

Anastasia Gacheva, Arseny Zhilyaev, and Anton Vidokle

# Timeline of Russian Cosmism

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**1772**

Biela's Comet (official designation: 3D/Biela) is first recorded by Jacques Leibax Montaigne and Charles Messier. Much later, in 1826, Wilhelm von Biela will identify the comet as a member of the periodic Jupiter-family. Predictions at the time place the comet on a collision course with Earth, bound to destroy the planet sometime in the 1830s (when this doesn't come to pass, Earth's annihilation by Comet Biela is anticipated for several subsequent decades).

**1792**

While exiled in Siberia (by Catherine the Great), Russian philosopher and writer Alexander Nikolaevich Radishchev begins composing his treatise *On Man, His Mortality and Immortality*.

O man, whether you be a creature complex or uniform, it is not ordained that your intellect disintegrate with your body. Your goal is your felicity and your perfection. Walk the path traced out by nature and believe that when you have outlived your days, the disintegration of your intellect shall not be your lot. You determine your future with the present; and believe, I say yet again, believe that eternity is not a dream.

– A. N. Radishchev

**1835**

The Russian author and journalist Vladimir Fedorovich Odoevsky (1803–1869) writes a science fiction novel, *The Year 4338*, premised on Earth's imminent destruction by a comet.

A means has been discovered for travelling to and from the Moon; it is uninhabited and serves only as a source for supplying Earth with various necessities of life, thereby averting the fatal catastrophe with which Earth was threatened by virtue of its immense human population ...

Through the use of diverse chemical compounds found in the ground, a means has been discovered for heating and cooling the atmosphere: ventilators have been devised to avoid high winds ...

The feeling of love for mankind has increased to such a degree that people cannot bear to see tragedies and are amazed at how we could have ever delighted in the sight of moral afflictions, just as we cannot comprehend the pleasure the ancients derived from watching gladiators.

Nikolai Fedorovich Fedorov (1829–1903) articulates his philosophy of the Common Task.

The idea that through us, through rational creatures, nature will attain the fullness of self-awareness and self-governance and will recreate that which has been destroyed and is being destroyed through its blindness hitherto and will thereby fulfil the will of God, becoming the likeness of Him, Who is its Creator.

– N. F. Fedorov

### 1851

The American paleontologist James Dana discovers the phenomenon of cephalization, demonstrating that the evolutionary process leading to the creation of man has a directed, ascending character: development occurs along the line of perfecting the nervous systems of living creatures and an increase in brain mass.

### 1874

Fedorov begins his twenty-five-year post at the Rumyantsev Museum Library.

If we compare an archive to a grave, then reading, or more precisely research, will be the path toward exhumation, and an exhibition, as it were, the resurrection.

– N. F. Fedorov

While working at the library, Fedorov makes the acquaintance of sixteen-year-old K. E. Tsiolkovsky.

I regard Fedorov as an exceptional individual, and my meeting him as my good fortune. For me he took the place of university professors, with whom I did not associate.

– K. E. Tsiolkovsky

### 1878

F. M. Dostoyevsky becomes acquainted with Fedorov's ideas.

Who is this thinker, whose thoughts you have conveyed? If you can do so, tell me his real name. He has intrigued me too greatly ... And then I shall say that essentially I am in entire agreement with these ideas. I read them as if they were my own.

– Letter from F. M. Dostoyevsky to Fedorov's pupil P. P. Peterson, March 24, 1878

In replying to Dostoyevsky, Fedorov begins constructing a comprehensive exposition of his

The question of the fate of the Earth leads us to the conviction that human activity must not be bound by the limits of the Earthly planet. We must ask ourselves: Does our knowledge of the fate awaiting the Earth, of its inevitable end, obligate us to do something, or not? ... God educates man through his own experience: He is the King who does everything not only for man, but also through man; because there is no purposiveness in nature, it must be introduced by man himself, and in this consists the higher purposiveness. The Creator re-creates the world through us; he resurrects all that has perished ... And therefore mankind must not be an idle passenger, but the servant, the crew of our Earthly ship, set in motion by a force as yet unknown.

– N. F. Fedorov, *The Question of Brotherhood, or Kinship ...*

Dostoyevsky begins work on his novel, *The Brothers Karamazov*.

The transposition of love. I have not forgotten those either. The belief that we shall come back to life and find each other, all in universal harmony ... The resurrection of our forebears depends on us.

– F. M. Dostoyevsky, preparatory notes for *The Brothers Karamazov*

In Ryazan, Russia, K. E. Tsiolkovsky makes his first notes on the conquest of space and interplanetary travel, sketches a map of the Solar System, draws an asteroid with a human being under conditions of weightlessness, and ponders how to achieve weightlessness under terrestrial conditions.

### 1880

The economist, essayist, and thinker Sergei Andreevich Podolinsky (1850–1891) publishes his work *The Labor of Man and its Relationship to the Distribution of Energy*, in which he propounds the concept of labor as a factor of negative entropy, pointing out that all living creatures – beginning from plants and ending with man – possess the ability to accumulate energy from the Sun and transform it into new, higher forms of energy.

### Autumn 1881–1882

N. F. Fedorov meets L. N. Tolstoy and V. S. Soloviev. An intellectual and philosophical dialogue develops between the three thinkers.

There are men here too. And God has allowed me to get to know two of them. Orlov is one, the other, and the main one, is

Nikolai Fedorovich Fedorov. He is the librarian at the Rumyantsev Library. Remember, I told you about him. He has put together a plan of the common task of all mankind, having as its goal the resurrection of all people in the flesh. Firstly, this is not as insane as it seems. (Don't be afraid, I do not share and have never shared his views, but I have understood them so well that I feel capable of defending those views against any other credo that has an external goal.)  
– L. N. Tolstoy, from a letter to V. I. Alexeev (November 15-30, 1881)

#### 1884

L. N. Tolstoy presents an exposition of Fedorov's ideas on resurrection to members of the Moscow Psychological Society. To the question: "How will all the resurrected generations fit onto the Earth?" the writer replies: "The kingdom of knowledge and governance is not limited to the Earth."

