the general science journal

Kozyreva N.A.'s paradox about an opportunity of an instant signaling from far stars to the Earth

© Sergey G. Burago
D.Sc., Prof.
State University of Aerospace Technology, Moscow, Russia
Email: buragosg@yandex.ru
Site: http://buragosg.narod.ru/

Abstract

In clause the known paradox of astronomer Kozyreva N.A. about an opportunity of simultaneous reception of three signals from a star, let out by a star at various times with intervals in billions years is considered at its movement on an orbit. Being based on this paradox itself Professor Kozyrev N.A. and its numerous followers approved Kozyrev N.A., that time is material, is allocated by energy and can influence processes proceeding in the Universe.

It is shown, that Kozyrev N.A. has not considered in the research refraction of rays of light and the beams perceived by a telescope-reflector invented by it, at an output of these beams from bowels of a star in a space. Value of factor of refraction of beams for a material of the star substance, equal 2 is received.

In 1976 on a symposium in Byurakan N.A.Kozyrev [1] has reported about his unusual astronomical observation. He defined position of a star by an optical method and by means of his telescope-reflector. Signals from some astronomical objects (from stars) were simultaneously registered at three different spacial positions of a telescope-reflector. The first position is marked on Fig. 1 by an index «1» and corresponds to the optical image of object at the moment of emission of the light which has reached the observer (a signal «from the past»). The second position is marked by an index «2» and corresponds to "true" position of object, i.e. to position at the moment of observation of a signal (a signal «of the present time»). The third position is marked by an index «3» and corresponds to position of object when light from observer will reach the object (a signal «from the future»). Angular distances between these three positions are equal to the ratio of tangential speed of object to speed of light. The scheme of these signals is presented on Fig. 1.

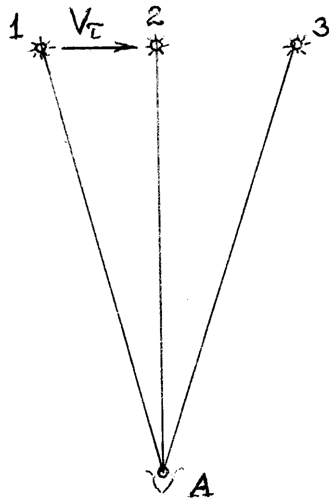

Fig. 1

We are not going to reconsider the Kozyrev's results and to analyse the details of its telescope-reflector since the results of his observations are confirmed by several independent groups of researchers. For an explanation of these observations Kozyrev and other astrophysicists have put forward the row of quite improbable assumptions concerning instant propagation of signals or about special properties of time such as its energy and its ability of influence on physical processes in the Universe. We shall show, that it is possible to explain this phenomenon within the limits of natural representations about time as about duration of those or other events by comparison with duration of well studied cyclic processes such as, for example, the movement of watch arrow, etc.

In a basis of our research we have an assumption, that the solution of Kozyrev's paradox is hidden in own properties of the object which radiates the light. Analysing the technique of Kozyrev's astronomical observation, it is possible to see at once, that the signals, which are simultaneously received by him from three different positions of a star, have different properties. One of signals is optical. Other signals have another nature in spite of the fact that all signals move with speed of light in vacuum according to known laws of reflection, refraction and propagation of light. In this connection we suppose, that these beams are produced out by different parts of radiating astronomical object.

According to Kozyrev's observation we believe, that an optical beam and the beams perceived by Kozyrev's telescope-reflector, are radiated by astronomical object «2» in the direction of the Earth under an angle (Fig. 2)

$$I_1 = \arcsin \frac{V_\tau}{C} \qquad (1)$$

to a vertical line. The optical beam, apparently, is radiated by a surface of a star the F-G. Therefore it does not change the beam directed to a point A in which an observer with an optical telescope is situated.

The beam, perceived by Kozyrev's telescope-reflector, partially without refraction crosses a surface of a star the F-G and further hits the point A. The second part of this beam refracts on external border of radiating astronomical object F-G, dividing a transparent matter of this object and a free space. On Fig. 2 these beams have the form «2»-C-A and «2»-C-E. Apparently, these beams are let out from deep bowels of a star. Therefore, before to get in free space, they make the way through transparent matter of star substance and only then get in "empty" space.

