

SOME FEATURES OF THE DISTRIBUTION OF LUNAR CRATERS WITH TERRACES AND FAULTS. Zh.F.Rodionova, V.V.Shevchenko. Sternberg State Astronomical Institute, Moscow University, Moscow 119899, USSR

Specific features of the distribution of craters with different morphological signs were considered in [1,2]. This paper analyses craters with terraces and faults on internal slopes. Analysis was conducted on the basis of the "Morphological Catalogue of the Moon's Craters" [3] which includes 14,923 craters more than 10 km in diameter. Just 1,102 craters have terraces and faults which makes up 7.4 % of all the craters analysed. In the Catalogue [3] craters are divided into five classes as regards the degree of the preservation of the rim. The first class includes craters having a sharply outlined rim (the youngest craters), the second class embraces craters with a sharply pronounced rim, the third class encompasses craters with a smoothed rim, the fourth class includes craters with a partly destroyed rim and craters ruins (the oldest) belong to the fifth class.

Table 1 gives the values of the number of craters with terraces and faults for each class and interval of diameters (in the first column); the second column indicates the overall number of craters of the given size and class; the third column gives the percentage ratio of the number of craters with terraces and faults to the overall number of craters of the given class and size. It is evident from the table that with the increase in size the percentage ratio of craters of the first class increases from 1 per cent for diameters of 10 to 20 km to 91 % for diameters of 80 to 160 km. It is worth nothing that on the basis of analysis of 115 lunar craters paper [4] presents much higher values of the percentage ratio of the number of craters with terraces, especially for the size of 10 to 20 km - 12% and of 20 to 40 km - 56%. It seems that such sampling is not typical of the entire Moon. With the increase in age the number of craters with terraces for the given size decreases, except for craters of 10 to 20 diameter for which the constant ratio of 1% is typical, irrespective of the age.

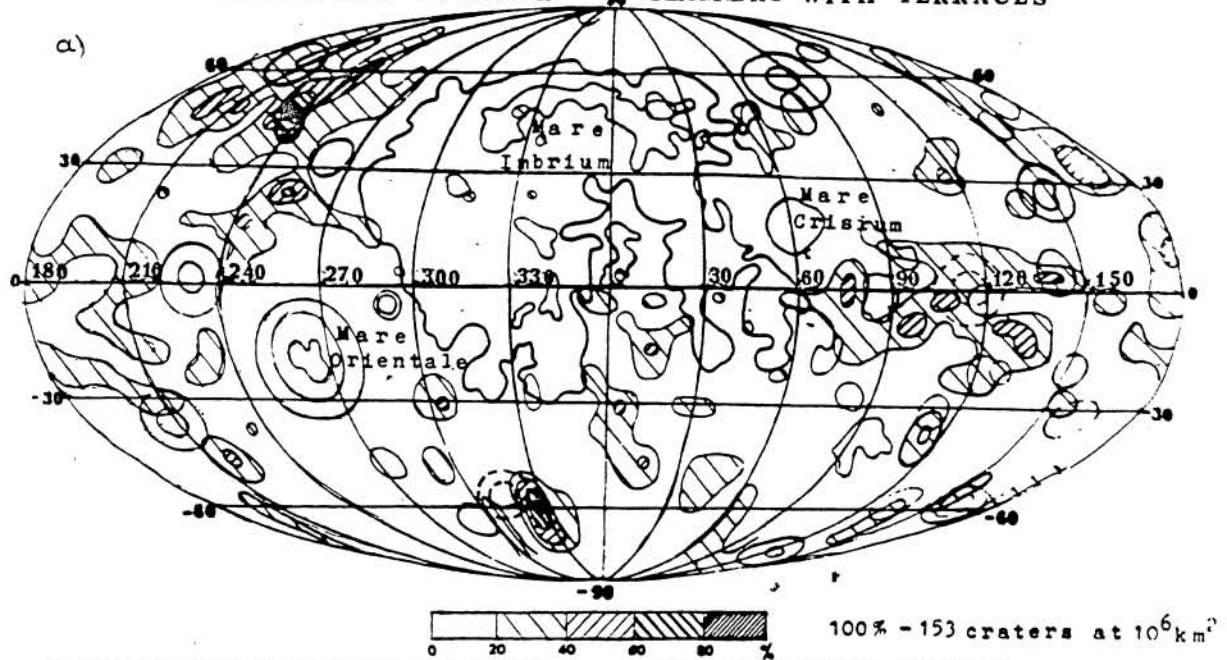
Fig.1 gives maps of the density of the distribution of craters with terraces (1a) and faults (1b). The interval of drawing isolines corresponds to the difference in the density equal to 20%. The maximum value of 153 craters with terraces and 136 craters with faults on the area of one million sq. km. is taken for 100% of density. Craters with terraces have the maximum density in two regions of the Western hemisphere near parallels +60 deg. and -60 deg. One region lies north of the Landau crater while the other lies between the Schiller and Clavius craters. Craters with faults are concentrated in the Western vicinity of Oceanus Procellarum, in the vicinity of Mare Tranquillitatis, Mare Serenitatis, Mare Nectaris and Mare Smythii. Local centres of concentration can be seen in the vicinity of large basins: Korolev, Hertzsprung, Birkhoff and Lorentz.

