



Imaging the Pleiades with VEGA / CHARA

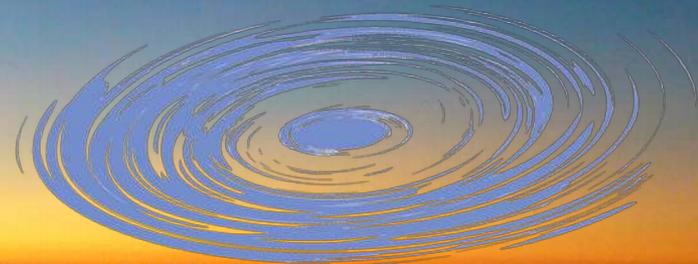
March 15th, 2016

F. Millour, A. Meilland,

A. Domiciano de Souza, P. Stee



Observatoire
de la CÔTE d'AZUR



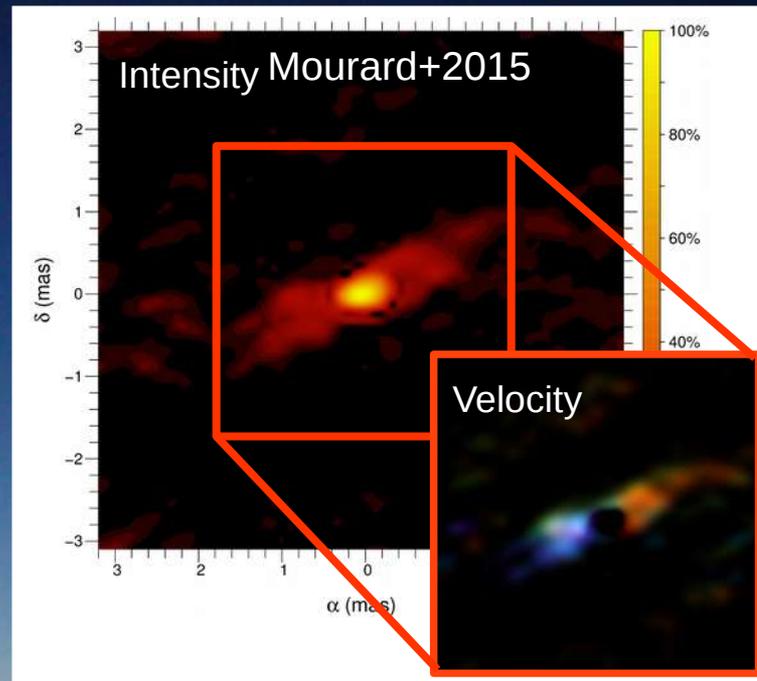
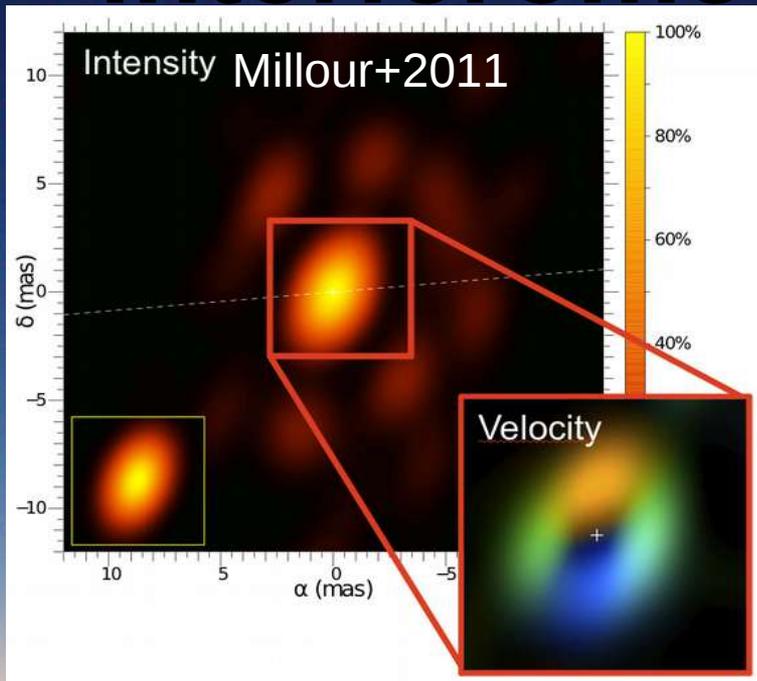
LAGRANGE



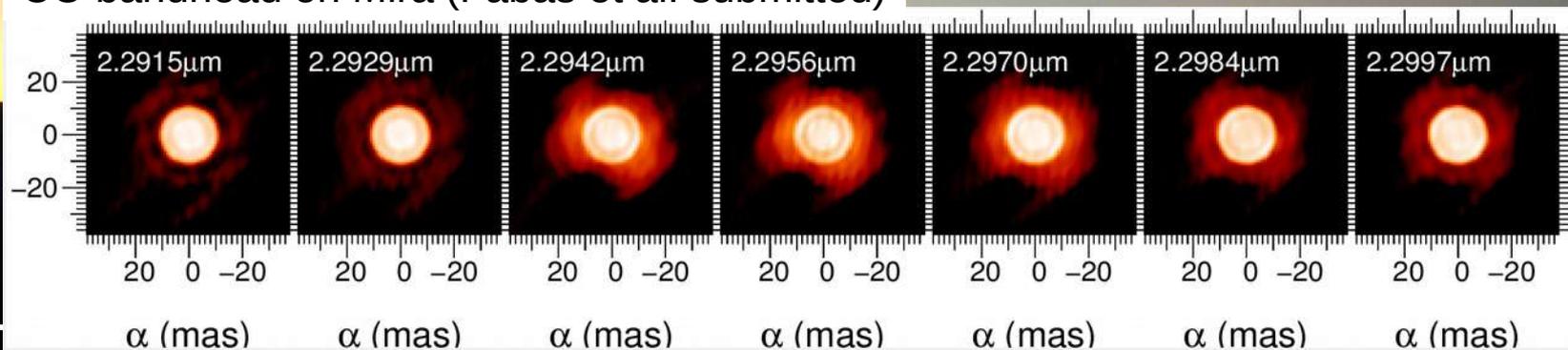
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Image cubes with interferometry



CO bandhead on Mira (Fabas et al. submitted)



