A.H. Wapstra, G. Audi, and R. Hoekstra Masses

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

Isotope	Mass Excess
^{1}n	8.071
^{1}H	7.289
^{2}H	13.136
^{3}H	14.950
^{4}H	25.840±0.380
^{3}He	14.931
^{4}He	2.424
^{5}He	11.390±0.050
^{6}He	17.592
^{7}He	26.110±0.030
^{8}He	31.598±0.007
^{9}He	40.810±0.120
^{4}Li	25.120±0.300
^{5}Li	11.680±0.050
^{6}Li	14.085
^{7}Li	14.907
^{8}Li	20.945
^{9}Li	24.954±0.002
^{10}Li	33.840±0.250
^{11}Li	40.900±0.110
^{6}Be	18.374±0.005
^{7}Be	15.768
^{8}Be	4.941
^{9}Be	11.347
^{10}Be	12.607
^{11}Be	20.174±0.006
^{12}Be	25.077±0.015
^{13}Be	35.000±0.500
^{14}Be	40.100±0.130
^{7}B	27.870±0.070
^{8}B	22.920±0.001
^{9}B	12.415±0.001
^{10}B	12.050
^{11}B	8.668
^{12}B	13.369±0.001
^{13}B	16.562±0.001
^{14}B	23.664±0.021
^{15}B	28.970±0.022
^{16}B	37.140±0.400
^{17}B	43.310±0.500
^{18}B	52.280±0.860
^{19}B	59.360±1.030
^{8}C	35.094±0.024
^{9}C	28.913±0.002
^{10}C	15.699
^{11}C	10.650
^{12}C	0.000
^{13}C	3.125
^{14}C	3.020
^{15}C	9.873
^{16}C	13.694±0.004
^{17}C	21.035±0.017
^{18}C	24.920±0.030
^{19}C	32.630±0.300
^{20}C	37.070±0.900
^{10}N	39.700±0.400
^{11}N	24.890±0.140
^{12}N	17.338±0.001
^{13}N	5.345
^{14}N	2.863
^{15}N	0.101
^{16}N	5.682±0.002
^{17}N	7.871±0.015
^{18}N	13.117±0.020
^{19}N	15.871±0.019
^{20}N	21.880±0.300
^{21}N	25.150±0.600
^{22}N	31.730±0.950

Isotope	Mass Excess
^{12}O	32.060±0.040
^{13}O	23.113±0.010
^{14}O	8.006
^{15}O	2.855
^{16}O	-4.737
^{17}O	-0.809
^{18}O	-0.782
^{19}O	3.332±0.002
^{20}O	3.796±0.001
^{21}O	8.066±0.015
^{22}O	9.440±0.090
^{23}O	14.540±0.700
^{24}O	18.790±0.900
^{14}F	33.610±0.400
^{15}F	16.770±0.130
^{16}F	10.680±0.008
^{17}F	1.951
^{18}F	0.873
^{19}F	-1.487
^{20}F	-0.017
^{21}F	-0.047±0.001
^{22}F	2.830±0.030
^{23}F	3.350±0.170
^{24}F	7.780±0.400
^{25}F	10.940±0.600
^{26}F	17.700±0.900
^{16}Ne	23.989±0.020
^{17}Ne	16.480±0.050
^{18}Ne	5.319±0.005
^{19}Ne	1.751
^{20}Ne	-7.047±0.001
^{21}Ne	-5.737±0.001
^{22}Ne	-8.027±0.001
^{23}Ne	-5.156±0.002
^{24}Ne	-5.950±0.010
^{25}Ne	-2.060±0.040
^{26}Ne	0.440±0.070
^{27}Ne	6.410±0.500
^{28}Ne	10.780±0.800
^{18}Na	25.320±0.400
^{19}Na	12.928±0.012
^{20}Na	6.839±0.007
^{21}Na	-2.189±0.002
^{22}Na	-5.185±0.001
^{23}Na	-9.532
^{24}Na	-8.420
^{25}Na	-9.360±0.001
^{26}Na	-6.904±0.016
^{27}Na	-5.600±0.040
^{28}Na	-1.140±0.140
^{29}Na	2.650±0.150
^{30}Na	8.210±0.250
^{31}Na	11.830±0.580
^{32}Na	16.550±0.740
^{33}Na	21.470±1.140
^{34}Na	26.650±3.570
^{20}Mg	17.570±0.027
^{21}Mg	10.913±0.016
^{22}Mg	-0.397±0.001
^{23}Mg	-5.473±0.001
^{24}Mg	-13.933
^{25}Mg	-13.192
^{26}Mg	-16.214
^{27}Mg	-14.586
^{28}Mg	-15.019±0.002
^{29}Mg	-10.661±0.029
^{30}Mg	-9.100±0.210
^{31}Mg	-3.650±0.400
^{32}Mg	-1.750±1.580
^{33}Mg	5.010±0.500

Isotope	Mass Excess
^{34}Mg	8.440±0.700
^{35}Mg	14.680±0.500
^{22}Al	18.090±0.070
^{23}Al	6.767±0.025
^{24}Al	-0.055±0.004
^{25}Al	-8.915
^{26}Al	-12.210
^{27}Al	-17.197
^{28}Al	-16.851
^{29}Al	-18.215±0.001
^{30}Al	-15.890±0.040
^{31}Al	-15.050±0.070
^{32}Al	-11.210±0.300
^{33}Al	-8.840±0.400
^{34}Al	-3.660±0.500
^{35}Al	-0.660±0.500
^{36}Al	5.050±0.600
^{23}Si	23.530±0.300
^{24}Si	10.755±0.019
^{25}Si	3.827±0.010
^{26}Si	-7.145±0.003
^{27}Si	-12.385
^{28}Si	-21.492
^{29}Si	-21.895
^{30}Si	-24.433
^{31}Si	-22.950
^{32}Si	-24.081±0.001
^{33}Si	-20.492±0.016
^{34}Si	-19.958±0.015
^{35}Si	-14.320±0.050
^{36}Si	-13.260±0.500
^{37}Si	-7.000±0.500
^{38}Si	-5.360±0.600
^{25}P	22.080±0.400
^{26}P	11.260±0.300
^{27}P	-0.750±0.040
^{28}P	-7.161±0.004
^{29}P	-16.951
^{30}P	-20.200
^{31}P	-24.441
^{32}P	-24.305
^{33}P	-26.338±0.001
^{34}P	-24.557±0.001
^{35}P	-24.857±0.001
^{36}P	-20.251±0.013
^{37}P	-19.260±0.300
^{38}P	-14.160±0.400
^{39}P	-12.500±0.400
^{40}P	-7.020±0.500
^{27}S	18.220±0.200
^{28}S	4.130±0.160
^{29}S	-3.160±0.050
^{30}S	-14.063±0.003
^{31}S	-19.045±0.001
^{32}S	-26.016
^{33}S	-26.586
^{34}S	-29.932
^{35}S	-28.846
^{36}S	-30.664
^{37}S	-26.896
^{38}S	-26.861±0.007
^{39}S	-23.000±0.200
^{40}S	-22.520±0.040
^{41}S	-17.870±0.300
^{42}S	-16.420±0.400
^{29}Cl	15.050±0.400
^{30}Cl	4.840±0.300
^{31}Cl	-7.060±0.050
^{32}Cl	-13.330±0.008

Isotope	Mass Excess
^{33}Cl	-21.003
^{34}Cl	-24.440
^{35}Cl	-29.013
^{36}Cl	-29.522
^{37}Cl	-31.761
^{38}Cl	-29.798
^{39}Cl	-29.802±0.002
^{40}Cl	-27.530±0.040
^{41}Cl	-27.400±0.150
^{42}Cl	-24.420±0.200
^{43}Cl	-23.130±0.060
^{44}Cl	-20.010±0.300
^{31}Ar	11.660±0.200
^{32}Ar	-2.180±0.050
^{33}Ar	-9.380±0.030
^{34}Ar	-18.379±0.003
^{35}Ar	-23.048±0.001
^{36}Ar	-30.230
^{37}Ar	-30.948
^{38}Ar	-34.715
^{39}Ar	-33.241±0.005
^{40}Ar	-35.039±0.001
^{41}Ar	-33.066±0.001
^{42}Ar	-34.420±0.040
^{43}Ar	-31.980±0.070
^{44}Ar	-32.260±0.020
^{45}Ar	-29.720±0.060
^{46}Ar	-29.720±0.040
^{47}Ar	-25.910±0.100
^{33}K	8.000±0.400
^{34}K	-1.480±0.300
^{35}K	-11.167±0.020
^{36}K	-17.425±0.008
^{37}K	-24.798±0.001
^{38}K	-28.802
^{39}K	-33.806±0.001
^{40}K	-33.534±0.001
^{41}K	-35.558±0.001
^{42}K	-35.020±0.001
^{43}K	-36.593±0.009
^{44}K	-35.810±0.040
^{45}K	-36.614±0.010
^{46}K	-35.418±0.016
^{47}K	-35.696±0.008
^{48}K	-32.122±0.024
^{49}K	-30.770±0.300
^{50}K	-25.520±0.300
^{35}Ca	4.450±0.060
^{36}Ca	-6.440±0.040
^{37}Ca	-13.159±0.022
^{38}Ca	-22.059±0.005
^{39}Ca	-27.275±0.002
^{40}Ca	-34.846±0.001
^{41}Ca	-35.137±0.001
^{42}Ca	-38.547±0.001
^{43}Ca	-38.408±0.001
^{44}Ca	-41.469±0.001
^{45}Ca	-40.812±0.001
^{46}Ca	-43.140±0.002
^{47}Ca	-42.345±0.002
^{48}Ca	-44.214±0.004
^{49}Ca	-41.289±0.004
^{50}Ca	-39.570±0.009
^{51}Ca	-35.010±0.080
^{52}Ca	-32.460±0.580
^{38}Sc	-4.460±0.300
^{39}Sc	-14.300±0.050
^{40}Sc	-20.526±0.004
^{41}Sc	-28.643±0.001
^{42}Sc	-32.121±0.001

Isotope	Mass Excess
^{43}Sc	-36.187±0.002
^{44}Sc	-37.815±0.002
^{45}Sc	-41.069±0.001
^{46}Sc	-41.758±0.001
^{47}Sc	-44.330±0.002
^{48}Sc	-44.492±0.005
^{49}Sc	-46.558±0.004
^{50}Sc	-44.537±0.016
^{51}Sc	-43.218±0.020
^{52}Sc	-40.060±0.300
^{53}Sc	-38.230±0.510
^{40}Ti	-9.063±0.011
^{41}Ti	-15.690±0.013
^{42}Ti	-25.121±0.006
^{43}Ti	-29.320±0.007
^{44}Ti	-37.548±0.001
^{45}Ti	-39.006±0.001
^{46}Ti	-44.125±0.001
^{47}Ti	-44.931±0.001
^{48}Ti	-48.487±0.001
^{49}Ti	-48.558±0.001
^{50}Ti	-51.426±0.001
^{51}Ti	-49.726±0.001
^{52}Ti	-49.464±0.007
^{53}Ti	-46.830±0.100
^{54}Ti	-45.530±0.300
^{42}V	-8.220±0.300
^{43}V	-17.920±0.200
^{44}V	-23.800±0.100
^{45}V	-31.875±0.017
^{46}V	-37.075±0.001
^{47}V	-42.004±0.001
^{48}V	-44.474±0.002
^{49}V	-47.956±0.001
^{50}V	-49.219±0.001
^{51}V	-52.199±0.001
^{52}V	-51.438±0.001
^{53}V	-51.846±0.003
^{54}V	-49.889±0.015
^{55}V	-49.150±0.100
^{56}V	-46.110±0.300
^{44}Cr	-13.450±0.030
^{45}Cr	-19.410±0.100
^{46}Cr	-29.472±0.020
^{47}Cr	-34.553±0.014
^{48}Cr	-42.818±0.007
^{49}Cr	-45.328±0.002
^{50}Cr	-50.257±0.001
^{51}Cr	-51.447±0.001
^{52}Cr	-55.414±0.001
^{53}Cr	-55.282±0.001
^{54}Cr	-56.930±0.001
^{55}Cr	-55.105±0.001
^{56}Cr	-55.290±0.010
^{57}Cr	-52.690±0.200
^{58}Cr	-52.050±0.300
^{46}Mn	-12.470±0.400
^{47}Mn	-22.650±0.200
^{48}Mn	-29.211±0.021
^{49}Mn	-37.611±0.024
^{50}Mn	-42.625±0.001
^{51}Mn	-48.238±0.001
^{52}Mn	-50.702±0.002
^{53}Mn	-54.686±0.001
^{54}Mn	-55.553±0.001
^{55}Mn	-57.708±0.001
^{56}Mn	-56.907±0.001
^{57}Mn	-57.487±0.003
^{58}Mn	-55.830±0.030
^{59}Mn	-55.476±0.029

