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The uniqueness of our Earth

Life on Earth is accepted as a natural phenomenon, taken for granted, that is present everywhere but if we stop for a moment to consider the features of the Earth and of the surroundings of it that allowed the rise and the permanence of life, soon we will have to join Socrates, Lucretius, St. Francis and many other great souls, in admiring the loving care that the Divine has directed on it and on its living creatures.

From a point of view that I would define "Scientific" soon appears that statistically speaking within a Universe that is infinitely extended there is a near zero probability that the conditions prevailing on Earth and from which life sprung can be matched somewhere else, therefore to prove this assertion an analysis of these conditions results necessary .

When we look at the Sun we need to realize that the phenomena happening on it depend from its large mass, since it is the mass of the Sun under its own gravitational pull that generates all the internal transformations-degradations making a star out of it .
What would have happened with a mass of the Sun, larger or smaller, is that within the same distance Earth-Sun, the radiation reaching Earth would have scorched it or would have left it to freeze, a phenomenon which by the way is in part avoided by presence of a sensible, not excessively long, spinning of the Earth on its axis that causes the alternation of days and nights .

But let us proceed by degrees, Earth and all planets in the solar system revolve around the Sun, running along orbits of small eccentricities and this renders the system safe from possible catastrophic encounters in Space of its planets, then dissipation from the Sun reaches the Earth as an amount of mass-energy that contains little in terms of destructive radiations (and those reaching the surface of Earth are also reduced by the presence of atmosphere that acts as a filter whilst Earth surface behaves as a mirror).
This dissipation of the Sun, that we receive, consists of radiation of mass-energy, and is such that due to presence of atmosphere and rotation of the Earth around its axis, establishment of a range of temperatures and pressure differences takes place, determining the atmospheric weather and permanent presence on the surface of our Earth of most of the water collected in a liquid status of existence or phase, which in turn is enough to allow presence of

various levels of relative humidity in the atmosphere, but not prevalence over the Earth of very low relative humidity or of continuous saturation (save a few exceptions…).

But then what must we say about the size of Earth whose gravitational pull allows permanent presence of atmosphere containing gases in friendly to life proportions, but is not permitting the establishment of a greenhouse effect that would trap Heat and greatly magnify the temperature of these gases, and what must we say about the fact that this mixture of humidity and gases in the air permits the establishment of the comfortable and sustainable metabolic processes sustaining life?

It must be brought to attention that due to the age of the Earth and its capacity of dissipation, by now, any initial hot core would have cooled down, instead we see that the core of the Earth is still hot, and this is due to Earth's own gravity acting over its own physical mass and (like it happens in the Sun) producing degradation, in a continuous basis, of neutron mass into mass-energy in the status of M_{Heat}.

This M_{Heat} which is continuously dissipated at Earth's surface balances with the dissipation coming from the Sun and does not permit presence of high differences of temperature at Earth's surface (see Ruggeri14), rendering it such a bearable and on the whole such a pleasant place in terms of temperatures and humidity.

Results from this observation that even the phenomena that we are inclined to consider obnoxious like the continuous tectonic movements caused by presence of the hot core of Earth and that especially in the zone of the Pacific Ocean cause recurrent disasters have their positive far better side, since if the Earth did not have its hot core that acts as a sort of moderator of the temperature differences at the surface, sustenance of life in it would have resulted precarious.

One can imagine extended desolated desert areas caused by higher gradients of temperature between night and day and the result will be a picture of an Earth looking very much like Mars, the difference between the two would probably be presence on the surface of the Earth of larger icecaps coupled with more intense atmospheric turbulence.

Earth then in which we as a species have developed and evolved, together with the various other living creatures is not only our irreplaceable haven but needs to maintain the characters that the Providence has supplied to it.

We can see that the capacity to harness to our advantage the sources of energy, a capacity that we have developed and is continuously subjected to improvement, has determined the success of our species, but this very success is rapidly influencing the fine ecological balances that are in tune with the processes sustaining the life, and this happens increasingly to our disadvantage (as well to disadvantage of other species many of whom recently disappeared or are in the way to do so).

