

Chapter 1.

“NICHES METHOD” AS AN APPROACH TO THE PROBLEM OF THE DESCRIPTIONS OF THE ENERGETIC WORLD

Modern science is strongly inclined to recognize the “mechanicality” of the universe. The latter is like an automaton, silent or speaking. From the point of view of the mind standing outside the Cosmos (independently of it), everything goes in a certain order, like a machine in motion, and can not go otherwise.

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§1. What is it “Niches Method”?

Life on Earth depends on the Cosmos. To answer the question of how Cosmos influences Man, it is necessary to use the data of modern physics, astronomy, medicine, biology, geology, etc. It turns out that in a number of areas of modern science a sufficient number of facts have already been accumulated that make it possible to see and understand (of course, to the extent that this is permissible for the consciousness of modern peoples), what place a person occupies in an infinite hierarchical chain extending from the depths of the microcosm in depth of the macrocosm. However, the integral perception of the world is hampered by the fragmentation (discreteness) of human perception, manifested, in particular, in that when an attempt is made to explore a single and indivisible World, a person divides it and his consciousness into different areas (energy volumes), each of which has its own science. These energy volumes often do not even intersect (as they are heard) in the minds of people, and specialists from different fields of science do not understand each other. Therefore, every event (fact) is explained in the rigid framework of one or another science. But in reality these volumes (different sciences) intersect each other, and therefore the most interesting discoveries are at the intersection of different sciences.

This chapter is introductory. Its purpose is to acquaint the reader with the works of those scientists whose research results go beyond modern scientific concepts. Specifically, it will be about the results that visually demonstrate the material manifestations of certain forces, the nature of which can not be explained in the rigid framework of modern science, which studies exclusively the material world. At present, the non-material (energetic) world is the field of activity of esoterics, magicians, astrologers studying the effects, as a rule, not considered by modern scientists. For explanations of non-material influences, a system of describing of the world, radically different from the modern scientific concept, is used. However, scientists in their studies meet with facts that can not be explained by the means of modern science, completely excluding from consideration the manifestation of the intangible world. The main idea of the book is to illuminate the role of the energetic world as the Causes that engender the material world. This approach is broader than the scientific one, since it views the material world as a manifestation of the energy world, and not as the only “reality”. In this case, a scientific, purely materialistic approach to the problem of describing the world is a special case of an incomparably broader approach, placing the energy world at the heart of it. To make the transition from a narrower conception of the description of the world to an incommensurably wider one in the most mild form, it is necessary to build bridges between the purely materialistic (scientific) picture of the world and the ancient system of concepts that was forgotten by the majority of modern people. The solution of this problem will be done by presenting a new material in a system of concepts more or less close to some accepted system of perception (science, literature, art, etc.), i.e., the “niches” method. He created by the laws of nature, and his work in the human social activity is limited by the lifetime of each period of the designated volume of interpersonal relationships. To put it simply, within the framework of this method new concepts for each period are expounded in terms existing precisely in this period. The variation of these explanations in time is the sum of the “niches” of understanding to the “niches”* of real space, using the concepts adopted at a given time. The sign (*) denotes new terms, which are described in more detail in the Dictionary. Recognizing the new knowledge for the given epoch, set forth in the concepts familiar to the given time, we see the appointment of the masses of people of certain epochs with their predictors, and the predictors with the time predicted by them. With the help of the “niches” method one can realize that every person is predetermined. The fact is that every material form, including the human body, is the condensation of the

energy of the non-material (energetic) world, created by a multitude of intersecting energy flows (currents of the times of the energy world). And man can not change these energy flows: after all, they themselves are parts of the streams that make up his energy body as the intersection of many currents of time, which will be discussed in more detail in the future. The energy (immaterial) world is the basis of the Universe. It can be compared with a giant iceberg, the tiny peak of which is the material world perceived by many people as the only “reality”.

Contents of the book is information that the material world that we accept for a single “reality” is an integral part of an infinite energy world that not only affects all processes in the material world, but literally “every second” creates all the surrounding space and ourselves as its inseparable part. Feeling yourself a part of the One Whole will help to look differently at the familiar world, consisting of “separate” people, animals, trees, planets, stars ... We will see that everything in the World is connected with all invisible threads and is alive, ie, aware of the surrounding in the range* in which the given structure of the World functions. One can come to the realization of the dominant role of the energy world in our life in various ways, since information about it is contained literally in everything: in religious and esoteric literature, in ancient myths, in fairy tales, in the literary works of some poets and science fiction writers, in works philosophers and scientists, who are figuratively said to be “ahead of their time”. One of the tasks of the book is precisely the explanation of the meaning of the last three words from the previous sentence: 1) what is the Time; 2) how can it be “one's own”; 3) how can you “get ahead”. This task will be solved consistently, and milestones on the way will be the work of people who can be called *independent researchers of the times*. A plural number here means that the One Time* is a collection of an infinite number of times nested in one another like an infinite-dimensional “doll”. In fact, the picture is much more complicated, since all times are intertwined, repeatedly reflecting each other, and we'll see it below, but for now it's enough to limit ourselves to what has been said. The concept of “own time” at the initial level of presentation means the attitude of a person living on a planet flying along its galactic route among the stars, but connecting the perception of the world mainly with the daily and orbital movement of the Earth. “To advance one's time” means to expand the world view, having realized for the beginning its unity with the stars inhabiting the Galaxy. Expanding the range of perception of the world will allow us to look into the future, since we will analyze the forthcoming course of events from the perspective of the inhabitants of the Galaxy, and not just its tiny area occupied by the solar system.

In the modern world, many fundamental concepts are ciphered into the complex terms of physics, philosophy, mathematics, and so on. As a result, a person is deprived of the opportunity to realize (see) all the Beauty of the World. Here the condition of unchangeability of events or of the TIME PROHIBITION is shown. In other words, until the time comes for certain events in a certain energy volume (in this case, in the space of the Earth), they are not realized. Information, the time of perception of which has not yet come, or will be encrypted in scientific terms, or hidden in the depths of esoteric knowledge, or even rejected by people. This is how the condition of unchangeability of events is manifested, which we are talking about. Meanwhile, information about the energy world is contained literally in everything: in fiction, especially in fiction, in folk (fairy tales), in science, art, nature, in the relationships of people and in their relations with nature. But in order to extract this information from all that surrounds us, first of all it is necessary to realize ourselves as an integral part of the energy world, and not as a separate individual placed in an external material environment. However, due to the current conditions, caused by the energy sector of the span of our planet in the Galaxy, the subject of the study of modern official science is exclusively the material world. Reliable scientific facts are those that are obtained with the help of instruments that record exclusively the material manifestations of various natural processes. In accordance with the philosophical conception of materialism that prevails in science, matter is a philosophical category for designating objective reality, reflected by our sensations and existing independently of them. But the triumph of the materialistic view of the nature of things is a phenomenon peculiar to this part of the span of the planet in the Galaxy. True (Unified) Knowledge of the Laws of the Universe was, is and will always exist. In addition to information sources related to different civilizations (myths, legends, fairy tales), it is stored in the deep memory of people and fragmentarily comes to the surface in certain periods of time, and this is the most important thing. Fragments of the Unified Knowledge of the Universe are manifested in the works of such scientists as Konstantin Tsiolkovsky [6], Alexander Chizhevsky [1], Nikolai Kozyrev [2–4], Vladimir Vernadsky [5]. These works will play the role of “niches of perception” in the presentation of concepts about the energy world and about man as the essence of the energy world manifested in the material world.

Creativity Tsiolkovsky — a huge amount of knowledge about man as a cosmic entity of the universal level. With his consciousness as a ray of light, he illuminated the very distant future of our planet — one of the many planets of the infinite World, one of the fragments of which is our Universe [6]. Tsiolkovsky

clearly traced the path of the development of mankind from the modern state — the caterpillar creeping on the surface of the planet, to the man of the future — the most beautiful butterfly flying in the expanses of the Universe. However, these ideas were not understood not only by his contemporaries, but also by people who lived in the following decades. Modern people already call him a genius, but the main part of scientific creativity is considered to be genius to the category of science fiction. Meanwhile, Tsiolkovsky's works contain the most detailed descriptions of future cosmic rockets — from near-earth orbital stations to interplanetary ships, the brightest volume views of the Earth visible from various distances from the Cosmos are given [6]. Reading Tsiolkovsky, we clearly see together with him the landscapes of the Moon and its inhabitants — plants moving like terrestrial animals, but, unlike them, able to live almost in the total absence of a gaseous medium: they were eating solar energy almost in conditions of open outer space. Together with Tsiolkovsky we visit Mercury, Mars, Venus, the small planets of the solar system. Tsiolkovsky very vividly and colorfully described his “meetings” and “conversations” with the inhabitants of the big and small planets of the solar system, their appearance, way of life, technical devices. What is it? Just “fantasy” or spiritual penetration into the worlds of the near Cosmos? The answer to this question is contained in the mind of the questioner. If a person does not believe in the existence of an intangible (spiritual) world, then the read will be perceived by him as “fantasy”. If the reader's level of consciousness allows such spiritual journeys, he will think about *why* and *how* it is possible.

However, Tsiolkovsky's spiritual routes are also extended to the distant Cosmos. In the magazine “Miracles and Adventures”, No. 4–5 for 1992 published excerpts from the book Tsiolkovsky “The gravity has disappeared”, published in 1933 in Kaluga. In it, the author narrates about his encounter with beings living on a planet belonging to the stellar system of one of the galaxies. The atmosphere on this planet was absent. The creatures themselves are immigrants from other great planets with an atmosphere. Gradually, their bodies changed and adapted to life in the void. Outside, the creatures are covered with a transparent horny shell (“spacesuit”), which does not let matter from the bodies out, but at the same time freely, almost without loss, passes the light of the star's rays around which their planet turns. Beautiful emerald-colored wings serve these creatures not for flight, since in the absence of an atmosphere wings are useless. But they contain the seeds of chlorophyll, as in terrestrial plants. The sun's rays decompose carbon dioxide, flowing in the wings of beings like blood streaming in the human body. Also many other chemical reactions take place, as a result of which various gases, liquids and solids are formed that make up the body. All of them immediately react with other constituents of the liquid medium, forming liquid bodies, that is, enriching the liquid medium with new substances. Those, in turn, at every moment deliver everything the body needs for nutrition — oxygen, hydrocarbons and nitrogen compounds. This happens with terrestrial plants under the influence of the rays of our Sun.

The organism of these beings, amazing for our understanding, is a closed system: the discharges of the body, dissolved in the liquid medium of the body, flow continuously into its plant parts, where the energy (work) of the sun's rays turns them into substances necessary for the body. Thus, in the body of the creature, an eternal cycle of matter takes place, as a result of which it does not need food, drink, or oxygen. Vegetative part of the body (wings), which is a surface area of 3–4 square meters, fully ensures the existence of the organism in the presence of sunlight. If the “sun”, in the space of which the creatures live in a given period of time, is for the time being extinguished, they will learn about this event several thousand years before it. And nothing prevents them from flying to another “sun” and living there, until it temporarily goes out. The speed of the “flight” of creatures (movements in the ethereal medium) is of the order of 100 km/s, and the journey from one “sun” to another takes thousands of years. During the whole time of flight, the creatures live with energy reserves, which they “took” with them from the sun they left, concentrating it in special devices — rings and necklaces. These devices allow for a few seconds to transform solar energy (create a “concentrate”) in such a way that it will last for thousands of years. Contact with the creatures of the unknown Tsiolkovsky planet was perceived by him, as continued for several years. Then he was invited to return to Earth and give people everything that he saw and experienced.

What conclusions can be drawn by reading this book? Here we are not talking about the perception of what has been read as fiction. Most likely, it was contact with beings living in space, where time flows many times faster than on Earth. Contact could last for minutes, hours on earth, but not years. The concept of “contact” means that with his consciousness Tsiolkovsky penetrated a world where the density of time is much higher, and was able to take out a lot of information from there, ie, he received the energy that he gave to people. Contact — the exchange of energy between the source and receiver of information. In other words, thanks to Tsiolkovsky our planet received a volume of energy of a very high level. The possibility of such contact is due to the fact that the contactee himself possessed very high energy: he was able to communicate with the inhabitants of another galaxy, that is, he had a consciousness of the intergalactic level. In order to

understand in more detail how this is possible at first, it is necessary to get acquainted with the works of other scientists whose subjects cover a smaller volume than the work of Tsiolkovsky, but in more detail highlights some important directions necessary for understanding the dominant role of the energy world. As the “niches” used in this chapter, methods of modern physics, mathematics and astronomy will be used. The method of “niches” is necessary for an initial acquaintance with the energy world, more precisely, with its manifestations in the material world, discovered by scientists. These manifestations can not be explained in the framework of modern scientific concepts that take into account only material effects on material bodies. Explanation of the impact of the energy world on material bodies and will serve as a bridge, allowing to understand the connections of the energy world with its various material manifestations. Basically, here it is about Time, the flows of which create the energy world.

Nikolai Kozyrev investigated Time, considering it the main source of energy, thanks to which there are no signs of degradation in the Universe — thermal death predicted by some scientists. In their opinion, sooner or later it will inevitably come, as all processes in the material world are accompanied by a loss of energy. Therefore, it is natural that a lonely material universe, without getting anywhere from outside energy, should quietly freeze: its temperature will fall to the absolute zero temperature (-273° Celsius), which means complete cessation of any movement. After all, according to scientific research, heat is the chaotic motion of molecules. Kozyrev, on the other hand, believed that Time, which possesses structural character, is the very life-giving force that gives energy to galaxies, stars, planets and their entire population ... He experimentally showed that in the volume of space where phase transitions occur (melting, crystallization, evaporation, explosion), that is, jumps occur from one state to another, phenomena associated with the emission and absorption of the energy of time can be observed. The scientist believed that Time exists everywhere and appears instantly, therefore it is possible to fix the radiation of Time emitted by any object of the Universe at the moment when it was emitted. To prove this fact, he conducted a series of astronomical observations of stars and other objects, establishing the following [2–4]: 1) there exists an interaction of non-electromagnetic nature that propagates both at the speed of light and instantaneously; 2) it has a negentropic (restoring structure) effect on the receiving device; 3) the objects of the universe that act in this way are stars, star clusters, and another galaxy. Details of these experiments are given in §4 of this chapter.

According to the concept of modern science, matter can be in two states: 1) substance; 2) field. In modern physics, substance is defined as a kind of matter whose particles can be at rest, while remaining particles of matter. Physicists say that such particles have a nonzero rest mass. Simply put, the substance is something that you can touch with your hands, see through a microscope as a separate particle, and so on. The field is seen as a mediator between real bodies: it transfers the impact (material!) Of one body to another through space. In modern physics, the field is a substance whose particles have zero rest mass, but possess a nonzero relativistic mass (mass of motion). Such particles include photons — quanta of the electromagnetic field. According to the ideas of modern scientists, free photons are always in a state of motion with a speed equal to 300,000 km/s in a vacuum. Initially, the concept of “field” was formed as a result of research by the founders of the theory of electromagnetism — Faraday and Maxwell. Under the field they meant some kind of heterogeneous environment that can flow from one place to another, form vortices. In their understanding, the field was close in properties to a special kind of matter, which for some reason does not manifest itself in an explicit form. Hence the concept of ether — a special medium that fills the space, but does not interact with the bodies filling it. Some scientists considered ether as an environment in which light is spread. Recently, the role of the ether is played by a physical vacuum — a special medium, whose particles can not be registered. Some physicists call them “virtual”. According to them, virtual particles are not observed in interactions with real particles, since they exist for an extremely short period of time. In general, somewhere in the “real” (read: material) world, something invisible and imperceptible hides, which interacts with everything, but does not manifest itself at all. What is it? Maybe this is an intangible world, energy exchange with which is carried out instantly? But how can scientists recognize the existence of the non-material world if, within the framework of the materialistic conception of the world order, there is nothing but moving matter? And if someone suddenly discovers this somewhere hiding, invisible and so far clearly incomprehensible “elephant”, the scientists will rejoice and immediately recognize it? The answer to the last question is ambiguous, since the question itself consists of two parts: 1) how to detect this “elephant”? 2) how to persuade other scientists to recognize its existence?

This chapter is mainly devoted to the answer to the first question. The answer to the second question briefly reads: “It is impossible to convince all people of the existence of the energetic world*: you can either believe or deny it. Faith is a state of consciousness, therefore beliefs and proofs here will not help”. The complexity of the problem of perception of the energy world lies in the consciousness of modern people living in this part of the span of the planet in the Galaxy. Our period is transitional: we, together with the

planet, are entering the galactic sector, whose energy is much higher than the energy sector that we are leaving. The term “energy” is a characteristic of the state of Time: its density, frequency of vibrations and speed of energy exchange. All these characteristics will be considered in detail later. In the meantime, suffice it to say that in the next galactic sector (the Time Sector), man will again have planetary-cosmic thinking, and not anthropocentric, as now. And people of the future will not need “scientific proof” of the existence of the energy world: they will simply perceive themselves as its integral part, manifested in the material world. Now let's return to the “niches” method.

§2. The galactic spiral of the planet is a fragment of the infinite Spiral of Time

Until now, it was only casually said that the planet follows the Sun enters the Galactic region, which has other energy characteristics. In this section, we will talk in more detail about the structure of the material body of the Galaxy, in particular, the vicinity of the Sun. The fact is that the conditions for the existence of biological species on the planet, including humans, depend significantly on the state of the galactic media through which the solar system flies. The space of the Galaxy is non-uniform, since dust, gas, and stars are distributed unevenly in it, and this certainly affects the course of events both in the entire space of the Sun and on Earth. “Safe” for a person are periods when the density of galactic environments through which the planet's route passes is relatively constant: then the state of planetary environments is relatively stable, and biological species, including humans, live in stable conditions. In the periods when the planet passes into areas filled with galactic media of different density, the course of all events on the planet is compelled to obey the new conditions—other vital realities. The more these media differ in density, the more biological species have to adapt to a new life, up to a complete modification (in the worst case, disappearances from the face of the planet). A detailed discussion of this is yet to be done, but for now we will use the method of niches—we will outline briefly known from astronomy information about the Galaxy. First, it will help to see yourself as an inhabitant of the outskirts of the Galaxy, living in its most dusty equatorial part, but rising from dust upwards, into the Northern Hemisphere. Secondly, using only astronomical data accepted in modern astronomy, one can see that the galactic route of the planet is an unclosed spiral trajectory, which includes many turns of different scale, each of which is one of the galactic periods (cycles) of the planet.

