

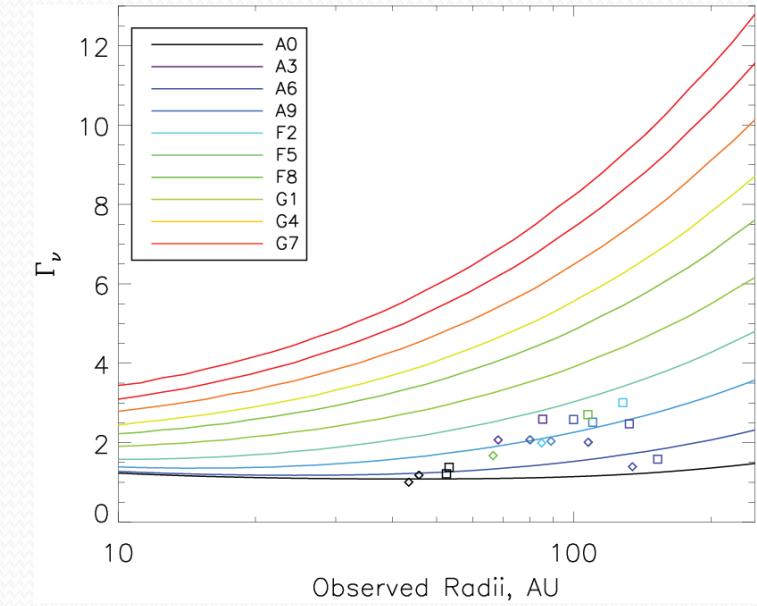
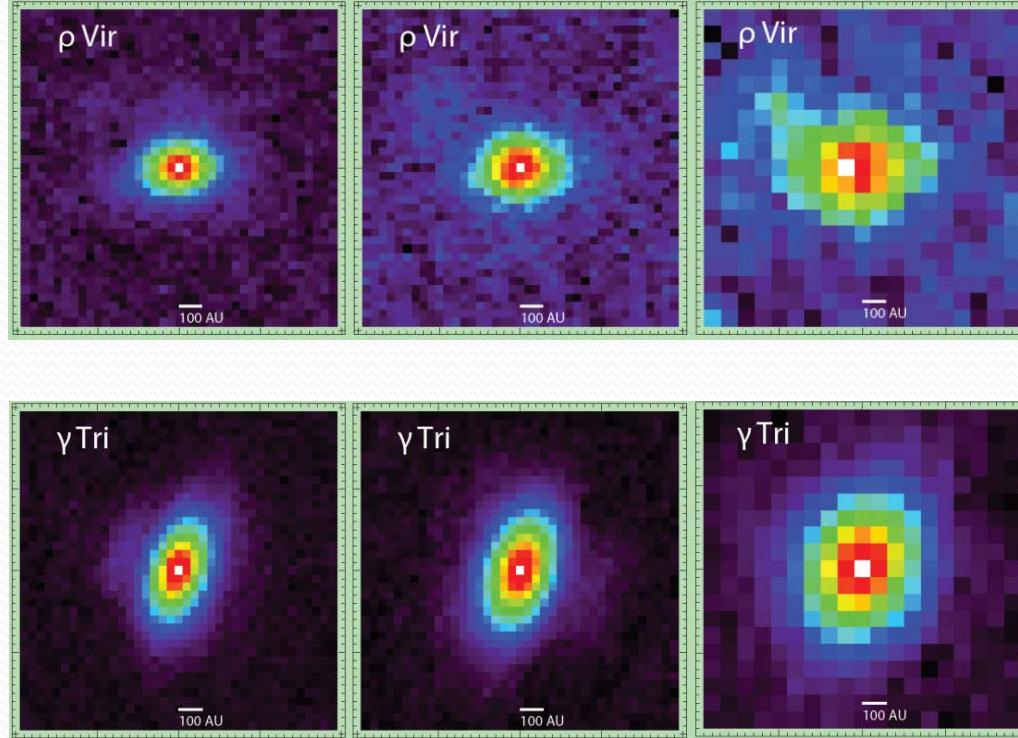
Poster Blitz #6

- 1. Booth, M.
- 2. Broekhoven-Fiene, H.
- 3. Duchêne, G.
- 4. Kennedy, G.
- 5. Lebreton, J.
- 6. Maddison, S.
- 7. Ubach, C.
- 8. Maldonado, J.
- 9. Olofsson, J.
- 10. Roberge, A.
- 11. Stapelfeldt, K.

