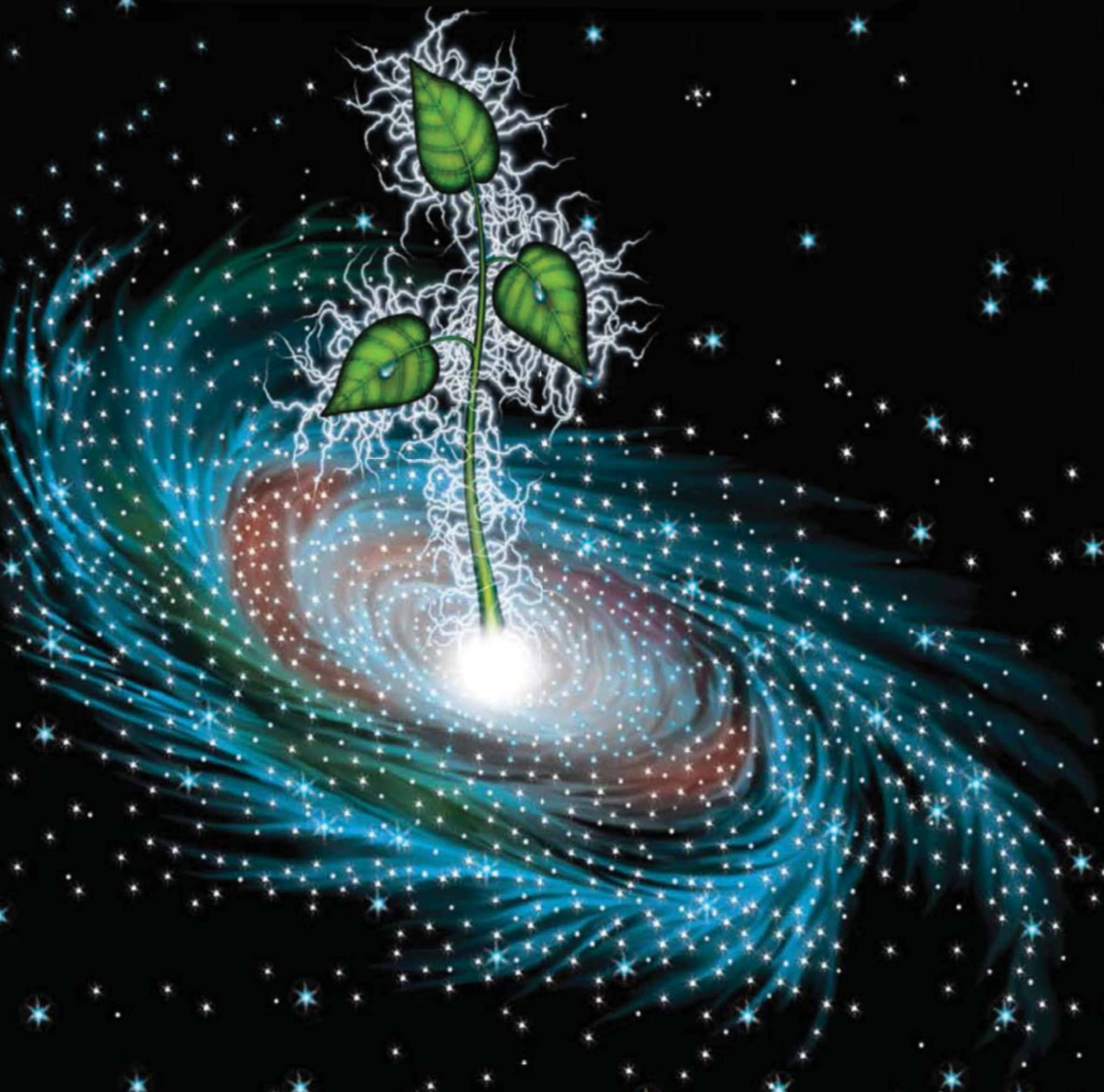
THE ANISOTROPIC UNIVERSE

Nicolai Levashov



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BOOKS

Nikolai Levashov

The Anisotropic Universe

Table of Contents

Review of the monograph by Academician N. Levashov's monograph "The Heterogeneous Universe"

The modern scientific picture of the world or universe (Greek Latin *universum* — everything that exists) is created thanks to targeted fundamental research, experimental observations by scientists, and philosophical interpretation of the information they obtain, on which scientific theories are based that explain unusual facts and deepen our understanding of the nature of the universe. The concept
The "scientific picture of the world" has been actively used in natural science and philosophy since the end of the 19th century. However, a special analysis of its content began to be carried out more or less systematically only in the middle of the 20th century, but to this day, no unambiguous understanding of it has been achieved. This is probably due to the objective vagueness and uncertainty of the very concept of the universe, which occupies a connecting position between the philosophical and natural scientific levels of generalisation and worldview awareness of the results, methods and trends of scientific knowledge of the world (universe). The problem of understanding the universe has historically been of great interest to both philosophers and scientists. There have been undoubted successes in explaining the mysteries of the world, but there are also serious problems in interpreting the new discoveries of physicists, chemists, biologists and other scientists. It is in this context that the appearance of the reviewed monograph is clear evidence of profound shifts in the contemporary philosophical perception of the very problem of the phenomenon of the universe and the ambiguous understanding of the nature of its existence in the scientific community.

Academician Nikolai Levashov undertook the difficult task of scientifically and philosophically rethinking the very origins of understanding the phenomenon of the universe in the history of philosophy and modern science, emphasising the ontological foundations in understanding the phenomenon of the self-development of a heterogeneous universe. Traditionally, all the diversity of objects and properties known to humanity in the universe is divided into macro- and micro-worlds. Already in the introduction to his book, the author quite rightly asserts that "this problem will exist until a picture of the universe is created based on an understanding of the laws of the macrocosm and microcosm" (p. 25). And this philosophical thought runs like a refrain through N. Levashov's entire monograph.

N. Levashov's monograph is undoubtedly a phenomenon, and like any phenomenon, it deserves the most scrupulous analytical consideration. The dominant idea of the book is that the historical formation and contemporary development of the culture of scientific knowledge of the universe

This is happening thanks to the tremendous intellectual work of the best thinkers of all times and nations. The very formulation of the problem of a heterogeneous universe in the history of philosophical thought is of undoubted interest both theoretically and practically, since it is connected with the elucidation of the conditions for the emergence of life and man — the subject of meaningful life activity and the development of spiritual and material culture. The author skilfully draws the reader into the process of philosophical rethinking of the eternal problems of understanding existence and the development of the universe and its various structures. This is a very difficult task for the author of the book, for any reader, and even more so for a reviewer. Therefore, I will draw the readers' attention to only one of the most relevant issues, in my opinion, raised by the author in his monograph, and, from the appropriate perspective, I will give a general assessment of this work by N. Levashov.

We will discuss the analysis of the philosophical basis of a new aspect in the theory of cognition — the heterogeneity of the universe. I will highlight only a few key points of the problem of cognition of the essence of the universe, as outlined by N. Levashov in his book. My attention was drawn to the author's methodological assessment of the role and significance of the philosophical factor in the historical formation of the scientific picture of the world, as the rational-theoretical vision of the universe took shape. The first chapter of the book, "Analytical Review," is specifically devoted to the analysis of this most important problem of understanding the world. It sets out and critically reinterprets the most ancient mythical and antique philosophical ideas and views of the world held by outstanding thinkers, as well as the ancient views of ordinary people on human existence in the natural world. "In the history of humanity, there have been several periods of rapid advancement in scientific ideas about the universe," the author emphasises, "which were followed by entire eras of ignorance and barbarism. Around the surviving fragments of true knowledge, 'new' theories of the universe began to emerge, which only in modern times have reached a certain completeness." And further:
"Concepts about the nature of the universe reflect and determine the level of development of scientific thought and technology, as well as determine the future development of civilisation as a whole" (p. 67).

The conceptual nature of the monograph is also noteworthy. All of its theoretical propositions and practical observations are organically interrelated. They form a coherent and rigorous scientific and philosophical system for understanding and explaining the universe, permeated by the unifying bonds of philosophical and analytical comprehension of everything new. The author sets out ontological problems

The universe is inseparable from the problems of epistemology. The issue of understanding the heterogeneity of the universe is examined through the prism of a new understanding of the heterogeneity of space. The author devotes two chapters to the analysis of this key problem: the second and third. In them, he meticulously rethinks the modern attitude towards such philosophical and scientific concepts as "matter," "space," "time," etc. It should be added that Academician N. Levashov, with his traditional understanding of matter (p. 71) as an objective reality, has a fundamentally different view of the diversity of connections between forms and types of matter and space. And if we assume that there are many types or forms of matter, each of which differs from the other in its properties and qualities, either partially or completely, and these forms of matter "overlay" space with continuously changing properties and qualities, the author philosophises, then a distribution of these free forms of matter across space arises according to the principle of identity between the properties of space and the forms of matter (p. 83). The author considers a system of matrix spaces formed by the synthesis of materials of the same type. In classical philosophy, space, like time and motion, is represented as an integral property (attribute) of matter. A new vision of the existence of matter and space will give rise to complex epistemological problems that did not previously exist in scientific theory of knowledge.

This book proposes a number of fundamentally new approaches to understanding the problems of the universe and raises acute questions that philosophers have not yet addressed. The author seeks to propose a number of fundamental problems based on a critical philosophical understanding of the nature of changes in the qualitative state of space, which manifest themselves primarily in changes in the qualitative state of matter. Academician N. Levashov confirms this essentially revolutionary idea with the following words: "A change in the qualitative state of matter affects the qualitative state of space with the opposite sign. As a result of the feedback between space and matter, manifested in their mutual influence on each other, a compensatory equilibrium arises between space and the matter located in that space" (p. 114).

The structure of the monograph is built around the awareness of the heterogeneity of space in the universe as the main scientific and philosophical problem of thinking humanity. There is a deep meaningful interconnection between the problem of scientific proof of the existence of a heterogeneous universe and its philosophical awareness. It is precisely philosophy

is capable of interconnecting the nature of scientific research into the mobility of heterogeneous space and its temporal dimension. Thus, discussing the "internal logic" of the stability and instability of complex systems, the author rightly states: "The simplest atom is the hydrogen atom, while the most complex are transuranic elements. Hydrogen atoms are the most stable elements in the universe, while transuranic elements
are not stable at all, and almost all of them exist only in artificial conditions and 'live' for a billionth of a second or even less" (p. 179).

Until recently, it was believed that there were only four elementary particles: protons, neutrons, electrons, and photons. Today, new elementary particles and numerous processes of their mutual transformations have been discovered. These phenomena are well described by the author and vividly presented in his illustrations. He convincingly showed how the existence of one particle is, in one way or another, connected with the presence of another, explaining the unity of the macrocosm and microcosm. Thus, according to the author, "the 'black hole' of the macrocosm creates a powerful radial gravitational field (radial dimensional gradient) around itself, causing the decay of any matter. Similarly, the internal volume of the **RNA** or **DNA** molecule spiral creates similar conditions, leading to the decay of captured molecules under the action of a standing wave of dimensionality. The spiral of these molecules behaves identically to the "black hole" of the macrocosm, which allows us to call the **RNA** or **DNA** molecule the "black hole" of the microcosm (pp. 260-261). The problem of the origin of life is one of the most difficult, but also one of the most interesting in understanding the phenomenon of the universe. While the history of the development of life on Earth over the last 4 billion years does not cause fundamental disagreements among scientists and philosophers, questions about the origin and evolution of life are the subject of ongoing debate. In this work, the author reflects on the evolution of the living world as a ramified, multifaceted process. It is known that modern fauna and flora include species that represent the last links in a wide variety of lines of development of living matter and stand at qualitatively different levels of its organisation. In connection with this phenomenon, Academician N. Levashov examined the phenomena of inorganic and organic interaction of elementary particles, atoms, molecules, etc. Concluding his scientific work, he rightly concludes that in it: "on the basis of multi-level living matter, the mechanisms of mutations, their accumulation and transmission to new generations of living organisms are shown for the first time, which, in turn, is the foundation for understanding the evolutionary process of living nature" (p. 299).

The reviewed monograph by N. Levashov, "The Heterogeneous Universe," is undoubtedly of interest to scientists and humanities scholars, specialists and teachers, and a wide range of readers, because the unconventional questions it raises about the heterogeneity of the universe and the universe itself are highly relevant, quite problematic, and require independent creative reading and interpretation. This means that the creative search for scientific and philosophical answers to

The "eternal" questions about the mysterious self-development of the universe allow us to understand the "fluidity" of familiar truths or established ideas about the world. In conclusion, it can be said once again that N. Levashov's monograph will be of great importance to scientists and philosophers, teachers and all those who are professionally involved in the problems of understanding the universe. Academician Nikolai Levashov is perhaps the first in the practice of scientific and philosophical research into the phenomenon of the universe and the formation of its existence to meticulously examine the philosophical and methodological foundations of cognition themselves. He skilfully uses the dialectical method of empirical and rational-theoretical consideration of the heterogeneity of the universe. The author's key idea about the heterogeneity of the universe has received a good scientific justification and critical philosophical reflection in his analysis of the picture of the universe. The author carried out a detailed and in-depth analysis in the concluding fourth chapter of the monograph, "Necessary and Sufficient Conditions for the Emergence of Life in the Universe," which is quite radical in nature. It outlines the basic parameters for the emergence of life and, most importantly, the qualitative features of the functioning of organic molecules. The author considers them to be, in a sense, the necessary objective conditions for the emergence of life on Earth and billions of other planets in the Universe. N. Levashov's monograph deserves the highest praise. It is an indicator of the fundamental contribution of Academician N. Levashov to the development of the philosophy of the Universe. The monograph represents a significant advance in the philosophical field of developing a contemporary theory of knowledge of the Cosmos. It is a truly groundbreaking scientific and philosophical work that will have (through its study, first and foremost, scientists and philosophers) in the study by students and postgraduates of various concepts of modern natural science, interested and unbiased reading of non-traditional approaches by scientists and philosophers developing topical problems of cognition of the universe. Academician N. Levashov's monograph "The Heterogeneous Universe" is written in the strict, impartial academic language of science. Given the nature of the monograph's subject matter, it does not contain

subjective and personal attitude towards certain theoretical biases and commonplace judgements about the state of the world. And this is correct, because the scientific monograph under review is a rigorous research work. At the same time, it is commendable that the author, in order to achieve a better understanding of the complex subjects of the study, resorts to vivid figurative comparisons from everyday life. For example, he compares the emergence of fluctuations in the dimensionality of space during a supernova explosion to the waves that appear on the surface of water after a stone is thrown. Or, to quote: "Let us imagine primary matter of one type as
'cubes' of the same size and consider how the matter interacts with each other in a zone of heterogeneous space." Or, to explain the process of an atom's transition from a stable state to an unstable one, the author compares this phenomenon to the image of potholes in roads filling with water during rain (pp. 142, 172, 201, 198-200).

Concluding the analysis of N. Levashov's monograph, I would like to note once again that this original book can be recommended not only to scientists and philosophers, teachers and doctors. It will also be useful to anyone who cares about the problems of cognition in general, who is interested in philosophical cognition of the world and is concerned with finding ways and means of cognition and understanding the formation of life on Earth and its evolution to the highest level — intelligent matter (human beings). The concept of a heterogeneous universe developed by N. Levashov will make it possible in the future to foresee and predict objective processes in the macro- and microcosm. The monograph outlines new promising directions for further fundamental research in this field of science and philosophy.

Thus, N. Levashov's monograph is a notable event in the world philosophy of cognition of the universe. It is imbued with profound reflections on the role and significance of philosophical heritage and contemporary research in the field of the theory of cognition in general.

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From the author's

The laws of nature are formed at the level of the macrocosm and microcosm. Man, as a living being, exists in the so-called intermediate world — between the macrocosm and microcosm. And in this intermediate world, man has to deal only with the manifestation of the laws of nature, and not with them directly. As a result, there is a problem with creating a complete picture of the universe. This problem will exist until a picture of the universe is created based on an understanding of the laws of the macrocosm and microcosm. No matter how long we look at the tip of the iceberg, until someone decides to dive underwater and see the whole iceberg, all attempts to describe it will be, at best, incomplete. The same is true of the "iceberg" of the universe. Until someone "dives" into the waters of the unknown, all attempts to create a picture of the universe, no matter how beautiful they may seem, will prove futile. The history of human knowledge of nature serves as full confirmation of this.

One of the main reasons for this is that the sensory organs that humans use to perceive nature do not allow them to do so for one simple reason. Nature did not create human sensory organs so that humans could perceive nature. Human senses, like the senses of animals and plants, arose and developed as a mechanism for each species of living being to adapt and adjust to the ecological niches they occupy. Humans began to use their senses to accumulate, store and transmit information to their fellow humans. But this is information about the intermediate world, not about the macrocosm or microcosm. Unfortunately, this is not taken into account. And that is a mistake. Because with only five senses, even enhanced by instruments, it is simply impossible to describe and create a complete picture of the universe. In order to create a complete picture, it is necessary to be able to simultaneously observe both the above-water and underwater parts of the "iceberg" of the universe, which is only possible with the appearance of additional senses to the five existing ones.

Virtually anyone who wishes to do so can obtain empirical proof of the limitations of our senses. This does not require any complex experiments, but only diving underwater without a mask and opening one's eyes. The picture of the underwater world will appear distorted to our eyes: shapes and distances will not correspond to reality. And there is no paradox in this. Human eyes are adapted to the air environment, while the eyes of fish and other underwater creatures are adapted to the aquatic environment. Therefore, the underwater picture will be distorted for humans, and the terrestrial picture will be distorted for fish. What can we say about qualitatively different natural phenomena that humans have never encountered and cannot encounter through their five senses?

The most interesting thing is that no one thinks about this. As a result, science and its various branches have become like the blind men in the old Hindu parable about an elephant, when three blind men were asked to describe an elephant. Each of them, having stumbled upon some part of the elephant, hastened to describe the whole elephant through their sensations. Everyone knows how this turned out, and if not, it is not difficult to imagine. Unfortunately, the entire history of theoretical science, which attempted to create a picture of the universe, is very reminiscent of the parable of the three blind men. Interestingly, almost all of humanity's great discoveries were made by scientists in moments of so-called insight or enlightenment, which always lay beyond the limits of the five human senses.

But even this did not make people think about the question of what can be obtained with the help of the five senses and what is needed for a complete understanding of nature. At the same time, one cannot blame them for this, just as one cannot blame a person who has been blind since birth for not being able to understand and feel the beauty and colours of the surrounding nature. The only way for a blind person to achieve this is to see.

I would like to believe that I have succeeded in this and, as a result of such "enlightenment", have managed to create the theory presented in this book.

Academician N. Levashov

Preface. The relevance of the problem

The emergence of humans and the development of consciousness are inextricably linked to their attempts to understand the world around them. The whole world, in its infinity, boundlessness and limitlessness, is not given to humans in its immediacy. The ontological approach makes it possible to comprehend the world as a whole, as a system. Thus, ontology answers the question: what is the essence of the universe and the understanding of the world? The specific philosophical formulation of the question, which we encounter in the ancient Greek philosophers Thales, Anaximander and Anaximenes, consists in an attempt to establish the first cause, the first principle, which could explain the infinite variety of natural phenomena.

Thales considered water to be the primary element, Anaximenes considered air to be the primary element, Heraclitus considered fire to be the primary element, Xenophanes and Parmenides considered earth to be the primary element, i.e., in general, the same elements that were considered indivisible in ancient times and which we find in both ancient Indian and ancient Chinese natural philosophy. Only Anaximander proposed, as such a primary element, a certain undefined primordial substance, which he designated with the word "apeiron." Leibniz considered the monad to be the beginning, i.e., a simple substance that does not arise or disappear, has no parts, and can only be obtained through creation. Each monad must be different from the other, and, like any creation, the monad is subject to constant change. The changes in the monad originate from an internal source, since an external cause cannot have an influence within the monad. Epicurus, Leucippus, Democritus, and Kant believed that the original state of nature was the universal dispersion of the primary substance of all celestial bodies — atoms. Leucippus and Democritus believed that not only the number of atoms in the universe was infinite, but also the number of possible forms they could take, i.e. their shapes and outlines. The number of these different forms is infinite. The proof of the infinite number of forms of atoms, of course, could not be empirical, due to the invisibility and intangibility of these forms, but only logical. This doctrine became a new and completely original way of solving a natural scientific and philosophical problem that was posed to Greek thought by the Eleatics with their doctrine that true being can neither arise nor perish.

Leucippus and Democritus, like Empedocles and Anaxagoras, agreed with this thesis, but at the same time fought against the views of the Eleatics, who denied the conceivability of multiplicity and movement. Empedocles attempted to solve this problem by developing a hypothesis about the four "roots of all substances" and the two forces that set them in motion. Anaxagoras tried to solve the same problem by proposing a hypothesis about the existence of a "mind" separate from everything else — a mechanical driving force that sets these particles in motion. But neither Empedocles nor Anaxagoras assumed that the elementary particles of matter were absolutely indivisible. It is this idea that forms the basis of the materialistic philosophy and physics of Leucippus and Democritus. The theory of atoms invisible to us stems from observations of processes and phenomena occurring in nature as perceived by the senses. The theory of atomism arose in Leucippus and Democritus on the basis of observations and certain analogies. According to Simplicio's explanation, Leucippus and Democritus postulated the existence of an infinite number of atoms because infinity is necessary to explain all phenomena observed in the physical world. Only those who consider atoms to be infinite in number can give a reasonable explanation for everything. This reasoning is a classic example of the emergence of a scientific hypothesis.

Democritus' atomistic doctrine developed inextricably linked to the concept of the eternity of time. Aristotle wrote that for Democritus, the eternity of time was a means of proving that uncreated existence exists. With the exception of Plato, all philosophers, as Aristotle pointed out, considered time to be unborn. The teachings of Leucippus and Democritus on the qualities of bodies were a completely new point of view, introduced for the first time in ancient Greek philosophy and science. It left a deep mark on the development of physics, chemistry, and the philosophical understanding of nature. These views sharply diverged from the prevailing ideas of the 5th century BC. Thoughts about the infinity of the universe and the simultaneous existence of countless worlds within it struggled to find their way into people's consciousness.

Kant accepted the atomistic theory of Epicurus, Leucippus, and Democritus. Epicurus assumed that there is a force of gravity that causes the primary particles of matter to fall. Kant acknowledged that his theory differed little from Newton's theory of gravitation, which he accepted. Finally, vortices arising from the random motion of atoms were one of the main points in the system of Leucippus and Democritus, and these vortices are found in Kant's cosmogonic theory. At the same time, Kant says that the above-mentioned proponents of the doctrine of the mechanistic origin of the universe derived all the order observed in it from blind chance, which so successfully combined atoms that they formed a single harmonious whole. He criticised Epicurus, for example, for claiming that atoms deviate from their straight-line motion without any reason in order to enable their possible encounter.

All these philosophers, he said, attributed the origin of living beings to blind chance and truly derived reason from irrationality. Kant saw the role of the supreme mind in the processes inherent in the laws of matter, when from its state of complete decay and dispersion, a beautiful, harmonious whole naturally develops. He noted that matter, which constitutes the primary substance of all things and is subject to known laws, must produce beautiful combinations. The reason for this must be God, because nature, even in a state of chaos, can only act correctly and harmoniously. Regarding the structure and motion of celestial bodies, Kant said that, given matter, which by its nature is endowed with the force of attraction, it is not difficult to determine the causes that could contribute to the structure of the world system as a whole. It is necessary for the body to acquire a spherical shape and for freely floating bodies to move in a circular motion around the centre to which they gravitate. The mutual arrangement of orbits, the coincidence of directions, eccentricity — all this can be explained by the simplest mechanical causes. At the same time, Kant admits that it is easier to understand the origin of the entire structure of the universe than to accurately determine, on the basis of mechanics, the origin of a single speck of dust or caterpillar.

It should be noted that Kant himself explained the great order of nature solely by the forces of attraction and repulsion, which are equally primary and universal. Both were borrowed from Newton's philosophy, which considered it possible to abandon natural cosmogony. Kant replaced anthology with transcendental philosophy, i.e., a system of concepts and principles that precede experience a priori, but are given to man sensually and therefore can be confirmed by experience. Kant evaluates his hypothesis as a new stage in the development of the theory of the universe based on the universal laws of nature. In perfecting hypotheses about the universe, as well as in solving similar problems, it is necessary to refer only to natural philosophy. The physical part of the science of the universe can be brought to the same perfection in the future as Newton brought its mathematical part, Kant noted.

The starting point of Hegel's philosophy is the identity of being and thinking, i.e., the understanding of the real world as a manifestation of ideas, concepts, and spirit. This identity was seen as a historically developing process of self-knowledge of the absolute idea of itself. At the basis of all phenomena of nature and society lies the absolute, spiritual and rational principle
— "absolute idea," "world mind," or "world spirit." This principle

— actively and energetically, and its activity consists in thinking, or more precisely, in self-understanding. According to Hegel, ontology is the study of abstract definitions of essence. He noted that earlier definitions of ontology, in their uniformity and finite significance, lacked principle, and their immediate content could be based on representation, assurance, and sometimes also on etymology. Hegel's system anticipated the idea of the unity of ontology, logic, and the theory of knowledge, thereby pointing the way to a positive understanding of the world.

The development of scientific thought in the 20th century, as in previous centuries, required a new justification for the ontological hypothesis. And it appeared by chance. Lorentz obtained a series of mathematical transformations, and Einstein derived two postulates from them:

1. Space is assumed to be isotropic when its properties do not depend on direction and distance.

2. The speed of light is assumed to be a constant and the maximum speed of movement of material objects. In other words, the speed of light does not depend on space.

This theory became the foundation for ideas about the nature of space.

At the same time, some discoveries made in the last quarter of the twentieth century and the beginning of the twenty-first century cannot be explained by existing postulates. The results of an analysis of data obtained outside the Earth's atmosphere using a radio telescope, published in 1997 by American astrophysicists Borg Rodlang and John Ralston, indicate that the universe is heterogeneous.

Experiments conducted by Dr. Luce Wang at the Princeton Research Institute yielded stunning results: beams of light travelled in a special gas environment at a speed **300 times** faster than the theoretically permissible speed. In Italy, another group of physicists obtained data on the propagation of microwaves at a speed 25 per cent higher than theoretically possible.

Nuclear physics did not escape a similar fate. The fundamental law of modern physics, the law of conservation of matter, states that matter does not appear from nowhere and does not disappear anywhere. As applied to the synthesis of particles during nuclear reactions, this law can be written as follows:

$$m1 + m2 > m3 \qquad (1)$$

In other words, the mass resulting from the synthesis of a particle must be less than or equal to the total mass of the particles that created it. However, in some experiments, the mass of the resulting particle sometimes exceeded the total mass of the particles that created it by several orders of magnitude:

$$m_1 + m_2 << m_3 \qquad (2)$$

These and many other experimental data indicate a crisis in science, i.e., there is a need for new approaches and hypotheses that can explain the discoveries made. For the first time in science, the concept of macrocosm and microcosm has been proposed, based on the idea of the heterogeneity of space. This idea has made it possible to substantiate and explain virtually all phenomena of living and non-living nature. The continuous change in the dimensionality of space in different directions (dimensional gradients) creates levels within which matter has certain properties and qualities. When moving from one level to another, there is a qualitative leap in the properties and manifestations of matter. Based on this, the existence of other universes is justified. The basis of the idea of the macrocosm is a system of interacting universes that are qualitatively different from each other. This position makes it possible for the first time to explain such phenomena as "black holes" and the existence of so-called *"dark matter,"* which were discovered as a result of astronomical research and calculations.

At the microcosmic level, the concept created allows us to explain the phenomenon of radioactivity, the causes of which no one has been able to explain. At the same time, this theory also allows us to explain the mystery of life. Using the example of analysing the behaviour of a virus **RNA** molecule in an aqueous environment, as the simplest living organism, and outside an aqueous environment, as an organic molecule, the qualitative processes occurring in this case are explained, and *an understanding of the qualitative transformation of non-living matter into living matter* is provided.

Based on the idea of quantising the dimensionality of continuously changing space, the multidimensionality of life is substantiated. For the first time, the necessary and sufficient conditions for the emergence of life in the universe are derived and substantiated. In addition, the qualitative processes of matter transformation occurring at the cellular level are explained.

The results obtained allow us to take a fresh look at the existing laws of physics, chemistry, astronomy, medicine and other sciences, which, in turn, makes it possible to develop new directions in many areas of science.

Chapter 1. Analytical overview

1.1. The significance of the ontology of physical processes for the philosophical and scientific thought of humanity

Space?! What is it? Since ancient times, humans have looked up at the starry sky and formed their own ideas about the universe. *Homo sapiens* —— in their self-designation, humans emphasised intelligence as the main distinguishing feature that sets them apart from the surrounding natural world. And like any thinking being, by definition, humans have an inherent desire to understand the world around them, the universe. And, naturally, as a result of this process of cognition, a picture of the universe emerges. History has given birth to and destroyed civilisations, and along with them, religions, philosophical systems, and concepts of the universe have appeared and disappeared. History has not preserved everything, especially the irreparable damage done to the history of civilisation and the development of civilisation as a whole by Christianity, especially Catholicism.

Fanatics, inspired by priests, destroyed the treasure troves of knowledge of bygone civilisations, ancient libraries — repositories of the most valuable books: the Proto-Sumerian library in Babylon, the Alexandrian library in Egypt, the Santorini archipelago, the papyrus storerooms in Thebes and Memphis, the Etruscan library in Rome, the temple-sanctuary in Athens was burned down, the huge library in Constantinople was destroyed, the libraries of Yaroslav the Wise and Ivan the Terrible disappeared without a trace, as did the manuscripts of the Mayan, Inca and Aztec civilisations. As a result, much of the knowledge of the ancient civilisations of Earth was destroyed. Much... but, fortunately, not all. And what was saved from the fires of the Inquisition, these ancient folios, sometimes saved at the cost of many lives, are striking in their depth and accuracy of descriptions of the universe, some aspects of which modern science has only begun to understand.

The most interesting in this regard and the most ancient are the Slavic-Aryan Vedas. The Book of Light, which is forty thousand years old, presents a picture of the universe that is simply astonishing in its accuracy and completeness. It is incredible, but it is a fact that anyone who opens this book will be forced to acknowledge.

...In the true Beginning, or rather, when the Great
powerful stream of Life-bearing shining Inglia
spread throughout the Infinite New Eternity,

the Primordial Life-giving Light, in the New
Reality, diverse Spaces and Realities of the Worlds
of Yavi, Navi, and Prav were born.
....
And the closer to
the Primordial Source of Light, the greater the
dimensions of these Spaces
and Realities in various shining Worlds were located,
the greater the dimensions
these Greatest Spaces
and Realities were filled... [1]

Forty thousand years ago, it was known that there are many universes of different dimensions that together form a single spatial system, which we will conditionally call matrix space.

Like the branches of a tree, the Primordial
Life-Giving Light connected the Leaves of
Reality
of our World Tree
with the mighty shining trunk.
And each Leaflet-Reality shone
immeasurably,
shimmering with the bright Light of
various Suns,
and the trunk of the World Tree
extended its numerous roots into the
Infinite New Eternity,
born in the New Reality[2] .

Our ancestors conveyed information about the structure of the Universe in beautiful, figurative language that is accessible to anyone, regardless of whether they lived forty thousand years ago or live now. The accuracy and scope of the information conveyed is striking. Our reality, the Universe, which is only partially known to modern scientists, is shown to be a small part, like a grain of sand on the shore of a boundless ocean. It is only one leaflet

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[1] Slavic-Aryan Vedas, "Book of Light," Kharaty 2, p. 36.
[2] Slavic-Aryan Vedas, "Book of Light," Kharaty 2, p. 38.

the reality of our World Tree. And each such leaflet-reality has its own dimension and strictly defined position on the trunk of the World Tree. Curious, isn't it?!

The principle of quantisation of space according to a certain feature, which is known to modern physics for processes occurring at the microcosmic level — the quantisation of electron orbits in atoms. The microcosm has been studied quite deeply by nuclear and quantum physics, while the study and understanding of the structure of the macrocosm is still in its infancy. The simplicity and imagery of the language of the Vedas is no accident. Those who recorded the information in the Book of Light understood perfectly well that any special language for presenting information would be unacceptable, since those who created the special language could all perish for one reason or another and would be unable to convey the meaning of the terms they used to their descendants. As a result, no one would be able to understand the information correctly.

This becomes abundantly clear when we look at modern science. Scientists have invented and introduced so many scientific terms that more than ninety percent of people alive today are unable to understand their meaning. Sometimes it reaches the point of absurdity, when only a few people on the planet are able to understand certain scientific works. And if we analyse the development of science, it becomes clear that the scientific language of today may become absurd and incomprehensible to future generations in the next century, just as, for example, the language of medieval alchemists seems absurd and anti-scientific to modern scientists, although in the Middle Ages alchemy was recognised by all and was an academic science studied by students at universities. And if it weren't for alchemy, inorganic and organic chemistry would never have appeared, which no longer have anything in common with their "mother." Therefore, if there is a need to convey information to distant descendants, the only way to achieve the desired result is to convey the information in the most accessible language possible. Only in this case is there a chance that linguists and historians of the future will be able to read and understand this information. Therefore, from this point of view, a language of presentation that is accessible and figurative for almost anyone to understand is a sufficient guarantee that the information being conveyed will be understood correctly. At the time of writing the Book of Light, there were not only special terms, but also different alphabets for people of different backgrounds and levels of initiation. This created a system that allowed for complete control over access to information. In those ancient times, it was well understood that information is a very powerful weapon that should not fall into the hands of spiritually immature people who could use this information for selfish purposes or ignorantly, which, in turn, could lead to more or less global catastrophes.

> ...However, among the priests of
> the second caste, there was a group
> even more highly initiated, known to few
> of the priests
> l o w e r castes,
> and they had a different Spiritual Teaching, very
> different from the previous ones.
>
> This Spiritual Teaching proclaimed
> that our surrounding Manifest World,
> The world of yellow stars and solar systems is but
> a grain of sand in the infinite universe. There are
> stars and suns that are white, blue, purple, pink,
> green, stars and suns of colours
> unseen by us,
> beyond our senses. Their number is
> infinitely great, their diversity
> boundless,
> and the spaces that separate them are infinite.
> ....
> And all these diverse worlds are nothing
> compared to other worlds
> lying outside our Universe,
> and again, their number is boundlessly great
> and their diversity is immeasurably great.
> Infinities of infinities separate all these diverse and
> varied worlds...[3]

The classification of stars according to their emitted spectrum was only fully established in the second half of the twentieth century, and some types of stars were only discovered with the help of radio telescopes and, naturally, could not be perceived by human senses. This cannot be a mere coincidence, and if so, then there exists

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[3] Slavic-Aryan Vedas, "Book of Light", Haraty 4, pp. 84-85.

a high probability that much of the rest of what is conveyed in the Vedas is close to the truth.

How did it happen that such valuable knowledge was "forgotten" for so long, and why has information about it only now become available to many? Several reasons led to this, and one is the main one.

— lies in the climate changes caused by a sharp cooling thirteen thousand years ago and, as a result, the migration of peoples to warmer regions, during which the migrants broke away from their roots and lost much of the knowledge possessed by their ancestors. Very few High Initiates left with the migrants, which was one of the main reasons for their "feralisation." The harsh nature forced them to fight for physical survival, and they had no time for the stars. And when the danger passed, little remained of the former knowledge, only fragments of it preserved in folk legends. These "fragments" of ancient knowledge were "greater" or "lesser" and, as a result, manifested themselves to a greater or lesser extent in the philosophical systems and religions of different peoples. Keepers of knowledge also travelled to distant lands with the settlers, but most of them were not highly initiated. In addition, people who went to new lands, often thousands of kilometres from their homeland, had to face many difficulties during their journeys: hunger, natural disasters, repelling attacks from other tribes, and carrying out attacks themselves.

Even in those days, much of the land suitable for living was occupied, and finding vacant land was not easy. In most cases, either peacefully or as a result of wars, newcomers settled alongside the indigenous people, living in symbiosis with them and gradually mixing with them. Therefore, survival was the main concern during this period, and knowledge was not in demand during the migrations. Only when the tribes of migrants found new places did the need for knowledge reappear, mainly in the form of applied knowledge that allowed migrants to cultivate the land, create necessary household items and various tools for reviving crafts, since during migrations people took and kept only the most necessary things. Sometimes years or decades passed before the migrants managed to find what they were looking for. Therefore, the training of new knowledge bearers and new priests could not be complete. As a result, the original knowledge was partially lost, partially modified and, as a consequence, in most cases gradually transformed into philosophical and mythological teachings. Similar phenomena occurred as a result of military campaigns. As a result of the Aryan campaign to Dravidia

(Ancient India) in 2691 BC, the tribes living in Belovodye
— The Dravidians and Nagas were subjugated and their knowledge was brought to India, where, in a modified form, it became the foundation of Indian philosophy and mythology:

> ...Other tribes of the Great Race will settle
> throughout Midgard-Earth and cross the Himavat
> Mountains...
> and teach people with skin the colour of the Darkness
> of the Wisdom of the World of Radiance...
>
> So that they would cease to make
> terrible, bloody sacrifices to their
> goddess — the Black Mother
> and the Serpent-Dragons from the World of Navi,
> and find new Divine Wisdom and Faith...[4]

Subsequently, some of the wise sayings from the Wisdom of the World of Radiance were included in a collection called the Rig Veda, which has been preserved in India. In ancient Indian society, a system of varnas was formed, and later castes — closed social formations that united people of strictly defined professions, excluded transition from one caste to another, and prohibited inter-caste marriages. The first place in the social hierarchy belonged to the Brahmins, i.e. priests, who in ancient times usually combined the functions of clergy with those of scholars; then came the Kshatriyas — the military-administrative nobility; the Vaishyas
— free members of the community who were engaged in agriculture, crafts and trade, both in cities and villages. These three varnas emerged during the formation of classes among the Aryan tribes (the H'Aryans and Da'Aryans), while the fourth varna, the Shudra varna, which included disenfranchised community members who were assigned the most unpleasant types of labour, was formed mainly from local tribes, the Dravidians and Nagas, who were conquered by the Aryans during military campaigns.

The ancient Slavic Vedas laid the foundation for the philosophical tradition in ancient India. In the Indian version, the Vedas consist of four collections of hymns (samhitas), chants, magical incantations, prayers, etc.: the Rig Veda, Sama Veda, Yajur Veda, and Atharva Veda (or Atharva

[4] Slavic-Aryan Vedas, "The Book of Perun's Wisdom," Circle One, Santya 5, p. 39.

rvangiras). Over time, each of these collections was supplemented with various commentaries and additions of a ritual, magical, and philosophical nature — the Brahmanas, Aranyakas, and Upanishads. In fact, the philosophical views of Ancient India are most fully reflected in the Upanishads, but the first glimpses of a philosophical approach to reality can already be traced in the collections of Vedic hymns, especially in the oldest of them — the Rig Veda([5]:

7. [Cosmogonic hymn]
Then there was neither the existent nor the non-
existent; There was neither air nor sky above
it.
What was in motion? Under whose cover? What
were the waters, impenetrable, deep?
Then there was neither death nor immortality, there was no
difference between night and day.
Without a breath, the One breathed by itself, And
there was nothing else but it.
In the beginning, darkness was hidden by
darkness, All of it [was] indistinguishable,
fluid.
From the great reserve, the One was born, Covered
with emptiness.
And it began [then] with desire—it was the
first seed of thought.
The connection between the existing and the carrying
Was found, taken into the heart, by the discerning sages. Their
rope was stretched across. Was there
Below [what], was it above?
There were bearers of the seed, there were forces. Desire — below,
effort — above.
Who truly knows, who would now tell, Where did
this universe come from?
The gods [appeared] after its creation. [But] who
knows from what it arose?
From what did this universe arise, did [Who
created it] create it or not?
Whoever saw it in the highest heaven,
That one truly knows. [But] if he does not know?

[5] "Ancient Indian Philosophy. The Early Period." Translated from Sanskrit. Moscow, 1963.

It is even more interesting to trace the reflection of the history of Atlantis and Egypt in the Slavic-Aryan Vedas. And, again, this is mentioned in the Vedas:

> ...The Great Cooling will bring the Da'Aryan wind to
> this land, and Marena will cover it with her White
> Cloak for a third of the summer. There will be no
> food for people and animals during this time, and the
> Great Migration of the descendants of the Heavenly
> Race will begin beyond the Ripian Mountains, which
> protect the western borders
> Holy Rasseniya...
>
> And they will reach the Great
> Waters, the Ocean-Sea of the
> West,
> and the Heavenly Power will carry
> them to the land of the Beardless
> People,
> with skin the colour of the flames of the Sacred
> Fire. The Great Leader will build in that land the
> Temple of the Trident of the God of the Seas.
>
> And Niij, God of the Seas, will send them
> countless gifts,
> and will defend their lands from the Elements of Evil...
> But great prosperity
> will cloud the minds of the chiefs and priests.
> Great Laziness and the desire for what belongs to others will take over their minds.
>
> And they will begin to lie to the Gods
> and to people, and will live by their own
> laws,
> breaking the Covenants of the Wise First
> Ancestors and the Laws of the One Creator
> God.
> And they will use
> The power of the elements of
> Midgard-Earth to achieve their
> goals...
>
> And with their actions, they anger Nia, the
> Great God of the Seas...
> And Nii and the Elements will destroy that land,
> and it will be hidden in the depths of the Great
> Waters, just as it was hidden in ancient times
> in the depths of the northern waters — the Sacred Daaria...

The gods of the Race will save the righteous people
and the Heavenly Power will carry them
eastward, to the lands of the people with skin
the colour of Darkness...
and the Beardless people,
with skin the colour of the flames of the Sacred
Fire, will be carried by the Great Power to the
boundless lands lying in the west of Yarilo-Sun...

The people with skin the colour of Darkness will
worship the descendants of the Heavenly Race as
Gods...
and will learn many sciences from them.
The people of the Great Race
will build new Cities and Temples,
and teach people with skin the colour of Darkness to
grow grains and vegetables...

The Four Great Races, succeeding one another, will teach
the Ancient Wisdom to new Priests... and build Trirani
Tombs,
in the form of man-made, four-sided mountains...[6]

According to this legend, the civilisation of the mythical Atlantis, as the ancient Greeks called it, arose as a result of the migration of the Ant tribes from Belovodye to a large island in the Western Ocean-mo-sea — the Atlantic Ocean — and the creation of another centre of civilisation there. Later, the settlers began to call their new homeland Antlan, i.e. the land of the Ants. Thanks to the ancient Greeks, this name was transformed into Atlantis and will remain in history under this name. In his works, Plato mentions Atlantis and expresses the opinion that with the destruction of Atlantis, Ancient Knowledge was lost. Atlantis sank to the bottom of the ocean as a result of natural disasters. Atlantis was located west of northern Africa. This is confirmed by the mystery and existence of the mysterious Guanches people, discovered by the Portuguese when they once again discovered the Canary Islands, where, to their surprise, they found white-skinned aborigines who, compared to the short Portuguese, looked like giants with their two-metre height. These blue-eyed and fair-haired giants lived on the Canary Islands, but

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[6] Slavic-Aryan Vedas, "The Book of Wisdom of Perun," Circle One, Santia 5, p. 38.

never reached the African continent, which is visible from these islands in good weather. It is also interesting that the Portuguese discovered feral domestic animals on these islands. It seems that the Guanches were descendants of people who had been cast away with their livestock on an uninhabited island, where they eventually became feral or, at least, lost most of the knowledge they possessed. Their language was completely unknown to the Portuguese. Unfortunately, the aggressive policy of the Portuguese led to
the freedom-loving Guanches were destroyed by soldiers or died from diseases brought to the islands, which they did not know. It is also interesting that women fought alongside men, preferring death to slavery. As a result of all this, the feral descendants of the Atlanteans completely disappeared, taking with them yet another mystery of history.

Those who did reach the African continent, reaching the lower reaches of the Nile, created a new civilisation — the civilisation of Ancient Egypt. Ancient Egyptian legends tell us that this country was founded by nine White Gods who came from the North. For the Negroid population of ancient Egypt, the white-skinned newcomers, who were privy to Ancient Knowledge, were undoubtedly like gods. The newcomers not only subjugated the Negroid tribes of ancient Egypt, but also taught them many things: the skills of building houses and temples, agriculture, animal husbandry, irrigation, crafts, navigation, military art, music, astronomy, poetry, medicine, the secrets of embalming, the use of minerals, and the occult sciences. They created a caste system, the institution of the priesthood, and the institution of the pharaoh.

It is also curious that all of the above appeared at once, simultaneously, rather than developing gradually, as would be expected in the case of the gradual development of civilisation. This only confirms that this knowledge was brought in from outside. In addition, it has now been proven that the first four dynasties of the Pharaohs of Ancient Egypt were white people. Research on the mummies of the first dynasties found confirms this beyond doubt. Thus, ancient myths receive scientific confirmation of their reality, which gives reason to believe that other myths may also be based on real facts. Another interesting fact about ancient Egyptian civilisation is that over many thousands of years of existence, this civilisation did not create anything new. The ancient knowledge of the White Gods became sacred to their descendants, guarded by a caste of priests — knowledge turned into dogma. The priests only passed on to new generations the knowledge that they themselves had received from their teachers. Any attempt to change anything

This was perceived as blasphemy; the evolutionary development of Egyptian civilisation was "frozen" by the priests for many millennia. And this unfortunate fact became the main reason for the destruction of Egyptian civilisation. But before it perished, it sowed the seeds of knowledge in the fertile soil of its neighbours.

Secret knowledge from Egypt found its way to Ancient Greece, where the scientific works of philosophers and scholars have been preserved by history. Unfortunately, a huge number of ancient Egyptian manuscripts and parchments, which Alexander the Great and his companions began to collect after the conquest of Egypt, were destroyed in a fire at the Library of Alexandria, set by fanatical Christians. The only things that have survived to this day are the tombs of the pharaohs and nobles of Egypt, and even then only because they were carefully hidden and then covered with sand. That is why the history of Egypt has been studied only through frescoes and inscriptions in pyramids and tombs. That is why little is known about the lives of the people of Ancient Egypt, their philosophical and scientific ideas.

It is also interesting to note that Slavic-Aryan runes and Egyptian hieroglyphs have much in common, and some of them are simply identical... Thus, there is practically no evidence left of the philosophy and scientific thought of Ancient Egypt, only secret repositories of manuscripts created by keepers of secrets escaped being burned, but even now they are not known to the general public. These manuscripts became the basis for the creation of almost all secret societies — Rosicrucians, Illuminati, Freemasons, etc. Nevertheless, the knowledge of ancient Egypt did not disappear without a trace, but found its continuation and development in ancient Greek philosophy.

Ancient Greek philosophy did not originate in Greece itself, nor on the Balkan Peninsula, but on the eastern edge of the Greek world — in the Ionian cities on the western coast of Asia Minor, founded by the Greeks, which developed slave-owning industry and trade earlier than Greece itself, trade, and the spiritual culture that grew out of them. This culture was created under the influence of the more ancient Eastern civilisations of Babylon, Phoenicia, and Egypt. The first materialistic teachings arose in Miletus, the largest of the Greek cities of Asia Minor in the 6th century BC, at the turn of the 7th and 6th centuries BC. Three thinkers lived and established their schools there in succession: Thales, Anaximander and Anaximenes. Asking themselves where everything comes from and what everything turns into, they sought the origin and transformation of all things. At the same time, they understood the primary substance not as dead and matter, but as a substance, alive as a whole and in parts, endowed with soul and movement. Thales (late 7th – first half of the 6th century BC) was a figure who combined an interest in the practical questions of life with a deep interest in questions about the structure of the universe. He was a hydraulic engineer, a versatile scientist and thinker, and an inventor of astronomical instruments. As a scientist, he became widely famous in Greece after successfully predicting a solar eclipse observed in Greece in 585 BC. For this prediction, Thales used astronomical information he had gleaned in Egypt, which was based on the observations and generalisations of Babylonian science, indirectly confirming the existence of scientific knowledge in Ancient Egypt. Thales combined his geographical, astronomical and physical knowledge into a coherent philosophical view of the world, which was materialistic in nature, despite clear traces of mythological ideas. Thales believed that everything that exists arose from a kind of moist primordial substance, or "water". Everything is constantly born from this single source. The Earth itself is held by water and surrounded on all sides by the ocean. It rests on water like a disc or a board floating on the surface of a reservoir. At the same time, the material origin of "water" and all of nature that came from it are not dead, not devoid of life. In the universe, everything is filled with divine essence, everything is animated. Thales attempted to understand the structure of the universe surrounding the Earth, to determine the order in which the heavenly bodies—the Moon, the Sun, and the stars—are arranged in relation to the Earth. In this matter, Thales relied on the results of Babylonian science. But he imagined the order of the heavenly bodies to be the opposite of what it actually is: he believed that the so-called sky of fixed stars was closest to the Earth, and the Sun was furthest away. This error was corrected by his successors.

His contemporary, Anaximander[8] , recognised as the single and constant source of the birth of all things no longer "water" and, in general, not any separate substance, but the primary substance from which the opposites of hot and cold are separated, giving rise to all substances. This primordial substance, distinct from other substances (and, in this sense, indefinite), has no boundaries and is therefore "boundless." When warm and cold separated from it, a fiery shell arose,

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[7] V.F. Asmus. "Ancient Philosophy." Textbook, p. 24. 2nd ed., rev. Moscow, "Higher School," 1976.
[8] Ibid., p. 25.

enveloping the air above the earth. The inflowing air broke through the fiery shell and formed three rings, inside which a certain amount of fire that had broken out was trapped. Thus, three circles were formed: the circle of the stars, the circle of the Sun, and the circle of the Moon. The earth, shaped like a column, occupies the centre of the world and is immovable; animals and humans were formed from the sediments of the dried-up sea floor and changed their forms when they moved onto land. Everything that has separated itself from the infinite must, for its "sin," return to it. Therefore, the world is not eternal, but when it is destroyed, a new world emerges from the infinite, and there is no end to this change of worlds.

The last in the line of Miletus philosophers, Anaximenes [9], who reached maturity by the time of the Persian conquest of Miletus, developed new ideas about the world. Accepting air as the primary substance, he introduced a new and important idea about the process of rarefaction and condensation, through which all substances are formed from air: water, earth, stones, and fire. For him, "air" is the breath that embraces the whole world, just as our soul, being breath, sustains us. By its nature,
"air" is a kind of vapour or dark cloud and is akin to emptiness. The earth is a flat disc supported by air, just like the flat discs of the luminaries floating in it, consisting of fire. Anaximenes corrected Anaximander's teaching on the order of the arrangement of the moon, sun, and stars in space. Contemporaries and subsequent Greek philosophers attributed greater importance to Anaximenes than to other Miletus philosophers.

Analysing these philosophers' ideas about nature, one cannot help but notice that each of them acquired knowledge that was not complete, but fragmentary. And, using each of their "own" fragments, they tried to construct their own picture of the universe. The incompleteness and unfinished nature of the initial foundation on which they relied led to one-sidedness and a strong distortion of the pictures of the universe they created.

The cosmological ideas of Empedocles, who worked in Akragas (Agrigento) on the coast of Sicily in the 5th century BC, are quite interesting. According to Empedocles' cosmology, there are two rotating hemispheres around the Earth. One of them consists entirely of fire, while the other, mixed, consists of air and a small amount of fire. The rotation of this second hemisphere produces the phenomenon of night. The movement began with a disturbance of equilibrium due to the addition of fire. According to the astronomical hypothesis

[9] Ibid., p. 26.

Empedocles believed that the Sun is not fiery by nature. According to Empedocles, the daytime luminary that we see every day in the sky is only a reflection of fire, similar to those that occur on water. The Moon was formed from air carried away by fire. This air condensed at the top, like hail. The moon does not shine with its own light, but with light emanating from the sun. The shape of the universe is not spherical in the strict sense. The world is closer in shape to an egg lying horizontally ([10]) .He imagined that the stars were attached to a solid, crystal-like celestial vault, while the planets moved freely. Empedocles already clearly distinguished between planets that had visible motion relative to the stars surrounding them and stars that were apparently motionless relative to each other. Empedocles' view of the moon as a body formed by the condensation of air, and therefore not self-luminous, suggested an explanation for solar eclipses. He saw the cause of them in the fact that sometimes the dark moon obscures the sun. Empedocles' guess that light needs some time to spread in space was brilliant for that time. This guess totally contradicted all the ideas about the nature of light back then.

In the second half of the 5th century BC, a new centre of scientific and philosophical development appeared in northern Greece, in Thrace: the city of Abdera. It was here that Leucippus carried out his work in his mature years, as did Democritus, who created a new doctrine: atomistic materialism. The name of the doctrine shows that the main physical (and philosophical) view of Leucippus and Democritus consists in the hypothesis of the existence of indivisible particles of matter. The Greek word "atomos" means "indivisible," "uncut into parts." According to Simplicius, Leucippus and Democritus said that the elements (physical elements) are infinite in number, and they called them "atoms" and considered them indivisible and impenetrable, due to the fact that they are absolutely dense and contain no voids. They said that division occurs due to the emptiness contained not inside atoms, but in bodies, while atoms are separated from each other in infinite emptiness and differ in external forms, sizes, positions, and order([11]) .

Atoms rush through the void, catching up with each other, colliding, and, depending on where this happens, some bounce off each other, while others cling together or intertwine due to the correspondence of their shapes and sizes.

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[10] V.F. Asmus. Ancient Philosophy. Textbook, pp. 68-69. 2nd ed., rev. Moscow, Vysshaya Shkola, 1976.

[11] Ibid., pp. 138-139.

rules, provisions and procedures. The resulting compounds hold together and thus produce complex bodies. Leucippus and Democritus believed that not only the number of atoms in the universe is infinite, but also the number of possible forms, i.e. shapes and outlines, of different atoms. There are atoms of various shapes: spherical, pyramidal, irregular, hooked, etc. The number of these different shapes is infinite. Of course, the proof of the infinite number of shapes of atoms could not be empirical, due to the invisibility and intangibility of these shapes, but only logical.

Atomists do not ask about the cause of atomic motion. They do not ask this question not because of "infinity," as Aristotle thought, but because they consider atomic motion to be an inherent property of atoms. Precisely because it is inherent, it does not require an explanation of its cause. But the doctrine of the motion of atoms is not an arbitrary assertion by philosophers about what happens in the realm of the sensually invisible and imperceptible. The theory of the motions of very small atoms, invisible to us, is inspired by our observations of the processes and phenomena occurring in sensually perceptible nature. The theory of atomism originated with Leucippus and Democritus, based on observations and certain analogies. The subject of these observations was such well-known facts as the ability of some solid bodies to contract. If bodies can shrink in volume, then they must consist of particles with empty space between them, otherwise how could they decrease in volume? Accordingly, Democritus explained that a greater or lesser degree of hardness and softness "corresponds to a greater or lesser degree of density and rarity." All things and bodies of the visible, perceptible world, according to their teaching, arise as a result of the temporary connection of invisible and intangible material particles. These particles, contrary to Anaxagoras, no longer possess the potential divisibility to infinity. These are particles that are absolutely indivisible and therefore called "atoms." Atoms, according to their ideas, are such small particles of matter that their existence cannot be detected directly by the senses: we can only infer it on the basis of evidence or reasoning. The cosmology of the atomists and their cosmogony, in their various parts, correspond to different levels of development of ancient science and therefore, in their individual teachings, are far from equivalent.

In some cosmological ideas, the atomists were far ahead of their time, while in others, they remained roughly at the level achieved by the Miletus school, represented by its last representative —

Anaximenes. The new achievements of the atomists were their teachings about the infinity of the universe and the innumerable worlds that exist simultaneously in infinite space. The teachings of Leucippus and Democritus on the infinity of the universe directly stem from their idea of the infinity of empty space and the idea of an infinite number of atoms moving in a vacuum. The atomists imagined the process of the formation of an infinite number of worlds in infinite space as follows: "Standing out from the boundless," a multitude of bodies of various shapes rush into the "great void," and there, gathering together, they produce a single vortex in which, colliding with each other and spinning in all directions, they separate, with similar ones moving away from similar ones. Those that are of equal weight, due to their large accumulation, are no longer able to spin... Thus, the thin bodies retreat to the outer parts of the void, as if flying away to the periphery. The others "stay together" and, intertwining with each other, move together and form, first of all, a kind of spherical connection. This spherical connection separates from itself, as it were, a shell that encompasses various bodies. A thin shell formed on the periphery of the vortex from the continuously flowing continuous masses. The reason for its formation was the rotation of the bodies and the resistance of the centre. This is how the Earth came into being: the masses carried to the centre began to stick together. The process did not stop there. The shell that had formed on the periphery continued to grow, carried away by the vortex, and the periphery attached everything it touched. As a result, some configurations of bodies formed connections. When these bodies, initially wet, dried up, they began to spin together with the world vortex. Subsequently, igniting, they became heavenly lights. Closest to the Earth is the circle of the Moon, furthest away is the circle of the Sun. Between these extreme circles are the circles of all the other lights.

It should be noted that when Leucippus speaks of the spherical shape of the connection between particles or bodies that arose in the centre, and of the shell that separated from this connection, he describes the process of the formation of only one of countless worlds — the one in which our Earth, Sun, and the stars moving between the Earth and the periphery of our world arose. But the world that came into being in this way, according to Leucippus, does not yet exhaust the universe. It is only one of an infinite number of worlds that are formed and perish. The development of ancient Greek philosophy before Socrates was, in general, the history of the emergence and development of materialism — from Thales to Democritus. In the teachings of Democritus (late 5th — early 4th century BC)

, ancient Greek materialism reached its highest form, becoming atomic materialism in philosophy and, at the same time, in science.

The situation changed at the beginning of the 4th century BC. Plato, with a talent rare in the history of thought, created the doctrine of objective idealism. From then on, in Greek philosophy, the "line of Democritus" sharply and irreconcilably opposed the "line of Plato." By "matter," Plato means the infinite beginning and condition of spatial separation, the spatial division of multiple things existing in the sensory world. In mythical images, Plato characterises matter as the universal "nursemaid" and "receptor" of all birth and creation. However, "ideas" and "matter," or the realms of "being" and "non-being," are not opposed in Plato as equal and equivalent principles. According to Plato, the world, or the realm of "ideas," has indisputable and unconditional primacy.

Plato's teachings did not remain static, but developed and changed throughout his long life. An important stage in Plato's development was his rapprochement with the Pythagoreans. The mathematical and cosmological teachings of Pythagoreans such as Archytas and Philolaus undoubtedly became known to Plato and must have attracted his attention. In Plato's late dialogue Timaeus, devoted to questions of cosmology, Plato directly attributes the cosmological teachings he expounds to the Pythagoreans. According to this teaching, the world is a living being in the shape of a sphere. As a living being, the world has a soul. The soul is not in the world as its "part," but surrounds the whole world and consists of three principles: "the same," "the other," and "essence." These principles are the highest foundations of "finite" and "infinite" being, i.e., ideal and material being. They are distributed, according to the laws of the musical octave, in circles that draw the heavenly bodies in their movements. Surrounded on all sides by the world soul, the body of the world consists of the elements of earth, water, fire, and air. These elements form proportional combinations according to the laws of numbers. The circle of the "identical" forms the circle of fixed stars, the circle of the "other" — the circle of planets. Both stars and planets are divine beings, animated by the world soul, just like the rest of the world. Since the elements of earth, water, fire and air
— physical, then they, like geometric bodies, are limited by planes. The shape of the earth is a cube, water is an icosahedron, fire is a pyramid, and air is an octahedron. The sky is decorated in the image of a dodecahedron. The life of the world soul is governed by numerical relationships and harmony. The world soul not only lives, but also cognises. In its circular return movement, whenever it comes into contact with something that has essence, it testifies with its

that it is identical to something, that it differs from something, and also where, when, and how everything that exists happens to be — in relation to the eternally unchanging and in relation to other existing things. The word of this bears witness equally true — both in relation to the "other" and in relation to the "identical." When it refers to the sensual, firm true opinions and beliefs arise. When it refers to the rational, then thought and knowledge necessarily attain perfection([12]).

The greatest of Plato's direct disciples was Aristotle. The nature of Aristotle's philosophical teachings on being was reflected in his physical teachings, as well as in his cosmology. In his teachings on motion, Aristotle took into account everything that had been discovered on this subject by his predecessors — people of everyday experience and philosophy. Both groups pointed out that only four types of motion are possible: increase and decrease; qualitative change, or transformation; creation and destruction; and motion as movement in space([13]).

Just as, when investigating the types of causes, the question was raised about causes that are mutually reducible and irreducible, so, when investigating the problem of motion, Aristotle asks which of the four types of motion is the principal one, irreducible to the others. According to Aristotle, this is movement in space: it is the condition for all other types of movement. Aristotle's doctrine of movement in space as the fundamental of the four types of movement did not lead Aristotle to a rapprochement with the atomistic materialists. Leucippus and Democritus believed that all qualities perceived by our senses are based on spatial forms and spatial configurations of atoms moving in a vacuum. This theory ruled out the possibility of one property being transformed into another. It claimed that these transformations were the result of the insufficient permeability of our senses and feelings, which did not "reach" the contemplation of atoms with their only objective differences in shape, position in space, and order relative to each other. For Aristotle, this view was unacceptable. Despite the role that spatial motion plays in Aristotle's cosmology, Aristotle's physics remains fundamentally qualitative rather than quantitative. Aristotle

[12] V.F. Asmus. Ancient Philosophy. Textbook, pp. 223–224. 2nd edition, supplemented. Moscow, Vysshaya Shkola, 1976.
[13] Ibid., pp. 289-294.

Aristotle affirms the reality of qualitative differences and the reality of the qualitative transformation of some physical elements into others. Aristotle contrasts the physical theories of the atomists and Eleatics with his own, the physical foundations of which are based on his philosophical teaching about possibility and reality. Since, according to Aristotle,
"matter" is the possibility of "form," it is also true that "matter" is
"form." The possibility of taking form, becoming form, changing into form is rooted in the very nature of "matter." Change is not the result of external bodies or their particles in space. For objects to interact with each other, it is sufficient that, belonging to the same genus, these objects differ from each other only in their specific characteristics.

According to Aristotle, space is nothing more than the place occupied by a body. But a place is the boundary of another body that surrounds a given body. Therefore, if there are no bodies outside the world, then this means that there is neither place nor space there. The world encompasses not only place, but also all time. Time itself is a measure of movement. Since movement does not extend to the realm beyond the world, neither does time. The Earth remains motionless at the centre of the world. And in this statement, Aristotle's cosmology
is a step backward compared to the cosmology of Plato and the Pythagoreans. Both Plato and the Pythagoreans developed the doctrine of the Earth's motion. The Pythagoreans taught about its motion around the "central fire." Plato hinted, albeit vaguely, at the idea of the Earth's motion around its axis.

However, Aristotle was not behind his time in all matters of cosmology. An outstanding achievement of his cosmology was his rigorous proof of the spherical shape of the Earth. He proved this sphericity from observations made during lunar eclipses. These observations show that the shadow of the Earth, looming over the visible surface of the Moon during a lunar eclipse, is round in shape. According to Aristotle's explanation, only a spherical body, which in this case is the Earth, can cast a shadow into space — in the direction opposite to the Sun — which, when projected onto the spherical surface of the Moon, appears as a dark circle approaching the disc of the full Moon.

The influence of Aristotle's other cosmological teachings proved to be enormous. First of all, this is the doctrine of the division of the world into two areas, completely different from each other in their physical nature and perfection: the area of the Earth with its four elements — earth, water, air, fire — and the area of the sky and the fifth element — ether. From the ether co-are the heavenly bodies and the sky itself. This is the realm of all that is eternal and perfect. The fixed stars, the most perfect of all heavenly bodies, reside in the realm of ether. Their substance is pure ether, and they are so far removed from Earth that they are inaccessible to any influence from the four earthly elements. The planets, the Sun and the Moon are also composed of ether, but unlike the fixed stars, they are already subject to some influence from the earthly elements. Objects on Earth are composed of the elements of earth, water, air and fire. Their place of residence is Earth, the realm of constant change, transformation, birth and death. As the heaviest of all the elements, Earth is at the centre of the world. It is spherical, as evidenced by the round shape of the Earth's shadow cast on the Moon's disc during lunar eclipses. The Earth is surrounded by water, and above the water is a shell of air. The lightest element, fire, is located in the space between the Earth and the Moon and touches the border of the fifth element, ether. Not only is the physical body of the world divided into two completely different areas, but the movements occurring in the universe are also divided into two completely different types. These are perfect movements, or uniform circular movements, and imperfect movements, or rectilinear movements. A pure example of perfect movement is the daily rotation of the sphere of fixed stars around the Earth. A less pure example of perfect movement is the complex movements of the planets, which are uneven and partially inclined. The complexity and confusion of planetary movements are due to the influence exerted on them by the earthly elements. An imperfect form of movement is movement from top to bottom, or, in other words, towards the centre of the Earth. All bodies rush downwards, and only a violent obstacle can temporarily suspend their movement. From this, Aristotle concludes that the Earth not only occupies the centre of the universe, but also remains motionless in it. Even if the Earth did move, it could only be temporary, and then it would stop again.

The philosophical heritage of the ancient Greeks became the foundation for the development of philosophy in Ancient Rome and later in Europe. In various historical periods, different positions formulated by different ancient Greek philosophical schools were put forward. Nothing fundamentally new was created during these historical eras. Only with the advent of the Renaissance did another revival of philosophical and scientific thought occur, which, unfortunately, was strictly regulated by the Christian church. One of the greatest philosophers and scientists of this era was Leonardo da Vinci (1452-1519), better known

known as the greatest artist. His scientific legacy, which was centuries ahead of its time, has been undeservedly forgotten. Not all of his scientific works have survived. Here is what he wrote about the Earth and the universe:

"...The Earth is not at the centre of the solar circle or at the centre of the world, but at the centre of its elements, which are close to it and connected to it; and anyone standing on the Moon, when it, together with the Sun, is below us, would see this Earth, with its element of water, as playing and indeed playing the same role as the Moon in relation to us. All your speech should lead to the conclusion that the Earth is a luminary, almost like the Moon..."([14])

For the first time, the idea is expressed that the Earth is not the centre of the universe, but only one of the planets in the solar system. In itself, this alone is a huge step forward in our understanding of the structure of the universe. These ideas continued to develop in the works of the Polish astronomer and thinker Nicolaus Copernicus (1473-1543). In an attempt to understand the structure of the universe, he put forward a number of propositions:

First proposition. There is no common centre for all circles, i.e. celestial spheres.

Second proposition. The centre of the Earth is not the centre of the world, but only the centre of gravity and the centre of the Moon's path.

Third proposition. All planetary orbits surround the Sun on all sides, near which is the centre of the world.

Fourth proposition. The ratio of the distance of the Sun from the Earth to the distance of the firmament is less than the ratio of the radius of the Earth to the distance from the Sun, so that this ratio, in the abyss of the heavens, is negligible.

Fifth proposition. Everything we see moving in the firmament is explained not by its own motion, but by the motion of the Earth itself. It is the Earth, together with its nearest elements, that performs a rotational motion around its fixed poles and in relation to the immovable sky during the course of a day.

Sixth proposition. Any apparent movement of the Sun does not come from its own movement; it is an illusion caused by the movement of the Earth and its orbit, along which we revolve around the Sun or around some other star, which means that the Earth performs several movements at the same time.

Seventh proposition. The apparent retrograde and prograde motions of the planets are not their own motions; they are

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[14] Anthology of World Philosophy, Academy of Sciences of the USSR, vol. 2, p. 88. Mysl, Moscow, 1970.

— is also an illusion caused by the movement of the Earth itself. Thus, its movement alone is sufficient to explain so many apparent differences in the sky[15].

Copernicus assumed that the universe is spherical because a sphere is the perfect shape:

"...The universe is spherical, both because a sphere is the most perfect shape and is a closed entity that does not need any fastenings, and because of all shapes, this is the most capacious, the most suitable for containing and preserving the entire universe; or also because all the independent parts of the universe

— I mean the Sun, the Moon, and the stars — we observe them in this form; or because all bodies achieve limitation in this form, as can be seen in drops of water and other liquid bodies when they strive for self-closure. Therefore, no one will doubt that this form is inherent in celestial bodies... The sky, compared to the Earth, is immense, and... it appears to be of infinite size, while the Earth, as assessed by our senses, relates to the sky as a point relates to a body, or as something finite in size relates to something infinite. But this proves nothing else; and it does not follow from this that the Earth must rest at the centre of the world. Everything

above boils down only to proving the immensity of the sky compared to the size of the Earth. But how far this immensity extends, we do not know.

Galileo Galilei (1564-1642) continued to develop Copernicus' ideas in his works. In his letter to Francesco Ingoli, Galileo expressed the idea that human science will never be able to determine whether the universe is finite or infinite. And further [16]:

" Of the natural things worthy of study, in the first place, according to

In my opinion, the structure of the universe must be established. Since the universe contains everything and surpasses everything in size, it determines everything else and reigns supreme over everything. If anyone has managed to rise, intellectually, high above the general level of humanity, it was, of course, Ptolemy and Copernicus.

The development of ideas about the universe was accompanied both by ingenious conjectures about the nature of phenomena and by the accumulation of religious and philosophical ideas prevailing in a particular historical period. Therefore, the golden grains of true knowledge can be found

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[15] Ibid., pp. 118-122.

[16] Ibid., p. 227.

among both supporters of materialism and idealism. For example, Immanuel Kant (1724-1804), the founder of so-called critical or "transcendental" idealism, in his "pre-critical" period (before 1770) created a "nebular cosmogonic hypothesis, in which the origin and evolution of the planetary system are derived from an initial diffuse cloud of particles. At the same time, Kant put forward a hypothesis about the existence of a large universe of galaxies outside our galaxy, developed the theory of the slowing down of the Earth's daily rotation as a result of tidal friction, and the concept of the relativity of motion and rest. These studies, united by the materialistic idea of the natural development of the universe and the Earth, played an important role in the history of dialectics([17]).

"...I believe that the initial state of nature was the universal dispersion of the primary substance of all celestial bodies or, as they (ancient Greek materialist philosophers) call them, atoms. Epicurus assumed that there is a force of gravity that causes these primary particles of matter to fall; it seems to differ little from Newton's law of gravitation, which I accept."

Kant sees in the indefinite tendency of every fully formed universe towards gradual destruction one of the arguments in favour of the idea that, in contrast to this, in other places the universe will create new worlds to compensate for the damage done to it in any one place. There is a constant renewal of nature, the infinity of creation is so great that, in comparison with it, any world or any Milky Way of worlds is viewed by him in the same way as a flower or an insect is viewed in comparison with the Earth. While nature adorns eternity with a variety of phenomena, God, in his tireless creation, according to Kant, creates the material for the formation of even greater worlds.

"...When, across the infinity of time and space, we observe this phoenix of nature, which burns itself only to be reborn from its ashes, when we see how nature, even where it decays and grows old, inexhaustible in new manifestations, and at the other boundary of creation in the space of unformed primary matter, it constantly expands the sphere of divine revelation in order to fill eternity and all space with its wonders..."([18])

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[17] Ibid., pp. 92-93.
[18] Ibid., p. 97.

Drawing on Newtonian mechanics, Kant attempts to prove the futility of attempts to explain the formation of planetary systems, in particular the solar system, by means of the laws of mechanics, which, in his opinion, are incapable of explaining the patterns of planetary behaviour:

"...If we assume (and this cannot be denied) that the above analogies establish with the utmost certainty that the harmonious and regularly connected motions and orbits of celestial bodies point to a natural cause as their source, then this cause cannot be the very matter that now fills the celestial space. Therefore, the matter that previously filled this space and whose movement served as the basis for the current revolutions of the celestial bodies, after it accumulated in these bodies and thus cleared the space, which is now empty, or (as directly follows from the above) the matter of which the planets, comets, and even the Sun itself, must have been originally scattered throughout the space of the planetary system and, in this state, must have been set in motion, which it retained even after it had combined into separate clumps and formed celestial bodies containing within themselves the previously scattered substance of world matter...[19]

Thus, Kant sees in the very existence of planetary systems the finger of God, which ultimately sets primary matter in motion and without which the universe cannot exist, since matter itself is incapable of carrying within itself an organising principle. The rapid development of the natural sciences in the nineteenth and twentieth centuries provided a huge amount of facts about the nature of both the macrocosm and the microcosm. More sophisticated instruments allowed natural scientists to penetrate much deeper into the vastness of the universe. Scientific research became increasingly specialised. New theories of the formation of the universe appeared, such as the Big Bang theory, according to which our universe arose as a result of a super-explosion of the super-dense core of the universe, the matter of which served as the building material for the formation of metagalactics, galaxies. The main evidence for this position was the fact of "galaxies running away," which, in itself, does not mean anything. The facts about what is happening in the cosmic space around us required some kind of fundamental theory of the universe.

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[17] Ibid., p. 99.

which was proposed by Einstein. In his theory of relativity, he put forward two fundamental postulates: the postulate that the universe is homogeneous in all directions, in other words, that the properties of space are identical in all directions, and that the speed of light is a constant and the maximum permissible speed of matter.

In principle, Einstein's theory of relativity was the final link in the accumulation of ideas about the universe based on atomistic theory. The fundamental difference from previous ideas about the nature of the universe lies in the consideration of time as a relative quantity depending on the speed of matter. In principle, this position became the third postulate of the theory of relativity, in which time acts as the fourth dimension of space, in contrast to previous theories of space, where time was assumed to be absolute in three-dimensional space.

Based on his theory of relativity, Einstein attempted to create a General Field Theory that could explain all natural phenomena based on a single principle. His attempt was unsuccessful. In addition, the instruments created not only confirmed the existence of atoms, which Leucippus and Democritus had spoken of, but also allowed us to penetrate the atom itself, and thus the indivisible "building blocks" of the universe turned out to be complex systems. Thus, the development of knowledge about the universe proceeded in two directions: knowledge of the macrocosm and knowledge of the microcosm. It was this fact that became the main mistake of virtually all theories of the universe. Nature is unified at all levels, both at the level of the microcosm and at the level of the macrocosm. Only by considering them together, as a single whole, is it possible to obtain a correct understanding of the nature of the universe.

1.2. Summary

Thus, an analysis of humanity's history of ideas about the nature of the universe has shown that:

1. Throughout known history, human ideas about the nature of the universe have changed inconsistently. In ancient times, there were civilisations and cultures whose ideas about the nature of the universe were, in some respects, significantly broader than those of today. Much of the knowledge of ancient civilisations was destroyed either during wars or by fanatics of new religions.

2. Human history has seen several periods of rapid advancement in scientific understanding of the universe, followed by entire eras of ignorance and barbarism. Based on the surviving fragments of true knowledge, "new" theories of the universe began to emerge, which only in modern times have reached a certain degree of completeness.

3. Ideas about the nature of the universe reflect and determine the level of development of scientific thought and technology, as well as the future development of civilisation as a whole. Incorrect ideas about the nature of the universe not only determine the evolutionary potential of civilisation, but also the degree and quality of its interaction with nature. With incomplete or erroneous ideas about the nature of the universe, human activity leads to the destruction of the ecological system, which, ultimately, can lead to the destruction of life itself on the planet.

4. Scientific discoveries in the last quarter of the twentieth century demonstrated the inconsistency of existing ideas about the nature of the universe, and the need arose to create new ideas about nature. Without a new theoretical system of ideas, there can be no further qualitative development of science and civilisation as a whole.

Chapter 2. Heterogeneity of space

2.1. 's formulation of the question

Before embarking on the creation of any theory of the universe, it is necessary to define the concepts that form the foundation of this theory. Without a clear definition of the initial and boundary conditions, a complete theory cannot be created. Let us first define what time is. For a long time, time was recognised as absolute, and it was only in the twentieth century, when developing his theory, that Einstein proposed the idea of the relative nature of time and introduced time as the fourth dimension. But before defining the absolute or relative nature of time, it is necessary to determine what time actually is. For some reason, everyone has forgotten that time is a conditional quantity introduced by humans themselves and does not exist in nature. In nature, there are periodic processes that humans use as a benchmark for coordinating their actions with those around them. In nature, there are processes of matter transitioning from one state or form to another. These processes occur faster or slower, and they are real and material.

In the universe, processes of transition of matter from one state to another, from one quality to another, are constantly taking place, and they can be reversible or irreversible. Reversible processes do not affect the qualitative state of matter. If a qualitative change in matter occurs, irreversible processes are observed. In such processes, the evolution of matter proceeds in one direction — from one quality to another — and therefore it is possible to quantitatively assess these phenomena. Thus, in nature, processes of change in matter are observed that proceed in one direction. A peculiar
"river" of matter with its own source and mouth. Matter taken from this
"rivers" has a past, present and future. The past is the qualitative state of matter that it had before, the present is the qualitative state at the moment, and the future is the qualitative state that this matter will take on after the destruction of the existing qualitative state.

The irreversible process of qualitative transformation of matter from one state to another proceeds at a certain speed. At different points in space, the same processes can proceed at different speeds, and in some cases, the speed varies within a fairly wide range. To measure this speed, humans invented a conventional unit called a second. Seconds merged into minutes, minutes into hours, hours into days, and so on. Periodic natural processes, such as the daily rotation of the planet around its axis and the period of the planet's revolution around the Sun, served as units of measurement. The reason for this choice is simple: convenience in everyday life. This unit of measurement was called a unit of time and became widely used. It is interesting to note that many peoples, initially isolated from each other, created very similar calendars, which may have differed in the number of days in a week or the beginning of the new year, but the length of the year was very similar. It was the introduction of a conventional unit of time that allowed humanity to organise its activities and simplify interaction between people.

The unit of time is one of mankind's greatest inventions, but we must always remember the fundamental fact that it is an artificially created quantity describing the speed of a qualitative transition of matter from one state to another. There are periodic processes in nature that served as the basis for the creation of this conventional unit. These periodic processes are objective and real, while the units of time created by humans are conventional and unreal.

Therefore, any use of time as a real measurement of space has no basis. The fourth dimension — the measurement of time — simply does not exist in nature. It is precisely the everyday and ubiquitous use of units of time, which accompany a person from the first moment of their life to the last, that very often create the illusion of the reality of time. It is not time that is real, but the processes occurring in matter, the unit of measurement of which is the unit of time. There is a subconscious substitution of one for the other, and as an inevitable result of this substitution of the real process with the unit of its measurement — the merging of one with the other in human consciousness — *Homo sapiens* has been played a cruel joke. Theories of the universe began to be created in which time was accepted as an objective reality. Objective reality is the processes taking place in matter, not a conventional unit for measuring the speed of these processes. In other words, a subjective value was mistakenly introduced into the initial and boundary conditions for the creation of theories of the universe. And this subjective value, as these theories of the universe developed, became one of the "stumbling blocks" on which these theories of the universe "crashed".

Let us try to identify other "pitfalls" of well-known theories of the universe. First of all, let us define the concept of matter. Matter is understood as *objective reality, given to us through our senses*. Sensations are information that reaches the brain about the world around us through the senses. The purpose of the human senses is to ensure the optimal existence of humans as living organisms in their environment. The human senses were formed as a result of humans adapting to the conditions of existence in their ecological niche. Therefore, the development of the sense organs followed the path of optimal adaptation of the human organism to the ecological system. Thus, the sense organs developed and formed as a result of adaptation to the conditions of existence in the ecological niche and serve those forms of matter that formed the ecological system as a whole and the ecological niche occupied by *Homo sapiens* as a species. This is the purpose of the human senses, and therefore the sensations received through these senses will correspond to the qualitative structure of the matter that forms the ecological system.

The emergence of human intelligence did not change the nature of our sensory organs, so our sensory organs can only give us an idea of the matter that forms the ecological environment of human beings.

human beings. Man-made devices have only allowed us to expand the range of perception of our senses, but not to penetrate into new qualities of matter. Our senses are limited, and therefore our understanding of the nature of matter will inevitably be limited. Adapting to the conditions of existence in an ecological system and understanding the nature of matter are two completely different things, which should not be confused. The absolutisation of our senses is another pitfall of existing theories. Our senses give us an idea of the four aggregate states of physically dense matter — solid, liquid, gaseous and plasma — as well as the optical range of longitudinal and transverse waves and the acoustic range of longitudinal waves. Everything else is not perceived by our senses and cannot be an "objective reality" given to us in our sensations. Does this mean that nothing else exists, and why should our sensations be the absolute criterion for the existence of matter?

It is quite natural that we perceive the world around us through our senses and only through them, but this does not mean that our sensations are absolute. It should be remembered that man exists in the "middle" world — between the macrocosm and the microcosm, and therefore all our ideas have been formed as a result of observing this intermediate world of nature. Meanwhile, the laws of nature are enacted at the level of the macrocosm and microcosm, and humans deal only with the manifestations of these laws in the intermediate world of human existence.

Observing the manifestations of the laws of the microcosm and macrocosm in the intermediate world, man has created a picture of this intermediate world that quite accurately reflects the state of this world of human existence. But this picture does not fully reflect the nature of the macrocosm and microcosm and therefore cannot claim to convey a complete picture of the universe as a whole. Thus, modern ideas about nature only partially reflect reality, and the universal laws created by humans sometimes present unexpected surprises when humans attempt to penetrate the depths of both the macrocosm and the microcosm.

One of these universal, fundamental laws in the natural sciences is the law of conservation of matter. Discoveries in nuclear physics in the last quarter of the twentieth century destroyed this fundamental pillar of modern physics. The basic law of physics — the law of conservation of matter — was destroyed by the results of experiments conducted by nuclear physicists.

The essence of this postulate is that *matter does not appear from nowhere and does not disappear anywhere*. As applied to the synthesis of particles during nuclear reactions, this law can be written as follows:

$$m1 + m2 > m3 \tag{2.1.1}$$

In other words, the mass of the particle created as a result of synthesis must be less than or equal to the total mass of the particles that created it. The results of the experiments shocked nuclear physicists, and they are still unable to recover from this shock to this day. The whole point is that in some experiments, the mass of the resulting particle sometimes exceeded the total mass of the particles that created it by several orders of magnitude:

$$m1 + m2 << m3 \tag{2.1.2}$$

Real experiments, real instruments, and absolutely fantastic results. The substance appeared out of nowhere. Moreover, the deviation of the results from the law is not within the margin of error of the instruments. Instruments with an error of more than five percent are practically not used for scientific research. Therefore, when the results differ by several orders of magnitude from the expected ones, the margin of error of the instruments is irrelevant. The fact is that scientists have no explanation and cannot have one. The phenomena they observe through instruments or visually are manifestations of the real laws of nature. The real laws of nature are formed at the levels of the macrocosm and microcosm. Everything that a person comes into contact with in their life is between the macrocosm and the microcosm. That is why, when a person was able to look into the microcosm with the help of instruments, they encountered the laws of nature for the first time, rather than their manifestations. Matter does not appear out of nowhere. Everything is much simpler and more complex at the same time: what people know about matter and think of as a complete, absolute concept is, in fact, only a small part of this concept. Matter does not disappear anywhere or appear from nowhere; the Law of Conservation of Matter does exist, but it is not what people imagine it to be. Physically dense matter is only one form of matter that humans perceive through their senses.

Now, let us analyse the concepts of space itself, on which modern scientific ideas are based. Space is assumed to be three-dimensional and homogeneous. It should be noted that the space around us is perceived by our eyes as three-dimensional. The purpose of our eyes is to act as optical sensors.

created by nature — ensuring an adequate response to the natural world around us. Our eyes allow our brain to create an accurate picture of the surrounding nature, without which a person simply cannot exist as a living being. At the same time, human eyes are adapted to functioning in a gaseous environment, which is the planet's atmosphere. We perceive the "picture" we see as three-dimensional space. But if we immerse ourselves in an aquatic environment, which, according to our understanding, is also three-dimensional, then in this environment our eyes will give us a distorted picture of it, which prevents us from orienting ourselves correctly in it. Meanwhile, the eyes of marine animals allow them to orient themselves in an aquatic environment without any problems. Their orientation in the air environment will be as impaired as ours in the water. In water, the "picture" we see will differ from the three-dimensional image we are so accustomed to. It turns out that the aquatic environment is qualitatively different from the air environment. And this difference is not only in the density of the molecules relative to each other and the qualitative composition of these molecules. Of course, these factors are important. The question is, are they the only ones? At this point, we come to the question: is space homogeneous?

2.2. The qualitative structure of space

All existing theories of space have considered space to be a homogeneous substance. The homogeneity of space implies that the properties of space are the same in all directions. This means that matter should manifest itself identically at any point in homogeneous space. Is this really the case? Let us analyse this situation. Astronomers and astrophysicists know that during a total solar eclipse, it is possible to observe objects that are obscured by our Sun. Based on the concept of homogeneous space, this is simply impossible. Nevertheless, it is a scientific fact. The impossibility of this is determined by the fact that electromagnetic waves in homogeneous space must propagate in a straight line. But if this is the case, then it is absolutely impossible to observe objects covered by another object located closer to us.

The explanation for this phenomenon was given as follows: a massive cosmic object, such as the Sun, affects the straight-line propagation of light waves, bending their trajectory, as a result of which we are able to observe what is behind it. The explanation is undoubtedly correct, but there is one ma-

However, if we consider space to be homogeneous, this becomes impossible. The question arises: is it homogeneous? The only possible explanation for this fact may be to recognise space as heterogeneous.

Let us analyse other facts. For example, the phenomenon of refraction of light waves propagating in a straight line by different media. These phenomena are called optical phenomena of nature. Their essence is that different media have a density different from the density of a vacuum, which is assumed to be zero. The speed of propagation of light waves in a vacuum **C** is taken as a constant and equal to 300,000 km/s. The medium resists the propagation of light waves, as a result of which their propagation speed in a given medium becomes less than the speed of propagation of these waves in a vacuum and becomes equal to V**.** Thus, a given medium affects the speed of light propagation with a coefficient n**,** which is called the refractive index of the medium:

$$\mathbf{n = c/v} \qquad (2.2.1)$$

where:

n is the refractive index;

c — speed of light (photon);

v — speed of light (photon) in the medium.

Using this refractive index, it is possible to calculate the point at which light exits this medium at the boundary with another medium. Practically every schoolchild has performed similar calculations and experiments on the transmission of light through a prism. Everything seems simple and clear. However, there is one small caveat. It appears when this information is compared with the rules of quantum physics, which describes the nature of waves, including those in the optical range. According to the concepts of quantum physics, light waves are emitted and absorbed in specific portions called photons. Each photon has an energy equal to:

$$\mathbf{E = hf} \qquad (2.2.2)$$

where:

h = 6.62×10^{-27} Erg/sec — Planck's constant;

f — photon frequency.

Thus, each photon has a strictly defined energy, and this energy determines its speed of movement in the medium. Therefore, we can establish the following identity:

$$\mathbf{mc^2/2 = hf} \qquad (2.2.3)$$

When passing through a medium, the wave velocity decreases proportionally to the refractive index of that medium ($\mathbf{c = nv}$) and, consequently, the energy of the photon decreases:

$$E_{cp} = \mathbf{mv^2 /2= hf} \qquad (2.2.4)$$

Naturally, the energy of a photon in a medium is less than its energy in a vacuum:

$$\mathbf{Eav<E}$$

Substituting their equations, we obtain:

$$\mathbf{mv^2 /2= hf < mc^2 /2= hf} \qquad (2.2.5)$$

Analysing this relationship, we inevitably come to the conclusion that when the energy of a photon changes, its frequency must change, and therefore its wavelength $\boldsymbol{\lambda}$. In other words, one photon enters the medium and another exits. This clearly contradicts reality. The conclusions of linear optics contradict quantum mechanics. Each photon has a strictly defined energy; it is emitted when an electron transitions from a higher allowed orbit to a lower one; when a photon is absorbed by an atom, the atom's electron transitions from the lower allowed orbit to the higher one, as determined by quantum physics. But a photon does not change when passing through a medium, while its speed decreases. How can this be?

If we assume that space is homogeneous, i.e., its properties and qualities are unchanging, we end up with an absurdity. This absurdity disappears if we recognise that **space is heterogeneous,** that its properties and qualities change in different directions, and that the matter filling space influences the properties and qualities of the space it fills, while space influences matter. This is known as feedback. As a result, a state of equilibrium is established between the matter filling space and the space in which this matter is located. In such equilibrium, matter is stable. At this point, we have come to understand another natural phenomenon — radioactivity. Radioactivity is a phenomenon in which an atom becomes unstable and decays, releasing energy and forming a more stable atom or atoms. Instability occurs when a photon is absorbed by a given atom. When a photon is absorbed, an electron transitions from one allowed orbit to another. But why does one atom become unstable and decay when a photon is absorbed, while another remains stable? Transuranic elements with an atomic weight exceeding 238 a.u. and a complex electron orbital structure are considered radioactive. The decay of such atoms could be explained by their complex structure, which is disrupted when absorbs a photon and transitions from a stable state to an unstable one, causing the atom to decay. Everything would seem fine if it weren't for one small **BUT**. Not only transuranic elements are radioactive, but also isotopes of all other elements. It is curious that, for example, hydrogen isotopes — deuterium and tritium, with atomic masses of two and three atomic units, are radioactive, while the gold atom is the most stable, with an atomic weight of almost one hundred and ninety-seven atomic units. In this and similar cases, it is impossible to explain stability and instability by the complexity of the structure of atoms. Once again, a paradox and a seemingly irresolvable contradiction arise. This would be the case if we assumed that space is homogeneous. But if we assume that space is heterogeneous, the contradiction and absurdity disappear.

We will examine the nature of radioactivity below. At this point, we are interested in the nature of space. As can be seen from the examples above, both at the macrocosmic and microcosmic levels, space is heterogeneous. The idea that space is homogeneous in all directions, with no "north" or "south," "top" or "bottom," is the basis of modern cosmology, which is based on Einstein's theory of relativity. Research conducted on a radio telescope outside the Earth's atmosphere has confirmed the heterogeneity of space. After analysing radio waves from 160 distant galaxies, physicists from the University of Rochester and the University of Kansas in the United States made a striking discovery that radiation rotates as it moves through space in the form of a barely noticeable pattern resembling a corkscrew, unlike anything previously observed. A complete rotation of the "corkscrew" is observed every billion miles that the radio waves travel. These effects are in addition to what is known as the Faraday effect, the polarisation of light caused by intergalactic magnetic fields. The periodicity of these newly observed rotations depends on the angle at which the radio waves move relative to the orientation axis passing through space. The more parallel the direction of wave motion is to the axis, the greater the radius of rotation. This orientation axis is not a physical quantity, but rather determines the direction in which light travels in the universe. According to researchers, when observed from Earth, the axis runs in one direction, towards the constellation *Sextant,* and in the other direction, towards the constellation *Aquila.* Which direction will be "top" or "bottom" is likely to be an arbitrary choice, they believe.

This discovery was made by Dr George Nodland and Dr John Ralston. They published a report on it in Physical Review [20]in 1997. Thus, the qualitative structure of space must be heterogeneous. Let us analyse the phenomenon of spatial heterogeneity. The heterogeneity of space means that its properties and qualities are different in different areas of space. It is logical to assume two possible states of space: undisturbed space, in which its properties change continuously and smoothly in specified directions, and disturbed space, in which a sharp change in properties and qualities is observed.

