Intimacy of MWCXXX with AMBER

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Le chateau de Goutelas

Science case:

- Probably a pre-main-sequence B[e] star (YSO)

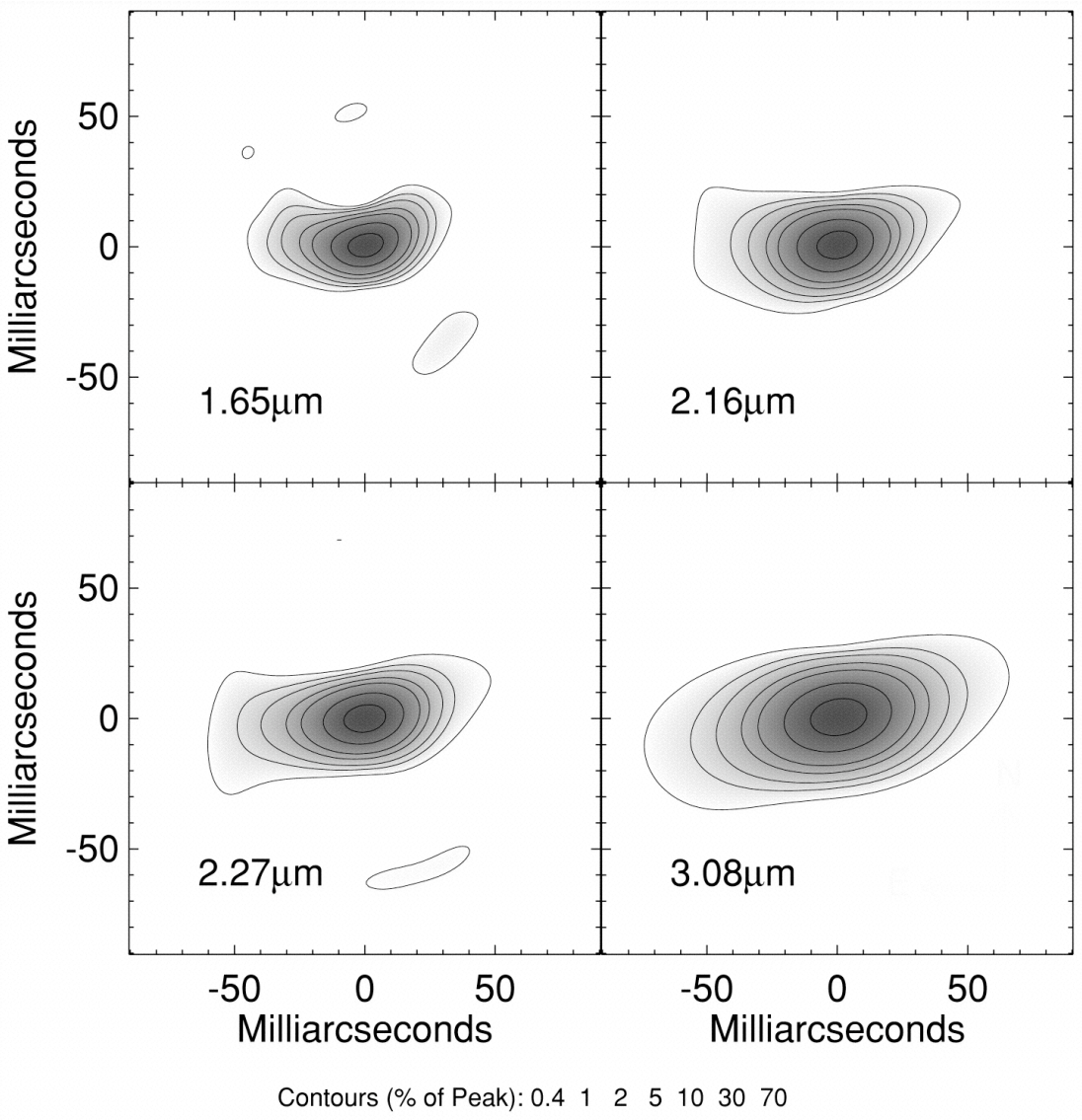
- Disagreement in literature about:
  evolutionary status, luminosity, and distance

- Dense neutral Keplerian disk (radius ≈ 300 AU)
  - Nearly edge-on

- Hydrogen recombination line masers
  - Discovered at mm / sub-mm wavelengths
  - Located at ≈ 40 AU
  - Kinematically associated with disk

- Ionized wind (terminal velocity ≈ 60 km s^{-1})
  - Wind is likely due to photo-evaporation of disk

Keck Aperture Masking Images (Danchi et al.)



