

Mass Defects

Mass Defect Data Compilation					
with the mass defect for each element					
atomic number	atomic weight	neutrons	Sym.	Element	
0	1	1	n0	neutron particle	Measured-Expected
					0.0008398836
				change/proton	0.0008398836
				change/neutron	0.0008398836
1	1	0	H	Hydrogen	Measured-Expected
0	0	0		H	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
1	2	1	D	Deuterium	Measured-Expected
				2H	-0.0020968663
				change/proton	-0.0020968663
				change/neutron	-0.0020968663
1	3	2	T	Tritium	Measured-Expected
				3H	-0.0074258967
				change/proton	-0.0074258967
				change/neutron	-0.0074258967
2	4	2	He	Helium	Measured-Expected
				4He	-0.0286981290
				change/proton	-0.0143490645
				change/neutron	-0.0071745322
3	7	4	Li	Lithium	Measured-Expected
			0	7Li	-0.1137752257
				change/proton	-0.0379250752
				change/neutron	-0.0094812688

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atomic number	atomic weight	neutrons	Sym.	Element	
4	9	5	Be	Beryllium	Measured-Expected
				9Be	-0.0582422902
				change/proton	-0.0145605725
				change/neutron	-0.0029121145
5	11	6	B	Boron	Measured-Expected
				11B	-0.2800753547
				change/neutron	-0.0093358452
6	12	6	C	Carbon	Measured-Expected
				12C	-0.0843003869
				change/proton	-0.0140500645
				change/neutron	-0.0023416774
7	14	7	N	Nitrogen	Measured-Expected
				14N	-0.1031204514
				change/proton	-0.0147314931
				change/neutron	-0.0021044990
8	16	8	O	Oxygen	Measured-Expected
				16O	-0.1261705159
				change/proton	-0.0157713145
				change/neutron	-0.0019714143
9	19	10	F	Fluorine	Measured-Expected
				19F	-0.1502724496
				change/proton	-0.0166969388
				change/neutron	-0.0016696939
10	20	10	Ne	Neon	Measured-Expected
				20Ne	0.0231993552
				change/proton	0.0023199355
				change/neutron	0.0002319936

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atomic number	atomic weight	neutrons	Sym.	Element	
11	23	12	Na	Sodium	Measured-Expected
				23Na	-0.1902064615
				change/proton	-0.0172914965
				change/neutron	-0.0014409580
12	24	12	Mg	Magnesium	Measured-Expected
				24Mg	0.1161992262
				change/proton	0.0096832689
				change/neutron	0.0008069391
13	27	14	Al	Aluminum	Measured-Expected
				27Al	-0.2297374705
				change/proton	-0.0176721131
				change/neutron	-0.0012622938
14	28	14	Si	Silicon	Measured-Expected
				28Si	-0.1351009027
				change/proton	-0.0096500645
				change/neutron	-0.0006892903
15	31	16	P	Phosphorus	Measured-Expected
				31P	-0.2688140015
				change/proton	-0.0179209334
				change/neutron	-0.0011200583
16	32	16	S	Sulphur	Measured-Expected
				32S	-0.1914010317
				change/proton	-0.0119625645
				change/neutron	-0.0007476603
17	35	18	Cl	Chlorine	Measured-Expected
				35Cl	0.1721238716
				change/proton	0.0101249336
				change/neutron	0.0005624963

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atomic number	atomic weight	neutrons	Sym.	Element	
18	40	22	Ar	Argon	Measured-Expected
				40Ar	-0.5210012896
				change/proton	-0.0289445161
				change/neutron	-0.0013156598
19	39	20	K	Potassium	Measured-Expected
				39K	-0.2068762574
				change/proton	-0.0108882241
				change/neutron	-0.0005444112
20	40	20	Ca	Calcium	-0.2350012896
				40Ca	-0.0117500645
				change/proton	-0.0005875032
				change/neutron	0.0000000000
21	45	24	Sc	Scandium	Measured-Expected
				45Sc	-0.3962184508
				change/proton	-0.0188675453
				change/neutron	-0.0007861477
22	48	26	Ti	Titanium	Measured-Expected
				48Ti	-0.5086015476
				change/proton	-0.0231182522
				change/neutron	-0.0008891635
23	51	28	V	Vanadium	Measured-Expected
				51V	-0.4575766443
				change/proton	-0.0198946367
				change/neutron	-0.0007105227
24	52	28	Cr	Chromium	Measured-Expected
				52Cr	-0.4108016765
				change/proton	-0.0171167365
				change/neutron	-0.0006113120

