J. Janecke and P.J. Masson Masses

† Nuclide is unstable to one-particle emission
‡ Nuclide is unstable to two-particle, but not one particle emission

Isotope	Mass Excess
^{6}He	17.590
^{7}He	26.370 †
^{8}He	31.170
^{9}He	41.270 †
^{10}He	49.350 †
^{12}He	74.050 †
^{14}He	96.610 †
^{7}Li	14.670
^{8}Li	21.140
^{9}Li	25.190
^{10}Li	33.050
^{11}Li	40.720
^{12}Li	52.550 †
^{13}Li	60.990 †
^{14}Li	71.310 †
^{15}Li	80.340 †
^{17}Li	101.710 †
^{6}Be	18.740 †
^{7}Be	15.530
^{8}Be	5.180
^{9}Be	10.920
^{10}Be	12.720
^{11}Be	20.160
^{12}Be	25.050
^{13}Be	35.240 †
^{14}Be	40.400
^{15}Be	50.780 †
^{16}Be	58.350 ‡
^{17}Be	69.200 †
^{18}Be	76.030 ‡
^{19}Be	87.030 †
^{20}Be	95.240 †
^{22}Be	118.000 †
^{7}B	28.590 †
^{8}B	23.070
^{9}B	11.990
^{11}B	8.760
^{12}B	13.410
^{13}B	16.670
^{14}B	23.580
^{15}B	28.810
^{16}B	37.720 †
^{17}B	43.710
^{18}B	52.440 †
^{19}B	58.180
^{20}B	66.670 †
^{21}B	74.400 ‡
^{22}B	85.450 †
^{23}B	95.130 †
^{8}C	35.370 †
^{9}C	29.100
^{10}C	15.770
^{11}C	10.740
^{12}C	-0.010
^{13}C	3.010
^{14}C	2.990
^{15}C	9.960
^{16}C	13.720
^{17}C	21.060
^{18}C	24.930
^{19}C	32.570
^{20}C	35.810
^{21}C	43.810
^{22}C	49.770
^{23}C	60.560 †
^{24}C	68.750 †
^{26}C	91.620 †
^{10}N	39.180

Isotope	Mass Excess
^{11}N	25.430 †
^{12}N	17.610
^{13}N	5.230
^{15}N	0.170
^{16}N	5.680
^{17}N	7.860
^{18}N	13.080
^{19}N	15.860
^{20}N	20.990
^{21}N	23.740
^{22}N	29.970
^{23}N	35.670
^{24}N	44.970 †
^{25}N	52.860 ‡
^{27}N	73.070 †
^{29}N	97.500 †
^{31}N	121.610 †
^{12}O	33.070 †
^{13}O	23.620
^{14}O	7.960
^{15}O	2.920
^{16}O	-4.760
^{17}O	-0.820
^{18}O	-0.760
^{19}O	3.370
^{20}O	3.650
^{21}O	8.290
^{22}O	9.270
^{23}O	15.240
^{24}O	19.450
^{25}O	28.450 †
^{26}O	34.630
^{27}O	44.860 †
^{28}O	52.380 ‡
^{30}O	74.340 †
^{32}O	96.080 †
^{34}O	118.610 †
^{14}F	33.290 †
^{15}F	17.690 †
^{16}F	11.190 †
^{17}F	1.940
^{19}F	-1.520
^{20}F	0.100
^{21}F	-0.110
^{22}F	2.760
^{23}F	3.490
^{24}F	7.970
^{25}F	11.880
^{26}F	19.160
^{27}F	24.400
^{28}F	33.100 †
^{29}F	39.910
^{30}F	50.910 †
^{31}F	59.440 †
^{32}F	70.390 †
^{33}F	78.960 †
^{35}F	99.100 †
^{36}F	110.140 †
^{37}F	119.070 †
^{14}Ne	54.420 †
^{15}Ne	41.760 †
^{16}Ne	24.690 ‡
^{17}Ne	16.610
^{18}Ne	5.240
^{19}Ne	1.720
^{20}Ne	-7.020
^{21}Ne	-5.890
^{22}Ne	-7.870
^{23}Ne	-5.250
^{24}Ne	-6.020

Isotope	Mass Excess
^{25}Ne	-1.840
^{26}Ne	0.350
^{27}Ne	6.700
^{28}Ne	10.410
^{29}Ne	18.400
^{30}Ne	23.460
^{31}Ne	33.780 †
^{32}Ne	40.620 ‡
^{33}Ne	51.040 †
^{34}Ne	57.980 ‡
^{35}Ne	68.330 †
^{36}Ne	75.940 ‡
^{37}Ne	86.350 †
^{38}Ne	93.610 ‡
^{40}Ne	114.700 †
^{42}Ne	137.690 †
^{44}Ne	161.880 †
^{18}Na	25.380 †
^{19}Na	12.920 †
^{20}Na	6.890
^{21}Na	-2.340
^{23}Na	-9.470
^{24}Na	-8.350
^{25}Na	-9.420
^{26}Na	-6.950
^{27}Na	-5.700
^{28}Na	-0.870
^{29}Na	2.120
^{30}Na	8.360
^{31}Na	12.740
^{32}Na	21.370 †
^{33}Na	27.690
^{34}Na	36.480 †
^{35}Na	42.650
^{36}Na	51.580 †
^{37}Na	58.560
^{38}Na	67.300 †
^{39}Na	74.240
^{40}Na	84.230 †
^{41}Na	93.370 †
^{43}Na	114.570 †
^{45}Na	136.720 †
^{47}Na	160.020 †
^{18}Mg	43.510 †
^{19}Mg	32.220 ‡
^{20}Mg	17.260
^{21}Mg	10.740
^{22}Mg	-0.260
^{23}Mg	-5.410
^{24}Mg	-14.150
^{25}Mg	-13.320
^{26}Mg	-16.110
^{27}Mg	-14.580
^{28}Mg	-14.850
^{29}Mg	-10.740
^{30}Mg	-9.500
^{31}Mg	-3.930
^{32}Mg	-1.250
^{33}Mg	6.850 †
^{34}Mg	11.540
^{35}Mg	19.570
^{36}Mg	24.320
^{37}Mg	32.620 †
^{38}Mg	37.930
^{39}Mg	46.350 †
^{40}Mg	51.510
^{41}Mg	61.330 †
^{42}Mg	68.960 ‡
^{43}Mg	79.860 †
^{44}Mg	88.240 †
^{46}Mg	108.640 †

Isotope	Mass Excess
^{48}Mg	130.570 †
^{50}Mg	154.560 †
^{20}Al	41.630 †
^{21}Al	26.180 †
^{22}Al	17.890
^{23}Al	6.640
^{24}Al	-0.010
^{25}Al	-9.040
^{27}Al	-17.110
^{28}Al	-17.110
^{29}Al	-18.090
^{30}Al	-15.740
^{31}Al	-15.170
^{32}Al	-11.290
^{33}Al	-9.140
^{34}Al	-2.660
^{35}Al	1.260
^{36}Al	7.860
^{37}Al	11.990
^{38}Al	18.610
^{39}Al	23.610
^{40}Al	30.250
^{41}Al	35.230
^{42}Al	43.550 †
^{43}Al	50.900
^{44}Al	60.140 †
^{45}Al	68.120 ‡
^{46}Al	78.340 †
^{47}Al	86.730 †
^{49}Al	107.300 †
^{51}Al	130.280 †
^{53}Al	153.780 †
^{55}Al	177.690 †
^{22}Si	31.970 ‡
^{23}Si	23.430
^{24}Si	10.680
^{25}Si	3.730
^{26}Si	-7.020
^{27}Si	-12.300
^{28}Si	-21.070
^{29}Si	-21.780
^{30}Si	-24.510
^{31}Si	-22.830
^{32}Si	-23.950
^{33}Si	-20.610
^{34}Si	-20.080
^{35}Si	-14.380
^{36}Si	-11.870
^{37}Si	-5.890
^{38}Si	-3.450
^{39}Si	2.870
^{40}Si	6.080
^{41}Si	12.540
^{42}Si	16.020
^{43}Si	24.060
^{44}Si	29.760
^{45}Si	38.600 †
^{46}Si	45.240
^{47}Si	55.000 †
^{48}Si	62.470 ‡
^{49}Si	73.230 †
^{50}Si	81.910 †
^{52}Si	103.600 †
^{54}Si	125.450 †
^{56}Si	148.020 †
^{58}Si	170.930 †
^{60}Si	194.420 †
^{62}Si	218.270 †
^{64}Si	242.420 †
^{24}P	32.850 †

Isotope	Mass Excess
^{25}P	19.800 †
^{26}P	11.140 †
^{27}P	-0.550
^{28}P	-7.360
^{29}P	-16.840
^{31}P	-24.510
^{32}P	-24.520
^{33}P	-26.170
^{34}P	-24.450
^{35}P	-24.690
^{36}P	-20.410
^{37}P	-18.530
^{38}P	-14.230
^{39}P	-12.090
^{40}P	-7.560
^{41}P	-4.520
^{42}P	0.430
^{43}P	3.630
^{44}P	10.020
^{45}P	15.320
^{46}P	22.820
^{47}P	29.000
^{48}P	37.850 †
^{49}P	44.890
^{50}P	54.930 †
^{51}P	63.300 †
^{53}P	83.270 †
^{55}P	103.770 †
^{57}P	125.070 †
^{59}P	146.530 †
^{61}P	168.630 †
^{63}P	191.040 †
^{65}P	213.710 †
^{26}S	27.390 †
^{27}S	17.790
^{28}S	4.580
^{29}S	-2.940
^{30}S	-14.170
^{31}S	-19.110
^{32}S	-26.100
^{33}S	-26.640
^{34}S	-29.910
^{35}S	-28.970
^{36}S	-30.620
^{37}S	-26.960
^{38}S	-26.770
^{39}S	-22.770
^{40}S	-22.420
^{41}S	-18.070
^{42}S	-16.530
^{43}S	-11.860
^{44}S	-10.310
^{45}S	-4.320
^{46}S	-0.360
^{47}S	6.680
^{48}S	11.950
^{49}S	20.360 †
^{50}S	26.690
^{51}S	36.430 †
^{52}S	43.820 ‡
^{53}S	54.390 †
^{54}S	62.140 ‡
^{55}S	73.000 †
^{56}S	81.300 †
^{58}S	100.800 ‡
^{60}S	121.140 †
^{62}S	141.730 †
^{64}S	162.410 †
^{66}S	183.840 †
^{29}Cl	14.270 †
^{30}Cl	4.990 †

Isotope	Mass Excess
^{31}Cl	-6.910
^{32}Cl	-13.540
^{33}Cl	-21.060
^{35}Cl	-28.940
^{36}Cl	-29.410
^{37}Cl	-31.690
^{38}Cl	-29.710
^{39}Cl	-29.820
^{40}Cl	-27.620
^{41}Cl	-27.440
^{42}Cl	-24.590
^{43}Cl	-23.340
^{44}Cl	-20.310
^{45}Cl	-19.160
^{46}Cl	-14.520
^{47}Cl	-11.010
^{48}Cl	-4.880
^{49}Cl	-0.050
^{50}Cl	7.650
^{51}Cl	13.670
^{52}Cl	22.430 †
^{53}Cl	29.080
^{54}Cl	38.740 †
^{55}Cl	46.050 ‡
^{56}Cl	56.020 †
^{57}Cl	63.930 ‡
^{58}Cl	74.070 †
^{59}Cl	81.980 ‡
^{60}Cl	92.660 †
^{61}Cl	100.930 †
^{62}Cl	111.560 †
^{63}Cl	120.090 †
^{64}Cl	130.510 †
^{65}Cl	139.280 †
^{66}Cl	150.250 †
^{67}Cl	159.370 †
^{30}Ar	21.470 ‡
^{31}Ar	11.520
^{32}Ar	-2.070
^{33}Ar	-9.230
^{34}Ar	-18.370
^{35}Ar	-22.980
^{36}Ar	-29.830
^{37}Ar	-30.930
^{38}Ar	-34.890
^{39}Ar	-33.220
^{40}Ar	-35.120
^{41}Ar	-33.090
^{42}Ar	-34.410
^{43}Ar	-31.850
^{44}Ar	-32.240
^{45}Ar	-29.620
^{46}Ar	-29.800
^{47}Ar	-25.620
^{48}Ar	-23.030
^{49}Ar	-17.330
^{50}Ar	-13.210
^{51}Ar	-5.820
^{52}Ar	-0.780
^{53}Ar	7.240
^{54}Ar	12.980
^{55}Ar	22.200 †
^{56}Ar	28.620
^{57}Ar	38.210 †
^{58}Ar	44.700
^{59}Ar	54.800 †
^{60}Ar	61.630 ‡
^{61}Ar	72.000 †
^{62}Ar	79.070 ‡
^{63}Ar	89.470 †
^{64}Ar	96.500 ‡

Isotope	Mass Excess
^{65}Ar	106.930 †
^{66}Ar	114.450 ‡
^{67}Ar	125.330 †
^{68}Ar	133.690 †
^{70}Ar	157.480 †
^{32}K	21.550 †
^{33}K	7.420 †
^{34}K	-1.360 †
^{35}K	-11.280
^{36}K	-17.300
^{37}K	-24.780
^{39}K	-33.340
^{40}K	-33.460
^{41}K	-35.530
^{42}K	-35.000
^{43}K	-36.610
^{44}K	-35.690
^{45}K	-36.490
^{46}K	-35.200
^{47}K	-35.850
^{48}K	-32.580
^{49}K	-30.420
^{50}K	-25.430
^{51}K	-21.620
^{52}K	-15.210
^{53}K	-10.910
^{54}K	-3.800
^{55}K	1.500
^{56}K	9.830 †
^{57}K	15.860
^{58}K	24.030 †
^{59}K	30.490
^{60}K	39.510 †
^{61}K	46.030
^{62}K	55.200 †
^{63}K	62.040
^{64}K	70.930 †
^{65}K	77.980
^{66}K	87.160 †
^{67}K	94.590 ‡
^{68}K	104.710 †
^{69}K	112.760 ‡
^{71}K	135.580 †
^{34}Ca	14.480 ‡
^{35}Ca	4.930
^{36}Ca	-6.400
^{37}Ca	-13.050
^{38}Ca	-22.210
^{39}Ca	-26.810
^{40}Ca	-34.710
^{41}Ca	-35.000
^{42}Ca	-38.550
^{43}Ca	-38.350
^{44}Ca	-41.590
^{45}Ca	-41.070
^{46}Ca	-43.200
^{47}Ca	-42.370
^{48}Ca	-43.940
^{49}Ca	-41.100
^{50}Ca	-39.650
^{51}Ca	-34.980
^{52}Ca	-32.140
^{53}Ca	-26.470
^{54}Ca	-23.070
^{55}Ca	-16.410
^{56}Ca	-12.000
^{57}Ca	-4.060
^{58}Ca	0.560
^{59}Ca	8.700 †
^{60}Ca	14.070
^{61}Ca	22.780 †
^{62}Ca	28.100
^{63}Ca	37.030 †
^{64}Ca	42.370

Isotope	Mass Excess
^{65}Ca	51.290 †
^{66}Ca	57.070
^{67}Ca	66.170 †
^{68}Ca	72.840
^{69}Ca	82.640 †
^{70}Ca	89.750 ‡
^{72}Ca	111.440 †
^{74}Ca	133.490 †
^{76}Ca	156.330 †
^{37}Sc	3.750 †
^{38}Sc	-4.580 †
^{39}Sc	-14.050 †
^{40}Sc	-20.440
^{41}Sc	-28.510
^{42}Sc	-32.100
^{43}Sc	-36.250
^{44}Sc	-37.820
^{45}Sc	-41.010
^{46}Sc	-41.840
^{47}Sc	-44.430
^{48}Sc	-44.520
^{49}Sc	-46.520
^{50}Sc	-44.380
^{51}Sc	-43.250
^{52}Sc	-39.550
^{53}Sc	-37.460
^{54}Sc	-32.690
^{55}Sc	-29.750
^{56}Sc	-23.970
^{57}Sc	-19.950
^{58}Sc	-13.420
^{59}Sc	-8.840
^{60}Sc	-1.780
^{61}Sc	3.280
^{62}Sc	10.800
^{63}Sc	15.880
^{64}Sc	23.310
^{65}Sc	28.670
^{66}Sc	36.320
^{67}Sc	42.030
^{68}Sc	50.360 †
^{69}Sc	56.710
^{70}Sc	65.580 †
^{71}Sc	72.670
^{72}Sc	83.370 †
^{73}Sc	93.090 †
^{74}Sc	103.980 †
^{75}Sc	113.990 †
^{77}Sc	135.730 †
^{81}Sc	182.880 †
^{83}Sc	206.520 †
^{85}Sc	229.950 †
^{38}Ti	10.810 ‡
^{39}Ti	2.180 ‡
^{40}Ti	-9.080
^{41}Ti	-15.640
^{42}Ti	-25.190
^{43}Ti	-29.380
^{44}Ti	-37.490
^{45}Ti	-39.070
^{46}Ti	-44.130
^{47}Ti	-44.950
^{48}Ti	-48.300
^{49}Ti	-48.820
^{50}Ti	-51.530
^{51}Ti	-49.710
^{52}Ti	-49.550
^{53}Ti	-46.590
^{54}Ti	-45.410
^{55}Ti	-41.090
^{56}Ti	-39.030
^{57}Ti	-33.640
^{58}Ti	-31.030
^{59}Ti	-24.540

Isotope	Mass Excess
^{60}Ti	-21.040
^{61}Ti	-14.300
^{62}Ti	-10.430
^{63}Ti	-3.160
^{64}Ti	0.430
^{65}Ti	7.890
^{66}Ti	11.980
^{67}Ti	19.550
^{68}Ti	24.490
^{69}Ti	32.510
^{70}Ti	37.930
^{71}Ti	46.770 †
^{72}Ti	52.740
^{73}Ti	63.290 †
^{74}Ti	71.930 †
^{75}Ti	82.750 †
^{76}Ti	91.760 †
^{78}Ti	112.550 †
^{80}Ti	134.950 †
^{82}Ti	157.570 †
^{84}Ti	180.000 †
^{86}Ti	202.130 †
^{88}Ti	224.370 †
^{40}V	11.510 †
^{41}V	0.080 †
^{42}V	-7.980 †
^{43}V	-17.860 †
^{44}V	-23.820
^{45}V	-31.940
^{46}V	-36.850
^{47}V	-41.990
^{48}V	-44.470
^{49}V	-47.980
^{50}V	-49.190
^{51}V	-52.200
^{52}V	-51.360
^{53}V	-51.950
^{54}V	-49.890
^{55}V	-49.150
^{56}V	-45.720
^{57}V	-44.050
^{58}V	-40.080
^{59}V	-37.500
^{60}V	-32.090
^{61}V	-28.910
^{62}V	-23.360
^{63}V	-19.730
^{64}V	-13.950
^{65}V	-10.350
^{66}V	-4.160
^{67}V	-0.140
^{68}V	6.670
^{69}V	11.300
^{70}V	18.380
^{71}V	23.770
^{72}V	31.500
^{73}V	37.310
^{74}V	46.790 †
^{75}V	55.360 †
^{76}V	65.170 †
^{77}V	74.080 †
^{78}V	84.430 †
^{79}V	93.860 †
^{81}V	115.020 †
^{83}V	136.700 †
^{85}V	157.890 †
^{87}V	178.860 †
^{89}V	199.980 †
^{91}V	221.900 †
^{42}Cr	6.210 ‡
^{43}Cr	-2.140
^{44}Cr	-13.650
^{45}Cr	-19.560
^{46}Cr	-29.550

Isotope	Mass Excess
^{47}Cr	-34.540
^{48}Cr	-42.840
^{49}Cr	-45.310
^{50}Cr	-50.220
^{51}Cr	-51.510
^{52}Cr	-55.480
^{53}Cr	-55.300
^{54}Cr	-56.790
^{55}Cr	-55.190
^{56}Cr	-55.340
^{57}Cr	-52.290
^{58}Cr	-52.030
^{59}Cr	-48.090
^{60}Cr	-46.600
^{61}Cr	-41.510
^{62}Cr	-39.510
^{63}Cr	-34.210
^{64}Cr	-32.070
^{65}Cr	-26.280
^{66}Cr	-23.930
^{67}Cr	-17.820
^{68}Cr	-14.570
^{69}Cr	-8.080
^{70}Cr	-4.390
^{71}Cr	2.670
^{72}Cr	6.950
^{73}Cr	14.520
^{74}Cr	19.260
^{75}Cr	28.660 †
^{76}Cr	36.230 ‡
^{77}Cr	45.950 †
^{78}Cr	54.010 ‡
^{79}Cr	64.180 †
^{80}Cr	72.700 †
^{81}Cr	83.610 †
^{82}Cr	92.810 †
^{84}Cr	113.280 †
^{86}Cr	133.180 †
^{88}Cr	153.200 †
^{90}Cr	173.540 †
^{92}Cr	194.580 †
^{94}Cr	215.620 †
^{96}Cr	236.870 †
^{98}Cr	258.450 †
^{100}Cr	279.900 †
^{102}Cr	301.020 †
^{104}Cr	322.140 †
^{44}Mn	6.500 †
^{45}Mn	-5.410 †
^{46}Mn	-12.670
^{47}Mn	-22.650
^{48}Mn	-29.300
^{49}Mn	-37.590
^{50}Mn	-43.300
^{51}Mn	-48.220
^{52}Mn	-50.580
^{53}Mn	-54.750
^{54}Mn	-55.570
^{55}Mn	-57.620
^{56}Mn	-56.910
^{57}Mn	-57.440
^{58}Mn	-55.810
^{59}Mn	-55.590
^{60}Mn	-52.730
^{61}Mn	-51.550
^{62}Mn	-47.650
^{63}Mn	-45.900
^{64}Mn	-42.080
^{65}Mn	-39.930
^{66}Mn	-35.400
^{67}Mn	-33.140
^{68}Mn	-27.790
^{69}Mn	-24.850
^{70}Mn	-19.300
^{71}Mn	-15.630

