



## **MEX/ASPERA-3/NPI data statistical analysis**

**A. Milillo (1), A. Mura (1), S. Orsini (1), S. Massetti (1), D'Amicis (1), P.C:son Brandt (2), E.C Roelof (2), T. Sotirelis (2), S. Barabash (3)**

(1) INAF/IFSI, Rome, Italy (2) JHU/APL, USA (3) IRF, Kiruna, Sweden

The ASPERA-3 unit NPI on board Mars Express is devoted to ENA detection within the Martian environment. These ENA result from the interaction between the energetic ions flowing inside the Martian environment and the exospheric neutral gas, thus providing crucial information about the dynamics of this interaction. NPI records the instantaneous angular distribution of the energy-integrated ENA signal. In order to identify recurrent ENA signals in the Martian environment, we have performed a statistical analysis of the NPI data. We have averaged the count rates in different ways in order to be able to discriminate signals from the planet or from a selected direction or omni-directional signals. We have produced averaged data maps by considering the Mars centric coordinates. This study evidences that the statistical analysis of the NPI sensor has some intrinsic problems due to not effective UV suppression, to difficulties in sectors inter-calibrations and also to the variation of sector response in time. Possible recurrent ENA signals are from the terminator toward night side, from the limb when s/c is in equatorial midnight positions, from the anti Mars directions in 2005 when the s/c is at the dusk night side.