NGC 2506 – a try for a spectroscopic study

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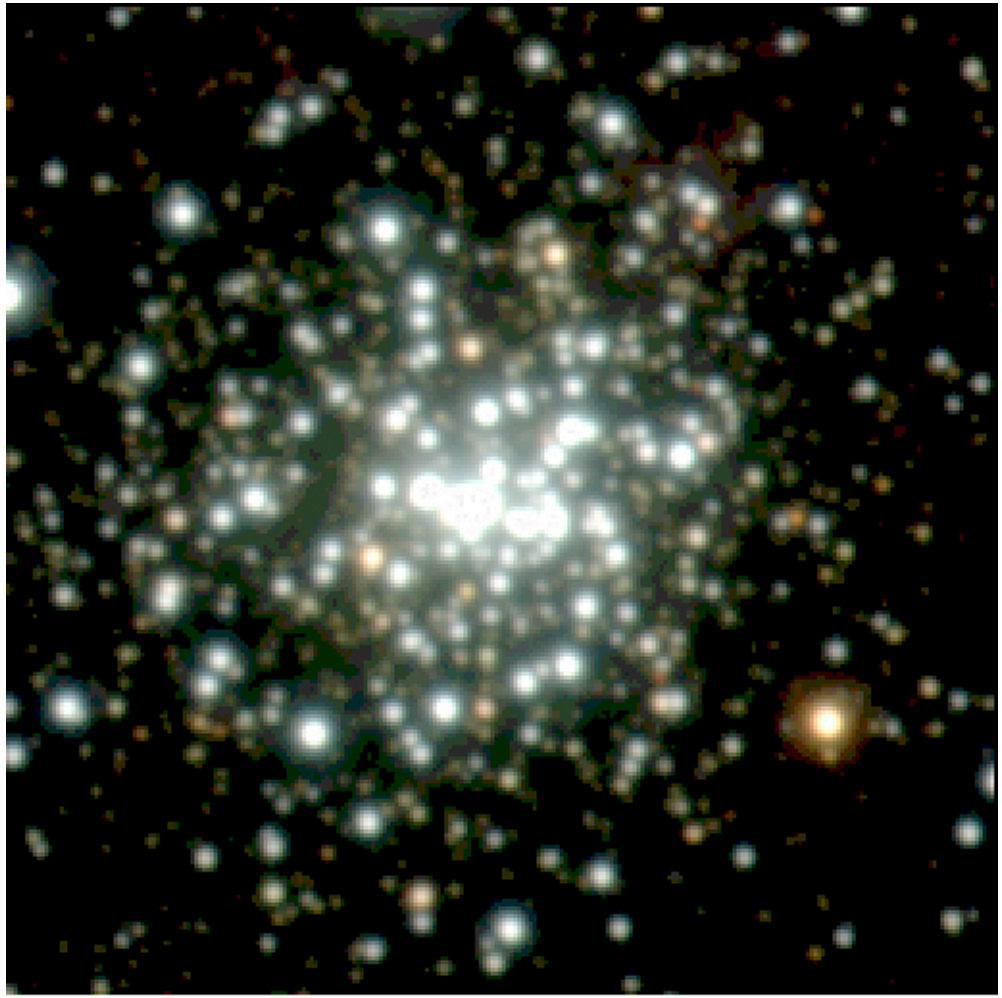
Open clusters – Why are they so interesting?



Central Star Cluster in NGC 3603 (VLT ANTU + ISAAC)

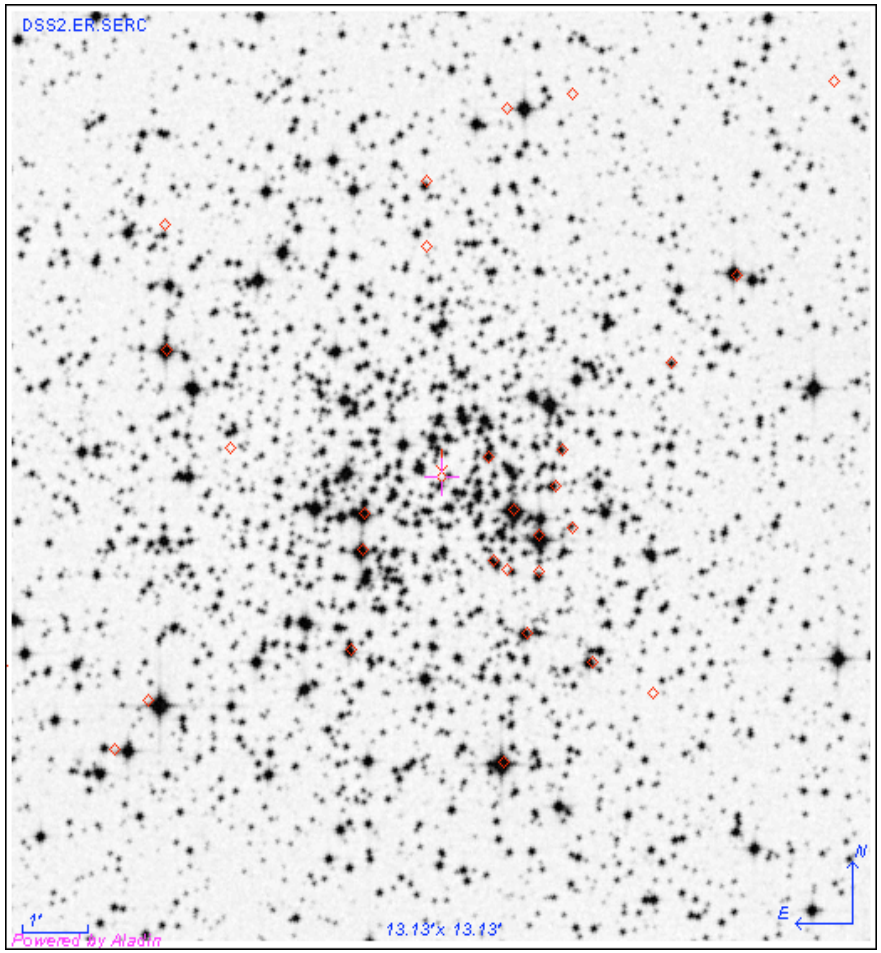
ESO PR Photo 38b/99 (13 October 1999)

