

DEBRIS DISK IMAGING WITH  
NASA'S SIRTf OBSERVATORY

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NASA's Space Infrared Telescope Facility (SIRTf), now scheduled for an August 2003 launch, will open a new window into the structure and evolution of debris disks. We present an overview of disk imaging science to be conducted by the SIRTf GTO teams.

Foremost is a major study of the disks of beta Pictoris, epsilon Eridani, Fomalhaut, and Vega, which will be mapped in all imaging and several spectroscopic modes. This program has three major science objectives:

- (1) Study of the disk spatial structure from MIPS and IRAC imaging;
- (2) Study of the dust grain composition using the IRS and MIPS SED mode; and
- (3) companion searches using IRAC.

The images and spectra will be compared with models for disk structure and dust properties. Dynamical features indicative of substellar companions' effects on the disks will be searched for. A "Dirty Dozen" additional but generally more distant IRAS debris disks have a strong potential to be resolved at 70 microns, and will be observed with MIPS and IRS. Results from these studies of resolved disks will lay the foundation for understanding the thousands of additional debris disks that SIRTf will detect photometrically.