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The Variation of the Atomic Radius with the Universal Density of Potential Energy

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Abstract After learning that ρ (Universal Density of Potential Energy), varies from one place to another, causing a change in the time measured in the clocks, inversely proportional to the square root of the value of ρ, "Ref. [1]", and that in expanding universe, locally, Universal Density of Potential Energy will decrease in the inverse proportion of that expansion. This decrease increases the G value indicating that the less the Universal Density of Potential Energy, the better the gravitational radiation occurs, thus causing its increase in the direct proportion of the expansion of the Universe, "Ref. [1]". Following the same principle, the Magnetic Permeability of the Vacuum should also increase, allowing a better propagation of electromagnetic waves. The increase in this permeability will allow greater action by the nuclei of the atoms on the electrons. Applying the expression of the atomic ray through quantum mechanics, we conclude that the size of the atoms will decrease with the expansion of the Universe, that is, it will vary in the inverse proportion of that expansion. This finding also implies that the stars are shrinking, which requires a New approach to the removal of the Moon from the Earth. The age of the Universe. Hubble Constant, "Ref. [1].

Keywords: *Universe, gravitation, potential, gravity, velocity, mass, physics, variable*

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1. Introduction

As we have already seen in the article The Universal Gravitational Variable [2], the decrease of the Universal density of potential energy at local improves the transmission capacity of gravitational radiation through space.

In the same sense, this decrease of the energy density will also facilitate the transmission of electrical radiation in space.

We will then see what implications this will have at the level of atoms and the consequence at the level of matter.

Remember, the variation of G with the Universal density of Potential Energy.

t_o - Time on our site

t_t - Time on future site

$$G_t = G_o \frac{\rho_o}{\rho_t} \quad (1.1)$$

The permeability (U) of vacuum.

Transformer, G to U

$$G_o = WU_0 \frac{C^2}{4\pi} \quad (2.1)$$

$$U_0 = KG_0. \quad (3.1)$$

$$U_t = U_o \frac{\rho_o}{\rho_t}. \quad (4.1)$$

1.1. The Dependence of the Atomic Radius with ρ.

Applying the expression for the calculation of the atomic radius and taking into account the Magnetic Permeability Variable of the Vacuum,

As:

$$R_o = \frac{4\pi}{mU_o C^2 ze^2}\left(\frac{h}{2\pi}\right)^2 n^2 \quad (5.1)$$

$$R_t = \frac{4\pi}{mU_t C^2 ze^2}\left(\frac{h}{2\pi}\right)^2 n^2 \quad (6.1)$$

$$R_t = \frac{4\pi}{mU_o \frac{\rho_o}{\rho_t} C^2 ze^2}\left(\frac{h}{2\pi}\right)^2 n^2 \quad (7.1)$$

$$R_t = R_o \frac{\rho_t}{\rho_o}. \quad (8.1)$$

The atomic radius of the matter is directly proportional to the local universal density of potential energy.

As ρ_t is inversely proportional to the expansion of the Universe, as such the atomic rays will always tend to decrease.

1.2. Potential Electron Energy

$$E_o = \frac{mU_o{}^2C^4z^2e^4}{2(4\pi)^2}\left(\frac{2\pi}{h}\right)^2\frac{1}{n^2} \quad (9.1)$$

$$E_t = \frac{mU_t{}^2C^4z^2e^4}{2(4\pi)^2}\left(\frac{2\pi}{h}\right)^2\frac{1}{n^2} \quad (10.1)$$

Atendendo à relatividade:

$$E_t = E_o(\frac{U_t}{U_0})^2 \quad (11.1)$$

$$E_t = E_o(\frac{\rho_0}{\rho_t})^2 \quad (12.1)$$

$$E_t = E_o(\frac{t_t}{t_o})^4. \quad (13.1)$$

2. Conclusion

2.1. The Evolution of the Radius of the Celestial Bodies over Time

As the rays of atoms vary in the inverse proportion of ρ, then the celestial bodies that are made up of atoms then their rauos will also vary in the same proportion.

$$R_t = R_o\frac{\rho_t}{\rho_o}. \quad (2.1)$$

In an expanding universe, the universal potential energy density will decrease, so the atomic radius will decrease which will cause the stars are shrinking.

