P. Moller and J.R. Nix Masses

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

Isotope	Mass Excess
^{16}O	-5.710
^{17}O	-1.280
^{18}O	-3.120
^{19}O	1.860
^{20}O	3.750
^{21}O	9.180
^{22}O	11.690
^{23}O	18.170
^{24}O	22.920
^{25}O	32.570 †
^{26}O	38.390
^{27}O	47.480 †
^{28}O	53.830
^{29}O	64.240 †
^{30}O	77.430 †
^{31}O	84.610 ‡
^{32}O	94.550 †
^{33}O	108.880 †
^{17}F	0.860
^{18}F	0.790
^{19}F	-3.290
^{20}F	-1.730
^{21}F	-1.200
^{22}F	2.630
^{23}F	4.180
^{24}F	8.790
^{25}F	12.990
^{26}F	20.320
^{27}F	26.090
^{28}F	33.710
^{29}F	39.530
^{30}F	48.390 †
^{31}F	57.110 †
^{32}F	67.460 †
^{33}F	74.850 ‡
^{34}F	84.550 †
^{35}F	95.730 †
^{18}Ne	3.200
^{19}Ne	-1.820
^{20}Ne	-7.770
^{21}Ne	-6.140
^{22}Ne	-8.980
^{23}Ne	-5.980
^{24}Ne	-6.360
^{25}Ne	-1.530
^{26}Ne	1.950
^{27}Ne	7.950
^{28}Ne	11.640
^{29}Ne	19.090
^{30}Ne	22.880
^{31}Ne	32.430 †
^{32}Ne	38.920
^{33}Ne	46.630
^{34}Ne	54.720 †
^{35}Ne	63.640 †
^{36}Ne	72.830 †
^{37}Ne	80.950 †
^{19}Na	10.850 †
^{20}Na	4.240
^{21}Na	-3.130
^{22}Na	-5.240
^{23}Na	-10.300
^{24}Na	-9.120
^{25}Na	-9.570
^{26}Na	-6.370
^{27}Na	-4.840
^{28}Na	-0.010
^{29}Na	2.860
^{30}Na	8.690

Isotope	Mass Excess
^{31}Na	13.480
^{32}Na	19.540
^{33}Na	24.980
^{34}Na	31.090
^{35}Na	37.270
^{36}Na	44.580
^{37}Na	52.890 †
^{38}Na	63.120 †
^{39}Na	70.160 ‡
^{20}Mg	16.470
^{21}Mg	8.220
^{22}Mg	-1.550
^{23}Mg	-5.910
^{24}Mg	-14.430
^{25}Mg	-13.600
^{26}Mg	-16.500
^{27}Mg	-13.690
^{28}Mg	-14.140
^{29}Mg	-9.610
^{30}Mg	-8.410
^{31}Mg	-2.620
^{32}Mg	0.760
^{33}Mg	6.820
^{34}Mg	10.700
^{35}Mg	16.700
^{36}Mg	21.240
^{37}Mg	28.190
^{38}Mg	34.520
^{39}Mg	43.980 †
^{40}Mg	50.310
^{41}Mg	59.420 †
^{21}Al	26.060 †
^{22}Al	16.570 †
^{23}Al	5.000
^{24}Al	-0.900
^{25}Al	-9.640
^{26}Al	-11.310
^{27}Al	-16.630
^{28}Al	-16.330
^{29}Al	-17.150
^{30}Al	-14.720
^{31}Al	-13.330
^{32}Al	-9.770
^{33}Al	-9.570
^{34}Al	-2.680
^{35}Al	0.420
^{36}Al	4.880
^{37}Al	9.530
^{38}Al	14.920
^{39}Al	20.980
^{40}Al	27.500
^{41}Al	34.110
^{42}Al	41.940
^{43}Al	49.660
^{22}Si	33.310 ‡
^{23}Si	23.860 †
^{24}Si	10.390
^{25}Si	3.710
^{26}Si	-7.470
^{27}Si	-11.300
^{28}Si	-20.230
^{29}Si	-20.040
^{30}Si	-22.880
^{31}Si	-20.740
^{32}Si	-21.050
^{33}Si	-18.410
^{34}Si	-19.670
^{35}Si	-14.210
^{36}Si	-11.340
^{37}Si	-6.560

Isotope	Mass Excess
^{38}Si	-3.160
^{39}Si	1.910
^{40}Si	6.010
^{41}Si	12.180
^{42}Si	16.680
^{43}Si	24.650
^{44}Si	31.530
^{45}Si	39.920 †
^{46}Si	47.760 ‡
^{23}P	44.500 †
^{24}P	31.450 †
^{25}P	18.480 †
^{26}P	9.560
^{27}P	-0.530
^{28}P	-6.050
^{29}P	-15.310
^{30}P	-18.210
^{31}P	-23.110
^{32}P	-21.820
^{33}P	-23.950
^{34}P	-21.720
^{35}P	-23.270
^{36}P	-19.860
^{37}P	-18.520
^{38}P	-14.800
^{39}P	-12.510
^{40}P	-7.730
^{41}P	-4.530
^{42}P	0.790
^{43}P	5.000
^{44}P	11.120
^{45}P	17.650
^{46}P	24.900
^{47}P	32.260
^{48}P	40.050
^{24}S	54.600 †
^{25}S	42.590 †
^{26}S	27.160 †
^{27}S	16.620
^{28}S	3.730
^{29}S	-3.200
^{30}S	-14.020
^{31}S	-17.420
^{32}S	-25.340
^{33}S	-25.190
^{34}S	-28.990
^{35}S	-26.980
^{36}S	-30.390
^{37}S	-26.160
^{38}S	-26.420
^{39}S	-22.980
^{40}S	-22.170
^{41}S	-17.720
^{42}S	-15.900
^{43}S	-11.090
^{44}S	-8.370
^{45}S	-2.620
^{46}S	2.920
^{47}S	9.930
^{48}S	16.170
^{49}S	24.000
^{50}S	30.350
^{26}Cl	52.780 †
^{27}Cl	37.310 †
^{28}Cl	25.340 †
^{29}Cl	12.670 †
^{30}Cl	3.770
^{31}Cl	-6.690 †
^{32}Cl	-13.020
^{33}Cl	-20.080

Isotope	Mass Excess
^{34}Cl	-22.600
^{35}Cl	-27.150
^{36}Cl	-28.020
^{37}Cl	-31.840
^{38}Cl	-30.360
^{39}Cl	-30.310
^{40}Cl	-28.550
^{41}Cl	-28.170
^{42}Cl	-25.180
^{43}Cl	-23.760
^{44}Cl	-19.860
^{45}Cl	-17.240
^{46}Cl	-12.270
^{47}Cl	-7.400
^{48}Cl	-1.400
^{49}Cl	4.260
^{50}Cl	10.820
^{51}Cl	16.650
^{52}Cl	24.130
^{27}Ar	65.210 †
^{28}Ar	47.200 †
^{29}Ar	34.430 †
^{30}Ar	19.970 †
^{31}Ar	10.580
^{32}Ar	-1.800
^{33}Ar	-8.410
^{34}Ar	-17.470
^{35}Ar	-21.520
^{36}Ar	-29.380
^{37}Ar	-30.680
^{38}Ar	-34.860
^{39}Ar	-34.770
^{40}Ar	-37.340
^{41}Ar	-34.780
^{42}Ar	-35.970
^{43}Ar	-33.210
^{44}Ar	-33.060
^{45}Ar	-28.870
^{46}Ar	-28.230
^{47}Ar	-23.660
^{48}Ar	-19.790
^{49}Ar	-13.660
^{50}Ar	-9.230
^{51}Ar	-2.660
^{52}Ar	2.070
^{53}Ar	8.860
^{54}Ar	14.900
^{30}K	45.610 †
^{31}K	31.160 †
^{32}K	19.910 †
^{33}K	7.430 †
^{34}K	-0.770 †
^{35}K	-10.080 †
^{36}K	-16.010
^{37}K	-23.230
^{38}K	-27.610
^{39}K	-34.280
^{40}K	-33.910
^{41}K	-38.010
^{42}K	-37.340
^{43}K	-38.660
^{44}K	-37.090
^{45}K	-37.420
^{46}K	-35.200
^{47}K	-34.320
^{48}K	-30.620
^{49}K	-27.690
^{50}K	-22.900
^{51}K	-18.690
^{52}K	-13.290
^{53}K	-8.540

Isotope	Mass Excess
^{54}K	-2.510
^{55}K	2.860
^{56}K	9.420
^{29}Ca	92.520 †
^{30}Ca	72.130 †
^{31}Ca	56.620 †
^{32}Ca	41.350 †
^{33}Ca	28.990 †
^{34}Ca	13.940 ‡
^{35}Ca	5.300
^{36}Ca	-5.870
^{37}Ca	-11.910
^{38}Ca	-22.660
^{39}Ca	-26.820
^{40}Ca	-34.240
^{41}Ca	-36.110
^{42}Ca	-40.590
^{43}Ca	-40.670
^{44}Ca	-43.490
^{45}Ca	-42.500
^{46}Ca	-44.180
^{47}Ca	-42.080
^{48}Ca	-42.460
^{49}Ca	-39.490
^{50}Ca	-37.770
^{51}Ca	-33.050
^{52}Ca	-30.340
^{53}Ca	-24.470
^{54}Ca	-21.200
^{55}Ca	-15.100
^{56}Ca	-11.140
^{57}Ca	-4.910
^{58}Ca	-0.220
^{33}Sc	53.670 †
^{34}Sc	40.250 †
^{35}Sc	24.930 †
^{36}Sc	14.650 †
^{37}Sc	3.090 †
^{38}Sc	-4.640
^{39}Sc	-14.100 †
^{40}Sc	-21.430
^{41}Sc	-29.630
^{42}Sc	-33.310
^{43}Sc	-39.400
^{44}Sc	-40.050
^{45}Sc	-43.710
^{46}Sc	-43.670
^{47}Sc	-45.990
^{48}Sc	-44.280
^{49}Sc	-45.960
^{50}Sc	-43.470
^{51}Sc	-42.500
^{52}Sc	-39.020
^{53}Sc	-36.300
^{54}Sc	-31.630
^{55}Sc	-28.750
^{56}Sc	-23.780
^{57}Sc	-19.930
^{58}Sc	-14.340
^{59}Sc	-10.010
^{60}Sc	-5.100
^{32}Ti	100.870 †
^{33}Ti	83.470 †
^{34}Ti	64.230 †
^{35}Ti	50.740 †
^{36}Ti	33.350 †
^{37}Ti	21.950 †
^{38}Ti	9.610 ‡
^{39}Ti	0.200
^{40}Ti	-11.910

Isotope	Mass Excess
^{41}Ti	-18.250
^{42}Ti	-27.210
^{43}Ti	-32.120
^{44}Ti	-40.660
^{45}Ti	-42.150
^{46}Ti	-47.130
^{47}Ti	-47.140
^{48}Ti	-50.950
^{49}Ti	-49.030
^{50}Ti	-52.130
^{51}Ti	-49.550
^{52}Ti	-50.150
^{53}Ti	-46.870
^{54}Ti	-45.050
^{55}Ti	-40.360
^{56}Ti	-38.570
^{57}Ti	-33.750
^{58}Ti	-31.230
^{59}Ti	-25.760
^{60}Ti	-22.670
^{61}Ti	-17.630
^{62}Ti	-13.730
^{37}V	46.320 †
^{38}V	33.700 †
^{39}V	19.570 †
^{40}V	9.360 †
^{41}V	-2.510 †
^{42}V	-10.400 †
^{43}V	-19.980
^{44}V	-26.110
^{45}V	-35.250
^{46}V	-37.840
^{47}V	-43.200
^{48}V	-45.180
^{49}V	-49.860
^{50}V	-49.540
^{51}V	-53.060
^{52}V	-51.480
^{53}V	-52.200
^{54}V	-49.450
^{55}V	-48.780
^{56}V	-45.510
^{57}V	-44.000
^{58}V	-40.160
^{59}V	-38.090
^{60}V	-33.690
^{61}V	-30.810
^{62}V	-26.240
^{63}V	-23.200
^{64}V	-17.250
^{36}Cr	91.520 †
^{37}Cr	74.590 †
^{38}Cr	56.960 †
^{39}Cr	43.420 †
^{40}Cr	28.560 †
^{41}Cr	17.200 †
^{42}Cr	3.950 ‡
^{43}Cr	-4.350
^{44}Cr	-15.390
^{45}Cr	-21.910
^{46}Cr	-32.410
^{47}Cr	-35.960
^{48}Cr	-43.310
^{49}Cr	-45.630
^{50}Cr	-51.780
^{51}Cr	-51.710
^{52}Cr	-56.590
^{53}Cr	-55.130
^{54}Cr	-57.060
^{55}Cr	-54.560
^{56}Cr	-55.100

Isotope	Mass Excess
^{57}Cr	-51.990
^{58}Cr	-51.650
^{59}Cr	-47.880
^{60}Cr	-47.010
^{61}Cr	-42.390
^{62}Cr	-40.860
^{63}Cr	-34.850
^{64}Cr	-34.450
^{65}Cr	-28.540
^{66}Cr	-25.800
^{67}Cr	-19.540
^{41}Mn	40.440 †
^{42}Mn	28.380 †
^{43}Mn	14.250 †
^{44}Mn	4.680 †
^{45}Mn	-6.830 †
^{46}Mn	-14.300 †
^{47}Mn	-24.850 †
^{48}Mn	-29.890
^{49}Mn	-38.150
^{50}Mn	-41.950
^{51}Mn	-48.660
^{52}Mn	-50.690
^{53}Mn	-55.200
^{54}Mn	-55.160
^{55}Mn	-57.170
^{56}Mn	-55.980
^{57}Mn	-56.880
^{58}Mn	-54.960
^{59}Mn	-54.960
^{60}Mn	-52.600
^{61}Mn	-51.700
^{62}Mn	-48.340
^{63}Mn	-46.880
^{64}Mn	-42.900
^{65}Mn	-41.890
^{66}Mn	-36.960
^{67}Mn	-34.920
^{68}Mn	-29.470
^{69}Mn	-25.640
^{70}Mn	-21.070
^{40}Fe	81.750 †
^{41}Fe	67.110 †
^{42}Fe	50.510 †
^{43}Fe	37.680 †
^{44}Fe	22.600 †
^{45}Fe	12.300 †
^{46}Fe	-0.500 ‡
^{47}Fe	-8.560
^{48}Fe	-20.690
^{49}Fe	-26.590
^{50}Fe	-35.570
^{51}Fe	-40.730
^{52}Fe	-49.190
^{53}Fe	-50.580
^{54}Fe	-56.740
^{55}Fe	-56.780
^{56}Fe	-60.250
^{57}Fe	-59.150
^{58}Fe	-61.210
^{59}Fe	-59.400
^{60}Fe	-60.520
^{61}Fe	-57.980
^{62}Fe	-58.580
^{63}Fe	-55.830
^{64}Fe	-55.360
^{65}Fe	-52.280
^{66}Fe	-51.160
^{67}Fe	-46.560
^{68}Fe	-44.900
^{69}Fe	-39.560
^{70}Fe	-37.590
^{71}Fe	-32.030
^{72}Fe	-28.650

Isotope	Mass Excess
^{73}Fe	-24.240
^{74}Fe	-20.520
^{75}Fe	-14.400
^{76}Fe	-10.640
^{77}Fe	-3.110
^{78}Fe	2.980
^{43}Co	63.000 †
^{44}Co	49.110 †
^{45}Co	34.810 †
^{46}Co	22.880 †
^{47}Co	9.680 †
^{48}Co	1.010 †
^{49}Co	-10.610 †
^{50}Co	-18.220 †
^{51}Co	-28.050 †
^{52}Co	-34.580
^{53}Co	-42.600
^{54}Co	-46.360
^{55}Co	-52.610
^{56}Co	-54.430
^{57}Co	-58.030
^{58}Co	-58.520
^{59}Co	-60.800
^{60}Co	-60.270
^{61}Co	-61.600
^{62}Co	-60.200
^{63}Co	-60.790
^{64}Co	-58.920
^{65}Co	-59.170
^{66}Co	-56.220
^{67}Co	-55.500
^{68}Co	-52.180
^{69}Co	-50.780
^{70}Co	-46.830
^{71}Co	-44.640
^{72}Co	-40.700
^{73}Co	-37.810
^{74}Co	-33.700
^{75}Co	-29.790
^{76}Co	-25.260
^{77}Co	-21.880
^{78}Co	-14.880
^{79}Co	-8.820
^{80}Co	-1.430
^{44}Ni	74.890 †
^{45}Ni	60.680 †
^{46}Ni	44.270 †
^{47}Ni	32.270 †
^{48}Ni	17.960 †
^{49}Ni	8.090 ‡
^{50}Ni	-4.980 ‡
^{51}Ni	-12.960
^{52}Ni	-23.950
^{53}Ni	-30.540
^{54}Ni	-40.020
^{55}Ni	-44.010
^{56}Ni	-52.570
^{57}Ni	-54.600
^{58}Ni	-59.490
^{59}Ni	-60.190
^{60}Ni	-62.880
^{61}Ni	-63.070
^{62}Ni	-65.250
^{63}Ni	-64.380
^{64}Ni	-66.050
^{65}Ni	-63.960
^{66}Ni	-65.370
^{67}Ni	-62.750
^{68}Ni	-62.930
^{69}Ni	-60.120
^{70}Ni	-59.230
^{71}Ni	-55.890
^{72}Ni	-54.480
^{73}Ni	-50.560