#### 1889–1890

L. N. Tolstoy and N. F. Fedorov hold dialogues on art. Fedorov is developing the concept of a theanthropurgical art that serves the causes of resurrection of the dead and regulation of nature. He opposes art as the creation of "likenesses" of the past and the living ("Ptolemaic art") to the art of reality that transforms the world ("Copernican art"). Leo Tolstoy works on two articles, "Science and Art" and "On Science and Art."

Aesthetics is the science of recreating all the rational beings that have ever been on this tiny Earth (this little drop that has reflected itself in the entire universe and reflected the entire universe in itself), for the animation (and governance) by them of all the immense celestial worlds that have no rational creatures.

– N. F. Fedorov

The *Exposition Universelle*, or World's Fair, opens in Paris during the 100th anniversary of the storming of the Bastille. For Fedorov, the image of the World's Fair becomes a manifestation of the false paths of civilization, and also of the decadence of art that serves the factory and trade. The philosopher contrasts the Fair with the Museum, which he makes the focus of history, as "a work of salvation," as a work of art that sets before itself the resurrectionary ideal.

The Museum does not permit either knowledge or truth or art, i.e. beauty, to be diverted from the common good, but only memory makes the good common.

– N. F. Fedorov

In his articles "Beauty in Nature" and "The General Meaning of Art," Vladimir Sergeevich Soloviev presents the development of the world as "the gradual and persistent process" of the animation of matter, which has attained its crown in man.

We must define beauty as the transformation of matter through the incarnation in it of another, supermaterial principle.

– V. S. Soloviev

#### 1891

Famine in Russia

In the U.S., the first experiments are carried out on inducing artificial rainfall by means of artillery projectiles.

N. F. Fedorov seeks to draw attention to the American experiment, seeing it as one of the first steps towards the governance of nature. Through I. M. Ivakin he approaches Tolstoy with a request to support the idea of the artificial induction of rain.

It is the regulation, the governance of the forces of blind nature that constitute that great task which can and must become the common one.

– N. F. Fedorov

Concerning influencing the movement of the clouds in order that rain will not fall into the sea, but where it is needed, I know and have read nothing, but I think that it is not impossible, and that everything that can be done in this line will be good. It is one of the applications of the worldview of Nikolai Fedorovich, with whom I have always sympathized and still do, regarding a task that is worth the effort and the common task of all mankind.

– From a letter from L. N. Tolstoy to I. M. Ivakin

#### 1893

Fedorov completes his major work, *The Question of Brotherhood, or Kinship*, which developed out of his correspondence with Dostoyevsky.

Fedorov announces his idea to cover the walls of the Kremlin with murals, part of his larger ambition to transform the Kremlin into a "universal museum of all sciences and arts." He wants these murals to depict key events in Russian history: the unification and pacification of nations, as well as "future deeds of the world"; the regulation of nature and resurrection.

The paintings are to be done collectively by all artists in Russia.

**1894**

Soloviev completes his treatise *The Meaning of Love*.

The meaning of gender differentiation (and sexual love) is to be found not in the reproduction of ancestral life, but in the idea of a higher organism.

Our rebirth is inextricably bound up with the rebirth of the Universe, with the transformation of its forms of space and time.

– V. S. Soloviev

Tsiolkovsky's science-fiction work *Dreams of the Earth and the Sky and the Effects of Universal Gravitation* is published in Moscow. It contains the first mention of the possibility of launching an artificial satellite into orbit round the Earth.

A notional satellite, like the Moon, but at an optionally close distance from our planet, only outside the bounds of the atmosphere—that is, about 300 versts (320 kilometers) from the Earth's surface—provided it has very low mass, would be an example of an environment free of gravity.

– K. E. Tsiolkovsky

**1898**

The dramatist Alexander Vasilievich Sukhovo-Kobylin (1817–1903) completes his translation of the works of Hegel and attempts to publish sections of his work *A Philosophy of Spirit or Sociology (A Doctrine of the Universe)*.

Three moments in the history of mankind and its advance toward Absolute Spirit: The first moment is telluric or earthly mankind, confined within the narrow limits of the terrestrial globe that we inhabit. The second moment is solar mankind, i.e. that which is manifested as the central hub of the inhabitants of our Solar System. The third moment is sidereal, or universal mankind, i.e. the entire totality of worlds inhabited by mankind throughout the infinity of the Universe.

– A. V. Sukhovo-Kobylin

On the basis of his mathematical calculations, K. E. Tsiolkovsky finally comes to the conclusion that a rocket constructed on the principle of reactive motion will be able to overcome the force of the Earth's gravitation.

After Russia makes an appeal for disarmament, preparations begin for the first peace conference.

N. F. Fedorov's article "Disarmament" appears in the newspaper *The New Times*: in it he proposes "converting instruments of destruction" into "instruments of salvation" and converting the army into a force for the study of nature.

The conversion of the art of war into research, into the study of nature, and the employment of the army in this study will be an expression of its new assignment; this will lay the foundation for the transition from strife with our own kind to acting on the blind, irrational forces of nature, which afflict us with floods, earthquakes, and other catastrophes of all kinds, to acting on the blind forces that hold us rational creatures in a state of unnatural dependence on them.

– N. F. Fedorov

**1902**

The physicist and philosopher Nikolai Alexeevich Umov (1846–1916) proposes the hypothesis of the anti-entropic nature of life, and suggests the introduction of a third law of thermodynamics to account for the phenomena of life and consciousness.

Orderliness is an essential characteristic of living matter. In its general features the evolution of living matter increases the amount of orderliness in nature. Man conscripts the vegetable and animal kingdoms into the circle of his own elements of orderliness; in his implements and machines he extends these elements of orderliness to unorganized matter, and in the name of these elements of orderliness he wages battle against the adventitious ordering of events in nature.

– N. A. Umov

N. F. Fedorov writes a new exposition of his doctrine: *Supra-Moralism, or Universal Synthesis, i.e. Universal Integration*.

The synthesis of two modes of reason (theoretical and practical) and three objects of knowing and doing (God, man and nature, of which man is the instrument of divine reason and himself becomes the reason of the universe) and in addition, together with this, the synthesis of science and art in the religion that is identified with Easter as a great feast and great deed.