The members

- are all at about the same distance
- have approximately the same age
- have about the same chemical composition
- have different masses

Probes for stellar evolution theories

NGC 2506



Open Cluster NGC 2506
Aladin image

Right Ascension (2000)	:	08 00 01
Declination (2000)	:	-10 46 12
Galactic longitude	:	230.564
Galactic latitude	:	9.935
Distance [pc]	:	3460
Reddening [mag]	:	0.081
Distance modulus [mag]	:	12.95
Log Age	:	9.045
Metallicity	:	-0.37

Data from
http://www.univie.ac.at/webda/

Spectroscopic data

VLT data was obtained from the ESO Archive

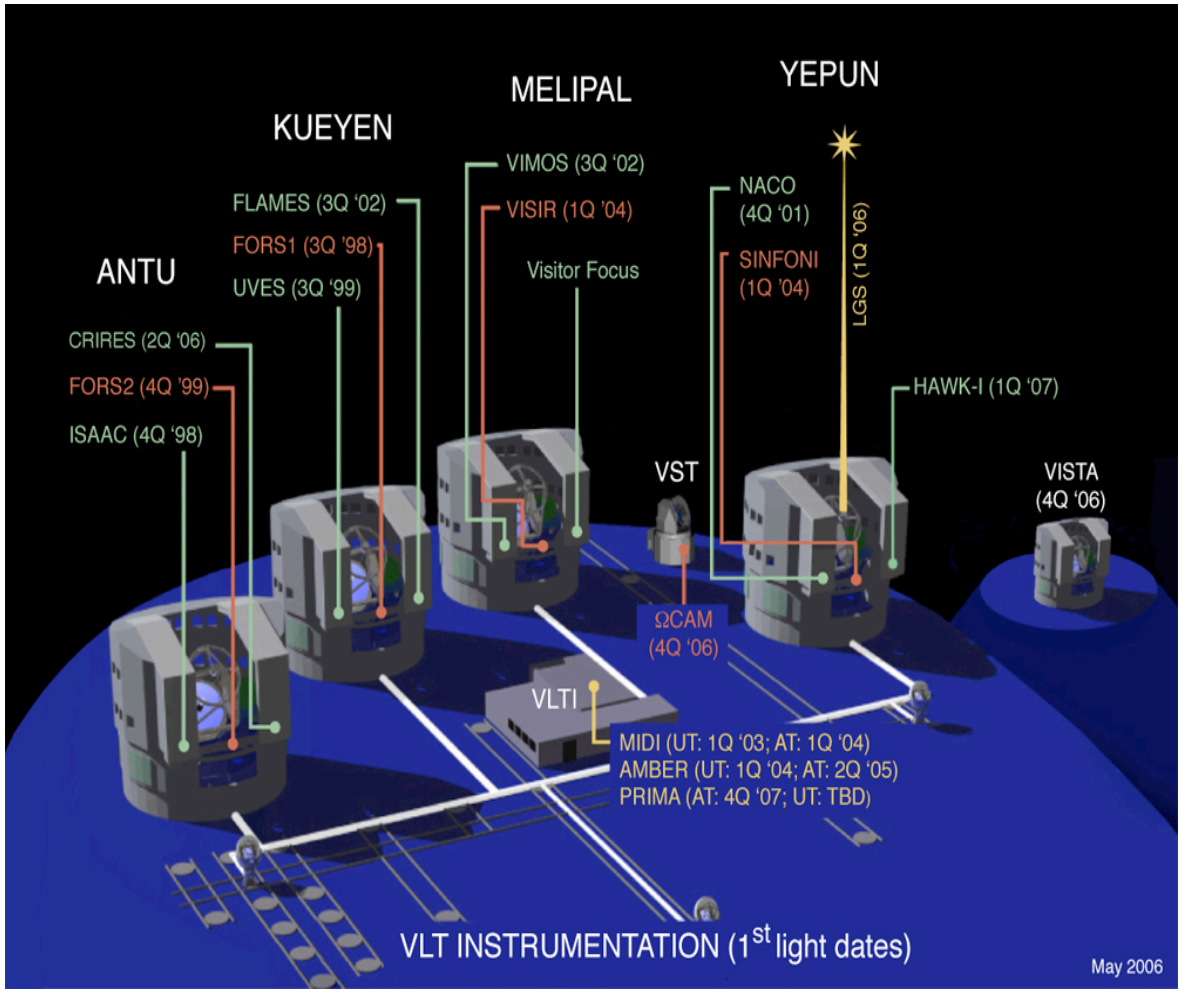
- 2004-01-15 Royer/Gomez
- 2004-01-17 Royer/Gomez
- 2004-02-14 Pallavicini et al
- 2005-03-28 Grundahl et. al.

- 8 scientific frames

The spectra were taken using Giraffe spectrograph mounted on VLT 2 KUYEN

Why Giraffe?

