

Clouds on Exoplanets: Astronomer annoyance or a view into the unknown?

From the shrouds of Venus and Titan to Jupiter's great red spot and the veil of Pluto, clouds and hazes are a ubiquitous feature of the planetary atmospheres in our solar system. As we extend our gaze beyond to learn about our nearest stellar neighbors we have discovered a breathtaking array of extrasolar planets (or exoplanets). Many of which do not have solar system analogs. Understanding the atmospheres and underlying surfaces of these planets is of tremendous interest, but the presence of clouds and hazes pose great challenges for characterization.

In the Cloud Lab we tackle this problem with a unique but Earth driven approach: leveraging lab-based terrestrial instrumentation and knowledge to study how exoplanet cloud analogs interact with stellar radiation across a wide range of simulated atmospheric conditions. In this talk I will discuss how the community detects exoplanets and what we know of their atmospheres, the single and bulk particle instrumentation we've developed for the study of exoplanet clouds, how our data can inform the atmospheric chemistry at work on these planets, and finally how we can use these tools to better understand Earth and our solar system neighbors.



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4:00-5:00 p.m.

See website for Zoom information

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