ROMANOV OBSERVATORY STUDIES

Editor in chief: A. A. Moskvin

Issue 2

THE EFFECT OF THE EARTH ON THE FLOW OF TIME

St. Petersburg — Velikaya Pustynya
2019

UDC 521
BBC 22.63
R75

Romanov Observatory Studies / ed. in chief: A. A. Moskvin. — Iss. 2:
R75 The Effect of the Earth on the Flow of Time. — Saint Petersburg, 2019. — 32 pp. — («Astrophysics» Series).

ISBN 978-5-00125-262-7

DOI: 10.25990/7ccm-gt83

The second issue of Romanov Observatory Studies investigates the unexplored effect of the Earth on the flow of time, suggests the definition for the law of media establishment, calculates the constant of temporal fading, determines the size of life-centered space and of the living center of the world, calculates the ballistics of the "anomalous" deceleration of *Pioneer 10* and other parameters, which are compared to the known ones.

UDC 544.53
BBC 35.11

ISBN 978-5-00125-262-7

Foreword for Issue 2

Velikaya Pustynya; “The Great Desert”. It’s a certain place in the middle of Russia. Used to be, thirty villages stood there, but now all that’s left is fields and forests, taken over by the wilds. Nobody’s been born there for last several decades. And so the desert rustles its wispy greenery, in this immaculate land that knows no war, nor cannon fire, nor the heavy march of troops on the byroads — a temple to Nature amidst which towers the Romanov Observatory, wherein I observe, and work, and listen to the approaching symphony that will keep playing throughout all of the spring and summer. Each blade of grass, each bird, each little bug is a living center, with its own sensations. A multitude of mutually contained centers of the world, and Me in the midst of them. The glow from the tower’s floodlight, with the evensong of its bell, attracts hermits to this backwoods place. The Romanov Observatory is an observatory of thought first and foremost, a castle of free creation, wherein lies its purpose. Only new and breakthrough concepts of science and humanities should and will be spread by the light and the sound of the Romanov tower, straining in their flight for the supremacy of the Mind. The absolutism of science — everything that does not serve science shall be destroyed, except for that which is subservient to science.

The first issue of Romanov Observatory Studies, *The Chemical Kinetics of Radiation-Induced Activation,* explored the creation and development of a new chemistry field — contactless selective radiation-induced activation of chemical reactions. That issue is now accessible in all Russian universities and major research centers, as well as on the Internet[1]. I offer my deepest gratitude for the reviews and critique kindly provided by professor Igor Meshkovsky, Saint-Petersburg ITMO University; Svyatoslav Loginov, chemist and science fiction writer; Israel citizen Alexander Schuster, D. Tech. Sci; Natalia Shmotova, chief librarian of the electronic department at FEFU Scientific Library; FEFU Vice-Principal for Science Kirill Golohvatov, and chief research officer at the Laboratory of Spectral Methods, Boreskov Institue of Catalysis, Evgenii Paukschtis. After some discussion, a more precise name for the aforementioned process has been proposed — selective radiation catalysis.

---

[1] http://elib.dvfu.ru/vital/access/manager/Repository/vtls:000876541

The second issue of Romanov Observatory Studies, *The Effect of the Earth on the Flow of Time*, is concerned with a fundamental problem of astrophysics — the structure of the Universe. It suggests and analyzes from a mathematical standpoint the possible existence of a particular influence spread by the Earth, which provides a new explanation for the redshift phenomenon. Further, it supports, explains and develops a model wherein an observer/participant is the living center and an indispensable element and condition of the existence of an egocentric finite Universe. This issue also defines the law of media constitution, calculates the temporal fading constant, determines the size of life-centered space, the living center of existence, and other parameters, which are then compared to the known ones.

This study and its findings are the result of many years spent analyzing the works of Edwin Powell Hubble, Vladimir Ivanovich Vernadsky, Aleksei Fedorovich Losev, Erwin Schrödinger, John Archibald Wheeler, Robert Henry Dicke, as well as Willem de Sitter, Georges Lemaître, Alexander Alexandrovich Friedmann, George Gamow, Yakov Borisovich Zeldovich, and many others whose studies define our understanding of the Universe and the place of the Earth, Life, and Man within it.

Head Keeper of the Romanov Observatory
Alexander Arkadyevich Moskvin

A. A. Moskvin

THE EFFECT OF THE EARTH

Redshift was discovered by Edwin Hubble in 1929. Hubble initially interpreted his findings as movement away from the viewer [1]. Redshift became the basis for the expanding universe theory developed by de Sitter, Lemaître, and Friedmann. Henry Russell found it "premature" to accept de Sitter's ideas unequivocally. "The notion that all nebulae were originally close together is philosophically rather unsatisfactory", he wrote; he found no answer to the question, "why". To the very end of his life in 1953, Hubble apparently could not decide whether redshift was an indication of an expanding universe or if it "represents a hitherto unrecognized principle of nature" [2]. Nonetheless, despite Hubble's misgivings, cosmological redshift was accepted as established scientific evidence of the expansion of the universe. Out of all the proposed explanations of redshift, to this day, only the expanding universe theory is deemed satisfactory. The numerous attempts to justify Hubble's law with something other than the expansion of the universe, attempts that have also been made recently, have so far all ended in failure.

1. REDSHIFT IN A STATIONARY UNIVERSE

1.1. Tired light

During the 1930s, a hypothesis was proposed by Fritz Zwicky that photons were capable of "growing old", and that some new process was in operation that involved photons losing part of their energy while interacting with atoms and electrons on their way from their source to a receptor. An analysis of this model, however, revealed complications that did not correspond with observation data [3]. A transfer of impulse would cause the photon's trajectory to alter and the images of the stars to be blurred dramatically, which has not been observed. In spite of this evidence, a certain version of the hypothesis has been developed by Pecker, Roberts and Vigier [4]. The presumption is that photons lose energy due to the scattering of photons by other photons. Cosmic microwave background is thought to contribute to the scattering in the case of intergalactic objects.

1.2. Gravitational deflection of electromagnetic waves

Every year on October 8, the Sun, if seen from Earth, passes in front of a quasar named 3C 279. By tracking the angular separation between 3C 279 and

its neighboring quasar, 3C 273B, radar astronomers can calculate the Sun-induced deflection of radio waves from 3C 279 in the centimeter and decimeter bands.

Up until 1968, every experiment to measure starlight deflection was conducted during a total solar eclipse [5, 6]. After processing the resulting data, the values of light deflection due to the light's passing near the Sun were found to vary between 1",43 and 2",7. This variation wouldn't be quite so problematic if one could be certain that the method used in the experiments contained no systematic errors or constant bias. The values obtained as a result of measuring the deflection of radio emission from 3C 279 and 3C 273B in the Sun's gravitational field had the relative error of ±0,03 [7].

The deflection of electromagnetic emission was measured through observation in order to confirm the general theory of relativity (GTR); however, the existence of such a phenomenon also indicates that emissions of distant celestial bodies, before reaching an observer, are deflected by a multitude of gravitational fields, which may be the reason for the displacement of the characteristic lines of their spectra. Vigier references authors who claim that beams which pass nearby the Sun experience redshift that is amplified according to the radiation density depending on the Sun's temperature. The statistics of gravitational deflection are directly proportional to the extragalactic distance ladder and the Hubble flow.

