

# The New Law of Universal Gravitational Variable

## A new vision of the universe

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Cosmological phenomena such as, the systematic and constant removal of 3,8 cm of the Moon in relation to the Earth, and the delay of 1,5 milliseconds in the period of translation of the Earth, and not to believe the bending of the space, then in the paradigm of the bending of the space-time as origin of the gravity, took the one that studied the subject in cause.

### Intro:

#### 1- The universe of constant speeds, the amounts of movement and the energy.

I always had some doubts regarding the gravitational constant, give that, in a Universe in expansion it does not seem reasonable to me the existence of a gravitational constant which with its extremely slow evolution would not allow us to observe it in a lifetime.

Something told me that this constant would have to be the growth of the Universe and not to the constant of the space.

With the available information that the moon is moving away from the earth at a rate of 3.8 cm per year, and that there is an annual delay of 1.5 milliseconds on the translation of the earth, this idea grew on me.

I'm certain, that the laws of inertia are the structural base to the functioning of the Universe, the very same Universe of the constant speeds, the quantity of movement, and energies.

### The reason:

$$U = \frac{G M}{R}$$

Analyzing the gravitational potential on the local perspective, it's clear to me that it couldn't express my basic concept for the local gravitational potential.

## Method

### 2 – Structural thought

My concept relies in the premises that the local potential is made by the local raw potential:

$$\frac{M C^2}{4 \pi R}$$

Limited by the action of the whole universal mass, as if the pressure made by this universal mass on the local mass stops its own raw radiation, which means:

$$U = G_k \frac{M C^2}{4 \pi R}$$

In which  $G_k$  would be the inhibitor, caused by the universal masses, of the raw local radiation.

One thought came to me, local mass does not transform itself in energy, only by that factor.

Getting back to the potential.

After all the traditional expression of the gravitational potential, it's only an informal expression of its formal expression.

From now on I will be able to work with one or the other as long as I always keep in mind the value of  $G$  which after all formally matches,  $G_k$

$$\frac{M C^2}{4 \pi R}$$

This means that the informal expression for gravitational potential contains within the formal one:

$$U = \frac{G_k C^2}{4 \pi} \frac{M}{R}$$

I noticed promptly that the expression used for the electromagnetic potential after all is itself informality.

$$U_{pe} = \frac{1}{4 \pi E_o} \frac{Q}{R}$$

The formal expression after all, given that  $U_o$

$$E_o = \frac{1}{U_o C^2}, \text{ we would have:}$$

$$U_{pe} = \frac{U_o C^2}{4 \pi} \frac{Q}{R}$$

$$U_{pe} = \frac{U_o Q C^2}{4 \pi R}$$

Funny: so my  $G_k$  is not more that the gravitational permeability of the vacuum.

Getting back to the potential now that we know what we are talking about:

$$U = K C^2 = \frac{G M}{R}$$

In Universal terms we would have, in which (u) indicates universal.

$$k_1 C^2 = \frac{G M_u k_2}{R_u k_3}$$

$$G = \frac{K R_u}{M_u}$$

Formally we would have:

$$G_k = \frac{K' 4 \pi R_u}{M_u C^2}$$

Therefore the G or  $G_k$  entity will always be in inversely proportional to the universal gravitational potential.

Because  $M_u$  or universal energy will be constant for all time.

So:

$$G = K R_u$$

$$G_k = K' R_u$$

Here it is which I thought, the gravitational variable increases with the expansion of the universe.

If a universe is expanding globally, so locally it should be as well.

The previous phenomena would only be possible with the decreasing in the planets speeds, which contradicts my opinion, the constancy of speeds e de amounts of movement and energy, therefore violating the laws of Inertia.

Endless principles... We will have to talk of gravitational potentials and always have in line scientific formality, which means the formal or informal expression of its potential.

Given so, I will try to find some answer in the upcoming explanation, having as a basis the constancy of the speed of light, already explained by relativity.

### **New paradigm**

Until the present he was considered that the gravity resulted of the bending of the space/time.

It wants either of a hypothetical bending or not of the space/time, the expression of the potential gravitation is that one that still we consider today the basic expression, for what is on that we must lean over our attention.

Either the bending of the space or another one the reason of the appearance of the “Universal constant gravitation”, is in the expression of the potential of gravitation that we must look its explanation, therefore does not have until this date one another expression that sheds this potential exactly.

In this perspective, we are led to conclude that “ Universal gravitational constant” is provoked, not for the bending of the space/time but yes for the Universal potential in the place.

It is the density of universal potential in the local that necessarily creates the characteristics of the homogeneous space through the value of “ gravitational constant ”

The concept of an entity only space/time me does not seem intelligible.