Presently we can sum many adverse effects, such the one which is depending from depletion of the protective ozone layer since reduction of ozone in the high levels of the atmosphere permits increase of the flow of noxious radiations

reaching Earth from the Sun.
Extensive use of various chemicals including pesticides permits the increase of allergenic conditions and infiltration inside the food chain of hormones and hormone-like substances can facilitate spread of gigantism and obesity in large scale.
Furthermore I cannot refrain from mentioning the fact that we experience flaring of epidemics in the animal kingdom that can spread to us humans, and are due mainly to presence of unhygienic practices especially when the animals (breed in order to feed Earth's increasing population) are intensively farmed in appalling conditions, etc....

The delicate balances influencing life on Earth are too numerous to be listed but we can just infer presence of them at macroscopic level when we observe that irrigation made using groundwater does not produce such a growth of vegetation like rainwater does, and when we observe that small amounts of rare atomic elements, (sometimes few parts per million or even traces…) make the difference between luxuriant and stunted growth on the plant kingdom.
The cycle of life permits renovation and propagation of life and is tuned with the cycle of the seasons which is determined by the yearly revolution of the Earth around the Sun, but at this point one can ask: "what has to do with life processes the revolution of a satellite that in appearance is completely disconnected with the life processes of vegetables?", indeed a good germination and fast initial growth is tied up to the cycle of the lunar revolutions since the weak illumination, by reflection of sunlight that Earth receives from its satellite, maintains at night time the growth into plant of germinating seeds, whilst weather and agriculture which in general are affected by the activity of the Sun are also affected by secondary periodic phenomena affecting the Sun as it is the case with the solar flares.

The effects on the living organisms of some natural processes can be replicated in agriculture, since gases or other substances and mainly fertilizers can be added to water for irrigation or can be added directly to the soil, and the presence of the glare of the moon which (as above mentioned) almost certainly is responsible for the faster germination of seeds, can up to an extent be mimicked with the use of electric nocturne illumination.
Inside a spaceship, not only we would be unable to reproduce satisfactorily the natural processes from which sustenance of life entirely depends, but we would equally be unable to face the imbalance of m-e on its physical mass that presence of velocity (and therefore of m-e M_{ESCE}) can cause. (see Ruggeri30 where it was suggested that the physical characters of a mass in movement are gradually subjected to change with the increase of velocity, in such a way that the phenomena ruling the processes of life become permanently altered)
From simplified calculations, results that a spaceship moving away from the solar system at a relative velocity of $\pm$ 300 km/sec needs to acquire inertial mass-energy M_{ESCE} equivalent to the kinetic energy corresponding to that velocity, and causing an increase of value of the inertial mass of the ship at rest of about 1

ppm (part per million).

In this case the physical mass contains extra m-e in the same order of magnitude in which those rare elements (abovementioned) are affecting the growth of plants and therefore affecting life, but whilst these rare elements are added as atoms and are to be considered as a form of doping of the chemical processes of life, in this case, the addition consists of m-e M_{ESCE} which affects the subatomic nature and the very atomic constitution of the physical mass M of the spaceship.

From the latest discoveries in astronomy, we can surmise that all the life processes commonly shared by the life on Earth did develop and thrive within the presence of similar values of absolute increases of inertial mass.

It is now difficult to extend this concept here but intuitively we can understand that, since our solar system is orbiting around the center of our Galaxy (the Via Lactea), if we assume that the local absolute temporal conditions in our Galaxy are also universal conditions (we assume our Galaxy gravitationally disconnected from other Galaxies), and consider the case in which we are traveling towards solar systems very close to us and therefore well inside our Galaxy, we need velocity and therefore increase of the absolute value of kinetic energy already possessed to which corresponds an increase of inertial m-e we must came to the conclusion that it is safe not go over the value $\Delta v \sim 200 \div 300$ km/sec, $<< c$.

We could then assume that life processes, can accept increased presence of the values of kinetic energy (up to the above value Δv) that we possess at present since our masses already contain a sizable amount of kinetic energy (and therefore of equivalent m-e) due to the Galactic orbital movements abovementioned.

Nevertheless it is my perception that if space travel happens at the velocity of $\pm 200 \div 300$ km/sec (provided we can develop the boosters allowing the spaceship to reach such a speed) once the spaceship reaches its destination there will be a problem in reducing the speed since being unable to release inertial m-e we will be forced to introduce a field of inertial m-e of the same value directed in the opposite direction which will accumulate that inertial m-e inside the physical mass of the spaceship.

