The Chemistry of God

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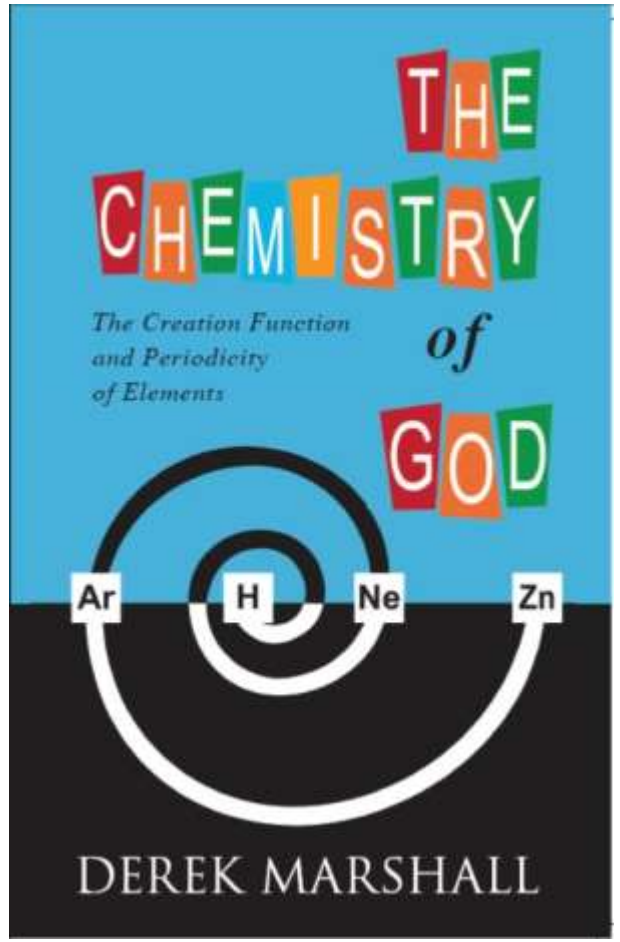
Who is Derek?

- Graduated from Evergreen Baptist Academy in Kalkaska, MI. K-12 approximately 70 students
- Honorably served in USMC six years active duty
- Graduate of Michigan State University with a Bachelors Degree in Physics.
- Co-Inventor three U.S. Patents with MSU dealing with biomass conversion and densification into value-added products such as ethanol, animal feed, renewable building materials.
- Currently Electrical Controls Engineer at Roberts Sinto Corporation: OEM of foundry equipment used in steel industry. Currently working on a project with Waupaca Foundry in Wisconsin
- Been with Revolution Against Evolution for 7 years in various roles as Guest, Crew, Producer, and Host

What is the Chemistry of God?

- The *Chemistry of God* is my book which asks the question: Could the periodic table of the elements be a link between science and scripture? (Available at the book table)
- Elements are found by name in the Bible
- The Creation is orderly and it is based upon immutable laws, such as the Word of God who spoke it into existence.
- This allowed several scientists to use scientific method to discover the Periodic Table of the Elements.
- We will do a short review of the Periodic Table of the Elements (PTOE)
- We will talk in-depth about Solomon's Molten Sea: One of several examples of the PTOE I have found in the Bible.

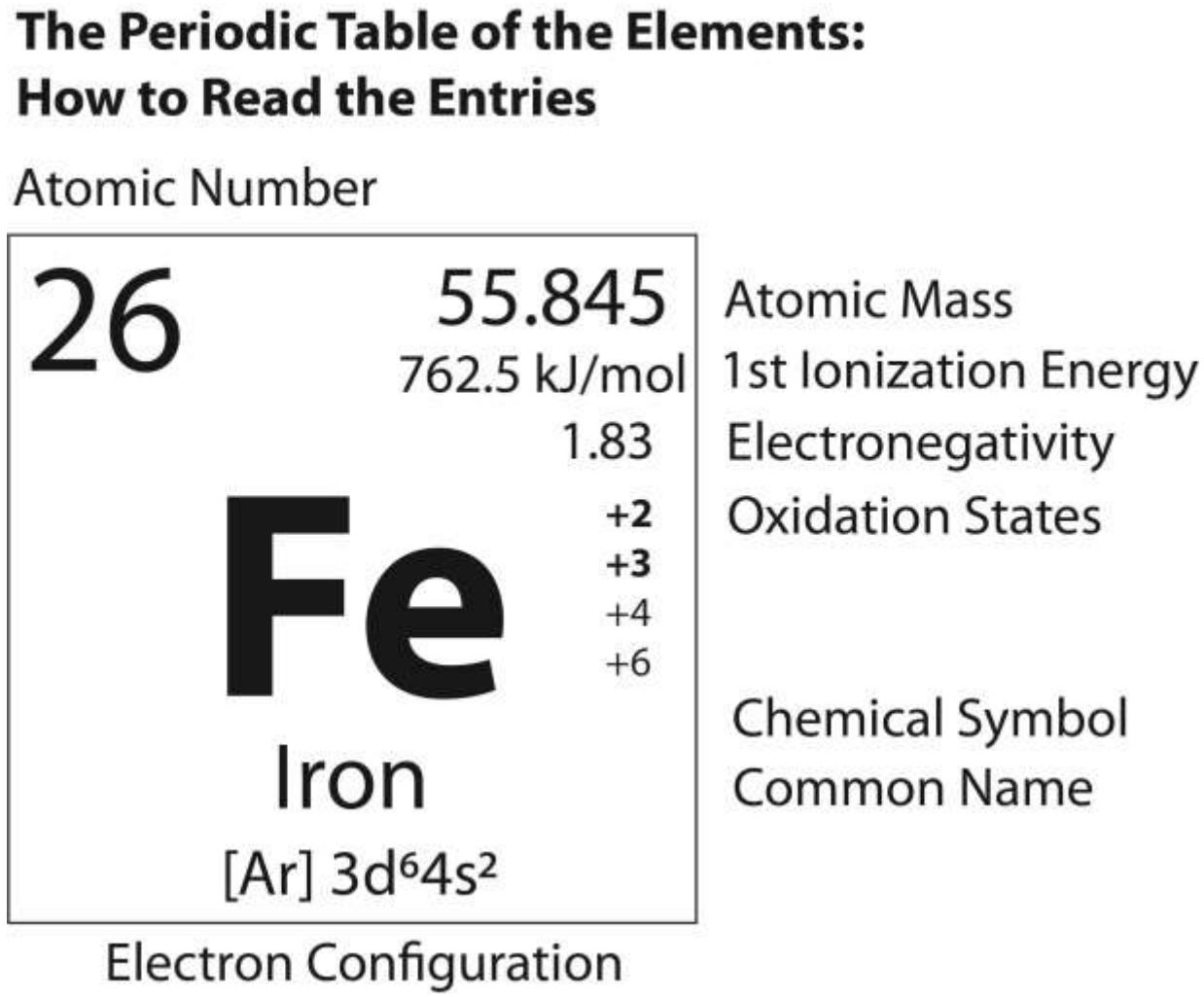


The Elements of the Bible

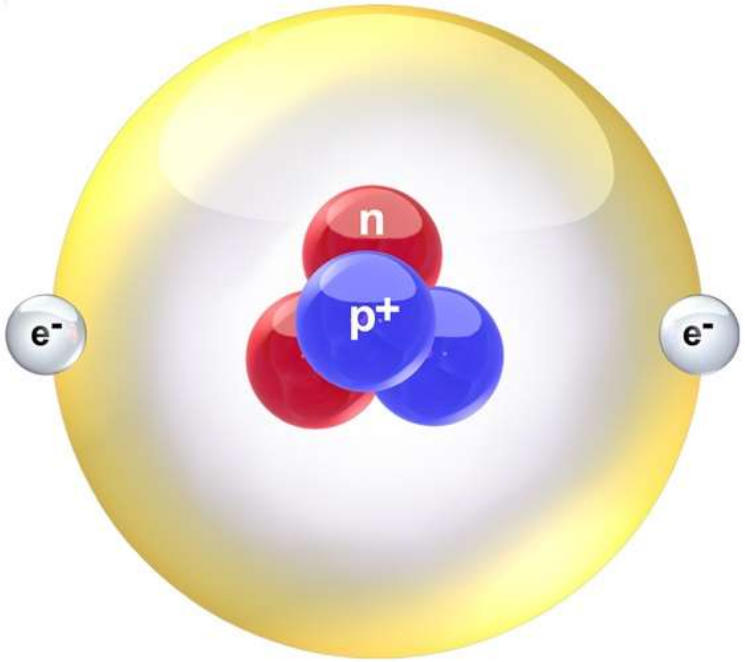
- **What is an Element**? We have found that any material is fundamentally made up of a combination of pure substances which have unique properties not necessary related to those of the parent material.
- Elements are mentioned by name in the Bible. It was ahead of its time, during the time of Greek "Air, Water, Earth, Fire" theory of materials.
- Some elements mentioned: Gold, Silver, Lead, Copper, Tin, Iron
- Some properties of elements: Melting Point, Density, Color, Metal/Semi-metal/Non-Metal/Gas
- Spiritual Significances: "Streets of Gold", "Rod of Iron", "Feet of Brass" (Copper Alloy)
- Bible says all works shall be "tried by fire" Fire is often used to "smelt" metals to obtain the pure elements like iron or copper.

A Short PTOE review: The Entries

- **Atomic Number**: Number of protons
- **Atomic Mass**: Number of protons + Neutrons
- **Abbreviation** for element: Fe is Iron (old latin name Ferrum)
- **Common Name**: Iron
- **Electron Configuration**: How s, p, d, f orbitals are filled.



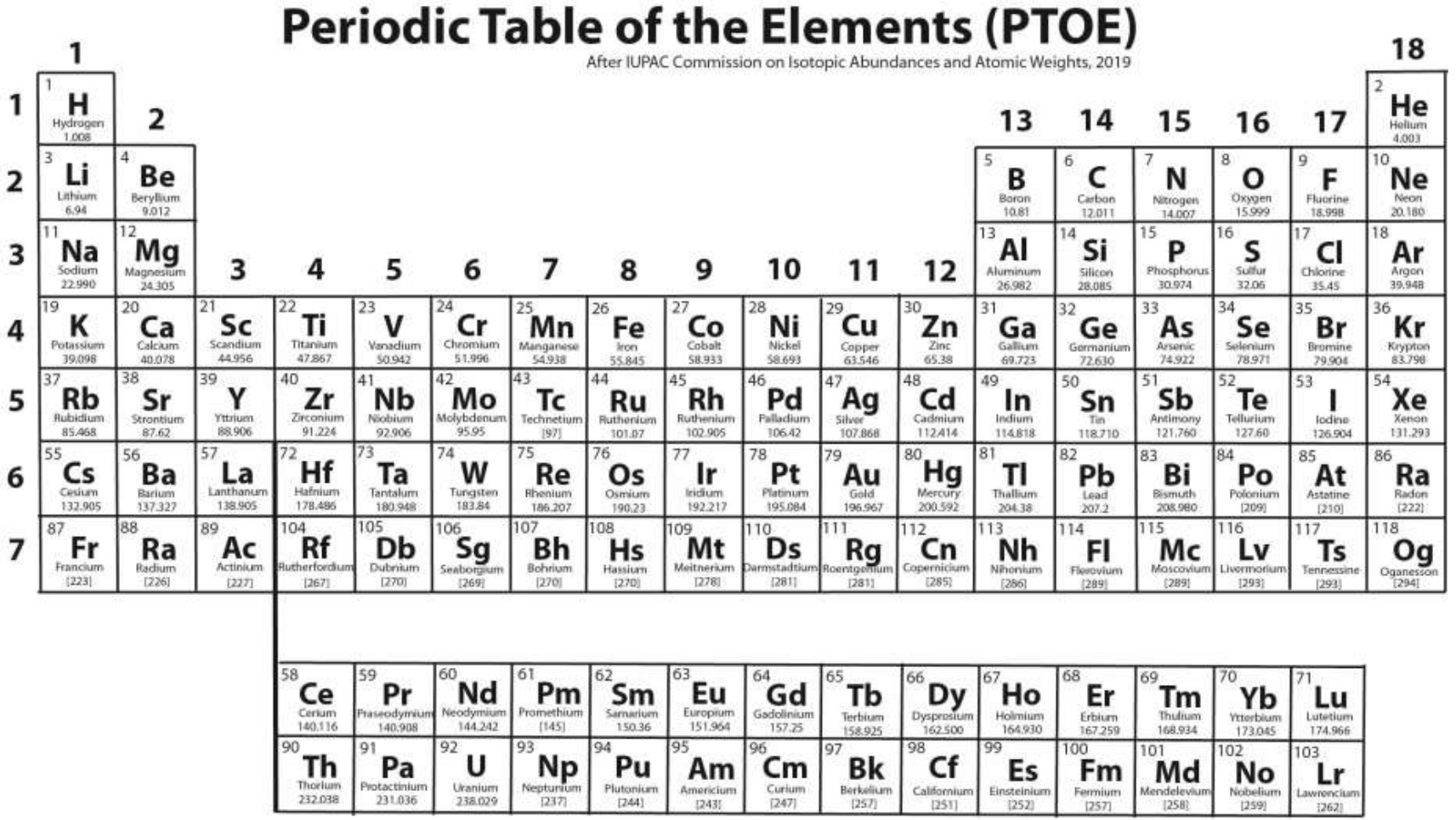
Protons, Neutrons, Electrons: Helium



Helium, He
Atomic number: 2
Mass number: 4
(2 protons + 2 neutrons)
2 electrons

A Short PTOE review: The Table

- Rows are "Periods" there are 7 periods
- Columns are "Groups", there are 18 groups
- Arranged in order of Atomic Number
- Groups have similar properties
- Currently the PTOE is "full" having discovered the last element of 7th Period, Oganesson.
- There are 118 Elements

