What has already been observed ?

Some Statistics, and a few Highlights….before to-day!

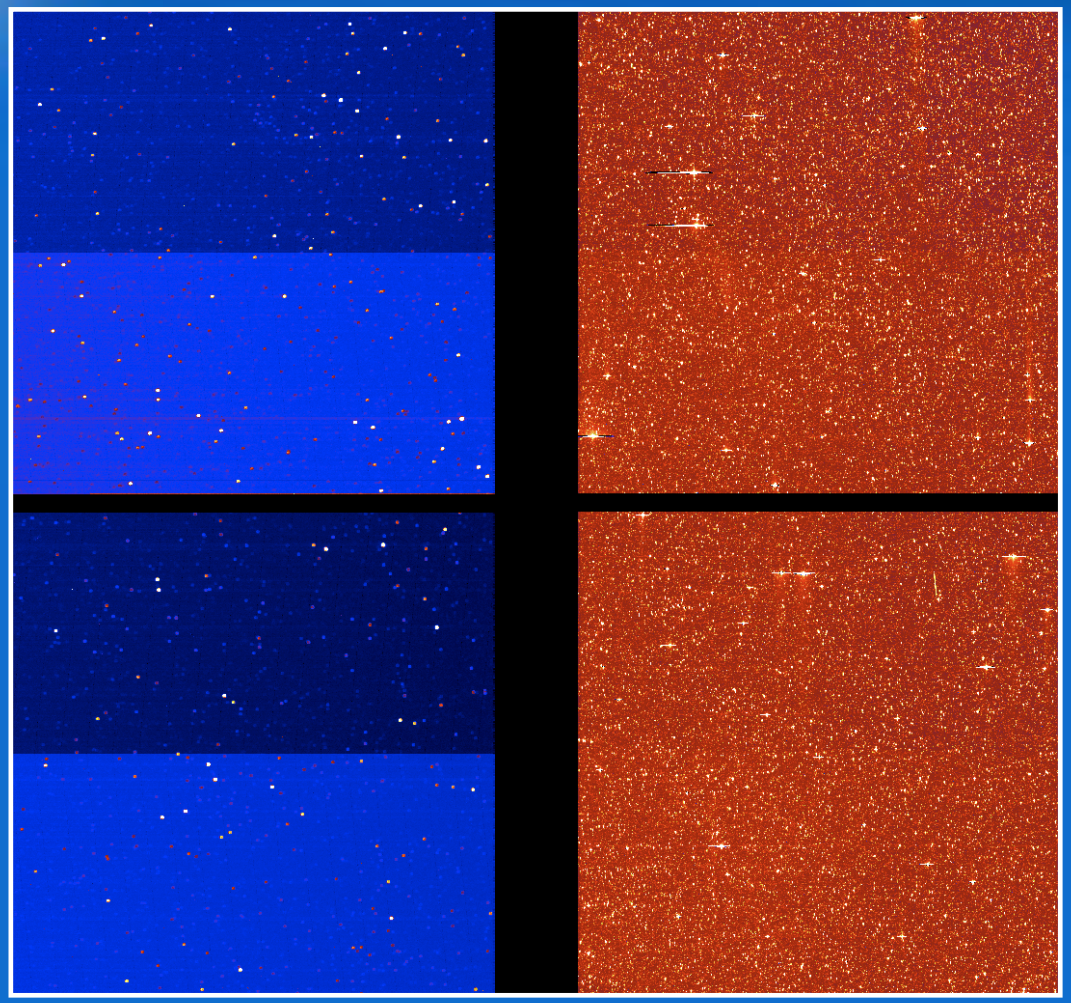
A. Baglin, M. Auvergne, P. Barge,
C. Catala, M. Deleuil, E. Michel, W. Weiss