– N. F. Fedorov, *Supra-Moralism*

**1903**

The journal *Scientific Review (Nauchnoe*

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obozrenie) publishes K. E. Tsiolkovsky's article "The Exploration of Outer Space by Means of Reactive Motion Devices," in which the formula of reactive motion is derived and the possibility of flight into cosmic space is validated.

I have elaborated certain aspects of raising objects into space by means of a reactive motion device, similar to a rocket. The mathematical conclusions, founded on scientific data and verified numerous times, indicate that it is possible to ascend into celestial space using such devices and perhaps establish colonies beyond the bounds of the Earth's atmosphere. Hundreds of years will probably pass before the ideas I have expressed find any application, and people will use them to settle not only across the face of the Earth, but across the face of the entire Universe.  
– From a letter written by K. E. Tsiolkovsky to the editor of the journal *Scientific Review*, M. M. Filippov

N.F. Fedorov dies.

We felt that those were his final words of advice, his final injunctions. Not a word about himself personally, neither about his illness, nor about the imminent end of his life. He thought and spoke only about the 'task.' He was never separated from it until his final moment of conscious awareness.  
– V. A. Kozhevnikov

### 1905

The first Russian revolution.

### 1906

In a poem entitled "In Praise of Humanity," Valery Bryusov becomes the first writer to use Fedorov's image of Earth as a spaceship.

### 1907

In the city of Verny (Alma-Ata), the first volume of N. F. Fedorov's *Philosophy of the Common Task*, prepared for publication by his disciples V. A. Kozhevnikov and N. P. Peterson, appears in an edition of 480 copies with the label "Not for sale."

### 1905–1909

Parallel to the Russian tradition of God-seeking, a new tendency is developing: God-building. Alexander Bogdanov, Anatoly Lunacharsky, and Maxim Gorky propose a new ideal, based on the idea of a collective organization of experience. The goal is for humanity to become godlike, while understanding the struggle for socialism not merely as a struggle against capital, but as positive creativity. The development of new forms of human relations, the construction of a new culture, and the transformation of nature

are all part of the plan.

### 1908

Alexander Aleksandrovich Bogdanov, a philosopher, scientist, and revolutionary (1873–1928) publishes his science-fiction novel *Red Star*, which depicts an ideal social order achieved on Mars. Leonid, the socialist protagonist of the novel, travels to Mars on a spaceship powered by a nuclear engine.

The poet Velimir Khlebnikov (1885–1922) writes "The Crane," in which he articulates an artistic and philosophical critique of a technologically-driven civilization, with its cult of commodities and submission to death.

### 1911–1912

The journal *Bulletin of Aeronautics* publishes the second part of a study by Konstantin Tsiolkovsky entitled "The Exploration of Cosmic Space by Means of Rocket Devices," in which he discusses rocket flight and the future development of flying cars, as well as the use of atomic energy for interplanetary travel.

### 1912

In his article "The Canon and the Law," the Russian avant-garde artist Pavel Nikolaevich Filonov (1883–1941) expounds the basis of the method of analytical art, which, in distinction from Cubism, takes its cue from an organic principle – a growing reality that is in a constant process of change and becoming.

### 1913

The second volume of Fedorov's *Philosophy of the Common Task* is published in Moscow.

The first part of Bogdanov's *Tektology, a Universal Organizational Science* is published. Tektology will later be recognized as a precursor to Cybernetics and Systems Theory.

The futurist opera *Victory over the Sun* premieres in St. Petersburg. The libretto is written by Aleksei Kruchonykh in Zaum (the language of Russian futurist poets); the music was composed by Mikhail Matyushin, with a prologue by Velimir Khlebnikov; Kasimir Malevich created the set design.

Evolution can be creative, i.e. man or any living creature will take note of it in himself and start directing its movement towards the form he requires.

– P. N. Filonov

### 1914

The beginning of World War I.

In Kaluga, a teenage student named Alexander Chizhevsky meets Konstantin Tsiolkovsky.

### 1915

In an essay entitled "War and the Progress of Science," the scientist Vladimir Vernadsky (1863–1945) warns against further use of

scientific experiments for military goals.

A new artistic movement called Suprematism is founded by Kazimir Malevich. Malevich paints his *Black Square* as well as a series of Suprematist compositions that are exhibited at the *Last Futurist Exhibition of Paintings 0.10* in St. Petersburg. Other participants include: Vladimir Tatlin, Ivan Puni, Liubov Popova, Ivan Kliun, Ksenia Boguslavskaya, Olga Rozanova, Nadezhda Udaltsova, Nathan Altman, Vasily Kamensky, Vera Pestel, Maria Vasilieva, Anna Kirillova, and Mikhail Menkov.

### 1916

The poet Vladimir Mayakovsky writes "The War and the World." The finale of the poem depicts the resurrection of the victims of all wars, and universal brotherhood.

Perplexing: is it air, flower, or a bird?  
Singing, sweet-smelling,

and kaleidoscopic – yet it sets all faces on fire and makes the mind spin like the sweetest wine. And not only people do joy's colors unfurl, their faces beaming; animals stylishly curl their fur. Yesterday's stormy seas begin to purr and lie down at your feet.  
– V. Mayakovsky, "The War and the World"

A manifesto by Velimir Khlebnikov entitled "The Trumpet of the Martians" is published in Kharkov. The text is a proclamation of a future humanity comprised of inventors who are constructing their state in time, as opposed to consumers who exist as parasites on existence.

### 1917

The Russian Revolution.

Konstantin Tsiolkovsky writes an article titled "The Ideal Order of Life."

The true path toward perfection means to not deprive anyone of anything, to not commit any violence, to not violate the freedoms and desires of our neighbors, unless they threaten us with the same. ... There is no need to rob or steal, because nature is abundant in all treasure.  
– K. E. Tsiolkovsky

Velimir Khlebnikov writes a poetic manifesto titled "A Call to the Chairmen of the Globe" – a call to end all wars.

