

On the Gravitational Constant of Our Inflating Sun and On the Origin of the Stars' Lifecycle

explained by Gravitomagnetism [1] [4] and the Coriolis Gravitation Theory [2] [3]

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Abstract

Gravitomagnetism [1] consists of Newtonian gravity and *gyrotation*, which is totally analogous to magnetism. In an earlier paper [2], I suggested that the attraction between elementary particles (trapped light) is generated by a Coriolis effect between gravitons and particles (Coriolis Gravitation Theory). In the subsequent paper [3], I deduced that the amplitude of gravity between particles is ruled by the spin-orientation of particles and I explained the origin of the Expanding Earth. Here, I consider the consequence that the value of the gravitational constant of the Sun is ruled only by the number of like-oriented particles in the Sun and in the planets. I find that the lifecycle of stars is ruled by a gravitomagnetic cycle.

1. Introduction: the expanding Sun and Earth

1.1 The gyrotation field of a rotating body is defined by the spin of the object

Rotation, and the motion of bodies create a magnetic-like field in addition to gravity. I call this second field the *gyrotation* Ω . As explained in my paper [1], this field acts internally to the body and externally upon moving masses (see fig. 1.a and fig.1.b).

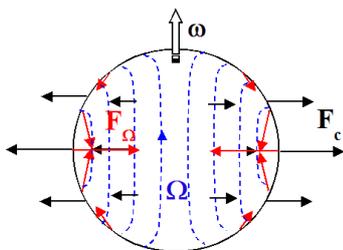
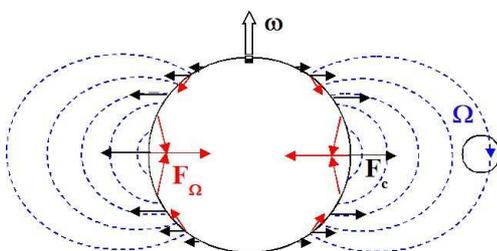


Figure 1.a. Internal gyrotation equipotentials Ω of a spinning body at a spinning rate ω . Surface gyrotation forces are indicated as F_Ω and centrifugal pseudo forces as F_c .



Every orbiting body gets that gyrotation field working on it, which orient the elementary particles to it, with time. Attraction of

the orbiting body occur. Surface gyrotation forces are indicated as F_Ω and centrifugal pseudo forces as F_c .

1.2 The preferential orientation of particles under a gyrotation field tends, with time, to change to that of the gyrotation field

As stated in my papers [2] [3], 'trapped light' is the most convenient way to describe matter. When elementary particles are not preferentially but randomly oriented, six main orientations are possible, like the six sides of a dice or any linear combination of them. But when some gyrotation field acts upon the body, a reorientation will occur over time: the preferred orientation will eventually correspond to the local gyrotation direction.

1.3 Gravity between particles (trapped light) seen as a Coriolis effect

In my earlier papers [2] [3], it was explained that the gravitation field can be seen as a Coriolis effect, applied upon trapped photons, wherein the gravitational attraction or repel is given by :

$$-\vec{a}_C = 2\vec{\omega}_i \times \vec{c} \quad (1)$$

whereby

$$-a_C = G m_i / R_{ij}^2 \quad (2)$$

wherein R_{ij} is the reciprocal distance (see fig.2 and fig.3).

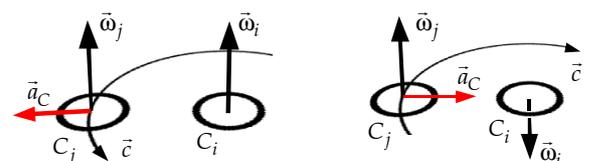


Figure 2.a. Like-oriented elementary particles of trapped light, hit by a graviton and undergoing a Coriolis acceleration \vec{a}_C . The particles repel.

Figure 2.b. Unlike-oriented trapped light, hit by a graviton and undergoing a Coriolis acceleration \vec{a}_C . The particles attract.

