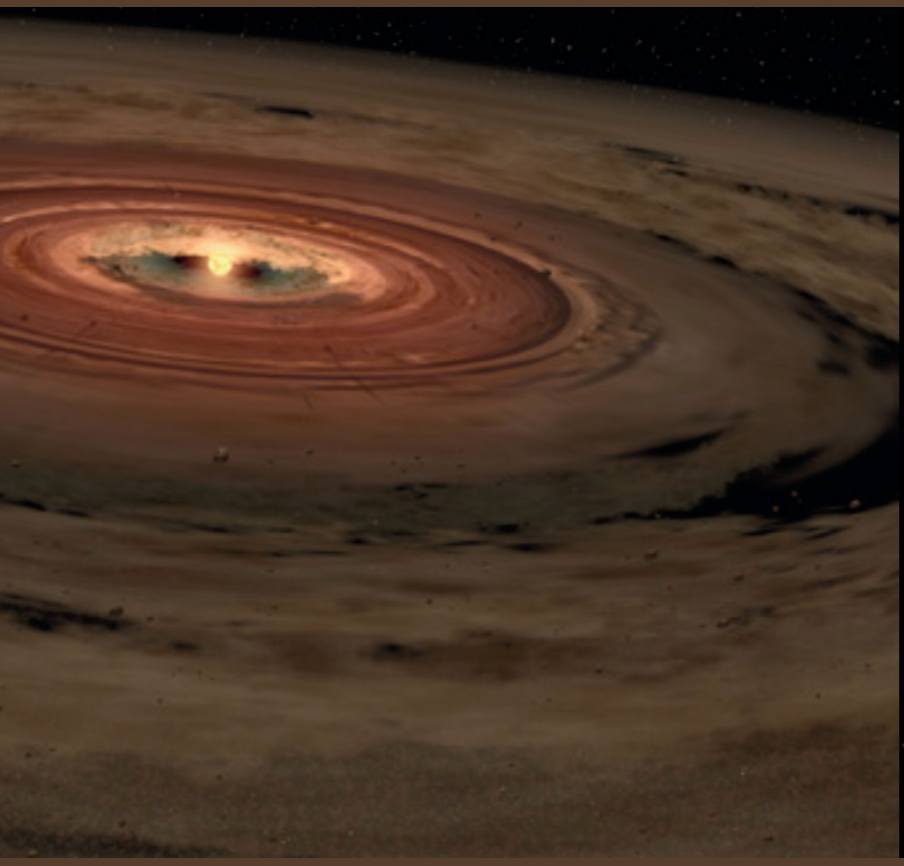
TSI Seminar Series

Trottier Space Institute at McGill

CRAQ Comprendre l'Univers Understanding the Universe



Super-Earth Formation: The View From Resonant Planets

Nick Choksi | UC Berkeley

Where there is one super-Earth, there is usually at least another. We show how pairs of resonant super-Earths shed light on how super-Earths formed in general: the distribution of orbital period ratios around resonances records the gas disk environments in which these planets completed their final mass doublings. Just as important as these period ratios are the strong transit timing variations (TTVs) observed near resonance. Besides an amplitude and a period, a sinusoidal TTV has a phase, often overlooked. We explain how TTV phases act like a kind of integration constant, encoding information about initial conditions or planetary environment, and use these phases to scope out distant planetary companions.

31-Oct-2023 **3:30 PM ET** **Bell Room**