The Proton-Electron Atom

A Proposal for a Structured Atomic Model (SAM)

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"We are all agreed that your theory is crazy. The question which divides us, is whether it is crazy enough to have a chance of being correct."



Presentation Overview

I. Current Understanding of the Atom

II. A proposal for a structured atom model (SAM)

III. Implications of the New Model

IV. Conclusion

V. Animation of Atom Builder Application



JEWLANDS LAW OF OCTAVES

- John Newlands described a Law of Octaves, noting their periodicity according to relative atomic weight in 1864, publishing it in 1865. His proposal identified the potential for new elements such as germanium.
- The concept was criticized and his innovation was not recognized by the Society of Chemists until 1887.



6



Mendeleev wrote the definitive textbook of his time:

Principles of Chemistry (two volumes, 1868–1870)

Classified elements according to their chemical properties

Noticed patterns that led to his periodic table

Periodic Table of the Elements According To Mendeleev (1897)



Discovery of the Electron

- ✓ "Plum Pudding Model" by J.J. Thomson
- ✓ Performed experiments with cathode ray tubes
- ✓ Discovery of electrons also meant atoms are no longer indivisible
- Named "electrons", they proved to be identical to particles from photoelectric and radioactive materials





Classical Model of the Nucleus

Bohr Atomic Model of a Nitrogen Atom

- ✓ Two types of nucleons:
- ✓ Protons and Neutrons
- ✓ Undeterministic nature
- ✓ Postulated "strong force"



Periodic Table of the Elements

What makes an element an element ? The number of outside electrons, per definition!

1	1 1 H Hystopen 1.00/04	Atomic # Symbol Name Atomic Nass	С	Solid			Metals Nonmetals								2 * He Helinn + 002502	15			
2	3 7 LL 1.45 am 0.91	4 1 Be Limpterm 5.012182	Hç H	Liquid Gas		Alkali me	Alkaline earth me	Lanthanoid	metals	Paor me	Other	Noble ga	5 5 B 10 811	6 ‡ C 12 0107	<pre>/ 3 N tetroper / 0007</pre>	8 ĝ	9 ₹ F 18.0000	10 है Ne Nenn 20.1797	N.L.
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4	1H 2 K 1 Potacorum 39,0663	20 Ca 4	Sc Scondum	22 5 Ti 5 1000000	2/3 2 V 12 Vanadium 60 9110	24 Cr Chromum 61,9601	Min Min Mangorese 61.885016	Fe 12	Co Co Uesal: 55.853.895	28 Ni Ni 56.5631	Cu Cu Cospor 53.545	30) 30 Zn 30	31 * Ga * vallem ce 723	32 3 Ge 4 Gemanum 72 64	333 5 As * Assmo 7* 90160	34 3 Se 4 Vicienum 75.46	Br State	Kr s	ZSrW
5	Bucklum 85.4078	38 Sr Stontum 87.02	39 Y 5	10 30 Zr 30 91.224	11 Statement	42 to the second	13 Tc Toolsectum (97.9072)	41 Ru Bathenium	45 Rh Bhotlum 102 90250	10 Polladium 100 42	Ag	18 Cd Codmium 112.411	19 ************************************	50 50 Sn 1 116,710	51 5 Sb /ectempery 121,700	52 9 Te 9 Telutum 127.00	63 4 ledino 120.50447	C1 3 Xe 3 Xonon 191,295	C.25-9
6	th 28 CS 15 Usesum 1 132 805*016	6H 8 Ba 16 Lienum 2 137.327	57-71	72 1 4 Hf 42 Nationam 178.46	73 3 Ta 4 sttalum 190.91785	/4 2 W 40 ungsten 2 183.81	/h Re Hervan 186.207	7/6 1 05 6 Camum 1 190.23	// 1 In 19 182 217	78 Pt 5 Habnum 1 195 051	Au Stores	BII 1	81 5 TI 42 16alium 5 391.3835	82 and a start of the start of	83 and a second	8/1 a Po a 1000000 b 1208.98210	85 8 At 8 Astatione 7 (209.8871)	HH 53 Rn 53 Haden 53 1232 01769	NOZELM
7	87 2 30 Fr 10 (223)	88 **** Ra *** Hodum **	89–103	104 Rf 57 Hatenstan 79	105 34 Db 34 Dubnum 1; (252)	106 Sg # Scotogum 19	107 Bh Botmum (264)	108 Hs 5 Haboum 19	109 Mt St Netronum	110 DS S Domototium 14 (270	111 Rg Hantonen	112 Uub Ununbum (285)	113 Uut Unit 3 (284)	114 Uuq (259)	115 Uup (258)	116 3 Uuh 5 (252) 2	117 Uus Unitopum	118 3 Uuo 5 Ununoctum 7 (294)	6.80.25 r.S

