

## **Polysingular model of the Universe**

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*In no other field of science, except for cosmology, there are so many arbitrary and obviously erroneous theories coexisting in time with the correct theory.*

*Ya. B. Zel'dovich*

### **Annotation**

The article deals with the processes associated with the time of formation of our Universe. An assumption is made that the formation of the matter of the universe occurred not from one, but from many singularities. A mechanism for the formation of galaxies by ejection of "protostars" from a rotating singularity - "grain of the galaxy" is proposed. An assumption is put forward about the spatial and temporal fluctuations of this process, which explains the entire spectrum of possible shapes and sizes of galaxies.

A similar mechanism is proposed for the formation of all structural elements of the solar system from a "protostar" by planet formation waves. It is assumed that the main source of energy in stars is not the thermonuclear reaction of the hydrogen-helium cycle, but the fission of supermassive nuclei, and the decay of neutrons on the surface of the dense core of the star. An explanation is given for the presence of heavy chemical elements in the Solar System. A mechanism is proposed for the formation of the entire spectrum of stable atomic nuclei by chains of their fission from massive and supermassive nuclides. The rotation of the Galaxy as a whole is explained not by the presence of "dark" matter, but by the fact that each star is connected with neighboring stars by gravitational forces, which are very strong in statics.

A hypothesis has been put forward about the origin of the Universe as conjugated three-dimensional and two-dimensional spaces, the uneven conjugation of which led to the emergence of points of occurrence of singularities that form the "three-dimensional craquelure" of galaxies.

### **Introduction**

Modern cosmology offers several options for the origin of our Universe, galaxies and stars.

#### **1. The Friedman universe** (the Friedman metric is Lemaitre - Robertson -Walker). [1,2]

This was the first of the models of the non-stationary Universe and became the main theoretical development of the general theory of relativity after the work of Einstein in 1915-1917.

In his work, Friedman used the GR equations with a zero cosmological constant. And models based on them were considered generally accepted until 1998 [4]. That same year, two papers appeared that used Type Ia supernovae as distance indicators. They convincingly showed that at large distances the Hubble law is violated and the Universe expands at an accelerated rate, which requires the presence of dark energy, the known properties of which correspond to the  $\Lambda$ -term.

The current model, the so-called "ΛCDM model", is still the Friedman model, but now takes into account both the cosmological constant and dark matter.

2. **The Big Bang Theory**" describing the emergence of the Universe from a point singularity.

Combined with the Hot Universe theory, the development of which led to the emergence of the Inflationary Universe model, it is considered the main model today. The disadvantages of this theory, in addition to the problems of large-scale homogeneity and isotropy of the model, include the unsubstantiated claim that there is only one initial feature and the invented principle of symmetry breaking.

### 3. Large-scale structure of the Universe.

An attempt to explain the observed clusters and superclusters of galaxies that stretch into some observable linear or flat formations separated by huge voids. At the same time, observations have shown that the Universe is homogeneous at a distance of about 300 megaparsecs.

### 4. The theory of stellar population.

This theory considers only the classification of galaxies by chemical composition, spatial distribution, position on the [Hertzsprung diagram -Russell](#), own speeds and other criteria. The two-population classification was proposed [by Baade](#) in 1944 <sup>[5]</sup> and supplemented by another group in the late 1970s <sup>[6][7][8]</sup>.

### 5. Theory of prestellar bodies.

It was proposed by academician V. Ambartsumyan as a result of an analysis of the "stellar associations" discovered by him and an analysis of the structure of our Galaxy, in which the formation of stars continues. The theory of superdense configurations of matter in the prestellar state is currently one of the most complex areas of theoretical physics that has not yet received recognition from the scientific community.

The present work is essentially a development of this theory.

## Polysingular Universe

According to the author, modern cosmology contains many errors, absurdities and outright frauds.

Let's start from the very beginning, that is, from the so-called "Big Bang".

The assertion that there was only one singularity is based on nothing. Accepting just one singularity as the source of all observable matter in the universe, created in a fraction of a second, makes it logical to conclude that it must fly apart at a speed much faster than the speed of light. Those . at almost infinite speed. This, of course, is possible if space itself were created simultaneously, but it is more logical to assume that there were an infinite number of singularities in which matter and space were born. Each such singularity "mastered", i.e. filled with matter " its own area " of existing or created space in the universe.

The uneven distribution of irregularities in the Universe led to the appearance of " Voids ", that is, huge volumes of space free from galaxies. If we claim that there was also matter in these spaces 13 billion years ago, then we have to admit that it was carried away from there at a speed of up to 1/40 of the speed of light, which cannot be explained by gravity, and even at such huge distances. It is enough to divide the sizes of these Voids by the age of the Universe.

The author considers it possible to exclude from consideration the process of singularity transformation through the plasma state into baryonic matter. Suffice it to admit that this happened many billions of years ago, and the mechanism of this transformation is not so important.

There are only two options for explaining the appearance of galaxies, stars and planets :

The first is that at first material formations in the form of elementary particles were evenly scattered throughout the space of the Universe, and then the density fluctuations that appeared began to collect them into local concentrations under the action of gravity. So concentrations subsequently became planets, stars and galaxies.

In the second version, that the density fluctuations were already at the stage of the origin of matter inside the singularity.

The failure of the first option, as it is called " before everyone 's eyes." This is the local rotation of planets, stars and galaxies.

It seems that everyone involved in cosmology has forgotten the physics textbook for the 6th grade of the school.

$$F_g = G m_1 m_2 / R^2; \tag{1}$$

$$\text{Where } G = 6.61 * 10^{-11} \text{ (m}^3 \text{ / (kg * s}^2\text{))}.$$

As can be seen from the formula , and the experience of mankind, the forces of gravity are central and do not have a side component.

