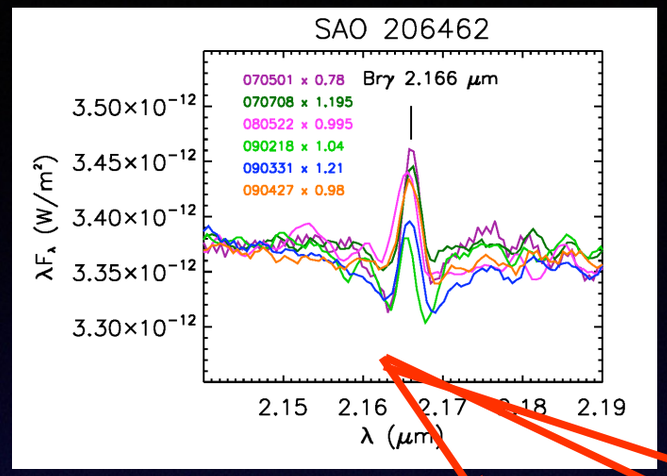
SCHEDULING!

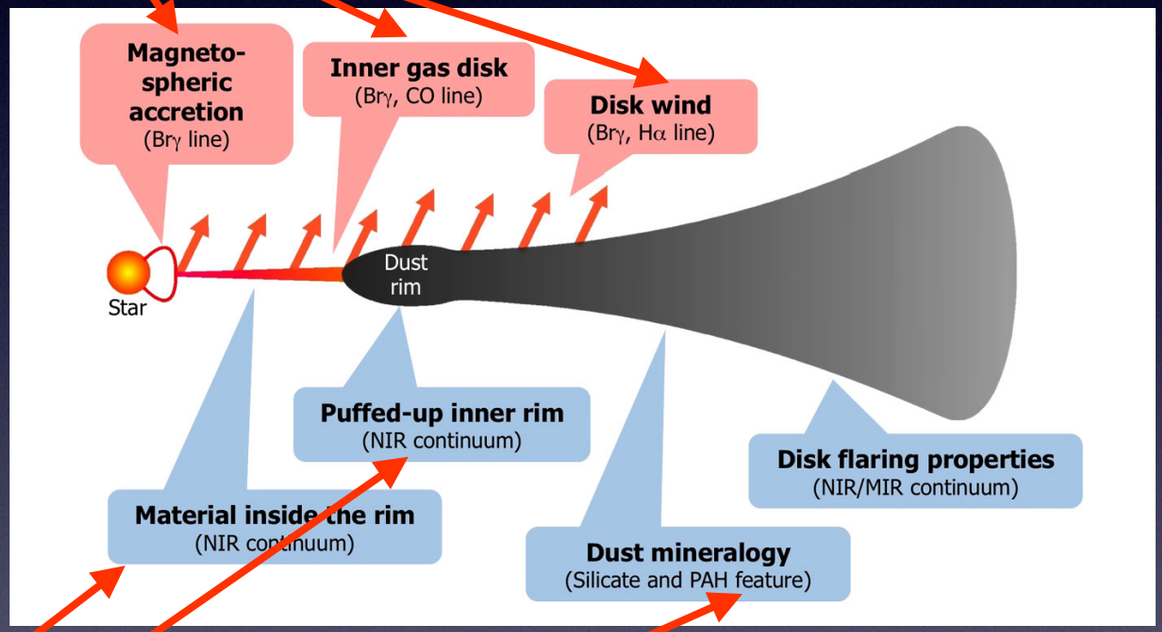
Synoptic Observations of Young Stars with Planet-Building Disks

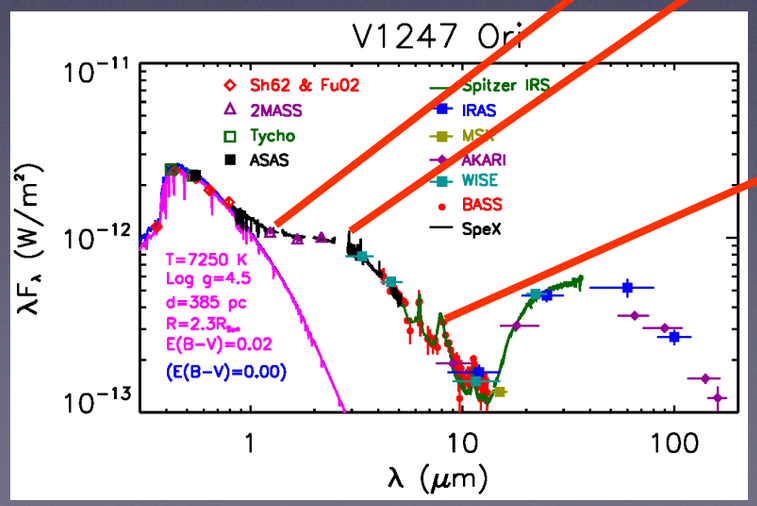
Mike Sitko (U Cincinnati & Space Sci. Inst.)
Monika Pikhartova (U Cincinnati)
Carol Grady (Eureka Scientific, Inc.)
John Wisniewski (U Oklahoma)
Evan Rich (U Oklahoma)