If the time is intrinsic to the matter, therefore it depends exclusively on the constancy of the internal work, and the space is exterior to this, does not know as to create an identity.

Both will have to survive independently. More ahead I go to retake this subject.

Any form I am convinced to be before a new concept of “ gravitational constant”.

Locally what is going on?

### **3- The local Universe.**

A new insight on the Universal gravitational constant.

I will now try to study the phenomena having for basis the gravitational potential.

$$U = \frac{G M}{R}$$

Let us consider the two instants, the instant 0 and the instant 1.

$$U_0 = \frac{G_0 M_0}{R_0}$$

$$U_1 = \frac{G_1 M_1}{R_1}$$

Considering the Earth-Moon system, being the Earth thermodynamically stable, we can state that this mass remains constant.

Two cases arise:

a) – The Universal gravitational constant is constant:

$$G_1 = G_0$$

$$M_1 = M_0$$

$$R_o < R_1$$

$$\frac{G_0 M_0}{R_o} > \frac{G_0 M_0}{R_1}$$

$$U_1 < U_o$$

$$V_1 < V_o$$

The decrease in potential implies the decrease of the translation speed of the stars, so it apparently violates of the law of inertia. Because if the gravity constancy remains equal then the space would remain homogeneous and there wouldn't be reason for imbalances.

b) – The potential is constant:

$$U_1 = U_o$$

$$M_1 = M_0$$

$$R_o < R_1$$

$$\frac{G_0 M_0}{R_o} = \frac{G_1 M_0}{R_1}$$

$$\frac{G_0}{R_o} = \frac{G_1}{R_1}$$

$$\frac{G_1}{G_0} = \frac{R_1}{R_o}$$

$$G_1 = G_0 \frac{R_1}{R_o}$$

$$V_1 = V_o$$

The “gravitational constant” will increase proportionally to the distance between the bodies, the speed of translation of the masses will always be constant because of the gravitational potential is constant.

$$U = V^2$$

$$U = V^2$$

We would then have a gravitational variable.

The constancy of speed is much more viable because it does not break the law of Inertia.

Any other explanation, given for these phenomena seems wrong to me.

This point of view is apparently more accordingly with a Universe in expansion, which means that locally the “gravitational constant” increases with the increase in radius, therefore extrapolating to the Universe.

The gravitational variable increases with the increase in radius of the universe and the gravitational potential created by universal masses will always be constant.

**The so called gravitational constant will vary in function of the variation of the distance between the celestial bodies.**

In a universe which is thought to be in expansion and in a translational balance, the distance between stars increases (Ri), causing therefore the increase in the value of the “gravitational constant”.

The increase of the “gravitational constant” to be understandable will have to be proportional to the growth of the universe.

All mass has an energy radiation potential  $(\frac{M C^2}{4 \pi R})$ . That potential is given by all gravitational potential from the remaining mass existing in the universe and is from the gravitational potential of that universal mass that gravity is established.

Translating this principle in mathematical expression the local potential would be:

$$U_i = \frac{G_i (M C^2)}{4 \pi R}$$

Being.

Gi, - The local inhibitor factor, for radiation depending on the universal mass, very likely of the potential which it creates on site. We are talking in the depths of vacuum gravitational permeability.

$$\frac{M C^2}{4 \pi R} - \text{Pure potential of the local mass.}$$

Therefore the gravitational variable must depend on the Universe's mass and the distance which it is in.

The universal energy is constant, being or not condensed in matter (mass x  $C^2$  + radiation)

We will then have an increase in the gravitational constant caused by the Universe's expansion and therefore a growth of the universe which will cause the increase of the gravitational constant, thus allowing that the potential created by masses would always be constant.

The universe can grow for all times at the same speed. It's the increase in gravity which allows constant radial and translation velocity.

$$\frac{G_0 M_0}{R_0} = \frac{G_1 M_0}{R_1} = k$$

We will have:

$$G_0 = K R_0$$

$$G_1 = K R_1$$

This situation leads to the fact that the growth of the universe creates a variable and not a constant. Only a relation of this sort leads to the constant stepping away between masses.

$$d_1 = R_0 \left( \frac{G_1}{G_0} - 1 \right)$$

$$d_2 = R_1 \left( \frac{G_2}{G_1} - 1 \right)$$

$$d_2 = R_0 \frac{G_1}{G_0} \left( \frac{G_2}{G_1} - 1 \right)$$

$$d_2 = R_0 \left( \frac{G_2}{G_1} - \frac{G_1}{G_0} \right)$$

If:

$$d_1 = d_2$$

$$d_1 + d_2 = 2 d_1$$

$$2 d_1 = R_o \left( \frac{G_1}{G_0} - 1 \right) + R_o \left( \frac{G_2}{G_1} - \frac{G_1}{G_0} \right)$$

$$2 d_1 = R_o \left( \frac{G_2}{G_0} - 1 \right)$$

$$\frac{G_2}{G_0} R_o - R_o = 2 d_1$$

$$\frac{G_2}{G_0} = \frac{R_o + d_1}{R_o}$$

We will then have a gravitational variable and not a constant.

$$G = k R$$

But what is the value of K?