And any amount of matter dispersed as a result of the Big Bang, even if it gathers into large masses, will never rotate locally.

Any statements that rotation could be created by local eddies in a streaming flow of matter moving towards the center of mass are completely refuted by the fact that even if such eddies can arise, again due to the uneven distribution of matter, then without an external force they will be chaotic and cancel each other out.

For the second option, theoretically, the unevenness of the density of the created substance can be any. What about rotation ? If a certain amount of locally rotating matter, not yet collected by gravity into a dense formation, flies out of the singularity, then it will simply dissipate under the action of centrifugal forces, and this will stop any rotation. The same applies to the turbulences mentioned above.

There can be only one conclusion from all this - **Matter in the singularity was originally born locally rotating and with the maximum density.**

Combining the two points above, we get that every observable galaxy is a former rotating singularity that once formed the substance of which it is composed. The remnant of this singularity in the form of a central "black hole" is at the center of the galaxy ( " Bulge " ).

It is quite possible that the "birth" of matter and space deep inside the remnants of the singularity did not stop 14 billion years ago , but continues today, ( exponentially ?) Decreasing, but did not become equal to zero, which, perhaps, is the reason for the so-called. " spreading \_ galaxies."

Let us call the singularity at the stage of the origin of matter the "grain of the galaxy".

## Galaxy formation

Back in 1863, the Belgian physicist Joseph Plateau experimentally established that , as the rotation speed increases (in the analogue of weightlessness) , the drop changes its shape from spherical to oval, and then transforms into a bipartite structure resembling a strongly elongated oval.

The asymmetry of the rotating fragment M0 - the grain of the galaxy, within which the process of “matter birth” occurs, leads to the ejection of grain matter by centrifugal forces in two directions.

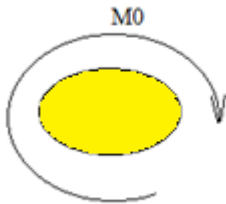


Fig.1 Grain of the Galaxy M0.

The entire mass of the galaxy and the momentum of rotation are concentrated in the Grain .

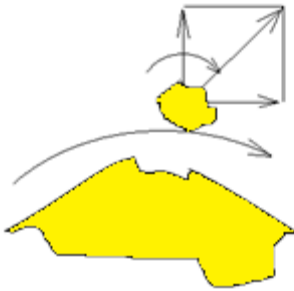


Fig.2 Separation of a piece from the surface of the Grain of the Galaxy

Pieces of protostars are torn off from the surface by centrifugal forces, taking away part of the mass and rotational momentum. This does not prevent the emission of smaller structures down to atomic Hydrogen (surface evaporation), but on a much smaller scale.

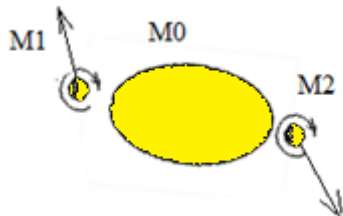


Fig. 3 Detachment several protostars

Due to the rotation of the grain, the direction of ejection of the following pieces - protostars - changes.

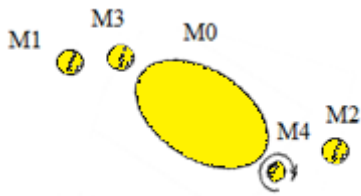


Fig. 4 Further formation of the "arms" of the galaxy



Fig. 5 Decrease in grain mass by detached protostars

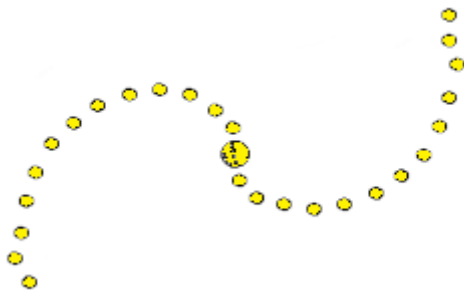


Fig.6 Formed arms of the galaxy

At the same time, by the end of the process, the rotation speed and grain mass decreased to some values at which protostars are no longer ejected. And each star, having dropped some of the mass that will become a planet, is mainly connected by gravity with neighboring stars and the rest of the grain.

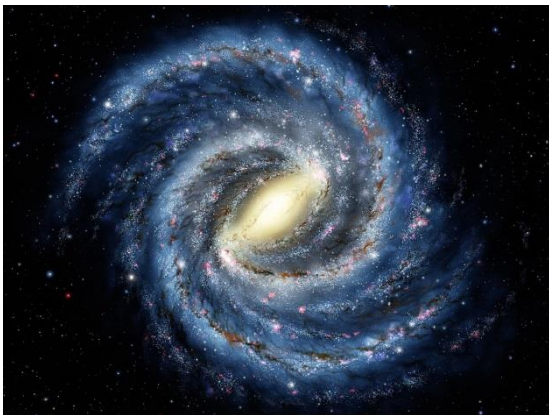


Fig. 7 Galaxy

It is quite probable that the processes of transition of the singularity to the phase of the grain of the Galaxy were uneven both in space and in time. The unevenness in space led to different grain shapes (sphere, ellipsoid...), different speed and direction of rotation.

The rotation of the grain of the galaxy in one plane formed spiral galaxies. Precession and nutation, which occurs in the grain when pieces are torn off, shifted the centrifugal force vector of ejection of protostars, which led to different thicknesses of spiral galaxies.

Rotation in two and even three planes has formed elliptical (spherical) and irregular galaxies. The large size of the detached pieces of grain could form "daughter" galaxies inside the main one.

It is logical to assume that, depending on the mass, precession and nutation of the rotating fragments, not only spiral but also spherical galaxies can be daughter galaxies.



Fig. 8. Main galaxy with daughter galaxies.

