The influence of dark matter on "Red shift in the spectra" of the distant galaxies and stars. Hubble's law. Big Bang.

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Abstract

The physical nature of light and the laws of its propagation in space is very well studied in terrestrial conditions. But poorly is 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.

The gaps in the knowledge about this subject permits the varying interpretations of the phenomenon. One of these erroneous interpretations was the idea of the Big Bang This an article is attempts to identify the quantitative effect of 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 Earth. As a consequence, it is proposed a different understanding of the red shift in the spectra of the distant galaxies and the phenomenon of the "big bang" .

About the expansion of the universe.

The modern cosmology suggests, that about 15 billion years ago the universe was formed as a result of the "Big Bang" and since then continuously expanded. The shift of spectral lines toward the red end in the spectra of distant galaxies was the basis for such a belief. This has been interpreted on the basis of the Doppler phenomenon as the removal of the galaxies in a result of the universe's expansion. The Hubble's law had connected the quantitatively changes in the wavelengths of the spectra with the distance to the galaxies , from which the their light came to the Earth. It is believed that at very large distances the universe is expanding much faster than the linear Hubble law predicted this.

I recall that in 2011 the Nobel Prize in Physics was awarded for the discovery of the accelerated expansion of the universe near the boundary of the universe to Americans Saul Perlmutter of the University of California at Berkeley (led supervisory project "Supernovae to Cosmology") and Adam

Reyes from 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").

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

- First the distance was determined as the distance by the redshift in the spectra on the basis of the Hubble law $L = \dfrac{\Delta\lambda / \lambda}{H}$, where H=10^{-26} 1 / m - the constant of redshift (the Hubble constant).

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

In our view, this the conclusion is erroneous. Before we have demonstrated that the lower the observed brightness of the stars than this expected due to the influence of the dark interstellar matter to the local speed of the light [3,4]. The reducing this the rate leads to a decrease in the kinetic energy of the mass of photons constituting the light wave (photon). This in turn reduces the apparent brightness of stars.

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

It is strange, but a supporters of the theory of the Big Bang and the expansion of the universe does not stop the conflict with the well-studied fact of the convergence of our the Milky Way galaxy 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 the correctness of the theory of the Big Bang.

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

The interaction of a dark matter with the baryon bodies

Now in the physics and the cosmology it is believed that baryonic matter atoms were formed in the Big Bang. Since then and to this day these atoms reached intact in its original form. In contrast to these views, we have a different perspective on this phenomenon of a nature. Our the representations are based on the idea that the baryonic body down to the smallest constantly absorb a dark matter from the surrounding space, and as a result increase their mass. **The universe is not static, as at present it is thought by the astrophysics. Over time, not only the living creatures, plants, bacteria, viruses, and so on are changed. A baryon inanimate matter, such as the stars, planets, moons, meteorites, up to the atoms and the elementary particles also change over time. The reason for this changes lies in the interaction of all these bodies with a dark matter. This knowledges opens up the new possibilities for the understanding the dynamics of the world around us.**

In light of these ideas it is assumed that the baryonic body down to elementary particles, including a photons of light, continuously is absorbing a dark matter surrounding them, which is then is converted into the matter within the of a bodies, passing from the gaseous state to the liquid state and then in the solid state. Under certain conditions, the baryonic body partially or completely is decayed into atoms of dark matter. Thus there is an eternal cycle of the matter and the energy. The internal energy of the dark gas is the energy of the cosmos. It's huge [1,2]. The process of absorption by bodies baryon dark gas 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, planets and even an atoms that make up molecules eventually have a spherical shape. A bodies' ability to absorb the dark gas is characterize as the mass flow rate of the dark gas through surface of the sphere at the elementary time

$$q = \frac{dm_e}{dt} \tag{1}$$

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

$$q = \frac{dm_e}{dt} = \alpha \cdot m, \tag{2}$$

where $\alpha = 1c^{-1}$ is a ratio of specific consumption of dark gas. It was obtained in [1,2] from the analysis of the luminosity of the star of "white dwarf" Wolf-457 and Newton's law of the universal gravitation.