Gravitational deflection of a beam also causes topographical effects.

1.3. Gravitational redshift experiments

The most precise redshift experiment to date was conducted by Robert Pound and Glen A. Rebka Jr. [8], and later repeated by Pound and J. Snider. For this experiment, in an attempt to measure the redshift of 14,4 keV gamma rays emitted by Fe^{37}, an emitter and an absorber of gamma rays were positioned motionless at the base of a tower at Harvard and separated by a distance h = 22.5 meters. As a photon traversed the gravitational field, its energy was expected to decrease (h represents the amount of lift of the photon in the gravitational field)

$$E_{lower} = E_{upper}(1 + gh) = E_{upper}(1+ g_{normal}h/c^2)$$

The decrease of energy due to the work done to resist gravitational forces led to a decrease in frequency and an increase in wavelength (the redshift, usually expressed in terms of the redshift parameter ($Z = \Delta\lambda/\lambda$)).

Thus

$$1+ Z = \lambda_{upper}/\lambda_{lower} = h\nu_{lower}/h\nu_{upper} = E_{lower}/E_{upper} = 1 + gh$$

The redshift of gamma rays, caused by overcoming the Earth gravitational field, was verified by experiment accurately to 1% and amounted here to $\Delta\lambda/\lambda = 2{,}5 \cdot 10^{-13}$.

1.4. Speculating on the existence of unknown fields of effect

The possibility of discovering yet unknown fields is quite real [9]. Numerous tests have been done in order to determine the existence of undiscovered fields which recede gradually as distance grows, with the overreaching goal of verifying by experiment the universality of gravitational laws. «Whether or not one accepts the assumption that test bodies move on geodesics of the metric, it remains conceivable that previously unknown long-range fields (fields with "1/*r*" fall-off at large distances) are somehow associated with gravity» [2].

Attempts have been made to experimentally prove the possible existence of new fields that involve gravitation. The Hughes-Drever experiment resulted in the conclusion that no data can suggest the existence of a second tensor field. The Turner-Hill experiment indicated that if a cosmological vector field does exist, its interaction with matter is minor.

2. THE EARTH EFFECT HYPOTHESIS

Cosmological redshift: could it be related to a new and unknown law of nature? Could it bring forth new implications concerning the universe? This study suggests that the Earth projects a field of influence: the Earth effect.

The Earth effect is a previously undiscovered phenomenon which involves a linearly non-decreasing field of exposure that is produced by the Earth and affecting cosmic radiation (a *field* which does not decrease in intensity at large distances by 1/r).

The Earth effect causes the frequency of a wave to decrease and its length to increase. Thus,

$$1 + Z = \lambda_{зм}/\lambda_{св} = r\nu_{св}/r\nu_{зм} = 1 + K_З \cdot r$$

where:

$\lambda_{зм}$; $\nu_{зм}$ — the length and frequency of the wave as perceived from the Earth's surface

$\lambda_{св}$; $\nu_{св}$ — the length and frequency of the wave as emitted by the celestial body

r — distance from observation point to celestial body

$K_З$ — Earth effect constant

$$K_З = H/C \approx 2{,}3 \cdot 10^{-18} s^{-1} \,/\, 3 \cdot 10^{8} m \cdot s^{-1} \approx 0{,}77 \cdot 10^{-26} m^{-1}$$

where:

H — the Hubble constant,

C — the speed of light

The redshift caused by the Earth effect agrees with the findings of the Pound-Rebka experiment, which measured the redshift caused in gamma rays during their traversal of Earth's linearly homogenous gravitation field.

Unlike gravitational, magnetic and electric fi elds, the Earth effect is not subject to disturbances such as are found in the fi elds of other celestial bodies. That is demonstrated by the fact that the cosmological redshift phenomenon is constant and does not depend on season, time of day, and location of observation point on Earth's surface. It follows, then, that the Earth effect is a previously undiscovered phenomenon which involves a linearly non-decreasing field of exposure that is produced by the Earth and affecting cosmic radiation. In any case, this condition agrees with observation data as can be measured via parallax.

3. CONCLUSIONS

1. Cosmological redshift can be explained by the Earth effect.
2. The Earth effect is a previously undiscovered phenomenon which involves a linearly non-decreasing field of exposure that is produced by the Earth and affecting cosmic radiation.
3. The center and source of the linearly decreasing exposure affecting cosmic radiation is located on Earth, and this exposure affects the entire universe.
4. The Earth effect constant:

$$K_З = H/C \approx 2{,}3 \cdot 10^{-18} s^{-1} / 3 \cdot 10^{8} m \cdot s^{-1} \approx 0{,}77 \cdot 10^{-26} m^{-1}$$

References

1. Hubble E. P., Red-shifts in the spectra of nebulae (Halley Lecture), Clarendon Press, Oxford, England, 1934.
2. Misner C. W., Thorne K. S., Wheeler J. A. Gravitation. San-Francisco: W. H. FREEMAN AND COMPANY, 1973. — P. 1063.
3. Зельдович Я. Б., Усп. Физ. Наук, 80, 357 (1963).
4. Pecker I. C., Roberts A. P., Vigier J. P., Nature 237, 227, (1972).
5. Bertotti B., Brill D. R., Krotkov R., Experiments on gravitation in Witten L., ed. Gravitation: An Introduction to Current Reasearch, Wiley, New York, 1962.
6. Klüber H. V., Vistas in Astronomy (London, Pergamon Press) 3, 47 (1960).
7. Concelman G., Shapiro I. et al. Phys. Rev. Lett., 33/1621 (1974).
8. Pound R. V., Rebka G. A., Phys. Rev. Lett., 4, 337 (1960).
9. Москвин А. А. Симфония предчувствия. Космологическая экоэма. СПб.: Реноме, 2018.

A. A. Moskvin

THE BIOLOGICAL BASIS OF THE UNIVERSE

I am always, in fact, at the rainbow's center

The center and source of the linearly non-decreasing field of exposure affecting cosmic radiation is located on Earth, and this field affects the entire universe. Why is that? What property is it that sets our planet apart from the multitude of all the other known celestial bodies? What is it that makes it, the center of cosmological redshift, exceptional within the universe?

Planet Earth is different from the multitude of all the other known celestial bodies due to a special and exceptional quality — LIFE.

1. RELATION OF PHYSICAL CONSTANTS TO THE CONDITIONS THAT MAKE LIFE POSSIBLE

It has been proven experimentally that fundamental constants do not vary with time [1]. Existing data suggests the fundamental constants to be, in fact, constant [2]. Let us turn our attention to a dimensionless quantity — the fine structure constant

$$\hbar c/e^2 = 137{,}0360$$

where:

$\hbar$ — the Planck constant,

e — electron charge.

According to Carter [3], a deviation of this quantity by 1% would cause all stars to turn either red or blue. A yellow sun would have no way to exist; nor would any life on Earth.

