	7093	7120
118	83	201	BI	-21410	310	-21452	633	-21666	361			3988	3791	9037	9052
117	84	201	PO	-16410	490	-16415	762	-16593	450			5037	5072	7884	7679
116	85	201	AT	-10520	640	-10165	1350	-10897	1004			6249	5695	9959	10074
115	86	201	RN	-3950	640	-2941	1113	-3410	890			7224	7486	8333	8536
114	87	201	FR			5458	1305	4800	1994			8399	8210	10571	11701
113	88	201	RA			14533	3314	15090	1545			9075	10290	9261	8686
112	89	201	AC			24659	3297	24912	3336			10126	9822	11065	12743
111	90	201	TH			35136	4375	37547	2345			10476	12634	9939	9931
110	91	201	PA			46464	6651	50494	6831			11327	12946	11683	13304
130	72	202	HF			18755	4013	26342	3057	8547	11443			3274	1294
129	73	202	TA			10207	5404	14899	4487	10930	11727			1942	1060
128	74	202	W			-722	2970	3171	1910	6307	8652			3978	2206
127	75	202	RE			-7029	3884	-5481	2469	8800	9481			2411	2292
126	76	202	OS			-15830	1959	-14963	949	2792	2847			5783	6124
125	77	202	IR			-18622	1913	-17810	1301	4651	5282			5100	5199
124	78	202	PT			-23274	693	-23093	319	822	1041			7041	7210
123	79	202	AU	-23860	200	-24096	507	-24135	349	2993	3222			5772	5793
122	80	202	HG	-27356	6	-27089	452	-27357	91					7820	7829
121	81	202	TL	-25988	18	-25306	759	-25812	117	719	209	1782	1545	6657	6704
120	82	202	PB	-25942	11	-26025	185	-26021	87					8655	8635
119	83	202	BI	-21040	260	-20849	431	-21015	249			5176	5005	7468	7421
118	84	202	PO	-17780	360	-17759	518	-17946	351			3090	3069	9414	9423
117	85	202	AT	-10520	630	-10354	1315	-10819	838			7404	7126	8259	7993
116	86	202	RN	-5880	580	-5209	996	-5817	745			5145	5001	10338	10478
115	87	202	FR	3160	310	4817	1051	3953	1728			10027	9771	8711	8917
114	88	202	RA			11652	1771	10980	1345			6835	7026	10951	12180

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
113	89	202	AC			23089	4211	23963	2996			11436	12982	9641	9020
112	90	202	TH			31760	2840	32393	2118			8671	8429	11446	13225
111	91	202	PA			44215	7091	48249	6325			12454	15856	10320	10315
110	92	202	U			54551	5565	59881	4467			10336	11632		
131	72	203	HF			25353	5733	34023	3325	10451	12600			1473	391
130	73	203	TA			14902	5030	21422	4917	9598	11384			3377	1548
129	74	203	W			5303	3841	10037	2123	8345	9900			2045	1205
128	75	203	RE			-3041	3232	137	2756	7233	9467			4083	2453
127	76	203	OS			-10275	2910	-9330	1081	6165	6587			2517	2438
126	77	203	IR			-16441	1987	-15917	1507	3969	4449			5890	6178
125	78	203	PT			-20411	1332	-20367	562	2763	3020			5208	5345
124	79	203	AU	-22980	220	-23174	587	-23387	469	1725	1849			7150	7324
123	80	203	HG	-25277	6	-24900	596	-25237	160	265	473			5882	5951
122	81	203	TL	-25769	6	-25165	742	-25711	99					7931	7971
121	82	203	PB	-24794	10	-24722	238	-24826	94			443	884	6768	6877
120	83	203	BI	-21600	50	-21546	201	-21616	114			3175	3210	8768	8671
119	84	203	PO	-17360	90	-17269	188	-17377	262			4277	4238	7582	7503
118	85	203	AT	-11970	480	-11812	981	-12246	652			5457	5131	9528	9497
117	86	203	RN	-6000	710	-5512	1308	-5839	670			6299	6406	8374	8092
116	87	203	FR	1230	210	2434	1028	1424	1463			7947	7263	10454	10600
115	88	203	RA			10896	1748	10011	1197			8461	8587	8827	9039
114	89	203	AC			20091	2587	19636	2646			9195	9624	11068	12397
113	90	203	TH			30073	4264	31379	1934			9981	11743	9758	9084
112	91	203	PA			40721	5733	42851	5832			10648	11472	11564	13468
111	92	203	U			52183	6499	57523	4170			11461	14671	10438	10429
132	72	204	HF			30251	4568	40902	3589	9111	12247			3174	1192
131	73	204	TA			21139	6375	28654	5372	11505	12568			1834	839
130	74	204	W			9634	3249	16085	2339	7013	9532			3741	2023
129	75	204	RE			2620	3965	6553	3094	9274	10765			2409	1655
128	76	204	OS			-6653	2062	-4211	1180	4598	6470			4449	2953
127	77	204	IR			-11251	2781	-10682	1756	7345	8143			2882	2836
126	78	204	PT			-18597	1375	-18825	592	2081	2259			6258	6530
125	79	204	AU	-20200	300	-20678	994	-21084	727	3669	3743			5576	5769
124	80	204	HG	-24703	6	-24348	584	-24828	142					7520	7662
123	81	204	TL	-24353	6	-23345	839	-24044	167	1607	1047	1002	784	6252	6404
122	82	204	PB	-25117	6	-24953	183	-25091	80					8301	8335
121	83	204	BI	-20820	170	-20614	479	-20775	201			4338	4316	7139	7230
120	84	204	PO	-18250	180	-18340	350	-18317	151			2274	2457	9141	9011
119	85	204	AT	-11970	420	-11695	667	-11984	490			6645	6332	7954	7810

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
118	86	204	RN	-7770	580	-7345	917	-7648	544						
117	87	204	FR	870	640	1756	1653	1062	1256			4349	4336	9903	9880
116	88	204	RA	6280	890	8136	1456	7096	1028			9102	8710	8748	8433
115	89	204	AC			18960	2476	18284	2342			6379	6034	10830	10986
114	90	204	TH			26698	2202	26582	1712			10823	11188	9202	9422
113	91	204	PA			38657	6557	41490	5372			7738	8298	11445	12867
112	92	204	U			48311	4819	51629	3873			11958	14908	10135	9432
111	93	204	NP			62074	9098	69107	8479			9653	10138	11943	13964
												13763	17478		
132	73	205	TA			25935	5818	35278	5839	10167	12109				
131	74	205	W			15768	4580	23168	2575	8920	10827			3275	1448
130	75	205	RE			6847	3698	12341	3446	7943	10320			1937	989
129	76	205	OS			-1095	2715	2021	1351	6640	7817			3845	2284
128	77	205	IR			-7735	2223	-5796	2003	5779	7969			2514	1839
127	78	205	PT			-13515	2094	-13766	679	5458	5885			4556	3186
126	79	205	AU			-18973	1276	-19651	1044	2988	3001			2989	3012
125	80	205	HG	-22299	8	-21962	906	-22653	376	941	1095			6366	6639
124	81	205	TL	-23837	5	-22904	829	-23748	143	340				5685	5896
123	82	205	PB	-23777	6	-23244	429	-23582	147					7630	7776
122	83	205	BI	-21070	9	-20957	199	-21066	99				165	6362	6563
121	84	205	PO	-17576	35	-17520	231	-17613	107			2287	2515	8413	8362
120	85	205	AT	-12960	300	-12879	625	-12970	322			3436	3453	7252	7367
119	86	205	RN	-7600	480	-7342	643	-7483	435			4641	4642	9255	9056
118	87	205	FR	-1040	700	-190	1321	-851	1028			5536	5486	8068	7907
117	88	205	RA	5980	920	7343	2087	6648	933			7151	6632	10018	9984
116	89	205	AC			16084	2072	15241	2038			7534	7499	8864	8518
115	90	205	TH			25449	2256	25114	1544			8740	8592	10946	11114
114	91	205	PA			35165	4836	36459	4911			9365	9872	9319	9539
113	92	205	U			46129	6225	50187	3608			9715	11345	11563	13102
112	93	205	NP			58083	7457	62968	7909			10964	13727	10252	9513
												11954	12781	12061	14210
133	73	206	TA			31867	7364	43678	6354	11661	14359				
132	74	206	W			20205	3785	29319	2809	7582	10345			2140	-329
131	75	206	RE			12622	4775	18973	3825	9853	11675			3635	1921
130	76	206	OS			2768	2259	7298	1524	5308	7295			2296	1439
129	77	206	IR			-2539	2765	2	2302	7823	9410			4207	2795
128	78	206	PT			-10363	1399	-9407	734	3891	5634			2875	2272
127	79	206	AU			-14254	1894	-15042	1248	6367	6507			4919	3713
126	80	206	HG	-20955	21	-20622	964	-21549	318	260	442			3352	3462
125	81	206	TL	-22269	5	-20882	1081	-21992	365	2287	1629			6732	6988
124	82	206	PB	-23795	5	-23170	412	-23621	124					6050	6315
														7997	8109

