

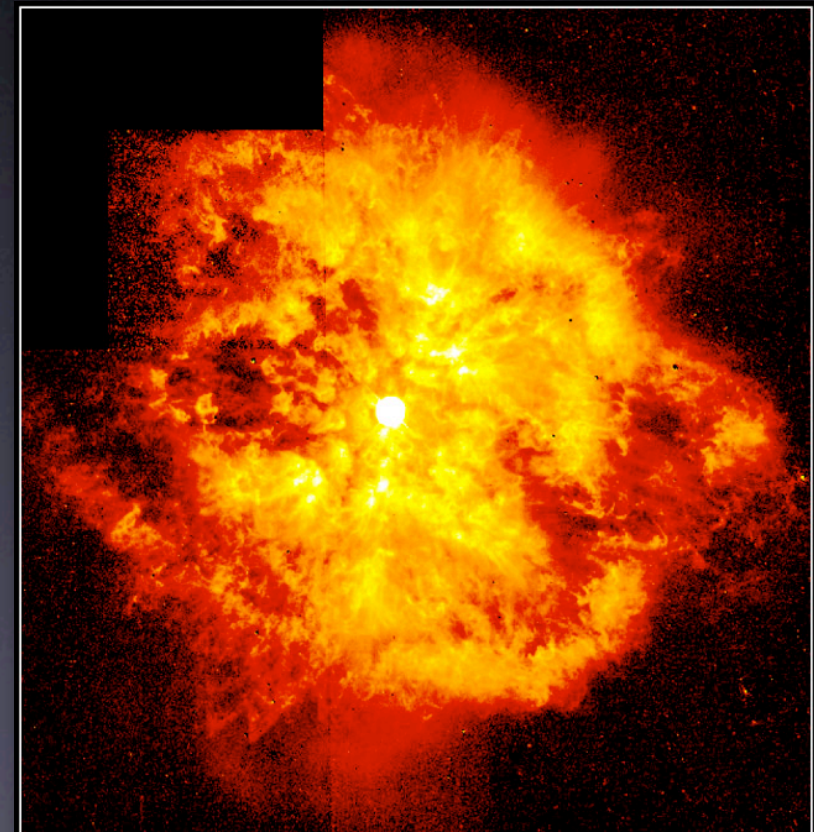
# Wind structure of black-hole progenitors

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(ESO+LAOG)

## Targets :

- **WR79a** (eWNL)  
V, K mag = 5.1, 4.9, d = 1.99 kpc
- **WR113** (WC) (?)  
V, K mag = 9.4, 5.4, d = 1.79 kpc

Wolf-Rayet star = Wolf-Rayet wind



Nebula M1-67 around Star WR124 HST • WFPC2  
PRC98-38 • STScI OPO • November 5, 1998  
Y. Grosdidier and A. Moffat (University of Montreal) and NASA

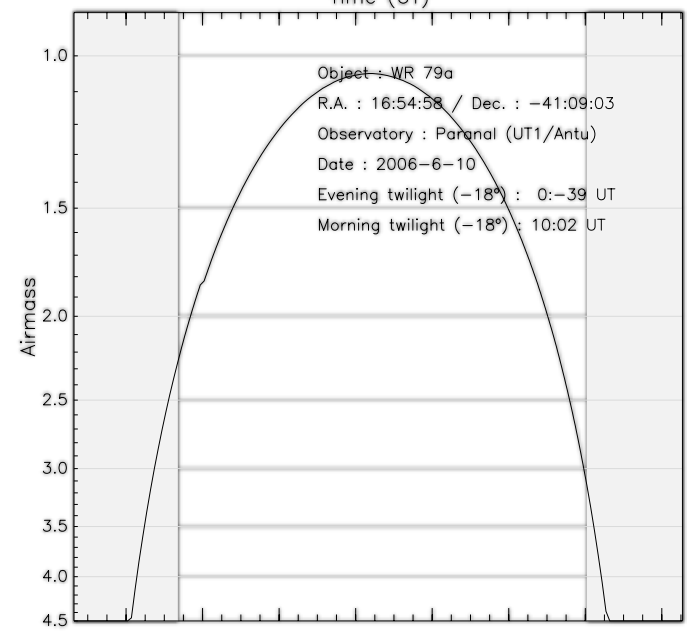
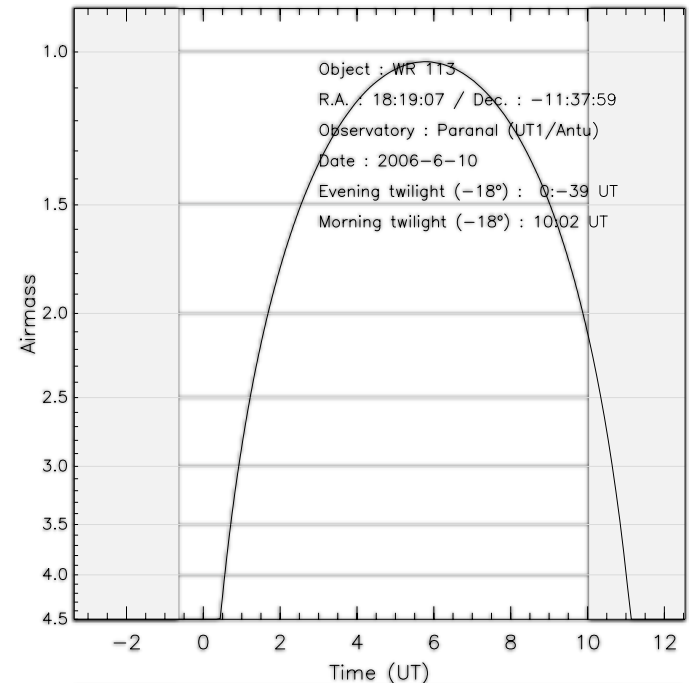
# Preparation

For **WR79a**

- FEROS spectrum + WFI image.
- FUSE + IUE + ISO spectra
- AMBER SDT (useless)
- AMBER GTO, still?

