

Outflows at mas scales

The winds and disks of young massive stars

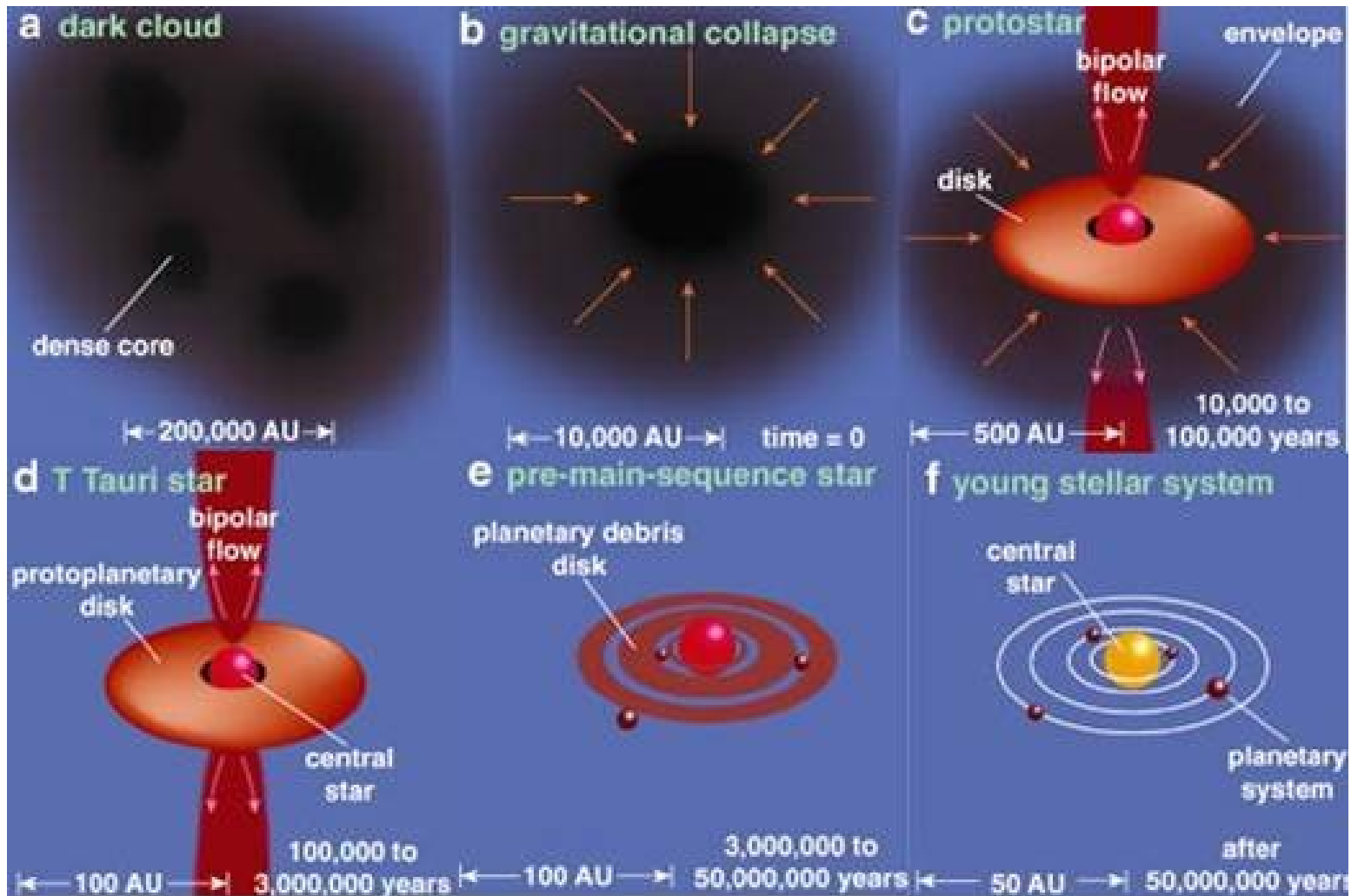


Gemini Observatory/Colin Aspin

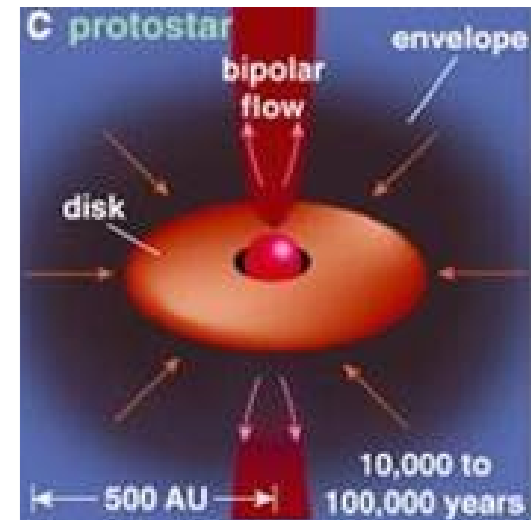
W.J. de Wit (ESO)
M. Beltran (Arcetri), A. Caratti o Garatti (Dublin),
P. Boley (Ekatarinburg), B. Stecklum (Tautenberg),
R.D. Oudmaijer (Leeds)



