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The interaction of a light with a dark matter of a interstellar space.

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The physical nature of the light and the laws of its propagation in space is very well studied in terrestrial conditions. But has been poorly understood that is happens with a quantum of the light during its long movement, is measured in billions of the light years distant from the star to the observer on Earth.

In this article is assumes that the space between a baryon bodies of the universe is filled with dark matter. Dark matter is in a gaseous state. It is invisible, just as a people do not see the surrounding air. It is not has the smell and the taste. The research based on the assumption about the interaction of a dark matter and of a baryonic matter. It is shown that a baryonic matter is continuously absorbs a dark gas from a surrounding space.

It is accepted that a quantum of a light is a chain of a photons (which are interconnected by electromagnetic forces). They have a mass, a momentum, a kinetic energy and are it subjected to the force of gravity. They also interact with the dark matter. This an article is attempt to identify the quantitative effect of the dark matter in the universe on the propagation of the light from the distant stars for a great time of movement of the light wave to an observer on the Earth.

1 The growth of a baryon mass of a bodies due to a absorption of a gaseous dark matter

It is assumed that the all baryonic bodies down to the elementary particles, including a photons of a light, continuously is absorbing a dark matter, which then is converted into the matter, passing from a gaseous state in a liquid state and then in a solid state. Under certain a conditions, a baryonic bodies partially or completely is decaying on an atoms of a dark matter. Thus there is an eternal cycle of a matter and an energy. The internal energy of a dark gas is a energy of the cosmos. She is huge. The process of an absorption dark gas by a baryon bodies is a prerequisite for the existence of a bodies. When it is violated a body is destroyed, totally or partially re-turning to the dark gas.

Many of the bodies of the universe, such as a stars, a planets and even an atoms that make up a molecules eventually have a spherical shape. A bodies' ability to absorb a dark gas characterize as mass flow a rate of a dark gas through surface of a sphere at a elementary time

$$q = \frac{dm_e}{dt} \qquad (1)$$

where dme- is an elementary mass of a dark gas, coming into a sphere for a elementary time dt. Obviously, a mass flow rate of a dark gas q [kg / s], also due to by the mass m [kg] of a material body, absorbing a dark gas, and hence is directly proportional to this a mass:

$$q = \frac{dm_e}{dt} = \alpha \cdot m\,, \qquad (2)$$

where α- is a ratio of the specific consumption of a dark gas

The dark gas is absorbed by a bodies, their a mass is increases, showing further a properties of an inertia and a momentum through a mass of of a bodies. From this follows that a dark gas, which enter into a body, it is not immediately turns into a material of a body, ie it is acquires a ability to absorb a dark gas from an environment. Therefore, we is assume that a rate of absorption of the dark gas by any body, regardless of its a chemical composition and a physical state, is directly proportional to a rate of formation of new body weight:

$$\frac{dm_e}{dt} = k\frac{dm}{dt}\,, \qquad (3)$$

where k -is the coefficient of the rate of formation of mass. We will be replace the left-hand side of this equation by means of (2) on αm

$$\frac{dm}{dt} = \frac{\alpha}{k}m\,. \qquad (4)$$

Integrating this equation, we will obtain the law of a weight change from to time:

$$m = m_o \cdot e^{\frac{\alpha \cdot t}{k}} \qquad (5)$$

A quantity m_o is the mass of the body at the time t = 0, i.e. at the reference time. The minus sign in the right-hand side is omitted, since a direction of the velocity to the center of the body was specified by the words. According to [1…3] a value $\frac{\alpha}{k} = 2{,}97 \cdot 10^{-18}\, s^{-1}$. The equation (5) is defines the law of the increase of a mass all the bodies of the universe with a time.

2. The reduction of a speed light with an increasing a distance from the source

Leaving the emitting atom, the photons of light on the wavelength of the light are carrying with them the amount of movement. This amount of movement is equal to the mass is multiplied on the speed of the light photons

$$J = m_o C = m \cdot C' = Const \qquad (6)$$

But the mass of the photon, as well as all other baryon bodies is increases with a time due to the absorption of a dark matter from the environment according to the revealed law (5). Since the mass of the photon is increases, the the speed of a light C' is reduced, because the amount of a movement is remains constant

$$C' = \frac{m_o C}{m} = \frac{m_o C}{m_o e^{\frac{\alpha}{k}t}} \approx \frac{C}{1 + \frac{\alpha}{k}t} \qquad (7)$$

Here $C = 3 \cdot 10^8 [m/s]$ - speed of a light in a time t=0. This is the same as that of a light on the ground. Bandwidth $\frac{\alpha}{k} = 2{,}97 \cdot 10^{-18} c^{-1}$ is very small. Therefore, in most a cases, wiht the increasing the mass of a photons due to inflow of a dark matter can be neglected. However, this growth can affect on the speed of the photon of a light from a distant light to an observer on Earth.