Isotope	Mass Excess
^{74}Ni	-48.640
^{75}Ni	-44.590
^{76}Ni	-42.030
^{77}Ni	-37.530
^{78}Ni	-34.430
^{79}Ni	-28.080
^{80}Ni	-22.720
^{81}Ni	-15.440
^{82}Ni	-9.280
^{48}Cu	44.380 †
^{49}Cu	29.280 †
^{50}Cu	19.050 †
^{51}Cu	5.990 †
^{52}Cu	-2.980 †
^{53}Cu	-14.200 †
^{54}Cu	-21.930 †
^{55}Cu	-31.520 †
^{56}Cu	-37.310
^{57}Cu	-45.710
^{58}Cu	-49.250
^{59}Cu	-54.800
^{60}Cu	-56.370
^{61}Cu	-60.100
^{62}Cu	-61.030
^{63}Cu	-63.770
^{64}Cu	-63.630
^{65}Cu	-65.700
^{66}Cu	-64.710
^{67}Cu	-65.920
^{68}Cu	-64.890
^{69}Cu	-64.980
^{70}Cu	-62.720
^{71}Cu	-62.420
^{72}Cu	-59.650
^{73}Cu	-58.720
^{74}Cu	-55.870
^{75}Cu	-54.160
^{76}Cu	-50.950
^{77}Cu	-48.450
^{78}Cu	-44.480
^{79}Cu	-41.990
^{80}Cu	-36.080
^{81}Cu	-31.140
^{82}Cu	-24.750
^{83}Cu	-18.930
^{84}Cu	-12.120
^{49}Zn	56.160 †
^{50}Zn	40.000 †
^{51}Zn	28.880 †
^{52}Zn	14.100 †
^{53}Zn	5.400 †
^{54}Zn	-6.970 ‡
^{55}Zn	-14.690 ‡
^{56}Zn	-25.890
^{57}Zn	-32.070
^{58}Zn	-42.120
^{59}Zn	-45.900
^{60}Zn	-52.850
^{61}Zn	-54.490
^{62}Zn	-59.510
^{63}Zn	-60.830
^{64}Zn	-64.750
^{65}Zn	-64.760
^{66}Zn	-68.160
^{67}Zn	-67.100
^{68}Zn	-69.420
^{69}Zn	-67.940
^{70}Zn	-70.190
^{71}Zn	-67.650
^{72}Zn	-68.760
^{73}Zn	-65.680
^{74}Zn	-65.540
^{75}Zn	-62.740
^{76}Zn	-62.180

Isotope	Mass Excess
^{77}Zn	-58.870
^{78}Zn	-57.050
^{79}Zn	-53.310
^{80}Zn	-51.830
^{81}Zn	-45.930
^{82}Zn	-41.970
^{83}Zn	-35.320
^{84}Zn	-30.320
^{85}Zn	-23.440
^{86}Zn	-18.090
^{54}Ga	17.050 †
^{55}Ga	4.470 †
^{56}Ga	-4.600 †
^{57}Ga	-15.680 †
^{58}Ga	-23.370 †
^{59}Ga	-33.300 †
^{60}Ga	-38.350 †
^{61}Ga	-45.560
^{62}Ga	-49.210
^{63}Ga	-55.020
^{64}Ga	-57.220
^{65}Ga	-61.420
^{66}Ga	-62.750
^{67}Ga	-66.070
^{68}Ga	-66.330
^{69}Ga	-68.630
^{70}Ga	-67.960
^{71}Ga	-69.700
^{72}Ga	-68.560
^{73}Ga	-69.790
^{74}Ga	-68.110
^{75}Ga	-68.110
^{76}Ga	-66.030
^{77}Ga	-65.690
^{78}Ga	-63.330
^{79}Ga	-62.360
^{80}Ga	-59.070
^{81}Ga	-57.450
^{82}Ga	-52.710
^{83}Ga	-48.620
^{84}Ga	-42.920
^{85}Ga	-38.220
^{86}Ga	-32.270
^{87}Ga	-27.230
^{88}Ga	-21.010
^{53}Ge	53.310 †
^{54}Ge	37.690 †
^{55}Ge	26.980 †
^{56}Ge	13.240 †
^{57}Ge	3.890 †
^{58}Ge	-8.340 †
^{59}Ge	-16.350 ‡
^{60}Ge	-27.440 ‡
^{61}Ge	-32.900
^{62}Ge	-41.220
^{63}Ge	-45.600
^{64}Ge	-53.000
^{65}Ge	-55.380
^{66}Ge	-60.630
^{67}Ge	-62.160
^{68}Ge	-66.760
^{69}Ge	-66.790
^{70}Ge	-70.190
^{71}Ge	-69.680
^{72}Ge	-72.290
^{73}Ge	-71.250
^{74}Ge	-73.380
^{75}Ge	-71.840
^{76}Ge	-72.950
^{77}Ge	-70.930
^{78}Ge	-71.500
^{79}Ge	-69.120
^{80}Ge	-69.020
^{81}Ge	-65.740

Isotope	Mass Excess
^{82}Ge	-65.070
^{83}Ge	-60.240
^{84}Ge	-57.230
^{85}Ge	-51.650
^{86}Ge	-47.840
^{87}Ge	-42.040
^{88}Ge	-37.880
^{89}Ge	-31.930
^{90}Ge	-27.140
^{91}Ge	-20.680
^{92}Ge	-15.780
^{93}Ge	-9.160
^{59}As	3.010 †
^{60}As	-6.250 †
^{61}As	-17.000 †
^{62}As	-24.160 †
^{63}As	-32.710 †
^{64}As	-38.160 †
^{65}As	-45.750
^{66}As	-49.660
^{67}As	-55.560
^{68}As	-58.300
^{69}As	-62.950
^{70}As	-64.200
^{71}As	-67.860
^{72}As	-68.310
^{73}As	-71.100
^{74}As	-70.960
^{75}As	-73.160
^{76}As	-72.530
^{77}As	-73.980
^{78}As	-72.750
^{79}As	-73.450
^{80}As	-71.930
^{81}As	-71.920
^{82}As	-69.760
^{83}As	-68.820
^{84}As	-65.370
^{85}As	-62.460
^{86}As	-57.760
^{87}As	-54.170
^{88}As	-49.220
^{89}As	-45.220
^{90}As	-40.110
^{91}As	-35.600
^{92}As	-29.830
^{93}As	-25.080
^{94}As	-19.220
^{95}As	-14.020
^{96}As	-7.640
^{57}Se	51.080 †
^{58}Se	36.040 †
^{59}Se	25.190 †
^{60}Se	11.770 †
^{61}Se	2.180 †
^{62}Se	-9.810 ‡
^{63}Se	-17.160 ‡
^{64}Se	-26.820
^{65}Se	-32.510
^{66}Se	-41.130
^{67}Se	-45.740
^{68}Se	-53.260
^{69}Se	-56.040
^{70}Se	-61.860
^{71}Se	-63.270
^{72}Se	-67.930
^{73}Se	-68.710
^{74}Se	-72.330
^{75}Se	-72.310
^{76}Se	-75.460
^{77}Se	-74.920
^{78}Se	-77.180
^{79}Se	-76.140
^{80}Se	-77.750

Isotope	Mass Excess
^{81}Se	-76.290
^{82}Se	-77.330
^{83}Se	-75.120
^{84}Se	-75.550
^{85}Se	-71.660
^{86}Se	-69.690
^{87}Se	-64.920
^{88}Se	-62.170
^{89}Se	-57.270
^{90}Se	-54.190
^{91}Se	-49.050
^{92}Se	-45.470
^{93}Se	-39.860
^{94}Se	-35.900
^{95}Se	-30.140
^{96}Se	-25.690
^{97}Se	-19.380
^{98}Se	-14.350
^{62}Br	13.470 †
^{63}Br	2.070 †
^{64}Br	-6.260 †
^{65}Br	-16.610 †
^{66}Br	-23.680 †
^{67}Br	-32.310 †
^{68}Br	-38.110 †
^{69}Br	-45.860 †
^{70}Br	-49.580
^{71}Br	-56.260
^{72}Br	-58.830
^{73}Br	-63.840
^{74}Br	-66.080
^{75}Br	-69.320
^{76}Br	-70.330
^{77}Br	-73.650
^{78}Br	-74.050
^{79}Br	-76.670
^{80}Br	-76.590
^{81}Br	-78.410
^{82}Br	-77.740
^{83}Br	-78.940
^{84}Br	-77.370
^{85}Br	-77.960
^{86}Br	-75.150
^{87}Br	-73.290
^{88}Br	-69.350
^{89}Br	-66.730
^{90}Br	-62.670
^{91}Br	-59.830
^{92}Br	-55.590
^{93}Br	-52.330
^{94}Br	-47.560
^{95}Br	-43.830
^{96}Br	-38.830
^{97}Br	-34.580
^{98}Br	-29.000
^{99}Br	-24.090
^{63}Kr	23.590 †
^{64}Kr	10.130 †
^{65}Kr	1.640 †
^{66}Kr	-9.380 ‡
^{67}Kr	-16.470 ‡
^{68}Kr	-26.550 ‡
^{69}Kr	-32.360
^{70}Kr	-41.090
^{71}Kr	-45.480
^{72}Kr	-53.660
^{73}Kr	-56.560
^{74}Kr	-62.510
^{75}Kr	-64.660
^{76}Kr	-69.420
^{77}Kr	-70.270
^{78}Kr	-74.660
^{79}Kr	-75.160
^{80}Kr	-78.820

Isotope	Mass Excess
^{81}Kr	-78.750
^{82}Kr	-81.540
^{83}Kr	-80.970
^{84}Kr	-83.180
^{85}Kr	-81.450
^{86}Kr	-83.200
^{87}Kr	-80.280
^{88}Kr	-79.420
^{89}Kr	-75.240
^{90}Kr	-73.490
^{91}Kr	-69.290
^{92}Kr	-67.260
^{93}Kr	-62.990
^{94}Kr	-60.450
^{95}Kr	-55.970
^{96}Kr	-52.990
^{97}Kr	-48.130
^{98}Kr	-44.620
^{99}Kr	-39.040
^{100}Kr	-35.030
^{101}Kr	-29.280
^{65}Rb	23.420 †
^{66}Rb	13.640 †
^{67}Rb	1.980 †
^{68}Rb	-6.130 †
^{69}Rb	-16.390 †
^{70}Rb	-23.410 †
^{71}Rb	-32.540 †
^{72}Rb	-37.910 †
^{73}Rb	-46.130 †
^{74}Rb	-50.110
^{75}Rb	-56.850
^{76}Rb	-59.960
^{77}Rb	-64.890
^{78}Rb	-66.780
^{79}Rb	-70.880
^{80}Rb	-72.610
^{81}Rb	-76.580
^{82}Rb	-77.330
^{83}Rb	-80.250
^{84}Rb	-80.680
^{85}Rb	-82.990
^{86}Rb	-82.190
^{87}Rb	-84.090
^{88}Rb	-81.740
^{89}Rb	-81.070
^{90}Rb	-78.140
^{91}Rb	-76.410
^{92}Rb	-73.290
^{93}Rb	-71.340
^{94}Rb	-67.650
^{95}Rb	-65.380
^{96}Rb	-61.630
^{97}Rb	-58.960
^{98}Rb	-54.710
^{99}Rb	-51.390
^{100}Rb	-46.630
^{101}Rb	-42.810
^{102}Rb	-37.840
^{103}Rb	-33.700
^{67}Sr	23.550 †
^{68}Sr	10.770 †
^{69}Sr	2.260 †
^{70}Sr	-8.990 †
^{71}Sr	-16.310 ‡
^{72}Sr	-26.340 ‡
^{73}Sr	-32.340
^{74}Sr	-41.120
^{75}Sr	-45.980
^{76}Sr	-54.040
^{77}Sr	-57.290
^{78}Sr	-63.020
^{79}Sr	-65.220
^{80}Sr	-70.240

Isotope	Mass Excess
^{81}Sr	-72.170
^{82}Sr	-77.520
^{83}Sr	-78.410
^{84}Sr	-82.450
^{85}Sr	-83.050
^{86}Sr	-85.970
^{87}Sr	-85.220
^{88}Sr	-87.600
^{89}Sr	-85.270
^{90}Sr	-85.670
^{91}Sr	-82.680
^{92}Sr	-81.460
^{93}Sr	-78.340
^{94}Sr	-77.290
^{95}Sr	-73.580
^{96}Sr	-72.030
^{97}Sr	-68.320
^{98}Sr	-66.480
^{99}Sr	-62.360
^{100}Sr	-59.830
^{101}Sr	-55.230
^{102}Sr	-52.110
^{103}Sr	-47.190
^{104}Sr	-43.670
^{105}Sr	-38.490
^{69}Y	23.190 †
^{70}Y	13.850 †
^{71}Y	2.420 †
^{72}Y	-5.870 †
^{73}Y	-16.080 †
^{74}Y	-23.080 †
^{75}Y	-32.290 †
^{76}Y	-38.100 †
^{77}Y	-46.500 †
^{78}Y	-51.180
^{79}Y	-57.520
^{80}Y	-60.330
^{81}Y	-65.500
^{82}Y	-67.720
^{83}Y	-73.380
^{84}Y	-75.530
^{85}Y	-79.580
^{86}Y	-81.280
^{87}Y	-84.260
^{88}Y	-84.820
^{89}Y	-86.770
^{90}Y	-85.790
^{91}Y	-86.060
^{92}Y	-84.010
^{93}Y	-82.670
^{94}Y	-80.340
^{95}Y	-79.380
^{96}Y	-76.440
^{97}Y	-75.290
^{98}Y	-72.310
^{99}Y	-70.730
^{100}Y	-67.380
^{101}Y	-65.060
^{102}Y	-61.120
^{103}Y	-58.290
^{104}Y	-54.020
^{105}Y	-50.620
^{106}Y	-46.190
^{107}Y	-42.380
^{71}Zr	23.520 †
^{72}Zr	11.220 †
^{73}Zr	2.640 †
^{74}Zr	-8.520 †
^{75}Zr	-15.480 †
^{76}Zr	-25.740 ‡
^{77}Zr	-31.820
^{78}Zr	-41.060
^{79}Zr	-46.280
^{80}Zr	-54.070

Isotope	Mass Excess
^{81}Zr	-57.000
^{82}Zr	-63.610
^{83}Zr	-65.900
^{84}Zr	-72.790
^{85}Zr	-74.880
^{86}Zr	-79.930
^{87}Zr	-81.290
^{88}Zr	-85.450
^{89}Zr	-85.600
^{90}Zr	-88.890
^{91}Zr	-87.780
^{92}Zr	-89.110
^{93}Zr	-87.210
^{94}Zr	-86.720
^{95}Zr	-84.190
^{96}Zr	-84.070
^{97}Zr	-81.030
^{98}Zr	-80.640
^{99}Zr	-77.580
^{100}Zr	-76.660
^{101}Zr	-73.280
^{102}Zr	-71.710
^{103}Zr	-67.860
^{104}Zr	-65.690
^{105}Zr	-61.470
^{106}Zr	-58.810
^{107}Zr	-54.350
^{108}Zr	-51.130
^{109}Zr	-46.510
^{75}Nb	2.850 †
^{76}Nb	-4.890 †
^{77}Nb	-15.270 †
^{78}Nb	-22.200 †
^{79}Nb	-31.840 †
^{80}Nb	-38.010 †
^{81}Nb	-46.020 †
^{82}Nb	-50.540
^{83}Nb	-57.250
^{84}Nb	-60.590
^{85}Nb	-66.580
^{86}Nb	-69.920
^{87}Nb	-75.120
^{88}Nb	-77.440
^{89}Nb	-82.110
^{90}Nb	-82.790
^{91}Nb	-86.740
^{92}Nb	-86.790
^{93}Nb	-88.080
^{94}Nb	-86.580
^{95}Nb	-86.320
^{96}Nb	-84.810
^{97}Nb	-84.420
^{98}Nb	-82.650
^{99}Nb	-82.350
^{100}Nb	-79.870
^{101}Nb	-79.150
^{102}Nb	-76.560
^{103}Nb	-75.180
^{104}Nb	-72.020
^{105}Nb	-69.950
^{106}Nb	-66.400
^{107}Nb	-63.830
^{108}Nb	-59.950
^{109}Nb	-56.930
^{110}Nb	-52.670
^{111}Nb	-49.170
^{77}Mo	3.680 †
^{78}Mo	-7.140 †
^{79}Mo	-14.810 †
^{80}Mo	-25.120 ‡
^{81}Mo	-30.010 †
^{82}Mo	-39.460 ‡
^{83}Mo	-44.800
^{84}Mo	-53.210

Isotope	Mass Excess
^{85}Mo	-57.300
^{86}Mo	-65.070
^{87}Mo	-68.130
^{88}Mo	-74.230
^{89}Mo	-76.210
^{90}Mo	-81.780
^{91}Mo	-82.940
^{92}Mo	-87.130
^{93}Mo	-87.070
^{94}Mo	-89.550
^{95}Mo	-88.230
^{96}Mo	-88.900
^{97}Mo	-86.990
^{98}Mo	-87.710
^{99}Mo	-85.790
^{100}Mo	-86.080
^{101}Mo	-83.790
^{102}Mo	-83.610
^{103}Mo	-80.900
^{104}Mo	-80.270
^{105}Mo	-77.100
^{106}Mo	-75.860
^{107}Mo	-72.370
^{108}Mo	-70.680
^{109}Mo	-66.910
^{110}Mo	-64.730
^{111}Mo	-60.590
^{112}Mo	-57.730
^{113}Mo	-53.160
^{82}Tc	-20.600 †
^{83}Tc	-30.210 †
^{84}Tc	-36.660 †
^{85}Tc	-44.930 †
^{86}Tc	-50.230
^{87}Tc	-57.750 †
^{88}Tc	-61.790
^{89}Tc	-68.830
^{90}Tc	-71.570
^{91}Tc	-77.450
^{92}Tc	-78.980
^{93}Tc	-83.750
^{94}Tc	-84.210
^{95}Tc	-87.060
^{96}Tc	-85.790
^{97}Tc	-87.160
^{98}Tc	-86.150
^{99}Tc	-87.090
^{100}Tc	-85.800
^{101}Tc	-86.320
^{102}Tc	-84.680
^{103}Tc	-84.770
^{104}Tc	-82.750
^{105}Tc	-82.230
^{106}Tc	-79.810
^{107}Tc	-78.700
^{108}Tc	-75.900
^{109}Tc	-74.390
^{110}Tc	-71.260
^{111}Tc	-69.160
^{112}Tc	-65.730
^{113}Tc	-63.200
^{114}Tc	-59.320
^{115}Tc	-56.120
^{116}Tc	-51.820
^{117}Tc	-48.400
^{84}Ru	-23.380 ‡
^{85}Ru	-29.720 ‡
^{86}Ru	-40.400
^{87}Ru	-46.220
^{88}Ru	-55.070
^{89}Ru	-59.170
^{90}Ru	-66.260
^{91}Ru	-68.950
^{92}Ru	-75.850

