Atomic Mass Table
(unified mass scale)

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
electron		0.000 549	<1	
proton		1.007 277	<1	
neutron		1.008 665	<1	
1	H	1.007 825	<1	
2	H	2.014 102	<1	2.225
3	H	3.016 050	<1	8.482
	He	3.016 030	<1	7.718
4	H	4.030 300	1830	3.280
	He	4.002 603	<1	28.296
5	H	5.031 620	1610	10.120
	He	5.012 297	20	27.338
	Li	5.012 538	40	26.331
6	He	6.018 893	4	29.266
	Li	6.015 124	1	31.993
	Be	6.019 717	13	26.932
7	Li	7.016 004	1	39.245
	Be	7.016 929	1	37.601
8	He	8.037 520	2150	28.060
	Li	8.022 487	2	41.278
	Be	8.005 308	1	56.498
	B	8.024 609	2	37.736
9	Li	9.026 802	22	45.330
	Be	9.012 186	1	58.163
	B	9.013 332	1	56.312
10	Be	10.013 534	2	64.978
	B	10.012 939	1	64.750
	C	10.016 810	14	60.361
11	Be	11.021 666	16	65.475
	B	11.009 305	<1	76.206
	C	11.011 432	1	73.443
12	B	12.014 354	1	79.575
	C	12.000 000	0	92.163
	N	12.018 641	8	74.017
13	B	13.017 780	4	84.455
	C	13.003 354	1	97.109
	N	13.005 738	1	94.106
14	C	14.003 242	<1	105.286
	N	14.003 074	<1	104.659
	O	14.008 597	<1	98.733
15	C	15.010 600	1	106.504
	N	15.000 108	1	115.494
	O	15.003 070	1	111.952
16	C	16.014 700	17	110.756
	N	16.006 103	4	117.981
	O	15.994 915	<1	127.620
	F	16.011 706	13	111.197
17	N	17.008 450	16	123.867
	O	16.999 133	1	131.763
	F	17.002 096	1	128.220
18	O	17.999 160	<1	139.809
	F	18.000 937	1	137.371
	Ne	18.005 711	5	132.142
19	O	19.003 578	3	143.765
	F	18.998 405	1	147.801
	Ne	19.001 881	2	143.781
20	O	20.004 079	9	151.370
	F	19.999 987	5	154.399
	Ne	19.992 441	1	160.646
	Na	20.008 880	320	144.550
21	F	20.999 951	8	162.504
	Ne	20.993 849	2	167.406
	Na	20.997 655	9	163.078
22	Ne	21.991 385	1	177.772
	Na	21.994 437	3	174.147
	Mg	21.999 850	90	168.320
23	Ne	22.994 473	4	182.967
	Na	22.989 771	2	186.565
	Mg	22.994 125	3	181.726

*Errors are standard errors (one standard deviation) in the last digits of the reported atomic masses. Binding energy errors are not given, but are generally proportional to the atomic mass errors.
†Binding energies are for the entire atom and include the binding energies of the electrons.

Source: Mattauch, J.H.E., Thiele, W., Wapstra, A.H., "1964 Atomic Mass Table," Nuclear Physics, Vol. 67, No. 1 (1965), pp. 1-31.

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
24	Ne	23.993 613	10	191.839
	Na	23.990 962	4	193.526
	Mg	23.985 542	2	198.258
	Al	24.000 100	100	183.450
25	Na	24.989 955	9	202.535
	Mg	24.985 839	2	205.587
	Al	24.990 412	7	200.545
26	Na	25.991 740	320	208.940
	Mg	25.982 593	2	216.682
	Al	25.986 891	2	211.896
	Si	25.992 343	14	206.036
27	Mg	26.984 345	4	223.122
	Al	26.981 539	2	224.953
	Si	26.986 703	3	219.361
28	Mg	27.983 875	6	231.631
	Al	27.981 904	4	232.684
	Si	27.976 929	3	236.536
	P	27.991 780	300	221.920
29	Al	28.980 442	7	242.118
	Si	28.976 496	4	245.011
	P	28.981 808	6	239.280
30	Al	29.981 590	270	249.120
	Si	29.973 762	4	255.628
	P	29.978 317	8	250.603
	S	29.984 873	29	243.714
31	Si	30.975 349	6	262.222
	P	30.973 765	2	262.916
	S	30.979 611	12	256.688
32	Si	31.974 020	50	271.530
	P	31.973 910	2	270.852
	S	31.972 074	1	271.880
	Cl	31.986 240	410	257.800
33	P	32.971 728	4	280.955
	S	32.971 462	3	280.421
	Cl	32.977 440	13	274.070
34	P	33.973 340	210	287.530
	S	33.967 864	3	291.843
	Cl	33.973 750	6	285.578
	Ar	33.980 620	1070	278.400
35	S	34.969 031	1	298.828
	Cl	34.968 851	1	298.213
	Ar	34.975 254	18	291.467
36	S	35.967 090	9	308.707
	Cl	35.968 309	4	306.790
	Ar	35.967 545	2	306.719
	K	35.982 040	1070	292.440
37	S	36.971 010	80	313.130
	Cl	36.965 899	1	317.106
	Ar	36.966 772	1	315.510
	K	36.973 365	48	308.587
38	S	37.971 230	160	321.000
	Cl	37.968 005	9	323.216
	Ar	37.962 728	3	327.349
	K	37.969 097	10	320.634
	Ca	37.976 720	1070	312.750
39	Cl	38.968 008	20	331.284
	Ar	38.964 317	6	333.940
	K	38.963 710	3	333.723
	Ca	38.970 691	25	326.437
40	Cl	39.970 400	500	337.100
	Ar	39.962 384	1	343.812
	K	39.964 000	1	341.524
	Ca	39.962 589	4	342.056
	Sc	39.977 570	210	327.320
41	Ar	40.964 500	5	349.912
	K	40.961 832	4	351.615
	Ca	40.962 275	8	350.420
	Sc	40.969 247	10	343.143
42	Ar	41.963 048	43	359.337
	K	41.962 406	11	359.152
	Ca	41.958 625	4	361.891
	Sc	41.965 495	13	354.710
	Ti	41.974 903	16	345.164
43	K	42.960 730	12	368.784
	Ca	42.958 780	4	369.819
	Sc	42.961 165	9	366.815
	Ti	42.968 500	160	359.200
44	K	43.962 040	210	375.640
	Ca	43.955 491	4	380.954
	Sc	43.959 406	6	376.525
	Ti	43.959 572	13	375.587
45	K	44.960 680	210	384.980
	Ca	44.956 190	4	388.374
	Sc	44.955 919	3	387.843
	Ti	44.958 129	5	385.003

