

“The Nature of the Elements”



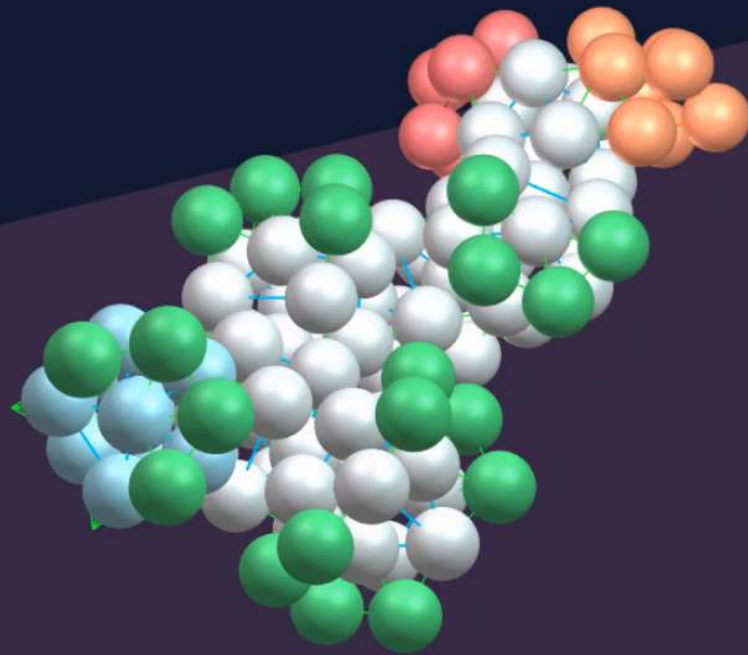
Metals, Non-metals and Inert Gases

<div>H1Hydrogen</div>																<div>He2Helium</div>																					
<div>Li3Lithium</div>		<div>Be4Beryllium</div>														<div>B5Boron</div>		<div>C6Carbon</div>		<div>N7Nitrogen</div>		<div>O8Oxygen</div>		<div>F9Fluorine</div>		<div>Ne10Neon</div>											
<div>Na11Sodium</div>		<div>Mg12Magnesium</div>														<div>Al13Aluminum</div>		<div>Si14Silicon</div>		<div>P15Phosphorus</div>		<div>S16Sulfur</div>		<div>Cl17Chlorine</div>		<div>Ar18Argon</div>											
<div>K19Potassium</div>		<div>Ca20Calcium</div>		<div>Sc21Scandium</div>		<div>Ti22Titanium</div>		<div>V23Vanadium</div>		<div>Cr24Chromium</div>		<div>Mn25Manganese</div>		<div>Fe26Iron</div>		<div>Co27Cobalt</div>		<div>Ni28Nickel</div>		<div>Cu29Copper</div>		<div>Zn30Zinc</div>		<div>Ga31Gallium</div>		<div>Ge32Germanium</div>		<div>As33Arsenic</div>		<div>Se34Selenium</div>		<div>Br35Bromine</div>		<div>Kr36Krypton</div>			
<div>Rb37Rubidium</div>		<div>Sr38Strontium</div>		<div>Y39Yttrium</div>		<div>Zr40Zirconium</div>		<div>Nb41Niobium</div>		<div>Mo42Molybdenum</div>		<div>Tc43Technetium</div>		<div>Ru44Ruthenium</div>		<div>Rh45Rhodium</div>		<div>Pd46Palladium</div>		<div>Ag47Silver</div>		<div>Cd48Cadmium</div>		<div>In49Indium</div>		<div>Sn50Tin</div>		<div>Sb51Antimony</div>		<div>Te52Tellurium</div>		<div>I53Iodine</div>		<div>Xe54Xenon</div>			
<div>Cs55Cesium</div>		<div>Ba56Barium</div>				<div>Hf72Hafnium</div>		<div>Ta73Tantalum</div>		<div>W74Tungsten</div>		<div>Re75Rhenium</div>		<div>Os76Osmium</div>		<div>Ir77Iridium</div>		<div>Pt78Platinum</div>		<div>Au79Gold</div>		<div>Hg80Mercury</div>		<div>Tl81Thallium</div>		<div>Pb82Lead</div>		<div>Bi83Bismuth</div>		<div>Po84Polonium</div>		<div>At85Astatine</div>		<div>Rn86Radon</div>			
<div>Fr87Francium</div>		<div>Ra88Radium</div>				<div>Rf104Rutherfordium</div>		<div>Db105Dubnium</div>		<div>Sg106Seaborgium</div>		<div>Bh107Bhoryum</div>		<div>Hs108Hassium</div>		<div>Mt109Meitnerium</div>		<div>Ds110Darmstadtium</div>		<div>Rg111Roentgenium</div>		<div>Cn112Copernicium</div>		<div>Nh113Nihonium</div>		<div>Fl114Flerovium</div>		<div>Mc115Moscovium</div>		<div>Lv116Livermorium</div>		<div>Ts117Tessessine</div>		<div>Og118Oganesson</div>			
						<div>La57Lathanum</div>		<div>Ce58Cerium</div>		<div>Pr59Praseodymium</div>		<div>Nd60Neodymium</div>		<div>Pm61Promethium</div>		<div>Sm62Samarium</div>		<div>Eu63Europium</div>		<div>Gd64Gadolinium</div>		<div>Tb65Terbium</div>		<div>Dy66Dysprosium</div>		<div>Ho67Holmium</div>		<div>Er68Erbium</div>		<div>Tm69Thulium</div>		<div>Yb70Ytterbium</div>		<div>Lu71Lutetium</div>			
						<div>Ac89Actinium</div>		<div>Th90Thorium</div>		<div>Pa91Protactinium</div>		<div>U92Uranium</div>		<div>Np93Neptunium</div>		<div>Pu94Plutonium</div>		<div>Am95Americium</div>		<div>Cm96Curium</div>		<div>Bk97Berkelium</div>		<div>Cf98Californium</div>		<div>Es99Einsteinium</div>		<div>Fm100Fermium</div>		<div>Md101Mendelevium</div>		<div>No102Nobelium</div>		<div>Lr103Lawrencium</div>			

Metals, Non-metals and Inert Gases

1 Hydrogen																	2 Helium																
3 Lithium	4 Beryllium																	5 Boron	6 Carbon	7 Nitrogen	8 Oxygen	9 Fluorine	10 Neon										
11 Sodium	12 Magnesium																	13 Aluminum	14 Silicon	15 Phosphorus	16 Sulfur	17 Chlorine	18 Argon										
19 Potassium	20 Calcium	21 Scandium	22 Titanium	23 Vanadium	24 Chromium	25 Manganese	26 Iron	27 Cobalt	28 Nickel	29 Copper	30 Zinc	31 Gallium	32 Germanium	33 Arsenic	34 Selenium	35 Bromine	36 Krypton																
37 Rubidium	38 Strontium	39 Yttrium	40 Zirconium	41 Niobium	42 Molybdenum	43 Technetium	44 Ruthenium	45 Rhodium	46 Palladium	47 Silver	48 Cadmium	49 Indium	50 Tin	51 Antimony	52 Tellurium	53 Iodine	54 Xenon																
55 Cesium	56 Barium			72 Hafnium	73 Tantalum	74 Tungsten	75 Rhenium	76 Osmium	77 Iridium	78 Platinum	79 Gold	80 Mercury	81 Thallium	82 Lead	83 Bismuth	84 Polonium	85 Astatine	86 Radon															
87 Francium	88 Radium			104 Rutherfordium	105 Dubnium	106 Seaborgium	107 Bhrium	108 Hassium	109 Meitnerium	110 Darmstadtium	111 Roentgenium	112 Copernicium	113 Nihonium	114 Flerovium	115 Moscovium	116 Livermorium	117 Tessessine	118 Oganesson															
																			57 Lanthanum	58 Cerium	59 Praseodymium	60 Neodymium	61 Promethium	62 Samarium	63 Europium	64 Gadolinium	65 Terbium	66 Dysprosium	67 Holmium	68 Erbium	69 Thulium	70 Ytterbium	71 Lutetium
																			89 Actinium	90 Thorium	91 Protactinium	92 Uranium	93 Neptunium	94 Plutonium	95 Americium	96 Curium	97 Berkelium	98 Californium	99 Einsteinium	100 Fermium	101 Mendelevium	102 Nobelium	103 Lawrencium