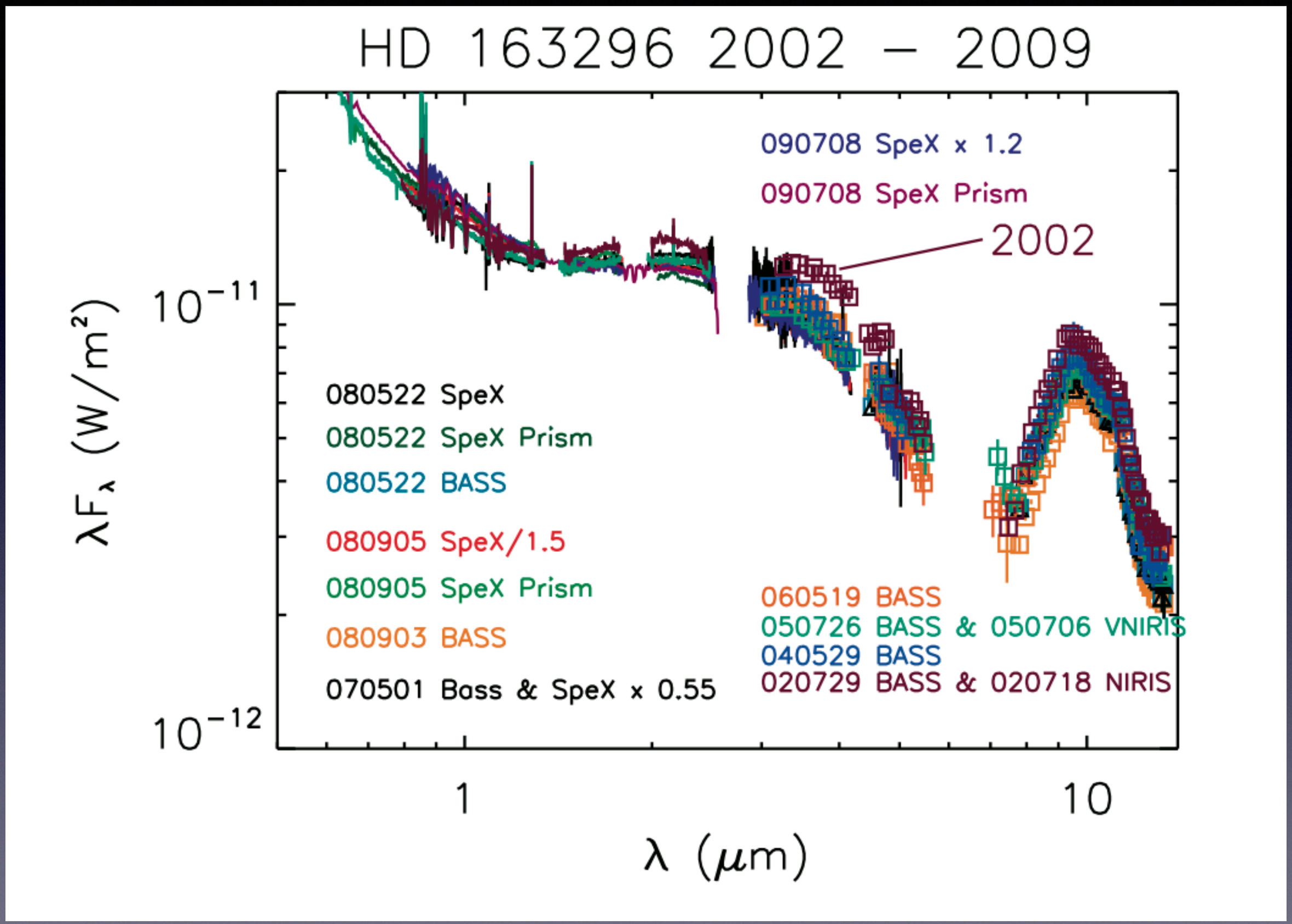
IRTF Workshop 2018

DIAGNOSTICS - gas & DUST

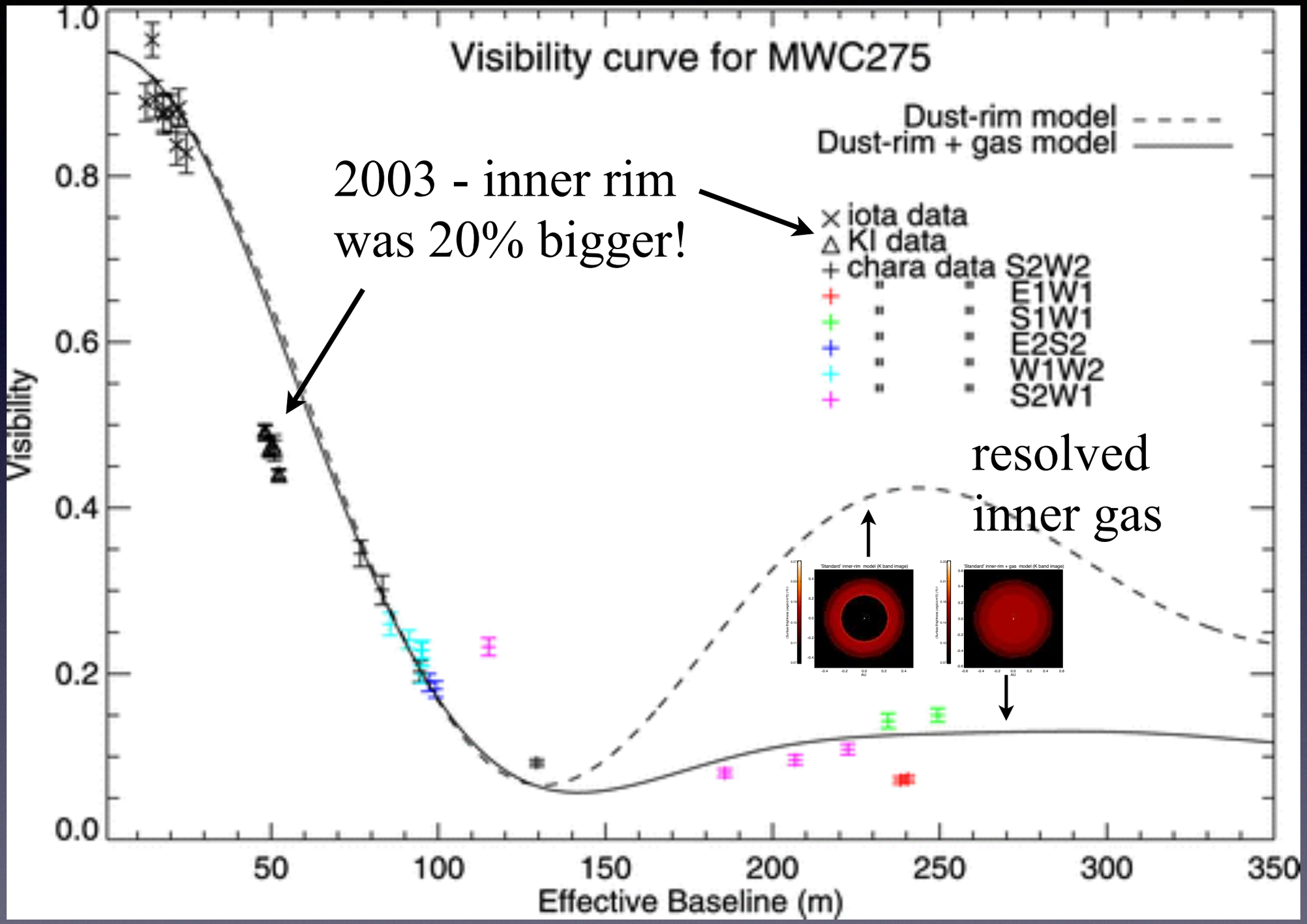






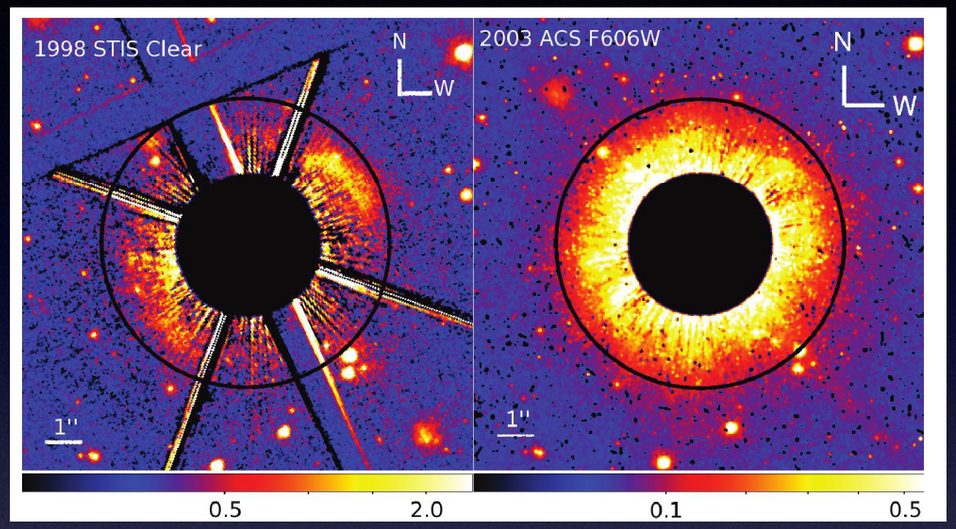

HD 163296 2002 – 2009
090708 SpeX x 1.2
090708 SpeX Prism
2002
080522 SpeX
080522 SpeX Prism
080522 BASS
080905 SpeX/1.5
080905 SpeX Prism
080903 BASS
070501 Bass & SpeX x 0.55
060519 BASS
050726 BASS & 050706 VNIRIS
040529 BASS
020729 BASS & 020718 NIRIS
10^{-11}
10^{-12}
λF_λ (W/m^2)
1
10
λ (μm)