SF in a nutt shell



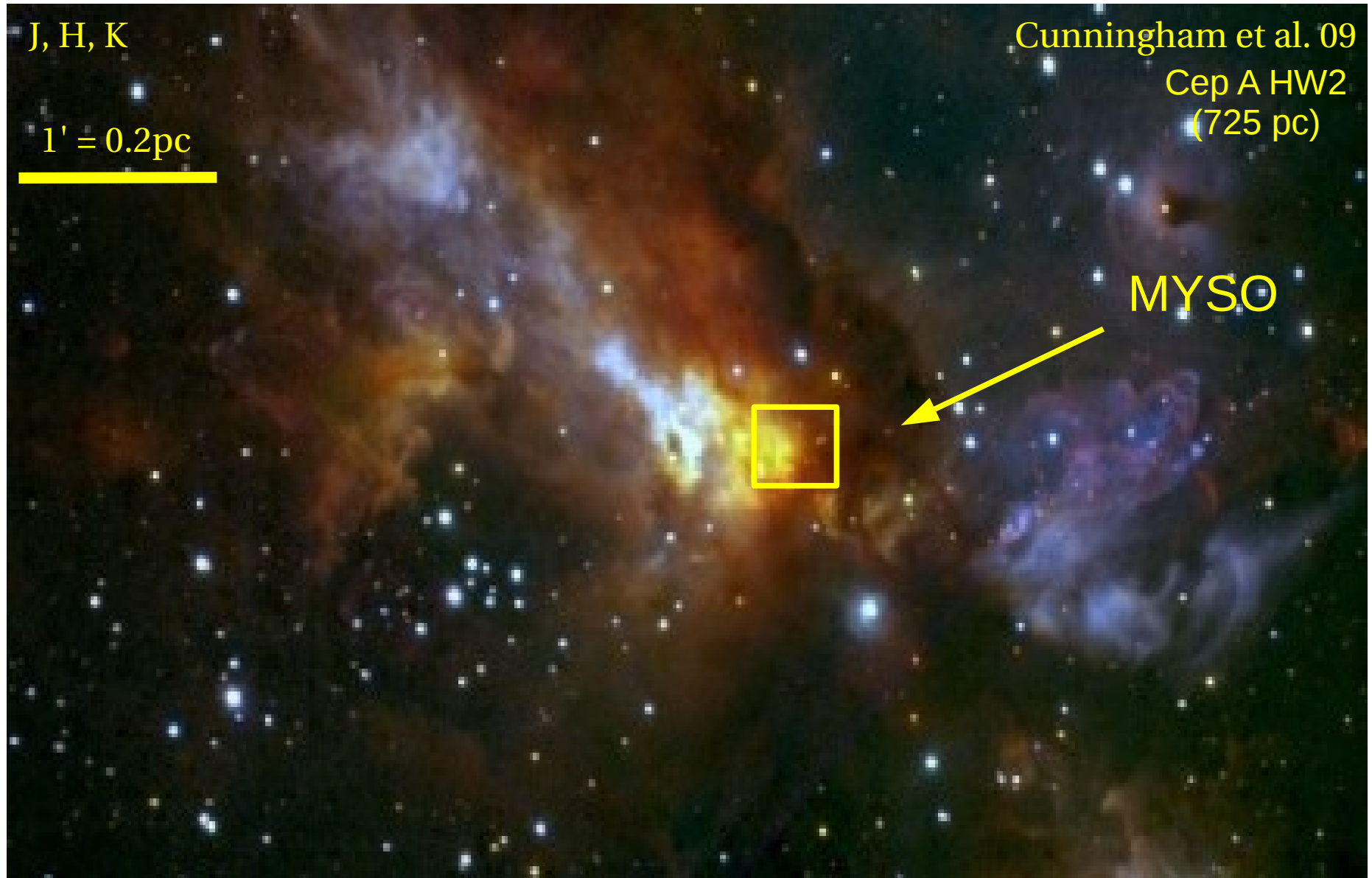
SF in a nutt shell



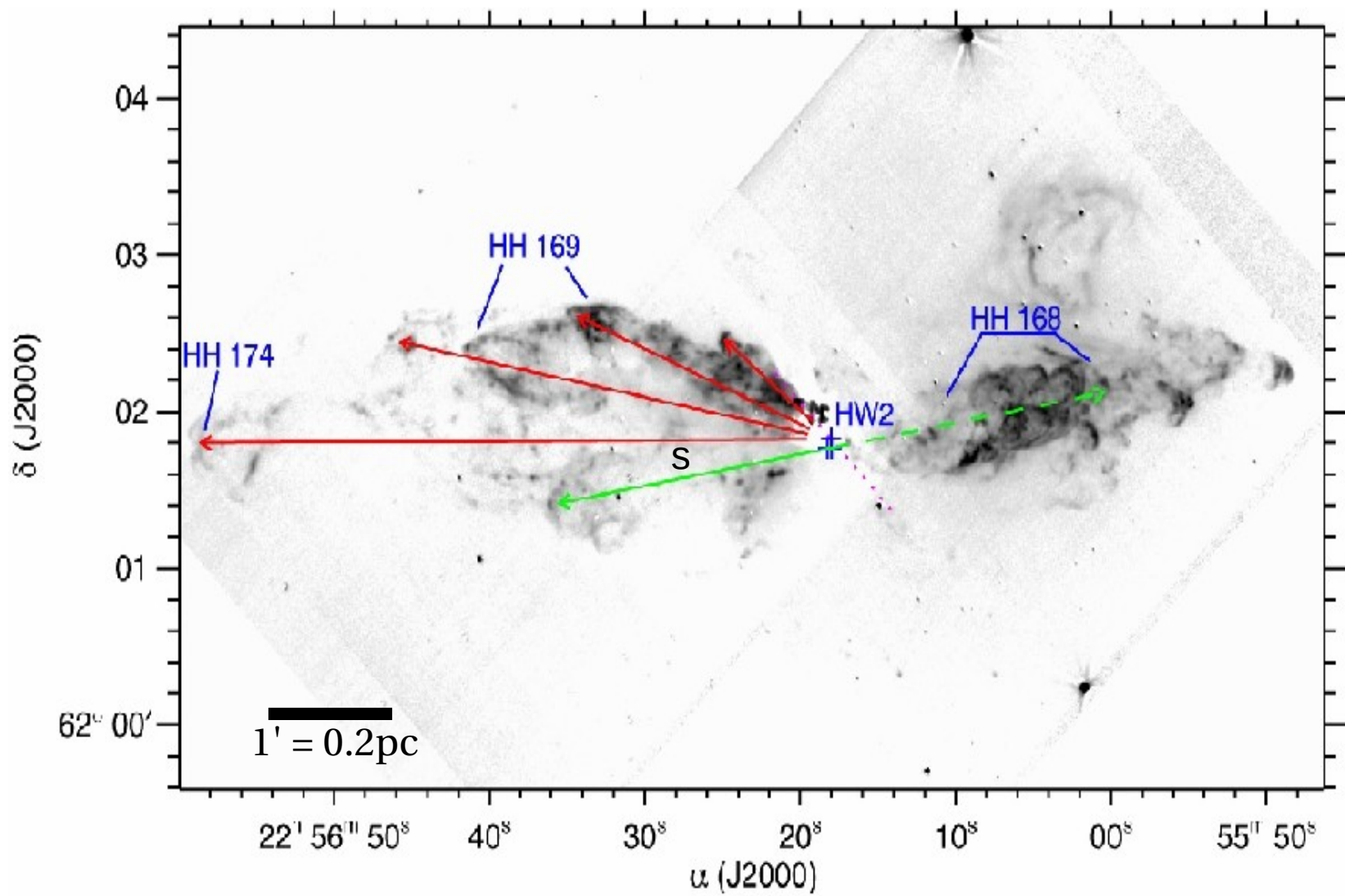
... the mess in HM SF regions



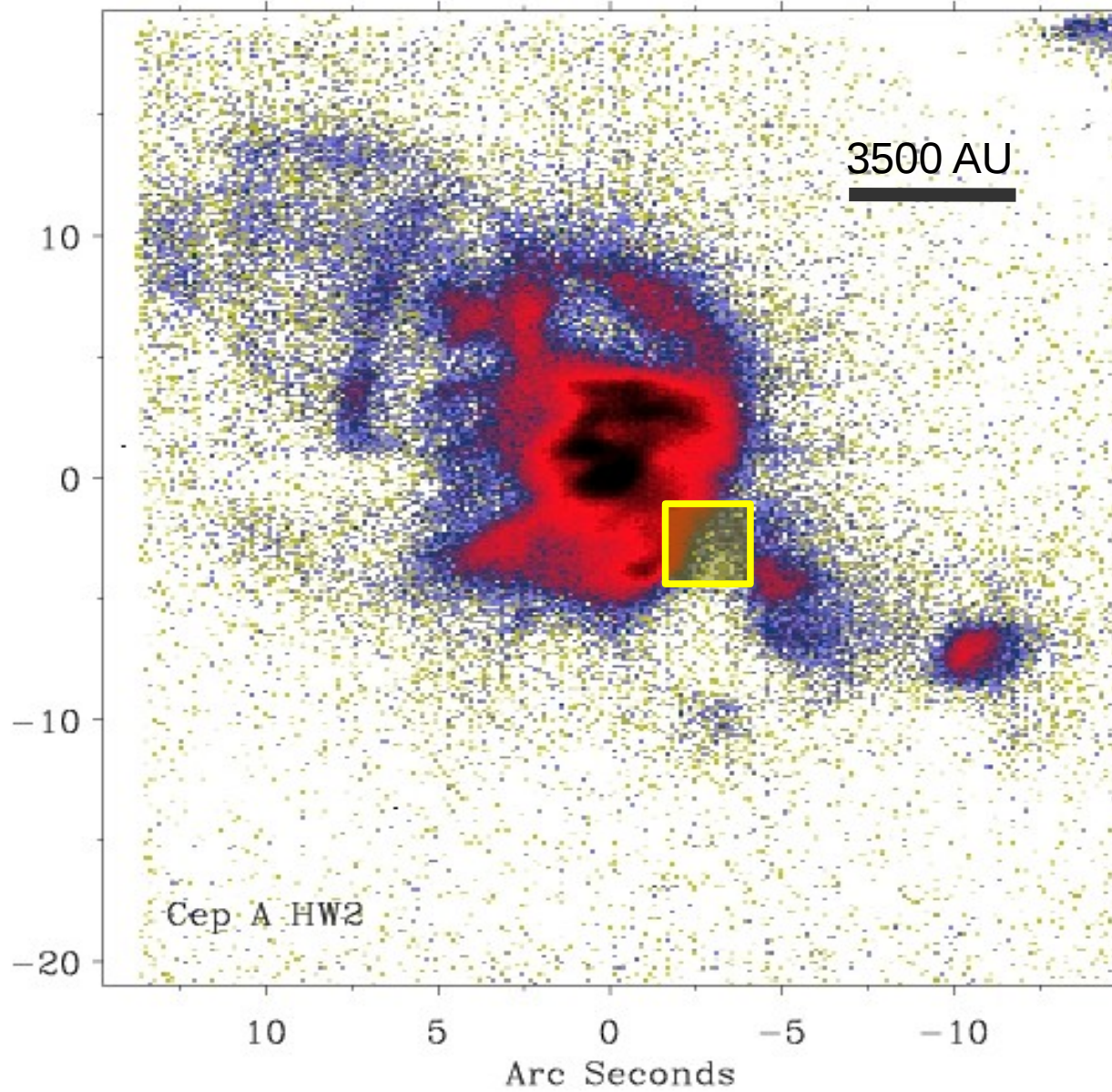
