Boston University College of Arts & Sciences Institute for Astrophysical Research

2023—2024 ASTROPHYSICS SEMINAR SERIES

Sublimating ices feeding forming planets

The chemical conditions in protoplanetary disks determine the composition of planets, moons and comets. In recent years, observations of disks with the Atacama Large Millimetre Array have allowed us to build up a picture of the chemical composition of disks in 10-100 au scales. The typical disk has an elevated C/O ratio and a lack of oxygen-bearing complex organic molecules, but there are a few interesting exceptions. Transition disks around young intermediate-mass stars uniquely show oxygen-rich chemistry due to the sublimation of water and

organic-rich ices. In this talk, I will share new molecular line observations of such systems and discuss how they give us a window into the typically unobservable planet formation reservoir and what we can learn about the planet formation process from the various observed molecular substructures.



Monday, February 5th

3:30 - 4:30 p.m. CAS 502 Alice Booth
Harvard University