Isotope	Mass Excess
^{72}Mn	-9.690
^{73}Mn	-5.570
^{74}Mn	0.930
^{75}Mn	5.600
^{76}Mn	14.000 †
^{77}Mn	21.470
^{78}Mn	30.340 †
^{79}Mn	38.230 ‡
^{80}Mn	47.490 †
^{81}Mn	55.690 †
^{82}Mn	65.870 †
^{83}Mn	74.860 †
^{84}Mn	85.400 †
^{85}Mn	94.080 †
^{86}Mn	104.260 †
^{87}Mn	112.820 †
^{88}Mn	123.290 †
^{89}Mn	131.720 †
^{90}Mn	142.550 †
^{91}Mn	151.380 †
^{93}Mn	171.370 †
^{95}Mn	191.450 †
^{97}Mn	211.760 †
^{99}Mn	232.590 †
^{101}Mn	252.930 †
^{103}Mn	273.190 †
^{105}Mn	293.530 †
^{46}Fe	0.480
^{47}Fe	-7.240
^{48}Fe	-17.980
^{49}Fe	-24.790
^{50}Fe	-34.480
^{51}Fe	-40.200
^{52}Fe	-48.390
^{53}Fe	-50.960
^{54}Fe	-56.230
^{55}Fe	-57.450
^{56}Fe	-60.560
^{57}Fe	-60.180
^{58}Fe	-62.170
^{59}Fe	-60.580
^{60}Fe	-61.440
^{61}Fe	-58.890
^{62}Fe	-58.910
^{63}Fe	-55.250
^{64}Fe	-54.990
^{65}Fe	-51.160
^{66}Fe	-50.270
^{67}Fe	-45.820
^{68}Fe	-44.320
^{69}Fe	-39.290
^{70}Fe	-37.290
^{71}Fe	-31.760
^{72}Fe	-29.200
^{73}Fe	-23.420
^{74}Fe	-20.370
^{75}Fe	-13.940
^{76}Fe	-10.270
^{77}Fe	-1.970 †
^{78}Fe	4.650
^{79}Fe	13.350 †
^{80}Fe	20.330
^{81}Fe	29.260 †
^{82}Fe	36.730 ‡
^{83}Fe	46.710 †
^{84}Fe	54.680 ‡
^{85}Fe	64.990 †
^{86}Fe	72.620 ‡
^{87}Fe	82.690 †
^{88}Fe	90.410 ‡
^{89}Fe	100.610 †
^{90}Fe	108.530 ‡
^{91}Fe	119.180 †
^{92}Fe	127.310 †
^{93}Fe	138.090 †

Isotope	Mass Excess
^{94}Fe	146.320 †
^{95}Fe	157.200 †
^{96}Fe	165.290 †
^{97}Fe	176.340 †
^{98}Fe	184.850 †
^{100}Fe	204.440 †
^{102}Fe	223.920 †
^{103}Fe	234.970 †
^{104}Fe	243.480 †
^{105}Fe	254.490 †
^{106}Fe	263.210 †
^{107}Fe	274.270 †
^{108}Fe	283.250 †
^{48}Co	0.970 †
^{49}Co	-10.200 †
^{50}Co	-17.700
^{51}Co	-27.470
^{52}Co	-34.260
^{53}Co	-42.660
^{54}Co	-48.320
^{55}Co	-53.990
^{56}Co	-56.110
^{57}Co	-59.320
^{58}Co	-59.850
^{59}Co	-62.210
^{60}Co	-61.700
^{61}Co	-62.870
^{62}Co	-61.520
^{63}Co	-61.780
^{64}Co	-59.610
^{65}Co	-59.330
^{66}Co	-56.770
^{67}Co	-55.960
^{68}Co	-52.270
^{69}Co	-51.080
^{70}Co	-46.990
^{71}Co	-45.010
^{72}Co	-40.600
^{73}Co	-38.200
^{74}Co	-33.490
^{75}Co	-30.510
^{76}Co	-25.090
^{77}Co	-21.520
^{78}Co	-14.060
^{79}Co	-7.610
^{80}Co	0.180
^{81}Co	6.830
^{82}Co	15.040 †
^{83}Co	22.300
^{84}Co	31.260 †
^{85}Co	39.010 ‡
^{86}Co	48.270 †
^{87}Co	55.780 ‡
^{88}Co	65.010 †
^{89}Co	72.450 ‡
^{90}Co	82.140 †
^{91}Co	89.890 ‡
^{92}Co	99.840 †
^{93}Co	107.610 ‡
^{94}Co	117.780 †
^{95}Co	125.670 ‡
^{96}Co	135.770 †
^{97}Co	143.690 ‡
^{98}Co	154.160 †
^{99}Co	162.510 †
^{100}Co	172.740 †
^{101}Co	180.990 †
^{102}Co	191.260 †
^{103}Co	199.600 †
^{104}Co	209.990 †
^{105}Co	218.390 †
^{106}Co	228.900 †
^{107}Co	237.550 †
^{108}Co	247.820 †
^{109}Co	256.940 †

Isotope	Mass Excess
^{50}Ni	-4.210
^{51}Ni	-12.010
^{52}Ni	-22.740
^{53}Ni	-29.730
^{54}Ni	-39.230
^{55}Ni	-45.290
^{56}Ni	-53.870
^{57}Ni	-56.100
^{58}Ni	-60.210
^{59}Ni	-61.130
^{60}Ni	-64.510
^{61}Ni	-64.200
^{62}Ni	-66.640
^{63}Ni	-65.530
^{64}Ni	-67.280
^{65}Ni	-65.090
^{66}Ni	-66.080
^{67}Ni	-63.590
^{68}Ni	-63.550
^{69}Ni	-60.170
^{70}Ni	-59.930
^{71}Ni	-55.860
^{72}Ni	-55.000
^{73}Ni	-50.730
^{74}Ni	-49.410
^{75}Ni	-44.770
^{76}Ni	-42.800
^{77}Ni	-37.470
^{78}Ni	-34.750
^{79}Ni	-27.470
^{80}Ni	-21.930
^{81}Ni	-14.470
^{82}Ni	-8.540
^{83}Ni	-0.540
^{84}Ni	5.710
^{85}Ni	14.440 †
^{86}Ni	21.140
^{87}Ni	30.280 †
^{88}Ni	36.960
^{89}Ni	45.910 †
^{90}Ni	52.840
^{91}Ni	62.360 †
^{92}Ni	69.410 ‡
^{93}Ni	79.000 †
^{94}Ni	86.160 ‡
^{95}Ni	95.980 †
^{96}Ni	103.100 ‡
^{97}Ni	113.030 †
^{98}Ni	120.380 ‡
^{99}Ni	130.680 †
^{100}Ni	137.950 ‡
^{101}Ni	148.150 †
^{102}Ni	155.570 ‡
^{103}Ni	165.810 †
^{104}Ni	173.480 ‡
^{105}Ni	183.760 †
^{106}Ni	191.660 ‡
^{107}Ni	202.100 †
^{108}Ni	209.970 ‡
^{109}Ni	220.370 †
^{110}Ni	228.790 †
^{112}Ni	252.120 †
^{52}Cu	-2.440 †
^{53}Cu	-13.830 †
^{54}Cu	-21.820 †
^{55}Cu	-31.720 †
^{56}Cu	-38.680
^{57}Cu	-47.370
^{58}Cu	-51.890
^{59}Cu	-56.390
^{60}Cu	-58.330
^{61}Cu	-61.980
^{62}Cu	-62.800
^{63}Cu	-65.590
^{64}Cu	-65.390

Isotope	Mass Excess
^{65}Cu	-67.150
^{66}Cu	-66.230
^{67}Cu	-67.300
^{68}Cu	-65.580
^{69}Cu	-65.840
^{70}Cu	-63.410
^{71}Cu	-63.190
^{72}Cu	-60.230
^{73}Cu	-59.520
^{74}Cu	-56.330
^{75}Cu	-55.090
^{76}Cu	-51.450
^{77}Cu	-49.570
^{78}Cu	-45.090
^{79}Cu	-42.540
^{80}Cu	-36.170
^{81}Cu	-30.960
^{82}Cu	-24.220
^{83}Cu	-18.500
^{84}Cu	-11.510
^{85}Cu	-5.500
^{86}Cu	2.190
^{87}Cu	8.770
^{88}Cu	17.070 †
^{89}Cu	23.470
^{90}Cu	31.910 †
^{91}Cu	38.680
^{92}Cu	47.490 †
^{93}Cu	54.180
^{94}Cu	63.160 †
^{95}Cu	69.970
^{96}Cu	79.020 †
^{97}Cu	85.970
^{98}Cu	95.330 †
^{99}Cu	102.510 ‡
^{100}Cu	111.730 †
^{101}Cu	118.970 ‡
^{102}Cu	128.340 †
^{103}Cu	135.720 ‡
^{104}Cu	145.290 †
^{105}Cu	152.860 ‡
^{106}Cu	162.640 †
^{107}Cu	170.470 ‡
^{108}Cu	180.130 †
^{109}Cu	188.120 ‡
^{110}Cu	197.830 †
^{111}Cu	206.200 †
^{113}Cu	228.770 †
^{54}Zn	-6.230 †
^{55}Zn	-14.780 ‡
^{56}Zn	-25.740
^{57}Zn	-32.800
^{58}Zn	-42.390
^{59}Zn	-47.300
^{60}Zn	-54.160
^{61}Zn	-56.360
^{62}Zn	-61.140
^{63}Zn	-62.180
^{64}Zn	-66.030
^{65}Zn	-65.840
^{66}Zn	-68.940
^{67}Zn	-68.030
^{68}Zn	-69.860
^{69}Zn	-68.450
^{70}Zn	-69.660
^{71}Zn	-67.240
^{72}Zn	-68.140
^{73}Zn	-65.330
^{74}Zn	-65.700
^{75}Zn	-62.590
^{76}Zn	-62.340
^{77}Zn	-58.800
^{78}Zn	-57.770
^{79}Zn	-53.470
^{80}Zn	-51.820

Isotope	Mass Excess
^{81}Zn	-45.780
^{82}Zn	-41.300
^{83}Zn	-34.760
^{84}Zn	-30.050
^{85}Zn	-23.300
^{86}Zn	-18.330
^{87}Zn	-10.760
^{88}Zn	-5.020
^{89}Zn	3.000
^{90}Zn	8.900
^{91}Zn	17.170 †
^{92}Zn	23.220
^{93}Zn	31.680 †
^{94}Zn	37.760
^{95}Zn	46.390 †
^{96}Zn	52.440
^{97}Zn	61.310 †
^{98}Zn	67.690
^{99}Zn	76.880 †
^{100}Zn	82.970
^{101}Zn	92.170 †
^{102}Zn	98.580
^{103}Zn	107.910 †
^{104}Zn	114.630
^{105}Zn	124.100 †
^{106}Zn	131.160 ‡
^{107}Zn	140.870 †
^{108}Zn	147.920 ‡
^{109}Zn	157.700 †
^{110}Zn	165.010 ‡
^{111}Zn	174.670 †
^{112}Zn	182.370 ‡
^{114}Zn	204.250 †
^{116}Zn	226.470 †
^{118}Zn	249.350 †
^{56}Ga	-4.850 †
^{57}Ga	-16.140 †
^{58}Ga	-24.110 †
^{59}Ga	-34.090 †
^{60}Ga	-40.020
^{61}Ga	-47.140
^{62}Ga	-51.740
^{63}Ga	-56.730
^{64}Ga	-58.850
^{65}Ga	-62.700
^{66}Ga	-63.740
^{67}Ga	-66.880
^{68}Ga	-67.090
^{69}Ga	-69.300
^{70}Ga	-68.800
^{71}Ga	-70.030
^{72}Ga	-68.740
^{73}Ga	-69.780
^{74}Ga	-68.060
^{75}Ga	-68.500
^{76}Ga	-66.380
^{77}Ga	-66.230
^{78}Ga	-63.540
^{79}Ga	-62.690
^{80}Ga	-59.290
^{81}Ga	-57.980
^{82}Ga	-52.660
^{83}Ga	-48.380
^{84}Ga	-42.860
^{85}Ga	-38.380
^{86}Ga	-32.680
^{87}Ga	-27.820
^{88}Ga	-21.100
^{89}Ga	-15.630
^{90}Ga	-8.110
^{91}Ga	-2.390
^{92}Ga	5.170
^{93}Ga	10.880
^{94}Ga	18.720
^{95}Ga	24.450

Isotope	Mass Excess
^{96}Ga	32.320
^{97}Ga	38.190
^{98}Ga	46.490 †
^{99}Ga	52.700
^{100}Ga	60.810 †
^{101}Ga	66.880
^{102}Ga	75.240 †
^{103}Ga	81.610
^{104}Ga	90.280 †
^{105}Ga	96.890
^{106}Ga	105.860 †
^{107}Ga	112.850
^{108}Ga	121.780 †
^{109}Ga	128.950
^{110}Ga	138.050 †
^{111}Ga	145.300 ‡
^{112}Ga	154.290 †
^{113}Ga	161.900 ‡
^{115}Ga	183.080 †
^{117}Ga	204.620 †
^{119}Ga	226.770 †
^{58}Ge	-8.690 †
^{59}Ge	-17.030 ‡
^{60}Ge	-28.030
^{61}Ge	-34.230
^{62}Ge	-42.480
^{63}Ge	-47.290
^{64}Ge	-54.360
^{65}Ge	-56.470
^{66}Ge	-61.560
^{67}Ge	-62.650
^{68}Ge	-66.990
^{69}Ge	-67.050
^{70}Ge	-70.580
^{71}Ge	-69.980
^{72}Ge	-72.430
^{73}Ge	-71.290
^{74}Ge	-73.410
^{75}Ge	-71.760
^{76}Ge	-73.200
^{77}Ge	-71.180
^{78}Ge	-71.880
^{79}Ge	-69.360
^{80}Ge	-69.420
^{81}Ge	-66.350
^{82}Ge	-65.760
^{83}Ge	-60.650
^{84}Ge	-57.380
^{85}Ge	-52.090
^{86}Ge	-48.670
^{87}Ge	-43.070
^{88}Ge	-39.070
^{89}Ge	-32.610
^{90}Ge	-27.650
^{91}Ge	-20.310
^{92}Ge	-15.290
^{93}Ge	-8.080
^{94}Ge	-2.990
^{95}Ge	4.510
^{96}Ge	9.470
^{97}Ge	17.160
^{98}Ge	22.450
^{99}Ge	30.590 †
^{100}Ge	35.720
^{101}Ge	43.800 †
^{102}Ge	49.030
^{103}Ge	57.370 †
^{104}Ge	63.070
^{105}Ge	71.630 †
^{106}Ge	77.750
^{107}Ge	86.630 †
^{108}Ge	92.850
^{109}Ge	101.900 †
^{110}Ge	108.390
^{111}Ge	117.430 †

Isotope	Mass Excess
^{112}Ge	124.010
^{113}Ge	132.910 †
^{114}Ge	139.930
^{116}Ge	160.320 †
^{118}Ge	181.220 †
^{120}Ge	202.590 †
^{60}As	-6.860 †
^{61}As	-18.060 †
^{62}As	-25.390 †
^{63}As	-33.860 †
^{64}As	-39.750 †
^{65}As	-46.810 †
^{66}As	-51.410
^{67}As	-56.540
^{68}As	-58.830
^{69}As	-63.030
^{70}As	-64.410
^{71}As	-67.820
^{72}As	-68.380
^{73}As	-70.940
^{74}As	-70.880
^{75}As	-73.070
^{76}As	-72.420
^{77}As	-73.960
^{78}As	-72.790
^{79}As	-73.660
^{80}As	-72.050
^{81}As	-72.430
^{82}As	-70.090
^{83}As	-69.710
^{84}As	-65.610
^{85}As	-62.570
^{86}As	-58.340
^{87}As	-55.030
^{88}As	-50.280
^{89}As	-46.540
^{90}As	-40.590
^{91}As	-35.810
^{92}As	-29.170
^{93}As	-24.510
^{94}As	-17.910
^{95}As	-13.170
^{96}As	-6.440
^{97}As	-1.650
^{98}As	5.470
^{99}As	10.600
^{100}As	17.650
^{101}As	22.750
^{102}As	30.000
^{103}As	35.200
^{104}As	42.860
^{105}As	48.460
^{106}As	56.530
^{107}As	62.570
^{108}As	70.670 †
^{109}As	77.010
^{110}As	85.380 †
^{111}As	91.810
^{112}As	100.180 †
^{113}As	106.680
^{114}As	114.980 †
^{115}As	121.890
^{116}As	132.330 †
^{117}As	141.600 †
^{118}As	152.250 †
^{119}As	161.770 †
^{120}As	172.740 †
^{121}As	182.370 †
^{62}Se	-10.630 †
^{63}Se	-18.310 ‡
^{64}Se	-27.840 ‡
^{65}Se	-33.730
^{66}Se	-42.030
^{67}Se	-46.670

Isotope	Mass Excess
^{68}Se	-54.280
^{69}Se	-56.420
^{70}Se	-61.940
^{71}Se	-63.200
^{72}Se	-67.770
^{73}Se	-68.330
^{74}Se	-72.050
^{75}Se	-72.190
^{76}Se	-75.270
^{77}Se	-74.590
^{78}Se	-76.980
^{79}Se	-75.980
^{80}Se	-77.760
^{81}Se	-76.480
^{82}Se	-77.590
^{83}Se	-75.450
^{84}Se	-76.080
^{85}Se	-72.210
^{86}Se	-70.230
^{87}Se	-66.110
^{88}Se	-63.640
^{89}Se	-59.160
^{90}Se	-55.930
^{91}Se	-50.160
^{92}Se	-46.080
^{93}Se	-39.790
^{94}Se	-35.750
^{95}Se	-29.500
^{96}Se	-25.520
^{97}Se	-18.960
^{98}Se	-14.750
^{99}Se	-7.800
^{100}Se	-3.750
^{101}Se	3.270
^{102}Se	7.540
^{103}Se	14.760
^{104}Se	19.290
^{105}Se	26.850
^{106}Se	31.950
^{107}Se	39.940
^{108}Se	45.190
^{109}Se	53.430 †
^{110}Se	59.080
^{111}Se	67.400 †
^{112}Se	73.160
^{113}Se	81.440 †
^{114}Se	87.340
^{115}Se	95.530 †
^{116}Se	101.760
^{117}Se	112.200 †
^{118}Se	120.830 †
^{119}Se	131.400 †
^{120}Se	140.230 †
^{121}Se	151.100 †
^{122}Se	159.980 †
^{124}Se	180.080 †
^{126}Se	200.550 †
^{128}Se	221.780 †
^{130}Se	244.070 †
^{132}Se	267.370 †
^{65}Br	-17.560 †
^{66}Br	-24.680 †
^{67}Br	-33.030 †
^{68}Br	-38.870 †
^{69}Br	-46.330 †
^{70}Br	-51.140
^{71}Br	-56.530
^{72}Br	-58.950
^{73}Br	-63.510
^{74}Br	-65.230
^{75}Br	-69.110
^{76}Br	-70.290
^{77}Br	-73.190
^{78}Br	-73.550
^{79}Br	-76.060

Isotope	Mass Excess
^{80}Br	-75.980
^{81}Br	-78.080
^{82}Br	-77.530
^{83}Br	-78.840
^{84}Br	-77.710
^{85}Br	-78.580
^{86}Br	-75.760
^{87}Br	-73.890
^{88}Br	-70.610
^{89}Br	-68.410
^{90}Br	-64.440
^{91}Br	-61.390
^{92}Br	-56.320
^{93}Br	-52.600
^{94}Br	-46.920
^{95}Br	-43.220
^{96}Br	-37.740
^{97}Br	-33.940
^{98}Br	-27.960
^{99}Br	-23.910
^{100}Br	-18.040
^{101}Br	-14.020
^{102}Br	-7.830
^{103}Br	-3.590
^{104}Br	2.950
^{105}Br	7.380
^{106}Br	14.440
^{107}Br	19.470
^{108}Br	26.670
^{109}Br	32.060
^{110}Br	39.610
^{111}Br	45.200
^{112}Br	52.850
^{113}Br	58.520
^{114}Br	66.210
^{115}Br	72.000
^{116}Br	79.510
^{117}Br	85.740
^{118}Br	95.540 †
^{119}Br	104.080 †
^{120}Br	113.960 †
^{121}Br	122.700 †
^{122}Br	132.820 †
^{123}Br	141.610 †
^{124}Br	152.180 †
^{125}Br	161.080 †
^{126}Br	171.670 †
^{127}Br	180.880 †
^{128}Br	191.790 †
^{129}Br	201.550 †
^{131}Br	223.310 †
^{133}Br	246.120 †
^{66}Kr	-10.360 ‡
^{67}Kr	-17.520 ‡
^{68}Kr	-27.070 ‡
^{69}Kr	-32.770
^{70}Kr	-41.550
^{71}Kr	-46.230
^{72}Kr	-54.230
^{73}Kr	-56.640
^{74}Kr	-62.370
^{75}Kr	-64.240
^{76}Kr	-69.170
^{77}Kr	-70.160
^{78}Kr	-74.060
^{79}Kr	-74.410
^{80}Kr	-77.820
^{81}Kr	-77.640
^{82}Kr	-80.430
^{83}Kr	-80.070
^{84}Kr	-82.400
^{85}Kr	-81.510
^{86}Kr	-83.420
^{87}Kr	-80.710
^{88}Kr	-79.690

Isotope	Mass Excess
^{89}Kr	-76.680
^{90}Kr	-74.990
^{91}Kr	-71.190
^{92}Kr	-68.850
^{93}Kr	-64.130
^{94}Kr	-61.020
^{95}Kr	-55.690
^{96}Kr	-52.760
^{97}Kr	-47.450
^{98}Kr	-44.230
^{99}Kr	-38.410
^{100}Kr	-35.450
^{101}Kr	-29.600
^{102}Kr	-26.420
^{103}Kr	-20.260
^{104}Kr	-16.690
^{105}Kr	-10.250
^{106}Kr	-6.320
^{107}Kr	0.660
^{108}Kr	4.910
^{109}Kr	12.240
^{110}Kr	16.940
^{111}Kr	24.430
^{112}Kr	29.360
^{113}Kr	36.920
^{114}Kr	42.000
^{115}Kr	49.570
^{116}Kr	54.680
^{117}Kr	62.190
^{118}Kr	67.790
^{119}Kr	77.500 †
^{120}Kr	85.350 ‡
^{121}Kr	95.140 †
^{122}Kr	103.120 ‡
^{123}Kr	113.160 †
^{124}Kr	121.400 †
^{125}Kr	131.880 †
^{126}Kr	140.220 †
^{127}Kr	150.710 †
^{128}Kr	159.470 †
^{129}Kr	170.260 †
^{130}Kr	179.620 †
^{132}Kr	200.760 †
^{134}Kr	223.150 †
^{70}Rb	-23.630 †
^{71}Rb	-32.290 †
^{72}Rb	-38.130 †
^{73}Rb	-46.120 †
^{74}Rb	-51.430
^{75}Rb	-57.310
^{76}Rb	-60.230
^{77}Rb	-64.970
^{78}Rb	-66.960
^{79}Rb	-70.850
^{80}Rb	-72.070
^{81}Rb	-75.460
^{82}Rb	-76.290
^{83}Rb	-79.110
^{84}Rb	-79.710
^{85}Rb	-82.270
^{86}Rb	-82.420
^{87}Rb	-84.450
^{88}Rb	-82.590
^{89}Rb	-81.840
^{90}Rb	-79.340
^{91}Rb	-77.820
^{92}Rb	-74.730
^{93}Rb	-72.730
^{94}Rb	-68.640
^{95}Rb	-65.870
^{96}Rb	-61.310
^{97}Rb	-58.550
^{98}Rb	-53.820
^{99}Rb	-50.760
^{100}Rb	-46.030