Isotope	Mass Excess
^{60}Mn	-52.900±0.100
^{48}Fe	-18.130±0.110
^{49}Fe	-24.580±0.160
^{50}Fe	-34.470±0.060
^{51}Fe	-40.217±0.015
^{52}Fe	-48.331±0.010
^{53}Fe	-50.943±0.002
^{54}Fe	-56.250±0.001
^{55}Fe	-57.476±0.001
^{56}Fe	-60.603±0.001
^{57}Fe	-60.178±0.001
^{58}Fe	-62.151±0.001
^{59}Fe	-60.661±0.001
^{60}Fe	-61.406±0.004
^{61}Fe	-58.919±0.020
^{62}Fe	-58.896±0.015
^{63}Fe	-55.190±0.060
^{50}Co	-17.980±0.200
^{51}Co	-27.420±0.200
^{52}Co	-34.287±0.022
^{53}Co	-42.639±0.018
^{54}Co	-48.007±0.001
^{55}Co	-54.025±0.001
^{56}Co	-56.037±0.002
^{57}Co	-59.342±0.001
^{58}Co	-59.844±0.001
^{59}Co	-62.226±0.001
^{60}Co	-61.646±0.001
^{61}Co	-62.897±0.001
^{62}Co	-61.423±0.019
^{63}Co	-61.839±0.020
^{64}Co	-59.791±0.020
^{65}Co	-59.160±0.050
^{52}Ni	-22.640±0.070
^{53}Ni	-29.380±0.160
^{54}Ni	-39.210±0.050
^{55}Ni	-45.330±0.011
^{56}Ni	-53.901±0.011
^{57}Ni	-56.077±0.003
^{58}Ni	-60.225±0.001
^{59}Ni	-61.153±0.001
^{60}Ni	-64.470±0.001
^{61}Ni	-64.219±0.001
^{62}Ni	-66.745±0.001
^{63}Ni	-65.512±0.001
^{64}Ni	-67.098±0.001
^{65}Ni	-65.124±0.001
^{66}Ni	-66.029±0.016
^{67}Ni	-63.743±0.019
^{68}Ni	-63.483±0.017
^{69}Ni	-60.460±0.150
^{54}Cu	-21.210±0.500
^{55}Cu	-31.630±0.300
^{56}Cu	-38.584±0.017
^{57}Cu	-47.350±0.050
^{58}Cu	-51.662±0.002
^{59}Cu	-56.353±0.001
^{60}Cu	-58.344±0.002
^{61}Cu	-61.982±0.001
^{62}Cu	-62.797±0.004
^{63}Cu	-65.578±0.001
^{64}Cu	-65.423±0.001
^{65}Cu	-67.262±0.001
^{66}Cu	-66.256±0.001
^{67}Cu	-67.303±0.008
^{68}Cu	-65.540±0.050
^{69}Cu	-65.741±0.008
^{70}Cu	-63.390±0.110
^{71}Cu	-62.920±0.300

Isotope	Mass Excess
^{56}Zn	-26.130±0.080
^{57}Zn	-32.700±0.120
^{58}Zn	-42.210±0.100
^{59}Zn	-47.260±0.040
^{60}Zn	-54.185±0.011
^{61}Zn	-56.343±0.016
^{62}Zn	-61.170±0.010
^{63}Zn	-62.211±0.002
^{64}Zn	-66.002±0.001
^{65}Zn	-65.910±0.001
^{66}Zn	-68.898±0.001
^{67}Zn	-67.879±0.001
^{68}Zn	-70.006±0.001
^{69}Zn	-68.417±0.001
^{70}Zn	-69.561±0.003
^{71}Zn	-67.323±0.011
^{72}Zn	-68.131±0.006
^{73}Zn	-65.410±0.040
^{74}Zn	-65.708±0.019
^{75}Zn	-62.530±0.090
^{76}Zn	-62.290±0.170
^{77}Zn	-58.820±0.280
^{78}Zn	-57.660±0.280
^{79}Zn	-53.820±0.420
^{80}Zn	-51.890±0.360
^{61}Ga	-47.540±0.400
^{62}Ga	-51.999±0.028
^{63}Ga	-56.690±0.100
^{64}Ga	-58.837±0.004
^{65}Ga	-62.654±0.002
^{66}Ga	-63.724±0.003
^{67}Ga	-66.878±0.001
^{68}Ga	-67.085±0.002
^{69}Ga	-69.322±0.002
^{70}Ga	-68.905±0.003
^{71}Ga	-70.139±0.001
^{72}Ga	-68.589±0.002
^{73}Ga	-69.705±0.006
^{74}Ga	-68.060±0.070
^{75}Ga	-68.466±0.007
^{76}Ga	-66.440±0.150
^{77}Ga	-66.320±0.200
^{78}Ga	-63.560±0.200
^{79}Ga	-62.720±0.120
^{80}Ga	-59.380±0.300
^{81}Ga	-57.990±0.190
^{82}Ga	-53.380±0.430
^{63}Ge	-47.310±0.300
^{64}Ge	-54.430±0.250
^{65}Ge	-56.410±0.100
^{66}Ge	-61.620±0.030
^{67}Ge	-62.656±0.005
^{68}Ge	-66.978±0.006
^{69}Ge	-67.097±0.004
^{70}Ge	-70.561±0.001
^{71}Ge	-69.906±0.001
^{72}Ge	-72.583±0.001
^{73}Ge	-71.295±0.001
^{74}Ge	-73.423±0.001
^{75}Ge	-71.858±0.001
^{76}Ge	-73.214±0.001
^{77}Ge	-71.216±0.001
^{78}Ge	-71.863±0.004
^{79}Ge	-69.490±0.090
^{80}Ge	-69.380±0.030
^{81}Ge	-66.310±0.120
^{82}Ge	-65.380±0.140
^{83}Ge	-61.140±0.400
^{84}Ge	-58.150±0.400
^{65}As	-47.510±0.410
^{66}As	-52.070±0.060
^{67}As	-56.650±0.100
^{68}As	-58.880±0.100
^{69}As	-63.080±0.030

Isotope	Mass Excess
^{70}As	-64.340±0.050
^{71}As	-67.894±0.004
^{72}As	-68.228±0.004
^{73}As	-70.955±0.004
^{74}As	-70.861±0.002
^{75}As	-73.035±0.001
^{76}As	-72.290±0.001
^{77}As	-73.918±0.002
^{78}As	-72.819±0.010
^{79}As	-73.639±0.006
^{80}As	-72.165±0.024
^{81}As	-72.536±0.006
^{82}As	-70.078±0.025
^{83}As	-69.880±0.220
^{84}As	-66.080±0.300
^{85}As	-63.510±0.400
^{86}As	-59.340±0.330
^{67}Se	-46.860±0.400
^{68}Se	-54.080±0.300
^{69}Se	-56.300±0.030
^{70}Se	-61.540±0.210
^{71}Se	-63.090±0.200
^{72}Se	-67.897±0.012
^{73}Se	-68.215±0.011
^{74}Se	-72.215±0.001
^{75}Se	-72.171±0.001
^{76}Se	-75.254±0.001
^{77}Se	-74.601±0.001
^{78}Se	-77.028±0.001
^{79}Se	-75.920±0.001
^{80}Se	-77.762±0.001
^{81}Se	-76.392±0.001
^{82}Se	-77.596±0.002
^{83}Se	-75.343±0.004
^{84}Se	-75.952±0.015
^{85}Se	-72.420±0.100
^{86}Se	-70.540±0.130
^{87}Se	-66.710±0.400
^{88}Se	-63.820±0.240
^{69}Br	-46.800±0.500
^{70}Br	-51.140±0.360
^{71}Br	-56.590±0.300
^{72}Br	-59.000±0.200
^{73}Br	-63.600±0.230
^{74}Br	-65.301±0.015
^{75}Br	-69.142±0.014
^{76}Br	-70.291±0.009
^{77}Br	-73.237±0.003
^{78}Br	-73.455±0.004
^{79}Br	-76.070±0.002
^{80}Br	-75.891±0.002
^{81}Br	-77.978±0.005
^{82}Br	-77.499±0.005
^{83}Br	-79.010±0.004
^{84}Br	-77.776±0.025
^{85}Br	-78.607±0.019
^{86}Br	-75.640±0.060
^{87}Br	-73.856±0.025
^{88}Br	-70.720±0.130
^{89}Br	-68.420±0.400
^{90}Br	-64.650±0.120
^{71}Kr	-46.490±0.420
^{72}Kr	-53.940±0.240
^{73}Kr	-56.890±0.140
^{74}Kr	-62.130±0.060
^{75}Kr	-64.214±0.020
^{76}Kr	-68.965±0.012
^{77}Kr	-70.194±0.017
^{78}Kr	-74.147±0.008
^{79}Kr	-74.445±0.004
^{80}Kr	-77.894±0.006
^{81}Kr	-77.697±0.005
^{82}Kr	-80.592±0.005
^{83}Kr	-79.982±0.003

Isotope	Mass Excess
^{84}Kr	-82.430±0.003
^{85}Kr	-81.477±0.003
^{86}Kr	-83.262±0.005
^{87}Kr	-80.706±0.005
^{88}Kr	-79.688±0.014
^{89}Kr	-76.720±0.050
^{90}Kr	-74.947±0.027
^{91}Kr	-71.370±0.080
^{92}Kr	-68.650±0.080
^{93}Kr	-64.160±0.120
^{73}Rb	-46.590±0.620
^{74}Rb	-51.670±0.460
^{75}Rb	-57.210±0.100
^{76}Rb	-60.530±0.060
^{77}Rb	-64.917±0.030
^{78}Rb	-66.980±0.030
^{79}Rb	-70.839±0.023
^{80}Rb	-72.176±0.018
^{81}Rb	-75.459±0.021
^{82}Rb	-76.203±0.017
^{83}Rb	-79.049±0.021
^{84}Rb	-79.748±0.003
^{85}Rb	-82.164±0.002
^{86}Rb	-82.744±0.002
^{87}Rb	-84.593±0.002
^{88}Rb	-82.601±0.004
^{89}Rb	-81.709±0.007
^{90}Rb	-79.350±0.013
^{91}Rb	-77.786±0.010
^{92}Rb	-74.811±0.012
^{93}Rb	-72.688±0.015
^{94}Rb	-68.518±0.019
^{95}Rb	-65.813±0.024
^{96}Rb	-61.150±0.030
^{97}Rb	-58.290±0.040
^{98}Rb	-54.090±0.060
^{99}Rb	-50.860±0.110
^{77}Sr	-57.880±0.150
^{78}Sr	-63.450±0.300
^{79}Sr	-65.340±0.200
^{80}Sr	-70.190±0.030
^{81}Sr	-71.470±0.040
^{82}Sr	-75.998±0.008
^{83}Sr	-76.781±0.021
^{84}Sr	-80.641±0.004
^{85}Sr	-81.099±0.004
^{86}Sr	-84.518±0.002
^{87}Sr	-84.875±0.002
^{88}Sr	-87.916±0.002
^{89}Sr	-86.211±0.004
^{90}Sr	-85.942±0.002
^{91}Sr	-83.652±0.009
^{92}Sr	-82.923±0.013
^{93}Sr	-80.160±0.016
^{94}Sr	-78.836±0.007
^{95}Sr	-75.050±0.050
^{96}Sr	-72.880±0.040
^{97}Sr	-68.810±0.070
^{98}Sr	-66.380±0.060
^{99}Sr	-62.150±0.100
^{100}Sr	-60.200±0.210
^{79}Y	-58.140±0.500
^{80}Y	-61.190±0.400
^{81}Y	-65.950±0.070
^{82}Y	-68.180±0.100
^{83}Y	-72.370±0.060
^{84}Y	-74.230±0.170
^{85}Y	-77.845±0.025
^{86}Y	-79.279±0.014
^{87}Y	-83.014±0.002
^{88}Y	-84.294±0.002
^{89}Y	-87.703±0.002
^{90}Y	-86.488±0.002
^{91}Y	-86.349±0.003

