

The ionospheric composition of Mars and its dependence on the magnetic configuration.

Lukas Maes (1), Markus Fraenz (1), Eduard Dubinin (1), and James McFadden (2)

(1) Max Planck Institute for Solar System Research, Göttingen, Germany (maes@mps.mpg.de), (2) University of California, Space Science Laboratory, Berkeley, CA, U.S.A.

The solar wind has a strong effect on the Martian ionosphere. Its pressure and magnetic field configuration control the magnetization and structuring of the ionosphere of Mars. Using data from the Suprathermal and Thermal Ion Composition (STATIC) onboard the MAVEN satellite, we will analyze the composition and layering of the ionosphere under different magnetic conditions, during specific passes through the ionosphere around Maven's pericenter. By combining data from the Magnetometer (MAG) and electron data from the Solar Wind Electron Analyzer (SWEA), we can analyze the magnetic structure with magnetic field, and its effect on the ionospheric composition. These results may help constraining ionospheric models of Mars and interpreting the ionospheric composition data from the ASPERA instrument on Mars Express.