Isotope	Mass Excess
^{101}Rb	-43.090
^{102}Rb	-38.080
^{103}Rb	-34.920
^{104}Rb	-29.430
^{105}Rb	-25.970
^{106}Rb	-20.030
^{107}Rb	-16.170
^{108}Rb	-9.970
^{109}Rb	-5.600
^{110}Rb	1.050
^{111}Rb	5.690
^{112}Rb	12.520
^{113}Rb	17.350
^{114}Rb	24.320
^{115}Rb	29.280
^{116}Rb	36.180
^{117}Rb	41.290
^{118}Rb	48.170
^{119}Rb	53.660
^{120}Rb	62.690 †
^{121}Rb	70.450 ‡
^{122}Rb	79.480 †
^{123}Rb	87.390 ‡
^{124}Rb	96.870 †
^{125}Rb	105.030 †
^{126}Rb	114.950 †
^{127}Rb	123.190 †
^{128}Rb	133.220 †
^{129}Rb	141.870 †
^{130}Rb	152.270 †
^{131}Rb	161.490 †
^{132}Rb	172.350 †
^{133}Rb	182.130 †
^{135}Rb	203.880 †
^{70}Sr	-9.400 ‡
^{71}Sr	-16.300 †
^{72}Sr	-26.120 ‡
^{73}Sr	-31.950
^{74}Sr	-41.110
^{75}Sr	-46.570
^{76}Sr	-55.140
^{77}Sr	-57.870
^{78}Sr	-63.610
^{79}Sr	-65.590
^{80}Sr	-70.350
^{81}Sr	-71.550
^{82}Sr	-75.950
^{83}Sr	-76.690
^{84}Sr	-80.590
^{85}Sr	-80.960
^{86}Sr	-84.460
^{87}Sr	-84.980
^{88}Sr	-87.850
^{89}Sr	-86.260
^{90}Sr	-86.010
^{91}Sr	-83.680
^{92}Sr	-82.870
^{93}Sr	-80.140
^{94}Sr	-78.760
^{95}Sr	-75.000
^{96}Sr	-73.010
^{97}Sr	-68.620
^{98}Sr	-66.440
^{99}Sr	-61.870
^{100}Sr	-59.890
^{101}Sr	-55.180
^{102}Sr	-53.080
^{103}Sr	-48.100
^{104}Sr	-45.620
^{105}Sr	-40.230
^{106}Sr	-37.270
^{107}Sr	-31.400
^{108}Sr	-28.330
^{109}Sr	-22.000
^{110}Sr	-18.310

Isotope	Mass Excess
^{111}Sr	-11.720
^{112}Sr	-7.750
^{113}Sr	-1.010
^{114}Sr	3.230
^{115}Sr	10.080
^{116}Sr	14.370
^{117}Sr	21.270
^{118}Sr	25.740
^{119}Sr	32.520
^{120}Sr	37.340
^{121}Sr	46.270 †
^{122}Sr	53.280
^{123}Sr	62.230 †
^{124}Sr	69.580 ‡
^{125}Sr	78.980 †
^{126}Sr	86.580 ‡
^{127}Sr	96.400 †
^{128}Sr	104.180 ‡
^{129}Sr	114.100 †
^{130}Sr	122.350 †
^{131}Sr	132.610 †
^{132}Sr	141.340 †
^{133}Sr	152.200 †
^{134}Sr	161.570 †
^{136}Sr	182.840 †
^{138}Sr	205.530 †
^{74}Y	-22.670 †
^{75}Y	-31.980 †
^{76}Y	-38.490 †
^{77}Y	-46.870 †
^{78}Y	-52.670
^{79}Y	-58.400
^{80}Y	-61.250
^{81}Y	-65.990
^{82}Y	-68.200
^{83}Y	-72.510
^{84}Y	-74.340
^{85}Y	-77.940
^{86}Y	-79.340
^{87}Y	-82.960
^{88}Y	-84.290
^{89}Y	-87.560
^{90}Y	-86.480
^{91}Y	-86.400
^{92}Y	-84.790
^{93}Y	-84.330
^{94}Y	-82.210
^{95}Y	-81.170
^{96}Y	-78.190
^{97}Y	-76.360
^{98}Y	-72.550
^{99}Y	-70.530
^{100}Y	-67.050
^{101}Y	-65.100
^{102}Y	-61.230
^{103}Y	-59.150
^{104}Y	-54.840
^{105}Y	-52.460
^{106}Y	-47.580
^{107}Y	-44.690
^{108}Y	-39.600
^{109}Y	-36.400
^{110}Y	-30.760
^{111}Y	-27.130
^{112}Y	-21.210
^{113}Y	-17.320
^{114}Y	-11.180
^{115}Y	-7.050
^{116}Y	-0.880
^{117}Y	3.410
^{118}Y	9.670
^{119}Y	14.050
^{120}Y	20.150
^{121}Y	24.870
^{122}Y	33.050 †

Isotope	Mass Excess
^{123}Y	39.980
^{124}Y	48.370 †
^{125}Y	55.640
^{126}Y	64.480 †
^{127}Y	71.980 ‡
^{128}Y	81.340 †
^{129}Y	89.010 ‡
^{130}Y	98.530 †
^{131}Y	106.650 †
^{132}Y	116.420 †
^{133}Y	125.150 †
^{134}Y	135.590 †
^{135}Y	144.740 †
^{136}Y	155.660 †
^{137}Y	165.510 †
^{139}Y	187.610 †
^{141}Y	210.530 †
^{74}Zr	-8.220 †
^{75}Zr	-15.370 †
^{76}Zr	-25.730 ‡
^{77}Zr	-32.050
^{78}Zr	-41.430
^{79}Zr	-47.220
^{80}Zr	-55.490
^{81}Zr	-58.330
^{82}Zr	-64.080
^{83}Zr	-66.200
^{84}Zr	-71.590
^{85}Zr	-73.120
^{86}Zr	-77.760
^{87}Zr	-79.270
^{88}Zr	-83.630
^{89}Zr	-84.900
^{90}Zr	-88.820
^{91}Zr	-87.860
^{92}Zr	-88.510
^{93}Zr	-87.250
^{94}Zr	-87.400
^{95}Zr	-85.630
^{96}Zr	-85.360
^{97}Zr	-82.550
^{98}Zr	-81.300
^{99}Zr	-77.660
^{100}Zr	-76.720
^{101}Zr	-73.260
^{102}Zr	-72.150
^{103}Zr	-68.300
^{104}Zr	-66.900
^{105}Zr	-62.690
^{106}Zr	-60.820
^{107}Zr	-56.000
^{108}Zr	-53.900
^{109}Zr	-48.680
^{110}Zr	-46.170
^{111}Zr	-40.580
^{112}Zr	-37.620
^{113}Zr	-31.790
^{114}Zr	-28.490
^{115}Zr	-22.470
^{116}Zr	-19.010
^{117}Zr	-12.840
^{118}Zr	-9.190
^{119}Zr	-3.020
^{120}Zr	0.670
^{121}Zr	6.680
^{122}Zr	10.640
^{123}Zr	18.750 †
^{124}Zr	25.110
^{125}Zr	33.430 †
^{126}Zr	40.140
^{127}Zr	48.870 †
^{128}Zr	55.920
^{129}Zr	65.170 †
^{130}Zr	72.440 ‡
^{131}Zr	81.820 †

Isotope	Mass Excess
^{132}Zr	89.450 ‡
^{133}Zr	99.220 †
^{134}Zr	107.540 †
^{135}Zr	117.760 †
^{136}Zr	126.640 †
^{137}Zr	137.320 †
^{138}Zr	146.600 †
^{140}Zr	168.110 †
^{142}Zr	190.220 †
^{144}Zr	213.290 †
^{76}Nb	-5.150 †
^{78}Nb	-22.640 †
^{79}Nb	-32.010 †
^{80}Nb	-38.670 †
^{81}Nb	-46.930 †
^{82}Nb	-52.840
^{83}Nb	-58.490
^{84}Nb	-61.700
^{85}Nb	-66.790
^{86}Nb	-69.360
^{87}Nb	-74.110
^{88}Nb	-76.360
^{89}Nb	-80.650
^{90}Nb	-82.660
^{91}Nb	-86.650
^{92}Nb	-86.370
^{93}Nb	-87.300
^{94}Nb	-86.280
^{95}Nb	-86.840
^{96}Nb	-85.830
^{97}Nb	-85.740
^{98}Nb	-83.500
^{99}Nb	-82.420
^{100}Nb	-79.860
^{101}Nb	-78.950
^{102}Nb	-76.330
^{103}Nb	-75.240
^{104}Nb	-72.070
^{105}Nb	-70.770
^{106}Nb	-67.060
^{107}Nb	-65.260
^{108}Nb	-61.230
^{109}Nb	-58.990
^{110}Nb	-54.470
^{111}Nb	-52.010
^{112}Nb	-47.090
^{113}Nb	-44.220
^{114}Nb	-38.980
^{115}Nb	-35.800
^{116}Nb	-30.450
^{117}Nb	-27.000
^{118}Nb	-21.460
^{119}Nb	-17.900
^{120}Nb	-12.420
^{121}Nb	-8.820
^{122}Nb	-3.560
^{123}Nb	0.320
^{124}Nb	7.860
^{125}Nb	14.150
^{126}Nb	21.910
^{127}Nb	28.510
^{128}Nb	36.800 †
^{129}Nb	43.720
^{130}Nb	52.580 †
^{131}Nb	59.720
^{132}Nb	68.610 †
^{133}Nb	76.240 ‡
^{134}Nb	85.590 †
^{135}Nb	93.680 †
^{136}Nb	103.640 †
^{137}Nb	112.290 †
^{138}Nb	122.400 †
^{139}Nb	131.660 †
^{140}Nb	142.550 †
^{141}Nb	152.330 †

Isotope	Mass Excess
^{143}Nb	173.770 †
^{145}Nb	196.200 †
^{78}Mo	-7.600 †
^{79}Mo	-14.910 †
^{80}Mo	-25.150 ‡
^{81}Mo	-31.790 ‡
^{82}Mo	-41.060
^{83}Mo	-46.870
^{84}Mo	-55.740
^{85}Mo	-58.640
^{86}Mo	-64.780
^{87}Mo	-67.460
^{88}Mo	-72.950
^{89}Mo	-75.140
^{90}Mo	-80.160
^{91}Mo	-82.240
^{92}Mo	-86.900
^{93}Mo	-86.790
^{94}Mo	-88.410
^{95}Mo	-87.620
^{96}Mo	-88.790
^{97}Mo	-87.650
^{98}Mo	-88.130
^{99}Mo	-86.060
^{100}Mo	-86.060
^{101}Mo	-83.530
^{102}Mo	-83.450
^{103}Mo	-80.860
^{104}Mo	-80.440
^{105}Mo	-77.370
^{106}Mo	-76.580
^{107}Mo	-72.950
^{108}Mo	-71.920
^{109}Mo	-67.760
^{110}Mo	-66.220
^{111}Mo	-61.740
^{112}Mo	-59.950
^{113}Mo	-55.120
^{114}Mo	-52.850
^{115}Mo	-47.720
^{116}Mo	-45.220
^{117}Mo	-39.870
^{118}Mo	-37.050
^{119}Mo	-31.610
^{120}Mo	-28.740
^{121}Mo	-23.350
^{122}Mo	-20.500
^{123}Mo	-15.330
^{124}Mo	-12.000
^{125}Mo	-4.540
^{126}Mo	1.190
^{127}Mo	8.840
^{128}Mo	15.000
^{129}Mo	23.160 †
^{130}Mo	29.690
^{131}Mo	38.410 †
^{132}Mo	45.060
^{133}Mo	53.960 †
^{134}Mo	61.160
^{135}Mo	70.300 †
^{136}Mo	78.130 ‡
^{137}Mo	87.850 †
^{138}Mo	95.930 †
^{139}Mo	106.010 †
^{140}Mo	114.700 †
^{141}Mo	125.320 †
^{142}Mo	134.570 †
^{143}Mo	145.540 †
^{144}Mo	155.300 †
^{146}Mo	177.210 †
^{148}Mo	199.980 †
^{150}Mo	223.070 †
^{82}Tc	-22.160 †
^{83}Tc	-31.340 †

Isotope	Mass Excess
^{84}Tc	-38.240 †
^{85}Tc	-46.800 †
^{86}Tc	-52.880
^{87}Tc	-59.120
^{88}Tc	-62.540
^{89}Tc	-67.970
^{90}Tc	-70.890
^{91}Tc	-75.980
^{92}Tc	-78.740
^{93}Tc	-83.570
^{94}Tc	-84.140
^{95}Tc	-86.000
^{96}Tc	-85.820
^{97}Tc	-87.340
^{98}Tc	-86.460
^{99}Tc	-87.410
^{100}Tc	-86.230
^{101}Tc	-86.250
^{102}Tc	-84.550
^{103}Tc	-84.510
^{104}Tc	-82.580
^{105}Tc	-82.270
^{106}Tc	-79.700
^{107}Tc	-78.980
^{108}Tc	-76.130
^{109}Tc	-74.980
^{110}Tc	-71.510
^{111}Tc	-70.020
^{112}Tc	-66.210
^{113}Tc	-64.510
^{114}Tc	-60.270
^{115}Tc	-58.110
^{116}Tc	-53.660
^{117}Tc	-51.160
^{118}Tc	-46.450
^{119}Tc	-43.720
^{120}Tc	-38.970
^{121}Tc	-36.190
^{122}Tc	-31.550
^{123}Tc	-28.780
^{124}Tc	-24.170
^{125}Tc	-20.920
^{126}Tc	-14.020
^{127}Tc	-8.390
^{128}Tc	-1.190
^{129}Tc	4.840
^{130}Tc	12.620
^{131}Tc	19.010
^{132}Tc	27.240 †
^{133}Tc	33.890
^{134}Tc	42.360 †
^{135}Tc	49.350
^{136}Tc	58.220 †
^{137}Tc	65.820 ‡
^{138}Tc	74.970 †
^{139}Tc	83.020 ‡
^{140}Tc	92.540 †
^{141}Tc	100.960 †
^{142}Tc	111.040 †
^{143}Tc	120.150 †
^{144}Tc	130.550 †
^{145}Tc	140.240 †
^{146}Tc	151.270 †
^{147}Tc	161.410 †
^{149}Tc	183.580 †
^{151}Tc	205.770 †
^{153}Tc	228.550 †
^{82}Ru	-6.850 †
^{83}Ru	-14.410 †
^{84}Ru	-24.670 ‡
^{85}Ru	-31.270 ‡
^{86}Ru	-40.880 ‡
^{87}Ru	-47.060
^{88}Ru	-55.980
^{89}Ru	-59.340

Isotope	Mass Excess
^{90}Ru	-65.500
^{91}Ru	-68.490
^{92}Ru	-74.270
^{93}Ru	-77.190
^{94}Ru	-82.700
^{95}Ru	-83.510
^{96}Ru	-85.970
^{97}Ru	-86.150
^{98}Ru	-88.170
^{99}Ru	-87.570
^{100}Ru	-89.200
^{101}Ru	-87.950
^{102}Ru	-88.960
^{103}Ru	-87.290
^{104}Ru	-87.910
^{105}Ru	-86.090
^{106}Ru	-86.280
^{107}Ru	-83.790
^{108}Ru	-83.850
^{109}Ru	-80.870
^{110}Ru	-80.410
^{111}Ru	-76.990
^{112}Ru	-76.170
^{113}Ru	-72.450
^{114}Ru	-71.340
^{115}Ru	-67.220
^{116}Ru	-65.740
^{117}Ru	-61.290
^{118}Ru	-59.420
^{119}Ru	-54.800
^{120}Ru	-52.760
^{121}Ru	-48.100
^{122}Ru	-46.070
^{123}Ru	-41.520
^{124}Ru	-39.310
^{125}Ru	-34.770
^{126}Ru	-32.080
^{127}Ru	-25.280
^{128}Ru	-20.110
^{129}Ru	-13.030
^{130}Ru	-7.390
^{131}Ru	0.250
^{132}Ru	6.150
^{133}Ru	14.380 †
^{134}Ru	20.610
^{135}Ru	28.870 †
^{136}Ru	35.590
^{137}Ru	44.230 †
^{138}Ru	51.250
^{139}Ru	60.380 †
^{140}Ru	67.860 ‡
^{141}Ru	77.120 †
^{142}Ru	84.990 ‡
^{143}Ru	94.940 †
^{144}Ru	103.480 †
^{145}Ru	113.820 †
^{146}Ru	123.050 †
^{147}Ru	133.790 †
^{148}Ru	143.480 †
^{150}Ru	164.860 †
^{152}Ru	186.200 †
^{154}Ru	208.260 †
^{156}Ru	231.230 †
^{158}Ru	254.730 †
^{86}Rh	-21.560 †
^{87}Rh	-31.280 †
^{88}Rh	-38.200 †
^{89}Rh	-47.060 †
^{90}Rh	-53.110
^{91}Rh	-59.340
^{92}Rh	-63.010
^{93}Rh	-68.950
^{94}Rh	-72.550
^{95}Rh	-78.310
^{96}Rh	-79.730

Isotope	Mass Excess
^{97}Rh	-82.540
^{98}Rh	-83.220
^{99}Rh	-85.520
^{100}Rh	-85.600
^{101}Rh	-87.350
^{102}Rh	-86.800
^{103}Rh	-88.090
^{104}Rh	-86.970
^{105}Rh	-87.810
^{106}Rh	-86.490
^{107}Rh	-86.750
^{108}Rh	-85.040
^{109}Rh	-84.970
^{110}Rh	-82.680
^{111}Rh	-82.270
^{112}Rh	-79.520
^{113}Rh	-78.790
^{114}Rh	-75.670
^{115}Rh	-74.670
^{116}Rh	-71.230
^{117}Rh	-69.750
^{118}Rh	-65.930
^{119}Rh	-64.160
^{120}Rh	-60.230
^{121}Rh	-58.280
^{122}Rh	-54.370
^{123}Rh	-52.420
^{124}Rh	-48.420
^{125}Rh	-46.300
^{126}Rh	-42.320
^{127}Rh	-39.730
^{128}Rh	-33.390
^{129}Rh	-28.330
^{130}Rh	-21.640
^{131}Rh	-16.140
^{132}Rh	-9.000
^{133}Rh	-3.090
^{134}Rh	4.720
^{135}Rh	10.730
^{136}Rh	18.720
^{137}Rh	25.210
^{138}Rh	33.280
^{139}Rh	40.280
^{140}Rh	48.840 †
^{141}Rh	56.050
^{142}Rh	64.770 †
^{143}Rh	72.520 ‡
^{144}Rh	81.890 †
^{145}Rh	90.360 †
^{146}Rh	100.240 †
^{147}Rh	109.180 †
^{148}Rh	119.480 †
^{149}Rh	129.010 †
^{150}Rh	139.710 †
^{151}Rh	149.500 †
^{152}Rh	160.250 †
^{153}Rh	170.040 †
^{155}Rh	191.570 †
^{157}Rh	213.830 †
^{159}Rh	236.760 †
^{86}Pd	-6.060 †
^{87}Pd	-13.810 †
^{88}Pd	-24.270 ‡
^{89}Pd	-31.130 ‡
^{90}Pd	-40.720 ‡
^{91}Pd	-46.840
^{92}Pd	-55.520
^{93}Pd	-59.360
^{94}Pd	-65.980
^{95}Pd	-69.830
^{96}Pd	-76.180
^{97}Pd	-77.960
^{98}Pd	-81.270
^{99}Pd	-82.230
^{100}Pd	-85.210

Isotope	Mass Excess
^{101}Pd	-85.410
^{102}Pd	-87.870
^{103}Pd	-87.470
^{104}Pd	-89.440
^{105}Pd	-88.390
^{106}Pd	-89.950
^{107}Pd	-88.470
^{108}Pd	-89.520
^{109}Pd	-87.670
^{110}Pd	-88.290
^{111}Pd	-86.060
^{112}Pd	-86.320
^{113}Pd	-83.660
^{114}Pd	-83.520
^{115}Pd	-80.510
^{116}Pd	-80.200
^{117}Pd	-76.750
^{118}Pd	-75.900
^{119}Pd	-72.180
^{120}Pd	-71.100
^{121}Pd	-67.260
^{122}Pd	-66.060
^{123}Pd	-62.230
^{124}Pd	-60.840
^{125}Pd	-56.930
^{126}Pd	-55.350
^{127}Pd	-51.480
^{128}Pd	-49.350
^{129}Pd	-43.120
^{130}Pd	-38.460
^{131}Pd	-31.910
^{132}Pd	-26.900
^{133}Pd	-19.750
^{134}Pd	-14.260
^{135}Pd	-6.670
^{136}Pd	-0.920
^{137}Pd	6.830
^{138}Pd	12.750
^{139}Pd	20.790
^{140}Pd	27.220
^{141}Pd	35.510 †
^{142}Pd	42.190
^{143}Pd	50.770 †
^{144}Pd	57.950
^{145}Pd	67.250 †
^{146}Pd	75.270 ‡
^{147}Pd	84.860 †
^{148}Pd	93.360 †
^{149}Pd	103.490 †
^{150}Pd	112.400 †
^{151}Pd	122.830 †
^{152}Pd	132.030 †
^{153}Pd	142.590 †
^{154}Pd	151.850 †
^{156}Pd	172.800 †
^{158}Pd	194.530 †
^{160}Pd	216.800 †
^{162}Pd	239.820 †
^{90}Ag	-21.340 †
^{91}Ag	-31.000 †
^{92}Ag	-37.800 †
^{93}Ag	-46.650 †
^{94}Ag	-52.640
^{95}Ag	-59.500
^{96}Ag	-63.950
^{97}Ag	-70.660
^{98}Ag	-72.940
^{99}Ag	-76.530
^{100}Ag	-78.170
^{101}Ag	-81.270
^{102}Ag	-82.170
^{103}Ag	-84.780
^{104}Ag	-85.050
^{105}Ag	-87.100
^{106}Ag	-86.830

Isotope	Mass Excess
^{107}Ag	-88.440
^{108}Ag	-87.610
^{109}Ag	-88.750
^{110}Ag	-87.550
^{111}Ag	-88.230
^{112}Ag	-86.660
^{113}Ag	-87.010
^{114}Ag	-84.940
^{115}Ag	-84.920
^{116}Ag	-82.590
^{117}Ag	-82.270
^{118}Ag	-79.460
^{119}Ag	-78.710
^{120}Ag	-75.670
^{121}Ag	-74.680
^{122}Ag	-71.590
^{123}Ag	-70.480
^{124}Ag	-67.210
^{125}Ag	-65.900
^{126}Ag	-62.540
^{127}Ag	-61.070
^{128}Ag	-57.650
^{129}Ag	-55.640
^{130}Ag	-49.800
^{131}Ag	-45.280
^{132}Ag	-39.220
^{133}Ag	-34.200
^{134}Ag	-27.470
^{135}Ag	-22.210
^{136}Ag	-14.880
^{137}Ag	-9.370
^{138}Ag	-2.180
^{139}Ag	3.710
^{140}Ag	11.180
^{141}Ag	17.350
^{142}Ag	25.100
^{143}Ag	31.640
^{144}Ag	39.650
^{145}Ag	46.760
^{146}Ag	55.610 †
^{147}Ag	63.340 ‡
^{148}Ag	72.480 †
^{149}Ag	80.820 †
^{150}Ag	90.330 †
^{151}Ag	98.960 †
^{152}Ag	108.810 †
^{153}Ag	117.810 †
^{154}Ag	127.840 †
^{155}Ag	137.100 †
^{156}Ag	147.640 †
^{157}Ag	157.340 †
^{159}Ag	178.490 †
^{161}Ag	200.140 †
^{163}Ag	222.430 †
^{165}Ag	245.360 †
^{90}Cd	-5.850 †
^{91}Cd	-13.510 †
^{92}Cd	-23.860 ‡
^{93}Cd	-30.820 ‡
^{94}Cd	-40.350 ‡
^{95}Cd	-46.580
^{96}Cd	-55.230
^{97}Cd	-60.040
^{98}Cd	-67.250
^{99}Cd	-69.800
^{100}Cd	-74.080
^{101}Cd	-75.840
^{102}Cd	-79.640
^{103}Cd	-80.690
^{104}Cd	-83.970
^{105}Cd	-84.330
^{106}Cd	-87.150
^{107}Cd	-86.930
^{108}Cd	-89.240
^{109}Cd	-88.490