... the mess in HM SF regions



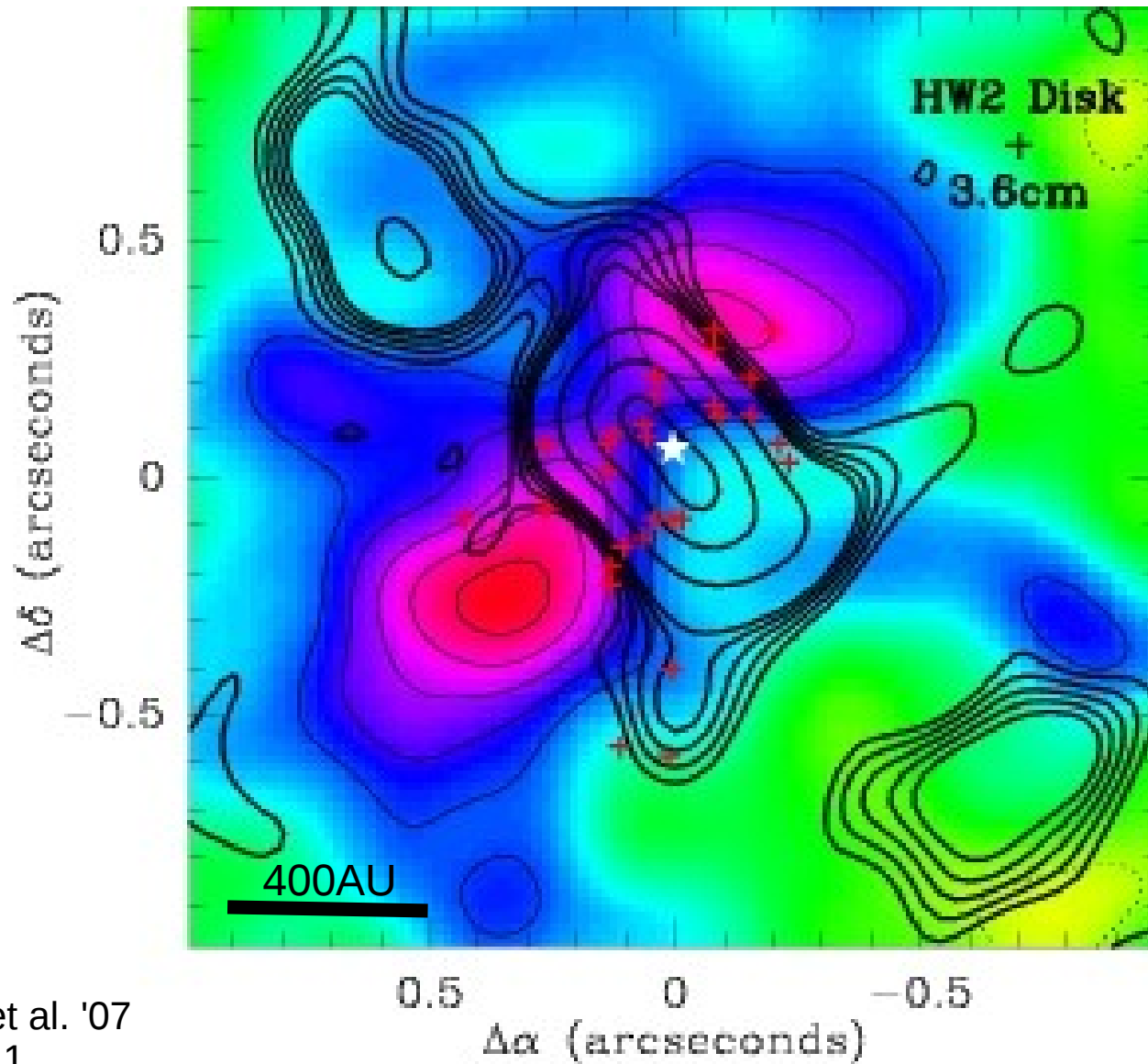
... and in H₂



... and at 24 microns

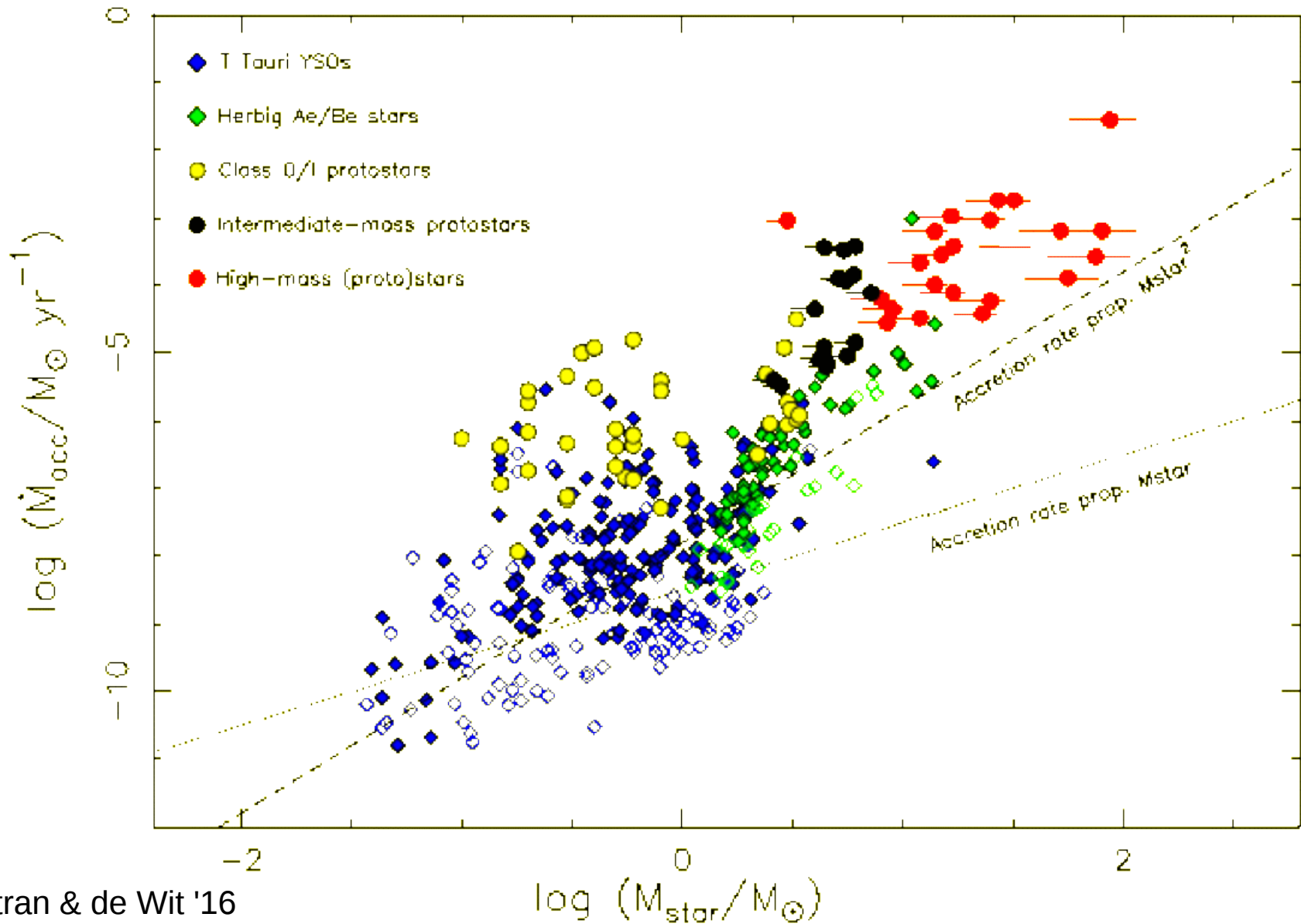


