A More Detailed Periodic Table of the Stable Isotopes 1 - 83

George R. Briggs

Abstract: In MHCE8S theory the stable isotopes are of special interest. Data from Wikipedia. 1st doubling is for sulfur. 3rd doubling is for calcium. Both are essential in forming the human body. In addition, we have a signal in the fact that 50 tin - 28 Nickel = 22, whereas undoubled stable isotope data indicate 21. Also 82 lead - 50 tin = 32. In this case however the data also show undoubled stabile isotopes = 32, as expected

* human body	stable isotope	abundance	**double**	density
1 hydrogen *	1, 2	99.98%, 0.02%		g/cm^3 0.07
2 helium	3, 4	0.0002%, 99.9998		0.14
3 lithium	6, 7	7.5%, 92.5		0.53
4 berylium	9	100%		1.85
5 boron	10, 11	20%, 80		2.08
6 carbon *	12, 13	98.7%, 1.1		2.27
7 nitrogen *	14, 15	99.6%, 0.4		0.80
8 oxygen *	16, 17, 18	99.76%, 0.04, 0.20		1.14
9 fluorine	19	100%		1.70
10 neon	20, 21, 22	90.4%, 0.27, 9.25		1.21
11 sodium *	23	100%		0.96
12 magnesium *	24, 25, 26	79.0%, 10.0, 11.0,		1.73
13 aluminium	27	100%		2.70
14 silicon	28, 29, 30	92.2%, 4.7, 3.1		2.33
15 phosphorus *	31	100%		2.34
16 sulfur *	32, 33, 34, **36**	94.99%, 0.75, 4.25, 0.01		1.84
17 chlorine *	35, 37	76%, 24		1.56
18 argon	**36**, 38, **40**	0.33%, 0.06, 99.6		1.39
19 potassium *	39,41	93.25%, 6.73		0.86
20 calcium *	**40**,42,43,44,**46**	96.9%,0.65,0.135,209,0.004		1.55
21 scandium	45	100%		2.98

22	titanium	**46**, 47, 48, 49, **50**	8.2%, 7.4, 73.7, 5.4, 5.18	4.51
23	vanadium	51	99.75%	6.11
24	chromium	**50,** 52, 53, **54**	4.34**%**, 83.7, 9.50, 2.36	7.19
25	manganese	55	100%	7.21
26	iron	**54,** 56, 57,**58**	5.85%, 91.75, 2.12, 0.28	7.87
27	cobalt	59	100%	8.90
28	nickel	**58**, 60, 61, 62, **64**	68.08%, 26.2,1.14,3.63,0.93	8.90

The first doubled stable isotope is for sulfur - argon. Now sulfur has the most allotropes of any element (30) and argon gas **40** is a very useful refrigerant and display gas. Calcium **40** is abundant and important for growing plants and bones. Titanium 48 is a light but strong metal of growing importance. Chromium 52 is anti-corrosive and very handsome as metal plating. Iron 56 has long been one of modern (1000 years) mankind's most useful metals, largely replacing bronze. Nickel **58** is a handsome metal plating similar to chromium but less harmful to the environment to refine. Nickel 60 and 62 are also important as the two strongest bound nuclei known.

Next take undoubled stable isotopes, find sum for 28 nickel: (1 x 8) + (2 x 8) + (3 x 4) +(5 x 1) = 8+8+4+1 = **21.** Now 50 tin-28 nickel periodic table entrants (**22**) include technetium which is very useful medically for its radioactive action (no gamma ray production) yet is considered to be stable. **nature** apparently is alerting us to this fact- see page 3.

			unduplicated stable isotopes	
28	nickel	**58,** 60 , 61, 62, **64**	3	8.90
29	copper	63, 65	2	8.96
30	zinc	**64,** 66, 67, 68, **70**	3	7.14
31	gallium	69, 71	2	5.91
32	germanium	**70**, 72, 73, **74**	2	5.32
33	arsenic	75	1	5.72

34 selenium	**74**, 76, 77, 78, **80**	3	4.28
35 bromine	79, 81	2	3.10
36 krpton	**80,** 82, **83**, **84, 86**	1	2.41
37 rubdium	**83**		3.53
38 strontium	**84, 86**, 87. 88	2	2.64
39 yttrium	89	1	4.47
40 zirconium	90, 91, **92, 94**	2	6.52
41 niobium	93	1	8.57
42 molybdenum	**92, 94,** 95, **96,** 97, **98**	2	10.28
43 technetium 0	count as stable		11
44 ruthenium	**96, 98,** 99, 100, 101, **102, 104**	3	12.45
45 rhodium	103	1	12.41
46 palladium	**102, 104,** 105, **106, 108, 110**	1	12.02
47 silver	107, 109	2	12.49
48 cadmium	**106, 108, 110,** 111, **112, 114**	1	8.65
49 indium	113	1	7.31

Next consider undoubled stable isotopes 50 tin - 82 lead: (16 x 1) + (6 x 2) +(4 x 3) + (5 x 4) + (1 x 5) = 16 + 6 + 4 + 5 + 1 = **32.** Now lead 82 - tin 50 = **32** also**. Nature** now evidently agrees that promethium is best considered as a stable element since it has no medically useful radioactivity and is very rare also.