Isotope	Mass Excess
^{110}Cd	-90.390
^{111}Cd	-89.210
^{112}Cd	-90.590
^{113}Cd	-89.090
^{114}Cd	-90.030
^{115}Cd	-88.080
^{116}Cd	-88.730
^{117}Cd	-86.400
^{118}Cd	-86.720
^{119}Cd	-84.000
^{120}Cd	-83.930
^{121}Cd	-80.990
^{122}Cd	-80.750
^{123}Cd	-77.740
^{124}Cd	-77.190
^{125}Cd	-74.000
^{126}Cd	-73.250
^{127}Cd	-69.990
^{128}Cd	-68.980
^{129}Cd	-65.680
^{130}Cd	-64.050
^{131}Cd	-58.350
^{132}Cd	-54.320
^{133}Cd	-48.260
^{134}Cd	-43.660
^{135}Cd	-37.160
^{136}Cd	-32.150
^{137}Cd	-25.060
^{138}Cd	-20.120
^{139}Cd	-12.960
^{140}Cd	-7.630
^{141}Cd	-0.430
^{142}Cd	5.190
^{143}Cd	12.810
^{144}Cd	18.790
^{145}Cd	26.730
^{146}Cd	33.380
^{147}Cd	41.940 †
^{148}Cd	49.220
^{149}Cd	58.210 †
^{150}Cd	65.920 ‡
^{151}Cd	75.160 †
^{152}Cd	83.210 ‡
^{153}Cd	92.850 †
^{154}Cd	101.330 †
^{155}Cd	111.350 †
^{156}Cd	120.040 †
^{157}Cd	130.440 †
^{158}Cd	139.750 †
^{159}Cd	150.650 †
^{160}Cd	160.240 †
^{162}Cd	181.190 †
^{164}Cd	202.880 †
^{166}Cd	224.960 †
^{168}Cd	247.700 †
^{170}Cd	271.080 †
^{93}In	-13.650 †
^{94}In	-21.290 †
^{95}In	-31.070 †
^{96}In	-37.900 †
^{97}In	-46.910 †
^{98}In	-52.920
^{99}In	-60.410
^{100}In	-63.650
^{101}In	-68.050
^{102}In	-70.510
^{103}In	-74.460
^{104}In	-76.190
^{105}In	-79.550
^{106}In	-80.670
^{107}In	-83.550
^{108}In	-84.030
^{109}In	-86.420
^{110}In	-86.430
^{111}In	-88.390

Isotope	Mass Excess
^{112}In	-87.970
^{113}In	-89.410
^{114}In	-88.600
^{115}In	-89.580
^{116}In	-88.300
^{117}In	-88.960
^{118}In	-87.260
^{119}In	-87.680
^{120}In	-85.650
^{121}In	-85.670
^{122}In	-83.480
^{123}In	-83.320
^{124}In	-80.870
^{125}In	-80.400
^{126}In	-77.760
^{127}In	-77.120
^{128}In	-74.320
^{129}In	-73.420
^{130}In	-70.510
^{131}In	-69.030
^{132}In	-63.820
^{133}In	-59.780
^{134}In	-54.140
^{135}In	-49.760
^{136}In	-43.520
^{137}In	-38.750
^{138}In	-32.230
^{139}In	-27.310
^{140}In	-20.720
^{141}In	-15.660
^{142}In	-9.000
^{143}In	-3.500
^{144}In	3.540
^{145}In	9.450
^{146}In	16.930
^{147}In	23.290
^{148}In	31.410 †
^{149}In	38.530
^{150}In	46.890 †
^{151}In	54.340
^{152}In	62.990 †
^{153}In	70.840 ‡
^{154}In	79.960 †
^{155}In	88.420 †
^{156}In	97.880 †
^{157}In	106.420 †
^{158}In	116.430 †
^{159}In	125.560 †
^{160}In	135.980 †
^{161}In	145.430 †
^{162}In	156.150 †
^{163}In	165.650 †
^{165}In	186.570 †
^{167}In	207.940 †
^{169}In	230.030 †
^{171}In	252.650 †
^{173}In	275.630 †
^{94}Sn	-5.820 †
^{95}Sn	-13.710 †
^{96}Sn	-24.080 ‡
^{97}Sn	-31.270 ‡
^{98}Sn	-40.780
^{99}Sn	-47.070
^{100}Sn	-55.820
^{101}Sn	-59.180
^{102}Sn	-64.270
^{103}Sn	-66.890
^{104}Sn	-71.510
^{105}Sn	-73.320
^{106}Sn	-77.450
^{107}Sn	-78.630
^{108}Sn	-82.200
^{109}Sn	-82.770
^{110}Sn	-85.920
^{111}Sn	-85.990

Isotope	Mass Excess
^{112}Sn	-88.710
^{113}Sn	-88.350
^{114}Sn	-90.530
^{115}Sn	-89.890
^{116}Sn	-91.460
^{117}Sn	-90.230
^{118}Sn	-91.670
^{119}Sn	-90.070
^{120}Sn	-91.170
^{121}Sn	-89.230
^{122}Sn	-90.000
^{123}Sn	-87.900
^{124}Sn	-88.300
^{125}Sn	-85.930
^{126}Sn	-86.010
^{127}Sn	-83.480
^{128}Sn	-83.290
^{129}Sn	-80.600
^{130}Sn	-80.100
^{131}Sn	-77.330
^{132}Sn	-76.340
^{133}Sn	-71.120
^{134}Sn	-67.510
^{135}Sn	-62.080
^{136}Sn	-57.970
^{137}Sn	-51.960
^{138}Sn	-47.770
^{139}Sn	-41.270
^{140}Sn	-36.920
^{141}Sn	-30.590
^{142}Sn	-26.080
^{143}Sn	-19.540
^{144}Sn	-14.620
^{145}Sn	-7.650
^{146}Sn	-2.190
^{147}Sn	5.000
^{148}Sn	10.920
^{149}Sn	18.870
^{150}Sn	25.370
^{151}Sn	33.460 †
^{152}Sn	40.310
^{153}Sn	48.770 †
^{154}Sn	56.090
^{155}Sn	65.200 †
^{156}Sn	73.100 ‡
^{157}Sn	82.410 †
^{158}Sn	90.570 †
^{159}Sn	100.390 †
^{160}Sn	109.040 †
^{161}Sn	119.330 †
^{162}Sn	128.220 †
^{163}Sn	138.760 †
^{164}Sn	147.830 †
^{165}Sn	158.770 †
^{166}Sn	167.900 †
^{168}Sn	188.560 †
^{170}Sn	209.960 †
^{172}Sn	231.820 †
^{174}Sn	254.180 †
^{102}Sb	-50.610 †
^{103}Sb	-55.860 †
^{104}Sb	-59.150 †
^{105}Sb	-63.860 †
^{106}Sb	-66.430
^{107}Sb	-70.620
^{108}Sb	-72.500
^{109}Sb	-76.150
^{110}Sb	-77.480
^{111}Sb	-80.690
^{112}Sb	-81.520
^{113}Sb	-84.300
^{114}Sb	-84.680
^{115}Sb	-87.030
^{116}Sb	-86.910
^{117}Sb	-88.610

Isotope	Mass Excess
^{118}Sb	-88.070
^{119}Sb	-89.510
^{120}Sb	-88.490
^{121}Sb	-89.680
^{122}Sb	-88.490
^{123}Sb	-89.350
^{124}Sb	-87.800
^{125}Sb	-88.280
^{126}Sb	-86.470
^{127}Sb	-86.650
^{128}Sb	-84.580
^{129}Sb	-84.500
^{130}Sb	-82.210
^{131}Sb	-81.840
^{132}Sb	-79.570
^{133}Sb	-78.570
^{134}Sb	-73.780
^{135}Sb	-70.380
^{136}Sb	-65.220
^{137}Sb	-61.350
^{138}Sb	-55.910
^{139}Sb	-51.740
^{140}Sb	-45.800
^{141}Sb	-41.720
^{142}Sb	-35.940
^{143}Sb	-31.550
^{144}Sb	-25.590
^{145}Sb	-20.740
^{146}Sb	-14.220
^{147}Sb	-9.060
^{148}Sb	-2.310
^{149}Sb	3.450
^{150}Sb	10.780
^{151}Sb	17.010
^{152}Sb	24.510
^{153}Sb	31.170
^{154}Sb	39.100
^{155}Sb	46.410
^{156}Sb	54.950 †
^{157}Sb	62.710 ‡
^{158}Sb	71.630 †
^{159}Sb	79.610 ‡
^{160}Sb	88.950 †
^{161}Sb	97.460 †
^{162}Sb	107.190 †
^{163}Sb	115.900 †
^{164}Sb	126.020 †
^{165}Sb	134.750 †
^{166}Sb	145.180 †
^{167}Sb	154.100 †
^{168}Sb	164.740 †
^{169}Sb	174.120 †
^{170}Sb	185.000 †
^{171}Sb	194.760 †
^{173}Sb	215.920 †
^{175}Sb	237.610 †
^{104}Te	-49.330 ‡
^{105}Te	-52.700
^{106}Te	-58.180
^{107}Te	-60.810
^{108}Te	-65.690
^{109}Te	-67.650
^{110}Te	-72.070
^{111}Te	-73.460
^{112}Te	-77.430
^{113}Te	-78.320
^{114}Te	-81.840
^{115}Te	-82.380
^{116}Te	-85.250
^{117}Te	-85.270
^{118}Te	-87.660
^{119}Te	-87.240
^{120}Te	-89.300
^{121}Te	-88.580
^{122}Te	-90.270

Isotope	Mass Excess
^{123}Te	-89.060
^{124}Te	-90.470
^{125}Te	-89.000
^{126}Te	-90.040
^{127}Te	-88.330
^{128}Te	-88.970
^{129}Te	-87.010
^{130}Te	-87.330
^{131}Te	-85.180
^{132}Te	-85.300
^{133}Te	-83.020
^{134}Te	-82.440
^{135}Te	-77.870
^{136}Te	-74.740
^{137}Te	-69.820
^{138}Te	-66.510
^{139}Te	-61.090
^{140}Te	-57.490
^{141}Te	-51.830
^{142}Te	-48.290
^{143}Te	-42.630
^{144}Te	-38.820
^{145}Te	-32.930
^{146}Te	-28.530
^{147}Te	-22.300
^{148}Te	-17.590
^{149}Te	-10.990
^{150}Te	-5.860
^{151}Te	1.200
^{152}Te	6.840
^{153}Te	14.140
^{154}Te	20.280
^{155}Te	28.190
^{156}Te	34.940
^{157}Te	43.340 †
^{158}Te	50.710
^{159}Te	59.450 †
^{160}Te	66.940 ‡
^{161}Te	76.150 †
^{162}Te	84.100 ‡
^{163}Te	93.650 †
^{164}Te	101.940 †
^{165}Te	111.710 †
^{166}Te	119.930 †
^{167}Te	130.160 †
^{168}Te	138.580 †
^{169}Te	149.080 †
^{170}Te	157.900 †
^{171}Te	168.580 †
^{172}Te	177.780 †
^{173}Te	188.800 †
^{174}Te	198.320 †
^{176}Te	219.410 †
^{178}Te	241.770 †
^{106}I	-43.880 †
^{107}I	-49.410 †
^{108}I	-52.740 †
^{109}I	-57.710 †
^{110}I	-60.430
^{111}I	-64.910
^{112}I	-67.060
^{113}I	-71.090
^{114}I	-72.720
^{115}I	-76.400
^{116}I	-77.470
^{117}I	-80.470
^{118}I	-81.170
^{119}I	-83.680
^{120}I	-83.890
^{121}I	-86.280
^{122}I	-86.060
^{123}I	-87.900
^{124}I	-87.410
^{125}I	-88.820
^{126}I	-87.920

Isotope	Mass Excess
^{127}I	-89.060
^{128}I	-87.810
^{129}I	-88.560
^{130}I	-87.000
^{131}I	-87.450
^{132}I	-85.790
^{133}I	-85.910
^{134}I	-84.050
^{135}I	-83.690
^{136}I	-79.380
^{137}I	-76.490
^{138}I	-72.130
^{139}I	-68.850
^{140}I	-64.000
^{141}I	-60.670
^{142}I	-55.550
^{143}I	-52.140
^{144}I	-47.060
^{145}I	-43.310
^{146}I	-37.870
^{147}I	-33.770
^{148}I	-27.980
^{149}I	-23.430
^{150}I	-17.460
^{151}I	-12.600
^{152}I	-6.120
^{153}I	-0.680
^{154}I	6.090
^{155}I	12.220
^{156}I	19.570
^{157}I	26.170
^{158}I	34.190
^{159}I	41.370
^{160}I	49.630 †
^{161}I	56.990
^{162}I	65.630 †
^{163}I	73.410 ‡
^{164}I	82.530 †
^{165}I	90.470 ‡
^{166}I	99.740 †
^{167}I	107.760 ‡
^{168}I	117.490 †
^{169}I	125.760 †
^{170}I	135.700 †
^{171}I	144.320 †
^{172}I	154.450 †
^{173}I	163.500 †
^{174}I	174.060 †
^{175}I	183.380 †
^{176}I	194.140 †
^{177}I	203.880 †
^{178}I	214.930 †
^{179}I	225.670 †
^{108}Xe	-42.870 ‡
^{109}Xe	-46.280
^{110}Xe	-52.010
^{111}Xe	-54.800
^{112}Xe	-60.030
^{113}Xe	-62.240
^{114}Xe	-67.010
^{115}Xe	-68.810
^{116}Xe	-73.010
^{117}Xe	-74.210
^{118}Xe	-77.900
^{119}Xe	-78.720
^{120}Xe	-81.860
^{121}Xe	-82.390
^{122}Xe	-85.270
^{123}Xe	-85.210
^{124}Xe	-87.650
^{125}Xe	-87.170
^{126}Xe	-89.210
^{127}Xe	-88.260
^{128}Xe	-89.790
^{129}Xe	-88.650

Isotope	Mass Excess
^{130}Xe	-89.810
^{131}Xe	-88.380
^{132}Xe	-89.330
^{133}Xe	-87.660
^{134}Xe	-88.200
^{135}Xe	-86.560
^{136}Xe	-86.460
^{137}Xe	-82.390
^{138}Xe	-80.070
^{139}Xe	-75.740
^{140}Xe	-73.020
^{141}Xe	-68.440
^{142}Xe	-65.650
^{143}Xe	-60.660
^{144}Xe	-57.820
^{145}Xe	-52.810
^{146}Xe	-49.510
^{147}Xe	-44.370
^{148}Xe	-40.710
^{149}Xe	-35.080
^{150}Xe	-31.150
^{151}Xe	-25.460
^{152}Xe	-21.180
^{153}Xe	-14.900
^{154}Xe	-9.990
^{155}Xe	-3.220
^{156}Xe	2.340
^{157}Xe	9.540
^{158}Xe	15.760
^{159}Xe	23.580
^{160}Xe	30.290
^{161}Xe	38.410 †
^{162}Xe	45.210
^{163}Xe	53.680 †
^{164}Xe	61.030
^{165}Xe	69.810 †
^{166}Xe	77.250 ‡
^{167}Xe	86.310 †
^{168}Xe	93.830 ‡
^{169}Xe	103.410 †
^{170}Xe	111.130 ‡
^{171}Xe	120.870 †
^{172}Xe	128.930 ‡
^{173}Xe	138.910 †
^{174}Xe	147.490 †
^{175}Xe	157.850 †
^{176}Xe	166.760 †
^{177}Xe	177.350 †
^{178}Xe	186.580 †
^{179}Xe	197.570 †
^{180}Xe	207.750 †
^{110}Cs	-37.310 †
^{111}Cs	-43.110 †
^{112}Cs	-46.650 †
^{113}Cs	-51.940 †
^{114}Cs	-54.890 †
^{115}Cs	-59.830
^{116}Cs	-62.150
^{117}Cs	-66.480
^{118}Cs	-68.370
^{119}Cs	-72.180
^{120}Cs	-73.630
^{121}Cs	-77.090
^{122}Cs	-78.120
^{123}Cs	-81.160
^{124}Cs	-81.700
^{125}Cs	-84.140
^{126}Cs	-84.290
^{127}Cs	-86.270
^{128}Cs	-85.940
^{129}Cs	-87.520
^{130}Cs	-86.890
^{131}Cs	-88.130
^{132}Cs	-87.200
^{133}Cs	-88.140

Isotope	Mass Excess
^{134}Cs	-86.890
^{135}Cs	-87.650
^{136}Cs	-86.270
^{137}Cs	-86.420
^{138}Cs	-82.910
^{139}Cs	-80.610
^{140}Cs	-76.850
^{141}Cs	-74.400
^{142}Cs	-70.370
^{143}Cs	-67.700
^{144}Cs	-63.280
^{145}Cs	-60.520
^{146}Cs	-55.960
^{147}Cs	-52.960
^{148}Cs	-48.260
^{149}Cs	-44.750
^{150}Cs	-39.750
^{151}Cs	-36.090
^{152}Cs	-30.980
^{153}Cs	-26.910
^{154}Cs	-21.150
^{155}Cs	-16.250
^{156}Cs	-10.050
^{157}Cs	-4.640
^{158}Cs	2.190
^{159}Cs	8.210
^{160}Cs	15.560
^{161}Cs	22.130
^{162}Cs	29.690
^{163}Cs	36.310
^{164}Cs	44.350
^{165}Cs	51.360
^{166}Cs	59.640 †
^{167}Cs	66.870
^{168}Cs	75.430 †
^{169}Cs	82.800
^{170}Cs	91.830 †
^{171}Cs	99.350 ‡
^{172}Cs	108.530 †
^{173}Cs	116.440 ‡
^{174}Cs	125.960 †
^{175}Cs	134.340 †
^{176}Cs	144.290 †
^{177}Cs	153.030 †
^{178}Cs	163.110 †
^{179}Cs	172.280 †
^{180}Cs	182.700 †
^{181}Cs	192.760 †
^{112}Ba	-36.470 ‡
^{113}Ba	-40.070 ‡
^{114}Ba	-46.110
^{115}Ba	-49.220
^{116}Ba	-54.680
^{117}Ba	-57.130
^{118}Ba	-62.160
^{119}Ba	-64.160
^{120}Ba	-68.600
^{121}Ba	-70.380
^{122}Ba	-74.330
^{123}Ba	-75.520
^{124}Ba	-79.160
^{125}Ba	-79.700
^{126}Ba	-82.780
^{127}Ba	-82.860
^{128}Ba	-85.460
^{129}Ba	-85.110
^{130}Ba	-87.260
^{131}Ba	-86.690
^{132}Ba	-88.440
^{133}Ba	-87.570
^{134}Ba	-88.930
^{135}Ba	-87.900
^{136}Ba	-88.920
^{137}Ba	-87.780
^{138}Ba	-88.500

Isotope	Mass Excess
^{139}Ba	-85.020
^{140}Ba	-83.280
^{141}Ba	-79.790
^{142}Ba	-77.880
^{143}Ba	-73.980
^{144}Ba	-71.880
^{145}Ba	-67.540
^{146}Ba	-65.220
^{147}Ba	-60.960
^{148}Ba	-58.400
^{149}Ba	-53.860
^{150}Ba	-50.980
^{151}Ba	-46.250
^{152}Ba	-43.180
^{153}Ba	-38.270
^{154}Ba	-34.710
^{155}Ba	-28.970
^{156}Ba	-24.630
^{157}Ba	-18.580
^{158}Ba	-13.550
^{159}Ba	-6.920
^{160}Ba	-1.370
^{161}Ba	5.840
^{162}Ba	11.850
^{163}Ba	19.240
^{164}Ba	25.430
^{165}Ba	33.130
^{166}Ba	39.630
^{167}Ba	47.700
^{168}Ba	54.430
^{169}Ba	62.850 †
^{170}Ba	69.670
^{171}Ba	78.490 †
^{172}Ba	85.450
^{173}Ba	94.490 †
^{174}Ba	101.940 ‡
^{175}Ba	111.250 †
^{176}Ba	119.220 ‡
^{177}Ba	129.000 †
^{178}Ba	137.230 †
^{179}Ba	147.250 †
^{180}Ba	155.850 †
^{181}Ba	166.150 †
^{182}Ba	175.850 †
^{114}La	-30.940 †
^{115}La	-37.150 †
^{116}La	-40.780 †
^{117}La	-46.370 †
^{118}La	-49.510 †
^{119}La	-54.660 †
^{120}La	-57.290
^{121}La	-62.060
^{122}La	-64.320
^{123}La	-68.440
^{124}La	-70.230
^{125}La	-73.870
^{126}La	-75.040
^{127}La	-78.050
^{128}La	-78.760
^{129}La	-81.330
^{130}La	-81.540
^{131}La	-83.770
^{132}La	-83.750
^{133}La	-85.300
^{134}La	-85.260
^{135}La	-86.630
^{136}La	-86.070
^{137}La	-87.210
^{138}La	-86.640
^{139}La	-87.380
^{140}La	-84.470
^{141}La	-83.000
^{142}La	-80.050
^{143}La	-78.270
^{144}La	-74.940

