

DISPLACEMENT WITHOUT RUNNING. RITZ VS DOPPLER

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Today we can assume with a high degree of certainty that the world is on the verge of a new revolution in the doctrine of the Universe. The Big Bang theory is undergoing serious and growing criticism, which it seems that it will soon no longer be able to withstand.

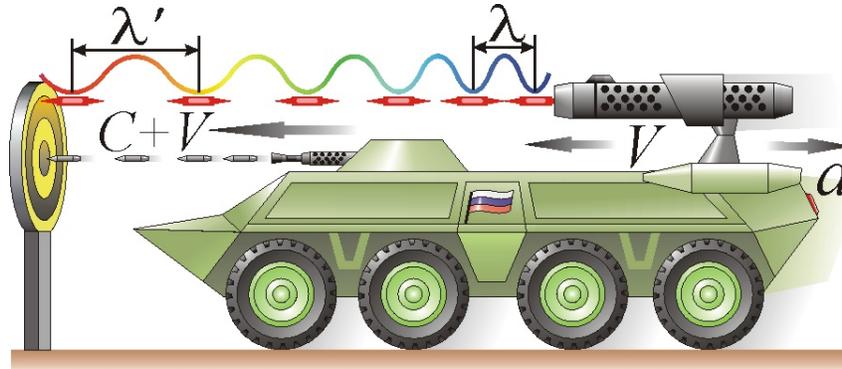
In 2004, in the [New scientist](#) magazine, dozens of experts from different countries in an open collective letter expressed their distrust of the Big Bang theory and the swelling Universe. It turned out that there is a mass of not officially recognized and kept in obscurity evidence of its fallacy. As soon as the first exclamation was heard, it was picked up by “the whole world”, and many hundreds of scientists have already signed the collective letter published on the Internet ...

What is the essence of the problem? At the beginning of the last century, Hubble discovered that the light from distant galaxies is redder the further away they are. Then theorists believed that this was due to the well-known Doppler effect, which traffic policemen successfully use in their radars. From the change in the frequency of the signal reflected by the car, such a radar automatically determines the speed of the car using the Doppler effect formula. Likewise, astronomers, by how much the wavelength of light λ' , recorded by terrestrial instruments, has changed in comparison with the wavelength of light λ emitted by galaxies, find their velocities. This shift of the wavelength of the spectral lines of galaxies towards the red side of the spectrum is called redshift. The speeds calculated by the Doppler effect led scientists to the idea that all galaxies fly apart, and the faster, the further away from us they are, so that the farthest of them move away at a speed of the order of the speed of light.

But back in 1929, our recognized astrophysicist Aristarkh Apollonovich Belopolsky stated that galaxies do not have to be removed to create a redshift: a change in the spectrum of galaxies causes not the Doppler effect, but some other physical phenomenon, according to which the wavelength of light increases in as it moves. It was called the effect of aging of light, but then they could not determine the physical content.

At first, this theory was supported by many astronomers, including Tsiolkovsky and Hubble himself. But later supporters of the theory of the expanding Universe rejected this explanation - precisely because of the unclear nature of the effect.

However, such an effect was rigorously and reasonably predicted back in 1908 by the Swiss physicist Walter Ritz, and then experimentally confirmed in the experiment of Bömmel (see Frankfurt U.I., Frank A.M. "Optics of moving bodies", Moscow: Nauka , 1972 [[Франкфурт У.И., Френк А.М. "Оптика движущихся тел", М.: Наука, 1972](#)]). But, due to the sudden early death of the scientist in 1909, the Ritz effect was completely forgotten, moreover, it was based on the unpopular in the XX century. classical physics and Ritz's ballistic theory (BTR).



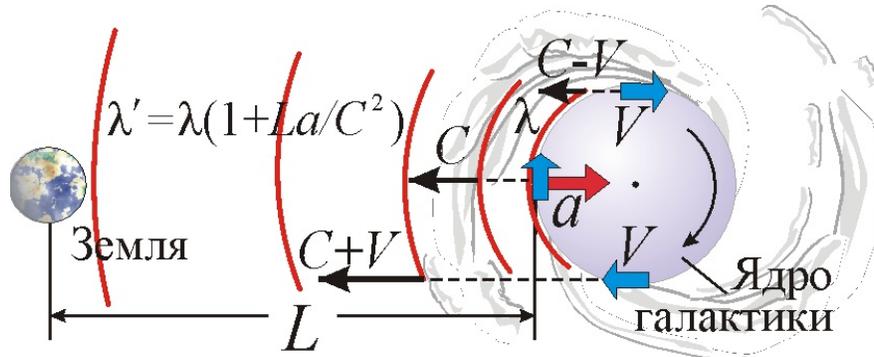
Ballistic principle: adding to its own speed of light C the speed of the source V . Analogy of firing a machine gun and a ray gun from an armored car on the move. Ritz effect: when braking an armored car, the speed of the rays decreases and they lag behind those emitted earlier, increasing the wavelength λ and reducing the frequency of light.