Isotope	Mass Excess
^{92}Y	-84.833±0.010
^{93}Y	-84.245±0.011
^{94}Y	-82.348±0.006
^{95}Y	-81.214±0.006
^{96}Y	-78.300±0.040
^{97}Y	-76.270±0.060
^{98}Y	-72.520±0.160
^{99}Y	-70.170±0.080
^{100}Y	-67.290±0.140
^{101}Y	-64.650±0.200
^{102}Y	-61.450±0.400
^{81}Zr	-58.790±0.300
^{82}Zr	-64.180±0.510
^{83}Zr	-66.350±0.100
^{84}Zr	-71.430±0.350
^{85}Zr	-73.150±0.100
^{86}Zr	-77.980±0.200
^{87}Zr	-79.348±0.008
^{88}Zr	-83.626±0.010
^{89}Zr	-84.871±0.003
^{90}Zr	-88.770±0.002
^{91}Zr	-87.893±0.002
^{92}Zr	-88.457±0.002
^{93}Zr	-87.120±0.002
^{94}Zr	-87.268±0.002
^{95}Zr	-85.659±0.002
^{96}Zr	-85.442±0.003
^{97}Zr	-82.950±0.003
^{98}Zr	-81.283±0.020
^{99}Zr	-77.790±0.040
^{100}Zr	-76.590±0.040
^{101}Zr	-73.380±0.070
^{102}Zr	-71.770±0.060
^{103}Zr	-68.290±0.130
^{104}Zr	-66.260±0.410
^{84}Nb	-61.530±0.620
^{85}Nb	-66.940±0.400
^{86}Nb	-69.580±0.300
^{87}Nb	-74.180±0.060
^{88}Nb	-76.430±0.200
^{89}Nb	-80.580±0.040
^{90}Nb	-82.659±0.005
^{91}Nb	-86.640±0.003
^{92}Nb	-86.451±0.002
^{93}Nb	-87.210±0.002
^{94}Nb	-86.368±0.002
^{95}Nb	-86.783±0.002
^{96}Nb	-85.606±0.004
^{97}Nb	-85.608±0.002
^{98}Nb	-83.528±0.006
^{99}Nb	-82.328±0.013
^{100}Nb	-79.929±0.028
^{101}Nb	-78.950±0.040
^{102}Nb	-76.350±0.050
^{103}Nb	-75.240±0.090
^{104}Nb	-72.260±0.120
^{105}Nb	-70.940±0.120
^{106}Nb	-67.290±0.500
^{86}Mo	-64.680±0.730
^{87}Mo	-67.440±0.310
^{88}Mo	-72.830±0.300
^{89}Mo	-75.005±0.015
^{90}Mo	-80.170±0.006
^{91}Mo	-82.208±0.012
^{92}Mo	-86.809±0.004
^{93}Mo	-86.805±0.004
^{94}Mo	-88.413±0.002
^{95}Mo	-87.709±0.002
^{96}Mo	-88.792±0.002
^{97}Mo	-87.542±0.002
^{98}Mo	-88.113±0.002
^{99}Mo	-85.967±0.002
^{100}Mo	-86.186±0.006
^{101}Mo	-83.513±0.006

Isotope	Mass Excess
^{102}Mo	-83.559±0.021
^{103}Mo	-80.760±0.080
^{104}Mo	-80.370±0.060
^{105}Mo	-77.360±0.090
^{106}Mo	-76.270±0.090
^{107}Mo	-72.910±0.430
^{108}Mo	-71.460±0.550
^{88}Tc	-62.330±0.830
^{89}Tc	-68.000±0.400
^{90}Tc	-70.970±0.300
^{91}Tc	-75.990±0.200
^{92}Tc	-78.939±0.026
^{93}Tc	-83.607±0.004
^{94}Tc	-84.158±0.005
^{95}Tc	-86.018±0.006
^{96}Tc	-85.819±0.006
^{97}Tc	-87.222±0.005
^{98}Tc	-86.429±0.004
^{99}Tc	-87.324±0.002
^{100}Tc	-86.017±0.002
^{101}Tc	-86.337±0.024
^{102}Tc	-84.569±0.009
^{103}Tc	-84.601±0.010
^{104}Tc	-82.490±0.050
^{105}Tc	-82.350±0.060
^{106}Tc	-79.790±0.060
^{107}Tc	-79.160±0.200
^{108}Tc	-76.280±0.360
^{109}Tc	-74.920±0.300
^{110}Tc	-71.640±0.640
^{90}Ru	-65.470±0.800
^{91}Ru	-68.410±0.400
^{92}Ru	-74.410±0.300
^{93}Ru	-77.270±0.090
^{94}Ru	-82.569±0.013
^{95}Ru	-83.451±0.012
^{96}Ru	-86.073±0.008
^{97}Ru	-86.113±0.008
^{98}Ru	-88.225±0.006
^{99}Ru	-87.617±0.002
^{100}Ru	-89.219±0.002
^{101}Ru	-87.950±0.002
^{102}Ru	-89.099±0.002
^{103}Ru	-87.260±0.002
^{104}Ru	-88.093±0.004
^{105}Ru	-85.932±0.004
^{106}Ru	-86.326±0.008
^{107}Ru	-83.710±0.300
^{108}Ru	-83.760±0.230
^{109}Ru	-80.720±0.200
^{110}Ru	-80.240±0.300
^{111}Ru	-77.030±0.400
^{112}Ru	-76.030±0.600
^{92}Rh	-63.140±0.800
^{93}Rh	-69.110±0.400
^{94}Rh	-72.940±0.450
^{95}Rh	-78.340±0.150
^{96}Rh	-79.626±0.013
^{97}Rh	-82.590±0.040
^{98}Rh	-83.168±0.012
^{99}Rh	-85.519±0.010
^{100}Rh	-85.590±0.020
^{101}Rh	-87.410±0.017
^{102}Rh	-86.821±0.017
^{103}Rh	-88.024±0.003
^{104}Rh	-86.952±0.003
^{105}Rh	-87.849±0.005
^{106}Rh	-86.365±0.008
^{107}Rh	-86.862±0.018
^{108}Rh	-85.080±0.200
^{109}Rh	-85.021±0.020
^{110}Rh	-82.940±0.220
^{111}Rh	-82.330±0.200
^{112}Rh	-79.730±0.300

Isotope	Mass Excess
^{113}Rh	-78.740±0.400
^{114}Rh	-75.960±0.500
^{94}Pd	-66.270±0.800
^{95}Pd	-70.150±0.400
^{96}Pd	-76.180±0.150
^{97}Pd	-77.800±0.300
^{98}Pd	-81.301±0.022
^{99}Pd	-82.193±0.016
^{100}Pd	-85.221±0.013
^{101}Pd	-85.430±0.018
^{102}Pd	-87.918±0.008
^{103}Pd	-87.471±0.008
^{104}Pd	-89.393±0.005
^{105}Pd	-88.416±0.005
^{106}Pd	-89.907±0.005
^{107}Pd	-88.374±0.006
^{108}Pd	-89.523±0.004
^{109}Pd	-87.605±0.004
^{110}Pd	-88.345±0.015
^{111}Pd	-86.030±0.040
^{112}Pd	-86.333±0.019
^{113}Pd	-83.680±0.150
^{114}Pd	-83.460±0.029
^{115}Pd	-80.590±0.300
^{116}Pd	-80.140±0.150
^{96}Ag	-64.430±0.800
^{97}Ag	-70.790±0.400
^{98}Ag	-73.000±0.300
^{99}Ag	-76.760±0.150
^{100}Ag	-78.170±0.090
^{101}Ag	-81.190±0.120
^{102}Ag	-82.080±0.050
^{103}Ag	-84.787±0.017
^{104}Ag	-85.114±0.006
^{105}Ag	-87.078±0.009
^{106}Ag	-86.941±0.005
^{107}Ag	-88.407±0.005
^{108}Ag	-87.605±0.005
^{109}Ag	-88.721±0.003
^{110}Ag	-87.459±0.003
^{111}Ag	-88.217±0.004
^{112}Ag	-86.624±0.017
^{113}Ag	-87.040±0.020
^{114}Ag	-84.960±0.070
^{115}Ag	-84.950±0.070
^{116}Ag	-82.760±0.110
^{117}Ag	-82.250±0.050
^{118}Ag	-79.580±0.100
^{119}Ag	-78.590±0.070
^{120}Ag	-75.770±0.100
^{121}Ag	-74.550±0.190
^{98}Cd	-67.900±0.800
^{99}Cd	-69.890±0.500
^{100}Cd	-74.320±0.300
^{101}Cd	-75.660±0.180
^{102}Cd	-79.720±0.200
^{103}Cd	-80.650±0.016
^{104}Cd	-83.977±0.010
^{105}Cd	-84.339±0.010
^{106}Cd	-87.135±0.006
^{107}Cd	-86.990±0.007
^{108}Cd	-89.253±0.005
^{109}Cd	-88.507±0.004
^{110}Cd	-90.351±0.003
^{111}Cd	-89.254±0.003
^{112}Cd	-90.581±0.002
^{113}Cd	-89.050±0.002
^{114}Cd	-90.021±0.002
^{115}Cd	-88.091±0.002
^{116}Cd	-88.720±0.003
^{117}Cd	-86.416±0.013
^{118}Cd	-86.709±0.020
^{119}Cd	-83.940±0.060
^{120}Cd	-83.973±0.019