For **WR113**

- No ESO archive data





- Bracket  $\gamma$  @  $2.165\mu$
- Measure the size versus the wavelength.
- Closure phase could bring photocenter shift, hence rotation velocity?
- **AMBER 3T MR-HK**

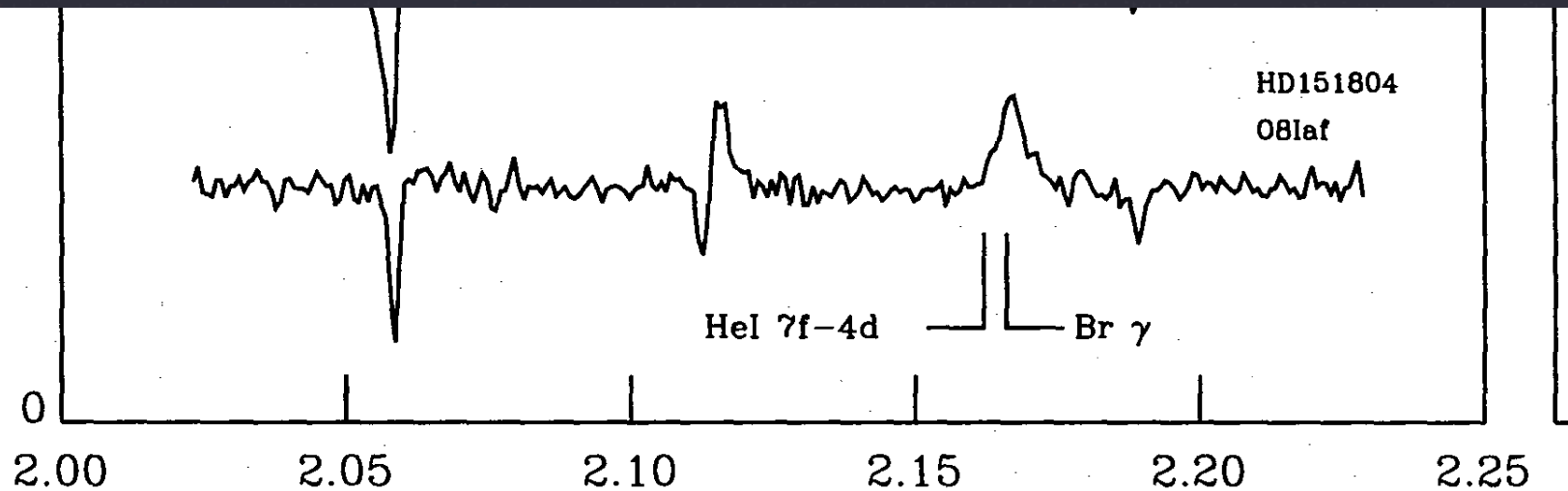
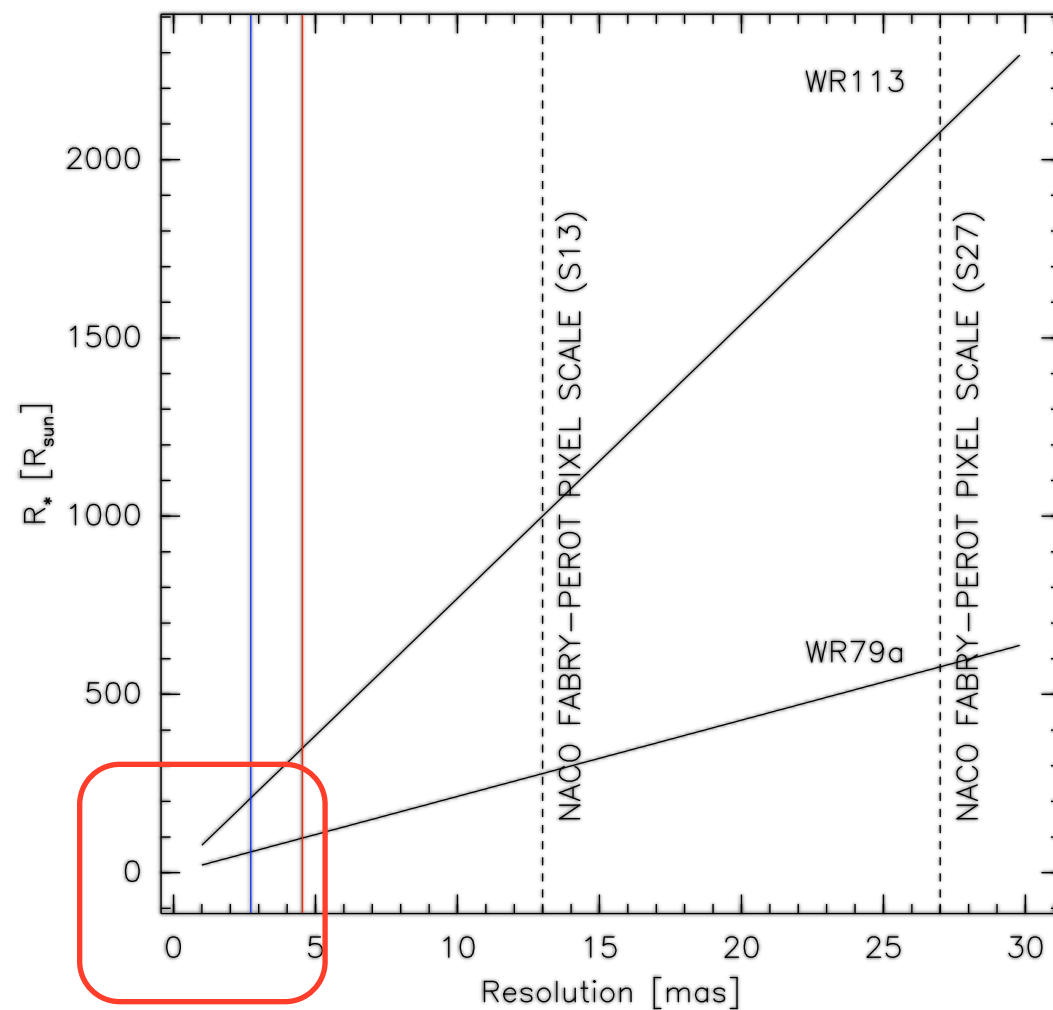
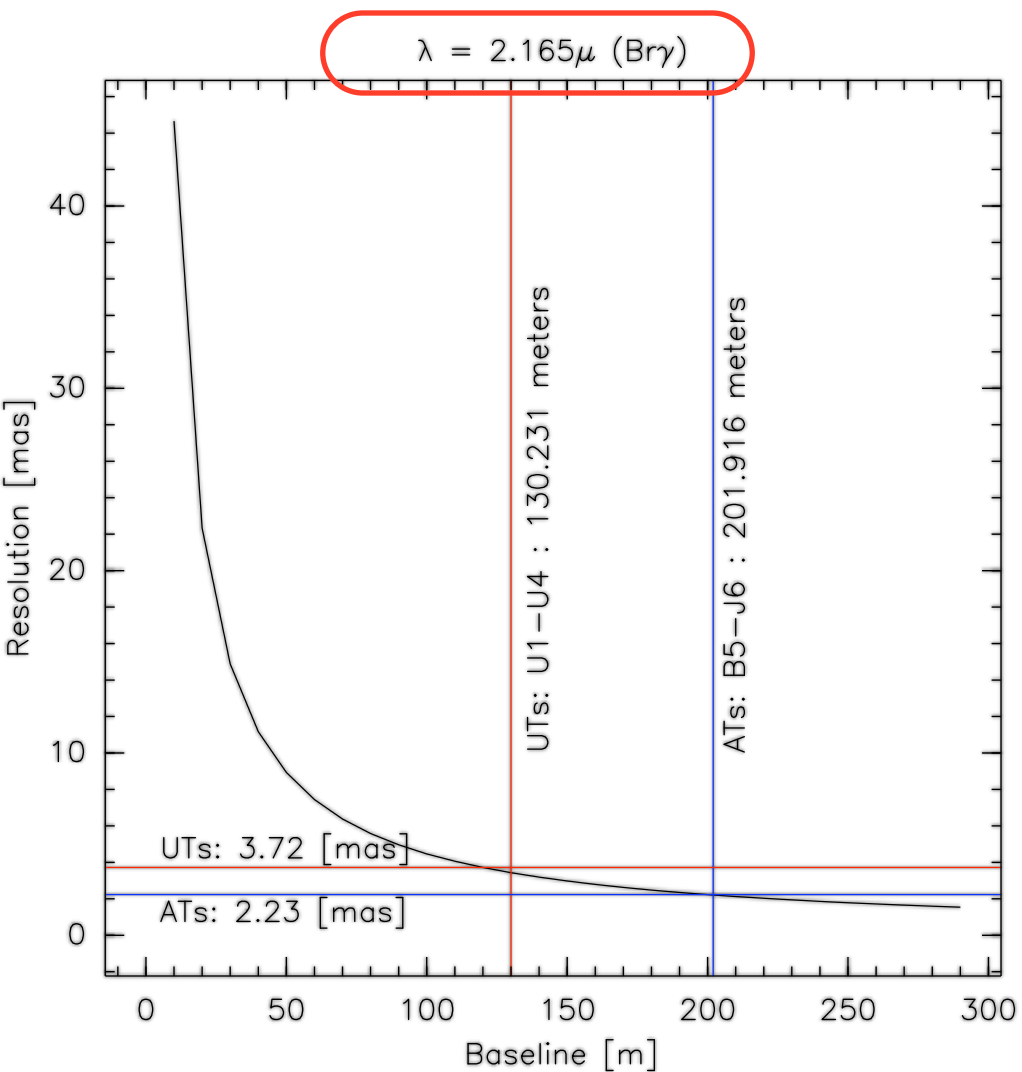


