OPENING THE RADIATION OF GRAVITATIONAL WAVES BY THE SUN

(Translation from Russian, see article on the website: http://borisov.3dn.ru/**)**

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Abstract: By theoretical astrophysical analysis and scientific experiment modeling of hitherto unknown objective phenomenon emitted by the Sun gravitational waves (gravitons), which consists in that the propagation radially from the solar direction they form the maxima of the gravitational field of the sun, the orbit planets and asteroids formed Solar system, which allows us to explain the stability, of the formation and evolution of the solar system as well as find a variety of foundation ial directions of scientific and practical application of the discovery. One such important direction is the possibility of exploring and applying gravitational waves to terrestrial conditions. The position of the source and the receiver of the gravitational waves in the conditions of the globe makes it possible to carry out experimental studies, to control them and objectively to address the solution of many problems of investigation of the properties of gravitational waves. Most preferred is the use of molecular radio frequency (microwave) generators as modulators of the gravitational field in which processes at the molecular level must occur in the collective system of modulators of a macroscopic body. The recommendations of the use of known radio engineering devices for the study of gravitational waves applied to terrestrial conditions are given. One of the interesting expected phenomena in the reception and transmission of gravitational waves can be telepathy.

Key words: Opening formula, gravitational waves of the Sun.

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ОТКРЫТИЕ ИЗЛУЧЕНИЯ ГРАВИТАЦИОННЫХ ВОЛН СОЛНЦЕМ

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Аннотация: Путём теоретического астрофизического анализа и научного экспериментального моделирования установлено неизвестное ранее объективно существующее явление излучения Солнцем гравитационных волн (гравитонов), заключающееся в том, что при распространении в радиальном от Солнца направлении они образуют максимумы гравитационного поля Солнца, в которых сформировались орбиты планет и астероидов Солнечной системы, что позволяет объяснить устойчивость, происхождение и эволюцию Солнечной системы, а также найти множество фундаментальных направлений научного и практического использования открытия. Одним из таких важных направлений является возможность исследования и практического использования гравитационных волн применительно к земным условиям. Размещение источника и приёмника гравитационных волн в условиях Земного шара позволяет проводить экспериментальные исследования, контролировать их и объективно решать многие задачи исследования свойств гравитационных волн. Наиболее предпочтительным является использование в качестве модуляторов гравитационного поля молекулярных радиочастотных (микроволновых) генераторов, в которых процессы должны происходить на молекулярном уровне в коллективной системе модуляторов макроскопического тела. Приведены рекомендации использования известных радиотехнических устройств для исследования гравитационных волн применительно к земным условиям. Одним из интересных ожидаемых явлений при приемо-передаче гравитационных волн может явиться телепатия.

Ключевые слова: Формула открытия, гравитационные волны Солнца.

At present, training of future specialists in the basics of scientific research, including the organization of preparation of scientific discoveries, is of great importance in various fields of higher professional and postgraduate education. This article presents an example of scientific discovery, proof of its objectivity and impact on the level of knowledge of the material world by mankind.

<u>It is popular about the essence of the claimed discovery.</u> The essence of the claimed discovery is to detect an unknown previously objectively existing phenomenon, which consists in the emission of gravitational waves by the Sun and the formation of maxima of the gravitational field of the Sun, in which the orbits of the planets of the Solar system were formed. The established phenomenon makes fundamental changes in the level of knowledge of the material world and the subsequent development of scientific and technological progress, in particular, the use of radio devices. The discovery proves that the gravitational field is not static, as it was thought until now.

The paper analyzes the scheme of the gravitational field (gravitons) quantum diffraction and explains the formation of diffraction maxima in the Solar system in the direction radial from the Sun. The results obtained are experimental evidence of the diffraction of the gravitational waves of the Sun and the wave nature of its gravitational field.

The location of the planets of the Solar system in certain orbits, associated with the analytical dependence (refined by the Titius-Bode law), is an indisputable proof of the existence of diffraction maxima of the gravitational field of the Sun and its wave nature. The positions of the orbits of planets and other objects of the Solar system (asteroids) fall on the position of the maximum diffraction of gravitational waves emitted by the Sun. The planets seem to be in gravitational potential pits. (Similarly, the position of satellites and rings of planetary systems is determined by the position of the maximum diffraction of the gravitational field of planets). For clarity, the existence of diffraction maxima in the Solar system is shown in Fig.1 according to the source [1], a view of the location of asteroids in the orbit between Mars and Jupiter and Jupiter is given. This arrangement shows the maximum diffraction of the gravitational field of the Sun formed by the wave particles of gravitons. From the figure it is clear that any body (small-asteroid, or large-planet), hitting the maximum gravitational field of the Sun, moving mainly on them, forming a trajectory, clearly shown in Fig. 1.