Astronomical observations in recent decades have made it possible to assert that about half of the stars in our Galaxy are binary star systems. In the light of the stated hypothesis of the formation of stars, it is quite possible that a fragment of the grain of the galaxy - a protostar, after separation, was divided into two (possibly more) massive parts. This could be due to the fact that even after separation from the grain of the galaxy, in the protostar fragment, intensive formation of matter continued, its mass and rotational moment grew, which led to growing asymmetry, transition to an elongated shape and separation.

in time could cause a different intensity of the process of their detachment, and cause "waves of star formation", as a result of which ring galaxies appeared.



Fig. 9 Ring galaxy (Hog's Object )

In 2008, a physicist from the University of Nottingham conducted a study on the influence of the speed of rotation of a liquid drop in zero gravity on its shape. It turns out that with a further increase in the rotation speed, a droplet from a bipartite (strongly elongated oval) can transform into a shape close to triangular, and even four and pentagonal. This makes it possible to explain the existence of galaxies with more than two "arms".

### **Formation of the planetary system**

It is possible that in the process of creating galaxies by stars breaking away from the two ends of an elongated grain, there is a certain “ pairing law ”, which also manifests itself in the fact that on both sides protosuns and planets come off in pairs .

This provides an explanation for all the mysteries of the solar system :

1. Reverse rotation of Venus;
2. The huge speed of rotation of Jupiter;
3. Anomalous position of the axis and rotation of Uranus;
4. Retrograde movement of satellites of planets;
5. Outer boundary of the Kuiper Belt ;
6. Abnormally large amounts of gold and uranium.

Summarizing all of the above, we can propose the following scenario formation of the solar system :

By processes similar to those that occur in the grain of the galaxy, there was an increase in the mass and an increase in the speed of rotation of the protosun detached from the grain . Which, upon reaching critical values, led to the separation of part of the mass from its surface ( from two opposite sides ). This led to a decrease in the mass and speed of rotation of the protosun , due to a decrease in the rotational moment of the breakaway pieces. Then a period of time passed , during which the mass of the protosun increased again until the next critical values were reached. The whole process took place under the influence of two factors - an increase in the speed of rotation of the surface due to a decrease in the radius of the proto-sun , ( which first led to an increase in the size of the fragments ) , and an exponential decrease in the process of creating matter inside it, ( then reducing the size of the fragments - protoplanets ) .

### **Planetary System Formation Waves**

1. The first wave in protosun - Formation of the Kuiper belt ;  
( *High rotation speed, large centrifugal forces allow small masses to break away and fly away from the protosun* ) .
2. Second wave - Formation of a group of pseudo-planets ;  
( *The masses are already larger , they did not fly so far* ) .
3. Third wave - Formation of the Uranus-Neptune pair ;
4. Fourth wave - The formation of a Jupiter-Saturn pair ;
5. Fifth wave - Formation of a Mars-Phaeton pair ;

- 6. Sixth wave - Formation of the Earth-Venus pair ;
- 7. Seventh wave - Formation of a pair of Mercury-Icarus ;

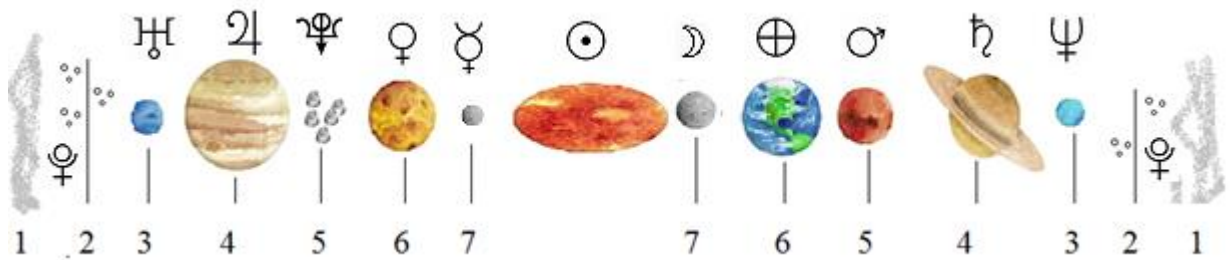


Fig.10

Probably, a collision of a pair of planets of the fifth wave occurred. As a result, Mars received a serious dent on its surface, and Phaeton crumbled into fragments of the asteroid belt.

Also in the proposed scheme there is no pair for Mercury. This can be explained by the fact that at the last stage the mass of the second planet was so small that it eventually fell into the Sun, or the growing volume of the Sun led to its orbit being inside the star

A more likely option is that this planet collided with Venus, changing its direction of rotation, and being attracted by the Earth, it became its satellite, the Moon.

The proposed model for the origin of the solar system does not include the Oort Cloud. The author suggests that, perhaps, the planet formation waves that formed the planets known to mankind were not the only ones in the history of the Sun. When the Sun was small and rotated faster, before that there were other waves that formed other small and large planets, also located in the Oort cloud. Their high ejection velocities from the protostar and in large numbers probably led to their intense collisions, a large spread in orbital inclinations and orbital periods. Such waves of planet formation can be distinguished from today's by a minus sign, as in Fig. 11 .

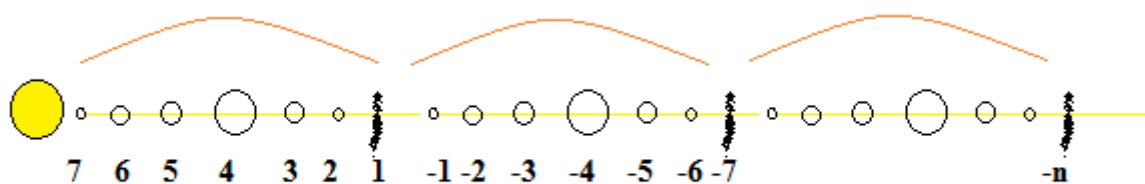


Fig. 11 Many waves of planet formation

In this case, the evolution of the star along the main sequence will occur not due to the "burning out of Hydrogen", but due to the gradual transition of the dense matter of the star's core into atomic Hydrogen and Helium. A decrease in the size of the star's core in this case leads to a decrease in the released energy and its movement towards the end of the Main Sequence.

