



Western University
Department of Physics and Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Date: **Wednesday, 10th May 2017**
Time: **2:30 p.m.**
Location: **Physics & Astronomy Seminar Room 100**

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“Searching for Planets Around the Youngest Stars”

ABSTRACT

The past two decades have seen the discovery of over 5000 extra-solar planets and planet candidates. With these exciting discoveries has come new interests and developments in the theory of planet formation. Much of that interest has been focused on the timescale for planet formation and the role of planetary migration. Along with the discovery of many extra-solar planets, we have also mapped out the brown dwarf desert: a surprising lack of brown dwarf companions within a few AU of solar-like stars. It is not yet clear whether this desert is the result of an inability to form such companions in the first place, or whether the desert is the result of a process such as migration removing such companions once they form. To address these issues it is imperative to search for planets around very young stars, including those still surrounded by active accretion disks. Due to accretion and stellar activity, such systems are quite challenging for traditional planet search techniques; nevertheless, progress is being made. In this talk I will describe recent searches for brown dwarfs and giant planets around low mass pre-main sequence stars. I'll detail some of the pitfalls that have been encountered and present observations indicating the discovery of 2 Jupiter mass planets in short period orbits around ~2-3 Myr old T Tauri stars; one an accreting classical T Tauri star and the other a non-accreting weak-lined T Tauri star.