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA &	BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
123	83	206	BI	-20033	12	-19615	439	-19893	161			3555	3728	6729	6898
122	84	206	PO	-18190	11	-18232	174	-18231	89			1382	1662	8782	8688
121	85	206	AT	-12730	250	-12428	481	-12625	213			5804	5605	7620	7726
120	86	206	RN	-8970	360	-8897	698	-8820	305			3530	3804	9625	9407
119	87	206	FR	-1180	620	-557	1097	-1020	828			8339	7800	8437	8240
118	88	206	RA	3960	810	5023	1530	4370	781			5581	5390	10390	10349
117	89	206	AC			14919	3012	14450	1792			9896	10080	9235	8861
116	90	206	TH			22200	1793	21694	1354			7280	7243	11320	11490
115	91	206	PA			33544	4643	34594	4487			11343	12900	9691	9936
114	92	206	U			42262	4064	44672	3320			8718	10078	11937	13585
113	93	206	NP			55528	8478	61180	7371			13266	16507	10626	9859
133	74	207	W			26034	5368	37489	3106	9077	12626			2242	-99
132	75	207	RE			16956	4396	24862	4214	8516	11120			3738	2183
131	76	207	OS			8440	3312	13742	1720	7219	8709			2400	1627
130	77	207	IR			1220	2580	5032	2616	6493	8855			4312	3042
129	78	207	PT			-5272	1857	-3822	873	5936	7148			2981	2487
128	79	207	AU			-11209	1414	-10971	1455	4801	6125			5026	4001
127	80	207	HG			-16011	1475	-17097	302	3640	3898			3461	3619
126	81	207	TL	-21041	6	-19651	1130	-20996	311	1606	996			6841	7076
125	82	207	PB	-22463	5	-21258	806	-21992	343					6160	6443
124	83	207	BI	-20058	8	-19651	420	-19930	134			1607	2061	8107	8108
123	84	207	PO	-17150	11	-17001	426	-17179	148			2649	2751	6841	7020
122	85	207	AT	-13310	50	-13252	205	-13279	118			3749	3900	8895	8724
121	86	207	RN	-8690	90	-8559	235	-8626	226			4693	4652	7733	7878
120	87	207	FR	-2650	480	-2226	1141	-2433	624			6332	6193	9739	9483
119	88	207	RA	3700	700	4542	1379	4118	654			6768	6551	8552	8322
118	89	207	AC			12485	1994	12062	1523			7942	7944	10505	10458
117	90	207	TH			20920	3209	20823	1239			8435	8760	9351	8941
116	91	207	PA			30178	4099	31030	4069			9258	10206	11436	11635
115	92	207	U			40524	4078	42674	3073			10345	11643	9808	10069
114	93	207	NP			51544	6439	55429	6834			11019	12755	12055	13822
134	74	208	W			30525	4785	43157	3323	8094	10653			3581	2403
133	75	208	RE			22431	5691	32503	4653	10014	13382			2597	430
132	76	208	OS			12416	2746	19121	1911	5881	8079			4095	2692
131	77	208	IR			6534	3411	11042	2956	8407	10373			2757	2061
130	78	208	PT			-1872	1539	669	1015	4605	6540			4671	3579
129	79	208	AU			-6478	1810	-5871	1716	6849	7660			3340	2971
128	80	208	HG			-13328	904	-13532	222	2073	3457			5388	4506
127	81	208	TL	-16768	6	-15401	1208	-16989	268	4989	4333			3821	4065

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
126	82	208	PB	-21759	5	-20391	871	-21322	294					7204	7402
125	83	208	BI	-18879	5	-18102	811	-18603	340			2288	2719	6522	6744
124	84	208	PO	-17475	6	-17403	408	-17512	123			699	1091	8472	8403
123	85	208	AT	-12640	160	-12385	497	-12569	234			5017	4943	7205	7361
122	86	208	RN	-9560	170	-9749	351	-9618	153			2635	2950	9261	9062
121	87	208	FR	-2770	410	-2253	816	-2625	466			7496	6993	8098	8263
120	88	208	RA	1930	580	2505	1322	2372	503			4759	4997	10107	9817
119	89	208	AC			11636	1858	11474	1284			9130	9102	8919	8658
118	90	208	TH			18116	1980	18080	1063			6479	6605	10875	10814
117	91	208	PA			28530	4929	29803	3695			10413	11722	9719	9298
116	92	208	U			36788	3493	38719	2813			8258	8916	11807	12025
115	93	208	NP			49437	6275	53034	6332			12648	14315	10178	10465
135	74	209	W			36323	6548	51029	3657	9503	13061			2273	199
134	75	209	RE			26819	5459	37967	5060	9032	11473			3683	2608
133	76	209	OS			17787	4067	26494	2170	7381	10320			2700	699
132	77	209	IR			10406	3189	16174	3307	7070	9713			4199	2940
131	78	209	PT			3336	2320	6460	1180	6520	8142			2862	2280
130	79	209	AU			-3184	1712	-1681	1991	5519	6946			4778	3881
129	80	209	HG			-8703	1193	-8528	307	4122	5083			3447	3167
128	81	209	TL	-13650	15	-12826	879	-13711	130	3423	3761			5496	4793
127	82	209	PB	-17624	5	-16250	970	-17472	237	1094	454			3930	4222
126	83	209	BI	-18268	5	-17344	875	-17926	293					7314	7395
125	84	209	PO	-16373	7	-15964	804	-16276	327			1380	1650	6633	6835
124	85	209	AT	-12888	9	-12898	423	-12910	139			3066	3365	8583	8412
123	86	209	RN	-8994	35	-8995	428	-9045	161			3903	3864	7317	7498
122	87	209	FR	-3760	300	-3557	852	-3683	322			5438	5361	9374	9129
121	88	209	RA	1970	470	2364	857	2042	400			5922	5726	8212	8400
120	89	209	AC	9120	690	9485	1690	9647	1043			7121	7604	10222	9898
119	90	209	TH			17153	2001	17416	917			7667	7768	9034	8735
118	91	209	PA			25610	3769	26933	3312			8457	9516	10990	10941
117	92	209	U			35023	4862	37395	2605			9413	10462	9835	9394
116	93	209	NP			45584	5581	48933	5837			10560	11537	11923	12172
115	94	209	PU			57505	5387	62721	4179			11921	13788		
136	74	210	W			40776	5614	57062	3878	8508	11711			3619	2038
135	75	210	RE			32267	6915	45351	5548	10444	13841			2624	688
134	76	210	OS			21823	3664	31509	2343	6397	8474			4036	3056
133	77	210	IR			15425	4253	23034	3706	8572	11978			3053	1211
132	78	210	PT			6852	1990	11056	1339	5182	7431			4555	3476
131	79	210	AU			1669	2332	3624	2292	7437	8578			3217	2766

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT SHELL		LINEAR SHELL		CONSTANT	LINEAR	CONSTANT	LINEAR
130	80	210	HG			-5767	977	-4954	389	2791	4333	5135	4397
129	81	210	TL	-9251	13	-8558	895	-9287	152	5475	5408	3804	3648
128	82	210	PB	-14738	5	-14034	506	-14696	95			5855	5295
127	83	210	BI	-14801	5	-13562	974	-14405	234	2005	1481	4289	4550
126	84	210	PO	-15963	5	-15568	869	-15886	285			7675	7681
125	85	210	AT	-11976	12	-11820	813	-11981	334			6993	7143
124	86	210	RN	-9608	12	-9871	411	-9693	133			8946	8718
123	87	210	FR	-3640	250	-3165	826	-3479	247			7679	7867
122	88	210	RA	610	350	696	889	663	303			9738	9449
121	89	210	AC	8860	610	8981	1189	8928	844			8575	8789
120	90	210	TH			14636	1802	15263	745			10587	10223
119	91	210	PA			24282	3647	25918	2958			9398	9085
118	92	210	U			31737	3470	34155	2361			11357	11310
117	93	210	NP			43453	6608	47253	5384			10201	9750
116	94	210	PU			53285	4617	58214	3878			12291	12578
136	75	211	RE			36619	6416	51168	5983	9450	12507	3720	2254
135	76	211	OS			27168	5113	38660	2639	7811	10801	2726	921
134	77	211	IR			19357	4133	27859	4077	7590	10241	4139	3247
133	78	211	PT			11767	3053	17617	1567	6685	9700	3157	1510
132	79	211	AU			5081	2276	7917	2605	6100	7765	4660	3779
131	80	211	HG			-1019	1502	151	505	4710	6066	3324	2966
130	81	211	TL			-5729	1042	-5914	319	4145	4553	5242	4698
129	82	211	PB	-10492	4	-9874	531	-10468	108	1580	1332	3912	3844
128	83	211	BI	-11865	6	-11455	512	-11801	107	440	684	5964	5468
127	84	211	PO	-12444	5	-11895	968	-12485	213			4399	4671
126	85	211	AT	-11653	9	-11534	876	-11594	289			7786	7684
125	86	211	RN	-8761	11	-8904	806	-8871	329			7105	7249
124	87	211	FR	-4220	50	-4152	816	-4165	154			9058	8757
123	88	211	RA	780	90	976	718	745	255			7792	7990
122	89	211	AC	7400	470	7199	1088	7478	661			9852	9521
121	90	211	TH			14017	1308	14413	619			8689	8921
120	91	211	PA			21651	3264	23668	2609			10702	10321
119	92	211	U			30294	3564	33048	2142			9514	9178
118	93	211	NP			40051	5197	43885	4925			11473	11439
117	94	211	PU			51038	6304	56420	3625			10317	9865
137	75	212	RE			42043	7945	58065	6492	10872	14044	2648	1174
136	76	212	OS			31170	4399	44020	2814	6817	9482	4069	2712
135	77	212	IR			24353	5322	34537	4523	9006	12570	3075	1393
134	78	212	PT			15347	2821	21966	1709	5703	8051	4491	3723