Let us assume that undisturbed space existed at the beginning of the formation of spatial structures, and as these structures formed, areas of disturbed space arose. Areas of disturbance arise under the influence of external factors, which may be other qualitative spaces that share certain properties and qualities with the given space. Naturally, these spaces cannot be completely identical, but only partially so. Thus, space can be in a disturbed and undisturbed state, which is an important point for understanding the nature of stars, to which we will return below. For now, let's deal with matter. **If space is practically and theoretically unlimited and its properties and qualities change continuously, then matter is finite. The finiteness of matter is due to the fact that it has specific qualities and properties that have their limits and, as a result, are finite.** Space and matter interact with each other, and this interaction is mutual. Therefore, when **an infinite quantity with continuously changing properties and qualities — space — interacts with a finite quantity with specific properties and qualities — matter — their interaction occurs only in that area of space where the properties and qualities of space and matter are identical to each other.** And if we assume that there are many types or forms of matter, each of which differs from the other in its properties and qualities, either partially or completely, and these forms of matter "overlay" space with continuously changing properties and qualities, then **there will be a distribution of these free forms of matter throughout space, according to the principle of identity between the properties of space and the forms of matter.**

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[20] "This Side Up' May Apply To the Universe, After All," by John Noble Wilford, The New York Times, 1997.

A process similar to the separation of mixtures of liquids with different densities occurs. Over time, all the liquids in the mixture will settle into layers one above the other, with the denser liquids (and therefore heavier ones) moving to the bottom of the vessel, and the less dense (and therefore lighter) ones settling closer to the top. If enough time passes, layers of liquids with different densities will form in one vessel. And if liquids of different densities are coloured in some way, for example, the densest is coloured red, and, as the density of the liquids decreases, they are coloured orange, yellow, green, blue, blue and purple, then, after the mixture of these liquids of different densities settles, multicoloured layers of liquids will appear in the vessel in descending order of density — red, orange, yellow, green, blue, blue and purple.

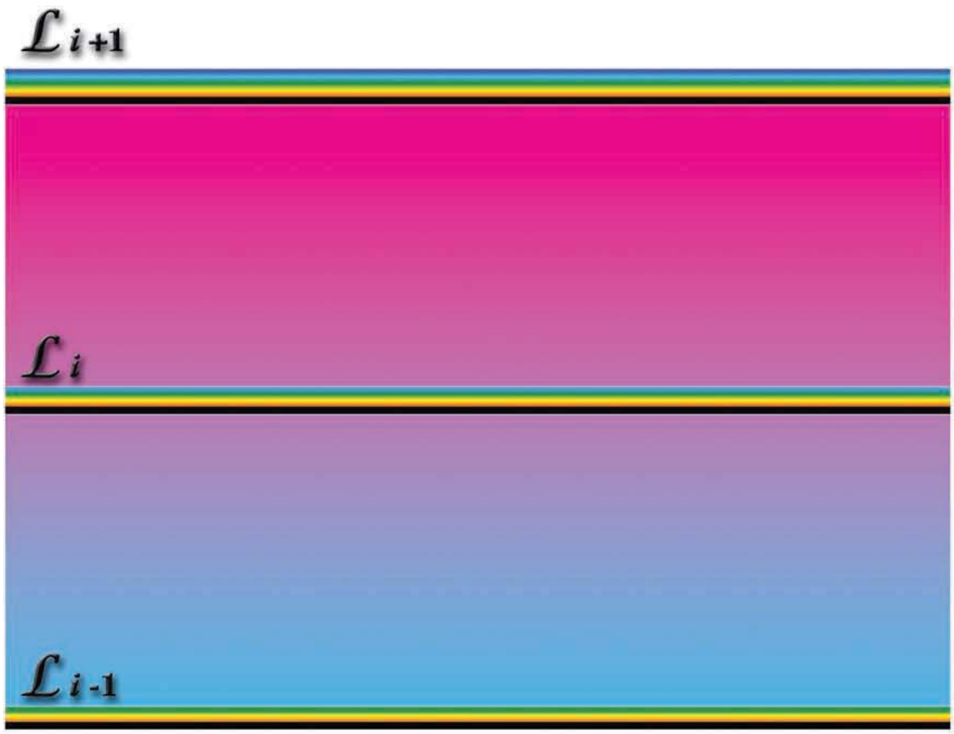
Liquids with different densities are also matter, differing only in one quality — density. In this case, a kind of quantisation (division) of the same matter occurs according to one property or quality. Therefore, if we assume the existence of a multitude of forms of matter, differing from each other in their qualities and properties in a space with continuously changing properties and qualities, then quantisation of this space will occur according to these forms of matter. And if we assign different colours to different forms of matter, space will turn into a colourful layered "pie". And if, in the case of a mixture of liquids, the criterion for separating liquids in a vessel was the density of these liquids, then in the case of different forms of matter, we will take the dimensionality of space as a similar criterion. We will call a space with continuously changing dimensionality a matrix space. Thus, in this matrix space, when it interacts with forms of matter, layers with identical dimensionality will arise. We will call each layer of identical dimensionality of this matrix space a space-universe with a given level of dimensionality. In other words, a change in the dimensionality of the matrix space by a certain amount, ΔL, leads to a qualitative change in the matrix space and the formation of a space-universe of a new qualitative composition within it.

Many of us probably played with building blocks as children, putting them together to make different pictures. So, changing the dimension of space by an amount $\mathbf{\Delta L}$ is equivalent to the appearance of a new block and the possibility of using it to put together a new "picture" universe by rearranging all the blocks. This becomes possible only when all the "blocks are of the same size." If we mix cubes of different sizes and try to assemble them into a picture, we will not succeed, even if we have enough "cubes" for several "pictures." First, we need to sort these "cubes" by size, and then assemble them into "pictures." A sequential change in dimensionality by the same amount ΔL is the quantisation of the matrix space and is expressed by the quantisation coefficient $\boldsymbol{\gamma i}$, which is the standard by which the "cubes" are selected to create a new "picture".

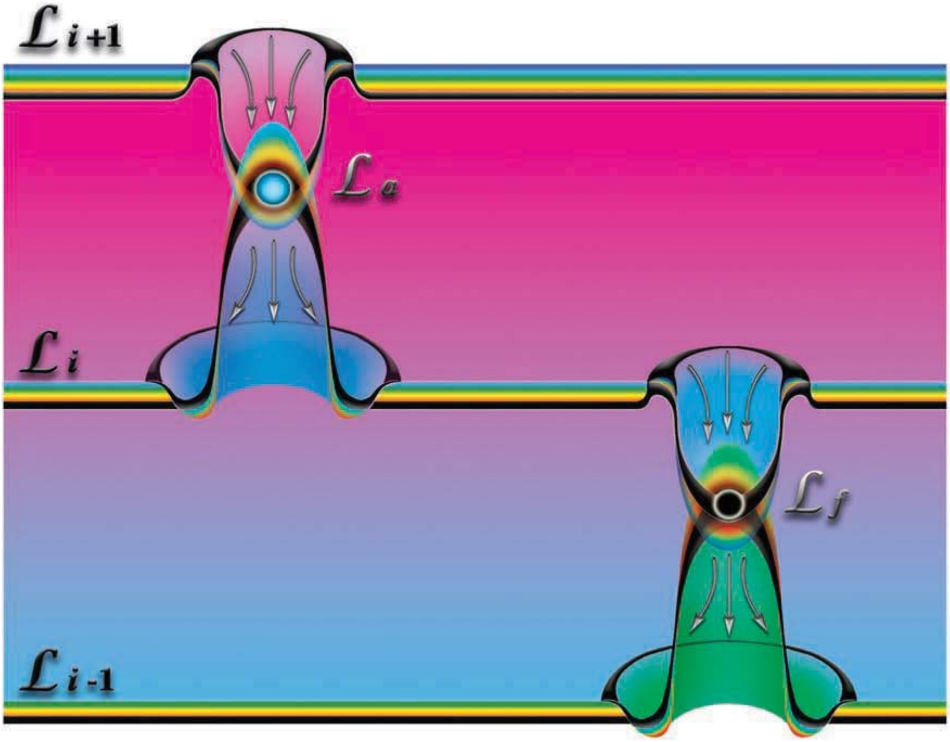
Thus, just as different pictures can be assembled from different numbers of cubes of the same size, so too can spaces-universes be formed from identical forms of matter in matrix space. These spaces-universes form a single system in matrix space, like a layer cake, each layer of which is qualitatively different from the others. At the same time, each adjacent layer of this pie has one more or one less "cube" in its "mosaic" **(Fig. 2.2.1)**. All these layers are in constant motion and interaction with each other. The result of such interaction between neighbouring space-universes is the appearance of stars and "black holes" in the areas of contact (**Fig. 2.2.2)**. At the same time, where one space-universe touches another that has one more "cube" in its composition, a star appears, and where there is one less "cube", a "black hole" appears.
"cube" more, a star appears, and where there is one "cube" less, a "black hole" appears.

2.3. System of matrix spaces

Thus, a system of spaces formed by the synthesis of matter of one type is created. The coefficient γi can take on a wide variety of values. Even a negligible change in its value prevents matter of our type from merging into substance (evolving). With a different value of γi, conditions arise for the merging of matter of a different type, distinct from the given one. This leads to the formation of a qualitatively different system of spaces — a different matrix space is formed. As a result, we have a whole system of matrix spaces that differ from each other in the coefficient of quantisation of the dimension of space and the type of matter that forms them. This manifests itself in the qualitative difference between substances that arise when different types of matter and different quantities of forms of matter that make up each of these types of substances merge. Each matrix space is heterogeneous in terms of dimension. These fluctuations in the dimension of the matrix



$\mathcal{L}_{i+1}$
$\mathcal{L}_{i}$
$\mathcal{L}_{i-1}$


$\mathcal{L}_{i+1}$
$\mathcal{L}_a$
$\mathcal{L}_i$
$\mathcal{L}_f$
$\mathcal{L}_{i-1}$

The dimensions of the matrix space lead to the fact that in some of its areas there is a convergence with other matrix spaces that have the same dimension in these areas. Zones of flow arise from the matrix space with one dimension coefficient γ to the matrix space with another. And if, in the case of the formation of stars and black holes, everything was determined only by the amount of matter forming the space-universes in the closure zone, and, at the same time, the matter was of the same type, i.e., quantised by the dimensionality coefficient, then when matrix spaces close, zones of flow arise for matter with different coefficients $\boldsymbol{\gamma i}$, matter of different types, which cannot be compatible under any conditions.

What happens in these zones where matrix spaces meet? Well, in these zones, both types of matter disintegrate, and "free" matter of both types is formed. But what happens next? Three conditions influence the processes occurring in these zones:

1) The number of forms of matter of a given type that make up each matrix space in the zone where they meet. Most often, the number of forms of matter that make up each of the matrix spaces is different. This, in turn, creates a different flow of matter, in terms of its overall composition, flowing from one matrix space to another and back. Two opposing flows arise, leading to the formation of powerful vortex flows of two types of matter in the zone of their intersection. At the same time, the more powerful flow will reverse the weaker one and create a powerful vortex fountain of two types of matter.

2) The power of matter flows from matrix spaces is influenced by the dimensionality of the zone where two matrix spaces meet. Naturally, this dimensionality cannot be harmonious with the dimensionality type of each of the matrix spaces, but it can be closer to the dimensionality type of one or the other. In other words, there is a dimensionality difference in the matrix spaces in the junction zone, which is different for each of the matrix spaces.

$$|L'_1 - L'_{12}| < |L'_2 - L'_{12}| \qquad (2.3.1)$$

The sign of this difference — positive or negative — is also important. A negative difference means more favourable conditions for the flow of matter from a given matrix space.

3) The type of quantisation of the dimension of matrix spaces is closer to the dimension of the closure zone of matrix spaces. The following occurs:

$$|L'_1 - L'_{12}| / L'_1 < 0$$
$$|L'_1 - L'_{12}| / L'_2 > 0$$
or (2.3.2)
$$|L'_1 - L'_{12}| / L'_1 > 0$$
$$|L'_1 - L'_{12}| / L'_2 < 0$$

The dimensionality of the closure zone may be closer to the type of dimensionality L'_1 or L'_2. At the same time, if the difference in dimensionality, conditionally $\Delta L'_{12}$, and the quantisation coefficient γ'_1, then the decay of matter of the type of dimensionality L'_2 occurs.

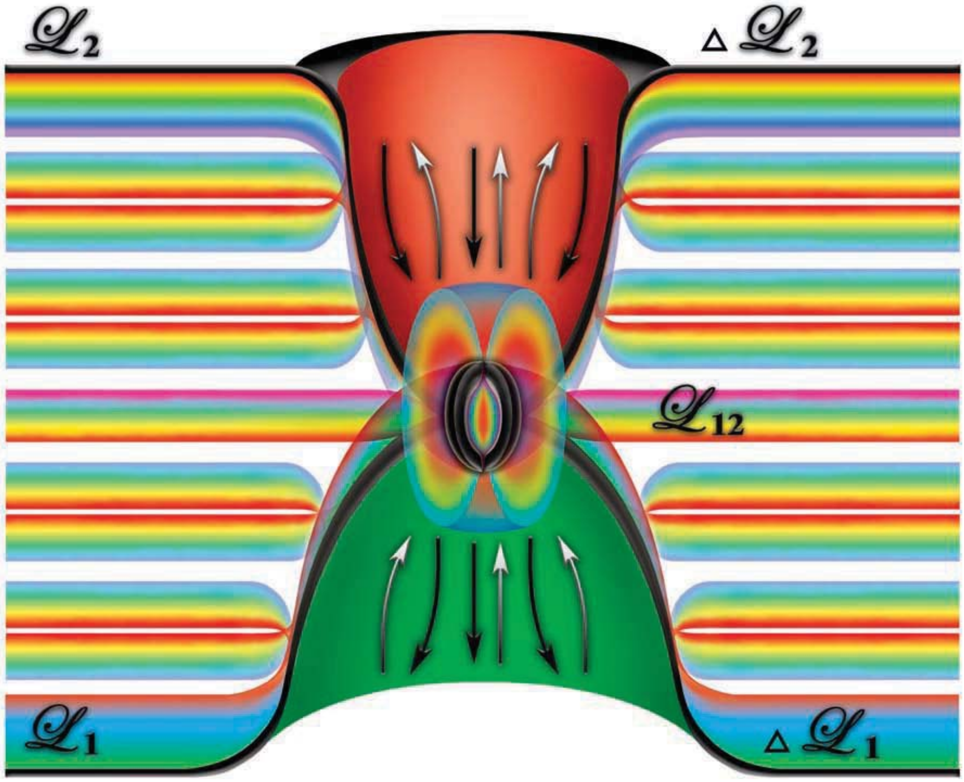
$$| L'_{12} - a\,\gamma'\,1 \,\square \rightarrow 0$$
If:
$$| L'_{12} - b \,\square\square\, 2 \,\square \rightarrow 0$$

There is a decay of matter of dimension type L'_1. If: $(\Delta L'_{12} - b\,\gamma'_2)$ < 0, synthesis of matter of dimension L'_2 occurs. Conversely, if: $(\Delta L'_{12} - a\,\gamma'_1) < 0$, synthesis of matter of dimension L'_1 occurs.

Where: **a** and **b** denote the number of times the coefficient γi "fits" into the zone of deformation of the space dimension.

In other words, in the closure zone, the synthesis of forms of matter of one of the two types of dimensionality of matrix spaces may occur due to the splitting of matter of the other type. During this synthesis, matter of an intermediate dimension type may be absorbed and matter of an intermediate type may be released, which, in turn, causes instability in the matrix space with a dimension quantisation type $\boldsymbol{\gamma 1}$ or $\boldsymbol{\gamma 2}$, depending on the direction of matter flow. Isn't it true that this is very reminiscent, in its nature, of exothermic and endothermic reactions at the microcosmic level, in which heat was either absorbed or released from the environment?

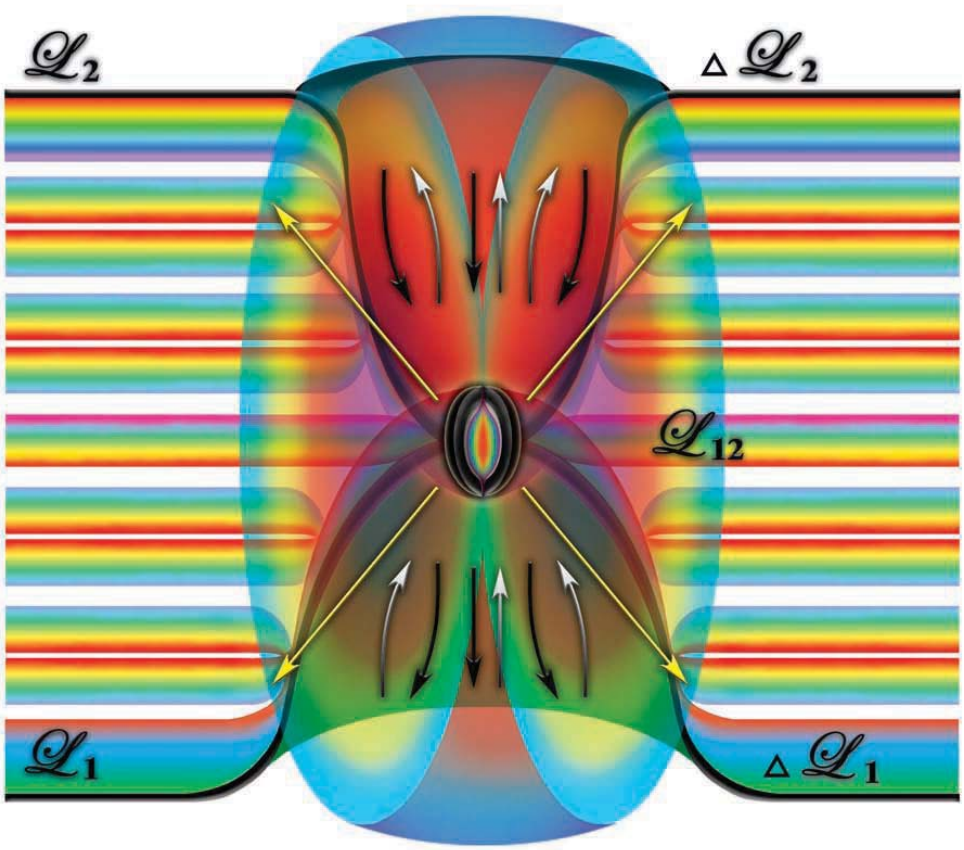
Let us return to the processes occurring in the zone where two matrix spaces meet. Depending on how the three conditions listed above interact, a zone of synthesis of matter of a given type or a zone of decay of this matter may arise in the zone where two matrix spaces meet. In one case, a centre for the formation of space-universes with a given type of dimensional quantisation arises.


$\mathscr{L}_2$
$\triangle\mathscr{L}_2$
$\mathscr{L}_{12}$
$\mathscr{L}_1$
$\triangle\mathscr{L}_1$

space, a super analogue of a star (**Fig. 2.3.1**). In another case, a centre of decay of space-universes with this type of space dimension quantisation arises (a super analogue of a "black hole"). At the same time, synthesised forms of matter of this type of dimensional quantisation begin to accumulate in the zone of closure of matrix spaces, and if the mass of matter flowing out of the zone of closure is less than the mass of synthesised matter, an excessive concentration of matter arises in this zone of closure of matrix spaces. Over time, the excess concentration becomes critical and begins to interfere with the inflow of matter into this zone, leading to instability in the dimensionality of this zone. A super-explosion occurs, during which the excess of synthesized forms of matter is ejected from the zone of convergence, and at the same time, fluctuations in dimensionality arise within each of the matrix spaces (**Fig. 2.3.2)**. In these zones of internal dimensionality fluctuations of the matrix space, the process of forming space-universes begins, from which systems of space-universes (metaverse) are formed in the zones of internal dimensionality fluctuations of space (**Fig. 2.3.3)**. Naturally, the amplitude of the internal fluctuation of the dimensionality of the matrix space increases with distance from the zone of convergence of the matrix spaces. This leads to the fact that in these zones, different numbers of forms of matter of a given type can merge together. Moreover, the further away from the centre of the zone of convergence of matrix spaces, the greater the number of forms of matter that can merge and form substance (**Fig. 2.3.4)**.

Two forms of matter that have merged together in the first zone from the centre form a metaverse from a single space-universe. Three merged forms of matter form a metaverse of three space-universes in the next zone. When four forms of matter merge, a metaverse of seven space-universes is formed. The merger of five, respectively, gives twenty-five. The merger of six gives sixty-six. When seven merge, one hundred and nineteen merge; when eight merge, two hundred and forty-six merge; when nine merge, four hundred and fifty-nine space-universes merge, forming a metaverse in the corresponding zone of internal dimensional oscillation of a given matrix space. The number of possible space-universes included in the metaverse is determined by the formula for the number of combinations of matter that form the substance of space-universes (**Fig. 2.3.5)**.

$$\sum\sum \mathbf{C^m_n} = \mathbf{n!/m!(n-m)!} \qquad (2.3.3)$$
$$\mathbf{2 \leq m \leq n}$$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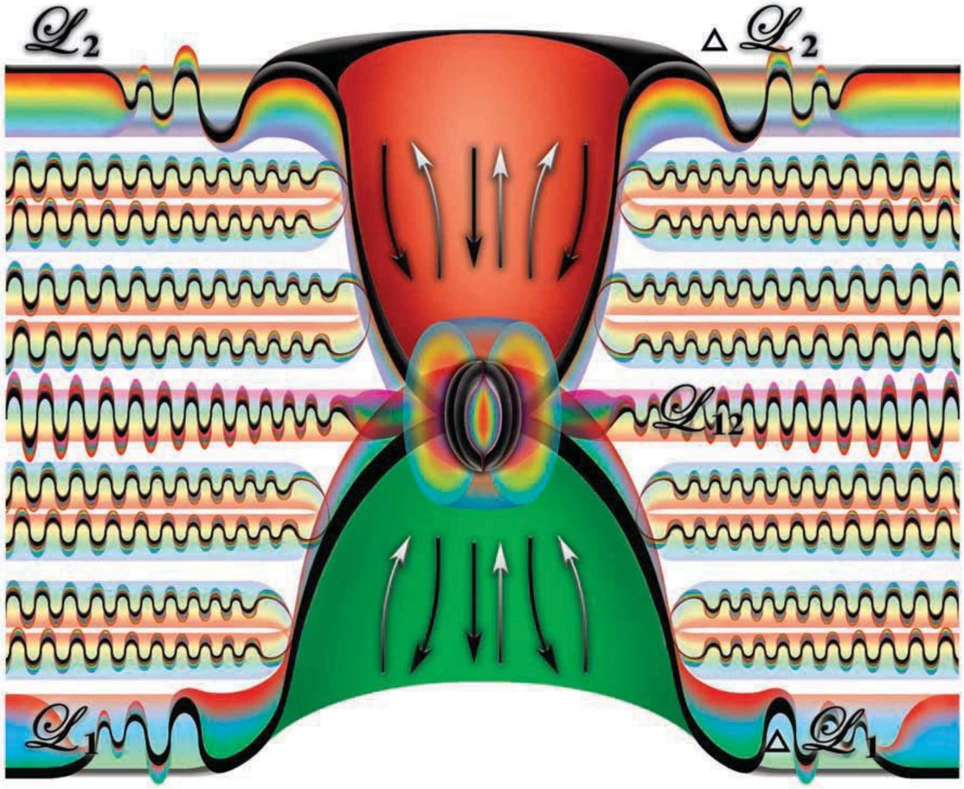
$\mathscr{L}_1$
$\triangle\mathscr{L}_1$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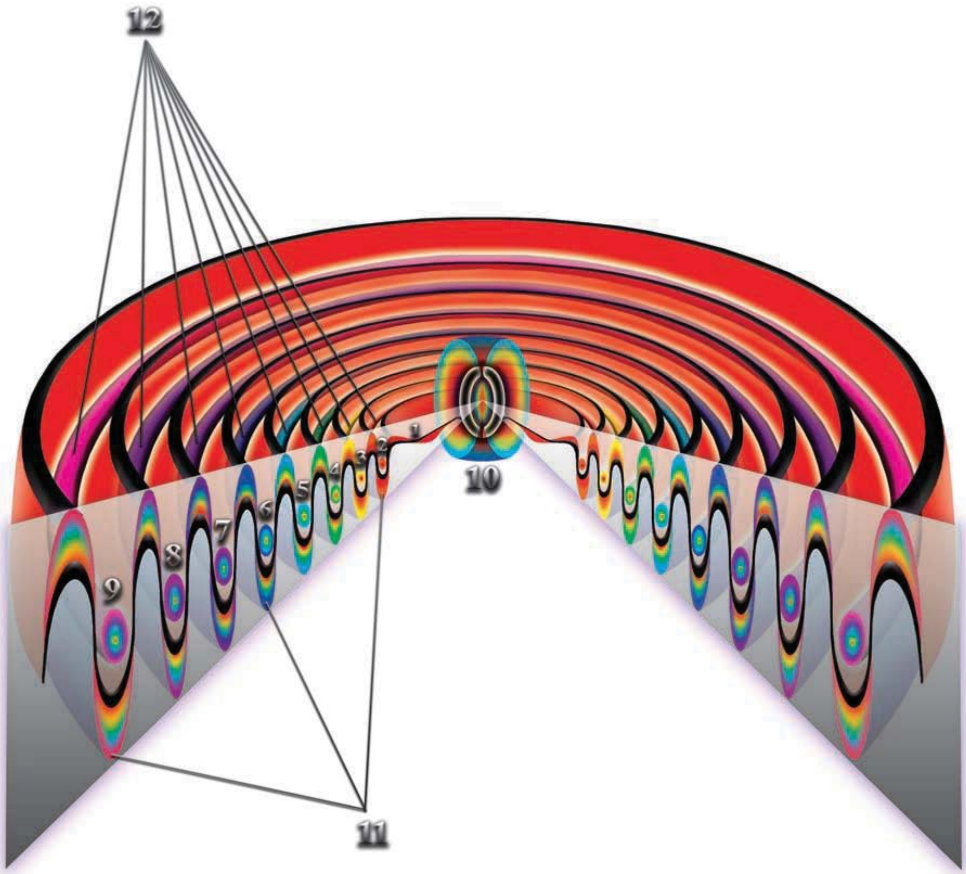
$\Delta\mathscr{L}_1$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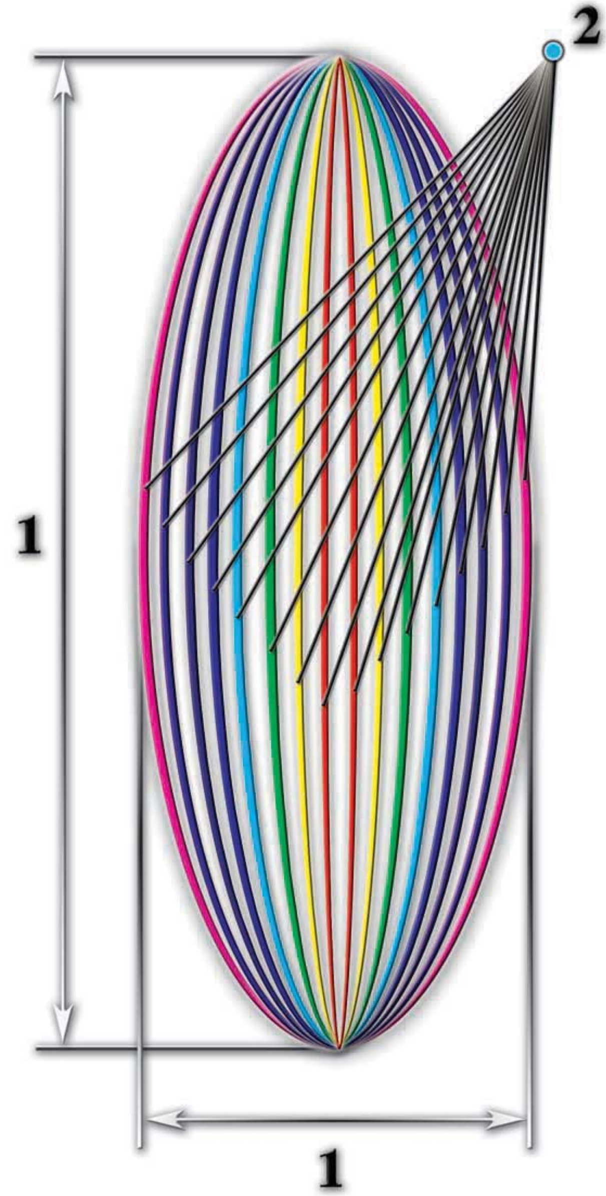

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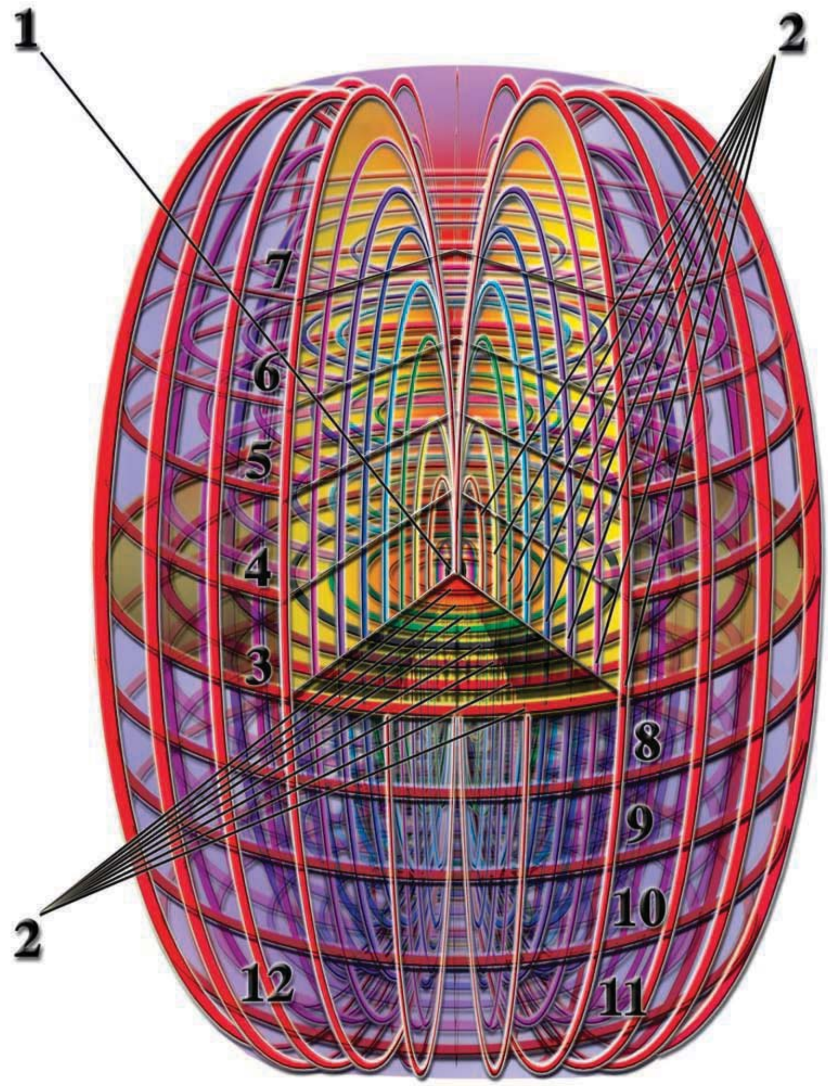
where: **n** is the maximum number of matters of a given type of quantum dimension, with a quantisation coefficient γ_i, which form space-universes in a given zone of internal oscillation of the matrix space dimension. Most often, the number of space-universes forming a given metaverse is less than the maximum. And the further away from the centre of the zone of convergence of matrix spaces, the greater the difference between the possible and actual number of space-universes forming a given metaverse. The further away from the centre, the more "free spaces" there are. The fact is that the conditions for quantisation of the dimension of a given zone of dimensional oscillation are only the necessary conditions for the formation of space-universes. This condition becomes sufficient only when the necessary mass of matter for the synthesis of these space-universes enters this zone of internal oscillation of the dimensionality of the matrix space. Although the mass of matter "ejected" from the zone of convergence of matrix spaces during a super-explosion is enormous, it is always a finite quantity. This mass is sufficient for the formation of a finite number of space-universes. After the super-explosion, the zone of convergence of matrix spaces decreases, which leads to a decrease in the mass of incoming matter. Over time, this process reaches a certain, specific, balanced level. As a result of the super-explosion, a system of metaverse is formed, which we will conditionally call the first-order super-space, which is formed by the fusion of nine forms of matter **(Fig. 2.3.6)**.

It should be noted that the metaverse, which arose in areas of internal fluctuation in the dimensionality of matrix space, itself influences the dimensionality of the surrounding matrix space. The curvature that arises when two matrix spaces meet is not the same in different directions. This means that there is some difference in both the form and qualitative composition of the metaverse that arises in these zones. Thus, there is an uneven distribution of matter in different directions. This, in turn, leads to varying degrees of secondary influence on the dimensionality of the matrix space by the emerging metaverse in the corresponding zones. The curvature that arises at the moment of the super-explosion also has a different sign along the axis passing through the zone of convergence of the matrix spaces. Therefore, the metaverses arising in these internal zones of curvature of the matrix space cause secondary curvature of the dimensionality in opposite directions, parallel to the same axis passing through the zone of closure of the matrix spaces. This opposite deflection on both sides, as metaverses are formed, leads to c l o s u r e .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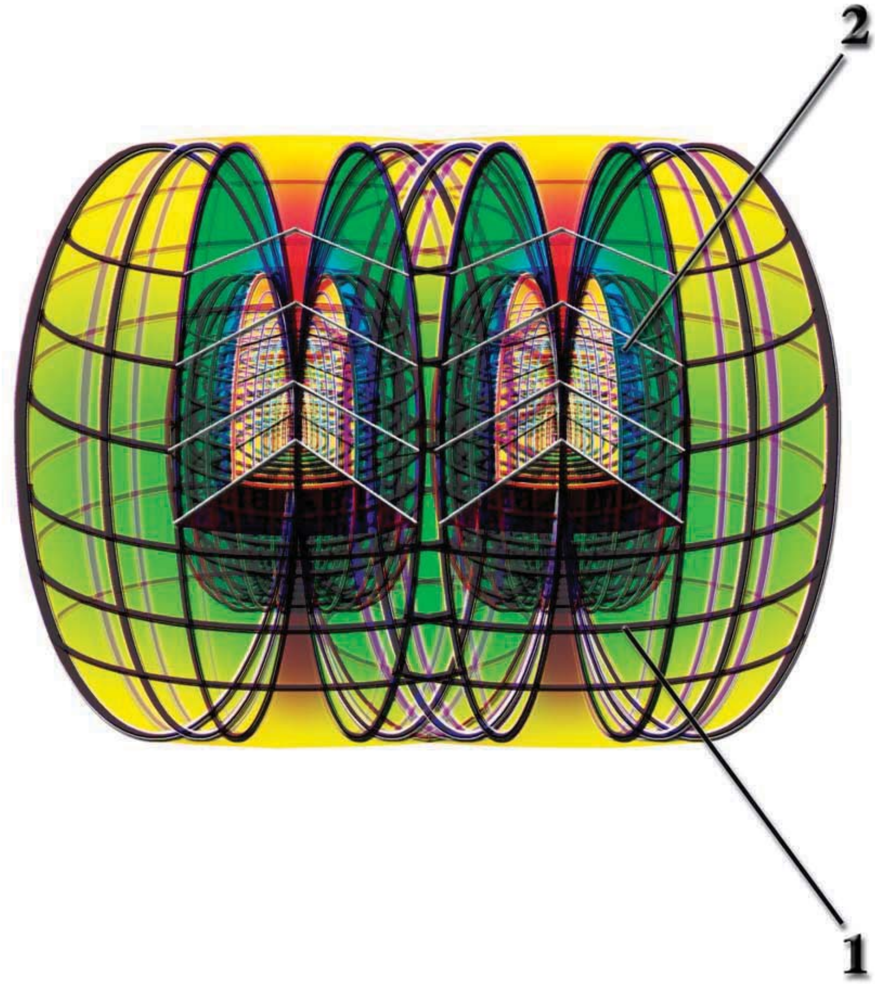
secondary curvature of the matrix space in the zone of balanced dimensionality of the matrix space that existed before the super-explosion. Thus, as a result of the evolution of the processes described above, a closed system of metaverse — a first-order super-space — emerges. In our matrix space, the opposite closure, which arose due to the influence of metaverse on the dimension of the matrix space, occurs in the metaverse formed by nine forms of matter. The super-space closes like the valves of a mollusc shell. The forms of matter flowing through the closing zone of the matrix spaces do not have another zone of curvature of the matrix space in which they could merge. Such zones arise only when two closing zones of matrix spaces of the same sign arise relatively "close" to each other. At the same time, counter waves of internal curvature of the matrix space are formed, and when they resonate, additional zones of internal curvature of the matrix space arise. In these zones, metaverse are formed, arising from the merging of ten forms of matter, which, in turn, again cause the counter-closure of these metaverse, as a result of the influence of these metaverse on the dimensionality of the matrix space in which they are located. A second-order super-space is formed from ten forms of matter (**Fig. 2.3.7**).

At the same time, the closure of the second-order metaverse of super-space occurs at a different balance level of matrix space dimensionality than the closure level of the first-order super-space. This is due to the different degrees of influence of the metaverses formed by ten and nine forms of matter on the dimensionality of matrix space. For the formation of metaverse from eleven forms of matter, it is necessary that the three super-spaces of the second order are located at a distance from each other no more than their own size. At the same time, three counter-waves of internal curvature of the matrix space arise, which, when resonating, create additional zones of curvature. In these zones, the synthesis of metaverse from eleven forms of matter takes place. Once again, the metaverse closes, but now at a different balance level of matrix space. A closed spatial system is formed — a third-order super-space (**Fig. 2.3.8)**.

Similarly, for the twelve forms of matter to merge, there must be four counter-currents of internal curvature of matrix space, which, in the resonance zones, create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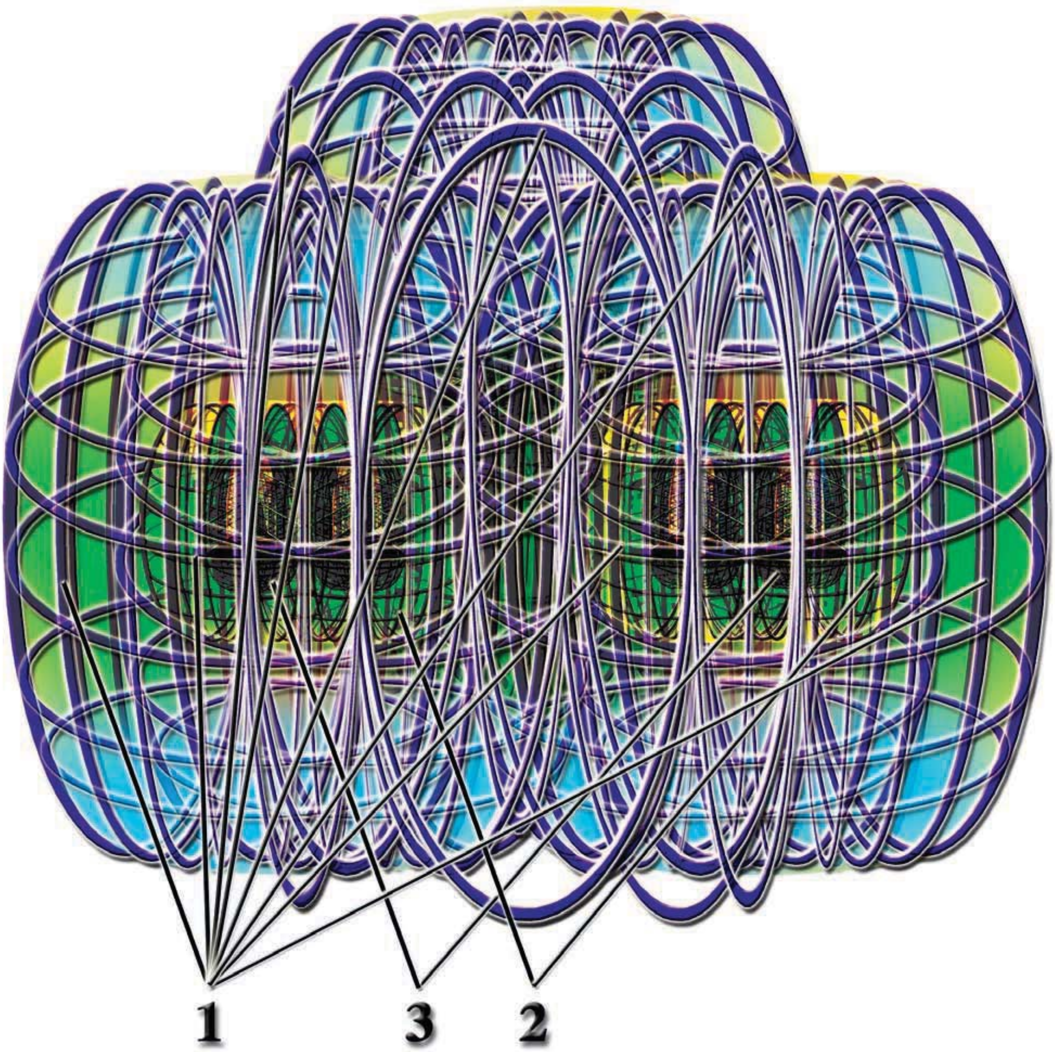
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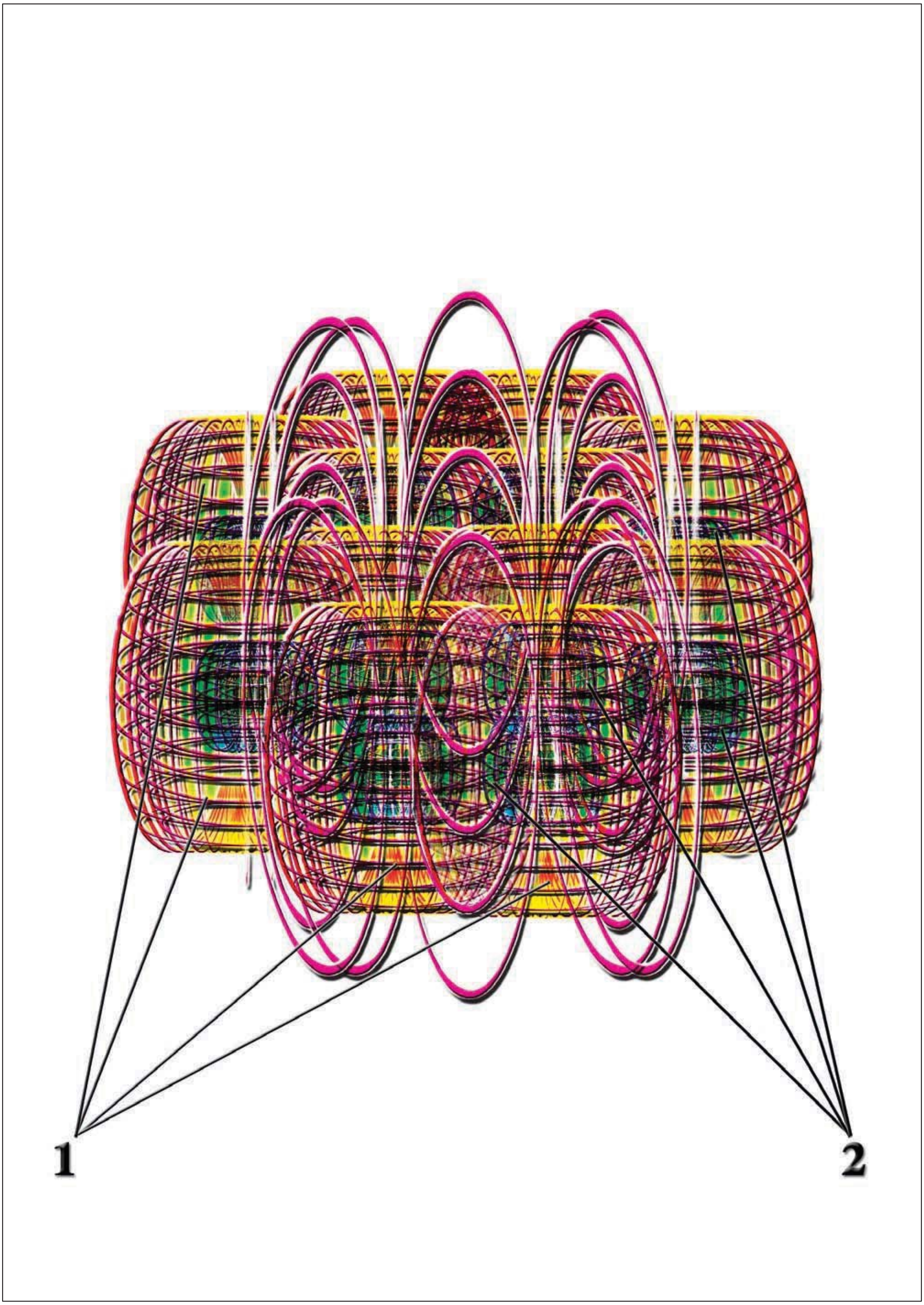
conditions for the formation of metaverse from twelve forms of matter. At the same time, a counter-closure arises again at another balance level of the dimensionality of matrix space, and a new, very stable system of metaverse is formed — a fourth-order super-space (**Fig. 2.3.9**).

Five fourth-order super-spaces, one of which is located on a spatial level different from the others, create conditions for the formation of metaverse from thirteen forms of matter. A counter-closure occurs, forming a system of metaverse that so strongly influences the dimensionality of the matrix space that another system of metaverse emerges, identical in structure to the fourth-order superspace, but now formed by twelve forms of matter. These two systems create conditions for the formation of the next system of metaverse along a common axis, but now from eleven forms of matter. The decrease in the number of forms of matter forming each subsequent spatial formation is due to the fact that the level of closure of the metaverse changes its sign. In other words, the curvature of the dimensionality of the matrix space does not increase, but decreases (**Fig. 2.3.10)**.

The evolution of this process leads to the sequential formation of metaverse systems along a common axis. The number of matters forming them gradually degenerates to two. At the ends of this
"beam" form zones where no matter of this type can merge with another or others to form metaverse. In these zones, our matrix space is "pushed through" and zones of convergence with another matrix space arise. In this case, there are again two options for the convergence of matrix spaces. In the first case, the connection occurs with a matrix space with a higher coefficient of quantisation of space dimension, and through this connection zone, matter from another matrix space can flow in and split, resulting in the synthesis of matter of our type. In the second case, the closure occurs with a matrix space with a smaller coefficient of quantisation of the space dimension — through this closure zone, matter from our matrix space will begin to flow and split in another matrix space. In one case, an analogue of a supermassive star arises, in the other — an analogue of a
"black hole" of similar dimensions. This difference between the variants of matrix space closure is very important for understanding the emergence of two types of sixth-order super-spaces — the six-ray and the anti-six-ray. The fundamental difference between them lies only in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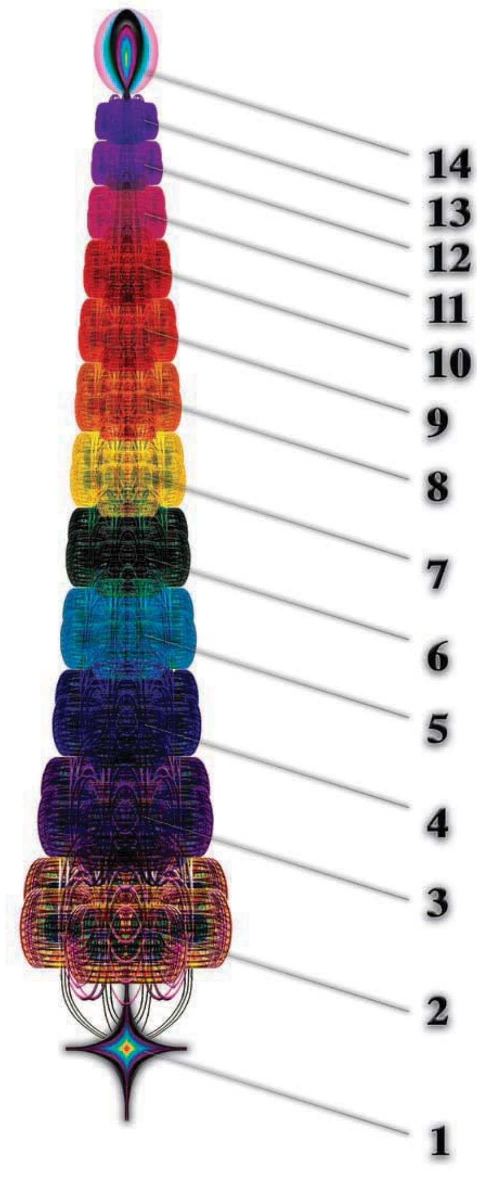
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direction of matter flow. In one case, matter from another matrix space flows through the central zone of convergence of matrix spaces and flows out of our matrix space through the zones at the ends of the "rays". In the anti-six-ray, matter flows in the opposite direction. Matter from our matrix space flows out through the central zone, and matter from another matrix space flows in through the "ray" zones of convergence. As for the six-ray, it is formed by the convergence of six analogous "rays" in one central zone. At the same time, zones of curvature of the dimensionality of the matrix space arise around the centre, in which metaverse universes of fourteen forms of matter are formed, which, in turn, converge and form a closed system of metaverse universes that unites the six rays into one common system

— a six-ray (**Fig. 2.3.11**).

Moreover, the number of "rays" is determined by the fact that in our matrix space, a maximum of fourteen forms of matter of a given type can merge during formation. At the same time, the dimensionality of the resulting union of metaverse is equal to **π (π = 3.14...)**. This total dimensionality is close to three. That is why six arise.

"rays," which is why we talk about three dimensions, etc.

Thus, as a result of the sequential formation of spatial structures, a balanced system of distribution of matter between our matrix space and others is formed. After the completion of the formation of the Six-Ray, whose stable state is possible only when the mass of matter flowing into and out of it is identical:

$$yy\ N^{(+)}\ dmidi = 6\ yy\ \eta^{(-)}\ dmidi \qquad (2.3.4)$$

where:

$N^{(+)}$ — the central area of convergence of matrix spaces, through which matter flows into our matrix space;

$\eta^{(-)}$ — the "ray" zones of closure with another matrix space, through which matter flows out of our matrix space;

i — the number of forms of matter forming a six-rayed star;

mi — mass of matter.

Identity (2.3.4) for our entire matrix space can be written in a more convenient form:

$$yy\ N^{(+)}\ \mathrm{dmidi} - 6\ yy\ \eta^{(-)}\ \mathrm{dmidi} = 0 \qquad (2.3.5)$$

As can be seen from this formula, the laws of conservation of matter are not violated at any level of spatial formations. From the microcosm to the macrocosm, they are universal. The unity of these laws follows, at least from the fact that the microcosm is the structural basis of the macrocosm. In the anti-six-ray, the circulation of matter goes in the opposite direction, from the boundaries of this super-space to its centre. Moreover, the curvature of the matrix space is maximum in the boundary regions and minimum in the centre of this spatial formation (**Fig. 2.3.12**). The condition for a stable state of an anti-six-ray is harmony between the matter flowing through the central zone of closure of matrix spaces and the matter of this type of dimensional quantisation synthesised in the boundary zones of closure (external). This balance can be described by the identity of the form:

$$yy\ N^{(-)}\ \mathrm{dmidi} = 6\ yy\ \eta^{(+)}\ \mathrm{dmidi} \qquad (2.3.6)$$

where:

$N^{(-)}$ — the central zone of convergence of matrix spaces, through which matter flows out of our matrix space (super-tax — "black hole");

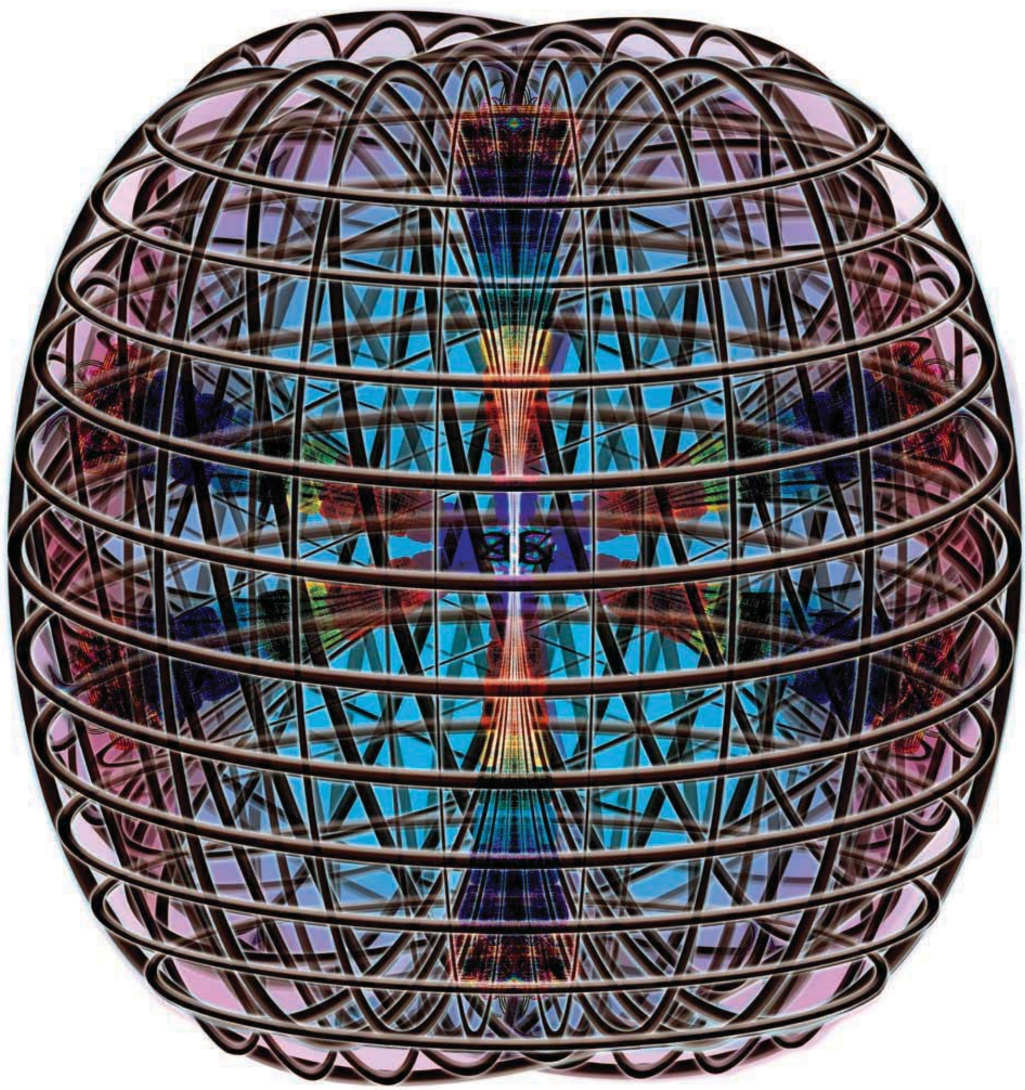
$\eta^{(+)}$ — the edge zones of closure of matrix space, through which matter flows into our matrix space;

m_i — mass of matter of a given type.

Identity (2.3.6) can be rewritten in a more understandable form:

$$yy\ N^{(-)}\ \mathrm{dmidi} - 6\ yy\ \eta^{(+)}\ \mathrm{dmidi} = 0 \qquad (2.3.7)$$

Naturally, there are many such super-spaces in our matrix space
. They create, as it were, nodes in the matrix space and are "atoms" in it. Once again, the structure of the macrocosm is analogous to the structure of the microcosm. This is yet another confirmation of their unity. The condition for the balanced stability of our matrix space is the balance between the matter synthesised in the matrix space and the matter flowing through the zones of intersection of the matrix spaces. This condition can be written as:



$$_{n1}[\mathbf{yyN^{(+)}\ dmidi\ -\ 6\ yy\eta^{(-)}\ dmidi}] \equiv {}_{n2}[\mathbf{yyN^{(-)}\ dmidi\ -\ 6\ yy\eta^{(+)}\ dmidi}] \quad (2.3.8)$$

where:

$_{n1}$ — number of six-beam antennas;

$_{n2}$ — number of anti-six-ray stars;

$\mathbf{N}^{(+)}$ — the central region of closure of matrix spaces through which matter flows into our matrix space (six-ray);

$\mathbf{N}^{(-)}$ — the central area of closure of matrix spaces through which matter flows out of our matrix space;

$\boldsymbol{\eta}^{(-)}$ — radial zones of closure with other matrix spaces through which matter flows out of our matrix space;

$\boldsymbol{\eta}^{(+)}$ — border zones of convergence with other matrix spaces through which matter flows into our matrix space;

i — the number of forms of matter;

m — mass of matter.

Analysing identities (2.2.4, 2.3.6, 2.3.8), it is easy to conclude that they can only be fulfilled under the following conditions:

$$[\mathbf{yyN^{(+)}\ dmidi\ -\ 6\ yy\eta^{(-)}\ dmidi}] \equiv 0$$

$$[\mathbf{yyN^{(-)}\ dmidi\ -\ 6\ yy\eta^{(+)}\ dmidi}] \equiv 0 \quad (2.3.9)$$

This identity reflects the law of conservation of matter and determines the possibility of a stable state of the universe. It will only be feasible if there is a balance between the matter flowing into and out of our matrix space, the condition for which can be written as:

$$\mathbf{yyN^{(+)}\ dmidi\ -\ yyN^{(-)}\ dmidi \equiv 6\ yy\eta^{(-)}\ dmidi\ -\ 6\ yy\eta^{(+)}\ dmidi \equiv 0} \quad (2.3.10)$$

This identity will be feasible if:

$$\mathbf{yyN^{(+)}\ dmidi\ -\ yyN^{(-)}\ dmidi \equiv 0}$$

$$yy\eta^{(-)}\,dmidi - yy\eta^{(+)}\,dmidi \equiv 0 \qquad (2.3.11)$$

or:

$$yy\,[N^{(+)}\,dmidi - N^{(-)}\,dmidi] \equiv 0$$

$$yy\,[\eta^{(-)}\,dmidi - \eta^{(+)}\,dmidi] \equiv 0 \qquad (2.3.12)$$

or:

$$yy\,[N^{(+)} - N^{(-)}]dmidi \equiv 0$$

$$yy\,[\eta^{(-)} - \eta^{(+)}]dmidi \equiv 0 \qquad (2.3.13)$$

These identities can only be satisfied under the following conditions:

$$N^{(+)} \equiv N^{(-)}$$

$$\eta^{(-)} \equiv \eta^{(+)} \qquad (2.3.14)$$

There can be an unlimited number of matrix spaces, but for a given space quantisation coefficient, γ_i, only one matrix space is possible. And the qualitative structure of this matrix space is determined by the type of matter forms and the degree of their reverse (secondary) influence on space. **Space influences matter, but matter also influences space.** A change in the qualitative state of space manifests itself in a change in the qualitative state of matter.

A change in the qualitative state of matter affects the qualitative state of space with the opposite sign. As a result of the feedback between space and matter, manifested in their mutual influence on each other, a compensatory equilibrium arises between space and the matter located in this space.

As a result of this compensatory equilibrium between space and matter, each **specific matrix space with a given space quantisation coefficient γ_i is finite in both size and form**.

2.4. The nature of stars and "black holes"

Quantisation of spaces according to the forms of matter that constitute them creates a system of spaces, each of which is qualitatively different from the others. Each layer-space with dimension L_i in this system is qualitatively different from its neighbours by one primary form of matter. There is a layer-space with a dimension level of $L_{i+1} = L_i + \gamma_i$, which has one more primary matter in its qualitative composition, and there is a layer-space with a dimension level of $L_{i-1} = L_i - \gamma_i$, which has one less primary matter in its qualitative composition. These are the so-called parallel universes, which have different qualitative structures and therefore have no direct contact with each other. But despite this, they have common qualities in their qualitative structure — a certain amount of primary matter that is part of the qualitative composition of each of these universes. The qualitative composition of neighbouring space-universes differs only by one primary matter in their qualitative composition, and their dimensionality differs by the value of the quantisation coefficient of these primary matters.

matter — γ_i, and a difference in dimensionality arises between them.

$$L_{i-1} = L_i - \gamma_i < L_i < L_{i+1} = L_i + \gamma_i \tag{2.4.1}$$

This gradient is directed from the space-universe with greater dimensionality to the space-universe with lesser dimensionality. The direction of this gradient plays a fundamental role, as it determines the nature of the birth, evolution, and death of stars in each specific space-universe. It was this dimensional gradient that was recorded by physicists from the Universities of Rochester and Kansas in the United States([21]) ,Dr George Nodland and Dr John Ralston. Our universe really does have an "up" and a "down," just like it has an "east" and a "west." Space-universe can be formed by at least two primary materials and, at the same time, will have a minimum dimension in a given matrix space. The value of the minimum dimensionality of the matrix space is determined by the coefficient of quantisation of the dimensionality of space for the forms of matter that constitute it. In addition, the forms of matter, quantised by a given coefficient of quantisation of space γ_i, in turn, affect the dimensionality of space. Therefore, in

[21] "This Side Up' May Apply To the Universe, After All," by John Noble Wilford, The New York Times, 1997.

In the process of forming matrix space, the number of primary forms of matter of the same type may be greater than the number that forms a given matrix space. Secondary degeneration of space, caused by the influence of matter on the space in which it is located, is a limiting factor on the upper bound of the number of forms of matter "participating" in the formation of matrix space. **Thus, each matrix space is limited in the number of forms of matter that constitute it, both from below and above.** It is precisely the mutual influence of space on matter and matter on space that leads to the fact that each specific spatial formation is limited.

$$L_i = L_2 + \gamma_i (i-2) \qquad (2.4.2)$$

Now, let's figure out what is happening at the level of our space-universe. Our space-universe has a dimension equal to $L_7 = $ **3.00017**. This dimension allows seven forms of matter, which make up all the substance of our universe, to merge into a single whole. In order for the conditions for the merging of the next form of matter of our type to arise, it is necessary to change the dimensionality of the so-called matrix space by an amount **of γ = 0.020203236.** Quantisation of the dimensionality of the matrix space occurs, as in an atom — quantisation of electron levels. Therefore,in discrete zones of matrix space, the synthesis of matter from different amounts of matter occurs. The dimensionality of each space-universe is heterogeneous, which leads to the closure of two space-universes with different dimensionalities in these zones of heterogeneity. Let us consider the three closest space-universes with dimensionalities:

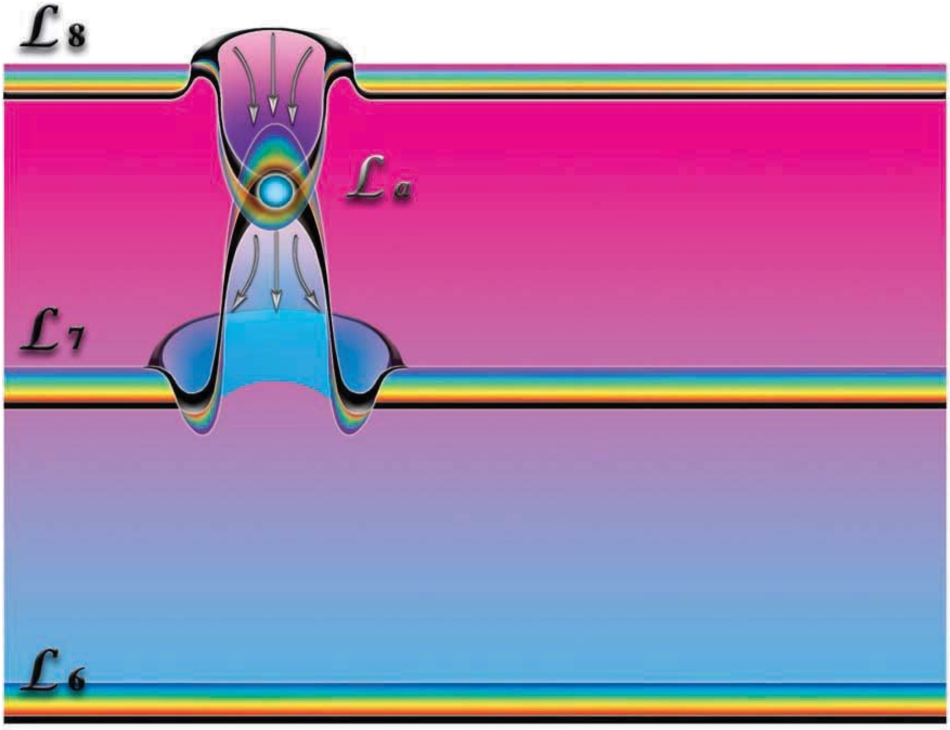
$L_6 =$ **2.979966764**
....
$L_7 =$ **3.00017 (our universe)** $L_8 =$
3.020373236

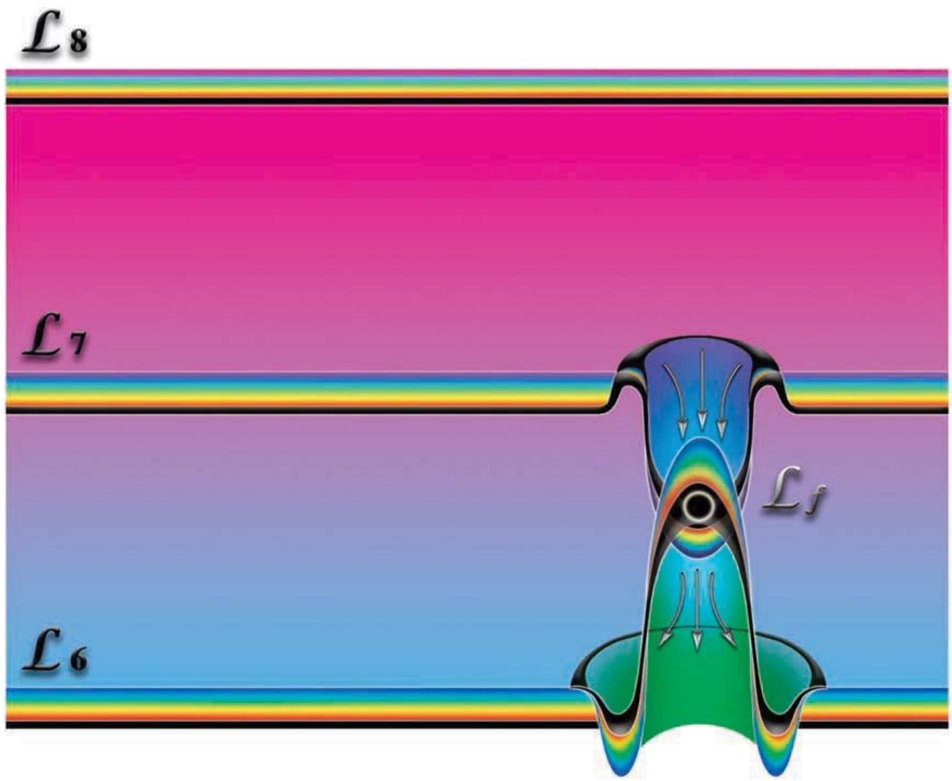
In areas of spatial dimensional heterogeneity, neighbouring space-universes merge with each other. When the spaces-universes **L8** and **L7** merge, a channel is formed between them. Through this channel, matter from the space-universe **L8** begins to flow into the space-universe **L7**. At the same time, there is a qualitative difference between the matter of the universe with **L8** and the matter of the universe with **L7**. Therefore, in the zone where these spaces merge, the matter of space-universe $_{L8}$ decays and the matter forming it synthesises the matter of space-universe $_{L7}$. In other words, the matter formed by eight forms of matter decays and synthesises matter from seven forms of matter. The zone where these spaces merge has a dimension in the range:

3.00017 < Lavg. < 3.020373236

Therefore, the liberated eighth form of matter continues to remain in this zone, remaining free and unclaimed. Over time, it accumulates in the convergence zone and begins to influence, within certain limits, the dimensionality of this zone. This leads to an increase in the channel between the spaces-universes and causes an even greater outflow of matter with dimension **L8**. This leads to the emergence of conditions under which part of the matter with dimension **L7** becomes unstable and begins to disintegrate into its constituent parts, giving rise to a so-called thermonuclear reaction. This is how stars are "ignited" **(Fig. 2.4.1)**. In this case, the zones of inhomogeneity can be both **ΔL > 0** and **ΔL < 0** relative to our universe. In the case where the inhomogeneities of the space dimension are less than zero **ΔL < 0,** the space-universes with dimensions **L7** and **L6** merge. At the same time, conditions for the flow of matter arise again, only this time, matter with dimension **L7** flows into space with dimension **L6**. Thus, the space-universe with dimension **L7** (our Universe) loses its matter. And this is how the mysterious "black holes" arise (**Fig. 2.4.2)**. This is how stars and "black holes" are formed in areas of spatial universe dimensionality inhomogeneities. At the same time, matter flows between different space universes.

There are also space-universes with a dimension of L7, but with a different composition of matter. When spaces-universes with the same dimension but different qualitative compositions of the matter forming them collide, a channel arises between these spaces. This causes matter to flow into both spaces-universes. This is not a star or a
"black hole", but a zone of transition from one space to another. Let us designate the zones of spatial dimensionality heterogeneity in which the above processes occur as zero transitions. Moreover, depending on the sign **of ΔL**, we can speak of the following types of these transitions:


$\mathcal{L}_8$
$\mathcal{L}_a$
$\mathcal{L}_7$
$\mathcal{L}_6$


$\mathcal{L}_8$
$\mathcal{L}_7$
$\mathcal{L}_f$
$\mathcal{L}_6$

1) Positive zero transitions (stars), through which matter flows into a given space-universe from another with greater dimensionality **($\Delta L > 0$) n^+** .

2) Negative zero transitions, through which matter flows from a given space-universe into another with a lower dimension **($\Delta L < 0$) n^-** .

3) Neutral zero transitions occur when matter flows in both directions and are identical to each other, and the dimensions of the space-universes in the junction zone are practically indistinguishable: $\mathbf{n}^0$.

If we continue to analyse what is happening, we will see that each space-universe receives matter through stars, but loses it through
"black holes" — loses it. For the sustainable existence of this space, a balance is needed between the matter coming into and leaving this space-universe. The law of conservation of matter must be fulfilled, provided that the space is stable. This can be represented by the formula:

$$\iint \mathbf{n}^{+}_{(i)k}\ \mathbf{m}_{(i)k}\,\mathbf{dkdi} + \iint \mathbf{n}^{0}_{(ij)k}\ \mathbf{m}_{(ij)k}\,\mathbf{dkd(ij)} \equiv \iint \mathbf{n}^{-}_{(j)k}\ \mathbf{m}_{(j)k}\,\mathbf{dkdj} \qquad (2.4.3)$$

where:

$\mathbf{n}^{+}_{(i)k}$ — positive zero transition (star),

$\mathbf{n}^{0}_{(ij)k}$ — neutral zero transition,

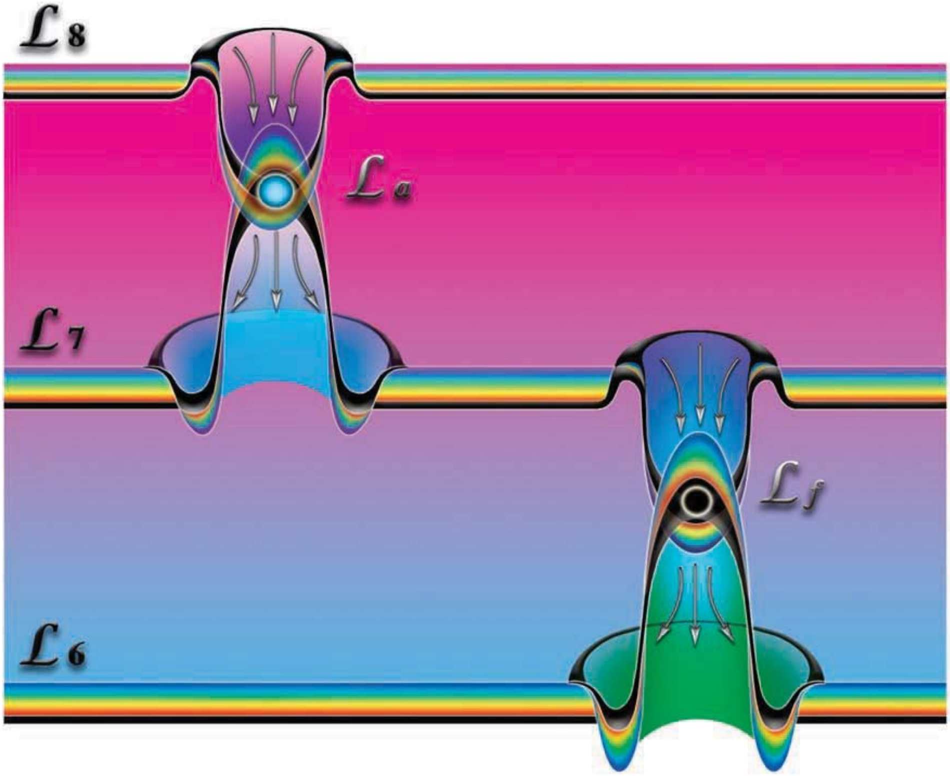
$\mathbf{n}^{-}_{(j)k}$ — negative zero transition,

$\mathbf{m}_{(i)k}$ — the total mass of matter flowing through the star,

$\mathbf{m}_{(j)k}$ — the total mass of matter flowing through a given
"black hole" into another space-universe,

$\mathbf{m}_{(ij)k}$ — the total mass of forms of matter flowing through the neutral zero transition.

Thus, between spaces-universes with different dimensions, through zones of heterogeneity, there is a circulation of matter between the spaces that form a given system (**Fig. 2.4.3**). Through zones of dimensional heterogeneity (zero transitions), it is possible to transition from one space-universe to another. At the same time, the matter of our space-universe is transformed into the matter of the space-universe to which the matter is transferred. So, "our" matter cannot enter other space-universes unchanged. The zones through which such a transition is possible are "black holes," in which matter completely disintegrates.


$\mathcal{L}_8$
$\mathcal{L}_a$
$\mathcal{L}_7$
$\mathcal{L}_f$
$\mathcal{L}_6$

of this type, and neutral zero crossings, through which a balanced exchange of matter occurs. Neutral zero crossings can be stable or temporary, appearing periodically or spontaneously. There are a number of areas on Earth where neutral zero transitions occur periodically. If ships, aeroplanes, boats or people enter these areas, they disappear without a trace. Such zones on Earth include the Bermuda Triangle, areas in the Himalayas, the Permian zone and others. If you get caught in a zero transition zone, it's basically impossible to predict where the matter will end up. Not to mention that the chances of getting back to where you started are basically zero. So, neutral zero transitions can't be used for targeted movement in space.

The evolution of stars is no less interesting in nature. Each star "lives" for billions of years and then "dies." During these billions of years, matter from the space-universe with a higher dimension **L8** passes through the convergence zone into the space-universe with a lower dimension **L7**. At the same time, this matter becomes unstable and disintegrates into the primary matter that forms it. The seven primary materials merge again, forming the physically dense matter of space-universe **L7**. At the same time, in the convergence zone, the level of dimensionality is such that the atoms of those elements whose own level of dimensionality allows them to maintain their stability undergo synthesis. In the upper zone of stability of physically dense matter

Only so-called light elements such as hydrogen

(**H**) and helium (**He**). Therefore, the fusion of these elements occurs in the convergence zone. It is no coincidence that most of the matter in our universe is hydrogen. In the convergence zone, there is an active process of hydrogen synthesis, the mass of which forms the basis of stars. This is how stars are born — the so-called blue giants (**Fig. 2.4.1)**.

The initial density of the "newborns" is very low, but due to the fact that the fusion zone is heterogeneous in dimension, a difference (gradient) in dimension arises in the direction towards the centre. As a result, hydrogen molecules begin to move towards the centre of the fusion zone. The process of star contraction begins, during which the density of the stellar matter begins to grow rapidly. As the density of the stellar matter increases, the volume occupied by the star decreases and the degree of influence of the star's mass increases, both on the dimensionality of the closure zone and at the atomic level. Thus, the star's own dimensionality begins to decrease, and processes begin inside the star itself.

synthesis of new, heavier elements. A so-called thermonuclear reaction occurs, and the star begins to emit a whole spectrum of waves as a side effect of the synthesis of elements. It should be noted that it is precisely this "side effect" that creates the conditions for the emergence of life. Two processes occur simultaneously in the convergence zone: the synthesis of hydrogen during the decay of space-universe matter with a higher level of intrinsic dimensionality (matter formed by the synthesis of eight forms of primary matter) and the synthesis of heavier elements from hydrogen during thermonuclear reactions. As a result of these processes, the star decreases in volume and, as a consequence of the increase in the mass of elements heavier than hydrogen, the level of the star's own dimensionality also decreases. This, in turn, reduces the convergence zone. In other words, a star "born" in another space-universe gradually separates from its "mother" in our space-universe.

Isn't it an interesting analogy with the development of an embryo inside the womb, when the foetus, "woven" from the mother's blood and flesh, leaves the mother's womb and begins an independent life, just like a star?

"Born" of the space-universe, it leaves the "womb" when its own dimensionality decreases as a result of its increasing influence on the surrounding space. Separated from the "mother" space-universe, the star begins its own life — a life that lasts for billions of years, after which it "dies." However, stars, in turn, manage to "give birth" to planetary systems where life has a chance to appear.

Let us consider the mechanism of the birth of a planetary system. During the process of stellar contraction, the balance between the radiating surface and the radiating volume is disrupted. As a result, primary matter accumulates inside the star. Over time, as a result of thermonuclear reactions, the stellar matter loses its simplest atoms, such as hydrogen, helium, etc., and an increasing percentage of it begins to consist of atoms of heavy elements. The size of the star decreases, it becomes denser and heavier, and its influence on the dimensionality of the surrounding space becomes stronger and stronger. If at the beginning of its evolution the star had a dimensionality of the surrounding space equal to **3.00017 < La < 3.02037,** then, as it contracts, it causes a secondary degeneration of space by a certain amount. This leads to the dimensionality of the surrounding space becoming equal to:

$$3.00017 < (L_a - \Delta L) < 3.02037$$
$$3.00017 < L_b < 3.02037$$
$$L_b = L_a - \Delta L \qquad (2.4.4)$$

where: **ΔL** may fluctuate during the first stage of a star's life within the range **$0 < \Delta L < 0.020203236$**.

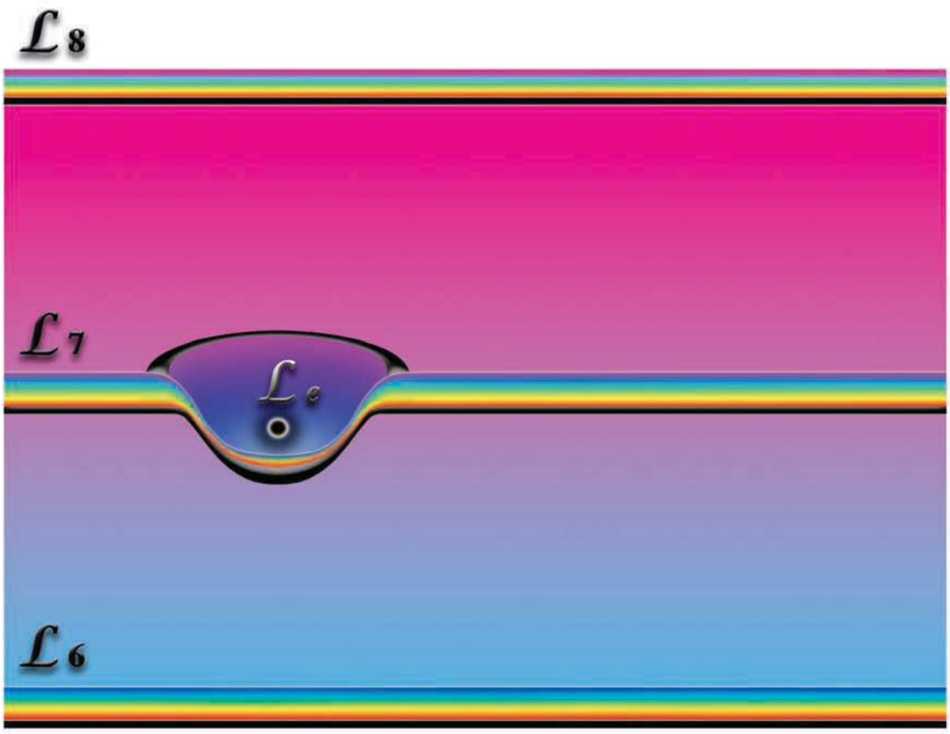
Gradually, the secondary degeneration of space dimension caused by the star's gravity becomes more and more pronounced. And the dimension of the space surrounding the star begins to approach the dimension L_7. As this process develops, the channel between the spaces-universes with dimensions L_8 and L_7 decreases. Less and less matter flows from space with dimension **L8** into space with dimension **L7**. At the same time, the radiation activity of such a star becomes less and less until it stops altogether. The star dies. The star "goes out." If at the beginning of its evolution the star had a large mass, but less than ten solar masses, then at the end of its life it causes a secondary degeneration of dimension, when the dimension of the space surrounding it becomes less than **L7**. It produces a deflection in the other direction. A so-called neutron star is formed **(Fig. 2.4.4)**.

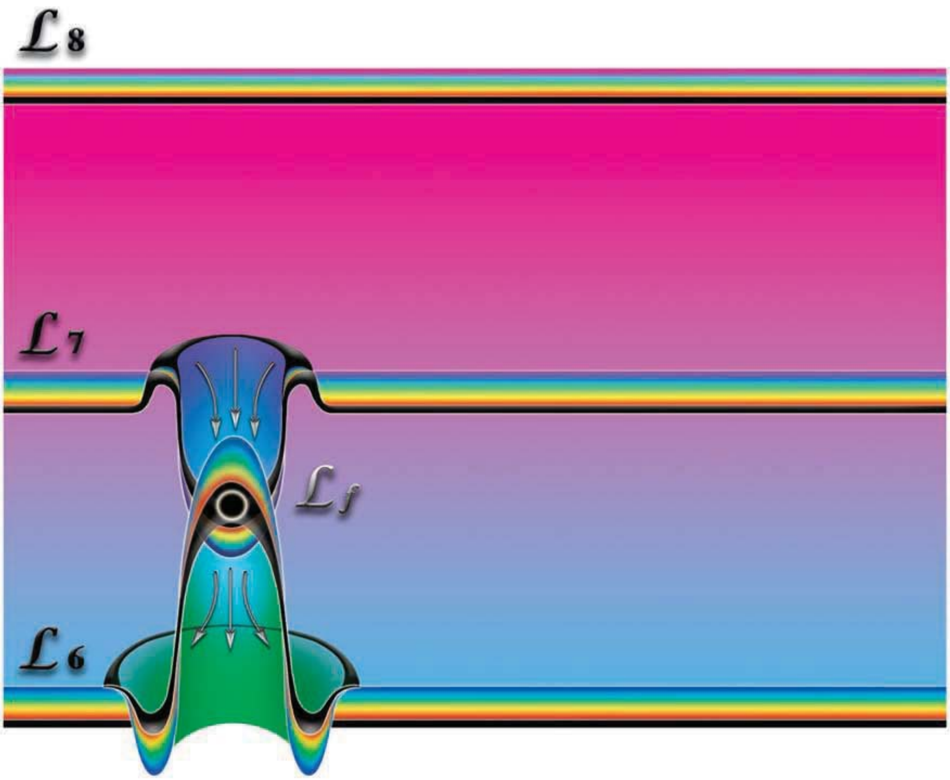
$$L_6 < L_d < L_7; \; L_d =$$
$$L_a - \Delta L$$
$$\Delta L \; 0.0102018... \qquad (2.4.5)$$

If, at the beginning of its evolution, a star had a mass greater than ten solar masses, secondary degeneration becomes so significant that it causes the closure of space-universes with dimensions L_7 and L_6. At the same time, matter from space with dimension L_7 begins to flow into space with dimension L_6. A "black hole" is formed (**Fig. 2.4.5**). Thus, "black holes" arise in the course of the evolution of stars, or more precisely the "end of life" of a star in our space-universe leads to the birth of a star in the lower space-universe.

2.5. The nature of the formation of planetary systems

Now let us also consider the nature of planetary system formation. At the beginning of its life, a star has a balance between its size, the channel between spaces with dimensions L_7 and L_8, and the amount of matter flowing through this star from space with dimension

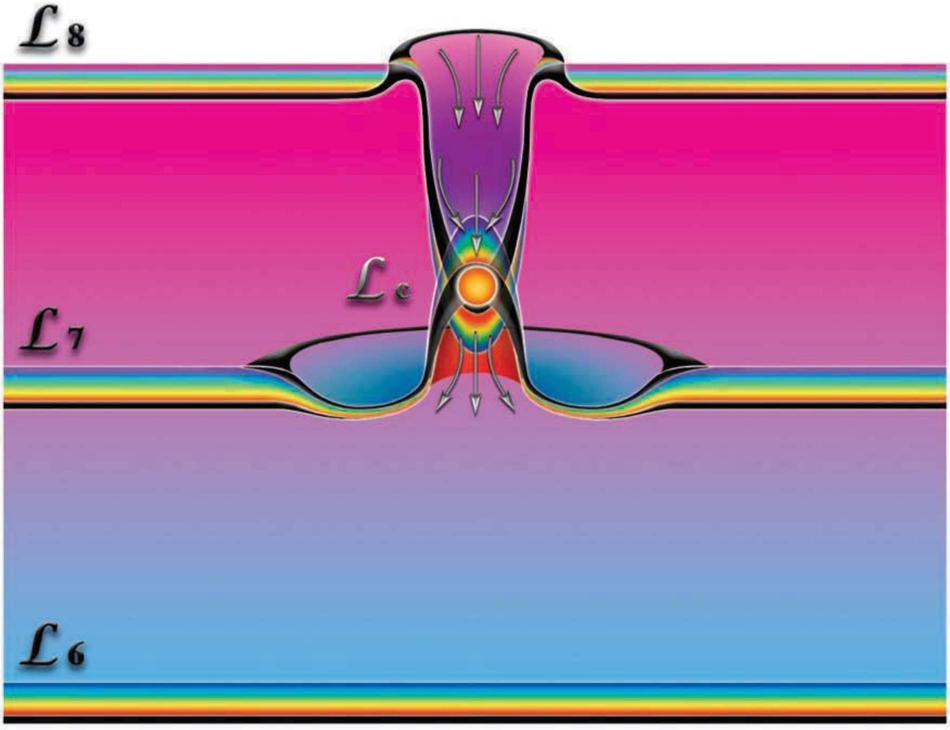

$\mathcal{L}_8$
$\mathcal{L}_7$
$\mathcal{L}_e$
$\mathcal{L}_6$



$\mathcal{L}_8$
$\mathcal{L}_7$
$\mathcal{L}_f$
$\mathcal{L}_6$

$_{L8}$ into space-universe with dimension $_{L7}$ (**Fig. 2.5.1**). As a result of thermonuclear reactions, with the loss of simple atoms, the size of the star decreases, and it is unable to pass through itself the entire mass of matter flowing from space with dimension **L8** into space with dimension **L7**. This imbalance increases over time and eventually reaches a critical level. A colossal explosion occurs, and part of the star's matter is ejected into the space surrounding it. At the same time, the dimension of the space surrounding the star decreases and a channel is formed through which the amount of matter that the star is able to pass through itself flows (**Fig. 2.5.2)**. Such an explosion is called a supernova explosion. The surface layers of the star ejected by the supernova explosion, which, incidentally, consist of the lightest elements, fall into the distortions of space created by the longitudinal oscillations of dimensionality that arose during the explosion. In these areas of space curvature, active synthesis of matter occurs from the primary matter, and a whole spectrum of different elements is synthesised, including heavy and superheavy ones. The greater the difference between the level of the star's own dimensionality and the levels of the own dimensionality of the zones of space curvature, the heavier the elements that can be "born" within these zones and the more stable these heavy elements are. Depending on the initial dimensions, there may be one or more supernova explosions during the life of a star. With each such explosion, the star's own dimensionality level decreases, which leads to a decrease in the synthesis of light elements and an increase in the synthesis of heavy elements. As a result, the density and, consequently, the degree of the star's influence on the surrounding space increases. When a supernova explodes, fluctuations in the dimensionality of space occur, similar to the waves that appear on the surface of water after a stone is thrown. The masses of matter ejected during the explosion fill these irregularities in the dimensionality of space around the star. Planets begin to form from these masses of matter (**Fig. 2.5.3** and **Fig. 2.5.4)**.