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
46	K	45.962 060	1070	391.760
	Ca	45.953 689	10	398.775
	Sc	45.955 173	4	396.611
	Ti	45.952 632	2	398.195
	V	45.960 214	10	390.350
47	K	46.961 090	320	400.740
	Ca	46.954 538	6	406.056
	Sc	46.952 413	3	407.253
	Ti	46.951 769	3	407.070
	V	46.954 899	9	403.372
48	Ca	47.952 531	10	415.996
	Sc	47.952 221	8	415.503
	Ti	47.947 950	2	418.698
	V	47.952 259	4	413.903
	Cr	47.953 760	210	411.720
49	Ca	48.955 675	12	421.140
	Sc	48.950 026	6	425.619
	Ti	48.947 870	2	426.844
	V	48.948 523	5	425.454
	Cr	48.951 271	12	422.112
50	Sc	49.951 730	210	432.100
	Ti	49.944 786	4	437.789
	V	49.947 164	4	434.791
	Cr	49.946 055	4	435.042
	Mn	49.954 215	29	426.659
51	Ti	50.946 603	7	444.168
	V	50.943 961	3	445.846
	Cr	50.944 768	3	444.312
	Mn	50.948 190	50	440.340
52	Ti	51.946 820	1070	452.040
	V	51.944 780	5	453.155
	Cr	51.940 513	3	456.347
	Mn	51.945 568	6	450.856
	Fe	51.948 117	14	447.699
53	V	52.943 980	1070	461.970
	Cr	52.940 653	3	464.288
	Mn	52.941 295	7	462.907
	Fe	52.945 572	48	458.141
54	V	53.946 720	1070	467.490
	Cr	53.938 882	4	474.009
	Mn	53.940 362	6	471.848
	Fe	53.939 617	5	471.760
	Co	53.948 475	7	462.726
55	Cr	54.940 833	7	480.263
	Mn	54.938 050	4	482.073
	Fe	54.938 299	4	481.059
	Co	54.942 013	11	476.817
56	Cr	55.940 640	160	488.520
	Mn	55.938 910	5	489.343
	Fe	55.934 936	4	492.262
	Co	55.939 847	8	486.905
	Ni	55.942 116	16	484.010
57	Mn	56.938 300	320	497.990
	Fe	56.935 398	5	499.904
	Co	56.936 296	5	498.285
	Ni	56.939 769	17	494.267
58	Mn	57.940 260	1070	504.230
	Fe	57.933 282	5	509.946
	Co	57.935 761	6	506.855
	Ni	57.935 342	5	506.462
	Cu	57.944 541	8	497.111
59	Fe	58.934 878	5	516.531
	Co	58.933 189	4	517.321
	Ni	58.934 342	4	515.465
	Cu	58.939 496	22	509.882
60	Fe	59.933 964	33	525.454
	Co	59.933 813	5	524.812
	Ni	59.930 787	5	526.848
	Cu	59.937 362	9	519.941
61	Fe	60.936 520	1070	531.140
	Co	60.932 440	43	534.162
	Ni	60.931 056	7	534.669
	Cu	60.933 457	7	531.651
	Zn	60.939 250	210	525.470
62	Co	61.933 946	43	540.831
	Ni	61.928 342	5	545.269
	Cu	61.932 566	11	540.552
	Zn	61.934 380	14	538.079
63	Co	62.933 530	210	549.290
	Ni	62.929 640	5	552.108
	Cu	62.929 592	5	551.393
	Zn	62.933 206	6	547.244
	Ga	62.939 110	1070	540.960
64	Ni	63.927 958	6	561.769
	Cu	63.929 759	5	559.309
	Zn	63.929 145	5	559.099
	Ga	63.936 737	33	551.244

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
65	Ni	64.930 072	8	567.872
	Cu	64.927 786	6	569.219
	Zn	64.929 234	6	567.087
	Ga	64.932 733	17	563.045
	Ge	64.939 600	1070	555.860
66	Ni	65.929 085	33	576.862
	Nu	65.928.871	9	576.279
	Zn	65.926 052	6	578.123
	Ga	65.931 607	7	572.165
	Ge	65.934 800	160	568.410
67	Cu	66.927 759	13	585.386
	Zn	66.927 145	10	585.175
	Ga	66.928 216	11	583.395
	Ge	66.932 940	110	578.210
68	Cu	67.929 770	60	591.580
	Zn	67.924 857	6	595.378
	Ga	67.927 992	7	591.676
	Ge	67.928 530	1070	590.390
69	Zn	68.926 541	7	601.881
	Ga	68.925 574	4	602.000
	Ge	68.927 963	5	598.992
	As	68.932 150	320	594.310
70	Zn	69.925 334	6	611.077
	Ga	69.926 035	6	609.642
	Ge	69.924 252	2	610.520
	As	69.930 946	32	603.502
71	Zn	70.927 510	50	617.120
	Ga	70.924 706	5	618.951
	Ge	70.924 956	6	617.935
	As	70.927 113	9	615.144
	Se	70.931 840	320	609.960
72	Zn	71.926 843	10	625.814
	Ga	71.926 372	7	625.471
	Ge	71.922 082	2	628.684
	As	71.926 763	11	623.542
	Se	71.927 410	1070	622.160
73	Ga	72.925 126	43	634.702
	Ge	72.923 463	2	635.470
	As	72.923 861	32	634.316
	Se	72.926 814	34	630.783
	Br	72.931 860	1070	625.300
74	Ga	73.927 190	50	640.850
	Ge	73.921 181	2	645.667
	As	73.923 933	4	642.321
	Se	73.922 476	5	642.895
	Br	73.929 780	1070	635.310
	Kr	73.933 100	1520	631.430
75	Ge	74.922 883	20	652.152
	As	74.921 596	4	652.568
	Se	74.922 525	4	650.921
	Br	74.925 447	22	647.416
	Kr	74.930 920	1070	641.530
76	Ge	75.921 405	2	661.600
	As	75.922 397	12	659.894
	Se	75.919 207	7	662.083
	Br	75.924 180	60	656.670
	Kr	75.925 470	1080	654.690
77	Ge	76.923 600	50	667.630
	As	76.920 646	11	669.597
	Se	76.919 911	5	669.498
	Br	76.921 376	6	667.351
	Kr	76.924 480	90	663.680
78	As	77.921 900	210	676.500
	Se	77.917 314	3	679.989
	Br	77.921 150	6	675.634
	Kr	77.920 403	5	675.547
79	As	78.920 890	60	685.510
	Se	78.918 494	5	686.961
	Br	78.918 329	3	686.333
	Kr	78.920 068	6	683.930
80	As	79.922 970	210	691.650
	Se	79.916 527	3	696.865
	Br	79.918 536	4	694.212
	Kr	79.916 380	6	695.437
	Rb	79.921 900	600	689.600
81	Se	80.917 984	7	703.579
	Br	80.916 292	5	704.373
	Kr	80.916 610	110	703.290
	Rb	80.919 020	110	700.270
82	Se	81.916 707	7	712.840
	Br	81.916 802	5	711.970
	Kr	81.913 482	5	714.279
	Rb	81.917 959	33	709.327
	Sr	81.918 390	1070	708.140
83	Br	82.915 168	17	721.562
	Kr	82.914 131	5	721.746
	Rb	82.914 730	1070	720.400
	Sr	82.917 200	1520	717.320
84	Br	83.916 550	50	728.350
	Kr	83.911 503	4	732.265
	Rb	83.914 381	5	728.803
	Sr	83.913 430	4	728.906
	Y	83.920 190	110	721.820

