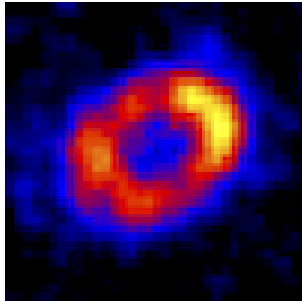


# Debris Disk



Mark Wyatt's group at the IoA carries out a range of observational and theoretical debris disk related research. Debris disks are the disks of planetesimals and dust found around many nearby main sequence stars. The Solar System has its own debris disk: the asteroid and Kuiper belts, as well as the dust produced in collisions and sublimation of these objects. This dust is visible with the naked eye from the Earth as the zodiacal light; debris also collides with the Earth creating meteor showers, extinctions, and may have delivered much of our water. As well as the analogous implications for the habitability of extrasolar planetary systems, studying the debris disks of nearby stars provides vital clues to the outcome of planet formation processes. Many nearby disks can be imaged, and by studying such images it is possible to pinpoint the presence of unseen planets, and to ascertain their evolutionary history, from the effect of the planets' gravity on the disks. Accurate characterisation of the level of dust present around nearby stars is also an essential step on the quest to find Earth-like planets, for which such dust can be both a hindrance and a help.

## Debris Disk Observations

Our observational work currently focuses on an unbiased survey of a sample that covers the nearest  $\sim 500$  stars (or rather the nearest  $\sim 100$  of each spectral type A,F,G,K,M). [Read more.](#)

## Debris Disk Theory

Comparison with observations of the structure of debris disks, and of how the level of dust emission varies with age, as well as other stellar parameters, provide vital tests of the models. [Read more.](#)

## Post-Main Sequence Debris Disks

Although debris discs around main sequence stars are relatively well understood, very little is known about what happens to these systems as the star evolves. [Read more.](#)

## Solar System

The Solar System hosts a debris disk, comprising primarily the Asteroid and Edgeworth-Kuiper belts, but with other important components such as the Zodiacal cloud, irregular satellites, and trojans. [Read more.](#)

## Planetary System Dynamics

Nearly all work on planetary systems requires an understanding of how planets and smaller bodies move under the gravitational influence of the host star(s) and each other.