P. Moller, W.D. Myers, W.J. Swiatecki, and J. Treiner Masses

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

Isotope	Mass Excess
^{16}O	-4.160
^{17}O	-0.050
^{18}O	-2.180
^{19}O	2.550
^{20}O	4.270
^{21}O	9.520
^{22}O	11.960
^{23}O	18.340
^{24}O	22.850
^{25}O	32.580 †
^{26}O	38.530
^{27}O	47.620 †
^{28}O	53.780
^{29}O	64.150 †
^{30}O	76.710 †
^{31}O	83.140 ‡
^{32}O	94.000 †
^{33}O	101.860 ‡
^{17}F	2.320
^{18}F	2.020
^{19}F	-2.250
^{20}F	-1.240
^{21}F	-0.750
^{22}F	2.940
^{23}F	4.360
^{24}F	8.860
^{25}F	12.810
^{26}F	20.170
^{27}F	26.070
^{28}F	33.670
^{29}F	39.390
^{30}F	47.980 †
^{31}F	55.850 ‡
^{32}F	66.200 †
^{33}F	74.060 ‡
^{34}F	83.260 †
^{35}F	91.500 †
^{18}Ne	4.430
^{19}Ne	-0.710
^{20}Ne	-7.120
^{21}Ne	-5.650
^{22}Ne	-8.640
^{23}Ne	-5.630
^{24}Ne	-6.130
^{25}Ne	-1.350
^{26}Ne	2.000
^{27}Ne	7.920
^{28}Ne	11.550
^{29}Ne	18.950
^{30}Ne	22.690
^{31}Ne	31.120 †
^{32}Ne	36.950
^{33}Ne	44.880
^{34}Ne	53.490 †
^{35}Ne	62.640 †
^{36}Ne	70.320 ‡
^{37}Ne	79.880 †
^{19}Na	11.860 †
^{20}Na	5.250
^{21}Na	-2.400
^{22}Na	-4.660
^{23}Na	-9.860
^{24}Na	-8.880
^{25}Na	-9.470
^{26}Na	-6.200
^{27}Na	-4.840
^{28}Na	-0.080
^{29}Na	2.720
^{30}Na	8.480

Isotope	Mass Excess
^{31}Na	12.450
^{32}Na	18.390
^{33}Na	23.730
^{34}Na	29.730
^{35}Na	36.260
^{36}Na	43.640
^{37}Na	52.060 †
^{38}Na	61.570 †
^{39}Na	68.950 ‡
^{20}Mg	18.050
^{21}Mg	9.360
^{22}Mg	-0.700
^{23}Mg	-5.230
^{24}Mg	-13.890
^{25}Mg	-13.270
^{26}Mg	-16.370
^{27}Mg	-13.490
^{28}Mg	-14.160
^{29}Mg	-9.690
^{30}Mg	-8.570
^{31}Mg	-2.870
^{32}Mg	0.030
^{33}Mg	5.950
^{34}Mg	9.740
^{35}Mg	15.700
^{36}Mg	20.290
^{37}Mg	27.200
^{38}Mg	33.370
^{39}Mg	41.740 †
^{40}Mg	47.890
^{41}Mg	57.990 †
^{21}Al	27.700 †
^{22}Al	17.780 †
^{23}Al	5.940
^{24}Al	-0.220
^{25}Al	-9.180
^{26}Al	-11.150
^{27}Al	-16.500
^{28}Al	-16.150
^{29}Al	-17.140
^{30}Al	-14.890
^{31}Al	-13.490
^{32}Al	-10.020
^{33}Al	-9.920
^{34}Al	-3.380
^{35}Al	-0.370
^{36}Al	4.050
^{37}Al	8.640
^{38}Al	13.920
^{39}Al	19.670
^{40}Al	26.620
^{41}Al	31.700
^{42}Al	40.320 †
^{43}Al	48.610 †
^{22}Si	35.070 †
^{23}Si	24.390 ‡
^{24}Si	11.030
^{25}Si	4.190
^{26}Si	-7.110
^{27}Si	-11.070
^{28}Si	-20.010
^{29}Si	-19.890
^{30}Si	-22.810
^{31}Si	-20.820
^{32}Si	-21.170
^{33}Si	-18.640
^{34}Si	-20.000
^{35}Si	-14.670
^{36}Si	-12.070
^{37}Si	-7.290

Isotope	Mass Excess
^{38}Si	-3.940
^{39}Si	1.090
^{40}Si	4.720
^{41}Si	10.320
^{42}Si	14.350
^{43}Si	22.940 †
^{44}Si	29.910
^{45}Si	38.400 †
^{46}Si	45.970
^{23}P	46.400 †
^{24}P	32.980 †
^{25}P	19.750 †
^{26}P	10.290
^{27}P	-0.010
^{28}P	-5.830
^{29}P	-15.050
^{30}P	-17.810
^{31}P	-22.930
^{32}P	-21.740
^{33}P	-23.990
^{34}P	-21.890
^{35}P	-23.560
^{36}P	-20.250
^{37}P	-19.060
^{38}P	-15.410
^{39}P	-13.240
^{40}P	-8.600
^{41}P	-5.490
^{42}P	-0.110
^{43}P	3.550
^{44}P	10.150
^{45}P	16.560
^{46}P	23.720
^{47}P	30.920
^{48}P	38.420
^{24}S	52.960 ‡
^{25}S	43.320 †
^{26}S	27.870 †
^{27}S	17.190
^{28}S	4.200
^{29}S	-2.710
^{30}S	-13.580
^{31}S	-16.960
^{32}S	-25.070
^{33}S	-25.110
^{34}S	-28.960
^{35}S	-27.090
^{36}S	-30.620
^{37}S	-26.500
^{38}S	-26.920
^{39}S	-23.570
^{40}S	-22.950
^{41}S	-18.610
^{42}S	-16.920
^{43}S	-11.970
^{44}S	-9.300
^{45}S	-3.630
^{46}S	1.680
^{47}S	8.650
^{48}S	14.670
^{49}S	22.210
^{50}S	28.340
^{26}Cl	53.920 †
^{27}Cl	38.580 †
^{28}Cl	26.310 †
^{29}Cl	13.490 †
^{30}Cl	4.410
^{31}Cl	-6.190 †
^{32}Cl	-12.620
^{33}Cl	-19.820

Isotope	Mass Excess
^{34}Cl	-22.480
^{35}Cl	-27.020
^{36}Cl	-28.040
^{37}Cl	-32.000
^{38}Cl	-30.640
^{39}Cl	-30.740
^{40}Cl	-29.070
^{41}Cl	-28.780
^{42}Cl	-25.920
^{43}Cl	-24.550
^{44}Cl	-20.690
^{45}Cl	-18.140
^{46}Cl	-13.290
^{47}Cl	-8.510
^{48}Cl	-2.640
^{49}Cl	2.910
^{50}Cl	9.310
^{51}Cl	15.010
^{52}Cl	22.370
^{27}Ar	66.590 †
^{28}Ar	48.480 †
^{29}Ar	35.460 †
^{30}Ar	20.850 †
^{31}Ar	11.270
^{32}Ar	-1.270
^{33}Ar	-8.030
^{34}Ar	-17.220
^{35}Ar	-21.360
^{36}Ar	-29.180
^{37}Ar	-30.610
^{38}Ar	-34.940
^{39}Ar	-34.970
^{40}Ar	-37.650
^{41}Ar	-35.200
^{42}Ar	-36.470
^{43}Ar	-33.810
^{44}Ar	-33.730
^{45}Ar	-29.620
^{46}Ar	-29.020
^{47}Ar	-24.550
^{48}Ar	-20.900
^{49}Ar	-14.910
^{50}Ar	-10.590
^{51}Ar	-4.180
^{52}Ar	0.460
^{53}Ar	7.070
^{54}Ar	13.020
^{30}K	46.610 †
^{31}K	32.040 †
^{32}K	20.630 †
^{33}K	7.960 †
^{34}K	-0.360 †
^{35}K	-9.820 †
^{36}K	-15.840
^{37}K	-23.000
^{38}K	-27.480
^{39}K	-34.260
^{40}K	-34.020
^{41}K	-38.240
^{42}K	-37.680
^{43}K	-39.090
^{44}K	-37.610
^{45}K	-38.030
^{46}K	-35.880
^{47}K	-35.060
^{48}K	-31.440
^{49}K	-28.570
^{50}K	-23.840
^{51}K	-19.700
^{52}K	-14.370
^{53}K	-9.710

Isotope	Mass Excess
^{54}K	-3.770
^{55}K	1.500
^{56}K	7.920
^{29}Ca	92.910 †
^{30}Ca	73.020 †
^{31}Ca	57.630 †
^{32}Ca	42.390 †
^{33}Ca	29.890 †
^{34}Ca	14.670 ‡
^{35}Ca	5.880
^{36}Ca	-5.510
^{37}Ca	-11.580
^{38}Ca	-22.400
^{39}Ca	-26.630
^{40}Ca	-34.110
^{41}Ca	-36.120
^{42}Ca	-40.730
^{43}Ca	-40.920
^{44}Ca	-43.840
^{45}Ca	-42.940
^{46}Ca	-44.700
^{47}Ca	-42.680
^{48}Ca	-43.130
^{49}Ca	-40.220
^{50}Ca	-38.570
^{51}Ca	-33.910
^{52}Ca	-31.260
^{53}Ca	-25.450
^{54}Ca	-22.240
^{55}Ca	-16.200
^{56}Ca	-12.290
^{57}Ca	-6.120
^{58}Ca	-1.490
^{33}Sc	54.690 †
^{34}Sc	41.170 †
^{35}Sc	25.710 †
^{36}Sc	15.290 †
^{37}Sc	3.590 †
^{38}Sc	-4.260 †
^{39}Sc	-13.820 †
^{40}Sc	-21.230
^{41}Sc	-29.490
^{42}Sc	-33.280
^{43}Sc	-39.440
^{44}Sc	-40.220
^{45}Sc	-43.980
^{46}Sc	-44.050
^{47}Sc	-46.450
^{48}Sc	-44.820
^{49}Sc	-46.560
^{50}Sc	-44.150
^{51}Sc	-43.250
^{52}Sc	-39.840
^{53}Sc	-37.180
^{54}Sc	-32.570
^{55}Sc	-29.740
^{56}Sc	-24.830
^{57}Sc	-21.040
^{58}Sc	-15.510
^{59}Sc	-11.230
^{60}Sc	-6.370
^{32}Ti	101.840 †
^{33}Ti	84.630 †
^{34}Ti	65.290 †
^{35}Ti	51.630 †
^{36}Ti	34.060 †
^{37}Ti	22.550 ‡
^{38}Ti	10.100 ‡
^{39}Ti	0.600
^{40}Ti	-11.600

Isotope	Mass Excess
^{41}Ti	-18.030
^{42}Ti	-27.050
^{43}Ti	-32.020
^{44}Ti	-40.600
^{45}Ti	-42.220
^{46}Ti	-47.300
^{47}Ti	-47.420
^{48}Ti	-51.310
^{49}Ti	-49.480
^{50}Ti	-52.650
^{51}Ti	-50.140
^{52}Ti	-50.810
^{53}Ti	-47.590
^{54}Ti	-45.850
^{55}Ti	-41.230
^{56}Ti	-39.490
^{57}Ti	-34.740
^{58}Ti	-32.260
^{59}Ti	-26.850
^{60}Ti	-23.800
^{61}Ti	-18.810
^{62}Ti	-14.970
^{37}V	47.160 †
^{38}V	34.430 †
^{39}V	20.150 †
^{40}V	9.770 †
^{41}V	-2.170 †
^{42}V	-10.150 †
^{43}V	-19.800
^{44}V	-26.020
^{45}V	-35.180
^{46}V	-38.010
^{47}V	-43.410
^{48}V	-45.500
^{49}V	-50.170
^{50}V	-49.920
^{51}V	-53.500
^{52}V	-52.010
^{53}V	-52.830
^{54}V	-50.160
^{55}V	-49.540
^{56}V	-46.330
^{57}V	-44.880
^{58}V	-41.100
^{59}V	-39.070
^{60}V	-34.720
^{61}V	-31.890
^{62}V	-27.340
^{63}V	-24.350
^{64}V	-18.500
^{36}Cr	91.910 †
^{37}Cr	75.280 †
^{38}Cr	57.730 †
^{39}Cr	44.140 †
^{40}Cr	29.080 †
^{41}Cr	17.640 †
^{42}Cr	4.310 ‡
^{43}Cr	-4.080
^{44}Cr	-15.190
^{45}Cr	-21.790
^{46}Cr	-32.330
^{47}Cr	-36.080
^{48}Cr	-43.430
^{49}Cr	-45.850
^{50}Cr	-52.010
^{51}Cr	-52.010
^{52}Cr	-56.940
^{53}Cr	-55.580
^{54}Cr	-57.600
^{55}Cr	-55.180
^{56}Cr	-55.780

Isotope	Mass Excess
^{57}Cr	-52.730
^{58}Cr	-52.460
^{59}Cr	-48.750
^{60}Cr	-47.920
^{61}Cr	-43.520
^{62}Cr	-41.840
^{63}Cr	-36.130
^{64}Cr	-35.510
^{65}Cr	-29.690
^{66}Cr	-26.970
^{67}Cr	-20.800
^{41}Mn	40.960 †
^{42}Mn	28.790 †
^{43}Mn	14.620 †
^{44}Mn	4.970 †
^{45}Mn	-6.610 †
^{46}Mn	-14.180 †
^{47}Mn	-24.760 †
^{48}Mn	-29.960
^{49}Mn	-38.230
^{50}Mn	-42.100
^{51}Mn	-48.840
^{52}Mn	-50.900
^{53}Mn	-55.470
^{54}Mn	-55.530
^{55}Mn	-57.650
^{56}Mn	-56.530
^{57}Mn	-57.490
^{58}Mn	-55.650
^{59}Mn	-55.710
^{60}Mn	-53.410
^{61}Mn	-52.580
^{62}Mn	-49.330
^{63}Mn	-47.910
^{64}Mn	-44.030
^{65}Mn	-42.860
^{66}Mn	-38.010
^{67}Mn	-35.990
^{68}Mn	-30.650
^{69}Mn	-26.900
^{70}Mn	-22.420
^{40}Fe	81.520 †
^{41}Fe	67.690 †
^{42}Fe	50.870 †
^{43}Fe	38.050 †
^{44}Fe	23.020 †
^{45}Fe	12.620 †
^{46}Fe	-0.270 ‡
^{47}Fe	-8.400
^{48}Fe	-20.580
^{49}Fe	-26.550
^{50}Fe	-35.580
^{51}Fe	-40.790
^{52}Fe	-49.230
^{53}Fe	-50.700
^{54}Fe	-56.930
^{55}Fe	-57.050
^{56}Fe	-60.600
^{57}Fe	-59.590
^{58}Fe	-61.720
^{59}Fe	-60.010
^{60}Fe	-61.200
^{61}Fe	-58.690
^{62}Fe	-59.340
^{63}Fe	-56.580
^{64}Fe	-56.150
^{65}Fe	-53.100
^{66}Fe	-52.030
^{67}Fe	-47.490
^{68}Fe	-45.870
^{69}Fe	-40.600
^{70}Fe	-38.680
^{71}Fe	-33.190
^{72}Fe	-29.860

Isotope	Mass Excess
^{73}Fe	-25.530
^{74}Fe	-21.850
^{75}Fe	-15.820
^{76}Fe	-12.110
^{77}Fe	-4.660
^{78}Fe	1.360
^{43}Co	63.190 †
^{44}Co	49.620 †
^{45}Co	35.230 †
^{46}Co	23.200 †
^{47}Co	9.930 †
^{48}Co	1.180 †
^{49}Co	-10.500 †
^{50}Co	-18.160 †
^{51}Co	-28.030 †
^{52}Co	-34.600
^{53}Co	-42.620
^{54}Co	-46.440
^{55}Co	-52.720
^{56}Co	-54.630
^{57}Co	-58.300
^{58}Co	-58.870
^{59}Co	-61.200
^{60}Co	-60.750
^{61}Co	-62.130
^{62}Co	-60.790
^{63}Co	-61.400
^{64}Co	-59.580
^{65}Co	-59.870
^{66}Co	-56.960
^{67}Co	-56.280
^{68}Co	-53.020
^{69}Co	-51.670
^{70}Co	-47.770
^{71}Co	-45.630
^{72}Co	-41.760
^{73}Co	-38.920
^{74}Co	-34.870
^{75}Co	-31.020
^{76}Co	-26.570
^{77}Co	-23.230
^{78}Co	-16.320
^{79}Co	-10.310
^{80}Co	-3.000
^{44}Ni	75.140 †
^{45}Ni	61.180 †
^{46}Ni	44.730 †
^{47}Ni	32.620 †
^{48}Ni	18.220 †
^{49}Ni	8.270 ‡
^{50}Ni	-4.850 ‡
^{51}Ni	-12.880
^{52}Ni	-23.910
^{53}Ni	-30.530
^{54}Ni	-40.030
^{55}Ni	-44.030
^{56}Ni	-52.600
^{57}Ni	-54.700
^{58}Ni	-59.670
^{59}Ni	-60.430
^{60}Ni	-63.180
^{61}Ni	-63.440
^{62}Ni	-65.660
^{63}Ni	-64.850
^{64}Ni	-66.560
^{65}Ni	-64.520
^{66}Ni	-65.960
^{67}Ni	-63.390
^{68}Ni	-63.610
^{69}Ni	-60.850
^{70}Ni	-60.010
^{71}Ni	-56.710
^{72}Ni	-55.350
^{73}Ni	-51.480