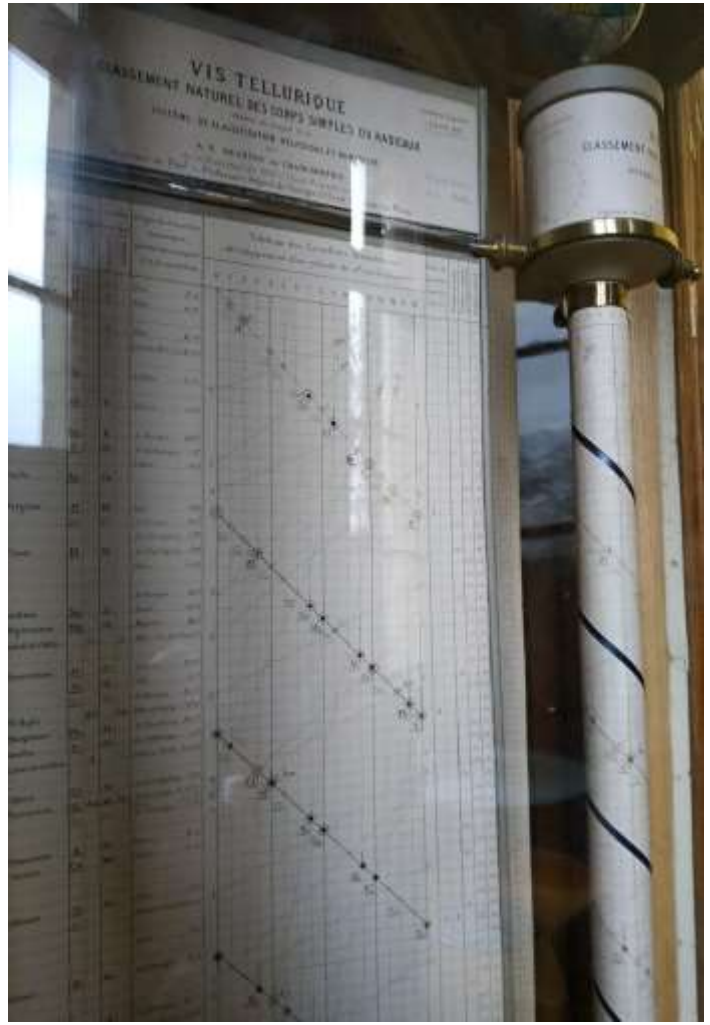


The Discoverers of the PTOE

Easy Table: Heroes of the Periodic Table	
Lavoisier	List of elements, chemistry is quantitative
Prout	All elements are composed of "protyle"
Richter	Equivalent weights table wide early use
Dalton	Elements combine in whole numbers
Berzelius	Precise atomic weights, not all whole numbers
Avogadro	Avogadro's Number, N_A, and diatomic compounds, such as O_2, H_2, N_2
Naquet	Grouped atoms by similar chemical properties, families
Cannizzaro	The distinction between molecular, atomic weights, first accurate atomic weights
Dobereiner	Triads of similar elements helping form groups
Pettenkofer	Difference relationships interpolate elements in Series
De Chancourtois	The first periodic system was a spiral table
Newlands	More groups of elements by properties
Odling	Periodic table with gaps, predicting spaces for undiscovered elements to fill
Hinrichs	Relating spectra to atomic weights, spiral table, a similar proportion to planet orbits
Meyer	Periodic table with groups and valences
Mendeleev	Tabulates elements by atomic weight, discovers group and series periodicity follows. Predicts 3 elements

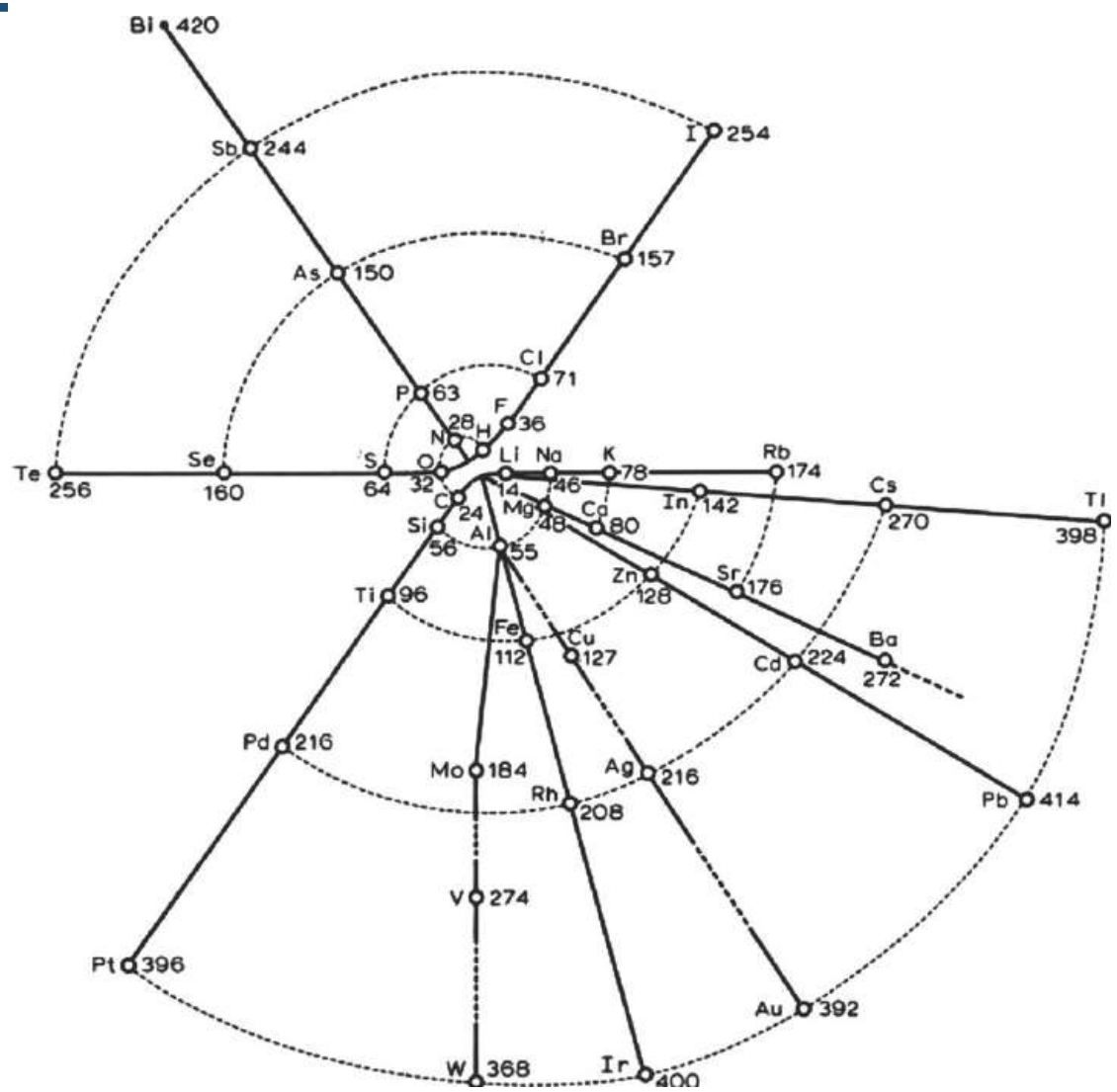
Alternative Periodic Tables: Telluric Screw of 1862

- The first Periodic Table was a spiral: The Telluric Screw of 1862
- Scientist: French Geologist Alexander DeChancourtois
- Cylinder 16” in diameter (based upon atomic weight of oxygen)
- “The properties of bodies are the properties of numbers.”
- Elements shown with some degree of accuracy:
    1) Group 1: Lithium, Sodium
    2) Group 2: Magnesium, Beryllium
    3) Group 13: Boron and Aluminum
    4) Group 14: Carbon and Silicon
    5) Group 16: Oxygen and Sulfur



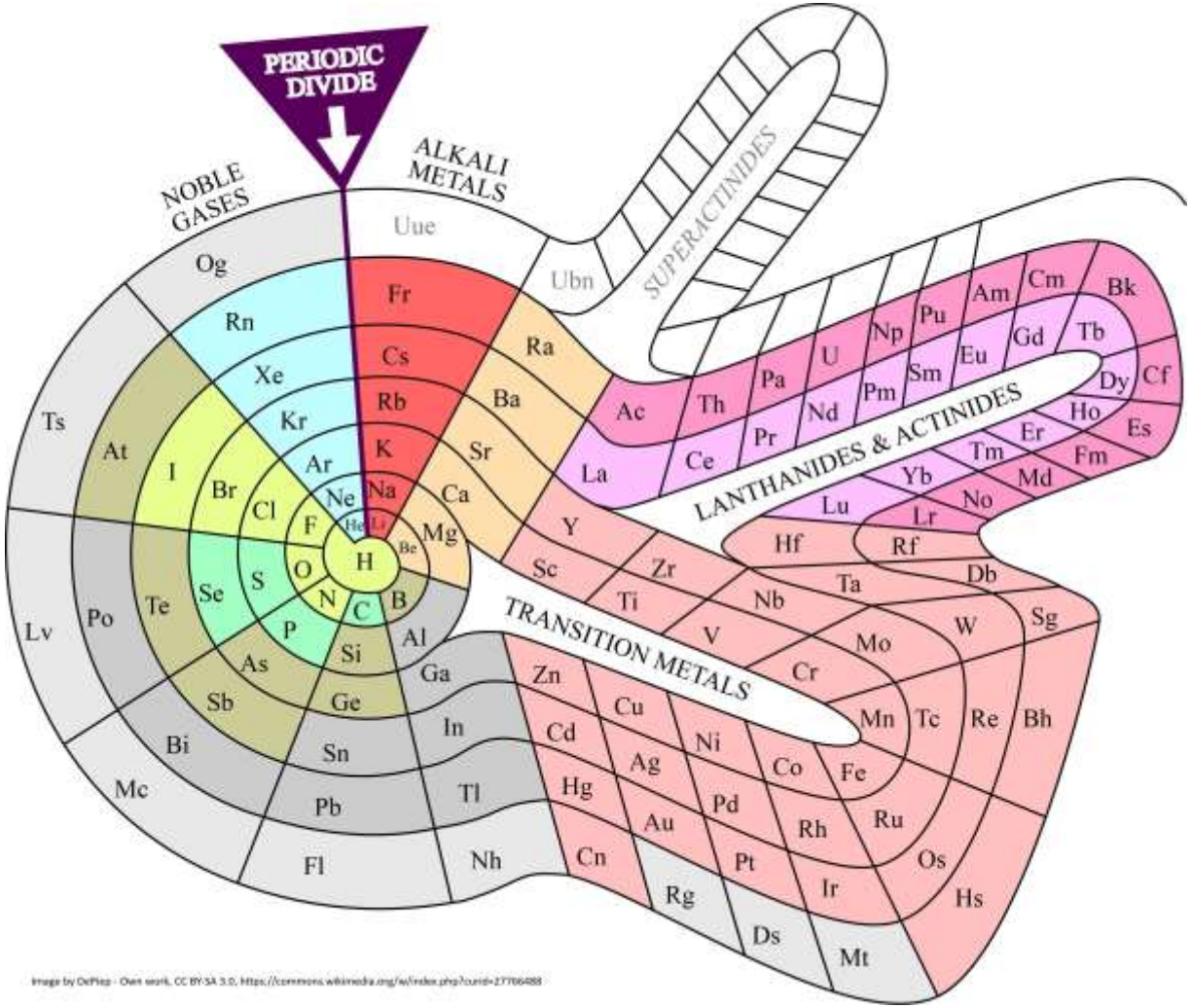
Alternative Periodic Tables: The Hinrichs Spiral, 1867

- Danish scientist Gustavus Hinrichs
- Circular table with heavier elements towards the outside.
- Non-metals in upper portion form triangular patterns (trigonoides) in relation to each other.
- Metals in lower portion form square patterns (tetragonoides) in relation to each other.
- Groups along the 11 “spokes” of the wheel.
- Was the first (besides the Bible in Daniel) to put Copper, Silver and Gold in the same group.