A similar process probably occurs (on a much smaller scale than on the Sun) on the surface of the cores of planets, heating their interiors.



And, finally, this consideration: modern cosmology explains the presence in the solar system of substances heavier than iron by the fact that the Sun allegedly passed the stage of "Supernova". But such stars appear as a result of the burning out of the main mass of stellar fuel - Hydrogen. And the result should be either a neutron star or a "black hole". But we do not observe either one or the other. In addition, the "supernova" explosion should scatter the matter of the star around in the form of a dusty nebula. But we don't see that either. By the way, it is the presence of a "dusty" nebula formed as a result of a "supernova" explosion that is another argument in favor of a superdense star core. The core of a star from Hydrogen cannot form dust during an explosion, i.e. small particles of matter, but only gaseous hydrogen.

Therefore, it turns out the only option in which the massive superdense substance from which the Sun and all the planets formed, having gone a long way of radioactive transformations, gave us all the heavy nuclei and chemical elements. Therefore, it is not surprising that the structure of the solar system contains a large proportion of gold, uranium and other heavy elements.

Let us consider in more detail the mechanism for obtaining in the proposed hypothesis the entire spectrum of chemical elements present both in the solar system and in the universe as a whole.

As shown above, the planets formed from superdense protostar fragments. High-energy processes took place on its surface, both the simple separation of neutrons and their further decay, and the "ejection" of pieces of large, giant nuclei, up to the size of satellites and miniplanets. As a result of such chains of fission of supermassive nuclei by superenergetic neutrons, there was a gradual decrease in their fragments - future atomic nuclei.

(Your students were one step away from understanding the structure of nuclei.

<https://link.springer.com/article/10.1007/s10698-020-09365-5>)

Layer-by-layer structure of a possible nuclide  $^{312}\text{Ubn}^{120}$  according to the Geometric model of atomic nuclei, shown in Fig .12.

You can download the modeling program here - <https://disk.yandex.ru/d/ao26clxJ9UJZ8A>

Trial-beta version.

It is not installed, it does not write to the registries, it does not create shortcuts.

Just unzip the folder, run CreatorBeta.exe

The inflection point of the graph of the number of bonds per nucleon is typical for "magic" nuclei. Atomic nuclei are not divided in a drop, but along multi-colored lines of intercluster communication. The color of the lines and the color of the formulas at the bottom left are the same.

(Show the program to friends who are engaged in nuclear physics - they will be shocked. And Russia has come close to creating a nuclear micropower industry. And these are not stupid experiments of A. Rossi.)