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
133	79	212	AU			9644	3144	13914	2963	7606	9984			3508	2074
132	80	212	HG			2038	1358	3929	607	3373	5220			5014	4293
131	81	212	TL			-1334	1426	-1290	470	6066	6317			3676	3447
130	82	212	PB	-7562	6	-7400	181	-7608	92	250	328			5597	5211
129	83	212	BI	-8135	6	-7650	538	-7936	124	2495	2407			4267	4207
128	84	212	PO	-10381	5	-10145	503	-10343	86					6321	5930
127	85	212	AT	-8625	6	-8218	975	-8527	218	758	254	1927	1816	4755	5005
126	86	212	RN	-8666	7	-8977	870	-8782	287					8143	7982
125	87	212	FR	-3690	160	-3544	1072	-3677	379			5433	5104	7463	7583
124	88	212	RA	-110	170	-371	708	-230	183			3172	3446	9418	9046
123	89	212	AC	7180	410	7120	775	7189	520			7491	7420	8150	8359
122	90	212	TH			11874	1206	12651	501			4754	5462	10213	9833
121	91	212	PA			20671	2782	22415	2292			8796	9763	9050	9323
120	92	212	U			27299	3154	30459	1912			6628	8043	11065	10660
119	93	212	NP			38246	5180	42428	4494			10946	11968	9876	9528
118	94	212	PU			47271	4600	52667	3340			9025	10238	11837	11824
138	75	213	RE			46594	7082	64362	6983	10101	13627			3520	1774
137	76	213	OS			36493	5896	50734	3100	8239	11040			2749	1557
136	77	213	IR			28254	4967	39694	4922	8012	11312			4171	2914
135	78	213	PT			20241	3965	28381	1974	7120	10363			3178	1657
134	79	213	AU			13121	3135	18017	3297	6624	8371			4595	3969
133	80	213	HG			6496	2194	9646	801	4879	7461			3613	2355
132	81	213	TL			1617	1452	2185	617	4729	5368			5120	4596
131	82	213	PB	-3140	160	-3112	395	-3183	164	2171	2079			3784	3647
130	83	213	BI	-5243	11	-5284	198	-5262	107	1165	1376			5706	5398
129	84	213	PO	-6663	7	-6449	527	-6638	94	128				4376	4366
128	85	213	AT	-6589	13	-6578	514	-6568	101				70	6431	6112
127	86	213	RN	-5706	11	-5771	969	-5851	206			806	716	4866	5141
126	87	213	FR	-3556	11	-3728	1120	-3621	298			2043	2230	8255	8015
125	88	213	RA	290	35	125	991	165	347			3853	3786	7575	7676
124	89	213	AC	6170	290	5659	531	6169	376			5534	6004	9531	9090
123	90	213	TH	12240	470	11681	888	12246	420			6022	6076	8264	8476
122	91	213	PA			18414	2492	20564	1993			6733	8318	10328	9921
121	92	213	U			26205	2730	29057	1712			7791	8493	9165	9472
120	93	213	NP			35136	4618	39738	4069			8931	10680	11180	10760
119	94	213	PU			45350	4876	51098	3081			10214	11360	9991	9639
118	95	213	AM			56408	7651	62591	9075			11057	11493		
139	75	214	RE			52427	8504	72028	7514	11727	15476			2239	405
138	76	214	OS			40700	4728	56551	3328	7468	10561			3865	2255

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
137	77	214	IR			33231	6187	45989	5391	9438	12935	3094	1776
136	78	214	PT			23793	3469	33054	2118	6126	9145	4519	3399
135	79	214	AU			17667	4082	23908	3701	8043	10612	3525	2181
134	80	214	HG			9623	2078	13295	872	3897	5953	4945	4423
133	81	214	TL			5726	2129	7342	850	6238	7561	3962	2914
132	82	214	PB	-185	3	-512	443	-218	98	835	984	5471	5107
131	83	214	BI	-1209	12	-1347	211	-1202	138	3089	3236	4134	4011
130	84	214	PO	-4479	5	-4437	172	-4438	80			6059	5871
129	85	214	AT	-3389	6	-3234	540	-3232	114	1251	1133	4728	4736
128	86	214	RN	-4328	11	-4485	504	-4366	86			6786	6587
127	87	214	FR	-965	13	-876	1199	-1051	220			5220	5502
126	88	214	RA	90	13	-415	1044	-59	299		3609	3314	8611
125	89	214	AC	6140	250	5800	874	6228	423		461	991	8296
124	90	214	TH	10870	350	9863	441	10945	321		6215	6288	7930
123	91	214	PA			17864	2126	19774	1722		4062	4716	9889
122	92	214	U			23589	2442	26881	1522		8001	8828	8620
121	93	214	NP			33684	4159	37935	3675		5725	7107	10686
120	94	214	PU			41881	4257	48054	2811		10094	11053	9523
119	95	214	AM			54128	7682	60698	8490		8196	10119	11540
											12246	12643	10350
139	76	215	OS			46432	6130	63999	3604	9095	12421	2339	624
138	77	215	IR			37337	5519	51577	5846	8667	12440	3966	2484
137	78	215	PT			28669	4611	39136	2372	7552	10813	3196	1989
136	79	215	AU			21116	3884	28323	4066	7051	9381	4622	3656
135	80	215	HG			14065	2953	18941	1103	5317	8195	3629	2426
134	81	215	TL			8747	2147	10746	1000	5257	6088	5050	4668
133	82	215	PB			3490	1257	4658	297	2344	3083	4068	3195
132	83	215	BI	1710	100	1145	450	1574	197	1753	2116	5578	5294
131	84	215	PO	-541	4	-607	183	-541	103	722	686	4242	41[illegible]
130	85	215	AT	-1262	7	-1330	203	-1228	95			6167	606
129	86	215	RN	-1179	10	-1252	529	-1205	90		78	23	4838
128	87	215	FR	309	13	298	867	221	104		1551	1426	6896
127	88	215	RA	2531	12	2325	1128	2388	216		2026	2166	5331
126	89	215	AC	5950	50	5148	934	5965	330		2823	3577	8723
125	90	215	TH	10870	90	9892	804	10918	420		4743	4952	8043
124	91	215	PA			15933	1676	18412	1460		6041	7494	10002
123	92	215	U			22926	2123	25956	1352		6992	7544	8734
122	93	215	NP			30954	3727	35667	3300		8028	9711	10801
121	94	215	PU			40314	3906	46085	2569		9359	10417	9638
120	95	215	AM			50543	6928	57577	7914		10228	11492	11656

TABLE 9 MAIN TABLE (CONT'D)

N	Z	A	EL	MASS EXCESS WAPSTRA & BOS		MASS EXCESS CONSTANT SHELL		MASS EXCESS LINEAR SHELL		Q(BETA-) CONSTANT	Q(BETA-) LINEAR	Q(EC) CONSTANT	Q(EC) LINEAR	S(N) CONSTANT	S(N) LINEAR
140	76	216	OS			50786	5043	68752	3880	8058	10180			3717	3318
139	77	216	IR			42728	6666	58572	6338	10297	14355			2680	1077
138	78	216	PT			32431	3738	44216	2570	6781	10282			4310	2992
137	79	216	AU			25649	4818	33934	4494	8479	11040			3539	2461
136	80	216	HG			17169	2618	22893	1177	4324	7021			4968	4119
135	81	216	TL			12844	2871	15871	1279	6680	8260			3974	2946
134	82	216	PB			6164	1147	7611	222	1362	1602			5397	5118
133	83	216	BI	5970	330	4801	873	6008	388	3265	4245			4415	3637
132	84	216	PO	1769	6	1536	439	1763	84					5928	5766
131	85	216	AT	2237	6	2149	217	2297	119	1848	1984	613	534	4591	4546
130	86	216	RN	245	11	300	177	313	76					6518	6553
129	87	216	FR	2975	14	3182	883	2985	114	34		2881	2671	5188	5307
128	88	216	RA	3285	11	3148	766	3203	92				217	7249	7256
127	89	216	AC	7980	160	7537	1027	8049	313			4389	4845	5683	5987
126	90	216	TH	10390	170	8885	885	10382	336			1348	2332	9077	8606
125	91	216	PA			15609	1682	18033	1274			6723	7651	8395	8449
124	92	216	U			20639	1599	24300	1180			5030	6266	10357	9727
123	93	216	NP			29936	3347	34358	2949			9296	10058	9089	9379
122	94	216	PU			37227	3453	43476	2338			7291	9117	11157	10679
121	95	216	AM			48620	6492	55230	7366			11392	11754	9993	10417
140	77	217	IR			46982	6107	63191	6844	9261	12229			3818	3452
139	78	217	PT			37720	4824	50962	2815	8412	12231			2782	1326
138	79	217	AU			29308	4377	38730	4912	7710	10420			4412	3276
137	80	217	HG			21598	3444	28310	1386	5754	8742			3643	2655
136	81	217	TL			15844	2729	19567	1459	5687	7074			5072	4376
135	82	217	PB			10156	1860	12492	456	2786	3661			4080	3191
134	83	217	BI			7369	1011	8831	614	2284	2878			5504	5249
133	84	217	PO	5960	160	5085	853	5952	239	899	1547			4522	3882
132	85	217	AT	4382	12	4185	452	4405	100	513	744			6035	5964
131	86	217	RN	3649	8	3672	188	3660	91					4700	4724
130	87	217	FR	4307	15	4626	727	4278	93			953	617	6628	6779
129	88	217	RA	5881	13	5921	783	5807	96			1295	1529	5298	5468
128	89	217	AC	8701	15	8249	607	8646	145			2327	2839	7360	7474
127	90	217	TH	12141	36	11163	967	12350	241			2913	3703	5794	6104
126	91	217	PA			14490	1539	17442	1044			3327	5092	9189	8662
125	92	217	U			20202	1749	23818	1092			5711	6375	8508	8552
124	93	217	NP			27535	2741	32639	2611			7333	8820	10471	9790
123	94	217	PU			36095	3164	42015	2124			8559	9376	9203	9532
122	95	217	AM			45418	5892	52553	6837			9323	10538	11272	10748

