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REASONS FOR REMOVAL OF THE MOON

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Abstract: -

In article the new concept of an explanation of the reason of removal of the Moon from Earth is offered to consideration. It is based on the theory of vortex gravitation, cosmology and a cosmogony. The main reason for this removal is that gravity, the earth's field does not create our planet, and ether vortex The orbital plane of the Moon doesn't coincide with the plane of a gravitational whirlwind that creates reduction of forces of an attraction of the Moon to Earth on some sites of its orbit. Removal of a lunar orbit happens a consequence of it.

Keywords: *theory of vortex gravitation, celestial mechanics.*

1. INTRODUCTION

Now it is established that the orbit of the satellite of our planet of the Moon moves away from Earth on 38 mm/year [1], [2]. Modern researchers this removal is explained by tidal acceleration of the Moon. The so-called tidal acceleration of the Moon - an effect called gravitational tidal interaction in the Earth-Moon system. The main consequence of this effect is the change of the orbit of the Moon and the Earth's rotation slowing down around the axis.

Objective calculations of change of dynamic properties of the Moon and Earth, connected with inflow it wasn't presented.

With the same probability it is possible to draw an opposite conclusion which consists in the following. If movement of the Moon is slowed down by gravitational and tidal interaction, the centripetal force operating on the Moon, has to decrease in direct ratio to a square of reduction of orbital speed of the Moon. In this case there will be a prevalence of force of terrestrial gravitation and the Moon has to fall to the Ground.

According to the theory of vortex gravitation, the Moon has no gravitational effect on the Earth and on its surface. High tides and low tides are not caused by the attraction of the moon and plane-symmetric gravitational field of the Earth.

In the present article the analysis of dynamics of the Moon also is based on the theory of vortex gravitation, cosmology and a cosmogony [3]. The principles and the equations of the theory of vortex gravitation are presented in the following chapter.

2. ABOUT THE THEORY OF VORTEX GRAVITATION

Theory of vortex gravitation and cosmology is based on the assumption that gravity creates vortices (torsion) gas, over a low-density substance called ether. Each space vortex generates other vortices of lower order. The size of each vortex corresponds to the size of a space system, which he created. The value of the universal vortex corresponds to the universe. Galactic vortex has a diameter equal to a diameter of the galaxy. Sunny ether vortex measured by the size of the solar system. This correspondence should be in every space system. Vortex gravitation theory assumes that there are in excess of the small eddies that form the elementary particles of which are all the celestial bodies.

Orbital speed of rotation of the ether in each vortex reduce your speed is inversely proportional to the square of the distance to the center of the vortex. In accordance with the laws of fluid dynamics, each vortex varies inversely proportional to the pressure change of the orbital velocity of the ether. The pressure gradient causes the ejection force (gravity) acting on nucleons any body or substance, toward the least pressure. I.e. toward the center of the vortex.

Consider the equation of vortex gravitation, resulting in the theory [3].

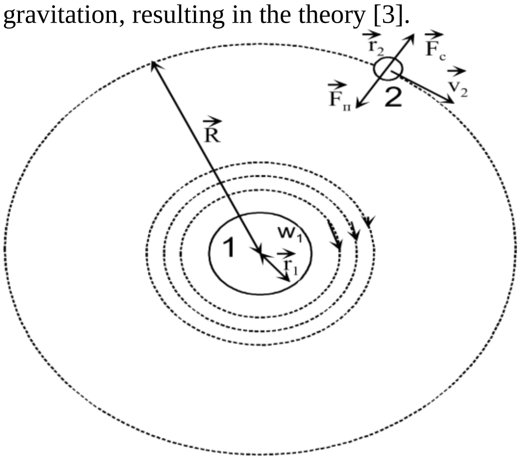

Fig.1. Two-dimensional model of the gravitational interaction of two bodies. The forces acting on the body 2.

F_c - centrifugal force $F_п$,- the attraction force of the body 2 with the body 1, v_2 - linear velocity of the body 2 in its orbit, R - Orbit radius, r_1 - radius of the body 1, r_2 - the radius of the body 2 w_1 - the angular velocity of rotation of the air on the surface of the body 1, m_2 - mass of the body 2.