FLAMES Instrument

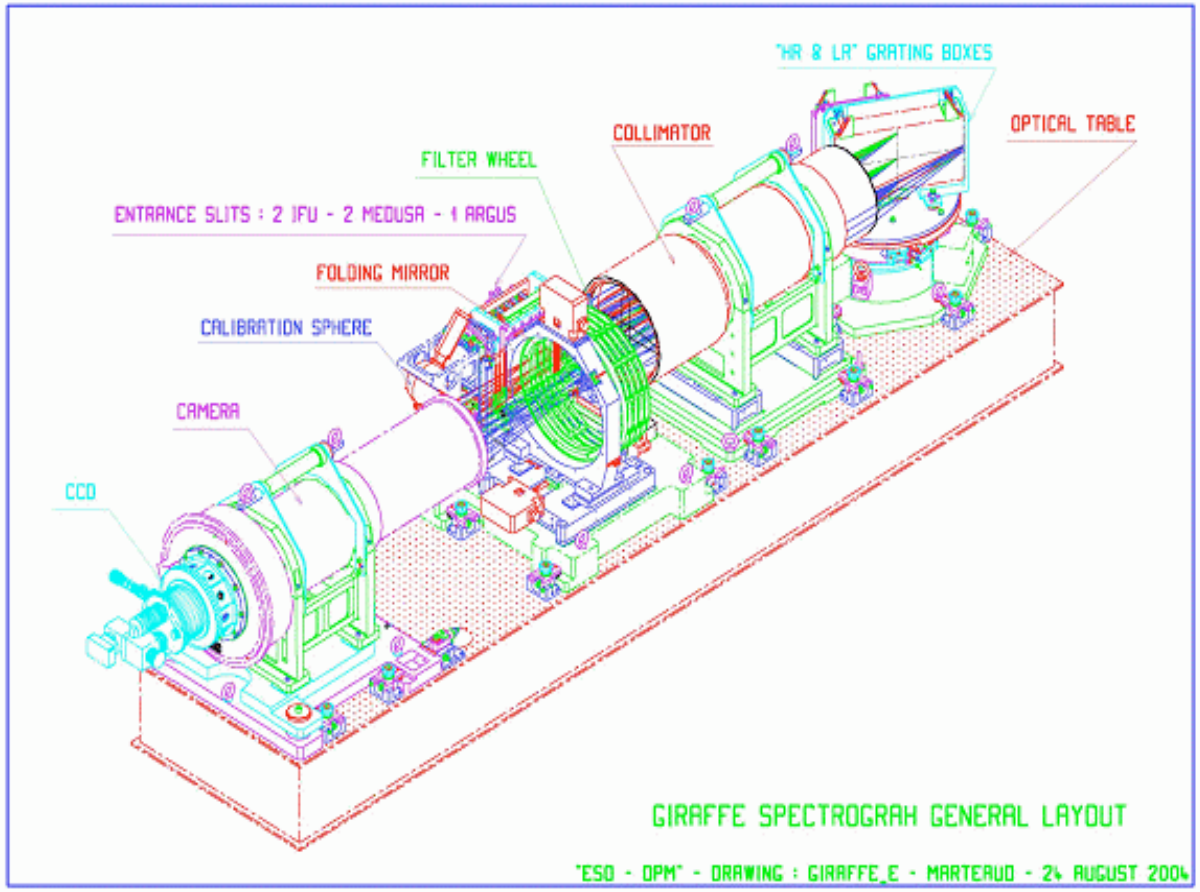


- **Mounted on KUEYEN**
- **Access to targets over 25' in diar**

Spectrographs:

- GIRAFFE R=25000 or 10000 - up to 130 targets

Giraffe - Spectrograph



R = 7500 - 30000

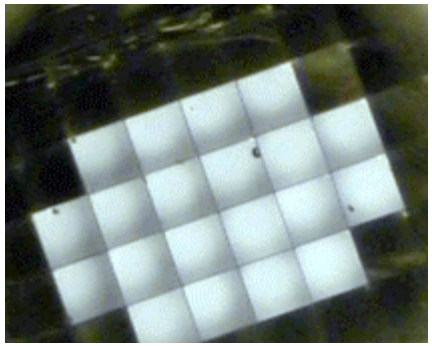
Spectral region 370 – 900 nm

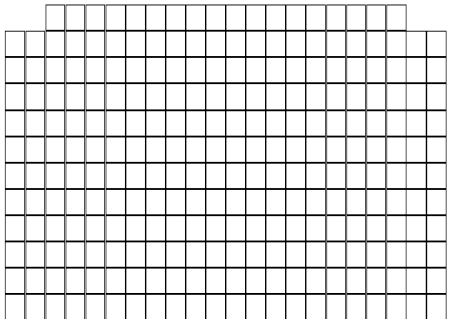
2K X 4K EEV CCD (15 µm pix.)

Modes:

- MEDUSA – 2 modes
- IFU
- ARGUS

IFU:
20 microlenses 0.52“





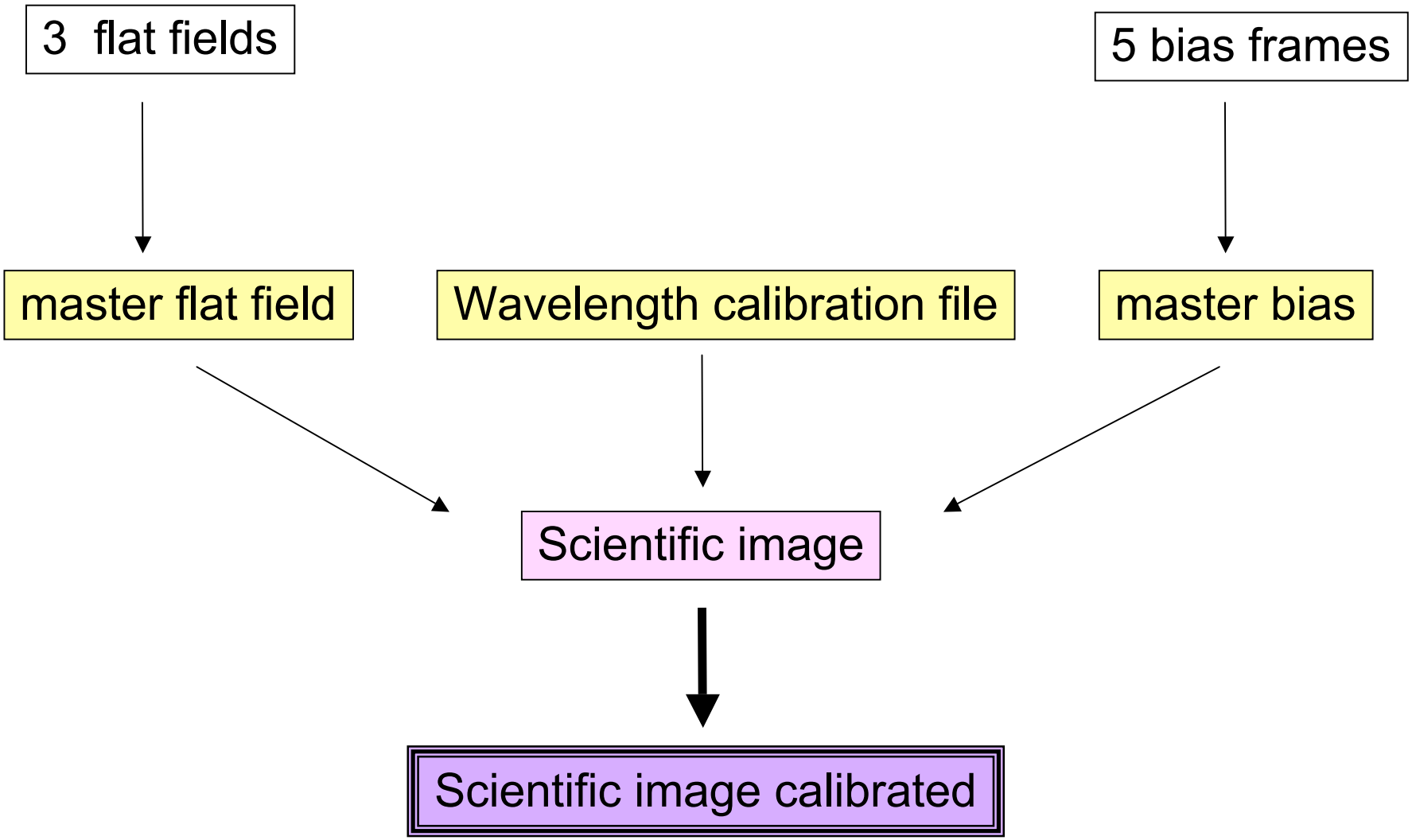
ARGUS:
22 times 14
1) 0.52“/microlens
2) 0.3“/microlens

