BOSTON UNIVERSITY

Boston University College of Arts & Sciences
Institute for Astrophysical Research

2018 - 2019 ASTROPHYSICS SEMINAR SERIES

Detection and Characterization of Forming Gas Giant Planets: Progress, Pitfalls, and Prospects

The detection and characterization of gas giant planets caught in the initial stages of formation is the holy grail of planet formation studies. The identification of forming planets will allow us to connect the initial conditions in disks to the kinds of planets that form and connect the initial architecture of planetary systems to the final distribution of planets observed around main sequence stars. Such observations will provide insight to the planet formation process itself by 1) identifying how material accretes from the circumstellar disk, through the circumplanetary disk, onto the planet itself and therefore revealing how the mass of gas giant planets is set, 2) determining how circumplanetary disks set the initial conditions for the in situ formation of satellites, e.g., the Galilean moons, and 3) validating indirect signposts of gas giant formation in the observed properties of disks. In this talk we will describe how high-resolution infrared spectroscopy and spectroastrometry have been used to search for signatures of ongoing planet formation, how these tools can provide insight into the planet forming envelopes in disks, and prospects for future studies with emerging advances in instrumentation.

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

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