Adapted (and embellished) from Tannirkulam et al. 208, ApJ, 677, L51

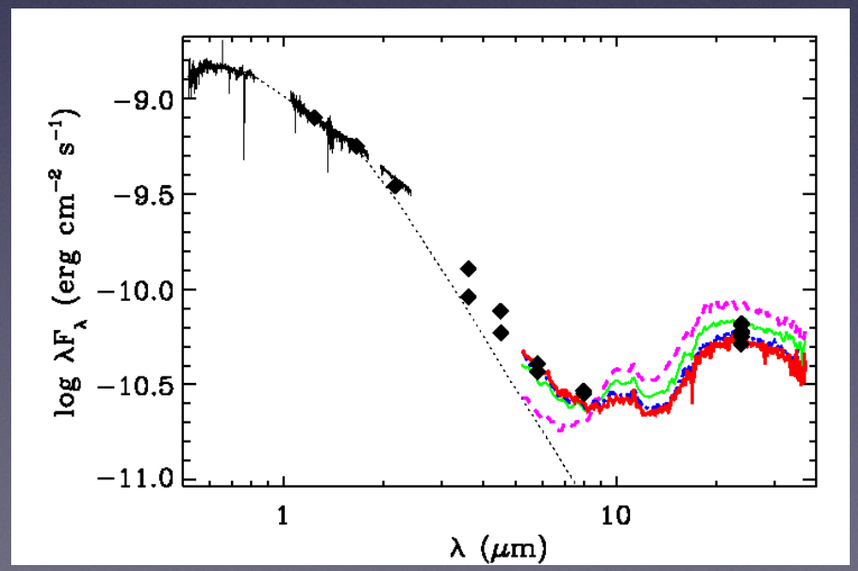


Wisniewski et al.2008, ApJ, 682, 548

HD 163296 = MWC 275

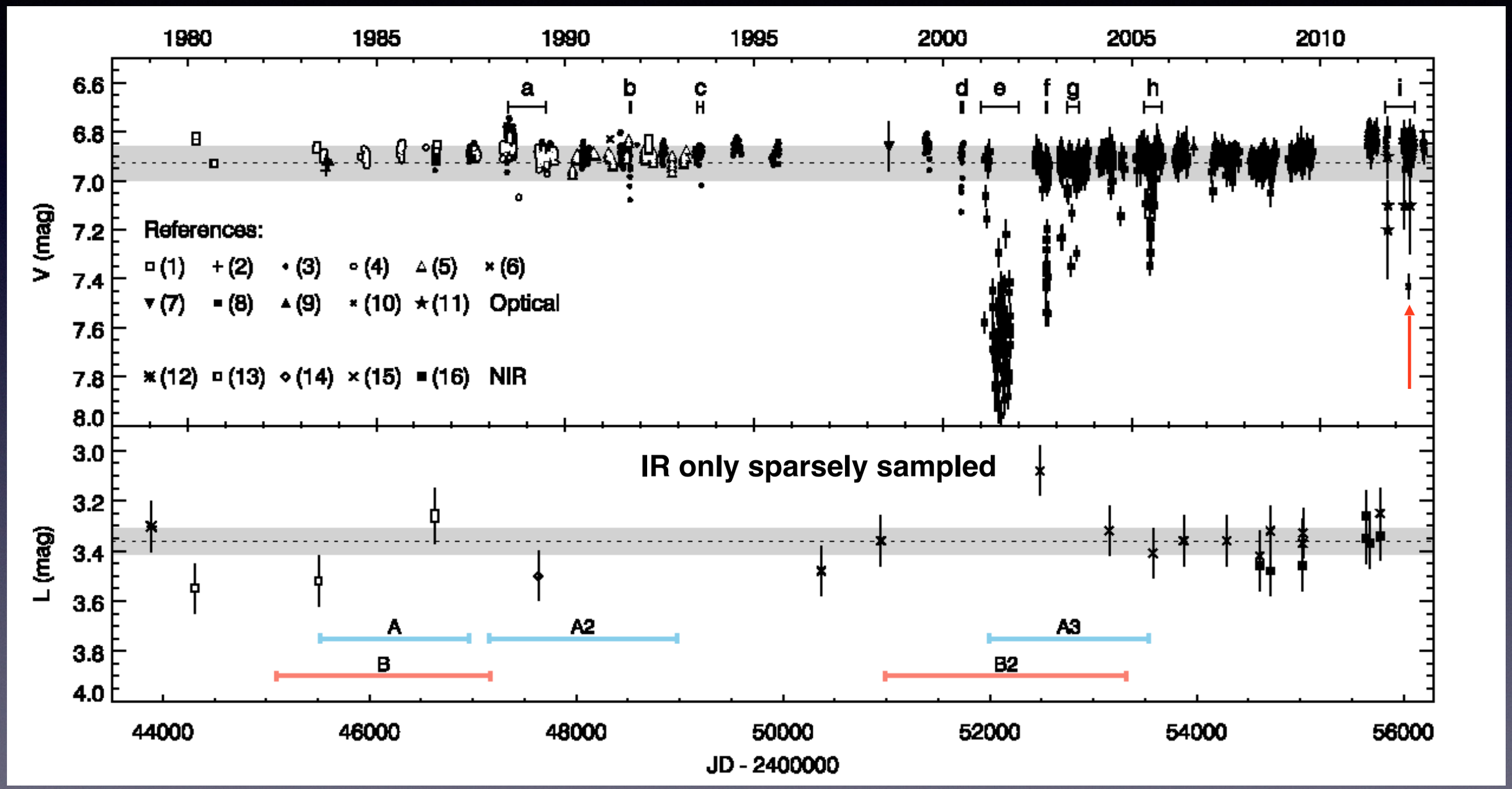


Increased disk wall height - increased near IR flux - causes increased shadowing and drop in mid-IR flux ("see-saw")



