Planck Pressure Provides Evidence for Multiple Hubble Sphere Universes and Rigid Components of Space

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I. Abstract

The Planck Pressure = 4.63309*10^113 Pascals. In this paper the author proposes that Planck Pressure could be the gravitational force of attraction between two equal sized universes all concentrated on the tiny area of one fourth of Planck Area. This paper shows that the Critical density of the Hubble Sphere Universe gives the same exact mass of the universe as the Planck Pressure requires between two Hubble Sphere Universes, attracted gravitationally and applied to the one fourth of Planck Area. This shows, that for such an enormous pressure, to be concentrated on such a small area results in an extremely rigid components of space and implies that matter and its properties could not entirely travel through space, but must be transmitted mostly through another mechanism which, likely, is a wave mechanism.

II. Assumptions

Assumptions

1) The Hubble constant in the exact inverse of the age of the universe which is $4.3440675*10^{(17)}$ seconds which yields Hubble constant = $H = 2.30199*10^{(-18)} s^{(-1)}$
2) The Hubble sphere has a radius of the age of the universe multiplied by the speed of light.
3) The Hubble Sphere Universes radius is as calculated in (3) is 13.7659 billion light years $4.344069*10^{(17)}$ seconds or $R = 1.302319 * 10^{26}$ meters when traveling at the speed of light.
4) Planck Pressure is calculated to be $4.63309*10^{(113)}$ Pascals (1)
5) Planck Pressure = $P = 2pic^7 / (hG^2)$
6) That the Planck Pressure is applied to ¼ of Planck Area is a dimensional factor that is likely not picked up in the definition of some of the Planck Dimensions.

Where c = The speed of light
and h=Planck Constant
and G=Gravitational constant
and pi=π
and R=Hubble Sphere Radius
and R=r/2

7) Critical Density is defined as $3H^2/(8piG)$ where the normalized spatial curvature is zero and the cosmological constant is zero(2)
$p = 3H^2/(8piG)$

Where ρ=Critical Density
Where H=Hubble constant
Where G=Gravitational Constant
Mass of the Hubble Sphere Universe = MH
Where A=Planck Area

III. Calculations

3.1 Mass of the Hubble Sphere Universe calculated using the critical density

It is proposed that the Hubble Sphere Universe Mass is equal to the Critical Density multiplied by the Volume of the Hubble Sphere

$$MH = (3H^2/(8piG))*((4pi/3)*(1.302319*10^{(26)})^3$$

MH=8.76906*10^52 Kg

3.2 Mass of the Hubble Sphere Universe calculated using the Planck Pressure and the gravitation of two Hubble Sphere Universes contacting at Planck Area.

It is proposed that the Hubble Sphere Mass can be calculated from the Planck Pressure assuming that Planck Pressure is the Gravitational attraction of two equal sized Hubble Sphere Universes applied to an area of one quarter of Planck area.

$$F / A = PlanckPressure = ((G(MH)^2) / Ar^2) = 4.63359 * 10^{(113)}\ Pascals$$

MH=8.76906*10^52 Kg

IV. Discussion

It was shown in the discussion section that Planck Pressure could be the gravitational force of attraction between two equal sized universes all concentrated on the tiny area of Planck Area. It was also shown that the Critical density of the Hubble Sphere Universe gives the same exact mass of the universe as the Planck Pressure requires between two Hubble Sphere Universes, attracted gravitationally and applied to the Planck Area. This shows, that for such an enormous pressure, to be concentrated on such a small area results in an extremely rigid components of space and implies that matter and its properties could not entirely travel through space, but must be transmitted mostly through another mechanism which, likely, is a wave mechanism.

With such a high Planck Pressure between, the proposed Hubble Sphere Universe, it is proposed that components of the Hubble Sphere Universe appear to be extremely rigid, and the combined construction of the Hubble Sphere Universe components, would, by extension, also be extremely rigid. This rigidness meets one of the requirements of an Aether. It is not presumed, that matter travels through this rigid environment, but rather it is proposed that the generator of fields could travel through this environment as a field generator and thus meet the requirement of a super fluid and super rigid component environment of the Aether.

V. References

1.) http://en.wikipedia.org/wiki/Planck_pressure
2.) http://en.wikipedia.org/wiki/Friedmann_equations
3.) M. J. Sarnowski http://www.vixra.org/abs/1403.0502

Appendix A

Fundamental Physical Constants (18)

1. c=2.99792458 * 10 Exp 8 m/s
2. h=6.626 06957(33) x 10^{-34} J s
3. G= 6.67384(80) x 10^{-11} m^3 kg^{-1} s^{-2}
4. Age of Universe = 13.7659 billion light years $4.3440675*10^{(17)}$ seconds
5. Hubble Sphere Radius = 13.7659 billion light years=$1.302319 * 10^{26}$ meters(3).
6. Hubble Constant = $H = 2.30199*10^{(-18)} s^{(-1)}$ assuming inverse of universe age.
7. $A = PlanckArea = 2.6121*10^{(-70)} m^2$