Nothing is known at present about the behavior of these accumulated inertial mass-energies inside the physical mass of the spaceship since on Earth in order to dispose of inertial mass we use the phenomenon of friction which permits dissipation of it as m-e M_{Heat}, and this process of accumulation must be repeated again in the return phase, where up to $\pm$ 2 ppm of inertial mass are added to the physical mass of spaceship.

It must be pointed now that all these increases of m-e are bound to unbalance the vital processes and possibly will subject our spacecraft to sudden internal transformations of m-e into M_{Heat} and dissipation of it.

Furthermore in a manned spaceship, assuming that we can solve these problems connected to velocity, once reached destination we will not benefit any of the vaunted time effects since, based on these velocities, our trip will happen at a relativistic time very close to the Universal Time, and will result that a trip to reach the nearest cluster of stars at the velocity of $\pm$300 km/sec will still require $\pm$

4000 years of our time on Earth.

The explosion of technical knowledge speedily applied to industry and to production of goods has enormously improved the quality of our lifestyles, modern Science has conquered us with practical benefits and with promises of a shining future, and the newly achieved capacity to tap through transformation-degradation into m-e M_{Heat} some of the m-e possessed by the atom as m-e M_{ESCM} , transforming part of it into m-e M_{ESCE} and causing movement of purpose built devices (causing machines to work for us), made us think that there is no limits to our capacity to achieve, whilst plodding along the frontiers of Science .

Heady times followed the first atomic explosions and the development of atomic plants producing electric power through atomic reactions, but, as we all know, problems soon arose , essentially connected with the fragility of our lives since these reactors are producing a considerable amount of radioactive discharge difficult to deal with, nevertheless more efficient ways to extract energy essentially as Heat and dissipation and more advanced techniques to dispose of radioactive ashes are being devised and the future is still promising well.

Man (we all, especially the less informed) started to think that the frontiers of Science would reach so far that we would be allowed to travel in space at fantastic velocities and a theory developed from the intuition that time can slow down when in a condition of travel at high speed and this could allow us to make fantastic trips, and this theory was then followed by other pseudo scientific aberrations.

The perception took hold that we would achieve a status in the Universe in which progressively our species would expand conquering new worlds and would be colonizing other solar systems etc...

This clashed with the hard reality of the fact that our nature is fragile and if the whole Earth is compared to a spaceship traveling the universal expanses, we also have to admit that is an ecosystem heavily subjected to the changes inflicted by our increasing presence and therefore will react with changes of the same magnitude as it happens in a dynamic situation, in poor words we are liable to produce natural changes which can be expected to become substantial and at time shattering and which will increasingly affect the delicate nature of life on Earth and its evolutionary patterns(our lives and those of all the living species).

If Earth, as a planetary mass full of natural resources and capable of sustain life can reach a point in the near future, when the course of life can become problematic, can we really expect that a man made spaceship, traveling for thousands of years, sustains a crew and possibly sustains the living species traveling with it?

In a spaceship, air must be re-circulated after having been purified and delicate parts subjected to wear and tear and corrosion will have to be frequently replaced through pure recycling.

In it the expected velocities of travel admissible are very small (as indicated above), and the time is almost universal (there would be little or no time delay,

retarding for us the immutable passage of time) since velocities on space must be comparable to our orbital velocities within the reality of our present status, because, as above mentioned, excessive presence of kinetic energy not only means increase of atomic mass but is also defined by presence of that mass inside a field in which the ESF determines local absolute conditions of existence and exists in a status in which increase of velocity in absolute determines insurgence of the quantum phenomena, and therefore affects the chemical processes happening inside our bodies, which will eventually be derailed (the first disastrous effects would be on our brains and, gradually, on our health in general).

A spaceship traveling for many thousands of years, can only carry fossils and with them evidence of terrestrial life forms to places far away.

Note: the theory developed regarding the invariable permanence of the physical Laws says that the Universal constants inside a closed system adapt themselves with the increase of the content of inertial mass but for an observer inside a system in movement the Physical Laws remain the same, under these circumstances alone we could be able to travel at velocities much higher than ± 300 km/sec.