Isotope	Mass Excess
^{93}Ru	-77.170
^{94}Ru	-83.120
^{95}Ru	-83.460
^{96}Ru	-86.960
^{97}Ru	-85.960
^{98}Ru	-88.140
^{99}Ru	-87.150
^{100}Ru	-88.690
^{101}Ru	-87.470
^{102}Ru	-88.730
^{103}Ru	-87.150
^{104}Ru	-87.850
^{105}Ru	-85.890
^{106}Ru	-86.100
^{107}Ru	-83.610
^{108}Ru	-83.260
^{109}Ru	-80.490
^{110}Ru	-79.620
^{111}Ru	-76.650
^{112}Ru	-75.340
^{113}Ru	-71.920
^{114}Ru	-70.110
^{115}Ru	-66.310
^{116}Ru	-63.850
^{117}Ru	-59.640
^{118}Ru	-56.990
^{119}Ru	-52.670
^{120}Ru	-49.600
^{86}Rh	-20.660 †
^{87}Rh	-31.160 †
^{88}Rh	-37.570 †
^{89}Rh	-46.560 †
^{90}Rh	-50.100 †
^{91}Rh	-58.650 †
^{92}Rh	-63.060
^{93}Rh	-70.120
^{94}Rh	-72.180
^{95}Rh	-78.410
^{96}Rh	-79.350
^{97}Rh	-83.250
^{98}Rh	-82.940
^{99}Rh	-85.270
^{100}Rh	-85.040
^{101}Rh	-86.830
^{102}Rh	-86.300
^{103}Rh	-87.670
^{104}Rh	-86.780
^{105}Rh	-87.650
^{106}Rh	-86.320
^{107}Rh	-86.680
^{108}Rh	-85.010
^{109}Rh	-84.720
^{110}Rh	-82.600
^{111}Rh	-82.020
^{112}Rh	-79.670
^{113}Rh	-78.590
^{114}Rh	-75.810
^{115}Rh	-74.210
^{116}Rh	-71.090
^{117}Rh	-68.850
^{118}Rh	-65.320
^{119}Rh	-62.790
^{120}Rh	-59.120
^{121}Rh	-56.170
^{122}Rh	-52.710
^{123}Rh	-49.240
^{124}Rh	-45.510
^{125}Rh	-42.280
^{126}Rh	-39.080
^{127}Rh	-35.370
^{128}Rh	-29.040
^{129}Rh	-22.810
^{130}Rh	-15.650
^{88}Pd	-24.320 ‡

Isotope	Mass Excess
^{89}Pd	-31.030 ‡
^{90}Pd	-40.870
^{91}Pd	-46.640
^{92}Pd	-55.530
^{93}Pd	-59.110
^{94}Pd	-67.120
^{95}Pd	-69.220
^{96}Pd	-76.270
^{97}Pd	-77.740
^{98}Pd	-82.000
^{99}Pd	-81.680
^{100}Pd	-84.710
^{101}Pd	-84.680
^{102}Pd	-87.210
^{103}Pd	-86.600
^{104}Pd	-88.710
^{105}Pd	-87.750
^{106}Pd	-89.380
^{107}Pd	-88.160
^{108}Pd	-89.210
^{109}Pd	-87.550
^{110}Pd	-88.170
^{111}Pd	-86.010
^{112}Pd	-86.110
^{113}Pd	-83.720
^{114}Pd	-83.370
^{115}Pd	-80.680
^{116}Pd	-79.730
^{117}Pd	-76.610
^{118}Pd	-75.190
^{119}Pd	-71.730
^{120}Pd	-70.130
^{121}Pd	-66.610
^{122}Pd	-64.280
^{123}Pd	-60.650
^{124}Pd	-58.400
^{125}Pd	-54.850
^{126}Pd	-52.360
^{127}Pd	-48.700
^{128}Pd	-45.670
^{129}Pd	-39.300
^{130}Pd	-33.690
^{131}Pd	-26.650
^{132}Pd	-20.530
^{90}Ag	-19.670 †
^{91}Ag	-30.670 †
^{92}Ag	-37.320 †
^{93}Ag	-46.290 †
^{94}Ag	-51.930
^{95}Ag	-60.220
^{96}Ag	-63.360
^{97}Ag	-70.480
^{98}Ag	-72.400
^{99}Ag	-77.180
^{100}Ag	-77.810
^{101}Ag	-81.160
^{102}Ag	-81.580
^{103}Ag	-84.150
^{104}Ag	-84.250
^{105}Ag	-86.480
^{106}Ag	-86.110
^{107}Ag	-87.890
^{108}Ag	-87.180
^{109}Ag	-88.430
^{110}Ag	-87.400
^{111}Ag	-88.190
^{112}Ag	-86.880
^{113}Ag	-87.140
^{114}Ag	-85.300
^{115}Ag	-85.110
^{116}Ag	-83.030
^{117}Ag	-82.300
^{118}Ag	-79.830
^{119}Ag	-78.880
^{120}Ag	-75.790

Isotope	Mass Excess	
^{121}Ag	-74.530	
^{122}Ag	-71.550	
^{123}Ag	-70.020	
^{124}Ag	-66.730	
^{125}Ag	-64.900	
^{126}Ag	-61.740	
^{127}Ag	-59.440	
^{128}Ag	-56.310	
^{129}Ag	-53.390	
^{130}Ag	-47.600	
^{131}Ag	-42.130	
^{132}Ag	-35.670	
^{133}Ag	-29.680	
^{134}Ag	-22.890	
^{93}Cd	-31.260	‡
^{94}Cd	-41.000	
^{95}Cd	-47.120	
^{96}Cd	-56.010	
^{97}Cd	-59.870	
^{98}Cd	-67.000	
^{99}Cd	-69.480	
^{100}Cd	-74.690	
^{101}Cd	-75.950	
^{102}Cd	-79.030	
^{103}Cd	-79.780	
^{104}Cd	-83.410	
^{105}Cd	-83.350	
^{106}Cd	-86.330	
^{107}Cd	-85.980	
^{108}Cd	-88.500	
^{109}Cd	-87.760	
^{110}Cd	-89.790	
^{111}Cd	-88.720	
^{112}Cd	-90.250	
^{113}Cd	-88.690	
^{114}Cd	-89.770	
^{115}Cd	-88.130	
^{116}Cd	-88.630	
^{117}Cd	-86.440	
^{118}Cd	-86.510	
^{119}Cd	-83.960	
^{120}Cd	-84.060	
^{121}Cd	-81.280	
^{122}Cd	-80.980	
^{123}Cd	-77.990	
^{124}Cd	-77.060	
^{125}Cd	-74.000	
^{126}Cd	-72.590	
^{127}Cd	-69.470	
^{128}Cd	-67.740	
^{129}Cd	-64.650	
^{130}Cd	-62.360	
^{131}Cd	-56.570	
^{132}Cd	-51.750	
^{133}Cd	-45.270	
^{134}Cd	-39.850	
^{135}Cd	-33.010	
^{136}Cd	-27.440	
^{95}In	-31.800	†
^{96}In	-37.940	†
^{97}In	-47.760	†
^{98}In	-52.920	
^{99}In	-60.540	
^{100}In	-63.560	
^{101}In	-69.070	
^{102}In	-70.250	
^{103}In	-74.040	
^{104}In	-75.580	
^{105}In	-79.030	
^{106}In	-79.830	
^{107}In	-82.880	
^{108}In	-83.180	
^{109}In	-85.760	
^{110}In	-85.700	

Isotope	Mass Excess	
^{111}In	-87.880	
^{112}In	-87.480	
^{113}In	-89.200	
^{114}In	-88.380	
^{115}In	-89.660	
^{116}In	-88.410	
^{117}In	-89.260	
^{118}In	-87.730	
^{119}In	-88.110	
^{120}In	-86.320	
^{121}In	-86.240	
^{122}In	-84.150	
^{123}In	-83.710	
^{124}In	-81.410	
^{125}In	-80.800	
^{126}In	-78.180	
^{127}In	-77.210	
^{128}In	-74.640	
^{129}In	-73.170	
^{130}In	-70.420	
^{131}In	-68.240	
^{132}In	-63.010	
^{133}In	-58.380	
^{134}In	-52.510	
^{135}In	-47.210	
^{136}In	-40.940	
^{137}In	-35.460	
^{138}In	-28.910	
^{97}Sn	-31.450	‡
^{98}Sn	-41.060	‡
^{99}Sn	-46.820	
^{100}Sn	-55.270	
^{101}Sn	-58.750	
^{102}Sn	-64.770	
^{103}Sn	-66.970	
^{104}Sn	-71.620	
^{105}Sn	-73.090	
^{106}Sn	-77.180	
^{107}Sn	-77.930	
^{108}Sn	-81.570	
^{109}Sn	-81.550	
^{110}Sn	-85.130	
^{111}Sn	-85.170	
^{112}Sn	-88.190	
^{113}Sn	-87.790	
^{114}Sn	-90.380	
^{115}Sn	-89.340	
^{116}Sn	-91.510	
^{117}Sn	-90.410	
^{118}Sn	-91.900	
^{119}Sn	-90.360	
^{120}Sn	-91.470	
^{121}Sn	-89.660	
^{122}Sn	-90.300	
^{123}Sn	-88.290	
^{124}Sn	-88.540	
^{125}Sn	-86.370	
^{126}Sn	-86.300	
^{127}Sn	-83.940	
^{128}Sn	-83.400	
^{129}Sn	-80.870	
^{130}Sn	-79.980	
^{131}Sn	-77.180	
^{132}Sn	-75.760	
^{133}Sn	-70.530	
^{134}Sn	-66.530	
^{135}Sn	-60.580	
^{136}Sn	-55.940	
^{137}Sn	-49.690	
^{138}Sn	-44.740	
^{139}Sn	-38.130	
^{140}Sn	-33.130	
^{141}Sn	-26.360	
^{142}Sn	-21.060	

Isotope	Mass Excess	
^{99}Sb	-29.470	†
^{100}Sb	-35.730	†
^{101}Sb	-44.740	†
^{102}Sb	-48.810	†
^{103}Sb	-55.400	†
^{104}Sb	-57.880	†
^{105}Sb	-62.770	†
^{106}Sb	-65.110	†
^{107}Sb	-69.490	†
^{108}Sb	-71.170	
^{109}Sb	-75.100	
^{110}Sb	-76.310	
^{111}Sb	-79.810	
^{112}Sb	-80.600	
^{113}Sb	-83.610	
^{114}Sb	-83.870	
^{115}Sb	-86.420	
^{116}Sb	-86.240	
^{117}Sb	-88.340	
^{118}Sb	-87.840	
^{119}Sb	-89.520	
^{120}Sb	-88.670	
^{121}Sb	-89.890	
^{122}Sb	-88.720	
^{123}Sb	-89.560	
^{124}Sb	-88.140	
^{125}Sb	-88.540	
^{126}Sb	-86.830	
^{127}Sb	-86.930	
^{128}Sb	-85.100	
^{129}Sb	-85.050	
^{130}Sb	-83.170	
^{131}Sb	-82.230	
^{132}Sb	-79.680	
^{133}Sb	-78.480	
^{134}Sb	-73.710	
^{135}Sb	-70.060	
^{136}Sb	-64.850	
^{137}Sb	-60.230	
^{138}Sb	-54.370	
^{139}Sb	-49.680	
^{140}Sb	-43.870	
^{141}Sb	-39.010	
^{142}Sb	-32.970	
^{143}Sb	-27.990	
^{144}Sb	-21.880	
^{145}Sb	-16.670	
^{101}Te	-27.290	†
^{102}Te	-36.810	†
^{103}Te	-41.580	‡
^{104}Te	-49.470	‡
^{105}Te	-51.140	‡
^{106}Te	-57.030	‡
^{107}Te	-59.260	
^{108}Te	-64.430	
^{109}Te	-66.370	
^{110}Te	-70.990	
^{111}Te	-72.350	
^{112}Te	-76.510	
^{113}Te	-77.430	
^{114}Te	-81.100	
^{115}Te	-81.580	
^{116}Te	-84.820	
^{117}Te	-84.950	
^{118}Te	-87.710	
^{119}Te	-87.170	
^{120}Te	-89.490	
^{121}Te	-88.750	
^{122}Te	-90.600	
^{123}Te	-89.580	
^{124}Te	-91.070	
^{125}Te	-89.600	
^{126}Te	-90.810	
^{127}Te	-89.100	
^{128}Te	-90.010	

Isotope	Mass Excess	
^{129}Te	-88.190	
^{130}Te	-88.430	
^{131}Te	-86.350	
^{132}Te	-86.200	
^{133}Te	-83.810	
^{134}Te	-83.000	
^{135}Te	-78.440	
^{136}Te	-75.200	
^{137}Te	-69.950	
^{138}Te	-65.990	
^{139}Te	-59.920	
^{140}Te	-55.900	
^{141}Te	-49.840	
^{142}Te	-45.780	
^{143}Te	-40.100	
^{144}Te	-35.700	
^{145}Te	-29.960	
^{146}Te	-25.300	
^{102}I	-14.450	†
^{103}I	-24.850	†
^{104}I	-29.670	†
^{105}I	-37.050	†
^{106}I	-41.070	†
^{107}I	-47.460	†
^{108}I	-50.730	†
^{109}I	-56.090	†
^{110}I	-58.750	†
^{111}I	-63.700	
^{112}I	-65.990	
^{113}I	-70.290	
^{114}I	-72.070	
^{115}I	-75.790	
^{116}I	-77.040	
^{117}I	-80.260	
^{118}I	-81.020	
^{119}I	-83.760	
^{120}I	-84.170	
^{121}I	-86.250	
^{122}I	-86.210	
^{123}I	-88.070	
^{124}I	-87.610	
^{125}I	-88.960	
^{126}I	-88.100	
^{127}I	-89.400	
^{128}I	-88.400	
^{129}I	-89.090	
^{130}I	-87.800	
^{131}I	-88.160	
^{132}I	-86.760	
^{133}I	-86.860	
^{134}I	-84.880	
^{135}I	-84.280	
^{136}I	-80.240	
^{137}I	-77.310	
^{138}I	-71.970	
^{139}I	-68.240	
^{140}I	-63.650	
^{141}I	-59.730	
^{142}I	-54.560	
^{143}I	-50.600	
^{144}I	-45.410	
^{145}I	-41.270	
^{146}I	-36.090	
^{147}I	-31.580	
^{104}Xe	-15.100	†
^{105}Xe	-20.120	†
^{106}Xe	-28.470	†
^{107}Xe	-33.060	†
^{108}Xe	-40.560	‡
^{109}Xe	-44.010	‡
^{110}Xe	-50.120	
^{111}Xe	-53.060	
^{112}Xe	-58.730	
^{113}Xe	-61.270	

Isotope	Mass Excess	
^{114}Xe	-66.330	
^{115}Xe	-68.370	
^{116}Xe	-72.610	
^{117}Xe	-74.040	
^{118}Xe	-77.810	
^{119}Xe	-78.740	
^{120}Xe	-81.950	
^{121}Xe	-82.480	
^{122}Xe	-85.170	
^{123}Xe	-85.240	
^{124}Xe	-87.430	
^{125}Xe	-86.960	
^{126}Xe	-88.790	
^{127}Xe	-88.020	
^{128}Xe	-89.630	
^{129}Xe	-88.620	
^{130}Xe	-90.220	
^{131}Xe	-88.940	
^{132}Xe	-89.970	
^{133}Xe	-88.490	
^{134}Xe	-89.190	
^{135}Xe	-87.080	
^{136}Xe	-87.160	
^{137}Xe	-83.240	
^{138}Xe	-80.740	
^{139}Xe	-75.970	
^{140}Xe	-72.470	
^{141}Xe	-68.120	
^{142}Xe	-64.860	
^{143}Xe	-59.920	
^{144}Xe	-56.560	
^{145}Xe	-51.650	
^{146}Xe	-48.120	
^{147}Xe	-43.100	
^{148}Xe	-39.130	
^{149}Xe	-33.850	
^{106}Cs	-7.730	†
^{107}Cs	-16.100	†
^{108}Cs	-21.710	†
^{109}Cs	-29.420	†
^{110}Cs	-34.120	†
^{111}Cs	-40.770	†
^{112}Cs	-44.620	†
^{113}Cs	-50.470	†
^{114}Cs	-53.880	†
^{115}Cs	-59.100	
^{116}Cs	-61.650	
^{117}Cs	-66.220	
^{118}Cs	-68.290	
^{119}Cs	-72.110	
^{120}Cs	-73.690	
^{121}Cs	-77.030	
^{122}Cs	-78.160	
^{123}Cs	-80.910	
^{124}Cs	-81.610	
^{125}Cs	-83.830	
^{126}Cs	-83.950	
^{127}Cs	-85.760	
^{128}Cs	-85.490	
^{129}Cs	-87.080	
^{130}Cs	-86.660	
^{131}Cs	-87.930	
^{132}Cs	-87.360	
^{133}Cs	-88.270	
^{134}Cs	-87.430	
^{135}Cs	-88.360	
^{136}Cs	-86.720	
^{137}Cs	-87.140	
^{138}Cs	-83.600	
^{139}Cs	-81.440	
^{140}Cs	-76.920	
^{141}Cs	-74.210	
^{142}Cs	-70.330	
^{143}Cs	-67.260	
^{144}Cs	-63.050	