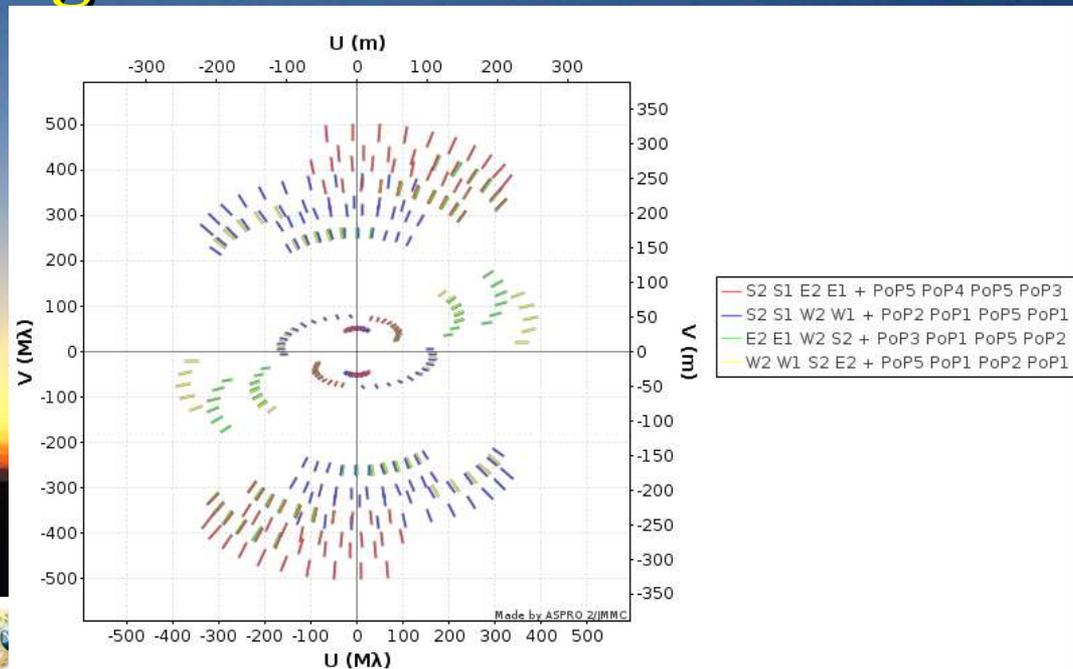


Why observing the Pleiades ?

- **Open cluster with all stars born at the same time**
 - Evaluate the kinematics of the primordial molecular cloud by measuring rotation velocities
 - Parent nebula topology by measuring spin-axes orientation of several stars
- **Image the disk kinematics of several active Be stars**
 - 4 stars are in active Be phase : Alcyone, Pleione, Electra, and Merope

Imaging potential

- **Alcyone & Pleione present strong-enough emission lines and large-enough discs to repeat the imaging experiment of Phi Per**
- **(u,v) coverage is OK**



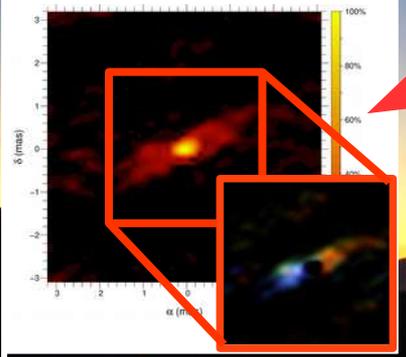
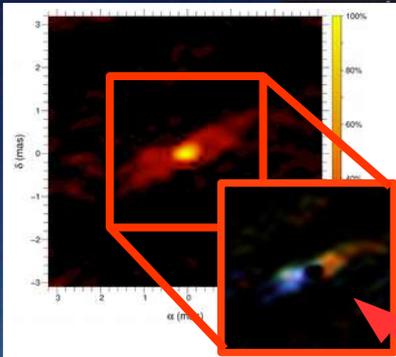


Finding chart



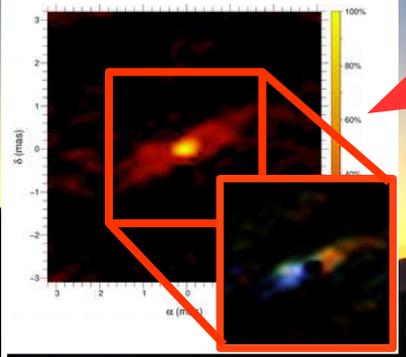
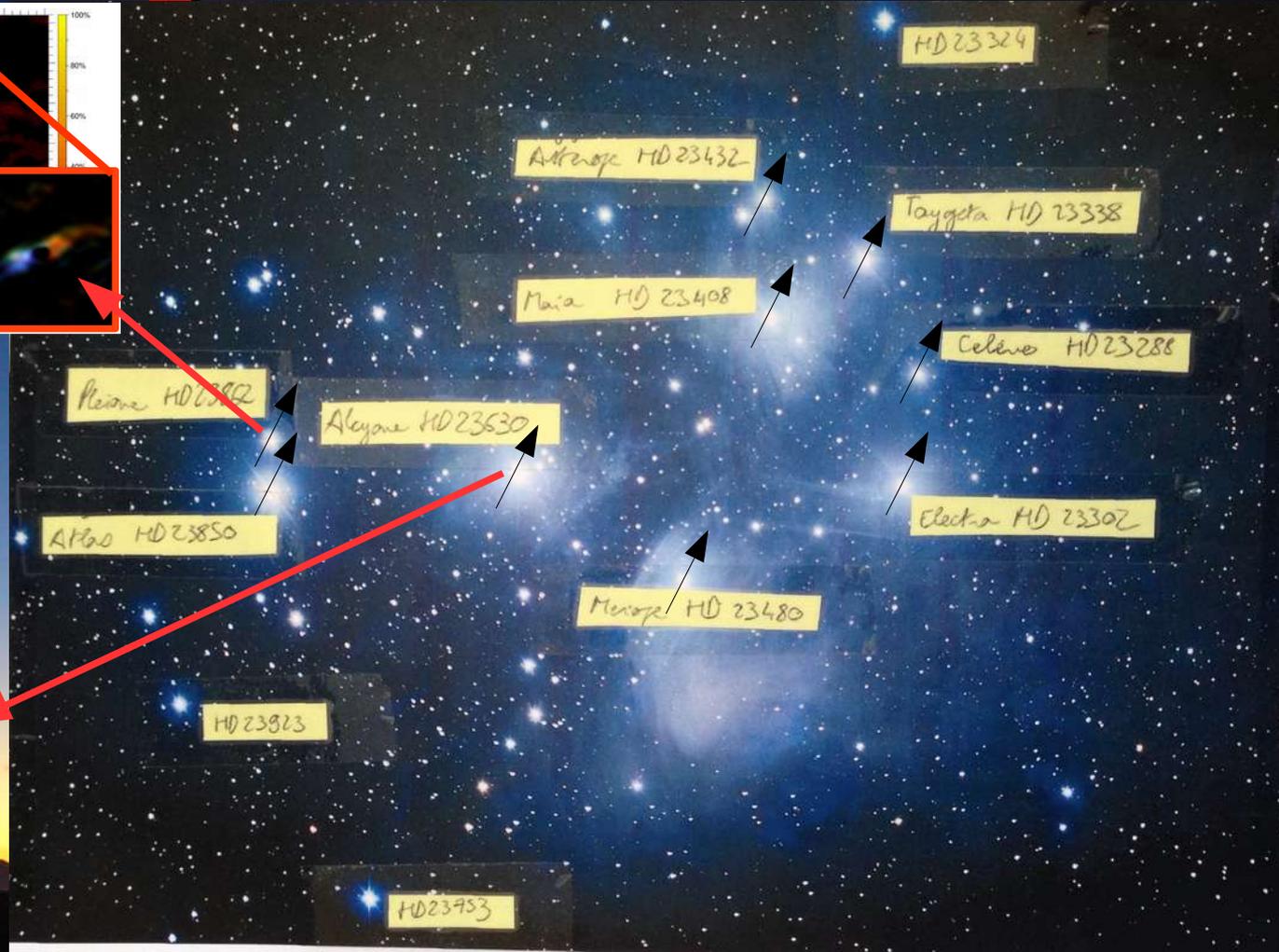
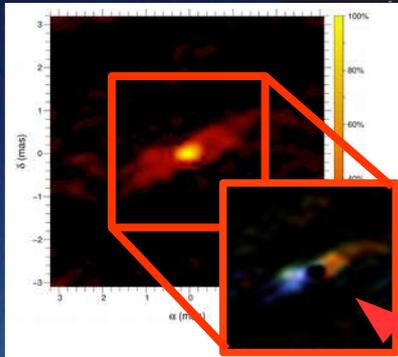


