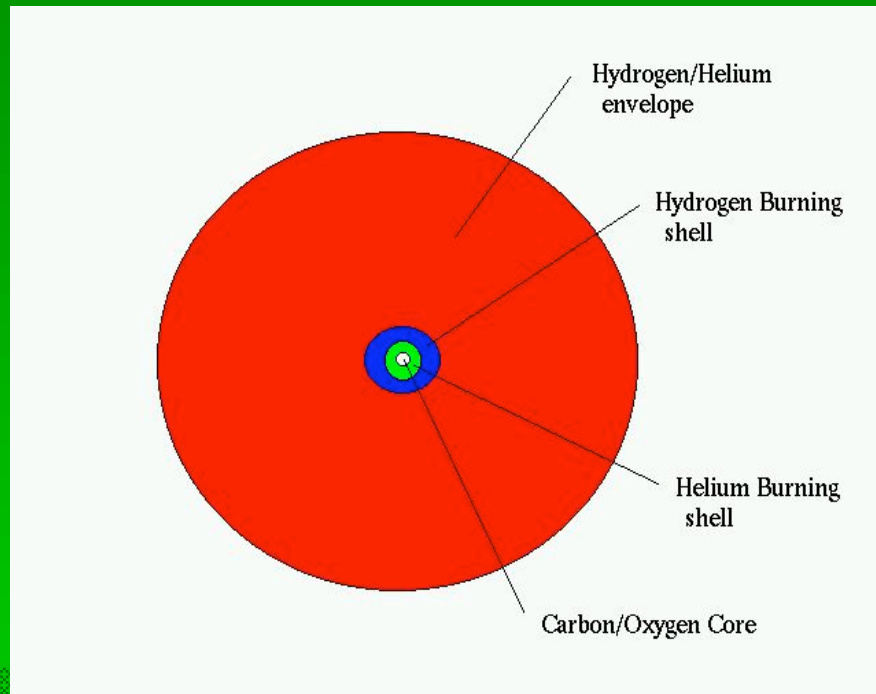


EVOLUTION?



ESA & Valentin Bujarrabal (Observatorio Astronomico Nacional, Spain)