Plable

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

		Design and Interface Copyright (i) 1997 Michael Dayah (michael@dayah.com), http://www.ptable.com/													
57 L	7	58 8 Ce 18 Cwillian 140 150	59 \$ Pr 35 Francolymian 140 53705	60 8 Nd 11 Nexdynakars 144 740	61 is Proceeditions (145)	62 Sm Semackers 100 30	63 Eu	64 Gd	65 5 Tb	66 8 Dy Dy 2500	67 B Ho Holmions Sind States	68 8 Er 35 Erbierr 197 275	69 3 Tm 34	70 8 Yb 19 YileLb = 173.054	71 8 Lu 21 Lute Jami 174 5008
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Understanding the Standard Model Requires Us to Believe These Things:

- A Strong Force: Protons "stuck together"
- ✓ Electrons "mysteriously" stay at a certain distance from the nucleus
- The existence of four "fundamental forces" that are not unified
- The neutron is a fundamental particle, but it decays to (p + e)
- ✓ There is no real agreement on anything, and if professors in QM cannot agree among themselves, how can we understand anything they present?
- Scientists should not have to believe certain things in order to do science!

13		THINK.		WHAT ATTRIBUTES Should an atom Model have?	
	✓ Shows a logic	cal construction of th	e atom i	n accordance with ob	servations
	✓ Explains why around it	the atom has a posit	ive nucl	eus with negative ele	ctrons
	✓ Explains why	the electrons do not	fall into	the positive nucleus	
	✓ Explains in a	logical manner how o	chemistr	y arises	
	\checkmark Explains the p	periodicity of the PTE	E		
	✓ Open Questio	on: Why do electrons	and pro	tons not annihilate ea	ch other?



II. A Proposal for a Structured Atom Model

Major Postulations:

- There are only two fundamental"particles":
- ✓ Proton and Electron, are a duality, or opposites
- ✓ Yet, they do not annihilate each other

Attribute	Proton	Electron
Mass	Heavy	Light
Size	Large	Small
Charge	Positive	Negative
Charge	Positive	Negative

II. A Proposal for a Structured Atom Model More Postulations:

- ✓ There is only one fundamental force: the electrostatic attraction force
- The atom must have a definitive organization which is responsible for all attributes of a particular element
- The neutron is not a fundamental particle, but is redefined as a connection between a nuclear electron and its neighboring protons
- ✓ A stable element has a stable nucleus, i.e. no movement, without cause, in the structure of the nucleus
- ✓ A sphere (proton) must always be part of one of the 3 identified geometrical structures, namely the tetrahedron, the pentagonal bi-pyramid, or the icosahedron
- The inner structure of the atom (nucleus) dictates the outer electron structure (orbitals)

The "New" Neutron

- Plus and minus combine to neutral status
- Field of connection of the proton and electron
- Connection on both sides yields "outer electron state"
- Connection on one side only yields the neutron state (inner electron)
- ✓ No "external" field: no interaction, hence neutral character of the neutron
- ✓ Inner electron leaves no room for another electron
- ✓ The latter relocates at some distance from the nucleus: goes "orbital"



"Free" Neutron is unstable; decays to H in 15 minutes Neutron (= connection) Inner electron connected to 2 protons



He3 - Resting Position of Inner Electron



He3 - One "Neutron"

Paper by Carl Johnson Statistical Analysis of Isotope Masses

Analysis of the measured masses of all known atomic isotopes contained in the NIST data base, done from 1996 to 2003 (published privately at: http://mb-soft.com/public2/nuclei6.html)

Major conclusions of this paper:

Neutrons do not exist inside atomic nuclei as distinct particles

The only fundamental particles are the electron and the proton

The accurate accounting (AMU accuracy to 10 decimal places) of mass and energy of all known isotopes leaves no room for the 0.7 MeV binding energy of any neutrons

Provides precise predictions of mass, lifetime before decay, modes of decay and the energy released by that decay

Data plots point to isotopes which have not yet been discovered



REMEMBER THE Platonic Solids?