As a result, the vortex motion a pressure gradient. Radial distribution of pressure and velocity in the ether [3] defined on the basis of the Navier-Stokes equations for the motion of a viscous fluid (gas).

$$\rho\left[\frac{\partial}{\partial t}+\vec{v}\cdot \mathrm{grad}\right]\vec{v}=\vec{F}-\mathrm{grad}\ P+\eta\Delta\vec{v} \qquad (1)$$

in cylindrical coordinates with the radial symmetry $v_r = v_z = 0 = v_{(r)}$, P = P (r) φ, v equation can be written as a system.

$$\begin{cases} -\dfrac{v(r)^2}{r}=-\dfrac{1}{\rho}\dfrac{dP}{dr} \\ \eta\cdot\left(\dfrac{\partial^2 v(r)}{\partial r^2}+\dfrac{\partial v(r)}{r\,\partial r}-\dfrac{v(r)}{r^2}\right)=0 \end{cases} \qquad (2)$$

where ρ= **8.85 x 10^{-12}** kg \ cub m - the density of [4] [4], v – the velocity vector of the ether, P - pressure air , η- viscosity. In cylindrical coordinates for the module gravity $F_п$

$$F_п = V \cdot \frac{\partial P}{\partial r} \qquad (3)$$

then comparing (2) and (3) for an incompressible ether (**ρ=const**) we find that $v(r)^2$

$$F_п = V \cdot \rho \cdot \frac{v(r)^2}{r} \qquad (4)$$

After the necessary transformations (full payment is set out in the theory [3]), we obtain the equation for the determination of the force of gravity, depending on the speed of rotation of the ether.

$$F_п = \frac{4 \cdot \pi \cdot r_n^{\ 3} \cdot \rho}{3 \cdot m_n} \cdot \frac{w_1^{\ 2} \cdot r_1^{\ 3} \cdot m_2}{r^2} \qquad (5)$$

r_n, m_n – radius and the mass of the nucleon.
Transform the formula (5). Equate $\mathbf{r_1 = r}$. We substitute $\mathbf{w_1 r_1 = v_1}$ and the numerical values of ρ, $\mathbf{r_n}$ and $\mathbf{m_n}$, we obtain:

$$F_п = ,83 \times 10^{-29} \times V_1^2 \times \frac{m}{r} \qquad (6)$$

It is worth noting an important condition - equation (5) describes the forces pushing (gravity) in only one plane of the world space - in the central plane of the considered space vortex. In the theory of vortex gravitation [3] found that the strength of the vortex gravitation away from the central plane of gravity is inversely proportional to the cube of this deletion. As a result of this law all the celestial bodies - satellites orbiting the center of the vortex on a plane having deviations from the gravitational plane of the vortex, have elliptical orbits of their treatment. Each celestial body (satellite) crosses the central plane of the vortex centers of perihelion and aphelion. In the tops of the small axis of the orbit of satellites has the greatest deviation from the gravitational plane. Therefore, at these points with respect to gravity is the smallest force of gravity to the center of the torsion bar. The magnitude of the eccentricity of the orbit path (ellipse) of any satellite depends on the inclination of the orbit to the sun torsion. In theory, [3] a universal equation for determining the swirl forces of gravity at any point of the space ($\mathbf{F_{gv}}$), depending on the deviation (i) of this point of gravity plane.

$$\boldsymbol{F_{gv} = F_{gn} \times Cos} \qquad \mathbf{(7)}$$ where

i - the angle of deviation of the point considered from the gravitational plane vortex. $\mathbf{F_{gn}}$ - the force of gravity in a plane gravitational vortex, which can be defined by the formula (5) or the classical formulas.

In the theory of vortex gravitation was the following dependence of the orbits of celestial bodies - the ratio of the minor axis of the orbit (b) to the semi-major axis (a) is the cosine of the angle of deflection (i) the top of the semi-minor axis of the gravitational plane.

$$\mathbf{Cos\ i} = \frac{b}{a} \qquad \mathbf{(8)}$$

Fig. 2 shows a side view of planes: plane of the Earth gravitational vortex (e) and the orbital plane of the moon (m).