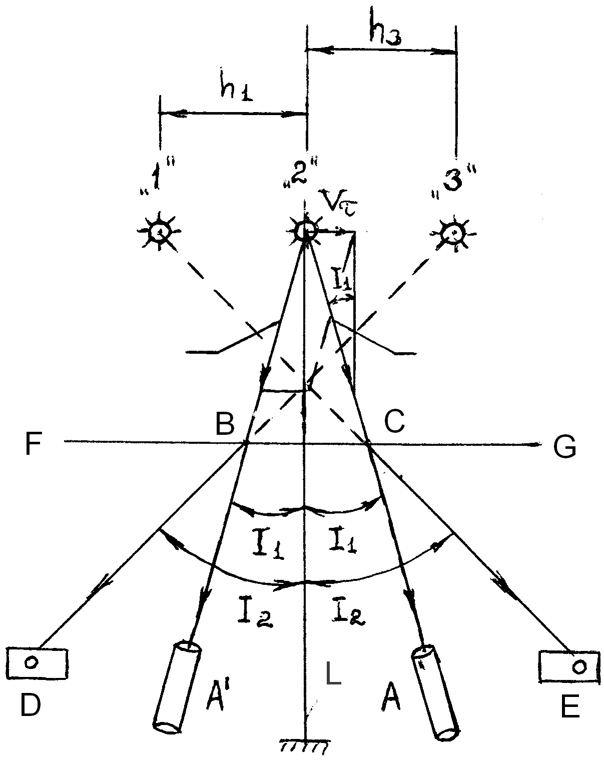

Fig.2

As a result to the observer two beams under different angles simultaneously come. On Fig. 2 one beam «2»-C-A comes under a angle I_1. The second beam «2»-C-E approaches to the observer under an angle I_2. Proceeding from this observation the researcher mentally continues a beam C-E in a point «1» and does a conclusion that one beam has ostensibly left a point «1» (a signal « from the past ») in which in his opinion the ray of light has been let out by radiating astronomical object billions years ago. Other beam «2»-C-A has left a point «2» and is a signal « from the present time». It has left that place where in opinion of the observer the star just should come, moving on the orbit with tangential speed V_τ during a time while the light beam moves from a star to the observer.

Let's check up our guess. For this purpose we shall address to Fig. 2. In this figure the beams caught by an optical telescope and Kozyrev's telescope-reflector are shown. The beams caught by Kozyrev's telescope-reflector, all over again extend in transparent substance of a star with factor of refraction $n_1 \geq n_2$. The factor $n_2 = 1$ is factor of refraction of "empty" space (vacuum). The beam «2»-C is directed to the Earth under an angle $I_1 \geq 0$. On external border (surface) of a star the F-G occurs division of this beam into two beams. One does not undergo refraction and continues to move in a direction of a falling beam «2»-C (beam C-A). Other part of a beam refracts and continues to move to the observer in a direction of beam C-E under a corner I_2 according to the law of refraction of beams [2]

$$\frac{\sin I_1}{\sin I_2} = \frac{n_2}{n_1} \qquad (2)$$

On the Earth it seems to the observer, that this beam C-E has come from a star which are being in position «1» though it has left position of a star «2».
Distance between these two positions «1» and «2» we shall designate through «h_1». Distance between position of a star during the moment of emission and the Earth we shall designate through «L». Thus it is necessary to consider, that though on Fig. 2 points D, A', A, E are in different places, but, in comparison with distance L between a star and the Earth, it is possible to neglect these distances and consider, that all of them are as though in one point. In view of it we shall write down obvious parities for definition of distance «h_1»

$$h_1 = L(tgI_2 - tgI_2) \approx L(\sin I_2 - \sin I_1) \qquad (3)$$

Angles I_1 also I_2 are very small. They are measured by several seconds. It allows to replace in expression (3) tangents of these angles with their sines. From the law of refraction of beams (1) have

$$\sin I_2 = \sin I_1 \cdot \frac{n_1}{n_2} \qquad (4)$$

Let's substitute (4) in (3), we shall receive

$$h_1 = L \sin I_1 (\frac{n_1}{n_2} - 1) \qquad (5)$$

The beam, perceived by Kozyrev's telescope, without refraction leaving radiating star and coming to the observer to the Earth, has speed equal to speed of light in vacuum $C = 3 \cdot 10^8 \, м/с$. Speed of a star is equal V_τ. Hence, corner I_1 defining a direction of this beam to the Earth, according to (1), is written as

$$\sin I_1 = \frac{V_\tau}{C} \qquad (6)$$

Substituting (6) in (5), get

$$h_1 = L \cdot \frac{V_\tau}{C} (\frac{n_1}{n_2} - 1) \qquad (7)$$

The angular distance between points «1» and «2» can be received as

$$\Delta I = I_2 - I_1 = \frac{h_1}{L} = \frac{V_\tau}{C} (\frac{n_1}{n_2} - 1) \qquad (8)$$

It is proportional to the ratio of tangential speed of a star to speed of light in "vacuum". If $n_1 = 2$ (size of factor of refraction of glass varies within the limits of n=1,4 … 1.7), that, as well as is noted in astronomical Kozyrev's observation, the angular distance is equal to this ratio

$$\Delta I = I_2 - I_1 = \frac{h_1}{L} = \frac{V_\tau}{C} \qquad (9)$$

Abundantly clear, that both of beams «2»-C-A and «2»-C-E reach the observer on the Earth simultaneously since were produced by a star from position «2» simultaneously, to tell more precisely, in the form of one beam.

