

Cassini VIMS observations of Saturn's infrared H₃⁺ aurora during the 2013 multi-instrument campaign

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Abstract

During the recent Saturn auroral observing campaign in April-May 2013 the Hubble Space Telescope (HST) and ground-based infrared telescopes observed Saturn's northern aurora while Cassini instruments observed either the northern or southern aurorae. This provided opportunity for unprecedented simultaneous observations of the auroral morphology and intensity in both hemispheres, as well as complementary sampling of the northern emissions at different spatial, spectral, and temporal scales.

Here we present first results from the Cassini Visual and Infrared Mapping Spectrometer (VIMS) observations of the infrared emissions from the H_3^+ ionized molecule. We discuss the presence of rotating and poleward-moving blobs, planetary period modulation of auroral intensity, correspondence with in situ detection of field-aligned currents in the magnetic field data, and interhemispheric conjugate and nonconjugate features.



Figure 1: False-colour image showing VIMS observations of Saturn's infrared aurora (green) in April 2013.