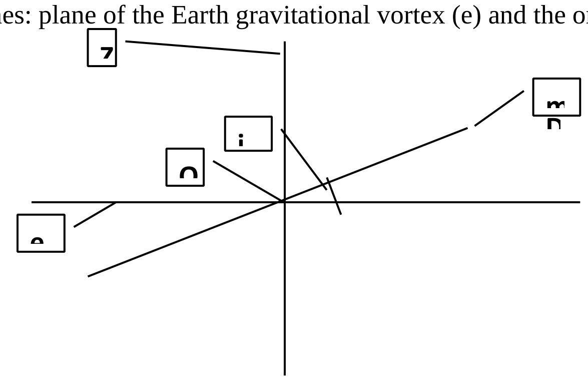

Figure 2. Lateral projection of gravity and orbital planes, where:

O - the center of the earth vortex
Z - axis of rotation of the earth vortex
e - a side view of the plane of the Earth's gravitational vortex
M - a side view of the orbital plane of the Moon
i - the angle of deviation of the lunar orbital plane (m) at the top of the semi-minor axis of the plane of the earth's vortex (e).

3 DYNAMICS OF THE MOON

On the basis of astronomical data [1], we define the Earth's gravitational force and the centrifugal force acting on the Moon in the semi-minor axis.

Astronomical parameters of the orbital motion of the Moon:

Perigee EP = 363.1×10^6 m

Apogee EA = $405{,}7 \times 10^6$ m

Semimajor axis a = $384{,}4 \times 10^6$ m

Eccentricity e = 0.0549

Orbital velocity of the Moon at apogee Va = 970 m / c

Semi-minor axis b = a $(1- e2)^{1/2}$ = 384,4 x $(1 - 0.05492)^{1/2}$ = 383.8 x 106 m

The strength of the Earth's gravity on the surface of Fe = 9,78 m

Radius of the Earth - Re = 6,371 x 106 m

The radius of the Moon - Rm = 1,7 x 106 m

The radius of curvature of the orbit of the moon at the top of semi-minor axis

$$R = a^2/b = (384{,}4 + 6{,}371)^2/(383{,}8 + 6{,}371) = 391{,}4 \times 10^6 \text{ м}$$

The distance from the center of the Earth to the semi-minor axis

$$R^2_{eb} = \{(a + R_e + R_m) - (ER + R_e + R_m)\}^2 + (b + R_e + R_m)^2 =$$
$$= \{(384{,}4 + 6{,}371 + 1{,}7) - (363{,}1 + 6{,}371 + 1{,}7)\}^2 + (383{,}8 + 6{,}371 + 1{,}7)^2$$
$$R_{eb} = 392{,}4 \times 10^6 \text{ m}$$

We define the Earth's gravitational force acting on the Moon (**F_{eb}**), at the top of the semiminor axis. The calculations are performed in accordance with the equation of universal gravitation Newton. For this we use the inverse square law.

$$\mathbf{F_e / F_{em} = R^2_{eb} / R^2_e} \quad \text{where}$$
$$F_e = 9{,}78 \text{ m}, \qquad \text{then}$$
$$\mathbf{F_{eb} = 2{,}58 \times 10^{-3} \text{ m}}$$

We define the orbital velocity of the moon at the top of semi-minor axis V_b, on the basis of the 2nd law of Kepler

$$\mathbf{EA / R_{eb} = V_b / V_a} \quad \text{where}$$
$$\mathbf{V_b = 1003 \text{ m / c}}$$

We define the centrifugal force acting on the Moon in the semi-minor axis

$$\mathbf{F_c = m\, v^2_b / R = 2{,}57 \times 10^{-3} \text{ m}}$$

On the basis of the classical theory of gravitation that the force due to gravity of the moon is greater than the centrifugal force acting on the satellite. Therefore, using the equations of Newton or Einstein's impossible to determine the reason for removing the orbit of the Moon According to the theory of vortex gravitation, the Moon's orbit deviates from the central orbit the Earth's gravitational vortex. The magnitude of this deviation (i) defined by equation (8).

$$\mathbf{\cos I = b/a = 383{,}4 \times 10^6 / 384{,}4 \times 10^6 = 0{,}9974 \text{ where } I = 6} \text{ degree}$$

With this rejection of the Earth's gravitational force at the top of semi-minor axis of the lunar orbit is reduced in accordance with equation (7).

$$\mathbf{F_v = F_g \cos^3 I = F_{em} \cos^3 I = 2{,}578 \times 10^{-3} \times 0{,}9974^3 = 2{,}56 \times 10^{-3} \text{ m}} \ (9)$$

Therefore, based on the theory of vortex gravitation, it is clear that at the top of semi-minor axis of the lunar orbit centrifugal force in its magnitude exceeds the vortex gravitation. But this is an incomplete analysis of the motion of the moon.

4. COSMOLOGY MOON

Calculations in Chapter 3 show the reason for removing the moon at the moment. But there are more questions when and why began removing the moon?