Before anything else let's look our local universal.

#### **4- Search of mathematical proof throughout known phenomena for determination of the correlation factor for the growth of the universe.**

The information in which the moon is stepping away from the earth, which means, that um celestial body is stepping away from the other.

Given the information that the translation period of the Earth is increasing, so is the earth also stepping away from the sun.

In the present cases, the local universe, we do not see an increase in the mass of the bodies creating the field, because the earth is stable in thermodynamic terms and the sun, on his behalf loses mass due to the

hydrogen fusion, fact for which is a star and not only because of that the earth stops stepping away from the sun.

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Data:

- Distance from earth to the moon	385.000.000 m
- Annual increase in distance between celestial bodies	0.038 m
- Correlation coefficient: $385.000.000 / 0.038$	<b>10.131.578.947</b> years

Note: The value found for the distance from the center of the earth to the center of the moon and the value of the moons increase in distance was taken out of NASA web site. Because the gathering should be the same level I used these values.

## 2- Increase in the Earth translation movement.

Data:

- Distance from the earth to the sun	149.600.000.000 m
- Gravitational constant	6,6726E-11
- Sun mass	1,9891E+30 kg
- Average translation velocity	29.785.85 m/s
- Translation perimeter	939.970.068.538m
- Increase in the translation	0.0015 sec
- Increase of the average perimeter $0.0015 \times 29.796,2 =$	44,679 m
- Increase of the radius $d / (2\pi) \times 2 =$	14,222 m
- Energy released per second $+5.67E-8 \times 5900^4 \times 4 \times \pi \times R_{sol}^2 =$	4,1824E+26 w
- Decreasing mass by fusion $E / C^2 =$	4.653.492.917 / sec.
- Average decrease in mass M	1,46853E+17 kg
- Decrease in radius by mass loss	
$1,57065E+17 / 1,9891E+30 \times 149.600.000.000 =$	0,012 m
- Annual stepping away of expansion $14.222 + 0.012 =$	14.233 m
- Correlation coefficient:	<b>10.510.469.719</b> years

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As we can see the correlation coefficients are extremely close, existing between them a variation of 3.7%, which considering the circumstances, is the same value.

For the development of this work I will adopt, the correlation value of 10.131.578.947, which is nothing more than the one given by the increase in distance of the moon from the earth because I believe that the margin of error from

the Apollo program, which verifies these measurements, is the smaller, and because it is a thermodynamically stable system.

Assess the delay of 1.5 milliseconds seems harder, because it relies in much harder to determine measures, such as the distance to the sun, quantification of the sun's mass and the decrease of the sun's mass.

Considering the value (10.131.578.947 we would have a delay of 1, 5562 milliseconds, very close to the announced (1,5 milliseconds).

Locally there was no increase in mass, which didn't prevent the increase in the distances. We know now that there is a gravitational variable and that it varies closely of or at least in the same proportion as the growth of the universe radius.

## **5- The impact of mass radiation of the whole universe in the value for local gravity.**

Anyway, I think it is necessary to look whole universe and try to take from there a better understanding of the phenomena, its verification and even trying to get the value of the constant which left over from the previous paragraphs.

As seen previously the gravitational variable increases with the increase of the universes radius, which implies that the increase of the gravitational variable happens with the stepping away of the matter. The energy which varies linearly with the universe's radius is the potential gravitational energy.

Because the potential gravitational energy decreases with the increase of the universe's radius, only one entity, inversely proportional to the raw potential of the matter will make the value of gravity increase.

Because gravity is the allowed radiation of the local matter and not its raw radiation, then it has to be that same potential energy of all the Universal matter to cause the inhibition and control the local gravity.

Because the potential gravitational energy, of the universal matter, is probably not equal in all points of the universe, then is the gravity not the same as well?

Let us consider the academic case, exclusively theoretical, in which the matter is moving away at the speed of light or very close to it, then any other radiation of the matter would not get to that place, the only universal matter present would be itself, non intervenient giving place to gravitational variable + infinity?

What allows the existence of matter is the inhibitor potential of all other matter.

Let us get back, therefore, to the gravitational potential expression:

$$U = G \frac{M}{R}$$

**Let us now think in Universal terms.**

For any place in the universe's radius i:

**What is M?**

As seen before M will be the mass radiation of any mass in the place j,  $M_{Uj}$ .

