



The NUV transit of WASP-12b as observed using the Hubble Space Telescope: examining the star-planet interaction

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In this presentation we discuss recent Cycle 21 observations of the NUV transit of the extreme 'hot Jupiter' exoplanet WASP-12b using the Cosmic Origins Spectrograph (COS) onboard the Hubble Space Telescope. Four closely-spaced transits of the planet were observed in October/November 2013 over 20 orbits, which executed at interleaved phases to obtain a transit light-curve at relatively high phase resolution. Previous observations of the NUV transit of this planet have suggested the observed NUV flux is reduced ahead of optical ingress, indicating a region of more dense absorbing matter ahead of the planet in its orbit. Two proposed causes for this phenomenon are hydrodynamic outflow and the magnetosheath surround a magnetosphere. We discuss these new observations of the shape of the transit, focusing on the early phases before and during optical ingress, and consider the implications for the star-planet interaction and the magnetic field of the planet.