Contributed Talk

Splinter Exoplanets

ALMA Observations of Planetary Systems

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Debris discs were first detected 3 decades ago when it was noticed that IRAS observations of a number of stars showed an infra-red excess above the stellar photosphere. These observations were quickly followed-up by a resolved image of the dust around beta Pictoris, clearly demonstrating it to be an edge on disc. But few other discs were resolved until much more recently. By looking for signatures in these resolved images they can tell us about the dynamical history of the planetary system and where planets might orbit today. ALMA has revolutionised such observations by giving us both high resolution and high sensitivity at long wavelengths. I will demonstrate its benefits by focusing on observations of three systems, all of which are also known to host planets: HR 8799, HD 95086 and epsilon Eridani. The ALMA images of all of these discs clearly resolve the inner edges and, in some cases, show other interesting features in the disc, allowing us to determine whether the known planets are responsible for the shape of the disc or whether other planets may be hiding in the system.