Recall that 1mlrd.years = $3{,}15 \cdot 10^{16} s$. Consequently, after 1 mlrd.years according to the formula (3) the speed of a photon of a light - is that quite a bit different from the Earth's speed of a light. After 10 Gyr the speed of a light, who came to us from a distant star, will be only half the initial velocity. After 15 Gyr light that came from the outskirts of the universe will have a velocity that slightly more than 40% of the Earth's speed of a light. From formulated law of reducing the speed of a light in the course of its the propagation from a distant star to the Earth you can draw some important conclusions

3 Adjusting of the method "standard candles"

The method of the "standard candles" is used to determine the distance between the observer and the star. The method is use the stars type La. They have roughly the same luminosity, no matter where they are. From the luminosity depends the apparent brightness of a star. It is known that the brightness of the stars is inversely proportional to the square of the distance from a star to the observer. Therefore, this method uses the relationship between the apparent brightness of the star and its distance from the Earth.

$$\frac{j_M}{j_m} = \frac{D^2}{D_o^2}, \qquad (8)$$

where D_o - the distance corresponding to the absolute value of brightness J_M. Than a star is closer to the Earth, those it is brighter. Than she further, the more it is looks dimly. To compare true brightness of stars, we need to compare what brilliance they had, if all they had the same distance. As such a distance by international agreement the distance of 10 parsecs was adopted. (Parsec - contraction of the words parallax-second). This is the distance to the star is about $3{,}1 \cdot 10^{13} [km]$. The light is held one parsec during 3.26 years). Absolute brightness of a stars type is known. If was measured the apparent brightness of a star with Earth, then by (4) we can calculate the distance to the star type, and to other stars of this a constellation.

This method does not take into account the influence of a dark matter in the interstellar space into the wavelength of a light on their way from the star to the observer on Earth. The property of a wavelength of a light (of quantum) to reduce a speed which was open by us in this article was not currently known to the developers of the method, the "standard candles". Therefore, it was not considered in the relationship between the apparent brightness of the star and its distance from us

However, it is clear that such an effect exists, because this decrease the speed of the light occurring at a great distances, which was measured in a billions of light-years. This will reduce the kinetic energy of the photon mass constituting the any wave of a light. The total energy will be saved due to an increase in the internal energy which increases a mass of the photon. That kinetic energy determines the apparent brightness of the star. To see this, we write the kinetic energy of a photon mass constituting a light wave on a way from a star to the Earth in the following form

$$E = \frac{mC^{/2}}{2} = \frac{(mC^{/}) \cdot C^{/}}{2} = \frac{I \cdot C^{/}}{2} \qquad (9)$$

We have already noted that the amount of movement of a mass of a photons that make up of a light wave remains constant along a light beam . Therefore the relation (9) is can be written with a regard to (7) as

$$E = Const \cdot C^{/} = Const \cdot \frac{C}{e^{\frac{\alpha}{k}t}} \qquad (10)$$

This the relation shows that the kinetic energy of a photons decreases with a time during which they are in the path from the star to the Earth. Therefore brightness of a star will decrease compared to the expected, which was calculated on the basis of expression (8). Based on this a study we can to build the schedule in a Figure 1. In this graph was shown as the apparent brightness of the observed the star was decrease

$$\frac{E}{E_o} = \frac{1}{e^{\frac{\alpha}{k}t}} \tag{11}$$

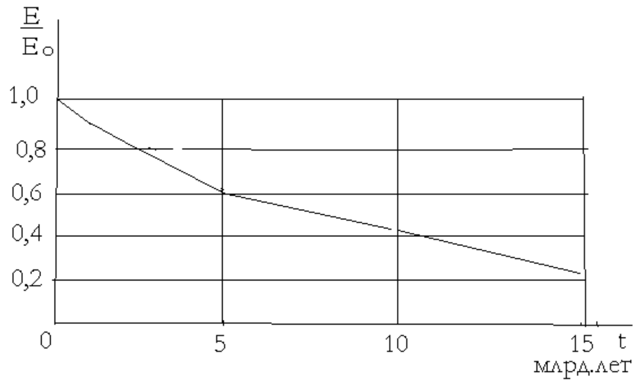


Fig.1

Depending on the residence time of a wavelength of a light (of a quantum) in a transit within 1 [Gyr] a decrease in a brightness does not exceed 10%. But a longer a light is in the way, the star will be emit a more dull than it expected. At the edge of the visible universe a star will be of a very dull, because its brightness is reduced by ¾. This is a consequence of the interaction of photons on a light wavelength with a dark matter.