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
85	Br	84.915 530	110	737.370
	Kr	84.912 523	7	739.387
	Rb	84.911 800	5	739.278
	Sr	84.912 989	33	737.388
	Y	84.916 489	34	733.346
86	Br	85.918 200	500	742.900
	Kr	85.910 616	4	749.235
	Rb	85.911 193	7	747.915
	Sr	85.909 285	5	748.910
	Y	85.914 946	18	742.854
	Zr	85.916 230	1070	740.870
87	Kr	86.913 365	10	754.745
	Rb	86.909 187	3	757.855
	Sr	86.908 892	4	757.347
	Y	86.910 740	210	754.850
	Zr	86.914 490	220	750.560
88	Kr	87.914 270	240	761.970
	Rb	87.911 270	100	763.990
	Sr	87.905 641	6	768.447
	Y	87.909 528	8	764.044
	Zr	87.910 060	1070	762.760
	Nb	87.917 790	1520	754.780
89	Kr	88.916 600	500	767.900
	Rb	88.911 650	50	771.700
	Sr	88.907 442	7	774.840
	Y	88.905 872	5	775.521
	Zr	88.908 914	6	771.905
	Nb	88.913 080	100	767.240
90	Kr	89.919 720	110	773.040
	Rb	89.914 820	110	776.820
	Sr	89.907 747	9	782.628
	Y	89.907 163	8	782.390
	Zr	89.904 700	4	783.902
	Nb	89.911 259	11	777.009
	Mo	89.913 940	110	773.730
91	Rb	90.916 070	1070	783.730
	Sr	90.910 161	16	788.451
	Y	90.907 295	12	790.338
	Zr	90.905 642	5	791.096
	Nb	90.906 860	70	789.180
	Mo	90.911 650	60	783.930
92	Rb	91.919 140	1080	788.940
	Sr	91.910 980	80	795.760
	Y	91.908 926	22	796.890
	Zr	91.905 031	3	799.736
	Nb	91.907 211	10	796.922
	Mo	91.906 810	3	796.514
	Tc	91.915 460	150	787.670
93	Sr	92.914 710	110	800.360
	Y	92.909 552	22	804.378
	Zr	92.906 450	5	806.486
	Nb	92.906 382	5	805.767
	Mo	92.906 830	14	804.566
	Tc	92.910 251	20	800.598
94	Sr	93.915 380	240	807.800
	Y	93.911 680	210	810.470
	Zr	93.906 313	4	814.684
	Nb	93.907 303	15	812.980
	Mo	93.905 090	3	814.259
	Tc	93.909 663	7	809.216
95	Y	94.912 540	1070	817.730
	Zr	94.908 035	5	821.152
	Nb	94.906 832	3	821.490
	Mo	94.905 839	3	821.633
	Tc	94.907 620	23	819.191
	Ru	94.909 801	40	816.377
96	Y	95.915 690	1070	822.870
	Zr	95.908 286	5	828.990
	Nb	95.908 056	27	828.422
	Mo	95.904 674	3	830.789
	Tc	95.907 830	50	827.070
	Ru	95.907 598	6	826.501
97	Zr	96.910 966	23	834.565
	Nb	96.908 096	8	836.455
	Mo	96.906 022	3	837.606
	Tc	96.906 340	1070	836.520
	Ru	96.907 630	1520	834.540
	Rh	96.911 380	1520	830.270
98	Zr	97.911 960	1520	841.710
	Nb	97.910 350	1070	842.430
	Mo	97.905 409	3	846.248
	Tc	97.907 110	210	843.880
	Ru	97.905 289	4	844.795
	Rh	97.909 800	320	839.810
99	Nb	98.911 050	1070	849.850
	Mo	98.907 720	10	852.166
	Tc	98.906 249	6	852.754
	Ru	98.905 936	4	852.264
	Rh	98.908 190	22	849.381
	Pd	98.912 270	220	844.800
100	Nb	99.914 020	1070	855.150
	Mo	99.907 475	4	860.466
	Tc	99.907 840	60	859.350
	Ru	99.904 218	5	861.935
	Rh	99.908 126	22	857.512
	Pd	99.908 770	1070	856.130

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
101	Mo	100.910 353	20	865.857
	Tc	100.907 326	27	867.893
	Ru	100.905 577	3	868.741
	Rh	100.906 178	19	867.398
	Pd	100.908 070	60	864.860
102	Mo	101.910 250	1520	874.020
	Tc	101.909 180	1070	874.240
	Ru	101.904 348	5	877.957
	Rh	101.906 842	9	874.851
	Pd	101.905 609	11	875.217
	Ag	101.911 300	1070	869.130
103	Tc	102.908 830	110	882.640
	Ru	102.906 306	21	884.204
	Rh	102.905 511	5	884.162
	Pd	102.906 107	22	882.825
	Ag	102.908 890	110	879.450
104	Tc	103.911 710	110	888.020
	Ru	103.905 430	5	893.092
	Rh	103.906 659	7	891.164
	Pd	103.904 011	11	892.848
	Ag	103.908 596	16	887.796
	Cd	103.909 880	1070	885.810
105	Tc	104.911 330	220	896.450
	Ru	104.907 679	17	899.068
	Rh	104.905 671	13	900.156
	Pd	104.905 064	12	899.939
	Ag	104.906 460	1070	897.860
	Cd	104.909 470	1520	894.270
106	Ru	105.907 322	12	907.472
	Rh	105.907 279	12	906.729
	Pd	105.903 479	6	909.487
	Ag	105.906 661	9	905.740
	Cd	105.906 463	4	905.143
	In	105.913 440	320	897.860
107	Ru	106.910 130	320	912.920
	Rh	106.906 753	43	915.292
	Pd	106.905 132	5	916.019
	Ag	106.905 094	5	915.272
	Cd	106.906 615	6	913.072
	In	106.910 360	160	908.800
108	Ru	107.910 100	700	921.000
	Rh	107.908 700	600	921.500
	Pd	107.903 891	8	925.246
	Ag	107.905 949	8	922.547
	Cd	107.904 187	4	923.406
	In	107.909 720	90	917.470
109	Rh	108.908 640	1070	929.680
	Pd	108.905 954	5	931.396

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
109	Ag	108.904 756	5	931.729
	Cd	108.904 928	7	930.787
	In	108.907 096	13	927.985
110	Rh	109.911 100	500	935.500
	Pd	109.905 164	14	940.204
	Ag	109.906 095	7	938.553
	Cd	109.903 012	4	940.643
	In	109.907 231	43	935.931
111	Pd	110.907 670	50	945.940
	Ag	110.905 316	11	947.351
	Cd	110.904 188	4	947.618
	In	110.905 360	210	945.750
	Sn	110.908 060	220	942.440
112	Pd	111.907 386	33	954.276
	Ag	111.907 064	25	953.794
	Cd	111.902 763	3	957.018
	In	111.905 544	10	953.645
	Sn	111.904 835	10	953.523
113	Ag	112.906 556	43	962.339
	Cd	112.904 409	4	963.556
	In	112.904 089	9	963.071
	Sn	112.905 187	18	961.266
	Sb	112.909 986	47	956.914
114	Ag	113.908 300	430	968.790
	Cd	113.903 360	3	972.604
	In	113.904 905	9	970.383
	Sn	113.902 773	9	971.587
	Sb	113.909 510	210	964.520
115	Ag	114.908 930	180	976.270
	Cd	114.905 431	10	978.747
	In	114.903 871	8	979.417
	Sn	114.903 346	7	979.124
	Sb	114.906 599	23	975.311
116	Ag	115.911 310	1070	982.120
	Cd	115.904 762	3	987.442
	In	115.905 317	26	986.142
	Sn	115.901 745	5	988.687
	Sb	115.906 630	50	983.350
	Te	115.908 300	120	981.010
117	Cd	116.907 239	15	993.205
	In	116.904 534	10	994.943
	Sn	116.902 958	3	995.628
	Sb	116.904 912	32	993.026
	Te	116.908 670	60	988.740
118	Cd	117.906 970	1160	1 001.520
	In	117.906 110	430	1 001.540
	Sn	117.901 606	4	1 004.959

