

FORMATION and CONSTITUTION of SOLAR SYSTEM

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Abstract

In the article is shown, that the planets are in quantum excited states and have appeared as a result of capture bodily or in the greater part.

Usable enunciated notions for space gauges. For this purpose is conversed (2.3) [1] to a view slightly:

$$\frac{a_0}{\sqrt{r}} = \sqrt{\frac{Ze^2}{m}} \quad (1).$$

The blanket constitution of a solar System visually demonstrates to us a development of gravidynamic interaction: all planets are gyrate on orbits and around of own axes in one side - side of gyration of the Sun in one plane. That most happens and to satellites of planets. Specially visually it is visible for promptly rotary Jupiter having besides and major mass, therefore, powerful a gravidynamic field making not only orbit of Jupiter to lie in a plane of a solar System, but it to have a minimum obliquity of equator to an orbit, and also making satellites of Jupiter to follow to an example of the host, except for exterior satellites with which one we shall understand later.

"Being address to a solar System, it is uneasy to find out following essential singularities of its constitution:

1. All planets are revolving around of the Sun in the same direction.
2. All planets are gyrate around of the axes in a direction appropriate to a direction of their treatment around of the Sun (elimination make of a Uranus and Venus).
3. The eccentricities of planet orbits differ from zero point very little i.e. orbit of planets almost circular. The elimination is introduced by orbits of a Mercury and Pluto.
4. The orbits of planets, except for a Mercury and Pluto, lie almost in one plane, it is not enough lop-sided to a plane of a solar equator.
5. Extremely nonuniformly is proportioned between the Sun and planets moment of momentum (for a point of mass m , rotate on a circle of radius r with velocity v , the moment of momentum is peer mvr). On a share of the Sun, in which one 99 % of all mass of a solar System is focused, it is necessary only 2 % of its full moments of momentum.
6. The rotation of the Sun around of its axis happens in the same side, in what moves of a planet around of the Sun.
7. Orbits of the majority of satellites of planets are close to circular, and the motions of the majority of satellites on their orbits happen in that a direction, in what planets moves around of the Sun.
8. Orbits of satellites in the majority are inclined to planes of equators of the planets a little.
9. The planets are divided into two groups: planets such as the Earth and planet - giant such as Jupiter. The planets with greater mass are gyrate around of the axes with smaller periods. The planets - giant have least density.

Any of existing and present cosmogonic hypotheses fails convincingly to explain these legitimacies both features, and this circumstance generates the skeptical relation to these hypotheses". V.G. Demin "Destiny of a solar System", "Science", M., 1975, page 61.

It is known, that in our Galaxy, as well as in others, there is and now sufficient quantity of protons, electrons separate atoms, molecules, dust particles, larger bodies, down to huge chunks of matter as asteroids, comets etc. "Interplanetary dust - particles predominantly with mass $10^{-3} - 10^{-5}$ g, widespread in interplanetary space. Total mass of interplanetary dust is estimated in $10^{19} - 10^{20}$ g. At removal from the Sun density of a dust cloud drops

approximately as $R^{-1.3}$, and on distances ~ 3 a.u. the dust practically misses. The greatest concentration of interplanetary dust is watched in the area of an ecliptic, as for the majority of particles the inclination of orbits does not surpass $30-40^\circ$. E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 42.

According to a hypothesis of formation of a gravidynamic field, not only elementary particles or molecule in a free condition moves on a screw line, but also any other bodies. Some affirming can be served by the screw forms of tails of comets I type. (E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 71). Thus there comes equilibrium state, when the force similar to force of the Lorentz in an electrodynamic performs forces attractive a body to an axis of a screw line, and about universal of repulse energy and relevant force we already order speech. Such motion of a body will be steady, since it is in a potential well. In any case the gravidynamic field urges a free body to be moves on a right-handed or left-handed line and first Newton's laws, leaves, is untrue in relation to a free body, and is fair only to an axis of a screw trajectory it. Therefore we in the Universe should not meet any body driving strictly rectilinearly, or is strict on parabolic or hyperbolic trajectory. Against it the astronomers, seem, do not object.

Here it is necessary to warn of the careless manipulation with a de Broglie formula $\lambda = \frac{h}{mV}$, determining "wavelength" of particles with an angular momentum \hbar . Usually, in its denominator substitute what thinks fit mass, receive a killing short wave for macrobodies (that as a matter of fact means incredibly large energy at ratty of moving speed) and on this basis consider, that macrobodies have not wave properties. If in new physics the waves of de Broglie have completely clear physical sense and is transversal ("oscillation" of a particle at motion on a screw line happen across its movement in space), the orthodox science in this problem has not clear notions. If to consider waves de Broglie transversal, it is necessary to introduce into the inventory ether with properties of a solid body, that the propagation of such wave was provided. If to consider as its longitudinal, the ether should have properties of a liquid or gas. If to refuse ether generally, it is necessary to enter a new kind of a wave - "a wave of probability", but then it is necessary to open its physical sense and to show theoretically, that such wave should have properties of customary waves, that is demonstrated experimentally. Even as a wave packet the particle cannot be presented, since on notions of official physics for waves of de Broglie there is dispersion even in vacuum, therefore wave packet fade away in due course. "It does not allow introducing particles as a wave group de Broglie" (B.M. Javorsky, A.A. Detlaph, Manual on physics, "Science", M., 1964, page 644).

Illogicality of reasons of official physics in handling of a de Broglie formula is obvious. That the wave has very small length or, on the contrary, very large, yet does not follow, that it absolutely is not present. The exact explanation is that de Broglie formula is result of gravidynamic self-effect of particles with an angular momentum \hbar and at other values of this moment will be unfair. And as to a particle mass in its denominator, it is the same misunderstanding being a corollary of the dogmatic relation to mathematics on a context incomprehension of physical substance, as well as electronic mass, standing in a denominator of the formula expressing radius of orbit of an electron in the modern theory of atom. Noting a de Broglie formula: $\lambda = \frac{h}{mV_f}$, where V_f - forward speed of a particle, is

separable both parts on 2π : $\frac{\lambda}{2\pi} = \frac{\hbar}{mV_f}$, but $\hbar = mV_T r$ (where V_T - the tangential velocity)

and is a moment of momentum of a particle. Is asked, where? You see the particle is free. The answer is univalent - on orbits of a screw line, if not we want to gyrate an electron with superlight velocity or at all to deprive of physical sense an angular momentum. By substituting value \hbar , we shall discover: $\lambda = \frac{2\pi mV_T r}{mV_f} = 2\pi r \frac{V_T}{V_f}$. V_T should be accepted equal

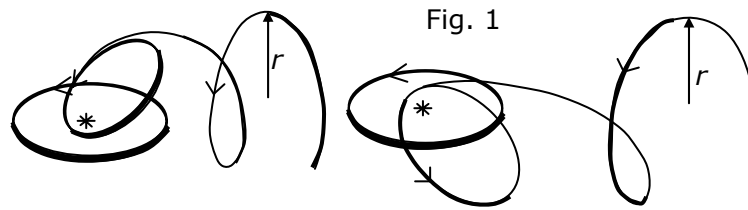
V_f again to remain within the framework of common sense at changes V_f and meaning a principle of an equal energy distribution on degrees of freedom, then is gained: $\lambda = 2\pi r$. We have received result showing, that the wavelength de Broglie, starting from microparticles and finishing astronomical objects is peer to length of orbit of this particle a

bound condition or circumference of cross section of a screw line in a free condition, and the last value considerably exceeds first, of what it is possible to be convinced on an example of a free and bound electron. This conclusion confirms the unified physical basis of motion of any free bodies both unity of the laws micro and macroworld. Of unity of these laws for us still will a capability repeatedly be convinced.