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
141	77	218	IR			52436	7910	69759	7381	10801	14587			2618	1504
140	78	218	PT			41635	4025	55171	3059	7376	10200			4157	3862
139	79	218	AU			34259	5272	44971	5366	9342	12351			3121	1830
138	80	218	HG			24916	2799	32619	1525	4983	8103			4754	3762
137	81	218	TL			19932	3398	24516	1745	7119	8788			3984	3123
136	82	218	PB			12812	1557	15727	395	1793	2419			5416	4836
135	83	218	BI			11018	1620	13308	852	3710	4945			4423	3594
134	84	218	PO	8355	3	7307	771	8363	105		217			5849	5661
133	85	218	AT	8099	13	7390	844	8146	204	2028	2861	82		4867	4331
132	86	218	RN	5212	5	5361	441	5284	77					6383	6448
131	87	218	FR	7050	6	7651	731	7227	111	635	596	2289	1942	5046	5122
130	88	218	RA	6644	14	7016	603	6631	80					6977	7247
129	89	218	AC	10837	16	10674	629	10851	151			3658	4219	5646	5867
128	90	218	TH	12362	16	11524	501	12499	103			850	1647	7710	7923
127	91	218	PA			16418	1496	19032	830			4893	6533	6144	6482
126	92	218	U			18732	1627	22940	928			2313	3907	9540	8948
125	93	218	NP			26748	2739	31806	2330			8015	8866	8858	8903
124	94	218	PU			33342	2453	39985	1912			6594	8178	10823	10100
123	95	218	AM			43934	5498	50733	6330			10592	10747	9555	9891
141	78	219	PT			46988	5875	61526	3336	8916	12534			2718	1717
140	79	219	AU			38071	4932	48992	5833	8307	10362			4259	4051
139	80	219	HG			29764	3610	38629	1719	6617	10087			3223	2061
138	81	219	TL			23146	3056	28542	1996	6350	8059			4857	4045
137	82	219	PB			16795	2145	20482	569	3226	4080			4088	3317
136	83	219	BI			13568	1444	16401	996	2718	3769			5521	4979
135	84	219	PO			10850	1272	12632	306	1344	2215			4529	3802
134	85	219	AT	10530	80	9505	779	10417	199	1047	1650			5956	5801
133	86	219	RN	8831	4	8458	837	8766	173		142			4975	4590
132	87	219	FR	8617	9	9231	832	8624	92			773		6491	6675
131	88	219	RA	9377	14	9932	606	9416	93			700	792	5156	5287
130	89	219	AC	11560	16	11659	381	11443	132			1726	2027	7087	7479
129	90	219	TH	14470	24	13839	526	14548	110			2179	3105	5757	6022
128	91	219	PA			16668	1005	18946	615			2829	4397	7821	8156
127	92	219	U			20547	1671	24397	774			3879	5450	6256	6615
126	93	219	NP			25165	2479	30870	2023			4617	6473	9653	9006
125	94	219	PU			32440	2650	39030	1765			7275	8160	8972	9025
124	95	219	AM			41067	4747	48662	5839			8626	9631	10938	10141
142	78	220	T			51246	4802	65783	3593	8156	10901			3813	3815
141	79	220	AU			43089	6387	54881	6330	9850	12619			3054	2182

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
140	80	220	HG			33239	3028	42262	1910	5582	8210			4597	4439
139	81	220	TL			27657	3725	34051	2297	7986	10026			3561	2562
138	82	220	PB			19670	1547	24025	617	2457	3219			5197	4529
137	83	220	BI			17213	1912	20805	1240	4153	5501			4427	3667
136	84	220	PO			13059	1080	15304	218	352	1028			5863	5399
135	85	220	AT	14200	330	12707	891	14276	389	2476	3663			4870	4212
134	86	220	RN	10599	6	10230	773	10612	92					6299	6225
133	87	220	FR	11470	8	11985	1095	11628	176	817	1283	1755	1015	5318	5067
132	88	220	RA	10263	15	11167	726	10345	77					6836	7142
131	89	220	AC	13747	17	14231	388	13827	145			3063	3481	5500	5688
130	90	220	TH	14663	23	14477	168	14681	91			246	853	7433	7939
129	91	220	PA			18637	925	20582	460			4159	5901	6103	6436
128	92	220	U			20449	1153	23848	605			1812	3265	8168	8619
127	93	220	NP			26633	2432	31949	1737			6183	8101	6603	6992
126	94	220	PU			30508	2406	37793	1561			3875	5843	10002	9308
125	95	220	AM			39818	4690	47382	5387			9309	9589	9320	9350
142	79	221	AU			47247	5851	58972	6833	9092	11015			3914	3980
141	80	221	HG			38155	4511	47957	2137	7126	10461			3155	2376
140	81	221	TL			31029	3471	37495	2608	6952	8191			4699	4627
139	82	221	PB			24077	2188	29304	751	4094	5124			3664	2792
138	83	221	BI			19983	1556	24179	1456	3385	4629			5302	4698
137	84	221	PO			16597	1401	19550	367	1788	2754			4533	3826
136	85	221	AT			14809	954	16796	612	1485	2547			5969	5551
135	86	221	RN	14380	160	13324	871	14248	238		943			4977	4436
134	87	221	FR	13265	12	13649	1046	13305	101		200	324		6407	6395
133	88	221	RA	12957	9	13812	1016	13104	163			163		5426	5312
132	89	221	AC	14518	18	15356	555	14523	126			1544	1419	6946	7375
131	90	221	TH	16934	14	16939	179	16906	107			1582	2382	5610	5846
130	91	221	PA			19164	521	20465	315			2225	3559	7544	8187
129	92	221	U			22307	1148	25312	495			3142	4846	6214	6607
128	93	221	NP			26423	1870	31163	1457			4115	5851	8280	8857
127	94	221	PU			31864	2507	38720	1371			5440	7556	6716	7144
126	95	221	AM			37772	4281	46108	4929			5908	7388	10116	9344
143	79	222	AU			52604	6980	64824	7366	10625	13137			2715	2220
142	80	222	HG			41978	3696	51687	2340	6366	8957			4248	4342
141	81	222	TL			35611	4647	42729	2955	8498	10366			3489	2838
140	82	222	PB			27113	1631	32363	873	3058	3288			5035	5013
139	83	222	BI			24054	2086	29075	1718	5024	6594			4000	3176
138	84	222	PO			19029	1006	22480	395	1018	1794			5639	5142

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
137	85	222	AT			18011	1189	20685	815	2923	4349			4870	4,83
136	86	222	RN	16370	3	15087	710	16336	98					6308	5984
135	87	222	FR	16338	21	16405	1109	16503	197	1269	2129	1317	167	5316	4873
134	88	222	RA	14312	6	15135	964	14374	84					6748	6802
133	89	222	AC	16617	7	17661	903	16804	201			2525	2429	5767	5791
132	90	222	TH	17197	16	17722	437	17144	84			61	340	7288	7834
131	91	222	PA	21959	35	21284	226	22275	145			3561	5131	5952	6262
130	92	222	U			22490	709	24721	386			1206	2445	7888	8661
129	93	222	NP			27937	1798	32214	1220			5447	7492	6558	7021
128	94	222	PU			31309	1894	37455	1171			[illegible]	5241	8626	9335
127	95	222	AM			38783	4194	46683	4493			7474	9228	7060	7496
126	96	222	CM			43935	3341	54748	2370			5151	8064		
143	80	223	HG			47235	4780	57375	2580	7901	11080			2815	2383
142	81	223	TL			39333	4223	46294	3299	7740	8891			4350	4506
141	82	223	PB			31593	2952	37402	1045	4606	5342			3591	3032
140	83	223	BI			26987	1828	32060	1991	3990	4879			5139	5087
139	84	223	PO			22996	1431	27180	507	2659	3744			4105	3371
138	85	223	AT			20337	990	23436	995	2154	3385			5745	5320
137	86	223	RN			18182	804	20051	214	121	1642			4976	4356
136	87	223	FR	18382	4	18061	1001	18408	104	277	1045			6416	6167
135	88	223	RA	17235	4	17783	1031	17363	167					5424	5082
134	89	223	AC	17825	9	18875	843	17897	129			1092	534	6857	6978
133	90	223	TH	19256	17	19917	835	19184	188			1041	1286	5876	6031
132	91	223	PA	22330	19	21957	457	22263	114			2039	3078	7398	8083
131	92	223	U			24499	700	26355	305			2542	4092	6063	6438
130	93	223	NP			28009	1310	31372	998			3510	5016	7999	8913
129	94	223	PU			32711	1954	38316	1017			4701	6944	6670	7211
128	95	223	AM			38116	3551	45204	4068			5404	6887	8738	9550
127	96	223	CM			44833	3535	55132	2143			6717	9928	7173	7687
144	80	224	HG			51328	4257	61306	2808	7068	9751			3978	4140
143	81	224	TL			44259	5111	51555	3680	9277	10946			3145	2811
142	82	224	PB			34982	2206	40609	1178	3847	3854			4682	4865
141	83	224	BI			31135	2866	36754	2298	5539	6935			3923	3377
140	84	224	PO			25595	1084	29819	609	1624	2072			5473	5433
139	85	224	AT			23971	1343	27746	1219	3797	5400			4438	3761
138	86	224	RN			20173	561	22346	219		606			6081	5777
137	87	224	FR	21710	240	20820	807	21739	234	1719	2888	647		5312	4740
136	88	224	RA	18813	6	19101	915	18851	80					6753	6583
135	89	224	AC	20219	8	21186	919	20446	192	393	567	2084	1594	5761	5523