**We speak of mass radiation. But which are its characteristic?**

In local gravity we have mass radiation, which despite controlled is the mass radiation. Is this mass radiation subject to the action of the local gravity?

In order to answer we should look to the black hole. They are masses generator of gravitational field, capable of bending completely their own radiation of light. Although that happens, the black holes besides their own critical radius, given  $(2 G \frac{M}{c^2})$ , continue to create a gravitational field therefore **this**

**type of radiation does not bend under the action of the local gravity.**

We should look a justification for this realization.

**The gravity is not capable of bending the mass radiation, therefore it's radiation itself in a straight line way across the whole universe.**

Other conclusion we take out of this observation, is the existence of radiation which doesn't bend by action of the gravity, I.e. in its radial spread there will always be radiation perpendicular to the surface of the universe, for which:

If to look at for the beginning, the Big-Bang, then more easily we understand that the Universe grows to the speed of the Light, the energy radiation is radial.

**The universe will grow at the speed of light.**

As electromagnetic radiation, the mass radiation will be limited also by the limit of the speed of light, condition for the consideration of the Doppler effect.

Being  $e_{d_{j-i}}$  the Doppler effect between mass j and the place i.

$$M_{u_{j-i}} = M_{u_j} e_{d_{j-i}}$$

**What is R?**

R is therefore the radius of emission of the mass radiation j to the universal place i, given the date of emission  $R_{u_{j-i}}$ .

$$\frac{M}{R} = \sum_1^n \left( \frac{M_{u_{j-i}}}{R_{e_{j-i}}} \right)$$

$$U_i = G_i \sum_1^n \left( \frac{M_{u_{j-i}}}{R_{e_{j-i}}} \right)$$

Lets, for simplification, replace:

$\Sigma M_{u_{j-i}}$  – All universal mass subject to its Doppler effect which radiates to the place i.

$$M_{uri} = \Sigma M_{u_{j-i}}$$

$$R_{eui} = \frac{\Sigma M_{u_{j-i}}}{\Sigma_1^n \left( \frac{M_{u_{j-i}}}{R_{e_{j-i}}} \right)}$$

By the equation of the Universal gravitational potential, we will have:

$$U_i = G_i \frac{M_{uri}}{R_{eui}}$$

**What is the value of U?**

Are we capable to determine which is the mass potential created at the local I by all universal masses?

There is an element that relativity has already clearly characterized as the limit speed of this universe, the speed of light, C.

If the maximum velocity permitted in the Universe is C, then it's that same escape speed in any particular point of the Universe.

$$C^2 = 2 G_i \frac{M_{uri}}{R_{eui}}$$

$$G_i \frac{M_{uri}}{R_{eui}} = \frac{C^2}{2}$$

The universal gravitational potential created in any local point will be given by  $\frac{C^2}{2}$ .

We now find the homogeneity talked earlier. The basic texture which means the universal space is homogeny, i.e. the space.

Here is the reason of the non curvature of the mass radiation, because it on its path always finds the same potential in any direction.

In a universe with these absolute homogeneity, locally, it is unthinkable the increase in distance of the celestial bodies, unless it is by the increase of the gravitational variable.

We can now obtain the value for  $G_i$ :

$$G_i = \frac{C^2}{2} \frac{Re_{ui}}{M_{uri}}$$

$$G_i = \frac{C^2}{2} \frac{1}{\sum_1^n \left( \frac{M_{uj-i}}{Re_{j-i}} \right)}$$

$$G_i = \frac{C^2}{2} \sum_1^n \left( \frac{Re_{j-i}}{M_{uj-i}} \right)$$

We then get the gravitational variable expression in any point of the universe.

We are really before a new paradigm, “gravitational constant” has a different nature of that we thought.

### **What is its evolution in time?**

The mass distribution in the universe, regardless of its dispersion throughout the universe radius, will always be radials symmetrical. Let us imagine the distribution/radiation of the mass/energy after the BIG BANG.

At the same distance from the center, should appear the same type of cosmological events for which will be a radial symmetry.

We can then talk about slices more or less finite of equal density or even of equal variation in density.

When we talk about the growth of the universe we talk about an evolution of masses in space, proportional to the position in which occupy in the universe radius, regardless of the location of the own mass, but to the rings of mass with the same density.

When the universal radius increases, ( $R_{eui} = K R_{eui0}$ ), then the radius of average emission of all universal masses regarding that point will increase in the same proportion, therefore:

$$R_{euji} = K R_{euij0}.$$

Which implies that  $R_{euji} = K_i R_u$ , being  $R_u$  the universal radius. The average emission radius relatively to the point I, point that occupies always the position i, the same percentage of the universe radius, will always be proportional to the universal radius (annex 1).