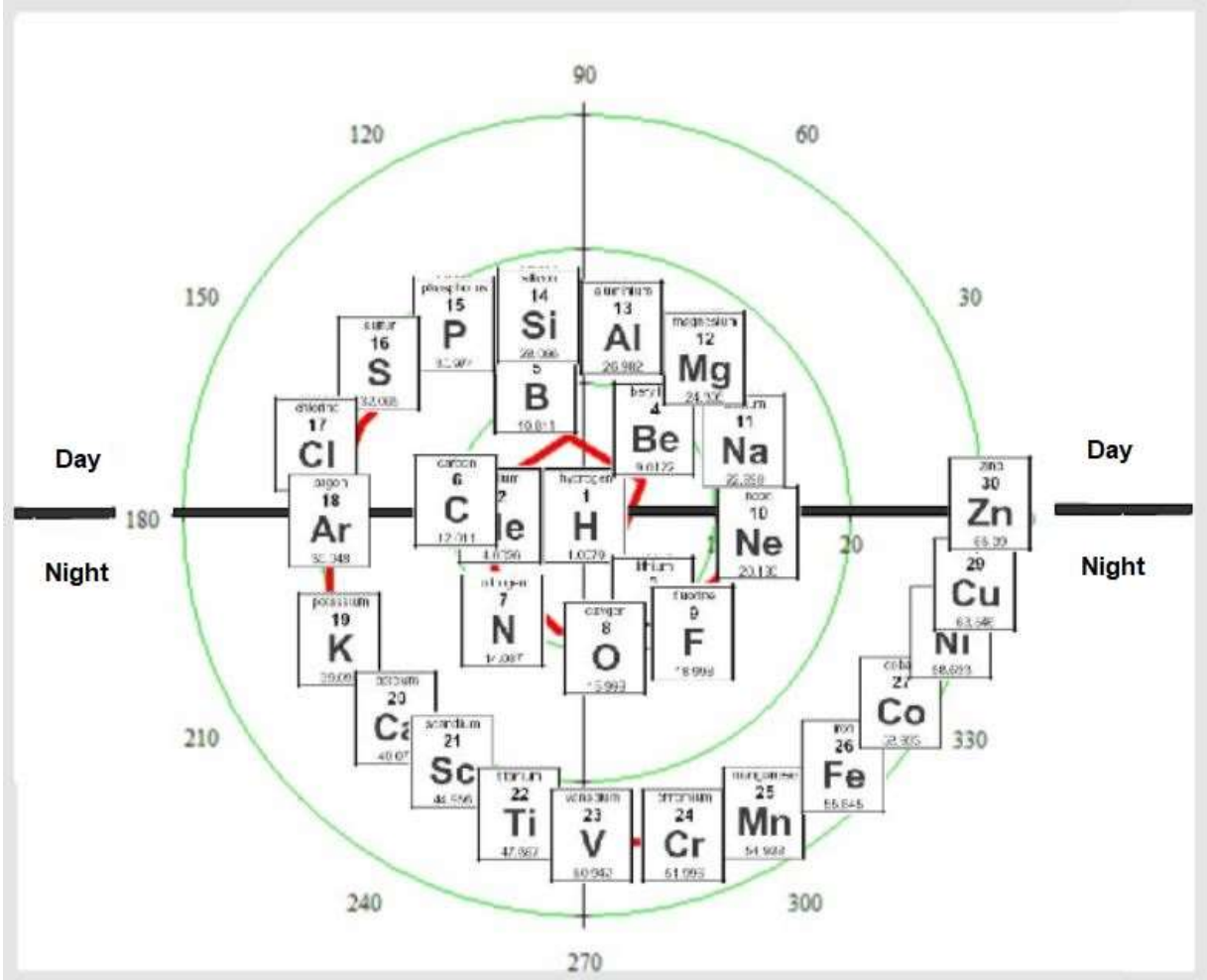
Alternative Periodic Tables: The Benfey Spiral, 1964

- American scientist Theodor Benfey
- Spiral table with Hydrogen in the center and heavier elements towards the outside.
- "Periodic Divide" marks where the square table must make shift from left to right like a typewriter.
- Special branches for the transition metals and Lanthanides/Actinides
- Groups along the "spokes" of the spiral.

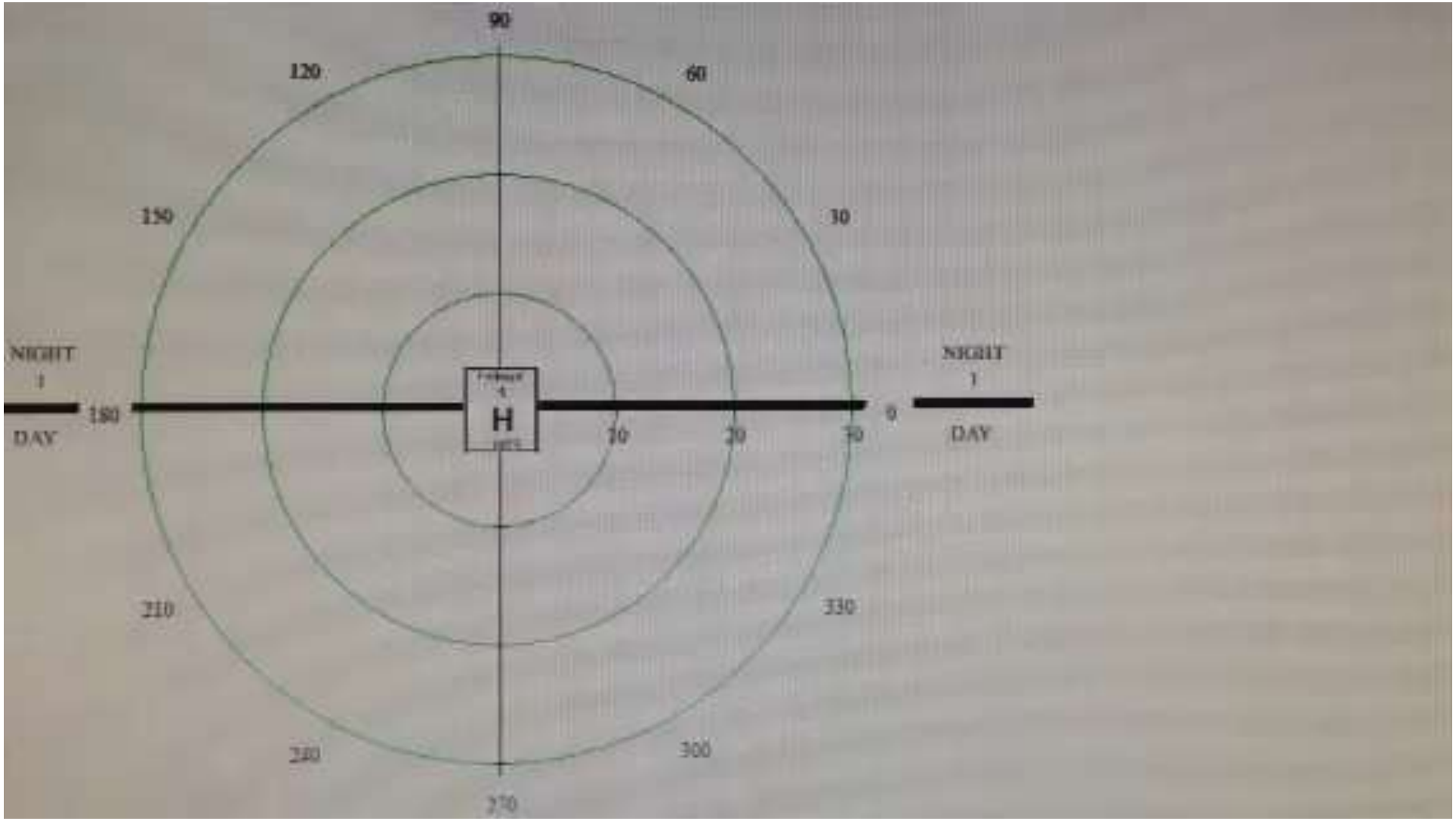


Alternative Periodic Tables: The Creation Function, 2005

- Discovered by Yours Truly in 2005 while a physics student at MSU.
- Spiral radial graph with Hydrogen in the center and heavier elements towards the outside to Zinc
- Represents the first three days of Creation. Three rotations of Earth
- Elements created: "God's Toolbox" to create the for the first three days.
- Scripturally-based math formula:
- Is. 40:26, By Number (1,2,3,..)
- Prov. 8:27, Used a compass, 360°
- Ps. 139:16, In continuance
- Ps. 139:17, Adding/summation

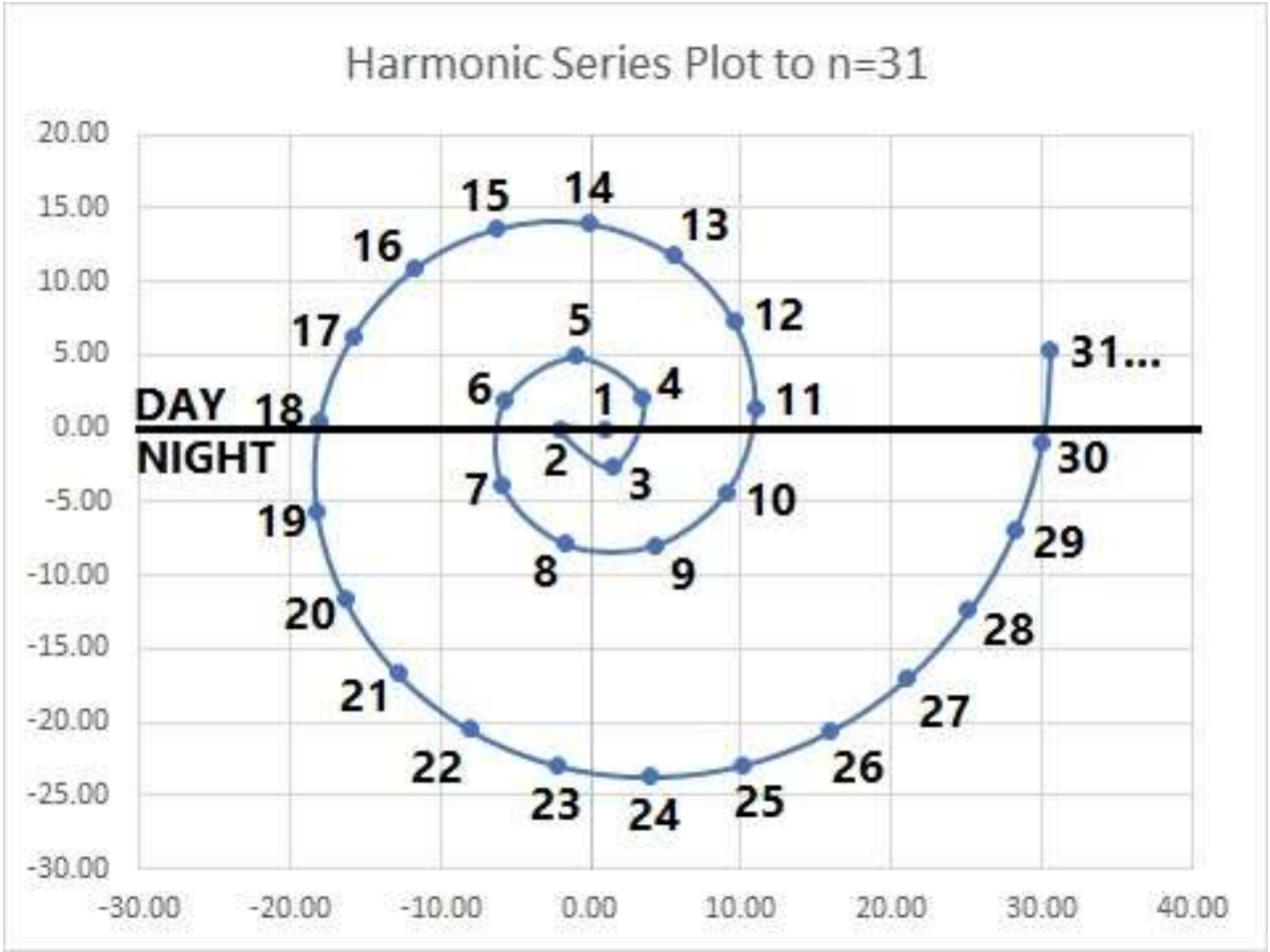


The Creation Function



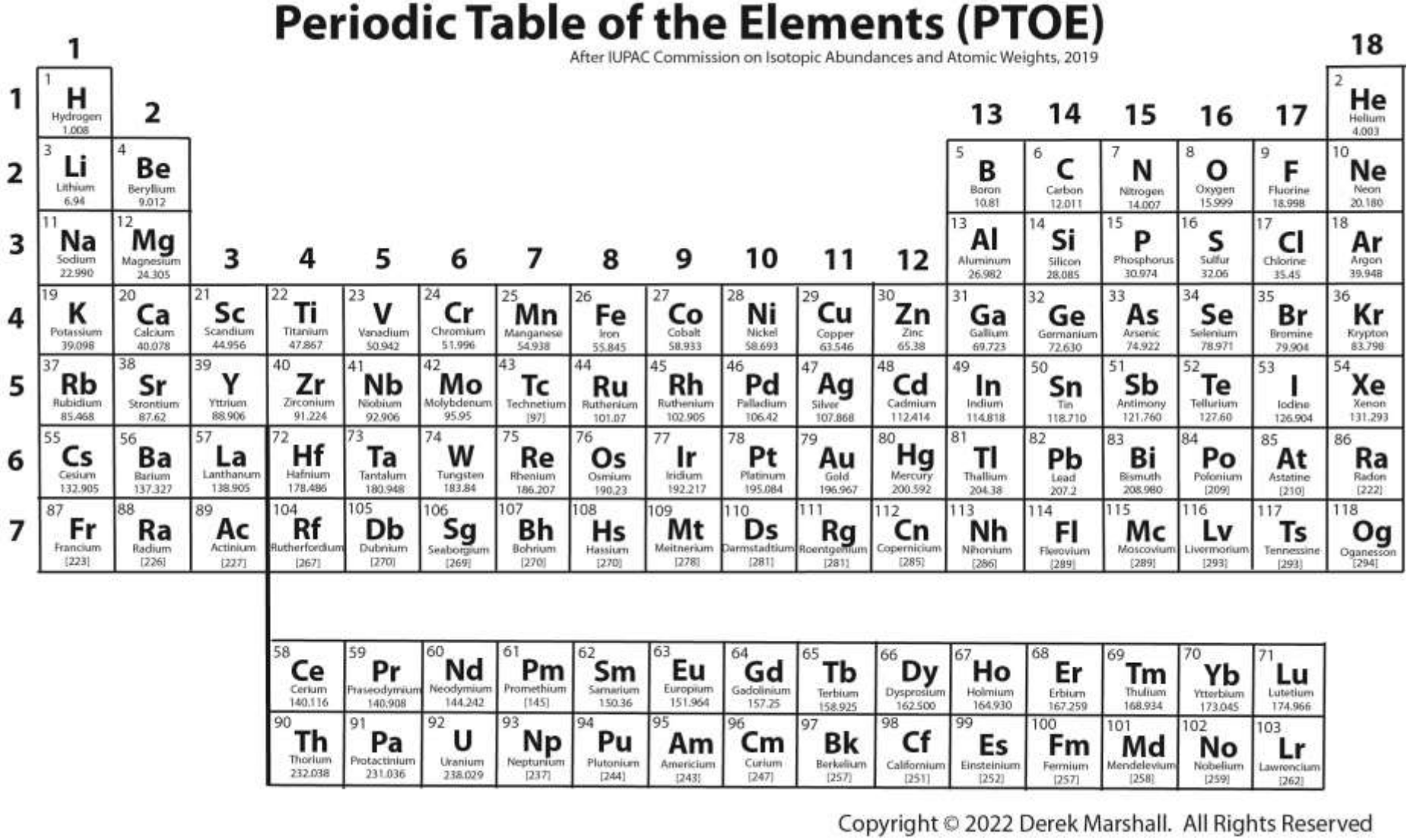
The Creation Function: Formalized Definition
The Harmonic Series and Logarithmic Spiral