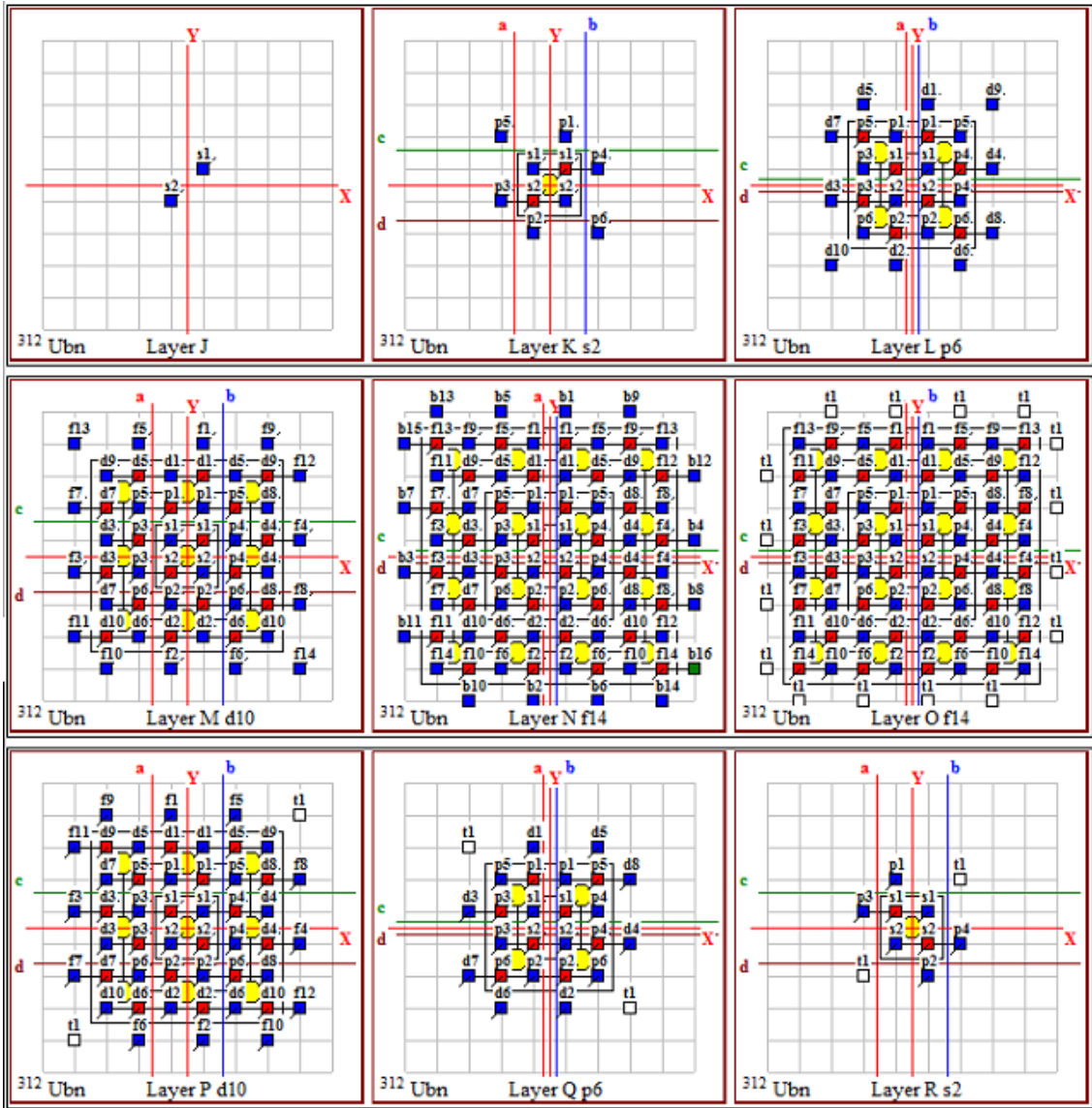


Fig. 12 Layered structure  $^{312}\text{Ubn}^{120}$

Protons are marked in **red** in the figure, neutrons are marked in **blue**, and centers of  $^4\text{He}$  clusters are marked in **yellow**.

In the Geometric model, one of the bases is considered to be the homology (mirror) of the order in which protons fill the positions of each layer of the nucleus (K,L,M,N,O,P,Q,R), the order in which electrons fill the corresponding shells of the atom (K,L,M,N,O,P,Q,R). Multi-colored lines a,b,c,d in Fig.12 show the lines of fission of the layer by intercluster bonds, which form unequal fragments.

This nuclide has only one fission mode  $^{312}\text{Ubn} \rightarrow ^{176}\text{Er} + ^{134}\text{Te} + 2n$ ;

And it is divided into two fragments plus a couple (and possibly more) of neutrons.

Two fission modes of the first fragment and their further fission are shown in Table 1. Down arrows point to different variants (modes) of fission of further fragments.



Table 1.

$^{101}\text{Y} \rightarrow$	$^{61}\text{Cr} \downarrow +$	$^{38}\text{P} \downarrow + 2n;$	$^{101}\text{Y} \rightarrow$	$^{62}\text{Mn} \downarrow +$	$^{37}\text{Si} \downarrow + 2n;$
	$^{37}\text{P} + ^{22}\text{F} + 2n;$	$^{25}\text{Ne} + ^{11}\text{B} + 2n;$		$^{44}\text{Cl} + ^{22}\text{O} + 2n;$	$^{25}\text{Ne} + ^{10}\text{Be} + 2n$
	$^{40}\text{Cl} + ^{19}\text{Ne} + 2n;$	$^{25}\text{Ne} + ^{10}\text{Be} + 2n;$		$^{45}\text{Ar} + ^{21}\text{N} + 2n$	$^{20}\text{O} + ^{15}\text{C} + 2n$
		$^{20}\text{O} + ^{16}\text{N} + 2n;$			
		$^{22}\text{F} + ^{14}\text{C} + 2n;$			
$^{76}\text{Cu} \rightarrow$	$^{44}\text{Ar} \downarrow +$	$^{30}\text{Na} \downarrow + 2n;$	$^{76}\text{Cu} \rightarrow$	$^{48}\text{K} \downarrow +$	$^{26}\text{Ne} \downarrow + 2n;$
	$^{25}\text{Ne} + ^{17}\text{O} + 2n;$	$^{19}\text{B} + ^9\text{Be} + 2n;$		$^{30}\text{Na} + ^{16}\text{O} + 2n;$	$^{16}\text{C} + ^8\text{Be} + 2n;$
		$^{15}\text{B} + ^{15}\text{C} + 2n;$			

Two fission modes of the second fragment and their further fission are shown in Table. 2,3:

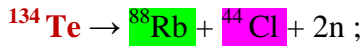


Table 2.

$^{88}\text{Rb} \rightarrow$	$^{51}\text{Sc} \downarrow +$	$^{35}\text{Si} \downarrow + 2n;$	$^{88}\text{Rb} \rightarrow$	$^{53}\text{Ti} \downarrow +$	$^{33}\text{Al} \downarrow + 2n;$
	$^{32}\text{Al} + ^{17}\text{O} + 2n;$	$^{23}\text{Ne} + ^{10}\text{Be} + 2n;$		$^{30}\text{Al} + ^{21}\text{F} + 2n;$	$^{22}\text{F} + ^9\text{Be} + 2n;$
	$^{29}\text{Mg} + ^{20}\text{F} + 2n;$	$^{20}\text{O} + ^{13}\text{C} + ^2\text{H};$			$^{21}\text{O} + ^{10}\text{B} + 2n;$
$^{44}\text{Cl} \rightarrow$	$^{26}\text{Ne} \downarrow +$	$^{16}\text{N} \downarrow + 2n;$	$^{44}\text{Cl} \rightarrow$	$^{24}\text{F} \downarrow +$	$^{18}\text{O} \downarrow + 2n;$
	$^{16}\text{C} + ^8\text{Be} + ^2\text{H};$	$^{13}\text{C} + ^1\text{H} + 2n;$		$^{14}\text{B} + ^8\text{Be} + 2n;$	$^{15}\text{N} + ^1\text{H} + 2n;$
		$^{13}\text{N} + 3n;$		$^{15}\text{C} + ^7\text{Li} + 2n;$	$^{10}\text{B} + ^6\text{Li} + 2n;$
		$^9\text{B} + ^5\text{He} + 2n;$			
		$^9\text{Be} + ^5\text{Li} + 2n;$			

Table 3.

