

Colloquium: University of New Mexico
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Title: Probing Nearby Planetary Systems by Debris Disk Imaging

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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, a growing number of them are now spatially resolved. In this talk, I'll review what is currently known about the structure of debris disks. Using images from the Hubble, Spitzer, and Herschel Space Telescopes, I will show how modeling of these resolved systems can place strong constraints on dust particle properties in the disks. Some of the disks show disturbed structures suggestive of planetary perturbations: specific cases will be discussed where directly-imaged exoplanets are clearly affecting debris disk structure. I'll conclude with thoughts on the future of high contrast exoplanet imaging.