



New mineralogies of the Southern Martian Crust, as identified by the OMEGA/MEx investigation

B. Gondet, Y. Langevin, F. Poulet, and J.P. Bibring

CNRS / Universite Paris Sud, Institut d'Astrophysique spatiale (IAS), Orsay Campus, France (brigitte.gondet@ias.u-psud.fr)

Observations by OMEGA of regions at high southern latitudes revealed an increased hydration level as determined from the $3 \mu\text{m}$ absorption band [1], associated with polar layered deposits (Apl unit in [2]). The same regions are characterized by a weak, broad absorption feature which is shifted toward longer wavelengths when compared with the $1.9 \mu\text{m}$ feature of most hydrated minerals. A few H_2O -bearing sulfates (in particular romerite and amarantite) exhibit such a broad absorption band near $2.0 \mu\text{m}$ [3]. However, there is no strong evidence of other spectral signatures of such minerals in the OMEGA spectra, hence there is as yet no unambiguous identification of hydrated minerals in high latitude southern terrains. This issue will be reinvestigated taking advantage of new observations of these areas with an improved resolution as the pericenter of Mars Express is at high southern latitudes during southern spring and summer in 2009.

References : [1] F. Poulet et al. (2009) in press, Geophysical Research Letters; [2] Tanaka, K. L., and D. H. Scott (1987), U.S.G.S. Misc. Invest. Ser. Map, I-1802-C, U.S. Geological Survey, Reston, VA.

[3] Cloutis, E. A., et al. (2006), Icarus, 184, 121– 157