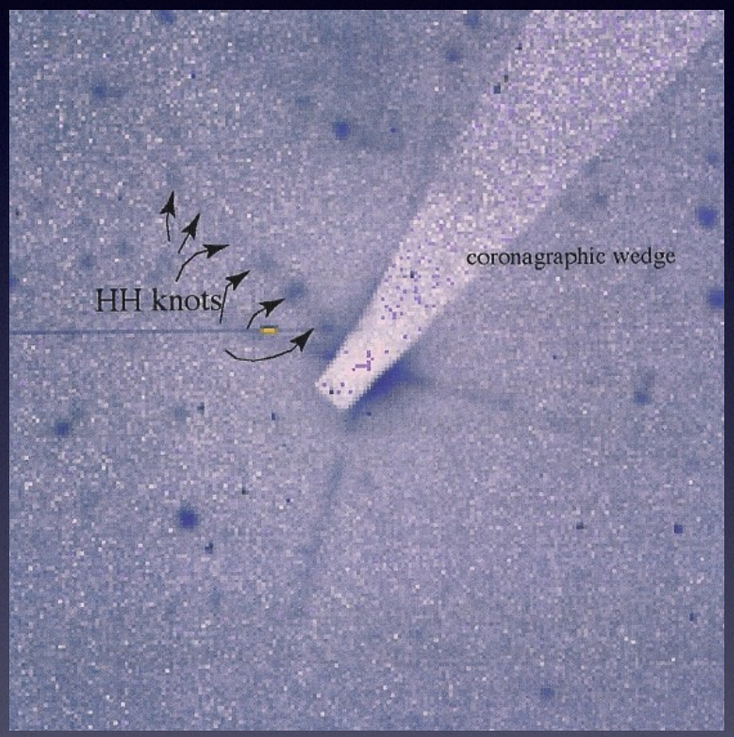
LRLL 31 - Muzerolle et al. 2009

Ellerbroek et al. 2014, A&A, 563, A87

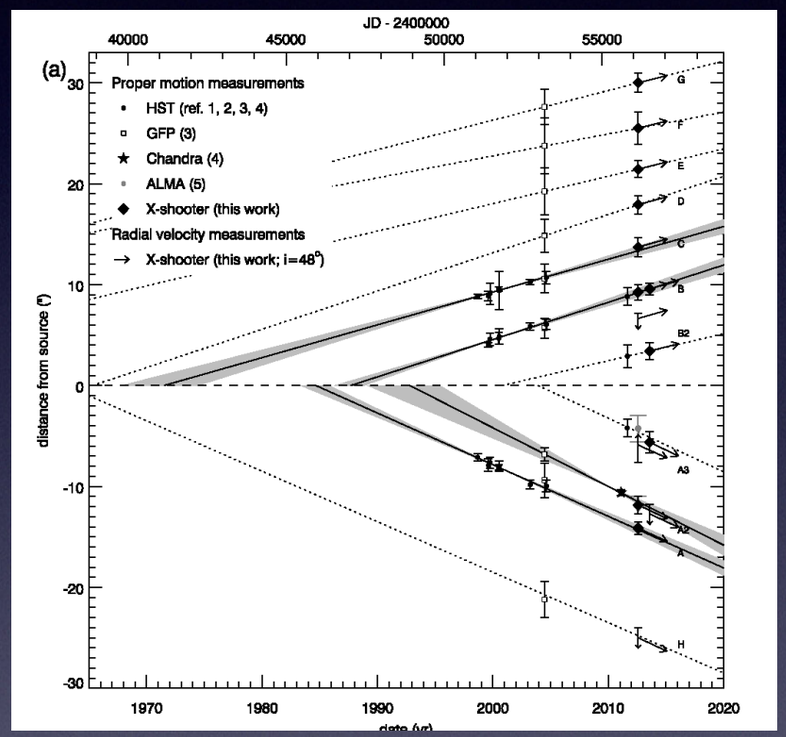


HD 163296 = MWC 275

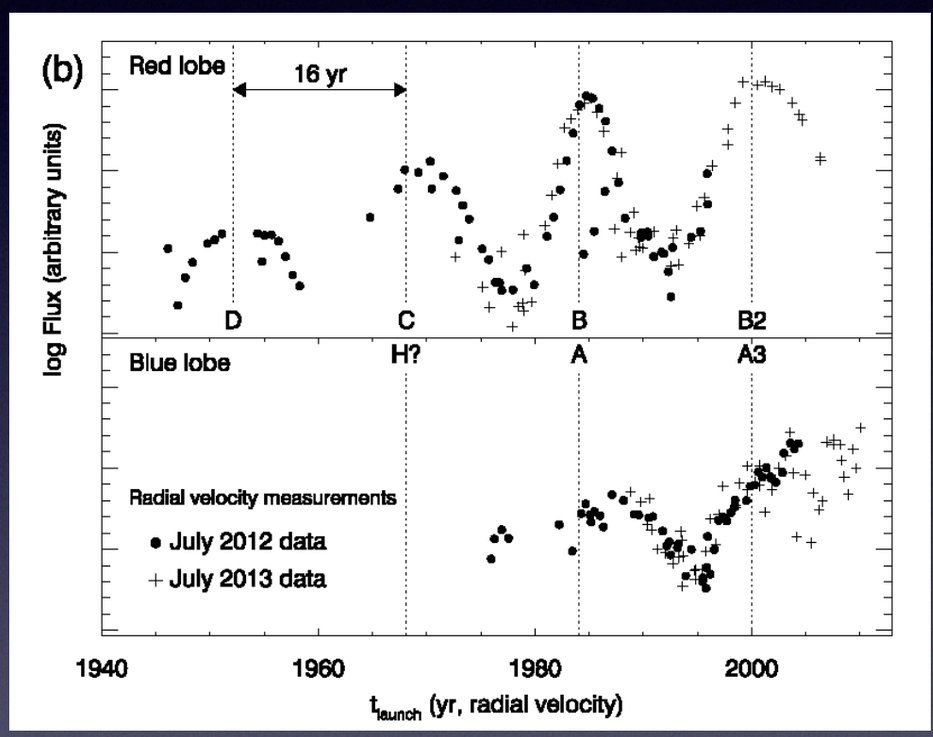
Periodic HH Knots



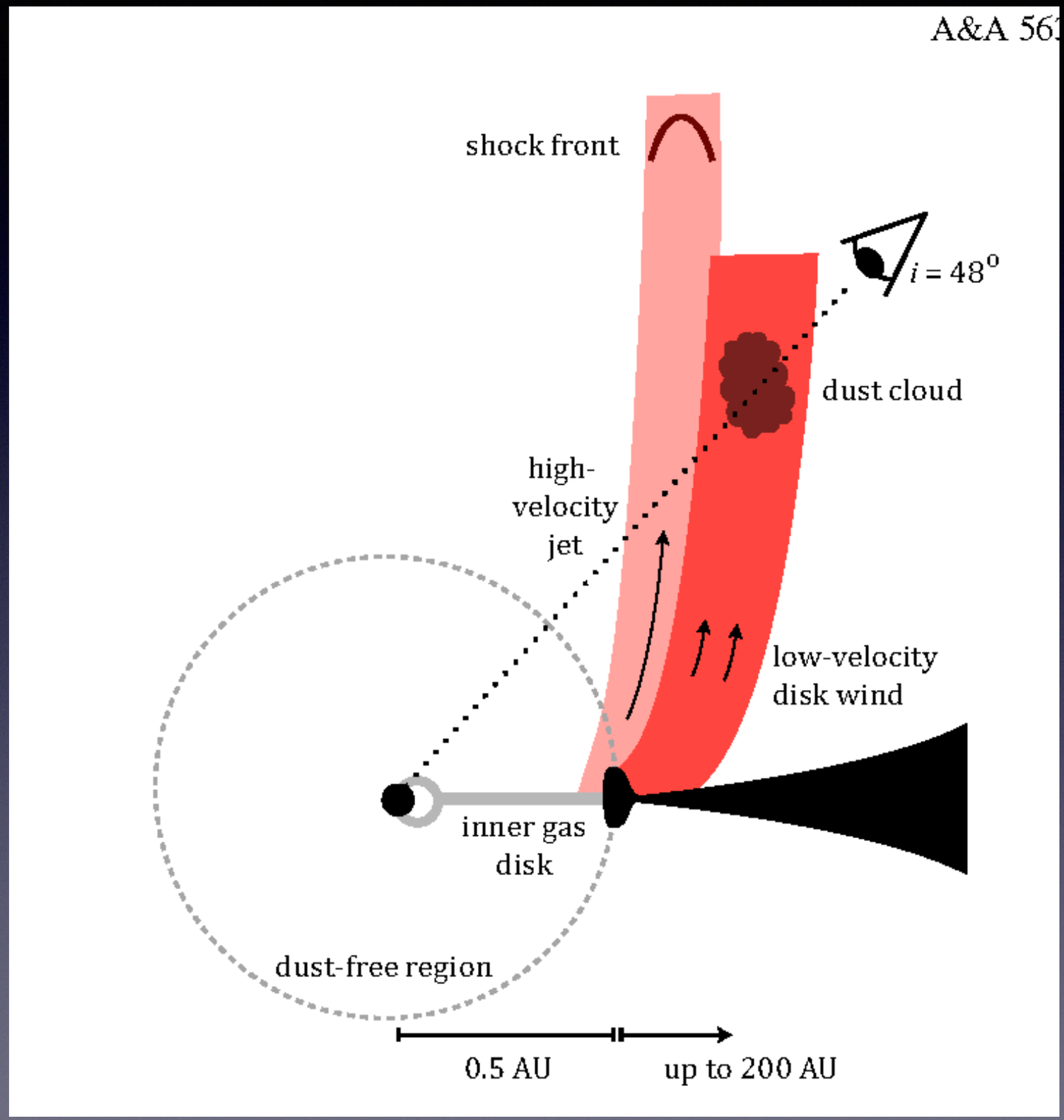