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

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

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

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

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

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

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. A value $\frac{\alpha}{k} = 2,97 \cdot 10^{-18} s^{-1}$. It was obtained in [1,2] from the analysis of the motion of the Moon around the Earth. The equation (5) is defines the law of the increase of mass all the bodies of the universe with time.

Table 1 shows the results of calculations of the mass ratios of baryons m in the reported time to the mass at the initial time m_o in the range of 1 billion years to 15 billion years. **This law governs all elementary particles, atoms, molecules, as well as stars and planets, including our Earth.**

Table 1

Time (billions yeas)	1,0	2,0	3,0	3,5	5,0	10	15
$m/m_0 = e^{\alpha \cdot t / k}$	1,1	1,2	1,33	1,38	1,61	2,59	4,17

Red shift in the spectra of distant galaxies
The Hubble law

The most exciting challenge of modern physics and astronomy, without a doubt, is the mystery of the red shift in the spectra of distant galaxies. Essence of the phenomenon of red shift in the spectra of distant galaxies lies in the fact that almost all the line spectra of galaxies are shifted toward the red end compared to the same spectrum in the normal terrestrial conditions. Farther away a galaxy is, the more lines in its spectrum are shifted toward the red end. In 1930 E.Habbl deduced from observations of the

ratio for galaxies between redshift, the distance between the galaxy and the observer on the Earth, or from the time of motion of the emitting light from the galaxy to Earth. [5,6]:

$$\Delta\lambda / \lambda = H \cdot t = H^* \cdot L \qquad (6)$$

where $H \approx 3 \cdot 10^{-18}[1/s]$ - is constant redshift Hubble, $H^* = H/C \approx 10^{-26}[m^{-1}]$, $L[m]$ - the motion light from the emittinggalaxy to Earth. $t = \dfrac{L}{C}[s]$ − the movement of light from the radiating galaxy to Earth.

We believe that the light wave consists of a chain of photons. Photons, as all baryons universe absorb gaseous dark matter. As a result of increased mass according to the law (5). This leads to an increase its length. In accordance with this can be written, the increment of the light wave length heavy relates both to the wave length increment to the weight $(m - m_o)$ of its mass m_o

$$\Delta\lambda / \lambda = (m - m_o)/m_o = m/m_o - 1 = e^{\frac{\alpha}{k} \cdot t} - 1 \qquad (7)$$

Value $e^{\frac{\alpha}{k}t}$ expanded in a series. Finally we obtain

$$\Delta\lambda / \lambda = \frac{\alpha}{k} t = \frac{1}{C} \cdot \frac{\alpha}{k} \cdot L \qquad (8)$$

Here L is the distance, that the light travels for the period of time. It are connected by formula $L = C \cdot t$. Comparing (6) and (8),in view of (2.19) $\dfrac{\alpha}{k} = 2{,}97 \cdot 10^{-18}[1/s]$, we find

$$H = 3 \cdot 10^{-18}[s^{-1}] \text{ - Hubble constant,} \qquad H^* = \frac{1}{C} \cdot \frac{\alpha}{k} = 10^{-26}[m^{-1}], \qquad (9)$$

Value $\dfrac{\alpha}{k}$ in (7),(.4) proved equal to the value of the Hubble constant H, which was obtained from observations of modern astronomy, [6;7] to distant galaxies. **It is important to note that this the value $\dfrac{\alpha}{k}$ derived from the observations of the motion of the moon, and has nothing to do with the huge distances to galaxies. This alone calls into question the approval of the expansion of the universe.** Hubble formula (6) is used in astronomy to determine the distances to the stars and radiogalaxies.

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

Should be noted that the Hubble law for very long distances and therefore time traffic light wave correct record without resorting to an expansion in the range of the magnitude $e^{\frac{\alpha}{k}t}$, ie

$$\Delta\lambda / \lambda = e^{\frac{\alpha}{k}t} - 1 = e^{H \cdot t} - 1 = e^{\frac{H}{C} \cdot t} - 1 \qquad (10)$$

As can be seen from this formula (10), the red shift in the spectra of galaxies is increases exponentially.