Isotope	Mass Excess
^{74}Ni	-49.620
^{75}Ni	-45.630
^{76}Ni	-43.120
^{77}Ni	-38.690
^{78}Ni	-35.640
^{79}Ni	-29.360
^{80}Ni	-24.060
^{81}Ni	-16.860
^{82}Ni	-10.760
^{48}Cu	44.720 †
^{49}Cu	29.550 †
^{50}Cu	19.200 †
^{51}Cu	6.110 †
^{52}Cu	-2.930 †
^{53}Cu	-14.190 †
^{54}Cu	-21.950 †
^{55}Cu	-31.550 †
^{56}Cu	-37.350
^{57}Cu	-45.740
^{58}Cu	-49.350
^{59}Cu	-54.930
^{60}Cu	-56.570
^{61}Cu	-60.350
^{62}Cu	-61.340
^{63}Cu	-64.120
^{64}Cu	-64.030
^{65}Cu	-66.140
^{66}Cu	-65.210
^{67}Cu	-66.450
^{68}Cu	-65.460
^{69}Cu	-65.590
^{70}Cu	-63.380
^{71}Cu	-63.120
^{72}Cu	-60.420
^{73}Cu	-59.530
^{74}Cu	-56.740
^{75}Cu	-55.070
^{76}Cu	-51.920
^{77}Cu	-49.450
^{78}Cu	-45.530
^{79}Cu	-43.110
^{80}Cu	-37.340
^{81}Cu	-32.460
^{82}Cu	-26.160
^{83}Cu	-20.450
^{84}Cu	-13.720
^{49}Zn	56.490 †
^{50}Zn	40.270 †
^{51}Zn	29.030 †
^{52}Zn	14.220 †
^{53}Zn	5.400 †
^{54}Zn	-7.000 ‡
^{55}Zn	-14.740 ‡
^{56}Zn	-25.930
^{57}Zn	-32.110
^{58}Zn	-42.150
^{59}Zn	-45.970
^{60}Zn	-52.930
^{61}Zn	-54.640
^{62}Zn	-59.710
^{63}Zn	-61.090
^{64}Zn	-65.050
^{65}Zn	-65.100
^{66}Zn	-68.540
^{67}Zn	-67.530
^{68}Zn	-69.880
^{69}Zn	-68.460
^{70}Zn	-70.700
^{71}Zn	-68.220
^{72}Zn	-69.350
^{73}Zn	-66.340
^{74}Zn	-66.260
^{75}Zn	-63.530
^{76}Zn	-62.990

Isotope	Mass Excess
^{77}Zn	-59.720
^{78}Zn	-57.920
^{79}Zn	-54.240
^{80}Zn	-52.790
^{81}Zn	-46.990
^{82}Zn	-43.100
^{83}Zn	-36.640
^{84}Zn	-31.700
^{85}Zn	-24.890
^{86}Zn	-19.610
^{54}Ga	17.050 †
^{55}Ga	4.450 †
^{56}Ga	-4.650 †
^{57}Ga	-15.740 †
^{58}Ga	-23.430 †
^{59}Ga	-33.350 †
^{60}Ga	-38.430 †
^{61}Ga	-45.650
^{62}Ga	-49.330
^{63}Ga	-55.170
^{64}Ga	-57.430
^{65}Ga	-61.670
^{66}Ga	-63.050
^{67}Ga	-66.410
^{68}Ga	-66.720
^{69}Ga	-69.040
^{70}Ga	-68.430
^{71}Ga	-70.200
^{72}Ga	-69.110
^{73}Ga	-70.330
^{74}Ga	-68.700
^{75}Ga	-68.740
^{76}Ga	-66.710
^{77}Ga	-66.400
^{78}Ga	-64.080
^{79}Ga	-63.140
^{80}Ga	-59.900
^{81}Ga	-58.300
^{82}Ga	-53.650
^{83}Ga	-49.650
^{84}Ga	-44.020
^{85}Ga	-39.390
^{86}Ga	-33.500
^{87}Ga	-28.530
^{88}Ga	-22.410
^{53}Ge	53.430 †
^{54}Ge	37.760 †
^{55}Ge	26.960 †
^{56}Ge	13.210 †
^{57}Ge	3.820 †
^{58}Ge	-8.420 †
^{59}Ge	-16.430 ‡
^{60}Ge	-27.500 ‡
^{61}Ge	-32.980
^{62}Ge	-41.310
^{63}Ge	-45.690
^{64}Ge	-53.090
^{65}Ge	-55.530
^{66}Ge	-60.840
^{67}Ge	-62.440
^{68}Ge	-67.050
^{69}Ge	-67.120
^{70}Ge	-70.540
^{71}Ge	-70.070
^{72}Ge	-72.720
^{73}Ge	-71.730
^{74}Ge	-73.890
^{75}Ge	-72.320
^{76}Ge	-73.490
^{77}Ge	-71.500
^{78}Ge	-72.110
^{79}Ge	-69.780
^{80}Ge	-69.700
^{81}Ge	-66.460

Isotope	Mass Excess
^{82}Ge	-65.810
^{83}Ge	-61.050
^{84}Ge	-58.100
^{85}Ge	-52.610
^{86}Ge	-48.860
^{87}Ge	-43.130
^{88}Ge	-39.030
^{89}Ge	-33.180
^{90}Ge	-28.440
^{91}Ge	-22.490
^{92}Ge	-17.700
^{93}Ge	-11.110
^{59}As	2.860 †
^{60}As	-6.370 †
^{61}As	-17.140 †
^{62}As	-24.260 †
^{63}As	-32.830 †
^{64}As	-38.290 †
^{65}As	-45.880
^{66}As	-49.830
^{67}As	-55.750
^{68}As	-58.530
^{69}As	-63.200
^{70}As	-64.470
^{71}As	-68.160
^{72}As	-68.640
^{73}As	-71.470
^{74}As	-71.380
^{75}As	-73.610
^{76}As	-73.040
^{77}As	-74.430
^{78}As	-73.240
^{79}As	-73.980
^{80}As	-72.510
^{81}As	-72.530
^{82}As	-70.380
^{83}As	-69.460
^{84}As	-66.060
^{85}As	-63.210
^{86}As	-58.580
^{87}As	-55.050
^{88}As	-50.180
^{89}As	-46.260
^{90}As	-41.250
^{91}As	-36.800
^{92}As	-31.470
^{93}As	-26.790
^{94}As	-20.960
^{95}As	-15.750
^{96}As	-9.410
^{57}Se	51.020 †
^{58}Se	35.920 †
^{59}Se	25.040 †
^{60}Se	11.570 †
^{61}Se	2.020 †
^{62}Se	-9.960 ‡
^{63}Se	-17.290 ‡
^{64}Se	-26.970
^{65}Se	-32.650
^{66}Se	-41.290
^{67}Se	-45.910
^{68}Se	-53.440
^{69}Se	-56.230
^{70}Se	-62.070
^{71}Se	-63.490
^{72}Se	-68.180
^{73}Se	-68.980
^{74}Se	-72.630
^{75}Se	-72.650
^{76}Se	-75.830
^{77}Se	-75.340
^{78}Se	-77.550
^{79}Se	-76.540
^{80}Se	-78.190

Isotope	Mass Excess
^{81}Se	-76.780
^{82}Se	-77.850
^{83}Se	-75.650
^{84}Se	-76.070
^{85}Se	-72.240
^{86}Se	-70.320
^{87}Se	-65.620
^{88}Se	-62.940
^{89}Se	-58.100
^{90}Se	-55.130
^{91}Se	-50.080
^{92}Se	-46.570
^{93}Se	-41.240
^{94}Se	-37.390
^{95}Se	-31.660
^{96}Se	-27.220
^{97}Se	-20.940
^{98}Se	-15.920
^{62}Br	13.260 †
^{63}Br	1.820 †
^{64}Br	-6.480 †
^{65}Br	-16.820 †
^{66}Br	-23.880 †
^{67}Br	-32.490 †
^{68}Br	-38.280 †
^{69}Br	-46.020 †
^{70}Br	-49.770
^{71}Br	-56.440
^{72}Br	-59.060
^{73}Br	-64.070
^{74}Br	-66.400
^{75}Br	-69.580
^{76}Br	-70.620
^{77}Br	-73.970
^{78}Br	-74.400
^{79}Br	-76.950
^{80}Br	-76.910
^{81}Br	-78.770
^{82}Br	-78.140
^{83}Br	-79.340
^{84}Br	-77.800
^{85}Br	-78.390
^{86}Br	-75.630
^{87}Br	-73.810
^{88}Br	-69.930
^{89}Br	-67.380
^{90}Br	-63.390
^{91}Br	-60.620
^{92}Br	-56.460
^{93}Br	-53.260
^{94}Br	-48.740
^{95}Br	-45.130
^{96}Br	-40.150
^{97}Br	-35.930
^{98}Br	-30.400
^{99}Br	-25.490
^{63}Kr	23.300 †
^{64}Kr	9.870 †
^{65}Kr	1.410 †
^{66}Kr	-9.620 ‡
^{67}Kr	-16.690 ‡
^{68}Kr	-26.760
^{69}Kr	-32.560
^{70}Kr	-41.270
^{71}Kr	-45.660
^{72}Kr	-53.810
^{73}Kr	-56.760
^{74}Kr	-62.750
^{75}Kr	-64.940
^{76}Kr	-69.710
^{77}Kr	-70.490
^{78}Kr	-74.900
^{79}Kr	-75.450
^{80}Kr	-79.030

Isotope	Mass Excess
^{81}Kr	-78.990
^{82}Kr	-81.800
^{83}Kr	-81.270
^{84}Kr	-83.480
^{85}Kr	-81.790
^{86}Kr	-83.540
^{87}Kr	-80.660
^{88}Kr	-79.830
^{89}Kr	-75.700
^{90}Kr	-74.010
^{91}Kr	-69.880
^{92}Kr	-67.920
^{93}Kr	-63.720
^{94}Kr	-61.280
^{95}Kr	-56.960
^{96}Kr	-54.060
^{97}Kr	-49.250
^{98}Kr	-45.770
^{99}Kr	-40.250
^{100}Kr	-36.290
^{101}Kr	-30.620
^{65}Rb	23.080 †
^{66}Rb	13.320 †
^{67}Rb	1.680 †
^{68}Rb	-6.400 †
^{69}Rb	-16.650 †
^{70}Rb	-23.660 †
^{71}Rb	-32.760 †
^{72}Rb	-38.130 †
^{73}Rb	-46.310 †
^{74}Rb	-50.300
^{75}Rb	-57.050
^{76}Rb	-60.190
^{77}Rb	-65.140
^{78}Rb	-67.040
^{79}Rb	-71.160
^{80}Rb	-72.830
^{81}Rb	-76.740
^{82}Rb	-77.510
^{83}Rb	-80.440
^{84}Rb	-80.900
^{85}Rb	-83.220
^{86}Rb	-82.450
^{87}Rb	-84.360
^{88}Rb	-82.040
^{89}Rb	-81.390
^{90}Rb	-78.500
^{91}Rb	-76.820
^{92}Rb	-73.790
^{93}Rb	-71.930
^{94}Rb	-68.310
^{95}Rb	-66.130
^{96}Rb	-62.470
^{97}Rb	-59.870
^{98}Rb	-55.670
^{99}Rb	-52.390
^{100}Rb	-47.690
^{101}Rb	-43.920
^{102}Rb	-39.020
^{103}Rb	-34.950
^{67}Sr	23.170 †
^{68}Sr	10.400 †
^{69}Sr	1.930 †
^{70}Sr	-9.310 †
^{71}Sr	-16.600 ‡
^{72}Sr	-26.600 ‡
^{73}Sr	-32.580
^{74}Sr	-41.340
^{75}Sr	-46.170
^{76}Sr	-54.220
^{77}Sr	-57.500
^{78}Sr	-63.240
^{79}Sr	-65.460
^{80}Sr	-70.490

Isotope	Mass Excess
^{81}Sr	-72.340
^{82}Sr	-77.620
^{83}Sr	-78.530
^{84}Sr	-82.580
^{85}Sr	-83.200
^{86}Sr	-86.130
^{87}Sr	-85.400
^{88}Sr	-87.800
^{89}Sr	-85.490
^{90}Sr	-85.910
^{91}Sr	-82.950
^{92}Sr	-81.770
^{93}Sr	-78.720
^{94}Sr	-77.750
^{95}Sr	-74.140
^{96}Sr	-72.690
^{97}Sr	-69.050
^{98}Sr	-67.260
^{99}Sr	-63.190
^{100}Sr	-60.700
^{101}Sr	-56.150
^{102}Sr	-53.080
^{103}Sr	-48.220
^{104}Sr	-44.770
^{105}Sr	-39.700
^{69}Y	22.750 †
^{70}Y	13.430 †
^{71}Y	2.030 †
^{72}Y	-6.220 †
^{73}Y	-16.400 †
^{74}Y	-23.380 †
^{75}Y	-32.550 †
^{76}Y	-38.330 †
^{77}Y	-46.710 †
^{78}Y	-51.390
^{79}Y	-57.720
^{80}Y	-60.550
^{81}Y	-65.730
^{82}Y	-67.960
^{83}Y	-73.440
^{84}Y	-75.600
^{85}Y	-79.660
^{86}Y	-81.380
^{87}Y	-84.370
^{88}Y	-84.940
^{89}Y	-86.900
^{90}Y	-85.950
^{91}Y	-86.220
^{92}Y	-84.190
^{93}Y	-82.910
^{94}Y	-80.620
^{95}Y	-79.820
^{96}Y	-76.960
^{97}Y	-75.850
^{98}Y	-72.920
^{99}Y	-71.390
^{100}Y	-68.070
^{101}Y	-65.800
^{102}Y	-61.920
^{103}Y	-59.130
^{104}Y	-54.930
^{105}Y	-51.610
^{106}Y	-47.280
^{107}Y	-43.570
^{71}Zr	23.040 †
^{72}Zr	10.760 †
^{73}Zr	2.210 †
^{74}Zr	-8.910 †
^{75}Zr	-15.840 †
^{76}Zr	-26.060 ‡
^{77}Zr	-32.100
^{78}Zr	-41.310
^{79}Zr	-46.510
^{80}Zr	-54.270

Isotope	Mass Excess
^{81}Zr	-57.200
^{82}Zr	-63.710
^{83}Zr	-66.020
^{84}Zr	-72.830
^{85}Zr	-74.920
^{86}Zr	-79.980
^{87}Zr	-81.350
^{88}Zr	-85.510
^{89}Zr	-85.670
^{90}Zr	-88.970
^{91}Zr	-87.870
^{92}Zr	-89.210
^{93}Zr	-87.330
^{94}Zr	-86.890
^{95}Zr	-84.390
^{96}Zr	-84.320
^{97}Zr	-81.360
^{98}Zr	-81.060
^{99}Zr	-78.070
^{100}Zr	-77.190
^{101}Zr	-73.860
^{102}Zr	-72.330
^{103}Zr	-68.510
^{104}Zr	-66.410
^{105}Zr	-62.250
^{106}Zr	-59.660
^{107}Zr	-55.300
^{108}Zr	-52.210
^{109}Zr	-47.710
^{75}Nb	2.390 †
^{76}Nb	-5.310 †
^{77}Nb	-15.650 †
^{78}Nb	-22.530 †
^{79}Nb	-32.140 †
^{80}Nb	-38.280 †
^{81}Nb	-46.250 †
^{82}Nb	-50.760
^{83}Nb	-57.350
^{84}Nb	-60.700
^{85}Nb	-66.680
^{86}Nb	-69.940
^{87}Nb	-75.150
^{88}Nb	-77.470
^{89}Nb	-82.150
^{90}Nb	-82.830
^{91}Nb	-86.770
^{92}Nb	-86.840
^{93}Nb	-88.130
^{94}Nb	-86.660
^{95}Nb	-86.430
^{96}Nb	-84.960
^{97}Nb	-84.590
^{98}Nb	-82.890
^{99}Nb	-82.630
^{100}Nb	-80.250
^{101}Nb	-79.580
^{102}Nb	-77.030
^{103}Nb	-75.690
^{104}Nb	-72.570
^{105}Nb	-70.540
^{106}Nb	-67.050
^{107}Nb	-64.540
^{108}Nb	-60.740
^{109}Nb	-57.820
^{110}Nb	-53.700
^{111}Nb	-50.340
^{77}Mo	3.220 †
^{78}Mo	-7.550 †
^{79}Mo	-15.190 †
^{80}Mo	-25.480 ‡
^{81}Mo	-30.270 †
^{82}Mo	-39.670 ‡
^{83}Mo	-44.960
^{84}Mo	-53.320

Isotope	Mass Excess
^{85}Mo	-57.420
^{86}Mo	-65.090
^{87}Mo	-68.150
^{88}Mo	-74.240
^{89}Mo	-76.230
^{90}Mo	-81.790
^{91}Mo	-82.950
^{92}Mo	-87.140
^{93}Mo	-87.080
^{94}Mo	-89.560
^{95}Mo	-88.250
^{96}Mo	-88.950
^{97}Mo	-87.070
^{98}Mo	-87.800
^{99}Mo	-85.910
^{100}Mo	-86.240
^{101}Mo	-84.040
^{102}Mo	-83.910
^{103}Mo	-81.250
^{104}Mo	-80.640
^{105}Mo	-77.520
^{106}Mo	-76.310
^{107}Mo	-72.860
^{108}Mo	-71.210
^{109}Mo	-67.530
^{110}Mo	-65.430
^{111}Mo	-61.420
^{112}Mo	-58.690
^{113}Mo	-54.070
^{82}Tc	-20.960 †
^{83}Tc	-30.510 †
^{84}Tc	-36.900 †
^{85}Tc	-45.110 †
^{86}Tc	-50.390
^{87}Tc	-57.860
^{88}Tc	-61.820
^{89}Tc	-68.850
^{90}Tc	-71.580
^{91}Tc	-77.450
^{92}Tc	-78.970
^{93}Tc	-83.740
^{94}Tc	-84.200
^{95}Tc	-87.040
^{96}Tc	-85.800
^{97}Tc	-87.180
^{98}Tc	-86.180
^{99}Tc	-87.130
^{100}Tc	-85.860
^{101}Tc	-86.400
^{102}Tc	-84.810
^{103}Tc	-84.940
^{104}Tc	-82.980
^{105}Tc	-82.470
^{106}Tc	-80.090
^{107}Tc	-78.990
^{108}Tc	-76.240
^{109}Tc	-74.760
^{110}Tc	-71.690
^{111}Tc	-69.670
^{112}Tc	-66.320
^{113}Tc	-63.830
^{114}Tc	-60.010
^{115}Tc	-56.830
^{116}Tc	-52.580
^{117}Tc	-49.220
^{84}Ru	-23.750 ‡
^{85}Ru	-30.040 ‡
^{86}Ru	-40.580
^{87}Ru	-46.330
^{88}Ru	-55.120
^{89}Ru	-59.210
^{90}Ru	-66.290
^{91}Ru	-68.960
^{92}Ru	-75.850