Our planet Earth is shrinking.

Our moon is shrinking

The Sun for this purpose without regard to mass loss, will shrink.

For example, the lengths of the same objects on the lunar surface will be lower than the same surface of the Earth

Two locals, a and b,

$$L_M = L_E\frac{\rho_M}{\rho_E}. \quad (2.2)$$

We are going to study the two stars where humanity has been, directly or indirectly, Moon and Mars.

2.1.1. Relativity of Time Earth/Moon

2.1.1.1. Dependent on ρ

We will have:

M_E - Mass of the Earth, 5,972E+24 Kg
M_M - Mass of the Moon, 7,349E+22 Kg
R_E - Radius of the Earth, 6 378 100 m
R_M - Radius of the Moon, 1 737 400 m
D_{E-M}= Actual distance between center of the Earth and center of theMoon, 385 000 600 meters.

$$\rho_E = \rho_u = \frac{C^2}{2G}$$

$$\rho_M = \rho_E - \frac{M_E}{R_E} + \frac{M_E}{R_{E-M}} + \frac{M_M}{R_M} \quad (3.2)$$

$$\frac{\rho_M}{\rho_E} = \frac{\rho_E - \frac{M_E}{R_E} - \frac{M_M}{R_{E-M}} + \frac{M_E}{R_{E-M}} + \frac{M_M}{R_M}}{\rho_E} \quad (4.2)$$

$$\frac{\rho_M}{\rho_E} = 0,999999998695. \quad (5.2)$$

The meter measurement on the Moon will be 1.3051 nm less than on Earth.

$$\frac{t_E}{t_M} = \sqrt{\frac{\rho_M}{\rho_E}} = 1,000000000653. \quad (6.2)$$

2.1.1.2. Dependent on velocity

The time difference measured between a signal emitted on the Moon and received on Earth in the interval of 1 day, will be:

We will have:

V_{tE} - Earth's translation speed. 29789,45 ms^{-1}
V_{rE} - Earth's rotation speed lat 40º. 356,2 ms^{-1}
V_{tM} - Moon's translation speed. 1018,28 ms^{-1}
V_{rM} - Moon's rotation speed 4,60 ms^{-1}

$$\frac{t_E}{t_M} = \sqrt{\frac{C^2 - V_{tE}{}^2}{C^2 - V_{tM}{}^2}\frac{C^2 - V_{rE}{}^2}{C^2 - V_{rM}{}^2}} \quad (7.2)$$

$$\frac{t_E}{t_M} = 1,00000000493183. \quad (8.2)$$

2.1.1.3. Dependent on ρ and velocity

$$\frac{t_E}{t_M} = 1,000000000653 * 1,00000000493183 \quad (9.2)$$

$$\frac{t_E}{t_M} = 1,0000000049975. \quad (10.2)$$

The time difference measured on Earth for a signal emitted on the Moon with an interval of 1 day, will be given by:

$$t_E - t_M = 0,0000000049975 \quad (11.2)$$

$$t_E - t_M = 431\ 785,26\ \text{Ns} \quad (12.2)$$

2.1.2. Relativity of time Earth/Mars.

2.1.2.1. Dependent on ρ

We will have:

M_S - Mass of theSun, 1,9891E+30 Kg
M_E - Mass of the Earth, 5,972E+24 Kg
M_M - Mass of the Mars, 7,349E+22 Kg
R_E - Radius of the Earth, 6 378 100 m
R_M - Radius of the Moon, 1 737 400 m