Let's try to figure out why and how this happens. Our universe has a dimension **of L7=3.00017**, which allows seven forms of matter of our type to coexist peacefully. To make it easier to understand the difference between different types of matter, let's recall our "cubes". The desired "picture" can only be assembled from "cubes" of the same size. If there are "cubes" of different sizes, it is simply impossible to assemble the "picture"; first of all, it is necessary to select "cubes" of the same shape and size from a pile of others. Only then is it possible to


$\mathcal{L}_8$
$\mathcal{L}_e$
$\mathcal{L}_7$
$\mathcal{L}_6$

$\mathcal{L}_8$
$\mathcal{L}_c$
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$\mathcal{L}_8$
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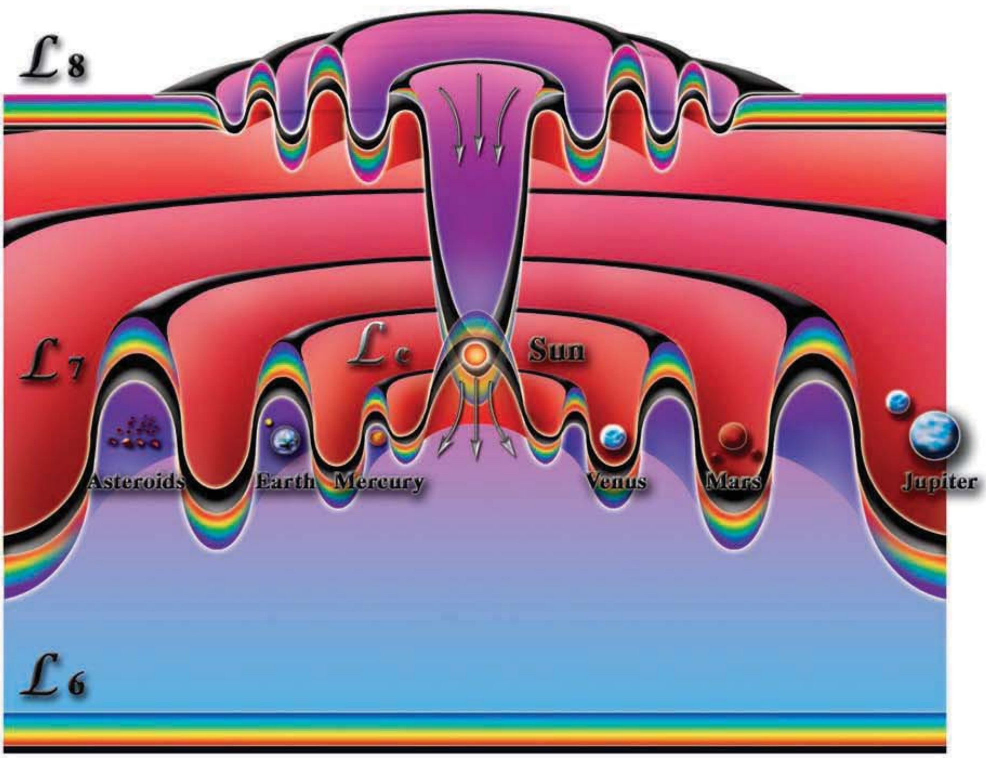
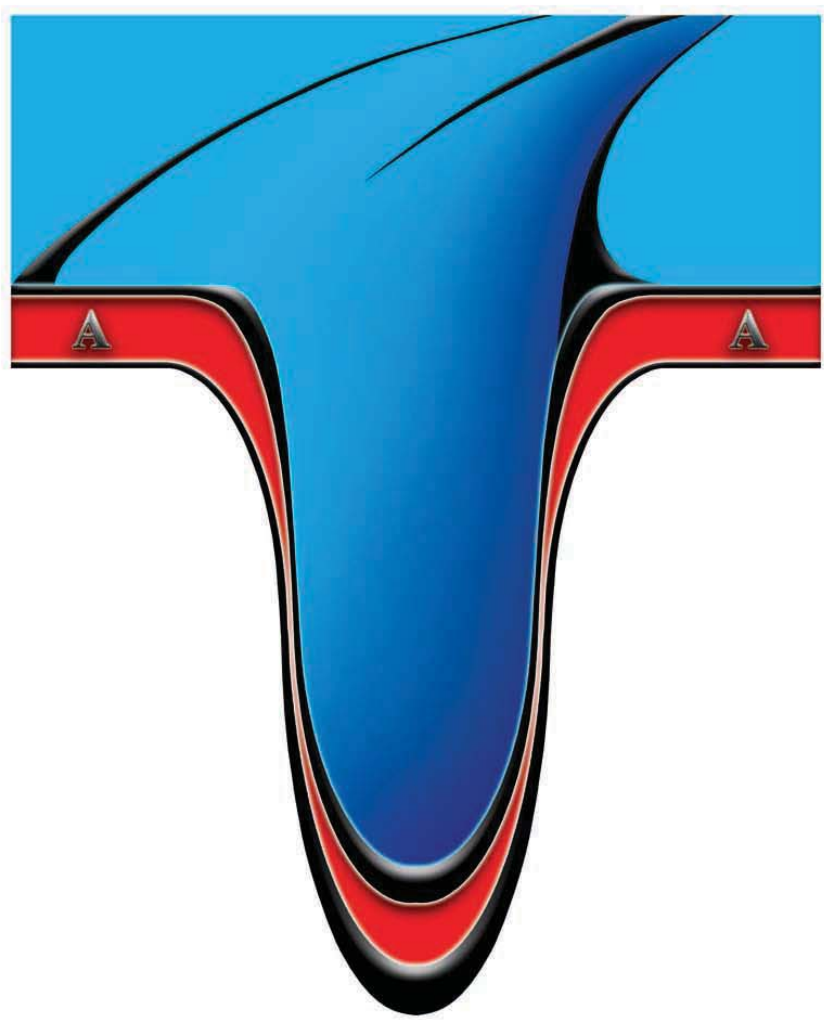


$\mathcal{L}_8$
$\mathcal{L}_7$
$\mathcal{L}_c$
Sun
Asteroids
Earth
Mercury
Venus
Mars
Jupiter
$\mathcal{L}_6$

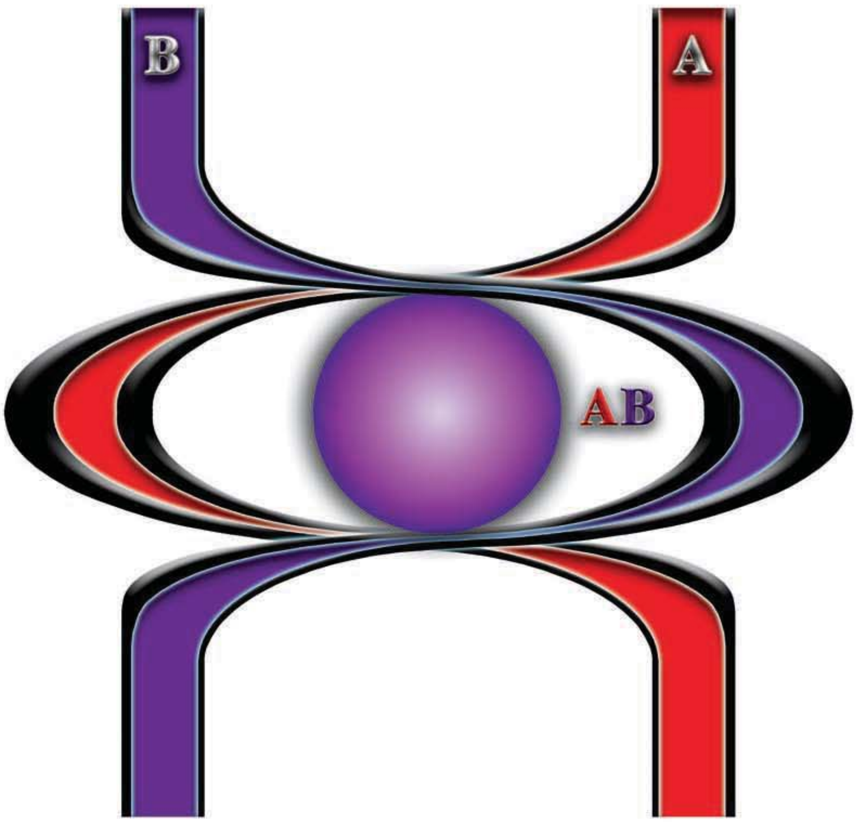
assemble the desired "picture." So, the criterion for determining the shape and size of matter is the coefficient of quantisation of the dimensionality of space γi. At the same time, we must not forget that "cubes" of other sizes do not disappear. They continue to exist, but they cannot be used to assemble our "picture." But if we sort them by shape and size, then we can assemble other "pictures" from similar "cubes," but these will be "pictures" of a different qualitative composition, and they will not affect or change our "picture" in any way. Similarly, in addition to spaces-universes of our type, there are spaces-universes with other values of the space quantisation coefficient $\boldsymbol{\gamma i}$. However, they have practically no influence on spaces of our type, and therefore, when studying the question of the formation of our universe, they can be disregarded. In a space with continuously changing dimensions, the permitted forms of matter (i.e., the amount of matter that forms our space-universe with dimension **L7**) do not interact with each other. During a supernova explosion, concentric waves of disturbance in the dimension of space spread out from the centre, creating zones of spatial heterogeneity, deformation of the dimension, or curvature of space. In the Great Cosmos, there are an infinite number of forms of matter that interact with each other to a greater or lesser extent or do not interact with each other at all.

If two forms of matter do not interact with each other, then even when they penetrate each other, nothing changes in them, they do not affect each other in any way, and nothing new arises. It is as if they do not exist for each other. Let us define the degree of influence of one form of matter on another as the interaction coefficient **α.** Then we can say that the interaction coefficient for these two forms of matter is zero. This means that there are no two "bricks" that would be part of both forms of matter. They have no common qualities or properties. The interaction coefficient is not the same even for two forms of matter at different points in space because space itself is not homogeneous. We can only talk about the interaction of matter with each other when the interaction is considered in a specific volume of this space. There are volumes of space where the interaction of matter is maximal and volumes where this interaction is impossible in principle, or where matter interacts with each other partially according to one or another common quality (**Fig. 2.5.5)**. When two materials interact to the maximum extent (let us designate one of them by the letter **A and** the other by **the letter B)**, a complete fusion of the given


A
A

When different types of matter interact with each other, a new, hybrid form emerges — **AB**. Merging is only possible within a volume where all parameters of these types of matter become identical. The heterogeneity of space affects the forms of matter that permeate this heterogeneity in different ways. One form of matter is affected more, another less. Heterogeneity changes the qualitative structure of matter, which creates conditions for their fusion and the formation of a new quality. Thus, within the heterogeneity within the volume where conditions for the fusion of two types of matter arise, a new quality of matter arises — the hybrid form **AB** **(Fig. 2.5.6)**. The hybrid form **AB** also affects the heterogeneity of the space in which it arose. This results in the filling of the heterogeneity with the hybrid form **AB** that has arisen**,** and its degeneration. Heterogeneity is a curvature of space, which leads to a change in dimensionality within this heterogeneity compared to neighbouring areas of space. Thus, a change in the dimensionality of space by a certain amount leads to the emergence of conditions for the fusion of two matters. In order for two forms of matter to merge, it is necessary to change the dimensionality of space by an amount of **ΔL = 0.020203236...**

In order for the three forms of matter to merge, the dimensionality of space must change again by a value **of ΔL**, which leads to the complete merging of the three forms of matter. Matter cannot merge in part. Only a complete fusion of matter is possible. Just as there cannot be two and a half people, but only two or three (if, of course, we are talking about living people), so two and a half forms of matter cannot merge, but only two or three. Let us denote the third matter by the letter **C.** As a result of the fusion of the three forms of matter, within a certain volume of space (for convenience, let us consider it a sphere), a qualitatively new hybrid form **ABC** arises **(Fig. 2.5.7)**, which occupies a volume smaller than the hybrid form **AB.** Moreover, these spheres have clear boundaries within which the dimensionality of space is uniform. With the next change in the dimensionality of space within the heterogeneity by an amount equal to **ΔL,** conditions arise for the fusion of yet another form of matter. A qualitatively new hybrid form **ABCD** arises **(Fig. 2.5.8).** It will occupy a sphere of volume smaller than the hybrid form **ABC.** With the next change in the dimensionality of space within the heterogeneity by **ΔL**, conditions arise for the fusion of yet another form of matter **E.** A qualitatively new hybrid form **ABCDE** arises **(Fig. 2.5.9)**. With the next change in the dimensionality of space within the heterogeneity by ΔL, conditions arise for the fusion of yet another form of matter F. A qualitatively new hybrid form ABCF arises **(Fig. 2.5.9**). With the next change in the dimensionality of space within the heterogeneity by ΔL, conditions arise for the fusion of yet another form of matter G. A qualitatively new hybrid form **ABCG** arises **(Fig. 2.5.9).** With the next change in the dimensionality of space within the heterogeneity by **ΔL**, conditions **arise** for the fusion of yet **another form of** matter H. A qualitatively new hybrid form **ABCH** arises **(Fig. 2.5.9)**. With the next change in the dimensionality of space within the heterogene**ity by ΔL**, conditions **arise** for the fusion of yet another form **of** matter I. A qualitatively new hybrid form ABCI arises **(Fig. 2.5.9)**. With the next change in the dimensionality of space within the heterogeneity by **ΔL**, conditions arise for the fusion of yet another form of matter J.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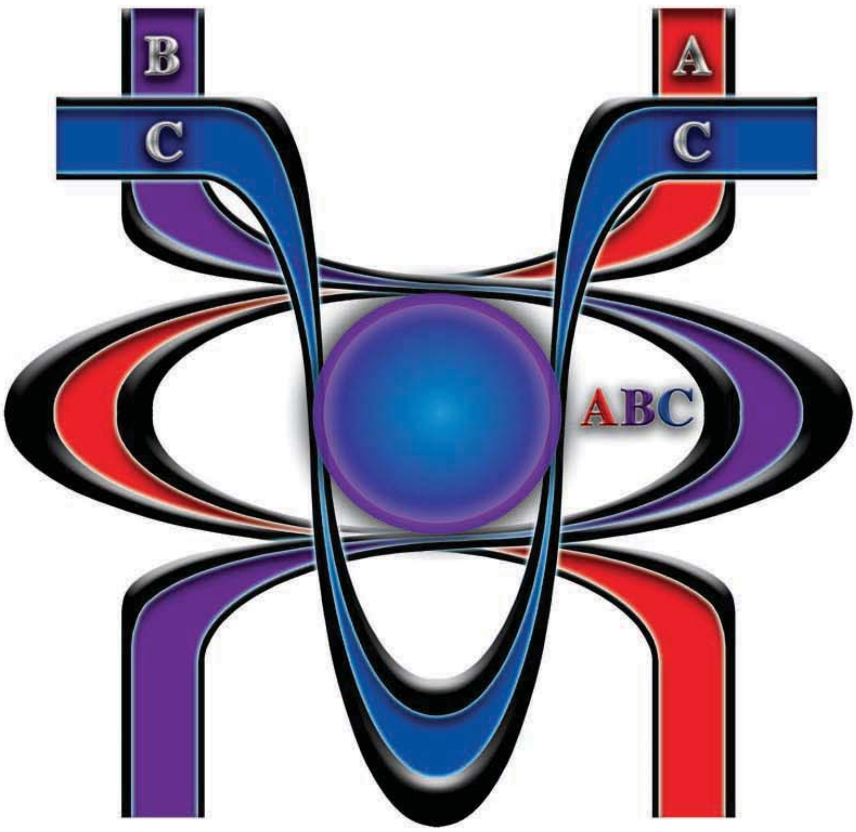
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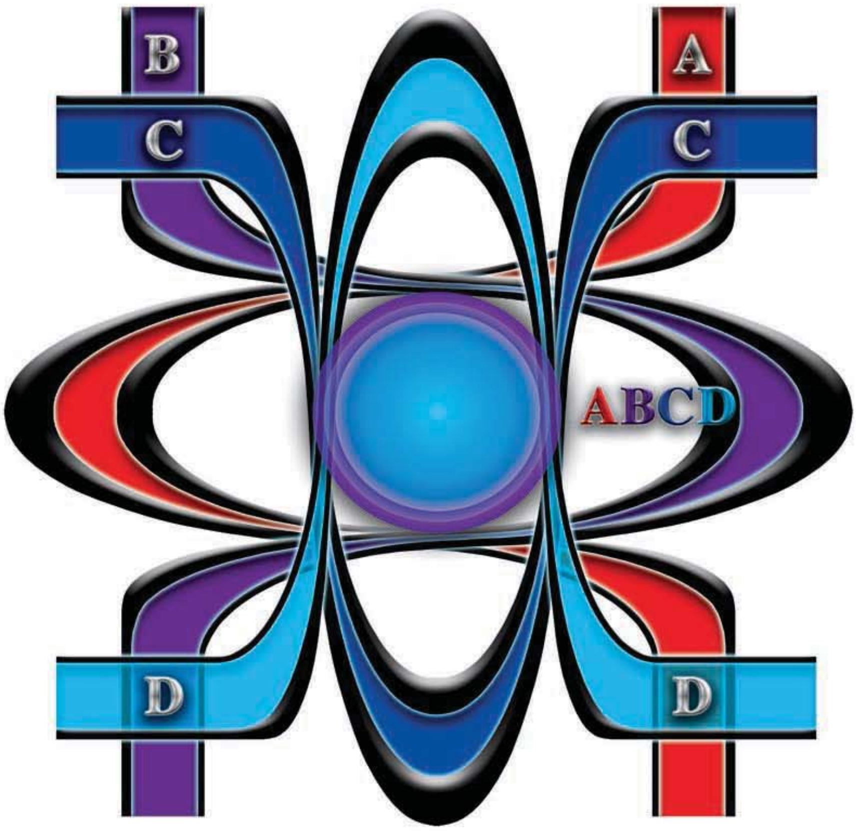
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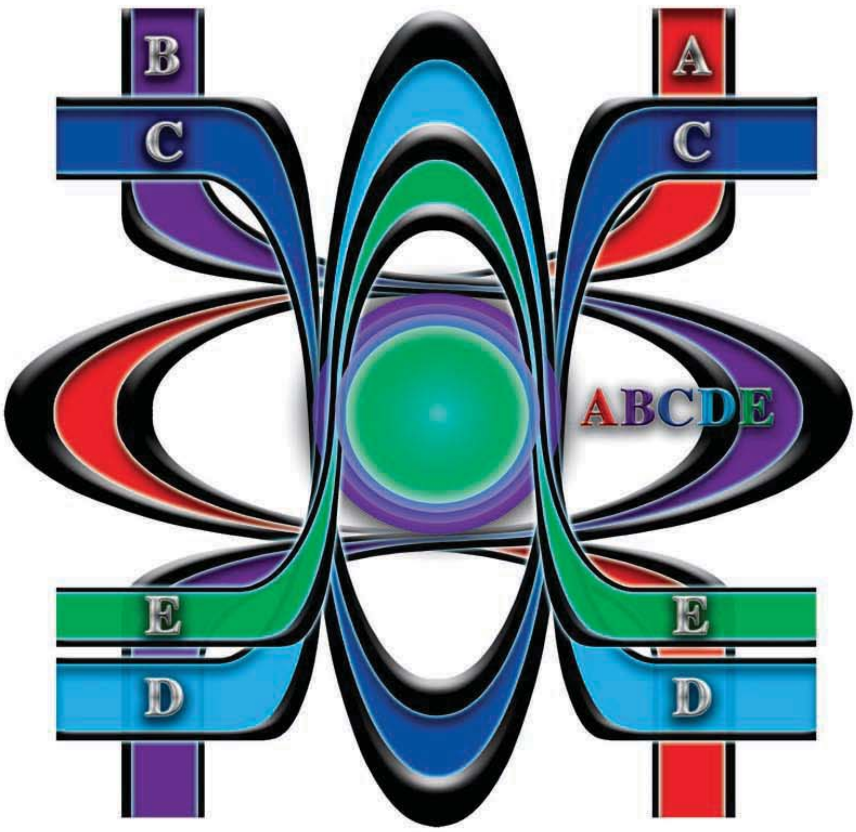
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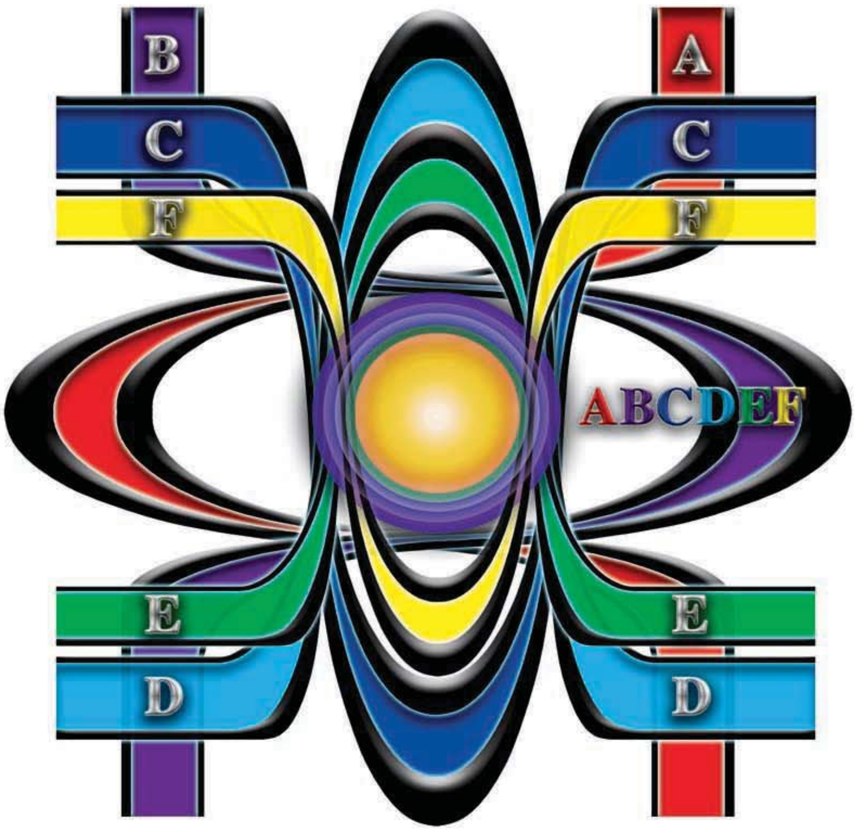
When the dimensionality of space within the heterogeneity changes by an amount **ΔL**, conditions arise for the fusion of the next form of matter. A qualitatively new hybrid form **ABCDEF** arises (**Fig. 2.5.10**). Another change in the dimensionality of space within the heterogeneity by the amount **ΔL** again creates conditions for the fusion of the next form of matter G. A qualitatively new hybrid form **ABCDEFG** emerges (**Fig. 2.5.11)**. Thus, with a continuous change in the dimensionality within the heterogeneity of space, seven forms of matter that make up our Universe merge sequentially within this heterogeneity and create six material spheres of different qualitative composition and size. The inner sphere, formed by seven forms of matter, is a physically dense sphere — the first planetary (material) sphere of our planet Earth, whose substance has four aggregate states — solid, liquid, gaseous and plasma. Different states of aggregation arise as a result of dimensional fluctuations less than **ΔL.** And if we proceed from the centre of heterogeneity, the next sphere, formed by the fusion of six forms of matter, is the second planetary (material) sphere; when five forms of matter merge, the third planetary (material) sphere; when four forms of matter merge, the fourth planetary (material) sphere; when three merge, the fifth planetary (material) sphere; when two forms of matter merge — the sixth planetary (material) sphere (**Fig. 2.5.12)**. All these spheres are material and differ in their qualitative and quantitative composition. In principle, a planet should be considered only as a combination of these six spheres. Only in this case is it possible to obtain a complete picture of the processes taking place and to gain a correct understanding of nature as a whole. The illusion of a complete understanding of nature obtained through our senses, or more precisely, the absolutisation of our senses, leads cognition to a dead end from which it is impossible to escape without a radical change in our concepts of nature and understanding the role that the senses play in human life.

It is worth remembering that all the senses available to humans have only one purpose: to maximise the adaptation of the human body to the ecological niche it occupies in the planet's ecological system as one of the species of living organisms. The purpose of the senses is optimal adaptation to the conditions of existence, and nothing else. Therefore, relying solely on the senses, we are unable to create a complete picture of the universe, no matter how much we might wish to do so. It is precisely this misunderstanding that has led modern science to a dead end.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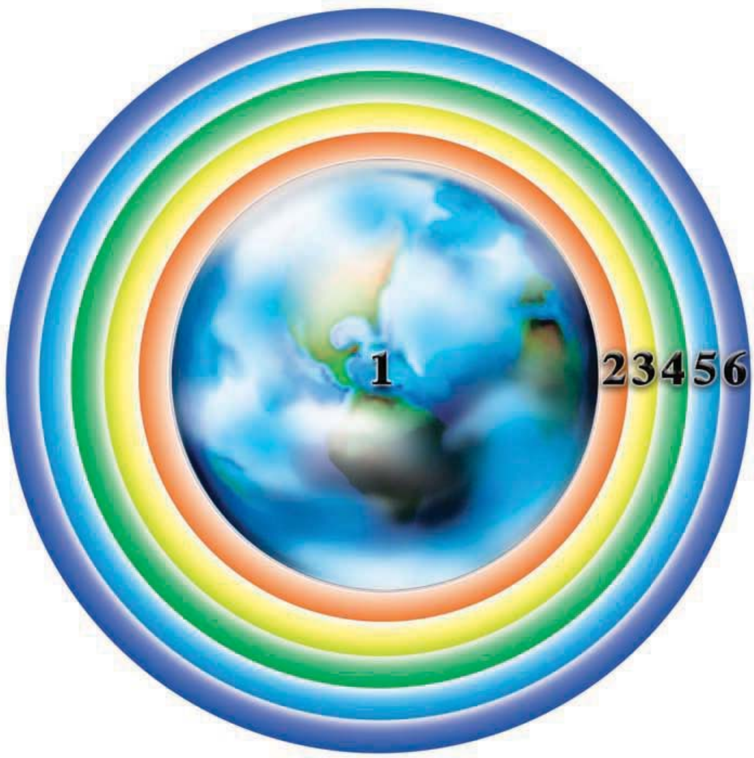
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Now let us return to the qualitative structure of the planet. If we take a physically dense sphere as a reference point, it has the most common qualities with the second material sphere and the least with the sixth sphere. The common qualities of different spheres create conditions for their interaction with each other. The degree of this interaction varies and depends on how many common qualities these spheres have. The degree of interaction between these spheres can be expressed by interaction coefficients — **$\alpha 1$; $\alpha 2$; $\alpha 3$; $\alpha 4$; $\alpha 5$** (**Fig. 2.5.13)**. Moreover:

$$\alpha 1 > \alpha 2 > \alpha 3 > \alpha 4 > \alpha 5 \qquad (2.5.1)$$

where:

$\alpha 1$ — coefficient of interaction between the physically dense (first material) and second material spheres;

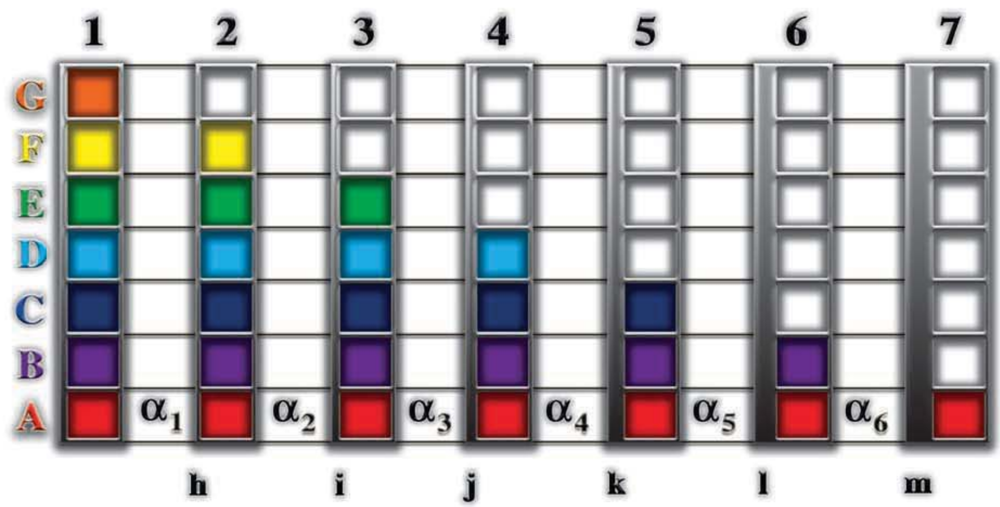
$\alpha 2$ — coefficient of interaction between the physically dense and third material spheres;

$\alpha 3$ — coefficient of interaction between the physically dense and fourth material spheres;

$\alpha 4$ — coefficient of interaction between the physically dense and fifth material spheres;

$\alpha 5$ — coefficient of interaction between the physically dense and sixth material spheres.

When we talk about planet Earth, we must understand this to mean six spheres nested within each other, like Russian nesting dolls, representing a single whole. This concept is very important for understanding many phenomena and mysteries of living and non-living matter, and the evolution of life on our planet. Upon completion of the formation of the qualitative structures of the Earth, the heterogeneity in space is neutralised (**Fig. 2.5.14)**. The hybrid material spheres that arose during the merging of forms of matter fill this heterogeneity. A "levelling of space" occurs. The heterogeneity of space can be compared to potholes on a dirt road. Until the potholes are filled with earth, the bumps remain. After the formation of the planet is complete, the forms of matter that created it continue their movement, no longer merging with each other (like water that, having filled a reservoir to the brim, begins to overflow and flow further). The activity of the movement of forms of matter is not always the same, which is manifested in the movement of the earth's crust, earthquakes and volcanic eruptions (**Fig. 2.5.15)**. The process of planet formation was completed six billion years ago.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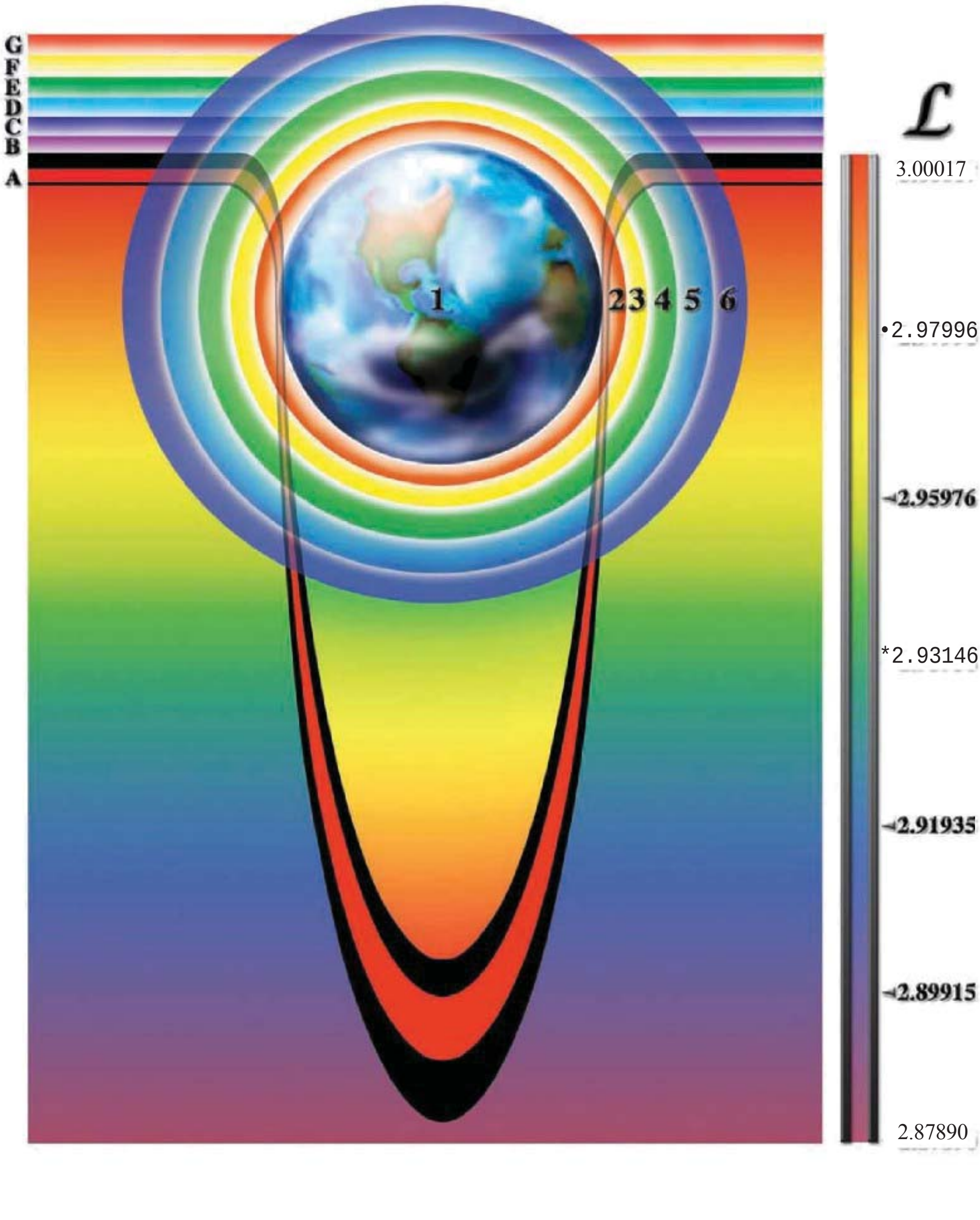
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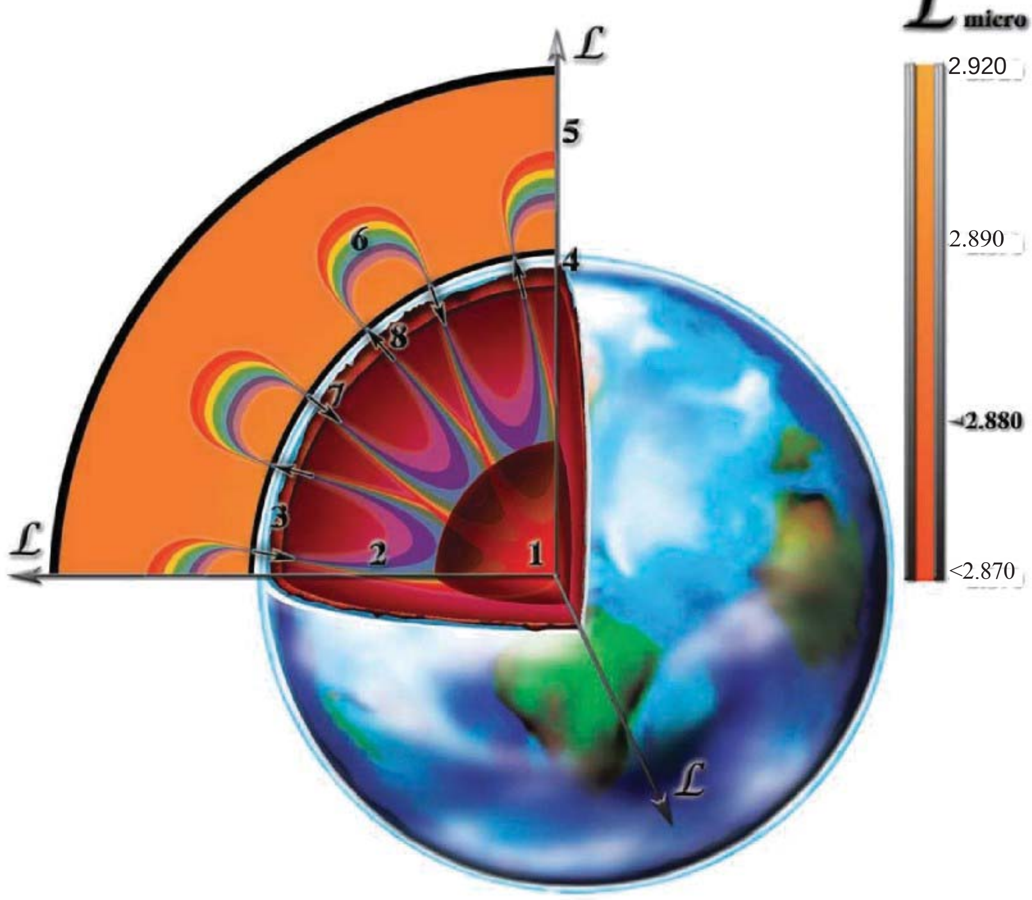
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back. This is the first cycle of the evolution of forms of matter, which is associated with the evolution of inanimate matter. The second stage is the evolution of living matter. Before moving on to the phase of the evolution of living matter, I would like to remind you that our planet Earth, our Universe, was formed by the fusion of seven forms of matter. Moreover, the number "seven" has no mystical significance. The fact that our universe is formed from seven forms of matter is not something unique or divine. It is simply the qualitative structure of our universe. It is no coincidence that white light, when refracted, breaks down into seven colours, and an octave contains seven notes. It is quite possible that the question may arise

— Why do free primary matter in the zone of space curvature begin to interact with each other and create hybrid compounds?! This happens because when free forms of matter from our space enter zones of dimensional heterogeneity, they find themselves in qualitatively new conditions. As a result, they behave differently. From the same seven "cubes" in zones of dimensional heterogeneity, new "mosaic pictures" begin to form. In accordance with the gradient (difference) in the dimensionality of space, in the zone of dimensional heterogeneity, under different qualitative conditions, free forms of matter begin to merge and form new hybrid compounds, which are in principle impossible outside the zones of dimensional heterogeneity of space. Each new change in the dimensionality of space by i within the heterogeneity creates conditions for the merging of another form of matter. This process will continue until the entire zone of heterogeneity is filled with hybrid forms of matter. At the same time, each of these hybrid forms of matter partially compensates for the heterogeneity of the dimensionality of space. As a result of the process of merging matter in the zone of heterogeneity, the dimensionality that existed before the explosion of the supernova star is restored. It is no coincidence that calculations of the amount of matter in the universe are an order of magnitude greater than the amount of physically dense matter that exists.

Where is this **90%** of the matter in the universe, and what is it? Modern science has solved the question very simply — *"dark matter"*. Matter in the universe that we cannot see, hear or touch.

this "dark matter" accounts for 90% of the matter in the universe.

Isn't that a "beautiful" answer?! And very familiar to anyone who remembers even a little about the crisis in nuclear physics at the beginning of the century. Only then, the problem was the disappearance of some matter, discovered during certain nuclear processes. At a specially convened international conference of physicists in Genoa, after long and protracted

After much debate, the problem was solved simply — disappearing matter carries a neutrino particle that we cannot see, hear or feel. But if part of the matter known to science "disappeared" in nuclear reactions, then in the case *of dark matter*, **90%** of the matter in the universe disappears! So, dark matter is the unbound (non-interacting) primary matter of our universe. Meanwhile, physically dense matter arises as a result of the fusion of these primary matters in areas of dimensional heterogeneity in the universe.

2.6. Summary

Space is heterogeneous, which means that its properties and qualities vary at different points. The heterogeneity of space is expressed by its dimensionality at a given point. The heterogeneity of space changes continuously; in other words, the properties and qualities of space are continuous quantities. There are two possible variants of change in the properties and qualities of space: gradual change and abrupt change. A sharp change in the properties and qualities of space occurs as a result of some internal or external disturbance of space. Matter has specific properties and qualities, therefore **matter is finite,** a finite quantity. When matter and space interact, matter with specific properties and qualities is distributed throughout space. Matter is located only in that volume of space where its properties and qualities are identical to the properties and qualities of space. Such a distribution of matter according to its properties and qualities occurs because in other areas of space, matter with these properties and qualities cannot be stable. When a continuously changing infinite quantity (space) interacts with finite quantities (matter) that have specific properties and qualities, matter is distributed throughout this space; we can talk about the quantisation of space according to its properties and qualities; for convenience, we will call this process the quantisation of space according to dimension. Since primary materials are indivisible, and their properties and qualities are specific, and therefore finite, this means that in order for the next material to manifest itself in space, its properties and qualities must change by a certain amount, called the coefficient of quantisation of the dimension of space $\boldsymbol{\gamma i}$. Each coefficient of quantisation of space $\boldsymbol{\gamma i}$ determines a certain number of primary matters that qualitatively and quantitatively correspond to specific the value of this coefficient. In other words, matter is regrouped in a continuously changing space according to certain qualities and properties. As a result, so-called matrix spaces are formed in space, representing systems of spaces formed by primary matter of a specific space quantisation coefficient. Matrix spaces connect with each other, leading to the redistribution of matter between them. As a result, a super-explosion occurs, causing the deformation of space. The resulting longitudinal waves of dimensional oscillation create new qualitative conditions under which free primary matter begins to merge with each other, creating **hybrid matter.** Hybrid matter, in turn, affects the space in which it is formed. The process of hybrid matter synthesis continues until the synthesized hybrid matter completely compensates for the deformation of the space in which their synthesis began. At the same time, the space in this zone returns to a state of equilibrium. Hybrid matter plays a compensatory role in this situation. As a result of these processes, a system of spaces with specific shapes and sizes emerges. Closed spatial systems, known as six-ray systems, arise in matrix space, the main condition for their stable state being the balance between the inflow and outflow of matter masses. This is **the law of conservation of matter** at a qualitatively different level.

Stars and black holes are the result of the convergence of a specific space-universe, a specific layer in matrix space with its own level of dimensionality, with neighbouring space-universes that have their own levels of dimensionality, which are greater or less than the dimensionality of the layer in question by the same amount γ_i. The merging with a space-universe having a higher level of its own dimensionality leads to **the birth of a star.** When merging with a space-universe with a lower level of its own dimensionality, **a "black hole"** appears**.** The stability of this space-universe is only possible when there is a balance between the inflow of matter from the "upper" space and the outflow of matter into the
"lower" space. During a supernova explosion, waves of disturbance in the dimensionality of space arise, and the primary matter ejected during the explosion, which has entered the resulting zones of dimensional curvature, finds itself in qualitatively different conditions, as a result of which it begins to merge, quantising in dimensionality, and form hybrid forms of matter. These

hybrid forms of matter form planetary spheres of different qualitative and quantitative composition. Upon completion of the formation of these planetary spheres in the zone of spatial dimensionality heterogeneity, the level of spatial dimensionality returns to its original level, which was before the supernova explosion. **Hybrid forms of matter, through their influence at the microcosmic level, compensate for the deformation of dimensionality that occurred during the supernova explosion.** After the balance of dimensionalities is restored, the active process of hybrid matter synthesis ceases. This is how planetary systems are formed in the universe.

Chapter 3. The heterogeneity of space and the qualitative structure of physically dense matter

3.1. 's formulation of the question

The heterogeneity of space at the macrocosmic level leads to the formation of matrix spaces. Processes occurring at the macro level cause a qualitative change in the state of space itself and the matter filling it. As a result, so-called hybrid forms of matter arise in space, which, in turn, affect the qualitative state of the space in which these materials were formed. The synthesised hybrid forms of matter neutralise the zones of heterogeneity in which their synthesis occurs. Upon completion of the synthesis process of hybrid matter, the zone of heterogeneity in which the synthesis of primary matter took place is completely neutralised. Thus, hybrid forms of matter affect the dimensionality of space with a reverse sign in relation to the heterogeneity of the dimensionality of space in which the synthesis process of these hybrid forms took place. The synthesis of hybrid forms of matter occurs at the level of microspace, thus the qualitative structure of microspace acts as a counterweight to the qualitative structure of macrospace. When a qualitative and quantitative balance between them is achieved, space acquires a stable equilibrium state. Macrospace and microspace neutralise each other, just as plus neutralises minus. And, accordingly, all this leads to the fact that any significant change at the level of the macrocosm leads to corresponding changes at the level of the microcosm and vice versa. It seems unlikely that any atom could influence macrospace, but nevertheless, this is a fact. Naturally, the influence of a single atom is microscopic, but their combined influence is the balance that equilibrates macrospace.

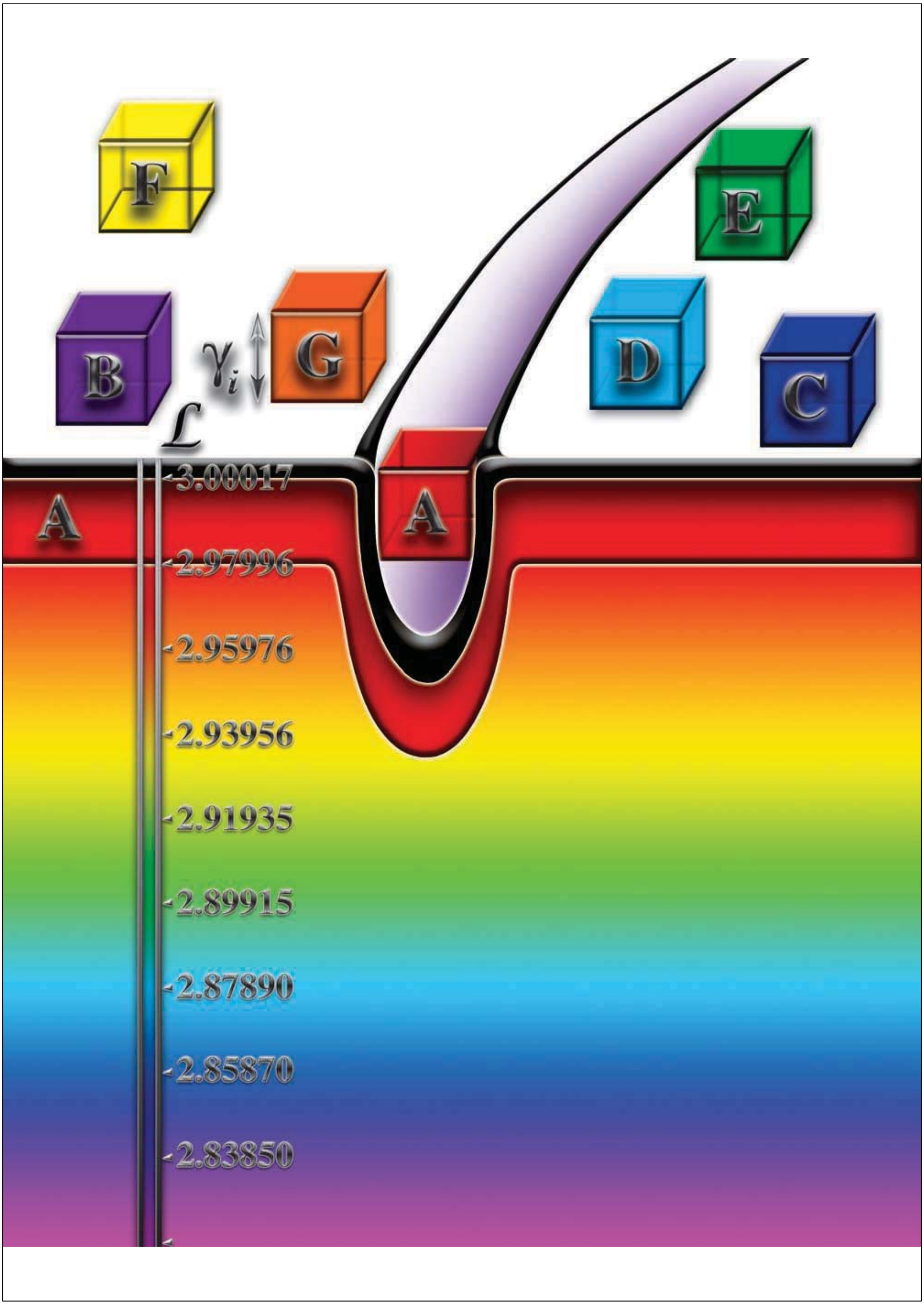
3.2. The qualitative structure of the microcosm

When a supernova explodes, the space around the star is distorted and matter is ejected. But first, let's take a look at the stars themselves. As we know, stars consist of physically dense matter. This raises a logical question: how does the synthesis of physically dense matter occur? The space quantisation coefficient γi determines divides the qualitative structure of this universe, in other words, which primary materials interact with each other and form a new quality. Each primary matter has its own specific qualities and properties, and therefore only in that part of space where the conditions of identity of the properties and qualities of space and this matter are fulfilled does this matter manifest itself and remain stable. Thus, a change in the qualitative state of space by a certain amount ΔL leads to the "falling out" in this zone of space of matter whose properties and qualities are identical to the properties and qualities of space itself. With the next change in the properties and qualities of space by an amount ΔL, conditions arise for the "falling out" of a stable state in this area of space of the next primary matter. If both changes in the properties and qualities of space ΔL are identical to each other, we can talk about the phenomenon of quantisation of space by matter, or more precisely, by primary matter that is compatible in terms of certain properties and qualities. Simple logic suggests that if two primary matters manifest themselves with identical changes in the properties and qualities of space, they must have some common properties and qualities. In this case, ΔL becomes $\boldsymbol{\gamma i}$ — the coefficient of space quantisation. And if this is so, then in that region of space where the conditions for a stable state of both materials are met, they begin to interact with each other according to common properties and qualities and form a new qualitative state — a hybrid form of matter.

Let us assume that there are many primary materials, and they have different properties and qualities. In this case, they can be sorted according to compatibility. The criterion for this will be the space quantisation coefficient γi. For each value of γi, there is a group of primary materials that are compatible with each other. Even a slight change in this coefficient gives rise to qualitatively new conditions for the interaction of other primary materials. In other words, each value of the space quantisation coefficient $\boldsymbol{\gamma i}$ corresponds to a different universe with its own laws of nature, properties and qualities. Let us imagine primary matter of one type as "cubes" of the same size and consider how matter interacts with each other in a zone of spatial heterogeneity. If the deformation of space ΔL is commensurate with $\boldsymbol{\gamma i}$, only one primary matter, whose properties and qualities are identical to the properties and qualities of a given zone of space deformation, can be located there.

in a stable state and accumulate in it. Similarly, rainwater fills any depressions in the surface, and when completely filled, the surface of the puddle or lake becomes level with the solid surface. However, no qualitative changes occur with the water that has filled the depressions in the surface; water remains water. Similarly, when a zone of space deformation is saturated with one primary matter, simple filling occurs without qualitative changes **(Fig. 3.2.1)**.

Before continuing with the analysis of this process, I would like to draw attention to the fact that the so-called primary matter of this type has common properties and qualities, but also has its own characteristics, manifested in how it interacts with itself and how it interacts with space. Let us recall that sunlight breaks down into seven basic colours, and that when matter is annihilated, a powerful flash of light occurs. Each portion of optical radiation — a photon — has its own specific properties and qualities. This is why our eyes can distinguish these seven basic colours, and their wavelength or frequency can be measured with instruments. Each photon is a microscopic curvature of space, saturated with a single primary matter. The spectrum appears as a result of the constant occurrence of many microscopic disturbances in space, the parameters of which vary. As a result, the properties and qualities of each such zone of space deformation differ from each other, albeit insignificantly. Therefore, each of these zones of space deformation is saturated with different primary matter. Photons of the optical range
— are particularly interesting, as they form the basis of our universe at the microcosmic level. They play a key role in the formation and evolution of stars, living and non-living matter. There are many types of primary matter, but the matter of our universe is formed by the fusion of seven types of primary matter. Primary matter of this type is primary matter that has common properties and qualities, the criterion for which is the space quantisation coefficient **γi**. Naturally, microscopic deformations with other parameters constantly arise in space, which creates conditions for their saturation with primary matter with other space quantisation coefficients **γi**. As a result, space is literally saturated with photons not only in the optical range. The spectrum of electromagnetic waves is a spectrum of primary matter corresponding to the spectrum of values of the space quantisation coefficient **γi**. The values of these coefficients are close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2.95976
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2.91935
2.89915
2.87890
2.85870
2.83850

each other, but nevertheless, each of them forms "its own" group of mutually compatible primary matters. However, the primary matters of different groups, corresponding to different space quantisation coefficients γi, do not interact with each other, at least not directly. For example, radio waves do not interact with photons in the optical range and vice versa. At the same time, both radio waves and photons in the optical range interact with each other, forming new superpositions (hybrid combinations).

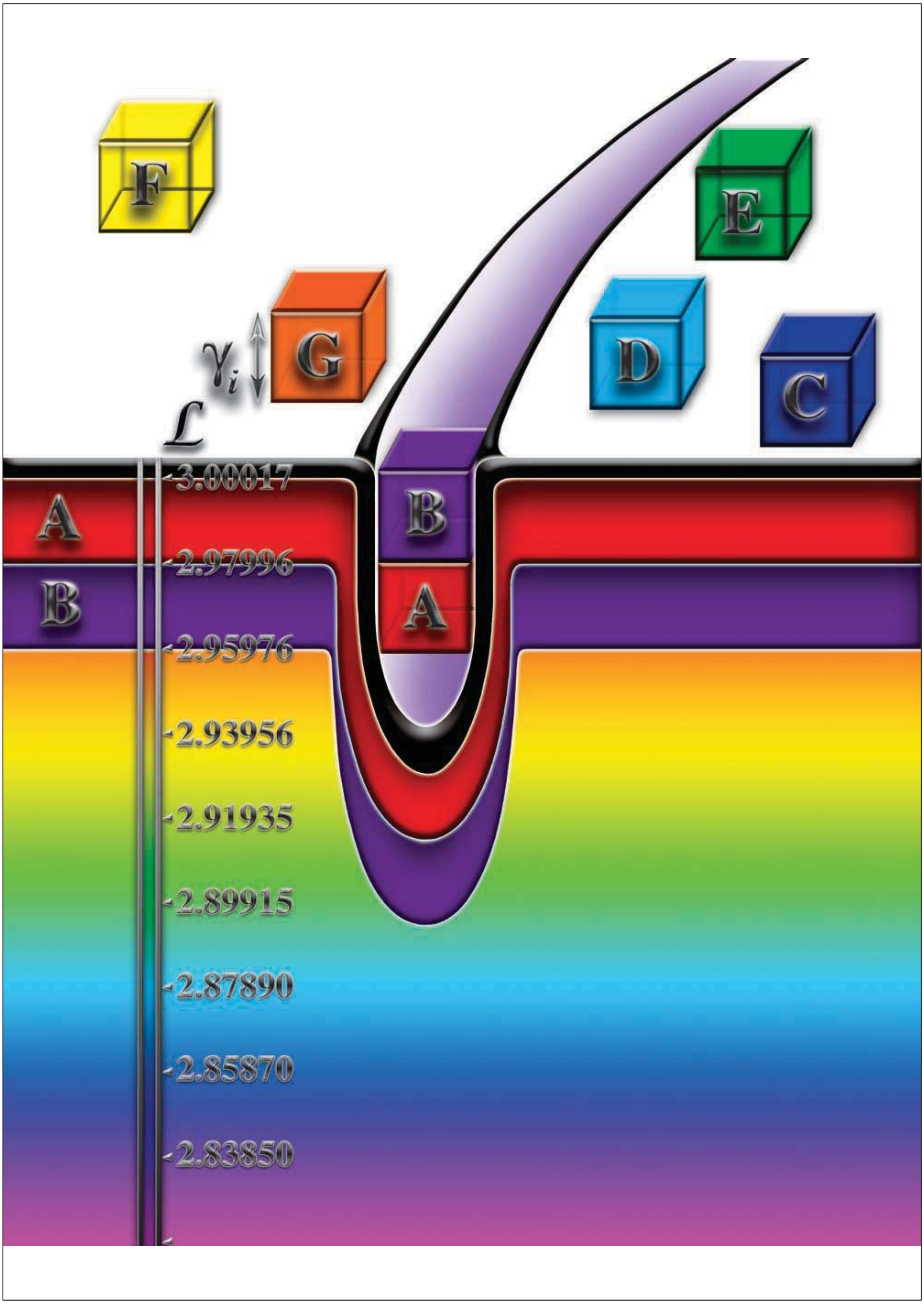
It is precisely thanks to the superposition of photons of seven basic colours that such a wealth of colours exists in nature. But an important point is that, in this case, no hybrid compounds of primary substances are formed. Let us imagine coloured rain falling. The rain is red, orange, yellow, green, blue, and purple. And each of these rains falls from the sky at different times, in different places and in different quantities. As a result, multicoloured puddles of all the colours of the rainbow would appear on the surface of the planet, as the multicoloured water in each specific puddle or lake would mix in different quantities and different sets of colours. But at the same time, regardless of colour, water remains water. Since there are no qualitative changes. So primary matter can flow into the same deformation of space and mix with others without creating hybrid matter of a new quality. Hybrid matter arises from the fusion of primary matter only when specific conditions arise. What specific conditions must arise for the synthesis of hybrid matter to occur and a new quality to emerge? Let us try to understand this amazing phenomenon of nature. In order for the conditions for the fusion of primary matter to arise and hybrid matter to form, there must be a curvature of space in which two or more primary matter of a given type can exist in a stable state. If the magnitude of the deformation of space lies in the range:

$$\mathbf{2}\,_{\gamma i} < \mathbf{\Delta L} < \mathbf{3}\,_{\gamma i} \qquad (3.2.1)$$

Two primary materials can remain in a stable state within this zone of space curvature, which creates sufficient and necessary conditions for their interaction in terms of common properties and qualities, and for the synthesis of hybrid matter. Similarly, for the possibility of fusion in the zone of heterogeneity of three, four, five, six and seven primary matter of this type, it is necessary that the magnitude of space deformation lies within the following ranges, respectively:

$$\mathbf{3}\,\gamma_i < \Delta L < \mathbf{4}\,\gamma_i \quad (3.2.2)$$
$$\mathbf{4}\,\gamma_i < \Delta L < \mathbf{5}\,\gamma_i \quad (3.2.3)$$
$$\mathbf{5}\,\gamma_i < \Delta L < \mathbf{6}\,\gamma_i \quad (3.2.4)$$
$$\mathbf{6}\,\gamma_i < \Delta L < \mathbf{7}\,\gamma_i \quad (3.2.5)$$
$$\mathbf{7}\,\gamma_i < \Delta L < \mathbf{8}\,\gamma_i \quad (3.2.6)$$

As a result of the sequential fusion of primary matter in these zones of space deformation, hybrid forms arise from two, three, four, five, six, and seven primary matters. Moreover, if the magnitude of space deformation lies in the range (3.2.1), the synthesis of hybrid matter occurs only from two primary ones. If the magnitude of space deformation lies in the range (3.2.2), the synthesis of hybrid matter occurs from both two and three primary matters. Similarly, with each change in the amount of space deformation by **γi**, the number of hybrid forms of matter increases by one. And when the amount of space deformation lies within the range (3.2.6), six hybrid forms of matter are synthesized from seven forms of primary matter. We will call the hybrid form of matter resulting from the fusion of the seven primary matters physically dense matter (see **Figs. 3.2.2 – 3.2.7**). Before proceeding to the analysis of the possible states of physically dense matter, we would like to draw special attention to the boundary states. The nature of one such material substance — the electron — is key to understanding the nature of physically dense matter in our universe. All existing models of the atom — the smallest stable material substance — describe the electron (no one has ever attempted to explain what an electron is, except to assign it a negative charge, while the proton was assigned a positive charge, without any explanation of what positive or negative charges actually are) with dual properties — both as a particle and as a wave. Experiments confirmed the existence of dual (dualistic) properties of the electron, but no one gave any explanation as to why it manifests itself ambiguously. Let's try to understand the nature of the electron. Consider such a qualitative state of space in which the magnitude of the deformation of the microspace lies in the following range: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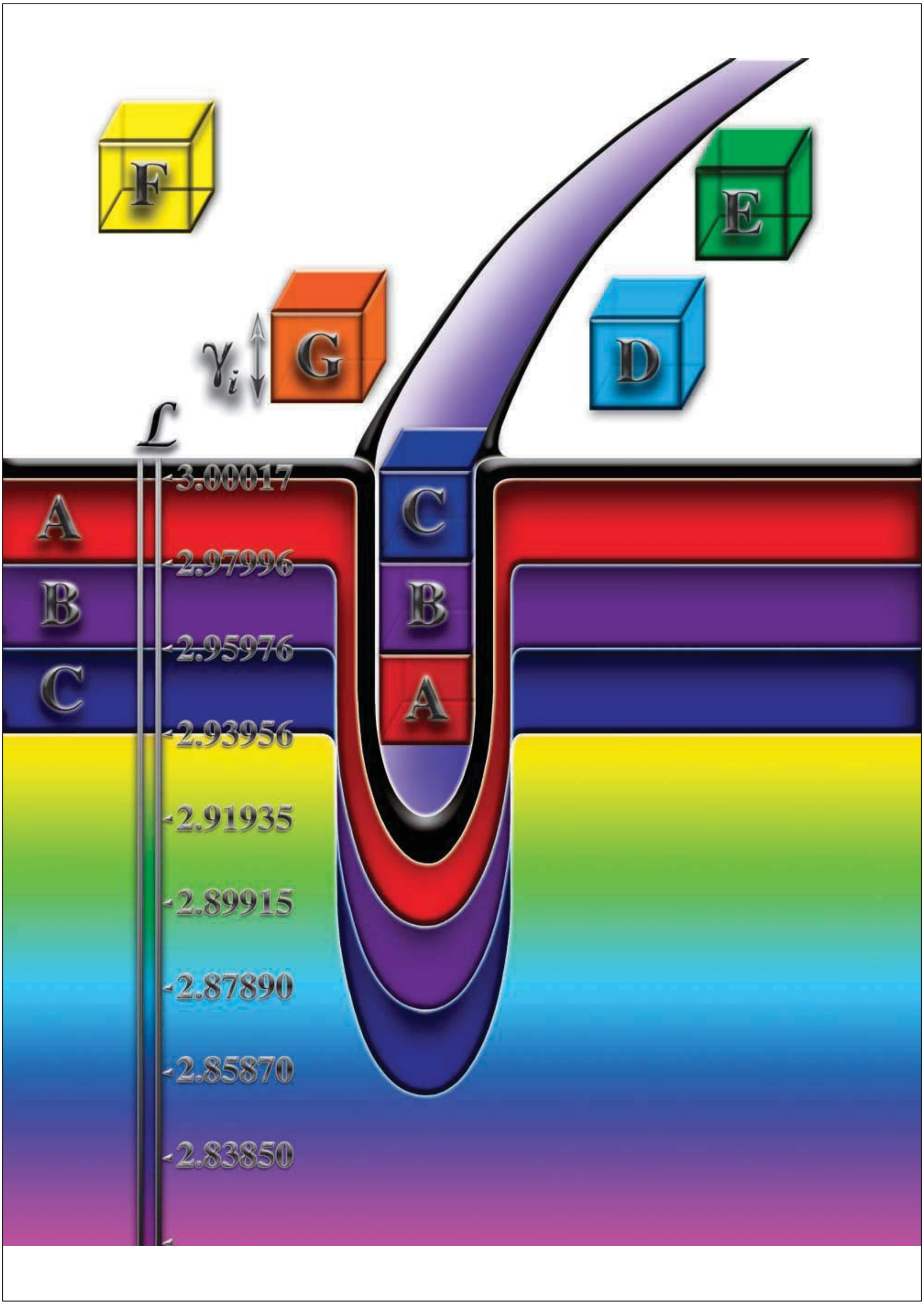
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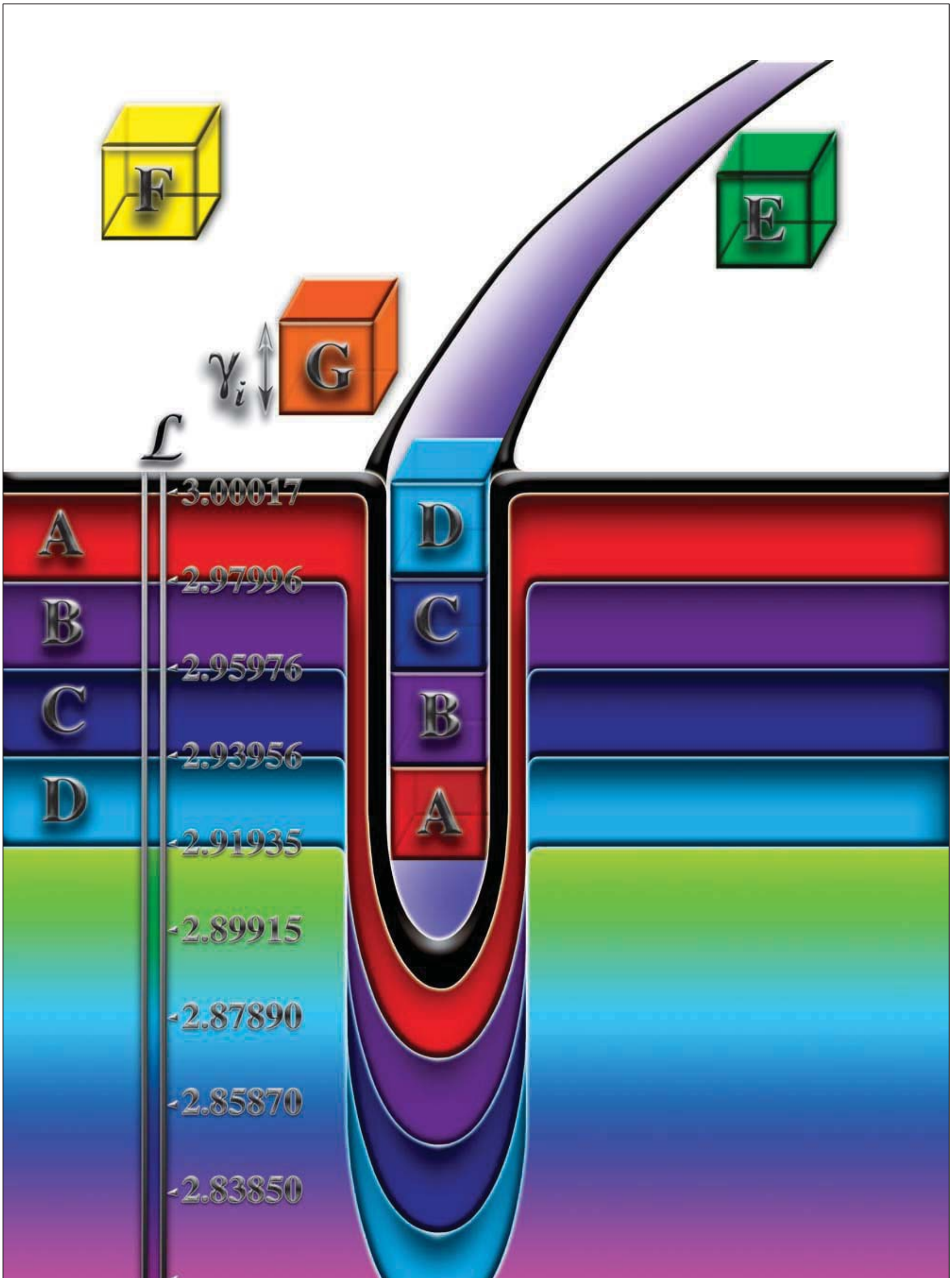
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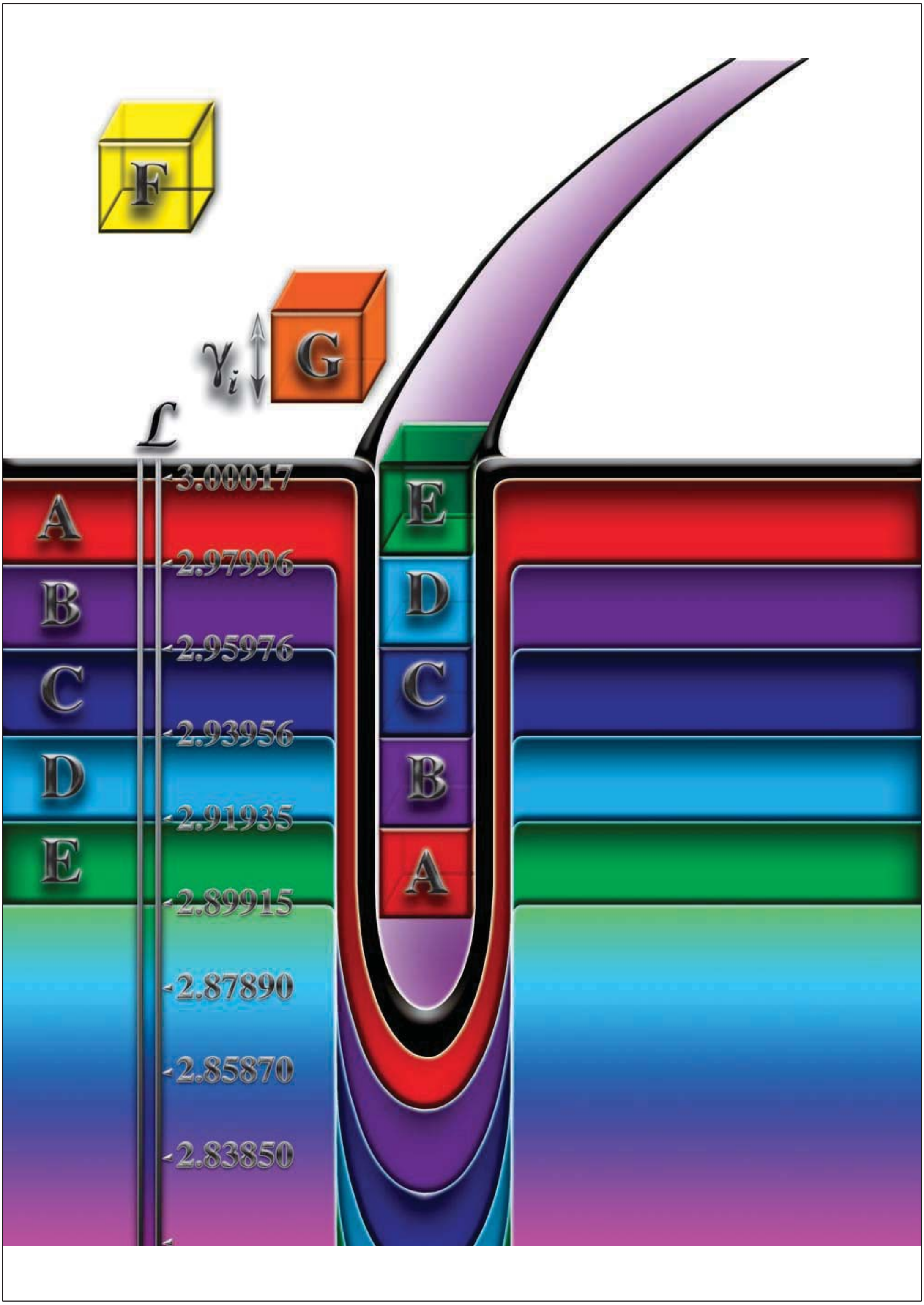
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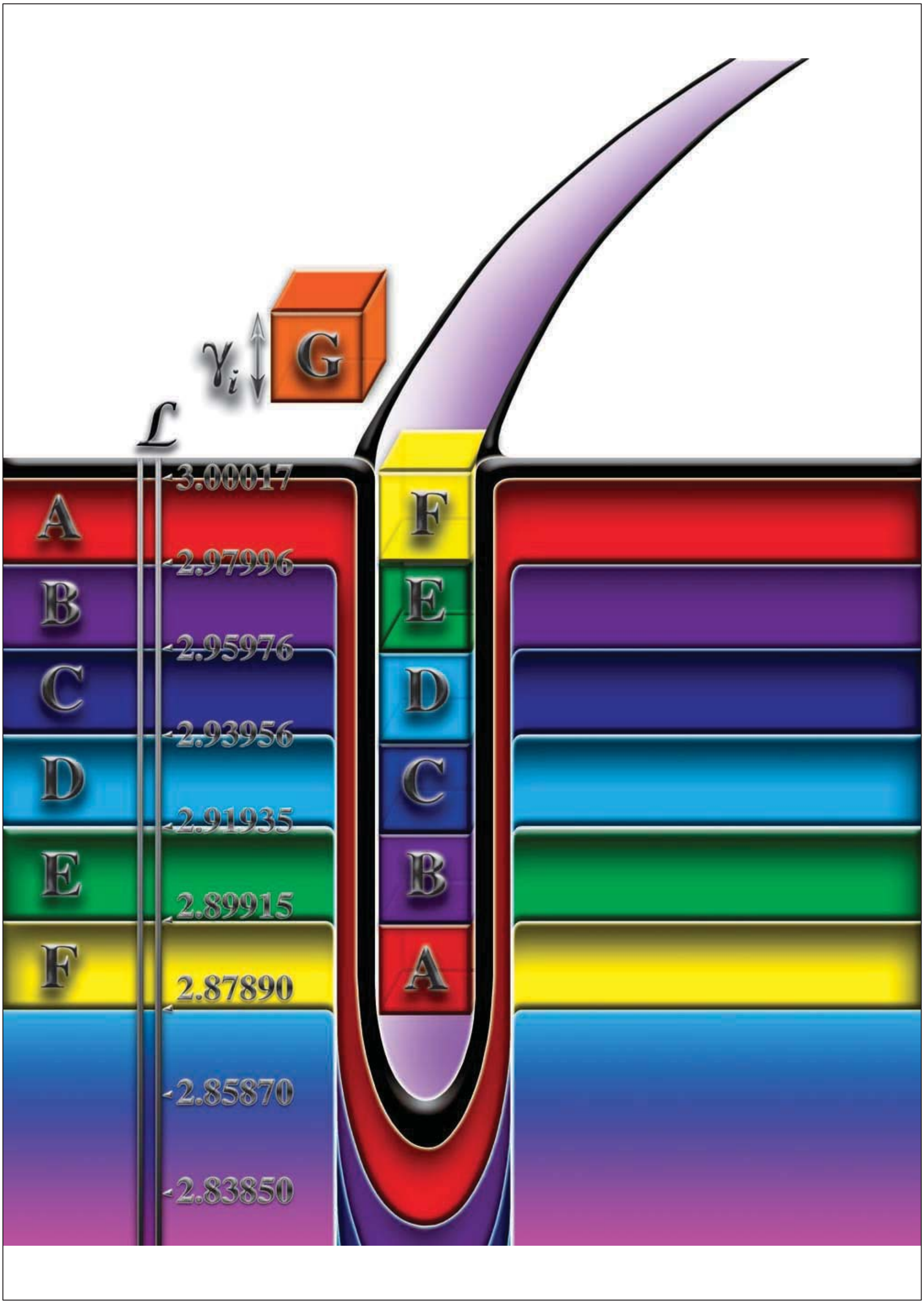
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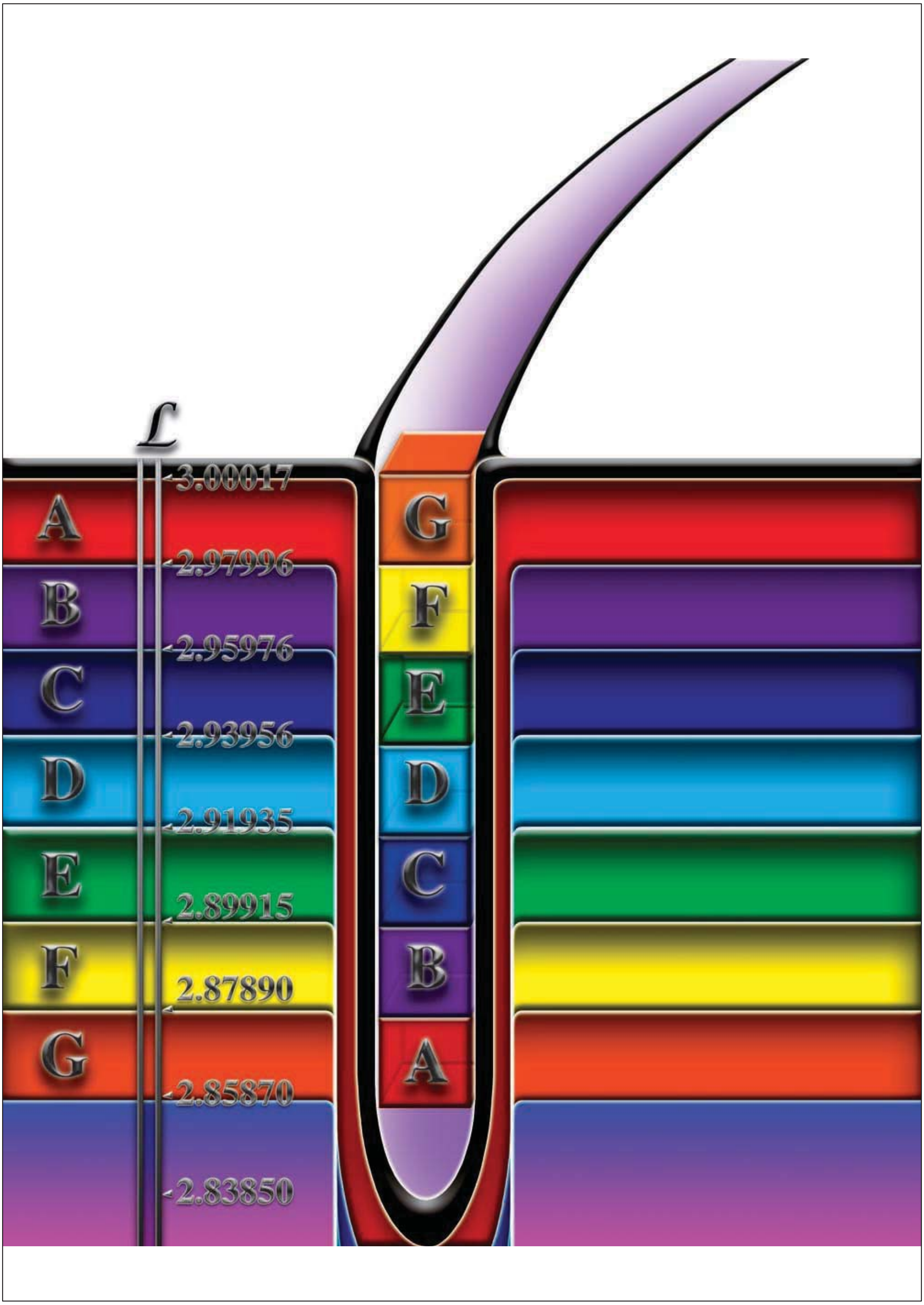

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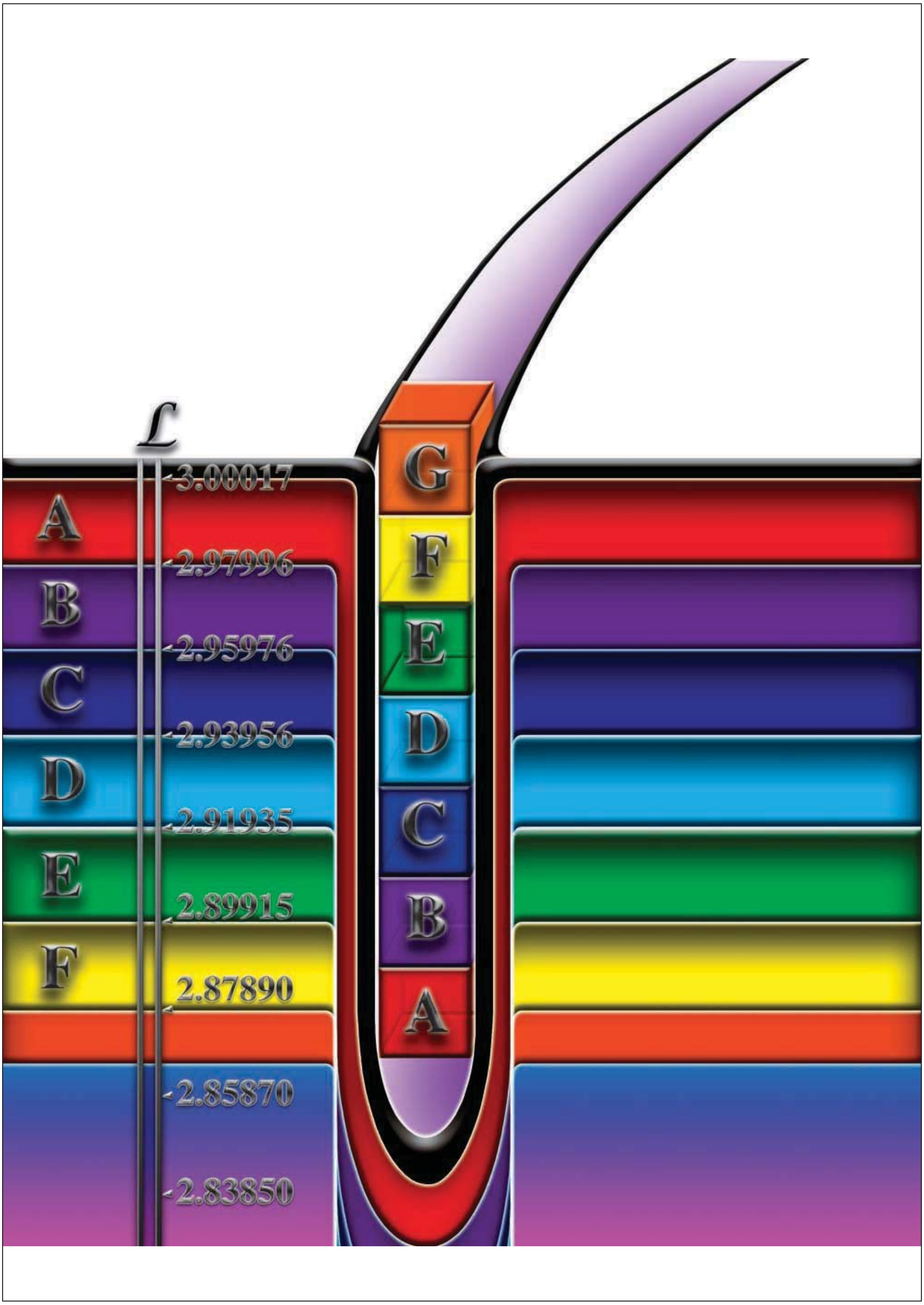
$$\mathbf{6}_{\gamma i} < \mathbf{\Delta L} < \mathbf{6.9}_{\gamma i} \qquad (3.2.6)$$

With this qualitative state of space, the necessary and sufficient conditions for the fusion of six primary materials are met, but for the fusion of seven primary materials, the smallest amount is missing (**Fig. 3.2.8**). Space is never in a static state. The synthesis and decay of matter and its constituent atoms constantly occur in it, and waves carrying insignificant perturbations of dimensionality constantly pass through every point in space. Astrophysicists call this the relic radiation of the Universe, which mainly consists of gamma rays. Gamma rays are a manifestation of primary matter with other, lower values of the space quantisation coefficient than our universe has, and they do not directly participate in the synthesis of physically dense matter. Nevertheless, their role is key in the nature of electro-na. Constantly permeating space, these waves cause disturbances in the dimensionality of space that are insignificant at first glance. Insignificant for some, these disturbances become decisive in the nature of the electron. Overlaying the deformation of microspace (3.2.6), gamma rays briefly create an additional curvature of microspace, which creates conditions for the fusion of the seven primary types of matter (**Fig. 3.2.9)**.

$$\mathbf{6}_{\gamma i} \leq \mathbf{\Delta L} + \mathbf{h} \qquad (3.2.7)$$

For a short time, conditions arise in which all seven primary materials are able to merge and form a hybrid form. The synthesis process begins, a material cloud appears, which begins to condense, but the condensation process does not have time to complete. The wave front passing through the area of microspace deformation constantly changes, and as a result, the aggregate level of dimensionality of this area changes smoothly within the amplitude of the passing wave. The wave brings with it a change in the level of dimensionality of the microspace deformation zone, without which the necessary and sufficient conditions for the fusion of the seven primary matters do not arise. This qualitative state persists for a very short period of time, during which the passing wave creates the necessary additional deformation of the microspace. It should be noted that the wave carries with it additional deformation of both signs, both positive and negative. As a result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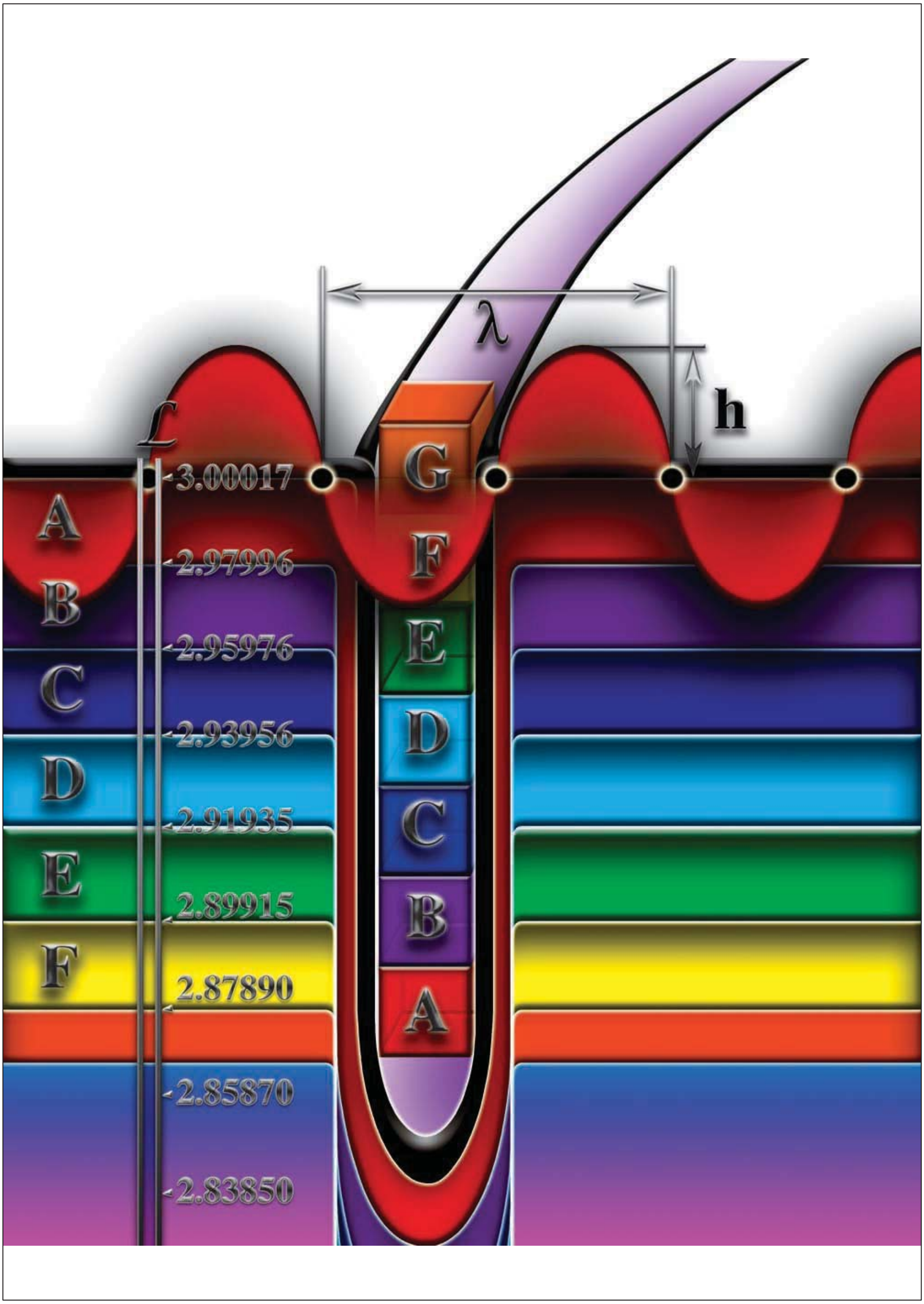
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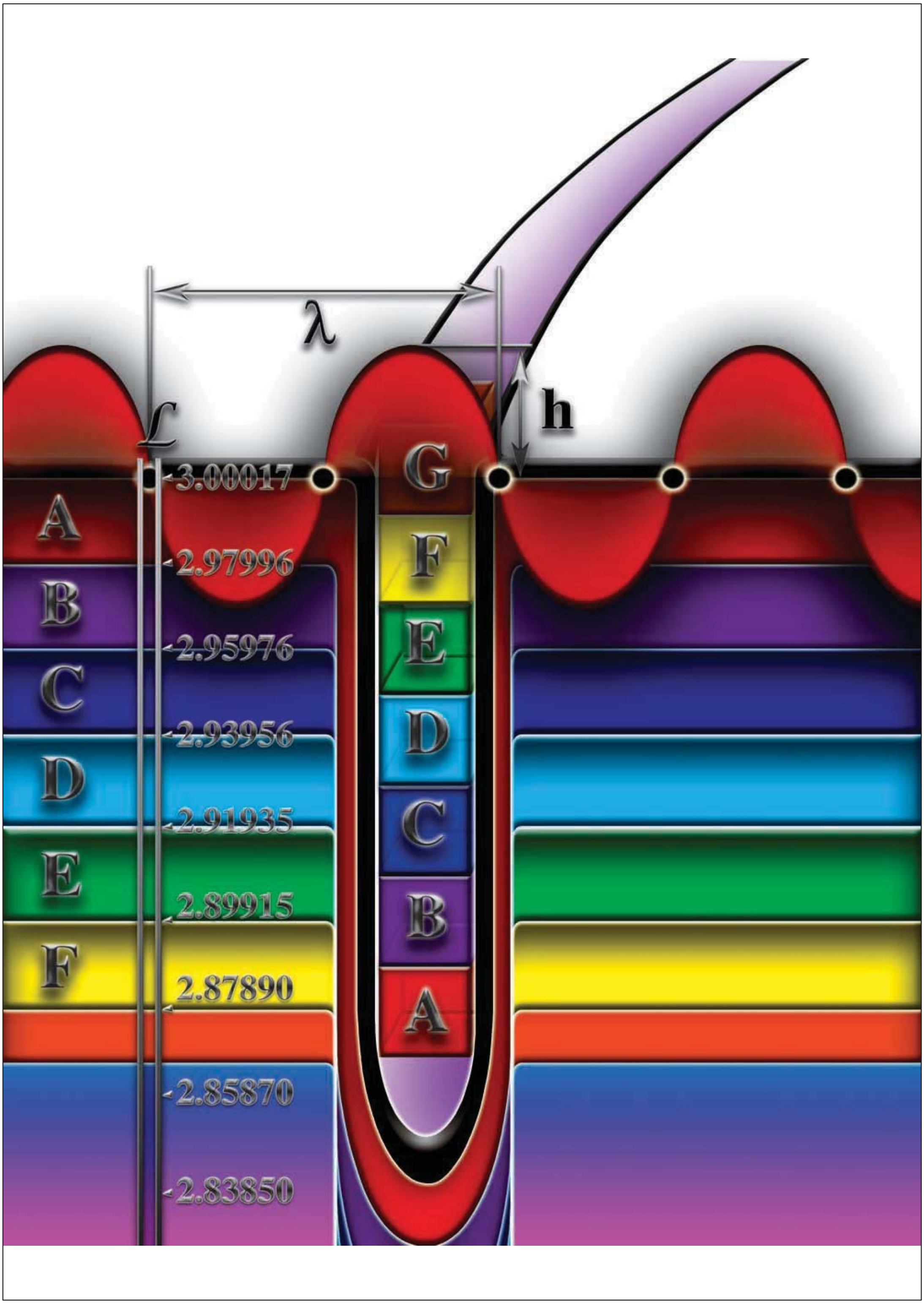
The deformation of microspace begins to decrease, and there comes a moment when the qualitative conditions for the possible fusion of the seven primary matters disappear again (**Fig. 3.2.10**). The material cloud, which has just begun to condense, disperses again. All this happens during the passage of only one gamma-ray photon through the microspace deformation zone. Due to the fact that any point in microspace is continuously penetrated by a huge number of waves, the process of condensation and decondensation of matter occurs continuously. This state is the limiting state of physically dense matter. That is why an electron, which corresponds to this limiting state, has dual properties, both as a particle and as a wave. That is why we talk about an electron cloud as a kind of cluster of matter that moves around the nucleus of an atom. Fog can serve as an analogy for an electron cloud. Water vapour in the air at the so-called dew point begins to condense into tiny droplets of water, so small that they do not fall as rain but continue to "float" in the air, absorbing and scattering light. Similarly, in the deformations of the microspace around the nucleus of an atom, an electron "fog" appears and disappears — an unstable boundary state of physically dense matter.

Now I would like to draw your attention to the concept of electron motion. An electron, or electron cloud, does not move at all in a physically dense medium. This is primarily because an electron is not, in the full sense of the word, physically dense matter, but is nothing more than an extremely unstable boundary state of this matter (**Fig. 3.2.11)**. This extremely unstable boundary state manifests itself primarily in the constant transition of matter from one qualitative state to another. At the same time, these qualitative states are associated with the constant absorption and emission of gamma photons during the transition of matter from one qualitative state to another and back (**Fig. 3.2.12** and **Fig. 3.2.13)**. At the same time, matter can return to its previous qualitative state, not necessarily in the same place (**Fig. 3.2.14)**.