At this stage of evolution (the part of the span of the planet in the Galaxy), it is well known that the Earth is one of the planets of the Solar System (the Space of the Sun). According to modern scientific concepts, the Earth rotates relative to the Center of the Solar System (almost coinciding with the center of the material body of the Sun) and makes one “revolution” over a period of time, called the *earthly year*. Therefore, we are used to think that the Earth moves along a flat closed orbit (ellipse). But is it really so? Astronomers are well aware that our Sun is one of the approximately 200 billion stars that make up the giant star system — the Milky Way Galaxy. The solar system is part of the Milky Way, part of the Local Group of Galaxies. The group is based on the Milky Way with its satellites (Big and Small Magellanic Clouds), the galaxy Chained Maiden Nebula (Center of the Local group of galaxies) and the galaxy in the constellation of the Triangle with its suites from smaller galaxies. The Milky Way within the Local Group of Galaxies moves at a speed of about 100 km/s towards the Andromeda Nebula. In addition to large objects, the group includes about 50 galaxies of different sizes, which are mostly irregular and elliptical in shape. All these objects and their groups are related by gravitational attraction. Astronomical data obtained by scientists allow us to orient ourselves in the intergalactic space. According to the views of Swedish astronomers, developed and protected from the 1950-s by the Vaucouleur, our Local Group of Galaxies is inside a giant flattened Cloud (Superassociation of galaxies), consisting of separate galaxies, small groups of galaxies, the Cloud, located in the direction of the constellation Great Bear and the Hunting Dogs, and the Cloud, which is in the direction of the constellation Maiden. Observations established that the Local group of galaxies as a whole flies at a speed of about 700 km/s, with respect to the Center for the Upper Galaxy of the Galaxies, located in the direction of the Maiden constellation. The diameter of the system is 30 million parsec¹, and the Milky Way is at a distance of 19 million parsec from its Center. The parsec (pc) is a unit of measurement adopted in astronomy. One parsec is the distance to the object from which the Earth's orbit is visible at an angle of 1 second. It is 3.263 light years, where one light-year is the distance that a light signal flies in a year. It is equal to 9,460.8 billion km. The period of rotation of the space object of this system around its center depends on the distance of the object from the Center: it increases from the Center to the periphery in the interval from 100 to 200 billion years. The period of rotation of the space object of this system around its Center depends on the distance of the object from the Center: it increases from Center to the periphery in the interval from 100 to 200 billion years. Scientists have obtained other results concerning larger fragments of the structure of

the universe, but in this book the main character is the Milky Way, one of the particles of which is the solar system, which includes our planet with all its inhabitants. Now consider the structure of the Galaxy as a whole, and also explore in more detail the vicinity of the Sun as the most important for us galactic region.

In form, the Galaxy resembles a lentil grain — a flat disc with a projected spherical component. A more detailed examination of its structure shows that it consists of five subsystems: 1) a spherical subsystem, or halo; 2) an intermediate spherical subsystem, or a spherical thickening in the center; 3) the disk; 4) old flat subsystem; 5) young flat subsystem. The amount of heavy elements, such as metals, in the atmospheres stars spherical subsystem behind atmospheres stars flat subsystem. Considering the Galaxy as a single Space, we see that a heavier substance settles in the central plane, and a lighter “floats” in the hemispheres. Depending on age, the stars are located in different parts of it. The old stars (the first generation) live in a spherical component, and the young (the second generation), to which the Sun belongs, concentrate near Disc. Old and young stars have different chemical composition. Thus, in the atmospheres of stars of the spherical component, the number of heavy chemical elements, in particular metals, is almost 100 times smaller than for stars of a planar component. Hence the picture of the evolution of the stars is visible: first they are formed in the entire spherical volume of the Galaxy, then the most massive of them quickly expend their “fuel” reserves and flare up as supernovae, filling the substance of the interstellar medium with the heavy chemical elements. By “fuel” here is meant the amount of time, spending which, the star makes its life cycle in our material world. The explosion of the supernova means that at that moment it “flares up” in the same place of space, but in another material world, leaving a gas nebula here as a building material for our future stars. Rotating around the Center (Heart) of the Galaxy, the substance “settles” to its plane, where the formation of stars of the second generation occurs. Rotating around the Center (Heart) of the Galaxy, the substance “settles” to its plane, where the formation of stars of the second generation occurs.

The diameter of the Galaxy is approximately 30,000 parsecs. The Sun, surrounded by planets, asteroids, comets, is almost in the plane of the galactic disk (the equatorial plane of the Galaxy) at a distance of approximately 8,100 parsecs, slightly higher, towards the galactic North Pole. The luminous band observed from Earth, crossing the sky almost in a large circle and called the Milky Way, is a consequence of the perspective when the Earth Observer observes galactic stars from within a strongly flattened Disc. The strip consists of a huge number of stars that are not distinguishable by a simple eye, but separated separately by a telescope visually or with high-resolution photography. In the northern hemisphere, the Milky Way passes through the constellations of Eagle, Arrow, Fox, Swan, King, Seated Queen, Hero, Charioteer, Bull and Twins. In the south — through the constellations of Unicorn, Stern, Sails, Southern Cross, Drafting Compass, Southern Triangle, Scorpion and Archer. This band is especially striking in the area of Archer, in the direction of which the Galactic Center is located.

The study of the proper motions of the stars shows that the Galaxy rotates about an axis perpendicular to its equatorial plane. The North Pole of the Galaxy is in the constellation Berenice's Hair, the South — in the constellation Sculptor, in the southern hemisphere of the celestial sphere. The galaxy rotates around the axis counter-clockwise, if you look at it from the North Pole. It does not rotate as a solid body: its different regions have different speeds. Therefore, the velocities of galactic stars have different values depending on the conditions of energy exchange* at a given point in the space of the Galaxy, in particular, from the gravitational state of space at the point of flight. Here we are talking about the energy exchange between the energy world and the material world, as will be discussed in more detail below. In addition, the stars move within local clusters (groups), so their velocities are oriented in different directions: the stars have their own velocities relative to each other. The Sun's own speed is about 20 km/sec: it rises from the galactic equator to the “north”, towards Hercules, rising about 10 parsecs above the Disk. The point to which the Sun's own motion is directed is called the apex of the Sun. Its coordinates are: direct ascension (analogous to geographical longitude) $\alpha = 270^\circ$, declination (analog of latitude) $\delta = +30^\circ$. The value of α is also measured in hours and fractions of an hour. In this measurement system, the coordinates of the Sun apex are: $\alpha = 18^h$, $\delta = +30^\circ$, where h is the initial letter of the Greek word horo — hour, time. It is interesting to note that the Sun's own motion occurs in the same direction as the motion of the Local Group of Galaxies relative to the Supercluster Center in Virgo constellation. The equatorial speed of rotation of the galactic space in the region of the location of the Sun, according to scientists, is approximately 230 km/sec. The equatorial motion of the Sun is directed towards the Swan: it moves along an elliptical orbit that is close to circular. The Sun makes one revolution around the Center of the Galaxy (the Main Emitter) for a period of time approximately 220 million years (one Galactic Year of the Sun, or one Day of the Galaxy itself). In addition, the solar system performs vertical (meridional) oscillations with respect to the galactic plane, crossing its equator in 30 – 35 million years. The entire galactic community is subordinated to the influence of the Center of the Galaxy, pulsating in a certain rhythm.

Galactic stars are not evenly distributed in the Galaxy, but are assembled into groups (clusters), which are parts of larger star clusters. The Sun is part of the Local Group of Stars, the Center of which is in the direction of the constellation Keel, and the Local Group itself is included in the Local Cluster of Stars (Gould's Belt) — a group of young massive stars of the age of 10–30 million years, with a diameter of 600 – 900 parsecs. The disk is inclined to the plane of the Galaxy by 15°–20°, and its mass is one million solar masses. Gould's belt is slightly extended, rotates as a single whole and expands, forming in the sky a chain of bright stars, as if running out of the Center of the Galaxy. The Sun rotates in a spiral counterclockwise around the Center of the Local group of stars at a speed of 250 km/sec, making 1 turn for 371,000 years [8]. The Center of the Local group of stars rotates clockwise along a spiral around the Gould Belt Center at a speed of 375 km/sec, making 1 turn for 18 million years. Gould's belt spins clockwise spirally around the Galactic Center at a speed of 410 km/s, making 1 turn for 210 million years [8].

The Sun is not far from the center of the Gould Belt, which allows us to admire the pattern of bright stars that make up the ring, which includes Sirius from the Great Dog, α Centaurus, Procyon — α Lesser Dog, Altair — α Eagle. The brightest stars are distributed symmetrically with respect to the Gould Belt Center. For us, the impact of stars located in front of the Sun along the directions of their galactic routes is especially important. Of the bright — it's Altair (α Eagle), α Centaurus. As they are on the future section of the solar route, energy exchanges with them affect the future of the Sun. In turn, the Sun influences the life of the stars that are on the past section of the path. Of the bright — it's Sirius, Procyon. The stars live in a common galactic volume, exchanging matter and radiations with each other through the interstellar medium. Some of them, like the Sun, have suites from the planets. Obviously, the life of the inhabitants of the planets depends on the life activity of their “suns”. The galaxy is part of the universe, an integral part of larger structures, but the most significant impact on humans is provided by galactic stars.

Our Galaxy is spiral, from its Center comes out at least five sleeves: Swan, Hunter, Hero, Archer and Centaurus. The sleeves rotate like rigid spokes emerging from the Center. They mostly contain young stars and their clusters. The concentration of interstellar gas and dust is higher there than in regions located outside the arms. The sun is in a small branch from the sleeve of Hunter, called the Spur of Hunter. The sun is surrounded by a region of rarefied hot gas, consisting of neutral hydrogen radiating in the X-ray range. This area is called Local Bubble. The density of matter inside it is about 10 times less than the density of the surrounding interstellar medium. The Solar System passes through the area of the Local Bubble in the last 5 to 10 million years, and is now located near its inner edge. Scientists suggest that the Local Bubble was formed as a result of explosions of several supernovae. The sun is surrounded by a heliosphere, which has the shape of an elongated bubble filled with solar wind and magnetic fields. The solar wind is a stream of charged particles constantly emitted by the Sun. The velocities of the particles have values from 300 to 1200 km/sec. The boundaries of the heliosphere extend over a distance exceeding the distance from the Earth to the Sun by 100–150 times. According to the data obtained by the Voyager-1 spacecraft, the density of the interstellar plasma surrounding the heliosphere is approximately 40 times higher than the plasma density inside the bubble surrounding the Sun with its entire environment (planets, asteroids, comets, etc.).

The space of the Sun is the region of the Galaxy, where the solar system is located, including planets with their satellites, asteroids, comets, subject to the gravitational influence of the Sun (material world). The Sun, moving along its galactic route, carries with it all the bodies belonging to its Space — planets with their satellites, asteroids, comets, etc. Small bodies (asteroids, small planets and their fragments, ...) are mainly concentrated in two belts: 1) the asteroid belt located between the orbits of Mars and Jupiter; 2) Kuiper belt, located beyond the orbit of Neptune. The latter is 20 times wider than the belt of asteroids and several times more massive. The last is 20 times wider than the asteroid belt and several times. The objects of the asteroid belt are mostly made up of stones and metals, and Kuiper belt objects are ice from water, ammonia, methane. Near the boundaries of the solar system is the Oort Cloud — an alleged source of long-period comets. Its objects consist of ice of different chemical composition.

Earth is a part of the Sun's space, so its movement is subject to the conditions of the Sun's passage in the Galaxy. It is located at a distance from the Sun of 149.5 million kilometers, which is called the *astronomical unit*. The Earth follows the Sun, participating in a variety of its movements: in the Local Group of Stars around its Center, in the Local Cluster of Stars around its Center, in the equatorial movement around the Galactic Center, in vertical vibrations relative to the galactic plane. At the same time, the Earth rotates around the center of the solar system at a speed of 29.8 km/sec. The rest of the planets revolve around the Sun with different velocities depending on the conditions of energy exchange, in particular, on the magnitude of the gravitational action of the Sun on the planet, determined by the distance of the planet from the Sun. The speed of the orbital rotation of the planets in the Sun's space is determined from the *weightlessness condition* $v^2 = GM/r$, where G is the Newtonian gravitational constant, M is the Sun mass, r is the distance

from the Sun to the planet, and v is the orbital velocity of the planet's rotation. The condition of weightlessness agrees with Kepler's third law: the squares of the periods of revolution of the planets around the Sun are referred to as cubes of the major semi-axes of the orbits of the planets. For us, the relatively short galactic cycle of 371,000 years is of the greatest importance, therefore, when calculating within the solar system, we will consider the movement relative to the Local Group Center at a speed of 250 km/sec. In this case, the Earth (without taking into account its rotation around its own axis) participates simultaneously in two movements (material world): 1) rotation relative to the Center of the Solar System, caused by rotation of the Sun's Space; 2) movement relative to the Local Group Center, caused by the rotation of the Galactic Space.

But in the minds of the vast majority of people these two facts are not related, since at the present time (the part of the span of the planet in the Galaxy) people's perception of their place in the universe corresponds to the ideas that arose after Nikolai Copernicus published his book "On the motion of celestial spheres". Before Copernicus, the geocentric reference system was used to calculate the motions of the planets: its center was a stationary Earth around which the Sun and planets orbited. Copernicus introduced heliocentric reference system: in its center was a stationary Sun, around which all planets, including the Earth, rotated. The planets were the sphere of still stars. Currently, people know about the motion of galactic stars and the motion of other galaxies, but many facts exist in their minds separately, independently of each other. Individual elements of knowledge are scattered like multicolored pebbles of mosaic. And, it seems, it is only necessary to reach out to them and collect them in a multi-colored single pattern, but something (the state of consciousness in this part of the span of the planet in the Galaxy) prevents it from doing so. Therefore, everyone plays their own stones separately. In other words, the fullness of the perception of the world is hindered by the Law of Conservation of Energy*, which manifests itself as a TABOO of Time. According to this Law, some natural patterns will not be realized by people until the Earth together with the Sun reaches the regions of the Galaxy whose energy will change the consciousness of people in such a way that these regularities will become obvious. For now, in astronomy, the picture is as follows: the motion of the planets is studied by celestial mechanics, the star movement is occupied by stellar astronomy, the motion of galaxies — extragalactic astronomy, etc. Therefore, in order to answer the question, what is the shape of the Earth's trajectory in the Galaxy, one should turn to the facts collected in different sections of astronomy.

If we look at the Solar system from the outside, we will see that the planets (and other bodies that make up it) rotate relative to its center. It can be said in another way: the Space of the Sun rotates around an axis passing through its Pole. If at the same time for each of the planets to hold in the direction of its motion planes passing through the center of the solar system and through the center of each of them, we will see that they all have small angles of inclination to the equatorial plane of the Sun. This picture is a stopped frame of the film about the events of motion of the bodies of the solar system. Physicists would say that at spatial points where planets are located at the given time, *spatial sections* are drawn. Let's call the Space of the Earth the area of the Sun's Space, where the Earth is at the moment with its satellite — the Moon. It is obvious that the Earth's space, being an integral part of the Sun's Space, is an inseparable part of the Space of the Galaxy, which in its turn is an area inside the cosmic structure, standing higher on the level of an infinite hierarchical ladder than our Milky Way.

According to astronomical data, the speed of the Sun in the Local Group is 250 km/sec. All other components of the solar system move in the Galaxy at the same speed, as their Spaces are integral parts of the Sun's space. All the planets of the solar system at each moment of time are located in planes (spatial sections) having small angles of inclination to the equatorial plane of the Sun. The plane passing through the Center of the Sun and the Center of the Earth is called the plane of the ecliptic. The space of the Sun rotates, carrying away by its rotation the body of the solar system (conditionally "rotational" motion), and simultaneously flies about the Center of the Galaxy, capturing them for themselves (conditionally "progressive" movement). Therefore, each body of the solar system in the galactic space forms a rotating Cylinder, the radius of which is equal to the distance of the given body from the center of the Sun. Before a detailed acquaintance with the energy world can be said so: a cylinder is a conditional description of the energy flow, in which the location of the body forming it is the place of the maximum concentration of energy of this stream. Before a detailed acquaintance with the energy world can be said so: a cylinder is a conditional description of the energy flow, in which the location of the body forming it is the place of the maximum concentration of energy of this stream, and each point of the cylinder simultaneously moves around its generatrix at a speed of 250 km/sec. Each cylinder rotates relative to its axis at a speed equal to the speed of rotation of the Sun's space in a given place (for the Earth this speed is 29.8 km/sec), and each point of the cylinder simultaneously moves around its generatrix at a speed of 250 km/s. Therefore, the Sun's Space in the Local Group — a set of differently inclined Cylinders nested into each other and rotating at

different speeds — is a giant “nesting doll”. Each of the bodies of the Solar System draws a spiral trajectory of motion on the walls of its Cylinder, the shape of which depends on the speed of rotation of this Cylinder relative to the Center of the Solar System and on the distance of this body from the Sun. Each Cylinder is called a Cylinder of Events or a Tunnel of the Destiny of this body. This is the manifestation in the material world of the energy flow (the currents of time) that materializes the given body. Hence it is easy to see that the motion of all the bodies of the Solar system, including the Earth, is not carried out in closed orbits (ellipses of the Copernican system), but along open (unclosed) trajectories reminiscent of the shape of the spiral. It is easy to imagine as follows. From mathematics it is known that if the point of the surface of the cylinder participates simultaneously in two movements: 1) moves uniformly along the generatrix of the cylinder; 2) rotates uniformly with the cylinder around its axis, then the result is the motion along the helical line, which is turned on the surface of the cylinder. This example is a very approximate analogy to the real motion of planets in the Galaxy, but nevertheless it allows us to make a firm conclusion about the non-closure of planetary trajectories.

If we look at the Sun's Space from the outside, from the side of its “North” Pole, we will see that all the planets and most other objects revolve around the Sun counter-clockwise. Such a rotation is called positive in mathematics, and the spiral, drawn by each of the planets of the Sun's Space on the walls of its Cylinder, is called *the right spiral*. Thus, the Space of the Sun in the Galaxy is a set of nested multicolored volumetric Cylinders consisting of a set of spiraling energy threads with nodules, where each node locates the specific body of the solar system at a given time. All these threads are embedded in the Main Cylinder of the Sun, therefore the Tunnels of the Fates of all the bodies of the Solar System are inextricably linked with the Sun Destiny Tunnel, which, in turn, is woven into the Tunnel of the Destiny of the Galaxy. In the positive direction, the Sun rotates around its axis and all its planets, with the exception of Venus and Uranus. The axis of rotation of the Sun is directed to a point located in the northern hemisphere between Polyarnaya from the Lesser Ursa and Vega from the constellation of Lira: Equatorial coordinates of the North Pole of the Sun: $\alpha = 19^{\text{h}} 04^{\text{m}}$, $\delta = + 64^{\circ}$. In the same direction, to the galactic “north”, the Sun moves in the Galaxy at a speed of 20 km/sec, rising above the galactic equator.