Isotope	Mass Excess
^{121}Cd	-80.950±0.150
^{122}Cd	-80.580±0.210
^{123}Cd	-77.520±0.300
^{100}In	-63.870±0.710
^{101}In	-68.360±0.610
^{102}In	-70.580±0.400
^{103}In	-74.607±0.025
^{104}In	-76.080±0.200
^{105}In	-79.493±0.016
^{106}In	-80.617±0.013
^{107}In	-83.568±0.013
^{108}In	-84.112±0.029
^{109}In	-86.487±0.006
^{110}In	-86.410±0.200
^{111}In	-88.391±0.006
^{112}In	-87.995±0.005
^{113}In	-89.368±0.003
^{114}In	-88.571±0.003
^{115}In	-89.539±0.004
^{116}In	-88.252±0.005
^{117}In	-88.945±0.005
^{118}In	-87.232±0.008
^{119}In	-87.733±0.008
^{120}In	-85.800±0.170
^{121}In	-85.841±0.028
^{122}In	-83.580±0.050
^{123}In	-83.420±0.030
^{124}In	-81.060±0.050
^{125}In	-80.420±0.080
^{126}In	-77.810±0.080
^{127}In	-77.010±0.070
^{128}In	-74.020±0.170
^{129}In	-73.020±0.170
^{130}In	-70.010±0.200
^{131}In	-68.490±0.140
^{132}In	-63.210±0.510
^{102}Sn	-65.020±0.630
^{103}Sn	-67.050±0.500
^{104}Sn	-71.680±0.540
^{105}Sn	-73.240±0.080
^{106}Sn	-77.450±0.060
^{107}Sn	-78.470±0.100
^{108}Sn	-82.050±0.040
^{109}Sn	-82.633±0.010
^{110}Sn	-85.834±0.016
^{111}Sn	-85.943±0.007
^{112}Sn	-88.658±0.004
^{113}Sn	-88.330±0.004
^{114}Sn	-90.560±0.003
^{115}Sn	-90.034±0.003
^{116}Sn	-91.526±0.003
^{117}Sn	-90.399±0.002
^{118}Sn	-91.654±0.002
^{119}Sn	-90.068±0.002
^{120}Sn	-91.103±0.002
^{121}Sn	-89.203±0.002
^{122}Sn	-89.946±0.002
^{123}Sn	-87.820±0.002
^{124}Sn	-88.237±0.001
^{125}Sn	-85.898±0.002
^{126}Sn	-86.021±0.011
^{127}Sn	-83.504±0.025
^{128}Sn	-83.330±0.050
^{129}Sn	-80.620±0.120
^{130}Sn	-80.130±0.080
^{131}Sn	-77.380±0.070
^{132}Sn	-76.610±0.080
^{133}Sn	-71.190±0.220
^{134}Sn	-67.230±0.410
^{104}Sb	-59.380±0.630
^{105}Sb	-63.930±0.580
^{106}Sb	-66.520±0.500
^{107}Sb	-70.770±0.400
^{108}Sb	-72.510±0.300

Isotope	Mass Excess
^{109}Sb	-76.253±0.019
^{110}Sb	-77.530±0.200
^{111}Sb	-80.840±0.200
^{112}Sb	-81.603±0.023
^{113}Sb	-84.424±0.024
^{114}Sb	-84.680±0.200
^{115}Sb	-87.004±0.020
^{116}Sb	-86.819±0.006
^{117}Sb	-88.644±0.009
^{118}Sb	-87.998±0.004
^{119}Sb	-89.475±0.008
^{120}Sb	-88.423±0.008
^{121}Sb	-89.591±0.002
^{122}Sb	-88.327±0.002
^{123}Sb	-89.223±0.002
^{124}Sb	-87.619±0.002
^{125}Sb	-88.258±0.003
^{126}Sb	-86.400±0.030
^{127}Sb	-86.705±0.006
^{128}Sb	-84.610±0.040
^{129}Sb	-84.624±0.022
^{130}Sb	-82.330±0.070
^{131}Sb	-82.020±0.070
^{132}Sb	-79.730±0.080
^{133}Sb	-79.020±0.210
^{134}Sb	-74.020±0.160
^{135}Sb	-70.320±0.200
^{136}Sb	-65.050±0.300
^{106}Te	-58.270±0.630
^{107}Te	-60.640±0.500
^{108}Te	-65.820±0.540
^{109}Te	-67.620±0.070
^{110}Te	-72.300±0.060
^{111}Te	-73.470±0.070
^{112}Te	-77.270±0.170
^{113}Te	-78.320±0.200
^{114}Te	-81.760±0.200
^{115}Te	-82.360±0.230
^{116}Te	-85.290±0.100
^{117}Te	-85.110±0.019
^{118}Te	-87.653±0.023
^{119}Te	-87.182±0.008
^{120}Te	-89.386±0.019
^{121}Te	-88.551±0.026
^{122}Te	-90.307±0.002
^{123}Te	-89.171±0.001
^{124}Te	-90.525±0.001
^{125}Te	-89.024±0.002
^{126}Te	-90.067±0.002
^{127}Te	-88.286±0.004
^{128}Te	-88.992±0.003
^{129}Te	-87.006±0.004
^{130}Te	-87.348±0.004
^{131}Te	-85.206±0.004
^{132}Te	-85.222±0.012
^{133}Te	-82.970±0.080
^{134}Te	-82.430±0.110
^{135}Te	-77.870±0.090
^{136}Te	-74.460±0.050
^{137}Te	-69.480±0.300
^{138}Te	-66.110±0.200
^{108}I	-52.750±0.660
^{109}I	-57.710±0.540
^{110}I	-60.520±0.500
^{111}I	-65.070±0.400
^{112}I	-67.100±0.310
^{113}I	-71.120±0.050
^{114}I	-72.760±0.280
^{115}I	-76.400±0.200
^{116}I	-77.550±0.140
^{117}I	-80.600±0.370
^{118}I	-81.050±0.200
^{119}I	-83.780±0.100
^{120}I	-83.771±0.024

Isotope	Mass Excess
^{121}I	-86.270±0.020
^{122}I	-86.073±0.006
^{123}I	-87.937±0.004
^{124}I	-87.368±0.004
^{125}I	-88.846±0.002
^{126}I	-87.916±0.005
^{127}I	-88.982±0.004
^{128}I	-87.736±0.004
^{129}I	-88.507±0.004
^{130}I	-86.897±0.010
^{131}I	-87.457±0.004
^{132}I	-85.715±0.011
^{133}I	-85.888±0.026
^{134}I	-83.990±0.060
^{135}I	-83.821±0.023
^{136}I	-79.550±0.040
^{137}I	-76.507±0.029
^{138}I	-72.290±0.080
^{139}I	-68.880±0.120
^{140}I	-64.250±0.200
^{110}Xe	-51.970±0.630
^{111}Xe	-54.510±0.500
^{112}Xe	-60.060±0.540
^{113}Xe	-62.090±0.090
^{114}Xe	-67.180±0.210
^{115}Xe	-68.670±0.280
^{116}Xe	-73.050±0.250
^{117}Xe	-74.200±0.220
^{118}Xe	-77.950±0.280
^{119}Xe	-78.750±0.140
^{120}Xe	-81.810±0.050
^{121}Xe	-82.510±0.060
^{122}Xe	-85.050±0.140
^{123}Xe	-85.258±0.016
^{124}Xe	-87.659±0.002
^{125}Xe	-87.191±0.002
^{126}Xe	-89.174±0.007
^{127}Xe	-88.319±0.005
^{128}Xe	-89.860±0.001
^{129}Xe	-88.698±0.001
^{130}Xe	-89.881±0.001
^{131}Xe	-88.428±0.004
^{132}Xe	-89.292±0.004
^{133}Xe	-87.659±0.005
^{134}Xe	-88.125±0.007
^{135}Xe	-86.506±0.011
^{136}Xe	-86.429±0.007
^{137}Xe	-82.383±0.007
^{138}Xe	-80.110±0.040
^{139}Xe	-75.690±0.060
^{140}Xe	-72.990±0.060
^{141}Xe	-68.320±0.090
^{142}Xe	-65.500±0.100
^{113}Cs	-51.810±0.540
^{114}Cs	-54.740±0.510
^{115}Cs	-59.650±0.500
^{116}Cs	-62.290±0.290
^{117}Cs	-66.260±0.180
^{118}Cs	-68.270±0.130
^{119}Cs	-72.240±0.100
^{120}Cs	-73.820±0.080
^{121}Cs	-77.110±0.060
^{122}Cs	-78.140±0.060
^{123}Cs	-81.070±0.040
^{124}Cs	-81.740±0.040
^{125}Cs	-84.113±0.017
^{126}Cs	-84.347±0.024
^{127}Cs	-86.243±0.012
^{128}Cs	-85.928±0.006
^{129}Cs	-87.506±0.005
^{130}Cs	-86.853±0.008
^{131}Cs	-88.076±0.006
^{132}Cs	-87.171±0.005
^{133}Cs	-88.086±0.005

Isotope	Mass Excess
^{134}Cs	-86.906±0.005
^{135}Cs	-87.662±0.007
^{136}Cs	-86.354±0.005
^{137}Cs	-86.556±0.005
^{138}Cs	-82.896±0.022
^{139}Cs	-80.710±0.007
^{140}Cs	-77.053±0.016
^{141}Cs	-74.472±0.016
^{142}Cs	-70.538±0.020
^{143}Cs	-67.745±0.028
^{144}Cs	-63.370±0.040
^{145}Cs	-60.210±0.050
^{146}Cs	-55.700±0.080
^{147}Cs	-52.300±0.110
^{148}Cs	-47.580±0.360
^{117}Ba	-57.160±0.840
^{118}Ba	-62.350±0.490
^{119}Ba	-64.460±0.350
^{120}Ba	-69.020±0.410
^{121}Ba	-70.420±0.210
^{122}Ba	-74.540±0.310
^{123}Ba	-75.560±0.300
^{124}Ba	-79.140±0.300
^{125}Ba	-79.550±0.250
^{126}Ba	-82.770±0.200
^{127}Ba	-82.790±0.100
^{128}Ba	-85.470±0.018
^{129}Ba	-85.080±0.011
^{130}Ba	-87.291±0.007
^{131}Ba	-86.714±0.007
^{132}Ba	-88.447±0.008
^{133}Ba	-87.570±0.005
^{134}Ba	-88.965±0.005
^{135}Ba	-87.867±0.005
^{136}Ba	-88.903±0.005
^{137}Ba	-87.732±0.005
^{138}Ba	-88.272±0.005
^{139}Ba	-84.924±0.005
^{140}Ba	-83.273±0.012
^{141}Ba	-79.732±0.021
^{142}Ba	-77.847±0.020
^{143}Ba	-73.979±0.028
^{144}Ba	-71.840±0.050
^{145}Ba	-68.120±0.070
^{146}Ba	-65.060±0.080
^{147}Ba	-61.500±0.100
^{148}Ba	-58.130±0.610
^{149}Ba	-54.300±0.900
^{124}La	-70.240±0.700
^{125}La	-73.810±0.600
^{126}La	-75.050±0.400
^{127}La	-77.990±0.220
^{128}La	-78.820±0.400
^{129}La	-81.360±0.050
^{130}La	-81.590±0.200
^{131}La	-83.750±0.100
^{132}La	-83.740±0.050
^{133}La	-85.520±0.100
^{134}La	-85.252±0.026
^{135}La	-86.667±0.011
^{136}La	-86.030±0.070
^{137}La	-87.130±0.050
^{138}La	-86.531±0.005
^{139}La	-87.238±0.004
^{140}La	-84.327±0.004
^{141}La	-82.983±0.025
^{142}La	-80.027±0.007
^{143}La	-78.200±0.017
^{144}La	-74.940±0.060
^{145}La	-73.020±0.070
^{146}La	-69.200±0.070
^{147}La	-67.250±0.080
^{148}La	-63.810±0.150
^{149}La	-61.290±0.500