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
118	Sb	117.905 574	8	1 000.481
	Te	117.905 900	1070	999.400
119	Cd	118.909 740	350	1 007.020
	In	118.905 990	130	1 009.730
	Sn	118.903 313	3	1 011.440
	Sb	118.903 935	22	1 010.079
	Te	118.906 398	22	1 007.002
120	In	119.908 000	1070	1 015.930
	Sn	119.902 198	4	1 020.550
	Sb	119.905 081	8	1 017.082
	Te	119.904 023	14	1 017.285
	I	119.909 820	1070	1 011.100
121	In	120.908 090	1070	1 023.910
	Sn	120.904 227	6	1 026.732
	Sb	120.903 816	3	1 026.332
	Te	120.905 199	48	1 024.262
	I	120.907 730	70	1 021.120
	Xe	120.911 800	130	1 016.550
122	In	121.910 600	900	1 029.600
	Sn	121.903 441	4	1 035.536
	Sb	121.905 183	7	1 033.130
	Te	121.903 066	6	1 034.320
	I	121.907 511	43	1 029.397
123	In	122.910 570	1070	1 037.750
	Sn	122.905 738	11	1 041.467
	Sb	122.904 213	3	1 042.106
	Te	122.904 277	6	1 041.263
	I	122.905 730	1070	1 039.130
	Xe	122.908 730	1080	1 035.550
124	In	123.913 200	500	1 043.400
	Sn	123.905 272	5	1 049.973
	Sb	123.905 973	6	1 048.539
	Te	123.902 842	6	1 050.671
	I	123.906 246	33	1 046.719
	Xe	123.906 120	150	1 046.050
125	Sn	124.907 746	13	1 055.740
	Sb	124.905 232	9	1 057.299
	Te	124.904 418	6	1 057.275
	I	124.904 578	6	1 056.343
	Xe	124.906 620	1070	1 053.660
	Cs	124.909 910	1070	1 049.810
126	Sn	125.907 640	1090	1 063.910
	Sb	125.907 320	160	1 063.420
	Te	125.903 322	5	1 066.367
	I	125.905 631	7	1 063.434
	Xe	125.904 288	9	1 063.903
	Cs	125.909 440	430	1 058.320
127	Sn	126.910 260	1070	1 069.550
	Sb	126.906 927	33	1 071.863
	Te	126.905 209	9	1 072.681
	I	126.904 470	4	1 072.587
	Xe	126.905 220	380	1 071.100
	Cs	126.907 480	380	1 068.220
	Ba	126.911 340	1140	1 063.840
128	Sn	127.910 470	230	1 077.420
	Sb	127.909 070	160	1 077.940
	Te	127.904 476	6	1 081.435
	I	127.905 838	9	1 079.384
	Xe	127.903 540	6	1 080.742
	Cs	127.907 759	33	1 076.029
	Ba	127.908 510	1070	1 074.550
129	Sb	128.909 260	1070	1 085.830
	Te	128.906 575	9	1 087.551
	I	128.904 987	7	1 088.249
	Xe	128.904 784	5	1 087.655
	Cs	128.905 960	1070	1 085.770
	Ba	128.908 590	1070	1 082.540
	La	128.912 890	1520	1 077.760
130	Sb	129.912 040	1070	1 091.320
	Te	129.906 238	6	1 095.937
	I	129.906 676	33	1 094.747
	Xe	129.903 509	6	1 096.914
	Cs	129.906 720	22	1 093.141
	Ba	129.906 245	23	1 092.800
	La	129.912 260	1070	1 086.420
131	Te	130.908 575	22	1 101.832
	I	130.906 127	4	1 103.329
	Xe	130.905 085	4	1 103.517
	Cs	130.905 466	8	1 102.380
	Ba	130.906 716	18	1 100.433
	La	130.909 890	60	1 096.690
	Ce	130.915 500	360	1 090.690
132	Te	131.908 523	18	1 109.951
	I	131.907 981	7	1 109.674
	Xe	131.904 161	5	1 112.450
	Cs	131.906 393	27	1 109.588
	Ba	131.905 120	300	1 109.990
	La	131.910 300	320	1 104.390
	Ce	131.911 590	1120	1 102.400
133	I	132.907 750	70	1 117.960
	Xe	132.905 815	39	1 118.981
	Cs	132.905 355	38	1 118.626
	Ba	132.905 879	39	1 117.356
	La	132.908 240	220	1 114.370
	Ce	132.911 250	1100	1 110.790

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
134	I	133.909 850	60	1 124.070
	Xe	133.905 397	5	1 127.441
	Cs	133.906 823	41	1 125.331
	Ba	133.904 612	41	1 126.607
	La	133.908 660	70	1 122.050
	Ce	133.908 810	90	1 121.130
135	I	134.910 020	1080	1 131.980
	Xe	134.907 020	110	1 134.000
	Cs	134.905 770	110	1 134.380
	Ba	134.905 550	110	1 133.810
	La	134.906 890	1080	1 131.780
	Ce	134.909 140	1520	1 128.890
136	I	135.914 740	110	1 135.670
	Xe	135.907 221	6	1 141.885
	Cs	135.907 340	90	1 140.990
	Ba	135.904 300	80	1 143.040
	La	135.907 380	110	1 139.390
	Ce	135.907 100	500	1 138.880
137	Xe	136.911 100	110	1 146.340
	Cs	136.906 770	80	1 149.600
	Ba	136.905 500	80	1 149.990
	La	136.906 040	1080	1 148.710
	Ce	136.907 330	1520	1 146.730
	Pr	136.910 360	1520	1 143.120
138	Xe	137.913 810	1100	1 151.890
	Cs	137.910 800	1080	1 153.910
	Ba	137.905 000	60	1 158.530
	La	137.906 910	60	1 155.970
	Ce	137.905 830	60	1 156.200
	Pr	137.910 460	120	1 151.100
139	Xe	138.917 840	390	1 156.210
	Cs	138.912 900	330	1 160.030
	Ba	138.908 600	60	1 163.250
	La	138.906 140	50	1 164.760
	Ce	138.906 430	50	1 163.710
	Pr	138.908 580	120	1 160.920
	Nd	138.911 580	1080	1 157.340
140	Cs	139.917 110	1070	1 164.170
	Ba	139.910 565	23	1 169.491
	La	139.909 438	20	1 169.758
	Ce	139.905 392	19	1 172.745
	Pr	139.909 007	27	1 168.595
	Nd	139.909 330	1070	1 167.510
141	Ba	140.914 050	110	1 174.320
	La	140.910 828	37	1 176.535
	Ce	140.908 219	19	1 178.182
	Pr	140.907 596	18	1 177.981
	Nd	140.909 528	21	1 175.398
	Pm	140.913 410	220	1 171.000
142	Ba	141.916 350	120	1 180.250
	La	141.913 980	60	1 181.670
	Ce	141.909 140	50	1 185.393
	Pr	141.909 978	17	1 183.833
	Nd	141.907 663	16	1 185.207
	Pm	141.912 820	320	1 179.620
143	La	142.915 870	90	1 187.980
	Ce	142.912 327	19	1 190.499
	Pr	142.910 781	16	1 191.157
	Nd	142.909 779	15	1 191.307
	Pm	142.910 990	330	1 189.400
	Sm	142.914 550	90	1 185.300
144	La	143.919 600	1070	1 192.580
	Ce	143.913 591	19	1 197.393
	Pr	143.913 248	16	1 196.930
	Nd	143.910 039	15	1 199.137
	Pm	143.912 510	1070	1 196.050
	Sm	143.911 989	15	1 195.755
145	Ce	144.917 270	1070	1 202.040
	Pr	144.914 476	19	1 203.858
	Nd	144.912 538	15	1 204.881
	Pm	144.912 691	18	1 203.955
	Sm	144.913 394	18	1 202.519
	Eu	144.916 390	60	1 198.950
146	Ce	145.918 670	240	1 208.810
	Pr	145.917 590	220	1 209.020
	Nd	145.913 086	15	1 212.442
	Pm	145.914 632	28	1 210.219
	Sm	145.912 992	23	1 210.964
	Eu	145.917 138	37	1 206.320
	Gd	145.918 320	1070	1 204.440
147	Pr	146.918 800	1070	1 215.970
	Nd	146.916 074	19	1 217.729
	Pm	146.915 108	15	1 217.847
	Sm	146.914 867	15	1 217.290
	Eu	146.916 800	330	1 214.700
	Gd	146.919 170	1120	1 211.720
148	Pr	147.921 910	1070	1 221.140
	Nd	147.916 869	15	1 225.061
	Pm	147.917 421	26	1 223.764
	Sm	147.914 791	15	1 225.432
	Eu	147.918 110	60	1 221.560
	Gd	147.918 101	19	1 220.783
	Tb	147.924 130	320	1 214.380
149	Nd	148.920 122	18	1 230.102
	Pm	148.918 330	15	1 230.989
	Sm	148.917 180	14	1 231.278
	Eu	148.918 000	1070	1 229.740
	Gd	148.919 300	160	1 227.730
	Tb	148.923 350	60	1 223.180