The radius of the cylinder of each body of the solar system is equal to its distance from the Sun. So, for the Earth it is 149.5 million kilometers, or *one astronomical unit*. The plane in which the Earth rotates relative to the center of the solar system is called *the plane of the ecliptic*. The section of the galactic path of the Earth, which it flies during the time of the complete revolution of its Cylinder (one Earth year), is *a step of the spiral*. To find the value of this distance, you must additionally enter smaller units of measure: day, hour, minute, second. The day contains 24 hours, the hour consists of 60 minutes, the minute consists of 60 seconds — the period of the Earth's rotation around the axis. The day contains 24 hours, the hour consists of 60 minutes, the minute consists of 60 seconds. It is easy to calculate that the day consists of 86,400 seconds. The speed of the Earth's motion around the Sun is approximately equal to $v_{\oplus} = 30$ km/sec. The Earth's cycle contains 3 ordinary years for 365 days and 1 leap year, containing 366 days, which in total is an integer — 1461 days. Thus, the minimum cycle containing the whole number of days is 4 years, or 1461 days (*the galactic frequency of the Earth*). During this period of time, the Earth moves to the other side of its Event Cylinder. The usual year consists of 31,536,000 seconds, and a leap year of 31,622,400 seconds. Thus, the earth cycle contains 126 230 400 seconds. Moving after the Sun in the Local group of stars at a speed of 250 km/s, the Earth flies in 1 year (usual) $7,884 \times 10^9$ km — this is *the step of the galactic spiral*. Since the distance from the Earth to the Sun is about 150 million km, it is obvious that the galactic spiral of the planet is very elongated. One cycle of the Earth (4 ordinary years + 1 leap year) is 31.5576×10^9 km. Century (100 years) consists of 25 cycles of 4 years and is 788.94×10^9 km.

In the material world, the Earth is an extended cosmic body that has a shape close to spherical (spheroid of the Earth). The earth rotates around an axis passing through its center and intersecting the surface of the spheroid at two points, called, respectively, the North and South Poles. The North Pole, currently directed to the Polar Star from the constellation of the Lesser Bear, is located in the northern part of the celestial sphere, like the North Pole of the Sun and the Galaxy. The axis of rotation of the Earth describes a cone in space, the projection of which creates a circle on the celestial sphere. Its center is in the constellation of the Dragon and is called the Pole of the ecliptic. The circle passes through the constellations Seated Queen, King, Dragon, Great Bear, Lesser Bear, Giraffe. The Pole of the Earth describes it approximately for 26000 years. The axis of Earth's rotation is currently inclined to the plane of the Earth's equator at $23^{\circ}27'$, which is the reason for the change of seasons: during the Earth's year the illumination of the poles of the earth changes by solar radiation. The maximum and minimum illumination of the North Pole by the Sun takes place on June 22 and December 22 — on the days of the summer and winter solstices (for the northern hemisphere). These days the Sun occupies the highest and lowest positions in the northern

hemisphere of the celestial sphere. Both hemispheres of the planet are equally illuminated in the days of the spring (March 21) and autumn (September 23) equinoxes: these days the Earth passes through the points of intersection of the plane of the ecliptic with the plane of the earth's equator. The Earth rotates in Space in the direction opposite to its orbital motion, therefore every year the spring equinox comes a little earlier (the phenomenon of precession, or the anticipation of the equinox, discovered by Hipparchus). It can be said that the precessional cone rotates in the direction opposite to the Sun's own rotation, coinciding with the direction of the Earth's orbital motion. In this case, the earth's axis rotates in such a way that its inclination to the plane of the ecliptic remains constant: The North Pole of the ecliptic is constantly directed to a certain point in the constellation of the Dragon with coordinates $\alpha = 18^{\text{h}} 00^{\text{m}}$, $\delta = +66.^\circ 5$; coordinates of the Southern, located in the constellation of the Golden Fish: $\alpha = 06^{\text{h}} 00^{\text{m}}$, $\delta = -28.^\circ 5$. It seems that the precession motion of the planet is due to the "desire" of our planet to keep the balance, broken for some reason.

The space of the Earth is a region of the Sun's Space that extends beyond the Moon's orbit — a part of the Earth's Space. The Earth rotates around its axis at a linear velocity of about $465 \cos \varphi$ m/s, where φ is the latitude. Since the Earth moves in the Sun's space at a speed of about 30 km/sec (the Sun's Space rotates the Earth's Space), every parallel of the Earth's surface draws its Cylinder in the Sun's Space, and each point of the surface draws its Spiral, the shape of which depends on the geographical latitude of the point. It is obvious that every point, located at any distance from the Earth's Center, draws its own pattern on the walls of the voluminous Earth Cylinder. Since the Earth draws a spiral in the Space of the Galaxy, every "fixed" point of the earth's surface draws a "spiral spiral" in the Space of the Galaxy, and every body moving along the surface of the planet is an even more complicated pattern.

Let us now consider in more detail the motion of the Sun in the Local Group of galaxies. The Sun is almost in the equatorial plane of the Galaxy, and its motion, caused by the rotation of the Galaxy around the axis, must occur in the direction of the constellation Cygnus, located in the equatorial plane of the Galaxy. Astronomical observations have established that the Sun moves in the direction of the constellation of Hercules, that is, it rises above the galactic equator. This motion can be viewed as the result of the addition of the motions of the Sun in the Local group of stars and in vertical motion relative to the equatorial plane. But, perhaps, the movement to Hercules is somehow connected with the movement of the Local Group of galaxies, which also occurs in the direction of the Sun apex, located in Hercules. Our Galaxy flies in the intergalactic space in such a way that its North Pole (in the constellation of Veronica's Hair) is oriented in the direction of its movement in the Local Group of Galaxies (to Hercules), so it can be called the Pole of the Future. Our Galaxy flies in the intergalactic space in such a way that its North Pole (in the constellation of Veronica's Hair) is oriented in the direction of its movement in the Local Group of Galaxies (to Hercules), so it can be called the Pole of the Future. Coordinates of the North Pole of the Galaxy: $\alpha = 12^{\text{h}} 40^{\text{m}}$, $\delta = +28^\circ$, Southern: $\alpha = 00^{\text{h}} 40^{\text{m}}$, $\delta = -28^\circ$ (the Constellation Sculptor). As the Earth is a part of the Galaxy, its galactic spiral is an integral part of a more grandiose intergalactic spiral, etc., up to Infinity. Therefore, the Earth does not have a closed orbit: it flies in the space of the Universe through a complex, repeatedly twisted spiral, the energy and shape of which at each moment is determined by the energy of the galactic space through which the planet flies along with the Sun. Although at present official science does not yet allow us to determine the world of larger structures, nevertheless, there is no reason to believe that the structure of the Universe is exhausted by this.

The calculations given here are based on known facts, and the conclusions are obtained as a result of combining these facts. As a result, we came to another system of describing the World. Why is it not generally accepted? Because of the TIME PROHIBITION? But Time does not prohibit the use of this information. The thing is that any event, including the perception of new information (energy) by people, can not occur earlier or later, but only at a strictly certain time. And this time is not far off. In the meantime, one should not lament the non-recognition of this information by the masses of people in vain: everything goes on as usual. The stereotypes of people's perception of reality, including various behavioral reactions, are due to the energy of the site of the planet's galactic span. Thus, in certain parts of the galactic spiral-shaped orbit, the energy conditions that determine the type of thinking that is currently called "planetary-cosmic". In such periods people know that everything in the World is interconnected, that Nature is living, and the Cosmos controls the destinies of people through their planet. A person feels that he is a part of the World. Perceiving the Nature of the planet as a living being, man fulfills the Laws of planetary-cosmic existence and, consequently, realizes the conditions of life in harmony with the world around him. Then people are in energy exchange with a living planet, that is, they receive energy, process it and give it in a processed form to the surrounding planetary Space. The world's perception of man is holistic, because his thinking is spherical in structure and cosmic in nature. Opportunity is assigned initially by the Development Time Energy. At the site of the spiral galactic orbit of the Earth, corresponding to the time of the existence of our

civilization, anthropocentric thinking began to dominate the planet. A system of concepts based on anthropocentrism teaches that the human mind is the highest achievement of the universe. This orientation of thinking is also determined by the energy of the planet's span in the Galaxy. It is this energy that creates different concrete types of behavior: in particular, a person who feels himself to be the highest creation of the universe behaves as the only "master" on Earth, transforming the environment in accordance with immediate interests. His actions seem to counteract Nature, but in fact they are caused by its impact, since human thoughts are determined by the conditions of the motion of the Earth in the Galaxy at a given time. But it will not always be so.

The alternation of such states of consciousness as planetary-cosmic and anthropocentric subordinate to a certain cyclicality, and we are on the threshold of a new cycle of planetary-cosmic thinking. Then the person again realizes himself as a cosmic entity and will feel himself an integral part of the universe. After all, the Earth with all its inhabitants, including man, is only a link in an endless cause-and-effect chain of events that obey the general laws of Being. Therefore, each action is the result (a consequence) of previous events and the cause of the subsequent events. In Nature everything is interconnected, and any action, whatever it may be (motion, thought, etc.), provokes a response. The human mind is able to perceive and realize only a negligible fraction of the events it participates in, so many events are perceived by it as "random", emerging from nowhere. But this imaginary "chance" is a manifestation of the regularity that a person can not comprehend by reason, and therefore perceives it as a separate fact. In fact, the system of perception of ancient people who felt themselves an integral part of the planet-cosmic world, and the system of perception of modern people who feel isolated from it are just two events that obey the conditions existing at certain times of the Earth's flight in the Galaxy, corresponding to different At present, the Earth in its movement along the galactic orbit enters the Sector of the Galaxy, in which the speed of energy exchanges between all material structures on the planet will increase.

At present, the Earth in its movement along the galactic orbit enters the Sector of the Galaxy, in which the speed of energy exchanges between all material structures on the planet will increase. Astrologers define this process as a transition from the Piscean Age to the Age of Aquarius. Any event is a link in an infinite cause-and-effect chain, and the more the person in each chain understands ("sees"), the stronger will be his connections with the world in the conditions of an approaching storm. Otherwise, it gradually loses its connection with the environment — the diet of its energy "food" decreases. In the material world, the energy (information) "hunger" of a person manifests itself as aggression, disease, degradation of the body. But what information is necessary for a person so that he does not experience information hunger? Here the decisive role is played by the factor of Time, that is, the state of the space of the span of the planet, which determines the entire sequence of events on the planet. The term "time factor" is associated with the deep properties of Time as the energy structure that generates the World. This will be discussed in later chapters. In the meantime, it is enough to say that in the history of mankind there are periods of different duration, when people in the overwhelming majority "immerse themselves in matter" and "do not see" and "do not hear" anything that could shake the walls of their beliefs that guard the familiar world around them. But there are times when the line separating our familiar material world from the mysterious "invisible" world becomes thinner and more transparent. In such periods, many witnesses of various "anomalous" phenomena appear, and even some representatives of official (materialistic) science begin to seriously argue that suddenly behind these "anomalies" there really is some meaning behind it. Scientists are beginning to use devices designed specifically for recording the material manifestations of certain effects that do not have an explanation within the framework of modern concepts. In general, for the manifestation of interest in certain phenomena of Nature in some periods burned on the bonfire works of scientists, and sometimes the authors themselves, in others on the independent researchers look more lenient.

In the following sections of this chapter we will discuss independent researchers of Time. They lived and live in all ages lived, and their work so much does not correspond to the habitual way of thinking of the vast majority of people that are immediately rejected by scientists. The results of modern independent researchers do not squeeze themselves into the close framework of the purely materialistic scientific worldview that dominates the given segment of the galactic span of the planet. This position is due to the structure of Time itself, which is so manifested at this stage of evolution. Modern scientists are accustomed and convenient to move along the roads of knowledge only about the material world, previously torn by their predecessors, or rather, those of their works that were either taken immediately or with difficulty, but still filtered through the Time filter. The first means full compliance of their work with the level of consciousness of those who continue to work in this direction. Difficult trickling of new ideas means that they are ahead of their Time, but will be taken afterwards, when the consciousness of most people will correspond to the energy of the part of the span of the planet in the Galaxy. Полное отрицание означает, что новые идеи

ещё не скоро займут своё место в сознании людей. But despite the misunderstanding and rejection of the results of independent researchers by official science, they continue their work. The fact is that all of Nature, of which man is a part, is subject to many cycles of Time of different duration, dictating the entire course of events, including on the planet. Among them there are cycles, similar in impact to the consciousness of people, but scattered in Time. And in the future our planet with the Sun will arrive to the site of the Galaxy, in which, under the influence of Time, the consciousness of people will have to be formed in a direction indicating the priority of the non-material (energy) world. Then the primary will be consciousness, and matter - secondary. Such periods existed before, otherwise the philosophers would not start discussions on the priority of the spirit or matter. On the eve of the future period of the domination of the spirit over matter, we will get acquainted with the works of those scientists who, in one of our purely materialistic age, in one way or another speak of the primacy of the intangible world. Comparison of the results of such researchers of Time as Nikolai Kozyrev, Nikolai Morozov, Simon Shnol, will allow us to see our customary world in a new way.

§3. Academician N.A. Morozov on the impact of galactic sources on the Earth's weather

Recently, the weather on the planet is becoming more and more unpredictable: in hot countries snow falls, in the northern regions, sometimes the temperature becomes abnormally high for these places, in temperate latitudes, the off-season periods (spring and autumn) are becoming shorter, the weather in winter and summer is unstable (sudden jumps of atmospheric pressure and temperature), there is a change in the directions of the main air currents (in the northern hemisphere, the traditional east-west direction is replaced by north-south), tornadoes appear where they never existed, and so on. Of course, all these changes can be attributed to the economic activities of people who destroy forests, exhaust the soil, intensively expend water resources, pollute and poison planetary environments (air, water, soil). But is this only the case? Perhaps all these negative processes, which greatly complicate people's lives, are manifestations of certain cosmic influences? And, maybe, there were researchers who studied the consequences of these impacts on the planet? About them now and there will be a speech.

The Earth with all its inhabitants is in the space of the Sun and therefore is its integral part. Man is a part of the planet, hence he is also a part of the Sun. Current scientists acknowledge the relationship between changes in solar radiation and people's health: summaries of the state of solar activity are constantly published in newspapers and on the Internet. There was even a term "meteopaths". This is the name of those who react to changes in atmospheric pressure, sudden temperature changes, changes in humidity, a strong gusty wind, changes in the Earth's magnetic field (magnetic storms), etc. All these changes in the state of the environment have a particularly strong effect on the state of the cardiovascular system of people. All these changes in the state of the environment have a particularly strong effect on the state of the cardiovascular system of people. Therefore, doctors recommend taking such necessary medicines during such unfavorable periods. In addition, recently the results of monitoring the level of ultraviolet radiation of the Sun are published periodically. Scientists warn that elevated levels of ultraviolet radiation in the atmosphere dangerous to be in the open areas; especially for those people whose skin is not covered by sunburn, but receives sunburn. But in fact not so long ago it was said about the benefits for the organism of "solar baths", at least in the middle latitudes. It turns out that in recent years the sun has become more active. However, the results of constant monitoring of the state of the solar surface indicate that in recent years a minimal number of spots has been observed on its surface, in the summer of 2016 there have been days when there were no sun spots at all! According to scientists, this could mean that the Sun is experiencing the end of one 11-year cycle and will soon begin another cycle. But quite possibly another: the Sun is at the minimum of some other, longer cycle. The Sun is a part of the Galaxy with many of its cycles, and it is unlikely that it obeys only one 11-year cycle, which is sometimes associated with the period of Jupiter's orbital rotation. In fact, Jupiter is part of the Sun, due to which it is compelled to obey the solar cycles. But now we are talking about a more private task — the impact on the weather of some galactic sources.

Weather conditions, i.e., relatively stable weather during each of the seasons and timely smooth transitions from one season to another are one of the most important factors for the successful existence of people: in particular, this stability allows you to plan periods of agricultural and construction work, rest time in certain areas of the planet, etc. But lately the weather has become increasingly unpredictable and rapidly changing. The climate in the middle zone is approaching sharply continental: spring and autumn are becoming very short, winter and summer are characterized by sharp changes in pressure and temperature, increased wind. And if this is due to the fact that our planet, together with the Sun, enters such areas of the

Galaxy, which have a significant impact on it, what is its nature? And in general, can galactic sources affect the weather on the planet?

We will use another scientific “niche”, this time created by the works of Nikolai Morozov (1854 – 1946), an outstanding scientist and encyclopedist, academician of the USSR Academy of Sciences, who viewed the development of mankind as an integral part of the natural historical (evolutionary) process. He published over 200 papers devoted to the problems of chemistry, astronomy, physics, higher mathematics, meteorology, aeronautics, aviation, and many other issues. In addition to purely scientific problems, Nikolai Alexandrovich devoted much time to social activities. He was one of the organizers in January 1909 in St. Petersburg Russian Society of Amateurs of the World (RSAW). Immediately after the October Revolution in 1918, Morozov headed the P. F. Lesgaft, transformed on his initiative from the Biological Laboratory of Lesgaft. Morozov put forward the idea of creating the Astronomical and Astrophysical Departments at the Lesgaft Institute, supported by scientists from the Main Astronomical Observatory in Pulkovo. This idea was also supported by the government: the necessary funds were allocated for the purchase of instruments for observation and other equipment necessary for the Observatory. In June 1920, at the ROLM, a circle of young scholars of the world was formed, uniting young researchers aged 12 to 19 years. Mostly it was students of St. Petersburg University and schoolchildren, and the classes were conducted by the staff of the Institute. This circle was visited by the future outstanding Soviet astronomer Nikolai Aleksandrovich Kozyrev. Later, Morozov gave him a recommendation for training in the physics and mathematics faculty of the university, without which the entry was impossible due to the noble origin of Kozyrev. So the life paths of two eminent researchers of their epoch, completely devoted themselves to the study of mysteries and mysteries of Nature, including the study of the Moon, crossed.

The fact is that Morozov was keenly interested in our companion. He even described in detail the imaginary journey to the moon with his fellow prisoners in the Shlisselburg fortress. [9]. It is interesting to note that the text of this book is not perceived as a science fiction, but as a modern report on space travel. The same impression is left also by the “sci-fi” works of Tsiolkovsky on his travels to the Moon, the planets of the solar system, free displacements in the galactic and intergalactic environments [2]. In particular, both authors very accurately describe the state of weightlessness inside the spacecraft, as well as the physical conditions with which people met on the Moon. Morozov was firmly convinced that the surface of the Moon is constantly changing. It is possible that it was the work of Morozov and his staff, who persistently sought these changes, gave Kozyrev confidence that the Moon is a living organism. As a result, it was Kozyrev who received the first confirmation of the reality of the changes on the Moon: on September 3, 1958, with the help of a 125-cm telescope of the Crimean Astrophysical Observatory of the USSR Academy of Sciences, he received spectrograms indicating the exit of gas (molecular hydrogen and carbon) from the central peak of the lunar crater Alfons. For the discovery of volcanic activity on the Moon in 1969, the scientist was awarded an award by the International Academy of Astronautics — a registered gold medal.

Since 1918, Morozov for many years with enthusiasm worked on a great fundamental work “The history of human culture in natural science coverage”. Part of this work in the form of seven volumes was published under the title “Christ” (edition 1924–1932). Three later volumes of the manuscript were printed only in 2000. In the foreword to volume 7 Morozov wrote: “The main task of this my great work was: to reconcile historical sciences with natural science and to discover the general laws of the mental development of mankind”. In the foreword to volume 7 Morozov wrote: “The main task of this my great work was: to reconcile historical sciences with natural science and to discover the general laws of the mental development of mankind”. In particular, the scientist believed that the reliability of the dating of some historical events can be confirmed or refuted by referring to ancient manuscripts in which it was told about bright astronomical events, for example, about a total eclipse of the Sun, a supernova explosion, etc., which took place in the described at the same time as historical events (for example, battles).

