

## New proofs in modern gravitation theory

### Part one

## Nature of gravitation and its influence mechanism

### Abstract

Neutrino is considered the carrier of gravitation. Earth gravity is formed due to the central Earth core shielding all-penetrating neutrino flow. Neutrino penetrates the Earth interfering fusion reaction on the core surface of our planet and stops motion and pressuring. As consequence neutrino is facing gravity force forwarded to the center of our planet.

**Key words:** gravity mechanism, gravity field, neutrino

### Abstract review

Gravity laws are well known to everyone. However, there is a lack of comprehensive knowledge about the gravity mechanism. It is a common view that any matter having the weight has got field of gravity, but this assumption has not been concreted by any essential mechanism. The author suggests by its theory a logical model supported by experimental data on gravity origin. Gravitation mechanism is based on neutrino circulation and the gravity formed by interfering neutrino flows revolves the planets on orbits and about own axis.

There are numerous gravity theories although principle mechanism of the gravity origin cannot be determined via such theories. Approaches given in these theories contain disadvantages and frequently contradict each other.

In this theory neutrino is taken as the carrier of gravity. Experimentally derived features of this fundamental particle entirely meet the graviton characteristics. Macro and micro space is filled by and consist of neutrino. Neutrino has got strong penetrating capacity, absorbed and escaped in beta-disintegration. Earth gravity is formed due to shielding by the earth core the all-penetrating neutrino flows. Neutrino enters the fusion reaction on the core surface and stops its motion. As a consequence neutrino flows directed towards the earth central core do not face any compensative neutrino countercurrent flow. Before stop neutrino on its way is pressing on gases, liquids and rocks.

On the surface of the Earth volume of neutrino flows coming from the Earth core ( $\nu\bar{\nu} = 10^6(\nu+\bar{\nu})/\text{cm}^2\text{s}$ ) is derived by tests of KamLAND neutrino detector. This value is less than the neutrino volume ( $\nu\bar{\nu}^+ = \sim 10^7-10^8(\nu+\bar{\nu})/\text{cm}^2\text{s}$ ) which arrives to the surface of the Earth from the open space.

New vision on the gravity nature is based on changed direction of neutrino flow during penetration into the matter. Penetrating the matter neutrino slightly changes initial flow direction. Within the magnetic field such changed neutrino flow is controlled by focusing it. As a result, focused neutrino flow is pressing on atmosphere and lithosphere.

Gravity filed is formed by any cosmic body which in its center has got a zone of fusion reaction. Each matter may change the neutrino flow although it is not gravity. Focused gravity flow revolves center core of the Earth, creates magnetic dynamo effect and revolves the Moon on its orbit. Such focused gravity flow creates a ring around the planets.

Gravity Constanta is typical for each gravity source and expressed by space and time relation around this source. Reserve interdependency of space and time leads to abnormalities in acts of nature.

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*The book will be appreciated in wisdom,  
Knowledge is appreciated only by comprehensive  
understanding  
Yousaf Balasaguni, Turkish philosopher*

## Introduction

The word “gravitation” is borrowed from Latin “gravitas” that means “weight, gravity”. However “gravitation” expresses more extensive meaning rather than simply a weight of body. Free falling of bodies on the Earth at all times has been explained by their mystic gravitating to the Earth. Astronomic observations have shown that some spheres also attract each other.

Gravitational phenomena during the whole humankind existence has been arouse interest as in its everyday life a man faces it continuously. Natural science is dealing with two questions thereupon, i.e. the nature of gravitation and gravitation law. Answer to the first shall clarify the nature of gravitation and its internal mechanism viz. gravitation field manner. Moreover, some applied facts that shall arise from possible understanding of essence of gravitational process will have to be defined. For intense, would it be possible to increase or decrease the weight of bodies, whether is it feasible to be shielded under the influence of the attracting bodies etc. Answer to this question should help to understand the functional dependencies which require to calculate motion of bodies under the force of gravity applied by other one. For example, to calculate the motion and trajectory of planets and comets or ballistic trajectory of spheres within the force of gravity of the Earth.

The law of gravitation defined by Isaac Newton, great scientist in the second half of 17century reflects a universal property of the body viz. dependency of bodies’ motion from weight and distance thereof. However, I. Newton himself and other subsequent physics during more than 300years could not explain nature of forces that influence on bodies in accordance with this law.

Why, being such a simple law at first view, it could not be decently explained by physics during a long time? It can be clarified by that in explaining the nature of forces occurred this law directs every effort to search the reasons of gravity exactly towards the center of the Earth. During XVIII—XX centuries physics searched a mechanism that could explain gravity.

Almost all his life Newton tried to understand the essence of gravitation. Firstly, he tried to prove that the action at distance of gravity relies on ether presence which is fine body of variable density that pushes out more coarse bodies and fills up pores of bodies thus leading to the said effect of gravitation. But numerous questions were arisen to that no answers were found and subsequently he stopped trying to find out gravity mechanisms.

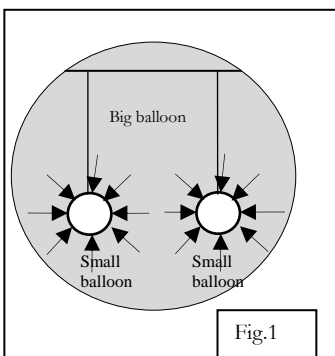


Fig.1

Over two centuries physics discussed two types of mechanisms that explain gravitation occurrence, i.e. with ether and species (corpuscles). However, those explanations were beneath valid criticism. A question to where these species disappear after encountering with bodies constantly haunted the mind of physics.

This gravitation mechanism can be simply demonstrated by an experiment with balloons (See Fig.1). “Ether” is an air in a big balloon which applies pressure on the small one but gravity of the latter is not occurred.

Various types of natural gravitation were studied (electrical, magnetic etc.) however under different reasons had not find a decent explanation. And this is fair as these types do not represent a reason for gravity occurred between

bodies.

Finally, physics concluded that merely weight of a body defines the force of gravity. We know that gravity of the Moon only in six times less though having its weight in 81times less than the Earth, and this evidences that weight of body and gravitation do not interact.

Gravity is a consequence of gravity interrelations of bodies, i.e. the force created by gravitation. It can be compared with induction of magnetic coil formed by directed electrons current. Well-known law of gravity refers to calculation of centrifugal force of a definite weight and its countermeasures so gravity in this law plays a supplementary role.

Interest to gravitation question has been raised long before Newton. In 4century A.C. Aristotle expressed an opinion that all bodies are falling as they are directed towards the center of Universe while the Earth is its center. Herewith it was considered that the heavier the body the faster it falls. Such idea was

supported for about 2 centuries and had been disproven by Galileo experiments of free falling of bodies. Galileo proven that without resistance of air flow all bodies will fall down on Earth with equal acceleration. Substantial contribution into the development of the ideas on universal gravity was made by I. Kepler by laws of planet's motion, although as well without explanation of reasons for gravity and gravitation occurrence. All these facts formed a baseline for I. Newton law of universal gravity in 1685. This law and three main mechanical principles: inertness, proportional acceleration with applied force and inversely proportional to weight, and principle of action and reaction: all these underlain modern classical or as frequently said Newtonian mechanics.

In Newton gravity theory as well as general relativity theory of Einstein gravitation constant is considered as universal constant of nature which is not changed in space and in time and not depend from physical and chemical properties of medium and gravitating masses. Such approaches cannot pretend to be a valid theory as did not determine the nature of gravitation.

Inertness source or mechanism of internees is deemed as a cornerstone for validity of gravity theory model. ***Once the problem of inertness has been resolved it would be possible to affirm that gravitation model is correct and a way of understanding of many acts of nature would be open from structural principles of a body trough emission of light.***

Let see on the inertness conditions provided by existing theories. I. Newton gave a description of gravitation by very simple formulas derived from Kepler's laws on planets motion. The Newton's formulas are shown below:

$$\begin{array}{ll} \textit{gravitation} - & F = G \frac{m_1 m_2}{R^2} \\ \textit{inertness} - & F = a \cdot m \end{array}$$

Apparently these formulae do not give an indication of the gravitation and internees' source. Newton perfectly understood this.

Nowadays commonly acknowledged gravitation theory is space-time of Einstein's (General Theory of Relativity, herein under GTR). Still GTR in fact does not represent gravitation force however it was accepted by Newton. Instead of the force a gravitation field was inserted in form described by metric tensor wherein gravity field is characterized not by Newton's scalar potential

$$U = G \frac{m_1 m_2}{R^2}$$

but ten functions. These functions determine pseudo-Riemannian space with interval of

$$ds^2 = n(\mathbf{ik}) \cdot d\mathbf{x}(\mathbf{i}) \cdot d\mathbf{x}(\mathbf{k})$$

It is assumed that such description is accepted for gravitation field being formula of gravitation on GTR while inertness is full equivalent of gravitation. It is described exactly by the same space-time interval. It is rather difficult to give an affirmation that gravitation and inertness question is resolved by geometry. GTR does not have a mechanism or nature of gravitation-inertness. It so far leads to continuous search of a realistic mechanism of its nature.[1]

This paper represents cosmic gravitation constant which is indicative for each gravitating body and dependent on dimension of its core where thermonuclear synthesis occurs. Physical and chemical properties of material medium are directly depend on gravitation constant.

Astronomic observations merely concern only fluctuations of electrical-magnetic fields (data-flow computing, gamma-quantum, x-ray and light emission) and ultrarays. There is no yet other available determination. Particularly, there are no means for detection of a gravitation waves' carrier, no direct measurements of gravitation and inertness forces are available. In recent years, neutrino tomography detection method has been developed and gave a hope that astronomic observations will be expanded. Meanwhile astronomic observations are essentially based on theoretical physics findings and are mainly clarified by Newton gravitation-inertness, GTR and quantum gravitation theory.

## I New approach to gravitation

*Truth can be so far as simple as difficult to believe it.  
Fanny Lewald*

### 1.1. Gravitation under the law of universal gravity

Gravitation nature is still unclear and scientists insistently continue search a particle-carrier of gravitation i.e. hypothetic graviton particle. Existing models of gravitons yet represent an approximate description of possible reality. Obviously there is some understanding of graviton interference such as a pushing effect but this is still in theory.

In every assumption body (bodies) are falling on a central substance. On the Earth it is the fall of bodies and things on the Earth, acceleration of the Moon towards the Earth, in Solar system it is acceleration (falling) of spheres towards the Sun. Some invisible force is pushing bodies towards a central body and makes them to spin.

Such effect Newton called gravity (acceleration) of bodies towards the center of a circle. Based on this fact he has worked out own universal gravity law.

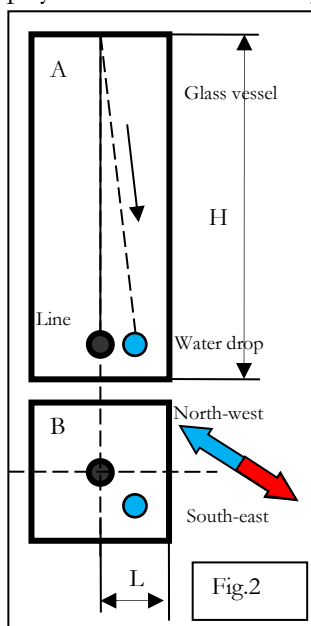
Gravity appeared to be pro rata to weight of bodies and reversed proportional to the squared distance.

$$F = G \frac{m_1 m_2}{R^2}$$

Such behavior of bodies (falling, acceleration) remains unclear. Newton law covers only a part of some phenomena and the law “begins” from the point when an object is already connected (interrelated) with a central body; the object revolving around a big body spiral like falls on the central body. And, ...that’s all. What is in precedence of interaction of bodies and what processes lead to such interaction are still unclear. To clarify this problematic aspect gravitation force has been invented. The force was applied for falling and gravitating of bodies. And this was the right decision as the science should have to be developed further.

New approach in this paper well enough expands and deepen the look on these aspects and represents an attempt to cover these phenomena from beginning through end clarifying it. Apparently there is some significant occurrence and the universal gravity law “catches” only this part.

Gravitation nature appeared to be most the complicated and interesting subject of modern fundamental physics in whole. Solar system was used as natural experimental plant to understand gravitation nature. Within



this system the smallest particle is neutrino which appeared to be dominant on energy and the one that able to create gravitation force. Being the smallest particle known in modern science the only neutrino pretended to execute function of graviton.

The author hereof has carried out in Shymkent (Kazakhstan) a simple experiment which is called *gravitation deflection* (Fig.2). Findings have reversed the look on gravitation nature. This experiment is focused on the definite gravitation property to change the direction of free falling bodies in vertical (A) and horizontal (B) planes. To create vacuum a drop was placed in the isolated vertical glass vessel and fallen down from 2m height ( $H=2$ meters.) Readings were made in different time of day, year and locations. 80percent of the water drops in free fall has shown obvious deflection depending on time but mainly towards the south-east from the vertical line and is falling in the distance of ( $L=10$ mm) from the vertical axis. Deflection  $\Delta S$  comprises at average:

$$\Delta S = \frac{L}{H} 100\% = \frac{10\text{MM}}{2000\text{MM}} 100\% = 0.5 \%$$

This can be explained only by that the defection occurs under influence of gravitation which has mainly south-east direction of impact, i.e. not directly towards the center of the Earth. Thereunder we shall study this gravitation feature in details.

Difficulty in detection of the carrier of gravitation until now is reflected in that the carrier of gravitation cannot be controlled and caught as well as there are no clear marks that will enable to make a conclusion about properties and quality of the so-called graviton.

One of the key problems in searching the decision is expressed in unfortunate understanding of gravitation properties of interaction with material bodies. It has been mistakenly adopted that gravity created attraction between bodies and does not attract them to each other but magnetize them vertically. With such assumption it was not possible to explain how cosmic objects revolve on orbit all the more they spin about own axis. We have been seeking gravitation not in its correct point of origin.

The proposed below “neutrino assumption” enables to bring into the new gravitation theory the most bright ideas of the particle physics thus expand the context of this theory. Due to challenging supposals it has been possible to create a coherent system of gravitation properties which is valid within existing natural and scientific rules and factors.

## 1.2. Detection of neutrino as carrier of gravitation. Postulate

Graviton is hypothetic quantum carrier that creates gravitation interrelation and known as elementary particle that does not have electric charge of  $1/2$  spin and two potential polarization directions.

Possibly quantization of weak disturbances in the indented gravitation field occurs. In the frame of such linier theory graviton is a source of elementary excitation. With such an extra weak gravitation interrelation it is impossible to detect experimentally certain gravitons.

Hypothesis of gravitons' existence appeared as a result of successful achievements in quantum physics (particularly Standard model) due to simulation of behavior of other fundamental interrelations with participation of similar particles, i.e. photons in electromagnetic interaction, gluons in strong interaction, W and Z bosons in weak interaction.

On the analogy gravity interrelation must be created by a particle. However, attempts to extend Standard model by gravitons face serious theoretical complications in the field of high-energy (equal or exceeding Plank energy). It is the result of continuously growing quantum effects (gravitation is not renormalizing.) This question was reviewed in scope of several proposed theories of quantum gravitation (i.e. string theory.) As per the string theory gravitons (as well as other particles) reflect condition of strings but not point particles. In this case no infinity appears. At the same time under low-energy they can be viewed as point particles. It means that graviton is some proximity to reality that can be applied in the field of low-energies.

In papers of John Wheeler and Fedosin S.G. gravitons are represented by cosmic quantum as integral part of photons. The model of gravitation interaction proposed by Fedosin S.G. by own way resolves the said problems while gravitons are represented not only by photons but neutrino and relativistic particle simile to cosmic rays.[3]

Neutrino is studied in scope of nuclear physics, the concept which today experiences a real boom. In investigations performed by John Bahcall, John Wheeler, Ingel L.Kh., Zeldovich Ya.B, Syunyaev R.A., Parkhomov A.G., Fedosin S.G., Berezinski V.S., Zatsepin G.T., Alexeev Y.M. at el special focus is made on neutrino properties that are analogical to graviton.

In accordance with General Relativity Theory massive bodies' motion with changeable acceleration gravitation field is distorted and such distorting is spreading in vacuum in form of gravitation waves. Explosions of supernova stars are the most powerful force that creates such waves, and gravitation collapse is occurred when gravitation waves and neutrino flows took place.

Gravitation waves model has been examined by exposure of supernova star occurred at 168 thousand light years from the Earth in Large Magellanic Cloud. On February 1987 these waves were read by American gravitation detectors. Neutrino detectors recorded 24 neutrinos after the explosion. Physicians found out that with accuracy plus or minus 10ms maximum gravitation distorting occurs in 5 ms before neutrino explosion. [4] This was accompanied by statistically true pre-background signals received from neutrino telescopes. Research group of the neutrino observatory nearby Mon Blanc registered five abnormal neutrino jumps not knowing yet about optical discovery of Supernova. When the data arrived it appeared that neutrino events are ahead of optical registration on 6 hours. After that data analysis was made by a number of large neutrino readers in Kamiokande (Japan), IBM (USA) and Baksansk Neutrino observatory (USSR). It has shown signals exceeding the background in the night of Supernova creation, February 23 1987. Results envisaged that neutrino signal almost was ahead of the background signal and was nearby congruent by gravitation waves. [2] Basing on this Shchadrin D.G. concluded that neutrino appeared to be graviton.

Passing through the massive body gravitation waves change direction and deflect similar to light waves being getting through a lens. Consequently gravitation waves are focused at some distance from such

“gravitation lens”. As it was shown by Ingel L.Kh. the Sun possesses good focusing properties like a common star.[5]

Derived neutrino features are identical with characteristics of empiric graviton. Based on the above a **Gravity Postulate** may be given on that: **neutrino is considered the gravity carrier.**

Represented in this paper function of carrier of gravitation neutrino has all such properties and characteristics that a mysterious graviton possesses. Comparably graviton and neutrino are ideally identical, i.e. high penetration, their presence all over the universal and in interatomic space, emitting and absorbing properties in thermonuclear synthesis, and weak interaction with bodies. No of known elementary particles aside from neutrino can pretend to be graviton upon the said properties.

Reaction with other particles neutrino runs due to weak nuclear interaction. Neutrino flow in beta-fission no losing strength passes the layer of body thick as inter-stars distance.

It could be possible that neutrino able to slightly interact with electromagnetic field as theorists assume that these particles could hold a magnetic moment although very little.

The magnetic moment of neutrino is less  $10^{-12}$  of electron's magnetic moment but it does not appear zero. There is a potential precession of strong magnetic fields, it is rotating (1/2 spin.)

At present six types of neutrino are known (electronic  $\nu_e$ , muonic  $\nu_\mu$ , tau-neutrino  $\nu_\tau$  and antiparticles.)

**Neutrino occurs and is absorbed in fission of nuclear and elementary particles.**

Neutrino of ultra-low energies is the best known in the cosmos. Its concentration at an average over universe comprises  $10^7 - 10^8$   $\nu/cm^2s$ . It has been found out in contrary to the earlier assumptions that **neutrino of ultra-low energies interacts with bodies incomparably more effectively** than neutrino of “nuclear” energies.

