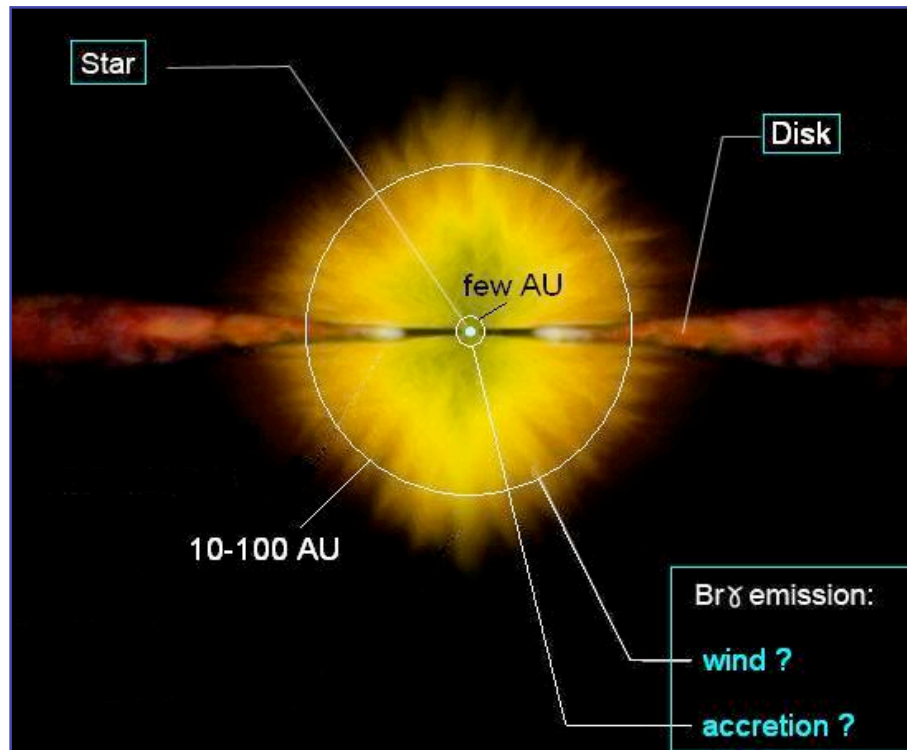


Studying the HI emission region around YSO NGC2024-IRS2

Simone Antonucci, Gianluca Li Causi, Stefan Vehoff



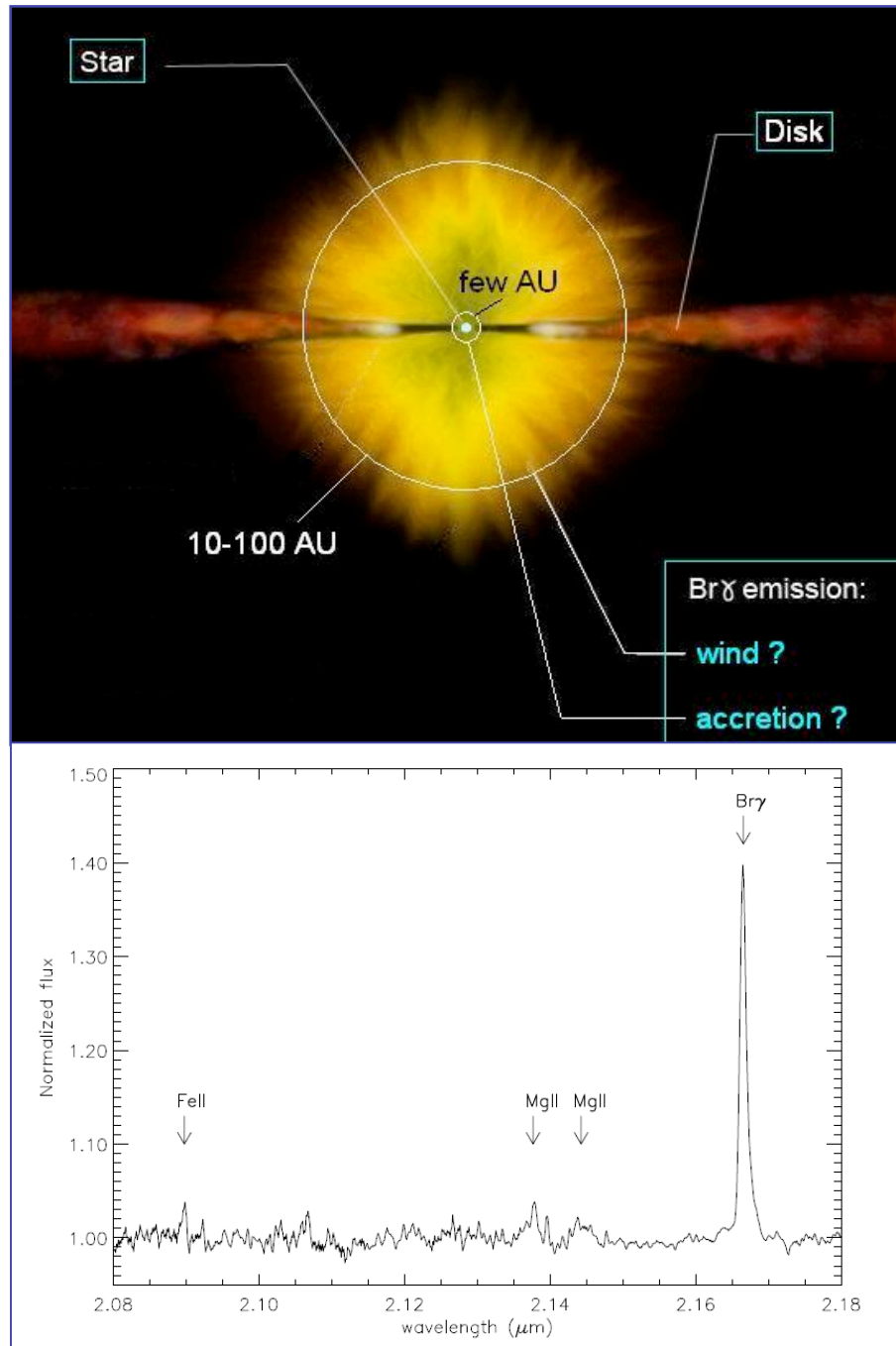


The object

- Class I YSO, $m_K = 4.5$,
 $d = 360$ pc, $L > 10^4 L_\odot$
- young star surrounded by an accretion disk; strong H I emission lines (e.g. Br γ)
- fit of SED yields disk with an outer radius of only 1AU (Lenorzer et al. 2003)