Finding chart



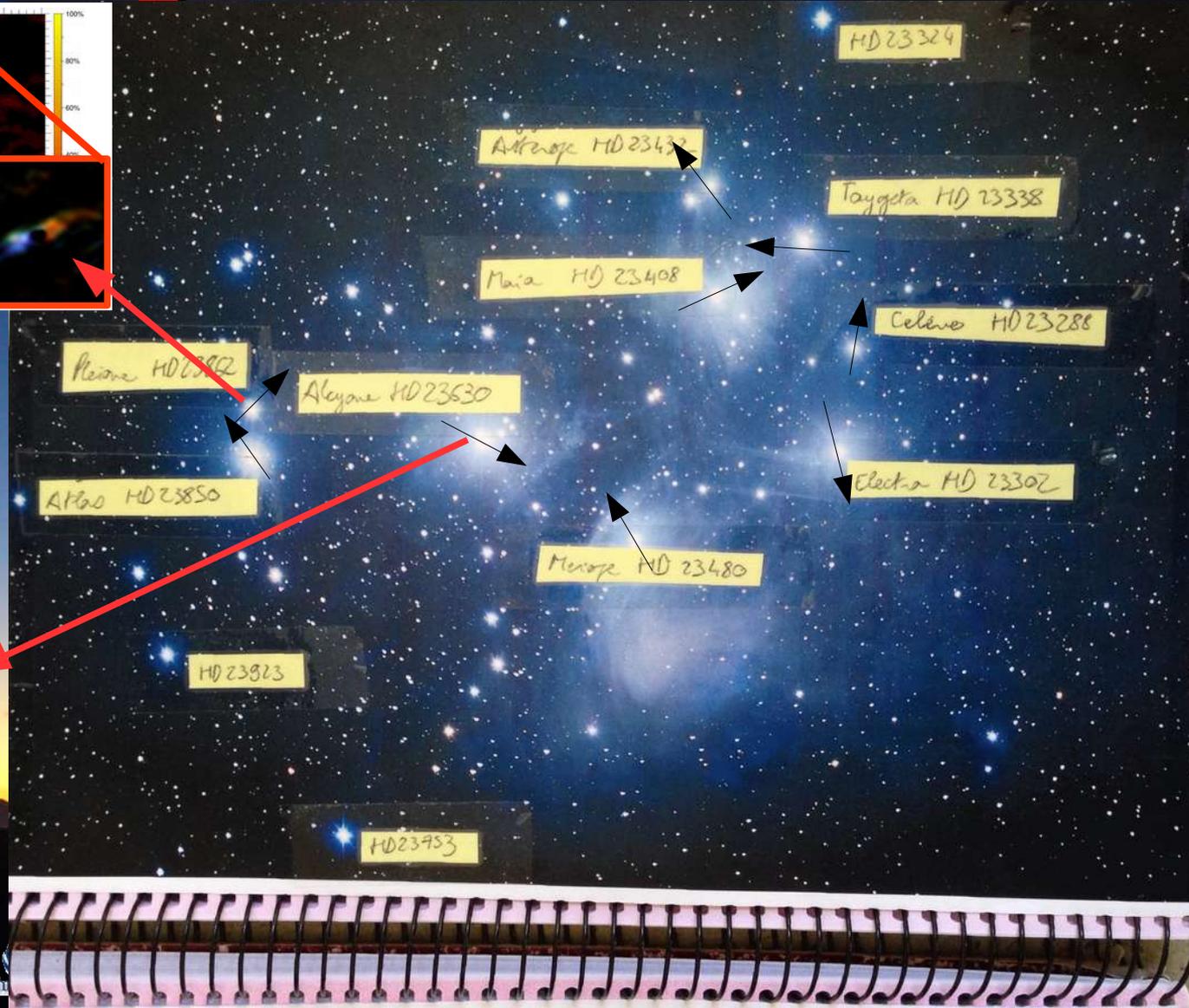
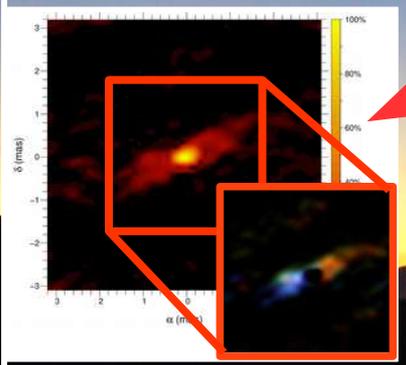
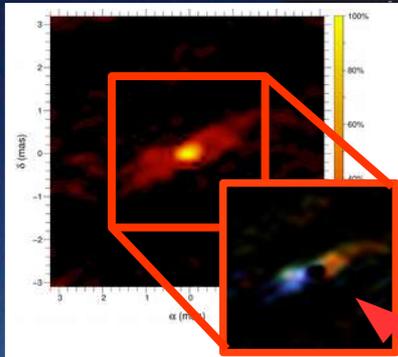