Interaction of low-energy neutrino with the body is similar to interaction of light or radio waves with a highly transparent medium. In vacuum radioactive transfer arises linearly and without exchange of energy. But, over **discontinuity at the margins of medium having different properties deflection and reflection occur, i.e. spreading direction is changed.** Herewith energy of particles (quantum) is not changed as well. Changed direction of spreading means impulse which is connected with the force applied to the changed part of the body. Thus, neutrino interacts with the body in its particular way: **the emitting flow delivers mechanical pressure under energy exchange.** [6]

Frequency of neutrino quantum wiggling is strictly proportional to its weight and creates vacuum. So such frequency has to be not less and equal to Compton frequency. Thus, there is the following relation for “gravitation impulse”:

$$\omega_\nu = \frac{2\pi mc^2}{h} \quad [c^{-1}]$$

where  $m$  – neutrino weight, generating vacuum quantum,  $h$  – Plank's constant,  $c$  – velocity of light in vacuum.

Basing on data received from cosmic studies an evolution of neutrino weight has been performed with an influence on beta-radioactivity (of about 20eV) with flow density (of about  $10^{13}$  of particles per cm<sup>2</sup>s.)[6]

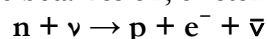
**Neutrino field is only known as Fermi field which is absolute simple and fundamental. Neutrino physical properties are more and more important in the physics of elementary particles arising more interest and giving more perspectives.**

Beta-processes are based on weak interaction of elementary particles, these are processes of mutual conversion of free or bonded in cores of neutrons ( $n$ ) and protons ( $p$ ). They are followed by formation and absorbing of beta-particles [electrons ( $e^-$ ) or positrons ( $e^+$ )], as well as neutrino ( $\nu$ ) or antineutrino ( $\bar{\nu}$ ).

The following processed are considered beta-kind:

- beta-fission  $\beta^-$ -fission:  $n \rightarrow p + e^- + \bar{\nu}_e$ ;  $\beta^+$ -fission in the core:  $p \rightarrow n + e^+ + \nu_e$ ;
- electronic or positron capture:  $e^- + p \rightarrow n + \nu_e$  or  $e^+ + n \rightarrow p + \bar{\nu}_e$ ;
- capturing reactions of neutrino or antineutrino as-called reversed beta-fission, i.e.  $\nu_e + n \rightarrow e^- + p$  or  $\bar{\nu}_e + p \rightarrow e^+ + n$ . [7]

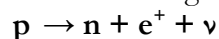
Physicians fulfilled two types of experiment to detect neutrino. The first one is observation of  **$\beta^-$ fission**, that has been reviewed firstly by Bete Kh. and Pierlse R. in 1934 in reaction of neutron absorbing of neutrino in reverse beta-fission, existence of which is derived from the Fermi theory:



occurred in both free and bonded cores of nucleons. **Electron and antineutrino are escaping from the core** while proton and outstanding nucleons coming form new core. Predominantly such conversion occurs in fission (nuclear) reactor. Assessment of probability for neutrino absorbing has given an amazing result, i.e. in

rigid body neutrino and energy which is indicative for beta-fission should take a distance of more than hundreds of light-years before it will be captured by the core.

During  $\beta^+$ -fission of the core with an excess of protons one of them is converted into the neutron and at a time positron and neutrino are emerged:



*Electronic neutrino finally appears in pair with positron and electronic antineutrino with electron. After nucleon is exposed to radiation in a neutrino ray electrons are detected. In case the reaction runs under influence of antineutrino positrons always represent among products of the reaction and never electrons.* [11]

KamLAND experiment carried out in 2005 (the only of existing neutrino detectors able to catch neutrino flow from the side of the Earth). It has been possible to register electronic antineutrino emerged during beta-fission of uranium-238 and thorium-232. This enabled for the first time to assess the upper limit of the heat that is emerged **under radioactive fission in the Earth core.**

As it is reported by PhysicsWeb data processing in detector KamLAND has shown that 16.2mln of neutrino covers  $1\text{cm}^2$  of the land surface per second, the neutrino came from the surface of the Earth core. Thermal rating of radioactive fission of uranium and thorium in the Earth core can as per the scientists evaluations reach 60TW (the most possible rate is 24TW.) [9]

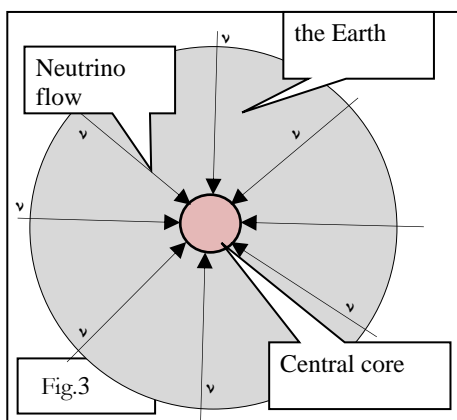
Heat flow from the center of the Earth is of around 60TW. What is the source of the heat? Whether it is fission of long-living isotopes or fission reactor in the Earth center? Answer can be derived from the neutrino flow coming from the Earth core which is studied by neutrino geophysics. In 90s to explain reorientation of the Earth magnetic dipole scientists developed a **hypothesis of existence nuclear georeactor in the center of the Earth** ( J.Herdon, 1993, 2003). [10]

Researchers of the Sweden University of Uppsala (Sweden) Natalya Skorodumova and Anatoli Belonoshko carried out an interesting computer experiment. Every four years they measured speed of seismic waves from the North Pole to Tahiti Island. It has appeared that waves were moving with different speed. This could be possible if the Earth would have a structure, for example, if its core is moving against the Earth surface. [10]

Kuzmenko G.I. in his paper *Underground Processes of the Earth* considered that in the latter days underground investigations are more focused on the Earth core rather than on its crust and mantle. It is exactly in the core is formed heat not less than on radioactive materials of the crust. Exactly there the classic theory finds lots of unclear phenomena. Therefore it should be studied more accurately the considerable increase of temperatures and possibility of presence there of a plasma state.[8]

Neutrino surrounds us from all sides. We have been living in the flow of relict neutrino left after the Big bang, the most ancient particles in the cosmos. Their energy is miserable, comprise in order  $10^{-4}$  eV although their flow is one of the most intensive in the Earth viz.  $\sim 10^{13} - 10^{14} (\nu + \bar{\nu})/\text{cm}^2\text{s}$ .

It is understood and without overestimating in neutrino physics today the biggest interest is expressed to this particle and everything that is connected with it. It is envisaged by continuous theoretic and experimental studies connected with neutrino, implementation of new experiments and development of new projects. In recent years lots of unknown aspects related to neutrino have been resolved. Now we are coming into the new era of precise measurements applied in neutrino physics. No any success will be achieved unless young skilled scientists are involved. [7]



Based on the above the following **neutrino properties** can be segmented:

- forming in thermo-nuclear reactions of stars, planets, and fill vacuum
- highly penetrating and weakly reacting with electromagnetic field
- neutrino are interchanging under impulse, weight of neutrino makes them fluctuating among their three atoms
- detectable during fission of every elementary particle
- neutrino of ultra-low energies interact with a substance more effectively than neutrino of *nuclear* reactions



- in inhomogeneous substance at the medium margins of different physical properties neutrino change direction of spreading
- neutrino of ultra-low energies from vacuum in the volume of  $10^7 - 10^8$  ( $\nu$ )/ $\text{cm}^2 \text{ s}$  are absorbed in reversed beta-fission on the surface of the central Earth core and are radiating from the Earth core in the order of  $10^6$  ( $\nu$ )/ $\text{cm}^2 \text{ s}$  towards the Earth surface. Due to difference of absorbed neutrino mechanical pressure is applied in the absence of energy exchange, and
- quantize, deflect and accompany gravitation waves.

Neutrino possessing the above said experimentally proven properties is valid to substitute hypothetic graviton (Fig.3). Provided data testifies the feasibility of further study of gravitation processes with direct involvement of neutrino.

### 1.3 Gravitation origin mechanism

*For me it is clear when a body has got gravitation field surrounding it there are inside mechanisms which led to its formation*

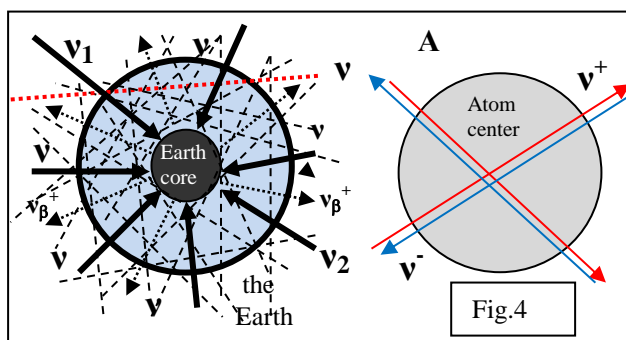
*K. Tsiolkovsky*

Attempts made by scientists to explain the gravitation reason led to searching and studying of different gravity mechanisms that justify the gravitation origin nature. There were hot disputes in 17th century already related to the gravitation origin, whether it is formed by external influence or internal properties of bodies? Do bodies gravitating in space directly or their motion is explained by encountering of some particles? An assumption adopted in physics that ***a body, having the weight, possesses gravitation property, and this has not been justified by a principal mechanism.***

A number of scientists (Descartes, R et al) did not accept the idea on direct gravitation and they considered that motion of large bodies can be caused only by action of finest invisible particles. Sweden mathematician Nicolas Fatio de Duillier in 1690 and LeSage Georges-Louis (Geneva) in 1756 proposed a simple kinetic gravitation theory. It enabled to give a mechanical explanation for equalizing of the Newtonian force. This point of view has got a further development in 18th century and is known as *shielding theory* (M.Lomonosov in 19th century, V.Thomson.) In accordance with this theory all world space is filled up with finest particles which chaotically move at great speeds in all directions. Single bodies are attacked by particles from each side equally. Two bodies are acting like a shield for particles and between them density of particles is less than that from outside. As a result differential pressure is created, lower inside and higher outside and bodies are encountered towards each other forming gravitation.

Notwithstanding, ***reason of shielding of bodies moreover where these particles disappeared after been encountered are indefinite, that was the reason of invalidity of such theory.*** Newton's law gave satisfactory description of such phenomena. But this was quantitative aspect of gravity. Neither in Newton's times nor after had been possible to find the true physical nature of gravity

Einstein's relativity theory considered gravity being geometry specific feature of space and time. Depending of weight space-time is deviated and motion of bodies in such space looks like gravitation. Essentially, relativity theory did not cover at all ***physical nature of gravity forces.*** Principally, it is based on deviation of space-time geometry, and influence mechanism of such deformation is not clear till the present. The present day in 300 years of physics development after universal law of gravitation is disclosed there is still no answer to the question what does gravity mean?



In spite of the search of new elementary particles that could be carriers of gravitation, of new theories of multidimensional spaces (membrane theory, strings theory, theory of center of mass, supergravitation, hole theory of gravitation etc.) there is no significant progress in understanding of physical essence of gravitation theory.

In the studied model of neutrino theory neutrino is represented as the finest particle run weak reaction with a body. Summarized influence of neutrino on trial body

leads to pushing of one body to the other.

Such approach explains the mechanism of the gravity observed from bodies to bodies taking into account relativity theory and space deflection. Calculation made by the applied formulae totally equals to results of empirical formula of Newtonian universal gravity.

The model represented hereunder and Fig.4 both sufficiently well explain gravitation origin.

Experimentally it has been determined that neutrino ( $\nu$ ) is uniformly spreading in space as well as in cosmos and inside the atom. Neutrino ( $\nu^+$ ) penetrates the body in its way. Herewith neutrino influences on the body equally to the contrary flow of the neutrino ( $\nu$ ) (Fig.4-A). Consequently their summarized influence on the body equals to  $\nu^- + \nu^+ = 0$ .

American scientist Marvin Horidron certifies that the core of our planet is natural fission reactor consisted of transuranium elements. Thermonuclear synthesis occurs in the reactor which never runs full reaction and is deemed as main source of the inside planetary heat.[10]

Neutrino penetrates our planet by different random directions (Fig. 4 dashed line) and most of it central Earth core participating in reverse beta-fission and stop. It is just the neutrino that cannot run heat exchange with neutrino that is penetrating into the opposite side of the Earth core.

Qualitative volume of the neutrino flow radiated by beta-positive fission ( $\nu_{\beta^+}$ ) from surface of central core is always less than absorbing volume ( $\nu_{\beta^-}$ ) of neutrino ( $\nu_{\beta^+} < \nu_{\beta^-}$ ). Flow difference equals to no heat exchange:

$$\nu_{\beta^-} - \nu_{\beta^+} = \sim 10^7 - 10^8 (\nu + \bar{\nu})/\text{cm}^2\text{s} - 10^6 (\bar{\nu})/\text{cm}^2\text{s} = \sim 10^1 - 10^2 (\nu + \bar{\nu})/\text{cm}^2\text{s}$$

As a result of it ***Earth central core is shielding all-penetrating flow of neutrino.*** Final influence of all neutrino on central core is renormalized forming gravitation force directed towards the Earth central core. Neutrino flow that does not bear heat exchange in its way penetrates atmo-, hydro- and litho- sphere and presses down towards the Earth core. Gravitation force influencing on the Earth will depend on how much neutrino is absorbed by the central core. Any body had central core with fission synthesis shields neutrino core and creates gravity around itself.

Neutrino participates in thermonuclear synthesis merely in the subsurface of stars and planets where high gravitation pressure contributes to proceeding of high-temperature plasma and does not allow it to run chain reaction. Formed heat keeps mantle in liquid condition over billions of years of the Earth's life. During thermonuclear synthesis significant number of neutrino is caused which at the moment of formation has weak reaction with bodies.

Herewith neutrino being more distant from its source for the ten astronomical units is weakening and changed after what it becomes active and runs reactions with other cosmic bodies. These active particles if interact are absorbed by natural thermonuclear reactors in center of other stars and planets.

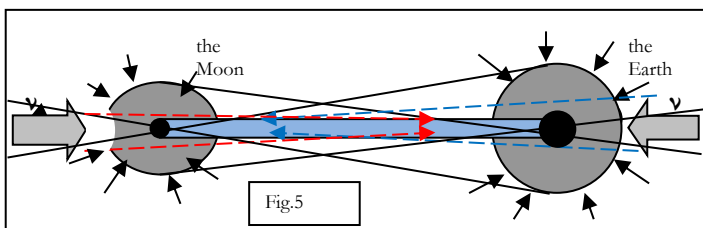
Therewith quantity and density if neutrino radiating from the core of our planet is of less than density of neutrino coming towards it from other spheres (stars). Potential of gravitation compression into vacuum in presence of gravitating bodies in it in three-dimensional cartesian reference system described in the known scalar gravitation field in the form of differential Poisson equation as follows:

$$\frac{d^2\varphi}{x^2} + \frac{d^2\varphi}{y^2} + \frac{d^2\varphi}{z^2} = -4\pi G c \quad [1/\text{s}^2]$$

where  $G$  – gravitation constant of the Earth, [ $\text{m}^3/\text{s}^2$ ],  $\varphi$  – frequency of neutrino fluctuation.

Thus, neutrino that are catching by the central core of the Earth participate in thermonuclear synthesis then stopping their directed motion. Exactly those neutrino cannot create equality with neutrino that penetrates from the opposite side that are also disappearing in thermonuclear synthesis.

Consequently, central core of the Earth is shielding gravitation influence of outside neutrino. Resulting influence of all neutrino on the central core will not be equal to zero; a force is created directed towards the central core of the planet. ***The body, having shielding central core where thermonuclear synthesis is occurred, forms gravity filed around itself.***



shown in Fig.5 be blue line a zone is created where the rate of gravitation affect slightly decreases. Areas of both planets entered in this zone under centrifugal forces are exposed to flooding in water basins and lifting of soils and atmosphere. Gravity rate within these areas is kept due to neutrino penetrating that not touching central cores (Fig.5 dashed line) Gravitation affect is also indicative for each of them but reflects the ability to create gravitation due to dimensions and energy of the central core where thermonuclear synthesis is occurred.

The body without such a core cannot create gravitation field although contributes to attracting of other bodies due to difference of potential of deflected gravity flows. Force that affects the planet depends on neutrino absorbing rate by central core where thermonuclear synthesis is occurred. Between directions of central cores

***Earth gravitation is formed by neutrino flow moving towards the Earth, that forms Earth gravitation on the surface of our planet.***

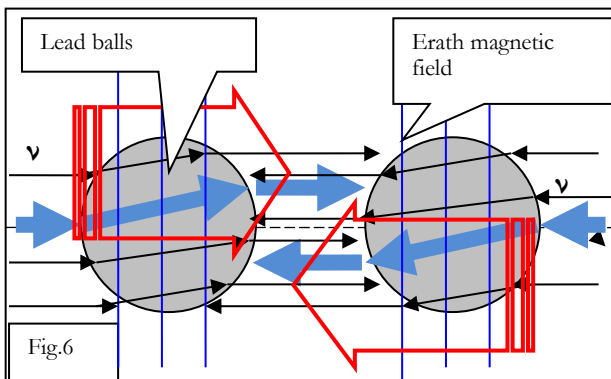
In connection with that the neutrino is less than proton on several times, when it is coming through the atom of the body it creates an effect of penetrating and encountering with its electron and core it transfers them a little portion of its centric energy (Fig.4 point A.) Encountering with the atom's core neutrino returns; the very same the neutrino from the opposite site of the core is turning back. As a result the core cannot halt the motion of the neutrino and actually remains transparent for the neutrino.

#### 1.4. Another result of Cavendish experiment or deflection of neutrino flow

*So far apologetic assumptions in the old science are alive new theory will not be born.*  
*Max Planck*

In 1797 Henry Cavendish for the first time measured gravitation constant initialized  $G$ . Cavendish used ring balancer fixed massive balls from the both sides. They were gravitating to the balls located nearby and spin the balance twisting its string. Twisting value was measured by deflection of the ray of light reflected by a mirror fixed on the string. For the past two hundred years numerous attempts were made to measure  $G$  more accurately. However the error was slightly decreased and in 1998 comprised 0.15percent. A group of scientists from Washington University (Seattle) at lead of Jens Nundlach and Stephen Merkwowitz could improve the accuracy on the order of 2 times. They announced the result:

$G = 6.67390 \cdot 10^{-11} \text{ n.m}^2/\text{kg}^2$  with an error 0.0014%. [12]



The said experiment in the frame of this theory is explained by the flowing (Fig.6.) Neutrino flying in all different directions are exposed to countering action from those neutrino which are flying towards. On the surface of the Earth horizontal countering neutrino flows are equalized. As said above penetrating into more rigid bodies neutrino changes its direction. Under influence of magnetic fields of the Earth it is occurred in an orderly manner. As a result horizontal neutrino flows are deflected countering (big red arrows on Fig6.) a body  $v_1 - v_2 = \Delta v$ . The deflection leads to insignificant potential difference in

countering neutrino flows enforcing bodies to approach each other. At the same time they do not stick to each other and this process is not gravitation. This is an **ordinary displacement of countering neutrino flows  $\Delta v$** .

The finding has indicated that defined gravitation constant ( $G_{\text{def}}$ ) is the coefficient of deflection of countering neutrino flows on the Earth.

$$G_{\text{def}} = \Delta v$$

Cavendish experimentally have proven the neutrino ability to change and deflect the motion direction under the influence of the Earth magnetic field. Measurement error on 0,0014% for 200 years shown that the Earth magnetic field has been decreased on the said value during the period.

It had been a great discovery of Cavendish though he explained it differently to the extent of scientific development at those times. Our responsibility is to correct his explanation and verify this unique experiment through new notion and concept.

#### 1.5. Determination of gravitation constant of the Earth by the Moon

Einstein has defined gravitation by space and time deviation. Gravitation constant is the consistent changing of space and time ratio where the body is in equality. Gravitation processes should be reviewed taking into account the Einstein's space deviation.

