electric
universe

‘The Structured Atom Model & Transmutations’

Edwin Kaal

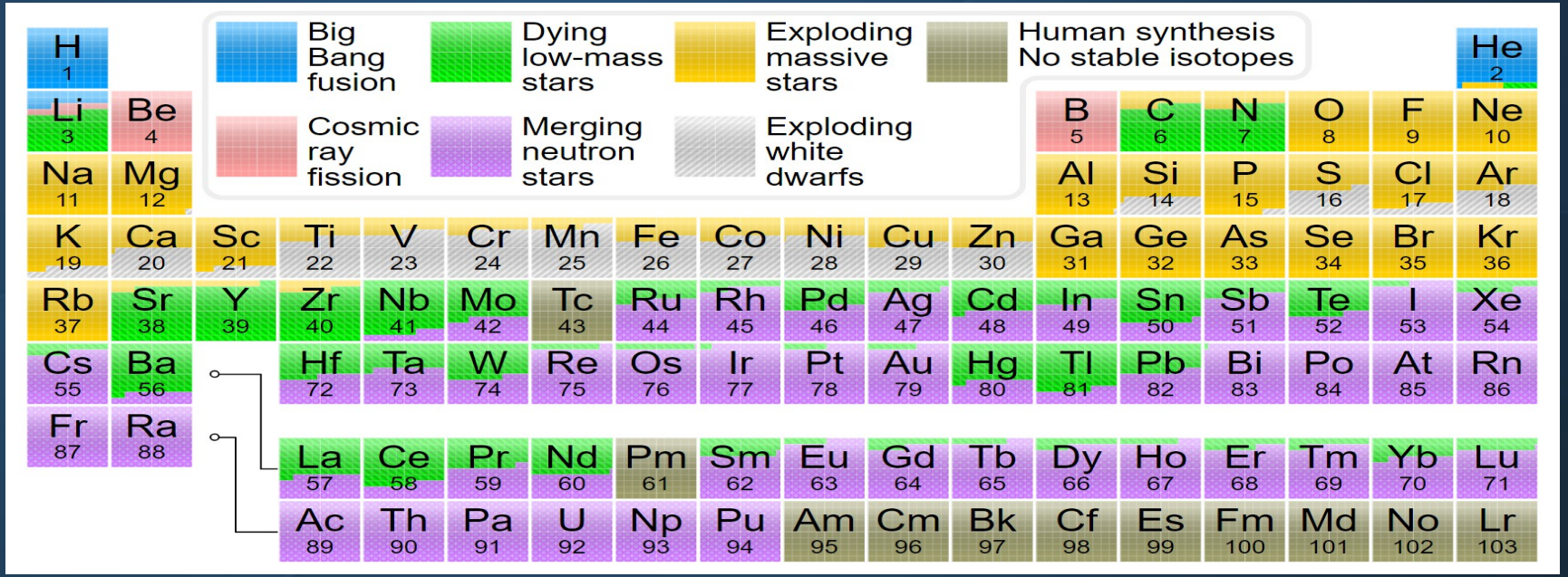
reconnect 2018

Introduction

Presentation content

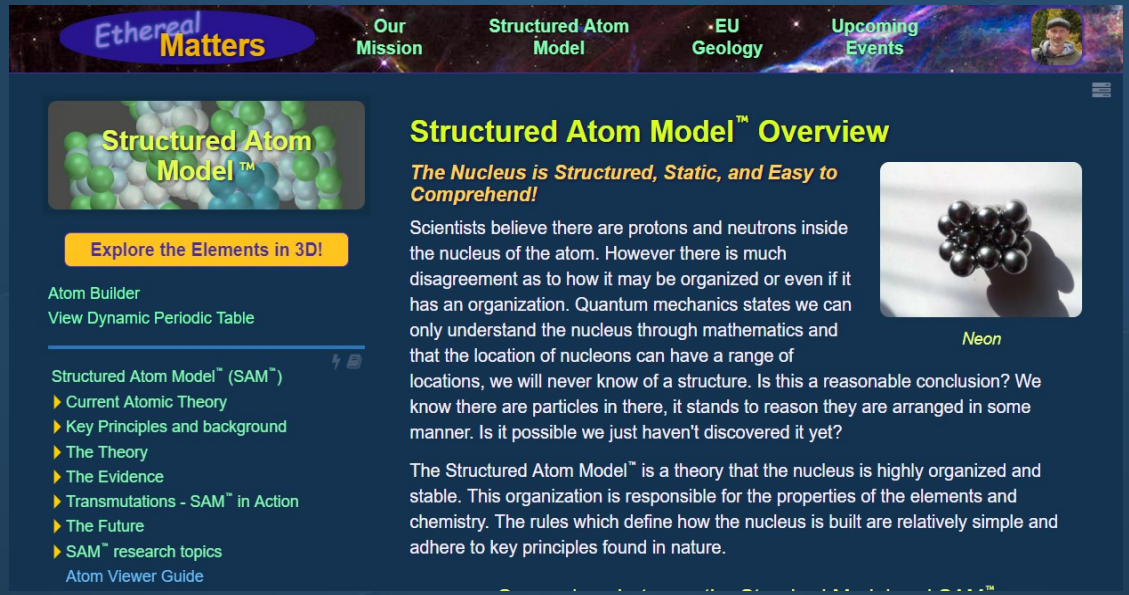
- Intro
- Recent Activities
- SAM recap
- Physics of SAM
- ICCF
- SAM and LENR
- Hypothesis
- LENR processes observed in nature
- Conclusion, Discussion & Summarizing

How were the elements created?



Creation of the elements as currently conceived

Recent Activities



- Presentation at the EU2017 conference
- Website launched
- Attended & presented a poster at the ICCF-21 conference
- Transmutations was the prevailing topic

Recent Activities

- The first 29 elements of the PTE released to the public, rest will follow
- An Atomizer-builder has been generated that can be used to (re)create any element or isotope
- Allowing the tooling to accurately depict elements and isotopes (reaction products)

Atomizer screenshot

Recent Enhancements

- Added “inner electrons” placement (learning more about the nature and behavior of the nucleus: Increased understanding nuclear reactions)
- Added “extra neutrons” feature (ability to create unstable isotopes)
- Implemented a color coding based on conventional proton-neutron model (understanding (in)stability isotopes)
- Made it much faster, added a lot of background info and explanation and made many general improvements
- Atomizer-Viewer (29 elements) works on a Smart Phone