In connection with a reduction of a speed of a light along a beam a distance which a light passes during a time t is smaller than if it is moving with constant velocity C. Distance D with this in mind, can be written as

$$D = \int_0^t C^{/} dt = \frac{C}{\alpha / k}(1 - \frac{1}{e^{\frac{\alpha}{k}t}}) \tag{12}$$

Figure 2 shows how a distance traveled by a ray of a light in reality considering an influence of a dark matter according to a formula (8) how is increasing, and as it would a increase a distance, if we assume that a light travels at a constant speed in an empty space

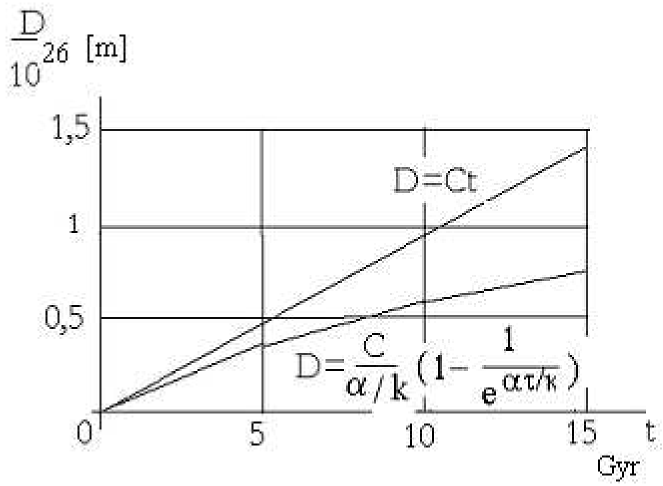


Fig.2

From (8) we express a movement of a light wave through a distance that it passes over this time

$$t = \frac{1}{\alpha / k} \ln \left(\frac{1}{1 - \frac{D \cdot \alpha / k}{C}} \right) \qquad (13)$$

Substitute this a time into a expression (11) for a ratio of a luminosities

$$\frac{E}{E_o} = \frac{1}{e^{\ln \frac{C}{C - D \cdot \alpha / k}}} \qquad (14)$$

To get to a final calculation formula in the method of the "standard candles" for a effects of a dark matter on a apparent brightness of a stars, you need to combine a formula (8) and (14)

$$\frac{J_m}{J_M} = \frac{D_o^2}{D^2} \cdot \frac{1}{e^{\lg \frac{C}{C - D \cdot \alpha / k}}} = \frac{D_o^2}{D^2} \cdot \frac{C - D \frac{\alpha}{k}}{C} \qquad (15)$$

An influence of a dark matter on an apparent brightness of a star is determined by the second factor in the formula. This effect comes into play at very large a distances from a radiating star, measuring in a billions of light-years. The values of this factor are adjusted to a brightness that an astronomers now accept for a apparent brightness of a star. Figure 3 shows a values of this amendment (the second factor), depending on a distance to a star

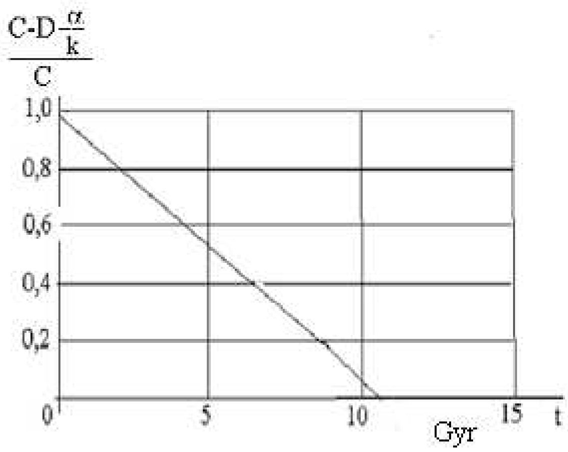


Fig. 3

The graph shows that a star (type) near the border of the visible universe will be look much fainter than a brightness, which was expected on a basis of the law (8).

