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Saturn's infrared spots at the southern and northern polar regions and calculation of their sizes by a wave modulation procedure

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Two recently acquired IR images of two polar regions of Saturn (credit: NASA/JPL/University of Arizona) show unusually large hurricane (8000 km across, PIA08333) centered on the south pole and a huge hexagon (25000 km across, PIA09186) centered on the north pole. The hexagon feature at least is rather stable as it was observed also by Voyagers about 30 years ago. Fascinated by these tremendous and regular features scientists paid less attention to regularly disposed non-overlapping dark spots (small hurricanes) separated by lighter areas making a kind of background to these features (though at the south pole this combination was nicknamed "leopard skin" [1]). This spotted background presenting a regular combination of dark and light areas in IR radiation is interpreted as an alternation of wave produced denser and less dense gaseous blocks permitting escape more or less intensive heat radiation. Movement down squeezes gas, movement up expands it. On an average dark spots measure 450 (300-600 km) in the south and 580 (400-800 km) in the north. What kind of interfering waves makes this pattern? The wave planetology [1, 2, 3 & others] main position is: "Orbits make structures". Movements in elliptical orbits with periodically changing accelerations means a warping of a body in 4 interfering directions (as every body rotates this warping go in ortho- and diagonal directions) by inertia-gravity waves. The theorem 3 of the wave planetology states: "Celestial bodies are granular". The higher orbital frequency the smaller tectonic granule. Starting from the Sun's photosphere one has the following row of granule sizes (a half wavelength) inversely proportional to orbital frequencies: photosphere πR/60, Mercury πR/16, Venus πR/6, Earth πR/4, Mars πR/2, asteroids πR/1, Jupiter 3πR, Saturn 7.5πR and so on… Before asteroids tectonic grains are detected inside bodies

and well known (e.g., Sun's supergranulation). In asteroids wave 1 makes their oblong and convexo-concave dichotomous shape. After asteroids the warping wave is too long to be detected in a body. So, one has to look for a shorter waves. Saturn's atmosphere rotates too rapidly (or orbits the center of the Saturnian system in $\sim$ 10 h.) and corresponding grains (πR/3448) are too small and difficult (or impossible at present) to see. However, a wave modulation helps us. Multiplying and dividing the higher frequency (1/10 hours) by the lower one (1/30 y.) one gets side frequencies and corresponding them granule sizes. They are [1/3448 : 7.5] πR and [1/3448 x 7.5]πR or 7 and 410 km across. So, detected are calculated granules 410 km across, in the real field they are on average 450 and 580 km in diameter. Somewhat larger grains in the north are attributed to the Saturnian dichotomy: squeezed south and expanded north. The overall expansion of the northern hemisphere makes structural features to manifest themselves (hexagon) and granules to enlarge.

References:

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