Nevertheless there is no doubt that travel at increasing velocities is subject to an imbalance of the ratios of m-e components of the physical mass and in such a circumstance the laws of the UDS fail due to insurgence of quantum based phenomena, and if hypothetically we assume that a physical mass reaches a point in which there is increase of inertial m-e not reflected by substantial increase of velocity we must consider the possibility that since there is accumulation of inertial m-e M_{ESLA}, on switching off the boosters the mass could instantly release as dissipation the inertial m-e_S M_{ESCE} and M_{ESLA} accumulated, reducing the velocity achieved as it can be seen is happening in the labs of physic (and one can imagine at this point what could be the catastrophic effect on our bodies).

More problems during space travel

Taking also into account that one of the main factors affecting life during space travels will also be the lack of genuine gravity, since gravity is cause of a Dominant mass Force of unique nature and cannot be substituted by a centrifugal Dominant mass Force originated by circular movement (see Ruggeri11).

Note: gravity is a mass Force that works also when a mass is in quiet and can be opposed by a contact Force if the object under observation is at rest over the M_{LGM} or can be opposed by inertial mass Force when the object is in orbit around a central M_{LGM}.

During lengthy sea trips the ships were unable to travel long distances due to lack of vitamins in the food that mainly caused the fatal disease called scurvy,

once in space we can experience presence of intense fields of electromagnetic nature generated inside the spaceship, and there will be massive exposition to cosmic radiations, and as consequence the processes of life based on reproduction of molecular structures, may be unduly disturbed causing conditions in which a plethora of cancers or of diseased cells may have the opportunity to proliferate inside our bodies .

Strong presence of electrically charged particles can affect the brain and cause damage and mental disorders in it and possibly in the other organs of our bodies. All these events will take place, due to the impossibility to reproduce the same conditions that we still enjoy here on Earth, and my conclusion is that any spaceship will eventually become a traveling coffin.

In the other hand, our mass, at any time, is subjected to small atomic transformations whose effects, when we are active and moving, are not felt since the atoms in question are in most cases continuously substituted and expelled from our bodies, through our metabolic processes.

Assuming now that we manage to put our bodies in suspended animation, due to the same small atomic transformations mentioned above, imperceptible changes at atomic and molecular level which our highly reduced metabolism cannot absorb, will certainly accumulate in time, then a condition will be quickly reached in which will be pointless to reclaim a body damaged, by transformations-degradations, beyond possibility of repair.

Note: I presume that even the electronic devices inside the spaceship will undergo irreversible transformations putting them permanently out of order if left unattended for extended periods of time whilst the crew is in a state of suspended animation from which will never come out.

Nevertheless, provided that life can be preserved, inside a Spaceship in working order, and eventually, its crew, in status of suspended animation, (or their descendants), after a number of years, in the order of thousands, reach the nearest star (Proxima Centauri) which as we know well is a sun/star part of a cluster of stars each orbiting as a system in irregular unforeseeable trajectories.

Once there “safely”, if there is a planet with physical characters similar to Earth it must be nested inside the system having at the center one of these stars in conditions similar to our solar system and this constitutes a very restrictive condition very unlikely to happen, as we know that in order to avoid fatal encounters or even extreme gravitational discomforts, orbits must be near circular and at the right distance from a star similar to our Sun since in elliptic orbits will prevail conditions causing extreme storms, in case a consistent atmosphere is present in a planet, whilst certainly its surface will be subjected to variations of temperature that could go from near zero Kelvin to many hundreds of degrees Kelvin whilst it approaches the aphelion and the perihelion.

This will constitute a situation not certainly very favorable for farming and for life in general, therefore even if a spaceship entirely manned with robots is sent to explore, the whole enterprise could be futile if our purpose is to colonize.

It may result that even if the said spaceship manages to remain active for many millennia and perform automatically all the maintenance operations, supposed

that is programmed to come back, it will do so after a long time in terms of our civilization, whilst us on Earth due to the brevity of our life spans will have been, long forgotten.
It will most certainly find our descendants conscious of the fragility of the human condition, and of the fact that the human body is unfit to survive interstellar travels.