Isotope	Mass Excess	
^{145}Cs	-59.860	
^{146}Cs	-55.700	
^{147}Cs	-52.350	
^{148}Cs	-47.970	
^{149}Cs	-44.190	
^{150}Cs	-39.490	
^{151}Cs	-35.330	
^{108}Ba	-6.520	†
^{109}Ba	-12.390	†
^{110}Ba	-20.800	†
^{111}Ba	-26.020	†
^{112}Ba	-33.810	‡
^{113}Ba	-37.860	‡
^{114}Ba	-44.570	
^{115}Ba	-47.970	
^{116}Ba	-53.990	
^{117}Ba	-56.710	
^{118}Ba	-62.010	
^{119}Ba	-64.160	
^{120}Ba	-68.650	
^{121}Ba	-70.290	
^{122}Ba	-74.300	
^{123}Ba	-75.470	
^{124}Ba	-78.880	
^{125}Ba	-79.590	
^{126}Ba	-82.370	
^{127}Ba	-82.670	
^{128}Ba	-84.870	
^{129}Ba	-84.640	
^{130}Ba	-86.710	
^{131}Ba	-86.380	
^{132}Ba	-88.170	
^{133}Ba	-87.630	
^{134}Ba	-89.290	
^{135}Ba	-88.480	
^{136}Ba	-89.940	
^{137}Ba	-88.240	
^{138}Ba	-89.180	
^{139}Ba	-85.740	
^{140}Ba	-84.180	
^{141}Ba	-79.660	
^{142}Ba	-77.430	
^{143}Ba	-73.650	
^{144}Ba	-71.210	
^{145}Ba	-67.160	
^{146}Ba	-64.650	
^{147}Ba	-60.580	
^{148}Ba	-57.870	
^{149}Ba	-53.620	
^{150}Ba	-50.390	
^{151}Ba	-45.830	
^{152}Ba	-42.240	
^{153}Ba	-37.270	
^{112}La	-14.980	†
^{113}La	-22.970	†
^{114}La	-28.150	†
^{115}La	-35.380	†
^{116}La	-39.500	†
^{117}La	-45.690	†
^{118}La	-49.060	†
^{119}La	-54.530	†
^{120}La	-57.370	
^{121}La	-61.840	
^{122}La	-64.130	
^{123}La	-68.240	
^{124}La	-70.060	
^{125}La	-73.550	
^{126}La	-74.880	
^{127}La	-77.750	
^{128}La	-78.590	
^{129}La	-80.840	
^{130}La	-81.170	
^{131}La	-83.130	
^{132}La	-83.230	

Isotope	Mass Excess	
^{133}La	-85.090	
^{134}La	-85.110	
^{135}La	-86.830	
^{136}La	-86.660	
^{137}La	-87.980	
^{138}La	-86.890	
^{139}La	-87.970	
^{140}La	-85.040	
^{141}La	-83.670	
^{142}La	-79.660	
^{143}La	-77.990	
^{144}La	-74.710	
^{145}La	-72.530	
^{146}La	-69.160	
^{147}La	-66.880	
^{148}La	-63.580	
^{149}La	-61.080	
^{150}La	-57.390	
^{151}La	-54.380	
^{152}La	-50.320	
^{153}La	-46.820	
^{154}La	-42.420	
^{155}La	-38.610	
^{114}Ce	-14.540	†
^{115}Ce	-20.110	†
^{116}Ce	-28.300	‡
^{117}Ce	-32.690	‡
^{118}Ce	-39.570	
^{119}Ce	-43.120	
^{120}Ce	-49.240	
^{121}Ce	-52.230	
^{122}Ce	-57.500	
^{123}Ce	-59.880	
^{124}Ce	-64.500	
^{125}Ce	-66.340	
^{126}Ce	-70.450	
^{127}Ce	-71.900	
^{128}Ce	-75.350	
^{129}Ce	-76.170	
^{130}Ce	-79.120	
^{131}Ce	-79.440	
^{132}Ce	-81.940	
^{133}Ce	-82.070	
^{134}Ce	-84.430	
^{135}Ce	-84.400	
^{136}Ce	-86.680	
^{137}Ce	-86.730	
^{138}Ce	-88.580	
^{139}Ce	-87.500	
^{140}Ce	-89.120	
^{141}Ce	-86.330	
^{142}Ce	-85.510	
^{143}Ce	-81.550	
^{144}Ce	-80.350	
^{145}Ce	-77.090	
^{146}Ce	-75.540	
^{147}Ce	-72.310	
^{148}Ce	-70.670	
^{149}Ce	-67.470	
^{150}Ce	-65.550	
^{151}Ce	-61.970	
^{152}Ce	-59.520	
^{153}Ce	-55.550	
^{154}Ce	-52.620	
^{155}Ce	-48.290	
^{156}Ce	-45.060	
^{157}Ce	-40.430	
^{116}Pr	-9.120	†
^{117}Pr	-17.440	†
^{118}Pr	-22.790	†
^{119}Pr	-30.020	†
^{120}Pr	-34.300	†
^{121}Pr	-40.600	†
^{122}Pr	-44.330	†

Isotope	Mass Excess	
^{123}Pr	-49.690	†
^{124}Pr	-52.710	
^{125}Pr	-57.470	
^{126}Pr	-59.960	
^{127}Pr	-64.130	
^{128}Pr	-66.190	
^{129}Pr	-69.700	
^{130}Pr	-71.090	
^{131}Pr	-74.090	
^{132}Pr	-75.090	
^{133}Pr	-77.480	
^{134}Pr	-78.090	
^{135}Pr	-80.370	
^{136}Pr	-80.840	
^{137}Pr	-83.050	
^{138}Pr	-83.640	
^{139}Pr	-85.550	
^{140}Pr	-85.050	
^{141}Pr	-86.800	
^{142}Pr	-84.540	
^{143}Pr	-83.950	
^{144}Pr	-80.490	
^{145}Pr	-79.590	
^{146}Pr	-77.100	
^{147}Pr	-75.810	
^{148}Pr	-73.240	
^{149}Pr	-71.870	
^{150}Pr	-69.280	
^{151}Pr	-67.460	
^{152}Pr	-64.420	
^{153}Pr	-62.110	
^{154}Pr	-58.720	
^{155}Pr	-55.870	
^{156}Pr	-52.100	
^{157}Pr	-48.970	
^{158}Pr	-44.890	
^{159}Pr	-41.350	
^{160}Pr	-37.030	
^{119}Nd	-14.600	†
^{120}Nd	-22.850	‡
^{121}Nd	-27.290	‡
^{122}Nd	-34.200	‡
^{123}Nd	-37.970	
^{124}Nd	-44.010	
^{125}Nd	-47.140	
^{126}Nd	-52.530	
^{127}Nd	-55.070	
^{128}Nd	-59.930	
^{129}Nd	-62.010	
^{130}Nd	-66.140	
^{131}Nd	-67.520	
^{132}Nd	-71.120	
^{133}Nd	-72.240	
^{134}Nd	-75.210	
^{135}Nd	-75.790	
^{136}Nd	-78.680	
^{137}Nd	-79.180	
^{138}Nd	-82.010	
^{139}Nd	-82.170	
^{140}Nd	-85.180	
^{141}Nd	-84.770	
^{142}Nd	-86.980	
^{143}Nd	-84.840	
^{144}Nd	-84.780	
^{145}Nd	-81.350	
^{146}Nd	-80.940	
^{147}Nd	-78.440	
^{148}Nd	-77.780	
^{149}Nd	-75.270	
^{150}Nd	-74.480	
^{151}Nd	-71.920	
^{152}Nd	-70.680	
^{153}Nd	-67.730	
^{154}Nd	-66.010	
^{155}Nd	-62.680	

Isotope	Mass Excess	
^{156}Nd	-60.470	
^{157}Nd	-56.740	
^{158}Nd	-54.190	
^{159}Nd	-50.120	
^{160}Nd	-47.170	
^{161}Nd	-42.860	
^{162}Nd	-39.480	
^{127}Pm	-44.460	†
^{128}Pm	-47.530	†
^{129}Pm	-52.570	†
^{130}Pm	-55.230	
^{131}Pm	-59.470	
^{132}Pm	-61.500	
^{133}Pm	-65.090	
^{134}Pm	-66.500	
^{135}Pm	-69.600	
^{136}Pm	-70.800	
^{137}Pm	-73.590	
^{138}Pm	-74.570	
^{139}Pm	-77.330	
^{140}Pm	-78.010	
^{141}Pm	-81.330	
^{142}Pm	-81.720	
^{143}Pm	-83.610	
^{144}Pm	-82.140	
^{145}Pm	-82.200	
^{146}Pm	-79.490	
^{147}Pm	-79.100	
^{148}Pm	-77.350	
^{149}Pm	-76.860	
^{150}Pm	-74.960	
^{151}Pm	-74.420	
^{152}Pm	-72.390	
^{153}Pm	-71.290	
^{154}Pm	-68.810	
^{155}Pm	-67.300	
^{156}Pm	-64.530	
^{157}Pm	-62.440	
^{158}Pm	-59.270	
^{159}Pm	-56.860	
^{160}Pm	-53.290	
^{161}Pm	-50.490	
^{162}Pm	-46.660	
^{163}Pm	-43.420	
^{164}Pm	-39.320	
^{131}Sm	-49.820	
^{132}Sm	-54.710	
^{133}Sm	-56.690	
^{134}Sm	-61.030	
^{135}Sm	-62.590	
^{136}Sm	-66.330	
^{137}Sm	-67.450	
^{138}Sm	-70.890	
^{139}Sm	-71.990	
^{140}Sm	-75.470	
^{141}Sm	-76.060	
^{142}Sm	-79.910	
^{143}Sm	-80.230	
^{144}Sm	-82.820	
^{145}Sm	-81.420	
^{146}Sm	-82.040	
^{147}Sm	-79.400	
^{148}Sm	-79.390	
^{149}Sm	-77.590	
^{150}Sm	-77.610	
^{151}Sm	-75.730	
^{152}Sm	-75.750	
^{153}Sm	-73.760	
^{154}Sm	-73.240	
^{155}Sm	-70.740	
^{156}Sm	-69.790	
^{157}Sm	-67.020	
^{158}Sm	-65.540	
^{159}Sm	-62.380	

Isotope	Mass Excess	
^{160}Sm	-60.550	
^{161}Sm	-57.060	
^{162}Sm	-54.810	
^{163}Sm	-51.060	
^{164}Sm	-48.340	
^{165}Sm	-44.280	
^{166}Sm	-41.140	
^{133}Eu	-46.900	†
^{134}Eu	-49.530	
^{135}Eu	-53.940	
^{136}Eu	-56.090	
^{137}Eu	-59.920	
^{138}Eu	-61.420	
^{139}Eu	-64.840	
^{140}Eu	-66.400	
^{141}Eu	-69.830	
^{142}Eu	-70.960	
^{143}Eu	-74.130	
^{144}Eu	-75.730	
^{145}Eu	-78.440	
^{146}Eu	-77.560	
^{147}Eu	-78.360	
^{148}Eu	-76.200	
^{149}Eu	-76.500	
^{150}Eu	-75.310	
^{151}Eu	-75.530	
^{152}Eu	-74.220	
^{153}Eu	-74.370	
^{154}Eu	-72.950	
^{155}Eu	-72.510	
^{156}Eu	-70.540	
^{157}Eu	-69.720	
^{158}Eu	-67.480	
^{159}Eu	-66.160	
^{160}Eu	-63.520	
^{161}Eu	-61.820	
^{162}Eu	-58.940	
^{163}Eu	-56.780	
^{164}Eu	-53.600	
^{165}Eu	-50.980	
^{166}Eu	-47.460	
^{167}Eu	-44.410	
^{168}Eu	-40.460	
^{169}Eu	-37.030	
^{170}Eu	-32.790	
^{135}Gd	-43.700	
^{136}Gd	-48.720	
^{137}Gd	-50.910	
^{138}Gd	-55.340	
^{139}Gd	-57.020	
^{140}Gd	-61.080	
^{141}Gd	-62.790	
^{142}Gd	-67.090	
^{143}Gd	-68.070	
^{144}Gd	-71.440	
^{145}Gd	-73.470	
^{146}Gd	-76.790	
^{147}Gd	-75.900	
^{148}Gd	-77.280	
^{149}Gd	-75.210	
^{150}Gd	-75.840	
^{151}Gd	-74.560	
^{152}Gd	-75.220	
^{153}Gd	-73.890	
^{154}Gd	-74.510	
^{155}Gd	-73.080	
^{156}Gd	-73.140	
^{157}Gd	-71.320	
^{158}Gd	-70.930	
^{159}Gd	-68.770	
^{160}Gd	-67.970	
^{161}Gd	-65.390	
^{162}Gd	-64.290	
^{163}Gd	-61.410	

Isotope	Mass Excess	
^{164}Gd	-59.860	
^{165}Gd	-56.720	
^{166}Gd	-54.700	
^{167}Gd	-51.220	
^{168}Gd	-48.730	
^{169}Gd	-44.840	
^{170}Gd	-42.030	
^{171}Gd	-37.850	
^{172}Gd	-34.620	
^{173}Gd	-30.080	
^{137}Tb	-40.520	†
^{138}Tb	-43.260	†
^{139}Tb	-47.740	†
^{140}Tb	-49.930	
^{141}Tb	-54.040	
^{142}Tb	-56.100	
^{143}Tb	-60.490	
^{144}Tb	-62.010	
^{145}Tb	-65.620	
^{146}Tb	-67.870	
^{147}Tb	-71.400	
^{148}Tb	-70.950	
^{149}Tb	-72.510	
^{150}Tb	-70.950	
^{151}Tb	-71.870	
^{152}Tb	-71.150	
^{153}Tb	-72.030	
^{154}Tb	-71.260	
^{155}Tb	-72.010	
^{156}Tb	-71.040	
^{157}Tb	-71.230	
^{158}Tb	-69.930	
^{159}Tb	-69.630	
^{160}Tb	-67.980	
^{161}Tb	-67.310	
^{162}Tb	-65.310	
^{163}Tb	-64.300	
^{164}Tb	-62.050	
^{165}Tb	-60.600	
^{166}Tb	-58.030	
^{167}Tb	-56.120	
^{168}Tb	-53.160	
^{169}Tb	-50.800	
^{170}Tb	-47.410	
^{171}Tb	-44.710	
^{172}Tb	-41.010	
^{173}Tb	-37.880	
^{174}Tb	-33.830	
^{175}Tb	-30.280	
^{176}Tb	-25.580	
^{139}Dy	-37.220	
^{140}Dy	-42.230	
^{141}Dy	-44.560	
^{142}Dy	-49.250	
^{143}Dy	-51.440	
^{144}Dy	-56.450	
^{145}Dy	-58.100	
^{146}Dy	-62.040	
^{147}Dy	-64.780	
^{148}Dy	-68.890	
^{149}Dy	-68.470	
^{150}Dy	-70.680	
^{151}Dy	-69.240	
^{152}Dy	-70.350	
^{153}Dy	-69.510	
^{154}Dy	-70.730	
^{155}Dy	-69.960	
^{156}Dy	-71.110	
^{157}Dy	-70.140	
^{158}Dy	-70.880	
^{159}Dy	-69.560	
^{160}Dy	-69.880	
^{161}Dy	-68.200	
^{162}Dy	-68.110	

Isotope	Mass Excess	
^{163}Dy	-66.110	
^{164}Dy	-65.710	
^{165}Dy	-63.490	
^{166}Dy	-62.600	
^{167}Dy	-60.080	
^{168}Dy	-58.680	
^{169}Dy	-55.850	
^{170}Dy	-54.020	
^{171}Dy	-50.720	
^{172}Dy	-48.510	
^{173}Dy	-44.960	
^{174}Dy	-42.370	
^{175}Dy	-38.350	
^{176}Dy	-35.310	
^{177}Dy	-30.680	
^{178}Dy	-27.160	
^{141}Ho	-33.830	†
^{142}Ho	-36.740	†
^{143}Ho	-41.440	†
^{144}Ho	-43.960	†
^{145}Ho	-48.860	†
^{146}Ho	-50.950	
^{147}Ho	-55.050	
^{148}Ho	-58.030	
^{149}Ho	-62.310	
^{150}Ho	-62.280	
^{151}Ho	-64.430	
^{152}Ho	-63.860	
^{153}Ho	-65.350	
^{154}Ho	-65.080	
^{155}Ho	-66.480	
^{156}Ho	-66.200	
^{157}Ho	-67.490	
^{158}Ho	-66.990	
^{159}Ho	-67.850	
^{160}Ho	-67.050	
^{161}Ho	-67.430	
^{162}Ho	-66.300	
^{163}Ho	-66.360	
^{164}Ho	-64.930	
^{165}Ho	-64.660	
^{166}Ho	-62.990	
^{167}Ho	-62.210	
^{168}Ho	-60.240	
^{169}Ho	-58.990	
^{170}Ho	-56.610	
^{171}Ho	-54.890	
^{172}Ho	-52.170	
^{173}Ho	-50.090	
^{174}Ho	-47.060	
^{175}Ho	-44.570	
^{176}Ho	-41.040	
^{177}Ho	-38.110	
^{178}Ho	-33.970	
^{179}Ho	-30.520	
^{180}Ho	-26.300	
^{143}Er	-30.140	
^{144}Er	-35.490	
^{145}Er	-38.160	
^{146}Er	-43.530	
^{147}Er	-45.780	
^{148}Er	-50.500	
^{149}Er	-53.770	
^{150}Er	-58.570	
^{151}Er	-58.700	
^{152}Er	-61.510	
^{153}Er	-60.900	
^{154}Er	-62.720	
^{155}Er	-62.490	
^{156}Er	-64.290	
^{157}Er	-63.890	
^{158}Er	-65.640	
^{159}Er	-65.100	
^{160}Er	-66.430	