Finding chart





Finding chart

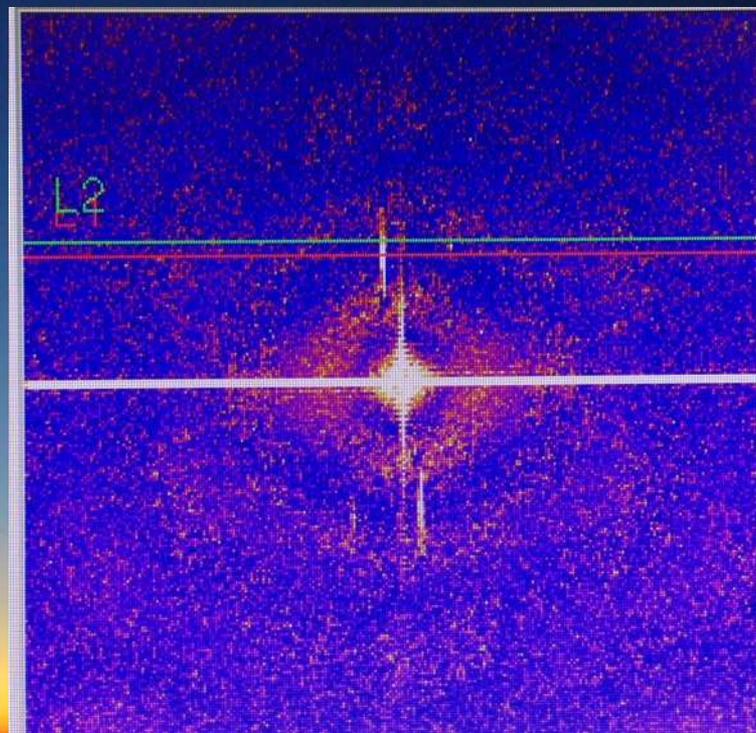
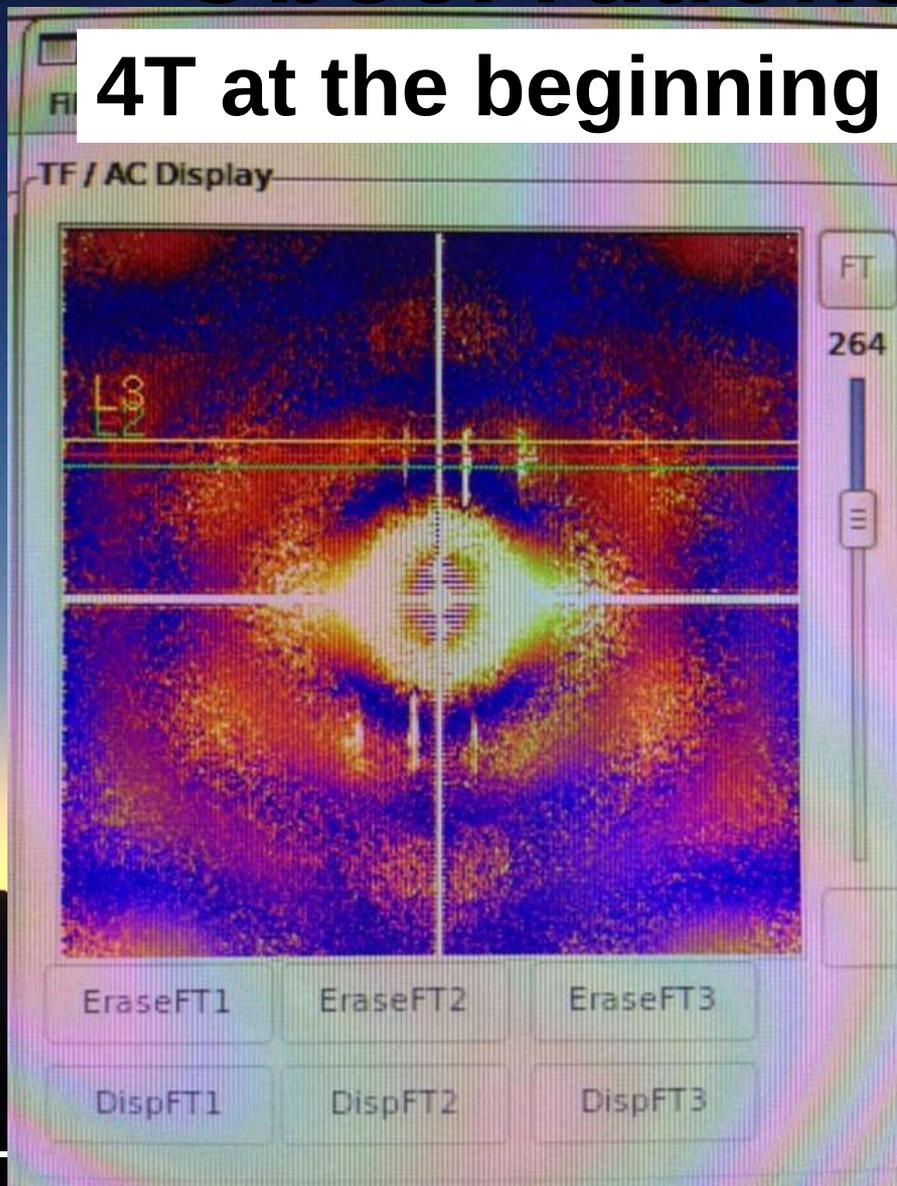




