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GLOBAL PHYSICS

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GLOBAL
ASTROPHYSICS
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José Tiberius



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The only antidote for the egocentrism
of pure reason is Love.

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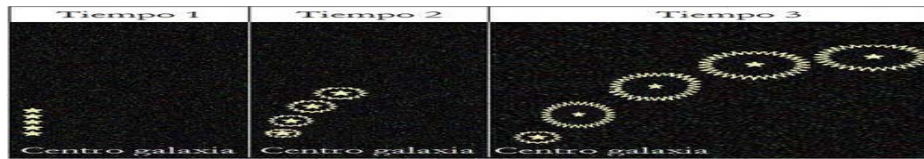
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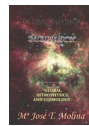
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GLOBAL PHYSICS

VOL.

GLOBAL ASTROPHYSICS AND COSMOLOGY



1. GLOBAL ASTROPHYSICS

After developing [Global Mechanics](#) to provide an alternative explanation for the [predictions](#) in Einstein's *Theory of General Relativity*, the theory of *Global Physics*, an interpretation of QM and GR, became a theory of everything.

Given already-discovered absolute horizons, and the fact that we wanted to submit a criticism of the [Big Bang Theory](#) for some time now, we decided to study implications of *Global Mechanics* on Astrophysics and Cosmology.

In the Universe, elastic energy produces changes in the [Global Aether](#) –quantum foam, strings or space-time with mechanical properties. In other words, the Principle of Conservation of Matter and Energy or [Global Conservation Principle](#) remains.

Global Mechanics has revealed some surprising aspects, which could change our way of understanding [dark matter](#) and energy, as well as the [expansion](#) and [contraction of the Universe](#).

Global Astrophysics has a mechanical and not relativistic nature. Within this definition, the basis of the gravitational model is the existence of [Global Aether](#): an unbreakable reticular structure of matter present throughout the Universe. This structure will be the physical support of gravity, mass and [kinetic energy](#) and, indirectly, of electromagnetic waves.

Consequently, many criticisms could be made of *Global Physics*, but not that of being an ad hoc theory –unless it is ad hoc for physical reality in its various manifestations.

If creating a new theory of everything is quite an adventurous task in itself, even more so is that of analyzing how it affects a

somewhat speculative topic such as Astrophysics and Cosmology, taking into account all the unknowns of recent observations of the Universe.

Perhaps because it is a field so little explained by present-day science, proposals put forth by the *Global Physics* might garner a bit of attention, despite being less likely to be correct than those proposals concerning gravitation, electromagnetism and the formation of elementary particles with mass.

We all know that the most challenging step in a paradigm shift is the change itself and not the new paradigm.

In this book following elements can be highlighted:

- **Additional philosophical principles of Astrophysics**
 - A Universe with unknown limits, both at smallest and largest scale
 - Lack of sense in the concept of the origin of the Universe from nothing, or a super-quantum singularity.
- **Fundamental forces of matter as elastic properties of the Global Aether**
 - Longitudinal tension of the filaments

Hubble

Star Cluster NGC-346 Mod

The young dragon Unoji
(Public domain image)



- Displacement of the Global Aether (drag effect on mass)
 - Tension of the longitudinal curvature of Global Aether filaments (gravity field - [luminiferous aether](#))
 - Movement of said tension (drag effect on electromagnetic energy)
 - Transversal tension of the Global Aether filaments ([electromagnetic field](#))
 - Changes in transversal tension of filaments (Electromagnetic energy)
 - Tension of deformation or reversible compression of the Global Aether (mass - white and black interactions)
 - [Nuclear forces](#) of retention caused by the cells or reticules of the Global Aether (mass - confinement or asymptotic liberty).
- **Proposals which affect Astrophysics**
- Black holes and stars are groups of atoms and elementary particles, which produce the effects of [contraction](#) and [expansion](#) of space; or much better, contraction and expansion of the [Global Aether](#).
 - The [supermassive black balls](#) are the primary cause of the birth of the stars by the expulsion of mass and perhaps by the strong magnetic field they create. Besides, this process would explain the origin and development of the arms of the spiral galaxies.
 - A conceivable relation exists between [dark matter](#) and [dark energy](#) –especially equal velocities of stars in

galaxies and some effects of gravitational lensing– and properties of expansion and contraction of the Global Aether, like the drag of mass and electromagnetic energy.

- Probable variability of the Universal Gravitation Constant due to **kinetic energy** effects of whole local systems, such as planets, stars or higher.
- There could be a physical explanation for **Earth's magnetic field** due to similarities with spatial configuration of the atom.

■ **Musings on aspects of Cosmology**

- Criticism of the **Big Bang Theory**
- Origin of the local Universe from a Little Bang, with a proposal of possible causes

This book aims to propose very generic concepts and explanations for observed phenomena of the Universe. Thus, we could say this book is for people interested but not necessarily experts in the field.

We could add it does not use math at all. Mathematics is both useful and necessary but from a different perspective.

A third aspect would be the simplicity of proposed concepts, especially if the processes of formation of elementary particles with mass explained in **Global Mechanics** are well known.

- *Simple Physics experiment*

Electromagnetic energy is like a transversal curl moving throughout a string, and the mass is like a ball of wool, but instead of being made with a piece of string or a sheet, it is

like a slipknot within a three-dimensional web of elastic bands.

As always, we must think that the different books of *Global Physics* form a set of arguments and points of view on physical reality, which reinforce each other.

1.a) Fundamental forces and philosophical principles

Before describing fundamental forces of matter in *Global Physics*, let us concisely present the philosophical principles of *Global Astrophysics*.

These principles are in addition to those more general principles mentioned in the page on [Physics Principles](#) of the book *Global Mechanics*. Likewise, we understand both space and time as conceptual variables of an absolute nature.

These philosophical principles will be the following:

▪ Infinite Universe

There is a Universe without known limits, both at the smallest and most extensive scale.

The concept of elasticity implies the existence of internal parts with different forces or energies within an object; these parts must also have elasticity. This argument, recursively applied, provides us with an intuitive concept of an infinite Universe towards the infinitely small.

Regarding the extent of the Universe, we do not know its limits. The only thing that seems to be clear is that there was an enormous explosion, which affected the part of the Universe in which we live –or local Universe. There is no reason to think that before this great explosion, there was nothing, or that beyond our local Universe there is not more of the same.

■ **Eternal Universe**

The concept of an origin of the Universe from nothing, or a super-quantum singularity, does not make sense.

The [Big Bang Theory](#) as the origin of the entire Universe seems to us to be a mixture of science and religion –or scientific creationism. What’s more, that something was to come out of nothing does not seem to us to be scientific at all!

The assumption of a non-origin or end of the Universe leads us to search for alternatives having more or less cyclical processes on a colossal scale.

The advantage of these two new principles, whether they are correct or not, is that they place the brain in a scientific perspective –an aspect that seems to be lacking lately in Theoretical Physics.

The [Principle of Global Conservation](#) represents both the above ideas. There will be a relation of transformation and equivalence both between the microscopic and the macroscopic as well as between two moments in a closed system. Logically, the entire Universe is a closed system by definition

Going back to the topic of fundamental forces of matter, please note that *Modern Physics* knows about only the last five forces mentioned in the previous section –and in a slightly superficial and confusing way.

Modern Physics sees the gravitational field as a purely mathematical field and sees electromagnetic energy as nothing traveling through nothingness. Meanwhile, [Quantum](#)

Mechanics is attempting to discover what forces of reversible deformation and retention are; that is to say, Higgs boson yes and Higgs boson no. At any rate, let us hope that incompatibility of the **Theory of Relativity** with *Quantum Mechanics* vanishes.

Spiral Galaxy NGC 1566

Hubble's Wide Field Camera 3

(Public domain image)



Regardless, the essence is to analyze dynamic equilibrium produced between all fundamental forces, and the importance of each of them about spatial and temporal scales and its particular conditions.

Global Physics defines fundamental forces of nature as properties of the unbreakable reticular structure of matter – global, gravitational or **kinetic aether**. Given the non-existence of **Global Aether** in *Modern Physics*, besides of its three fundamental forces –or four if one considers electromagnetic energy and the weak **nuclear force** separately– new fundamental forces appear related to the mechanical

properties of the Global Aether and its movement.

Let us now review the ideas given in the book on [Global Mechanics](#) and look at a few considerations regarding main elastic characteristics of [Global Aether](#) –quantum foam, strings or space-time with mechanical properties– or fundamental forces of the matter:

1. Longitudinal tension of the filaments

We have barely mentioned this fundamental force of matter in the previous books, as they were about known forces such as gravity, electromagnetism or mass creation.

However, in *Astrophysics* it can play a significant role. If the creation of the mass of the atoms, particles and black holes produces a local compression of the Global Aether, this will provoke a stretching of the filaments to cover the same surrounding space.

Moreover, the stars with their mass loss and emission of electromagnetic energy can cause expansion of the Global Aether.

These processes of [expansion](#) and contraction of the Global Aether could explain the effect of gravitational lenses without apparent mass and same speed of stars of [rotation of the galaxies](#).

2. Displacement of the Global Aether (Movement of Longitudinal tension - Drag effect on mass)

As has been discussed, the mechanisms of formation of mass –or black interaction– and its destruction –white interaction– will produce variations in longitudinal tension.

Change in the longitudinal tension of the filaments of Global Aether will provoke a tendency at a large scale to

balance longitudinal tension, as in any other elastic web, via displacements of itself.

These displacements of the [Global Aether](#) will affect the speed of light and mass due to the drag effects, as mentioned in the page [Types of movement](#) in the book *Physics and Global Dynamics*.

These displacements of the Global Aether may correspond to newly discovered [gravitational waves](#).

On the other hand, not only white and black interactions produce a lengthening or shortening of the filaments of Global Aether, but also emission or absorption of electromagnetic energy.

3. **Tension of the longitudinal curvature of Global Aether filaments (gravity field)**

This tension is responsible for the gravitational field and gravitational interaction. See the page [Gravity as a phase of matter](#) of the book *Global Mechanics* and the book *Global Gravity Law*.

Global Mechanics maintains that electromagnetic energy configuration is transversal waves on the tension of the longitudinal curvature of [Global Aether](#) filaments, which are a non-dispersive medium. Consequently, if said tension changes, the speed of light will adjust.

Similarly, the Plank Constant and Newton's Universal Gravitation Constant could also alter.

For example, it seems that if the filaments or strings are tenser the [gravitational force](#) due to the tension of the longitudinal curvature will be higher. However, perhaps greater tension could balance with internal and external forces of the [protons and neutrons](#) with a smaller size.

Therefore, the force of gravitation or tension of the longitudinal curvature could not change for a given distance. Thus, there could be greater longitudinal tension but less curvature of the filaments.

Too big conjecture! Only excellent and real experiments will illuminate us.

4. Movement of the tension of longitudinal curvature (Drag effect on electromagnetic energy)

One must distinguish between movement of the Global Aether and movement of the tension of its longitudinal curvature. The physical support of electromagnetic energy is not [Global Aether](#) but the gravitational field – [luminiferous aether](#).

A simple example will explain this concept. Earth's gravitational field or tension of said longitudinal curvature would accompany the Earth in its trajectory around the Sun, while the Global Aether will not follow its displacement.

In addition to generating the force of gravity, gravitational field –if it is moving– has drag effects on electromagnetic energy.

Another intuitive example of drag effect on waves could be when sound waves travel on top of electromagnetic waves.

5. Transversal tension of Global Aether filaments (Electromagnetic field)

Spatial distribution of filaments of the Global Aether with transversal tension implies the existence of [electromagnetic field](#).

6. **Changes in the transversal tension of Global Aether filaments (Electromagnetic energy)**

This fundamental force of matter is the well-known electromagnetic energy; however, it becomes complex when it is confused with the electromagnetic field, as the presence of [photons](#) or electrons is not necessary for its existence. Inverse causality gives rise to the creation of the electrons, as explained in the pages on the [theory of the atom](#) in the book *Global Mechanics*.

In any case, it is also true that photons and accelerated electrons produce an electromagnetic field. Photons, because of their transversal wave nature, and accelerated electrons because they are half a fold in the [Global Aether](#) with a minimum energy level below which they do not reverse, and they provoke alterations in the spatial configuration of Global Aether.

7. **Tension of deformation or reversible compression of Global Aether (Creation of mass – White and black interactions)**

The book *Global Mechanics* explains the mechanisms of formation of particles with [physical mass](#) –or *black interaction*– such as the transformation of the transversal tension of the filaments of [Global Aether](#) into the tension of longitudinal curvature and the tension of deformation or reversible compression of Global Aether.

This interaction will provoke a shrinking of the Global Aether due to compression or compaction of electromagnetic energy.

The opposite mechanism –or *white interaction*– will produce an elongation of the [Global Aether](#) and will liberate once again electromagnetic energy.

This mechanism is, therefore, a manifestation of the well-known equivalence between energy and mass. This fundamental force will include any particle with mass, like electrons or nucleons.

Within reversible deformation or compression of Global Aether, we may include, where appropriate, the longitudinal folds.

8. Forces of retention caused by the cells or reticules of the Global Aether (Nuclear forces and confinement or asymptotic liberty)

As is stated in the book *Global Mechanics*, the main idea is that **strong nuclear force** is composed of two balanced opposite forces, the internal and external strong forces.

PHYSICS NEWS

“Quarks appear to be like prisoners, eternally confined within the protons

It is as if they were bound together with a rubber band (the gluons), which becomes harder and harder to stretch the tenser it is. However, at a particular moment –at very high temperatures– the rubber band breaks and these elementary particles, now at liberty, form the famous soup, Pajares explains. How? Why? What rules dictate this transition and its properties? This is the realm of Alice’s physicists.”

El País 18-09-2012

The elasticity of the filaments in the three-dimensional reticule causes **external strong force** –confinement force.

The internal strong force will be the tendency of the curls of **Global Aether** to become undone.

A unique novelty of Global Physics is the integration of **kinetic energy** in fundamental forces regarding mass.

It is likely other fundamental forces will appear, as other characteristics of matter appear, such as certain physical limits of abovementioned forces and processes involved.