Basing on the above said shall try to determine gravitation constant by excising objects of solar system participating in formation of universal gravitation and being kept in equality. Let's take our plants and the Moon its orbiter.

The Moon turns around the Earth on its orbit with a radius of  $R = 384000\text{km}$ , speed  $v = 1012 \text{ m/s}$ . With such a speed reacting with a centrifugal force the Moon seats in equality. Under the same condition the Earth satellite is placed with the following parameters:  $R = 42178\text{km}$  ( $35800\text{km} + 6378\text{km}$ ), the period of rotating is 24 hours, speed is  $v = 11035 \text{ km/h}$ , or  $3065 \text{ m/s}$ . A spaceman comes on orbit from the satellite

into the open space. As per the second Newton's law bodies with big difference in weights will be differently affected by centrifugal force. The spaceman shall have to fly off the station though they are turning together on the intended orbit. It's caused by that one of the gravitation component  $G$  equally effects on all bodies independently on their weight and density. Therefore cosmic objects of different weight  $m$  and dimensions can be placed on one orbit  $R$  with equal rotating speed  $v$ . That is why the Earth satellite on the Moon's orbit will turn around the Earth with the speed equal to the Moon. The said conditions demonstrate that effects of centrifugal force and the Earth gravitation force are equaled independently on weights. At the same time such equality affords ground to guess that centrifugal force affected on the Moon probably is derived from the Earth gravitation.

As per the second Newton's law centrifugal force affected the Moon rotating around the Earth is running from the center and calculated at the weight multiplication on revolution speed as follows:

$$F_1 = \frac{M_L v^2}{R}$$

where  $F_1$  – centrifugal force  $M_L$  – the Moon weight,  $v$  – the Moon revolution speed on orbit around the Earth,  $R$  – distance from the Earth center to the Moon.

Force countering the centrifugal one and created by the Earth gravity on the Moon orbit as per the first Newton's law equals to

$$F_2 = M_L \cdot g$$

Equaled motion of the Moon and orbiters on orbit indicates that  $F_2 = F_1$  therefore

$$M_L \cdot g = \frac{M_L v^2}{R}$$

As it is seen such equality **does not depend on weight** as with its decrease the equation is still unchanged as follows:

$$g = \frac{v^2}{R} \quad (1)$$

The formula shows that with equilibrated motion of the body on orbit centrifugal force equals to the rate of influence of gravitation density and characterized by **height and speed of the body motion on orbit**. In favor of the formula there is also a fact said that all bodies with zero starting point within the near-Earth space are falling towards the Earth with equal speed.

The condition of the Moon and the Earth satellites on orbit indicates that similar effects of centrifugal and gravitation force do not depend on their weight.

Basing on the above said affecting **gravitation constant**  $G$  is calculated by formula:

$$G = R^2 \cdot g = R^2 \cdot \frac{v^2}{R} = R \cdot v^2,$$

where  $g = F_2 = \frac{v^2}{R}$

i.e.

$$G = R \cdot v^2 \quad (2)$$

where,  $R$  is a distance from center to rotating orbit,

$v$  is revolution speed on orbit.

By formula (2) let's find **cosmic gravitation constant** of the Earth and the Moon.

$$G_{SGC} = R \cdot v^2 = 384000 \text{ km} \cdot 36422 \text{ km/h} = 5093438976000 \text{ km}^3/\text{h}^2 \text{ or } 399 \cdot 10^{12} \text{ m}^3/\text{s}^2.$$

In the international system of constants IERS in 1992 the Earth gravitation constant  $G$  was admitted at  $398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2$ .

Taking into account the Moon has got an averaged orbit with some deviations the accurate value of the Earth SGC shall be accepted as  $398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2$ . Such SGC is characterized by space and reverse decrease in time of our planet.

For a satellite on synchronistic orbit of  $H = 35800 + 6378 = 42378 \text{ km}$ :

$$G_{SGC} = H \cdot v^2 = 42178 \text{ km} \cdot 111352 \text{ km/h} = 5254372999050 \text{ km}^3/\text{h}^2 = 396 \cdot 10^{12} \text{ m}^3/\text{s}^2$$

Same gravitation constant is defined by satellites of Mars for Phobos

$$G_{SGC} = H \cdot v^2 = 9380000 \text{ m} \cdot 2137.26^2 \text{ m/s} = 42.847 \cdot 10^{12} \text{ m}^3/\text{s}^2 \text{ and for Deimos}$$

$$G_{SGC} = H \cdot v^2 = 23460000 \text{ m} \cdot 1351.18^2 \text{ m/s} = 42.831 \cdot 10^{12} \text{ m}^3/\text{s}^2.$$

Using the determined data for Jupiter satellite Io Jupiter gravitation constant is

$$G_{SGC} = H \cdot v^2 = 420000000 \text{ m} \cdot 17444^2 \text{ m/s} = 127.809 \cdot 10^{15} \text{ m}^3/\text{s}^2.$$

By formula (2) it is possible to calculate the speed of the Earth satellites that is needed for stationary revolution on the intended orbit as follows:

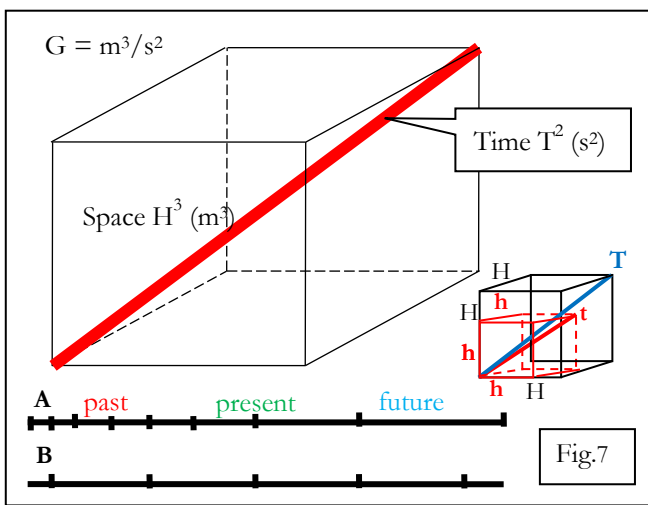
$$v = \sqrt{\frac{G}{R}} \quad (3)$$

Each planet has its own gravitation constant expressed by ratio of space and time characteristics. It is different in structure, form and condition of living and non-living body. Other planets under conditions of the Earth gravity change their feature is per new space-time Earth characteristics.

## 1.6. Space and time interference

There are different variants of the gravity theory which have in weak field same Newtonian limit. They give a number of predictions differed from forecasts of the general relativity theory, i.e. variability of gravitation constant. For example, theory of Paul Dirac (1930) predicts changing of gravitation constant ( $\Delta G$ ) by  $\sim \Delta G/G \approx 6 \cdot 10^{-11}$  per annum. It is evidenced by that the Moon annually moves away from the Earth on 3.8cm [13]. Some variants of gravity theory foresee dependency of gravity constant from distance between attracted bodies.

**Gravitation constant ( $G$ ) is a feature of celestial bodies and depends merely from the dimension of central core where thermonuclear synthesis occurs. Depending on the intensity of the said energy source, planets and stars are concentrating and perform absorbance of gravitation.**



Therefore it shall be deemed that gravitation constant characterizes the energy of stars and planets by absorbance and concentration of gravity flows. With the less energy of thermonuclear synthesis gravitation constant of an object is decreasing.

With the same value of gravitation constant a direct proportional change of its components can take place viz. astronomic space ( $H - m^3$ ) and duration ( $T - s$ ). Such dependency can be expressed through space and time as Fig. 7 shows. It is evident herein that with time space is changed.

With decreased space characteristics ( $H \rightarrow h$ ), duration became slower ( $T \rightarrow t$ ) and longer ( $\Delta t = t/T < 1$ ) in perceptive till the full stop ( $\Delta t = t/T = 0$ ). This direct proportionality is clear when the time is

extended ( $\Delta t = t/T < 1$ ) and space is decreased ( $\Delta h = h/H < 1$ ). It forms the space that corresponds to the past. With increased duration ( $\Delta t = t/T > 1$ ) space is increased ( $\Delta h = h/H > 1$ ) therefore it forms the space that corresponds to the future.

With unchanged gravitation constant the duration is stable ( $\Delta t = t/T = 1$ ), the same as the space ( $\Delta h = h/H = 1$ ). Thus gravitation constant is six-dimensional not four-dimensional. The key role is played by duration in formation of three-dimensional space in past, present and future.

In space-time  $G = m^3/s^2$  context the space (cubic meters) is clear without verification. But duration (squared second) is understood with complications as in nature such phenomenon is not met and to imagine time in such form is not possible. However duration means that time being gravitation component is not constant and changes progressively. In coordinates  $x = y^2$  duration is represented by parabolic curve.

**The great Einstein determining deviation of space and time had surpassed the time and space. For a long time it has been understood being a brilliant discovery i.e. space and time deviation in sensu stricto. However the time has come to acknowledge that Einstein's space-time deviation is the deviation of gravitation, i.e. changed direction of the gravitation carrier. Einstein pointed out that deviation of graviton's path is similar to photon one.**

Interrelation of gravitation constant components is the main factor which leads the body to change its property. Depending on its dimensions the body contributes to the world variety. **Electromagnetic waves are changed with changed duration. Consequently derivatives are changed, i.e. light, heat radiation, sound etc.** Human's vision and hearing catch wider range of electromagnetic waves which were not possible to sense before. **With decreased space characteristics the bodies properties are changed. Gaseous substance is coming more rigid, water more dense, stone more brittle, glass more cloud etc.**

Proportionally decreased space and extended time together actively affect biochemical processes. Chemical reactions run immediately, mitosis and reproduction proceed rapidly. Light and sound anomalies occur, smelling and hearing become more sensitive.

Such dependency can be easily found in the example of free fall acceleration of bodies on the Earth surface. The body in free-fall accelerates its motion and in a first second passes the distance of 9.81 meters, in a second 19.62 meters and third 29.43 meters. It is seen that in a section of way that corresponds to the 2<sup>nd</sup> second the body passes 9.81 meters in 0.5 second and 0.3 second in the 3<sup>rd</sup> second. Distance is still the same and the duration speeds up. However, general gravitation constant is not changed. Its components time and space were inverse proportionally changed. Such changes lead to slight deflection in spreading of electromagnetic waves (sound and light), i.e. Doppler principle. Quantitatively the falling body is changed insignificantly to such an extent that hardly sensed.

The Fig. 7 shows that line **B** is present astronomical pace in uniform duration and line **A** is an evolution pace in duration response. Comparison clearly shows that their discrepancy to the extent of comparability and correlation. Line **A** clearly shows that the past point corresponds to the past, present to the present and future to the future. Thus the frequency of evolution time will correspond to astronomical only in the present. That is why it is not possible to identify past or future with present precisely, as their corresponding space sizes will differ. Such comparison testifies that the gravitation constant tends to decrement.

It means that if million years ago the gravitation constant of the Earth was in ten times more than at present. Time went respectively in ten times faster. And on the contrary, if, gravitation constant will be less on ten times one million years ago, it will extend the time in ten times. In understandable way it can be expressed: if time is accelerated space is increased, if time is extended space is decreased.

Thus, ***gradually decreasing gravitation constant has a vital part in evolving of living and non-living bodies of our planet. It led to natural modification of nature genetically.***

The modern physics long ago refused Newtonian understanding of time as an abstractive duration. Scientists-theoreticians, in accordance with a specific relativity theory come to understanding of this phenomenon in the form of numerous times, each of which corresponds to own process, own elementary particle, i.e. own reference system with own simultaneity.

It means that in nature neither absolute time nor absolute space is met; there is the only sequence of changes that form the nature of elements and sequence of their interposition. Gravitation constant is sequential change of space/time ratio where the body is equilibrated.

As a result it is possible to conclude that ***time means body motion in space, i.e. motion in own coordinates. If motion will stop time will stop for the stopped body. Time is directly connected with space. The space characterizes coordinates of position of bodies whilst time characterizes change of positioning of bodies in space.***

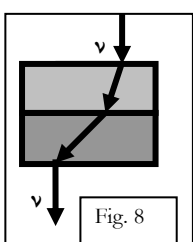
It is necessary to consider that under motion all types of motion is understood start with atom and chemical elements fission, cells mitosis through motion of space bodies in space.

When the Earth and the Moon or clock hands move on own orbits, time passes corresponding to their motion. The same in living body liquids circulate and cells are reproduced, all these types of motion have correspondent duration. Even half-decay of radioactive elements corresponds to its time. With no motion time stops in more accurate words extends endlessly.

## II. Gravitation and planets revolution

***Give me a place to stand on, and I will move the Earth. Archimedes***

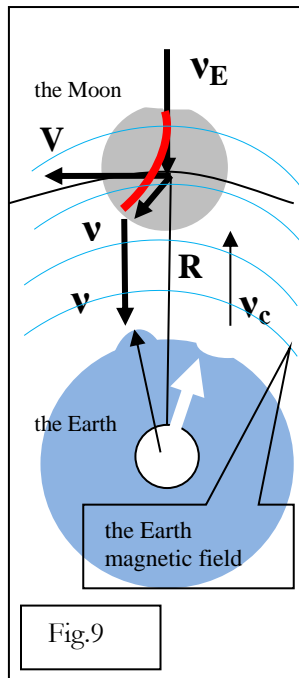
### 2.1. Gravitation curve and influence on planets revolution



A number of scientists explain the Moon's revolution on its orbit by the fact that the Moon, under the influence of the Earth's gravity directed to the center of the Earth, constantly falls on it, however, due to its high speed cannot fall to the Earth. Constant speed of motion of the Moon is explained by energy conservation. Having once sped up on orbit it will move without stopping as does not face encountering on its way. However, its motion is affected by gravitation of the Earth, the Sun and other planets which will have to change the Moon's speed on orbit. If to change the Moon's speed it will fall on the Earth or fly away to the open space. So it is fair to ask *due what source of energy the Moon keeps its speed?* By

calculations of this theory, it is the Earth gravitation.

**Neutrino being gravitation carrier penetrates into the body and encounters resistance therefore its spreading speed is slightly slowed and its direction is slightly changed (Fig. 8).** Came through the rigid body neutrino returns its speed to original and restores the direction.



**Depending on density and the dimension of materials of the body the gravitation direction varies. All these changes occur gradually and from a space curve. The said process occurs in planetary scale thus to repeat it experimentally under laboratory conditions is not yet possible.**

At the same time gravitation flow deflects on 0.5 % as it has been shown by experiment in Chapter 1.1, Fig. 2; nevertheless, it evidences that change of the gravitation flow direction takes place.

The Earth gravitation, coming into the Moon, changes the direction and leaves it in different direction (Fig. 9 red curve). Herewith the Moon is pushed not to the Earth straight but tangentially towards the path (tracing) of the Moon revolution on its orbit. The gravitation is a vector which directs towards the center of the Earth and drives revolution on orbit. It means that the Earth gravitation flow penetrating into the Moon will not be driven directly towards the Earth enter and will trace a certain angle. In this case, as Fig. 9 shows, the Moon will revolve smoothly on the orbit with certain speed constantly receiving gravitating energy that pushes is for revolution. Herewith gravitation flow passed through the Moon is projected on the Earth surface in the form of tidal bulge and is located in front of the Moon projection towards the direction to its revolution.

This is good sign that **the Earth gravitation flow penetrating the Moon not only decreases its rate of density but deflects towards the side of its revolution.** So the Moon revolution period on orbit is constant and its speed on orbit is relatively smooth. The speed depends on gravitation rate and inversely proportional to orbit radius:

$$V = \sqrt{\frac{G}{R}} \quad (3)$$

if  $G$  is changed from the shown formula for acceleration of the Moon on its orbit  $g$

$$g = \frac{G}{R^2} \quad (4)$$

whereas

$$G = g R^2$$

the Moon revolution speed on orbit :

$$V = \sqrt{\frac{gR^2}{R}} = \sqrt{gR} \quad (5)$$

$$V = \sqrt{gR} = \sqrt{0.00266 \text{ m/s}^2 \cdot 384000000 \text{ m}} = 1011.65 \text{ m/s}$$

where  $R$  – distance from the Earth center to the Moon;  $g$  – rate of the Earth gravitation flow influence on the Moon orbit.

Formulae (1, 2, 3, 4 and 5) show that speed and radius of the Moon orbit proportionally change while gravitation constant is stable.

## 2.2. Elliptic orbits and gravitation

To study the case when under the influence sola gravitation the Moon orbit is periodically changed. With changed radius of the Moon orbit its speed will be different. Such variation could be particularly clearly seen when the Moon will dislocate between the Sun and the Earth.

Rate of the Sun gravitation flow influence or free-fall acceleration at the Earth orbit equals to  $g_s = G/H^2 = 0.005898 \text{ m/s}^2$ . Rate of influence of the Earth gravitation flow on the Moon's orbit is  $g_e = G/R^2 = 0.00266 \text{ m/s}^2$  that is almost in two times less the Sun's flow. Such discrepancy central shall lead to the Moon orbit deflection towards the Sun. This process as shown in Fig.10 proceeds by the following steps. With total decrease of the Earth gravitation flow  $g$  centrifugal force  $F_m$  pushes the Moon off the Earth slightly increasing distance  $r_0$  between them. Mechanically the Moon speed on its orbit  $v_0$  for some time remains unchanged.

This changes its proximity from the Earth  $r_1$  and  $r_2$  on the elliptic orbit. (One section of the orbit.) When the Moon leaves the abnormal zone, radially removing from the Earth by the straight line, its angular

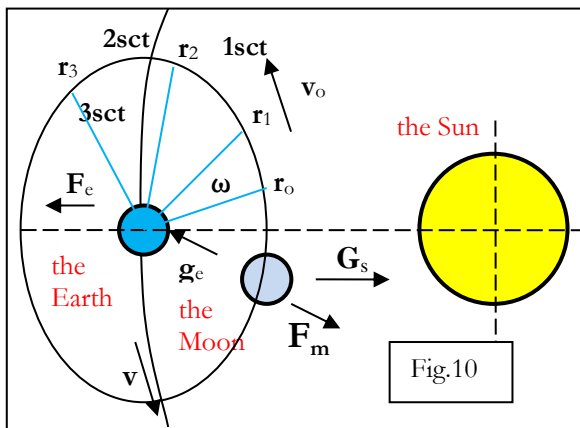
revolution speed  $\omega$  around the Earth is decreased. This will increase  $g_e$  the rate of the Earth gravitation flow influence viz. free-fall acceleration of the Moon on the Earth. Herewith the Moon removal is getting slower. It will decrease its speed  $v_1$  thus resulting decrement of centrifugal force  $F_m$  and increment of free-fall acceleration  $g_e$  (Second section of the orbit.) Then the distance to the Moon is shortening  $r_3$  and it is speeding up  $-v_3$ . At that the Moon is of like falling on the Earth not by straight but tangent line (third section of the orbit.) This increases the angular speed  $\omega$  and angular acceleration  $\beta = (\omega - \omega_0)/t$ . Correspondently centrifugal force is increased  $F = \beta \cdot r$  thus pushing the Moon away from the Earth. Such Earth satellite revolution is expressed by the following formulae:

$$v = \sqrt{g r}$$

$$r = \frac{v^2}{g}$$

(6)

where  $v$  is uniformly variable motion of the Moon on orbit,  $g$  is the rate of the Earth gravitation flow influence on the Moon's orbit and  $r$  is radius of the Moon revolution on orbit.