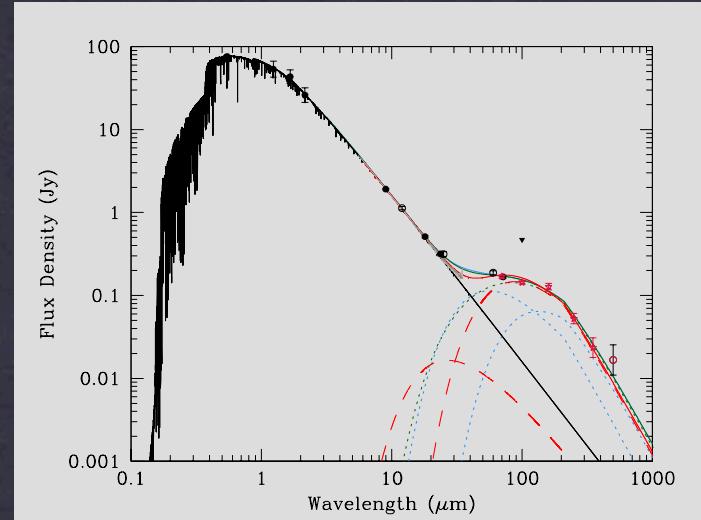
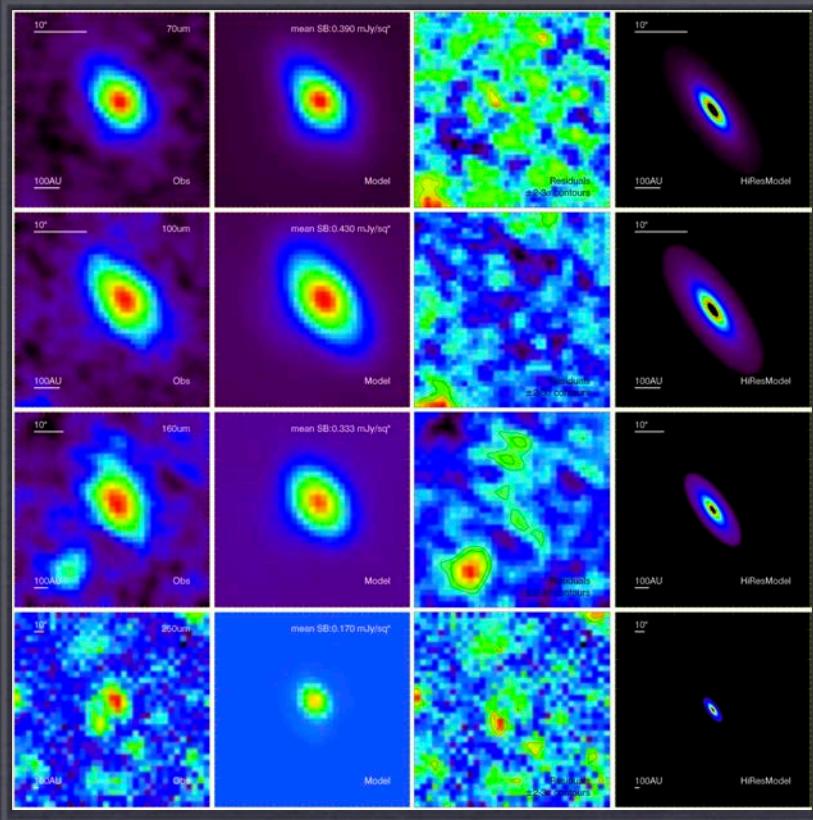


Constraining Debris Disc Radii with Resolved Images from the DEBRIS Survey

Mark Booth (University of Victoria/HIA) and the DEBRIS Team



Resolving the multi-component debris disk around γ Doradus with *Herschel*



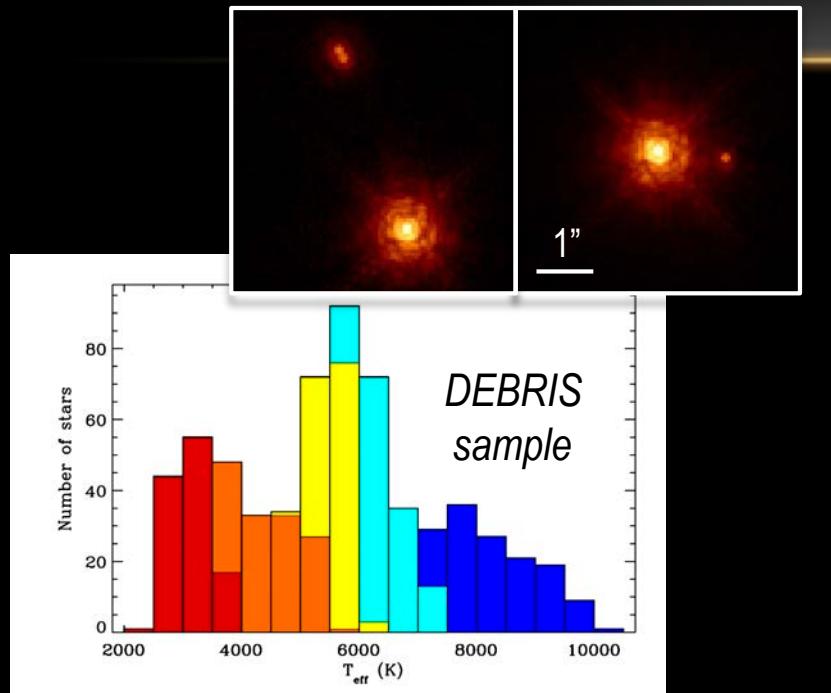
H. Broekhoven-Fiene, B. Matthews, G. Kennedy, M. Booth et al.



