



## **Martian cloud distribution detected by SPICAM UV channel in nadir mode.**

**N. Mateshvili** (1), D. Fussen (1), F. Vanhellemont (1), C. Bingen (1), J. Dodion (1), F. Daerden (1), C. Verhoeven (1), C. Depiesse (1), C. Muller (1), F. Montmessin (2), S. Perrier (2), J.-L. Bertaux (2).

(1) Belgian Institute for Space Aeronomy, Brussels, Belgium, (2) Service d'Aeronomie du CNRS, France. (ninam@aeronomie.be / Fax: +32-2-374.84.23 / Phone: +32-2-373-0-432 /

Nadir UV (200-310 nm) measurements performed by SPICAM instrument onboard Mars Express allowed to build maps of both ice and dust cloud distributions for one Martian year. The aphelion cloud belt (ACB) and polar hoods development and decay were clearly observed. The ACB formation started in the solar longitude range  $L_s=20-60^\circ$ . After a gap in observations the ACB was already well-developed at  $L_s=93^\circ$  and quickly decayed after  $L_s=140^\circ$ . The characteristic values of the cloud optical thickness were 0.1-0.3 at the early stage the ACB development and varied between 0.3 and 0.8 while developed. The north polar hood started to develop at  $L_s=160^\circ$  and the south one at  $L_s=330^\circ$ , showing typical cloud optical thicknesses of about 0.35.

Dust clouds were rare during northern spring ( $L_s=0-90^\circ$ ), being mainly observed in Hellas and Argyre basins. They appeared well-mixed with ice clouds at high northern latitudes in the period  $L_s=90-150^\circ$ . In the same period a few storms in Valles Marineris were detected. Later ( $L_s=150-210^\circ$ ) dust clouds spread southward and occupied all northern lowlands. After the  $L_s=240^\circ$  the Martian atmosphere became very dusty showing intensive dust storms which accompanied the south polar cap retreat. The dusty atmosphere spread towards the equator. The beginning of southern summer was marked by a regional dust storm in October 2005. One of the episodes of this storm was observed by SPICAM at  $L_s=312^\circ$  above Noachis Terra. In this period dust clouds concentrated mainly around the South Pole and in northern lowlands where they were distributed at the edge of the north polar hood.