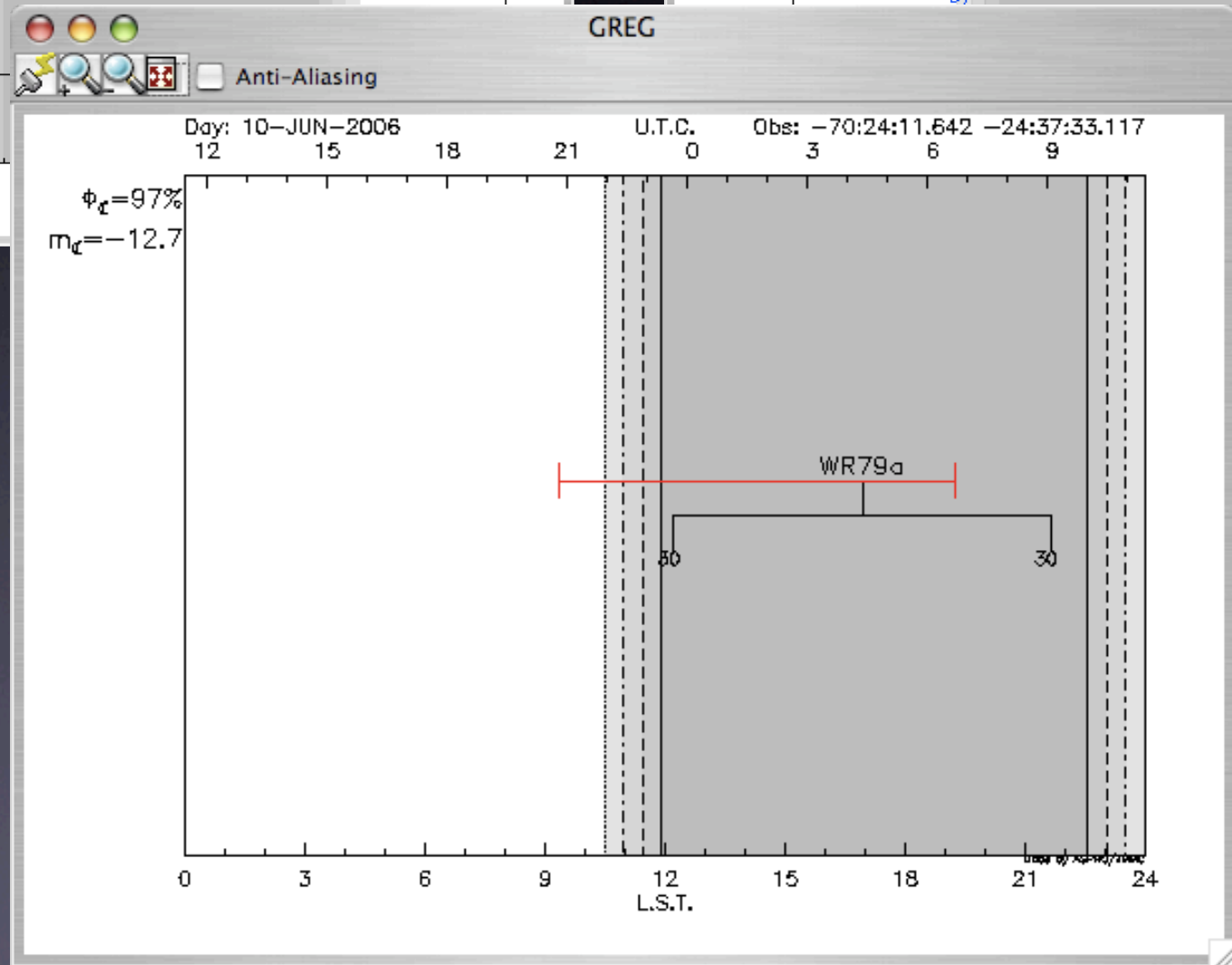
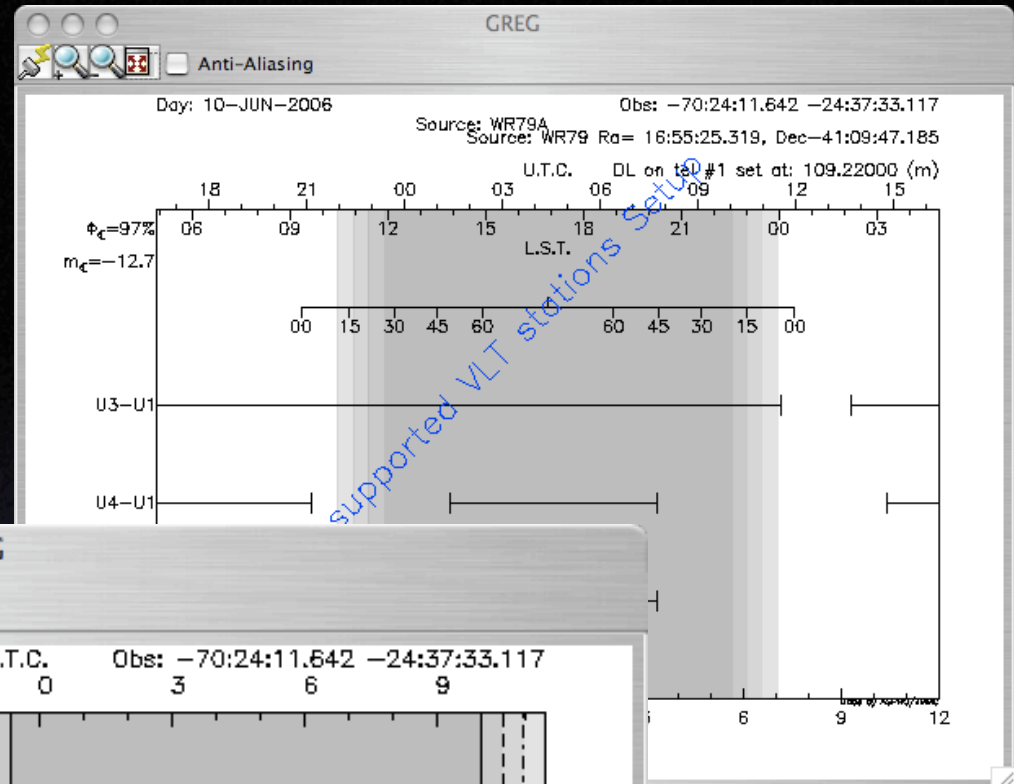