What we want to find out:

- **Inner scale of the continuum flux**
  use of existing data of Keck uperature masking
  Amber gives closure phase
  --> posibility to combine both data sets

- **Complex Visibility in Br gamma line:**
  Interaction between wind & disk,
  constrains on central object

How do we want to find it out:

- **VLTI & Amber** (medium resolution)
  with At's + Finito --> **2008** earliest

AT baslines:

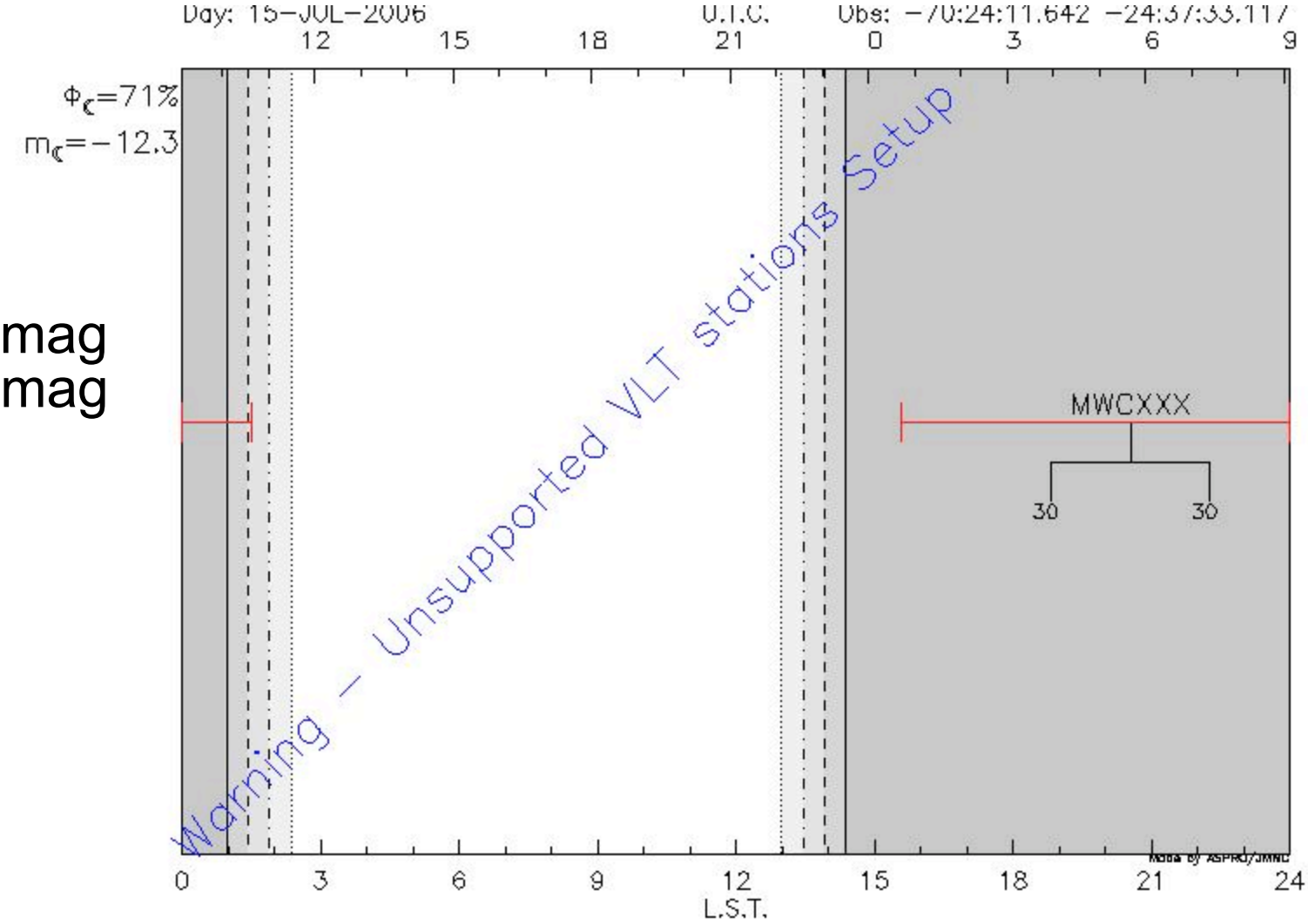
- E0-G0 (16 m)
- G0-G2 (24 m)
- G2-E0 (29 m)

