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Disproof of Gravitational Constant

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Short Communication

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ABSTRACT

We prove here that Newton's universal gravitation and momentum conservation laws together reproduce Weinberg's relation. It is shown that the Hubble parameter H must be built in this relation or equivalently the age of the Universe t. Using a wave-to-particle interaction technique we then prove that the speed of light c decreases with cosmological time and that c is proportional to the Hubble parameter H. Because the LAB value of the speed of light is supposed to be constant, we see the expansion of the Universe as a visible consequence. We present a generalised red shift rule and calculate a predicted photon acceleration that matches the Pioneer 10/11 anomalous acceleration result nicely. Finally, we provide the Mass-Boom cosmological model, which is consistent with the observations shown above. Because of the linear decrease in the speed of light with time and the conservation of two momentums, it has a linear increase in mass with time.

Keywords: High energy physics; Gravitational force; Thermodynamics; Quantum gravity

INTRODUCTION

The gravitational constant is a defining constant in various natural unit systems, particularly geometrized unit systems like Planck and Stoney. When represented in terms of such units, the gravitational constant has a numeric value of 1 or something near to it. Because there is significant uncertainty in the observed value of G in terms of other known fundamental constants, there will be a similar amount of uncertainty in the value of many quantities when expressed in such a unit system. Isaac Newton and Henry Cavendish's discovery of the gravitational constant can be questioned. One constant for all of space is questionable as there are trillions of miles in space and the universe. Isaac Newton and

Cavendish are only here on a small point or small dot of space as Carl Sagan used to say a Pale Blue Dot (PBD) [1-3].

ABOUT THE STUDY

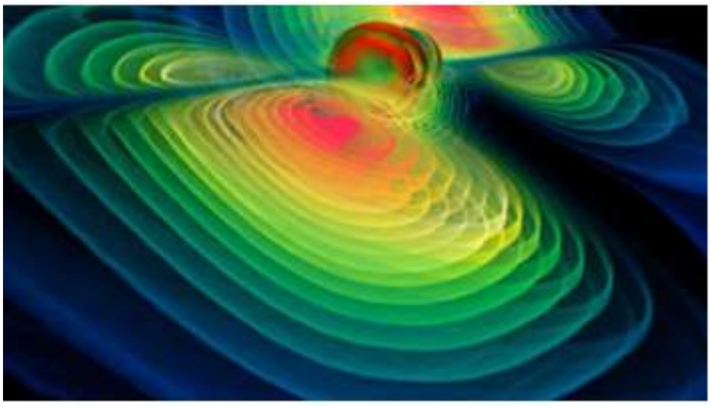
The universal Gravitational constant (G) is equal to the gravitational force between two objects of unit mass each and separated by a unit distance. It works in the same way everywhere in the universe anytime. Its value is 6.627 × 10^{-11} Nm^2kg^{-2} always. Hence, it is called the universal constant.

The gravitational constant, denoted by the capital letter G and also known as the universal gravitational constant, Newtonian constant of gravitation or Cavendish gravitational constant is an empirical physical constant that is used to calculate the gravitational effects in both Albert Einstein's theory of general relativity and Sir Isaac Newton's law of universal gravitation [4].

In 1798, he suspended a dumbbell with lead spheres from a wire, such that the two suspended spheres were in proximity to two much larger lead spheres that were fixed. The slight force of gravity between the large spheres and the smaller lead spheres caused the suspended dumbbell to rotate, to torque slightly [5].

It is the proportionality constant in Newton's law that links the gravitational force between two bodies to the sum of their respective masses and the square root of their distance. It quantifies the relationship between the energy momentum tensor, also known as the stress energy tensor and the geometry of space time in the Einstein field equations (Figure 1).

Figure 1. Improve sensitivity of gravitational wave detectors.

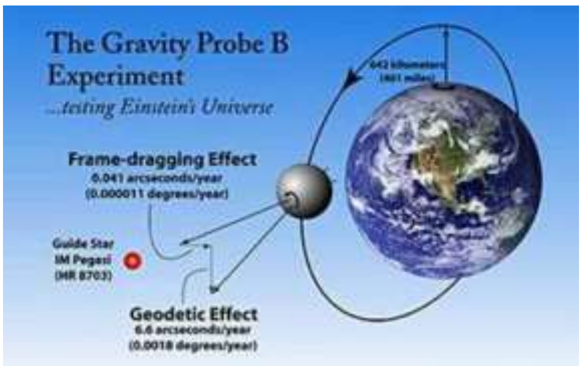


We can reasonably say that we know the measured value of the constant to four significant digits.

DESCRIPTION

The existence of the constant is implied in Newton's law of universal gravitation as published in the 1680's (although its notation as G dates to the 1890's), but is not calculated in his mathematical principles of natural philosophy where it postulates the inverse square law of gravitation (Figure 2) [6-10].

Figure 2. Gravity probe B mission, testing Einstein's theory of gravity, completes first year in space.



Two studies to be considered:

- In the January 2007 issue of science described a measurement of the gravitational constant by a new technique, atom interferometry, reporting a value of G 2800 ppm higher than the 2006 CODATA value. An improved cold atom measurement G=6.67191(99) × 10^{-11} m^3. Although much closer to the accepted value and this result was 325 ppm below the recommended 2014 CODATA value, with non-overlapping standard uncertainty intervals.

- As of 2018, efforts to re-evaluate the conflicting results of measurements are underway, coordinated by NIST, notably a repetition of the experiments reported.

In the principal, Newton considered the possibility of measuring gravity's strength by measuring the deflection of a pendulum in the vicinity of a large hill, but thought that the effect would be too small to be measurable [11-14]. Nevertheless, he had the opportunity to estimate the order of magnitude of the constant when he surmised that "the mean density of the earth might be five or six times as great as the density of water", which is equivalent to a gravitational constant of the order:

$$G \approx (6.7 \pm 0.6) \times 10^{-11}\ m^3.kg^{-1}.s^{-2}$$

The accuracy of the measured value of G has increased only modestly since the original Cavendish experiment. G is quite difficult to measure because gravity is much weaker than other fundamental forces and an experimental apparatus cannot be separated from the gravitational influence of other bodies [15-17].

Here are reasons we can doubt the gravitational constant:

- Curved space time theory of Albert Einstein.

- Henry Cavendish's discovery of the gravitational constant is based on a flawed torsion balance experiment where the metals used in torsion balance are attracted to each other due to electrical charges.

- The gravitational constant in England is a local english gravitational value which is different than equator measurements.

- Newton’s equation fails to recognize variability in gravity in different areas of space and the universe. Some areas of Italy have levitation occurring.

- Experiments have shown variation in gravitational value at the equator.

- England’s gravity is not gravity at the equator or in Siberia.

- Black holes are seen as not subject to universal laws.

- Not proven in many areas of space and time.

- A test done in 1789 shows something about a torsion balance not gravity.

- The string on the torsion balance can use different metals or materials which changes gravitational values.

- Gravitational constant was not measured in space beyond the atmosphere.

- Gravity varies from Mercury to the moon to Jupiter it is not constant.

CONCLUSION

G as the gravitational constant is placed in doubt. Due to not taking into account coulomb attraction of the torsion balance, G as the gravitational constant is questionable. There is reason to think there is variation in gravitational values as gravity near planets gravity does vary from a value at Mercury to a value at Jupiter to the value on each independent moon. Some studies in fact show a different measurement.

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