BOSTON UNIVERSITY

Boston University College of Arts & Sciences
Institute for Astrophysical Research

2018 - 2019 ASTROPHYSICS SEMINAR SERIES

Beyond Detection: Constraining Properties of Exoplanet Atmospheres

The bulk of exoplanet science to date has focused on planet detection with large-scale ground-based surveys and space-based facilities such as the Kepler Space Telescope. The past decade, however, has seen steady growth in observational and theoretical efforts aimed at understanding global chemical, radiative, and dynamical processes shaping exoplanet atmospheres. Here I will describe my recent efforts to provide robust constraints on exoplanet atmospheric properties through a mixture of observational, theoretical, and laboratory efforts that leverage my expertise as a planetary scientist and astronomer. Such constraints are critical for refining our theories of planetary atmosphere formation and evolution. I will highlight recent results from large-scale exoplanet studies with the Hubble (600+ orbits) and Spitzer (1000+ hours) Space Telescopes that are bringing distant worlds into focus. Additionally, I will highlight recent results from laboratory experiments that seek to explore the potential diversity in atmospheric chemistry and haze formation in super-Earth and mini-Neptune atmospheres. These studies are establishing a solid foundation on which to continue our pursuit of answering the questions “How did we get here?” and “Are we alone?”.

Monday, February 25th
3:30 - 4:30 p.m.
725 Commonwealth Avenue | Room 502

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