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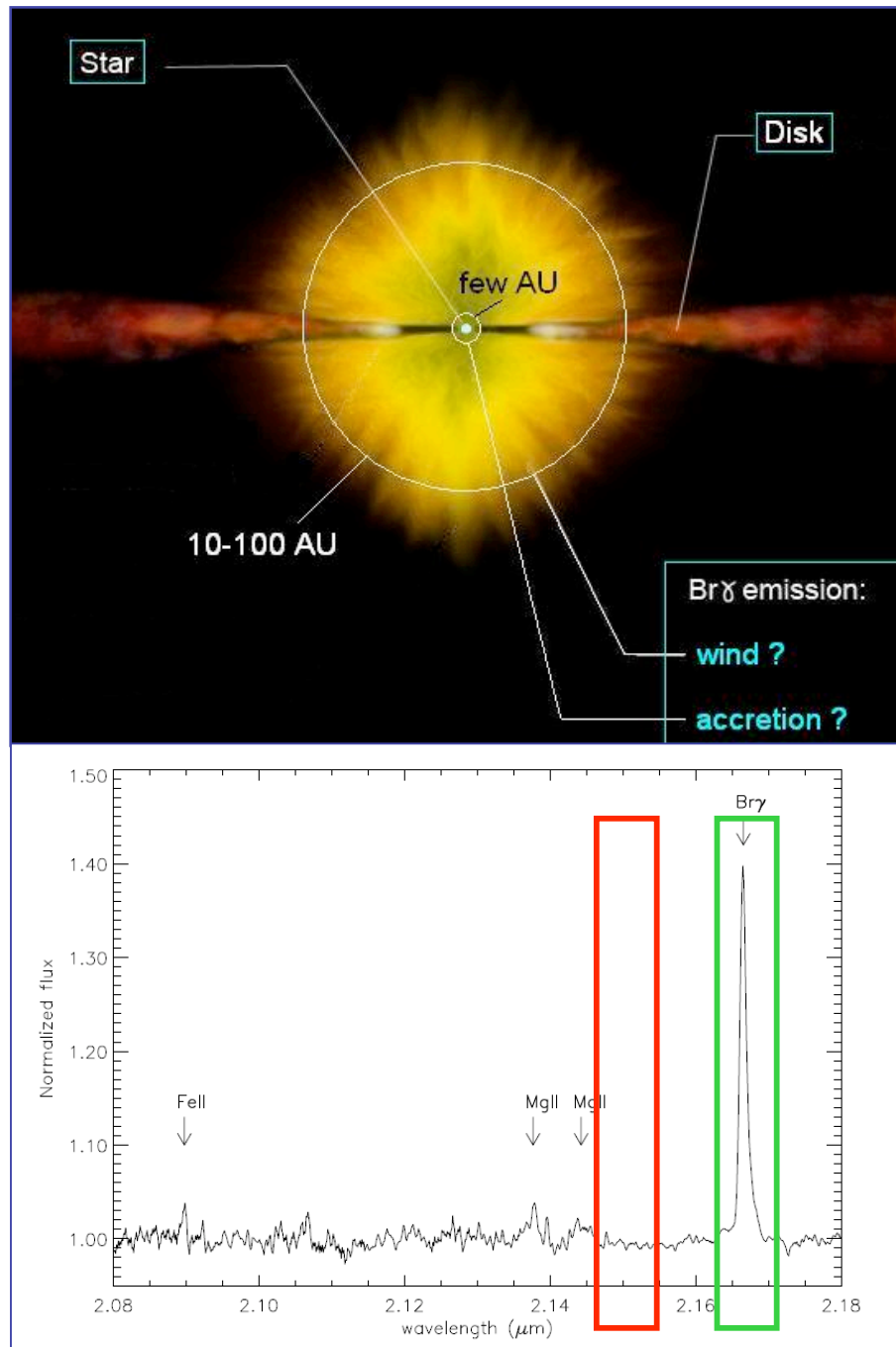


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Investigating the inner region of the object with **AMBER**:

- check Lenorzer's results
- put constraints on the size of the emitting region: **wind** or **accretion flow?**

Preparing observations...

Target: NGC 2024-IRS2

Magnitude: 4.5 (K band)

VLT configuration: UT1, UT2, UT4, min. 2 observations (4h)

Time of observation: late December, visible all night long

Configuration of AMBER: K Band – MR, spectral window centered around $2.17\mu\text{m}$

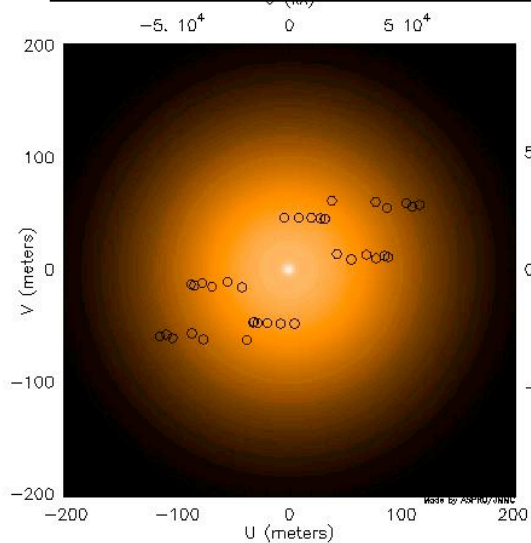
Calibrator: HD 30836

Magnitude: 4.1 (K band)