Isotope	Mass Excess
^{150}La	-57.500±0.610
^{126}Ce	-71.070±0.830
^{127}Ce	-72.290±0.610
^{128}Ce	-75.870±0.500
^{129}Ce	-76.480±0.400
^{130}Ce	-79.590±0.300
^{131}Ce	-79.730±0.410
^{132}Ce	-82.440±0.210
^{133}Ce	-82.470±0.200
^{134}Ce	-84.750±0.200
^{135}Ce	-84.641±0.012
^{136}Ce	-86.500±0.050
^{137}Ce	-85.910±0.050
^{138}Ce	-87.574±0.011
^{139}Ce	-86.973±0.013
^{140}Ce	-88.088±0.004
^{141}Ce	-85.445±0.004
^{142}Ce	-84.542±0.004
^{143}Ce	-81.616±0.004
^{144}Ce	-80.441±0.004
^{145}Ce	-77.110±0.040
^{146}Ce	-75.730±0.070
^{147}Ce	-72.190±0.060
^{148}Ce	-70.430±0.120
^{149}Ce	-66.800±0.080
^{150}Ce	-64.990±0.120
^{151}Ce	-61.660±0.500
^{152}Ce	-59.760±0.700
^{128}Pr	-66.320±0.900
^{129}Pr	-70.060±0.700
^{130}Pr	-71.290±0.540
^{131}Pr	-74.450±0.410
^{132}Pr	-75.340±0.300
^{133}Pr	-78.020±0.220
^{134}Pr	-78.650±0.200
^{135}Pr	-80.920±0.150
^{136}Pr	-81.370±0.050
^{137}Pr	-83.200±0.050
^{138}Pr	-83.137±0.015
^{139}Pr	-84.844±0.013
^{140}Pr	-84.700±0.007
^{141}Pr	-86.026±0.003
^{142}Pr	-83.798±0.003
^{143}Pr	-83.078±0.003
^{144}Pr	-80.760±0.004
^{145}Pr	-79.636±0.008
^{146}Pr	-76.760±0.060
^{147}Pr	-75.470±0.040
^{148}Pr	-72.490±0.220
^{149}Pr	-70.988±0.011
^{150}Pr	-68.000±0.080
^{151}Pr	-66.760±0.300
^{152}Pr	-64.160±0.300
^{153}Pr	-62.370±0.500
^{154}Pr	-59.110±0.710
^{129}Nd	-62.880±0.890
^{130}Nd	-66.990±0.850
^{131}Nd	-68.230±0.810
^{132}Nd	-71.940±0.630
^{133}Nd	-72.570±0.450
^{134}Nd	-75.950±0.360
^{135}Nd	-76.220±0.340
^{136}Nd	-79.160±0.060
^{137}Nd	-79.700±0.070
^{138}Nd	-82.040±0.200
^{139}Nd	-82.060±0.040
^{140}Nd	-84.471±0.020
^{141}Nd	-84.203±0.004
^{142}Nd	-85.960±0.003
^{143}Nd	-84.012±0.003
^{144}Nd	-83.758±0.003
^{145}Nd	-81.442±0.003
^{146}Nd	-80.935±0.003
^{147}Nd	-78.156±0.003

Isotope	Mass Excess
^{148}Nd	-77.418±0.004
^{149}Nd	-74.385±0.004
^{150}Nd	-73.693±0.004
^{151}Nd	-70.956±0.004
^{152}Nd	-70.160±0.030
^{153}Nd	-67.170±0.200
^{154}Nd	-65.860±0.300
^{155}Nd	-62.700±0.500
^{156}Nd	-60.570±0.700
^{132}Pm	-61.940±0.860
^{133}Pm	-65.620±0.740
^{134}Pm	-67.050±0.630
^{135}Pm	-70.220±0.430
^{136}Pm	-71.300±0.410
^{137}Pm	-74.020±0.150
^{138}Pm	-75.140±0.450
^{139}Pm	-77.540±0.050
^{140}Pm	-78.380±0.040
^{141}Pm	-80.472±0.029
^{142}Pm	-81.090±0.040
^{143}Pm	-82.970±0.004
^{144}Pm	-81.425±0.004
^{145}Pm	-81.278±0.004
^{146}Pm	-79.458±0.006
^{147}Pm	-79.052±0.003
^{148}Pm	-76.874±0.011
^{149}Pm	-76.073±0.005
^{150}Pm	-73.606±0.020
^{151}Pm	-73.398±0.006
^{152}Pm	-71.270±0.070
^{153}Pm	-70.669±0.016
^{154}Pm	-68.410±0.110
^{155}Pm	-67.100±0.200
^{156}Pm	-64.370±0.300
^{157}Pm	-62.370±0.500
^{158}Pm	-59.410±0.700
^{134}Sm	-62.050±0.880
^{135}Sm	-63.520±0.780
^{136}Sm	-67.260±0.600
^{137}Sm	-68.100±0.410
^{138}Sm	-71.540±0.450
^{139}Sm	-72.080±0.120
^{140}Sm	-75.380±0.300
^{141}Sm	-75.943±0.013
^{142}Sm	-78.986±0.015
^{143}Sm	-79.526±0.005
^{144}Sm	-81.975±0.004
^{145}Sm	-80.660±0.004
^{146}Sm	-81.000±0.005
^{147}Sm	-79.276±0.003
^{148}Sm	-79.346±0.003
^{149}Sm	-77.146±0.003
^{150}Sm	-77.060±0.003
^{151}Sm	-74.587±0.003
^{152}Sm	-74.773±0.003
^{153}Sm	-72.569±0.003
^{154}Sm	-72.465±0.003
^{155}Sm	-70.201±0.003
^{156}Sm	-69.374±0.010
^{157}Sm	-66.870±0.200
^{158}Sm	-65.400±0.200
^{159}Sm	-62.370±0.400
^{160}Sm	-60.350±0.700
^{136}Eu	-57.000±0.900
^{137}Eu	-60.720±0.720
^{138}Eu	-62.340±0.750
^{139}Eu	-65.630±0.400
^{140}Eu	-66.980±0.400
^{141}Eu	-69.980±0.040
^{142}Eu	-71.590±0.100
^{143}Eu	-74.380±0.030
^{144}Eu	-75.646±0.022
^{145}Eu	-78.000±0.005
^{146}Eu	-77.125±0.008

Isotope	Mass Excess
^{147}Eu	-77.555±0.004
^{148}Eu	-76.239±0.018
^{149}Eu	-76.455±0.005
^{150}Eu	-74.800±0.007
^{151}Eu	-74.663±0.003
^{152}Eu	-72.899±0.003
^{153}Eu	-73.378±0.003
^{154}Eu	-71.748±0.003
^{155}Eu	-71.829±0.003
^{156}Eu	-70.096±0.007
^{157}Eu	-69.472±0.006
^{158}Eu	-67.220±0.080
^{159}Eu	-66.058±0.009
^{160}Eu	-63.550±0.200
^{161}Eu	-61.770±0.400
^{162}Eu	-59.080±0.600
^{138}Gd	-56.640±0.920
^{139}Gd	-58.470±0.710
^{140}Gd	-62.480±0.670
^{141}Gd	-63.540±0.400
^{142}Gd	-67.390±0.400
^{143}Gd	-68.470±0.300
^{144}Gd	-71.950±0.300
^{145}Gd	-72.950±0.040
^{146}Gd	-76.099±0.011
^{147}Gd	-75.367±0.004
^{148}Gd	-76.278±0.004
^{149}Gd	-75.135±0.005
^{150}Gd	-75.771±0.007
^{151}Gd	-74.199±0.004
^{152}Gd	-74.718±0.003
^{153}Gd	-72.893±0.003
^{154}Gd	-73.717±0.003
^{155}Gd	-72.081±0.003
^{156}Gd	-72.546±0.003
^{157}Gd	-70.834±0.003
^{158}Gd	-70.701±0.003
^{159}Gd	-68.572±0.003
^{160}Gd	-67.953±0.003
^{161}Gd	-65.517±0.003
^{162}Gd	-64.240±0.110
^{163}Gd	-61.590±0.400
^{164}Gd	-59.280±0.600
^{140}Tb	-51.780±0.900
^{141}Tb	-55.580±0.700
^{142}Tb	-57.390±0.610
^{143}Tb	-60.970±0.400
^{144}Tb	-62.750±0.400
^{145}Tb	-66.200±0.300
^{146}Tb	-67.860±0.150
^{147}Tb	-70.880±0.060
^{148}Tb	-70.680±0.050
^{149}Tb	-71.499±0.005
^{150}Tb	-71.113±0.009
^{151}Tb	-71.633±0.005
^{152}Tb	-70.770±0.070
^{153}Tb	-71.322±0.005
^{154}Tb	-70.150±0.050
^{155}Tb	-71.261±0.012
^{156}Tb	-70.102±0.005
^{157}Tb	-70.772±0.003
^{158}Tb	-69.480±0.003
^{159}Tb	-69.542±0.003
^{160}Tb	-67.846±0.003
^{161}Tb	-67.471±0.003
^{162}Tb	-65.680±0.040
^{163}Tb	-64.700±0.040
^{164}Tb	-62.090±0.100
^{165}Tb	-60.610±0.300
^{166}Tb	-57.980±0.500
^{142}Dy	-50.990±0.900
^{143}Dy	-52.870±0.760
^{144}Dy	-57.150±0.670
^{145}Dy	-58.750±0.500

Isotope	Mass Excess
^{146}Dy	-62.860±0.250
^{147}Dy	-64.330±0.110
^{148}Dy	-68.000±0.060
^{149}Dy	-67.900±0.200
^{150}Dy	-69.324±0.012
^{151}Dy	-68.764±0.005
^{152}Dy	-70.127±0.006
^{153}Dy	-69.152±0.005
^{154}Dy	-70.399±0.009
^{155}Dy	-69.166±0.012
^{156}Dy	-70.536±0.007
^{157}Dy	-69.434±0.007
^{158}Dy	-70.418±0.004
^{159}Dy	-69.176±0.003
^{160}Dy	-69.682±0.003
^{161}Dy	-68.064±0.003
^{162}Dy	-68.189±0.003
^{163}Dy	-66.389±0.003
^{164}Dy	-65.976±0.003
^{165}Dy	-63.621±0.003
^{166}Dy	-62.593±0.003
^{167}Dy	-59.940±0.060
^{168}Dy	-58.500±0.400
^{144}Ho	-45.650±0.900
^{145}Ho	-50.000±0.760
^{146}Ho	-52.160±0.720
^{147}Ho	-56.280±0.600
^{148}Ho	-58.380±0.300
^{149}Ho	-61.910±0.210
^{150}Ho	-62.210±0.160
^{151}Ho	-63.720±0.060
^{152}Ho	-63.750±0.060
^{153}Ho	-65.023±0.007
^{154}Ho	-64.647±0.009
^{155}Ho	-66.064±0.023
^{156}Ho	-65.600±0.280
^{157}Ho	-66.890±0.050
^{158}Ho	-66.200±0.030
^{159}Ho	-67.338±0.004
^{160}Ho	-66.391±0.011
^{161}Ho	-67.207±0.004
^{162}Ho	-66.050±0.005
^{163}Ho	-66.386±0.003
^{164}Ho	-64.990±0.003
^{165}Ho	-64.907±0.003
^{166}Ho	-63.079±0.003
^{167}Ho	-62.291±0.006
^{168}Ho	-60.260±0.100
^{169}Ho	-58.805±0.020
^{170}Ho	-56.250±0.050
^{146}Er	-45.060±0.840
^{147}Er	-47.330±0.710
^{148}Er	-52.000±0.600
^{149}Er	-54.950±0.900
^{150}Er	-58.120±0.200
^{151}Er	-58.460±0.300
^{152}Er	-60.640±0.060
^{153}Er	-60.670±0.200
^{154}Er	-62.622±0.012
^{155}Er	-62.220±0.050
^{156}Er	-64.100±0.200
^{157}Er	-63.420±0.090
^{158}Er	-65.300±0.100
^{159}Er	-64.570±0.005
^{160}Er	-66.063±0.028
^{161}Er	-65.203±0.010
^{162}Er	-66.346±0.004
^{163}Er	-65.177±0.006
^{164}Er	-65.952±0.004
^{165}Er	-64.530±0.004
^{166}Er	-64.933±0.003
^{167}Er	-63.298±0.003
^{168}Er	-62.998±0.003
^{169}Er	-60.930±0.003

