Department of Physics and Astronomy Colloquium Series

Tuesday, November 21st, 2023, 2:30pm in PSE 317

Speaker: Lisa Dang, Ph.D.

Institution: Université de Montréal

Title: Exploring the Diversity of Highly Irradiated Exoplanets by Revealing their Multidimensional Nature

Abstract:

Although we will never get the same level of details for exoplanets as we do for Solar System bodies, the large diversity of exoplanets revealed by exoplanet hunting missions, e.g. Kepler and TESS, provide thousands of study cases to refine formation and evolution pathways as well as theories of how their climate is shaped by their environment. Particularly amenable for atmospheric characterization, short-period exoplanets with dayside blasted with stellar radiation are some of the best-characterized exoplanets to this day. Due to their synchronous rotation, they exhibit large day-to-night differences and their observation can be difficult to interpret without a full understanding of their "3D-ness". Fortunately, phase-resolved observations can reveal the inhomogeneous nature of these exoplanets and provide a more comprehensive view into their atmosphere. In this talk, I will present what we have learned from Spitzer phase curve observations of a variety of close-in planets from large hot Jupiters to small lava planets. More excitingly, I will also discuss the continuation of Spitzer's legacy in the era of JWST and ground-based high-resolution spectroscopy.

Short Bio: Lisa Dang is currently a Banting Postdoctoral Fellow at the Institute for Research on Exoplanets at Université de Montréal. Formerly a TEPS PhD fellow, Lisa holds a physics PhD from McGill University, where she also completed her B.Sc. She studies the diversity of exoplanets and their climate with a variety of space-based and ground-based telescopes and has also worked on planetary microlensing during a visiting research position at Caltech/IPAC.