THE LAST RIDDLE OF THE SPHINX, OR WHY DO THE STARS SHINE? (published in the journal Engineer No. 2-4, 2013)

Look at the stars. The great kings of the past are looking at us from these stars.
From the cartoon "The Lion King"

There is an ancient legend, the text of which is carved on the rock of Abu Simbel in Egypt and says: "When a person understands why the stars are shining, the sphinx will laugh and the world will end." It seemed that in the 20th century, people finally realized that it has been feeding the stars with energy for billions of years, and this thermonuclear source, reproduced on Earth in the form of hydrogen bombs, is about to cause the end of the world. Fortunately, the end did not come - neither 50 years ago, nor in 2012. This is understandable, because in reality people have not solved the riddle of the Sphinx about the cause of the glow of the stars.

The fallacy of the thermonuclear hypothesis was immediately obvious to everyone. No wonder our astronomer V.G. Fesenkov called it "astrophysical abstraction" [1]. This hypothesis was developed by the English astronomer Arthur Eddington, who built a mathematical model of the structure of stars. But from this model it followed that in the interior of the Sun and other stars, the characteristic temperatures are millions of Kelvin, which is not enough for a thermonuclear reaction (in a thermonuclear explosion, the reaction proceeds at a billion Kelvin). The thermal energies of hydrogen nuclei are thousands of times lower than those needed to overcome the Coulomb repulsion and enter into a nuclear reaction [2]. The absence of intense thermonuclear reactions in the interior of the Sun was also confirmed by the deficit of neutrinos emitted by a star during nuclear reactions. The measured flux of these particles turned out to be 3 times lower than the required one and is comparable to the background of the Earth. But despite such obvious contradictions and thanks to widespread advertising, the thermonuclear hypothesis is now everywhere presented as the final and indisputable truth, along with the equally controversial theories of relativity and the Big Bang, imposed by the same Eddington, who became the new royal astronomer, "who sent all dissenting to hell" [2 , from. 57].

In this sense, the end of the world really came, since the light of knowledge was extinguished, and groundless dark theories reigned in science and the consciousness of people. And contradictions, as usual, were "swept under the carpet." G. Gamow formally "proved" that thermonuclear reactions can proceed at low temperatures due to the tunneling of nuclei through the Coulomb barrier. And to explain the deficit of solar neutrinos, it was formally accepted that the electron neutrinos generated in the reactions are converted on the way to the Earth into

neutrinos of other types. All astronomers have seen these formal explanations and hypotheses false. Thus, academician A.B. Severny showed that the temperature of the sun's interior is even lower than Eddington believed, and thermonuclear reactions hardly go there. Astrophysicist V.A. Ambartsumyan directly stated the falsity of the hypotheses of the thermonuclear glow of stars, the expansion of the Universe and the Big Bang, noting that these hypotheses are not the result of experiment, but of an abstract mathematical approach. The adherents of this approach were called formalists by Ambartsumyan, referring to them as Eddington, De Sitter, Lemaitre and Gamow [3]. These formalists, cunningly using the madness of world wars, the decline of science and the disunity of scientists, have formed a gang of "space pirates-marauders", torn from the solid ground of facts and "robbing" in the vastness of space, where it is difficult to catch them on error, while there are no interstellar ships to check hypotheses.

The same formalists rejected alternative explanations for the glow of the Sun and stars. Thus, the most substantiated gravitational mechanism for the release of solar energy, proposed by Yu.R. Mayer and H. Helmholtz, rejected for formal reasons [1], deciding that if the Sun shone due to gravitational compression and heating of gas, then this energy would be enough for it for a million years, and the stars shine for billions of years. With such a formal approach, they did not take into account that matter from the outside can fall and actually falls on the Sun (such a spiral fall of dust and gas onto a star is known in the form of accretion and the Poynting effect, Fig. 1), and it heats up the star, giving up the energy accumulated during falling in the gravitational field of the Sun [4]. Since the reserves of this diffuse matter (gas, dust, comets and asteroids) are enormous, and already in the vicinity of the solar system are comparable to the mass of the sun, it would have shone for billions of years. For its luminescence with a power of $W=3.8\cdot10^{26}$ W, it is sufficient to absorb the mass $\Delta m=Wr/GM$ per year, which at $r=7\cdot10^{8}$ m, equal to the radius of the Sun, will be $6\cdot10^{22}$ kg - of the order of the mass of the Moon, or one billionth on the mass M of the Sun [4].

But the formalists found fault here too: an increase in the mass and gravity of the Sun would cause a smooth reduction in the year - the period P of the Earth's revolution around the Sun, which is not observed. For the Earth, with mass m and orbital radius R, from the gravitational force formula $F=GmM/R^2$ and the condition $F=ma$ (where the acceleration is $a=4\pi^2R/P^2$) we get $M=4\pi^2R^3/GP^2$. That is, an increase in the mass M will cause an increase in the right-hand side of a decrease in the period P. Since the period P remains almost unchanged, the gravitational hypothesis was rejected [2]. This is another feature of the formal approach: the formalists, translating the problem into the language of formulas, manipulate them as they please, deceiving the conclusion they need. For some reason, it was considered

here that the increase in mass will manifest itself only in the reduction of the year, although with an increase in $M=4\pi^2R^3/GP^2$, the period P can persist if the radius of the orbit R by 15 cm, which cannot be explained otherwise than by an increase in the mass of the Sun by about $6\cdot10^{18}$ kg per year [5]. Although, according to the thermonuclear hypothesis, the mass of the Sun should only decrease due to the solar wind and the "conversion" of mass into energy.

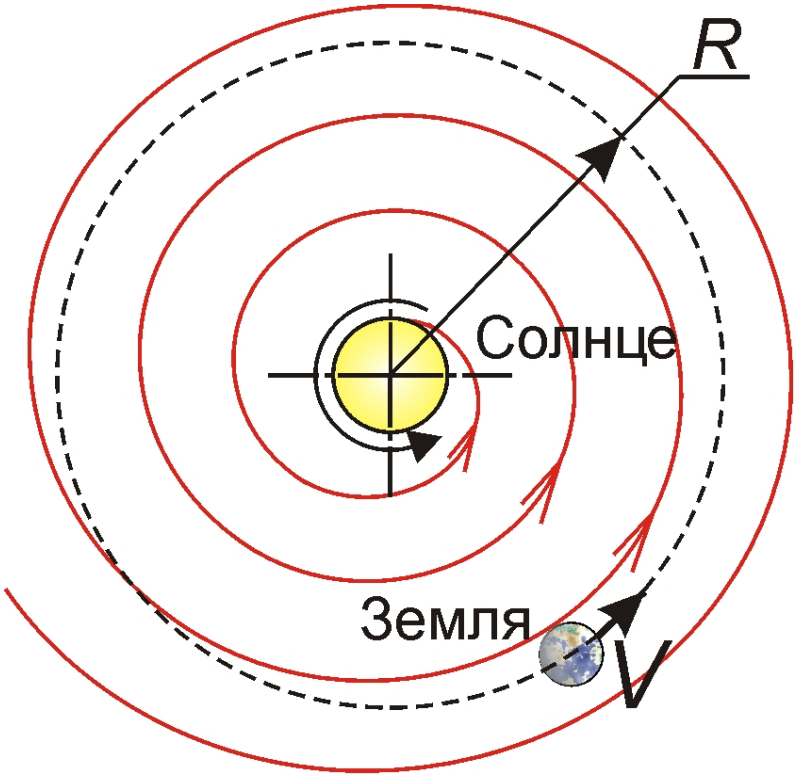

Рис. 1. Падение по спирали на Солнце пыли и метеоритов наращивает его массу, ускоряет движение Земли по орбите и радиус R орбиты.

Fig. 1. Falling dust in a spiral on the Sun and meteorites increases its mass, accelerates the Earth's orbital motion and the radius R of the orbit.

It turns out that observations confirm the increase in the mass of the Sun and the gravitational hypothesis, but reject the thermonuclear one. True, the increase in mass turned out to be 10,000 times less than the calculated one [4]. But this can be explained by the fact that the heavy matter of meteorites and dust, absorbed by the Sun, not only settles on its surface, but continues to sink to the very center, releasing gravitational energy. Thus, the radius r in the formula $\Delta m=Wr/GM$ does not correspond to the radius of the Sun, but to the radius of its core, the core, which may turn out to be 10,000 times smaller than the radius of the star, being about 70 km. This inner core would not only consist of heavy elements, but would also have a

tremendous density due to the gigantic pressure in the center of the star. As a result, a proportionally smaller mass, $\Delta m=6\cdot10^{18}$ kg per year, is enough to power the Sun. By the way, our astronomer N.A. Kozyrev believed that the source of the sun's energy is outside, not inside. That is why the corona (outer atmosphere) of the Sun is heated by the friction of the matter falling into it more strongly (up to millions of kelvin) than the surface and the interior of the Sun, which the hypothesis of an internal thermonuclear heat source could not explain. Yes, and N. Tesla considered the source of stellar energy the absorption of mass: the Sun absorbs mass faster than it scatters it with light and heat. It is not for nothing that scientists still put forward a hypothesis of a gravitational heat source of giant planets and stars [6].