The magnitude is determined by the Balmer lines in the spectra of these objects. Already found objects [7], for which $\dfrac{\Delta\lambda}{\lambda}$ tends to 5 and whose removal rate from the Earth closer to the speed of light. In accordance with formulas (6) and (10) these distances are different to each other

The calculation to the formula Hubble without any tweaks contradicts modern estimating the size of the explored part of the universe, approximately equal to 15 billion light-years. For example, calculations are made for these formulas $\dfrac{\Delta\lambda}{\lambda} = 3$. Obtain

$$L_{habbl} = \frac{\Delta\lambda / \lambda}{H^*} = \frac{3}{10^{-26}} = 3 \cdot 10^{26}[m] = 32 \text{ billion light-years.}$$

The calculation formula of the theory of dark matter (10) gives a correct result. For $\dfrac{\Delta\lambda}{\lambda} = 3$

$$L = \frac{\ln\left(\dfrac{\Delta\lambda}{\lambda} + 1\right)}{H^*} = \frac{1{,}38}{10^{-26}} = 1{,}38 \cdot 10^{26}[m] = 14{,}6 \text{ billion light-years.}$$

where $1 Gyr = 10^{16} s$

Going back further to the more accurate view of the Hubble law (10), we see that in contrast to the Hubble law (8), the wavelength increases nonlinearly over the time. Than the more the light wave is on its way, it more intense increases its length This is explained by the growth of the mass of the photons that make up the light waves. And this does not mean that the universe is expanding, the more that this expansion occurs the more intense than the farther away it is moved outside the boundary. Fig.1 shows a comparison of the increase in the length of the light waves received by the formulas (8) and (10) as a function of distance from the source of the radiation and the time by the propagation of the light from the distant galaxies to Earth

However, if we take the point of view of the supporters of the Big Bang theory, and we will treat the rapid increase in the wavelength predicted by the law (10) as compared to (8), as an increase in the rate of the removal of the galaxies from the observer on the Earth, it would mean that the universe is indeed expanding rapidly as it approaches its external borders.
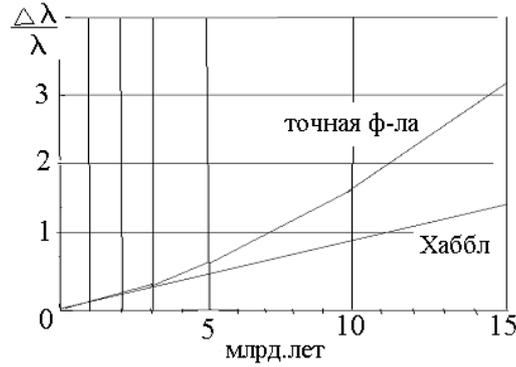
Fig.1

We also note, that a result, which was given in the article, is explaining the nature of the red shift in the spectra of distant galaxies by the interaction of the photons of a light with dark matter makes. It makes it unnecessary to explain this phenomenon by the Doppler effect and the " Big Bang. Explosions of massive stars are observed in the universe and are the most important events in the cycle of a circulation of matter in the universe . They do not occur simultaneously , but are the result of the accumulation of excess weight due to the absorption of dark matter. Apparently, these explosions are accompanied by partial conversion to gaseous substances dark matter with great energy output of gravity.

The gravitational red shift in the spectra of the stars

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

$$\frac{\Delta\lambda}{\lambda} = \frac{fm}{r_o C^2}.$$
(11)

This the formula supported by the 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 the proof of the validity of the theory of the relativity

We show that this formula can be obtained by using the concept of the light waves, consisting of a chain of the photons. The photons subject to gravity. It also shows that the cause of this the effect are well-studied the tidal forces. This the forces. causing tides of water of Earth's oceans

We assume that the light wave has a mass of uniformly distributed over its the length. At each point of the wave (Fig.2), the acceleration of gravity acts $j = fm/r^2$. As a result, the gravitational forces are stretch wave. Here m - mass of the stars; r - the radial distance from the center of mass m to the point under consideration of the light wave. The speed of points of light wave without taking into account the forces of gravity $C = 3\cdot10^8$ m / s. Given the accelerating action of the gravity forces of the stars formula can be written as