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
134	90	224	TH	19993	18	20792	771	19879	87					7196	7377
133	91	224	PA	23798	20	23813	846	23810	224			3021	3930	6215	6525
132	92	224	U			24832	658	25870	212			1018	2059	7739	8556
131	93	224	NP			29678	1247	32591	804			4846	6721	6402	6852
130	94	224	PU			32441	1411	36984	867			2762	4393	8340	9403
129	95	224	AM			39176	3450	45676	3676			6735	8691	7011	7599
128	96	224	CM			43822	2785	53137	1906			4645	7461	9081	10065
145	80	225	HG			56756	5933	66942	3070	8503	11612			2644	2436
144	81	225	TL			48252	4931	55330	4066	8445	9622			4079	4297
143	82	225	PB			39807	3113	45707	1359	5385	5795			3247	2974
142	83	225	BI			34421	2474	39911	2605	4782	5555			4785	4915
141	84	225	PO			29639	2063	34356	758	3174	4054			4027	3535
140	85	225	AT			26464	1246	30301	1453	2763	3855			5578	5517
139	86	225	RN			23701	817	26446	308	996	2621			4544	3971
138	87	225	FR	23790	170	22705	781	23825	313	950	1802			6187	5986
137	88	225	RA	21987	4	21754	696	22023	132		276			5419	4900
136	89	225	AC	21626	12	22396	786	21747	125			642		6861	6771
135	90	225	TH	22303	11	22994	853	22224	166			597	477	5869	5726
134	91	225	PA	24320	21	24580	782	24311	111			1585	2087	7305	7570
133	92	225	U			26578	1254	27159	267			1998	2847	6325	6782
132	93	225	NP			29900	1068	31853	617			3322	4693	7849	8809
131	94	225	PU			33999	1474	38008	738			4098	6155	6514	7047
130	95	225	AM			38795	2871	44115	3300			4795	6106	8452	9632
129	96	225	CM			44770	2947	53380	1709			5975	9265	7123	7829
146	80	226	HG			61237	4854	71201	3319	7883	10641			3591	3812
145	81	226	TL			53354	6284	60560	4486	9882	11427			2970	2841
144	82	226	PB			43471	2667	49133	1520	4553	4434			4407	4646
143	83	226	BI			38917	3209	44698	2947	6322	7506			3575	3284
142	84	226	PO			32595	1575	37192	872	2416	2705			5115	5235
141	85	226	AT			30179	1986	34487	1720	4316	5844			4357	3886
140	86	226	RN			25862	642	28642	388		1134			5910	5875
139	87	226	FR	27460	330	25901	857	27508	459	2596	3839	38		4875	4389
138	88	226	RA	23666	3	23304	666	23669	91					6521	6426
137	89	226	AC	24301	4	24716	517	24531	159	846	1413	1411	862	5752	5287
136	90	226	TH	23189	6	23869	708	23117	76					7196	7179
135	91	226	PA	26029	12	26447	863	26202	197			2577	3084	6204	6181
134	92	226	U	27186	34	27007	770	27248	106			560	1046	7642	7983
133	93	226	NP			31311	1604	32649	525			4303	5401	6661	7275
132	94	226	PU			33883	1255	36782	605			2571	4132	8187	9297

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
131	95	226	AM			40015	2783	44749	2947			6132	7967	6851	7437
130	96	226	CM			44049	2258	51293	1518			4033	6543	8792	10158
129	97	226	BK			52154	4875	62504	4483			8104	11211		
147	80	227	HG			66946	6229	76743	3596	9213	12072			2360	2530
146	81	227	TL			57734	5693	64670	4911	9263	10449			3691	3961
145	82	227	PB			48471	4147	54220	1724	5991	6138			3071	2984
144	83	227	BI			42480	3073	48082	3295	5491	6228			4509	4688
143	84	227	PO			36989	2221	41853	1031	3957	4588			3678	3411
142	85	227	AT			33031	1797	37264	1991	3558	4609			5219	5294
141	36	227	RN			29472	1314	32654	513	1515	3064			4462	4059
140	87	227	FR	29580	100	27957	740	29590	612	1562	2434			6015	5989
139	88	227	RA	27185	20	26394	653	27156	112	234	1193			4982	4585
138	89	227	AC	25850	3	26159	475	25962	133	78	214			6628	6640
137	90	227	TH	25806	4	26081	386	25747	110					5860	5441
136	91	227	PA	26832	10	27213	720	26889	97			1132	1142	7305	7384
135	92	227	U	28880	160	28765	869	28917	239			1552	2027	6314	6402
134	93	227	NP			31630	1011	32542	322			2864	3624	7752	8178
133	94	227	PU			35182	1911	37303	567			3552	4760	6772	7551
132	95	227	AM			39788	2418	43292	2609			4605	5989	8298	9528
131	96	227	CM			45157	2430	51694	1346			5369	8401	6963	7671
130	97	227	BK			51320	4146	60141	4069			6162	8447	8904	10433
147	81	228	TL			63123	6818	69841	5366	10595	11847			2683	2901
146	82	228	PB			52527	3164	57993	1907	5371	5111			4016	4299
145	83	228	BI			47155	4254	52881	3676	6931	7954			3396	3272
144	84	228	PO			40224	1990	44926	1173	3125	3318			4836	4998
143	85	228	AT			37098	2319	41607	2292	5101	6507			4005	3729
142	86	228	RN			31996	1043	35099	609	757	1876			5548	5627
141	87	228	FR			31238	1185	33223	803	3118	4327			4790	4438
140	88	228	RA	28941	5	28120	619	28896	95					6346	6331
139	89	228	AC	28895	5	28919	458	29028	152	1726	2281	799	132	5312	5006
138	90	228	TH	26758	6	27193	330	26747	77					6960	7072
137	91	228	PA	28870	9	29093	410	29118	133			1900	2370	6191	5843
136	92	228	U	29221	21	29198	708	29183	90			105	64	7638	7806
135	93	228	NP			33055	1067	33757	310			3856	4574	6646	6857
134	94	228	PU			35167	1225	36767	389			2111	3009	8086	8606
133	95	228	AM			40753	2819	43344	2314			5586	6577	7106	8019
132	96	228	CM			44594	2016	49711	1172			3840	6366	8634	10053
131	97	228	BK			52093	4126	60110	3678			7499	10398	7298	8102

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
148	81	229	TL			67640	6508	74270	5833	9825	11220			3554	3642
147	82	229	PB			57815	4338	63050	2124	6705	6432			2783	3014
146	83	229	BI			51110	3727	56618	4063	6312	7000			4117	4334
145	84	229	PO			44797	3121	49618	1355	4567	4990			3498	3380
144	85	229	AT			40230	2337	44628	2603	4271	5327			4939	5051
143	86	229	RN			35959	1475	39300	744	2301	3722			4109	3871
142	87	229	FR			33657	1091	35578	994	2361	3208			5652	5716
141	88	229	RA	32720	230	31296	814	32369	178	757	1720			4895	4598
140	89	229	AC	30720	150	30539	406	30649	229	693	1026			6452	6451
139	90	229	TH	29581	3	29846	302	29623	93					5419	5196
138	91	229	PA	29887	13	30097	355	29886	92			251	263	7068	7303
137	92	229	U	31201	11	30970	386	31240	134			872	1354	6300	6014
136	93	229	NP	33758	29	33379	714	33815	122			2408	2574	7747	8014
135	94	229	PU			36482	1323	37742	396			3103	3927	6756	7096
134	95	229	AM			40627	2080	42635	1995			4145	4892	8196	8780
133	96	229	CM			45449	2782	49449	1074			4821	6813	7217	8333
132	97	229	BK			51418	3584	57851	3300			5969	8402	8746	10329
131	98	229	CF			58139	3311	67921	1715			6720	10069		
149	81	230	TL			73157	8134	79910	6339	11146	12776			2554	2432
148	82	230	PB			62010	3698	67134	2336	5934	5713			3876	3988
147	83	230	BI			56076	4672	61421	4479	7648	8365			3105	3269
146	84	230	PO			48428	2442	53056	1519	3947	4030			4441	4634
145	85	230	AT			44481	3222	49025	2945	5714	7026			3821	3675
144	86	230	RN			38766	1412	41999	868	1470	2564			5265	5373
143	87	230	FR			37295	1414	39434	1219	3907	5025			4433	4216
142	88	230	RA	34560	230	33388	652	34409	215	0	668			5980	6032
141	89	230	AC	33760	190	33388	488	33740	359	2251	2830	0		5222	4980
140	90	230	TH	30861	3	31136	218	30910	79					6781	6785
139	91	230	PA	32166	4	32422	332	32326	111	778	764	1285	1416	5747	5631
138	92	230	U	31607	6	31644	329	31562	81					7398	7750
137	93	230	NP	35232	24	34821	400	35470	174			3177	3908	6629	6416
136	94	230	PU			36475	909	37362	214			1653	1891	8078	8451
135	95	230	AM			41612	2063	43181	1744			5137	5819	7087	7526
134	96	230	CM			44990	1875	48274	870			3378	5093	8529	9245
133	97	230	BK			51941	4059	57078	2971			6950	8803	7549	8844
132	98	230	CF			57130	2654	65146	1519			5188	8068	9079	10845
149	82	231	PB			67428	5491	72641	2600	7256	7182			2654	2565
148	83	231	BI			60172	4434	65459	4908	6878	7676			3976	4033
147	84	231	PO			53294	3311	57782	1714	5284	5363			3206	3345