Isotope	Mass Excess	
^{161}Er	-65.660	
^{162}Er	-66.680	
^{163}Er	-65.490	
^{164}Er	-66.100	
^{165}Er	-64.680	
^{166}Er	-64.950	
^{167}Er	-63.290	
^{168}Er	-63.060	
^{169}Er	-61.110	
^{170}Er	-60.400	
^{171}Er	-58.080	
^{172}Er	-56.910	
^{173}Er	-54.260	
^{174}Er	-52.720	
^{175}Er	-49.770	
^{176}Er	-47.800	
^{177}Er	-44.320	
^{178}Er	-41.830	
^{179}Er	-37.820	
^{180}Er	-34.850	
^{181}Er	-30.680	
^{182}Er	-27.650	
^{183}Er	-23.240	
^{184}Er	-19.880	
^{145}Tm	-26.520	†
^{146}Tm	-29.610	†
^{147}Tm	-35.270	†
^{148}Tm	-38.020	†
^{149}Tm	-42.720	†
^{150}Tm	-46.230	†
^{151}Tm	-51.090	†
^{152}Tm	-51.780	
^{153}Tm	-54.710	
^{154}Tm	-54.740	
^{155}Tm	-56.790	
^{156}Tm	-57.090	
^{157}Tm	-58.990	
^{158}Tm	-59.010	
^{159}Tm	-60.970	
^{160}Tm	-60.890	
^{161}Tm	-62.390	
^{162}Tm	-62.060	
^{163}Tm	-63.180	
^{164}Tm	-62.500	
^{165}Tm	-63.230	
^{166}Tm	-62.310	
^{167}Tm	-62.710	
^{168}Tm	-61.580	
^{169}Tm	-61.480	
^{170}Tm	-59.990	
^{171}Tm	-59.450	
^{172}Tm	-57.650	
^{173}Tm	-56.640	
^{174}Tm	-54.500	
^{175}Tm	-53.090	
^{176}Tm	-50.630	
^{177}Tm	-48.840	
^{178}Tm	-45.780	
^{179}Tm	-43.400	
^{180}Tm	-39.890	
^{181}Tm	-37.010	
^{182}Tm	-33.320	
^{183}Tm	-30.260	
^{184}Tm	-26.360	
^{185}Tm	-23.070	
^{186}Tm	-18.880	
^{147}Yb	-22.730	‡
^{148}Yb	-29.020	
^{149}Yb	-31.960	
^{150}Yb	-37.440	
^{151}Yb	-41.020	
^{152}Yb	-46.390	
^{153}Yb	-47.200	
^{154}Yb	-50.580	

Isotope	Mass Excess	
^{155}Yb	-50.640	
^{156}Yb	-53.240	
^{157}Yb	-53.420	
^{158}Yb	-55.820	
^{159}Yb	-55.850	
^{160}Yb	-58.060	
^{161}Yb	-57.960	
^{162}Yb	-59.950	
^{163}Yb	-59.610	
^{164}Yb	-61.270	
^{165}Yb	-60.700	
^{166}Yb	-61.840	
^{167}Yb	-60.920	
^{168}Yb	-61.830	
^{169}Yb	-60.670	
^{170}Yb	-61.080	
^{171}Yb	-59.650	
^{172}Yb	-59.650	
^{173}Yb	-57.900	
^{174}Yb	-57.410	
^{175}Yb	-55.260	
^{176}Yb	-54.450	
^{177}Yb	-52.090	
^{178}Yb	-50.710	
^{179}Yb	-47.720	
^{180}Yb	-45.780	
^{181}Yb	-42.380	
^{182}Yb	-40.000	
^{183}Yb	-36.390	
^{184}Yb	-33.810	
^{185}Yb	-30.090	
^{186}Yb	-27.200	
^{187}Yb	-23.170	
^{188}Yb	-20.120	
^{189}Yb	-16.090	
^{190}Yb	-13.150	
^{149}Lu	-19.820	†
^{150}Lu	-23.270	†
^{151}Lu	-28.640	†
^{152}Lu	-32.840	†
^{153}Lu	-38.060	†
^{154}Lu	-39.530	†
^{155}Lu	-43.080	†
^{156}Lu	-43.810	
^{157}Lu	-46.280	
^{158}Lu	-47.060	
^{159}Lu	-49.620	
^{160}Lu	-50.030	
^{161}Lu	-52.400	
^{162}Lu	-52.780	
^{163}Lu	-54.780	
^{164}Lu	-54.930	
^{165}Lu	-56.650	
^{166}Lu	-56.560	
^{167}Lu	-57.870	
^{168}Lu	-57.360	
^{169}Lu	-58.380	
^{170}Lu	-57.700	
^{171}Lu	-58.240	
^{172}Lu	-57.280	
^{173}Lu	-57.370	
^{174}Lu	-56.110	
^{175}Lu	-55.760	
^{176}Lu	-54.150	
^{177}Lu	-53.470	
^{178}Lu	-51.530	
^{179}Lu	-50.260	
^{180}Lu	-47.730	
^{181}Lu	-45.940	
^{182}Lu	-43.030	
^{183}Lu	-40.910	
^{184}Lu	-37.840	
^{185}Lu	-35.330	
^{186}Lu	-32.000	
^{187}Lu	-29.190	

Isotope	Mass Excess	
^{188}Lu	-25.640	
^{189}Lu	-22.690	
^{190}Lu	-19.100	
^{191}Lu	-16.210	
^{150}Hf	-12.670	‡
^{151}Hf	-16.220	‡
^{152}Hf	-22.260	‡
^{153}Hf	-26.540	
^{154}Hf	-32.430	
^{155}Hf	-33.830	
^{156}Hf	-37.980	
^{157}Hf	-38.560	
^{158}Hf	-41.690	
^{159}Hf	-42.350	
^{160}Hf	-45.400	
^{161}Hf	-45.880	
^{162}Hf	-48.690	
^{163}Hf	-48.930	
^{164}Hf	-51.500	
^{165}Hf	-51.560	
^{166}Hf	-53.740	
^{167}Hf	-53.640	
^{168}Hf	-55.500	
^{169}Hf	-55.190	
^{170}Hf	-56.600	
^{171}Hf	-55.900	
^{172}Hf	-56.910	
^{173}Hf	-55.920	
^{174}Hf	-56.510	
^{175}Hf	-55.220	
^{176}Hf	-55.410	
^{177}Hf	-53.810	
^{178}Hf	-53.530	
^{179}Hf	-51.610	
^{180}Hf	-50.790	
^{181}Hf	-48.290	
^{182}Hf	-47.130	
^{183}Hf	-44.260	
^{184}Hf	-42.630	
^{185}Hf	-39.590	
^{186}Hf	-37.760	
^{187}Hf	-34.410	
^{188}Hf	-32.340	
^{189}Hf	-28.810	
^{190}Hf	-26.440	
^{191}Hf	-22.940	
^{192}Hf	-20.480	
^{193}Hf	-16.660	
^{194}Hf	-13.930	
^{195}Hf	-9.850	
^{151}Ta	-2.660	†
^{152}Ta	-6.750	†
^{153}Ta	-12.830	†
^{154}Ta	-17.490	†
^{155}Ta	-23.210	†
^{156}Ta	-25.150	†
^{157}Ta	-29.310	†
^{158}Ta	-30.920	†
^{159}Ta	-33.990	†
^{160}Ta	-35.100	
^{161}Ta	-38.190	
^{162}Ta	-39.190	
^{163}Ta	-42.130	
^{164}Ta	-42.910	
^{165}Ta	-45.450	
^{166}Ta	-45.980	
^{167}Ta	-48.190	
^{168}Ta	-48.480	
^{169}Ta	-50.450	
^{170}Ta	-50.560	
^{171}Ta	-52.050	
^{172}Ta	-51.900	
^{173}Ta	-52.980	
^{174}Ta	-52.470	

Isotope	Mass Excess	
^{175}Ta	-53.150	
^{176}Ta	-52.330	
^{177}Ta	-52.580	
^{178}Ta	-51.460	
^{179}Ta	-51.360	
^{180}Ta	-49.910	
^{181}Ta	-49.190	
^{182}Ta	-47.320	
^{183}Ta	-46.230	
^{184}Ta	-43.870	
^{185}Ta	-42.370	
^{186}Ta	-39.820	
^{187}Ta	-38.050	
^{188}Ta	-35.020	
^{189}Ta	-33.120	
^{190}Ta	-30.150	
^{191}Ta	-27.990	
^{192}Ta	-24.890	
^{193}Ta	-22.500	
^{194}Ta	-19.120	
^{195}Ta	-16.460	
^{196}Ta	-12.860	
^{197}Ta	-9.690	
^{198}Ta	-6.710	
^{153}W	1.250	†
^{154}W	-5.410	†
^{155}W	-10.130	†
^{156}W	-16.560	‡
^{157}W	-18.780	‡
^{158}W	-23.450	
^{159}W	-24.780	
^{160}W	-28.390	
^{161}W	-29.420	
^{162}W	-32.980	
^{163}W	-33.960	
^{164}W	-37.310	
^{165}W	-38.130	
^{166}W	-41.170	
^{167}W	-41.700	
^{168}W	-44.360	
^{169}W	-44.630	
^{170}W	-46.990	
^{171}W	-47.130	
^{172}W	-49.150	
^{173}W	-48.980	
^{174}W	-50.470	
^{175}W	-50.060	
^{176}W	-51.150	
^{177}W	-50.290	
^{178}W	-51.020	
^{179}W	-49.990	
^{180}W	-50.360	
^{181}W	-48.940	
^{182}W	-48.800	
^{183}W	-46.830	
^{184}W	-46.320	
^{185}W	-44.060	
^{186}W	-43.000	
^{187}W	-40.510	
^{188}W	-39.190	
^{189}W	-36.490	
^{190}W	-35.220	
^{191}W	-32.220	
^{192}W	-30.650	
^{193}W	-27.690	
^{194}W	-25.840	
^{195}W	-22.580	
^{196}W	-20.500	
^{197}W	-16.870	
^{198}W	-14.250	
^{199}W	-11.300	
^{200}W	-8.220	
^{201}W	-2.630	
^{155}Re	4.770	†

Isotope	Mass Excess	
^{156}Re	-0.410	†
^{157}Re	-6.470	†
^{158}Re	-9.190	†
^{159}Re	-14.130	†
^{160}Re	-16.190	†
^{161}Re	-19.710	†
^{162}Re	-21.410	†
^{163}Re	-24.960	†
^{164}Re	-26.400	†
^{165}Re	-29.740	†
^{166}Re	-30.980	
^{167}Re	-33.970	
^{168}Re	-34.950	
^{169}Re	-37.740	
^{170}Re	-38.460	
^{171}Re	-40.960	
^{172}Re	-41.430	
^{173}Re	-43.480	
^{174}Re	-43.690	
^{175}Re	-45.380	
^{176}Re	-45.340	
^{177}Re	-46.550	
^{178}Re	-46.240	
^{179}Re	-47.080	
^{180}Re	-46.450	
^{181}Re	-46.980	
^{182}Re	-46.110	
^{183}Re	-46.030	
^{184}Re	-44.670	
^{185}Re	-44.140	
^{186}Re	-42.370	
^{187}Re	-41.460	
^{188}Re	-39.470	
^{189}Re	-38.390	
^{190}Re	-36.220	
^{191}Re	-35.000	
^{192}Re	-32.490	
^{193}Re	-31.010	
^{194}Re	-28.410	
^{195}Re	-26.940	
^{196}Re	-24.150	
^{197}Re	-22.040	
^{198}Re	-18.880	
^{199}Re	-16.260	
^{200}Re	-13.680	
^{201}Re	-10.600	
^{202}Re	-5.450	
^{203}Re	-1.260	
^{204}Re	4.240	
^{157}Os	7.780	†
^{158}Os	0.930	†
^{159}Os	-1.810	†
^{160}Os	-7.560	‡
^{161}Os	-9.500	‡
^{162}Os	-13.530	‡
^{163}Os	-14.920	
^{164}Os	-18.920	
^{165}Os	-20.240	
^{166}Os	-24.050	
^{167}Os	-25.190	
^{168}Os	-28.740	
^{169}Os	-29.710	
^{170}Os	-32.900	
^{171}Os	-33.630	
^{172}Os	-36.540	
^{173}Os	-37.040	
^{174}Os	-39.670	
^{175}Os	-39.850	
^{176}Os	-41.960	
^{177}Os	-41.920	
^{178}Os	-43.590	
^{179}Os	-43.260	
^{180}Os	-44.570	
^{181}Os	-43.900	
^{182}Os	-44.970	

Isotope	Mass Excess	
^{183}Os	-44.080	
^{184}Os	-44.500	
^{185}Os	-43.080	
^{186}Os	-43.120	
^{187}Os	-41.370	
^{188}Os	-41.010	
^{189}Os	-39.100	
^{190}Os	-38.510	
^{191}Os	-36.540	
^{192}Os	-35.900	
^{193}Os	-33.380	
^{194}Os	-32.520	
^{195}Os	-30.210	
^{196}Os	-29.150	
^{197}Os	-26.640	
^{198}Os	-25.030	
^{199}Os	-21.920	
^{200}Os	-19.840	
^{201}Os	-17.360	
^{202}Os	-14.740	
^{203}Os	-9.570	
^{204}Os	-5.860	
^{205}Os	-0.280	
^{206}Os	4.100	
^{160}Ir	8.150	†
^{161}Ir	2.320	†
^{162}Ir	-0.120	†
^{163}Ir	-4.320	†
^{164}Ir	-6.470	†
^{165}Ir	-10.480	†
^{166}Ir	-12.240	†
^{167}Ir	-16.030	†
^{168}Ir	-17.590	†
^{169}Ir	-21.140	†
^{170}Ir	-22.470	
^{171}Ir	-25.690	
^{172}Ir	-26.780	
^{173}Ir	-29.700	
^{174}Ir	-30.510	
^{175}Ir	-33.130	
^{176}Ir	-33.800	
^{177}Ir	-36.010	
^{178}Ir	-36.410	
^{179}Ir	-38.190	
^{180}Ir	-38.310	
^{181}Ir	-39.750	
^{182}Ir	-39.560	
^{183}Ir	-40.590	
^{184}Ir	-39.990	
^{185}Ir	-40.630	
^{186}Ir	-39.630	
^{187}Ir	-39.740	
^{188}Ir	-38.510	
^{189}Ir	-38.370	
^{190}Ir	-36.940	
^{191}Ir	-36.730	
^{192}Ir	-35.200	
^{193}Ir	-34.780	
^{194}Ir	-32.760	
^{195}Ir	-32.040	
^{196}Ir	-30.200	
^{197}Ir	-29.400	
^{198}Ir	-27.420	
^{199}Ir	-25.880	
^{200}Ir	-23.160	
^{201}Ir	-21.100	
^{202}Ir	-19.060	
^{203}Ir	-16.470	
^{204}Ir	-11.730	
^{205}Ir	-8.100	
^{206}Ir	-2.950	
^{207}Ir	1.350	
^{208}Ir	6.850	
^{209}Ir	11.270	
^{210}Ir	16.980	

Isotope	Mass Excess
^{162}Pt	10.150 †
^{163}Pt	7.930 †
^{164}Pt	2.950 ‡
^{165}Pt	0.870 †
^{166}Pt	-3.660 ‡
^{167}Pt	-5.400 ‡
^{168}Pt	-9.730
^{169}Pt	-11.110
^{170}Pt	-15.110
^{171}Pt	-16.330
^{172}Pt	-20.140
^{173}Pt	-21.180
^{174}Pt	-24.580
^{175}Pt	-25.350
^{176}Pt	-28.430
^{177}Pt	-29.270
^{178}Pt	-31.860
^{179}Pt	-32.330
^{180}Pt	-34.650
^{181}Pt	-34.640
^{182}Pt	-36.590
^{183}Pt	-36.210
^{184}Pt	-37.810
^{185}Pt	-37.230
^{186}Pt	-38.310
^{187}Pt	-37.300
^{188}Pt	-37.960
^{189}Pt	-36.680
^{190}Pt	-37.510
^{191}Pt	-36.180
^{192}Pt	-36.560
^{193}Pt	-35.060
^{194}Pt	-35.230
^{195}Pt	-33.510
^{196}Pt	-33.280
^{197}Pt	-31.220
^{198}Pt	-30.650
^{199}Pt	-28.690
^{200}Pt	-27.550
^{201}Pt	-24.870
^{202}Pt	-23.340
^{203}Pt	-21.390
^{204}Pt	-19.260
^{205}Pt	-14.520
^{206}Pt	-11.360
^{207}Pt	-6.230
^{208}Pt	-2.330
^{209}Pt	3.190
^{210}Pt	7.080
^{211}Pt	12.840
^{212}Pt	16.880
^{213}Pt	22.540
^{214}Pt	26.610
^{167}Au	6.030 †
^{168}Au	3.840 †
^{169}Au	-0.450 †
^{170}Au	-2.390 †
^{171}Au	-6.430 †
^{172}Au	-8.040 †
^{173}Au	-11.790 †
^{174}Au	-13.090 †
^{175}Au	-16.510 †
^{176}Au	-17.530 †
^{177}Au	-20.680 †
^{178}Au	-21.470 †
^{179}Au	-24.320 †
^{180}Au	-24.910 †
^{181}Au	-27.430
^{182}Au	-27.800
^{183}Au	-29.990
^{184}Au	-30.090
^{185}Au	-31.910
^{186}Au	-31.780
^{187}Au	-33.160
^{188}Au	-32.670

Isotope	Mass Excess
^{189}Au	-33.820
^{190}Au	-33.120
^{191}Au	-33.990
^{192}Au	-33.080
^{193}Au	-33.650
^{194}Au	-32.590
^{195}Au	-32.800
^{196}Au	-31.570
^{197}Au	-31.450
^{198}Au	-29.900
^{199}Au	-29.460
^{200}Au	-27.980
^{201}Au	-27.010
^{202}Au	-24.850
^{203}Au	-23.410
^{204}Au	-22.150
^{205}Au	-20.050
^{206}Au	-15.740
^{207}Au	-12.690
^{208}Au	-8.020
^{209}Au	-4.240
^{210}Au	0.850
^{211}Au	4.720
^{212}Au	9.990
^{213}Au	13.980
^{214}Au	19.260
^{215}Au	23.320
^{216}Au	28.630
^{169}Hg	12.210 †
^{170}Hg	7.380 †
^{171}Hg	5.500 †
^{172}Hg	0.940 †
^{173}Hg	-0.640 †
^{174}Hg	-4.910 ‡
^{175}Hg	-6.220 ‡
^{176}Hg	-10.150
^{177}Hg	-11.210
^{178}Hg	-14.850
^{179}Hg	-15.630
^{180}Hg	-18.980
^{181}Hg	-19.530
^{182}Hg	-22.570
^{183}Hg	-22.840
^{184}Hg	-25.590
^{185}Hg	-25.670
^{186}Hg	-28.010
^{187}Hg	-27.840
^{188}Hg	-29.830
^{189}Hg	-29.360
^{190}Hg	-31.110
^{191}Hg	-30.450
^{192}Hg	-31.850
^{193}Hg	-30.950
^{194}Hg	-32.060
^{195}Hg	-31.020
^{196}Hg	-31.750
^{197}Hg	-30.520
^{198}Hg	-30.920
^{199}Hg	-29.470
^{200}Hg	-29.570
^{201}Hg	-28.000
^{202}Hg	-27.050
^{203}Hg	-24.900
^{204}Hg	-24.300
^{205}Hg	-23.220
^{206}Hg	-21.580
^{207}Hg	-17.340
^{208}Hg	-14.670
^{209}Hg	-10.000
^{210}Hg	-6.600
^{211}Hg	-1.490
^{212}Hg	1.880
^{213}Hg	7.230
^{214}Hg	10.750
^{215}Hg	16.470