So, the increase in the mass of the Sun will explain both its energy output W, and the anomalous increase in the astronomical unit R, and the abnormally high temperature of the corona. Sometimes they object that the replenishment of the star in the course of constant "meals" would not go unnoticed. But the gigantic energy release of the Sun itself is a striking manifestation of the increase in mass. In addition, with a gigantic surface of the Sun of $6\cdot10^{18}$ m^2, a mass of the order of a kilogram would settle annually for each square meter, which would be absorbed imperceptibly if we take into account the density of the solar atmosphere. It turns out that the Sun breathes, absorbs the atmosphere to provide itself with energy, like a living being, and the solar wind, depleted in energy and mass, "exhales" - a stream of protons and electrons, carrying about 1% of the absorbed and released power W. Like a lion with a fiery mane-crown, absorbs the Sun and "food", swallowing dust and stones, asteroids that release energy when falling into the insatiable womb of the Sun. Having settled into the gravitational trap of the star, the bodies fall into it, drawn and inhibited by the flows of matter captured by a giant funnel, like a trap of an ant lion.

It is believed that the star can also "regurgitate undigested food" - heavy and radioactive elements that form when the planet is detached. Laplace also argued that the Sun gave birth to all the planets, and proposed to simulate this in the Plateau experiment, where a drop of sunflower oil suspended in a liquid of the same density takes the shape of a ball due to surface tension [7]. This sun drop, unwound by a rod, gradually flattens and separates from itself the rings, which disintegrate into small oil balls. The same, according to Laplace, happens with the Sun, which separates and throws out all new planets during spinning. As in a centrifuge, at the moment of separation, heavy elements and the core of the Sun formed from them gather at the periphery of the star: from them planets are born. A similar point of view was defended by G. Darwin and V. Fesenkov [8]. This is how the satellites of the planets can be formed: first, the planets are separated by rings, like those of Saturn, which gather into satellites as they move away. By the way, according to Greco-Roman mythology, Saturn (god Kronos) devoured stones and his children, and regurgitated

them when they grew up, as if the Greeks knew the mechanism of the growth of planets and the formation of their satellites. In Laplace's model, it was a mystery what plays the role of a rod, spinning the Sun and planets faster and faster, causing their fragments to separate. And now it is clear that the spinning is driven by matter falling on the star (and planets), which, together with energy and mass, increases their angular momentum. That is why, the older and largest a star or planet, the faster it rotates [9] and emits more heat, since more matter falls on it, including from meteor showers, such as leonids. And when the fragments are separated and from the swirling of neighboring layers, the rotation slows down, the angular momentum decreases.

This can explain the deficit of the angular momentum of the Sun in comparison with the planets [9]. It is believed that it is associated precisely with the transfer of rotation from the Sun to the planets. This can also explain the gradual distance of the planets from the Sun - an increase in R. After all, if the Earth's orbital velocity remained the same, an increase in the Sun's mass would lead to a reduction in the Earth's orbit. And since R grows, then in order to preserve the length of the year P, the Earth's speed must proportionally grow, which is caused by tidal friction (the Earth slows down the rotation of the Sun, moving away at the same time, just as the Moon slows down the Earth's rotation and moves away annually by 4 cm [9]) and accelerating the action of vortex flows of dust and gas, accelerating the Earth. Combined with increasing mass, this increases the orbital radius of the Earth and other planets. It is possible that the balance of these two processes stabilizes the periods of revolution of the planets and the ratio of the radii of their orbits, given by the empirical rule of Titius-Bode. So the "Sun King", crowned with a shining crown, coordinates the life of its subjects, the planets.

Interestingly, the estimated time of the Earth's distance from the Sun to its current position is billions of years, which is comparable to the measured age of the Earth. This confirms that it was the Sun that gave birth to the Earth and that 250 million years ago it was noticeably closer to the star, from where its former hot climate, where large cold-blooded dinosaurs could flourish. The slow distance of the planets from the star, leading to their cooling, would force advanced civilizations to gradually migrate, colonizing all the planets closer to the star, mastering them from the poles, where the temperature is closer to usual. In this light, interesting is the well-known hypothesis according to which there was a civilization on Mars (which is confirmed by artifacts of Mars, including the "pyramids" and the "face of the sphinx" [10]), which created developed centers at the Poles of the Earth (as described by the Russian, Indian, Greek and Egyptian legends), where the "Martians" migrated and founded the earthly civilization, when Mars experienced the "end of the world", becoming a cold desert. So, one day people will be able to inhabit Venus, starting from the poles, if the Earth, with distance and cooling, becomes unsuitable for life,

and Venus cools down and condenses its dense atmosphere. The hypothesis of super-technological civilization was also defended by such a serious physicist as F. Soddy, who associated with it the legends of paradise, the golden age of abundance of energy and transmutation of elements, substantiated in the works of Soddy [11]. This hypothesis even became the basis for a number of films, from such old ones as "Sinbad and the Eye of the Tiger" to the modern "Spy Children".

Soddy's point of view is confirmed by the cultural heritage of our ancestors. So, in a number of languages, salt is a synonym for the sun, but few will explain why. Firstly, salt crystals and the sun are closely related to polar symbolism: according to ancient Indian, ancient Greek and ancient Russian legends, in the golden age, it was at the pole ("in the center", "at the edge of the earth", "in Hyperborea"), where the sun does not set for six months , and snow and icebergs lie like heaps of salt, there was a paradise oasis and there was a pyramidal temple of the Sun, giving energy and substances, having the shape and shine of a salt crystal [12, 13]. Isn't this a fabulous "white-combustible alatyr-stone - the father of all stones" (described in the Deep Book, XII-XIII centuries), which, according to legend, was located on the North Polar Island? Ancient legends about a wonderful polar oasis-island inhabited by magicians with an energy-releasing mountain are reflected both on the ancient map of Mercator and in the works of such classics as Jules Verne ("The Adventures of Captain Gaterras", "Ice Sphinx"), Obruchev ("Sannikov's Land", " Plutonium "), A. Belyaev (" Air Seller "), A. Tolstoy (" Aelita "), A. Kuprin (" Mountain of the Star "), V. Bryusov (" Republic of the Southern Cross "). From here comes the pagan tradition - to wait on Kolyada for wonderful gifts from Father Frost, Santa Claus - miracles arriving from the North Pole.

Second, the process of grinding salt used to simulate the release of solar energy. Pouring rock salt crystals into a salt mill, friction and rotation of its millstones, leading to heating and grinding of salt, crumbling from the millstones in a continuous stream, similar to heating, ionization with the formation of the finest matter of light (also associated with a shining salt powder) in the atmosphere of the Sun during its rotation and falling stones and dust into it. In the North, the curtains of auroras ignited by streams of elementary particles - dissociated solar matter, stardust - were compared with a stream of salt dust falling from millstones. It is not for nothing that in the Slavic tradition the polar temple was called the "Thundering millstone". That is why there are so many tales and legends about the salt mill: the Russian fairy tale about the millstones, the Finnish epic Kalevala. There, the miracle mill Sampo (a source of energy and substances) is stolen from the pole by the dark forces of space, leaving the earth without energy, which was a symbol of the end of the world. In an adapted form, this plot is familiar to everyone from K. Chukovsky's fairy tale "The Stolen Sun", the song "The Fool and the Sun" by the "Alice" group ["Дурак и

Солнце" группы "Алиса"], etc. It is not for nothing that the Finnish astrophysicist T. Jaakkola, who proved the eternity of the Universe, the falsity of the theories of the Big Bang and the scattering of galaxies, put a lot of effort into revealing the solar-cosmic symbolism of the Kalevala. And another well-known Slavic physicist N. Tesla [Н. Тесла], having drawn a number of ideas from ancient Indian texts, noted that matter dissociates in the Sun, as if it is abraded into the finest matter, scattered in the form of light (a stream of rheons [14]). So D.I. Mendeleev [Д.И. Менделеев] believed that the sun generates light in the form of a stream of particles of matter (called corona, due to the formation in the sun's corona), whose atoms are lighter than hydrogen atoms and fly at light speed. The idea of warming up the Sun during rotation and friction in its atmosphere was also put forward at the Lynx-Eyes Academy, where Galileo argued that abrasion and decay of matter leads to the release of tiny particles that carry light and heat [15].