... and in radio (contours) and SO₂ (7mm, VLA).



Jimenez-Serra et al. '07
Torrelles et al. '11

High mass-loss rates



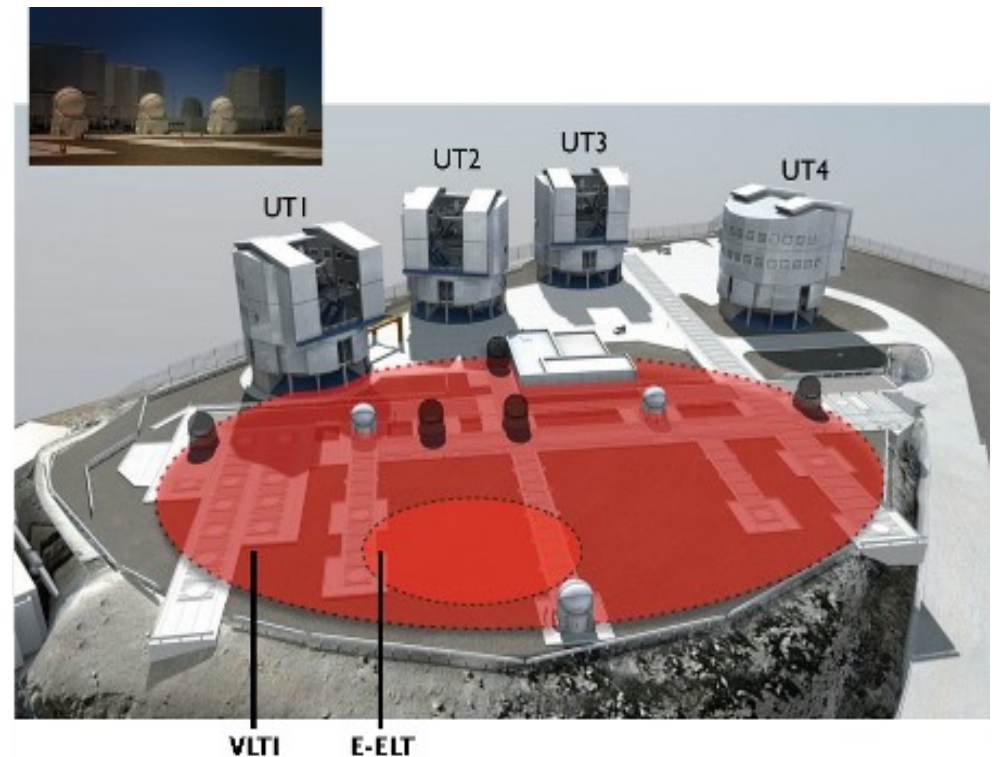
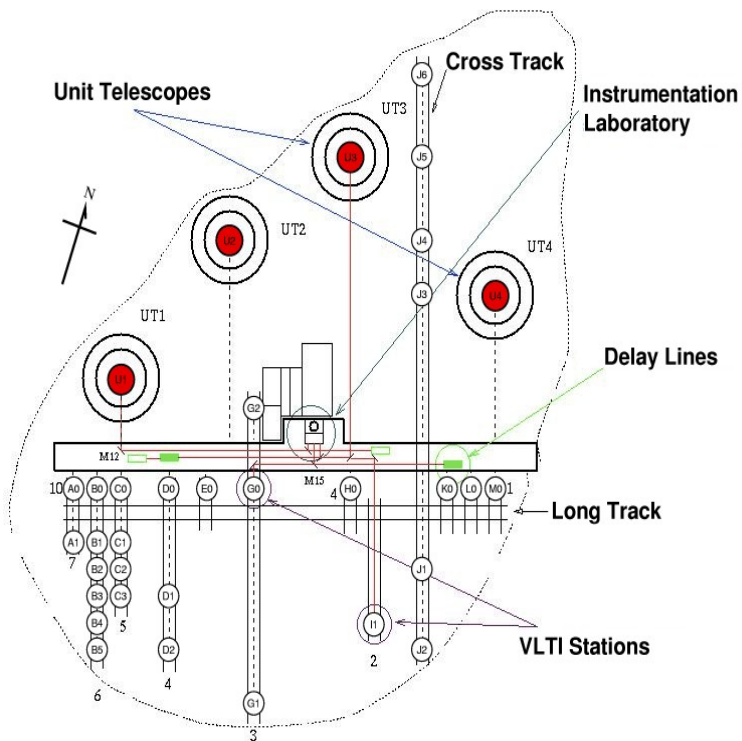
Results