### 1918–1922

The cosmic achievements of a liberated humanity become a recurrent theme in the poetry and journalism of the first years after the Revolution. Cosmist themes appear in the work of Khlebnikov, Mayakovsky, Esenin, Kluev,

Gerasimov, Kirillova, and Filipchenko, which leads literary critics to speak of a spontaneous "cosmism" in poetry.

### 1918

The ideology of the Proletkult is actively articulated (the notions of culture or labor, the proletariat as the messiah, the spirit of labor, universal revolution, a global spring, etc.) The main theorist of the Proletkult, Alexander Bogdanov, outlines the central task of the working class: "a graceful and holistic organization of the life of all humanity," and defines the goal of art as work directed toward "the realization of an ideal organization of the world."

Kasimir Malevich paints *White on White: A Cosmos within a Cosmos*.

The white square carries within itself a white world (world-building), assigning the symbol of purity to the creative life of humanity.

– Kasimir Malevich

### 1919

Velimir Khlebnikov pens a platform statement, "The Artists of the World."

Our goal is a common written language, common for all the nations of the third satellite of the Sun, to construct written signs, comprehensible and acceptable for the whole star that is settled by humanity, lost in the world.

– Velimir Khlebnikov, *The Artists of the World*, 1919

A Union of Artist-Inventors is formed. Members include Kasimir Malevich, Vladimir Tatlin, and others.

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### 1921

A famine in the USSR kills nearly five million people.

The biocosmist movement starts in

Moscow, led by the anarchist poet A. Agienko (Svyatogor) and the publicist P. I. Ivanitsky. The slogan of the biocosmists is "Immortalism and Interplanitarism." They publish numerous manifestos, participate in public debates, and publish a journal, *Biocosmism*.

The most important thing for us is the immortality of the individual and his life in the cosmos. We have elevated this value to a goal in itself, thus formulating our teleological point of view. Our philosophy is first and foremost a great teleology and all philosophical problems are shaped by our glorious objectives.

We looked to our undying, instinctive urge towards immortality and our unquenchable thirst for glorious creativity, trusting in our biocosmic consciousness of the objective world's reality. Objective reality is an infinite arena for the great struggle in which everything that possesses individuality and integrity asserts its supreme existence.  
– "Our Affirmations," *Biocosmist* no. 1

An artistic-philosophical association, "Art-Life," is formed in Moscow. It is based on the idea of the synthesis of the arts. Participants include the artists V. Chekrigyn, S. Romanovich, and S. Gerasimov, the philosopher P. Florensky, and the poets P. Antokolsky and V. Khlebnikov.

The artist V. Chekrygin encounters the ideas of N. Fedorov. Inspired by Fedorov's idea of the art of the future, Chekrygin develops a project for a Resurrecting Cathedral-Museum, as a collective task for contemporary artists. He creates a series of drawings entitled *The Resurrection of the Dead* as studies for frescos in this cathedral.

Resurrection of the dead fathers is the task of art. The full synthesis of art is the Transformation of the Cosmos (the Universe), the mastery of the cosmic process, transformation of the inert law of attraction and gravitation of the masses (and bodies in the dying universe, waiting for support), towards a higher law-the true support-love.  
– V. Chekrygin

A. Platonov writes an essay on the cosmic goals of art entitled "Proletarian Poetry." It is published in the journal *Forge*.

Proletarian poetry is a transformation of matter, it is a struggle with reality, a battle with the cosmos in order to change it in

accordance with the inner needs of humans.

– A. Platonov

## 1922

A club called the "Creatorium of Biocosmists" is founded. The newspaper *Izvestia* publishes the biocosmist manifesto. A. Yaroslavsky joins the movement and organizes a biocosmist group in St. Petersburg called the "Northern Biocosmists." This group starts publishing a journal entitled *Immortality*. Yaroslavsky publishes several books of poetry, including *The Assault on the Universe* and *Anabiosis Poem*.

## 1923

British scientist and Marxist J. B. S. Haldane publishes the book *Daedalus; or, Science and the Future*, which offers an early vision of transhumanist thought. The book is particularly concerned with the ethical implications of the advancement of science.

The Marxist historian N. Rozhkov publishes a book entitled *The Meaning and Beauty of Life*, which advocates immortality and the exploration of the cosmos.

In the distant future humanity will have the opportunity to achieve omnipotence in the literal sense of this word, including communication with other worlds, immortality, resurrection of bodies of those who lived earlier, and even the creation of new planets and planetary systems.

– N. Rozhkov

V. Mayakovsky depicts the studio of resurrection at the end of his poem "About This."

I see clearly, to the tiniest detail I see, Air into air, as if brick on brick appears, inaccessible to decay and putrefaction, gleaming, rearing through the eras the workshop of human resurrection. There he is that great-browed quiet scientist, before the experiment, furrowing his brow. Name-searching – a book – The Whole Earth its title-list. The Twentieth Century. Whom to resurrect now?

"There's Mayakovsky here ... Let's find someone brighter - This poet's not handsome enough. Reject."

Then I cry out from these very pages of writing: Don't turn over the page! Resurrect !

Put a heart in me – Transfuse blood to the uttermost vein. Inject thought into my skull with your skill! My earthly life I never lived out to the end. On earth, my love I could never fulfill.

– V. Mayakovsky, "About This"

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A. Tolstoy publishes his novel *Aelita, or The Decline of Mars*.

**1924**

Lenin dies. His body is embalmed and placed in a mausoleum in Red Square.

The proletarian poet G. Sannikov composes the poem “Leniniada,” in which he depicts the resurrection of all the casualties of the revolution.

The scientist, poet, painter, and philosopher A. Chizhevsky (1897–1964) self-publishes a treatise entitled *Physiological Factors of the Historical Process* in which, using the statistical analysis of historical data, he explains the relationship between the activity of solar cycles and human history.

In light of the contemporary scientific worldview, the fate of humanity is directly connected with the fate of the universe ... To understand the life of the Earth-the planet taken as a whole: with its atmosphere and lithosphere, as well as all the plant and animal life, and all its human population-we must look at life as one common organism ... Historical events develop in response to triggers caused by changes in the process of the formation of Sun spots.