MEDUSA Modes

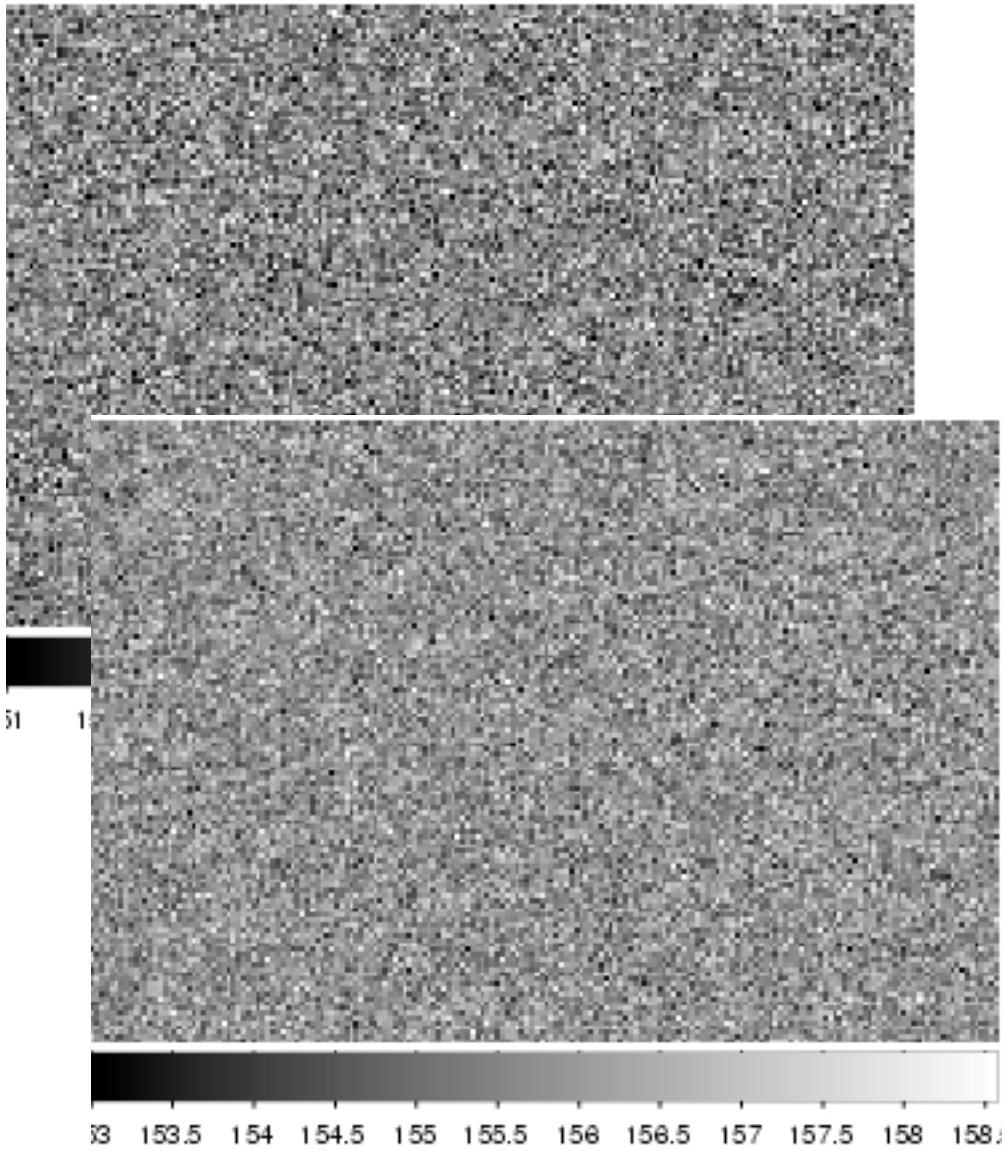
MEDUSA fibers
(Image by ESO)