The winds and disks of young massive stars

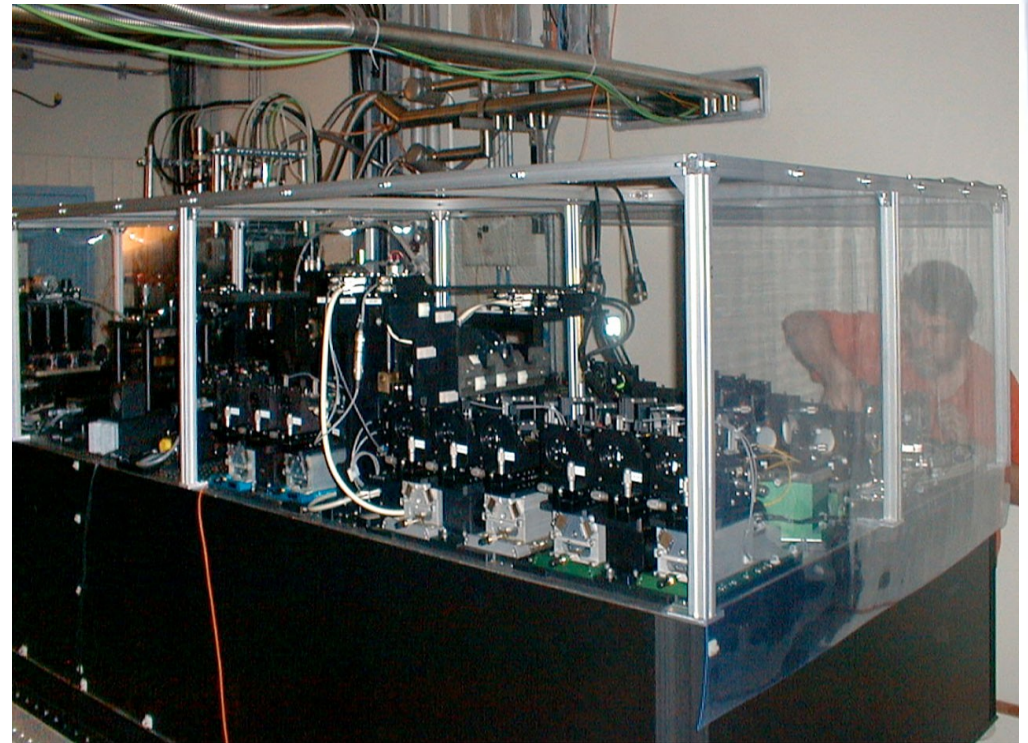
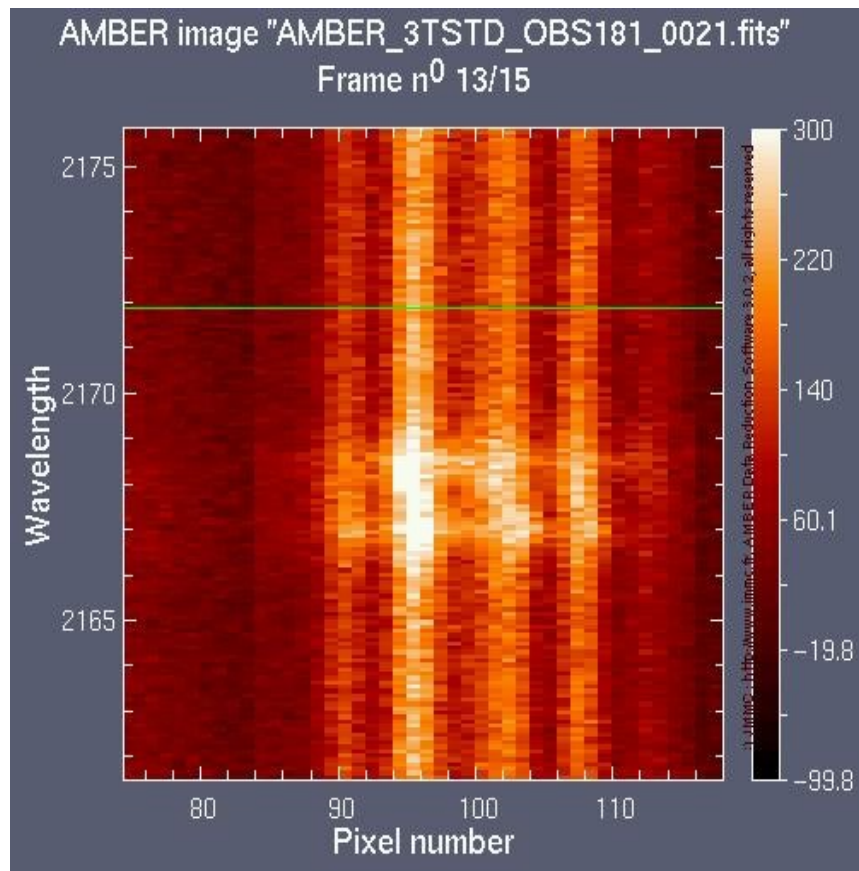