4. The red shift in the spectra of a distant galaxies. Blem of the expansion of the univers

This a phenomenon reducing of a speed of a light on its way from a distant stars or a distant galaxies allows us to find another a explanation for Hubble's the law, rather than an extension of a space of a universe in accordance with the law the Doppler and theory of the Big Bang. Strange, but a supporters of the theory of the Big Bang and a expansion of a universe does not stop the conflict with the well-studied fact of a convergence of our the Milky Way and the Andromeda galaxy. The observations show that the the Andromeda Galaxy is approaching to us at a speed of 400,000 [km / h]. After a period of 3 [Ga] will the clash of these two the galaxies. This the observational fact leads us to the doubt a correctness of the theory of the Big Bang.

To a sober-minded man is hard to agree with the idea "big bang", which advocated by a relativists, so that all a matter and energy of the universe must was fit in a tiny elementary particle incredible density. There is a huge amount of a scientific works that quite seriously substantiate a processes that allegedly was occurred a billions of years ago, immediately after the "big bang". We offer a different, more natural a explanation for a phenomenon of "red shift in the spectra of the distant galaxies," Hubble's discovery. It does not require an exotic explanations of this a phenomenon by the "big bang."

A speed of a light wave according to the formula (3) decreases over a time

$$C' = \frac{C}{1 + \frac{\alpha}{k} t} \tag{16}$$

Consequently, a number of a waves transmitted by a device of a observer will be determined by a expression

$$\nu' = \frac{C'}{\lambda} = \frac{C}{(1 + \frac{\alpha}{k} t)\lambda} = \frac{C}{\lambda'} \tag{17}$$

in which a new wavelength on a expiration time will be

$$\lambda' = (1 + \frac{\alpha}{k} t)\lambda \tag{18}$$

Obviously, a number of a waves decreased, and a wavelength in accordance with the law Hubble increased by an amount $\Delta\lambda$

$$\frac{\Delta\lambda}{\lambda} = \frac{\alpha}{k} t = \frac{1}{C} \cdot \frac{\alpha}{k} \cdot C \cdot t = H \cdot L \tag{19}$$

A better result is obtained, unless resorting to a degradation values $e^{\frac{\alpha}{k}t}$ in a row. I.e write a formula for a increment of a wavelength of light in a form of

$$\frac{\Delta\lambda}{\lambda} = e^{\frac{\alpha}{k}t} - 1 = e^{H \cdot L} - 1 \tag{20}$$

This new more a correct expression of the Hubble law. The value $\frac{\alpha}{k} = 2{,}97 \cdot 10^{-18} c^{-1}$ is included in the value of the Hubble constant $H = \frac{1}{C} \cdot \frac{\alpha}{k} = 10^{-28} [1/sm]$. A light wave travels a path that after time t with a velocity $C = 3 \cdot 10^{8} [m/s]$. It is equal to $L = C \cdot t$

I recall that in 2011 the Nobel Prize in Physics was awarded for the discovery of accelerating an expansion of a universe over time to Americans Saul Perlmutter of the University of California at Berkeley (led supervisory project "Supernovae to Cosmology") and Adam Reyes from the Johns Hopkins University in Baltimore (the project "Search supernovae at high redshifts "). And Brian Schmidt of the Australian National University (project "Search supernovae at high redshifts").

A essence of their a research, as I understand it, was that they observed a supernova explosions with a large a red shifts in a spectra. They used two methods to determine a distances to these objects:

First the a distance was determined as a distance by the redshift in the spectra on the basis of the Hubble law

$$L = \frac{\Delta\lambda / \lambda}{H} \ , \qquad (21)$$

where H=10^{-28} 1 / cm - the constant of redshift (the Hubble constant).

-Second is a monitor by a luminosity of supernovae of a type La, which have a property of the "standard candles", ie they have approximately a same luminosity, wherever they are. Then, according to a observations of a gloss can determine a distance to them. To a surprise a researchers, these methods have a different distances for a same stars. The differences were so great that they can not be attributed to a measurement error. Analyzing a data, these researchers concluded that at a very large distances the universe is expanding much faster than predicted by Hubble's law.

An accelerated expansion of a universe was allowed an enter term into the equation Einstein, which was previously in them to make a stationary universe (he later admitted that it was a biggest mistake). Now this term is called the "cosmological constant" and is a physical constant, which in an opinion of a relativists characterizes a properties of a vacuum.

