

Oceanic Fingerprints and Radiation Processes on the Surface of Europa

Beneath its ice shell, Jupiter's moon Europa is understood to harbor a global, salty, liquid water ocean, making it a prime target for exploring habitability in the Solar System. Currently, the composition of Europa's geologically young, fractured surface provides our best window into its ocean chemistry. However, its surface is also continuously altered by Jovian magnetospheric particle bombardment, creating a natural laboratory for radiation processes involving water ice, salts, and sulfur from the volcanoes of nearby Io. Unraveling and exploring the resulting tapestry of endogenic and exogenic signatures thus both provides clues to Europa's internal geochemistry and keys to understanding radiolytic cycles common to icy bodies throughout the Solar System. I will discuss how recent Earth-based spectroscopic observations have been expanding our understanding of Europa's heterogeneous surface and revealing new mysteries ahead of NASA's upcoming *Europa Clipper* mission.



Thursday, April 20th

4:00-5:00 p.m.

725 Commonwealth Ave | Room 502

Samantha Trumbo

Cornell University