As the physical sense of a wavelength de Broglie has become trivial, in further, using this term, we shall not nest in it more that in it is contained, on the strength from above-stated, and especially we shall not consider particles as a wave, though their motion and has some properties of a wave because of a screw trajectory.

Now we can assert, that the free bodies micro and macrocosmos, being moving on screw lines, demonstrate to us violation at once of two Newton's laws: they not moves is rectilinear also the activity not equally to counteraction. At all events, the Newton's laws require refinement of the formulations. The rather second Newton's laws it is possible to tell following. In calm of a cabinet it is possible to consider, as it and is accepted, that on a body drives on a circle, the centripetal force calling a centripetal acceleration pursuant to the second Newton's law acts and the centrifugal force acts on "connection". It is necessary to enclose eyes on that circumstance, that "connection" under activity of unbalanced force should be moves with acceleration from a centre of rotation. However, by turning over on steep sweep together with the automobile, we shall be rigidly convinced that just a centrifugal force acted on us, and all was good so long as it was peer centripetal, stipulated support reaction. Therefore exact explanation of this problem will be such. If the body is steadily gone on a circle, it is in a potential well and the attractive force to center of a circle is peer to a repulsive force. Both forces are affixed on a driving body. The total of these forces is peer to zero point and on the second Newton's law the acceleration misses. In such interpretation all cases of motion of bodies on a circle become completely clear. On notions of modern science of a potential well does not exist neither in case of motion of an electron around of a nucleus, nor in case of motion of a space body around of central. Therefore given a systems should be basic unstable, and their actual stability (being a sample of stability in our world) uniquely indicates an inaccuracy of these notions. Only concept of universal energy of repulsion, bring in new physics, allows to give the exhausting solution of this problem.

A gravidynamic field, as well as magnetic, short-range, radius of its activity on an order of magnitude is comparable with radius of a particle in case of her rotation about an axis and is comparable with radius of orbit, on which one the gravitational current "flows". In the latter case induction of a gravidynamic field is maximum near to a driving body, therefore on distances, is significant superior the sizes of bodies, the gravidynamic field can not be the competitor of a gravitational field of attraction in case of space objects or electrostatic field in case of an electron motion in atom. At the same time, setting an initial moment of momentum on a screw line to a free particle, it completely determines a position of orbit of this particle in a bound condition, leaving on a share long-range gravitational and electrostatic field draft-quality activity on keeping of a body on destined beforehand orbit. Radius it is picked from an infinite set solved a potential energy of attraction and universal repulsion just by a gravidynamic field. Below we shall see, that this ingenious fabrication of the Creator (author is the convinced atheist, therefore mention in vain of a name of the god serves only for a readability of the text), when the kind of the Universe is determined not powerful gravitational, and negligible more feeble, in the given conditions, by a gravidynamic field, has allowed to create alive, evolving, developing world, instead of dead and fixed, as the dissipations of energy in a macroworld cannot be avoided as against a microcosm. Thus, in space we have a broad set "of lengths of waves de Broglie" starting that are determined by his formula and fair for particles with a mechanical moment \hbar and finishing macrobodies "wavelength" which one can significant exceed the sizes of a solar System down to the galactic sizes. Being moving on a screw line, macrobodies with a defined value Vr , which one determines the future their position in a solar System irrespective of mass "put on" on a solar System, reducing thus radius of motion and incrementing an orbital velocity pursuant to a principle of conservation of moment of momentum. The main mass of substance goes in a solar System from area of galactic "orbit" of the Sun (inverted commas will become clear later, when will be found out, that orbit as such is not present) precisely the same as on planets in main substance goes from planetary orbit. This most widespread case is figured on a figure 1.

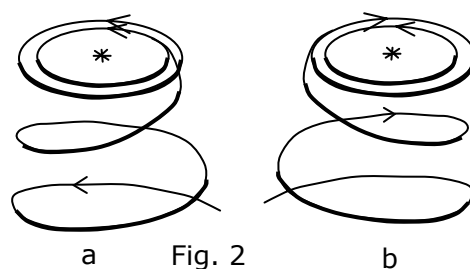


You tell that the author views the far-fetched problem. Something not so is noticeably, that from space to us the significant amount of matter went. It is possible to answer it simply - it necessarily will discover, and if its today's entry will appear small, it is quite compensated by past abundance and future entry. Naturally, that in past entry of matter in a solar System was significant more. "Bombardment meteoritic intensive - event, the tracks which one was kept in a geologic history of planetary bodies and small bodies of a solar System as areas high density of craters impact on a solid surface. The definitions of absolute age of rocks of lunar continents date sharp decay of intensive meteoritic bombardment time ~3.9 billions years back. The beginning it, is probably, is closed with the last stages of an accretion (growth of bodies at the expense of affixing of new particles - V.K.) planetary bodies (~4,6 billions years back)". E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 11.

The author hopes, as the reader will part of his optimism in this problem, by finishing reading of this chapter.

Macrobodies, reaching a radius of action of a gravodynamic field of a solar System as a whole, comparable with size systems, deploy vector of the mechanical moment so that to take para-position in a solar System, thus has not value the right-handed or left-handed current of traffic had macrobody and from what side of a plane of a solar System it has appeared. In other cases the matter can go from directions, perpendicular plane of a solar System. The last researches of antarctic meteorites confirm that the meteorites going on the Earth from these two directions differ among themselves: "Meteorites antarctic - meteorites retrieved in Antarctic Continent, where in certain geomorphological conditions as a result of intensive transpiration affluent from the large area of masses of ice there is accumulation meteorites on a surface of ice. Is retrieved more than 10 000 is models, including new (for example, meteorites lunar) and infrequent types. On ratio of meteorites of miscellaneous classes, and also on some chemical features the population of meteorites antarctic differs from unantarctic. The reason it while is unknown". E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 43.

Thus there can be two versions figured on a figure 2.