Every Wonder! Why is geometry apparent in the study of mathematics, music, cosmology, and ALL the life sciences. Moon Model - A nested System







Left to right: hydrogen, deuterium, helium3, helium4, lithium and carbon.

GEOMETRIC STRUCTURE

These geometric nuclets are repeating inside the nucleus





Research in Progress





Integrated Geometry of the Atomic Nucleus

Magnesium: 3 Geometric Shapes





The Noble Gas Configuration





Main Structure of the Nucleus







Recurring Geometric Shapes in the Periodic Table Carbon Group

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	1	Atomic													Pnictogens	Chalcogens	Halogens	2
1	H Hydrogen	Sym Name	С	Solid		\square	Ν	letals		Met	Nonme	etals					273	He Helium
- 22	1.008 3	Weight	Hg	Liquid		Alka	<u></u> ≜ Lant	hanoids	Tran	Post	Othe	Nop	5	6		8	9	4.0026 10
2	Lithium	Beryllium	H	Gas		li me	line e		sition	-tran	r netal	e ga	B Boron	C Carbon	litrogen	O Oxygen	Fluorine	Neon
2	0.94 11 No	12 Ma	Df	Unkno		tals	Actin	noias		sition	S	ses	13	14 Si	5	16 C	17	18 A r
3	Sodium 22.990	Magnesium 24.305	KI	UTIKITU	VVII								Aluminium 26.982	Silicon 28.085	hosphorus 0.974	Sulfur 32.06	Chlorine 35.45	Argon 39.948
1	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	3 As	34 Se	35 Br	36 Kr
	Potassium 39.098	Calcium 40.078	Scandium 44.956	Titanium 47.867	Vanadium 50.942	Chromium 51.996	Manganese 54.938	Iron 55.845	Cobalt 58.933	Nickel 58.693	Copper 63.546	Zinc 65.38	Gallium 69.723	Germanium 72.630	rsenic 4.922	Selenium 78.971	Bromine 79.904	Krypton 83.798
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	Ru	⁴⁵ Rh	46 Pd	⁴⁷ Ag	48 Cd	49 In	Sn	51 Sb	52 Te	53 	54 Xe
Ŭ	Rubidium 85.468	Strontium 87.62	Yttrium 88.906	Zirconium 91.224	Niobium 92.906	Molybdenur 95.95	Technetium (98)	Ruthenium 101.07	Rhodium 102.91	Palladium 106.42	Silver 107.87	Cadmium 112.41	Indium 114.82	Tin 118.71	Antimony 121.76	Tellurium 127.60	lodine 126.90	Xenon 131.29
6	55 Cs	56 Ba	57_71	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Ha	81 TI	82 Pb	83 Bi	84 Po	85 At	⁸⁶ Rn
0	Caesium 132.91	Barium 137.33	57-71	Hafnium 178.49	Tantalum 180.95	Tungsten 183.84	Rhenium 186.21	Osmium 190.23	Iridium 192.22	Platinum 195.08	Gold 196.97	Mercury 200.59	Thallium 204.38	Lead 207.2	Bismuth 208.98	Polonium (209)	Astatine (210)	Radon (222)
7	87 Fr	88 Ra	89-103	104 Rf	105 Db	106 Sa	107 Bh	108 HS	109 Mt	110 DS	111 Ra	112 Cn	113 Nh	114 FI	115 MC	116 L V	117 Ts	118 Og
1	Francium (223)	Radium (226)	03-103	Rutherfordiu (267)	Dubnium (268)	Seaborgium (269)	Bohrium (270)	Hassium (277)	Meitnerium (278)	Darmstadtiu (281)	Roentgeniur (282)	Coperniciun (285)	Nihonium (286)	Flerovium (289)	Moscovium (290)	Livermorium (293)	Tennessine (294)	Oganesson (294)