Likewise, the very knowledge of the physical processes and their equivalences unifies the fundamental forces; the *Global Physics* does this when it unifies all forces in one single field of a material nature via their several elastic properties.

1.b) Black holes and contraction of the Universe

It is worthwhile to read the book on *Global Mechanics* to understand the proposals for Astrophysics and the black holes –black balls–; in particular, section referring to [subatomic particles](#) and the mechanisms for the [creation of mass](#).

Global Mechanics has given the name of black interaction to the phenomenon of creation and formation of physical mass, as it is a different –albeit related– phenomenon to [gravitational](#) and [electromagnetic interactions](#).

The inverse phenomenon to black interaction would be white interaction, conversion of mass into electromagnetic energy and relaxation of the longitudinal tension of the [Global Aether](#). An example would be a star breaking up in a [nuclear fusion](#) reaction. Indeed, it is the interaction of mass in its two manifestations of creation and destruction or transformation.

This section of *Global Physics* on *Astrophysics* aims solely to note some general ideas, without going into detail.

We have decided to change the name of black holes gradually for black balls because, according to *Global Physics*, these astronomical objects have nothing to do with a hole and appear to be like a giant ball. We use the new name particularly for the case of supermassive black balls.

It is not about change for the sake of change; it is about aiding the brain in using intuitive thought and logic processes when it comes to complex topics such as these, due to the lack of experimental information available, and many physical theories of a purely mathematical nature. Also, it serves to situate the brain within the *Global Physics* model.

Special care must be taken with physical theories of a mathematical nature because they do not know where the physical limits of their mathematical functions lie. A current example may be that the mathematical models of Modern Physics only explain 4% of the energy-mass of the universe; not because it is so, but because they surely apply functions outside their context or limits of their physical relationships.

We are going to divide the exhibition into two large sections; the first on the concept, formation, types and main effects of black holes in general.

The second section contains proposals of Global Astrophysics about the concept, origin, characteristics, and effects of supermassive black balls.

Such proposals can alter ideas about the [origin of the universe](#), galaxies, and stars.

1.b.1. What is a black hole or black ball?

- **Concept**

We must recognize that the concept of a black hole in space-time (strings, quantum foam, aether or any other name) has been a hole in itself, where theories of all kinds seem to fit.

The exotic phenomenon known as a wormhole connects two parts of the Universe –also known as Einstein-Rosen bridge across space-time– with a gravitational tunnel through which mass and energy absorbed by a black hole could pass. A wormhole does not seem reasonable given the gravitational effects of the black holes and characteristics of the Global Aether.

The idea of wormholes that connect two different or parallel Universes is perhaps best not to comment on –at least, from a scientific point of view.

Another quite nice way to characterizing black holes or black balls is to say that they consist of atoms and particles in a state of plasma. However, according to Wikipedia, interstellar space contains plasma, the interior of stars is also plasma, and we have plasma ornaments with pretty lighting effects; so, we have concluded that it is perhaps best not to mention *plasmodium* too much, so as not to confuse people more than necessary. At least not in a book like this, which does not aim to possess a detailed technical precision.

The intention is not to criticize Wikipedia; it seems that

plasma refers to a phase of matter –different from solid, liquid or gas– characterized by its composition of ions or charged particles moving freely.

The black holes and the stars are somewhat more complicated than plasma; in fact, we would say anything but free, which is not saying plasma is easy to describe in its various manifestations.

The Global Physics, an intuitive interpretation of QM and GR, talks about primary phases of the reticular structure of matter or the Global Aether, such as total symmetry, radial symmetry –or gravity–, transversal symmetry –or electromagnetism–, and compressed matter –or mass.

The most straightforward idea of a black hole is an astronomical object composed of compressed reticular matter or mass, which generates sufficient gravity avoiding electromagnetic energy to escape; as such, it appears black from the outside. Thus, it is not only capable of capturing electromagnetic energy passing through its area of influence, but also does not allow electromagnetic energy produced in its interior to escape.

The black holes are like huge balls made up of little balls and ball in development; they absorb the mass and electromagnetic radiation that reaches them via the creation of loops and curls in their interior due to the forces of torsion that act on them. The formation of these loops neutralizes the tension of transversal elasticity, as it transforms it into the tension of longitudinal curvature and energy of reversible deformation due to the compression of Global Aether.

■ **Formation of black holes**

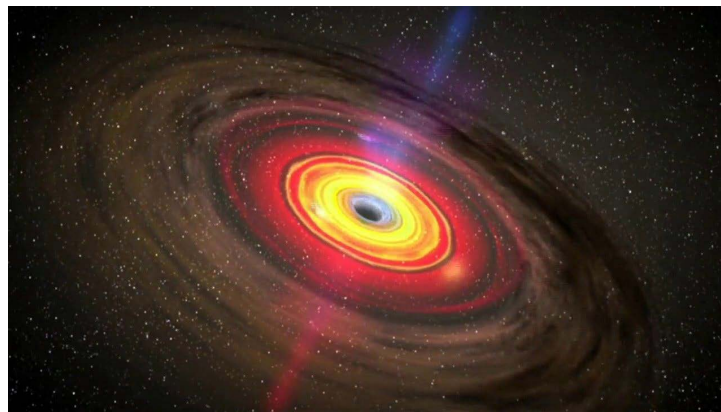
We must take into account that at the end of the last century, scientists used to say it was possible a black hole could exist in each galaxy. Now, they talk of millions in massive galaxies.

The process has various stages, and not all of them are necessary.

In Modern Astrophysics, there are various theories regarding the origin of planets. It is almost sure that in outer space there exist planetary systems with different formation processes.

Black hole

(CC0 Public domain image)



According to Wikipedia, the most widely accepted theory, and the one that would explain the majority of planetary systems is that of cosmic dust before and after the birth of stars and post accretion disk.

However, for Global Physics the origin of the enormous quantities of cosmic dust needed to generate so many stars and in many cases with a specific distribution, as in [spiral galaxies](#), is not adequately explained.

It is possible that in the enormous initial explosion of our local Universe –[the Little Bang](#)– large masses formed in a short time, capable of provoking reactions of nuclear fusion leading to the birth of stars, neutron stars or directly a black hole.

■ **Characteristics of black holes**

Everything is possible in Nature, with perhaps a few exceptions, like forces at a distance, pure telepathy, additional spatial dimensions, multiple realities depending on the observer and time-travel.

The only thing that these anti-intuitive concepts achieve is to hinder scientific development unless we understand them as mere temporary tricks of science until the underlying physical reality is discovered by one and the other. We could say that these epistemological impossibilities make up an anti-all theory or a dark goal.

• **Composition and internal structure**

Black holes could be a collection of fundamental particles because high gravitational energy could split the nuclei of the atoms.

• **Mass and size**

By the concept itself, the minimum mass should achieve a sufficient global gravitational attraction not to allow electromagnetic energy to escape.

It is unknown what the maximum size may be, but it would be logical for it to exist, however large it might be.

• **Rotation**

Black holes have rotation movement. This characteristic could be a consequence, in addition to the rotation of the stars that originate them and how the corresponding absorptions and mergers take place, of the transverse nature of the electromagnetic energy.

◦ *Simple Physics experiment*

Hold an elastic band by its ends and twist it in opposite directions until little ball forms in the center.

Keep twisting to the ends and see what happens!

• **Black holes and anti-black-holes**

Like [fundamental subatomic particles](#), there could exist two types of black holes: right-handed and left-handed. Although gravitational attraction will always exist, from the perspective of the supported magnetic field, two corresponding black holes should repel each other and two different ones should attract; it seems to be the age-old story. The only thing remaining would be if sexuality were a right-handed to left-handed attraction, like political dynamics.

It is convenient to point out that an anti-black-hole would not be a star or white fountain, but similar to the terminological relation between matter and antimatter. The opposite phenomenon to the creation of mass – black hole– is the destruction of mass –white fountain or star–, and this is not the same as the creation of a mass of a right-handed or left-handed nature.

In other words, the right-handed or left-handed nature of mass or electromagnetic energy will relate to the concepts of matter and antimatter. If a black ball is

right-handed, its anti-black-ball will be a left-handed black ball.

■ **Effects of black holes**

• **Gravitational attraction on mass and energy**

This effect comes literally from its definition or concept.

• **Emission of mass and electromagnetic energy**

We know that some black holes emit significant quantities of matter in short periods.

In section [1.b.2 "Supermassive black balls"](#) this effect will be analyzed in greater depth.

• **Contraction of the Universe**

The phenomenon known as the contraction of the Universe occurs in the area of influence of each black hole from the first stage of creation of cosmic dust. Likewise, it happens on a small scale with the particles with mass and the [creation of loops](#) or curls with the absorption of electromagnetic radiation and compression and compaction of the Global Aether.

The contraction of the Universe will be a similar phenomenon to that of a displacement in a three-dimensional spider's web when one tug towards the middle and a central ball creates –with the material of the strands– containing many little balls.

Other physical theories might call these phenomena contraction of space; they understand space – erroneously in our opinion– like the mathematical

points corresponding to Global Aether in *Global Mechanics*. Thus, if the **Global Aether** compresses, there will be a contraction of the Universe due to the contraction of space according to these theories.

The **stars or white fountains** will produce the opposite phenomenon –or expansion of the Universe– with the emission of electromagnetic energy, consequence of the white interaction or decompression of the reticular matter in the nuclear reactions. Therefore, we could say the named dark energy in the visible Universe is white energy.

- **Collision**

This type of mergers seems to be a normal phenomenon now that there may be millions in massive galaxies.

Mergers of neutron stars and black holes have been observed experimentally with **gravitational wave** detectors such as LIGO.

1.b.2. Supermassive black balls and the origin of the galaxies

In the previous section, we have shown an overview of the concept, formation, types and main effects of [black holes](#). To simplify the analysis and comparison, we will maintain a similar structure here.

This second section contains proposals from Global Astrophysics regarding the concept, origin, characteristics, and effects of supermassive black holes (SMBH) or supermassive black balls, given that they can be significantly different due to their enormous size.

We remind the reader that Global Physics, an interpretation of [General Relativity](#) and [Quantum Mechanics](#), is a bold theory, particularly when it comes to Global Astrophysics –while not quite at the extreme level of Modern Physics.

In the real developments are mixed processes, and there are all the exceptions to the general case we can imagine. In some way, we must imagine or discover the forces present in all cases, although they may not always be the determinants of the observed result.

■ Concept

The supermassive black balls are, as their name indicates, those having much mass; so much, like millions or billions the mass of the Sun.

It seems that they typically exist at the center of galaxies and are also known as active galactic centers or quasars in the case of being active.

■ **Formation**

The general idea we all have so far is the formation due to gravity that would join the cosmic dust in asteroids, [planets](#), stars, neutron stars, black balls and, finally, supermassive black balls.

For Global Physics, these slow processes may be appropriate in the cases above except for that of supermassive black balls for the following reasons:

- The [expansion of the Universe](#) causes the stars in the big galaxies to be moving away from the center instead of approaching.
- The origin of the immense amount of cosmic dust needed is not clear, much less bearing in mind its spatial distribution capable of generating observed galaxies.

On the contrary, it seems that there had to be an initial explosion that caused at least the local universe –[Little Bang](#)– and that some stars and black holes formed almost at the beginning or directly.

With few exceptions, the supermassive black balls would have formed directly or in a fast initial process. Although this idea is the opposite to create from stars, NASA on its page about [massive black holes in the early universe](#) says, “why are there so many supermassive black holes in the early universe?”

■ **Characteristics and effects**

Supermassive black balls have additional characteristics to those of smaller black holes and, therefore, produce different effects:

- **Composition and internal structure**

Their enormous size and the high internal gravity force could provoke rigid structures of nucleons, and that these structures behave as oversize particles.

- *Simple Physics experiment*

We can visualize these giant structures if we think of a three-dimensional elastic net with small marbles in its reticules; we grab a few of these with our hand and twist our fist.

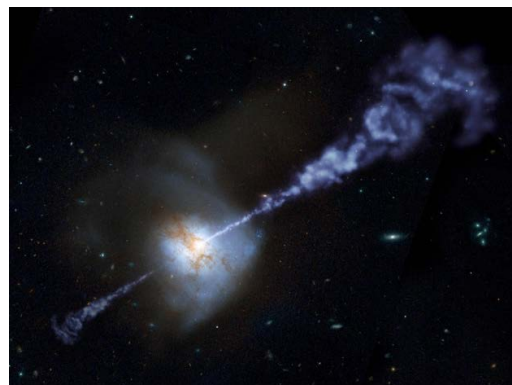
- **Emission of mass and electromagnetic energy**

There is evidence that supermassive black balls expel large numbers of particles jets of mass and electromagnetic energy, possibly due to their [speed of rotation](#).

Some large clouds of intergalactic dust could have their origin in supermassive black balls. The page on the phenomenon called [Ram-pressure stripping](#) states: “The high incidence of nuclear activity among heavily stripped jellyfish galaxies may be due to ram pressure causing gas to flow towards the centre and triggering the activity, or to an enhancement of the stripping caused by energy injection from the active nucleus, or both.”

Black hole jet

(Public domain image)



Another example to ponder would be this article about a [source of cosmic dust](#).

This effect would be different from that of the quasars or active galactic centers, where the emission of electromagnetic energy is due to the heating and loss of mass of the cosmic dust disk.

- **Powerful electromagnetic fields**

It seems scientists thought gravitational processes were more relevant in the formation of stars than electromagnetic processes. However, lately, some studies show maps of the galactic and intergalactic magnetic field and [powerful magnetic fields](#) around black holes indicating that these fields play a more significant role than previously thought.

It is convenient to distinguish between observations and [simulations](#) because any model recreation will behave as programmed.

Global Astrophysics does not deny gravitational processes, but it also gives significance to electromagnetic fields; by the processes explained in the section on [Elementary particles and constitution of the mass](#) of book *Global Mechanics*, regardless of whether stars eject cosmic dust in supernova-like explosions.

- **Creation of a large part of the primary stars**

Taking into account the [rotation of the galaxy](#) and the expansion of the universe, the arms of the spiral galaxies seem to be a consequence of a continuous birth of stars near the galactic center.