He was also interested in the scientific interpretation of people's perceptions concerning weather changes, which depend on the mutual arrangement of the sun and moon in the sky, especially during the new moon periods. This problem was investigated by many astronomers and meteorologists, in particular, the French scientist Dominique-François-Jean Arago (1786–1853), the author of works on astronomy, physics, and the history of science. Scientists believed that due to the influence of the sun and the moon, tidal waves occur not only in water, but also in the atmosphere, and the interaction of solar and lunar tidal waves should form in different places of the planet different cyclones depending on the conditions existing at that time (in particular. Morozov established that the solar-lunar impacts accounted for only 60% of the predictions, while the remaining 40% did not come true. Analyzing the work of his predecessors, he came to the conclusion that the unavoidable impact of the Galaxy, first of all the impact of its various Centers, should be a missing factor in influencing the weather characteristics. Therefore, he began to look for this missing factor [10].

To solve the problem, Morozov along with his assistants for seven years scrupulously translated from solar time to stellar data from meteorological yearbooks of the USSR and many foreign countries. Star and solar day, respectively, the gaps between two successive (upper) culminations of the point of the vernal equinox and the Sun. Due to the orbital motion of the Earth, the Sun moves among the stars in the direction opposite to the diurnal rotation of the celestial sphere, so the solar day is longer than the stellar for about 4 minutes. The sunny days are 1440 minutes or 24 hours, and the stars are 1436 minutes or 23 hours 56 minutes. The results obtained were presented in more than 200 diagrams, where for each location temperature, relative and absolute humidity dependencies were determined from solar and stellar time. The “star” diagrams had the same shapes as the “solar” ones, only with smaller peak amplitudes. Among the hundreds of “star” charts based on data from Europe, Asia, Africa, America, Australia, there was not one, the form of which would differ from the corresponding “solar” diagram.

The scientist made an obvious conclusion that in no case can ignore the influence of solar and stellar influences. All the detected maxima and minima of the star-diurnal influences on the air temperature unequivocally showed that it is located behind the constellation Ship of the Argonauts. The constellation ship Argonauts (Argo Navis) is a configuration of the stars of the southern hemisphere, named so by Ptolemy. In the 18th century, the astronomer Nicolas de Lacaille divided it into the three constellations — Stern, Keel and Sails. But the Sun belongs to the Local Group of Stars, which is in the direction of the constellation Keel, extending in the intervals $\alpha = 6^{\text{h}}-11^{\text{h}} 15^{\text{m}}$, $\delta = (-75^{\circ}) - (-55^{\circ} 45')$. It turns out that the galactic effect on the temperature is caused by some object in the direction of the Keel constellation. Morozov writes: “All the revealed maxima and minima of the star-diurnal influences on the air temperature unanimously showed, that behind the constellation Ship of the Argonauts about 8–11 hours of direct ascension there is a gigantic cluster of high-temperature substance, the radiation of which, like an invisible night of a giant furnace, increases during its highest rise above the horizon of any place the temperature of the air above it by more than a seventh of the solar heating” [10].

And how does the “star wind” affect the Earth? “As it (source — L. B.) rise above the horizon, the relative humidity of the air increases, that is, its saturation with water gas. Denoting 100 % saturation, at which the water gas begins to emerge in the form of fog or rain, we get very regular diagram arcs from the solar and galactic effects, and from the galactic arc reaches in the climatically temperate belts of the Earth to half of the solar arc” [10]. The maximum temperature rise caused by the Sun takes place two hours after its passage through the *local meridian*, that is, at 14 hours of solar time. The local meridian is a plane passing through the zenith and the Sun at the time of its upper culmination (the highest position in the sky), that is, in the local noon on solar time. Similarly, the galactic effect peaks at two hours after the source passes the meridian at $\alpha = 10^{\text{h}}$. The meridian is a large circle formed as a result of the intersection of the celestial sphere with the plane passing through the Pole of the World and the zenith. Exploring the rate of evaporation of the planet's water surface under the influence of galactic radiation, Morozov finds that “... it reaches a third of the *solar impact*. The maximum impact comes from a site in the sky located at the intersection of the straight-climb line $\alpha = 12^{\text{h}}$ with the strip of the Milky Way, where many small stars and several *carbon bags* are located” [10]. Carbon bag — the name of the site in the sky, occupied by a dark dust nebula, actively absorbing light.

In tropical regions of the planet, the maximum absolute humidity caused by the Sun (due to the residual effect of evaporation) is maintained in the interval from 14 to 20 hours of solar time; the maximum galactic effect is at $\alpha = 20^{\text{h}}$, although it appears less smoothly on the diagram. Observations show that the “solar maximum” is delayed by 8 hours after its passage through the meridian, that is, it occurs in the range $\alpha = 18^{\text{h}} - 20^{\text{h}}$. If we assume that the galactic effect lags as much as the same, it is easy to determine that the source is located in the region $\alpha = 10^{\text{h}} - 12^{\text{h}}$, i.e. again in the Keel region. Investigating the frequency of changes in the distribution of rainfall on all the continents of the planet, except Antarctica, Morozov came to the conclusion that it depends not only on changes in barometric pressure and temperature, but also from magnetic storms that occur not only on the Sun, but also in a certain galactic formation in the constellation of Keel: “Otherwise, it would be difficult to understand why on our diagrams the jumps represented by asterisks are repeated not only at noon, when the given horizon is turned toward the Sun, but also at different hours of the day, and why they are also distributed over various stellar clocks. It turns out even as if every blow of cosmic lightning and prominence on any galactic center is accompanied by a repeated echo on the rest” [10]. To confirm what has been said, Morozov cites just one example, comparing the solar and galactic effects on the oscillations of the electric field in Tashkent and the magnetic field in the suburbs of Paris. The plots of the oscillations of both fields, due to the solar action, have the same shape. Graphs caused by the galactic effect on these areas are also similar, but their shapes are different from solar ones. It can be concluded that these graphs represent the materialization in the Earth's space of solar and galactic effects in the form of

electric and magnetic fields, respectively. And the identity of the signals for each of the effects clearly demonstrates that the solar and galactic effects on the planet are the material manifestations of universal interaction manifested in the Galaxy, the Sun and Earth, and also in the person fixing it with the help of the instruments created by it, that is, by the power of consciousness.

Here it was mainly about the impact on the meteorological conditions on the planet caused by sources located in the direction of the constellation Keel. Morozov assumed the presence of high-temperature sources there. And this is the answer of modern scientists to the outstanding natural scientist of the past. Astronomers of the Southern European Observatory recently made the best picture of the mysterious clouds around the emission nebula (ionized hydrogen region) NGC 3372 (another designation is ESO 128-NS13) located in the constellation Kiel at a distance estimated from 6500 to 10,000 light-years. Its coordinates are: $\alpha = 10^{\text{h}} 45^{\text{m}}$, $\delta = -59^{\circ} 52'$. In its angular dimensions ($2.0^{\circ} \times 2.0^{\circ}$), the Carina Nebula is 4 times the angular diameter of the Sun and the full Moon. It is illuminated by the star of the η Keel (Foramen), which is a double hypergiant: its cumulative luminosity exceeds the solar one by more than 5 million times, and the mass is more than 100 times greater than the solar one. Coordinates of the star: $\alpha = 10^{\text{h}} 45^{\text{m}}$, $\delta = -59^{\circ} 41'$. The star is from the Earth at a distance of 7,500 light years. The main component (η Keel A) is a bright blue variable (hypergiant) with an initial mass of 150 solar, of which 30 masses are already scattered in the form of a stellar wind. (The mass of the Sun is 2×10^{33} grams). This is one of the largest unstable stars, whose mass is close to the theoretical limit. Scientists suggest that over time it will turn into a supernova. The phenomenon of a supernova is a powerful explosion with the release of a huge amount of energy, accompanied by the ejection of a large part of the stellar mass into the surrounding space, where a nebula is formed. From the remaining part, either a small dense object is formed — a neutron star, or a black hole (the transition of the star into a space of a different dimension than ours). The star emits in the infrared range, and is also the only known star emitting ultraviolet laser radiation. The second star (η Keel B) also has a high temperature and luminosity, and its mass is 5 times smaller than the mass of the Keel A. The system of stars is surrounded by the Carina Nebula, the Homunculus and the Keyhole. The name of the Keel — Foramen, meaning “hole”, is associated with the Nebula close to it. Emission nebula Homunculus arose as a result of the discharge of matter by the star of the Kiel A, which occurred in 1842.

In the direction of Kiel, at a distance of 6,500 light-years from us, there is a cluster NGC 3572, which is a group of young hot white and blue stars that generate powerful stellar vortices (winds) that scatter the remains of gases and dust from the mother nebula. These giants ionize hydrogen, which is in the nebula, causing its glow. Under the influence of the stellar wind in the nebula, various figures are formed in the form of bubbles, arches and objects of bizarre configurations, called “elephant trunks”. The estimated age of the cluster is approximately 8 million years, the diameter of the surrounding nebula is of the order of several light years. Of particular interest is the annular (planetary) nebula located in its center. Usually, such nebulae occur at the end of the life cycle of a star: it sheds matter and turns into a white dwarf. The coordinates of the cluster NGC 3572 are: $\alpha = 11^{\text{h}} 10^{\text{m}}$, $\delta = -60^{\circ} 15'$, i. e. these unstable stars also take part in the formation of weather on a distant planet.

So, in the Galaxy there is a direction where there are a number of objects that are physically unstable (a star at the last stage of evolution, a group of young fast-forming stars). Morozov suggested that such high-temperature sources should influence the formation of weather on Earth. He found that the maxima and minima of solar and galactic influences are related to the height above the horizon of both the Sun and the galactic sources in Keel. In this case, the graphs of temperature variations for the Sun and galactic sources are similar in shape, but differ in the height of the amplitude (for galaxies it is smaller). A maximum increase in air temperature over a certain place takes place 2 hours after the moment of the passage of the Sun through the local meridian (local noon). A maximum increase in air temperature over a certain place takes place 2 hours after the moment of the passage of the Sun through the local meridian (local noon). The right ascension of this source (analogous to geographical longitude) is $\alpha = 10^{\text{h}}$, which is close in value to the coordinate of the Star Foramen ($\alpha = 10^{\text{h}} 45^{\text{m}}$). Note that the moments of the upper culminations of the Sun and the stars are calculated by solar and stellar time, respectively. The maximum evaporation rate of the water surface caused by the action of galactic sources is related to the region of intersection of the meridian $\alpha = 10^{\text{h}}$ with the Milky Way located on the boundary of the constellations of Sails, Fly and the Southern Cross. This area contains many small stars and several coal sacks. In tropical regions, the maximum solar exposure occurs 8 hours after its upper culmination — in the range $\alpha = 18^{\text{h}}-20^{\text{h}}$. If we assume that the exposure is as much delayed, it is easy to determine that the source is located in the region $\alpha = 10^{\text{h}}-12^{\text{h}}$ — again in the Keel region.

Here it is necessary to pay attention to the following fact: the Sun is from the Earth at a distance of 500 seconds (about 8 minutes), and the galactic sources causing a similar impact are located at a distance of

several thousand light years. And while they have a similar effect on atmospheric phenomena (changes in temperature and humidity)! The determining factor here is only the height of the position of the source (the Sun, the stars, ...) above the horizon. It turns out that in the Galaxy (and possibly in more remote areas) there is a universal impact that equally affects both the Sun and its integral part — the Earth. And this fact over time should lead us to a radical revision of the view of the surrounding space as a three-dimensional volume, in which all objects are located at different spatial distances from the observer. Within the framework of these representations, the signal from the more distant object should come to the observer later than from the closer one. But the results obtained by Morozov disprove this “common sense” from the point of view of common sense: the arrival rate of the “signal”, which causes: 1) an increase in the temperature of the atmosphere; 2) the evaporation of the water surface depends only on the very nature of the phenomenon, but not on the distance between the planet and the source of the signal (the Sun or a distant galactic object). The galactic signal in the first case is 2 hours behind compared with the solar one, in the second — for 8 hours (but not for several millennia!). Moreover, in both cases the maximum of the impact is related to the moment of the upper culmination of the source, and not to the distance to it. Obviously, there is another way of transmitting the impact between space objects. Moreover, in order to understand this process, it will be necessary to adopt another system of describing our world, different from the long-established in our minds. Changes on the planet, growing at an accelerating pace, indicate that it is time to look at such a familiar, established world, called “reality”, with new eyes. And first you should not brush aside the facts, even if they do not fit into the usual harmonious picture, but try to understand what is behind the “abnormal” phenomena and the results of observations that do not fit into the usual framework.

Extensive research N.A. Morozov — in fact, a thinker of a galactic scale — are currently waiting for their time. Many works of N.A. Morozov's geophysics, including the connection of the Galaxy with earthquakes, thunderstorms, meteorological phenomena, etc., are stored in the archives of the Academy of Sciences. They are available on the Internet. In his works, many of which have not yet been published, the scientist has shown that the effects of the Galaxy on the geological and geophysical processes of the Earth are natural and so great that without taking them into account, one can not even dream of scientific prediction of the weather even for a month ahead. Due to the Earth's own motion along with the Sun in the Galaxy, the route of which lies in different galactic environments, similar energy events can appear in different forms. Morozov defined the period in the 521 Julian year, when exactly the configurations of the Sun, the Moon and the above-mentioned galactic source of impact in the constellation of Keel for each given place of the planet are repeated exactly. From the analysis of meteorological observations, he calculated a short period of 19 years, when similar meteorological conditions are formed over certain places of the planet. This is the so-called Methon cycle, which is 6939 days, 14 hours, 15 minutes, proposed by the Athenian astronomer Meton to coordinate the lunar month and solar year in the solar-lunar calendar. There is also a “Gelman period” at 11.35 years, determined by the alternation of the thickness of the tree rings and coinciding with the period of the appearance of sunspots. A period of 280 years, consisting of 25 repeating cycles of 11.5 years, determined by the alternation of the rings of giant Californian pines *Sequoia Gigantea* awaits its explanation [10].

Morozov's studies clearly demonstrate that the galactic effect on the planet contributes to the formation of weather on the Earth, affects the structure of electromagnetic fields. There are works where the scientist studies the relationship of earthquakes with the position of certain galactic objects in the sky, and also establishes the relationship of thunderstorms with the upper culminations of certain galactic centers of influence. And then the inevitable question arises: ***at what speed does the impact from galactic sources spread, if reactions to it follow in a few hours?*** And then the inevitable question arises: at what speed does the impact from galactic sources spread, if reactions to it follow in a few hours? One might think that the naturalist Morozov “did not know” what modern scientists insistently insist: in the world there are no impacts propagating with velocities exceeding the speed of light $c = 300,000$ km/s, since their existence supposedly “prohibits” the theory of relativity. But Morozov knew perfectly the Theory of Relativity and even wrote interesting works in this field. Moreover, this theory only says that it is the particles of matter that can not reach the speed of light. But can not other kinds of matter, more subtle than matter, exist in Nature? And if not matter, then any energy radiations that spread instantly?

Carrying out such studies is in fact ***Time Resolution*** on the further development of human civilization, which means that the energy of human consciousness corresponds to the energy of the planet's span in the Galaxy. And the present negation of the cosmic nature of many phenomena of the material world and the attempt to explain each of them by their (purely material) causes is the Taboo of Time — the prohibition of the Time itself for further development in a certain direction. It can manifest itself in different forms: in the non-recognition (concealment) of new ideas, in their fierce denial, in the impossibility of reproducing certain

experiments that could give a new impetus to development, and so on. The Taboo of time for research of a certain direction is manifested in the case when the proposed material, in its level and orientation, does not correspond to the general vector of the development of human consciousness at the moment. Then the proposed new Knowledge simply *awaits its time*. So far, it turns out that "Resolution" is received, but the performers are still one, and the results they have received so far do not wait for a warm welcome.

Morozov's studies of the galactic effect on the weather clearly demonstrate that the course of processes in the gas environment of the planet, in addition to lunar and solar influences, depends on the position of galactic objects in the sky — unstable stars and their clusters and nebulae. The scientist established that the maximum impact of a galactic source on a particular terrain is determined by the moment of its upper culmination. At the same time, different atmospheric processes caused by both the Sun and the Galaxy are delayed relative to the moment of culmination for periods of time, the duration of which depends only on the nature of the process itself. The shapes of the atmospheric change graphs caused by the galactic and solar influences are identical, and the maxima of their amplitudes are directly related to the moment of the upper culmination of the corresponding sources. The delay in the beginning of the process with respect to the moment of the upper culmination is the same as for the Sun removed by 500 light seconds, and for galactic sources, the light from which reaches us in a few thousand years. It turns out that in the Galaxy there is a universal effect, spreading very quickly (almost instantaneously), and the speed of its materialization on the planet depends on which of the planetary media it is realized in. The rise in air temperature is directly related to the gaseous environment (the atmosphere of the planet), and the increase in its humidity — with the aquatic environment (water surfaces). Since the water is denser than air, the evaporation process materializes in 8 hours, and not after 2 hours, as in the first case. But in both cases, the maximum of the process is related to the maximum illumination of this part of the surface either by the Sun (local noon) or at the culmination of distant unstable objects. In the modern system of description, the energy impact of the Sun on the terrain is perceived only as the degree of its illumination by a *visible* solar disk, i. e. as an electromagnetic effect. The amount of illumination depends both on the time of day (because of the daily rotation of the planet) and on the time of year (due to the inclination of its axis of rotation relative to the plane of the ecliptic).

In the conclusion of the paragraph, it should be noted that Morozov's research related to the area of the constellation Keel, and that is where the Center of the Local Group of Stars is located. While it is not known exactly whether the position of the Local Group Center is affecting the weather of the planet, or the emission nebula with a lot of young unstable stars, a variable supergiant Foramen or another source remote at 6500 light years away. This is difficult to determine accurately, since the processes initiating the atmospheric processes are directly related to the moment of the upper culmination of the source of cosmic impact taking place in the specified locality. But the main thing here is the information that in the Galaxy there are special directions along which the planet is affected. In the future it will be shown that both the planet and its entire population, and indeed the entire universe, represent the materialized states of these influences.

