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# Cosmogonic curve and positions on it of Earth, asteroids, and the outer planets

Kochemasov G.G.
IGEM of the Russian Academy of Sciences, 35 Staromonetny, 119017 Moscow,
kochem.36@mail.ru

The main point of the comparative wave planetology [1 & others] is the statement: "Orbits make structures". All so different celestial bodies (various sizes, masses, densities, chemichal compositions, physical states, positions in the Universe and so on) have two fundamental properties: movement and rotation. Movements in non-circular (keplerian elliptical, parabolic) orbits with changing accelerations induce in bodies wave warpings (standing waves) which in rotating bodies have 4 orthogonal and diagonal directions. An interference of these directions produces uprising, subsiding and neutral tectonic blocks size of which depends on warping wavelengths. The fundamental wave1 long 2πR (R – a body radius) gives ubiquitous tectonic dichotomy (two hemispheres – segments), the first overtone wave2 long πR produces sectoring.

Along with these warpings (wave1 with harmonics) exist tectonic granulations. Granule size depends on orbital frequency: higher frequency – smaller granule, lower frequency – larger granule. Terrestrial planets have the following individual granule sizes (a half of a wavelength): Mercury πR/16, Venus πR/6, Earth πR/4, Mars πR/2, asteroids πR/1 (Fig. 1, bottom). These granule producing warpings tend to bring planetary spheres to polyhedrons which, for simplicity, are represented by the following figures inscribed in the planetary circles: Mercury- 16-gon, Venus- hexagon, Earth- square, Mars- rectangle, asteroids – line (Fig. 2). Obviously, nearer a figure to circle more it is stable, and this is expressed by the ratio of a figure area to the circle area. Mercury has 0.973, Venus 0.830, Earth 0.637, Mars 0.420, asteroids 0. The line for asteroids means the zero ratio, thus zero stability and no planet in the asteroid zone. Earth is unique by its near to the "golden section" value.

In Fig. 1 both axes are logarithmic: the abscissa – solar distances of the planets, the ordinate – relative granule sizes (ratio of an individual wave to the fundamental wave). Before the asteroid belt individual waves are shorter than the fundamental wave, after the belt – an opposite relation occurs. Thus the asteroid belt crosses the ordinate 1 what means that there is the very strong 1 : 1 resonance between the fundamental and the individual waves prohibiting a planet (Phaethon) formation. Available material is scattered leading to a known matter deficit. The constructed cosmogonic curve is a curve with a bending point. Earth occurs at this peculiar place what determines Earth uniqueness. The heliocentric distance is then mathematically the abscissa of the bending point (Fig. 1).

In the outer planets zone regularly increasing warping wavelengths begin to exceed the fundamental wavelength. The giant planets resist to destructive high amplitude oscillations thanks to their large gravitational compression and elasticity. Nevertheless they also lose a part of their matter ejecting it into near planet space where it gathers up as systems of satellites and rings. Such ejections could explain appearance of non-regular satellites, arcs in rings and other "anomalous" phenomena. Pluto bears vivid marks of destructive oscillations. It has large bulge or is torn in two parts (second core or large satellite) and "chaotically" moves in orbit. The chaos is most probably caused by a distortion of its orbit by its own high amplitude oscillations. Approaching the 100 : 1 resonance (Fig. 1) tells on significant matter deficit in the Pluto's orbit and its increased density. Decimal resonances (1:1,10:1, 100:1) are marked by a matter deficit. Planetary masses relative to the Earth's mass are as follows: Mercury 0.06; Venus 0.82; Earth 1.00; Mars 0.11; Asteroids

0.001(mass deficit); Jupiter 318; Saturn 95.1; (mass deficit) Uranus 14.5; Neptune 17.3; Pluto 0.002 (mass deficit). **References: [1]**Kochemasov G.G. (1992)16th Russian-American microsymposium on planetology, Abstracts, Moscow, Vernadsky Inst. (GEOKHI), 36-37.