Isotope	Mass Excess
^{170}Er	-60.117±0.003
^{171}Er	-57.727±0.003
^{172}Er	-56.491±0.005
^{173}Er	-53.660±0.200
^{147}Tm	-36.710±0.840
^{148}Tm	-39.880±0.860
^{149}Tm	-44.510±0.730
^{150}Tm	-47.010±0.620
^{151}Tm	-51.220±0.400
^{152}Tm	-51.850±0.400
^{153}Tm	-54.240±0.210
^{154}Tm	-54.700±0.160
^{155}Tm	-56.730±0.060
^{156}Tm	-56.980±0.070
^{157}Tm	-58.890±0.210
^{158}Tm	-58.900±0.200
^{159}Tm	-60.670±0.200
^{160}Tm	-60.460±0.300
^{161}Tm	-62.100±0.200
^{162}Tm	-61.550±0.040
^{163}Tm	-62.738±0.006
^{164}Tm	-61.990±0.020
^{165}Tm	-62.938±0.004
^{166}Tm	-61.894±0.012
^{167}Tm	-62.550±0.004
^{168}Tm	-61.319±0.004
^{169}Tm	-61.280±0.003
^{170}Tm	-59.802±0.003
^{171}Tm	-59.217±0.003
^{172}Tm	-57.382±0.006
^{173}Tm	-56.265±0.005
^{174}Tm	-53.870±0.040
^{175}Tm	-52.300±0.050
^{176}Tm	-49.700±0.200
^{149}Yb	-33.910±0.950
^{150}Yb	-39.320±0.730
^{151}Yb	-41.960±0.670
^{152}Yb	-46.640±0.500
^{153}Yb	-47.270±0.450
^{154}Yb	-50.220±0.200
^{155}Yb	-50.700±0.300
^{156}Yb	-53.410±0.060
^{157}Yb	-53.630±0.210
^{158}Yb	-56.022±0.016
^{159}Yb	-55.900±0.210
^{160}Yb	-58.160±0.200
^{161}Yb	-57.900±0.200
^{162}Yb	-59.850±0.200
^{163}Yb	-59.370±0.100
^{164}Yb	-60.990±0.100
^{165}Yb	-60.175±0.020
^{166}Yb	-61.589±0.008
^{167}Yb	-60.596±0.005
^{168}Yb	-61.575±0.004
^{169}Yb	-60.371±0.004
^{170}Yb	-60.770±0.003
^{171}Yb	-59.314±0.003
^{172}Yb	-59.262±0.003
^{173}Yb	-57.558±0.003
^{174}Yb	-56.951±0.003
^{175}Yb	-54.702±0.003
^{176}Yb	-53.501±0.003
^{177}Yb	-50.996±0.003
^{178}Yb	-49.705±0.010
^{150}Lu	-25.350±0.950
^{151}Lu	-31.000±0.740
^{152}Lu	-34.050±0.720
^{153}Lu	-38.840±0.640
^{154}Lu	-40.000±0.530
^{155}Lu	-42.990±0.410
^{156}Lu	-43.830±0.410
^{157}Lu	-46.690±0.220
^{158}Lu	-47.490±0.170
^{159}Lu	-49.770±0.080

Isotope	Mass Excess
^{160}Lu	-50.460±0.280
^{161}Lu	-52.600±0.220
^{162}Lu	-52.860±0.230
^{163}Lu	-54.770±0.220
^{164}Lu	-54.740±0.140
^{165}Lu	-56.260±0.080
^{166}Lu	-56.110±0.160
^{167}Lu	-57.470±0.100
^{168}Lu	-57.090±0.060
^{169}Lu	-58.078±0.005
^{170}Lu	-57.311±0.019
^{171}Lu	-57.834±0.004
^{172}Lu	-56.741±0.004
^{173}Lu	-56.886±0.004
^{174}Lu	-55.575±0.004
^{175}Lu	-55.171±0.002
^{176}Lu	-53.394±0.002
^{177}Lu	-52.394±0.002
^{178}Lu	-50.338±0.024
^{179}Lu	-49.110±0.040
^{180}Lu	-46.690±0.070
^{154}Hf	-33.420±0.730
^{155}Hf	-34.600±0.670
^{156}Hf	-38.180±0.500
^{157}Hf	-38.960±0.450
^{158}Hf	-42.400±0.200
^{159}Hf	-43.050±0.300
^{160}Hf	-46.080±0.060
^{161}Hf	-46.480±0.210
^{162}Hf	-49.178±0.017
^{163}Hf	-49.380±0.360
^{164}Hf	-51.790±0.230
^{165}Hf	-51.670±0.370
^{166}Hf	-53.790±0.300
^{167}Hf	-53.470±0.220
^{168}Hf	-55.290±0.120
^{169}Hf	-54.810±0.080
^{170}Hf	-56.210±0.200
^{171}Hf	-55.430±0.200
^{172}Hf	-56.390±0.050
^{173}Hf	-55.290±0.100
^{174}Hf	-55.851±0.003
^{175}Hf	-54.488±0.003
^{176}Hf	-54.582±0.003
^{177}Hf	-52.892±0.002
^{178}Hf	-52.446±0.002
^{179}Hf	-50.475±0.002
^{180}Hf	-49.791±0.002
^{181}Hf	-47.416±0.002
^{182}Hf	-46.062±0.007
^{183}Hf	-43.290±0.030
^{184}Hf	-41.500±0.040
^{156}Ta	-26.230±0.900
^{157}Ta	-30.030±0.640
^{158}Ta	-31.370±0.530
^{159}Ta	-34.820±0.410
^{160}Ta	-35.850±0.410
^{161}Ta	-38.980±0.220
^{162}Ta	-40.060±0.170
^{163}Ta	-42.600±0.090
^{164}Ta	-43.320±0.440
^{165}Ta	-45.850±0.220
^{166}Ta	-46.310±0.340
^{167}Ta	-48.470±0.320
^{168}Ta	-48.590±0.310
^{169}Ta	-50.380±0.200
^{170}Ta	-50.210±0.200
^{171}Ta	-51.730±0.200
^{172}Ta	-51.470±0.190
^{173}Ta	-52.490±0.220
^{174}Ta	-51.850±0.100
^{175}Ta	-52.490±0.100
^{176}Ta	-51.470±0.100
^{177}Ta	-51.726±0.004

Isotope	Mass Excess
^{178}Ta	-50.530±0.100
^{179}Ta	-50.365±0.006
^{180}Ta	-48.939±0.003
^{181}Ta	-48.444±0.003
^{182}Ta	-46.436±0.003
^{183}Ta	-45.299±0.003
^{184}Ta	-42.844±0.026
^{185}Ta	-41.402±0.014
^{186}Ta	-38.620±0.060
^{158}W	-24.380±0.730
^{159}W	-25.720±0.670
^{160}W	-29.690±0.500
^{161}W	-30.620±0.450
^{162}W	-34.300±0.200
^{163}W	-35.110±0.310
^{164}W	-38.380±0.060
^{165}W	-39.030±0.220
^{166}W	-41.898±0.018
^{167}W	-42.350±0.300
^{168}W	-44.840±0.200
^{169}W	-44.940±0.310
^{170}W	-47.240±0.250
^{171}W	-47.080±0.280
^{172}W	-48.970±0.270
^{173}W	-48.690±0.220
^{174}W	-50.150±0.300
^{175}W	-49.590±0.200
^{176}W	-50.680±0.200
^{177}W	-49.730±0.300
^{178}W	-50.440±0.100
^{179}W	-49.306±0.016
^{180}W	-49.647±0.005
^{181}W	-48.256±0.005
^{182}W	-48.250±0.003
^{183}W	-46.369±0.003
^{184}W	-45.709±0.003
^{185}W	-43.393±0.003
^{186}W	-42.515±0.003
^{187}W	-39.910±0.003
^{188}W	-38.673±0.004
^{189}W	-35.480±0.200
^{190}W	-34.310±0.160
^{161}Re	-21.170±0.640
^{162}Re	-22.670±0.530
^{163}Re	-26.330±0.410
^{164}Re	-27.510±0.410
^{165}Re	-30.910±0.220
^{166}Re	-32.130±0.180
^{167}Re	-34.910±0.100
^{168}Re	-35.880±0.440
^{169}Re	-38.600±0.320
^{170}Re	-39.040±0.680
^{171}Re	-41.440±0.570
^{172}Re	-41.660±0.370
^{173}Re	-43.650±0.500
^{174}Re	-43.670±0.350
^{175}Re	-45.280±0.480
^{176}Re	-44.980±0.280
^{177}Re	-46.330±0.200
^{178}Re	-45.780±0.210
^{179}Re	-46.620±0.050
^{180}Re	-45.840±0.030
^{181}Re	-46.460±0.100
^{182}Re	-45.450±0.100
^{183}Re	-45.813±0.009
^{184}Re	-44.220±0.005
^{185}Re	-43.826±0.003
^{186}Re	-41.933±0.003
^{187}Re	-41.222±0.003
^{188}Re	-39.022±0.003
^{189}Re	-37.985±0.010
^{190}Re	-35.580±0.150
^{191}Re	-34.360±0.011
^{192}Re	-31.790±0.200

Isotope	Mass Excess
^{163}Os	-16.620±0.680
^{164}Os	-20.780±0.500
^{165}Os	-21.870±0.460
^{166}Os	-25.740±0.200
^{167}Os	-26.710±0.310
^{168}Os	-30.130±0.060
^{169}Os	-30.880±0.220
^{170}Os	-33.933±0.018
^{171}Os	-34.550±0.300
^{172}Os	-37.190±0.200
^{173}Os	-37.460±0.310
^{174}Os	-39.950±0.250
^{175}Os	-39.920±0.290
^{176}Os	-42.080±0.240
^{177}Os	-41.870±0.300
^{178}Os	-43.540±0.210
^{179}Os	-42.970±0.240
^{180}Os	-44.380±0.180
^{181}Os	-43.530±0.250
^{182}Os	-44.542±0.025
^{183}Os	-43.510±0.100
^{184}Os	-44.259±0.003
^{185}Os	-42.813±0.003
^{186}Os	-43.003±0.003
^{187}Os	-41.224±0.003
^{188}Os	-41.142±0.003
^{189}Os	-38.993±0.003
^{190}Os	-38.714±0.003
^{191}Os	-36.401±0.003
^{192}Os	-35.892±0.004
^{193}Os	-33.405±0.004
^{194}Os	-32.442±0.004
^{195}Os	-29.700±0.500
^{196}Os	-28.300±0.040
^{166}Ir	-13.540±0.530
^{167}Ir	-17.360±0.420
^{168}Ir	-18.670±0.420
^{169}Ir	-22.210±0.230
^{170}Ir	-23.530±0.190
^{171}Ir	-26.420±0.110
^{172}Ir	-27.490±0.440
^{173}Ir	-30.230±0.320
^{174}Ir	-31.010±0.680
^{175}Ir	-33.490±0.570
^{176}Ir	-34.000±0.370
^{177}Ir	-36.100±0.500
^{178}Ir	-36.350±0.290
^{179}Ir	-38.050±0.440
^{180}Ir	-37.840±0.300
^{181}Ir	-39.360±0.320
^{182}Ir	-38.950±0.230
^{183}Ir	-40.110±0.200
^{184}Ir	-39.540±0.250
^{185}Ir	-40.210±0.200
^{186}Ir	-39.172±0.020
^{187}Ir	-39.720±0.100
^{188}Ir	-38.333±0.007
^{189}Ir	-38.462±0.013
^{190}Ir	-36.710±0.200
^{191}Ir	-36.715±0.004
^{192}Ir	-34.843±0.004
^{193}Ir	-34.544±0.004
^{194}Ir	-32.539±0.004
^{195}Ir	-31.700±0.004
^{196}Ir	-29.460±0.040
^{197}Ir	-28.292±0.021
^{198}Ir	-25.830±0.200
^{168}Pt	-11.370±0.500
^{169}Pt	-12.610±0.460
^{170}Pt	-16.610±0.200
^{171}Pt	-17.680±0.310
^{172}Pt	-21.240±0.060
^{173}Pt	-22.110±0.230
^{174}Pt	-25.324±0.019