As the rate of star creation does not seem to have

declined much over time, the birth of primary stars over billions of years implies the existence of a continuous nourishing of cosmic dust.

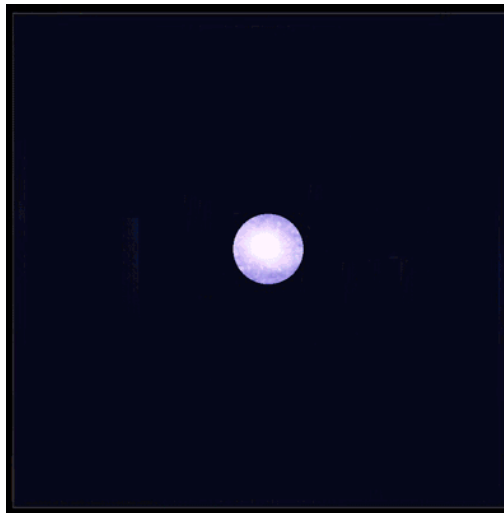
- **Expansion of the universe as an indirect effect**

The supermassive black balls seem to be the foremost source of the creation of cosmic dust for the birth of the primary stars, either by direct ejection or by creation due to the enormous electromagnetic fields they generate.

Formation of the galaxies

Global Physics

[GIF animated](#) - CC0 Creative Commons



Besides, the [stars](#) will produce the expansion of the Universe both with the emission of electromagnetic energy because of the decompression of the reticular matter in the [nuclear reactions](#), as well as the decompression of the Global Ether itself.

Therefore, the supermassive black balls have an indirect effect due to the expansion of the universe caused by nuclear fusion in the created stars.

- **The shock of supermassive black balls**

In the previous section, we also mentioned that shocks of [black holes](#) are relatively numerous given the amount that can exist in the same galaxy. However, the same does not happen with supermassive black balls.

An interesting topic would be the fusion of two supermassive black balls, one right-handed and the other left-handed, which could produce a [small Big Bang](#) or Little Bang.

It is difficult for two supermassive black balls of a different spatial nature to exist close to each other or even within the local or observable universe since the forces that originate them would compensate, and no such supermassive black balls could arise.

However, in larger scales cannot be ruled out that they come into existence and that, once created and neutralized part of the torsional forces, such as a giant ball of elastic rubber balls, could approach, collide and, given its different nature, explode violently.

1.c) Stars, expansion of the Universe and dark energy

1.c.1. Concept and characteristics of stars

Our knowledge of the characteristics of different types of stars is continually evolving, on par with the improvements made in observations carried out.

Below, a few basic concepts will be briefly touched upon because one can find detailed information on Wikipedia. However, we are most interested in the [effects produced by stars](#) on the elasticity of the reticular structure of matter or [Global Aether](#) –quantum foam, strings or space-time with mechanical properties–, as well as the subsequent [dark energy](#) as we discuss further on.

■ What are the stars?

The concept of a star is not very well defined; in theory, they are astronomical objects, which –due to their size and gravitational force– have begun the nuclear fusion reactions converting Hydrogen into Helium, thus emitting a significant amount of electromagnetic energy and other particles. They release so much energy that, throughout their lives, they lose a notable percentage of their [mass](#). An example is our Sun.

Nonetheless, there are stars that –after finishing all the available Hydrogen– have a vast increase in volume, due to the change of dominant forces in their internal composition. We call them red giants.

Others go through the supernova phase –a giant explosion– and become neutron stars.

■ **Origin, birth, and formation of stars**

As stated in Wikipedia, processes of formation of stars are unknown to some extent. There are numerous variables involved; such as composition and concentration of cosmic dust, magnetic field, temperature, pressure, nuclear fusion processes, and proximity to previous supernova explosions.

Barred spiral galaxy

NASA - NGC 1300

(Public domain image)



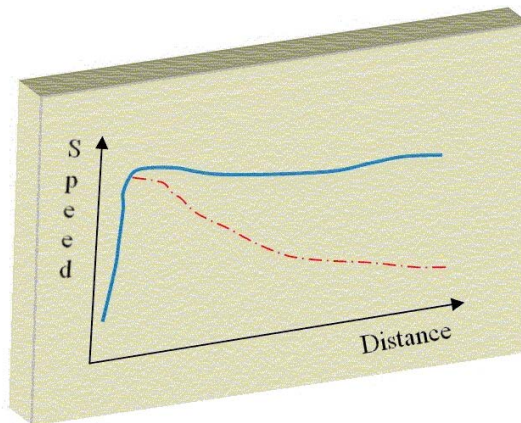
According to Global Physics, it seems that many stars are born near the galactic center, giving rise to the arms of the [spiral galaxies](#) by the fusion and conversion of the stars' mass into the [Global Aether](#). As a result, they are displaced outward as they rotate. Hence, many of these stars have the same linear velocity and different orbit.

■ **Death of stars and supernovae**

Astrophysics has observed the [expansion of the Universe](#) by using supernovas or stars dying in great explosions as points of reference in space.

Linear velocity

of stars in galaxies



■ **Types of stars**

There are various types of stars, with particular characteristics like size and mass.

When the death of a star is imminent, a sudden explosion or supernova may occur.

After the explosion of type II supernovae, neutron stars form. These stars must have a mass above 9 or 10 times that of the Sun, and below some other limit. The origin and formation process of neutron stars is more or less known, according to the explanations provided by Wikipedia.

As we said earlier, stars emit light, and this makes them lose mass when heavier elements create, such as occurs in Hydrogen fusion. Another classification criterion for stars is whether they contain heavy atoms; this also gives us an

idea of their age.

Another possibility is if the neutron star were capturing mass and became a black hole.

One could say they are systems of dynamic equilibrium of fundamental forces, but on a colossal scale in both space and time.

1.c.2. Dark energy and expansion of the Universe

The model of [Global Mechanics](#) –part of *Global Physics* theory of everything– offers clues to understand the expansion of the Universe and, its cause –dark energy–, and its relation with the hypothetical [dark matter](#).

After the [detection of gravitational waves](#) –GW171017– generated by the merger of two neutron stars, the accumulative expansion of the Universe is around 70 km/s per megaparsec questioning the [Big Bang theory](#).

PHYSICS NEWS

"Groups of galaxies confirm dark energy

By combining all the data, we have arrived at the most substantial piece of evidence to suggest that dark energy is the cosmological constant; or in other words, that nothing weighs something.

‘Nothing’ in this case refers to the fact that dark energy is the energy of the vacuum, possibly a field of very light particles in an unstable state; a residue of the conditions present in the Universe just after the initial Big Bang.”

El País 17-12-2008

The term expansion of the Universe refers to the observable

fact that stars seem to be moving away from each other when they should be getting closer due to gravity force.

The concept of dark energy refers to the cause of this movement because it is unknown what dark energy is.

According to Wikipedia, observed expansion of the Universe corresponds to dark energy effect as a scalar field that fills all space in the Universe and results in a repulsive gravitational force. We can see here how Wikipedia seems to use a strange definition of space; it appears to be able to be full and empty at the same time, or to be empty and have dark and magical properties.

The terminology used by Wikipedia makes sense to a certain extent if one considers that scientists define space as points of the existence of light and mass. Which is to say, the reticules of unbreakable filaments of the global, gravitational or [kinetic aether](#) that supports gravity, [kinetic energy](#), and [strong forces](#) in *Global Mechanics*.

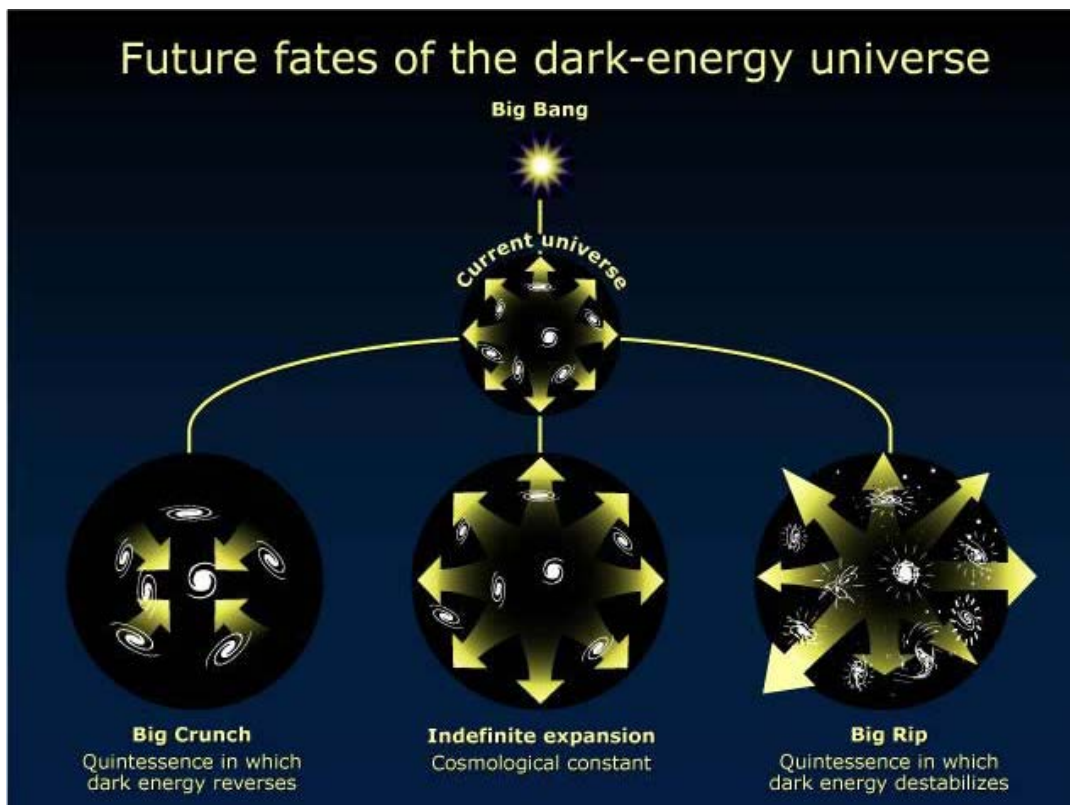
Before presenting the proposals of *Global Physics*, let us discuss the approximation of *Modern Physics* to dark energy topic.

1.c.2.a) Acceleration or deceleration of expansion of the Universe in Modern Physics

Predominant model in Cosmology throughout most of the last century was a deceleration of the Universe since the initial explosion of the Big Bang. This deceleration of expansion of the Universe would be due to gravitational attraction generated by the mass of stars.

Diagram of dark energy in the Universe NASA

(Public domain image)



Discussion centered on whether the expansion of the Universe would eventually stop, giving way to a period of [contraction of the Universe](#), or whether it would remain in an

indefinite increase. A simple analysis shows the result would depend on the total mass of the Universe itself.

This figure shows the possible evolution of the Universe as a function of the relationship between dark energy and gravitational forces.

There are various ways of representing dark energy –cause of the expansion of the Universe– mathematically. The most general idea was the cosmological constant of Einstein. As usual in Einstein's theories, whether this constant exists or not is perfect. Einstein's [Theory of Relativity](#) adapts itself almost as well as Darwin's theory of evolution. We do not know what they will say if it has ever confirmed that, both things exist at the same time!

In theory, the cause of the expansion of the Universe is the *Big Bang*, an enormous initial explosion that generated all the matter in the Universe. However, in the last decade of last century, it appeared expansion of the Universe is accelerating. In other words, the separation velocity of stars is ever increasing. This phenomenon requires some force or energy to justify it, and because there is no satisfactory theory to explain this energy in outer space, its name is dark energy.

In other words, Einstein's cosmological constant has nothing to do with dark energy, which incorporates a different expansion model. However, dark energy is compatible with the attractive forces of gravity.

Therefore, we can point to two radically different models of expansion of the universe.

- **Big Bang and Einstein's cosmological constant**

The cause would be inertia of the hypothetical initial explosion of the Big Bang with plus the inflation stage

facing the forces of gravity.

It is a homogeneous expansion throughout the universe, and it appears in field equations as a constant, without needing a matrix tensor.

■ **The stationary universe and dark energy**

Its denomination shows an unknown cause. Consequently, we do not know when it will stop.

It does not have to be homogeneous –according to *Global Physics*, it is not– and everything indicates that this expansion occurs in a stationary universe. The age of the Universe 13.7 billion years seems to be the time limit of the [observable universe](#) given the latest estimates of the expansion of the universe by the detection of [gravitational waves](#) –GW171017.

PHYSICS NEWS

“Ten years after discovering **dark energy**, physicists still don’t know what it is.”

El País 11-06-2008

1.c.2.b) Dark energy in the Global Physics

Going back to *Global Astrophysics*, let us present the main developments and precisions regarding astronomical objects in outer space, expansion of the Universe and dark energy.

Global Astrophysics uses a different approach, as it proposes the simultaneous existence of processes of **contraction** and expansion of the Universe. Also, these processes do not alter Euclidean space, merely the volume occupied by the Global Aether. In other words, Euclidean space is a suitable concept, and that is better not to revise ever for the sake of sound reasoning.

- **The existence of contraction and expansion of the Universe**

We must bear in mind that both the expansion and **contraction of the Universe** are indeed coherent with the available information. Of course, the expansion is predominant on the big scale.

As mentioned in the section on big black balls, the **creation of mass** –black interaction– implies compression or concentration of the Global Aether. Consequently, they provoke contraction of the Universe.

Also, the capture of electromagnetic energy also entails an increase in the mass of big black balls and concentration of the **Global Aether**.

Meanwhile, the white fountains or high emitters of electromagnetic radiation, generally known as stars,

produce expansion of the Universe.

Expansion of the Universe is not occurring in one particular direction, but equally for all-stars; it is as if each star was getting further away from all its neighboring stars.

- *Home physical experiment*

The usual visual model thinks of stars as dots on an inflating balloon, so all points are getting further and further away from each other.

- **Mechanisms of dark energy**

Elastic characteristics of reticular matter allow the energy of reversible deformation, accumulated in the mass, to constitute so-called dark energy, once reversion begins with nuclear fusion processes in stars.

