



## **Long Awaited Fundamental Measurement of the Martian Upper Atmosphere from the Langmuir Probe and Waves Instrument on the MAVEN Mission.**

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Electron temperature and density are critical quantities in understanding an upper atmosphere. Approximately 40 years ago, the Viking landers reached the Martian surface, measuring the first (and only) two temperature profiles during its descent. With the MAVEN mission arriving at Mars details of the Martian ionosphere can again be studied by a complete plasma package. This paper investigates the first few months of data from the MAVEN mission when the orbit is below 500 km and around the northern hemisphere's terminator. The focus of this presentation is on the different measurements that the Langmuir probe and Waves (LPW) instrument is making on the MAVEN mission. Some of the LPW highlights that will be presented: (a) the long awaited new the electron temperature profiles; (b) the structures observed on the nightside ionosphere; (c) wave-particle interactions observed below 500 km; and (d) the observed dusty environment at Mars. This presentation is supported by measurements from the other Particle and Fields (PF) measurements on MAVEN.