R_{TMS} - Radius of the Moon, 2,27939E+11 m
R_{TE} - Radius of the Earth translation, 1.496x10^11 m
R_{TMS} - Radius of the Moon, 2,27939E+11 m

$$\rho_E - \rho_u = \frac{C^2}{2G}$$

$$\rho_{MS} = \rho_E - \frac{M_S}{R_{S-E}} - \frac{M_E}{R_E} + \frac{M_S}{R_{S-MS}} + \frac{M_{MS}}{R_M S} \quad (13.2)$$

$$\frac{\rho_{MS}}{\rho_E} = \frac{\rho_E - \frac{M_E}{R_E} - \frac{M_M}{R_{E-M}} + \frac{M_E}{R_{E-M}} + \frac{M_M}{R_M}}{\rho_E} \quad (14.2)$$

$$\frac{\rho_{MS}}{\rho_E} = 0,99999996896. \quad (15.2)$$

The meter measurement on the Moon will be 31,0369 nm less than on Earth.

$$\frac{t_E}{t_M} = \sqrt{\frac{\rho_M}{\rho_E}} = 1,00000001552. \quad (16.2)$$

2.1.2.2. Dependent on Velocity

The time difference measured between a signal emitted on the Moon and received on Earth in the interval of 1 day, will be:

We will have:
V_{tE} - Earth's translation speed. 29789,45 ms^{-1}
V_{rE} - Earth's rotation speed lat 40º. 356,2 ms^{-1}
V_{tMS} - Mars's translation speed. 24133,42 ms^{-1}
V_{rMS} - Mars's rotation speed 242,37 ms^{-1}

$$\frac{t_E}{t_M} = \sqrt{\frac{C^2 - V_{tE}^2}{C^2 - V_{tM}^2} \frac{C^2 - V_{rE}^2}{C^2 - V_{rM}^2}} \quad (17.2)$$

$$\frac{t_E}{t_M} = 1,000000001697. \quad (18.2)$$

2.1.2.3. Dependent on ρ and velocity

$$\frac{t_E}{t_M} = 1,00000001552 * 1,000000001697 \quad (19.2)$$

$$\frac{t_E}{t_M} = 1,0000000172159 \quad (20.2)$$

The time difference measured on Earth for a signal emitted on the Moon with an interval of 1 day, will be given by:

$$t_E - t_M = 1,0000000172159 \quad (21.2)$$

$$t_E - t_M = 1\ 487\ 452 \text{ Ns} \quad (22.2)$$

2.2. Celestial Mechanics

Locally with the increase of G the centers of mass move away in proportion of the growth of the universe and with the increase of U the radius of the atoms vary in inverse proportion to that growth, will decrease, therefore all celestial bodies vary too in inverse proportion to that growth, will shrink.

The increase in G will stabilize our Universe. The same gravitational potentials will remain but the greatest distance from the generating mass of the field. The gravitational field will be increasing.

From our perspective we now have a clearer idea of the evolution of the universe.

The stars were created from large clouds formed by large atoms that with the passer of time were subject to a higher G due to the decrease of ρ, causing their contraction, increased pressure and temperature. The planets were formed within these protostars in places where the local gravitic potential was able to concentrate the original masses. If we look at the past we will have to imagine much larger and more fluid stars and planets. Within this line, perhaps we will shed light on the latest studies made on the earth's crust that indicate a Liquid Earth in the past of our planet. In the future the Earth will shrink and become more rigid.

When the universe was half the age that it is today, the Earth would have twice the diameter, 25512.4 km, the our Moon would have a diameter of 6949.6 km, the Sun would have a radius of 1392600 km. The Earth had an average density of 689.4 km / m3 much less dense than today's water. The Earth gravitated in an orbit to the Sun of 7.48x10^10 km and the Moon in an orbit to the Earth of 192500.3 Km).

2.3. LIGO, Gravitational Wave Detector or ρ Variation?

We are convinced that the gravitational wave detector is nothing more than a detector for the variation of ρ (Universal density of potential energy).

