The Exolife: Gas Dust Streams and Seeds

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Abstract: The hypothesis that bacteria and protozoa microorganisms are able to travel from one planet to another and become of exolife was not taken seriously by the scientific community for a long time. However at the end of the 20th century the situation changed dramatically. Firstly, in 1990, meteorites consisting of Martian rocks were found. Secondly, it became clear that many microorganisms especially bacteria spores have an uncanny ability to endure the rugged environment of the outer space for a long time and then re-activate in a more favorable environment. If we compare these findings, the idea of interplanetary transmigration of the simplest forms of life on meteoroids ceases to look so illusory. The final dot in this issue was made by the works of academician Rozanov, and later Hoover (Professor Richard B. Hoover) through the discovery of fossilized microbes inside of a meteorite massif, that is to say, seeds of life. However, to tie only the simplest forms of life to meteorites or comets is to introduce strong constraints on the likelihood of delivery of seeds (spores of life) to Earth for many obvious reasons. Besides, exobiology does not negate the problem of origin of life, and transfers it into the era of the young universe. Therefore, it is necessary to consider in detail the essence of seeds of life or cosmic particles of dust and gas-dust streams as their carriers, their penetration path to Earth and forms of their existence.

Key words: Gas-dust streams, spores of life and space viruses, comets and meteoroids, biological hazards.

1. Seeds of Life and Gas-Dust Plasma Form Generation

Gas-dust plasma in outer space in weightlessness and specific local conditions, in accordance with the theoretical and experimental research, is capable of generating 3D-forms (V. N. Tsytovich et al). These forms as granules (grains) can be formed in the space from the background dust or gas-dust streams and under simulation using special cameras.

2. The Exolife: New Factors

Dust gas streams and seeds (spores of life) are one of the key concepts and elements of exobiology which is finally acquiring the status of a customary section in science (at least in the West). In Russia now there is dominated to a certain extent by two positions: it is geocentricism under which life can only happen on the Earth and anthropocentrism when all life on Earth is ultimately connected with man as a product of the Earth’s evolution, thus the influence of space in Darwin’s accordance is impossible. And all that strongly connect with the theory of evolution.

3. Gas-dust Streams of the Solar Systems

One of the formal signs of meteoroid or gas-dust streams is the existence of a mandatory component of meteoroids from macroscopic sizes up to large bodies. If we consider the processes of destruction of macroscopic components, it is the final stage in the evolution of meteoroid stream, and the disappearance of the comet’s tail and the loss of the volatile component of gas, and dust can also form a separate gas-dust flow. Streams like comets have elongated orbits that reach the Copier Belt, and their frequency and other elements of the orbit are known [1]. As shown by studies of lunar seismicity, some of the unidentified seismic events are caused by interaction of dust flow with the lunar surface; and the spatial-temporal structure of the flow appears as a hidden periodicity of the time series of seismicity.
[2-7]. Because threads are essentially composed of gas, dust plasma and plasma crystals, when passing near the giant planets and their satellites and planets with intrinsic magnetic and/or electric fields, they are modulated by the spatial structure of their orbital periods and their own rotation [6, 7]. Spectral analysis of time series of unidentified lunar seismicity revealed these periods as valid peaks, enabling to recognize the Moon as a giant detector of gas and dust impacts, recording their spatial-temporal structure, unlike the dust telescope of corpuscular type, analyzing the physical characteristics of the dust particles and their mineralogical and chemical composition [8]. Based on the above and considering the detection of particles from supernova remnants, a search was conducted for the moon seismicity manifestation which is caused by external space influences, namely gas and dust flows from stellar systems.

