

Meanderings of things we think we know or don't know.

By Eugene A. Ellis (Revised October 2016)

In the Beginning, there was nothing, zero, zip, nada.

Energy, a pillar of the Standard Model of Particle Physics, became the first entity. When the energy reached massive levels, the second entity... *Dark Matter* was born (hydrogen via pair production?). From this first element, the next 20 or so larger elements amalgamated or evolved as time marched on in total darkness, absolute zero temperatures, and in a perfect vacuum.

Gravity gathered various elemental masses of dark matter into various sized balls in various separated places; however, trillions upon trillions of hydrogen or hydrogen-helium balls predominated in the early universe and when each ignited (not as a singular Big Bang 13 or 14 BYA) they became the burning stars. That time marked the appearance of a third entity...*entropy* (heat and temperature) that is thought to be energy and generally ignored. Where did the heat from all those stars go...then and now? Moreover, what was the temperature of the early universe? Absolute zero? 2.7 Kelvin? Is the universe cooling? Or is the heat entropy increasing while its temperature is diluting in the ever increasing space of an accelerated expanding universe.

During those early times, dark elements could merge and become different elements but they could not join other elements to become molecules or compounds and they could not grow larger. That is, until ~8.8 BYA when the first dark element (calcium) ionized and became spectra visible. Everything changes after an element ionizes for the first time. Thereafter, it is postulated the element can grow or heat in addition to having bonding capabilities at certain times (levels). Before ionization, there were no ions, no plasma, no electrons, and no charged particles to inflate the universe; so how do the Big Bangers explain the suppositions 4 or 5 BY earlier? Before Einstein's $E = mc^2$, energy and matter could neither be created nor destroyed. The same applied after $E = mc^2$, but energy and matter became interconvertible with the potential to interchange. This equivalency corollary would not apply to entropy because heat is one directional and non-reversible. The corollary also would not apply to the atoms of the Standard Model (SM) because it is believed...atoms cannot change size. Interesting, the universe of the SM is believed to consist of energy and matter but the atoms of that matter cannot increase in size. So what does Einstein's energy convert to in a SM universe? Logically, if matter cannot increase in size, then our Earth began with its current size and the tectonic plates would recycle as the continents meander above (the evolution of P-T theory?).

Charlotte Moore charted a table of ionization potentials and limits of the elements (NBS-34). In an Ionic Model, a time factor (1 eV / 1.595235 MY) applied to her energy level chart reveals the limit (which starts the grow/heat phases) and the *time* when each element has the potential to ionize and bond. An anomaly in the levels identifies the heating phases.

Earth coalesced in a cold galaxy around 4 1/2 BYA orbiting one of the stars, our Sun, with 8 of the 20 or 30 existing elements comprising 98.8% of its mass. The orbital radius from the Sun and the Earth's radius at that time were about 1/8th of present. During the first 3000-3500 MY, the active elements were predominately producing heat and a very hot and loosely compacted planet would absorb the small amounts of growth. The temperatures within became sufficiently high to melt the iron that mostly gravitated to the core while the lighter matter rose to the top to become the crust. Water arrived ~ 1.2 or 1.4 BYA to solidify the molten crust. Around 700 MYA, half of the planet was heating and half was growing. During those times of high heat and high pressure (and at similar later times), many of the larger elements were fashioned within. Moreover, those same conditions of growing and heating in the mantle and core brought volcanism to the surface, splitting the solid crust. These events occurred well before the beginning of the Cambrian Period and by the middle of the Ordovician, Earth's radius doubled to about 25% of its present size

As expansion continued, many of the original cracks widened and lengthened forming the continental shelves as depicted in white on the NOAA map. Expansion slowed ~358 MYA beginning an extensive heating period that intensified between 266 MYA and 241 MYA when over 80% of the planet was heating. This intense 25 MY heating period bracketed the Permian-Triassic boundary (250 MYA)... the geological time of the world's greatest extinction.

When iron (32.1%) resumed growing 241 MYA and oxygen (30.1%) at 220 MYA, rapid expansion again doubled the planet's radius ~ 175 MYA. At that time, the Earth's radius and the distance to the Sun were one-half their present value. Also at 220 MYA, the original water reverted to growing. With an oxygen doubling rate of 24 MY and new H₂O possibly arriving at around 182 MYA, 124 MYA, 88 MYA, 56 MYA and 22 MYA, the sediment covered sea beds (shelf material) and the basaltic ocean floors were being filled as they developed to occupy over 70% of the Earth's surface.

Two mechanisms are necessary for the Earth to grow and expand. One for providing matter (mass) and another for providing heat (entropy), so the question becomes... are two more mechanisms needed or can the same ionic bonding mechanism also grow and heat the elemental atoms? We are told atoms can't acquire matter from converted energy and change size. And that ionization is a chemistry thing...only to join elements. Physics involves the atom and has a Standard Model with ~200 particles and 4 forces that are consistent with quantum mechanics and special relativity that has answered many, many questions. Yet, it does not account for gravity or answers why the universe is expanding.

Only a skeptic would think a two entity Model (mass and energy) lacks a third entity to account for the ever-increasing heat that is irreversible in direction. Apparently, heat is not very relevant or problematic in a two entity Model for it has been established the 2.7-Kelvin temperature permeating the universe is a remnant of the Big Bang. Consequently, all the heat from the multi-trillions of stars for multi-billions of years since time of the Big Bang disappeared or reverts to

dark matter thereby permitting the universe to expand, while the size of all the contained celestial bodies remains the same. Don't be confused about dark matter. About 85% of the mass of the SM universe is yet unaccounted...or missing. And don't be confused about heat. All the heat loss from the stars and elsewhere eventually ends up in space.

Seriously, mounting evidence warrants a reverse approach. Here the celestial bodies would gradually gain mass from growing elemental atoms, and gravity would require those bodies to move away from each other and the universe would expand naturally with no missing mass. These same bodies would have been less massive in the past in a smaller more energetic universe

The uniqueness of having so much water on Earth leads to doubting and questioning planetary growth. The Timing of Water's Arrival on Planet Earth answers those questions and numerically explains how, when, and why water forms and increases on an Ionic Growing Earth.

Ionization is the proven mechanism responsible for water on Earth and elsewhere in the universe. Connecting a time with the ionization potentials of Charlotte Moore's NBS-34 Table reveals when such events are possible and claims of water on the planet before its time become questionable. The same factor ($1\text{eV} / 1.595235\text{ MY}$) when used with oxygen's equivalent atomic weight produces a doubling rate of 23.77 MY. Doubling exposes a "Catch 22"... doubling the mass of existing atoms or doubling the number of atoms. A belief the SM atoms cannot grow in size and an equal belief that the number of SM atoms cannot increase to double the 4.9% ordinary matter in the universe. Dark matter may resolve the "catch" to fill the gravity gap, but it probably comes at the gravitons' expense.

All matter began as dark matter. The importance of ionization cannot be overstated. It not only provides the means (mechanism) for growing and heating the Earth, it also makes dark matter spectra visible. The first ion appeared ~8.8 BYA to begin slow punctuated expansions of space as each element followed suit and started to grow or heat. Exponential expansion on Earth began ~700-800 MYA, thereby providing a reset time for accelerating space expansions.

Charlotte Moore's 1970 tables indicate the energy levels of each element (and by inference, the atoms of each element) are diminishing when reading her chart from past to present (from right to left). If the energy level of the universe is decaying, then the energy must be converting to something else.

Just mulling over things we think are known to sort out the something else.

More sorting at: <http://ionic-expanding-earth.weebly.com/>