– A. Chizhevsky

To emphasize the importance of Tsiolkovsky to the field of space exploration, Chizhevsky publishes Tsiolkovsky’s 1903 treatise *A Rocket in Outer Space* and distributes it to numerous international libraries and universities, as well as directly to a number of notable scientists.

In Moscow, a society for research into interplanetary communications is formed. Members include K. Tsiolkovsky, F. Zander, V. Vetchinkin, and others.

Y. Protazanov directs a silent film, *Aelita, Queen of Mars*, based on the novel by A. Tolstoy.

The cosmist philosopher V. Muraviev (1885–1930) publishes a book entitled *The Control of Time as the Main Task of Labor Organization*.

Creative labor, in our understanding, is a cosmic category, and the goal of all labor is to overcome time. We need to stop hoping for a ready-made eternity and start producing time. Blind, irrational time is already in its death throes. Beyond it lies the new, more perfect and rational time—a creation of the future global culture.

– V. Muraviev

The cosmist philosopher A. Gorsky (1886–1943)

completes a treatise entitled *An Enormous Sketch* in which, transforming Freud's psychoanalytic theory and complementing it with ideas from *The Meaning of Love* by V. Soloviev, he proposes the concept of a transformative, resurrecting eros and the overcoming of genders.

E. Roerich writes and starts to publish anonymously a fourteen-volume work called *Living Ethics (Agni-Yoga)*, based on the idea of an ascending cosmic evolution and the harmonization of individual energy with the energy of the universe.

**1925**

In France an essay by V. Vernadsky entitled “Human Autotrophy” is published. The essay addresses the notion of the infinity of life, the role of reason in the biosphere, and the prospects for a transition to synthetic food production.

What would synthetic food mean for the life of humans and the life of the biosphere? This would liberate humanity from its dependence on the consumption of other living matter, transforming the human from a heterotrophic being into an autotrophic being. The consequences of this transformation for the mechanism of the biosphere would be enormous.

– V. Vernadsky

Biocosmist P. Ivanitsky publishes a brochure entitled “Artificial Rain and Weather Controlled by Means of Regulating Atmospheric and Ground Electricity.”

The *Global Pathfinder* journal publishes a science fiction story by A. Belyaev (1884–1942) entitled “Professor Dowell’s Head,” about experiments to keep a head alive without the rest of the body. This story is later developed into a novel.

K. Malevich develops Suprematist architectural models (architectons and planids), some of which the author says are intended to represent models for structures in the cosmos—the foundation for space stations.

**1926**

V. Vernadsky publishes his book *The Biosphere*.

The substance of the biosphere is permeated by energy, thanks to cosmic rays; it becomes active, it collects and distributes this radiant energy in the biosphere. The face of the Earth is not only a reflection of our planet and its substance and energy – at the same time it is a creation of the external forces of the cosmos.

– V. Vernadsky

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The Moscow Institute of Hematology is opened. A. Bogdanov is appointed director and focuses on experimental blood transfusions, with the goal of reversing the aging process.

Professor S. Briukhonenko (1890–1960) invents the world's first device for artificial blood circulation, called the "Ventricular Assistance Device." He conducts experiments in which he is able to reanimate dogs and keep them alive for two hours or more.

A cosmist artistic group called "Amaravella" (Sanskrit for "Saplings of Immortality") is formed.

### 1927

In April the first World Exhibition of Interplanetary Spacecraft and Mechanisms opens in Moscow and is visited by more than ten thousand people in two months.

The scientist and popularizer of aviation and cosmonautics N. A. Rynin starts publishing a series of issues of *Interplanetary Travel in the Fantasies of Novelists and the Projects of Scientists* (in all there were nine issues, and the final one, which appeared in 1932, included a chronicle and an extensive bibliography on the subject).

In Paris, the French philosopher Édouard Le Roy gives a cycle of lectures that are later compiled in his book *The Origins of Man and the Evolution of Intelligence*, in which the term "noosphere" first appears. The originator of the term was the philosopher and paleontologist P. Teilhard de Chardin, who made the case for it in 1925 in his essay "Hominization."

P. Teilhard de Chardin completes his book *The Divine Milieu*, in which he emphasizes the idea of ascending creation and the movement of the universe towards the Pleroma, which includes, together with man, all the creatures of creation.

### 1928

M. Gorky mentions Fedorov in his article "Once Again on Mechanical Citizens," published on November 27 in the newspaper *Izvestiya*, adducing Fedorov's aphorism: "Freedom without power over nature and without controlling it is the same as liberating the peasants without land." M. I. Kalinin cites this quotation in his report to the fourth session of the Central Executive Committee of the USSR on December 11.

On December 28 *Izvestiya* publishes an article about N. F. Fedorov by A. K. Gorsky, in which he expounds Fedorov's ideas in such a way as to show their affinity with the scientific, technical, and social transformations of Soviet Russia.

The young architect G. T. Krutikov, a student at the Higher Art and Technical Studios, presents

as his graduation project the work *The City of the Future: The Evolution of Architectural Principles in City Planning and the Organization of Housing*. As part of the project he creates a design for a "flying city."

A volume of the preparatory materials for F. M. Dostoevsky's novel *The Brothers Karamazov* is published in Germany by R. Piper's publishing house, with V. L. Komarovich's extensive research work *Patricide and N. F. Fedorov's Doctrine of Physical Resurrection*.

### 1929

A. K. Gorsky and V. N. Muraviev are arrested.

The philosopher, priest, and theologian P. A. Florensky (1882-1937) propounds the idea of the pneumatosphere in a letter to V. I. Vernadsky.

From my side I wish to express an idea which requires concrete substantiation and is more of a heuristic principle. It is precisely the idea of the existence in the biosphere, or perhaps on the biosphere, of that which might be called a pneumatosphere, i.e., of the existence of a special part of matter involved in the circulation of culture, or rather, of the spirit.

– P. A. Florensky. From a letter to V. I. Vernadsky

A. Platonov completes his novel *Chevengur*, in which he puts the ideal of communism to the test. The novel remains unpublished in Platonov's lifetime.

Socialism is not a far-distant country where, through the combined efforts of humanity, Rosa Luxemburg will return to life as a living citizen.