Chemistry and Physics

Particle Physics | Nuclear Physics | Atomic Physics

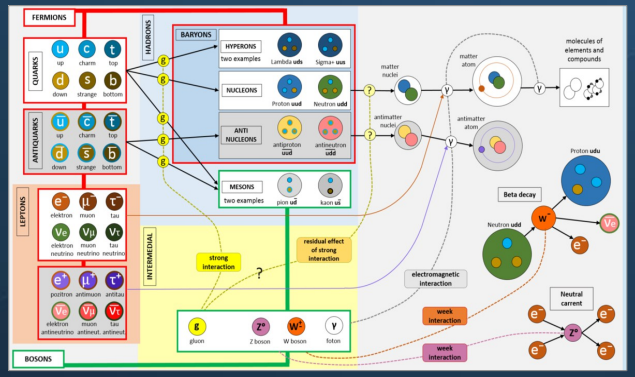
Quantum Mechanics

Structured Atom Model – SAM

Chemistry

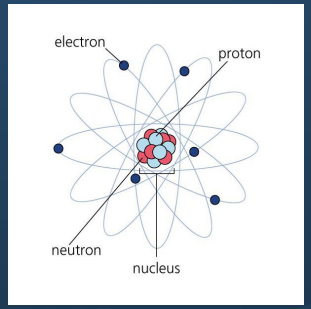
Quantum Concepts

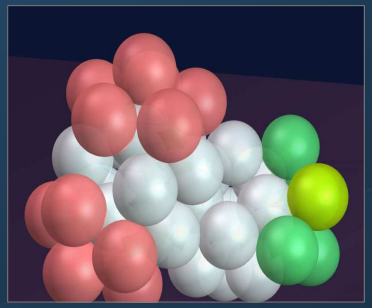
- Particles fading in and out of existence
- Over 200 particles identified
- Uncertainty Principle – cannot know both position and speed at the same time



Nuclear Reactions

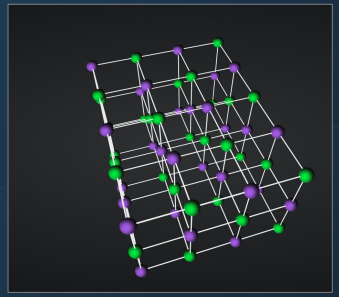
- Exploding Stars
- Nuclear Power Plants
- Atom/Hydrogen Bomb
- Radioactive decay
- LENR Reactions

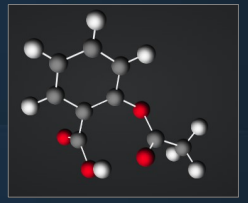




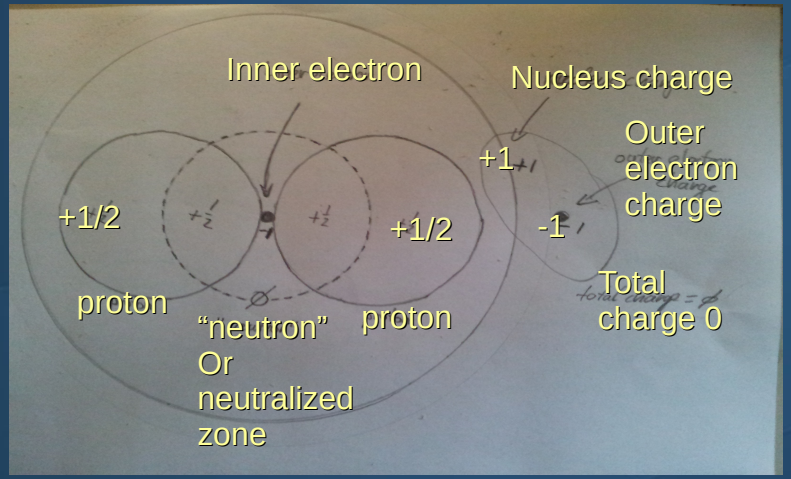
Chemical Reactions

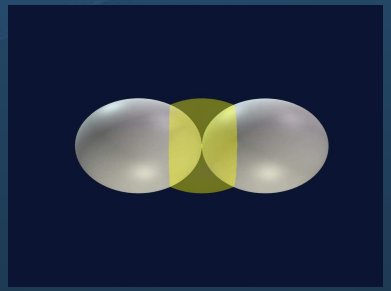
- Burning Candle
- Photosynthesis
- Cooking an Egg
- Rusting Iron
- Fireworks





SAM recap – the components of the atom

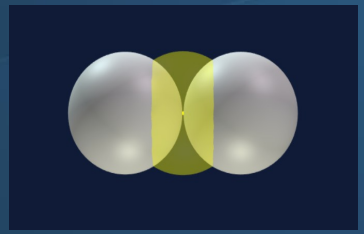
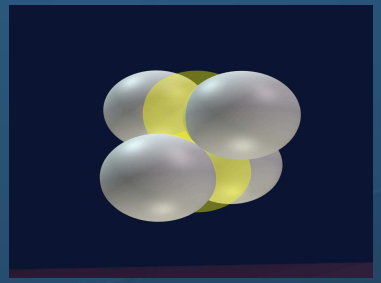
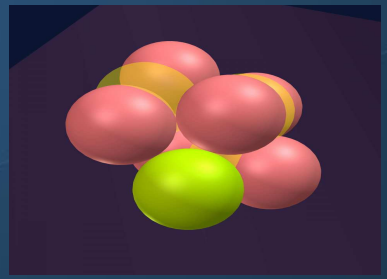
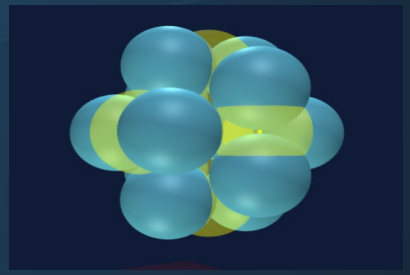
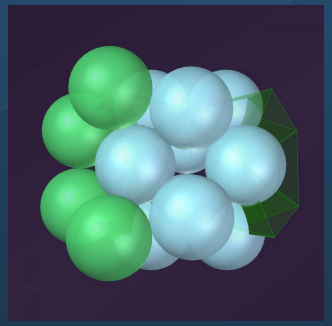
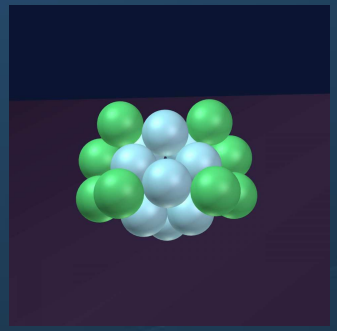
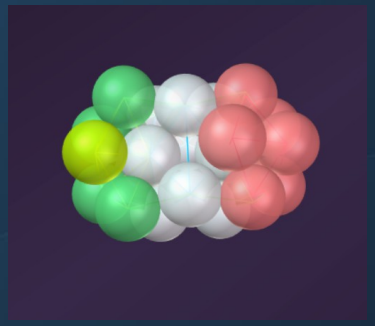




- New neutron / Deuterium / 2H from the nucleus to the atom to a molecule.
  This is the most important "building block" or "nuclet"
- "But as to atomic energy, my experimental observations have shown that the process of disintegration is not accompanied by a liberation of such energy as might be expected from the present theories." (Tesla, 1931 NYT interview)