50 tin	**112,114**,115,116,117,118,119,**120,122,124**	5	7.28
51 antimony	121, **123**	1	6.69
52 tellurium	**120, 122, 123, 124,** 125, **126**	1	6.24
53 iodine	127	1	4.93
54 xenon	**126**, 128, 129, 130, 131, **132**, **134**	4	2.94
55 cesium	133	1	1.93
56 barium	**132**, **134**, 135, **136**, 137, **138**	2	3.51
57 lanthanum	139	1	6.16
58 cerium	**136**, **138**, 140, **142**	1	6.77
59 praseodymim	141	1	6.77

60 neodymium	**142**, 143, 145, 146	3	7.01
61 promethium 0	count as stable		7.26
62 samarium	144, 149, 150, 152, **154**	4	7.51
63 europium	153	1	5.26
64 gadolinium	**154**, 155, **156**, 157, **158**, **160**	2	7.9
65 terbium	159	1	8.23
66 dysprosium	**156**,**158**,**160**,161,**162**,163,**164**	2	8.54
67 holmium	165	1	8.79
68 erbium	**162**, **164**, 166, 167, **168**, **170**	2	9.06
69 thulium	169	1	9.32
70 ytterbium	**168**, **170**, 171, 172, 173, 174, **176**	4	6.90
71 lutetium	175	1	9.84
72 hafnium	**176**, 177, 178, 179, **180**	3	13.31
73 tantalum	**180**, 181	1	16.69
74 tungsten	182, 183, **184**, 186	3	19.3
75 rhenium	185	1	21.02
76 osmium	**184**, 187, 188, 189, 190, **192**	4	22 .59
77 iridium	191, 193	2	22.56
78 platinum	**192**, 194, 195, **196**, **198**	2	21.45
79 gold	197	1	19.30
80 mercury	**196**,**198**,199,200,201,202,**203**,**204**	4	13.53
81 thallium	**203**, 205	1	11.85
82 lead	**204**, 206, 207, 208	3	11.34
83 bismuth 0 (2 x 10^19 yr) counts as stable but it is weakly radioactive	209	1	9.78
84 polonium 0 unstable without a doubt			

Stable isotopes not doubled for atomic nos. 28 - 82 = 50+**4.** now 50 is also the atomic number of tin, so useful in forming the alloy bronze which led to the the rise of the civilization of greece. 4 also indicates the number of genome types every person carries and the number of cyclic universes which have ocurred and most importantly the number by which the critical value of Hubble's constant exceeds the actual value reached (see my ViXra #96 1905.0606). Lastly, we wish to point out technetium's need for classifiction change is being signaled to us by its density of 11 g/cm^3 (see page 6).

We next wish to discus the abundances listed on p. 1 in more detail. Hydrogen 1 has only hydrogen 2 deuterium (0.02%) accompaning it. Deuterium contains 1 proton and 1 neutron. Helium 4 has only helium 3 (0.0002%) accompaning it. Helium 3 contains 2 protons and 1 neutron and helium 4 an additional neutron. Lithium 7 (92.5%) has only lithium 6 (7.5%) which contains 3 protons and 3 neutrons and lithium 7 an additional neutron. Then with (the 4th member of the periodic table, an even #) comes berylium 9 (100%) which is the first isotope to exist alone. It contains 4 protons and 5 neutrons, both very important numbers in MHCE8S theory.

We don't get another single isotope element of the periodic table until fluorine 19 which happens to be the 9th and an odd number of the periodic table (1,3,5,7 odd nos. all have 2 isotopes - note the #4 and conection with MHCE8S theory. The next odd# periodic table elements 9,11,13,15, all have single isotopes (4 again!), 17,19 both 2 isotopes each; 21,23,25,27 single isotopes again ; 29,31 both with 2 isotopes each; 33 (arsenic,poison), only a single isotope but 35 (bromine) 2 isotopes 79l 81 again and 37 (rubdium) a single isotope; but this isotope is the first odd isotope to be duplicated (printed double black). Now rubdium has proven to be a very useful periodic table element because it enables very stable and accurate atomic clocks.

After rubdium 37, the odd # periodic table is;1 isotope 39, 41, 43, 45 then 2 isotopes 47; then 1 isotope 49; then 1 + **1** isotopes 51; then 53, 55, 57, 59; then (promethium 61),63, 65, 67, 69, 71; 5 #s this time, but 5 is also special in MHCE8S theory then **1**+1 isotopes 73; then 1 isotope 75; then 2 isotopes 77 (iridium); then 1 isotope 79 (gold); then **1+** 1 isotopes 81; (thallium); then 1 isotope 83 (bismuth - weakly radioactive).