4. Gas-dust Streams from the Nearest Multiple of Some Stellar Systems

As is well known, close multiple star systems form powerful gas-dust disks [9]. A flow of matter spreading from the central zone of a system may have relativistic velocities and modulates on the rotation periods of components. On further distributions the flux of stellar matter is transformed into a gas-dust stream producing plasma crystals which prevent smoothing modulation perturbations. The estimates show that as compared to the solar system fluxes, the density of which exceeds the density of gas and dust flows from multiple systems by an order of magnitude or more, the latter due to the high velocities put pressure on the lunar surface comparable to the impact of fluxes of the solar system. This agrees well with the results of the statistical analysis of lunar seismicity: apart from periodicities from modulated flows of the solar system periodicities of nearest binary stars (see Table 1) are observed [6]. These effects should be observed in the Earth’s atmosphere. However, initially let us try to find a connection between gas-dust flows of the solar system and the processes in the Earth’s atmosphere, since only by demonstrating the connection of dust flows and the Earth’s atmosphere, it can be argued that the possibility of penetration of the spores of life on the Earth exists.

5. Atmospheric Processes and Gas-dust Streams

To prove the penetration of spores of life into the atmosphere we need comprehensive data analysis on the processes on the Sun (their impact on the Earth’s

<table>
<thead>
<tr>
<th>n</th>
<th>lun.per.(day)</th>
<th>Name syst.</th>
<th>period (day)</th>
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<th>dist (parsec)</th>
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<tr>
<td>1</td>
<td>6.700</td>
<td>CV Vel</td>
<td>T = 6.89</td>
<td>6.0 \ 6.0</td>
<td>1047</td>
<td>10^{31}</td>
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<td>2</td>
<td>4.800</td>
<td>V356 sgr</td>
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<td>12.3 \ 4.7</td>
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Table 1  Parameters of binary star systems and lunar periodicity of seismicity.
The Exolife: Gas Dust Streams and Seeds

atmosphere) and, accordingly, the gas-dust component of meteoroid streams [1], and to study interactions we need to use seasonal series of solar activity and the annual number series of meteoroid streams (Fig. 1) [10-12].

On the other hand, the noise during auroras on Earth and in the atmosphere was pointed out by J. Chamberlain and earlier by Alvy, so the analysis of data on acoustics of the upper atmosphere is more promising for the study of cosmogony effects on the atmosphere [13-16]. Let us consider the most complete description of these processes for the search of those properties, which indicate the genesis of wave objects [14]. AIW (Analysis of auroras infrasonic waves)—the parameters, is well represented statistically, but the source is not known exactly, it is of interest.

As shown our research, the wave (acoustic) processes in the upper atmosphere, as well as those that accompanied and optical effects (auroras), strongly associated with the gas and dust meteoroid streams. Known processes on the Sun can be easily seen in auroras and slightly in acoustic. This is probably true of buoyancy waves. The correlation coefficient between the time series of that is in the range 0.26-0.57. All of the above gives a fairly complete picture of the impact on the Earth and interplanetary space dust. That except for solar-terrestrial relationships as purely informative and academic character and would seem to have served as a springboard for the development of the fundamental problems of astrobiology. One of the problems is a purely technical as a microorganism or virus, overcoming almost galactic space without losing viability. One of the reasons is in the next.

6. Seeds of Life and Gas-Dust Plasma form Generation

Gas-dust plasma in outer space, in weightlessness and specific local conditions, in accordance with the theoretical and experimental research, is capable of generating 3D-forms [18-21] (Figs. 2-4). These forms as granules (grains) can be formed in the space from the background dust or gas-dust streams and under simulation using special cameras (Fig. 2).

The same primary clusters can form crystalline formations that are prone to cooperative associations. Of greatest interest is spherical dust structure with spherical walls (Fig. 4). If part of the cosmic dust includes seeds life, finding the dispute in these structures provides a more comfortable environment and the movement of their existence in the universe. The most perfect structure (Fig. 4) is able to include and convey not only the simplest embryos as separate

Fig. 1 Annual number according to the major meteoroid streams.
The Exolife: Gas Dust Streams and Seeds

Fig. 2  First observation in micro-gravity conditions of a self-confined grain spherical structure. The ram pressure of the collective flux confines the structure. The bright regions are due to the light reflection by the cameras [19]. Subsequently, the pellets-clusters self-organize into spherical shell structures (Fig. 3).