The fall of large bodies on the surface of the Sun also gives rise to sunspots, which look like giant vortex funnels in the atmosphere of the Sun, as many astronomers and physicists, starting from M.V. Lomonosov and up to Fai, Hale, Bjorknes [4]. And K. Flammarion compared sunspots by their appearance and shape with vortices. On a small scale, such vortex-funnels could be observed by everyone when stones fell into the water, and on a large scale, giant vortices were observed when fragments of the Shoemaker-Levy comet fell into the atmosphere of Jupiter. If a meteorite strikes the solid surface of the Moon or Earth, a crater-funnel is formed - a cosmic scar (astroblem), which "cicatrizes" much longer than in a viscous medium. Recently, it was possible to observe a vertical funnel-tornado in the atmosphere of the Sun. However, astrophysicists stopped considering the spots as vortices, since the spectral analysis of the Doppler shifts did not reveal the rotation of the spots. Yet photographs of the Sun show that the spots are slowly rotating. And the spectral analysis does not register rotation, since the dark lines, along which the Doppler shifts are sought, are not given by the photosphere of the Sun, twisted in a vortex, but by the overlying chromosphere, which weakly participates in the rotation of spots.

For the same reason, the direction of motion of the Sun's surface was found incorrectly. According to the observations of the SOHO spacecraft, it creeps like a conveyor belt [4], but supposedly moves from the equator to the poles, although sunspots are clearly sliding from the poles to the equator. This is how the spots should move, participating in the circulation of convective cells created by the fall of matter on the Sun (the dimensions of these cells determine the region of the so-called "royal zones" where spots appear). But by measuring the shift of the dark spectral lines, one finds the velocity not of the photosphere, but of the chromosphere, where friction creates a cell with reverse rotation (Fig. 2). However, the velocity V of circulation of the meridional flows (about 1 m/s) was measured correctly, since it is close for these

cells, connected like oppositely rotating gears. Then the cell makes a complete revolution in time $t \sim r/V = 22$ years, which coincides with the cell circulation period found from the solar activity model [4], equal to the full solar cycle, through which the polarities of the Sun and its spots are repeated. Friction from the circulation of the atmosphere, as Lomonosov noted, causes electrification, leading to the appearance of magnetic fields and flares-breakdowns near the Sun. Well, the very circulation of the cells of the Sun is caused by accretion, falling on the star of bodies that accelerate rotation at the equator (accretion also occurs on Jupiter, also causing its differential rotation and heat release). Note that a similar idea, developed in [4], was put forward by A.E. Vladimirov [16].

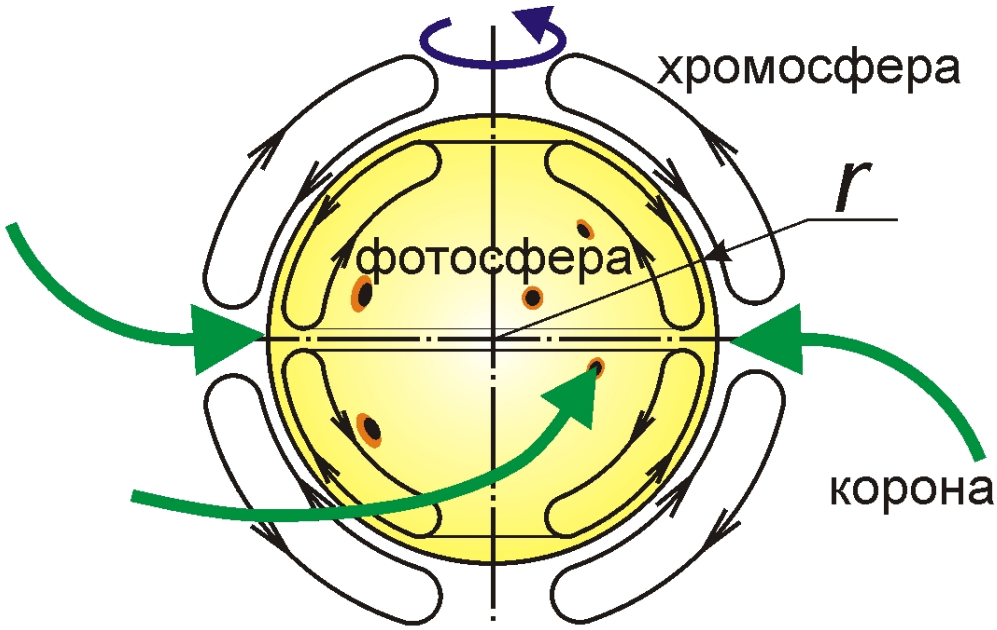

Рис. 2. Противоположная циркуляция внутренних и внешних конвективных ячеек Солнца, обусловленная схождением аккреционных потоков пыли и метеоритов.

Fig. 2. Opposite circulation of internal and external convective cells of the Sun, due to convergence of accretion streams of dust and meteorites.

The connection between bursts of solar activity and sunspots with the fall of large bodies on the Sun is confirmed by the fact that bursts of activity are common when comets appear. The icy nuclei of comets are accompanied by a swarm of ejected meteorite bodies that bombard the Sun as they fly past it and form vortices in its atmosphere. The glow and replenishment of the Sun due to ice fragments arriving from the Oort cloud (a belt of comets around the solar system) were assumed by the scientists of the Third Reich. This hypothesis was put forward by the "ice prophet" G. Görbiger, who was the first to predict the trans-Neptunian belt of rock-ice bodies, now

actually discovered in the form of the Kuiper belt, the scattered disk and the Oort cloud. He also developed the idea of the birth of sunspots from the fall of ice blocks-comets on the Sun and the ancient idea of the cyclical development of matter pulled towards the Sun, and then scattered during explosions. But after the defeat of Germany, all these ideas were forgotten for political reasons.

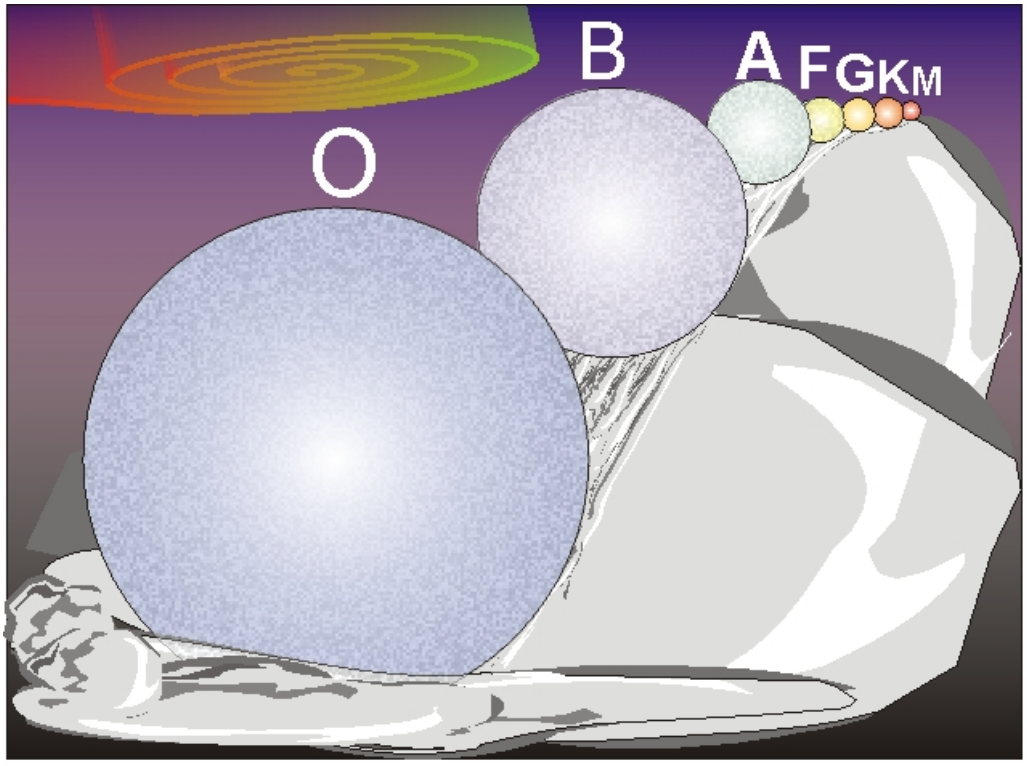

Рис. 3. Звезда, “скатывающаяся с гравитационной горки”, словно снежный ком, наращивает массу и энергию, проходя семь спектральных классов.

Fig. 3. A star “rolling down from gravitational slides", like a snowball, increases the mass and energy, passing through seven spectral classes.

Politics also manifested itself in the fact that astrophysicists accepted Eddington's theory and began to deny noticeable variations in the mass of stars during their life. Although V. Ambartsumyan showed that the masses of stars vary greatly during their life. Indeed, as it was shown [4], and as astronomers, for example Hoyle, Lebedinsky, Gurevich have long believed [3], a spinning star during accretion becomes overgrown with matter falling on it, like a snowball rolling from a mountain becomes overgrown with snowflakes, turning into a giant ball, which is gaining more and more mass and energy in the gravitational field. So, the star, absorbing matter and gravitational energy, "rolling down" from the hill of gravitational potential, becomes larger and more energetic, shining brighter and hotter (Fig. 3). It is interesting that in

Russia the sun, its rotation and energy release have long been simulated by a burning fiery wheel, which was rolled down the mountains on holidays, for example, on Kolyada (Christmas), on Shrovetide and other holidays dedicated to the Sun. And the rolling of snowmen from growing balls into Kolyada can also symbolize the gradual growth of the Sun from the fall of rocky-ice comets and asteroids into it. Such an overgrowth of stars with matter absorbed from rotating accretion disks has actually been discovered near stars by X-ray and infrared telescopes of the Chandra and Simba types. Finally, driving to Kolyada circular and spiral dances around the tree crowned with a burning star symbolizes the Sun, around which the planets walk and the flows of matter converge in a spiral, and the spruce itself is a symbol of the polar temple of the Sun, which, according to legend, had the same pyramidal shape. Likewise, the ancient Solovetsky spiral labyrinths of stones, associated with the cult of the sun in Russia [6, 13], may have symbolized the spiral convergence of streams of stones and dust to the Sun, supporting its glow.