– A. Platonov, *Chevengur*

### 1930

A. Chizhevsky publishes his book *Epidemiological Catastrophes and the Periodic Activity of the Sun*, summing up his research into the relationship between the origin and spread of epidemics and the cycles of solar activity. In Kaluga, Tsiolkovsky publishes his *Scientific Ethics*.

The ethics of the cosmos, i.e., of its conscious creatures, requires that there should not be any suffering anywhere.

– K. E. Tsiolkovsky, *Scientific Ethics*

The science fiction writer A. Belyaev publishes an essay on K. E. Tsiolkovsky entitled "Citizen of the Ethereal Island." He also publishes a story entitled "Imperishable World," which shows in artistic form the dangers of ill-considered and

voluntaristic intrusions by man into nature that have not been preceded, as N. F. Fedorov insisted they should be, by a thorough study of natural processes.

A. Platonov writes his novel *The Foundation Pit*, which symbolically embodies a number of Fedorovian motifs (such as eternal memory and the impossibility of universal happiness as long as death exists).

### 1931

The Group for the Study of Reactive Motion (GSRM) is founded, affiliated with the Society for the Promotion of Defense and Aviation and Chemical Construction. The members of the group are the scientists and design engineers S. P. Korolev, Yu. A. Pobedonostsev, M. K. Tikhonravov, and F. A. Zander, among others. A Leningrad chapter of GSRM is set up, including as members Ya. I. Perelman, N. A. Rynin, and V. V. Razumov, among others.

A Central Scientific Research Laboratory for studying ionification is set up, headed by A. L. Chizhevsky.

*Amazing Stories* publishes “The Jameson Satellite,” a short story by Neil R. Jones, about a man whose corpse is sent into orbit, where it remains near absolute zero temperature for millions of years until a race of cyborgs discovers it, defrosts its brain, and installs it in a robot’s body.

### 1932

The Institute of Artificial Rain is founded, affiliated with the USSR Hydrometeorological Committee.

On the initiative of A. M. Gorky, the All-Union Institute of Experimental Medicine, is founded in Moscow to deal, among other things, with the question of longevity.

### 1933

The first launch of a rocket developed by the GSRM takes place at the Nakhabino testing ground in the Moscow region. The group works on problems associated with the conquest of space.

The science fiction writer A. Belyaev publishes his novel *Leap Into Nothing*. The engineer F. A. Zander serves as the prototype for the main character, the German scientist and pacifist Leo Zandler, who builds a spaceship and explores the expanses of the universe.

The Eurasian writer K. A. Chkheidze (1897-1974) creates the archive collection “Fedoroviana Pragensia” at the National Museum in Prague. The collection is dedicated to promoting the understanding of Fedorov’s ideas among Russian émigrés.

### 1934

In Harbin, China, N. A. Setnitsky publishes a second edition of an anthology entitled *The Universal Task*, dedicated to the memory of Fedorov. The book includes essays addressing

polemics addressing the topics “science and religion” and “science and labor,” and discusses spiritual yearning among the Russian émigré community in Harbin from the viewpoint of the philosophy of the Common Task.

The Mosfilm film studio starts work on the movie *Cosmic Voyage*. K. E. Tsiolkovsky is a consultant and is involved in writing the script. He creates thirty drawings especially for the film, which are later collected in *An Album of Space Travel*.

### 1935

K. E. Tsiolkovsky dies.

### 1936

The journal *Zvezda* (Star) prints A. Belyaev’s science fiction novel *The Star KETs* (the letters K, E, and Ts are the initials of Konstantin Eduardovich Tsiolkovsky).

N. A. Setnitsky attempts unsuccessfully to meet with A. M. Gorky. Eventually, Setnitsky writes Gorky a letter about his unsuccessful efforts to incorporate Fedorov’s ideas into Gorky’s vision of the construction of Soviet society. Before Setnitsky can send the letter, he discovers that Gorky has died.

The tragic thing is that not one of the builders of socialism dares to say that it is impossible even to think about socialism without a struggle against death, and that communism cannot be built without victory over death.

– N. A. Setnitsky. From a letter to A. M. Gorky

### 1937

In collaboration with A. K. Gorsky, who is released from a prison camp in the spring of 1937, N. A. Setnitsky writes the article “Creative Marxism and the Liquidation of Opportunistic Time-Serving in Biology” (unpublished).

N. A. Setnitsky is arrested and executed in the fall.

### 1939

A. L. Chizhevsky is elected honorary president of the International Congress for Biological Physics and Cosmic Biology.

World War II begins.

### 1940

P. Teilhard de Chardin completes his most important book, *The Phenomenon of Man*, formulating the concept of Christian evolutionism and the idea of the noosphere.

Life, once having achieved its thinking stage, can only continue by rising structurally higher and higher. – P. Teilhard de Chardin

The movie director G. V. Alexandrov (1903-1983),

one of the creators of sound cinema, publishes an article entitled “The Cinema of the Future” in the newspaper *Izvestiya*. In his opinion, the movie theater of the future will have no screen. Rather, it will be like a planetarium, and cinematic works will be projected onto the walls and the ceiling. Alexandrov forecasts a wide variety of applications for stereo imaging (at that time research into the creation of this technology was being actively pursued in the USSR), and he asserts that in the future, new technologies will make it possible to record on film not only images and sounds, but also smells: “The music of aromas is a new power for the artist of the cinema.”

A. K. Gorsky proposes the idea of an experimental studio of the new screen (ESNES), which would link the art of the cinema to the image of the art of the future, destined to realize “the organization of world-action” and resurrectionary practice.

#### 1941

The science fiction writer A. Belyaev’s novel *Ariel*, about a flying man, is published.

The USSR enters World War II.

#### 1942

A. L. Chizhevsky is arrested.

The first successful test of the V-2 rocket, designed by Wernher von Braun for the German Wehrmacht and Luftwaffe. The rocket reaches an altitude of 84.5 km, and subsequently 174.6 km, crossing the Karman Line and entering the edge of space. Used as a missile rather than a spaceship, the V-2 kills many thousand of civilians in Great Britain, Belgium, France, and the Netherlands during the war. After the defeat of the Nazis, German engineers are moved to the United States and the USSR, where they further develop the V-2 rocket for military and civilian purposes. The V-2 rocket lays the foundation for the liquid-fuel missiles and space launchers used later.