Fig. 3  Grain clusters with screened Coulomb interaction and unscreened Coulomb clusters. The confining potential is the same for both cases [20].

viruses, but also more complex organisms such as nano bacteria or large elements of the genome of a big organism.

Thus, there are two factors (interstellar dust and gas flows and plasma dust structures) which are able to retain and spores life in outer space and transport them across the galaxy. It is possible not only extreme ephiles survival, but also more complex organisms. Release of spores of life in outer space from the surface of habitable planets is possible not only due to the fall of large meteorites [22], but other processes [23]. Estimated magnetologist Tom Dehel, on the Earth magnetic field fluctuations in the upper atmosphere can inspire space possessing an electric charge bacterium. It followed by the inclusion in the organization structure of the plasma [18-21].

7. Observation

Permanent population of the upper layers of the atmosphere of the earth and modified microorganisms proved British scientist Wickramasinghe (Chandra Wickramasinghe) in Indian experiments with high-altitude balloons, so by different mechanisms (magnet atmospheric storms, dust and gas flows) is a constant emission of terrestrial microorganisms in space. This is now quite obvious process, existing since the completion of the Earth as a planet, which is
The Exolife: Gas Dust Streams and Seeds

ignored by experts in the preparation of the space program to find space for life on other planets. Other concrete results of other researchers are also not taken into account [24]. Italian scientists Bruno de Argegno and Professor Giuseppe Geraci as Rozanov and Hoover discovered fossilized microorganism in a meteorite from a local museum, and Wickramasinghe have repeatedly found intensifying dispute life when taking dust samples using high-altitude balloons and after passing over a certain region of India gas and dust stream. In an even more dramatic form spores appeared exolife inner space exploration in the USSR. Unknown form of microorganism appeared on the space station “Mir”, and cosmonaut Serebrov got an infection, so it could not be identified before his death. Rather than conduct a comprehensive study of the Serebrov’s state deep, this case was kept secret for a long time. Philosophy Russian Darwinists transparent—we all know there is no studies or absent of exolife. Although this is the excellent conditions to undertake pilot studies! However, the development of science cannot be stopped and back in 2010, there published a collection of materials for the meeting “Space (meteor) dust on the surface of the Earth” [24]. Collection contains important historical and methodological part but the first concrete results on gas and dust flows as galactic universal element providing universal transfer dispute life and the first conclusions about exolife on Earth was published in 2004 [25].

Because the presence of cosmic dust in the universe everywhere, the dust (and spores of life) is on all known galactic objects. Therefore there are pass aging of comets and their fall on Earth as well as meteoroids often accompanied by an unknown disease of the local population. The more that is estimated Wickramasinghe galactic dust contains a significant percentage of spores and microbial life viral type (60%-80%), covered ice shell [26].

That agrees well with the results of recent research at Cornell and Harvard (Cambridge, USA) universities, according to which the background temperature of space in 15 million years after the Big Bang was up to 30 degrees Celsius and it allows for the existence of liquid water on the planet. That is the universe could be a great area for origin of life. Loeb of Harvard University believes that the planet is able to exist in a time when it already appeared short-lived stars with masses ranging from tens to hundreds of solar, these areas are filled with heavy elements necessary for the formation of planets, due to stellar winds and supernova explosions. Intense short decay processes by Vladimir Tsarev stars led to a single chirality occurred living matter [27] which confirms Carroll on which homochirality origin and the origin of life—one event [28].

On the other hand, the flow of dust to earth exceeds tens of tons per day. In this case, there is a paradox in this thread, epidemic disease and the population is not so frequent, what are the reasons? Firstly, the human genome is largely made up of viruses (previously, the so-called junk part of the genome) which is now considered by many. For example, Dr. Ewan Birney from the European Bioinformatics Institute in Cambridge wrote about viruses as an important part and that not all viruses are dangerous. Secondly, the percentage of dangerous viruses probably is a small part of the total weight since the wildlife on Earth arose a dispute at a flow of life which have already formed before and since then has undergone little change. Thirdly, every type of virus adapted to the living conditions of those characters that were at its establishment on his planet. But it seems that researchers have overlooked some important factor. Consider the illustrative material on the structure of viruses taken from the Internet (Figs. 5-7).