In our view, this a conclusion is erroneous. In a previous section we have demonstrated that the lower an observed brightness of a stars than this expected due to a influence of a dark interstellar matter to a local speed of a light. Reducing this a rate leads to a decrease in a kinetic energy of a mass of photons constituting a light wave (photon). This in turn reduces an apparent brightness of a stars.

I must to say that the law itself Hubble did not say that an universe is expanding. He had just established a link between a distance from a Earth to distant galaxies and a redshift in a spectra of a light coming from these galaxies. The belief that a universe is expanding emerged in the course of an interpretation of the law Hubble by the law Doppler. A analogy was drawn between a change in a wavelength of a light $\Delta\lambda$ and a private removal rate of a light source from an observer V under the law c Doppler

$$\frac{\Delta\lambda}{\lambda} = \frac{V}{a}, \qquad (22)$$

obtained for a propagation of a sound in an air. Here, a -the velocity of a sound in a still air. It was a tribute to a misconception that a light travels in a space (even empty) in a form of a wave, and not due to a motion of a photons. In a relation to a propagation of a light the law has been rewritten to a form

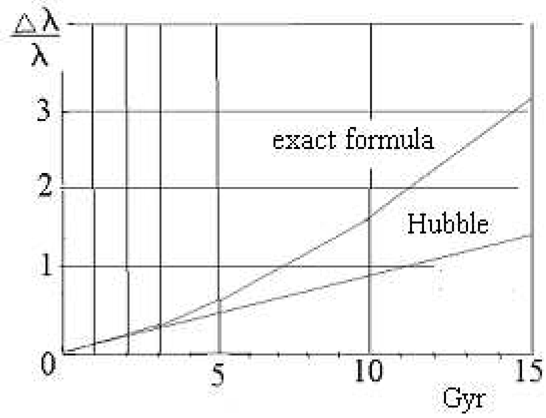
$$\frac{\Delta\lambda}{\lambda} = \frac{V}{C} \ , \qquad (23).$$

wherein a speed of a sound in a air was replaced speed by a light. Such an analogy was suited to astrophysics until a decoding a spectra of distant galaxies did not give a values significantly $\frac{\Delta\lambda}{\lambda}$ greater than unity. This meant that speed V exceeded the speed C. To avoid a breaking a postulate to a relativity theory about an impossibility of an exceeding a speed of a light radiated by an object in a vacuum, another formula for the law Doppler was invented

$$1 + \frac{\Delta\lambda}{\lambda} = \frac{1 - V/C}{\sqrt{1 - V^2/C^2}} \qquad (24)$$

This formula for any values $\frac{\Delta\lambda}{\lambda}$ does not allow to exceed a speed of a light

Going back further to a more accurate view of the Hubble law (17), we see that in contrast to the Hubble law (19), a wavelength increases nonlinearly over a time. Than more a light wavelength is on way, she more intense increases its length This is explained by a growth of a mass of a photons that make up a light waves. And this does not mean that an universe is expanding. The more that it does not mean that this expansion occurs the more intense than the farther away it is moved outside the boundary of an universe. Figure 4 shows a comparison of a increase in a length of a light waves received by the formulas (19) and (20) as a function of distance from a source of a radiation and a time by the propagation of a light from a distant galaxies to Earth



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However, if we take a point of view of a supporters of the Big Bang theory, and according to the laws (23) or (24) we will treat a rapid increase in a wavelength predicted by the law (21), this we can mistaken for accelerated a removal of the galaxy from Earth.

5. The paradox of Olbers

We consider another a unexplained global problem. This so-called the paradox of Heinrich Olbers formulated them in 1826. According to Olbers there is a contradiction between a observed dark night sky and an infinite number of a uniformly (on a cosmic scale) distributed in a space a stars. Olbers observed that for an infinite number of a stars that completely covered a night sky it must be as bright as the sun

An attempt to explain the paradox that an intensity of a light from a distant stars decreases with a square of a distance from a observer and a illumination shall fall, does not a hold water. A reason is that a increase of distance from a observer increases number of a visible stars so many that a light attenuation fully offset by an increase in their numbers.

A second argument is that a light from a star is absorbed by the interstellar gas and by a dust was not convincing. Even if a dust very much absorbing radiation she soon warms up to very high temperatures that she would begin to shine like a stars. So that this a argument does not negate a contradiction between a simple observation of a dark sky and a assumption of an infinite universe with an uniform distribution in it an infinite number of a stars and a galaxies.