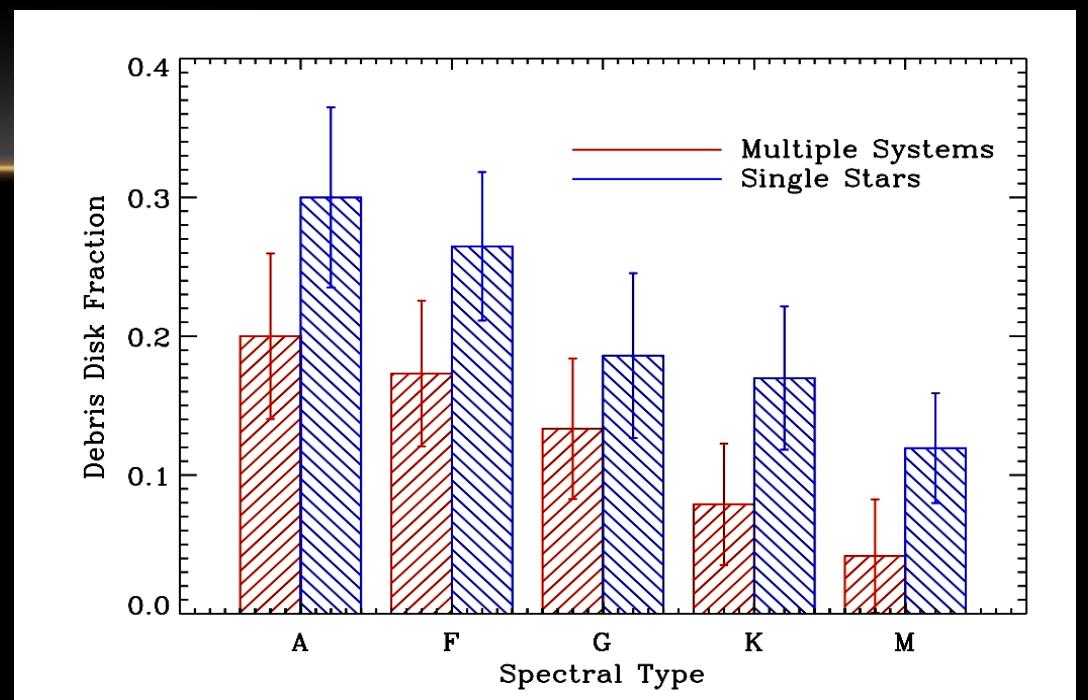
STELLAR MULTIPLICITY AND DEBRIS DISKS: THE UNBIASED DEBRIS SAMPLE

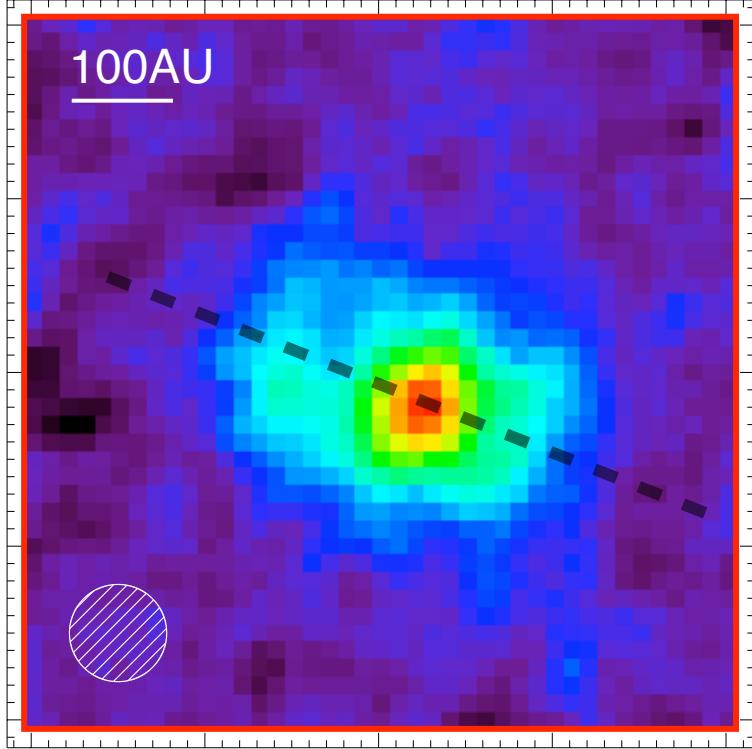
G. Duchêne, D. Rodriguez, H. Butner, for the DEBRIS team

- + Unbiased DEBRIS OTKP survey
- + Literature/catalogue search
- + Lick Adaptive Optics survey



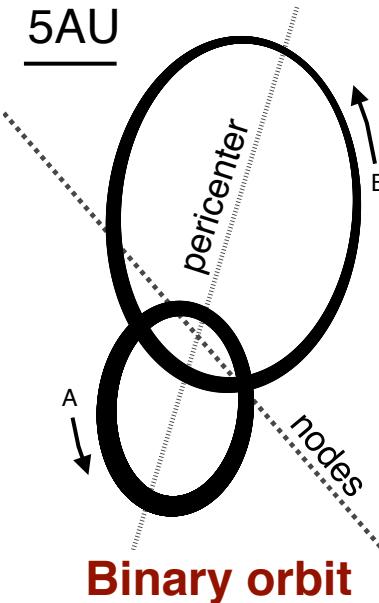
***Debris disks are less frequent in multiple systems
with separation larger than a few AU***



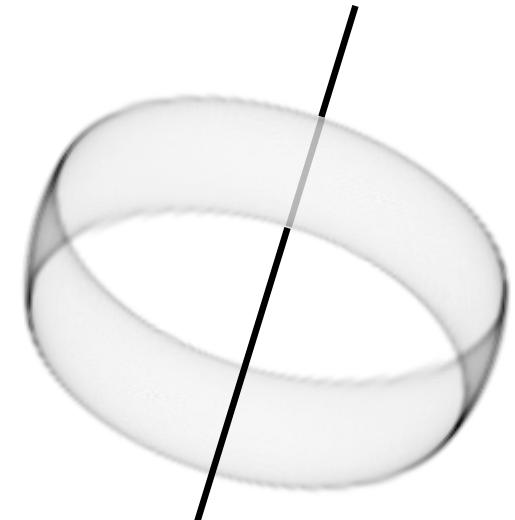


70 μ m PACS image

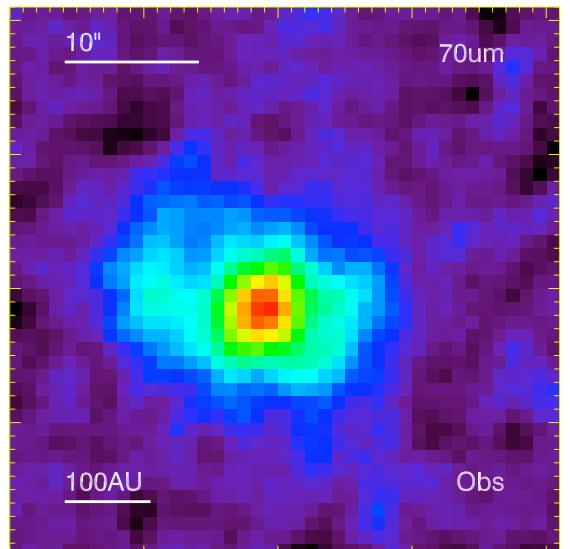
99 Herculis: Circumbinary Polar-ring Debris Disk (Kennedy et al 2012)