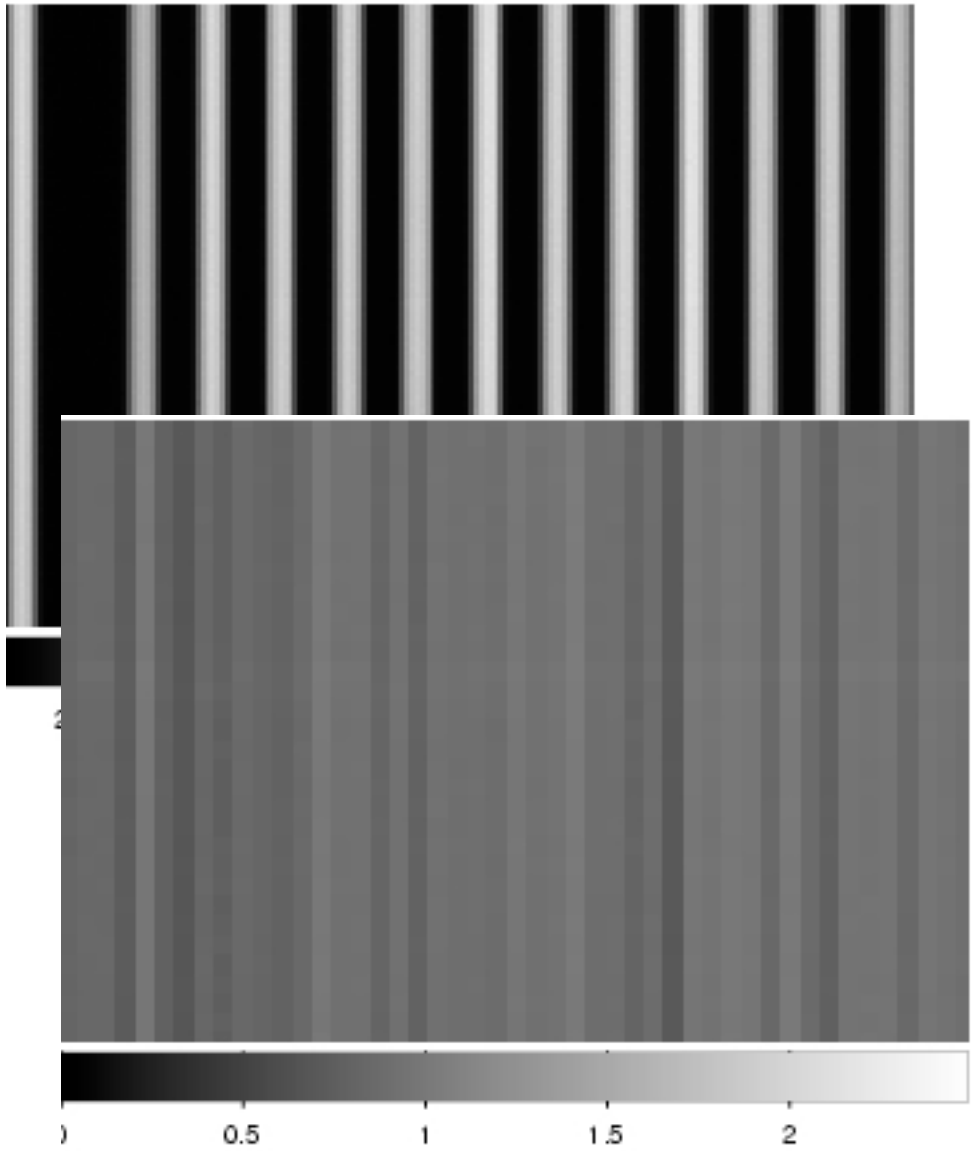
- Possible to observe 132 objects
- Resolution: each fiber equals to 1.2“ of the sky
- 2 Slits - High resolution
  - Low resolution
- High resolution mode (HR) - 22 filters (379 nm to 920.5 nm)
- Low resolution mode (LR) - 8 filters (385.7 nm to 881.7 nm)