Isotope	Mass Excess
^{93}Ru	-77.160
^{94}Ru	-83.100
^{95}Ru	-83.430
^{96}Ru	-86.930
^{97}Ru	-85.930
^{98}Ru	-88.120
^{99}Ru	-87.140
^{100}Ru	-88.690
^{101}Ru	-87.470
^{102}Ru	-88.740
^{103}Ru	-87.190
^{104}Ru	-87.900
^{105}Ru	-86.010
^{106}Ru	-86.210
^{107}Ru	-83.770
^{108}Ru	-83.420
^{109}Ru	-80.690
^{110}Ru	-79.870
^{111}Ru	-76.940
^{112}Ru	-75.690
^{113}Ru	-72.380
^{114}Ru	-70.570
^{115}Ru	-66.830
^{116}Ru	-64.390
^{117}Ru	-60.220
^{118}Ru	-57.650
^{119}Ru	-53.380
^{120}Ru	-50.370
^{86}Rh	-21.070 †
^{87}Rh	-31.430 †
^{88}Rh	-37.770 †
^{89}Rh	-46.690 †
^{90}Rh	-50.190 †
^{91}Rh	-58.700 †
^{92}Rh	-63.100
^{93}Rh	-70.130
^{94}Rh	-72.170
^{95}Rh	-78.390
^{96}Rh	-79.320
^{97}Rh	-83.210
^{98}Rh	-82.900
^{99}Rh	-85.240
^{100}Rh	-85.000
^{101}Rh	-86.790
^{102}Rh	-86.260
^{103}Rh	-87.630
^{104}Rh	-86.750
^{105}Rh	-87.640
^{106}Rh	-86.320
^{107}Rh	-86.690
^{108}Rh	-85.050
^{109}Rh	-84.800
^{110}Rh	-82.720
^{111}Rh	-82.190
^{112}Rh	-79.880
^{113}Rh	-78.850
^{114}Rh	-76.150
^{115}Rh	-74.560
^{116}Rh	-71.510
^{117}Rh	-69.280
^{118}Rh	-65.790
^{119}Rh	-63.310
^{120}Rh	-59.720
^{121}Rh	-56.790
^{122}Rh	-53.420
^{123}Rh	-49.660
^{124}Rh	-45.990
^{125}Rh	-42.810
^{126}Rh	-39.670
^{127}Rh	-36.020
^{128}Rh	-29.750
^{129}Rh	-23.580
^{130}Rh	-16.500
^{88}Pd	-24.680 ‡

Isotope	Mass Excess
^{89}Pd	-31.320 ‡
^{90}Pd	-41.090
^{91}Pd	-46.790
^{92}Pd	-55.610
^{93}Pd	-59.170
^{94}Pd	-67.160
^{95}Pd	-69.240
^{96}Pd	-76.260
^{97}Pd	-77.720
^{98}Pd	-81.960
^{99}Pd	-81.630
^{100}Pd	-84.650
^{101}Pd	-84.620
^{102}Pd	-87.140
^{103}Pd	-86.520
^{104}Pd	-88.630
^{105}Pd	-87.680
^{106}Pd	-89.310
^{107}Pd	-88.110
^{108}Pd	-89.160
^{109}Pd	-87.510
^{110}Pd	-88.150
^{111}Pd	-86.040
^{112}Pd	-86.170
^{113}Pd	-83.810
^{114}Pd	-83.500
^{115}Pd	-80.850
^{116}Pd	-79.920
^{117}Pd	-76.850
^{118}Pd	-75.440
^{119}Pd	-72.030
^{120}Pd	-70.460
^{121}Pd	-66.980
^{122}Pd	-64.490
^{123}Pd	-60.890
^{124}Pd	-58.690
^{125}Pd	-55.190
^{126}Pd	-52.740
^{127}Pd	-49.140
^{128}Pd	-46.160
^{129}Pd	-39.850
^{130}Pd	-34.300
^{131}Pd	-27.320
^{132}Pd	-21.260
^{90}Ag	-20.070 †
^{91}Ag	-31.000 †
^{92}Ag	-37.570 †
^{93}Ag	-46.460 †
^{94}Ag	-52.050
^{95}Ag	-60.300
^{96}Ag	-63.410
^{97}Ag	-70.500
^{98}Ag	-72.400
^{99}Ag	-77.150
^{100}Ag	-77.770
^{101}Ag	-81.110
^{102}Ag	-81.510
^{103}Ag	-84.070
^{104}Ag	-84.170
^{105}Ag	-86.380
^{106}Ag	-86.020
^{107}Ag	-87.780
^{108}Ag	-87.070
^{109}Ag	-88.320
^{110}Ag	-87.310
^{111}Ag	-88.110
^{112}Ag	-86.810
^{113}Ag	-87.130
^{114}Ag	-85.320
^{115}Ag	-85.160
^{116}Ag	-83.120
^{117}Ag	-82.410
^{118}Ag	-79.970
^{119}Ag	-79.020
^{120}Ag	-75.870

Isotope	Mass Excess	
^{121}Ag	-74.610	
^{122}Ag	-71.670	
^{123}Ag	-70.110	
^{124}Ag	-66.860	
^{125}Ag	-65.060	
^{126}Ag	-61.950	
^{127}Ag	-59.690	
^{128}Ag	-56.610	
^{129}Ag	-53.740	
^{130}Ag	-48.000	
^{131}Ag	-42.580	
^{132}Ag	-36.180	
^{133}Ag	-30.250	
^{134}Ag	-23.520	
^{93}Cd	-31.610	‡
^{94}Cd	-41.270	
^{95}Cd	-47.320	
^{96}Cd	-56.140	
^{97}Cd	-59.970	
^{98}Cd	-67.060	
^{99}Cd	-69.510	
^{100}Cd	-74.690	
^{101}Cd	-75.930	
^{102}Cd	-78.990	
^{103}Cd	-79.720	
^{104}Cd	-83.330	
^{105}Cd	-83.260	
^{106}Cd	-86.230	
^{107}Cd	-85.870	
^{108}Cd	-88.380	
^{109}Cd	-87.640	
^{110}Cd	-89.670	
^{111}Cd	-88.590	
^{112}Cd	-90.130	
^{113}Cd	-88.570	
^{114}Cd	-89.660	
^{115}Cd	-88.030	
^{116}Cd	-88.530	
^{117}Cd	-86.420	
^{118}Cd	-86.450	
^{119}Cd	-83.910	
^{120}Cd	-84.000	
^{121}Cd	-81.250	
^{122}Cd	-80.920	
^{123}Cd	-77.950	
^{124}Cd	-77.050	
^{125}Cd	-74.020	
^{126}Cd	-72.640	
^{127}Cd	-69.560	
^{128}Cd	-67.860	
^{129}Cd	-64.810	
^{130}Cd	-62.570	
^{131}Cd	-56.830	
^{132}Cd	-52.050	
^{133}Cd	-45.620	
^{134}Cd	-40.260	
^{135}Cd	-33.480	
^{136}Cd	-27.970	
^{95}In	-32.190	†
^{96}In	-38.260	†
^{97}In	-47.990	†
^{98}In	-53.090	
^{99}In	-60.660	
^{100}In	-63.640	
^{101}In	-69.110	
^{102}In	-70.260	
^{103}In	-74.030	
^{104}In	-75.540	
^{105}In	-78.970	
^{106}In	-79.740	
^{107}In	-82.770	
^{108}In	-83.060	
^{109}In	-85.620	
^{110}In	-85.550	

Isotope	Mass Excess
^{111}In	-87.710
^{112}In	-87.320
^{113}In	-89.020
^{114}In	-88.190
^{115}In	-89.470
^{116}In	-88.220
^{117}In	-89.070
^{118}In	-87.550
^{119}In	-87.930
^{120}In	-86.150
^{121}In	-86.080
^{122}In	-84.000
^{123}In	-83.570
^{124}In	-81.300
^{125}In	-80.700
^{126}In	-78.110
^{127}In	-77.160
^{128}In	-74.620
^{129}In	-73.190
^{130}In	-70.470
^{131}In	-68.320
^{132}In	-63.140
^{133}In	-58.550
^{134}In	-52.720
^{135}In	-47.480
^{136}In	-41.260
^{137}In	-35.840
^{138}In	-29.340
^{97}Sn	-31.890 ‡
^{98}Sn	-41.410 ‡
^{99}Sn	-47.090
^{100}Sn	-55.450
^{101}Sn	-58.900
^{102}Sn	-64.870
^{103}Sn	-67.030
^{104}Sn	-71.650
^{105}Sn	-73.080
^{106}Sn	-77.150
^{107}Sn	-77.860
^{108}Sn	-81.470
^{109}Sn	-81.430
^{110}Sn	-84.990
^{111}Sn	-85.000
^{112}Sn	-88.010
^{113}Sn	-87.600
^{114}Sn	-90.170
^{115}Sn	-89.120
^{116}Sn	-91.270
^{117}Sn	-90.170
^{118}Sn	-91.650
^{119}Sn	-90.110
^{120}Sn	-91.230
^{121}Sn	-89.430
^{122}Sn	-90.070
^{123}Sn	-88.060
^{124}Sn	-88.330
^{125}Sn	-86.170
^{126}Sn	-86.120
^{127}Sn	-83.770
^{128}Sn	-83.260
^{129}Sn	-80.760
^{130}Sn	-79.890
^{131}Sn	-77.120
^{132}Sn	-75.730
^{133}Sn	-70.540
^{134}Sn	-66.580
^{135}Sn	-60.670
^{136}Sn	-56.070
^{137}Sn	-49.860
^{138}Sn	-44.960
^{139}Sn	-38.400
^{140}Sn	-33.460
^{141}Sn	-26.760
^{142}Sn	-21.500

Isotope	Mass Excess	
^{99}Sb	-29.950	†
^{100}Sb	-36.130	†
^{101}Sb	-45.050	†
^{102}Sb	-49.060	†
^{103}Sb	-55.570	†
^{104}Sb	-58.020	†
^{105}Sb	-62.870	†
^{106}Sb	-65.180	†
^{107}Sb	-69.520	†
^{108}Sb	-71.160	
^{109}Sb	-75.050	
^{110}Sb	-76.230	
^{111}Sb	-79.710	
^{112}Sb	-80.470	
^{113}Sb	-83.440	
^{114}Sb	-83.690	
^{115}Sb	-86.220	
^{116}Sb	-86.030	
^{117}Sb	-88.110	
^{118}Sb	-87.610	
^{119}Sb	-89.270	
^{120}Sb	-88.420	
^{121}Sb	-89.630	
^{122}Sb	-88.460	
^{123}Sb	-89.300	
^{124}Sb	-87.890	
^{125}Sb	-88.280	
^{126}Sb	-86.580	
^{127}Sb	-86.700	
^{128}Sb	-84.880	
^{129}Sb	-84.830	
^{130}Sb	-82.980	
^{131}Sb	-82.050	
^{132}Sb	-79.540	
^{133}Sb	-78.360	
^{134}Sb	-73.620	
^{135}Sb	-70.000	
^{136}Sb	-64.840	
^{137}Sb	-60.260	
^{138}Sb	-54.510	
^{139}Sb	-49.870	
^{140}Sb	-44.110	
^{141}Sb	-39.340	
^{142}Sb	-33.400	
^{143}Sb	-28.480	
^{144}Sb	-22.600	
^{145}Sb	-17.380	
^{101}Te	-27.820	†
^{102}Te	-37.240	†
^{103}Te	-41.930	‡
^{104}Te	-49.720	‡
^{105}Te	-51.380	‡
^{106}Te	-57.210	
^{107}Te	-59.400	
^{108}Te	-64.520	
^{109}Te	-66.410	
^{110}Te	-71.000	
^{111}Te	-72.330	
^{112}Te	-76.460	
^{113}Te	-77.360	
^{114}Te	-80.990	
^{115}Te	-81.450	
^{116}Te	-84.660	
^{117}Te	-84.780	
^{118}Te	-87.490	
^{119}Te	-86.940	
^{120}Te	-89.230	
^{121}Te	-88.490	
^{122}Te	-90.330	
^{123}Te	-89.300	
^{124}Te	-90.770	
^{125}Te	-89.310	
^{126}Te	-90.500	
^{127}Te	-88.800	
^{128}Te	-89.710	

Isotope	Mass Excess
^{129}Te	-87.900
^{130}Te	-88.150
^{131}Te	-86.080
^{132}Te	-85.940
^{133}Te	-83.570
^{134}Te	-82.790
^{135}Te	-78.250
^{136}Te	-75.040
^{137}Te	-69.810
^{138}Te	-65.890
^{139}Te	-59.980
^{140}Te	-56.050
^{141}Te	-50.130
^{142}Te	-46.130
^{143}Te	-40.560
^{144}Te	-36.220
^{145}Te	-30.610
^{146}Te	-25.920
^{102}I	-15.130 †
^{103}I	-25.430 †
^{104}I	-30.160 †
^{105}I	-37.460 †
^{106}I	-41.410 †
^{107}I	-47.720 †
^{108}I	-50.940 †
^{109}I	-56.250 †
^{110}I	-58.860 †
^{111}I	-63.770
^{112}I	-66.020
^{113}I	-70.290
^{114}I	-72.030
^{115}I	-75.710
^{116}I	-76.940
^{117}I	-80.130
^{118}I	-80.860
^{119}I	-83.570
^{120}I	-83.950
^{121}I	-86.000
^{122}I	-85.950
^{123}I	-87.800
^{124}I	-87.330
^{125}I	-88.660
^{126}I	-87.790
^{127}I	-89.080
^{128}I	-88.080
^{129}I	-88.760
^{130}I	-87.480
^{131}I	-87.820
^{132}I	-86.440
^{133}I	-86.540
^{134}I	-84.580
^{135}I	-83.990
^{136}I	-79.990
^{137}I	-77.060
^{138}I	-71.790
^{139}I	-68.140
^{140}I	-63.660
^{141}I	-59.780
^{142}I	-54.700
^{143}I	-50.760
^{144}I	-45.700
^{145}I	-41.610
^{146}I	-36.610
^{147}I	-32.060
^{104}Xe	-15.840 †
^{105}Xe	-20.760 †
^{106}Xe	-29.030 †
^{107}Xe	-33.520 †
^{108}Xe	-40.920 ‡
^{109}Xe	-44.310 ‡
^{110}Xe	-50.360
^{111}Xe	-53.240
^{112}Xe	-58.870
^{113}Xe	-61.370

Isotope	Mass Excess
^{114}Xe	-66.390
^{115}Xe	-68.390
^{116}Xe	-72.580
^{117}Xe	-73.980
^{118}Xe	-77.710
^{119}Xe	-78.610
^{120}Xe	-81.790
^{121}Xe	-82.290
^{122}Xe	-84.960
^{123}Xe	-85.010
^{124}Xe	-87.170
^{125}Xe	-86.680
^{126}Xe	-88.490
^{127}Xe	-87.700
^{128}Xe	-89.290
^{129}Xe	-88.270
^{130}Xe	-89.870
^{131}Xe	-88.590
^{132}Xe	-89.600
^{133}Xe	-88.120
^{134}Xe	-88.820
^{135}Xe	-86.720
^{136}Xe	-86.810
^{137}Xe	-82.900
^{138}Xe	-80.410
^{139}Xe	-75.680
^{140}Xe	-72.260
^{141}Xe	-68.000
^{142}Xe	-64.780
^{143}Xe	-59.940
^{144}Xe	-56.610
^{145}Xe	-51.850
^{146}Xe	-48.380
^{147}Xe	-43.480
^{148}Xe	-39.480
^{149}Xe	-34.280
^{106}Cs	-8.540 †
^{107}Cs	-16.820 †
^{108}Cs	-22.320 †
^{109}Cs	-29.920 †
^{110}Cs	-34.530 †
^{111}Cs	-41.100 †
^{112}Cs	-44.900 †
^{113}Cs	-50.690 †
^{114}Cs	-54.080
^{115}Cs	-59.250
^{116}Cs	-61.770
^{117}Cs	-66.260
^{118}Cs	-68.290
^{119}Cs	-72.060
^{120}Cs	-73.600
^{121}Cs	-76.900
^{122}Cs	-78.010
^{123}Cs	-80.720
^{124}Cs	-81.410
^{125}Cs	-83.580
^{126}Cs	-83.680
^{127}Cs	-85.460
^{128}Cs	-85.180
^{129}Cs	-86.740
^{130}Cs	-86.310
^{131}Cs	-87.560
^{132}Cs	-86.980
^{133}Cs	-87.870
^{134}Cs	-87.030
^{135}Cs	-87.960
^{136}Cs	-86.320
^{137}Cs	-86.740
^{138}Cs	-83.210
^{139}Cs	-81.060
^{140}Cs	-76.630
^{141}Cs	-73.960
^{142}Cs	-70.110
^{143}Cs	-67.070
^{144}Cs	-62.950