Here it is again the proportionality of the value of the gravitational variable with average distance in which the universal masses are present, therefore being proportional to the growth of the Universe radius.

Now we are sure that gravity increases with the growth of the universe's radius, the growth of the universe happens at a constant speed and grows in time, so the gravitational variable of the place  $i$  increases proportionally to time.

The relation established until now, considering the potential or potential density, is sorts of:

$U_{upi}$  – Gravitational pure potential.

$$U_{upi} = \frac{M_{uri} C^2}{4 \pi R_{eui}}$$

$$G_i = \frac{1}{U_{upi}} K$$

$$G_i = \frac{4 \pi R_{eui}}{M_{uri} C^2} k$$

$$U_i = \frac{4 \pi R_{eui}}{M_{uri} C^2} \frac{M_{uri}}{R_{eui}} k - \text{Informality.}$$

$$U_i = \frac{4 \pi}{C^2} k$$

$$\frac{C^2}{2} = \frac{4 \pi}{C^2} k$$

$$k = \frac{c^4}{8 \pi} \text{ - Informality}$$

$$U_{upi} = \frac{c^4}{8 \pi G}$$

Informality, because the values are mathematically correct, but lacking of any particular meaning.

Formally we would have:

$$\frac{c^2}{2} = \frac{4 \pi R_{eui}}{M_{uri} c^2} \frac{M_{uri} c^2}{4 \pi R_{eui}} k$$

$$k = \frac{c^2}{2}$$

And this is the Great Universal Constant, the universal potential which implies the escape velocity C, speed limit of the universe.

$$U_{upi} = \frac{c^2}{2 G_k}$$

Definitively either we use the informal expression e use the formal factors or we formalize everything.

The equation of the gravitational potential given its nature should be formally e correctly written in a different way.

$$U = G_k \frac{M c^2}{4 \pi R}$$

The bottom expression is made by Gk which is no more than the part of all local radiation, i.e. the part allowed to the local radiation. The universal radiation controls the local one. The inspiring principle is now correct.

It can eventually be written is such formula:

$$U = G_k \frac{c^2}{4 \pi} \frac{M}{R}$$

We can define  $G_k$  – Vacuum gravitational permeability as:

$$G_k = \frac{2 \pi R_{eu}}{M_{ur}}$$

$$G_k \frac{C^2}{4 \pi} = G$$

Actual  $G_k$  on site Earth =  $6.6726E-11 \times 4 \times \pi / C^2 = 9,32963E-27$ .

The radiation at our local:

$$Rad\ l = \frac{M_{uri}}{R_{eui}} = \frac{C^2}{2 G} = 6,73467E+26$$

Logically, solving the potential we would obtain always the same value for the potential.

The lack of formality of the gravitational potential expressions used until nowadays, as lead to obtained some results without any sense, as we will see forward.

## 6- Cosmological variable

Looking to the shape given by me informal for the gravitational potential:

$$G_i = \frac{1}{U_{upi}} K$$

$$G_i = \frac{4 \pi R_{eui}}{M_{uri} C^2} k$$

$$U_i = \frac{4 \pi R_{eui}}{M_{uri} C^2} \frac{M_{uri}}{R_{eui}} k - \text{Informality.}$$

$$U_i = \frac{4 \pi}{C^2} k$$

$$\frac{C^2}{2} = \frac{4 \pi}{C^2} k$$

$$k = \frac{C^4}{8 \pi} - \text{Informality.}$$

$$U_{upi} = \frac{C^4}{8 \pi G} - \text{The informal cosmological variable.}$$

If we are formal::

$$G_i = \frac{1}{U_{upi}} K$$

$$\frac{C^2}{2} = \frac{4 \pi R_{eui}}{M_{uri} C^2} \frac{M_{uri} C^2}{4 \pi R_{eui}} k$$

$$k = \frac{C^2}{2}$$

$$U_{upi} = \frac{C^2}{2 G_k}$$

As seen previously that constant would be obtained by the multiplication of G by the raw potential created by universal masses, as if a radiation potential density.

$$K1 = G U_{up} = C^2 / 2 = 4,49378E+16$$

Although this work is still being made based on the gravitational variable, i think that in a near future, in order to all readings are correct we shall consider the vacuum magnetic permeability.

## 7- The expansion of the universe. Abolition of "black energy"

By getting a universal gravitational variable ,which grows in proportion to the growth of the radius of the universe, it appears that the potential created by the masses for the same spot on the universe (because on this point will follow the actual growth of the universe), will always be constant.

$$U_0 = \frac{G_0 M}{R_0}$$

$$U_1 = \frac{G_1 M}{R_1}$$

Them:

$$G_1 = G_0 \frac{R_1}{R_0}$$

$$U_1 = \frac{G_0 \frac{R_1}{R_0} M}{R_1}$$

$$U_0 = \frac{G_0 M}{R_0}$$

$$U_0 = U_1$$

Therefore the universe, from the standpoint of gravitational potential constantly created, will behave the same way as a "static universe" and will not collapse.