$^{82}\text{As} \rightarrow$	$^{53}\text{Ti} \downarrow +$	$^{27}\text{Na} \downarrow + 2n;$	$^{50}\text{K} \rightarrow$	$^{26}\text{Ne} \downarrow +$	$^{22}\text{F} \downarrow + 2n;$
	$^{24}\text{Al} + ^{17}\text{F} + 2n;$	$^{11}\text{N} + ^8\text{Be} + 2n;$		$^{16}\text{C} + ^8\text{B} + 2n;$	$^{13}\text{B} + ^7\text{Be} + 2n;$
		$^{10}\text{C} + ^9\text{B} + 2n$			$^{13}\text{C} + ^7\text{Li} + 2n;$
$^{82}\text{As} \rightarrow$	$^{54}\text{V} \downarrow +$	$^{26}\text{Ne} \downarrow + 2n;$	$^{50}\text{K} \rightarrow$	$^{28}\text{Na} \downarrow +$	$^{20}\text{O} \downarrow + 2n;$
	$^{24}\text{Al} + ^{19}\text{Ne} + 2n;$	$^{16}\text{C} + ^8\text{Be} + 2n;$		$^{17}\text{N} + ^9\text{Be} + 2n;$	$^{16}\text{N} + 2\text{H} + 2n;$
	$^{26}\text{Si} + ^{17}\text{F} + 2n;$			$^{15}\text{C} + ^{11}\text{B} + 2n;$	$^{12}\text{B} + ^6\text{Li} + 2n;$
$^{82}\text{As} \rightarrow$	$^{49}\text{Sc} \downarrow +$	$^{31}\text{Mg} \downarrow + 2n;$	$^{50}\text{K} \rightarrow$	$^{30}\text{Na} \downarrow +$	$^{18}\text{O} \downarrow + 2n;$
	$^{30}\text{Al} + ^{17}\text{O} + 2n;$	$^{20}\text{O} + ^9\text{Be} + 2n;$		$^{19}\text{N} + ^9\text{Be} + 2n;$	$^{14}\text{N} + 2\text{H} + 2n;$
	$^{28}\text{Mg} + ^{19}\text{F} + 2n;$			$^{15}\text{C} + ^{13}\text{B} + 2n;$	$^{10}\text{B} + ^6\text{Li} + 2n;$
$^{82}\text{As} \rightarrow$	$^{49}\text{Ca} \downarrow +$	$^{31}\text{Al} \downarrow + 2n;$			
	$^{30}\text{Mg} + ^{17}\text{O} + 2n;$	$^{21}\text{F} + ^8\text{Be} + 2n;$			
		$^{19}\text{O} + ^{10}\text{B} + 2n;$			

The chains of further divisions of light nuclides  $A=2*Z$  are presented in Table 3.

Table 3.

$^{26}\text{Al} \rightarrow ^{17}\text{F} + ^7\text{Be} + 2\text{n};$	$^{26}\text{Al} \rightarrow ^{15}\text{O} + ^9\text{B} + 2\text{n};$		
$^{24}\text{Mg} \rightarrow ^{15}\text{O} + ^7\text{Be} + 2\text{n};$			
$^{22}\text{Na} \rightarrow ^{12}\text{N} + ^8\text{Be} + 2\text{n};$	$^{22}\text{Na} \rightarrow ^{11}\text{C} + ^9\text{B} + 2\text{n};$		
$^{20}\text{Ne} \rightarrow ^{11}\text{C} + ^7\text{Be} + 2\text{n};$			
$^{18}\text{F} \rightarrow ^{14}\text{N} + ^2\text{He} + 2\text{n};$	$^{18}\text{F} \rightarrow ^{14}\text{O} + 2\text{H} + 2\text{n};$	$^{18}\text{F} \rightarrow ^9\text{B} + ^7\text{Be} + 2\text{n};$	$^{18}\text{F} \rightarrow ^{11}\text{C} + ^5\text{Li} + 2\text{n};$
$^{16}\text{O} \rightarrow ^{13}\text{N} + \text{H} + 2\text{n};$	$^{16}\text{O} \rightarrow ^9\text{B} + ^5\text{Li} + 2\text{n};$		
$^{14}\text{N} \rightarrow ^{11}\text{C} + \text{H} + 2\text{n};$	$^{14}\text{N} \rightarrow ^{13}\text{N} + \text{n};$	$^{14}\text{N} \rightarrow ^8\text{B} + ^4\text{He} + 2\text{n};$	$^{14}\text{N} \rightarrow ^8\text{Be} + ^4\text{Li} + 2\text{n};$
$^{12}\text{C} \rightarrow ^7\text{Be} + ^3\text{He} + 2\text{n};$	$^{12}\text{C} \rightarrow ^{11}\text{C} + \text{n};$		
$^{10}\text{B} \rightarrow ^7\text{Be} + \text{H} + 2\text{n};$	$^{10}\text{B} \rightarrow ^9\text{B} + \text{n};$		
$^8\text{Be} \rightarrow ^4\text{He} + ^4\text{He};$	$^8\text{Be} \rightarrow ^3\text{He} + ^3\text{He} + 2\text{n};$		
$^6\text{Li} \rightarrow ^3\text{He} + \text{H} + 2\text{n};$			
$^4\text{He} \rightarrow ^2\text{H} + ^2\text{H} \rightarrow$	$\rightarrow 4\text{p} + 2\text{e}^- + 2\tilde{\nu}_e;$		

As you can see, as a result of only four successive fission processes, a whole set of nuclei of medium and light nuclides was obtained from the nucleus of the 120th element. It takes about 45 fission processes to turn a fragment weighing 1 ton into a set of light nuclei. Note that the resulting set of nuclei includes almost all chemical elements that are part of the most common molecules of not only planets, but also comets, asteroids and satellites. Since the masses of supermassive nuclei can also have a wide range of values, the resulting fragments will fill the entire spectrum of possible nuclei. Unstable nuclei due to beta capture, as well as alpha / beta  $\alpha$ - and neutron decays, will turn into stable nuclides.