In the presence of a horizontal dimensional difference, the primary matter released during the decay of an electron, having absorbed a photon of a different wavelength, can materialise in any neighbouring zone of micro-space deformation existing around the nucleus of an atom. This results in a so-called quantum transition of an electron from one orbit to another. During such transitions, electrons absorb and emit photons of different wavelengths. This is due to the fact that each zone...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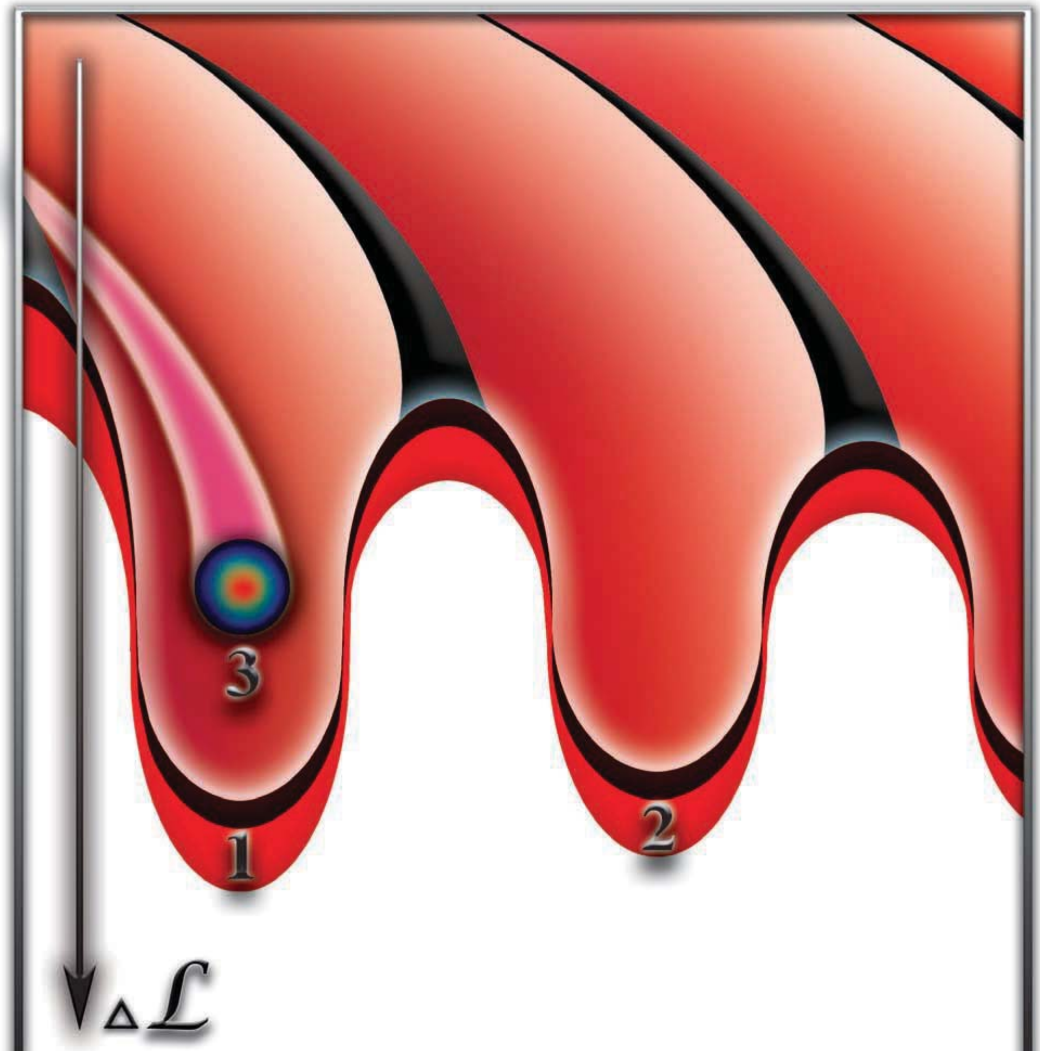
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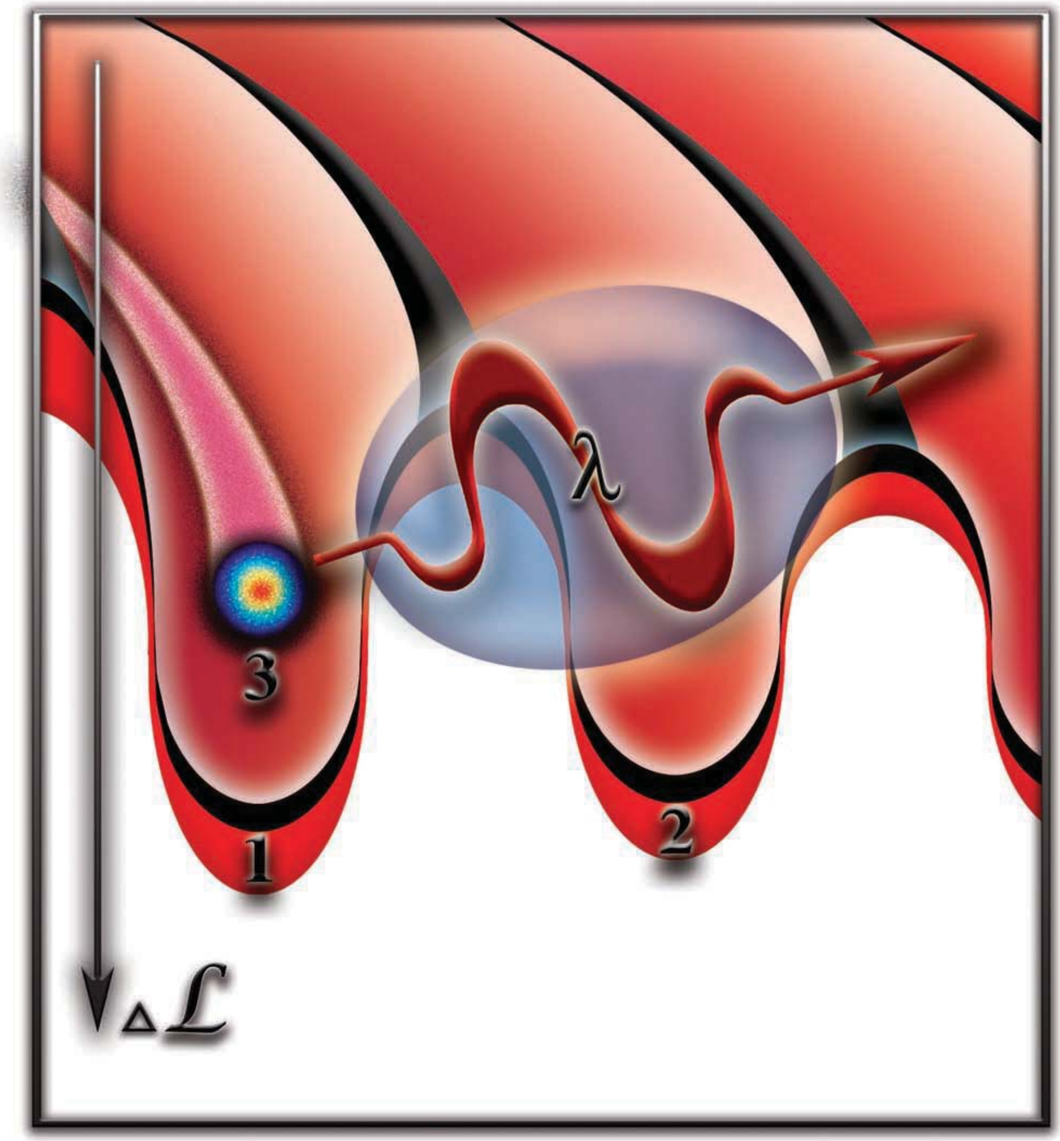
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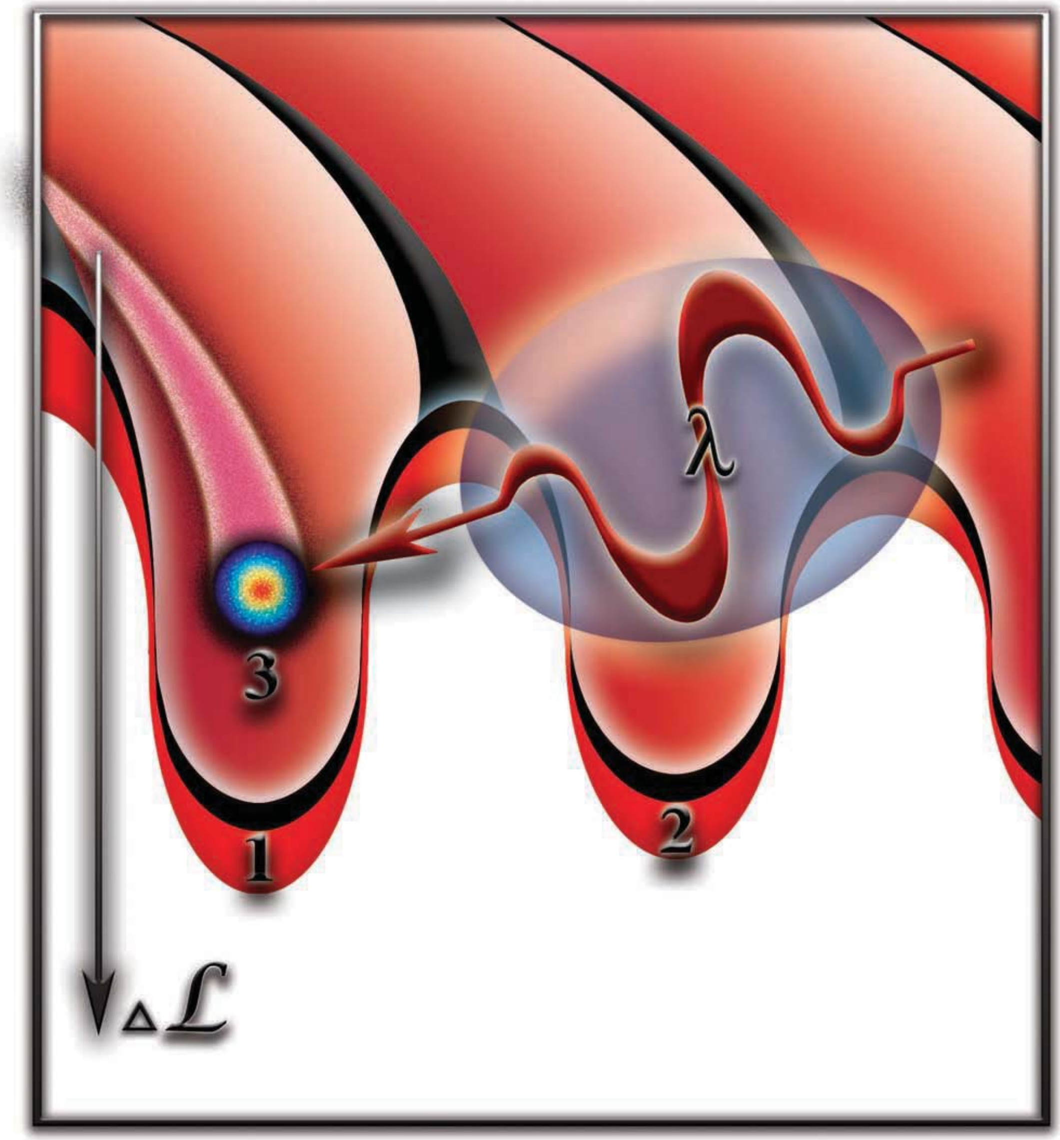
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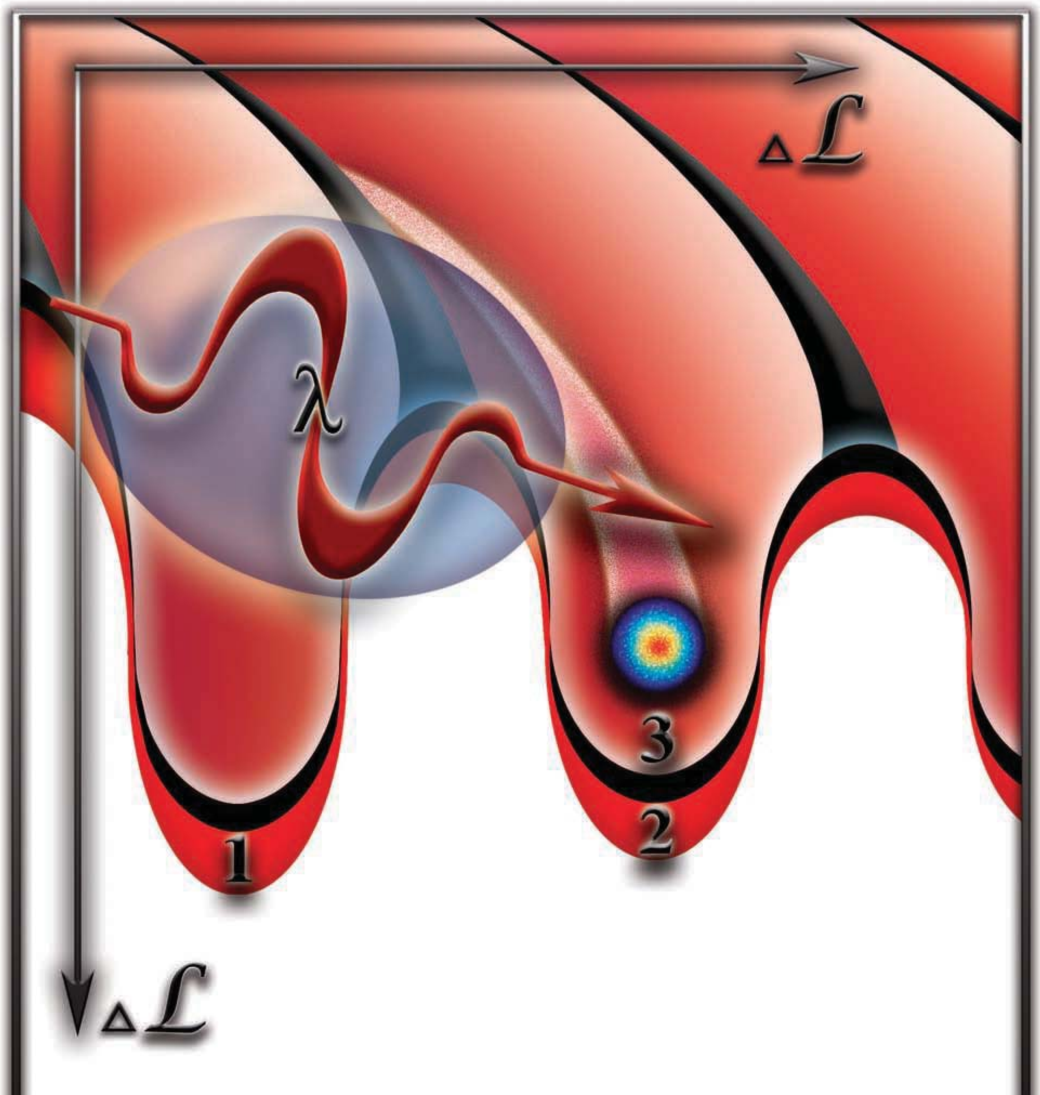
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differs from the neighbouring numerical value of microspace deformation. Therefore, due to this difference in the "depth" of microspace deformation zones, different additional microspace curvatures are necessary for the electron to materialise, which is achieved through the absorption of photons with different wavelengths and amplitudes. Since photons of different wavelengths bring with them different magnitudes of microspace dimensionality oscillations, they are able to qualitatively influence the processes in the zones of inhomogeneity if their wavelength is commensurate with the dimensions of these zones of micro-space inhomogeneity. This is why, when an electron emits a photon, it "jumps" to a smaller orbit, and when it absorbs a photon, it jumps to a larger orbit. The fact is that, with radiation, with the loss of a photon by an electron, the "depth" of the microspace deformation zone in which the electron is located changes by the amplitude of the emitted photon. As a result, the electron becomes unstable and decays into its constituent primary matter and materialises in the deformation zone located closer to the nucleus of the atom. Similarly, when a photon is absorbed by an electron, its own dimensionality increases, and it "jumps" to a larger orbit.

The level of dimensionality of microspace at which conditions for the emergence of an electron arise will be called the electron's own level. Around the nucleus of an atom, zones of deformation of the dimensionality of microspace, which arose during the synthesis of the nucleus, are arranged concentrically. The depth of these deformation zones varies, so in order for the conditions for the fusion of the seven primary materials to arise and an electron cloud to form, additional curvatures of the dimensionality of microspace specific to each of these zones are necessary. These conditions correspond to photons of different wavelengths, as noted above, whose wavelengths are commensurate with the sizes of the deformation zones. Practically all of the atom's matter, the so-called physically dense matter, is concentrated in the nucleus. The simplest atom is the hydrogen atom, while the most complex are the transuranic elements. Hydrogen atoms are the most stable elements in the universe, while transuranic elements are completely unstable and almost all of them exist only in artificial conditions and
They "live" for a billionth of a second, sometimes even less.

The instability of heavy elements falls into the "Procrustean bed" of logic — the nucleus is formed from protons and nucleons, and the more nucleons there are, the less stable the system they form. The more complex the system, the more difficult it is for it to remain in a stable state. This rule applies to virtually any complex system.

Nevertheless, the question of the causes of emerging instability remains open, because different natural phenomena cause instability in different complex systems. Thus, in modern nuclear physics, there is no explanation for the phenomenon of radioactive decay itself, only a statement of its reality. And while the instability of transuranic elements is at least consistent with logic, this logic, to put it mildly, does not work with the instability of isotopes of more "simple" elements, including hydrogen. The nucleus of a hydrogen atom contains only one nucleon — a proton — and its atomic weight is taken as one. Heavy hydrogen — deuterium or tritium — has one or two more nucleons in its nucleus. Unlike protons, these nucleons are electrically neutral, have almost the same weight and size, and are called neutrons. Unlike "simple" hydrogen, they are unstable, in other words, radioactive. Meanwhile, other elements with atomic weights in the tens of atomic units remain stable. Gold, with an atomic weight of almost 197 atomic units, is the most chemically stable element of all. The appearance of any stable atom, an "extra" neutron, in the nucleus turns it into an unstable isotope. For example, gold **Au** has seventy-nine protons and one hundred and seventeen neutrons in its nucleus, and it is stable! The appearance of one more neutron in the nucleus of a gold atom, in addition to the existing 117, makes it unstable. Meanwhile, the next element, which has one more proton, mercury **(Hg)**, has 119 neutrons in its nucleus and is stable.

There is a contradiction with common sense if we approach this phenomenon from a classical point of view. The same number of neutrons in different atoms behaves differently. This means that the nature of radioactivity is not determined by the number of neutrons in the nucleus. If this is the case, what makes atoms unstable and radioactive? Let's take a closer look at this most curious phenomenon of nature.

3.3. The influence of material objects in the microcosm on the space surrounding them

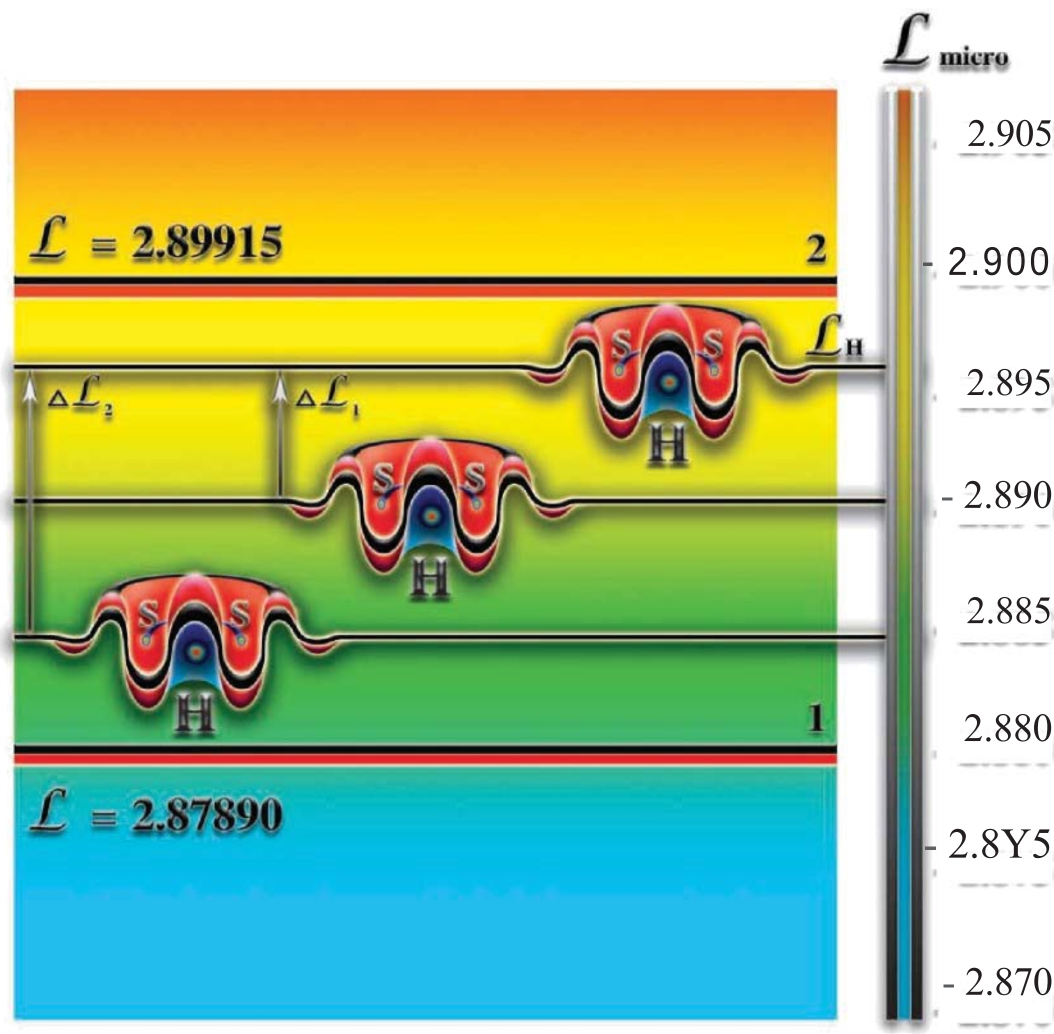
In the zone of microspace deformation, where the necessary conditions for the complete fusion of the seven primary materials are met, the synthesis of hybrid forms of matter takes place. Moreover, the hybrid forms of matter themselves begin to influence their microspace with reverse sign. Each hybrid form of matter increases the dimensionality of the surrounding space by a certain amount. The process of synthesising these primary matters will continue until the deformation of the dimensionality of the microspace is neutralised. Hybrid forms of matter fill these deformations of dimensionality. Imagine a dirt road with potholes. If you fill these potholes completely with stones, the surface of the road will become smooth again, although in reality the potholes have not disappeared anywhere. They have simply been filled with qualitatively different solid materials. Similarly, hybrid matter, which arose in areas of micro-space deformation and is qualitatively different from the primary matter that created it, fills areas of heterogeneity and compensates for the curvature of space. In this case, we are interested in the hybrid form of matter that arose as a result of the fusion of seven forms of primary matter. The range of dimensional values within which a physically dense substance is stable, i.e., does not disintegrate into the primary matter that forms it, lies within the limits of:

$$\mathbf{2.87890} < {}_{\Delta L\text{ф.п.в.}} < \mathbf{2.89915} \qquad (3.3.1)$$

The smallest atom — the hydrogen atom — has only one nucleon in its nucleus — a proton, whose atomic weight is equal to one conventional atomic unit. It is natural to assume that the hydrogen atom will have a minimal effect on its surrounding microcosm. Because of this, hydrogen will be stable across the entire range of physically dense substances (3.3.1). This is why hydrogen is the most common element in the universe. Let's try to understand why hydrogen is the most common element in the universe. During the synthesis of atoms, in particular hydrogen, there is a change in the qualitative state of the microspace around the nucleus of these atoms. Moreover, the resulting additional curvature of space has a different sign in relation to the zone of space deformation in which the synthesis of these atoms took place. If we consider the negative value of the deformation of space in which the synthesis of atoms took place, then the additional curvature of space caused by each atom will be a positive value. Thus, the primary curvature of space is superimposed by a secondary curvature with the opposite sign. As a result, the primary curvature of space is partially compensated. A hydrogen atom, which has only one nucleon — a proton — in its nucleus, thus creates a minimal secondary curvature of space and is therefore stable throughout across the entire range. The danger of instability arises only when hydrogen atoms are found at the boundaries of the stability range of physically dense matter. Therefore, hydrogen has a spectrum of stable states that is practically equal to the stability range of physically dense matter (**Fig. 3.3.1**).

Each stable state of an atom corresponds to the atom's intrinsic dimensionality level. If an atom has a level of intrinsic dimensionality close to the upper limit of the stability range of a physically dense substance, then when the atom absorbs a photon with a wavelength commensurate with the size of the atom (when the atom absorbs a photon, the atom's electron "transitions" from an orbit closer to the nucleus to a more distant one), the intrinsic dimensionality level of the atom changes by the amplitude of the wave absorbed by the atom. Thus, as a result of the atom absorbing a photon, the intrinsic dimensionality level of the atom increases. And if the atom was initially close to the upper limit of the stability range of physically dense matter, such a change in dimensionality leads to an unstable state of the atom, and it decays. The question may arise as to how a hydrogen atom in particular, or any other atom that is stable in its normal state, becomes unstable and decays. Let us return to the image of potholes in the road that fill with water when it rains. Both the size and depth of these potholes will always vary, and different amounts of water or something else will be needed to fill them to the brim. Therefore, if there is a slight curvature of microspace, **only takihatooms are synthesized, whose own influence on their microspace is commensurate with the magnitude of the deformation of microspace in the area of synthesis of these atoms. The deformation of macrospace is superimposed on the deformation of microspace, only with the opposite sign, and they mutually balance each other.** The minimum curvature of macrospace at which the synthesis of physically dense matter occurs corresponds to the conditions for the synthesis of hydrogen. The hydrogen atom **H** has a minimal effect on its microspace and is therefore the primary form of physically dense matter in the universe (**Fig. 3.3.2)**.

The hydrogen atom is the building block of matter in our universe, and it served as the building material for both stars and all other known atoms that arose in the depths of stars as a result of thermonuclear reactions occurring during the compression of hydrogen stars, or blue giants. The compression of hydrogen blue giants occurs due to the fact that there is a pressure gradient inside the blue giant.



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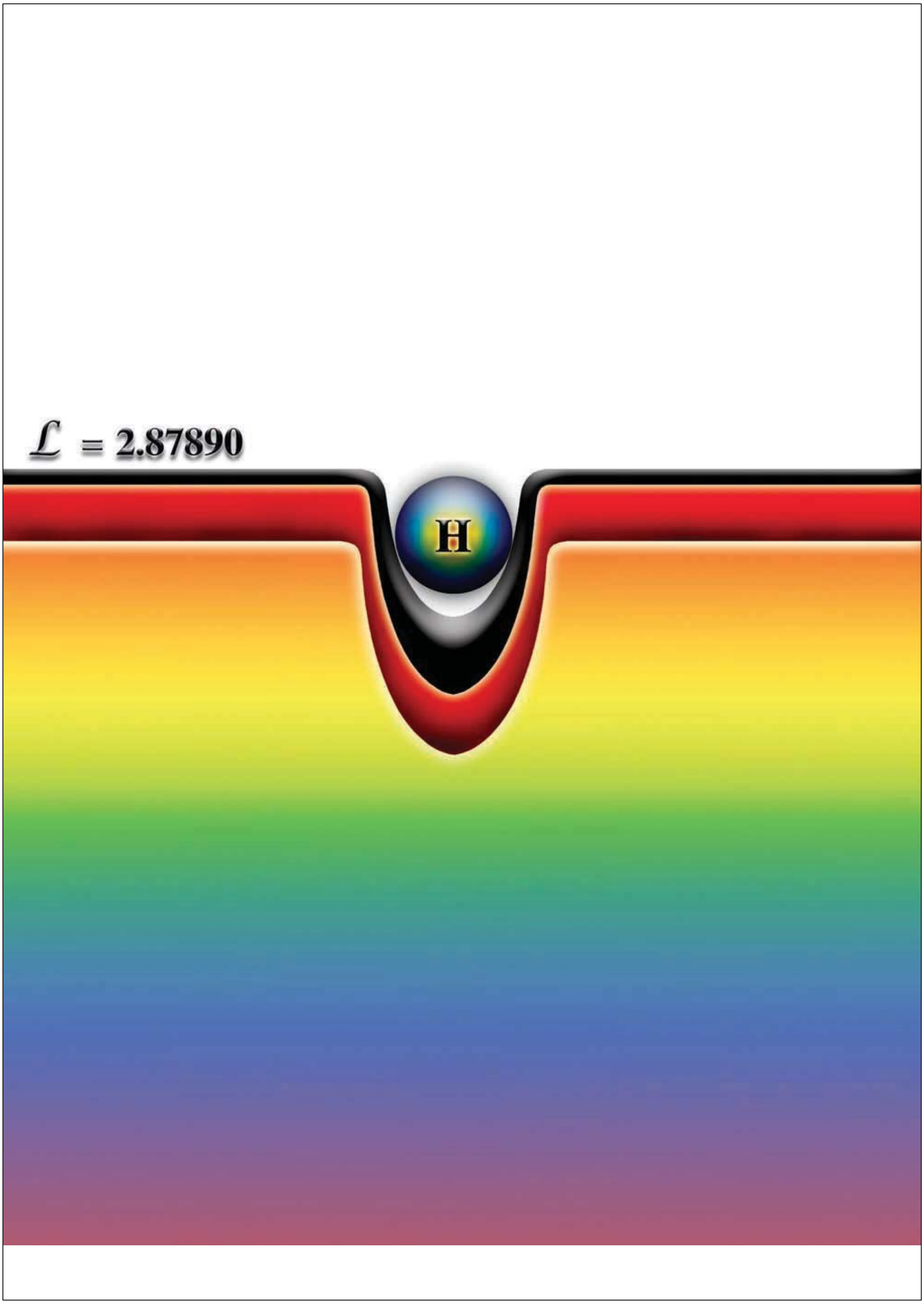
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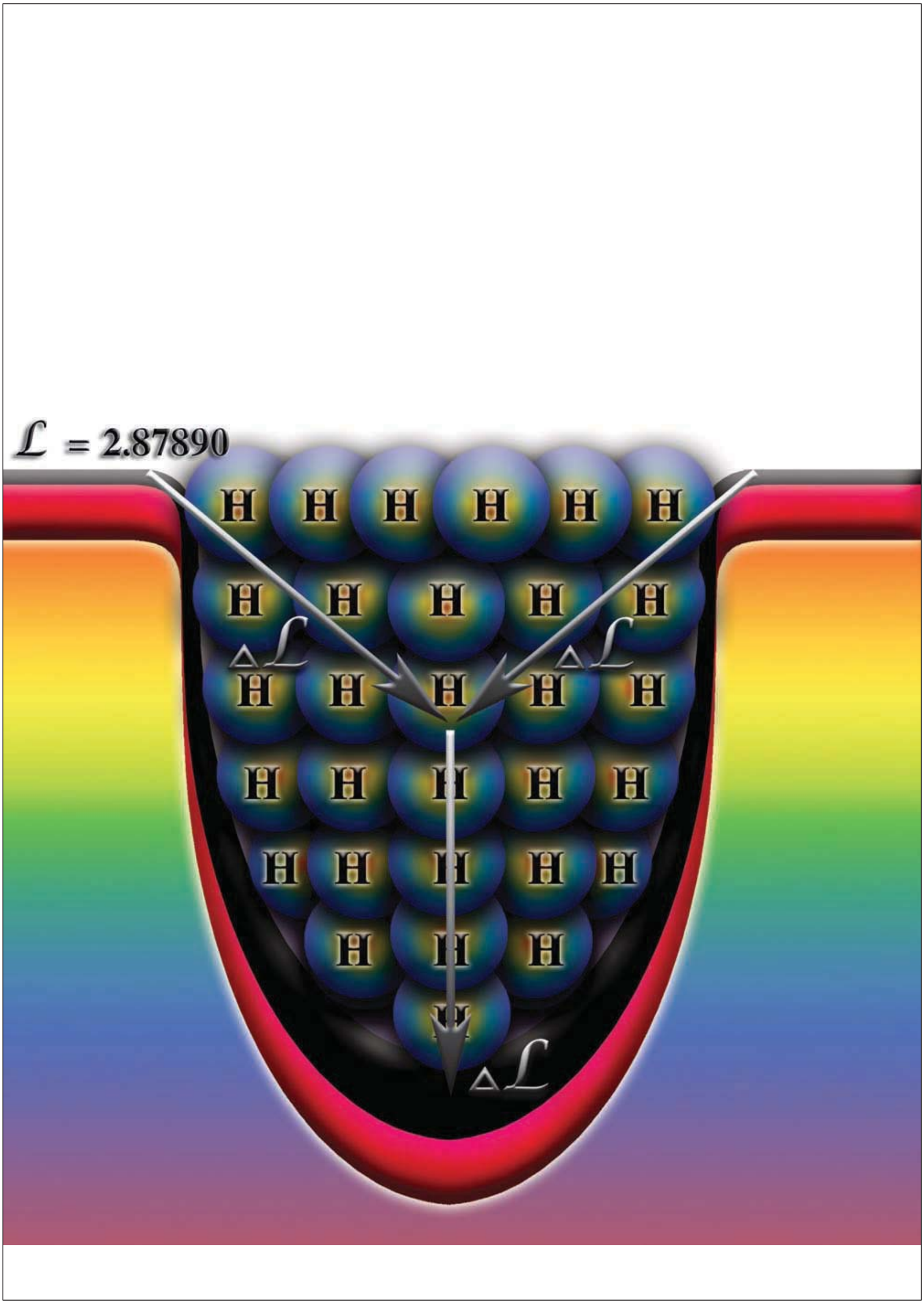
H

dimension, directed towards the centre of the star (**Fig. 3.3.3**). As a result of this compression, hydrogen atoms begin to move towards the centre of the macroscopic space deformation zone and, colliding with each other, emit waves. At the same time, the electron of each emitting hydrogen atom moves from a higher energy orbit to a lower one. This continues until the electron approaches the proton nucleus so closely that a qualitative transformation of the hydrogen atom into a neutron occurs. There is a critical minimum orbit for the electron of a hydrogen atom. And if an electron in this orbit emits a wave and moves to an orbit below the critical one, irreversible processes occur and hydrogen transitions to a new qualitative state — a neutron. In a neutron, the distance between the proton and the electron is so small that it can be said that the electron has practically fallen onto the proton. When an electron is dropped into an orbit below the critical one, a situation arises where it is practically impossible to bring it back to a higher orbit. A neutron, which has no electric charge, becomes a building block for other atoms.

Accelerating as a result of collisions with atoms and other neutrons, neutrons reach energies at which they are able to penetrate the hydrogen nucleus and create deuterium, or heavy hydrogen. This creates the conditions for thermonuclear reactions, which result in the synthesis of helium. The synthesis of atoms of all other elements occurs in a similar way. As a result of the compression of the star, there comes a moment when an explosion occurs, known as a supernova, and the matter of the upper layers of the star, consisting of atoms of various elements, is ejected into the surrounding space. In addition, it should be remembered that, within the stability range of physically dense matter, the dimensionality of microspace changes continuously, while the secondary influence of each atom on the same space has a specific, finite value. This value of the influence of the atom itself can be very small, as in hydrogen, or commensurate with the stability range, as in uranium and the elements following it (**Fig. 3.3.4)**. The influence of all other elements lies between these extremes. We call hydrogen the "lightest" element and transuranic elements the "heaviest" (**Fig. 3.3.5)**. But hardly anyone has thought about what lies behind these obvious concepts. We are accustomed to taking many natural phenomena for granted, even though they sometimes contain surprising information that could help us solve many of nature's mysteries. Imagine that many balls of different sizes but identical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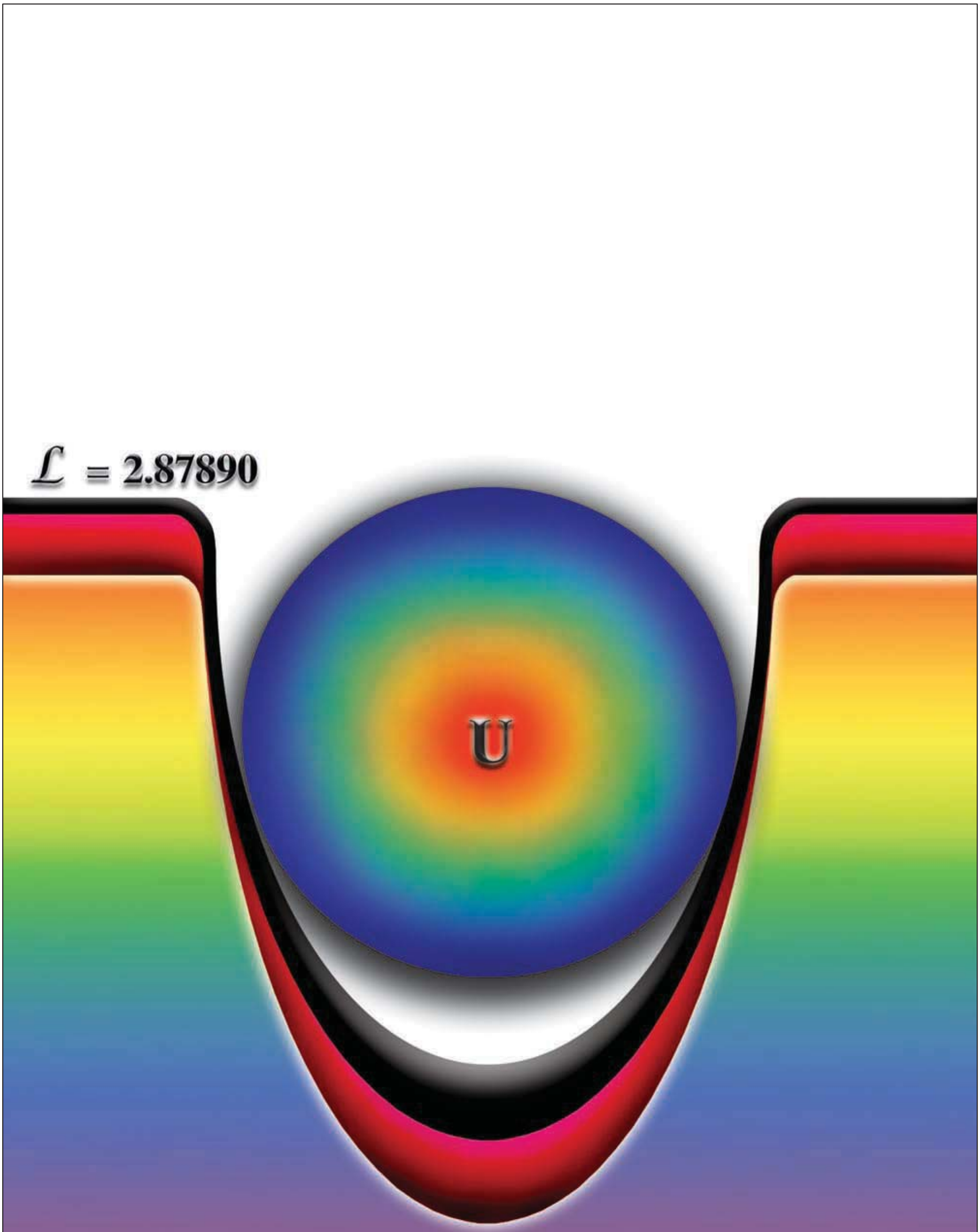
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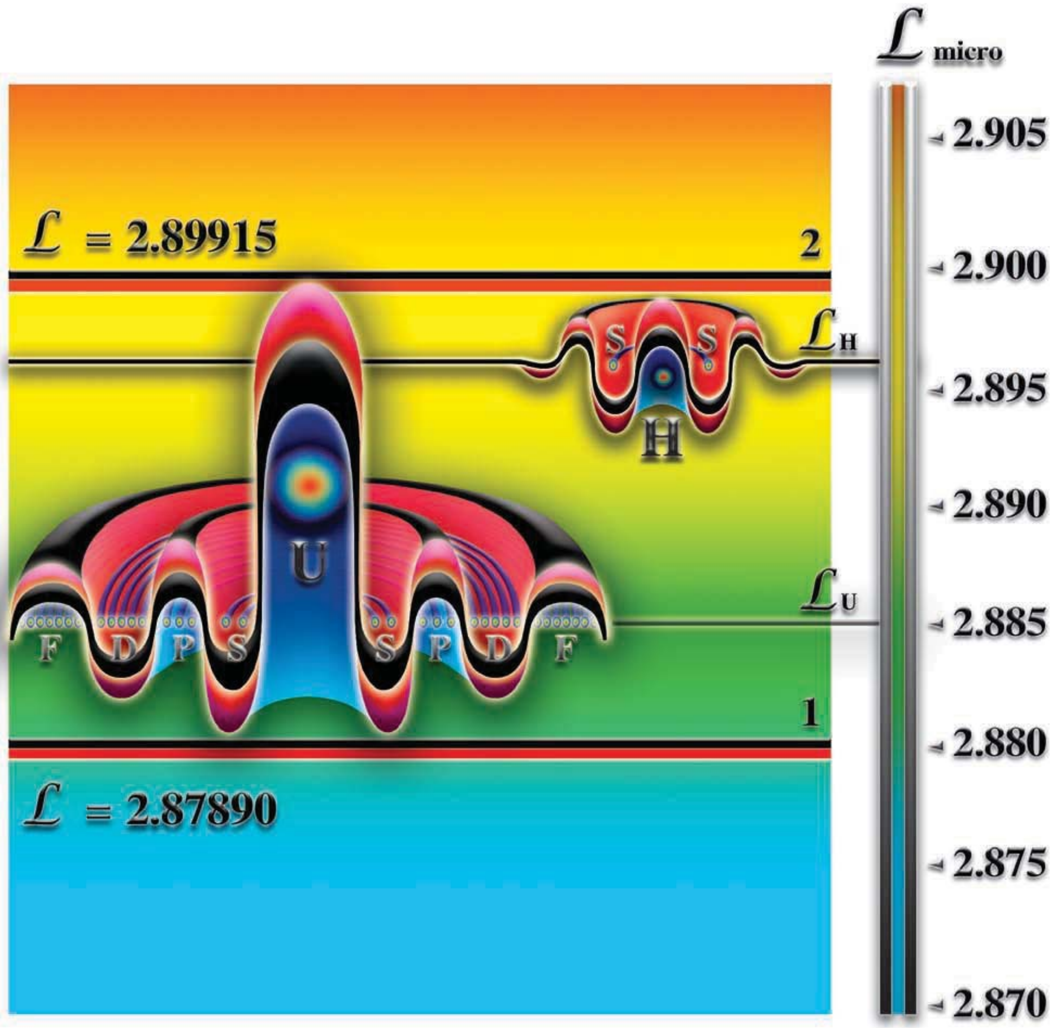

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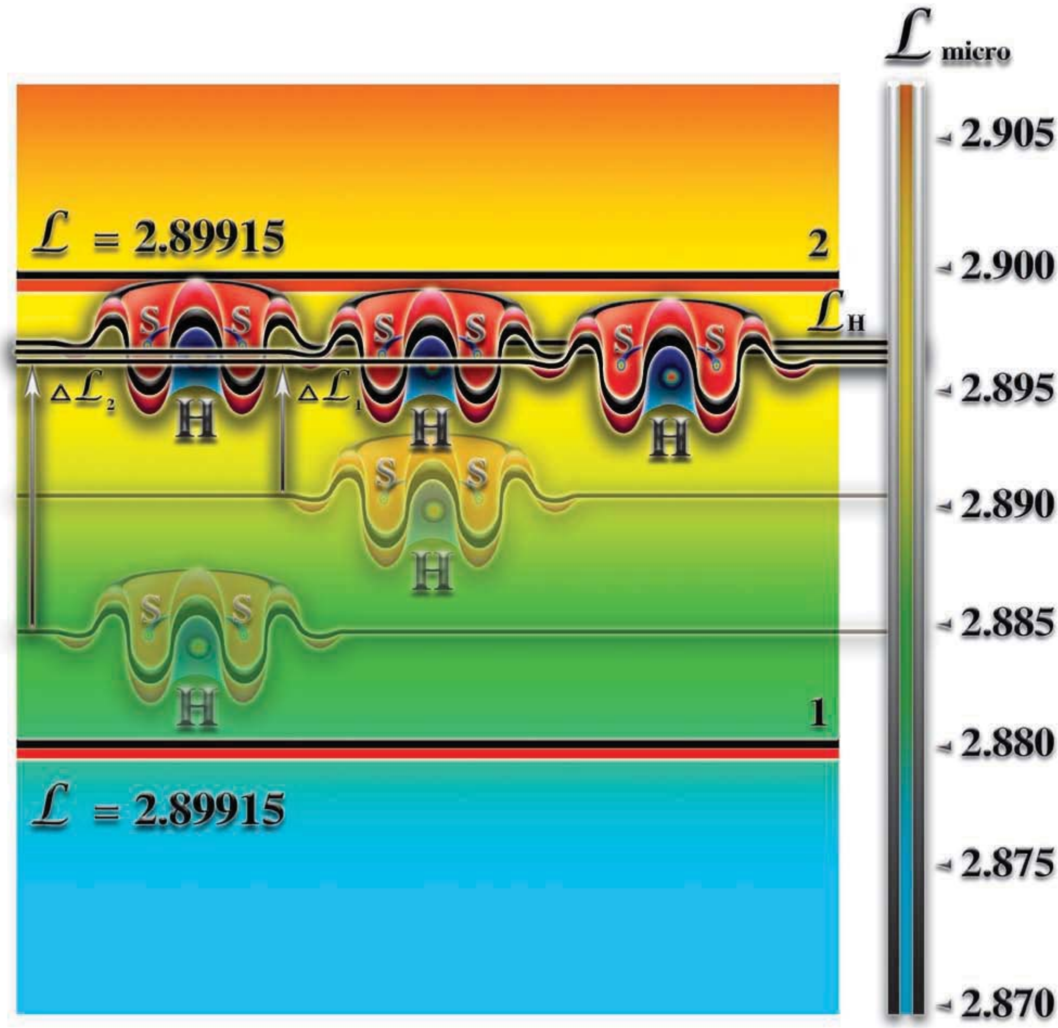
density, and the smallest of them fits into any other a whole number of times. As a result, the weight of each will be greater than the weight of the smallest by as many times as it fits into a given ball. After all these balls fell into the water, they began to move chaotically in relation to each other. But gradually, as they lost their initial momentum, they settled in the water in a certain order. The lightest ball will float on the surface of the water or close to it, where its weight will be neutralised by the pressure of the water. All other balls, depending on their size and therefore their weight, will be submerged to different depths. Any movement of the water will set all these balls in motion, but each time the water stops moving, all these balls will return to their "places" — they will return to the depth where their weight is neutralised by the pressure of the water. Isn't this a picture that is familiar and understandable to all of us? So, the "lightest ball" is hydrogen, and all the other balls are atoms of other elements, whose atomic weight is a multiple of the atomic weight of a hydrogen atom. It is a multiple because any nucleus consists of nucleons — protons and neutrons — whose weights are practically the same. So, just as water masses are set in motion by the wind or something else, various processes are constantly taking place in space (for example, the passage of different waves through space), as a result of which all atoms and molecules "floating" in space are almost constantly in motion. After each successive disturbance of the dimensionality of space, the atoms return to their "equilibrium" states. As a result, hydrogen atoms accumulate at the upper limit of the stability range of physically dense matter. Understanding this brings us closer to understanding the radioactivity of isotopes of "light" and "medium-weight" elements. For example, when hydrogen is bombarded with neutrons, some hydrogen atoms capture one or two neutrons, resulting in an increase in the atomic weight of these atoms by one or two atomic units and the formation of deuterium or tritium, which have a greater atomic weight than hydrogen but the same electrochemical properties. Deuterium and tritium, having such an insignificant atomic weight, are radioactive isotopes of hydrogen. A phenomenon that is inexplicable from a classical point of view becomes natural to understand when the above is taken into account. In principle, hydrogen is stable within virtually the entire stability range of physically dense matter. However, the level of hydrogen's intrinsic dimensionality is close to the upper limit of the stability range. In order to understand what the level of intrinsic dimensionality is, When considering the inherent dimensionality, it should be remembered that each atom affects its microspace. This influence is due to the fact that the atom occupies part of the macrosphere.

The influence of each atom on its microspace and macrospace is constant and proportional to its atomic weight, in other words, to the number of protons and neutrons that make up the atomic nucleus: the greater the number of nucleons (protons and neutrons) in the nucleus of an atom, the greater the influence of the atom on the surrounding space. The deformation of macroscopic space can vary. Atoms that arise as a result of synthesis or that have entered this deformation fill it with themselves. Therefore, when the same heterogeneity is filled with different atoms, the latter (atoms) will find themselves in different qualitative conditions. A hydrogen atom, with its minimal influence on the surrounding space, will be stable throughout the entire zone of heterogeneity due to the fact that the degree of influence of a hydrogen atom on the surrounding space is significantly less than the magnitude of the deformation itself. At the same time, the degree of influence of a uranium atom U on the surrounding space is comparable to the maximum amount of deformation of space at which a physically dense substance can exist. Therefore, the conditions for the synthesis and stable state of a uranium atom are only possible at a deformation value commensurate with the degree of influence of the uranium atom on the surrounding space. And this value, as already mentioned, is commensurate with the stability range of physically dense matter. Therefore, the intrinsic dimensionality of a uranium atom will lie near the lower limit of the stability range.

The hydrogen atom **H** has a minimal effect on the surrounding space and therefore will be stable within virtually the entire stability range of physically dense matter. In other words, hydrogen has a spectrum of intrinsic dimensionality values commensurate with the stability range of physically dense matter. **Thus, the level of intrinsic dimensionality represents the value(s) of the dimensionality of space within the stability range of physically dense matter at which the synthesis of a given atom occurs and at which it maintains a stable state.** The spectrum of values of the levels of intrinsic dimensionality of hydrogen means that the synthesis of hydrogen atoms will occur both during deformations of space commensurate with the degree of influence of the hydrogen atom on the surrounding space, which is close to the upper limit of the stability range, and during deformations of space commensurate with the magnitude of the stability range of a physically dense substance. It should be noted that each atom in affects the surrounding space depending on its atomic weight. But regardless of how strongly it affects it, it partially or completely fills the deformation of space, thereby reducing the magnitude of this deformation. Therefore, the cumulative effect on space of two hundred and thirty-eight hydrogen atoms will be approximately equal to the degree of influence of one uranium atom. Moreover, by filling and compensating for the deformation of space, each hydrogen atom will reduce the "depth" of this deformation, and the two hundred and thirty-eighth hydrogen atom will find itself in the same qualitative conditions as one uranium atom — it will become unstable and radioactive. The only difference will be that all these hydrogen atoms will be in constant motion relative to each other and periodically each of them will find itself in a position of instability, and if at that moment some microscopic disturbance of the dimensionality of space passes through a given point in space, that hydrogen atom will become radioactive. At the same time, every uranium atom is constantly in an unstable state and, when microscopic disturbances in the dimensionality of space occur, begins to decay into more stable atoms.

Thus, **regardless of what kind of atom it is, it becomes radioactive if, for one reason or another, it finds itself close to the upper limit of the stability range of physically dense matter**.Due to the fact that various microscopic dimensional fluctuations are constantly present in space, hydrogen atoms are constantly in motion, deviating from their optimal dimensional level. But, just as a float that has gone under the water floats up after the fish releases the bait, hydrogen atoms (as well as any other atoms) return to their optimal level of dimensionality **(Fig. 3.3.6)**. If, during the movement of hydrogen atoms under the influence of perturbations of the dimensionality of microspace, the nucleus of any of the hydrogen atoms "captures" one or two "extra" neutrons, then when such altered atoms return to the optimal dimensionality level for hydrogen, they "fall out" of the stability range of physically dense matter (**Fig. 3.3.7)**. As a result, they become unstable and disintegrate **(Fig. 3.3.8)**. And everything immediately falls into place, contradictions disappear, and instead of absurdity, a magnificent picture of the microcosm in its pristine beauty opens up. There remains only one small "but" to figure out: why does heavy hydrogen return to the same optimal level of its own dimensionality as "simple" hydrogen, as a result of which it becomes unstable and disintegrates?



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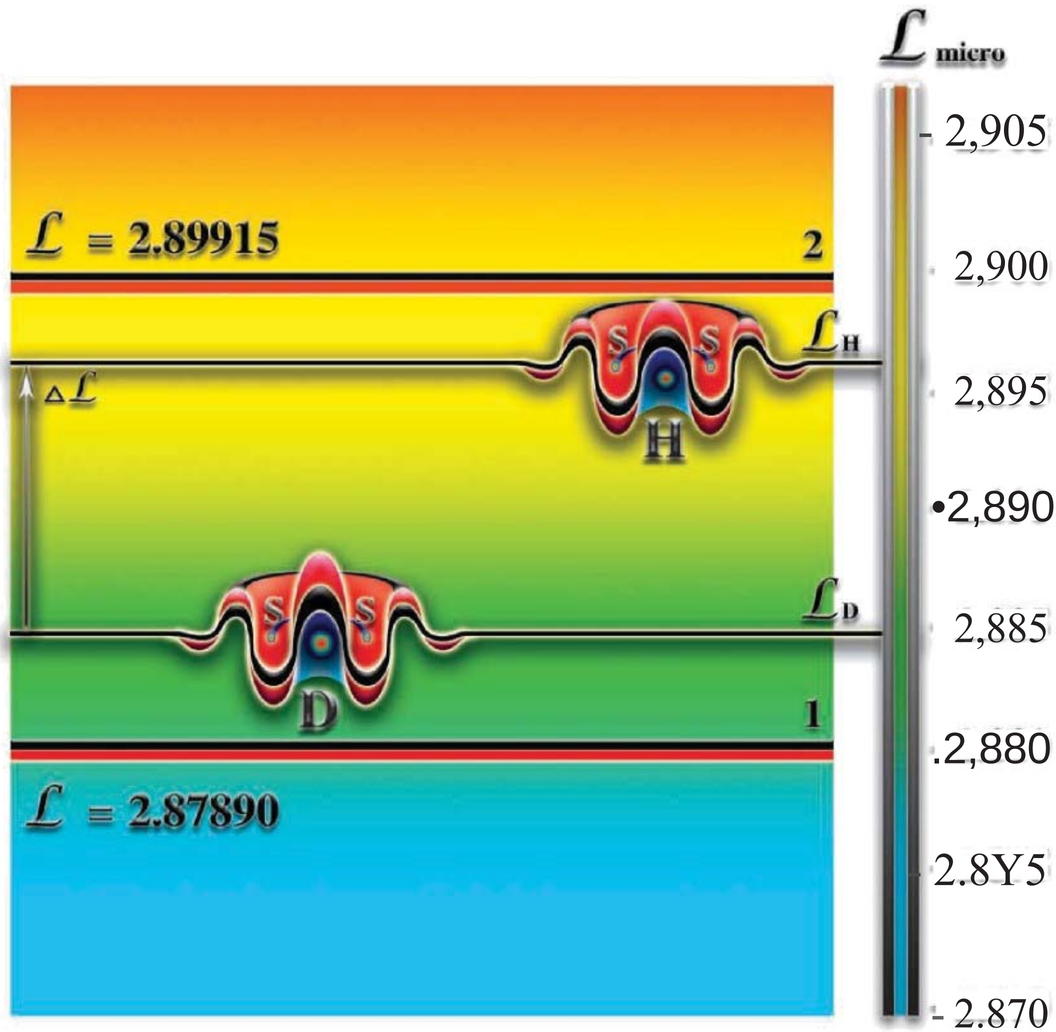
$\mathcal{L}$ = 2.89915



$\mathcal{L}$ micro
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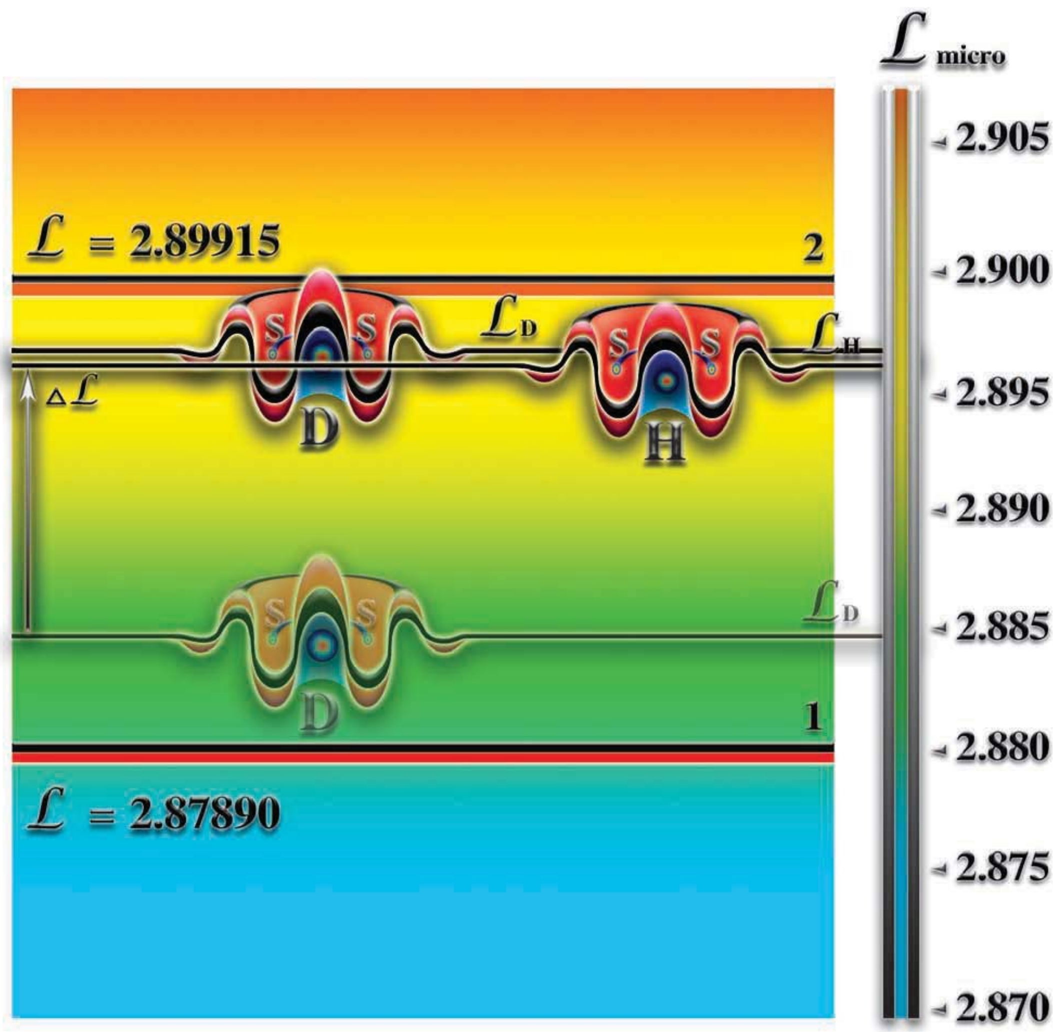

$\mathcal{L}$ micro
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$\mathcal{L}$ = 2.89915
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D
1
$\mathcal{L}$ = 2.87890

Let's take a closer look at the nucleus of a hydrogen atom. The nucleus of hydrogen has one nucleon — a proton — a positively charged particle whose charge is neutralised by the negative charge of an electron, which ensures the stability of the atom. Remember that the nucleus contains almost the entire mass of the atom; it contains a physically dense substance that is a hybrid form of matter resulting from the fusion of seven primary substances. Hybrid forms affect the dimensionality of microspace with the opposite sign. As a result, the initial deformation of microspace is neutralised, and balance is restored — a stable state of space. When it is born, the nucleus of a hydrogen atom creates its own microscopic deformation of the dimensionality of the surrounding microspace, which is of the same nature as the original one. And if the original deformation is considered negative, then physically dense matter creates a positive deformation of microspace. Depending on the distance from the nucleus at which the proton-induced deformation of micro-space occurs, either a hydrogen atom or a neutron appears. The fact is that a neutron is an electrically neutral particle, qualitatively formed by a proton and an electron, the distance between which is an order of magnitude smaller than the size of a hydrogen atom. Therefore, the positively and negatively deformed areas of microspace, located so close to each other, completely compensate for each other, and a neutral area of microspace arises, which does not interact with any other areas and is isolated from everything else.

In a hydrogen atom, the "electronic" zone of microspace deformation is somewhat distant from the proton, as a result of which its influence on the proton of the hydrogen nucleus is significantly less, and therefore the force of interaction between them is significantly less than inside a neutron, resulting in the appearance of properties characteristic of atoms. Thus, the differences between the hydrogen atom and the neutron are clearly outlined, and this difference lies solely in the distance between the two zones of micro-space deformation of different signs. It is precisely the distance between them that has such a significant effect on their properties that we speak, in one case, of a hydrogen atom, and in the other, of a neutron. And again, spatial characteristics lead to a qualitative leap in the manifestation of matter. Now, let us recall that the "electron" zone of deformation is insufficient for the complete fusion of the seven forms of matter and that the conditions for fusion arise only temporarily, during the passage of the wave front through the "electron" zone of deformation of microspace. As a result, physically dense matter is "born" only to die in the next moment

die, and so it repeats an infinite number of times. During its "short-lived existence," the electron exhibits the properties of matter, in other words, it affects space in exactly the same way as the nucleus of a hydrogen atom.
— proton. At the moment of its decay — its "death" — this influence disappears. As a result, the hydrogen atom constantly undergoes microscopic fluctuations in the dimensionality of the surrounding microspace relative to the level of stable equilibrium. As a result of the periodic materialisation of the electron, the "electronic" negative zone of microspace deformation will disappear and reappear. Thus, the difference between a hydrogen atom and a neutron is determined only by their spatial structure, which affects only their chemical properties, while the nature of their influence on microspace is practically identical. Therefore, when a hydrogen atom "captures" a neutron, the heavy hydrogen atom strives for the same optimal level of its own dimensionality as "simple" hydrogen, while the cumulative influence of the nucleus on the surrounding microspace in heavy hydrogen is two or three times (in the case of deuterium or tritium, respectively) greater than that of simple hydrogen. As a result, heavy hydrogen falls outside the stability limits of physically dense matter. Its nuclei find themselves in a zone of microspace where matter cannot exist, and the fusion of seven primary materials causes the nucleus to decay into the materials that form it. This corresponds to radioactive decay.

The question may arise: why should a hydrogen atom, like all other atoms, strive for the optimal level of its own dimensionality? And what is behind this concept in general? Is it just another combination of words that has no physical meaning or clear explanation? Let's take a closer look at this concept.

As already noted, hybrid forms of matter fill the deformation of space in which their synthesis occurs with their mass. The synthesis process continues until the deformation zone is completely filled, just as when a pit is filled with stones, the surface of a dirt road becomes level. Hybrid matter neutralises the zone of space deformation. And this can only mean one thing
— they themselves influence the dimensionality of space with a sign opposite to the sign of the deformation of space in which the synthesis of these hybrid materials took place. Atoms create a secondary curvature of microspace. Thus, each atom changes the dimensionality of its microspace, while the rest of the microspace surrounding it retains the dimensionality that existed before the synthesis of this atom.

As a result, there is a certain dimensionality gradient, directed from the level with lower dimensionality to the level with higher dimensionality. This small dimensionality gradient causes the atom to move towards the upper boundary of the stability range of physically dense matter. Recall that the primary deformation of space, in which the synthesis of hybrid forms occurs, creates a dimensional gradient directed from the level with greater dimensionality to the level with lesser dimensionality, which causes free primary matter to move into these zones, where they find themselves in different qualitative conditions under which the synthesis of hybrid matter occurs. Thus, the gradient (difference) in dimensionality in the zone of space deformation has one sign, while the difference created during the synthesis of an atom has the opposite sign. Let us recall another fact: a pothole in the road does not disappear, but is only filled with stones. Therefore, even after the synthesis of hybrid matter is complete, the dimensionality difference remains, and this leads to the primary matter continuing to "flow" into the zone of space deformation. Similarly, as the water of a river or stream, having filled the lake to the brim, continues to flow into it, it creates currents in it. At the same time, part of the lake water is displaced and continues to flow further. Similarly, after the completion of the synthesis of hybrid matter, the primary matter continues to permeate the zone of deformation in which this synthesis took place. The zone of space deformation does not disappear, but is only filled with hybrid forms of matter. Therefore, the initial dimensional difference, although compensated by hybrid matter, continues to exist for free primary matter, just as the lake continues to exist for the water flowing into it even after it is completely filled.

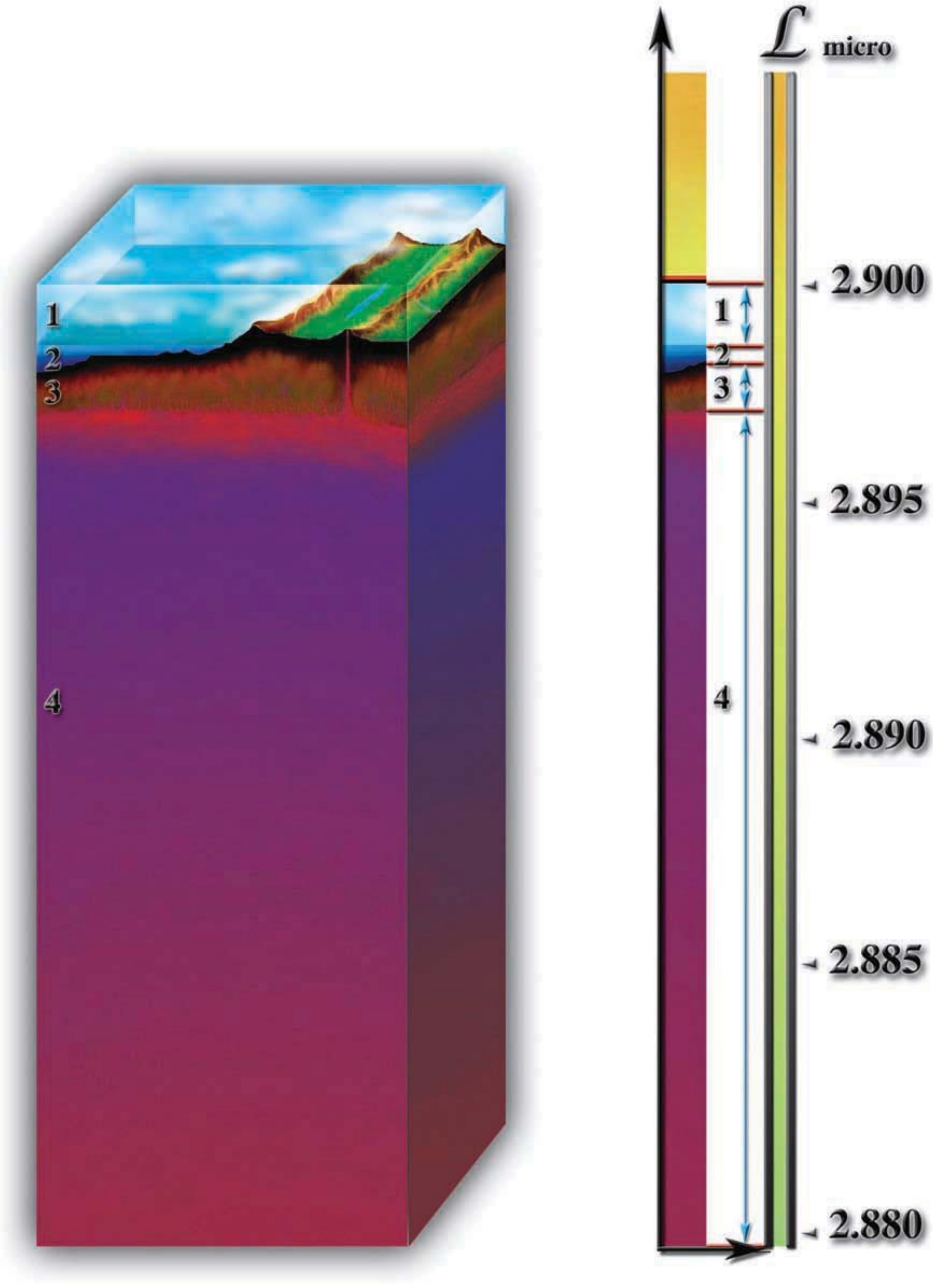
The dimensional gradient is always directed from the boundaries towards the centre of the space deformation zone, so primary matter, moving along this gradient, creates a directed flow. This directed flow of primary matter in the dimensional gradient zone creates what is known as **a gravitational field**. The gravitational field has always been taken for granted, as obvious and unprovable. In general, the concept of any field was introduced as a postulate, without any evidence or explanation, which in principle is fraught with serious consequences for the development of science as a whole. Without understanding what seems obvious, it is impossible for science to move forward. So, the difference in the dimensionality of space in areas of heterogeneity that arose during supernova explosions creates a gravitational field, or gravity. Each atom resulting from the synthesis of the seven primary materials creates a secondary curvature of space at the micro level. A transition occurs...

The dimensionality created by an atom is directed against the original; in other words, each atom creates an anti-gravity field. As a result, the atom begins to move towards the upper limit of the stability range and stops at a balanced level of dimensionality. Let's analyse why the atom stops at the so-called balance level of dimensionality?!

Let us recall that each atom not only creates a secondary curvature of space, but also represents a physically dense substance, a hybrid form of seven primary materials, which is qualitatively different from the primary materials. The planetary dimensional gradient forms directed flows of primary matter towards the centre of the planet, and each atom falls under their "pressure". A "sail effect" arises — the primary matter "presses" on the atom, forcing it to move in the same direction as itself. The flow of primary matter "forces" the atom to move in a given direction — towards the centre of the deformation zone. The dimensional difference created by the atom is directed from the centre of the deformation zone to its boundaries, which creates a counter-impulse of the atom. As a result, the pressure of the primary matter on the "surface" of the atom is partially neutralised by the anti-gravity generated by the atom itself. And at a certain point, these two forces balance each other, which corresponds to the balanced level of dimensionality for a given atom. Each atom has its "own" size, atomic weight and degree of influence on the surrounding microspace, so each atom has its own balance level that is unique to it. This is why light elements have a balanced — their own — level of dimensionality close to the upper limit of the stability range of physically dense matter, while heavy elements have their own levels of dimensionality close to the lower limit of the stability range (3.3.1). And in the case of a heavy hydrogen atom, its own level of dimensionality is close to the upper limit of this range, and even with insignificant perturbations of dimensionality created by waves penetrating micro-space, it (heavy hydrogen) becomes radioactive, since, upon absorption of the waves, the intrinsic dimensionality of the heavy hydrogen atom becomes supercritical, and the atom decays **(LD > 2.89915)**. Conversely, the level of intrinsic dimensionality of transuranic elements is close to the lower limit of the stability range, while the influence of transuranic element nuclei on their microcosm is close to the critical value. Even insignificant fluctuations in the dimensionality of the microcosm arising in atoms when they absorb waves are enough to make them unstable and cause them to begin to decay.

Hydrogen isotopes and transuranic elements find themselves in analogous conditions and, as a result, their behaviour is identical. Isotopes of all elements between hydrogen and uranium are radioactive for the same reasons. Each of these elements has its own dimensionality level corresponding to the optimal stability of the atom of each element. The primary curvature of space, in which the synthesis of matter occurs, and the secondary curvature, arising under the influence of atomic nuclei with different signs (different signs mean the presence of dimensionality differences directed towards each other), create conditions in which matter can be stable at a given point in space corresponding to a given level of dimensionality. As a result of such "sorting," matter is distributed according to its qualitative composition in the zone of spatial heterogeneity. This is why a planet has a core of heavy elements, the amount of which decreases from the centre to the surface. Medium-weight elements or a combination of them and light elements form the planet's crust, the boundary of which is at different distances from the centre of the planet's core. And if we take sea level as a reference point, then all the depressions are filled with water, which is a synthesis of light elements: oxygen and hydrogen. Next comes the atmosphere, formed by gases from light elements, which transitions into the ionosphere **(Fig. 3.3.9)**. Ions are the boundary form of physically dense matter in our universe, the decay of which is accompanied by various emissions that cannot be called matter in the full sense of the word. Thus, a balance, a harmony arises between the constantly changing space and matter, which has specific properties and qualities. The infinite merges, becomes identical to the finite in some limited volume of this infinite. Another paradox, which, in principle, is not a paradox at all. And while the nature of the electron is more or less understood, the concept of electric current remains uncharted territory. So let's try to understand it.
understand the nature of electric current.

In classical physics, electric current is understood as the directed movement of electrons from positive to negative. It seems very simple, but unfortunately, this is an illusion. Classical physics does not explain what an electron is, except that it is declared to be a negatively charged particle. But no one has bothered to explain what a negatively charged particle is. At the same time, it has been noted that electrons have dual (dualistic) properties, both as particles and as waves. Even this definition is ambiguous.



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$\mathcal{L}$ micro
2.900
2.895
2.890
2.885
2.880

Answer: If a material object has the properties of both waves and particles, then this can only mean one thing — it is neither one nor the other. By their very nature, particles and waves are fundamentally incompatible, and there is no need to combine the incompatible. We have already discussed in detail what an electron is, so let's move on to the next part of the explanation of electric current. Directed motion seems simple enough — motion in a given direction. All this is true, but there is a small **"but". Electrons do not move in a conductor at all,** at least not in the sense that we understand an electron. And if we assume that they do move, then there must be a speed at which they move in the conductor.

Let us recall the explanation of the nature of direct current. Electrons in a conductor are distributed unevenly in the radial direction, resulting in a radial gradient (gradient) of the electric field. The electric field gradient induces a magnetic field in a perpendicular direction, which in turn induces a perpendicular electric field, and so on. But again, the concepts of electric and magnetic fields are introduced as postulates, i.e., they are accepted without any explanation. This leads to an interesting situation: new concepts are explained by others that were themselves accepted without explanation and therefore such explanations do not stand up to criticism. One only has to think about the meaning of the words and the beautiful phrase turns into nonsense. Nevertheless, if we close our eyes to this and calculate the speed of propagation of the surface charge using the appropriate formulas, the result will finally dot the i's and cross the t's. The speed turns out to be a few millimetres per second.

It would seem that everything is fine, but this is only an illusion. Once the circuit is closed, electric current appears instantly, regardless of how far away the source of direct current is, and the results of the calculations become devoid of any physical meaning. Real-life facts completely refute theoretical explanations. And finally, what are "plus" and "minus"?! Again, there are no explanations. As a result of a simple analysis, we have come to the conclusion that the commonly used concept of electric current in physics has no basis, in other words, from the current standpoint, modern physics cannot explain the nature of electric current. Despite the fact that it is a real physical phenomenon.

So what is the matter, what is the nature of this phenomenon after all?

Let us try to approach this phenomenon from several other angles. Recall that the nucleus of any atom influences its microcosm. However, the degree of this influence varies greatly between the nuclei of different elements. When atoms of a single element or molecules consisting of atoms of different elements form crystal lattices, a homogeneous environment is created in which all atoms have the same level of dimensionality. For a deeper understanding of this phenomenon, let us consider the mechanisms of molecule formation from individual atoms. At the same time, let us remember that the restoration of the original level of dimensionality of the macrocosm occurs for the following reasons. Six spheres of hybrid forms of matter, which arose within the heterogeneity, compensate for the deformation of space that occurred as a result of a supernova explosion. At the same time, hybrid forms of matter increase the dimensionality of macroscopic space within the volume they occupy. At a dimensionality of space **L=3.00017,** all forms of matter in our universe no longer interact with each other. It is noteworthy that all radiation known to modern science is longitudinal-transverse waves that arise as a result of microscopic fluctuations in the dimensionality of space.

$$\mathbf{3.000095 < L_\lambda < 3.00017}$$
$$\mathbf{0 < \Delta L_\lambda < 0.000075} \qquad (3.3.2)$$

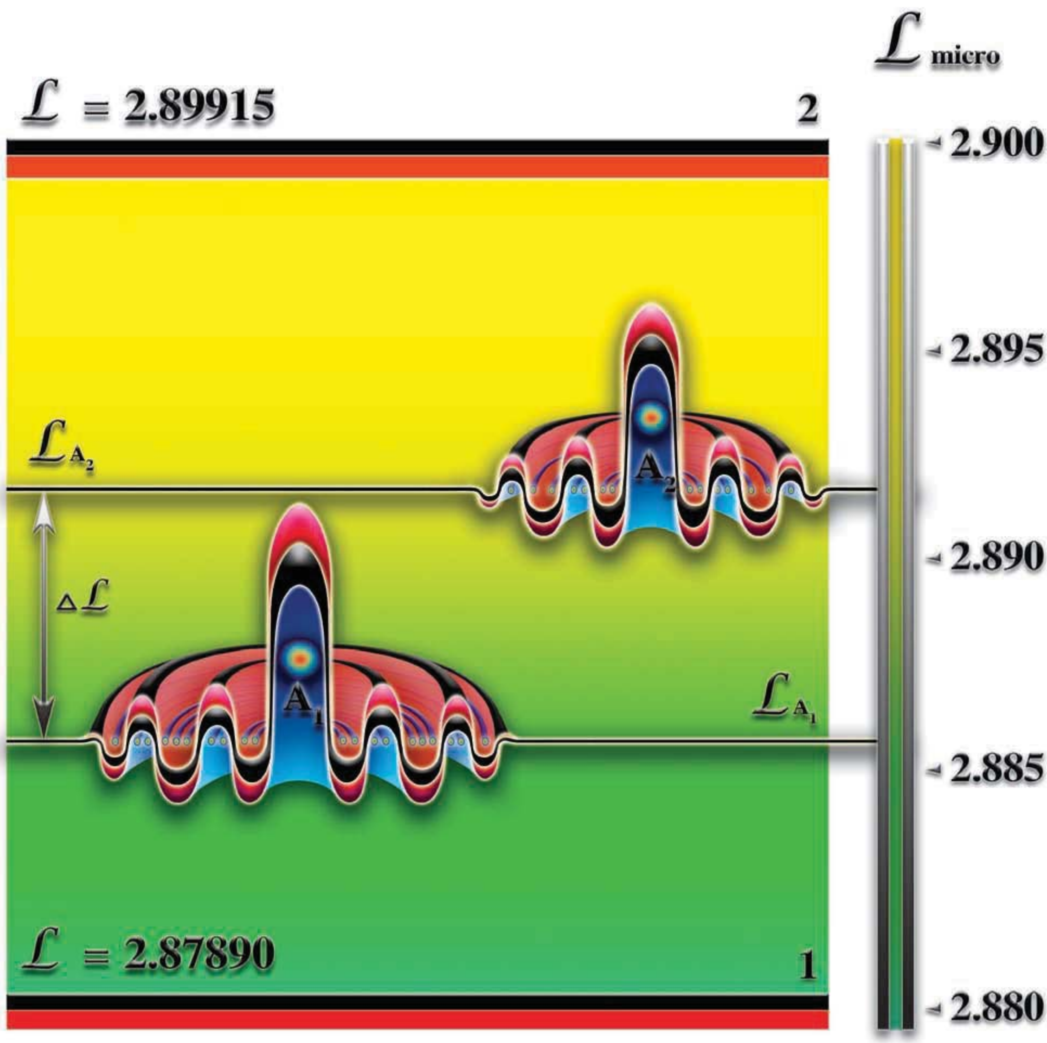
The speed of propagation of these waves varies depending on the intrinsic dimensionality of the propagation medium. When radiation from the Sun and stars penetrates the planet's atmosphere, its speed of propagation in this medium decreases. This is because the intrinsic dimensionality of the atmosphere is less than the intrinsic dimensionality of open space.

$$\mathbf{2.899075 < L\lambda cp. < 2.89915}$$
$$\mathbf{0 < \Delta L\lambda cp. < 0.000075} \qquad (3.3.3)$$

In other words, the propagation speed of longitudinal-transverse waves depends on the intrinsic dimensionality level of the propagation medium. This is usually expressed by the refractive index of the medium (n_{cp}). Longitudinal-transverse waves carry this microscopic disturbance of dimensionality **ΔLλcp** as they propagate through space**.** When they penetrate different material substances, **ΔLλcp** is superimposed on the level of dimensionality of these substances or media. The internal oscillation of dimensionality, arising as a result of such interference (addition), is a catalyst for most processes occurring in physically dense matter. Due to the fact that atoms of different elements have different sublevels of dimensionality, they cannot form new compounds (**Fig. 3.3.10**).

When longitudinal-transverse waves propagate in a medium, the microscopic disturbance of dimensionality caused by them neutralises the differences in the values of the intrinsic dimensionality levels of different atoms. In this case, the electron shells of these atoms merge into one, forming a new chemical compound, a new molecule. Atoms can be compared to floats on the surface of water. Longitudinal-transverse waves raise and lower the "floats" (atoms) on their crests, thereby changing their intrinsic dimensionality and creating the possibility of new compounds. The following parameters of longitudinal-transverse waves are fundamentally important for the realisation of synthesis: amplitude and wavelength (**λ)**. If the distance between atoms is comparable to the wavelength, interaction occurs between the intrinsic dimensionality of these atoms and the dimensionality of the wave. The effect of the same wave on the dimensionality levels of different atoms is not the same. The dimensionality of some atoms increases, while others decrease or remain the same. This is what leads to the balance of dimensionality necessary for the fusion of atoms (**Fig. 3.3.11)**.

If the wavelength significantly exceeds the distance between atoms, then the difference in the dimensionality levels of atoms remains unchanged or changes insignificantly. A synchronous change in the intrinsic dimensionality levels of all atoms occurs, and the initial qualitative difference in the dimensionality levels of atoms remains unchanged. The amplitude of the waves determines the magnitude of the change in the dimensionality of space caused by these waves as they propagate in a given medium. The difference in dimensionality levels between different atoms requires a different level of influence on them. It is the amplitude that performs this function when waves propagate in a medium. The distance between atoms in liquid and solid media ranges from **10-(**$^{10)}$to 10**(**$^{-8)}$metres. This is why the spectrum of waves from ultraviolet to infrared is absorbed and emitted during chemical reactions in liquid media. In other words, when atoms are combined in a new order, heat or visible light is released or absorbed (exothermic and endothermic reactions), since only these waves meet the required conditions. Thus, longitudinal-transverse waves, from infrared to gamma, are microscopic dimensional vibrations arising during thermonuclear and nuclear reactions. The amplitude of the waves, participating


$\mathcal{L}_{micro}$
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A_2
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$\Delta\mathcal{L}$
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A_1
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$\mathcal{L} = 2.87890$
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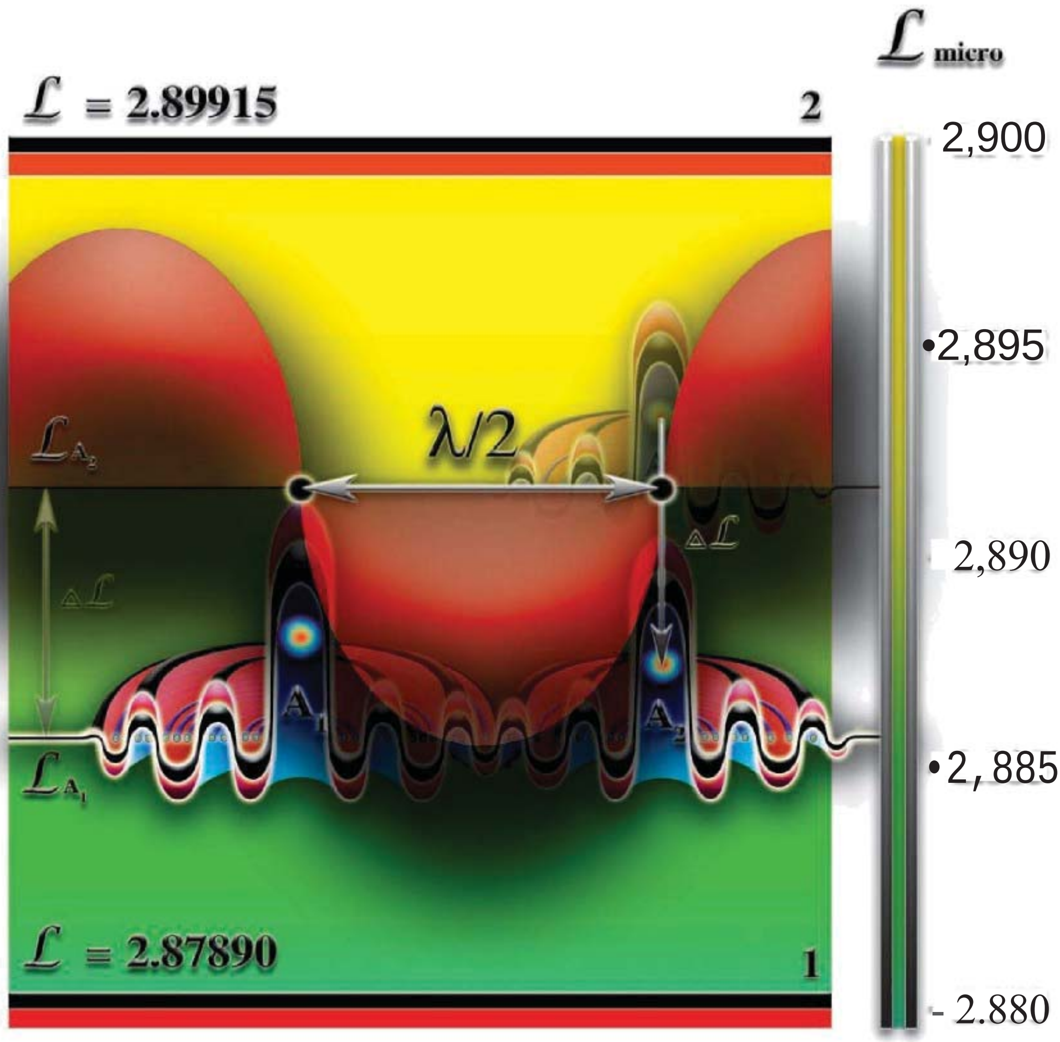
2.880



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A_1
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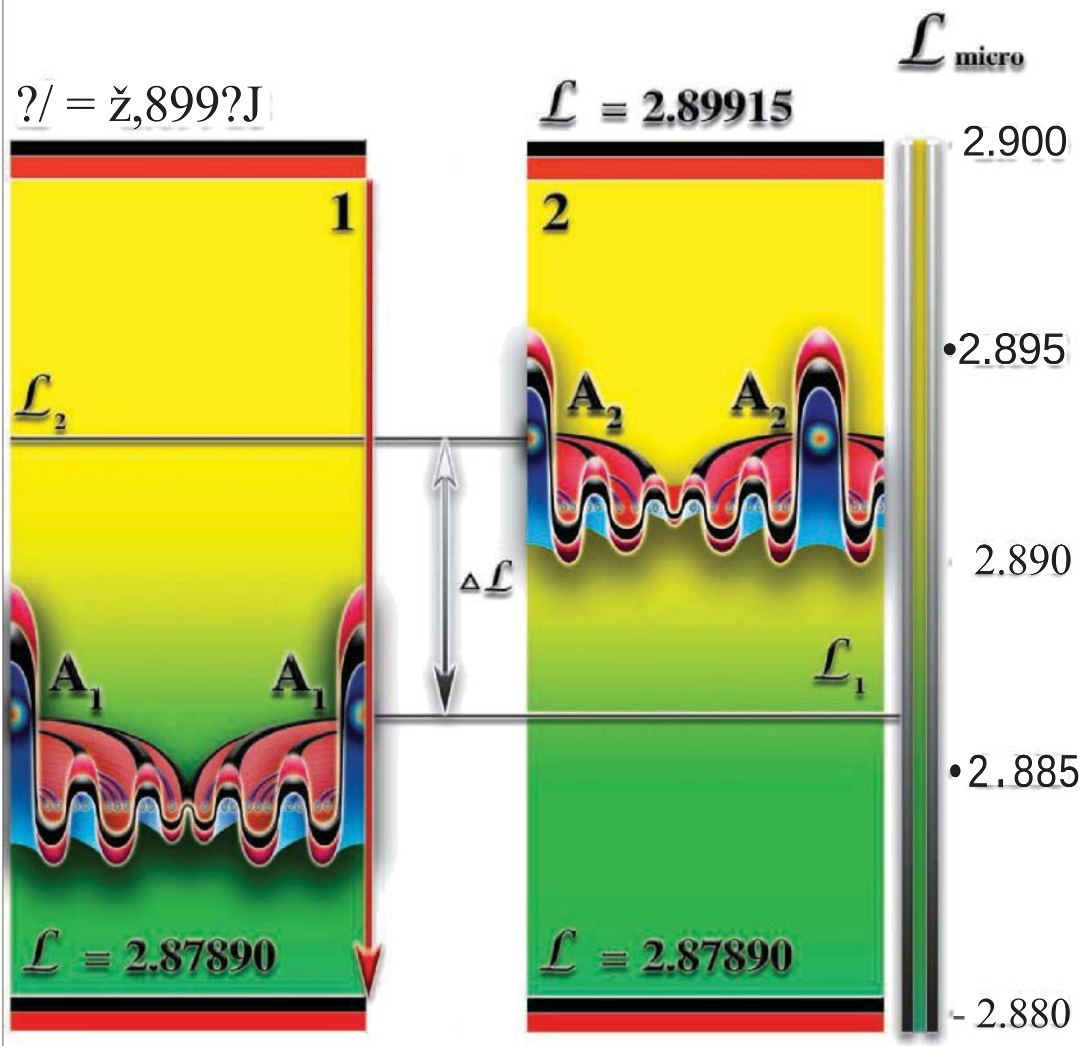
$\mathcal{L}_{A_1}$
$\mathcal{L}$ = 2.87890
1

involved in chemical reactions is determined by the difference between the energy levels of atoms before the reaction and atoms resulting from the reaction. It is no coincidence that radiation occurs in portions (quanta). Each quantum of radiation is the result of a single process of atom transformation. Therefore, when this process is complete, the generation of waves ceases. The emission of radiation occurs in billionths of a second. Accordingly, radiation is also absorbed in quanta (portions).

Now, let's consider crystal lattices. Crystal lattices are formed from atoms of the same element or from identical molecules. Therefore, all atoms forming a crystal lattice have the same level of intrinsic dimensionality. Moreover, each crystal lattice will have its own level of intrinsic dimensionality. Let's take two metals with different dimensionality levels **(Fig. 3.3.12)**. They represent two qualitatively different environments that affect the surrounding space in different ways. If they do not interact with each other in any way, no unusual phenomena are observed. But as soon as they come into direct contact, qualitatively new phenomena appear. In the area where crystal lattices with different levels of intrinsic dimensionality meet, a horizontal dimensionality gradient arises, directed from the crystal lattice with a higher level of intrinsic dimensionality to the crystal lattice with a lower level of intrinsic dimensionality. Now, let us place a liquid medium saturated with positive and negative ions between the plates made of these materials. In a liquid medium, molecules and ions do not have a fixed position and are in constant chaotic motion, known as Brownian motion. Therefore, under the influence of the horizontal dimensional gradient, the ions begin to move in an orderly manner. Positively charged ions begin to move towards the plate with a higher level of intrinsic dimensionality, while negatively charged ions move towards the plate with a lower level of intrinsic dimensionality **(Fig. 3.3.13)**.