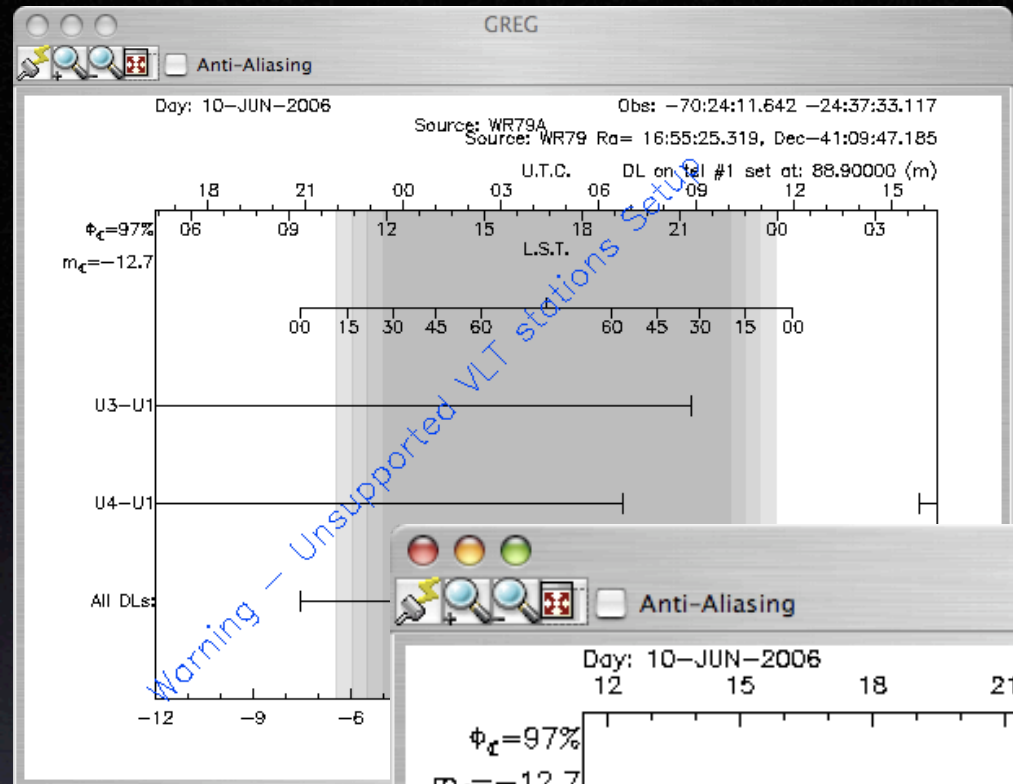
Figure 2: Spectrum of WR79a - Morris et al. 1996