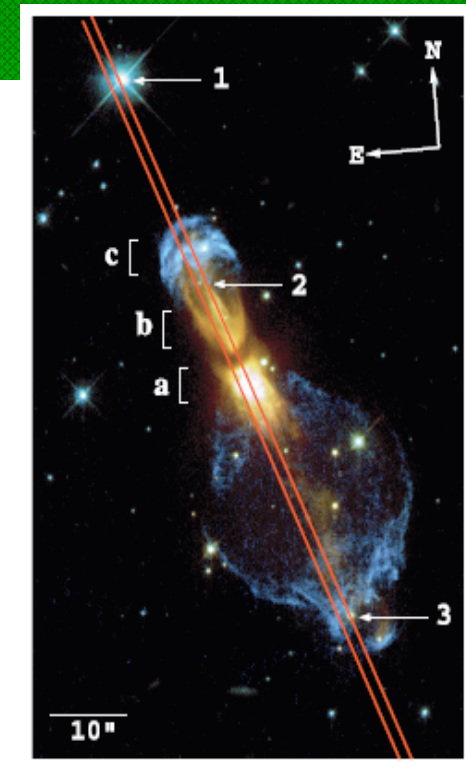
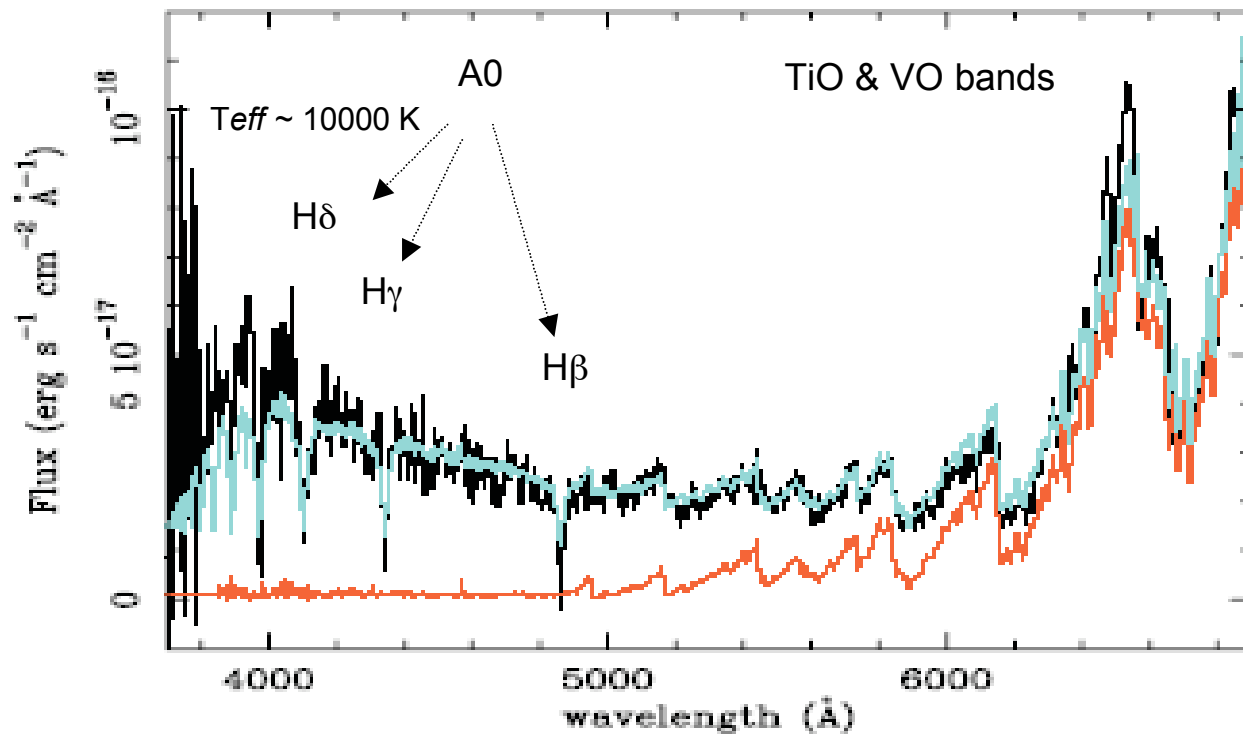
poorly known