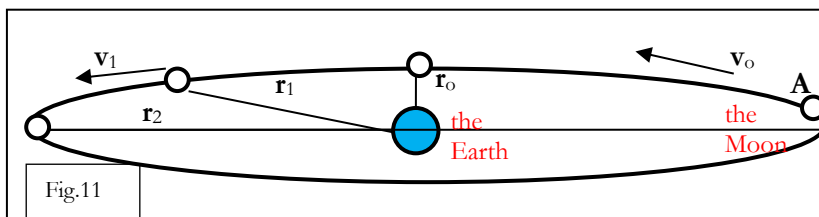
It is seen that the Moon revolution radius and its speed on orbit are inverse proportional as gravitation flow intensity depends on the orbit radius. That is why said formula clearly expresses the Moon motion and satellites on elliptic orbit around the Earth.

Let guess that the Earth is the only body in the universe which is motionless. If the motionless Moon will be placed at the distance from the Earth (Fig.11 point A) as it is, under the influence of the Earth gravitation (as Fig. 11 shows), it shall immediately start to move with accelerating speed  $v_o$  towards the Earth along tangent line to the straight line. At that the Moon shall not fall on the Earth but shall pass nearby accelerating speed at the distance of  $r_o$  and made a full

ellipse shall return back.

After several millions turns the Moon will straighten its orbit and will revolve ideally about orbit not been exposed to any disturbance.

See, the surface of the Moon, Mercury, Venus that do not revolve about own orbit are powered by craters from large meteorites. At the same time the surface of the Moon, Mars, Jupiter and other spheres that do revolve about own orbits are not exposed to such affect. The same can be seen on satellites of giant planets as detected by American spacecraft Voyager. The surface of Jupiter Io, Europe, Ganymede moons are rarely covered by meteorites' holes though the surface of Callisto is thoroughly by craters. Saturn Enceladus, Dione and Titan are also rarely covered by holes, and Tethys, Rhea and Yaphetus moons were strongly damaged. Uranus Moon Ariel is slightly affected by meteorites, and Umbriel, Oberon and Titania have been frequently attacked by meteorites.[14] Probable those moons that covered by few craters revolve about own orbit similar to the Earth and Mars.



The Earth and the Moon are located relatively close to each other and similarly exposed to meteorites attacks. Moreover it is difficult to find meteorite holes on the Earth surface. Modern astronomy explains numerous craters on the Moon by absence of atmosphere and water, so craters are not damageable while craters on the Earth surface frequently break up due to atmospheric erosions. If so, how to explain numerous traces of meteorites on Venus whilst its atmosphere is highly dense with thick clouds and carbonate gases saturated by small drops of sulphuric acid. Logically craters there should be more exposed to damages. Such illogical meteorite tracing on different planets have to find logical explanation. Why? Spheres with own magnetic field spin around own axis do frequently avoid collisions with large meteorites. Such spheres have fixed deflection of gravitation flow by revolution. As a result of it gravitation of such planets "attracts" cosmic bodies that do not fall on them expecting small meteorites that fall under influence of the Earth gravitation at relatively short distances. Large bodies experience the Earth gravity from far distances and approaching the Earth under gravitation force pass by it. Small meteorites in open space are larger than big ones and even they



are exposed to the Earth gravitation in relatively close distance. However collisions with the Earth do rarely occur when closely passing body is more exposed to the Sun gravitation and its route crosses the Earth orbit. At the same time meteorites always enter the dense atmospheric of the Earth by inclined line mainly towards south-east direction in the North and north-east in the South. Possibly due this reason in the course of historical development of the Earth no any large asteroid has fallen on our planet.

I. Kepler planets motion laws made contribution into the development of ideas on universal gravity. Herewith his calculations were based only on planets' motion on elliptic orbit and do not cover the essence of the gravity influence. Kepler's laws are observant result of mathematical processing of findings. It reflects dependency of motion but do not determine sources.

$$e = \frac{\sqrt{a^2 - b^2}}{a}$$

Universal gravity law shows that Kepler's law is only the consequence of physical properties of any bodies that having weight attract to each other. It had been accepted that all motions within Solar system are driven by universal gravity. It can be approximated that spheres of small weight and all the more so other bodies of Solar system move in solar space under Kepler's law. However Kepler's law gives mathematical description to motion rout of the bodies around the Sun on elliptic orbits in focus of one of them there is the Sun.

Unfortunately gravitation is not taken in account.

However observations evidence that motion routs of moons on orbit are directly dependent on the rate of gravitation flow that determines the distance between spheres. The closer to the Sun the more fast motion on orbit (Uranium the most distance planet of known moves in five times slower than the Earth.)

Comets motion on elliptic orbit is strictly directed by the Sun gravitation force.

The arched comet tail clearly evidences that the comet moves on orbit not straight-line but after a definite time changes its rout. It is not a simple motion in elliptic orbit but probably influence of planets which the comet passes. Tail of comet scientists explain by evaporation of comet ice melted by the Sun that is also raises doubts as some asteroids as well contain ice but do not have such tail as comet does.

Presumably comet has inner with thermonuclear synthesis that is why its tail is formed by gases discharged in this process.

It is common that comet passing large planets being under their gravitation changes its direction and more intensively discharges products of fission. As tail of comet is closer to the Sun it is getting bigger and smaller while removing from it. Asteroids have not got inner core with thermonuclear synthesis that is why do not form gravitation field. It is about that unsuccessful attempts of Americans to land and fix space probe NEAR on Phobos asteroid and Hayabusa probe ( MUSES-C) that Japanese sent to Itokava asteroid. Asteroids rejected to accept on their surface probes sent from the Earth. [15]

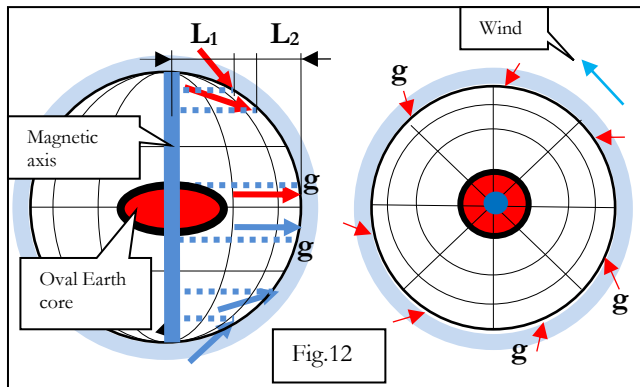
Satellites movement observations clearly show that under gravitation the duration of motion will be significantly shorten if they will be directed against the common motion, i.e. from the East towards the West. On such orbit gravitation will decrease speed of a satellite pressing them towards the Earth and inevitably they will fall down shortly. Even those satellites that have got polarity and strongly deflect from equator's orbit in time take the orbit along equator line and move from the West towards the East. That is why it is not possible to explain why satellites revolve about the Moon that does not have directional gravitation pressure.

### 2.3. Formation of rings under influence of gravitation

Formation of thin rings about giant planets is also occurring due to gravitation. About equator a planet vector of gravitation influence on satellites orbit has a strong slope along the equator in the direction of revolution. In other latitudes gravitation influence  $\mathbf{g}$  has some slope towards the equator (red and blue lines shown by Fig. 12.) It means that satellites moved on orbit will be directed from any point of near-earth space to equator. For example, air masses of atmosphere of southern and northern hemispheres in general move towards equatorial belt.

It is well known that in the Earth upper atmosphere layers constantly Eastern wind has been blown (Fig. 12 right circle) overrunning the Earth revolution about its axis. What forces do accelerate this large flywheel? Existing theories cannot give answer to this question. Energy discharged in this process able to reduce to powder all mountains on the Earth. All these make to believe that gravitation influence has some regular effect and directivity.

Being directed by gravitation it is possible that all satellites of the Earth have been revolving on high near-earth orbits after hundred years will line up a chain in a form of ring around the equator. At the same time they will not be exposed to any gravitation between each other. In far future satellites will start landing and bring catastrophic accidents to the countries located along the Equator.



that the Earth surface shape is spherical of. In central part of the Earth magnetic field flow forms dense vertical axis penetrating our planet from South through North poles. Tension of magnetic field over the whole length of the axis is constant and high. Strength of spreading of magnetic field is decreased with distance to the planet surface (Fig. 12 dashed line.) On equatorial line its length is minimal and surface magnetic field has parallel direction. On other latitudes where distance to vertical axis is smaller (Fig.12 dashed lines) magnetic field influence is expressed stronger, and surface magnetic field is sloping towards equator. Due to difference of magnetic field tension in gravitation carrier force deflection occurs which take the slope towards equator.

To prove such assumption shall have a look at a simple compass and the Earth magnetic field influence on it. Usually we use compass strictly horizontally towards the Earth surface to detect correct north-southern direction. After turning compass from this positioning on  $90^\circ$  keeping north-southern direction parallel to the Earth surface and east-western direction vertically we shall find out the compass needle is noticeably deflected. In this position compass needle shows north-eastern direction, i.e. deflects from horizontal line down on  $45^\circ$  towards the North. Most probably that in this position compass needle shows the difference of the earth magnetic field potentials that differs from the common one. [16]

Numerous shatters and particles (space debris) are accumulated along equators of giant planets while rotating on orbit under gravitation influence. Herewith gravitation make their thin ring more compressed where each particle independently on its size is rotating with equal speed that is common to each height of turning on orbit. Specific features of these rings are that all contained particles in spite of their relative density are separated evidencing uniform gravitation between them. Particles and shatters on the lowest orbit of the ring in time are coming closer to the planet surface and faced resistance of atmosphere decrease revolution speed and fall down on the planet. As a result of it an arching a line of craters is tracing along equator of the planet. When all shatters fall down on surface they form a smooth mountain range looking like Chinese wall. Such lines are found on Jupiter and Saturn.

Some physicians explain that rings of some giant planets are formed due absence of interaction between light bodies revolving by Kepler's law around a huge object. Interaction between such bodies can be taken into account in the frame of perturbation theory with time averaging. Thereat non-trivial phenomena can take place such as resonances, attractors, randomness etc. A clear example of such phenomena is non-trivial structure of Saturn rings. In spite of attempts it is not feasible to describe the system behavior taking numerous gravitating bodies of approximately equal weight because of dynamic chaos.

However, if presume that Saturn is formed from small parts it is fair that hundred thousand million years ago shatters of its ring were grouped forming an entire body. At the same time this is not happen and all particles that form the ring are still independent as they do not have their own gravity fields.

In 2007 Cassini detected and made a photo of 20km wall around the equator of Yapetus, Saturn moon. It is called the wall *de bene esse* as it looks like a mountain range. Most possible it was formed by fallen Yapetus shatters of its ring that previously existed about the moon. Yapetus phenomenon envisages that the planet have got own magnetic field and spin around their axis. Its gravitation collected shatters and formed a bid ring rotating along equator. In time Yapetus magnetic field decreased and led the ring gradually coming closer to the surface. Large shatters of the ring softly stick directly to equator and formed a belt of mountain range. Small particles and dust slowly reacted on gravitation influence remained on orbit for some time. As far as Yapetus was rotating about Saturn those dust was falling down on its surface right on the opposite side, i.e. the side of revolution on orbit. Consequently one side of Yapetus ice surface would have to be dirty whilst

the other clean. Yupiter magnetic field fully disappeared and it stopped its revolution around own axis, centrifugal force disappeared as well and the planet rock became more dense.

As far as Yupiter was coming closer to Saturn gravitation field of the latter affected it halting its revolution around own axis. It stopped revolution of inner core of Yupiter thus leading to dying of hydrodynamic process in the core which was the main source of its own magnetic field. Then gradually Yupiter magnetic field disappeared totally stopped its revolution around own axis, led to disappearance of centrifugal force and compression of the planet rock. However Yupiter has kept own gravitation and it acts like the Moon gravitation not allowing satellites revolve about it. [17]

Photos of Saturn ring made from spacecrafts Voyager and Cassini shown spots of unknown origin sized over thousand kilometers. These strange spots had dark and light traces on the ring that after several hours disappeared. Probable this phenomenon can be explained by periodically varied gravitation density of Saturn within the ring area. Rapid change of Saturn gravitation density in separate sections under the ring varies radius of particles revolution that form the ring. Particles start to change the level of orbit revolution while remain same speed of motion. This leads to gradual mixing of particles. Consequently usual smooth appearance of the ring formed by particles had similar speed at each level is disturbed. However when abnormal level of density of Saturn gravitation is normalized the ring appearance is recovered.[18]

Exactly the same is seen in solar system where all planets revolve about the Sun at one plane and speed of their motion is decreased when orbit radius is increased with removal from the central sun. Orbits of planets are almost is one plane coincident to solar equator (ecliptic plane.) Only due to this reason Plutonium can be eliminated from the context of solar system as ecliptic plane of it greatly deflects from others.

Photos of remote galaxies made by orbital Hubble telescope have envisaged that principle of such gravitation interrelation found there as well. Fogginess of the said galaxies consists of gaseous and rigid accumulations spin around its center in spiral way and it is positioned within one plane.

Cassini also detected the presence of so-called tiger-stripes on the South of Encelade, Saturn moon. Exactly in the location of these stripes temperature is higher than in other areas of Saturn and there is discharged in space water steam and crystals of ice. Scientists from California University (Santa-Cruz) and NASA Reactive Motion Laboratory from Pasadena (California) explained that such behavior of Encelade is formed by its oval orbit. Sometimes it is close to Saturn and then going far away for a significant distance. Consequently the moon is extended either compressed by Saturn gravitation and its ice cover is deformed enforcing tiger-stripes and/or faulting traces to move back and ahead. Heat created by traces moved against each other transfers ice into steam and dispatches to space crystals of ice. [19]

Under this theory it is probable that the discharge of steam and ice into space is produced by tiger-stripes where abnormal gravitation of Encelade occurs. Rapid decrease of gravitation rate in tiger-stripes leads to atomic extension of the rock accompanied by energy release. Volcanic outburst is produced while with the low gravitation rate beneath the discharge zone allows steam and crystals of ice remain in the space.

### III. Gravitation and planets rotation about own axis

*If I have seen further it is by standing on the shoulders of giants  
Isaac Newton*

#### 3.1. Influence of gravitation on the Earth rotation around own axis

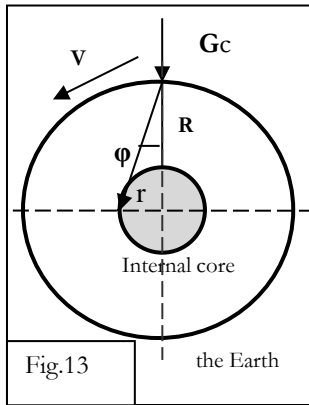
If an assumption about that the Moon revolves about the Earth under directed affect of the Earth gravitation is correct so it is logically to conclude the Earth spins around own axis under the influence of own gravitation. Linear speed of the Moon revolution on the near-earth orbit is significantly higher than the linear speed of the Earth surface revolution. Therefore energy of the gravitation constant equaled to  $398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2$  is produced during penetration into the Earth. This kinetic energy pushes our planet to rotate. However at the same time apparently the Earth revolves with a different speed. Let's try to explain this process with the aid of new theory.

Taking into account revolution speed of the Earth surface about own axis equaled to  $v = 463.6 \text{ m/s}$ ., by formula (2) it is possible to calculate  $G_{\text{fgc}}$  – **final gravitation constant (FGC)** due which the earth gravitation is created on the surface of the planet. Determination of FGC is required in the following calculations.

$$G_{fgc} = R \cdot v^2 = 6378000 \text{ m} \cdot 463.6^2 \text{ m/s} = 1.37 \cdot 10^{12} \text{ m}^3/\text{s}^2,$$

where  $R$  is the Earth radius.

**Gravitation constant is an average rate of energy of the Earth gravitation.** In action the said rate can be decreased. Decrement of cosmic gravitation constant (CGC) to the rate of **final gravitation constant**



requires logical explanation. FGC is the rate remained from CGC and gives a basis to consider that while penetrating into the Earth the most part of CGC somewhere disappears. The only correct explanation of the decrement of gravitation constant is a decreased speed of motion of bodies which are exposed to its influence. It means that gravitation flow being an energy penetrating into the Earth makes a certain work. Under the energy conservation principle a part of the Earth gravity penetrating into the Earth converts its energy into the kinetic one and rotates our planet with constant angular speed.

In decreased revolution radius the speed shall have to increase pro rata. However in the planet revolution the speed of motion of its surface is decreased for some reason. Apparently it is connected with a certain part of the planet that revolves in a high speed. Then the speed gradually moves to the surface. In this case, as Fig. 13 shows, given inner of the planet of radius 1 250 000m shall have to

revolve with a tremendous speed equaled to

$$v_2 = \sqrt{\frac{Gcgc}{r}} = \sqrt{\frac{398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2}{1250000 \text{ m}}} = 17857 \text{ m/s},$$

While, the core during the period of  $T_2 = 439.6\text{s}$  or  $7\text{m}20\text{s}$  is making one turn and that is on 196.54 faster than the Earth surface revolution period  $T_1 = 24\text{h}$ . Relation of the Earth surface revolution ( $v_1$ ) to the core revolution speed ( $v_2$ ) comprised:

$$\frac{v_1}{v_2} = 463.6 \text{ m/s} / 17857 \text{ m/s} = 0.02596.$$

Degree of the core revolution transferred speed to the Earth surface  $\Theta$  is expressed by the following relation:

$$\Theta = \frac{v_1}{v_2} \cdot \frac{T_1}{T_2} = 0.02596 \cdot 196.54 = 5.1. \quad (7)$$

As it has been defined in the Chapter 1.3 above gravitation constant depends on the volume of the inner where thermonuclear synthesis takes place which absorb the penetrating neutrino. To define the gravitation and density coefficient  $Y$  per  $1\text{m}^2$  CGC is divided by the area of section of the inner multiplied by surface  $g$  as follows

$$Y = \frac{Gc}{\pi r^2 g} = \frac{398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2}{3.14 \cdot 1250000^2 \text{ m} \cdot 9.81 \text{ m/s}^2} = 8.29 \quad (8)$$

to substitute  $g = \frac{Gc}{R^2}$  where,  $R$  is the Earth radius:

$$Y = \frac{Gc}{\pi r^2 g} = \frac{Gc \cdot R^2}{Gc \cdot \pi r^2} = \frac{R^2}{\pi r^2} = 8.29 \quad (9)$$

It is a **relative coefficient of the gravity and density per one square meter.**

It is possible to define deflection of gravitation in the dense medium by relation of right triangle sides, i.e.  $R$  is the Earth radius,  $r$  is the core radius,  $\varphi$  is the angle of the gravitation slope (Fig.13):

$$\varphi = r / R = 1250000 \text{ m} / 6378000 \text{ m} = 0.1960 \quad (10)$$

By the derived coefficient of the gravitation deflection angle the inner radius is calculated for other planets as follows:

Jupiter where  $R$  is 71 880 000 m:

$$r = \varphi \cdot R = 0.1960 \cdot 71880000 \text{ m} = 14\,087\,488 \text{ m}.$$

Calculate the speed of revolution of Jupiter inner as follows:

$$V = \sqrt{\frac{G_{cgc}}{r}} = \sqrt{\frac{127,809 \cdot 10^{15} \text{ m}^3/\text{s}^2}{14087488 \text{ m}}} = 95\,250 \text{ m/s}$$

Herewith the core makes one turn during 15.48m that is on 38.49 faster the Jupiter surface revolution period. Relation of revolution speed is  $12627.5 \text{ m/s} / 95250 \text{ m/s} = 0.1325$ . Thus the degree of transferred speed equals to  $\Theta = 5.1$ .