Isotope	Mass Excess
^{175}Pt	-25.950±0.300
^{176}Pt	-28.880±0.200
^{177}Pt	-29.390±0.310
^{178}Pt	-31.950±0.250
^{179}Pt	-32.200±0.290
^{180}Pt	-34.400±0.240
^{181}Pt	-34.310±0.300
^{182}Pt	-36.170±0.210
^{183}Pt	-35.700±0.240
^{184}Pt	-37.360±0.180
^{185}Pt	-36.510±0.200
^{186}Pt	-37.790±0.030
^{187}Pt	-36.820±0.200
^{188}Pt	-37.827±0.006
^{189}Pt	-36.491±0.011
^{190}Pt	-37.331±0.006
^{191}Pt	-35.701±0.006
^{192}Pt	-36.303±0.004
^{193}Pt	-34.487±0.004
^{194}Pt	-34.787±0.004
^{195}Pt	-32.821±0.004
^{196}Pt	-32.671±0.004
^{197}Pt	-30.446±0.004
^{198}Pt	-29.932±0.005
^{199}Pt	-27.432±0.019
^{200}Pt	-26.627±0.021
^{201}Pt	-23.750±0.050
^{173}Au	-12.890±0.240
^{174}Au	-14.330±0.190
^{175}Au	-17.210±0.110
^{176}Au	-18.520±0.440
^{177}Au	-21.370±0.320
^{178}Au	-22.530±0.680
^{179}Au	-24.990±0.570
^{180}Au	-25.750±0.460
^{181}Au	-27.920±0.500
^{182}Au	-28.390±0.290
^{183}Au	-30.170±0.430
^{184}Au	-30.130±0.310
^{185}Au	-31.750±0.320
^{186}Au	-31.570±0.300
^{187}Au	-32.900±0.210
^{188}Au	-32.530±0.100
^{189}Au	-33.640±0.200
^{190}Au	-32.889±0.016
^{191}Au	-33.870±0.050
^{192}Au	-32.787±0.016
^{193}Au	-33.430±0.100
^{194}Au	-32.295±0.012
^{195}Au	-32.594±0.004
^{196}Au	-31.166±0.005
^{197}Au	-31.165±0.004
^{198}Au	-29.606±0.004
^{199}Au	-29.119±0.004
^{200}Au	-27.280±0.050
^{201}Au	-26.413±0.015
^{202}Au	-24.420±0.170
^{203}Au	-23.153±0.016
^{204}Au	-20.720±0.200
^{175}Hg	-8.210±0.310
^{176}Hg	-11.890±0.060
^{177}Hg	-12.950±0.230
^{178}Hg	-16.321±0.019
^{179}Hg	-17.090±0.300
^{180}Hg	-20.200±0.200
^{181}Hg	-20.680±0.310
^{182}Hg	-23.530±0.250
^{183}Hg	-23.740±0.290
^{184}Hg	-26.310±0.240
^{185}Hg	-26.110±0.300
^{186}Hg	-28.540±0.210
^{187}Hg	-28.130±0.230
^{188}Hg	-30.230±0.180
^{189}Hg	-29.690±0.200

Isotope	Mass Excess
^{190}Hg	-31.410±0.150
^{191}Hg	-30.690±0.090
^{192}Hg	-32.060±0.100
^{193}Hg	-31.090±0.100
^{194}Hg	-32.255±0.023
^{195}Hg	-31.070±0.050
^{196}Hg	-31.852±0.005
^{197}Hg	-30.566±0.005
^{198}Hg	-30.979±0.004
^{199}Hg	-29.572±0.004
^{200}Hg	-29.529±0.004
^{201}Hg	-27.688±0.004
^{202}Hg	-27.370±0.004
^{203}Hg	-25.292±0.004
^{204}Hg	-24.716±0.004
^{205}Hg	-22.312±0.006
^{206}Hg	-20.969±0.020
^{207}Hg	-16.270±0.150
^{179}Tl	-8.020±0.150
^{180}Tl	-9.300±0.530
^{181}Tl	-12.350±0.440
^{182}Tl	-13.500±0.610
^{183}Tl	-16.210±0.530
^{184}Tl	-17.030±0.460
^{185}Tl	-19.490±0.460
^{186}Tl	-20.080±0.290
^{187}Tl	-22.200±0.430
^{188}Tl	-22.430±0.220
^{189}Tl	-24.450±0.350
^{190}Tl	-24.490±0.200
^{191}Tl	-26.190±0.310
^{192}Tl	-25.950±0.200
^{193}Tl	-27.450±0.200
^{194}Tl	-27.070±0.180
^{195}Tl	-28.270±0.140
^{196}Tl	-27.500±0.130
^{197}Tl	-28.400±0.050
^{198}Tl	-27.520±0.080
^{199}Tl	-28.140±0.100
^{200}Tl	-27.073±0.007
^{201}Tl	-27.205±0.016
^{202}Tl	-26.006±0.015
^{203}Tl	-25.784±0.004
^{204}Tl	-24.369±0.004
^{205}Tl	-23.846±0.004
^{206}Tl	-22.278±0.004
^{207}Tl	-21.049±0.006
^{208}Tl	-16.774±0.004
^{209}Tl	-13.652±0.010
^{210}Tl	-9.262±0.012
^{182}Pb	-6.874±0.028
^{183}Pb	-7.720±0.310
^{184}Pb	-11.000±0.200
^{185}Pb	-11.580±0.310
^{186}Pb	-14.630±0.250
^{187}Pb	-14.920±0.290
^{188}Pb	-17.780±0.240
^{189}Pb	-17.820±0.300
^{190}Pb	-20.420±0.210
^{191}Pb	-20.300±0.220
^{192}Pb	-22.580±0.180
^{193}Pb	-22.280±0.210
^{194}Pb	-24.250±0.150
^{195}Pb	-23.780±0.160
^{196}Pb	-25.420±0.140
^{197}Pb	-24.800±0.150
^{198}Pb	-26.100±0.100
^{199}Pb	-25.270±0.070
^{200}Pb	-26.280±0.100
^{201}Pb	-25.300±0.030
^{202}Pb	-25.957±0.010
^{203}Pb	-24.810±0.007
^{204}Pb	-25.132±0.004
^{205}Pb	-23.793±0.004

Isotope	Mass Excess
^{206}Pb	-23.809±0.004
^{207}Pb	-22.476±0.004
^{208}Pb	-21.772±0.004
^{209}Pb	-17.638±0.004
^{210}Pb	-14.752±0.004
^{211}Pb	-10.494±0.003
^{212}Pb	-7.571±0.004
^{213}Pb	-3.240±0.100
^{214}Pb	-0.188±0.002
^{186}Bi	-3.380±0.580
^{187}Bi	-6.100±0.530
^{188}Bi	-7.330±0.460
^{189}Bi	-9.800±0.460
^{190}Bi	-10.690±0.280
^{191}Bi	-12.990±0.430
^{192}Bi	-13.520±0.230
^{193}Bi	-15.720±0.350
^{194}Bi	-16.040±0.210
^{195}Bi	-17.930±0.310
^{196}Bi	-17.970±0.700
^{197}Bi	-19.640±0.170
^{198}Bi	-19.540±0.150
^{199}Bi	-20.920±0.100
^{200}Bi	-20.400±0.080
^{201}Bi	-21.470±0.050
^{202}Bi	-20.800±0.060
^{203}Bi	-21.580±0.040
^{204}Bi	-20.730±0.040
^{205}Bi	-21.084±0.008
^{206}Bi	-20.052±0.009
^{207}Bi	-20.079±0.004
^{208}Bi	-18.894±0.004
^{209}Bi	-18.282±0.004
^{210}Bi	-14.815±0.004
^{211}Bi	-11.873±0.006
^{212}Bi	-8.142±0.004
^{213}Bi	-5.244±0.008
^{214}Bi	-1.218±0.012
^{215}Bi	1.710±0.090
^{216}Bi	5.960±0.100
^{192}Po	-8.030±0.240
^{193}Po	-8.280±0.290
^{194}Po	-11.010±0.210
^{195}Po	-11.120±0.220
^{196}Po	-13.500±0.180
^{197}Po	-13.450±0.210
^{198}Po	-15.510±0.150
^{199}Po	-15.280±0.160
^{200}Po	-17.010±0.140
^{201}Po	-16.570±0.150
^{202}Po	-17.970±0.100
^{203}Po	-17.350±0.070
^{204}Po	-18.370±0.100
^{205}Po	-17.555±0.030
^{206}Po	-18.205±0.010
^{207}Po	-17.169±0.007
^{208}Po	-17.492±0.004
^{209}Po	-16.390±0.004
^{210}Po	-15.977±0.004
^{211}Po	-12.457±0.004
^{212}Po	-10.394±0.004
^{213}Po	-6.676±0.005
^{214}Po	-4.493±0.004
^{215}Po	-0.542±0.003
^{216}Po	1.760±0.004
^{217}Po	5.840±0.100
^{218}Po	8.351±0.002
^{194}At	-0.760±0.350
^{195}At	-3.170±0.480
^{196}At	-3.890±0.240
^{197}At	-6.190±0.340
^{198}At	-6.720±0.210
^{199}At	-8.730±0.310
^{200}At	-8.940±0.690

Isotope	Mass Excess
^{201}At	-10.740±0.170
^{202}At	-10.770±0.150
^{203}At	-12.290±0.100
^{204}At	-11.900±0.070
^{205}At	-13.030±0.050
^{206}At	-12.490±0.060
^{207}At	-13.290±0.040
^{208}At	-12.560±0.040
^{209}At	-12.902±0.008
^{210}At	-11.995±0.009
^{211}At	-11.674±0.005
^{212}At	-8.640±0.005
^{213}At	-6.603±0.013
^{214}At	-3.403±0.006
^{215}At	-1.269±0.007
^{216}At	2.231±0.005
^{217}At	4.383±0.008
^{218}At	8.090±0.013
^{219}At	10.520±0.080
^{220}At	14.290±0.100
^{198}Rn	-1.240±0.210
^{199}Rn	-1.560±0.220
^{200}Rn	-4.040±0.180
^{201}Rn	-4.160±0.220
^{202}Rn	-6.320±0.150
^{203}Rn	-6.230±0.160
^{204}Rn	-8.040±0.140
^{205}Rn	-7.760±0.160
^{206}Rn	-9.160±0.100
^{207}Rn	-8.670±0.070
^{208}Rn	-9.690±0.100
^{209}Rn	-8.973±0.029
^{210}Rn	-9.623±0.011
^{211}Rn	-8.780±0.008
^{212}Rn	-8.682±0.005
^{213}Rn	-5.722±0.008
^{214}Rn	-4.343±0.010
^{215}Rn	-1.193±0.008
^{216}Rn	0.231±0.008
^{217}Rn	3.634±0.005
^{218}Rn	5.199±0.004
^{219}Rn	8.828±0.003
^{220}Rn	10.590±0.004
^{221}Rn	14.420±0.100
^{222}Rn	16.367±0.002
^{201}Fr	3.770±0.350
^{202}Fr	3.100±0.210
^{203}Fr	0.970±0.320
^{204}Fr	0.650±0.690
^{205}Fr	-1.270±0.170
^{206}Fr	-1.420±0.150
^{207}Fr	-2.960±0.100
^{208}Fr	-2.710±0.070
^{209}Fr	-3.830±0.050
^{210}Fr	-3.400±0.050
^{211}Fr	-4.200±0.040
^{212}Fr	-3.600±0.040
^{213}Fr	-3.572±0.009
^{214}Fr	-0.983±0.010
^{215}Fr	0.292±0.008
^{216}Fr	2.960±0.013
^{217}Fr	4.293±0.015
^{218}Fr	7.036±0.006
^{219}Fr	8.609±0.008
^{220}Fr	11.456±0.005
^{221}Fr	13.266±0.008
^{222}Fr	16.380±0.040
^{223}Fr	18.381±0.003
^{224}Fr	21.620±0.050
^{225}Fr	23.840±0.090
^{226}Fr	27.210±0.140
^{227}Fr	29.590±0.090
^{228}Fr	33.140±0.200
^{204}Ra	5.990±0.270