Proper motion traceback



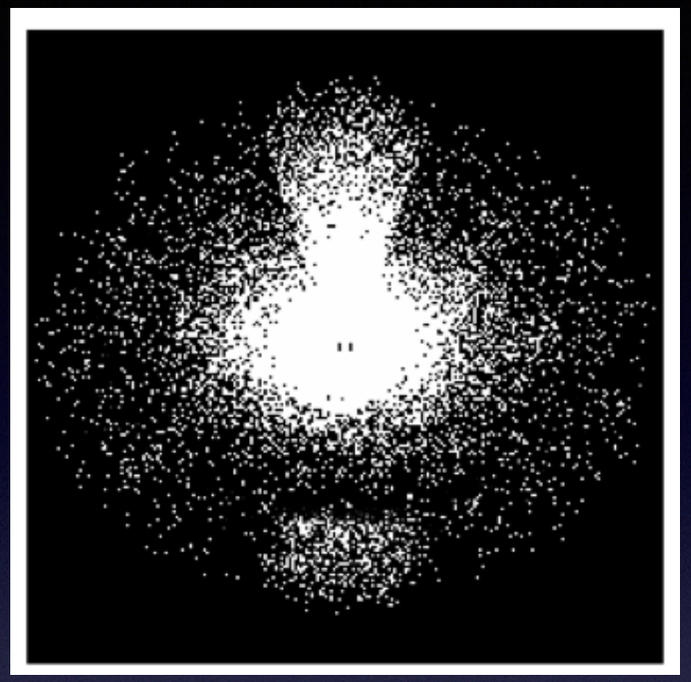
~16 year photometric period



Ellerbroek et al. 2014, A&A, 563, A87



from Monika Pikhartova et al. AAS 2017 & 2018

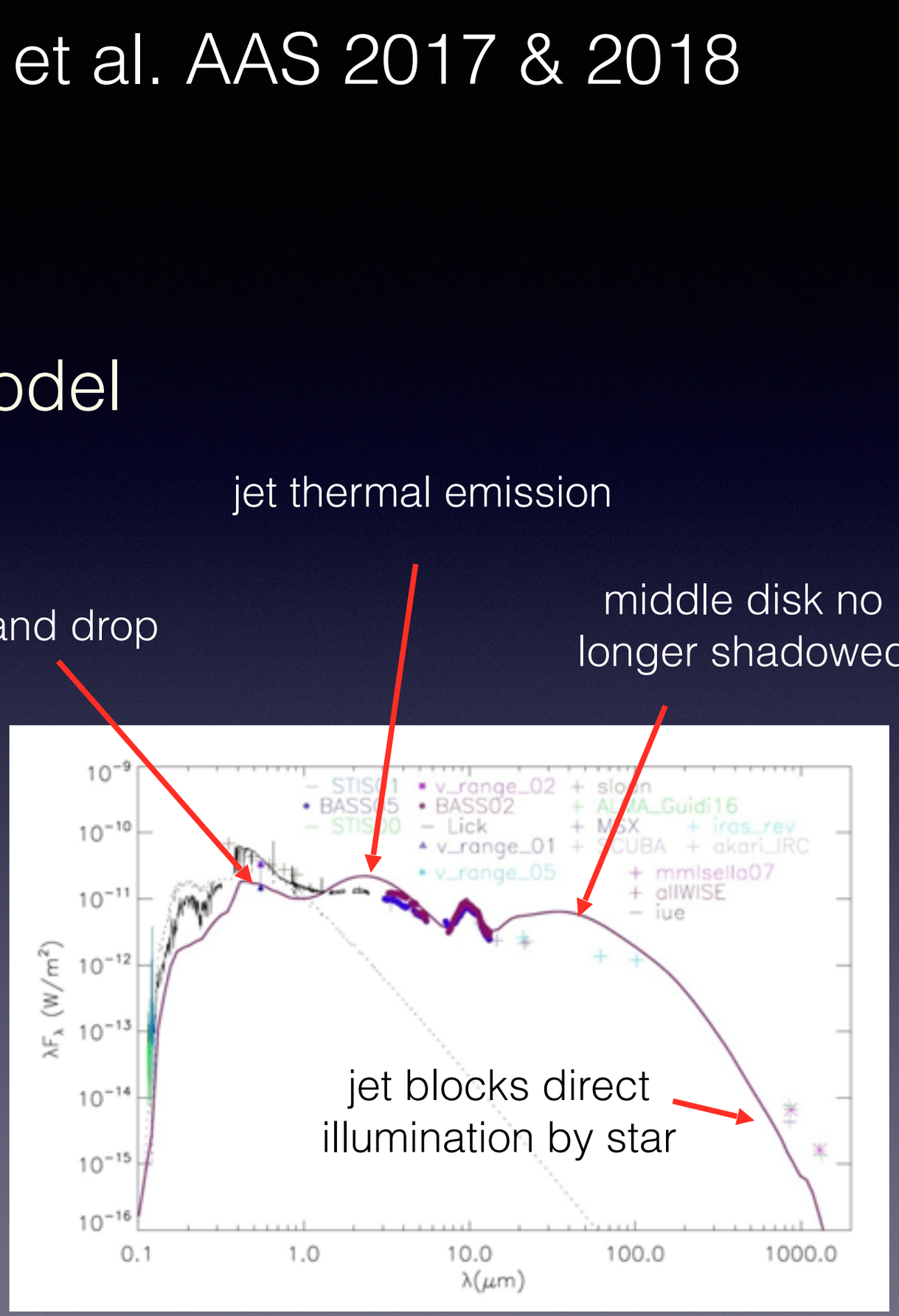


MCRT Model

jet thermal emission

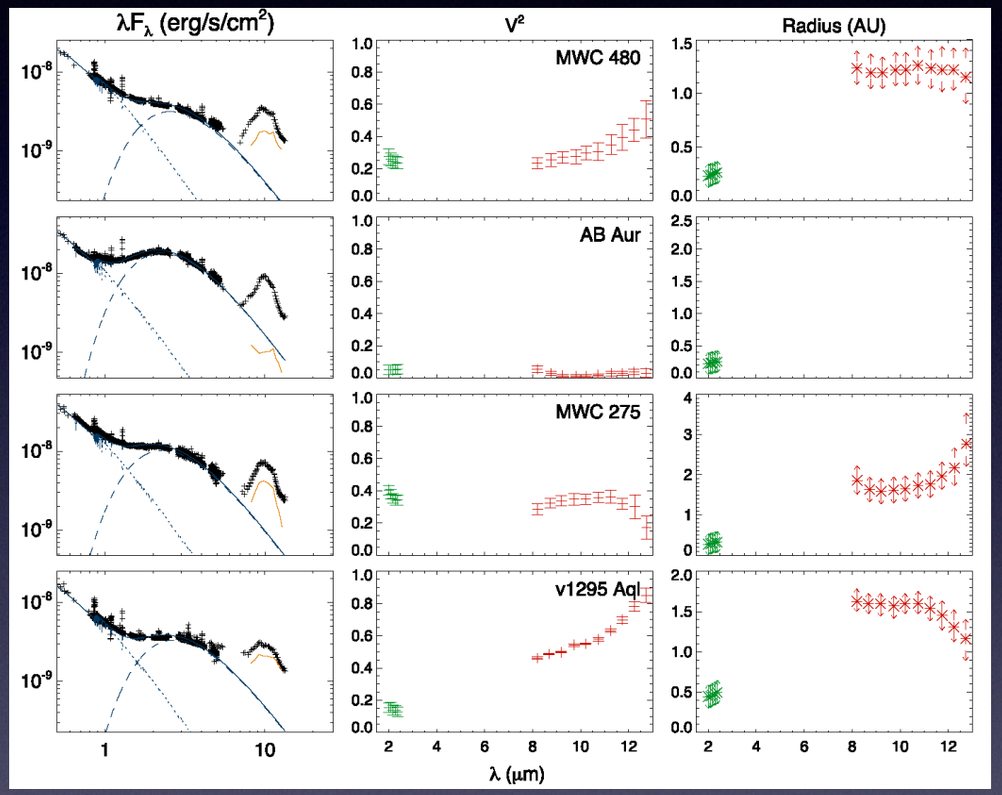
