

THURSDAY

MARCH 3

4:00 P.M.

RM 118 NSH

## Higher-Order Effects in Microlensing

Dr. Jennifer Yee

Harvard-Smithsonian Center for Astrophysics

When two stars at very different distances come into alignment, the gravitational pull of the foreground star bends the light from the background star, magnifying it and creating a microlensing event. The resulting lightcurve reflects the gravitational potential of the foreground star and can be used to detect companions to the star including planets. To first order, we assume that the motion is rectilinear, the components of the lens are fixed, and the event is observed from a single location. When these assumptions break down, we observe higher-order effects in the microlensing light curve, which provide more detail about the lens system. I will discuss the effects of parallax and lens orbital motion, what they tell us about the lenses, and my work to independently verify and test microlensing models with higher-order effects.