Diameter: 0.3 mas

ASPRO	Continuum emission (disk)	Bγ emission (envelope)
ACCRETION B γ emission from small inner region	elliptical gaussian <i>major axis: 1.96 mas</i> <i>minor axis: depending on inclination</i>	circular gaussian <i>1 mas</i> <i>0.4 flux ratio</i>
WIND B γ emission from extended envelope		circular gaussian <i>50 mas</i> <i>0.4 flux ratio</i>

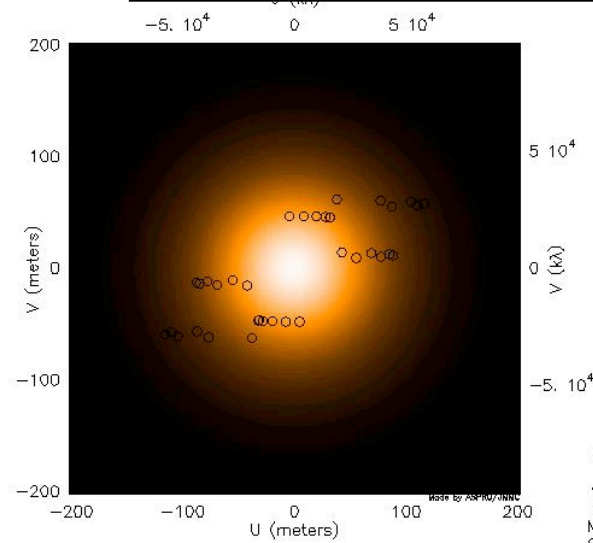
Bry, Accretion, pole-on



U1-U2-U4, DL set @ 127.0000

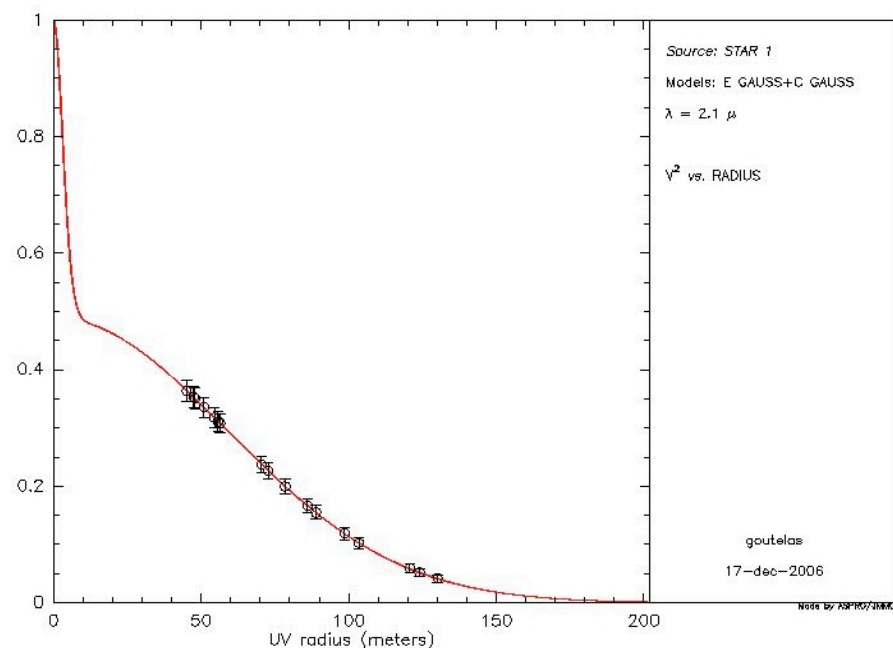
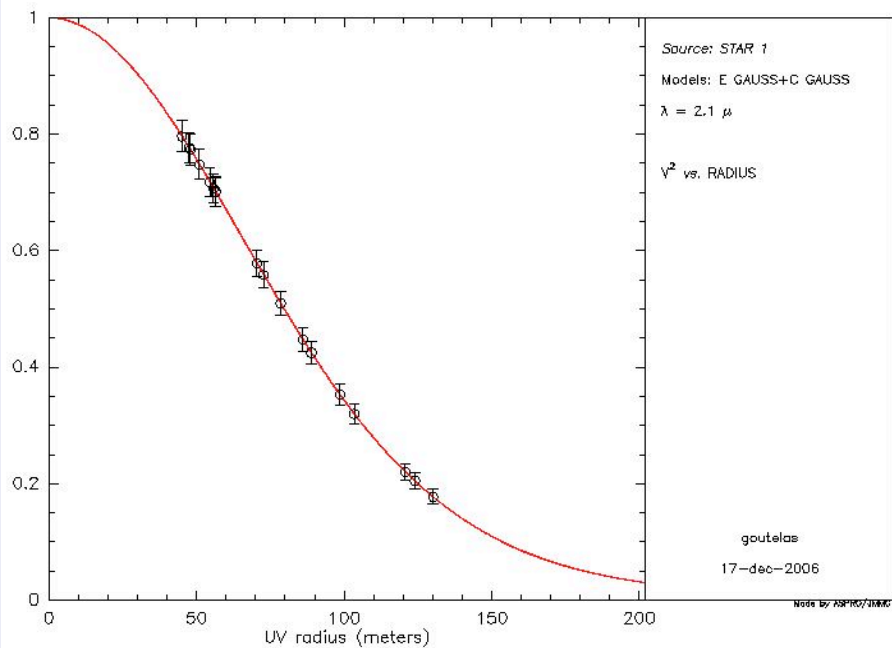
Wavelength 2.100 microns
 Declination -1.9°
 Models: E GAUSS+C GAUSS
 Source: STAR 1

