The Interferometric Observations of the Post-AGB Star : HD 172810

Melike Afsar, Zeynep Bozkurt
Belinda Kalomeni

Scientific Justification

- **AGB --> Post-AGB --> PNe**
- **Initial masses between 0.8 M_{sun} – 9 M_{sun}**
- **Spectral range : B – K**
- **Short-lived phase - constant luminosity**
- **Post-AGB stars are rare and not many are known**
- **Studies exist but the evolution of the Post-AGBs not well understood**
- **Detailed study of these objects are needed**

Target
HD 172810

- **“An evolutionary catalogue of galactic post-AGB & related objects” by Szczerba et al. (2007)”***
- **Catalogued as “very likely post-AGB”**
- **Class : RV Tau**
- **Spectral Type : K2**
- **K : 4.074 mag**
- **RA: 18 42 35.742, Dec: -7 38 16.820**

*http://www.ncac.torun.pl/postagb

- **RV Tau : near-infrared excess --> DUST !**
  --> BINARY ?

- **Determining the diameter of the giant**

- **Determining the diameter and the structure of the circumstellar disk (if any)**

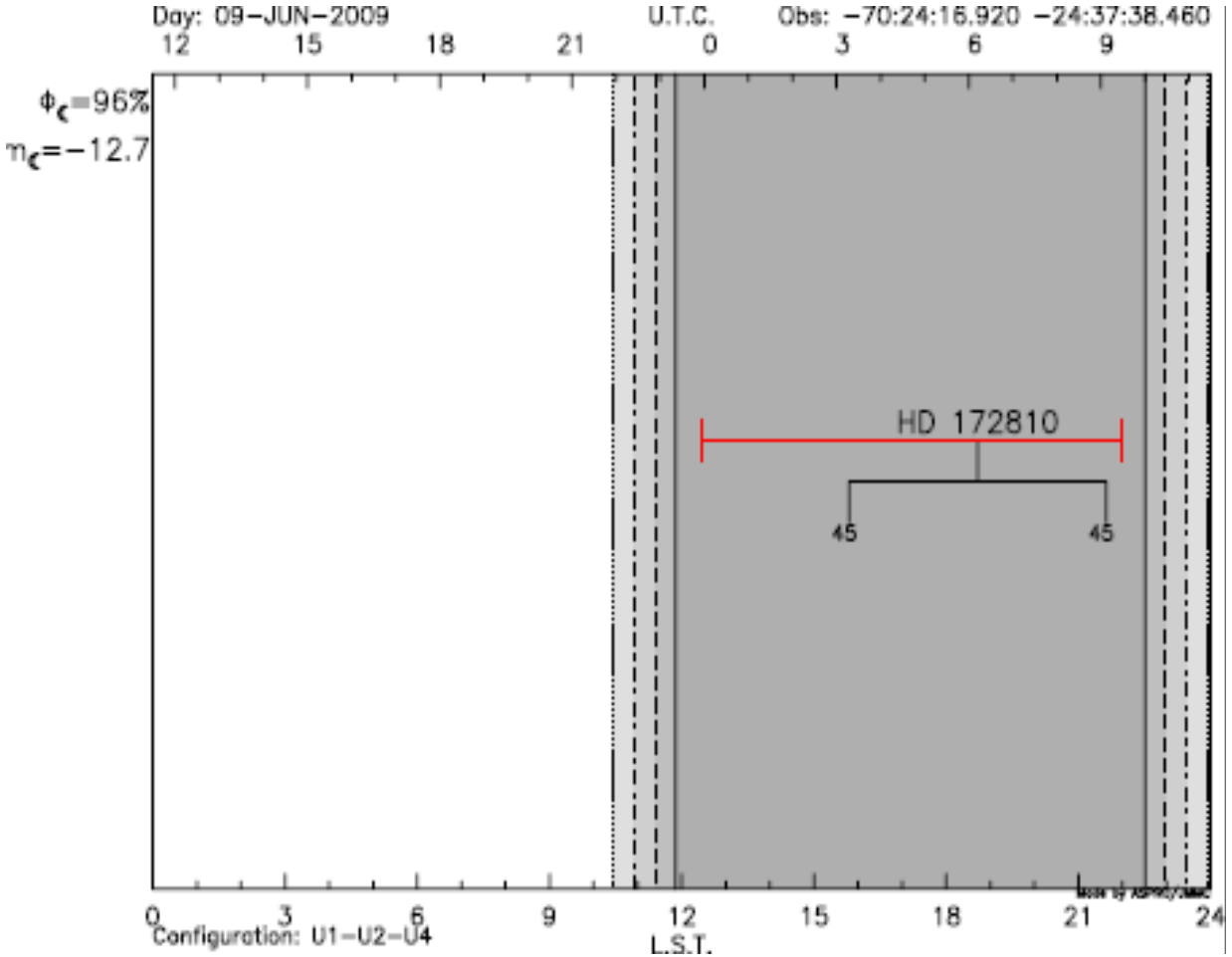
- **Structure of the disk is important for modeling the system**

Observational Setup

- **AMBER**
- **A0 – D0 – H0**
- **K – band (2.4 μm)**
- **May - August 2009 (elevation ~ 60°)**
  June - July 2009 (elevation ~ 45°)
- **HA : [-2, 2], 2 hours**
- **Seeing < 0".8**

