



Simultaneous view of ozone and water vapor in the martian atmosphere with SPICAM/MEX UV and near-IR measurements.

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The dual UV/IR spectrometer SPICAM on board MARS-EXPRESS uses four methods to measure ozone on Mars: the UV stellar occultations and solar occultations both provide unique vertical distribution, but at a limited number of points (typically 1 to 2 per day). In the nadir viewing geometry on the day side, the total vertical ozone content is measured from its broad UV absorption near 250 nm, while the emission line of $O_2(^1\Delta)$ at 1.27 μm , produced when O_3 is photo-dissociated, is a measure of ozone favoring the contribution above 20 km. Typical results from the four methods will be presented. Vertical profiles, as well as along track nadir (total column) measurements, will be compared to model predictions for various seasons and latitudes. SPICAM also measures, simultaneously with the ozone absorption near 250 nm, the integrated vertical quantity of H_2O at 1.38 μm . An anti-correlation between ozone and water vapour is expected since Mariner 9 observations. We will present an analysis of the observed correlation/anti-correlation of these two species, in order to test this paradigm and discuss its validity.