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
150	Nd	149.920 915	15	1 237.435
	Pm	149.920 960	70	1 236.610
	Sm	149.917 276	14	1 239.260
	Eu	149.919 689	24	1 236.229
	Gd	149.918 605	24	1 236.457
	Tb	149.923 748	38	1 230.884
	Dy	149.925 590	1070	1 228.390
151	Nd	150.923 770	110	1 242.840
	Pm	150.921 198	22	1 244.460
	Sm	150.919 919	21	1 244.869
	Eu	150.919 838	21	1 244.162
	Gd	150.920 270	1070	1 242.980
	Tb	150.923 150	330	1 239.510
	Dy	150.926 250	1120	1 235.850
152	Pm	151.923 510	1070	1 250.370
	Sm	151.919 756	15	1 253.093
	Eu	151.921 749	15	1 250.453
	Gd	151.919 794	16	1 251.492
	Tb	151.924 280	160	1 246.530
	Dy	151.924 729	28	1 245.330
	Ho	151.931 560	330	1 238.180
153	Pm	152.924 030	110	1 257.960
	Sm	152.922 102	17	1 258.978
	Eu	152.921 242	18	1 258.997
	Gd	152.921 503	18	1 257.971
	Tb	152.923 490	1070	1 255.340
	Dy	152.925 740	160	1 252.460
	Ho	152.930 270	60	1 247.460
154	Sm	153.922 282	15	1 266.882
	Eu	153.923 053	20	1 265.382
	Gd	153.920 929	20	1 266.577
	Tb	153.924 580	1070	1 262.400
	Dy	153.924 350	60	1 261.820
	Ho	153.930 260	1080	1 255.540
	Er	153.932 760	1070	1 252.420
155	Sm	154.924 701	18	1 272.701
	Eu	154.922 930	19	1 273.568
	Gd	154.922 664	18	1 273.033
	Tb	154.923 630	1070	1 271.350
	Dy	154.925 880	1070	1 268.470
156	Sm	155.925 569	30	1 279.963
	Eu	155.924 802	25	1 279.896
	Gd	155.922 175	19	1 281.560
	Tb	155.924 750	1070	1 278.380
	Dy	155.923 930	180	1 278.360
157	Eu	156.925 390	60	1 287.420
	Gd	156.924 025	19	1 287.908
	Tb	156.924 090	22	1 287.065
	Dy	156.925 270	1070	1 285.180
158	Eu	157.927 940	220	1 293.120
	Gd	157.924 178	19	1 295.837
	Tb	157.925 464	29	1 293.857
	Dy	157.924 449	30	1 294.020
	Ho	157.928 790	31	1 289.193
159	Eu	158.928 840	220	1 300.350
	Gd	158.926 368	27	1 301.868
	Tb	158.925 351	26	1 302.033
	Dy	158.925 759	34	1 300.871
	Ho	158.927 690	1070	1 298.290
160	Eu	159.931 000	500	1 306.400
	Gd	159.927 115	20	1 309.244
	Tb	159.927 146	25	1 308.433
	Dy	159.925 202	21	1 309.461
	Ho	159.928 740	60	1 305.380
161	Gd	160.929 720	80	1 314.890
	Tb	160.927 572	21	1 316.107
	Dy	160.926 945	20	1 315.909
	Ho	160.927 800	1070	1 314.330
	Er	160.929 950	1080	1 311.540
	Tm	160.933 730	1080	1 307.240
162	Gd	161.930 880	1520	1 321.880
	Tb	161.929 810	1070	1 322.100
	Dy	161.926 803	19	1 324.113
	Ho	161.929 122	38	1 321.170
	Er	161.928 740	90	1 320.740
	Tm	161.933 990	140	1 315.070
163	Tb	162.930 560	60	1 329.470
	Dy	162.928 755	19	1 330.366
	Ho	162.928 766	22	1 329.574
	Er	162.930 065	23	1 327.581
	Tm	162.932 502	40	1 324.529
164	Tb	163.933 280	1070	1 335.010
	Dy	163.929 200	19	1 338.023
	Ho	163.930 390	41	1 336.132
	Er	163.929 287	43	1 336.377
	Tm	163.933 541	48	1 331.632
165	Dy	164.931 816	20	1 343.658
	Ho	164.930 421	21	1 344.175
	Er	164.930 819	22	1 343.021
	Tm	164.932 540	1070	1 340.640
	Yb	164.935 440	1520	1 337.160
166	Dy	165.932 807	30	1 350.806
	Ho	165.932 289	30	1 350.506
	Er	165.930 307	29	1 351.570
	Tm	165.933 510	60	1 347.810
	Yb	165.933 850	110	1 346.700