Isotope	Mass Excess	
^{145}Cs	-59.800	
^{146}Cs	-55.840	
^{147}Cs	-52.550	
^{148}Cs	-48.270	
^{149}Cs	-44.460	
^{150}Cs	-39.780	
^{151}Cs	-35.640	
^{108}Ba	-7.410	†
^{109}Ba	-13.150	†
^{110}Ba	-21.460	†
^{111}Ba	-26.570	†
^{112}Ba	-34.250	‡
^{113}Ba	-38.250	‡
^{114}Ba	-44.900	
^{115}Ba	-48.270	
^{116}Ba	-54.240	
^{117}Ba	-56.890	
^{118}Ba	-62.140	
^{119}Ba	-64.230	
^{120}Ba	-68.670	
^{121}Ba	-70.260	
^{122}Ba	-74.220	
^{123}Ba	-75.360	
^{124}Ba	-78.730	
^{125}Ba	-79.420	
^{126}Ba	-82.160	
^{127}Ba	-82.430	
^{128}Ba	-84.600	
^{129}Ba	-84.340	
^{130}Ba	-86.390	
^{131}Ba	-86.030	
^{132}Ba	-87.790	
^{133}Ba	-87.240	
^{134}Ba	-88.870	
^{135}Ba	-88.060	
^{136}Ba	-89.500	
^{137}Ba	-87.800	
^{138}Ba	-88.740	
^{139}Ba	-85.310	
^{140}Ba	-83.750	
^{141}Ba	-79.280	
^{142}Ba	-77.110	
^{143}Ba	-73.360	
^{144}Ba	-70.950	
^{145}Ba	-66.980	
^{146}Ba	-64.540	
^{147}Ba	-60.650	
^{148}Ba	-58.010	
^{149}Ba	-53.800	
^{150}Ba	-50.550	
^{151}Ba	-46.010	
^{152}Ba	-42.400	
^{153}Ba	-37.460	
^{112}La	-15.690	†
^{113}La	-23.570	†
^{114}La	-28.680	†
^{115}La	-35.840	†
^{116}La	-39.900	†
^{117}La	-46.040	†
^{118}La	-49.350	†
^{119}La	-54.740	†
^{120}La	-57.520	
^{121}La	-61.930	
^{122}La	-64.170	
^{123}La	-68.230	
^{124}La	-70.000	
^{125}La	-73.450	
^{126}La	-74.740	
^{127}La	-77.590	
^{128}La	-78.390	
^{129}La	-80.590	
^{130}La	-80.890	
^{131}La	-82.830	
^{132}La	-82.900	

Isotope	Mass Excess
^{133}La	-84.730
^{134}La	-84.740
^{135}La	-86.420
^{136}La	-86.230
^{137}La	-87.530
^{138}La	-86.430
^{139}La	-87.510
^{140}La	-84.570
^{141}La	-83.200
^{142}La	-79.280
^{143}La	-77.630
^{144}La	-74.390
^{145}La	-72.230
^{146}La	-68.940
^{147}La	-66.720
^{148}La	-63.560
^{149}La	-61.110
^{150}La	-57.470
^{151}La	-54.440
^{152}La	-50.400
^{153}La	-46.870
^{154}La	-42.500
^{155}La	-38.680
^{114}Ce	-15.320 †
^{115}Ce	-20.790 †
^{116}Ce	-28.880 ‡
^{117}Ce	-33.200 ‡
^{118}Ce	-40.010
^{119}Ce	-43.490
^{120}Ce	-49.550
^{121}Ce	-52.470
^{122}Ce	-57.670
^{123}Ce	-59.990
^{124}Ce	-64.570
^{125}Ce	-66.350
^{126}Ce	-70.410
^{127}Ce	-71.830
^{128}Ce	-75.230
^{129}Ce	-76.010
^{130}Ce	-78.930
^{131}Ce	-79.210
^{132}Ce	-81.670
^{133}Ce	-81.770
^{134}Ce	-84.100
^{135}Ce	-84.040
^{136}Ce	-86.290
^{137}Ce	-86.300
^{138}Ce	-88.130
^{139}Ce	-87.040
^{140}Ce	-88.640
^{141}Ce	-85.850
^{142}Ce	-85.020
^{143}Ce	-81.130
^{144}Ce	-79.930
^{145}Ce	-76.710
^{146}Ce	-75.190
^{147}Ce	-72.030
^{148}Ce	-70.440
^{149}Ce	-67.340
^{150}Ce	-65.470
^{151}Ce	-61.920
^{152}Ce	-59.450
^{153}Ce	-55.500
^{154}Ce	-52.580
^{155}Ce	-48.240
^{156}Ce	-45.020
^{157}Ce	-40.380
^{116}Pr	-9.980 †
^{117}Pr	-18.190 †
^{118}Pr	-23.440 †
^{119}Pr	-30.580 †
^{120}Pr	-34.790 †
^{121}Pr	-41.010 †
^{122}Pr	-44.660 †

Isotope	Mass Excess
^{123}Pr	-49.960 †
^{124}Pr	-52.920
^{125}Pr	-57.630
^{126}Pr	-60.060
^{127}Pr	-64.170
^{128}Pr	-66.190
^{129}Pr	-69.650
^{130}Pr	-70.990
^{131}Pr	-73.950
^{132}Pr	-74.910
^{133}Pr	-77.250
^{134}Pr	-77.830
^{135}Pr	-80.070
^{136}Pr	-80.510
^{137}Pr	-82.680
^{138}Pr	-83.250
^{139}Pr	-85.110
^{140}Pr	-84.600
^{141}Pr	-86.320
^{142}Pr	-84.050
^{143}Pr	-83.450
^{144}Pr	-80.060
^{145}Pr	-79.170
^{146}Pr	-76.710
^{147}Pr	-75.450
^{148}Pr	-72.920
^{149}Pr	-71.620
^{150}Pr	-69.080
^{151}Pr	-67.310
^{152}Pr	-64.290
^{153}Pr	-61.960
^{154}Pr	-58.580
^{155}Pr	-55.720
^{156}Pr	-51.950
^{157}Pr	-48.830
^{158}Pr	-44.750
^{159}Pr	-41.240
^{160}Pr	-36.920
^{119}Nd	-15.400 †
^{120}Nd	-23.540 ‡
^{121}Nd	-27.900 ‡
^{122}Nd	-34.730 ‡
^{123}Nd	-38.430
^{124}Nd	-44.400
^{125}Nd	-47.450
^{126}Nd	-52.780
^{127}Nd	-55.250
^{128}Nd	-60.060
^{129}Nd	-62.090
^{130}Nd	-66.160
^{131}Nd	-67.490
^{132}Nd	-71.040
^{133}Nd	-72.120
^{134}Nd	-75.040
^{135}Nd	-75.580
^{136}Nd	-78.430
^{137}Nd	-78.900
^{138}Nd	-81.680
^{139}Nd	-81.820
^{140}Nd	-84.780
^{141}Nd	-84.330
^{142}Nd	-86.520
^{143}Nd	-84.360
^{144}Nd	-84.280
^{145}Nd	-80.900
^{146}Nd	-80.490
^{147}Nd	-78.010
^{148}Nd	-77.370
^{149}Nd	-74.920
^{150}Nd	-74.180
^{151}Nd	-71.690
^{152}Nd	-70.480
^{153}Nd	-67.540
^{154}Nd	-65.800
^{155}Nd	-62.470

Isotope	Mass Excess
^{156}Nd	-60.250
^{157}Nd	-56.510
^{158}Nd	-53.970
^{159}Nd	-49.900
^{160}Nd	-46.950
^{161}Nd	-42.640
^{162}Nd	-39.290
^{127}Pm	-44.820 †
^{128}Pm	-47.820 †
^{129}Pm	-52.800
^{130}Pm	-55.400
^{131}Pm	-59.580
^{132}Pm	-61.560
^{133}Pm	-65.100
^{134}Pm	-66.470
^{135}Pm	-69.520
^{136}Pm	-70.660
^{137}Pm	-73.400
^{138}Pm	-74.340
^{139}Pm	-77.050
^{140}Pm	-77.700
^{141}Pm	-80.960
^{142}Pm	-81.330
^{143}Pm	-83.180
^{144}Pm	-81.690
^{145}Pm	-81.720
^{146}Pm	-79.050
^{147}Pm	-78.650
^{148}Pm	-76.910
^{149}Pm	-76.450
^{150}Pm	-74.570
^{151}Pm	-74.070
^{152}Pm	-72.100
^{153}Pm	-71.010
^{154}Pm	-68.530
^{155}Pm	-67.010
^{156}Pm	-64.240
^{157}Pm	-62.140
^{158}Pm	-58.960
^{159}Pm	-56.550
^{160}Pm	-52.980
^{161}Pm	-50.180
^{162}Pm	-46.370
^{163}Pm	-43.140
^{164}Pm	-39.060
^{131}Sm	-50.090
^{132}Sm	-54.920
^{133}Sm	-56.850
^{134}Sm	-61.130
^{135}Sm	-62.630
^{136}Sm	-66.320
^{137}Sm	-67.390
^{138}Sm	-70.770
^{139}Sm	-71.820
^{140}Sm	-75.250
^{141}Sm	-75.810
^{142}Sm	-79.600
^{143}Sm	-79.880
^{144}Sm	-82.430
^{145}Sm	-81.000
^{146}Sm	-81.600
^{147}Sm	-78.970
^{148}Sm	-78.950
^{149}Sm	-77.150
^{150}Sm	-77.160
^{151}Sm	-75.300
^{152}Sm	-75.340
^{153}Sm	-73.400
^{154}Sm	-72.880
^{155}Sm	-70.390
^{156}Sm	-69.420
^{157}Sm	-66.640
^{158}Sm	-65.150
^{159}Sm	-61.990

Isotope	Mass Excess
^{160}Sm	-60.150
^{161}Sm	-56.660
^{162}Sm	-54.410
^{163}Sm	-50.660
^{164}Sm	-47.960
^{165}Sm	-43.910
^{166}Sm	-40.800
^{133}Eu	-47.230 †
^{134}Eu	-49.790
^{135}Eu	-54.150
^{136}Eu	-56.230
^{137}Eu	-60.000
^{138}Eu	-61.440
^{139}Eu	-64.810
^{140}Eu	-66.330
^{141}Eu	-69.700
^{142}Eu	-70.780
^{143}Eu	-73.890
^{144}Eu	-75.450
^{145}Eu	-78.110
^{146}Eu	-77.190
^{147}Eu	-77.960
^{148}Eu	-75.810
^{149}Eu	-76.090
^{150}Eu	-74.890
^{151}Eu	-75.090
^{152}Eu	-73.780
^{153}Eu	-73.940
^{154}Eu	-72.540
^{155}Eu	-72.100
^{156}Eu	-70.130
^{157}Eu	-69.300
^{158}Eu	-67.040
^{159}Eu	-65.720
^{160}Eu	-63.060
^{161}Eu	-61.350
^{162}Eu	-58.470
^{163}Eu	-56.320
^{164}Eu	-53.150
^{165}Eu	-50.530
^{166}Eu	-47.030
^{167}Eu	-44.000
^{168}Eu	-40.070
^{169}Eu	-36.670
^{170}Eu	-32.460
^{135}Gd	-44.090
^{136}Gd	-49.040
^{137}Gd	-51.170
^{138}Gd	-55.530
^{139}Gd	-57.150
^{140}Gd	-61.150
^{141}Gd	-62.810
^{142}Gd	-67.050
^{143}Gd	-67.980
^{144}Gd	-71.290
^{145}Gd	-73.260
^{146}Gd	-76.530
^{147}Gd	-75.600
^{148}Gd	-76.940
^{149}Gd	-74.860
^{150}Gd	-75.460
^{151}Gd	-74.150
^{152}Gd	-74.800
^{153}Gd	-73.460
^{154}Gd	-74.070
^{155}Gd	-72.650
^{156}Gd	-72.710
^{157}Gd	-70.880
^{158}Gd	-70.460
^{159}Gd	-68.300
^{160}Gd	-67.480
^{161}Gd	-64.900
^{162}Gd	-63.770
^{163}Gd	-60.900

Isotope	Mass Excess
^{164}Gd	-59.340
^{165}Gd	-56.200
^{166}Gd	-54.190
^{167}Gd	-50.730
^{168}Gd	-48.260
^{169}Gd	-44.380
^{170}Gd	-41.600
^{171}Gd	-37.460
^{172}Gd	-34.280
^{173}Gd	-29.810
^{137}Tb	-40.970 †
^{138}Tb	-43.650 †
^{139}Tb	-48.060 †
^{140}Tb	-50.180
^{141}Tb	-54.230
^{142}Tb	-56.230
^{143}Tb	-60.550
^{144}Tb	-62.020
^{145}Tb	-65.560
^{146}Tb	-67.750
^{147}Tb	-71.230
^{148}Tb	-70.730
^{149}Tb	-72.250
^{150}Tb	-70.660
^{151}Tb	-71.540
^{152}Tb	-70.790
^{153}Tb	-71.640
^{154}Tb	-70.850
^{155}Tb	-71.580
^{156}Tb	-70.610
^{157}Tb	-70.790
^{158}Tb	-69.480
^{159}Tb	-69.140
^{160}Tb	-67.480
^{161}Tb	-66.780
^{162}Tb	-64.780
^{163}Tb	-63.760
^{164}Tb	-61.500
^{165}Tb	-60.040
^{166}Tb	-57.480
^{167}Tb	-55.580
^{168}Tb	-52.630
^{169}Tb	-50.280
^{170}Tb	-46.910
^{171}Tb	-44.240
^{172}Tb	-40.560
^{173}Tb	-37.460
^{174}Tb	-33.470
^{175}Tb	-29.950
^{176}Tb	-25.330
^{139}Dy	-37.750
^{140}Dy	-42.690
^{141}Dy	-44.960
^{142}Dy	-49.570
^{143}Dy	-51.690
^{144}Dy	-56.630
^{145}Dy	-58.220
^{146}Dy	-62.090
^{147}Dy	-64.770
^{148}Dy	-68.820
^{149}Dy	-68.340
^{150}Dy	-70.500
^{151}Dy	-69.020
^{152}Dy	-70.090
^{153}Dy	-69.210
^{154}Dy	-70.390
^{155}Dy	-69.600
^{156}Dy	-70.710
^{157}Dy	-69.740
^{158}Dy	-70.440
^{159}Dy	-69.120
^{160}Dy	-69.400
^{161}Dy	-67.700
^{162}Dy	-67.590

Isotope	Mass Excess
^{163}Dy	-65.580
^{164}Dy	-65.150
^{165}Dy	-62.930
^{166}Dy	-62.030
^{167}Dy	-59.510
^{168}Dy	-58.120
^{169}Dy	-55.300
^{170}Dy	-53.470
^{171}Dy	-50.180
^{172}Dy	-48.000
^{173}Dy	-44.480
^{174}Dy	-41.930
^{175}Dy	-37.970
^{176}Dy	-34.960
^{177}Dy	-30.410
^{178}Dy	-26.910
^{141}Ho	-34.440 †
^{142}Ho	-37.280 †
^{143}Ho	-41.910 †
^{144}Ho	-44.350 †
^{145}Ho	-49.170 †
^{146}Ho	-51.190
^{147}Ho	-55.230
^{148}Ho	-58.140
^{149}Ho	-62.360
^{150}Ho	-62.260
^{151}Ho	-64.350
^{152}Ho	-63.740
^{153}Ho	-65.170
^{154}Ho	-64.860
^{155}Ho	-66.210
^{156}Ho	-65.890
^{157}Ho	-67.150
^{158}Ho	-66.620
^{159}Ho	-67.450
^{160}Ho	-66.620
^{161}Ho	-66.970
^{162}Ho	-65.820
^{163}Ho	-65.850
^{164}Ho	-64.400
^{165}Ho	-64.110
^{166}Ho	-62.430
^{167}Ho	-61.650
^{168}Ho	-59.680
^{169}Ho	-58.420
^{170}Ho	-56.030
^{171}Ho	-54.330
^{172}Ho	-51.620
^{173}Ho	-49.540
^{174}Ho	-46.550
^{175}Ho	-44.100
^{176}Ho	-40.600
^{177}Ho	-37.720
^{178}Ho	-33.630
^{179}Ho	-30.200
^{180}Ho	-26.070
^{143}Er	-30.840
^{144}Er	-36.110
^{145}Er	-38.710
^{146}Er	-43.990
^{147}Er	-46.160
^{148}Er	-50.810
^{149}Er	-54.010
^{150}Er	-58.740
^{151}Er	-58.800
^{152}Er	-61.550
^{153}Er	-60.880
^{154}Er	-62.640
^{155}Er	-62.360
^{156}Er	-64.110
^{157}Er	-63.660
^{158}Er	-65.370
^{159}Er	-64.790
^{160}Er	-66.090

Isotope	Mass Excess
^{161}Er	-65.280
^{162}Er	-66.260
^{163}Er	-65.050
^{164}Er	-65.630
^{165}Er	-64.180
^{166}Er	-64.430
^{167}Er	-62.760
^{168}Er	-62.510
^{169}Er	-60.560
^{170}Er	-59.830
^{171}Er	-57.510
^{172}Er	-56.340
^{173}Er	-53.700
^{174}Er	-52.170
^{175}Er	-49.250
^{176}Er	-47.310
^{177}Er	-43.880
^{178}Er	-41.410
^{179}Er	-37.470
^{180}Er	-34.530
^{181}Er	-30.420
^{182}Er	-27.370
^{183}Er	-22.980
^{184}Er	-19.620
^{145}Tm	-27.310 †
^{146}Tm	-30.330 †
^{147}Tm	-35.890 †
^{148}Tm	-38.560 †
^{149}Tm	-43.190 †
^{150}Tm	-46.620 †
^{151}Tm	-51.400 †
^{152}Tm	-52.020
^{153}Tm	-54.880
^{154}Tm	-54.840
^{155}Tm	-56.830
^{156}Tm	-57.070
^{157}Tm	-58.900
^{158}Tm	-58.870
^{159}Tm	-60.780
^{160}Tm	-60.650
^{161}Tm	-62.110
^{162}Tm	-61.740
^{163}Tm	-62.820
^{164}Tm	-62.110
^{165}Tm	-62.800
^{166}Tm	-61.850
^{167}Tm	-62.230
^{168}Tm	-61.080
^{169}Tm	-60.960
^{170}Tm	-59.460
^{171}Tm	-58.920
^{172}Tm	-57.110
^{173}Tm	-56.090
^{174}Tm	-53.960
^{175}Tm	-52.560
^{176}Tm	-50.120
^{177}Tm	-48.370
^{178}Tm	-45.340
^{179}Tm	-42.970
^{180}Tm	-39.490
^{181}Tm	-36.660
^{182}Tm	-33.020
^{183}Tm	-29.950
^{184}Tm	-26.070
^{185}Tm	-22.770
^{186}Tm	-18.570
^{147}Yb	-23.630 ‡
^{148}Yb	-29.830
^{149}Yb	-32.670
^{150}Yb	-38.070
^{151}Yb	-41.580
^{152}Yb	-46.870
^{153}Yb	-47.590
^{154}Yb	-50.890