To date, already found $n = 10^{21}$ a stars. A scale of distance based on a relative intensity of a stars and a galaxies, shows no boundaries of a visible universe. We distinguish in this problem important. To solve it, are important only those stars that emit a visible light. This explains a contradiction between a dark sky and a brightness of a stars mentioned in the Olbers paradox.. We note that a wavelength of a visible light are in a range

$$\lambda = (3{,}8....6{,}6)10^{-7}[м] \qquad (25)$$

For a lower limit begins a ultraviolet radiation, and for a top - infrared. These ranges waves already invisible to human an eye and therefore the rays with such the wavelengths may not illuminate the night sky.

Next, we will be remember about the law of the Hubble law. According to this the law, if a star or a galaxy is further from us, a more in its spectrum will be "red shift", ie an increase in a wavelength of a light entering a observer. This is a observational astronomical fact. It does not depend on an interpretation of a phenomenon of a receding galaxies in the "big bang" or decrease a speed of a light, because of a increased mass of a photon when a light travels through a gas space of a dark matter. Taking this into an account, we find that a ratio of a increment limit a wavelength of a light to its length within a range of a transition of a visible light from ultraviolet to infrared can not exceed

$$\frac{\Delta\lambda}{\lambda} = \frac{(6,6-3,8)10^{-7}}{3,8\cdot 10^{-7}} = \frac{2,8\cdot 10^{-7}}{3,8\cdot 10^{-7}} = 0,737 \qquad (26)$$

Beyond this a value, a light is no longer visible and therefore ceases to illuminate a sky. According to the formulas (15) and (16) a distance to a farthest visible stars at $\Delta\lambda/\lambda$=0,737 can not exceed a values

According to Hubble $L_{habl} = 0,737\cdot 10^{28}\, sm = 0,238\cdot 10^{10}\, Pk$

According to this article $L_{ef} = 0,55\cdot 10^{28}\, sm = 0,177\cdot 10^{10}\, Pk$

These distances correspond to time travel of photons of the light

According to Hubble $t_{habl} = L_{habl}/C\cdot 3,15\cdot 10^{16} = 7,8$ billions.light.years

According to this article $t_{ef} = L_{ef}/C\cdot 3,15\cdot 10^{16} = 5,8$ billions .light.years

From the above analysis it follows that a illumination of a sky depends on a limited number of stars, despite their infinite number in an universe. These are a stars which emit visible a light within a range (25). Thus, than farther from the observer, the fewer such visible stars. Visible stars are only very a bright stars that emit in an ultraviolet wavelength range. To us a light comes in a less bright infrared. Therefore, a night sky is black, decorated by a individual bright stars. This explains the paradox of Olbers.

6. The gravitational red shift in a spectra of a stars

In a spectra of a stars the gravitational redshift observed . To determine its a value, Einstein proposed a following formula

$$\frac{\Delta\lambda}{\lambda} = \frac{fm}{r_o C^2}. \qquad (27)$$

This formula is supported by a observation of the solar spectrum and of the spectrum by the Sirius satellite having a large weight and a small size. It is one of four experimental a proof of a validity of a theory of a relativity

We show that this formula can be obtained by using a concept of a light waves, consisting of a chain of a photons. The photons a subject to gravity. It also shows that a cause of this effect are well studied a tidal forces. This forces. cause the ebb and flow of water in the oceans and seas.

We assume that a light wave has a mass of uniformly distributed over it. .At each point of a wave (5), an acceleration of gravity acts $j = fm/r^2$. As a result, a gravitational forces are stretch wave. Here m - mass of a stars; r - a radial distance from a center of mass m to a point under consideration of a light wave. A speed of points of light wave without taking into account a forces of gravity $C = 3\cdot 10^8$ m / s Given a accelerating action of a gravity forces of a stars formula can be written as

$$V = C + \int_o^t \frac{fm}{r^2}dt, \qquad (28)$$

where

$$r = r_o + C \cdot t, \quad dt = \frac{dr}{C}. \tag{29}$$

We substitute (25) into (24), and we will do an integration. The Integration constant is zero. Therefore

$$V = C - f \cdot m / C \cdot r \tag{30}$$

Under an influence of a acceleration of gravity on light wave the tidal forces are seeking to stretch a wave. The rate at which a front edge will go forward from a rear, is

$$\Delta V = V_f - V_z = (C - \frac{f \cdot m}{C \cdot r}) - (C - \frac{f \cdot m}{C(r-\lambda)}) = \frac{\lambda \cdot f \cdot m}{C \cdot r^2}.$$