Tin 114



Valence

Oxidation States

hydrogen	H					-1	+1												
helium	He																		
lithium	Li						+1												
beryllium	Be					0	+1	+2											
boron	B	-5				-1	0	+1	+2	+3									
carbon	C		-4	-3	-2	-1	0	+1	+2	+3	+4								
nitrogen	N			-3	-2	-1		+1	+2	+3	+4	+5							
oxygen	O				-2	-1	0	+1	+2										
fluorine	F					-1													
neon	Ne																		
sodium	Na					-1		+1											
magnesium	Mg						+1	+2											
aluminium	Al					-2	-1	+1	+2	+3									
silicon	Si		-4	-3	-2	-1	0	+1	+2	+3	+4								
phosphorus	P			-3	-2	-1	0	+1	+2	+3	+4	+5							
sulfur	S				-2	-1	0	+1	+2	+3	+4	+5	+6						
chlorine	Cl					-1		+1	+2	+3	+4	+5	+6	+7					
argon	Ar																		
potassium	K					-1		+1											
calcium	Ca						+1	+2											
scandium	Sc						0	+1	+2	+3									
titanium	Ti				-2	-1	0	+1	+2	+3	+4								
vanadium	V			-3	-2	-1	0	+1	+2	+3	+4	+5							
chromium	Cr		-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6						
manganese	Mn			-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7					
iron	Fe		-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7					
cobalt	Co			-3	-2	-1	0	+1	+2	+3	+4	+5							
nickel	Ni				-2	-1	0	+1	+2	+3	+4								
copper	Cu				-2		0	+1	+2	+3	+4								
zinc	Zn				-2			+1	+2										
gallium	Ga	-5	-4	-3	-2	-1		+1	+2	+3									
germanium	Ge		-4	-3	-2	-1	0	+1	+2	+3	+4								
arsenic	As			-3	-2	-1		+1	+2	+3	+4	+5							
selenium	Se				-2	-1		+1	+2	+3	+4	+5	+6						
bromine	Br					-1		+1	+2	+3	+4	+5	+6	+7					
krypton	Kr							+2											
rubidium	Rb					-1		+1											
strontium	Sr						+1	+2											
yttrium	Y						0	+1	+2	+3									
zirconium	Zr				-2			+1	+2	+3	+4								
niobium	Nb			-3	-2	-1		+1	+2	+3	+4	+5							
molybdenum	Mo		-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6						
technetium	Tc			-3	-2	-1	0	+1	+2	+3	+4	+5	+6	+7					
ruthenium	Ru		-4	-3	-2		0	+1	+2	+3	+4	+5	+6	+7	+8				
rhodium	Rh			-3	-2	-1	0	+1	+2	+3	+4	+5	+6						
palladium	Pd						0	+1	+2	+3	+4								
silver	Ag				-2	-1		+1	+2	+3									
cadmium	Cd				-2			+1	+2										
indium	In	-5			-2	-1		+1	+2	+3									
tin	Sn		-4	-3	-2	-1	0	+1	+2	+3	+4								
antimony	Sb			-3	-2	-1		+1	+2	+3	+4	+5							
tellurium	Te				-2	-1		+1	+2	+3	+4	+5	+6						
iodine	I					-1		+1	+2	+3	+4	+5	+6	+7					
xenon	Xe							+2			+4	+6		+8					
caesium	Cs					-1		+1											
barium	Ba						+1	+2											
lanthanum	La						0	+1	+2	+3									
cerium	Ce							+2	+3	+4									
praseodymium	Pr						0	+1	+2	+3	+4	+5							
neodymium	Nd						0	+2	+3	+4									
promethium	Pm							+2	+3										
samarium	Sm						0	+2	+3										
europium	Eu							+2	+3										
gadolinium	Gd						0	+1	+2	+3									
terbium	Tb						0	+1	+2	+3	+4								
dysprosium	Dy						0	+2	+3	+4									
holmium	Ho						0	+2	+3										

hydrogen	H					-1	+1												1
helium	He																		18
lithium	Li						+1												1
beryllium	Be					0	+1	+2											2
boron	B	-5				-1	0	+1	+2	+3									13
carbon	C		-4	-3	-2	-1	0	+1	+2	+3	+4								14
nitrogen	N			-3	-2	-1		+1	+2	+3	+4	+5							15
oxygen	O				-2	-1	0	+1	+2										16
fluorine	F					-1													17
neon	Ne																		18

Where are the Elements Created!

<div>H1</div>		<div><div><div>Big Bang fusion</div><div>Cosmic ray fission</div></div><div><div>Dying low-mass stars</div><div>Merging neutron stars</div></div><div><div>Exploding massive stars</div><div>Exploding white dwarfs</div></div><div><div>Human synthesis No stable isotopes</div></div></div>																<div>He2</div>					
<div>Li3</div>	<div>Be4</div>																	<div>B5</div>	<div>C6</div>	<div>N7</div>	<div>O8</div>	<div>F9</div>	<div>Ne10</div>
<div>Na11</div>	<div>Mg12</div>																	<div>Al13</div>	<div>Si14</div>	<div>P15</div>	<div>S16</div>	<div>Cl17</div>	<div>Ar18</div>
<div>K19</div>	<div>Ca20</div>	<div>Sc21</div>	<div>Ti22</div>	<div>V23</div>	<div>Cr24</div>	<div>Mn25</div>	<div>Fe26</div>	<div>Co27</div>	<div>Ni28</div>	<div>Cu29</div>	<div>Zn30</div>	<div>Ga31</div>	<div>Ge32</div>	<div>As33</div>	<div>Se34</div>	<div>Br35</div>	<div>Kr36</div>						
<div>Rb37</div>	<div>Sr38</div>	<div>Y39</div>	<div>Zr40</div>	<div>Nb41</div>	<div>Mo42</div>	<div>Tc43</div>	<div>Ru44</div>	<div>Rh45</div>	<div>Pd46</div>	<div>Ag47</div>	<div>Cd48</div>	<div>In49</div>	<div>Sn50</div>	<div>Sb51</div>	<div>Te52</div>	<div>I53</div>	<div>Xe54</div>						
<div>Cs55</div>	<div>Ba56</div>	<div></div>		<div>Hf72</div>	<div>Ta73</div>	<div>W74</div>	<div>Re75</div>	<div>Os76</div>	<div>Ir77</div>	<div>Pt78</div>	<div>Au79</div>	<div>Hg80</div>	<div>Tl81</div>	<div>Pb82</div>	<div>Bi83</div>	<div>Po84</div>	<div>At85</div>	<div>Rn86</div>					
<div>Fr87</div>	<div>Ra88</div>			<div>La57</div>	<div>Ce58</div>	<div>Pr59</div>	<div>Nd60</div>	<div>Pm61</div>	<div>Sm62</div>	<div>Eu63</div>	<div>Gd64</div>	<div>Tb65</div>	<div>Dy66</div>	<div>Ho67</div>	<div>Er68</div>	<div>Tm69</div>	<div>Yb70</div>	<div>Lu71</div>					
				<div>Ac89</div>	<div>Th90</div>	<div>Pa91</div>	<div>U92</div>	<div>Np93</div>	<div>Pu94</div>	<div>Am95</div>	<div>Cm96</div>	<div>Bk97</div>	<div>Cf98</div>	<div>Es99</div>	<div>Fm100</div>	<div>Md101</div>	<div>No102</div>	<div>Lr103</div>					

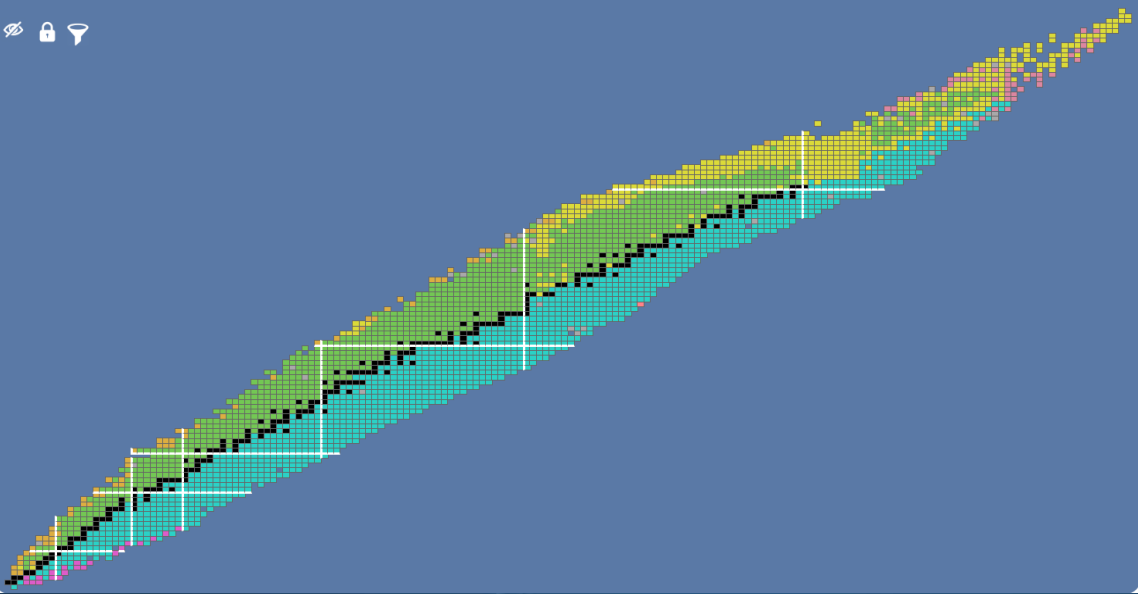
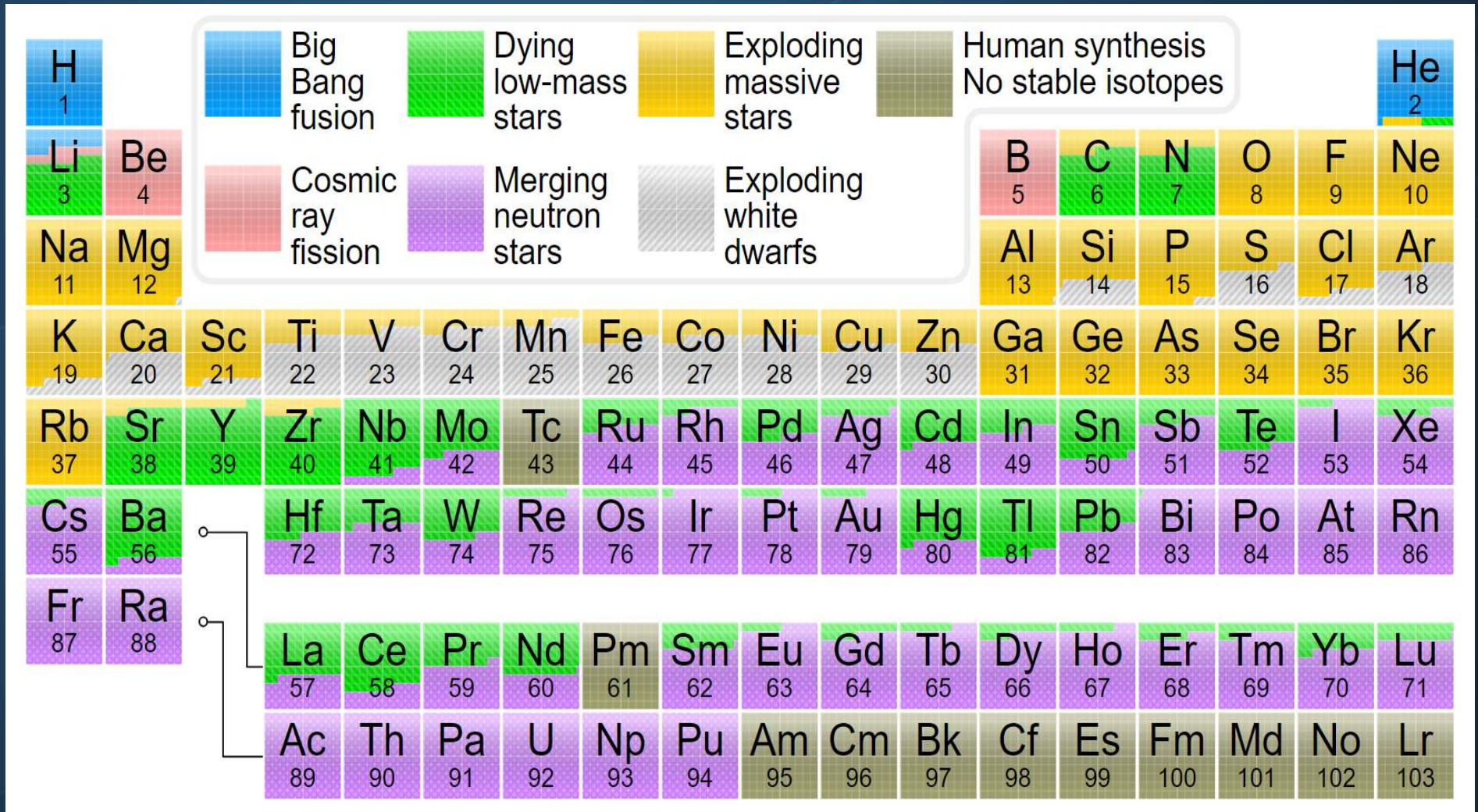