According to this theory, a ray of light from a moving source, in addition to the speed of light C , receives the speed of the source V , flying out at a speed of $C+V$, if the source moves towards the observer, or at a speed of $C-V$, if the source is moving away, just like motion machine gun on the armored car gives additional speed to the fired bullets. This followed from the fact that, according to Ritz's theory, light is a stream of freely flying rheon particles (similar to a flying chain of bullets in a queue from a machine gun) emitted by a light source and purely mechanically borrowing its velocity V , in addition to the light velocity C , with which would be "shot" by a stationary light source. From this ballistic principle, the Ritz effect automatically followed.

Indeed, let's apply Ritz's ballistic analogy and consider an armored car that drives towards a target while simultaneously firing at it. Bullets acquire the speed of the armored car in addition to the shot speed. If we consider an armored car at the moment of braking, when its speed drops, then each subsequent bullet will "receive" an ever lower speed. Therefore, bullets fired earlier and having a higher speed, like distance runners, will gradually move away from those fired later: the intervals between the bullets increase as they move, in proportion to the distance traveled L . Accordingly, the frequency of their arrival at the target - the frequency with which they drum on the target.

By ballistic analogy, the same is true for light. If a certain cosmic source has an acceleration a directed from the observer, then the light rays emitted by it decrease their speed, which is why the crests of light waves, as they move towards the Earth, “move apart” more and more, increasing the wavelength according to the Ritz effect $\lambda'=\lambda(1+La/C^2)$ and lowering the radiation frequency.

But this is an exact analogy to the Hubble law $\lambda'=\lambda(1+LH/C)$, where the Hubble constant H must be equal to a/C !



Since in the visible part of the galactic nucleus the centripetal acceleration a is directed away from us, the rotation imparts an ever slower speed to the rays of light, which is why the crests of light waves diverge more and more, increasing the wavelength in proportion to the distance L and the acceleration a .

Hence, the conclusion suggests itself that the Hubble redshift is caused not by the Doppler effect from the receding of galaxies, but by the Ritz effect, which, firstly, does not require galaxies to run away at a frantic and ever-increasing speed, and, secondly, is created by small accelerations actually inherent in stars in galaxies. After all, stars in a distant galaxy move in orbits, attracted to its center, and therefore have an acceleration, which in the visible, brightest part of galaxies, in their core, is always directed from us to the center of gravity, regardless of the angle at which the galaxy is visible. That is, the Ritz effect shifts the radiation of galaxies exactly to the red side, in proportion to the distance to them. We do not see the reverse side of galactic nuclei (where the acceleration is directed towards us, and the displacement according to the Ritz effect is blue), because of the clouds of gas and dust filling the nuclei, which, as astronomers have found out, hide the distant parts of the nucleus of our Galaxy from us.

Because of the absorbing clouds of interstellar gas and dust surrounding the cores, we also see noticeably weakened light from stars at the edges of galactic cores, where the absorbing layer is thicker and where the radial acceleration with redshift is close to zero. Therefore, the most intense and noticeable spectral lines from the closest to us rather extensive region of the galactic nucleus, where the radial acceleration and redshift are close to maximum. However, astronomers often record

weaker lines of galaxies - from the edges of the nuclei - and observe much smaller redshifts in them ...

The most interesting thing is this. Based on the known values of the rotation speed and centripetal accelerations of galaxies, it is easy to theoretically calculate the value of the Hubble constant $H=a/C$. And the calculation gives a value that is very close to the actually measured value $H=50-100$ km/s/Мпс (see Semikov SA, "Ritz's ballistic theory and the picture of the universe", N. Novgorod: Press-contour, 2009 [[Семиков С.А., "Баллистическая теория Ритца и картина мироздания", Н. Новгород: Пресс-контур, 2009](#)])).

The Ritz effect not only makes it possible to abandon the contrived scattering of galaxies, but also explains all the features and paradoxes of redshift. So, it turned out that in distant galaxies, not only the frequency of light is reduced, but also the apparent frequency of all processes. For example, supernova explosions lasting in our galaxy for about two weeks, in distant galaxies are stretched in time in proportion to the redshift of these galaxies. This is considered proof that the redshift causes the Doppler effect, and not the hypothetical effect of aging of photons, which would not affect the apparent duration of the processes. And the Ritz effect, like the Doppler effect, equally affects the frequency of light and the apparent frequency or duration of processes. That is, in this case, the Ritz effect and scattering have the same explanatory power.

But the hypothesis of the recession of galaxies could not really explain the anomalously high redshift of quasars. According to Hubble's law, it corresponds to a giant distance to them, while their high brightness and its rapid variations prove that they are relatively close and not very large objects.

