
EAPS Planetary Lunch Colloquium Series (PICS)

Meredith MacGregor

PhD Candidate

Harvard University

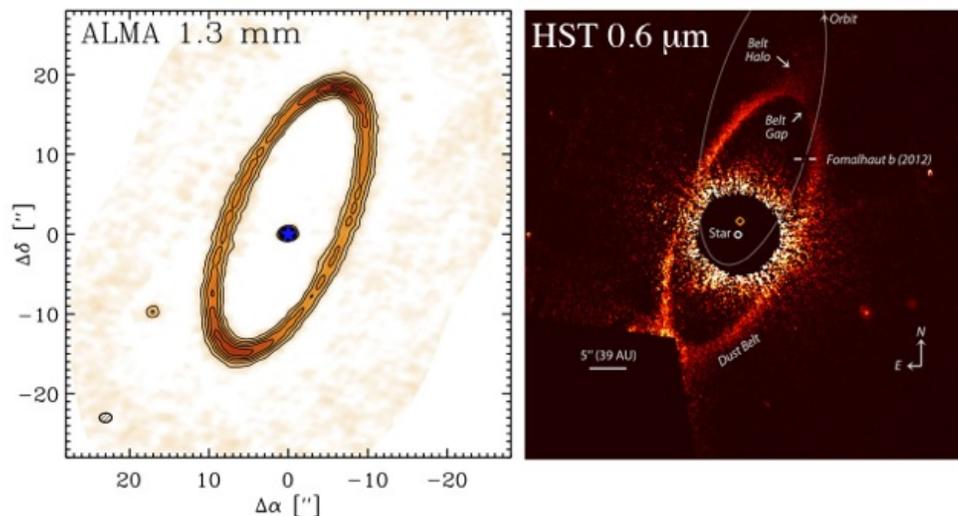
Tuesday, October 4th

12:30pm

54-517

Millimeter Studies of Nearby Debris Disks

At least 20% of nearby main sequence stars are known to be surrounded by disks of dusty material resulting from the collisional erosion of planetesimals, larger bodies similar to asteroids and comets in our own Solar System. Since the dust-producing planetesimals are expected to persist in stable regions like belts and resonances, the locations, morphologies, and physical properties of dust in these debris disks provide probes of planet formation and subsequent dynamical evolution. Observations at millimeter wavelengths are especially critical to our understanding of these systems, since the large grains that dominate emission at these long wavelengths do not travel far from their origin and therefore reliably trace the underlying planetesimal distribution. The newly upgraded capabilities of millimeter interferometers like ALMA are providing us with the opportunity to image these disks with unprecedented sensitivity and resolution. I will present some of my ongoing thesis work, which uses observations of the angularly resolved brightness distribution and the spectral dependence of the flux density to constrain both the structure and grain size distribution of a sample of nearby debris disks.



For more information, contact John Biersteker (jo22395@mit.edu)