Except for beams «2»-C-E and «2»-C-A, let out by a star from position «2» on a course of its movement, the beams «2»-Б-Г and «2»-Б- A' , which also let out by a star from position «2» in a direction of the Earth, but in an opposite direction relatively to movement of a star, will reach the Earth also. The beam «2»-B thus leaves a star in position «2» under a corner

$$I_1 = \arcsin \frac{V_\tau}{C} \qquad (10)$$

In a point B the beam perceived by Kozyrev's telescope-reflector, is divided into two beams. One without refraction hits the nail A' , where it is fixed by Kozyrev's telescope. The second beam after refraction in a point B accepts direction B-D where also it is fixed by Kozyrev's telescope. Analyzing the received signals the researcher mentally continues beam B-D in a direction of a star and makes a conclusion, that the beam «3»-B-D has come from a point «3» where in his opinion the star will just come at that moment when light, let out in a point of observation, will reach the object (the signal « from the future »).

Continuing our reasonings in the same order in which we considered a course of beams, let out a star in a direction of its direct movement, we can write down

$$h_3 = L(tgI_2 - tgI_1) \approx L(\sin I_2 - \sin I_1) \qquad (11)$$

From the law of refraction of beams (1) according to [2] we have

$$\sin I_2 = \sin I_1 \cdot \frac{n_1}{n_2} \qquad (12)$$

Substituting (11 in (10), we get

$$h_3 = L \sin I_1 (\frac{n_1}{n_2} - 1) \qquad (13)$$

The beam, perceived by Kozyrev's telescope, without refraction leaving radiating star and coming to the observer to the Earth, has speed equal to speed of light in vacuum $C = 3 \cdot 10^8 м/c$. Speed of a star is equal V_τ . Hence, angle I_1 defining a direction to the Earth of a beam «2»-B- Γ' in the return direction to movement of a star, can be written as

$$\sin I_1 = \frac{V_\tau}{C} \qquad (14)$$

Substituting (13) in (12), we get

$$h_3 = L \cdot \frac{V_\tau}{C}(\frac{n_1}{n_2} - 1) \tag{15}$$

The angular distance between points «2» and «3» can be received as

$$\Delta I = I_3 - I_2 = \frac{h_1}{L} = \frac{V_\tau}{C}(\frac{n_1}{n_2} - 1) \tag{16}$$

It is proportional to the ratio of tangential speed of a star to speed of light in "vacuum". If $n_1 = 2$, that, as well as is noted in astronomical Kozyrev's observation, the angular distance is equal to this ratio

$$\Delta I = I_2 - I_1 = \frac{h_1}{L} = \frac{V_\tau}{C} \tag{17}$$

Abundantly clear, that both of the beam which has been let out by a star in a direction opposite own movement, reach the observer on the Earth simultaneously since were let out by a star from position «2» simultaneously, to tell more precisely, in the form of one beam. Therefore there is no necessity to allocate unusual time properties for explanation. On the Earth only it seems to the observer, that this beam has come from a point «3» though it has left position of a star «2». We remind, that the distance between true position of a star and the Earth at the moment of emission is designated through «L». Thus it is necessary to consider, that though on Fig. 2 points D, A', A, E are in different places, but in comparison with distance L between the star and the Earth it is possible to neglect these distances and consider, that all of them are as though in one point. Angular distances $\Delta I = I_2 - I_1 = I_3 - I_2$ are very small. They are even measured not by degrees, but seconds.

Apparently, the optical telescope is tolerant to such little change of a direction of a ray of light. For this reason in [3] there is no mention of its detection in three different directions of a beam on points «1», «2» and «3». The optical beam received from a star, logically is attributed to position of a star «1», i.e. to a signal « from the past ». From the lead analysis follows, that for an explanation of Kozyrev's astronomical paradox about simultaneous reception of signals from ostensibly three positions of a star: « The past "," the present "and" the future », is not present necessity to allocate time properties unusual for it. And also there is no necessity to consider, that signals from space objects can be transferred in space instantly, i.e. with infinitely great speeds, which exceed the speed of light in vacuum. The reason of this optical deceit was not noticed by Kozyrev refraction of the beams perceived by a telescope-reflector, on border between star substance and the "empty" space, coinsiding with star surface.

References

1. Problems of research of the Universe, Flashing stars: Proc. of the symposium dated for opening of 2,6 m telescope of Burakan astrophysical observatory. Burakan, October, 5-8th, 1976. - Yerevan, 1977, - P. 209-227.
2. Frish S.E, Timofeeva A.V. The general physics. Vol.1, 2, 3. Moscow: Fizmatgiz publ, 1961.
3. Parkhomov A.G. Astronomical observations by Kozyrev's technique and a problem of instant transfer of a signal. Moscow: Journal “Physical ideas of Russia”. 2000. № 1.