



Space weather at different planetary environments

Christina Plainaki (1), Anna Milillo (1), Maria Andriopoulou (2), Iannis Dandouras (3), Aikaterini Radioti (4), Jean Lilensten (5), Athena Coustenis (6), Tom Nordheim (7), Stefano Orsini (1), Alessandro Mura (1), and Valeria Mangano (1)

(1) INAF-IAPS, Rome, Italy (christina.plainaki@iaps.inaf.it), (2) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, (3) IRAP, University of Toulouse / CNRS, Toulouse, France, (4) LPAP, Institut d'Astrophysique et de Géophysique, Université de Liège, Belgium, (5) Laboratoire de Planétologie de Grenoble, France, (6) LESIA, Meudon, France, (7) Mullard Space Science Laboratory, University College London

Different aspects of the conditions in the Sun, solar wind and magnetospheric plasmas, at various planetary systems of our Solar System, can influence the performance and reliability of space-borne technological systems. The science study of the so-called Planetary Space Weather considers different cross-disciplinary issues, including:

- the interaction of solar wind/magnetospheric plasmas with planetary/satellite surfaces, ionospheres and thick (e.g. at Jupiter, Saturn, Uranus, Mars, Venus, Titan) or tenuous (e.g. Ganymede, Europa, Mercury, our Moon) atmospheres, including the generation of auroras
- the satellite interactions with their neutral environments and dust
- the variability of the magnetospheric regions under different solar wind conditions
- radiation belts, and their interactions with atmospheres/satellites/rings, in different planetary environments
- the inter-comparisons of space weather conditions in different planetary environments

In this paper, a brief review of theoretical and data analysis studies regarding planetary space weather in different bodies of our Solar System is presented. The importance of such studies for the in-situ data interpretations as well as for the preparation of future space missions is outlined.