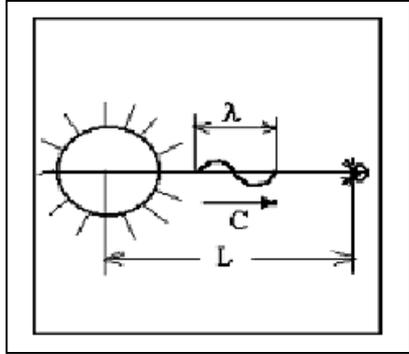$$V = C + \int\limits_{o}^{t} \frac{fm}{r^2} dt \; , \qquad\qquad\qquad\qquad\qquad\qquad (12)$$

где

Fig.2

$$r = r_o + C \cdot t, \quad dt = \frac{dr}{C}. \qquad\qquad (13)$$

We substitute (13) into (12), and we will do the integration. The Integration constant is zero. Therefore

$$V = C - f \cdot m / C \cdot r \qquad\qquad (14)$$

the influence of the acceleration of gravity on light wave the tidal forces are seeking to stretch the wave. The rate at which the front edge will go forward from the 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 - the wavelength at the initial time in a quiet dark gas. The increment of the wavelength during the passage from the light source to the observer can be written as

$$\Delta \lambda = \int\limits_{0}^{t} \Delta V dt = \frac{fm\lambda}{C} \int\limits_{o}^{t} \frac{dt}{r^2} = \frac{fm\lambda}{C^2} \left(\frac{1}{r_o} - \frac{1}{L} \right). \qquad (15)$$

Given that $L \gg r_o$, we obtain the formula

$$\frac{\Delta \lambda}{\lambda} = \frac{f \cdot m}{C^2 r_o} \quad . \qquad\qquad\qquad\qquad\qquad (16)$$

This formula is identical to the corresponding Einstein's formula (11) and therefore do not need to comment, although more the rigorous view it has the formula (15). In passing, I note that the the explanation of "the gravitational redshift" by a well-known the practice in the Earth's tidal forces leaves no room for the effects of Einstein's the relativity, whose authenticity is proved by this effect. Otherwise would have both of these effects and increase the wavelength $\Delta \lambda$, obtained experimentally, would be 2 times more. This really is not.

The movement of the light wave about a massive body
About the curved space

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

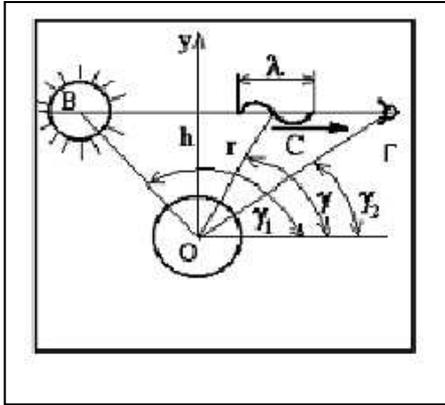$$\psi = \frac{4f \cdot M}{h \cdot C^2} \qquad (17)$$

Fig.3

where h - the distance between the center of a massive body and of the light beam (Fig.3). f - is a constant of the gravitation. C-the velocity of the light in the vacuum. We one can to check this the formula only for the sun.

Therefore, it is usually written for the mass and radius of the sun. If a ray of the light passes directly next to the surface of the sun ($h = r_o$, where r_o - the radius of the Sun), the maximum deflection of the a ray of the light beam $\psi_o = 1,75''$. For other a distances, this the value should be corrected by an amount h/r$_o$.

$$\psi_C = \psi_o /(h/r_o) \qquad (18)$$

It is known that Soldner [6] was gave the solution of the problem of the bending of the light rays when it passes near a massive body, based on the Newton's law, submitting that the wave of the light has a mass. He got the result is half the angle ψ_o predicted by Einstein

$$\psi_1 = 2fM/(hC^2) , \qquad (19)$$

$$\psi_{o1} = 0,5 \cdot \psi_o = 0,875'' \qquad (20)$$

Indeed, in accordance with Fig.3 at any time interval dt the light wave passes the distance $dx = C \cdot dt$ and moves in the direction perpendicular to the distance $dy = -j_r \sin \gamma \cdot (dt.)^2$. There is the acceleration of the gravity of bodies towards the center of the sun $j_r = f \dfrac{M}{r^2}$. f - is a constant of the gravitation. The rate of the displacement of the light wave in the direction of the negative axis y is $V_r = -j_r \sin \gamma \cdot dt$. Given the magnitude of the computations discussed inclination angle of the tangent to the trajectory of the light beam $d\psi_1$ is equal to the derivative $y(x)$ of the coordinate x

$$d\psi_1 = \frac{dy}{dx} = -\frac{j_r \sin\gamma \cdot (dt)^2}{C \cdot dt} = -\frac{f \cdot M \cdot \sin\gamma}{C \cdot r^2} dt \qquad (21)$$

