Astrophysics Seminar

Monday, February 5, 2018

Sarah Hörst

John Hopkins University

Planets in a Bottle: Exploring Planetary Atmospheres in a Lab

From exoplanets, with their surprising lack of spectral features, to Titan and its characteristic haze layer, numerous planetary atmospheres may possess photochemically produced particles of "haze". With few exceptions, we lack strong observational constraints (in situ or remote sensing) on the size, shape, density, and composition of these particles. Photochemical models, which can generally explain the observed abundances of smaller, gas phase molecules, are not well suited for investigations of much larger, solid phase particles. Laboratory investigations of haze formation in planetary atmospheres therefore play a key role in improving our understanding of the formation and composition of haze particles. I will discuss a series of experiments aimed at improving our understanding of the physical and chemical properties of planetary atmospheric hazes on Titan, Pluto, super-Earths, and mini-Neptunes.

3:30pm in CAS 502. *Refreshments to follow in CAS 500.*

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Next Week

Marcelle Soares-Santos

Brandeis University