Isotope	Mass Excess
^{145}La	-72.910
^{146}La	-69.020
^{147}La	-67.000
^{148}La	-63.180
^{149}La	-60.780
^{150}La	-56.860
^{151}La	-54.250
^{152}La	-50.110
^{153}La	-47.240
^{154}La	-42.850
^{155}La	-39.310
^{156}La	-34.140
^{157}La	-29.940
^{158}La	-24.270
^{159}La	-19.430
^{160}La	-13.280
^{161}La	-7.860
^{162}La	-1.210
^{163}La	4.620
^{164}La	11.580
^{165}La	17.430
^{166}La	24.630
^{167}La	30.920
^{168}La	38.490
^{169}La	45.070
^{170}La	52.940
^{171}La	59.550
^{172}La	67.820 †
^{173}La	74.640
^{174}La	83.200 †
^{175}La	90.450
^{176}La	99.350 †
^{177}La	107.160 ‡
^{178}La	116.420 †
^{179}La	124.590 †
^{180}La	134.040 †
^{181}La	142.530 †
^{182}La	152.470 †
^{183}La	161.950 †
^{116}Ce	-30.460 ‡
^{117}Ce	-34.220 ‡
^{118}Ce	-40.500
^{119}Ce	-43.770
^{120}Ce	-49.540
^{121}Ce	-52.500
^{122}Ce	-57.750
^{123}Ce	-60.180
^{124}Ce	-64.900
^{125}Ce	-66.690
^{126}Ce	-70.960
^{127}Ce	-72.070
^{128}Ce	-75.700
^{129}Ce	-76.380
^{130}Ce	-79.520
^{131}Ce	-79.800
^{132}Ce	-82.570
^{133}Ce	-82.360
^{134}Ce	-84.740
^{135}Ce	-84.680
^{136}Ce	-86.530
^{137}Ce	-85.990
^{138}Ce	-87.560
^{139}Ce	-86.810
^{140}Ce	-88.120
^{141}Ce	-85.470
^{142}Ce	-84.550
^{143}Ce	-81.730
^{144}Ce	-80.520
^{145}Ce	-77.260
^{146}Ce	-75.690
^{147}Ce	-72.090
^{148}Ce	-70.510
^{149}Ce	-66.840
^{150}Ce	-65.070
^{151}Ce	-61.430

Isotope	Mass Excess
^{152}Ce	-59.410
^{153}Ce	-55.460
^{154}Ce	-53.110
^{155}Ce	-48.740
^{156}Ce	-45.760
^{157}Ce	-40.730
^{158}Ce	-36.920
^{159}Ce	-31.440
^{160}Ce	-27.080
^{161}Ce	-21.060
^{162}Ce	-16.210
^{163}Ce	-9.730
^{164}Ce	-4.330
^{165}Ce	2.290
^{166}Ce	7.630
^{167}Ce	14.620
^{168}Ce	20.420
^{169}Ce	27.840
^{170}Ce	33.870
^{171}Ce	41.530
^{172}Ce	47.590
^{173}Ce	55.710 †
^{174}Ce	62.060
^{175}Ce	70.430 †
^{176}Ce	77.260
^{177}Ce	86.000 †
^{178}Ce	93.290
^{179}Ce	102.490 †
^{180}Ce	110.090 ‡
^{181}Ce	119.430 †
^{182}Ce	127.550 †
^{183}Ce	137.280 †
^{184}Ce	146.380 †
^{186}Ce	169.750 †
^{190}Ce	217.020 †
^{192}Ce	240.770 †
^{196}Ce	288.280 †
^{198}Ce	312.080 †
^{118}Pr	-25.100 †
^{119}Pr	-31.500 †
^{120}Pr	-35.390 †
^{121}Pr	-41.490 †
^{122}Pr	-44.940 †
^{123}Pr	-50.360 †
^{124}Pr	-53.380
^{125}Pr	-58.100
^{126}Pr	-60.520
^{127}Pr	-64.730
^{128}Pr	-66.460
^{129}Pr	-70.070
^{130}Pr	-71.310
^{131}Pr	-74.530
^{132}Pr	-75.360
^{133}Pr	-77.930
^{134}Pr	-78.540
^{135}Pr	-80.900
^{136}Pr	-81.320
^{137}Pr	-83.190
^{138}Pr	-83.150
^{139}Pr	-84.870
^{140}Pr	-84.810
^{141}Pr	-85.890
^{142}Pr	-83.830
^{143}Pr	-83.030
^{144}Pr	-80.780
^{145}Pr	-79.650
^{146}Pr	-76.840
^{147}Pr	-75.560
^{148}Pr	-72.400
^{149}Pr	-70.980
^{150}Pr	-67.950
^{151}Pr	-66.440
^{152}Pr	-63.390
^{153}Pr	-61.560
^{154}Pr	-58.140

Isotope	Mass Excess
^{155}Pr	-55.810
^{156}Pr	-52.000
^{157}Pr	-49.160
^{158}Pr	-44.520
^{159}Pr	-40.900
^{160}Pr	-35.900
^{161}Pr	-31.670
^{162}Pr	-26.210
^{163}Pr	-21.530
^{164}Pr	-15.490
^{165}Pr	-10.420
^{166}Pr	-4.310
^{167}Pr	0.830
^{168}Pr	7.310
^{169}Pr	12.960
^{170}Pr	19.830
^{171}Pr	25.660
^{172}Pr	32.760
^{173}Pr	38.680
^{174}Pr	46.330
^{175}Pr	52.480
^{176}Pr	60.430
^{177}Pr	67.100
^{178}Pr	75.320 †
^{179}Pr	82.560
^{180}Pr	91.190 †
^{181}Pr	98.680
^{182}Pr	107.640 †
^{183}Pr	115.550 ‡
^{184}Pr	124.900 †
^{185}Pr	133.750 †
^{187}Pr	156.460 †
^{189}Pr	179.560 †
^{191}Pr	202.350 †
^{193}Pr	225.340 †
^{197}Pr	271.530 †
^{199}Pr	294.580 †
^{120}Nd	-24.720 ‡
^{121}Nd	-28.930 ‡
^{122}Nd	-35.520
^{123}Nd	-39.140
^{124}Nd	-45.160
^{125}Nd	-48.190
^{126}Nd	-53.540
^{127}Nd	-55.890
^{128}Nd	-60.720
^{129}Nd	-62.430
^{130}Nd	-66.600
^{131}Nd	-67.920
^{132}Nd	-71.680
^{133}Nd	-72.310
^{134}Nd	-75.710
^{135}Nd	-76.310
^{136}Nd	-79.140
^{137}Nd	-79.580
^{138}Nd	-81.950
^{139}Nd	-82.060
^{140}Nd	-84.420
^{141}Nd	-84.210
^{142}Nd	-86.050
^{143}Nd	-84.020
^{144}Nd	-83.790
^{145}Nd	-81.520
^{146}Nd	-80.840
^{147}Nd	-78.320
^{148}Nd	-77.490
^{149}Nd	-74.490
^{150}Nd	-73.690
^{151}Nd	-70.930
^{152}Nd	-70.010
^{153}Nd	-67.150
^{154}Nd	-65.850
^{155}Nd	-62.450
^{156}Nd	-60.670
^{157}Nd	-57.010

Isotope	Mass Excess
^{158}Nd	-54.560
^{159}Nd	-50.110
^{160}Nd	-46.960
^{161}Nd	-42.100
^{162}Nd	-38.430
^{163}Nd	-33.150
^{164}Nd	-28.900
^{165}Nd	-23.190
^{166}Nd	-18.640
^{167}Nd	-12.730
^{168}Nd	-8.090
^{169}Nd	-1.750
^{170}Nd	3.340
^{171}Nd	10.010
^{172}Nd	15.280
^{173}Nd	22.240
^{174}Nd	27.680
^{175}Nd	35.140
^{176}Nd	40.870
^{177}Nd	48.670
^{178}Nd	54.820
^{179}Nd	62.980 †
^{180}Nd	69.650
^{181}Nd	78.160 †
^{182}Nd	85.280
^{183}Nd	94.040 †
^{184}Nd	101.570 ‡
^{185}Nd	110.660 †
^{186}Nd	119.060 †
^{188}Nd	141.210 †
^{190}Nd	163.390 †
^{192}Nd	185.520 †
^{194}Nd	207.780 †
^{196}Nd	230.220 †
^{198}Nd	252.530 †
^{200}Nd	274.930 †
^{202}Nd	297.810 †
^{204}Nd	320.920 †
^{206}Nd	344.210 †
^{208}Nd	367.170 †
^{210}Nd	390.270 †
^{212}Nd	413.610 †
^{214}Nd	437.190 †
^{122}Pm	-19.670 †
^{123}Pm	-26.420 †
^{124}Pm	-30.630 †
^{125}Pm	-36.650 †
^{126}Pm	-40.310 †
^{127}Pm	-45.600 †
^{128}Pm	-48.570 †
^{129}Pm	-53.380 †
^{130}Pm	-55.650
^{131}Pm	-59.900
^{132}Pm	-61.760
^{133}Pm	-65.320
^{134}Pm	-66.780
^{135}Pm	-70.170
^{136}Pm	-71.240
^{137}Pm	-74.090
^{138}Pm	-75.030
^{139}Pm	-77.550
^{140}Pm	-78.300
^{141}Pm	-80.520
^{142}Pm	-81.070
^{143}Pm	-82.930
^{144}Pm	-81.480
^{145}Pm	-81.280
^{146}Pm	-79.490
^{147}Pm	-79.010
^{148}Pm	-76.940
^{149}Pm	-76.260
^{150}Pm	-73.890
^{151}Pm	-73.360
^{152}Pm	-71.180
^{153}Pm	-70.470

Isotope	Mass Excess
^{154}Pm	-68.130
^{155}Pm	-66.850
^{156}Pm	-64.000
^{157}Pm	-62.370
^{158}Pm	-59.090
^{159}Pm	-56.840
^{160}Pm	-52.860
^{161}Pm	-49.850
^{162}Pm	-45.550
^{163}Pm	-42.060
^{164}Pm	-37.200
^{165}Pm	-33.290
^{166}Pm	-28.100
^{167}Pm	-23.740
^{168}Pm	-18.340
^{169}Pm	-13.850
^{170}Pm	-8.060
^{171}Pm	-3.170
^{172}Pm	2.940
^{173}Pm	8.070
^{174}Pm	14.560
^{175}Pm	19.800
^{176}Pm	26.850
^{177}Pm	32.420
^{178}Pm	39.690
^{179}Pm	45.790
^{180}Pm	53.380
^{181}Pm	59.930
^{182}Pm	68.080 †
^{183}Pm	74.990
^{184}Pm	83.360 †
^{185}Pm	90.640
^{186}Pm	99.290 †
^{187}Pm	107.470 †
^{189}Pm	129.130 †
^{191}Pm	150.420 †
^{193}Pm	171.790 †
^{195}Pm	193.480 †
^{197}Pm	215.170 †
^{199}Pm	236.730 †
^{201}Pm	258.620 †
^{203}Pm	280.810 †
^{205}Pm	303.230 †
^{207}Pm	325.590 †
^{209}Pm	347.980 †
^{213}Pm	393.320 †
^{215}Pm	416.270 †
^{124}Sm	-19.530 ‡
^{125}Sm	-23.740 ‡
^{126}Sm	-30.400 ‡
^{127}Sm	-33.990
^{128}Sm	-39.900
^{129}Sm	-42.850
^{130}Sm	-48.230
^{131}Sm	-50.570
^{132}Sm	-55.360
^{133}Sm	-57.020
^{134}Sm	-61.410
^{135}Sm	-62.860
^{136}Sm	-66.720
^{137}Sm	-67.810
^{138}Sm	-71.170
^{139}Sm	-72.260
^{140}Sm	-75.420
^{141}Sm	-76.020
^{142}Sm	-78.990
^{143}Sm	-79.570
^{144}Sm	-82.010
^{145}Sm	-80.590
^{146}Sm	-80.960
^{147}Sm	-79.230
^{148}Sm	-79.310
^{149}Sm	-77.090
^{150}Sm	-76.790
^{151}Sm	-74.680

Isotope	Mass Excess
^{152}Sm	-74.750
^{153}Sm	-72.770
^{154}Sm	-72.580
^{155}Sm	-70.250
^{156}Sm	-69.530
^{157}Sm	-66.830
^{158}Sm	-65.590
^{159}Sm	-62.500
^{160}Sm	-60.720
^{161}Sm	-56.880
^{162}Sm	-54.430
^{163}Sm	-50.300
^{164}Sm	-47.240
^{165}Sm	-42.730
^{166}Sm	-39.320
^{167}Sm	-34.330
^{168}Sm	-30.480
^{169}Sm	-25.220
^{170}Sm	-21.280
^{171}Sm	-15.700
^{172}Sm	-11.360
^{173}Sm	-5.400
^{174}Sm	-0.740
^{175}Sm	5.550
^{176}Sm	10.380
^{177}Sm	17.260
^{178}Sm	22.310
^{179}Sm	29.530
^{180}Sm	35.060
^{181}Sm	42.530
^{182}Sm	48.720
^{183}Sm	56.660
^{184}Sm	63.180
^{185}Sm	71.310 †
^{186}Sm	78.140
^{187}Sm	86.570 †
^{188}Sm	94.400 ‡
^{190}Sm	115.150 †
^{191}Sm	126.160 †
^{192}Sm	135.770 †
^{194}Sm	156.420 †
^{196}Sm	177.400 †
^{198}Sm	198.360 †
^{200}Sm	219.270 †
^{202}Sm	240.550 †
^{204}Sm	262.090 †
^{206}Sm	283.730 †
^{208}Sm	305.430 †
^{210}Sm	327.210 †
^{212}Sm	349.330 †
^{214}Sm	371.300 †
^{216}Sm	393.690 †
^{126}Eu	-14.360 †
^{127}Eu	-20.950 †
^{128}Eu	-25.160 †
^{129}Eu	-31.050 †
^{130}Eu	-34.560 †
^{131}Eu	-40.010 †
^{132}Eu	-42.900 †
^{133}Eu	-47.490 †
^{134}Eu	-49.990
^{135}Eu	-54.360
^{136}Eu	-56.280
^{137}Eu	-60.160
^{138}Eu	-61.750
^{139}Eu	-65.260
^{140}Eu	-66.990
^{141}Eu	-70.000
^{142}Eu	-71.360
^{143}Eu	-74.360
^{144}Eu	-75.520
^{145}Eu	-77.990
^{146}Eu	-77.140
^{147}Eu	-77.570
^{148}Eu	-76.350

Isotope	Mass Excess
^{149}Eu	-76.450
^{150}Eu	-74.850
^{151}Eu	-74.770
^{152}Eu	-72.980
^{153}Eu	-73.380
^{154}Eu	-71.920
^{155}Eu	-71.740
^{156}Eu	-69.980
^{157}Eu	-69.410
^{158}Eu	-67.090
^{159}Eu	-66.040
^{160}Eu	-63.430
^{161}Eu	-61.780
^{162}Eu	-58.500
^{163}Eu	-56.230
^{164}Eu	-52.530
^{165}Eu	-49.810
^{166}Eu	-45.800
^{167}Eu	-42.600
^{168}Eu	-38.110
^{169}Eu	-34.410
^{170}Eu	-29.700
^{171}Eu	-25.970
^{172}Eu	-20.940
^{173}Eu	-16.750
^{174}Eu	-11.250
^{175}Eu	-6.790
^{176}Eu	-0.920
^{177}Eu	3.750
^{178}Eu	10.110
^{179}Eu	15.110
^{180}Eu	21.750
^{181}Eu	27.170
^{182}Eu	34.270
^{183}Eu	40.250
^{184}Eu	47.810
^{185}Eu	54.080
^{186}Eu	61.760
^{187}Eu	68.370
^{188}Eu	76.450 †
^{189}Eu	84.150
^{190}Eu	94.580 †
^{191}Eu	104.000 †
^{192}Eu	114.470 †
^{193}Eu	123.870 †
^{194}Eu	134.540 †
^{195}Eu	143.940 †
^{196}Eu	154.700 †
^{197}Eu	164.170 †
^{198}Eu	174.800 †
^{199}Eu	184.380 †
^{200}Eu	195.070 †
^{201}Eu	204.780 †
^{202}Eu	215.630 †
^{203}Eu	225.380 †
^{204}Eu	236.280 †
^{205}Eu	246.230 †
^{206}Eu	257.140 †
^{207}Eu	266.940 †
^{208}Eu	277.920 †
^{209}Eu	288.060 †
^{211}Eu	309.490 †
^{212}Eu	320.530 †
^{213}Eu	330.870 †
^{215}Eu	352.210 †
^{217}Eu	373.990 †
^{128}Gd	-13.670 ‡
^{129}Gd	-17.860 †
^{130}Gd	-24.310 ‡
^{131}Gd	-27.900 ‡
^{132}Gd	-33.890
^{133}Gd	-36.580
^{134}Gd	-42.000
^{135}Gd	-44.480
^{136}Gd	-49.330

Isotope	Mass Excess
^{137}Gd	-51.270
^{138}Gd	-55.650
^{139}Gd	-57.390
^{140}Gd	-61.540
^{141}Gd	-63.120
^{142}Gd	-66.890
^{143}Gd	-68.280
^{144}Gd	-71.850
^{145}Gd	-73.040
^{146}Gd	-76.080
^{147}Gd	-75.290
^{148}Gd	-76.240
^{149}Gd	-75.040
^{150}Gd	-75.750
^{151}Gd	-74.090
^{152}Gd	-74.750
^{153}Gd	-72.890
^{154}Gd	-73.810
^{155}Gd	-72.120
^{156}Gd	-72.500
^{157}Gd	-70.890
^{158}Gd	-70.690
^{159}Gd	-68.570
^{160}Gd	-67.990
^{161}Gd	-65.520
^{162}Gd	-64.440
^{163}Gd	-61.330
^{164}Gd	-59.490
^{165}Gd	-56.120
^{166}Gd	-53.910
^{167}Gd	-50.110
^{168}Gd	-47.410
^{169}Gd	-43.070
^{170}Gd	-39.920
^{171}Gd	-35.420
^{172}Gd	-32.240
^{173}Gd	-27.350
^{174}Gd	-23.630
^{175}Gd	-18.330
^{176}Gd	-14.290
^{177}Gd	-8.580
^{178}Gd	-4.430
^{179}Gd	1.880
^{180}Gd	6.300
^{181}Gd	12.840
^{182}Gd	17.880
^{183}Gd	24.780
^{184}Gd	30.370
^{185}Gd	37.680
^{186}Gd	43.510
^{187}Gd	50.970
^{188}Gd	57.230
^{189}Gd	65.180
^{190}Gd	72.100
^{191}Gd	82.410 †
^{192}Gd	91.280 †
^{193}Gd	101.540 †
^{194}Gd	110.420 †
^{195}Gd	121.030 †
^{196}Gd	129.790 †
^{197}Gd	140.440 †
^{198}Gd	149.290 †
^{199}Gd	159.790 †
^{200}Gd	168.840 †
^{201}Gd	179.560 †
^{202}Gd	188.640 †
^{203}Gd	199.440 †
^{204}Gd	208.580 †
^{205}Gd	219.390 †
^{206}Gd	228.660 †
^{207}Gd	239.320 †
^{208}Gd	248.700 †
^{209}Gd	259.530 †
^{210}Gd	269.220 †
^{212}Gd	290.030 †

Isotope	Mass Excess
^{213}Gd	301.040 †
^{214}Gd	310.780 †
^{215}Gd	321.840 †
^{216}Gd	331.560 †
^{218}Gd	352.700 †
^{130}Tb	-7.880 †
^{131}Tb	-14.400 †
^{132}Tb	-18.530 †
^{133}Tb	-24.330 †
^{134}Tb	-27.850 †
^{135}Tb	-33.250 †
^{136}Tb	-36.200 †
^{137}Tb	-41.070 †
^{138}Tb	-43.510 †
^{139}Tb	-48.040 †
^{140}Tb	-50.430
^{141}Tb	-54.420
^{142}Tb	-56.770
^{143}Tb	-60.560
^{144}Tb	-62.530
^{145}Tb	-66.140
^{146}Tb	-67.890
^{147}Tb	-71.000
^{148}Tb	-70.720
^{149}Tb	-71.680
^{150}Tb	-71.100
^{151}Tb	-71.750
^{152}Tb	-70.820
^{153}Tb	-71.420
^{154}Tb	-70.180
^{155}Tb	-71.170
^{156}Tb	-69.940
^{157}Tb	-70.660
^{158}Tb	-69.560
^{159}Tb	-69.560
^{160}Tb	-67.910
^{161}Tb	-67.470
^{162}Tb	-65.560
^{163}Tb	-64.650
^{164}Tb	-61.980
^{165}Tb	-60.470
^{166}Tb	-57.620
^{167}Tb	-55.610
^{168}Tb	-52.310
^{169}Tb	-49.760
^{170}Tb	-45.970
^{171}Tb	-43.020
^{172}Tb	-39.080
^{173}Tb	-36.040
^{174}Tb	-31.630
^{175}Tb	-28.100
^{176}Tb	-23.220
^{177}Tb	-19.340
^{178}Tb	-14.150
^{179}Tb	-10.050
^{180}Tb	-4.320
^{181}Tb	-0.010
^{182}Tb	6.160
^{183}Tb	10.990
^{184}Tb	17.510
^{185}Tb	22.850
^{186}Tb	29.710
^{187}Tb	35.320
^{188}Tb	42.430
^{189}Tb	48.560
^{190}Tb	55.730
^{191}Tb	62.540
^{192}Tb	72.300 †
^{193}Tb	80.960 †
^{194}Tb	90.700 †
^{195}Tb	99.520 †
^{196}Tb	109.490 †
^{197}Tb	118.140 †
^{198}Tb	128.170 †
^{199}Tb	136.890 †

Isotope	Mass Excess
^{200}Tb	146.860 †
^{201}Tb	155.940 †
^{202}Tb	166.020 †
^{203}Tb	175.050 †
^{204}Tb	185.250 †
^{205}Tb	194.300 †
^{206}Tb	204.430 †
^{207}Tb	213.450 †
^{208}Tb	223.690 †
^{209}Tb	232.910 †
^{210}Tb	243.290 †
^{211}Tb	253.080 †
^{212}Tb	263.550 †
^{213}Tb	273.150 †
^{214}Tb	283.560 †
^{215}Tb	293.270 †
^{216}Tb	303.800 †
^{217}Tb	313.440 †
^{218}Tb	324.160 †
^{219}Tb	334.050 †
^{132}Dy	-6.590 †
^{133}Dy	-10.530 †
^{134}Dy	-17.150 ‡
^{135}Dy	-20.660 ‡
^{136}Dy	-26.540 ‡
^{137}Dy	-29.510 ‡
^{138}Dy	-34.880
^{139}Dy	-37.470
^{140}Dy	-42.640
^{141}Dy	-44.870
^{142}Dy	-49.630
^{143}Dy	-52.000
^{144}Dy	-56.370
^{145}Dy	-58.370
^{146}Dy	-62.550
^{147}Dy	-64.360
^{148}Dy	-67.980
^{149}Dy	-67.720
^{150}Dy	-69.300
^{151}Dy	-68.660
^{152}Dy	-70.050
^{153}Dy	-69.050
^{154}Dy	-70.270
^{155}Dy	-69.110
^{156}Dy	-70.560
^{157}Dy	-69.500
^{158}Dy	-70.550
^{159}Dy	-69.180
^{160}Dy	-69.830
^{161}Dy	-68.060
^{162}Dy	-68.180
^{163}Dy	-66.440
^{164}Dy	-65.960
^{165}Dy	-63.630
^{166}Dy	-62.630
^{167}Dy	-59.980
^{168}Dy	-58.480
^{169}Dy	-55.320
^{170}Dy	-53.320
^{171}Dy	-49.740
^{172}Dy	-47.350
^{173}Dy	-43.540
^{174}Dy	-40.980
^{175}Dy	-36.760
^{176}Dy	-33.650
^{177}Dy	-28.930
^{178}Dy	-25.570
^{179}Dy	-20.430
^{180}Dy	-16.910
^{181}Dy	-11.290
^{182}Dy	-7.350
^{183}Dy	-1.390
^{184}Dy	3.060
^{185}Dy	9.330
^{186}Dy	14.220

