No Acceleration in Gravity !

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Abstract: The familiar acceleration concept $\frac{V^2}{R}$ or $\frac{R}{T^2}$ means the constant deviation from traveling in a straight line caused by inertia to falling towards the center of gravity where the resultant is the circular motion around this center, but this concept is not a correct explanation of gravitational motion, the correct one is simply the squared circular motion $\frac{4\pi^2 R^2}{T^2} = V^2$ determined by the distance R from the center of gravity, because: 1-It is impossible mathematically to analyze Kepler's third law on acceleration basis. 2- In the case of artificial satellite orbiting the Earth the dependence is on the circular motion not on the acceleration in calculating the demanded position of the satellite. 3- In the case of falling objects toward the Earth's center, what increases is its squared circular motion, and not its changing velocity with the squared time.
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1ntroduction:

The Great Men like Galileo and Newton paved the way to understand the nature of motion in our universe, from their aspect of views they corrected some concepts of the past about the nature of motion, and this is our duty to day, This is a natural development in the history of science. The acceleration concept was one Galileo reached to experimentally on the Earth and Newton applied it on the sky, but it is not the correct one for describing the nature of motion here and there, we are going to say why in this paper.

The circular motion and not the acceleration is the right concept:

The conflict between the motion in straight line or in circular path is a very old conflict although everything in the universe moves in a circular path: the Moon around the Earth, the Earth around the Sun the electron around the nucleus, (using π in describing this motion means simply the perfect circular motion) even the blood in our bodies moves its circular motion between its two equal halves. Galileo and Newton stated that if no force acts on a body, then it travels in a straight line at constant speed, its acceleration is zero till it is acted upon by a force. The straight line as the origin of the motion and falling of objects affected strongly the thought of the great thinkers. Galileo to calculate the rate of falling things used an inclined level over which an object rolled, from here he came to that the objects accelerate towards the center of gravity of the Earth where the distance R is divided by the squared time indicating that the velocity itself changes along the path! This is not correct because what changes here is the squared velocity of the object towards the center of gravity where $V^2 R = cons\tan t$ in every gravitational system as we are going to prove by analyzing Kepler third law [(1)] and in the case of artificial satellites. Newton extended Galileo's acceleration from the Earth to the sky stating that an orbit is the balance between inertial and gravitational forces, the Moon is continually "falling" toward the Earth, the Earth toward the Sun, in the same time inertia wants them to move in a straight line, the balance between these two forces results in the stable orbit of the Moon and Earth [(2)]. Since more than a century Einstein reached to the idea that the space itself is bent around the Sun causing the Earth and other planets to move their orbital motions. Here the circular motion received a complete different explanation on the basis of space- time deformation caused by the Sun [(3)], but Einstein proved this bent of the space on the basis of the same gravitational terms where the squared orbital velocity of an object passes at the surface of the Sun is simply divided by the squared velocity of a beam of light where the Einstein formula in 1911 was as follows

$$a = 2\frac{GM}{c^2 R} \quad (4)$$

Only Einstein changed the integer 2 to 4 in 1916. Here we are not before the pull of gravity and the resistance of inertia but before the bent of the four dimensions of space-time expressed by the ordinary terms of gravity !

Gravity is a circular motion:

Now let us see the matter in the light of Kepler's third law where gravity is the squared velocity $\frac{4\pi^2R^2}{T^2} = V^2$ an object moves with at a distance R from a gravitational center, where $\frac{4\pi^2R^3}{T^2} = V^2R$ is a constant of a certain gravitational system, differing from a system to another. This is Kepler's third law which is the most correct and accurate law describing the motion of solar planets, and can be applied successfully to any planet with its satellite. The most real validity of this law is that dividing it by the central mass of any gravitational system gives the gravitational constant G [(5)] Let us getting G by dividing the numerical value of Kepler third law of any planet by the mass of the sun, all in Mks system :

$$\frac{1.32x10^{20}}{1.99x10^{30}} = 6.63x10^{-11}$$

Now, Writing Kepler third law according to the acceleration of planets corrupts this law entirely, as the acceleration takes this form: $\frac{2\pi R}{T^2}$, and we must multiply it by the following incorrect amount $2\pi R^2$ to get the complete law! The appearance of π never could be escaped in writing the third law of Kepler because without it the law is simply incorrect. Therefore there is no acceleration in gravity but squared circular motion inversely proportional to the distance R from the center of gravity.

Even in the case of artificial satellite that orbits the Earth, we are obliged when using the acceleration of the Earth g to multiply it by R in $\sqrt{gR}$ to determine the demanded orbital velocity of the satellite, because simply $g = \frac{GM_E}{R^2} = \frac{V^2}{R}$. Therefore no acceleration is dealt with in the case of artificial satellite, because if it accelerates and not moves in circular motion why writing $\sqrt{gR}$ or $\sqrt{\frac{GM_E}{R}}$ [(6)] ?

