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## **Electron Phase Space Holes Observed on Jupiter's Auroral Field Lines**

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The Juno Waves instrument has observed electron phase space holes with a magnetic component propagating upward from the planet on field lines connecting to Jupiter's auroras. A survey of waveform burst data from Juno perijoves 4 through 10 found primarily monopolar spikes in both the electric and magnetic waveforms on field lines connected to Jupiter's aurora. Given limitations in the simple two-sensor Waves instrument on Juno, the field signatures are primarily observed at intermediate to large angles from the planetary field. While quasi-electrostatic in the rest frame of the phase space holes, the Lorentz transformation to the observer frame can account for the magnetic component. The phase between the mutually orthogonal electric and magnetic field measurements can be used to determine the direction of the Poynting flux, which is upward, away from the planet in virtually all cases examined. We conclude that these are similar to electron phase space holes observed in Earth's auroral regions.