Isotope	Mass Excess
^{216}Hg	20.130
^{217}Hg	25.620
^{218}Hg	29.370
^{171}Tl	16.650 †
^{172}Tl	14.380 †
^{173}Tl	9.790 †
^{174}Tl	7.560 †
^{175}Tl	3.240 †
^{176}Tl	1.530 †
^{177}Tl	-2.430 †
^{178}Tl	-3.830 †
^{179}Tl	-7.480 †
^{180}Tl	-8.600
^{181}Tl	-12.030
^{182}Tl	-12.910
^{183}Tl	-16.070
^{184}Tl	-16.720
^{185}Tl	-19.590
^{186}Tl	-20.040
^{187}Tl	-22.570
^{188}Tl	-22.770
^{189}Tl	-24.990
^{190}Tl	-24.930
^{191}Tl	-26.890
^{192}Tl	-26.660
^{193}Tl	-27.610
^{194}Tl	-27.280
^{195}Tl	-28.250
^{196}Tl	-27.530
^{197}Tl	-28.520
^{198}Tl	-27.640
^{199}Tl	-28.640
^{200}Tl	-27.070
^{201}Tl	-27.780
^{202}Tl	-26.710
^{203}Tl	-26.330
^{204}Tl	-24.940
^{205}Tl	-24.330
^{206}Tl	-22.370
^{207}Tl	-20.800
^{208}Tl	-16.870
^{209}Tl	-14.330
^{210}Tl	-10.060
^{211}Tl	-6.730
^{212}Tl	-2.130
^{213}Tl	1.230
^{214}Tl	6.070
^{215}Tl	9.550
^{216}Tl	14.580
^{217}Tl	18.100
^{218}Tl	23.180
^{219}Tl	26.920
^{220}Tl	32.090
^{173}Pb	23.340 †
^{174}Pb	18.310 †
^{175}Pb	16.220 †
^{176}Pb	11.470 †
^{177}Pb	9.680 †
^{178}Pb	5.210 †
^{179}Pb	3.690 †
^{180}Pb	-0.460
^{181}Pb	-1.720
^{182}Pb	-5.550
^{183}Pb	-6.470
^{184}Pb	-10.060
^{185}Pb	-10.770
^{186}Pb	-14.010
^{187}Pb	-14.480
^{188}Pb	-17.390
^{189}Pb	-17.600
^{190}Pb	-20.230
^{191}Pb	-20.180
^{192}Pb	-22.540
^{193}Pb	-22.290

Isotope	Mass Excess
^{194}Pb	-24.280
^{195}Pb	-23.850
^{196}Pb	-25.500
^{197}Pb	-24.870
^{198}Pb	-26.210
^{199}Pb	-25.350
^{200}Pb	-26.390
^{201}Pb	-25.380
^{202}Pb	-26.050
^{203}Pb	-24.950
^{204}Pb	-25.250
^{205}Pb	-23.950
^{206}Pb	-23.780
^{207}Pb	-21.860
^{208}Pb	-20.760
^{209}Pb	-16.820
^{210}Pb	-14.730
^{211}Pb	-10.410
^{212}Pb	-7.530
^{213}Pb	-2.940
^{214}Pb	0.030
^{215}Pb	4.860
^{216}Pb	7.920
^{217}Pb	12.940
^{218}Pb	16.110
^{219}Pb	21.230
^{220}Pb	24.540
^{221}Pb	29.780
^{222}Pb	33.210
^{175}Bi	30.680 †
^{176}Bi	28.030 †
^{177}Bi	23.190 †
^{178}Bi	20.780 †
^{179}Bi	16.220 †
^{180}Bi	14.130 †
^{181}Bi	9.840 †
^{182}Bi	8.020 †
^{183}Bi	4.040 †
^{184}Bi	2.510 †
^{185}Bi	-1.190 †
^{186}Bi	-2.600 †
^{187}Bi	-5.770 †
^{188}Bi	-6.760 †
^{189}Bi	-9.610 †
^{190}Bi	-10.280 †
^{191}Bi	-12.830 †
^{192}Bi	-13.280
^{193}Bi	-15.480
^{194}Bi	-15.610
^{195}Bi	-17.650
^{196}Bi	-17.580
^{197}Bi	-19.450
^{198}Bi	-19.170
^{199}Bi	-20.600
^{200}Bi	-20.170
^{201}Bi	-21.280
^{202}Bi	-20.570
^{203}Bi	-21.500
^{204}Bi	-21.230
^{205}Bi	-21.370
^{206}Bi	-20.400
^{207}Bi	-20.230
^{208}Bi	-18.610
^{209}Bi	-17.480
^{210}Bi	-14.060
^{211}Bi	-12.060
^{212}Bi	-8.230
^{213}Bi	-5.430
^{214}Bi	-1.300
^{215}Bi	1.560
^{216}Bi	5.920
^{217}Bi	8.780
^{218}Bi	13.220
^{219}Bi	16.310
^{220}Bi	22.250

Isotope	Mass Excess
^{221}Bi	24.430
^{222}Bi	28.660
^{223}Bi	32.010
^{224}Bi	35.970
^{225}Bi	39.460
^{226}Bi	43.840
^{227}Bi	47.510
^{177}Po	38.530 †
^{178}Po	32.390 †
^{179}Po	29.690 †
^{180}Po	24.830 †
^{181}Po	21.380 ‡
^{182}Po	17.040 ‡
^{183}Po	14.920 ‡
^{184}Po	10.650 ‡
^{185}Po	8.840 ‡
^{186}Po	5.090 ‡
^{187}Po	3.590
^{188}Po	0.000
^{189}Po	-1.060
^{190}Po	-3.550
^{191}Po	-4.400
^{192}Po	-7.400
^{193}Po	-7.930
^{194}Po	-10.520
^{195}Po	-10.650
^{196}Po	-12.800
^{197}Po	-13.100
^{198}Po	-15.510
^{199}Po	-15.270
^{200}Po	-17.250
^{201}Po	-16.720
^{202}Po	-18.400
^{203}Po	-17.600
^{204}Po	-18.970
^{205}Po	-18.470
^{206}Po	-19.080
^{207}Po	-18.100
^{208}Po	-18.360
^{209}Po	-16.860
^{210}Po	-16.150
^{211}Po	-12.710
^{212}Po	-11.140
^{213}Po	-7.300
^{214}Po	-4.940
^{215}Po	-0.820
^{216}Po	1.620
^{217}Po	5.950
^{218}Po	8.450
^{219}Po	15.160
^{220}Po	17.220
^{221}Po	20.270
^{222}Po	23.040
^{223}Po	26.930
^{224}Po	29.770
^{225}Po	33.760
^{226}Po	36.830
^{227}Po	41.290
^{228}Po	44.510
^{229}Po	49.070
^{230}Po	52.670
^{183}At	27.930 †
^{184}At	25.220 †
^{185}At	20.830 †
^{186}At	18.490 †
^{187}At	14.580 †
^{188}At	12.680 †
^{189}At	8.980 †
^{190}At	7.250 †
^{191}At	5.000 †
^{192}At	3.690 †
^{193}At	0.660 †
^{194}At	-0.350 †
^{195}At	-2.970 †

Isotope	Mass Excess
^{196}At	-3.690
^{197}At	-6.020
^{198}At	-6.470
^{199}At	-8.480
^{200}At	-8.690
^{201}At	-10.560
^{202}At	-10.560
^{203}At	-12.250
^{204}At	-11.720
^{205}At	-13.110
^{206}At	-13.080
^{207}At	-13.930
^{208}At	-13.210
^{209}At	-13.670
^{210}At	-12.580
^{211}At	-11.870
^{212}At	-8.890
^{213}At	-7.440
^{214}At	-4.090
^{215}At	-1.820
^{216}At	2.000
^{217}At	4.280
^{218}At	8.770
^{219}At	11.200
^{220}At	14.620
^{221}At	17.150
^{222}At	20.860
^{223}At	23.350
^{224}At	26.860
^{225}At	29.640
^{226}At	33.350
^{227}At	36.340
^{228}At	40.380
^{229}At	43.580
^{230}At	47.710
^{231}At	51.280
^{232}At	55.580
^{185}Rn	33.360 †
^{186}Rn	28.560 †
^{187}Rn	26.080 †
^{188}Rn	21.810 ‡
^{189}Rn	19.810 ‡
^{190}Rn	15.800 ‡
^{191}Rn	14.160 ‡
^{192}Rn	10.650
^{193}Rn	10.370 ‡
^{194}Rn	7.090
^{195}Rn	6.090
^{196}Rn	2.970
^{197}Rn	2.240
^{198}Rn	-0.460
^{199}Rn	-0.960
^{200}Rn	-3.410
^{201}Rn	-3.640
^{202}Rn	-5.860
^{203}Rn	-5.850
^{204}Rn	-8.150
^{205}Rn	-7.480
^{206}Rn	-9.620
^{207}Rn	-9.080
^{208}Rn	-10.370
^{209}Rn	-9.600
^{210}Rn	-10.490
^{211}Rn	-9.430
^{212}Rn	-9.130
^{213}Rn	-6.170
^{214}Rn	-5.150
^{215}Rn	-1.840
^{216}Rn	0.040
^{217}Rn	3.680
^{218}Rn	5.610
^{219}Rn	9.940
^{220}Rn	11.870
^{221}Rn	15.150
^{222}Rn	17.210

Isotope	Mass Excess
^{223}Rn	20.510
^{224}Rn	22.650
^{225}Rn	26.150
^{226}Rn	28.460
^{227}Rn	32.140
^{228}Rn	34.650
^{229}Rn	38.600
^{230}Rn	41.370
^{231}Rn	45.490
^{232}Rn	48.670
^{233}Rn	52.840
^{234}Rn	56.210
^{235}Rn	60.670
^{189}Fr	31.940 †
^{190}Fr	29.460 †
^{191}Fr	25.460 †
^{192}Fr	23.390 †
^{193}Fr	19.930 †
^{194}Fr	18.330 †
^{195}Fr	16.120 †
^{196}Fr	14.620 †
^{197}Fr	11.500 †
^{198}Fr	10.330 †
^{199}Fr	7.610 †
^{200}Fr	6.680 †
^{201}Fr	4.250 †
^{202}Fr	3.580
^{203}Fr	1.450 †
^{204}Fr	0.950
^{205}Fr	-1.130
^{206}Fr	-1.490
^{207}Fr	-2.860
^{208}Fr	-2.870
^{209}Fr	-3.840
^{210}Fr	-3.300
^{211}Fr	-4.730
^{212}Fr	-4.190
^{213}Fr	-3.920
^{214}Fr	-1.400
^{215}Fr	-0.480
^{216}Fr	2.400
^{217}Fr	4.150
^{218}Fr	7.640
^{219}Fr	9.980
^{220}Fr	12.710
^{221}Fr	14.450
^{222}Fr	17.300
^{223}Fr	19.160
^{224}Fr	22.050
^{225}Fr	24.060
^{226}Fr	27.140
^{227}Fr	29.380
^{228}Fr	32.650
^{229}Fr	35.100
^{230}Fr	38.570
^{231}Fr	41.330
^{232}Fr	44.920
^{233}Fr	48.080
^{234}Fr	51.930
^{235}Fr	55.280
^{236}Fr	59.380
^{237}Fr	62.900
^{238}Fr	67.170
^{193}Ra	31.090 †
^{194}Ra	27.170 ‡
^{195}Ra	25.460 ‡
^{196}Ra	22.060 ‡
^{197}Ra	21.030 ‡
^{198}Ra	18.130 ‡
^{199}Ra	16.870 ‡
^{200}Ra	13.740
^{201}Ra	12.780
^{202}Ra	9.980
^{203}Ra	9.280

Isotope	Mass Excess
^{204}Ra	6.750
^{205}Ra	6.250
^{206}Ra	3.960
^{207}Ra	3.830
^{208}Ra	1.780
^{209}Ra	1.660
^{210}Ra	0.230
^{211}Ra	0.730
^{212}Ra	-0.840
^{213}Ra	-0.380
^{214}Ra	-0.480
^{215}Ra	2.000
^{216}Ra	2.480
^{217}Ra	5.320
^{218}Ra	6.620
^{219}Ra	10.490
^{220}Ra	11.810
^{221}Ra	14.610
^{222}Ra	15.800
^{223}Ra	18.500
^{224}Ra	19.860
^{225}Ra	22.670
^{226}Ra	24.260
^{227}Ra	27.160
^{228}Ra	28.930
^{229}Ra	32.130
^{230}Ra	34.120
^{231}Ra	37.540
^{232}Ra	39.850
^{233}Ra	43.530
^{234}Ra	46.260
^{235}Ra	50.100
^{236}Ra	53.090
^{237}Ra	57.170
^{238}Ra	60.400
^{239}Ra	64.650
^{240}Ra	68.210
^{196}Ac	35.190 †
^{197}Ac	31.720 †
^{198}Ac	30.330 †
^{199}Ac	27.190 †
^{200}Ac	25.820 †
^{201}Ac	22.690 †
^{202}Ac	21.350 †
^{203}Ac	18.470 †
^{204}Ac	17.390 †
^{205}Ac	14.850 †
^{206}Ac	13.970 †
^{207}Ac	11.730 †
^{208}Ac	11.380 †
^{209}Ac	9.310 †
^{210}Ac	8.690
^{211}Ac	7.300
^{212}Ac	7.410
^{213}Ac	5.900
^{214}Ac	5.760
^{215}Ac	5.630
^{216}Ac	7.680
^{217}Ac	8.060
^{218}Ac	10.440
^{219}Ac	11.720
^{220}Ac	15.040
^{221}Ac	16.090
^{222}Ac	18.250
^{223}Ac	19.250
^{224}Ac	21.490
^{225}Ac	22.700
^{226}Ac	25.050
^{227}Ac	26.480
^{228}Ac	28.970
^{229}Ac	30.680
^{230}Ac	33.400
^{231}Ac	35.250
^{232}Ac	38.330
^{233}Ac	40.620

Isotope	Mass Excess
^{234}Ac	43.940
^{235}Ac	46.600
^{236}Ac	50.100
^{237}Ac	53.060
^{238}Ac	56.790
^{239}Ac	59.990
^{240}Ac	63.880
^{241}Ac	67.420
^{242}Ac	71.770
^{200}Th	34.080 ‡
^{201}Th	33.060 ‡
^{202}Th	29.770 ‡
^{203}Th	28.430 ‡
^{204}Th	24.860 ‡
^{205}Th	23.830
^{206}Th	20.860
^{207}Th	20.040
^{208}Th	17.320
^{209}Th	16.840
^{210}Th	14.670
^{211}Th	13.930
^{212}Th	12.150
^{213}Th	12.260
^{214}Th	10.300
^{215}Th	10.260
^{216}Th	9.730
^{217}Th	11.750
^{218}Th	11.680
^{219}Th	14.020
^{220}Th	14.850
^{221}Th	18.100
^{222}Th	18.550
^{223}Th	20.650
^{224}Th	21.280
^{225}Th	23.430
^{226}Th	24.210
^{227}Th	26.430
^{228}Th	27.340
^{229}Th	29.740
^{230}Th	31.000
^{231}Th	33.820
^{232}Th	35.230
^{233}Th	38.310
^{234}Th	40.220
^{235}Th	43.440
^{236}Th	45.740
^{237}Th	49.210
^{238}Th	51.780
^{239}Th	55.520
^{240}Th	58.340
^{241}Th	62.220
^{242}Th	65.390
^{243}Th	69.730
^{244}Th	73.210
^{245}Th	77.890
^{246}Th	81.480
^{202}Pa	42.510 †
^{203}Pa	39.440 †
^{204}Pa	37.740 †
^{205}Pa	34.540 †
^{206}Pa	33.060 †
^{207}Pa	29.810 †
^{208}Pa	28.490 †
^{209}Pa	25.890 †
^{210}Pa	25.080 †
^{211}Pa	22.770 †
^{212}Pa	21.730 †
^{213}Pa	19.930 †
^{214}Pa	19.700 †
^{215}Pa	18.290 †
^{216}Pa	17.210
^{217}Pa	16.660
^{218}Pa	18.250
^{219}Pa	18.090

Isotope	Mass Excess
^{220}Pa	20.040
^{221}Pa	22.400 †
^{222}Pa	23.170
^{223}Pa	23.480
^{224}Pa	25.150
^{225}Pa	25.550
^{226}Pa	27.220
^{227}Pa	27.850
^{228}Pa	29.560
^{229}Pa	30.520
^{230}Pa	32.530
^{231}Pa	33.720
^{232}Pa	36.010
^{233}Pa	37.490
^{234}Pa	40.150
^{235}Pa	42.040
^{236}Pa	44.820
^{237}Pa	47.090
^{238}Pa	50.110
^{239}Pa	52.630
^{240}Pa	56.000
^{241}Pa	58.790
^{242}Pa	62.290
^{243}Pa	65.430
^{244}Pa	69.440
^{245}Pa	72.860
^{246}Pa	77.230
^{247}Pa	80.800
^{248}Pa	85.240
^{204}U	46.890 †
^{205}U	45.310 †
^{206}U	41.760 ‡
^{207}U	40.250 ‡
^{208}U	36.920 ‡
^{209}U	35.770 ‡
^{210}U	32.170 ‡
^{211}U	31.360
^{212}U	28.750
^{213}U	27.720
^{214}U	25.510
^{215}U	25.260
^{216}U	23.430
^{217}U	22.410
^{218}U	21.460
^{219}U	23.020
^{220}U	22.420
^{221}U	24.300
^{222}U	25.960
^{223}U	26.910
^{224}U	26.850
^{225}U	28.430
^{226}U	28.320
^{227}U	29.910
^{228}U	30.050
^{229}U	31.800
^{230}U	32.320
^{231}U	34.220
^{232}U	34.950
^{233}U	37.260
^{234}U	38.310
^{235}U	40.950
^{236}U	42.460
^{237}U	45.240
^{238}U	47.140
^{239}U	50.180
^{240}U	52.330
^{241}U	55.670
^{242}U	58.060
^{243}U	61.550
^{244}U	64.310
^{245}U	68.290
^{246}U	71.380
^{247}U	75.670
^{248}U	78.870
^{249}U	83.200

