The Electromagnetic Nature of Gravity

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ABSTRACT

The gravitational motion of any solar planet around the Sun is the result of all neutral charges of hydrogen atoms forming the Sun, where the squared velocity of any planet multiplied by its distance from the center of the Sun equals to very high degree the squared amount of neutral charge of hydrogen atom multiplied by number of hydrogen atoms in the Sun. This means that gravity and electromagnetism are the same thing in the solar system. Are we before one of the great scientific discoveries ? let us hope.

Keywords: solar system - hydrogen atom - neutral charge - gravitational constant - Coulomb's law - permittivity - Kepler's third law.

1. INTRODUCTION

Gravity still outside the ability of unifying universal energies, no success has been achieved in this field, it remained the great dream of scientists since Einstein and even before him. We accustomed to consider gravity a negligible quantity measuring to electromagnetism in hydrogen atom according to the following well known comparison between them

$$\frac{G m_p m_e}{e^2 / 4\pi\varepsilon_0} = 4.408 x 10^{-40}$$

But this calculation however did not say the last word in the subject, we are going later to explain why.

Here we present a simple numerical proof that gravity is nothing but an electromagnetic phenomenon through the solar system.

Between electron and planet in the solar system:

The electron revolves a proton in hydrogen atom which is the corner stone of every substance in the universe, according to Prout's theory which goes to that the atomic weight of elements are whole number multiplies of the atomic weight of hydrogen, this theory proved highly fruitful for later investigations of atomic weights and it was in agreement with Avogadro law [1]. Now because electron and proton have two equal and opposite fundamental charges, e^- and e^+, (and from here comes the neutral charge [4] in hydrogen atom) these two charges behave as the two equal and opposite halves of any circle. Simply adding one half to the other forms the complete circumference of the circle, and likewise $e^- + e^+ = 2e$ creates the circular motion in hydrogen atom. Simply from Coulomb's law we can determine exactly the orbital velocity of the electron around the proton, and the distance between them, Quantum theory about the uncertainty of the position and velocity of the electron [2] concerns the range of human knowledge and not the fact of the subject, but the electron as the lighter particle moves its circular motion around the proton according to their mentioned equal and opposite charges. Now dividing the mass of the Sun in kilogram [3] by the mass of hydrogen atom [4] gives the number of hydrogen atoms forming the Sun as $N = 1.19 x 10^{57}$, then

$$1.19 x 10^{57}.(2e)^2 = 1.22 x 10^{20} \qquad [1]$$

This is the amount of whole neutral charge in the sun.

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On the other hand any solar planet orbits the Sun according to the gravitational law gives

$$GM_s = \frac{4\pi^2 R^3}{T^2} = V^2 R = 1.32x10^{20} \qquad [2]$$

Where G is the universal constant of gravity, M_s is the mass of the Sun in Kg, R is its radius in meters, T is the period of revolution of the planet, thus from 1&2

$$GM_s \approx N_H (2e)^2 \qquad [3]$$

This simply means that the orbital velocity of any solar planet is to very high degree the result of the quantity of electromagnetism of the Sun itself .

Let us here say a word about the dimensions of e^2 in eq 3. If we analyze coulomb's law that describes the interaction between two charges, we will go to the following

$$e^2 = m_e v^2 r 4\pi\varepsilon_0$$

Where m_e is the mass of electron, v its velocity, r its distance from the other charged particle, and ε_0 [(5)] is the permittivity in vacuum.

Dimensionally $\qquad e^2 = M\frac{L^3}{T^2}.\frac{e^2 T^2}{ML^3}$

e^2 has the same dimensions of GM_s which is $\frac{L^3}{T^2}$, as M_s is the mass of the Sun, the different masses of the planets do not appear , they are only points measuring to the huge mass of the Sun, and here the mass of the electron is naturally eliminated, what remains in both of them is only $\frac{L^3}{T^2}$

Planets' velocities around the Sun are less than velocities of electrons around protons:
    One evening some months ago I noticed a fantastic fact, that any body supposed to orbit the Sun at its hydrogen surface, this body will move with the velocity of an electron at the fifth level of energy in hydrogen atom, where

$$\frac{GM_s}{R} = 1.90x10^{11}$$

Hydrogen atom has five levels of energy [(6)]

Experimentally the velocity of the electron in the fifth level of energy [(6)] is

$$\frac{13.6}{5^2} = 0,544 = 8.714x10^{-20} J = \frac{1}{2}mv^2$$

$$mv^2 = 1.74x10^{-19}$$

$$v^2 = 1.91x10^{11}$$

    All solar planets move with velocities less than that as they are at greater distances from the center of the Sun, but all, including the mentioned body, obey the same law of gravity. For example the

velocity of our body is $4.37x10^5$, that of Mercury is $4,78x10^4$, that of Venus is $3.50x10^4$, the Earth $2.97x10^4$ etc...[6]

It is worth mentioning that the velocity of the body at the surface of the Sun and that at fifth level of energy in hydrogen atom are in the stage before the electron get free from the attraction of the proton.

The comparison between gravity and electromagnetism in hydrogen atom:

Now, I am going to explain why the mentioned comparison between gravity and electromagnetism in hydrogen atom did not say the last word in the subject

$$\frac{Gm_p m_e}{e/4\pi\varepsilon_0} = \frac{Gm_p}{e^2/4\pi\varepsilon_0 m_e} = 4.408x10^{-40}$$

Being $4\pi\varepsilon_0 m_e = 1.012x10^{-40}$ must make us change our mind toward the previous result of this comparison, and as GM_s in the case of the sun gives the data of its revolving planets, Gm_p in the hydrogen system gives the data of the revolving electron. Thus we have $Gm_p = (2.08e)^2$, giving the two charges causing the circular motion of the electron around the proton. Now by multiplying this by the number of hydrogen atoms forming the Sun we have the gravitational motion of any solar planet. Where

$$1.19x10^{57}(2.08e)^2 = 1.32x10^{20}$$

This is exactly Kepler Third Law [7] for any solar planet $\frac{4\pi^2 R^3}{T^2} = 1.32x10^{20}$ or GM_e in SI system

Conclusion

The previous calculations confirm the electromagnetic nature of gravity representing in the solar system where the orbital velocity of any planet determined by its distance from the center of the sun is the result of the neutral charges of hydrogen atoms forming the Sun and causing the velocities of all electrons orbiting their protons in its hydrogen atoms.

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