Another subject that brings to mind the connection between physical constants and life existence conditions are some of the so-called "large numbers" [4].

$$\sim 10^{40} \sim \frac{e^2}{GmM} \approx \frac{electric\ \ forces}{gravitational\ \ forces},$$

$$\sim 10^{20} \sim \frac{e^2/mc^2}{(hG/c^3)^{1/2}} \approx \frac{fundamental\ \ paricle\ \ size}{Planck\ \ length},$$

$$\sim 10^{10} \sim \frac{number\ offotons\ in\ the\ Universe}{number\ of\ baryons\ in\ the\ Universe}.$$

It is rather interesting that these enormous physical and astrophysical quantities are all divisible by the power of 10. According to Dirac, this coincidence is too convenient to be purely coincidental [5]. Other similar coincidences among physical and cosmological large numbers have been noted [6, 7, 8], which, if believed to be not purely coincidental, would necessitate a denunciation of the contemporary physics theory. Currently, there is no existing research to support that idea, other than references to random coincidences [9].

In some theories similar to the Jordan-Brans-Dicke theory, the gravitational constant G is determined from the spread of matter across the Universe [10]. Is the gravitational constant $G = 6{,}67428 \cdot 10^{-11} m^3 \cdot s^{-2} \cdot kg^{-1}$ actually constant? Such variations are limited by a whole plethora of observations. Significant changes in G during the last 4.6 billion years would have had perceptible impact on Earth, the Sun, and the entire Solar system, and would have put strain on the possibility of life. For life to exist, elements heavier than hydrogen have to be available. Heavy elements require thermonuclear fusion in order to form. For a star to be capable of thermonuclear fusion, several billions of years have to pass.

Another curiosity of note is the similarity between the time life has been present on Earth (~3.5 billion years) and the distance to the closest observable quasars (~3.5 billion light years). Is there a connection? Clearly, the universe is sized proportionally to the age of life. To rephrase Dicke, thus is the Universe the way a man should be, and thus is a man the way the Universe should be. A biological selection of physical constants.

2. MEDIA AND THEIR BASES. THE LAW OF MEDIA CONSTITUTION

The universe contains galaxies, which, in turn, contain stars. What are the stars made of? Plasma. Ionized particles that aren't connected by any kind of rigid structure. Hadrons: protons, neutrons, and electrons, have an almost infinite lifespan and constitute the basis for an isolated medium – the medium of a star. And a star's lifespan is long.

Another, slightly colder isolated medium is a planet. Planets, too, have plenty of time to orbit their stars, and like stars, they possess a homogenous, stable, nigh-eternal base, although its constitution differs from that of the stars: planets are made of atoms and molecules.

Stable homogenous naturally-occurring bases structure themselves into an isolated medium and define its mode of existence – that is the law of media constitution.

Atoms connect into molecules, yet out of all the existing molecules, only the protein molecules that contain carbon can serve as a basis for stable, reiterative and self-replicating media that perceive space and time – living organisms.

Organisms form the Earth's biosphere. They are the percipient bases that form habitats.

Out of all the creatures, only one type of organism – the human being – is the basis of the anthroposphere, i.e. civilization.

Minds are the basis of the knowledge medium.

The individual mind is the basis of the I. The I is the stable nondivisible basis of the medium that is its own mind. Such is the dualism exhibited between the two.

To sum it up, bases constitute media. Protons, neutrons, electrons constitute a star. Atoms and molecules constitute a planet. Carbon-containing protein molecules constitute a living organism. Organisms constitute a biosphere. Human beings constitute the anthroposphere, the civilization. The mind constitutes knowledge. The I constitutes the mind, the Mind constitutes the I.

This describes the law of media constitution, illustrated in the table of the media found in our universe and their bases.

Table media and their bases. The law of media constitution

Basis	Basis size, meters	Medium	Medium			
			Size, meters	Temperature, Kelvin	Pressure, atmospheres	Time of life, years
space	$\rightarrow 0$	universe	10^{28}	$3–10^{25}$	$0 \rightarrow \infty$	$\sim 15 \cdot 10^{9}$
hadrons	$\sim 10^{-15}$	star	$10^{6}–10^{15}$	6000–Nmil.	$>1 \rightarrow \infty$	$\sim 10^{10}$
atoms and molecules	$10^{-12}–10^{-8}$	planet	$10^{3}–1{,}5 \cdot 10^{8}$	> 3		$\sim 4{,}5$ bil.
protein	$10^{-9}–10^{-8}$	organism	$10^{-6}–10^{8}$	220–400	0,1 - 1000	≤ 10000
organisms	$10^{-6}–10^{3}$	biosphere	$(\downarrow 15+15\uparrow) \cdot 10^{3} \leftrightarrow 20000$	220–400	0,1 - 1000	~3,5 bil.
protein	$10^{-9}–10^{-8}$	human being	0,3 – 2,2	308–315	0,9 – 1,1	≤ 110
human being	0,3–2,3	anthro-po-shpere	$\downarrow 15000 + 10^{13}\uparrow \leftrightarrow 20000$	3–Nmil.	$0 \rightarrow \infty$	> 10000
Mind		knowledge	memory	3–2100	0–11000	≤ 40000
I	no size	Mind				
Mind	no size	I — center	no size	N/A	N/A	N/A

3. THE SPACE AND TIME OF LIFE

The mode of matter that corresponds with living beings (symmetry) is radically different from the symmetry of inert bodies. The four-dimensional Euclidean space-time wherein in time is the fourth dimension, as well as the space-time in the theory of relativity, do not conform to the symmetry observed in living beings [11]. The dominant compounds found in organisms — protein, carbohydrate and fat molecules — only contain optically pure, levorotary isomers. No liquid or gaseous bodies are found, although both liquids and gases are. Nor can we see atoms, elementary particles, fields or vacuum as alive — that would go against the law of media constitution. The smallest possible size of a living being is limited by the rules of metabolism and cannot be smaller than about 10^{-6} meters. The largest possible size is limited by a living being's capability to breathe and sustain itself, and cannot exceed 100 meters. The range, thus, is 10^8.

Life is created via its own laws and follows them. For living beings, space-time manifests itself as earthly reality. The processes which occur in living matter influence atoms and even isotopes; they are involved in the rhythmic orderly movements and connections that occur inside an organism, and this leads to a reimagining of the relations of space-time in the world around us, a world perceived through science. Living matter and the biosphere are geologically eternal. The essence of life exists inside its own space-time, which is also alive. Perception is always subjective. The subject is always alive. That which is alive is rhythmic. The metabolic rhythms of levorotary monodirectional proteins, in the stable living basis of a universe that perceives time and space, develop into generational cycles, into growing old, into evolution. These meters affect the inert, meaningless space of faceless matter and fill it with the pulsing of life — the unilateral flow of time. The left-hand geometry of the proteins which bring life, and the loss of symmetry in the universe. Time is determined by the living being, which lives at the center of space.

Life is the existence of a time-perceiving center in space. A multitude of mutually contained centers of the world which reiterate rhythmically, evolve cyclically, and reproduce and aim to reproduce endlessly.

4. THE I AS THE BASIS OF THE MIND MEDIUM

The immutable bases of the world are hadrons, atoms, molecules, proteins, organisms, humans, the mind, and the I.

Stars and planets, living creatures and the biosphere, civilization and people — everything is material, everything has a size, a temperature, a temporal duration, and stems from natural causes. The mind exists inside a human brain and is obviously material, just as data is borne on storage devices.