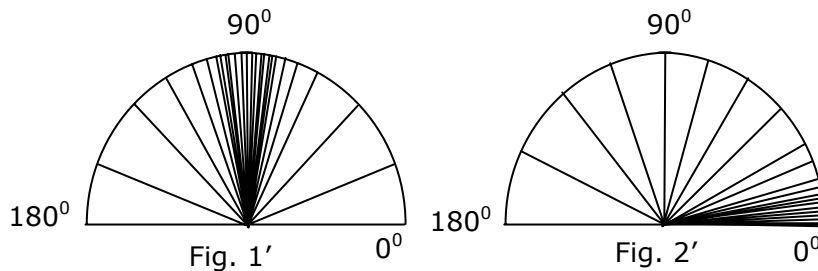


In version 2a the body with right-handed motion enters in a solar System, being moving inside it in a current of traffic of planets (the proper rotation it happens in the same side). In version 2b the body with left-handed motion at the approach to a solar System hardly is brakes because of a mutual repulsion of unlike gravodynamic poles, therefore takes a position on a periphery of a solar System or satellite system of a planet, demonstrating a backward motion. For satellites of planets of a solar System the picture of motions of a building material is look-alike, only value Vr , accordingly, it is less.

Starting from an apparent constitution of a solar System, it is possible to draw a conclusion that behind Pluto we can find out small satellites of the Sun with a backward motion. Besides right-handed bodies from northern part of a sky and left-handed of a

southern part of a sky in a solar System is watched very little, as they should be moves against rotation of our Galaxy as a whole. It is possible to consider these bodies temporarily as "abnormal" as against "normal", relevant versions of a figure 2a.

Comets (starting from motes of a cometary structure and finishing large comets), being the main supplier the matters in a solar System convincingly demonstrate to us a regularity of enunciated notions, and is apparent, that the comets of group 2 recently are captured by a solar System, and comets of group 1 - for a long time and practically transfer to a stationary state (as we shall see later, relative). "The random accumulation of disturbances at the expense of gravity of planets is termed as diffusion of comets. K.A. Shteins has pointed three laws of diffusion.



According to the first law of diffusion the accumulation of random disturbances in motion of comets results in gradual decreasing of declinations of planes of orbits of comets to a plane of an ecliptic. In a fig. 1' the distribution of orbits on their declinations to an ecliptic for again unclosed comets is indicated and in a fig. 2' the distribution of old comets on declinations of their orbits in a plane of an ecliptic is added.

As it is visible, for new orbits are equiprobable both straight lines, and backward motions, while the majority remaining (old - V.K.) comets is gone around of the Sun in a forward direction.

Under the second law of diffusion the accumulation of disturbing effects results that orbits with large perihelion distances have on the average smaller eccentricities and smaller values of semimajor axes.

The second law of diffusion is in the very good consent with the observational data of all comets, which one were unclosed and were watched after 1700. It characterizes a direction of evolution of cometary orbits under activity of planetary disturbances.

The third law of diffusion explains distribution of orbits of new comets in space and is stated as follows: quantity of apparent new comets will increase with decreasing of perihelion distance. It finds simple explanation: the comets with large perihelion distance ruins much more slower, rather than those comets, which one in perihelion pass very close to the Sun". V.G. Demin "Destiny of a solar System", "Science", M., 1975, page 140-142.

From a point of view of new physics, it is possible to aggregate all three laws of diffusion of comets and not only them, but also any body in a solar System in one. Any body in a solar System, not absorbed other bodies, at the expense of gravodynamic interaction with a system aims to take a circular orbit with straight motion (counter-clockwise if to look from North Pole of a world) and proper rotation in the same side. This promotes interaction with other bodies of a solar System and dissipative processes. In result the minimum of a potential energy of a system as a whole is reached. The figure 1 confirms, that "new" comets the Sun seizes on galactic orbit, therefore inclination of their orbits is close to 90° (see figure 1). The laws of diffusion of comets will become much clearer after familiarization with the theory of capture of space bodies.

Especially are visible evolution of orbits in a solar System on an example of sets of comets of Neptune, Uranus, Saturn and Jupiter. If in a set of Neptune of orbits of comets have a large eccentricity, large declination of orbits and frequently by backward motion, in a set of Jupiter are characteristic proximity of planes of orbits of comets to a plane of an ecliptic and extremely straight of the revolutions around of the Sun with a small eccentricity (see. E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 62-63.

In spite of the fact that the growth of the terms of a solar System at the expense of meteoritic matter is not so great, as from cometary, to it everything completely concerns, that was above said about comets. "The subsystem of asteroids flat - the asteroids with an orbit inclination are less 8° , i.e. with orbits arranged near to a plane of an ecliptic. The subsystem envelops about half of all asteroids... (Compare with fig. 1' and fig. 2' - V.K.).

The subsystem of asteroids spherical - asteroids with an orbit inclination is more 8° . E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 52.

Precisely the same as we found expression (2.3) [1] for radius of orbit of an electron in atom, we can find and the expression for radius of orbit of a planet located in a potential well at motion around of the Sun (official science does not know about existence of a potential well in this case):

$$r_0 = \frac{\alpha^2}{GM} \quad (2).$$

This position macrobody, fallen in a solar System, takes rather fast, since the gravitational interaction is much stronger gravodynamic in these conditions. As the formation of atom in essence does not differ from formation of a solar System, is similar (20.1) we can record:

$$\frac{\alpha}{\sqrt{r}} = \sqrt{\frac{GMm}{m}} = \sqrt{GM} \quad (3),$$

where: $\alpha = Vr$ - product of a tangential velocity on a screw line and radius it for free macrobody, which one is saved and in the planets and their satellites, formed by such bodies, since:

$$Vrm_1 + Vrm_2 + \dots = Vr \sum_i m_i \quad (4).$$

G - gravitational constant, r - radius of orbit of a planet, m - its mass, M - mass of the Sun (or central body, for example, planet for its satellites). By the way, from (3) the third Kepler's Law is easily received, and expression (3) is equivalent to the formula of the first solar escape velocity for a body driving on orbit of radius r . By substituting $\alpha = Vr$ and

$V = \frac{2\pi r}{T}$, where T - cycle time, in (3), after simple transformations we shall discover:

$\frac{r^3}{T^2} = \frac{GM}{4\pi^2} = const$, and it also is the third Kepler's Law. Pay attention, that at this conclusion

we did not use at all concept of a centripetal acceleration, as it is made, for example, in the book: J. Orir "Popular physics", "World", M., 1969, page 107-108.

By plotting the graph, on an ordinate axis which one the values of products of an orbital velocity of a planet on radius of its orbit are put off, and on an abscissa axis \sqrt{r} , we shall receive a straight line which is coming from of a beginning of coordinates with tangent of a slope angle equal \sqrt{GM} . This fact verifying an accuracy (3) serves very severe argument for the benefit of the above-stated reasons, is fine explains distribution of a mechanical moment in a solar System (official science can not it explain) and speaks that there is no necessity to a solar System "to be born", as something whole. "Some, for example, large English astronomer Hoil, hold the opinion about simultaneous formation of the Sun and planets from a primary cloud. But on this way there are difficulties in explanation of distribution of a moment of momentum (quantity of rotation) between the Sun and planets (in a solar System on a share of planets it is necessary 98 % of a torques, though they make only 0,1 % of mass of a solar System". K.P. Belov, N.G. Bochkarev "Magnetism on the Earth and in space", "Science", M., 1983, the page 168), i.e. "is unsatisfactory are explained the difficulties which have appeared fatal for a hypothesis of the Laplace". V.G. Demin "Destiny of a solar System", "Science", M., 1975, page 63.