Observations done

4T at the beginning

3T at the end





Observations done

28/09/2015

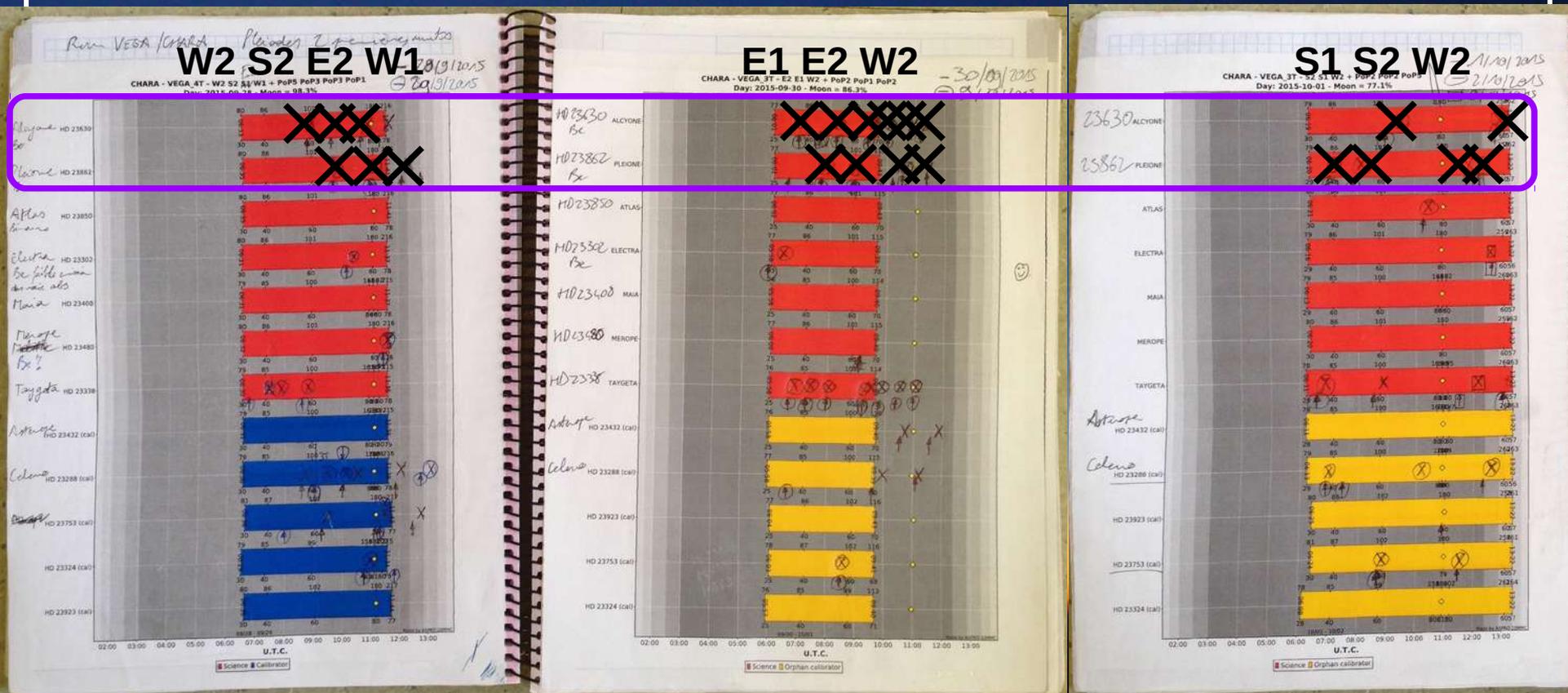
29/09/2015

30/09/2015

01/10/2015

02/10/2015