The gradual growth of stars also explains the nature of the main sequence in the spectrum-luminosity diagram (Fig. 4), where stars form a row in which the temperature of the star rises with increasing mass and luminosity. Indeed, a growing star, absorbing more and more matter, heats up, becoming brighter and changing color (frequency f of the spectral maximum) from red to yellow, and then to white and blue [4]. With a constant mass of stars, it was believed that the star mainly resides near one section of the sequence. But it seems that each star goes through all the stages of the sequence formed by the same type of stars of different ages, in different phases of evolution. Stars, like schoolchildren, successively move from one class to another, from spectral class M to class O. The approach of the formalists, led by Eddington, is reminiscent of the approach of an alien who, having visited a school, would have decided that teachers and students of different classes are they are different biological species, not people of different ages. Just like in the legend about the Sphinx riddle about a creature that has 4 legs in the morning, 2 feet in the afternoon, and 3 feet in the evening. It is no coincidence that the idea of the evolution of stellar systems was developed by Howard Darwin, the son of Charles Darwin, who created the theory of animal evolution.

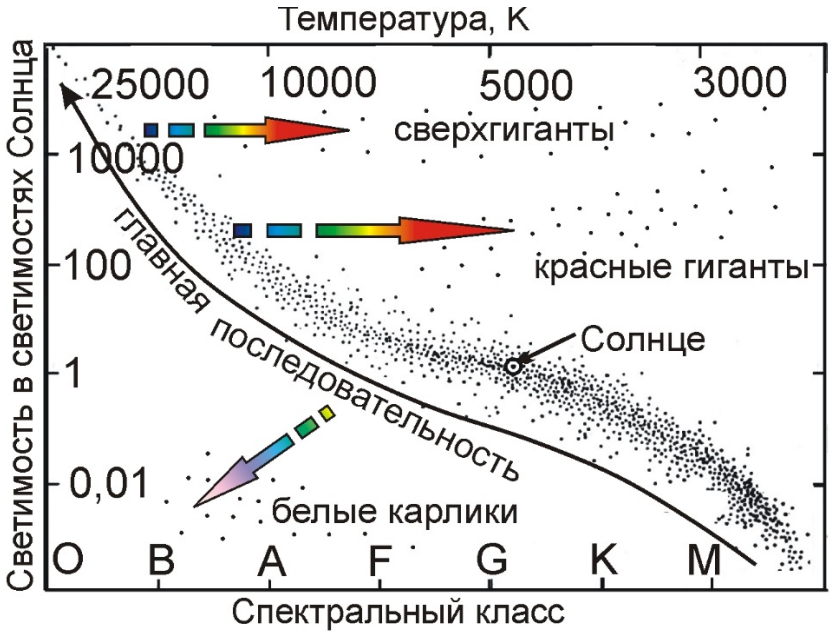

Рис. 4. Диаграмма Герцшпрунга-Рессела (спектр-светимость) с нанесёнными точками для известных звёзд. Стрелками показаны кажущиеся смещения звёзд от последовательности по эффекту Ритца.

Fig. 4. Hertzsprung-Russel diagram (spectrum-luminosity) with plotted points for famous stars. Arrows show apparent displacements of stars from the Ritz-effect sequence.

There are also stars on the diagram that do not fall into the main sequence, namely, red giants and white dwarfs (Fig. 4). Both those and others were invented by the formalist Eddington, who needed these stars to confirm his speculative theories. So, he invented giant stars to substantiate his theory, according to which Cepheids and Mira are giant cold stars, the atmospheres of which oscillate-pulsate for periods P from several days to several years. For the velocity v~10–100 km/s found from the Doppler effect, the amplitude of "pulsations" ~vP turns out to be comparable to the radius R of the Earth's orbit. So, the star is also gigantic. This seemed to be evidenced by the brightness of such stars. Since giants emit light mainly in red rays (which is why they are called red), spectral estimates of their temperature show that these are cold stars. According to the Stefan-Boltzmann law, the lower the temperature, the less light a unit of surface emits. From such a radiometric estimate, to explain the high brightness of such stars, they have to attribute gigantic sizes.

It seemed that this was confirmed by measurements of the diameters of such stars with telescopes-interferometers. Thus, the measured diameter of the supergiant Betelgeuse was hundreds of times the diameter of the Sun. However, the interferometer does not measure the diameter, but only the angle α at which the disk of the star is visible and which for Betelgeuse is 0.05 ". And the diameter is sought as $D=L\alpha$ based on the known distance L to the star, although the distance to most stars cannot yet be determined accurately, due to the smallness of their parallax. And if the distances L to

the "giant stars" are overestimated by an order of magnitude, then their dimensions $D=L\alpha$ are also overestimated, reaching 1000 solar diameters at Betelgeuse. The gigantic sizes of such stars supposedly follow from the long duration T of their eclipses. Thus, ζ Auriga is a double star, where the star ζ Aurigae A once every three years eclipses satellite B for a time of $T = 37$ days [2]. With the satellite velocity v~100 km/s found from the Doppler effect, this indicates the gigantic size of the star $D \sim vT = 320$ million km, which is 200 times the size of the Sun, and the Earth's orbit would fit inside the star. But these dimensions seem to be overstated. Firstly, eclipses can be produced not by a star, but by the extended dust cloud surrounding it, as it was revealed for another double star of the same constellation - at ε Aurigae, where eclipses last a year and speak of a large size of the cloud, and not the star inside it. Second, there is no guarantee that the time T and the velocity v are measured correctly, since the Ritz effect can greatly change the apparent duration of the processes [17, 18]. The effect can extend the visible period T (which, as we will show, actually takes place in giants) or greatly overestimate the velocity v, if the displacements of the spectral lines are caused more by the Ritz effect than by the Doppler effect. So, the gigantic size of the stars may be an illusion.

These dimensions turned out to be so great that with a known mass, the density of giant stars was negligible, and even according to Eddington, they could not shine if we take into account their low temperatures and densities, which reduce the probability of nuclear reactions to zero. The density of the giants is so low that in binary systems, when a companion star goes beyond the supposed surface of a giant, the star often continues to shine, supposedly shining through. But, rather, red giants are fiction, and the real size of the star is much more modest, which is why the "giant" cannot block the companion star. However, among the stars of the main sequence there are still large stars of large masses and luminosities. These are hot blue stars such as Spica, α Giraffe. Due to the high temperature, which provides a high surface brightness, these stars shine as brightly as red giants, at smaller sizes, reaching thirty times the diameter of the Sun (diameter α Giraffe). The conclusion suggests itself that the "red giants" are simply massive bright blue-white stars from the top of the main sequence, reddened by the Ritz effect (Fig. 4). No wonder in the ancient Chinese annals of the 1st century BC, Betelgeuse is named not a red, but a white star. It seems that this is its true color, indicating the high temperature of the star. But then her acceleration changed this color to red by the rhythm effect. So, on the visible surface of stars, the acceleration is directed from us to the center of the star (Fig. 5), and the Ritz effect could well reduce the frequency f of the emitted light, making the star red (Fig. 6). The same causes an effect similar to the redshift of galaxies: the further away the stars, the higher their redshifts. This is the so-called K-effect, which A. Belopolsky believed to be of the same nature as the Hubble law [19].

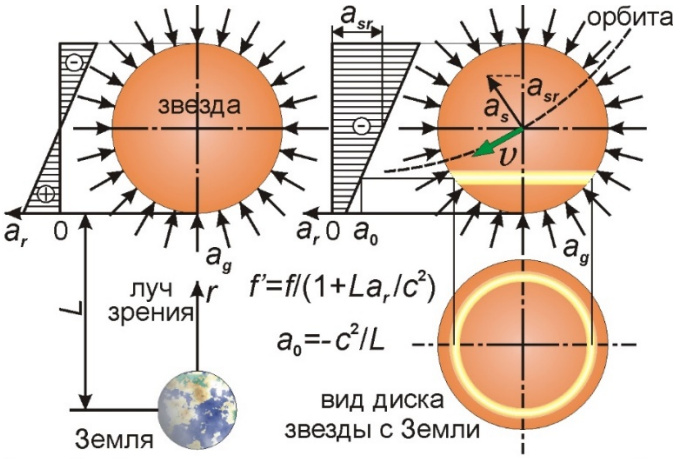

Рис. 5. Эпюры распределения лучевых ускорений на поверхности звезды объясняют покраснение звёзд и “колебания” их размера при орбитальном движении.