The focal plane

5 targets per CCD

5≤ mv ≤ 9.5

sampling 1 s to 32s



Seismology field
highly defocussed

Exoplanet field
On focus + bi-prism

6000 windows per CCD

10.5 ≤ R ≤ 16

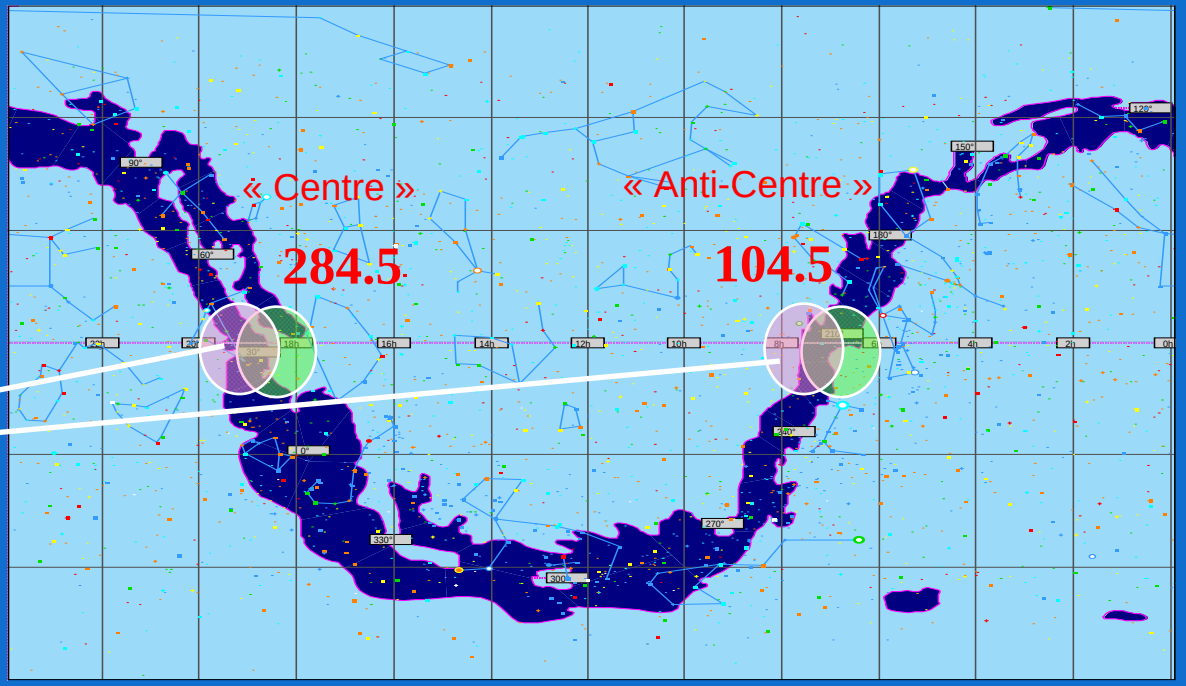
sampling 8.5 min (32 s.)