Most types of viruses in their structure have a common element as usual, a spherical shell contains genetic material of the virus that is injected into the cell body. Further, the genetic material of the virus rebuilds cells working on the reproduction of the virus and the cell dies. One of the main mechanisms of penetrating or overcome to the cell membrane can be
Fig. 5  Viruses schematic structure.

Fig. 6  A more detailed classification and morphology of viruses.
defined as the hydrodynamic. When you attach the virus to the cell membrane in the amount of virus creates overpressure $P_{huts} \approx 30$ atm, and through which is injected into the cells of a living organism’s genetic material hazardous. Therefore, if the body and viruses under $P_{sp}$ (surplus pressure) and the body tolerates this pressure without damage, it is not in danger. On Earth $P \approx 1.0$ atm. so all viruses having $P_{huts} > 1.0$ atm. smoothly penetrate into the cells of living organisms. This means that for those of terrestrial organisms dangerous disputes life (viruses), native to the planet with an atmosphere of $P > 1.0$ atm or, more generally with $g$ (gravity), providing more ambient pressure of 1 atm. That is viruses (spores of life) with the planets, where $P < 1$ atm for terrestrial organisms are not dangerous (for space stations in the general case, this rule does not work). This effect can be used in applications, such as in the treatment of leukemia virus: the patient must be placed in a special pressure chamber ($P \approx 30$ atm). Also acceptable pressure and viruses play a useful role due to the effect of parallel transport contribute to the evolution of terrestrial creatures including humans that almost cancels Darwinist evolutionary ideas. Given the above, the question arises—where disputes life when they were born and why they are not earthly. That is not earthly as it was stated previously [29].

8. Astrobiology, Spores of Life and the Phenomenon of Life

As shown above, the lunar seismicity is analyzed as a non linear process, and hidden periodicity is caused mainly by external influences. Histogram and spectral analyzes Nakamura’s Catalog and time series formed as a sequence of durations lunar seismograms and time intervals between them, led to a new understanding of the functional and the Moon as cosmological astrophysical detector. In particular, there is evidence of the existence of reliable periodicities in the lunar seismicity caused by gas and dust flow from the nearest multiple stellar systems (Table 1). Given the fact that the first star systems and planets were formed a few hundred million years after the Big Bang, the subsequent emergence of life, if you follow the currently accepted scientific logic origin of life, for example, astro-catalysis, or rather its galactic modification [30] was not more than 1 billion years. Thus life in our galaxy (and the universe), there is 12-13 billion years. Mechanism for the transport of spores (micro particles) life, for example, at the molecular level, are dust and gas flows which are from star systems, as well as comets, meteoroids and other cosmic bodies and dust formation, which interact with flows [31, 32]. For the above data and the distances to stellar systems, dust streams appeared in the seismicity of the Moon, you can roughly estimate the number of stars, “in contact” with our solar system in a similar way in one of its turnover (and the Earth too) around the galactic center. Excluding the dust component of other stars more distant from the sun, the number of stars will be 10,000. Consequently, during the lifetime of the solar system (4.6 billion
years) and the displacement of its per center about 17° per revolution, the Oort cloud (and Earth) exchange micro particles with the majority of stellar systems from the galactic center. Other less regular cast dispute mechanisms life-galactic comets (besides comets from the Oort’s cloud), the pulsar wind and shock waves accompanying supernova explosions. Since the conditions for the development of life, similar to existing in the world at the moment, last 3.0 billion years, its occurrence (or rather the development or continuation) could happen many times including in the form of higher intelligence. It also makes quite eligible and research hypotheses about pra civilization. However, the problem of the instability of existence form of higher intelligence remains [33]. This requires a strong modification of representations, as the origin of life and understanding of the phenomenon of higher intelligence. Adoption rather obvious fact and interdependence phenomenon of life in the solar system with interstellar gas and dust flows (former hypothesis of “a panspermia”) is not simply takes time τ₀ origin of life to the middle of the first billion years of the Big Bang, but also makes the radical ideas of the external conditions of the initial phase and depth understanding of the phenomenon itself. We give a briefly information about the expected conditions, some well-known features of the simplest biological structures and their place in a possible future picture of the new paradigm of life and the life of the existing, as well as the first task for future research.