As we saw earlier, ρ interferes with the size of atoms, therefore with the size of objects.

In the case of the detection of waves in the Ligo, it is two black holes with a mass of 29 and 36 solar masses located at a distance of 1.3 billion light years separated from 3000 km gravitating around each other. The impact of this movement on ρ is around ∓ 2.76x10 ^ -13 Kg / m which seems very low and difficult to detect.

On the other hand, the variation in the distance between Earth and the Sun in its annual translation movement causes a much greater variation of ρ, in the order of 4.45E + 17 kg / m between perihelion and aphelion, causing a variation of 6.60E -10 in the length of the objects. In the 4000 m of LIGO the variation should be in the order of 2640 nm.

The terrestrial equatorial diameter will vary between the periods considered above, of 8.42 mm.

3. The Removal of the Moon from the Earth

There are values already known such as:

Dc - Actual distance between center of the Earth and center of theMoon, 385 000 600 meters.

Rt - Radius of the Earth, 6 378 100 m

Rl - Radius of the Moon, 1 737 400 m

D= 385 000 600-6 378 100-1 737 400

D= 376 885 100 meters

Dm - Aparent removal, actualy calculated, 3.82∓0.07 cm per year.

d - Real annual average removal of the Moon.

t_0 - Value of the measure of the time of the light beam.

t_t - Value of the measure of the time of the light beam, conseding the variation of time.

$$t_0 = \frac{D + 0.0382}{C}. \quad (1.3)$$

Taking into account the shrinking of the Earth and the Moon, we will have:

$$t_t = \frac{D + d + (\mathrm{Rt} + \mathrm{Rl})\frac{d}{\mathrm{Dc} + d}}{C} \quad (2.3)$$

ρ is inversely proportional to the expansion of the Universe [1]", and this proportional to the increase in the radius of gravitation, we will have:

$$\frac{t_t}{t_0} = \sqrt{\frac{\rho_0}{\rho_t}}$$

$$\left(\frac{t_t}{t_o}\right)^2 = \frac{\frac{1}{\mathrm{Dc}}}{\frac{1}{\mathrm{Dc} + d}} \quad (3.3)$$

$$\frac{t_t}{t_0} = \sqrt{\frac{\mathrm{Dc} + d}{\mathrm{Dc}}} \quad (4.3)$$

$$t_t = t_0 \sqrt{\frac{\mathrm{Dc} + d}{D}}. \quad (5.3)$$

The reading made will be conditioned by the contraction of time on the watch.

In the following year, the clock will mark more time. So it is necessary to take this into account and make the correction.

$$t_t = \frac{D + d + (\mathrm{Rt} + \mathrm{Rl})\frac{d}{\mathrm{Dc} + d}}{C} \sqrt{\frac{\mathrm{Dc} + d}{\mathrm{Dc}}} \quad (6.3)$$

$$\frac{D + 0.0382}{C} = \frac{D + d + (\mathrm{Rt} + \mathrm{Rl})\frac{d}{\mathrm{Dc} + d}}{C} \sqrt{\frac{\mathrm{Dc} + d}{\mathrm{Dc}}} \quad (7.3)$$

$$d = 0{,}02528902\mathrm{m}. \quad (8.3)$$

4. The Age of the Universe

Now we can calculate how many years it took the mass centers to move away as far as today.

$$I = \frac{D}{d} \quad (1.4)$$

$$I = 15224021588 \; years. \quad (2.4)$$

This value is considered approximate until we can know if the measurements of the celestial bodies also change.

$$\mathrm{d} = (0{,}02482560;\ 0{,}02575240)\ \mathrm{m}$$

$$\mathrm{I} = (14\ 950\ 088\ 889; 15\ 508\ 209\ 194)\ \mathrm{years}$$

5. The Hubble Constant

For the first time, we can evaluate the expansion of the Universe, from nearby and therefore more accurate medics.