Bry, Wind, pole-on

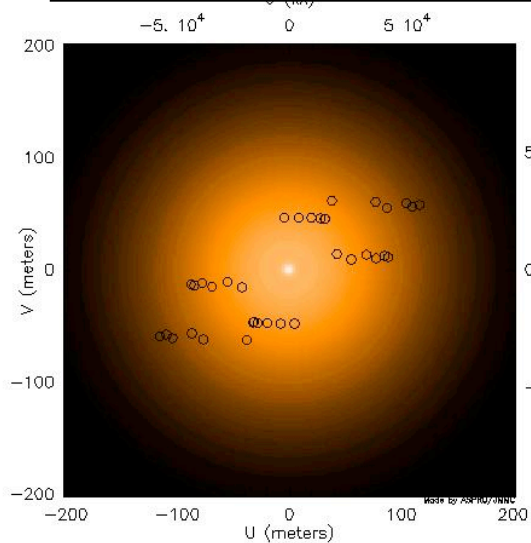


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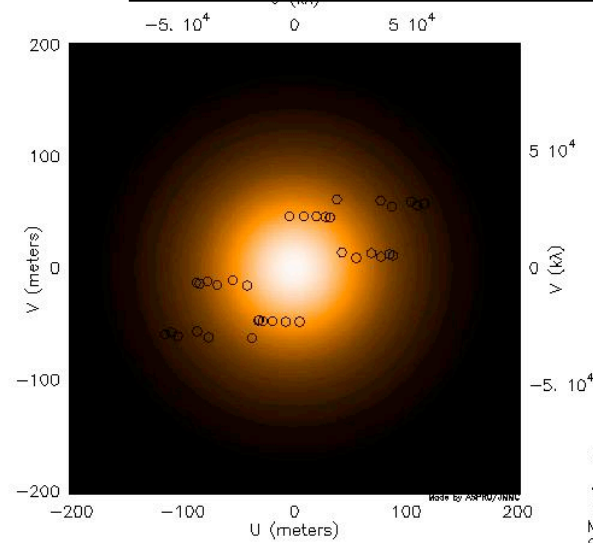
B_γ, Accretion, pole-on



U1-U2-U4, DL set @ 127.0000

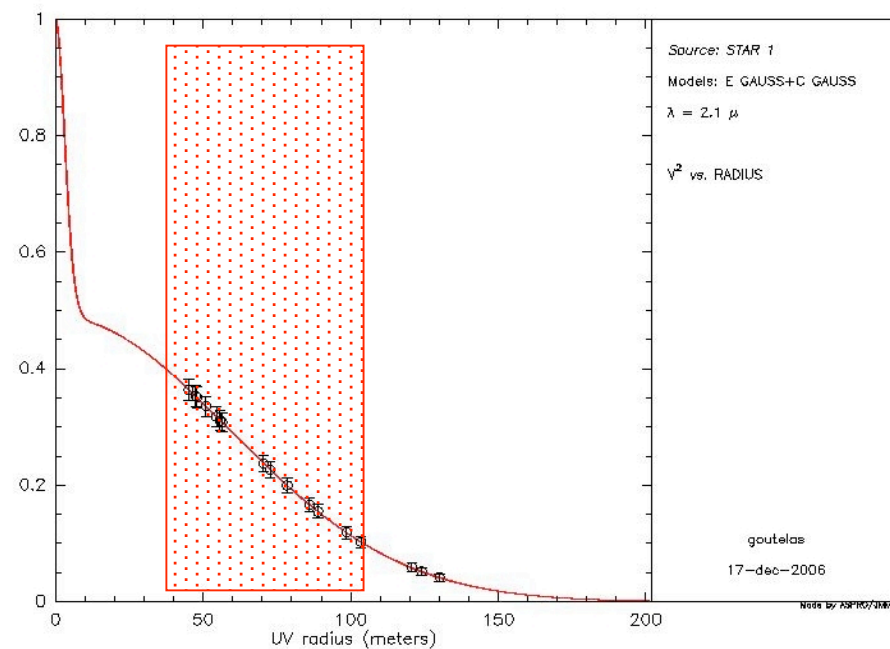
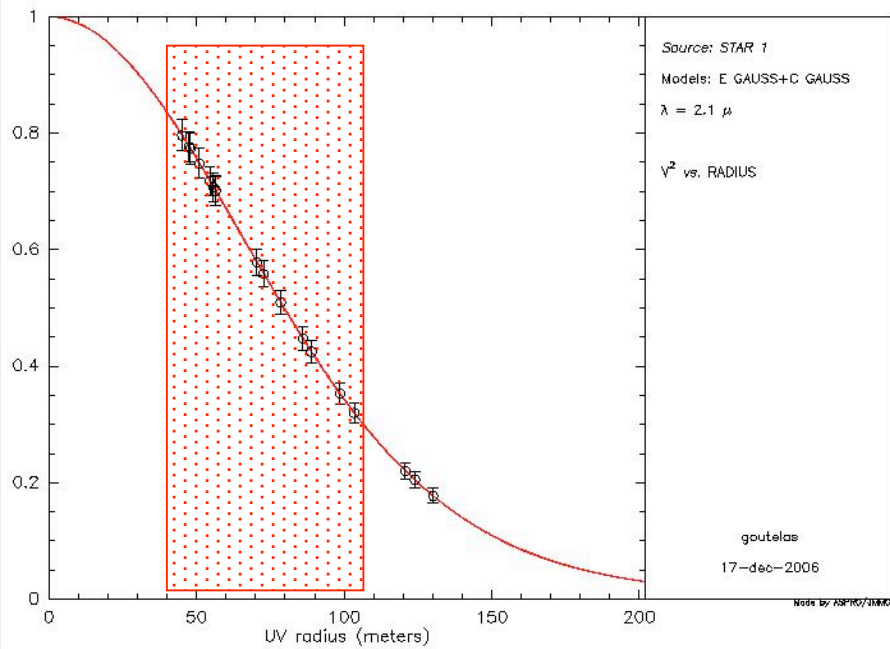
Wavelength 2.100 microns
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Source: STAR 1