Fig. 5. Diagrams of distribution of radial accelerations on the surface of a star explain the reddening of stars and "fluctuations" of their size during orbital motion.

Reddening of the star's light leads to an overestimation of its dimensions (found radiometrically) and it seems that the star has left the main sequence. This is why there are no heavy and hot main sequence stars in those star clusters with many red giants. In fact, they are there, but from the transformation of the spectrum they are mistaken for red giants. It is not for nothing that the branch of red giants in each cluster moves away from the point where the main sequence ends (Fig. 7), and hot heavy stars "disappear" [2]. In clusters, the branch of giants begins where the Ritz effect begins to affect the stars (this point is given by the distance to the cluster and the properties of the stars). It turns out that giant red stars are the same illusion as the red color of the sun at sunset, when it also seems noticeably larger, although everyone knows that the Sun remains a yellow star of normal size.

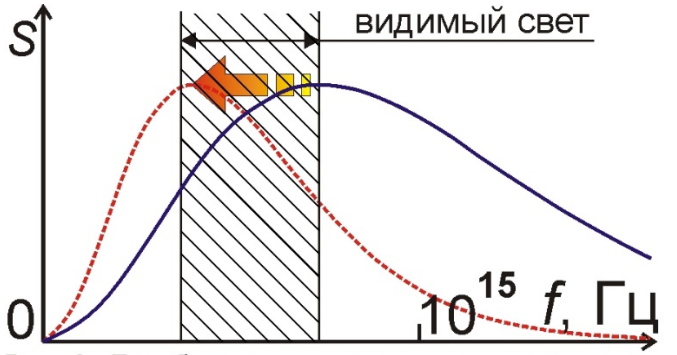

Рис. 6. Преобразование оптического спектра звёзд по эффекту Ритца смещает спектральный максимум в красную область, “превращая” их в красные гиганты.

Fig. 6. Transformation of the optical spectrum of stars the Ritz effect shifts the spectral maximum into the red area, “turning” them into red giants.

The fluctuations in brightness and color, size and shape of stars observed in Cepheids and Mirids, which are considered red giants and supergiants, are also illusory. For these stars, the Ritz effect $f'=f/(1+La_r/c^2)$ is strong, which changes their brightness and color, due to the proximity of the acceleration ar to the critical value $a_0=-c^2/L$. And the slightest fluctuations of this acceleration during the orbital motion of the star periodically change its brightness and color [17, 20]. Eddington, having decided that these variations were real, formally attributed them to the regular pulsations of the star, again contrary to a number of facts. It seemed that his theory was confirmed by interferometry data: the measured diameters of the stars changed in time with the brightness fluctuations. But then they discovered that it is not the radii that change, but the shapes of the stars: they either rounded or compressed into an ellipse.

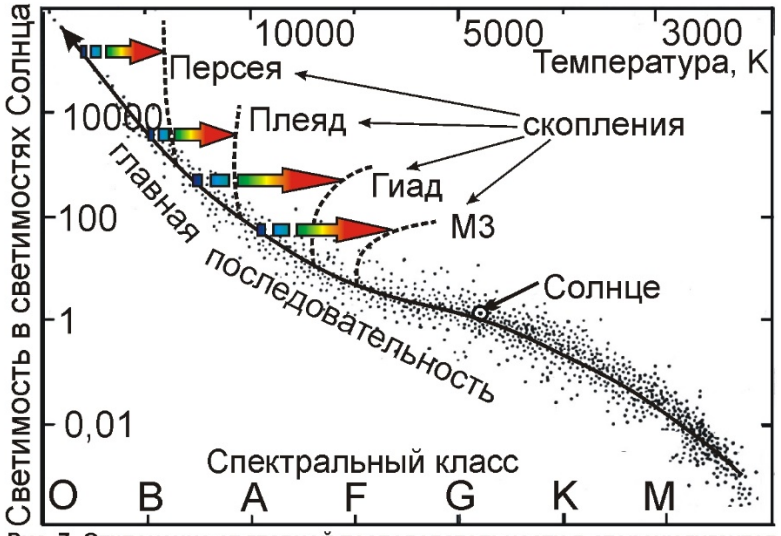

Рис. 7. Отклонение от главной последовательности в сторону гигантов начинается у разных звёздных скоплений от разных участков главной последовательности, ввиду различной удалённости и эффекта Ритца.

Fig. 7. Deviation from the main sequence towards the giants starts at different star clusters from different parts of the main sequence, due to different remoteness and the Ritz effect.

This was to be expected according to Ritz's theory: if Cepheids are binary stars, then the orbital motion changes their apparent brightness, color and shape, although real stars are unchanged [17, 18]. While the resolution of the interferometers was low, a pair of stars was taken as one, and it seemed that the Cepheid was expanding and contracting with periodic distance and approach of the stars. When it was possible to distinguish the disks of the Cepheids, their shape seemed to change, since the image of a star flying in orbit is stretched and then compressed due to the difference in the speed of light [18]. All these imaginary variations again resemble regular variations in the appearance of the Sun, which looks dim, red and flattened every sunset, without actually changing. Stretched, blurred along the orbits images of

a pair or a group of stars sometimes form a pale luminous ball of variable outlines (as in the case of nebulae), which can be mistaken for one star. This also sometimes leads to an erroneous estimate of the size: a ghostly "tangle" of orbits is taken for a star, although the stars themselves are of modest size [18]. This is probably the case when observing Betelgeuse, Mira Cetus and other giant stars, Mirids and Cepheids, which have transparent, fuzzy and uneven contours and shapes in the images, with "ejections", "cocoons", "bubbles" that may be traces " erosion of stars along the orbits. However, there are stars, say χ Cygnus, in which, when analyzed through an interferometer, oscillations of the radius are discovered. But even these oscillations are apparently illusory, like the anomalously low temperature T_c (400–3000 K) of the χ Cygnus surface.

Since the acceleration a_g directed from us to the center of the star on its visible surface reduces the radiation frequency according to the Ritz effect (Fig. 5), leading to the reddening of light, this is interpreted as a decrease in the color temperature of the star T_c. The radial acceleration is maximal in the center of the visible disk of the star and drops to zero near its edges, where the acceleration is directed across the line of sight. In addition to the local acceleration of gravity a_g, the star also has a general acceleration as caused by its orbital motion. In total, they sometimes give the value $a_r \approx -c^2/L$, at which the apparent frequency and brightness of the radiation increase strongly. That is, an annular layer will be visible, a narrow segment of the star, in which $a_{gr}+a_{sr} \approx -c^2/L$ and which will seem especially bright and hot. Due to fluctuations in the orbital acceleration a_{sr}, this condition will be fulfilled in turn for different sections: the bright ring will either contract or expand. And at times, when the condition is not met, it will disappear, and the star will look dim. Apparently, this expansion-contraction of the bright region is observed on the χ Cygnus surface, taking it for the expansion-contraction of the star itself, although the star does not actually change.

There is a whole book of facts that contradict the theory of pulsations of Cepheids, Mirids and other variable stars. So, if the star pulsed, then the maximum brightness and temperature would be observed at the moment of ultimate compression, but in fact it lags behind by a quarter of the period [20]. In addition, the pulsating surface in different areas would have different projections of the velocity V_r onto the line of sight, by analogy with accelerations (Fig. 5), causing different displacements $f'=f(1+V_r/c)$ of the lines by the Doppler effect: a set of such lines with different displacement will be perceived as a strongly broadened line. Then the spectral lines of the star would not shift as a whole, but would periodically broaden in one direction or the other from their usual position. In fact, in Cepheids, the lines only shift, that is, the star moves as a whole in orbit near another star, periodically changing the brightness and spectrum according to the Ritz effect. And only in rare

stars, such as β Canis Major and β Cephei, periodic broadening of spectral lines was discovered, and the light and radial velocity curves correspond to the theory of pulsations. Such stars (unless the line broadening is caused by the difference a_r on the surface, Fig. 5) can indeed be pulsating according to the mechanism discovered by our scientist S.A. Zhevakin. But, first, this mechanism is fundamentally different from that proposed by Eddington [2]. Secondly, the fluctuations in the brightness of such stars, in contrast to the Cepheids and Mirids, are extremely small, amounting to a few percent. Third, stars of this type are not red giants, but hot blue-white O and B stars from the top of the main sequence. Thus, Eddington's theory of the pulsations of Cepheids and Mirids is erroneous, but Belopolsky's theory is correct: Cepheids are double stars.

