



RSPP seminars



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“A New View of Jupiter’s Aurora: The Juno UVS Perspective”

The ultraviolet spectrograph on board the Juno spacecraft (Juno UVS) is afforded a unique view of Jupiter’s polar auroras never before seen. Looking down from above each pole from altitudes ranging from ~ 0.05 - $7 R_J$, UVS is able to see for the first time the behavior of the UV aurora at all local times. With 23 successful perijoves, or closest approaches, we have observed significant local time variability of all emissions from the main emission poleward. Additionally, we find the main emission in a variety of configurations from highly contracted intense emissions to expanded weak emissions. Surprising results include the apparent dependence of auroral polar emissions to magnetic local time on the night side as well as the high color ratio found in the previously defined swirl region, the inner portion of the northern auroral oval, compared to the low color ratio emissions found in the annulus between the main emission and the swirl region. In my talk I will describe the Juno UVS instrument, investigation, operational challenges and limitations, present highlights of data from the first 23 perijoves, and discuss the results thus far.

Monday, January 27th at 2 pm in Physics LTD

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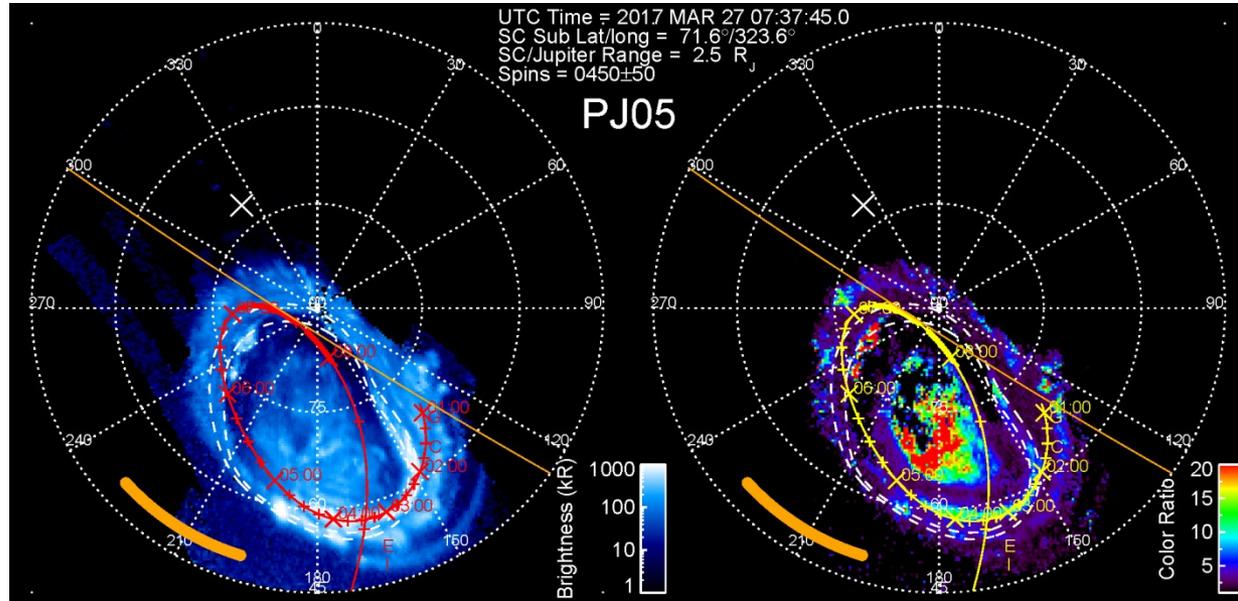


Figure 1) Jupiter's north pole aurora as seen from Juno UVS during the perijove 5 pass in March 2017. The brightness image on the left and color ratio image on the right are produced from 50 minutes of integrated scan data. The orange line coming close to the pole demarcates the terminator at the midpoint time of the observation (it is northern winter though Jupiter has only a 3 degree axial tilt). The red trace with times on the left plot (yellow on the right) shows the magnetic mapping of the Juno spacecraft position down to the surface of Jupiter. This view, similar to images from Hubble, shows the northern oval on the dayside. Attend the talk and see what the aurora looks like on the night side!

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