Isotope	Mass Excess
^{187}Dy	20.860
^{188}Dy	26.130
^{189}Dy	33.100
^{190}Dy	38.450
^{191}Dy	45.500
^{192}Dy	51.760
^{193}Dy	61.310 †
^{194}Dy	69.460 †
^{195}Dy	79.140 †
^{196}Dy	87.320 †
^{197}Dy	97.180 †
^{198}Dy	105.200 ‡
^{199}Dy	115.110 †
^{200}Dy	123.300 †
^{201}Dy	133.300 †
^{202}Dy	141.740 †
^{203}Dy	151.770 †
^{204}Dy	160.200 †
^{205}Dy	170.300 †
^{206}Dy	178.680 †
^{207}Dy	188.560 †
^{208}Dy	197.160 †
^{209}Dy	207.240 †
^{210}Dy	216.020 †
^{211}Dy	226.490 †
^{212}Dy	235.560 †
^{213}Dy	246.000 †
^{214}Dy	255.000 †
^{215}Dy	265.380 †
^{216}Dy	274.560 †
^{217}Dy	285.020 †
^{218}Dy	294.090 †
^{219}Dy	304.850 †
^{220}Dy	313.970 †
^{136}Ho	-10.810 †
^{137}Ho	-16.710 †
^{138}Ho	-20.180 †
^{139}Ho	-25.700 †
^{140}Ho	-28.930 †
^{141}Ho	-33.950 †
^{142}Ho	-36.950 †
^{143}Ho	-41.740 †
^{144}Ho	-44.680 †
^{145}Ho	-49.090
^{146}Ho	-51.650
^{147}Ho	-55.890
^{148}Ho	-58.220
^{149}Ho	-61.850
^{150}Ho	-62.210
^{151}Ho	-63.720
^{152}Ho	-63.820
^{153}Ho	-65.140
^{154}Ho	-64.770
^{155}Ho	-66.060
^{156}Ho	-65.360
^{157}Ho	-66.980
^{158}Ho	-66.260
^{159}Ho	-67.260
^{160}Ho	-66.390
^{161}Ho	-67.080
^{162}Ho	-65.940
^{163}Ho	-66.320
^{164}Ho	-65.060
^{165}Ho	-64.920
^{166}Ho	-63.090
^{167}Ho	-62.300
^{168}Ho	-60.150
^{169}Ho	-58.790
^{170}Ho	-56.190
^{171}Ho	-54.400
^{172}Ho	-51.370
^{173}Ho	-49.120
^{174}Ho	-45.790
^{175}Ho	-43.420
^{176}Ho	-39.620

Isotope	Mass Excess
^{177}Ho	-36.670
^{178}Ho	-32.470
^{179}Ho	-29.160
^{180}Ho	-24.600
^{181}Ho	-21.190
^{182}Ho	-15.940
^{183}Ho	-12.200
^{184}Ho	-6.630
^{185}Ho	-2.430
^{186}Ho	3.390
^{187}Ho	8.070
^{188}Ho	14.360
^{189}Ho	19.490
^{190}Ho	25.690
^{191}Ho	30.920
^{192}Ho	37.420
^{193}Ho	43.470
^{194}Ho	52.500 †
^{195}Ho	60.590 †
^{196}Ho	69.630 †
^{197}Ho	77.700 ‡
^{198}Ho	86.930 †
^{199}Ho	94.840 ‡
^{200}Ho	104.210 †
^{201}Ho	112.430 †
^{202}Ho	121.790 †
^{203}Ho	130.180 †
^{204}Ho	139.610 †
^{205}Ho	147.940 †
^{206}Ho	157.370 †
^{207}Ho	165.500 †
^{208}Ho	174.960 †
^{209}Ho	183.400 †
^{210}Ho	193.040 †
^{211}Ho	201.910 †
^{212}Ho	211.670 †
^{213}Ho	220.710 †
^{214}Ho	230.550 †
^{215}Ho	239.520 †
^{216}Ho	249.360 †
^{217}Ho	258.470 †
^{218}Ho	268.360 †
^{219}Ho	277.470 †
^{220}Ho	287.460 †
^{221}Ho	296.670 †
^{136}Er	1.430 †
^{137}Er	-2.570 †
^{138}Er	-8.970 †
^{139}Er	-12.590 †
^{140}Er	-18.750 ‡
^{141}Er	-21.830 ‡
^{142}Er	-27.620 ‡
^{143}Er	-30.640
^{144}Er	-36.000
^{145}Er	-38.980
^{146}Er	-43.950
^{147}Er	-46.580
^{148}Er	-51.330
^{149}Er	-53.670
^{150}Er	-57.920
^{151}Er	-58.220
^{152}Er	-60.470
^{153}Er	-60.500
^{154}Er	-62.440
^{155}Er	-62.150
^{156}Er	-63.900
^{157}Er	-63.370
^{158}Er	-65.330
^{159}Er	-64.550
^{160}Er	-66.060
^{161}Er	-65.220
^{162}Er	-66.410
^{163}Er	-65.120
^{164}Er	-66.060
^{165}Er	-64.570

Isotope	Mass Excess
^{166}Er	-65.080
^{167}Er	-63.260
^{168}Er	-62.970
^{169}Er	-60.970
^{170}Er	-60.160
^{171}Er	-57.760
^{172}Er	-56.520
^{173}Er	-53.640
^{174}Er	-51.860
^{175}Er	-48.730
^{176}Er	-46.770
^{177}Er	-43.130
^{178}Er	-40.710
^{179}Er	-36.560
^{180}Er	-33.820
^{181}Er	-29.370
^{182}Er	-26.330
^{183}Er	-21.290
^{184}Er	-17.940
^{185}Er	-12.610
^{186}Er	-8.860
^{187}Er	-3.260
^{188}Er	1.070
^{189}Er	7.230
^{190}Er	11.580
^{191}Er	17.660
^{192}Er	22.340
^{193}Er	28.640
^{194}Er	34.170
^{195}Er	43.140 †
^{196}Er	50.590 ‡
^{197}Er	59.510 †
^{198}Er	66.960 ‡
^{199}Er	76.070 †
^{200}Er	83.450 ‡
^{201}Er	92.840 †
^{202}Er	100.420 ‡
^{203}Er	109.740 †
^{204}Er	117.530 ‡
^{205}Er	126.870 †
^{206}Er	134.520 ‡
^{207}Er	143.700 †
^{208}Er	151.400 ‡
^{209}Er	160.710 †
^{210}Er	168.700 ‡
^{211}Er	178.440 †
^{212}Er	186.590 †
^{213}Er	196.320 †
^{214}Er	204.760 †
^{215}Er	214.570 †
^{216}Er	223.010 †
^{217}Er	232.780 †
^{218}Er	241.320 †
^{219}Er	251.250 †
^{220}Er	259.590 †
^{221}Er	269.660 †
^{222}Er	278.440 †
^{140}Tm	-2.770 †
^{141}Tm	-8.780 †
^{142}Tm	-12.620 †
^{143}Tm	-18.430 †
^{144}Tm	-22.030 †
^{145}Tm	-27.420 †
^{146}Tm	-30.970 †
^{147}Tm	-36.000 †
^{148}Tm	-39.140 †
^{149}Tm	-43.910 †
^{150}Tm	-46.870
^{151}Tm	-51.060
^{152}Tm	-52.100
^{153}Tm	-54.280
^{154}Tm	-54.930
^{155}Tm	-56.950
^{156}Tm	-57.110
^{157}Tm	-59.030

Isotope	Mass Excess
^{158}Tm	-58.840
^{159}Tm	-60.750
^{160}Tm	-60.470
^{161}Tm	-62.010
^{162}Tm	-61.680
^{163}Tm	-62.720
^{164}Tm	-61.990
^{165}Tm	-62.820
^{166}Tm	-61.900
^{167}Tm	-62.360
^{168}Tm	-61.260
^{169}Tm	-61.260
^{170}Tm	-59.810
^{171}Tm	-59.200
^{172}Tm	-57.360
^{173}Tm	-56.270
^{174}Tm	-53.850
^{175}Tm	-52.270
^{176}Tm	-49.550
^{177}Tm	-47.770
^{178}Tm	-44.640
^{179}Tm	-42.270
^{180}Tm	-38.700
^{181}Tm	-36.080
^{182}Tm	-31.990
^{183}Tm	-29.160
^{184}Tm	-24.500
^{185}Tm	-21.400
^{186}Tm	-16.520
^{187}Tm	-12.990
^{188}Tm	-7.730
^{189}Tm	-3.540
^{190}Tm	1.840
^{191}Tm	6.070
^{192}Tm	11.600
^{193}Tm	16.080
^{194}Tm	21.860
^{195}Tm	27.320
^{196}Tm	35.660 †
^{197}Tm	43.000
^{198}Tm	51.300 †
^{199}Tm	58.630
^{200}Tm	67.200 †
^{201}Tm	74.600
^{202}Tm	83.360 †
^{203}Tm	90.890 ‡
^{204}Tm	99.610 †
^{205}Tm	107.300 ‡
^{206}Tm	115.960 †
^{207}Tm	123.370
^{208}Tm	132.130 †
^{209}Tm	139.670 ‡
^{210}Tm	148.530 †
^{211}Tm	156.620 †
^{212}Tm	165.640 †
^{213}Tm	173.770 †
^{214}Tm	182.900 †
^{215}Tm	191.310 †
^{216}Tm	200.590 †
^{217}Tm	208.950 †
^{218}Tm	218.150 †
^{219}Tm	226.730 †
^{220}Tm	235.890 †
^{221}Tm	244.310 †
^{222}Tm	253.950 †
^{223}Tm	262.510 †
^{140}Yb	9.930 †
^{141}Yb	5.810 †
^{142}Yb	-0.960 †
^{143}Yb	-4.830 †
^{144}Yb	-11.210 ‡
^{145}Yb	-14.840 ‡
^{146}Yb	-20.800 ‡
^{147}Yb	-24.410
^{148}Yb	-29.960

Isotope	Mass Excess
^{149}Yb	-33.120
^{150}Yb	-38.500
^{151}Yb	-41.400
^{152}Yb	-46.330
^{153}Yb	-47.290
^{154}Yb	-50.100
^{155}Yb	-50.830
^{156}Yb	-53.310
^{157}Yb	-53.640
^{158}Yb	-55.900
^{159}Yb	-55.650
^{160}Yb	-58.060
^{161}Yb	-57.820
^{162}Yb	-59.860
^{163}Yb	-59.370
^{164}Yb	-60.980
^{165}Yb	-60.140
^{166}Yb	-61.540
^{167}Yb	-60.570
^{168}Yb	-61.610
^{169}Yb	-60.380
^{170}Yb	-60.870
^{171}Yb	-59.330
^{172}Yb	-59.250
^{173}Yb	-57.550
^{174}Yb	-56.930
^{175}Yb	-54.710
^{176}Yb	-53.540
^{177}Yb	-50.990
^{178}Yb	-49.720
^{179}Yb	-46.650
^{180}Yb	-44.850
^{181}Yb	-41.390
^{182}Yb	-39.140
^{183}Yb	-35.260
^{184}Yb	-32.810
^{185}Yb	-28.400
^{186}Yb	-25.750
^{187}Yb	-21.090
^{188}Yb	-17.900
^{189}Yb	-12.790
^{190}Yb	-9.370
^{191}Yb	-4.110
^{192}Yb	-0.430
^{193}Yb	4.900
^{194}Yb	8.850
^{195}Yb	14.570
^{196}Yb	19.400
^{197}Yb	27.620 †
^{198}Yb	34.340
^{199}Yb	42.520 †
^{200}Yb	49.310
^{201}Yb	57.910 †
^{202}Yb	64.680
^{203}Yb	73.390 †
^{204}Yb	80.320
^{205}Yb	88.940 †
^{206}Yb	95.960
^{207}Yb	104.370 †
^{208}Yb	111.350
^{209}Yb	119.950 †
^{210}Yb	127.060
^{211}Yb	136.010 †
^{212}Yb	143.380 ‡
^{213}Yb	152.370 †
^{214}Yb	159.900 ‡
^{215}Yb	169.000 †
^{216}Yb	176.880 ‡
^{217}Yb	186.080 †
^{218}Yb	193.880 ‡
^{219}Yb	203.120 †
^{220}Yb	210.930 ‡
^{221}Yb	220.170 †
^{222}Yb	228.160 ‡
^{223}Yb	237.590 †

Isotope	Mass Excess
^{224}Yb	245.730 †
^{144}Lu	5.080 †
^{145}Lu	-1.340 †
^{146}Lu	-5.540 †
^{147}Lu	-11.560 †
^{148}Lu	-15.680 †
^{149}Lu	-21.240 †
^{150}Lu	-25.020 †
^{151}Lu	-30.340 †
^{152}Lu	-33.980 †
^{153}Lu	-38.840 †
^{154}Lu	-40.430
^{155}Lu	-43.310
^{156}Lu	-44.500
^{157}Lu	-47.150
^{158}Lu	-47.810
^{159}Lu	-50.020
^{160}Lu	-50.280
^{161}Lu	-52.720
^{162}Lu	-52.980
^{163}Lu	-54.870
^{164}Lu	-54.950
^{165}Lu	-56.440
^{166}Lu	-56.170
^{167}Lu	-57.520
^{168}Lu	-57.140
^{169}Lu	-58.050
^{170}Lu	-57.250
^{171}Lu	-57.760
^{172}Lu	-56.790
^{173}Lu	-56.800
^{174}Lu	-55.480
^{175}Lu	-55.190
^{176}Lu	-53.380
^{177}Lu	-52.380
^{178}Lu	-50.340
^{179}Lu	-49.130
^{180}Lu	-46.630
^{181}Lu	-44.950
^{182}Lu	-41.850
^{183}Lu	-39.810
^{184}Lu	-36.320
^{185}Lu	-34.110
^{186}Lu	-30.160
^{187}Lu	-27.720
^{188}Lu	-23.410
^{189}Lu	-20.360
^{190}Lu	-16.020
^{191}Lu	-12.720
^{192}Lu	-8.000
^{193}Lu	-4.530
^{194}Lu	0.270
^{195}Lu	4.170
^{196}Lu	9.250
^{197}Lu	13.970
^{198}Lu	21.560
^{199}Lu	28.160
^{200}Lu	35.800
^{201}Lu	42.620
^{202}Lu	50.590
^{203}Lu	57.300
^{204}Lu	65.420 †
^{205}Lu	72.250
^{206}Lu	80.190
^{207}Lu	86.970
^{208}Lu	94.960
^{209}Lu	101.780
^{210}Lu	109.940 †
^{211}Lu	117.130
^{212}Lu	125.370 †
^{213}Lu	132.720
^{214}Lu	141.110 †
^{215}Lu	148.600
^{216}Lu	157.170 †
^{217}Lu	164.980 ‡

Isotope	Mass Excess
^{218}Lu	173.610 †
^{219}Lu	181.440 ‡
^{220}Lu	189.920 †
^{221}Lu	197.810 ‡
^{222}Lu	206.620 †
^{223}Lu	214.400 ‡
^{224}Lu	223.410 †
^{225}Lu	231.530 †
^{144}Hf	18.200 †
^{145}Hf	13.720 †
^{146}Hf	6.730 †
^{147}Hf	2.470 †
^{148}Hf	-4.060 †
^{149}Hf	-8.200 †
^{150}Hf	-14.380 ‡
^{151}Hf	-18.090 ‡
^{152}Hf	-24.160
^{153}Hf	-27.730
^{154}Hf	-33.210
^{155}Hf	-34.870
^{156}Hf	-38.220
^{157}Hf	-39.570
^{158}Hf	-42.550
^{159}Hf	-43.170
^{160}Hf	-45.880
^{161}Hf	-46.170
^{162}Hf	-49.120
^{163}Hf	-49.230
^{164}Hf	-51.680
^{165}Hf	-51.640
^{166}Hf	-53.700
^{167}Hf	-53.390
^{168}Hf	-55.320
^{169}Hf	-54.800
^{170}Hf	-56.150
^{171}Hf	-55.370
^{172}Hf	-56.450
^{173}Hf	-55.490
^{174}Hf	-55.870
^{175}Hf	-54.450
^{176}Hf	-54.670
^{177}Hf	-52.900
^{178}Hf	-52.430
^{179}Hf	-50.450
^{180}Hf	-49.800
^{181}Hf	-47.420
^{182}Hf	-46.110
^{183}Hf	-43.220
^{184}Hf	-41.560
^{185}Hf	-38.320
^{186}Hf	-36.570
^{187}Hf	-32.820
^{188}Hf	-30.730
^{189}Hf	-26.560
^{190}Hf	-24.290
^{191}Hf	-20.060
^{192}Hf	-17.310
^{193}Hf	-12.810
^{194}Hf	-9.850
^{195}Hf	-5.110
^{196}Hf	-1.850
^{197}Hf	3.120
^{198}Hf	7.210
^{199}Hf	14.690
^{200}Hf	20.750
^{201}Hf	28.420
^{202}Hf	34.600
^{203}Hf	42.520
^{204}Hf	48.640
^{205}Hf	56.650
^{206}Hf	62.810
^{207}Hf	70.500
^{208}Hf	76.850
^{209}Hf	84.690
^{210}Hf	91.070

Isotope	Mass Excess
^{211}Hf	99.320 †
^{212}Hf	105.800
^{213}Hf	114.010 †
^{214}Hf	120.750
^{215}Hf	129.110 †
^{216}Hf	136.070
^{217}Hf	144.570 †
^{218}Hf	151.810
^{219}Hf	160.480 †
^{220}Hf	167.540
^{221}Hf	176.100 †
^{222}Hf	183.560
^{223}Hf	192.160 †
^{224}Hf	199.520
^{225}Hf	208.510 †
^{226}Hf	216.090 ‡
^{148}Ta	12.510 †
^{149}Ta	5.960 †
^{150}Ta	1.200 †
^{151}Ta	-4.920 †
^{152}Ta	-9.370 †
^{153}Ta	-15.360 †
^{154}Ta	-19.560 †
^{155}Ta	-25.120 †
^{156}Ta	-27.240 †
^{157}Ta	-30.750 †
^{158}Ta	-32.440
^{159}Ta	-35.370
^{160}Ta	-36.500
^{161}Ta	-39.240
^{162}Ta	-40.030
^{163}Ta	-42.820
^{164}Ta	-43.500
^{165}Ta	-45.840
^{166}Ta	-46.370
^{167}Ta	-48.380
^{168}Ta	-48.650
^{169}Ta	-50.450
^{170}Ta	-50.360
^{171}Ta	-51.740
^{172}Ta	-51.530
^{173}Ta	-52.620
^{174}Ta	-52.020
^{175}Ta	-52.300
^{176}Ta	-51.540
^{177}Ta	-51.720
^{178}Ta	-50.330
^{179}Ta	-50.290
^{180}Ta	-48.920
^{181}Ta	-48.440
^{182}Ta	-46.420
^{183}Ta	-45.320
^{184}Ta	-42.810
^{185}Ta	-41.400
^{186}Ta	-38.610
^{187}Ta	-37.070
^{188}Ta	-33.680
^{189}Ta	-31.730
^{190}Ta	-28.330
^{191}Ta	-26.170
^{192}Ta	-22.500
^{193}Ta	-19.960
^{194}Ta	-15.970
^{195}Ta	-13.070
^{196}Ta	-8.970
^{197}Ta	-5.820
^{198}Ta	-1.480
^{199}Ta	2.490
^{200}Ta	9.430
^{201}Ta	15.520
^{202}Ta	22.560
^{203}Ta	28.690
^{204}Ta	36.010
^{205}Ta	42.030
^{206}Ta	49.370

Isotope	Mass Excess
^{207}Ta	55.280
^{208}Ta	62.550
^{209}Ta	68.740
^{210}Ta	76.130
^{211}Ta	82.610
^{212}Ta	90.140
^{213}Ta	96.590
^{214}Ta	104.200
^{215}Ta	110.910
^{216}Ta	118.740
^{217}Ta	125.630
^{218}Ta	133.560
^{219}Ta	140.830
^{220}Ta	148.740
^{221}Ta	155.880
^{222}Ta	164.010 †
^{223}Ta	171.260
^{224}Ta	179.440 †
^{225}Ta	186.780
^{226}Ta	195.230 †
^{227}Ta	202.800
^{148}W	26.120 †
^{149}W	21.330 †
^{150}W	14.160 †
^{151}W	9.470 †
^{152}W	2.610 †
^{153}W	-1.770 †
^{154}W	-8.390 ‡
^{155}W	-12.660 ‡
^{156}W	-18.670
^{157}W	-20.960
^{158}W	-24.810
^{159}W	-26.450
^{160}W	-29.890
^{161}W	-31.040
^{162}W	-34.290
^{163}W	-34.930
^{164}W	-38.290
^{165}W	-38.850
^{166}W	-41.760
^{167}W	-42.240
^{168}W	-44.840
^{169}W	-44.970
^{170}W	-47.200
^{171}W	-47.150
^{172}W	-49.090
^{173}W	-48.890
^{174}W	-50.340
^{175}W	-49.640
^{176}W	-50.580
^{177}W	-49.780
^{178}W	-50.350
^{179}W	-49.270
^{180}W	-49.530
^{181}W	-48.230
^{182}W	-48.250
^{183}W	-46.410
^{184}W	-45.690
^{185}W	-43.440
^{186}W	-42.470
^{187}W	-39.900
^{188}W	-38.710
^{189}W	-35.450
^{190}W	-34.280
^{191}W	-31.000
^{192}W	-29.390
^{193}W	-25.920
^{194}W	-23.900
^{195}W	-19.970
^{196}W	-17.720
^{197}W	-13.720
^{198}W	-11.200
^{199}W	-6.980
^{200}W	-3.540
^{201}W	3.430

