

2018 - 2019 SPACE PHYSICS SEMINAR SERIES

Latest results from the MAVEN Radio Occultation Science Experiment (ROSE)

The Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft has started orbiting Mars on September 2014. One of the main goals of the mission is to understand the composition, structure, and variability of the martian upper atmosphere.

Planetary radio occultation is a remote measurement technique which relies on a particular configuration of the system, where the radio signal passes close to the solar system object of interest while travelling from the transmitter to the receiver; the application of this technique to planetary science has been described by several authors (e.g. Phinney and Anderson, 1968; Fjeldbo et al., 1971; Kliore et al., 2004; Withers, 2010).

At Mars, the MAVEN Radio Occultation Science Experiment (ROSE) - recent addition to MAVEN's scientific investigations - provide, via two-way radio occultations at X-band frequencies, vertical profiles of ionospheric electron density. Typically, two pairs of occultations are observed during each week in which occultations are geometrically possible. In nearly three years of operations, ROSE observations include local dust events and storms, such as the global storm occurred during summer 2018, allowing a deeper investigation of the upper atmosphere response to such events. In this talk I will describe our latest results.

**Thursday, April 4th**

4:00 - 5:00 p.m.

725 Commonwealth Avenue | Room 502

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