Jupiter gravitation density per  $1\text{m}^2$  is derived by CGC divided by area of section of the inner as follows:

$$Y = \frac{G_c}{\pi r^2 g} = \frac{127,809 \cdot 10^{15} \text{ m}^3 \text{ s}^2}{3,14 \cdot 14087488 \text{ m}^2 \cdot 24,737 \text{ m/s}^2} = 8.29.$$

For Mars it equals to

$$r = \varphi \cdot R = 0.1960 \cdot 3335000 \text{ m} = 653\,660 \text{ m}.$$

The core revolution speed is

$$V = \sqrt{\frac{G_{cgc}}{r}} = \sqrt{\frac{42,831 \cdot 10^{12} \text{ m}^3/\text{s}^2}{653660 \text{ m}}} = 8095 \text{ m/s}$$

while, the core makes one turn during 8.45m that is on 174.67 faster that the Mars surface revolution period. Relation of revolution speed is  $236.27 \text{ m/s} / 8095 \text{ m/s} = 0.0292$ . Therefore degree of the transferred speed is  $\Theta = 5.1$ .

Mars gravitation density per  $1\text{m}^2$  shall be defined by CGC divided by area of section of the inner:

$$Y = \frac{G_c}{\pi r^2 g} = \frac{42,831 \cdot 10^{12} \text{ m}^3 \text{ s}^2}{3,14 \cdot 653660^2 \text{ m} \cdot 3,851 \text{ m/s}^2} = 8.29.$$

Thus  $Y = 8.29$ . It means that *coefficient of the gravitation flow density per one square meter in thermonuclear synthesis of the inner is always and everywhere is the same.*

With given CGC free-fall acceleration is calculated  $= \frac{G_c}{R^2}$  on the surface of planets and using the coefficient is it possible to define radius of the inner of planets by the formula (9):

$$r = \sqrt{\frac{c}{\pi \cdot Y \cdot g}} = \sqrt{\frac{G_c}{3,14 \cdot 8,29 \cdot g}} = \sqrt{\frac{G_c}{26,03 \cdot g}} \quad (11)$$

It is east to calculation gravitation constant of planets by the derived radius of the core and gravitation flow density as below:

$$G_c = Y g S = Y g (\pi r^2) \quad (12)$$

where  $S = \pi r^2$  is the area of section of the planet along equator.

Observations have shown that periodically the Earth revolution speed is changed. On February 25, 1956 the Earth speed suddenly changed after exclusively strong sun outburst. As well from June to September the Earth revolves faster than at an average annum whilst during the rest period slower. Such events envisage that the planet revolution speed depends on its magnetic field disturbances.

Thus, *gravitation is the main factor in planets' spin around own axis occurred under the influence of own magnetic field and directly depends on output of thermonuclear synthesis in the inner enabling the formation of planet gravitation flow.*

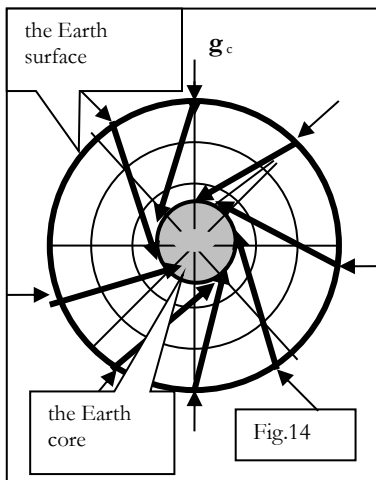
### 3.2. Deflection and a slope of the Earth gravitation

Verifying gravitation as the main factor it has to be defined to what extent satellites revolution on orbit conforms to rotation of a planet around own axis.

Analysis of the revolution parameters and planets turnaround in the solar system highlights a specific role of magnetic field in this process. As a result there is the only one assumption based on that gravitation is directed by magnetic field, so neutrino carrier is strictly oriented within the magnetic field of the planet. Providing that acceleration and planets' motion on their orbit are directly connected with gravitation oriented in the magnetic field to be verified how planets perform rotation around own axis.

As it has been assumed above, gravitation during penetration in more dense substances changes its route. As the Earth rock getting denser in deeper layers gravitation changes direction by parabolic curve. In

that case, gravitation flow oriented and directed by magnetic field while penetrating the planet body does not get into its center but slightly deflects towards side concentrating on a small spherical surface of a central core. Thus, all gravitation flow compressed the center core towards tangent vector. Such an effect has a revolving impact on the central section and then transfers to the planet in a whole; the rate of transfer depends on liquid characteristics of mantle.



Thus gravitation flow penetrating into the Earth, as Fig.14 shows, moves with a slope and shall reach the surface of inner with a deflection towards the revolution direction. Herewith, influence of the Earth magnetic field expands only on the neutrino that is directed to the central core. The other passing by the central core faces countering neutrino, thus does not have a directed impact. On the surface of the central core where thermonuclear synthesis of heavy elements occurs neutrino take part in the process and turns into other elementary particles. It means that such neutrino does not penetrate the Earth thoroughly.

Oriented gravitation flow rotates the Earth inner that in turn is transferred to the whole volume of the Earth. **Only gravitation is able to rotate the planet that has got significant and sufficient energy for this.**

Gravitation in the Earth rotation around own axis is expressed differently on its surface. Under the influence of gravitation atmosphere and hydrosphere are exposed to a certain pressure (Fig.12.) along declined lines towards the Earth revolution direction. For example, trade wind (continues wind in tropics of both hemispheres that blows towards equator.) Under influence of gravitation the wind is blowing from East to West; in the northern hemisphere right banks of rivers are eroded while the southern left; in a storm from South to North is deflects towards East etc.

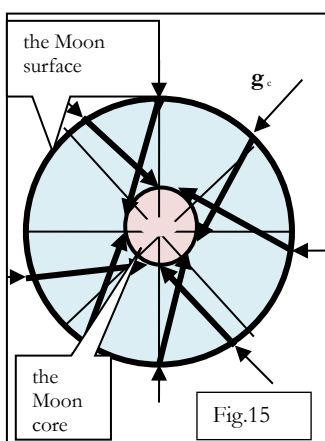
But the most obvious effect of gravitation with the eastward slope is demonstrated by physical Foucault lever. The Foucault experience is based on ability of free lever to remain unchanged in space of gravity. As the plane of the lever motion cannot change its direction randomly it has to be acknowledged that the lever motion plane is influenced by gravitation having the eastward slope. If the lever to fix on the Earth equator and orient its motion plane on the equator plane the deflection plane hereof will be unchanged. If the lever fixed on equator will start to change planes finally it will stay in the plane along the equator line.

Second consequence of gravitation inclining impact is deflection of falling bodies from the tower towards south-east. This experiment is based on that the free-fall body is exposed merely to gravitation having slope towards the Earth revolution direction. Therefore before to fall down on the Earth the body will move by a curve and will fall down on the surface not at the foundation of the tower but slightly far from it towards the Earth revolution direction to south-east from the foundation (Chapter 1, Fig 2 shows the experiment.)

One more consequence of eastward gravitation inclining impact is that aircrafts that fly from east to west spend more time than in fly back [20] as in the first case gravitation restrains them and in the latter pushes.

### 3.3. Influence of magnetic field on rotation of planets around own axis

Taking into account synchronized rotation of Phobos and Diemos Mars moons about own axis leading looking on Mars with the same unchanged side lets guess that the moons do not able to spin around own axis.



The moons look on Mars by the same sides as Mars gravitation seeming them stick in a stable manner and influences on them only linearly moving on orbit.

Similarly the Moon and Mercury act with relation to the Sun. Analysis of observed scientific data with regard to the said objects has defined that they do not have own magnetic field or just such field is very weak.

If a planet does not have own magnetic field so it does not able to spin around own axis irrespectively how strong the gravitation flow. In this case gravitation flow randomly penetrates (Fig 15.) towards the center of the planet and creates nothing but gravitation viz. the pressure and be no means can have a rotary impact.

To confirm the rightness of the assumptions shall compare gravitation parameters of the sad objects.

It has been determined that free-fall acceleration on the Moon surface is six times less than the Earth's one and equals to  $g = 1.6348\text{m/s}^2$ . Therefore with the aid of formula (3) the Moon gravitation constant is derived:

$$\mathbf{G}_{\text{cgc}} = \mathbf{g} \cdot \mathbf{R}^2 = 1.6348\text{m/s}^2 \cdot 1738000\text{m}^2 = 4.938 \cdot 10^{12} \text{ m}^3/\text{s}^2,$$

The Moon core radius is  $\mathbf{r} = \varphi \cdot \mathbf{R} = 0.1960 \cdot 1738000\text{m} = 340648\text{m}$ .

Potential core speed is

$$\mathbf{V} = \sqrt{\frac{\mathbf{G}_{\text{cgc}}}{\mathbf{R}}} = \sqrt{\frac{4,938 \cdot 10^{12} \text{ m}^3/\text{s}^2}{340648\text{m}}} = \mathbf{3807\text{m/s}}, \quad (13)$$

wherein the Moon has to pass one circle during 562s or 9.36min. This will be in 4200times faster to the Sun surface revolution speed if to consider that the Moon makes one spin about own axis per month.

Differences in revolution speed around the inner core and the surface revolution speed in the Earth are of 196.54rounds, Mars 174.67rounds and Jupiter 38.49rounds. Taking into account the differences in free-fall acceleration, radius of the planets and correlation of surface and inners speed as well as the period of inner revolution it is feasible to assume that correlation of the Moon revolution rates should not be more than 300.

Big difference in the Moon revolution rates comprising 4200rounds has shown that there is an unknown restraining in transfer of revolution speed from its inner to the surface and that is in general unrealistic. The only correct explanation can be given by that its inner does not revolve. The situation is found on Mercury although the Sun proximity, having strong gravitation, causes big sudden changes in Mercury magnetic field.

The Moon magnetic field is miserable, almost there is no any. Therefore moon gravitation penetrates into the body randomly, i.e. undirected (Fig.15 shows.) Therefore it cannot rotate the planet around own axis as well satellites on orbit in time loose speed and fall down on it. No centrifugal force is countering the Moon gravitation (the Earth, for instance, faces centrifugal force of revolution). Therefore the Moon rock is compressed to maximum and stays in gravitation-tense and resonant behavior while the substance is not so dense.

The sustained seismic sound observed during artificial moonquake [21] is the resonance effect of gravitationally compressed rock as the Moon does not spin around own axis. Samples of the Moon rock with the Earth were compared. It has been found that they do correlate in different levels of gravitation pressure. For example, in 70th soviet space stations had delivered several hundredth gram of the moon soil. The substance was examined separately by several research centers of the country to fulfill independent analysis. A small sample acquired from ultra-deep well examined Kola Research Center. Scientists had found out that the moon soil was identical to Kola's one acquired locally from 3km well. It had been supposed that the Moon got-off the Kola Peninsula approximately 1.5bln years ago, same age of diabase. [22]

State and properties of the Moon soil differ under the Moon and the Earth conditions. American craftsmen Charley Duck from Apollo-16 and Jack Schmidt from Apollo-17 who visited the Moon stated that the Moon dust brought into the spacecraft on the exposure suit smelled of gunpowder. But in NASA laboratory the Moon soil did smell of anything. Probably the reason for such property of the Moon soil is in difference of gravitation conditions. Gravitation differs in six times, thus properties of the same rock differ under different conditions similar to human scenes.

Presence or absence of magnetic field is connected with internal structure. All planets of the Earth group have got own magnetic field. The strongest magnetic fields have got giant planets and the Earth. Venus and the Earth are of similar sizes, average density and internal structure but the Earth as opposed to Venus has got quite strong magnetic field (magnetic moment of Venus does not exceed 5-10 % of magnetic field of the Earth.) One of the modern theory guesses that tension of dipole magnetic field depends on the procession of polar axis and angular revolution speed. Exactly these parameters of Venus are negligible. But measurements has shown that the tension is even less than the theory forecasts. Modern assumptions with regard to such a weak magnetic field are based on that there are no convection flows in the iron core of Venus. [23]

### 3.4. Influence of magnetic field on gravitation

In constantly magnetic body neutrino flying towards each other and penetrating in different directions coming into magnetic field strictly oriented. Neutrino passes through the magnet straightly parallel. Towards the axis of magnetic field parallel neutrino flows are increased concentrating around the axial line. In non-magnetic body neutrino comes almost with unchanged direction.

Direction of neutrino motion is changed in the continuous magnet and forms full deflection on the width of magnet in relative planes of the magnetic field. However, ultimately the impact of countering neutrino flows on the continuous magnet is equilibrated ( $-\nu + \nu = 0$ ) as quantity and direction of neutrino coming to the surface of the magnet ( $+\nu$ ) corresponds to quantity and direction of neutrino coming through the magnet ( $-\nu$ ) i.e. ( $\nu = \nu$ ).

Gravitation and pushing off magnets impacts are closely connected with neutrino flow interaction. Experimentally it has been defined that in vertical and horizontal planes gravitation force of magnets significantly varies. Without interference of neutrino flows this experiment cannot be explained.[16]

This experiment also envisages that neutrino flow coming from the Earth core is slightly constrained due what the Earth surface creates gravitation. However, the main argumentum for the findings of the experiment is that the direction of neutrino flow is strongly affected by magnetic field.[16]

All neutrino flows are changed with parallel deflection in magnet planes. Consequently any neutrino flow is changed only inside the continuous magnetic body. Outside the magnet neutrino flows remain even distribution as in surrounding space. Therefore magnetic field of a single magnet is not able to create around itself the effect of gravitation and pushing. Such effects shall require another magnet or another object that creates magnetic field. Continuous magnetic body plays the same role as an optical prism that deflects the flow of light and facilitates neutrino flow to change its direction. Such an effect in the neutrino behavior is one of the most vital features of gravitation.[16]

## IV. Gravitation main features

### 4.1. Neutrino interaction with a body

Generally gravitation possesses unique properties that are difficult to explain by existing laws of physics. One of such properties is interaction of gravitation with the atom of the body that essentially is the main nature of gravitation impact.

Neutrino is coming through any body either gamma or beta rays but with absolute penetrating ability.

***Gravitation influence is equal to bodies of different weight which is possibly explained by a specific mechanism of gravitation to interact with atoms of bodies.***

However, general impact of gravitation on bodies of different weight is characterized proportionally to their weight.

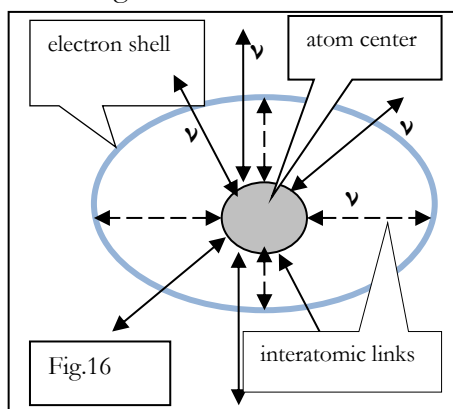


Fig. 16 schematically shows how neutrino interacts with the body at the atomic level. Interaction and transfer of neutrino kinetic energy happen directly in the contact with the body atom and due to intratomic links it is brought to the electron shell and then spreading by the whole body.

When gravitation strongly presses on the atom center towards the electric shell it influences on electron shell through interatomic links. The links are also based on neutrino forming in interatomic space deflection between electron and the atom center.

In general interatomic links are considered as control mechanism in transfer of gravitation to the body. Finally, gravitation transfers its impact energy directly to each atom center of the bodies independently on dimensions, quantity and atomic mass hereof. Electrons encountering with the gravitation carrier change direction of their motion although remaining on their orbit. At that all atoms in one body independently on quantity and dimensions hereof are exposed to the equal impact of gravitation and free-fall acceleration. Their total impact depends on the body weight with equal free-fall acceleration. Depending on the impact manner i.e. the force and time of gravitation influence electron shell can take oval shape.

Free acceleration of each body towards the Earth depends from neutrino quantity that is coming thoroughly the bodies' atom center, i.e. from neutrino flow density. Only the density defines how strong would be the impact on body. It means that each level of the flow density equally influence on all atoms independently on the weight of their atom center. If the density increases all atoms of different elements of complex body are exposed to equally increasing impact.



State of interatomic forces formed by interaction with neutrino flows reflects external properties of atom and the body in a whole. It facilitates the fusion and decomposition of complex atoms, isotope activity and atomic radioactivity as well as quality change of electromagnetic rays. Radioactive fission is a result of decreased gravitation impact that leads to separation and fission of core nucleons of heavy elements. All elements acquired from the deepest layers of the Earth are able to decompose on simple elements.

#### 4.2. Degree of gravitation density influence on bodies and its range

Degree of gravitation density influence (DGDI) is a feature of gravitation to impact by kinetic energy on the body. It depends on the body proximity to the gravitating body and is expressed by a number of inclined gravitation flows. Due to gravitation density bodies obtain free-fall acceleration  $\mathbf{g}$ . Free-fall acceleration is a consequence of gravitation impact on free body that obtains uniformly accelerated motion on gravitation direction.

Herewith, drawing closer to the Earth center DGDI of the Earth proportionally is increasing and accelerates free-fall speed of bodies. Free-fall acceleration is applied to bodies freely falling on the surface of the Earth. DGDI is applied to all space objects and body independently on their weight and dimensions including those that remain equilibrium state on orbit. That is why DGDI is more expanded and extended than free-fall acceleration.

To simplify the expression of DGDI it is marked with the letter  $\mathbf{g}$ .

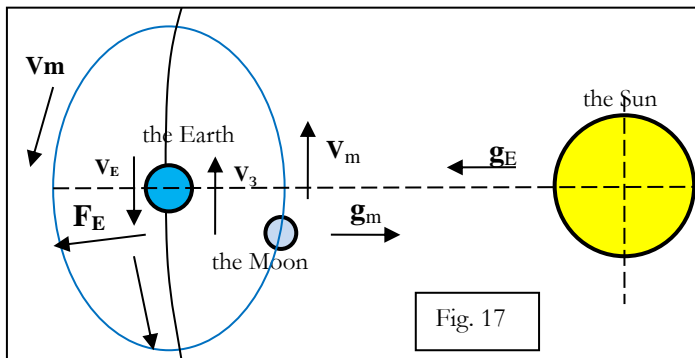
On the Earth surface and in open space DGDI is defined by the following relation:

$$\mathbf{g} = \frac{\mathbf{G}}{\mathbf{R}^2}$$

where  $\mathbf{G}$  is the Earth gravitation constant,  $\mathbf{R}$  is the distance from attracted object to the center of gravitation,  $\mathbf{g}$  is the degree of gravitation density influence.

The Sun gravitation influences on the Earth surface differently, thus the Earth rotates around own axis with a definite speed (Fig.17.) During the daytime the surface of the Earth is rotating and moving with a speed of  $\mathbf{V}_E$  contrary the direction of the Earth orbit and at night towards the direction of the Earth orbit.

Such relative change of motion speed of the lighted Earth surface in daytime decreases total free-fall acceleration on the Earth surface by  $\mathbf{g}_s = 0.005898\text{m/s}^2$  and at night increases by the same value.



Consequently, the Earth surface at night is exposed to the total impact of the Earth and the Sun gravitation flow, while centrifugal force  $\mathbf{a}_E$  in relation to the Sun is totally increased.

During the daytime gravitation influence on the Earth surface is decreased as contradicts with the Sun gravitation. With that centrifugal force is decreased in relation to the Sun leading to the Earth surface raising.