From M. Auvergne

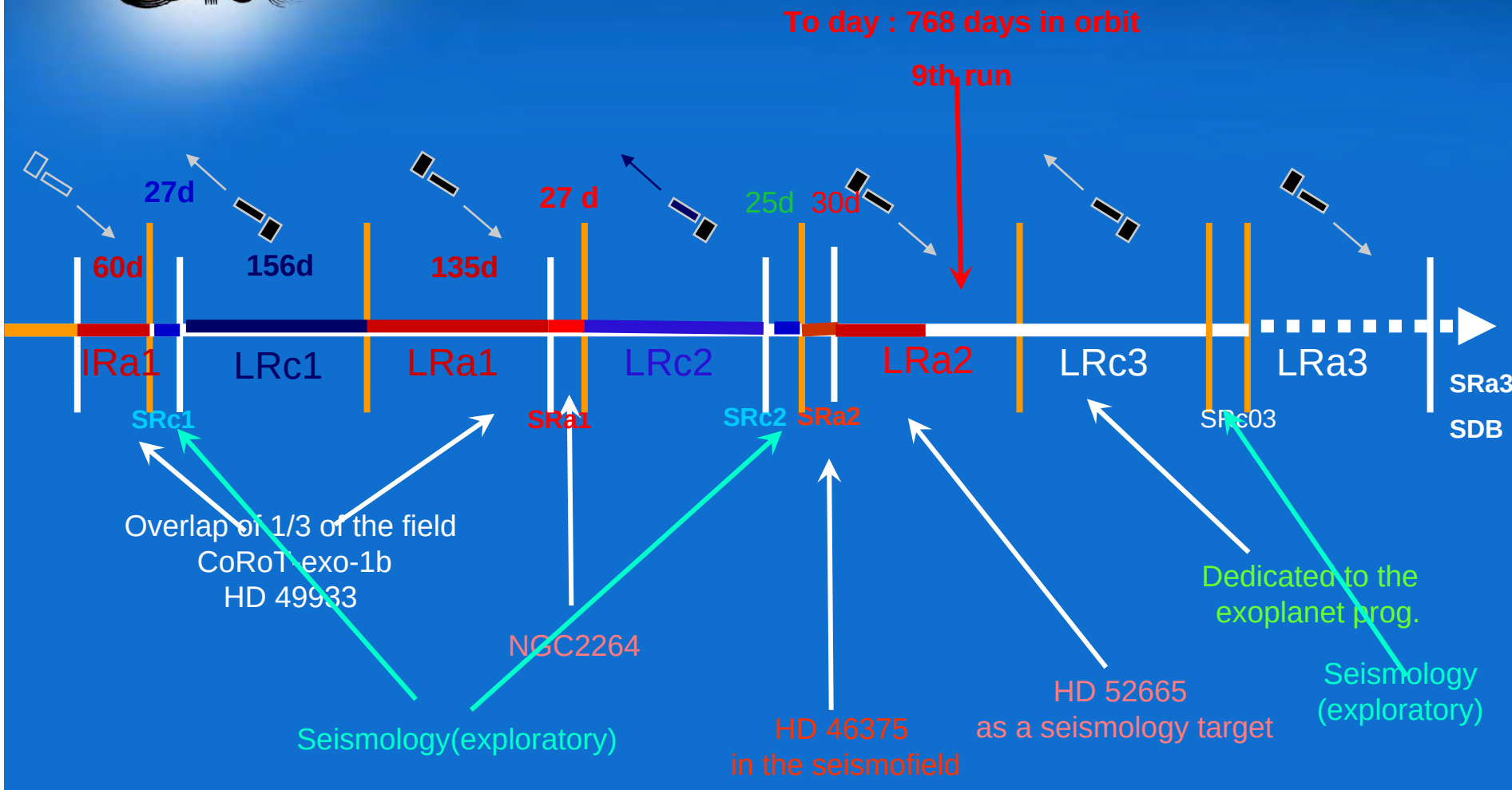
The CoRoT Eyes

The CoRoT Eyes

Radius ~10° ?



The observing programme



Extension 2010……2012?

Data Deliveries

see PI-06, PI-07, PI-08, PI-09, PI-10

* To the CO-Is at CDC : IAS

http://idoc-corot.ias.u-psud.fr/

* To the GIs at CDC : IAS for specific Targets of Additionnal Programmes

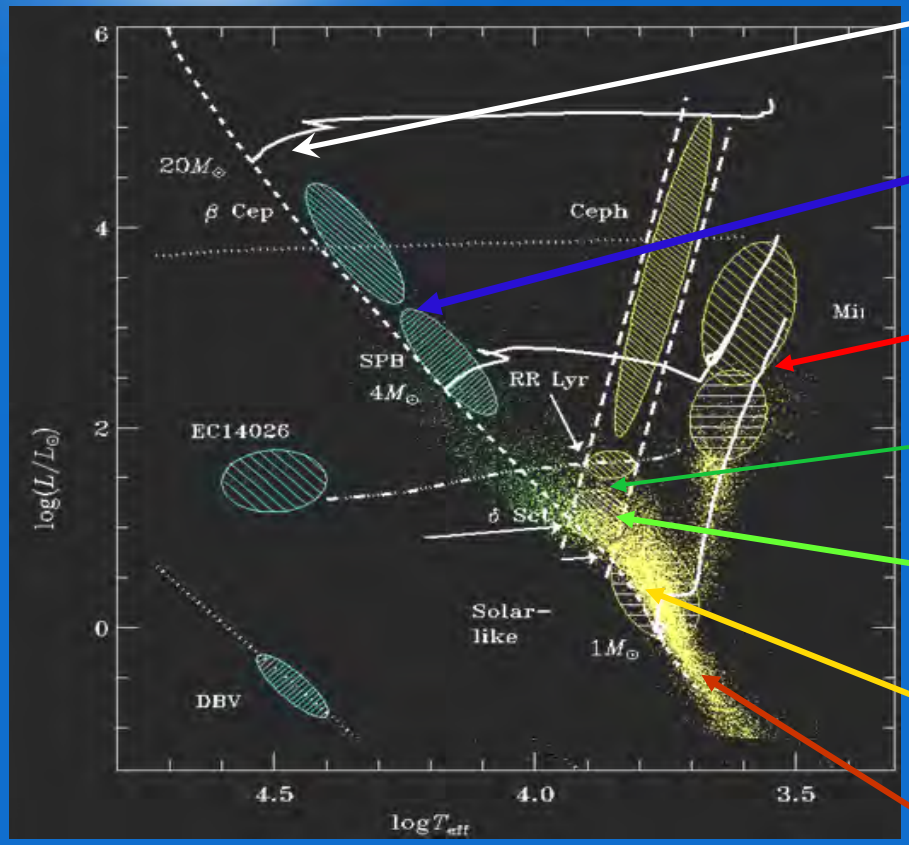
  Same timing except when classification needded