Giraffe data pipeline

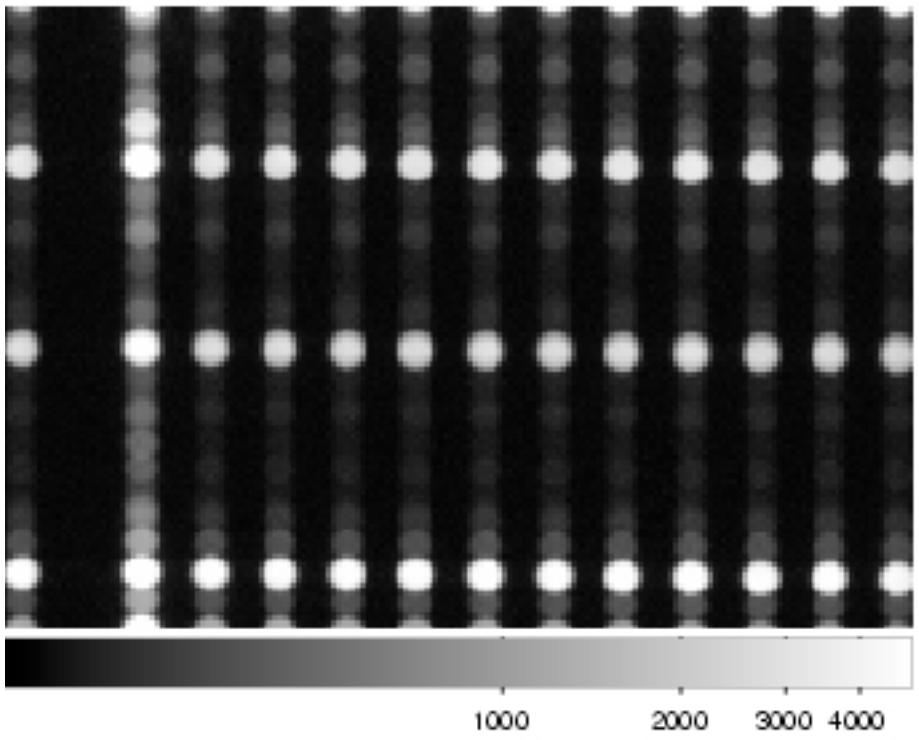


Calibration of a scientific frame 1





Calibration of a scientific frame 2

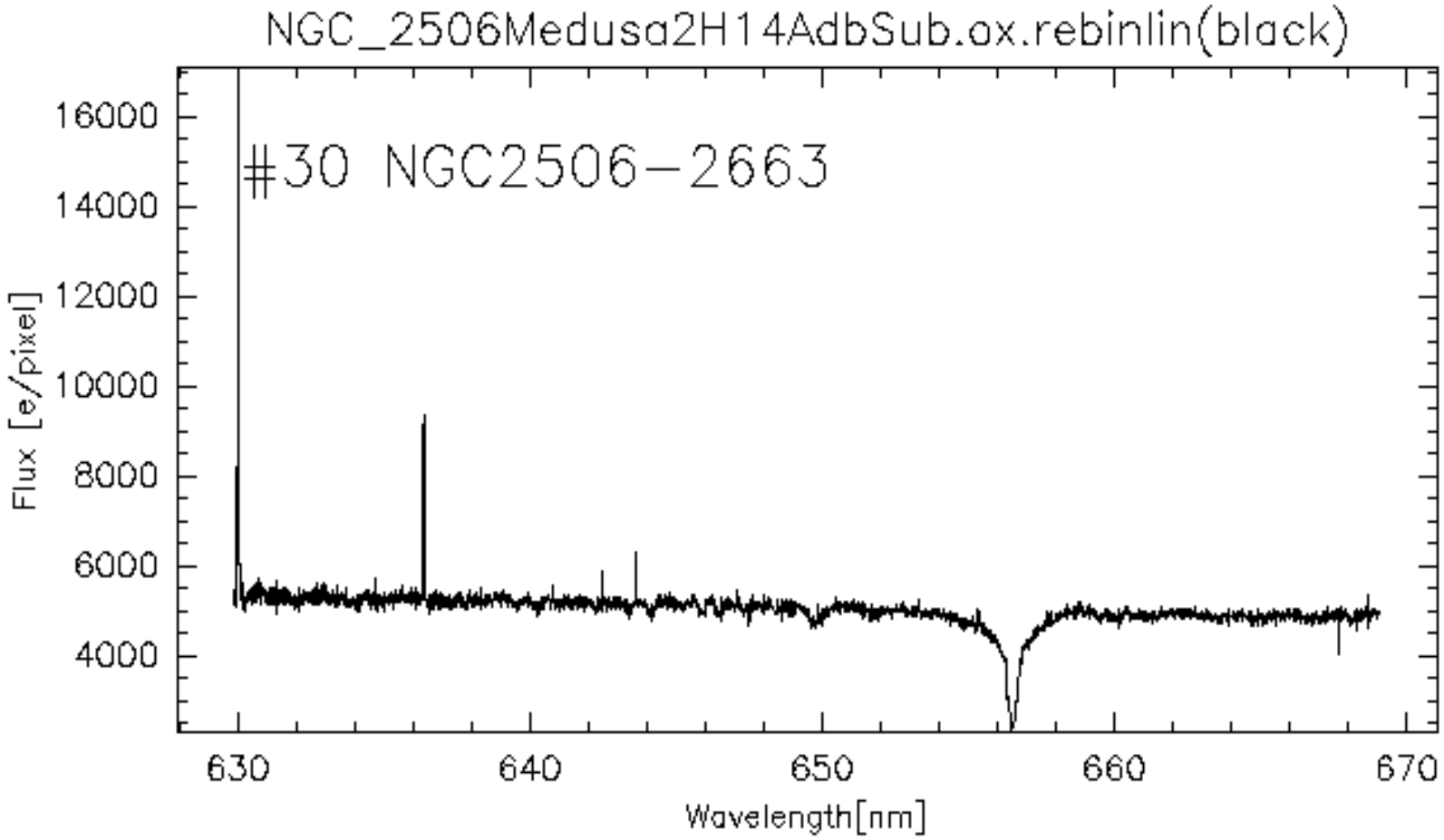


- Output = (Sci-bias)/(Master flat)
- Wavelength calibration with Th-Ar Lamp

Some comments

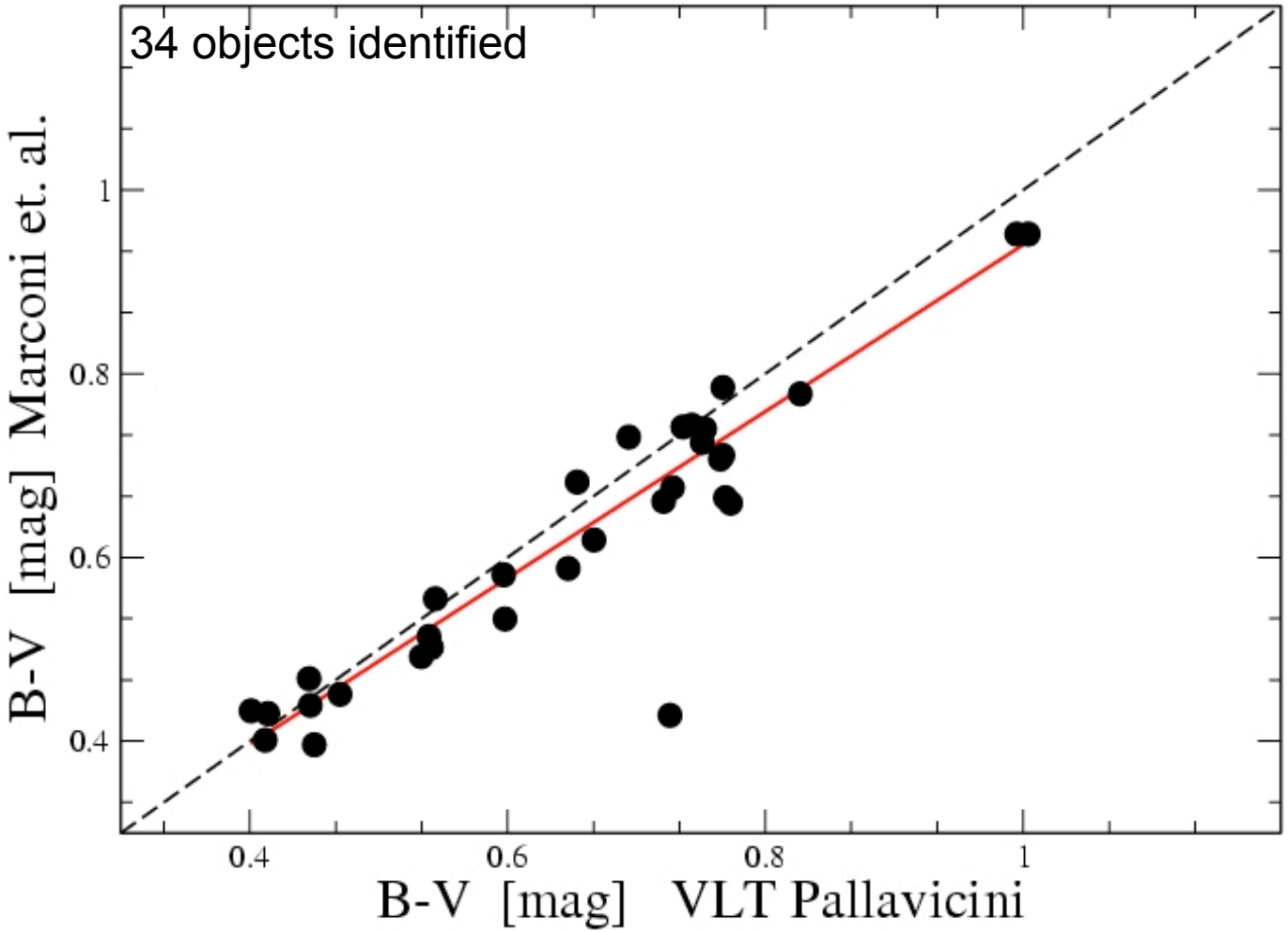
- No need of dark subtraction
- No flux calibration
- No sky subtraction