But what about the I? Where and how, and why? A mind without an I is an aimless analog device bloated with data. Only the I, the sole, indivisible, limitless, immaterial, timeless, yet invariably living I exists always in the center of the universe. The I is wherever it wants to be: in the now, in the past, in the future. The I is whatever it wants to be, as free and wild as the imagination. A universe within a universe. The I inhabits and strains the mind. The mind learns. The Living Mind — a mind bound to the earth and its own scull — has risen above evolution until it reached the process of learning and creation, and gone forward — to the omnipotent creation of its intervention in the world — an act of participation. *The participant* is, undoubtedly, a new term proposed by Wheeler and Everett. It replaces the outdated *observer* used in classic theory — a person standing behind a thick glass wall and observing apathetically the goings-on around themselves. Is it not the *participation* of the I that gives the universe meaning? The I fills in the new creations of all-permeating life. The I is the basis of the mind medium, the only immutable basis in the universe which exists regardless of time and space and is not constrained by the physical constants and laws of the material world.

5. CONCLUSIONS

1. Planet Earth is different from the multitude of all the other known celestial bodies due to a special and exceptional quality — life.
2. Life is the existence of a time-perceiving center in space. A multitude of mutually contained centers of the world which reiterate rhythmically, evolve cyclically, and reproduce and aim to reproduce endlessly.
3. Physical constants are interrelated with the conditions of existence of biologically selective life.
4. Stable homogenous naturally occurring bases structure themselves into an isolated medium and define its mode of existence — that is the law of media constitution.
5. The immutable bases of the world are hadrons, atoms, molecules, proteins, organisms, humans, the mind, and the I.
6. The I is the basis of the mind medium, the only immutable basis of the universe which exists regardless of time and space and is not constrained by the physical constants and laws of the material world.

References

1. Dyson F. J., The fundamental constants and their time variation in the book Salam A., Wigner E. P., eds., Aspects of Quantum Theory, Cambridge University Press, Cambridge Eng., 1972.

2. Dicke R. H., Peebles P. J. E., Phys. Rev. Left., 18, 2006 (1962). Minkovsky R., Wilson O. S., Astrophys. Journ., 123, 373, (1956).

3. Carter B., preprint, Institute of Theoretical Astronomy, Cambridge, England, 1968.

4. Dicke R. H., Nature, 192, 440 (1961).

5. Dirac P. A.M., Nature, 139, 323 (1937).

6. *Станюкович К. П*. Гравитационное поле и элементарные частицы. Атомиздат, 1965.

7. Gamov G., Phys. Rev. 74, 505 (1948).

8. Gamov G., Proc. Nat. acad. Sci. 59, № 2, 313 (1968).

9. *Зельдович Я. Б., Новиков И. Д*. Строение и эволюция Вселенной. М.: Наука 1975. — 735 с.

10. Brans C., Dicke R. H., Phys. Rev., 124, 925 (1961).

11. *Вернадский В. И*. Собр. соч.: в 24 т. Т. 10: Химическое строение Биосферы Земли и её окружения. М.: Наука, 2013.

A. A. Moskvin

TEMPORAL FADING

...a moderately satisfying picture of the world has only been reached at the high price of taking ourselves out of the picture, stepping back into the role of a non-concerned observer.

E. Schrödinger, 1942

A living being always exists in the center of its space and has a sense of time. The only known place in the universe that has life, where the living centers of space are located and time is perceived, is Earth. Cosmological redshift can be explained quite well by the Earth effect — the further one goes from the Earth, the more the spectral lines shift towards slower frequencies. This begets the following questions:

– could life on Earth be the cause of cosmological redshift?
– could it be possible for the living organism to center the space of the universe on itself and set its time?

If the above questions are answered in the affirmative, one has to conclude that **as one moves further away from living beings, the flow of time fades — that is, slows linearly.**

1. THE TEMPORAL FADING CONSTANT

If the fl ow of time fades, or slows down linearly, as one moves away from living beings, then the Earth effect constant can be read as a temporal fading constant:

$$K_З = H/C \approx 2{,}3 \cdot 10^{-18} s^{-1} / 3 \cdot 10^{8} m \cdot s^{-1} \approx 0{,}77 \cdot 10^{-26} m^{-1}$$

In that case, temporal fading, concurrent with increasing distance from an observer/participant, is calculated as

$$\Delta\tau = (\tau - \tau_i) / \tau = K_З \cdot r_i$$

where:

r_i — distance from the observer/participant;
τ_i — the flow of time at the distance r from life $_i$;
τ — the flow of time in the life of the observer/participant.

The Hubble constant is thus perceived as the time pulsation frequency or the universe pulsation frequency — $2{,}3 \cdot 10^{-18}$ Hz, while its reciprocal quantity $1/H \approx 10^{18}$ s is perceived as is — as the lifespan of time.

The dependencies of temporal fading ($\Delta\tau$), frequency (ν_i), and wavelength of emissions that reach the observer/participant (λ_i) are plotted against the distance from the observer/participant in the image below.

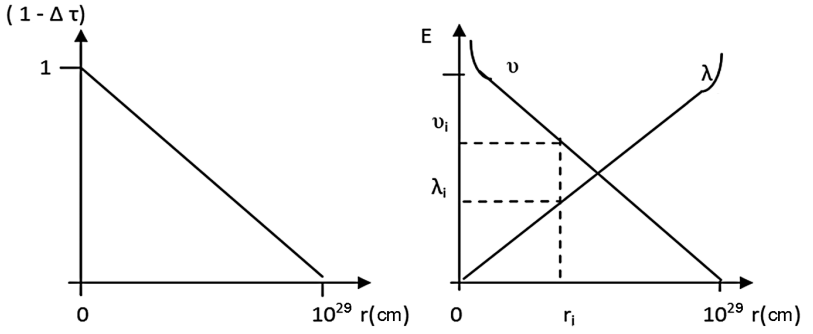

Fig. 1. Dependencies of temporal fading ($\Delta\tau$), frequency (ν_i), wavelength of emissions that reach the observer/participant (λ_i), against the distance from the observer/participant (r_i)

As one moves further away from living beings, time slows and, according to K_3, reaches the limits of the universe and halts at a distance of $1/7{,}7 \cdot 10^{-29} = 1{,}3 \cdot 10^{29}$ cm. Like the horizon, the limits of the universe are unreachable for the observer/participant. The observer/participant is the center of the universe.

2. THE MEDIA BASES' DISINTEGRATION SEQUENCE AS THE DISTANCE FROM THE OBSERVER/PARTICIPANT INCREASES

Temporal fading as the distance from an observer/participant on Earth increases is applicable as a law to all media and their bases and causes changes in universe matter (see table). A decrease in frequency υ_i as the distance from the observer/participant increases is also the decrease of binding energy linked inseparably with time,

$$\Delta E = \Delta\tau = K_3 \cdot r_i$$
$$\Delta E = (E - E_i)/E$$

where: E — binding energy on Earth;
E_i — binding energy at the distance r_i

Table

Changes in universe matter caused by distance-induced temporal fading

Distance from observer/ participant, r_i	Temporal fading, $\Delta\tau$	Reaching limit of radiation energy, E_i	Extreme reaching radiation type	Disintegrating bond energy $E_{cb} < \Delta\tau \cdot E$	Extreme interaction type	Matter type	Notes
cm	Rel. unit	eV		eV	What disintegrates		
10^{14}–10^{20}	10^{-14}–10^{-8}	10^{14}–10^{8}					
10^{22}–10^{24}	10^{-8}–10^{-6}	10^{8}–10^{6}					
				Min. bond energy	Van der Vaals force, adsorbtion	Crystals, liquids	No characteristic lines
10^{25}–10^{27}	10^{-5}–10^{-3}	10^{5}–10^{3}	γ radiation				
				0,01–0,5	Complex polar bonds	Organics	No char. lines
10^{26}–10^{28}	10^{-4}–10^{-2}	10^{4}–10^{2}	X-radiation				
				~5	Covalent chem. bonds	Nonorganic matter	No char. lines
10^{28}–10^{29}	0,01–1	120–3,2	UV				
10^{29}	~1	3,2–1,6	Visible light				No more light
				~10	Electr. shells	Atoms	
10^{29}	~1	0,6–0,04	Infrared				No more warmth
				~10^{7}	Atomic nuclei	Ions	
$\rightarrow 10^{29}$	~ 1	$\leq$ 0,04	Radio waves				No more communication
	1	0				Fundamental particles	The end