Step	Harmonic Series Equation	n	S_n	Time Interval Ratio n_{step}/n_{step-1}	=	Compare to e
0	$\sum_{n=1}^{n=1}\frac{1}{n}=\{\frac{1}{1}\}$	1	1	-	-	-
1	$\sum_{n=1}^{n=4}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}\}$	4	2.08	4/1	4	2.718
2	$\sum_{n=1}^{n=11}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{11}\}$	11	3.02	11/4	2.750	2.718
3	$\sum_{n=1}^{n=31}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{31}\}$	31	4.03	31/11	2.818	2.718
4	$\sum_{n=1}^{n=83}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{83}\}$	83	5.00	83/31	2.677	2.718
5	$\sum_{n=1}^{n=227}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{227}\}$	227	6.00	227/83	2.735	2.718
6	$\sum_{n=1}^{n=616}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{616}\}$	616	7.00	616/227	2.714	2.718
7	$\sum_{n=1}^{n=1674}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{1674}\}$	1674	8.00	1674/616	2.718	2.718
8	$\sum_{n=1}^{n=4550}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{4550}\}$	4550	9.00	4550/1674	2.718	2.718
9	$\sum_{n=1}^{n=12368}\frac{1}{n}=\{\frac{1}{1}+\frac{1}{2}+\cdots+\frac{1}{12368}\}$	12368	10.00	12368/4550	2.718	2.718



Follows an approximate e^{day} mathematical pattern.
Every day the function increases by a factor of e

PTOE Follows Days of Creation



Creation Function and PTOE follow the Days of Creation

Easy Table: How the Creation Spiral Follows the First Three Days of Creation and the PTOE	
Period 1 of the PTOE Creation Day 1: Light	
Z=1	Hydrogen, fuels the Sun
Z=2	Helium, fuels the Sun
Period 2 of the PTOE Creation Day 2: Firmament	
Z=6	Carbon, essential 0.4% of our atmosphere
Z=7	Nitrogen, 78% of our atmosphere
Z=8	Oxygen, 21% of our atmosphere
Period 3 of the PTOE Creation Day 3: Dry Land, Earth, Life	
Z=11	Sodium: An abundant metal of earth (6^{th}).
Z=12	Magnesium: An abundant metal of earth (7^{th}).
Z=13	Aluminum: An abundant metal of earth (3^{rd}).
Z=14	Silicon: An abundant semi-metal of earth (3rd).
Z=15	Phosphorus: An abundant non-metal of earth.
Z=16	Sulfur: An abundant non-metal of earth
Z=17	Chlorine: An abundant non-metal of earth.
Z=18	Argon: The end of the 3rd period of the PTOE.

Period 4, Transition Metals are in 3d orbital

Z=19: Potassium: 8^{th} most abundant metal of earth.

Z=20: Calcium: 5^{th} most abundant metal of earth

Z=22: Titanium: An abundant metal of earth.

Z=23: Vanadium: An abundant metal of earth.

Z=24: Chromium: An abundant metal of earth

Z=25: Manganese: An abundant metal of earth.

Z=26: Iron: 4^{th} most abundant metal of earth.

Z=27: Cobalt: An abundant metal of earth.

Z=28: Nickel: An abundant metal of earth

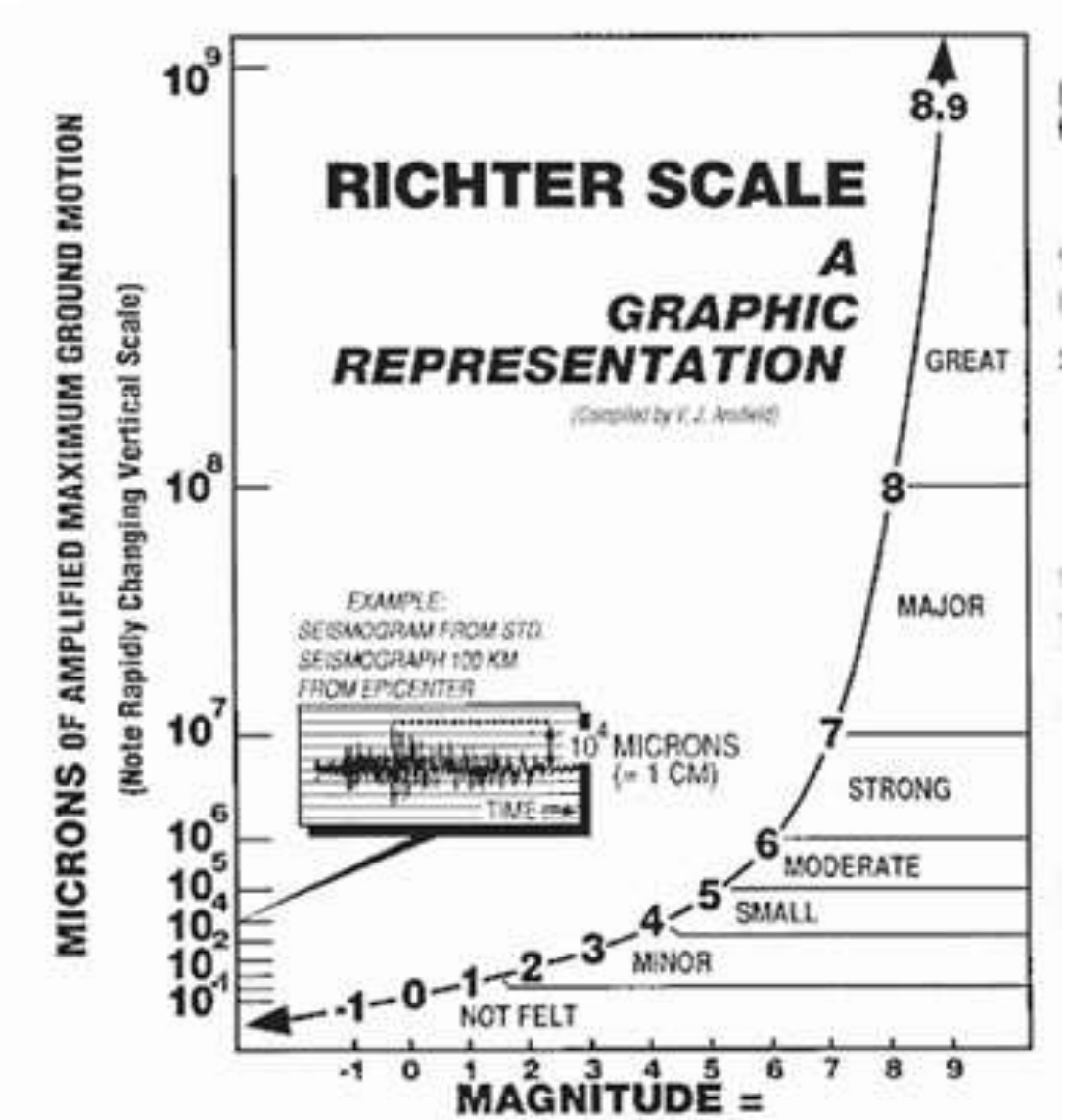
Z=29: Copper: An abundant metal of earth

Z=30: Zinc: An abundant metal of earth.

Elemental abundances drop off drastically after Atomic Number 30!

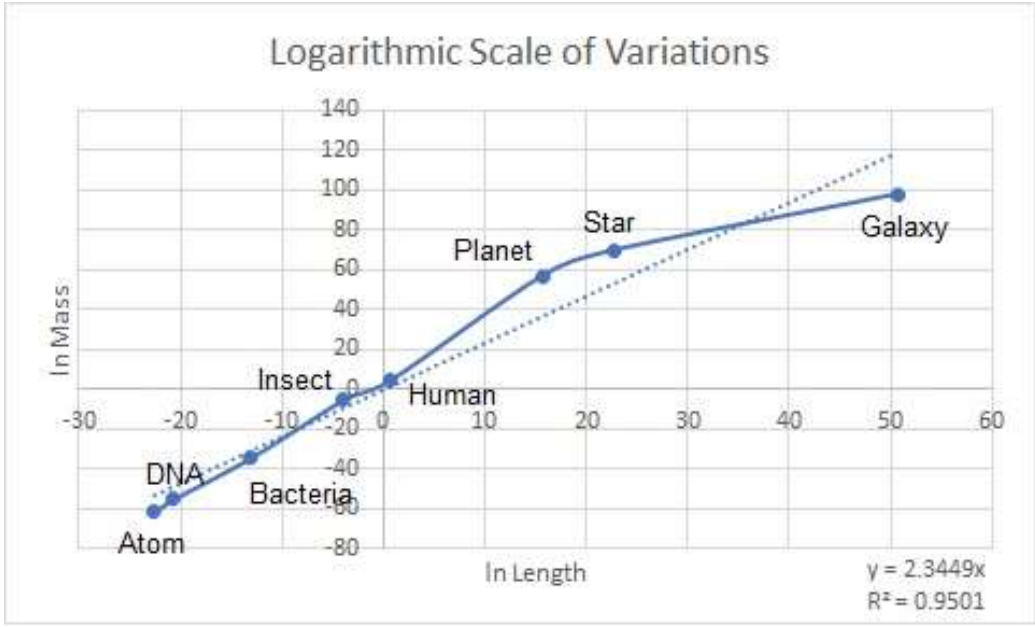
Benefits of the Logarithm and "e"

- Exponents and logarithms give us the ability to express large quantities using smaller, more manageable numbers.
- Base-10 logarithms are used to characterize the magnitude of earthquakes and intensity of sound (decibel)
- Base-e logarithms are called Natural Logarithms. Base-e = Base (2.718)
- John Napier, 1618: Produced a table of natural logarithms using the constant.
- Jacob Bernoulli, 1668: An account that starts at $1, and yields interest at annual rate R with continuous compounding, will accumulate to eR dollars at the end of one year.
- Leonhard Euler: Gave the constant its name "e" retained in his honor "Euler's Constant"



Fun with Logarithms and "e" for Young-Earth Creationism: Creation Function's e^{Day}

- Exponents and logarithms give us the ability to express large quantities using smaller, more manageable numbers.
- The Creation Function is a base-e logarithmic spiral. Growth follows e^{Day} formula.
- Creation: Seven Days, Seven rotations of Earth related to e^7 = CF 1674, Calc. 1096
- Flood: Forty Days, Forty rotations of Earth. Relates to $e^{40} = 2.3 \times 10^{17}$
- Compare: 9×10^{17} approximate diameter of Milky way galaxy in km.
- Compare: $e^{39} = 8 \times 10^{16}$ = "c-squared" from $E=mc^2$ (c^2 = velocity of light squared)
- Compare: Noah's Ark 17,000T multiplied by $e^{40.4}$ equals 6×10^{24} kg the mass of the Earth.



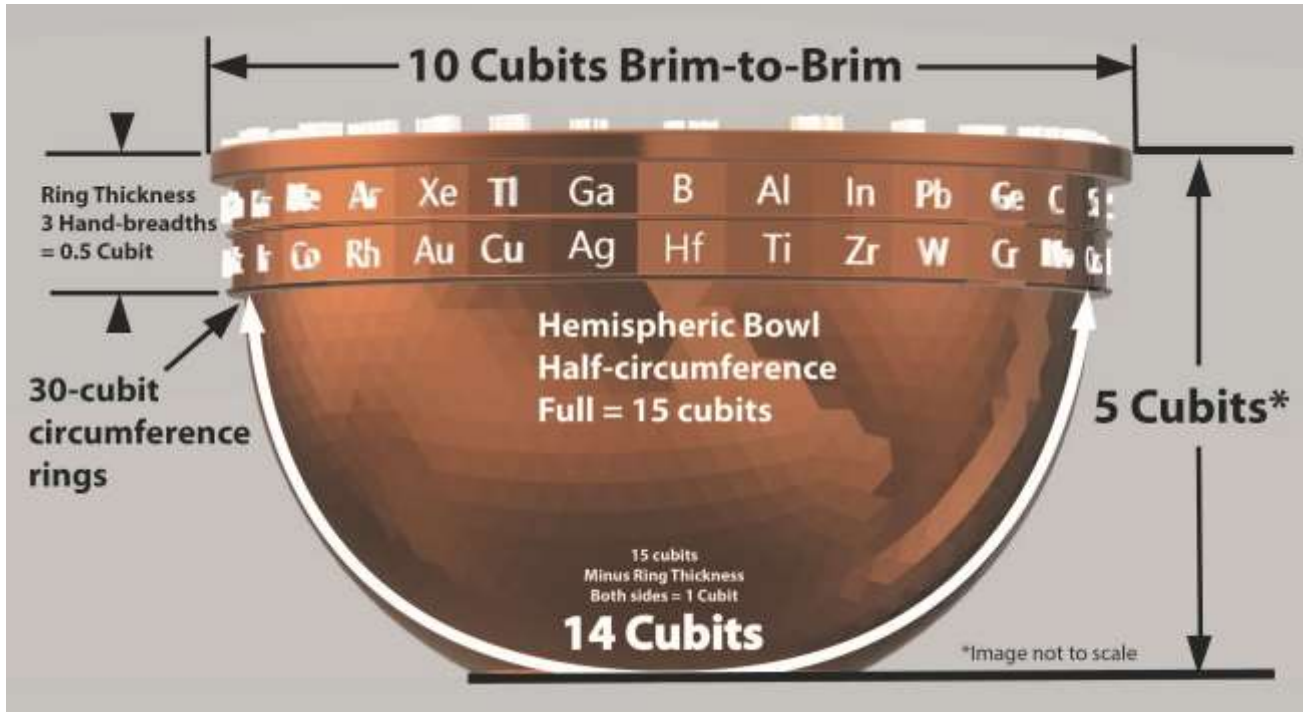
Solomon's Molten Sea: A 3-D Periodic Table?

