



RSPP seminars

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“Energetic particle measurements at Jupiter by the Juno-JEDI instrument”

“As of March 2017, the Juno spacecraft has completed four 53.5 day Jovian polar orbits, with complete science coverage, with an apojoVe ~ 110 RJ and a perijove ~ 1.1 RJ. Thus far, the Jupiter Energetic particle Detector Instrument (JEDI) has been returning a rich and diverse data set that is already challenging our preconceived notions of Jupiter’s magnetosphere and ionosphere. In this talk we will give a brief overview on the recent discoveries made by the JEDI instrument and the unresolved questions that are starting to emerge from the analysis. Specifically, we will briefly discuss Jupiter’s radiation belts, distant plasma sheet observations and the coordinated observations between JEDI, Hisaki and HST. However, a significant portion of this presentation will be dedicated to energetic ion and electron observations over the polar auroral region. These energetic particle populations are observed to have peaked energy distributions consistent with the idea of local acceleration regions containing strong parallel electric fields. The particle phase space spectra suggest the potential drops vary between 100s of kV to ~ 1 MV. We explore the origin of these strong potential drops within the downward current region by investigating their current-voltage relationship and comparing them to the current theoretical framework on Jovian MI-coupling”.