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
167	Ho	166.933 130	110	1 357.790
	Er	166.932 060	29	1 358.008
	Tm	166.933 030	1070	1 356.330
	Yb	166.935 130	1070	1 353.580
	Lu	166.938 390	1080	1 349.760
168	Ho	167.935 930	110	1 363.260
	Er	167.932 383	32	1 365.779
	Tm	167.934 230	50	1 363.279
	Yb	167.934 160	160	1 362.560
	Lu	167.939 090	1090	1 357.180
169	Ho	168.936 860	110	1 370.460
	Er	168.934 610	34	1 371.776
	Tm	168.934 245	34	1 371.334
	Yb	168.935 530	1070	1 369.350
	Lu	168.937 960	1080	1 366.310
170	Ho	169.940 070	130	1 375.540
	Er	169.935 560	70	1 378.960
	Tm	169.936 060	60	1 377.720
	Yb	169.935 020	60	1 377.900
	Lu	169.938 830	70	1 373.570
171	Er	170.938 130	70	1 384.640
	Tm	170.936 530	70	1 385.350
	Yb	170.936 430	70	1 384.660
	Lu	170.938 140	1080	1 382.280
172	Er	171.939 330	80	1 391.590
	Tm	171.938 380	80	1 391.700
	Yb	171.936 360	70	1 392.800
	Lu	171.939 260	1080	1 389.320
173	Tm	172.939 480	80	1 398.740
	Yb	172.938 060	70	1 399.280
	Lu	172.938 800	80	1 397.810
174	Tm	173.941 970	120	1 404.500
	Yb	173.938 740	60	1 406.720
	Lu	173.940 350	70	1 404.440
	Hf	173.940 360	70	1 403.640
175	Tm	174.943 830	1080	1 410.840
	Yb	174.941 140	60	1 412.550
	Lu	174.940 640	60	1 412.240
	Hf	174.941 610	1080	1 410.560
176	Tm	175.947 190	130	1 415.770
	Yb	175.942 680	70	1 419.190
	Lu	175.942 660	60	1 418.430
	Hf	175.941 570	60	1 418.660
177	Yb	176.945 410	90	1 424.720
	Lu	176.943 930	80	1 425.320
	Hf	176.943 400	80	1 425.030
	Ta	176.944 650	80	1 423.080
178	Yb	177.947 370	1080	1 430.970
	Lu	177.946 300	90	1 431.180
	Hf	177.943 880	80	1 432.650
	Ta	177.945 930	130	1 429.960
179	Lu	178.947 470	100	1 438.160
	Hf	178.946 030	90	1 438.720
	Ta	178.946 160	90	1 437.820
180	Lu	179.950 370	150	1 443.540
	Hf	179.946 820	100	1 446.050
	Ta	179.947 544	48	1 444.602
	W	179.947 000	50	1 444.320
181	Hf	180.949 105	42	1 452.001
	Ta	180.948 007	42	1 452.242
	W	180.948 211	47	1 451.269
182	Hf	181.950 700	220	1 458.580
	Ta	181.950 167	42	1 458.301
	W	181.948 301	41	1 459.257
	Re	181.951 372	47	1 455.614
183	Hf	182.953 830	220	1 463.740
	Ta	182.951 470	43	1 465.159
	W	182.950 324	41	1 465.444
	Re	182.951 260	1070	1 463.790
184	Ta	183.953 980	50	1 470.900
	W	183.951 025	43	1 472.863
	Re	183.952 780	1080	1 470.450
	Os	183.952 750	70	1 469.690
185	Ta	184.955 560	70	1 477.490
	W	184.953 519	43	1 478.611
	Re	184.953 059	43	1 478.257
	Os	184.954 113	43	1 476.493
186	Ta	185.958 410	330	1 482.910
	W	185.954 440	45	1 485.824
	Re	185.955 020	70	1 484.500
	Os	185.953 870	70	1 484.790
	Ir	185.957 990	80	1 480.170
187	W	186.957 244	45	1 491.284
	Re	186.955 833	44	1 491.815
	Os	186.955 832	44	1 491.034
	Ir	186.957 560	1070	1 488.640
188	W	187.958 816	48	1 497.891
	Re	187.958 353	47	1 497.540
	Os	187.956 081	47	1 498.873
	Ir	187.959 122	49	1 495.259
	Pt	187.959 670	70	1 493.970

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
189	Re	188.959 370	90	1 504.660
	Os	188.958 300	90	1 504.880
	Ir	188.958 910	1080	1 503.530
	Pt	188.960 610	1520	1 501.160
190	Re	189.961 960	440	1 510.330
	Os	189.958 630	80	1 512.640
	Ir	189.960 830	180	1 509.810
	Pt	189.959 950	70	1 509.840
	Au	189.964 710	1080	1 504.630
191	Os	190.960 970	60	1 518.530
	Ir	190.960 640	60	1 518.060
	Pt	190.961 450	1080	1 516.520
	Au	190.963 550	1520	1 513.790
192	Os	191.961 450	60	1 526.160
	Ir	191.962 700	60	1 524.210
	Pt	191.961 150	60	1 524.880
	Au	191.964 620	80	1 520.860
	Hg	191.966 160	1080	1 518.640
193	Os	192.964 227	35	1 531.643
	Ir	192.963 012	35	1 531.993
	Pt	192.963 060	31	1 531.165
	Au	192.964 240	1070	1 529.280
	Hg	192.966 750	1070	1 526.160
194	Os	193.965 229	25	1 538.781
	Ir	193.965 125	25	1 538.096
	Pt	193.962 725	23	1 539.549
	Au	193.965 418	28	1 536.258
	Hg	193.965 790	1070	1 535.130
	Tl	193.971 570	1520	1 528.960
195	Os	194.968 000	500	1 544.200
	Ir	194.965 890	110	1 545.460
	Pt	194.964 813	18	1 545.675
	Au	194.965 051	19	1 544.672
	Hg	194.966 620	1070	1 542.430
	Tl	194.969 840	1090	1 538.650
196	Ir	195.968 250	1070	1 551.330
	Pt	195.964 967	15	1 553.604
	Au	195.966 555	14	1 551.342
	Hg	195.965 820	14	1 551.244
	Tl	195.970 760	160	1 545.860
	Pb	195.973 800	1090	1 542.250
197	Ir	196.969 490	220	1 558.240
	Pt	196.967 347	13	1 559.458
	Au	196.966 541	10	1 559.426
	Hg	196.967 360	44	1 557.881
	Tl	196.969 720	170	1 554.900
	Pb	196.974 090	1090	1 550.050
198	Ir	197.972 620	320	1 563.400
	Pt	197.967 895	23	1 567.019
	Au	197.968 231	7	1 565.923
	Hg	197.966 756	7	1 566.515
	Tl	197.970 470	90	1 562.270
	Pb	197.972 410	1080	1 559.680
	Bi	197.980 370	1520	1 551.490
199	Pt	198.970 580	29	1 572.589
	Au	198.968 773	13	1 573.490
	Hg	198.968 279	7	1 573.168
	Tl	198.969 460	320	1 571.290
	Pb	198.972 860	1120	1 567.330
	Bi	198.978 440	1090	1 561.350
200	Pt	199.971 430	1080	1 579.870
	Au	199.970 700	100	1 579.770
	Hg	199.968 327	6	1 581.194
	Tl	199.970 962	8	1 577.958
	Pb	199.971 970	1070	1 576.240
	Bi	199.978 940	1520	1 568.960
	Po	199.982 820	1090	1 564.570
201	Pt	200.974 770	120	1 584.830
	Au	200.971 920	110	1 586.700
	Hg	200.970 308	7	1 587.421
	Tl	200.970 750	60	1 586.230
	Pb	200.972 860	1080	1 583.480
	Bi	200.977 370	1520	1 578.490
	Po	200.983 020	1090	1 572.450
202	Au	201.974 120	1070	1 592.720
	Hg	201.970 642	7	1 595.181
	Tl	201.971 950	25	1 593.180
	Pb	201.972 003	40	1 592.348
	Bi	201.977 880	1070	1 586.100
	Po	201.981 130	1080	1 582.280
	At	201.989 800	1520	1 573.420
203	Au	202.975 130	1070	1 599.850
	Hg	202.972 880	8	1 601.168
	Tl	202.972 353	8	1 600.876
	Pb	202.973 229	13	1 599.278
	Bi	202.976 650	60	1 595.310
	Po	202.981 470	1120	1 590.040
	At	202.987 710	1090	1 583.440
204	Hg	203.973 495	7	1 608.666
	Tl	203.973 865	8	1 607.539
	Pb	203.973 044	8	1 607.522
	Bi	203.977 810	1070	1 602.300
	Po	203.980 460	1070	1 599.050
	At	203.988 060	1520	1 591.190
	Rn	203.992 300	1090	1 586.450