At the same time, ions are redistributed in the liquid medium, resulting in the accumulation of positive and negative ions on the plates. When positive ions collide with the plate, they capture electrons from the atoms of the plate's crystal lattice, becoming neutral atoms that begin to settle on the plate itself, while the plate itself experiences a shortage of electrons. Moreover, the plate will be constantly bombarded with positive ions throughout its entire



$\mathcal{L}_{micro}$
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$\mathcal{L}_2$
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$\mathcal{L}$ = 2.87890
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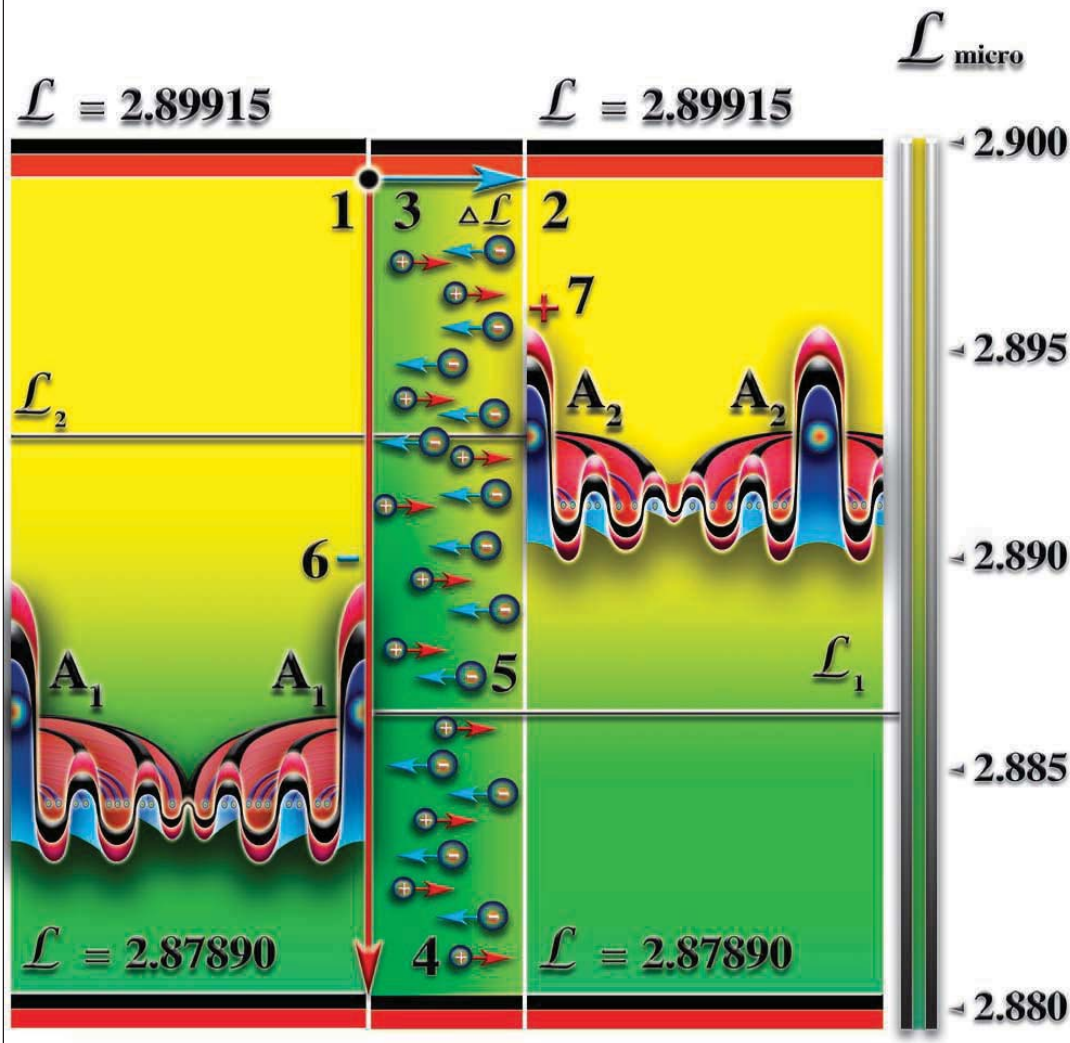
$\mathcal{L}_{micro}$
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$\mathcal{L}$ = 2.87890
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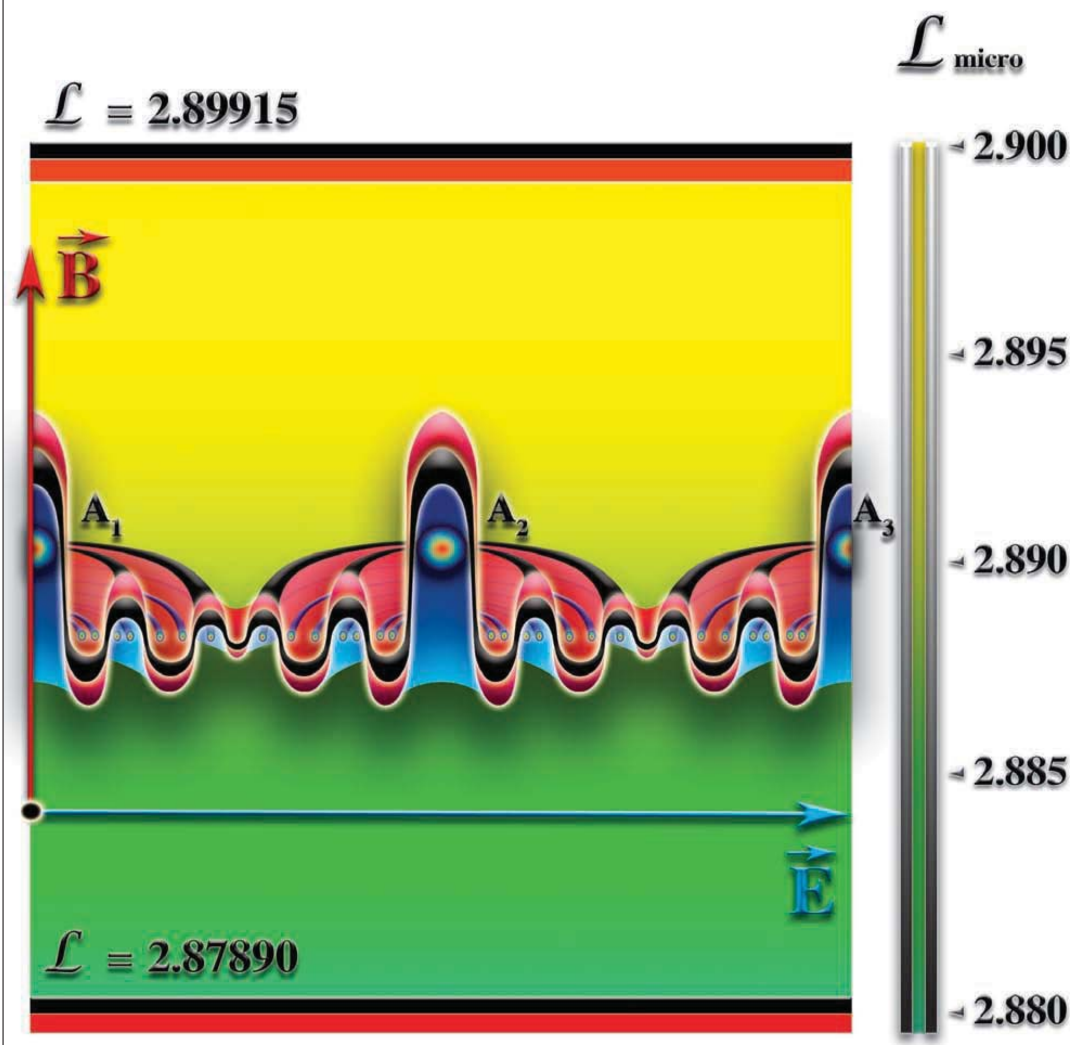
$\mathcal{L}$ = 2.87890
2.880

surface. Since, despite all this, the dimensional difference between the two plates remains, and ions from the liquid medium, under the influence of this difference, acquire directed motion. The chaotic process of collisions between molecules and ions of the liquid medium acquires a qualitatively new character. The movement of ions and molecules becomes directed. At the same time, the behaviour of positive and negative ions will differ under the influence of the existing dimensional difference between the plates. The horizontal dimensional gradient creates conditions under which positive ions must move against the gradient, while negative ions move along it. Positive ions are forced to move
"against the current," while negative ions move "with the current." As a result, the speed of movement, and therefore the energy, of positive ions decreases, while that of negative ions increases. Negative ions accelerated in this way lose excess electrons when they collide with the crystal lattice, becoming neutral atoms. The crystal lattice, meanwhile, gains additional electrons. And if we now connect these two plates with different levels of intrinsic dimensionality by means of a wire made of a compatible material, then in the latter (the wire) a so-called direct electric current will arise — the directed movement of electrons from plus to minus, where plus is the plate with a higher level of intrinsic dimensionality, and the negative pole is the plate with a lower level of intrinsic dimensionality. And if we continue this analysis, the potential difference between the plates is nothing more than the difference in the levels of intrinsic dimensionality of the crystal lattices of these plates. As a result of analysing this process, we have come to understand **the nature of direct current.**

To understand the nature of electron motion in a conductor, it is necessary to clearly define the nature of magnetic **B** and electric **E** fields. The nature of the gravitational field of any material object is determined by the dimensionality difference in the zone of heterogeneity in which the process of formation of this material object took place. In the case of the formation of a planet, the initial cause of such a curvature of space was the explosion of a supernova star. The dimensionality difference is directed from the edges of the zone of spatial heterogeneity to its centre, which explains the directionality of the gravitational field towards the centre of the planet or any other material object. Due to the fact that the deformation of space manifests itself differently within the zone of heterogeneity, the synthesis of atoms of different elements occurs.

And when this process occurs on a global scale, matter is distributed according to the principle of its own dimensionality. This means that matter on the planet is distributed across zones where it is most stable. This does not mean that atoms with intrinsic dimensionality values different from the optimal values cannot be synthesised within a given volume with a specific value of spatial dimensionality. It only means that atoms with a level of intrinsic dimensionality higher than the level of dimensionality of the volume of space in which this synthesis occurred become unstable and disintegrate back into the primary matter from which they were formed. And the greater the difference between the level of intrinsic dimensionality of the formed atom and the level of dimensionality of the space in which this synthesis occurred, the faster the decay of this atom will occur. This is precisely why there is a natural redistribution of atoms, and consequently of matter, within the zone of heterogeneity of the planet. This is precisely why the surface of the planet is formed in the way we have been accustomed to since birth and perceive as normal. It should be borne in mind that any atom has a certain range within which it remains stable, which means that the substance formed from these atoms will also be stable within this range. The solid surface of the planet simply repeats the shape of the zone of spatial heterogeneity within which the solid substance is stable, with oceans and seas filling the depressions and the atmosphere surrounding it all. Thus, the atmosphere is located at the upper boundary of the stability range of physically dense matter, while the planet itself is located in the middle and lower parts of this range... Now, let us return to the microcosm and try to understand the nature of magnetic and electric fields. Consider a crystal lattice formed by atoms of the same element or atoms of several elements (**Fig. 3.3.14)**. In a solid, neighbouring atoms connect with their electron shells and form a rigid system, which means that the curvatures of microspace caused by the nucleus of one atom connect with the curvatures of microspace of the neighbouring atom, and so on. and form a unified system of microspace curvature for all atoms that are connected to each other and form so-called domains. "Linked" in this way, atoms create a unified system consisting of hundreds of thousands of millions of atoms. All atoms in this system have the same level of intrinsic dimensionality, which, in most cases, differs from the level of dimensionality of the microspace in which they are located.


$\mathcal{L}_{micro}$
$\mathcal{L} = 2.89915$
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$\mathcal{L} = 2.87890$
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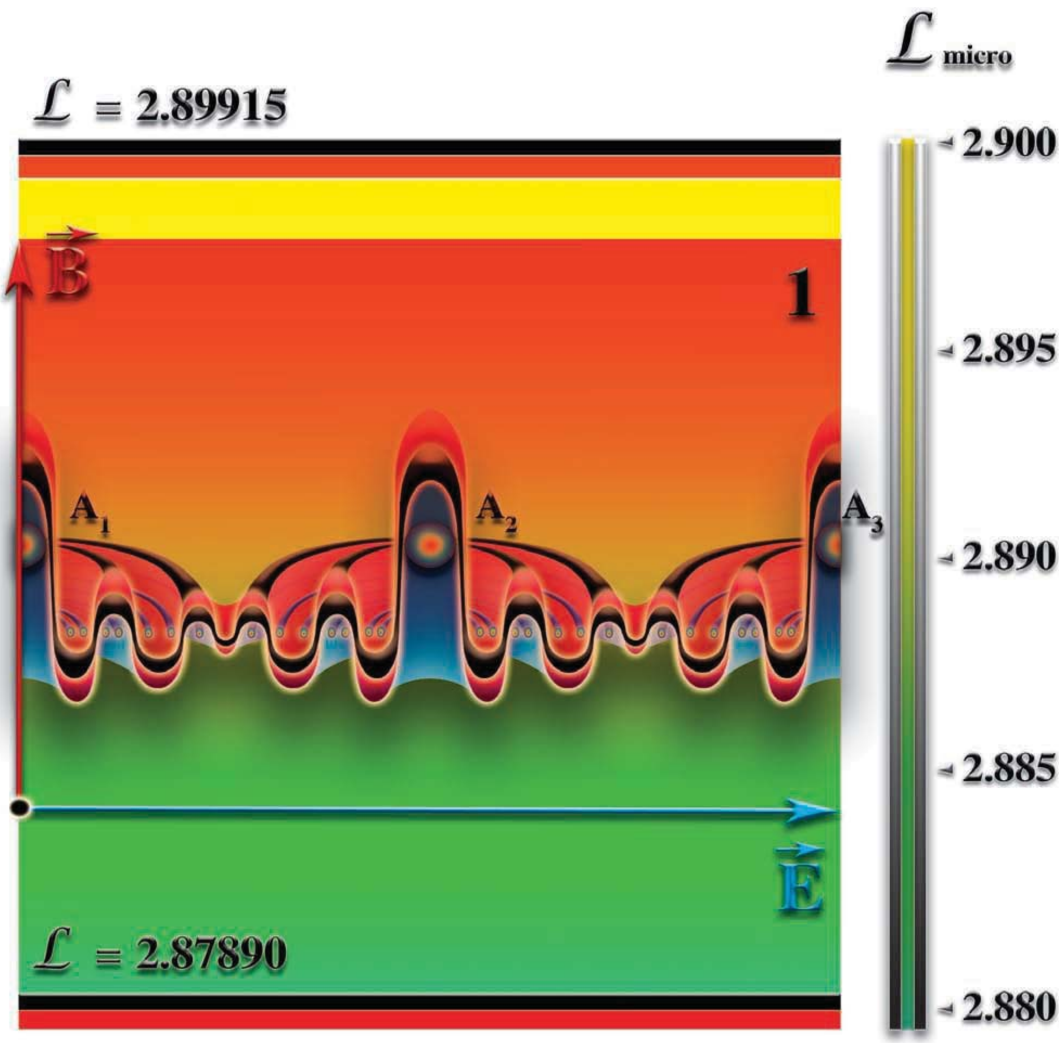
this system of atoms. As a result, a dimensionality gradient arises, directed against the dimensionality gradient of macroscopic space. A zone of interaction between microspace and macroscopic space is formed. The opposing dimensionality gradient of such systems of atoms leads to compensation for the deformation of the dimensionality of macroscopic space, in which the synthesis of physically dense matter occurs. Upon completion of the substance synthesis process, mutual neutralisation occurs in the zone of dimensional deformation of macroscopic space — the dimensional deformation of macroscopic space is neutralised by counter-deformations of microscopic space. Moreover, the deformation of the dimensionality of macroscopic space in physics is called the gravitational field, while the counter-deformation of micro-space created by a system of domain atoms creates the so-called magnetic field of the domain at the level of a single domain and the magnetic field of the planet at the level of the planet.

The planet's magnetic field arises as the sum of the magnetic fields of all domains existing in the physically dense matter of the planet as a whole. The total magnetic field of the planet is orders of magnitude smaller than the gravitational field of the planet for one simple reason : the myriad microscopic magnetic fields of the domains throughout the planet are oriented chaotically relative to each other, and only a small fraction of them are oriented parallel to each other and retain their magnetisation, creating the planet's magnetic field. Moreover, domains formed by different atoms have different degrees of magnetisation. Magnetisation is determined by the ability of a given domain to maintain a certain orientation of the domain's magnetic field and, in physics, is determined by the area of the hysteresis loop. The maximum magnetisation properties are exhibited by iron, whose domains are aligned on a planetary scale and mainly form the planet's magnetic field. It is for this reason that anomalous deposits of iron-bearing ores create magnetic anomalies — local disturbances in the planet's magnetic field within the limits of these anomalies.

Now, let's figure out what effect a magnetic field — a counter-gradient of spatial dimensionality — has on the atoms that generate it. In the presence of a magnetic field, the electrons of atoms become more unstable, which significantly increases the possibility of their transition not only to higher orbits of the same atom, but also the possibility of complete electron decay in one atom and its synthesis in another. Similar processes occur when an atom absorbs waves; the only difference is that the absorption of of photon waves occurs individually by each atom, while under the influence of a magnetic field, billions of atoms simultaneously find themselves in an excited state without any significant change in their aggregate state (**Fig. 3.3.15**).

In the presence of a longitudinal dimensional gradient, called a constant electric field, the outer electrons of atoms, which have become unstable under the influence of a transverse dimensional gradient, called a constant magnetic field, begin to disintegrate into their constituent matter and, under the influence of a longitudinal dimensional gradient, begin to move along the crystal lattice from a higher dimensional level, called plus, to a lower dimensional level, called minus (**Fig. 3.3.16)**. The longitudinal flow of primary matter released during the decay of the outer electrons of some atoms, entering the location of other atoms with a lower level of their own dimensionality, causes these atoms to synthesise electrons. In other words, electrons "disappear" from some atoms and "appear" in others. Moreover, this happens simultaneously with millions of atoms at the same time and in a certain direction. In the so-called conductor, a constant electric current arises — the directed movement of electrons from plus to minus. Only in the proposed explanation does it become absolutely clear what this directed movement is, what "positive" and "negative" are, and finally, what an "electron" is. All these concepts have never been explained and have been taken for granted. However, to be completely accurate, we should not talk about the "directed movement of electrons from positive to negative", but about the directed redistribution of electrons along the conductor.

As is clear from the above explanation, electrons do not move along the conductor; they disappear in one place where the level of the atoms' own dimensionality becomes critical for the existence of external electrons and are formed at atoms that meet the necessary conditions for this. Electrons are dematerialised in one place and materialised in another. This process occurs constantly and chaotically in nature and therefore can only be observed when it is controlled, which is achieved by artificially creating a directed dimensional gradient along the conductor. It should be noted that the causes of the manifestation of both magnetic and electric fields are dimensional gradients (dimensional gradients) of space, which are fundamentally no different from each other. In both cases, it is a dimensional gradient between two points in space that have, on the one hand,



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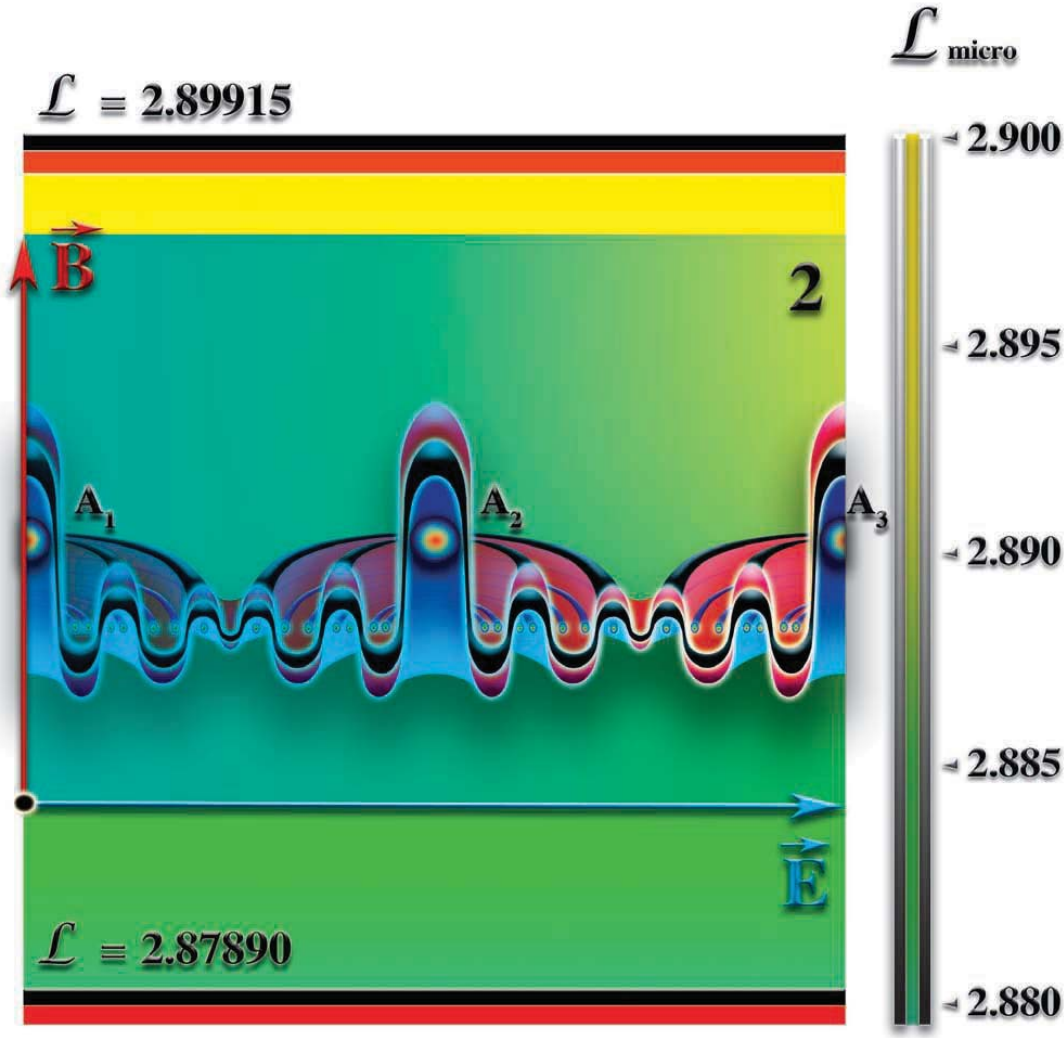

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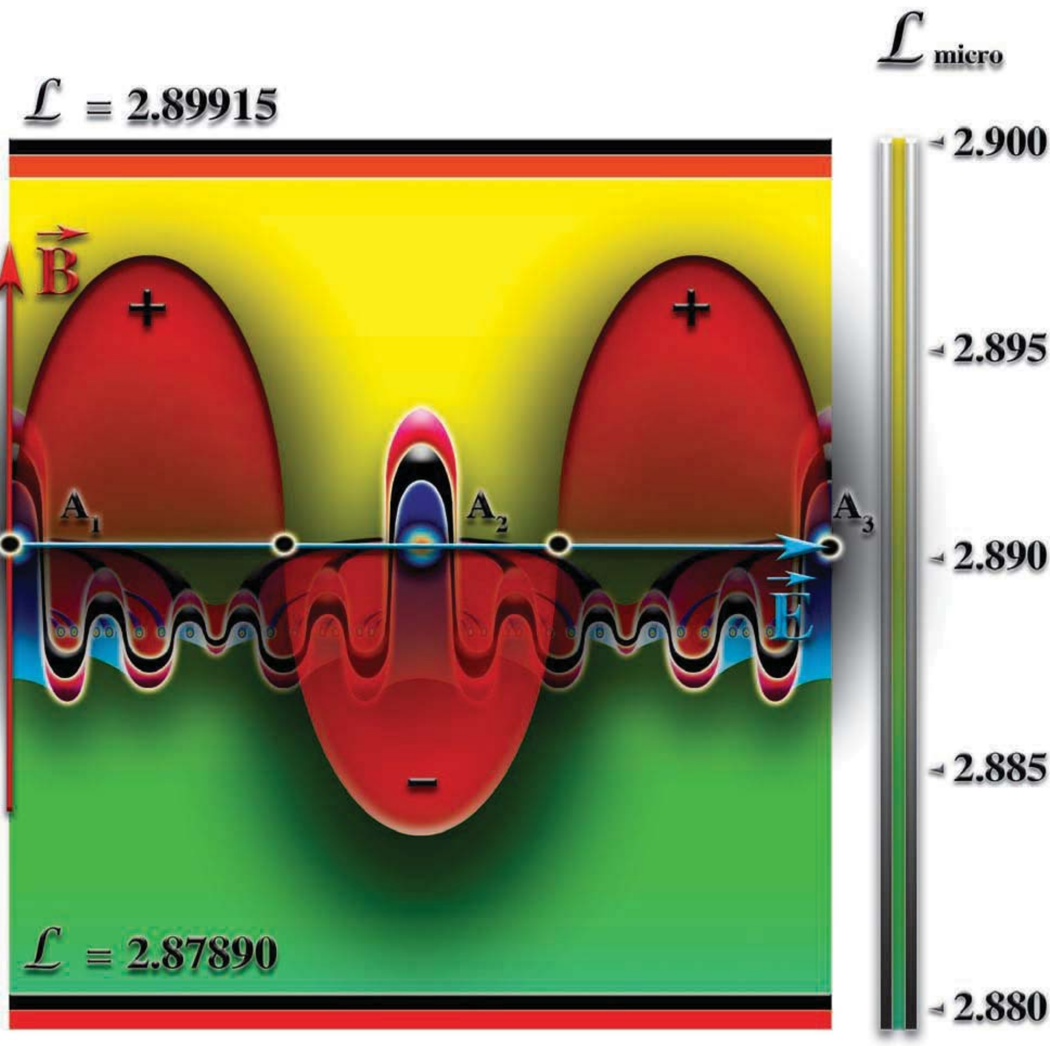
or other reasons, different levels of their own dimensionality. The difference in the manifestation of these differences is determined solely by their spatial orientation relative to the crystal lattice. The mutual perpendicularity of two dimensionality differences relative to the so-called optical axis of the crystal leads to a qualitative difference in the reaction of each atom to these dimensionality differences, while the nature of the differences themselves is completely identical. The anisotropy of the qualitative structure of both macroscopic and microscopic space leads to qualitatively different reactions of the matter filling these spaces, both at the macroscopic and microscopic levels.

Understanding the nature of constant magnetic and electric fields and the nature of their influence on the qualitative state of physically dense matter allows us to understand the nature of alternating electromagnetic fields. An alternating magnetic field affects the same atom differently in different phases of its qualitative state. At zero intensity of the alternating magnetic field, the effect on the qualitative state of the atoms of the crystal lattice is naturally zero. When passing through the crystal lattice of the conditionally positive phase of the alternating magnetic field intensity, each atom begins to lose its outer electrons due to the fact that the additional external influence of the dimensionality difference affects the qualitative state of the electron shells of atoms without significantly affecting the qualitative state of atomic nuclei. As a result, some outer electrons become unstable and decay into the matter that forms them. When the conditionally negative phase of the alternating magnetic field passes, conditions are created for the synthesis of electrons in the zones of microspace deformation created under the influence of atomic nuclei. Therefore,when an alternating magnetic field wave passes through a crystal lattice, an interesting picture emerges. If, under the influence of a magnetic field, the outer electrons of a given atom or atoms become unstable and disintegrate into their constituent matter, then for the atoms lying ahead along the optical axis, the same wave creates favourable conditions for the synthesis of electrons (**Fig. 3.3.17**). This creates a difference in magnitude (electric field), shifted by a phase of $\pi/2$ in the atoms located ahead along the optical axis, perpendicular to the alternating magnetic field, as a result of which these atoms synthesise additional electrons (**Fig. 3.3.18**). The additionally synthesised electrons, in turn, create a perpendicular electric



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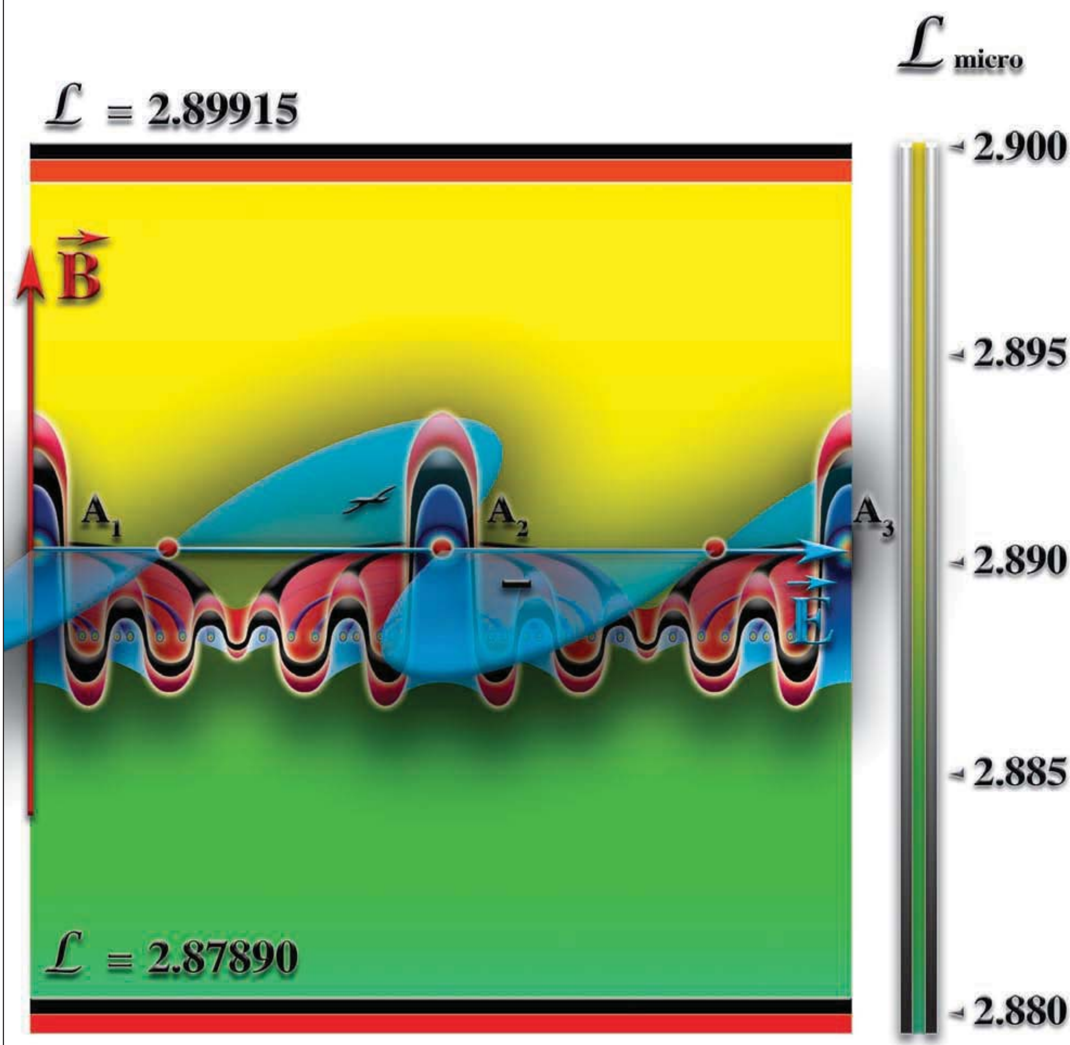
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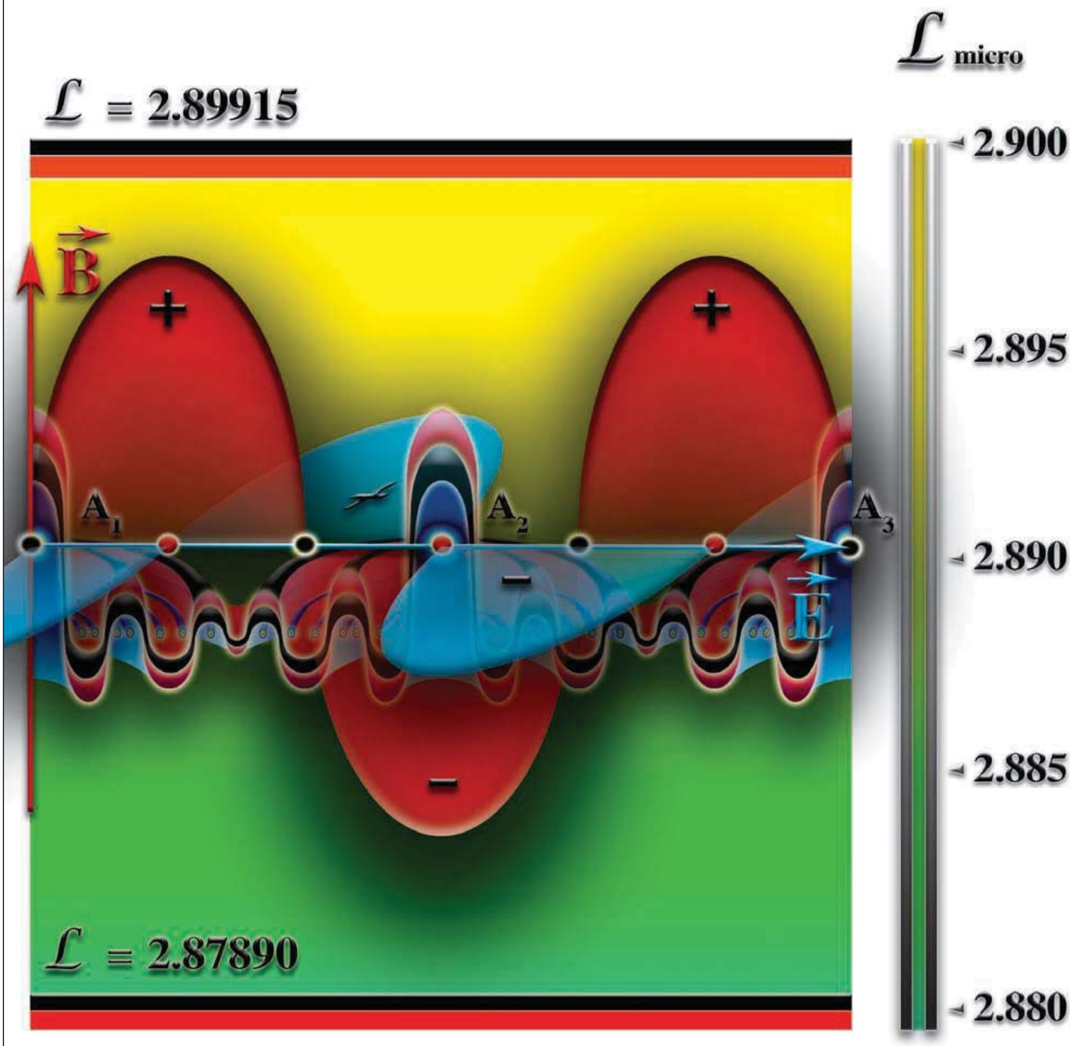
field shifted by a phase of $\pi/2$ dimensional difference (magnetic field). As a result of all this, an alternating electric current propagates along the optical axis through the conductor (**Fig. 3.3.19**). Electromagnetic waves propagate in space according to a similar principle.

Thus, an alternating magnetic field generates an alternating electric current in a conductor, which in turn generates an alternating magnetic field in the same conductor. When one conductor with an alternating magnetic field is located near another, the latter generates a so-called induced electric current. As a result, it became possible to create an electric current generator in which the rotational movement of the turbine is converted into an alternating electric current. The superposition on a specific microspace, with specific properties and qualities of external influence, in the form of a dimensional gradient, leads to a change in the properties and qualities of the microspace in the superposition zone. Due to the fact that space, both at the macro level and at the micro level

— anisotropic, i.e., the properties and qualities of space are not the same in different directions; additional external dimensional differences, depending on the direction in which they manifest themselves in space, will cause different reactions in the physically dense matter filling that space. With the same nature of dimensionality differences, it is precisely the anisotropy of space that causes the reaction of physically dense matter to depend on the spatial direction in which this difference manifests itself. This is precisely why the nature of magnetic and electric fields is identical, as paradoxical as it may sound. The difference in their properties and qualities is determined precisely by their spatial characteristics. It is the identical nature of magnetic and electric fields that creates the possibility of their interaction and mutual induction.

3.4. Summary

Macrospace and microspace exist in continuous interaction with each other. But the nature of this interaction has remained a mystery throughout the entire history of science. A mystery that, for some reason, no one has paid attention to. But it is precisely the understanding of the interaction between macro- and microspace that gives us an understanding of the life of the universe. The synthesis of physically dense matter occurs in areas of disturbance in the dimensionality of space, which arise...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during the explosion of a supernova star. Waves of disturbance in the dimensionality of macroscopic space change the properties and qualities of the space through which they pass. As a result, the nature of the behaviour of matter changes, which, for one reason or another, finds itself in these areas of disturbance in the dimensionality of space. As a result, qualitatively new forms of matter appear in these zones of space deformation. These qualitatively different forms of matter, filling the zones of space heterogeneity, neutralise the curvature of macroscopic space, and the waves of disturbance of the dimension of space are "frozen", giving rise to peculiar standing waves of disturbance of the dimension of macroscopic space. The processes occurring at the micro-space level in the zones of disturbance of the macro-space dimension ultimately lead to complete compensation for the disturbance of the dimension of macrospace due to the fact that the synthesised hybrid forms of matter at the level of microspace affect the surrounding microspace with a sign opposite to the sign of the initial disturbance of macrospace in which this synthesis occurs. Microscopic in comparison with the disturbances of macroscopic space, the effects of hybrid forms of matter on the surrounding microscopic space, when added together, compensate for the disturbance of the dimensionality of macroscopic space. They compensate, but do not cancel out. As a result, the zones of disturbance of the dimensionality of macospace remain and do not disappear, filled with hybrid forms of matter, the synthesis of which, in turn, occurs only in these zones of disturbance of the dimensionality of macospace. Thus, macospace and microspace are closely interrelated, cannot exist stably without each other, and the state of balance between them ensures the stable state of space as a whole. Any changes or disturbances in the qualitative state of macospace are manifested in changes in the qualitative state of micospace. Conversely, any changes in the qualitative state of micospace are manifested in the qualitative state of macospace. The stability of the state of the universe is ensured by the balance between macrospace and microspace. The standing waves of disturbance in the dimension of macrospace that arise in the process of this balance between macrospace and microspace have a constant gradient of dimension directed from the outer boundary of the zone of heterogeneity to its centre. As a result, even after the synthesis of hybrid forms of matter is complete, under the influence of this dimensional gradient, the primary matter continues its movement from the boundaries of the zone of dimensional heterogeneity to its centre, just as hybrid forms of matter. Each hybrid form of matter differs qualitatively and structurally from others and partially neutralises the disturbance of the dimensionality of macro-space through its secondary degeneration of space. As a result, for each individual hybrid form of matter, the dimensionality difference within the zone of macro-space heterogeneity continues to exist despite the fact that this hybrid matter partially neutralises this dimensionality difference. Only together do hybrid forms of matter neutralise the initial or primary dimensionality difference in the zone of macro-space dimensionality curvature. At the same time, for a single hybrid matter, the dimensionality difference continues to exist. In addition, this dimensional difference becomes permanent due to the emergence of a standing wave of dimension. This phenomenon exists only because hybrid forms of matter, although formed from the same primary matter, differ qualitatively and structurally from each other, having only partial interaction with each other in terms of common properties and qualities. Therefore, physically dense matter, which is one of the forms of hybrid matter, is constantly under the influence of this constant dimensional difference, as a result of which all physically dense objects are forced to move from the edge of the zone of macrospace heterogeneity to its centre. In modern physics, this process is called gravity, the gravitational field of a planet or any other material macro-object.

Gravity is nothing more than the effect on physically dense matter of a constant radial dimensional gradient of macospace, arising in a zone of macospace heterogeneity as a result of the interaction between space and the free matter filling that space. At the microspace level, each atom influences the surrounding space. This is the so-called secondary influence on space, which leads to partial neutralisation at the micro-space level of the dimensionality gradient of macro-space. In other words, each atom creates a counter-dimensionality gradient of space at the micro-space level, partially neutralising the primary dimensionality gradient of macro-space at the micro-space level. The influence of each atom is independent of the influence of any other atom. When atoms combine into molecules and crystal lattices, their individual influences on the surrounding space are combined into a common system. Each molecule or crystal lattice is limited in space due to certain properties and qualities of macroscopic space. Therefore, the space created by a molecule or crystal

The lattice counter-dimensionality manifests itself at the micro level of space. Each molecule or crystal creates a unique domain, forming around itself a counter-dimensionality of space, which is called the magnetic field of that domain. The superposition of all magnetic domains creates the magnetic field of a material object, in the case of a planet — the magnetic field of the planet. The total magnetic field of the planet affects the atoms and molecules that make up the planet's matter in different ways due to their qualitative and structural differences, as a result of which atoms, molecules, and crystals exhibit different properties and qualities. The heterogeneity of space in different directions leads to the fact that the same difference in the dimensionality of space affects the qualitative state of physically dense matter in different ways, depending on the spatial direction in which this difference in dimensionality arises. This is also due to the fact that the synthesis of hybrid matter, including physically dense matter, is oriented in accordance with the anisotropy of the macrospace itself in which the synthesis takes place. The anisotropy of space predetermines the spatial orientation of matter, both unbound primary matter and hybrid matter. The anisotropy of space predetermines the structural and qualitative anisotropy of matter. An anisotropic macrocosm generates an anisotropic microcosm, the balance of which ensures the stable state of the universe. Due to the anisotropy of both macrospace and microspace, the influence of local spatial heterogeneity on matter and on space itself becomes dependent on the spatial orientation of the gradient of the space dimension difference, both in relation to space itself and in relation to matter. As a result, the gradient of the dimension of space manifests itself as a so-called gravitational field in one spatial direction, as a magnetic field in another, and as an electric field in a third. Only thanks to this is it possible for electromagnetic waves and other waves to propagate in space. A magnetic field turns into an electric field, and vice versa — an electric field turns into a magnetic field. This rule also applies to gravitational waves. They are all interchangeable. This rule does not apply to standing waves of dimensionality. Understanding the unity of the nature of fields provides the key to creating anti-gravity and the possibility of instantaneous movement in space, opening up virtually unlimited possibilities for the development of technology and the exploration of new energy sources.

Chapter 4. Necessary and sufficient conditions for the emergence of life in the universe

4.1. The question

The question of the origin of life on our planet has always been a stumbling block. Since ancient times, philosophers and scientists have tried to unravel the mystery of life. Various theories and hypotheses about the nature of living matter have been put forward. All of them are based on postulates (concepts accepted without proof). In order to keep these theories viable, new postulates were introduced later on. Currently, all existing scientific theories are based on dozens, and sometimes hundreds, of postulates. Modern physics is no exception. The information that humanity had accumulated by the end of the twentieth century completely invalidates these theories. The phenomena that scientists observe, either through instruments or visually, are manifestations of the real laws of nature. But the real laws of nature are formed at the levels of the macrocosm and microcosm. Everything that a person encounters in their life is located between the macrocosm and the microcosm. That is why, when a person was able to look into the microcosm with the help of instruments, they encountered the laws of nature for the first time, rather than their manifestations. Matter did not appear out of nowhere. Everything is much simpler and more complex at the same time: what a person knows about matter and thinks of as a complete, absolute concept is, in fact, only a small part of this concept. Matter really does not disappear anywhere or appear from anywhere; the Law of Conservation of Matter really does exist, only it is not as people imagine it to be. Thus, existing scientific theories based on postulates turned out to be stillborn. They were unable to provide any coherent and logical explanation. The inability of existing theories to explain the conditions and causes of the origin of life does not excuse this lack of knowledge. Life appeared on our planet more than four billion years ago, and its development led to the emergence of intelligence, but existing civilisation still cannot answer a simple question: what is life, how did it arise from so-called inanimate matter? How and why did inanimate matter suddenly transform into living matter? Without understanding this question, humanity cannot call itself an intelligent race, but only an unintelligent child who has yet to gain wisdom.

So, what conditions had to exist on the planet for life to emerge?

4.2. Conditions for the emergence of life on planets

Before explaining the nature of the origin of life, it is first necessary to determine what conditions must exist for at least protein-based life to arise on a planet. The nine planets of the solar system are a clear example of this. At present, only on planet Earth do the necessary and sufficient conditions exist for life, or at least for complex living matter. The primary task is to determine these conditions. Based on an understanding of the above-mentioned processes occurring at the macro and micro levels of space, the following conditions necessary for the emergence of life can be identified:

1. The presence of a constant dimensionality gap σ. The value of the constant dimensionality gap and the space quantisation coefficient γ_i (which determines the number of forms of matter of a given type that can merge within this gap) determine the evolutionary potential of possible life. The multiplicity of these values is a criterion that gives an idea of the number of qualitative barriers (levels) arising within this dimensionality gap. The number of barriers characterises the qualitative diversity of possible life. This includes the possibility of the emergence and development of intelligence. After the formation of the planet is complete, the dimensionality of macospace returns to its initial level, which was before the explosion of the supernova. After the formation process is complete, a constant dimensionality gap arises between the dimensionality level of physically dense matter (2**.89915)** and the dimensionality level of the surrounding macicosmos (3**.00017)**. Thus, a constant dimensionality difference is a necessary condition for the emergence of life. The magnitude of this difference is important. It is the magnitude of the difference that determines the evolutionary potential of living matter, of life. The minimum dimensionality difference at which life can emerge must be equal to:

$$\varsigma = 1 \ \gamma_i (\Delta L) \qquad (4.2.1)$$

The emergence of elements of mind and the birth of memory, without which the development of mind is impossible, is possible at a dimensionality difference equal to:

$$\varsigma = 2\ \gamma_i(\Delta L) \qquad (4.2.2)$$

A necessary condition for the emergence of mind and its evolution is a dimensionality difference of:

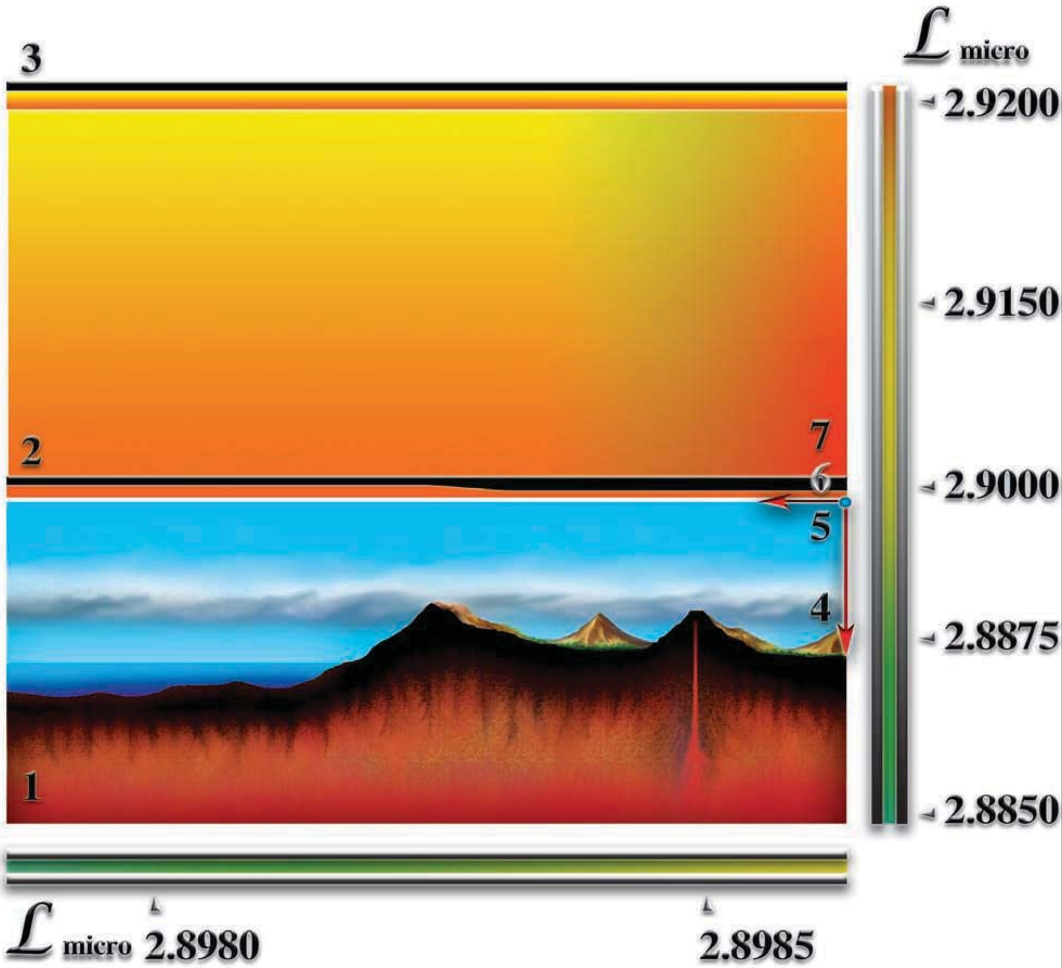
$$\varsigma = 3\ \gamma_i(\Delta L) \qquad (4.2.3)$$

Thus, using the dimensionality gap as a criterion, we can talk about the requirements for the qualitative structure of space-universe (for our space-universe ($\gamma_i(\Delta L) = 0.020203236...$). Only space-universes formed by three or more forms of matter have the necessary conditions for the emergence of life and intelligence.

2. The presence of water. Water is the basis of organic life on our planet. Of course, there are forms of life that are not based on protein. But first, it is necessary to trace the patterns of the emergence of protein-based life. It is necessary to understand what is happening in our own home before looking into others.

3. Presence of an atmosphere. The atmosphere is the most dynamic and active part of the planet. It reacts quickly and sharply to changes in the external environment, which is very important for the emergence of life. The presence of oxygen and carbon dioxide in the atmosphere is a sign of protein life on the planet. The atmosphere should not be too dense or too thin. If the atmosphere is very dense, the star's radiation does not reach the planet's surface and does not heat it. At the same time, the lower layers of the atmosphere do not absorb the star's radiation and the thermal radiation of the planet's surface layers. As a result, there is no temperature difference between the illuminated and night-time parts of the planet's surface. As a consequence, there is no movement of atmospheric masses in the lower layers of the atmosphere. In the absence of a gradient (difference) in density along the planet's surface, there are no atmospheric electrical discharges. In an excessively rarefied atmosphere, the lower layers are able to absorb the star's radiation and the thermal radiation of the surface. However, there is no movement of atmospheric masses as a result of its excessive thinness. As is known, the size and density of the atmosphere is determined by the size and mass of the planet. Therefore, only planets comparable in size and mass to our planet Earth have the most favourable conditions for the emergence of protein-your life. The atmosphere should be neither too "heavy" nor too "light".

4. The presence of periodic changes between day and night. Planetary days should not be very short or very long. Planets with planetary days lasting between 18 and 48 Earth hours have the most favourable conditions for the emergence of life. When photons of light are absorbed en masse by atoms in the surface layer of large areas, the level of dimensionality of this layer increases by a certain amount **ΔL.** This value corresponds to the amplitude of the waves absorbed by the surface layer of the planet (infrared, optical, and ultraviolet radiation from the Sun). As a result, the difference between the dimensionality levels of the atmosphere and the planet's surface in the absorption zone decreases by an amount **ΔL,** while the unlit or night-time part of the surface retains the previous difference in dimensionality levels between the atmosphere and the surface. Thus, a difference in dimensionality arises between the illuminated and unilluminated zones of the planet's surface. A parallel difference (gradient) in dimensionality arises across the planet's surface. The magnitude of this difference is of decisive importance. The fact is that the molecules of the atmosphere are under the influence of the planet's gravitational field, which exists constantly as a result of the formation of a constant dimensional difference in the zone of macrospace heterogeneity, directed from the outer boundaries to the centre of the zone of heterogeneity. The gravitational field of the planet is compensated by the fact that each atom or molecule of the atmosphere has its own dimensionality levels, which are very close to the upper limit of the stability range of physically dense matter. The so-called "float effect" comes into play, when each molecule or atom strives for the position of maximum stable equilibrium. It is thanks to this that the molecules and atoms of the atmosphere do not fall to the surface of the planet, like the molecules and atoms of heavier elements. The difference (gradient) in dimensionality between the day and night zones is directed along the surface of the planet, which sets free matter in motion parallel to its surface from the zone with a higher level of dimensionality (illuminated surface) to the zone with a lower level of dimensionality (unilluminated surface). As a result of the emergence of a second direction of movement of free matter parallel to the surface, an atmospheric pressure gradient arises (**Fig. 4.2.1)** and the force of gravity decreases. Since the molecules of the atmosphere are not bound together in rigid (solid state of matter) or semi-rigid systems (liquid state of matter)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If the substance is heated, the difference in dimensionality along the surface causes the flow of free matter to carry along the molecules that form the atmosphere. Air masses start moving, and wind arises. At the same time, "heated" molecules (molecules that have absorbed solar radiation) move to unlit areas, where they spontaneously (spontaneously) emit waves. In other words, due to the fact that the intrinsic dimensionality of these molecules is higher than the intrinsic dimensionality of the atmosphere of the unlit surface, this difference between the dimensionality of the environment and the intrinsic dimensionality of the heated molecules causes the latter to become unstable and provokes spontaneous radiation of waves by the molecules. "Cold" molecules, in turn, have a level of dimensionality lower than the level of dimensionality of the illuminated area, which provokes massive absorption of solar radiation and thermal radiation from the illuminated surface. Gradually, the level of dimensionality of the illuminated surface and the level of dimensionality of the molecules become equalised. At the same time, if the intrinsic dimensionality level of "cold" molecules differs significantly from the intrinsic dimensionality level of the illuminated area, the latter decreases. When the intrinsic dimensionality level of the illuminated area drops to the level of the so-called "dew point," water molecules transition from a gaseous state to a liquid state. Dew falls. If this occurs at the cloud level, the process of droplet formation becomes chain-like, and rain falls. At the same time, the state of the qualitative barrier between the second and physical levels returns to normal. When this process occurs quickly and sharply, the free matter accumulated at the level of the qualitative barrier flows down like a lava flow. As a result, atmospheric electrical discharges occur — lightning. An analogy for this process is a dam on a river where all the sluice gates have been opened, and all the water accumulated by the dam is released simultaneously.

The periodic alternation of day and night makes the above description logical and natural. Planets with a planetary day lasting between 18 and 48 Earth hours are optimal for the emergence of life. With shorter planetary days, the processes described above do not reach the level at which active movement of atmospheric masses and atmospheric electrical discharges occur, without which the emergence of organic life is impossible. Longer planetary days (more than 48 Earth hours) lead to a constant stormy state of the atmosphere.

spheres of the planet, which creates difficult conditions for the emergence and development of life. On such planets, life can only arise when the intensity of the star's radiation reaching the planet's surface decreases to a certain level. Only when the intensity of the star's radiation is such that the illuminated surface of the planet does not overheat do the conditions for the emergence of life arise. Usually, such conditions appear at the last stage of the evolution of stars, and even if life does arise on them, it does not have time to develop into complex forms before the star dies. In addition, if the duration of planetary days is short, the temperature difference does not reach the level at which any significant movement of the lower layers of the planet's atmosphere occurs. If the duration of planetary days is long, the difference in dimensions becomes so significant that it leads to powerful and prolonged atmospheric storms and tempests, as a result of which the upper layer of the planetary soil is destroyed, making it impossible for the planet's flora to develop, without which the development of an ecological system is simply impossible. The stormy state of the atmosphere also causes powerful movements of the surface layers of the planet's oceans, which in turn makes it impossible for life to originate in water.

5. The presence of atmospheric electrical discharges. During atmospheric electrical discharges, organic molecules are synthesized in seawater. In the discharge zone, an additional curvature of space is created (a change in the level of dimensionality), in which molecules of inorganic compounds dissolved in water combine with each other in a qualitatively new order, forming organic compounds that are chains of atoms of the same type. Only powerful atmospheric electrical discharges are capable of creating the necessary conditions under which the dimensionality level reaches a critical value. The two free electron bonds of each of these atoms are capable of attaching both free ions and other chain molecules to themselves. Atmospheric electrical discharges occur as a result of a difference in the thickness of the qualitative barrier between the physical and second levels of the planet. When night envelops the earth with its veil, the surface layer of the planet begins to cool and emit heat waves. And, as with any radiation, the dimensionality level of the emitting atom or molecule decreases. When this happens simultaneously with trillions of trillions of atoms and molecules in a limited area (the area illuminated by a star during the daytime), the dimensionality level decreases throughout this entire area. If the atmosphere and surface of the planet have heated up significantly during the day and cooled sharply at night, there is a jump in the level of dimensionality. At the same time, the free matter accumulated at the level of the qualitative barrier collapses like an avalanche. An electrical discharge occurs between the atmosphere and the surface of the planet.

Thus, the necessary conditions for the emergence of life on planets are:

- **the presence of a constant dimensionality gradient,**
- **the presence of water,**
- **the presence of an atmosphere,**
- **the periodic alternation of day and night,**
- **the presence of atmospheric electrical discharges.**

Life arises automatically on all planets where the above conditions exist. And there are billions of such planets in the universe. Our planet Earth is not a unique creation of nature.

4.3. Qualitative characteristics of organic molecules and their role in the emergence of life

Now let us consider how life originates and develops under the necessary conditions listed above. As everyone knows, seawater became the cradle of life. It contains virtually all chemical elements and many compounds made of them. During atmospheric electrical discharges, space is deformed. In water penetrated by these discharges (lightning), a level of dimensionality arises at which tetravalent elements (carbon, silicon, phosphorus) begin to combine into chains. At the same time, the resulting molecules not only have structural differences, but also acquire new qualities. What new qualities arise when the same atoms are connected in a different structural order? What makes us separate atoms that form one structural order from the same atoms that create another structural order? Why, in one case — inorganic compounds, and in another — organic ones?

Since carbon is the basis of protein life, it is sufficient to analyse the qualitative difference in the spatial characteristics of molecules created by this element to unravel the mystery of the origin of life. Let us try to understand what differences in the structural organisation of molecules lead. Let's consider inorganic structural formations — crystals. Crystals are spatial compounds in which atoms are located at almost equal distances from each other. These distances are commensurate with the sizes of the atoms themselves (**$10^{(-14)}$ …$10^{(-12)}$ metres)**. Moreover, they (the distances) are practically the same in all spatial directions (diamond) or identical in each of the spatial planes (graphite). These crystals are formed by carbon atoms (**C)**, but they are not the basis of living organisms or organic molecules (**Fig. 4.3.1, Fig. 4.3.2)**. What are the reasons why the same carbon atoms, when combined in a different spatial order, became the foundation of living nature? The reasons are the consequences of the qualitative characteristics of organic molecules (**Fig. 4.3.3, Fig. 4.3.4)**. The qualitative characteristics of organic molecules are as follows:

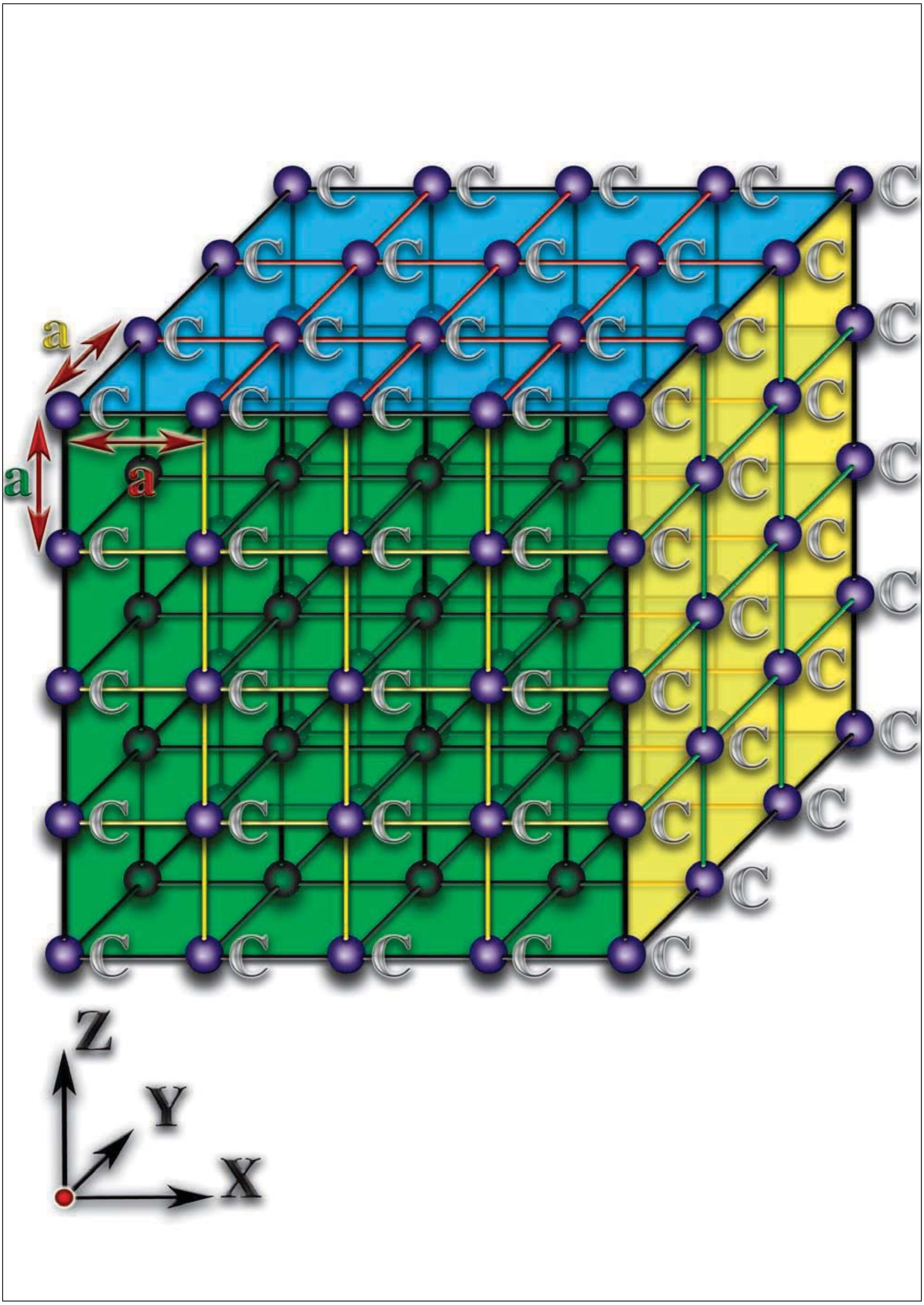
1. The spatial structure of organic molecules is heterogeneous in different spatial directions.

2. The molecular weight of organic molecules ranges from several tens to several million atomic units.

3. The uneven distribution of the molecular weight of organic molecules in different spatial directions.

As a result of these qualitative characteristics, organic molecules affect the microspace surrounding them differently in different spatial directions. This phenomenon is particularly pronounced in **RNA** and **DNA** molecules (**Fig. 4.3.5**, **Fig. 4.3.6**). The atoms that form these molecules create long chains twisted into a spiral. It is the spiral spatial form of **RNA** and **DNA** molecules that creates the necessary qualities for the emergence of living matter. What are these necessary qualities that create the miracle of life? What allows us to speak of a qualitatively new stage in the evolution of matter — the evolution of living matter, the evolution of life? Let us try to understand the miracle that gives birth to life...

The internal volume of the spirals of **RNA** or **DNA** molecules forms a kind of tunnel. The spiral molecule has a strong influence on the dimensionality of the microspace of this tunnel. Moreover, this influence on the internal volume of the tunnel is not the same in different spatial directions (**Fig. 4.3.7)**. Recall that each atom exerts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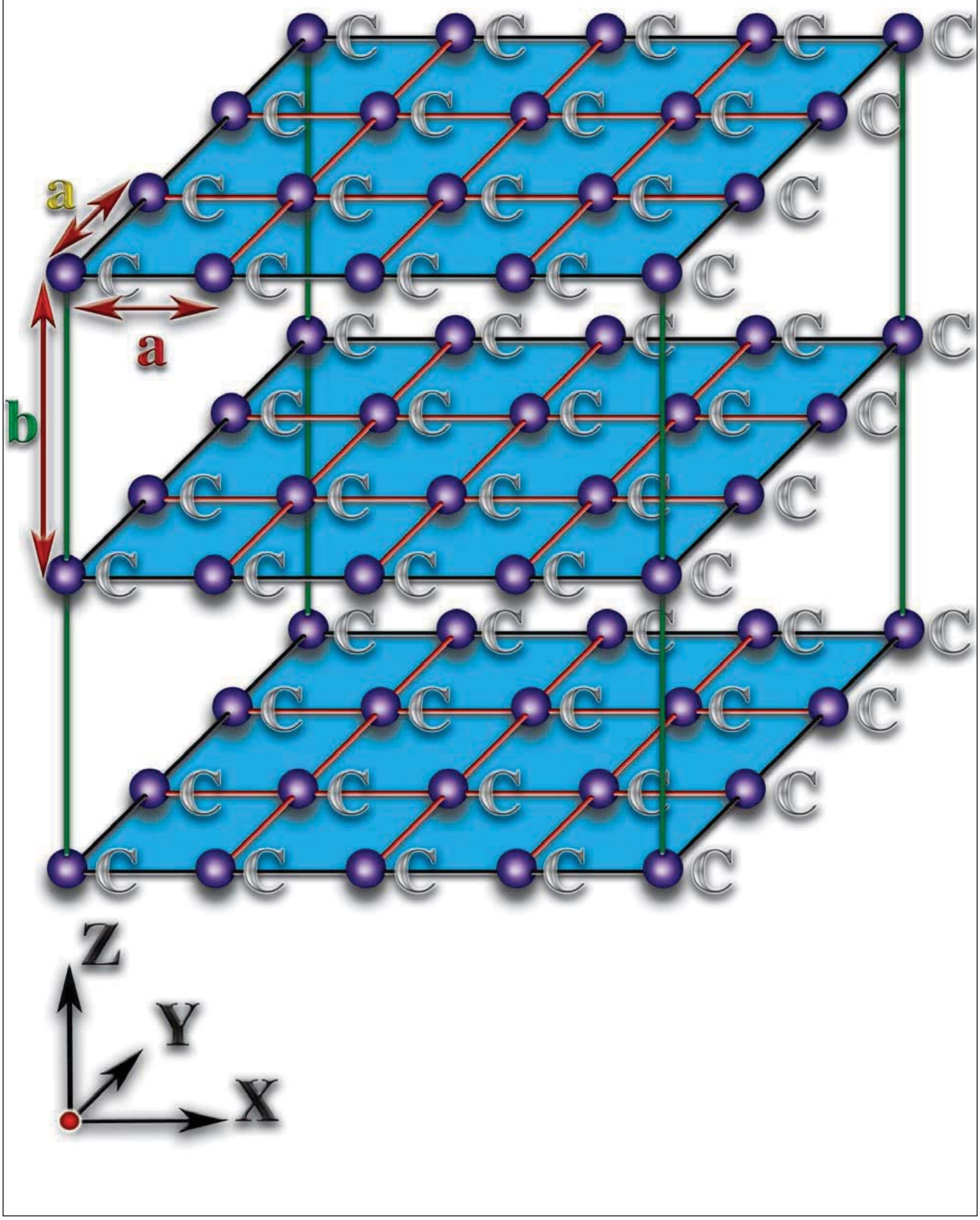
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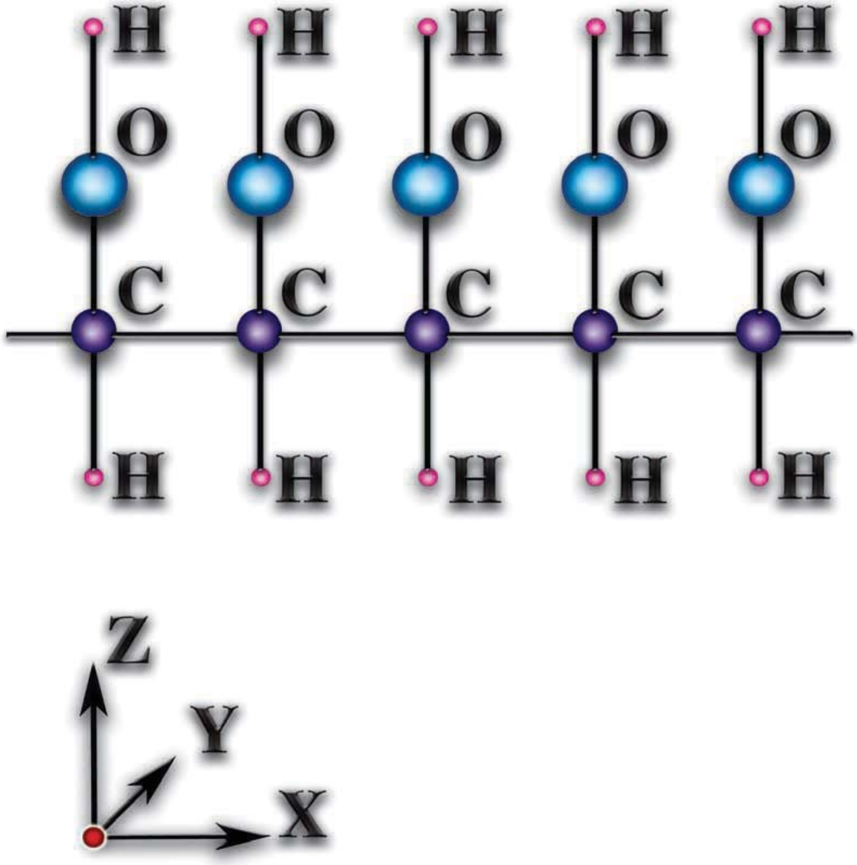
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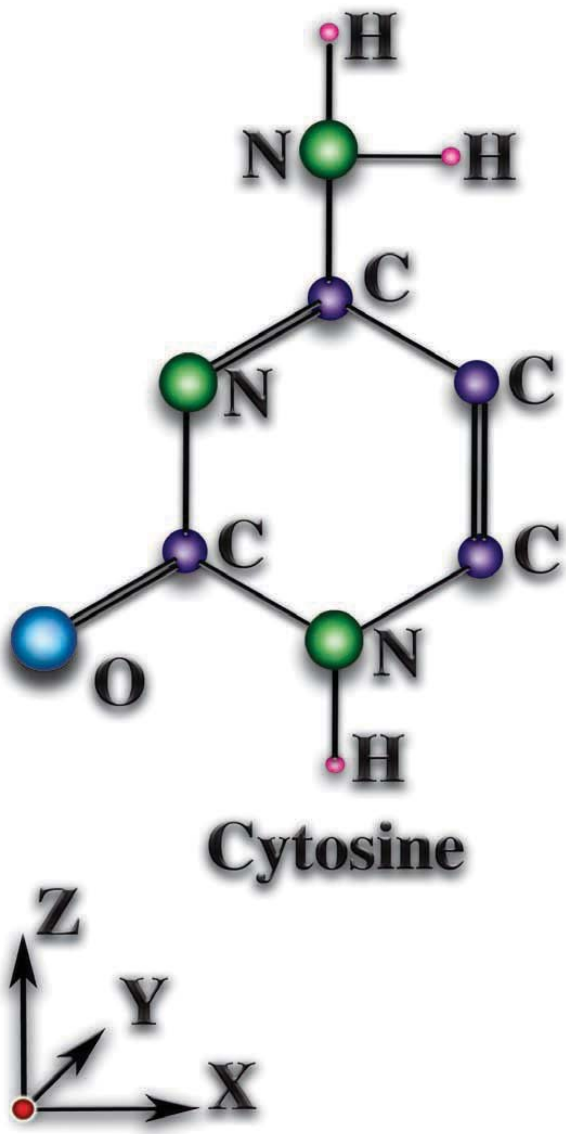
H
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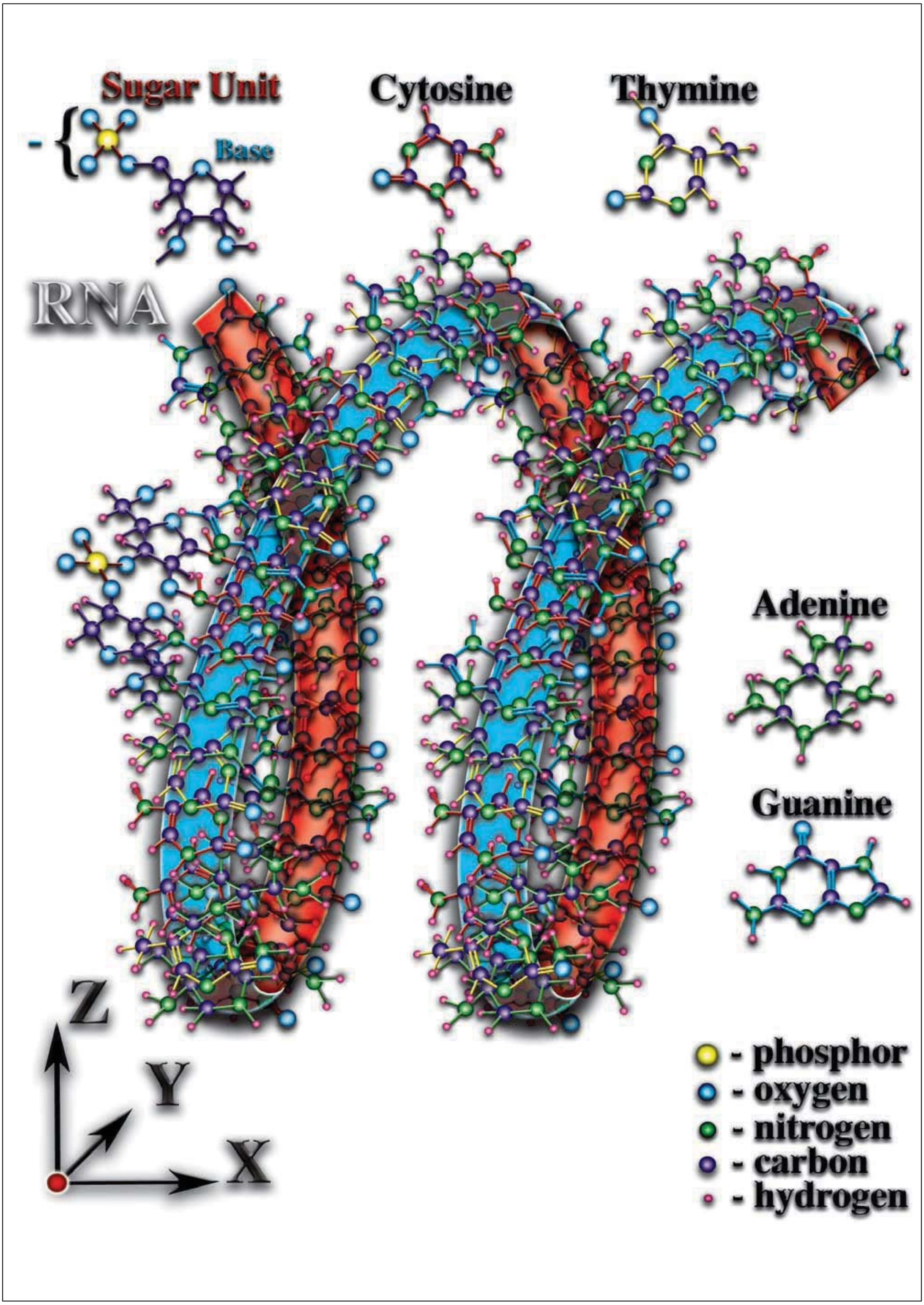
Sugar Unit
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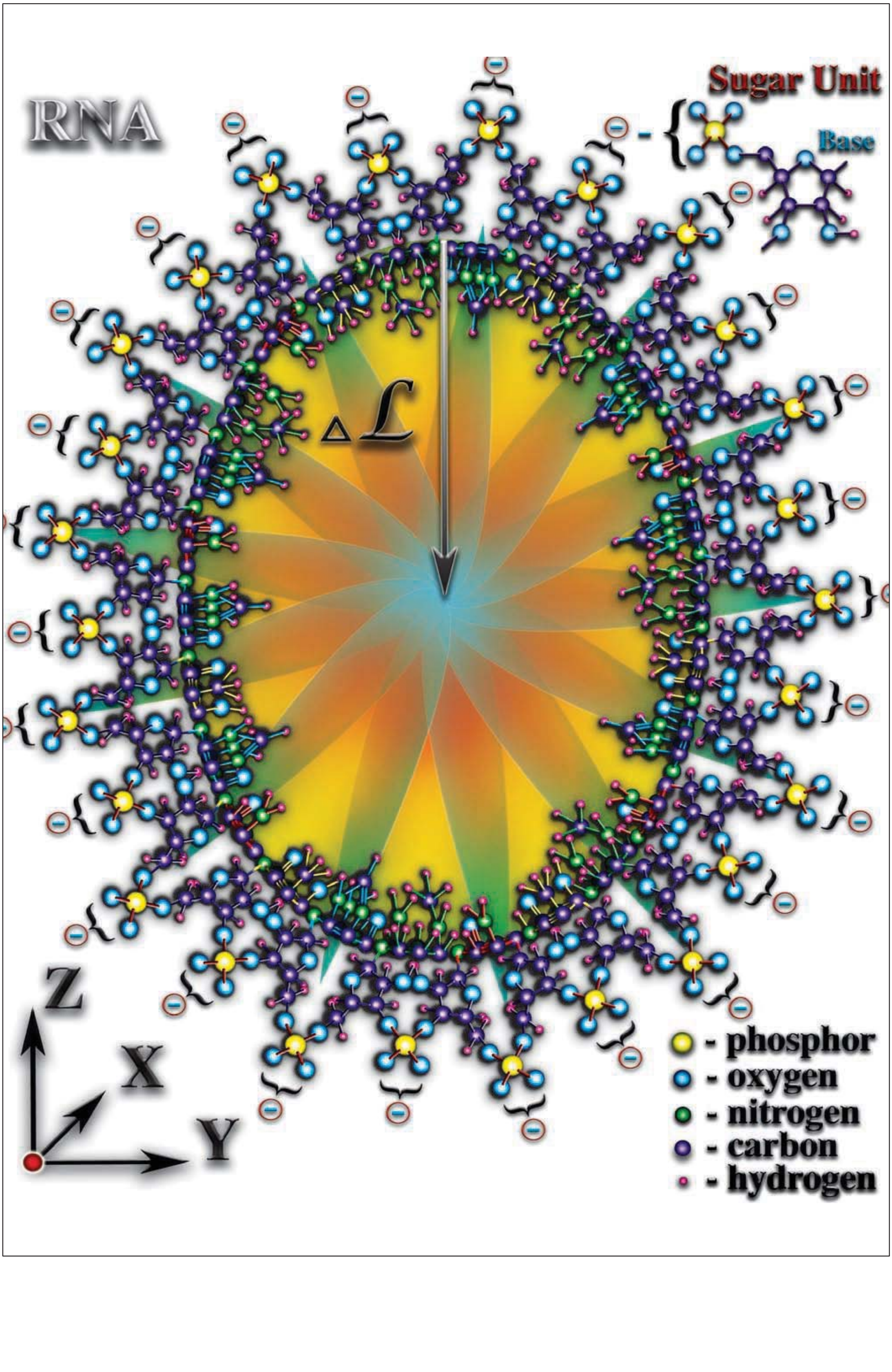
RNA
Sugar Unit
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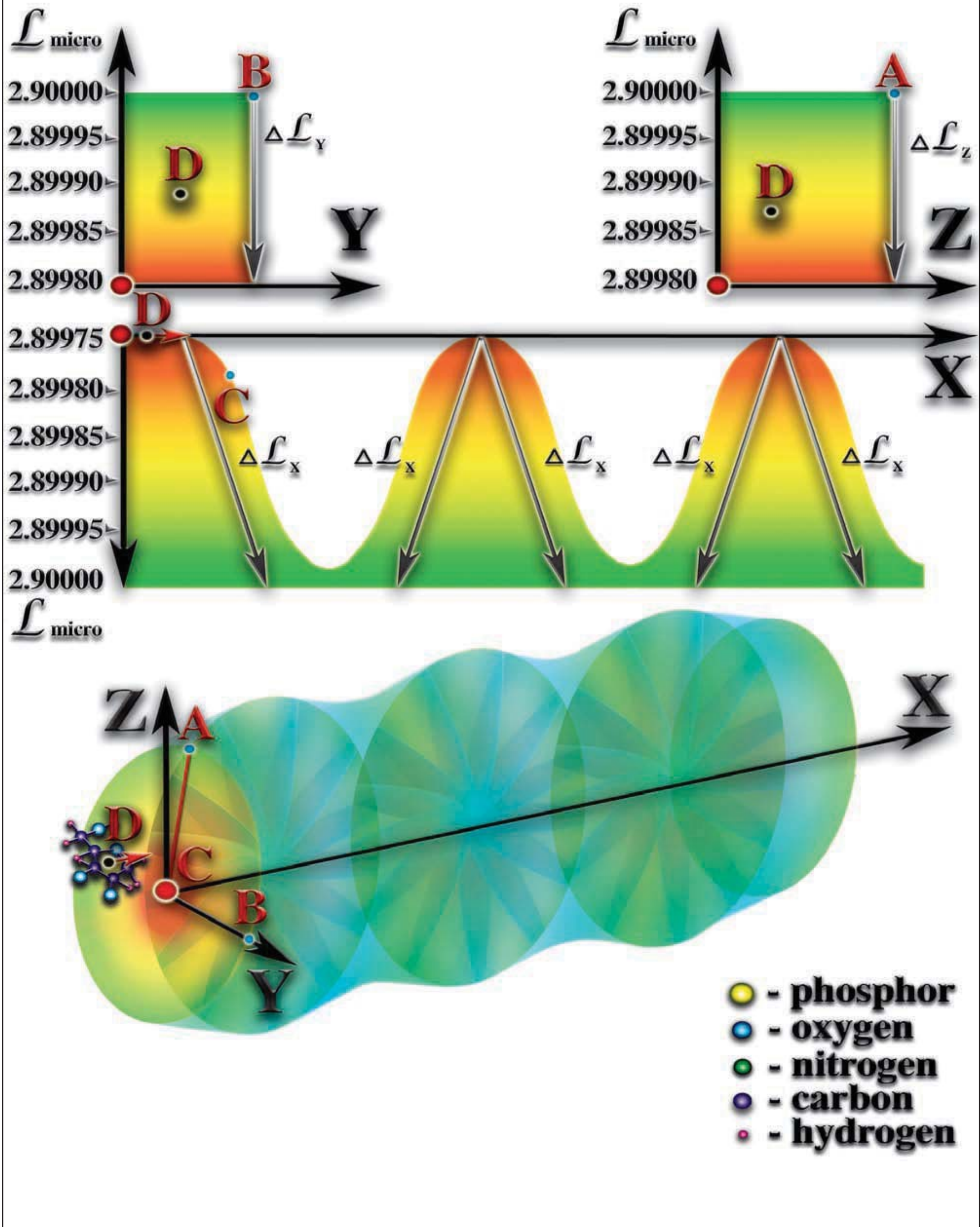

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affects the dimensionality of the microspace around it. A compound of atoms creates a combination of influences of all atoms forming this compound on the dimensionality of the microspace of the molecule. At the same time, the spatial orientation of the influence of each atom in the compound is of great importance. The spiral structure of **RNA** or **DNA** molecules creates conditions under which the influence on the dimensionality of most of the atoms forming them is concentrated in the internal volume of the spirals of these molecules. The dimensionality of the external volume of the spirals of **RNA** or **DNA** molecules undergoes only minor changes. It should be noted that changes in the dimensionality of the internal volume of these spirals are not the same in different spatial directions. Along the axis of the spiral, the spirals create periodically repeating differences in dimensionality. These differences in internal volume create a standing wave of dimensionality (a wave of dimensionality whose parameters do not change over time and space). In radial directions, the spiral of an **RNA** or **DNA** molecule creates a smooth dimensionality gradient. It is precisely the standing wave of dimensionality created by the spiral structure of **an RNA** or **DNA** molecule that is a sufficient condition for the emergence of life. Let's try to figure out why this is so. **RNA** and **DNA** molecules are found in an aqueous environment. Seawater, where life first originated, contains a huge number of molecules and ions of both inorganic and organic origin. All these molecules and ions are in constant chaotic motion. As a result of this motion, molecules and ions periodically enter the internal volume of the **RNA** or **DNA** spiral. And the miracle of life is born!

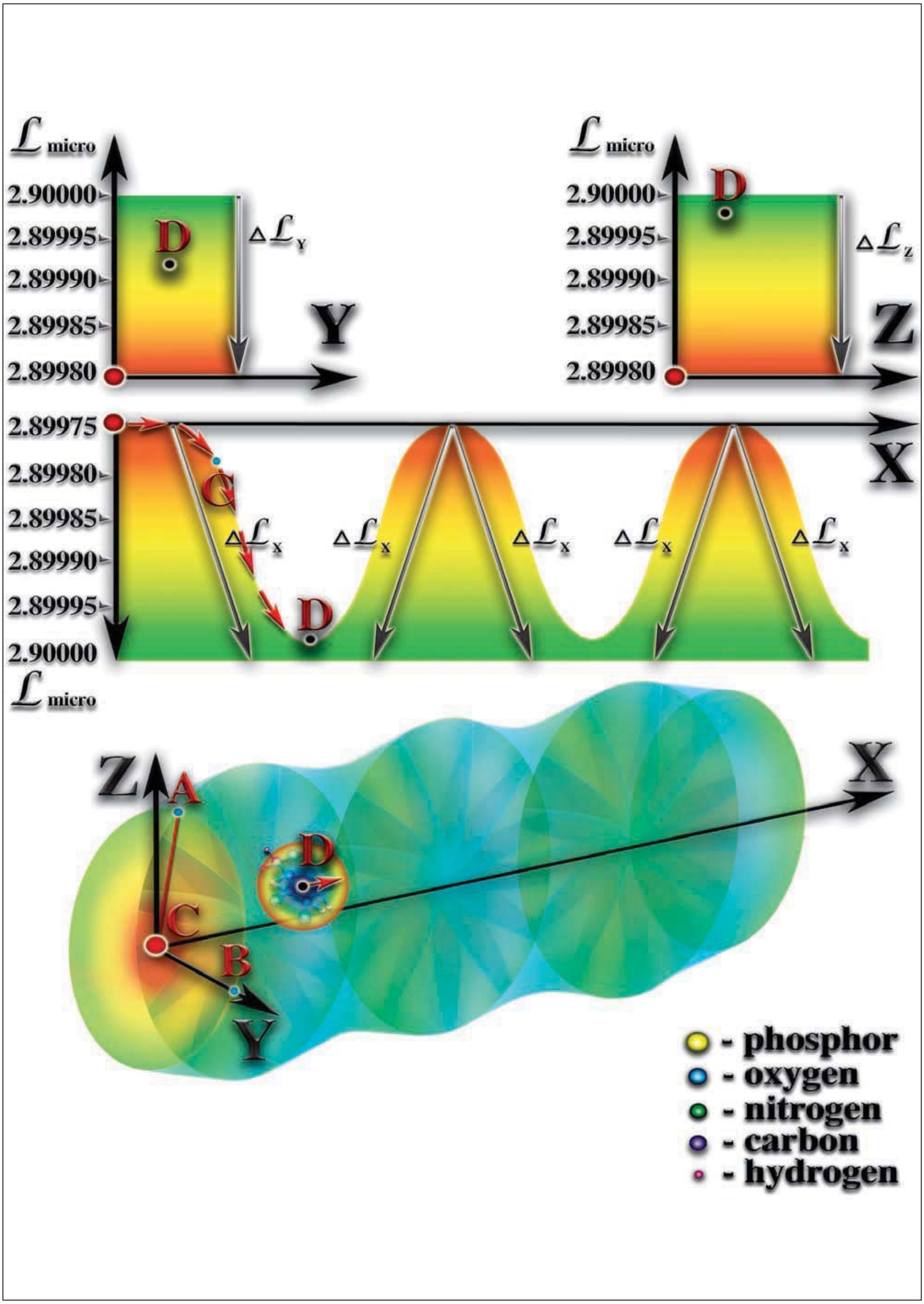
The explanation for this phenomenon is quite straightforward. The internal volume of **the RNA** or **DNA** molecule's helix acts as a trap for any molecules that enter it. The radial dimensional gradient keeps the molecules that have fallen into this trap inside the **RNA** or **DNA** spiral. At the same time, the radial dimensional gradient causes free matter to move along this gradient. As a result, gravitational forces arise that are directed towards the axis of **the RNA** or **DNA** spiral. Therefore, all molecules that have entered the inner volume of the spiral, as a result of Brownian (chaotic) motion, begin to move along the axis of the spiral. Just as the flow of a river carries away everything that enters it, the radial gradient carries away the "captured" molecules. Only very fast molecules can escape this captivity. In doing so, they lose part of their potential. All other molecules begin to move along the axis of the spiral. Along the axis, **the RNA** or **DNA** molecule spiral creates, as you remember, a standing wave of dimensionality. During its

In forced motion along the axis, "captured" molecules enter zones with different dimensions. Each of these molecules has its own level of dimension at which it is most stable, as well as a range of dimension values within which the molecule can exist without disintegrating. And as soon as the "captured" molecules, in their forced movement along the axis, enter a zone with a dimension that is beyond their limits, they become unstable and begin to disintegrate (**Fig. 4.3.8**).

As a result of the disintegration of molecules, all seven primary substances that formed physically dense matter are released. At the same time, some of the released substances recreate new atoms and molecules that have their own level of dimensionality, identical to the dimensionality of the zone of disintegration. Usually, the newly formed molecules do not disintegrate during their forced movement along the axis. Leaving the internal volume of the **RNA** or **DNA** molecule spiral**,** they find themselves in an aqueous environment (**Fig. 4.3.9**). These molecules are often chemically active and, as a result, aggressive, both towards **RNA** or **DNA** molecules and other intracellular formations. Looking ahead, we note that these molecules, which we will refer to as toxins or waste products, are removed from the cell and then from the organism (in the case of a multicellular organism). Let us return to the analysis of the processes occurring within the internal volume of the **RNA** or **DNA** spiral... It turns out that some of the released free matter forms stable atoms and molecules. But what about the rest? What happens to it?

It is at this point in our analysis that we come to understand the mystery of life.