Table of Nuclides

48Ni	49Ni	50Ni	51Ni	52Ni	53Ni	54Ni	55Ni	56Ni	57Ni	58Ni	59Ni	60Ni	61Ni	62Ni	63Ni	64Ni
			50Co	51Co	52Co	53Co	54Co	55Co	56Co	57Co	58Co	59Co	60Co	61Co	62Co	63Co
46Fe	47Fe	48Fe	49Fe	50Fe	51Fe	52Fe	53Fe	54Fe	55Fe	56Fe	57Fe	58Fe	59Fe	60Fe	61Fe	62Fe
45Mn	46Mn	47Mn	48Mn	49Mn	50Mn	51Mn	52Mn	53Mn	54Mn	55Mn	56Mn	57Mn	58Mn	59Mn	60Mn	61Mn
44Cr	45Cr	46Cr	47Cr	48Cr	49Cr	50Cr	51Cr	52Cr	53Cr	54Cr	55Cr	56Cr	57Cr	58Cr	59Cr	60Cr
43V	44V	45V	46V	47V	48V	49V	50V	51V	52V	53V	54V	55V	56V	57V	58V	59V
42Ti	43Ti	44Ti	45Ti	46Ti	47Ti	48Ti	49Ti	50Ti	51Ti	52Ti	53Ti	54Ti	55Ti	56Ti	57Ti	58Ti
41Sc	42Sc	43Sc	44Sc	45Sc	46Sc	47Sc	48Sc	49Sc	50Sc	51Sc	52Sc	53Sc	54Sc	55Sc	56Sc	57Sc
40Ca	41Ca	42Ca	43Ca	44Ca	45Ca	46Ca	47Ca	48Ca	49Ca	50Ca	51Ca	52Ca	53Ca	54Ca	55Ca	56Ca

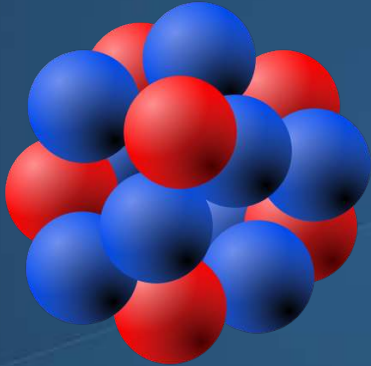
Isotopes and Decay Paths

How were the elements created?



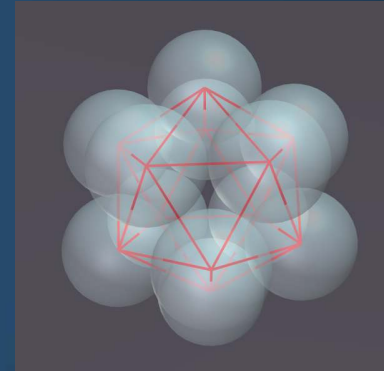
Is the Nucleus Structured?

Standard Model



- No known structure
- Understanding the nucleus requires advanced mathematics
- Nucleus is thought to be chaotic in nature.
- Requires 3 forces – electrostatic, strong and weak force.
- The neutron is a fundamental particle that decays into a proton and electron when removed from the nucleus.

Structured Atom Model - SAM



- Precise fixed structure that grows predictably and determines properties of the elements and the organization of the Periodic Table.
- Easy to understand, easy to visualize
- Requires one force for the atom – electrostatic
- The nuclear neutron is a shared electron between protons

Presentation content

- Introduction
- Key Principles of SAM
- The New Neutron
- The Structured Nucleus
- ICCF-21 – Cold Fusion – LENR
- Transmutation of Elements in Nature
 - Geological
 - Biological

Edo (Edwin) Kaal

The Atom Hacker

- Born August 3, 1972 – Apeldoorn Netherlands
- Lifelong fascination with the complexity of the Periodic table and the elements.
- 2006 – Major life events resulted in his questioning everything – family, the courts, banking, politics and Science.
- He realized science had not advanced significantly in the last 10 years.
- Consciously decided to discard what he had been taught about atoms, electrons, protons, chemistry, etc. Started looking only at what he KNEW as absolute fact.



How many ways can 2 spheres fit together?

Let's try 3?

What can nature teach me?

Early Explorations with Marbles

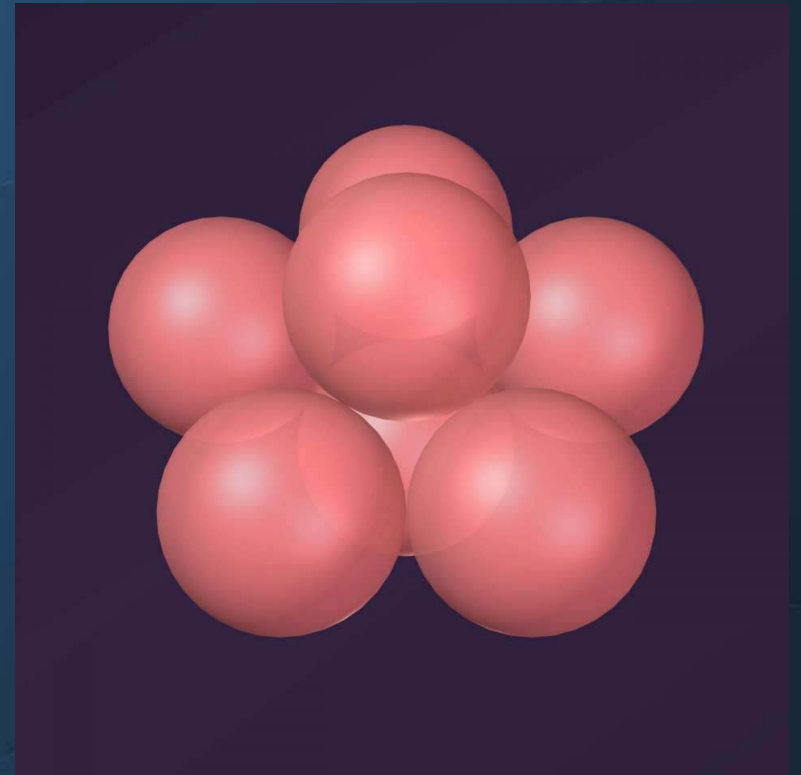


Magnets – the experts at dense packing



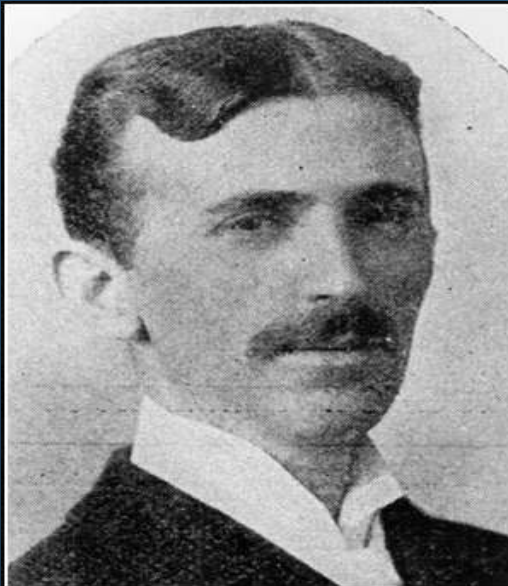
Eureka – We have Lithium!

- Structure: Pentagonal Bi-pyramid – can be thought of as a partial icosahedron
- 3rd element of periodic table
- First solid element
- Prefers Lithium-7 over Lithium-6



Key Principles

- Duality – the Proton and Electron.
- Dense packing – stability
- Platonic Solids - the tetrahedron and icosahedron.
- A static element has a static nucleus
- Must explain the Periodic Table of Elements and the properties of the elements



The idea of atomic energy is
illusionary but it has taken so
powerful a hold on the minds, that
although I have preached against it
for twenty-five years, there are still
some who believe it to be realizable.

— Nikola Tesla —

AZ QUOTES

Duality

Everything that we know, both physical and non-physical, is perceived by us because of its dual nature. One cannot exist without the other.

- Female & Male
- Hot & Cold
- Love & Hate
- Positive and Negative



The proton is positive, solid, and creates structure.