"Differently, specific (it is per unit mass) moment of momentum for planets more, than for the Sun, on the average in 35 000 times. This circumstance was an insuperable hindrance to many cosmogonic hypotheses. In the new hypotheses is received, that the magnetic field of the Sun is responsible carry of a moment of momentum in a solar System". Physics of space, "Soviet encyclopedia", M., 1976, page 70. It is clear to the reader, probably, that the engaging of a magnetic field of the Sun is connected with perfect hopelessness of a position of orthodox science in this problem. Moment of momentum of a planet and their satellites bring with themselves at acquisition by their solar system bodily or in their greater part.

Here it is necessary to pay attention that the orthodox science did not view at all version of origin of a solar System on the mechanism of gradual growth at the expense of an

external material. Any rather large mass which is capable to retain a material at the expense of a gravitational field, whether it be star or cold body, with inevitability (see chapter about capture of space bodies) will form a planetary system, agglomerating any trash, it is enough of which one in space. "Is true, since 1973, there are all new indicating on presence of interstellar motes at matter of meteorites". Physics of space, "Soviet encyclopedia", M., 1976, page 443.

Therefore Solar System not "was born", but was engendered as small bodies in dedicated places, when the Sun yet was not a star (see below about Jupiter), which one have grown together with the Sun and prolong to grow at the expense of space matter. In this sense, the planetary system of the Sun is more elder than the Sun as a star. The age of the majority of meteorites is close to age of a solar System and makes ~ 4.6 billions old. E.N. Sluta etc., Comparative planetology, "Science", M., 1995, page 14. The age of the Earth and moon is determined by the same value. These facts speak that the matter in the Universe as space bodies has appeared about 5 billions years back.

Phenomenon of zodiacal light and the counter glow in a plane of an ecliptic confirm this conclusion. "...The Soviet astronomer V.G. Phesenkov has shown, that the substance of zodiacal light should be renovated through everyone 100 000 years. For the indicated time all motes formed a zodiacal cloud, should fall out on the Sun on account of effect Pointing - Robertson. The source which is filling up decrease of a substance of a zodiacal cloud, with veracity is not established yet". Physics of space, "Soviet encyclopedia", M., 1976, page 78. Further we find out material for formation of space bodies whence arises.

That in it to be convinced once again, it is enough to look at "face" of terrestrial planets covered with meteoritic craters or to have a look in a history of the Earth, for what it is necessary swarm penetrating under ground and the further, the deeper. By the way, as it will be clear from further, the meteorites can not fall on planets of Jupiter's group in such quantity, as on terrestrial planets, and comet - on the contrary.

With the same value V_r can be macrobodies of any mass and any forward speed. They, falling in a solar System, place on orbit of the relevant planet or satellite and injects by their matter. Macrobodies with other values V_r can not be acquired by a given planet or satellite and for them an alone way to assimilation to the given by a space body - to change in appropriate way V_r as a result of disturbances and dissipation of energy, otherwise it macrobody will become booty of other planet or satellite. This conclusion is not absolutely valid, in further we shall be convinced that macrobodies and the microparticles will not forms continuous sequence of moments of momentum in result of "interference", therefore it is not enough of "improper" space objects. Thus, the solar System, similarly to atom illuminated by photons by a miscellaneous wavelength, also "is illuminated" by macrobodies with a miscellaneous wavelength de Broglie and immerses only selected macrobodies. As against atom, this capture is nonreversible and results in continuous growth of mass of a system. On it the analogies macro and microcosm are a long way off from being exhausted.

Paying attention on physical characteristics of a material, from which one the planets are under construction, we at once note two kinds it: the main mass deliverable by comets, represents a material, density which one, approximately, in 5 times are lower the density of a material of meteorites. Therefore, α first, roughly speaking should be in 5 times more second. At the same rotation rate, the particle low-density creates smaller intensity gravodynamic field, that will cause at the same tangential velocity of screw motion to essential increase of radius of a screw line because of feeble force of the Lorentz (for of a gravodynamic field). Therefore macrobodies of matter of comets accumulate in a solar System of a planet of Jupiter's group, and matter of meteorites - terrestrial planet pursuant to distribution of matter in space, which one and determines relative mass of planets. Thus the meteoritic matter places closer to a central body, both for planets, and for their satellites, than cometary matter. Naturally, that density of matter in each comet and meteorite are nonconstant and change in some not overlapping each other limits, but, as it was indicated above, the planets will immerse not every possible values α inside these limits, but only selected, relevant to a given planet or satellite. Thus, space matter before to get on a planet, separates on density and, therefore, chemistry. Certainly, as a whole, we supervises an average picture, but during a certain period, the passage by a solar System on galactic way calls preferred growth of the Sun, if on a way falls the clouds of hydrogen, planets of earth's or Jupiter's group, if on a way the relevant material falls. "But then there

should be a constant source feeding congestions of a space substance". V.G. Demin "Destiny of a solar System", "Science", M., 1975, page 121.

"Variability of gravitation of bodies of a solar System somewhat depends also on processes of growth of mass of planets because of to constant falling out on them of meteoric matter. In motion of planets this effect will not call some noticeable changes; however it cannot be asserted concerning motion of satellites of planets on cosmogonic time slices". (Ibidem, page 180).

"We have mentioned one more effect able to influence on evolution of satellite motions, namely, effect of growth of mass of planets at the expense of falling out of a meteoric substance. This effect presently is rather insignificant, for example, Earth at the expense of fall of a meteoric substance each year increments mass approximately on 3-6 thousand tons, however it has an effect for motion of moon. If quantity of a meteoric substance in a solar System was not filled up, the influence of minor growth of masses of planets could be neglected. Unfortunately, it cannot be asserted. There is a hypothesis, according to which one the drifts epoch on the Earth are repeated with periodicity of the order 200 millions years. The geologic data do not contradict this hypothesis. ...As is known, in a Galaxy the extended gas-dust clouds are watched in significant amounts. The solar system, passing through these clouds, replenishes meteoric matter". (Ibidem, page 184).

"Apart from braking effect of cosmic dust, on bodies of a solar System the solar radiation affects also, which one generates not only light pressure, but also calls additional (radiation) inhibiting action. The latter is especially strongly exhibited in motion of small bodies, in particular, meteoric dust. In this direction the relevant researches were held by the academician V.G. Phesenkov. Let's put some of his results). Radiation the inhibiting action results in decreasing the sizes of orbits. So, for a particle of radius in 1 cm with density in 3 g/cm³, originally moved on orbit with the semimajor axis in 2 a.u., the impact time on the Sun makes about 60 millions years. For micrometeorites of radius in 10 micron with density in 1 g/cm³, driving in a neighborhood earth orbit, the impact time on the Sun makes only 7000 years. From here follows that interplanetary space should gradually "clears" of cosmic dust (and mass of the Sun to grow! - V.K.), if not there will be compensation by its replenishment from any other sources". (Ibidem, page 186-187).