Isotope	Mass Excess
^{202}W	8.880
^{203}W	15.860
^{204}W	21.400
^{205}W	28.620
^{206}W	33.970
^{207}W	41.060
^{208}W	46.550
^{209}W	53.660
^{210}W	59.410
^{211}W	66.890
^{212}W	72.650
^{213}W	80.160
^{214}W	86.010
^{215}W	93.580
^{216}W	99.770
^{217}W	107.520
^{218}W	113.840
^{219}W	121.800
^{220}W	128.320
^{221}W	136.300
^{222}W	143.020
^{223}W	150.930
^{224}W	157.760
^{225}W	165.920 †
^{226}W	172.720
^{227}W	181.160 †
^{228}W	188.270
^{152}Re	19.540 †
^{153}Re	12.750 †
^{154}Re	7.740 †
^{155}Re	1.050 †
^{156}Re	-3.680 †
^{157}Re	-9.860 †
^{158}Re	-12.490 †
^{159}Re	-16.290 †
^{160}Re	-18.430 †
^{161}Re	-21.900 †
^{162}Re	-23.560 †
^{163}Re	-26.650 †
^{164}Re	-27.850
^{165}Re	-31.100
^{166}Re	-32.230
^{167}Re	-35.090
^{168}Re	-36.160
^{169}Re	-38.620
^{170}Re	-39.190
^{171}Re	-41.450
^{172}Re	-41.960
^{173}Re	-43.900
^{174}Re	-44.070
^{175}Re	-45.420
^{176}Re	-45.380
^{177}Re	-46.290
^{178}Re	-45.870
^{179}Re	-46.750
^{180}Re	-45.980
^{181}Re	-46.300
^{182}Re	-45.470
^{183}Re	-45.660
^{184}Re	-43.970
^{185}Re	-43.770
^{186}Re	-41.980
^{187}Re	-41.230
^{188}Re	-39.010
^{189}Re	-37.950
^{190}Re	-35.480
^{191}Re	-34.420
^{192}Re	-31.690
^{193}Re	-30.290
^{194}Re	-27.340
^{195}Re	-25.380
^{196}Re	-22.090
^{197}Re	-19.940
^{198}Re	-16.580
^{199}Re	-14.170

Isotope	Mass Excess
^{200}Re	-10.490
^{201}Re	-7.020
^{202}Re	-0.690
^{203}Re	4.710
^{204}Re	11.100
^{205}Re	16.540
^{206}Re	23.090
^{207}Re	28.180
^{208}Re	34.850
^{209}Re	40.180
^{210}Re	46.850
^{211}Re	52.690
^{212}Re	59.460
^{213}Re	65.190
^{214}Re	72.100
^{215}Re	77.910
^{216}Re	84.960
^{217}Re	91.070
^{218}Re	98.260
^{219}Re	104.610
^{220}Re	111.810
^{221}Re	118.400
^{222}Re	125.960
^{223}Re	132.460
^{224}Re	139.960
^{225}Re	146.760
^{226}Re	154.390
^{227}Re	161.170
^{228}Re	169.160
^{229}Re	176.260
^{152}Os	33.940 †
^{153}Os	28.580 †
^{154}Os	21.170 †
^{155}Os	16.080 †
^{156}Os	8.940 †
^{157}Os	4.040 †
^{158}Os	-2.480 †
^{159}Os	-5.060 †
^{160}Os	-9.360 ‡
^{161}Os	-11.540 ‡
^{162}Os	-15.510
^{163}Os	-17.010
^{164}Os	-20.670
^{165}Os	-21.760
^{166}Os	-25.570
^{167}Os	-26.660
^{168}Os	-30.110
^{169}Os	-31.040
^{170}Os	-33.930
^{171}Os	-34.530
^{172}Os	-37.360
^{173}Os	-37.870
^{174}Os	-40.190
^{175}Os	-40.250
^{176}Os	-42.270
^{177}Os	-42.190
^{178}Os	-43.480
^{179}Os	-43.370
^{180}Os	-44.550
^{181}Os	-43.840
^{182}Os	-44.640
^{183}Os	-43.970
^{184}Os	-44.200
^{185}Os	-42.870
^{186}Os	-42.850
^{187}Os	-41.080
^{188}Os	-41.260
^{189}Os	-39.030
^{190}Os	-38.760
^{191}Os	-36.390
^{192}Os	-35.880
^{193}Os	-33.360
^{194}Os	-32.480
^{195}Os	-29.590
^{196}Os	-28.270

Isotope	Mass Excess
^{197}Os	-25.090
^{198}Os	-23.570
^{199}Os	-20.320
^{200}Os	-18.460
^{201}Os	-14.740
^{202}Os	-11.910
^{203}Os	-5.630
^{204}Os	-0.830
^{205}Os	5.460
^{206}Os	10.230
^{207}Os	16.520
^{208}Os	21.200
^{209}Os	27.710
^{210}Os	32.600
^{211}Os	39.360
^{212}Os	44.480
^{213}Os	51.220
^{214}Os	56.350
^{215}Os	63.230
^{216}Os	68.520
^{217}Os	75.490
^{218}Os	81.030
^{219}Os	88.250
^{220}Os	93.850
^{221}Os	101.130
^{222}Os	107.280
^{223}Os	114.630
^{224}Os	120.710
^{225}Os	128.180
^{226}Os	134.450
^{227}Os	142.060
^{228}Os	148.400
^{229}Os	156.370
^{230}Os	162.780
^{158}Ir	14.140 †
^{159}Ir	7.670 †
^{160}Ir	4.580 †
^{161}Ir	0.250 †
^{162}Ir	-2.430 †
^{163}Ir	-6.250 †
^{164}Ir	-8.320 †
^{165}Ir	-11.860 †
^{166}Ir	-13.520 †
^{167}Ir	-17.290 †
^{168}Ir	-18.960 †
^{169}Ir	-22.260 †
^{170}Ir	-23.630 †
^{171}Ir	-26.560 †
^{172}Ir	-27.720
^{173}Ir	-30.550
^{174}Ir	-31.430
^{175}Ir	-33.650
^{176}Ir	-34.370
^{177}Ir	-36.350
^{178}Ir	-36.660
^{179}Ir	-38.260
^{180}Ir	-38.460
^{181}Ir	-39.690
^{182}Ir	-39.460
^{183}Ir	-40.420
^{184}Ir	-39.790
^{185}Ir	-40.380
^{186}Ir	-39.220
^{187}Ir	-39.330
^{188}Ir	-38.270
^{189}Ir	-38.340
^{190}Ir	-36.600
^{191}Ir	-36.660
^{192}Ir	-34.850
^{193}Ir	-34.550
^{194}Ir	-32.550
^{195}Ir	-31.730
^{196}Ir	-29.480
^{197}Ir	-28.270
^{198}Ir	-25.720

Isotope	Mass Excess
^{199}Ir	-24.320
^{200}Ir	-21.600
^{201}Ir	-19.710
^{202}Ir	-16.630
^{203}Ir	-13.850
^{204}Ir	-8.170
^{205}Ir	-3.460
^{206}Ir	2.150
^{207}Ir	6.670
^{208}Ir	12.540
^{209}Ir	17.060
^{210}Ir	23.130
^{211}Ir	28.110
^{212}Ir	34.150
^{213}Ir	39.250
^{214}Ir	45.390
^{215}Ir	50.490
^{216}Ir	56.830
^{217}Ir	62.050
^{218}Ir	68.460
^{219}Ir	74.030
^{220}Ir	80.490
^{221}Ir	86.160
^{222}Ir	93.010
^{223}Ir	98.950
^{224}Ir	105.880
^{225}Ir	111.940
^{226}Ir	118.880
^{227}Ir	125.130
^{228}Ir	132.290
^{229}Ir	138.610
^{230}Ir	145.890
^{231}Ir	152.330
^{156}Pt	41.580 †
^{157}Pt	35.870 †
^{158}Pt	28.220 †
^{159}Pt	23.030 †
^{160}Pt	16.060 †
^{161}Pt	12.940 †
^{162}Pt	8.110 †
^{163}Pt	5.580 †
^{164}Pt	1.200 †
^{165}Pt	-0.760 †
^{166}Pt	-4.870 ‡
^{167}Pt	-6.480 ‡
^{168}Pt	-10.830 ‡
^{169}Pt	-12.360
^{170}Pt	-16.110
^{171}Pt	-17.510
^{172}Pt	-21.000
^{173}Pt	-22.170
^{174}Pt	-25.370
^{175}Pt	-26.150
^{176}Pt	-29.020
^{177}Pt	-29.710
^{178}Pt	-32.070
^{179}Pt	-32.690
^{180}Pt	-34.590
^{181}Pt	-34.850
^{182}Pt	-36.570
^{183}Pt	-36.490
^{184}Pt	-37.500
^{185}Pt	-37.220
^{186}Pt	-37.980
^{187}Pt	-36.960
^{188}Pt	-37.770
^{189}Pt	-36.600
^{190}Pt	-37.190
^{191}Pt	-35.710
^{192}Pt	-36.210
^{193}Pt	-34.450
^{194}Pt	-34.870
^{195}Pt	-32.800
^{196}Pt	-32.620
^{197}Pt	-30.480

Isotope	Mass Excess
^{198}Pt	-29.900
^{199}Pt	-27.460
^{200}Pt	-26.600
^{201}Pt	-23.850
^{202}Pt	-22.600
^{203}Pt	-19.570
^{204}Pt	-17.390
^{205}Pt	-11.800
^{206}Pt	-7.770
^{207}Pt	-2.400
^{208}Pt	1.690
^{209}Pt	7.410
^{210}Pt	11.480
^{211}Pt	17.640
^{212}Pt	21.900
^{213}Pt	27.920
^{214}Pt	32.420
^{215}Pt	38.520
^{216}Pt	43.090
^{217}Pt	49.360
^{218}Pt	54.010
^{219}Pt	60.450
^{220}Pt	65.270
^{221}Pt	71.800
^{222}Pt	77.050
^{223}Pt	83.680
^{224}Pt	89.210
^{225}Pt	96.110
^{226}Pt	101.640
^{227}Pt	108.560
^{228}Pt	114.360
^{229}Pt	121.500
^{230}Pt	127.130
^{231}Pt	134.440
^{232}Pt	140.380
^{164}Au	15.500 †
^{165}Au	11.230 †
^{166}Au	8.710 †
^{167}Au	4.640 †
^{168}Au	2.450 †
^{169}Au	-1.770 †
^{170}Au	-3.740 †
^{171}Au	-7.510 †
^{172}Au	-9.470 †
^{173}Au	-12.970 †
^{174}Au	-14.500 †
^{175}Au	-17.600 †
^{176}Au	-19.050
^{177}Au	-21.880
^{178}Au	-22.960
^{179}Au	-25.630
^{180}Au	-26.550
^{181}Au	-28.510
^{182}Au	-29.250
^{183}Au	-31.120
^{184}Au	-31.090
^{185}Au	-32.450
^{186}Au	-32.350
^{187}Au	-33.250
^{188}Au	-32.920
^{189}Au	-33.620
^{190}Au	-32.970
^{191}Au	-33.820
^{192}Au	-32.780
^{193}Au	-33.250
^{194}Au	-32.220
^{195}Au	-32.480
^{196}Au	-31.110
^{197}Au	-31.180
^{198}Au	-29.640
^{199}Au	-29.180
^{200}Au	-27.280
^{201}Au	-26.390
^{202}Au	-24.280
^{203}Au	-23.070

Isotope	Mass Excess
^{204}Au	-20.640
^{205}Au	-18.560
^{206}Au	-13.650
^{207}Au	-9.870
^{208}Au	-4.920
^{209}Au	-0.990
^{210}Au	4.290
^{211}Au	8.450
^{212}Au	13.890
^{213}Au	18.130
^{214}Au	23.550
^{215}Au	28.020
^{216}Au	33.590
^{217}Au	38.090
^{218}Au	43.790
^{219}Au	48.470
^{220}Au	54.150
^{221}Au	59.050
^{222}Au	65.150
^{223}Au	70.180
^{224}Au	76.400
^{225}Au	81.900
^{226}Au	88.270
^{227}Au	93.780
^{228}Au	100.250
^{229}Au	106.040
^{230}Au	112.490
^{231}Au	118.140
^{232}Au	124.950
^{233}Au	130.860
^{160}Hg	49.230 †
^{161}Hg	43.500 †
^{162}Hg	36.000 †
^{163}Hg	32.530 †
^{164}Hg	27.280 †
^{165}Hg	24.310 †
^{166}Hg	19.470 †
^{167}Hg	16.990 †
^{168}Hg	12.340 †
^{169}Hg	10.280 †
^{170}Hg	5.630 †
^{171}Hg	3.630 †
^{172}Hg	-0.700 ‡
^{173}Hg	-2.670 ‡
^{174}Hg	-6.540
^{175}Hg	-7.970
^{176}Hg	-11.730
^{177}Hg	-13.140
^{178}Hg	-16.360
^{179}Hg	-17.740
^{180}Hg	-20.720
^{181}Hg	-21.700
^{182}Hg	-24.140
^{183}Hg	-25.030
^{184}Hg	-26.960
^{185}Hg	-27.270
^{186}Hg	-28.800
^{187}Hg	-28.840
^{188}Hg	-30.440
^{189}Hg	-30.000
^{190}Hg	-31.220
^{191}Hg	-30.830
^{192}Hg	-32.130
^{193}Hg	-31.050
^{194}Hg	-32.250
^{195}Hg	-31.070
^{196}Hg	-31.900
^{197}Hg	-30.450
^{198}Hg	-31.000
^{199}Hg	-29.480
^{200}Hg	-29.560
^{201}Hg	-27.630
^{202}Hg	-27.380
^{203}Hg	-25.320
^{204}Hg	-24.710

Isotope	Mass Excess
^{205}Hg	-22.380
^{206}Hg	-20.970
^{207}Hg	-16.310
^{208}Hg	-12.950
^{209}Hg	-8.160
^{210}Hg	-4.670
^{211}Hg	0.700
^{212}Hg	4.140
^{213}Hg	9.560
^{214}Hg	13.200
^{215}Hg	18.590
^{216}Hg	22.520
^{217}Hg	28.020
^{218}Hg	31.950
^{219}Hg	37.690
^{220}Hg	41.610
^{221}Hg	47.370
^{222}Hg	51.830
^{223}Hg	57.720
^{224}Hg	62.330
^{225}Hg	68.530
^{226}Hg	73.500
^{227}Hg	79.850
^{228}Hg	84.910
^{229}Hg	91.360
^{230}Hg	96.460
^{231}Hg	102.930
^{232}Hg	108.090
^{233}Hg	114.870
^{234}Hg	120.350
^{170}Tl	20.450 †
^{171}Tl	15.770 †
^{172}Tl	13.210 †
^{173}Tl	8.870 †
^{174}Tl	6.530 †
^{175}Tl	2.770 †
^{176}Tl	0.670 †
^{177}Tl	-3.050 †
^{178}Tl	-4.840 †
^{179}Tl	-8.370 †
^{180}Tl	-10.060 †
^{181}Tl	-13.090 †
^{182}Tl	-14.550
^{183}Tl	-17.150
^{184}Tl	-18.090
^{185}Tl	-20.360
^{186}Tl	-20.860
^{187}Tl	-22.530
^{188}Tl	-23.260
^{189}Tl	-24.750
^{190}Tl	-24.830
^{191}Tl	-26.320
^{192}Tl	-26.370
^{193}Tl	-27.620
^{194}Tl	-27.280
^{195}Tl	-28.320
^{196}Tl	-27.710
^{197}Tl	-28.470
^{198}Tl	-27.500
^{199}Tl	-28.120
^{200}Tl	-27.020
^{201}Tl	-27.090
^{202}Tl	-25.910
^{203}Tl	-25.830
^{204}Tl	-24.370
^{205}Tl	-23.860
^{206}Tl	-22.210
^{207}Tl	-21.050
^{208}Tl	-16.800
^{209}Tl	-13.600
^{210}Tl	-9.260
^{211}Tl	-5.670
^{212}Tl	-1.020
^{213}Tl	2.400
^{214}Tl	7.210

Isotope	Mass Excess
^{215}Tl	10.820
^{216}Tl	15.680
^{217}Tl	19.540
^{218}Tl	24.470
^{219}Tl	28.430
^{220}Tl	33.410
^{221}Tl	37.410
^{222}Tl	42.730
^{223}Tl	46.980
^{224}Tl	52.460
^{225}Tl	57.050
^{226}Tl	62.710
^{227}Tl	67.660
^{228}Tl	73.560
^{229}Tl	78.600
^{230}Tl	84.370
^{231}Tl	89.490
^{232}Tl	95.470
^{233}Tl	100.600
^{234}Tl	106.940
^{235}Tl	112.450
^{166}Pb	49.060 †
^{167}Pb	45.560 †
^{168}Pb	40.180 †
^{169}Pb	37.260 †
^{170}Pb	32.300 †
^{171}Pb	29.780 †
^{172}Pb	24.540 †
^{173}Pb	21.970 †
^{174}Pb	17.260 †
^{175}Pb	15.020 †
^{176}Pb	10.600 †
^{177}Pb	8.540 †
^{178}Pb	4.430 †
^{179}Pb	2.330 ‡
^{180}Pb	-1.500 ‡
^{181}Pb	-3.250
^{182}Pb	-6.760
^{183}Pb	-8.380
^{184}Pb	-11.020
^{185}Pb	-12.310
^{186}Pb	-14.760
^{187}Pb	-15.400
^{188}Pb	-17.760
^{189}Pb	-18.390
^{190}Pb	-20.390
^{191}Pb	-20.740
^{192}Pb	-22.660
^{193}Pb	-22.670
^{194}Pb	-24.660
^{195}Pb	-24.160
^{196}Pb	-25.780
^{197}Pb	-25.090
^{198}Pb	-26.330
^{199}Pb	-25.430
^{200}Pb	-26.470
^{201}Pb	-25.360
^{202}Pb	-26.010
^{203}Pb	-24.810
^{204}Pb	-25.100
^{205}Pb	-23.790
^{206}Pb	-23.880
^{207}Pb	-22.470
^{208}Pb	-21.730
^{209}Pb	-17.650
^{210}Pb	-14.890
^{211}Pb	-10.450
^{212}Pb	-7.580
^{213}Pb	-2.960
^{214}Pb	-0.140
^{215}Pb	4.640
^{216}Pb	7.720
^{217}Pb	12.500
^{218}Pb	15.800
^{219}Pb	20.770

Isotope	Mass Excess
^{220}Pb	23.970
^{221}Pb	29.020
^{222}Pb	32.590
^{223}Pb	37.700
^{224}Pb	41.530
^{225}Pb	46.990
^{226}Pb	51.040
^{227}Pb	56.680
^{228}Pb	61.180
^{229}Pb	67.070
^{230}Pb	71.420
^{231}Pb	77.210
^{232}Pb	81.840
^{233}Pb	87.790
^{234}Pb	92.480
^{235}Pb	98.860
^{236}Pb	103.870
^{180}Bi	12.550 †
^{181}Bi	8.660 †
^{182}Bi	6.430 †
^{183}Bi	2.760 †
^{184}Bi	1.100 †
^{185}Bi	-1.900 †
^{186}Bi	-3.360 †
^{187}Bi	-5.950 †
^{188}Bi	-7.280 †
^{189}Bi	-9.530 †
^{190}Bi	-10.680 †
^{191}Bi	-12.950 †
^{192}Bi	-13.730
^{193}Bi	-15.620
^{194}Bi	-16.360
^{195}Bi	-18.200
^{196}Bi	-18.270
^{197}Bi	-19.810
^{198}Bi	-19.600
^{199}Bi	-20.910
^{200}Bi	-20.440
^{201}Bi	-21.470
^{202}Bi	-20.930
^{203}Bi	-21.560
^{204}Bi	-20.670
^{205}Bi	-21.110
^{206}Bi	-20.030
^{207}Bi	-20.170
^{208}Bi	-18.900
^{209}Bi	-18.320
^{210}Bi	-14.680
^{211}Bi	-11.830
^{212}Bi	-8.110
^{213}Bi	-5.270
^{214}Bi	-1.250
^{215}Bi	1.540
^{216}Bi	5.800
^{217}Bi	8.800
^{218}Bi	13.010
^{219}Bi	16.340
^{220}Bi	20.550
^{221}Bi	23.830
^{222}Bi	28.450
^{223}Bi	31.800
^{224}Bi	36.500
^{225}Bi	40.310
^{226}Bi	45.220
^{227}Bi	49.260
^{228}Bi	54.450
^{229}Bi	58.940
^{230}Bi	64.140
^{231}Bi	68.510
^{232}Bi	73.810
^{233}Bi	78.400
^{234}Bi	83.920
^{235}Bi	88.640
^{236}Bi	94.520
^{237}Bi	99.400

Isotope	Mass Excess
^{178}Po	31.840 †
^{179}Po	29.080 †
^{180}Po	24.360 †
^{181}Po	21.900 †
^{182}Po	17.530 †
^{183}Po	15.140 †
^{184}Po	11.420 †
^{185}Po	9.410 †
^{186}Po	6.240 †
^{187}Po	4.640 †
^{188}Po	1.360 †
^{189}Po	0.130 †
^{190}Po	-2.640 ‡
^{191}Po	-4.050
^{192}Po	-6.750
^{193}Po	-7.500
^{194}Po	-10.120
^{195}Po	-10.710
^{196}Po	-13.120
^{197}Po	-13.120
^{198}Po	-15.130
^{199}Po	-15.000
^{200}Po	-16.730
^{201}Po	-16.250
^{202}Po	-17.850
^{203}Po	-17.300
^{204}Po	-18.240
^{205}Po	-17.500
^{206}Po	-18.160
^{207}Po	-17.180
^{208}Po	-17.520
^{209}Po	-16.380
^{210}Po	-15.880
^{211}Po	-12.490
^{212}Po	-10.410
^{213}Po	-6.710
^{214}Po	-4.470
^{215}Po	-0.480
^{216}Po	1.780
^{217}Po	5.960
^{218}Po	8.390
^{219}Po	12.640
^{220}Po	15.210
^{221}Po	19.490
^{222}Po	22.340
^{223}Po	26.750
^{224}Po	29.690
^{225}Po	34.360
^{226}Po	37.630
^{227}Po	42.530
^{228}Po	46.120
^{229}Po	51.300
^{230}Po	55.090
^{231}Po	60.310
^{232}Po	64.190
^{233}Po	69.460
^{234}Po	73.620
^{235}Po	79.170
^{236}Po	83.390
^{237}Po	89.150
^{238}Po	93.670
^{186}At	19.590 †
^{187}At	16.290 †
^{188}At	13.990 †
^{189}At	10.810 †
^{190}At	9.070 †
^{191}At	6.030 †
^{192}At	4.190 †
^{193}At	1.520 †
^{194}At	0.040 †
^{195}At	-2.430 †
^{196}At	-3.590
^{197}At	-5.920
^{198}At	-6.400
^{199}At	-8.490