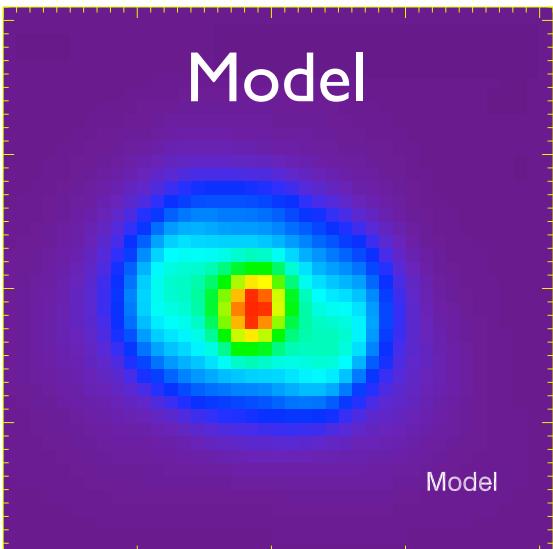
Binary orbit



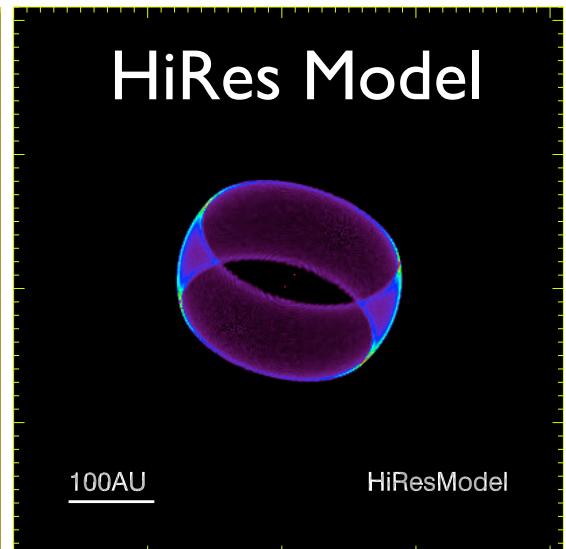
Polar ring



Model



HiRes Model

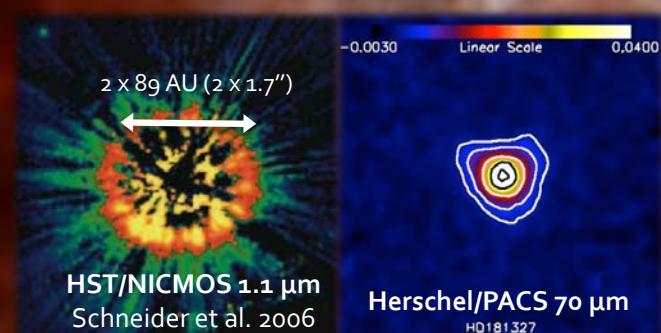


HiResModel

An icy Kuiper-Belt around the young solar-type star HD 181327

J. Lebreton, Institut de Planétologie et d'Astrophysique de Grenoble

J.-C. Augereau, W.-F. Thi, A. Roberge, J. Donaldson, G. Schneider, S. T. Maddison, F. Ménard, P. Riviere-Marichalar, G.S. Mathews, I. Kamp, C. Pinte, W.R.F. Dent, D. Barrado, G. Duchêne, J.-F. Gonzalez, C. A. Grady, G. Meeus, E. Pantin, J. P. Williams, P. Woitke



- HD 181327: a **young** F5/F6V star member of the **Beta Pictoris Moving Group (12^{+8}_{-4} Myr)**
- Scattered and thermal light images reveal **an optically thin ring of dust orbiting at 89 AU** from the star. Far-IR excess: $L_{\text{IR}}/L_* \sim 0.2\%$

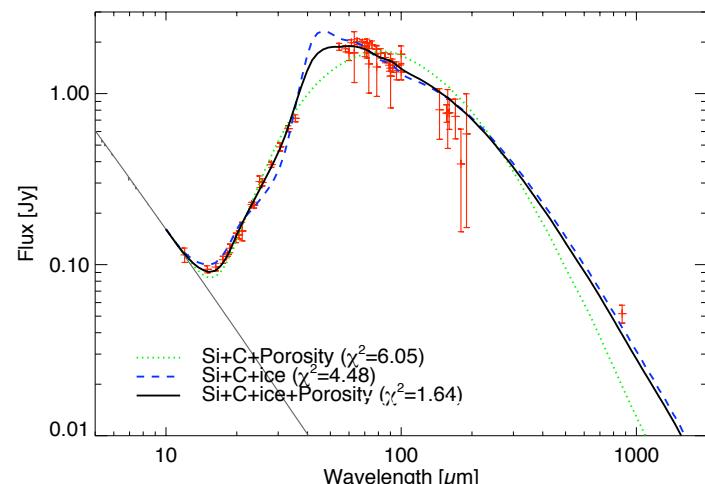
■ We present **Herschel/PACS** spectroscopy and photometry, complemented by new 3.2 mm **ATCA** observations.

■ We perform **detailed radiative transfer modelling** of the SED using HST/NICMOS constraints on the debris disk geometry to properly analyse the grains properties.

■ The dust disk is replenished by a population of colliding **icy bodies**, similar to the early Kuiper Belt.

■ A source for the future delivery of water and volatiles onto forming terrestrial planets.

Spectral Energy Distribution: multi-wavelengths data and best fit models from the GRaTer code