Solomon's Molten Sea: A 3-D Periodic Table?
1 Kings 7:23-26, 2 Chronicles 4:2-5

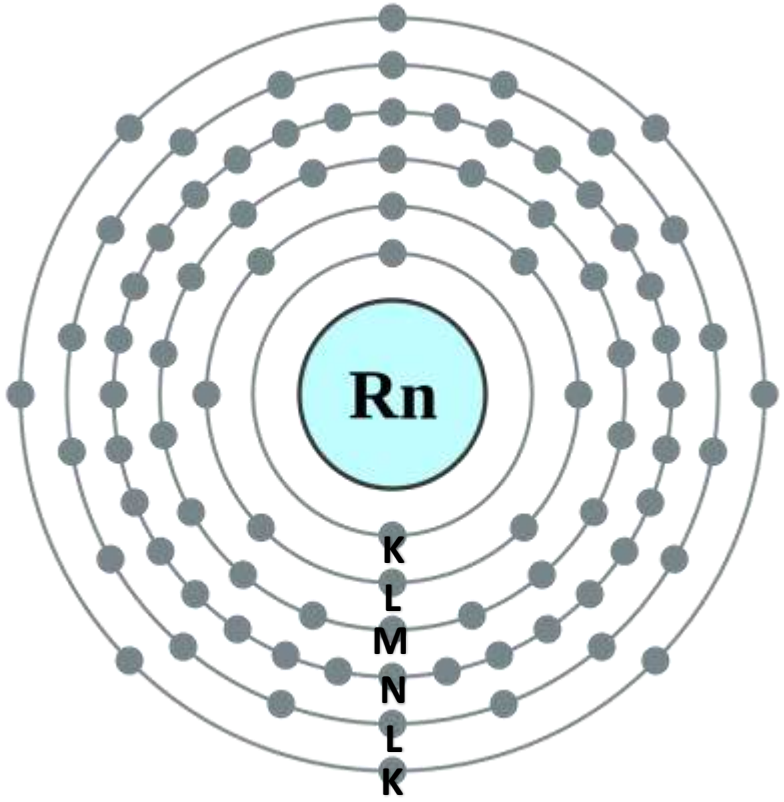
- A large basin holding the water priests used to cleanse themselves before entering The Holy Place.
- This symbol is much like how the Earth is the place we are cleansed before entering the Kingdom of God.
- The Earth is comprised of the elements of the Periodic Table.
- Can this structure could be viewed as a model of the Earth?

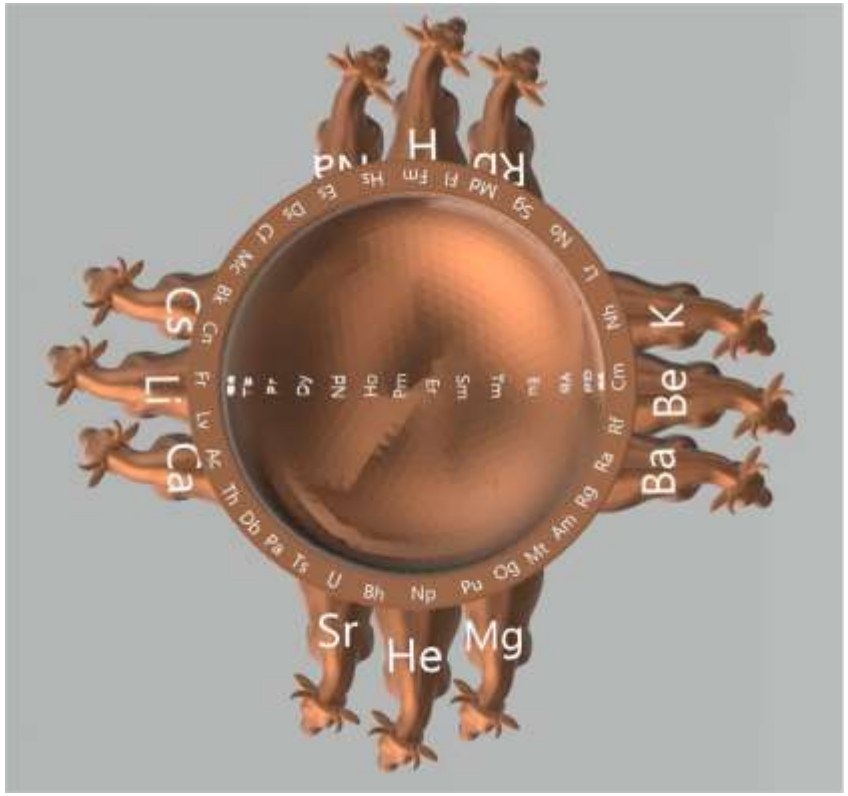
Solomon's Molten Sea (MS): Dimensions

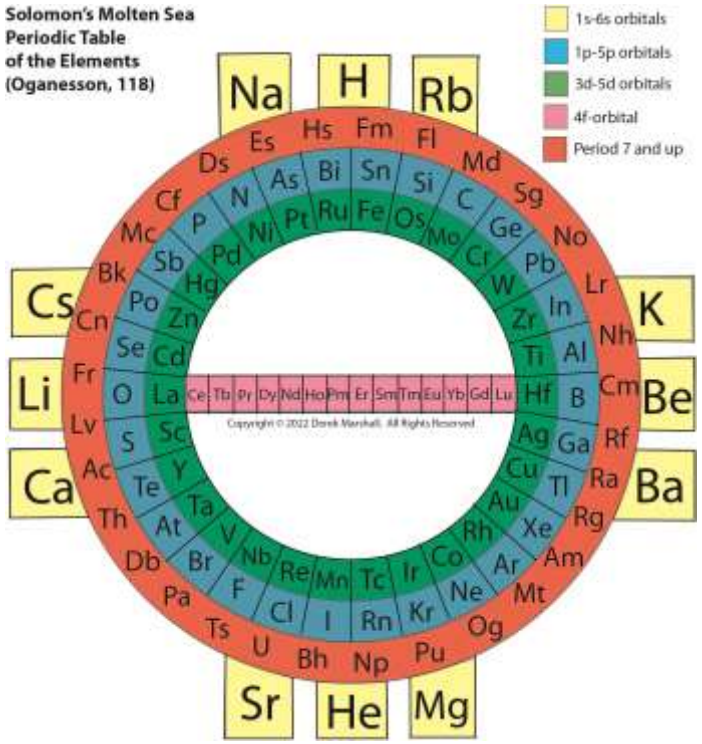
- The MS was a bowl with a fluted lip. It measured 10 cubits across the top, and 5 cubits top to bottom.
- It had two rows of 300 "knops" each, ten per cubit = 30 cubits around the bowl (circumference)
- The brim thickness was 1 hand-breadth (hb). Six hb. = 1 cubit
- Assuming bowl was hemispherical (From measurements & *Antiquities*)
- Assuming the brim and two rings together measured 3 hb, the bowl portion = 14 cubits