B_γ, Wind, pole-on

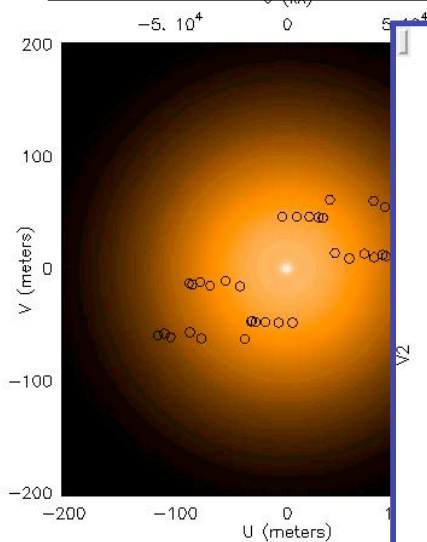


U1-U2-U4, DL set @ 127.0000

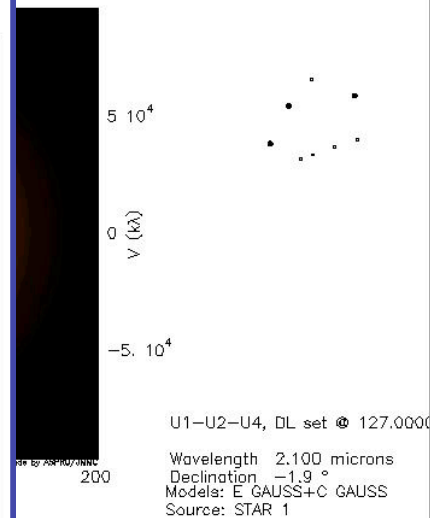
Wavelength 2.100 microns
Declination -1.9°
Models: E GAUSS+C GAUSS
Source: STAR 1



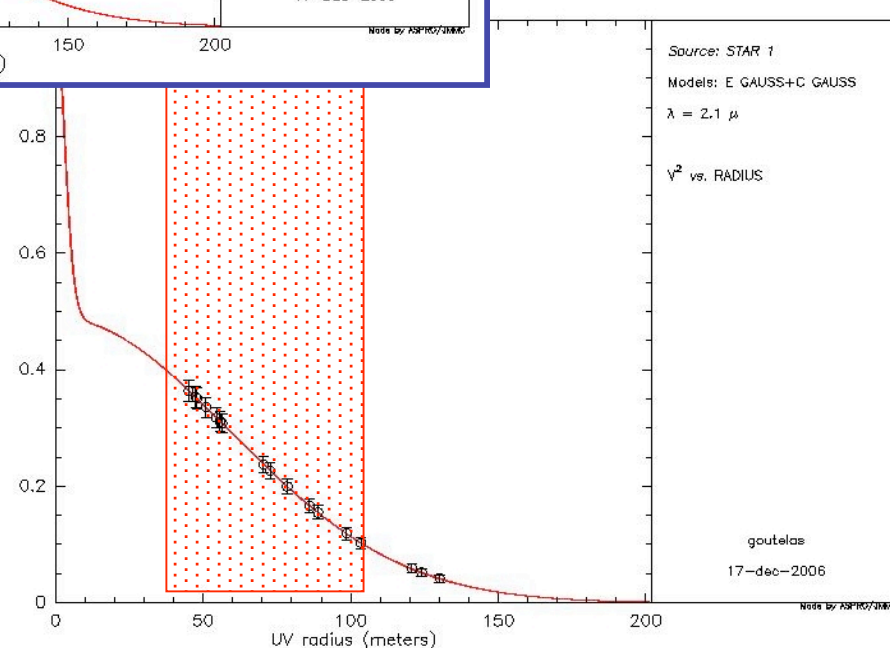
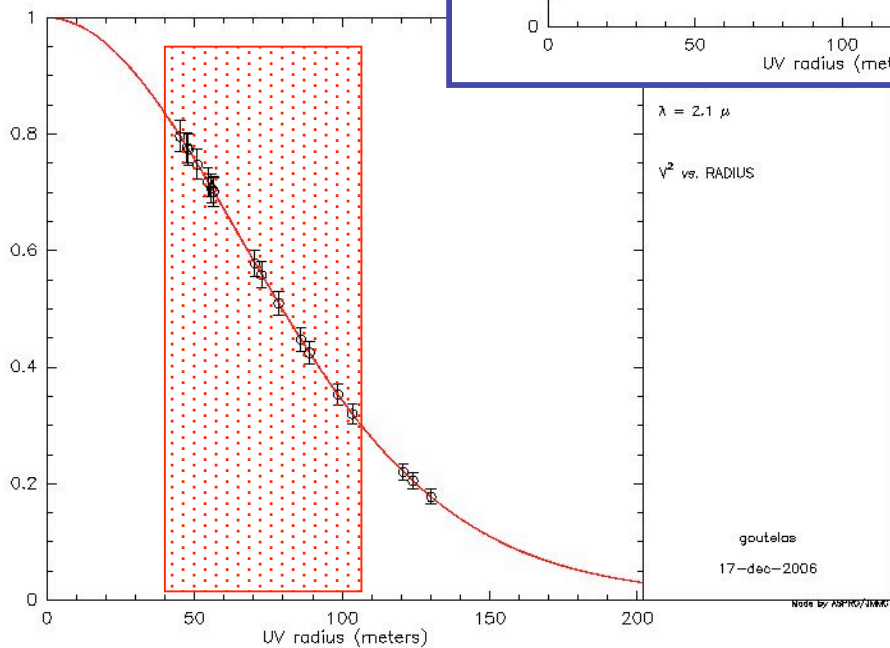
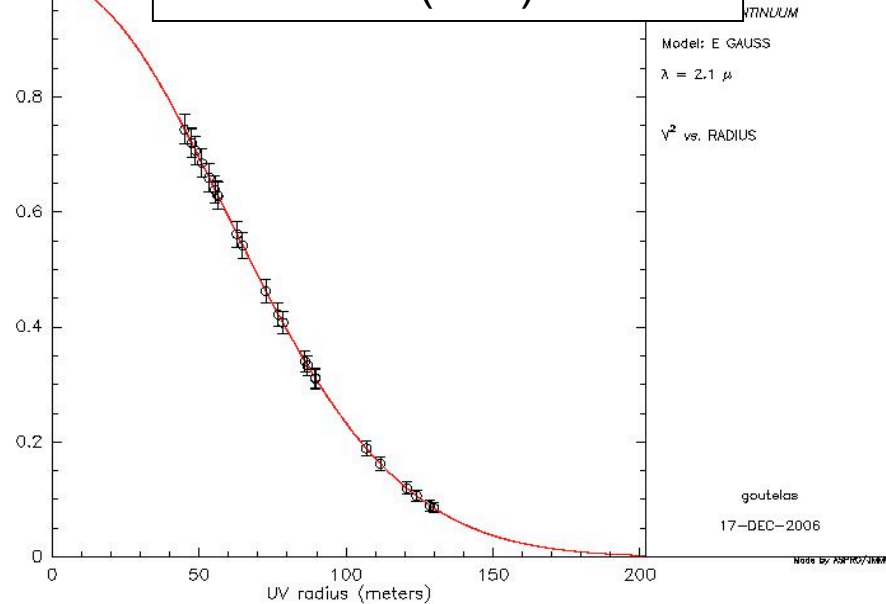
Bry, Accretion, pole-on