So, periodic fluctuations in the apparent brightness, size and shape of stars are the same illusion as the daily fluctuations in brightness, size and shape of the sun, which every evening looks red, large and flattened at sunset. At the same time, wide dark stripes, spots arising due to refraction, the difference in the speed of light in layers of the atmosphere of different density are often visible in the sun [21]. Similar giant dark areas are sometimes visible on the surface of stars, say, HD 12545. It seems that these large regions, unlike small funnel spots, are not real sunspots, but also illusions caused by the difference in the speed of light from the motion of the star's atmosphere: convection, differential rotation, stellar wind. As a result, some parts of the moving star look lagging behind others, as if the surface of the star is "sliding", which is why the star looks darker in some places, and brighter in others. From differential rotation, the maximum compressions-stretches will be at the equator, where wide "bands and spots" will appear. And bright spots are actually visible in the equatorial region, say, near Betelgeuse, which cannot be explained, since the poles of the star should burn brighter, which are slightly closer to its center and lose heat more slowly.

Equally illusory are the properties of hot stars called "white dwarfs" that have been mistakenly placed below the main sequence (Fig. 4). Their light and spectrum are also transformed by the Ritz effect from the acceleration of gravity on the surface of the star (Fig. 5). That is why white dwarfs have a large redshift of all spectral lines. For example, the satellite Sirius, which is considered the white dwarf Sirius B, has the frequency of absorption lines reduced by 10%. At the same time, the main and completely normal star Sirius A has no redshift. That is, the redshift is caused not by the orbital motion of the stars, but by the acceleration on the star itself. This is confirmed by the fact that the lines of white dwarfs are not just displaced, but also strongly broadened (due to different a_r on the surface, Fig. 5). However, the dark lines of the absorption spectrum are shifted by the Ritz effect much weaker than the emission spectrum. First, the dark lines are sometimes created not by the star itself,

but by the interstellar gas, so that the path L, along which the absorption spectrum is converted, is noticeably shorter than that of the emission spectrum. Second, at light wavelengths λ close to absorption lines, re-emission by the gas occurs earlier, since the enhancement of absorption strongly increases the refractive index n of the gas, reducing the re-emission length $\lambda/(n-1)$ [17], which also reduces the length L, on which there is a frequency conversion according to the Ritz effect.

Therefore, if the absorption spectrum of white dwarfs is strongly shifted, then the emission spectrum is shifted even more. As a result, the spectral maximum, which lies in the visible range, slides into the invisible infrared, and the apparent brightness of the star decreases a thousandfold (Fig. 8). And sure enough, Sirius B and other white dwarfs have a strong excess of radiation in the infrared rays, which they cannot explain. Only the shallow lateral branch of the spectrum falls into the visible part of the spectrum. Such a spectrum, where the intensities of all frequencies are close (of the same order), creates the feeling of white light - a mixture of all colors. That is why the "dwarfs" appear white. The underestimated brightness leads astronomers to the false conclusion that white dwarfs are such small stars that, with a known mass, their density is millions of times higher than the density of water. It is a false estimate of the color (spectral type) and luminosity of "white dwarfs" that knocks these stars out of the main sequence (Fig. 4). If we correctly estimate the spectra, sizes and luminosities of dwarfs and giants, then they will definitely fall on the main sequence, and for them the mass-luminosity and mass-radius dependences will be fulfilled.

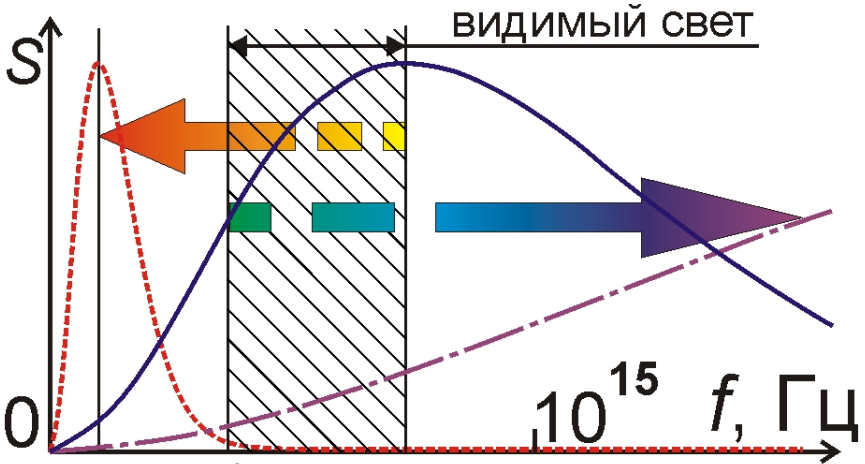

Рис. 8. Преобразование оптического спектра звёзд по эффекту Ритца сильно снижает видимую яркость звёзд, “превращая” их в тусклые белые карлики.

Fig. 8. Transformation of the optical spectrum of stars the Ritz effect greatly reduces the visible brightness stars, “turning” them into dim white dwarfs.

A strong drop in the brightness of a star is also caused by an increase in the frequency of light according to the Ritz effect, when the radiation spectrum is strongly shifted towards the blue side, which is why an insignificant part of the star's radiation falls on the visible range (Fig. 8). This happens when a star or a pair of stars flies with an acceleration directed towards the Earth, and the "whitened", faded stars appear as white dwarfs. An increase in the frequency of light according to the Ritz effect is accompanied by an increase in the rotation frequency of stars, a decrease in the duration T and period P of eclipses of stars [17, 18], from which they again make a false conclusion about the scanty sizes $D \sim \upsilon T < \upsilon P$ of "white dwarfs". A striking example is the new DQ of Hercules, which flared up in 1924 and turned out to be a binary star with an eclipse repetition period of P=4.65 hours, where the second component is a "white dwarf", which was allegedly confirmed by the small period of its brightness fluctuations of 71 seconds [22]. In fact, the star became $3 \cdot 10^5$ times brighter from the Ritz effect (which was confirmed by a double flare of the star [17]), which increased the apparent frequency of rotation of stars by the same amount. Then the true period P is 160 years, and 71 seconds corresponds to the 246-day period of the planet's revolution around one of the stars. The same is true for the new-like star U Gemini, which has been found to have a white dwarf companion from its apparent eclipse period [22]. The J 0651 system, where eclipses occur with a period of 13 minutes, and the NLTT 11748 system, where eclipses repeat every 6 hours and last 3 minutes, are considered double white dwarfs, allegedly confirming the small size of the stars. The true periods are noticeably longer, and the sizes of the stars are proportionally larger.

The fact that the real luminosity and size of white dwarfs is much higher is convinced by their high brightness in the IR and X rays. So, if Sirius B against the background of Sirius A is almost invisible in the optical range, then in the X-ray range it is much brighter. In addition, a couple of thousand years ago, the ancient Greeks saw Sirius not blue, but red. It looks like they saw Sirius B, which, being a simple star, eclipsed Sirius A with its brilliance. But then the conditions in the atmosphere of Sirius B changed, and its spectrum was strongly transformed by the Ritz effect. For example, the density of the atmosphere surrounding Sirius B could have decreased, which is why the light began to go to the Earth almost without re-emission by the atmosphere, strongly transforming according to the Ritz effect.

Such a transformation of light by the Ritz effect also exists in the atmosphere of our Sun, which is much closer, and its atmosphere is denser, which is why the reddening of light is not great. But formalists interpret this as a change in the rate of time in a gravitational field according to general relativity, although the same frequency shift follows from the Ritz effect [14]. A change in wavelength from emitting and re-emitting atoms of the solar atmosphere leads to bending of light rays

near the Sun. It has long been noted that this resembles refraction in the earth's atmosphere, which, by changing the speed and wavelength of light, bends the rays of the stars and the Sun [21]. But the curvature of the rays of stars near the Sun, with the filing of Eddington, is interpreted only according to the general theory of relativity (GTR), despite its inconsistencies. So, in the photographs (Fig. 9) it can be seen that the stars, which should radially move away according to general relativity, are actually displaced at angles and everything is different, even if they lie at equal angular distances from the Sun. This can be explained by the Ritz effect. After all, the displacement caused by the change in wavelength with acceleration a_r is not only due to the acceleration of gravity a_g, but also due to the rotation of the atmosphere, its convection, the movement of plasma in the magnetic field of the Sun, repulsion by pressure of light, solar wind and flares. The direction of the displacement is given by the direction of the acceleration and the resultant forces that caused it. That is why the displacements of the stars are directed not radially, but at angles, reflecting the vortex-like movements of the atmosphere, the loop-like paths of prominences in a magnetic field. That is why the picture of the displacements of the stars is so reminiscent of photographs of the solar corona, whose rays are not elongated radially, but swirl in a magnetic field, like a fiery lion's mane. And in some places the acceleration from the light pressure on the gas exceeds the acceleration of gravity, and the apparent positions of the stars do not shift at all, or even shift the other way around, as photographs (Fig. 9) and radio observations show.