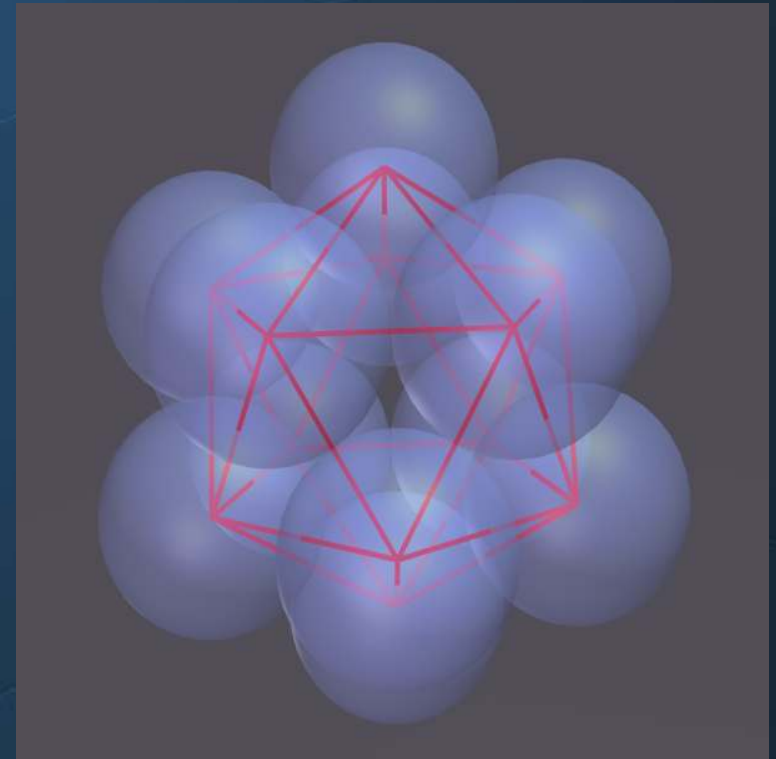
The electron is negative, more like a field or wave, and holds the structure together.

Spherical Dense Packing

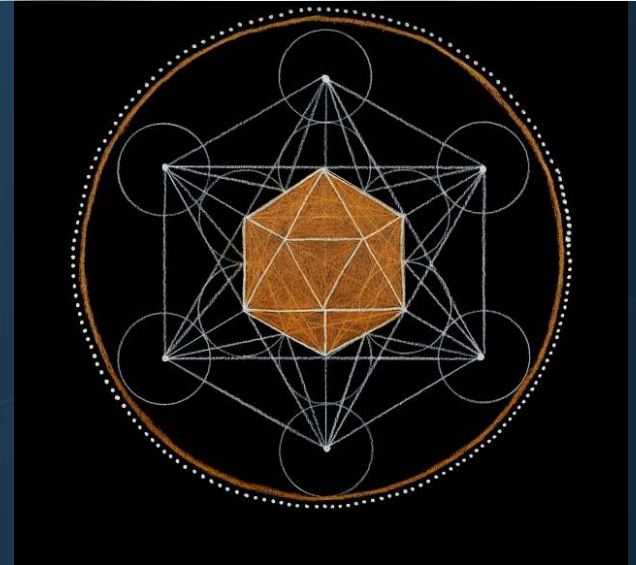


Discussions on dense packing focus on spheres stacked on a flat surface. The sides are triangles, however each layer is based on the square. This is not a strong arrangement.

SAM is based on spherical dense packing. All faces are triangular. The icosahedron is the largest possible structure that is spherically dense packed.



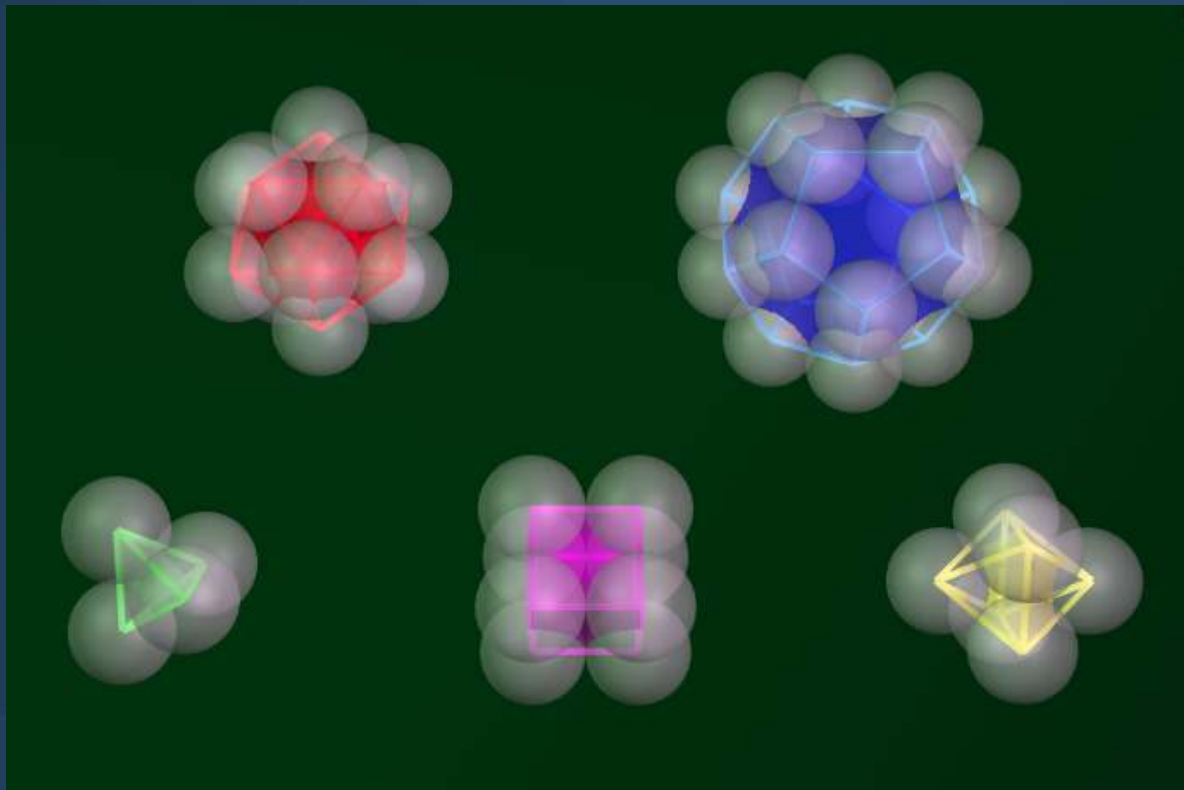
Mans fascination with the Platonic Solids



Platonic Solids

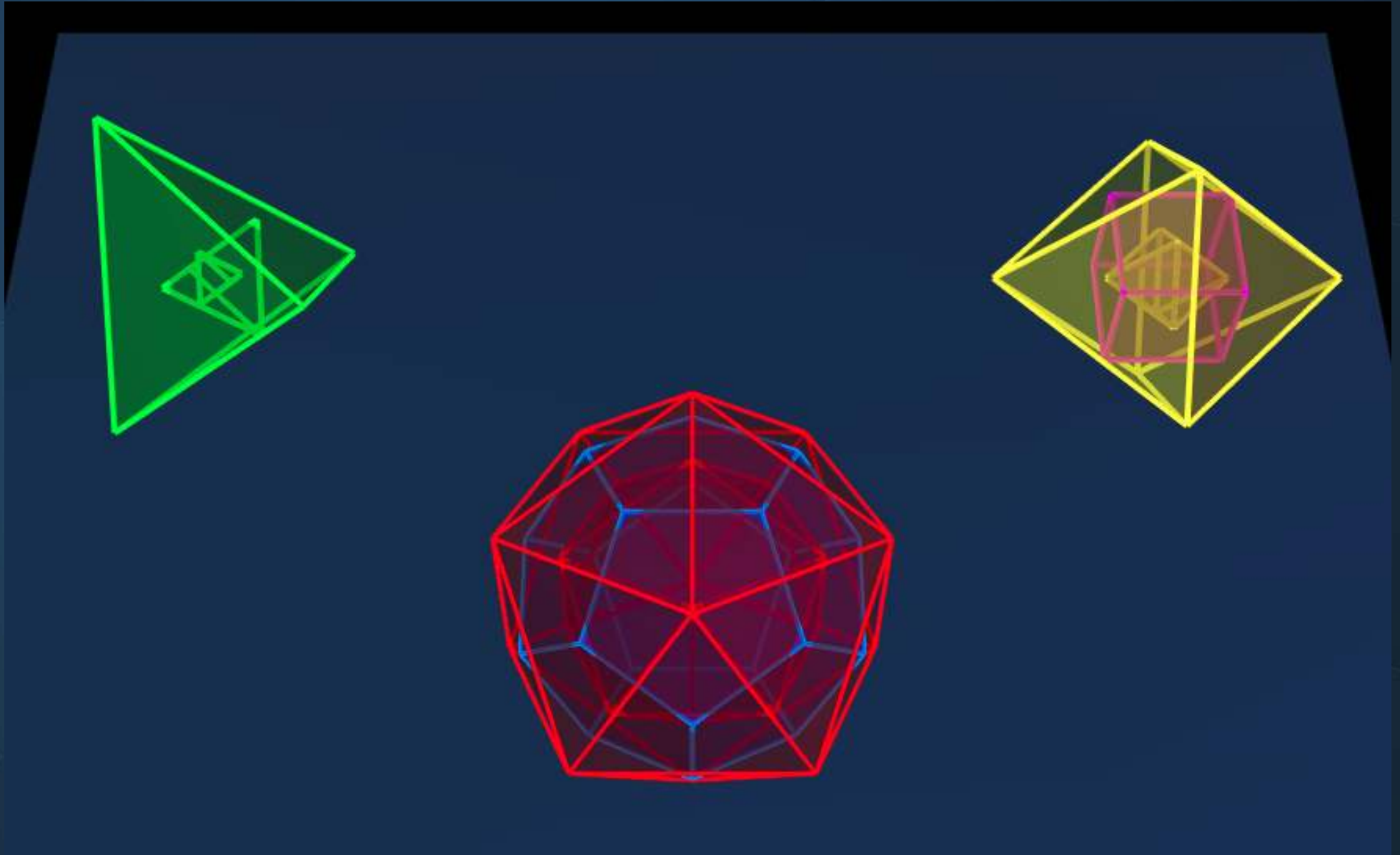
There are 5 platonic solids.