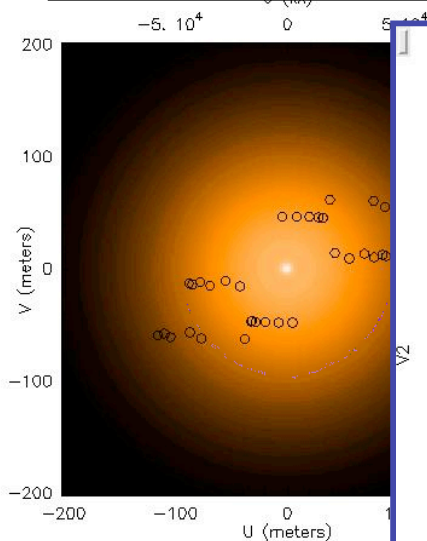
Bry, Wind, pole-on



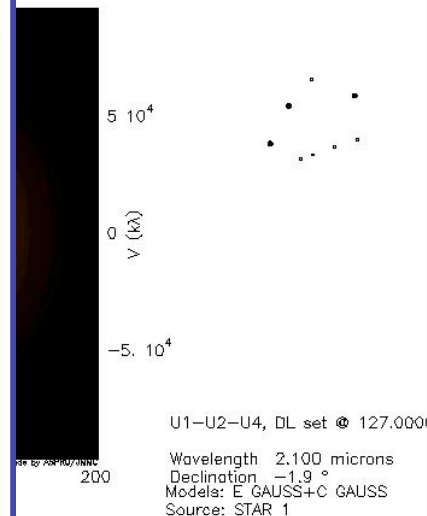
Continuum (disk)



