Keck INSTITUTE FOR SPACE STUDIES

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The Keck Institute for Space Studies presents the following webinar:

The Ultraviolet Spotlight on Exoplanets

Prof. Evgenya Shkolnik

Arizona State University

Monday
January 25, 2021
5:00 PM Lecture

There are about seventy-five billion terrestrial planets in our one Milky Way galaxy with temperatures capable of supporting surface life. They tend to orbit stars called K and M dwarfs, which lower in mass and temperature than our Sun. The stellar ultraviolet (UV) radiation from these stars is strong and highly variable, and their planets are exposed to "superflares" daily in their first ~300 Myr.

Knowing the UV environments of planets of all sizes is crucial to understand their atmospheric composition and evolution. For temperate terrestrial planets, characterization of the UV provides a key parameter in a planet's potential to be habitable and helps us to discriminate between biological and abiotic sources for observed biosignatures, gases we hope will be signs of life. Prof. Shkolnik will review efforts to study the UV exoplanet environments using existing space telescopes and describing new efforts to build dedicated UV space telescopes specifically designed to provide key information needed to answer these questions:

How do planet atmospheres form and evolve under various stellar conditions?
What are those planet atmospheres really made of and are they like those in our Solar System?
Can planets around active stars be habitable and can we accurately interpret their biosignatures?

Registration is required at kiss.caltech.edu