In effect, the life of stars –emitting electromagnetic waves– is causing the opposite phenomenon to the loops or curls in [the formation of mass](#). Consequently, there will be an expansion of the Global Aether; or, in an imprecise and incorrect terminology from our point of view, [expansion of the Universe](#) or space.

Interestingly enough, it seems that the most appropriate term for dark energy could be white energy, which would also make [dark matter](#) unnecessary.

The mechanism of dark energy is increasing in the volume of the Global Aether, as its elasticity causes displacement of the rest of the reticular structure of matter. This mechanism implies a new type of movement, the movement of Global Aether; we say new because it has not a consideration in the application of Newton's *Laws of Dynamics*.

According to *Global Mechanics*, supporting medium of electromagnetic waves is gravitational field –[luminiferous aether](#) or tension of the longitudinal curvature of [Global Aether](#). A direct consequence is that velocity of electromagnetic waves will be additive concerning displacement of this tension.

To be compatible with the [Theory of Cosmic Inflation](#), the velocity of decompression of Global Aether should be higher than the speed of light. In this case, collisions between matter and antimatter could help verification of this statement, though we doubt current technology has the necessary precision.

As mentioned in the book on *Global Mechanics*, another mechanism that could provoke displacements in Global Aether could be the [neutrinos](#), if they came from longitudinal folds in the filaments of Global Aether. As we know, stars produce large quantities of neutrinos.

1.d) Astronomy and other phenomena in outer space

As well as processes of [contraction](#) and [expansion](#) of space of previous sections, other physical aspects have considerable repercussions on the structure of the Universe.

There are two phenomena not discussed up until now. These are the similar velocities in general of the stars in galaxies and some effects of [gravitational lensing](#) that the existence of a large quantity of mass could explain them, but this mass persists without detection.

Consequently, to explain both cases, scientists consider the possible existence of dark matter.

In this case, the model of *Global Astrophysics* –part of the *Global Physics*– attempts to contribute new ideas to explain dark matter in the Universe and strange behavior of stars in [rotation of the galaxies](#).

We must keep in mind that Astrophysics is a very imaginative science; not only because of limitations in observations but also their interpretation.

In other words, 95% of the mass/energy of the universe has no explanation.

What's more, *Modern Astrophysics* remains stuck in its metaphysical doubts and questions; on the one hand, its central theory is Einstein's *General Relativity*; but on the other, it seems evident "vacuum" is not empty, and that it has mechanical properties. That something could be quantum

foam, ropes, or what Global Physics denominates Global Aether.

In addition to gravitational lensing effect without mass, and to the problem of rotation of the stars in galaxies, we are going to discuss the topic of antimatter, related to dark matter and the theories of the origin of the universe.

We need to remark that section [1.d.3. Rotation of the galaxies](#) includes a quantitative analysis of **experimental data** and very satisfactory results.

Furthermore, as a novel consequence of second element of the attractis causa –[Merlin effect](#)– in the [Global Gravity Law](#), we will study possible additional eccentricity of [planetary orbits](#) concerning classical and relativistic orbits.

1.d.1. Antimatter

Throughout this book, we have mentioned on numerous occasions there are two types of electromagnetic energy and **physical mass**, depending on the transversal rotation they possess.

In a three-dimensional Euclidean space –advocated by *Global Physics*–, there can only be two types of rotation in the direction of propagation of a transversal wave. Consequently, electromagnetic energy can be right-handed or left-handed.

Similarly, given definition of **physical mass** in *Global Mechanics*, there will be two types of mass –matter and antimatter– formed by a confluence of right-handed and left-handed electromagnetic energy, respectively. Thus, regular mass in our galaxy configures matter and antimatter will have different transversal torsion.

As would be expected, the lifetime of antimatter on our planet is very short; it is very unstable because opposite electromagnetic tension is all over around.

Maintaining particles of antimatter is a very costly process, as they need powerful **electromagnetic fields** of correct transversal torsion. Theoretically, a proton of antimatter, if adequately isolated from ordinary matter, should be as stable as a standard proton.

Again, the whole description of antimatter fits perfectly with the concept of mass in *Global Mechanics*.

PHYSICS NEWS

"Antimatter of anti-galaxies from a spaceship

Half the faraway galaxies could be of antimatter, an analogous substance to matter, which annihilates when it in contact with it. In theory, the existence of antigalaxies –groups of antistars and antiplanets– is possible and they could be visually indistinguishable from normal galaxies, such as the Milky Way.”

El País 24-05-1995

In a hypothetical initial situation of the Universe without any electromagnetic torsion or any matter or antimatter, any rotation or torsion of the reticular structure of matter –global, gravitational or [kinetic aether](#)– will produce right-handed electromagnetic waves in one sense and left-handed waves in opposite sense in the same direction.

Just as magnetic monopoles do not exist, due to the mechanisms that create mass and to *Law of Large Numbers*, there should be an equal quantity of antimatter and ordinary matter –matter visible to us– in the Universe.

Recently, there has been talking about the possible existence of magnetic monopoles; however, this is most likely just a figure of speech, as the absent pole is probably at an inferior level. That is to say; its magnetism will end directly in the [Global Aether](#), without detection by current technology.

The matter would be predominant in some regions of outer space, and antimatter in others.

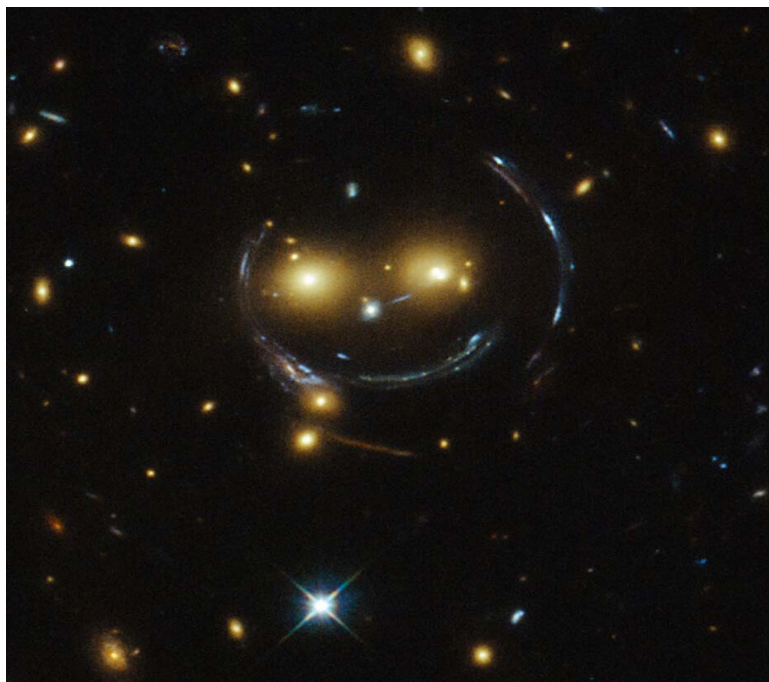
1.d.2. Effect of gravitational lensing without apparent mass

The book *Physics and Global Dynamics* analyzes gravitational lensing provoked by large masses. Gravitational **potential energy** produces **curvature of light** and **Merlin effect** doubles the effect of Newton's *Law of Universal Gravitation* for both kinetic and electromagnetic energy.

Gravitational lensing

Galaxy-cluster-SDSS-J1038+4849

(NASA-Image of Public Domain)



Given the mass required to produce this effect is not visible, there are various opinions regarding whether it is antimatter or normal matter. The gravitational field is independent of right-handed or left-handed nature of mass; thus, the same

curvature of light would appear in both cases.

When there is not enough mass or we do not detect it, dark matter provides an additional explanation for the effects of gravitational interaction on the trajectory of light.

Other explanations could be the existence of many black holes or weird particles with mass, like WIMPS.

However, we consider these options are very unlikely, due to the spatial distribution they should have.

PHYSICS NEWS

Micro black holes are harmless – LHC

One of those supersymmetric particles has a unique theoretical attraction because it is the best candidate to constitute the mysterious dark matter of the Universe.

El País 11-09-2008

Now, let us see the most likely cause of this strange phenomenon in *Global Physics*.

- **Global Astrophysics and gravitational lensing without mass**

Of course, if we are going to speculate, the most probable cause for gravitational lensing could be merely the result of variations in the longitudinal tension of the Global Aether, changes in its spatial configuration at a large scale, or even phenomena of drag of light due to displacements of [luminiferous aether](#) –gravitational field.

Surely luminiferous aether is not only gravity field –tension of longitudinal curvature of the Global Aether– but also the longitudinal tension itself.

Intergalactic **dark energy** will have a non-uniform distribution due to the mechanisms discussed in the previous subsection **1.c.2.b) Dark Energy in Global Physics**.

Following those mechanisms, dark energy will appear in regions where there is a significant concentration of stars, in other words, in the galaxies.

In addition to said non-uniformity. Other curious effects will take place in intergalactic space due to the existence of black holes in the galaxies and to a different distribution of its stars.

Let us assume a region of three-dimensional space surrounded by 20 more or less distant galaxies. All these galaxies will produce an **expansion** of the Global Aether; thus, the longitudinal tension of the filaments of Global Aether will be smaller in this region, until the galaxies separate due to the tendency towards equilibrium.

These adjustment processes will happen throughout every section of the local Universe, resulting in its expansion. However, along the whole process will be irregularities in the longitudinal tension of the filaments, and these will affect gravity, intergalactic electromagnetic fields, and gravitational lensing.

The irregularities will occur at different scales, not only in intergalactic space but also in clusters of galaxies and superstructures of clusters.

Another speculative aspect would be that the existence of

barred galaxies might be a sign of the different longitudinal stress of the Global Aether –or space-time with mechanical properties– in large scales.

1.d.3. Rotation of galaxies

According to *Modern Physics*, the presence of mass not directly detected could also provoke a similar velocity of the stars in galaxies. Thus, the name of this mass is dark matter.

There has also been an attempt to explain the abovementioned natural phenomenon of the rotation of galaxies alternatively, with a minimum intensity of the gravitational field.

Global Astrophysics proposes a possible solution to explain observations within its physical model, based on [contraction](#) or expansion of the [Global Aether](#) –or the less intuitive concept of space with mechanical properties.

Theories related to the rotation of the galaxies are:

- **Minimum gravity**

MOND –*Modified Newtonian Dynamics*– is a proposal of modified gravity called, put forward by Mordehai Milgrom in 1981 as a modification of Newton’s *Second Law* or [Fundamental Law of Dynamics](#) –Wikipedia.

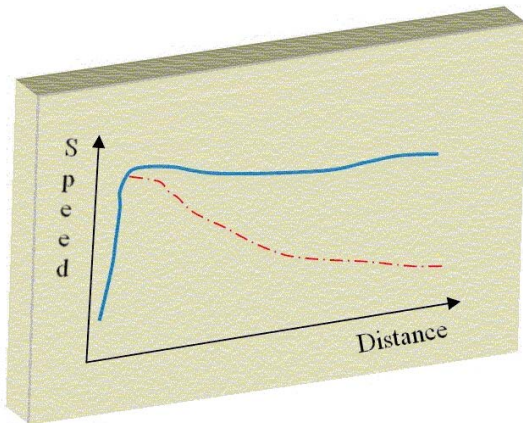
The most important criticism made to this proposal of modified gravity or MOND is to be an *ad hoc* theory.

Another noteworthy criticism is to be a mathematical modification of Newton’s *Second Law* without providing a physical justification for it.

■ Dark matter and rotation of galaxies

In theory, without the gravitational minimum, the only existence of a large quantity of dark matter would maintain the velocity of the stars in spiral galaxies. According to Wikipedia, dark matter comprises up to 90% in most galaxies.

Linear velocity of stars in galaxies



It seems that, in addition to a substantial amount of dark matter, there must be a strange distribution to achieve a similar speed of the stars.

When physicists say NASA or the [Dark Energy Survey](#) confirm the existence of dark matter as a halo in galaxies, what it means –or

they should report to the public– is measurements obtained of the linear velocity of the stars would require the existence of dark matter to be coherent with the current gravitational model. Of course, this is all assuming it is, in fact, a gravitational effect of dark matter.

In other words, what they confirm is the correction of measurements of linear velocity that they have made –not the hypothesis of dark matter. Although we must understand, the term dark matter itself means it could be anything.

The velocity of stars close to the center of a galaxy increases as their distance to the center increases because their classical gravitational displacement depends on the mass of all the astronomical objects, not just the central

black ball. Once this effect disappears, the velocity should decrease once again.

■ **Global Astrophysics and rotation of galaxies**

SYPNOSIS

1. Mass moves as a slipknot in the Global Aether – a 3D grid of elastic filaments.
2. Electromagnetic energy means transversal waves in the lattice
3. When there are enough electromagnetic energy **mass forms** within a reticule, and Global Aether is compressed. The reticules avoid the knots to get undone.
4. While the stars are losing mass, they are producing the expansion of the Global Aether.
5. The expansion of the universe does not push a lot the other stars because the interaction stars-Global Aether has the quadratic relation v^2/c^2 –like kinetic energy and mass but the opposite effect–, so it looks the expansion generates everywhere.
6. Global Physics theory was not designed to explain the expansion of the universe but it does, and dark matter is not necessary anymore.

According to the mechanisms seen in the previous subsection [1.c.2.b\) Dark Energy in Global Physics](#), there is a natural explanation about the similar linear velocity of stars of galaxies.

◦ *Simple example*

Let us consider the simple experiment of a balloon inflating, like when the explaining the [expansion of the Universe](#). If, instead of drawing dots on the surface, we were to imagine an elastic bar in the radius from the center to the surface, and we were to bring dots on this bar; when the balloon inflates, dots would also get further and further away from each other.

Global Astrophysics incorporates effects of expansion and contraction of the Global Aether. Its combination with classical gravitational forces could get us closer to a physical explanation for the velocity of stars in galaxies.

An implicit element in concepts of contraction and expansion of the Universe in *Global Mechanics* is a drag of mass to a certain extent by the Global Aether –[inverse movement](#) in the book *Physics and Global Dynamics*. One must consider a train drags a passenger with it, but this does not mean the passenger cannot move on the train.