Combining the above two assumptions, we can put forward the hypothesis that it was the above-described process of the comprehensive division of parts of the surface of the protostar core that began from the moment of its separation from the grain of the galaxy and continued to go on for some time. And at the end of the decays of heavy, medium and light nuclei initiated by ultrafast neutrons, only the lightest nuclides remain - Helium and Hydrogen. Which allows us to conclude that it is the chains of nuclear fission, together with the decay of neutrons, that are the sources of the star's energy. The same mechanism makes it possible to explain the chemical composition of not only planets and satellites, but also the components of comets, asteroids and other small bodies of the solar system that arose during planet formation waves.

Separately, it is worth mentioning the recent process of searching for "dark" matter responsible for the fact of the rotation of the galaxy as a whole. Here lies another mistake of physicists who perceive gravitational forces as something weak. At the same time, forgetting that gravity is just one of the properties of mass. In addition, there are also forces of inertia.

And in general, the formula of forces acting on a body of mass  $m_1$  at a distance  $R$  from a body of mass  $m_2$ , taking into account the forces of inertia, looks like this:

$$F = F_g + F_i = m_1 (G * m_2 R^{-2} - \Delta x * t^{-2}); \quad (5)$$

$$\text{Where } G^* = 1 + 6,61 * 10^{-11} \text{ (M}^3 / (\text{kg} * \text{s}^2)).$$

That is, statically, the forces of gravity are very large. And in real motion, almost all of them are used to suppress the force of inertia. Therefore, the search for "dark" matter or energy does not make any scientific sense.

Combining two processes: the formation of protostars by the grain of a galaxy, and the formation of planets by a protostar, the author considers it possible to assume that at the stage of formation of protostars, small pieces could well come off from the grain of the galaxy, which, having quickly passed the path from a fragment of a neutron star, converted all their neutrons into ordinary matter through chains of decays and became galactic planets - wanderers not tied by gravity to any star. These low-mass planets are likely to be Earth-like, while the more massive planets are likely to be exo-Jupiters.

Figure 13 shows a one-dimensional space E1 with located in it at a distance R one-dimensional bodies L1, L2, which "push" it into the two-dimensional space E2 conjugate to it. In this space, gravitational forces  $F_g$  act on bodies, bringing them closer together, and inertial forces  $F_i$  preventing them.

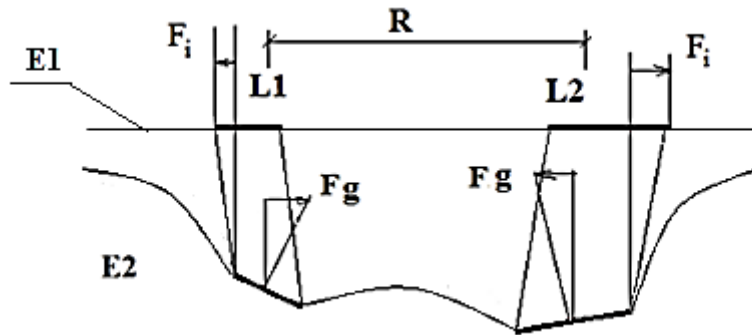


Fig. 13 Conjugate one-dimensional and two-dimensional spaces.

Replacing the one-dimensional space E1 with the three-dimensional space of our Universe will give an idea of the mechanism of the appearance of forces perceived as manifestations of the inertial and gravitational properties of the mass. [8]. Gravity forces arise when the body mutually "rolls" into someone else's curvature of space, inertia forces - when the body is "pushed" out of its own curvature, and it tries to roll back there.

Acceptance of mass as the geometry of space, when the mass of an elementary particle is proportional to its three-dimensional volume, brings the formula of the body's own energy to the following form :

$$E = M \cdot c^2 = \rho_m \cdot V \cdot c^2 = \rho_m V \cdot S \cdot t^2 = \rho_m (V \cdot t^1) \cdot (S \cdot t^1); \quad (6)$$

Where  $M = \rho_m V$ ;  $c^2 = S \cdot t^2$ ;  $\rho_m$  is the energy filling density of the volume of an elementary particle in the three-dimensional space of our universe.

That is, the self-energy of an elementary particle is equal to the product of the conditional energy density by the values of the three-dimensional and conjugate two-dimensional spaces per unit time each.

An analysis of the latest data on the structure and arrangement of galaxies in the form of "threads" and "network" structures suggests that the formation of our Universe began with the emergence and spread of massless five-dimensional space, in the form of a three - dimensional and associated two - dimensional spaces .

The unequal rate of formation of two spaces led to their uneven conjugation, the appearance of an excess of energy and the formation of points of origin of singularities , which, formed by the mass of matter, eliminated the uneven conjugation. Similarly, craquelure cracks form on the surface of two paints superimposed one on top of the other and having different drying rates.

That is why we see the location of galaxies in the form of a kind of "three-dimensional craquelure" in the Universe .

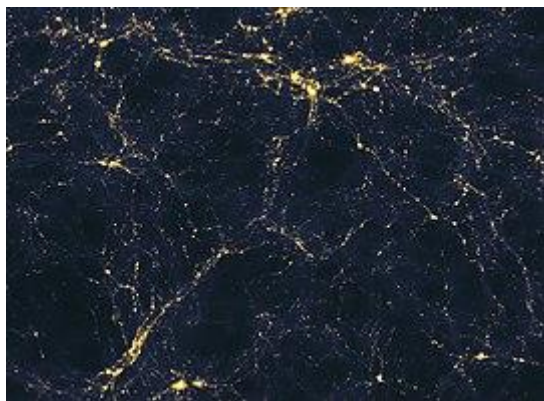


Fig. 14 Computer model of large-scale distribution of light sources (galaxies and quasars) in the Universe.