The Nuclets – Further Organization

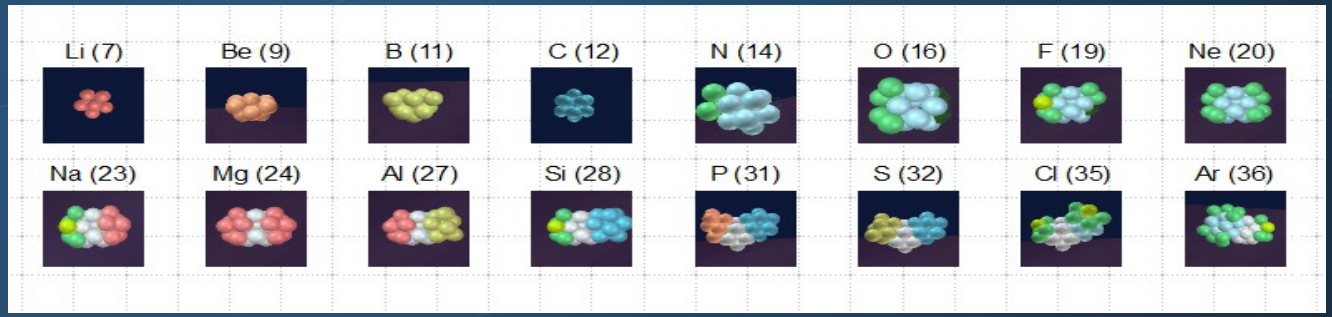
Nuclets are specific groupings of geometrically shaped protons-electrons or rather made up of the Deuterium nuclets as pointed out in the 'new neutron'.

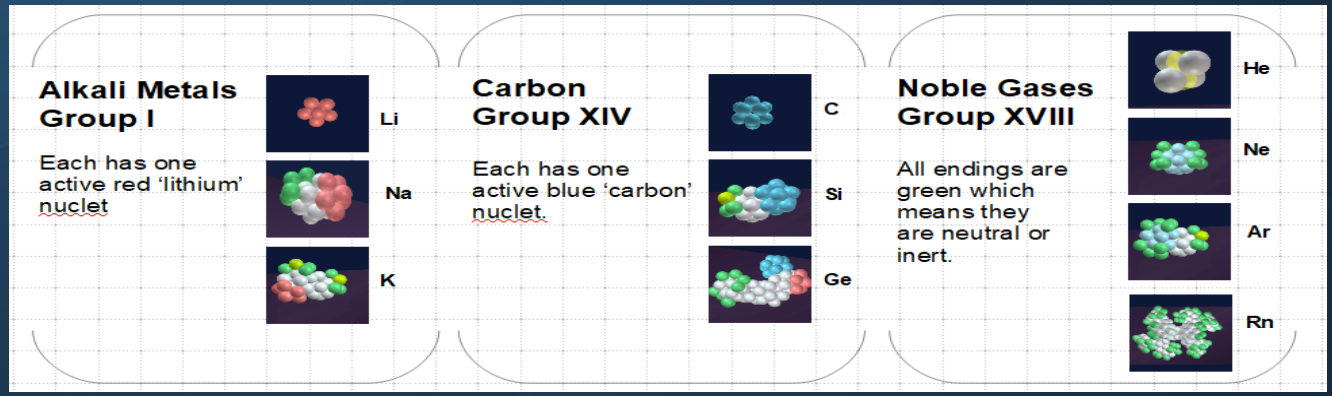
SAM Linked to the Properties of the Elements

Cycle of 8 +1 +2 +3 +4/-4 -3 -2 -1 0

The periods

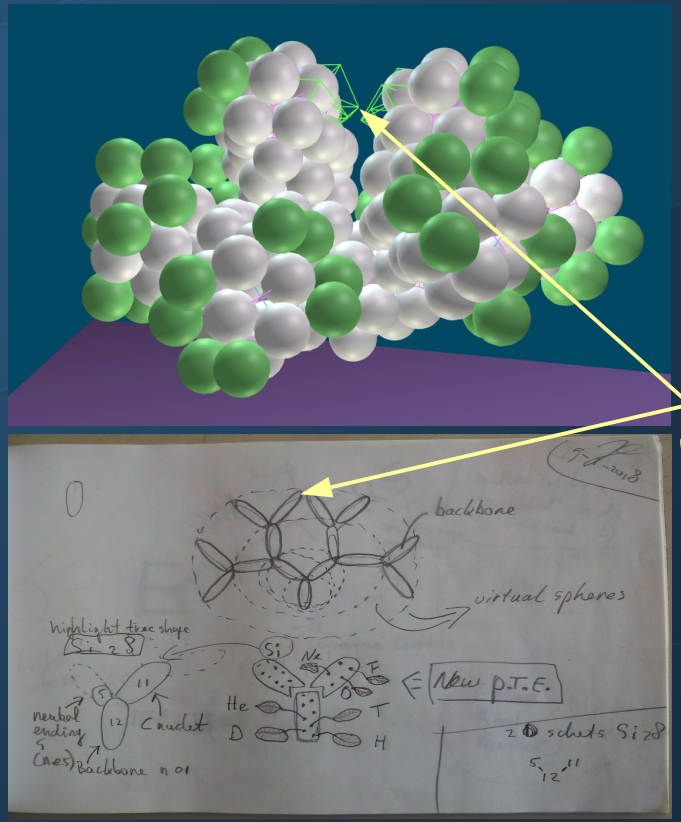


Groups

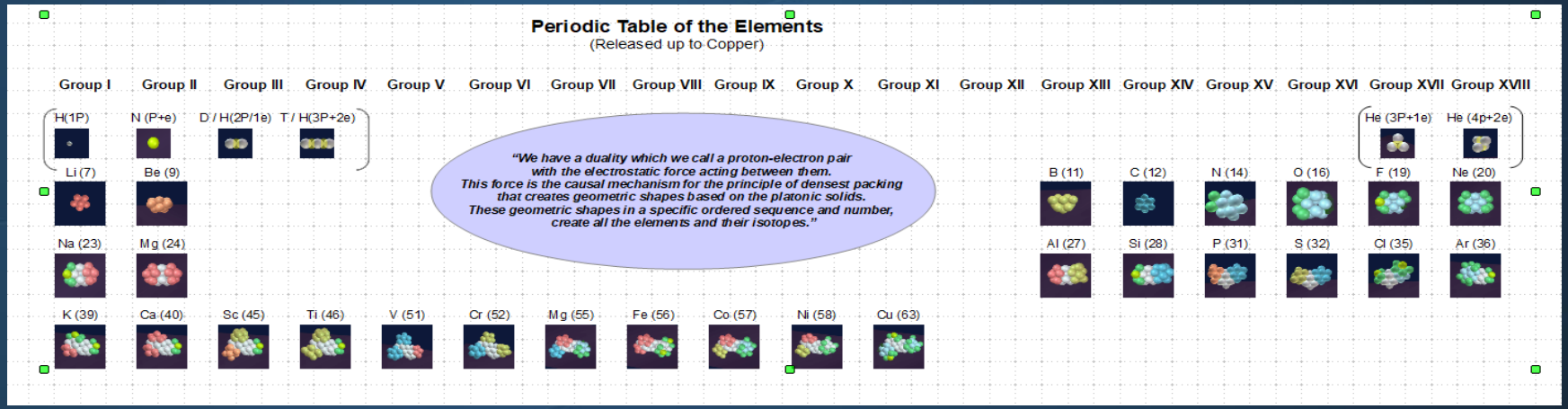


The Shape of the Larger Elements

- The nucleus shows polarity
- Nuclets – The nucleus is constructed from (repeating) recognizable geometric groupings
- The (active) nuclets in combination with the larger structure (backbone) results in the properties of elements
- Each element is like a growth fragment of the 'tree'