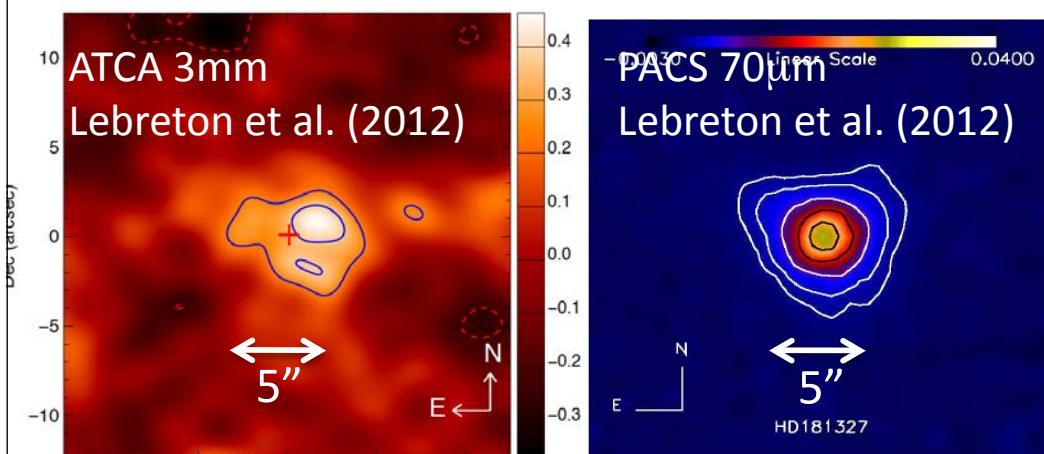


Millimetre imaging of debris disks

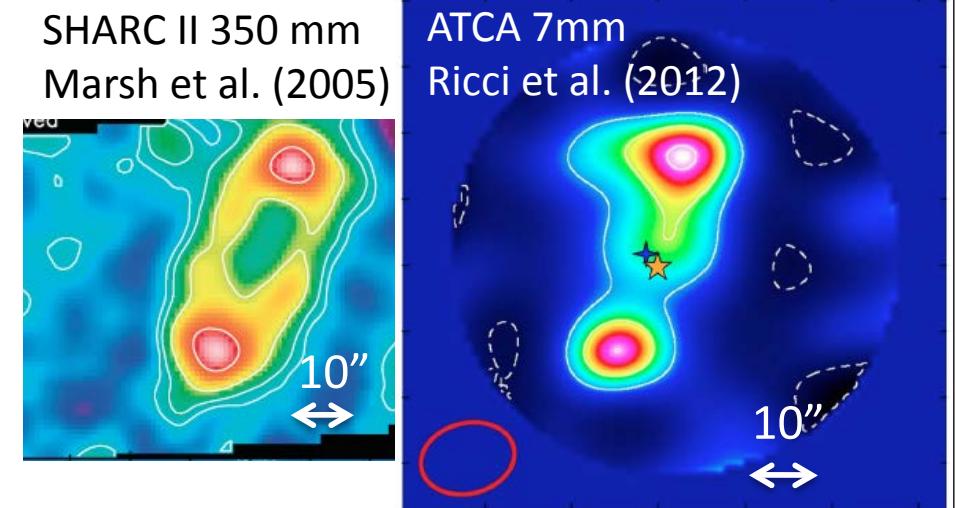
S. T. Maddison¹, C. M. Wright², L. Ricci³, J. Lebreton⁴, E. Pantin⁵, J.-F. Gonzalez⁶,
F. Ménard⁴, J.-C. Augereau⁴, D. Wilner⁷

¹Swinburne University, Australia; ²UNSW@ADFA, Australia; ³Caltech, USA; ⁴LAOG, France;
⁵CAE, France; ⁶CRAL, France; ⁷CfA, USA

