Phantom Energy and Cosmic Doomsday

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1.0 Abstract

Robert R. Caldwell, Marc Kamionkowski, and Nevin N. Weinberg, wrote a paper Phantom Energy and Cosmic Doomsday (1). They wrote an equation for the expiration date of the universe and used an example where the expiration date of the universe is 22 billion years.

In spinning sphere theory, matter is created by imperfections forming in the universe. The imperfections are absence defects similar to Shottky defects in material science.(2) It is proposed that repulsive gravity pushes on these defects out to the edge of the universe. During that time of travel to the edge of the universe, stars, galaxies, and galaxy clusters are formed and age. Over 22 billion years, the edge of the universe is reached and all matter goes into non-existence. New matter is continually formed on the interior of the universe. Old matter is destroyed at the edge of the universe. The following paper shows the equation for calculating the amount of time it takes for matter to be pushed out of the universe by repulsive gravity. In spinning sphere theory, the universe is about 3.018 billion light years in radius. If were to use the Hubble sphere radius of 13.8 billion years, the cosmic doomsday would be about 97.5 billion light years.

2.0 Calculations

In spinning sphere theory, the universe is infinitely old. However, the matter within is continually created and destroyed. The theory is that attractive gravity is effective over a radius distance of about 19 million light years. After 19 million lightyears repulsive gravity takes over. This is about the radius of the maximum size of observed gravitationally bound galaxy clusters. The value of 19 million light years was determined from the following equation.

$$Gravitydominatedradius = (1 - \frac{M_p}{M_n}) * 13750 million lightyears = 18.93 million lightyears$$

The mass ratio of the proton to the neutron is used because it seems to show up in so many calculations of the spinning sphere theory, as is shown in the following paper. "Predicting the Gravitational Constant from the New Physics of a Rotating Universe"[3] It also fits with the maximum size of galaxy clusters.

Over time, repulsive gravity will continually accelerate matter towards the edge of the universe. If the creation of new matter starts at 18.93 million light years from the center

of the universe and the velocity continually increases, we can calculate a time to the destruction of the matter.

Lets say that the repulsive that there is a center galaxy cluster. The velocity of the edge of the galaxy cluster is $(1-\frac{M_p}{M_n})*c$. Where $\frac{M_p}{M_n}$ is the mass ratio of the proton to the neutron and c is the speed of light. For each 18.93 million years the speed of light will go up by $(1-\frac{M_p}{M_n})*c$. If we integrate this out to the edge of the universe, taking into account the Lorentz factor we came can calculate the time of cosmic doom after creation of matter.

Cosmic Doom=Size of Universe* $\int_{0.00137652133}^{1} \frac{1}{x\sqrt{1-x^2}}dx$ [1]

In "Predicting the Gravitational Constant from the New Physics of a Rotating Universe" It was found that the universe size, in radius, is 3.0183173 billion light years.

$$CosmicDoom = 3.0183173*10^9\ years \int_{0.00137652133}^{1} \frac{1}{x\sqrt{1-x^2}}dx$$

$$3.0183173*10^9\ years*7.28134 = 21.98 billion years$$

3.0 Discussion

In spinning sphere theory, cosmic doom is 21.98 billion light years. Why did Robert R. Caldwell, Marc Kamionkowski, and Nevin N. Weinberg choose the parameters of their equations to pick a cosmic doom of 22 billion years? Did they know more than their paper let on?

The result is that we have a universe that is infinitely old, but continually renews every 22 billion years. Although, at the edge of the universe, we have matter close to the speed of light, with big bang like conditions. It does throw matter back toward the center of the universe, so there was always be some matter older than the 22 billion years of age.

4.0 References

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1.) https://arxiv.org/pdf/astro-ph/0302506.pdf

2.) https://en.wikipedia.org/wiki/Schottky_defect

3.) http://vixra.org/pdf/1903.0253v5.pdf