TABLE 1

Diameters km	1st class			2nd class			3rd class			4th class			5th class		
	Nt	N	%	Nt	N	%	Nt	N	%	Nt	N	%	Nt	N	%
10 - 20	23	2198	1	27	2513	1	18	2255	1	15	1554	1	5	381	1
20 - 40	119	561	21	107	1059	10	68	1024	7	30	942	3	14	334	4
40 - 80	66	79	84	218	407	53	118	529	22	35	467	8	7	126	6
80 - 160	10	11	91	72	81	89	84	172	49	25	125	20	4	301	3
>160	0	1	0	7	8	87	22	37	59	8	24	33	0	5	0
Σ	218	2850	8	431	4068	11	310	4017	8	113	3112	4	30	876	3

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## DENSITY DISTRIBUTION OF LUNAR CRATERS WITH TERRACES



## DENSITY DISTRIBUTION OF LUNAR CRATERS WITH FAULTS

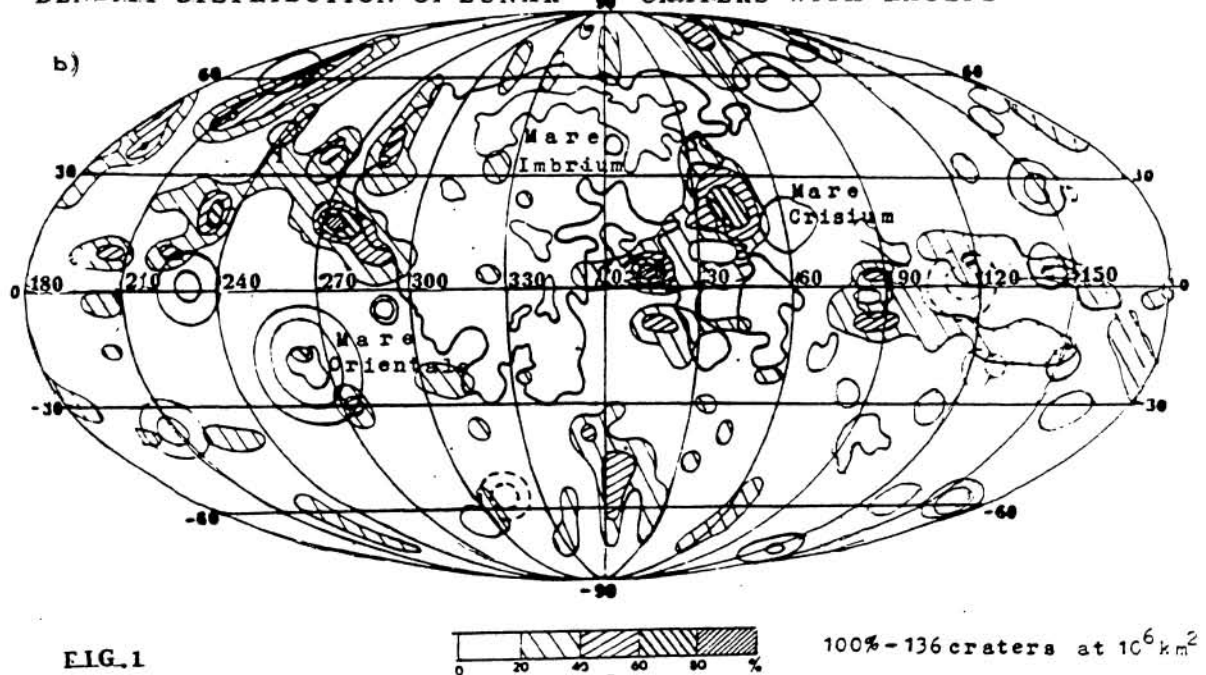


FIG. 1

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