Isotope	Mass Excess
^{200}At	-8.780
^{201}At	-10.490
^{202}At	-10.580
^{203}At	-12.170
^{204}At	-11.920
^{205}At	-13.010
^{206}At	-12.500
^{207}At	-13.270
^{208}At	-12.480
^{209}At	-12.960
^{210}At	-12.060
^{211}At	-11.610
^{212}At	-8.480
^{213}At	-6.670
^{214}At	-3.420
^{215}At	-1.240
^{216}At	2.230
^{217}At	4.410
^{218}At	8.020
^{219}At	10.490
^{220}At	13.980
^{221}At	16.630
^{222}At	20.480
^{223}At	23.110
^{224}At	27.110
^{225}At	30.020
^{226}At	34.160
^{227}At	37.410
^{228}At	41.860
^{229}At	45.440
^{230}At	49.920
^{231}At	53.740
^{232}At	58.470
^{233}At	62.320
^{234}At	67.150
^{235}At	71.340
^{236}At	76.390
^{237}At	80.490
^{238}At	85.880
^{239}At	90.360
^{182}Rn	45.590 †
^{183}Rn	42.490 †
^{184}Rn	37.910 †
^{185}Rn	35.130 †
^{186}Rn	30.890 †
^{187}Rn	28.560 †
^{188}Rn	24.560 †
^{189}Rn	22.360 †
^{190}Rn	18.670 †
^{191}Rn	16.670 †
^{192}Rn	13.190 ‡
^{193}Rn	11.380 ‡
^{194}Rn	7.980 ‡
^{195}Rn	6.660
^{196}Rn	3.610
^{197}Rn	2.530
^{198}Rn	-0.280
^{199}Rn	-0.830
^{200}Rn	-3.340
^{201}Rn	-3.620
^{202}Rn	-5.910
^{203}Rn	-5.980
^{204}Rn	-7.880
^{205}Rn	-7.780
^{206}Rn	-9.090
^{207}Rn	-8.690
^{208}Rn	-9.640
^{209}Rn	-8.990
^{210}Rn	-9.710
^{211}Rn	-8.860
^{212}Rn	-8.670
^{213}Rn	-5.650
^{214}Rn	-4.210
^{215}Rn	-1.140
^{216}Rn	0.290

Isotope	Mass Excess
^{217}Rn	3.600
^{218}Rn	5.220
^{219}Rn	8.870
^{220}Rn	10.580
^{221}Rn	14.140
^{222}Rn	16.360
^{223}Rn	19.990
^{224}Rn	22.210
^{225}Rn	26.180
^{226}Rn	28.560
^{227}Rn	32.680
^{228}Rn	35.490
^{229}Rn	39.920
^{230}Rn	42.810
^{231}Rn	47.320
^{232}Rn	50.640
^{233}Rn	55.340
^{234}Rn	58.750
^{235}Rn	63.610
^{236}Rn	67.310
^{237}Rn	72.230
^{238}Rn	75.970
^{239}Rn	81.320
^{240}Rn	85.530
^{190}Fr	32.520 †
^{191}Fr	28.570 †
^{192}Fr	26.130 †
^{193}Fr	22.690 †
^{194}Fr	20.140 †
^{195}Fr	16.900 †
^{196}Fr	15.000 †
^{197}Fr	12.040 †
^{198}Fr	10.470 †
^{199}Fr	7.590 †
^{200}Fr	6.620 †
^{201}Fr	4.120 †
^{202}Fr	3.270
^{203}Fr	0.990
^{204}Fr	0.610
^{205}Fr	-1.430
^{206}Fr	-1.560
^{207}Fr	-2.980
^{208}Fr	-2.770
^{209}Fr	-3.860
^{210}Fr	-3.450
^{211}Fr	-4.210
^{212}Fr	-3.630
^{213}Fr	-3.550
^{214}Fr	-0.900
^{215}Fr	0.360
^{216}Fr	3.010
^{217}Fr	4.410
^{218}Fr	7.170
^{219}Fr	8.610
^{220}Fr	11.330
^{221}Fr	13.260
^{222}Fr	16.390
^{223}Fr	18.390
^{224}Fr	21.610
^{225}Fr	23.810
^{226}Fr	27.240
^{227}Fr	29.610
^{228}Fr	33.280
^{229}Fr	36.070
^{230}Fr	39.810
^{231}Fr	42.720
^{232}Fr	46.730
^{233}Fr	50.030
^{234}Fr	54.290
^{235}Fr	57.740
^{236}Fr	62.100
^{237}Fr	65.670
^{238}Fr	70.230
^{239}Fr	73.920
^{240}Fr	79.010

Isotope	Mass Excess
^{241}Fr	83.040
^{186}Ra	59.640 †
^{187}Ra	56.550 †
^{188}Ra	51.470 †
^{189}Ra	48.560 †
^{190}Ra	44.150 †
^{191}Ra	41.170 †
^{192}Ra	36.780 †
^{193}Ra	34.370 †
^{194}Ra	30.200 †
^{195}Ra	27.810 †
^{196}Ra	23.990 ‡
^{197}Ra	22.170 ‡
^{198}Ra	18.730 ‡
^{199}Ra	17.090
^{200}Ra	13.780
^{201}Ra	12.830
^{202}Ra	9.750
^{203}Ra	8.920
^{204}Ra	6.330
^{205}Ra	5.800
^{206}Ra	3.540
^{207}Ra	3.300
^{208}Ra	1.690
^{209}Ra	1.770
^{210}Ra	0.440
^{211}Ra	0.800
^{212}Ra	-0.230
^{213}Ra	0.250
^{214}Ra	-0.040
^{215}Ra	2.430
^{216}Ra	3.270
^{217}Ra	5.880
^{218}Ra	6.730
^{219}Ra	9.420
^{220}Ra	10.350
^{221}Ra	13.040
^{222}Ra	14.280
^{223}Ra	17.210
^{224}Ra	18.810
^{225}Ra	22.010
^{226}Ra	23.670
^{227}Ra	27.080
^{228}Ra	29.000
^{229}Ra	32.650
^{230}Ra	34.750
^{231}Ra	38.520
^{232}Ra	40.930
^{233}Ra	44.920
^{234}Ra	47.780
^{235}Ra	52.070
^{236}Ra	55.020
^{237}Ra	59.250
^{238}Ra	62.460
^{239}Ra	66.980
^{240}Ra	70.410
^{241}Ra	75.310
^{242}Ra	79.120
^{194}Ac	44.400 †
^{195}Ac	40.380 †
^{196}Ac	37.420 †
^{197}Ac	33.670 †
^{198}Ac	31.370 †
^{199}Ac	27.860 †
^{200}Ac	25.800 †
^{201}Ac	22.510 †
^{202}Ac	20.980 †
^{203}Ac	17.910 †
^{204}Ac	16.770 †
^{205}Ac	14.040 †
^{206}Ac	13.280 †
^{207}Ac	10.910 †
^{208}Ac	10.490
^{209}Ac	8.740

Isotope	Mass Excess
^{210}Ac	8.580
^{211}Ac	7.200
^{212}Ac	7.290
^{213}Ac	6.160
^{214}Ac	6.270
^{215}Ac	5.800
^{216}Ac	7.850
^{217}Ac	8.650
^{218}Ac	10.710
^{219}Ac	11.490
^{220}Ac	13.680
^{221}Ac	14.580
^{222}Ac	16.690
^{223}Ac	17.950
^{224}Ac	20.290
^{225}Ac	21.700
^{226}Ac	24.290
^{227}Ac	25.930
^{228}Ac	28.900
^{229}Ac	30.790
^{230}Ac	33.760
^{231}Ac	35.880
^{232}Ac	39.150
^{233}Ac	41.540
^{234}Ac	45.080
^{235}Ac	47.980
^{236}Ac	51.770
^{237}Ac	54.590
^{238}Ac	58.470
^{239}Ac	61.630
^{240}Ac	65.890
^{241}Ac	69.140
^{242}Ac	73.810
^{243}Ac	77.560
^{191}Th	70.100 †
^{192}Th	64.990 †
^{193}Th	61.610 †
^{194}Th	56.520 †
^{195}Th	53.540 †
^{196}Th	48.950 †
^{197}Th	46.060 †
^{198}Th	41.840 †
^{199}Th	39.470 †
^{200}Th	35.530 †
^{201}Th	33.480 †
^{202}Th	29.620 ‡
^{203}Th	28.100 ‡
^{204}Th	24.730 ‡
^{205}Th	23.440
^{206}Th	20.480
^{207}Th	19.620
^{208}Th	17.060
^{209}Th	16.500
^{210}Th	14.510
^{211}Th	14.300
^{212}Th	12.650
^{213}Th	12.640
^{214}Th	11.140
^{215}Th	11.070
^{216}Th	10.180
^{217}Th	12.190
^{218}Th	12.440
^{219}Th	14.430
^{220}Th	14.710
^{221}Th	16.870
^{222}Th	17.190
^{223}Th	19.320
^{224}Th	20.000
^{225}Th	22.220
^{226}Th	23.140
^{227}Th	25.710
^{228}Th	26.720
^{229}Th	29.630
^{230}Th	30.840
^{231}Th	33.830

Isotope	Mass Excess
^{232}Th	35.460
^{233}Th	38.700
^{234}Th	40.650
^{235}Th	44.230
^{236}Th	46.620
^{237}Th	50.290
^{238}Th	52.750
^{239}Th	56.580
^{240}Th	59.490
^{241}Th	63.560
^{242}Th	66.580
^{243}Th	71.200
^{244}Th	74.540
^{200}Pa	49.500 †
^{201}Pa	45.580 †
^{202}Pa	42.960 †
^{203}Pa	39.110 †
^{204}Pa	37.280 †
^{205}Pa	33.770 †
^{206}Pa	32.250 †
^{207}Pa	29.190 †
^{208}Pa	28.130 †
^{209}Pa	25.430 †
^{210}Pa	24.630 †
^{211}Pa	22.590 †
^{212}Pa	22.120 †
^{213}Pa	20.370 †
^{214}Pa	19.990 †
^{215}Pa	18.300
^{216}Pa	17.810
^{217}Pa	16.880
^{218}Pa	18.350
^{219}Pa	18.530
^{220}Pa	20.020
^{221}Pa	20.260
^{222}Pa	21.840
^{223}Pa	22.190
^{224}Pa	23.730
^{225}Pa	24.290
^{226}Pa	26.020
^{227}Pa	26.880
^{228}Pa	28.920
^{229}Pa	29.890
^{230}Pa	32.170
^{231}Pa	33.430
^{232}Pa	35.910
^{233}Pa	37.510
^{234}Pa	40.320
^{235}Pa	42.300
^{236}Pa	45.380
^{237}Pa	47.650
^{238}Pa	50.950
^{239}Pa	53.370
^{240}Pa	56.940
^{241}Pa	59.660
^{242}Pa	63.510
^{243}Pa	66.470
^{244}Pa	70.680
^{245}Pa	74.030
^{196}U	78.050 †
^{197}U	74.570 †
^{198}U	69.580 †
^{199}U	66.140 †
^{200}U	61.420 †
^{201}U	58.640 †
^{202}U	54.140 †
^{203}U	51.530 †
^{204}U	47.380 †
^{205}U	45.400 †
^{206}U	41.660 †
^{207}U	40.040 †
^{208}U	36.780 †
^{209}U	35.600 †
^{210}U	32.660 ‡

Isotope	Mass Excess
^{211}U	31.800 ‡
^{212}U	29.500 ‡
^{213}U	28.920 ‡
^{214}U	26.800
^{215}U	26.240
^{216}U	24.140
^{217}U	23.600
^{218}U	22.130
^{219}U	23.520
^{220}U	23.210
^{221}U	24.660
^{222}U	24.320
^{223}U	25.930
^{224}U	25.690
^{225}U	27.120
^{226}U	27.180
^{227}U	28.850
^{228}U	29.170
^{229}U	31.170
^{230}U	31.590
^{231}U	33.810
^{232}U	34.590
^{233}U	36.930
^{234}U	38.160
^{235}U	40.960
^{236}U	42.430
^{237}U	45.390
^{238}U	47.300
^{239}U	50.560
^{240}U	52.720
^{241}U	56.100
^{242}U	58.600
^{243}U	62.380
^{244}U	64.940
^{245}U	69.160
^{246}U	72.150
^{206}Np	55.650 †
^{207}Np	51.800 †
^{208}Np	49.990 †
^{209}Np	46.600 †
^{210}Np	45.170 †
^{211}Np	42.180 †
^{212}Np	41.060 †
^{213}Np	38.650 †
^{214}Np	37.710 †
^{215}Np	35.410 †
^{216}Np	34.430 †
^{217}Np	32.280 †
^{218}Np	31.200 †
^{219}Np	29.660 †
^{220}Np	30.550
^{221}Np	30.190
^{222}Np	31.070
^{223}Np	30.760
^{224}Np	31.770
^{225}Np	31.420
^{226}Np	32.350
^{227}Np	32.350
^{228}Np	33.490
^{229}Np	33.770
^{230}Np	35.220
^{231}Np	35.580
^{232}Np	37.320
^{233}Np	37.980
^{234}Np	39.960
^{235}Np	41.060
^{236}Np	43.380
^{237}Np	44.870
^{238}Np	47.460
^{239}Np	49.320
^{240}Np	52.320
^{241}Np	54.290
^{242}Np	57.450
^{243}Np	59.890
^{244}Np	63.270

Isotope	Mass Excess
^{245}Np	65.830
^{246}Np	69.700
^{247}Np	72.550
^{202}Pu	83.120 †
^{203}Pu	79.780 †
^{204}Pu	74.990 †
^{205}Pu	71.930 †
^{206}Pu	67.390 †
^{207}Pu	65.090 †
^{208}Pu	61.050 †
^{209}Pu	59.100 †
^{210}Pu	55.470 †
^{211}Pu	53.990 †
^{212}Pu	50.740 †
^{213}Pu	49.510 †
^{214}Pu	46.740 †
^{215}Pu	45.610 †
^{216}Pu	42.890 †
^{217}Pu	41.870 †
^{218}Pu	39.180 ‡
^{219}Pu	38.030
^{220}Pu	35.980
^{221}Pu	36.840
^{222}Pu	35.910
^{223}Pu	36.810
^{224}Pu	35.910
^{225}Pu	36.810
^{226}Pu	35.950
^{227}Pu	36.830
^{228}Pu	36.300
^{229}Pu	37.390
^{230}Pu	37.120
^{231}Pu	38.510
^{232}Pu	38.380
^{233}Pu	40.010
^{234}Pu	40.310
^{235}Pu	42.170
^{236}Pu	42.850
^{237}Pu	45.090
^{238}Pu	46.150
^{239}Pu	48.590
^{240}Pu	50.130
^{241}Pu	52.930
^{242}Pu	54.680
^{243}Pu	57.780
^{244}Pu	59.810
^{245}Pu	63.190
^{246}Pu	65.410
^{247}Pu	69.130
^{248}Pu	71.750
^{214}Am	59.690 †
^{215}Am	56.730 †
^{216}Am	55.190 †
^{217}Am	52.420 †
^{218}Am	50.860 †
^{219}Am	48.090 †
^{220}Am	46.440 †
^{221}Am	44.360 †
^{222}Am	44.640 †
^{223}Am	43.740 †
^{224}Am	44.050
^{225}Am	43.030
^{226}Am	43.430
^{227}Am	42.520
^{228}Am	42.860
^{229}Am	42.290
^{230}Am	42.830
^{231}Am	42.500
^{232}Am	43.410
^{233}Am	43.170
^{234}Am	44.430
^{235}Am	44.600
^{236}Am	46.050
^{237}Am	46.650

Isotope	Mass Excess
^{238}Am	48.450
^{239}Am	49.390
^{240}Am	51.520
^{241}Am	52.920
^{242}Am	55.470
^{243}Am	57.150
^{244}Am	59.870
^{245}Am	61.910
^{246}Am	64.940
^{247}Am	67.020
^{248}Am	70.500
^{249}Am	73.000
^{211}Cm	80.350 †
^{212}Cm	76.400 †
^{213}Cm	74.550 †
^{214}Cm	70.820 †
^{215}Cm	69.050 †
^{216}Cm	65.670 †
^{217}Cm	64.080 †
^{218}Cm	60.770 †
^{219}Cm	59.140 †
^{220}Cm	55.870 †
^{221}Cm	54.190 †
^{222}Cm	51.530 ‡
^{223}Cm	51.830 ‡
^{224}Cm	50.340
^{225}Cm	50.540
^{226}Cm	49.020
^{227}Cm	49.370
^{228}Cm	47.920
^{229}Cm	48.220
^{230}Cm	47.090
^{231}Cm	47.580
^{232}Cm	46.760
^{233}Cm	47.550
^{234}Cm	46.950
^{235}Cm	48.090
^{236}Cm	47.850
^{237}Cm	49.210
^{238}Cm	49.380
^{239}Cm	51.060
^{240}Cm	51.680
^{241}Cm	53.680
^{242}Cm	54.780
^{243}Cm	57.190
^{244}Cm	58.480
^{245}Cm	61.020
^{246}Cm	62.580
^{247}Cm	65.540
^{248}Cm	67.370
^{249}Cm	70.750
^{250}Cm	72.990
^{220}Bk	69.100 †
^{221}Bk	65.800 †
^{222}Bk	63.540 †
^{223}Bk	60.900 †
^{224}Bk	60.620 †
^{225}Bk	59.010 †
^{226}Bk	58.710 †
^{227}Bk	57.140 †
^{228}Bk	56.950 †
^{229}Bk	55.460 †
^{230}Bk	55.200
^{231}Bk	54.020
^{232}Bk	54.020
^{233}Bk	53.090
^{234}Bk	53.520
^{235}Bk	52.790
^{236}Bk	53.520
^{237}Bk	53.200
^{238}Bk	54.120
^{239}Bk	54.170
^{240}Bk	55.530
^{241}Bk	56.020

Isotope	Mass Excess
^{242}Bk	57.720
^{243}Bk	58.690
^{244}Bk	60.700
^{245}Bk	61.840
^{246}Bk	64.010
^{247}Bk	65.460
^{248}Bk	68.100
^{249}Bk	69.790
^{250}Bk	72.950
^{251}Bk	75.220
^{218}Cf	86.550 †
^{219}Cf	84.350 †
^{220}Cf	80.470 †
^{221}Cf	78.290 †
^{222}Cf	74.420 †
^{223}Cf	72.180 †
^{224}Cf	68.950 †
^{225}Cf	68.550 †
^{226}Cf	66.450 †
^{227}Cf	66.090 †
^{228}Cf	63.980 ‡
^{229}Cf	63.760
^{230}Cf	61.710
^{231}Cf	61.400
^{232}Cf	59.730
^{233}Cf	59.610
^{234}Cf	58.330
^{235}Cf	58.630
^{236}Cf	57.490
^{237}Cf	58.130
^{238}Cf	57.370
^{239}Cf	58.180
^{240}Cf	57.910
^{241}Cf	59.140
^{242}Cf	59.330
^{243}Cf	60.890
^{244}Cf	61.460
^{245}Cf	63.330
^{246}Cf	64.090
^{247}Cf	66.150
^{248}Cf	67.280
^{249}Cf	69.710
^{250}Cf	71.130
^{251}Cf	74.110
^{252}Cf	76.040
^{225}Es	79.190 †
^{226}Es	78.300 †
^{227}Es	76.130 †
^{228}Es	75.240 †
^{229}Es	73.100 †
^{230}Es	72.310 †
^{231}Es	70.210 †
^{232}Es	69.410 †
^{233}Es	67.630 †
^{234}Es	67.150 †
^{235}Es	65.740 †
^{236}Es	65.630
^{237}Es	64.400
^{238}Es	64.610
^{239}Es	63.730
^{240}Es	64.220
^{241}Es	63.820
^{242}Es	64.750
^{243}Es	64.800
^{244}Es	65.970
^{245}Es	66.390
^{246}Es	67.880
^{247}Es	68.530
^{248}Es	70.270
^{249}Es	71.190
^{250}Es	73.360
^{251}Es	74.530
^{252}Es	77.240
^{253}Es	78.950

Isotope	Mass Excess
^{254}Es	82.030
^{255}Es	84.070
^{222}Fm	102.090 †
^{223}Fm	99.370 †
^{224}Fm	94.920 †
^{225}Fm	91.980 †
^{226}Fm	88.140 †
^{227}Fm	87.190 †
^{228}Fm	84.490 †
^{229}Fm	83.560 †
^{230}Fm	80.850 †
^{231}Fm	80.010 †
^{232}Fm	77.430 ‡
^{233}Fm	76.520 ‡
^{234}Fm	74.370 ‡
^{235}Fm	73.770
^{236}Fm	71.940
^{237}Fm	71.750
^{238}Fm	70.090
^{239}Fm	70.180
^{240}Fm	68.980
^{241}Fm	69.340
^{242}Fm	68.640
^{243}Fm	69.430
^{244}Fm	69.090
^{245}Fm	70.110
^{246}Fm	70.150
^{247}Fm	71.540
^{248}Fm	71.860
^{249}Fm	73.390
^{250}Fm	74.040
^{251}Fm	75.970
^{252}Fm	76.870
^{253}Fm	79.360
^{254}Fm	80.850
^{255}Fm	83.760
^{256}Fm	85.490
^{257}Fm	88.580
^{230}Md	93.620 †
^{231}Md	90.860 †
^{232}Md	89.530 †
^{233}Md	86.840 †
^{234}Md	85.560 †
^{235}Md	83.290 †
^{236}Md	82.280 †
^{237}Md	80.370 †
^{238}Md	79.740 †
^{239}Md	77.960 †
^{240}Md	77.730 †
^{241}Md	76.400 †
^{242}Md	76.460
^{243}Md	75.620
^{244}Md	76.020
^{245}Md	75.530
^{246}Md	76.170
^{247}Md	76.110
^{248}Md	77.170
^{249}Md	77.280
^{250}Md	78.550
^{251}Md	78.960
^{252}Md	80.610
^{253}Md	81.290
^{254}Md	83.570
^{255}Md	84.890
^{256}Md	87.490
^{257}Md	89.000
^{258}Md	91.770
^{228}No	109.220 †
^{229}No	107.690 †
^{230}No	104.390 †
^{231}No	102.850 †
^{232}No	99.610 †
^{233}No	98.170 †
^{234}No	95.110 †

Isotope	Mass Excess	
^{235}No	93.710	†
^{236}No	91.030	†
^{237}No	89.920	†
^{238}No	87.580	‡
^{239}No	86.830	‡
^{240}No	84.730	‡
^{241}No	84.380	
^{242}No	82.750	
^{243}No	82.670	
^{244}No	81.430	
^{245}No	81.680	
^{246}No	80.820	
^{247}No	81.350	
^{248}No	80.960	
^{249}No	81.810	
^{250}No	81.660	
^{251}No	82.690	
^{252}No	82.820	
^{253}No	84.250	
^{254}No	84.720	
^{255}No	86.830	
^{256}No	87.840	
^{257}No	90.220	
^{258}No	91.410	
^{259}No	94.020	
^{236}Lr	103.610	†
^{237}Lr	100.850	†
^{238}Lr	99.310	†
^{239}Lr	96.850	†
^{240}Lr	95.780	†
^{241}Lr	93.560	†
^{242}Lr	92.890	†
^{243}Lr	91.130	†
^{244}Lr	90.650	†
^{245}Lr	89.270	†
^{246}Lr	89.150	†
^{247}Lr	88.170	†
^{248}Lr	88.380	
^{249}Lr	87.780	
^{250}Lr	88.370	
^{251}Lr	87.980	
^{252}Lr	88.730	
^{253}Lr	88.640	
^{254}Lr	89.860	
^{255}Lr	90.160	
^{256}Lr	91.950	
^{257}Lr	92.740	
^{258}Lr	94.810	
^{259}Lr	95.840	
^{260}Lr	98.130	