These questions can be answered on the basis of the laws of vortex cosmogony and celestial mechanics.

Each celestial body is generated by cosmic etheric vortex. Mass of a celestial object in the initial moment of time is equal to the mass of ether torsion. During the whole period of its existence the weight of his body constantly increased depending on the strength of the vortex gravitation.

Note 1: Since the vortex gravitation force has always been the same, then the increase in mass of a celestial body in each year of its existence came to the same value.

Mass of the Moon (M), the radius of the orbit of its revolution around the Earth (R) and the orbital speed of its movement (V) binds the law of conservation of momentum of rotation of the body.

$$\boldsymbol{M \times R \times V = const} \qquad (10)$$

Consider the simplified mass change of the moon. We represent the change in each physical parameter in equation (10) in the form of coefficients - Km, Kr, Kv. These coefficients based on equation (10) are linked:

$$K_m \times Kr \times K_v = 1 \quad (11)$$

According to Kepler's law $V \sim \frac{1}{\sqrt{R}}$ can be written

$$K_v = \frac{1}{\sqrt{K_r}} \quad (12)$$

Substituting (12) and (11)

$$K_r = \frac{1}{K_m{}^2} \quad (13)$$

Therefore, the moon in the radial direction, there are three permanent force vector:

I. The strength of the vortex gravitation
II. Radial force action for conservation of angular momentum of the Moon around the Earth.
III. centrifugal force

At the moment there is a removal of the lunar orbit. Therefore, the centrifugal force (III) in its magnitude exceeds the vector sum of the forces (**I**) and (**II**). But it was not always. In the initial period of the moon her weight was negligible, therefore, the relative increase in its **Km** - maximum. Then, based on equation (13) Moon should be close to the Earth. With the constant increase in the mass of the moon decreases its relative gain Km. Decreases with decreasing Km annual approximation of the lunar orbit to the Earth - **Kr**. At some point the total mega historical value forces (**I**) and (**II**) became equal in absolute value to the centrifugal force - **(III).** Moon orbit stabilized at this moment, the movement of the moon in the radial direction has stopped. A further decrease in Km, respectively reduce the total attraction forces (**I**) and **(II).** Therefore, the centrifugal force exceeded the force (see. Chapter 3). Began removing the Moon from the Earth.
Based on these formulas define the dynamic characteristics of the moon.
The main physical parameters of the Moon:

mass **M_m = 7,3 x 10^{22} kg**

- The age of **T = 4,5 x 10^9** years
- The distance from the Earth to the semi-minor axis of the lunar orbit **R_b = 392,4 x 10^6 m**
- Annual increase in orbit radius $\Delta R = 3,8 \times 10^{-2} m$

We define on the basis of **notes 1** annual increase in mass of the Moon

$$\Delta M = M_m/T = 7,3 \times 10^{22} / 4,5 \times 10^9 = 1,6 \times 10^{13}\ kg$$

The relative increase in weight

$$K_m = \Delta M / M_m = 1,6 \times 10^{13} / 7,3 \times 10^{22} = 2,2 \times 10^{-10} \ \text{or} \quad K^2_m = 1 + 4,4 \times 10^{-10}$$

The relative increase in mass causes a relative decrease in the radius of the lunar orbit on the basis of formula (13):

$$K_r = \frac{1}{K_m{}^2} = \frac{1}{1+4,4\times10^{-10}} = 1 - 4,4 \times 10^{-10}$$

We define the absolute value of the decrease in the radius of the lunar orbit by the force **II**:

$$\Delta R_{II} = R_b \times K_r = 392,4 \times 10^6 \times 4,4 \times 10^{-10} = 17,3 \times 10^{-2} m$$

Then the increase in the radius of the orbit of the interplay of forces I and III (ΔR_{I+III}) must be:

$$\Delta R_{I+III} = \Delta R + \Delta R_{II} = 3,8 \times 10^{-2} + 17,3 \times 10^{-2} = 21,1 \times 10^{-2} m$$

he magnitude ΔR_{I+III} constant. Consequently, when the variable of Strength II is the vector sum of the forces I and III, the radius of the Moon's orbit is not changed.

$$\Delta R_{II0} = -\Delta R_{I+III} = \pm 21,1 \times 10^{-2} m \quad \text{or} \quad \Delta R_0 = 0$$

