



P23D-05: Search for low-latitude atmospheric hydrocarbon variations on Jupiter from Juno-UVS measurements

Tuesday, 13 December 2016

14:55 - 15:10

📍 *Moscone West - 2009*

The Juno mission offers the opportunity to study Jupiter, from its inner structure, up to its magnetospheric environment. Juno was launched on August 2011 and its Jupiter orbit insertion (JOI) occurred on July 4th 2016. The nominal Juno mission involves 35 science polar-orbits of 14-days period, with perijove and apojoive distances located at 0.06 R_J and 45 R_J, respectively. Juno-UVS is a UV spectrograph with a bandpass of $70 < \lambda < 205 \text{ nm}$, designed to characterize Jupiter UV emissions. One of the main additions of UVS compared to its predecessors (New Horizons- and Rosetta- Alice, LRO-LAMP) is a 2.54 mm tantalum shielding, to protect it from the harsh radiation environment at Jupiter, and a scan mirror, to allow for targeting specific auroral and atmospheric features at +/- 30° perpendicular to the Juno spin plane. It will provide new constraints on Jupiter's auroral morphology, spectral features, and vertical structure, while providing remote-sensing constraints for the onboard waves and particle instruments. It will also be used to probe upper-atmospheric composition through absorption features found in the UV spectra using reflected solar UV radiation. For example, stratospheric hydrocarbons such as C₂H₂ and C₂H₆ are known to absorb significantly in the 150-180 nm regions, and these absorption features can be used to determine their abundances. We will present our search for the spectroscopic features seen in Jupiter's reflected sunlight during the first perijove.

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