- All vertices lie on a sphere.
- All angles are equal.
- All faces are the same.
- All vertices are surrounded by the same number of faces.



	Vertices	Sides	Face Shape	Dual
Tetrahedron	4	4	Triangle	Itself
Hexahedron - Cube	8	6	Square	Each Other
Octahedron	6	8	Triangle	
Icosahedron	12	20	Triangle	Each Other
Dodecahedron	20	12	Pentagon	

Platonic Solid Duals



[Wikipedia](#)
[Properties](#)
[Orbitals](#)
[Isotopes](#)
[Compounds](#)
☒ Weight

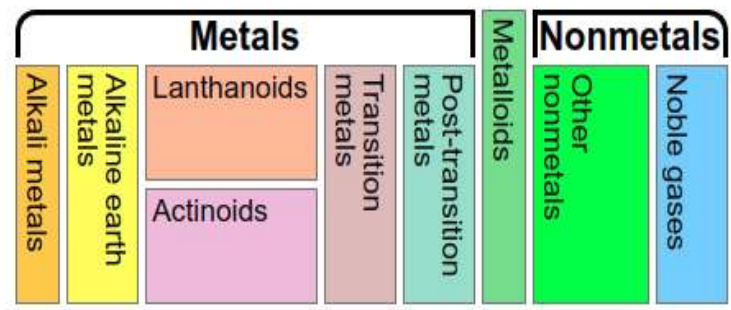
☒ Names

☐ Electrons

☐ Wide

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18								
																				Pnictogens		Chalcogens		Halogens			
		Atomic Sym Name Weight		[C] Solid		Metals										Metalloids		Nonmetals		273							
				[Hg] Liquid		Alkali metals		Alkaline earth metals		Lanthanoids		Transition metals		Post-transition metals		Other nonmetals		Noble gases									
				[H] Gas						Actinoids																	
				[Rf] Unknown																							
1	2	1 H Hydrogen 1.008	4 Be Beryllium 9.0122																	2 He Helium 4.0026							
2	3	3 Li Lithium 6.94	4 Be Beryllium 9.0122																	10 Ne Neon 20.180							
3	11	11 Na Sodium 22.990	12 Mg Magnesium 24.305																	18 Ar Argon 39.948							
4	19	19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.867	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.38	31 Ga Gallium 69.723	32 Ge Germanium 72.630	33 As Arsenic 74.922	34 Se Selenium 78.971	35 Br Bromine 79.904	36 Kr Krypton 83.798								
5	37	37 Rb Rubidium 85.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.95	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.60	53 I Iodine 126.90	54 Xe Xenon 131.29								
6	55	55 Cs Caesium 132.91	56 Ba Barium 137.33	57-71	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)								
7	87	87 Fr Francium (223)	88 Ra Radium (226)	89-103	104 Rf Rutherfordium (267)	105 Db Dubnium (268)	106 Sg Seaborgium (269)	107 Bh Bohrium (270)	108 Hs Hassium (277)	109 Mt Meitnerium (278)	110 Ds Darmstadtium (281)	111 Rg Roentgenium (282)	112 Cn Copernicium (285)	113 Nh Nihonium (286)	114 Fl Flerovium (289)	115 Mc Moscovium (290)	116 Lv Livermorium (293)	117 Ts Tennessine (294)	118 Og Oganesson (294)								

C Solid
Hg Liquid
H Gas
Rf Unknown



For elements with no stable isotopes, the mass number of the isotope with the longest half-life is in parentheses.

Periodic Table Design & Interface Copyright © 1997 [Michael Dayah](#). Ptable.com Last updated Jun 16, 2017

57 La Lanthanum 138.91	58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.05	71 Lu Lutetium 174.97
89 Ac Actinium (227)	90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (266)

June 2016 – Electric Universe Conference Phoenix, Az

- Edo presented publicly for first time in break-out room to 50 people.
- Afterward on EU Geology tour, James and Edo officially met while sitting together on the curb at the Grand Canyon Geology Museum.
- Together James and Edo have created software to build atoms according to SAM.
- Ethereal Matters website is place for people to discuss new and controversial subjects.



Chemistry and Physics 101

Particle Physics

Nuclear Physics

Chemistry

Quantum Mechanics

Structured Atom Model – SAM

Quantum Concepts

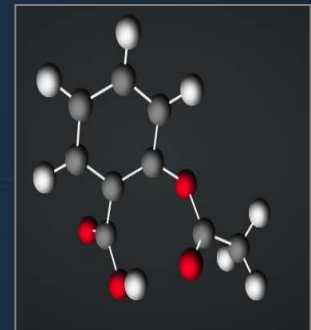
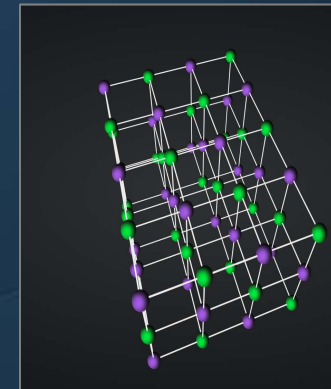
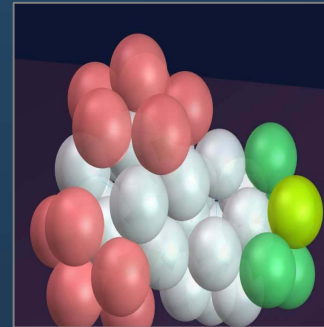
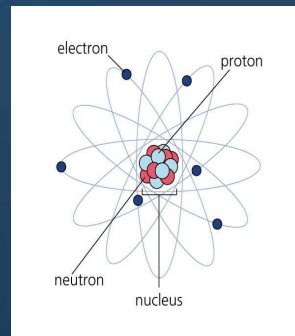
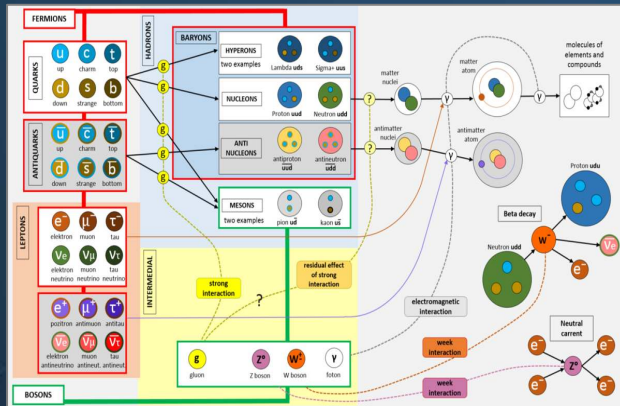
- Particles fading in and out of existence
- Over 200 particles identified
- Uncertainty Principle – cannot know both position and speed at the same time

Nuclear Reactions

- Exploding Stars
- Nuclear Power Plants
- Atom/Hydrogen Bomb
- Radioactive decay
- LENR Reactions

Chemical Reactions

- Burning Candle
- Photosynthesis
- Cooking an Egg
- Rusting Iron
- Fireworks



Key Principles of SAM

We have a duality – the proton-electron pair with the electrostatic force acting between them.

This force is the causal mechanism for the principle of densest packing that creates geometric shapes based on two of the platonic solids – the icosahedron and tetrahedron.

These geometric shapes combine together in a tree like fashion, in a specific ordered sequence and number.

This structure creates all the elements, their isotopes and it determines the properties of the Periodic Table.

Phenomena SAM Explains

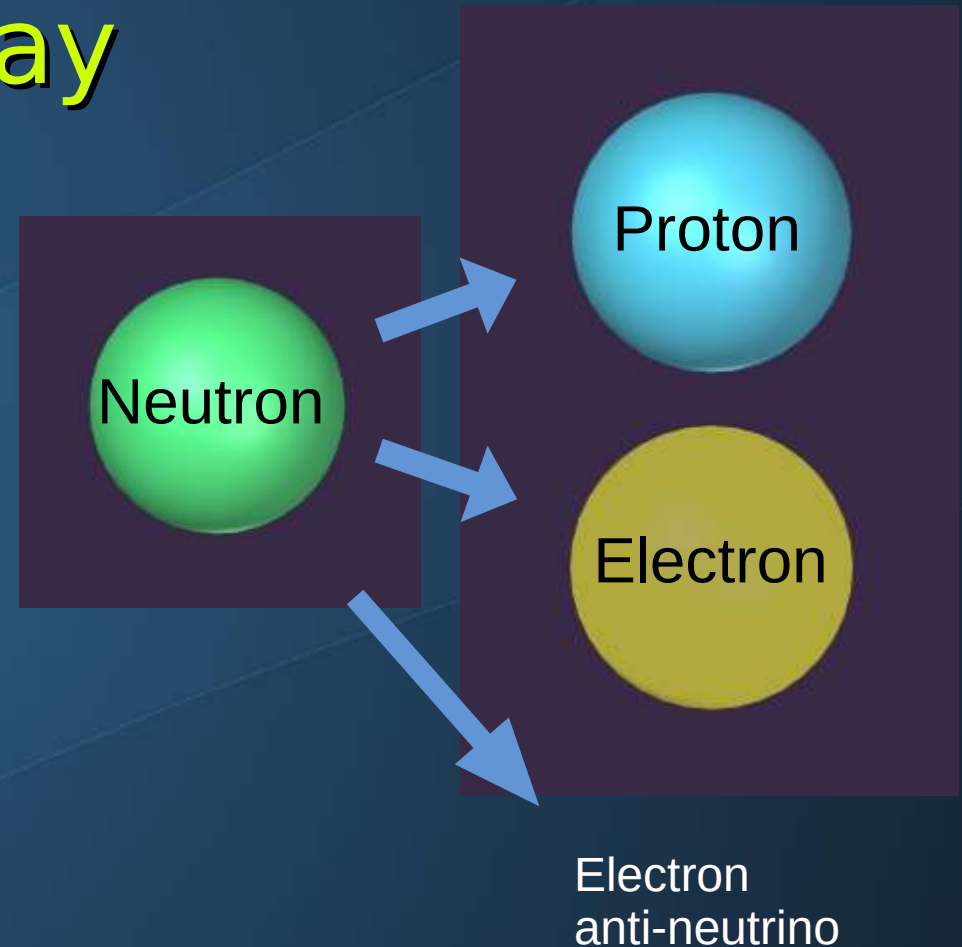
- Why do elements in the same column of the periodic table have similar properties?
- Why are the majority of the elements metals?
- Why are the noble gases inert?
- Why do elements and their isotopes have varying spin numbers?
- What is beta+, beta-, and free neutron decay?
- Why does valence follow the "Law of Octaves" -- 0, 1, 2, 3, 4/-4, -3, -2, -1, 0?
- What are isotopes and what makes them stable or not?
- Why do heavier elements have more 'neutrons' than 'protons'?
- Why are the very heavy elements unstable?
- Why are there no elements with 5 or 8 nucleons?
- Why does carbon dioxide behave similar to an inert gas?
- Why is carbon the darkest element, but carbon diamonds are transparent?
- Why is water a bi-polar molecule?

