

D2D – disks to debris: the fate of gas in planetary systems

W.Dent, W-F.Thi, S.Ramsay, J.Greaves, D.Ardilla, H.Fraser, ...

- A legacy project to study the gas in disks at the last stages of their evolution.
- Conduct a systematic survey of 1-30Myr transition through to debris disks.
- Use a well-defined set of key gas tracers, with models.
- Comparable to the Spitzer C2D and FEPS key projects (which mainly looked at the *dust* content).

Science questions:

1. How are the gas and dust structures of the disks related?
2. What is the gas structure of the disk surface?
3. What is the chemical and ionisation structure of the disk atmosphere?
4. How is this gas affected by parameters such as stellar luminosity, disk flaring, disk mass, fractional excess, stellar age, and dust composition?

Issues:

1. How to interpret emission? Models
2. Lines mostly from disk surface. Models
3. How to extract disk emission from ambient cirrus? Imaging, small beam
4. Target selection: only disks with low F (<0.1)