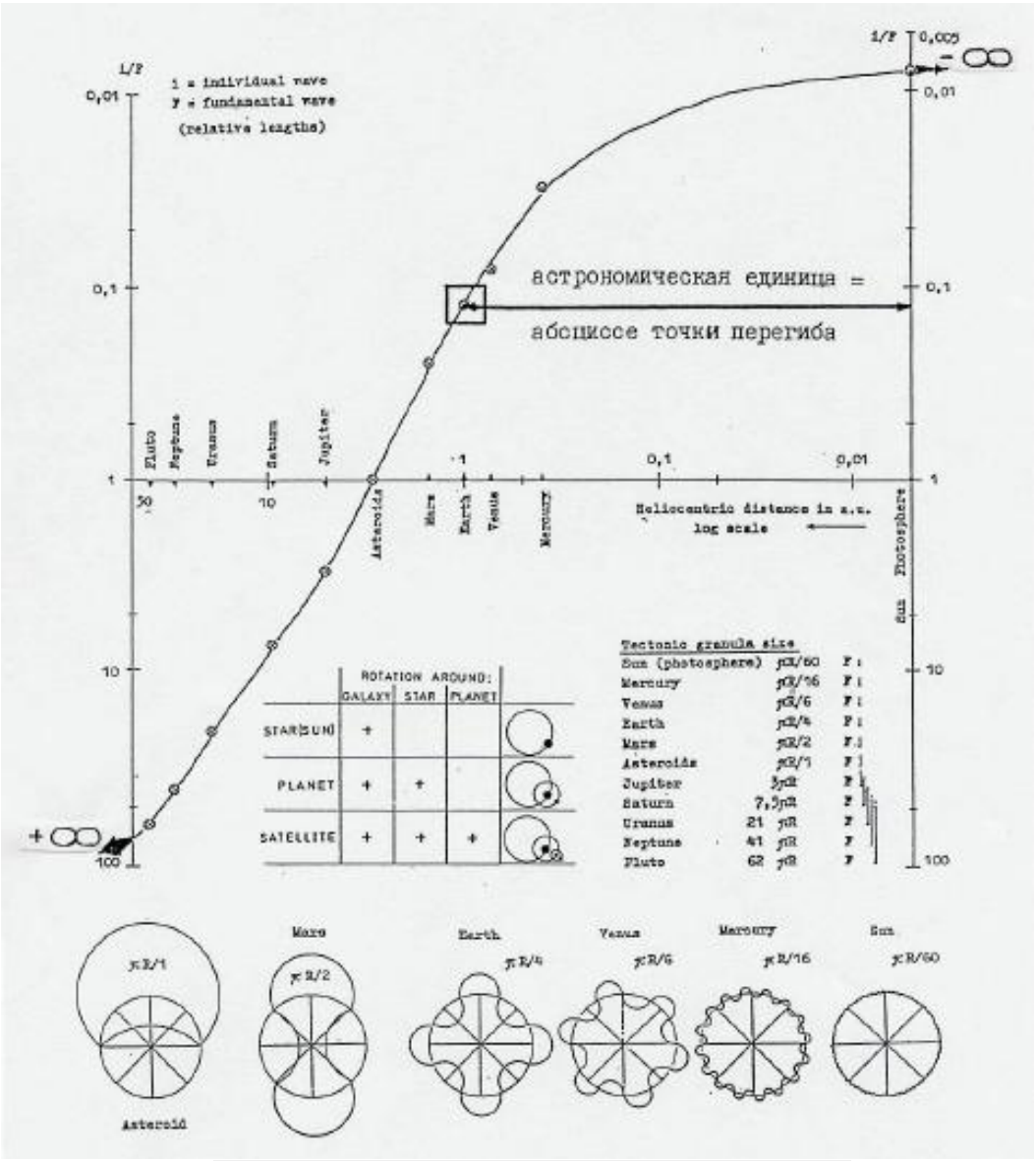


**Fig.1**

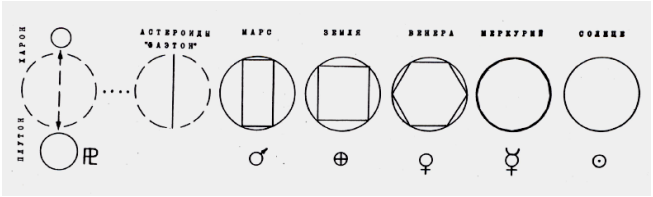

**Fig. 2**