Let us remember that Global aether is not the gravitational field; one thing is the three-dimensional material structure of Global Aether, and the other is the tension of its longitudinal curvature. This tension –or gravitational field– can move without a Global Aether displacement; other times, the opposite can also occur.

One must also not forget that, because electromagnetic energy moves on the tension of longitudinal curvature of the Global Aether –by *Global Mechanics*–, relativistic interpretation of the information we receive may see enthralling effects upon the supposedly observed reality.

Another way of presenting the proposal of *Global Astrophysics* is using a simple sequence of images.

◦ *Heyelagic telescope*

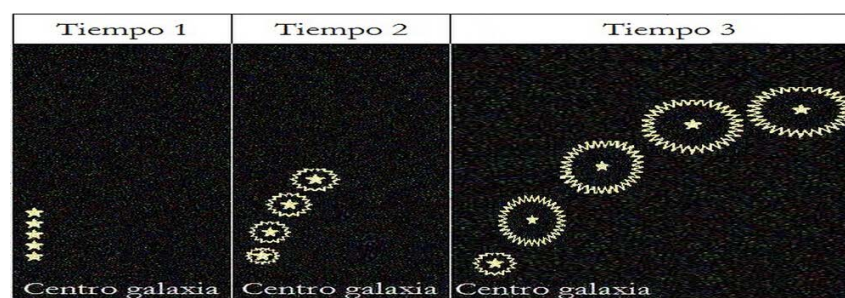
In the first column, one can see a galaxy with stars very close to its center. In the second, expansion of outer space provoked by the stars has made the galaxy increase in size. Finally, in the third column, the space occupied by the galaxy is much more extensive.

This sequence of images shows how the **expansion of the universe** is cumulative for the stars that are far away from the center of the galaxy. At the same time, its linear velocity will maintain and, therefore, will be higher than it would have in a stable orbit corresponding to its new radius according to the model of gravitational effects.

The figure also shows how the closest star causes a smaller expansion than the rest, due to **contraction of the universe** that probably occurs in the surrounding area of the center of the galaxy. The more modest increase is not only due to the **supermassive black ball** that almost certainly exists but also due to multiple black holes that will exist and the little accumulative effect of the stars.

Rotation of galaxies

Expansion of Global Aether



Perhaps the comparison between those galaxies with the

phenomenon above of faraway stars and those in which it is not present, or it appears with less intensity could shine some light on dark matter topic. If proposal put forth by *Global Astrophysics* is correct, those galaxies in which the phenomenon does not occur should be smaller contain many black holes or **fewer stars**. (This paragraph is [some years older](#) than the next news).

PHYSICS NEWS

Discovered the first galaxy without dark matter

An international group of astronomers observes a strange galaxy that can change theories about how these star groups form.

However, it seems there may be circumstances in which galaxies form without dark matter. He adds. “These **ultra-diffuse galaxies** seem to be something extraordinary, that could have formed in a region of the universe where there was little dark matter.”

[El País 27-03-2018](#)

Supposed expansion of the Universe provoked by the Sun does not “push” the Earth away; as is to be expected, the effect is minimal. Perhaps it would be larger if the bubbles in the figure represented billions of stars in a particular galaxy and billions of years.

We must take into account that the expansion of the universe is [70 km/s Mpc](#) according to the detection of gravitational waves from neutron stars merger by LIGO

experiment.

The **inverse movement** previously mentioned would imply that the mass has a drag effect on the expansion of the **Global Aether** as a function of the quadratic relation of its velocity concerning velocity of light. On the contrary, according to *Global Physics*, gravitational field –**luminiferous aether** or tension of the longitudinal curvature of Global Aether– has a full drag effect on light.

Global Astrophysics concludes the expansion of Global Aether causes the stars' speed in the galaxies to correspond to their initial stable orbit and higher than the corresponding velocity of their current orbit if we only take into account the gravitational effects.

As a result, the stars are in an unstable orbit and they will never return to a stable orbit.

PHYSICS NEWS

When dark matter did not rule the universe

An analysis of galaxies from 10,000 million years ago shows that visible matter dominated. Now, the dark one determines the way they turn.

El País 24-03-2017

With this mechanism, dark matter is not necessary to clarify rotation of the galaxies, as it was not necessary to elucidate gravitational lensing without mass. Furthermore, it is the same mechanism used to illuminate the so-called expansion of the universe or, correctly said, expansion of the Global Aether.

Also, let us remark that this mechanism is implicit in the concept of mass contributed by *Global Physics*; and used both in his new [atom theory](#) in *Global Mechanics* and in the development of its motion theory in *Global Dynamics*.

On the other hand, these ideas also configure a theory of the origin of the stars, since all of them would have been born in their initial orbits.

There is experimental verification of expansion within galaxies. The [Wikipedia](#) article on the Milky Way indicates, *"The Near 3 kpc Arm (also called Expanding 3 kpc Arm or simply 3 kpc Arm) was discovered in the 1950s ... It was found to be expanding from the central bulge at more than 50 km/s."*

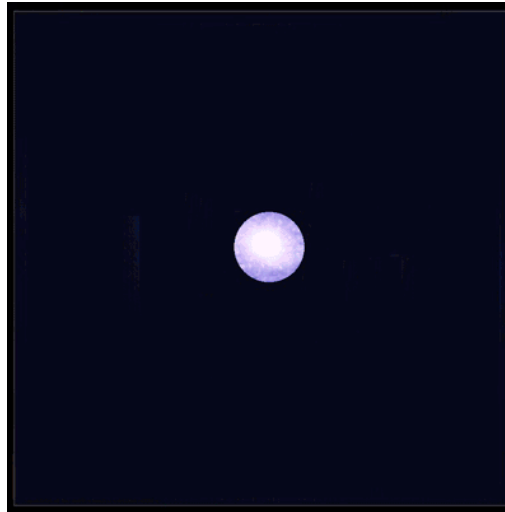
Among the leading consequences we can highlight:

- Similar velocities mean that they were born in same distance zones from the center for each galaxy.
- It explains the existence and formation of the spiral galaxy arms.
- There will be a relationship between the arms and the age of the stars. In [Wikipedia](#) *"In December 2013, astronomers found that the distribution of young stars and star-forming regions matches the four-arm spiral description of the Milky Way. Thus, the Milky Way appears to have two spiral arms as traced by old stars and four spiral arms as traced by gas and young stars. The explanation for this apparent discrepancy is unclear."*
- The existence of arms in the spiral galaxies implies places of intense star formation at the beginning of them.

Formation of the galaxies

Global Physics

GIF animated - CC0 Creative Commons



- The different periods of star formation seem to indicate that mass creates in the initial zone, which could indicate the presence of large electromagnetic fields.

"The center of the Milky Way is a special place," notes Jay Lockman, an astronomer at the Green Bank Observatory in West Virginia. "At its heart is a black hole several million times more massive than the Sun and there are regions of intense star birth and explosive star destruction."

The same argument, but used inversely, could be used for the drastic fall of stars starting at 40000 light years from the radius of the Milky Way.

We have performed a mathematical analysis for the Milky Way with very satisfactory results, although we must take into account the large margin of error existing for various reasons in some of the data used.

The calculated expansion is $2.50169E + 20$ m, which is almost 50% the radius of the Milky Way, which is $4.72713E + 20$ m. Naturally; we pick some figures to achieve such an excellent result, but always within reasonable limits.

Nevertheless, we would like to remark that the expansion obtained is more conservative than the 50 km/s mentioned in the cited Wikipedia article of experimental observations. This high figure seems to confirm the ideas of inverse movement, the acceleration on it that produces the constant expansion of the universe and the unstable orbits.

The calculations are the following:

EXPANSION IN THE MILKY WAY

a. Typical speed of the stars	2,20000E+05 m/s	
b. Velocity over the Global Aether	8,80000E+05 m/s	
c. Light speed	2,99792E+08 m/s	
d. 1 million years	3,15360E+13 s	
e. Average expansion per Mpc	7,08205E+04 m/s	
f. 1 million years expansion	2,23340E+18 m	=d*e
Expansion adjustments		
g. Mpc applied to MW	5	Exp. till next galaxy
h. Mpc local group applied to MW *	2	Exp. till galactic group
i. Mpc star position in MW *	5	Origin of exp. inside MW
j. Age of the arms of stars MW	13000 My	Wikipedia
k. Expansion. adjusted	1,45171E+24 m	=f*g*h*i*j
Inverse movement adjustments		
l. Drag acceleration *	10	
m. Drag *	8,61636E-05 m	=l*b*b/c*c
n. Exp. with drag effect	1,25084E+20 m	=k*m
o. Exp. with unstable orbits in MW	2,50169E+20 m	=n*2
p. Radio of MW	4,72713E+20 m	

* These elements are included by the explanations of the *Global Physics*. The expansion adjustments by the application of average expansion to the stars of the Milky Way and the **inverse movement** due to the effect of the expansion of the universe on the displacement of the stars over the global aether.

This presentation is very general and renormalizable.

Anything, but stretching space, shrinking time, or shoving things into other dimensions.

1.d.4. Paradox of the last relativistic dolphin

Einstein himself admitted his *Special Relativity* could not explain the [twin paradox](#). later on, [General Relativity](#) purportedly solved this problem

We suppose *General Relativity* avoids any twin symmetry by acknowledging that gravitational fields are somehow “privileged” frames of reference. Consequently, the twins disappear and the paradox becomes relative.

A new paradox now appears when one reflects upon another phenomenon of outer space –the orbits of planets revolving around moving stars. Indeed, the orbits of these planets might change as a function of the chosen [frame of reference](#).

To solve this new relativistic paradox might be necessary to establish new privileged frames of reference. We shall analyze this possibility below.

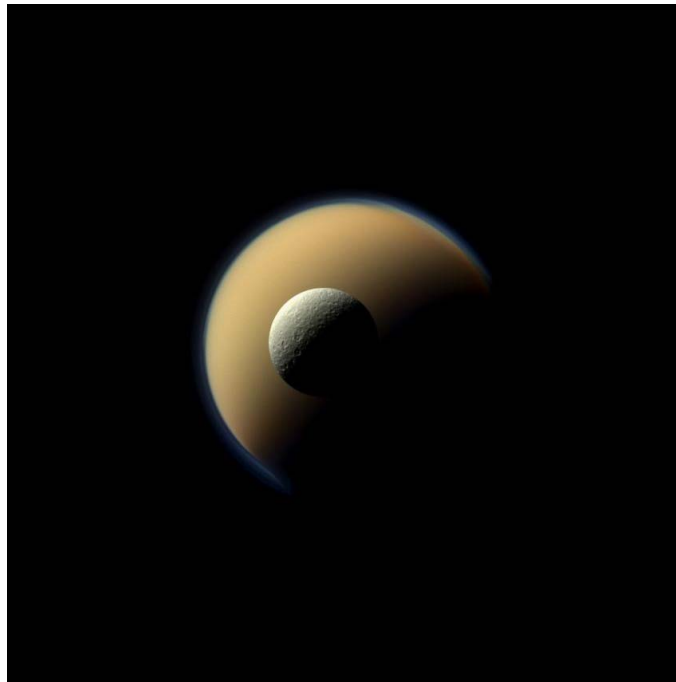
The paradox of the *Last Relativistic Dolphin* concerns the different shapes of planetary orbits, which depend on the frame of reference chosen. The dependency is due to the effect of [kinetic energy](#); for further information, see the pages on [Gravity Probe B](#) and the [Precession of the Perihelion of Mercury](#) from the book *Global Gravity Law*.

We know that variation in kinetic energy –due to the double effect of gravity on it than on mass– provokes changes in [gravitational force](#) per unit mass. This variation in gravity force occurs both in *Global Physics* and in *General Relativity*’s so-called [space-time](#); in fact, both theories use this phenomenon to explain the precession of the perihelion of Mercury.

However, in the case of *General Relativity* and its prevailing obscurantism, the fact that kinetic energy is responsible for this adjustment is not usually explicitly stated.

Titan y Rhea - NASA

(Public domain image)



Recall that in *Global Physics* interaction between mass and the reticular structure of matter –global, gravitational or [kinetic aether](#)– moves the mass. The different names for [Global Aether](#) are to represent better its various properties for specific explanations.

From the starting point of a circular orbit –to simplify argumentation–, let us look at the following situations:

1. The star is at rest

The planet's circular orbit is stable and has a constant velocity, kinetic energy, and gravitational or centripetal force. In both relativistic and global models, gravitational force will have one component due to the kinetic energy of the planet itself.

However, there will not be a precession of the perihelion of the orbit in either model, as we are considering a circular orbit. Thus, the orbit will be slightly smaller than it would be in Newton's *Classical Physics*.

2. **The star is moving in the same plane as the orbit**

When the orbiting planet is surpassing the star, its velocity will be larger than that of the star itself, even in case of an initially circular orbit. Likewise, when the star is overtaking the planet, the velocity of the latter will be smaller than the stars.

In other words, the velocity of the planet cannot be constant, and thus its **kinetic energy** cannot be either. Consequently, gravitational force will vary, due to the effect that kinetic energy has to it. The variation will produce a small ellipsoid eccentricity, perpendicular to the direction the star is moving in.

Moreover, this effect will have a lateral displacement, as the planet will be closer to the star when its velocity –and thus, the gravitational force per unit mass– is at a maximum.

In this case, just as in the case of Mercury, there will be a precession of the perihelion of the orbit.

It is clear that a change in the system of reference will alter the shape of planetary orbits.

3. **The movement of the star is perpendicular to the orbit plane**

The velocity of the planet in the direction of movement of the star is constant; thus, it will not produce the effect we are analyzing. Moreover, one notable difference between

this situation and the first case –that of a star at rest– is that the gravitational force here will be higher. The difference is due to the kinetic energies of both the star and the planet.

Now we have described the orbits we are interested in, the problem will be to determine which of these orbits is correct; or indeed, whether they could all be correct. Let us look at the possible solutions, depending on which theory is applied.

■ **General Relativity**

The solution to the paradox will be slightly more difficult than in the case of the [twin paradox](#). Now, one cannot just make the gravitational field the privileged [frame of reference](#); one would have to choose a physical frame of reference also including the kinetic energy that produces the observed shape of the orbit.