As a result of all these reasons, we come to a surprising conclusion about "quantum" condition of planets and their satellites in a solar System and in any other space systems. The truth, this conclusion is contained in the known empirical rule of the Bode for radiuses of orbits of planets, therefore calls surprise not formal, and actual quantumness, more correctly even, generality micro and macroworld. "The radiuses of planetary orbits approximately obey to the law, retrieved from observations, the Bode - Ticius: $R_n = (0,3 \cdot 2^{n-2} + 0,4)$ a.u., where n - number of a planet. This formula, fair and for planets - giant if to consider Jupiter not as fifth and sixth planet, boosted in due time searchings by fifth of a planet. On its place the ring of asteroids was unclosed (at $n=5$, $R=2.8$ a.u.)". Physics of space, "Soviet encyclopedia", M., 1976, page 70.

Some quotations concerning searching quantum conditions of planets in an early and modern astronomy from: V.G. Demin "Destiny of Solar systems", "Science", M., 1975, page 235-237.

"If to trace evolution of views of the scientists, it is possible to note, what still since ancient times philosophers, physicists, and later and the mechanics donated is priority idea about particular "organizations" Solar System. So, Plato has put forward a principle "ideality" of celestial motions, according to which one the celestial motions should be uniform and circular. ...In the nature is true more often we meet with almost circular motions. On the other hand, the principle of the Plato urges to muse above a problem: "Instead of whether "pick" planets the orbits on any unknown still to physical principle?" (Such principle new physics also tenders - V.K.). Within two last centuries, starting from Ticius and Bode, not one astronomer attempted to find the law of planetary distances. These attempts do not cease and now (enough to recollect the law of planetary distances O.J. Shmidt). And despite of empiricism and blind searching, despite lacking physical and mechanical guiding ideas, these searchings are not estimated by us as searchings of a philosophical rock. Why and really to not exist to the law of planetary distances? Whether the planets can be moves "on what has got" orbits? Whether they are obliged in the selection of orbits to obey to any rules? ...Though the forces of a nuclear interaction are different from forces of a gravitational interaction, nevertheless searchings of principles of

"quantization" of orbits of planets seem quite natural. ...It appears the insuperable barrier between classic and quantum mechanics is not present. It especially clear has shown N.G. Chetaev. He repeatedly stated the most interesting thought which has stayed, unfortunately, without attention: "Stability, the phenomenon is basic common, as should, apparently to be exhibited in fundamental laws of the nature". ...The result of the Chetaev is striking. The rule of selection of steady actual motions in Hamiltonian systems coincides quantization rules of orbits of electrons: it results to fundamental for a modern physics to a Schrodinger equation".

It is necessary again to address to atom of hydrogen and to conduct some matchings with a solar System. The large error of the Bohr and his modern followers, as us is shown earlier, is, that they guess a capability of existence for an electron of multiple values of a moment of momentum, in spite of the fact that a principle of conservation of moment of momentum it categorically prohibits. If the multiplicity of an angular momentum for an electron in atom is impossible (behind expection of rydberg atoms), it quite state of nature for space object, as the formula (4) is fair not only for a body raising from a space material, but also for most this material. In this sense, as it is not paradoxical, the theory of atom of the Bohr is fairer for a solar System, than for atom. Therefore radius of orbit of a space body will be (from the theory of the Bohr):

$$r = r_0 n^2 \quad (5),$$

if not to allow for elliptical orbits or "to converse" them in circular (see below), where: r - radius of orbit of a planet, and r_0 - radius of orbit of a planet in a ground state, n - quantum number of the Bohr (to not confuse to quantum numbers in the theory of atom enunciated above). By copying (5) as:

$$\sqrt{r} = n\sqrt{r_0} \quad (6)$$

and by putting aside on ordinate axis \sqrt{r} for planets of a solar System, and on an abscissa axis of integers, we shall see, that the terrestrial planets, and planets of group of Jupiter will be formed by two traversed straight lines (fig. 3).

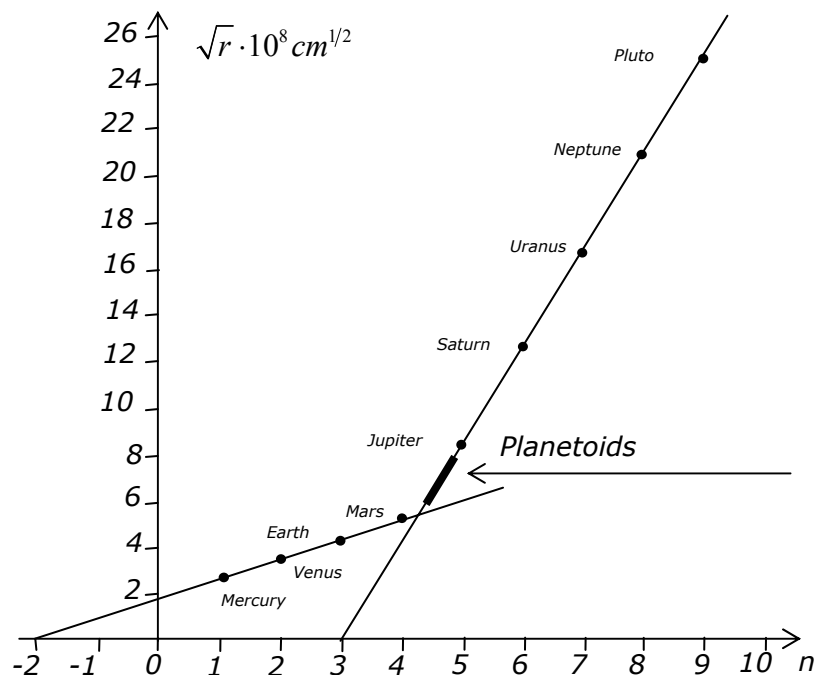


Fig. 3

From a figure 3 it is possible to find:

For earth group: $r_0 = 0.6213 \cdot 10^{12}$ cm. Mercury $n=3$, Venus $n=4$, Earth $n=5$, Mars $n=6$.

For group of Jupiter: $r_0 = 17.16 \cdot 10^{12}$ cm. Jupiter $n=2$, Saturn $n=3$, Uranus $n=4$, Neptune $n=5$, Pluto $n=6$.

It is interesting to mark, that for terrestrial planets it is not scored of planets with $n=1$ and $n=2$, and for group of Jupiter there is no planet with $n=1$. The absence them, on the one hand, is explained to that the planet in a ground state is too close to a central body and fails from tidal effect it. On the other hand, the terrestrial planets with $n=1$ and 2 should be

so closely arranged for the Sun, that, despite of a heat-resistant material agglomerated in this area, in conditions of empty space, it is easily volatilized. That can be told and about a planet of 1 group of Jupiter, which one should be between the Earth and Mars, as matter of comets in these conditions nor heat-resistant. However goes in a solar System of cometary matter considerably more, than meteoritic, therefore it is necessary to view not static, and dynamic balance. If the entry of matter exceeds its transpiration, mass grows, in a reverse case - decreases. The example of the latter is served by Uranus, which one during a turning of orbit in a plane of a solar System together with the satellites practically did not consume matter, but lost it, therefore planetary mass "falls out" of a series of masses of planets of group of Jupiter. In any case from comets there is more heat-resistant "debris", which one at decay of cometary matter gains a quantum number 1.5 and any more destination in a planet 1 of Jupiter's group, therefore between Mars and Jupiter as belts of planetoids (outside ring of the Sun) there is a sorting of matter. There are also "planets" of earth group with quantum numbers above 6.