Top View of Solomon's Molten Sea: Compare to Shell Model: Qualitative

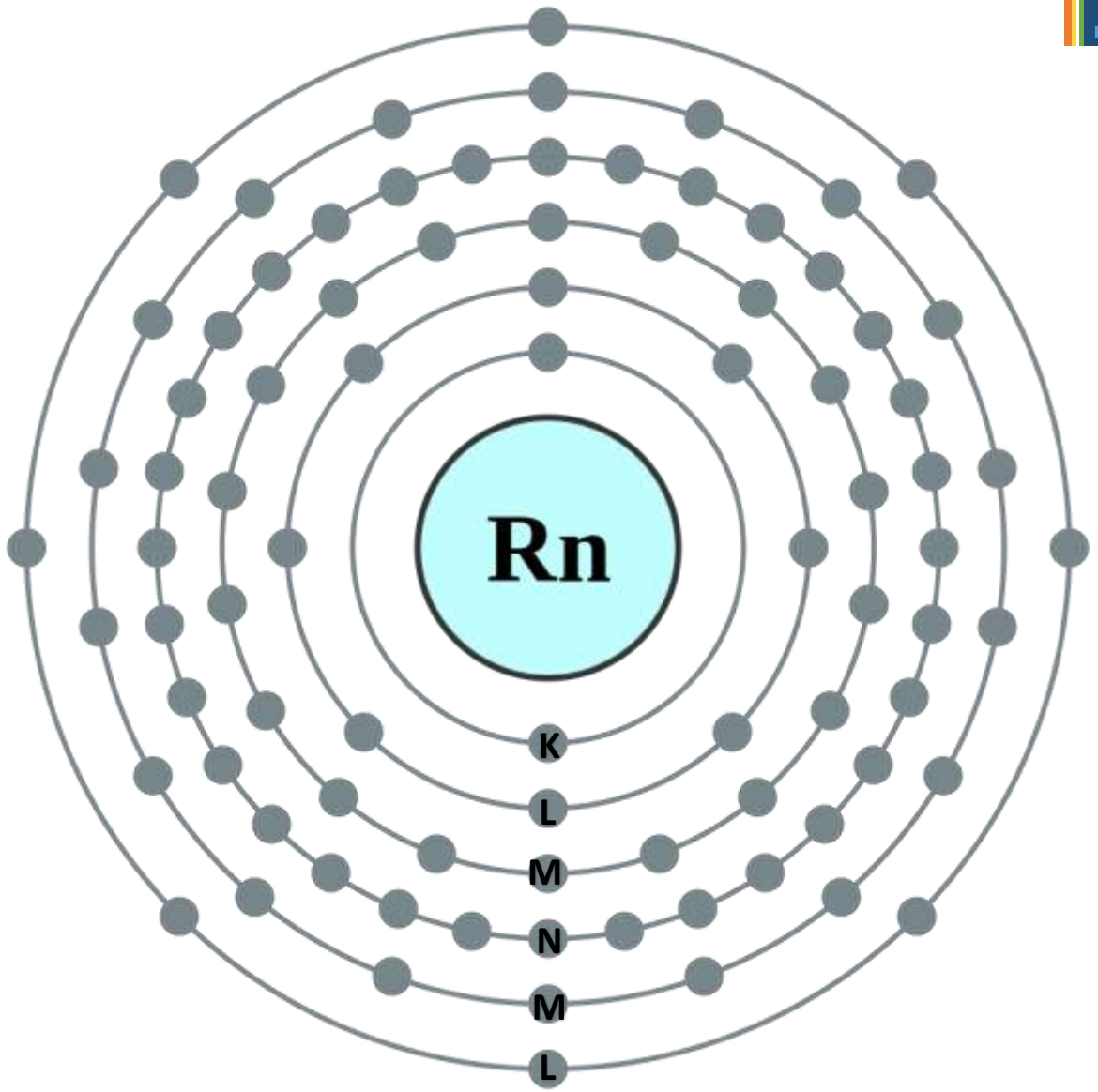




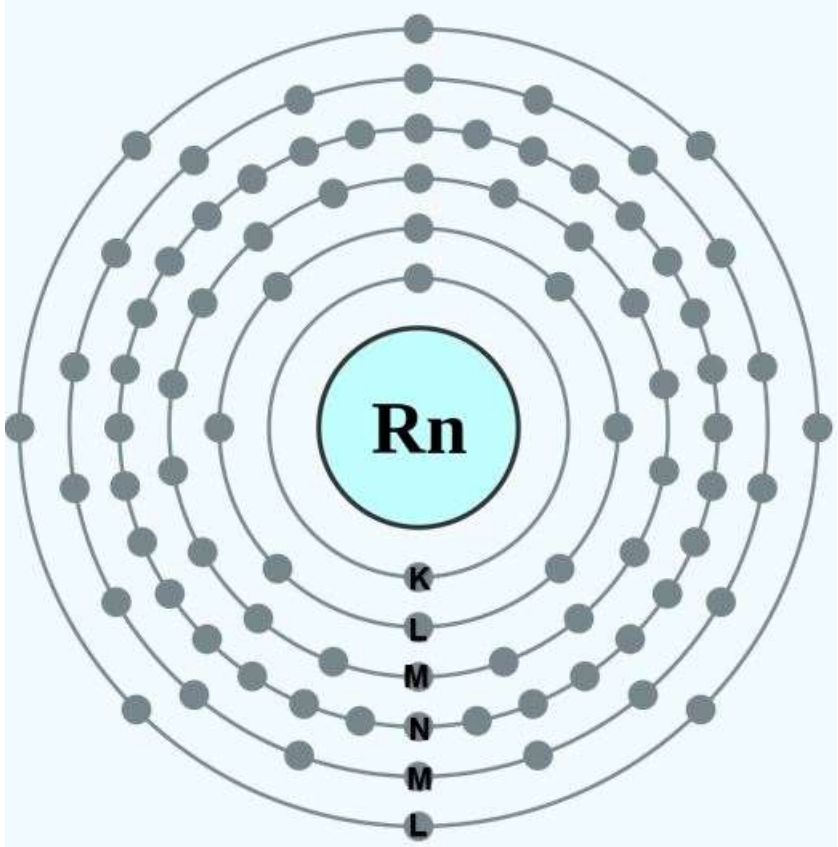


Shell Model of Electronic Orbitals

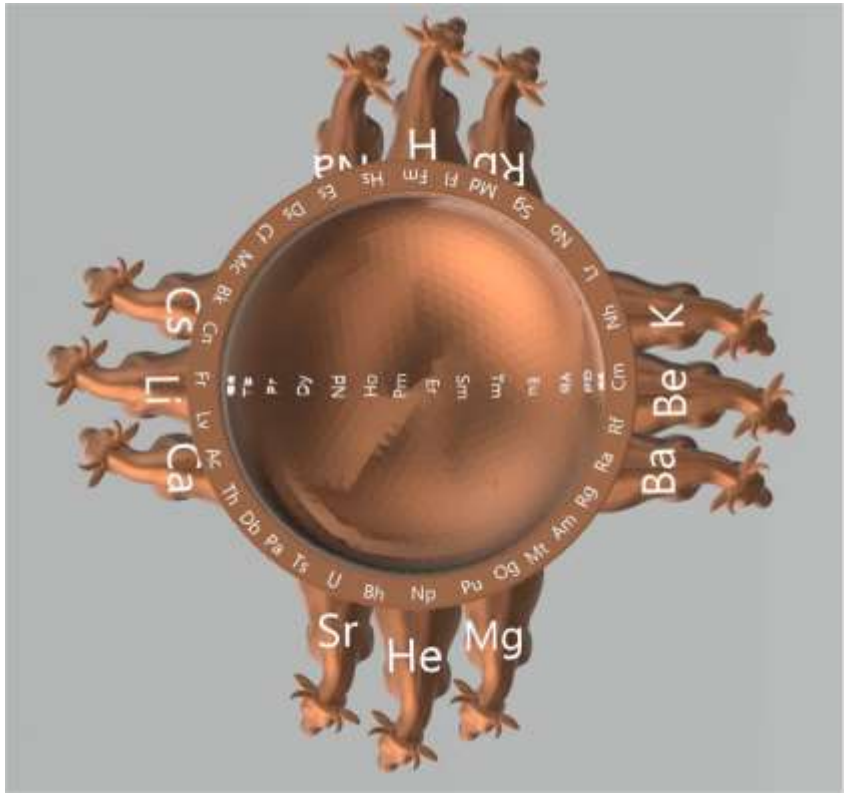
- Expresses the order in which electrons form energy levels within atoms
- Principal quantum number *"n"*
- *"n"* Corresponds to Periods (rows) of the PTOE
- Formula: $2n^2$ =Number of electrons per shell
- For *"n"* from 1 to 4 make K, L, M, N Shells
- {K, L, M, N} -> {2, 8, 18, 32}
- Outer ring is "Valence Shell" with occupancies for up to 8 electrons
- This is where chemistry happens.



Shell Model of Electronic Orbitals: Comparison to Molten Sea Model

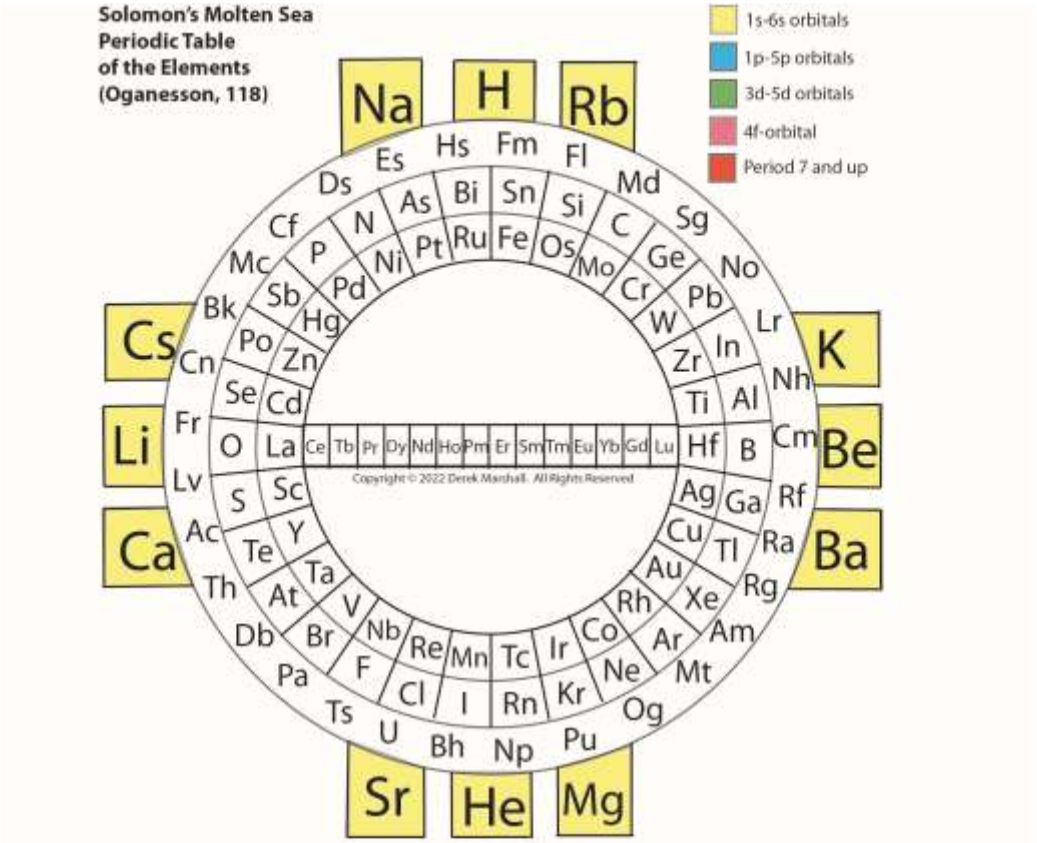


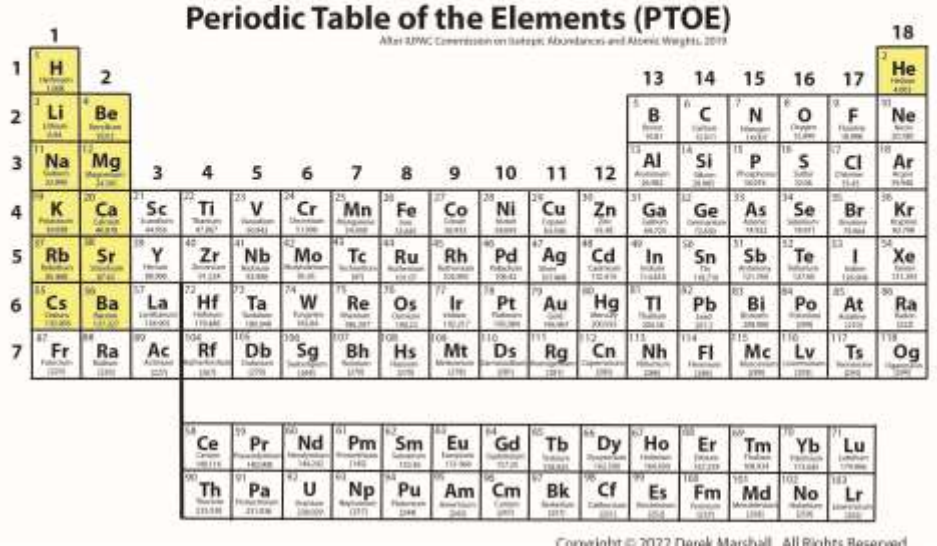
- Both circular models
- Both have points along the circle representing occupancies
- Oxen (mobile) influence felt from inside to outside as K, L shells do.
- Inner rings, bowl and brim fill in the larger M, N shells
- Let us now look at the individual parts of the MS Model.



12 *s*-orbitals, K-shell: Oxen (Yellow)

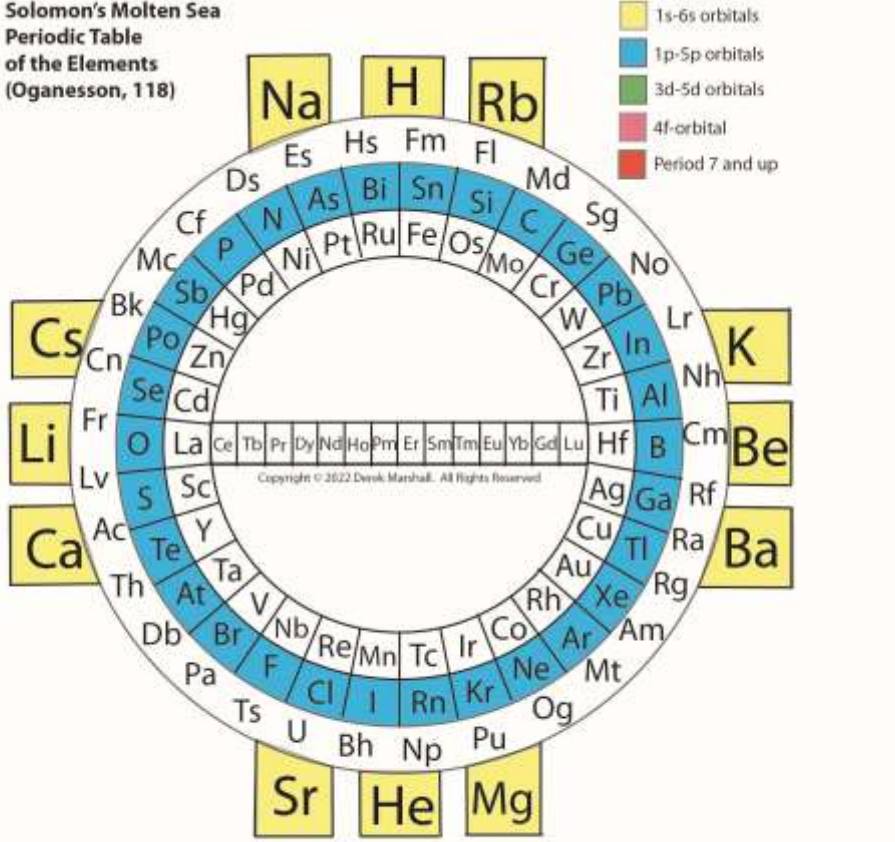
- Oxen form the basis on which the bowl rests.
- Oxen arranged in threes, but each ox has its opposite across from it. Corresponds to quantum "spin" of +/- ½. Oxen are like "fermions"
- Each ox occupies a side, or ½, of the bowl.
- This corresponds Hund's Rule of how electrons are added to an atom. They fill in the empty spots first before they pair up.
- Each *s*-orbital can take two oxen.
- As shown in yellow, Twelve oxen fill up 1s to 6s orbitals on PTOE = 12 oxen total → 12 elements.
- ℓ quantum number relates to angular momentum of electron. Formula: $\ell = +/- (n-1)$
- Also since the oxen are on a flat plane, this corresponds to an $\ell = 0$ (no angle, just flat spin)

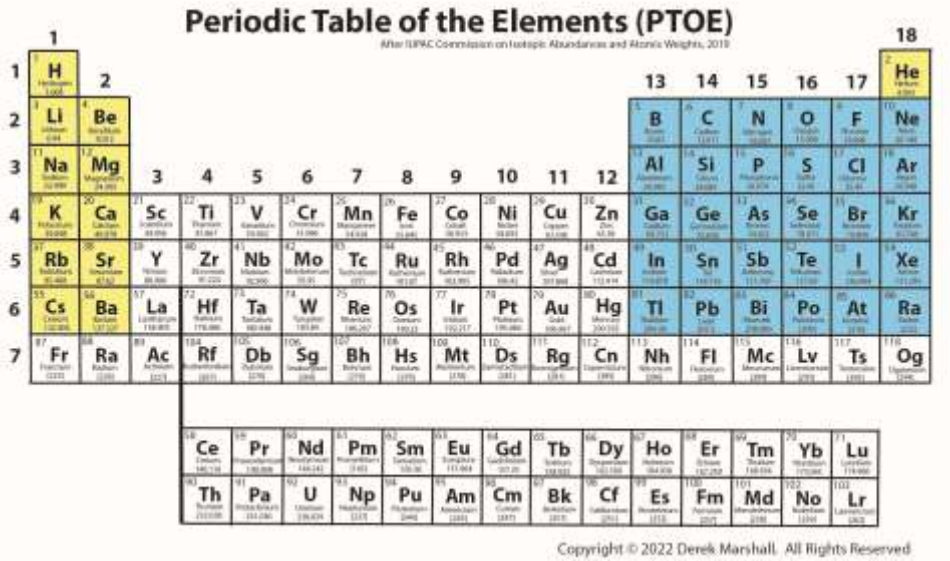




30 *p*-orbitals, L-Shell: Upper Knop Ring (Blue)