From Fig.3 the obvious relations follow

$$r = \frac{h}{\sin\gamma} \quad \text{and} \quad dt = \frac{h \cdot d\gamma}{C \sin^2 \gamma} , \quad y(x) - . \text{ equation of light beam} \qquad (22)$$

We substitute them into expression (21) for $d\psi_1$ and integrate it within the range of $\gamma_1=\pi$ to $\gamma_2=0$. We obtain the rotation angle of the light beam due to the gravity to center of the star. We obtain the rotation angle of the light beam due to the gravity of the star

$$\psi_1 = -\frac{fM}{hC^2} \int\limits_{\pi}^{0} \sin\gamma \cdot d\gamma = \frac{2fM}{hC^2}. \tag{23}$$

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

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

To understand this, we let us return to the Fig.3 and to the expression (21) for the elementary rotation angle $d\psi_1$ of the light wave in the time dt. These the values determine the angular velocity of the rotation of the wave at any point of the light beam $\omega = \dfrac{d\psi_1}{dt}$

$$\omega = \frac{d\psi_1}{dt} = -\frac{f \cdot M \cdot \sin\gamma}{C \cdot r^2} = -\frac{f \cdot M \cdot \sin^3\gamma}{C \cdot h^2} \tag{24}$$

Referring to Fig.3 $\quad tg\gamma = \dfrac{h}{L} = \dfrac{h}{C \cdot t}$. from whence $\quad t = \dfrac{h}{C \cdot tg\gamma}$. $\quad dt = -\dfrac{h \cdot d\gamma}{C \cdot \sin^2\gamma}$. $\tag{25}$

We substitute in (24) the value (25). We obtain an expression for the increment of the angle $d\psi_1$ as a result of the rotation $d\gamma$ of the light wave .

$$d\psi_2 = \omega \cdot dt = -\frac{f \cdot M \cdot \sin^3\gamma}{C \cdot h^2} dt = -\frac{f \cdot M \cdot \sin\gamma}{C^2 \cdot h} d\gamma \tag{26}$$

Integrating this the expression between $\gamma = 180^o$ and $\gamma = 0^o$. We get the value of the rotation angle of the waves of light for all the time of its motion from a stars near the Sun to the observer on Earth, caused by inertia of the rotation of the material wave of a light

$$\psi_2 = \frac{f \cdot M}{C^2 \cdot h} \int\limits_{-180^o}^{180^o} \sin\gamma \cdot d\gamma = -\frac{2f \cdot M}{C^2 \cdot h} \tag{27}$$

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

$$\psi = \psi_1 + \psi_2 = \frac{4f \cdot M}{C^2 \cdot h} \tag{28}$$

The obtained formula (28) coincides with (17) Einstein's the relativity theory, and hence does not require additional the experimental verification and the confirmation. This the result was obtained on

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the basis of well-known in the human practice of Newton's the law of gravity and the concept of the rotational inertia of a massive bodies. He no leaves room for the effects of the relativity, whose the authenticity is proved by this the effect. Otherwise would have both of these the effects, and the rotation of the light beam when passing about a massive body, obtained experimentally, would be 2 times more. This really is not.

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

In other words, the relativists went through quite to the exotic way, instead of how to understand the properties of the light. In its the reasoning it was easier to squeeze all the matter and the energy of the universe to the 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 the universal gravitation by the curvature of the space. The question is, on what the curved space falls to the ground thrown up the ball? When this does not bother them that all this is contrary to the practice of the earth man. As if the some laws of the nature act on Earth and in the solar system, but quite other laws related to the rate of bodies act in the distant parts of the universe from us? This is contrary to the common sense and the experience of mankind.