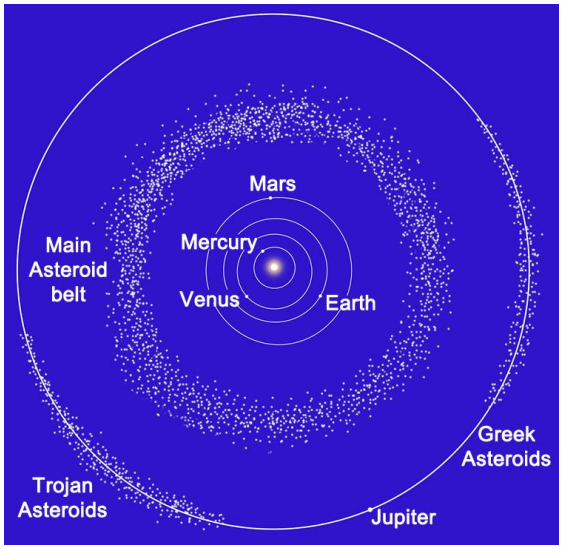

Fig. 1. Location of the maxima of the gravitational field of the Sun in the solar system.

<u>The element of chance in the detection of the claimed discovery.</u> The law of Titius-Bode (discovery and publication for the first time – in 1766y., that is 250 years ago) admired me when teaching in the 10-th grade when a teacher of astronomy P. F. Tishkin told us about this law in the classroom back in 1963. I was surprised, how is it with such huge masses of planets and the scale of distances, the planets are arranged according to a certain law? The law was admired and remembered.

Later, in the two thousand years, when astronomers have discovered new objects in the zaneptunovoy area of the Solar system, I asked: "and the newly discovered objects are built into a pattern?" Then we had to analyze the literature sources, clarifying the law of Titius-Bode. Scientists: Wurm (1787.), Merry Blagg (1913), D. S. Richardson (1943), V. V. Shepelev (2004). These works were aimed at further improvement (clarification) of the law, and its application to the satellites of the planets. As many researchers rightly point out, today it is important to find out the reasons for the existence of such a pattern, since it is certainly connected with the fundamental questions of the theory of gravity, the origin and evolution of the Solar system. To solve this task was our noble goal. The theory of diffraction and interference of light, as a wave process, was developed more than 200 years ago, but to apply it to the gravitational waves in the Solar system no one came to mind.

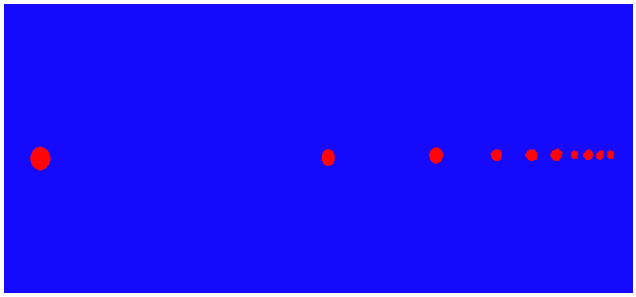

Fig. 2. The type of the diffraction pattern according to the scheme of Fig. 4 at the position of the screen is 4 (in Figure 3).

In our case, this was made possible by the element of chance. Consider this an accident. In the manuals of preparation for the exam in physics at the end of two thousand years, the problem appeared: "Determine the maximum number of diffraction maxima (m), which can give a diffraction grating with a period (d) from a laser with a wavelength of light (λ)." For the analytical solution of this problem it is necessary to take the angle (φ) equal to 90° in the equation of the diffraction grating ($d \cdot \sin\varphi = m\lambda$) (1), then sinφ will be equal to one, and from the equation of the diffraction grating (1) to find the maximum number (m). The above solution seems to have nothing to do with the diffraction in the radial direction does not have until there was a desire to test it experimentally. For this purpose, it was necessary to carry out the experiment in accordance with the condition of the problem: the screen should not be placed perpendicular to the laser beam (as is usually done in experiments on diffraction of light), but placed almost along this ray. Then the picture of the location of the diffraction maxima of light from the laser will resemble the location of the planets in the Solar system (see Fig. 2 compared to Fig. 1). Then there was a realization of a new discovery, the essence of which is to detect the formation of the maxima of the gravitational field in the radial direction from the Sun.

Proof of the fidelity of discovery. The article is prepared in the form of material for the fundamental discovery. According to the rules of registration of the application for the opening, information on priority publications is indicated. For the theoretical justification and experimental confirmation of the discovery, the material from the works of the author [2, 3, 4], as well as the important equations obtained in [5], were used. The history of the discovery and subsequent use of the

law of the location of planets in the Solar system (Titius-Bode) is very interesting, and further similar studies, including the location of small and remote, zablutonievyh, objects of the Solar system continue to the present time. The historical analysis of this problem is given in the sources [3,6,7]. The law of Titius-Bode was first published in 1766 and until now the physical nature of this law has not been disclosed, and the law itself was interpreted as a "rule". And only 250 years later, in 2013. the author was lucky to discover the nature of the regularity of the planets location in the Solar system and to publish the results in [2] and [3]. Work [2] published 27.03.2013 – this is the priority date of this discovery.