**No need now for any "black energy" for the expansion of the universe.**

## **8- The speed limit of the universe, the speed limit of expansion.**

### **Universal translation speed**

The translation speed in different places of the universe will be that which is obtained from the gravitational potential, simultaneously generated by Universal masses.

To better understand the phenomena lets imagine the Universal ball cut by a perpendicular plan to the radius of the universe to which the universal place in analysis belongs.

We thus have a spherical shell to the left and a spherical shell on the right. The masses belonging to the left shell will create a "positive" potential, i.e. will make the site under consideration spin in one way, the

masses belonging to another shell will create a "negative" potential that will make the masses spin in other the opposite direction. I.e. the perpendicular potential to universal radius to which it belongs in the place studied, created by the Universal masses will be lesser than  $C^2$ .

In addition to the already pointed out, the emission radius of masses, either one side or the other, will be oblique, "angle  $w$ ", for the radius of the universe that contains the location  $i$  still causing a decrease in perpendicular potential, " $U = U_0 \cos w$ ".

Because there is a global symmetry in the universal mass distribution the potential created by the universal masses at any point of the universe will be perpendicular to the radius of the universe in which that point lies.

We will have to consider the potential generated by each mass, given the age of the radiation which creates that potential, i.e. the value of the local gravity  $j$ , in any given date of emission of radiation, because as proven before the gravity travels always at the speed of light.

Because of the previously said, we expect a null velocity of translation at the core of the universe, because the shells are precisely alike.

At the end of the universe, as whatever exists travels at the speed of light, then the energy present is the intrinsic to whatever exists. By the non presence of the remaining universal mass no universal radius is defined i.e. the potential created its non perpendicular to the radius of the universe in that exact place. Matter itself does not cause in itself a directional potential.

The potential created is radial, relatively to the point, reason why its rotational effect becomes null.

The translation speed at the end of the universe is null.

### **Radial Velocity of the universe**

At the universe's core we have a null radial velocity, at its core the speed of light,  $C$ . Mass radiation does not curve by action of universal mass, by which a part of these radiates perpendicularly to the universal surface, making the universe grow to the velocity  $C$ .

As predicted by Friedmann and latter on was confirmed by Hubble , radial velocity of the stars is directly proportional to the distance they are at.

The radial velocity of the stars will than be proportional to the place they are in the universe's radius, in relation to that radius and is given by:

$$V_r = \frac{R_i}{R_u} C$$

### **The limit velocity of expansion**

The universe will grow in a radial way to the speed of light, because of the previously stated reasons.

## **9- Black holes seen in other perspective**

As seen previously the local gravitational potential is given by:

$$U = G \frac{M}{R}$$

$$U = \frac{C^2 R_{eu}}{2 M_{ur}} \frac{M}{R}$$

$$C^2 \leq \frac{C^2 R_{eu}}{2 M_{ur}} \frac{M}{R}$$

$$\frac{M}{R} \geq \frac{M_{ur}}{R_{eu}}$$

Black hole is every celestial body who's reason between its mass and radius is equal or greater than the reason between the universal mass radiation received on site and the radius of emission to that same site, i.e. the raw universal potential.

The local mass participate in the pure potential of Universal mass of the place, the relation below

indicated is always verifiable, that is the Universal potential will be also  $\frac{C^2}{2}$  there.

Any that is the Universal place; this is always in the homogeneous space.

$$U = \frac{C^2 R_{eu}}{2 M_{ur}} \frac{M_{ur}}{R_{eu}}$$

In the exterior limit of the mass the value of the local potential will be always inferior to  $\frac{C^2}{2}$  ?

Better to approach the black holes we will have that to wait for the result of the implications of the bending of the time under the share of a gravitational field.

Apparently we would have in the surface of the black hole:

Being:

RadU - Potential in the place of all the other Universal masses.

RadL - Potential generated by the local mass in the local potential

$$U = \frac{C^2}{2} \frac{1}{\text{RadU} + \text{RadL}} \text{ (Rad)}$$

As :

$$\frac{\text{RadL}}{\text{RadU} + \text{RadL}} = 1 - \text{An impossibility, the speed of escape would be lower than C.}$$

Apparently the black hole is not possible.

Either way the disruption there is the potential site. The black hole remains in space.

It may radiate to space if it contains.

If we assume the universal potential for leakage at the center of the black hole or the surface will always  $C^2$ .

To better understand the black holes will have to wait for the analysis of the curvature of the time under the action of a gravitational field.