Observability in July 2006

_no dark moon requierd

MWCXXX

K flux 3.3 Kmag
V flux 11.8 Vmag

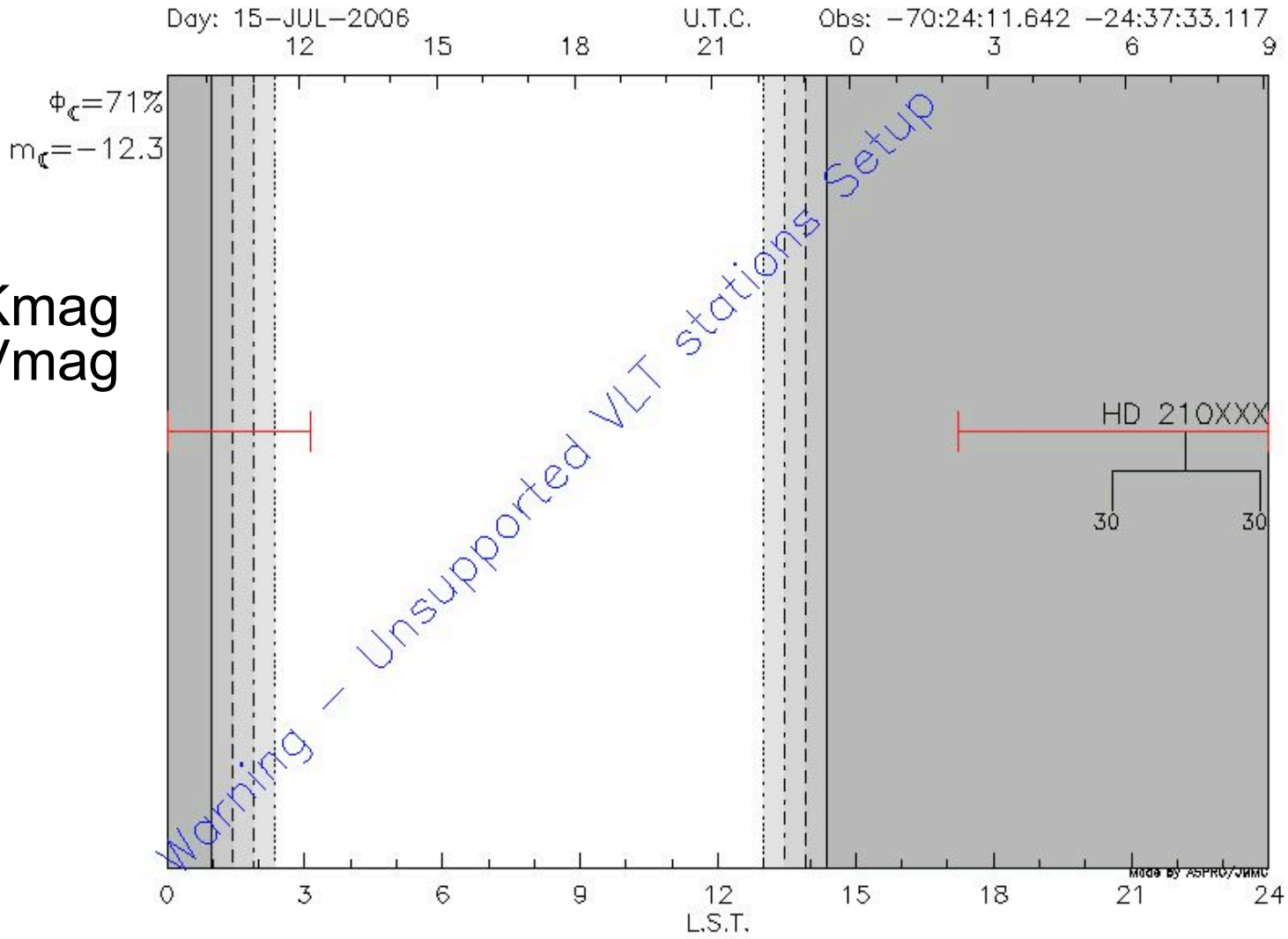


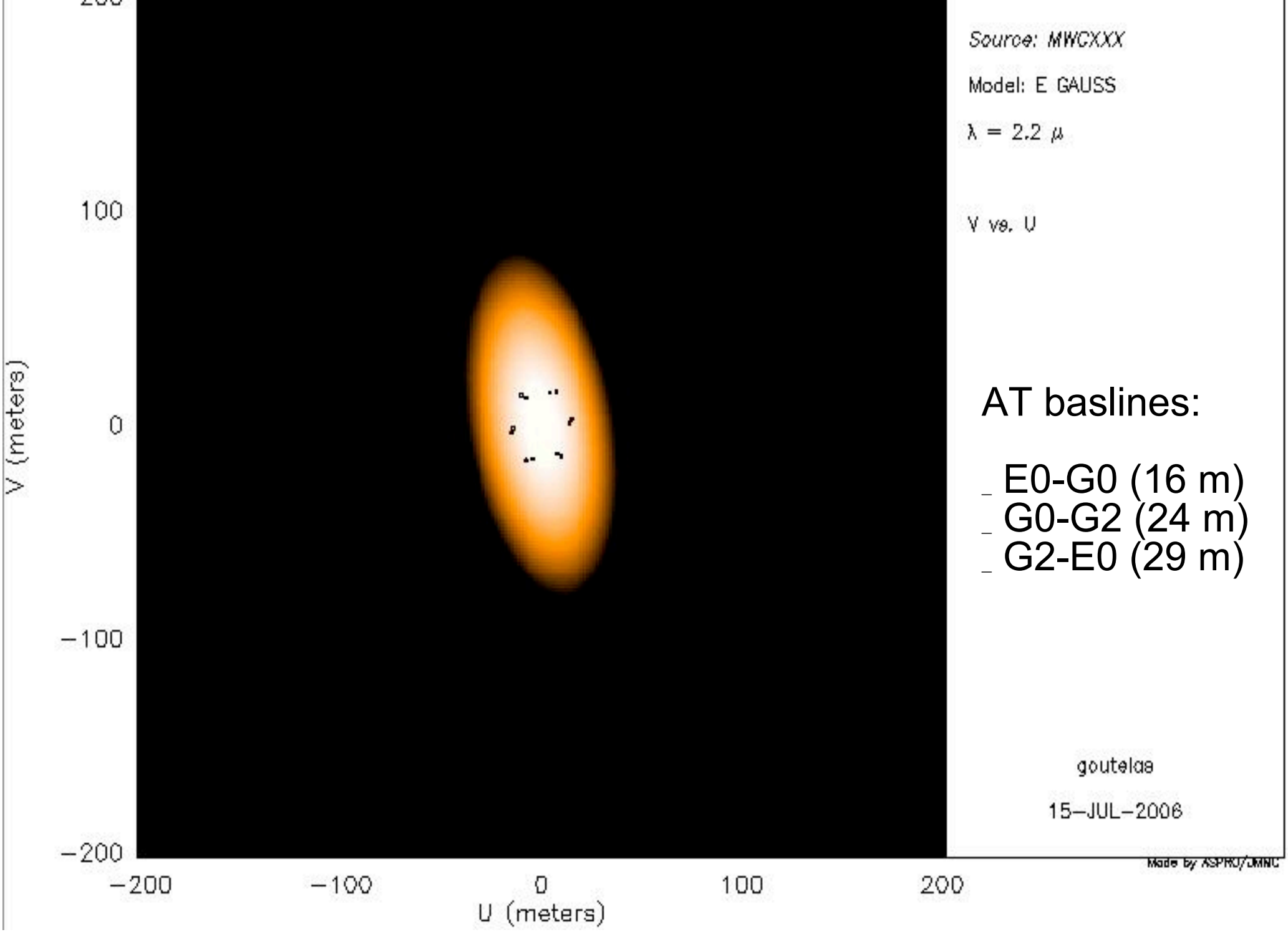
Observability in July 2006

_no dark moon requierd