Recurring Geometric Shapes in the Periodic Table: Carbon group



Recurring Geometric Shapes in the Periodic Table Alkali Metal Group

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 Pnictogens	16 Chalcogens	17 Halogens	18
1 H	vdrogen	Atomic Sym Name Weight	С	Solid			N N		2 -1 =	Meta	Nonme	etals				[273	2 He Helium 4 0026
	.i thium	Be eryllium	Hg	Liquid		lietais Jkali me	lkaline	manoius	ransitio	lloids ost-tran)ther onmeta	loble ga	5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Neon
6.9 11 11 N	94 9 1 1a	0122 2 Ag lagnesium	Rf	Unkno	wn	stals	earth Acti	noids	5	sition	<u></u>	ises	10.81 13 Aluminium	12.011 14 Silicon	14.007 15 Phosphorus	15.999 16 S Sulfur	18.998 17 Cl Chlorine	20.180 18 Ar Argon
22 19 K	2.990 9 Dtassium	4.305 0 2 a alcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	26.982 31 Ga Gallium	28.085 32 Gemanium	30.974 33 As Arsenic	32.06 34 Se Selenium	35.45 35 Br Bromine	39.948 36 Kr Krypton
39 5 R	8.098 Rb	0.078 8 Sr	44.956 39 Y	47.867 40 Zr	50.942 41 Nb	51.996 42 Mo	54.938 43 TC	55.845 44 Ru	58.933 45 Rh	58.693 46 Pd	63.546 47 Ag	65.38 48 Cd	69.723 49 In	72.630 50 Sn	74.922 51 Sb	78.971 52 Te	79.904 53 	83.798 54 Xe
85 55	5.468	Strontium 87.62 56	906 x	2irconium 91.224 72	92.906 73	Molybdenur 95.95 74	(98) 75	Ruthenium 101.07 76	Rhodium 102.91 77	Palladium 106.42 78	500 Silver 107.87 79	Cadmium 112.41 80	114.82 81	118.71 82 Db	Antimony 121.76 83	127.60 84	126.90 85	Xenon 131.29 86
Ca 13 87	aesium 32.91 7	Da Barium 137.33 88	57–71	Hafnium 178.49 104	Tantalum 180.95 105	Tungsten 183.84 106	Rhenium 186.21 107	Osmium 190.23 108	Iridium 192.22 109	Platinum 195.08 110	Gold 196.97 111	Mercury 200.59 112	Thallium 204.38 113	Lead 207.2 114	Bismuth 208.98 115	Polonium (209) 116	Astatine (210) 117	Radon (222) 118
	ancium	Ra Radium	89–103	Rf Rutherfordiu	Dubnium	Seaborgium	Bh Bohrium	Hs Hassium	Mt Meitnerium	Ds Darmstadtiu	Roentgeniur	Cn Copernicium	Nh Nihonium	FI Flerovium	Mc Moscovium	Lv Livermorium	Ts Tennessine	Oganesso

Recurring Geometric Shapes in the Periodic Table – Alkali metal group



Recurring Geometric Shapes in the Periodic Table Noble Gas Group

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 Pnictogens	16 Chalcogens	17 Halogens	18
1	1 H Hydrogen	Atomic Sym Name Weight	С	Solid			N	letals		Meta	Nonme	etals					273	2 He Helium
2	3 Li	4 Be Beryllium	Нg	Liquid		Alkali me	Alkaline	nanoios	ransitior netals	illoids ^p ost-tran	Other	Voble ga	5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
3	6.94 11 Na Sodium	9.0122 12 Mg Magnesium	Rf	Unkno	wn	tals	Acti	noids		sition	<u>o</u>	ses	10.81 13 Aluminium	12.011 14 Silicon	14.007 15 Phosphorus	15.999 16 S Sulfur	18.998 17 CI Chlorine	18 Ar Argon
4	22.990 19 K Potassium	24.305 20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chromium	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	26.982 31 Ga Gallium	32 Gemanium	30.974 33 As Arsenic	32.06 34 Se Selenium	35.45 35 Br Bromine	39.948 36 Kr Krypton
5	39.098 37 Rb	40.078 38 Sr	44.956 39 Y	47.867 40 Zr	50.942 41 Nb	51.996 42 Mo	54.938 43 Tc	55.845 44 Ru	58.933 45 Rh Bhodium	58.693 46 Pd Palladium	63.546 47 Ag	65.38 48 Cd	69.723 49 In	72.630 50 Sn	74.922 51 Sb	78.971 52 Te	79.904 53	83.798 54 Xe
6	85.468 55 CS	87.62 56 Ba	88.906 57-71	91.224 72 Hf	92.906 73 Ta	95.95 74 W	(98) 75 Re	101.07 76 OS	102.91 77 Ir	106.42 78 Pt	107.87 79 Au	112.41 80 Hg	114.82 81 TI	118.71 82 Pb	121.76 83 Bi	127.60 84 Po	126.90 85 At	131.29 86 Rn
7	Caesium 132.91 87 Er	Barium 137.33 88 P 2	00, 400	Hafnium 178.49 104 Df	Tantalum 180.95 105	Tungsten 183.84 106	Rhenium 186.21 107 Bb	Osmium 190.23 108	Iridium 192.22 109	Platinum 195.08 110	Gold 196.97 111 P C	Mercury 200.59 112	Thallium 204.38 113	Lead 207.2 114	Bismuth 208.98 115	Polonium (209) 116	Astatine (210) 117	Radon (222) 118
1	Francium (223)	Radium (226)	89–103	Rutherfordiu (267)	Dubnium (268)	Seaborgium (269)	Bohrium (270)	Hassium (277)	Meitnerium (278)	Damstadtiu (281)	Roentgeniur (282)	Copernicium (285)	Nihonium (286)	Flerovium (289)	Moscovium (290)	Livermorium (293)	Tennessine (294)	Oganesson (294)