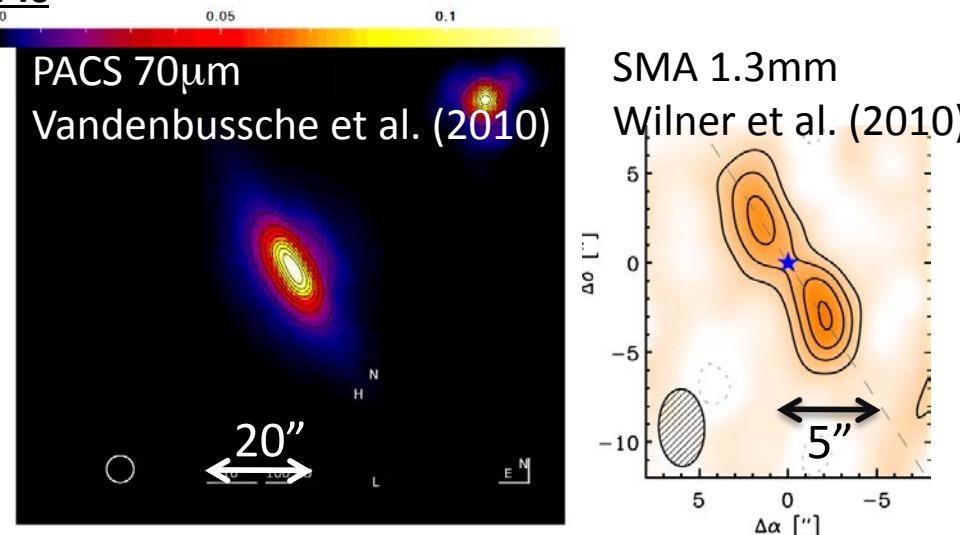
HD181327



Fomalhaut



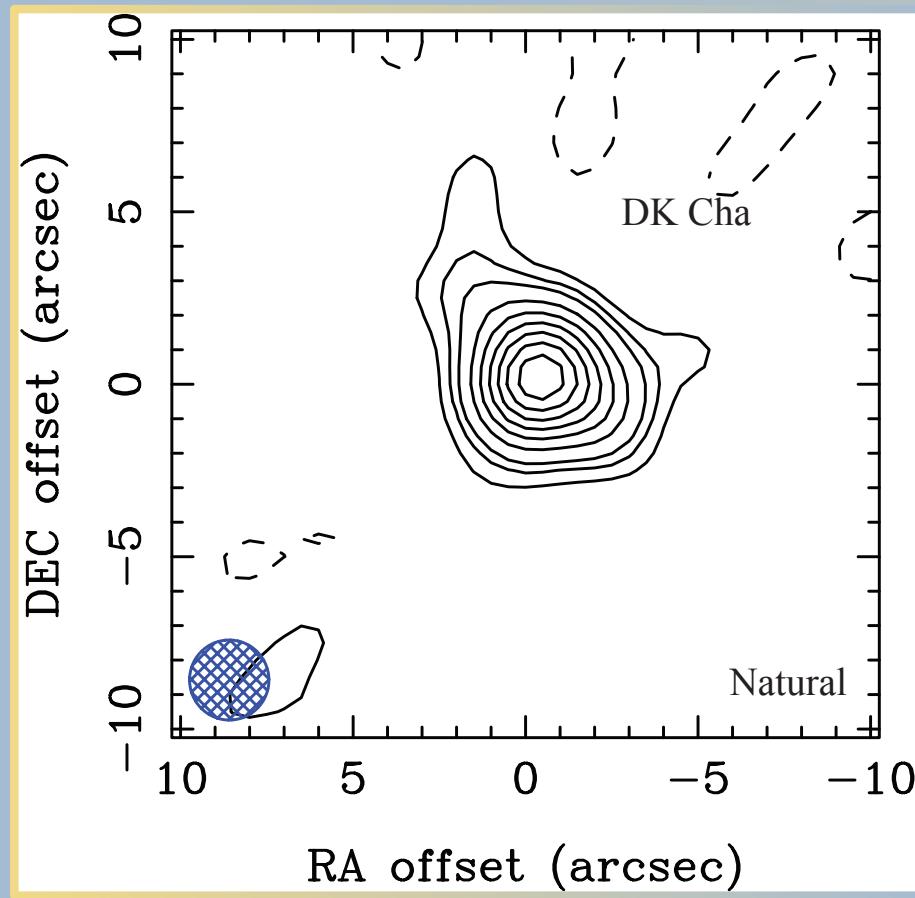
β Pic



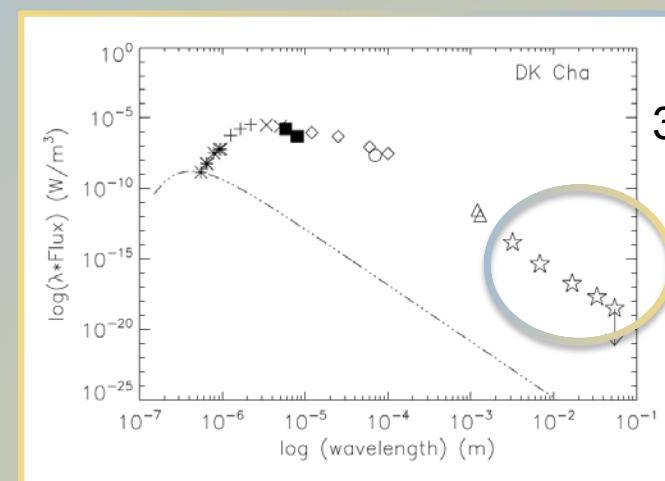
Characteristics of the DK Cha protoplanetary disc

Authors: Catarina Ubach^{1,3}, Sarah Maddison¹, Francois Ménard²

Affiliations: ¹Swinburne University, ²Laboratoire d'Astrophysique de Grenoble, ³CSIRO Astronomy & Space Science



3 mm imaging with ATCA



ATCA
 3, 7 and 15 mm
 &
 3 and 6 cm

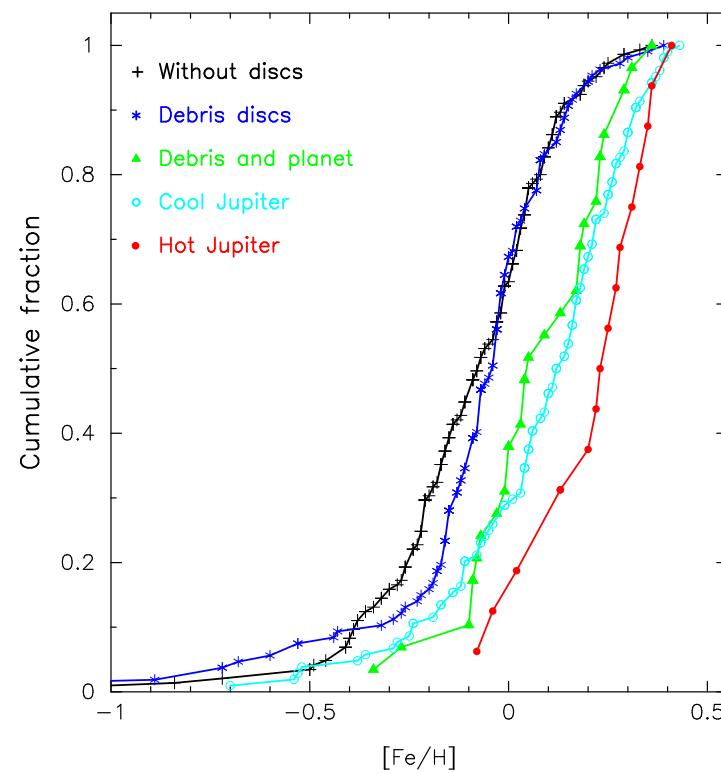
How does radio compliment
 Herschel?
 Come and see our poster for the answer...



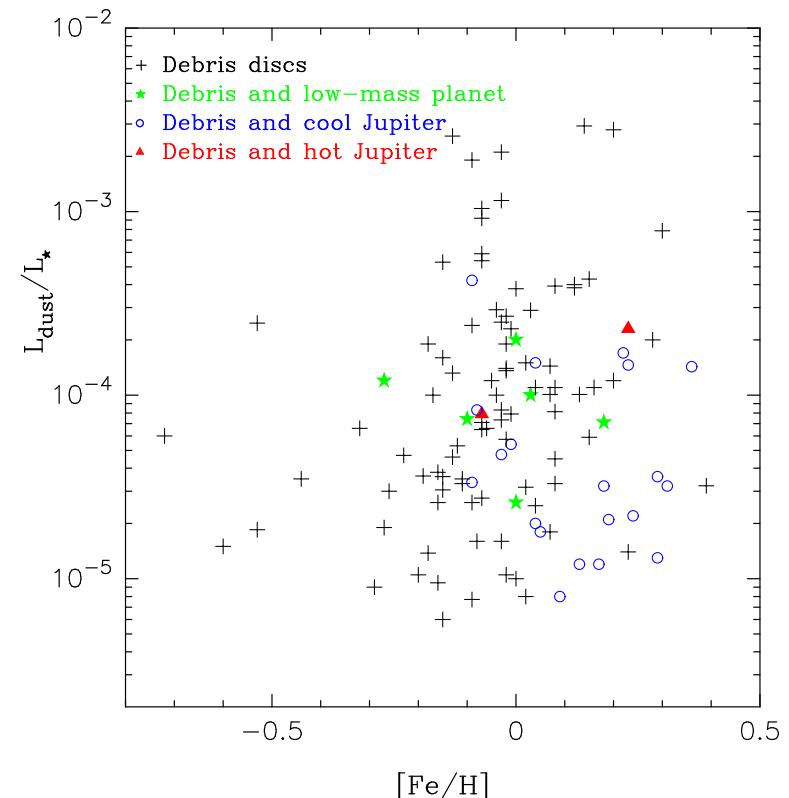
[Fe/H] of stars with/without discs and/or planets

