

A TREATMENT OF DATA BANK OF MORPHOLOGIC CATALOGUE OF MERCURIAN CRATERS. B. D. Sitnikov., E.A. Kozlova, J.F. Rodionova. Sternberg State Astronomical Institute, Moscow, jeanna@sai.msu.ru.

The bank of data of Morphological catalogue of Mercurian craters in diameters 10 km and more including 6 500 craters have been compiled for 45% of the surface of Mercury in Sternberg State Astronomical Institute on the base of Mariner 10 data [1]. Coordinates of craters in the catalogue are changed in accordance with [2] new data of Mercury's North Pole.

A treatment of data bank is fulfilled with the use of software in regime of "client-server" on the choice of ensemble of the objects, compiling maps of density distribution of craters. The maps of density distribution of craters with different degree of rim degradation permit to determine the regions of concentration a "young" and "old" craters. The average density distribution of mercurian craters is 193 on 1 million km². Table 1 show the quantity of craters in % with different morphological features on the investigated part of Mercury and on the Moon. The craters of class 3 (smooth rim) are prevailed on the investigated part of Mercury in comparison with the Moon [3, 4].

48% of the mercurian craters has diameters 10-20 km, about 30% - diameters 20-40 km. 51% of mercurian craters has terraces and faults on inner slopes instead of 7.5% on the Moon. The reason of a great number of terraces and faults of mercurian

craters may be connected with stress deformation of the surface of Mercury. Hills on the floor of mercurian craters are twice more than on lunar craters. Flat floor of craters on Mercury is met often than on the Moon. There are three times it is more craters on the plains of Mercury than on the lunar maria. It is necessary note that it was difficult to determine the morphology features of many craters of Mercury because of pure quality of mages in some regions.

Fig.1 show the density distribution of craters in diameters 10 km and more on the investigated part of Mercury. We turned the Molveide projection on -20° along meridians. The scale of the map show the density of craters - the quantity of craters referenced to 1 million km².

References: [1] (1977) Atlas of Mercury 1:5 000 000 Topographic series. USGS. [2] Harmon J.K. and Perillat P.J. (2001) *Icarus*. V.149, p. 1-15. [3] J.F Rodionova. et al (1987) *Morphologicheskiiy Katalog Kraterov Lunny*. Moskva, Nauka. 187 p. [4] J.F. Rodionova et al (1993) *Morfometriya lunnyh kraterov*. *Astronomicheskie Aspekty Osvoenia Lunny I Poisk Vnezemnyh Resursov*, p.93-102

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Morphological features	Mercury	Moon
Rim degradation	1	3
	2	12
	3	46
	4	29
	5	10
Terrace	38	6
Faults	13	1,5
Hills	27,5	12,9
Central peaks	7,3	5,5
Ridges	0,9	3
Chains	10,5	12
Fissures	0,3	2
Flat floor	26,2	7
Rough floor	35,3	71,5
Dark material on a part of floor	8,5	11
Dark material on total floor	3,5	0,1
Local terrain: highland	82	94
Local terrain: plains	11	3
Local terrain: transitional zone	6,5	3

Table 1 Quantity of craters with different morphological features at Mercury and the Moon in %.

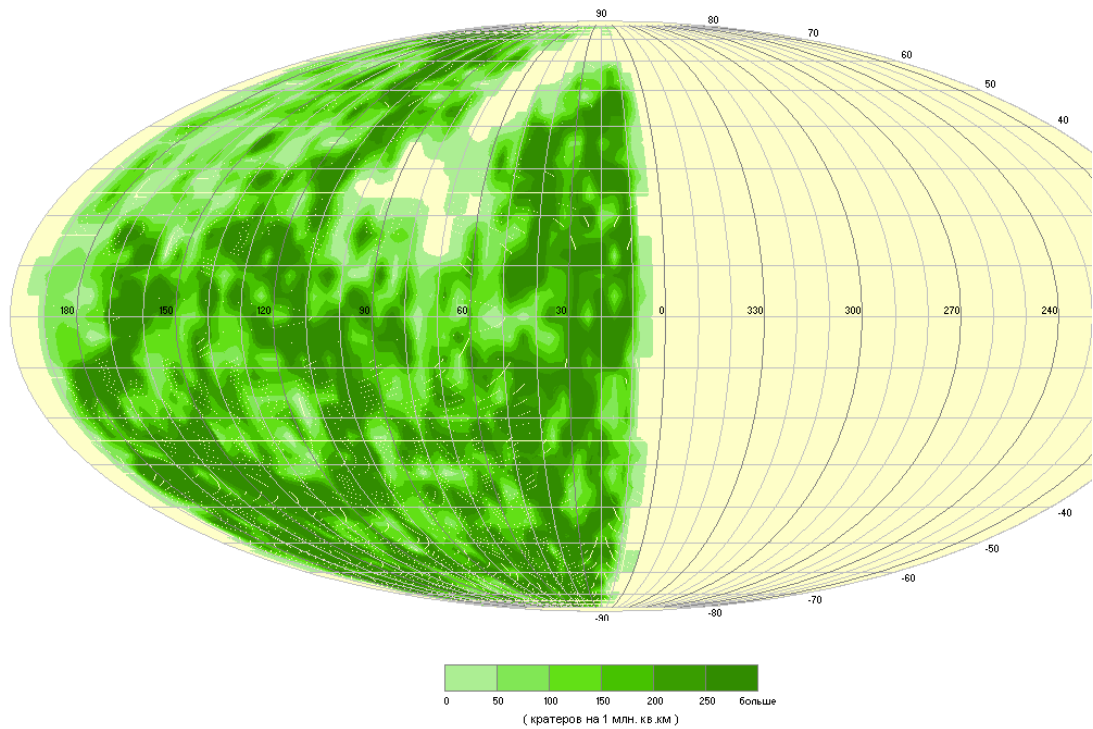


Fig.1 The density distribution of craters in diameter 10 km and more on Mercury referenced to 1 million km².