Isotope	Mass Excess
^{155}Yb	-50.890
^{156}Yb	-53.410
^{157}Yb	-53.530
^{158}Yb	-55.860
^{159}Yb	-55.820
^{160}Yb	-57.980
^{161}Yb	-57.820
^{162}Yb	-59.760
^{163}Yb	-59.380
^{164}Yb	-60.990
^{165}Yb	-60.380
^{166}Yb	-61.480
^{167}Yb	-60.530
^{168}Yb	-61.410
^{169}Yb	-60.220
^{170}Yb	-60.600
^{171}Yb	-59.170
^{172}Yb	-59.150
^{173}Yb	-57.380
^{174}Yb	-56.910
^{175}Yb	-54.750
^{176}Yb	-53.950
^{177}Yb	-51.610
^{178}Yb	-50.240
^{179}Yb	-47.290
^{180}Yb	-45.340
^{181}Yb	-41.970
^{182}Yb	-39.640
^{183}Yb	-36.080
^{184}Yb	-33.480
^{185}Yb	-29.780
^{186}Yb	-26.870
^{187}Yb	-22.800
^{188}Yb	-19.630
^{189}Yb	-15.500
^{190}Yb	-12.570
^{149}Lu	-20.820 †
^{150}Lu	-24.180 †
^{151}Lu	-29.450 †
^{152}Lu	-33.570 †
^{153}Lu	-38.710 †
^{154}Lu	-40.090 †
^{155}Lu	-43.560 †
^{156}Lu	-44.200
^{157}Lu	-46.590
^{158}Lu	-47.300
^{159}Lu	-49.790
^{160}Lu	-50.130
^{161}Lu	-52.430
^{162}Lu	-52.750
^{163}Lu	-54.700
^{164}Lu	-54.790
^{165}Lu	-56.460
^{166}Lu	-56.330
^{167}Lu	-57.600
^{168}Lu	-57.050
^{169}Lu	-58.030
^{170}Lu	-57.320
^{171}Lu	-57.820
^{172}Lu	-56.840
^{173}Lu	-56.920
^{174}Lu	-55.650
^{175}Lu	-55.290
^{176}Lu	-53.680
^{177}Lu	-53.000
^{178}Lu	-51.070
^{179}Lu	-49.820
^{180}Lu	-47.310
^{181}Lu	-45.510
^{182}Lu	-42.640
^{183}Lu	-40.550
^{184}Lu	-37.520
^{185}Lu	-34.990
^{186}Lu	-31.670
^{187}Lu	-28.850

Isotope	Mass Excess
^{188}Lu	-25.210
^{189}Lu	-22.180
^{190}Lu	-18.470
^{191}Lu	-15.580
^{150}Hf	-13.880 ‡
^{151}Hf	-17.330 ‡
^{152}Hf	-23.270 ‡
^{153}Hf	-27.470
^{154}Hf	-33.270
^{155}Hf	-34.580
^{156}Hf	-38.630
^{157}Hf	-39.130
^{158}Hf	-42.170
^{159}Hf	-42.750
^{160}Hf	-45.720
^{161}Hf	-46.120
^{162}Hf	-48.860
^{163}Hf	-49.030
^{164}Hf	-51.540
^{165}Hf	-51.540
^{166}Hf	-53.650
^{167}Hf	-53.510
^{168}Hf	-55.310
^{169}Hf	-54.950
^{170}Hf	-56.330
^{171}Hf	-55.590
^{172}Hf	-56.560
^{173}Hf	-55.530
^{174}Hf	-56.100
^{175}Hf	-54.790
^{176}Hf	-54.970
^{177}Hf	-53.360
^{178}Hf	-53.070
^{179}Hf	-51.160
^{180}Hf	-50.360
^{181}Hf	-47.870
^{182}Hf	-46.710
^{183}Hf	-43.860
^{184}Hf	-42.260
^{185}Hf	-39.250
^{186}Hf	-37.400
^{187}Hf	-34.030
^{188}Hf	-31.900
^{189}Hf	-28.310
^{190}Hf	-25.900
^{191}Hf	-22.260
^{192}Hf	-19.800
^{193}Hf	-15.960
^{194}Hf	-13.210
^{195}Hf	-9.130
^{151}Ta	-4.090 †
^{152}Ta	-8.080 †
^{153}Ta	-14.050 †
^{154}Ta	-18.620 †
^{155}Ta	-24.250 †
^{156}Ta	-26.090 †
^{157}Ta	-30.150 †
^{158}Ta	-31.670 †
^{159}Ta	-34.650 †
^{160}Ta	-35.670
^{161}Ta	-38.670
^{162}Ta	-39.600
^{163}Ta	-42.450
^{164}Ta	-43.150
^{165}Ta	-45.630
^{166}Ta	-46.090
^{167}Ta	-48.240
^{168}Ta	-48.460
^{169}Ta	-50.380
^{170}Ta	-50.430
^{171}Ta	-51.870
^{172}Ta	-51.670
^{173}Ta	-52.720
^{174}Ta	-52.170

Isotope	Mass Excess
^{175}Ta	-52.810
^{176}Ta	-51.970
^{177}Ta	-52.200
^{178}Ta	-51.060
^{179}Ta	-50.950
^{180}Ta	-49.490
^{181}Ta	-48.770
^{182}Ta	-46.900
^{183}Ta	-45.820
^{184}Ta	-43.470
^{185}Ta	-41.970
^{186}Ta	-39.450
^{187}Ta	-37.650
^{188}Ta	-34.650
^{189}Ta	-32.630
^{190}Ta	-29.640
^{191}Ta	-27.420
^{192}Ta	-24.190
^{193}Ta	-21.790
^{194}Ta	-18.400
^{195}Ta	-15.720
^{196}Ta	-12.110
^{197}Ta	-8.940
^{198}Ta	-5.940
^{153}W	-0.320 †
^{154}W	-6.860 ‡
^{155}W	-11.490 ‡
^{156}W	-17.820 ‡
^{157}W	-19.930 ‡
^{158}W	-24.500
^{159}W	-25.730
^{160}W	-29.240
^{161}W	-30.170
^{162}W	-33.650
^{163}W	-34.530
^{164}W	-37.800
^{165}W	-38.540
^{166}W	-41.500
^{167}W	-41.950
^{168}W	-44.540
^{169}W	-44.750
^{170}W	-47.050
^{171}W	-47.120
^{172}W	-49.080
^{173}W	-48.860
^{174}W	-50.300
^{175}W	-49.840
^{176}W	-50.900
^{177}W	-49.990
^{178}W	-50.700
^{179}W	-49.640
^{180}W	-49.990
^{181}W	-48.540
^{182}W	-48.410
^{183}W	-46.430
^{184}W	-45.900
^{185}W	-43.640
^{186}W	-42.570
^{187}W	-40.090
^{188}W	-38.740
^{189}W	-36.010
^{190}W	-34.680
^{191}W	-31.680
^{192}W	-30.080
^{193}W	-27.070
^{194}W	-25.120
^{195}W	-21.840
^{196}W	-19.740
^{197}W	-16.100
^{198}W	-13.470
^{199}W	-10.500
^{200}W	-7.430
^{201}W	-1.850
^{155}Re	3.070 †

Isotope	Mass Excess
^{156}Re	-2.010 †
^{157}Re	-7.970 †
^{158}Re	-10.570 †
^{159}Re	-15.400 †
^{160}Re	-17.350 †
^{161}Re	-20.760 †
^{162}Re	-22.370 †
^{163}Re	-25.820 †
^{164}Re	-27.160 †
^{165}Re	-30.410 †
^{166}Re	-31.560
^{167}Re	-34.470
^{168}Re	-35.370
^{169}Re	-38.090
^{170}Re	-38.730
^{171}Re	-41.160
^{172}Re	-41.560
^{173}Re	-43.550
^{174}Re	-43.690
^{175}Re	-45.330
^{176}Re	-45.240
^{177}Re	-46.400
^{178}Re	-46.040
^{179}Re	-46.850
^{180}Re	-46.170
^{181}Re	-46.670
^{182}Re	-45.780
^{183}Re	-45.670
^{184}Re	-44.310
^{185}Re	-43.750
^{186}Re	-41.970
^{187}Re	-41.050
^{188}Re	-39.040
^{189}Re	-37.920
^{190}Re	-35.740
^{191}Re	-34.480
^{192}Re	-31.960
^{193}Re	-30.450
^{194}Re	-27.800
^{195}Re	-26.210
^{196}Re	-23.410
^{197}Re	-21.280
^{198}Re	-18.120
^{199}Re	-15.480
^{200}Re	-12.860
^{201}Re	-9.790
^{202}Re	-4.650
^{203}Re	-0.460
^{204}Re	5.040
^{157}Os	5.920 †
^{158}Os	-0.810 ‡
^{159}Os	-3.440 ‡
^{160}Os	-9.070 ‡
^{161}Os	-10.900 ‡
^{162}Os	-14.820
^{163}Os	-16.090
^{164}Os	-19.990
^{165}Os	-21.210
^{166}Os	-24.920
^{167}Os	-25.960
^{168}Os	-29.430
^{169}Os	-30.310
^{170}Os	-33.420
^{171}Os	-34.060
^{172}Os	-36.900
^{173}Os	-37.330
^{174}Os	-39.880
^{175}Os	-39.990
^{176}Os	-42.040
^{177}Os	-41.940
^{178}Os	-43.560
^{179}Os	-43.170
^{180}Os	-44.440
^{181}Os	-43.720
^{182}Os	-44.750

Isotope	Mass Excess
^{183}Os	-43.830
^{184}Os	-44.210
^{185}Os	-42.760
^{186}Os	-42.770
^{187}Os	-41.010
^{188}Os	-40.600
^{189}Os	-38.680
^{190}Os	-38.040
^{191}Os	-36.060
^{192}Os	-35.380
^{193}Os	-32.860
^{194}Os	-31.970
^{195}Os	-29.600
^{196}Os	-28.440
^{197}Os	-25.920
^{198}Os	-24.270
^{199}Os	-21.150
^{200}Os	-19.060
^{201}Os	-16.550
^{202}Os	-13.930
^{203}Os	-8.760
^{204}Os	-5.040
^{205}Os	0.540
^{206}Os	4.910
^{160}Ir	6.260 †
^{161}Ir	0.560 †
^{162}Ir	-1.760 †
^{163}Ir	-5.850 †
^{164}Ir	-7.880 †
^{165}Ir	-11.780 †
^{166}Ir	-13.430 †
^{167}Ir	-17.120 †
^{168}Ir	-18.580 †
^{169}Ir	-22.030 †
^{170}Ir	-23.260
^{171}Ir	-26.400
^{172}Ir	-27.400
^{173}Ir	-30.240
^{174}Ir	-30.970
^{175}Ir	-33.510
^{176}Ir	-34.100
^{177}Ir	-36.240
^{178}Ir	-36.570
^{179}Ir	-38.290
^{180}Ir	-38.350
^{181}Ir	-39.730
^{182}Ir	-39.480
^{183}Ir	-40.470
^{184}Ir	-39.830
^{185}Ir	-40.420
^{186}Ir	-39.380
^{187}Ir	-39.450
^{188}Ir	-38.180
^{189}Ir	-37.990
^{190}Ir	-36.530
^{191}Ir	-36.290
^{192}Ir	-34.730
^{193}Ir	-34.280
^{194}Ir	-32.250
^{195}Ir	-31.510
^{196}Ir	-29.610
^{197}Ir	-28.730
^{198}Ir	-26.730
^{199}Ir	-25.150
^{200}Ir	-22.410
^{201}Ir	-20.330
^{202}Ir	-18.260
^{203}Ir	-15.670
^{204}Ir	-10.920
^{205}Ir	-7.290
^{206}Ir	-2.140
^{207}Ir	2.170
^{208}Ir	7.670
^{209}Ir	12.090
^{210}Ir	17.790

Isotope	Mass Excess
^{162}Pt	8.110 †
^{163}Pt	6.020 †
^{164}Pt	1.160 ‡
^{165}Pt	-0.800 ‡
^{166}Pt	-5.210 ‡
^{167}Pt	-6.830
^{168}Pt	-11.060
^{169}Pt	-12.330
^{170}Pt	-16.220
^{171}Pt	-17.350
^{172}Pt	-21.050
^{173}Pt	-22.000
^{174}Pt	-25.310
^{175}Pt	-25.990
^{176}Pt	-28.980
^{177}Pt	-29.740
^{178}Pt	-32.250
^{179}Pt	-32.640
^{180}Pt	-34.890
^{181}Pt	-34.810
^{182}Pt	-36.710
^{183}Pt	-36.260
^{184}Pt	-37.820
^{185}Pt	-37.180
^{186}Pt	-38.220
^{187}Pt	-37.170
^{188}Pt	-37.760
^{189}Pt	-36.430
^{190}Pt	-37.180
^{191}Pt	-35.800
^{192}Pt	-36.140
^{193}Pt	-34.610
^{194}Pt	-34.740
^{195}Pt	-32.990
^{196}Pt	-32.710
^{197}Pt	-30.630
^{198}Pt	-30.020
^{199}Pt	-28.040
^{200}Pt	-26.860
^{201}Pt	-24.170
^{202}Pt	-22.610
^{203}Pt	-20.630
^{204}Pt	-18.480
^{205}Pt	-13.730
^{206}Pt	-10.560
^{207}Pt	-5.420
^{208}Pt	-1.510
^{209}Pt	4.010
^{210}Pt	7.900
^{211}Pt	13.660
^{212}Pt	17.700
^{213}Pt	23.340
^{214}Pt	27.410
^{167}Au	4.230 †
^{168}Au	2.150 †
^{169}Au	-2.020 †
^{170}Au	-3.840 †
^{171}Au	-7.770 †
^{172}Au	-9.280 †
^{173}Au	-12.930 †
^{174}Au	-14.120 †
^{175}Au	-17.450 †
^{176}Au	-18.380 †
^{177}Au	-21.430 †
^{178}Au	-22.130 †
^{179}Au	-24.900 †
^{180}Au	-25.410
^{181}Au	-27.850
^{182}Au	-28.140
^{183}Au	-30.250
^{184}Au	-30.290
^{185}Au	-32.030
^{186}Au	-31.840
^{187}Au	-33.160
^{188}Au	-32.620

Isotope	Mass Excess
^{189}Au	-33.710
^{190}Au	-32.950
^{191}Au	-33.770
^{192}Au	-32.810
^{193}Au	-33.340
^{194}Au	-32.230
^{195}Au	-32.400
^{196}Au	-31.120
^{197}Au	-30.970
^{198}Au	-29.380
^{199}Au	-28.900
^{200}Au	-27.380
^{201}Au	-26.390
^{202}Au	-24.200
^{203}Au	-22.730
^{204}Au	-21.440
^{205}Au	-19.310
^{206}Au	-14.990
^{207}Au	-11.920
^{208}Au	-7.240
^{209}Au	-3.430
^{210}Au	1.650
^{211}Au	5.530
^{212}Au	10.810
^{213}Au	14.800
^{214}Au	20.080
^{215}Au	24.140
^{216}Au	29.410
^{169}Hg	10.250 †
^{170}Hg	5.550 †
^{171}Hg	3.790 †
^{172}Hg	-0.660 ‡
^{173}Hg	-2.120 ‡
^{174}Hg	-6.290 ‡
^{175}Hg	-7.490
^{176}Hg	-11.320
^{177}Hg	-12.270
^{178}Hg	-15.810
^{179}Hg	-16.510
^{180}Hg	-19.760
^{181}Hg	-20.220
^{182}Hg	-23.170
^{183}Hg	-23.370
^{184}Hg	-26.030
^{185}Hg	-26.030
^{186}Hg	-28.310
^{187}Hg	-28.070
^{188}Hg	-29.990
^{189}Hg	-29.450
^{190}Hg	-31.140
^{191}Hg	-30.420
^{192}Hg	-31.760
^{193}Hg	-30.810
^{194}Hg	-31.860
^{195}Hg	-30.780
^{196}Hg	-31.460
^{197}Hg	-30.190
^{198}Hg	-30.540
^{199}Hg	-29.050
^{200}Hg	-29.110
^{201}Hg	-27.490
^{202}Hg	-26.500
^{203}Hg	-24.320
^{204}Hg	-23.690
^{205}Hg	-22.560
^{206}Hg	-20.900
^{207}Hg	-16.630
^{208}Hg	-13.940
^{209}Hg	-9.250
^{210}Hg	-5.840
^{211}Hg	-0.710
^{212}Hg	2.670
^{213}Hg	8.030
^{214}Hg	11.560
^{215}Hg	17.290