Isotope	Mass Excess
^{250}U	86.610
^{209}Np	46.640 †
^{210}Np	45.110 †
^{211}Np	42.040 †
^{212}Np	40.200 †
^{213}Np	37.670 †
^{214}Np	36.370 †
^{215}Np	34.130 †
^{216}Np	33.500 †
^{217}Np	31.750 †
^{218}Np	30.220 †
^{219}Np	29.340 †
^{220}Np	30.330 †
^{221}Np	29.680
^{222}Np	32.500 †
^{223}Np	31.760
^{224}Np	32.740
^{225}Np	32.450
^{226}Np	33.510
^{227}Np	33.260
^{228}Np	34.460
^{229}Np	34.470
^{230}Np	35.780
^{231}Np	36.180
^{232}Np	37.710
^{233}Np	38.430
^{234}Np	40.350
^{235}Np	41.350
^{236}Np	43.640
^{237}Np	45.050
^{238}Np	47.460
^{239}Np	49.310
^{240}Np	51.970
^{241}Np	54.070
^{242}Np	57.010
^{243}Np	59.380
^{244}Np	62.510
^{245}Np	65.200
^{246}Np	68.840
^{247}Np	71.860
^{248}Np	75.780
^{249}Np	79.040
^{250}Np	83.060
^{251}Np	86.420
^{252}Np	90.560
^{253}Np	94.040
^{213}Pu	47.280 ‡
^{214}Pu	44.300 ‡
^{215}Pu	43.030 ‡
^{216}Pu	40.350 ‡
^{217}Pu	39.710
^{218}Pu	37.530
^{219}Pu	36.060
^{220}Pu	34.690
^{221}Pu	35.780
^{222}Pu	34.650
^{223}Pu	37.540
^{224}Pu	36.740
^{225}Pu	37.290
^{226}Pu	36.580
^{227}Pu	37.640
^{228}Pu	36.960
^{229}Pu	38.190
^{230}Pu	37.740
^{231}Pu	39.100
^{232}Pu	39.030
^{233}Pu	40.530
^{234}Pu	40.840
^{235}Pu	42.760
^{236}Pu	43.350
^{237}Pu	45.490
^{238}Pu	46.490
^{239}Pu	48.970
^{240}Pu	50.320

Isotope	Mass Excess
^{241}Pu	53.050
^{242}Pu	54.730
^{243}Pu	57.670
^{244}Pu	59.590
^{245}Pu	62.670
^{246}Pu	64.980
^{247}Pu	68.590
^{248}Pu	71.250
^{249}Pu	75.090
^{250}Pu	77.960
^{251}Pu	81.950
^{252}Pu	84.920
^{253}Pu	88.960
^{254}Pu	92.120
^{255}Pu	96.380
^{256}Pu	99.690
^{222}Am	43.840 †
^{223}Am	42.710 †
^{224}Am	44.740
^{225}Am	43.400
^{226}Am	43.880
^{227}Am	42.870
^{228}Am	43.480
^{229}Am	42.740
^{230}Am	43.540
^{231}Am	43.090
^{232}Am	44.060
^{233}Am	43.850
^{234}Am	45.030
^{235}Am	45.270
^{236}Am	46.830
^{237}Am	47.280
^{238}Am	49.110
^{239}Am	50.050
^{240}Am	52.020
^{241}Am	53.400
^{242}Am	55.740
^{243}Am	57.380
^{244}Am	59.980
^{245}Am	61.870
^{246}Am	64.590
^{247}Am	66.870
^{248}Am	70.140
^{249}Am	72.710
^{250}Am	76.200
^{251}Am	79.030
^{252}Am	82.640
^{253}Am	85.580
^{254}Am	89.250
^{255}Am	92.400
^{256}Am	96.290
^{257}Am	99.580
^{258}Am	103.780
^{259}Am	107.570
^{226}Cm	49.030
^{227}Cm	49.260
^{228}Cm	47.910
^{229}Cm	48.520
^{230}Cm	47.380
^{231}Cm	48.180
^{232}Cm	47.340
^{233}Cm	48.330
^{234}Cm	47.690
^{235}Cm	48.860
^{236}Cm	48.650
^{237}Cm	50.260
^{238}Cm	50.270
^{239}Cm	52.040
^{240}Cm	52.610
^{241}Cm	54.530
^{242}Cm	55.460
^{243}Cm	57.680
^{244}Cm	58.890
^{245}Cm	61.420

Isotope	Mass Excess
^{246}Cm	62.890
^{247}Cm	65.610
^{248}Cm	67.470
^{249}Cm	70.680
^{250}Cm	72.830
^{251}Cm	76.370
^{252}Cm	78.740
^{253}Cm	82.400
^{254}Cm	84.960
^{255}Cm	88.610
^{256}Cm	91.380
^{257}Cm	95.240
^{258}Cm	98.140
^{259}Cm	102.330
^{260}Cm	105.790
^{261}Cm	110.270
^{262}Cm	113.950
^{229}Bk	55.070
^{230}Bk	55.210
^{231}Bk	54.020
^{232}Bk	54.480
^{233}Bk	53.590
^{234}Bk	54.080
^{235}Bk	53.450
^{236}Bk	54.280
^{237}Bk	53.990
^{238}Bk	55.210
^{239}Bk	55.190
^{240}Bk	56.580
^{241}Bk	56.980
^{242}Bk	58.630
^{243}Bk	59.430
^{244}Bk	61.340
^{245}Bk	62.480
^{246}Bk	64.610
^{247}Bk	65.990
^{248}Bk	68.370
^{249}Bk	70.140
^{250}Bk	73.000
^{251}Bk	75.080
^{252}Bk	78.260
^{253}Bk	80.590
^{254}Bk	83.900
^{255}Bk	86.400
^{256}Bk	89.710
^{257}Bk	92.430
^{258}Bk	95.970
^{259}Bk	98.860
^{260}Bk	102.710
^{261}Bk	106.110
^{262}Bk	110.290
^{263}Bk	113.900
^{264}Bk	118.230
^{265}Bk	121.740
^{232}Cf	59.470
^{233}Cf	59.920
^{234}Cf	58.610
^{235}Cf	59.120
^{236}Cf	58.140
^{237}Cf	58.930
^{238}Cf	58.280
^{239}Cf	59.480
^{240}Cf	59.060
^{241}Cf	60.330
^{242}Cf	60.420
^{243}Cf	62.040
^{244}Cf	62.410
^{245}Cf	64.280
^{246}Cf	65.010
^{247}Cf	67.130
^{248}Cf	68.100
^{249}Cf	70.370
^{250}Cf	71.760
^{251}Cf	74.600

Isotope	Mass Excess
^{252}Cf	76.270
^{253}Cf	79.420
^{254}Cf	81.360
^{255}Cf	84.550
^{256}Cf	86.750
^{257}Cf	90.040
^{258}Cf	92.310
^{259}Cf	95.810
^{260}Cf	98.310
^{261}Cf	102.150
^{262}Cf	105.210
^{263}Cf	109.410
^{264}Cf	112.680
^{265}Cf	117.060
^{266}Cf	120.250
^{267}Cf	124.380
^{268}Cf	127.890
^{234}Es	67.180
^{235}Es	65.720
^{236}Es	65.960
^{237}Es	64.890
^{238}Es	65.380
^{239}Es	64.600
^{240}Es	65.390
^{241}Es	64.900
^{242}Es	65.870
^{243}Es	65.890
^{244}Es	67.060
^{245}Es	67.440
^{246}Es	68.930
^{247}Es	69.580
^{248}Es	71.310
^{249}Es	72.150
^{250}Es	74.110
^{251}Es	75.410
^{252}Es	77.890
^{253}Es	79.480
^{254}Es	82.140
^{255}Es	84.110
^{256}Es	86.930
^{257}Es	89.060
^{258}Es	92.040
^{259}Es	94.280
^{260}Es	97.410
^{261}Es	99.880
^{262}Es	103.310
^{263}Es	106.370
^{264}Es	110.240
^{265}Es	113.500
^{266}Es	117.630
^{267}Es	120.770
^{268}Es	124.720
^{269}Es	128.040
^{270}Es	132.200
^{271}Es	135.710
^{236}Fm	71.740
^{237}Fm	71.900
^{238}Fm	70.430
^{239}Fm	70.920
^{240}Fm	69.760
^{241}Fm	70.530
^{242}Fm	69.680
^{243}Fm	70.620
^{244}Fm	70.180
^{245}Fm	71.390
^{246}Fm	71.350
^{247}Fm	72.810
^{248}Fm	73.000
^{249}Fm	74.690
^{250}Fm	75.170
^{251}Fm	77.080
^{252}Fm	77.970
^{253}Fm	80.320
^{254}Fm	81.580

Isotope	Mass Excess
^{255}Fm	84.170
^{256}Fm	85.690
^{257}Fm	88.530
^{258}Fm	90.250
^{259}Fm	93.110
^{260}Fm	95.030
^{261}Fm	98.130
^{262}Fm	100.210
^{263}Fm	103.580
^{264}Fm	106.290
^{265}Fm	110.190
^{266}Fm	113.100
^{267}Fm	117.150
^{268}Fm	120.090
^{269}Fm	124.070
^{270}Fm	127.030
^{271}Fm	131.170
^{272}Fm	134.350
^{273}Fm	138.740
^{274}Fm	142.310
^{238}Md	79.640 †
^{239}Md	78.130 †
^{240}Md	78.240 †
^{241}Md	77.050
^{242}Md	77.580
^{243}Md	76.530
^{244}Md	77.100
^{245}Md	76.640
^{246}Md	77.490
^{247}Md	77.280
^{248}Md	78.340
^{249}Md	78.480
^{250}Md	79.830
^{251}Md	80.130
^{252}Md	81.630
^{253}Md	82.440
^{254}Md	84.430
^{255}Md	85.610
^{256}Md	87.840
^{257}Md	89.280
^{258}Md	91.750
^{259}Md	93.410
^{260}Md	95.900
^{261}Md	97.790
^{262}Md	100.520
^{263}Md	102.560
^{264}Md	105.600
^{265}Md	108.280
^{266}Md	111.880
^{267}Md	114.760
^{268}Md	118.530
^{269}Md	121.530
^{270}Md	125.160
^{271}Md	128.150
^{272}Md	131.840
^{273}Md	135.140
^{274}Md	139.220
^{275}Md	142.760
^{276}Md	146.960
^{277}Md	150.740
^{240}No	84.490
^{241}No	84.630
^{242}No	83.060
^{243}No	83.560
^{244}No	82.150
^{245}No	82.710
^{246}No	81.860
^{247}No	82.690
^{248}No	82.060
^{249}No	83.130
^{250}No	82.860
^{251}No	84.200
^{252}No	84.120
^{253}No	85.520

Isotope	Mass Excess
^{254}No	85.930
^{255}No	87.970
^{256}No	88.680
^{257}No	90.840
^{258}No	91.970
^{259}No	94.360
^{260}No	95.540
^{261}No	98.050
^{262}No	99.460
^{263}No	102.140
^{264}No	103.780
^{265}No	106.770
^{266}No	109.100
^{267}No	112.720
^{268}No	115.180
^{269}No	118.980
^{270}No	121.570
^{271}No	125.240
^{272}No	127.900
^{273}No	131.570
^{274}No	134.510
^{275}No	138.560
^{276}No	141.770
^{277}No	145.930
^{278}No	149.420
^{279}No	153.770
^{280}No	157.610
^{243}Lr	91.260 †
^{244}Lr	91.240 †
^{245}Lr	90.020 †
^{246}Lr	90.220 †
^{247}Lr	89.180 †
^{248}Lr	89.640
^{249}Lr	88.940
^{250}Lr	89.590
^{251}Lr	89.230
^{252}Lr	90.180
^{253}Lr	90.000
^{254}Lr	91.000
^{255}Lr	91.330
^{256}Lr	92.960
^{257}Lr	93.580
^{258}Lr	95.360
^{259}Lr	96.440
^{260}Lr	98.410
^{261}Lr	99.550
^{262}Lr	101.660
^{263}Lr	103.010
^{264}Lr	105.350
^{265}Lr	106.930
^{266}Lr	109.560
^{267}Lr	111.850
^{268}Lr	115.170
^{269}Lr	117.610
^{270}Lr	121.010
^{271}Lr	123.670
^{272}Lr	127.020
^{273}Lr	129.730
^{274}Lr	133.020
^{275}Lr	135.940
^{276}Lr	139.660
^{277}Lr	142.940
^{278}Lr	146.780
^{279}Lr	150.260
^{280}Lr	154.350
^{245}Rf	98.170 ‡
^{246}Rf	96.460
^{247}Rf	96.640
^{248}Rf	95.230
^{249}Rf	95.680
^{250}Rf	94.640
^{251}Rf	95.210
^{252}Rf	94.430
^{253}Rf	95.370

Isotope	Mass Excess
^{254}Rf	94.700
^{255}Rf	95.760
^{256}Rf	95.690
^{257}Rf	97.250
^{258}Rf	97.500
^{259}Rf	99.250
^{260}Rf	99.910
^{261}Rf	101.830
^{262}Rf	102.570
^{263}Rf	104.640
^{264}Rf	105.600
^{265}Rf	107.900
^{266}Rf	109.110
^{267}Rf	111.670
^{268}Rf	113.600
^{269}Rf	116.920
^{270}Rf	119.000
^{271}Rf	122.410
^{272}Rf	124.770
^{273}Rf	128.050
^{274}Rf	130.410
^{275}Rf	133.700
^{276}Rf	136.260
^{277}Rf	139.940
^{278}Rf	142.750
^{279}Rf	146.560
^{280}Rf	149.730
^{248}Ha	104.870 †
^{249}Ha	103.380 †
^{250}Ha	103.450 †
^{251}Ha	102.230 †
^{252}Ha	102.470
^{253}Ha	101.590
^{254}Ha	102.120
^{255}Ha	101.400
^{256}Ha	102.100
^{257}Ha	101.950
^{258}Ha	103.110
^{259}Ha	103.230
^{260}Ha	104.600
^{261}Ha	105.210
^{262}Ha	106.740
^{263}Ha	107.400
^{264}Ha	109.040
^{265}Ha	109.980
^{266}Ha	111.910
^{267}Ha	113.020
^{268}Ha	115.280
^{269}Ha	117.180
^{270}Ha	120.140
^{271}Ha	122.220
^{272}Ha	125.310
^{273}Ha	127.670
^{274}Ha	130.670
^{275}Ha	133.020
^{276}Ha	135.950
^{277}Ha	138.500
^{278}Ha	141.900
^{279}Ha	144.680
^{280}Ha	148.150
^{252}Sg	108.700
^{253}Sg	108.940
^{254}Sg	107.610
^{255}Sg	108.170
^{256}Sg	107.060
^{257}Sg	107.740
^{258}Sg	107.180
^{259}Sg	108.350
^{260}Sg	108.120
^{261}Sg	109.440
^{262}Sg	109.570
^{263}Sg	111.070
^{264}Sg	111.330
^{265}Sg	112.930

Isotope	Mass Excess
^{266}Sg	113.450
^{267}Sg	115.360
^{268}Sg	116.130
^{269}Sg	118.330
^{270}Sg	119.870
^{271}Sg	122.790
^{272}Sg	124.550
^{273}Sg	127.650
^{274}Sg	129.660
^{275}Sg	132.630
^{276}Sg	134.540
^{277}Sg	137.550
^{278}Sg	139.680
^{279}Sg	142.910
^{280}Sg	145.320
^{255}Ns	115.680 †
^{256}Ns	115.830 †
^{257}Ns	114.640 †
^{258}Ns	114.960
^{259}Ns	114.330
^{260}Ns	115.100
^{261}Ns	114.770
^{262}Ns	115.710
^{263}Ns	115.740
^{264}Ns	116.860
^{265}Ns	117.090
^{266}Ns	118.300
^{267}Ns	118.760
^{268}Ns	120.330
^{269}Ns	121.020
^{270}Ns	122.880
^{271}Ns	124.350
^{272}Ns	126.930
^{273}Ns	128.630
^{274}Ns	131.330
^{275}Ns	133.390
^{276}Ns	136.050
^{277}Ns	138.010
^{278}Ns	140.660
^{279}Ns	142.790
^{280}Ns	145.650
^{257}Hs	122.810 ‡
^{258}Hs	121.240
^{259}Hs	121.540
^{260}Hs	120.560
^{261}Hs	121.300
^{262}Hs	120.540
^{263}Hs	121.470
^{264}Hs	121.090
^{265}Hs	122.160
^{266}Hs	121.980
^{267}Hs	123.160
^{268}Hs	123.230
^{269}Hs	124.780
^{270}Hs	125.140
^{271}Hs	126.910
^{272}Hs	128.000
^{273}Hs	130.600
^{274}Hs	131.930
^{275}Hs	134.600
^{276}Hs	136.220
^{277}Hs	138.840
^{278}Hs	140.560
^{279}Hs	142.990
^{280}Hs	144.650
^{281}Hs	147.500
^{282}Hs	149.570
^{283}Hs	152.680
^{284}Hs	155.080
^{285}Hs	158.240
^{286}Hs	161.170
^{287}Hs	164.590
^{288}Hs	167.770
^{289}Hs	171.760

