PHYSICS AND ASTRONOMY

SEMINAR

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"Observational Planet Formation II: The Coming Era of New Facilities and Large Samples"

Abstract

I will discuss my research program at Victoria in the next five to ten years. To begin with I will introduce the basic dynamics and radiative transfer physics in protoplanetary disks, and the numerical techniques to simulate observational signatures of planet formation in disks. I will then lay out my plan, and put it into the context of existing and upcoming facilities in the next decade, including NASA's new flagship mission the James Webb Space Telescope and the planned Thirty-Meter-Telescope. I will discuss how we will address a number of more advanced questions in the field driven by these instruments and large samples of disk observations. For examples: What new parameter space will be unlocked by the upcoming new observations? Can we detect Neptune or even super-Earth forming in disks in the near future? What preparations on the theory/modeling side should we do to make the best out of JWST and TMT? How do we connect the statistics of planet formation to planets around mature stars to study the evolution of planetary systems? Several example student projects will also be introduced during my seminar.

Friday, February 3, 2017
3:00 p.m.
Engineering Computer Science
Room 108