Location: Tucson, AZ Dates: 09/11/2012-09/21/2012

Title: Debris Disks as Tracers of Nearby Planetary Systems

Presenter: Karl Stapelfeldt, NASA GSFC

Abstract:

Many main-sequence stars possess tenuous circumstellar dust clouds believed to trace extrasolar analogs of the Sun's asteroid and Kuiper Belts. While most of these "debris disks" are known only from far-infrared photometry, dozens are now spatially resolved. In this talk, I'll review the observed structural properties of debris disks as revealed by imaging with the Hubble, Spitzer, and Herschel Space Telescopes. I will show how modeling of the far-infrared spectral energy distributions of resolved disks can be used to constrain their dust particle sizes and albedos. I will review cases of disks whose substructures suggest planetary perturbations, including a newly-discovered eccentric ring system. I'll conclude with thoughts on the potential of upcoming and proposed facilities to resolve similar structures around a greatly expanded sample of nearby debris systems.