In order to prove the reliability of the discovery it was necessary to check the regularity of the planets location in the Solar system and to obtain such a regularity of its own kind. The most preferable was the use of the exponential dependence of the distances from the Sun to the planet, which is superimposed dependence in the form of the sine function. For rice. 3 it is represented by a line 2, and analytically expressed by the equation:

$$L_1 = L_{01} e^{k_1 n} \left(1 + A_1 \cdot sin \frac{2\pi n}{n_{01}} \right). \qquad (2)$$

In this equation L_1 - the distance from the planet to the Sun, n - the order number of the planet (numbers 1,2, 3, ...), e - the base of natural logarithms, L_{01} = 30 million km, k_1 = 0,543, A_1 = 0,19, n_{01} = 6,3. The calculation of these coefficients is performed by the graph-analytical method under the condition of minimizing the relative errors – ε.

The results of calculations by the equation (2) for planets and other objects of the Solar system, respectively, are given in tables 1 and 2, and the graphical anamorphosis is presented in figure 3 in semi-logarithmic coordinates (line 2). The tables also show the relative deviations of the distance L_1, calculated by the equation (2) from the corresponding actual values $L_{\phi 1}$. It should be noted that for objects with a greater distance from the Sun (table 2), the spread of distances $L_{\phi 1}$ from L_1 is much greater than for planets (table 1). This indicates that at the periphery of the solar system (in the Kuiper belt and beyond) the maxima of the intensity of the gravitational field of the Sun (the reason for the formation of planets in the solar system) are weaker than near the Sun. Indeed, for Neptune objects due to a significant decrease in the absolute value of the gravitational field of the Sun (10 orders of magnitude, counting from the surface of the Sun), the formation of planets has not been completed.

Table 1. Characteristics of planets (n = 1÷9) according to the equation (2).

Planet name	n	$L_{ф1}$, million km	L_1, million km	ε, %
Mercury	1	58	59,8	3,1
Venus	2	108	104	3,7
Land	3	150	157	4,7
Mars	4	228	226	0,9
Ceres	5	414	368	11,1
Pallada		415		11,3
Juno		399		7,8
Vesta		353		4,2
				8,6
Jupiter	6	778	736	5,4
Saturn	7	1426	1506	5,6
Uranium	8	2869	2747	4,3
Neptune	9	4496	4303	4,3
Average relative error, %				4,5

Table 2. Feature senatovych objects (n =10÷14) by equation (2).

The name of the planet (object)	n	$L_{ф1}$, million km	L_1, million km	ε, %
Makemake, FУ9, 2005	10	6850	6172	9,9
Orc, 2004	10	5860		5,3
Haumea, EL61, 2003	10	6413		3,8
Pluto, 1930	10	5900		4,6
Quaver, 2002	10	6493		4,9
42301, UR163, 2001	10	7693		19,8
48639, TL8, 1995	10	7858		21,4
				9,9

(—), UR146, 2002 82075, YW143,2000 Object OR10, 2007 Erica, UB313,2003	11 11 11 11	7989 8697 10072 10157	9543	19,4 9,7 5,3 6,0 } 101,
26181, GQ21,1996 15874, TL66,1996	12 12	14154 15557	18105	27,9 16,4 } 22,1
Object RC105,2000	13	44500	37472	15,8
Sedna, VB12, 2000	14	78825	71304	9,5
Average relative error, %				13,5

