

Astrophysics Cluster Guest Speaker Seminar Series

“Astrophysics & Radioastronomy at the CHIME Telescope”

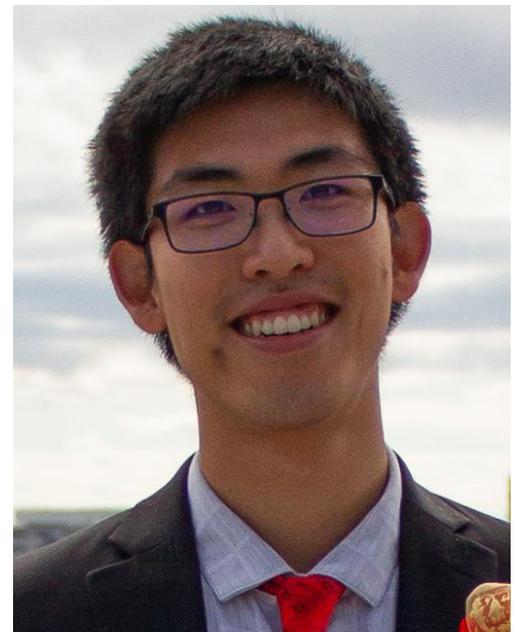
Tuesday, July 21

8:00 - 9:00 PM PST

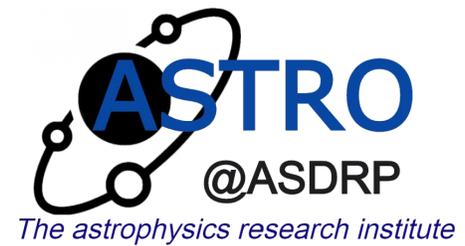


About the Speaker

Calvin Leung is one of our very own ASDRP research advisors! He completed his undergraduate degrees in physics and mathematics at Harvey Mudd College in Southern California, and has also previously worked as a vibration engineer aboard Falcon 9 at SpaceX. Today, Calvin is pursuing his PhD at the Massachusetts Institute of Technology (MIT) in physics, studying the phenomena of fast radio bursts: brief, intense flashes of radio-frequency light originating from outside the Milky Way. His past research interests have included quantum communication and searching for dark matter using atomic clocks.



Mr. Calvin Leung,
*PhD Candidate, Massachusetts
Institute of Technology*



Astrophysics Cluster Guest Speaker Seminar Series

“Transition disks as lenses on planet formation”

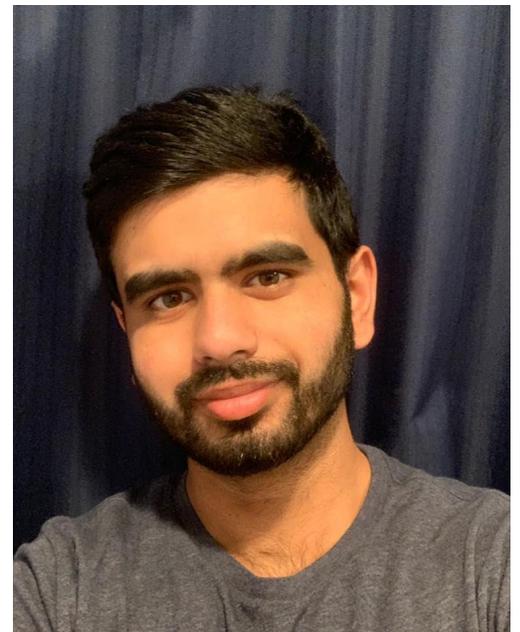
Thursday, August 6

5:00 – 6:00 PM PST

Circumstellar disks of gas and dust are an inevitable byproduct of the process of star formation. Over time, these evolve and eventually disperse by various mechanisms, giving way to the rich variety of planetary systems we observe today. In particular, so-called “transition disks”—an intermediate phase defined by large interior cavities—may be shaped by disk-planet interaction. We study this hypothesis with hydrodynamical simulations of the PDS 70 system and its recently-discovered multi-Jupiter-mass companion, PDS 70b. When the accreting planet reaches 2.5 Jupiter masses, it spontaneously starts to grow in eccentricity, allowing it to consume a wide swathe of the disk. Our results demonstrate that single, multi-Jupiter-mass planets are capable of creating transition disks, and that the large eccentricities measured for such giants may in part arise from disk-planet interaction. In the specific context of PDS 70, we discuss how the subsequent detection of a second possible companion impacts the picture we present.



Berkeley
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Mr. Dhruv Muley,
*University of California,
Berkeley*