§4. Kozyrev's experience is the key to understanding the nature of Time

In the late 1970s of the last century, an astronomer, Professor Nikolai Kozyrev, discovered the effect on a material device from a place where, from the point of view of modern astronomy, the observed object was absent. Kozyrev was interested in the possibility of establishing an instant connection with celestial objects. He argued as follows: since electromagnetic radiation from stars propagates at a speed of 300,000 km/s, during a period of time during which the light signal from the star flies to the Earth, it will be located elsewhere. Observations established that the stars are not only rotate together with the Space of the Galaxy relative to its Center. In addition, they move with different velocities and in different directions, since they are subject to the gravitational influence not only of the Galactic Center, but also to the gravitational fields of local groups of stars and local star clusters. From the closest to the Earth star Proxima Centaurus, the light flies 4 years, so it is obvious that for such a time the stars must move from their visible (observed) position in the direction of their own movement. Knowing the own speed of the star and the distance to it, it is easy to find its place in the sky, corresponding to the moment of observation (true position). It was these calculations that Kozyrev conducted for nine nearby stars from the constellations Great Bear, Lion, Herdsman, Lyre, Hero, Winged Hourse, two globular star clusters from the Water Bearer and Hercules and the nearest galaxy — the Chained Maiden Nebula [3, 4]. Then he sent to these points in the sky a mirror telescope, into the ocular of which was mounted a sensor — a metal-film resistor. And the sensor reacted to the effect of "empty spaces" on it in the sky in that its conductivity increased (resistance decreased). It is known that an increase in conductivity means a reduction in the measure of disorder (entropy), that is, the impact of the true

positions of cosmic objects restores order within the structure affected by this action. It is interesting to note that the same restoring effect on the sensor has two points in the sky, located symmetrically at the same distance relative to the central (true) image of the source. In this case, one of the images coincides with the visible (electromagnetic) position of the object. Kozyrev called these three images *past*, *present* and *future* images [3, 4]. A detailed exposition of these papers is given in [1]. Since the impact from the true (real) image of the object instantly connects the radiation source to the observer, it can be asserted that it is not electromagnetic. But the two images on the sides of the center exactly correspond to the apparent position of the object and its mirror image relative to the true position. The electromagnetic signal (light) from the visible image of the star moves with a finite velocity and reaches the Earth at least 4 years (from the nearest star) or 2.2 million years (from the Andromeda nebula). At the same time, the image of the object in the past, coinciding with the visible (electromagnetic) image, has the same effect on the sensor as the non-electromagnetic effect from the image of the star in the present. This fact can be explained by the fact that the image of a star in the electromagnetic range (optical image) is superimposed on its image, caused by the non-electromagnetic action of the star on the sensor. Here it is necessary to note that during these observations the telescope simultaneously registers both the visible (optical image) and the invisible. The fact is that at the time of observations, the telescope guide is aimed precisely at the visible image of the observed object. The telescope guide is an optical tube with a small magnification, installed parallel to the main tube; It is intended for exact guidance of a telescope on the observed object. In this case, the image of the object is observed in the eyepiece of the main telescope optical tube. However, instead of the eyepiece, a sensor was installed there, replacing the human eye (a common practice in observational astronomy). And this sensor, not designed for recording the electromagnetic signal, just reacted to the non-electromagnetic signal emanating from the place where the image of the star is located in the past, that is, at the moment of emission of a light signal that will come to Earth after a period of time that depends from the distant to the star. But where did the two images on the sides of the central image, called Kozyrev's *past* and *future* images of objects, come from?

It is not a secret that signals having different nature propagate at different speeds. So, the light signal flies at a speed of 300,000 km/sec, and the sound signal — at a speed of 330 m/s in the air. Therefore, in case of a thunderstorm, first we see a flash of lightning, and then we hear thunder. Let's compare now instantly spreading information with a flash of lightning. The sense organs of our material body are not able to recognize instantly spreading information. However, depending on the state of human consciousness (energy), he either admits the possibility of such a phenomenon of nature, or denies it. In the second case, a person will continue to deny what he has seen even in the case of a convincing demonstration of the phenomenon: he will find many other explanations that he understands himself. Thus, the discrepancy between the energy of the event and the energy of this person is manifested. Obviously, Kozyrev allowed the possibility of instantaneous propagation of signals from celestial bodies. Moreover, he designed a device for recording the instantaneous transmission of information (energy) to demonstrate this phenomenon to other people [3, 4]. As a result of the impact of the true position of the star on the sensor, there is an instantaneous energy exchange between the person and the star (analog of the lightning flash). As a result of the impact of the true position of the star on the sensor, there is an instantaneous energy exchange between the person and the star (analog of the lightning flash). And what is a “thunder”?

With the help of the device created and used by Kozyrev, the observer registers two thunder rolls: one is the position of the star in the past, the other is the future position of the star. Both of them are located symmetrically with respect to the central (true) image of the object along the line of its visible motion along the celestial sphere, that is, they are reflections of the true image into the past and the future. Reflection is the result of the impact of a true (central) image of a star on a person's consciousness. Kozyrev believed that the true image of cosmic objects emits a special substance called “*time*”. He wrote: “Time does not move in space, but appears immediately in the whole universe. Therefore, time is free from the speed limit of the signal, and in a moment it will be possible to instantly communicate with the most distant objects of the Cosmos” [5], p. 334. In giving a mathematical explanation of his results, Kozyrev relied on the geometric model of the world, built by Herman Minkowski.

In 1907, Minkowski created the mathematical base of the Special Theory of Relativity (STR), building a basic flat four-dimensional space, now known as the Minkowski Space, than making an invaluable contribution to a new understanding of space and time. In mathematics, the dimension of any space is determined by the maximum number of linearly independent mutually orthogonal vectors (directions) that can be drawn at any of its points. They form the basis of space. In the SRT space the basis consists of three spatial and one time vector, tangent, respectively, to the three spatial directions and to the time line. The division of the basis vectors into real and imaginary has a profound meaning: people recognize a three-

dimensional space as “reality”, and one-dimensional time is something “imaginary”. In Relativity Theory, the time coordinate is denoted as $x^0 = ict$, where i is the imaginary unit ($i^2 = -1$), c is the speed of light, t is a quantity having the dimension of time. Such an expression for the time coordinate was suggested by Minkowski, where i is the initial letter of the word *imaginary*. Minkowski took time to an imaginary (non-material) world, in contrast to a space based on three axes (spatial directions) that have real (real) lengths. This division reflects the real state of affairs: the spatial distances are measured directly by the “rulers”, and the time is measured with the help of a clock that measures the distances that the Moon, the Sun, and the stars pass through the sky. Minkowski wrote: “From now on, time itself and space in itself become an empty fiction, and only their unity retains a chance for reality”. The very fact of this division of the mathematical base space-time into the real and imaginary parts testifies to the fact, that at the beginning of the 20th century conditions were created on our planet when some people began to realize again that the “imaginary” and “real” worlds are two sides of the One Whole.

At this stage of evolution, people have come very close to the threshold of the familiar, cozy but closed three-dimensional world, beyond the threshold of which there is multidimensionality. However, the realization of multidimensionality (plurality of worlds) through perception by the senses is possible only in the future. In the meantime, we are only approaching the first stage of multidimensionality—the four-dimensional space, or space-time. SRT is the first step of the ladder, leading from the three-dimensional world to multidimensionality, since its foundation (mathematical base) is four-dimensional space. Since SRT does not include gravity into consideration, its base space is flat. According to Minkowski, the world (flat space-time, or Minkowski Space) at each of its points is arranged like an hourglass: their upper part contains the cone of the future, the lower part is the cone of the past. According to Minkowski, the world (flat space-time, or Minkowski Space) at each of its points is arranged like an hourglass: their upper part contains the cone of the future, the lower part is the cone of the past. In the Minkowski Space, the present realm is just a point. Light travels along the walls of cones (forming) from the past to the future also through the base of the cone. Inside the cones is a substance whose particles move with sub-light velocities and have a real relativistic mass (mass of motion). It is determined by the motion) is determined by the formula: $m = m_0/(1 - V^2/c^2)^{1/2}$, where m_0 is the rest mass, and V is the particle velocity. Outside the cones, theoretically there must be particles moving with superluminal velocities and having an imaginary relativistic mass $m_{im} = m_0/(V^2/c^2 - 1)^{1/2}$, which is related to the real relation $m_{im} = im$. These hypothetical particles in science are called *tachyons* (from the Greek word *ταχύς* — fast). Light-like particles move along the walls of the cones: they move at the speed of light. According to the Theory of Relativity, light travels along trajectories of a special kind: their four-dimensional length is zero, and the observed projections on space and time are equal to each other. In other words, for light, the concepts of “space” and “time” are identical. In terms of the theory of physical observables, the square of the four-dimensional length (interval) between two points (events) is determined by the expression $ds^2 = -c^2d\tau^2 + d\sigma^2$, where $cd\tau$ and $d\sigma$ are, respectively, its observable projections for time and space [11, 12]. Thus, within the framework of the theory of space-time, the material world at each point can be represented as cones of the past and the future, where the past passes to the future through the zero moment—the present. The walls of the cones (“Walls of the World”) are filled with light-like matter, including electromagnetic fields, and the substance is located inside the cones. Actually, the space of the walls of the cones is also a “barrier” for particles of matter, since their masses asymptotically tend to infinitely large values as their velocity tends to light. Since the body of a real (real) observer consists of particles of matter, it is considered that this barrier can not be overcome by it. Fortunately, the material observer also has a consciousness that can cover space up to the “edge of the Universe” and even further, and also travel in different times. In particular, he can come up with a new way of obtaining information from different objects. After all, a person is a body + consciousness, as will be discussed in detail later. In the meantime, let us return to the problem of explaining Kozyrev's results within the framework of STR. Recall, the scientist believed that the past and future image of the object are instant reflections in the past and the future of the central (true) image. This is a very interesting explanation, but the structure of the flat Minkowski Space, where the vertex of cones is an ordinary point, does not allow us to understand it in more detail. In more detail, this idea of Kozyrev can be considered in the curved (Riemannian) space-time of the General Relativity Theory (GTR), which will be shown in §7 of this chapter. In the meantime, let us return to the experiments themselves.

The movement of any material object or field in space-time can be considered as its manifestation (materialization) at each point of the four-dimensional trajectory (world line) with a speed equal to the speed of its movement. The movement of any material object or field in space-time can be considered as its manifestation (materialization) at each point of the four-dimensional trajectory (world line) with a speed equal to the speed of its movement. The central (true) image of a star instantly affects the consciousness of a

person through the readings of the sensor, indicating its location in space at the time of observation. Since a person divides his time into three states — the present, the past, the future — in his consciousness, he observes three positions of the object, corresponding to his location in the past, present and future. Therefore, past and future images are a thunder of thunder that sounded in the mind of an observer accustomed to viewing the past and the future as a projection of the present. When observing closely located objects, the effect of dividing time into three states is not observed, since all three images simply merge into one. The effect of triplicity is difficult to see even for the moon, the average distance to which is 384.4 thousand kilometers. However, for the Sun remote at 150 million kilometers, this effect takes place: the scientists of the Siberian Branch of the Academy of Sciences observed a triple image of the Sun, where in the center was the true (invisible to the eyes) position, and symmetrically on the sides were the past image (coinciding with the visible) and the future. The past and future image of the Sun was spaced from the central by about $2,1''$ — into four visible widths of the solar disk [13, 14]. The fact is that the light signal from the Sun reaches the Earth, removed from it by 150 million km, in 500 seconds, during which the Sun moves across the sky at an angular distance of $2,1''$. This displacement is the visualization of the cyclic rotation of the planet around its own axis, where one revolution is one day, or 86400 seconds.

Observations of the triple image of the Sun should be particularly emphasized, since in this example we can more clearly show the motion of the planet in the Galaxy as a movement from the past to the future. Consider a part of the galactic route of the Sun and the planet as a time interval. The Sun is flying in the Local group of stars at a speed of 250 km/s, carrying all the bodies of the Solar system. The Earth is located 150 million km from the Sun. Солнце импульсно излучает кванты электромагнитного поля (фотоны), летящие со скоростью 300000 км/сек. Пока фотоны достигнут Земли, пройдёт 500 секунд. During this time, the Earth will fly in the Galaxy with the Sun 125,000 km (about 10 diameters of the planet) at a speed of 250 km/sec. The true Sun and the planet are always strictly on the line connecting them in the Sun Cylinder and perpendicular to the Cylinder axis, since the energy interaction is instantaneous. Therefore, “the rays of time” (“the light of the true Sun”) always fall on the planet strictly vertically. But the sunlight (electromagnetic radiation) spreads at a finite speed, so it falls to Earth at an angle slightly different from the direct (90°): because while the light ray is flying to the planet, it will be 125.000 km ahead along the galactic route. The tangent of the angle of incidence of sunlight is $1/1200$.

The “past” and “future” of the image created by the “rays of time”, in fact, are instantaneous reflections of the central (true) image, where the reflecting surface (mirror) is the human consciousness. Kozyrev wrote: “Experiments have shown that the laws of geometric optics, and in particular the law of reflection, are also valid for time” [5]. As is known, the law of reflection in geometrical optics says: *the angle of incidence is equal to the angle of reflection*. It is this phenomenon that takes place when observing distant cosmic objects: the “ray of time” is refracted in the human consciousness like a spoon placed in a glass of water. There is one spoon, but we see two of its images — the upper (above-water) and the lower (underwater) part. In the case of cosmic objects, the role of water is played by human consciousness, and there are three images: the falling “ray of time” is reflected from the central (true image) and projected in the moments of the past and the future, located behind and ahead along the trajectory of motion. The natural question arises: why is the image of the object in the “ray of time” not smeared along the entire trajectory of motion? But then one should ask another question: why do stars look like dots? After all, according to modern science, the light from a point source radiates across the sky uniformly in all directions, so the stars should look like swelling spheres, which we do not observe.

To understand this, imagine the motion of a star in the Galaxy as an energy flow directed along its motion, and the location of the material body of the star at each moment of time is the place of maximum concentration (condensation) of this stream. Light is the result of the interaction of the energy flow with the galactic medium, ie, one of the types of energy exchange between the energy world and the material world, where materialization is the condensation of energy to the state of a material body or material field. Here, the galactic medium means the energy space of the Galaxy, which includes the energy flows emitted by all its objects. In the material world, these energy flows are manifested, respectively, by stars and their clusters, nebulae, interstellar gas and dust. In Chapter 3, these links will be considered in more detail. Light materializes in both directions along the direction of the energy flow at a speed of 300,000 km/s, but the observer registers precisely the point image of the star, and not the line of light smeared along the motion. “Blurring” is impossible here, since every second materialization of light in the form of impulses occurs. The next moment is the materialization of other impulses. And human consciousness perceives these impulses. In other words, the stars look like dots because at this stage of evolution a person reacts (through the brain) to discrete impulses, and does not see (with few exceptions) the continuous color flows of the energy world that fill the surrounding space.

So, the visible images of cosmic objects, created by quanta of the electromagnetic field (photons), are either point stars (stars), or have clear boundaries (star clusters, galaxies, ...), but not blurred objects in space. Similarly, the images of cosmic bodies created by the “radiation of time” (in Kozyrev's terminology) “look” and not visible to the eye. In this case, the “true” is only the central image, invisible in the electromagnetic range, created, according to Kozyrev, instantaneously propagating “rays of time”. The optical image is the electromagnetic trace of the past star — its electromagnetic image in the past. It consists of quanta of the electromagnetic field (photons) perceived by the human eye in the form of impulses: each impulse corresponds to its own moment of time. The star moves and spreads the light, but all the time is observed in the form of a point due to the fact that the perception of a person by light is discrete. ***Thus, all modern observational astronomy, based on the study of various ranges of electromagnetic radiation, is aimed at studying the past states of cosmic objects.***

If at the moment of observation the star fades, then its image will disappear in the future. There will be only one electromagnetic (past) image, which will be visible for a period of time, while the light flies from the star to the observer. In connection with what has been said, problems associated with observing "future" images of stars become clear. It is known that when observers repeated Kozyrev's astronomical observations at another time and in another locality, the “future” images were sometimes poorly discernible, or none at all [13, 14]. This is not surprising: it is quite possible that in the intervening time the star could become invisible due to various reasons: 1) its luminosity decreased; 2) met with a dust cloud, etc. Therefore, the only real way is the true position of the star, the information (energy) from which comes to us instantly. And the past and future images are “temporary bunnies”, like solar rabbits. Both temporary and solar bunnies carry the energy reflected by them, but they are just reflections of the central (true) image.

Now let us recall Morozov's studies on the effects on weather of distant galactic sources. They can be explained by assuming that all objects of the Galaxy are connected with each other by instantaneously propagating interaction (“rays of time”). And their impact on different planetary medium manifests itself with its speed. Thus, the maximum increase in temperature of the least dense medium - air - manifests itself 2 hours after the moment of the upper culmination of the source — the moment of its maximum impact. The maximum evaporation rate of a denser aqueous medium takes place 8 hours after the moment of the upper culmination of the source. These sources in Kiel have great instability due to their nature: the young stars are rapidly evolving, the old Foraman hypergiant is getting ready for a transition to a new energy state in a relatively near future by star standards, and so on. It is the instability of the processes occurring in the sources that makes it possible to relate changes in planetary media with the height of these sources above the horizon. For stably emitting stars, this dependence is not so clearly expressed.

So, Kozyrev's astronomical observations opened the way for astronomers to study the real (true) states of cosmic objects, but this discovery was made earlier than could be understood and accepted by scientists. Modern official science does not in principle consider the instantaneous spread of energy (information). It is believed that this possibility has remained in the past — in the classical theory of gravitation of Newton, where the gravitational interaction is propagated instantaneously, i.e., long-range interaction takes place. Contemporary scientists also do not consider the possibility of motion with superluminal velocities supposedly “forbidden” by Einstein. There is even the concept of a “light barrier” that does not allow motion with superluminal velocities. It is interesting to use the very term “barrier”. Such a choice means a ban on further development of the Theory of Relativity, which scientists have placed themselves. In fact, from this theory it follows only that the particles of matter can not only exceed the speed of light, but also reach its values. However, in Nature there are electromagnetic fields, the quanta of which (photons) propagate at the speed of light. It is possible that in time, hypothetical tachyons will be discovered — superluminal “particles” possessing an imaginary relativistic mass that extend beyond what is called the “material world”. And the modern theory of space-time is not at all the last word in science: there will be new discoveries and new methods of describing the World. And while Kozyrev brilliantly demonstrated the experimental proof of the existence of instantaneously spreading energy (information) and gave a theoretical explanation of the phenomenon within the framework of the Special Relativity Theory, i. e., on the basis of flat space-time (Minkowski Space). The main thing here is that the scientist discovered in the universe the existence of an instant connection with everything. At least, this relationship is realized in the intergalactic space, which was demonstrated by Kozyrev while observing another galaxy, the Chained Maiden Nebula [5]. And these experimental results exist regardless of whether modern scientists can explain them. Nevertheless, different explanations are needed, if only to orientate and understand in what direction it is necessary to move further in the study of the Universe. In addition, every attempt to explain the results or to deny them will show how much energy the obtained data correspond to the energy of our time.

