Under the (Fleeting) Iron Sky: Electron Mass is Tied to H0 Hubble Volume and the 26 Sporadics

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Abstract: The total baryonic mass within a local Hubble volume, if collapsed into its most stable state (Fe-56), would form a single-nucleus-thick layer coating the surface of the global Hubble volume. In this configuration, the average distance between Fe-56 nuclei would closely approximate the electron's Compton wavelength. The energy released from collapsing hydrogen to Fe-56 is nearly sufficient to sustain an orbit at the global Hubble radius (about 1 in 1000 difference). The separation between the local and global Hubble radii is approximately defined by a particle accelerating at MOND's a_0 over the Hubble time (see prior work).

Thus, given infinite time in an instant, an "iron sky" would form. These characteristic distances arise from the direct product of the 26 sporadic groups (UNIVERSOID). This configuration holds only at approximately 13.8 billion years post-Big Bang under the Standard Model of Cosmology (SMoC). These findings challenge mainstream cosmology, raising further doubts about its validity.

Body:

In previous work, we have observed that the direct product of the 26 sporadic groups (UNIVERSOID) is (probably) the symmetry group of some kind of measuring lattice used by nature to gauge distances in the universe and that it is possibly linked to the largest spatial extent of an expanding universe or to a crypto-closed universe and/or related to some kind of observer/anthropic effect.[1] Currently, I'm leaning towards some kind of static structure that exists "outside of time" with no relativistic corrections at the base level.

Nevertheless, we've successfully found out that the diameter of the lattice (UNIVERSOID) is about 93.75 billion ly and that is has a binding domain (local Hubble radius) of r = ~13.396 billion ly and a global one of r = 14.921 billion ly. The distance separating these two can be thought of as a distance that a point will cover if it is accelerating at 1.257×10^-10 m/s^2 (MOND's a0) for 14.921 billion years + a quite small correction factor.

Precisely:

The mass of a neutral Fe-56 atom is $9.2882×10^{-26}$ kg. The baryonic mass of the local Hubble volume is ~$3.5887×10^{51}$ kg, therefore the number of atoms/nuclei is $3.8637× 10^{76}$. The surface area of a r = 14.921 billion ly ball is $2.501×10^{53}$ m^2. This gives us $1.545× 10^{23}$ atoms (nuclei) per square meter or $3.930× 10^{11}$ nuclei per meter or $2.544× 10^{-12}$ m per nucleon. Electron's Compton wavelength is 2.426 x 10^{-12} m. The difference is only about 1in 20 parts and (likely) can be explained by various correction factors.

As stated in the previous paper, the (Newtonian) orbital velocity at the global Hubble radius around the baryonic content of the local Hubble volume is 41 192 km/s. [2] And the (Newtonian) velocity of an iron atom that has been created by a collapse from hydrogen with all energy dumped into its kinetic energy is 41 209.6 km/s – barely any difference.

Using (the hopefully correct) GR corrections the orbit wants to jump to 15.7 Gly but will jump back into 14.921 Gly orbit after one takes about 50 electron's worth of mass and stores it inside as potential energy inside... that atom. The whole situation is not entirely clear to me. I don't think that the "group" uses GR deformations to the lattice, not on the base level. I'll try to revisit this problem in the future.

The density of the iron coating of the global Hubble sphere is 1.565×10^{12} kg/m³ when using the thickness of an iron nucleus or 5.920×10^9 kg/m³ when using electron's Compton wavelength as the thickness of the shell. Maximum central density of white dwarfs is about 2×10^{13} kg/m^3.

The fact that there's only a single electron worth of separation between individual nuclei while each nucleus has 26 electrons associated with it might be related to 24 or 26 dimensions and/or the 26 sporadic groups.

Once again: this whole one-layer thick iron coating of the Hubble sphere – resulting from the sudden collapse of all baryonic matter into hot Fe-56 - that has just enough energy to orbit (the baryonic mass of the Hubble volume) occurs only at this (current) specific time in the history of the universe. Furthemore, the total mass inside the Hubble volume would fill a proton at Planck density, as discussed in my previous work (also time-dependent).Very strange.

Since an electron's mass is directly tied to an electron's Compton wavelength, we can say that the electron mass is directly tied to ~current Hubble volume (H0). Please note that I use the term current as interchangeable with the moment described by the direct product of the 26 sporadics.

References:

[1] Direct Product of Sporadic Groups as a Symmetry Group of the Observable Universe at Maximum Expansion https://vixra.org/abs/2305.0118

[2] Is Iron-56 Just MOND in Disguise? https://vixra.org/abs/2410.0168

Note that this work contains a mistake: the separation between the global and local Hubble radius isn't exactly the same as a separation created by a particle falling at a0 for global Hubble time + 1/2 of the pull of the local baryonic matter – it's somewhat off.