

Detection of martian dust clouds by SPICAM UV nadir measurements during of the October 2005 regional dust storm

N. Mateshvili (1), D. Fussen (1), **F. Vanhellemont** (1), C. Bingen (1), J. Dodion (1), S. Perrier(2), J.L. Bertaux(2), E. Dimarellis(2), A. Reberac(2)

(1)Belgian Institute for Space Aeronomy,Belgium (ninam@aeronomie.be), (2) Service d'Aéronomie du CNRS, France

SPICAM is a spectrometer onboard Mars Express with two spectral ranges in the UV and in the IR. The UV channel covers the domain of wavelengths 118-320 nm. The spectral range 118-200 nm contains a strong absorption band of CO₂, whereas the range 220-280 nm contains the ozone Hartley band. In nadir mode, besides of these two main absorbers, many surface features manifest themselves as variations of the UV albedo. Martian soil contains minerals with high content of iron oxides and therefore the surface has low UV albedo. Water ice clouds are bright in UV and are well contrasted on this dark background. The way how dust clouds should manifest themselves in UV strongly depends on magnitude and wavelength dependence of their optical parameters such as the single scattering albedo and the asymmetry factor. According to the ground-based telescopic observations of the British Astronomical Association, a regional dust storm started in October 2005 over Chryse Planitia and then extended southward. On October 24 SPICAM crossed the storm at the east of Argyre Planitia. A comparison with a prior orbit above almost the same path 6 days before has shown a significant difference in reflectance before and during the storm. The presence of dust caused a clear decrease of reflectance. The difference grows at shorter wavelengths and shows significant absorption in UV. In this presentation we will discuss UV values of the single scattering albedo and the asymmetry parameter of the dust cloud.