So, the presence of an instantaneous relationship of the observer with the remote objects of the

universe is brilliantly demonstrated by a professional astronomer. And what about the recognition of this discovery, which opens for humanity fundamentally new horizons of development, actually paving the way for the stars? It, as they say, “had to go to court”. Most of the circulation of the collection with articles by Kozyrev was destroyed by order of the then leadership of the Academy of Sciences of the USSR. Since then, more than 40 years have passed, but so far nothing has changed in principle. In official science, there is still a “ban” on the movement at a speed exceeding the speed of light. And what can we say about the instantaneous spread of the signal? This is not even seriously discussed. Only here nobody's fault in this state of affairs. “Guilty” here, if I may say so, is Time itself. It was it that formed such a structure of human consciousness on the part of the span of the planet in the Galaxy, corresponding to our civilization. The vast majority of modern people have anthropocentric thinking, considering human reason the highest achievement of the Universe. This approach leads to the fact that a person feels isolated from both Nature and from other people. The same thing happens in any human activity, in particular, in science. The main direction (the Main Stream) in all sciences is the study of the exclusively material world. Therefore, everything that can not be explained only by material influences is knowingly denied. Once accepted scientific knowledge is considered “absolute truths” and can not be questioned. Hence, in particular, the categorical rejection by the official science of the idea of the possibility of instant energy exchanges follows. But it will not always be so. Moreover, our planet, along with the Sun, flies in the Galaxy, crossing the Time Sector. Moreover, our planet, along with the Sun, flies in the Galaxy, crossing the Time Sector. At this stage of human civilization, the Earth approaches the border of the Time Sector, which has a higher energy than the previous one. And staying there will form a human consciousness, and, hence, the human body in such a way that it will correspond to the higher energy of the surrounding space. In the new world, the human consciousness will again be planetary-cosmic. This means that people will feel their unity with Nature, feeling themselves as parts of the Universe, where everything is interconnected and everything depends on everything. It remains only to cross this invisible for eye, but tangible for the material body border between the Sectors. The thing is that we live now in the border zone, and our consciousness is the result of a long existence for many generations in a relatively favorable environment, comfortable for the human body.

It's time for us to learn to think differently to match the energy state of the upcoming section of the span. Therefore, it is necessary everywhere to look for the shoots of a new set of diverse events in a kaleidoscope, and, most importantly, to choose from among all the variety exactly those sprouts that will bear in the future abundant fruits. Modern astronomy, based on the technical achievements of mankind, which allows us to deduce telescopes to near-Earth space, receives a lot of observational data on the structure of the remote space objects. However, the subject of research both on Earth and in the near Cosmos, so far only the electromagnetic radiation of objects remains. Therefore, it turns out that the farther away from us the space object, the “younger” it looks. So, we see the brightest star of the northern hemisphere of Sirius as it was 8.6 years ago. The beautiful star cluster of the Pleiades has brought to us its electromagnetic image about 400 years ago. And the distance to the galaxy Chained Maiden Nebula is estimated at about 2.2 million light-years! And so, so we will always look back at the past? Or will we learn to live in the rhythm of the Cosmos in order to respond quickly to the challenges that Time itself sends us? The prerequisites for mastering new methods of interaction with the Cosmos already exist: their foundations are laid down in the works of the outstanding researcher of Time, Nikolai Kozyrev. In the next section, we will also talk about the structure of Time, which is examined from other positions.

§5. Shnoll's experiments — a demonstration of the fractality of Time

Fundamental experiments, which give an opportunity to look at the world in a new way, were started by Simon Shnol, then a beginning biophysicist, in September 1951 [15]. The scientist worked simultaneously with the materials studied in physics, and with biological material. Physical experiments consisted in the analysis of measurement errors when working with radioactive sources, biological experiments in the study of the enzymatic activity of muscle proteins. The first area of research relates to nuclear physics, the second — to biochemistry. Such synthetic research is very important, as they are laying new ways and allowing to build bridges connecting the areas of knowledge, which at first glance are very far apart. The basis for the bridge was the problem that arose: in the morning it was possible to achieve high accuracy of measurements, and in the second half of the day a wide range of results was obtained. Exploring it, Shnol came to the conclusion: “Contrary to the limit theorems, the disparities that I found in the measurements were characterized by very narrow peaks in comparison with what should be according to the theory” [15]. Here we are talking about the probability theory, created to describe the probability of random events. This theory

is based on the law of large numbers, according to which the reliability of the measurement results is determined by their number: the more measurement points, the more correctly the resulting picture. However, at first the scientist did not have the opportunity to make a large number of measurements, so he came up with a method of histograms, which no one used before.

Histogram is a graph of the change in the number of pulses over a short time interval. Mathematicians call such pictures “insolvent”, because in them the number of measurements is comparable to the number of time intervals in which the number of pulses per unit of time is counted. They reject this method, because with a small number of measurement points the law of large numbers is inapplicable. However, the forms of these “untenable” histograms were repeated on intervals of measurements of different duration. The histogram, in contrast to the generally accepted graphs and diagrams in science, characterizes not the magnitude of the amplitudes of different processes, but changes in the number of pulses in a small time interval (seconds, minutes) during measurements over long periods of time (days, months). The histogram, in contrast to the generally accepted graphs and diagrams in science, characterizes not the magnitude of the amplitudes of different processes, but changes in the number of pulses in a small time interval (seconds, minutes) during measurements over long periods of time (days, months). The shape of the histogram, in which the number of points is less or comparable to the number of measurements (discharges), characterizes *the fine structure*. This structure is a clear indicator of the state of the world in a given place at a given moment in time. In fact, the measurements carried out by scientists for several decades and continuing at the present time are aimed at a detailed study of the structure of Time at both small and large intervals, i. e., both on a small scale and on a large scale. It is very important that the histograms of time intervals of different scales are *completely identical for completely different processes*: the emission of α particles, the rate of chemical reactions, physiological processes in the tissues of living organisms, ... In any case, you only need to know the local time and coordinates of the object. At the same time in the given place, the same form of histograms is obtained for any process. If we consider long histogram series containing hundreds of objects, even if the rows do not overlap in time, almost always the shapes of the closest figures are more similar than the distant ones. It was obtained that, regardless of the nature of the process being studied, the shape of the histograms has *a daily period* of variation. When going over to the measurements of small intervals (hourly, minute, second) it became clear that for minute and second intervals there are two types of day: solar (1440 minutes or 24 hours) and star (1436 minutes or 23 hours 56 minutes). And this is clearly manifested for any processes. At different longitudes, the same pictures are observed: similar diagrams appear at the same local time point. As the planet rotates, the shapes change, but their changes are identical. Thus, the scientist examines the structure of Time, in particular, its density as a characteristic of the number of pulses per unit of Time. On the basis of the material obtained, Shnol makes a fundamental conclusion: *the shape of the histograms does not depend on the nature of the process, but only on the site of the experiment and local time*.

The scientist became interested in the question of how the shape changes at the North Pole, through which the axis of the daily rotation of the planet passes. As a process, he investigated the behavior of the α particle flux emitted by plutonium-239, whose half-life is 24,000 years. Since there was no way to get to the North Pole, he sent a narrow tube of the device's collimator to the Polaris: the alpha-particle flux ceased, that is, the daily period disappeared. “And it became clear that the fine orientation of the direction of flight of the same alpha particles — the most important condition for the existence of a certain form of histograms at the moment” [15]. It should be noted that in this case the direction in question coincides with the direction of the earth's axis, around which our planet rotates like a gigantic gyroscope. The axis is directed to the Polar Star from the constellation of the Lesser Bear, and the North Pole is the projection of the axis of rotation on the surface of the Earth. In this singular point there is no concept of longitude — hence all directions lead to the south, and the concept of local time loses its meaning. For practical use, the World Pole is used at the North Pole - a modern replacement for the Greenwich Mean Time. But in reality there is a flow of time on the pole connected with the orbital rotation of the planet: after all there are all 4 seasons, determined by the height of the Sun above the horizon. Spring at the North Pole, and with it a polar day, begins on the day of the vernal equinox (March 21), when the Sun rises above the horizon for the first time this year. It reaches a maximum height of 23° 27' on the day of the summer solstice on 21 June. Then the Sun descends every day lower, describing horizontal circles in the sky and on September 23 (the beginning of autumn) it disappears for half a year under the horizon — the polar winter comes. With certainty it can be said that seasonal changes at the pole should also appear on the form of histograms. And as you move away from the singular point (the Pole), the concept of longitude appears, and with it the local time associated with the daily rotation.

Another effect was obtained. It is known that twice a day the Earth in its daily rotation crosses the orbital direction of motion: at 6 o'clock in the morning the planet rotates against the orbital motion, and at 18

o'clock in the evening both directions coincide. The scientist discovered that during these hours of the day, for a certain time, the histograms "... first shift in one direction, and then in the other direction" [15], that is, as it were, "back away". The researchers called this phenomenon the "palindrome effect". It also occurs in the case of retrograde motions of the planets. The same thing was observed for Mercury, Venus, Mars: at the moment of crossing the celestial equator, the retrograde movement began at first in one direction, then in the opposite direction. Such studies were conducted for 7–10 years. Shnol also found it important to explore the histograms in the days of the equinoxes. But since they are only twice a year, the scientist decided to investigate the movement of the Moon, as it crosses the equator 12 times a year. The changes in the histograms turned out to be similar to the solar ones.

For greater confidence in the results of the experiments, an artificial rotation. Shnol's employee, Vladimir Shlektarev, made an installation simulating any movements of the Earth and satellites. The picture of what he saw coincided with the expected: during the period of any duration, the same result was obtained. For example, when the machine did 4 revolutions per day, 5-hour periods of histogram change were obtained. At the same time, the ratio 1440 to 1436 was preserved at any intervals. "No less surprising is the fractality of this picture. We see the same thing in milliseconds, minutes, hours, days, annual periods: for a simple calendar year of 365 days and for the "tropical year", when 5 hours and 45 minutes are added to the calendar year" [15]. Then the scientist concludes: "... we scan the surrounding space, and we study its heterogeneity. And it is fractal. We can say that we are scanning the fractal "coastline" of the Universe ... The law of large numbers is inapplicable to this physics. The greater part of humanity draws probabilistic distributions, and we distribute it differently. The central limit theorems, the criterion for the concurrence of hypotheses, are not needed when we see the fine structure of the surrounding space. It turns out to be inhomogeneous and non-isotropic — unequal in different directions" [15]. Shnol is sure that the reasons for the discreteness of the observed pictures are concealed in physical phenomena, namely, "... the condensation of the masses around which we are moving. It bends space and time, but does not change scale" [15]. In this connection it would be very interesting to obtain histograms caused by the influence of the true Sun. After all, for 500 seconds the planet flies in the Local group of stars at a speed of 250 km/sec the distance is 125,000 km. Therefore, the electromagnetic radiation of the solar disk falls on the planet at a smaller angle than the energy impact of the true Sun. It is most important in this situation to get the histograms exactly at the time of the upper culmination of the true Sun and compare them to the histograms of the next 500 seconds during which the materialization of electromagnetic radiation takes place — in fact, at this moment, the sun's effect on the terrain is maximum.

Kozyrev and Shnol argue that the positions of space objects, the effects of which are transmitted instantaneously, affect the receiving devices, regardless of whether these objects are at the time of observation above or below the horizon. All kinds of the Sun's impact on the planet, including the gravitational and electromagnetic — are materialized states of different ranges of the energy impact of the invisible Sun, ahead of the visible disk on the ecliptic by 2.1° or 8 minutes 24 seconds, therefore the moments of the culminations of the observed (past) and true (present) Sun are spaced in time by 500 seconds, i. e., by 2.1° along the ecliptic. To record the instantaneous impacts of various space objects, Kozyrev used a metal-film resistor, and the process was a change in its electrical conductivity [3, 4]. In works [13, 14], where the effect of the true positions of the Sun on biological structures was investigated, it was established that, under the influence of the true Sun, bacteria were more actively building colonies. Therefore, it would be extremely interesting to apply the Shnol technique, which allows to study a wide range of physical and biological processes, to the problem of the influence of the true Sun on physical and biological systems.

However, the most important achievement of Shnol is a breakthrough, which will then inevitably lead to the realization of the fractal structure of Time, and this is the first step to its practical mastering — "time travel". Thanks to the works of Mandelbrot and his followers [16, 17], modern scientists gradually come to understand the fractal structure of space. But in the beginning many of them did not consider fractal mathematics as a science. However, the main engine of scientific progress is not a theory, but an experiment. The histograms obtained by Shnol unequivocally point to the heterogeneity of the flow of even such processes as radioactive α -decay, and, it would seem, what can be more stable? Since anywhere in any process occurs in Time, this means that Time itself is not homogeneous. Experience with the guidance of a collimator on the Polar Star (the North Pole of the World) brilliantly demonstrated the anisotropy of Time, that is, the existence of special (highlighted) directions in space. (Homogeneity and isotropy is the equality of all points and all directions in space). Since any event (process) has its coordinates in space and time, later it makes sense to talk about the Space of Time as an arena, where all the events of our world unfold. Moreover, Shnol showed that the inhomogeneity of Time, which takes place for intervals of any duration,

has a fractal structure. From this position, the electron is equal to the universe, that is, both of these structures are subject to the same laws. It's only a measurement scale: the electron seems small to us, and the Universe is huge because the growth of the observer (person) is about a meter. The microscope and the telescope allow us to penetrate the view into the spaces of very small and very large structures compared to the human body, but we can not use in these spaces such instruments as we are familiar to us, like clocks and rulers. Therefore, measures of length that are not directly perceived by the human eye due to their smallness are used for measurements in the space of extremely small objects of the universe (atoms and elementary particles). Thus, the measuring ruler for atoms and their nuclei are values of the order of 10^{-8} cm and $10^{-12} - 10^{-13}$ cm, respectively. A unit of measurement of 10^{-13} cm is called 1 femtometer (fm). It is applicable for measurements of proton and neutron sizes. Such particles as quarks, electrons, neutrinos are still considered point (their internal structure is unknown). And for measurements in the space of distant objects of the Universe (stars, galaxies, their clusters and superclusters), a specially invented "ruler" — a light year is used. This approach is very interesting because it directly identifies the spatial and time intervals: one light-year is the distance traveled by a beam of light at a speed of 300,000 km/s for a period of one year. At this stage in the part of the universe where we live, the light in the cosmic medium propagates at a constant speed, which allows us to measure the distances to cosmic objects with light "rulers".

People perceive the world around them both with the help of their senses, and through devices that expand the range of perception. The design of each device is related to the task posed by man. In other words, a person's consciousness directs him to build one or another device that will allow him to obtain more information about the World. And along this path there are two main methods: 1) improvement of instruments in order to move as far as possible in already existing fields of research (create more sophisticated microscopes, telescopes, etc.); 2) search for fundamentally new directions that allow us to look at the world from other positions. In this chapter we are talking about such independent researchers of Time, whose work, unfortunately, does not squeeze into the close framework of the modern scientific worldview. And one of the reasons for this is the desire for comfort in everything, in particular, in scientific research. More precisely, those works that either leaked through the Time filter, or were taken immediately. The difficult trickling of new ideas means that they are ahead of their time, but will be taken afterwards. The acceptance of new ideas immediately means their correspondence to the spirit (orientation) of Time at this stage. Kozyrev's research, categorically not perceived by official science, clearly demonstrated the instantaneous relationship of the observer with relatively close stars and another galaxy. Morozov clearly established the interrelation of weather phenomena with processes occurring in some galactic directions. Shnol experimentally established fractality of Time on intervals of different duration. Einstein, building on the works of his predecessors and contemporaries, built a four-dimensional world and led us from the closedness of the three-dimensionality to the first step leading to multidimensionality. Mandelbrot, with the help of the theory of fractals, finally derived mathematics from a cozy world, where the functions are basically smooth, do not have discontinuities, in the extreme case, more or less smoothly go to infinity, where the discontinuities of functions and their derivatives of different orders are not welcomed. True, in mathematics, the theory of catastrophes [18] paves its way, which can also be considered as a model of the World, which is on the verge of transition from one state to another. The catastrophe in translation from Greek is a leap, and in order to jump (and not just move) from one world to another, it is necessary to tear ourselves away from the usual concepts and to prepare ourselves for the fact that the world can change beyond recognition. It is the preparation for the perception of new ideas about the World that is the purpose of this book. The appearance of the above-mentioned works of independent researchers, both purely theoretical and experimental, indicates that we are on the threshold of a new stage of our infinite space path, where the results, so unusual at this stage, will become an integral part of the new science built on other principles than the modern, where the only actor is the material world with all its attributes.

§6. Fractal mathematics as a method of describing the structure of Infinity

One of the transitional bridges between the modern and new description of the World is the theory of the fractal structure of the universe [16, 17]. The brief information about fractals presented here will play the role of one more "niche of perception", through which it will be possible to approach the realization of the fractal structure of the energy world. In the perception of most modern people, a three-dimensional space is real, in which there are countless different material forms — from the smallest elementary particles to the very material body of the Universe, filled with various radiations, gas, dust. In this space, smaller structures revolve around larger Centers. In other words, the structural basis of the Universe is an object that rotates

relative to the Center, which in its turn is an integral part of a larger-scale object, and so on. The mathematical basis of the General Theory of Relativity — Riemannian geometry — does not allow us to give an adequate description of such a picture. Within the framework of this theory, it is possible to correctly calculate the motions of individual objects in the gravitational field of the central body: planets revolving around the central “sun”, stars revolving around the Local Centers or around the Galactic Center. In this case, the central body itself is regarded as a point body, and the gravitational fields of its satellites are considered negligibly small, that is, they are trial particles. They do not affect each other and the central body, and themselves move along trajectories determined by the mass of the central body and the distance to it. This concludes the exact calculations, since the mathematical resource of the base itself is exhausted — the geometry of the curved space. The fact is that exact calculations are possible only for objects considered as single or moving in the gravitational field of another body. Besides, the concept of “solitary” is purely conventional: even if the body breaks out of the gravitational captivity of the central body, it will be trapped in a larger body, for every material body that has a mass is subject to gravitational attraction. Therefore, the concept of motion by inertia only means that at some stage the body moves in space “uniformly” and “rectilinearly” because it is at a considerable distance from the centers of attraction. The exact description of more complex configurations of the type of motion along a spiral trajectory that is part of a larger scale spiral is difficult because of the purely mathematical complexity of the calculations in the curved space. In addition, why should we assume that the space of the universe is limited only by the space that is currently observable? Maybe it is infinite in space and time? But then we need to turn to the means of description, which allow us to try to imagine, at least on a mental level, the Infinity in space and time, more precisely, the infinite Space of Time. Perhaps these mental constructions will ultimately lead us to a perestroika of consciousness, and we are at least partially aware of the Infinite World. The fractal geometry will serve as a mathematical support on this path.

