

# Exoplanet Science Double Header!

## From the Kepler Telescope

*Presentation on Friday June 23, 2017, 7:30-9 p.m.*

Sponsored by the College of San Mateo and the  
San Mateo County Astronomical Society

held at the [College of San Mateo, Building 36 Planetarium](#)

Free and open to the public, free parking.

### **Sounding stars while hunting for planets**

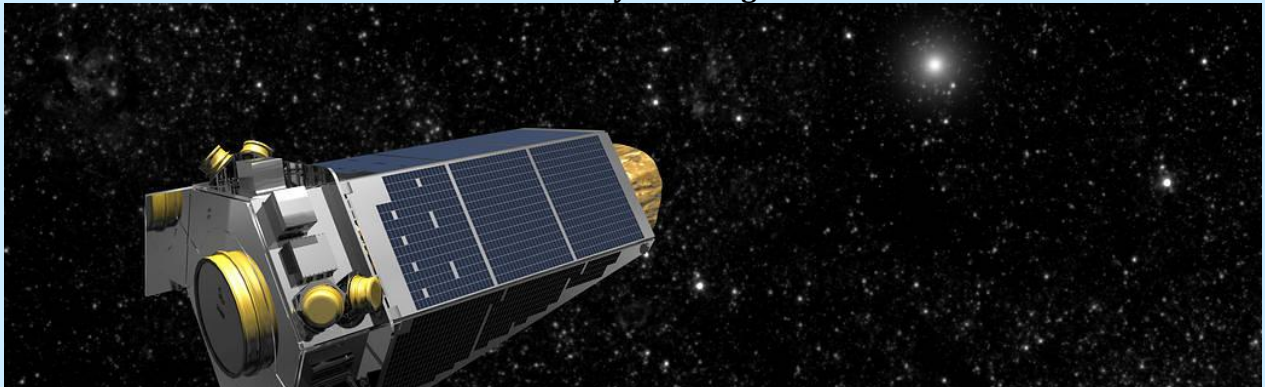
**Dr Steve Kawaler**

Professor of Astrophysics  
University of Iowa

### **Bumpy Rides in the Early Lives of Planetary Systems**

**Dr Dan Fabrycky**

Asst Professor of Astronomy  
University of Chicago



### **Sounding stars while hunting for planets**

Kepler/K2 data is used to detect and decode subtle vibrations of the stars, a field of science called asteroseismology, similar to how vibrations in the earth's crust can be used in the science of seismology to study the properties of the earth. The decoded vibrations are used to measure stellar properties with high precision (i.e. the mass, radius, and age). Many exoplanet host stars show these oscillations so we work hand-in-hand with Kepler telescope scientists to provide accurate stellar parameters that are needed to characterize the exoplanets. But beyond that, this technique is used to study a wide variety of stars from the inside-out.

### **Bumpy Rides in the Early Lives of Planetary Systems**

Multiple-planet systems detected by the Kepler telescope allow us to understand the similarities and surprising dissimilarities from how our Solar System, and how we think they form and evolve.



Dr. Steve Kawaler is a Professor of Astrophysics in the Astronomy Program at the Department of Physics and Astronomy at Iowa State University. His work primarily involves exploring the interior structure and evolution of stars. He uses various techniques, but really enjoys using the subtle variations in the brightness (and surface oscillations) of stars as probes of their interior structure (asteroseismology). He is a member of the Steering Committee for the Kepler Asteroseismology Research Consortium (KASC), and for the TESS Asteroseismology Research Consortium (TASC). They are

exploiting the asteroseismology that can be done on data that the Kepler, K2, and TESS missions have and will provide in the hunt for Earthlike planets around other stars.



Dr. Dan Fabrycky is an Assistant Professor in the Department of Astronomy and Astrophysics at the University of Chicago. He thrived on Science Olympiad at South Middle School and Prospect High School, which got him started in the sciences. While a physics major at Caltech, he did research in gravitational waves, neutrino oscillations, and synthetic aperture radar. He attended Astrophysics graduate school at Princeton University. He further developed his interest in exoplanets as a Michelson Fellow at Harvard and a Hubble Fellow at UC Santa Cruz.

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