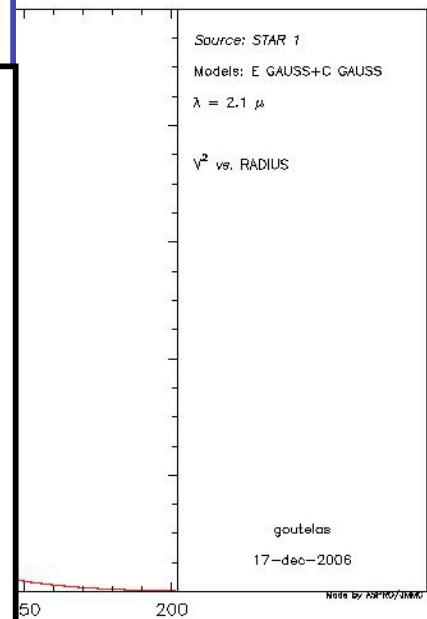
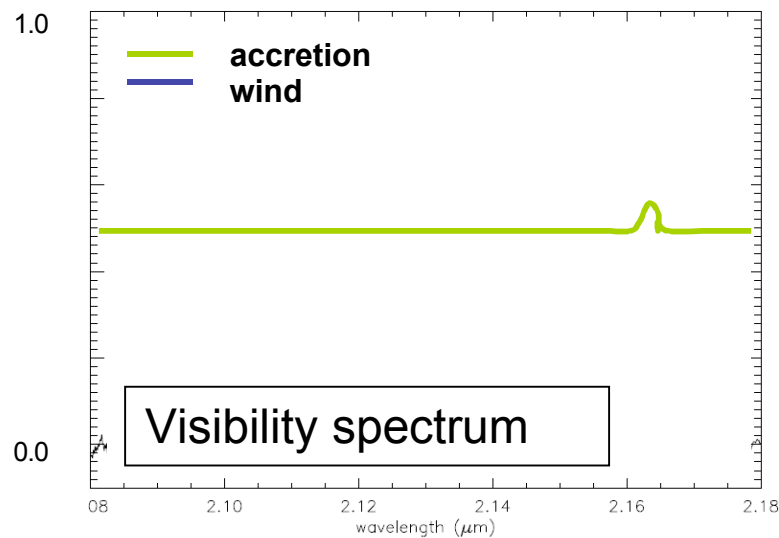
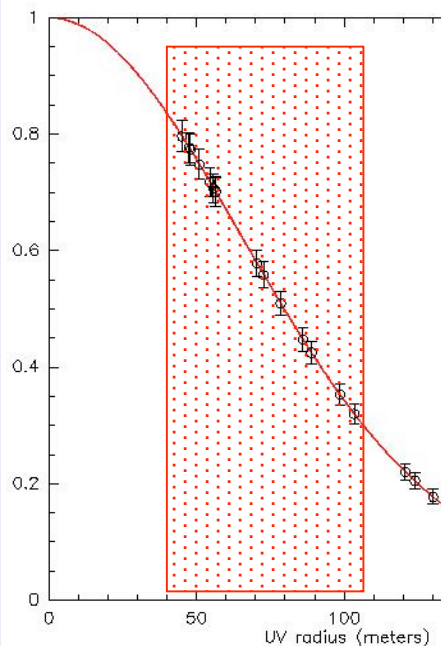
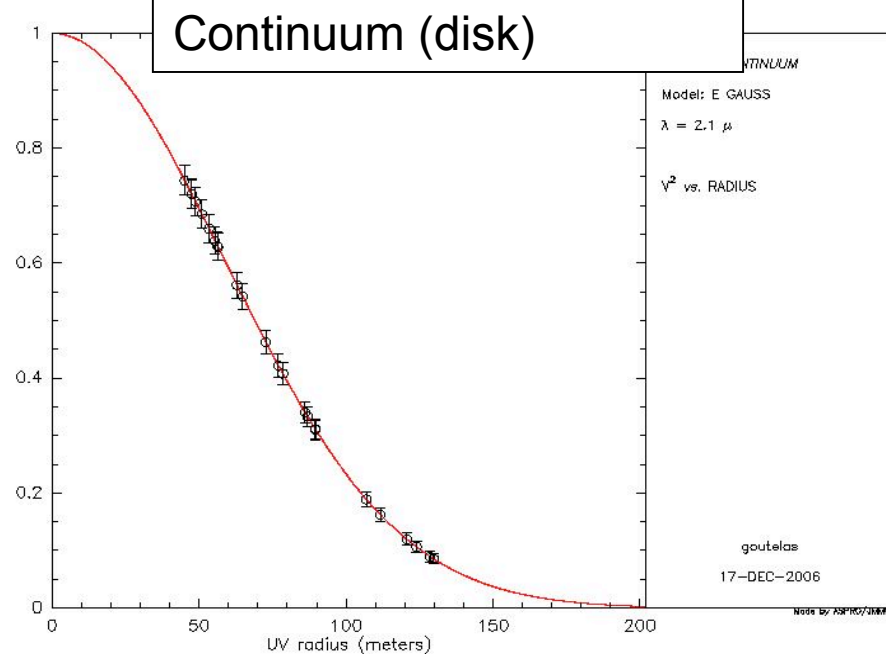
Bry, Accretion, pole-on



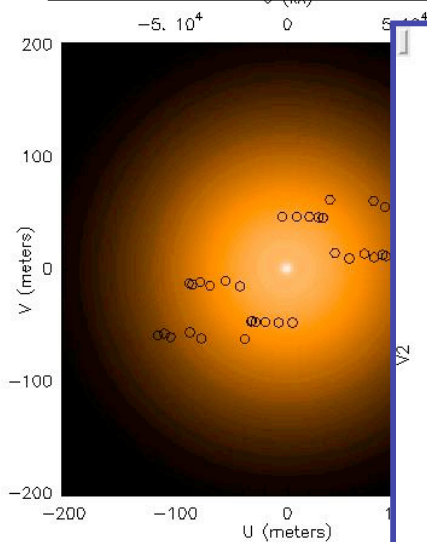
Bry, Wind, pole-on



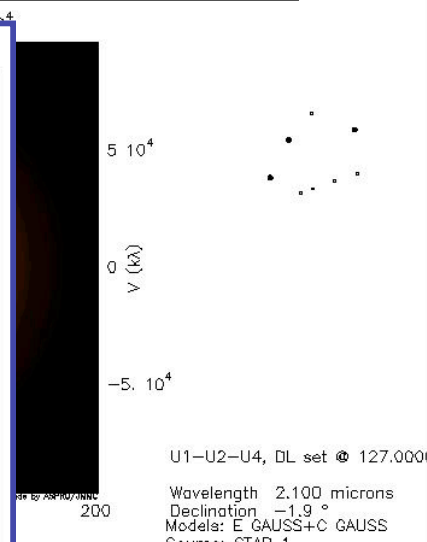
Continuum (disk)