Calibrated spectra



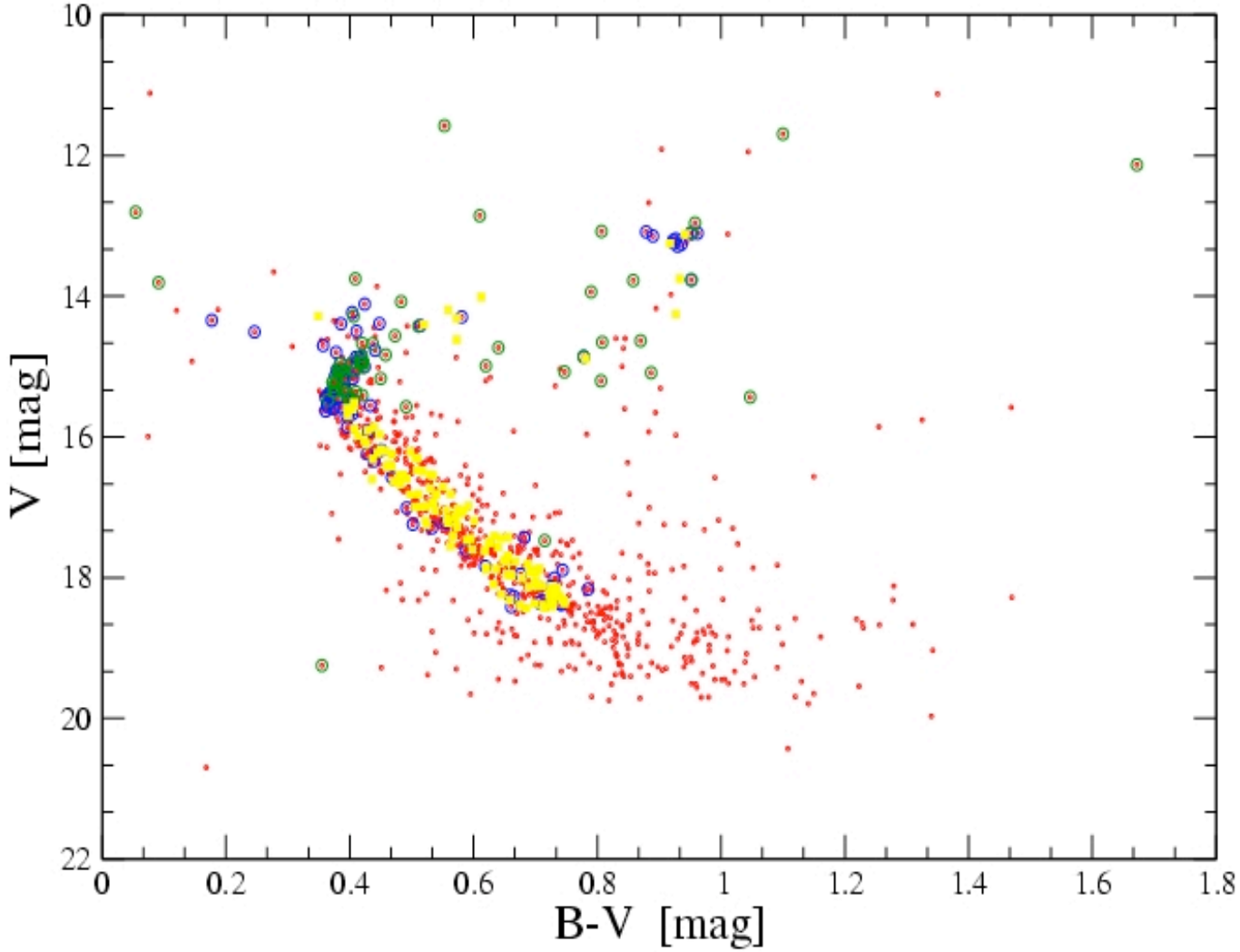
2004-02-14

Cross identification of our targets with photometric data



(B-V)*marconi*=0.032143+0.90548*(B-V)*pallavicini*

Science?