We have the distance from the Earth to the Moon and the value of the moon's annual remoteness from the Earth. In order to obtain the equivalent value of Hubble constant, let's consider Megaparsec.

Mparsec = 3,0856775815*10^22 m

T-One year=365.256363 dias=31 558 150 seg

$$V = \frac{3{,}0856775815 * 10\hat{}22}{31558150} \frac{0{,}02528902}{385000600} \quad (1.5)$$

$$V = 64225{,}81 ms^{-1}\mathrm{Mpc}^{-1} \quad (2.5)$$

$$V = 64{,}226 kms^{-1}\mathrm{Mpc}^{-1} \quad (3.5)$$

$$\mathrm{V} = (63{,}049;\ 65{,}403)\ \mathrm{km}\ s^{-1}\mathrm{Mpc}^{-1}.$$

6. Annual Removal of Masses Belonging to the Solar System in Relation to the Gravitational Masses that Generate the Fields

As we saw earlier [2], the masses belonging to a gravitational field move away from the mass that generates the field, in the same proportion of the expansion of the Universe.

D_a - Annual increase in gravitational radius.

I-Age of the Universe

$$D_a = \frac{R_{Gravitational}}{I}. \quad (1.6)$$

6.1. Annual Removal of Moons Belonging to the Solar System in Relation to Their Planets

Jupiter:	
Io:	2.77 ± 0,005 cm
Europa:	4,41 ± 0,008 cm
Ganymede:	7,03 ± 0,013 cm
Calisto:	12,37 ± 0,023 cm
Sinope:	157,25 ± 0,286 cm
Saturn:	
Titan:	8,03 ± 0,015 cm

We analyzed the increase in the gravity radius of the moons and not the increase in the distance to the planet, as this will depend on the changes caused on the planet by the increase in the G. The recently measured of 11 cm per year, to the departure of Saturn's Titan, published in Nature Astronomy, is much better than the previous one aimed at 0.1 cm a year.

Iapetus:	23,39 ± 0,042 cm

6.2. Annual Removal of Planets Belonging to the Solar System in Relation to the Sun

Sun:	
Earth	9,83 ± 0,018 m

Mars: 14,97 ± 0,028 m
Jupiter: 51,13 ± 0,094 m

6.3. Annual Removal of Sun in Relation to the Center of Milk Way

Milk Way:
Sun (26000 al) 10.80 ± 0,20u.a.
Within 585 539 years, the Sun will be away more 1 light year from the center of the Milky Way.

7. Calculation of the Age When Planets and Moons Left Their Respective Centers of Mass

As we have already seen, in balanced gravitational fields, the centers of mass will move apart between them and the masses will shrink.

If we go back to the past, the process is reversed, the centers of mass will be much closer and the masses will be much larger. If we step back significantly we will see the moons plunge into their protoplanets and planets in the proto-star.

Will be:
Ro - Current radius of the generating mass of the field.
R1 - Radius of the mass belonging to the field
RR- Gravity radius.

On the date of abandon, the gravity radius must be equal to the sum of the radii of the two masses.

$$RR\frac{\mathrm{Io}}{I}=\left(\mathrm{Ro}+\mathrm{R1}\right)\frac{I}{\mathrm{Io}} \quad (1.7)$$

$$\mathrm{Io}=I\sqrt{\frac{\mathrm{Ro}+\mathrm{R1}}{RR}} \quad (2.7)$$

7.1. We Will Indicate the Ages when the Planets Left the Proto Star Sun

Although the sun is essentially a gas, we will consider that it maintains the plastic conditions as a result of this forecast. We will not take into account the loss of matter by radiation for now

Neptune - 192 598 796 years
Jupiter - 477 995 542 years
Mars- 843 299 049 years
Earth- 1 043 155 555 years
Mercury- 1 671 939 774 years
The respective radius, planet and proto Sun.
Neptune- 1 957 476 779m ; Sun- 55 015 499 858m
Jupiter- 2 276 999 796m ; Sun- 22 167 401 355m
Mars- 61 311 372m ; Sun- 12 564 841 659m
Earth- 93 083 272m ; Sun- 10 157 563 720m
Mercury- 22 214 942m ; Sun- 6 337 500 422m