Isotope	Mass Excess	
^{290}Hs	175.020	
^{291}Hs	179.380	
^{292}Hs	182.970	
^{293}Hs	188.340	
^{294}Hs	191.850	
^{295}Hs	197.380	
^{296}Hs	201.390	
^{297}Hs	206.160	
^{298}Hs	209.620	
^{299}Hs	214.220	
^{300}Hs	217.900	
^{301}Hs	222.660	
^{302}Hs	226.500	
^{303}Hs	231.370	
^{304}Hs	235.340	
^{259}Mt	129.810	†
^{260}Mt	129.740	†
^{261}Mt	128.650	†
^{262}Mt	129.020	†
^{263}Mt	128.240	†
^{264}Mt	128.720	
^{265}Mt	128.330	
^{266}Mt	129.040	
^{267}Mt	128.760	
^{268}Mt	129.540	
^{269}Mt	129.560	
^{270}Mt	130.700	
^{271}Mt	131.030	
^{272}Mt	132.420	
^{273}Mt	133.470	
^{274}Mt	135.710	
^{275}Mt	137.010	
^{276}Mt	139.280	
^{277}Mt	140.790	
^{278}Mt	143.170	
^{279}Mt	144.760	
^{280}Mt	146.890	
^{281}Mt	148.570	
^{282}Mt	151.100	
^{283}Mt	153.150	
^{284}Mt	155.950	
^{285}Mt	158.390	
^{286}Mt	161.260	
^{287}Mt	163.900	
^{288}Mt	167.060	
^{289}Mt	170.120	
^{290}Mt	173.790	
^{291}Mt	177.040	
^{292}Mt	181.060	
^{293}Mt	184.640	
^{294}Mt	189.700	
^{295}Mt	193.150	
^{296}Mt	198.360	
^{297}Mt	202.310	
^{298}Mt	207.650	
^{299}Mt	210.670	
^{300}Mt	214.980	
^{301}Mt	218.660	
^{302}Mt	223.110	
^{303}Mt	226.930	
^{304}Mt	231.490	
^{305}Mt	235.510	
^{260}110	137.370	†
^{261}110	137.320	†
^{262}110	135.840	‡
^{263}110	136.200	‡
^{264}110	135.030	
^{265}110	135.530	
^{266}110	134.680	
^{267}110	135.390	
^{268}110	134.730	
^{269}110	135.510	
^{270}110	135.150	
^{271}110	136.330	

Isotope	Mass Excess	
^{272}110	136.200	
^{273}110	137.570	
^{274}110	138.310	
^{275}110	140.510	
^{276}110	141.440	
^{277}110	143.500	
^{278}110	144.550	
^{279}110	146.710	
^{280}110	147.800	
^{281}110	149.950	
^{282}110	151.290	
^{283}110	153.800	
^{284}110	155.460	
^{285}110	158.200	
^{286}110	160.230	
^{287}110	163.020	
^{288}110	165.160	
^{289}110	168.420	
^{290}110	171.110	
^{291}110	174.810	
^{292}110	177.750	
^{293}110	181.780	
^{294}110	185.030	
^{295}110	190.080	
^{296}110	193.200	
^{297}110	198.410	
^{298}110	202.020	
^{299}110	207.380	
^{300}110	211.070	
^{301}110	215.020	
^{302}110	218.510	
^{303}110	222.970	
^{304}110	226.500	
^{305}110	231.100	
^{306}110	234.760	
^{261}111	146.920	†
^{262}111	146.530	†
^{263}111	144.990	†
^{264}111	144.950	†
^{265}111	143.710	†
^{266}111	143.820	†
^{267}111	142.920	†
^{268}111	143.270	†
^{269}111	142.570	†
^{270}111	143.020	†
^{271}111	142.640	†
^{272}111	143.440	
^{273}111	143.460	
^{274}111	144.410	
^{275}111	145.270	
^{276}111	146.840	
^{277}111	147.310	
^{278}111	149.220	
^{279}111	149.990	
^{280}111	151.730	
^{281}111	152.700	
^{282}111	154.480	
^{283}111	155.760	
^{284}111	157.950	
^{285}111	159.580	
^{286}111	161.980	
^{287}111	163.890	
^{288}111	166.340	
^{289}111	168.460	
^{290}111	171.510	
^{291}111	174.170	
^{292}111	177.480	
^{293}111	180.380	
^{294}111	184.110	
^{295}111	187.370	
^{296}111	192.110	
^{297}111	195.170	
^{298}111	200.060	
^{299}111	203.600	
^{300}111	208.610	

Isotope	Mass Excess	
^{301}111	212.290	
^{302}111	216.460	
^{303}111	220.130	
^{304}111	224.230	
^{305}111	227.780	
^{306}111	232.080	
^{307}111	235.720	
^{262}112	155.090	†
^{263}112	154.700	†
^{264}112	152.810	†
^{265}112	152.770	†
^{266}112	151.190	†
^{267}112	151.300	†
^{268}112	150.040	‡
^{269}112	150.390	‡
^{270}112	149.320	‡
^{271}112	149.750	
^{272}112	148.980	
^{273}112	149.760	
^{274}112	149.490	
^{275}112	150.590	
^{276}112	150.850	
^{277}112	152.140	
^{278}112	152.600	
^{279}112	154.280	
^{280}112	154.230	
^{281}112	155.900	
^{282}112	156.570	
^{283}112	158.340	
^{284}112	159.230	
^{285}112	161.420	
^{286}112	162.700	
^{287}112	165.130	
^{288}112	166.370	
^{289}112	169.270	
^{290}112	170.790	
^{291}112	173.810	
^{292}112	176.120	
^{293}112	179.420	
^{294}112	181.970	
^{295}112	185.690	
^{296}112	188.610	
^{297}112	193.360	
^{298}112	196.080	
^{299}112	200.960	
^{300}112	204.170	
^{301}112	209.190	
^{302}112	212.510	
^{303}112	216.900	
^{304}112	220.280	
^{305}112	224.630	
^{306}112	227.990	
^{307}112	232.390	
^{308}112	235.620	
^{263}113	165.710	†
^{264}113	164.990	†
^{265}113	162.980	†
^{266}113	162.590	†
^{267}113	160.870	†
^{268}113	160.620	†
^{269}113	159.380	†
^{270}113	159.350	†
^{271}113	158.230	†
^{272}113	158.310	†
^{273}113	157.540	†
^{274}113	158.130	†
^{275}113	157.590	†
^{276}113	158.210	†
^{277}113	158.390	†
^{278}113	159.700	†
^{279}113	158.760	
^{280}113	159.890	
^{281}113	160.140	
^{282}113	161.460	

Isotope	Mass Excess	
^{283}113	162.180	
^{284}113	163.610	
^{285}113	164.430	
^{286}113	166.330	
^{287}113	167.570	
^{288}113	169.610	
^{289}113	171.080	
^{290}113	173.490	
^{291}113	175.180	
^{292}113	177.970	
^{293}113	180.280	
^{294}113	183.280	
^{295}113	185.880	
^{296}113	189.260	
^{297}113	192.160	
^{298}113	196.550	
^{299}113	199.240	
^{300}113	203.790	
^{301}113	206.960	
^{302}113	211.660	
^{303}113	214.910	
^{304}113	219.710	
^{305}113	223.100	
^{306}113	226.430	
^{307}113	229.950	
^{308}113	234.060	
^{309}113	237.650	
^{264}114	174.440	†
^{265}114	173.690	†
^{266}114	171.420	†
^{267}114	171.040	†
^{268}114	169.070	†
^{269}114	168.840	†
^{270}114	167.210	†
^{271}114	167.220	†
^{272}114	165.780	†
^{273}114	165.900	†
^{274}114	164.790	‡
^{275}114	165.250	‡
^{276}114	164.490	‡
^{277}114	165.100	
^{278}114	163.700	
^{279}114	164.440	
^{280}114	163.910	
^{281}114	165.030	
^{282}114	165.110	
^{283}114	166.250	
^{284}114	166.850	
^{285}114	168.270	
^{286}114	168.830	
^{287}114	170.590	
^{288}114	171.510	
^{289}114	173.550	
^{290}114	174.650	
^{291}114	177.000	
^{292}114	178.420	
^{293}114	181.140	
^{294}114	183.040	
^{295}114	186.030	
^{296}114	188.270	
^{297}114	191.660	
^{298}114	194.240	
^{299}114	198.650	
^{300}114	200.970	
^{301}114	205.540	
^{302}114	208.340	
^{303}114	213.050	
^{304}114	215.990	
^{305}114	220.820	
^{306}114	223.860	
^{307}114	227.330	
^{308}114	230.580	
^{309}114	234.880	
^{310}114	238.110	

Isotope	Mass Excess	
^{265}115	185.760	†
^{266}115	184.600	†
^{267}115	182.290	†
^{268}115	181.480	†
^{269}115	179.460	†
^{270}115	178.870	†
^{271}115	177.160	†
^{272}115	176.780	†
^{273}115	175.180	†
^{274}115	174.930	†
^{275}115	173.670	†
^{276}115	173.780	†
^{277}115	173.310	†
^{278}115	173.070	†
^{279}115	171.400	†
^{280}115	171.850	†
^{281}115	171.610	†
^{282}115	172.350	†
^{283}115	172.200	
^{284}115	173.210	
^{285}115	173.630	
^{286}115	174.720	
^{287}115	175.120	
^{288}115	176.760	
^{289}115	177.650	
^{290}115	179.350	
^{291}115	180.300	
^{292}115	184.180	
^{293}115	183.800	
^{294}115	186.080	
^{295}115	188.060	
^{296}115	190.860	
^{297}115	193.100	
^{298}115	196.190	
^{299}115	198.760	
^{300}115	202.850	
^{301}115	205.140	
^{302}115	209.380	
^{303}115	212.140	
^{304}115	216.520	
^{305}115	219.430	
^{306}115	223.920	
^{307}115	225.900	
^{308}115	229.880	
^{309}115	232.990	
^{310}115	237.080	
^{311}115	240.430	
^{266}116	195.380	†
^{267}116	194.150	†
^{268}116	191.570	†
^{269}116	190.790	†
^{270}116	188.460	†
^{271}116	187.870	†
^{272}116	185.790	†
^{273}116	185.490	†
^{274}116	183.520	†
^{275}116	183.270	†
^{276}116	182.280	†
^{277}116	181.750	†
^{278}116	180.560	‡
^{279}116	180.720	†
^{280}116	180.570	†
^{281}116	179.630	†
^{282}116	178.840	‡
^{283}116	179.470	
^{284}116	179.040	
^{285}116	180.020	
^{286}116	180.010	
^{287}116	181.150	
^{288}116	181.320	
^{289}116	182.830	
^{290}116	183.370	
^{291}116	185.080	
^{292}116	185.300	
^{293}116	187.720	

Isotope	Mass Excess	
^{294}116	188.600	
^{295}116	190.740	
^{296}116	192.350	
^{297}116	195.150	
^{298}116	197.090	
^{299}116	200.210	
^{300}116	202.460	
^{301}116	206.550	
^{302}116	208.480	
^{303}116	212.720	
^{304}116	215.120	
^{305}116	218.820	
^{306}116	221.270	
^{307}116	225.000	
^{308}116	227.600	
^{309}116	231.450	
^{310}116	234.410	
^{311}116	238.550	
^{312}116	241.560	
^{272}117	198.690	†
^{273}117	196.450	†
^{274}117	195.820	†
^{275}117	193.790	†
^{276}117	193.820	†
^{277}117	191.810	†
^{278}117	191.440	†
^{279}117	189.790	†
^{280}117	189.540	†
^{281}117	188.180	†
^{282}117	188.200	†
^{283}117	187.340	†
^{284}117	187.630	†
^{285}117	187.150	†
^{286}117	187.730	†
^{287}117	187.750	†
^{288}117	188.560	†
^{289}117	188.730	†
^{290}117	189.930	
^{291}117	190.470	
^{292}117	191.900	
^{293}117	192.390	
^{294}117	194.180	
^{295}117	196.530	†
^{296}117	196.870	
^{297}117	198.420	
^{298}117	200.990	
^{299}117	202.890	
^{300}117	205.720	
^{301}117	207.980	
^{302}117	211.730	
^{303}117	213.630	
^{304}117	217.530	
^{305}117	219.880	
^{306}117	222.800	
^{307}117	225.210	
^{308}117	228.670	
^{309}117	231.210	
^{310}117	234.760	
^{311}117	237.540	
^{312}117	241.410	
^{313}117	244.490	
^{268}118	217.690	†
^{269}118	215.990	†
^{270}118	213.290	†
^{271}118	212.150	†
^{272}118	209.440	†
^{273}118	208.510	†
^{274}118	205.940	†
^{275}118	205.300	†
^{276}118	202.940	†
^{277}118	202.440	†
^{278}118	200.520	†
^{279}118	200.560	†
^{280}118	198.970	†

Isotope	Mass Excess	
^{281}118	197.910	†
^{282}118	196.180	†
^{283}118	196.150	†
^{284}118	195.030	†
^{285}118	195.310	†
^{286}118	194.510	†
^{287}118	195.200	†
^{288}118	194.790	‡
^{289}118	195.610	
^{290}118	195.470	
^{291}118	196.720	
^{292}118	196.970	
^{293}118	198.420	
^{294}118	198.790	
^{295}118	200.290	
^{296}118	202.160	
^{297}118	202.790	
^{298}118	204.060	
^{299}118	206.650	
^{300}118	208.260	
^{301}118	211.090	
^{302}118	212.990	
^{303}118	216.760	
^{304}118	218.330	
^{305}118	220.830	
^{306}118	222.740	
^{307}118	226.000	
^{308}118	228.070	
^{309}118	231.520	
^{310}118	233.780	
^{311}118	237.280	
^{312}118	239.750	
^{313}118	243.660	
^{314}118	246.320	
^{275}119	217.700	†
^{276}119	216.570	†
^{277}119	214.200	†
^{278}119	212.950	†
^{279}119	211.070	†
^{280}119	210.590	†
^{281}119	209.140	†
^{282}119	208.940	†
^{283}119	206.250	†
^{284}119	205.880	†
^{285}119	204.770	†
^{286}119	204.590	†
^{287}119	203.870	†
^{288}119	204.260	†
^{289}119	203.670	†
^{290}119	204.160	†
^{291}119	204.020	†
^{292}119	204.930	†
^{293}119	205.140	†
^{294}119	206.320	†
^{295}119	206.800	†
^{296}119	207.720	†
^{297}119	208.630	
^{298}119	209.920	
^{299}119	211.170	
^{300}119	213.500	
^{301}119	215.070	
^{302}119	217.600	
^{303}119	219.530	
^{304}119	221.510	
^{305}119	223.180	
^{306}119	225.940	
^{307}119	227.790	
^{308}119	230.720	
^{309}119	232.770	
^{310}119	235.850	
^{311}119	238.070	
^{312}119	241.340	
^{313}119	243.790	
^{314}119	247.390	
^{315}119	250.020	

Isotope	Mass Excess	
^{270}120	242.980	†
^{271}120	242.010	†
^{272}120	237.640	†
^{273}120	234.680	†
^{274}120	232.710	†
^{275}120	231.300	†
^{276}120	228.330	†
^{277}120	227.030	†
^{278}120	224.330	†
^{279}120	222.240	†
^{280}120	219.990	†
^{281}120	219.700	†
^{282}120	217.900	†
^{283}120	217.680	†
^{284}120	215.290	†
^{285}120	214.920	†
^{286}120	213.520	†
^{287}120	213.400	†
^{288}120	212.350	†
^{289}120	212.710	†
^{290}120	211.770	†
^{291}120	212.200	†
^{292}120	211.800	†
^{293}120	212.700	†
^{294}120	212.590	†
^{295}120	213.720	†
^{296}120	213.950	‡
^{297}120	214.990	‡
^{298}120	215.190	
^{299}120	216.700	
^{300}120	217.710	
^{301}120	219.920	
^{302}120	220.610	
^{303}120	222.760	
^{304}120	223.900	
^{305}120	226.330	
^{306}120	227.670	
^{307}120	230.390	
^{308}120	231.930	
^{309}120	234.820	
^{310}120	236.540	
^{311}120	239.590	
^{312}120	241.540	
^{313}120	244.770	
^{314}120	247.080	
^{315}120	250.530	
^{316}120	252.870	
^{280}121	233.580	†
^{281}121	231.540	†
^{282}121	230.860	†
^{283}121	228.890	†
^{284}121	228.360	†
^{285}121	226.740	†
^{286}121	226.780	†
^{287}121	223.760	†
^{288}121	223.450	†
^{289}121	222.080	†
^{290}121	221.880	†
^{291}121	220.880	†
^{292}121	221.120	†
^{293}121	220.600	†
^{294}121	221.690	†
^{295}121	221.570	†
^{296}121	222.430	†
^{297}121	222.590	†
^{298}121	223.120	†
^{299}121	223.460	†
^{300}121	225.070	†
^{301}121	225.410	†
^{302}121	226.820	
^{303}121	227.620	
^{304}121	229.450	
^{305}121	230.540	
^{306}121	232.650	
^{307}121	233.930	

Isotope	Mass Excess	
^{308}121	236.310	
^{309}121	237.810	
^{310}121	240.390	
^{311}121	242.090	
^{312}121	244.810	
^{313}121	246.740	
^{314}121	249.660	
^{315}121	251.950	
^{316}121	255.100	
^{317}121	257.420	
^{276}122	255.160	†
^{277}122	253.870	†
^{278}122	251.080	†
^{279}122	249.760	†
^{280}122	246.580	†
^{281}122	243.410	†
^{282}122	241.060	†
^{283}122	240.570	†
^{284}122	238.270	†
^{285}122	237.740	†
^{286}122	235.800	†
^{287}122	235.850	†
^{288}122	233.690	†
^{289}122	232.680	†
^{290}122	231.010	†
^{291}122	230.850	†
^{292}122	229.570	†
^{293}122	229.880	†
^{294}122	229.030	†
^{295}122	229.840	†
^{296}122	229.600	†
^{297}122	230.520	†
^{298}122	230.030	†
^{299}122	230.950	†
^{300}122	230.580	‡
^{301}122	231.620	‡
^{302}122	231.680	
^{303}122	233.080	
^{304}122	233.580	
^{305}122	235.380	
^{306}122	236.140	
^{307}122	238.240	
^{308}122	239.180	
^{309}122	241.550	
^{310}122	242.740	
^{311}122	245.260	
^{312}122	246.640	
^{313}122	249.350	
^{314}122	250.980	
^{315}122	253.890	
^{316}122	255.860	
^{317}122	259.000	
^{318}122	261.060	