With so many restrictions and privileges, [General Relativity](#) might be somewhat less relative. Nevertheless, complex relativistic geometries –such as Riemann’s– will doubtless manage to make all orbits correct. For each system of reference, both classical [potential energy](#) and kinetic energy will modify the very axes of the four-dimensional Minkowski metric in tensors of field equations. This variation will be enough to make orbits equivalent and have the same shape.

However, the problem now will be the fact that [kinetic energy](#) –which is one variable that modulates the dimensions– will no longer depend on the gravity of a particular mass or the velocity within the chosen frame of reference, but on the velocity concerning the mechanisms that configure its very nature. In other words, it will

depend on the velocity concerning its natural [frame of reference](#) –kinetic aether– just as the gravitational field depends on the mass that creates it and not on any arbitrary system of reference.

Of course, *General Relativity* completely denies the possibility of the vacuum itself having mechanical properties, as this would directly lead to the existence of some aether, which is to say, a quantum vacuum that is not, in fact, a vacuum. Nevertheless, we would say the very existence of gravity implies the same thing, or at least something very similar.

The simple fact of incorporating gravity into a new metric –the Riemann metric– should not hide its physical meaning. Something exists which has mechanical properties, and which has a locally privileged nature. One could make an analogous argument regarding the Kerr metric incorporating Lens-Thirring effect, which describes how a gravitational field has a dragging effect on light.

Even if [General Relativity](#) were to accept [space-time](#) having mechanical properties, which would manifest themselves via its dilations and contractions, it would not solve this new paradox. In this case, the mechanisms of kinetic energy would be the same as those that make atomic clocks desynchronize due to variations in velocity. However, its privileged system of reference would not coincide with that of gravitational potential energy. In other words, the [Principle of Equivalence](#) in GR would break.

Of course, one could always create mixed metrics that give local and ad hoc mathematical solutions with bi-univocal asymptotic transformations and multiple singularities at points where the transformation cannot be bi-univocal.

However, this would no longer be *General Relativity*, but a mathematical adaptation of some other theory with different principles.

On the other hand, it is imperative to recall that *General Relativity* does not seem to be having much success when it comes to explaining the phenomena of outer space as discussed in the previous sections of this book. It only seems to be able to explain 5% of the matter in the Universe.

■ **Global Physics**

The book *Physics and Global Dynamics*, in its section on [mechanisms of movement](#), explains that the mechanism which produces velocity is an interaction between the spatial configuration of global mass –including kinetic energy– and kinetic or [Global Aether](#) –quantum foam, strings or space-time with mechanical properties. Thus, velocity depends on its natural reference frame –kinetic aether.

In other words, though it might seem that spatial vacuum offers no resistance to movement of planets, *Global Dynamics* considers this resistance to increase with the quadratic relation between the velocity of the object and the speed of light. The relation is precisely the quantification of kinetic energy.

To aid intuitive understanding, one could imagine a dolphin swimming in the water. The faster the dolphin swims, the higher the resistance from the water will be. This increase will not be linear.

Independently from other energy exchanges, the energy absorbed by resistance to movement will return in the form of an impulse as movement goes on. This

mechanism is due to the perfect elasticity of kinetic aether.

The book on *Global Gravity Law* explicitly adds the mass equivalent to **kinetic energy** to Newton's **Law of Universal Gravitation**. In this way, it explains the **precession of the perihelion of Mercury** with a non-relativistic model. The resulting mathematical formula for this precession is practically the same as Einstein's 1916 expression and as **Paul Gerber's** pre-relativistic 1898 formula. Nevertheless, the physical interpretation is reasonably different for each of these three theories.

Therefore, if one knew a priori the shape of a planet's orbit around a star at rest, in theory, one could calculate the velocity of movement of the star concerning kinetic aether. However, in this context, it is not possible; the only thing one could measure would be the difference in velocities when the planet overtakes or not the star –this is in fact what produces the lateral ellipsoid eccentricity.

Also, we cannot know whether **kinetic aether** is at rest or whether it is moving in a particular direction regarding the whole galaxy or others possible points of reference.

This limitation is because the kinetic energy consequence of the shared velocity of the planet-star system concerning kinetic aether would always be present; as such, it is indistinguishable from the standard gravitational force. In other words, it would be included within Newton's *Universal Gravitational Constant*, as all masses will attract each other with a superior force per unit **physical mass**, the higher the aforementioned common velocity. We should take into account that masses of planets are quantified based on the supposed constancy of this gravitational constant.

In other words, Newton's *Universal Gravitational Constant* is **not constant**. Of course, this statement is also true within the context of *General Relativity*, though distortions in space-time –relativistic aether– would hide it.

We do not know whether our current technology can take precise enough measurements of planetary orbits to detect these effects, as they are of a lower order of magnitude than precessions of planets.

However, as we mentioned previously, including these precessions could improve adjustments in the table of positions of planets –ephemerides– and masses in the Solar System. One should also take into account that the non-linearity of kinetic energy helps when the system includes various planets with different velocities.

A different approximation would be the possibility of studying precessions of orbits together with their corresponding precessions in planetary axes of rotation, which would seemingly remain even in the case of circular orbits.

In any case, these simple theoretical discussions could be relevant and show the desire to propose further scientific experimentation. Of course, it will all remain speculation until it we can prove them.

Another investigative route could be to compare the effects of the *paradox of the last relativistic dolphin* with the data obtained from the *Cosmic Microwave Background* (CMB).

Though in this case, it might not be possible to confirm the velocity relative to the CMB, one could perhaps confirm its orientation concerning the direction of the Sun.

1.d.5. Magnetic field of the Sun, the Earth, and other planets

The [gravito-magnetic field](#) in Global Mechanics –without the relativistic connotation– by the structure of the mass of the atomic nucleus and creation of the electron mass implies a generation of a magnetic field by the mass of the Earth and rest of the planets in their rotation.

According to Wikipedia, the magnetic field of the Earth is a consequence of the existence of melted iron in its interior and Coriolis effect. However, it is not a sufficiently proved theory. We would like to remind the reader once again of speculative nature of phenomena observed due to lack of a general theory of Astrophysics.

Global Physics offers a possible explanation for the magnetic field of the Earth, as well as for why gravitational field accompanying the Earth could be the physical basis for its new interpretation of the classic [Michelson-Morley experiment](#).

Let us now see the following elements related to the magnetic field of the Sun, the Earth, and other planets in the Universe:

- **The magnetic field of the Sun**

Global Physics explains what magnetic fields are and how mass creates to produce [expansion of the Universe](#) when stars emit electromagnetic waves, as they become partially undone via nuclear fusion reactions.

Consequently, the Sun –and stars with its same

characteristics or with a high rotation— will have a powerful magnetic field.

In other words, the magnetic field of the Sun and luminous stars is not principally due to their internal composition –iron or other heavy elements– but to their rotation and the nuclear fusion reactions and emissions of photons and charged particles.

■ **Composition of the Earth and other planets of the Universe**

The conductivity of the chemical elements of the Earth and other planets will be a vital factor when it comes to the existence of a magnetic field.

The more conductive composition of the Earth and other planets is the stronger magnetic field –provoked by other factors– will tend to be.

■ **Rotation of the Earth**

Rotational movement of the planets is directly responsible for the creation of the Earth's magnetic field. Rotation of the planets via the Coriolis effect generates different forces that act upon various elements that make up the composition of the Earth, due to their distinct spatial location. These forces correspond to force of gravity as centripetal acceleration and to force of tangential acceleration due to rotational movement.

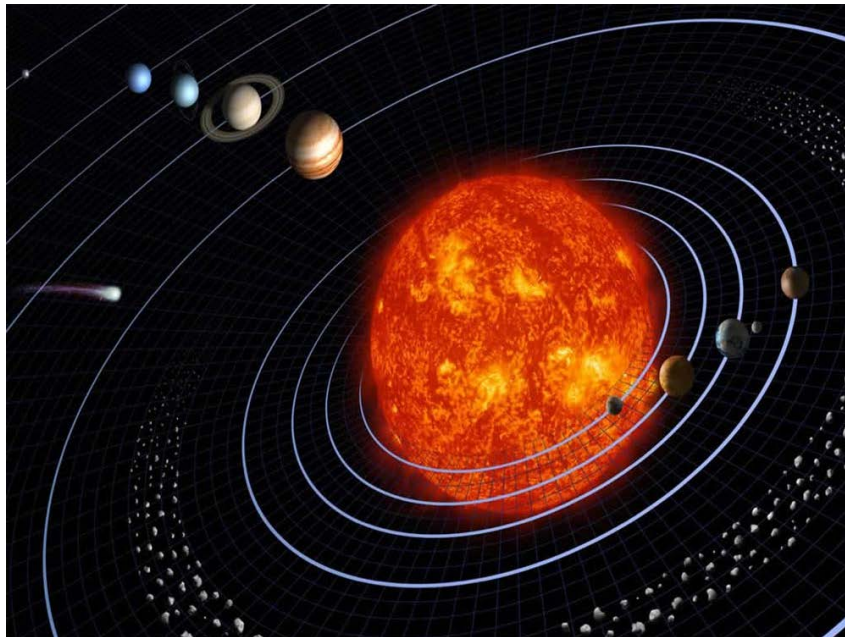
The perfect elasticity of the [Global Aether](#) –quantum foam, strings or space-time with mechanical properties– is what gives the order to the magnetic field around the Earth.

- **The magnetic field of the Earth and other planets in the Solar System**

Currently, the explanation of the magnetic field of the Earth is not a final theory. The spatial configuration of the atomic structure gives us a clue.

Sistema Solar - NASA

(Public domain image)



The previous analysis is rather classical and incomplete. If we go deeper into rotational movement effect upon the reticular structure of matter –global, gravitational or [kinetic aether](#)–, and we take into account that all lines of gravitational tension follow mass, we can imagine that variation of these force lines cannot be completely homogeneous. As such, it will generate a magnetic field.

Regardless of elastic torsion of Global Aether in the formation of mass, [Global Mechanics](#) shows how the mass of [protons and neutrons](#) in the nuclei of atoms increases the gravito-magnetic field using torsion of the filaments of Global Aether. The same mechanism also holds for quarks

and other subatomic particles.

This torsion occurs because the filaments of the reticular structure should either form part of the mass of elementary particles or surround the mass of said particles. In other words, the existence of numerous particles of mass in rotation transversally distorts tension of the longitudinal curvature of Global Aether –also produced by the mass– even when the mass as a whole has no electric charge.

- *Simple Physics experiment*

Something similar to the difference between a ball moving between sheets and many balls moving between many sheets, that they are very close together.

Due to this, even a neutron star in rapid rotation produces a substantial magnetic field.

- *Simple Physics experiment*

If we pass strings between a group of balls, marbles or even tennis balls, we will observe that the strings would acquire a specific rotation due to geometric forms they adopt between the balls.

Let us remember rotation or the torsion of lines of the tension of the reticular structure is indeed what *Global Mechanics* calls “magnetic field.”

Of course, other characteristics or factors affect the Earth’s magnetic field. For example, extended explanation of the metallic elements in the interior of the Earth which, when charged in motion, generate a magnetic field.

On the other hand, perhaps internal electric currents are a consequence of Earth’s magnetic field, and not the other

way around.

It is important to note that the bubble called magnetosphere, created by the magnetic field of the Earth, gets very close to the surface of the planet at magnetic poles. The localization is coherent with both classical explanation and new proposal; as magnetic poles are very close to the rotational axis.

Both explanations are complementary.

On the contrary, the Coriolis effect is smaller at the Equator.

An even more bold idea would be to think Earth's magnetic field produces a small additional alignment of the Earth's elementary particles. With time, this could present a spring-like effect, and consequently a change of polarity in Earth's magnetic field. We like this idea, but we admit there is little probability of it being correct.

The planet Jupiter has a magnetic field ten times stronger than Earth's field despite not having as much iron in its interior as our planet.

Another planet, which has a tremendous magnetic field, is Saturn. The internal composition of Saturn is similar to Jupiter –mainly Hydrogen and Helium. Thus, it does not seem the presence of iron or heavy elements in the Earth is the leading cause when it comes to its magnetic field.

Characteristics of the planet Saturn are the following: it takes 10 hours for one rotation to occur, and its mass is 95 times that of the Earth, with a density lower than water.

Name of the Hydrogen present in Saturn and Jupiter is metallic Hydrogen; as it is extremely compressed, it behaves as an excellent conductor. This name is because

metals are excellent conductors of electrons.

Powerful magnetic field of Saturn seems to be responsible for its beautiful rings.

■ **The physical basis for the new interpretation of the Michelson-Morley experiment**

In *Global Physics*, the luminiferous aether is the gravity field or tension of longitudinal curvature of the [Global Aether](#).

According to the Lense-Thirring Effect, the rotational movement of the Earth could drag the [luminiferous aether](#), and it would be an immediate elucidation of the [Michelson-Morley experiment](#) without making time relative. In other words, the reason given presented in detail in the book *Theory of Relativity, Elements, and Criticism*.

It is also not surprising that if big black balls and stars have some characteristics typically present in elementary particles – due to being groups of these particles– the Earth will try to be a limited imitation.

* * *

2. COSMOLOGY

2.a) Theory of the origin of the Universe

Cosmology focuses on formation or origin of the Universe, as well as its evolution.

The [Big Bang Theory](#) is generally accepted; however, from our point of view, it has significant problems when it comes to the Philosophical Principles of Astrophysics mentioned in the introduction of this book. Also, the recent measurements on [dark matter](#) and the expansion of the universe –2018– induce us to think that the age of the universe is the time corresponding to the observable universe.

Also, on the page on [Fundamental Forces of Matter](#) is a list of elastic properties of the reticular structure of matter or [Global Aether](#) –quantum foam, strings or space-time with mechanical properties. Those characteristics together with processes and mechanisms explained here lead us to consider a stationary or cyclical universe on a larger scale than the observable universe.

Cause of creation or origin of the Universe is a “dark cause.”

