



## **Waves patterns traced by O<sub>2</sub> emission at 1.27 micorn on Martian polar regions**

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Atmospheric wave patterns traced by the O<sub>2</sub> emission at 1.27 micron in the OMEGA spectra are observed on the Martian polar regions. The wave patterns are found close to the north pole and south pole in their respective late winter / early spring. On the north pole atmospheric waves are observed at  $L_s = 342.5^\circ$ , late MY26 winter, with an intensity of the order of 4 MR. Few other orbits have been acquired during the early spring of MY27. The coverage of the terminator in those cases is poor and no waves have been observed. A better coverage of the north cap has been made possible during the spring MY28, but in those cases no waves have been observed. On the south pole wave patterns above the OMEGA detection limit are observed between  $L_s = 170.7^\circ$  and  $180.6^\circ$  during MY28 at different longitudes. Waves are observed always close to the terminator, the patterns are parallel to it and they show comparable spatial scale and intensity. Only in one case, above the Hellas basin, the patterns cross the terminator and the spatial scale and intensity fluctuations are higher. The high topographic discontinuity may play an important role in perturbing the shape of the wave fronts and in increasing its intensity.

The role of topography, night side-day side thermal gradients, polar vortex and atmospheric dust loading is under investigation to explain the nature and the origin of the observed patterns.