The First 29 Elements Created by SAM



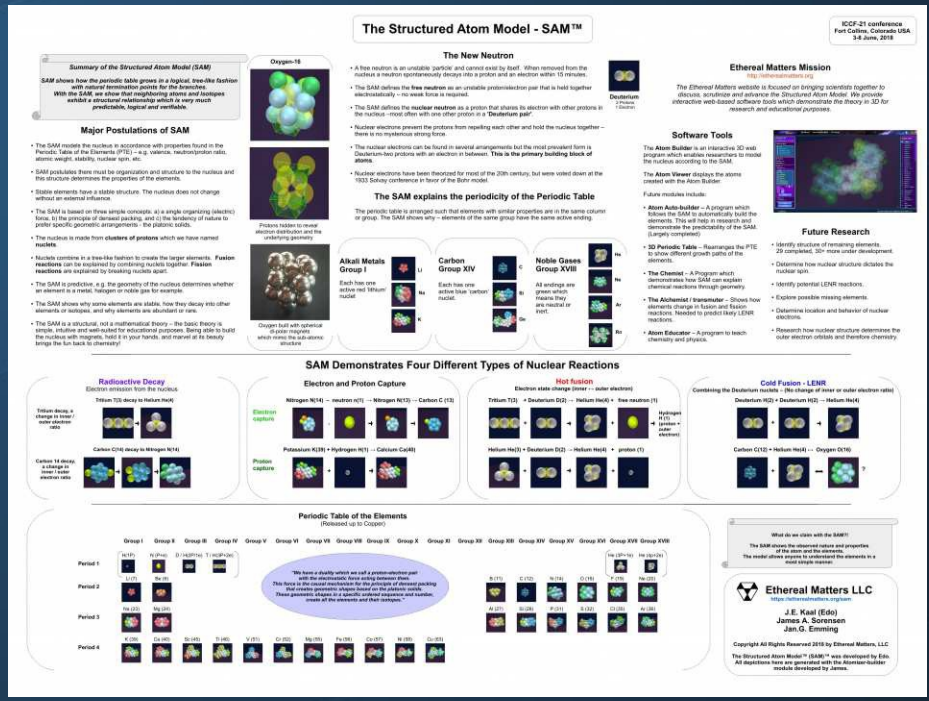
For more information and background visit the page
https://etherealmatters.org/sam

The Atom According to SAM:

- Is based on the proton – electron duality
- 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
- Has no need for a strong force
- Does not need mathematical equations to depict the nucleus

Presentation of SAM at ICCF-21

- About a month ago the SAM group visited the ICCF-21 conference at the CSU with the intention of promoting SAM by presenting a poster and to learn about the LENR field



ICCF-21

- Experimental data presentations
- Hydrogen or Deuterium fusion
- Transmutations in Nickel or Palladium systems trans-mutating into Copper and Silver respectively
- During a special session that dealt specifically with the atomic structure and concepts like “binding energy,” we learned that since 2016 - a structure for the nucleus **is** now acknowledged

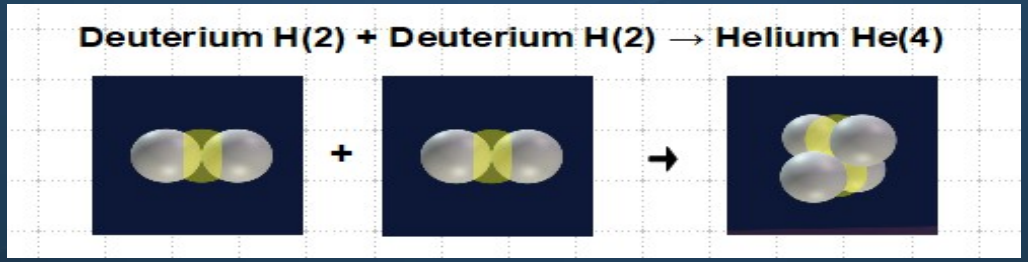
Conference room

Issues in LENR Preventing a Break-Through

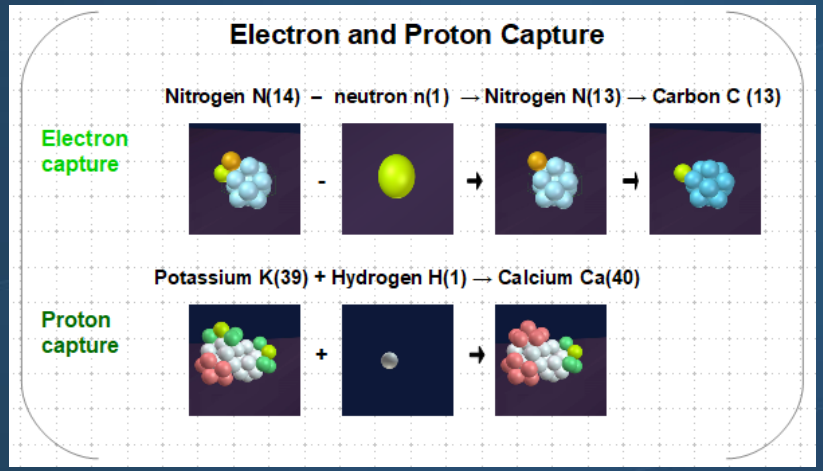
- Lack of controllability - control of the electrodes proves difficult
- Repeatability is not always assured
- No theoretical model - reactions are not understood

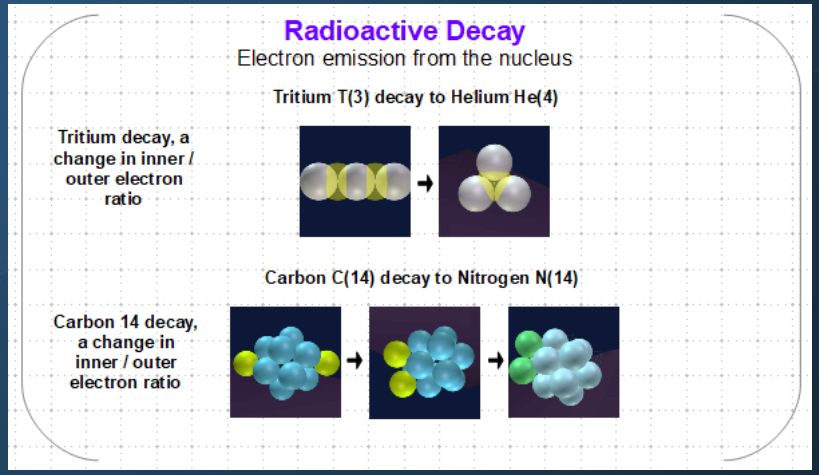
Stanley Pons & Martin Fleischmann

Yet the original experiment by Pons and Fleischmann (1989) has been recreated by Melvin Miles (1991) in such a way that it is / should be indisputable. Excess **Heat and He4** production from D2 is precisely correlated.