09/10/2015



A motivated observing team

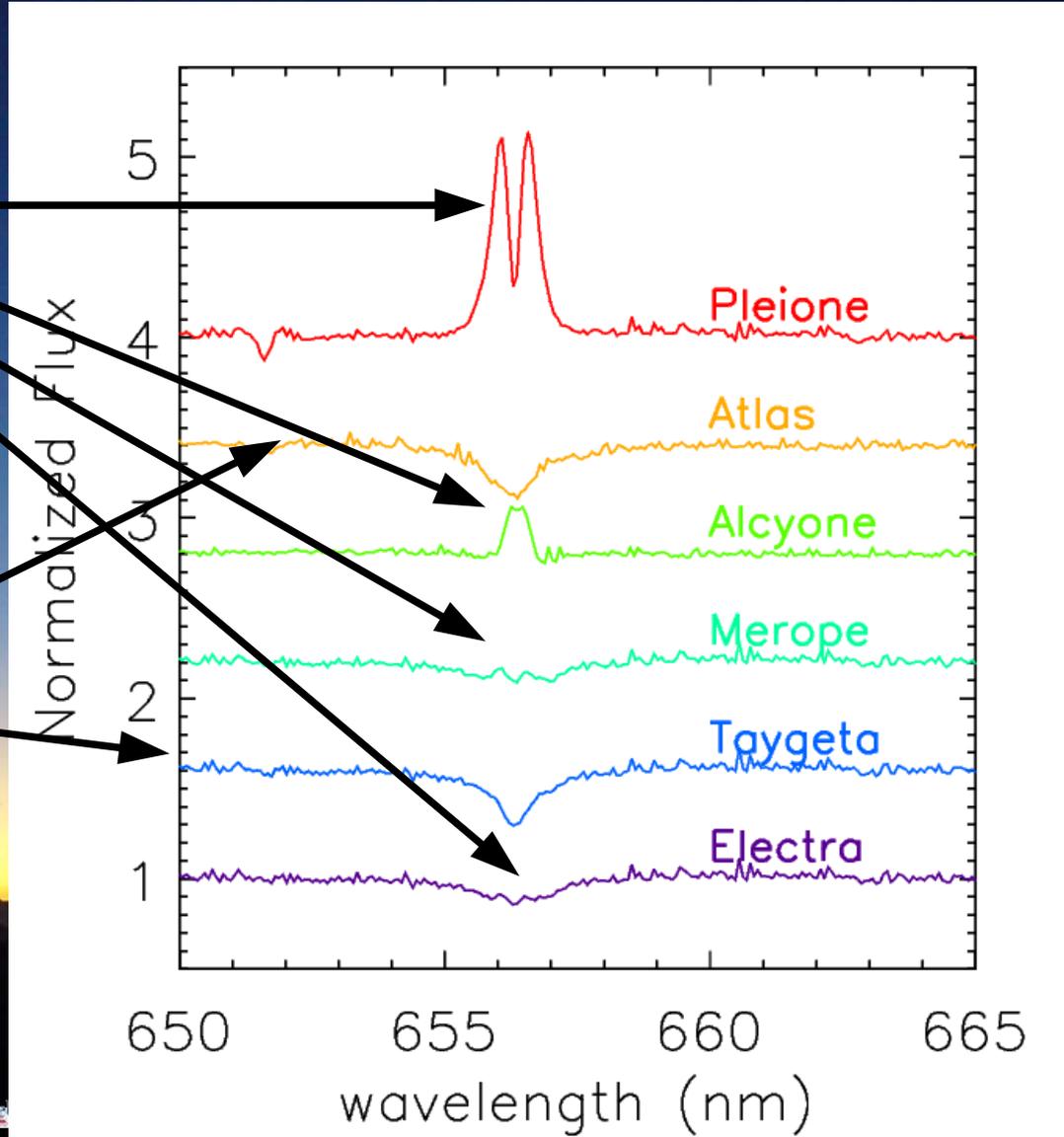




Spectra

Be

B

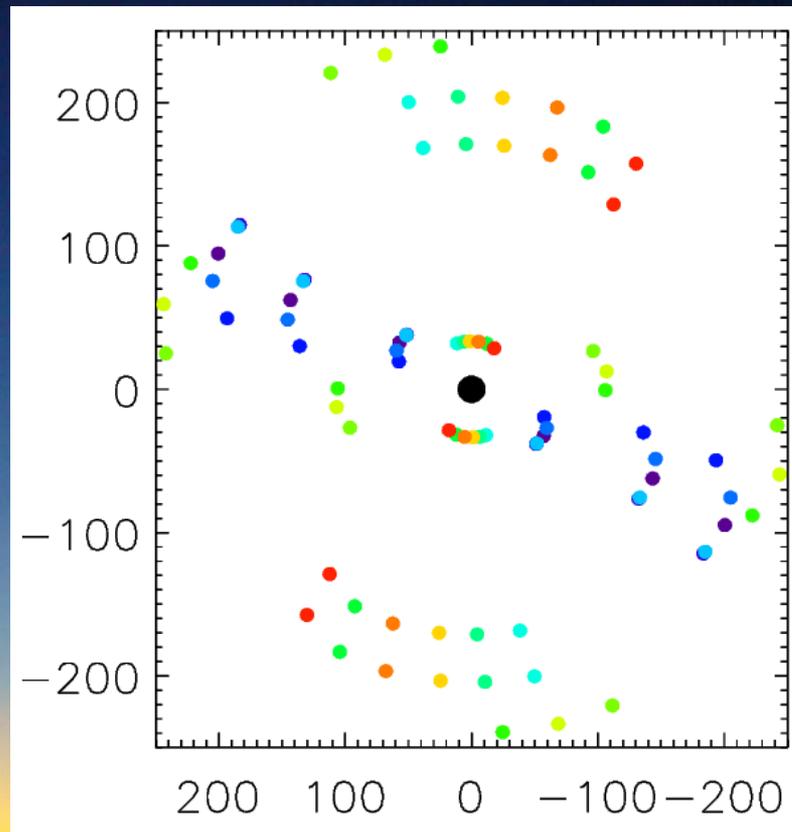
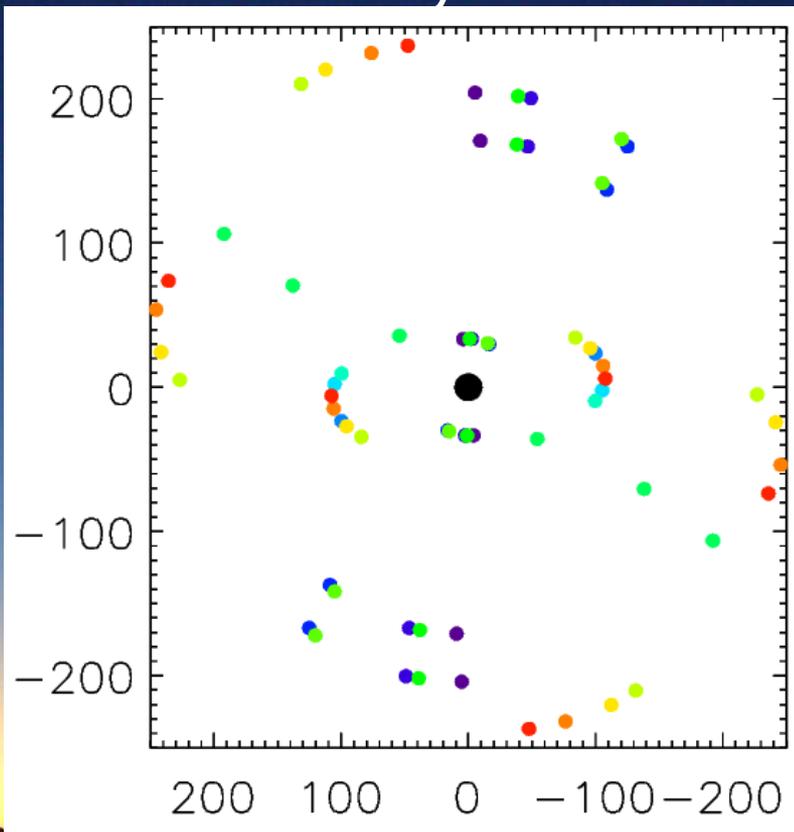