V band drop

middle disk no longer shadowed



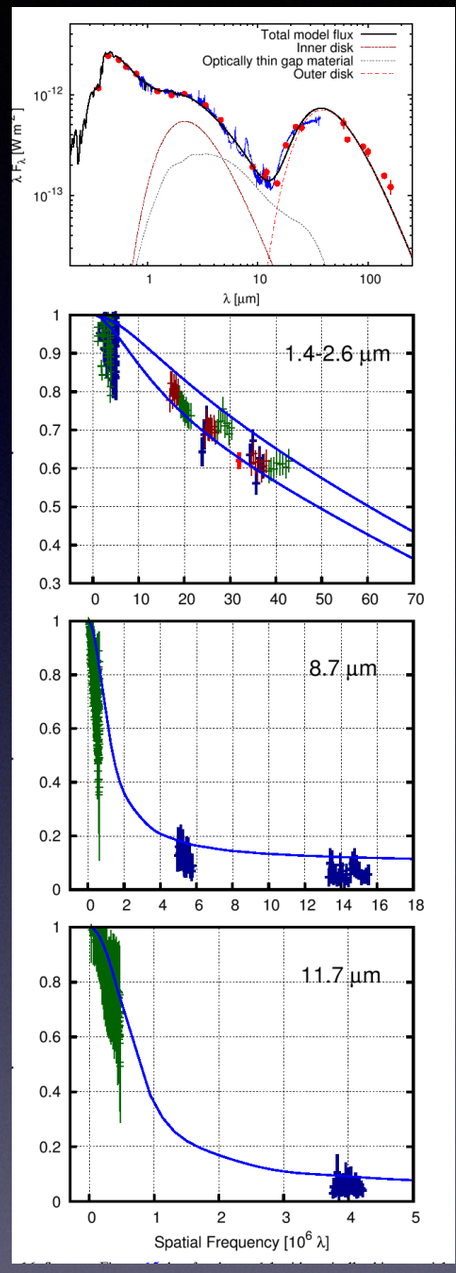
What Next?

Coordinate with Interferometers (again)
Already did this with Keck (no longer KI) & VLTI/MATISSE (mid-IR 4T)
Discussed with CHARA Director and 6T Scientists Monnier last year