Isotope	Mass Excess
^{216}Hg	20.950
^{217}Hg	26.440
^{218}Hg	30.190
^{171}Tl	14.520 †
^{172}Tl	12.380 †
^{173}Tl	7.910 †
^{174}Tl	5.800 †
^{175}Tl	1.600 †
^{177}Tl	-3.840 †
^{178}Tl	-5.130
^{179}Tl	-8.690
^{180}Tl	-9.700
^{181}Tl	-13.030
^{182}Tl	-13.820
^{183}Tl	-16.880
^{184}Tl	-17.440
^{185}Tl	-20.230
^{186}Tl	-20.590
^{187}Tl	-23.040
^{188}Tl	-23.160
^{189}Tl	-25.310
^{190}Tl	-25.180
^{191}Tl	-27.070
^{192}Tl	-26.770
^{193}Tl	-27.650
^{194}Tl	-27.260
^{195}Tl	-28.170
^{196}Tl	-27.400
^{197}Tl	-28.330
^{198}Tl	-27.400
^{199}Tl	-28.340
^{200}Tl	-26.730
^{201}Tl	-27.390
^{202}Tl	-26.270
^{203}Tl	-25.860
^{204}Tl	-24.430
^{205}Tl	-23.780
^{206}Tl	-21.790
^{207}Tl	-20.190
^{208}Tl	-16.230
^{209}Tl	-13.660
^{210}Tl	-9.360
^{211}Tl	-6.010
^{212}Tl	-1.390
^{213}Tl	1.980
^{214}Tl	6.850
^{215}Tl	10.340
^{216}Tl	15.380
^{217}Tl	18.910
^{218}Tl	24.000
^{219}Tl	27.740
^{220}Tl	32.900
^{173}Pb	21.060 †
^{174}Pb	16.150 †
^{175}Pb	14.190 †
^{176}Pb	9.560 †
^{177}Pb	7.890 †
^{178}Pb	3.530 †
^{179}Pb	2.130
^{180}Pb	-1.910
^{181}Pb	-3.060
^{182}Pb	-6.790
^{183}Pb	-7.610
^{184}Pb	-11.100
^{185}Pb	-11.720
^{186}Pb	-14.860
^{187}Pb	-15.240
^{188}Pb	-18.070
^{189}Pb	-18.190
^{190}Pb	-20.730
^{191}Pb	-20.610
^{192}Pb	-22.890
^{193}Pb	-22.570
^{194}Pb	-24.490

Isotope	Mass Excess
^{195}Pb	-23.990
^{196}Pb	-25.580
^{197}Pb	-24.880
^{198}Pb	-26.160
^{199}Pb	-25.240
^{200}Pb	-26.220
^{201}Pb	-25.160
^{202}Pb	-25.780
^{203}Pb	-24.630
^{204}Pb	-24.880
^{205}Pb	-23.540
^{206}Pb	-23.330
^{207}Pb	-21.370
^{208}Pb	-20.230
^{209}Pb	-16.250
^{210}Pb	-14.130
^{211}Pb	-9.780
^{212}Pb	-6.870
^{213}Pb	-2.250
^{214}Pb	0.730
^{215}Pb	5.580
^{216}Pb	8.660
^{217}Pb	13.700
^{218}Pb	16.890
^{219}Pb	22.020
^{220}Pb	25.350
^{221}Pb	30.600
^{222}Pb	34.030
^{175}Bi	28.230 †
^{176}Bi	25.720 †
^{177}Bi	21.000 †
^{178}Bi	18.720 †
^{179}Bi	14.270 †
^{180}Bi	12.310 †
^{181}Bi	8.140 †
^{182}Bi	6.420 †
^{183}Bi	2.560 †
^{184}Bi	1.130 †
^{185}Bi	-2.460 †
^{186}Bi	-3.770 †
^{187}Bi	-6.840 †
^{188}Bi	-7.740 †
^{189}Bi	-10.500 †
^{190}Bi	-11.070
^{191}Bi	-13.540
^{192}Bi	-13.900
^{193}Bi	-16.020
^{194}Bi	-16.070
^{195}Bi	-18.030
^{196}Bi	-17.890
^{197}Bi	-19.690
^{198}Bi	-19.330
^{199}Bi	-20.700
^{200}Bi	-20.200
^{201}Bi	-21.260
^{202}Bi	-20.490
^{203}Bi	-21.360
^{204}Bi	-21.030
^{205}Bi	-21.120
^{206}Bi	-20.110
^{207}Bi	-19.880
^{208}Bi	-18.220
^{209}Bi	-17.050
^{210}Bi	-13.590
^{211}Bi	-11.560
^{212}Bi	-7.680
^{213}Bi	-4.860
^{214}Bi	-0.690
^{215}Bi	2.200
^{216}Bi	6.580
^{217}Bi	9.460
^{218}Bi	13.910
^{219}Bi	17.010
^{220}Bi	22.930
^{221}Bi	25.140

Isotope	Mass Excess
^{222}Bi	29.330
^{223}Bi	32.690
^{224}Bi	36.500
^{225}Bi	40.030
^{226}Bi	44.410
^{227}Bi	48.110
^{177}Po	35.920 †
^{178}Po	29.900 †
^{179}Po	27.340 †
^{180}Po	22.610 †
^{181}Po	19.340 ‡
^{182}Po	15.140 ‡
^{183}Po	13.160 ‡
^{184}Po	9.010 ‡
^{185}Po	7.310 ‡
^{186}Po	3.670 ‡
^{187}Po	2.270
^{188}Po	-1.240
^{189}Po	-2.210
^{190}Po	-4.620
^{191}Po	-5.380
^{192}Po	-8.290
^{193}Po	-8.740
^{194}Po	-11.260
^{195}Po	-11.310
^{196}Po	-13.370
^{197}Po	-13.600
^{198}Po	-15.930
^{199}Po	-15.610
^{200}Po	-17.520
^{201}Po	-16.930
^{202}Po	-18.530
^{203}Po	-17.670
^{204}Po	-18.980
^{205}Po	-18.420
^{206}Po	-18.970
^{207}Po	-17.930
^{208}Po	-18.140
^{209}Po	-16.590
^{210}Po	-15.830
^{211}Po	-12.350
^{212}Po	-10.740
^{213}Po	-6.850
^{214}Po	-4.450
^{215}Po	-0.300
^{216}Po	2.180
^{217}Po	6.540
^{218}Po	9.070
^{219}Po	15.770
^{220}Po	17.820
^{221}Po	20.830
^{222}Po	23.610
^{223}Po	27.410
^{224}Po	30.280
^{225}Po	34.270
^{226}Po	37.370
^{227}Po	41.820
^{228}Po	45.090
^{229}Po	49.660
^{230}Po	53.280
^{183}At	25.790 †
^{184}At	23.200 †
^{185}At	18.930 †
^{186}At	16.720 †
^{187}At	12.930 †
^{188}At	11.140 †
^{189}At	7.520 †
^{190}At	5.880 †
^{191}At	3.690 †
^{192}At	2.490 †
^{193}At	-0.450 †
^{194}At	-1.370 †
^{195}At	-3.900 †
^{196}At	-4.540

Isotope	Mass Excess
^{197}At	-6.780
^{198}At	-7.140
^{199}At	-9.090
^{200}At	-9.230
^{201}At	-11.020
^{202}At	-10.940
^{203}At	-12.560
^{204}At	-11.960
^{205}At	-13.280
^{206}At	-13.180
^{207}At	-13.970
^{208}At	-13.190
^{209}At	-13.590
^{210}At	-12.440
^{211}At	-11.690
^{212}At	-8.650
^{213}At	-7.160
^{214}At	-3.750
^{215}At	-1.440
^{216}At	2.410
^{217}At	4.730
^{218}At	9.210
^{219}At	11.670
^{220}At	15.070
^{221}At	17.620
^{222}At	21.330
^{223}At	23.810
^{224}At	27.290
^{225}At	30.120
^{226}At	33.790
^{227}At	36.820
^{228}At	40.880
^{229}At	44.110
^{230}At	48.260
^{231}At	51.850
^{232}At	56.170
^{185}Rn	31.060 †
^{186}Rn	26.390 †
^{187}Rn	24.030 †
^{188}Rn	19.890 ‡
^{189}Rn	17.990 ‡
^{190}Rn	14.080 ‡
^{191}Rn	12.540 ‡
^{192}Rn	9.130
^{193}Rn	8.930
^{194}Rn	5.750
^{195}Rn	4.850
^{196}Rn	1.820
^{197}Rn	1.180
^{198}Rn	-1.430
^{199}Rn	-1.850
^{200}Rn	-4.210
^{201}Rn	-4.350
^{202}Rn	-6.510
^{203}Rn	-6.420
^{204}Rn	-8.640
^{205}Rn	-7.900
^{206}Rn	-9.970
^{207}Rn	-9.360
^{208}Rn	-10.570
^{209}Rn	-9.740
^{210}Rn	-10.570
^{211}Rn	-9.450
^{212}Rn	-9.090
^{213}Rn	-6.070
^{214}Rn	-4.990
^{215}Rn	-1.630
^{216}Rn	0.290
^{217}Rn	3.980
^{218}Rn	5.950
^{219}Rn	10.280
^{220}Rn	12.230
^{221}Rn	15.510
^{222}Rn	17.580
^{223}Rn	20.820

Isotope	Mass Excess
^{224}Rn	23.000
^{225}Rn	26.490
^{226}Rn	28.840
^{227}Rn	32.530
^{228}Rn	35.070
^{229}Rn	39.050
^{230}Rn	41.850
^{231}Rn	46.000
^{232}Rn	49.210
^{233}Rn	53.400
^{234}Rn	56.800
^{235}Rn	61.290
^{189}Fr	29.730 †
^{190}Fr	27.370 †
^{191}Fr	23.480 †
^{192}Fr	21.510 †
^{193}Fr	18.160 †
^{194}Fr	16.670 †
^{195}Fr	14.540 †
^{196}Fr	13.140 †
^{197}Fr	10.120 †
^{198}Fr	9.050 †
^{199}Fr	6.420 †
^{200}Fr	5.580 †
^{201}Fr	3.240 †
^{202}Fr	2.650
^{203}Fr	0.610
^{204}Fr	0.180
^{205}Fr	-1.820
^{206}Fr	-2.110
^{207}Fr	-3.400
^{208}Fr	-3.330
^{209}Fr	-4.220
^{210}Fr	-3.620
^{211}Fr	-4.980
^{212}Fr	-4.370
^{213}Fr	-4.040
^{214}Fr	-1.450
^{215}Fr	-0.470
^{216}Fr	2.460
^{217}Fr	4.270
^{218}Fr	7.800
^{219}Fr	10.150
^{220}Fr	12.880
^{221}Fr	14.650
^{222}Fr	17.490
^{223}Fr	19.350
^{224}Fr	22.240
^{225}Fr	24.300
^{226}Fr	27.400
^{227}Fr	29.660
^{228}Fr	32.940
^{229}Fr	35.440
^{230}Fr	38.940
^{231}Fr	41.740
^{232}Fr	45.350
^{233}Fr	48.550
^{234}Fr	52.430
^{235}Fr	55.810
^{236}Fr	59.950
^{237}Fr	63.500
^{238}Fr	67.790
^{193}Ra	28.920 †
^{194}Ra	25.110 ‡
^{195}Ra	23.500
^{196}Ra	20.240
^{197}Ra	19.330
^{198}Ra	16.490 ‡
^{199}Ra	15.330
^{200}Ra	12.300
^{201}Ra	11.440
^{202}Ra	8.730
^{203}Ra	8.130
^{204}Ra	5.680

Isotope	Mass Excess
^{205}Ra	5.270
^{206}Ra	3.060
^{207}Ra	3.010
^{208}Ra	1.040
^{209}Ra	1.000
^{210}Ra	-0.350
^{211}Ra	0.220
^{212}Ra	-1.280
^{213}Ra	-0.740
^{214}Ra	-0.770
^{215}Ra	1.780
^{216}Ra	2.320
^{217}Ra	5.220
^{218}Ra	6.590
^{219}Ra	10.490
^{220}Ra	11.840
^{221}Ra	14.640
^{222}Ra	15.870
^{223}Ra	18.550
^{224}Ra	19.950
^{225}Ra	22.760
^{226}Ra	24.390
^{227}Ra	27.300
^{228}Ra	29.120
^{229}Ra	32.340
^{230}Ra	34.380
^{231}Ra	37.840
^{232}Ra	40.190
^{233}Ra	43.910
^{234}Ra	46.670
^{235}Ra	50.550
^{236}Ra	53.570
^{237}Ra	57.680
^{238}Ra	60.960
^{239}Ra	65.240
^{240}Ra	68.820
^{196}Ac	32.950 †
^{197}Ac	29.620 †
^{198}Ac	28.360 †
^{199}Ac	25.340 †
^{200}Ac	24.020 †
^{201}Ac	21.000 †
^{202}Ac	19.760 †
^{203}Ac	16.980 †
^{204}Ac	15.990 †
^{205}Ac	13.540 †
^{206}Ac	12.750 †
^{207}Ac	10.600 †
^{208}Ac	10.340 †
^{209}Ac	8.350 †
^{210}Ac	7.810
^{211}Ac	6.510
^{212}Ac	6.700
^{213}Ac	5.270
^{214}Ac	5.210
^{215}Ac	5.150
^{216}Ac	7.270
^{217}Ac	7.720
^{218}Ac	10.180
^{219}Ac	11.520
^{220}Ac	14.850
^{221}Ac	15.940
^{222}Ac	18.100
^{223}Ac	19.130
^{224}Ac	21.390
^{225}Ac	22.640
^{226}Ac	25.010
^{227}Ac	26.490
^{228}Ac	29.010
^{229}Ac	30.750
^{230}Ac	33.510
^{231}Ac	35.410
^{232}Ac	38.540
^{233}Ac	40.870
^{234}Ac	44.220

Isotope	Mass Excess
^{235}Ac	46.920
^{236}Ac	50.470
^{237}Ac	53.470
^{238}Ac	57.230
^{239}Ac	60.480
^{240}Ac	64.410
^{241}Ac	67.970
^{242}Ac	72.350
^{200}Th	31.940 ‡
^{201}Th	31.040 ‡
^{202}Th	27.740 ‡
^{203}Th	26.520 ‡
^{204}Th	23.100
^{205}Th	22.170
^{206}Th	19.290
^{207}Th	18.570
^{208}Th	15.940
^{209}Th	15.560
^{210}Th	13.480
^{211}Th	12.820
^{212}Th	11.120
^{213}Th	11.330
^{214}Th	9.440
^{215}Th	9.490
^{216}Th	9.040
^{217}Th	11.150
^{218}Th	11.150
^{219}Th	13.560
^{220}Th	14.470
^{221}Th	17.730
^{222}Th	18.240
^{223}Th	20.330
^{224}Th	21.010
^{225}Th	23.160
^{226}Th	23.990
^{227}Th	26.260
^{228}Th	27.210
^{229}Th	29.660
^{230}Th	30.970
^{231}Th	33.810
^{232}Th	35.290
^{233}Th	38.390
^{234}Th	40.360
^{235}Th	43.620
^{236}Th	45.970
^{237}Th	49.480
^{238}Th	52.120
^{239}Th	55.880
^{240}Th	58.760
^{241}Th	62.680
^{242}Th	65.880
^{243}Th	70.250
^{244}Th	73.760
^{245}Th	78.470
^{246}Th	82.080
^{202}Pa	40.200 †
^{203}Pa	37.110 †
^{204}Pa	35.540 †
^{205}Pa	32.450 †
^{206}Pa	31.080 †
^{207}Pa	27.980 †
^{208}Pa	26.750 †
^{209}Pa	24.260 †
^{210}Pa	23.550 †
^{211}Pa	21.330 †
^{212}Pa	20.380 †
^{213}Pa	18.670 †
^{214}Pa	18.530
^{215}Pa	17.210 †
^{216}Pa	16.220
^{217}Pa	15.760
^{218}Pa	17.420
^{219}Pa	17.350
^{220}Pa	19.380

Isotope	Mass Excess
^{221}Pa	21.800 †
^{222}Pa	22.590
^{223}Pa	22.940
^{224}Pa	24.640
^{225}Pa	25.100
^{226}Pa	26.810
^{227}Pa	27.480
^{228}Pa	29.220
^{229}Pa	30.240
^{230}Pa	32.290
^{231}Pa	33.540
^{232}Pa	35.870
^{233}Pa	37.410
^{234}Pa	40.120
^{235}Pa	42.050
^{236}Pa	44.880
^{237}Pa	47.210
^{238}Pa	50.290
^{239}Pa	52.860
^{240}Pa	56.270
^{241}Pa	59.110
^{242}Pa	62.660
^{243}Pa	65.830
^{244}Pa	69.880
^{245}Pa	73.330
^{246}Pa	77.750
^{247}Pa	81.340
^{248}Pa	85.810
^{204}U	44.270 ‡
^{205}U	42.810 ‡
^{206}U	39.370 ‡
^{207}U	37.980 ‡
^{208}U	34.760 ‡
^{209}U	33.730 ‡
^{210}U	30.270
^{211}U	29.550
^{212}U	27.040
^{213}U	26.110
^{214}U	23.990
^{215}U	23.830
^{216}U	22.100
^{217}U	21.180
^{218}U	20.320
^{219}U	21.970
^{220}U	21.460
^{221}U	23.420
^{222}U	25.140
^{223}U	26.130
^{224}U	26.100
^{225}U	27.730
^{226}U	27.680
^{227}U	29.320
^{228}U	29.510
^{229}U	31.310
^{230}U	31.880
^{231}U	33.830
^{232}U	34.630
^{233}U	36.980
^{234}U	38.090
^{235}U	40.790
^{236}U	42.340
^{237}U	45.210
^{238}U	47.160
^{239}U	50.250
^{240}U	52.450
^{241}U	55.850
^{242}U	58.290
^{243}U	61.840
^{244}U	64.630
^{245}U	68.650
^{246}U	71.780
^{247}U	76.110
^{248}U	79.340
^{249}U	83.700
^{250}U	87.130