Unrelated matter, through the channel between the physical (first material sphere) and second (second material sphere) levels of the planet, which arises in the inner volume of **the RNA** or **DNA** spiral, begins to flow to other levels. Let us recall that every molecule, especially such huge ones as **RNA** and **DNA,** deforms the microspace around itself. And at the same time, the second material level of the planet is deformed. Moreover, the shape of the deformation completely copies the shape of **the RNA** or **DNA** molecule**,** as well as all other molecules. When potholes (deformations) appear on the road, they fill to the brim with water during rain. If the rain is prolonged, the rainwater, having filled the potholes, begins to flow into the lowlands. Similarly, unbound matter, flowing through the channel to the second material level, completely fills the shape of the deformation. The excess returns to freedom from the captivity of the planet. Only one question arises: what are the



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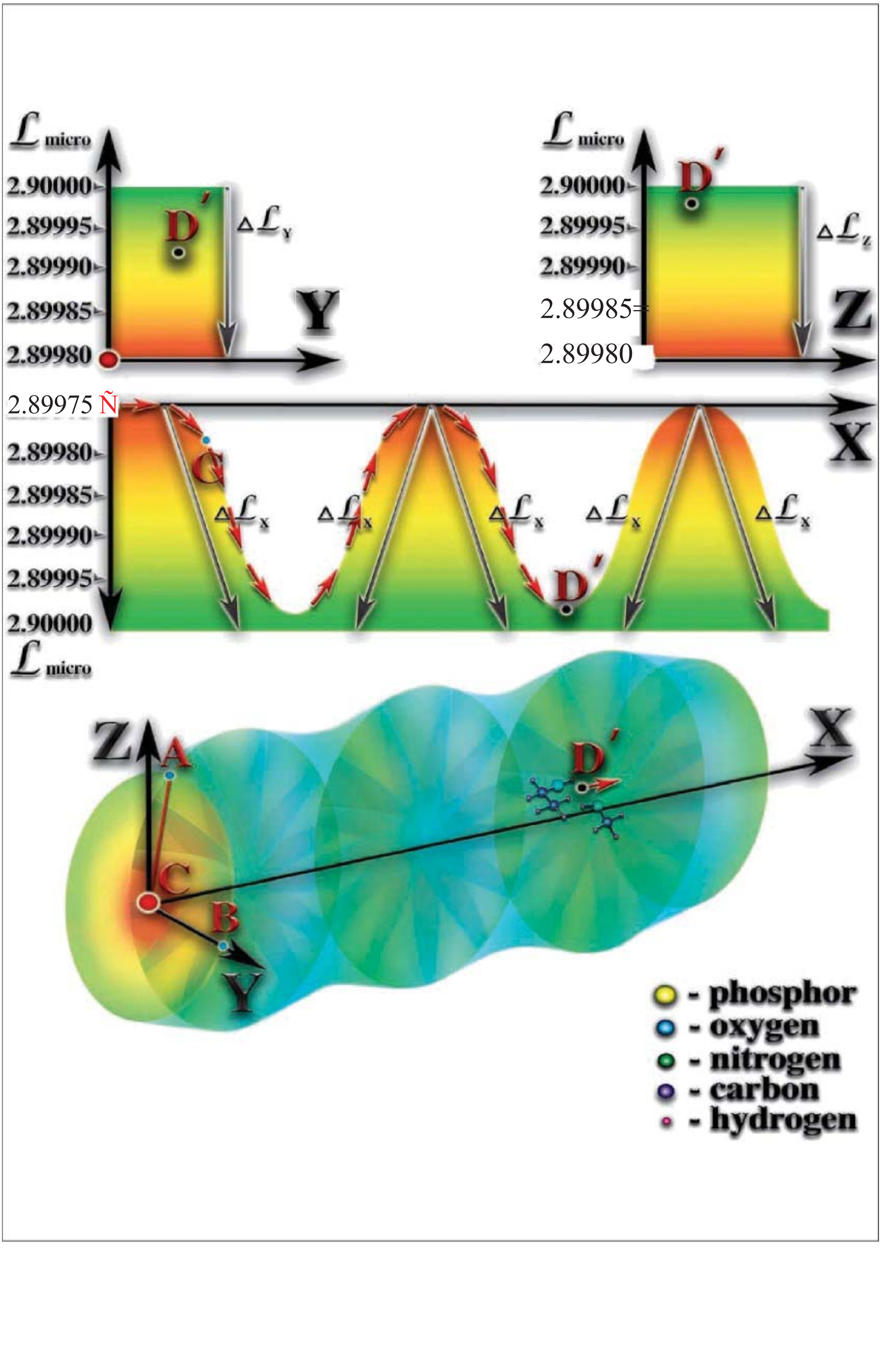

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freed materials and why do they fill this deformation form of the second material level (sphere)?

To answer this question, let us recall that the second material level (sphere) was formed as a result of the fusion of six free forms of matter. Therefore, the deformation of the second material level is filled only by matter **G**, which is the seventh matter and is not part of the hybrid matter of the second material sphere. After the deformation is completely filled with matter G**,** an exact copy of the **RNA** or **DNA** molecule is formed on the second material level (sphere)**.** The so-called second material body of **the RNA** or **DNA** molecule appears **(Fig. 4.3.10)**. With a fully-fledged second material body, the qualitative barrier between it — the second material sphere — and the physically dense body (the first material sphere) disappears, since the system of the second material body plus the second material sphere structurally and qualitatively corresponds to physically dense matter[22]. A permanent channel is formed between the physically dense (first material body) molecule and the second material body of the **RNA** or **DNA** molecule, through which the released matter continues to flow to the second and other material levels of the planet. If the process of decay of "captured" molecules in the internal volume of **the RNA** or **DNA** molecule spiral stops, then the second material body of the molecule will either disappear completely or lose its optimal density. Like a puddle on the road: if there is no new rain, all the water will evaporate from it, and only a hole will remain on the road...

Thus, the constant decay of "captured" molecules in the internal volume of the **RNA** or **DNA** molecule spiral is a necessary condition for sustaining life. The emergence of the second material body is a qualitatively new step in the evolution of matter. Captured matter has found a way to free itself from its prison. And this liberation is living matter.

The appearance of the second material body is **the beginning of the evolution of living matter**.

Viruses were the first living organisms. A virus is an **RNA** molecule surrounded by a protein shell. The protein shell creates a stable environment around the **RNA** molecule, creating a kind of microclimate around the **RNA** molecule due to the fact that the protein shell slows down the movement of molecules, both inside itself and outside.

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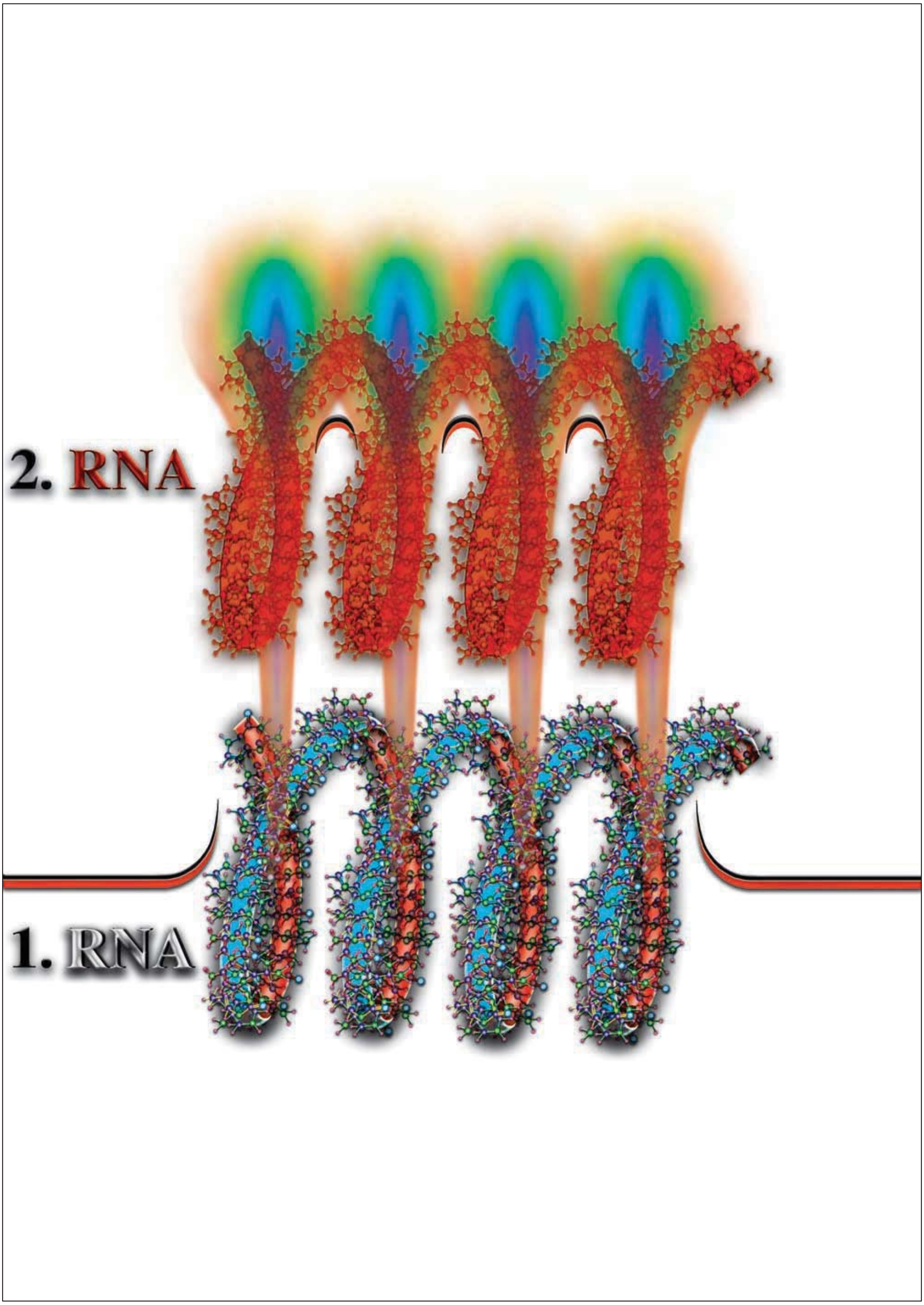
22 "The DNA PHANTOM EFFECT: Direct Measurement of A New Field in the Vacuum Substructure," by Dr. Vladimir Poponin, 1996.


2. RNA
1. RNA

themselves. Therefore, molecules that enter the protein shell and collide with it during their movement can ricochet off it many times before leaving the internal volume of the protein shell. Repeated multiple movements of molecules that have entered the protein shell increase the probability that they will enter the "sphere of influence" of the **RNA** molecule and, as a result, be drawn into the internal volume of the **RNA** molecule and begin their forced movement along the optical axis of this molecule, coming under the influence of a standing wave of dimension. This ultimately leads to their disintegration into the matter that forms them. The internal volume of the **RNA** molecule**,** like a vacuum cleaner, sucks in all the molecules that come under the influence of the radial dimensional gradient created by **the RNA** molecule's spiral**.** Just like **RNA** molecules**,**

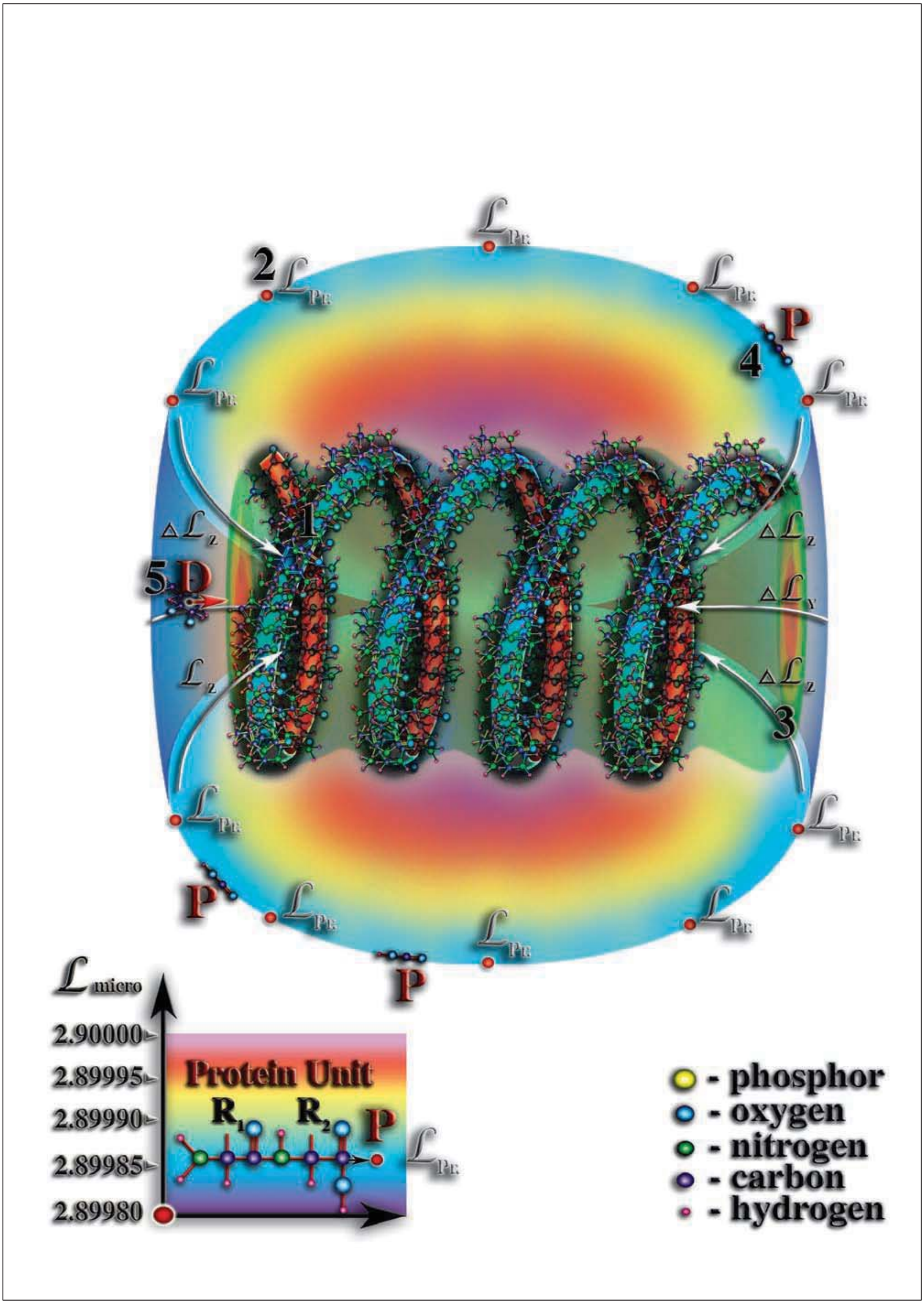
The "black holes" of the macrocosm create a sphere of influence around themselves, within which any matter, including electromagnetic waves, is unable to escape. A black hole in the macrocosm creates a powerful radial gravitational field (radial dimensional gradient) around itself, causing the decay of any matter. Similarly**,** the internal volume of the **RNA** or **DNA** molecule spiral creates similar conditions, leading to the decay of captured molecules under the action of a standing wave of dimension. The spiral of these molecules behaves identically to the "black hole" of the macrocosm, which allows us to call the **RNA** or **DNA** molecule

a "black hole" of the microcosm.

Thus, the appearance of a protein shell around the **RNA** molecule was the next stage in the evolution of matter from an inanimate form to a living one. It is with the appearance of this shell that we can speak of a qualitatively new stage in the evolution of matter — the stage of the evolution of living matter. The standing wave of dimensionality that arises in the internal volume of an **RNA** or **DNA** molecule**,** while a necessary condition for the emergence of life, is not sufficient because the concentration of organic molecules in the primordial ocean was very low. Therefore, without additional accumulation of organic molecules near the **RNA** molecule, there could be no question of their constant capture by this molecule with subsequent decay into the matter that forms them. The question arises: how could a protein shell appear on an **RNA** molecule? What miracle had to happen for this to occur? The answer to these questions, oddly enough, is very simple. Proteins, like all organic molecules, arose in the saturated solution of the primordial ocean as a result of atmospheric electrical discharges. Proteins themselves are large molecules, sometimes consisting of tens of thousands of atoms, and during their free (Brownian) motion

In the waters of the primordial ocean, once they enter the "gravitational field" of an **RNA** molecule, they cannot be drawn into the internal volume of this molecule because proteins themselves are enormous molecules and simply cannot fit into the internal volume of an **RNA** molecule. But this does not mean that the **RNA** molecule does not affect protein molecules. The radial dimensional gradient created by the **RNA** molecule's helix nevertheless captures **the primary structures** of protein molecules with its "gravity" and makes them its constant "companions," as happens when a large material body (e.g., a planet) captures a smaller one (**Fig. 4.3.11)**. Once again, there is a striking parallel between the macroworld and the microworld. Thus, the capture and retention of the primary structures of protein molecules by **the RNA molecule** became the condition that led to the formation of a protein shell around this molecule. Over time, the number of proteins accompanying the **RNA** molecule increased, and their "orbits" were comparable due to the similar values of their intrinsic dimensions. As a result, neighbouring companion proteins were at such a distance from each other that conditions arose for the occurrence of so-called chemical reactions between them (**Fig. 4.3.12)**. Chemical reactions between **the primary structures** of satellite proteins led to the formation of stable electronic bonds between them, and they fused into a single entity. Gradually, a continuous protein shell formed around the **RNA** molecule. As a result, the satellite proteins imprisoned their captor, the **RNA** molecule, within their own "prison" **(Fig. 4.3.13)**. Thus, a stable system of molecules
— the **RNA** molecule and its protein shell. The first living organ
ism — virus. Now it is time to consider another quality of living matter — **reproduction**. At the viral level, we can talk about viruses duplicating themselves, as a result of which the appearance of one living organism became a natural result of the vital activity of another.

Let's take a closer look at the nature of this phenomenon. The single protein shell that forms around the **RNA** molecule is not continuous in nature, but rather represents a mesh around the **RNA** molecule**.** The cells of this "mesh" are not identical, which allows molecules of different sizes to enter the protein shell. Small molecules, most of which are inorganic, can quite freely leave the internal volume of the protein shell during their chaotic movement, since most of the cells of the virus's protein shell exceed their size. Meanwhile, large and medium-sized organic molecules are trapped inside the protein shell by this "dragnet," since the probability that a given molecule will enter, at



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Protein Unit
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- carbon
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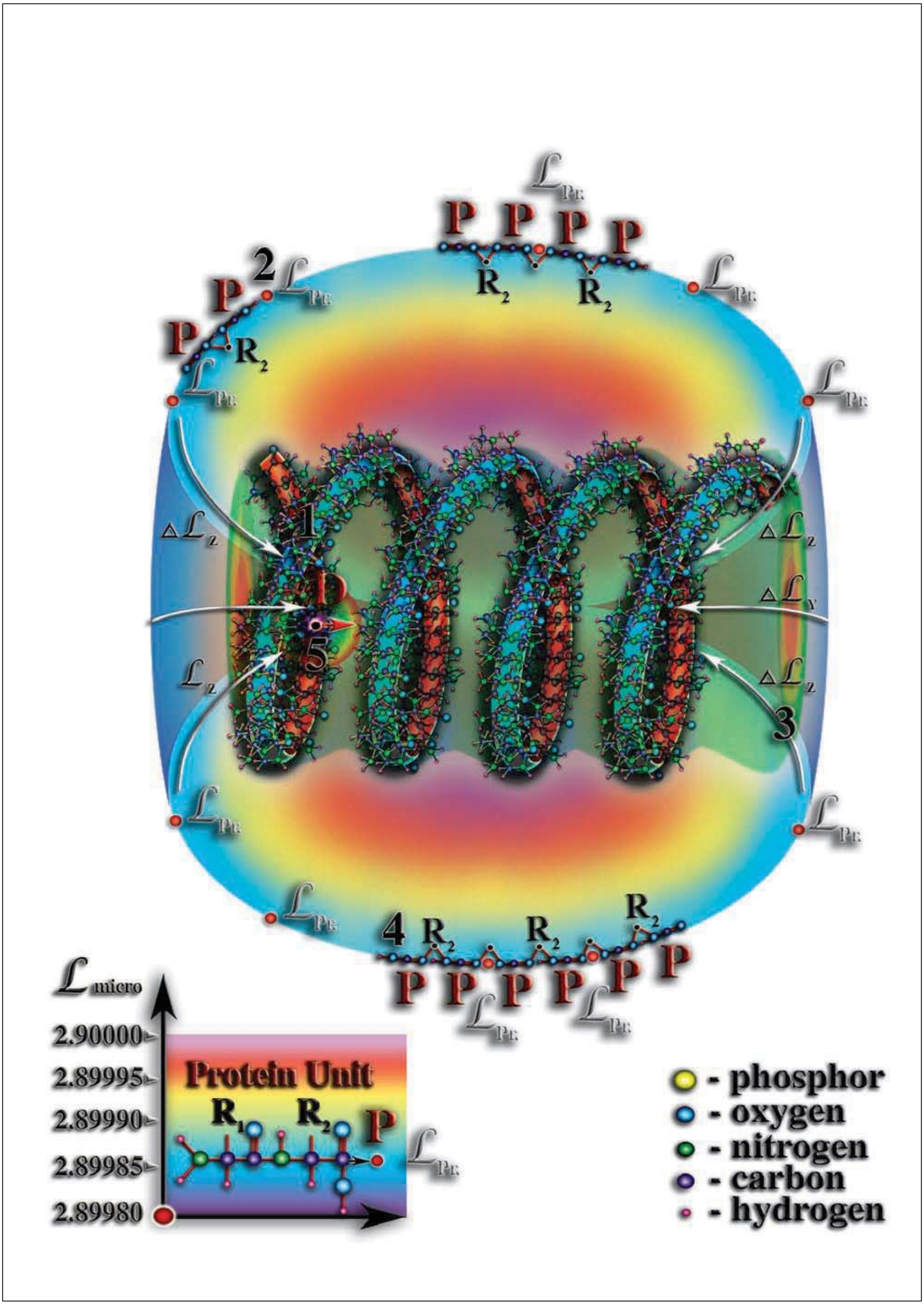

Protein Unit
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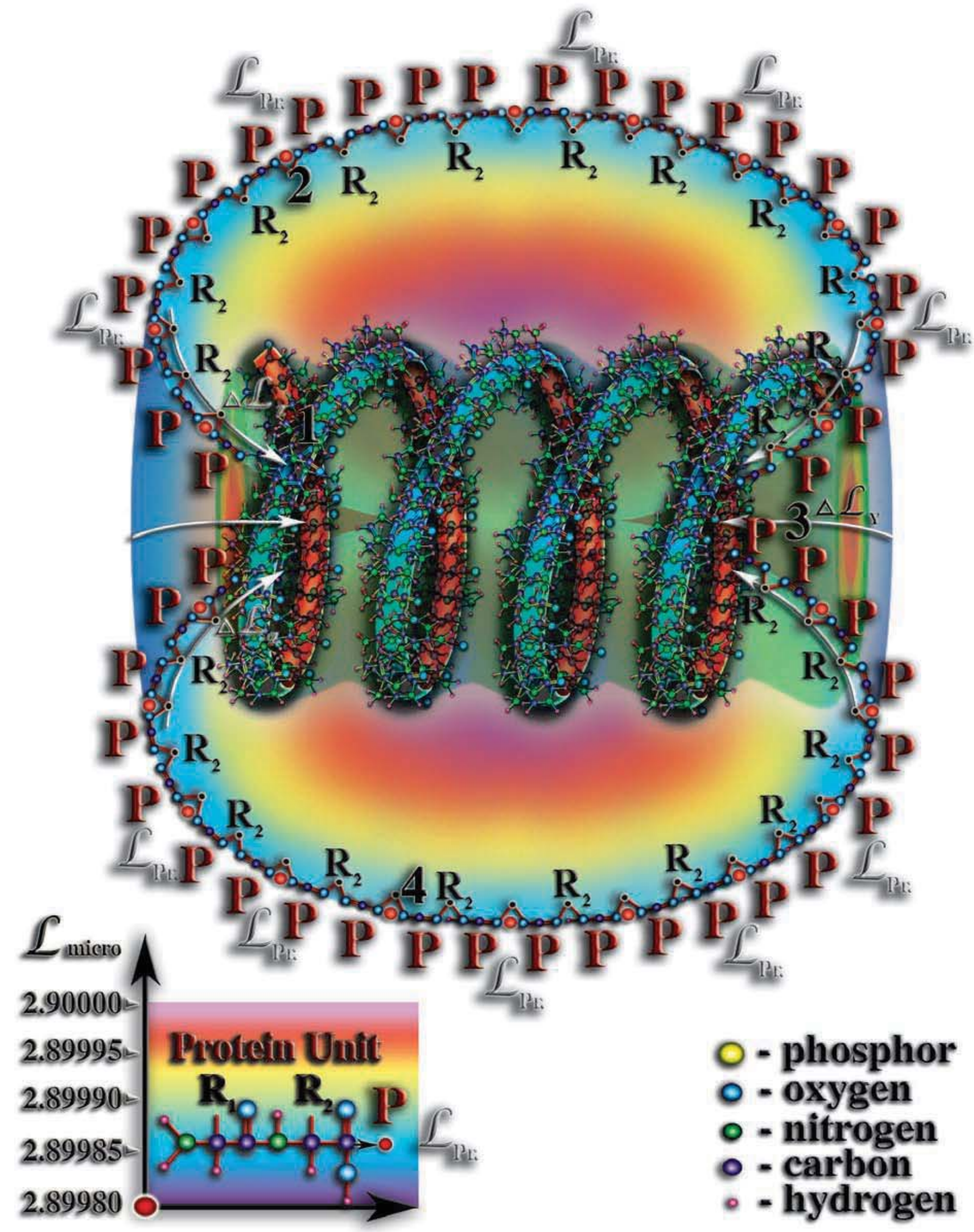

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its chaotic movement into the same cell through which it entered is very small. As a result, organic molecules accumulate inside the protein shell of the virus. A peculiar filtration of water from the primordial ocean occurs through the internal volume of the protein shell of the virus. This process can be considered as the primary nutrition of the first living organism. Some of the organic molecules captured in this way fall within the range of the radial dimensional difference of the RNA molecule spiral, are drawn into the internal volume of the spiral and disintegrate there into the matter that forms them. If the water of the primordial ocean is sufficiently saturated with organic molecules, the concentration of organic molecules inside the protein shell gradually increases. As the concentration of organic molecules inside the protein shell increases, so does the number of molecules that fall into the "gravitational pull"
"black hole" of the microcosm — the internal volume of the RNA molecule
.

It should be noted that various organic molecules accumulate inside the protein shell, including nucleotides — the building blocks of **RNA** and **DNA** molecules. Gradually, the concentration of organic molecules inside the protein shell reaches such a level of density that the organic molecules that have entered the internal volume undergo constant decay. As a result, the flow of primary matter released during decay from the physically dense level to the second material level increases. This leads to excessive saturation of the second material body of the **RNA** molecule**.** Excessive saturation of the second material body leads to the appearance of a reverse flow of primary matter G from the second material level to the first. As a result, a projection of the second material body appears at the physical level. Among the organic molecules that saturate the internal volume of the protein shell of the virus, there are also nucleotides, which are the building blocks for **RNA** and **DNA** molecules**.** Therefore, when the projection of the second material body appears, the necessary conditions arise at the physical level for the connection of individual nucleotides into the spiral of the virus **RNA** molecule.

The projection of the second material body on the physical level corresponds to the exact order of nucleotides in the **RNA** molecule, therefore it creates additional distortions of the dimensionality of microspace on the physical level, in accordance with the qualitative characteristics of the corresponding nucleotides that form the initial the so-called maternal **RNA** molecule. An exact matrix of the maternal **RNA** molecule appears next to it. Free nucleotides, entering this matrix, begin to connect with each other in the same order as in the maternal **RNA** molecule. The induced matrix forces the free nucleotides to connect in a given order. This is because the projection of the second material body on the physical level creates such a change in the dimensionality of the microspace that the free nucleotide molecules cannot connect in any other order. As a result of this forced connection of free nucleotide molecules, **a new RNA molecule** appears on the physical level**,** which is an exact copy of the parent molecule.

But why can't nucleotides connect in a different order? The answer to this question is very simple. Each nucleotide has its own level of dimensionality, which differs from that of others, so in order for two nucleotides to connect with each other, it is necessary to create an additional change in the dimensionality of the microspace. Moreover, for different pairs of nucleotides, the magnitude of this additional change in the dimensionality of the microspace will be different. Therefore, when a sufficiently dense projection of the second material body of the **RNA** molecule of the virus arises at the physical level, the initial level of dimensionality of the microspace in the projection zone changes in exact accordance with the code of the **RNA** molecule of this type. This leads to the fact that only the nucleotide whose parameters are identical to those of a given area of microspace can "occupy" a given place. Each nucleotide literally "sits" in a "nest" specially prepared for it. As a result of this process, two identical **RNA** molecules of this virus appear. This is followed by the stage of creating a new **RNA** molecule of the protein shell, using the same principle as the parent **RNA** molecule of the virus from the proteins accumulated in the protein shell of the parent virus. A similar process will occur every time a sufficient amount of organic molecules — the "building material" of the required quality — accumulates inside the protein shell of the virus. The process of virus duplication (or reproduction) takes place. As a result of this process, organic matter that arose in the primordial ocean from inorganic matter, under the influence of atmospheric electrical discharges, is reorganised into the simplest self-organising living matter. Thus, the first primitive living organisms appeared — viruses, whose evolution led to the diversity of plant and animal life forms, first in the world's oceans and then on land.

The next evolutionary step in the development of life was the emergence of bacteriophages, an intermediate link between viruses and bacteria — the simplest single-celled organisms. The question may arise: how did life evolve further from a virus to a bacteriophage, and from a bacteriophage to a single-celled organism? Again, there is no room for miracles; everything is very simple and at the same time wonderful. The multiplied viruses filled the upper layer of the primordial ocean to a depth of no more than one hundred metres. This depth (one hundred metres) of virus penetration into the world ocean is due to the fact that the synthesis of organic molecules occurs during atmospheric electrical discharges, which affected only the surface layer of the primordial ocean.

Firstly, and secondly, it was precisely the upper layer of the ocean that was in constant motion, under the influence of winds and tides, and sunlight penetrated to this depth. So, viruses "floating" in the surface layer of the primordial ocean periodically found themselves in the zone of atmospheric electrical discharges. Atmospheric discharges cause a change in the dimensionality of space in the areas they pass through, thereby creating conditions for the synthesis of organic compounds. But what happens if a virus enters the zone of an electrical discharge? Of course, if a virus is directly exposed to an electrical discharge, it will be completely destroyed. What will happen if the virus enters the peripheral zones of the atmospheric discharge? Will any changes occur? When the dimensionality of the space around and inside the virus changes, several processes may occur:

1. A change in the order of nucleotide connections in the existing **RNA** molecule of the virus.

2. An increase or decrease in the number of nucleotides in the existing **RNA** molecule of the virus.

3. The emergence of chemical bonds between the existing **RNA** molecule of the virus and other **RNA** molecules that were inside the protein shell of the virus at the moment of the electrical discharge or appeared in it as a result of the electrical discharge.

When the order of nucleotides in the **RNA** molecule of the virus changes , a new virus appears as a result of so-called mutations.

When the number of nucleotides forming the **RNA** molecule of a virus decreases, the latter may lose the qualities of living matter, since, in order to manifest the properties of living matter, the **RNA** molecule must reach a critical molecular weight. Viruses are a borderline form of matter organisation between living and non-living. In order to manifest the properties of living matter, the **RNA** molecule of a virus must reach a certain molecular mass, at which point a qualitative barrier between the first and second material spheres opens. At a lower molecular mass, the qualitative barrier does not open. That is why, if the virus is removed from water, it transitions to a crystalline state, since outside of water, the **RNA** molecule of the virus loses the H and **OH** groups from its external electronic bonds, which significantly affects its molecular weight and, as a result, the qualitative barrier is restored and the properties of living matter disappear. When it enters water, the virus **RNA** molecule restores its chemical bonds, as a result of which the H and **OH** groups attach to it, and the molecular weight increases again. When a critical molecular weight is reached, a qualitative barrier between the first and second material spheres opens, and the properties and qualities of living matter reappear. Thus, a very important factor determining the possibility of the emergence of life is molecular weight, or more precisely, there is a qualitative boundary of the molecular weight of **RNA** or **DNA** molecules, the so-called critical molecular weight, at which the evolution of matter reaches a qualitatively new stage of evolution — **the evolution of living matter.**

If, under the influence of atmospheric electrical discharges, the number of nucleotides in the **RNA** molecule of the virus increases, several interesting things happen. First, the appearance of "extra" nucleotides leads to the birth of a new virus, a new mutation. Secondly, an increase in the number of nucleotides leads to an increase in the molecular weight of the **RNA** molecule, which in turn increases its influence on the surrounding microspace, leading to an increase in the size of the protein shell. The increase in the size of the protein shell is due to the fact that the heavier **RNA** molecule of the virus has a greater impact on the surrounding microspace. As a result, the satellite proteins that form the virus envelope are captured by the "gravitational field" of the **RNA** molecule at a greater distance from it, which leads to the heavier **RNA** molecule having a larger protein envelope. A larger protein shell allows it to accumulate more organic molecules inside itself and allows for the creation of a more stable internal microclimate. If, during atmospheric electrical discharges, stable chemical bonds form between two **RNA** molecules**,** a molecule appears that is a spatial-chemical compound of two spirals — a so-called double-stranded **RNA** molecule appears**, and** under certain conditions**,** a **DNA** molecule appears**.** The emergence **of DNA** opens a new era in the development of living matter — from single-celled organisms to multicellular organisms, etc., until the emergence of intelligent living matter. The double helix of the **DNA** molecule creates a more pronounced deformation of the microspace around itself, which accelerates the process of decay.

"Captured" molecules on the matter that forms them, due to the fact that during their forced movement in the internal volume of **DNA** molecule spirals, "captured" molecules are subjected to the impact of two standing waves of dimension, while **RNA** molecules have only one standing wave of dimension. The double standing wave of the **DNA** molecule thus accelerates the process of decay of the "captured" molecules, thereby increasing the efficiency of the entire system as a whole. In addition, the double helix of the **DNA** molecule has such an effect on its microspace that the protein shell arises at a much greater distance from the molecule itself, which allows a significantly larger number of captured organic molecules to accumulate inside such a shell.

This is a crucial factor for sustaining life.

The large protein shell "filters" a greater amount of seawater with organic molecules "floating" in it, which arise during atmospheric electrical discharges. This is natural: a large net can catch more fish. Only in this case, the net is a protein shell, and the fish are organic molecules "floating" in the primordial ocean. In addition, the double helix of the **DNA** molecule creates conditions for the emergence of a multi-layered shell, the so-called membrane. During evolution, the membrane formed from three layers: two protein layers and one fat layer. Moreover, the fat layer is located between the two protein layers. The spirals of the **DNA** molecule are spatially displaced relative to each other. Therefore, each of these spirals creates its "own" protein shells, which are also displaced relative to each other and, in addition, one inside the other. Two protein "crepe" walls are formed around the **DNA** molecule**.** As a result, organic and inorganic molecules are forced to seep through the barriers to get into the inner volume of the shell. When passing through double barrier, these molecules lose their kinetic energy. As a result, they are practically unable to break back through the shells. Thus, the water of the primordial ocean is filtered and organic molecules accumulate inside the shells. A gap forms between the nested protein shells. And any molecule, after passing through the outer protein shell, enters the space between the outer and inner shells. The intrinsic dimensionality level of protein shells is significantly higher than that of ocean water. Therefore, a double insignificant dimensionality difference arises with a zone of stable equilibrium between them. As they move, all molecules must overcome these dimensional differences and enter a "neutral" zone with a dimensional level lower than that of the protein shells themselves. This is why fat molecules, when they enter the gap between the protein shells, enter a zone with a dimensionality level very close to the dimensionality level of the fat molecules themselves. The fat molecules begin to settle in the space between the protein shells, gradually filling the gap. At the same time, fat molecules connect with each other, creating a fat layer between the protein shells. Over time, chemical bonds form between the fat layer and the protein shells. As a result, a three-layer shell — **a membrane —** is formed. With the appearance of a three-layer shell, we can talk about the next stage in the development of living matter — **the emergence of single-celled organisms.** Their advantage over viruses is that the multilayered cell membrane creates a stable chemical environment inside the cell. In addition, the cell membrane protects against the aggressiveness of the external environment, creating favourable conditions for the further evolution of life. The hydrophobic (water-repellent) properties of the membrane's lipid layer created favourable conditions for organic molecules to penetrate the shell, making it difficult for water molecules to penetrate the shell. The fact is that the internal volume of the shell is limited, and therefore, if a water molecule enters it, which occupies a small but nevertheless real volume of space, there is no room left for organic molecules, which are much larger and, because of this, move much slower than water molecules. Thus, the appearance of the fat layer of the shell has practically equalised the chances of organic and inorganic molecules. Such a shell "holds" some of the water molecules, creating favourable conditions for the penetration of organic molecules. This is a huge achievement, but, as with any achievement,

, single-celled organisms had to pay a high price for it. If viruses can exist for millions and billions of years, periodically being in a living or crystalline state, then single-celled organisms, like then and multicellular, became
"mortal". In a "young" single-celled organism, the thickness and density of the fat layer of the membrane is relatively small, which allows water molecules to enter the shell. Over time, the fat membranes oxidise, which makes the membrane more hydrophobic. Also, the fat layer of the membrane gets thicker as the protein membranes keep grabbing new fat molecules from the environment. As a result, the circulation of substances through the membrane gradually slows down and then stops completely. When the internal volume of the cell loses a certain amount of water, the cell's vital activity ceases and the cell dies. Thus, **single-celled organisms became mortal,** i.e. they can only exist for a limited time.

The appearance of the three-layer membrane gave a tremendous boost to the development of life and, at the same time, created temporary limitations on the duration of the life of single-celled organisms. Unlike viruses, they died when they lost water. Therefore, the first single-celled organisms could only exist in the waters of the primordial ocean. The movement of the upper layers of the primordial ocean led to single-celled organisms of the same type being exposed to different external conditions. The influence of different external conditions on similar single-celled organisms created conditions in which they either died or changed. Plant and animal single-celled organisms appeared. The diversity of external conditions gave rise to a diversity of forms of plant and animal organisms. A primitive ecological system began to form. The ability of single-celled animal organisms to move independently gave a new impetus to the evolution of life. Single-celled animal organisms thus gained some independence from the vagaries of the external environment. The primitive ocean still contained very few organic substances, and it was very difficult for the first single-celled organisms to "catch" the organic substances necessary to sustain their life in the surrounding water. Let us recall the conditions under which organic compounds arise from inorganic molecules of carbon, oxygen, nitrogen, hydrogen, and others... This occurs when water saturated with inorganic molecules and atoms is penetrated by electrical discharges.

arising as a result of the static electricity difference between the atmosphere and the surface. Electrical discharges distort the microcosm, creating conditions for carbon atoms to combine into chains — organic molecules. Thus, for the synthesis of organic molecules to occur, the dimensionality of the microcosm must change by a certain amount:

$$\Delta L \approx 0.020203236... \quad (4.3.1)$$

And in order for the first single-celled organisms to be able to restore and preserve their structure, the synthesis of the simplest organic compounds within the single-celled organisms themselves is necessary. The emergence of the synthesis of the simplest organic molecules from inorganic ones is possible when the dimensionality of the microcosm changes by an amount ΔL/2.

No simple (or even complex!) living organism is capable of creating an electrical discharge similar to that found in the atmosphere. In the course of evolution, an intermediate variant arose in simple single-celled organisms, providing the necessary **ΔL** value. Let us recall that each molecule and atom influences and distorts its microcosm by a certain amount. Organic molecules have the greatest influence on the microcosm. Large organic molecules, such as **DNA** and **RNA**, exert such an influence on the microcosm that, under the influence of dimensionality differences created by the standing wave of the dimensionality of the internal volume of the **RNA** or **DNA** molecule spiral, simple organic molecules undergo decay rather than synthesis. Let us recall that the synthesis of organic molecules from inorganic ones initially occurred during atmospheric electrical discharges, which created the level of dimensionality necessary for carbon atoms to combine into chains. Therefore, for the synthesis of organic molecules to occur inside the cell, processes similar to those listed above must take place. A cell is not capable of creating an electrical discharge similar to atmospheric electricity, but nevertheless, the process of organic molecule synthesis occurs within it. How did nature solve this problem? Once again, it is quite simple.

To synthesise organic molecules from inorganic ones, it is necessary to create periodic oscillations of the microcosm's dimensionality within the range of **0**
< ΔL < 0.020203236, which will be superimposed on the existing curvature of space created by cellular inclusions.

this, a periodically changing value is superimposed on a constant level of dimensionality. And for a short time, conditions necessary for the synthesis of organic molecules arise in a microscopic volume of space. Atmospheric electrical discharges occur at the macro level, and the synthesis of organic molecules by cells occurs at the micro level. In the first case, synthesis is a side effect, in the second — a direct one. For this to happen, the cell must have molecules whose own dimensionality level, plus periodic dimensionality fluctuations coming from outside the cell, would together create the necessary conditions for synthesis. Medium-sized organic molecules have such an effect on the microcosm. It would seem that everything is very simple... In single-celled organisms, there should be molecules that are approximately an order of magnitude smaller than **DNA** and **RNA** molecules, and the problem is solved... But it is not that simple. Each molecule changes the microcosm around it, but this change remains unchanged as long as the integrity of the molecule itself is preserved. For the synthesis of organic molecules to occur, there must be a fluctuation in the dimensionality of the microcosm with an amplitude of:

$$\mathbf{0 < \Delta L < 0.010101618...} \qquad (4.3.2)$$

Fluctuations in the dimensionality of the microcosm must be at least periodic in order for normal conditions for the synthesis of organic molecules to arise. For this to happen, there must be molecules that change with minor changes in the external environment and cause the necessary fluctuations in the dimensionality of the microcosm within single-celled organisms. These environmental influences (radiation) must not destroy the single-celled organisms themselves, but must be able to freely penetrate their membranes. The external factors that meet all these requirements are the weak thermal and optical radiation of the Sun, while the other part of solar radiation for organic compounds and organisms (X-rays and gamma rays) is destructive. And once again, salvation lies in water... Ocean water absorbs X-rays and gamma rays and transmits the Sun's thermal and optical radiation, which can also freely penetrate single-celled organisms. Thus, the following conditions are necessary for the intracellular synthesis of organic compounds to occur:

a) the presence of organic molecules within single-celled organisms that can easily change their structure within certain limits when changes in external factors, which leads to fluctuations in the dimensionality of the microcosm in the range **$0 < \Delta L < 0.010101618...$**

b) the presence of external factors that can cause the necessary changes in the structure of these molecules without destroying the molecules, as well as the single-celled organisms themselves (weak thermal and optical radiation from the Sun).

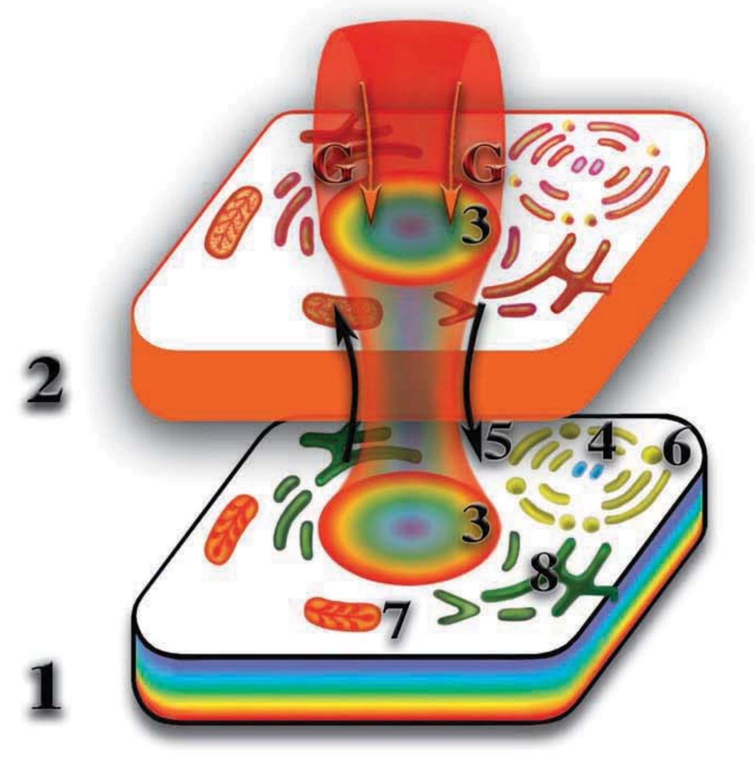
During evolution, the molecule necessary for this appeared — the chlorophyll molecule. Chlorophyll molecules, absorbing part of the optical and thermal radiation, change their structure, creating new compounds, which in turn are very unstable, and the absorption occurs in portions, so-called photons. These compounds disintegrate as soon as the action of thermal and optical radiation ceases, and it is this that causes the necessary vibrations in the microcosm, which are so necessary for the synthesis process to occur within single-celled organisms. By absorbing photons of solar radiation, the chlorophyll molecule causes vibrations in the dimensionality of the microcosm. This is due to the fact that when photons are absorbed by the atoms of the chlorophyll molecule, electrons move to other orbits. At the same time, the chlorophyll molecule attaches **OH** and **H** groups to the resulting electronic bonds, which leads to a fluctuation in molecular weight. As a result, the dimensionality of the microcosm fluctuates, creating the necessary conditions for the synthesis of organic compounds. The accumulated potential of the chlorophyll molecule is lost during synthesis and returns to its original, more stable state, ready for new photon absorption. Synthesis occurs with the absorption of carbon dioxide (**CO_2**) from the environment and, as a by-product, oxygen (**O_2**) is released. This is known as photosynthesis. Consequently, during the course of evolutionary development (thanks to chlorophyll molecules), the simplest single-celled organisms acquired the ability to synthesise organic compounds necessary for the restoration of their structure and life by absorbing sunlight.

The connection of single-celled organisms by cell membrane projections into a single conglomerate (e.g., Volvox) caused another evolutionary leap in life. The fusion of single-celled organisms through cell membrane extensions caused another explosion in the development of life. Temporary connections turned into a permanent symbiosis of single-celled organisms. From this point in the evolution of life, we can talk about multicellular organisms.

The outer cells of a multicellular conglomerate were exposed to the external environment, which was often aggressive, while the inner cells of a multicellular organism had an environment consisting of other cells. As a result, over time, the cells of multicellular organisms began to perform different functions and acquired different appearances. In the course of evolution, new species of multicellular organisms appeared, while old ones disappeared. More sophisticated ecological systems replaced simpler ones. Over time, life emerged from its cradle — the ocean — and colonised the land. But all this happened on a physically dense level. How did these evolutionary processes affect other levels of the planet?

Let us recall that an **RNA** or **DNA** molecule at the second material level creates an exact copy of itself from a single substance. This copy is the so-called second material body of this molecule. A single-celled organism (cell), in addition to **DNA** molecules that form the chromosomes of the cell nucleus, includes a number of organic inclusions (Golgi apparatus, mitochondria, centrioles, endoplasmic reticulum, etc.), as well as organic and inorganic molecules. The latter participate in intracellular biochemical reactions. So, all cellular inclusions also have an effect (i.e., deform, distort) on the surrounding microspace. The difference between their influence and that of **RNA** and **DNA** molecules is that most of them (with the exception of mitochondrial **RNA**) do not create a qualitative barrier between the physical and second material levels. Therefore, on the second material level, all these deformations, taken together, create an exact copy of a physically dense cell (**Fig. 4.3.14)**. Just as footprints on wet ground repeat the shape of the feet, so the second material body of the cell is a complete copy of the physically dense cell. The only difference is that the second material body of the cell is formed from one primary matter, while the physically dense cell is formed by the fusion of seven primary matters. Thus, a system of a physically dense cell and a second material body of the cell is formed. In a physical cell, processes of splitting physically dense matter are constantly taking place. Primary matters are released and begin to circulate between levels through a channel created by the cell nucleus, forming a protective shell around the cell.

How does the protective shell of the cell arise from the primary matter ejected through the channel? What natural or divine forces "took care" of such protection for living creatures? And again, unfortunately for many, there is no divine origin in this. Everything, as always, is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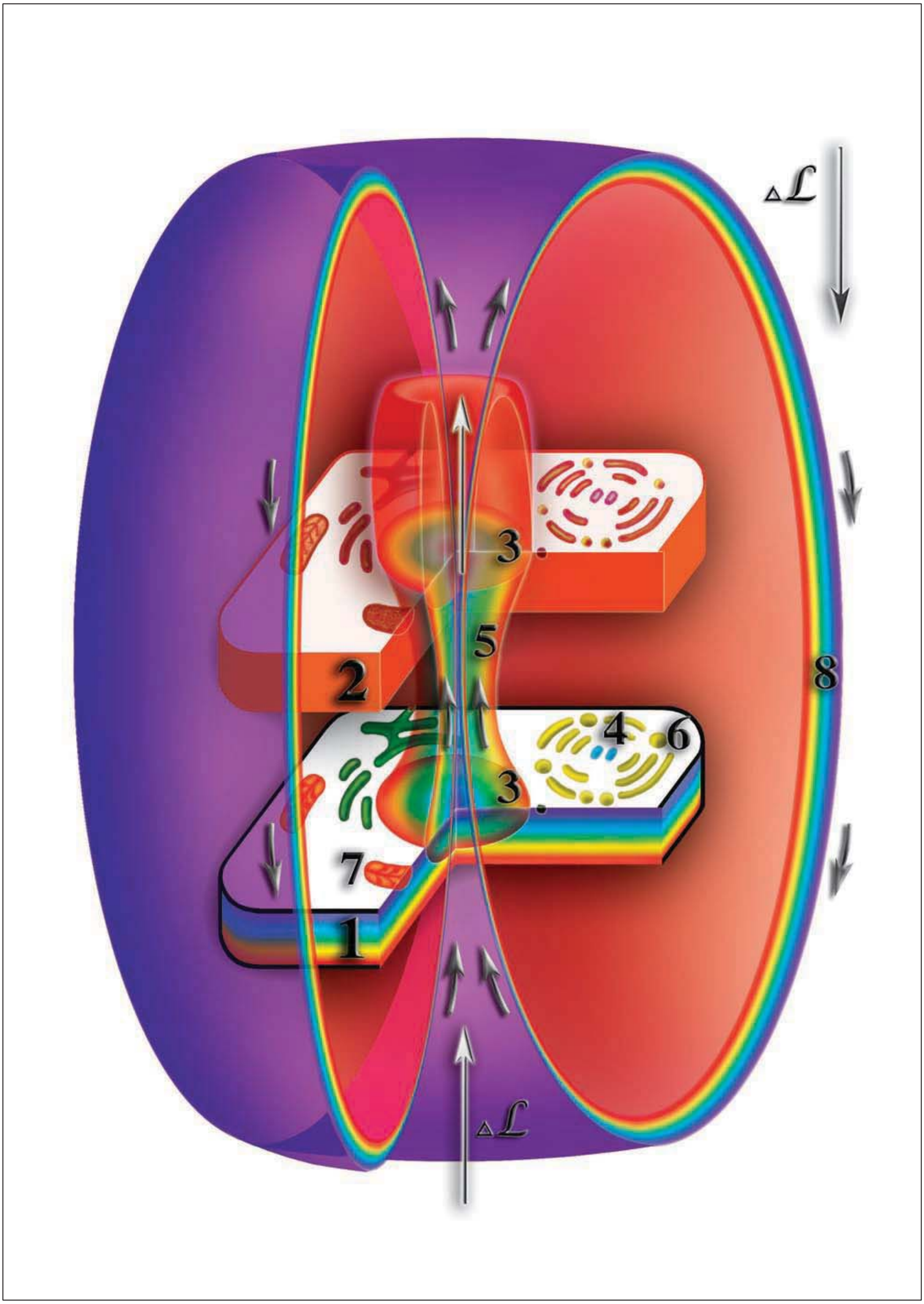
very simple and at the same time very complex.

The chromosomes that form the cell nucleus deform the microspace around them. At the same time, the dimensionality of the microspace increases in the deformation zone. The primary matter released during splitting begins to move along the channel created by the cell nucleus from the physical level to the second, third material levels, and so on. This flow of primary matter is directed against the main flow of primary matter in macromatter. Therefore, the primary matter ejected through the channel of the cell nucleus unfolds in the opposing flows of primary matter that form the spheres of the planet. A fountain can serve as an analogy for this. A jet of water ejected under pressure rises to a certain height. Having exhausted its initial potential, it falls down, creating a kind of water dome. Similarly, the primary matter ejected through the channel of the cell nucleus unfolds into opposing flows. They move along the zone of curvature of the microspace. Upon reaching the physical level, they repeat the shape of the curvature of the microspace and turn towards the cell nucleus. As a result, the primary matter creates an isolated zone around the physically dense and second material bodies of the cell (**Fig. 4.3.15**). After the protective shell is formed, the general flow of primary matter simply bypasses this zone. Inside this protective shell, a unique microclimate arises, an oasis where the second material body of the cell is maximally isolated from both the chaos of the environment and the influence of other cells or organisms. The protective insulating shell will exist as long as the substances inside the cell are being broken down and the channel between the cell levels is functioning. In other words, as long as the cell remains alive. In multicellular organisms, cells have different functions and, as a result, acquire different external forms. Any multicellular organism is a rigid colony in which the external environment of most cells is formed by other cells of the same organism. Moreover, this fixed position of cells is maintained throughout their entire life (with the exception of blood cells).

Let us recall that every living cell creates a second material body, which is a structural copy of itself. In a rigid colony, the position of cells is fixed, so their second material bodies also have a fixed position. Therefore, on the second material level, the second material bodies of cells form a similar rigid system — the second material body of a multicellular organism.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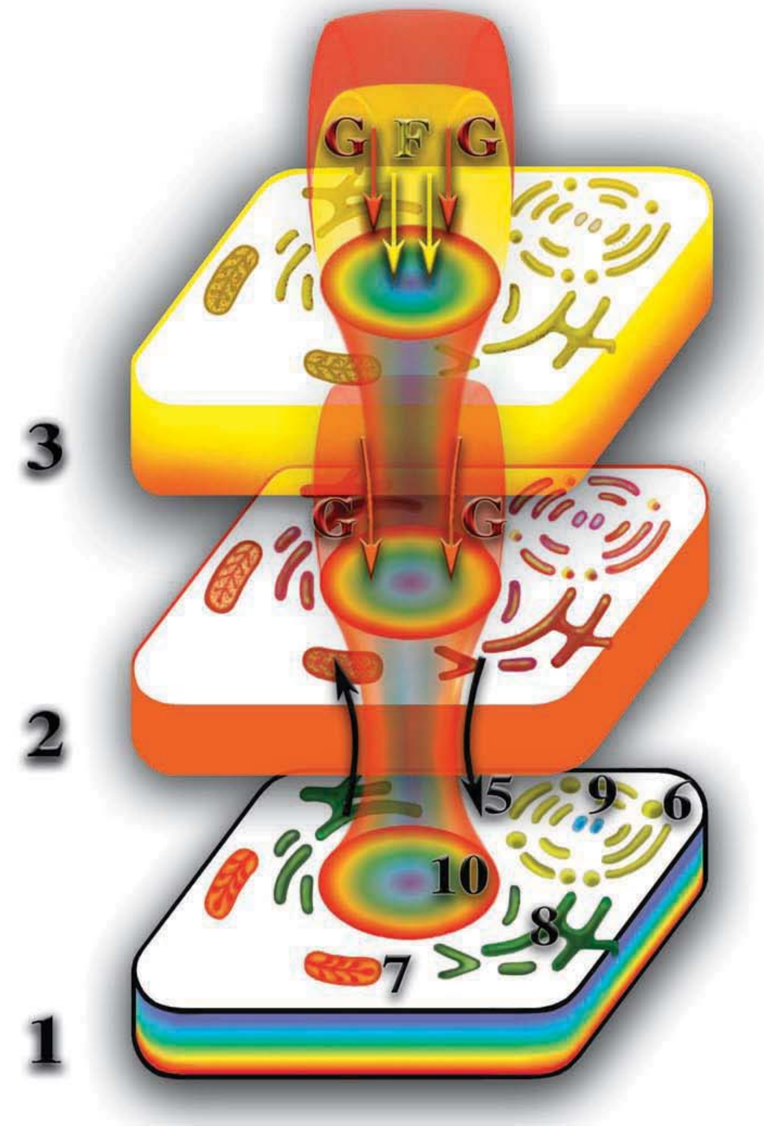
ganism. In the course of the evolution of multicellular organisms, cell specialisation has not only led to them looking different, but also to significant qualitative changes in the degree of their influence on their microcosm. The deformation of microspace created by several types of cells in a multicellular organism has led to the opening of a qualitative barrier between the second and third material levels of the planet. At the same time, on the third material level, exact copies of physically dense cells with all their characteristics are formed, by analogy with the second material level. Let us call these copies the third material bodies of physically dense cells. Their difference from the second material bodies of cells is determined not only by their location on the next qualitative level of the planet, but also by their qualitative composition. Complete third material bodies are formed as a result of the synthesis of two primary materials (**Fig. 4.3.16**). The third material bodies of the cells of a multicellular organism also form a rigid system — **the third material body** of a multicellular organism.

The emergence of third material bodies in living organisms was a huge qualitative leap in the development of living nature. The presence of three interacting levels in cells created the necessary and sufficient conditions for the emergence **of memory**, **emotions**, and **intelligence**, which is the basis of highly organised living matter. Some types of cells in multicellular organisms, in adapting to their functions, have changed to such an extent that the deformation of microspace caused by them has reached the fourth material level of the planet. These are the cells of the brain, spinal cord, and bone marrow. Similarly, at this level, **the fourth material body** of a multicellular organism is formed from the material bodies of the cells of this organism (**Fig. 4.3.17**). Thus, all cells of a physically dense organism participate in the creation of the second material body. Most cells participate in the creation of the third material body. Fourth material bodies can arise only in certain types of living organisms and only at a certain level of their development. Only some of the cells of a multicellular organism participate in the creation of the fifth material body. Therefore, the fourth and fifth material bodies differ qualitatively (and externally) from both the third and second material bodies of a multicellular organism. The physically dense or first material body of a cell, together with the second, third, fourth, etc. material bodies, constitute a single system.

— a living organism, living matter. Only together do they create a miracle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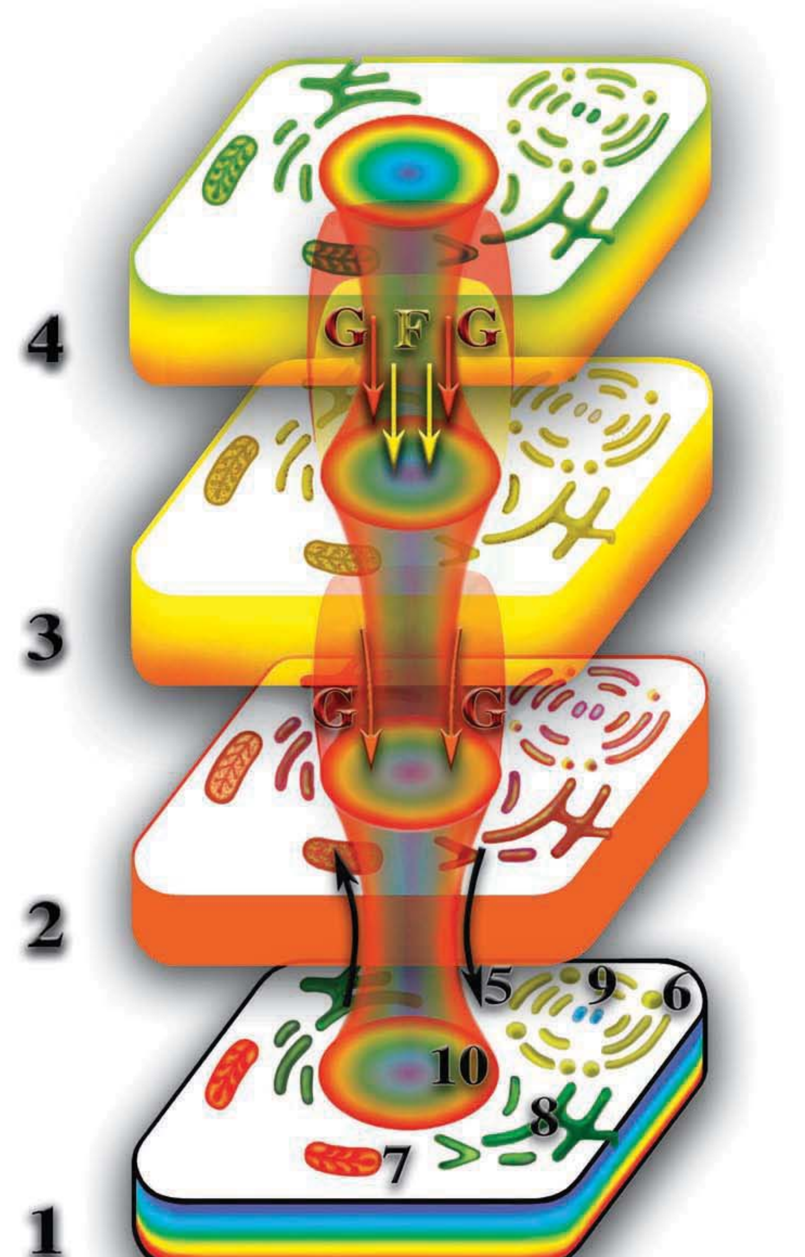
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nature — living matter, life, the evolution of which naturally leads to the emergence of mind — the self-awareness of living matter. When the interaction between the physically dense body of the cell (the first material body) and the other material bodies is disrupted, the functioning of the cell itself is disrupted. The cessation of the circulation of primary matter between the levels of the cell leads to the death of the latter. A living cell cannot function without feedback from its other material bodies. Just as other material bodies of the cell are unable to function without the constant process of molecular decay in a physically dense cell. After the cessation of vital processes, a physically dense cell disintegrates into organic and inorganic molecules. This fact requires no explanation. But what happens to the other material bodies of the cell? Do they disintegrate like the physically dense body of the cell, or are other processes observed, and if so, what are they?

Indeed, the second and so on, material bodies arise as a result of the deformation of microspace created by a physically dense cell. Therefore, the first thing that comes to mind is that all other material bodies of the cell disappear when the physically dense one disintegrates. But is this really the case? That is the question.

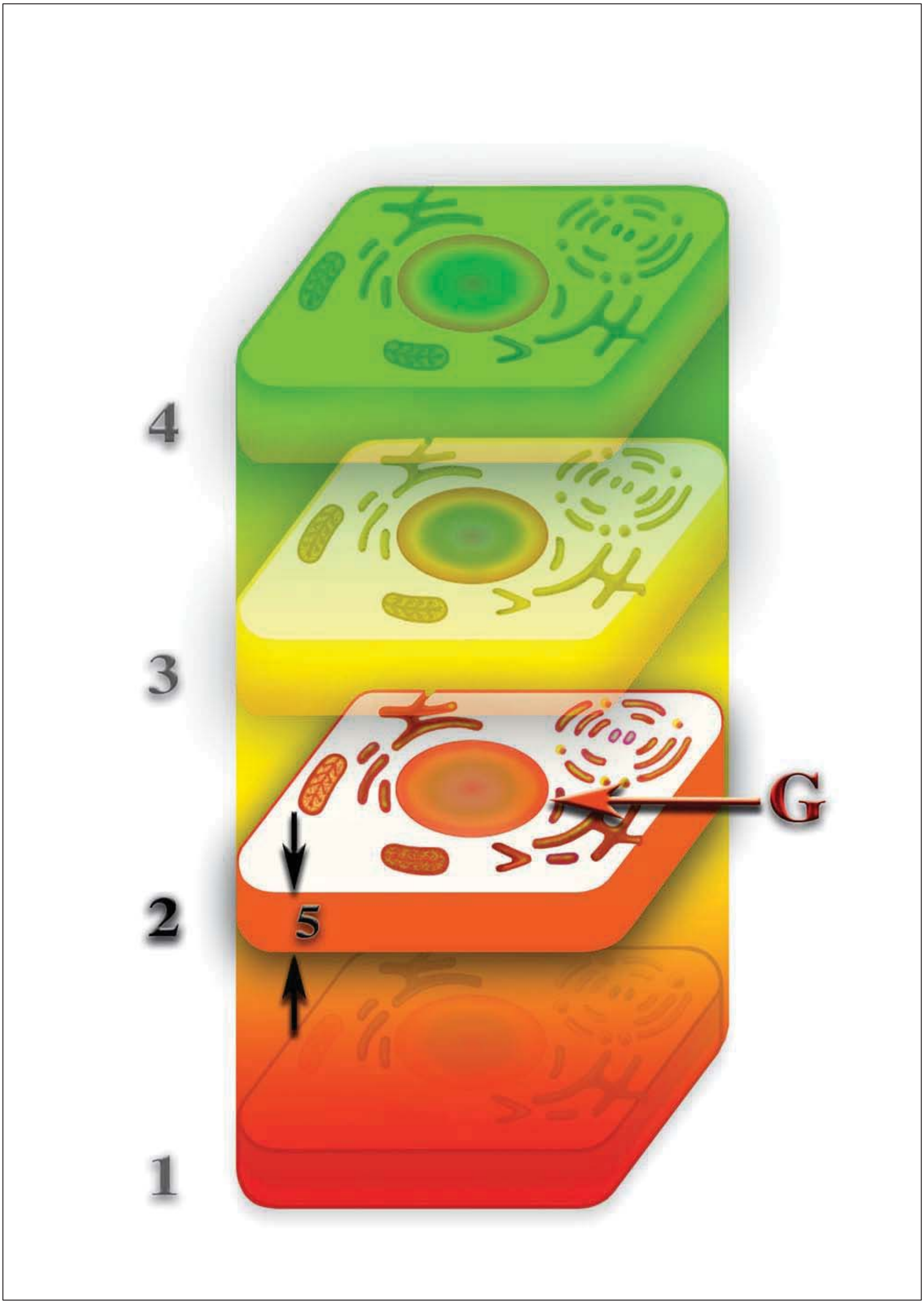
Let us recall that the second, etc., material bodies of the cell appear as a result of the saturation of the deformation created by the cell at one level or another by primary matters that are not part of each of these levels. The second material body is primary matter **G**, the third is **G** and **F**, the fourth is G, F and E, and so on. In this situation, the qualitative difference between the first and all other material bodies of the cell is striking. The first material body is formed from *hybrid* matter that arose from the fusion of seven primary matters. All other material bodies of the cell arose as a result of saturation with *primary* matter of the deformation of microspace created by the physically dense body of the cell. Just as a footprint in soft soil is filled with rainwater, so the deformation of microspace caused by a physically dense cell is saturated with the corresponding primary matter. And just as a footprint left in soft soil does not always disappear, so the second and other material bodies do not always disappear after the destruction of the physically dense body of the cell.

Let's find out what happens to them. If the cell has only a second material body made of primary matter **G**, a situation arises in which several options for the development of the process are possible. The second material body loses its saturation density over time.

primary matter **G**; in the presence of a physically dense body, losses are replenished by saturation with primary matter released during the decay of molecules inside the cell, but most of the losses **of** the second material body of primary matter G are caused by the return flow of this primary matter to the physically dense level. This reverse flow is a necessary condition for the normal functioning of a living cell. When a physically dense cell is destroyed, the reverse flow of primary matter G from the second material body to the first ceases **(Fig. 4.3.18)**.

The second material body continues to lose some of the primary matter **G**, from which the second material body of the cell is formed. As a result, the density of the second material body decreases, and it "melts" away. And if the "melting" process continued, the second material body of the cell would undoubtedly disappear some time after the death of the physically dense one. But this does not happen. And here's why. Let us recall that after the formation of the planet is complete, the primary matter continues to permeate the zone of spatial heterogeneity in which the synthesis of the planet took place. This means that the flows of primary matter also permeate all the material bodies of the cell, including the physically dense one. And if the saturation of the physically dense body with free primary matter does not play a fundamental role in the functioning of the physically dense cell, then, when the second and other material bodies of the cell are permeated by streams of primary matter, the picture changes dramatically. The second material body is a clot of primary matter G that has filled the deformation of microspace created by the physically dense body in the second material sphere. Therefore, when planetary space is permeated by primary matter, primary matter G also saturates the second material body. This is similar to how the loss of water from a puddle or pond on hot days is compensated for by rain. The main thing is that the "rain" falls regularly. And while in the case of puddles this does not always happen, in the case of the saturation of the second material body with primary matter G**,** such a problem practically never arises. Thus, the qualitative difference between the nature of the formation of the physically dense body of the cell and the nature of the formation of other material bodies of the cell creates a unique situation without which the evolution of living matter would be simply impossible.

After the destruction of the physically dense cell, the other material bodies of the cell do not disappear or disintegrate, but are preserved by being fed by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currents of primary matter permeating planetary space. However, there is a very significant difference between these two states. Without the physically dense body of the cell, in which the active process of the decomposition of molecules into the primary matter that forms them and the powerful saturation of the second and other material bodies of the cell with them takes place, the secondary saturation of these bodies with primary matter occurs very slowly. As a result, all processes occurring at the level of the second and other material bodies of the cell slow down hundreds, and sometimes thousands, of times. They slow down, but do not stop. This — a very important point, which is of fundamental importance for understanding both life itself and the possibility of the evolution of living nature. Let us analyse in detail, step by step, the processes taking place in a living system after the destruction of the physically dense body of a cell.

If the cell has only a second material body, after the destruction of the physically dense body of the cell, the second material body does not **disappear** or dissipate like morning fog under the rays of the Sun. Of course, the density of the second material body without the physically dense one decreases significantly, but the nourishment from the primary matters permeating the planetary levels does not allow the second material body to completely "dry out". Why is this fundamentally important? What would happen if the second material body of the cell "dried up" after the destruction of the physically dense body? Nothing "special," except that the evolution of living matter and the emergence of consciousness would "simply" not have happened. There may well be situations when the second material body could be completely destroyed for one reason or another, such as the impact of powerful vortex flows of primary matter flowing through planetary levels. However, such phenomena do not occur very often and do not create global problems or threaten living matter and its evolution as a whole. But the question of why the "non-drying" of the second and other material bodies of the cell after the destruction of the physical body of the cell is a key point for the possibility of the evolution of living matter and the emergence of mind, let us postpone for a while and return to the qualitative processes occurring with cells that have different qualitative structures.

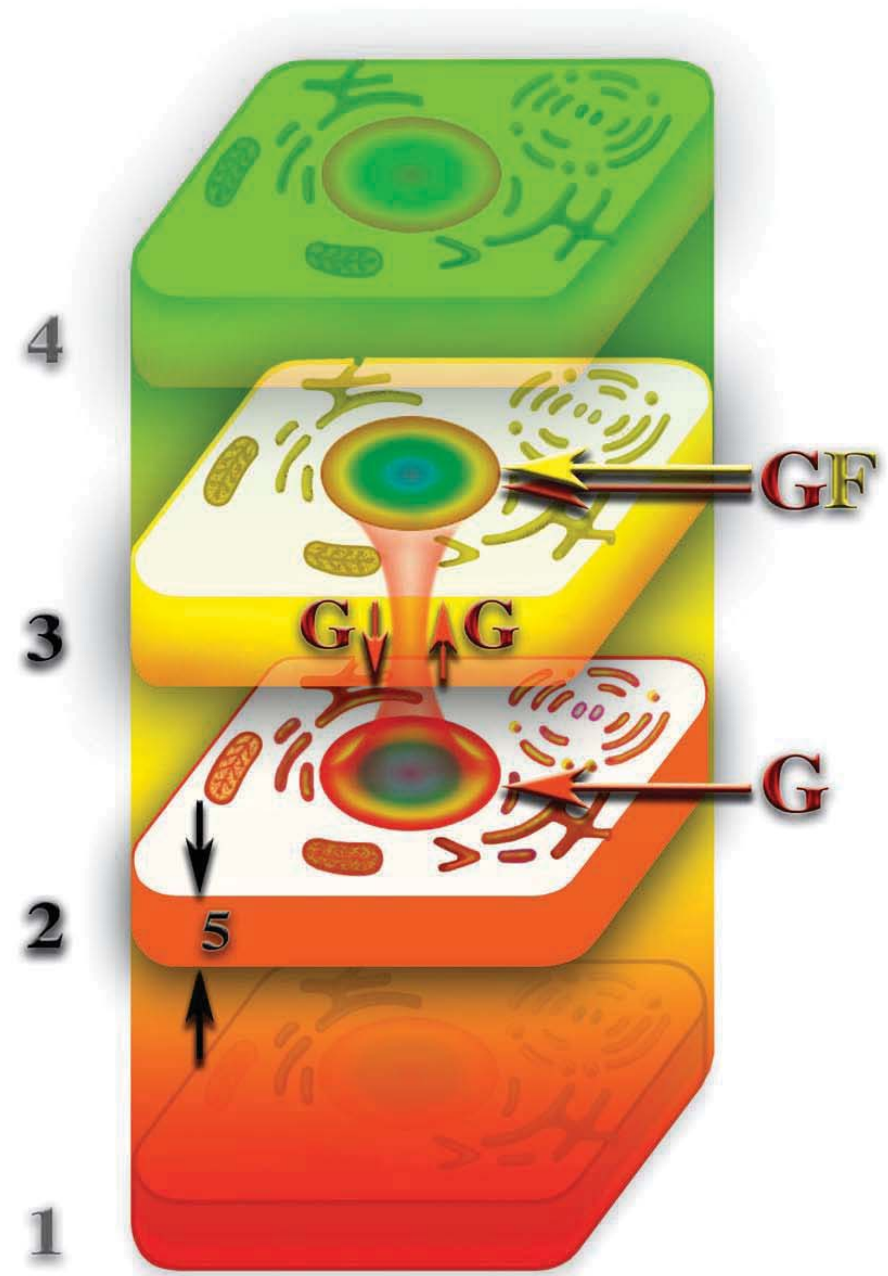
If a living cell has both a second and third material body, then when the physically dense body is destroyed, without being nourished by primary matter, through the splitting of molecules in the physically dense cell, there are already two material bodies — **the second and third material bodies**. And, naturally, after the cessation of the "upward flow" of physically dense cell, both the second and third material bodies of the cell "lose weight". But, again, these material bodies do not disappear after the destruction of the physically dense cell due to the same saturation of the latter with primary matter, which constantly permeates the planetary levels. The difference is that the third material body of the cell is already fed by two primary matters, G and F. Moreover, the rate of saturation of the third material body of the cell with primary matters is greater than the rate of saturation of the second material body, for one simple reason. The flows of primary matter, entering the planetary zone of deformation, are forced to "seep" through the qualitative barriers of the six planetary material spheres as they move through it. As a result, their speed slows down, and the speed of the primary matter that has reached the second planetary material sphere becomes minimal in relation to the speeds at all other planetary levels.

In addition, planetary qualitative barriers affect different primary matters differently, resulting in a change in the ratio of primary matters in the general flow, and the speed of their movement relative to each other begins to differ more and more after passing each qualitative barrier of the planet. This, in turn, significantly affects the ratio between primary matter at each planetary level and, accordingly, the intensity of the processes occurring at each planetary level. Therefore, if a cell has a second and third material body, the saturation of the third material body of the cell with primary matter G and F will occur faster than the saturation of the second material body with primary matter G occurring at the same time. And, if we take into account that the "melting" or, in other words, the loss of primary matter by the second and third material bodies of the cell occurs approximately equally, then, as a result of the different densities and speeds of movement of primary matter through the second and third planetary levels, the speed of saturation with primary matter of these bodies will be different. As a result, the saturation of the third material body with primary matter will occur relatively faster than the saturation of the second.

Of course, this saturation cannot be compared to the saturation of these bodies with primary matter, given the presence of the physically dense body of the cell, but nevertheless, as a result of this saturation, a certain excess arises in relation to the second material body, the primary matter.

matter in the third material body of the cell. The relative excess of the concentration of primary matter at the level of the third material body, in relation to the second material body, leads to the fact that a very weak circulation of primary matter **G** occurs between the third and second material bodies of the cells (**Fig. 4.3.19**). The circulation of primary matter between the second and third material bodies after the complete destruction of a physically dense cell is nothing more than a manifestation of life activity. In other words, if a physically dense cell had both the second and third material bodies in its qualitative structure before it was destroyed, then after the destruction of the physically dense body, the processes of the cell's vital activity at these levels do not stop, but only slow down many times over.

Similar processes occur at the level of physically dense bodies in amphibians and reptiles, when cooling the body slows down their vital processes by tens of times without any harm to these animals. Moreover, some amphibians, such as frogs, can freeze completely, turning into ice statues, and then, warming up under the influence of sunlight, gradually return to their normal level of activity. They can remain in this frozen state for hundreds of years, but their development and evolution also stops for those same hundreds of years. In this frozen state, the life processes of the physically dense cells of the frog's body slow down tens of thousands of times, but do not stop completely. Therefore, in a frozen state, the frog continues to use the reserves of organic molecules accumulated in its cells before it froze. Therefore, in a frozen state, a frog loses weight very slowly, gradually begins to starve, and if such a frog is not thawed in time, it will simply die of exhaustion. Unfortunately, in a frozen state, frogs are unable to feed. They are only able to catch midges, which are the main food source for these amphibians, when they are active. Frozen frogs are rarely in danger of dying from exhaustion, as they only freeze during the winter when the temperature of their habitat drops below zero degrees Celsius. So, without a physically dense body, the cells in the second and third material bodies do not stop their life processes, but slow down thousands of times. Nevertheless, this is still not complete death, which implies a complete cessation of life processes at all levels, so-called absolute death.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So, for living organisms, *in most cases, absolute death never **occurs***.

After the destruction of the physically dense body of a cell, a relative death of a living organism occurs, when the life processes at the level of the second and third material bodies proceed hundreds of thousands of times slower than in the case of a living organism.

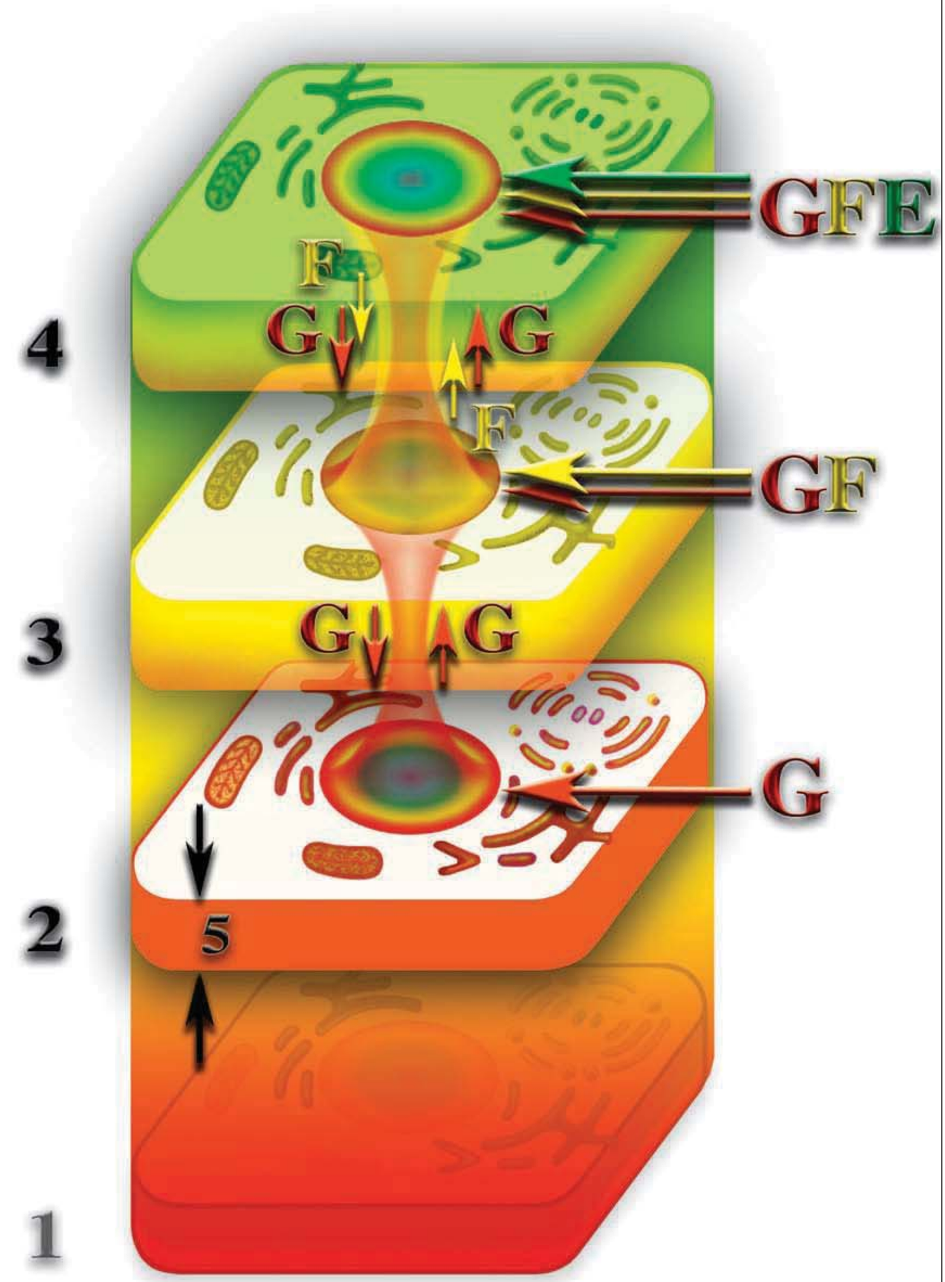
significant death of the living organism, when the processes of life activity at the level of the second and third material bodies proceed hundreds of thousands of times slower than in the presence of a dense physical body. At the same time, the living organism loses its physically dense body, in this case a single cell, but the "upper floors" — the second and third material bodies — continue their life activity, albeit slowed down hundreds of thousands of times. However, at the same time, an evolutionary

"freezing" of these bodies. Fortunately, these bodies do not remain in this state forever. For single-celled organisms, the complete destruction of the physically dense body occurs during the process of division (**Fig. 4.3.20**). As a result of division, two identical new cells appear, while the "old" cell disappears, completely destroying itself during the division process. Therefore, the "old" cell dies in the sense that it ceases to exist.

Understanding the mechanisms of cell division will allow us to clearly visualise the phenomena that occur during the destruction and death of a living organism. What is cell division, and how does it happen? Let's try to figure it out and understand this mechanism, which is the basis of all life. When the concentration of organic substances produced in the cell as a result of photosynthesis or absorbed by the cell from the external environment becomes critical, it loses its stability and the division process begins. Why, when the cell is saturated with organic substances, does it become unstable and start to divide? Why is it precisely the concentration of organic substances that triggers the disintegration of the old cell and the birth of two new ones, specifically birth, since the appearance of new cells in place of the old ones is the birth of cells? Why and how is this process triggered? Why is it precisely the critical concentration of organic substances in the cell that leads to its own death and the birth of two new cells?

Let us recall that the cell membrane serves as a trap for organic and inorganic molecules that find themselves in close proximity to the cell. During the synthesis of organic compounds, the cell membrane is practically an insurmountable obstacle for the synthesised molecules, as a result of which they begin to accumulate inside the synthesising cell. So why is an unsaturated,

"hungry" cell is unable to divide, and only a saturated, "full" cell becomes ready to die itself and "give birth"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Two new cells? What are the qualitative differences between unsaturated, "hungry" cells and saturated, "full" cells? In fact, a cell influences the surrounding microspace, deforming it in a certain way, as a result of which an identical imprint appears on the second material level, which is filled with primary matter G, forming a second material body. It follows that the level of dimensionality inside the cell differs from the level of dimensionality of the microspace surrounding it.

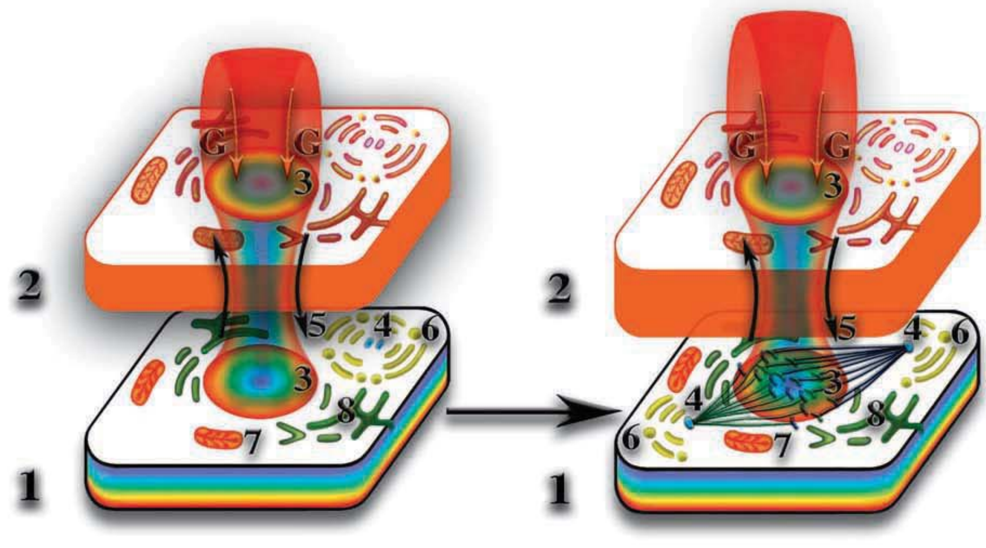
As noted above, the **DNA** and **RNA** molecules of a cell, creating a standing wave of dimensionality, deform their internal space to such an extent that a qualitative barrier opens up between the first and second material spheres. As a result, conditions arise for the formation of a second material body. It is only in the internal space of these molecules that a qualitative barrier opens, while the rest of the cell's contents only deform their surrounding microspace without causing a qualitative barrier to open. Nevertheless, the deformation of the intracellular microspace caused by the entire cell is quite significant. Thus, the dimensionality level of the cell itself is very close to the critical level at which physically dense matter becomes unstable and disintegrates into the primary matter that forms it. But in a normal state, the cell is in a stable state. So, when the cell is saturated with organic substances, it begins to "get heavier" and have a stronger effect on its internal and external microspace. The cell's own level of dimensionality changes and, as a result, the cell becomes less stable as a whole. When the cell is critically saturated with organic substances, this instability reaches its maximum level. In addition, when there is a high concentration of organic molecules inside the cell, the number of molecules captured by the internal volume of **DNA** and **RNA** molecule spirals increases significantly. As a result, the flow of primary matter from the physically dense to all other levels of the cell increases. This leads to additional saturation of the second and other material bodies of the cell with primary matter.

The second and other material bodies of the cell also influence their microspace, as a result of which, when additional saturation of the second material body with primary matter **G** occurs, additional deformation of the cell's microspace arises on the part of the second material body of the cell. Two opposing additional deformations of the cell's microspace arise, both on the part of the physically dense cell and on the part of its second material body. As a result, the saturated cell approaches the critical state of its stability. It approaches, but nevertheless does not yet reach a critical state. The "last straw" in this process is the beginning of the formation of a second cell nucleus.

How does this happen?!

Centrioles move to opposite poles of the cell and become the centres around which the process of division and formation of new cells takes place (**Fig. 4.3.21**). Protein filaments pull chromosomes from the old cell nucleus to the centrioles, and this is the beginning of the formation of two new cells. Initially, the new nuclei contain half the set of necessary chromosomes, so the two channels they create are practically equivalent to the channel of the nucleus before division began, and the cell still retains its stability. At the same time, the dimensionality of the cell's microcosm remains almost unchanged, and the balance of flows between the physical and second levels of the cell is maintained. Each chromosome in such nuclei begins to recreate its mirror image from the organic substances accumulated in the cell, which is the natural tendency of any system to achieve a state of maximum stability (**Fig. 4.3.22)**. Upon completion of this process, two nuclei are formed inside a single cell, each of which has a channel through which primary matter flows to the second material level. Two nuclei in the local volume of the cell create such a curvature of the microcosm that the cell itself becomes unstable and the organic substances that form it begin to disintegrate, and the primary matter that forms them begins to flow to the second material level due to the fact that the "excess" nucleus in the cell creates an additional curvature of the cell's microspace, and the cell's own level of dimensionality becomes critical. At the same time, the amount of primary matter flowing from the physical level to the second material level is significantly greater than the amount of matter flowing from the second material level to the physical level (**Fig. 4.3.23)**.