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT SHELL	LINEAR SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
146	85	231	AT			48009	2930	52418	3294	5096	6144	4543	4678
145	86	231	RN			42913	2237	46273	1028	2914	4223	3924	3797
144	87	231	FR			39999	1473	42050	1452	3077	3913	5368	5456
143	88	231	RA			36922	884	38136	308	1546	2452	4533	4344
142	89	231	AC	35910	100	35375	380	35684	156	1495	1836	6085	6128
141	90	231	TH	33812	3	33880	180	33847	105	273	371	5328	5134
140	91	231	PA	33423	3	33606	255	33476	93			6887	6921
139	92	231	U	33780	50	33861	302	33795	139			5854	5839
138	93	231	NP	35626	13	35387	343	35557	107	255	318	7506	7984
137	94	231	PU			37808	801	38827	215	1525	1762	6738	6606
136	95	231	AM			41495	1578	42615	1458	2421	3269	8187	8637
135	96	231	CM			45864	2041	48541	809	3686	3787	7197	7805
134	97	231	BK			51371	3122	55684	2610	4369	5926	8640	9464
133	98	231	CF			57541	3671	64065	1406	5507	7142	7660	9152
150	82	232	PB			71895	4596	77051	2808	6169	8381	3605	3661
149	83	232	BI			65272	5856	70693	5374	6623	6358	2972	2838
148	84	232	PO			57069	2930	61512	1906	8202	9180	4296	4341
147	85	232	AT			52555	3630	56883	3672	4513	4629	3525	3607
146	86	232	RN			46120	1817	49355	1172	6435	7527	4865	4990
145	87	232	FR			43825	2109	46002	1717	2295	3353	4245	4120
144	88	232	RA			39301	912	40446	385	4523	5555	5692	5762
143	89	232	AC	39150	270	38585	487	39063	257	715	1382	4861	4692
142	90	232	TH	35447	2	35541	166	35483	87	3043	3579	6410	6435
141	91	232	PA	35934	12	36025	226	36017	116			5653	5530
140	92	232	U	34597	6	34719	217	34596	78	1306	1421	7214	7270
139	93	232	NP	37290	140	37278	393	37355	314	483	533	6180	6274
138	94	232	PU	38362	23	38046	328	38453	98	2559	2758	7834	8445
137	95	232	AM			42501	1438	43703	1233	767	1098	7066	6983
136	96	232	CM			45418	1473	47500	608	4455	5250	8517	9112
135	97	232	BK			51917	3143	55478	2325	2917	3796	7526	8276
134	98	232	CF			56641	2471	62215	1176	6499	7978	8971	9921
133	99	232	ES			64901	5123	73002	3705	4723	6736		
										8259	10787		
150	83	233	BI			69640	5426	75056	5831	7570	8406	3704	3708
149	84	233	PO			62069	4330	66649	2146	5839	6091	3072	2935
148	85	233	AT			56230	3577	60558	4063	5665	6830	4397	4396
147	86	233	RN			50564	2430	53728	1346	3635	4719	3628	3699
146	87	233	FR			46929	1912	49008	1989	3905	4718	4967	5065
145	88	233	RA			43024	1459	44289	506	2163	3004	4349	4228
144	89	233	AC			40861	688	41285	357	2214	2544	5796	5850

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
143	90	233	TH	38732	2	38647	178	38740	111	1065	1199			4966	4815
142	91	233	PA	37487	2	37581	212	37540	98	549	574			6516	6548
141	92	233	U	36915	3	37031	180	36966	93					5759	5702
140	93	233	NP	38010	120	38028	238	38017	188			997	1050	7322	7409
139	94	233	PU	40042	23	39829	301	40024	115			1800	2007	6288	6500
138	95	233	AM			42630	934	43117	998			2800	3092	7943	8657
137	96	233	CM			46315	1494	48360	538			3684	5242	7175	7212
136	97	233	BK			51361	2509	54206	1996			5046	5846	8627	9343
135	98	233	CF			57076	2796	61737	1102			5715	7531	7637	8548
134	99	233	ES			63890	3909	70911	3303			6813	9173	9082	10162
151	83	234	BI			75068	6444	80427	6328	8947	9720			2643	2700
150	84	234	PO			66120	3741	70706	2337	5206	5291			4021	4014
149	85	234	AT			60913	4673	65415	4488	6993	8332			3388	3215
148	86	234	RN			53920	2259	57083	1518	2865	3991			4716	4716
147	87	234	FR			51055	2402	53091	2289	5247	6090			3946	3938
146	88	234	RA			45808	1216	47000	605	1544	2198			5288	5361
145	89	234	AC			44263	1156	44802	510	3663	4138			4669	4554
144	90	234	TH	40612	4	40600	165	40664	93	235	229			6118	6148
143	91	234	PA	40349	5	40364	224	40434	121	2101	2267			5288	5178
142	92	234	U	38143	2	38263	165	38167	76					6839	6871
141	93	234	NP	39951	9	40018	207	39990	119			1754	1823	6082	6098
140	94	234	PU	40342	8	40254	216	40322	92			236	331	7646	7774
139	95	234	AM	44460	390	44089	792	44277	626			3834	3955	6613	6911
138	96	234	CM			46117	842	47274	389			2028	2997	8268	9156
137	97	234	BK			51932	2452	54646	1736			5814	7371	7500	7632
136	98	234	CF			56192	2019	59999	873			4260	5353	8954	9808
135	99	234	ES			63998	4071	69941	2984			7805	9941	7963	9040
134	100	234	FM			70096	3205	78652	1527			6097	8711		
152	83	235	BI			79614	6039	84554	6831	8164	8558			3526	3945
151	84	235	PO			71449	4664	75995	2581	6585	6579			2743	2782
150	85	235	AT			64864	4473	69415	4908	6361	7588			4121	4071
149	86	235	RN			58502	3312	61827	1733	4193	5466			3489	3327
148	87	235	FR			54308	2406	56361	2603	4477	5355			4818	4802
147	88	235	RA			49831	1609	51006	738	2887	3573			4049	4066
146	89	235	AC			46943	1062	47432	656	3045	3354			5391	5441
145	90	235	TH	44150	230	43898	613	44078	171	1685	1826			4773	4657
144	91	235	PA	42320	100	42213	211	42252	191	1271	1331			6223	6254
143	92	235	U	40916	2	40941	177	40921	92					5394	5318
142	93	235	NP	41040	3	41143	192	41075	94			202	154	6946	6986