Men on Earth…

We have developed, all along, bound to Earth, during the course of the evolution of our species and paradoxically enough to develop and evolve we need Earth with its weather and its uncertainties of life, we need to struggle and be confronted by the surrounding nature and if we want a future, for us as species and for the life in general, the best thing we can do is to take care of our planet in any possible way and direct our efforts in order to make and maintain Earth the most pleasant place we can (after all we have the means and our civilization that is developing at a fast pace needs only to maintain, through respect, a benevolent attitude towards our planet).

Even if we admit that Providence has placed another Earth or more than one in the infinite Universe it may well result that we will never know about its existence and we will never be able to move there, but to put our doubts at rest a last consideration is necessary and is based on the fact that infinite conditions are necessaries to combine together all the physical conditions requiring the rise of life (as we know it and as mentioned here), and this awareness forces us to assume that in the Universe there is a Principle of Uniqueness for planet Earth .

Once recognized the limitations of our nature which binds us on Earth, we will be better disposed to comprehend that the purpose of our existence on Earth is to foster and sustain life in it in whatever form and manifestations, with all the means at our disposal to the best of our ability and in full respect of the natural balances and this requires capacity to love and to give unconditionally in the consciousness that this is the only way to face the future in our planet.

In the context of our presence and of the necessity to develop, the search for sources of minerals from which we can economically obtain mass-energy transformations, will never fade, and possibly will expand inside the solar system.
This statement serves to outline that not only we should endeavor to benefit as much as possible from the mass-energy that we receive from the Sun as dissipation but investigate the presence in our solar system of atoms rich on m-e M_{ESCM}, which through transformation-degradation, can be extracted as m-e M_{Heat} .

I point out that the gravitational phenomenon called “precession” produces accumulation inside the atomic mass of the particular status of the m-e M_{ESCM}

which can be transformed into M_{Heat}.

On Earth these transformations according to calculations developed by me, (see Ruggeri14) possibly have produced an accumulation of fertile atomic matter, difficult to put in evidence.

Nevertheless, this phenomenon is more intense in Mercury and in IO, the Galilean moon of Jupiter, if this hypothesis is proven valid then Mercury, IO and possibly other celestial objects in our solar system could reveal themselves to be treasury troves of m- e M_{ESCM} contained inside heavy fissionable atoms present in them.

Modern scientific theories tell us that our place, in the Universe, is near to the point of the original Big-Bang since we see everything moving away from us and since “there is a fairly uniform background radiation, in all directions, coming back to us from the past when the universe was formed”, but then it is hard to accept that Earth is again at the centre of an action of sorts as it was affirmed with tenacious insistence along the ages.

To my judgment the hypothesis of presence of Ether/ESF allows a better explanation.

According to it there was no Big-Bang in the Universe but interaction of Spin of the Speeding Particles of which the light is formed and the ESF is subjected to relaxation, it explains at the same time the shifting of light towards the red zone of the spectrum and the uniformity of the background radiation no matter what our position in the Universe is, and solves the Olbert paradox, since says that light does not travel as radiation of constant wavelength through the entire Universe but save particular cases (large explosions) even the most intense form of luminous radiation at a distance that presumably is of the order of twelve to thirteen billion years light, fades into the infrared and radio frequencies sections of the spectrum .

Earth is somewhere in the infinity of the Universe and the hypothesis of Big-Bang as a sudden phenomenon of instantaneous creation should be replaced by the one that the Universe is stationary and pervaded by a substance, the Ether/ESF (Energized Space Fabric) that coexists with the physical mass M(or Heavy Mass M_{HM}) and interacts with it, and that the gravitational m-e $M_0 = M_{RM} + M_{ESCM}$, inside the physical mass M, has the capacity to absorb the ESF and transform it in gravitational neutron m-e M_{RM}.

The open cycle of consecutive transformations-degradations that from the Ether/ESF absorbed and transformed-degraded into neutron m-e M_{RM} inside the physical gravitational mass, carries on producing also inside it the emergence of M_{ESCE} measurable as equivalent kinetic energy (belonging to the physical mass) and ends with the final dissipation of mass as Speeding Particles (final status of the m-e) in the ESF, does not allows cluttering of the space with ever increasing presence of physical masses, since as soon the physical mass becomes large enough, becomes a stars and as such dissipates its mass as mass-energy, in quantities which by far overcome its capacity to absorb the ESF.