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
205	Hg	204.976 210	110	1 614.210
	Tl	204.974 442	8	1 615.073
	Pb	204.974 480	9	1 614.256
	Bi	204.977 382	13	1 610.769
	Po	204.981 200	1080	1 606.430
	At	204.986 440	1520	1 600.770
	Rn	204.992 560	1530	1 594.290
206	Hg	205.977 513	23	1 621.067
	Tl	205.976 104	8	1 621.597
	Pb	205.974 468	7	1 622.338
	Bi	205.978 389	28	1 617.904
	Po	205.980 324	41	1 615.318
	At	205.986 790	1070	1 608.510
	Rn	205.990 580	1080	1 604.200
	Fr	205.999 840	1520	1 594.790
207	Tl	206.977 450	11	1 628.414
	Pb	206.975 903	7	1 629.073
	Bi	206.978 438	8	1 625.929
	Po	206.981 558	11	1 622.240
	At	206.985 560	60	1 617.730
	Rn	206.990 760	1120	1 612.100
	Fr	206.997 730	1090	1 604.830
208	Tl	207.982 013	9	1 632.235
	Pb	207.976 650	7	1 636.448
	Bi	207.979 731	9	1 632.796
	Po	207.981 243	12	1 630.605
	At	207.986 610	1080	1 624.830
	Rn	207.989 790	1070	1 621.080
	Fr	207.997 950	1520	1 612.700
209	Tl	208.985 296	37	1 637.249
	Pb	208.981 082	11	1 640.391
	Bi	208.980 394	8	1 640.250
	Po	208.982 426	13	1 637.575
	At	208.986 167	13	1 633.307
	Rn	208.990 420	1080	1 628.570
	Fr	208.996 320	1520	1 622.280
210	Tl	209.990 054	29	1 640.888
	Pb	209.984 187	7	1 645.571
	Bi	209.984 121	7	1 644.849
	Po	209.982 876	7	1 645.227
	At	209.987 036	28	1 640.569
	Rn	209.989 540	42	1 637.454
	Fr	209.996 570	1070	1 630.120
211	Pb	210.988 742	22	1 649.399
	Bi	210.987 300	11	1 649.960
	Po	210.986 657	8	1 649.777
	At	210.987 462	8	1 648.244
	Rn	210.990 566	11	1 644.570
	Fr	210.995 330	60	1 639.350
	Ra	211.000 950	1550	1 633.330
212	Pb	211.991 892	9	1 654.537
	Bi	211.991 276	8	1 654.328
	Po	211.988 865	6	1 655.792
	At	211.990 723	23	1 653.278
	Rn	211.990 707	13	1 652.511
	Fr	211.996 230	1080	1 646.580
	Ra	211.999 950	1070	1 642.330
213	Pb	212.996 580	1070	1 658.240
	Bi	212.994 377	14	1 659.511
	Po	212.992 849	10	1 660.152
	At	212.993 070	210	1 659.170
	Rn	212.993 935	24	1 657.576
	Fr	212.996 184	17	1 654.698
	Ra	213.000 420	1080	1 649.970
	Ac	213.007 050	1520	1 643.010
214	Pb	213.999 844	12	1 663.272
	Bi	213.998 726	15	1 663.532
	Po	213.995 204	6	1 666.029
	At	213.996 332	12	1 664.196
	Rn	213.995 380	1070	1 664.300
	Fr	213.998 980	40	1 660.160
	Ra	213.999 990	50	1 658.440
	Ac	214.007 100	1080	1 651.040
215	Bi	215.001 850	100	1 668.690
	Po	214.999 449	11	1 670.147
	At	214.998 656	14	1 670.103
	Rn	214.998 690	110	1 669.290
	Fr	215.000 400	30	1 666.910
	Ra	215.002 765	26	1 663.930
216	Bi	216.006 310	1070	1 672.610
	Po	216.001 908	9	1 675.928
	At	216.002 416	11	1 674.672
	Rn	216.000 272	12	1 675.887
	Fr	216.003 100	1070	1 672.470
	Ra	216.003 490	30	1 671.330
217	Po	217.006 340	1070	1 679.870
	At	217.004 708	14	1 680.609
	Rn	217.003 920	11	1 680.560
	Fr	217.004 750	300	1 679.000
	Ra	217.006 390	40	1 676.700
218	Po	218.009 009	12	1 685.456
	At	218.008 710	15	1 684.953
	Rn	218.005 606	12	1 687.062
	Fr	218.007 521	16	1 684.496
	Ra	218.007 170	1520	1 684.040
219	At	219.011 320	90	1 690.600
	Rn	219.009 508	11	1 691.499
	Fr	219.009 250	26	1 690.956
	Ra	219.010 050	150	1 689.430