As distance increases, binding energy decreases, and bonds degrade and disappear, starting with the weaker links and continuing with the stronger ones. The modes of matter formed with those links disintegrate in the following order:

1. The van der Vaals force (disintegration of adsorption, crystals, noncrystalline solids, liquids).
2. Chemical bonds (disintegration of agents: organics → nonorganics).
3. Electron shells (disintegration of atoms).
4. Ions (disintegration of atomic nuclei).
5. Fundamental particles (complete disburdenment)

Those are the extremes of the universe.

It is possible that, as time fades, it is not only that the wave frequency elongates, but also that the energy of disintegrated bonds decreases as well. This would result in a paucity of suitable conditions for the eradication of media bases. However, as the observed object gains distance from the observer, the disintegration sequence of media bases perseveres.

Extreme kinds of space radiation that reach the observer/participant cascade in the same order — starting with the high-energy ones, continuing with low-energy, and terminating at absolute zero at the distance $r_i = 10^{29}$ cm.

3. THE UNIVERSAL WORLD CONSTANT

In order to calculate the space-time parameters in an egocentric finite universe model, it would be convenient to introduce and use a specific operator — the universal constant of the world.

$$M = H/G \approx 2{,}3 \cdot 10^{-18}\,s / 6{,}67428 \cdot 10^{-11}\,m^3 \cdot s^{-2} \cdot kg^{-1} = 3{,}45 \cdot 10^{-8}\,s \cdot kg \cdot m^{-3}$$

The dimension of the universal world constant is the product of time and ambient density.

4. THE SIZE OF HUMAN-CENTERED SPACE

Life is the existence of a time-perceiving center in space. Living beings are always located at the center of their own space and are capable of sensing time. The only known place in the universe that has life, where the living centers of space are located and time is sensed, is Earth. Man is one of the immutable bases of the universe, a living organism that perceives time and centers the space it exists in.

Based on the value of the universal world constant and assuming the lifespan of the observer/participant to be

$$Ж = 100 \text{ years} = 3{,}1536 \cdot 10^9 \text{ seconds},$$

the density of space determined by the observer's/participant's lifespan constitutes the following:

$$\rho_{цч} = \frac{M}{Ж} = \frac{3,45 \bullet 10^{-8}}{3,1536 \bullet 10^{9}} = 1,09 \bullet 10^{-17}\, kg \bullet m^{-3}$$

What is the meaning of this value - $1,09 \cdot 10^{-17}$kg/m^3? This is the density of Earth-adjacent outer space, where the universe is centered on the human life. What is the size of that space? Does its density match the density of the Universe or the Milky Way, or of the Solar system: as a sphere, as an ellipsoid, as calculated based on the ecliptic of the planets, as limited by the Earth's orbit?

The volume of the sphere representing the human life-centered space is:

$$V_{цч} = m_{цч}/\rho_{wx}$$

where $m_{цч}$ is the mass contained in the human life-centered space.

If $V_{цч}$ fits within the Solar system, then:

$$m_{цч} \approx M_c$$

where M_c is the mass of the Sun, $M_c = 1,989 \cdot 10^{30}$kg = 99,8 % of mass of the entire Solar system.

The radius of $V_{цч}$

$$r_{цч} = \sqrt[3]{\frac{M_s}{1,33 \bullet \pi \bullet \rho_{цч}}} = \sqrt[3]{\frac{2 \bullet 10^{30}}{1,33 \bullet 3,14 \bullet 1,09 \bullet 10^{-17}}} = 1,64 \cdot 10^{18}\,\text{cm} = 1,73 \text{ light years}$$

There are no stars within that distance except for the Sun. The distance to the closest star, α Centauri, is 4.49 light years. There are 9460800 mil. km. in a light year. The distance from the Sun to Pluto is 5913 mil. km. It follows that the size of human-centered space fits within that of the Solar system.

5. COMPARING THE DENSITY OF THE HUMAN-CENTERED UNIVERSE WITH THE DENSITY OF A GALAXY CLUSTER

The universe density determined by the observer/participant's lifespan is:

$$\rho_{ун} = \frac{M}{Ж_з} = \frac{3,45 \bullet 10^{-8}\, s \bullet kg \bullet m^{-3}}{1,1 \bullet 10^{17}\, s} = 3,13 \bullet 10^{-25}\, kg \bullet m^{-3}$$

Here, $Ж_З$ is the lifespan of universe-centering observers/participants on Earth.

$$Ж_З \approx 3,5 \cdot 10^{9} \text{ years} = 1,1 \cdot 10^{17} \text{ s}$$

The density value of our galaxy cluster, calculated according to a currently recognized anisotropy of relict radiation in an expanding universe [1], is

$$\rho_c = 3H^2/8\pi G = (0{,}61 \pm 0{,}1) \cdot 10^{-26}\ \text{kg/m}^3$$

where $H = 65 \pm 15$ km/s Mpc^{-1} is the Hubble constant.

$$\rho_c < \rho_{ун}$$

To sum up, universe density values calculated according to the egocentric, spatially finite universe model and galaxy cluster density values calculated according to the expanding universe model are similar and only differ by one order of magnitude. The variance between the values may be caused by an error in determining the Hubble constant and the age of life on Earth.

6. LIFE AND THE SIZE OF THE UNIVERSE

Currently, the only proven way to measure the distance to celestial bodies uses the parallax observed from Earth's orbit. The distance that can be measured this way cannot exceed 300 pc = $9.24*10^{20}$ cm. All other values, calculated using the Doppler effect in the Hubble constant, are mostly provisional and depend on a range of theoretical works that offer explanations for the redshift phenomenon, Cepheid variables, and other celestial reference points. The universal space density values calculated according to the expanding universe model and the egocentric finite universe model are rather similar. It follows that the size of the universe is determined by the time of life.

7. THE SIZE OF THE LIVING CENTER OF THE WORLD

The immutable bases of the world are hadrons, atoms, molecules, proteins, organisms, humans, the mind, and the I. The I is the only immutable basis of the universe which exists regardless of time and space and is not constrained by the physical constants and laws of the material world. The I is a Universe within a universe that is always located at the center of the world.

What is the size of the Universe within a universe?