Calculate the physical parameters of the moon at this time (in a stable orbit). With an absolute decrease in the radius by an amount ΔR_{II0}, the relative decrease in the radius of the orbit of the force II power

$$K_{r0} = \frac{\Delta R_{II_0}}{R} = \frac{21,1\times10^{-2}}{392,4\times10^6} = 5,38 \times 10^{-10}$$

According to formula (13), the relative decrease in the radius of the orbit K_{r0}be invoked relative increase in the mass of the moon the size of

$$K_{m0} = \frac{1}{\sqrt{K_{r0}}} = \frac{1}{\sqrt{1+5,38\times10^{-10}}} = 1 - 2,69 \times 10^{-10}$$

Determine the mass of the moon at $K_{m0} = 2,69 \times 10^{-10}$ that is in a stable orbit

$$M_0 = \frac{\Delta M}{K_{m0}} = \frac{1,6 \times 10^{13}}{2,69 \times 10^{-10}} = 5,95 \times 10^{22} m$$

Mass M_0 Moon should be aged

$$T = \frac{M_0}{\Delta M} = \frac{5,95 \times 10^{22}}{1,6 \times 10^{13}} = 3,7 \times 10^9 years$$

Thus, removal of the moon started 800 million years ago. Since removal of the orbit must be accelerated, then 800 million years ago was Moon orbit closer to the earth is not more than 16 000 km and had approximate radii:

- Perigee - 347 000 km
- The apogee - 390,000 km

In the future, through the 1 billion years, the radius of the moon's orbit will be increased by 14 cm per year. Overall increase in orbit during this time will be no more than 90 thousand km.

5. ROTATION OF THE MOON

Any astronomical reference indicate that the moon rotates around its axis. During one revolution of rotation coincides with the turnover of the Moon around the Earth. Therefore, the Moon is directed by an observer on earth is always on one side.

Objectively, any movement (rotation) can be considered only in the relative valuation.

Indeed, in the coordinates of the world round the moon rotates on its axis, but in geocentric coordinates, that is, with respect to its orbit or the surface of the Earth the Moon does not rotate. This anomaly is explained by the law of conservation of angular momentum of rotation.

Increasing the mass of the moon, accompanied by an increase in its radius. Then on the basis of equation (10) the rate of rotation of the Moon around its axis must decrease. It is clear that to date rate of rotation of the Moon should be minimal. But the moon is now ceased to rotate about its orbit and the Earth's surface. This fact is explained by the fact that the density of the moon or the height of the relief of its surface uniform. At the most dense or high part of her body to a maximal force of gravity on the Earth that orbit than other segments of the moon. At low speed and force of inertia of the Moon's rotation, this dense, or the highest part, at the time, was unable to overcome the force of gravity (continue rotation) and remained "fixed" at a very close distance from our planet. That is, this part of the moon forever "tied" the earth's gravity on our side.

Therefore, the moon ceased to rotate relative to its orbit.

6. CONCLUSION

Above presented calculations of the dynamics of the moon give reason to conclude that the majority of the celestial objects in the universe perform similar radial displacement.

All of the body or system of bodies in space are satellites of other cosmic torsion. Turning on the orbits of the gravitation torsion, every body constantly increases its mass. Depending on the inclination of the orbit to the plane of the torsion of their age and the celestial bodies get the opposite radial directions. The greater the slope and the age of the space object, the greater the likelihood that it is removed from the center of its space systems. If you contact any of the gravitational plane torsion, without inclination of the orbit, the space object approaches the center of the torsion bar.

Similar conclusions apply to all known space objects. Galaxies can approach the center of the universe, and can be removed. Similarly, the dynamic properties of stars appear in any galaxy or planets when handling around any star, etc.

Therefore, the removal of galaxies from each other is not evidence of expansion of the universe.

REFERENCES

[1].*M. Chapront-Touzé, J. Chapront (1983). «The lunar ephemeris ELP-2000». Astronomy & Astrophysics* ***124****: 54.* Bibcode*:* 1983A&A...124...50C.

[2].Jean O. Dickey et al. (1994): «Lunar Laser Ranging: a Continuing Legacy of the Apollo Program». Science 265, 482..490 .

[3].S. Orlov. *Foundation of vortex gravitation, cosmology and cosmogony*. Global journal of science Frontier research. Physic and Space Science. Volume 12 issue 1 Version 1.0 January 2012

[4].V.A. Atsurovskiy. *General ether-dynamics*. Energoatomizdat. Moscow, Russia. 1990. Page 278.