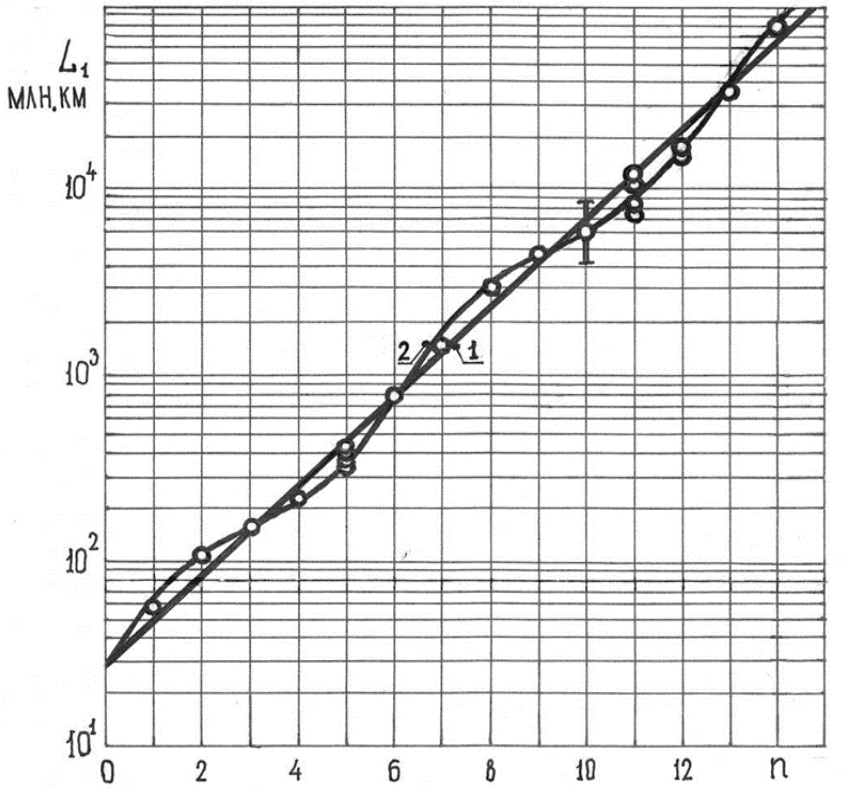

Fig. 3. Graphical anamorphosis of the L_1 dependence on equation (2) - line 2; (line 1 - the exponent).

Study of the diffraction of light as a wave process similar to gravity. To study the diffraction of light, in particular, to determine the wavelength of a light wave, use the scheme shown in Fig. 4. The screen (or sensors) is then positioned at position 5. The wavelength is determined using

the formula (1): d · sinφ = mλ, where d - is the lattice constant, φ - is the diffraction angle, m = 0,1, 2,. .. - the order of the diffraction maximum, λ - the wavelength. In the figure, the maxima are shown only in one direction.

In our studies [2] in the scheme of Fig. 4, we placed the screen in position 4, then the diffraction pattern was modified, it is shown in Fig. 2. Analysis of the light diffraction data is given in Table 3. Using the $L_{2ф}$ data of Table 3, obtained from Fig. 2, the dependences 1 and 2 were plotted in semilogarithmic coordinates, shown in Fig. 5. Even with a visual comparison of Figures 3 and 5, it is clear that the dependencies are identical and should be described by the same equations. Indeed, for the data in Fig. 5 and tab. 3 the equation in general form is:

$$L_2 = L_{02} e^{k_2 n}(1 + A_2 \, sin \frac{2\pi n}{n_{02}}) \quad (3)$$, or taking into account the values of the coefficients:

$$L_2 = 3{,}5 e^{0{,}48n}(1 + 0{,}1944 \, sin \frac{6{,}283 n}{9}) \quad (4)$$, где n = 0,1,2, ... $[L_2]$=мм.

On the basis of the coincidence of equations 2 and 3, it should be assumed that the location of planets and other objects of the solar system is a consequence of the diffraction of gravitational waves and the formation of the maxima of the gravitational field of the Sun.

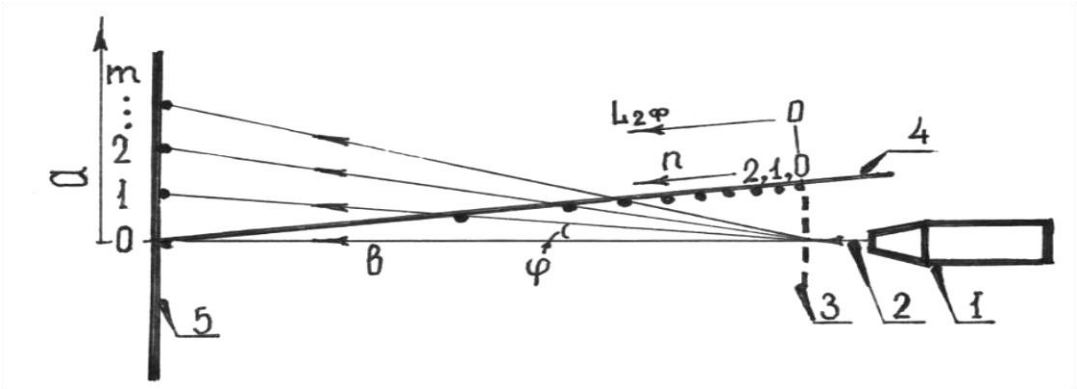

Fig. 4. Scheme of the experiment on diffraction of light. Designations: 1 - laser; 2 - monochromatic ray of light; 3 - diffraction grating; 4, or 5 - screen, its location; $L_{2ф}$ – is the distance to the diffraction maximum at a certain n on screen 4; *а* – is the distance to the maximum for a certain m on screen 5; *в* – is the distance from the grating 3 to the screen 5.