Table 13.1 [1] now is useful to us to count up quantum conditions of the terms of a solar System with large eccentricities of orbits. Apparently, that the space body can not take bottom of a potential well by emitting of portions of energy, as it is capable to do an electron. The maximum binding energy with a central body (minimum of a potential energy) is reached by gradual dispersion of exuberant energy of a space body (which one easily to find using the formulas of table 13.1 [1]) at the expense of dissipative processes (resistance of a space environment for motion, tidal effect, orbit perturbation from influence of other bodies etc.). In such conditions of integer change of a quantum number n it is not necessary to wait. By random fashion space-stabilized elliptical orbit of a space body fallen in a solar System, gradually without jumps passes in circular in a plane of an ecliptic with straight lines by orbital motion (counter-clockwise if to look from north pole of a world). It concerns to anyone macrobodies from motes up to a planetary scale, therefore fall of a micrometeorite on moon or capture by a solar System of Uranus together with all by its satellites - essence the same process of absorption by a system macrobodies, potentially for a long time off-the shelf to capture in interstellar and intergalactic medium because of screw motion them. "Four external satellites of Jupiter have a backward motion. To explain a genesis of all satellites, both with straight lines, and with reverse motions in unified process it is very difficult. Reasonably therefore to raise the question: instead of whether the satellites with a backward motion by Jupiter then, "in a case" are acquired? Whether there was for a long time in neighborhoods of Jupiter an asteroid, which has incidentally "come" in its sphere of action? Such phenomenon celestial mechanics term as capture. The astronomers poorly familiar with a gravitational astronomy consider a capability of capture quite possible. However to demonstrate strictly mathematically capability and large or rather noticeable probability of capture it is at all not simple. While we have not its reliable quantitative assessments. (They have given below in this book - V.K.). Therefore to be forwent of the answer to this problem more correct". V.G. Demin "Destiny of a solar System", "Science", M., 1975, page 126-127. Apparently, that the new gravitational astronomy, asserting motion macrobodies on a screw trajectory and existence of a potential well at a gravitational interaction, simultaneously asserts not only probability, but also the inevitability of capture, theory which one will be given later.

However exists of other kind quantumness - on values of product Vr . In atom such quantumness is impossible, since the angular momentum of an electron $\hbar = m_e Vr$ saves the value, therefore, the product $\alpha = Vr$ is value a constant (for nonrelativistic electrons). In space there is a process of intensive growth of macrobodies. Thus to stick together there will be particles having identical parameters of a screw trajectory, as they have a capability rather long to be near. Similar "the wave interference de Broglie" macrobodies results that the product Vr has anyone macrobody not what has got, and some quantized values. Apparently, that Vr will be determined not in mass, and density macrobodies, since at low-density the gravidynamic field of a particle will be small, therefore, the analog of force of the Lorentz is insignificant also coils of a screw line will have the very large sizes (Vr is great). If we mentally shall prevent entry of new matter in a solar System, that, having patience, tarry, that orbits of all terms of a solar System will become circular. Therefore calculations are better conduct for "ideal" - circular orbits, which one are necessary for a stationary state and acquisition of such form of orbits of space objects - problem only of time. For planets, their satellites and majority of asteroids it has not large value, since their

orbits are already close to circular and for comets the extrapolation of their orbits in the future is completely indispensable, differently with them to not be disassembled.

Allowing above-stated, we shall take advantage from table 13.1 [1] of a ratio:

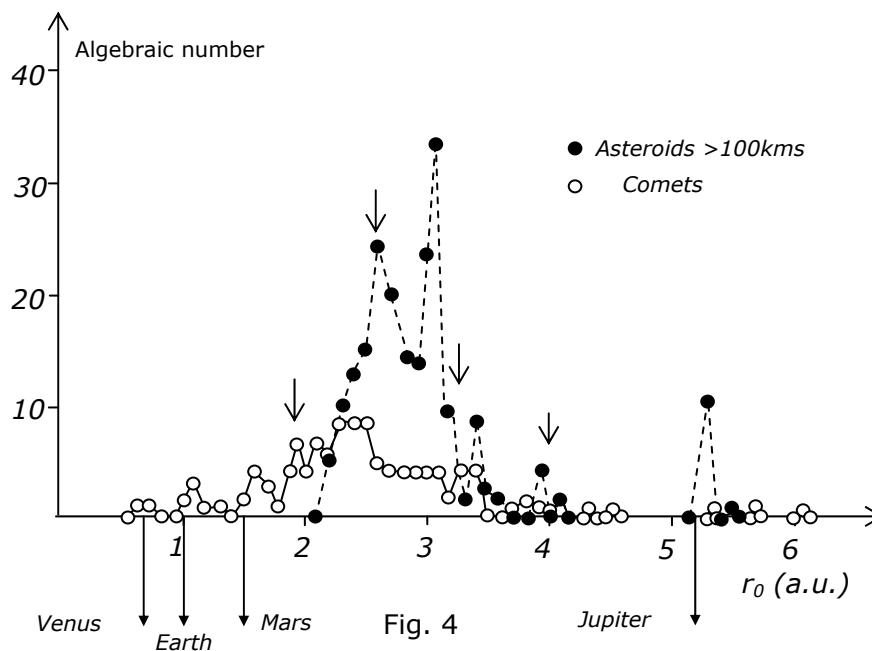
$$r_p = \frac{n}{n+1} \cdot r_0 \quad (7),$$

where r_p - perihelion distance, r_0 - radius of a circular orbit. To be saved from n , from same table we shall take advantage of a ratio:

$$e = \frac{1}{n} \quad (8),$$

where e - eccentricity of orbit. By substituting (8) in (7), we shall discover, what there will be a radius of a circular orbit on apparent perihelion distance and eccentricity of orbit:

$$r_0 = r_p(1+e) \quad (9).$$



It was possible and directly to take advantage of the formula (13.19) to receive (20.9), but the physical sense (9) would remain is not absolutely clear.

By taking advantage the data: E.N. Sluta etc. "Comparative planetology", "Science", 1995, page 91-105, under the formula (9) we shall calculate the future position of circular orbits of asteroids (diameter more than 100 kms) and known comets. The results are shown on a figure 4. From a figure it is visible, that both comet and the asteroids will collect together apart 2-3 a.u. from the Sun, i.e. in a belt of planetoids. Here there are soon all comets of group 1; comets of group 2 by then are steadied also etc. Therefore in a belt of planetoids we have a capability to watch internal matter of comets. Many explorers consider comets as one of the most ancient relict bodies of a solar System, others guess, that some comets come to us from other planetary systems. The known Dutch astronomer the Oort guesses existence on purlieus of a solar System (150 000 a.u.) cloud of comets feeding a solar System. Guess also, that except for a cloud of the Oort (in existence which one a little who doubts) there is one more container of comets - belt of the Whipple, which one is behind orbit of Neptune. "The number of comets in this area is estimated in 10^9 with summary mass of $\sim 10^{27}$ g. The guess is grounded on noticeable disturbances in motion of Neptune". E.N. Sluta etc. "Comparative planetology", "Science", M., 1995, page 58.