Gemini Observatory/Colin Aspin

by means of the VLT- interferometer



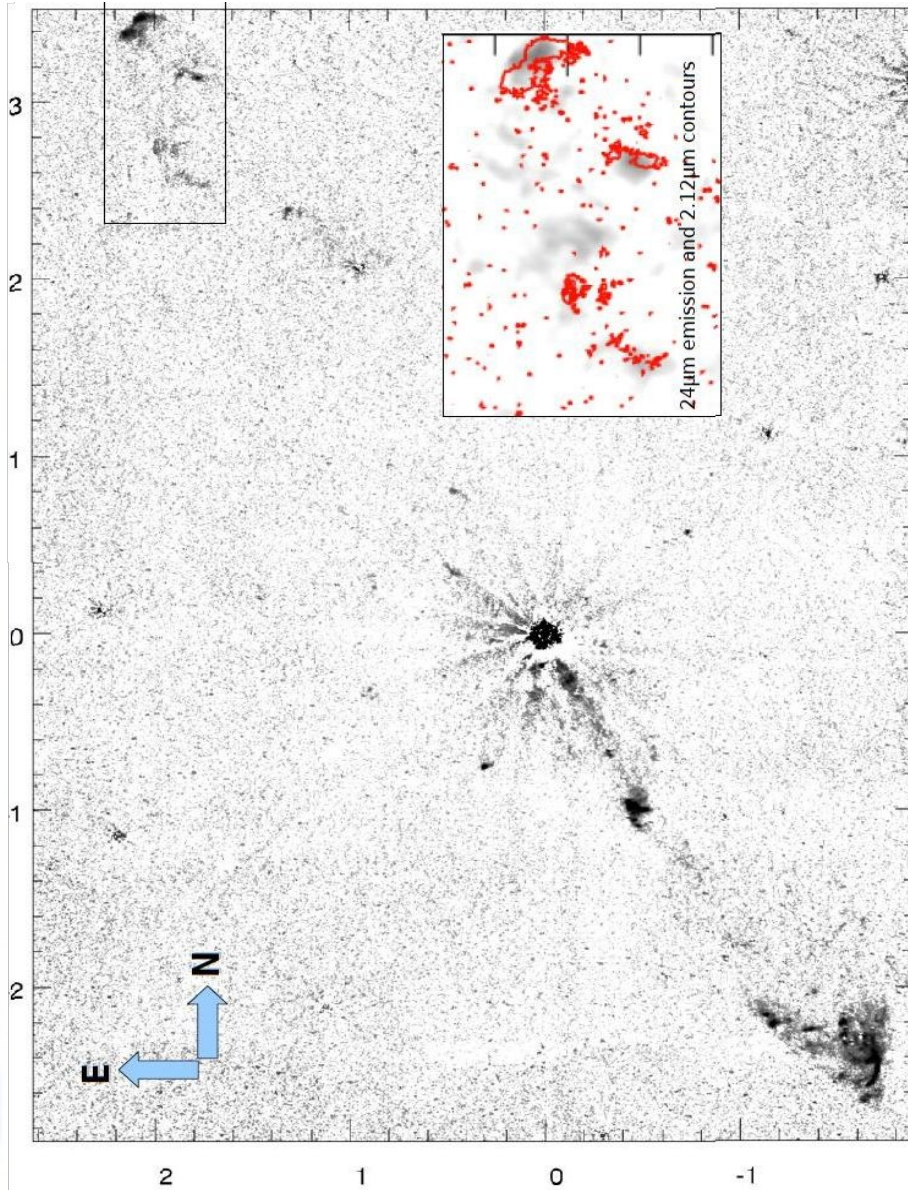
K-band fringes from AMBER



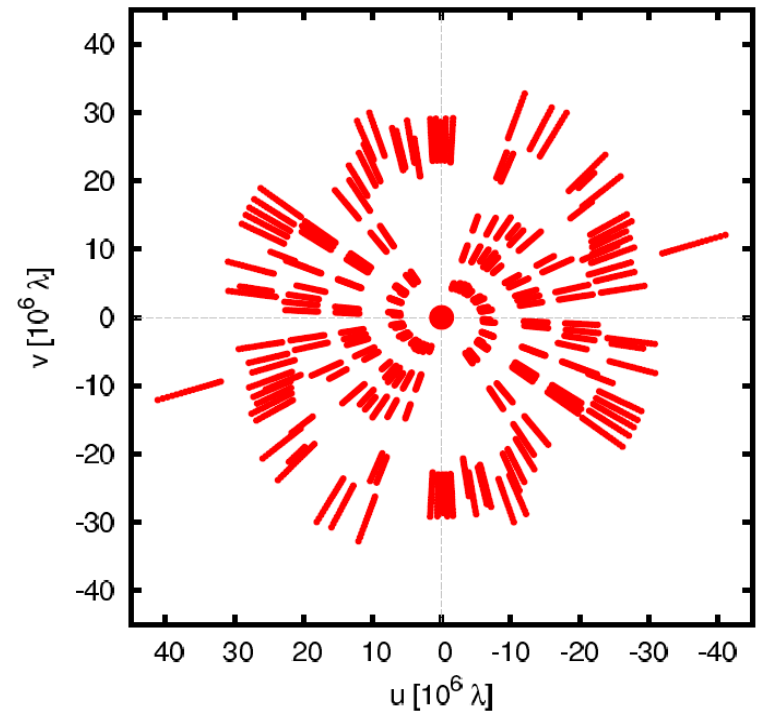
... lots of glass