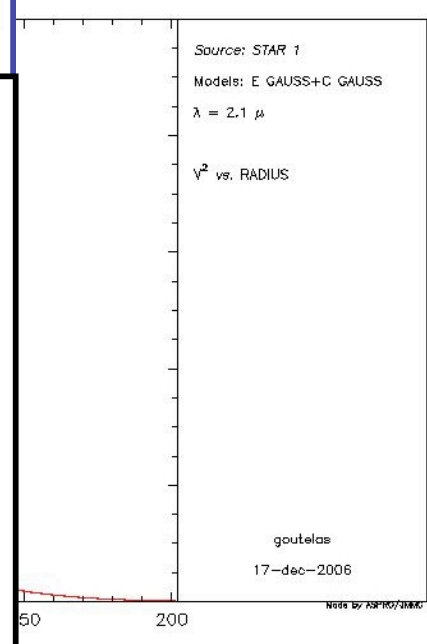
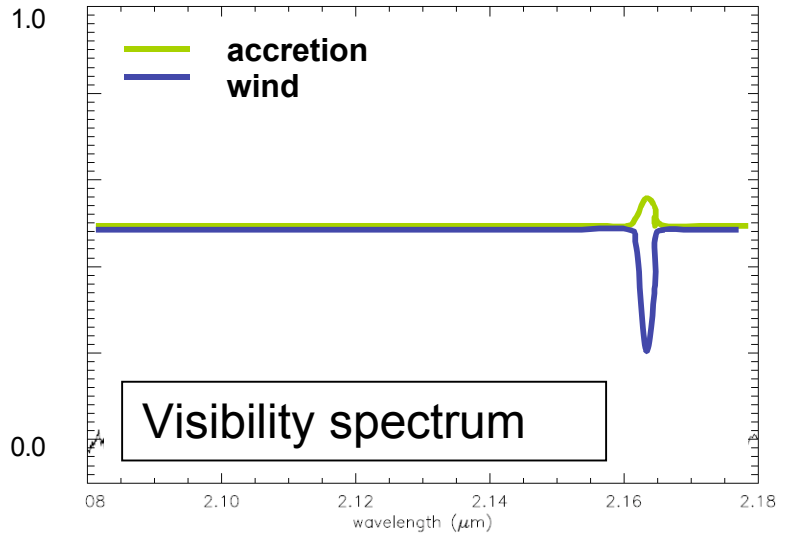
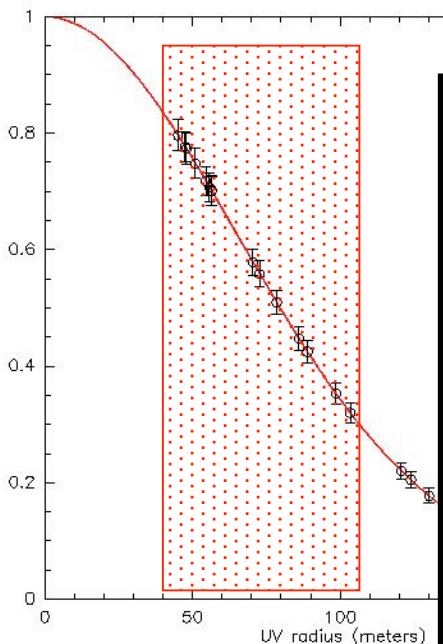
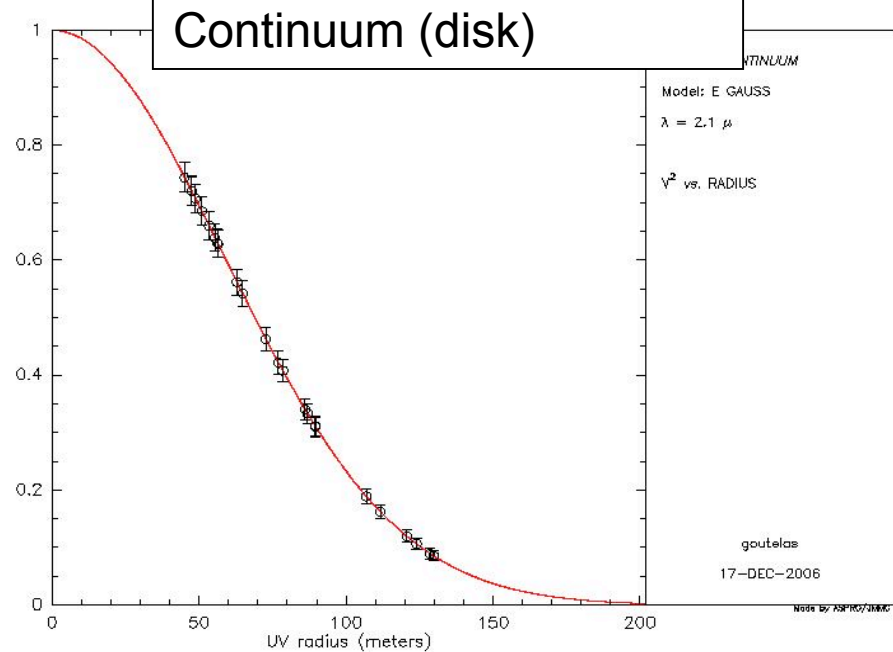
B γ , Accretion, pole-on



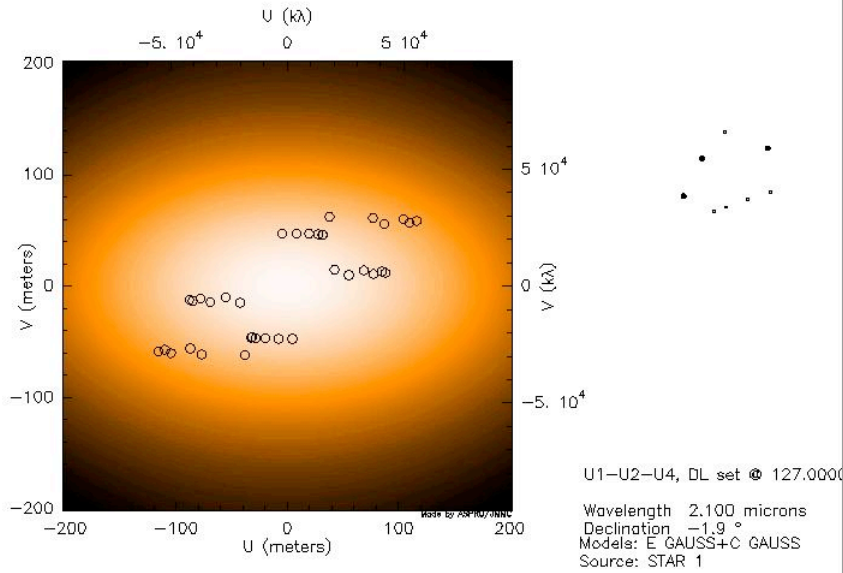
B γ , Wind, pole-on



Continuum (disk)



B γ , Accretion, i=60 deg.



B γ , Wind, i=60 deg.

