

The Sun as a large Hydrogen Atom

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Abstract: The solar planets orbit the Sun with velocities less than the velocity of an electron orbiting a proton in the fifth level of energy in hydrogen atom, while if a body B takes place at the hydrogen surface of the sun, this supposed body will orbit the Sun with the same velocity of this electron according to the gravitational law $\frac{GM_s}{R_s}$

with which we calculate the orbital velocity of any planet. The velocities of solar planets from Mercury to Pluto, therefore follow that of B, each according to its distance from the Sun's center. The Sun which is a hydrogen star therefore behaves as a large hydrogen atom with number of 'constant' levels of energy, the mentioned velocities being obtained from gravitational law means the disappearance of the borders between gravity and electromagnetism as gravity itself creates the electromagnetic bonds in the structure of the Sun where at its hydrogen surface the electron is at its fifth and last level of energy with its mentioned orbital velocity.

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1. Introduction

One evening, some months ago I decided to know the value of orbital velocity of a body nearer than Mercury to the Sun, just at its hydrogen surface, using the law of gravity in calculating this velocity I was very surprised when the value of it was that of an electron orbiting a proton at fifth level of energy! The accurate equivalence between the two velocities bears a deep meaning concerning the dream of scientists especially Einstein of unifying gravity with electromagnetism. For this reason I studied the subject seriously.

The Sun as a hydrogen star:

Like most of other stars, the Sun is made up mostly of hydrogen followed by helium⁽¹⁾. From here came the theory that the source of Sun's energy arises from burning hydrogen into helium, this is not the place of discussing the correctness of this theory, what is important here is to emphasize on the Sun as a hydrogen star. For every million atoms of hydrogen in the sun there 98,000 of helium and less numbers of oxygen, carbon, neon, magnesium etc⁽²⁾. The surface of the Sun is composed of three layers, the photosphere, the chromosphere and the corona, they are respectively above each others. The chromosphere (800 km) deep is the most important layer of the sun or any other star⁽³⁾. For us here this statement is so because it is the actual hydrogen surface of the Sun, the corona above it (800,000 km) or more⁽⁴⁾ composed of electrons free from the attraction of the protons, thus at the corona layer thus comes the end of

hydrogen in the Sun, and this means that electrons in the chromosphere must be at the fifth and last level of energy of hydrogen atoms just before getting free from the protons' attraction, the chromosphere appears as a thin red rim of light⁽⁵⁾, the red color confirms the idea that the electrons in the chromosphere are at the last or fifth level of energy in hydrogen atom before getting free from the attraction of the protons in the following corona layer, where they emit the longest wavelength in all the portions of hydrogen spectrum (656.3 nm)⁽⁶⁾ concerning the red color.

The equivalence between two velocities:

The mentioned orbital velocity of the supposed B body at the hydrogen surface of the Sun is

$$\frac{GM_s}{R_s} = V^2 = 1.90 \times 10^{-11}$$

Where G is the universal constant of gravity, M_s is the mass of the Sun in Kg, R_s is the radius of it in meters.

The mean orbital velocities of solar planets from Mercury to Pluto follow the velocity of this body, they are less than it as they are farthest than this body from the center of the Sun, but they all obey the same law of gravity, the velocities of the interior planets are

Body B	4.35×10^5
Mercury	4.78×10^4

Venus	3.50×10^4
Earth	2.97×10^4
Mars	2.41×10^4 (7)

This means that the Sun is a large hydrogen atom, the planets with their velocities are extension of body B!

Now, the velocity of our body is the same velocity of an electron orbiting a proton at the fifth level of energy, where experimentally

$$\frac{13.6 \text{ eV}}{5^2} = 0.544 = 8.714 \times 10^{-20} \text{ J} = \frac{1}{2} m_e v^2$$

$$m_e v^2 = 1.74 \times 10^{-19} \text{ J}$$

$$v^2 = 1.91 \times 10^{11} \quad \text{or} \quad v = 4.37 \times 10^5$$

And this is the case in chromosphere layer before the beginning of corona layer above it. The equivalence is clear between the velocity of the body B orbiting the Sun at its hydrogen surface, and the velocity of the electrons orbiting protons in this surface. Is not this equivalence a fantastic fact?

From this equivalence we can see the relation between the radius of hydrogen atom and that of the Sun through the two expressions of gravitational and electromagnetic velocities as follows

$$\frac{GM_s}{R_s} = \frac{e^2}{4\pi m r \epsilon_0}$$

Where

$$\frac{r}{R_s} = \frac{e^2}{4\pi m \epsilon_0 GM_s}$$

We can conclude any of the two radii from the other for any star, even it is neutron star where the radius between the electron and the proton is of nuclear range, the mass of the star is some multiple of the Sun and therefore the radius of the star is very short.

Conclusion:

- The two main results from above discussion are
- 1- The Sun which is a hydrogen star behaves as a large hydrogen atom.
 - 2- Gravity is equivalent to electromagnetism.

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