The I is a stable indivisible basis which constitutes the medium of its own mind. The mind exists within a human brain and has substance. If universe density equals the density of a human body,

$$\rho_B = \rho_ч \approx 1000\ \text{kg/m}^3,$$

the distance at which time will halt at the limits of the universe will be

$$r_{вч} = \frac{C \bullet M}{\rho_ч} = \frac{3 \bullet 10^8 \bullet 3{,}45 \bullet 10^{-8}}{10^3} = 1{,}03 \bullet 10^{-2}\, m \approx 1 \text{ cm}.$$

Like this, the Universe within a universe fits within the limits of a human brain.

Coincidence?

8. *PIONEER 10*'s DECREASING SPEED AS ITS DISTANCE FROM THE OBSERVER/PARTICIPANT INCREASES

It is particularly important to note the peculiar slowing of the spacecrafts *Pioneer 10* and *Pioneer 11* that occurred once they'd moved more than 120 au beyond the limits of the Solar system, contradicting the known laws of ballistics. *Pioneer 10* was the first spacecraft to reach the third cosmic velocity and photograph Jupiter. It was launched on March 2, 1972. *Pioneer 11* was launched on April 6, 1973, and had few differences from its "twin". The anomaly was first registered in 1998, when both probes reached a distance of 13 billion kilometers away from the Sun. NASA researchers noticed that their speed began to decrease with a deceleration value of $a_П = (8{,}74 \pm 1{,}33)\, 10^{-10}$ m/s^2. The known laws of physics could not account for this phenomenon. Some experts, however, recalled a similar incident in the early 1980^s, when an unidentified force began to "pull" the probes back towards the Sun. The occurrence was explained by the evaporation of remnant fuel from the tanks while the probes were flying past Jupiter. Now, however, the *Pioneers* have no more fuel in them, and yet they continue to lose momentum. The scientists at last concurred that the reason for this bizarre loss of speed was the electrical current running within the research devices on board, which created faint jet thrust that would pass unnoticed under normal conditions. This explanation appears quite dubious and far-fetched, even with a lack of other, more convincing hypotheses. The last signal from *Pioneer 10* was registered on January 23, 2003. The probe was withdrawing from the sun at a velocity of ~11391 km/s.

On February 17, 1998, *Pioneer 10* was no longer the furthest spacecraft away from Earth: it was overtaken by *Voyager 1*. The new probe was launched on September 5, 1977. Its twin, the probe called *Voyager 2*, was launched 16 days later, but it will never reach *Voyager 1*. As of the end of the year 2017, *Voyager 1* is the fastest spacecraft to leave the Solar system. The *New Horizons* probe, launched towards Pluto on January 19, 2010, is slower than both of the *Voyagers*. The distance covered by *Voyager 1* by the middle of December 2010 was approximately 17.41 bil. km. No ballistics-defying abnormalities have been recorded yet, but any small anomaly could have been corrected due to the research equipment still working on board: on November 28, 2017, *Voyager 1*

successfully fired each of its four trajectory correction maneuver thrusters in 10-millisecond bursts; those thrusters had not been fired in more than 37 years. Unlike the *Voyagers*, however, *Pioneer 10* had no equipment capable of adjusting its trajectory when its anomaly occurred.

What was the value of the deceleration experienced by *Pioneer 10* during the anomaly as it moved away from the observer/participant according to the law of temporal fading?

Pioneer 10's deceleration according to the law of temporal fading was

$$a_з = dv_i = \nu \cdot \Delta\tau/\tau_м = \nu \cdot K_З \cdot r_i/\tau_м \approx 11{,}391 \cdot 10^3 \cdot 7{,}7 \cdot 10^{-27} \cdot 13 \cdot 10^{12}/1 = 11{,}4 \cdot 10^{-10}\ \text{m/s}^2$$

where

ν — velocity of *Pioneer 10*; $\nu = 11{,}391 \cdot 10^3$ m/s ;

r_i — distance from the observer/participant; $r_i \approx 13$ bil. km $= 13 \cdot 10^{12}$ m;

$\tau_м$ — time period of reference; $\tau_м = 1$ s.

Therefore, the value of *Pioneer 10*'s anomalous deceleration is similar to the deceleration of a test body moving on geodesics of the metric with provision for temporal fading as the distance from the observer/participant increases.

$$a_з \approx a_П \qquad 11{,}4 \cdot 10^{-10}\ \text{m/s}^2 \approx (8{,}74 \pm 1{,}33) \cdot 10^{-10}\ \text{m/s}^2$$

Coincidence?

9. CORRECTION OF THE HUBBLE CONSTANT ACCORDING TO NASA DATA

The Hubble constant, corrected according to *Pioneer 10*'s deceleration values at the edges of the Solar system as provided by NASA.

$$H_{NASA} = \frac{a_з \bullet \tau_m \bullet c}{\upsilon \bullet \tau_i} = \frac{(8{,}74 \pm 1{,}33) \bullet 10^{-10} \bullet 1 \bullet 3 \bullet 10^8}{11{,}391 \bullet 10^3 \bullet 13 \bullet 10^{12}} = (1{,}77 \pm 0{,}27) \cdot 10^{-18}\text{s}^{-1}$$

Reference

1. *Чернин А. Д.* Космический вакуум // УФН. 2001. № 11. Т. 171. С. 1153 (обзоры актуальных проблем).

Amateurs Club

The questions one poses when one begins to study an unknown subject usually seem amateurish. This is particularly obvious in the establishment of spearhead schools that border multiple disciplines, whose findings do not fit into conventional terms, and where initiative and ingenuity are paramount. Contemporary science, framed into bureaucratic structures as it is, grows to fit into preplanned subjects while disregarding the investigation of that which falls beyond the lines [1], but fundamental discoveries that alter the basic principles of science are never planned. Revelations happen in their own time, almost simultaneously, in a number of different minds across the world, when an idea is ripe. This is exactly when a passionate, educated, self-assured amateur shines. Exact science is not the only way towards discovery. For an example, think of a monkey with a pair of glasses, which it would explore with its hands; for another, think of the flight of the Montgolfier brothers, who were unaware of Archimedes' principle and based their calculations on the Ancient Greek Δ Δ ▼ ▲ + ʊ black goat hair coated in burning sap. A need defines a goal. If the goal is defined correctly, it is attainable. The goal of the amateurs club is quite attainable — asking scandalous questions in order to try out a ripened idea.

1. EXPANSION OF VACUUM IN COSMOLOGY

The future is discovered through science. Science is perpetually in a state of development, and if it cannot provide assistance right now, it will surely be able to do so later, as a result of future discoveries that will lead to an introduction of new technologies. Initial learning is a practice that produces laws pertaining to the humanities. Unlike engineering, astrophysics and cosmology are disciplines that define the horizon of learning while also being included among the natural sciences; lately, these disciplines have been growing closer and closer to philosophy and the humanities. Currently, the boundary between theory and hypothesis in astrophysics is blurred. This is a direct consequence of the supremacy of the expanding universe theory and other such concepts. There is constant conflict between two distinct approaches: doing local experiments, which are within human research capabilities and involve studying particular parts of the Universe, and finding explanations for the existence of

elements that are beyond the bounds of contemporary local quantum theory. Perhaps in the future it will no longer be necessary to selectively choose data and we will be able to perceive and comprehend white noise, but at the current point in time, the main tools of research in astrophysics are to propose a hypothesis, build a mathematical model based on that hypothesis, calculate a reference parameter, and confirm it via observation of telescope spectra. This pattern is far from new and finds application in fundamental particle physics and in measuring hyperfine fields in the nuclei of unmagnetized ions with the MRI method [2]. It is also well-used in infrared spectroscopy of complex molecules and polymers, where calculations may well have reached a level of precision normally associated with engineering [3]. But even in these, rather simplified, cases, the results could be interpreted in two, if not three, different ways, and depend heavily on the starting parameters. It happens sometimes that different theories lead to the same results [4].