~ 50% more SWDPs w.r.t. previous works

[Fe/H] distributions



Trends with L_{dust}/L_\star

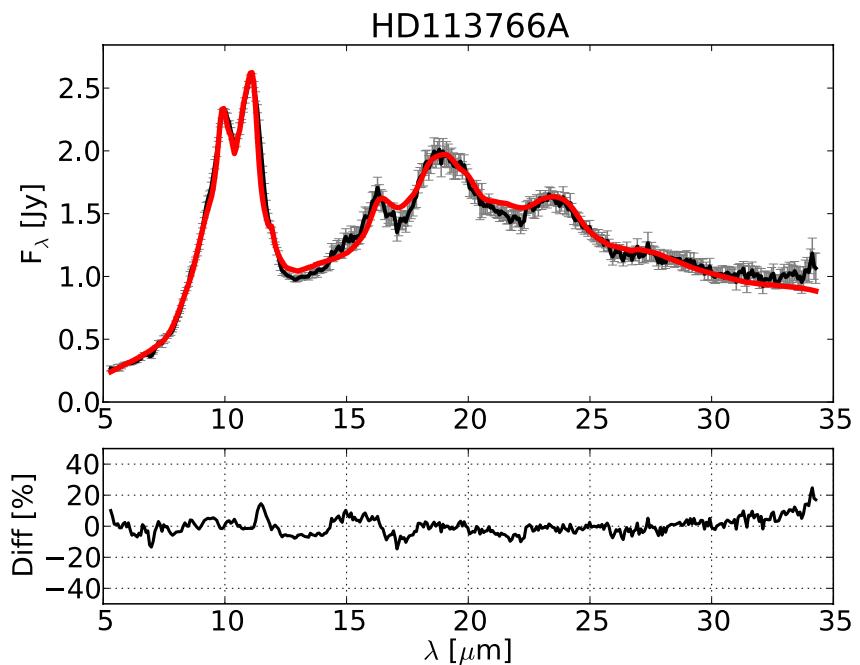
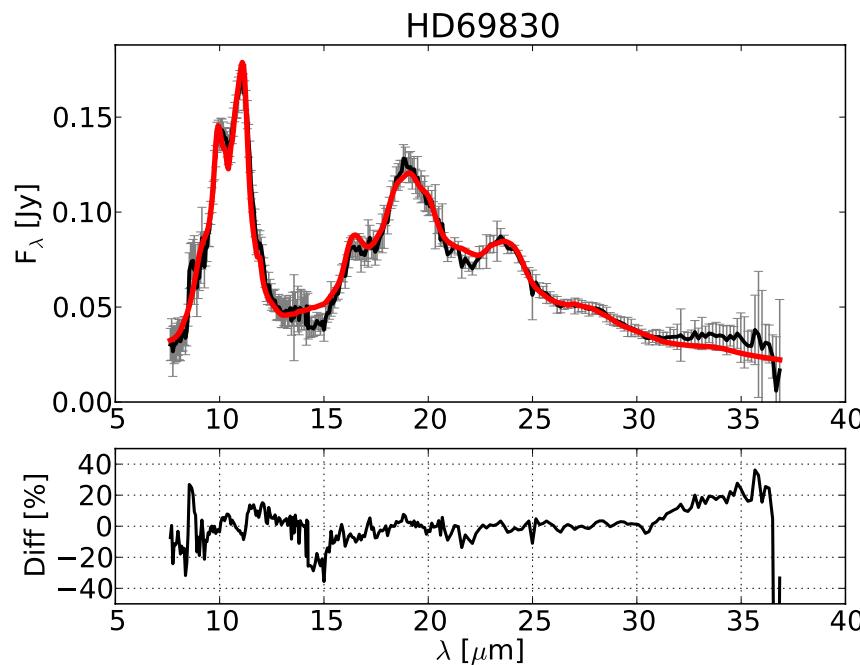