Alternative idea of "Big Bang"

Astrophysics asserts that our universe was formed as a result of a "Big Bang ." This is confirmed by the detected CMB and gravitational waves , which have survived the explosion. According to Gamow's theory about 15 billion years ago the superdense elementary particle was exploded . Products explosion created our universe. Since then, she is constantly expanding. It remains an open question on the form in which материя и the energy is inside this superdense elementary particle ? Considered improper to ask what was around before the explosion particles and where the universe is expanding ?

This article has a different perspective on this phenomenon of nature. It is based on the idea that the baryonic body is constantly absorb dark matter from the surrounding space. As a result, the mass of the body is continuously increasing. Next, consider to the what the consequences may lead the continued growth of the mass and dimensions of atoms tel.

Radial flow to the centers baryon bodies are unstable and therefore about the bodies was formed vortices. These vortices was forced atomic nuclei rotate with high angular speed.

The atoms of baryonic matter very quickly rotate, because dark gas is supplied into атом with great peripheral speed . Apparently, the transition of a dark gas from gaseous to liquid state (solid), when the jets of a dark gas reach a speed of a light (in a vacuum). This transition is occurs at the outer boundary of the atoms $r_0 = 10^{-10}[m]$ при достижении угловой скорости порядка $\omega = \dfrac{C}{r_0} = \dfrac{3 \cdot 10^8}{10^{-10}} = 3 \cdot 10^{18} [рад/с]$. Here the velocity of dark gas jet reaches of the speed of a light (in a vacuum). With the same angular velocity of the rotating nucleus of an atom

A hydrogen atom has an axis of rotation and has poles respectively. Select the segment core atom wide Δr near the equator, as shown in Figure 2. The mass of this segment $dm = \rho_o r_o^2 \Delta r \cdot d\theta / 2$. This segment has angular velocity ω. He has a centrifugal force. (mass center located at a distance from the axis of rotation $r_{ц.м} = \frac{2}{3} r_o$)

$$dF_z = \frac{3u_o^2 dm}{2r_o} = \frac{3}{4}\omega^2 r_o^3 \rho_o \Delta r \cdot d\theta \qquad (29)$$

This force is balanced by the external pressure acting upon the surface segments

$$dF_p = p_e r_o \Delta r \cdot d\theta , \qquad (30)$$

where $p_e = p_{eo}(1 - \frac{C_o^2}{V_{max}^2})^{\frac{\kappa}{\kappa-1}} = 2{,}64 \times 10^{25}[\Pi a]$, $u_o = C = 3 \cdot 10^8 [m/s]$ -окружная скорость струй темного газа на поверхности сегмента, $p_{eo} = 6{,}426 \cdot 10^{25}[\Pi a]$ -давление в темном газе, окружающем барионные тела [1,2]. Nucleus of the atom density of the substance can express the ratio of mass to volume $\rho_o = 3m/4\pi \cdot r_o^3 \approx 10^{18}[]kg/m^3]$

Segment nucleus of an atom will be broken by centrifugal force when it exceeds the pressure force
$$dF_{ц.б}/dF_p \geq 1 \qquad (31)$$
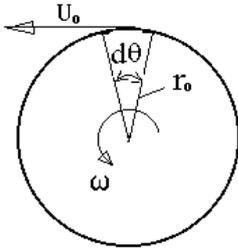
Fig.4

Substitute (29) and (30) into (31). We obtain the condition of destruction atomic nucleus centrifugal forces

$$\frac{dF_z}{dF_p} = \frac{9\omega^2 m}{16\pi \cdot r_o p_{to}(1 - \frac{C^2}{V_{max}^2})^{\frac{\kappa}{\kappa-1}}} \geq 1 \qquad (32)$$

Hydrogen atom (nucleon) and the pressure in the dark gas is characterized by the following parameters: $m = 1{,}673 \times 10^{-27}[kg]$, $\omega = 3 \times 10^{18}[s^{-1}]$, $r_o = 10^{-15}[m]$, $p_{eo} = 6{,}426 \times 10^{-25}[H/m^2]$ .For a nucleus of a hydrogen atom we have $dF_{ц.б}/dF_p = 0{,}0187 < 1$. Consequently, the nucleus of an atom can not be broken by centrifugal forces.