#### 1943

A. K. Gorsky is arrested and dies in the Tula prison hospital.

The first translation of Fedorov into Japanese is published in Tokyo, based on the Harbin publication of 1928-1930. It includes the first, second, and third parts of Fedorov’s most important work, *The Question of Brotherhood, or Kinship*.

#### 1944

V. I. Vernadsky’s essay “Some Words About the Noosphere” is published in the journal *Uspexhi Biologii* (Successes of Biology). It is the first significant work to draw public attention to the idea of a transition from the biosphere to the noosphere.

The noosphere is a new geological

phenomenon on our planet. In it, man for the first time becomes a major geological force. He can and must transform his life domain by his labor and his thought, transform it radically as compared with what existed previously.

– V. I. Vernadsky

The botanist and microbiologist N. G. Kholodny (1882-1953), one of Vernadsky’s pupils, introduces the concept of anthropocosmism.

The most characteristic feature of the anthropocosmic attitude to nature is man’s constant awareness of his own organic, indissoluble, and efficacious connection with it, and with the entire cosmos.

– N. G. Kholodny

### 1950

In the Vladimir prison, the poet, philosopher, and mystic D. Andreev (1906-1959) starts work on his poem “The Iron Mystery” and his book *The Rose of the World*, embodying in it the idea of “joint creation with God,” which is close to the ethos of Russian cosmism.

#### 1951

The noted eugenicist and evolutionary biologist Julian Huxley coins the term “transhumanism” in a lecture entitled “Knowledge, Morality and Destiny,” delivered in Washington, DC. Huxley describes his philosophy as “the idea of humanity attempting to overcome its limitations and to arrive at fuller fruition.”

#### 1950–1958

A. L. Chizhevsky lives and works in Karaganda. He continues his research into aero-ionization.

#### 1955

On Easter Day, P. Teilhard de Chardin dies in New York. Immediately after his death, a commission to publish his work is established, consisting of friends and admirers of the scientist and thinker. The publication of his collected works begins. The first volume to appear is *The Phenomenon of Man*.

#### 1957

Earth’s first artificial satellite is launched. On November 3, 1957, the dog Laika becomes the first animal to be launched into orbit, paving the way for human spaceflight.

The newspaper *Pionerskaya Pravda* publishes excerpts from I. Efremov’s novel *The Andromeda Nebula*, about mankind’s future in space. This marks the beginning of the golden age of Soviet science fiction, which develops rapidly in the novels of Efremov, in Arkady and Boris Strugatsky’s novels *Land of Scarlet Clouds* (1959) and *Far Rainbow* (1963), and in their short novels *The Way to Almathea* (1960), *Apprentices*

(1962), and *The Kid* (1971). Also significant are G. Altov's collection of stories *Legends of the Star Captains* (1961), V. Zhuravleva's short novel *Galactic Journey* (1963), Georgy Gurevich's short novels (later combined into the utopian novel *We Are From the Solar System* [1965]), Sergei Snegov's trilogy *People Like Gods* (1966-1977), and Sergei Pavlov's novel *Lunar Rainbow* (1978-1983).

B. Klushantsev's documentary film *The Road to the Stars* is released, in which the story of K. E. Tsiolkovsky plays a central role. Subsequently, following a ban on his feature films, Klushantsev develops a special popular-scientific movie genre, which combines the approaches of documentary film and artistic narrative. The director makes the movies *Moon* (1965), *Mars* (1968), *I See Earth* (1970), *Dictate of Time* (1972), and others.

#### 1958

A. L. Chizhevsky is rehabilitated and is allowed to return to Moscow.

#### 1959

The American National Exhibition opens in Moscow and is visited by almost three million people in six weeks. One of the most-discussed pieces is Buckminster Fuller's geodesic dome made out of gold-hued aluminum sheets. Independently of Fedorov, the architect arrives at the idea of Earth as a spaceship, and this idea finds expression in his experiments with geodesic constructions.

#### 1960s

In the 1960s, in the midst of Khrushchev's thaw, the triumphal exploration of outer space, and widespread interest in cybernetics, there emerges a geometric and kinetic art that harks back to constructivism, the figurative experiments of the avant-garde, and the dynamic art of Naum Gabo. The group "Dvizhenie" ("Movement")—consisting of the artists L. Nussberg, F. Infante-Arana, V. Koleichuk, and others—aims to link together technology, an interest in outer space, and art.

#### 1961

The newspaper *Moskovsky Komsomolets* publishes an article by the biologist V. F. Kuprevich (1897-1969), the president of the Belorussian Academy of Sciences, in which the prospects of human immortality are discussed.

Soviet cosmonaut Yuri Gagarin became the first person in space, when he orbited the Earth in a Vostok spacecraft.

#### 1962

P. Klushantsev's popular science fiction movie *Planet of Storms*, based on the eponymous novel by A. Kazantsev, is released. Distribution rights to the film are acquired by twenty-eight countries around the world. The new visual effects and techniques for combination shots

that Klushantsev invents for the movie are subsequently borrowed by a number of American directors, including Stanley Kubrick, George Lucas, and Ridley Scott, as well as by special effects experts.

The first edition of R. Ettinger's book *The Prospect of Immortality* is published, laying the foundations of modern cryonics.

Following the publication of Ettinger's book, a small number of cryonics societies are established.

#### 1963

V. Tereshkova becomes the first woman in space when she pilots Vostok 6.

#### 1964

A. L. Chizhevsky dies.

#### 1965

The cosmonaut A. Leonov makes the first spacewalk.

Cryonics is mentioned for the first time in the Soviet press.

#### 1967

The first corpse to be cryopreserved is that of Dr. James Bedford. As of 2014, about 250 bodies have been cryopreserved in the United States and 1,500 people have made arrangements for cryopreservation after their legal deaths.

#### 1969

On July 20, the United States's Apollo 11 is the first manned mission to land on the moon.