Then acceleration of gravity $\frac{V^2}{R}$ or $\frac{R}{T^2}$ is not a correct concept at all although we are familiar with it and consider it as a fact never being a subject of discussion!

Different masses:

Now, let us move to another point concerning the different masses. The Moon is governed by the same constant V^2R of the Earth just as the famous apple on the surface of the Earth, no matter the huge difference in mass between them, only the distance R from the center of gravity determines the squared velocity V^2 of each of them. The differences among the masses of the solar planets are very great, but the squared orbital velocity of each of them is determined *only* by the distance R from their centre of gravity. Any object on the surface of the Sun obeys the mentioned constant as the orbital velocity of a supposed object at the hydrogen surface of the Sun moves with the velocity of an electron at the fifth level of hydrogen atom where R is the radius of the Sun

$$\frac{GM_{Sun}}{R} = 1.89x10^{11}\frac{m^2}{t^2}$$ [(8)]

In fact the very slight value of the gravitational constant $G = \frac{V^2R}{M} = 6.67x10^{-11}$ means the very sensitive nature of gravity, where M is the central mass of a gravitational system, and V^2R is a constant due to this system. As everything is a multiple of hydrogen atom according to Prout's theory[(10)]. Two objects at the same distance R from the center of gravity Q_2 and Q_1 where Q_2 contains double numbers of hydrogen atoms more than Q_1,then Q_2 has double number of hydrogen atoms moving with V^2 (and not with $\frac{V^2}{R}$) towards the center of gravity than Q_1, here the *whole energy* of Q_2 towards the center of gravity is double that of Q_1, therefore the weight is **the number** of hydrogen atoms of an object moving with certain velocity V^2 towards the center of gravity. Putting the two objects in a balance, then Q_2 will have double the distance R toward the center than Q_1, therefore Aristotle was right in his statement that the heavier reaches the ground than the lighter! Galileo did not take this fact into consideration when he proved that the heavier reached the ground in the same time as the lighter in his historical experiment putting the two different masses at the same distance from the center of gravity.

On the other hand, when the two objects are at different distance R from the center of gravity

then the value of V^2 itself towards this center differs and gravity deals with the two objects regardless the number of hydrogen atoms forming them. From here the huge difference of the number of hydrogen atoms forming the apple and the Moon is of no importance in their orbital velocity V^2

No need for centrifugal force:

As has been passed Newton considered the circular motion of the Moon as a continuous falling from the straight line to the curve of its circular motion as the result of balance between gravity and inertia, therefore the Moon falls constantly from the straight line towards the Earth or it *accelerates* towards the center of gravity just as the apple *accelerates* towards the same center. Here we need to suppose the existence of two forces one against the other to keep the Moon in its orbit, where its natural tendency to move in straight line prevents it from falling on the Earth, and this inertia prevents the electron from falling on the nucleus. In fact, only the mentioned distance R from the center of gravity governs and determines V^2 according to the mentioned constant, there is no acceleration and accordingly no squared distance, in addition to that no need to other force to balance the gravitational force, also the gravity is between every object and the center of gravity in one gravitational system according to V^2R. Newton made incorrect generalization by stating that every object in the universe attracts every other object with a force that is proportional to the product of their masses and inversely proportional to the square of the separation between them. In fact the relation between two objects on the Earth, for example, is through their relation with the center of gravity, no one of them attracts the other.

Conclusion:

Gravity is a circular motion $\frac{4\pi^2R^2}{T^2}=V^2$ determined by the distance R from the center of gravity, where V^2R is a constant governing all gravitational systems and differing in its value from one system to other, dividing it by the central mass of the system gives the universal constant G, and this confirms the correctness of $V^2R=cons\tan t$ which is Kepler's Third law. On this basis there is no need to any centrifugal force to balance the gravitational force which considered a constant deviation from the strait line to the curve of the circular motion according to the concept of acceleration $\frac{V^2}{R}$ that had been established by Galileo on the Earth and used by Newton in the sky. In forming the gravitational law Newton considered the moon falling in every moment from the straight line it ought to persuade to the curve of its circular motion according the force of attraction due to the Earth like any thing on it falling towards its center. The constant V^2R explains the difference in weight between two masses as the number of hydrogen atoms forming the mass move with V^2 velocity to the center of gravity at a certain distance R from that center, this number distinguishes between different masses, but at different values of R the gravity deals with V^2 of the objects regardless the number of hydrogen atoms forming them.

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