1. Dimensions of the universe and galaxies at τ₀ < 1 billion years could be significantly smaller than the existing (~ 15 times the diameter). With such a dense arrangement permitted the existence of galaxies in the early Universe total dust and gas exchange at admitting the existence of liquid water.

2. Density physical fields and radiations at τ₀ superior currently existing density by several orders (approximately 10⁷-10⁴ times), and the probability of a high degree of coherence significant that promotes self-organization of matter [33, 34].

3. Certain types of radiation, the decay of nuclear matter young stellar formations can functionally replace the enzymes in the formation of self-replicating molecular structures and define the left chirality of living matter [27, 28].

4. Difficulties using a model for the formation of dissipative structures primary living matter are eliminated if the mechanism for (factor) ordering take stable frequency external radiation, and emerging models of structures to move from systems with distributed parameters to systems with lumped parameters; it opens up the possibility of effective display of structuring within wave dynamics [34].

5. Genome and experimental data on the relations of the simplest objects of life and radiation indicate the important role of external radiation.

6. Stability of DNA with respect to external influences: 10⁻⁷-mutation probability regardless of local conditions.

7. Resistance DNA super dense radiation fields: no damage dose loads > 10 Mrad [35].

8. At least 10% human use genetic information. This indicates the overall total excess informative genetic material of Earth’s biosphere. Probably at the time τ₀ in the unique conditions and with sufficient time for the creation was created universal galactic genome, different elements of which can give rise to the biosphere on the planet with the widest range of environmental conditions and for different stages of development of each.

9. Celestially there is universal galactic genome. This versatility and manifests as redundancy. This redundancy (~90%) roughly determines the number of higher life forms in the universe, including the “earth”; their number does not exceed 10.

10. Universal model genome logically linked to the concept of foresight and design, hence the origin of life creationism model more logically justified.

11. The carrier and the universal code, or “dispute” life, almost there in the galaxy in the form of dust everywhere. When forming the star system of the
proto planetary cloud, once on planets there are conditions similar to those now existing earth (the last 2-3 billion years), the code of life starts from the Oort cloud and comets. On Earth, this code is only used by 10%, in preceding periods could be different.

(12) Accordingly, the search for extraterrestrial life and the mind splits into two directions. One that exists is passive, consisting of attempts to find a micro - or mega scale traces of existence, the second is active. Search micro scale manifestations of life—it is Mars programs implemented on the Earth, and Mars; mega scale traces—the pyramid of Earth and Mars, the anthrop principle. Paleo archeology necessary to self form that is paleontology, admitting the existence of traces of intelligent life. Active search for extraterrestrial life involves activation of redundant information of the human genome, the attempts of its development.

(13) Targeted expedition to the moon, to the polar craters, delivery regolith column with “disputes life” on earth as the promotion of the latest positive results in the field of exobiology.

(14) If disputes life, continuously reaching the Earth contain even the simplest proto virus, then this is sufficient for the development of extraterrestrial life.

(15) Genome fund all organisms potentially constitute a common gene pool of all life on Earth and the transfer of genes between different tax on - a reality. There is gene flow between distant organisms and micro - organisms in the world it occurs regularly.

[36]

(16) Thus the spores of life constantly coming from space primarily with gas and dust flows interact with microorganisms of the upper atmosphere and is gradually moving into the lower layers. Next is the turn of birds, especially migratory (bird flu) and other larger mammals (swine, sheep flu, etc.).