A physically dense cell (old cell) begins to break down into its constituent molecules because each individual molecule has a lower level of dimensionality than the system of molecules, and therefore they do not break down into parts on their own. A supercritical state arises for a physically dense cell as a single system, but not for individual organic molecules. The intrinsic dimensionality level of a cell is significantly greater than the intrinsic dimensionality level of an individual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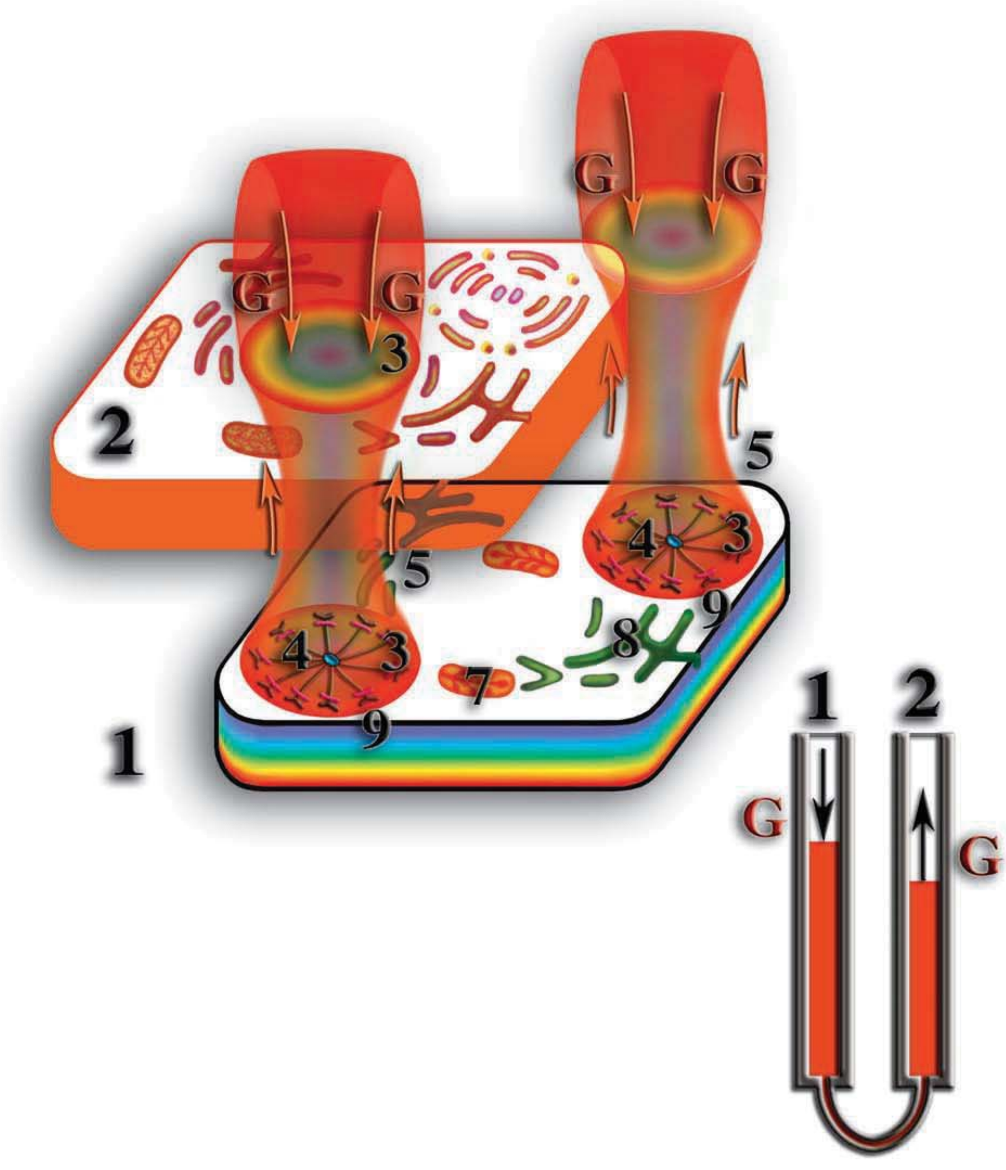
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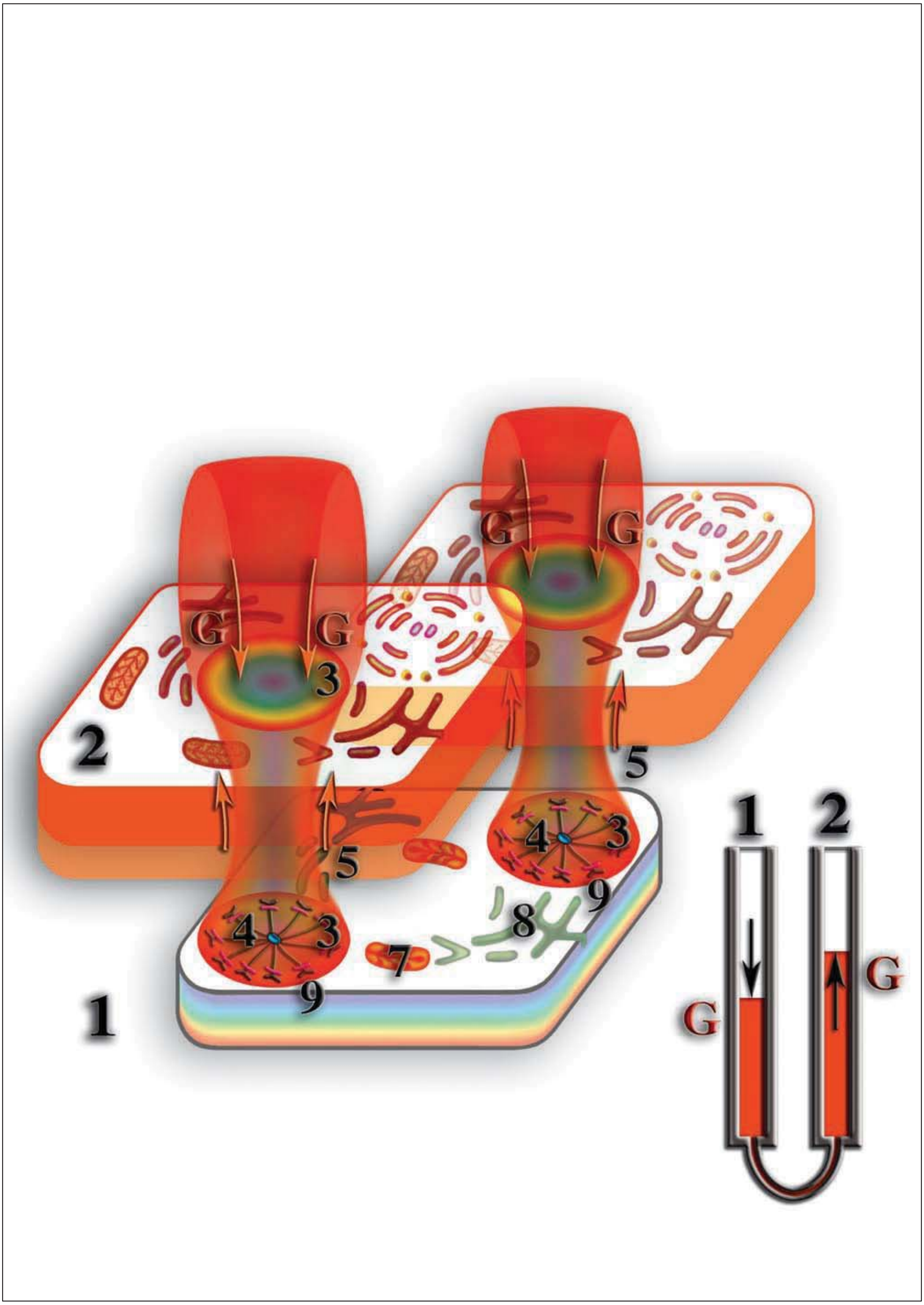
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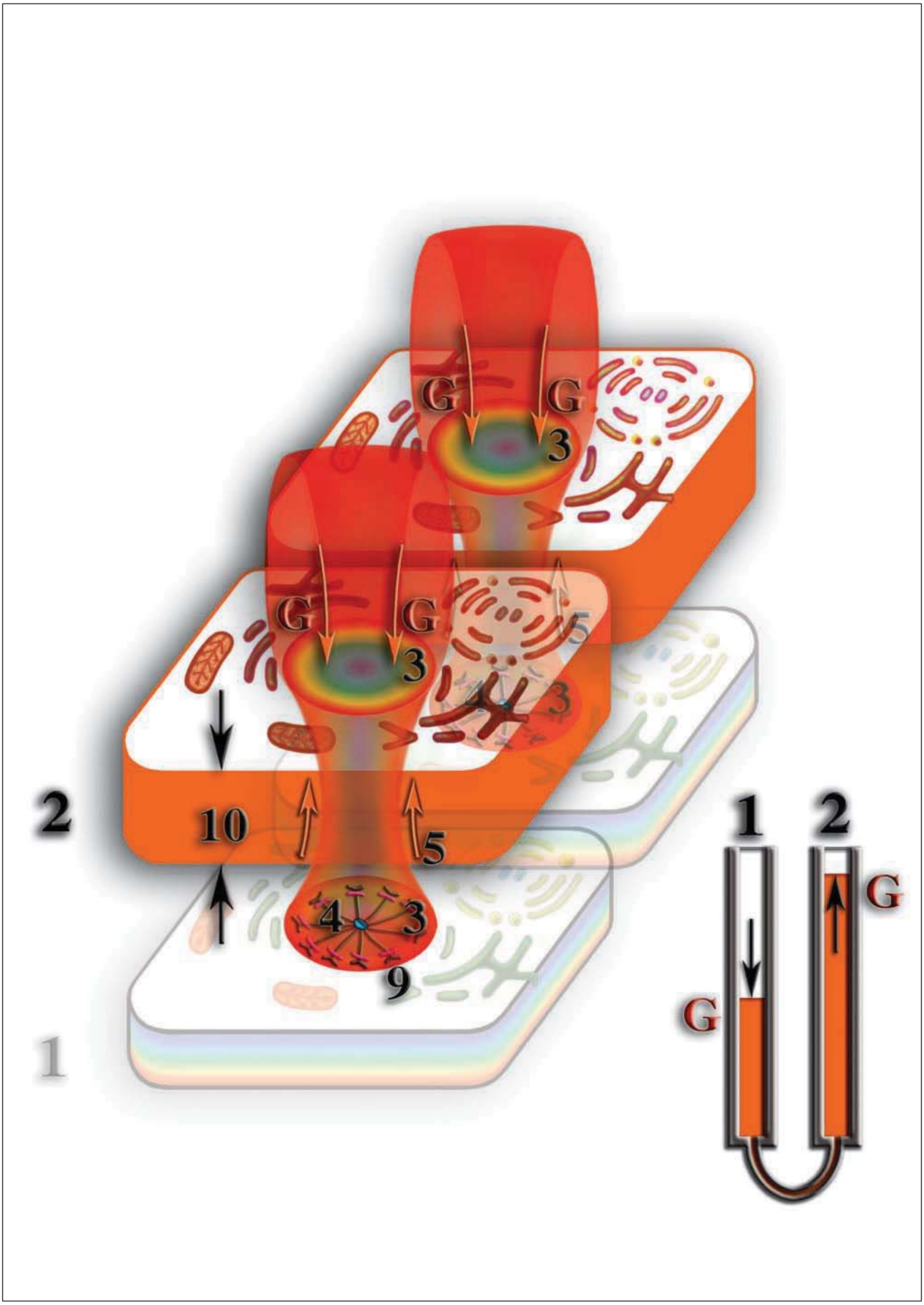
organic molecule. As the physical cell disintegrates, two second material bodies of the cell are created on the second material level because each nucleus creates an identical curvature of the microcosm on the second material level. At the same time, the amount of primary matter G, in particular, flowing into the second material level, becomes excessive at this level **(Fig. 4.3.24)**.

When the disintegration of the old physical cell is complete, its constituent organic molecules remain in its place, i.e., organic matter — the building material for creating new cells. And as soon as the intense flow of primary matter from the physical level to the second material level ceases, the excess of primary matter G from the two formed second material bodies of the cell begins to flow through the same channels from the second material level to the physical level and creates projections of two second material bodies of the cell on the physical level (**Fig. 4.3.25**). At the same time, in the zones of projections of the second material bodies on the physical level, an additional curvature of the microcosm is created, i.e., the necessary conditions are created for the synthesis of molecules from the mass of organic matter accumulated in the cell before division and arising from the decay of the old cell and its arrangement in the order specified by the second material bodies of the cells (**Fig. 4.3.26**). An analogue of this process, which is also very similar, is the magnetisation and distribution of metal dust along the lines of force of a magnetic field. Upon completion of synthesis, two completely new cells are formed in the image and likeness of the second material bodies of the cell, with a balanced flow of primary matter between the physical and second material levels of the cell. The new cells that have arisen as a result of the division of the old cell are not exact copies of the old cell, although they are very similar to it **(Fig. 4.3.27** and **Fig. 4.3.28)**. It is precisely because of this phenomenon, which occurs during cell division, that **the evolution of life** is possible**.**

It should be noted that during cell division, there is a moment when the old cell disappears, is completely destroyed, and the new cells have not yet begun to assemble. This phenomenon is observed for a very short time, but nevertheless, it is a fact. During division, the old cell dies, and for a certain period of time, there are neither old cells nor new ones. And although the time interval between the disappearance of the old cell and the appearance of new ones is negligible, this does not change the essence. Between the "old cell phase" and the "new cell phase" there is a qualitative state when there are neither one nor the other. This, in turn, fully confirms the mechanism of cell division described above. In addition, only the above-described pro-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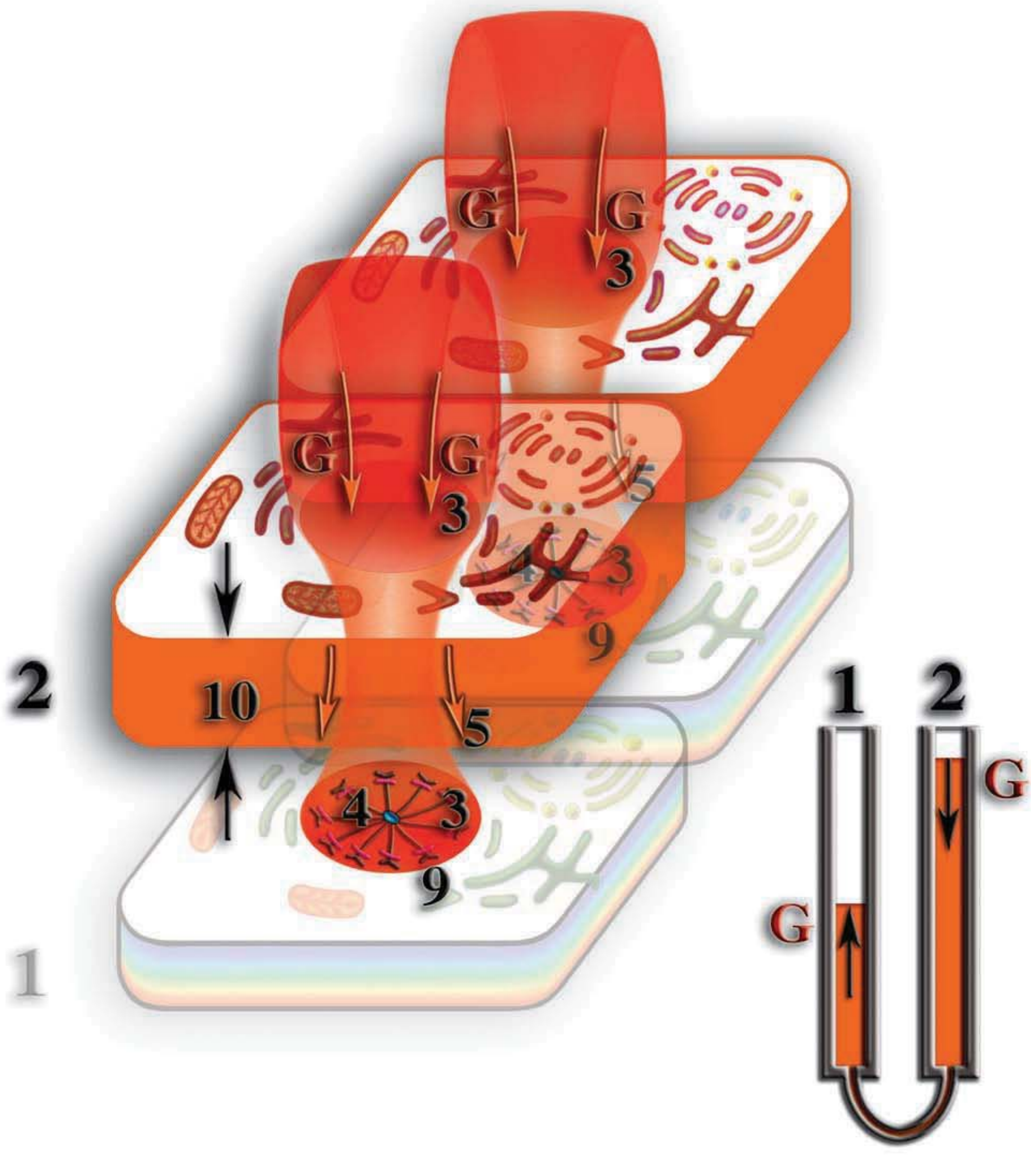
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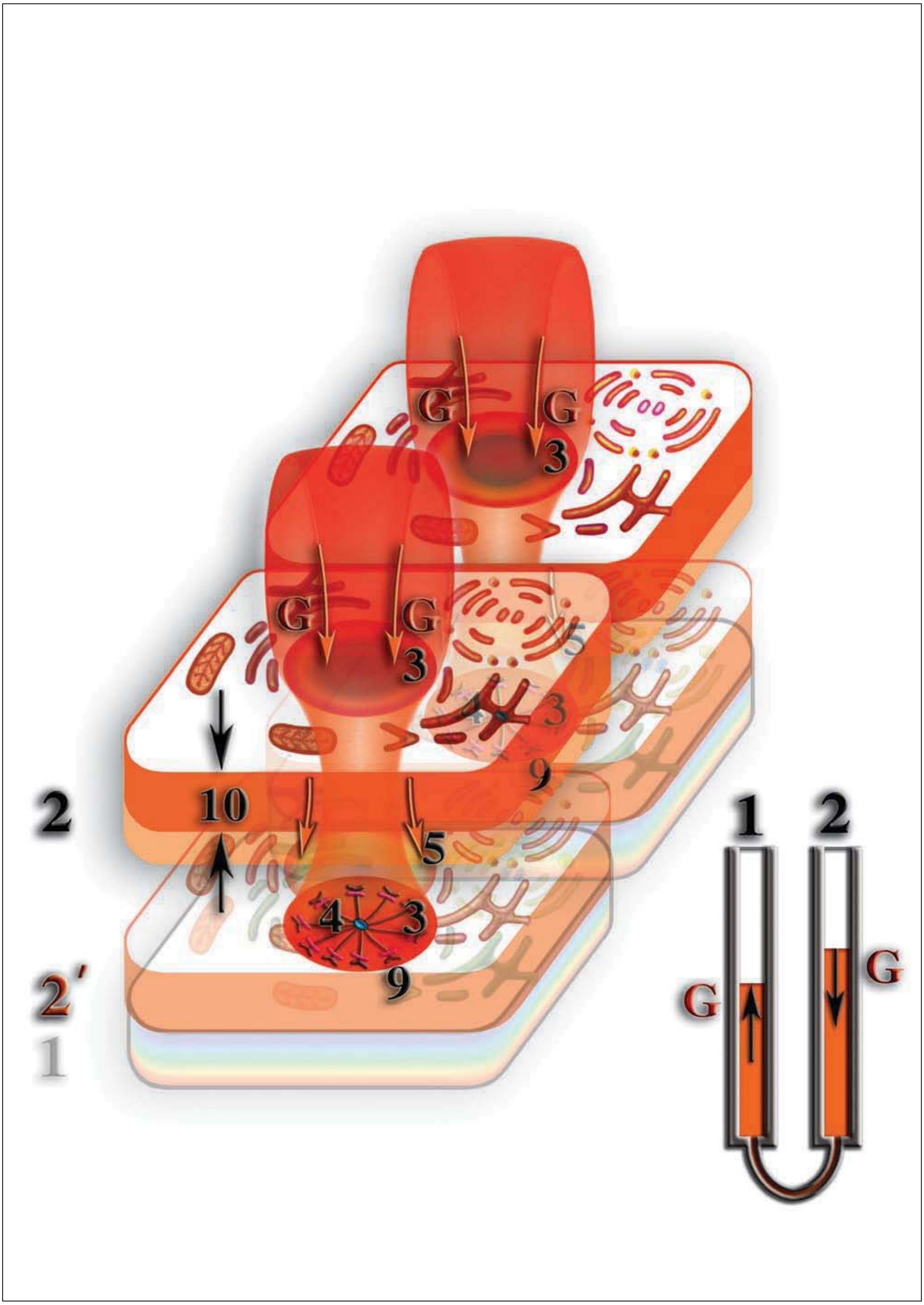
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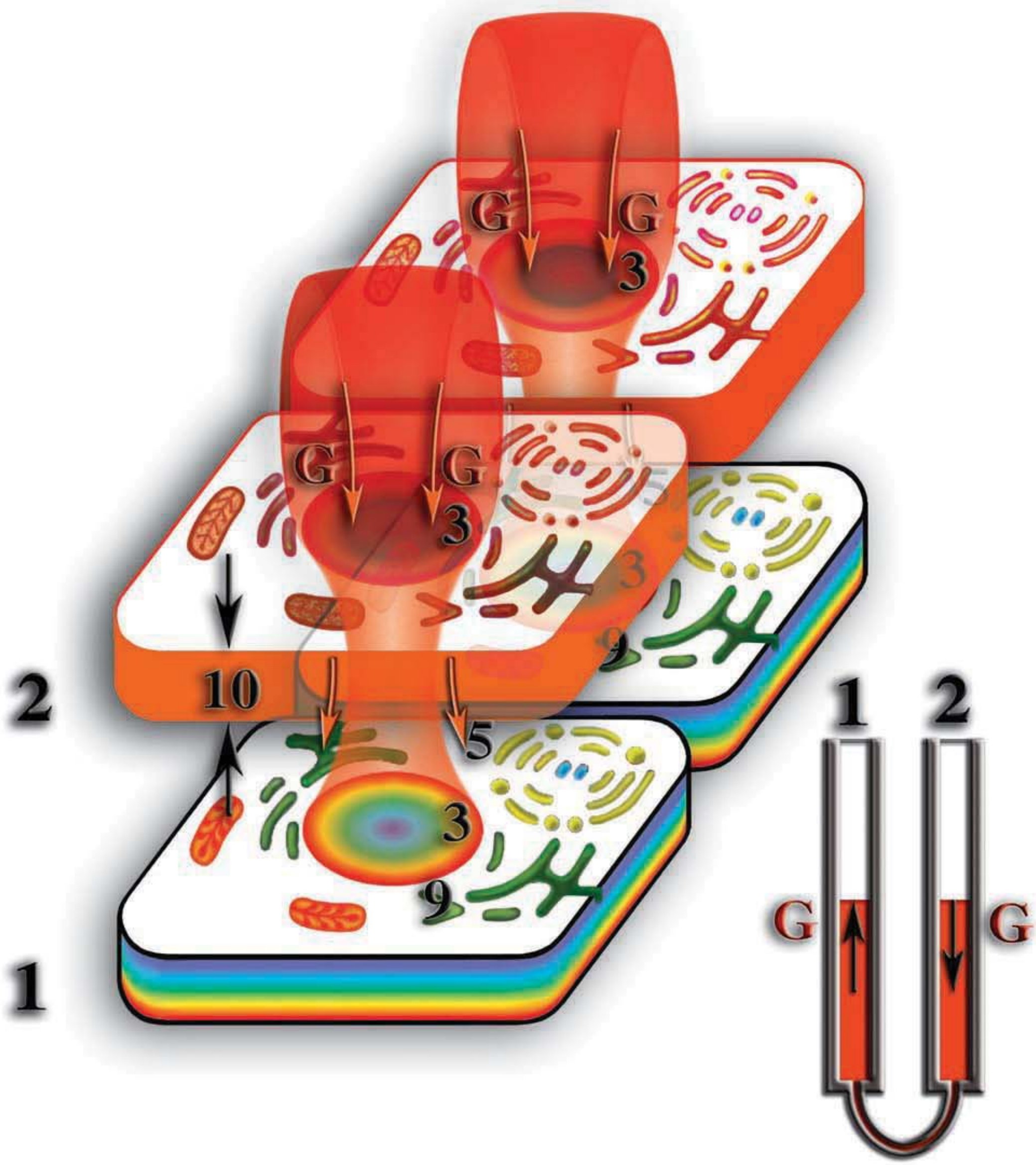
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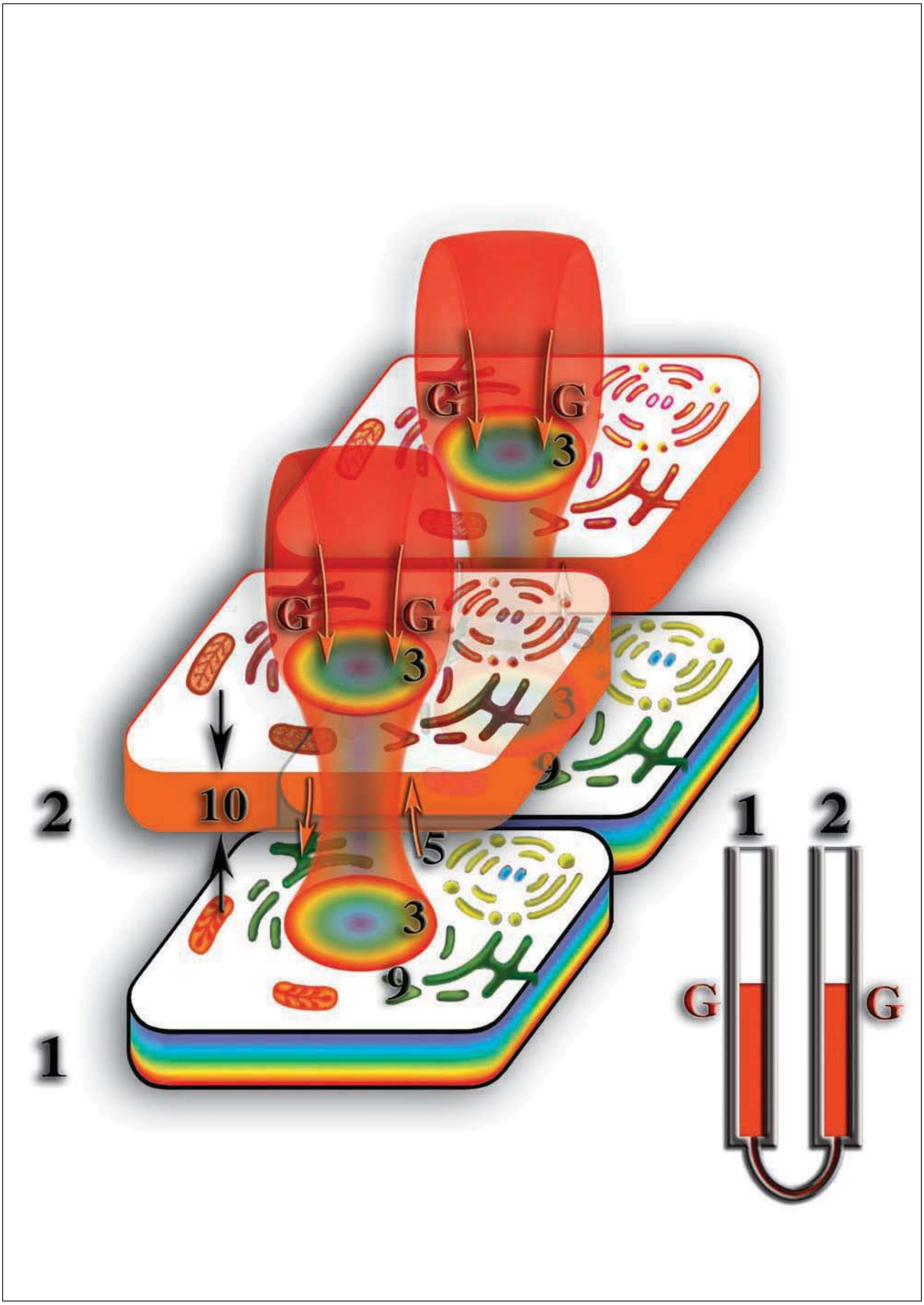
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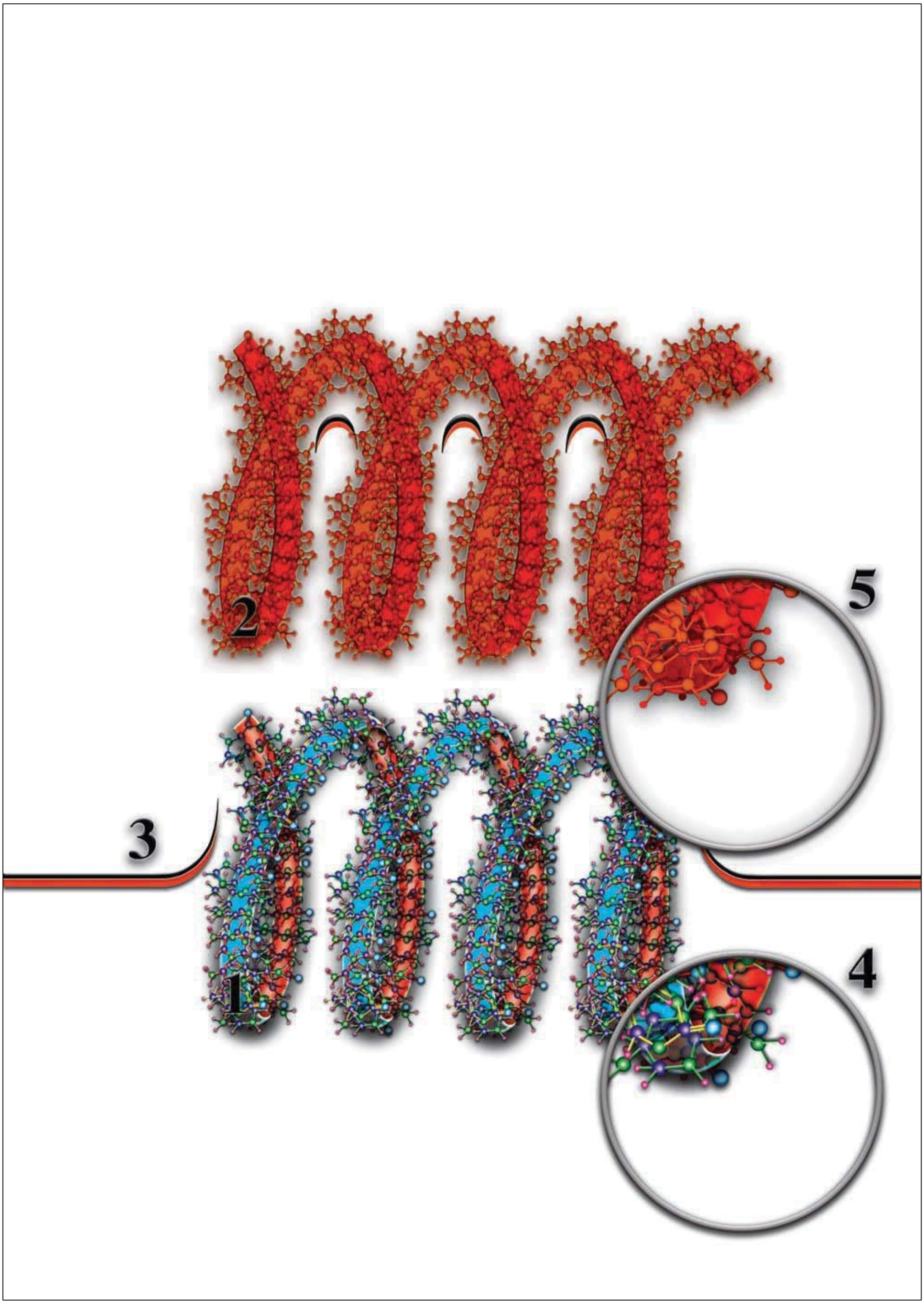
Cell division processes explain the evolution of living matter, the emergence of new species, accumulation, and the ability to pass on experience and positive mutations to future generations. To ensure that this is not just an empty statement, let us try to conduct a qualitative analysis of this natural phenomenon. Understanding this phenomenon provides the key to unravelling the nature of memory, consciousness, and many other phenomena of living nature, which to this day remain "blank spots on the map of our understanding of the world." Let us consider how new acquisitions and positive mutations are passed on from one generation to another.

Life could not have originated in the diversity of living forms that exist today. The first single-celled organisms became the basis for all living organisms on the planet. How did this amazing transformation of the first single-celled organisms into all this diversity of living nature occur? The first single-celled organisms, as already noted, arose in the upper layer of the primordial ocean. When a single-celled organism divides, two identical single-celled organisms appear, and it would seem that this should have been the end of the evolution of life. The surface layer of the primordial ocean should have been filled with identical single-celled organisms, and that should have been the end of it. But this did not happen. What is the reason for such "illogical" behaviour on the part of nature, which created the diversity of life? The answer to this question lies right on the surface, or more precisely, in the surface layer of the primordial ocean. Air masses set the surface layer of the primordial ocean in motion, as a result of which single-celled organisms of the same type, and later multicellular organisms, were carried by ocean or sea currents to great distances from each other. It would seem that this is all there is to it, but what does this have to do with the emergence of a diversity of life forms? It's very simple! Currents carried organisms of the same type tens, hundreds, and sometimes thousands of kilometres away from each other. As a result, they found themselves in different external conditions. The water temperature, chemical composition, and gas saturation in one place of the primordial ocean differed from another. Particularly large differences arose in shallow waters, in areas of terrestrial and underwater volcanic eruptions. When they entered a different chemical environment, organisms of the same type found themselves in external conditions that differed significantly from each other. Ultimately, this led to changes in the intracellular environment. And, as a result of changes in the chemical composition within the single-celled organisms themselves, qualitative changes also occurred in the organisms themselves.

single-celled organisms — mutations.

Under the influence of changes in the ionic balance within single-celled organisms as a result of changes in the chemical composition of the external environment, changes occurred in the molecular weight, qualitative composition, and spatial structures of the organic molecules that make up single-celled organisms. Those single-celled organisms that did not die after such "reconstructions" differed to one degree or another from the original organisms. Gradually, these changes accumulated, and the moment came when it was possible to speak of the emergence of new species of single-celled organisms. When the altered single-celled organisms reached a critical saturation point with organic substances, the process of division was triggered, resulting in the consolidation of positive mutations. The number of changed single-celled organisms grew exponentially. The changed organisms, like their "parent" original single-celled organisms, were carried by currents to other places with different chemical compositions, and the process repeated itself. To understand the mechanism of mutation spread, it is necessary to remember that when organic molecules undergo qualitative changes under the influence of the external environment, not only physically dense molecules change structurally and qualitatively, but also their second material bodies.

The appearance of additional chains of atoms or the loss of existing organic molecules that form single-celled organisms leads to a change in the deformation of microspace caused by the single-celled organism as a whole. As a result of this process, the second material body of the single-celled organism also changes. In other words, qualitative changes occur at all levels of the existing single-celled or multicellular organism **(Fig. 4.3.29, Fig. 4.3.30** and **Fig. 4.3.31)**. The additional structural changes in the organic molecules of single-celled organisms cause similar deformations of the microspace of the cell at the second material level. The primary matter released during the decay of organic molecules in the internal volume of **DNA** and **RNA** molecule spirals saturates these additional deformations at the second material level, resulting in fixation at the second material level as well. And when the process of division of such a changed cell begins, the second material body of such a single-celled organism carries within itself all the changes that have occurred in this living organism throughout its life. The second material body of a single-celled organism plays a key role in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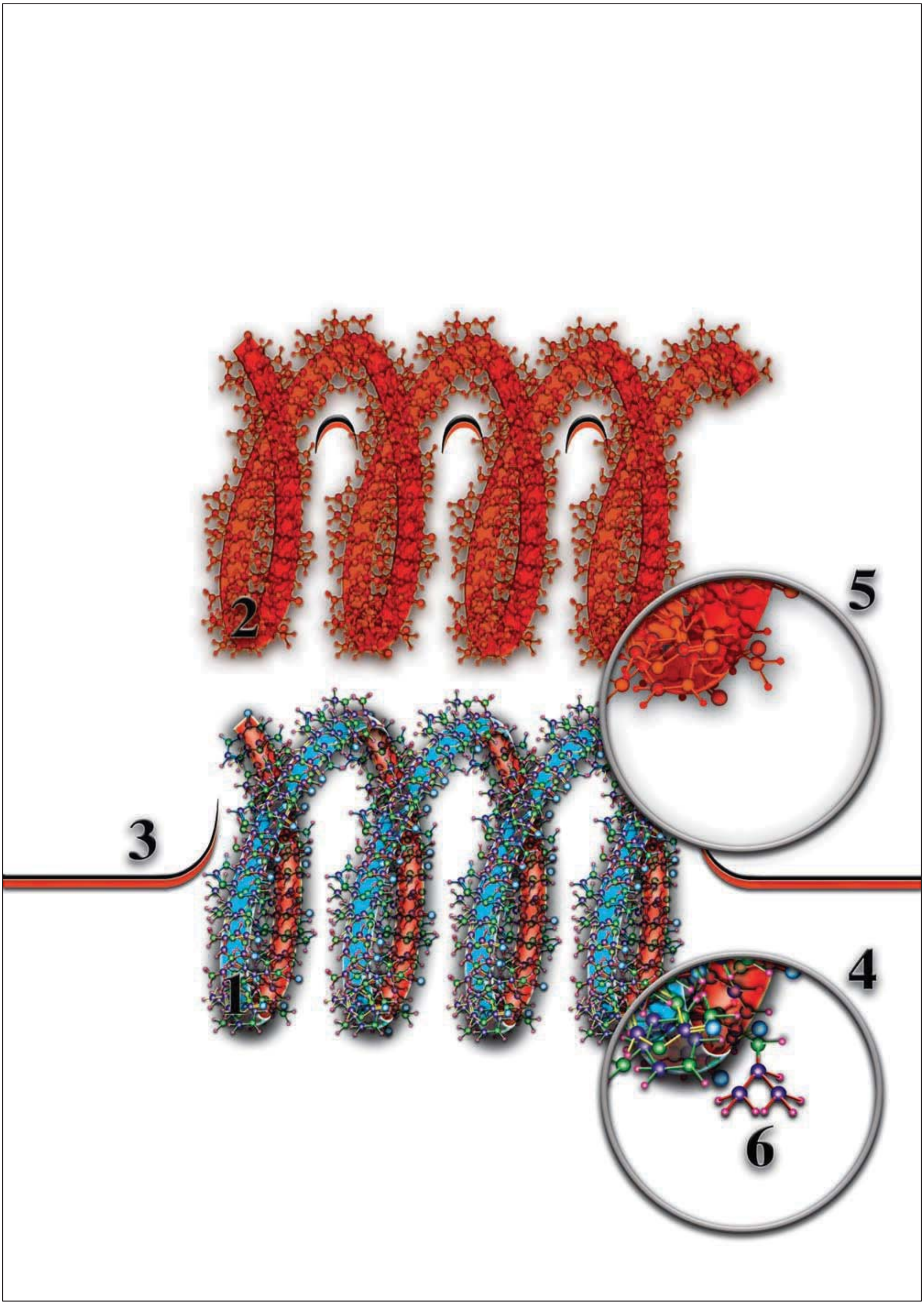
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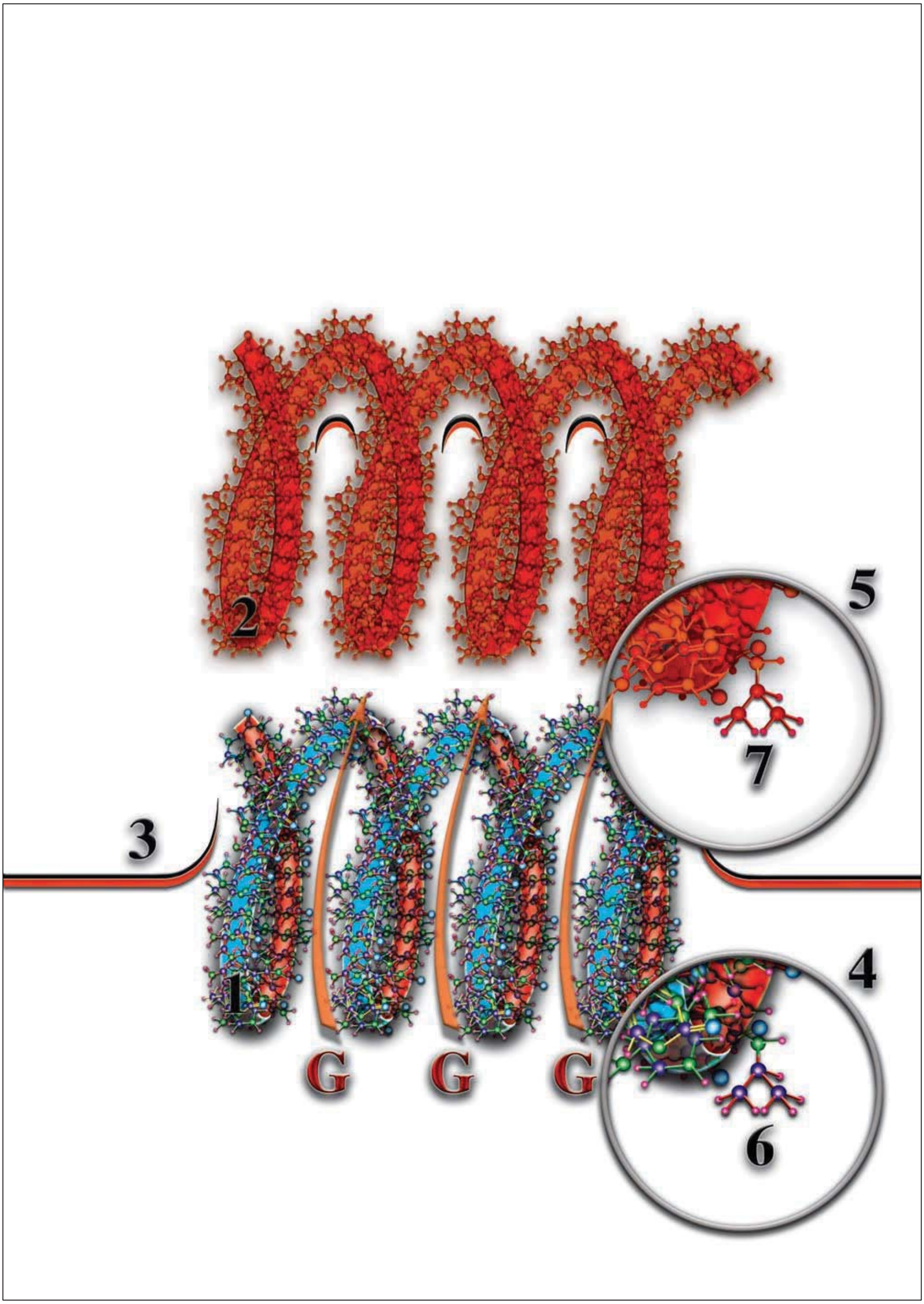

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division process, since during this process the physically dense "old" cell is completely destroyed. At the same time, the altered molecules are also destroyed, and all the changes that have occurred in the cell disappear completely along with the old cell. In general, this process of cell division would be impossible without the presence of a second and other material bodies in the cells, which are copies of the given cell at the corresponding levels with all its characteristics. With the complete disappearance of the old cell in the process of division, only the presence of the latter's second and other material bodies allows us to understand and comprehend the real physical process of cell division. Only the presence of second and other material bodies in single-celled and multicellular organisms makes it possible to talk about the emergence and development of living matter. Neither cell division, nor the emergence of new species and, ultimately, the formation of the planet's ecological system, nor the emergence of intelligence, can be understood and comprehended without the emergence of a second and other material bodies in living organisms. That is why all attempts to explain the nature of living matter from the point of view of existing science have suffered a complete fiasco.

4.4. Summary

The origin of life on planet Earth in particular and in the universe in general remained a "blank spot" in the system of ideas created by humanity within the limits of recorded history. The fact of the existence of life was either taken for granted, or acquired a divine nature in people's minds, or was simply "ignored" in the pictures of the universe created after unsuccessful attempts to give a coherent and comprehensive explanation of the phenomenon of living nature. A methodologically correct approach to understanding the nature of living matter must begin with the definition of the necessary and sufficient conditions for the emergence of life from non-living matter:

1. **The presence of a constant dimensionality difference σ.**
2. **The presence of water.**
3. **The presence of an atmosphere.**
4. **The presence of a periodic change between day and night.**
5. **The presence of atmospheric electricity discharges.**

The second key point is the need to understand the qualitative difference between living and non-living matter. Without understanding that

Just as each atom and molecule influences its own microcosm, and just as spatial organisation influences the properties of space, it is impossible to penetrate the nature of living matter. Applying the principle of spatial heterogeneity at the microcosmic level makes it possible to create a complete picture of the processes occurring at the molecular level. As a result, it is possible to identify the qualitative features of organic molecules that create conditions under which matter manifests itself in a new quality — the quality of living matter:

1. The spatial structure of organic molecules is heterogeneous in different spatial directions.

2. The molecular weight of organic molecules ranges from several tens to several million atomic units.

3. The uneven distribution of the molecular weight of organic molecules in different spatial directions.

The spiral shape of **RNA** and **DNA** molecules creates a unique phenomenon — a standing wave of dimensionality within their internal volume. Organic molecules drawn into the internal volume of **DNA** and **RNA** molecule spirals begin to move along the optical axes of these molecules, periodically encountering dimensionality fluctuations, which create critical conditions for most molecules, causing them to disintegrate into their constituent primary matter. The primary matter released in this process saturates the deformation created by these molecules at the second material level and forms a second material body. The appearance of the second material body is a qualitative leap in the organisation of matter and marks the beginning of the era of living matter. The emergence of viruses and their protein shells can be fully explained on the basis of the principle of interaction between microspace with continuously changing properties and qualities and matter with certain properties and qualities. This reveals a picture of nature in which each element has an explanation and its own place. The concept of **the heterogeneity of space** allows us to reveal the mechanisms of the evolution of life and the emergence of a variety of forms of living organisms, which makes it possible to substantiate the positions of evolutionary theory. Determining the conditions and mechanisms of change that lead to the emergence of new species of viruses and other living organisms allows us to see a holistic picture of the ecological planetary systems:

1. Changing the order of nucleotide connections in an existing viral **RNA** molecule.

2. Increasing or decreasing the number of nucleotides in an existing viral **RNA** molecule.

3. The appearance of chemical bonds between the existing **RNA** virus molecule and other **RNA** molecules that were inside the virus's protein shell at the moment of the electrical discharge or appeared in it as a result of the electrical discharge.

The concept of spatial heterogeneity allows us to provide a detailed explanation of the mechanism of cell formation as the basis of all life and to reveal the role of the appearance of protein shells in viruses and, later, cell membranes. The cell membrane is a qualitative leap in the organisation of living matter. This principle allows us to reveal the mechanisms of the emergence and synthesis of organic substances by living organisms themselves and **the necessary conditions** for this:

a) the presence of organic molecules inside single-celled organisms that easily change their structure within certain limits when external factors change, which leads to fluctuations in the dimensionality of the microcosm in the range $\mathbf{0 < \Delta L < 0.010101618...}$

b) the presence of external factors that can cause the necessary changes in the structure of these molecules without destroying the molecules, as well as the single-celled organisms themselves (weak thermal and optical radiation from the Sun).

With the emergence of organic compound synthesis by living organisms, the evolution of living matter entered a qualitatively new stage. The independent synthesis of organic substances by living organisms known as plants created the conditions for the independent evolution of life, independent of atmospheric electricity. The principle of spatial heterogeneity allows us to explain the nature of the mechanisms of the appearance of second material bodies at a certain stage of the evolution of organic matter and their role in the development of living matter. Taking into account the complete picture of what a living organism is (second and other material bodies), it becomes possible to provide a complete and comprehensive explanation of the processes of cell division and the phenomena that occur during it. The heterogeneity of space and its interaction with matter having certain properties and qualities allows us to create a coherent picture and explanation of what happens when the so-called physically dense body of a living organism — a physically dense cell — is destroyed. At the same time, the qualitative and functional differences between physically dense and other material bodies of a living organism are clearly defined. For the first time, it is proven that life does not end with the destruction of a physically dense body, but only transitions to a qualitatively different level of functioning. The nature of the cycle of life on the planet is explained. Based on the multilevel structure of living matter, the mechanisms of mutations, their accumulation and transmission to new generations of living organisms are shown for the first time, which, in turn, is the foundation for understanding the evolutionary process of living nature.

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Description of figures

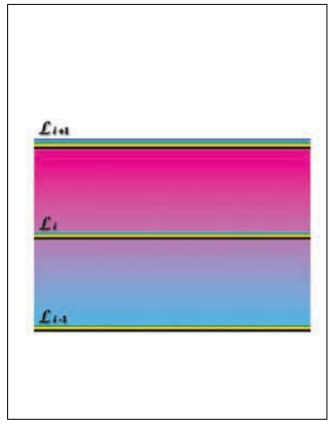

Fig. 2.2.1. A sequential change in dimensionality by the same amount **ΔL** is a quantisation of matrix space and is expressed by the quantisation coefficient γ_i, which is the standard by which "cubes" are selected to create a new "picture". Thus, just as different pictures can be assembled from different numbers of cubes of the same size, so too can spaces-universes be formed from similar types of matter in matrix space. These spaces-universes form a unified system in matrix space, like a layered cake, each layer of which is qualitatively different from the other. At the same time, each neighbouring layer of this cake has one more or one less "cube" in its "mosaic". All these layers are in constant motion and interaction with each other.

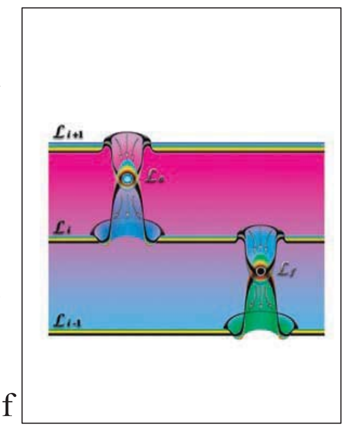

Fig. 2.2.2. As a result of space curvature caused by various reasons, zones of closure arise between neighbouring space-universes. If, for example, a space-universe with a lower intrinsic dimension **Li** merges with a space-universe with a higher intrinsic dimension Li+1, then, as a result, a star La is born in the merging zone for the space-universe with a lower intrinsic dimension **Li**. Similarly, a junction with a space-universe with a lower intrinsic dimension Li-1 leads to the appearance of a "black hole" — Lf in the space-universe with a higher level of Through the so-called positive closure zones (stars), matter from the space-universe with a higher level of dimensionality enters the space-universe, and through the negative closure zones ("black holes"), matter from the space-universe enters the space-universe with a lower level of dimensionality. Each space remains in a stable state when there is a balance between the volumes of "inflowing" and "outflowing" matter.

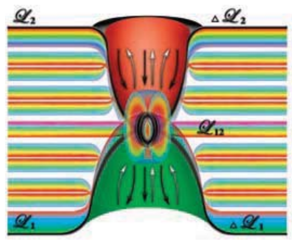

Fig. 2.3.1. Convergence of two matrix spaces with different dimension quantisation coefficients. In the convergence zone of matrix spaces with different space quantisation coefficients, both types of matter decay into two types of primary matter. The primary matter of both types returns to a free (unbound) state. The opening of a qualitative barrier between neighbouring matrix spaces leads to all types of primary matter rushing into the junction zone and beginning to accumulate there.

L'_1 — the dimension of the first matrix space

L'_2 — the dimension of the second matrix space.

L'_{12} — the dimension of the junction zone of matrix spaces.

L_1 is the range of oscillation of the dimension of the first matrix space.

L_2 — the range of variation of the dimension of the second matrix space.

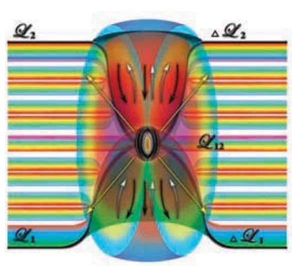

Fig. 2.3.2. Ejection of matter through the junction zone of matrix spaces during a super-explosion, when the junction zone cannot pass through itself the entire mass of moving matter. The accumulation of primary matter occurs as a result of the decay of hybrid matter from different matrix spaces into the matter that forms them. The released primary matter begins to move away from the epicentre of the explosion in all spatial directions. It should be remembered that space is heterogeneous in different directions, i.e., it has different properties and qualities. Therefore, matter is distributed unevenly in space

. The designations are the same.

Fig. 2.3.3. During an explosion, the dimensionality of the surrounding space closure zone is disturbed, and zones of dimensional heterogeneity are formed, in which the matter ejected by the explosion begins to settle. Processes similar to the explosion of a supernova star occur, only at a different qualitative level. The difference is only in scale. In one case, planetary systems are born, and in the other, universes. In the latter case, the deformation of layers of identical dimensionality during the explosion leads to their closure and the birth of galaxies. The symbols are the same.

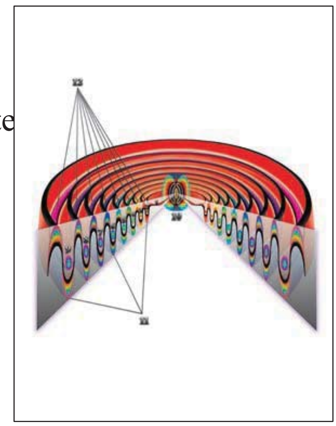

Fig. 2.3.4. Formation of metaverses in zones of spatial dimensionality heterogeneity that arose during a super-explosion.

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4. An area where four forms of matter can merge.

5. An area where five forms of matter can merge.

6. An area where six forms of matter can merge.

7. An area where seven forms of matter can merge.

8. The zone where eight forms of matter can merge.

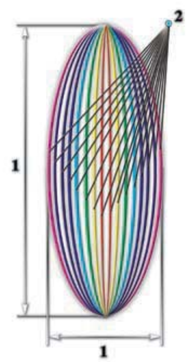
9. The zone where nine forms of matter can merge.

10. The zone where matrix spaces converge.

11. Metaverse.

12. Zones of dimensional deformation.

Fig. 2.3.5. Within each zone of heterogeneity, the dimensionality of space changes continuously from the centre of the zone of heterogeneity to its edges. As a result, matter is distributed unevenly, creating discrete layers that differ in the qualitative and quantitative composition of the primary matter that forms them. This results in the so-called quantisation of primary matter in space. In this process, primary matter, each of which has its own properties and qualities, interacts with space only where the properties of space are identical to the properties and qualities of primary matter. The quantisation of

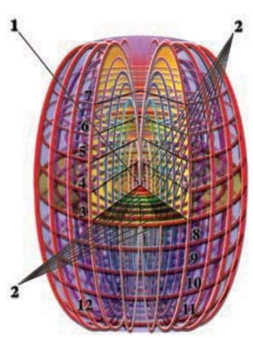


of space according to primary matter leads to the emergence of a system of space-universes, which are qualitatively heterogeneous within the zone of heterogeneity due to the fact that the zone of heterogeneity in which they arose is heterogeneous in different spatial directions.

1. Zone of spatial heterogeneity.

2. Spaces-universes that are formed within a single zone of space heterogeneity.

Fig. 2.3.6. First-order super-space. Due to the fact that a super-explosion causes deformation of space, systems of space-universes arise in all spatial directions, which differ from each other in the number of primary matters that form them. Moreover, the differences in the dimensionality of space in different spatial directions within the zone of heterogeneity are so significant that space quantisation occurs in several spatial directions simultaneously. With such multidimensional quantisation of space, systems of space-universes arise (me-



universes) that have a rigid, unchanging spatial position relative to each other, just as electrons have their rigid, fixed orbits around the nucleus. As a result, the metaverses create a single stable system.

1. The zone of convergence of matrix spaces.

2. Metaverse.

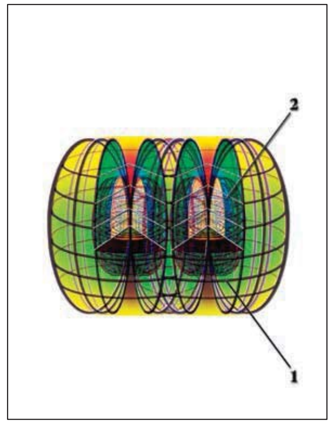


Fig. 2.3.7. Second-order super-space. During a super-explosion, wave-like deformations of space occur, spreading out in circles from the centre of the super-explosion. A super-explosion causes such powerful ring-shaped waves of macro-space deformation that they propagate over enormous distances. Moreover, the stronger the explosion, the greater the deformation of macroscopic space caused by the waves it creates. Over time, the space in the super-explosion zone returns to its equilibrium state. This process is accompanied by a gradual with a decrease in the amplitude of space deformation waves from the centre. Therefore, the further away from the epicentre of the super-explosion, the greater the depth of the space deformation zones will be. This means that the further away from the epicentre of the super-explosion, the greater the number of primary matter merging with each other, forming metaverse systems.

1. Metaverse formed by the fusion of ten forms of matter.

2. First-order super-spaces.

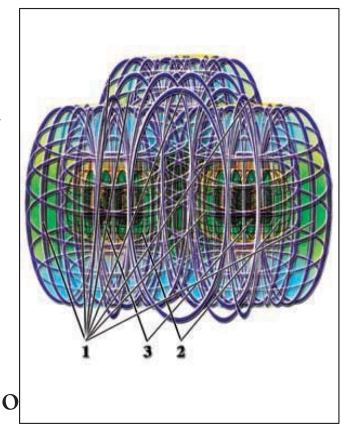


Fig. 2.3.8. Third-order super-space. Usually, many super-explosions occur in macro-space, so the waves of macro-space deformation of some overlap with similar waves of macro-space disturbance of others. As a result, a superposition of macrospace deformation waves arises, forming combined spatial systems. The qualitative structure of these spatial systems depends on how many super-explosions occurred in a given area of macrospace and how far apart their epicentres are from each other.

1. Metaverse formed by the fusion of eleven forms o

2. Second-order super-spaces.

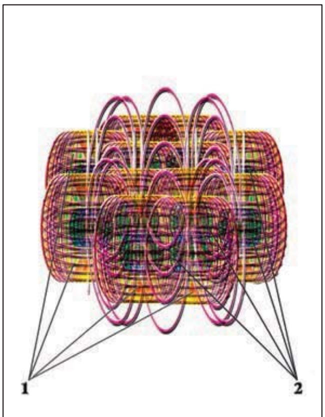


Fig. 2.3.9. Fourth-order superspace. The disturbance of the dimension of macrospace caused by each super-explosion spreads in circles from the epicentre. The further away from the epicentre, the stronger the deformation of macroscopic space created by the disturbance wave generated by the super-explosion. This means that the further away from the epicentre, the greater the number of primary materials that can merge with each other in areas of heterogeneity. The more primary matter merges together to form hybrid matter, the more inertial and resistant to external influences it becomes. In addition, the farther from the epicentre of the super-explosion, the greater the number of disturbances in the macrospace from other super-explosions that are superimposed on the disturbance created by this super-explosion.

1. Metaverse formed by the fusion of twelve forms of matter.

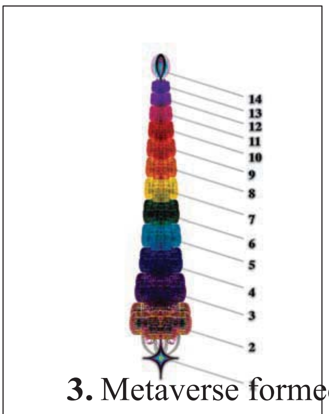


Fig. 2.3.10. Fifth-order super-space. Due to the fact that the matrix space is inherently heterogeneous, the disturbance of dimension caused by each super-explosion spreads unevenly in different spatial directions of macrospace. Therefore, the synthesis of hybrid matter occurs only along certain spatial directions of the matrix space.

1. The central zone of convergence of matrix spaces.

2. Metaverse formed by the fusion of thirteen forms of matter.

3. Metaverse formed by the fusion of twelve forms of matter.

4. Metaverse formed by the fusion of eleven forms of matter.

5. Metaverse formed by the fusion of ten forms of matter.

6. Metaverse formed by the fusion of nine forms of matter.

7. Metaverse formed by the fusion of eight forms of matter.

8. Metaverse formed by the fusion of seven forms of matter.

9. Metaverse formed by the fusion of six forms of matter.
10. Metaverse formed by the fusion of five forms of matter.
11. Metaverse formed by the fusion of four forms of matter.
12. Metaverse formed by the fusion of three forms of matter.
13. Metaverse formed by the fusion of two forms of matter.
14. The terminal zone of convergence of matrix spaces.

Fig. 2.3.11. Six-rayed star. It should be borne in mind that hybrid matter, resulting from the synthesis of primary matter, affects the matrix space in which it is located, and there comes a moment when the secondary influence of hybrid matter reaches a critical value, resulting in the "spillover" of one matrix space into another. As a result, a superanalogue of a "black hole" arises in one matrix space, and a superanalogue of a star in another. Thus, in a given matrix space, the spaces

spaces have finite dimensions. The quantisation coeffic space determines the type of primary matter from which spatial systems are formed in this matrix space. Hybrid matters that arise in deformation zones as a result of super-explosions have a finite maximum number of primary matters forming them for each specific matrix space. The secondary degeneration of the dimension of space created by them completely neutralises the primary deformation of macrospace.

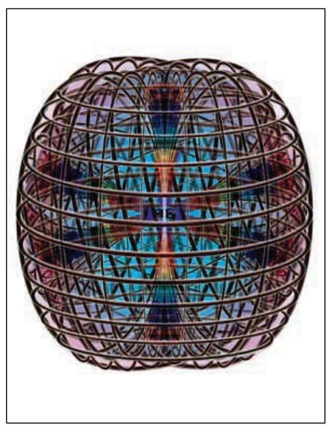


Fig. 2.3.12. Anti-six-ray. During super-explosions, ring waves of macro-space deformation arise. These longitudinal waves deform space both "upwards" and

"downwards". This phenomenon arises due to the fact that the matrix space itself is heterogeneous. There are differences (gradients) in dimension

"up" "down" and "east" and "west". Therefore, when a heterogeneous deformation of the matrix space, arising during a super-explosion, is superimposed on a heterogeneous space,

two types of matrix space deformation zones are formed. One zone of hybrid matter synthesis represents a
a "pit," while the other is a "hill." Six-rayed stars form inside the "pits," and anti-six-rayed stars form inside the "hills." The difference between the former and the latter is that in the latter, super-spaces arise with the maximum number of primary materials in the outer volumes and the minimum number in the inner volumes. Conventionally, we can say that in one case the spaces have positive spins, and in the other, negative spins.

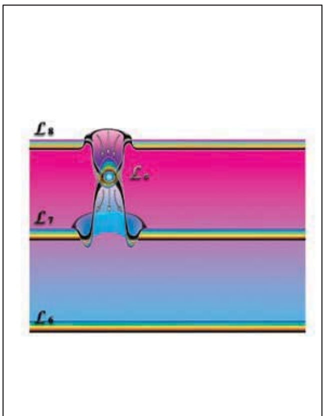


Fig. 2.4.1. The emergence of a star when the space-universe of our dimension closes with the space-universe of a higher dimension. Disturbances in space cause layers of identical space dimensions to close with each other in certain areas. When a layer of space-universe of one identical dimension merges with a layer of a higher identical dimension, a star is formed in the merging zone. At the same time, matter begins to flow from the space-universe with a higher dimension into the space-universe with a lower dimension.

The reason for the flow in this direction is that two neighbouring layers of identical dimension differ from each other by one primary matter. In the convergence zone, the matter of the higher dimension decays and the matter of the lower dimension synthesises.

L_6, L_7, L_8 are the dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

L_a — the dimension of a star.

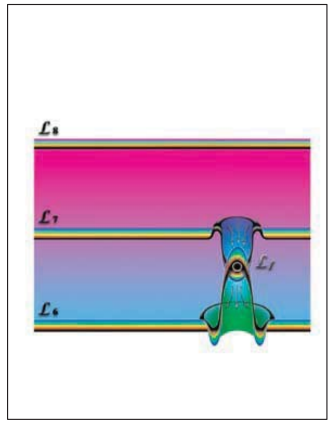


Fig. 2.4.2. The emergence of a "black hole" when the space-universe of our dimension closes with the space-universe of a lower dimension. When a layer of space-universe of one identical dimension closes with a layer of a lower identical dimension, a "black hole" forms in the closing zone. At the same time, matter begins to flow from the space-universe with a higher dimension into the space-universe with a lower dimension. The reason for the flow in this direction is that two neighbouring layers with the same dimension differ from each other by one primary matter. In the junction zone, the matter of the higher dimension decays and the matter of the lower dimension synthesises. The "black hole" is essentially a window into a parallel universe.

L_6, L_7, L_8 are the dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

L_f is the dimension of a "black hole".

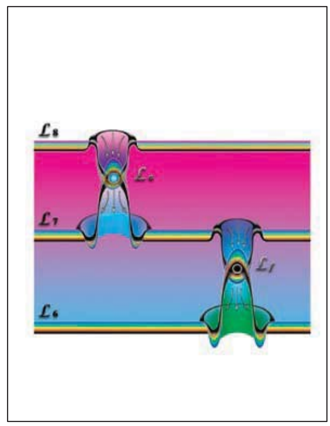


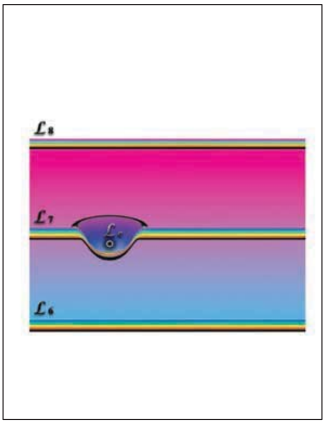
Fig. 2.4.3. Matter flows into each space-universe through stars and flows out through "black holes." Thus, a balance of matter in space is achieved. Through the zones of convergence between the layers of space, matter is redistributed, and it is precisely because of this that the conditions for the emergence of life arise. The substance of the layer with a higher level of identical dimensionality breaks down into primary matter, and the synthesis of the substance of the layer with a lower level of dimensionality occurs. The "excess" primary matter is released from captivity. The newly formed matter, when it enters the "black holes," breaks down into its constituent matter, and the synthesis of matter from the layer with a lower level of dimensionality occurs, and so on.

, when it enters "black holes," it breaks down into its constituent materials, and the synthesis of the layer with a lower level of dimensionality occurs, and so on.

L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_a, L_f — star and "black hole"

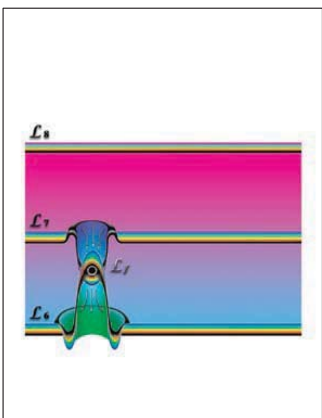
Fig. 2.4.4. Neutron star. As a star ages, the proportion of light elements decreases while the proportion of heavy elements increases. As a result, the degree of influence of the star on its macrocosm increases, and deformation of the layer of identical dimension occurs in the sphere of influence of the star. If the initial size of the star was less than ten solar radii, then when the star dies, a so-called neutron star is formed. And although a neutron star does not "opens" the door to another layer of identical dimension, it nevertheless has a significant impact on the qualitative state of "its" layer of identical dimension.



L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

L_c — neutron star.

Fig. 2.4.5. "Black hole." If the initial radius of a star was greater than ten solar radii, then when such a star dies, a black hole is formed. The mass of neutron matter is so great that it pushes through the matrix space to the next, lower space-universe. A new star ignites in the lower layer of the universe. Through this peculiar door, matter from one space-universe begins to flow into the lower one, completely disintegrating into the primary matter that forms it. When dying, one type of matter gives rise to another type of matter.



L_6, L_7, L_8 are the dimensions of the universe spaces f six, seven, and eight forms of matter.

L_f — a "black hole".

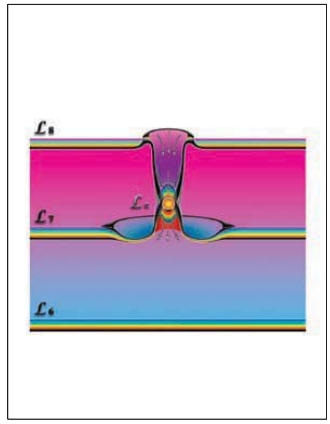


Fig. 2.5.1. Each star "lives" for billions of years, after which it "dies." During these billions of years, matter from the space-universe with a higher dimension L8 passes through the convergence zone into the space-universe with a lower dimension L7. At the same time, this matter becomes unstable and decays into the primary matter that forms it. The seven primary matters merge again, forming the physically dense matter of space-universe **L7**. In the convergence zone, the level of dimensionality is such that the atoms of those elements are synthesised, their own level whose dimensionality allows them to maintain their stability. Only so-called light elements such as hydrogen (**H**) and helium (**He**) are "found" in the upper stability zone of physically dense matter. Therefore, the synthesis of these elements occurs in the convergence zone. It is no coincidence that most of the matter in our universe is hydrogen. In the convergence zone, there is an active process of hydrogen synthesis, the mass of which forms the basis of stars. This is how stars, the so-called blue giants, are born. The initial density of the "newborns" is very low, but due to the fact that the convergence zone is heterogeneous in dimension, a difference (gradient) in dimension arises in the direction towards the centre. As a result, hydrogen molecules begin to move towards the centre of the convergence zone. The process of star contraction begins, during which the density of the stellar matter begins to grow rapidly.

As the density of stellar matter increases, the volume occupied by the star decreases and the degree of influence of the star's mass increases, both on the level of dimensionality of the fusion zone and at the atomic level. Thus, the star's own level of dimensionality begins to decrease, and processes of synthesis of new, heavier elements begin inside the star itself. A so-called thermonuclear reaction occurs, and the star begins to emit a whole spectrum of waves as a side effect of the synthesis of elements. It should be noted that it is precisely because of this "side effect" that the conditions for the emergence of life arise. Two processes occur simultaneously in the convergence zone: the synthesis of hydrogen during the decay of matter in space-universe with a higher level of intrinsic dimensionality (matter formed by the synthesis of eight forms of primary matter) and the synthesis of heavier elements from hydrogen during thermonuclear reactions. As a result of these processes, the star decreases in volume and, as a consequence of the increase in the mass fraction of heavier elements than

hydrogen elements, the star's own dimensionality decreases. This, in turn, reduces the convergence zone. In other words,
a star "born" in another space-universe gradually separates from its "mother" in our space-universe. Isn't it true that there is an interesting analogy with the development of an embryo inside the womb, when the foetus, "woven" from the mother's blood and flesh, leaves the mother's womb and begins an independent life, just as a star "born" by space-universe leaves the "womb of its mother" when its own dimensionality decreases as a result of its increasing influence on the surrounding space. Separated from its "mother" space-universe, the star begins its own life — a life that lasts for billions of years, after which it
"dies." However, stars, in turn, manage to "give birth" to planetary systems where life has a chance to appear.

L6, L7, L8 — the dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

Lc — a star.

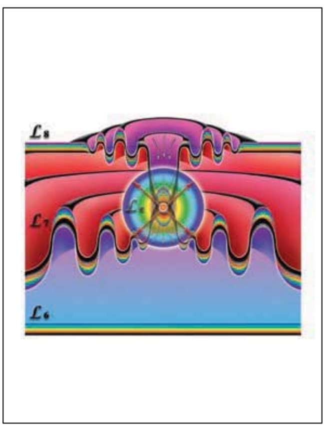


Fig. 2.5.2. During the compression of a star, the balance between the radiating surface and the radiating volume is disrupted. As a result, primary matter accumulates inside the star. The accumulation of primary matter ultimately leads to a so-called supernova explosion. A supernova explosion generates longitudinal oscillations in the dimensionality of space around the star. The surface layers of the star ejected by the supernova explosion, which, incidentally, consist of the lightest elements, fall into the distortions of space created by the longitudinal oscillations of dimensionality that arose during the explosion. In these areas of space distortion,
, active synthesis of matter occurs from the primary matter, and a whole spectrum of different elements is synthesized, including heavy and superheavy ones. The greater the difference between the star's own dimensionality level and the dimensionality levels of the space curvature zones, the heavier the elements that can be "born" within these zones and the more stable these heavy elements are. Depending on its initial size, a star may experience one or more supernova explosions during its lifetime. With each such explosion, the star's own dimensionality level decreases, which leads to

This leads to a decrease in the synthesis of light elements and an increase in the synthesis of heavy elements. As a result, the density, and therefore the degree of influence of the star on the surrounding space, increases. If the initial mass of the star was less than ten solar masses, by the time of its "death" (extinction) it will turn into a so-called neutron star. If, however, the initial mass of the star exceeded ten solar masses, then at the end of its life cycle, the star turns into a "black hole". The neutron remnant of the star (neutron matter is a qualitative structure of physically dense matter in which only neutrons, which have no electric charge, form the mass of this matter and, because of this, there is no "empty" space between them, as between the nuclei of neighbouring atoms) deforms the surrounding space so strongly that a new zone of convergence appears, but now with a space-universe with a lower level of its own dimensionality **L6**.

L6, L7, L8 are the dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

Lc — star.

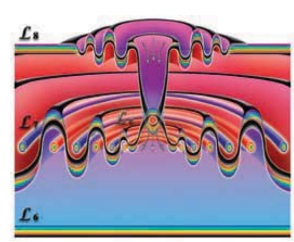
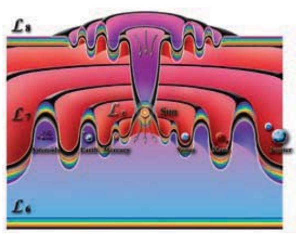


Fig. 2.5.3. Primary matter ejected during a supernova explosion — part of the mass of the star itself ejected in the process — enters zones of space curvature caused by the explosion. In the deformation zones, an active process of hybrid matter synthesis begins, and this process continues until the hybrid matter completely compensates for the deformation of the space in which its synthesis occurs. This happens because hybrid matter itself influences the space in which it is located. Moreover, if the change the change in dimensionality in the zone of space deformation caused by a supernova explosion is considered negative, then hybrid matter will positively influence the dimensionality of space, increasing the dimensionality of space in the zone of deformation.

L6, L7, L8 are the dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

Lc — star.

Fig. 2.5.4. Gradually, the matter in the curvature zones becomes denser and



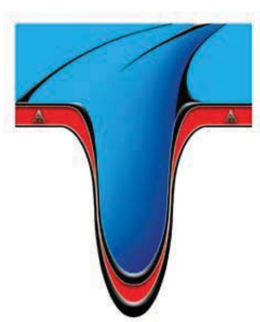
planets are born. The densification of matter occurs due to the presence of a dimensional gradient within the curvature zones, directed towards the centre of the heterogeneity. The closer the curvature zone is to the star, the more pronounced the gradient is. Therefore, planets closer to the star will be smaller and contain a larger proportion of heavy elements. These elements are also more stable, since the planet's own level of heterogeneity is lower the closer the planet is to the star. Thus, stable heavy elements are most abundant on Mercury and, accordingly, as the proportion of heavy elements decreases, they are found on Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Pluto.

, as the proportion of heavy elements decreases, they are followed by Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Pluto.

L6, L7, L8 — dimensions of space-universes formed by the fusion of six, seven, and eight forms of matter.

Lc — a star.

Fig. 2.5.5. Curvature of space, in which conditions arise for the fusion of



forms of matter into substance. Primary matter has its own qualities and properties. The qualities and properties of primary matter have their limitations. Each specific quantity is finite, just as a finite quantity has its own form. Therefore, in order for the interaction of a finite quantity (primary matter) with specific properties and qualities and an infinite quantity (space) with continuously changing properties and qualities to occur, it is necessary for this matter to enter the zone of this space that has adequate

s. And this can only happen in a limited volume of this space. Therefore, when a supernova explodes, space is deformed, and changes occur in the zones of deformation of the qualities and properties of this space. As a result, in these zones, primary matter manifests itself in a new way and a synthesis of hybrid matter occurs.

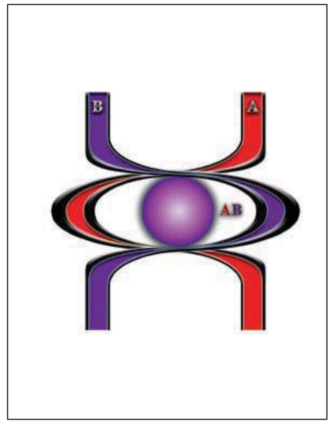


Fig. 2.5.6. Merging of forms of matter **A** and **B** in the zone of space curvature, and formation of substance type **AB**. This substance is qualitatively different from the forms of matter that constitute it; a new quality arises from old qualities. Moreover, the fusion of matter occurs in a limited volume where the parameters of forms of matter **A** and **B** are identical. The identity of the parameters of the primary matter is due to the fact that they fall into the zone of space deformation that arose during the supernova explosion. In this region of space, properties and qualities change, as a result of which the primary matter, having its own qualities and properties, begins to interact with each other where their properties and qualities are identical to each other.

As a result, primary matter, which has its own qualities and properties, begins to interact with each other where their properties and qualities are identical to each other. It is precisely due to the identity of the properties and qualities of the region of space and the primary matter that the necessary conditions arise for the fusion of free primary matter and the formation of a hybrid form with new properties and qualities. Moreover, the hybrid form resulting from the synthesis itself influences the space in which it is located.

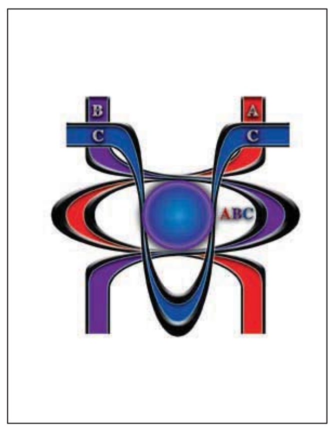
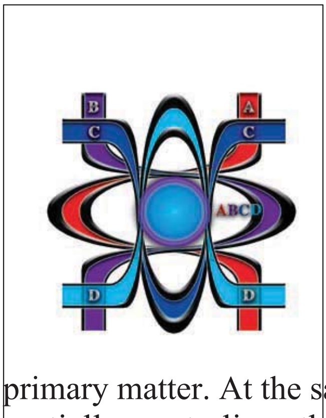


Fig. 2.5.7. Merging of forms of matter **A**, **B**, **C** in the zone of space curvature, and formation of substance type **ABC**. This **ABC** substance is qualitatively different from both its constituent forms and the **AB** type substance**.** The fusion occurs in a smaller volume than when two forms of matter **A** and **B** fuse**,** since the properties and qualities of the three primary forms of matter are identical, respectively, in a smaller volume within the zone of space curvature. In the zone of space deformation, properties and qualities change continuously. Primary matter, qualitatively harmonising in a

a specific volume of space, create hybrid forms of matter that affect space, changing its properties and qualities, which makes possible a new fusion of primary matter in a different combination. This creates a so-called feedback loop, where the new quality affects the quality that gave rise to it, changing it and creating conditions for the emergence of a new quality.

A, **B**, **C**, **D**, **E**, **F**, **G** — seven primary materials that form our space-universe.

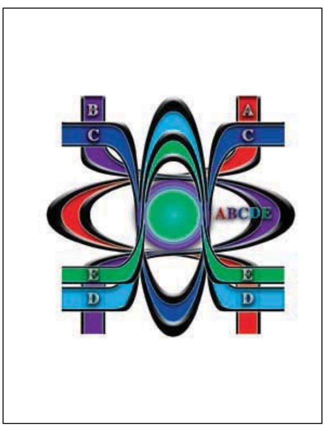
Fig. 2.5.8. Merging of forms of matter **A**, **B**, **C**, **D** in the zone of space curvature and formation of **ABCD-type** matter. This substance occupies a smaller volume than substance type **ABC** because the properties and qualities of the four forms of matter are identical in a smaller volume within the zone of space curvature than when three forms of matter merge. The hybrid form **ABCD** is spatially located inside the hybrid form **ABC.** In turn, the new hybrid matter affects the surrounding space, creating qualitative conditions for the possibility of synthesising new hybrid matter, which has one



primary matter. At the same time, each new hybrid matter partially neutralises the space curvature zone. The "pit" is gradually filled with hybrid matter.

A, **B**, **C**, **D**, **E**, **F**, **G** — seven primary materials that form our space-universe.

Fig. 2.5.9. Merging of forms of matter **A**, **B**, **C**, **D**, **E** in the zone of space curvature and formation of substance type **ABC-DE**. This substance occupies a smaller volume than substance type **ABCD** because the properties and qualities of the five forms of matter are identical in a smaller volume within the zone of space curvature than in the merging four forms matter. The hybrid form **ABCDE** is spatially located inside the hybrid form **ABCD**. In turn, the new hybrid matter **ABCDE** affects the surrounding space, creating qualitative conditions for the possibility of synthesising new hybrid matter, which has in its



in its composition by one primary matter. At the same time, each new hybrid matter partially neutralises the space curvature zone. The "pit" is gradually filled with hybrid matters.

A, **B**, **C**, **D**, **E**, **F**, **G** — seven primary materials that form our space-universe

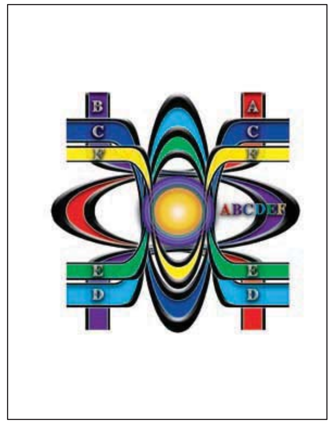


Fig. 2.5.10. Merging of matter forms **A**, **B**, **C**, **D**, **E**, **F** in the space curvature zone and formation of **ABCDEF-type** matter. This substance occupies a smaller volume than **ABCDEF-type** substance because the properties and qualities of the six forms of matter are identical in a smaller volume within the zone of space curvature than when the five forms of matter merge. The hybrid form **ABCDEF** is spatially located inside the hybrid form **ABCDE.** In turn, the new hybrid matter **ABCDEF** affects the surrounding space, creating qualitative conditions.

for the possibility of synthesising new hybrid matter, which has one more primary matter in its qualitative composition. At the same time, each new hybrid matter partially neutralises the area of space curvature. The "pit" is gradually filled with hybrid matter.

A, **B**, **C**, **D**, **E**, **F**, **G** — seven primary materials that form our space-universe.

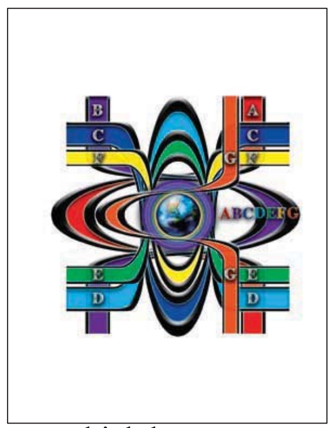


Fig. 2.5.11. Merging of seven forms of matter **A**, **B**, **C**, **D**, **E**, **F**, **G** in the zone of space curvature and formation of **ABCDEFG-type** matter. This substance occupies a smaller volume than substance type **ABCDEF** because the properties and qualities of the seven forms of matter can be identical in a smaller volume within the zone of space curvature than when six forms of matter merge. The hybrid form **ABCDEFG** is spatially located inside the hybrid form **ABCDFE.** In turn, the new hybrid matter **ABCDE-FG** affects the surrounding space, creating qualitative conditions for the synthesis of new hybrid matter, which has one more primary matter in its qualitative composition. At the same time, each new hybrid matter partially neutralises the space curvature zone. The "pit" is gradually filled with hybrid matter.

A, **B**, **C**, **D**, **E**, **F**, **G** — seven primary materials that form our space-universe.

Fig. 2.5.12. Planet Earth, which arose in the zone of space curvature as a result of the sequential fusion of seven forms of matter and represents six material spheres of different quantitative and qualitative composition, one inside the other. These spheres together represent one system — planet Earth — and cannot exist without each other. Therefore, when considering the processes occurring at the physical level, it is necessary to remember that this is only the visible tip of the iceberg that is the planet. The inner sphere, formed by seven forms of matter, is the physically dense planet Earth.

1. The physically dense (first material) sphere.
2. The second material sphere.
3. The third material sphere.
4. The fourth material sphere.
5. Fifth material sphere.
6. The sixth material sphere.

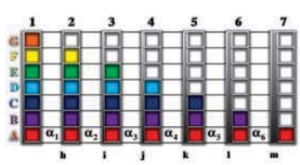


Fig. 2.5.13. Structural and qualitative composition of the spheres of the Earth. This diagram clearly shows what the material spheres of the Earth have in common and how they differ from each other. Common elements create conditions for interaction between the spheres of the Earth, and the degree of this interaction is reflected in the coefficients:

1. Physically dense (first material) sphere.
2. Second material sphere.
3. Third material sphere.
4. Fourth material sphere.
5. Fifth material sphere.
6. Sixth material sphere.
7. The layer of unwarped space.

$\alpha 1$ — coefficient of interaction between the physically dense and second material spheres.

$\alpha 2$ — coefficient of interaction between the physically dense and third material spheres.

α_3 — coefficient of interaction between the physically dense and fourth material spheres.

α_4 — coefficient of interaction between the physically dense and fifth material spheres.

α_5 — coefficient of interaction between the physically dense and sixth material spheres.

α_6 — coefficient of interaction between the physically dense sphere and the layer of undistorted (undeformed) space.

h — qualitative barrier between the physically dense and second material spheres.

i — qualitative barrier between the physically dense and third material spheres.

j — qualitative barrier between the physically dense and fourth material spheres.

k — a qualitative barrier between the physically dense and fifth material spheres.

l — a qualitative barrier between the physically dense and sixth material spheres.

m — a qualitative barrier between the physically dense sphere and the layer of unwarped space.

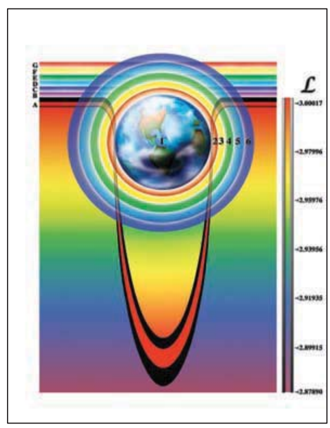


Fig. 2.5.14. When merging in the zone of space curvature, the seven forms of primary matter form six types of substance, which differ from each other in their qualitative and quantitative composition. These substances create six material spheres, one inside the other, which cause secondary degeneration of space (curvature) and neutralise the primary curvature of space in which the fusion of these seven forms of matter took place. After the formation of the planet is complete, some of the substance decays, which again creates conditions for the synthesis of matter from free forms of matter, and a cycle of matter occurs.

1. Physically dense (first material) sphere.

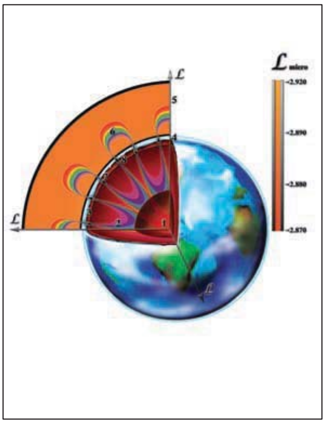
2. Second material sphere.

3. Third material sphere.

4. Fourth material sphere.

5. Fifth material sphere.
6. Sixth material sphere.

Fig. 2.5.15. After the planet formation process is complete, primary matter continues to "flow in" and "flow out" of the zone of heterogeneity. Hybrid forms of matter, resulting from the synthesis of primary matter, compensate for the dimensional difference in the zone of heterogeneity, but do not "remove" it. Therefore, just as flowing water continues to flow into and out of a reservoir, maintaining its level, so too does the primary matter, after the formation of the planet is complete, continue to flow into and out of the zone of heterogeneity. Due to the fact that the planet partially loses its matter mainly in the form of a gas trail and radioactive decay of elements,



moments, there is a slight additional synthesis of physically dense matter, and the balance is thus restored. Within the planetary zone of heterogeneity, there are many small heterogeneities that affect the primary matter "flowing" through them, as a result of which each area of the surface is permeated by streams of primary matter in a certain proportional ratio. As a result, depending on the specific distribution, the synthesis of certain elements occurs during the formation of the planet. This is precisely the reason for the formation of deposits of certain elements in different areas of the crust and at different depths. And when these deposits are depleted, a dimensional heterogeneity arises in this place, which provokes the synthesis of the same elements. Upon completion of the synthesis, the dimensional balance is restored. However, the restoring synthesis can continue for hundreds, and sometimes thousands of years, and its results can only be seen by subsequent generations. Thus, each area of the planet's surface is permeated in one direction or another by a certain superposition (proportional ratio) of primary matter. The ascending flows of primary matter permeating the surface create so-called positive geomagnetic zones, while the descending flows create negative ones.

1. The core of the planet.
2. Magma belt.
3. Crust.
4. Atmospheres.

5. Second material sphere.

6. Circulation of primary matter through the planet's surface.

7. Negative geomagnetic zones (descending flows of primary matter).

8. Positive geomagnetic zones (ascending flows of primary matter).

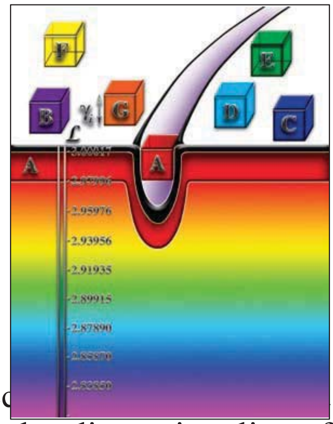


Fig**. 3.2.1**. If we imagine primary matter of one type as multicoloured cubes of the same size, then the interaction between space and primary matter can be represented as follows. Each primary matter has its own specific properties and qualities, therefore, in order for it to interact with space, it is necessary to change the properties and qualities of space until they become identical to the properties and qualities of the given primary matter. In order for the properties and qualities of space to change, This space must be disturbed. Such disturbance occ explosion. Longitudinal ring waves of disturbance in the dimensionality of space propagate from the epicentre of the supernova explosion and create the necessary conditions for the emergence of a new quality — hybrid matter. Disturbance waves can have different amplitudes. If the amplitude of the disturbance of the dimensionality of space is commensurate with the quantisation coefficient $\Delta L = \boldsymbol{\gamma i}$, then only one primary matter A "resonates" with space, and no new quality is formed.

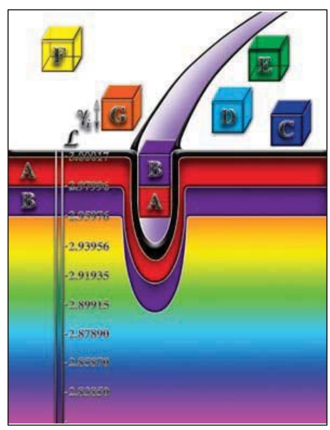


Fig. 3.2.2. If the amplitude of the disturbance of the space dimension caused by a supernova explosion is proportional to the quantisation coefficient, as a value $\boldsymbol{\Delta L=2\ \gamma i}$, then the two primary materials **A** and **B** "resonate" with space, and a new quality arises — hybrid material **AB.** At the same time, the hybrid form itself influences space and completely neutralises the zone of space deformation in which it arose. Synthesis of the hybrid form of matter **AB** in the zone of space heterogeneity

At the same time, it "freezes" this zone of heterogeneity, creating a standing wave of dimensionality in space. At the same time, the system returns to the stable state that existed before the arrival of the longitudinal wave of disturbance of the dimensionality of space. The restoration of equilibrium becomes possible only with the emergence of standing waves of dimensionality, due to hybrid matter, and the new stable state of space is qualitatively different from the initial one, with the appearance of hybrid matter. In other words, space before and after a supernova explosion is qualitatively different from each other.

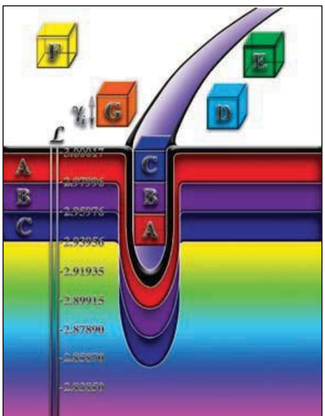


Fig. 3.2.3. If the amplitude of the disturbance of the dimension of space caused by a supernova explosion is proportional to the quantisation coefficient, as a value **ΔL=3 γi**, then the three primary materials **A, B** and **C** "resonate" with space, and a new quality arises — hybrid material **ABC.** At the same time, the hybrid form itself influences space and completely neutralises the zone of space deformation in which it arose. The synthesis of hybrid matter **ABC** in the zone of space heterogeneity neutralises this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium.

of equilibrium. However, this state of equilibrium will differ from any other, since the amplitude of the standing wave of dimension will differ from the amplitudes of other standing waves in this space. This is because filling in all the potholes on the road does not mean that the potholes have disappeared or that they are completely identical, if only because filling in potholes of different depths requires different amounts of gravel or something else.

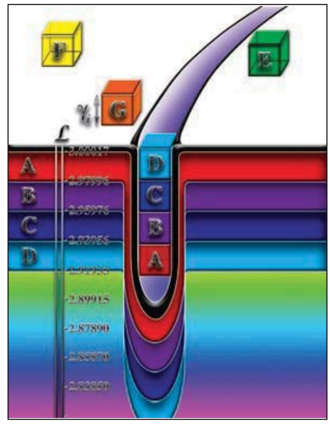


Fig. 3.2.4. If the amplitude of the disturbance of the spatial dimension caused by a supernova explosion is proportional to the quantisation coefficient, as a value **$\Delta L=4$** γ_i, then the four primary materials **A**, **B**, **C** and **D** "resonate" with space, and a new quality arises — hybrid matter **ABCD**. At the same time, the hybrid form itself affects space and completely neutralises the zone of space deformation in which it arose. The synthesis of hybrid matter **ABCD** in the zone of space heterogeneity neutralises this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium. However, this state of equilibrium will differ from any other, since the amplitude of the standing wave of dimensionality will differ from the amplitudes of other standing waves in this space.