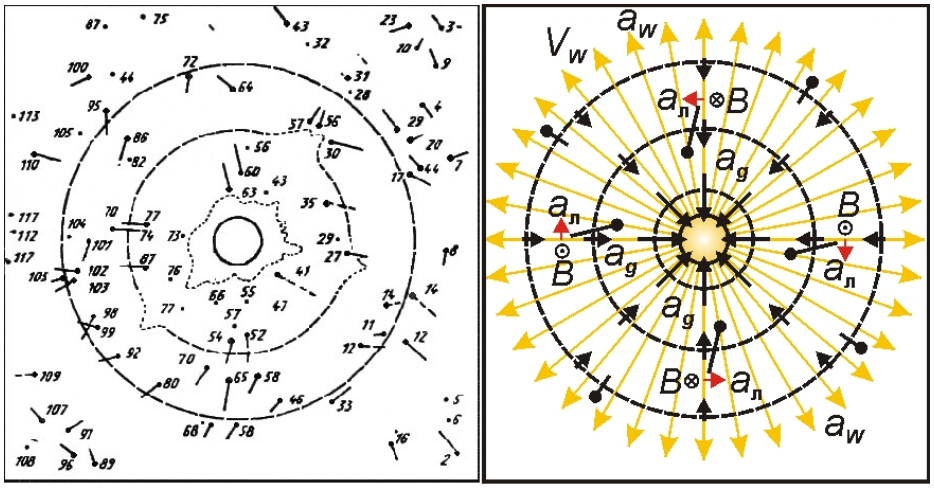

Рис. 9. Наблюдаемое нерадиальное смещение звёзд (слева) вызвано нерадиальным ускорением, за счёт действия тяготения a_g, силы Лоренца $a_л$, вращения Солнца, давления света и солнечной атмосферы a_w.

Fig. 9. Observed non-radial displacement of stars (left) caused by non-radial acceleration due to actions of gravity a_g, Lorentz force a_l, rotation of the sun, the pressure of light and the solar atmosphere a_w.

Where the Sun's corona greatly reduces density, the light rays of stars, as shown by a recent analysis by NASA, are not bent at all, since they are not re-emitted and do not change wavelength, although according to the theory of relativity, the rays would be curved at any distance from the Sun. Local accelerations in the solar atmosphere (say, during explosions-flares) can reach very large values, up to the critical value - $a_r \approx c^2/L = 6 \cdot 10^5$ m/s^2, where $L=R=1.5 \cdot 10^{11}$ m (distance to Earth). Then the light radiation from the solar flare will be perceived as X-ray or gamma radiation. So, X-ray flares of the Sun can be explained not only by the strong heating of matter, but also by the Ritz effect.

Speaking about the development of the Sun and its cycles, it is appropriate to ask where is this development going? A star cannot grow forever from matter falling into it. Like any creature, the Sun will one day die, burn out like a light bulb, spraying matter to give life to new stars. There are three possible ways of the local "end of the world". First: the sun will absorb all the surrounding cloud of stones, interstellar gas and dust, and quietly go out, dying of hunger. This path is unlikely, because, as estimates [23] show, there is a lot of gas and dust in the Galaxy (it seems that they form the bulk of non-luminous matter, which is revealed by its gravity and is observed in the form of nebulae that absorb light). The second way is the division of the star in half - the formation of a double star when it reaches its maximum rotation speed (not in vain, as N.A.Kozyrev noted, double stars have similar masses). The third way is death from gluttony, from excessive consumption of substances and energy.

The main sequence shows that as the star increases, its temperature rises up to hundreds of thousands of Kelvin, and then the sequence ends (Fig. 4). It seems that at the point of breakage, the stars die from an explosion, burst, reaching a critical mass and temperature at which a thermonuclear chain reaction begins: the released heat and particles are increasingly intensifying the reactions of fusion and decay. The star's temperature rises irreversibly, causing a thermonuclear explosion, which sprays the star, forming a gas-dust nebula, from which other stars will subsequently grow [8]. Thus, a lost star provides food and energy for future generations of stars, closing the great circle of life.

We observe such thermonuclear explosions of stars in the form of type I supernova explosions lasting standard time, having standard brightness and leaving behind gas and dust nebulae. These supernovae should be distinguished from novae and type II supernovae, which are not a real explosion, but an illusory outburst of a star caused by the Ritz effect, the duration and brightness of which can be very different [17]. The mechanism of the glow of nebulae visible at the site of type I and II supernovae also differs. If type II supernova nebulae are blurry images of stars or flash echoes [18], then gas and dust nebulae at the site of type I supernova explosions are quite real. They glow due to the scattering of light from stars and are usually

irregular in shape. And nebulae around type II supernovae usually have surprisingly regular, symmetric shapes in the form of nebular filaments intertwining, or they are absent altogether, like in hypernovae, in which all the flash energy goes into γ-radiation, which astronomers cannot explain [24]. It seems that there is little gas around such stars, and it cannot effectively scatter the light converted by the Ritz effect into the γ-range [17] and make it visible in the form of a bright spot.

It turns out that the intense release of heat in thermonuclear reactions marks not the beginning, but the end of the life of stars, since there is no mechanism in stars that ensures a stable thermonuclear reaction. This reaction develops too quickly, covering the entire mass of the star at once, and the relatively slow expansion of stars during heating can hardly slow down this rapid process. In addition, if the stars burned due to thermonuclear reactions, in which hydrogen and other light elements turned into heavy ones, then all the stars would go out sooner or later: the end of the world would come from the exhaustion of nuclear fuel in the Universe. This is one of the variants of the theory of thermal death of the Universe, which is inevitable when energy resources are exhausted. Eddington liked this conclusion about the end of the world, who developed the theory of star burning to please the Vatican and contrary to the materialistic scientific worldview [3]. If the Universe is eternal, then there must be a mechanism that ignites more and more stars, ensuring their eternal burning. Therefore, if thermonuclear reactions, converting hydrogen and other elements into heavier ones, take place in the atmosphere of the Sun and stars, then only on a modest scale, and serve not as a source of energy for stars, but only as a weak background to it. When stars reach a critical size and temperature, they explode in the form of supernovae, and the heavy elements accumulated in them partially decay into light ones again due to collisions at a gigantic explosion temperature. These hydrogen- and helium-enriched nebulae are beginning to form fresh stars.

Also, stars and nebulae can be constantly enriched in hydrogen and helium due to the decay of heavy nuclei induced by the flow of rheons and electromagnetic radiation, since all nuclei are unstable to some extent (and "stable nuclei" seem to simply have a half-life>10^{15} years). And only the hydrogen nucleus is not capable of decaying, because it consists of only one proton. Therefore, in the course of particle impacts, heavy nuclei sometimes divide, turn into light ones, replenishing the stars and clouds with hydrogen and almost equally stable helium, and partly with energy. This maintains a constant balance of light and heavy elements in the Universe, which on average remains unchanged throughout the entire existence of the Universe. It is no coincidence that the famous Russian astronomer R.V. Kunitskiy, the author of a number of textbooks, assumed that the radiation energy lost by the stars does not disappear for good, but returns to the stars, replenishing hydrogen reserves and contributing to the accumulation of energy for a new development cycle [8]. And

gravitational energy, converted into radiation and the formation of new elements, is ultimately restored when the radiation in the form of streams of rheons produces hydrogen nuclei, contributing to the release of the star's energy in the form of an explosion, which again scatters and scatters matter across space, starting a new cycle of the star's development.

It seems that our ancestors knew or guessed about such a cumulative mechanism of the development of stars and their death from gluttony, reflecting this in the ancient tales about Kolobok and Clay. A round bun, like a hot pancake, with its shine, boiling surface and dark spots, was in the Russian tradition a symbol of the sun ("Kolo" is the ancient Slavic name for the sun, hence the word brace, solstice). The method by which the dough was beaten, rolled or poured into a hot frying pan in a whirlwind manner resembles the vortex formation of hot accretion disks and stars from scattered (and then "collected on the bottom") protoplanetary clouds. In the original version of the tale, the Kolobok did not run away from animals of ever larger size, but devoured them, becoming larger and larger, like a snowball that grows and gains energy, rolling down the mountain until it breaks upon impact (Fig. 3). This cumulative (growing) plot was preserved in a similar fairy tale about Clay, about the Wolf and Little Red Riding Hood or Goats, and in the Greco-Roman myth of Kronos, where the overeating character burst, and everything that was swallowed was released, starting a new development cycle. Maybe before, they depicted nutrition and the cyclical development of the Sun and stars in this way?

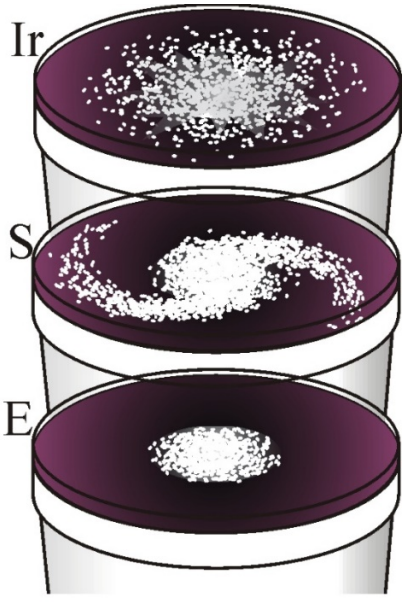

Рис. 10. Галактики, видимые в телескоп, и пятна пены в стакане чая имеют сходные формы, проходя те же стадии эволюции.

Figure: 10. Galaxies visible through a telescope, and the foam spots in a glass of tea are similar forms, going through the same stages of evolution.