SAM & LENR - Nuclear Reactions

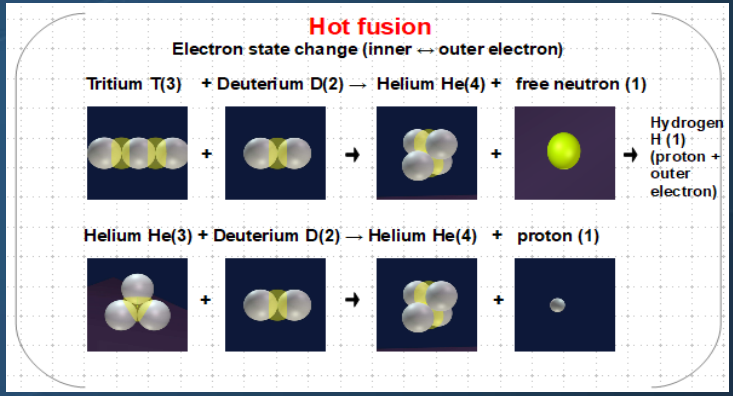


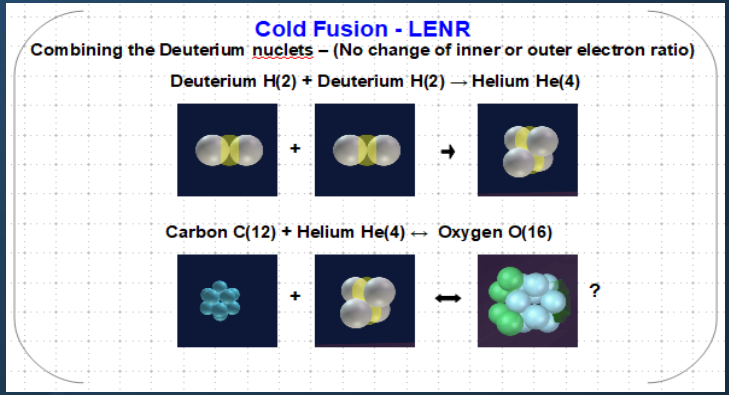


We learned that these experiments are solid, but that the break-through that could cause LENR to be accepted, remains elusive

Nuclear Reactions

We learned that we can differentiate between hot and cold fusion and that the SAM model accounts for and is able to depict nuclear reaction products..

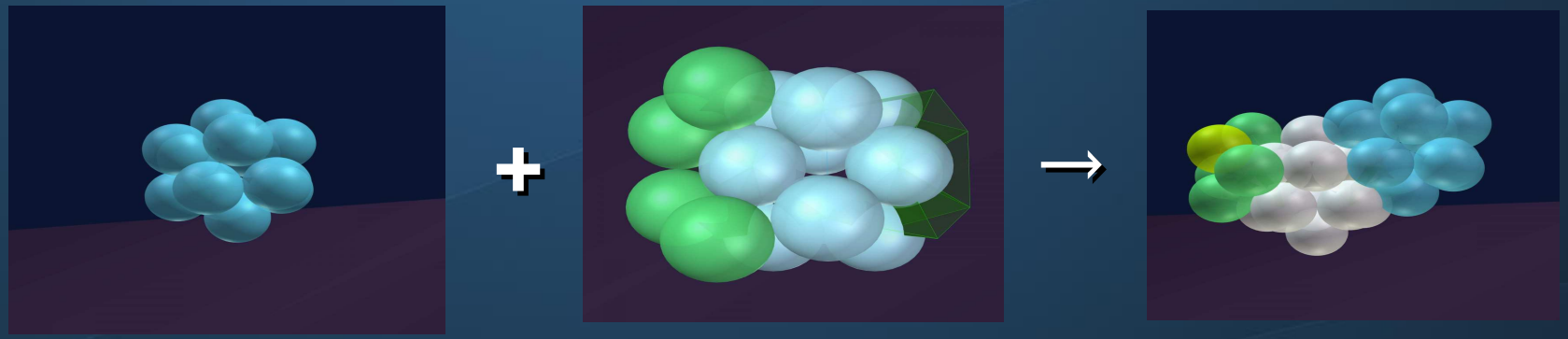




The Electric Component - Linking Pin

- The ICCF community is trying to find a model that would predict reactions (LENR) and therefore help in achieving a break-through.
- Example of suspected reaction taking place in geology

  C + O → Si + E (heat)



- This is important for both the EU and the LENR communities

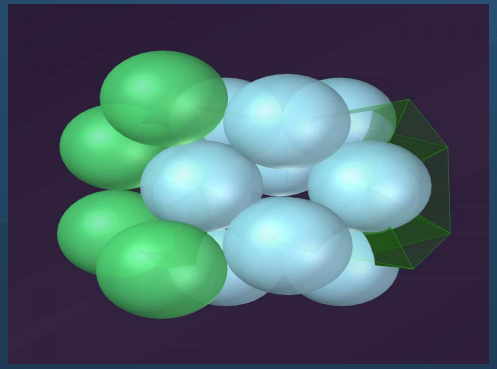
Transmutations in Nature

- Nature provides many hints of transmutations taking place
- Kervran – biological transmutation such as
  $K39 + H \rightarrow Ca40$
- Peter Mungo Jupp – instant petrification
  Petrified animals imply instant events
- James Sorensen will be narrating during our tour to the Cheddar Canyon, explaining Geology through “ electric glasses”
- Too many to name when one starts looking for transmutations...

The Oxygen Group.... Sulfur

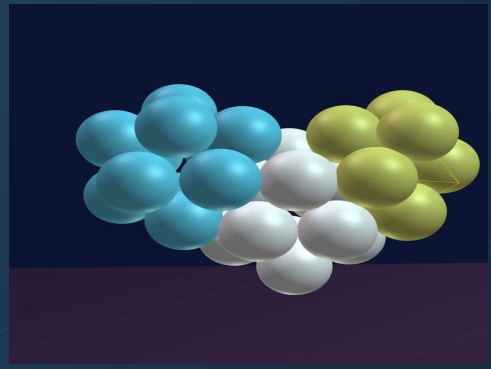
The Oxygen group is peculiar in that Oxygen doesn't seem to fit in this group that it's named after. When we examine this closer we can see that Sulfur has the right numbers (2 * 16 = 32) to be a combination of two Oxygens.
Assuming this takes place, what would be the result?

