



## ASTROPHYSICS SEMINAR SERIES

### **"The Galactic Plane Infrared Polarization Survey (GPIPS): Early Science"**

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**Monday, February 11, 2013**  
**Refreshments at 3:30pm in CAS 500**  
**Talk begins at 4:00pm in CAS 502**

**Abstract:**

Magnetic fields may, or may not, play important roles in how the diffuse interstellar medium collects into large clouds of gas and dust. Magnetic fields may also, or may not, play key roles in regulating how dense cores within those clouds are formed and how the cores might, or might not, go on to form new stars.

To try to bring clarity to this very murky state of affairs, teams at Boston University developed the Mimir near-infrared multi-function instrument to enable revealing magnetic fields in the Milky Way galaxy and in other nearby galaxies. We have used Mimir on the Perkins 1.8 meter telescope at Lowell Observatory in Flagstaff, AZ to survey 76 square degrees of the Milky Way's disk. This has revealed the magnetic field across this swath of the sky with unprecedented clarity and depth. This Galactic Plane Infrared Polarization Survey.

(GPIPS) will be complete this spring and will contain some 400,000 new polarization measurements, representing a roughly 100,000-fold advance. The GPIPS data are being released as they complete data processing steps and we expect all GPIPS data will be available to the community by late 2013. How can these data be used and what follow-up capabilities exist? Example studies that range from revealing the magnetic fields in external galaxies to testing whether star formation in dense cloud cores is mediated by embedded magnetic fields will be presented.