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atomic number	atomic weight	neutrons	Sym.	Element	
25	55	30	Mn	Manganese	Measured-Expected
				55Mn	-0.4923337733
				change/proton	-0.0196933509
				change/neutron	-0.0006564450
26	56	30	Fe	Iron	Measured-Expected
				56Fe	-0.5932018055
				change/proton	-0.0228154541
				change/neutron	-0.0007605151
27	59	0	Co	Cobalt	Measured-Expected
				59Co	-0.5284829022
				change/proton	-0.0195734408
				change/neutron	-0.0006116700
28	59	31	Ni	Nickel	Measured-Expected
				59Ni	-0.7682769022
				change/proton	-0.0274384608
				change/neutron	-0.0008851116
29	64	35	Cu	Copper	Measured-Expected
				64Cu	-0.9548020634
				change/proton	-0.0329242091
				change/neutron	-0.0009406917
30	65	35	Zn	Zinc	Measured-Expected
				change/proton	-0.8247522569
				change/neutron	-0.0266049115
31	70	39	Ga	Gallium	Measured-Expected
				70Ga	-0.8247522569
				change/proton	-0.0266049115
				change/neutron	-0.0006821772
32	73	41	Ge	Germanium	Measured-Expected
				73Ge	-0.9412273536
				change/proton	-0.0294133548
				change/neutron	-0.0007173989

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atomic number	atomic weight	neutrons	Sym.	Element	
33	75	42	As	Arsenic	Measured-Expected
				75As	-0.6652824181
				change/proton	-0.0201600733
				change/neutron	-0.0004800017
34	79	45	Se	Selenium	Measured-Expected
				79Se	-0.6471775470
				change/proton	-0.0190346337
				change/neutron	-0.0004229919
35	80	45	Br	Bromine	Measured-Expected
				80Br	-0.7190025793
				change/proton	-0.0205429308
				change/neutron	-0.0004565096
36	84	48	K	Krypton	Measured-Expected
0	0	0	0	84K	-0.8593027082
				change/proton	-0.0238695197
				change/neutron	-0.0004972817
37	85	48	Rb	Rubidium	Measured-Expected
				85Rb	-0.1973277405
				change/proton	-0.0053331822
				change/neutron	-0.0001111080
38	88	50	Sr	Strontium	Measured-Expected
				88Sr	-1.0686028372
				change/proton	-0.0281211273
				change/neutron	-0.0005624225
39	89	50	Y	Yttrium	Measured-Expected
0	0	0	0	89Y	-0.7905878694
				change/proton	-0.0202714838
				change/neutron	-0.0004054297
40	91	51	Zr	zirconium	Measured-Expected
				91Zr	-0.4880779339
				change/proton	-0.0122019483
				change/neutron	-0.0002392539

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41	93	52	Nb	Niobium	Measured-Expected
				93Nb	-0.8213579984
				change/proton	-0.0200331219
				change/neutron	-0.0003852523
42	96	54	Mo	Molydenum	Measured-Expected
				96Mo	-0.8012030951
				change/proton	-0.0190762642
				change/neutron	-0.0003532642
43	98	55	Tc	Technetium	Measured-Expected
				43Tc	-0.8596431596
				change/proton	-0.0199917014
				change/neutron	-0.0003634855
44	101	57	Ru	Ruthenium	Measured-Expected
				101Ru	-0.7203282563
				change/proton	-0.0163710967
				change/neutron	-0.0002872122
45	103	58	Rh	Rhodium	Measured-Expected
				103Rh	-0.9004883208
				change/proton	-0.0200108516
				change/neutron	-0.0003450147
46	107	61	Pd	Palladium	Measured-Expected
				107Pd	-1.4172784498
				change/proton	-0.0308104011
				change/neutron	-0.0005050885
47	108	61	Ag	Silver	Measured-Expected
				108Ag	-0.9769034820
				change/proton	-0.0207851805
				change/neutron	-0.0003407407
48	112	64	Cd	Cadmium	Measured-Expected
				112Cd	-0.4624036110
				change/proton	-0.0096334086
				change/neutron	-0.0001505220