Next we are going to concentrate on the periodic table elenents used to build the human body (see "composition of the human body", Wikipedia,2020). The elements are:

1. oxygen, 65% mass, 24% atoms
2. carbon, 18.5% mass, 12 atoms
3. hydrogen, 9.555%, 62.0
4. nitrogen, 3.2%, 1.1
5. calcium, 1.5%, 0.22
6. phosphorus, 1.0%, 0.22
7. potassium, 0.4%, 0.03
8. sulfur, 0.3%, 0.038
9. sodium, 0.2%, 0.38
10. chlorine, 0.2%, 0.024
11. magnesium, 0.1%, 0.015

all others < 0.1%

These are marked on page 1 with *. We note that in building the human body (adult average 70 kg, 150 lbs), only 2 doubled stable isotopes are used, sulfur **36** and calcium **40.**

The mass-energy in electronvolts for the mass of the average adult human is 1.782 (**nature's** 4 digits) x 0.09 x 10^ -36 x70 kg = 11.2266 x 10^-36 kg. This is a remarkable number. The first 2 digits clearly signal the density of 3 poisonous elements, technetium (radioactive), thallium and lead. The next 2 digits signal the density of iridium and osmium. Both of these elements are scarce and probably intended for signaling only, the 1st for signaling the 66-million -year-old extinction of the dinosaurs and the 2nd for notifying us of the end of the stable isotopes in the periodic table. It does this by making osmium density = 22.59 g/cm^3 vs. twice lead 11.34 x 2 = 22..68. Now 22.68-22.59 = **0.09**, which appears to be **nature's** way of alerting us. We note that the same signal x 10^-35 converts electronvolts -to-kg and led us to the number 11.2266 and the easy-to-remember mass- energy conversion factor electronvolt =1.782 x 0.09 x 10^-36 = 1604 x 10^- 40 Kg.

Another place we have encounted the number 0.09 is in the Higgs boson mass. For several years after its discovery its measured mass was 125.09 GeV, then better measurement gave 125.18 GeV for an increase of 0.09 GeV. Was this **nature's** doing? and if so, what did it mean. A good guess is that she is telling us that 125.18 GeV is very close to being correct.

The next topic of interest are the 4 groups that have taken place, each of 4 elements. The use of 4, 4 times indicates MHCE8S theory at work again. With the addition of 2 elements for life (sulfur, and calcium), and 4 more elements (17, 19 both 2 isotopes each; we have 10 in all, with #130 and #129 used to publish the fact.

The last topic I will discuss are the 25 most important final papers in MHCE8S universe theory (following 50 which I published Nov. 7, 2019) which I feel are now sufficiently well enough understood that publication of the fact is urgent. These are:

1. #129 (this paper now expanded to 8 pages) the periodic table of the stable isotopes 1-83: this is my 4th paper past #125 (mass of Higgs boson !) 11 new papers

2. #128 Twice the density of lead 11.34 compared to the density of osmium equals 22.68-22.59=0.09 again, grams/cm^3: the highests density matter known 22.59 1 paper

3. #127 A strange dimensionless ratio occurs for the critical density of matter versus the density of lead: signal for the end of the stable isotopes =1.0123456 = 11.48/11.34 1 paper

4. #126 Leptons now number 4 not 3: this requires a 4th neutrino also: the heavy Z(4430) neutrino particle. 1 paper

5. #125 The modern magic numbers differs importantly from the original numbers of Prof. Wigner's in only one number: that number is **4**. 1 paper

6. #124 A 2nd revised and improved MHCE8S model of physics: 2 new particles, quantum of the universe (33.91 GeV) and dark matter tau-antitau composite particle (3552 MeV). Also see #110 for 3552 mass 2 papers

7. #123 How did Prof. Wigner include 126 as one of his "magic numbers" when discovery of the Higgs boson was at least 18 years in the future for him? 1st discovery of higgs particle was 125-127 GeV 1 paper

8. #122 The magic numbers of Prof. Wigner's include 28 and 82 and 82 alerts us to the ratio of the quantum of the universe to Planck's constant: 33.91/41.35 = 0.8200 x 10^+22 1 paper

9. #119 Consequence of rapid top quark decay to massless gauge boson: faster-than-light cosmophoton 1 paper

10. #118 The recent increase of Higgs measured mass by 0.09 GeV has an important consequence: detection and identification of dark matter 1 paper

11. #117 Top quarks decay so rapidly that hadronization cannot occur, considerably restricting decay possibilities: existence of both top and bottom leptons, 4 in all, and 1 new neutrino Z(4430) 1 paper

12. #116 The importance of the numbers 17 and 71 in MHCE8S theory: 171.7 GeV mass of the top quark, and 7.1 Mev for the mass of the 2 up neutron quarks gives 5-digit neutron accuracy 1 paper

13. #115 A dark top lepton tau-antitau matter condensate exists: The dark particle mass is 3552 MeV 1 paper

14. #131 An important use of the number 4 in MHCE8S universe theory: 1 eV = (400x4+4) x 10^- 40 Kg 1 paper