Isotope	Mass Excess
^{209}Np	44.180 †
^{210}Np	42.780 †
^{211}Np	39.810 †
^{212}Np	38.100 †
^{213}Np	35.680 †
^{214}Np	34.490 †
^{215}Np	32.340 †
^{216}Np	31.810 †
^{217}Np	30.160 †
^{218}Np	28.730 †
^{219}Np	27.940 †
^{220}Np	29.040
^{221}Np	28.480
^{222}Np	31.370 †
^{223}Np	30.700
^{224}Np	31.730
^{225}Np	31.490
^{226}Np	32.610
^{227}Np	32.420
^{228}Np	33.680
^{229}Np	33.750
^{230}Np	35.120
^{231}Np	35.590
^{232}Np	37.150
^{233}Np	37.940
^{234}Np	39.910
^{235}Np	40.990
^{236}Np	43.320
^{237}Np	44.790
^{238}Np	47.270
^{239}Np	49.180
^{240}Np	51.900
^{241}Np	54.060
^{242}Np	57.070
^{243}Np	59.490
^{244}Np	62.680
^{245}Np	65.410
^{246}Np	69.100
^{247}Np	72.150
^{248}Np	76.120
^{249}Np	79.420
^{250}Np	83.470
^{251}Np	86.860
^{252}Np	91.020
^{253}Np	94.510
^{213}Pu	44.890 ‡
^{214}Pu	42.010 ‡
^{215}Pu	40.850 ‡
^{216}Pu	38.280
^{217}Pu	37.740
^{218}Pu	35.660
^{219}Pu	34.290
^{220}Pu	33.030
^{221}Pu	34.220
^{222}Pu	33.180
^{223}Pu	36.160
^{224}Pu	35.440
^{225}Pu	36.060
^{226}Pu	35.420
^{227}Pu	36.540
^{228}Pu	35.930
^{229}Pu	37.220
^{230}Pu	36.830
^{231}Pu	38.260
^{232}Pu	38.270
^{233}Pu	39.830
^{234}Pu	40.190
^{235}Pu	42.180
^{236}Pu	42.850
^{237}Pu	45.050
^{238}Pu	46.120
^{239}Pu	48.650
^{240}Pu	50.080
^{241}Pu	52.850
^{242}Pu	54.610

Isotope	Mass Excess
^{243}Pu	57.600
^{244}Pu	59.580
^{245}Pu	62.730
^{246}Pu	65.080
^{247}Pu	68.740
^{248}Pu	71.450
^{249}Pu	75.330
^{250}Pu	78.240
^{251}Pu	82.260
^{252}Pu	85.260
^{253}Pu	89.320
^{254}Pu	92.510
^{255}Pu	96.770
^{256}Pu	100.090
^{222}Am	42.010 †
^{223}Am	40.970 †
^{224}Am	43.100
^{225}Am	41.830
^{226}Am	42.390
^{227}Am	41.470
^{228}Am	42.160
^{229}Am	41.500
^{230}Am	42.370
^{231}Am	41.990
^{232}Am	43.030
^{233}Am	42.900
^{234}Am	44.150
^{235}Am	44.460
^{236}Am	46.080
^{237}Am	46.600
^{238}Am	48.490
^{239}Am	49.510
^{240}Am	51.550
^{241}Am	52.990
^{242}Am	55.400
^{243}Am	57.110
^{244}Am	59.760
^{245}Am	61.720
^{246}Am	64.510
^{247}Am	66.830
^{248}Am	70.150
^{249}Am	72.770
^{250}Am	76.320
^{251}Am	79.190
^{252}Am	82.840
^{253}Am	85.820
^{254}Am	89.520
^{255}Am	92.700
^{256}Am	96.590
^{257}Am	99.890
^{258}Am	104.100
^{259}Am	107.910
^{226}Cm	47.200
^{227}Cm	47.530
^{228}Cm	46.270
^{229}Cm	46.960
^{230}Cm	45.900
^{231}Cm	46.780
^{232}Cm	46.040
^{233}Cm	47.090
^{234}Cm	46.540
^{235}Cm	47.780
^{236}Cm	47.650
^{237}Cm	49.330
^{238}Cm	49.420
^{239}Cm	51.260
^{240}Cm	51.910
^{241}Cm	53.900
^{242}Cm	54.890
^{243}Cm	57.180
^{244}Cm	58.460
^{245}Cm	61.050
^{246}Cm	62.590
^{247}Cm	65.380

Isotope	Mass Excess
^{248}Cm	67.290
^{249}Cm	70.560
^{250}Cm	72.760
^{251}Cm	76.360
^{252}Cm	78.770
^{253}Cm	82.480
^{254}Cm	85.070
^{255}Cm	88.760
^{256}Cm	91.560
^{257}Cm	95.430
^{258}Cm	98.360
^{259}Cm	102.560
^{260}Cm	106.040
^{261}Cm	110.570
^{262}Cm	114.340
^{229}Bk	53.190
^{230}Bk	53.410
^{231}Bk	52.300
^{232}Bk	52.840
^{233}Bk	52.050
^{234}Bk	52.620
^{235}Bk	52.090
^{236}Bk	52.980
^{237}Bk	52.780
^{238}Bk	54.070
^{239}Bk	54.130
^{240}Bk	55.600
^{241}Bk	56.090
^{242}Bk	57.800
^{243}Bk	58.680
^{244}Bk	60.650
^{245}Bk	61.860
^{246}Bk	64.070
^{247}Bk	65.530
^{248}Bk	67.970
^{249}Bk	69.810
^{250}Bk	72.720
^{251}Bk	74.850
^{252}Bk	78.090
^{253}Bk	80.480
^{254}Bk	83.840
^{255}Bk	86.380
^{256}Bk	89.720
^{257}Bk	92.480
^{258}Bk	96.040
^{259}Bk	98.950
^{260}Bk	102.840
^{261}Bk	106.270
^{262}Bk	110.510
^{263}Bk	114.180
^{264}Bk	118.560
^{265}Bk	122.120
^{232}Cf	57.500
^{233}Cf	58.030
^{234}Cf	56.820
^{235}Cf	57.410
^{236}Cf	56.530
^{237}Cf	57.400
^{238}Cf	56.850
^{239}Cf	58.120
^{240}Cf	57.790
^{241}Cf	59.140
^{242}Cf	59.320
^{243}Cf	61.010
^{244}Cf	61.460
^{245}Cf	63.400
^{246}Cf	64.210
^{247}Cf	66.400
^{248}Cf	67.450
^{249}Cf	69.790
^{250}Cf	71.250
^{251}Cf	74.150
^{252}Cf	75.880
^{253}Cf	79.090

Isotope	Mass Excess
^{254}Cf	81.090
^{255}Cf	84.320
^{256}Cf	86.570
^{257}Cf	89.910
^{258}Cf	92.210
^{259}Cf	95.750
^{260}Cf	98.270
^{261}Cf	102.130
^{262}Cf	105.240
^{263}Cf	109.480
^{264}Cf	112.820
^{265}Cf	117.270
^{266}Cf	120.520
^{267}Cf	124.690
^{268}Cf	128.250
^{234}Es	65.030
^{235}Es	63.670
^{236}Es	64.000
^{237}Es	63.030
^{238}Es	63.610
^{239}Es	62.910
^{240}Es	63.790
^{241}Es	63.400
^{242}Es	64.440
^{243}Es	64.540
^{244}Es	65.800
^{245}Es	66.270
^{246}Es	67.840
^{247}Es	68.570
^{248}Es	70.380
^{249}Es	71.300
^{250}Es	73.330
^{251}Es	74.700
^{252}Es	77.250
^{253}Es	78.900
^{254}Es	81.630
^{255}Es	83.650
^{256}Es	86.530
^{257}Es	88.720
^{258}Es	91.740
^{259}Es	94.020
^{260}Es	97.190
^{261}Es	99.700
^{262}Es	103.150
^{263}Es	106.270
^{264}Es	110.200
^{265}Es	113.510
^{266}Es	117.730
^{267}Es	120.910
^{268}Es	124.910
^{269}Es	128.280
^{270}Es	132.480
^{271}Es	136.030
^{236}Fm	69.400
^{237}Fm	69.660
^{238}Fm	68.280
^{239}Fm	68.870
^{240}Fm	67.810
^{241}Fm	68.670
^{242}Fm	67.910
^{243}Fm	68.940
^{244}Fm	68.590
^{245}Fm	69.900
^{246}Fm	69.950
^{247}Fm	71.490
^{248}Fm	71.770
^{249}Fm	73.540
^{250}Fm	74.100
^{251}Fm	76.090
^{252}Fm	77.050
^{253}Fm	79.480
^{254}Fm	80.800
^{255}Fm	83.460
^{256}Fm	85.040

Isotope	Mass Excess
^{257}Fm	87.940
^{258}Fm	89.720
^{259}Fm	92.630
^{260}Fm	94.600
^{261}Fm	97.740
^{262}Fm	99.850
^{263}Fm	103.260
^{264}Fm	106.030
^{265}Fm	109.970
^{266}Fm	112.960
^{267}Fm	117.090
^{268}Fm	120.080
^{269}Fm	124.110
^{270}Fm	127.130
^{271}Fm	131.330
^{272}Fm	134.530
^{273}Fm	138.960
^{274}Fm	142.540
^{238}Md	77.100 †
^{239}Md	75.690 †
^{240}Md	75.900
^{241}Md	74.810
^{242}Md	75.430
^{243}Md	74.490
^{244}Md	75.150
^{245}Md	74.800
^{246}Md	75.740
^{247}Md	75.630
^{248}Md	76.780
^{249}Md	77.010
^{250}Md	78.440
^{251}Md	78.820
^{252}Md	80.410
^{253}Md	81.300
^{254}Md	83.370
^{255}Md	84.620
^{256}Md	86.920
^{257}Md	88.430
^{258}Md	90.960
^{259}Md	92.680
^{260}Md	95.220
^{261}Md	97.180
^{262}Md	99.960
^{263}Md	102.030
^{264}Md	105.100
^{265}Md	107.850
^{266}Md	111.500
^{267}Md	114.440
^{268}Md	118.290
^{269}Md	121.370
^{270}Md	125.060
^{271}Md	128.100
^{272}Md	131.850
^{273}Md	135.190
^{274}Md	139.310
^{275}Md	142.870
^{276}Md	147.080
^{277}Md	150.890
^{240}No	81.740
^{241}No	81.980
^{242}No	80.520
^{243}No	81.120
^{244}No	79.820
^{245}No	80.480
^{246}No	79.740
^{247}No	80.670
^{248}No	80.140
^{249}No	81.300
^{250}No	81.130
^{251}No	82.560
^{252}No	82.570
^{253}No	84.060
^{254}No	84.550
^{255}No	86.670

Isotope	Mass Excess
^{256}No	87.450
^{257}No	89.690
^{258}No	90.890
^{259}No	93.340
^{260}No	94.590
^{261}No	97.170
^{262}No	98.640
^{263}No	101.360
^{264}No	103.050
^{265}No	106.080
^{266}No	108.460
^{267}No	112.150
^{268}No	114.680
^{269}No	118.580
^{270}No	121.240
^{271}No	124.970
^{272}No	127.690
^{273}No	131.430
^{274}No	134.410
^{275}No	138.500
^{276}No	141.740
^{277}No	145.920
^{278}No	149.430
^{279}No	153.890
^{280}No	157.750
^{243}Lr	88.410 †
^{244}Lr	88.490 †
^{245}Lr	87.380 †
^{246}Lr	87.690
^{247}Lr	86.770
^{248}Lr	87.330
^{249}Lr	86.740
^{250}Lr	87.490
^{251}Lr	87.230
^{252}Lr	88.270
^{253}Lr	88.180
^{254}Lr	89.280
^{255}Lr	89.690
^{256}Lr	91.410
^{257}Lr	92.100
^{258}Lr	93.960
^{259}Lr	95.120
^{260}Lr	97.160
^{261}Lr	98.370
^{262}Lr	100.550
^{263}Lr	101.960
^{264}Lr	104.360
^{265}Lr	105.980
^{266}Lr	108.670
^{267}Lr	111.020
^{268}Lr	114.400
^{269}Lr	116.910
^{270}Lr	120.420
^{271}Lr	123.140
^{272}Lr	126.560
^{273}Lr	129.320
^{274}Lr	132.690
^{275}Lr	135.660
^{276}Lr	139.440
^{277}Lr	142.750
^{278}Lr	146.620
^{279}Lr	150.120
^{280}Lr	154.320
^{245}Rf	95.100
^{246}Rf	93.500
^{247}Rf	93.790
^{248}Rf	92.500
^{249}Rf	93.060
^{250}Rf	92.130
^{251}Rf	92.810
^{252}Rf	92.130
^{253}Rf	93.170
^{254}Rf	92.600
^{255}Rf	93.760

Isotope	Mass Excess
^{256}Rf	93.780
^{257}Rf	95.430
^{258}Rf	95.760
^{259}Rf	97.590
^{260}Rf	98.330
^{261}Rf	100.340
^{262}Rf	101.150
^{263}Rf	103.290
^{264}Rf	104.320
^{265}Rf	106.680
^{266}Rf	107.930
^{267}Rf	110.560
^{268}Rf	112.550
^{269}Rf	115.940
^{270}Rf	118.090
^{271}Rf	121.610
^{272}Rf	124.050
^{273}Rf	127.390
^{274}Rf	129.810
^{275}Rf	133.200
^{276}Rf	135.810
^{277}Rf	139.540
^{278}Rf	142.390
^{279}Rf	146.240
^{280}Rf	149.440
^{248}Ha	101.690 †
^{249}Ha	100.320 †
^{250}Ha	100.510 †
^{251}Ha	99.400
^{252}Ha	99.750
^{253}Ha	98.980
^{254}Ha	99.620
^{255}Ha	99.000
^{256}Ha	99.800
^{257}Ha	99.750
^{258}Ha	101.000
^{259}Ha	101.210
^{260}Ha	102.670
^{261}Ha	103.360
^{262}Ha	104.980
^{263}Ha	105.720
^{264}Ha	107.430
^{265}Ha	108.440
^{266}Ha	110.440
^{267}Ha	111.600
^{268}Ha	113.920
^{269}Ha	115.890
^{270}Ha	118.920
^{271}Ha	121.090
^{272}Ha	124.260
^{273}Ha	126.720
^{274}Ha	129.790
^{275}Ha	132.210
^{276}Ha	135.230
^{277}Ha	137.850
^{278}Ha	141.310
^{279}Ha	144.140
^{280}Ha	147.650
^{252}Sg	105.540
^{253}Sg	105.900
^{254}Sg	104.680
^{255}Sg	105.350
^{256}Sg	104.350
^{257}Sg	105.130
^{258}Sg	104.670
^{259}Sg	105.930
^{260}Sg	105.810
^{261}Sg	107.220
^{262}Sg	107.440
^{263}Sg	109.020
^{264}Sg	109.370
^{265}Sg	111.050
^{266}Sg	111.640
^{267}Sg	113.630

Isotope	Mass Excess
^{268}Sg	114.440
^{269}Sg	116.730
^{270}Sg	118.330
^{271}Sg	121.330
^{272}Sg	123.180
^{273}Sg	126.370
^{274}Sg	128.490
^{275}Sg	131.530
^{276}Sg	133.510
^{277}Sg	136.640
^{278}Sg	138.830
^{279}Sg	142.120
^{280}Sg	144.560
^{255}Ns	112.410 †
^{256}Ns	112.680 †
^{257}Ns	111.600
^{258}Ns	112.030
^{259}Ns	111.500
^{260}Ns	112.380
^{261}Ns	112.140
^{262}Ns	113.180
^{263}Ns	113.300
^{264}Ns	114.520
^{265}Ns	114.830
^{266}Ns	116.130
^{267}Ns	116.670
^{268}Ns	118.320
^{269}Ns	119.080
^{270}Ns	121.020
^{271}Ns	122.560
^{272}Ns	125.220
^{273}Ns	126.990
^{274}Ns	129.780
^{275}Ns	131.960
^{276}Ns	134.700
^{277}Ns	136.730
^{278}Ns	139.520
^{279}Ns	141.720
^{280}Ns	144.630
^{257}Hs	119.300
^{258}Hs	117.850
^{259}Hs	118.270
^{260}Hs	117.390
^{261}Hs	118.250
^{262}Hs	117.590
^{263}Hs	118.620
^{264}Hs	118.340
^{265}Hs	119.510
^{266}Hs	119.420
^{267}Hs	120.690
^{268}Hs	120.840
^{269}Hs	122.470
^{270}Hs	122.900
^{271}Hs	124.760
^{272}Hs	125.930
^{273}Hs	128.610
^{274}Hs	130.030
^{275}Hs	132.800
^{276}Hs	134.530
^{277}Hs	137.290
^{278}Hs	139.100
^{279}Hs	141.600
^{280}Hs	143.340
^{281}Hs	146.240
^{282}Hs	148.380
^{283}Hs	151.540
^{284}Hs	154.000
^{285}Hs	157.240
^{286}Hs	160.290
^{287}Hs	163.790
^{288}Hs	167.030
^{289}Hs	171.080
^{290}Hs	174.400
^{291}Hs	178.820