In immediate proximity from the Earth there will be "our" comets: Halley, Brorsen, Brorsen-Metcalf and Honda-Mrcos-Pajdusakova. All of them with inevitability will fall on the Earth or some of them on moon, which one necessarily will fall on the Earth (see below). Therefore, the falling out of space bodies on a surface of planets and their satellites is not random event, as it is treated by official science, and objective, in this connection the space patrolling is completely necessary for safety of mankind.

The planet 2 earth groups too should originate, though and is less intensive, because of a relative deficit of meteoritic matter, therefore on its place the presence of "germ" from apart dense and heat-resistant matters is quite interquartile. The presence of rings around of the Sun similar to rings of planets of Jupiter's group is more probably. "The guess repeatedly was stated, that the tenth planet of a solar System is gone inside orbit of a Mercury. To such conclusion as a result of calculations of a disturbed motion of Mercury there came the astronomers of a Marine observatory in the Washington". V.G. Demin "Destiny of a solar System", "Science", M., 1975, page 54.

As to planets with a quantum number it is more 6, it is possible to tell following. If and the existence of planets of progressively decreasing mass with quantum numbers 7, 8, 9, 10 for earth group of planets is possible, these planets precisely fall in a belt of planetoids in the same degree relating and to group of Jupiter (them there correspond maxima on fig. 20.4, indicated by vertical arrows). To put it briefly, prolongation of a series of terrestrial planets does not exist with quantum numbers above 10 on that to the simple reason that the matters with smaller density fall in group of Jupiter. Behind Pluto there could be planets with quantum numbers 7 and 8, but it is not clear, of what they can consist. If in space there is solid hydrogen and, accordingly, solid high-porous hydrogen, it is necessary to look for these planets. It is represented to more interquartile existence behind Pluto of planetoids of a solar System with a backward motion, what indirectly indicates "abnormal" (see below) eccentricity of orbit of Pluto. All these reasoning are fair for "exact" of planets and satellites, not captured Solar System, as a unit, and rising by a natural fashion or captured it is enough for a long time and had time to become "by exact".

One more feature should be marked in connection with "irradiation" of a solar System by two miscellaneous types' macrobodies. By substituting in (20.2) r_0 , retrieved for planets earth and of Jupiter groups, we shall discover:

$$\alpha = 0.908 \cdot 10^{19} \text{ cm}^2/\text{sec} \text{ for earth group and } \alpha = 4.77 \cdot 10^{19} \text{ cm}^2/\text{sec} \text{ for Jupiter group} \quad (10),$$

I.e. the moment of momentum macrobodies, forms earth group planets, as well as was supposed, almost in 5 times is less moment macrobodies the forms planets of Jupiter's group. For this reason the first group of planets is gyrated slowly around of a own axis, and second fast, i.e. space matter not only injects in mass the Sun and planets, but also supports their rotation around of axes. And, the more planets, the faster it is gyrated, as grows faster. "There is certain legitimacy in rotation of planets: the more planetary mass, the faster it is gyrated". A.V. Bialko, Our planet - Earth, "Science", M., 1989, page 50. With one's own eyes it can be seen on preferred falling out of meteorites on the Earth in eastern direction. "You see all (practically all) the energy of a meteorite leaves ultimately just on heating of rocks, elapse before it through other, mechanical forms. The stipulation "practically" is connected to change as a result of collision with a meteorite of traveling speed of all Earth and velocity of its rotation". A.V. Bialko, Our planet - Earth, "Science", M., 1989, page 81.

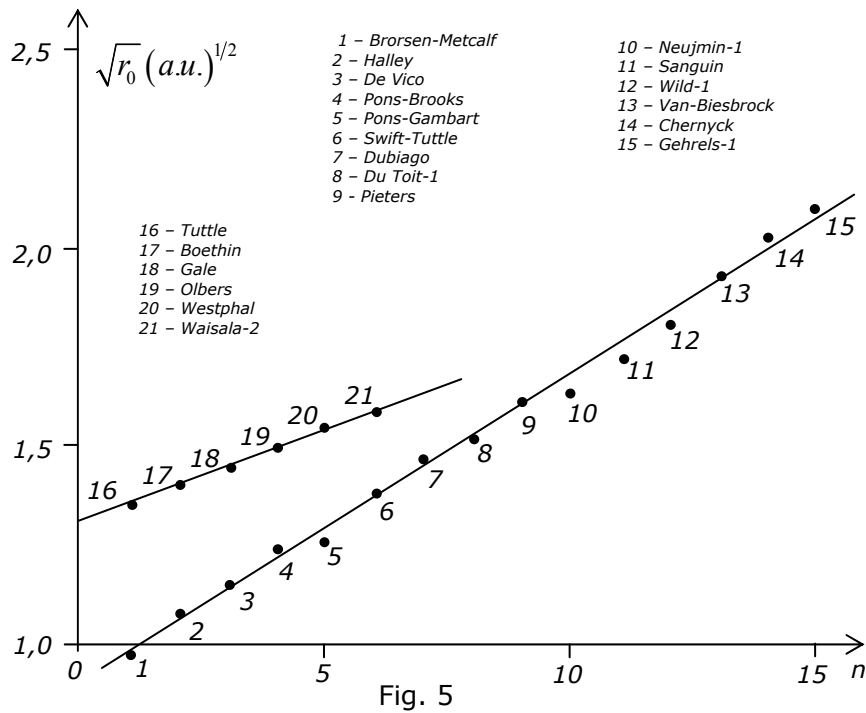
"Most frequently fall out on the Earth meteorites stone, so-called chondrite. Their silicate structure contains chondrs - grains by the size up to several millimeters". Ibidem, page 80.

"If to suspect, that a central solid core (Earth - V.K.) consists of iron, and the liquid - from iron oxide FeO and iron sulphide FeS , chemical composition of all our planet bodily will appear close to a compound carbonaceous chondrite". Ibidem, page 93.

The captured matter does not give orbits of planets to become exact in an equatorial plane of the Sun that is visible from a figure 20.1, and with rotation axes of planets hinders to lie precisely perpendicularly to orbit. The angle between rotation axis of a planet and orbital plane is, as a matter of fact, corollary of a angle between a own moment of momentum and velocity vector of macrobody on an coil of a screw line. The numerous facts showing, that the rotation of celestial bodies is made by external action compensatory dissipative processes, behind a deficiency of a place to view we shall not be - they are known. We should watch also quantumness of semimajor axes of orbits of asteroids and comets being a corollary of gravidynamic self-effect of free bodies.

For a illustration of this statement, on a figure 20.5 the relation $\sqrt{r_0}$ (a.u.)^{1/2} from a quantum number n for sets of comets of Saturn and Neptune is shown. r_0 was calculated under the formula (9), i.e. corresponds to the future circular orbits of comets. The comets with № 16 on № 21, apparently, are crowded with meteoritic matter, since for them the slope angle of a straight line is significant less. Thus, all depth of a generality macro and

microspace to us still should be realized to the full (look quantum conditions of elementary particles in the relevant chapter).