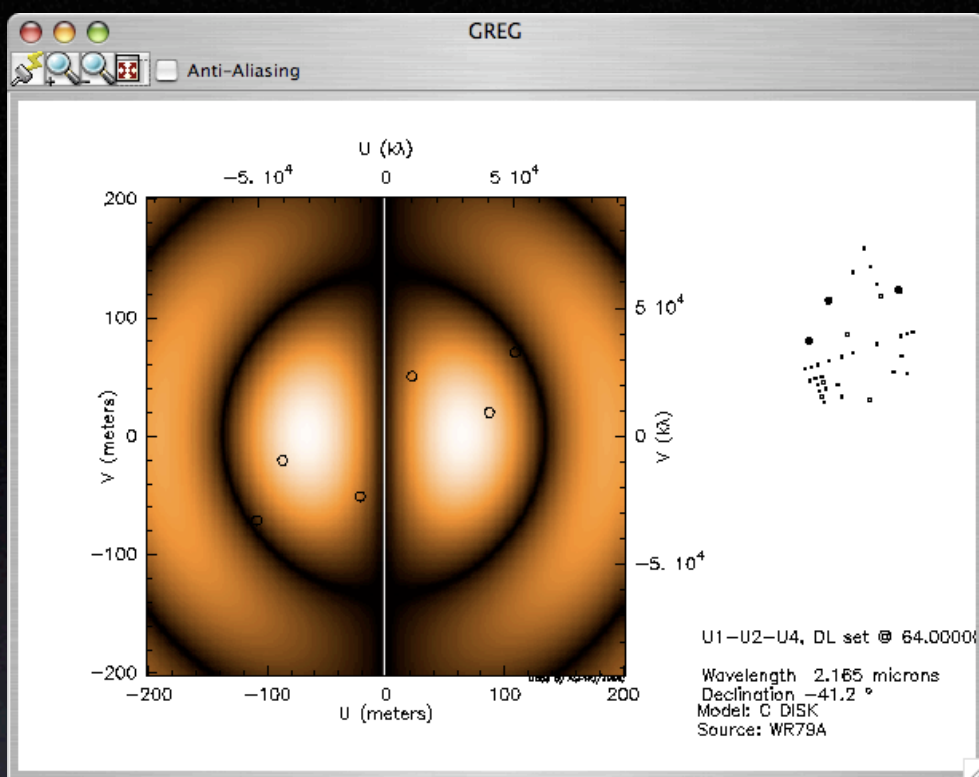
To resolve disk:  
 $D = \lambda/\theta$