16 protons



Oxygen

32 protons



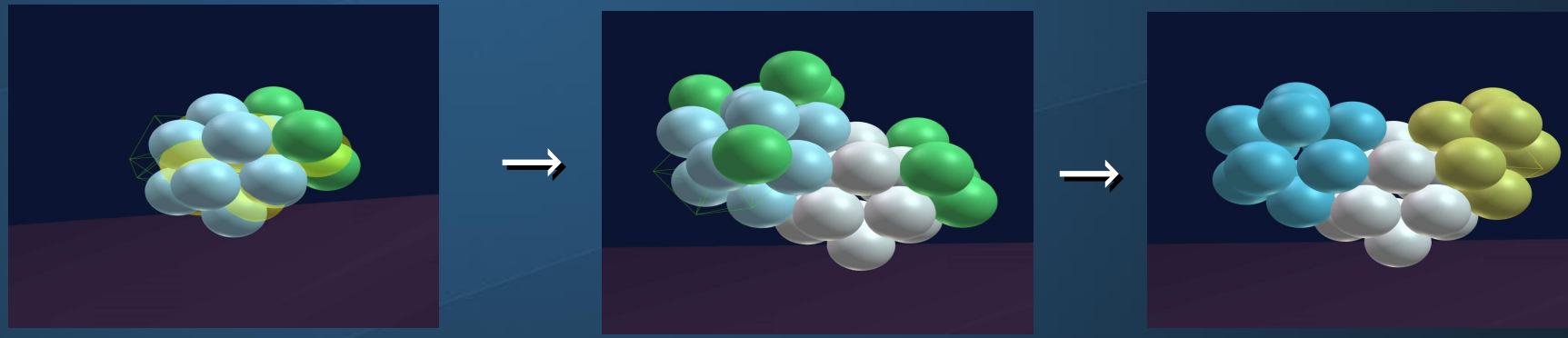
Sulfur

Oxygen Group and the Elements

Oxygen

Sulfur (2 fused O)
In-between state?

Sulfur

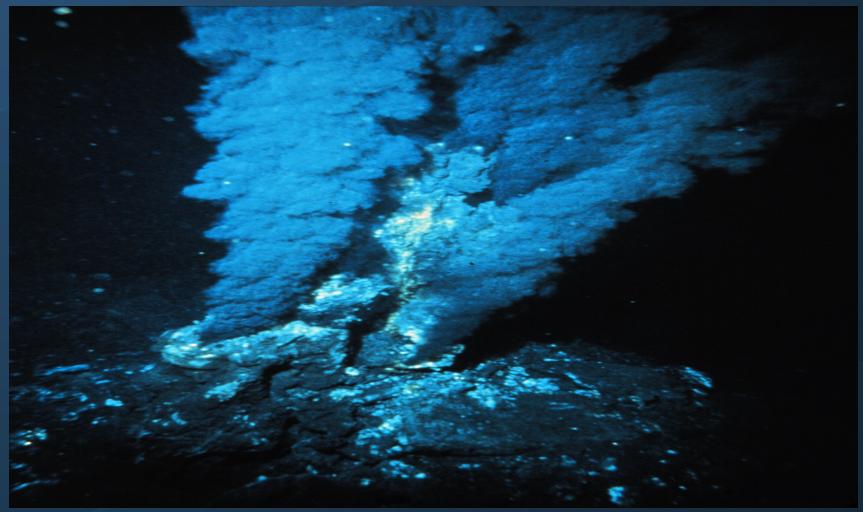
2*  →

2O16 → S32 ? (# protons & neutrons / inner electron are the same before and after)

Hypothesis

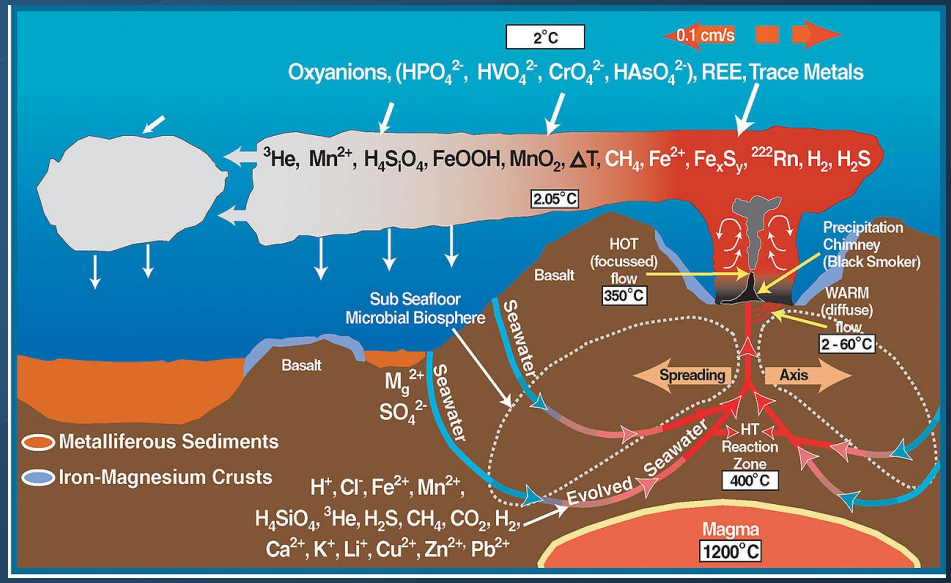
Could it be that, the (heavier) elements are created in situ on the earth itself through what is known as LENR, and that these processes are the cause for geological processes such as volcanoes and explain the abundance of the elements?