(u,v) coverage

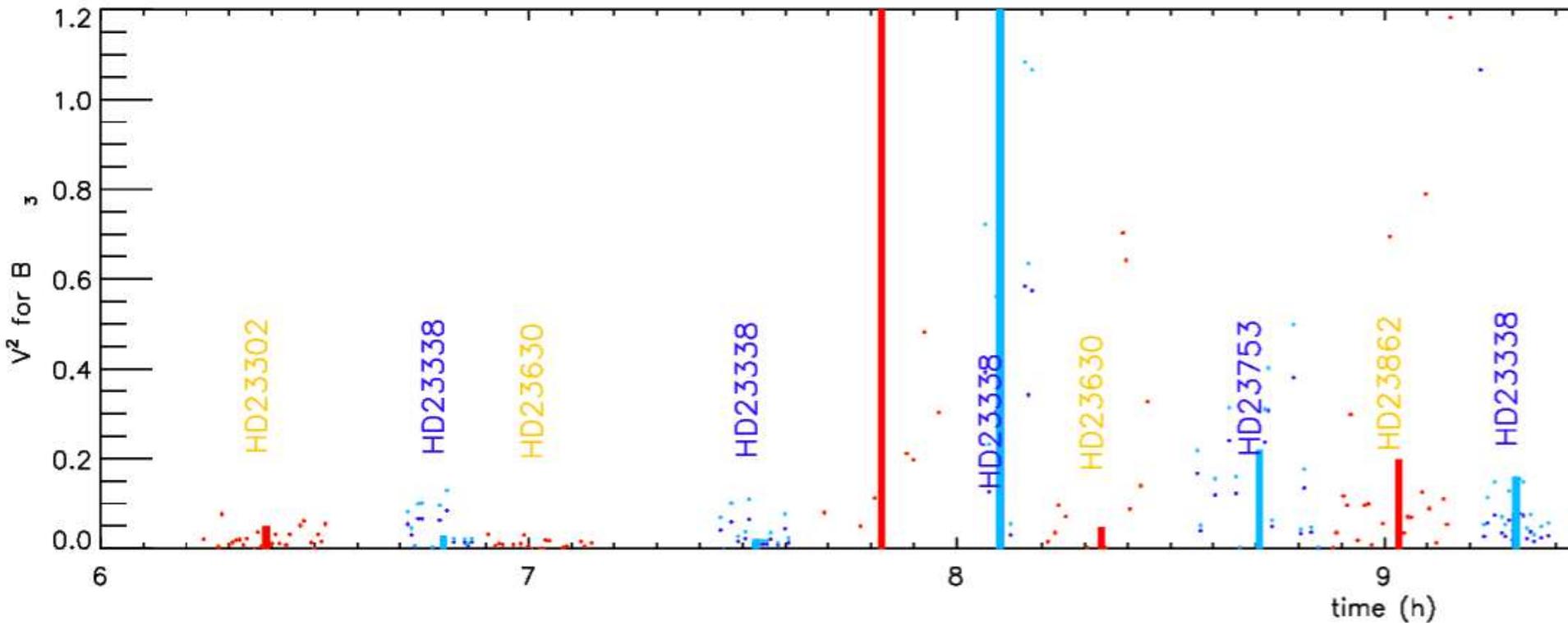
Alcyone

Pleione



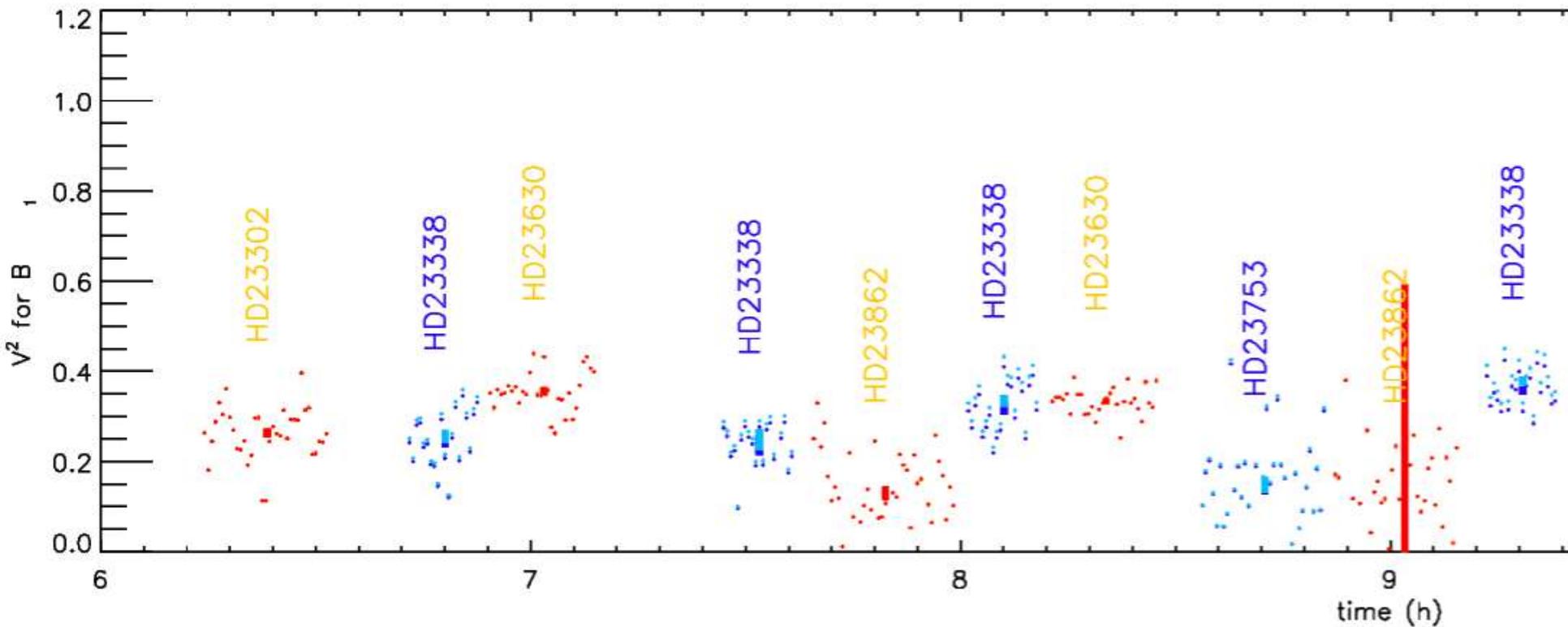


Transfer function (bad)





Transfer function (good)

