

# **COLLOQUIUM**

**Department of Physics, Temple University**

## **Searching for Earth-Like Planets Beyond the Solar System**

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### **Abstract**

Recent results from Kepler and ground-based exoplanet surveys suggest that low-mass stars are host to numerous small planets. Since low-mass stars are intrinsically faint at optical wavelengths, obtaining the Doppler precision necessary to detect these companions remains a challenge for existing instruments. I will describe MINERVA-Red, a project to use a dedicated, robotic, near-infrared optimized 0.7 meter telescope and a specialized Doppler spectrometer to carry out an intensive, multi-year campaign designed to reveal the planetary systems orbiting some of the closest stars to the Sun. The MINERVA-Red cross-dispersed echelle spectrograph is optimized for the “deep red”, between 800 nm and 900 nm, where the stars that will be targeted are relatively bright. The instrument is very compact and designed for the ultimate in Doppler precision – it uses a single-mode fiber input. I will describe the spectrometer and the status of the MINERVA-Red project, which is expected to begin routine operations at Whipple Observatory on Mt Hopkins, Arizona, in 2017.

**Monday, March 27, 2017, 3:00 pm**

**SERC, Room #116**

**Refreshments served at 2:45 pm**