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
141	94	235	PU	42160	60	42136	178	42105	154			992	1029	6190	6288
140	95	235	AM	44650	320	44406	589	44457	460			2269	2351	7754	7891
139	96	235	CM			47467	814	48169	310			3061	3711	6721	7176
138	97	235	BK			51625	1777	53302	1459			4157	5133	8377	9414
137	98	235	CF			56653	2243	60217	786			5028	6914	7610	7854
136	99	235	ES			63004	3235	67950	2612			6350	7733	9065	10061
135	100	235	FM			70093	3728	77399	1440			7089	9449	8073	9323
152	84	236	PO			75681	4054	79852	2808	5801	5409			3839	4214
151	85	236	AT			69879	5244	74443	5366	7741	8933			3056	3044
150	86	236	RN			62138	2981	65509	1907	3561	4711			4436	4390
149	87	236	FR			58576	3248	60798	2951	5808	6826			3804	3635
148	88	236	RA			52767	1558	53971	867	2117	2826			5135	5106
147	89	236	AC			50650	1410	51145	842	4390	4723			4365	4359
146	90	236	TH			46260	414	46421	211	1067	1095			5710	5729
145	91	236	PA	45540	200	45193	455	45325	321	2723	2899			5091	4998
144	92	236	U	42442	2	42469	164	42426	79					6543	6566
143	93	236	NP	43426	10	43501	205	43466	114	561	613	1032	1040	5713	5681
142	94	236	PU	42889	6	42940	164	42852	81					7268	7324
141	95	236	AM	46020	310	45967	470	45869	335			3026	3016	6511	6660
140	96	236	CM	47890	300	47462	607	47948	219			1495	2079	8076	8291
139	97	236	BK			52653	1651	53743	1225			5191	5795	7043	7630
138	98	236	CF			56023	1338	58384	612			3369	4640	8701	9903
137	99	236	ES			63141	3351	67728	2316			7118	9343	7934	8293
136	100	236	FM			68774	2702	74934	1183			5632	7206	9390	10535
153	84	237	PO			81396	5814	85450	3082	7383	7172			2357	2474
152	85	237	AT			74012	5059	78277	5831	6959	7838			3939	4237
151	86	237	RN			67053	3644	70439	2129	4942	6046			3156	3141
150	87	237	FR			62110	3138	64393	3295	5177	6082			4537	4477
149	88	237	RA			56933	2321	58310	1042	3448	4290			3906	3733
148	89	237	AC			53484	1493	54019	1035	3621	3957			5238	5197
147	90	237	TH			49863	699	50061	303	2412	2490			4469	4431
146	91	237	PA	47640	50	47450	210	47570	120	2106	2190			5814	5827
145	92	237	U	45389	3	45344	189	45379	104	420	516			5197	5118
144	93	237	NP	44869	2	44923	190	44863	95					6649	6675
143	94	237	PU	45087	6	45191	175	45085	100			268	221	5820	5839
142	95	237	AM	46640	170	46663	347	46522	202			1471	1437	7375	7418
141	96	237	CM	49170	250	48915	596	49130	190			2251	2608	6619	6889
140	97	237	BK			52539	1343	53360	1001			3624	4229	8185	8454
139	98	237	CF			56941	1430	58566	510			4402	5206	7153	7889

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS					Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
138	99	237	ES			62401	2430	65615	1998						
137	100	237	FM			68801	3166	74479	1080			5459	7048	8811	10183
												6400	8864	8044	8526
154	84	238	PO			86129	4871	89214	3326	6711	5584			3339	4308
153	85	238	AT			79418	6439	83629	6331	8543	9637			2666	2720
152	86	238	RN			70874	3288	73992	2337	4160	4958			4250	4519
151	87	238	FR			66714	3698	69033	3675	6560	7430			3468	3431
150	88	238	RA			60153	2152	61602	1173	2817	3555			4851	4779
149	89	238	AC			57336	2131	58046	1273	4954	5406			4219	4044
148	90	238	TH			52381	709	52640	384	1643	1737			5553	5493
147	91	238	PA	51270	300	50738	441	50903	217	3453	3580			4783	4739
146	92	238	U	47307	2	47284	163	47322	86					6131	6129
145	93	238	NP	47453	2	47482	215	47475	118	1186	1322	197	153	5513	5459
144	94	238	PU	46161	2	46295	162	46153	75					6968	7003
143	95	238	AM	48417	32	48597	253	48416	141			2301	2262	6138	6178
142	96	238	CM	49398	31	49292	164	49409	100			694	992	7694	7793
141	97	238	BK	54280	460	53673	1247	54127	812			4380	4717	6938	7304
140	98	238	CF			56506	1092	57790	396			2833	3653	8506	8846
139	99	238	ES			62999	2405	65324	1725			6493	7533	7473	8362
138	100	238	FM			67738	1975	71868	880			4738	6544	9133	10681
136	102	238	NO			83070	3582	92787	1963						
154	85	239	AT			84051	6013	87413	6833	7871	8153			3438	4287
153	86	239	RN			76180	4658	79260	2588	5745	6727			2766	2803
152	87	239	FR			70434	3585	72533	4063	5778	6373			4351	4572
151	88	239	RA			64656	2600	66159	1353	4201	4912			3569	3514
150	89	239	AC			60454	2140	61246	1495	4323	4671			4953	4872
149	90	239	TH			56130	1313	56574	521	2977	3201			4322	4137
148	91	239	PA			53153	520	53372	317	2685	2807			5657	5602
147	92	239	U	50572	2	50468	174	50565	110	1150	1247			4888	4829
146	93	239	NP	49306	3	49317	190	49317	104	569	690			6236	6229
145	94	239	PU	48585	2	48748	188	48627	91					5619	5598
144	95	239	AM	49389	5	49594	241	49398	105			846	771	7074	7089
143	96	239	CM	51090	170	51118	384	51105	167			1523	1706	6245	6376
142	97	239	BK	54280	350	53942	797	54266	618			2823	3161	7802	7932
141	98	239	CF			57532	1206	58335	342			3589	4068	7046	7527
140	99	239	ES			62455	1965	64363	1462			4923	6027	8615	9031
139	100	239	FM			68227	2224	71308	757			5772	6944	7583	8631
137	102	239	NO			82665	4299	91608	1808					8475	9249

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR
155	85	240	AT			89727	7712	92599	7377	9222	9792	2396	2885
154	86	240	RN			80505	4021	82807	2813	5072	5280	3747	4524
153	87	240	FR			75432	4703	77527	4486	7365	8134	3074	3077
152	88	240	RA			68066	2391	69393	1519	3419	3882	4661	4838
151	89	240	AC			64647	2547	65510	1761	5710	6030	3879	3808
150	90	240	TH			58937	1253	59479	606	2346	2498	5265	5166
149	91	240	PA			56590	1023	56981	482	4021	4257	4634	4463
148	92	240	U	52712	5	52569	164	52724	95	381	471	5970	5913
147	93	240	NP	52210	60	52188	202	52252	129	1919	2101	5201	5137
146	94	240	PU	50123	2	50268	162	50150	76			6551	6548
145	95	240	AM	51443	20	51733	262	51555	118			5933	5914
144	96	240	CM	51712	6	51799	163	51721	85			7391	7455
143	97	240	BK	55710	370	55452	803	55580	471			6561	6757
142	98	240	CF	58030	380	57483	553	58109	222			8119	8297
141	99	240	ES			63163	1985	64473	1236			7363	7962
140	100	240	FM			67364	1710	69946	622			8934	9432
138	102	240	NO			81172	2795	88169	1575			9563	11510
155	86	241	RN			86082	5734	87946	3095	6424	6881	2494	2933
154	87	241	FR			79657	4376	81064	4911	6694	6746	3846	4535
153	88	241	RA			72963	3453	74318	1730	5007	5632	3175	3146
152	89	241	AC			67956	2547	68685	2031	4928	5019	4763	4896
151	90	241	TH			63027	1558	63666	746	3733	3889	3981	3885
150	91	241	PA			59294	1067	59776	618	3390	3554	5368	5276
149	92	241	U			55903	597	56222	191	1718	1922	4738	4573
148	93	241	NP	54310	100	54184	191	54300	197	1150	1322	6075	6024
147	94	241	PU	52953	2	53033	172	52977	92			5[illegible]36	5245
146	95	241	AM	52932	2	53147	241	53000	95			6657	6626
145	96	241	CM	53696	6	53831	188	53700	102	113	23	6040	6093
144	97	241	BK	56100	170	56026	500	56065	315	683	699	7498	7587
143	98	241	CF	59190	340	58886	853	59232	201	2195	2364	6668	6949
142	99	241	ES			63006	1310	64085	1002	2859	3166	8227	8458
141	100	241	FM			67963	1985	69822	544	4120	4853	7472	8194
139	102	241	NO			81233	3220	86815	1405	4956	5737	8011	9425
156	86	242	RN			90605	4864	91535	3404	5675	5567	3548	4483
155	87	242	FR			84929	5786	85967	5378	8048	8333	2799	3168
154	88	242	RA			76881	3003	77634	1912	4335	4300	4153	4756
153	89	242	AC			72546	3426	73333	2342	6518	6750	3482	3424

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS				Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
152	90	242	TH			66027	1451	66583	868	2951	2929			5071	5154
151	91	242	PA			63076	1337	63654	808	4779	4946			4290	4194
150	92	242	U			58296	618	58708	216	1087	1236			5678	5586
149	93	242	NP	57520	260	57208	428	57471	330	2489	2774			5048	4900
148	94	242	PU	54715	2	54719	163	54697	80					6386	6351
147	95	242	AM	55463	3	55601	251	55543	111	668	753	882	845	5618	5529
146	96	242	CM	54802	2	54932	162	54790	77					6970	6932
145	97	242	BK	57800	250	57745	440	57684	213			2813	2894	6353	6452
144	98	242	CF	59332	33	59145	163	59360	101			1400	1675	7812	7943
143	99	242	ES			64095	1736	64806	816			4950	5446	6982	7350
142	100	242	FM			67491	1092	69060	403			3395	4253	8543	8833
140	102	242	NO			79943	2485	84817	1228					9360	10068
156	87	243	FR			89353	5282	89553	5872	7300	7049			3647	4486
155	88	243	RA			82053	4371	82504	2155	5689	5870			2899	3202
154	89	243	AC			76363	3254	76633	2648	5847	5466			4254	4772
153	90	243	TH			70516	2304	71167	1039	4542	4671			3583	3488
152	91	243	PA			65974	1361	66495	998	3998	4004			5174	5230
151	92	243	U			61975	790	62490	313	2477	2645			4393	4289
150	93	243	NP			59498	546	59845	613	1859	2104			5782	5698
149	94	243	PU	57753	4	57638	182	57740	111	457	566			5152	5028
148	95	243	AM	57170	3	57181	242	57174	96					6492	6440
147	96	243	CM	57177	3	57280	173	57185	91			99	10	5723	5676
146	97	243	BK	58685	6	58740	190	58649	106			1459	1464	7077	7106
145	98	243	CF	60910	170	60757	612	60807	168			2017	2157	6460	6624
144	99	243	ES	64800	340	64247	797	64780	619			3489	3973	7920	8097
143	100	243	FM			68471	1903	69579	352			4224	4798	7091	7552
141	102	243	NO			80118	2946	83975	1096					7897	8913
156	88	244	RA			86173	3729	85877	2421	4941	4613			3951	4598
155	89	244	AC			81232	4382	81264	3004	7204	7010			3203	3441
154	90	244	TH			74028	1998	74253	1179	3870	3466			4560	4985
153	91	244	PA			70157	2074	70786	1234	5591	5727			3888	3780
152	92	244	U			64566	752	65058	389	1695	1739			5481	5503
151	93	244	NP			62870	724	63319	799	3251	3531			4699	4597
150	94	244	PU	59803	5	59619	224	59788	91					6091	6024
149	95	244	AM	59879	3	59792	257	59915	122	1242	1463	173	127	5460	5330
148	96	244	CM	58450	2	58550	163	58452	75					6802	6804
147	97	244	BK	60646	21	60778	202	60718	119			2228	2265	6033	6003