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49	115	66	In	Indium	Measured-Expected
				115In	-1.0818787077
				change/proton	-0.0220791573
				change/neutron	-0.0003345327
50	119	69	Sn	Tin	Measured-Expected
				119Sn	-1.2211788367
				change/proton	-0.0244235767
				change/neutron	-0.0003539649
51	122	71	Sb	Antimony	Measured-Expected
				120Sb	-1.1946539334
				change/proton	-0.0234245869
				change/neutron	-0.0003299238
52	128	76	Te	Tellurium	Measured-Expected
				128Te	-1.4016041268
				change/proton	-0.0269539255
				change/neutron	-0.0003546569
53	127	74	I	Iodine	Measured-Expected
				127I	-1.0893090946
				change/proton	-0.0205530018
				change/neutron	-0.0002777433
54	131	77	Xe	xenon	Measured-Expected
				131Xe	-0.7320792236
				change/proton	-0.0135570227
				change/neutron	-0.0001760652
55	133	78	Cs	Cesium	Measured-Expected
				133Cs	-1.1352292881
				change/proton	-0.0206405325
				change/neutron	-0.0002646222
56	137	81	Ba	Barium	Measured-Expected
				137Ba	-0.7450294170
				change/proton	-0.0133040967
				change/neutron	-0.0001642481



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57	139	82	La	Lanthanum	Measured-Expected
				139La	-1.1821794815
				change/proton	-0.0207399909
				change/neutron	-0.0002529267
58	140	82	Ce	Cerium	Measured-Expected
				140Ce	-0.9795045137
				change/proton	-0.0168880089
				change/neutron	-0.0002059513
59	141	82	Pr	Praseodymium	Measured-Expected
				141Pr	-2.0125645460
				change/proton	-0.0341112635
				change/neutron	-0.0004159910
60	144	84	Nd	Neodymium	Measured-Expected
				144Nd	-0.8868046427
				change/proton	-0.0147800774
				change/neutron	-0.0147800774
61	145	84	Pm	Promethium	Measured-Expected
				145Pm	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
62	150	88	Sm	Samarium	Measured-Expected
				150Sm	-0.8137548361
				change/proton	-0.0131250780
				change/neutron	-0.0001491486
63	152	89	Eu	Europium	Measured-Expected
				152Eu	-1.2254049006
				change/proton	-0.0194508714
				change/neutron	-0.0002185491
64	157	93	Gd	Gadolinium	Measured-Expected
				157Gd	-0.9785300618
				change/proton	-0.0152895322
				change/neutron	-0.0001644036

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65	159	94	Tb	Terbium	Measured-Expected
				159Tb	-1.3188401263
				change/proton	-0.0202898481
				change/neutron	-0.0002158494
66	163	97	Dy	Dyprosium	Measured-Expected
				163Dy	-1.7754802553
				change/proton	-0.0269012160
				change/neutron	-0.0002773321
67	165	98	Ho	Holmium	Measured-Expected
				165Ho	-1.3608103198
				change/proton	-0.0203106018
				change/neutron	-0.0002072510
68	167	99	Er	Erbium	Measured-Expected
				167Er	-1.0477803842
				change/proton	-0.0154085351
				change/neutron	-0.0001556418
69	169	100	Tm	Thulmium	Measured-Expected
				169Tm	-1.3882204487
				change/proton	-0.0201191369
				change/neutron	-0.0002011914
70	173	103	Yb	Ytterbium	Measured-Expected
				173Yb	-1.3137305777
				change/proton	-0.0187675797
				change/neutron	-0.0001822095
71	175	104	Lu	Lutetium	Measured-Expected
				175Lu	-1.4023806422
				change/proton	-0.0197518400
				change/neutron	-0.0001899215
72	178	106	Hf	Hafnium	Measured-Expected
				178Hf	-0.9028557389
				change/proton	-0.0125396630
				change/neutron	-0.0001182987

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73	181	108	Ta	Tantalum	Measured-Expected
				181Ta	-1.4684308356
				change/proton	-0.0201154909
				change/neutron	-0.0001862545
74	184	110	W	Tungsten	Measured-Expected
				184W	-1.5998059323
				change/proton	-0.0216189991
				change/neutron	-0.0001965364
75	186	111	Re	Rhenium	Measured-Expected
				186Re	-1.2484559968
				change/proton	-0.0166460800
				change/neutron	-0.0001499647
76	190	114	Os	Osmium	Measured-Expected
				190Os	-1.2567561258
				change/proton	-0.0165362648
				change/neutron	-0.0001450550
77	192	115	Ir	Iridium	Measured-Expected
				192Ir	-1.2854061903
				change/proton	-0.0166935869
				change/neutron	-0.0001451616
78	195	117	Pt	Platinum	Measured-Expected
				195Pt	-1.4478812870
				change/proton	-0.0185625806
				change/neutron	-0.0001586545
79	197	118	Au	Gold	Measured-Expected
				197Au	-1.5749813515
				change/proton	-0.0199364728
				change/neutron	-0.0001689532
80	201	121	Hg	Mercury	Measured-Expected
				201Hg	-1.9828314804
				change/proton	-0.0247853935
				change/neutron	-0.0002048380