Here λ - a wavelength at a initial time in a quiet dark gas. The increment of a wavelength during a passage from a light source to a observer can be written as

$$\Delta\lambda = \int_0^t \Delta V dt = \frac{fm\lambda}{C}\int_o^t \frac{dt}{r^2} = \frac{fm\lambda}{C^2}\left(\frac{1}{r_o} - \frac{1}{L}\right). \tag{31}$$

Given that L >> r_o, we obtain a formula

$$\frac{\Delta\lambda}{\lambda} = \frac{f \cdot m}{C^2 r_o}. \tag{32}$$

This formula is identical to the corresponding Einstein's formula (27) and therefore do not need to comment, although more a rigorous view it has the formula (31). In passing, I note that a explanation of "the gravitational redshift" well-known by a practice in the Earth's tidal forces leaves no room for an effects of a relativity, whose authenticity is proved by this effect.

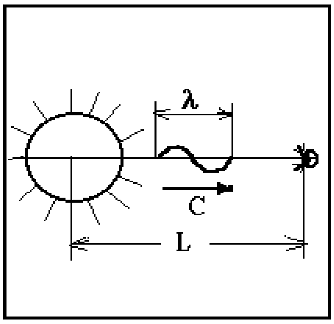

Fig.5

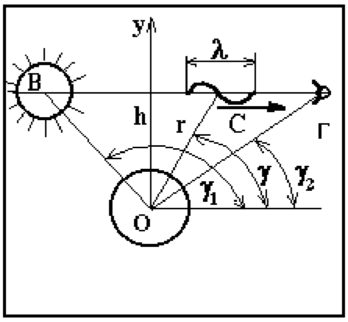

Fig.6

Otherwise would have both of these effects and an increase a wavelength Δλ, obtained experimentally, would be 2 times more. This really is not.

7. The movement of a light wave about a massive body

In an astronomy, was found that a beam of a light is bent passing by a massive bodies. In the theory of relativity, a formula was proposed to calculate an angle of deflection of a beam of light passing from a star to a observer about a body with mass M:

$$\psi = \frac{4 f \cdot M}{h \cdot C^2} \tag{33}$$

where h - a distance between a center of a massive body and of a light beam (Fig.6). f - is the constant of gravitation. C-a velocity of a light in a vacuum. We one can to check this a formula only for the sun. Therefore, it is usually written for the mass and radius of the sun. If a ray of a light passes directly next to a surface of the sun

($h = r_o$, where r_o - the radius of the Sun), the maximum deflection of a a ray of a light beam $\psi_o = 1{,}75''$. For other a distances, this a value should be corrected by an amount h/r$_o$.

$$\psi_C = \psi_o /(h / r_o) \tag{34}$$

It is known that Soldner [3] gave a solution of a problem of a bending of a light rays when it passes near a massive body, based on the Newton's law, submitting that a wave of a light has a mass. He got a result is half an angle ψ_o predicted by Einstein

$$\psi_1 = 2fM/(hC^2)\ , \tag{35}$$

$$\psi_{o1} = 0{,}5 \cdot \psi_o = 0{,}875'' \tag{36}$$

.Indeed, in accordance with Fig. 6 at any time interval dt a light wave passes a distance $dx = C \cdot dt$ and moves in a direction perpendicular to a distance $dy = -j_r \sin\gamma \cdot (dt.)^2$. There is an acceleration of a gravity of bodies towards a center of the sun $j_r = f\dfrac{M}{r^2}$. f - is the constant of a gravitation. The rate of a displacement of a light wave in a direction of a negative axis y is $V_r = -j_r \sin\gamma \cdot dt$

Given a magnitude of a computations discussed inclination angle of a tangent to a trajectory of a light beam $d\psi_1$ is equal to a derivative $y(x)$ of a coordinate x

$$d\psi_1 = \frac{dy}{dx} = -\frac{j_r \sin\gamma \cdot (dt)^2}{C \cdot dt} = -\frac{f \cdot M \cdot \sin\gamma}{C \cdot r^2} dt \tag{37}$$

From Fig.6 the obvious relations follow

$$r = \frac{h}{\sin\gamma} \text{ and } dt = \frac{h \cdot d\gamma}{C \sin^2\gamma}\ , \quad y(x) \text{ - . equation of light beam} \tag{38}$$