The best candidate to do so

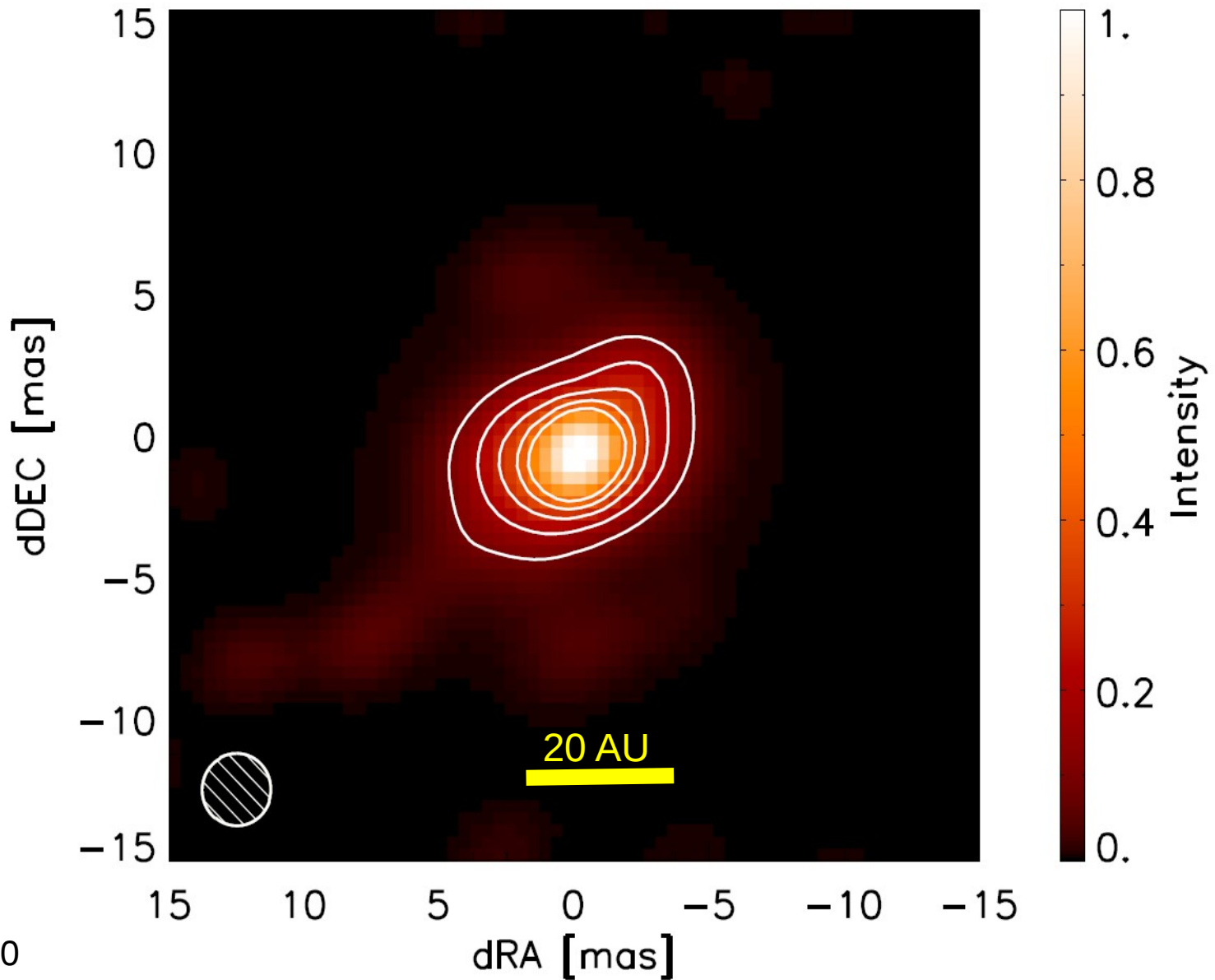
H2 - continuum



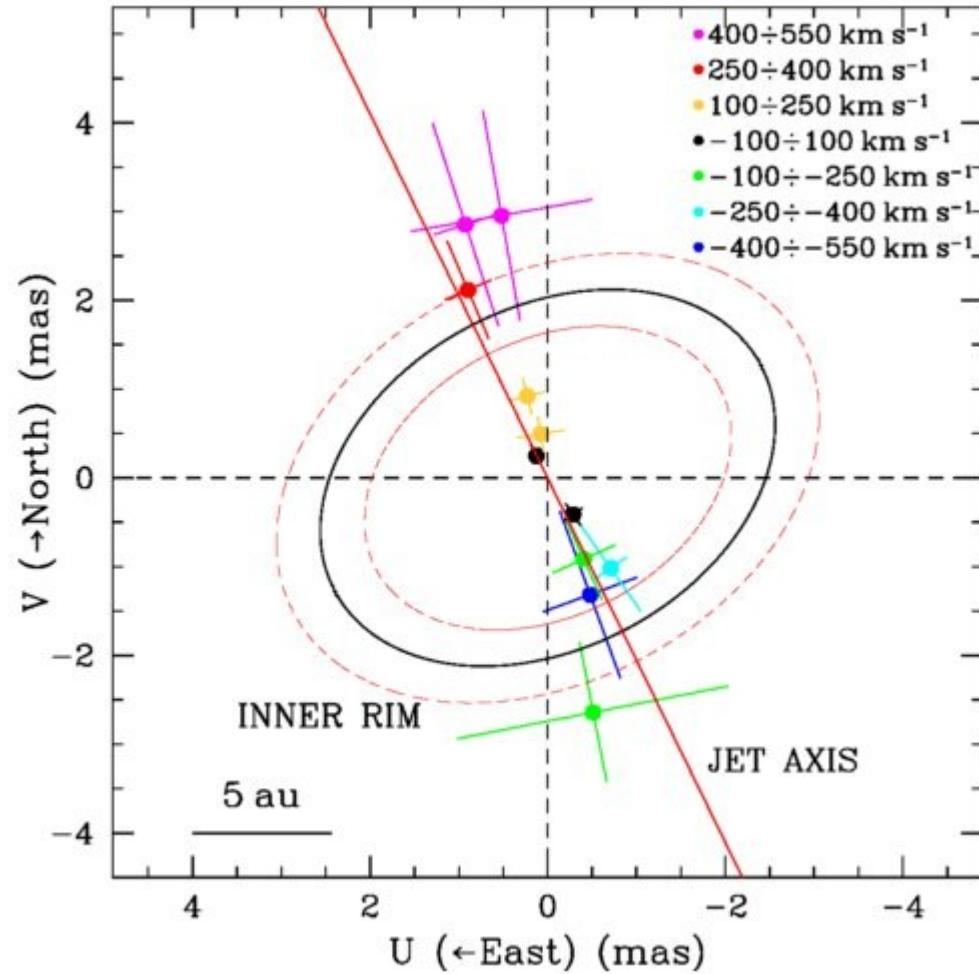
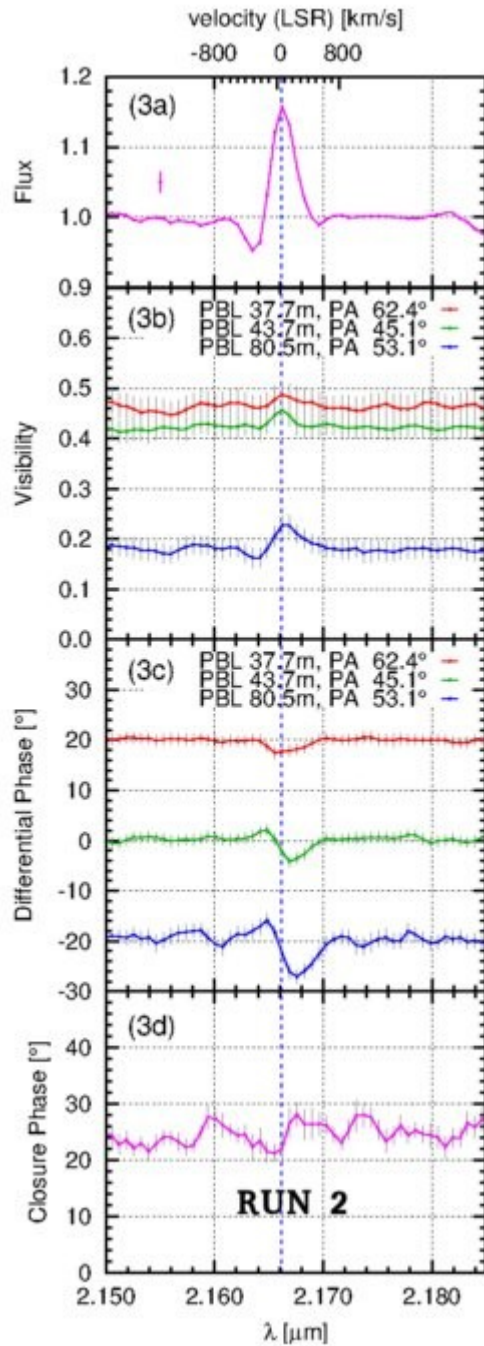
Spat. Resolution 2.4 mas (8.4 AU)