2004-02-14 Pallavicini et al.
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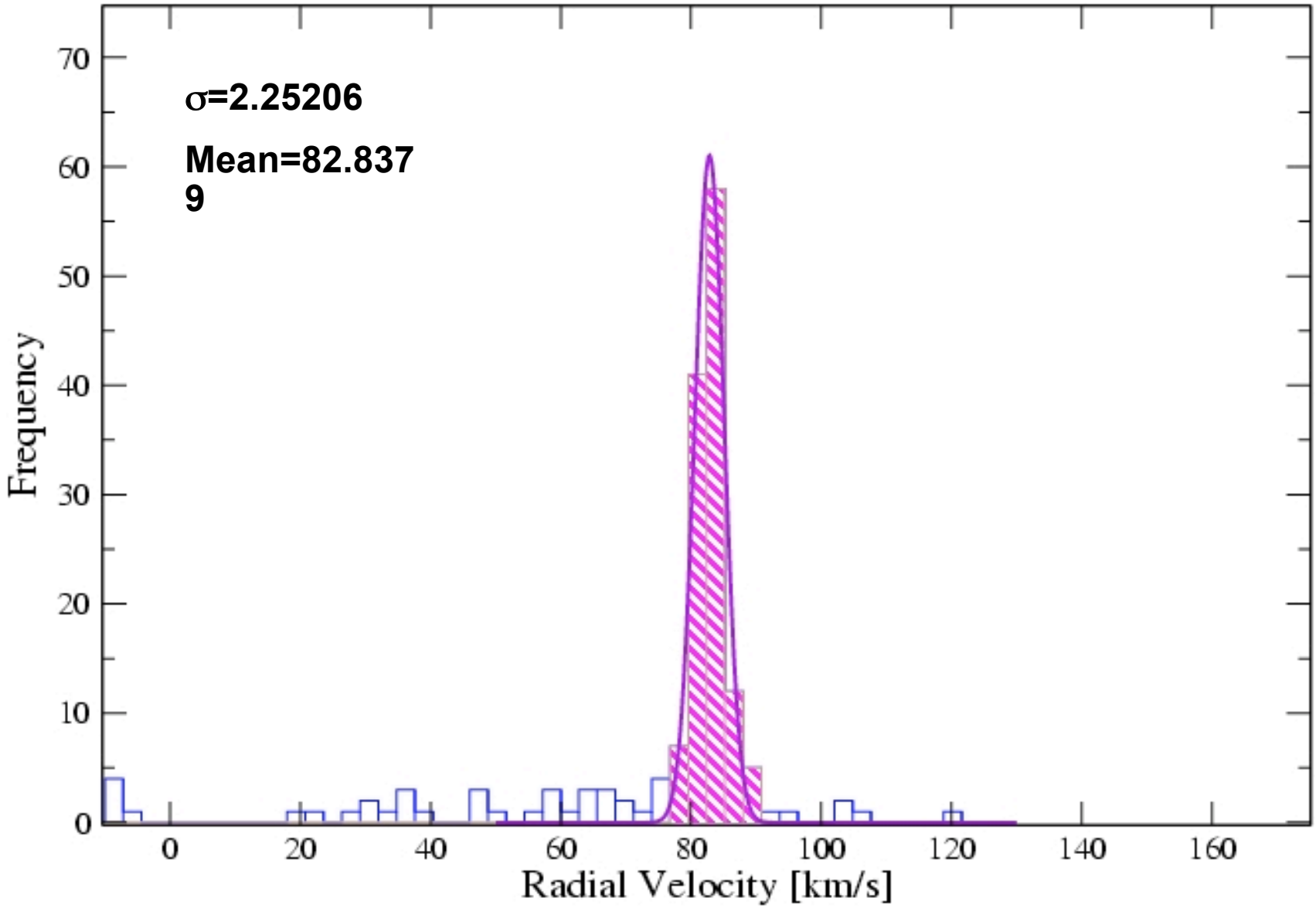
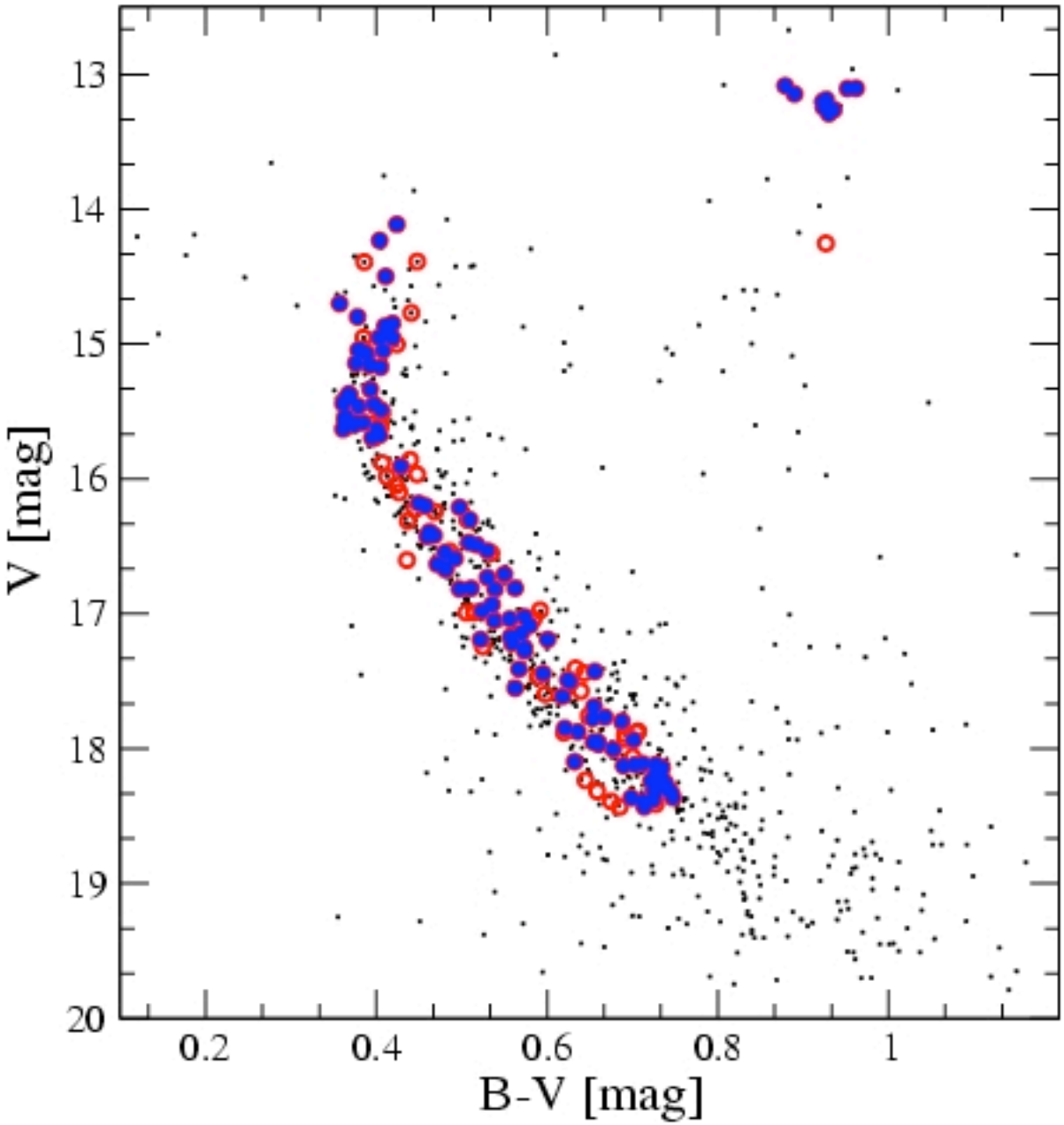
2005-03-28 Grundahl et al.

Radial velocity distribution in the field



To be or not to be …. A member?



Still a lot of work to do….but THANK YOU FOR YOUR ATTENTION:-)