#### 1970

In R. A. Galtseva's article "V. I. Vernadsky," published in the five-volume *Philosophical Encyclopedia*, the term "Russian cosmism" is used for the first time to signify an entire constellation of thinkers: V. I. Vernadsky, A. L. Chizhevsky, and "in part N. F. Fedorov." The same volume includes articles on Fedorov (by D. Lyalikov), Chizhevsky (by L. Golovanov), and Tsiolkovsky (by I. Rodnyanskaya).

I. M. Zabelin's book *Physical Geography: The Science of the Future* is published. The ideas of cephalization, the noosphere, and the prospect of immortality are discussed in the book, and mention is made of Fedorov and Setnitsky.

#### 1972

The philologist S. G. Semenova (1941-2014) becomes acquainted with the ideas of Fedorov. The rest of her life will be devoted to researching, developing, and disseminating the ideas of Fedorov and the philosophy of cosmism, which she divides into two main branches (active-evolutionary and active-Christian), studying the influence of Fedorov's ideas on Russian literature and researching the work of P. Teilhard de Chardin.

*Solaris*, a Russian film adaptation of Polish author Stanislaw Lem's novel of the same name (1961), is released. The film is cowritten and

directed by Andrei Tarkovsky. It is a meditative psychological drama, with the action occurring mostly aboard a space station orbiting the fictional planet Solaris.

**1973**

A. L. Chizhevsky's book *The Earthly Echo of Solar Storms* is published.

**1974**

F. Sobolev's popular science movie *Biosphere! Time to Apprehend* is released. The documentary filmmaker from Kiev begins his experimental visual poem about life in space with discussions about Vladimir Vernadsky.

**1976**

The Cryonics Institute is established and freezes its first clients in liquid nitrogen.

**1977**

Stephen Lukashovich's monograph about Fedorov is published in London: *N. F. Fedorov (1828-1903): A Study in Russian Eupsychian and Utopian Thought*.

The *Prometheus* journal publishes an article by S. Semenova entitled *Nikolai Fedorov. His life and teachings* – the first article on Fedorov in the USSR following a fifty year gap.

**1978**

The biologist Yu. I. Pichugin, who is studying the problems of cryobiology and is an enthusiastic proponent of cryonics, meets S. G. Semenova and O. N. Setnitskaya.

The art exhibition *Time-Space-Man* is held at the Molodaya Gvardiya (Young Guard) publishing house, bringing together works devoted to "cosmic fantasy." The exhibition is organized by the historian, journalist, and art historian V. V. Baidin.

V. V. Baidin meets A. L. Chizhevsky's widow, N. V. Chizhevskaya, and becomes acquainted with Chizhevsky's artistic heritage.

J. Posadas pens an essay titled "Childbearing in Space, the Confidence of Humanity, and Socialism."

**1979**

Andrei Tarkovsky's film *Stalker* is released, based on a script by the cult Soviet science fiction writers Arkady and Boris Strugatsky.

Publication of George M. Young's *Nikolai F. Fedorov: An Introduction, Nordland* (MA, USA: Publishing Co., Belmont, 1979)

**1981**

In Kiev, V. V. Baidin organizes the exhibition "Scientists Draw," the core of which consists of drawings by A. L. Chizhevsky.

The German academic M. Hagemeister visits Moscow in connection with his research into the heritage of N. F. Fedorov and V. N. Muraviev. While gathering material for a book, he meets and consults with O. N. Setnitskaya, S. G. Semenova, and V. V. Baidin, among others.

**1982**

The Mysl (Thought) publishing house releases N. F. Fedorov's work in its series *Philosophical Heritage*. In the foreword, Fedorov is presented as the founding father of active-evolutionary, noospheric, and cosmic thought.

**1983**

*Turritopsis dohrnii*, the immortal jellyfish, is discovered. It is a species of small, biologically immortal jellyfish found in the Mediterranean Sea and the waters of Japan. It is one of the few known cases of animals capable of reverting completely to a sexually immature, colonial stage, after having reached sexual maturity as an individual.

In Munich, M. Hagemeister republishes V. N. Muraviev's work *The Conquest of Time as the Basic Task in the Organization of Labor* in a series of publications devoted to Slavic philology. He accompanies the work with an explanatory essay.

**1985**

Perestroika is announced in the USSR.

A seminar for the study of N. F. Fedorov's heritage starts work under the direction of S. G. Semenova.

According to the testimony of some filmmakers, during his first visit to Moscow, in the perestroika period, George Lucas asks Soviet officials to arrange a meeting between him and P. Klushantsev. However, it turns out that the officials do not even know who Klushantsev is. Lucas supposedly replied: "Klushantsev is the godfather of *Star Wars*." The meeting between the two directors never took place.

**1986**

The Mir space station orbits Earth from 1986 to 2001. In Russian, the word "Mir" ("Мир") means "peace" or "world."

Ilya Kabakov creates his installation *The Man Who Flew Into Space from His Apartment*.

**1988**

A. P. Platonov's novel *Chevangur* is finally published. The journals *Novy Mir* and *Moskvaprint* articles by S. G. Semenova, devoted to the influence of Fedorov's ideas on the novel and on Platonov's work as a whole.

**1989**

The fall of the Berlin Wall

To mark the 160th anniversary of N. F. Fedorov's birth, Galina Shergova makes the documentary film *A Parable of Resurrection*, which is shown on Soviet Central Television.

**1990**

A volume of selected works by N. F. Fedorov, entitled *What Was Man Created For? The Philosophy of the Common Task*, is published in English, translation by L'Age d'Homme.

**1991**

The dissolution of the USSR.

**1993**

The N. F. Fedorov Museum and Reading Room is opened in Moscow. In 1998 it is transformed into the N. F. Fedorov Museum-Library, which is an educational and research center that works on developing the ideas of cosmism.

#### **1990s-2000s**

The phenomenon of cosmism is actively researched in Russia and abroad. Primary texts are published, as are numerous monographs and scholarly articles.

There is rapid development in the areas of information technology, biology, medicine, and nano- and biotechnologies. The philosophy of transhumanism emerges. The prospects for artificial intelligence and robotization provoke a new surge of interest in cosmism and the futurological ideas generated within its matrix.

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