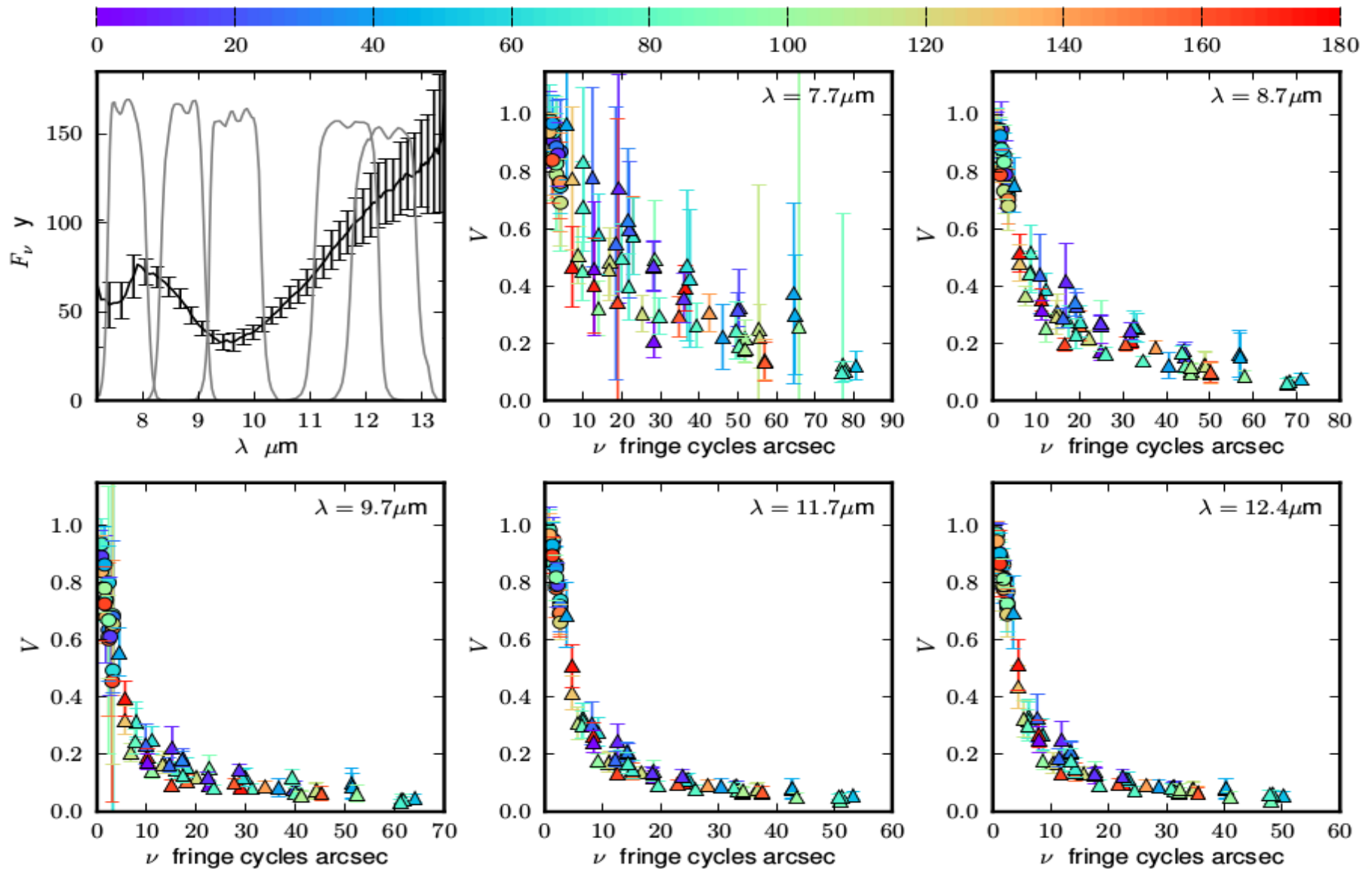
Result 1: a disk at 20 AU



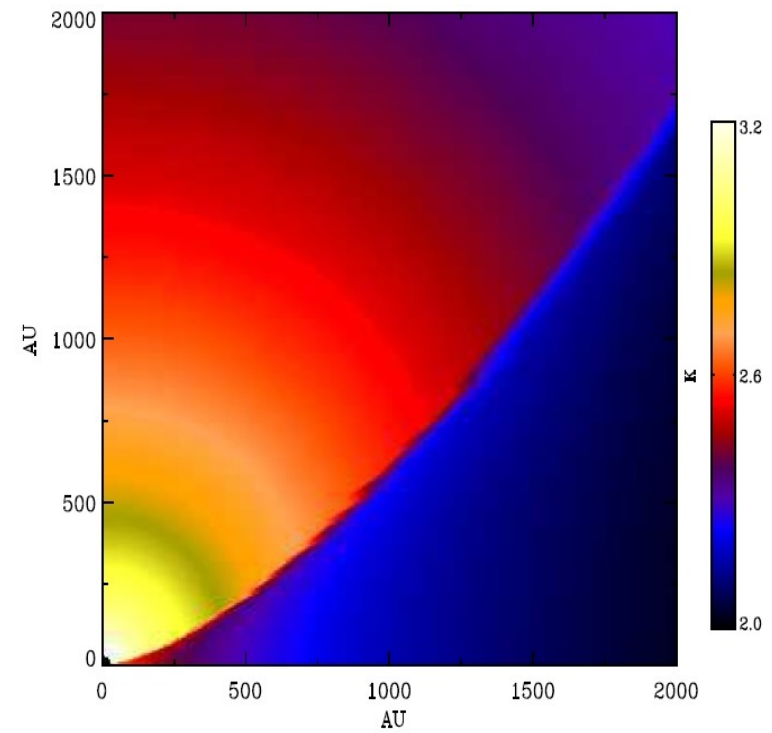
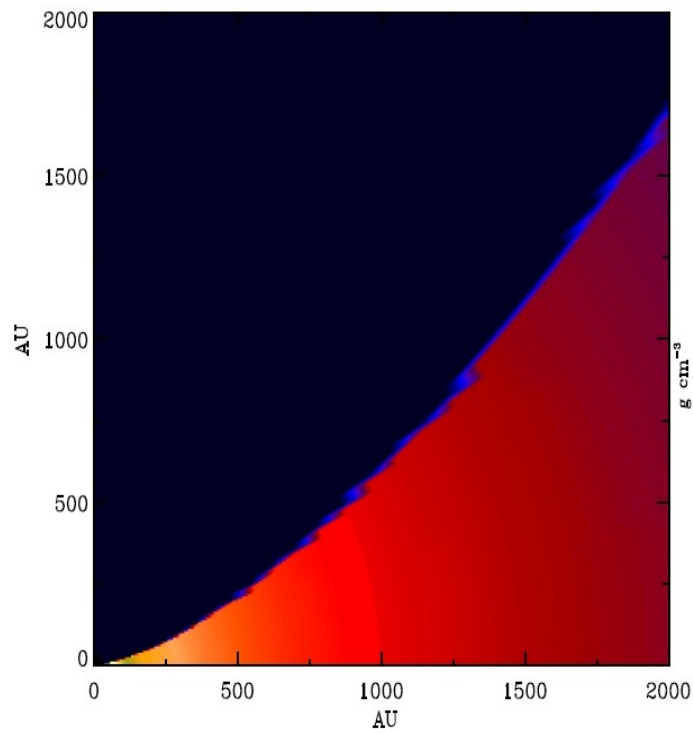
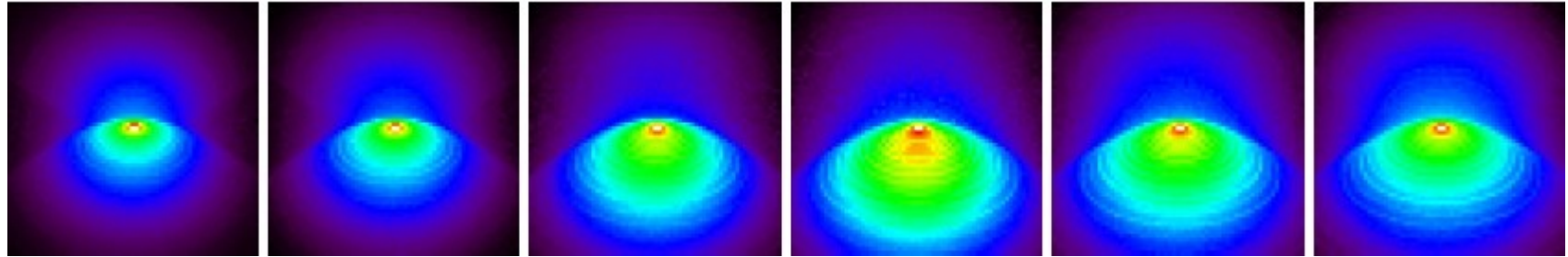
Result 2: astrometry



Result 3: we see cavity emission



in pictures:



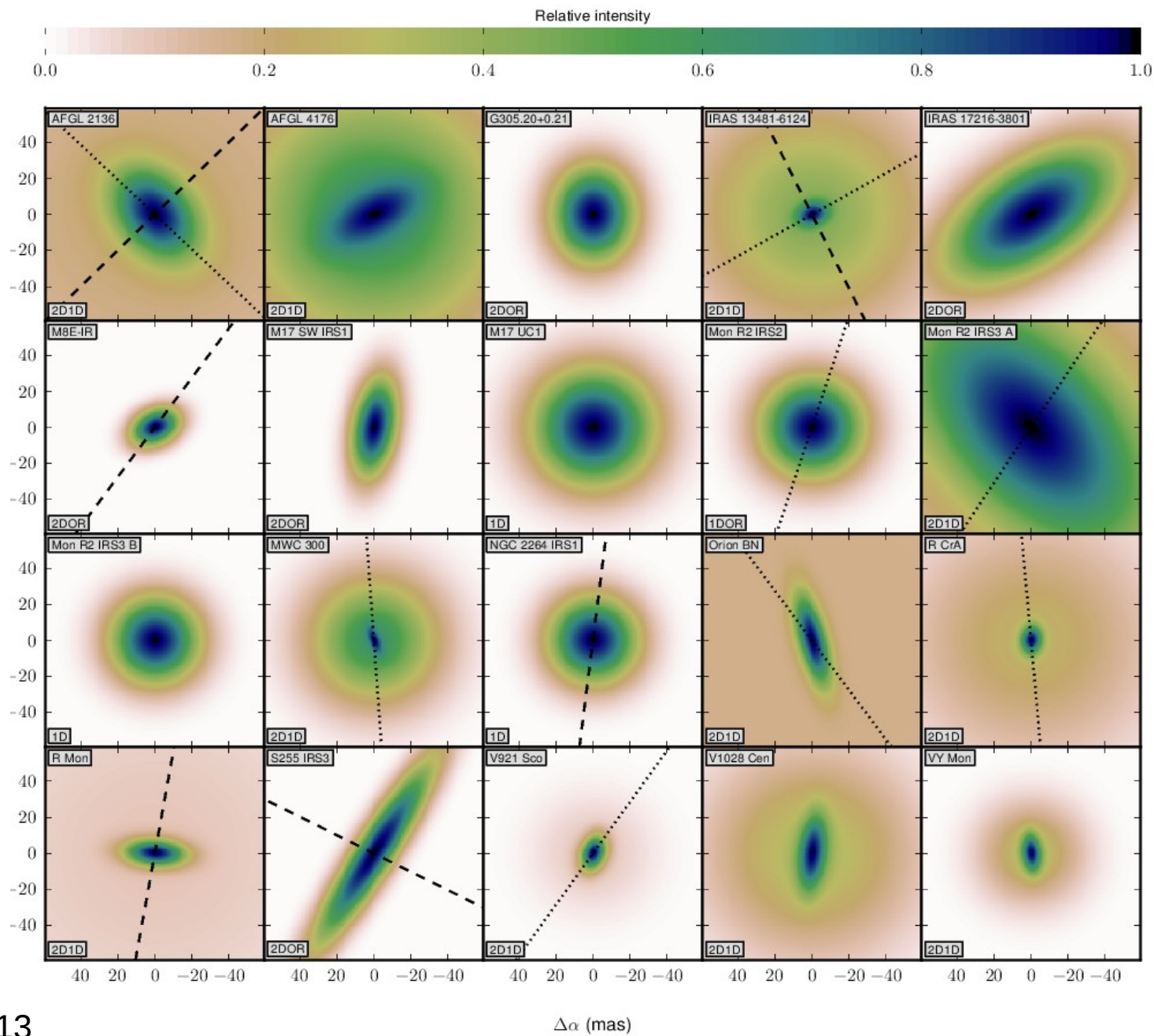
Boley et al. 2016
de Wit et al. 2011

The new VLT-I

Gravity



THANK YOU!



Is it a rim?

VLT/AMBER+SED 2.2 μm
Radiative Transfer model



d

$\frac{0.006''}{20 \text{ AU}}$