continuum is not resolved

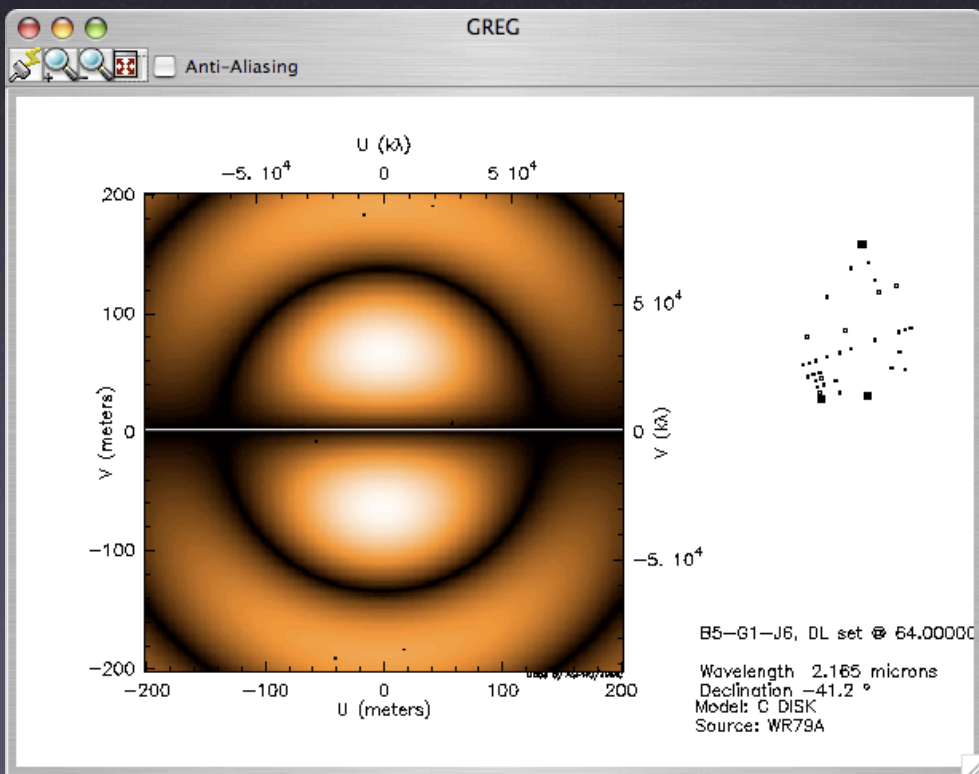


FORS spectra





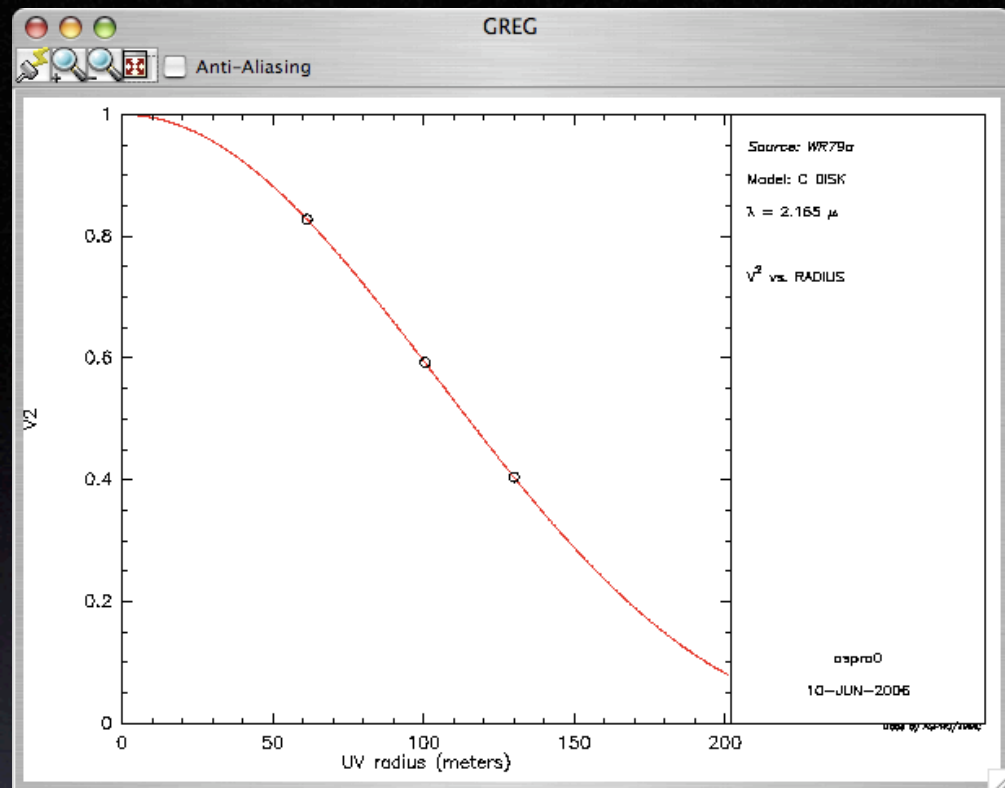
U1-U2-U4 / size = 4 mas



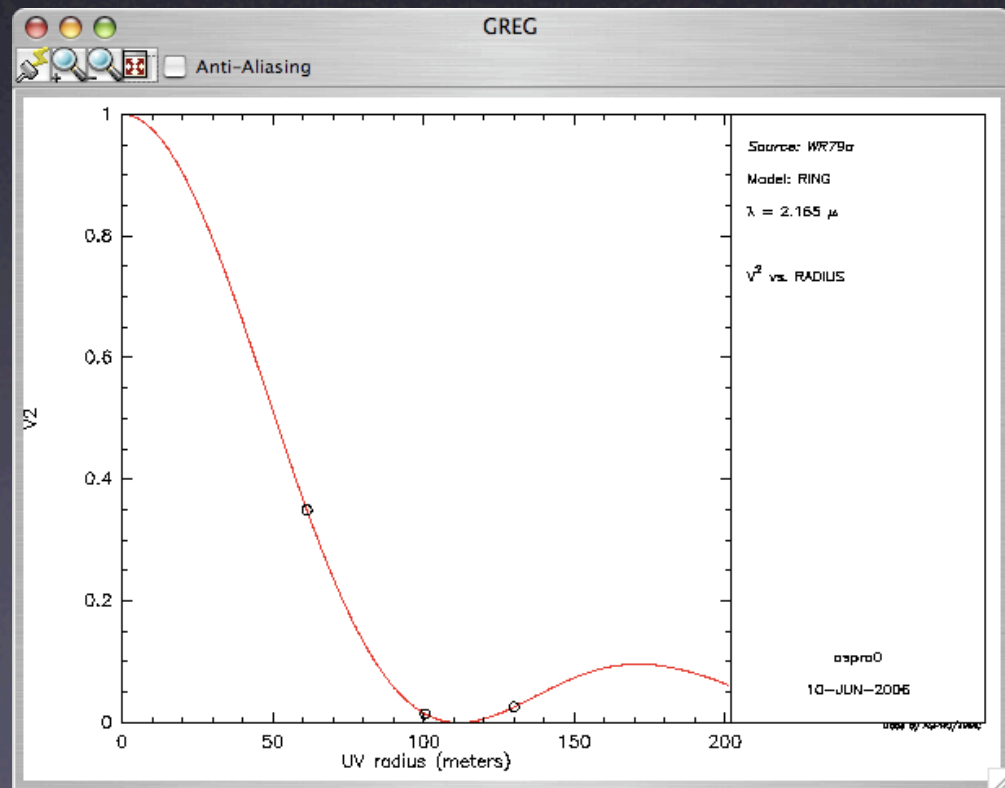
B5 - G1 - J6 / size = 4 mas

but no visibilities due to delay lines...  
and object too faint for ATs anyway(?)