In modern interpretation, the term “Infinity” refers to the categories of human thinking used for the characteristics of infinite, infinite, innumerable objects and phenomena for which it is impossible to indicate the boundaries or quantities of a measure. Infinity is the opposite of all finite, countable, having limits. But this definition is static in its essence. Meanwhile, both on our planet and in the distant cosmos everything lives, develops and dies, more precisely, passes into other forms (unless, of course, one considers that life is only a “mode of existence of protein bodies”). In mathematics and philosophy there are many definitions of Infinity (potential, actual, continuum, ...), but they are too abstract and do not give a clear idea of the subject. The fact is that all these definitions are far from Nature. Much closer to the description of the Nature of the study of Benoit Mandelbrot, the creator of fractal geometry [16]. The word “fractal” comes from the Latin word “fractus” — broken. Fractal is an infinite self-similar structure, each fragment of which repeats as the scale decreases. The concepts of fractal and fractal geometry appeared in the late 1970s, and by the 1980s they had become firmly established among mathematicians. The simplest abstract example of a fractal is a line that at the end splits, and each of its segments also bifurcates. In principle, such a process can be continued indefinitely. A natural analogue of this process can serve as a tree where branches branch off from the trunk, from them other, smaller ones. The smallest branches end in leaves, where the process of division continues: the main veinlet in the leaf branches and divides into smaller ones. More than 500 years ago, Leonardo da Vinci formulated the rule: “The thickness of all branches of a tree at any height, combined together, gives the thickness of the trunk”. The rule of Leonardo from the notebooks of Leonardo da Vinci was released by Jean-Paul Richter in 1970. At the same time, for each tree there is a similarity of the branching schemes of branches in the crown and veins in the leaves. At the same time, for each tree there is a similarity of the branching schemes of branches in the crown and veins in the leaves. It can be said that the upper and lower parts of the tree are mirror images of each other relative to the interface between the air and soil media serving as a mirror. By the same principle, the human circulatory system is arranged: smaller arterioles depart from large arteries, from them small capillaries, the thickness of which decreases with each branching. In this case, each fragment of any scale has a similar structure.

Another example is the coastline of the sea, which retains its shape as the scale increases. It looks the same when viewed from the Cosmos from a satellite, from a bird's eye view, from the height of human growth. In the first case, bays and peninsulas are visible, in the second — bays and protruding capes, in the third — small seizures of the beach and protruding pebbles. At the same time fragments of different scale for each coast are identical in shape for each shore. It is interesting to note that the measured length of the shoreline is the greater, the smaller the scale of measurements, since with each reduction of the scale there are many new convolutions and depressions. In the limit, when the measurement scale tends to an infinitesimal amount, the length of the multiply tortuous line becomes infinitely large. This simple example shows that the fractal structure is in principle related to infinity, since there are no formal limitations on the

possibility of both increasing and decreasing its fragments, which are also fractals.

From a formal point of view, fractals are spaces with fractional dimensions. Fractal geometry is a very interesting direction, since it potentially contains the ability to move from one dimension to another. Imagine a crumpled sheet of paper. In some places of bends, different parts of the sheet can come into contact, which allows you to move from one part to another. Such a sheet can not be considered a two-dimensional surface, but it is not a three-dimensional volume either. This is the simplest example of a fractional dimension: it is less than three, but more than two. Intuitively clear: the more crumpled the sheet, the closer its dimension to three. Conversely, a slightly crumpled sheet of paper is almost flat, close in structure to a two-dimensional one. Let's make a simple action: draw two points on a sheet of paper, and then strongly doubt the sheet in such a way that these points become close. The distance between them on paper will be the same in both cases, but in case of crumpling these points can be brought together, right up to the point of contact. And then it remains to solve only the problem of instant "transition" from one point of the plane to another through three-dimensional space. This process looks like teleportation — "practically an "instantaneous" movement (an extra-space jump) from one point to another. It is inexplicable in the framework of Newton's theory, in which the concept of time as one of the dimensions is missing, and space is Euclidean. From the point of view of the General Theory of Relativity, the process of non-quantum teleportation is theoretically possible in some exotic space with a non-Euclidean metric [19, 20].

Of particular interest is the use of fractal geometry to describe the structure of the universe. His cosmological and philosophical views Mandelbrot set out in an unpublished note "Two Heritage of the Great Chain of Being", and also in a book "Fractal Structure of the Universe" [17] with Jury Baryshev and Pekka Teerikorpi. The authors created a theory of infinite nesting of matter based on inductive logical constructions based on the data of modern physics and the results of astronomical observations concerning the study of the structure of the universe: electrons revolve around centers of atomic nuclei, planets revolve around stars, stars revolve around galactic centers, galaxies revolve around centers of galactic clusters of a higher order, ... According to this theory, the observed Universe consists of an infinite number of levels of matter with similar characteristics, constructed according to the fractal principle. At the same time, particles (carriers of matter) are constantly born and then transformed into carriers or their own or other levels. The space in this theory has a fractional dimension, tending to three, and time is considered an independent coordinate, depending on the velocity of matter motion. In fact, this theory describes the structure of the observed material universe. The space is filled with matter, where each element (structural unit), on the one hand, is part of a higher-order structure, on the other — consists of lower-order structures (similar to a nesting doll whose dimension is close to three). The universe in this theory is eternal in space and time, but it is unclear where the system draws energy for infinite existence. After all, it lives only at the expense of internal (exclusively material) resources, which sooner or later must be exhausted: the law of increasing entropy in purely material systems is inexorable. The idea of fractality in itself is very good here, because it essentially reflects the observed picture of the device of the material world, where every body: 1) is part of another larger body; 2) itself consists of smaller bodies. Fractality is a fundamental property inherent in Nature. Since any fractal is an infinite self-similar structure, in principle it is possible to "enter" into any of its fragments and move both towards increasing the scale and towards reducing it. Because of the fractal properties, this process is infinite. The representation of the material world as an aggregate of different material objects constructed on the principle of fractality automatically means the possibility of both an infinite growth of their fragments in Space and their infinite reduction. Structures differ only in scale. From this position, the electron is equal to the universe, and vice versa. It's only the scale that the observer uses. Obviously, the choice of scale is related to the capabilities of the observer, in particular, to his physical nature (growth), as well as to the devices that he uses. (While it is only a matter of the material world). The microscope reveals the depths of the microworld, the telescope — the depths of the Universe.

Fractal arrangement of natural structures of different scale suggests that everything in Nature is built according to the Uniform Law, which is universal in nature, so this Law is the same for all structures — from the electron to the boundaries of the observed Universe. Moreover, it must be satisfied both for infinitesimal and for infinitely large structures. In fact, the minimal fragment of the fractal is Zero, and the maximum is Infinity. At the same time, in order for this structure to function forever, a constant exchange of energies between fragments of different scales is necessary. In the material world, such a structure can not exist forever: it inevitably either collapses due to various inconsistencies in interactions (catastrophes), or will softly die out due to natural — "aging" caused by the attenuation of the processes of exchange of material energies at all levels (analogy — friction in mechanical processes). However, this will not happen if the material world feeds on the inexhaustible Infinite Power of the non-material (energy) world. Considering the material world as a materialized (manifested) state of the energetic world, we come to the conclusion that the

energetic world has a fractal structure. Then the fractals of the material world are the materialized states of the fractals of the energetic world. And certainly there must be a materialization mechanism that turns the non-material fractal “Tree” into the trees of the material world, and the intangible fractals “Man” and “Star” form a multitude of different people and stars. At the same time, there are no completely identical natural objects in the material world, while in mathematics fractals constructed according to the same formula will be completely identical in form. The structure of natural objects can not exactly be described by any formulas, even very complex ones, since each fragment of the fractal of the material world represents a materialized (condensed to the state of matter) portion of energy that is part of the Infinity Energy.

All natural objects have a finite period of existence in a certain form, hence their material bodies either smoothly evolve from the moment of birth to the moment of transformation, or the transformation takes place “abruptly” — *a catastrophe* takes place. Let's give an example: one tree grows and dies naturally, reaching a certain age, another can be broken by the wind or felled by man. Obviously, in the second case, a catastrophe takes place in the life of a tree. But the smooth flow of life, and its abrupt breakage are manifestations (in dynamics) in the material world of certain processes that can not be described with the help of only the formal methods of modern science: we do not know the underlying causes that gave rise to them. Of course, we can say that the tree was killed by the fact that a gust of wind came or because a person decided to cut it down. And it can be said in another way: the whole process of life of any structure is a continuous chain of interactions with other structures, where the interactions (events) in the material world are manifestations of the processes taking place in the energetic world, because it is primary. This means that the life of any material body is the materialization of a continuous chain of interactions of fractals of the energetic world that generate the habitat of every material body, including the body itself. In this case, all the events of the material body are predetermined in advance, since every body is a materialized state of energy of a certain kind, which is an integral part of any fractal (the fragment of Infinity). Therefore, every event in the life of any structure is a link in the continuous infinite chain of rigidly fastened events of other bodies and phenomena that follow one another in a certain sequence. The human body consists of planetary media (gaseous, liquid, solid), where each medium is the materialized state of a certain fractal of the energy world. Since all the media touch each other (air permeates both liquid and solid media), this means that the fractals of the energy world interact with each other. Moreover, the space of the Earth is part of the space of the Sun, which is part of the space of the Galaxy, and so on. The solar and galactic spaces are also filled with their material environments and physical fields. Being in the gravitational field of the planet, we are simultaneously in the gravitational fields of the Sun and the Galaxy. Similarly, galactic and solar environments permeate our planet, including the human body, that is, interact with it. But how is this interaction carried out? И что может служить его носителем? And what can serve as its carrier?

Obviously, the answer to this question can not be found in purely logical reasoning, even backed up by mathematical calculations that are correct from the point of view of mathematics. ***The point here is different: modern science describes only objects and phenomena of the material world.*** This also applies to fractal mathematics [16]: in fact, the basis for the fractal images obtained by Mandelbrot is mathematical formulas - abstractions that in one way or another describe the real forms of objects or phenomena. Indeed, many natural structures and their fragments can be approximated by mathematical formulas. It turns out that natural structures (outlines of mountains and their parts, trees of different species and their distribution in the forest, outlines of coastal lines observed from different heights ...) are fractals. But not even the most perfect formula will explain the reason for this, since the cause itself is outside the material world. The outstanding biophysical scientist, Professor Simon Shnoll, as a result of many years of experiments with different types of physical and biological processes, came to the conclusion that Time itself has a fractal structure. In the next chapter, this question will be considered in detail, but for now we are examining the question of what additional information besides the generally accepted by modern scientists contains the most advanced theory of the twentieth century — the General Theory of Relativity. Recall that Kozyrev, in explaining the results of his astronomical observations, used her special case — the Special Relativity Theory, based on a flat space-time in which there is no gravity. In the next section, the “niches method” will be applied for a more detailed explanation of the results of Kozyrev's astronomical observations. For the explanation, modern scientific methods will be used: in some cases, their application will make it possible to understand in what direction it is necessary to move further along the path of cognition of the world. But if the time for solving a particular problem or for understanding the essence of some phenomena has not yet come, the explanation will not be accepted. However, it does not follow from this that it is necessary to deny everything that does not fit within the framework of generally accepted concepts. However, it does not follow from this that it is necessary to deny everything that does not fit within the framework of generally accepted concepts. Perhaps, in due course it will become a wide road itself, perhaps — it will remain a footpath on the roadside of the

main road. But the very fact of such attempts indicates that the human mind is trying to expand the horizons of the “obvious”.

§7. The General Theory of Relativity is the initial step of an infinite Stairway to the Sky

The task of this section is to show the true possibilities of Riemannian geometry as the mathematical basis of the General Relativity Theory (GTR). At present, the mathematical foundation of general relativity is a four-dimensional Riemannian space with additional constraints introduced from so-called “physical considerations”: 1) limitation of the field of existence of the physical observer, 2) prohibition of superluminal velocities, 3) unidirectionality of the “arrow” of time, 4) absence of discontinuities in the observed time and space. All restrictions are imposed on the grounds that in the real physical world there are no velocities exceeding the light one, the time evenly “flows” from the past to the future, the three-dimensional space is continuous, and so on. In other words, modern science is mainly seeking to explain the “obvious”. And the main goal of science is to give an acceptable explanation as soon as possible to any new phenomenon or result of experience. And if it is not quickly explained, or the result (phenomenon) does not fit into the modern scientific framework, the “new” is vehemently denied or demonstratively “not seen”. That is why the long-held concepts supported by obsolete “props” are held for so long, although it is high time to build on the site of the old building a new one from modern material — concepts that include neglected and unrecognized results. But in addition to the experimental results that point to new directions in the development of science, we first need to study in detail the theoretical possibilities of the mathematical base of general relativity, unless we simplify the task in advance, confining ourselves to what can be explained by “obvious”. If we use the mathematical resource of general relativity to the full, it turns out that the real possibilities of Riemannian geometry destroy such mythical “barriers” as: 1) “impossibility” of instantaneous information transfer in space-time; 2) reversal of the course of time. In the next chapter, such a singular state as a break of space will be studied in detail. Singular states should be investigated first theoretically, and not try to eliminate them or ignore them: after all, the study of precisely the special states of space-time-matter can lead scientists to new horizons of knowledge of the World.

The presentation of the mathematical foundations of general relativity will serve as a basis for expanding the concepts of “space” and “time” from the point of view of a real observer. The transition from three-dimensional space to space-time, carried out in the last century, is a fundamental step towards the realization of the multidimensionality of an infinite Space, one of whose cells (the fragment of the Fractal “Infinity”) is our Universe. The division of basis vectors into time-like and spatially similar leads to the understanding of time as a dimension of a fundamentally different nature than spatial dimensions. This division is an illustration of the well-known fact that time is measured by hours, and space by rulers. The realization of time as a new dimension is the way to the exit from the captivity of three-dimensional space and the first step to the realization of multidimensionality. The remaining dimensions are (for the time being latent) in the human mind, so the introduction of additional time coordinates would be only a formal step. In this section it is proposed to extend the notion of one-dimensional time, introducing such concepts as stopping time and the reverse course of time.

First, let us briefly summarize the general information on general relativity necessary for understanding the further material. In 1915 – 1916, Einstein published a paper in which a new concept of the World was formulated, called the General Theory of Relativity. It was created on the basis of numerous studies conducted by different scientists: Henri Poincare, Herman Minkowski, Marcel Grossman, and others. Scientists were presented with curved space-time, the curvature of which is due to the presence of masses. The mathematical base of general relativity is Riemannian geometry, which is based on the theory of curved surfaces, obtained in 1822 by one of the greatest mathematicians, Karl Friedrich Gauss. The foundations of geometry that generalizes the Gaussian surface theory were formulated by Bernhard Riemann in 1854. Riemannian spaces have a smooth structure that allows each tangent to introduce a tangent plane space in which the geometry of a flat (Euclidean) space can be used. This means that in the vicinity of each point, we can apply the usual means of measurement — “rulers”. The quotes are set because the Riemannian spaces theoretically can have any integer dimension n — from one to infinity, therefore the number of “rulers” depends on the dimension. The number of measurements (dimension) of space is determined by the maximum number of independent basis vectors (basis) that is possible in this space. The basis of a Riemannian space of a given dimension at each point is constructed in a flat space of the same dimension tangent to the Riemannian space at this point. If the basis vectors are linearly dependent, the dimension of the space decreases. There are two types of basis vectors: 1) real, whose squares of length are positive; 2)

imaginary, whose squares of length are negative. If all the basis vectors of the space are either real or imaginary, it is called a proper Riemannian vector. If some of them are real, and the others are imaginary, then the space is pseudo-Riemannian.

Flat spaces belong to the class of Riemannian spaces, but a single basis for them can be introduced immediately in the entire space. In this case, all basis vectors can be mutually orthogonal, and their lengths are single or imaginary. Flat spaces, all of whose basis vectors are either single or imaginary, are called proper Euclidean spaces, spaces with a mixed set of vectors — pseudo-Euclidean. A regular Euclidean proper space is an ordinary Euclidean space in which one can introduce a global system of Cartesian coordinates. A four-dimensional pseudo-Euclidean (flat) space with three real and one imaginary basis vector is the basic space of the Special Relativity Theory (SRT). It is called the Minkowski space, since it was Herman Minkowski who proposed to introduce the fourth (time) coordinate $x^0 = ict$, where i is imaginary unit, t is the coordinate uniformly current time, and c is the speed of light. Often, for convenience of calculations, a pseudo-Riemannian (pseudo-Euclidean) space is used in which the time base vector is real, and the spatial basis is imaginary. Its signature has the form: $+ - - -$, where (+) means the realness of time, and (-) — the imaginary of spatial directions. A four-dimensional pseudo-Riemannian (curved) space with a similar set of basis vectors is the space-time of general relativity. According to Einstein, the curvature of space is due to gravity.

Riemannian spaces belong to the class of metric spaces, since they define a metric, a function that allows one to measure the lengths of various objects in space. A metric is the square of the distance between two infinitely close points in a Riemannian space of dimension n . The metric has the form: $ds^2 = g_{\alpha\beta} dx^\alpha dx^\beta$, where $g_{\alpha\beta}$ — metric coefficients (the cosines of the angles between the basis vectors), the contraction by indices means summation. In General Relativity, $n = 4$, where 3 coordinates are spatial, and the fourth is temporary. It is often denoted by 0. Coefficients g_{ik} ($i, k = 1, 2, 3$) determine the structure of a 3-space, g_{i0} are related to the rotation of the 3-space with respect to time, g_{00} determines the rate of physical time in a given place at the moment of the ideal (ephemeris time t). A four-dimensional pseudo-Riemannian (curved) space with a set of basis vectors analogous to their set in SRT is the space-time of General Relativity. The idea of applying it to describe the geometry of the world was offered to Einstein by a mathematics teacher from Switzerland, Marcel Grossman. Einstein agreed with his proposal, since the use of Riemannian spaces has certain advantages over spaces that have other geometric properties. The fact is that a metric form in a Riemannian space is an invariant, that is, it is determined solely by the structure of the space itself. Otherwise it would be necessary to define this form as a function depending on the coordinates, which would significantly complicate the problem of observable quantities, which is already nontrivial for curved spaces. The theory of physical observable quantities (chronometric invariants) is determined in the reference system, accompanying the observer, was created by A.L. Zel'manov [11]. The essence of the theory consists in constructing quantities whose values within a given frame of reference do not depend on the choice of a coordinate grid applied to a given reference body, but depend only on the set of clocks (time lines) theoretically located at each point of the reference frame. In other words, the reference system is determined by the choice of time lines (a set of clocks) and does not depend on the set of rulers (for spatial measurements). The physical observables are defined as the projections of four-dimensional quantities for time and space [11, 12].

Since the base space is crooked, measurements can be made only in a small neighborhood of each point, so an elementary four-dimensional distance between two neighboring points is considered an infinitesimal vector. Its length is calculated using the metric. Metric coefficients $g_{\alpha\beta}$, describing the physico-geometric structure of this vector, are obtained by solving the equations of the general relativity field. The field equations of general relativity are a system of 10 nonlinear equations of hyperbolic type. Their right-hand sides either contain material fields (in the case that space-time is filled with matter or field) or equal to zero in the case of “empty” space-time. Quotation here means that the “empty” space-time is actually filled with gravitational fields. The concept of “infinitesimal” is conditional: it depends both on the scale of the measurements and on the geometric structure of space. A more detailed study of this question shows that the curvature of space-time is manifested for the observer as: 1) the change in the rate of the observed time; 2) rotation of the observed 3-space. The interval of the physically observed time has the form [11, 12]: $d\tau = (1 - w/c^2)dt - v_i dx^i/c^2$, where $w = c^2[1 - (g_{00})^{1/2}]$ is the three-dimensional gravitational potential, $v_i = -cg_{0i}/(g_{00})^{1/2}$ is a three-dimensional vector of the angular velocity of space rotation with respect to time, $dx^i = u^i dt$ is a three-dimensional displacement vector in space with velocity u^i , $i = 1, 2, 3$.