Both absorption of ESF and internal transformation into m-e M_{Heat} (coming out

of the physical mass as dissipation) are phenomena connected with the presence of a gravitational field of depression and flow of the ESF capable to interact with the physical gravitational mass M_{LGM} which generated it (and with any other gravitational physical mass inside the gravitational field of the M_{LGM}) and to generate Force and movement based on transformation-degradation (which, as already mentioned, are dependent from the highly reactive capacity to release the SP particles of the neutron m-e M_{RM} that the depression of the ESF possesses).

The Universe renovates itself continuously and being an infinite reservoir of ESF it has the ability to absorb the dissipation coming out of the physical mass M.

As far as Earth is concerned, we can compare it to a spec of dust lost in the infinity of the Universe but from what said above it should be understood that Earth is also the result of a unique concentration events (unlikely to be repeated in another place in the Universe) and its condition of almost perfect isolation due to our incapacity to travel through the cosmic expanses makes it unique as, cradle, place of development, evolution and final extinction, of the human race .

In the past our predecessors, (when faced with the marvels of the natural world attempted to express their amazement), said that the Earth was at the centre of the Universe and when this concept became untenable the Sun became the centre of the Universe.

At the beginning of the 20th century the world of Science was considering our Galaxy as the entire Universe, and now we know that we live surrounded by numberless billions of visible galaxies similar in size to ours.

This new consciousness based on the improbable event that there can be in the whole Universe another place like our Earth, is consistent with the idea of uniqueness of Earth due to the marvelous I would dare to say supernatural characters and beauty of the natural world on it.

Folding up…

Note: the presentation made above in regard of the variation of the content of inertial mass-energy inside the physical mass poses a fundamental question in regard to the preservation of the physical universal laws which probably will never find an answer, since we will never be capable to observe physical phenomena developing in conditions of simultaneity inside another system, moving at high relative velocity respect to ours (and therefore endowed of a field of inertial mass-energy dragging the ESF captured in such a way that a local observer has the perception to be in conditions of quiet inside his system).

The contention is that the UDS is the Science whereas contents of m-e in the systems observed are low $0 <\sim v << c$ and in these ranges of velocities the formulations used are related to consistent physical presence and composition of the physical masses, but as soon the values of v are increasing there is a change of composition of the physical mass of the system which is reflected by

change of ratios (percentages) of m-e contained in it.

The question is: “can a system which has absorbed large amounts of inertial m-e and in consequence has acquired physically different characters, still behave in such a way that the physical laws remain unchanged?”

The relativistic formulations do not consider this possibility but in the awareness that internal change is occurring inside a physical mass, with the increase of the inertial contents of mass-energy, we must accept as a fact that the physical laws are seriously affected in ways and manners unforeseeable to us.

We must take in consideration that mass-energy in whatever status of existence inside the physical mass is endowed of very reactive characters associated to that status and this forces me to sum up my conclusions in the following statement:

“If in a physical mass, the physical phenomena connected to life can be seriously affected at bio-chemical level through simple additions of traces of physical masses consisting of selected atomic elements, can we afford to consider that physical phenomena connected to life are not generally affected in a way unforeseeable to us, by general additions of similar amounts of inertial m-e inside the physical masses of the atoms?”

To my judgment, this above does not falsifies the formulations of the relativistic phenomena, but just evidences their limitations in the face of introduction of increasing amounts of inertial m-e to which does not corresponds increase of relative velocity (increasing presence of m-e M_{ESLA}).

Since the temporal phenomena are retarded also by presence of gravity we here have a more dramatic manner to drive home the concept, because a surrounding lower gravitational depression puts us in more favorable relativistic condition in terms of respect of physical laws but obviously only corresponds to our presence on a gravitational object in orbit at lower gravitational pull from the central M_{LGM}, I now leave the reader to conclude that an higher orbital velocity around a M_{LGM} could negatively affect the physical laws warning him that in view of the increased amounts of dissipation emitted by the central M_{LGM} and scorching the orbiting mass where he resides, this non respect of physical laws could become for him a secondary insignificant problem.