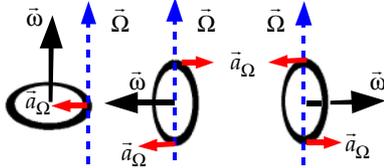


Figure 3.a.b.c. Three situations of spinning particles at a spinning rate $\vec{\omega}$, under a gyrotation field $\vec{\Omega}$. In the cases 3.b. and 3.c. there occurs a swiveling of the particle towards a like orientation as the gyrotation's direction, due to an acceleration \vec{a}_Ω .

It follows that after time, the random distribution of particles will not be maintained, but instead an excess in a preferential direction.

1.4 Gravitomagnetic consequences due to preferentially like-oriented particles

Under a gyrotation field, caused by the spinning of the object, more elementary particles will get like-oriented, and these like oriented particles repel [3]. The inflating of heavenly bodies is occasioned by the repel of the excess of like oriented particles in one direction.

Let's go over the main features of like and unlike spinning elementary particles:

1° Gravity between elementary particles can be an attraction as well as a repel.

2° Consequently, the 'universal' gravitation constant isn't universal at all but 'local' and its value depends from the degree of like or unlike orientations of particles in the bodies.

3° Rotating (spinning) bodies get steadily more like-oriented particles and consequently, steadily higher values of the 'local' gravitation constant.

4° An object, containing ideally random-oriented particles doesn't have any global gravitational effect! In other words, if there is no preferential orientation of the particles, no global gravitational attraction (or repel) will occur!

5° The parameters of the gravitational attraction and repel of bodies are: their masses (as far as they can be regarded as absolute values), their distance and their excess-quantity of like oriented particles (also expressible by the 'local' gravitation constant of each of the bodies, as vectors).

6° Rotating (spinning) bodies inflate.

On top of these six consequences of my paper [3], two more consequences follow.

7° The steady state of spinning objects' gravity is rather an internal repel than an internal attraction [3].

8° The steady state of the spinning objects' gyrotation results rather in a compression than an internal repel [1].

The consequence 7° follows from the fact that spinning objects get an internal gyrotation that tends to orient the particles like-wise, which causes repel. The consequence 8° follows long since the basic gyrotation calculations in [1].

2 The value of the gravitational constant is defined by the quantity of like spin orientations of particles

Since the orientation of spinning trapped light (elementary particles) defines the quantity of attraction or repel, and since Newton's gravitation equation doesn't content variables, under fixed masses and distances, the quantity of like-oriented particles should be expressed by some variable, that cannot be included elsewhere than in the gravitational 'constant'.

2.1 When is the global gravitational constant of an object minimal?

From the paragraph 1.4, especially the consequences 4° and 5° follows that when an object consists of particles that are perfectly randomly oriented, there is no global attraction or repel of particles inside that object. There are as much repelling as attracting particles and the resultant is zero.

$$\sum \vec{\omega} = 0 \quad . \quad \text{It follows that} \quad \sum \vec{\Omega} = 0$$

for the gyrotation of the object.

If the object is not spinning and if there is no external gyrotation acting upon the object, the situation will remain constant in time. The global gravitational constant is then zero

2.2 When is the global gravitational constant of an object maximal?

The individual gravitational constant between two like-oriented particles is a well defined value : the "elementary gravitational constant". This constant indicates the flow of how many gravitons escape from an elementary particle that are implicated in a Coriolis effect with another elementary particle.

When all the particles are like-oriented, due to a long-lasting rotation of the object, or due to an external gyrotation field that works upon the object, the global gravitational constant will be the same as the "elementary gravitational constant" itself. This is the maximal possible value for the global gravitational constant of the object.

3 The star's lifecycle: a typical gravitomagnetic cycle

Consider a recently born star in its early condition: a cloud of almost randomly spin-oriented particles, though with some global spin. The global spin will be consequently responsible for a gyrotation field, internally and responsible externally (fig.1.a and fig.1.b), and for a steady increase of the number of

particles with a spin orientation in the preferred direction, that of the global star's spin.

3.1 Towards a red giant

When an increase of like-oriented particles occurs as explained in [3], the star inflates, due to the repel of these particles. At the same time, the star's spin velocity decreases, due to the radius increase and to the conservation of global momentum. Because the star's density decreases, the nuclear activity decreases at the same time. The star finally becomes a red giant.