black smoker



Mid Oceanic Ridges – The Conventional Story

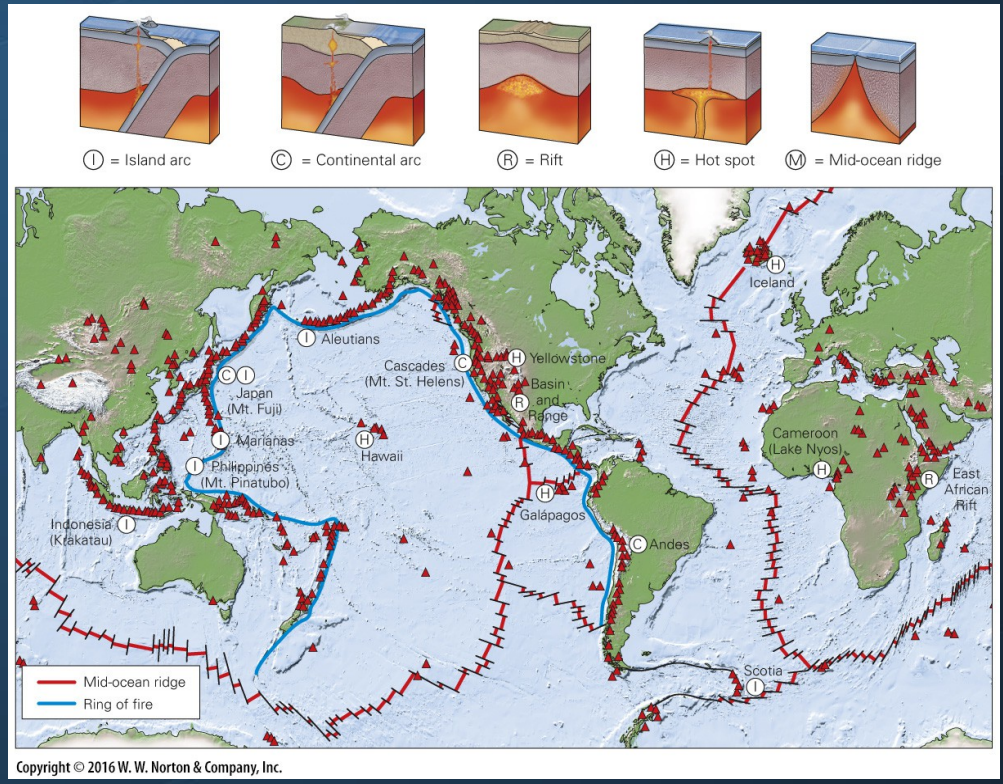
- The ocean's contain at least a million volcanoes and many more vents (black smokers)
- High abundance of Sulfur. The S tends to rise up as H20, S, So2 etc.
- The **Moho**rovičić discontinuity on average 35 Km deep +- 500 m thick



- The outer core is suspected to be mostly Iron, but magmas are silicate liquids. Thus, magmas do NOT come from the molten outer core of the earth

Volcanoes / Black Smokers / Mid-Oceanic Ridges

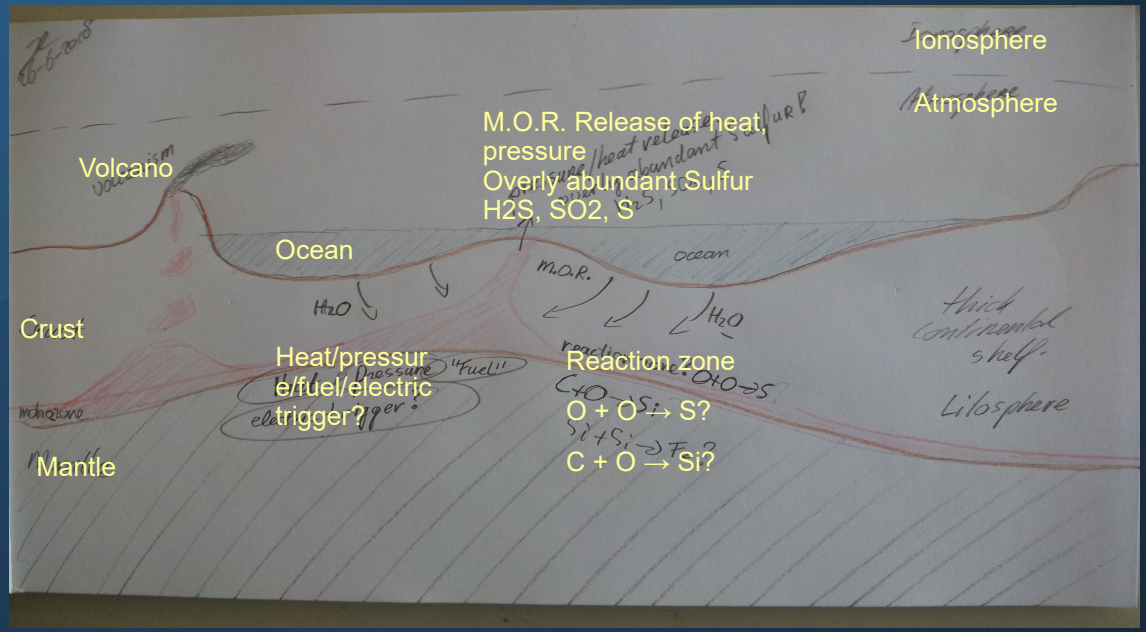
- What if we put the LENR reactions into this picture?
- Heat is produced, Oxygen is transported into the bowels of the earth, Sulfur is available in large quantities! Volcanoes and black smokers are the result and they are concentrated in certain places



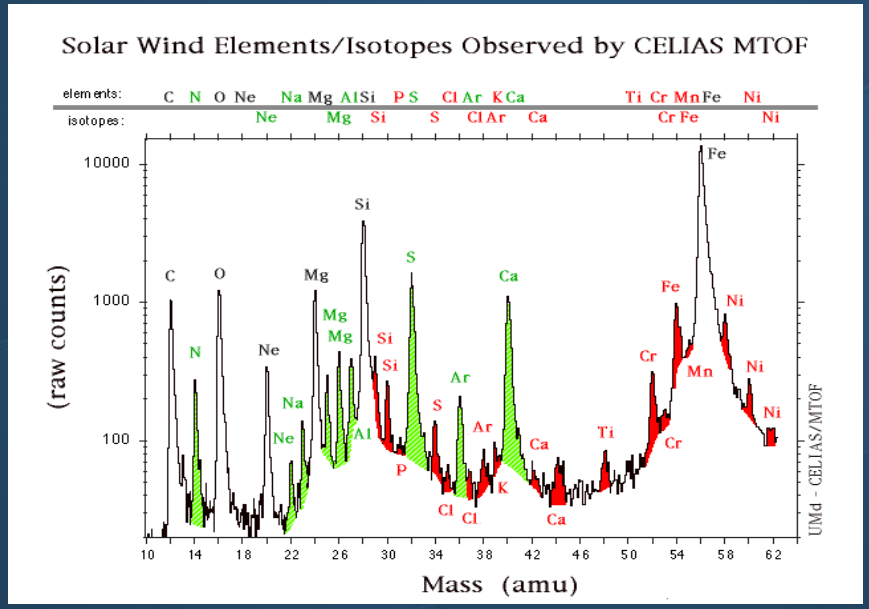
Hydro-cycle

- LENR reaction and heat creation, creation of Si ! (SiO2) and lots of other products. And the lighter elements are brought to the surface. The Si (O) remains and increases rock material.
- O + O → S + heat ?
- C + O → Si + heat?

- Exactly how all of this works needs a lot of research



Solar Wind



Chemical composition solar wind

Solar wind has Oxygen as third abundant element
Oxygen & Hydrogen makes water!