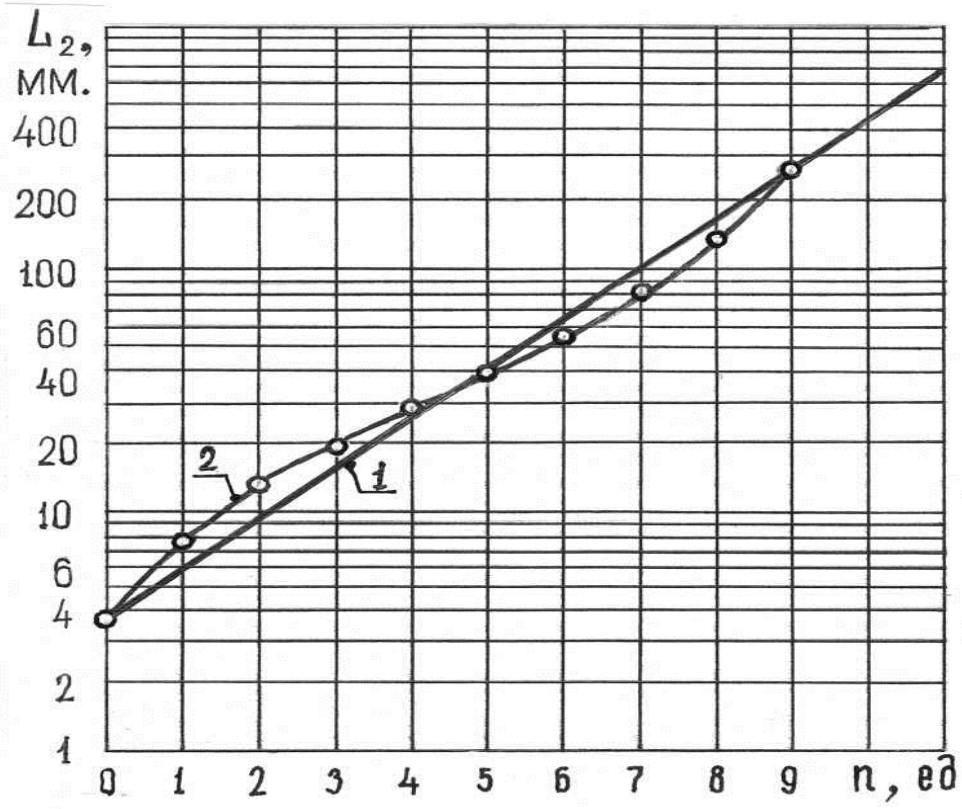

Fig. 5. Dependence of the distance of the diffraction maximums L2 from their number n (line 2) by the equation 4, the points are the actual values ($L_{2\phi}$). Line 1 is the exponent in equation 4.

The value of L_2 according to equation (4) in comparison with its actual value $L_{2\phi}$ for a certain n.										
The value of n	0	1	2	3	4	5	6	7	8	9
L_2 value, mm	3,5	6,4	10,9	17,3	25,5	36,0	51,9	81,5	142	263
$L_{2\phi}$, value, mm	3,5	7,5	12,5	19,0	27,5	38,5	55,0	81,5	132	263
Relative error, ε, %	0,0	17,2	14,6	9,8	7,8	6,9	6,0	0,0	7,0	0,0
Average value, ε_{av}, %	6,9									

Modeling of the diffraction of gravitons emitted by the Sun. In Fig. 6 shows a diagram of the diffraction of gravitons (Γ) at distant nuclei (1 and 2) of macroscopic body atoms. The circuit shown in Fig. 6 can be used to simulate diffraction of gravitons of any macroscopic body. In our example, this is the Sun. Gravitons (Γ), are quanta of the gravitational field of a macroscopic body, radiated in all directions by the nuclei of this macroscopic body. Gravitons have a high penetrating