Then the process of creation of the Universe is represented as follows:

The "Big Bang" created a massless two-dimensional space with great speed. And then it created three- (?) dimensional space. The unevenness of the processes of creation and conjugation of spaces gave rise to singularities - the grains of galaxies.

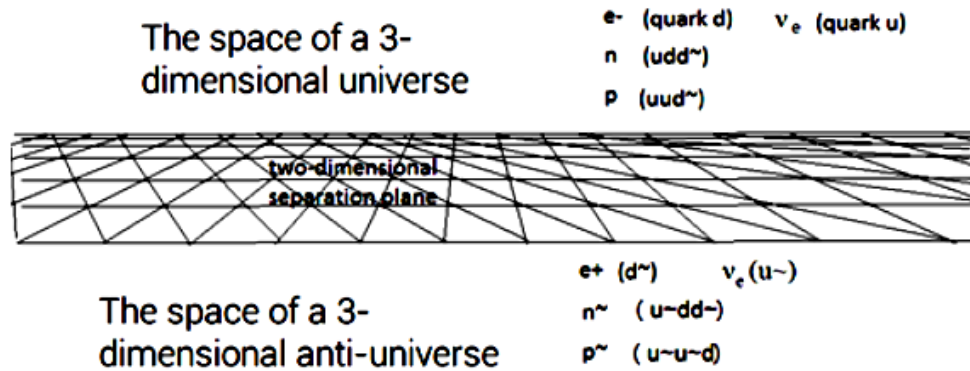
Separately, it is worth dwelling on such a physical phenomenon as the so-called. "Binding energy" in atomic nuclei. In nuclear physics, this is understood as a decrease in the mass of nucleons when they enter the structure of the nucleus. Since in the geometric model the mass of elementary particles is proportional to their volume in three-dimensional space, then taking the grain of the galaxy and the nuclei of stars and planets as analogues of atomic nuclei, we can conclude that during the transition from a bound state in the core to a free state in the stellar atmosphere, protons increase their masses "push apart" the surrounding three-dimensional space.

Yes, this "spreading apart" is very small ( $\sim 10^{-50}$  m<sup>3</sup> per nucleon), but in total it becomes observable for all stars in the galaxy, and perhaps is the reason for the so-called. "scattering" of galaxies.

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In principle, there is something else to talk about.

For example, about conjugated with two-dimensional space on the other side of our three -dimensional anti-universe with antimatter ...



On the discrete-continuous structure of the three-dimensional space of the Universe. With the existing lower bound on the size of discrets of the order of the Planck length ( $10^{-35}$  m). And this is the only way to avoid the aporias of Zenon.

About isotachia and kekinem the process of body motion in space .

That a photon is an excited state of a group of discretes . And the time of transmission of such a state to the neighboring discrete  $e$  , is a constant for our Universe. Therefore, the speed of light is absolute in all directions and the same in all reference systems, which means that the photon ( " torn off" from an electron ) does not care at all , the speed of this electron, the angle of separation, and also the speed of movement in space, like an atom in which this electron rotates, and the body in which this atom. The further movement of the photon is dictated only by the space itself and the time of transmission to the neighboring discrete .

That when moving, the dimensions of the body do not shrink, but, on the contrary, are "smeared" in space along the line of motion. This causes an increase ( relativistically ) in mass, since more spatial a discrete unit of time has a mass.



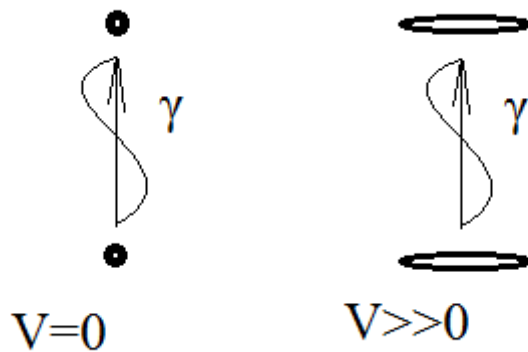


Fig.15

A photon released by one atom perpendicular to the motion of the body will be accepted by another atom, regardless of the motion or rest of the inertial coordinate system.

That gravity doesn't slow down time. Time cannot be accelerated or slowed down. A photon moving through a material body (or close to it) has a longer path because it passes through the gravitational funnel(s) of 3+2 space. Consequently, its path consists of an increased number of space discretely, which ultimately gives an increase in the time interval compared to the travel time in empty space.

Because of our three-dimensionality, we cannot detect it directly.

About the fact that an elementary particle can “disappear” in our 3-dimensional space, in order to then appear in the neighboring discrete space, for this time it appears in the conjugated 3-dimensional anti-universe in the form of an antiparticle, and then, having disappeared there, appears here ... Therefore there is no reason to talk about the absence of baryon symmetry.....

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\* Program for modeling the structures of atomic nuclei -

<https://disk.yandex.ru/d/ao26clxJ9UJZ8A>

Trial beta version 1.1 For Windows. It is not installed, it does not write to the registries, it does not create shortcuts. Just unzip , run CreatorBeta.exe .

RJA Hill\* and L. Eaves Nonaxisymmetric Shapes of a Magnetically Levitated and Spinning Water Droplet *Physics Review Letters* PRL 101, 234501 (2008)  
<https://physics.aps.org/featured-article-pdf/10.1103/PhysRevLett.101.234501>