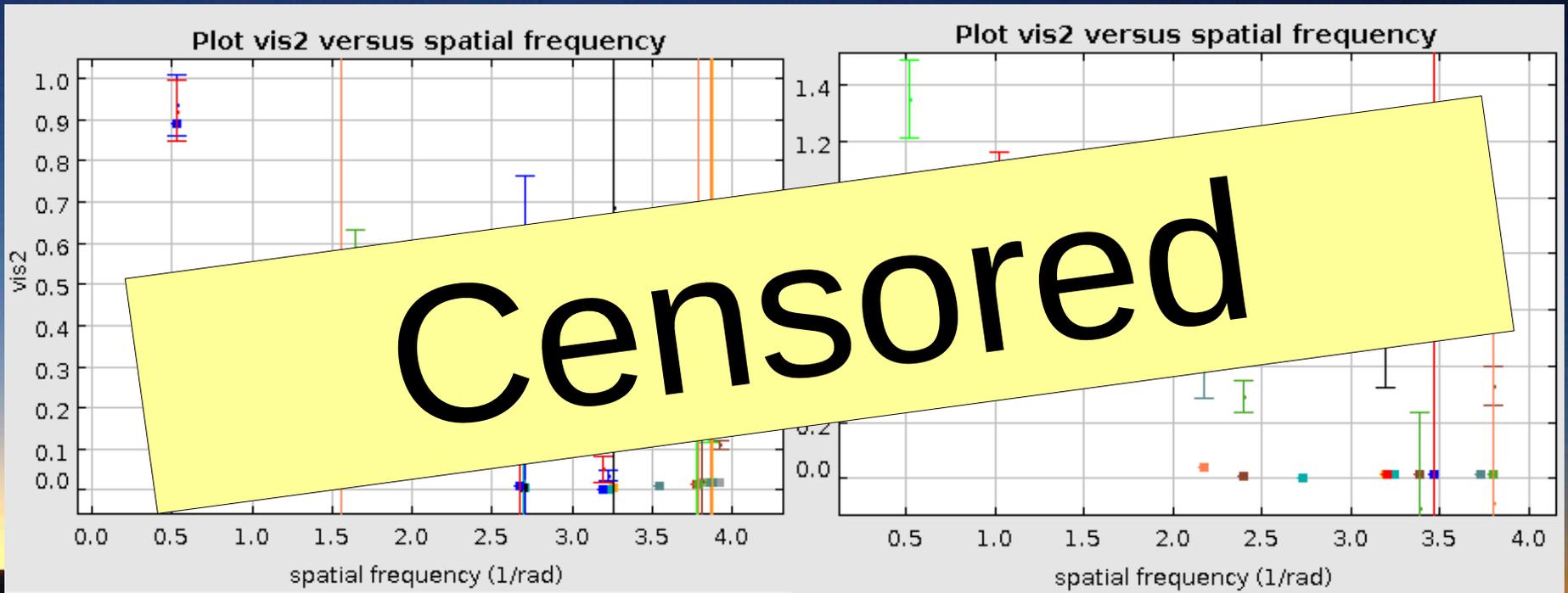




(preliminary) visibilities

Alcyone

Pleione



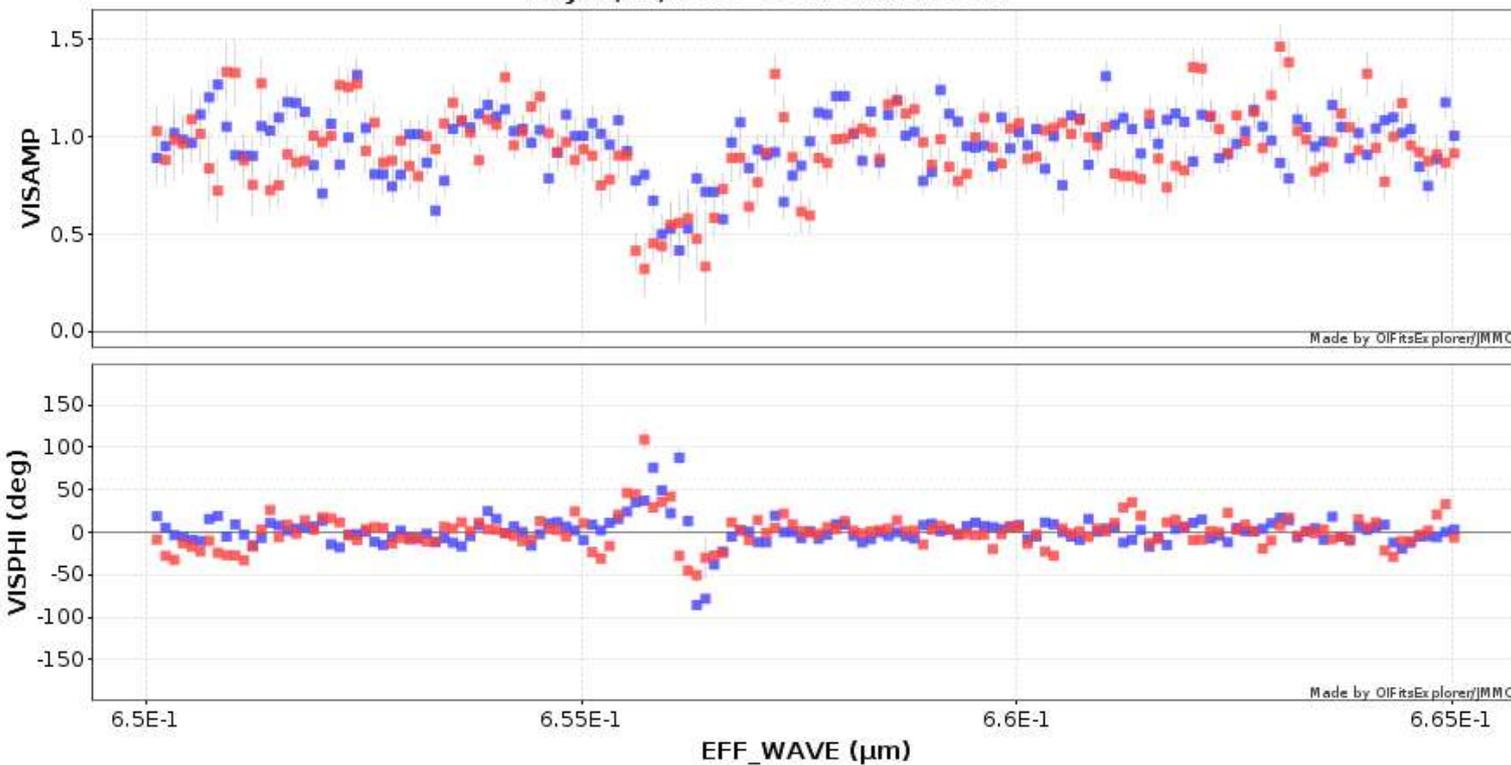
More work to be done to calibrate properly the visibilities
LitPro fit : bad χ^2





Pleione

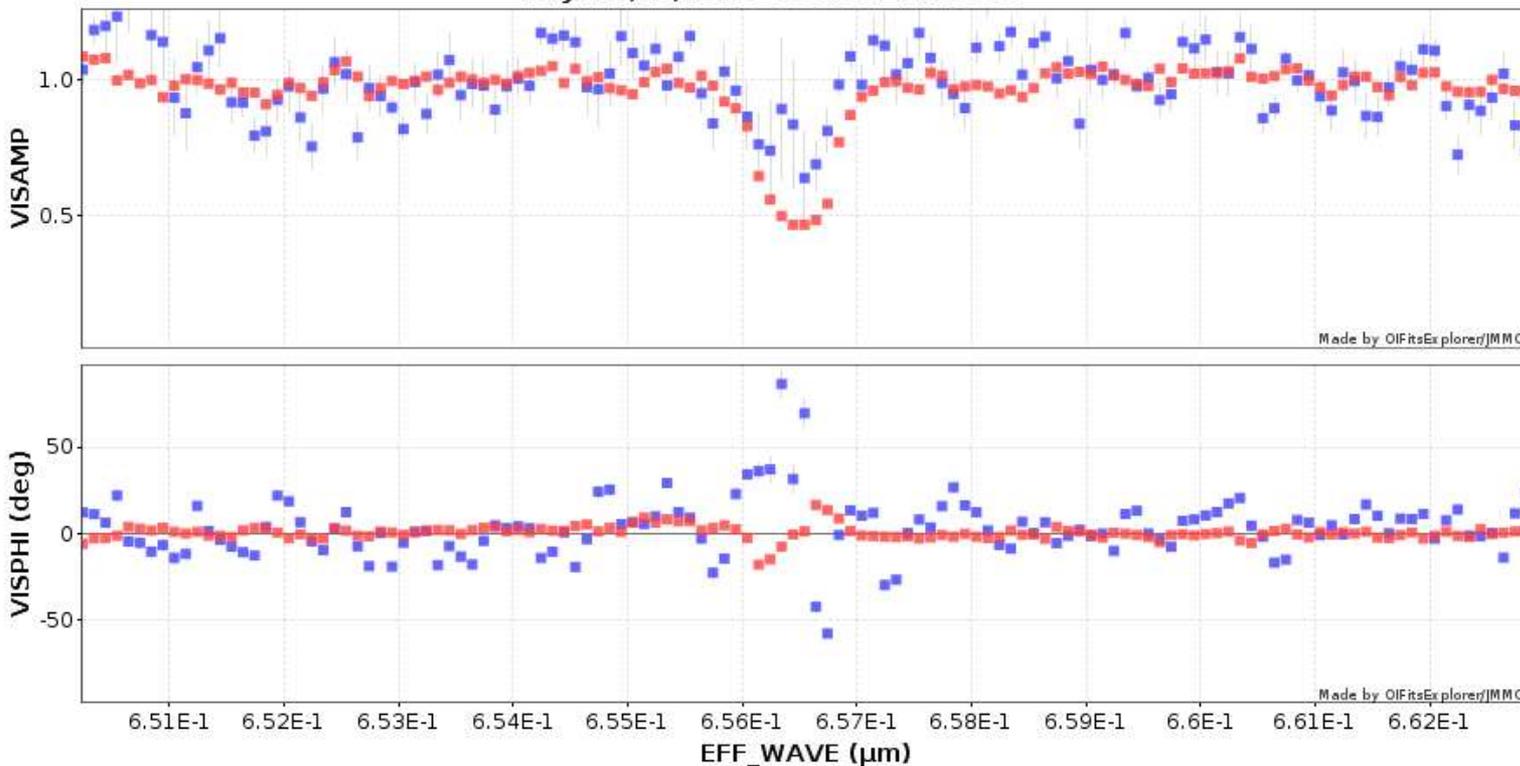
CHARA - VEGA [0.6501 μm - 0.665 μm] - S1 W2 / S1 S2
 Day: 1/11/2015 - Source: HD23862





Alcyone

CHARA - VEGA [0.6501 μm - 0.665 μm] - E1 E2 / E2 W2
Day: 10/10/2015 - Source: HD23630





Thanks !

- **Done: observing**
- **Done: data reduction**
- **TBD: reduce the data**
- **TBD: data not reduced good enough, repeat**
- **TBD: image reconstruction**
- **TBD: model fitting**
- **TBD: publish**