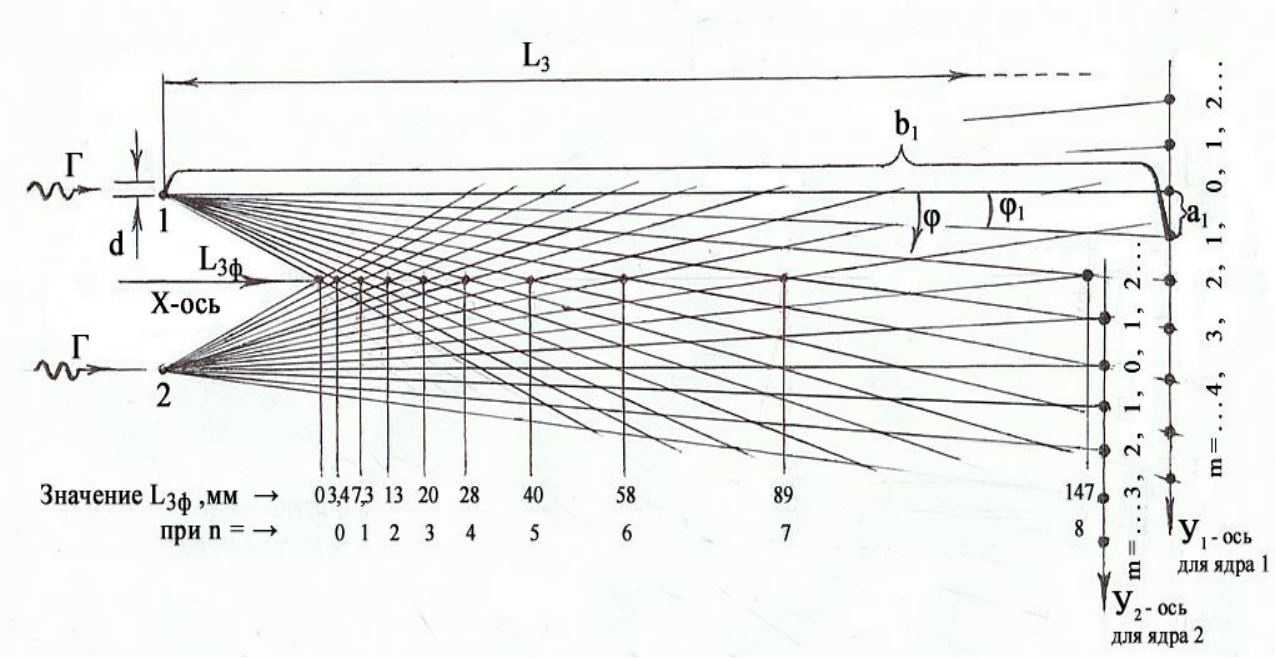

Fig. 6. Scheme of diffraction of gravitons (Γ) on the distant nuclei (1 and 2) of atoms of a macroscopic body.

power through the substance. Taking into account that the volume of nuclei is 1015 times smaller than the volume of atoms, gravitons "freely" permeate the space between nuclei of atoms. The coefficient of absorption of gravitational energy by the substance is only 10-10, i.e. very small. Passing further near the nuclei (1 and 2), gravitons (Γ) (see Fig. 6) experience diffraction deviations. The maxima of these diffraction deviations are shown in Fig. 6 by lines that, when encountered in space with each other, create an interference pattern of the maxima of gravitation. The indicated maxima of gravity in Fig. 2 are shown by points along the X– axis. The $У_1$ and $У_2$ axes are the usual diffraction pattern described by the equation: $d \cdot \sin\varphi = m\lambda$ (1), where: φ - is the diffraction angle, m = 0,1,2 ..., is the order of the diffraction maximum, λ - is the wavelength, d - is the size of the Fresnel zone in the near-nuclear region, inside which the flow of diffracting gravitons flies (Fig. 1 is shown conditionally). Probably, the size of such a Fresnel zone (d) is commensurable with the diameter of the nucleon.

Table 4. Analysis of the diffraction data from Fig. 6.

The value of L_3 in the equation (5) in comparison with its actual value $L_{3ф}$ at a certain n.										
The value of n	0	1	2	3	4	5	6	7	8	9
The value of L_3, mm	3,53	6,87	12,24	19,65	28,58	38,88	53,70	84,65	158,0	318,1
The value of $L_{3ф}$,mm	3,4	7,3	13,0	20,0	28,0	40,0	58,0	89,0	147	310
Relative error, ε, %	3,7	5,9	5,8	1,7	2,1	2,8	7,4	4,9	7,5	2,6
Average value, ε_{av},%	4,1									

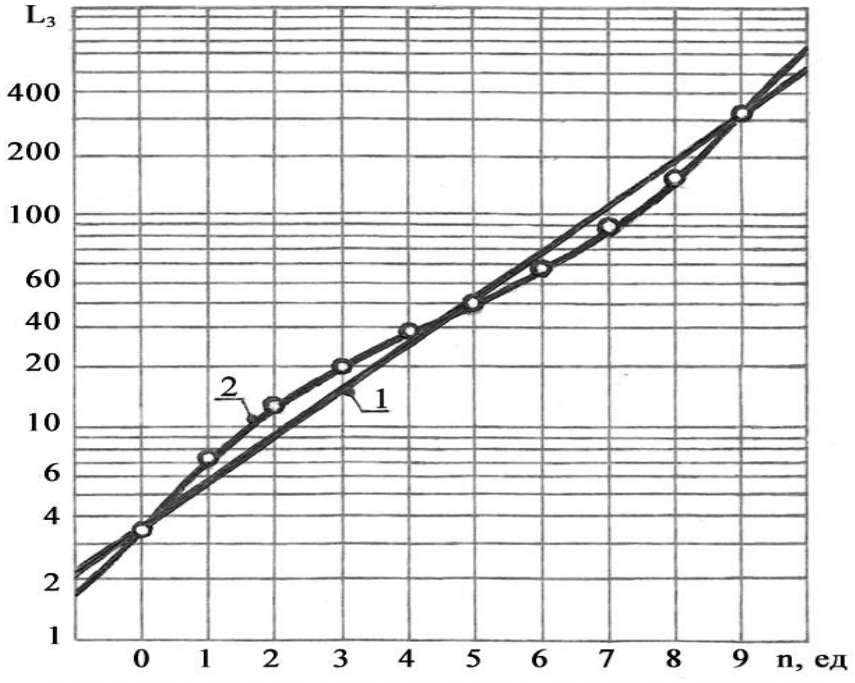

Fig. 7. Dependence of the distances of diffraction peaks L_3 from their number n (line 2) by equation 5, the points are the actual values ($L_{3ф}$). Line 1 – exponent in equation 5.