The transition process gaseous dark matter into the liquid phase at the boundary of the atomic nuclei baryon bodies increases their weight and dimensions. Next we estimate how long it took to fill the nucleus of atom by liquid dark matter to its present size. From expression (4) the growth rate is determined $\frac{dm}{dt} = \frac{\alpha}{k} m$

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Atomic mass in accordance with the law (5) increases in time is not uniform. As the average value of this increase will take the value of $(\frac{dm}{dt})_{mdl} = 0,7\frac{\alpha}{k}m$.

Mass atom considering this value will be increase in the time interval in accordance with the expression $m = (\frac{dm}{dt})_{mdl}\Delta t$.

The present value of the mass of an atom of hydrogen $m = 1,67 \cdot 10^{-27}[kg]$. This time is of the order of the universe of life, from birth to the present day accumulates over time $\Delta t = \dfrac{m}{(\frac{dm}{dt})_{mdl}} = 0,48 \cdot 10^{18}[s] = 15,3[Gyr]$. This time is of the order of the universe of life, from birth to the present day

The process of filling core by a liquid of dark matter increased its weight and volume to the limit value . This brings us to the hypothesis of the "Big Bang. We believe that "the act of creation of baryonic matter from dark gas" is simultaneously throughout the universe. Liquid dark matter fills the nuclei of atoms in a long time and it results to the destruction of the atoms by centrifugal forces.. **For all matter in the universe annihilation of matter can also occur at the same time (in astronomical terms). It is likely that this will be accompanied by a simultaneous explosion. It will be a "Big Bang ."**

Of course, one does not need a explosion of "superdense elementary particle", whose structure could not imagine even the scientists with the most violent imagination.

In this case, the "Big Bang" will everywhere, as if by clockwork alarm installed in every atom. As a result of this explosion the baryons is disintegrate into free atoms dark gas. All dark gaseous field will enflame explosion and immediately begin the vortex formation, ie, conversion of gas dark matter into a baryonic matter. The process can be repeated an infinite number of times.

You can try to estimate how much time is left until the next "Big Bang". To do this, use the condition disrupt the nucleus of an atom (32). At the same time, we note that with increasing time the mass of the nucleus of an atom will increase in accordance with the law $\dfrac{m}{m_o} = e^{\frac{\alpha}{k}\cdot t}$. With increasing

mass will increase the radius of the nucleus in accordance with the expression $r = \sqrt[3]{\dfrac{3m_o e^{\frac{\alpha}{k}\cdot t}}{4\pi \cdot \rho_o}}$

Angular velocity is not changed, as it has been defined for the circumferential speed at the far edge of the atom, but not to its nucleus. With these remarks, the destruction of the state of the nucleus of an atom (hydrogen) takes the form

$$\frac{dF_z}{dF_p} = \frac{9m_o\omega^2 e^{\frac{\alpha}{k}t}}{16\pi \cdot \sqrt[3]{\frac{3m_o e^{\frac{\alpha}{k}t}}{4\pi \cdot \rho_o} \cdot p_{eo}(1 - \frac{C^2}{V_{max}^2})^{\frac{\kappa}{\kappa-1}}}} \geq 1$$

where $\kappa = 5/3$, $p_{eo} = 6{,}426 \times 10^{25}[\Pi a]$, $u_o = C = 3 \times 10^8[m/s]$, $m_o = 1{,}673 \times 10^{-27}[kg]$, $\omega = 3 \cdot 10^{18}[s^{-1}]$, $\alpha/k = 2{,}97 \cdot 10^{-18}[s^{-1}]$. Calculations have shown that this condition is satisfied, when radius of the nucleus of the hydrogen atom $r = 2{,}02 \cdot 10^{-15}[m]$ at this moment is $t = 32[Gyr]$. I.e by this time the dimensions of the nucleus of the atom increased 2.02 times.

Thus from the previous "Big Bang" passed around , $15{,}3[Gyr]$, and the next you have to wait more $32[Gyr]$. While you should not worry about the next "Big Bang." Thus it is necessary to reckon with the fact that we had no exact calculation and estimate. The values obtained can be refined.

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