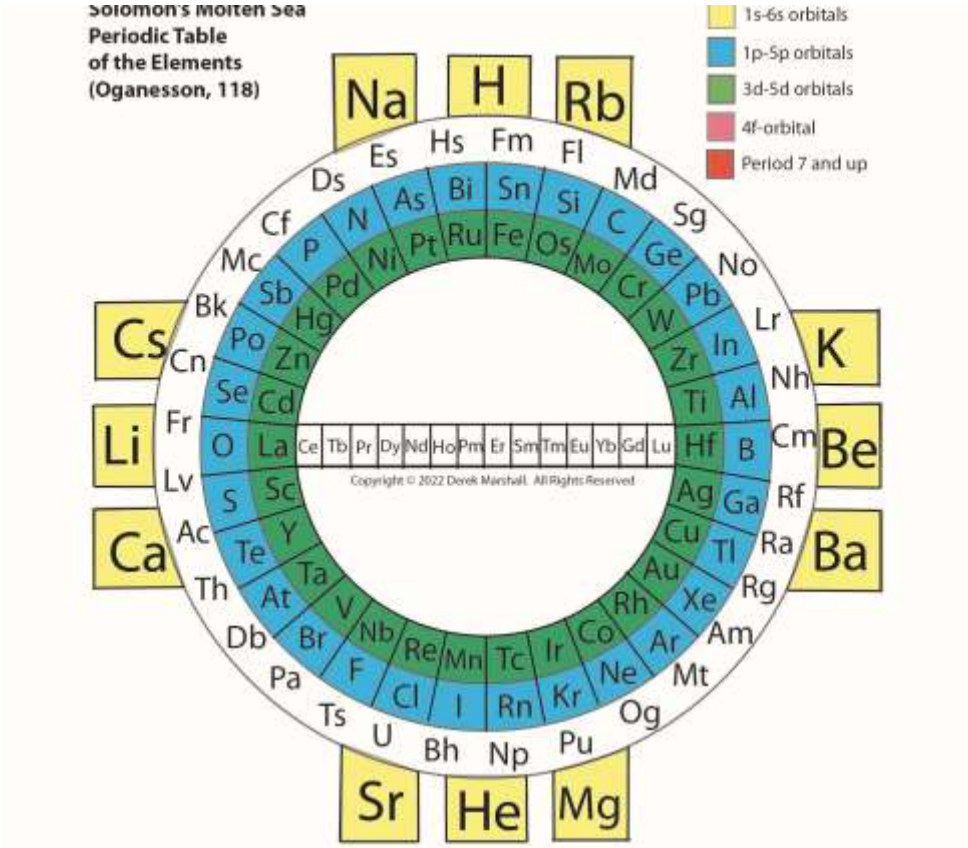
- This is the upper ring of 300 knops under the brim.
- There are 10 knops per cubit = 30 cubit circumference.
- Each cubit represents one occupancy, one atom.
- Amazing: Any atom can be made up of combinations of the following 10 sub-atomic particles: p^+, n, e^-, v, *up*, *down*, *top*, *bottom*, *charm*, *strange* quarks
- Each *p*-orbital can take 6 cubits of knops.
- As shown in blue, Thirty cubits of knops fill up 2p to 6p orbitals on PTOE → 30 elements. Here $n = 2$, creates L-Shell = 8 electrons
- ℓ quantum number relates to angular momentum of electron. Formula: $\ell = +/- (n - 1)$. Now ℓ has values.
- Since the knops are on a round bowl, they can have angles above the base plane of oxen.
- *p*-orbitals tend to form 90° angles to each other, maybe related to being "clocked" by oxen also situated at 90°
- Elements on ring next to each other similar properties as in "groups" on PTOE. Periodic nature of the PTOE.

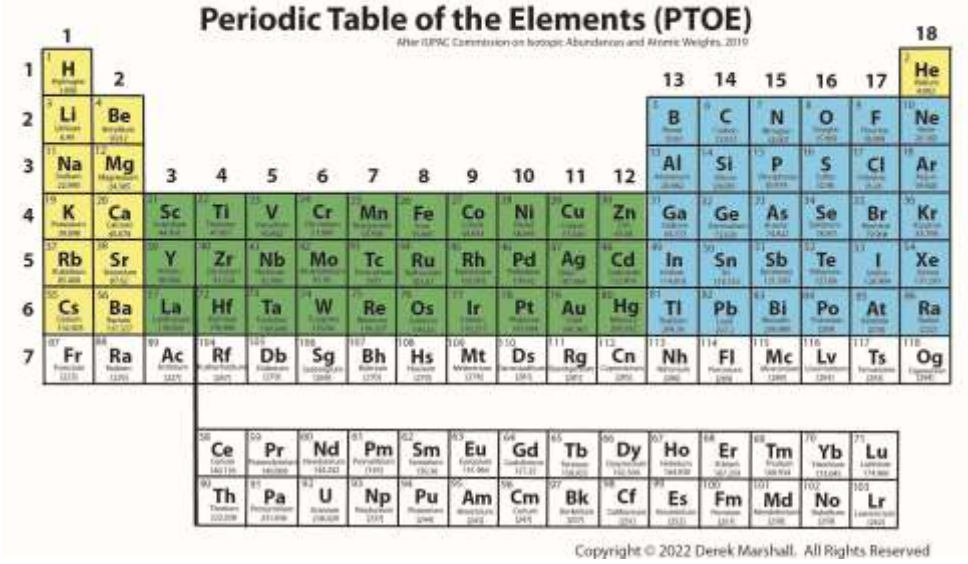




30 *d*-orbitals, M-Shell: Lower Knop Ring (Green)

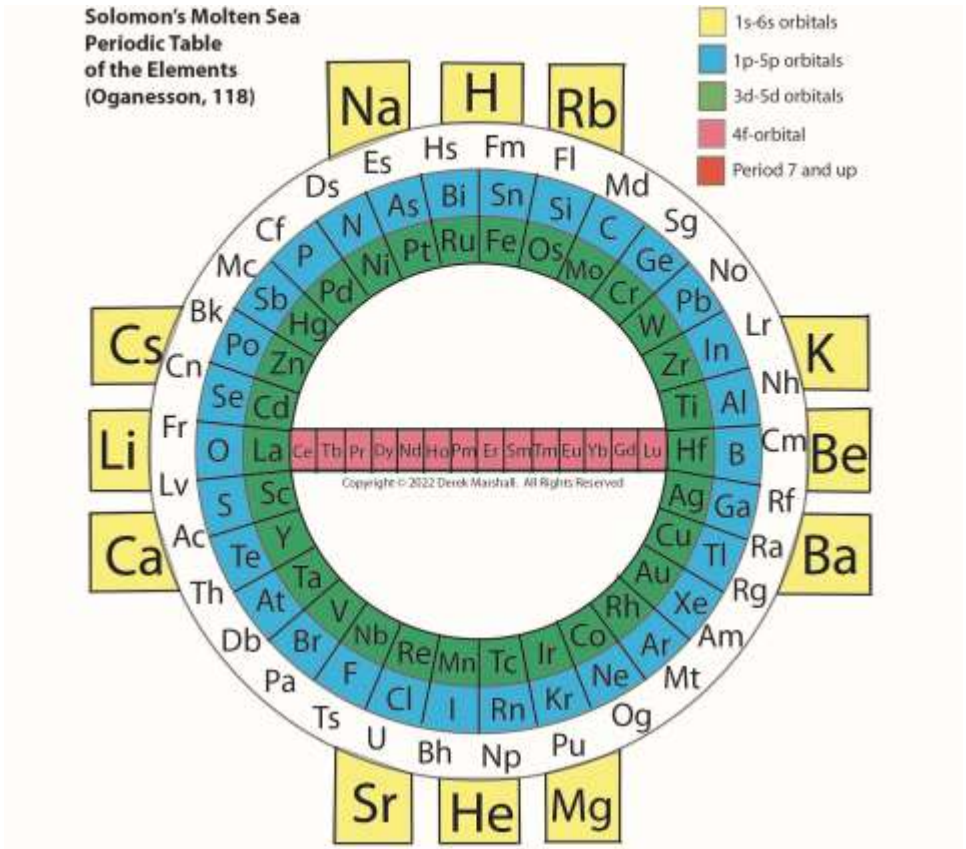
- This is the lower ring of 300 knops under the brim.
- There are 10 knops per cubit = 30 cubit circumference.
- Each cubit represents one occupancy, one atom.
- Each *d*-orbital can take 10 cubits of knops.
- As shown in green, Thirty cubits of knops fill up 3d to 5d orbitals on PTOE → 30 elements. Here $n = 3$, creates M-Shell -> 18 electrons
- ℓ quantum number relates to angular momentum of electron. Formula: $\ell = +/- (n - 1)$. Now ℓ has values.
- Since the knops are on a round bowl, they can have angles above the base plane of oxen.
- Lanthanum (La) and Hafnium (Hf) begin as opposite each other to allow for the f-orbital bridge, next slide
- Elements on ring next to each other similar properties as in "groups" on PTOE. Periodic nature of the PTOE.

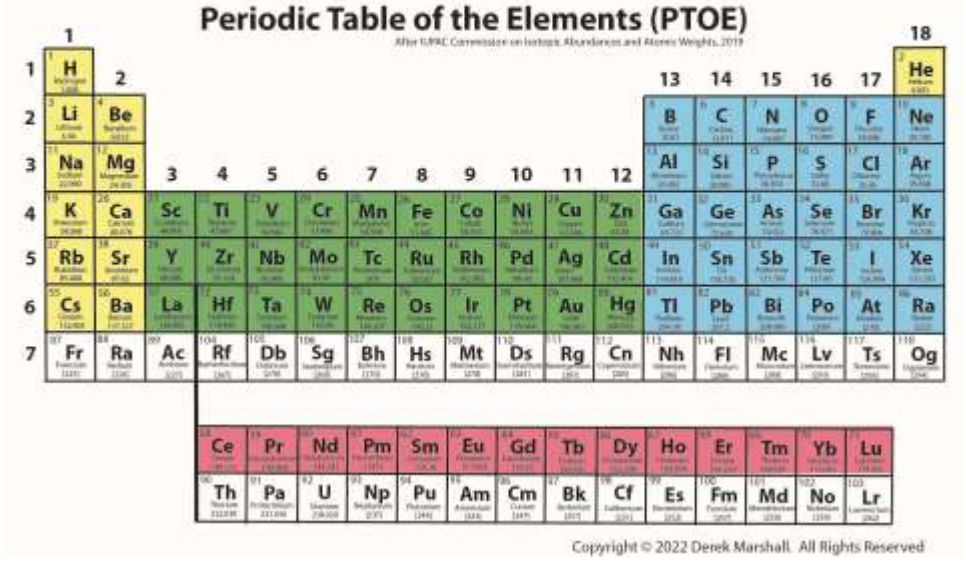




14 *f*-orbitals, N-shell: Bowl Hemisphere (Purple)

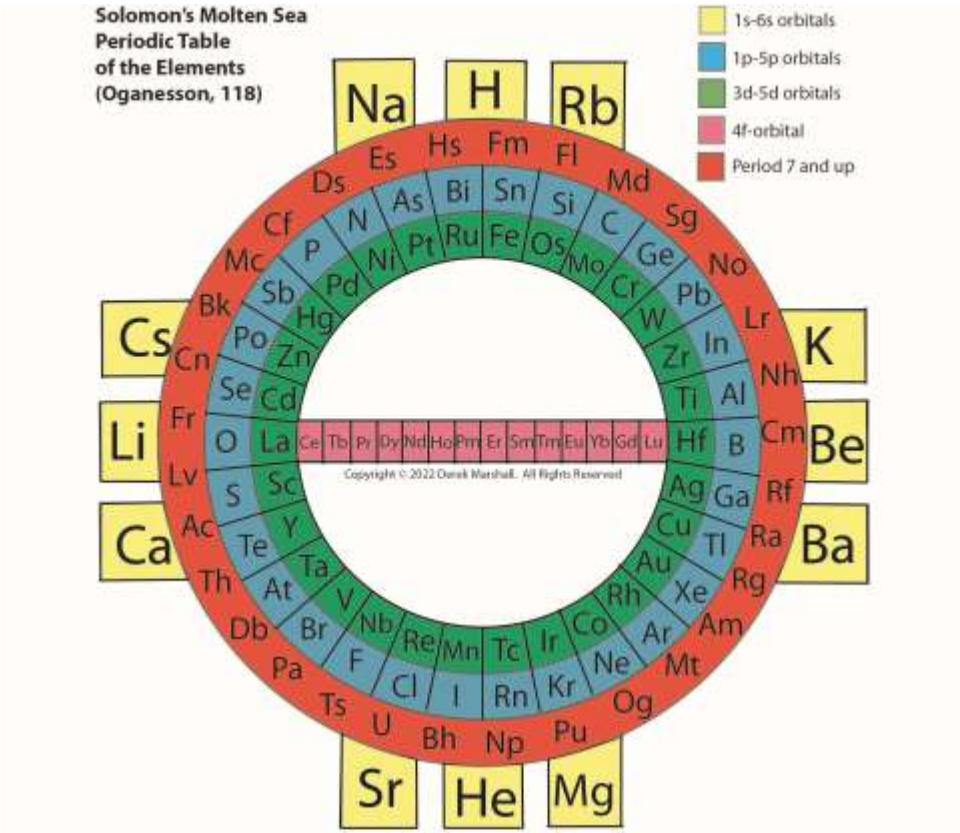
- This is the lower bowl under the knop rings.
- This partial circumference under the knop rings is 14 cubits, as calculated earlier.
- Each cubit represents one occupancy, one atom.
- The *f*-orbital occupies the 14 cubits of the bowl.
- As shown in purple, 14 cubits fill up 4f orbital on PTOE → 14 elements. Here $n = 4$, creates N-Shell -> 32 electrons
- ℓ quantum number relates to angular momentum of electron. Formula: $\ell = +/- (n - 1)$. Now ℓ has values.
- Since these elements form the bowl, they can have angles above the base plane of oxen.
- Also, as a half-ring, it has additional degrees of freedom to move and spin, forming the more complex orbital structures of rare-earth elements.

