



The Jovian UV aurorae as seen by Juno-UVS

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The Juno spacecraft was inserted in orbit around Jupiter on July 4th 2016. Its highly elongated polar orbit brings it <5000 km above the cloud tops every 53,5 days, allowing spectacular and unprecedented views of its polar aurorae. The Juno-UVS instrument is an imaging spectrograph observing perpendicularly to the Juno spin axis. It is equipped with a moving scan mirror at the entrance of the instrument that allows the field of view to be directed up to $\pm 30^\circ$ away from the spin plane. The 70-205 nm bandpass comprises key UV auroral emissions such as the H₂ bands and the H Lyman alpha line, as well as hydrocarbon absorption bands.

We present polar maps of the aurorae at Jupiter for the first three first few periapses. These maps offer the first high resolution observations of the night-side aurorae. We will discuss the observed auroral morphology, including the satellite footprints, the outer emissions, the main emission and the polar emissions. We will also show maps of the color ratio, comparing the relative intensity of wavelengths subject to different degrees of absorption by CH₄. Such measurements directly relate to the energy of the precipitating particles, since the more energetic the particles, the deeper they penetrate and the stronger the resulting methane absorption. For example, we will show evidence of longitudinal shifts between the brightness peaks and color ratio peaks in several auroral features. Such shifts may be interpreted as the result of the differential particle drift in plasma injection signatures.