VON STEIGER ET AL.: SOLAR WIND COMPOSITION

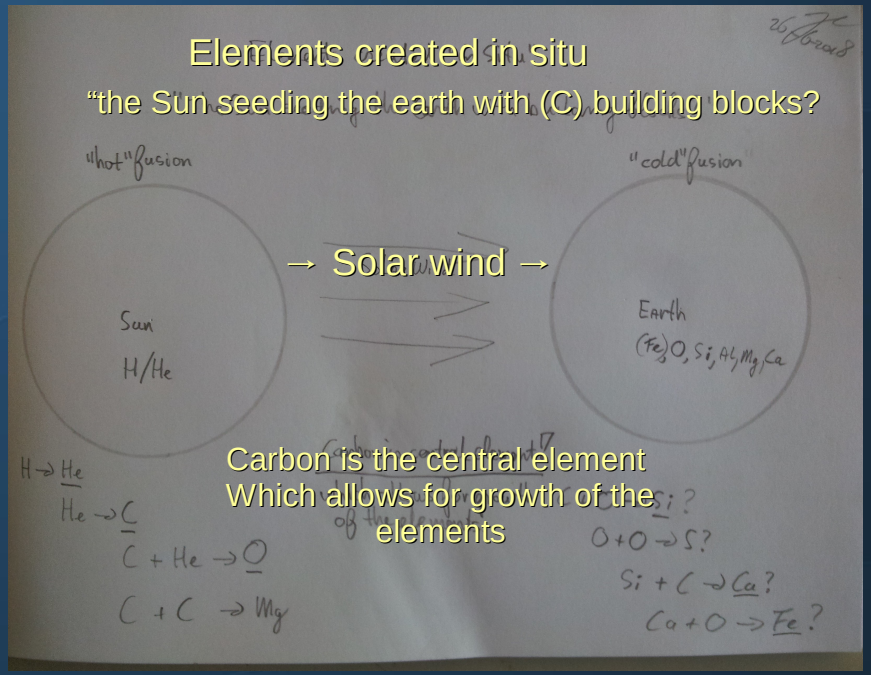
Table 1. Abundance Ratios Relative to Oxygen Obtained With Ulysses/SWICS During the Four ~300-Day Periods Defined in Plate 1[a]

	FIP	"Max"	"South"	"North"	"Min"	Phot.
He	24.59	95.9 ± 35.1	72.7 ± 7.9	73.6 ± 8.2	84.0 ± 33.0	126
C	11.26	0.670 ± 0.071	0.683 ± 0.040	0.703 ± 0.037	0.670 ± 0.086	0.489
N	14.53	0.069 ± 0.038	0.111 ± 0.022	0.116 ± 0.021	0.088 ± 0.035	0.123
O	13.62	$\equiv 1 \pm 0$	$\equiv 1 \pm 0$	$\equiv 1 \pm 0$	$\equiv 1 \pm 0$	$\equiv 1$
Ne	21.56	0.091 ± 0.025	0.082 ± 0.013	0.084 ± 0.013	0.104 ± 0.027	0.178
Mg	7.65	0.147 ± 0.045	0.105 ± 0.025	0.108 ± 0.022	0.143 ± 0.055	0.0560
Si	8.15	0.167 ± 0.047	0.115 ± 0.023	0.102 ± 0.023	0.132 ± 0.042	0.0525
S	10.36	0.049 ± 0.016	0.056 ± 0.013	0.051 ± 0.014	0.051 ± 0.021	0.0316
Fe	7.87	0.120 ± 0.039	0.092 ± 0.017	0.081 ± 0.014	0.106 ± 0.044	0.0468

[a]The numbers denote averages of daily values with their 1-σ variability. Photospheric (Phot.) values are from *Grevesse and Sauval* [1998]. SWICS, Solar Wind Ion Composition Spectrometer; FIP, first ionization potential.

From the Sun to the Earth

- Sun: Hydrogen into Helium, Carbon and fuses those into Oxygen? Solar wind has Oxygen as third most abundant element
  4H → He4 / 3He4 → C12
  C12 + He4 → O16
- Earth collects water and turns the oxygen into building blocks for further fusion processes?
  C12 + O16 → Si28 + C12 → Ca40
  Ca40 + O16 → Fe56
- Is this connected to geological activity? Heat release of LENR type reactions and creation of earth minerals by using liquid water?



Conclusions

- In Nature, “Cold Fusion” seems to be happening everywhere, without significant gamma ray production. They can be both endothermic & exothermic. Experiments are showing this to be the case (LENR / Krivitsky / Cook). The one missing factor is **understanding**, which would provide predictability and controllability.
- The SAM model can help us better understand these processes and help fill in this missing piece of the puzzle. When we better understand the reactions, we could potentially create new LENR technologies for energy production for example, or the creation of certain elements and isotopes. Nature seems to do it all the time!
- The elements are created more or less in situ!

Discussion

- Much remains uncertain, many new questions
- A break-through seems to be close
- Need collaboration between the various stake-holders:
  - Theorists
  - Experimentalists
  - Naturalists
- Only by working together will we succeed. The LENR field is a promising one and one that I believe is in concert with the EU paradigm. The SAM model can be the conduit between the two...

General Recommendations

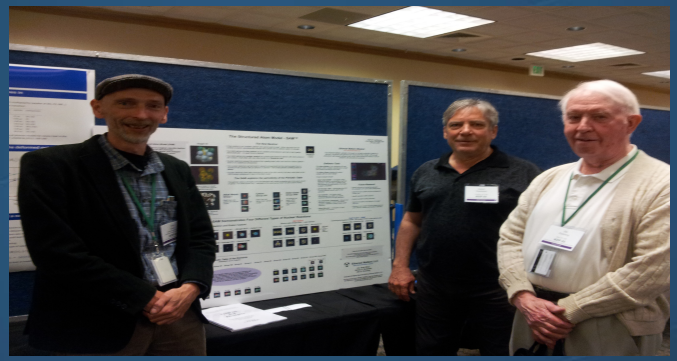
- More collaboration
- Crossing boundaries between disciplines (scientific fields)
- Need for a new understanding / paradigm shift and the will to do that..
- Attract more investments, without this, progress is slow at best
- Attention / exposure, “How to reach the mainstream”?

Presentation Objectives

- Inspired others to explore the idea of (in-situ) creation of the elements, differently from the standard model
- Showed the potential of SAM and its utility for learning, understanding and education
- Emphasized the need for a suitable physical model for the atom
- Informed those interested about what “we have been up to”... so far

Thank You on Behalf of the Team

The team:



Edo Kaal

James Sorensen

Jan Emming

With special thanks to!

Adrian Gilbert

Lucy Wyatt

And to all the others out there who helped in their own way to advance the model

The Structured Atom Model and Transmutations

EU 2018, Bath, U.K.

A PROPOSAL FOR FUSION PROCESSES ON EARTH

Edo Kaal