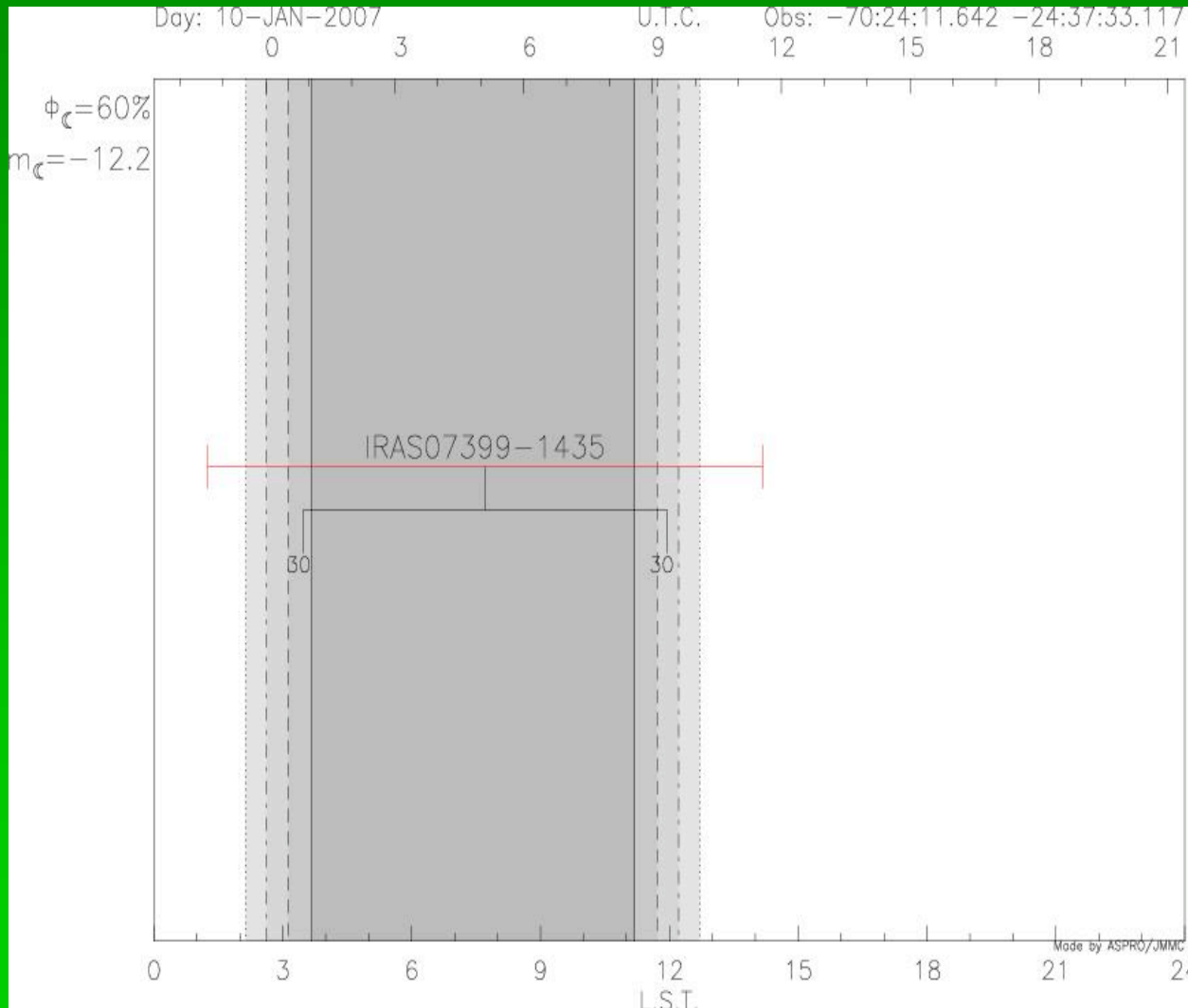
Bipolar morphology → Binary system separation not much larger than 10 AUs needed (models)

Case: OH 231.8+4.2, suspected but not resolved binary system

- Precession of molecular outflows \rightarrow presence of companion
- Binary system? TiO & VO band \rightarrow presence of a cool object M9-10 Mira
Balmer series absorption \rightarrow presence of a hot object A0



Observational setup



- Observability period (over 6h): Dec-Feb

- Amber (K band) with 3 UTs: U1-U2-U3

- Angular separation: 1mas (in agreement with models)

- PA 25 degrees (randomly chosen)