## 10- Characterization of the kind of universe

As seen previously, we are in a universe of constant speeds, supported by a local gravitational variable proportional to the growth of the universe, which gives itself a pure stability; the universal gravitational potential is constant.

The universe is energy, as such must be held as it , that is it, The mass radiation, is not subjects the local gravitation.

Has that to be radial. As the mass radiation, it is not it subjects the local substance, it's radiation, itself in a straight line way across the whole universe, then taking in account Big-Bang, the Universe alone could be a ball.

We can say that the universe is open.

## 11- The age of the universe

As already he was implied the age of the Universe will be in years light given for the reason of in the distance of the Land to the Moon for the annual increase of this distance.

$$K_u = \frac{385.000.000}{\text{Annual increase of the distance Earth-Moon}} \text{ a. l.}$$

As we will see this is apparent.

The findings, made so far, is the name of I, the main body of work, they have been hitherto defined the lines of the new theory founders.

### Discussion

## 12. Other considerations:

-The weight of matter in each celestial body will increase because the gravity will increase, which means we will be heavier.

-The escape velocity of the celestial bodies is due to increase. Leaving the earth is going to get more difficult every time, which we as a species have to do, sooner or later, to preserve ourselves.

-Black holes will be darker every time, because the escape velocity will increase?

-The planets in the star systems are already placed closer to the stars.

-What has happened in the solar system?

-Mars, has already been as far to the sun as the earth is now.

-Venus will soon be as far from the sun as the earth is now.

-Thermodynamically what has happened? What will happen?

-Did any planet at any previous time gathered the conditions necessary for the development of the life as we know it on earth today? Considering the life temperature the 284.57K that we receive today in the earth?

-It's no longer necessary to consider repulsive forces to justify the expansion of the universe.

-Given the variation of gravity trough out time, probably all dating made by radioactive elements will have to be rethought. Is the solar system much older, about twice as old as we thought until nowadays and is it own source very close to the universe itself?

-Never the limit of the universe's radius will be seen, because any ray light, even if in the exterior radial direction of the universe will achieve getting a limit travelling at the speed of light.

- Such as every year the Moon if moves away from the Land 3,8 cm(apparent distance). and the Earth if moves away from the Sun 14,2 meters (apparent distance)., then in all the systems want planetariums, galactic, of swarm, super swarm will also have, approximately, the masses that are part to the same move away from the respective centers of rotation value to them every year.

- The Sun for being the 30,000 year-light of the center of the Way Lacteal, will have to be to move away itself from this center, 28.013.592 km every year, that is to move away a speed to it from 890 m/s. (Apparent value).

- The proper Way Lacteal that has a diameter of 99.000 year-light, will have to be to grow to the return of 92.444.852 km per year, then to grow to a speed of 2.929 m/s. (Apparent value).

- The proper Universal masses will be to the same move away from the center of the Universe annual value. (Law of Hubble – 95.51 km/s x (Mpc). (Apparent value).

-No more it is necessary to consider repulsive forces (Black energy), to justify the expansion of the Universe.

-Given the variation of the gravity throughout the time, probably all the dating made through carbon will have that to be rethought. It will be that the solar system is much older, going up to around the double of the age so far pointed, and its origin is very next to the one of the proper Universe

-Is our dark mass, necessary to justify the high gravity phenomena, verified in the universe or can it be let go? All or great part.

When we speak, in apparent values, are the values that are read by us, but these depend on the time, can not be real.

These issues will be treated in depth in the 3rd article, entitled “the new vacuum magnetic permeability variable. The dimension of matter. A new vision of the universe”.

Remaining still is a 4th article in which I will approach the impact caused in the analysis of the universe due to the new vacuum magnetic permeability variable and also the impact resulting from both the gravitational variable and the vacuum magnetic permeability.

### **13. Cases for future study in the proof verification**

Let as remind ourselves the gravitational variable expression:

$$G_i = k R_i$$

The expansion of the universe is constant, all celestial bodies in translation balance step away from each other, the same value every passing earth year.

We now know that gravity increases at the same proportion as time

$$U_o = \frac{G_o M_o}{R_o}$$

$$U_1 = \frac{G_1 M_o}{R_1}$$

Being

$$U_o = U_1$$

$$\frac{R_1}{R_o} = \frac{G_1}{G_o} \frac{M_1}{M_o}$$

$$\text{DeltaR} = \left( \frac{R_1}{R_o} - 1 \right) R_o$$

In one year we should have:

$$\frac{R_1}{R_o} =$$

$$(10.131.578.947+1)/10.131.578.947 \times (1,9891\text{E}+30 - 1,46853\text{E}+17) / 1,9891\text{E}+30$$

$$\frac{R_1}{R_o} = 1,000000000098630$$

$$\text{DeltaR} = 9,862733\text{E}-11 R_o$$

**Mars:**

By the present speculation that clearance by the end of a full rotation, i.e. 1,8815 years, should be in the order of:

$$\text{Anual DeltaR} = 9,862733\text{E}-11 \times 2,28\text{E}+11 = 22,49 \text{ m}$$

$$\text{Translation DeltaR} = 22,49 \text{ m} \times 1.8815 = 42,31 \text{ m}$$

$$\text{-Increase in the translation time} = 11,0 / 2 = 5,506 \text{ milliseconds}$$

