



University
of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (In-Person)

Dr. Jeffrey Fung
Clemson University

“Dissecting the CI Tau System: Disk Eccentricity Excitation”

Abstract

“CI Tau is among the handful of exceptional systems where an exoplanet is detected within a protoplanetary disk. These systems are the key to calibrating theoretic predictions of planet-disk interaction. Using NASA IRTF, we took high resolution spectroscopic data of CI Tau’s 12CO and hydrogen Pf-beta line emission, and revealed the complex kinematic structures in the disk that are likely tied to planetary influence. Most notably, the disk is broken at about 0.14 au, where both the inner and outer disks are eccentric, but their arguments of periapsis are anti-aligned. This raised the question of whether anti-aligned, eccentric inner and outer disks are an expected product of planet-disk interaction, a feature that may be as common as planetary spirals and gaps. In this talk, I will describe our models of the CI Tau system, and present our theoretical explorations using hydrodynamical simulations.”

Wednesday, February 28th, 2024

3:30 p.m. PST

BWC A104

Zoom link available on Uvic Event Calendar