Transient dust in warm debris disks

Detection of Fe-rich olivine grains

J. OLOFSSON et al.

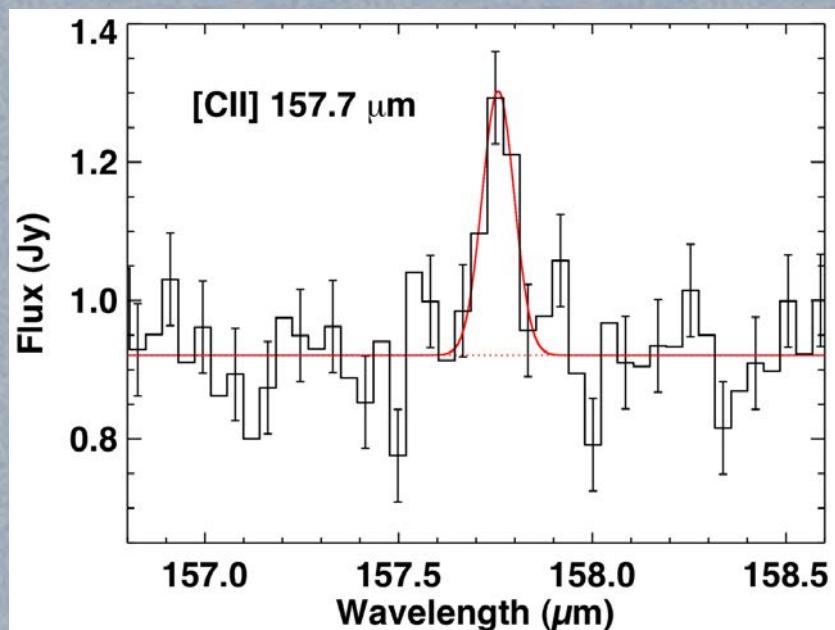
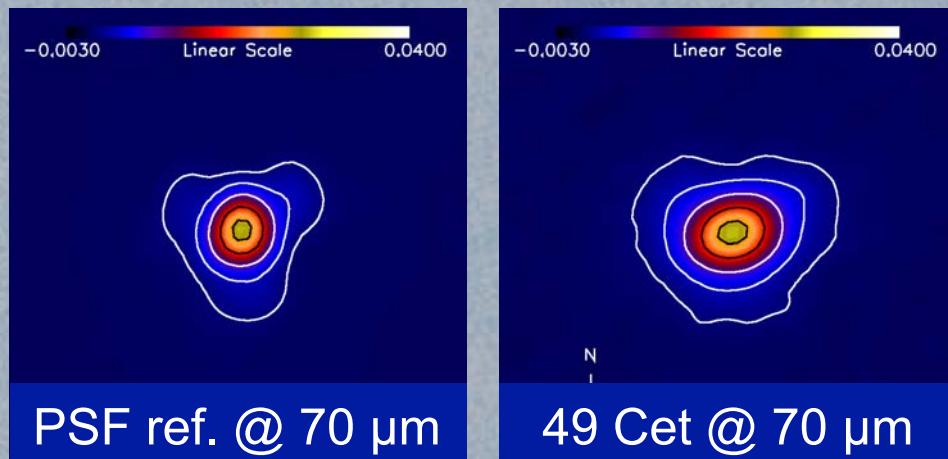


Optically thin SED modeling - Spectral decomposition

Fe-rich ([20% Fe](#)) crystalline olivine grains

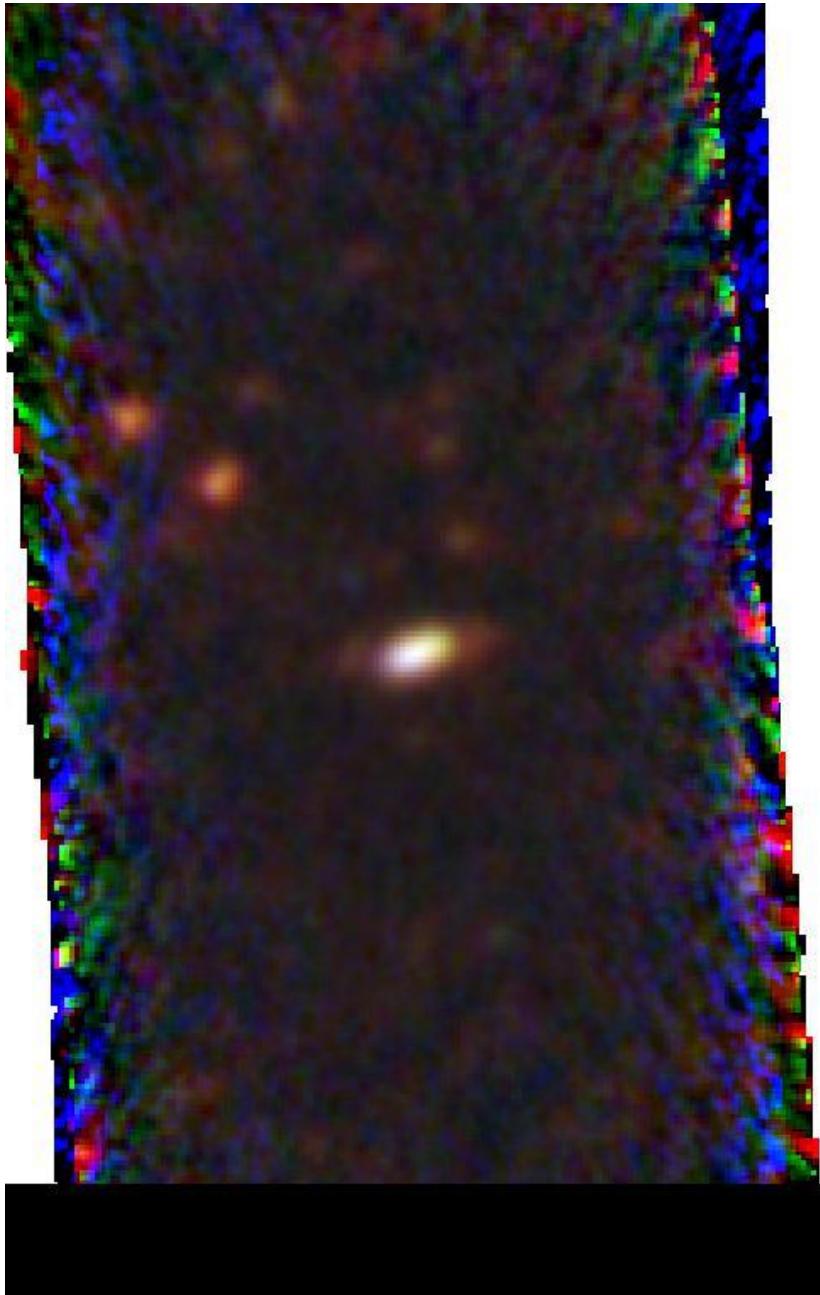
A Unique Gas-Rich Debris Disk: Herschel Imaging and Spectroscopy of 49 Ceti

A. Roberge, I. Kamp, J.-C. Augereau, G. Meeus, W. Dent, & the GASPS team



- Debris disk with sub-mm CO emission
 - 10 to 30 Myr-old
 - Observed in GASPS OTKP

- Dust disk resolved in thermal emission
- CII emission detected (5σ)
- No OI emission



A Herschel-resolved Debris Ring around the Nearby G star HIP 32480

Karl Stapelfeldt
(NASA GSFC) and



- Result from the DUNES Key Programme
- Dust in 105-155 AU radial zone – the 2nd largest debris belt around a G star
- More tenuous interior dust population
- Combined modeling indicates particles in 4-800 μm size range, albedo < 10 %

Thank you!