By substituting expression (10) and (2) in (5), we shall discover radiuses of orbits of planets of a solar System of earth group r_e and groups of Jupiter r_j :

$$r_e = \frac{0,824 \cdot 10^{38} n^2}{GM} \text{ (cm)} \quad (11),$$

$$r_j = \frac{22,75 \cdot 10^{38} n^2}{GM} \text{ (cm)} \quad (12).$$

In table 1 are indicated (semimajor axis of orbit) real and calculated on (11) and (12) in the guess of a circular orbit radiuses of orbits of planets. In brackets the quantum condition of planets is indicated.

Table 1.

Planet	radius orb. 10^{13} cm	calc. 10^{13} cm
Mercury (3)	0.5791	0.559
Venus (4)	1.0821	0.993
Earth (5)	1.496	1.552
Mars (6)	2.279	2.235
Jupiter (2)	7.783	6.86
Saturn (3)	14.28	15.4
Uranus (4)	28.72	27.4
Neptune (5)	44.98	42.8
Pluto (6)	59.1	61.7

It would be very strange, if in a solar System there were bodies only in miscellaneous quantum conditions. It meant that a certain manager conducts their registration and delivers pursuant to the approved list. As a matter of fact it means full discrediting of idea quantumness of macrobodies. Therefore we should find out macrobodies in the same quantum condition. The Earth and moon can be considered as a double planet in one quantum condition. "Exclusive solidity of moon allows to term a system Earth - moon as a double planet and to consider, that the conditions of formation of this system differed a little from conditions of formation of other planets. However after a ruin of a hypothesis the English physicist of the D. Darwin about separation of moon from the Earth of any diverse

explanation to so considerable sizes of moon was not offered". "Physics of space", "Soviet encyclopedia", M., 1976, page 66. New physics considers that moon is captured by a solar System almost bodily and the speech is necessary to a message not about its separation from the Earth, and fall on the Earth. More in detail about capture of moon at the end of the chapter.

The similar position in one quantum condition unstably also should result in to merging of macrobodies, but, allowing their constant entry in a solar System, the similar phenomenon will demonstrate simultaneously and quantumness and continuous growth of mass of a solar System. For finding - out of this problem we are address to satellites of planets. By doing a similar procedure for them, we shall see, that the qualitative picture remains former, down to copying by planets of Jupiter's group of a solar System in a miniature (these planets, as we shall see below, are potential stars). "A satellite regular - satellites formed extrasmall systems, similar Solar, about three largest planets - giants. It is four Galilean satellites of Jupiter (are unclosed by the Galileo in 1610) eight classic satellites of Saturn and five satellites of Uranus. Orbits of satellites regular, as a rule, almost circular also lie near to equators of planets. It is supposed, that the systems satellite regular were formed under activity of the same processes, which one have resulted in formation of the Solar System". E.N. Sluta etc., Comparative planetology, "Science", M., 1995, page 65-66.

The truth, in the even greater degree "quantumness" is spread, since it and for a solar System not severe that is visible on some mismatching of calculated and real radiuses of orbits of planets because of essential dissipative processes and disturbances. For calculations are indispensable, as the minimum two a satellite (further will be shown a way of calculation of a satellite system, for which one it is necessary to know only mass of a central body).

The numerous apparent phenomena on the Sun confirm the guess that our star not only loses mass at the expense of radiation and "solar wind", but also gains it (it is a pity, that we do not know how many) at the expense of a space material. "The phenomenon resulting in to growth of mass of the Sun is watched also. This drop on the Sun of comets. Some comets, with velocity of 618 kms/sec (second solar escape velocity of the Sun) bears down to the solar disk were photographed. It was the small comets, they have found out themselves by glow all after some clocks before the disappearance, before transpiration in atmosphere of the Sun. To estimate mass of these comets it is difficult. It is difficult even to tell, as frequently there are these events - while them is captured too little". A.V. Bialko, Our planet - Earth, "Science", M., 1989, page 114.

Apparently, that the meteoritic dust should give bright spectral lines iron and nickel in a corona. "Approximately at the same time was uncovered riddle of a mysterious element "coronium", to which one the bright lines of a corona were assigned. Has appeared, that they are called by glow iron and nickel only located in a completely exotic condition, when because of to extremely heats (approximately 1-2 millions degrees) and tenuity the atoms of these chemical elements lose from nine up to fourteen electrons". J.I. Vitinsky, Solar Activity, "Science", M., 1983, page 15.

"Fall" of clouds of space hydrogen on the Sun calls not only flash, but also confirms heretical thought that the thermonuclear reactions heat the Sun not only from inside, but also outside. "Apparently, somewhere on boundary of a photosphere and chromosphere as a result of composite interaction of radiation, convection, and also magnetic and electrical fields there is something exotic, not clear. Because temperature of solar gas, which one before is from center of the Sun up to a photosphere - descended (as well as it is necessary at removal from a power source), unexpectedly starts to increase". A.V. Bialko, Our planet - Earth, "Science", M., 1989, page 129.

"A flash is very composite phenomenon. It is exhibited first of all in short-lived strengthening of electromagnetic radiation in a broad band of lengths of waves, from rigid X-rays with a wavelength it is less 1 \AA , and in infrequent cases from a gamma of rays with a wavelength about 0.02 \AA , up to kilometer radio waves, and in outbreak of accelerated solar particles. Besides the flashes result in activation of processes in other areas of solar atmosphere occasionally removed from them on tens thousand of kilometers. And in some most powerful flashes even the cosmic rays are generated, the protons which one have deadly energy. Common the energy of a flash makes 10^{29} - 10^{32} ergs, that is comparable to energy of explosion of thousand hydrogenous bombs". J.I. Vitinsky, Solar Activity, "Science", M., 1983, page 36.

"Solar flash usually starts by fast ascending of temperature of a corona approximately up to 40 millions degrees resulting in to occurrence of splash of a soft X-radiation". Ibidem, page 37.

"It is interesting, that in the last years from several proton flashes the gamma radiation was recorded, which one serves as a sign of presence of nuclear reactions in solar atmosphere. It has appeared during their pulse stage". Ibidem, page 41.

Flows of matter from the Sun we fix easily, but, unfortunately, it is very difficult to find out a backflow, even the drop of comets on our star finds out with a large hardly.

The future researches will show, with what from these mechanisms prevails. "The results of experiments have appeared unexpected. A neutrino was not registered: the flow a neutrino has appeared, at any rate, five times it is less, than was forecast by the theory. These experiments have shown, that our notions about processes which are flowing past in deep entrails of stars, are not exact. Apparently, the entrails of the Sun are colder, than earlier it was supposed. It means that from two possible thermonuclear reactions - the protonic-protonic and carbonic-nitric - last most likely is not implemented in internal areas of the Sun". Physics of space, "Soviet encyclopedia", M., 1976, page 382.

References:

- 1 <http://www.new-physics.narod.ru>