(17) Since the type and intensity of the flow of life until the dispute is fundamentally not predictable and horizontal gene transfer there permanently, it makes a fatal uncertainty and destroys nomo genesis speculations evolutionary sense.

(18) Group of biologists currently particularly emphasizes the role of viruses throughout the time evolution of life on Earth: the origin of the brain, emotions, love and even monogamy.

Note also shows that in our time, “a large number of DNA in our chromosomes, not having any apparent function”, has attached great importance. The fact that n.n [1-13] withdrawn evolutionary theory modest place mechanisms to limit the kind of perfection, or rather local adaptation does not make sense as a separate item, the more resistance to claim 17 makes all evolutionary models untenable. The most profound specialists who realize the hopeless state of evolution (eg, according to evolutionists-step mechanism of random selection gives the probability of occurrence of species as 10-40 or less), for removal of problems introduced the mechanism of “cumulative selection” [37]. The latter implies that the mechanism of selection of the moment “knows” the target destination that admits the existence of foresight. But this is the criterion for the existence of the Creator [38]. However, such a giant personality intuition as F. Krik and the deepening crisis of orthodox evolutionism led to the modernization theory of the origin of life on Earth.

Thus, the experimental discovery of gas and dust flow from the nearest multiple stellar systems leads to the formulation of new fundamental problems. Moreover, some of the tasks and ideas of modern astrophysics and cosmology inevitably come into contact with these results [39]. For example, one of the cosmological models—Big Universe—infinite in time and space, while in one of the varieties of this model as a small component of a larger universe (including our universe) are linked at the level of matter exchange “tunnels”. In this case primarily inevitably a continuous exchange of gas and dust component space that is “spores of life.” In this case, at least at the level primitive life, the issue of how life
loses meaning, that is return to the concept V.
Vernadsky - S. Arrhenius. As a result, to date, can be
considered several models of pan sperm: S. Arrhenius.
Arrhenius—Universal life disputes, life—a special
form of matter; F. Krik, L. Algiers is directed the
highest form of civilization seeding Earth disputes;
and briefly outlined above diffuse dust model pan
sperm. All models combine extraterrestrial origin of
life, character, that is denial of biological geo centrism.
Benefits origin of life on Earth we can show exolife
and tabulated. Look below.

9. Life Ago and A Biogenesis on the Earth
and in Space: Pro and Contra

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Conclusions and/or consequences</th>
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<tbody>
<tr>
<td>1. Vernadsky's postulate</td>
<td>1. The biosphere (life) geology is eternal.</td>
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<tr>
<td>2. Existence of a life on the Earth as time criterion</td>
<td>2. Age of a life is 3.8Gyr; time for genesis of a life is 200-300 one million years; age of the Earth is 4.5Gyr</td>
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<td>3. Charity cleanliness of alive substance</td>
<td>3. On the Earth: an alive matter - 100 of % cleanliness; Dead - 50%×50%</td>
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<tr>
<td>4. Time for genesis of a life</td>
<td>4. The Earth is 300mill. Year; Space is 13Gyr of years</td>
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<tr>
<td>5. Nomogenesis</td>
<td>5. Features and paradoxes on the Earth</td>
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On the other hand, one cannot deny the possibility
of “small-town” if it is not the origin of life, the
complex organic developments. It successfully
develops the concept of origin, to the chief of which
should be attributed

1. The classic scenario based on linear non
equilibrium of thermodynamics and on nonlinear of
self-organization [33].

2. Less developed scenario mainly aimed at
developing capabilities to biological evolution of
matter in the plasma of a meteorite impact [22].

3. The emergence of simple organisms and the
development of spores of life in the deep layers of the
planetary crust (cryobiology) at a late stage of planet
formation [22, 40];

4. The case is with the environment of cryobiology
type, but with the mechanisms of emergence of
primitive organisms in the conditions that all the
effects of the plasma is a meteorite impact. On the
macro scale level, it appears mechanisms seismic
acoustic emission [7]. Moreover, in addition to
providing the parameters of micro-processes at the
level of the plasma plume, this mechanism exists
almost everywhere from the depths of hundreds of
meters or more, provides transport of the reaction
products flow of fluids also includes mechanisms
friction chemistry. Some of these processes have been
successfully modeled in the field when subjected to a
field of vibroseis geological structures [7].