- Mira Kmag: 6.5

- Companion Kmag: 6

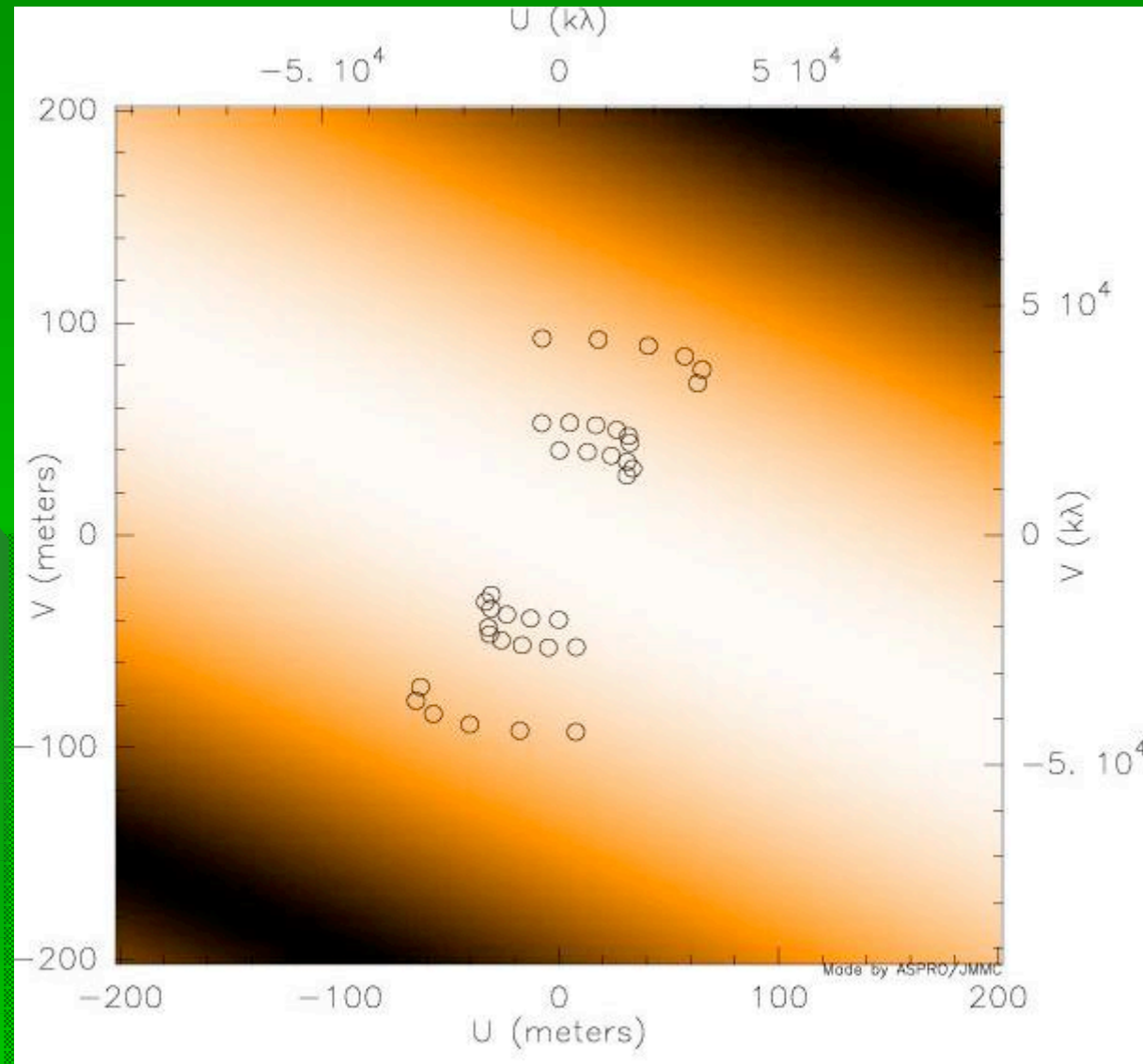
- Flux ratio: 0.631

Calibrators

Close		Help											
RESET		SHOW ALL RESULTS		SHOW DETAILS		HIDE DETAILS							
Science star													
NAME	RAJ2000	DEJ2000	MagK	Base-max	Lambda								
OH231.8+4.2	07:42:16.83	-14:42:52.1	9.470	102.45	2.16								
Results													
Number of stars: 31 found, 20 with coherent diameter and 4 without variability and multiplicity													
Number	dist	HD	RAJ2000	DEJ2000	vis2	vis2Err	diam_vk	e_diam_vk	SpType	V	J	H	
1	0.900	62952	07 45 56...	-14 33 4...	0.958	0.006	0.574	0.040	F2V	5.036	4.570	4.328	4.2
2	2.069	60552	07 34 28...	-13 52	0.984	0.002	0.349	0.024	F7II/III	6.697	5.791	5.560	5.5
3	2.438	60513	07 34 13...	-16 11 1...	0.978	0.005	0.416	0.029	G2V	6.725	5.601	5.331	5.2
4	4.850	65846	08 00 10...	-16 57 1...	0.962	0.005	0.546	0.038	K0III	7.022	5.385	4.990	4.7

