



**BOSTON
UNIVERSITY**

**Boston University College of Arts & Sciences
Center for Space Physics**

2018 - 2019 SPACE PHYSICS SEMINAR SERIES

Europa-UVS, JUICE-UVS, and Hubble Observations of Galilean Satellite Atmospheres

The Galilean satellites display a diverse range of activity and coupling of their tenuous (mostly exospheric) atmospheres to the plasma environment of Jupiter. UV remote sensing observations of these atmospheres inform our understanding of Io's volcanism and feeding of plasma into the Jupiter system, Europa's water vapor plumes and habitability, Ganymede's internal magnetic field and ocean, and Callisto's atmospheric composition and volatile transport. NASA's Europa Clipper mission plans for ~44 Europa flybys and focuses its science goals to investigate potential habitable regions within Europa's subsurface, answering questions such as could the source of water vapor plumes connect directly with the liquid ocean? The European Space Agency's Jupiter Icy Moons Explorer (JUICE) mission objectives include this same habitability goal for Europa, planning 2 Europa flybys. Moreover, JUICE investigates the entire Jupiter system and ultimately orbits Ganymede to investigate its subsurface ocean and habitability, among numerous other goals. I'll describe our group's Europa Ultraviolet Spectrograph (Europa-UVS) and JUICE-UVS instrument developments at SwRI and planned observations, which utilize far-UV emissions, reflectance, and transmission techniques to constrain the composition and structure of satellite atmospheres, surfaces, and plasma environments. Our long series of Hubble Space Telescope (HST) observations of the Galilean satellites inform these mission plans; I will summarize results from recent HST observations by several groups.



Thursday, September 20th

4:00 - 5:00 p.m.

725 Commonwealth Avenue | Room 502



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