7.2. We Will Indicate the Ages when the Moons Left Ther Proto Planets.

Moon- 2 210 325 983 years
Ganimedes- 4 006 179 467 years
Io- 6 347 746 391years
The respective radius, moons and proto Planets.
Moon- 11 966 658m ; Earth- 43 930 322 m
Ganimedes- 9 998 154m ; Jupiter- 271 679 230m
Io- 4 368 567m ; Jupiter- 171 461 757m

8. Calculation of the Delay in the Masses's Translation and Rotation Period

8.1. Delay in the Earth's Translation Period

One of the consequences of the contraction of time and the expansion of the universe is the delay in the Earth's translation period.
-Ro -Distance Sun/Earth - 1,496x10^11 m
-Vo -Earth's translation speed - 29788,64 m/s

$$\mathrm{T_t}=\frac{2\pi\mathrm{Ro}\frac{I+N}{I}}{\mathrm{Vo}}\sqrt{\frac{\rho_0}{\rho_t}} \quad (1.8)$$

$$\mathrm{T_t}=\frac{2\pi\mathrm{Ro}\frac{I+N}{I}}{\mathrm{Vo}}\sqrt{\frac{I+N}{I}} \quad (2.8)$$

$$\mathrm{T_t}=\frac{2\pi\mathrm{Ro}}{\mathrm{Vo}}\left(\frac{I+N}{I}\right)^{\frac{3}{2}} \quad (3.8)$$

$$\mathrm{T_t}-\mathrm{T_0}=\frac{2\pi\mathrm{Ro}}{\mathrm{Vo}}\left[\left(\frac{I+N}{I}\right)^{\frac{3}{2}}-1\right] \quad (4.8)$$

$$\mathrm{T_t}-\mathrm{T_0} = 0{,}003108944176 \text{ seconds} \quad (5.8)$$

$$\mathrm{T_t}-\mathrm{T_0} = 3{,}108944176 \text{ milliseconds.} \quad (6.8)$$

If we take into account the contraction of the Earth, we will have;

$$\mathrm{T_t}=\frac{2\pi\mathrm{Ro}\frac{I+N}{I}}{\mathrm{Vo}}\sqrt{\frac{\rho_0}{\rho_t+\left(\frac{\mathrm{M}_E}{\mathrm{R_E}}\left(\frac{\rho_0}{\rho_t}-1\right)\right)}} \quad (7.8)$$

$$\mathrm{T_t}-\mathrm{T_0} =\frac{2\pi\mathrm{Ro}\frac{I+N}{I}}{\mathrm{Vo}}\left(\sqrt{\frac{\rho_0}{\rho_t+\left(-\frac{\mathrm{M}_E}{\mathrm{R_E}}\left(\frac{I+N}{I}-1\right)\right)}}\right)-\frac{2\pi\mathrm{Ro}}{\mathrm{Vo}} \quad (8.8)$$

$$\mathrm{T_t}=3{,}10894417\ 6\text{milliseconds}$$

The value is practically the same since the variation of ρ_t is 9.1347E-20.

8.2. Delay in the Moon's Translation Period

One of the consequences of the contraction of time and the expansion of the universe is the delay in the Earth's translation period.
With an interval of one year, we will have:
-Ro -Distance Moon/Earth - 385000600m