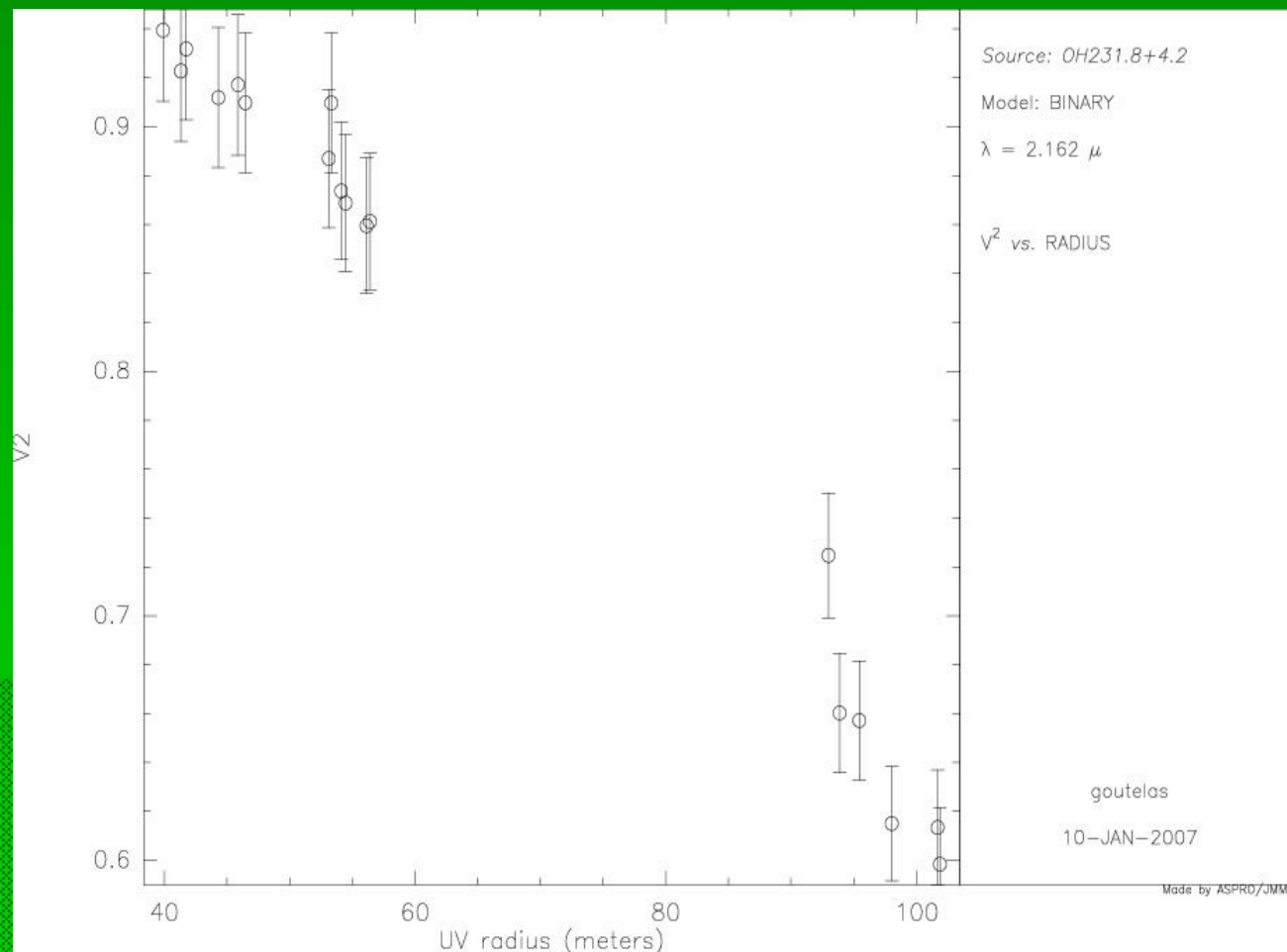
We have chosen the calibrator with the better compromise between the visibility and its error

uv plane coverage



Three points will constrain the model, but we have too many “free” parameters, so we apply for 6 visibilities per baseline.

Visibilities



- Under our assumptions on the object we could resolve the binary system in one night 6h integration time.
- The errors in the model fitting will be: ~2% in both parameters: angular separation and Position Angle.