To determine L_3, we first determined the position of the maxima along the $У_1$ and $У_2$ axes by $\sin\varphi = a / b$. As an example, Fig. 6 shows the definition: $a_1 = \sin\varphi_1 \cdot b_1$. Further, as shown in Fig. 6, the position of the maxima along the X-axis was determined, in which gravitons, diffracting on nuclei 1 and 2, are encountered with the difference of their course equal to zero, as the intersection points of the corresponding lines. These points determine the values of $L_{3ф}$, which are measured and shown in Fig. An analysis of the data of the graviton diffraction model is given in Table 4. According to the obtained data, the dependences 1 and 2, shown in Fig. 7, are constructed in semilogarithmic coordinates. Even with a visual comparison of Figures 3 and 7, it can be seen that the dependencies shown in these figures are identical. For the data in Fig. 6 and Table 4, the equation in general form is:

$$L_3 = L_{03} e^{k_3 n} \left(1 + A_3 \sin\frac{2\pi n}{n_{03}}\right), \qquad (5)$$

Where: n - is the ordinal number of the diffraction maximum, the numbers 1,2,3 ..., the coefficients of equation (5) have the values: L_{03} = 3.53 mm, k_3 = 0.50, A_3 = 0.28, n_{03} = 9.0.

On the basis of the coincidence of equations 3 and 5, it should be concluded that the location of the planets and other objects of the solar system falls on the positions of the diffraction maxima of the gravitational waves radiated by the Sun. The planets seem to be in gravitational potential pits. (Similarly, the position of satellites and rings of planetary systems is determined by the position of The maximum diffraction of the gravitational field of the planets).

Our analysis on the model scheme of diffraction of gravitational waves makes it possible to consider the experimental verification of diffraction by measuring the strengths of the gravitational field in the regions where the trajectories of the planets (and their satellite systems) are located. Such measurements were not purposefully conducted during the research flights of the spacecraft "Pioneer-10 and -11" [8] and are regarded as "anomalous effects in the solar system". Moreover, the maximums of the gravitational field strengths, according to the measurements made, are due to the arrangement of the planets. This is another, and experimental, proof of the wave nature of gravity in our analysis.

Conclusions on experimental modeling. As follows from a comparison of the results of our analysis: 1) the location of the planets of the solar system, 2) the diffraction of light in the radial direction from the source, 3) the modeling of the diffraction of gravitons emitted by the Sun, it must be concluded that the position of the planets and other objects of the solar system is determined position of the diffraction maxima of the Sun's gravitational field (likewise, the position of the satellites and rings of the planetary systems is determined by the position of the diffraction maxima of the gravitational field of the planets). The presence of maxima of gravitation explains the formation of the planets of the solar system, satellite and ring systems of planets, and their subsequent stability, ie, it is a proof of the reliability of the discovery of the wave nature of the gravitational field of the Sun and the planets of the solar system.

The formula for discovery. Theoretical astrophysical analysis and scientific experimental modeling established an unknown phenomenon of solar radiation from gravitational waves (gravitons), which consists in the fact that when they propagate in the radial direction of the Sun they form the maxima of the solar gravitational field in which the orbits of planets and asteroids of the solar system were formed, which explains the stability, origin and evolution of the solar system, as well as to find many new fundamental directions of scientific and practical use of the discovery.

The field of scientific and practical significance of the use of discovery. The discovery fundamentally changes the level of knowledge of the material world by mankind and the subsequent development of scientific and technological progress, in particular, the use of radio engineering devices. The discovery proves that the gravitational field is not static, as was believed to date. Our ideas about gravitational interaction, developed in the discovery, have been used in the author's works [3,4,5] and will undoubtedly receive their further scientific and practical use. In these papers the author develops "particle-wave theory of gravitation" using the ideas of the theory of short-range interaction [9]. Its essence boils down to the following. According to the law of universal gravitation of Newton, the gravitational force is determined by the masses of gravitating bodies. The masses are concentrated in the nuclei of atoms, which emit and absorb gravitational waves in the form of quanta of these waves-gravitons. Absorption by the body of gravitational energy and its transformation into the kinetic energy

of the body, or its parts (atoms), is an inalienable property of gravitational interaction. The flux of gravitational energy is determined by the intensity (J) of the gravitational field of the central gravitating body, in accordance with the equation obtained by us:

$$J = \frac{g^2}{G} \cdot \sigma , \quad (6)$$

where g - is the gravitational field strength, G - is the gravitational constant, σ - is the velocity of propagation of gravitational waves, which, according to our estimates, is $\sigma \approx 1.2 \cdot 10^{15}$ m / s. Absorption of the energy of the gravitational field, in our opinion, is the main factor in increasing the temperature in the bowels of the planets [5]. Here we also obtain the equation for the average intensity (J) of the radiation of a gravitational oscillator at a distance R from it:

$$J = \frac{Gm_0^2 d_0^2 \omega^4}{\sigma^3 48\, \pi^2 R^2} , \quad (7)$$

where: m_0 - is the mass of the oscillator, d_0 - is the oscillation amplitude, ω - is its frequency, and σ - is the velocity of the gravitational waves. In [2], the length of gravitational waves emitted by the Sun is estimated: $\lambda \approx 10^{-17}$ m and, correspondingly, their frequencies: $\nu \approx 1.2 \cdot 10^{30}$ Hz.

The material of publications [3,4,5] will serve to solve important problems of searching for fundamental directions of scientific and practical use of the discovery. An interesting scientific explanation on the basis of the corpuscular-wave theory of gravitation and the theory of diffraction developed in optics [10] can be obtained by the dependence of the dimensions of the planets [12] existing in the solar system [11] in the direction radial from the sun.

An important direction of scientific and practical use of the claimed discovery is the possibility of research and practical use of gravitational waves in relation to terrestrial conditions. In this connection, the use of the equations (6) and (7) is indisputable for the design of experimental radiators for gravitational waves. Thus, for example, the estimation by the equation (7) of the possibility of using mechanical gravitational oscillators under terrestrial conditions shows their insurmountable limitations in frequency and mass. The value of the frequency of gravitons emitted by the Sun, $\nu \approx 1.2 \cdot 10^{30}$ Hz, is prohibitive for radio engineering, therefore registration of such gravitons by radio engineering means is directly impossible. Most preferable is the use of molecular high-frequency (microwave) generators as modulators of the gravitational field, in which processes must occur in the collective system of modulators at the molecular level. The location of the source and receiver of gravitational waves in the conditions of the Earth will allow us to conduct experimental research, to manage them, and to approach objectively the solution of many problems of studying the properties of gravitational waves.

With reference to terrestrial conditions, an installation for generating modulated gravitational waves and their registration can be as follows. As a generator it is possible to use an analogue of a conventional microwave oven with an operating frequency of 2.45 GHz. This low-frequency component, imposed on the carrier of a gravitational wave of frequency ~ 10^{30} Hz. The emitter of the gravitational wave is warm water with a mass of about 10 kg between the plates of the condenser in

the vessel. Here the synchronous oscillations of the dipoles of the entire mass of water resemble the oscillations of a mechanical gravitational oscillator. The emitter of our gravity installation should be shielded from electromagnetic wave radiation. Modulated with a frequency of 2.45 GHz, the gravitational wave is studied in all directions. Possessing high penetrating power, it permeates the electromagnetic screen of the receiving installation, and causes gravitational oscillations of the water mass dipoles filling the electrode space of the flat capacitor of the receiving oscillatory circuit tuned to the frequency of the low-frequency component of the gravitational wave of 2.45 GHz. The receiving circuit will respond to these electromagnetic oscillations, that is, simultaneously with the reception of the modulated gravitational wave, its demodulation and transformation into an electromagnetic signal will occur. This signal carries information about the gravitational wave (its propagation velocity, absorption coefficient, etc.), and after amplification it can be successfully analyzed. Calculation of the power of the gravitational waves radiated by the generator in the considered example using equation (7), transformed with respect to the generation conditions, gave the value P = 25 W. It is encouraging to expect the result of the range of reception and transmission of gravitational waves of several hundred kilometers. This result makes it possible to determine experimentally many of the fundamental properties of gravitational waves under terrestrial conditions: propagation velocity, frequency, absorption coefficient of matter, and so on.

Such a project with the aim of increasing the distance of the transceiver can be developed on the basis of a powerful stationary radar installation.

From the example considered, it is also seen that gravitational waves can be used to transmit information. Their distinctive feature is the rectilinear spread and high penetrating ability, or the ability to penetrate the entire thickness of the globe with low losses. Moreover, it is possible to use known radio engineering devices for research.

The high penetrating power of gravitational waves and, consequently, their ability to act directly on the human brain by their modulating (sound) component suggest that one of the interesting expected phenomena in the reception and transmission of gravitational waves can be telepathy, which undoubtedly takes place in our world. But, here, the technical way of telepathic information transfer is still unknown. Perhaps the solution to this question is in the use of gravitational waves for this purpose.

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