The said continuous periodic disturbance of the Earth surface during daytime and at night releases tension of the Earth subsurface. Consequently seismic events are eliminated from of the surface whilst the Earth like a living organism occasionally breathes and pulsates. Such disturbance of the Earth surface is reflected in all biochemical and physiological processes hereof including climatic.

Similarly the degree of own gravitation density of the visible and unseen Moon surface varies due to the Earth gravitation within the limits from 1.63214 to 1.63746 $\text{m/s}^2$  i.e. by 0.00532 $\text{m/s}^2$  or 0.16% of the Moon gravitation density influence on its own surface. However, absence of centrifugal force on the Moon surface is expressed in a changed shape of the Moon and its DGDI varies:

$$\mathbf{g} = 1.6348\text{m/s}^2 \pm 0.00266\text{m/s}^2$$

The Moon gravitation also affects the surface gravity of the Earth.

$\mathbf{g}_E \pm \mathbf{g}_M = 9.81 \text{ m/s}^2 \pm 0.00003349\text{m/s}^2 = 9.80996651$  and  $9.81003349$  viz. 0.00006698 or 0.0000068% of DGDI of the Earth on its surface. By comparison of the Moon DGDI with the Earth DGDI it is found that

$$\mathbf{g}_E / \mathbf{g}_M = 0.0027\text{m/s}^2 / \mathbf{g}_M = 0.00003349\text{m/s}^2 = 80.6 \text{ less.}$$

Insignificant fluctuation of the Moon gravitation does not initiate catastrophic affect on the Earth

surface. At the same time it is well-known that the Moon gravitation influences on the Earth surface and it is expressed by rising and falling of water in seas and oceans up to ten meters depending on water depth and the slope of gravitation flow. The water rising does not occur in the whole surface of the Earth but only in the area where it is shadowing from the central section of the Moon (white line shown by Fig.5 in Chapter 1 and tide bulge by Fig.9.) Exactly within this area due to decrease of DGDI the Earth centrifugal force compresses rock, water and air. Determining the level of rising and the depth at the location of raising on equator it is feasible to verify the manner of the Moon gravitation influence accompanied by accurate values increased.

Difference in 80.6 between the Earth and the Moon gravitation strongly affects the satellite and is reflected in the shape of the Moon. At the time of full lightening when the Earth and the Sun gravitation together influence on the Moon it looks like a pear. At that time more moon areas can be seen on the surface which is almost three/fifth of the Moon sphere.

On the opposite side of the Moon there is a giant excavation dia 2500km (two/third of the Moon diameter) and 12km deep [25] which has been formed due absence of the Earth gravitation pressure on the visible side of the Moon (Fig. 5, 9.) The diameter of the hole is exactly equals to the Earth inner diameter. It is connected with the long distance between the Earth and the Moon and it facilitates almost parallel penetration of the Earth gravitation flows to the central core. Assuming that the Moon is covered by ocean or there is atmosphere there possibly all water and air will accumulate on its visible side and then the Earth shall pump them out.

Influence of the Sun gravitation on the Earth differs from the influence of the Earth gravitation on the Moon. The Earth spins around axis and revolves around the Sun, therefore centrifugal force of our planet equilibrates the Sun gravitation influence that is why no rising and falls connected with the Sun gravitation are observed (Fig.17shows.)

Noticeably DGDI changes during eclipse of the Moon. As it is known the eclipse occurs when the Earth is positioning on the same line with the Sun and the Moon. In such location the Moon is covered by the Earth not only shadowing on it but shielding the Sun gravitation flow. At that moment at the daytime side of the Earth gravitation level will be slightly decreased and on the night side of the Earth gravitation will disappear fully during eclipse of the Moon that equals to  $33.49 \cdot 10^{-6} \text{ m/s}^2$ . On the visible dark side of the Moon DGDI is decreasing to  $26.6 \cdot 10^{-4} \text{ m/s}^2$ . Significant difference in 80.6times of such fluctuations strongly influence on the relief of the Moon.

### 4.3. Gravitation spreading rate

Physics find it considerably complicated to explain gravitation spreading rate for interacting bodies. In accordance with Newton's law the rate is unlimitedly high and disturbance is transferred immediately. This is directly derived from the law viz. formula is static there is no delay in it.

P.S.Laplace highlighted this aspect. Analyzing centuries-old accelerations of the Moon he had concluded that the rate of spreading is limited but great being not less than in 50mln times higher than the wind velocity. The velocity of light by that time had been already well-known from O.K.Roemer observations (1676) and J.Bradley (1728). The last fact is sufficiently well confirmed by experience of the space mechanics that operates exclusively static formulae derived from Newton and Kepler laws. It implicitly means that gravitation rate of spreading significantly exceeds the velocity of light. [26]

It should be said that Laplace demonstrated that even at distance the Earth-the Moon (380 000km or 1.3s of the light spreading rate) gravitation delay shall not be ignored at all, as too big mistakes would be built up in calculations of the Moon conditions. What after that has to be said with regard to distance between other planets?!

General theory of relativity (GTR) differently concerned both first and the second points. Gravity under GRT is explained by "*space wrap*" caused by appearance of gravitation masses in it. Why space is wrapped if such masses contain in it and what is wrapping mechanism GTR does not explain. As per GTR gravitation rate of spreading equals to wind velocity which is fully contradicts Laplace's calculations. However data has never been recalculated by GTR followers and they did not advice to make further attempts.[27]

Behavior and some features of neutrino are strongly differing from photon. Possessing all-penetrating feature neutrino shows that its speed of spreading is higher than velocity of light. The only one "RED" in light spreading into the depth of the universe envisages that velocity of light is considerably less than gravitation speed. Cosmic space is the vacuum consisted of neutrino and acts as conductor of electromagnetic waves. One this vacuum feature and the fact show that gravitation waves shall be faster than light.

In February 1987 gravitation waves were registered by explosion of ultra-wave occurred at 168th light years from the Earth in the Large Magellanic Cloud. Comparison of the collected data demonstrated that neutrino events are faster optical registration by 6hours. Findings have testified that gravitation waves are very small but faster than electromagnetic waves.[4]

That fact is tempting the idea that nature of gravitation and electromagnetic waves possibly is represented solely by a carrier, i.e. neutrino, whilst having different spreading velocities.

#### 4.4. Vertical and inclined gravitation flows

It is known that DGDI is increased with proximity to the Earth. Same dependence is observed in other planets. What is the reason for such gravitation feature and how can be explained the mechanism of such influence?

As per the proposed theory of gravitation formation model neutrino flow is directed towards the surface of the central core of the Earth where it halts motion. However, central core of our planet is not high-risen and its dia. is 2500km. This is directly reflected in neutrino flows features.

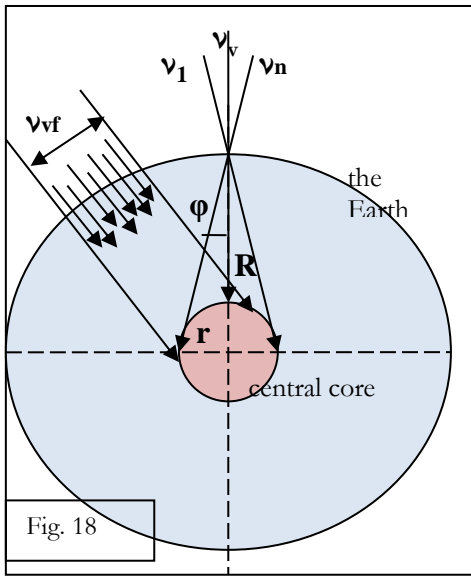


Fig. 18 shows that neutrino flows are directed towards the Earth surface  $\mathbf{v}_v$ ,  $\mathbf{v}_1$  and  $\mathbf{v}_n$  under a certain angles. They create bulk gravitation pressure on the Earth surface. Apart from the vertical flow  $\mathbf{v}_v$  two others  $\mathbf{v}_1$  and  $\mathbf{v}_n$  are inclined composing gravitation flows. These two flows are mutually equilibrated as directed under the same angles to the vertical flow and in general create a bulk pressure in the similar direction.

With remoteness from the central core angle of slope is reducing, i.e.  $\varphi \Rightarrow 0$  while the number of inclined composing flows of bulk gravitation is proportionally decreased. With remoteness from the Earth to any distance where not much inclined flows the level of vertical flow  $\mathbf{v}_{vf}$  remains unchanged. Power and the volume of the vertical flow  $\mathbf{v}_{vf}$  everywhere and constantly unchanged equal to each inclined neutrino flow. The vertical neutrino flows that directed in

parallel towards the Earth inner comprise main Earth gravitation flow and keep their density and degree of influence at any distance far from the Earth (Fig.18.)

Angle of inclined neutrino flows (Fig.13) can be approximately calculated by the following relation (10):

$$\varphi = r / R$$

where  $r$  is radius of inner,  $R$  is the Earth radius,  $\varphi$  is angle sine for inclined neutrino flows.

$$\varphi_1 = 1250000\text{m} / 6378000\text{m} = 0.196 = 11.3^\circ$$

But for the whole surface of inner it will comprise  $22.6^\circ$ .

On the Earth surface DGDI is  $9.81\text{m/s}^2$  which corresponds to  $22.6^\circ$  of inclined flows.

Given distance is on 1mln times longer than the Earth radius so angle of inclined neutrino flows will be around zero (0). As so neutrino flows are coming in parallel and only vertical flow will proceed.

In this case:

$$\varphi_2 = 1250 \cdot 10^3\text{m} / 1250 \cdot 10^9\text{m} = 0.000001 = 0.0000573^\circ$$

applying for all diameter of inner it will be of  $0.0001146^\circ$  or  $0.041\text{s}$ . With such angle number of inclined flows is of around zero (0). DGDI with such angle can be calculated as follows:

$$\frac{\mathbf{g}_E}{\varphi_1} = \frac{\mathbf{v}_{VF}}{\varphi_2} \quad \text{therefore}$$

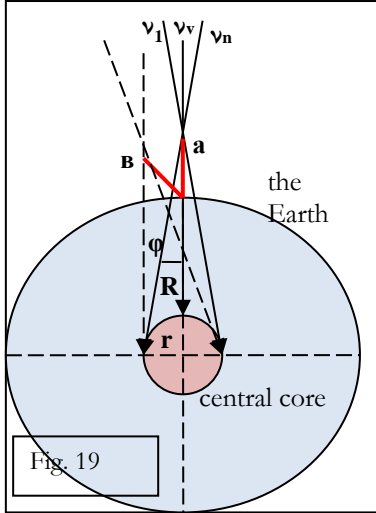
$$\mathbf{v}_{VF} = \frac{\mathbf{g}_E \varphi_2}{\varphi_1} = 9.81\text{m/s}^2 \cdot 0.0001146^\circ / 22.6^\circ = 0.0000497 \text{ m/s}^2 = 497 \cdot 10^{-7} \text{ m/s}^2$$

It appears that the degree of influence of vertical neutrino flows  $\mathbf{v}_{VF} = \mathbf{g}_{VF}$  is less than the influence on the Earth surface  $\mathbf{g}_E$  in 197 207 times almost in 200th times.

Therefore, DGDI of the Earth  $\mathbf{g}_{vf} = 497 \cdot 10^{-7} \text{ m/s}^2$  is the minimal constant and remains unchanged at all distances from the Earth.

*The said degree of neutrino vertical gravitation flow influence is constant in all spaces of the universe and common for gravitation of all planets and stars. At the same time in the space distant from planets and stars all vertical gravitation flows from a background sphere where the influence of each vertical flow is equilibrated by contrary passing vertical flow.*

Vertical gravitation flows of the Sun may create gravity that differs from the background sphere. However at exit from the solar system and removing far from it such gravity is weakened and gravitation of nearby galactic is increased. Anomaly of spacecrafts Pioneers can be explained by that units exit from the space of general gravitation of the solar system and entering the field of gravitation of other galactic.



On the Earth surface the body is positioned in equilibrium (a) and takes vertical state (Fig.19.) Under this condition vertical neutrino flows  $v_1$  and  $v_n$  are mutually equilibrated.

Just when the body (B) is inclining vertical neutrino flows  $v_1$  and  $v_n$  are disturbed. The body will wove out from the dominant equilibrium and will fall towards the direction of deflection. At far distance from the Earth where no inclined gravitation flows exist the body in any state will take likewise vertical state and it will never fall on the side.

The effect of inclined neutrino flows can be explained by the following not complicated examples. A reflector of the hand lamp facilitates the accumulation of right (vertical) light rays coming from the lamp and formation of numerous inclined rays that at certain distance are focusing in one point. Consequently a strengthened flow out of numerous inclined rays is formed, consisted of lots of inclined rays, and its intensiveness depends on area and quality of the reflector.

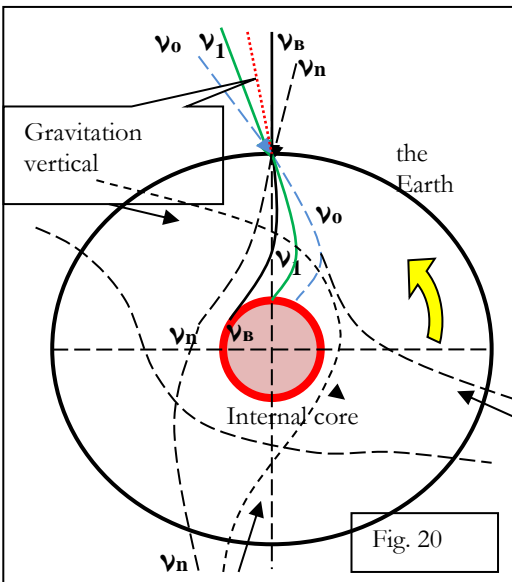
Basing on collected data it can be deemed that DGDI on the Earth surface  $g = 9.81 \text{ m/s}^2$  and it can be used as a unit value. With regard to the different distances it is used as a derivative unit of one. It means that DGDI is increased coming from the Earth surface to the central core and above the Earth surface it is decreased.

The all above said conclusively proves that **DGDI never depends on the weight of the body and merely refers to the dimension of the inner of planets and stars on the surface of which thermonuclear synthesis takes place. Body without cores do not possess own gravitation.**

Such fact can be visually observed by behavior of some cosmic bodies. Asteroids, for example, do not leave a visible trace but comets being closer to the Sun and large planets increase dimension of their tails. Probably, a comet contrary to an asteroid has got a core where thermonuclear synthesis occurs. Finally, the core, when outside gravitation impact is changed, intensifies fission of complicated elements up to light gases.

#### 4.5. Deflection of gravitation direction inside the Earth mantle

As has been concluded above gravitation penetrating into the Earth mantle changes its route towards the direction of a planet revolution.



Penetrating into dense atmosphere neutrino flow deflection is increasing. Fig.20 shows an example when neutrino flow  $v_n$  is passing by the inner and equilibrated by the flow that it meets. Therefore there is a need in influence of neutrino flow  $v_0$ . However this flow inside the mantle is equilibrated by the contrary one. There are neutrino flows  $v_n$  and  $v_1$  outstanding that impact on inner rotating it.

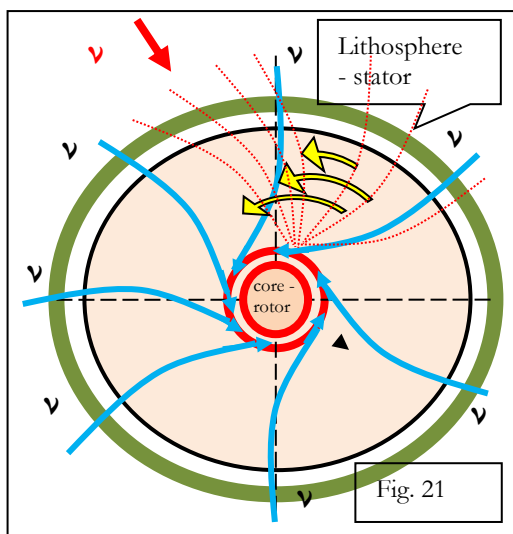
Herewith the flow  $v_n$  rotates mantle and  $v_1$  restrains revolution of the upper mantle layers. Therefore the Earth inner revolution speed is very high and liquid mantle revolution speed is slower and they are never synchronized. These revolution at different level in different speed form numerous dynamic flocs that transfer kinetic energy of the Earth core into electromagnetic. An effect magnet dynamo takes place producing current flow and magnetic field.

The said process envisages that gravitation vertical on the Earth equator slightly declines towards the direction of revolution to the planet center. Angle of deflection between  $\mathbf{v}_b$  and  $\mathbf{v}_1$  is known from formula 10 and equals to  $11.3^\circ$ . Gravitation vertical paths the center of the said directed flows and equals to  $5.65^\circ$ . Therefore *we are walking on the Earth slightly declined from the true vertical state and keep equilibrium due to gravitation and centrifugal force.*

#### 4.6. Magnetic dynamo and magnetic field occurrence

There are different assumptions with regard to the Earth magnetic field. The latest one concerns its occurrence due to current flows that are flowing in liquid metallic core. It has been calculated that magnetic dynamo takes place within the area located on 0.25-0.3 from the Earth radius. Same mechanism of generating can take place in different planets, i.e. in Jupiter and Saturn cores. Hydromagnetic or magnetic hydrodynamic (MHD) dynamo effect is the source for self-generating of magnetic field at certain flowing rate of conducting liquid.

First configuration that shows generating of magnetic field under specific flow rate of conducting liquid is dynamo studied by Ponamorenko (1978.) Following after several configurations have been studied that entertain such possibility (there are ABC-dynamo, Richardson's dynamo etc.)



However in realistic conditions dynamo has been produced in these configurations. First laboratory experiments that have confirmed the dynamo effect were performed in Institute of Physics, Latvia, Salaspils and Karlsruhe, Germany in 1999. Two more experiments have been performed in France (dynamo of von Karman) and in USA (inside the medium) but with controversy interpretation. Experiment that does not require a complex pumping system and too large facilities is under preparation in physical hydrodynamic laboratory of Institute of Mechanics of Rigid Mediums, Ural Branch, Russian Academy of Science.[28]

**Geodynamo** model in the said experiment is represented by a planet with a central rigid core, heat-producing with transuranium elements. The core rapidly revolves eastwards (Fig.21.) Due to its revolution the core, taking acting as a rotor, attracts the surrounding liquid mantle. The liquid mantle, as transmission medium, gradually transfers revolution to the whole planet body.

Herewith upper lithosphere and middle layers of mantle are restrained by gravitation (Fig. 21 shows dashed forceful line.) Therefore revolution speed in different layers of the planet is never equilibrated. Lithosphere is acting as dynamo stator. The core and lithosphere revolution occur at different speed and they interact through liquid mantle. Liquid mantle is exposed to gravitation compression and expansion at different depth derived by interatomic energy. Huge electrical flows in liquid mantle are created leading to formation of magnetic field.

Such model satisfies all requirements for existence and functioning of magnetic dynamo.

Central core of our planet dia. 2500km is rotating at great speed equaled to  $v = 17857$  m/s. At the same time the core during  $T = 439.6$ s or 7m 20s makes a single turn; it is on 196.54time faster than the Earth surface revolution period comprising 24hours. It is explained by that neutrino flows reach the core flying along a certain curve. The flows ( $v_0$ ) and ( $v_1$ ) (Fig.20) restrain revolution of upper mantle layers and the Earth surface motion is tempered.