- **Calibrator star : Eta Ser**
- **RA: 18 21 18.60, DEC: -2 53 55.77**
- **Spectral Type : K0 III-IV**
- **K : 1.05 mag**

Observability



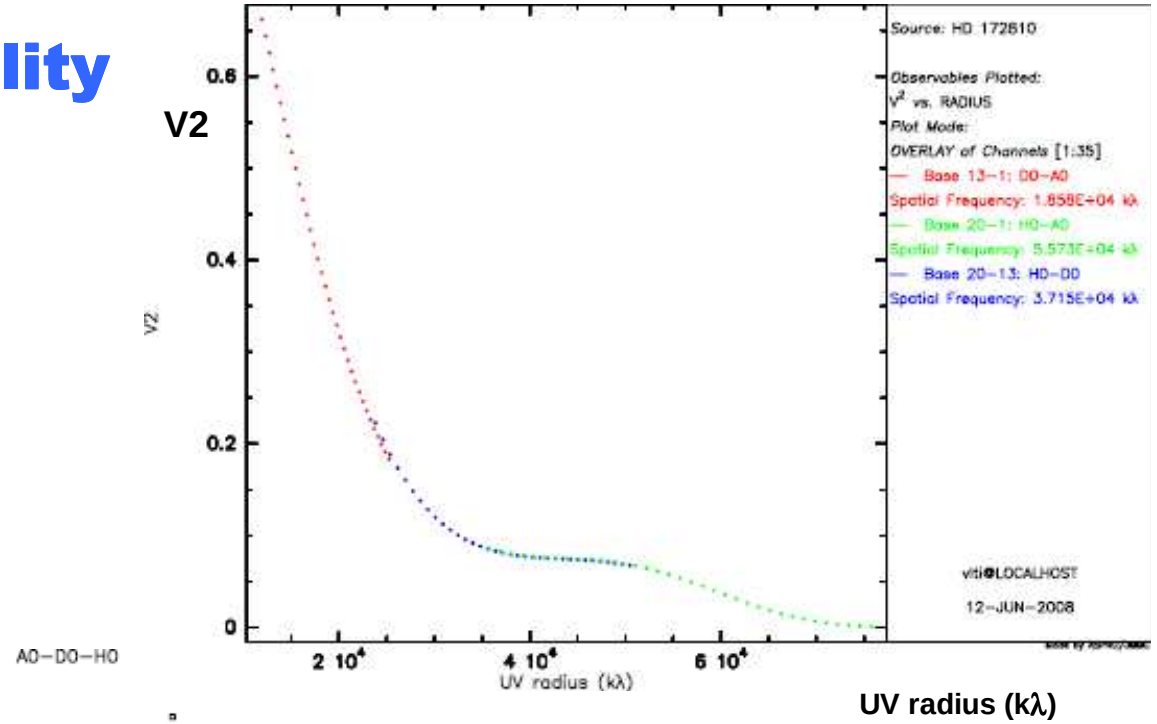
Visibility

Model 1: Circular disk

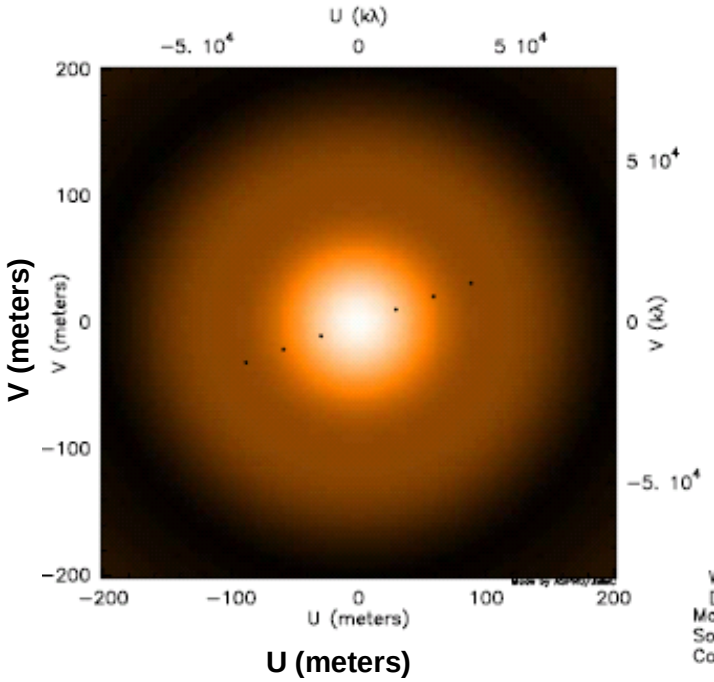
Model 2: Circular disk

Diameter (star) : 3 mas

Diameter (disk) : 10 mas

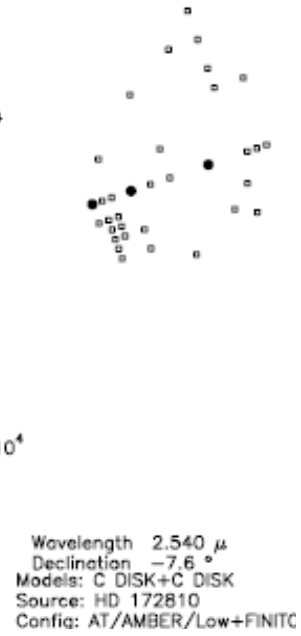


UV radius (kλ)



V (meters)

U (meters)



UV Coverage