



Space weather conditions at Mercury and possible related effects on the exospheric sodium distribution.

S. Massetti (1), V. Mangano (1), C. Barbieri (2), F. Leblanc (3), A. Milillo (1), A. Mura (1), S. Orsini (1), M. Storini (1)

(1) Interplanetary Space Physics Institute IFSI-INAF, Roma, Italy

(2) Department of Astronomy, University of Padova, Italy

(3) Service d'Aéronomie du CNRS, Verrières-Le-Buisson, France

stefano.massetti@ifsi-roma.inaf.it

We inspected the space weather conditions at Mercury during two time periods: 29 June-1 July 2005, and 16-19 June 2006, when data of the exospheric sodium distribution are available, thanks to ground-based observations from the Italian National Telescope Galileo (TNG, La Palma, Canary Islands, Spain). In particular, during the first time-period, we found that Mercury was likely reached by a high speed stream, associated with a low-latitude coronal hole (SoHO/EIT, and ACE data) and characterised by a positive IMF BX. Such configuration is expected to trigger magnetic merging and solar wind plasma entry on the southern hemisphere of Mercury. Moreover, the intense eastward edge of the 28 June 2005 halo CME, which probably originated from active region AR0871 at 16:30UT (SoHO/LASCO, and SoHO/EIT data), should have impacted the Mercury's magnetosphere about 24-36 hours later. We discuss potential signatures of these space weather events in the observed exospheric sodium distribution.