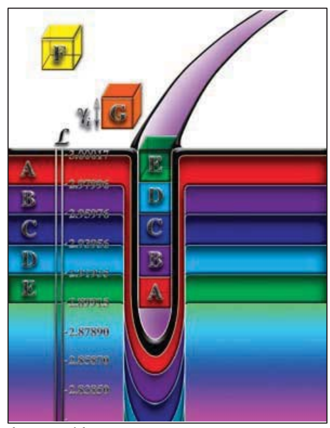
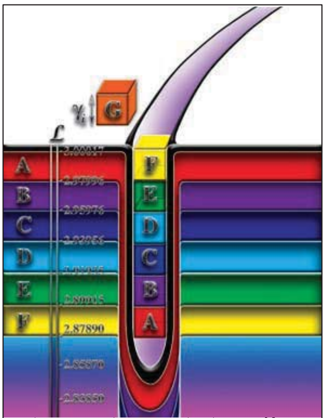


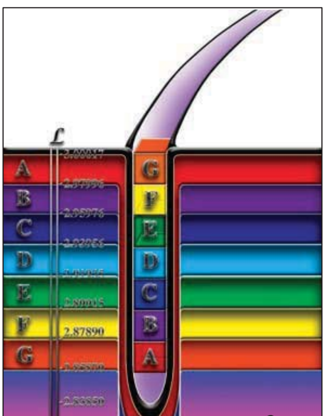
Fig. 3.2.5. If the amplitude of the disturbance of the spatial dimension caused by a supernova explosion is proportional to the quantisation coefficient, as a value **$\Delta L = 5$** γ_i, then the five primary materials **A**, **B, C,** D, and E "resonate" with space, and a new quality arises — hybrid matter **ABCDE.** At the same time, the hybrid form itself influences space and completely neutralises the zone of space deformation in which it arose. The synthesis of hybrid matter **ABCDE** in the zone of spatial heterogeneity neutralises this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium. However, this state of equilibrium will differ from any other, since the amplitude of the standing wave of dimensionality will differ from the amplitudes of other standing waves in this space.

Fig. 3.2.6. If the amplitude of the disturbance of the spatial dimension arising from a supernova explosion is proportional to the quantisation coefficient, as the quantity $\mathbf{\Delta L}$ $\mathbf{=6}\ \gamma_i$, then the six primary materials **A**, **B**, **C**, **D**, **E**, and **F** "resonate" with space, and a new quality arises — hybrid material **ABCD-EF**. At the same time, the hybrid form itself influences space and completely neutralises the zone of space deformation in which it arose. The synthesis of hybrid matter **ABCDEF** in the zone of spatial heterogeneity neutralises this heterogeneity, creating, as already noted, a standing wave of dimension. Space returns



returns to a state of equilibrium. However, this state of equilibrium will differ from any other, since the amplitude of the standing wave of dimension will differ from the amplitudes of other standing waves in this space.

Fig. 3.2.7. If the amplitude of the disturbance of the spatial dimension arising from a supernova explosion is proportional to the quantisation coefficient, as the quantity $\mathbf{\Delta L}$ $\mathbf{= 7}\ \gamma_i$, then the seven primary matters **A**, **B**, **C**, **D**, **E**, **F**, and **G** "resonate" with space, and a new quality arises — hybrid matter **AB-CDEFG**. At the same time, the hybrid form itself influences space and completely neutralises the zone of space deformation in which it arose. The synthesis of hybrid matter **ABCDEFG** in the zone of space heterogeneity neutralises this heterogeneity, creating, as already noted, a standing wave of dimension. Space



returns to a state of equilibrium. However, this state of equilibrium will differ from any other, since the amplitude of the standing wave of dimension will differ from the amplitudes of other standing waves in this space.

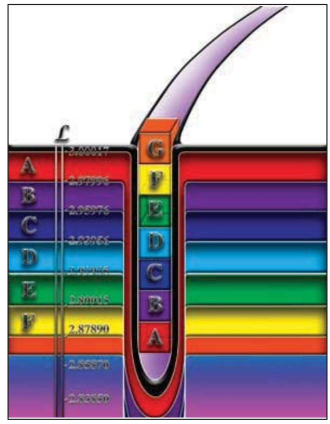


Fig. 3.2.8. If the amplitude of the disturbance of the spatial dimension caused by a supernova explosion is proportional to the quantisation coefficient, as a value **of** $\mathbf{6}\ _{\gamma i} < \Delta L < \mathbf{6.9}\ \boldsymbol{\gamma i}$, then the seven primary materials **A, B, C,** D, E, F, and G cannot "resonate" with space, and no new quality arises — hybrid material **ABCDEFG.** Under these conditions, only six primary materials can merge and form hybrid material **ABCDEF.** Each primary matter has its own specific properties and qualities and cannot interact with other parts in any part of itself, but only as a whole. Just as there cannot be half a person or a quarter of a person, since a person is a single living organism, all of whose cells work together to ensure the functioning of the organism as a whole. Similarly, primary matter cannot interact only with part of its property or quality, but only with the "whole" property or quality. Thus, we observe the quantisation of space according to primary matter.

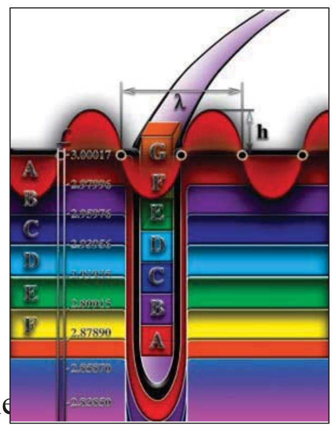


Fig. 3.2.9. There are always slight fluctuations in the dimensionality of space, which are relic radiation from space, echoes of supernova explosions that occurred billions and billions of years ago, or radiation from dying stars. All this radiation creates a kind of spatial "background". Therefore, in a situation where the zone of deformation of the dimensionality of space lies in the range $\mathbf{6}\ _{\gamma i} < \mathbf{\Delta L} < \mathbf{6.9}\ _{\gamma i}$, the relic radiation of space, carrying insignificant fluctuations in the dimensionality of space, act as a "lifesaver." The amplitudes of the dimensionality fluctuations that they bring with them on the dimensionality of space at a given point in space will temporarily create conditions for the fusion of the seven primary materials.

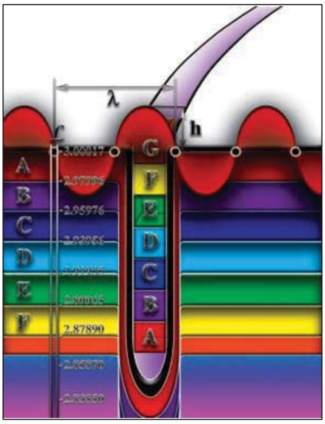


Fig. 3.2.10. After the wave front passes through a given point in space, the dimensionality of space returns to the level it was at before the wave front arrived, and the conditions necessary for the synthesis of the seven primary materials disappear, and the hybrid material **ABC-DEFG** breaks down into the primary materials. A new wavefront restores the conditions necessary for synthesis, and the process repeats itself. The hybrid matter **ABCDEFG** — a physically dense substance — is in a state of oscillation, which is a borderline state of physically dense matter and is nothing more than the so-called electron. This is why the electron has dual (dualistic) properties, both as a wave and as a particle. In principle, the electron is neither one nor the other, but is a borderline form of matter.
has dual (dualistic) properties, both as waves and particles. In principle, an electron is neither one nor the other, but is a borderline form of matter.

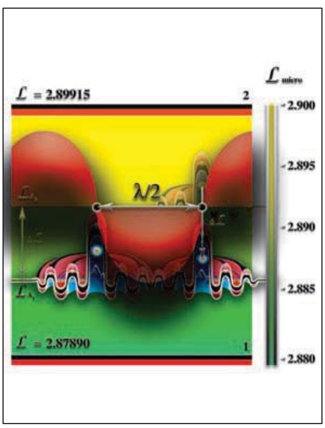


Fig. 3.2.11. When an atomic nucleus is formed, disturbances in the dimensionality of space occur, similar to those that occur during a supernova explosion, only everything happens at the micro-space level. The ring waves of disturbance in the dimensionality of microspace created by the atomic nucleus decay fairly quickly, and the smaller the atomic nucleus, the faster this decay occurs. Nevertheless, one or more zones of microspace deformation arise for the fusion of the seven primary materials **ABCDEFG.** The fusion of the seven primary materials occurs in the form of a boundary form of physically dense matter. At the same time, standing waves of micro-space dimension are formed around the nucleus.
standing waves of micro-space dimension are formed around the nucleus. Due to the fact that microscopic oscillations of micro-space dimension are constantly present at the micro-space level, periodic changes in the level of dimension occur in one or another zone of the standing wave of atomic dimension.

1. The first allowed electron orbit.
2. The second allowed electron orbit.
3. Electron.

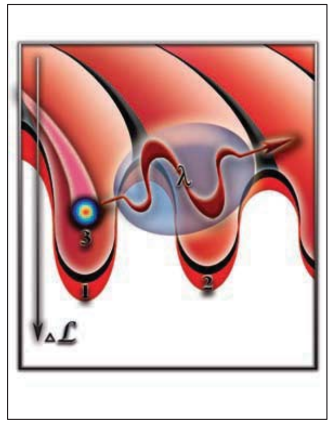


Fig. 3.2.12. Due to the fact that all known radiation exists in the form of portions — photons — the latter, when moving in space, affect only a particular part of microspace, depending on the wavelength of a given photon. The disturbance of dimensionality leads to the borderline form of matter — the electron — becoming unstable and disintegrating into primary matter. At the same time, a microscopic explosion occurs, all of whose energy goes into creating a single photon. The electron disappears from this electron orbit and not only from the orbit.

bits. This electron simply ceases to exist, it "dies". The lifetime of an electron is a trillionth of a second. After the "death" of the electron, a "vacancy" appears in its place. The fact is that the presence of an electron creates a standing wave zone in a given electron orbit of an atom. After the electron "dies," this zone becomes unstable and active, since the intrinsic dimensionality of this zone becomes higher than the intrinsic dimensionality of the atom as a whole. The microscopic dimensionality that arises in this way creates "photon trap".

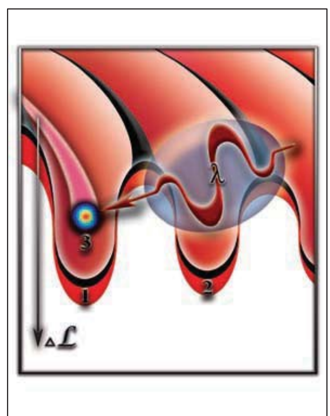


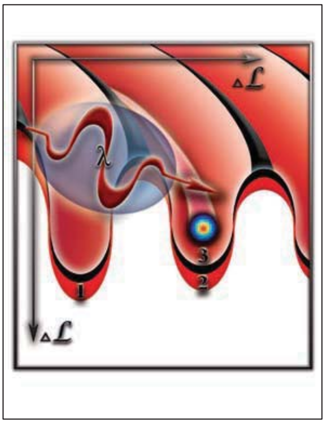
Fig. 3.2.13. A vacant electronic zone does not remain free for a "long" time. The entire space is literally saturated with microscopic dimensional fluctuations, most of which are chaotic emissions of electrons from the entire universe. One of these photons is absorbed, and a new electron is born in the same deformation zone — the electron orbit. The process of the death and birth of an electron occurs so quickly that it creates the illusion of the same electron flickering. Due to the fact that during the vacant

, there is also a radial dimensional gradient within the zone of heterogeneity, the birth of a new electron does not occur in the same place where the previous electron disappeared. Therefore, each new birth of an electron occurs in a new place. As a result, there is a flickering motion of the electron in its orbit around the nucleus.

1. The first allowed electron orbit.

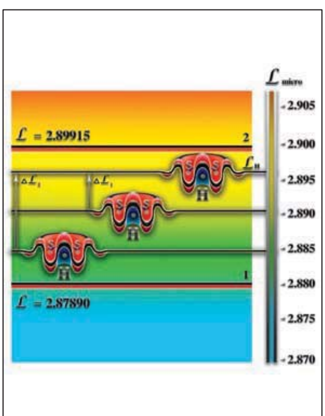
2. The second allowed electron orbit.
3. Electron.

Fig. 3.2.14. The "death" of an electron can occur in one orbit, and its new "birth" can occur in orbits closer to or further from the nucleus. This is a well-known fact in atomic physics. Moreover, the jump can only occur to one orbit down or one orbit up. As a result, the "pro-pisk" of the newly born electron changes after the decay of the previous one! What "didn't like" it yet?



"The 'old' place of residence for the born electron?! Yes, nothing. The fact is that the 'residence' of the electron changes only if a disturbance of dimension is superimposed on the standing wave structure of the atom, the wavelength of which is commensurate with the distance
distance between neighbouring zones of dimensional deformation around the nucleus, in other words, commensurate with the distance between neighbouring orbits, or there is an external dimensional difference **ΔL**. In these cases, the place of
"birth" of the electron is carried away by the gravitational wind in one direction or another, depending on the situation and the direction of the originating processes.

Fig. 3.3.1. The intrinsic dimensionality level of hydrogen **H** (the degree of influence of an atom or other material object on the surrounding space) is so insignificant that it makes it stable within the entire dimensionality range between the physically dense and second material spheres. Hydrogen can be stable both inside a hot star and in interstellar space. Because of this, hydrogen is the most abundant element in the universe. Virtually all processes occurring in the universe involve hydrogen. Hydrogen is not only the basis of thermonuclear reactions in stars, but also plays
the existence of living matter.



1. The lower level of dimensionality of the physically dense sphere.
2. The upper level of dimensionality of the physically dense sphere.

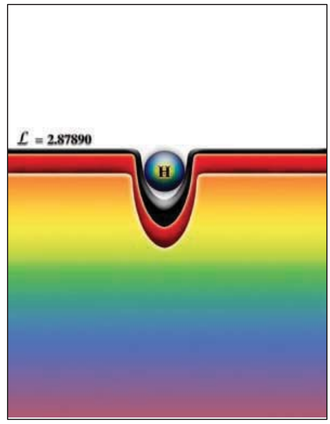


Fig. 3.3.2. The hydrogen atom **H** is the most stable and most common element in our universe due to the fact that it (hydrogen) has a minimal impact on the surrounding space. This is because only insignificant changes in the dimensionality of space are required for the synthesis of hydrogen from primary matter. That is why hydrogen is the most common element in the universe. At the same time, it should be remembered that every atom, including the hydrogen atom, affects the dimensionality of space by filling the deformation space with its mass. Therefore, after the synthesis of each atom, the zone of space deformation decreases by a certain amount, proportional to the atomic weight of that atom. Therefore, as physically dense matter is synthesized with each synthesized atom, the amount of space deformation decreases, and this process will continue until the deformation zone is completely neutralized by the atoms resulting from the synthesis. At the same time, the synthesis itself ceases.

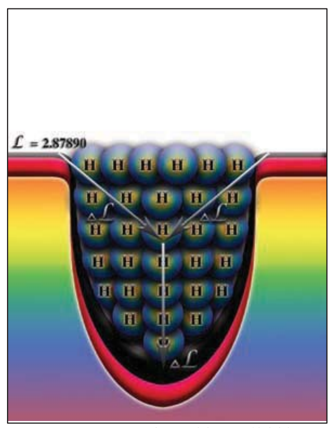


Fig. 3.3.3. In the universe, atoms, mainly hydrogen, are constantly being synthesized; because of this, synthesis occurs in the areas of contact between this space-universe and the one above it. Therefore, areas of space deformation most often occur closer to the upper limit of the stability of physically dense matter. As a result, optimal conditions arise for the synthesis of hydrogen, due to its minimal secondary impact on the surrounding space. Since the zones of heterogeneity have enormous spatial dimensions, the synthesised atoms begin to accumulate in these zones, gradually filling them. Due to the fact that the zones of heterogeneity are themselves heterogeneous in different spatial directions, internal differences (gradients) in dimensionality arise, directed towards the centre of the zone of heterogeneity. As a result, hydrogen atoms trapped in the zone of heterogeneity are exposed to streams of primary matter directed towards the centre of the zone of heterogeneity. And, as a consequence,

compression of the hydrogen substance occurs, leading to heating and the onset of thermonuclear reactions.

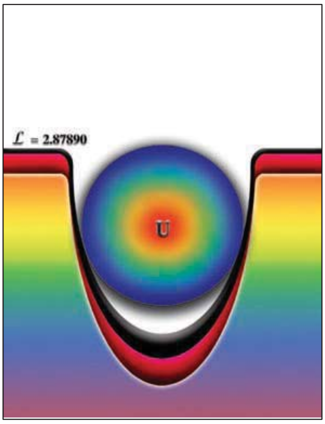


Fig. 3.3.4. For the synthesis of a uranium atom**,** the space deformation zone must be as large as possible for the possible states of physically dense matter. The deformation of space created by the nucleus of a uranium atom is so significant that a single uranium atom almost completely neutralises the maximum possible dimensional difference for physically dense matter. Therefore, uranium and all transuranic elements become unstable and begin to decay into the matter that forms them under normal conditions. Since even the absorption of background radiation from the universe is sufficient to cause the state of an atom that has absorbed a photon from this background to become supercritical and decay, the synthesis of stable atoms under these conditions occurs from the primary matter released during the decay process.

After that, the system returns to a stable state. The processes and causes leading to a supernova explosion and the processes and causes leading to radioactive decay are identical in nature, with features caused by differences between the macro- and micro-worlds.

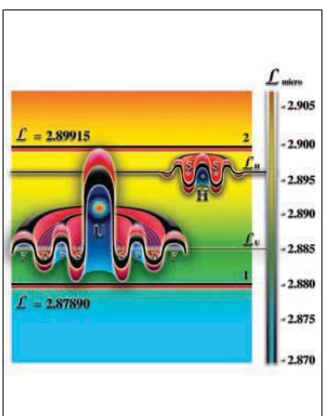
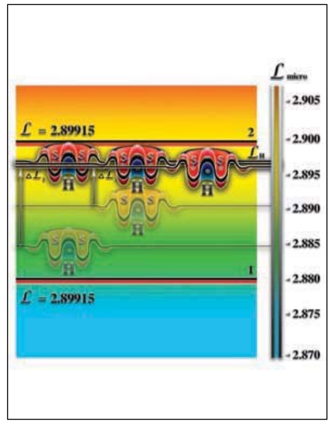


Fig. 3.3.5. Comparison of the degree of influence on the surrounding microcosm (microsphere) of a hydrogen atom **H** and a uranium atom **U**. The intrinsic dimensionality level of uranium **U** allows it to be stable within a narrow range of dimensionality. This is why uranium and all transuranic elements are radioactive, i.e., unstable under virtually any conditions. Meanwhile, hydrogen and other light elements become unstable only under certain conditions. The lighter the element, the more stable it is, which means that greater external influence is required to cause its instability.

1. The lower level of dimensionality of the physically dense sphere.

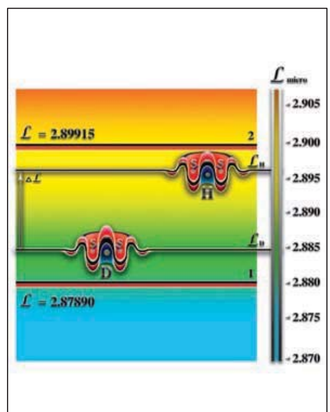
2. The upper level of dimensionality of the physically dense sphere.

Fig. 3.3.6. The synthesis of hydrogen atoms can occur within virtually the entire stability range of physically dense matter. The intrinsic dimensionality level of hydrogen, however, is close to the upper stability limit. The float effect comes into play. The optimal level of hydrogen dimensionality is close to the upper limit of the stability range. This is because hydrogen is the lightest of the atoms and its own influence on the surrounding space is minimal. And therefore, the flows of primary matter, which after completion



The synthesis process continues to circulate in the zone of space deformation, "carrying" hydrogen atoms to the level of dimensionality at which their own influence on the surrounding space balances the impact of primary matter flows. An analogy can be drawn with the buoyancy of an object submerged in water by its weight, as a result of which the material object will stop at the depth where these two forces balance each other. In this case, the object seems to hover at a certain depth. Similarly, any atom will strive to reach its optimal level.

Fig. 3.3.7. Virtually all atoms have radioactive isotopes. Radioactive isotopes of hydrogen — deuterium and tritium — have one or two more neutrons in their nuclei than hydrogen itself. Their atomic weight differs by one or two atomic units from the atomic weight of hydrogen, and yet they are radioactive. At the same time, atoms of other elements with exactly the same or even greater atomic weight do not show signs of radioactivity, and only their isotopes with an "extra" neutron behave as radioactive.



Atoms of many elements in their stable states have neutrons in their nuclei, sometimes dozens of them, and yet they do not become radioactive. Why does the appearance of one more neutron, in addition to those already present, make such an atom radioactive? The fact is that an extra neutron does not change the optimal dimensionality of the atom as a whole, but changes the degree of influence of the nucleus of this atom on the rest of the atom.

atom, within the nucleus itself. Therefore, an atom with an "extra" neutron continues to behave like an atom without one and, as a result, becomes radioactive.

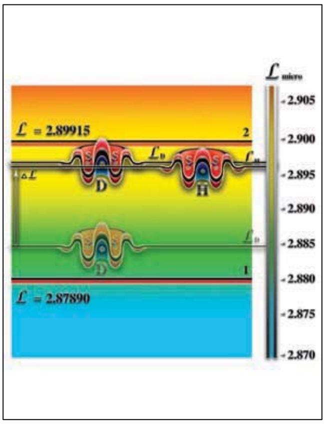


Fig. 3.3.8. The radioactive isotope of hydrogen — deuterium **D** — regardless of where its synthesis occurred, strives to reach the optimal level of its own dimensionality of ordinary hydrogen **H** and, as a result, finds itself in conditions close to critical for physically dense matter. Space is constantly saturated with microscopic fluctuations in the dimensionality of space at different levels of its own dimensionality, including at the level of the optimal dimensionality of hydrogen. Basically, these microscopic fluctuations in dimensionality (photons) arise during the transitions of electrons from orbits further away from the nucleus to closer to the nucleus in the same hydrogen atoms that "float" at the level of their optimal dimensionality. When these photons are absorbed (imposed on the atom) by deuterium **D** atoms, the level of intrinsic dimensionality increases and, as a result, such an atom finds itself outside the stability range of physically dense matter.

1. The lower level of dimensionality of the physically dense sphere (P.D.S.).

2. The upper level of dimensionality of the F.P.S.

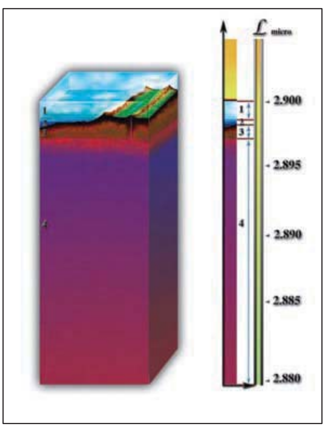


Fig. 3.3.9. Each molecule or atom has its own range of dimensionality within which it maintains its stability. Therefore, the physically dense matter of the planet is distributed across ranges of stability. The boundaries of these ranges are the levels of separation between the atmosphere, oceans, and solid surface of the planet. The boundary of stability of the planet's crystalline structure repeats the shape of heterogeneity, which is why the surface of the solid crust has depressions and protrusions. The depressions were subsequently filled with water and formed oceans, seas and lakes. Water, which is a liquid crystal and has a significant level of its own dimensionality, is stable in the upper part of the range, which is what allows it to accumulate in depressions.

The atmosphere, which smoothly transitions into the ionosphere (the plasma boundary state of physically dense matter), occupies the upper boundary region of the dimensionality range of physically dense matter. After the synthesis of physically dense matter, atoms acquire some resistance to external changes in the dimensionality of the macrocosm. Therefore, only when the amplitude of the external dimensionality change becomes commensurate with half the dimensionality range of the physically dense sphere do atoms become unstable and disintegrate. Any change in the dimensionality of macromacrospace caused, among other things, by solar flares, changes in the overall level of dimensionality of macromacrospace, due to the fact that the solar system moves relative to the core of our galaxy, and, as a result, enters areas with other levels of its own dimensionality, due to the heterogeneity of space itself, leads to tensions in the Earth's crust. Tensions in the crust lead to its splitting, sinking or rising in different places, volcanic eruptions and the appearance of new ones, as a result of changes in the conditions of magma movement, etc. There is a redistribution of physically dense matter within the zone of heterogeneity of the planet, in accordance with the position of the levels of optimal dimensionality for different aggregate states of physically dense matter: solid, liquid, gaseous and plasma.

1. Level of atmospheric dimensionality.
2. Level of dimensionality of the oceans.
3. Level of dimensionality of the Earth's crust.
4. Level of dimensionality of magma.

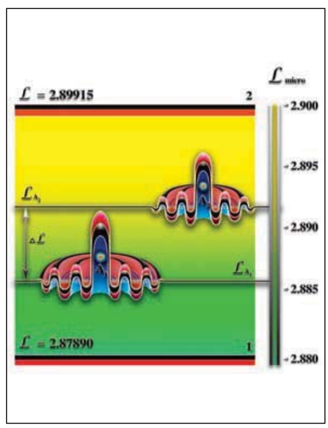


Fig. 3.3.10. Each atom has its own level of dimensionality, and if this level coincides with the level of dimensionality of the macrospace where the atom is located, it will be in a stable state. Otherwise, the atom will become unstable and decay. Two atoms of different elements, **A1** and **A2,** have different intrinsic dimensionality levels due to the fact that they have different atomic weights and, as a result, affect their micro-space differently. Therefore, the intrinsic dimensionality levels of two atoms of different elements differ from each other by a certain amount **ΔL** and therefore cannot form a single system under normal conditions.

A_1 is the nucleus of the first atom.

A_2 is the nucleus of the second atom.

L_{A1} — the level of intrinsic dimensionality of the first atom.

L_{A2} — intrinsic dimensionality level of the second atom.

ΔL — the difference between the intrinsic dimensionality levels of two different atoms.

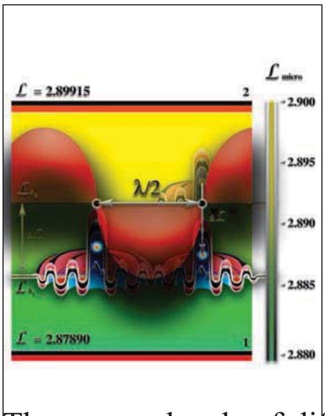


Fig. 3.3.11. Atoms with different intrinsic dimensionality levels can form molecules when one of them absorbs or emits electromagnetic waves whose wavelength is comparable to the distance between these atoms. Waves in the range from infrared to ultraviolet, inclusive, meet these requirements. When one of the atoms absorbs a wave, its intrinsic dimensionality level increases by the amplitude of the wave. When a wave is emitted, the intrinsic dimensionality level decreases by the amplitude of the emitted wave. As a result, the intrinsic dimensionality level of the atoms decreases by the amplitude of the emitted wave. The energy levels of different atoms A_1 and A_2 are equalised, and they are able to form a new molecule. The entire spectrum of chemical compounds existing in nature, including organic ones, exists thanks to a small section — the diazone — of so-called electromagnetic waves. Consequently, the emergence of living matter is impossible without these insignificant fluctuations in the dimensionality of microspace — electromagnetic waves from infrared to ultraviolet.

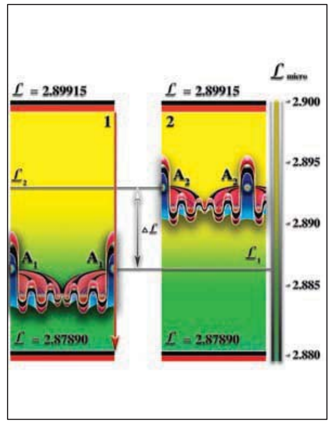


Fig. 3.3.12. Atoms of the same element have the same optimal levels of their own dimensionality. Therefore, if the environment in which they are located is not saturated with excessive infrared (thermal) radiation, after a while, these atoms will gather at the level of optimal dimensionality, which creates favourable conditions for the connection of their electron shells with each other and the formation of a crystalline structure. This refers to the temperature of the environment at which crystallisation occurs. Different elements have different temperatures, just as after the crystallisation process is complete, crystals of different elements will have different levels of intrinsic dimensionality, and there will be a dimensionality difference **L** between them.

A1 — nuclei of atoms of the first element.

A2 — nuclei of atoms of the second element.

L1 — the dimensionality level of the crystal of the first element.

L2 — dimensionality level of the crystal of the second element.

ΔL — the difference between the intrinsic dimensionality levels of two different elements.

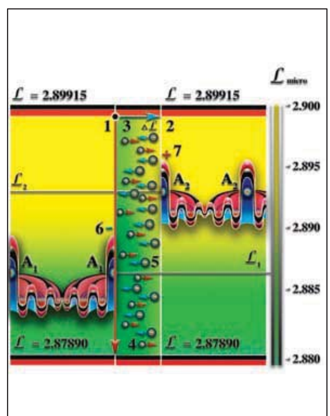


Fig. 3.3.13. The crystal structures of different elements have different intrinsic dimensionality levels. If these crystal structures are placed at a distance commensurate with the dimensions of the crystals themselves, a dimensionality difference (gradient) will arise in the intermediate space from the level of the crystal structure with greater intrinsic dimensionality to the level with lesser dimensionality. This gradient is not significant enough to cause instability in the atoms forming these crystal structures, but if a liquid medium saturated with positive positive and negative ions, the difference between the crystal structures will cause the free ions to move in different directions. At the same time, positive ions with a higher level of intrinsic dimensionality will begin to accumulate on the surface of the crystal structure with a higher level of intrinsic dimensionality under the influence of this difference, while negative ions with a lower

level of intrinsic dimensionality — on a surface with a lower level of intrinsic dimensionality. An excess of positive ions on one surface indicates a positive charge, while an excess of negative ions indicates a negative charge on the surface. The difference in intrinsic dimensionality between different crystal surfaces causes a redistribution of ions saturating the intermediate medium and leads to the appearance of a so-called constant electric current between these surfaces if they are connected to each other by a conductor.

1. Crystalline surface with a lower level of intrinsic dimensionality.

2. Crystalline surface with a higher level of intrinsic dimensionality.

3. Intermediate liquid medium saturated with ions.

4. Positive ions.

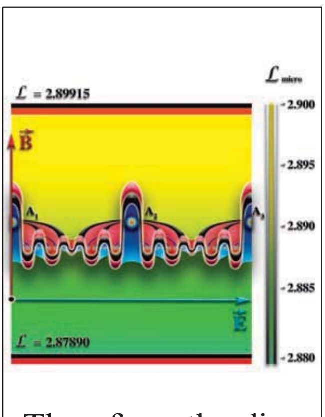
5. Negative ions.

L1 — dimensionality level of the crystal of the first element.

L2 — dimensionality level of the crystal of the second element.

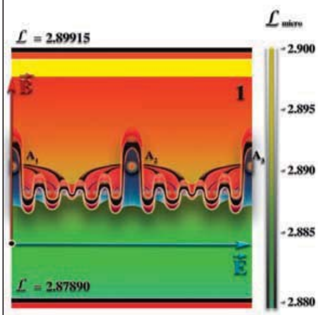
ΔL — difference between the intrinsic dimensionality levels of two different elements.

Fig. 3.3.14. The crystal lattice of any solid substance is non-uniform in different spatial directions. This is a result of the fact that the synthesis of atoms occurs in a non-uniform space. The non-uniform space, interacting with the non-uniform structure of atoms, forces them to orient themselves and arrange themselves in relation to each other in a certain order. Therefore, practically all crystals are anisotropic, i.e., their properties and qualities differ in different spatial directions. For the same reasons, their reaction to the same external influence will depend on the spatial direction in which this influence occurs.



. Therefore, the dimensional difference along the optical axis of the crystal is called the electric field **E**, as it causes electrons to jump from the orbit of one atom to the orbit of another. Meanwhile, the dimensional gradient perpendicular to the optical axis of the crystal is called the magnetic field **B,** as it causes atoms or groups of atoms to reorient themselves in space. However, in both cases there is a spatial dimensional gradient **ΔL**.

Fig. 3.3.15. The constant magnetic field **B** represents a difference in the dimensionality of space, which is superimposed on the crystal system in a direction perpendicular to the optical axis of the crystal. If we conditionally accept the upper stability limit of a physically dense substance as "north" and the lower limit as "south," then the dimensional gradient from south to north acts as the north magnetic pole, and the dimensional gradient from north to south acts as the south magnetic pole. These differences are determined by the heterogeneity of crystals in the specified directions (top



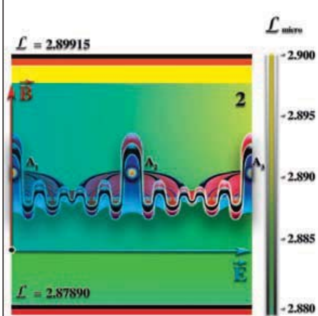
The heterogeneity of the properties of crystal lattices is associated with the spatial orientation of electron orbits. Therefore, the dimensionality gradient from "south to north" facilitates the "transitions" of electrons from orbit to orbit, both within a single atom and between neighbouring atoms of the crystal lattice. At the same time, the dimensionality gradient from "north to south" significantly hinders these transitions.

A1, A2 — nuclei of atoms in a crystalline structure.

1. Constant magnetic field.

B — dimensional gradient along the optical axis of the crystal.

Fig. 3.3.16. A constant electric field **E** represents a dimensional gradient along the optical axis of crystal lattices. The direction of the electric field can be either from "west to east" or from "east to west". In this case, the properties of the electric field will be identical due to the fact that the crystal lattices in these directions are identical. The nature of the electric field is simple. It creates a "gravitational wind." The dimensional gradient along the optical axis carries electrons from the electron orbit of one atom to the orbits of another during



phase between electron materialisations. Atoms located along the optical axis of the crystal are subject to varying degrees of influence from the dimensionality gradient, resulting in a redistribution of electrons.

atoms along the optical axis, which creates what is known as electric current — the directed movement of electrons from positive to negative.

A_1, A_2 — nuclei of atoms in a crystal structure.

2. Constant electric field.

E — Dimension difference along the optical axis of the crystal.

Fig. 3.3.17. The alternating magnetic field **B** represents a periodic (wave-like) change in the dimension of space in a direction perpendicular to the optical axis of the crystal. In this case, the same atom of the crystal lattice periodically falls under dimensional gradients, both in the direction from "south to north" and in the direction from "north to south." As a result, each atom periodically finds itself in different qualitative conditions. Consequently, each atom will periodically find itself in conditions where its electrons are either more tightly "attached" to their atom or, conversely, practically "free," depending on the direction of the dimensionality gradient on a given segment of the crystal's optical axis. Naturally, different crystals consisting of atoms of different elements will react differently to such dimensionality gradients due to the fact that they have different nuclei and different numbers of electrons with different electron shells. Electrons are most weakly "bound" to their atoms in metals, which are called electrical conductors.

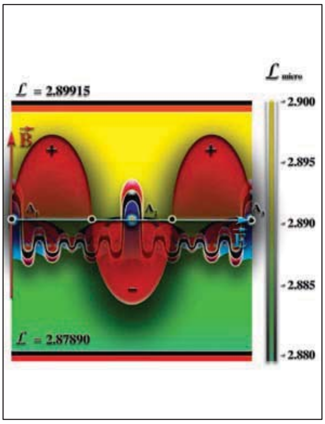
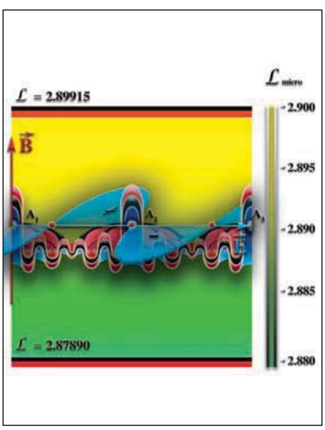


Fig. 3.3.18. An alternating electric field **E** represents a periodic (wave-like) change in the dimensionality of space along the optical axis of the crystal. In this case, the same atom of the crystal lattice periodically undergoes dimensionality changes, both in the "west to east" direction and in the "east to west" direction. As a result, there is a periodic redistribution of electrons along the optical axis in both directions. An alternating electric current arises. The same atom is subjected to opposite



dimension variations along the optical axis of the crystal lattice. In this process, each atom either loses electrons or receives them from neighbouring atoms. By regulating the amplitude and frequency, it is possible to obtain new qualitative states of physical matter due to the short-term transition of an atom or group of atoms to dimensionality levels above or below the optimum for a given element. Such transitions provoke the emission or absorption of photons by these atoms, to which the atoms do not react in their normal state.

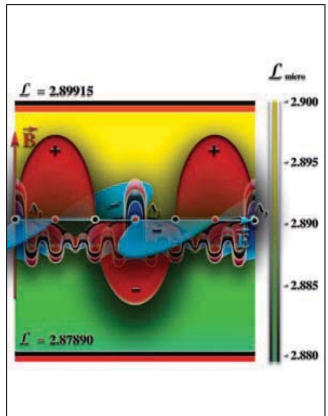
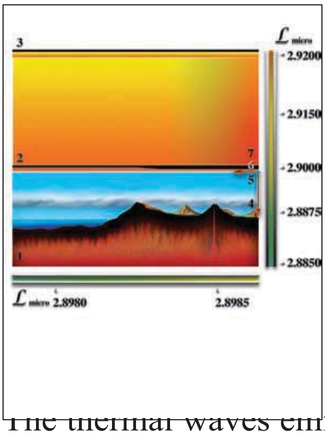


Fig. 3.3.19. If we recall that the alternating magnetic field **B** represents a dimensionality gradient perpendicular to the optical axis in the directions "from north to south" and "south to north", the result of such periodic exposure to a spatially inhomogeneous structure of physically dense matter is the loss or acquisition of additional electrons by an atom or group of atoms along the optical axis of the crystal lattice. The periodic loss or acquisition of electrons by atoms is nothing more than an alternating electric current. Ta-

In this way, an alternating magnetic field generates an alternating electric field and vice versa. At the same time, the "birth" of the electric field occurs with a certain delay, with a so-called phase shift, which creates conditions for the propagation of electromagnetic waves in space. Magnetic and electric fields, both constant and alternating, are the result of the effect on spatially inhomogeneous physically dense matter of the same dimensional gradient in different directions.

Fig. 4.2.1. When atoms absorb waves, their dimensionality increases.



Sunlight is absorbed by the surface of the planet. After absorbing a photon of light, each atom remains in an excited state for some time (its intrinsic dimensionality level becomes higher than the dimensionality levels of neighbouring atoms forming the crystal lattice), after which it emits a wave. The atom absorbs one wave and emits another. This happens because part of the energy of the absorbed wave is lost. As a result, the "heated surface" begins to emit waves, mainly thermal waves, during the solar day.
The thermal waves emitted by the heated surface begin to be absorbed by the molecules of the atmosphere. At the same time, the level of intrinsic dimensionality of the atoms of the atmosphere above the heated surface increases. As a result, the overall level of intrinsic dimensionality of the atmosphere above the heated surface increases, while the intrinsic level of dimensionality of the atmosphere above the unlit surface decreases. The decrease in the intrinsic dimensionality of the atmosphere above the unlit (night) surface of the planet or partially lit surface occurs because the atoms of the atmosphere also emit waves, which leads to a decrease in the intrinsic dimensionality of the emitting molecules. As a result, a horizontal difference (gradient) in dimensionality arises between the illuminated and unilluminated surfaces of the planet. Therefore, the molecules of the atmosphere, which are not bound in a rigid system, begin to move along this horizontal difference in dimensionality, which is the cause of the movement of the layers of the atmosphere — the wind.

1. The surface layer of the planet with the atmosphere.

2. A qualitative barrier between the physically dense and second material spheres.

3. A qualitative barrier between the second and third material spheres.

4. Vertical dimensional difference within heterogeneity.

5. Longitudinal (horizontal) dimensional gradient arising between the illuminated and unilluminated surfaces of the planet.

6. An increase in the qualitative barrier above the illuminated surface.

7. Accumulation of primary matter at the boundary between the physically dense and second material spheres above the illuminated surface.

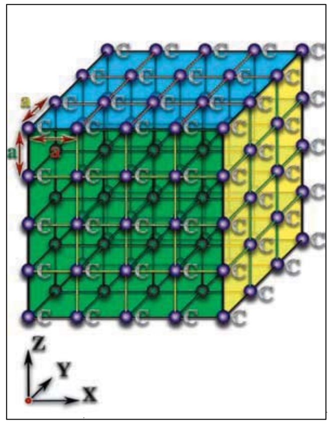


Fig. 4.3.1. Spatial structure of a diamond, in whose crystal carbon atoms **C** are located at equal distances from each other. The distance between carbon atoms in a diamond crystal is commensurate with the size of the carbon atoms themselves. Therefore, no other atoms or molecules larger than a carbon atom, or even smaller ones, can move between them. Only some carbon atoms can be replaced by others, which causes the transparent diamond crystal to acquire colour. For this reason, humans have the opportunity to admire the beauty of yellow, diamonds, which, when processed by human hands, are transformed into stones of astonishing beauty... In addition, this crystal lattice makes diamonds the strongest atomic bond in nature, which makes them indispensable in technology.

a. The distance between carbon atoms **C** in a diamond crystal.

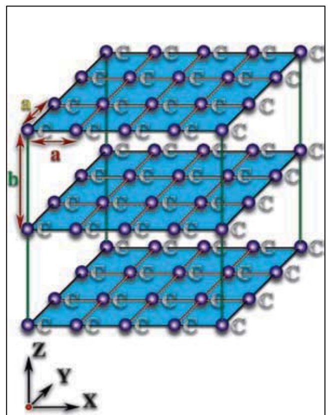


Fig. 4.3.2. The spatial structure of graphite, in whose crystal the carbon atoms are located at equal distances in the horizontal plane, while the distance between the layers in the vertical plane is significantly greater than the distance between the carbon atoms in the horizontal plane. This seemingly insignificant difference in the spatial arrangement of carbon atoms makes these crystals very soft. This spatial organisation of carbon atoms is called graphite and is widely used in industry and everyday life (pencil leads, electrical insulators, etc.).

pencil leads, electronics, etc.). The same carbon atoms that create the strongest bond in nature — diamond — also create the softest of natural crystalline compounds — graphite. A seemingly insignificant change in the spatial structure of the carbon atom compound transforms the strongest atomic compound in nature into the softest. The reason for this difference in the properties of these **carbon** compounds lies in the different external conditions under which they are formed.

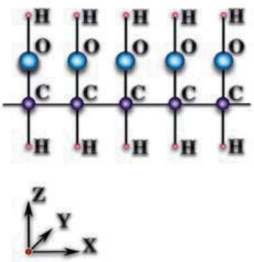


Fig. 4.3.3. Spatial structure of a carbon chain. By connecting into chains, carbon atoms **C** can form molecules consisting of hundreds of thousands or millions of atomic units. At the same time, such molecules affect the surrounding microcosm unevenly, creating an anisotropic structure of the microcosm around themselves. The ability of carbon atoms to create such compounds is determined by the fact that they are tetravalent. It is this property of the electron shells of carbon atoms that creates a spectrum of qualities that made the emergence of life possible. The so-called outer electrons of carbon atoms are capable of form compounds with the outer electrons of other atoms in directions perpendicular to each other. It is this property that allows carbon atoms **C** to form various spatial compounds.

C — carbon atoms.

H — hydrogen atoms.

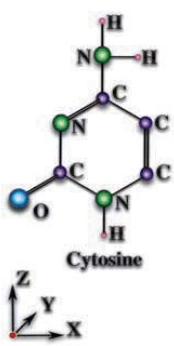


Fig. 4.3.4. Spatial structure of cytosine, one of the four nucleotides that structurally form **DNA** and **RNA** molecules. By connecting with each other, nucleotides form **DNA** and **RNA** molecule spirals, which are the foundation of life. The miracle of life is born as a result of a qualitatively different spatial connection between carbon atoms. A similar spatial structure of carbon atom connections is formed in an aqueous environment during atmospheric electrical discharges. Three types of carbon atom connections give rise to three types of spatial organisation of matter: isotropic structure of diamond, isotropic in two spatial directions and anisotropic in one, the structure of graphite, and finally, anisotropic in all spatial directions, the structure of **DNA** and **RNA** molecules. Thus, the anisotropy of matter is the foundation of life.

C — carbon atoms.

H — hydrogen atoms.

O — oxygen atoms.
N — nitrogen atoms.

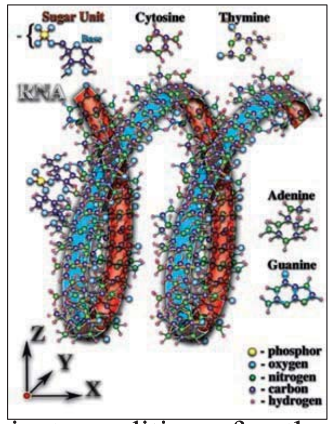


Fig. 4.3.5. Spatial structure of an **RNA** molecule segment, which is a sequential chain of nucleotides — guanine, adenine, thymine, and cytosine. The molecular weight of this molecule is hundreds of thousands, millions of atomic units and is distributed disproportionately in different spatial directions, which is a unique property of this molecule. The spatial anisotropy of **DNA** and **RNA** molecules is a necessary condition for the origin of life.

It is precisely spatial heterogeneity at the microcosmic level creates the necessary and sufficient conditions for the emergence of living matter. Inanimate matter is characterised by an isotropic, symmetrical spatial organisation of matter. Spatial and qualitative asymmetry are necessary conditions for living matter. Isn't that an interesting paradox of nature? Asymmetry is living matter. Spatial heterogeneity is not only the cause of the birth of stars and black holes in the universe, but also the cause of the miracle of nature — life.

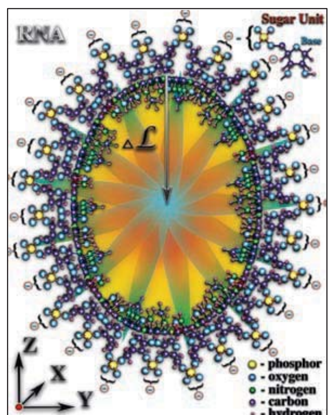


Fig. 4.3.6. Spatial view from the end of **RNA** and **DNA** molecules. The spirals of these molecules create a kind of tunnel in microspace, the internal volume of which has a radial difference in dimension. Inside the spirals of **RNA** and **DNA** molecules, an anisotropic structure of microspace is created. A peculiar suction funnel is created for all molecules that, as they move inside the cell, come into "dangerous" proximity to **DNA** and **RNA** molecules**.** Isn't this an interesting analogy with a "black hole" that sucks in any matter that falls into its "territory" — an area of space within which excessive attraction operates. As in the case of **DNA** and **RNA** molecules, so in the case of "black holes," the suction of matter occurs as a result of the presence of a certain constant dimensional difference in the area where these

material objects. The only difference is in the magnitude of this dimensionality gap and in the fact that in the case of **DNA** and **RNA** molecules, the processes take place at the micro-space level, while in the case of "black holes," they take place at the macro-space level.

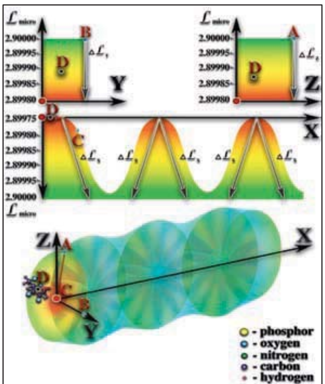


Fig. 4.3.7. The spiral spatial form of **RNA** and **DNA** molecules creates an anisotropic microspace within these molecules. Radial and longitudinal dimensionality gradients, overlapping each other in the internal volume of **RNA** and **DNA** molecule spirals**,** create a longitudinal standing wave of dimensionality gradient. This spatial structure creates a trap for all other molecules, both organic and inorganic. As a result of Brownian motion of molecules inside the cell, they end up near **RNA** or **DNA** molecules**.** The radial difference in dimensionality within the spirals of these molecules causes the molecules that have entered the internal volume of the spirals to move along the so-called optical axis of **DNA** and **RNA** molecules. As they move within the internal volume of the **DNA** or **RNA** molecule spirals**,** the "captured" molecules are subjected to dimensionality level differences.

1. Anisotropic internal volume of the **RNA** or **DNA** spiral.

2. Dimension gradient of microspace along the **Y** axis.

3. The difference (gradient) in the dimensionality of the microspace along the **Z** axis.

4. A standing wave of dimensionality difference in the microspace of the internal volume of **RNA** and **DNA** molecule spirals along the **X-axis**, which coincides with the axis of these molecules.

5. Captured external molecule **D**.

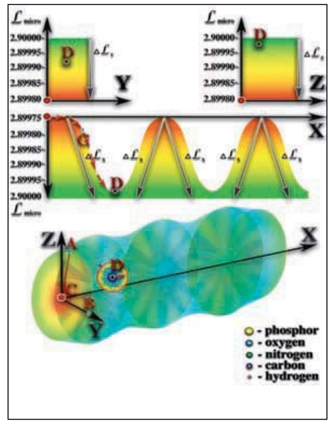


Fig. 4.3.8. Molecules that have entered the internal volume of **RNA** and **DNA** spirals, under the influence of a radial dimensionality gradient, are forced to move along the axis of the spiral. As it moves along the axis, the captured molecule encounters longitudinal dimensionality gradients in the microspace created by a standing wave of dimensionality. For most captured molecules, this gradient is excessive and causes these molecules to begin to disintegrate into their constituent primary matter.

1. Anisotropic internal volume of the spiral **RNA** or **DNA**.

2. Dimension gradient of microspace along the **Y** axis.

3. The gradient of the dimension of the microspace along the **Z** axis.

4. Standing wave of the difference in the dimensionality of the microspace of the internal volume of **RNA** and **DNA** molecule spirals along the **X**-axis, which coincides with the axis of these molecules.

5. Captured external molecule **D**.

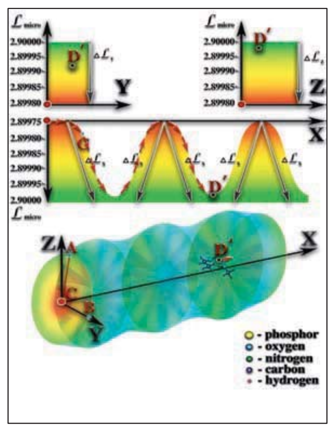


Fig. 4.3.9. Under the influence of longitudinal dimensional differences along the spiral axis, the molecule becomes unstable, and when the oscillation reaches a critical value, this molecule **D** decays into the primary matter that forms it. At the same time, molecules **D'** are synthesized with a level of intrinsic dimensionality at which these molecules remain stable under the influence of longitudinal dimensionality differences in the standing wave of the **RNA** or **DNA** molecule spiral**.** These newly synthesized molecules, which are resistant to such differences, are

The molecules of these substances are toxins and waste products and must be removed from the body. Thus, nuclear reactions of decay and synthesis occur within the internal volume of **DNA** and **RNA** molecules. But these are nuclear reactions of a different type, when external molecules that have fallen into the "trap" of **RNA** or **DNA** molecule spirals undergo decay**.** Nevertheless, the fact remains that nuclear reactions of molecule fission and synthesis occur in living matter. And there is no contradiction in this; in living matter, nuclear reactions only occur inside the spirals of **DNA** and **RNA** molecules, in a microscopic volume, no matter how large these molecules may be. And at the same time, there is no chain reaction, as in the case of classical nuclear reactions.

1. Anisotropic internal volume of the **RNA** or **DNA** spiral.

2. The difference (gradient) in the dimensionality of microspace along the **Y** axis.

3. The difference (gradient) in the dimensionality of microspace along the **Z** axis.

4. A standing wave of the difference in the dimensionality of the microspace of the internal volume of **RNA** and **DNA** molecule spirals along the **X**-axis, which coincides with the axis of these molecules.

5. Captured external molecule **D**.

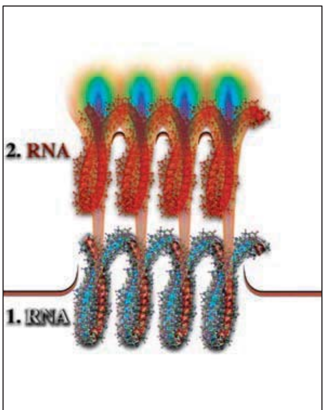


Fig. 4.3.10. Formation of a copy of an **RNA** or **DNA** molecule, the so-called second material body, on the second material level. This body is created from primary matter **G**. The qualitative difference between the physically dense and second material spheres consists in the absence of primary matter G on the second material level, and when the qualitative barrier between the physically dense and second material spheres disappears in the zone of influence of **RNA** or **DNA** molecule spirals, the qualitative balance of primary matters is restored. The second material body is formed from primary matter, which is is released during the splitting of molecules into the matter that forms them the internal volume of **DNA** and **RNA** molecule spirals. Microscopic living "black holes" in cells provide a continuous flow of released primary matter to the second material level, which ensures the constant replenishment of the second material bodies with primary matter G **and** their stability.

1. Physically dense **RNA** molecule.

2. The second material body of the **RNA** molecule.

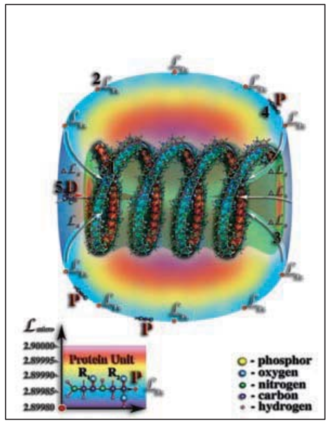


Fig. 4.3.11. **RNA** or **DNA** molecules not only create a standing wave of dimensionality in the internal volume, but also create a dimensionality gradient in the microspace around them. As a result, layers with identical levels of dimensionality form around the spirals of these molecules. The influence of the spirals of these molecules on the external space is significantly less than the influence on the dimensionality of the microspace of the internal volume of the spirals of **RNA** or **DNA** molecules. Nevertheless, at the microspace level, the spirals of these molecules act as centres of deformation of the micro-space. **DNA** and **RNA** molecules at the microcosmic level have dual properties. These molecules are simultaneously analogous to "black holes" and star systems at the microcosmic level. The internal volume of **RNA** and **DNA** molecules exhibits properties similar to those of a "black hole" in macrospace, while the external volume of these molecules exhibits properties similar to those of a star. All other molecules, falling into the gravitational field of these "stars" — "black holes" of microspace — are either drawn into the internal volume of **RNA** or **DNA** molecule spirals, where they disintegrate into the primary matter that forms them, or settle at levels of identical dimensionality that arise around these molecules. The primary structures of protein molecules, falling into the gravitational field of **RNA** or **DNA** molecule spirals, begin to settle at the level of identical dimensionality LPr.

1. Physically dense **DNA** or **RNA** molecule.

2. Protein shell.

3. The dimensionality gradient of the microspace created by the internal volume of the **DNA** or **RNA** molecule.

4. Primary structures of protein molecules.

P — amino acids of proteins.

R2 — free radicals of protein amino acids.

LPr — level of identical dimensionality of the primary structure of a protein molecule.

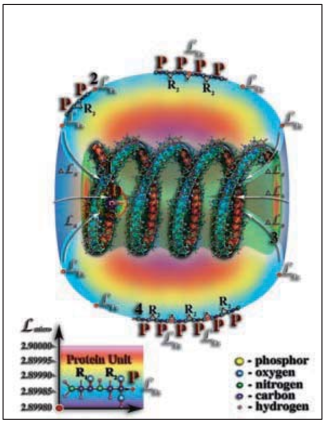


Fig. 4.3.12. Over time, the primary structures of protein molecules captured by the gravitational field of **RNA** and **DNA** molecules become more and more numerous. Located close to each other, the primary structures of protein molecules, through hydrogen bonds and various bonds between amino acid radicals that form the primary structures of proteins, begin to create the secondary structure of the protein. Unlike the free synthesis of protein from primary protein structures, the connection of the latter does not occur randomly. Held by the gravitational field of the **RNA** or **DNA** molecule, the primary structures of the protein are forced to connect along the level of identical dimensionality. As a result, at the level of identical dimensionality, L_{Pr} begins to form a protein shell around the **DNA** or **RNA** molecule spiral. The level of identical dimensionality around the spirals of **RNA** and **DNA** molecules acts as an organising field, forcing the primary structures of the protein, captured by the "gravitational field" of the spiral, to connect in a certain order, as, for example, the lines of force of a magnetic field force metal particles to arrange themselves along the contours of these lines of force, which are, in essence, levels of identical dimensionality created by the magnet around itself.

1. A physically dense **DNA** or **RNA** molecule.

2. A protein shell.

3. The dimensionality gradient of microspace created by the internal volume of a **DNA** or **RNA** molecule.

4. Primary structures of protein molecules.

P — amino acids of proteins.

R_2 — free radicals of protein amino acids.

L_{Pr} — level of identical dimensionality of the primary structure of a protein molecule.

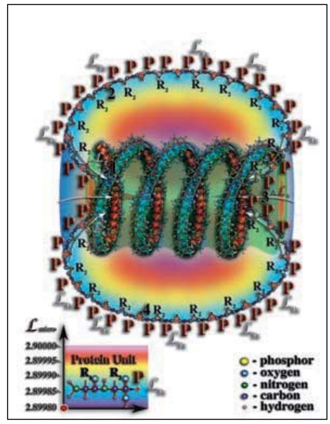


Fig. 4.3.13. Gradually, an increasing number of primary protein structures are captured by the "gravitational field" of the **DNA** or **RNA** molecule helix and are forced to connect with each other at the level of identical dimensionality. The size of the protein layer around the **DNA** or **RNA** molecule helix gradually increases, and there comes a moment when the protein field completely surrounds the **RNA** or **DNA** molecule helix**.** This is how the protein shell of viruses appears. The appearance of the protein shell of the virus marked the beginning of a new era in the evolution of matter — the emergence of life. Protein
The shell created conditions within its internal volume that were significantly different from those outside its boundaries. It helped to retain organic and inorganic molecules that had penetrated through this protein mesh. The protein shell of the virus filtered the water of the primordial ocean, collecting organic and inorganic molecules dissolved in this water in its internal volume. This filtration of seawater allowed organic molecules to accumulate in close proximity to **the DNA** or **RNA** molecule spiral**.** And when the concentration of organic molecules reached a critical level, conditions arose for the duplication of **DNA** or **RNA** molecules and the protein shell. As a result of this process, an exact copy of the virus was created. From this moment on, we can talk about the origin of life.

1. A physically dense **DNA** or **RNA** molecule.

2. A protein shell.

3. The dimensional difference in microspace created by the internal volume of a **DNA** or **RNA** molecule.

4. Primary structures of protein molecules.

P — amino acids of proteins.

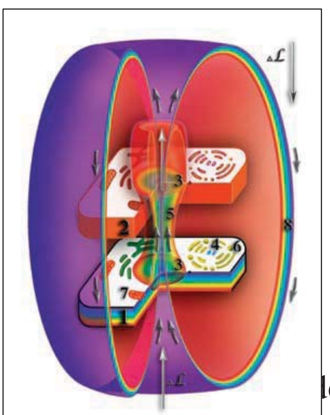
R_2 — free radicals of protein amino acids.

L_{Pr} — level of identical dimensionality of the primary structure of a protein molecule.

Fig. 4.3.14. The cell and its second material body. Each molecule distorts the microspace around itself, therefore a living cell, formed from organic and inorganic molecules, creates a deformation on the second material level that completely replicates the appearance of the cell itself. However, this deformation would remain unfilled if it were not for the presence of **DNA** and **RNA** molecules in the cell, which not only open a qualitative barrier between the physical and second material levels, but also create conditions for the splitting of molecules into the primary matter that forms them in the internal volume of their spirals.

1. Physically dense cell.
2. The second material body of the cell.
3. Cell nucleus.
4. Centrioles.
5. The zone of convergence between the physical and second material levels — the energy channel.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic reticulum.

Fig. 4.3.15. In the cell nucleus, molecules are broken down into the primary matter that forms them. The primary matter released in this process begins to circulate through the channel that exists between the physically dense and second material bodies. As they move from the physically dense to the second material level, the ascending flows of primary matter turn around and begin to move in the direction of the dimensional gradient. Around the physically dense cell and its second material body, the circulating primary matter creates an insulating shell.



lense body of the cell.
2. The second material body of the cell.
3. Cell nucleus.

4. Centrioles.

5. Energy channel between the physically dense cell and the second material body.

6. Golgi apparatus.

7. Mitochondria.

8. Insulating protective shell.

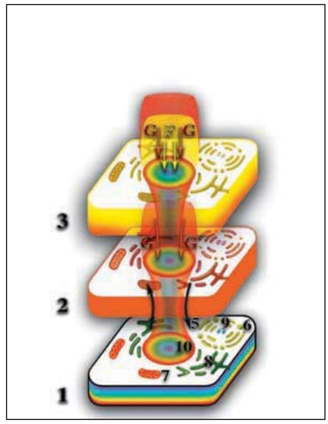


Fig. 4.3.16. A physically dense cell with a second and third body. The second material body of the cell differs from the third in its qualitative structure. The third material body is formed by the fusion of two primary materials, **G** and **F**, while the second is formed by one primary material, **G**. Together, they form a unified system — the next stage in the evolution of living matter. The appearance of the third material body in cells led to significantly greater stability, vitality, and a higher degree of adaptability to changing external environmental conditions.

1. The physically dense body of the cell.

2. The second material body of the cell.

3. The cell nucleus.

5. The energy channel between the physically dense cell, the second and third material bodies.

6. Golgi apparatus.

7. Mitochondria.

8. Endoplasmic reticulum.

9. Centrioles.

10. Cell nucleus.

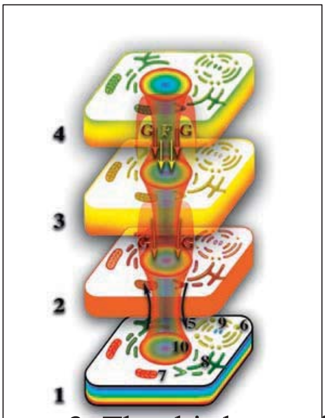


Fig. 4.3.17. Physically dense cell with second, third and fourth material bodies. The fourth material body is formed by the fusion of three primary materials **G**, **F** and **E**, the third material body is formed by the fusion of two primary materials, G and F, and the second material body is formed by one primary material, G. The presence of the fourth material body is the next qualitative leap in the development of living matter, an opportunity for the development of consciousness at a qualitatively different evolutionary level.

1. The physically dense body of the cell.

2. The second material body of the cell.

3. The third material body of the cell.

4. The fourth material body of the cell.

5. The energy channel between the physically dense cell, the second, third and fourth bodies.

6. Golgi apparatus.

7. Mitochondria.

8. Endoplasmic reticulum.

9. Centrioles.

10. Cell nucleus.

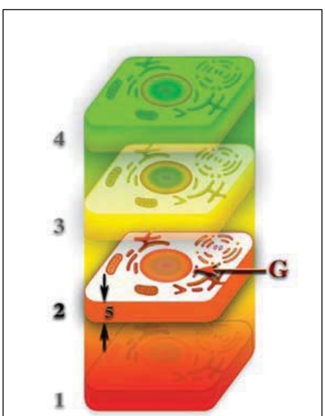


Fig. 4.3.18. If a cell has a physically dense body and a second material body (the original cell), then after the destruction or death of the physically dense body, the second material body does not disappear. The flows of primary matter G, permeating the entire space of the planet, saturate the second material body. As a result, the second material body retains its integrity even after the loss of the physically dense body that created it. Naturally, the saturation of the second material body is significantly different from saturation through a physically dense body, but nevertheless, it is sufficient to preserve it. integrity of the second material body. At the same time, the second material body is, as it were, "frozen" and this state will continue until the physically dense body is restored.

2. The second material body of the cell.

5. The thickness of the second material body of the cell.

G — Primary matter permeating space and saturating the second material body.

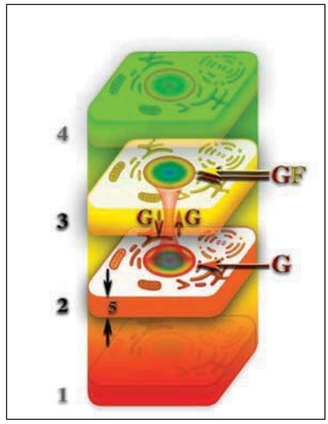


Fig. 4.3.19. If a cell has a physically dense body, a second and third material bodies, then after the destruction or death of the physically dense body, the second and third material bodies do not disappear. The flows of primary matter G and F, permeating the entire space of the planet, saturate both the second and third material bodies. As a result, both the second and third material bodies retain their integrity even after the loss of the physically dense body that created them. Naturally, the saturation of the second and third material bodies differs significantly different from their saturation through a physically dense body, but nevertheless, it is sufficient to preserve their integrity.

2. The second material body of the cell.

3. The third material body of the cell.

5. The thickness of the second material body of the cell.

G and **F** are primary matter that permeates space and saturates the second and third material bodies.

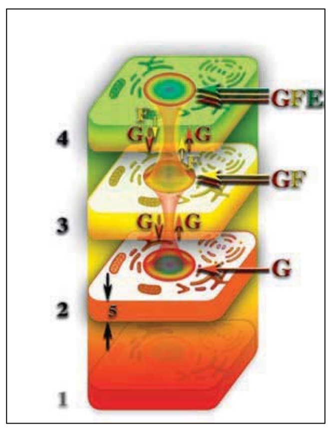


Fig. 4.3.20. If a cell has a physically dense body, a second, third, and fourth material bodies, then after the destruction or death of the physically dense body, the second, third, and fourth material bodies do not disappear. The flows of primary matters **G**, F and E, which permeate the entire space of the planet, saturate the second, third and fourth material bodies. As a result, the second, third and fourth material bodies retain their integrity even after the loss of the physically dense body. At the same time, the saturation of these bodies with these primary matters will differ from their saturation through a physically dense body.

2. The second material body of the cell.

3. The third material body of the cell.

4. The fourth material body of the cell.

5. The thickness of the second material body of the cell.

G, **F**, and **E** are primary matter that permeates space and saturates the second, third, and fourth material bodies.

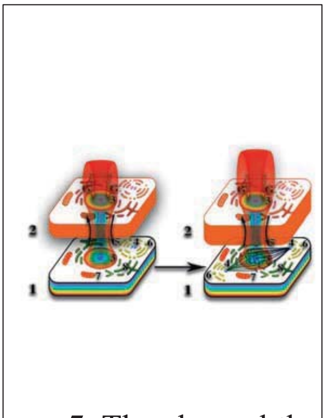


Fig. 4.3.21. The first phase of cell division. When the concentration of organic substances produced in the cell as a result of photosynthesis or absorbed by the cell from the external environment becomes critical, it loses its stability and the division process begins. The cell's centrioles move to opposite poles of the cell and become the centres around which the division process takes place.

1. A physically dense cell.
2. The second material body of the cell.
3. Cell nucleus.
4. Cell centrioles.
5. The channel through which matter circulates.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic reticulum.
9. Chromosomes of the nucleus.

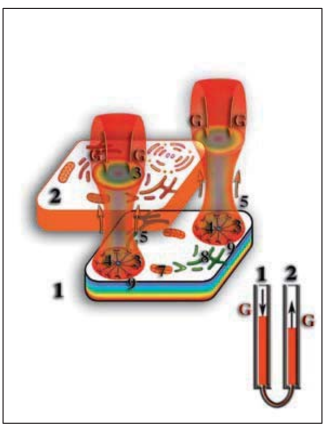


Fig. 4.3.22. Protein filaments pull chromosomes from the old cell nucleus towards the centrioles, and this is the beginning of the formation of two new cells. At the beginning, the new nuclei contain half the set of necessary chromosomes, so the two channels they create are practically equivalent to the channel of the nucleus before division began. The dimensionality of the cell's microcosm remains almost unchanged, and the balance of flows between the physical and second material levels of the cell is maintained.

1. Physically dense cell.
2. The second material body of the cell.
3. Cell nucleus.
4. Cell centrioles.
5. The channel through which matter circulates.
6. Golgi apparatus.
7. Mitochondria.

8. Endoplasmic reticulum.
9. Chromosomes of the nucleus.

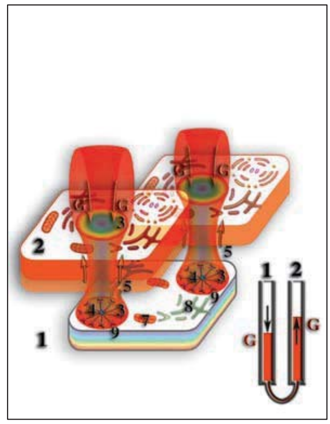


Fig. 4.3.23. Each chromosome in such nuclei begins to recreate its mirror image from the organic substances accumulated in the cell, which is the natural tendency of any system to achieve maximum stability. Upon completion of this process, two nuclei are formed inside one cell, each of which has a channel through which matter flows to the second material level.

1. Physically dense cell.
2. The second material body of the cell.
3. Cell nucleus.
4. Cell centrioles.
5. Channel through which matter circulates.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic reticulum.
9. Chromosomes of the nucleus.

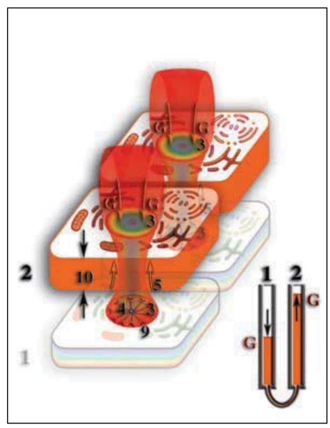


Fig. 4.3.24. When a physically dense cell disintegrates, a second material body of the cell is formed. Moreover, the concentration of matter **G** in the second material bodies of the cell exceeds the balance ratio for the second material level by several times. Excess saturation occurs because during the disintegration of the old cell, many times more primary matter G flows through the nuclear channels to the level of the second material bodies than under normal conditions, while the loss of primary matter G by the second material bodies remains the same.
rema i n s the same. As a result, excessive saturation occurs.

1. Physically dense cell.
2. Second material body of the cell.
3. Cell nuclei.
5. Cell nucleus channels.
10. The "thickness" of the second material body.

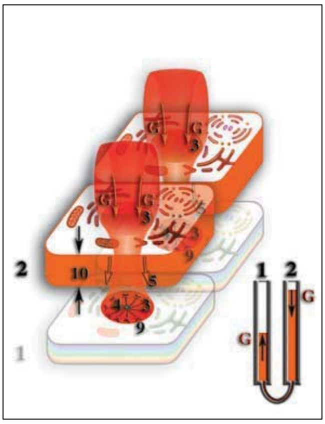


Fig. 4.3.25. After the disintegration of the old physically dense cell is complete, two second material bodies remain on the second material level, which are oversaturated with primary matter **G**. The excess saturation significantly exceeds the optimum. Therefore, when the flow of primary matter from the physically dense level ceases, the excess of primary matter G begins to flow from the second material level to the physical level. Moreover, the flow to the physically dense level occurs through the same channels through which it flowed to the second material level. It should be noted that there is a certain time interval between the moment the complete destruction of the old physically dense cell and the emergence of the reverse flow of primary matter **G**, there is a certain time interval.

1. Physically dense cell.
2. Second material body of the cell.
3. Cell nuclei.
5. Cell nucleus channels.
10. The "thickness" of the second material body.

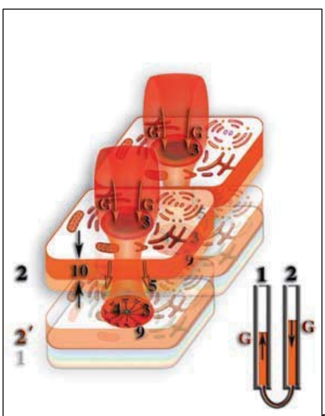


Fig. 4.3.26. The reverse flow of primary matter **G** from the second material level to the physically dense level creates projections of two second material bodies on the physically dense level. These projections continue to be saturated with primary matter G until the density of these projections on the physically dense level becomes commensurate with the density of the second material bodies themselves on the second material level. It can be said that as a result of this process, two second material bodies are formed on the physically dense level.

1. Physically dense cell.
2. Second material body of the cell.
2'. Projection of the second material body of the cell on the physically dense level.
3. Cell nuclei.
5. Cell nucleus channels.

9. Chromosomes of the nucleus.

10. The "thickness" of the second material body.

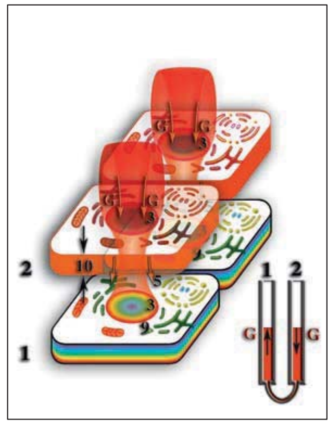


Fig. 4.3.27. Based on two matrices of the second material bodies, two new physically dense cells are synthesised on the physically dense level, which are exact copies of the cell before division. The matrices (projections) of the second material bodies force the molecules on the physically dense level to connect in the same order as they were connected in the old cell, creating corresponding dimensional differences on the physically dense level. The newly assembled molecules, for the same reasons, form cellular inclusions, a membrane and, ultimately, two new cells appear in place of the old cell, which are not exact copies of the old cell, although they are very similar to it.

1. A physically dense cell.

2. The second material body of the cell.

3. Cell nuclei.

5. Cell nucleus channels.

10. The "thickness" of the second material body.

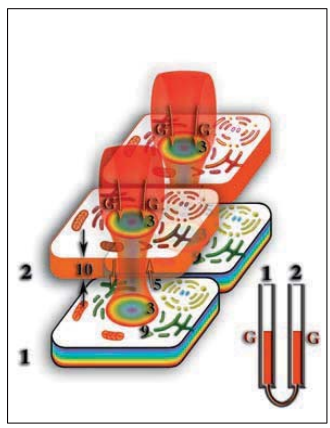


Fig. 4.3.28. After the formation of two new physically dense cells in the image and likeness of the old one, the membranes of the new cells create a dimensional gradient directed inward toward the new cells. This gradient arises as a result of differences in the concentration of organic and inorganic molecules inside and outside these cells. The differences in concentration arise because cell membranes have selective permeability to molecules. This results in a difference in the concentration of molecules. The dimensional gradient directed into the cells forces all molecules that fall within this gradient to move into the cells, where they, in turn, are broken down into the primary matter that forms them when they enter the spirals of **DNA** and **RNA** molecules. The primary matter released as a result of this process begins to saturate the second material

bodies on the second material level. Newborn cells "come to life." The death of an old cell causes the birth of two new cells, and life continues, with the number of living cells doubling.

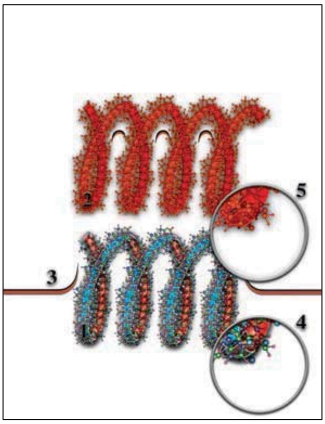


Fig. 4.3.29. **DNA** and **RNA** molecules on the second material level create their exact copy from the primary matter **G**. This is due to the fact that these molecules, having a huge molecular weight, have a spiral shape. The spiral shape creates conditions where the influence of each atom in these molecules on the microspace creates a level of dimensionality in the internal volume of these spirals at which a qualitative barrier opens up between the physically dense and second material levels. At the same time, these molecules do not disintegrate. Only molecules that enter the spirals disintegrate.

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1. The second material body of a **DNA** or **RNA** molecule.

2. The second material body of a **DNA** or **RNA** molecule.

3. A qualitative barrier between the physical and second material levels of the planet.

4. An enlarged section of the spiral on the physical level.

5. An enlarged corresponding section of the spiral on the second material level.

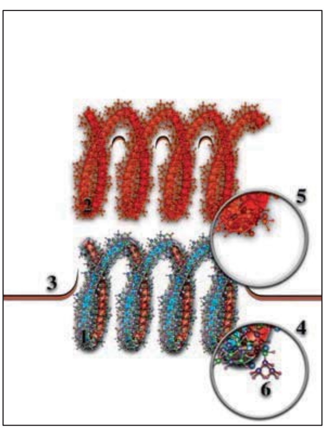

Fig. 4.3.30. An external signal in the form ofan ionic code reaches the body of the neuron itself. In other words, several additional ions end up inside the neuron. At the same time, the ionic balance inside the neuron changes. These "extra" ions provoke additional chemical reactions, resulting in the appearance of new or destruction of old electronic bonds, and changes in the molecular weight and qualitative structure of the molecule at a physically dense level.

1. The spiral of a **DNA** or **RNA** molecule at a physically dense level.

2. The second material body of a **DNA or RNA** molecule.

RNA.

3. A qualitative barrier between the physical and second material levels of the planet.

4. An enlarged section of the spiral at the physical level.

5. An enlarged corresponding section of the spiral at the second material level.

6. Additional atoms attached to the highlighted section of the **DNA** or **RNA** molecule spiral on the physical level.

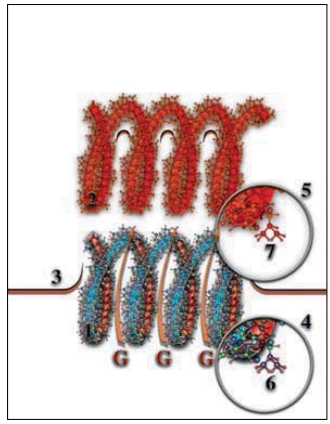

Fig. 4.3.31. Additional curvature of microspace caused by the attached "extra" atoms changes the structure of the second material body of the **DNA** or **RNA** molecule. The imprint of the second material body is saturated with the flow of primary matter G**,** and thus the identity of the structures of the **DNA** or **RNA** molecule spirals at the physically dense and second material levels is restored.

1. The spiral structure of **DNA** or **RNA** molecules at a physically dense level.

2. The second material body of the **DNA** or **RNA** molecule.

3. A qualitative barrier between the physical and second material levels of the planet.

4. An enlarged section of the spiral at the physical level.

5. An enlarged corresponding section of the spiral at the second material level.

6. Additional atoms attached to the selected section of the **DNA** or **RNA** molecule spiral at the physical level.

7. Imprint of an external signal on the second material level.

Nikolai Levashov, July 2005.

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Other books by the author

The Last Appeal to Humanity

In his first book, the author offers readers a new system of knowledge and ideas about the laws of nature, which are necessary not only to avoid destroying our home planet, but also for every thinking person, everyone who wants to understand and realise what is happening to themselves and to the people around them at home or at work. This book is for those who seek to penetrate the mysteries of nature, to understand and realise the miracle of the origin of life, to understand what the soul is and what happens to a person at the moment of death and afterwards. Concepts such as the soul, essence, and reincarnation, which are mystical "miraculous" concepts into real concepts, conditioned by the laws of the evolution of living matter. For the first time, this book provides an explanation of virtually all phenomena of living and non-living nature and demonstrates the unity of the laws of the macrocosm and microcosm. The author has succeeded in creating a unified field theory, combining ideas about nature into a single whole.

Essence and Mind. Volume 1

In this book, the author continues to use his theory of the heterogeneity of space to lift the veil of mystery from yet another set of nature's "paradoxes." This time, the focus of knowledge is on living nature and humankind itself. The author formulates the necessary and sufficient conditions for the emergence of life on planets. The simplicity and beauty of the concepts allow the reader, perhaps for the first time in their life, to experience enlightenment through knowledge, when the feeling arises that knowledge becomes an integral part of oneself. In the first volume of this book, the author reveals the nature and mechanisms of emotions. He shows the role of emotions in the evolution of life in general and of humans in particular. For the first time, an explanation of the feeling of love is given, and this explanation does not diminish the beauty of love, but rather allows a person to understand what is happening to them and avoid unnecessary disappointments... In addition, the author sheds light on

the nature of memory, again for the first time revealing the mechanisms of formation of both short-term and long-term memory. And on this basis, it reveals the mechanisms of the emergence of consciousness.

Essence and Mind. Volume 2

In the second volume of the book, the author clearly and concisely demonstrates the necessary and sufficient conditions for the emergence of consciousness at a certain level of development of life. Understanding the mechanisms of memory and consciousness formation at the level of the material bodies of essence allows

It allows the author to explain the phenomenon of life after death that occurs to people in a state of clinical death. Thanks to this, these facts move from the category of inexplicable phenomena to the category of natural phenomena of living nature. The phenomenon of reincarnation moves from the category of religious and mystical concepts to the category of real natural phenomena. Similarly, the concepts of karma and sin cease to be instruments manipulation of the consciousness of the masses in the hands of state and religious leaders and become manifestations of the same laws of nature. Understanding all this makes a person truly free and the creator of their own destiny. Neither God, nor the Tsar, nor a Hero, but the person themselves determines their actions and bears full responsibility (not only moral) for them.

Russia in Distorted Mirrors

Volume 1. From the Star Rus to the Desecrated Russians

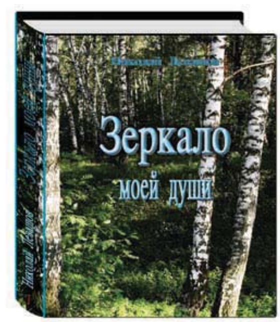
The author began working on this book in 2003, although the idea of writing such a book had been maturing for more than a year. A childhood fascination and interest in the past, both of his homeland and of the entire planet

did not disappear over time, but became one of his calling. Analytical thinking, unusual abilities, and numerous books ultimately led the author to write a book about the real history of Russia, rather than the "version" imposed on the Slavic Rus people by "well-wishers" with the rise to power of the Romanov dynasty, whose founders agreed to betray their people and the great past of their ancestors in exchange for the throne. In his book, the author shows "history" in a fundamentally new light, as no one else has done before him. He confirms his conclusions with real historical documents and maps, which the reader will be among the first to see. Step by step, the author reconstructs the real past of our planet and Russia, which for many thousands of years has played a key role in the development of Earth's civilisation, which was originally a colony created on planet Earth by a large union of humanoid civilisations. Of course, it was not called Russia at that time, but the point is not in the name, but in the essence of what lies behind it. And behind Russia lies the amazing past of the people who inhabit it, without whom not only many cultures, nations and peoples would not exist, but also modern civilisation.

The Mirror of My Soul

Volume 1. It's good to live in the Soviet Union...

The reasons why I decided to write my autobiography are quite trivial. For quite a long time, I had to talk about certain events in my life, and very often my stories came back to me in such a form that I did not even anticipate the possibility of such "folklore" emerging. My stories became embellished with such "facts" that even I found them interesting to listen to. The second reason that prompted me to undertake this "feat" was the fact that from time to time people would offer to write a book about me, and each time something stopped me. Once I even agreed to let an American writer record my memories



I spent several days recording my memories and reflecti
But soon I changed my mind and turned down the c
spend quite a lot of time explaining and clarifying what had happened to me. Secondly, even with audio cassettes of my memories in their hands, writers and journalists managed to distort everything so much that I was simply amazed. Moreover, the distortion was observed both in the direction of exaggeration and in the direction of distortion of facts and outright lies...

Svetlana de Rohan-Levashova

Revelation

Part 1. Childhood. Volume 1.

Svetlana means "Bearer of Light." It is very rare for a person's destiny, deeds, and name to coincide almost completely, as in the case of Svetlana de Rohan-Levashova. Her entire life, from early childhood, was permeated with a desire for

Towards light, towards knowledge, towards spiritual development. To say that her fate is unusual is to say nothing at all. From the earliest years of her life, she had to adapt to the fact that she was not like everyone else, that she could do many things that were incomprehensible and inaccessible to those around her. When she was still very young, Svetlana had to study and master her abilities herself, learn to control them and use them correctly. She learned early on the bitterness of misunderstanding and mistrust, envy and cruelty, loneliness and hatred. The wonderful abilities she had possessed since childhood were misunderstood and unappreciated by those around her; she had to survive and live in this world on her own — a very dangerous and treacherous world, especially for a lonely little girl...

Books the author is working on

The Mirror of My Soul

Volume 2. It's Good to Live in America...

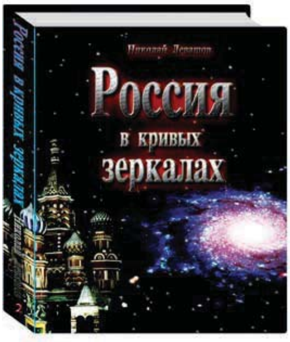
This book will tell about the author's American period, which lasted almost fifteen years, from 1992 to the end of 2006. This time was filled with a huge number of diverse encounters, events, achievements, struggles, retreats, and victories. Many
Some of them had an impact on the author's life and that of his wife.

— Svetlana, some had global significance, and some even affected our universe. Life in America turned out to be completely different from what was shown on television or written about in glossy magazines. Life is never the way it is portrayed in advertisements. And the point here is not that some people are considered stupid, while others are considered smart, some greedy, and others generous.
There are intelligent and foolish people everywhere. The point here is that a huge myth has been created on Earth, consisting of many other myths, such as the myth of freedom, the myth of democracy, the myth of God and the devil, of equality and brotherhood, the myth that science knows something for sure, the myth of relationships between people, and many others. And we, as people, are forced to think and live in accordance with these myths, rather than with the real picture of the universe and the laws of nature. This is particularly evident in America, which initially caused the characters in the book to be completely baffled and even somewhat confused. Later, having figured out where the wind was blowing from, they began their long-standing confrontation with the System. That is what this book is about...

Russia in Distorted Mirrors

Volume 2. Russia Crucified

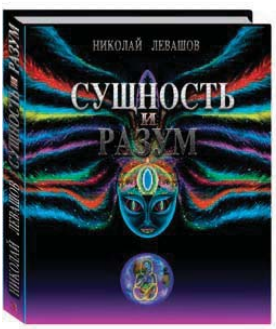
In the second volume of the book, the author presents his vision of Russia's past. In doing so, the author not only raises the issue of deliberate distortion of past events, but also reveals for the first time the reasons for this distortion, shows who is behind it and why, and how all this became possible. The author offers a completely different perspective on events from the distant and not-so-distant past, or rather, from several angles at once.



angles at the same time. The author examines a whole range of phenomena from the life of society as a whole and shows that, when viewed in this way, virtually any event from the past of any country cannot be interpreted in two ways, as is convenient for those in power. Instead, it receives a very definite explanation that does not depend on the desires or ambitions of the explainer, but only on the objective processes taking place within human society. He succeeds, thanks to such approach, he manages to "clear" the murky waters of the temporary "river" of the past of the Midgard-Earth civilisation, and in particular that which concerns the past of Russia, although during the existence of this Slavic-Aryan empire it had many different names. The reader can read about how he manages to do this in this book...

Essence and Mind. Volume 3

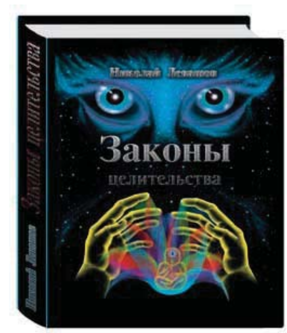
In this volume, the author continues to reveal the secrets of nature to the reader step by step. His focus is on the nature of human mental phenomena. The author then presents a whole range of pioneering ideas about the phenomena of the human psyche and societies that no one



has ever touched upon before. He introduces new concepts such as human geopsychology and evolutionary geopsychology of societies. These concepts allow us to look at the development of earthly civilisation and historical events of the past, present and even future in a completely different way. This knowledge allows us to see, instead of the "chaos" of events and the "arbitrariness" of personalities that historians love to talk about, the regularity of what is happening determined by the real laws of nature operating in human society. As a result, for the first time, it becomes possible to understand the reasons behind certain social events and phenomena and to see the puppet masters who have been in the shadows for so long; and even if someone guessed at their presence, without understanding the laws of nature, the efforts of these puppet masters would cause them to become either mad or falsifiers. The author then introduces the concept of human cosmo-psychology and explains the influence of cosmic phenomena on the development of civilisation.

The laws of healing

Modern medicine has "lost its way" in the labyrinth it has created for itself and, having lost "Ariadne's thread", is unable to find its way out. In the middle of the twentieth century, doctors said that when they had accurate diagnostic equipment and necessary medicines, they would lead humanity into a golden age of universal health... They got all of that... But nevertheless, people are no less sick than before, but rather more so. Children are born with weakened immune systems; when they arrive at a hospital or clinic in relatively good health, they run a high risk of leaving with a whole range of diseases, often fatal. And anything can happen.



just by breathing the air in these "temples of health." In this book, the author explains the reasons for this and gives an idea of the medicine of the future. The knowledge of this medicine is already in use, and real results confirm the correctness of this new approach. In this book, the author explains how a living organism works, how and why diseases and pathologies arise, the mechanisms of scanning the body, methods for determining the root causes of diseases, strategies and tactics for treating diseases and restoring the body to a healthy state, up to and including genetic correction of the body.

www.levashov.org
www.levashov.info
www.levashov.nam
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Russian Public Movement

Renaissance. Golden Age

Russian Public Movement "Revival. Golden Age" was created on the initiative of Russian scientist and academician of several academies, Nikolai Levashov. It is a project for the qualitative transformation of modern man, who has been subjected to constant brainwashing over the last few thousand years, into a true Intelligent Human Being. This project aims to awaken the genetic

the memory of the Russian people and other indigenous peoples of Russia, restoring the truth about the glorious past of these peoples, about their role in creating a highly developed earthly civilisation that flourished on our planet for many hundreds of thousands of years. This project aims to show people the path of Knowledge — the only path leading to evolution, the only one that will allow our civilisation to survive the tragic impasse into which we have been led by social parasites — bandits from the great cosmic highway.

The project "Revival. Golden Age" is a happy opportunity for people to awaken from the destructive evolutionary "sleep" into which parasitic forces have helped us sink, and from which they have not allowed us to emerge for a long time, because it is easier to control the "sleeping" masses and easier to take away their energy, their life force, leaving them with illness, misfortune and death in return. "Renaissance. The Golden Age" is the path of evolutionary development of humanity, which will ultimately allow it to survive, reach a high level of development, take its rightful place in the family of intelligent civilisations of our Universe, and live happily for many millions of years.

The Russian Public Movement "Revival. Golden Age" is currently the only real opportunity to truly feel like a Rational Human Being, to start thinking rationally, acting wisely, and gaining enlightenment through Knowledge. It is the only real opportunity to understand the responsibility that each person bears for themselves and for civilisation as a whole; the only opportunity to save oneself, one's civilisation, and one's planet from inevitable destruction. The movement is a public association of people, regardless of their political beliefs, who have a genuine desire to change the existing situation for the better; people who are ready to act not for profit and their own personal interests, but for the sake of their Great Nation and a happy and peaceful future for the country, for the preservation of the planet and its ecology. Every honest person who cares deeply about the future of the country and the future of our children must understand their personal responsibility for everything that is happening, and not wait for someone else to come and do everything for them.

Now is not the time to argue over trivial matters; it is time to put aside all personal ambitions — the fate of the nation, its future and even its very existence are at stake. Foreign gods and "ideals" have already brought Russia to the brink of disaster. They have led to the unified social organism of the Russian nation being broken up into a multitude of tiny "fragments," many of which are no larger than a single family, and sometimes even a single person who is only looking out for himself. This is exactly what our enemies wanted. Therefore, all those who resonate with the information presented in the book Russia in Distorted Mirrors and who are ready to act for the good of their people, and not just for their own personal gain, will respond to this call. The time has come for every Russian and every representative of other indigenous peoples of Russia to stop being slaves and working for the benefit of foreigners, obvious and hidden enemies and destroyers, and to become free people, creators, bringing good to their family, their people; to become noble.

The Movement's website can be found at the following addresses:

www.rod-vzv.net
www.rod-vzv.org
www.rod-vzv.info

Nikolai Viktorovich
Levashov
Anisotropic Universe

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