Given page 1-4, and the reality of life can assume
dispute occurrence of certain conflicts between local
and cosmic life forms. In more primitive case is
observed for a long time.

10. ACDP (Astrobiology Component of Dust
Particles): Practical Aspects.

As a percentage of total number of particles of dust
component carrying astro-biologic active component
or “living spores” is likely negligible. With space
exploration and other technical processes amount
astro-biological component of dust particles increases
but their astrobiology component will have a
terrestrial origin, that is terrestrial organisms are
modified the influence of space environment.
Consider the interaction with biological processes
ACDP on Earth, including higher life forms and
humans, but without affecting the genetic processes.
This interaction is, there initially, but the history of
this section of natural science, especially physical
mechanisms of its manifestations, were uneasy,
largely influenced by the ideas and research work and
A. A. Chizhevskii, N. D. Kondratyev, especially in the
“socio-economic theory of genetics” [41-44]. No need,
obviously, to challenge the influence of space solar
fields, magnetic, electrical, electromagnetic factors in
Earth’s biosphere. However, if we consider more
narrowly purely epidemiological aspect here is necessary to analyze the role of the ACDP and associated physical mechanisms and cosmogony. And it must be remembered visionary A. A. Chizhevskii remarks: “The action of the sun, around probably only fuel the epidemic”. In this case, excluding background ACDP conceptual model is simple and includes: source ACDP—permanent or temporary; reserve accumulation and preservation of the ACDP with the possibility of release and capture of particles; object and / or a dynamic process of transport of particles to the atmosphere of the planet. The primary sources of ACDP significance level should include the following cosmogony and astrophysical objects and processes.

1. Oort cloud and Kuiper belt part;
2. point (zone) Lagrange;
3. gas and dust and meteoroid streams of the solar system;
4. dust and gas flows from the nearest multiple star systems;
5. of the comet, including galactic;
6. the shock waves from supernova explosions;
7. dust and gas flows from variable stars and pulsars. At the same owners own ACDP probably be only the fifth first-objects, and other objects in their distribution ACDP produce a seizure.

Mechanisms of objects 6 and 7 with certainty speak particularly difficult. On the one hand, the substance of shells in supernova—a noticeable component of interplanetary dust [34], and the shock waves from the flash mixing ACDP in the solar system. But the capture of the gas-dust plasma of these waves in the solar system may not be visible due to the relatively small cross-section of facilities and high speed of the shock wave. Consequently, there must be other, ongoing mechanisms delivery of gas and dust plasma, and here it is necessary to evaluate the role of the pulsar as a source of dust particles. Closest to Earth sources ACDP—essentially secondary, it is dust accumulations in the libration points as a kind of small dust “planets” and craters at the poles of the Moon and other bodies in the solar system, deprived of its own atmosphere. Mars is the proxy object and its surface, especially the pole may have a diverse set of ACDP. The objects and / or dynamic processes, carrying trucks ACDP to the Earth and to secondary sources ACDP should include both sources [1, 3, 4-6], but only the solar wind, particularly solar flares serve as delivery mainly from secondary sources and comets. Naturally, the source should be on the ACDP Earth-Sun. Taking this into account will enhance the value of the correlation estimates for identifying "earthly echo of solar storms", but in this case plays the role of the Sun only transport system. Because the relationship between supernovae and the appearance of comets galactic type solar activity terrestrial processes (epidemics and pandemics, social disturbance, genetic changes like a time bomb, etc.) has a strong historical and statistical basis, then these processes in the light of the foregoing, no less dangerous for civilization, like an asteroid collision. Therefore astrobiology danger to the Earth must also be in the field of academics and politicians.

References