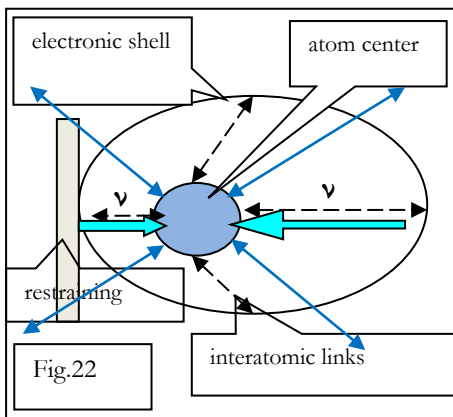
The model represents sufficiently the most features of the earth group planets magnetic field, i.e. the Earth and Mars, and explains absence of magnetic field in Venus. With regard to the Earth the model predicts field-assisted motion and inversion of magnet poles.

#### 4.7. Weight and inertness role in gravitation theory

Weight of a body depends on number of atoms in the core, i.e. atomic weight. Weight defines degree of gravitation influence viz. pressure of vertical neutrino flows produced on atomic core in motionless state.

Inertness weight is expressed as a result of misbalance of countering neutrino flows influence caused by disturbance. The body weight is formed by a number of neutrino flows keeping the body in equilibrium and inertness.

Fig.22 shows that in restraining or acceleration the body, more accurately its atom, equilibrated state of countering neutrino flows is disturbed by interatomic links. At the same time the atom center tries to keep equal influence of neutrino flows at the same level inside the atom and in space. However, interatomic forces, with rapidly restrained or disturbed electronic shell of the atom, tend to achieve equilibrium inside the atom and push the core to the atom center. Such interatomic process disturbs equilibrated state of neutrino influence on the core. Consequently, the core exposed to interatomic forces hardly overcoming the countering neutrino flow locates in the center of the atom. With more and heavier atoms in the body the stronger countering neutrino flows.



Intertness of each body is defined by influence of neutrino flows.

If atom is fully isolated from neutrino flow impact it does not take inertness state, i.e. a body is able to change direction of motion at any time and it stands vertical.

An impulse given to electronic shell of the atom is immediately brought to the core by interatomic links and the core constantly stays inside the center of the atom.

Under equilibrated influence of neutrino flows on the atom core on all sides it is safely fixed in the atom center and stands immovable. If the atom under the influence of outside forces starts to move sideward firstly electronic shell is dislocated. The core does not move as it is fixed by outside neutrino flows. When interatomic forces occurred between the core and electrons are excess impact of equilibrated neutrino flows on the core it start to move along with dislocation of electronic shell. Inertness of the body is expressed by the said principle.

***Weight and inertness of a body differ only in impact of neutrino flows. When vertical neutrino flow effects on the body and/or with an effect on the body of equilibrated, i.e. equally countering, neutrino flows; the weight is formed. Inertness occurs when the body inclines and equilibrated neutrino flows are disturbed.***

Calculations have shown that the rate of gravitation does not depend on dimensions and weight of gravitating body.

The Moon is on 80times lighter than the Earth although DGDI on the Moon surface is less than the Earth's only on 6times. It demonstrates that gravitation does not depend on the weight of gravitating body.

Galileo experimentally proven that bodies of a different weight are falling down with the same speed. As well it is determined that satellites of a different weight can revolve on the same near-earth orbit with the same speed. On the Moon orbit a satellite revolves with the same speed as the Moon. It is clear that the Moon and the satellite weigh is different and ignoring such discrepancy the bodies will revolve synchronically. All this envisages that gravitation influence does not refer to weight of bodies and highlights the specific gravitation influence on bodies.

A body under the influence of gravitation in the motionless and free-fall state expresses different features. In free-fall of the body interatomic forces equilibrate gravitation impact fixating the core in the center of the atom. Rapid restrain of such body will rapidly change the core location in the atom which is accompanied by energy production. In motionless state gravitation property of the mass is expressed in weight.

Difference in cosmic and final gravitation constant detects the rate of gravitation constant at which the weight of the body on the Earth surface is increased from 0 to maximal.

$$\mathbf{G} = \mathbf{G}_{CGC} - \mathbf{G}_{FGC} = 398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2 - 1.37 \cdot 10^{12} \text{ m}^3/\text{s}^2 = \mathbf{397.23 \cdot 10^{12} \text{ m}^3/\text{s}^2}$$

$$G/m = 397.23 \cdot 10^{12} \text{ m}^3/\text{s}^2 / 1000 \text{ kg} = \mathbf{0.39723 \cdot 10^{12} \text{ m}^3/\text{s}^2 \text{ kg}},$$

herewith, each such decrement of gravitation constant corresponds to decrement of weight per 1kg of the body of total mass1000kg.

At the same time, deeper to the central Earth core the weight of the body will increase:

$$1.37 \cdot 10^{12} \text{ m}^3/\text{s}^2 / 0.39723 \cdot 10^{12} \text{ m}^3/\text{s}^2 = 3.449$$

So closer to the Earth center the weight of the said mass will be 3449kg.

#### 4.8. Validity of planets gravitation constant

As per the third Kepler's law the distance between the Earth and the Sun equals to revolution period  $H^3 = T^2$  and cubic radius of revolution related to gravitation multiplied by the squared revolution period:

$$\theta = \frac{R^3}{G T^2} \quad (14)$$

The coefficient  $\theta$  for all planets is constant and corresponds to gravitation constant, it's positioning to revolution and rotation of satellites on orbit.

As for **Jupiter**:

$$\theta = \frac{R^3}{G T^2} = 71880000^3 \text{ m}^3 / (11.46 \cdot 10^{15} \text{ m}^3/\text{s}^2 \cdot 9.93^2 \text{ h}^2) = 0.02533$$

where  $R$  is Jupiter radius,  $G$  final Jupiter gravitation,  $T$  – period of Jupiter spins around its axis.

The coefficient  $\theta$  for the Io moon revolving on orbit.

$$\theta = \frac{H^3}{G T^2} = 420000000^3 \text{ m} / (127.809 \cdot 10^{15} \text{ m}^3/\text{s}^2 \cdot 42^2 \text{ h}^2) = 0.02535$$

where  $H$  is the distance from Jupiter center to Io orbit,  $G$  is Jupiter gravitation constant,  $T$  revolution period of Io about own orbit.

As for the **Earth**:

$$\theta = \frac{R^3}{G T^2} = 6378000^3 \text{ m} / (1.37 \cdot 10^{12} \text{ m}^3/\text{s}^2 \cdot 24^2 \text{ h}^2) = 0.02537$$

where  $R$  is the Earth radius,  $G$  is final gravitation,  $T$  is the rotation period around own axis.

As for the **Moon** at revolution about own orbit:

$$\theta = \frac{H^3}{G T^2} = 384000000^3 \text{ m} / (398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2 \cdot 5563560038400 \text{ s}^2) = 0.02553$$

where  $H$  is the distance from the Earth center to the Moon orbit,  $G$  is the Earth gravitation constant,  $T$  is revolution of the Moon about its orbit.

Identically validation of gravitation constant correlation is check up for the Earth central core:

$$\theta = \frac{R^3}{G T^2} = 1250000^3 \text{ m} / (398.6 \cdot 10^{12} \text{ m}^3/\text{s}^2 \cdot 439.6^2 \text{ s}^2) = 1.953 \cdot 10^{18} \text{ m}^3 / 77.028 \cdot 10^{18} \text{ m}^3 = 0.02535$$

The derived average coefficient  $\theta = 0.02535$  is used to check up on gravitation constant of each celestial body that makes it to spin around its axis and satellites to revolve about orbit.

***Coefficient  $\theta = 0.02535$  is the ratio of volumetric gravitation constant to squared revolution period which is equalized to all celestial bodies with own gravitation and proves its validity in this gravitation theory***

$$\theta = \frac{R^3}{G T^2} = 0.02535 \quad (15)$$

Therefore calculate gravitation constant of celestial bodies having data on distance and revolution of satellites which is equal to ratio of volume to squared revolution period multiplied by coefficient 0.02535.

$$G = \frac{R^3}{\theta T^2} = \frac{R^3}{0.02535 T^2} \quad (16)$$

#### 4.9. Specific character of the solar gravitation

Calculations of gravitation influence on planets revolution about their orbit and their rotation around own axis have shown that central core of gravitating body, where thermonuclear synthesis occurs, is a basis of gravitation formation. Depending on dimension of the central core planets of the solar system and the Sun have specific characters reflected on their main characteristics.

Due to strong gravitation of the Sun all planets revolve about it on remote orbit. To hold planets on different orbits the Sun should have strong and stable gravitation that is easily determined by known formula. Revolution period of planet and distance to the Sun are known therefore the Sun gravitation constant is follows: (16):

$$G = \frac{R^3}{\theta T^2} = \frac{R^3}{0.02535 T^2} ,$$

gravitation constant is derived:

$$\begin{aligned}
\text{as for Mercury} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (580 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 7600167^2 \text{ s} = 133.25 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for Venus} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (1080 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 19394640^2 \text{ s} = 132.11 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for the Earth} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (1500 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 31536000^2 \text{ s} = 133.87 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for Mars} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (2280 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 59319216^2 \text{ s} = 132.87 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for Jupiter} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (7780 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 374016960^2 \text{ s} = 132.79 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for Saturn} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (14260 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 929050560^2 \text{ s} = 132.52 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for Uranium} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (28690 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 2649339360^2 \text{ s} = 132.72 \cdot 10^{18} \text{ m}^3/\text{s}^2; \\
\text{as for Neptune} \quad \mathbf{G} &= \frac{\mathbf{R}^3}{0.02535 \mathbf{T}^2} = (44960 \cdot 10^8 \text{ m})^3 / 0.02535 \cdot 5193979200^2 \text{ s} = 132.89 \cdot 10^{18} \text{ m}^3/\text{s}^2.
\end{aligned}$$

Average gravitation constant of the Sun is  $\mathbf{G} = 132.87 \cdot 10^{18} \text{ m}^3/\text{s}^2$  and it is the most powerful within the solar system. This fact proves by itself that the Sun has got strong magnetic field and huge central core.

With gravitation constant and having magnetic field the Sun shall get a central core and will revolve with a definite speed. To provide such a high gravitation constant the Sun shall have a core of enormous dimensions.

Data analysis carried out by SOHO shown that by the core the Sun spinning speed significantly exceeds the speed derived by its surface. [49][50]

The time of existence of separate spots is of several months it means separate groups of spots can be seen during several turns made by the Sun. Exactly this fact (motion of spots on the Sun disc) have given the occasion for proof that the Sun rotates and made possible to measure the Sun spinning period. Sidereal (in relation with stars) period of the Sun is 25.38 days (2 192 400s) on the equator and of around 33 days close to poles. With given parameters the Sun surface rotation speed on the equator equals to

$$V_{ss} = 2 \pi r / T_s = 4370880000 \text{ m} / 2192400 \text{ s} = 1993.65 \text{ m/s}.$$

Data collected by spacecraft Ulysses has shown that waves are produced deeply inside the Sun and enforce the Earth to tremble in unison as it is reported by European Space Agency (ESA.) Ulysses manufactured by NASA in association with ESA start off in 1990 to observe the Sun and Jupiter. The craft has detected the said changes in the Sun. Observatories have been constantly studied the data received. For ESA lots of earth systems show clear changes that frequently are considered to be an accidental noise. But indeed such trembling is produced by changes occurred in the Sun. Statistic analysis of a big amount of data has shown that such changes are met in geological structures as well as in magnetic field, atmosphere and even in voltage of transoceanic cable lines. In spite of this the changes in atmosphere are taking a form of sound waves that are not heard by a person. Often these waves are not exceeding 5000 microhertz, it is of around 18 vibrations per hour while the near threshold of reading is of 16 hertz. How the waves are transferred from the Sun to the Earth has not been defined yet. Researchers guess that gravitation field disturbance is caused in the depths of the Sun, transferred to magnetic field and that solar wind which flies away to the interplanetary space (those trembling has been detected by Ulysses.) Then magnetic field of solar wind interacts with the Earth magnetic field and its pulsing is transferred to the planet.[29]

Under this theory this event is explained by the following. Waves in the Sun subsurface are produced by the central core. It rotates with a tremendous speed and makes 18 turns per hour. The vibration takes place with each turn of the core wherein the  $T=200$ . The vibration leads to changes in solar DGDI. This probably creates similar vibrations in all other planets and satellites of the solar system.

Given that coefficient of total average density is known for cosmic gravitation  $\mathbf{Y} = \frac{\mathbf{R}^2}{\pi \mathbf{r}^2} = 8.29$  ref formula (9) diameter of the Sun core can be determined while its radius is 696000 km.

Therefore the Sun central core radius is

$$r = \sqrt{\frac{\mathbf{R}^2}{\mathbf{Y} \pi}} = \sqrt{\frac{696000000^2 \text{ m}}{8.29 \cdot 3.14}} = 136416577 \text{ m} \text{ or } 136 \text{ 416 km}.$$

In this case the Sun inner core of R 136 416 km shall revolve with a great speed equals to

$$V_c = \frac{C}{T} = \frac{2\pi R}{T} = \frac{2 \cdot 3.14 \cdot 696000 \text{ km}}{200 \text{ s}} = 21 \text{ 854 400 m/s}.$$



Applying such characteristics the Sun shall have to spin around its axis towards the planets revolution direction. However the Sun surface is liquid, boiling and by high-temperature and has got different core speed transfer rate.

$$\Theta = \frac{V_s}{V_c} \cdot \frac{T_s}{T_c} = \frac{1993.65 \text{ m/s}}{21854400 \text{ m/s}} \cdot \frac{2192400 \text{ s}}{200 \text{ s}} = \frac{4370880000}{4370880000} = 1.0$$

This coefficient shows that the core speed transfer rate to the Sun surface is totally different from the rate of the planets' transfer.

To calculate DGDI with the formula (4) slightly above the Sun surface as follows:

$$g = \frac{G}{R^2} = \frac{132,87 \cdot 10^{18} \text{ m}^3/\text{s}^2}{696000000^2 \text{ m}} = 274.29 \text{ m/s}^2$$

The Sun gravitation degree of influence  $g = 274.29 \text{ m/s}^2$  that exceeds the Earth gravitation in 28times.

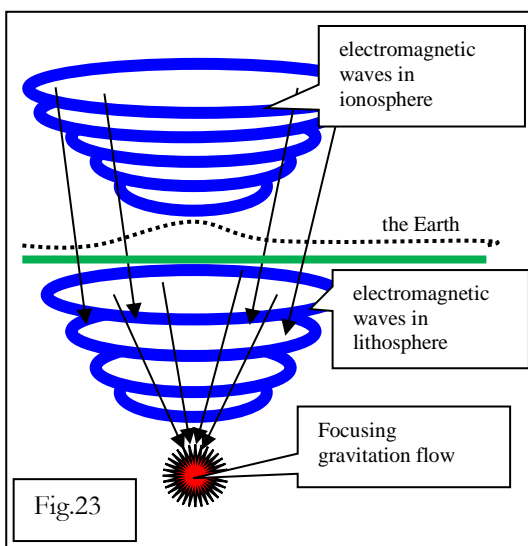
Compared with the earth gravity the Sun is of stormy type therefore a suggestion about presence of free hydrogen and helium inside the Sun is not so trustful. At the same time taking into account centrifugal force on the Sun surface no hesitation occurs.

Most probably the gases are formed as a result of multi-levels decays of heavy elements namely above the Sun surface formed at discharge of solar matter. The surface is high- temperature and covered by melted mass. Gravitation flows are mainly unsmooth therefore the upper layer is open to explosions. Continuous explosions lead to small and frequent discharges. These discharges are accelerating, transferring to weightless and free-fall state. In such state atoms of solar matter are exposed to thermonuclear synthesis and fission producing energy. Then the mass is coming back to the Sun surface. The Sun can radiate merely neutrino flows that carry different types of electromagnetic fluctuations.

## V. Nature of gravitation

### 5.1. Interrelation of magnetic and gravitation fields

Analysis of revolving parameters and their spin around axis in the solar system mainly highlights magnetic field activity in this process. The Earth has got magnetic field and spins around its axis, while the Moon has got very weak magnetic field and does not spin. Therefore there is the only one assumption which is based on that gravitation is directed by magnetic field and its carrier neutrino is strictly oriented within magnetic field of the planet.



As Fig.23 shows gravitation flows coming through electromagnetic waves in ionosphere and lithosphere are able to focus at a certain level.

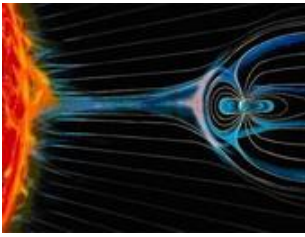
To determine some properties of magnetic field the author hereof has fulfilled a unique experiment with permanent magnets. The experiment is based on a simple logic said that if the Earth central core really shields neutrino flows with magnets will prove the presence of restriction of the flows by the Earth core.[16]

Permanent magnets are able to attract and push-off; and such ability in the third part of this theory is deemed as a force created under influence of neutrino incoming from vacuum. Magnetic field indeed does not possess any gravitating force. It

facilitates the compression and expansion of neutrino flows. The experiment has defined that neutrino within horizontal plane is gravitating and repulsing magnets on 12.56% intensive than in vertical plane.

Therefore gravitating and repulsive force are closely connected with interference of neutrino flows as in vertical and horizontal planes it is clearly different. It is not possible to perform the experiment with zero influence of neutrino flows. Neutrino flow incoming from the Earth core is restricted thus the Earth creates gravitation. In add, the experiment demonstrates that magnetic field is created by waves after neutrino flow. Magnetic field influences of neutrino flows thus changes their direction.[16]

There is a true statistics that earthquakes more frequently happen during magnetic storms. The probability is higher on 50% and that has been derived from estimations of the most prudent researchers. Geomagnetic storms caused by Sun bursts, it had been proven in 19century. Magnetic storms formed by sun bursts and seismic events produced on the Earth are directly connected.[30]

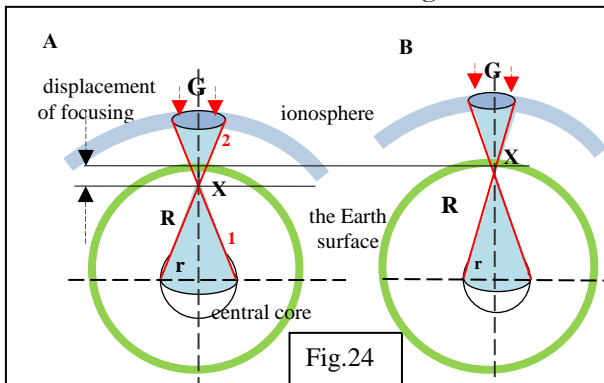


In the Earth magnetic field magnetic storms are produced and magnetic vortexes are formed in ionosphere coming down to the height of 70km above the Earth surface and again going up. Magnetic fields lead to deformation and cause movements within the Earth magnetic field. All these movements strongly affect the degree of Earth gravitation density.

### 5.2. Focusing of neutrino flows

As said above the Earth gravitation flow in general is spreading gradually. On the Earth surface it is expressed in constant gravitation value. However neutrino flow ( $v_E$ ) penetrating into atmo-, hydro- and lytho- sphere, under influence of magnetic field, changes its direction. This is focusing neutrino flows. Consequently abnormal zones are created in gravitating field of the Earth where gravitation density varies against its normal values.

Gravitation density is changed in abnormal zones with different heights of focusing neutrino flows. Dynamic of north-lights reflects the possibility of formation of such vortexes in ionosphere.