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
220	At	220.015 140	1070	1 695.100
	Rn	220.011 387	9	1 697.819
	Fr	220.012 318	13	1 696.170
	Ra	220.011 026	16	1 696.591
221	Rn	221.015 390	1520	1 702.170
	Fr	221.014 244	15	1 702.447
	Ra	221.013 913	12	1 701.973
	Ac	221.015 680	370	1 699.550
222	Rn	222.017 610	12	1 708.166
	Fr	222.017 550	30	1 707.440
	Ra	222.015 375	16	1 708.683
	Ac	222.017 779	20	1 705.661
223	Fr	223.019 760	11	1 713.452
	Ra	223.018 527	11	1 713.818
	Ac	223.019 133	26	1 712.470
	Th	223.020 920	190	1 710.030
224	Fr	224.023 320	1070	1 718.210
	Ra	224.020 203	9	1 720.328
	Ac	224.021 701	15	1 718.150
	Th	224.021 470	20	1 717.583
225	Ra	225.023 630	13	1 725 208
	Ac	225.023 214	15	1 724.813
	Th	225.023 945	14	1 723.349
	Pa	225.026 230	1140	1 720.430
226	Ra	226.025 438	12	1 731.594
	Ac	226.026 101	21	1 730.195
	Th	226.024 900	20	1 730.531
	Pa	226.027 882	22	1 726.971
227	Ra	227.029 180	24	1 736.181
	Ac	227.027 774	11	1 736.708
	Th	227.027 727	11	1 735.969
	Pa	227.028 801	27	1 734.190
	U	227.031 200	1090	1 731.170
228	Ra	228.031 096	13	1 742.468
	Ac	228.031 037	13	1 741.740
	Th	228.028 733	9	1 743.103
	Pa	228.030 990	16	1 740.219
	U	228.031 377	22	1 739.076
229	Ra	229.034 870	1520	1 747.020
	Ac	229.032 940	1070	1 748.040
	Th	229.031 781	12	1 748.336
	Pa	229.032 081	16	1 747.274
	U	229.033 496	14	1 745.173
230	Ra	230.037 130	1520	1 752.990
	Ac	230.036 270	1070	1 753.010
	Th	230.033 159	12	1 755.124
230	Pa	230.034 541	21	1 753.054
	U	230.033 935	20	1 752.836
	Np	230.037 750	1070	1 748.500
231	Ac	231.038 570	110	1 758.930
	Th	231.036 318	11	1 760.252
	Pa	231.035 903	11	1 759.857
	U	231.036 290	50	1 758.720
	Np	231.038 270	60	1 756.080
232	Th	232.038 079	12	1 766.683
	Pa	232.038 592	24	1 765.423
	U	232.037 148	10	1 765.986
	Np	232.039 950	1070	1 762.600
	Pu	232.041 170	60	1 760.670
233	Th	233.041 604	12	1 771.472
	Pa	233.040 268	12	1 771.934
	U	233.039 654	12	1 771.723
	Np	233.040 830	1070	1 769.850
	Pu	233.042 987	26	1 767.050
234	Th	234.043 636	13	1 777.651
	Pa	234.043 354	13	1 777.131
	U	234.040 976	12	1 778.564
	Np	234.042 908	20	1 775.981
	Pu	234.043 313	20	1 774.822
235	Pa	235.045 450	110	1 783.250
	U	235.043 943	11	1 783.871
	NP	235.044 075	11	1 782.965
	Pu	235.045 290	60	1 781.050
236	Pa	236.048 700	1070	1 788.290
	U	236.045 591	12	1 790.407
	NP	236.046 605	15	1 788.680
	Pu	236.046 049	11	1 788.416
	Am	236.049 310	1520	1 784.590
237	Pa	237.051 220	60	1 794.020
	U	237.048 750	12	1 795.536
	NP	237.048 195	12	1 795.271
	Pu	237.048 434	13	1 794.266
	Am	237.050 060	1520	1 791.970
238	U	238.050 819	12	1 801.680
	NP	238.050 970	14	1 800.757
	Pu	238.049 582	12	1 801.268
	Am	238.052 010	1070	1 798.230
	Cm	238.053 030	40	1 796.490
239	U	239.054 328	13	1 806.484
	Np	239.052 951	12	1 806.984
	Pu	239.052 175	12	1 806.924
	Am	239.053 042	24	1 805.330
	Cm	239.054 900	1070	1 802.820

A	El.	Atomic Mass (u)	Mass Error*	Binding Energy† (MeV)
240	U	240.056 633	17	1 812.408
	Np	240.056 080	70	1 812.140
	Pu	240.053 836	12	1 813.448
	Am	240.055 340	1070	1 811.270
	Cm	240.055 518	11	1 810.316
241	Np	241.058 330	110	1 818 110
	Pu	241.056 873	12	1 818 691
	Am	241.056 850	12	1 817.929
	Cm	241.057 679	13	1 816.375
	Bk	241.060 240	1070	1 813.200
242	Np	242.061 780	1070	1 822.980
	Pu	242.058 769	12	1 824.996
	Am	242.059 573	14	1 823.465
	Cm	242.058 860	12	1 823.347
	Bk	242.062 080	1070	1 819.560
	Cf	242.063 670	40	1 817.300
243	Pu	243.062 031	15	1 830.029
	Am	243.061 393	12	1 829.840
	Cm	243.061 400	12	1 829.052
	Bk	243.063 022	25	1 826.760
	Cf	243.065 330	1520	1 823.830
244	Pu	244.064 235	17	1 836.047
	Am	244.064 310	12	1 835.196
	Cm	244.062 775	12	1 835.842
	Bk	244.065 220	1070	1 832.780
	Cf	244.065 988	11	1 831.284
245	Pu	245.067 800	1070	1 840.800
	Am	245.066 477	13	1 841.249
	Cm	245.065 511	12	1 841.366
	Bk	245.066 393	13	1 839.762
	Cf	245.068 071	13	1 837.416
	Es	245.071 330	1520	1 833.600
246	Pu	246.070 120	60	1 846.710
	Am	246.069 720	60	1 846.300
	Cm	246.067 250	13	1 847.817
	Bk	246.068 820	1070	1 845.570
	Cf	246.068 837	16	1 844.774
	Es	246.072 970	1520	1 840.140
	Fm	246.075 260	50	1 837.230
247	Am	247.072 100	1070	1 852.160
	Cm	247.070 380	15	1 852.973
	Bk	247.070 290	30	1 852.280
	Cf	247.071 180	760	1 850.660
	Es	247.073 620	40	1 847.600
	Fm	247.076 740	1860	1 843.920
248	Am	248.075 710	1070	1 856.860
	Cm	248.072 379	16	1 859.182
	Bk	248.073 020	1070	1 857.800
	Cf	248.072 220	30	1 857.770
248	Es	248.075 500	1520	1 853.930
	Fm	248.077 190	30	1 851.570
249	Cm	249.075 985	17	1 863.895
	Bk	249.075 005	12	1 864.026
	Cf	249.074 870	12	1 863.369
	Es	249.076 380	30	1 861.180
	Fm	249.078 960	1070	1 857.990
250	Cm	250.078 420	1070	1 869.700
	Bk	250.078 337	16	1 868.993
	Cf	250.076 432	14	1 869.985
	Es	250.078 650	1070	1 867.130
	Fm	250.079 550	40	1 865.520
	Md	250.084 430	1860	1 860.190
251	Bk	251.080 810	1520	1 874.760
	Cf	251.079 591	18	1 875.114
	Es	251.079 970	50	1 873.980
	Fm	251.081 620	1320	1 871.660
	Md	251.084 870	1070	1 867.850
	No	251.088 860	2150	1 863.350
252	Bk	252.084 340	1070	1 879.540
	Cf	252.081 657	17	1 881.261
	Es	252.082 870	1070	1 879.350
	Fm	252.082 500	40	1 878.910
	Md	252.086 530	1860	1 874.380
	No	252.088 970	40	1 871.320
253	Cf	253.085 140	60	1 886.090
	Es	253.084 850	14	1 885.576
	Fm	253.085 200	1070	1 884.470
	Md	253.087 250	1070	1 881.780
	No	253.090 580	1520	1 877.890
254	Cf	254.087 390	1070	1 892.060
	Es	254.088 053	17	1 890.663
	Fm	254.086 883	15	1 890.972
	Md	254.089 630	1520	1 887.630
	No	254.090 990	40	1 885.580
255	Es	255.090 290	1520	1 896.650
	Fm	255.089 970	19	1 896.168
	Md	255.091 100	1070	1 894.330
	No	255.093 270	1700	1 891.520
256	Es	256.093 710	1520	1 901.540
	Fm	256.091 730	40	1 902.600
	Md	256.093 790	1520	1 899.900
	No	256.094 280	40	1 898.650
	Lw	256.098 570	1070	1 893.880
257	Fm	257.095 110	60	1 907.520
	Md	257.095 610	1070	1 906.270
	No	257.096 930	1520	1 904.260
	Lw	257.099 510	1520	1 901.070