The metric coefficients $g_{\alpha\beta}$ are the cosines of the angles between the basis vectors in the local tangent plane space, therefore the metric is the scalar product of an elementary (infinitesimal) 4-vector on itself, that is, its square. The dimension of the tangent plane space and the ratio of the number of imaginary and real

basis vectors (signature) completely coincide with the analogous characteristics of a Riemannian space. Thus, the tangent plane space for the curved space-time of general relativity is the Minkowski space. In Riemannian spaces the metric is symmetric ($g_{\alpha\beta} = g_{\beta\alpha}$) and nondegenerated (the determinant of the fundamental metric tensor $|g_{\alpha\beta}| \neq 0$), and the elementary four-dimensional interval is invariant with respect to any frame of reference, that is, it is a constant. Invariance of the interval is a weighty argument in favor of Riemannian space as a mathematical basis of general relativity. In pseudo-Riemannian and pseudo-Euclidean spaces, the metric can take positive, negative, and zero values. Trajectories of particle motion in space-time are called *world lines*, and four-dimensional points are called *events*. In terms of Zelmanov's theory of physical observables, the four-dimensional interval is expressed in terms of the intervals of the observed time and the observed 3-space and takes the form: $ds^2 = c^2 d\tau^2 - d\sigma^2$, where $d\tau$ is the interval of the physically observable time, $d\sigma^2 = h_{ik} dx^i dx^k$, $h_{ik} = -g_{ik} + (v_i v_k)/c^2$ — three-dimensional fundamental metric tensor, $i, k = 1, 2, 3$, $d\sigma$ is the observed spatial interval.

The concept of physical observables directly refers to the real observer, which is at rest in the reference system associated with the physical reference body. In modern physics, a real observer has a material body, so that he can move only with sublight light speed, nevertheless he can observe not only the movements of material bodies, but also light. In terms of physical observables, the metric can also be written in the form: $ds^2 = c^2 d\tau^2 (1 - V^2/c^2)$, $V^i = dx^i/d\tau$, $V^2 = h_{ik} V^i V^k$, where V^i is the three-dimensional observable velocity. Depending on the sign of the metric, the world lines can be: 1) real ($ds^2 > 0$) for $V < c$; 2) imaginary ($ds^2 < 0$) for $V > c$; 3) isotropic ($ds^2 = 0$) for $V = c$. Isotropic lines are considered as trajectories of light-like particles (photons), real-like trajectories of particles moving with sub-light velocities, hypothetical superluminal tachyons propagate along imaginary lines. The condition $ds^2 = 0$ in terms of physical observables has the form: $c d\tau = \pm d\sigma$, that is, it is the light cone equation.

In General Relativity, as in SRT, there is a light cone, the walls of which serve as a barrier between the worlds of sublight and superluminal velocities, but, in contrast to SRT, this cone is curvilinear. In general relativity, as in SRT, there is a light cone, the walls of which serve as a barrier between the worlds of sublight and superluminal velocities, but, in contrast to SRT, this cone is curvilinear. In general relativity, as in SRT, there is a light cone, the walls of which serve as a barrier between the worlds of sublight and superluminal velocities, but, in contrast to SRT, this cone is curvilinear. The light cone is also called the light “barrier”, the presence of which “prohibits” movement with superluminal velocities. In fact, this imaginary “prohibition” only means that particles of a substance with a nonzero real rest mass m_0 associated with a relativistic mass m (mass of motion) known by the relation: $m = m_0/(1 - V^2/c^2)^{1/2}$, can not reach the velocity c : real for $V < c$, the value m becomes infinitely large for $V = c$ and imaginary for $V > c$. Thus, a real observer can move in space-time with sub-light velocities along real paths. But, in addition, he perceives light propagating along the generatrix of the light cone. You can say that his body is also made of light. After all, light, like a finer structure, pervades a more dense medium — a human body that includes gas, liquid and solid media. The real observer moves with the sublight speed inside the cone along real world lines and observes photons (events on the inner surface of the light cone) propagating along isotropic world lines at a speed c . Here we should pay attention to the fact that the light cone exists at every point of the trajectory of the motion of a real observer. Outside the light cone are tachyons — events propagating with superluminal velocities along world lines of imaginary length. At present, there is no convincing experimental (observational) evidence confirming the existence of tachyons, and the light barrier should be considered as a membrane located between the world of matter and the world of imaginary matter. In this case, both worlds are equally illuminated by light filling the membrane. For a more clear understanding of what has been said, let us consider in the framework of general relativity two interrelated problems: 1) stopping the observed time; 2) the possibility of a reverse course of the observed time (from the future into the past). This will later help to debunk two persistent myths: 1) the impossibility of instantaneous transmission (reception) of information; 2) about the stable present, evenly “floating” from the past to the future.

Our ideas about the world we get by observing its manifestations, including, through specially set experiments. The observer is the receiver of a huge number of simultaneously incoming signals. But since he is interested in the concrete manifestations of the surrounding world, he puts the experiments in such a way that it is possible to study the events of interest to him and the interrelations between them. As an example, let us consider the results of Kozyrev's astronomical measurements of the true positions of cosmic objects in the framework of general relativity. From the point of view of logic, it turns out that Kozyrev fixed the positions of objects in space at the time of observation, since the formally observed interval between the moment of emission and reception of the signal is zero. The condition for stopping time (simultaneity of the events of emission and arrival of the signal) is $d\tau = 0$, which is equivalent to the relation: $w + v_i u^i = c^2$ [20, 21]. The scientist himself explained the results of his experiments within the framework of the flat

Minkowski Space, that is, in the SRT [4]. В каждой точке этого пространства существует так называемый конус Минковского. It consists of rectilinear cones of the past and future, and the point of their intersection (the base of the cones) is the moment of the present [20, 21]. Unfortunately, with this approach one can not investigate in detail the properties of particles (quanta) that are carriers of long-range action: they are at the base of the cone (the moment of transition of the past to the future), which in the Minkowski Space is an ordinary point in a flat 3-space. But such a study is possible within the framework of General Relativity, which includes gravitation into consideration.

We use the mathematical apparatus of General Relativity to study the properties of hypothetical particles that are carriers of long-range action, that is, spreading information (energy) from the object to the real observer instantly. A detailed theoretical explanation of the possibility of long-range action in the curved space-time of general relativity is presented in [19, 20], where the geometric structure of the four-dimensional “point”, which is also the base of the cones of the past and the future, was investigated. The equation of this “point” has the form: $cd\tau = \pm d\sigma = 0$, which means that the observer and the observed object are in one layer of time and in one 3-space that are outside our time reference and measurement system in ordinary space. The sign (\pm) means that both directions are equal for the observed time. In the space-time GRT, the cone is curvilinear, and the four-dimensional “point” at the base of the cones of the past and future unfolds into a three-dimensional surface, the hypersurface. This is a surface in space, whose dimension is one less than the dimension of the enclosing space, possessing special properties: for an observer, time stops on it, and all its lines have a zero three-dimensional length. This “point” is the moment of interaction between the past and the future, that is, the present. The walls of the cones of the past and future are the conductors of particles moving at the speed of light and creating an environment more subtle than matter. Previously, this luminiferous medium was called *ether*. A substance is a substance whose particles have a nonzero rest mass m_0 and a nonzero relativistic mass $m = m_0/(1 - V^2/c^2)^{1/2}$, where V is the observable three-dimensional particle velocity. For light particles (photons), $m_0 = 0$, but they have a nonzero relativistic mass m . For zero-particles connecting the past and future of the state of time, the relativistic mass $m = 0$, but they have the gravitational-rotational mass $M = m/[1 - (w + v_i u^i)/c^2]$ and propagate instantaneously along the trajectories $d\sigma = 0$ [20]. The particles on the surface of the transition between the past and the future belong to an even finer substance than light. They propagate instantaneously along trajectories of zero three-dimensional length, i.e., for them there are no spatial distances or time intervals. We can say that they are outside of space-time, modeling in modern science a material world filled with matter and fields (in particular, light). Since these particles propagate along three-dimensional lines of zero length and have a zero relativistic mass, they were called *zero-particles*, and the space in which they instantaneously propagate is *zero-space* [19, 20]. Long-range media (zero-particles) possess both corpuscular and wave properties. As corpuscles they spread instantaneously, as waves form holograms (standing wave systems). As corpuscles they spread instantaneously, as waves form holograms (standing wave systems) $h^{ik}(*\partial\psi/\partial x^i)(* \partial\psi/\partial x^k) = 0$, where ψ — wave phase, $h^{ik} = -g^{ik}$ — metric tensor of the observable space, $*\partial/\partial x^i = \partial/\partial x^i - (g_{0i}/g_{00})\partial/\partial t$ — chronometrically invariant operator of differentiation with respect to the spatial coordinate [11, 12]. We can say that the moment of the present, in which the future instantly becomes the past, is the moment of transforming the future into the past, which also forms the present. Zero-particles — the inhabitants of space, in which time for the observer stops — becomes real, but only for a moment. The next moment is another moment of the present, but due to the structure of our consciousness in the waking state, the present for us is perceived as continuous, unlike the state of sleep, where our consciousness sometimes instantly passes from one space and time to other fragments of Infinity. Note that the time and space intervals are related by the relation $cd\tau = \pm d\sigma$, that is, the past and the future interact continuously, giving rise to the present, perceived by us as “reality”.

Thus, the long-range interaction in general relativity is realized by zero-particles propagating instantaneously from the point of view of a real observer along three-dimensional lines of zero length. Thus, the long-range interaction in general relativity is realized by zero-particles propagating instantaneously from the point of view of a real observer along three-dimensional lines of zero length. Similarly, the zero particles born on the horizon of the events of the universe instantly reach any of its points, while the light born near the event horizon will come to Earth after billions of years, bringing with it long-outdated information. Similarly, the zero particles born on the horizon of the events of the universe instantly reach any of its points, while the light born near the event horizon will come to Earth after billions of years, bringing with it long-outdated information. The same goes for closer objects, in particular, for stars. All the surrounding space is filled with particles moving with finite velocities (with light and light) and zero particles, but scientists are only set up to register objects moving at finite velocities. Therefore, the further away the investigated object is from us, the more outdated information about it we get. Zero-particles give information about the

instantaneous state of astronomical objects, since these particles do not move, but rest, forming at each moment the holograms of events of all objects of the universe, from the largest to the smallest. Zero-particles give information about the instantaneous state of astronomical objects, since these particles do not move, but rest, forming at each moment the holograms of events of all objects of the universe, from the largest to the smallest. Awareness of the possibility of instantaneous transmission of information will in principle change the view of events in the universe, for it becomes clear that everything that happens somewhere in the Universe is reflected everywhere. Another thing is that it is perceived not at once, but it may not be perceived by consciousness at all. For example, predestined events can materialize at a time when human civilization will not be: the life expectancy of a person is one instant in comparison with the period of the existence of the universe. However, information about the state of stars, especially close ones, should be taken into account. The interaction of the holograms of all events forms the most complex interlacing of them, which in the next moment will become different. The shorter the lifetime of each object compared to the lifetime of the universe, the faster its events change with respect to events of longer-lived objects. And, conversely, the longer the life span of an object, the slower its main hologram, associated with the phase of this particular object, changes. Thus, the stability of the universe is due precisely to standing waves. But standing waves of any kind are formed as a result of the addition of direct and reflected waves. But standing waves of any kind are formed as a result of the addition of direct and reflected waves. However, standing waves in space-time can be viewed as the result of a superposition of waves propagating in opposite temporal directions - from the past to the future and from the future into the past.

Zero particles exist under the following conditions: 1) if gravitation and rotation coexist in the observed space, their total impact must be such that the time for the observer stops ($w + v_i u^i = c^2$); 2) in the absence of a gravitational field, the 3-space rotates at the speed of light; 3) in the absence of rotation, the 3-space turns into a black hole (collapses). Hence it follows that the cones of the future and the past rotate, forming vortices that ensure the transfer of energy from the future into the past. If the rotation stops, the vortex cones collapse, forming a black hole. In other words, energy exchanges between the future and the past cease. This means that black holes fall out of the system of energy exchanges with our world, closing themselves to other relationships, which we do not yet know. (More details about black holes will be discussed in the next chapter). From what has been said, it is obvious that the body of a real (physical) observer moving with sub-light velocities can not exist in zero-space. Nevertheless, his consciousness is capable of perceiving signals that instantly connect us with cosmic bodies located at different distances from the Earth. Thus, according to the most advanced theory of the twentieth century, the instantaneous transmission of information is theoretically possible, since Kozyrev's device (metal-film resistor) registers the effect exerted on it by an object whose time is synchronized with the observer's time. But modern people in large numbers can not yet realize this fact. So there are all kinds of prohibitions on theoretical research in this field and the negation of the observed experimental facts. In fact, the Theory of Relativity and Kozyrev's observations have shown a possible path for the further development of mankind, which can be realized only if in the future the human consciousness changes so much that it will change the human body itself, and, consequently, the ways of its perception of the surrounding world. From a formal (scientific) point of view, zero-particles fill an exotic three-dimensional space in which they propagate instantaneously along trajectories of zero three-dimensional length. But the long-range action is an instant connection with any object of our world. We establish this connection simply by looking at the star or thinking about it. It is here that all the connections are laid that will help people to develop the surrounding space in the future. In the meantime, we do not know how to "fly", we have to be content with "scientific crutches": with their help one can at least understand in which direction one should think and where the boundaries are located, which so far can not be jumped with crutches.

Now in brief about the direct and reverse course of time. This topic is covered in more detail in Chapter 2). From considerations of "evidence" based on personal experience, it is commonly believed that time flows in one (direct) direction — from the past to the future. Although the mathematical apparatus of general relativity does not prohibit the reverse course of time (from the future to the past), in modern science this possibility is not considered. In this case, scientists refer to the "arrow of time" Reichenbach, always directed from the past to the future. Meanwhile, Reichenbach, referring to unidirectionality, had in mind the world process of development (the spread of energy). He wrote: "The overtime has no direction, but only order, but it itself contains individual sections that have a direction, although these directions vary from site to site" [21]. As a mathematical illustration of the "arrow of time" in modern science, a rectilinear light cone in Minkowski space is considered, the lower half of which is the cone of the past, the upper half is the cone of the future [22]. Here the time flows evenly, and the past automatically passes to the future through the point $t = 0$, which denotes the present.

In contrast to the Minkowski space, where the past automatically passes into the future through the coordinate time point $t = 0$, in curved space-time, GRT between the cone is curvilinear, and between the past and the future is a membrane - a three-dimensional degenerate hypersurface whose geometric properties depend on the three-dimensional gravitational potential w and the rotation rates of the 3-space and particle [19, 20]. The determinant of the metric of a degenerate hypersurface is 0. In the absence of gravity, the rotational velocities of the hypersurface and zero particles are equal to the light velocity. In the presence of gravity, the hypersurface rotates with the sublight speed: in this case, the stronger the gravitational action, the smaller the value of the rotation speed of space. At the maximum possible value of the gravitational potential $w = c^2$, there is a collapse: the stopping of the observed time ($d\tau = 0$) occurs, and the basis of the hypersurface becomes purely spatial, so the collapse is not the compression of space, but the collapse of time.

The three-dimensional (physical) body of a real observer can move in space, but is always rigidly tied to the moment of time perceived by him as the present. Moving to the past and the future is available to man only mentally: the possibility of this journey of consciousness provides a memory of the past (not always clear) and the foresight of the future (not always accurate). But how does one form of two virtual concepts what we call reality? Turning mentally into the past, both planets and in one's own, one can observe the frequency of similar events. The past of the planet is preserved for us by the memory of our ancestors, knowledge of our own past is stored in our memory. Events (three-dimensional points, stretched in time in the "thread") are located in a certain sequence in time. Comparing similar events from different times, we can say that sometimes the past and the future are similar to each other's mirror reflections. In a three-dimensional space, the object and its mirror image differ in that the concepts "right" and "left" for them have the opposite meaning; in the space-time of the space of the past and the future differ in the direction of the course of time. In spaces with a direct course of time there are particles with a positive relativistic mass (both pre-light and photons), in spaces with an inverse course of time, the relativistic masses of the sublight and light-like particles are negative [20, 21].

Currently, General Relativity is used to study the movements of bodies located in the gravitational field of a remote attractive center, so it is applicable to describe the motion of the planets of the solar system and systems of double stars. In the framework of General Relativity, the existence of black holes and neutron stars can be explained. This theory allows the existence of gravitational waves as perturbations of space-time. But in general, GTR is not used to theoretically substantiate the possibility of interactions that occur with superluminal velocities. Obviously here works the Time Prohibition, which does not allow to move in this direction. It goes so far that scientific journals reject articles not only from scientists admitting the possibility of superluminal velocities, but also those that refer to their work (!?) The reason seems to be on the surface: The theory of relativity does not allow the velocities of the motion of particles and fields exceeding the light velocity. Arguments that in Nature there can be so far unknown to modern scientists the particles and fields are not taken into account. It turns out that the GTR actually "forbids" the scientific community of the whole planet to conduct research in a certain direction. What is it, the evil plots of unknown cosmic forces? And why do scientists so zealously execute them, not sparing their own colleagues who wished to escape from the captivity of the ban? After all, the impossibility of research in the direction of achieving superluminal velocities actually puts a ban on interstellar flights, in an extreme case, theoretically possible only long flights in a state of suspended animation. At the very time, while Time itself closes the path laid by the most advanced theory of the twentieth century. It was it that put the "barrier" that was not visible to the eyes, but perceived by the energy of the scientists, which they perceived as the Time Prohibition. But we have approached the boundaries of the unknown, and now we need to lay new paths and roads in a world that lives according to fundamentally different laws than we are accustomed to. Old methods in the new world will not be able to work. And this is reflected in the structure of the once most advanced theory of the twentieth century. The fact is that one of the fundamental principles of the Theory of Relativity is the presence of a real observer who has a physical body and is able either to move in space with pre-light speeds, or be at rest with respect to the frame of reference. By virtue of its structure, such an observer lives in a world of matter that is permeated with fields, but can not move beyond the light-like field. But what kind of observer can exist in the world of superluminal velocities and even instantaneous displacements? This problem will be covered throughout the book, since it is directly related to the problem of consciousness, i.e. with direct perception of the surrounding world and the subsequent reaction. We will see that although man perceives the world directly with the whole body, he believes that only those sensations that have passed through the brain (part of the body) are believed to be "truly real", and that filtered by the brain is seen as something insignificant, accidental, abnormal, etc. But in this chapter we only come to the understanding that it is already time to realize some of the phenomena of Nature from the

standpoint of modern science, but this does not happen. The human mind (one of the levels of human consciousness, by the way, is not very high) keeps us in captivity of a certain range of consciousness connected with the brain, and does not give us for different reasons for each person to go further along the path of cognizing the World. Therefore, it is so important first to analyze the available information and not to deny it from the very beginning, as supposedly “unscientific” (more precisely, not corresponding to the mass consciousness of our civilization period).

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