



# PHYSICS AND ASTRONOMY COLLOQUIUM

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**“Supernova Remnants and Neutron Stars:  
An Astrophysical Laboratory  
for Probing the Physics of the Extreme”**

Abstract

High-energy astrophysics is a relatively young, fast-growing, field that benefited greatly from particle physics and is now at the interface of multi-wavelength, multi-messenger astronomy. This field probes the physics of the extreme and exotic phenomena unattainable on Earth, including SuperNova Remnants (SNRs): the remains of super-energetic explosions of dying stars that can leave behind some of the most exotic and compact objects in the Universe (neutron stars). SNRs are excellent probes for nucleosynthesis studies and are regarded as the cosmic PeVatrons in our Galaxy. I will review these interesting aspects for SNR astrophysics research from an observational perspective, highlighting the surge of discoveries obtained with X-ray and gamma-ray observations that continue to stimulate theoretical efforts and numerical simulations, as well as drive missions across the electromagnetic spectrum. I will highlight new results from the most recently launched (but sadly lost) ASTRO-H/Hitomi X-ray satellite (with Canadian participation) and the current status of facilities driving SNR research into the future.

Wednesday, March 15, 2017

3:00 p.m.

Elliott Building

Room 167