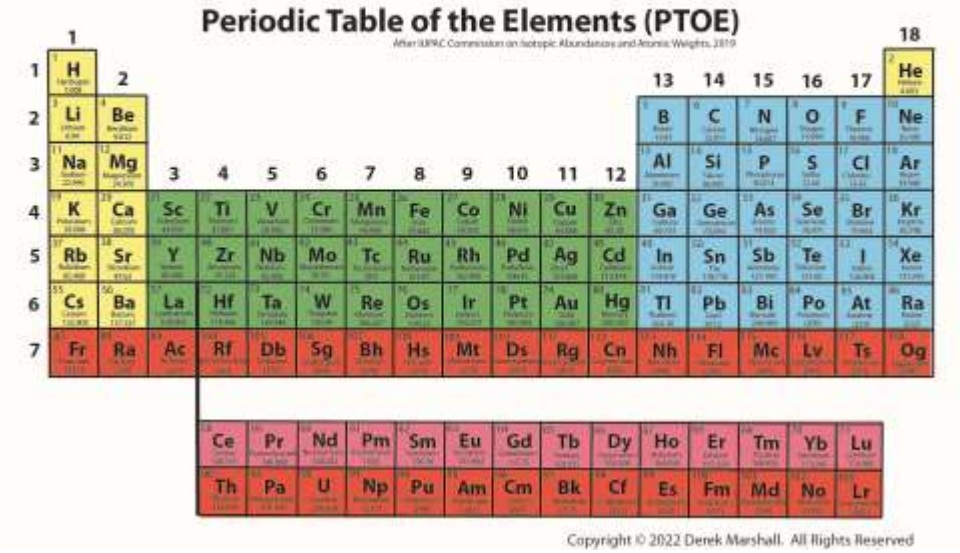




31.4 cubit *7th Period*: Fluted Lip of Bowl (Red)

- This is the wider top brim of the bowl.
- This fluted lip was hand-worked into the shape of lilies on the MS.
- The brim was 10 cubits diameter across. Using π, circumference = 31.4 cubits approx.
- Each cubit represents one occupancy, one atom.
- As shown in red, 31.4 cubits fill up 5f orbital on PTOE → 32 elements?
- The full model, as shown completely filled in, represents Oganesson, Og, the largest element discovered
- The orbitals of superheavy elements such as Oganesson are subject to relativistic effects. Relativistic effect: *length contraction*.
- To "fit" 32 elements into 31.4 cubits of occupancy would require 0.98 contraction. Theoretical velocity around 0.19c
- Thumbnail calculation of Og outer shell velocity, using Fine Structure Constant is about 0.12c.
- These elements are mostly synthetic, man-made. Only the first 6 are naturally occurring. Similar to the idea that the brim is hand-worked.
- This completes the 7th period, and *completes the full PTOE!!!*

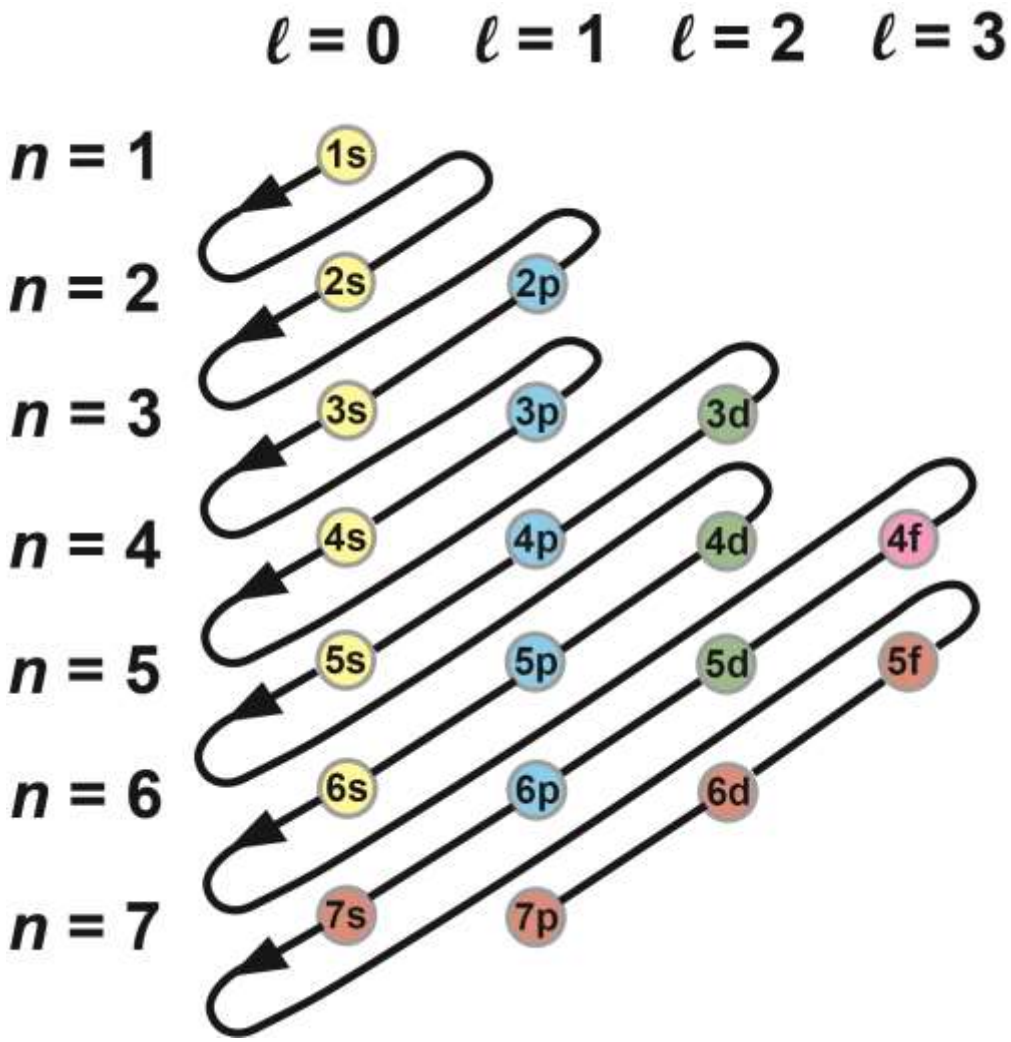




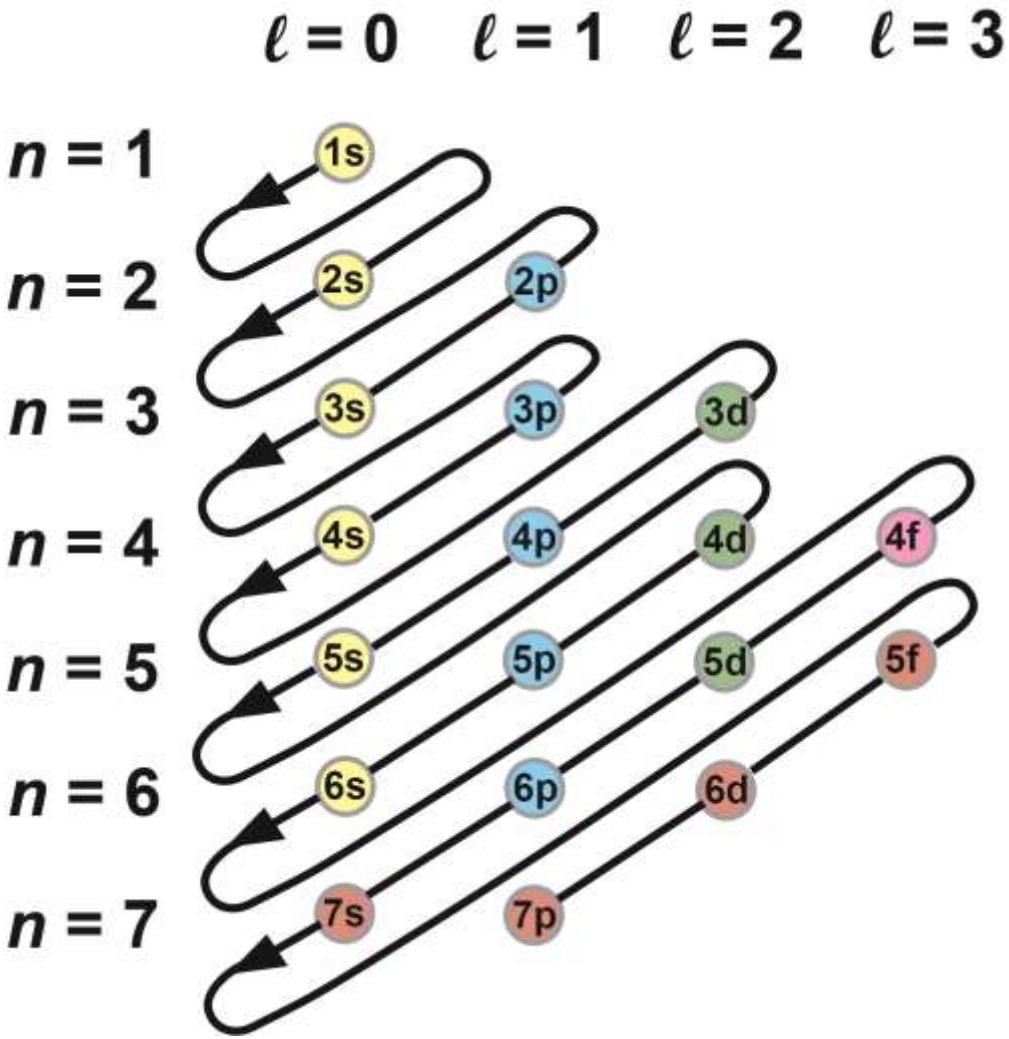
The Aufbau (Build-up) Principle

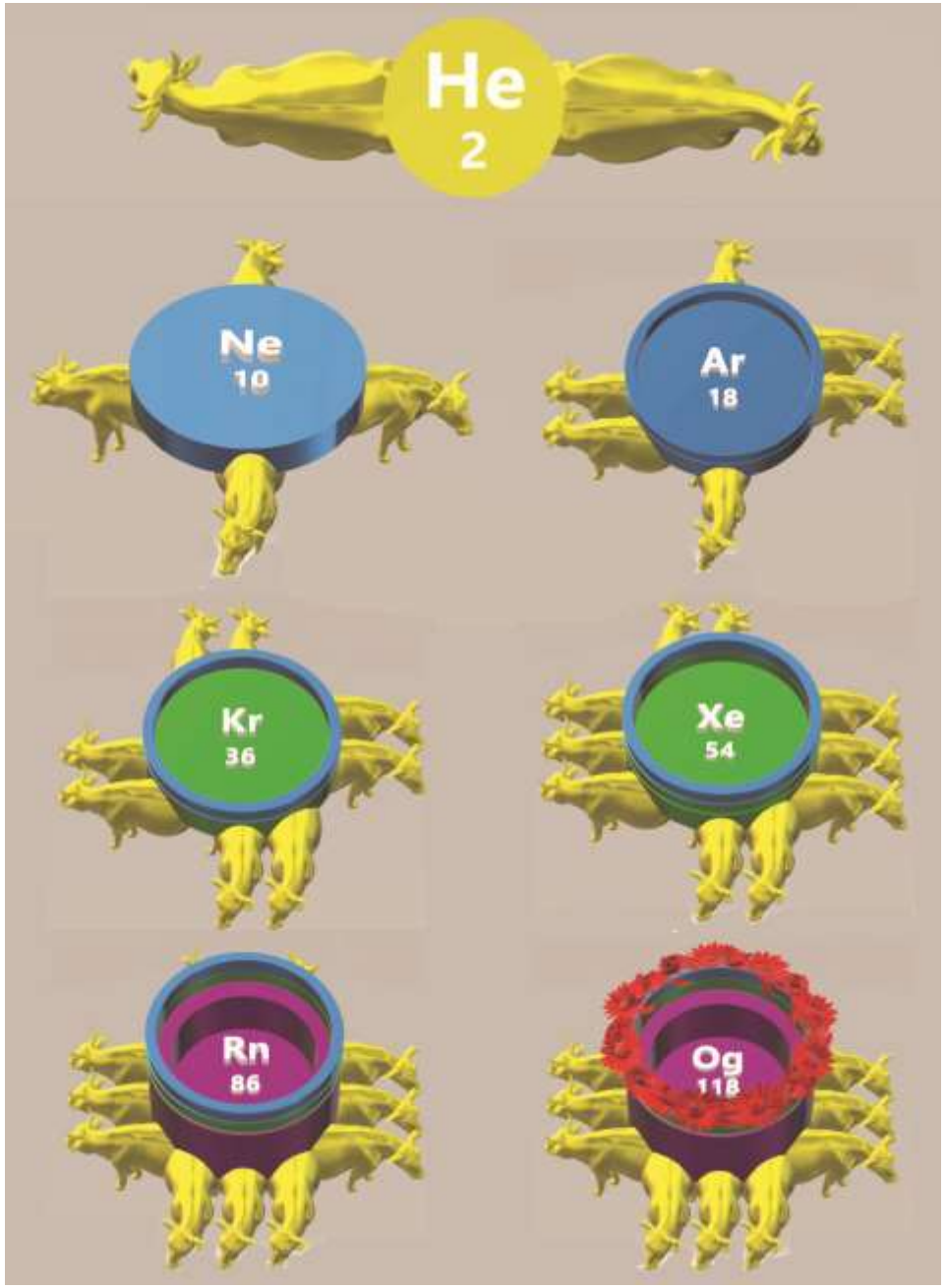
- Electrons "aufbau" or "build up" orbitals based upon their energy levels.
- Lowest energy filled first.
- Applied to model:

1) Oxen, s-orbital
2) First Ring, p-orbital
3) Second Ring, d-orbital
4) Bowl, f-orbital
5) Lip, 7th Period



The Aufbau (Build-up) Principle





COG Book: The Daniel Image Periodic Table