Concluding the story about the cyclical evolution of cosmic vortices, consider the evolution of galaxies, these giant vortices of stars and interstellar matter. There are three main types of galaxies: irregular Ir, spiral S and elliptical E (Fig. 10). They are usually considered independent. But, as in the case of stars, these may just be different stages in the evolution of each galaxy, as Hubble, who discovered them, foresaw. The shapes of galaxies also suggest this hypothesis. In the beginning, as in the case of stars, there is a shapeless cloud of gas in which stars are born from individual vortices. This is what irregular galaxies look like - associations of stars that contain a lot of gas and dust and have an irregular shape. Then, as in the case of stars [4], the cloud begins to contract and swirl faster and faster. At the same time, it flattens and becomes denser, forming a disk with a vortex, spiral structure, where more and more stars in the spiral arms are formed from the clusters. This is what spiral galaxies look like. Gradually, the stars, drawn by gravity and a vortex of interstellar gas, move to the center, condensing and forming a galactic core (bulge) in the form of a ball, an ellipsoid. The nucleus grows, and the arms of the galaxy, where the influx of stars comes from, are getting thinner. As a result, only an ellipsoidal core remains: this is how elliptical galaxies look like, devoid of spiral arms. No wonder elliptical galaxies are considered the most ancient [23]. Like the cores of spiral galaxies, they are formed from old stars containing many metals accumulated in background nuclear reactions and from deposited dust. Elliptical galaxies have little interstellar gas and dust: over the long life of the galaxy, they have transformed into stars. In such elderly galaxies, all processes are slowed down, new stars are almost not formed, and heavy elements predominate, as if living creatures, in which the rhythm of all processes is slowed down in old age, almost no new cells are formed and heavy elements accumulate.

All these metamorphoses can be observed on the model in the form of foam in a glass of tea, especially if the foam is formed by small bubbles, for example, if the tea has not boiled. Bubbles, due to surface tension, are attracted, like stars, forming at first a shapeless irregularly shaped cluster. When tea is stirred, a funnel is formed, which carries the bubbles to the center, similar to the dragging of stars to the center of the galaxy by the gravitation of the core and streams of interstellar gas. In the center of the funnel, a central dense cluster of bubbles begins to form, which has a round shape and is similar to the galactic nucleus. And on the sides, its bubbles gather in spiral branches that rotate slowly. This formation is similar to a spiral galaxy. Moreover, it can be seen that the composition of the branches changes: some bubbles stick to them, while others leave and are absorbed by the core. Likewise, in the galaxy the spiral branches do not have a constant composition, but are formed by density waves, such as the spiral crests of a water funnel [23]. Finally, all the bubbles collect in the center of the funnel, forming a circular cluster, spinning more and more slowly due to viscous friction. This is what elliptical galaxies look like. Finally, galaxies die like stars, either from the depletion of nutrient in the form of interstellar gas, or from

the explosion of the stars that form them, or from collisions, due to their high concentration in the galaxy. Such explosions, the activity of galactic nuclei were foreseen by V.A. Ambartsumyan [3]. Then the galaxy scatters its substance during the explosion and forms a new nebula, from which new galaxies can arise. These explosions are much rarer than the explosions of stars. Therefore, most of the "exploding" galaxies are an illusion caused by their blurring according to the Ritz effect [18], and only rare of them are traces of real explosions. This is how the life cycle of galaxies closes, and then everything repeats. It is not for nothing that the idea of the evolution of galaxies with their cyclical development in a circle is defended by the ballistic theory activist V. Cherepennikov [25].

As you can see, explosive, ballistic processes underlie the life of the Universe. All objects - stars, galaxies, clusters of galaxies, sooner or later explode, and only the Universe itself is immortal: it exists forever, has never arisen and will never disappear [8]. Therefore, theories that speak of the Big Bang that gave birth to the Universe are absurd. It is interesting that in the Indian tradition, very close to the Slavic, the idea of a cyclical development, the birth and death of the world during a world fire, an explosion that occurs in the era of Kaliyuga, general degradation, depletion of energy and matter, after which the cycle of development (Kalpa) is repeated ... Moreover, it was a local explosion that was meant, and not a global explosion of the Universe, which the Indians considered eternal and uncreate, as it is sung in the cosmogonic hymn of the Rig Veda. Comparing living beings to the stars, the ancient Indians and Slavs did not bury the dead in the ground, but burned (cremated) and scattered the ashes in the wind, so that, as in the explosion of stars, quickly return energy and matter into the cycle of nature, contributing to the beginning of a new cycle of life and rebirth into new creatures.

So, the energetics of stars and galaxies is inextricably linked with their vortex, cyclical development, birth and dying, which is associated with the end of the world. Can this be considered a solution to the main riddle of the sphinx? Judging by the fact that the end of the world has not come, it is unlikely. But seriously, it will be possible to fully understand the energetics of the stars only when it is possible to investigate the interior of the Sun directly, having realized the daring idea of flying to it and around it, as Tsiolkovsky and Korolev had dreamed of. It is even easier to study the internal structure of the Sun than the bowels of the Earth, because there is no need to overcome the resistance of solid dense rocks. It remains to solve the problem of thermal insulation and heat removal by means of emitters and magnetic fields, devices already developed for confining hot plasma. So the main riddle of the Sphinx still needs to be smashed before it is possible to comprehend its salt, so that instead of the end of the world, the end of darkness came and the golden age of earthly science began.

Sources:

1. Kharitonov A.V. Energy of the Sun and Stars. M .: Knowledge, 1984.

2. Kippenhan R. 100 billion suns. Moscow: Mir, 1990.

3. Strogova E. History of one hypothesis. Moscow: Young Guard, 1955. [Строгова Е. История одной гипотезы. М.: Молодая гвардия, 1955.]

4. Semikov S. Solar cyclones // Engineer No. 1-2, 2011. [Семиков С. Солнечные циклоны // Инженер №№1-2, 2011.]

5. Anderson J. Astrometric Solar-System Anomalies // IAU, Bulletin AAS, V. 41, p. 882, 2009. [Anderson J. Astrometric Solar-System Anomalies // IAU, Bulletin AAS, V. 41, p. 882, 2009.]

6. Demin V.N., Seleznev V.N. To the stars faster than light. M., 1993. [Дёмин В.Н., Селезнёв В.Н. К звёздам быстрее света. М., 1993.]

7. Perelman Ya.I. Entertaining physics. Moscow: Nauka, 1991. [Перельман Я.И. Занимательная физика. М.: Наука, 1991.]

8. Kunitskiy R.V. Was the beginning of the world? M .: GITTL, 1949. [Куницкий Р.В. Было ли начало мира? М.: ГИТТЛ, 1949.]

9. Byalko A.V. Our planet is Earth. Moscow: Nauka, 1989.

10. Yurkin Yu. Martian trace // Engineer №1, 2012.

11. Soddy F. Radium and his answer. Odessa: Matezis, 1910. [Содди Ф. Радий и его разгадка. Одесса: Матезис, 1910.]

12. Biruni A. India. M .: Ladomir, 1995. [Бируни А. Индия. М.: Ладомир, 1995.]

13. Demin V.N. Hyperborea. M., 2000.

14. Semikov S. Mystery of gravitation and antigravity // Engineer №8, 2010. [Семиков С. Тайна гравитации и антигравитации // Инженер №8, 2010.]

15. Galileo G. Assay master. Moscow: Nauka, 1987. [Галилей Г. Пробирных дел мастер. М.: Наука, 1987.]

16. Vladimirov A.E., Vladimirov E.A. Meteorite-cometary nature of sunspots and differential rotation of the Sun. SPb .: Kometa, 1994.

17. Semikov S. Star freak show // Engineer # 5-6, 2012. [Семиков С. Звёздный паноптикум // Инженер №№5-6, 2012.]

18. Semikov S. Space patterns and paintings // Engineer №№8-9, 2012. [Семиков С. Космические узоры и картины // Инженер №№8-9, 2012.]

19. Belopolsky A.A. Astronomical works. M., 1954. [Белопольский А.А. Астрономические труды. М., 1954.]

20. Semikov S.A. How the beacons of the Universe are arranged // Engineer, no. 9, 2006. [Семиков С.А. Как устроены маяки Вселенной // Инженер, №9, 2006.]

21. L. V. Tarasov. Physics in nature. M.: Education, 1988.

22. Tsesevich V.P. What and how to observe in the sky. Moscow: Nauka, 1984. [Цесевич В.П. Что и как наблюдать на небе. М.: Наука, 1984.]

23. Tayler R.J. Galaxies: Structure and Evolution. Moscow: Mir, 1981.

24. Zasov A.V., Postnov K.A. General astrophysics. M .: Vek 2, 2006. [Засов А.В., Постнов К.А. Общая астрофизика. М.: Век 2, 2006.]

25. VB Cherepennikov History of the centenary genocide. Ulyanovsk, 2008. [Черепенников В.Б. История столетнего геноцида. Ульяновск, 2008.]

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