Now, the star's rotation is very low and its size is maximal. The star's global gravitational constant became maximal as well, because its value is directly linked to the number of like-oriented particles [3]. But it doesn't mean that *all* the particles are like-oriented.

3.2 The spin inversion of the red giant

In my paper [2] I explained that trapped light works in two different ways upon other trapped light: the first way is by an orbital graviton, as explained in fig.2, the second way is the one with a direct radial impact of 'light' upon other particles, as shown in fig.4 below.

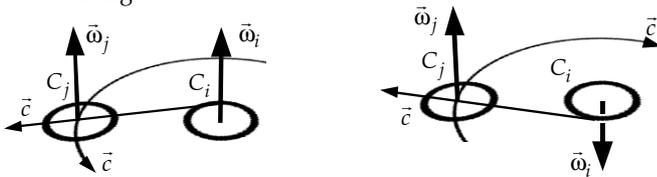


Figure 4.a. and b. Two cases of trapped light, hit by a graviton, radial or tangential, and undergoing a Coriolis effect.

From eq.(1) follows that in fig.4.a, the Coriolis effect by the direct and radial impact of light gives an induced rotation (by a Coriolis effect), opposite of the global object's spin. This is particularly clear when one consider the spin $\bar{\omega}_i$ as one of a more inner particle, and $\bar{\omega}_j$ as one of a particle that is more situated near the star's surface.

The impact of this phenomenon, subsequently to the expansion of the star towards a red giant is that, the more the particles are like-oriented, the more the spin will tend to increase in the opposite direction of the star's global spin. Indeed, in fig.4.a, the global spin is oriented like the spins $\bar{\omega}_i$ and $\bar{\omega}_j$.

The red giant's spin will reach zero, then will start to increase in the opposite direction! Since the global gravitational constant was maximal at the end of the expansion period, this spin increase is fast, and causes the next phenomena.

3.3 Towards a white dwarf

The new spin will generate a gyrotation that is defined by the spin of the star (fig.1.a), and that is differential, depending from its latitude. The strongest differential spin at first will generate a swiveling of the particles' orientation in its neighborhood, which results in an attraction with the rest of the star's particles, which are still oriented as before. The inner part

of the star will keep the ancient orientation the longest time and the outer shells of the star will get inversed orientations more quickly. This means that, still at a high value of the gravitational constant, two zones are built up, which attract each other.

Also the global gyrotation, originated by the global spin of the star, builds-up a compression zone between the equator and about 35° of latitude, which compresses the star [1].

Both phenomena are responsible for a decreasing distance between both zones, an increasing pressure and an increasing spin of the star, strongly augmented by the law of conservation of angular momentum when the star's radius decreases, and resulting all together in the collapse of the star into a white dwarf, wherein the nuclear activity rises again strongly.

3.3 The star's lifecycle: an harmonic?

It is quite complicated to analytically predict how the following stage of the white star would be, since the mixture of 'up' and 'down' oriented particles can become turbulent, and therefore hard to evaluate. However, it is probable that due to the global angular momentum, the dust of the dying star could partly stay together and try another cycle, depending from how much matter got lost into space.

4 Discussion and conclusion

A new positive test for the Coriolis Gravitation Theory: the lifecycle of a star

The expanding Sun and the lifecycles of stars have an explanation that is consistent with gravitomagnetism and with the 'Coriolis Gravity Theory' [2]. Rotation (spin) engenders gyrotation, and gyrotation engenders internally more and more like-oriented spins of elementary particles.

This results in the following lifecycle of a star: inflation of the star occurs until it becomes a red giant at a low spin. At that stage, its global gravitational constant is maximal. The high number of like-oriented elementary particles also slows down the star's spin and inverses it, due to the Coriolis effect between like-oriented elementary particles and incoming radial gravitons (fig.4.b).

The global gyrotation of the red giant increases together with its inversed spin, and the places where the local gyrotation is the largest will again inverse the spin of the elementary particles. This outer shell of the star will attract the inner part and result in a collapse to a white dwarf.

References

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