-Vo -Moon's translation speed - 1022 m/s

$$T_t = \frac{2\pi Ro \frac{I+N}{I}}{Vo}\sqrt{\frac{\rho_0}{\rho_t}} \quad (9.8)$$

$$T_t = \frac{2\pi Ro \frac{I+N}{I}}{Vo}\sqrt{\frac{I+N}{I}} \quad (10.8)$$

$$T_t = \frac{2\pi Ro}{Vo}(\frac{I+N}{I})^{\frac{3}{2}} \quad (11.8)$$

$$T_t - T_0 = \frac{2\pi Ro}{Vo}\left[(\frac{I+N}{I})^{\frac{3}{2}} - 1\right] \quad (12.8)$$

$$T_t - T_0 = 0,000234248 \text{ seconds} \quad (13.8)$$

$$T_t - T_0 = 0,23425 \text{ milliseconds.} \quad (14.8)$$

If we take into account the contraction of the Earth, we will have;

$$T_t = \frac{2\pi Ro \frac{I+N}{I}}{Vo}\sqrt{\frac{\rho_0}{\rho_t + \left(-\frac{M_E}{R_E}\left(\frac{\rho_0}{\rho_t} - 1\right)\right)}} \quad (15.8)$$

$$T_t - T_0 = \frac{2\pi Ro}{Vo}(\frac{I+N}{I}\sqrt{\frac{\rho_0}{\rho_t + \left(-\frac{M_E}{R_E}\left(\frac{I+N}{I} - 1\right)\right)}}) - 1 \quad (16.8)$$

$$T_t - T_0 = 0,23425 \text{ milliseconds} \quad (17.8)$$

8.3. Delay in the Earth's Rotation Period

One of the consequences of the contraction of time is the delay in the Earth's rotation period.

With an interval of one year, we will have:

$$\partial T_t = +24x3600\left[(\frac{\rho_0}{\rho_t + \left(-\frac{M_E}{R_E}\left(\frac{I+N}{I} - 1\right)\right)})^{\frac{1}{2}} - 1\right] \quad (18.8)$$

$$\partial T_t = 2,83764x10\text{^-}06 \text{seconds} \quad (19.8)$$

$$\partial T_t = 2837,6 \text{ nanoseconds} \quad (20.8)$$

The value is practically the same

The constant contraction of time on Earth will cause a change in the way we view the Universe through telescopes over time.

The constant contraction of time on Earth will cause a change in the way we look at the Universe and even the Earth itself.

$$\frac{t_t}{t_0} = \sqrt{\frac{\rho_0}{\rho_t + \left(-\frac{M_E}{R_E}\left(\frac{I+N}{I} - 1\right)\right)}} \quad (21.8)$$

9. Conclusion

This new analysis gives a new vision about the universe and its evolution.

The decrease in the universal density of potential energy at the local, due to the expansion of the universe will allow the increase of the gravitational variable G indicating a better gravitational radiation, as well as the increase in the magnetic permeability of the vacuum U indicates a better electromagnetic radiation.

The first, G, allows the stars belonging to a gravitational field to occupy orbits but away from the generating mass of that field in proportion to the increase in G, allowing to keep all gravitational fields in balance stable, and we can say that the part expands in the same proportion as the all Universal.

he second U when improving the electromagnetic radiation makes the electrons start to occupy atoms in more energetic orbits and that approach the nuclei causing the atoms to decrease in size, thus varying in the inverse proportion of the expansion of the universe.

Perhaps we now better understand the past of the universe.

This new celestial mechanics allows us to calculate the age of the universe and thus have a series of information hitherto unknown, such as the increase in the distance between the celestial bodies and the center of the gravitational field to which they belong.

We learned that atoms will decrease in size in the inverse proportion of universal expansion, and we can say that stars that are all made up of atoms will also decrease in size under the same rules.

The contraction of time in proportion to the square root of the expansion of the universe, will allow us to make the necessary corrections to correctly interpret the data measured over time from the Universe.

The decrease in the universal density of potential energy at the local, should have implications for all matter, whether at the level of stars, molecules, atoms and particles.

This contraction of the atoms and the increase in G should cause changes in the temperature and energy reduced by the stars.

The constant contraction of time on Earth will cause a change in the way we look at the Universe and even the Earth itself.

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