



## U22A-01: Initial observations of Jupiter's aurora from Juno's Ultraviolet Spectrograph (Juno-UVS) (Invited)

**Tuesday, 13 December 2016**

**10:28 - 10:42**

📍 *Moscone West - 2020*

Juno-UVS is an imaging spectrograph with a bandpass of  $70 < \lambda < 205$  nm. This wavelength range includes important far-ultraviolet (FUV) emissions from the  $H_2$  bands and the H Lyman series which are produced in Jupiter's auroras, and also the absorption signatures of aurorally-produced hydrocarbons. The Juno-UVS instrument telescope has a  $4 \times 4$  cm<sup>2</sup> input aperture and uses an off-axis parabolic primary mirror. A flat scan mirror situated near the entrance of the telescope is used to observe at up to  $\pm 30^\circ$  perpendicular to the Juno spin plane. The light is focused onto the spectrograph entrance slit, which has a "dog-bone" shape, with three sections of  $2.55^\circ \times 0.2^\circ$ ,  $2.0^\circ \times 0.025^\circ$ , and  $2.55^\circ \times 0.2^\circ$  (as projected onto the sky). Light entering the slit is dispersed by a toroidal grating which focuses FUV light onto a curved microchannel plate (MCP) cross delay line (XDL) detector with a solar blind UV-sensitive CsI photocathode. The two mirrors and the grating are coated with  $MgF_2$  to improve FUV reflectivity. Tantalum surrounds the spectrograph assembly to shield the detector and its electronics from high-energy electrons. All other electronics are located in Juno's spacecraft vault, including redundant low-voltage and high-voltage power supplies, command and data handling electronics, heater/actuator electronics, scan mirror electronics, and event processing electronics. The purpose of Juno-UVS is to remotely sense Jupiter's auroral morphology and brightness to provide context for in situ measurements by Juno's particle instruments. Here we present the first near-Jupiter results from the UVS instrument following measurements made during PJ1, Juno's first perijove pass with its instruments powered on and taking data.

### Authors

**Randy Gladstone \***

*Southwest Research Institute*

*University of Texas at San Antonio*

**Maarten Versteeg**

*Southwest Research Institute*

**Thomas Greathouse**

*Southwest Research Institute*

**Vincent Hue**

*Southwest Research Institute*

**Michael Wayne Davis**

*Southwest Research Institute*

**Jean-Claude M C Gerard**

*Space sciences,  
Technologies & Astrophysics  
Research Institute*

**Denis C Grodent**

*Space sciences,  
Technologies & Astrophysics  
Research Institute*

**Bertrand Bonfond**

*Space sciences,  
Technologies & Astrophysics  
Research Institute*

**Scott J Bolton**

*Southwest Research Institute*

**John E P Connerney**

*NASA Goddard Space Flight  
Center*

**Steven Levin**

*Jet Propulsion Laboratory*

**Fran Bagenal**

*University of Colorado at  
Boulder*

Barry Mauk

*Johns Hopkins University  
Applied Physics Laboratory*

William S Kurth

*University of Iowa*

David J McComas

*Princeton University  
Southwest Research Institute*

Philip W Valek

*Southwest Research Institute  
University of Texas at San  
Antonio*

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