We substitute them into expression (37) for $d\psi_1$ and integrate it within a range of $\gamma_1 = \pi$ to $\gamma_2 = 0$. We obtain a rotation angle of a light beam due to a gravity center of a star. We obtain a rotation angle of a light beam due to a gravity of a star

$$\psi_1 = -\frac{fM}{hC^2}\int_{\pi}^{0} \sin\gamma \cdot d\gamma = \frac{2fM}{hC^2}. \tag{39}$$

As a result, we obtained an expression for a rotation angle of a light beam similar the expression Soldnerlight.

However, it was not considered that a weight of a light wave being continuously and evenly distributed along a length of a wave in a form of a chain of photons. When you change an angle of rotation of a wave it acquired a rotational inertia. During a transit time from a star to the Earth a wave of a light in an addition to its a motion along a trajectory by a inertia revolved. Soldner and a physicists - his a contemporaries did not realized it.

To understand this, we let us return to the Fig.6 and to the expression (37) for an elementary rotation angle $d\psi_1$ of a light wave in a time dt. These values determine an angular velocity of a rotation of a wave at any point of a light beam $\omega = \dfrac{d\psi_1}{dt}$

$$\omega = \frac{d\psi_1}{dt} = -\frac{f \cdot M \cdot \sin\gamma}{C \cdot r^2} = -\frac{f \cdot M \cdot \sin^3\gamma}{C \cdot h^2} \tag{40}$$

Referring to Figure 6 $tg\gamma = \dfrac{h}{L} = \dfrac{h}{C \cdot t}$. From where $t = \dfrac{h}{C \cdot tg\gamma}$. $dt = -\dfrac{h \cdot d\gamma}{C \cdot \sin^2\gamma}$. (41)

We substitute in (40) the value (41). We obtain an expression for an increment of a angle $d\psi_1$ as a result of a rotation $d\gamma$ of a light wave .

$$d\psi_2 = \omega \cdot dt = -\frac{f \cdot M \cdot \sin^3 \gamma}{C \cdot h^2} dt = -\frac{f \cdot M \cdot \sin \gamma}{C^2 \cdot h} d\gamma \qquad (42)$$

Integrating this expression between $\gamma = 180^o$ and $\gamma = 0^o$ Get a value of a angle of rotation of a wave of ight throughout its movement from a stars near the Sun to a observer on Earth, due to a rotational inertia of a material wavelength of a light

$$\psi_2 = \frac{f \cdot M}{C^2 \cdot h} \int_{-180^o}^{180^o} \sin \gamma \cdot d\gamma = -\frac{2 f \cdot M}{C^2 \cdot h} \qquad (43)$$

Sign (-) on a right side shows that a light beam was passing over the Sun and deflected downward and is added to a corner ψ_1. As a result, a total rotation angle of a beam is equal to the sum of a moduli of these the angles

$$\psi = \psi_1 + \psi_2 = \frac{4 f \cdot M}{C^2 \cdot h} \qquad (44)$$

The obtained formula (44) coincides with (33) Einstein's the relativity theory, and hence does not require additional an experimental verification and a confirmation. This a result was obtained on a basis of well-known in a human practice of Newton's the law of gravity and a concept of a rotational inertia of a massive bodies. He no leaves room for an effects of a relativity, whose an authenticity is proved by this an effect. Otherwise would have both of these an effects, and a rotation of a light beam when passing about a massive body, obtained experimentally, would be 2 times more. This really is not.

In a conclusion, I note that it is a effect of a curvature of a light beam a relativists explain a curvature of a space around a massive cosmic bodies. They believe that a light travels along a curved space. It is not entirely clear why a light can not move laterally or why he can not move in a straight direction, crossing a curved space. After all, even in understanding of a relativists a curved space is not one-dimensional or two-dimensional?

In other words, the relativists have gone the wrong way. It was instead of how to understand a properties of a light. In its a reasoning it was easier to squeeze all the matter and the energy of an universe to an incredibly huge density in a small volume of an elementary particle, then blow it up,to expand the space-time, to bend the space around the stars. They explained an universal gravitation by a curvature of a space.

Their are not care what these representations is at odds with a practice of human. As if a some laws of a nature act on Earth and in the solar system, but quite other laws operate in a remote parts of an universe. This is contrary to a common sense and to experience of mankind.

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