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
146	98	244	CF	61465	6	61440	163	61426	87			661	708	7388	7452
145	99	244	ES	65970	370	65548	1024	65848	472			410	4421	6771	7004
144	100	244	FM			68310	613	69188	225			270	3339	8232	8462
142	102	244	NO			79222	1774	82626	921					8966	9419
156	89	245	AC			85252	4075	84628	3385	6456	5771			4051	4707
155	90	245	TH			78796	3106	78856	1383	5228	5016			3304	3469
154	91	245	PA			73567	1952	73840	1461	4920	4571			4661	5018
153	92	245	U			68647	1401	69269	522	3289	3460			3990	3861
152	93	245	NP			65358	821	65808	995	2470	2660			5584	5582
151	94	245	PU	63157	30	62887	272	63148	117	1218	1276			4803	4711
150	95	245	AM	61897	4	61668	287	61872	110	612	847			6195	6115
149	96	245	CM	61001	3	61056	182	61025	97					5565	5499
148	97	245	BK	61811	5	61942	191	61850	96			886	825	6907	6939
147	98	245	CF	63377	6	63372	173	63353	104			1430	1503	6139	6144
146	99	245	ES	66380	170	66124	501	66321	316			2751	2967	7495	7599
145	100	245	FM	70020	340	69503	1187	70073	204			3379	3752	6878	7186
143	102	245	NO			79782	2828	82491	808					7512	8206
156	90	246	TH			82513	2659	82017	1606	4480	3828			4354	4911
155	91	246	PA			78033	2880	78189	1743	6280	6094			3606	3723
154	92	246	U			71753	1205	72094	615	2618	2368			4965	5246
153	93	246	NP			69135	1318	69726	1224	4065	4377			4294	4154
152	94	246	PU	65290	50	65069	214	65348	147	437	400			5889	5871
151	95	246	AM	64920	50	64631	327	64948	134	2006	2329			5108	4995
150	96	246	CM	62616	3	62625	224	62619	79					6502	6478
149	97	246	BK	64020	180	64142	429	64078	203			1516	1458	5872	5844
148	98	246	CF	64096	3	64228	164	64130	80			86	52	7216	7294
147	99	246	ES	67930	250	67748	425	67901	214			3520	3770	6447	6491
146	100	246	FM	70131	36	69770	241	70190	107			2021	2239	7805	7954
144	102	246	NO			79202	1199	81530	651					8651	9032
156	91	247	PA			81650	2661	81323	2046	5533	4925			4454	4938
155	92	247	U			76117	2063	76397	783	3978	3882			3707	3768
154	93	247	NP			72139	1316	72515	1456	3395	3349			5067	5282
153	94	247	PU			68744	695	69166	245	2033	2073			4397	4254
152	95	247	AM	67130	150	66710	279	67092	205	1225	1550			5993	5928
151	96	247	CM	65530	5	65484	272	65542	95		6			5213	5148

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
150	97	247	BK	65484	6	65606	245	65535	96			122		6607	6614
149	98	247	CF	66150	160	66322	597	66196	166			715	661	5978	6006
148	99	247	ES	68550	31	68498	192	68521	111			2175	2324	7322	7452
147	100	247	FM	71540	170	71287	596	71619	168			2789	3097	6554	6643
145	102	247	NO			79978	1968	81802	558					7295	7799
156	92	248	U			79433	1775	79312	960	3230	2748			4755	5157
155	93	248	NP			76203	1986	76564	1730	4757	4853			4008	4023
154	94	248	PU			71445	564	71710	301	1362	1069			5370	5527
153	95	248	AM	70490	300	70082	551	70641	337	2823	3282			4693	4523
152	96	248	CM	67389	6	67258	214	67359	85					6297	6255
151	97	248	BK	67990	130	68161	371	68130	199	680	830	902	771	5516	5476
150	98	248	CF	67243	31	67481	225	67300	77					6913	6968
149	99	248	ES	70220	220	70287	874	70221	233			2805	2921	6283	6371
148	100	248	FM	71891	21	71730	242	71875	96			1443	1653	7629	7815
146	102	248	NO			79829	713	81368	426					8219	8505
156	93	249	NP			79417	1930	79449	2021	4010	3754			4857	5186
155	94	249	PU			75406	1207	75695	439	2725	2523			4110	4087
154	95	249	AM			72681	561	73171	620	2153	2403			5473	5541
153	96	249	CM	70748	8	70527	273	70768	117	695	922			4803	4662
152	97	249	BK	69848	4	69831	236	69845	106		96			6401	6357
151	98	249	CF	69722	3	69931	272	69749	102			99		5621	5623
150	99	249	ES	71116	7	71340	246	71166	99			1408	1417	7018	7127
149	100	249	FM	73500	220	73413	1171	73403	211			2072	2236	6389	6544
147	102	249	NO			80933	1208	82246	349					6968	7193
156	94	250	PU			78321	1042	78345	571	1978	1419			5156	5422
155	95	250	AM			76343	1048	76926	818	3518	3908			4409	4317
154	96	250	CM	72986	12	72824	177	73017	104	25	74			5774	5823
153	97	250	BK	72950	5	72799	293	72943	133	1500	1797			5104	4974
152	98	250	CF	71170	4	71299	215	71145	78					6704	6675
151	99	250	ES	73170	180	73488	371	73267	207			2189	2121	5923	5971
150	100	250	FM	74069	31	74162	287	73985	87			673	717	7322	7489
148	102	250	NO			80964	559	81931	249					8041	8386
156	95	251	AM			79156	1051	79568	1026	2771	2900			5259	5429

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS						Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS		CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
155	96	251	CM			76384	599	76668	203	1390	1536			4512	4420
154	97	251	BK	75250	150	74993	399	75132	204	830	1021			5878	5882
153	98	251	CF	74130	5	74162	274	74110	96					5208	5107
152	99	251	ES	74503	8	74751	237	74540	98			588	429	6809	6799
151	100	251	FM	76000	160	76205	325	75928	171			1454	1388	6029	6128
149	102	251	NO			82237	1846	82870	283					6799	7132
156	96	252	CM			78898	561	79037	277	643	528			5557	5702
155	97	252	BK	78530	300	78255	534	78509	339	2197	2482			4810	4694
154	98	252	CF	76031	6	76057	178	76026	85					6177	6155
153	99	252	ES	77150	120	77315	294	77172	201	148	298	1258	1146	5507	5439
152	100	252	FM	76822	37	77167	279	76874	84					7110	7126
150	102	252	NO	82862	26	82578	240	82880	127					7730	8062
156	97	253	BK			80667	803	80826	628	1451	1519			5660	5755
155	98	253	CF	79299	10	79215	189	79306	120	109	300			4914	4791
154	99	253	ES	79012	4	79106	205	79006	109					6281	6237
153	100	253	FM	79346	5	79627	327	79363	114			520	356	5612	5583
151	102	253	NO			84214	684	84267	189					6435	6684
156	98	254	CF	81342	12	81330	191	81359	115					5956	6019
155	99	254	ES	81992	6	81967	216	81993	135	848	1078	637	633	5210	5085
154	100	254	FM	80899	5	81119	252	80915	90					6579	6519
152	102	254	NO	84729	34	84772	230	84711	106					7514	7628
156	99	255	ES	84080	160	83979	401	83970	207	102	177			6060	6094
155	100	255	FM	83796	5	83876	259	83793	107					5314	5193
153	102	255	NO			86829	679	86673	164					6015	6110
156	100	256	FM	85481	8	85593	261	85497	120					6355	6367
154	102	256	NO	87801	40	87920	196	87810	123					6980	6934
155	102	257	NO	90223	31	90278	206	90235	160					5713	5646

TABLE 9 MAIN TABLE (CONT'D)

				MASS EXCESS											
								Q(BETA-)		Q(EC)		S(N)	
N	Z	A	EL	WAPSTRA & BOS	CONSTANT	SHELL	LINEAR	SHELL	CONSTANT	LINEAR	CONSTANT	LINEAR	CONSTANT	LINEAR
156	102	258	NO		91597	490	91540	235					6752	6767
157	102	259	NO	94026	11									