Astrophysics and cosmology at the limits of knowledge. Some of the terms and definitions used in modern astrophysics and cosmology, ones that have not been confirmed experimentally, have the emotional impact of the images of monsters and disfigured savages drawn on the blank spots of maps in the Middle Ages:

- Quantum foam (*gamma quants 10^{16} GeV, which, according to calculation, form in quasars' cores, are supposed to be sensitive to the foam*);
- Wormholes – fluctuations of space-time on the Planck scale;
- Photon vacuum — a system of weak interactive zero-point oscillations through virtual electron-positron burrows;
- The string theory and the hidden dimensions of the universe [5];
- The preon model as an alternative to the superstrings model (*a preon is allegedly a compound Хцboson*);
- quantum gravity, a negative-energy density condensate — prototype phenomenon of a nonlinear solution to the Yang-Mills equations (*equation presented as fact, everything is imaginary*);
- massive 10 eV neutrinos, heavy 100 GeV Majorana neutrinos, new interaction and bundle types;
- Wheeler's superspace, superdeformation, supergeometry, superbundles (*super, super, super*).

Mathematicians have gone wild in the wide-open spaces of the universe. They imagine it to be an infinite, perfect blackboard for building diagrams upon models of endless, perfect, and inexhaustible spaces. From these diagrams, they chart the cosmological worldview for a multitude of curious amateurs, who are captivated and dazed by those cryptic and divine and convoluted operations, like the peasants and signors of the Middle Ages were entranced by the magic of cryptic, divine and convoluted chants performed by priests.

Religion has been superseded by scientific theories. There have appeared scientific publications that interpret the Rigvedic hymn X129 as an explanation of singularity [6].

A fresh perspective on the latest studies from a well-educated, independently-thinking amateur can sometimes be useful and point out some significant contradictions and deadlocks in astrophysics and cosmology that scholars overlook for being too mundane. Nature has its own laws, which we use in order to improve our lives, sometimes without even knowing them, instead substituting them in practice with imaginary models that just happen to coincide with reality in certain cases. However, even if it is convenient to measure berries by the handful, it doesn't mean that the berry *is* the handful. Modeling is the idea of creating something new based on older, better-known models. Attempts to create the unknown that are based on familiar ideas don't always succeed — they boil down to contemplating the essence of the world without even the knowledge of how much knowledge one lacks. To expanding vacuum and the Big Bang. In order to explain redshift via the Doppler effect, scientists had to invent a fundamentally new natural phenomenon — the expansion of the universe — and agree with the gibberish of the expanding vacuum and the Big Bang, discarding common sense. Machine calculation has invalidated common sense — everything that cannot be understood can be converted into a computer game, a virtual worldview. The arrogance of a man crossing the railroad tracks with his ears plugged has been reinforced. Isn't that where all of us stand today in astrophysics and cosmology?

In reality, from a terrestrial observer's point of view, it looks as if all the galaxies and clusters are dispersing from a certain point upon the Earth. According to logic, the epicenter of the original Big Bang is located on Earth! However, despite all that, modern astrophysicists and cosmologists keep insisting with a persistence worthy of the Middle Ages that, *'Perhaps, if this fact had been known before Copernicus, then the man of that time would have decided that he is the center of the world. We have long since departed from geo-, helio-, and galactocentrism. It is obvious (!!!) that our galaxy is no better (!!!) and no worse (!!!) than millions of other observable galaxies. This is why (!!!) it is only natural to conclude that any (!!!) observer in any galaxy would see a similar dispersing of galaxies'*.

Better and worse galaxies… The man of that time… We have long since departed from… This is why it is only natural to conclude… — this are all striking examples of dogmatism taken at face value in order to explain the gibberish that resulted from an error in a fundamental concept. An established reaction to the sentencing of Giordano Bruno. Nowadays the general tendency in cosmology is that its laws are rather similar to theories, the theories to hypotheses, and the hypotheses are likened to dogmas. Certain

excerpts from some cosmology studies, like beacons, are signaling the coming upheaval:

- the vacuum, in its complexity and variety of properties, may be no less complex than the human being. An intellectual challenge to man;
- in the 21st century, we are now studying things that are much more complex than ourselves;
- the issues of contemporary science can be summarized as studying the infinite.

The path towards truth is far from smooth. Building a systematic world model upon erroneous notions leads astrophysicists and cosmologists to self-humiliation. There's no limit to imagination in astronomic calculations — it is so easy to explain one unexplainable oddity with another one, even more obscure. However, **all the systematic models, one after another, are built with the underlying assumption that its viewpoint is unbiased and life is optional and lost amidst endless space.** The only exception is Everett and Wheeler's concept, which has the observer influence the evolution of the finite universe he inhabits with his actions.

Studying the infinite causes an infinite number of incredibly complex problems to appear. But what if the world is finite? Objective reality is a dead ocean filled with stones that bruise, it does not exist unless it is being perceived by someone, unless there is life. Perhaps, if it is unnecessary for life to exist, there is no infinity? Perhaps no one is lost, because we study the universe from right here on Earth. Imagination is beyond space, beyond time, it is in the I. Do not belittle the I or the Mind, do not discard the common sense inherent in it.

"Any model that is impossible to understand either is dead or begets the dead *(stillborn)*" [7] — if we adhere to this postulate, we can operate without the "expanding universe" dogma that has achieved a semi-religious sense, without the "Big Bang" and other such phlogistons, yet in Friedmann's cosmology, vacuum keeps expanding. Every second, a Milky Way's worth of empty space is produced in this made-up world.

2. THE RELIC RADIATION MIRAGE

The term "relic radiation" came about in a very similar fashion to the term "expanding universe". Both were mathematically proven and predicted first, and only later was their existence confirmed via observed facts that were accepted as corroboration. The expansion of the universe was predicted theoretically back in 1924 by a Soviet mathematician, A. Friedmann; in 1927, Lemaître arrived at the same conclusion independently. In 1929, Hubble discovered the redshift phenomenon, which became the basis for de Sitter and Lemaître's expanding universe theory. In 1931, Friedmann's theory was designated as the

main one. The expanding universe theory has since become a paradise for Big Bang and expanding vacuum theorists and hell for experimentalists, because no confirmation could be found except for the unconfirmed relation of redshift to this theory.

G. Gamov helped — during the late forties, he predicted the discovery of the cosmic microwave background, a remnant from an earlier stage of the universe's evolution which has a spectrum corresponding to a temperature of 2725 K. In 1965, radio astronomers Arno Penzias and Robert Wilson published a study about the discovery of a microwave background that was 3.5 K above the expected. Cosmologists Robert Dicke, Jim Peebles, Peter Roll and David Wilkinson immediately attributed this background to the relic radiation of a high-temperature expanding universe. Penzias and Wilson received a Nobel Prize in 1978 for the discovery of a microwave background at the 7.35 cm wave. Further studies with satellites and ground-based telescopes found a high degree of isotropy in background microwave radiation. In 1983–84, an experiment titled "Relic" (using the USSR "Prognoz-9" satellite) discovered a dipole component in the distribution of background radiation, caused by the movement of the Solar system in relation to the radiation field. Observations completed with the help of COBE (Cosmic Background Explorer) and WMAP (Wilkinson Microwave Anisotropy Probe) found small-scale spatial fluctuations in the distribution of the radiation across the sky, including an area where there was no apparent cosmic microwave background [8,9].