Some weaknesses present in the *Big Bang theory* are:

- **Science**

- *Spatial situation of the origin of the Universe*

- We still have not entirely understood how one can say the origin of the Universe was an initial explosion, and yet the location of this explosion is unknown. We must admit the egg-like shape of the Universe according to

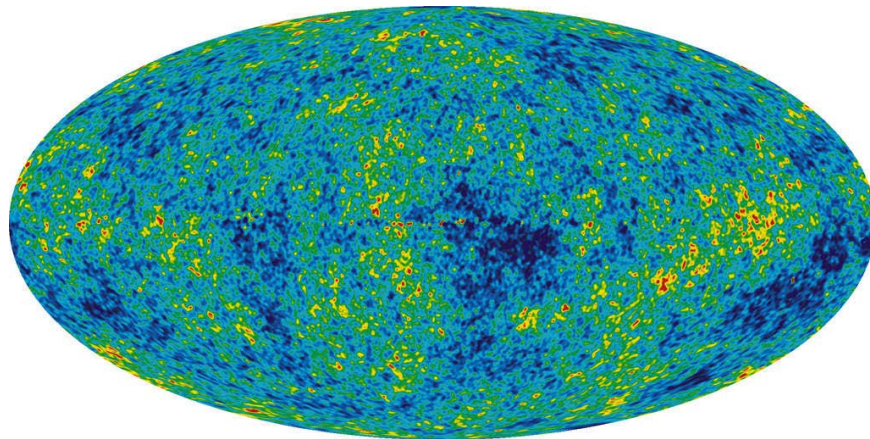
the satellite WMAP is very pretty. We suppose it represents the Universe as seen from the Earth, and that its form is due to something similar to an orange peel in a two-dimensional plane.

◦ *Temporal origin*

The problem of the spatial origin of the Universe has a corresponding problem in time.

Origin of the Universe with an egg-like shape

NASA's WMAP Satellite
(Public domain image)



Given we have detected light from galaxies emitted over $13 \cdot 10^9$ years ago, and similarly in the opposite direction, it would appear the Universe should be older than the $13.7 \cdot 10^9$ years said to be its approximate age. In the opposite case, both light and the mass would have traveled from the initial location of the *Big Bang* to the two extremes to emit the observed light.

We imagine this is why recently one hears more about the concept of observable Universe, which we believe to be much more accurate.

The Theory of Inflation

This theory attempts to solve in some way the previous two problems, as it proposes a time of **expansion of the Universe**, at a much higher speed than the speed of light. Although with the detections of **gravitational waves** there seems to be a new perspective on the rate of expansion and age of the universe.

Here, another problem of *Modern Physics* arises, due to its insistence on including generally accepted and incompatible theories at the same time. There is probably some sort of **quantum logic** at play.

However, it is also true that their incompatibility is generally accepted; therefore, one of them must be incorrect. Some people say that all proven theories can improve, but that it does not mean they are wrong. Quantum ingenuity!

- *An obsession with demonstrating the impossible*

Every year, there are attempts of new experiments to prove the **Theory of Relativity** again. Alternatively, they could be to improve it!

PHYSICS NEWS

Two stars used to verify Einstein

The importance of this discovery lies in the fact that these two celestial objects make it possible to study with high precision the curvature of space-time over there, at the extreme conditions, which are present in the surroundings of a black hole.

El País 05-10-2012

Concepts such as space and time are created or altered but cannot be proven. What's more, Einstein's Theory of Relativity does not demonstrate the relativity of space or time; it merely incorporates it as an axiom. Why do they always seem to insist on not making things clear?

- **Science fiction**

In our opinion, of course, Science in general and in particular Cosmology should have **logic and common sense**, to not deviate and become other branches of the study of life. In other words, we do not want to go into theories discussing the origin of the Universe based on different physical dimensions or existence of parallel universes, for us, these ideas of space form part of the realm of science fiction and abhorrent logic.

- **Magic**

There is an epistemological problem when it comes to the concept of the origin of the Universe. The idea that something could arise out of nothing makes no sense in the logic of our world or our nature. We suppose that, as our nature is finite, any concept that lacks limits, such as eternity or infinite space, evades our internal **logic**.

In a particular way, same philosophical argument supports the *Principle of Global Conservation*; things either transform or disappear entirely, but the latter is usually called magic and not Cosmology or some other branch of Science.

■ Religion

Within this scientific weakness, we can find various examples.

- *Faith*

The worst part is not to propose incorrect solutions, but to manage to make them accepted. It has merit to deny the need for convincement in Science because the human brain is not ready for it; it sounds to us like religious faith regarding the origin of the Universe, or like a primary school class.

- *Scientific Creationism*

Another subject is all religious ideas on the formation of life and the creation of the Universe; they make approximations not supported by [logic](#).

From a philosophical point of view, we cannot see any difference between whether the world was born 6000 years ago, or a few billion years ago. The creative element is there in both cases with an exemplary singularity.

- *Immortality*

Another example of the nature of life and the human race is the yearning or hope for immortality; reflected in this case by the triumph of Einstein's [Theory of Relativity](#).

Of course, it does not matter if it is incompatible with [Quantum Mechanics](#), the theory of inflation or the most basic [logic](#) one could imagine. It is even inconsistent with quantum logic!

Despite mentioning these religion-related aspects as

scientific weaknesses in specific theories, we would like to make it clear that we understand why they exist. Many people believe that there is something different or something that the laws of Physics cannot explain; it is spirituality in a generic sense, or more simply: **Love**.

This position is not conservative in Cosmology; it would be almost impossible to fit such a situation with proposals of change presented in this book. It is merely convenient to distinguish between reasonable adjustments and changes that aim to justify the lack of standard **logic** or common sense itself, such as quantum logic.

It is also not necessary to be a radical skeptic to be uncomfortable with the general acceptance of incompatible theories.

After having discussed the philosophy of formation and origin of the Universe, let us briefly see the evolution of the Universe independently from the observer.

We would like to call attention to aspects or characteristics of the Universe that would not alter due to a philosophical change towards in the more intuitive paradigm of *Global Physics*.

Among those characteristics are the non-imaginary effects currently explained by *Modern Physics* like:

- The increase in **mass with velocity**
- **The orbit of Mercury**
- Change in the angular velocity of light or **gravitational lensing** effect
- The **speed of light** is constant, though this has many

conditions that would make it variable if not maintained.

- Alterations in the atomic clocks, as they will continue to alter by mechanical effects of the Global Aether, this may be due to its displacement, its longitudinal tension, the tension of longitudinal curvature –gravity–, or velocity of the mass.
- The origin of the Universe as an enormous explosion, or Big Bang, though this may have been the origin of just part of it –*Small Bang*.
- **Electrons** will continue revolving around the atomic nucleus in the typical **Dance of the Wavons**.
- The members of the **Inquisition** will continue to be inquisitive, just somewhat less skeptical.
- Etc.

After all, it would not surprise us if current maps of the Universe were somewhat confusing, rather like the maps of the Mediterranean in Ancient Greece.

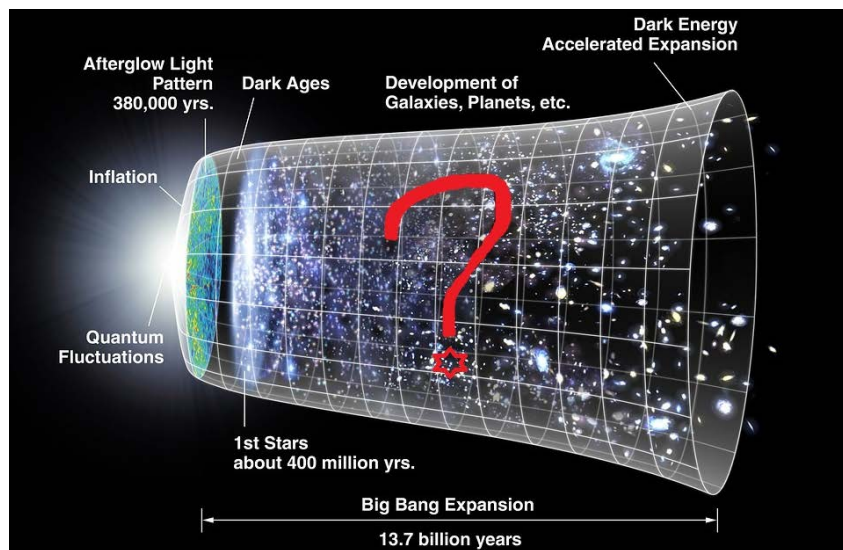
The most important aspect, however, is that reasoning will become much more powerful and it will go back to be intuitive and comprehensible.

2.b) The Big Bang Theory and Inflation

The *Big Bang Theory* proposes the Universe resulted from an initial explosion, which is a generally accepted theory; though of course, it is not the same as proven. In any case, as there are no further details about before the supposed initial explosion or Big Bang, it configures another singularity; in other words, the origin is unknown.

Following the [detection of gravitational waves -GW171017-](#) generated by the merger of two neutron stars, more doubts about the Big Bang arise.

Big Bang stages (CC0 Creative Commons)



If we calculate the time corresponding to the observable universe taking into account the average expansion universe of 70 km/s for each megaparsec –Mpc– we will have:

$$\begin{aligned} & 300,000 \text{ (km/s)} * 3.26 \text{ (million years/Mpc)} / 70 \\ & \quad \text{((km/s)/Mpc)} = \\ & = 13.971 \text{ million years} \end{aligned}$$

Meaning the age of the universe according to the Big Bang theory is similar to the time associated with the observable universe.

Regarding the cosmic microwave background –CMB– support to the Big Bang theory, we wonder if the initial explosion could give birth to a more prominent universe than the observable and if the CMB would be different in that case.

We imagine the CMB would be the same bearing in mind the limits the observable universe implies. Therefore, the CMB only informs about the observable universe and not about the origin of the universe or the Big Bang.

In a strict sense, both the *Big Bang Theory* and the *Theory of Parallel Universes* are not admissible from an epistemological point of view; as from nothing, nothing can emerge, and two parallel straight lines will never come together unless the fat dot theorem is applied.

In the previous section on the origin of the Universe, we presented a rational criticism of the *Big Bang Theory*.

The doubts get prominent by the recent observation of [mature galaxies](#) to 12,000 million light years.

Whether or not the *Big Bang Theory* is correct, giant explosions occur naturally in the Universe, such as those originated by supernovas; many massive implosions also happen, such as the so-called black holes or big black balls, though they are not as fast as the former.

In the book [Global Mechanics](#), we discussed the structure of the global or [gravitational aether](#), which supports gravity.

The [Principle of Global Conservation](#) proposes a mechanism or relationship between [gravity and mass](#), as different states the [Global Aether](#) –quantum foam, strings or space-time with

mechanical properties— to explain big black balls. The various manifestations of energy are only properties of the Global Aether in these different states.

In turn, it expresses the existence of the inverse phenomenon of black holes, which could be white sources or stars. It could help us to understand the [expansion of the universe](#), dark energy, and the non-existence of [dark matter](#).

PHYSICS NEWS

The Big Bang is similar to a black hole – only the other way around.

In a particular sense, the singularity in the interior of a black hole is like the singularity at the origin of the Universe, but with time inverted: in the Big Bang, everything emerges from the singularity, while a black hole absorbs everything. It is somewhat like reversing the time of the singularity.

El País 23-03-2011, Kip Thorne

Faced with the Big Bang Theory is the Steady State Theory. According to the theory of everything of Global Physics, after its development by both Global Mechanics and [Global Dynamics](#) and the new measurements of the expansion of the universe, Small Bangs in an infinite universe would be possible, which could be smaller or much larger than the observable universe.

From the perspective of an infinite Universe, the *Steady State Theory* would be admissible without imposing conditions of homogeneity and without the concepts of relativistic space

and time. That is to say; it only would remain the idea that the entire Universe does not appear or disappear; it merely remains in a dynamic equilibrium on a large scale.

The new vision of Global Cosmology provides potential explanations for both the energy source of the possible Small Bangs and the Theory of Cosmic Inflation applied to them.

▪ **Small Bang.**

Surely, by using just a little bit of imagination, we could think of many possible causes of a Small Bang, related to black holes, such as:

- The collision of supermassive black balls

The two [supermassive black balls](#) should have different spatial configuration right-handed and left-handed nature.

Taking into account gravitational elongation –opposite to creation of loops or curls–, if a black hole and an anti-black hole were to collide, one right wing and the other left wing in nature, in this unlikely and hypothetical scenario would be an explosion of both and a consequent [expansion](#) of the local Universe.

- Physical limit of a big black ball

Another idea could be that a black hole could get to be so massive that it would reach a physical threshold relative to the folding in the filaments of Global Aether that form the mass. Specifically, the gravity would be so immense that the loops that form the atoms and elementary particles would suddenly become undone.

One must remember that, according to *Global Mechanics*, the mass of a proton or a neutron is like a slipknot, and

is stable in the reticular structure of matter or Global Aether.

- *Simple Physics experiment*

Typically, a stable knot of strings is one where, when attempting to undo it by pulling strings, the knot gets tighter.

However, [logic](#) dictates that if one were to pull hard enough, it is possible that the knot would become undone, as long as the strings do not break.

- **Inflation of the Universe**

In both explosions of two big black balls or a physical limit of the mass, reversion of compressed mass would provoke an enormous [expansion](#) of the Global Aether. If the size of the big black balls involved were sufficiently large, this expansion could explain the period known as cosmic inflation.

However, even if they were not so big, the period of cosmic inflation in the Universe could also happen if the size was large enough to provoke a substantial decrease in longitudinal tension of the Global Aether and, consequently, the undoing of the knots that form the mass of nearby galaxies.

- *Physics example*

A knot of strings can become undone easily if its internal tension is relaxed.

On the other hand, the fact that the speed of light is constant and maximum in its natural [reference frame](#) is not contradictory with the expansion of [Global Aether](#).

Thus, electromagnetic waves traveling upon [luminiferous](#)

[aether](#) –and this one dragged by the longitudinal tension of the Global Aether– will have velocities much higher than $*c*$ in the universe.

The first estimation of this velocity, which could somewhat fit with the extreme distances we are referring to, could be that of $*c^2*$. It is, after all, the relation between electromagnetic energy and mass, and we are precisely talking about changes between these two states of aggregation of matter.