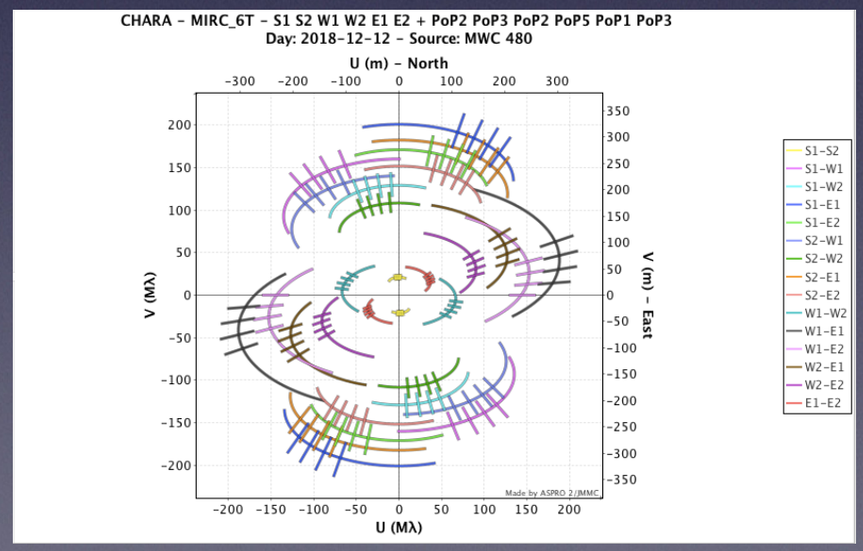


Millan-Gabet et al. 2016

Kraus et al. 2013

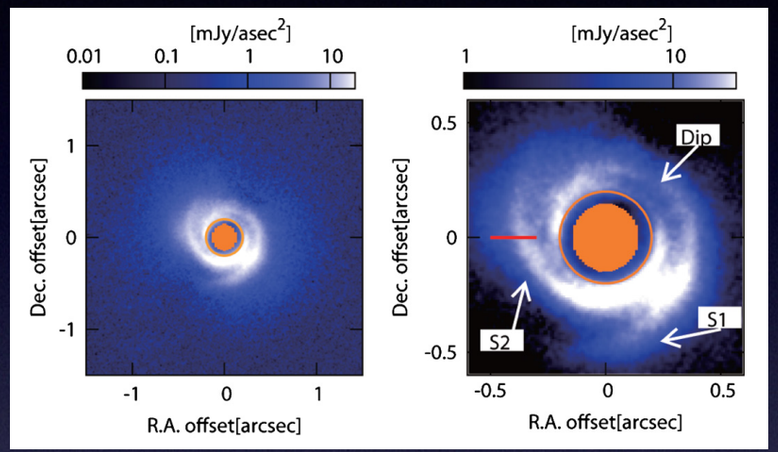


MWC 480 CHARA 6T

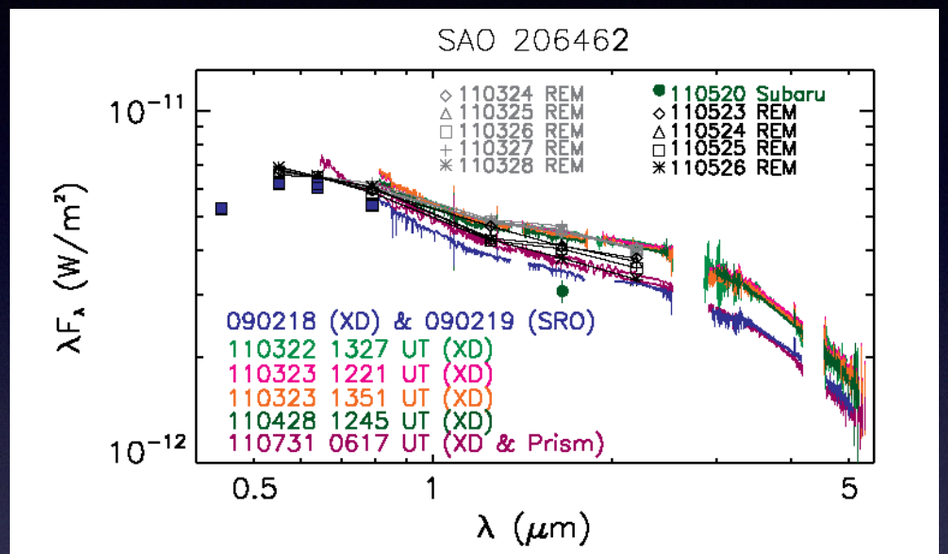


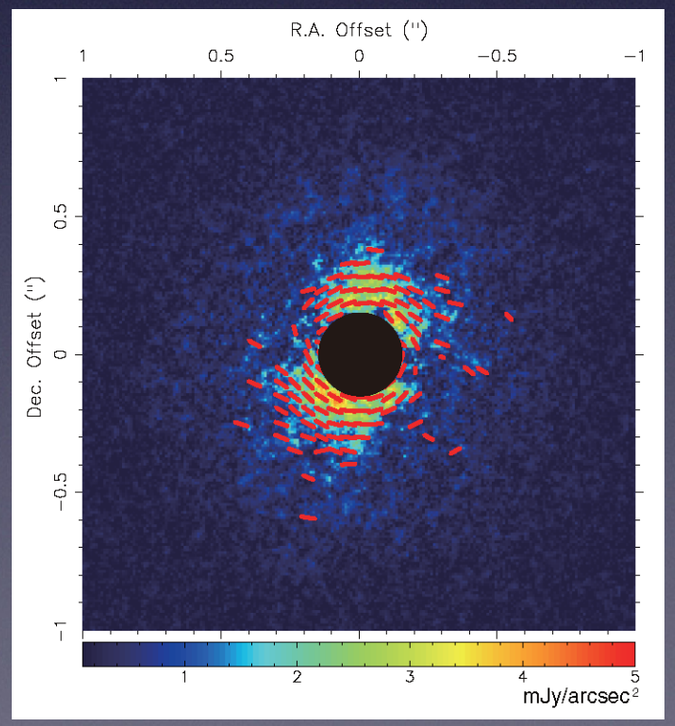
What Next?

Support of JWST (& other Coronagraphs) - What IS the illumination of the disks? (bright stars observable with JWST/MIRI coronagraph, NIRISS-SAM)

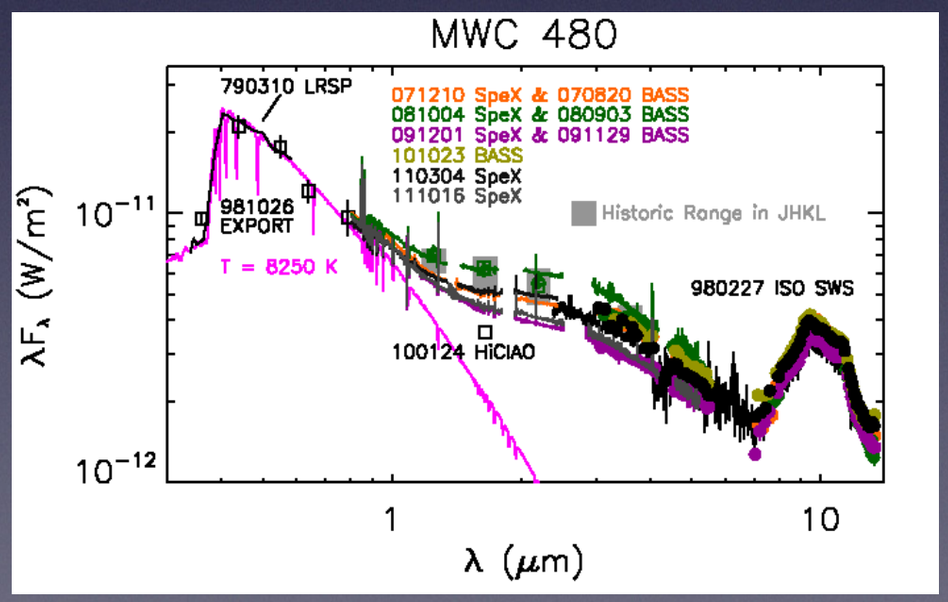


SAO 206462
(Muto et al. 2012)





MWC 480
(Kusakabe et al. 2012)



What Next?

Return of MIRSI with Visible-Wavelength (Guider) Capability
and Extension to mid-IR - variability, including “see-saw” behavior, daytime observing