Experimentalist radio astronomers prefer the term "cosmic microwave background" (CMB). The term "relic radiation" is used by theoretician astrophysicists, because the reason for its invention and existence has been determined to be the initial expansion of the universe, just as the expansion of space was hailed as the reason for the existence of redshift back in the thirties.

Nonetheless, the origin of CMB is not necessarily cosmological. Isotropic radiation may be caused, for example, by such a phenomenon as resonance microwave luminescence of a cloud's sol, if a solar system is located within it and is passing through it; this would be the origin of the background radiation distribution dipole component and of the dark spot lacking the radiation and indicating the perceived absence of the cloud. The sol particles in such a cloud causing resonance-luminescent distribution on the 7.35 cm wave may be hydrogen crystals ($T_{melt} = 14.01$ K) covered by a liquid helium eutectic ($He^4 - T_{boil} = 4{,}215$ K; $He^3 - T_{boil} = 3{,}19$ K). Background distribution of 7–8 K in a distant part of the universe in the rays of a quasar may be another microwave-luminescent cloud rather than the proof of post-Big-Bang cooling. This could be an observed, potential relict radiation mirage.

3. AN INDICATION OF EXTRATERRESTRIAL LIFE

In 1967, at the Mullard Radio Astronomy Observatory, Jocelyn Bell Burnell and Antony Hewish detected a quick-variable extraterrestrial radio source of unknown nature with a high-stable repetitive pulse frequency. This observation was concealed for a certain time, as the signals had been thought to be artificial in origin. Once it was published, however, over a hundred similar sources were found and, eventually, named "pulsars". According to the dominant astrophysical model, pulsars are rotating neutron stars with a magnetic field that is tilted towards the rotation axis.

The history of this discovery demonstrates that many astronomers would like to find extraterrestrial life by detecting artificial signals from open space. However, if life as a center of perceiving time in space is the cause of cosmological redshift, then redshift is where it would be prudent to begin such a search. Physical constants and the existence conditions of biologically selective life are interdependent and do not vary with time. The conditions found on Earth, notable for its distinctive trait — being a host to life — may be found in other places in the universe. Life is a multitude of mutually contained centers of the world. Therefore, the gradient of decreasing cosmological redshift may become a constant astronomical observational indication of life. This other, extraterrestrial, mutually contained center of the world (if such a center exists) — let us call it «Ekazemlya» — does not release radiation of its own, but it does serve as a starting point for temporal fading. «Ekazemlya» has to be located in the center of a gradient field of decreasing cosmological redshift. When observed from the surface of the Earth, as the viewpoint aligns with this center, the cosmological redshift should decrease. It is not easy to find such a gradient among the many fluctuations present in the universe. It is not only the Doppler effect that affects the mapping of these fluctuations, but also gravitational radiation: the same star, with the same spectral characteristics, may be observed in different regions of the sky at different luminosities. There are plenty of such duplicates to be found. It is not impossible for certain galactic spiral arms to be mirages, either. The goal set for mathematicians and computers is to investigate and understand this mirage of the universe.

References

1. *Гуц А. К.* Многовариантная история России. Омск: изд. КАН, 2012.

2. *Москвин А., Ованесян Н., Трухтанов В.* К теории косвенных сверхтонких взаимодействий (препринт Черноголовка 1976.

3. *Грибов Л. А., Баранов В. И., Зеленцов Д. Ю.* Электрон-колебательные спектры многоатомных молекул. Теория и методы расчёта. М.: Наука, 1997.

4. Труды Романовской обсерватории / гл. ред. А. А. Москвин. Т. 78, вып.1: Химическая кинетика лучевой активации. СПб., 2018. – 28 с. – (Серия «Химия»).

5. *Шинтан Яу*. Стив Надис. Теория струн и скрытые измерения вселенной (The shape of inner space Shing-Tung Yau and Sateve Nadis) М, СПБ, Нижний Новгород, Воронеж, Ростов-на-Дону, Екатеринбург, Самара, Новосибирск, Киев, Харьков, Минск, 2013. В СПб. тир 2500.

6. *Латынов Н.Н., Бейлин В.А.? Верешков Г. М*. Вакуум, элементарные частицы и Вселенная. Изд. МГУ 2001.

7. *Москвин А.А*. Симфония предчувствия. Космологическая экоэма. СПб.: Реноме, 2018.

8. *Краус Дж. Д*. Радиоастрономия. М., 1973.

9. Астрономия: век XXI / Под редакцией В. Г. Сурдина. Фрязино, 2007.

Afterword

In 1548, a book by Nicolaus Copernicus, titled *On the Revolutions of the Celestial Spheres*, was published in the city of Nuremberg. The theory and proof of Earth's revolution, though published, were for a long time hushed up or criticized and ridiculed by the maîtres of the ideology that was dominant in Europe at the time. Even 85 years later, in the year 1633, a well-known, active follower of Copernicus who continued to develop his work was brought before a judge and forced under threat of torture to publically renounce the fact that the Earth rotated. What this emblematic trial involved was not the fundamental questions of science, but the degree of danger that those claims, the claims that Earth was not the center of the world, posed to the current way of life. This demonstrates yet again that a study of the skies does not involve only the sciences, but also the inner workings of the human mind and the ideology of society.

Today, cosmology, a contemporary discipline, is similar to religion in that it bases itself on faith, on a belief in certain postulates: the infinitely expanding universe, the Big Bang. These dogmas are widely accepted and approved by the best minds of contemporary science, as well as by a plethora of hypotheses and equations that are presented as theories and laws of nature, according to which the I is nothing but a tiny speck lost in endless, empty galaxies. Excluding the I from the foundations of nature works well with the industrial ideology, with its centralized mass production of choice essentials and diffused consumption of necessities by every separate I. This fundamental contradiction is constantly testing the limits of sustainable development, and is a precursor of systemic change in the world economy. The future begins with an aim. "In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual," is a quote that has long been attributed to Galileo Galilei.

Contents

You are welcome to contact the author at
aam.creative@gmail.com

Scientific publication

ROMANOV OBSERVATORY STUDIES

Editor-in-chief
Doctor of Technical Science
Aleksandr Arkadyevich Moskvin

Issue 2
THE INFLUENCE OF EARTH
ON THE FLOW OF TIME

The book was published in the author's edition

Translated by *N. M. Kalechenkova*
Technical editor *A. B. Levkina*
Cover design *T. B. Tiunova*
Original lay-out *A. L. Afanasyev*

Passed for printing 07.11.2019. Формат $60\times90\,^{1}/_{16}$.
Digital printing. Conv. print. sh. 2. Тираж 150 экз.
Order № 259C.

Printed by
Renome, printing and publishing company
192007, Saint-Petersburg, Obvodny channel emb., 40
Tel/fax (812) 766-05-66. E-mail: book@renomespb.ru
http://vk.com/renome_spb
www.renomespb.ru