Isotope	Mass Excess
^{205}Ra	5.760±0.240
^{206}Ra	3.520±0.150
^{207}Ra	3.470±0.170
^{208}Ra	1.660±0.140
^{209}Ra	1.810±0.170
^{210}Ra	0.420±0.100
^{211}Ra	0.800±0.070
^{212}Ra	-0.230±0.100
^{213}Ra	0.311±0.030
^{214}Ra	0.075±0.011
^{215}Ra	2.509±0.008
^{216}Ra	3.269±0.009
^{217}Ra	5.864±0.010
^{218}Ra	6.627±0.012
^{219}Ra	9.363±0.012
^{220}Ra	10.250±0.011
^{221}Ra	12.938±0.007
^{222}Ra	14.303±0.006
^{223}Ra	17.232±0.002
^{224}Ra	18.804±0.004
^{225}Ra	21.988±0.003
^{226}Ra	23.662±0.002
^{227}Ra	27.172±0.002
^{228}Ra	28.936±0.004
^{229}Ra	32.660±0.110
^{230}Ra	34.660±0.360
^{209}Ac	8.890±0.170
^{210}Ac	8.620±0.160
^{211}Ac	7.080±0.110
^{212}Ac	7.240±0.080
^{213}Ac	6.100±0.070
^{214}Ac	6.380±0.070
^{215}Ac	5.970±0.060
^{216}Ac	8.060±0.040
^{217}Ac	8.685±0.013
^{218}Ac	10.820±0.050
^{219}Ac	11.540±0.050
^{220}Ac	13.730±0.050
^{221}Ac	14.500±0.050
^{222}Ac	16.603±0.006
^{223}Ac	17.817±0.008
^{224}Ac	20.204±0.005
^{225}Ac	21.626±0.008
^{226}Ac	24.303±0.004
^{227}Ac	25.848±0.002
^{228}Ac	28.890±0.004
^{229}Ac	30.900±0.110
^{230}Ac	33.760±0.200
^{231}Ac	35.910±0.100
^{232}Ac	39.240±0.200
^{212}Th	12.040±0.140
^{213}Th	12.080±0.170
^{214}Th	10.670±0.100
^{215}Th	10.890±0.070
^{216}Th	10.270±0.100
^{217}Th	12.160±0.030
^{218}Th	12.348±0.014
^{219}Th	14.450±0.050
^{220}Th	14.647±0.022
^{221}Th	16.917±0.011
^{222}Th	17.182±0.013
^{223}Th	19.357±0.028
^{224}Th	19.980±0.013
^{225}Th	22.283±0.009
^{226}Th	23.183±0.006
^{227}Th	25.803±0.002
^{228}Th	26.749±0.004
^{229}Th	29.581±0.003
^{230}Th	30.858±0.002
^{231}Th	33.812±0.002
^{232}Th	35.444±0.002
^{233}Th	38.729±0.002
^{234}Th	40.607±0.004
^{235}Th	44.250±0.050

Isotope	Mass Excess
^{215}Pa	17.680±0.120
^{216}Pa	17.680±0.100
^{217}Pa	17.020±0.090
^{218}Pa	18.600±0.090
^{219}Pa	18.500±0.210
^{220}Pa	20.190±0.200
^{221}Pa	20.310±0.200
^{222}Pa	21.940±0.070
^{223}Pa	22.310±0.070
^{224}Pa	23.780±0.070
^{225}Pa	24.310±0.060
^{226}Pa	26.015±0.012
^{227}Pa	26.824±0.010
^{228}Pa	28.856±0.006
^{229}Pa	29.887±0.009
^{230}Pa	32.168±0.004
^{231}Pa	33.422±0.002
^{232}Pa	35.924±0.009
^{233}Pa	37.485±0.002
^{234}Pa	40.334±0.005
^{235}Pa	42.330±0.050
^{236}Pa	45.340±0.200
^{237}Pa	47.640±0.100
^{238}Pa	50.910±0.300
^{226}U	27.170±0.030
^{227}U	28.970±0.110
^{228}U	29.209±0.016
^{229}U	31.181±0.009
^{230}U	31.600±0.006
^{231}U	33.780±0.050
^{232}U	34.587±0.004
^{233}U	36.915±0.003
^{234}U	38.141±0.002
^{235}U	40.915±0.002
^{236}U	42.441±0.002
^{237}U	45.387±0.002
^{238}U	47.305±0.002
^{239}U	50.570±0.002
^{240}U	52.711±0.005
^{229}Np	33.740±0.080
^{230}Np	35.220±0.050
^{231}Np	35.620±0.050
^{232}Np	37.280±0.100
^{233}Np	38.010±0.110
^{234}Np	39.952±0.009
^{235}Np	41.039±0.002
^{236}Np	43.370±0.050
^{237}Np	44.868±0.002
^{238}Np	47.451±0.002
^{239}Np	49.306±0.002
^{240}Np	52.321±0.014
^{241}Np	54.260±0.070
^{242}Np	57.410±0.200
^{243}Np	59.922±0.011
^{231}Pu	38.390±0.150
^{232}Pu	38.349±0.019
^{233}Pu	40.020±0.050
^{234}Pu	40.335±0.008
^{235}Pu	42.160±0.050
^{236}Pu	42.879±0.004
^{237}Pu	45.090±0.006
^{238}Pu	46.160±0.002
^{239}Pu	48.584±0.002
^{240}Pu	50.122±0.002
^{241}Pu	52.952±0.002
^{242}Pu	54.713±0.002
^{243}Pu	57.751±0.003
^{244}Pu	59.802±0.005
^{245}Pu	63.175±0.014
^{246}Pu	65.391±0.015
^{233}Am	43.270±0.220
^{234}Am	44.340±0.210
^{235}Am	44.640±0.210

Isotope	Mass Excess
^{236}Am	46.010±0.140
^{237}Am	46.640±0.150
^{238}Am	48.420±0.050
^{239}Am	49.385±0.003
^{240}Am	51.498±0.013
^{241}Am	52.931±0.002
^{242}Am	55.463±0.002
^{243}Am	57.169±0.002
^{244}Am	59.877±0.002
^{245}Am	61.891±0.002
^{246}Am	64.990±0.018
^{247}Am	67.230±0.100
^{248}Am	70.590±0.200
^{235}Cm	48.020±0.250
^{236}Cm	47.870±0.200
^{237}Cm	49.150±0.210
^{238}Cm	49.380±0.040
^{239}Cm	51.090±0.100
^{240}Cm	51.702±0.005
^{241}Cm	53.700±0.006
^{242}Cm	54.800±0.002
^{243}Cm	57.177±0.002
^{244}Cm	58.449±0.002
^{245}Cm	60.998±0.002
^{246}Cm	62.614±0.003
^{247}Cm	65.528±0.004
^{248}Cm	67.388±0.005
^{249}Cm	70.746±0.005
^{250}Cm	72.985±0.011
^{251}Cm	76.642±0.023
^{237}Bk	53.190±0.290
^{238}Bk	54.070±0.290
^{239}Bk	54.270±0.290
^{240}Bk	55.600±0.100
^{241}Bk	56.100±0.200
^{242}Bk	57.800±0.200
^{243}Bk	58.683±0.005
^{244}Bk	60.700±0.050
^{245}Bk	61.809±0.002
^{246}Bk	64.110±0.100
^{247}Bk	65.484±0.006
^{248}Bk	68.107±0.020
^{249}Bk	69.842±0.002
^{250}Bk	72.951±0.006
^{251}Bk	75.222±0.011
^{252}Bk	78.530±0.200
^{239}Cf	58.250±0.250
^{240}Cf	58.020±0.200
^{241}Cf	59.180±0.260
^{242}Cf	59.320±0.040
^{243}Cf	60.910±0.140
^{244}Cf	61.460±0.005
^{245}Cf	63.380±0.006
^{246}Cf	64.087±0.002
^{247}Cf	66.130±0.008
^{248}Cf	67.237±0.004
^{249}Cf	69.717±0.002
^{250}Cf	71.167±0.003
^{251}Cf	74.129±0.005
^{252}Cf	76.030±0.005
^{253}Cf	79.296±0.007
^{254}Cf	81.338±0.012
^{241}Es	63.830±0.330
^{242}Es	64.620±0.310
^{243}Es	64.710±0.290
^{244}Es	65.970±0.140
^{245}Es	66.380±0.200
^{246}Es	67.940±0.230
^{247}Es	68.550±0.040
^{248}Es	70.290±0.060
^{249}Es	71.110±0.050
^{250}Es	73.270±0.100
^{251}Es	74.506±0.006

Isotope	Mass Excess
^{252}Es	77.290±0.050
^{253}Es	79.007±0.002
^{254}Es	81.994±0.006
^{255}Es	84.083±0.011
^{256}Es	87.160±0.220
^{243}Fm	69.360±0.260
^{244}Fm	69.040±0.280
^{245}Fm	70.040±0.280
^{246}Fm	70.120±0.040
^{247}Fm	71.530±0.150
^{248}Fm	71.888±0.014
^{249}Fm	73.510±0.100
^{250}Fm	74.060±0.021
^{251}Fm	75.978±0.009
^{252}Fm	76.814±0.005
^{253}Fm	79.339±0.005
^{254}Fm	80.900±0.004
^{255}Fm	83.788±0.005
^{256}Fm	85.482±0.007
^{257}Fm	88.585±0.007
^{247}Md	76.060±0.360
^{248}Md	77.100±0.210
^{249}Md	77.270±0.290
^{250}Md	78.580±0.300
^{251}Md	79.050±0.200
^{252}Md	80.620±0.210
^{253}Md	81.240±0.210
^{254}Md	83.490±0.140
^{255}Md	84.835±0.007
^{256}Md	87.550±0.050
^{257}Md	89.010±0.200
^{258}Md	91.840±0.300
^{251}No	82.760±0.150
^{252}No	82.857±0.018
^{253}No	84.330±0.230
^{254}No	84.711±0.024
^{255}No	86.848±0.013
^{256}No	87.793±0.017
^{257}No	90.220±0.030
^{258}No	91.430±0.200
^{259}No	94.018±0.011
^{253}Lr	88.630±0.290
^{254}Lr	89.750±0.340
^{255}Lr	90.080±0.230
^{256}Lr	91.930±0.230
^{257}Lr	92.670±0.210
^{258}Lr	94.750±0.140
^{259}Lr	95.840±0.050
^{260}Lr	98.130±0.070
^{255}Rf	94.290±0.220
^{256}Rf	94.234±0.029
^{257}Rf	95.900±0.230
^{258}Rf	96.340±0.200
^{259}Rf	98.280±0.040
^{260}Rf	99.020±0.200
^{261}Rf	101.150±0.110
^{257}Ha	100.360±0.290
^{258}Ha	101.620±0.340
^{259}Ha	102.110±0.300
^{260}Ha	103.620±0.240
^{261}Ha	104.170±0.220
^{262}Ha	105.970±0.150
^{259}Sg	106.590±0.240
^{260}Sg	106.580±0.040
^{261}Sg	108.140±0.250
^{262}Sg	108.460±0.360
^{263}Sg	110.090±0.060
^{261}Ns	113.330±0.360
^{262}Ns	114.650±0.350
^{263}Ns	114.830±0.590
^{264}Ns	116.150±0.550

Isotope	Mass Excess
^{264}Hs	119.710±0.800
^{265}Hs	121.080±0.260
^{266}Mt	128.350±0.360