Lunar gravity pattern mimics the solar supergranulation: why it is so?

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Lunar gravity [1] reveals granulation with a typical granula size of about 100 km (πR/60). Knowing that orbits of celestial bodies by their ellipticities and frequencies inevitably produce in them wave induced granulation of characteristic sizes (i.g., Galilean and Saturnian satellites, inner planets of the solar system (SS) with regularly changing orbital frequencies), we have found that the only sphere in SS has the same orbital frequency as the Moon around Earth-about 1/1 month- it is the solar photosphere. It has the known from the thirtieth of the 20th century and then well imaged supergranulation with its characteristic size ∼30000 km (πR/60). Now reducing both spheres (lunar and solar) to the same size and comparing them one reveals that they are very similar. This fact has serious consequences. Some of them: 1) not all circles (craters) on the lunar surface has an impact origin (now it is clearly confirmed by Cassini's images of saturnian icy satellites with ubiquitous cross-cutting wave warpings of characteristic spacings [2]); 2) wave warpings affect all spheres of celestial bodies notwithstanding their sizes, physical states, chemical compositions; 3) there is finally an explanation of sizes of the solar supergranulation –so important for the solar physics: this size is related to the photosphere orbital frequency around the center of the SS and is in line with orbital frequencies and corresponding granulation of the planets (Photosphere πR/60, Mercury πR/16, Venus πR/6, Earth πR/4, Mars πR/2, asteroids πR/1); 4) As the Moon is a satellite it has 2 orbital frequencies in the SS: around Earth 1/1month, and Sun 1/1year. Both must be reflected in crater sizes of the Moon's surface. Moreover, craters are created also by modulated frequencies that are obtained by division and multiplication of the higher frequency (around Earth) by the lower one (around Sun). So, one comes to 4 frequencies: 2 main and 2 side ones, to whom correspond 4 crater sizes (10-30 km, 80-140 km, 300-400 km, >600 km). Looking at the classical crater size-frequency distribution curve one finds that exactly

to these sizes corresponds surplus (abnormal quantity) of craters [3]. It means that to get a real impact craters sizes-frequency distribution curve one must clean it out of non-impact circular features number of which is important (judging by saturnian satellites [2]).

References: **[1]** Konopliv A.S. et al. (1998) Science, v. 281, # 5382, 1476-1480.**[2]** Kochemasov G.G. (2005) Vernadsky-Brown Microsymp.-42, Moscow, Oct. 2005, Abstr. M42_31, CD-ROM. **[3]** Kochemasov G.G. (2001) Geophysical Research Abstracts, vol.3, CD-ROM.