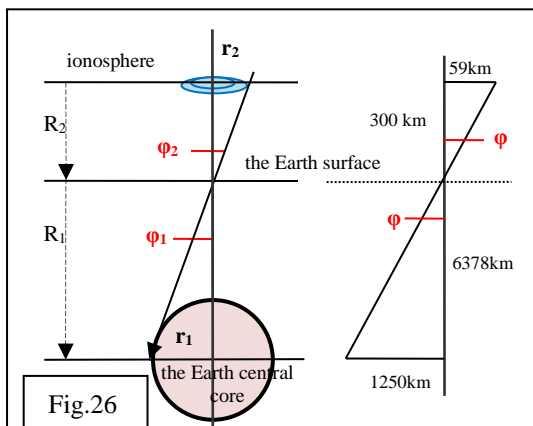


Calculation of focusing and spreading of gravitation flow can be done geometrically. Gravitation flow as itself being closer to the Earth center core is narrowing and compressed. The central core, dia. 2500km, facilities this processes. Neutrino being gravitation carrier at semispherical surface of our planet, dia. 12756km, is focused on the half of the central core surface.

At that the core surface is not high-risen and gravitation influence on each point of the Earth surface shall be determined taking into account that **gravitation expansion is built up by two reversed cones**. Fig.24 shows that ionosphere and inner form x-shape space of interrelations the lower base of which is laying on semispherical surface of the core (1) on relatively equal section. In the upper base of the cone (2) vortexes in ionosphere are formed and its parameters directly depend on area of occupied section. Upper cone under influence of magnetic storm in ionosphere can go down and displace the focused flows (Fig.24 A and B).

Changing interrelations of two reversed cones depends on the following:

- area of the upper base, i.e. parameters of magnetic vortex in ionosphere,
- height of upper base from the Earth surface.



From the data gravitation flow it is seen that the Earth surface gravitation flow has a shape of reversed cone.

$$\varphi = r / R$$

where  $r$  is radius of inner core,  $R$  is the Earth radius,  $\varphi$  sinus of angle of inclined flows.

$$\varphi_1 = 1250000 \text{ m} / 6378000 \text{ m} = 0.196 = 11^{\circ}18'$$

However for the whole surface of inner core it will be of  $22^{\circ}36'$ . On the Earth surface DGDI comprises  $9.81 \text{ m/s}^2$  which corresponds to  $22^{\circ}36'$  of inclined flows.

Therefore, gravitation flow in the space of the Earth surface up to ionosphere with the width of 300km is changed to  $\varphi_2 = 1250 \text{ 000m} / 6678 \text{ 000m} = 0,187 = 11^{\circ}12'$ .

Gravitation deflection angle in this space is  $\Delta\varphi = 0^{\circ}06'$  per 300km width, so its change can be ignored. Thus it can be considered that free-fall acceleration at this height will be almost the same ( $g = 9.6 \text{ m/s}^2$ )

In this case gravitation flow on the Earth surface influence on a body by focusing and has the shape of funnel cone with angle slope of  $\varphi = 22^{\circ}36'$  (Fig. 25 shows blue upper triangular.) Such gravitation density is normal standard condition.

Given that  $\varphi_1$  and  $\varphi_2$  are equal so relation of  $r_1/r_2$  and  $R_1/R_2$  is directly proportional and always change in a mutually dependent way (see Fig.26).

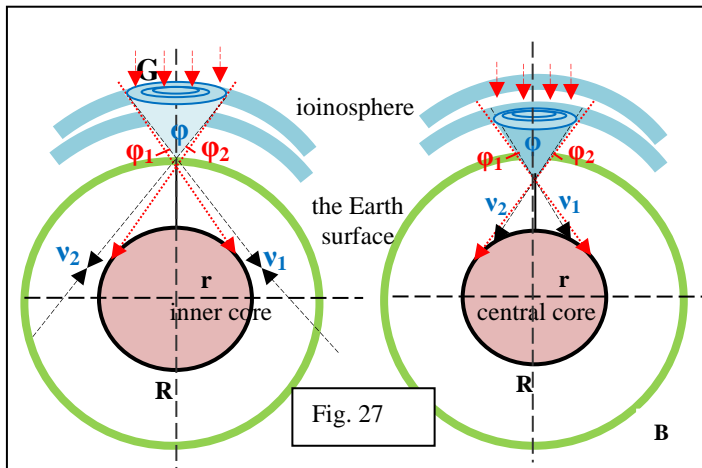
$$R_1 / R_2 = 6\,378\,000\text{m} / 300\,000\text{m} = 21.26$$

$$r_1 / r_2 = 1\,250\,000\text{m} / X\text{m}$$

wherein

$$r_2 = 1\,250\,000\text{m} / 21.26 = 58.795\text{km}.$$

These calculations show that magnetic vortexes in ionosphere are difficultly focusing but are liable for estimated determination.



slightly decreased (рис.27).

Central core radius  $r$  is 1 250km and of the earth one  $R$  is 6 378km. Gravitation deflection angles before and after penetrating the Earth surface are the equal. Magnetic vortexes are initiated in the upper layers of ionosphere at height of 300km from the Earth surface.

In the higher ionosphere layers (200-3000km) magnetic vortexes change crossing neutrino flow direction to  $\varphi_1$  and  $\varphi_2$ . Crossing vortexes neutrino flows are focused. After that ( $v_1$  and  $v_2$ ) neutrino flows do not set on the core surface and are equilibrated by countering neutrino flows.

On the Earth surface flow density degree is

Under influence of magnetic storm the vortex is coming down to the height of 70km (Fig. 27.) Focusing rate of gravitation flow is displaced beneath the Earth surface. The process is accompanied with significant changes occurred in atmosphere, lithosphere and mantle. Inside the mantle where point of focusing in positioned gravitation is getting more dense and compressed maximally. Over this point in lithosphere and atmosphere gravitation flow is less dense and more expanded followed by formation of abnormal gravitation zones.

### 5.3. Gravity laws

Gravity origin mechanism and gravity properties reviewed in the current analysis exhibit certain conformity of these processes. Firstly, any matter with is central core where fusion synthesis occurs may become a source of gravitation. Secondly, gravitation revolves the central core. Thirdly, the core revolving leads to formation of magnetic field.

All these processes are controlled by neutrino field. Neutrino flows create gravitation and magnetic field. The flows differ only in changeability.

The derived findings and proposed ideas may lead to the relevant conclusions and derive the following dependencies:

1. *Should neutrino flows equally act about the matter the latter is being kept in state of rest*  
( $F_v = F_1 = F_3 = F_n$ )
2. *Should one of the neutrino flow be over the other a force is created that pressing on the matter*  
( $+F_v = F_1 - F_3 + F_n$ )
3. *Should the greater neutrino flow arrive under the influence of magnetic field a directional force occurs and gravity flow is settled*

$$(G_v = +F_v \cdot M)$$

4. *The neutrino flow directed towards the matter having its central core where fusion reaction is arising constantly creates gravitation field about this matter*

$$(G = g \cdot R^2).$$

The said gravitation laws are deemed as fundamental implying that space bodies may have got own gravitation and rest balanced.

#### 5.4. Gravitation conception and characteristics

*Gravitation cannot be explained by known theories*

*R. Feynman*

This theory generalizes and analyses features and known properties of gravitation. Gravitation carrier is not scientifically defined yet and cannot be studied. Some gravitons' properties were defined empirically through comparison of such elementary particles as neutrino and photon. These properties and gravitation characteristics are represented below.

Based on the findings the following can be noted:

1). Gravitation is a directed flow of elementary particles, i.e. gravitation carrier neutrino, appear and disappear from thermonuclear synthesis. Neutrino expresses its gravitating feature only in the absence of countering flow. Directed gravitation flow without energy exchange represents an energy and penetrates any material and non-material matter transferring them a part of its kinetic energy. [Chapter I, Item 1.3.]

2). Neutrino is gravitation carrier interacts with material matters only atomically and brings its kinetic energy straight on electron and atom center. Doing this, it dislocated the atom center reflecting it on interatomic, structural and external atom behavior in space. Displaced atom center changes interatomic links. This is reflected on such atom features as inertness, heat, electromagnetic radiation etc. [Chapter IV, Item 4.1. and 4.6.]

3). Gravitation carrier is strictly oriented neutrino within magnetic field that changes its direction in abnormal zones of magnetic field. Abnormal zone is created at points of interrelation of independent magnetic fields. Herewith gravitation flow can be accumulated in a batch or dissipate. Magnetic field is created by waving motion of neutrino and plays key role in orienting of gravitation carrier and subatomic particles. Abnormal zones in magnetic field create similar abnormal events in the flow of elementary particles. Abnormal zones between two permanent magnets facilitate gravitating and repulsing effects due to neutrino [Chapter III, Item 3.4.]

4). Penetrating into the material matter gravitation creates a physical force for motion, rotation and compression and as well proportionally influence on chemical, physical and biological processes run in the matter. Penetrating into the non-material matter gravitation changes its behavior and properties. [Chapter IV Items 4.2., 4.3. and 4.4.]

5). Penetrating material and non-material matters neutrino likewise the light is exposed to restraining thus changes its direction. After all, neutrino recovers its speed and returns initial motion. In magnetic field it is oriented therefore can experience directive impact on material and non-material matters [Chapter II, Items 2.1 and 2.2.]

6). Neutrino origin can be brought by any stars and planets with thermonuclear synthesis in the core. The neutrino flow just originated from the source does not possess interaction property in the distance of tens parsecs [Chapter VI, Item 5.2]

7). Neutrino flow is directed to the surface of the Earth inner core; it is named earth gravitation, The flow focuses on the Earth central core. Degree of the flow density increases closer to the focused point. The Earth is not deemed as a source of earth gravitation but only facilitates focusing of neutrino came from outside to its center. [Chapter I, Item 1.3.]

8). Gravitation interrelation between bodies is expressed in their gravitating, revolution and rotation around own axis, compression and releasing of gas, liquid and solid surface. [Chapter II and III]

9). Gravitation creates a field around gravitating body that influences along tangent and directed towards revolution direction and center of gravitating body. Gravitation influence among stars and planets is expressed in spiral-like revolution of bodies and their falling towards direction of revolving of gravitating body [Chapter II Item 2.3. and Chapter IV.]

Gravitating and rotating properties are expressed in stars, planets and space bodies had in their center a zone of thermonuclear synthesis which plays a role of a shield on the way of countering neutrino flow but only when bodies have got own magnetic field.

10). Gravitation is characterized by DGDI (degree of gravitation density influence) of the flow and dimensions of shielding central core of a planet. Gravitation rate does not depend on weight and volume of a gravitating body and varies with distance to the center of its focusing. Bodies of different weight and density and same DGDI move with equal free-fall acceleration. DGDI is gravitation ability to impact on material and non-material matters. DGDI gives to the body free-fall acceleration  $g$ . Free-fall acceleration characterizes motion of body under the influence of gravitation [Chapter IV, Item 4.2.]

11). All gravitation properties are openly expressed in free-falling of a body, i.e. during increasing impact of degree of gravitation density on the body. In free-fall the body is moved only with acceleration. In free-fall gravitation influences on the body changing its direction and the rate of change of such influence depends on the matter density. [Chapter IV]

12). Total DGDI on the Earth surface is represented by vertical and inclined neutrino flows. Inclined neutrino flows directed under a certain angle towards the inner core of the Earth are mutually equilibrated and form general vertical direction of influence. DGDI depends on the number of inclined flows and increases being closer to the Earth core. It remains constantly unchanged and equals to each inclined neutrino flow [Chapter IV, Item 4.4]

The Earth gravity equilibrated with centrifugal force keeps the Moon and satellites on near-earth orbit that differ only in speed and radius of revolution around the Earth.

13). Gravitation constant is a volumetric rate of gravitation flow in time created among stars and planets being exclusive to each of the bodies. It is expressed by three-dimensional plane and changing in time taken place in past, present and future in six-dimensional plane. Squared time expresses the volume of constant motion of a body. Cosmic gravitation constant is indicative for each gravitating body and depends on dimension of central core where thermonuclear synthesis takes place. Physical and chemical properties of material medium are directly connected with gravitation constant value. [Chapter I, Item 1.5]

14). Each space body contained central core and thermonuclear synthesis has got its own gravitation constant. Gravitation constant depends merely from dimension of central core that facilitates absorbing, collection and shielding of gravitation flow coming from outside and tends to continue decrement. Gravitation constant does not depend from weight and dimension of gravitating body [Chapter I, Item 1.3.]

15). Changes of gravitation constant components are directly proportional, i.e. with more expanding space time runs faster and if space getting smaller time is slowing. Such proportional variances change space and time features of the matter and are reflected in its properties. Herewith, time impacts on quality of electromagnetic waves; space changes properties and structure of the matter. Together space and time impact on biochemical properties of the matter. Gravitation constant itself is exposed to such variations in material world. [Chapter I, Item 1.6.]

## Conclusion

*Science is international and no one shall be forbidden to work where desired and study subjects of own interest.*

*V.Vernadskii*

The theory represented herein gives new knowledge about gravitation basic studies that differs from classical understanding and interprets differently lots of facts. Indeed most events and processes occurred in nature being a subject to complicated meanings is making clearer by this theory. It is certainly evident that gravitation is the main energy base of Universe and other forces are hereby derived.

***Neutrino flows encountered atom are originating neutrino waves. Neutrino wave interacting with subatomic particles discharge electromagnetic and light waves, form weight, interneer and centrifugal force to the body.***

It will be right to assume that neutrino under influence of magnetic field penetrating into solid matters correspondently changes its direction of influence. Exactly this feature of gravitation changes our understanding about it. In this regard neutrino acts like photon.

This theory represents sentences, definitions and formulae that do not cross link with references. Such meanings are not met anywhere and compose the main context of the new work. In general, the new theory main point is that **neutrino, gravitation carrier, changes its direction coherently while penetrating into solid matter** this interpretation is used only in this paper and deemed as a subject of priority.

Einstein said that any theory shall satisfy two criteria, i.e. *external justification* (its conformance with experiment) and *internal perfection*. The latter criteria shown in this paper with advantages as it fits with modern physical understanding of the world as contain same meanings and techniques that have proven their validity in other fundamental related studies.

With astrophysics and space facilities development has become more evident the universe does not have any space without action force. Any matter in cosmic space is exposed to gravitation from bigger bodies. Therefore bodies in space are not immovable and all of them without exclusion are exposed to gravitation from other space bodies and constantly do move.

Facts and observations of planets in solar system have given correct interpretation and proven validity of this work. The Moon had reached speed on orbit at a time is not able to move with constant speed endlessly. To keep its speed it is constantly getting a pushing energy from the earth gravitation.

The defined facts of gravitation influence of the Earth on the Moon and vice versa, its criteria and consequences have been found more convenient than any arguments proven the correctness of assumptions represented herein.

Such facts that prove deflection of gravitation direction can be expressed by the following:

- ride bulge in oceans of the Earth formed by the Moon gravitation ahead of its projection;
- the hole on the back side of the Moon dia. 2500km and 12km deep;
- pear-shaped form of the Moon.

Analogue facts and marks of gravitation interaction in favor of this paper are found on the Earth surface as well:

- declining of the body towards the revolution direction and the Earth equator in free-fall (from the tower);
- keeping same plane of the Foucault pendulum (lever) on the Earth equator;
- decrement of the aircraft speed during the flight from east to west;
- fluctuation to the south-east of a water drop in free-fall along vertical line;
- deflection of neutrino flows in abnormal zone of magnetic field of permanent magnets;
- restrained neutrino flows by the Earth core.

Other facts of gravitation influence on planets location and their orbits have been found out:

- ring formation around giant planets and the presence of equatorial line on the surface of some planets;
- location of ecliptic of the planet's orbit within one plane around the Sun;
- satellites revolving about planets including the moons strictly towards one side on its rotation;
- some planets do not spin around own axis
- spiral-like fogginess within one plane around remote galactic;
- relative absence of craters on the planets' surface and satellites that spin around own axis.

These facts steadily prove correctness of the said theory of gravitation that changes its direction thus causing the above listed gravitation features.

Conclusions and facts represented in this paper require further study and research to be experimentally proven and verified in some aspects. The listed derived factors in course of detailed development shall give a number scientific findings in gravitation study.

This paper opens the following mechanisms and basis of natural acts that essentially match scientific findings in the world scale.

1. Gravitation origin mechanism with neutrino interference ;
2. Focusing mechanism of gravitation flow;
3. Mechanism of the Moon revolution on orbit;
4. Mechanism of the Earth rotation around axis;
5. Mechanism of elliptic orbit of planets;
6. Deflection of neutrino flow during penetration into bodies;

7. Mechanism of rings around planets;
8. Interdependence of space and time ;
9. Mechanism of the Earth magnetic field;
10. Mechanism of weight formation due to neutrino;
11. Vertical and declined flows of gravitation;
12. Seismic facts formation mechanism.

In the frame of ***New facts in modern gravitation theory*** it is easily to explain the mechanism of as-called “flying saucers” and nature of mystery drawings on the wheat fields. Flying saucers principle is based on the gravitation focusing ability through deflection of its direction. Thus zones are created with an increased gravitation rates beneath the source but there is no gravitation but on its edges. Potentials difference of encountering neutrino flows forms lifting forces that push the source upwards. Drawings on the wheat fields are formed as a result of selective influence of exceeded gravitation, to which the flying source is exposed, pressing down the wheat stems. Structure and cells of stems are changed.

***New facts in modern gravitation theory*** is new approach to the gravitation unknown features as no one of the existing scientific theories does not study the change of gravitation direction. The said above facts and conclusion testify the gravitation earlier unknown features.

Alternative theories for their validity represent facts and circumstances that are complicated to study in general understanding. The proposed theory gives generally available facts which are studied from the different point of view. Now when we know gravitation features we can surely say that in one of these days gravitation will inure to the benefit of humidity.

***New facts in modern gravitation theory*** consists of four chapters and in all parameters well-deserves to be a theory. This paper in its context fully reveals gravitation, vacuum, quantum, mechanics and natural facts.

Conclusion of Part I of gravitation theory is the beginning of the Part II which is an important part of study of such phenomena as earthquakes, storms, earthquake waves, volcanic explosion, climatic characteristics.

New knowledge of gravitation will reverse scientific and technical progress and push ahead designing of spacecrafts, development of astrophysics, geophysics, chemistry, biology, medicines and other scientific trends.

Come to know gravitation it will appear a main source of energy substituting other types. Disastrous effects of jet engines, combustion engines, nuclear plants and heating stations will be eliminated from the Earth.

If degree of density of gravitation flow will be controlled it will become possible to gain advantages in most industrial, transportation and agricultural trends. New facilities will be manufactured for space shipping of large commodities. New technologies will be developed for disposal of radioactive wastes. Finally it will be possible to forecast earthquakes and release accumulated seismic tension. New equipment will be designed for agriculture and medicines facilitating reproduction and cells repair. All these will be feasible as a result of controlled density of gravitation flow.

A number of non-biased developments of 21century have been restrained to put ahead new ideas. First of all more intensive specialization of scientific research and strengthening of expertise conclusions complicate it while for assessment breakthrough ideas a wide views are vital. Secondly, ideas that are not followed up by advertising promotions became embarrassed in growing flow of information contained a huge amount of biased data. In the third, predominates promotion of group interests that replace universal concerns thus not the best ideas are lobbying through.

Likely possible, neither new gravitation theory nor others can be considered as an absolute paradigm. The true can be found somewhere align middle. Presumably, something important in missed in study of gravitation and for the research new comprehensive theories are required. However, new characterization of this theory is simple and attractive and can be deemed as a part of unknown fundamental theory that in more simple ways interprets physics of universe.

*(translated by Yelena Rud, Shymkent, South Kazakhstan, 2013)*

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