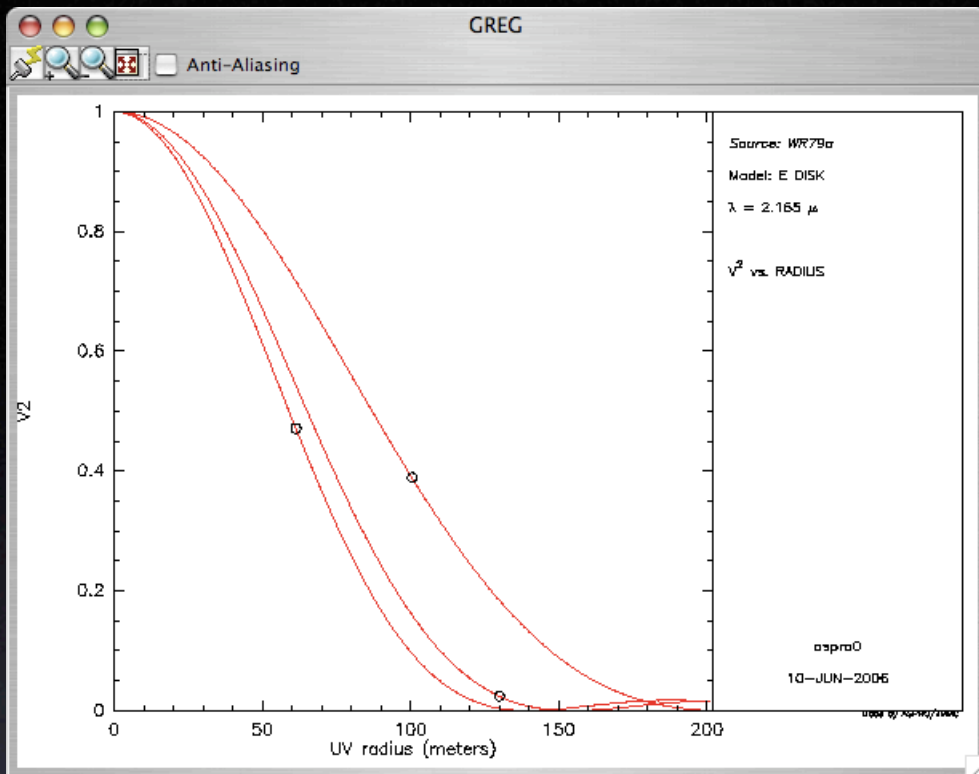




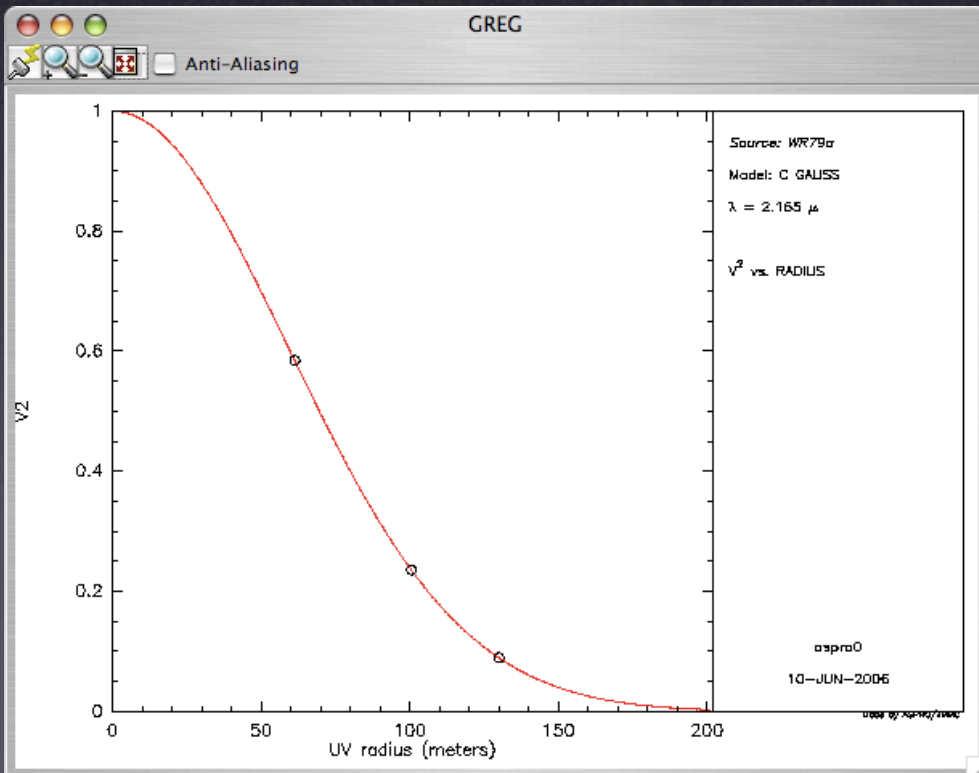
UI - U2 - U4  
**C\_DISK** 2 mas



UI - U2 - U4  
**C\_RING** 2-4 mas



UI - U2 - U4  
**E\_DISK** 2-4 mas  
 pos angle = 0.



UI - U2 - U4  
**C\_GAUSS** 2 mas



# Calibrator(s)

2.1 $\mu$  - 4.9 Kmag : 1-7 mag, R.A. = 60 min, Dec = 5 deg.

JMMC Calibrator Group 3.3.3

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RESET SHOW ALL RESULTS SHOW DETAILS HIDE DETAILS

Science star

NAME	RAJ2000	DEJ2000	MagV	Base-max	Lambda
WR79a	16:54:58.51	-41:09:03.1	5.290	102.45	1.00

Results

Number of stars: 91 found, 43 with coherent diameter and 14 without variability and multiplicity

Number	dist	HD	RAJ2000	DEJ2000	vis2	vis2Err	diam_vk	e_diam_vk	SpType
1	1.213	152334	17 05 34...	-42 21 4...	0.900	0.000	4.432	0.200	K4III
2	2.085	150591	16 43 54...	-41 57 0...	0.977	0.001	0.203	0.014	A1V
3	2.168	152491	16 55 25...	-41 18 5...	0.988	0.001	0.138	0.010	A1V
4	3.683	155259	17 12 16...	-39 30 2...	0.965	0.005	0.240	0.017	A0/A1V
5	4.049	155276	17 12 16...	-38 49 2...	0.653	0.040	0.822	0.057	K1IIICN...
6	4.723	154025	17 05 05...	-45 30 0...	0.975	0.003	0.203	0.014	A2V
7	5.296	156293	17 18 47...	-44 07 4...	0.976	0.003	0.199	0.014	B9V
8	6.159	157243	17 24 13...	-44 09 4...	0.963	0.005	0.250	0.017	B7III
9	6.657	157316	17 24 43...	-45 00 2...	0.944	0.007	0.306	0.021	F3V
10	6.783	146906	16 20 14...	-39 37 4...	0.788	0.027	0.619	0.043	K1III

Brightest in K (5.572) among #2, 3 and 4

Catalog Origin: I/280 II/225 II/7A II/246 V/50 Borde Merand

Confidence Index: Low Medium High

Sort above list... SELECT CALIBRATORS