Finally, the German astrophysicist Halton Arp discovered many equally distant space objects connected in pairs, having, contrary to Hubble's law, strongly different redshifts, which the theory of the expanding Universe could not explain.

The Ritz effect easily explains both facts if we take into account that only galaxies have close values of centripetal accelerations, enclosed for most types of galaxies in a certain characteristic range, while more compact objects, such as quasars, have larger a values, which correspond to much larger values of $H=a/C$, and hence redshifts - even if the object is at the same distance L as the galaxy.

In the same way, the microwave background radiation with a temperature of 2.7 K should not be considered relict, that is, from ancient times, a trace of the once hot Universe, which cooled down during its expansion after the Big Bang. Scientists back in the 19th century knew that outer space is filled with extremely rarefied interstellar gas with a certain nonzero temperature (which is confirmed by spectral

observations that reveal interstellar hydrogen and other gases). This is due to the fact that the gas is heated by radiation from stars and galaxies. At the same time, how easy it is to calculate on the basis of data on the radiation power of galaxies and their average concentration in the Universe, the temperature of the gas at which thermodynamic equilibrium occurs (that is, the heated gas radiates as much heat as it receives from the stars) at any point in the Universe is as times about three Kelvin - the temperature of the background radiation. Moreover, this radiation with a thermal spectrum is not subject to redshift, since the intergalactic gas, being far from the sources of gravity, has practically no acceleration, and therefore the spectrum of the gas, in contrast to the spectra of galaxies, does not experience redshift according to the Ritz effect.

So, from the point of view of an unchanging, stationary Universe, in the background radiation, the temperature of which is the same everywhere, is no more strange than in the same air temperature in all points of the room, heated by light sources or other devices and staying in thermodynamic equilibrium.

It turns out that there is no need to believe in the Big Bang and consider the Universe to be expanding if the relic background is the equilibrium radiation of intergalactic gas, and the redshifts of galaxies are a consequence of the Ritz effect from the rotation of galaxies, and not their imaginary scattering.

This effect may well lead to a revolution in our views on space. Indeed, with sufficient distance and acceleration of the source, the effect is able not only to noticeably change the spectrum of an object, converting light into radio or X-rays, but also to influence its brightness - to change the concentration of light. Thus, they will receive a simple explanation that does not require unnecessary hypotheses and exotic objects, all the phenomena of space: outbreaks of new and supernovae, quasars, pulsars, busters, Cepheids and other blinking stars, as well as many other "cosmic wonders". We will not give these explanations here, since this would lead us far beyond the admissible length of the article.

If the Ritz effect is correct, the revolution will shake physics, where it was still believed, in the framework of the theory of relativity, that, no matter how quickly the source approaches and moves away, the light emitted by it arrives at us with the same speed C , independent of source movement. They predict that this revolution will break out in the coming years - contradictions have been accumulating and hiding for too long ...

From such long-hidden data, confirming the dependence of the speed of light on the speed of the source, we can mention [[опыты конструктора ракет М.И. Дуплищева](#)] the experiments of the designer of the rocket M.I. Duplishchev, as well

as radar measurements of the positions of Venus [[радиолокационные замеры положений Венеры](#)], which showed that the speed of the radio beam added up with the speed of the Earth.

Now this kind of results are becoming known. For example, in the case of radar spacecraft "Pioneer", the positions of which, calculated taking into account the constancy and independence of the speed of light, do not converge with real ones. Many authors [[Многие авторы убеждены](#)] are convinced that the accidents of spacecraft directed to Mars in different years - for example, the mysterious accidents of our "Phobos" [[аварии наших "Фобосов"](#)] - are caused precisely by navigational, radar errors due to neglect of the dependence of the speed of light on the movement of the source.

Some authors even suggest that the exceptional success of American spacecraft landings on Mars is explained by the fact that the United States knows about the dependence of the speed of light on the movement of the spacecraft and takes it into account on purpose. But they carefully hide this knowledge to gain an advantage in space exploration and the upcoming "Star Wars". This is the opinion of the American physicist, Dr. Bryan Wallace [[доктора Брайана Уоллеса](#)], who gives numerous arguments in his articles confirming the concealment of the fact that the speed of the source influences the speed of light in space. It is characteristic that Wallace proves his assumptions with facts, but there are no reasoned refutations of his point of view.

It seems that the entire XX century science, as before the Copernican revolution, was dominated by something similar to medieval mysticism, for scientists again believed in the creation of the world during the Big Bang, in a limited Universe, in a mad race of stars and galaxies around the Earth. As in the Middle Ages, the Universe again began to be considered limited, closed in a "celestial sphere", only not static, but inflating like a soap bubble.

And we have the right to ask the question: is it not time for a new revolution in science?

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