To conclude this book on the life of the Universe, we would like to thank all the collaborators of *Wikipedia* for their work and efforts to contribute to Modern Science because they are more objective than technical papers.

Finally, we have just realized something; according to *Global Mechanics*, when we move, we do not only abandon the space we were occupying, but also the reticular structure of matter which we were modulating with our energy. We do not know why, but this is beginning to remind us of [the Equation of Love](#).

* * *

Appendix

UMBRELLA

(Universal Measurement Background Relativistic Effects
Low-Level Analysis)

A-1. Introduction

Current Astrophysics poses a series of unknowns demanding new elements or a review of both General Relativity and Quantum Mechanics. In addition, these elements could help achieve both theories' desired compatibility.

It is about understanding the causes of the expansion of the universe and the mechanisms regarding movement and gravity. In this sense, we propose optimizing the planetary orbits'

adjustment considering the force of gravity of all the mass-energy involved and the path of the entire system that may exist.

The main quantitative element to explain the observed anomalous precessions of planetary orbits is the gravity force derived from kinetic energy.

AG Carinae



The kinetic energy depends on the reference frame and has a non-linear character for speed. It could be possible to determine whether a reference frame is producing a better fit for the General Relativity model in an expanding universe context or any other theory with similar settings like Global Physics.

Note that the reference frame locally associated with the universe's expansion would not be in solidarity with the Solar system.

A positive result would offer the optimal vectorial orientation to the Solar system, either due to the universe's expansion or for any reason not directly related to the universe's development, such as, in the unexpected case, the movement of the CMB.

This article is very complex because it covers various advanced physical and mathematical topics. Consequently, we omit formulas or equations since they would only contribute to more incredible difficulty in following the reasoning. In addition, they are on Wikipedia and other pages of this same book or the other Global Physics books at <https://molwick.com/es/materia/117-fisica-global.html>

Likewise, given the difficulty of the study, possible specific errors are not ruled out. In any case, the objective of UMBRELLA is to contribute ideas for obtaining adequate scientific evidence.

The UMBRELLA - Universal Measurement Background Relativistic Effects Low-Level Analysis report has five sections for a better understanding.

1. Introduction.

2. A previous analysis of circular and elliptical orbits

We comment on the current situation of the so-called anomalous precessions and the difficulty of calculating the numerous factors in the adjustment of planetary orbits.

3. An improved model to confirm the hypothesis that the universe's expansion can affect planetary orbits if it has a specific spatial orientation with the considered system.

The current explanation of the anomalous precession may not be entirely correct since it does not seem to be due simply to an increase in the force of gravity derived from kinetic energy. It would also need an asymmetric distribution for the direction of the central mass.

4. A greater understanding of the constant G since it is affected by the kinetic energy in a solidary system with the central mass to a different frame of reference.

5. The fourth section deals with the universe expansion's effects on the orbit of stars and the movement of galaxies.

Finding a relationship between the stars' orbits and the universe's expansion would simultaneously explain dark energy and matter.

A-2. Relativistic effects of the planets' orbits

Given the variety and complexity of the factors that influence planetary orbits, it is convenient to present and analyze the following topics briefly.

▪ **a) Post Newtonian-Model**

Currently, a Post Newtonian model carries out the estimates of the planetary orbits and their precessions since the diversity of factors would complicate the relativistic model' calculus.

In addition to kinetic energy, we can mention the gravitational effects of the situation and movement of the different planets and other factors such as their

rotation speed, temperature, and orbital eccentricity.

The observed and unexplained precession of the orbits of the planets is the goal of new projects such as UMBRELLA - Universal Measurement Background Relativistic Effects Low-Level Analysis.

Neptune



■ **b) The movement of the CMB**

About the asymmetric distribution of the set of forces of gravity along the orbit, it does not seem that the CMB can cause such asymmetry.

If its vector velocity is known, the parameterized sensitivity analysis of the reference frames proposed by UMBRELLA to detect the possible influence of the universe's expansion would also catch the relationship with the CMB, where appropriate.

■ **c) The shape of the orbits**

Let's analyze the influence of an asymmetry of forces in the following types of planetary orbits.

○ **c.1. Circular Orbit**

Let us see the effect on a circular orbit of an increase in the force of gravity.

• **c.1.a) Newtonian orbit**

In Newton's classical model, the answer is simple, the greater the force of gravity, the smaller the diameter of a stable orbit.

• **c.1.b) Relativistic effects**

In the model of the theory of relativity, the answer is still simple, the kinetic energy and its gravitational effects would be constant; therefore, it would be equivalent to an orbit with a greater force of gravity. The rotation would reduce its diameter.

In other words, it is not that each turn the planet travels 360° and something else. The balance between centrifugal and centripetal force is

mathematical, and a complete turn is 360° .

○ **c.2. Elliptical Orbit**

This case is more interesting because it is closer to the actual orbits.

Let us now see the effect on an elliptical orbit of an increase in the force of gravity.

• **c.2.a) Newtonian orbit**

The problem is complicated since the change in orbit's shape and size will depend on where the increase in the force of gravity begins and its intensity. As the force of gravity is variable, we can understand it as a force with perfect elasticity.

Besides, we know that the equilibrium orbit will continue to be elliptical with greater or lesser eccentricity, except for the particular cases of spiral towards the center, circular or hyperbolic.

• **c.2.b) Relativistic effects**

Orbits are not pure ellipses, but ellipsoids due to the double effect in gravity derived from kinetic energy or, if preferred, its equivalent mass.

Something similar to a classical orbit should occur. Although the variations of the force of gravity will be different, they will continue to be symmetrical concerning the central axis and, therefore, they will continue to be ellipsoid orbits.

However, we know that planetary orbits have anomalous precessions due to kinetic energy, which means the resulting forces are not symmetrical.

In short, the asymptotic transformation of variables carried out by some mathematical models does not always respect the underlying physical models, especially when there is a change of sign in a variable.

As we will see in more detail in another section, the constant G will gather kinetic energy's effect of the central mass's velocity in a non-solidary frame of reference.

A-3. The flower shape of Mercury's orbit

Mercury's orbit is ellipsoid with anomalous precession or not explained by the numerous factors known before the Theory of Relativity and the classical model of Paul Gerber (20 years before said theory).

The precession of the orbits gives them a distinctive flower shape as their axis rotates.

The mentioned theories almost explained the anomalous precession. However, there are still minor differences with the observed data, which could indicate the possibility of technical improvements to the observations or additional factors.

On the other hand, as shown by the undoubted precision of the mathematical adjustments of Paul Gerber and Einstein's models, another no less important factor is the coherence or not of the physical models proposed. Furthermore, there are other relativistic models and some post-Newtonian models that are more comprehensive than Paul Berger's, such as José Tiberius's *Global Physics*. ; in particular, in the section *The Precession of the Perihelion of Mercury* of the book of the *Law of Global Gravity*.

Regardless of the above, all the models mentioned use the same variables in one way or another, especially kinetic energy, since the result is so specific that it could not be due to chance.

Except for errors in previous analyses, a common theme in all the models cited is that they do not satisfactorily explain the orbital asymmetry of the flower shape.

When talking about elliptical orbits, we commented that with anomalous precession, they would be ellipsoids; but they should remain symmetrical and, consequently, could not have the flower shape.

Mars over Earth



UMBRELLA aims to propose a parameterized sensitivity analysis of the available data and the possible asymmetries in the kinetic energy derived from the universe's expansion to check if there is an optimal fit that can justify the flower shape, as mentioned above.

In the next section, we comment on the importance of the constant G to collect increases in the force of gravity due to the kinetic energy that affects the entire system studied. In this sense, each system

will have its own G .

Note that the supposed best fit of the model for kinetic energy asymmetry need not be a consequence of the universe's expansion. To cite a few possibilities, it could also be due to the movement of the Solar System in a galactic reference frame, the galaxy itself in an extragalactic frame, or even related to the direction of the CMB.

In the last section, we analyze the issue related to the universe's expansion of whether galaxies have been formed mainly from supermassive black holes.

A-4. Changes in G due to physical reference frame changes.

A change in kinetic energy in a moving reference frame relative to another will produce a change in G. The increase in G will compensate for the decrease in kinetic energy since it will be less in the solidary reference frame.

Eagle Nebula



Sometimes, the actual physical effects do not depend on the model used. We must understand the limits of its application unless it incorporates the necessary adjustments.

Kinetic energy is a physical effect that depends on mass and velocity squared. In other words, it is a non-linear effect, and in addition, the mass also changes or is affected by speed or multiplies by a factor depending on the model used.

Even though the calculations may imply a mere change of base of the mathematical relationships between variables,

If the physical effect existed, there would have to be some cause that justifies it according to Mach's principle. The gravity increase per unit of mass could be due to the

distribution of the total mass of each element between rest mass and kinetic mass equivalent to that produced by the speed in the form of alteration of the spatial distribution of the atomic structure. (See the Global Mechanics and Global Physics books on the motion.)

Calculating the variation in G due to a change in the reference frame could allow deducing the relative velocity to a system of proper physical rest. Undoubtedly, knowing the true rest is a complicated task, but perhaps some mathematical relationship exists, for example, in calculating the absolute minimum temperature.

For these purposes, if theoretically a frame of reference moves for that of absolute rest and an element has the same speed in the opposite direction, then we would find ourselves in a situation identical to that of the complete rest of said element in physical terms.

In other words, the physical kinetic energy depends on the interrelationship between the spatial configuration of the element and that of the underlying system that should exist according to Mach's principle. Consequently, if there were no relative motion between said element and the physical system, the kinetic energy or its equivalent mass in the element would be zero.

The argumentation of value changes due purely to mathematical or reference system changes is very complicated in the Theory of Relativity because the numerical values of the variables alter and the physical content of their units.

The problem is complex; the Post Newtonian model has multiple related variables, such as the mass of the planets and their orbit.

In summary, the parameterized analysis of UMBRELLA tries

to achieve an optimal adjustment of the precessions of the planetary orbits by adding the reference frame as another variable for the optimization of the Post Newtonian model.

Note that the reference frame is vectorial; we will have 360×360 possibilities by parameterizing the degrees.

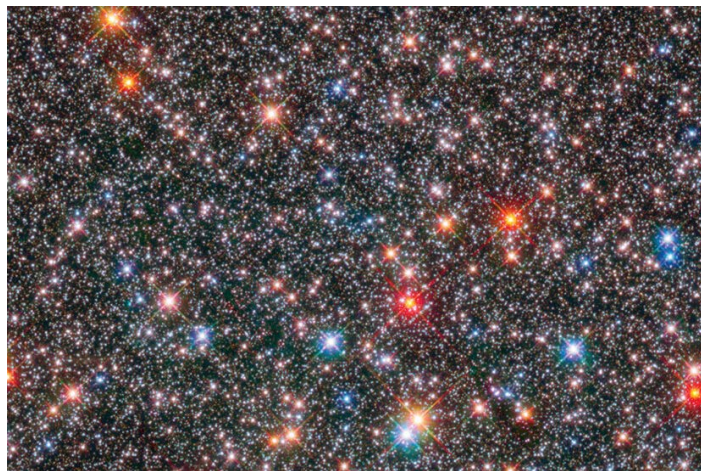
An intuitive analysis of G changes is in the section on the Dolphin Paradox of the Global Astrophysics book.

A-5. The stars' orbit

If the universe's expansion were produced mainly by nuclear fusion in stars, the so-called dark energy could affect the star orbits inside galaxies, which would explain dark matter.

The name dark matter responds to the semantic representation of an effect similar to a non-visible material whose gravitational forces would reveal why the linear velocities of the stars in their galactic orbits are higher than those that would correspond to both classical and relativistic models.

Stars in the heart of Milky Way



In other words, their orbits moved away from the galactic center of gravity or expanded.

The relevant arguments for the creation of galaxies from their central nucleus are.

- The superior orbital speed of the stars
- The expansion of the universe itself

The expansion of the universe stands at 70 km/s Mpc, according to recent estimates.

Suppose it mainly originates from the mass transformation into a star's fusion energy into space, space-time, strings, gravitons, or any ether. In that case, it could lead to stars moving away from the galactic center by a reverse motion effect related to Mach's principle.

This effect is detailed in the 2009 Global Mechanics book when discussing atomic structure; in other words, it is not an ad hoc explanation.

In addition, there is a cumulative effect because since the orbital speed of the stars is higher than that of a stable orbit, the stars will move away from the galactic center. However, there will always be exceptions, for example, due to its location within an arm in spiral galaxies.

- The lack of logic in a self-expanding vacuum
- The spiral galaxies' arms

In these galaxies, we can observe the stars accumulated in the form of arms, which reminds us a bit of the physiology of an octopus.

Intuition offers us two contradictory ideas. The octopus's arms grow from the body outwards; the opposite would be gravitational or attraction effects.

The first argument seems more reasonable for both cases, given the large number of stars in the vicinity of the supermassive black holes in the galactic centers. Their current velocities make their orbit move away from the center.

- The jets of mass and energy

Supermassive black holes expel jets of mass and energy that can be several thousand light-years long.

- The dark matter itself

The non-explanation of the observations that give rise to said denomination.

- The prediction of galaxies with little dark matter

Global Astrophysics in 2017 predicted that galaxies with few stars would have little dark matter based on the non-ad hoc model of Global Mechanics 2009 on elementary particle physics.

- The detection of so-called "gravitational waves."

The detection by LIGO observations of gravitational waves could suppose massive universe expansions at the scale of elementary particles.

In short, there is strong evidence that the universe's expansion produced by stars' fusion could explain dark energy and matter.

At the galactic level, the James Web Space Telescope may offer essential contributions allowing studies related to reference frames.

ÚMBRELLA does not try to present these ideas but rather a possible empirical verification of them through the optimization of the adjustment of the anomalous precessions of the planetary orbits.

* * *





When Einsotro finished his masterpiece *Global
Astrophysics*,

as a celebration he told M^a José:

–I’m inviting you to come to my house for dinner,
I will prepare my culinary specialty:

Dorada al Tinto, Tintorro–

So M^a José answered:

–Why don’t you invite Don Magufo and Goblin as well?–

Einsotro, who expected anything from her, answered:

–*What a witch you are!*–



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