5 Pillars of Observations

1. Neutron / Proton ratio
2. Valence / Oxidation State
3. Isotopes & Stability
4. Nuclear Reactions
5. Binding Energy

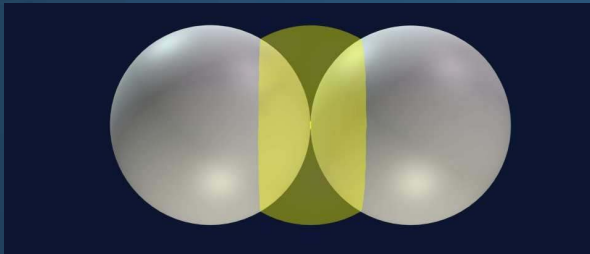
Free Neutron Decay

- A free neutron decays into a proton, electron and electron anti-neutrino within 15 minutes.
- A neutron is unstable outside the nucleus, it must be part of a nucleus to exist.
- SAM redefines the nuclear neutron to be a proton that shares it's electron with other protons in the nucleus.

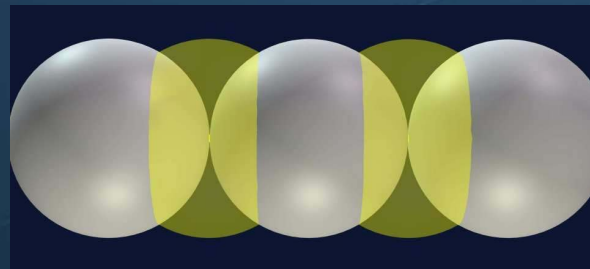


The New Neutron

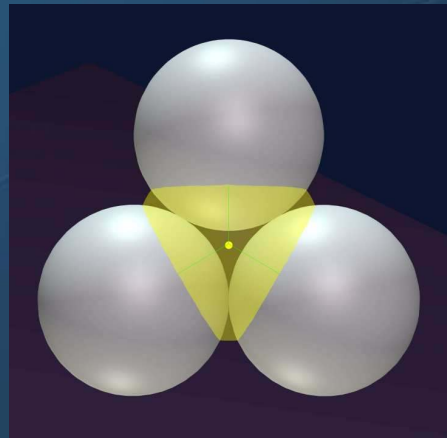
- A free neutron decays into a proton and electron within 15 minutes. A neutron is not stable by itself.
- SAM redefines the nuclear neutron to be a proton that shares it's electron with other protons in the nucleus.
- The nucleus is held together by the electrostatic force, there is no strong nuclear force.



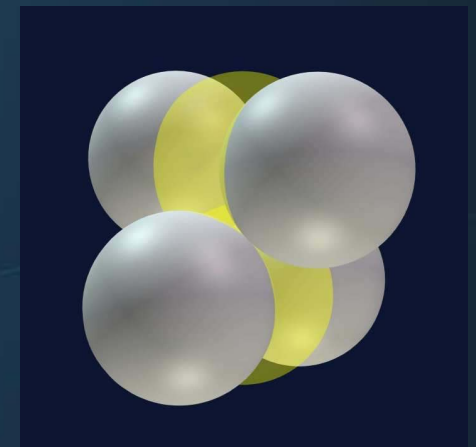
Hydrogen-2 – Deuterium



Hydrogen-3 – Tritium



Helium-3



Helium-4

Hydrogen and Helium

The First Two Elements



Hydrogen 1

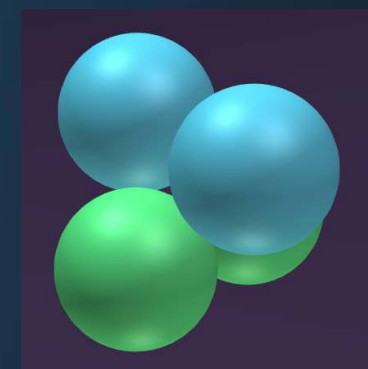
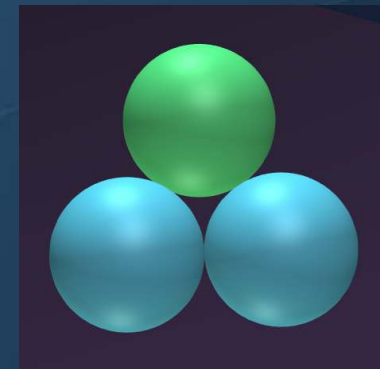
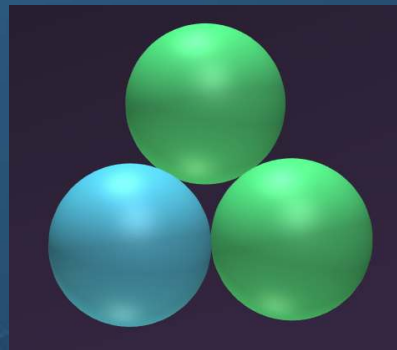
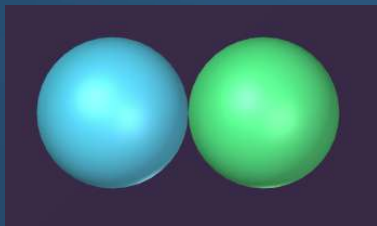
Hydrogen 2
Deuterium

Hydrogen 3
Tritium

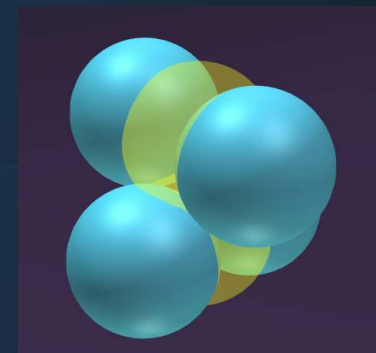
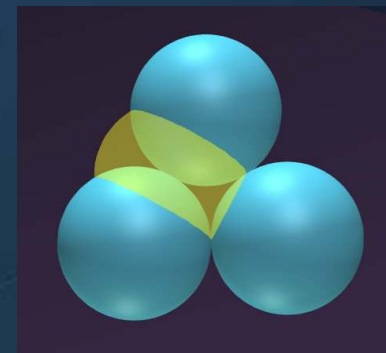
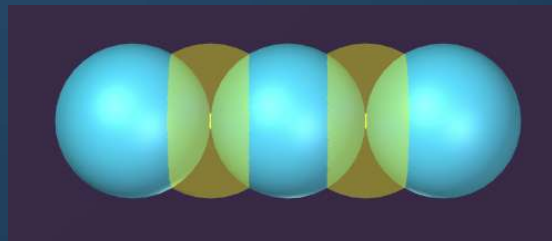
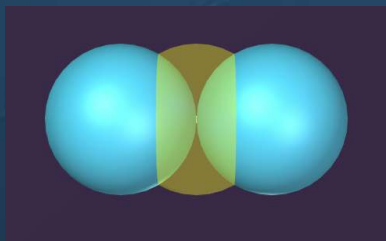
Helium 3

Helium 4
Alpha Particle

Standard
Model



Structured
Atom
Model



Decay Steps

Carl Johnson

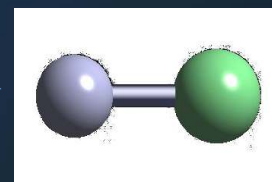
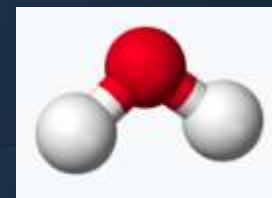
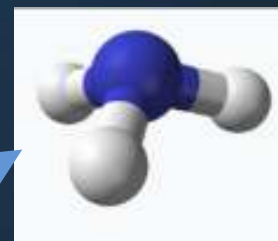
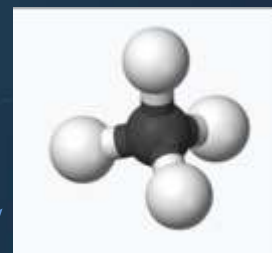
Support for the New Neutron

- Graduated 1967 physics degree University of Chicago
- Meticulously analyzed NIST data over period of 6+ years.
- Found there is no room for neutron binding energy.
- Weight of nucleus = protons + electrons + mass defect
- Papers:
 - Neutrinos do not exist
 - Nuclear Physics May be Fairly Simple
 - Nuclear Physics - Statistical Analysis of Isotope Masses

Valence

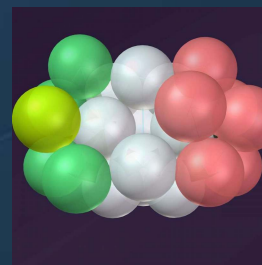
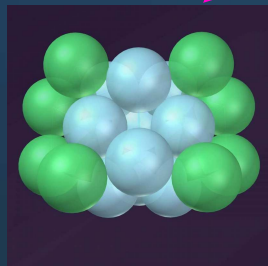
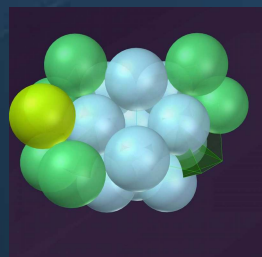
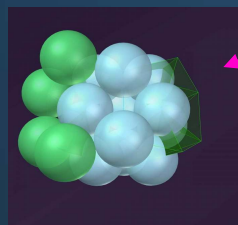
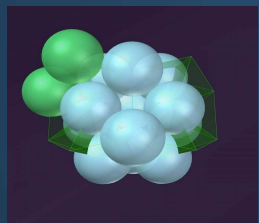
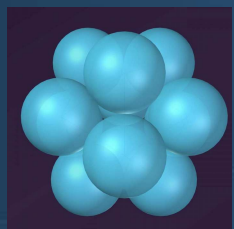
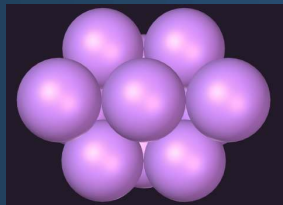
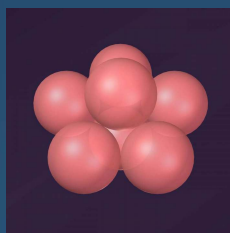
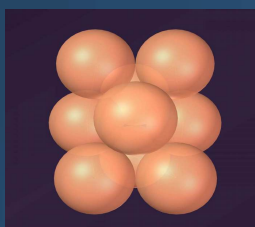
Valence (simplified) – The maximum number of hydrogen (or chlorine) atoms an element can combine with.