Isotope	Mass Excess	
^{292}Hs	182.460	
^{293}Hs	187.890	
^{294}Hs	191.460	
^{295}Hs	197.030	
^{296}Hs	201.100	
^{297}Hs	205.710	
^{298}Hs	209.220	
^{299}Hs	213.870	
^{300}Hs	217.580	
^{301}Hs	222.380	
^{302}Hs	226.260	
^{303}Hs	231.150	
^{304}Hs	235.150	
^{259}Mt	126.050	†
^{260}Mt	126.100	†
^{261}Mt	125.130	†
^{262}Mt	125.610	†
^{263}Mt	124.940	†
^{264}Mt	125.530	
^{265}Mt	125.250	
^{266}Mt	126.060	
^{267}Mt	125.870	
^{268}Mt	126.760	
^{269}Mt	126.860	
^{270}Mt	128.100	
^{271}Mt	128.490	
^{272}Mt	129.970	
^{273}Mt	131.110	
^{274}Mt	133.430	
^{275}Mt	134.830	
^{276}Mt	137.200	
^{277}Mt	138.840	
^{278}Mt	141.350	
^{279}Mt	143.040	
^{280}Mt	145.250	
^{281}Mt	146.990	
^{282}Mt	149.580	
^{283}Mt	151.710	
^{284}Mt	154.560	
^{285}Mt	157.060	
^{286}Mt	160.030	
^{287}Mt	162.800	
^{288}Mt	166.030	
^{289}Mt	169.170	
^{290}Mt	172.900	
^{291}Mt	176.220	
^{292}Mt	180.300	
^{293}Mt	183.930	
^{294}Mt	189.050	
^{295}Mt	192.560	
^{296}Mt	197.820	
^{297}Mt	201.830	
^{298}Mt	207.230	
^{299}Mt	210.100	
^{300}Mt	214.460	
^{301}Mt	218.190	
^{302}Mt	222.680	
^{303}Mt	226.550	
^{304}Mt	231.150	
^{305}Mt	235.190	
^{260}110	133.230	‡
^{261}110	133.310	‡
^{262}110	131.950	
^{263}110	132.430	
^{264}110	131.370	
^{265}110	131.990	
^{266}110	131.250	
^{267}110	132.070	
^{268}110	131.510	
^{269}110	132.390	
^{270}110	132.130	
^{271}110	133.400	
^{272}110	133.350	
^{273}110	134.820	

Isotope	Mass Excess	
^{274}110	135.660	
^{275}110	137.940	
^{276}110	138.960	
^{277}110	141.140	
^{278}110	142.330	
^{279}110	144.610	
^{280}110	145.790	
^{281}110	148.030	
^{282}110	149.440	
^{283}110	152.030	
^{284}110	153.770	
^{285}110	156.570	
^{286}110	158.660	
^{287}110	161.550	
^{288}110	163.820	
^{289}110	167.160	
^{290}110	169.920	
^{291}110	173.690	
^{292}110	176.700	
^{293}110	180.790	
^{294}110	184.110	
^{295}110	189.230	
^{296}110	192.410	
^{297}110	197.670	
^{298}110	201.350	
^{299}110	206.760	
^{300}110	210.510	
^{301}110	214.160	
^{302}110	217.860	
^{303}110	222.360	
^{304}110	225.940	
^{305}110	230.580	
^{306}110	234.290	
^{261}111	142.380	†
^{262}111	142.120	†
^{263}111	140.710	†
^{264}111	140.800	†
^{265}111	139.680	†
^{266}111	139.910	†
^{267}111	139.130	†
^{268}111	139.600	†
^{269}111	139.010	†
^{270}111	139.560	
^{271}111	139.290	
^{272}111	140.180	
^{273}111	140.290	
^{274}111	141.340	
^{275}111	142.290	
^{276}111	143.960	
^{277}111	144.550	
^{278}111	146.590	
^{279}111	147.470	
^{280}111	149.340	
^{281}111	150.400	
^{282}111	152.270	
^{283}111	153.630	
^{284}111	155.900	
^{285}111	157.610	
^{286}111	160.090	
^{287}111	162.080	
^{288}111	164.650	
^{289}111	166.860	
^{290}111	169.990	
^{291}111	172.730	
^{292}111	176.110	
^{293}111	179.090	
^{294}111	182.890	
^{295}111	186.220	
^{296}111	191.030	
^{297}111	194.160	
^{298}111	199.100	
^{299}111	202.710	
^{300}111	207.780	
^{301}111	211.520	
^{302}111	215.400	

Isotope	Mass Excess	
^{303}111	219.130	
^{304}111	223.270	
^{305}111	227.050	
^{306}111	231.400	
^{307}111	235.080	
^{262}112	150.130	†
^{263}112	149.880	†
^{264}112	148.130	†
^{265}112	148.230	†
^{266}112	146.760	‡
^{267}112	147.010	‡
^{268}112	145.870	‡
^{269}112	146.340	
^{270}112	145.380	
^{271}112	145.930	
^{272}112	145.270	
^{273}112	146.150	
^{274}112	145.980	
^{275}112	147.190	
^{276}112	147.550	
^{277}112	148.960	
^{278}112	149.540	
^{279}112	151.330	
^{280}112	151.420	
^{281}112	153.180	
^{282}112	153.960	
^{283}112	155.830	
^{284}112	156.810	
^{285}112	159.090	
^{286}112	160.450	
^{287}112	162.950	
^{288}112	164.290	
^{289}112	167.310	
^{290}112	168.910	
^{291}112	172.020	
^{292}112	174.410	
^{293}112	177.790	
^{294}112	180.430	
^{295}112	184.220	
^{296}112	187.220	
^{297}112	192.030	
^{298}112	194.820	
^{299}112	199.780	
^{300}112	203.050	
^{301}112	208.140	
^{302}112	211.530	
^{303}112	215.650	
^{304}112	219.090	
^{305}112	223.490	
^{306}112	226.910	
^{307}112	231.360	
^{308}112	234.680	
^{263}113	160.310	†
^{264}113	159.740	†
^{265}113	157.880	†
^{266}113	157.630	†
^{267}113	156.040	†
^{268}113	155.920	†
^{269}113	154.810	†
^{270}113	154.910	†
^{271}113	153.910	†
^{272}113	154.120	†
^{273}113	153.460	†
^{274}113	154.160	†
^{275}113	153.720	†
^{276}113	154.450	
^{277}113	154.740	
^{278}113	156.160	
^{279}113	155.380	
^{280}113	156.630	
^{281}113	156.990	
^{282}113	158.410	
^{283}113	159.240	
^{284}113	160.780	

Isotope	Mass Excess	
^{285}113	161.700	
^{286}113	163.690	
^{287}113	165.020	
^{288}113	167.140	
^{289}113	168.730	
^{290}113	171.230	
^{291}113	173.010	
^{292}113	175.900	
^{293}113	178.290	
^{294}113	181.380	
^{295}113	184.060	
^{296}113	187.520	
^{297}113	190.500	
^{298}113	194.970	
^{299}113	197.740	
^{300}113	202.350	
^{301}113	205.600	
^{302}113	210.380	
^{303}113	213.690	
^{304}113	218.560	
^{305}113	222.010	
^{306}113	225.080	
^{307}113	228.660	
^{308}113	232.820	
^{309}113	236.470	
^{264}114	168.600	†
^{265}114	168.000	†
^{266}114	165.880	†
^{267}114	165.650	†
^{268}114	163.820	†
^{269}114	163.720	†
^{270}114	162.220	†
^{271}114	162.370	†
^{272}114	161.060	‡
^{273}114	161.310	‡
^{274}114	160.320	‡
^{275}114	160.910	‡
^{276}114	160.250	
^{277}114	160.980	
^{278}114	159.720	
^{279}114	160.580	
^{280}114	160.160	
^{281}114	161.410	
^{282}114	161.600	
^{283}114	162.850	
^{284}114	163.560	
^{285}114	165.100	
^{286}114	165.750	
^{287}114	167.620	
^{288}114	168.640	
^{289}114	170.790	
^{290}114	171.990	
^{291}114	174.430	
^{292}114	175.950	
^{293}114	178.770	
^{294}114	180.750	
^{295}114	183.840	
^{296}114	186.170	
^{297}114	189.640	
^{298}114	192.300	
^{299}114	196.800	
^{300}114	199.200	
^{301}114	203.850	
^{302}114	206.730	
^{303}114	211.510	
^{304}114	214.520	
^{305}114	219.420	
^{306}114	222.540	
^{307}114	225.760	
^{308}114	229.070	
^{309}114	233.430	
^{310}114	236.730	
^{265}115	179.420	†
^{266}115	178.430	†

Isotope	Mass Excess	
^{267}115	176.280	†
^{268}115	175.620	†
^{269}115	173.740	†
^{270}115	173.300	†
^{271}115	171.730	†
^{272}115	171.490	†
^{273}115	170.030	†
^{274}115	169.920	†
^{275}115	168.790	†
^{276}115	169.030	†
^{277}115	168.680	†
^{278}115	168.550	†
^{279}115	167.020	†
^{280}115	167.600	
^{281}115	167.490	†
^{282}115	168.350	
^{283}115	168.310	
^{284}115	169.450	
^{285}115	169.980	
^{286}115	171.190	
^{287}115	171.700	
^{288}115	173.450	
^{289}115	174.440	
^{290}115	176.230	
^{291}115	177.300	
^{292}115	181.290	
^{293}115	181.000	
^{294}115	183.380	
^{295}115	185.460	
^{296}115	188.360	
^{297}115	190.690	
^{298}115	193.870	
^{299}115	196.530	
^{300}115	200.710	
^{301}115	203.080	
^{302}115	207.410	
^{303}115	210.250	
^{304}115	214.710	
^{305}115	217.690	
^{306}115	222.260	
^{307}115	224.040	
^{308}115	228.080	
^{309}115	231.250	
^{310}115	235.410	
^{311}115	238.820	
^{266}116	188.570	†
^{267}116	187.520	†
^{268}116	185.090	†
^{269}116	184.470	†
^{270}116	182.280	†
^{271}116	181.850	†
^{272}116	179.910	†
^{273}116	179.760	†
^{274}116	177.940	†
^{275}116	177.830	†
^{276}116	176.950	†
^{277}116	176.580	†
^{278}116	175.500	‡
^{279}116	175.800	‡
^{280}116	175.790	†
^{281}116	174.980	†
^{282}116	174.320	
^{283}116	175.080	
^{284}116	174.760	
^{285}116	175.870	
^{286}116	175.990	
^{287}116	177.240	
^{288}116	177.530	
^{289}116	179.150	
^{290}116	179.800	
^{291}116	181.610	
^{292}116	181.960	
^{293}116	184.480	
^{294}116	185.460	
^{295}116	187.710	

Isotope	Mass Excess	
^{296}116	189.420	
^{297}116	192.320	
^{298}116	194.360	
^{299}116	197.580	
^{300}116	199.920	
^{301}116	204.100	
^{302}116	206.130	
^{303}116	210.450	
^{304}116	212.950	
^{305}116	216.500	
^{306}116	219.020	
^{307}116	222.820	
^{308}116	225.490	
^{309}116	229.410	
^{310}116	232.430	
^{311}116	236.640	
^{312}116	239.720	
^{272}117	192.180	†
^{273}117	190.100	†
^{274}117	189.630	†
^{275}117	187.740	†
^{276}117	188.030	†
^{277}117	186.040	†
^{278}117	185.820	†
^{279}117	184.300	†
^{280}117	184.200	†
^{281}117	182.970	‡
^{282}117	183.130	†
^{283}117	182.400	†
^{284}117	182.830	†
^{285}117	182.470	†
^{286}117	183.190	†
^{287}117	183.330	†
^{288}117	184.260	
^{289}117	184.550	
^{290}117	185.870	
^{291}117	186.520	
^{292}117	188.070	
^{293}117	188.670	
^{294}117	190.580	
^{295}117	193.040	†
^{296}117	193.490	
^{297}117	195.150	
^{298}117	197.820	
^{299}117	199.830	
^{300}117	202.760	
^{301}117	205.120	
^{302}117	208.960	
^{303}117	210.960	
^{304}117	214.950	
^{305}117	217.400	
^{306}117	220.200	
^{307}117	222.690	
^{308}117	226.220	
^{309}117	228.840	
^{310}117	232.450	
^{311}117	235.300	
^{312}117	239.250	
^{313}117	242.400	
^{268}118	209.870	†
^{269}118	208.390	†
^{270}118	205.810	†
^{271}118	204.840	†
^{272}118	202.280	†
^{273}118	201.520	†
^{274}118	199.110	†
^{275}118	198.630	†
^{276}118	196.420	†
^{277}118	196.210	†
^{278}118	194.410	†
^{279}118	194.570	†
^{280}118	193.110	†
^{281}118	192.120	†
^{282}118	190.530	†

Isotope	Mass Excess	
^{283}118	190.640	†
^{284}118	189.670	‡
^{285}118	190.090	‡
^{286}118	189.410	‡
^{287}118	190.240	
^{288}118	189.960	
^{289}118	190.910	
^{290}118	190.890	
^{291}118	192.260	
^{292}118	192.630	
^{293}118	194.190	
^{294}118	194.680	
^{295}118	196.320	
^{296}118	198.300	
^{297}118	199.040	
^{298}118	200.430	
^{299}118	203.130	
^{300}118	204.850	
^{301}118	207.780	
^{302}118	209.790	
^{303}118	213.660	
^{304}118	215.330	
^{305}118	217.790	
^{306}118	219.780	
^{307}118	223.130	
^{308}118	225.270	
^{309}118	228.800	
^{310}118	231.130	
^{311}118	234.710	
^{312}118	237.250	
^{313}118	241.240	
^{314}118	243.960	
^{275}119	210.360	†
^{276}119	209.400	†
^{277}119	207.180	†
^{278}119	206.260	†
^{279}119	204.510	†
^{280}119	204.160	†
^{281}119	202.840	†
^{282}119	202.780	†
^{283}119	200.140	†
^{284}119	199.920	†
^{285}119	198.950	†
^{286}119	198.920	†
^{287}119	198.340	†
^{288}119	198.870	†
^{289}119	198.410	†
^{290}119	199.030	†
^{291}119	199.020	†
^{292}119	200.060	†
^{293}119	200.400	†
^{294}119	201.690	†
^{295}119	202.290	†
^{296}119	203.340	
^{297}119	204.380	
^{298}119	205.790	
^{299}119	207.170	
^{300}119	209.610	
^{301}119	211.290	
^{302}119	213.930	
^{303}119	215.970	
^{304}119	217.970	
^{305}119	219.730	
^{306}119	222.580	
^{307}119	224.530	
^{308}119	227.540	
^{309}119	229.670	
^{310}119	232.830	
^{311}119	235.140	
^{312}119	238.480	
^{313}119	241.000	
^{314}119	244.690	
^{315}119	247.390	
^{270}120	234.030	†

Isotope	Mass Excess	
^{271}120	233.250	†
^{272}120	229.070	†
^{273}120	226.360	†
^{274}120	224.500	†
^{275}120	223.270	†
^{276}120	220.470	†
^{277}120	219.340	†
^{278}120	216.810	†
^{279}120	215.080	†
^{280}120	212.980	†
^{281}120	212.810	†
^{282}120	211.140	†
^{283}120	211.070	†
^{284}120	208.700	†
^{285}120	208.490	†
^{286}120	207.240	†
^{287}120	207.270	†
^{288}120	206.360	†
^{289}120	206.870	†
^{290}120	206.070	†
^{291}120	206.640	†
^{292}120	206.370	†
^{293}120	207.400	†
^{294}120	207.420	‡
^{295}120	208.680	
^{296}120	209.040	
^{297}120	210.210	
^{298}120	210.540	
^{299}120	212.180	
^{300}120	213.320	
^{301}120	215.650	
^{302}120	216.430	
^{303}120	218.680	
^{304}120	219.920	
^{305}120	222.450	
^{306}120	223.890	
^{307}120	226.700	
^{308}120	228.340	
^{309}120	231.320	
^{310}120	233.130	
^{311}120	236.260	
^{312}120	238.290	
^{313}120	241.610	
^{314}120	244.000	
^{315}120	247.540	
^{316}120	249.950	
^{280}121	225.950	†
^{281}121	224.040	†
^{282}121	223.490	†
^{283}121	221.670	†
^{284}121	221.290	†
^{285}121	219.820	†
^{286}121	220.000	†
^{287}121	217.010	†
^{288}121	216.850	†
^{289}121	215.640	†
^{290}121	215.590	†
^{291}121	214.740	†
^{292}121	215.120	†
^{293}121	214.740	†
^{294}121	215.950	†
^{295}121	215.970	†
^{296}121	216.960	†
^{297}121	217.250	†
^{298}121	217.930	†
^{299}121	218.400	†
^{300}121	220.180	†
^{301}121	220.650	†
^{302}121	222.170	
^{303}121	223.080	
^{304}121	225.010	
^{305}121	226.200	
^{306}121	228.420	
^{307}121	229.800	
^{308}121	232.290	

Isotope	Mass Excess	
^{309}121	233.880	
^{310}121	236.560	
^{311}121	238.340	
^{312}121	241.160	
^{313}121	243.180	
^{314}121	246.190	
^{315}121	248.560	
^{316}121	251.800	
^{317}121	254.200	
^{276}122	245.930	†
^{277}122	244.810	†
^{278}122	242.170	†
^{279}122	241.030	†
^{280}122	238.030	†
^{281}122	235.290	†
^{282}122	233.070	†
^{283}122	232.700	†
^{284}122	230.560	†
^{285}122	230.190	†
^{286}122	228.400	†
^{287}122	228.590	†
^{288}122	226.600	†
^{289}122	225.600	†
^{290}122	224.100	†
^{291}122	224.090	†
^{292}122	222.960	†
^{293}122	223.420	†
^{294}122	222.720	†
^{295}122	223.650	†
^{296}122	223.550	†
^{297}122	224.600	†
^{298}122	224.380	‡
^{299}122	225.420	†
^{300}122	225.170	‡
^{301}122	226.340	
^{302}122	226.520	
^{303}122	228.040	
^{304}122	228.650	
^{305}122	230.560	
^{306}122	231.430	
^{307}122	233.640	
^{308}122	234.690	
^{309}122	237.170	
^{310}122	238.450	
^{311}122	241.080	
^{312}122	242.550	
^{313}122	245.360	
^{314}122	247.080	
^{315}122	250.080	
^{316}122	252.150	
^{317}122	255.370	
^{318}122	257.520	