### **Jupiter:**

By the present speculation that clearance by the end of a full rotation, i.e. 11,8596 years, should be in the order of:

$$\text{Annual DeltaR} = 9,862733\text{E-}11 \times 7,78\text{E+}11 = 76,73 \text{ m.}$$

$$\text{Translation DeltaR} = 76,73\text{m} \times 11,8596 = 910,01 \text{ m.}$$

$$\text{Increase in translation time} = 0,44 / 2 = 0,22 \text{ seconds.}$$

### **Saturn:**

By the present speculation that clearance by the end of a full rotation, i.e. 29,5532 years, should be in the order of:

$$\text{Annual DeltaR} = 9,862733\text{E-}11 \times 1,43\text{E+}12 = 141,04 \text{ m}$$

$$\text{Translation DeltaR} = 141,04 \text{ m} \times 29,5532 = 4.168,10 \text{ m}$$

$$\text{Increase in translation time} = 2,72 / 2 = 1,36 \text{ seconds}$$

This verification “delay in the translation time” can be applied to each planet from our solar system.

### **Speculation**

## **14. Space and time**

We are now in better conditions to approach these concepts.

### **Space**

The gravitational potential is constant, is worth  $\frac{C^2}{2}$  and it is from there that the homogeny tridimensional dimension of space. The constancy of the universe potential on site, in any site or part of the universe, creates a density of potential constant in the universe, making it completely homogeny.

Space is the gravitational potential  $\frac{C^2}{2}$ .

Space apparently does not bend because the universal base potential created by radiation of the universal mass is unchangeable. What we find is areas in space with different local gravitational potentials, i.e. they shift/travel in space. All local gravitational potential takes place in space. Space is tridimensional and equal in all universe.

The action of the local potential over the existences is what gives us the idea of deformation of space, but it isn't its own deformation but an event over space, that universal gravitational potential  $\frac{C^2}{2}$ . The local gravitational variable adapts itself in such manner to maintain the site within space. All happens in space.

The black hole itself is found in space. If it radiates/creates gravity in space, it could only be in it. The disturbance introduced is the local potential overlaid to space, in space.

Above when it is said in space we are to speak of mechanical space that without these characteristics would be empty.

## **Time**

But what is time after all? What is its act on existence?

Energy (intrinsic) x time (intrinsic) = constant

E t = k (proportionality frequency energy)

$$E_0 t_0 = E_v t_v$$

$$E_0 t_0 = \frac{E_0}{\sqrt{1 - \frac{V_0^2}{C_0^2}}} t_v$$

$$t_0 \sqrt{1 - \frac{V_0^2}{C_0^2}} = t_v$$

In the matter, where its speed changes, ie its kinetic energy, changes its frequency. Time is the inverse of frequency, then the time changes with internal energy of matter. The increased power is a reduction of the time.

An increase in energy corresponds to a reduction in time.

Being space unworkable and intrinsic time to matter itself, we should abandon the expression of the curvature of the space – time. All local disturbances are the child of a gravitational potential and the relativity mechanics.

### **Informative note**

The natural consequence of the creation of this new theory is to assess the impacts on the cosmological vision resulting from this theory beyond the ones treated in this paper.

In that sense I will next present a new paper called: “The new gravitational variable. The impact in the cosmos analysis. A new vision of the universe.”

### **Annex:**

Board 1

Simplified board for better understand the relative question regarding Reui, and its proportion in comparison to the universe radius.

### **Bibliography:**

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-Lições de Relatividade – de Einstein a Lorentz. Franco Selleri – tradução de J.R. Croca e Rui Moreira

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To my wife and daughter, your love, my light.

Oporto, from December 2005 to June 21st 2008

Board 1:

Simplified board for better understand the relative question regarding Reui, and its proportion in comparison to the universe radius.

Situação 1 - Ru=20	
Potencial	

	Murj	Rueji	Murj/Rueji	
	30	15	2	
	50	10	5	
	20	12	1,66666667	
sum(murj)	100		8,66666667	=sum(murj/Rueji)
Ruo=	20		11,5384615	= Ruei=sum(murj)/sum(murj/Rueji)
			<b>0,57692308</b>	<b>=Ki=Ruei/Ruo</b>