	Element Name	Valence	Symbol	Compound Name
3	Lithium	+1	LiH	Lithium Hydride
4	Beryllium	+2	BeH ₂	Beryllium Hydride
5	Boron	+3	BoH ₃	Boron Hydride
6	Carbon	+4/-4	CH ₄	Methane
7	Nitrogen	-3	NH ₃	Ammonia
8	Oxygen	-2	H ₂ O	Water
9	Flourine	-1	HF	Hydrogen Flouride
10	Neon	0	-----	-----



“Nuclelets” – Building Blocks of the Atom

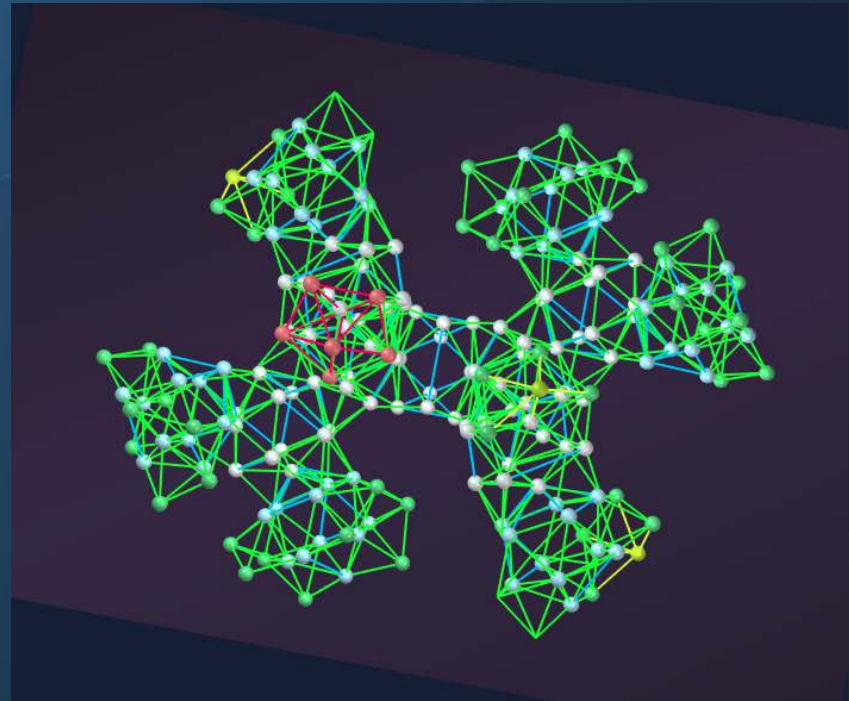
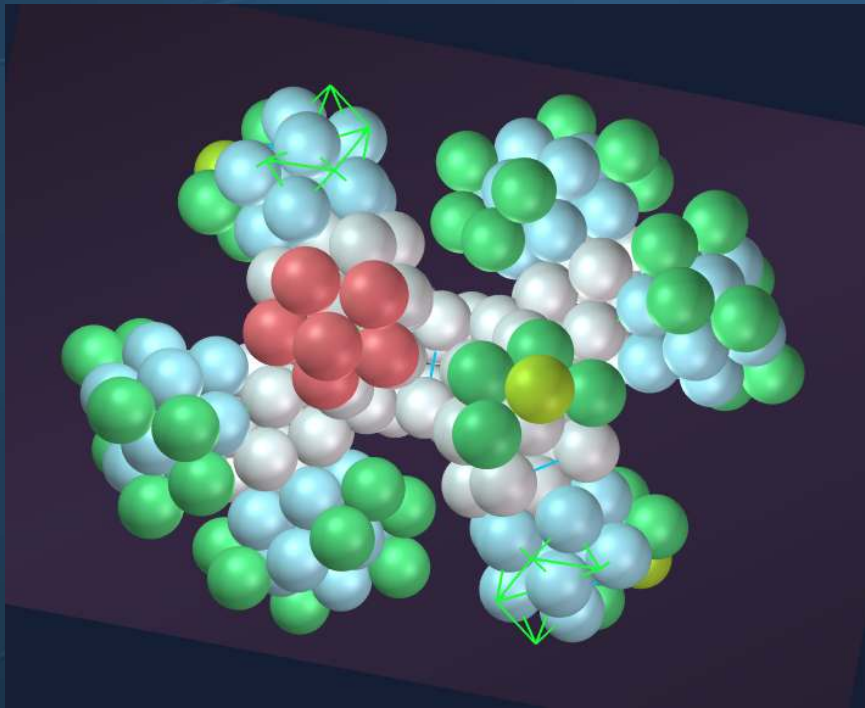
	# Protons	Valence
Growing Phase - Metals		
Lithium	7	+1
Beryllium	9	+2
Boron	11	+3
Carbon	12	+4/-4
Capping Phase - Non-Metals		
Nitrogen	14	-3
Oxygen	16	-2
Flourine	19	-1
Neutral Ending - Inert Gases		
Neon	20	0



- Sodium – alkali metal
- Starts 3rd row of PTE

The Shape of the Larger Elements

- The nucleus grows like a tree, splitting into branches as it gets larger.
- The center has 1 nuclet, this splits into 2 nuclets, which split into 4 nuclets and finally 8 nuclets. This completes the stable elements.



Gold?

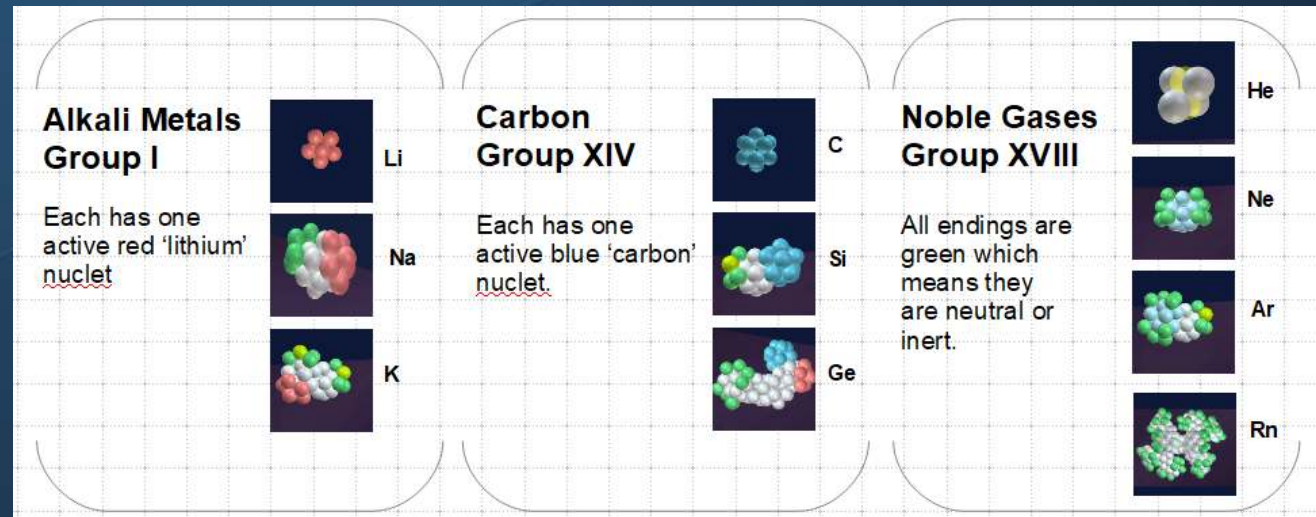
SAM Linked to the Properties of the Elements

Cycle of 8
The periods

+1 +2 +3 +4/-4 -3 -2 -1 0



Groups

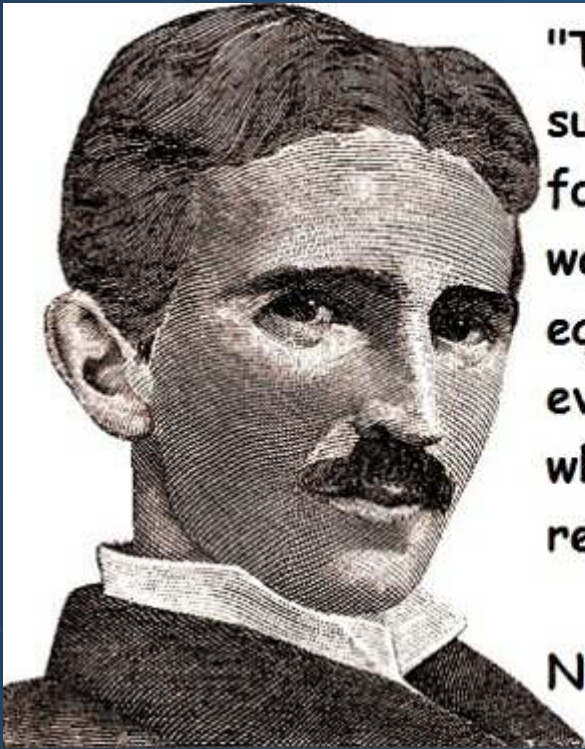


Periodic Table According to SAM

For more information and background visit the page
<https://etherealmatters.org/sam>

The Atom According to SAM:

- Is based on the proton – electron duality.
- The neutron is a proton/electron pair, electrons are shared inside the nucleus and hold it together electrostatically.
- There is no strong or weak force, only electricity.
- Does not need mathematical equations to depict the nucleus
- Is structured according to specific rules (of growth) and shapes
- Shows that the properties of the elements are dictated by the structure of the nucleus
- Is static in nature
- Tends to resist absorption of energy, reverting to its ground-state, if possible



"Today's scientists have substituted mathematics for experiments, and they wander off through equation after equation, and eventually build a structure which has no relation to reality."