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81	204	123	Tl	Thallium	Measured-Expected
				123Tl	-1.2130065772
				change/proton	-0.0149753898
				change/neutron	-0.0001217511
82	207	125	Pb	Lead	Measured-Expected
				125Pb	-1.4197816739
				change/proton	-0.0173144107
				change/neutron	-0.0001385153
83	209	126	Bi	Bismuth	Measured-Expected
				209Bi	-1.6550517384
					-0.0199403824
				change/neutron	-0.0001582570
84	209	125	Po	Polonium	Measured-Expected
				209Po	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
85	210	125	At	Astatine	Measured-Expected
				210As	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
86	222	136	Rn	Radon	Measured-Expected
				222Rn	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
87	223	136	Fr	Francium	Measured-Expected
				223Fr	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
88	226	138	Ra	Radium	Measured-Expected
				226Ra	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000

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89	227	138	Ac	Actinium	Measured-Expected
				227Ac	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
90	232	142	Th	Thorium	Measured-Expected
				232Th	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
91	231	140	Pa	Protactinium	Measured-Expected
				231Pa	0.0000000000
					0.0000000000
				change/neutron	0.0000000000
92	238	146	U	Uranium	Measured-Expected
				238U	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
93	237	144	Np	Neptunium	Measured-Expected
				237Np	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
94	244	150	Pu	Plutonium	Measured-Expected
				244Pu	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
95	243	148	Am	Americium	Measured-Expected
				243Am	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
96	247	151	Cm	Curium	Measured-Expected
				247Cm	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000

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97	247	150	Bk	Berkelium	Measured-Expected
				247Bk	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
98	251	153	Cf	Californium	Measured-Expected
				251Cf	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
99	252	153	Es	Einsteinium	Measured-Expected
				252Es	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
100	257	157	Fm	Fermium	Measured-Expected
				257Fm	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
101	258	157	Md	Mendelevium	Measured-Expected
				258Md	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
102	259	157	No	Nobelium	Measured-Expected
				259No	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
103	262	159	Lr	Lawrencium	Measured-Expected
				262Lw	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
104	261	157	Rf	Rutherfordium	Measured-Expected
				261Rf	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000

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105	262	157	Db	Dubnium	Measured-Expected
				262Db	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
106	266	160	Sg	Seaborgium	Measured-Expected
				266Sg	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
107	264	157	Bh	Bohrium	Measured-Expected
				264Bh	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
108	267	159	Hs	Hassium	Measured-Expected
				267Hs	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
109	268	159	Mt	Meitnerium	Measured-Expected
				288Mt	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
110	262	152	Ds	Damstadtium	Measured-Expected
				262Ds	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
111	272	161	Rg	Roentgenium	Measured-Expected
				272Rg	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
112	285	173	Cn	Copernicium	Measured-Expected
0	0	0	0	285Cn	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000

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113	286	173	Uut	Ununtrium	Measured-Expected
				286Uut	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
114	289	175	Fl	Flerovium	Measured-Expected
				289Fl	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
115	288	173	Mc	Moscovium	Measured-Expected
				288Mc	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
116	293	177	Lv	Livermorium	Measured-Expected
				293Lv	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
117	294	177	Ts	Tennessine	Measured-Expected
				294Ts	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
118	294	176	Og	Oganesson	Measured-Expected
				294Og	0.0000000000
				change/proton	0.0000000000
				change/neutron	0.0000000000
table compiled by David Michalets					
as a personal reference for analysis.					
This file is a reference for					
his self-published book,					
Redefining Gravity.					
Data are from Wikipedia.					
The book has a reference page identifying					
the url for each page being referenced.					



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Note:					
The file contains all elements identified by Wikipedia, at the time of the book preparation. That date is on the bottom of each page.					
Technetium has a measured mass value. All other radioactive elements have no actual measured value so all of them have a difference of zero in this analysis.					
Accuracy cannot be guaranteed with keyboard entries.					