

## **COSMIC RAY AND SOLAR PARTICLE COMPOSITION MEASUREMENTS IN THE SOUTHERN SOLAR POLAR REGION**

M.Y. HOFER, R.G. MARSDEN, T.R. SANDERSON, C. TRANQUILLE, O. MOULLARD.

Solar System Division, Space Science Dept. of ESA, ESTEC, P.O. Box 299,  
2200 AG Noordwijk, The Netherlands.

This analysis was based on energetic particle measurements covering the energy range 4-20 MeV/n recorded by the COSPIN/LET instrument on the Ulysses spacecraft. Around the beginning of the year 2001 the Ulysses spacecraft was above the southern solar polar region at less than 2.5 AU radial distance from the Sun. Shocks related to stream interaction regions were seen, but these did not have recurrent character associated with corotating interaction regions. The elemental abundances of the selected events are consistent with particles having solar energetic particle (SEP) origin. We compare selected events at high southern latitudes with in-ecliptic values and with other previous findings. A preliminary analysis showed that the abundance ratios He/O and C/O are lower than during the in-ecliptic transfer around the last solar maximum and more than ten times higher than during the last southern solar passage.