Nikola Tesla

"But as to atomic energy, my experimental observations have shown that the process of disintegration is not accompanied by a liberation of such energy as might be expected from the present theories."

Nikola Tesla on atomic energy

The background of the slide is a black field with several bright, jagged white and blue lightning bolts striking across it. The bolts are of varying thickness and length, creating a dynamic and energetic visual effect.

Transmutations of Elements in Nature

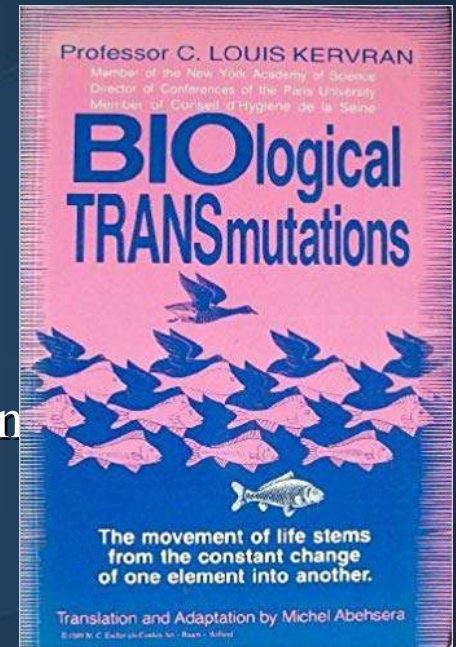
The Structured Atom Model TM - Ethereal
Matter LLC



Biological Transmutations

Corentin Louis Kervran

1901-1983



- Chickens transmute Potassium-39 to Calcium-40 to make egg shells.
- Desert workers transmute Sodium into Potassium to help cool themselves – an endothermic nuclear reaction.
- Seeds have different elements after they sprout.
- Animals transmute nitrogen into carbon and oxygen - carbohydrates or food.

Peter Mungo Jupp – Instant Fossilization

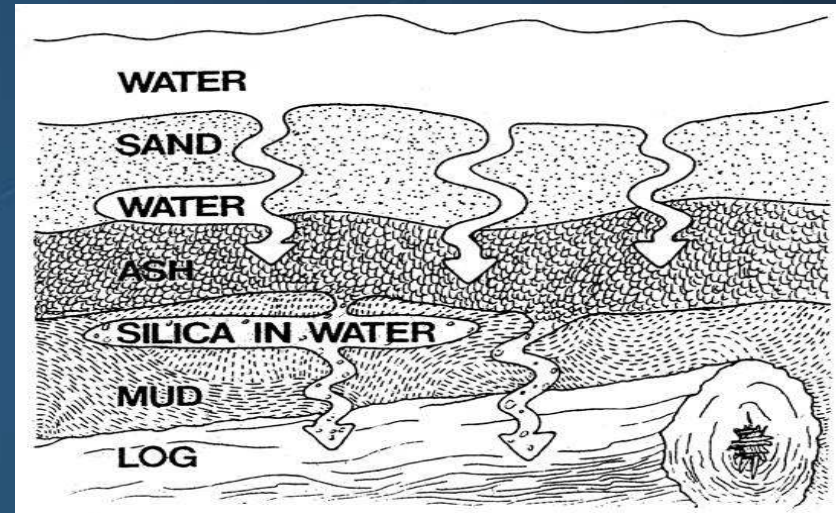
www.ancientdestructions.com



Instant Petrification



Petrified forest in
Yellowstone National park

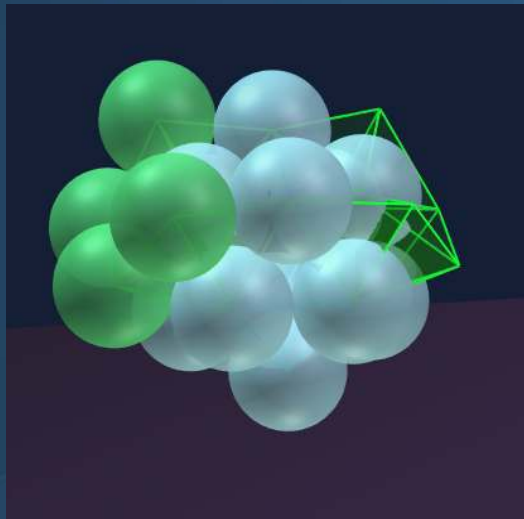


Power line induced petrification

- Reported by Eric Milton – Alberta Canada
- In rainstorm a power line falls on tree stump for 2 hours until the power is shut off.
- 5 years later they dig up the stumps and roots which contacted the broken power line were fossilized.

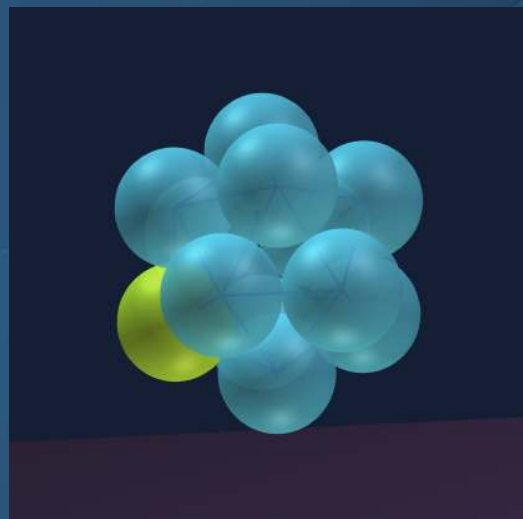
“The (root) piece was pure clear silica inside, it was coated with a rougher opaque crust of partially fused sand.”

Transmuting Oxygen and Carbon into Silicon



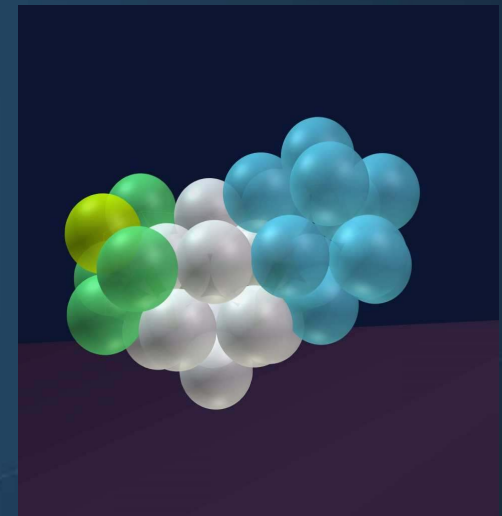
Oxygen-16

+



Carbon-12

=



Silicon-28

When combined the nucleons share one proton. It is thought that the yellow-green proton shown on the carbon is moved over to the neutral ending of the oxygen.

The inner electron count (neutrons) remains the same therefore no radiation is produced.

Conclusions

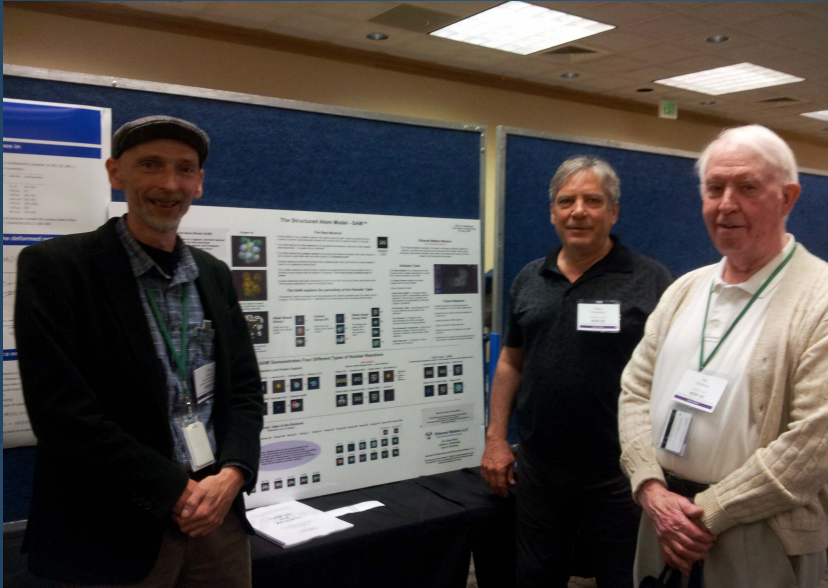
- In Nature, transmutations are happening everywhere, we just haven't been looking for it.
- These reactions can be both endothermic and exothermic.
- What we are missing is an **understanding**, this will bring both predictability and controllability.
- A new understanding opens the doors for exciting new research, I believe we are on the verge of creating a new physics.

The SAM model can help us fill in this missing piece of the puzzle.

With an understanding of the nucleus we will be able to generate cheap energy, create the elements needed for agriculture, clean up radio-active waste, and propel ourselves to the stars.

The internet provides a place for users from all over the world to collaborate. People are hungry for the truth, through the internet we can bring about a New Science.

Thank You on Behalf of the Ethereal Matters Team



Edo Kaal
James Sorensen
Jan Emming

With special thanks to!

Steven Elswick

For more information and
background visit the page
<https://etherealmatters.org/sam>

And a special thanks to all that
have helped in their own way
to advance the model