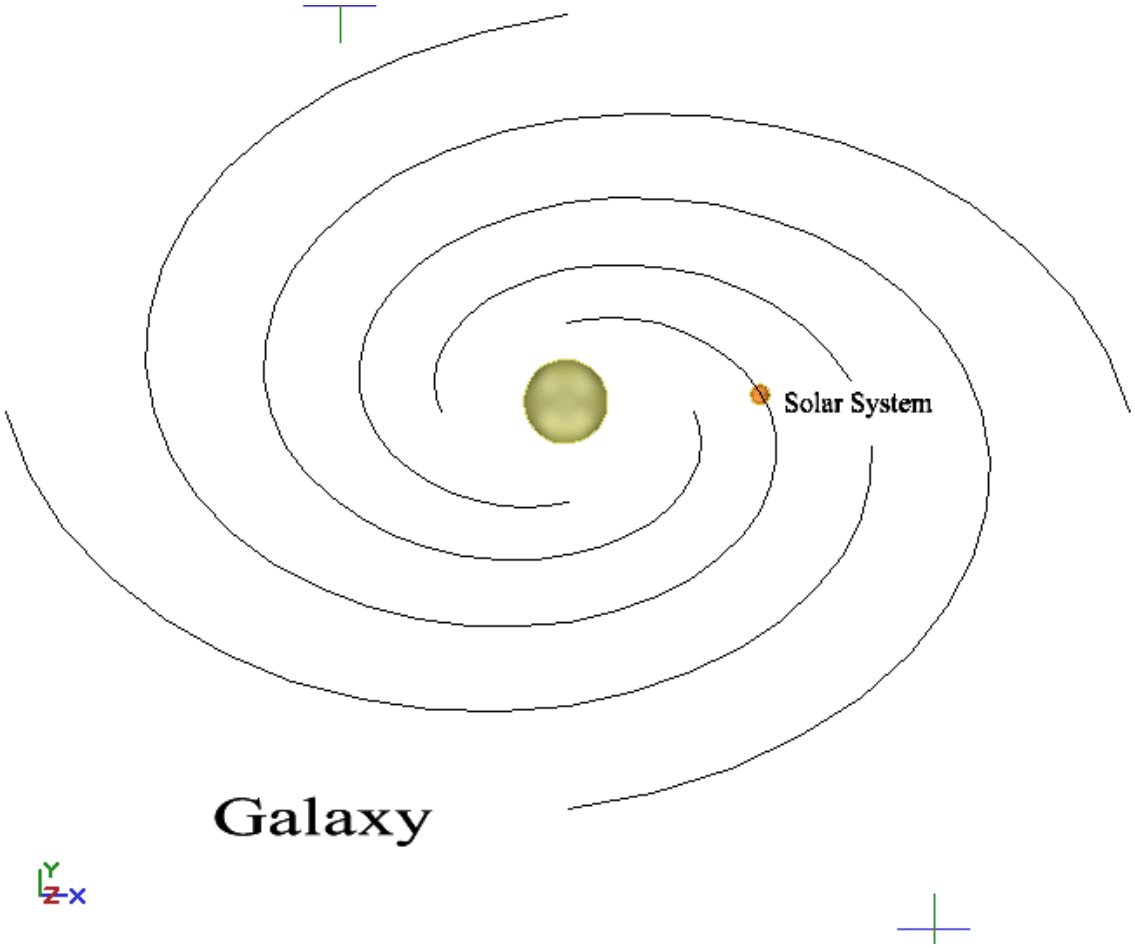
Via Lactea (Milky Way)

I present below a model of our Galaxy (Via Lactea), showing the lines of more intense stellar presence consistent with the most recent conclusions reached by the astronomers , it has a central enormous gravitational physical mass and stars are orbiting it whilst concentrated along lines following patterns having the shape of logarithmic curves.

Our star, the Sun is a modest solar system orbiting not far from the central massive object, since info regarding the Galaxy are readily available on the internet I have presented here a simple drawing which only has the purpose to

spur imagination.

My intention is in pointing the fact that conical lines had been known since antiquity and only recently (Kepler-Newton) were associated to gravitational phenomena, the logarithmic spiral was discovered by Jakob Bernoulli and only recently associated to the spiral pattern that the distribution of stellar presences follows in many galaxies, certainly it has to do with phenomena of gravitational nature and maybe hides some surprises….



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