



On the oxygen airglow on Venus, with VIRTIS data.

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Oxygen on Venus is considered a peculiar trace to study atmosphere circulation. In this work we present the study of oxygen airglow distribution, on the night side of Venus, using limb-like VIRTIS data. VIRTIS is a spectro-imager instrument on board the European Venus-Express mission, which covers the visible and IR spectral range, from 0.3 to 5 microns, with a spectral resolution of 9.8 nm in the IR. The oxygen main emissions at 1.27 (0-0 band) and 1.58 (0-1 band) micron are investigated. The maximum peak emission usually occurs at about 96 +/- 2 km, and it is about 8-10 km wide; however a secondary peak sometimes appears at higher altitudes. Oxygen emission seems to be highly variable with latitude, as it follows from subsolar to antisolar point circulation, though a specific behavior has not been observed yet. Peak emission is also very intense at about midnight, but it is suspected to vary with local time.

Finally, the weaker oxygen emission at 1.58 micron is observed for the first time on another planet. Its intensity is about 78 times weaker than the main one, and it is geometrically related with it. In fact, the two emissions are set at about the same altitude. The relative intensities of the two emissions are in great agreement with laboratory measurements.