SAM Atom Builder Current Status

- ✓ Focus on structure
- ✓ Creation of a PTE
- ✓ 40% of elements created
- ✓ Leaving the other 60% to be done
- ✓ Undisovered elements
- Progression of the elements



The Atom Builder – Structuredatom.org

Atom Builder

Help text - can

Focus on creating the elements automatically

Creation of a Periodic Table according to the model

Future Atom builder with Inner electron behavior

Molecule builder

Vew Edit Outly	ne Delete	Revisions	Devel	
⊙≣0⊗k√Xm	p or something.			
Atom Attributes				
Nuclets 5 Protons 87				
Atom Information				
Nickel			0.50	
Earart: Notel				
# Protons: 50 # Inner electrons: 30				
# Outer electrons: 28				
Stability: Preferred Ulthium nuclet and Thoras 10				
nucleit resulting in a +1 and a +2				
ending totalling +3 as a normal valence state.				
Looks a lot like iron and pobalt				
indeed All three are showing magnetic properties.				
Note: Lithium ring does not show.				

Select Atom					
240 P		Voietie		240	
Kalun		Statie		-39	
maximum configuration "stable" element		Unstable		226	
oops element		Voiatile			
Backbore Initial					
Missing +1 element after N E 50		Preferred		53	
mesong noble gas 2 (66)		Impossible		85	
Phosphor		Preferred		31	
Hydrogen 2	1	Stable	01 Lithium	2	
Hydrogen 3	1	Suble	01 Lithium	3	
Hydrogen 1	1	Suble	(1)Utum	1	
Nation 4	2	Preferred	18 Neon	4	
Lithium 6	3	Sable	01 Lithium	6	
Lithium 7	3	Preferred	01 Lithium	T	
Benjfiun 9	4	Preferred	02 Berylliam	.9	
Boron 11	5	Preferred	13 Boran	11	

Summary of the New Atomic Model

- ✓ We have defined a duality: the proton-electron pair
- ✓ Operating between proton and electron is the electrostatic force
- This force is the causal factor for the principle of densest packing that creates geometric shapes
- These geometric shapes in a specific order and number are able to create all elements in the PTE
- The model shows the observed nature and properties of the atom such as:
 - The reason why the nucleus is positively charged
 - Explains why the outer electrons stay at a distance from the nucleus
 - Shows the causal factor for chemistry
- ✓ There are many more implications and consequences of SAM

Potential Implications

Plasma Physics, Astrophysics and Cosmology;

Better understanding of the nuclear structure;

Better Understanding of chemistry;

Nuclear Fission & Fusion Nanotechnology (even smaller?) Radiometric dating

Transmutations and

New elements?





Thank You...

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James Sorensen – Atom builder & Website

Jean Haffner – EU Support

Jan Emming – Text Editing

Karen Elkins – Graphic Presentation & Feedback

Edwin Kaal

IV. Animation of Atom Builder Application

The imagery showing the atomic nuclei were provided by the Atom builder, Ethereal Matters LLC