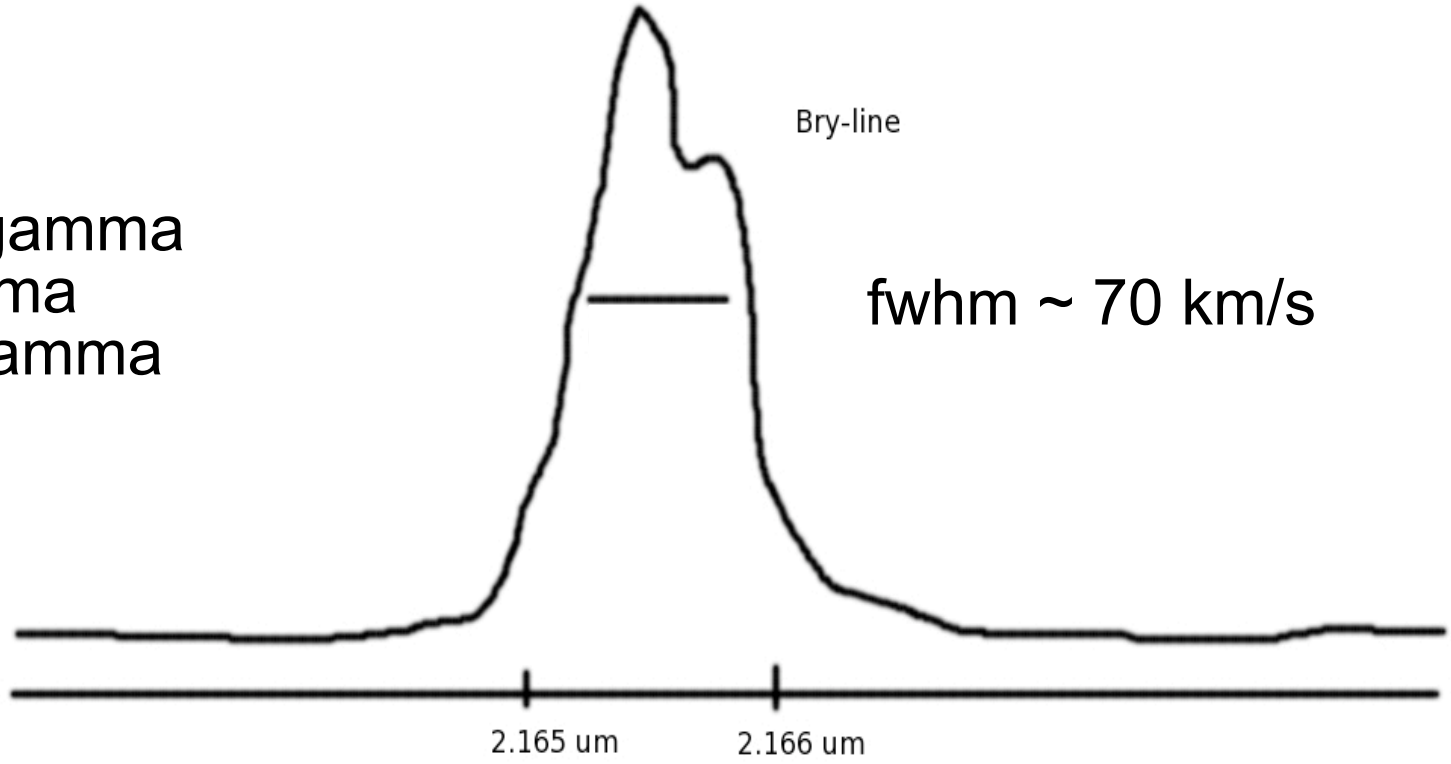
HD 210XXX

K flux 3.6 Kmag
V flux 7.3 Vmag




Source: MWCXXX
Model: E GAUSS
λ = 2.2 μ
V vs. U
AT baslines:
_ E0-G0 (16 m)
_ G0-G2 (24 m)
_ G2-E0 (29 m)
goutelas
15-JUL-2006
Made by ASPRO/JMMC
V (meters)
U (meters)
200
100
0
−100
−200
−200
−100
0
100
200

3 observations
0.04 mu right of Br gamma
0.04 mu on Br gamma
0.04 mu left of Br gamma



--> Complex visibility in Br gamma
--> inner scale (inner rim) of MWCXXX