* To the Public at CDC:IAS , LAEFF, NSteD, CDS

Code	Begins	Duration	Type	V1 : Date	V2 : Date	V1 :Public
IRa01	07/01/31	62 days	Astero/exo	07/12/10	09/03/10	**08/12/19**
SRc01	07/04/11	29 days	Astero/exo	08/04/01	09/05/11	
LRc01	07/05/11	158 days	Astero/exo	08/02/15	**09/02/25**	09/02/15
LRa01	07/10/18	138 days	astero	08/07/24	09/04/01	
			exo	08/10/29	09/04/01	
SRa01	08/03/04	28 days	astero	08/11/06	09/04/10	
			exo	08/09/04		
LRc02	08/04/11	150 days	astero		**09/02/10**	
			exo		**09/02/10**	
SRc02	08/09/09	28 days	astero/exo		09/04/17	
SRa02	08/10/08	36 days	astero		**09/02/15**	
			exo		09/04/30	
LRa02	08/11/13		astero/exo		09/06/30	

Already 210 visits!

Seismology Targets already observed



7 O

12 B stars,
1 β Ceph,
5 Be

10 giants (G,F)

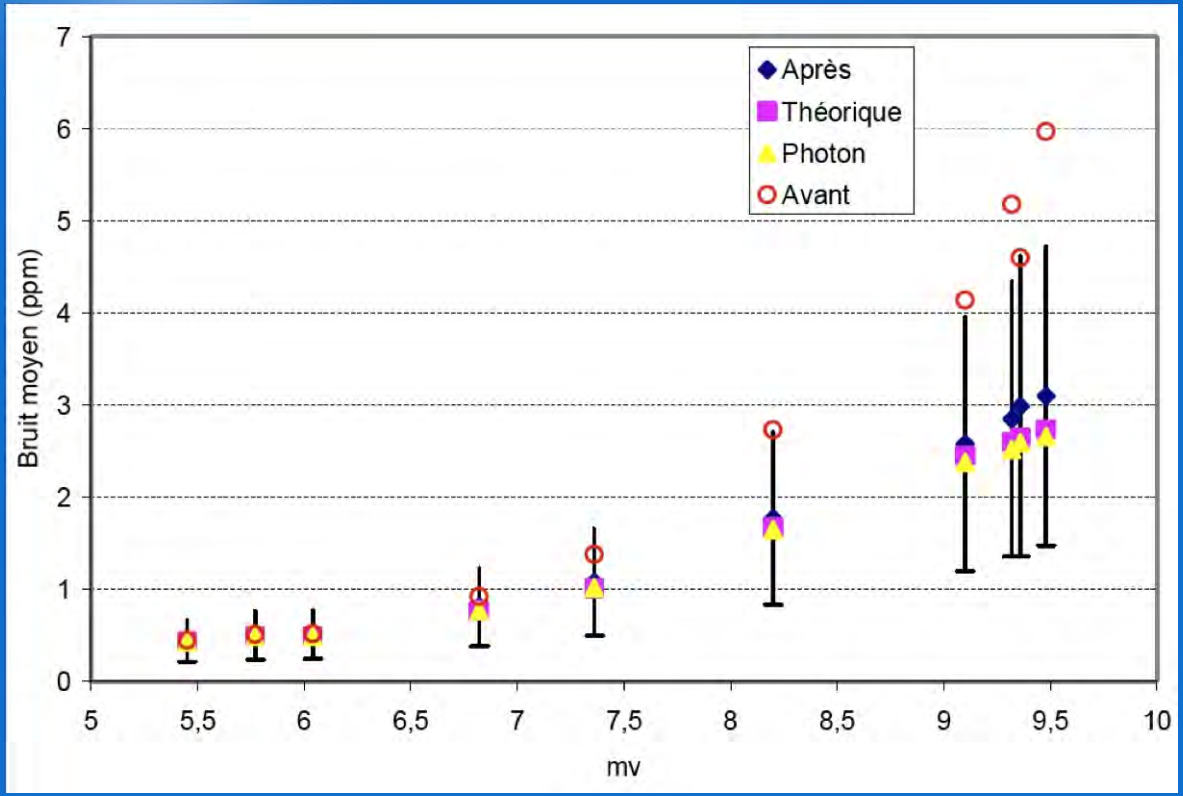
7 δ Scuti,
2 known γ Dor +1

17 A/early F stars ?
3 Am, 7 Ap,

9 solar-like puls. cand.
(one observed twice)

3 KM ?

Photometric accuracy in seismology



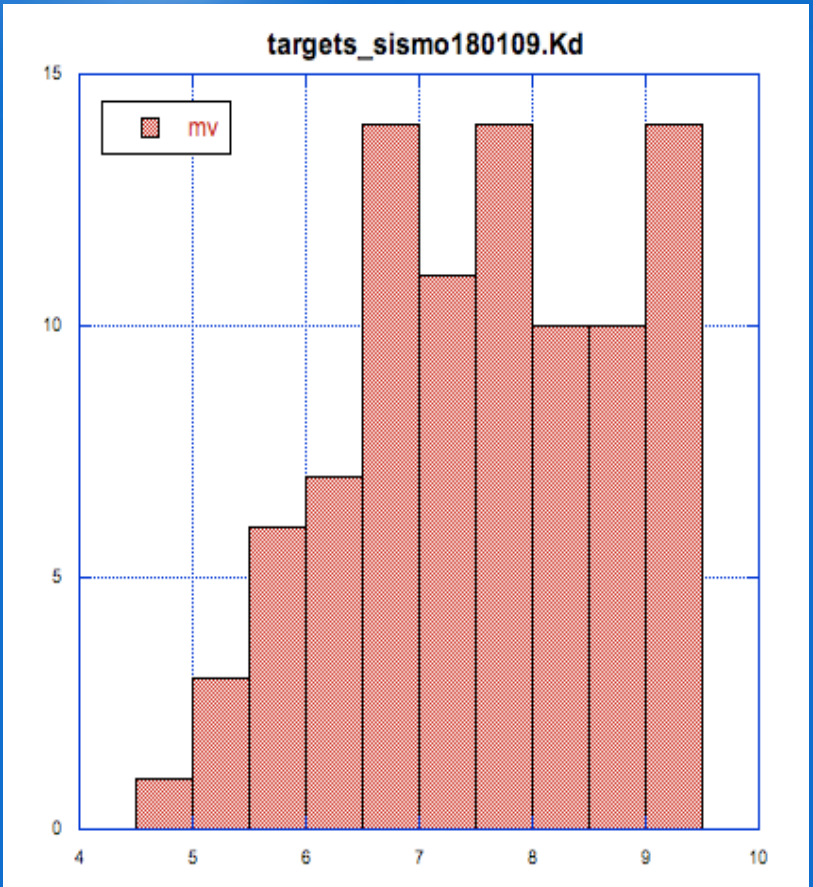
0.5ppm in 5 days
for bright stars mv~6

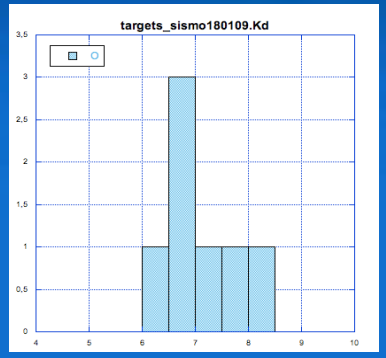
Photon noise limited
down to mv=9
with jitter corrections

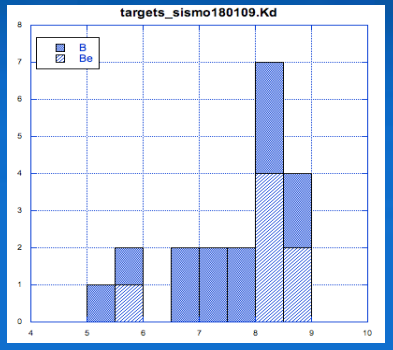
Between 5 to 500mHz, 5 days of data

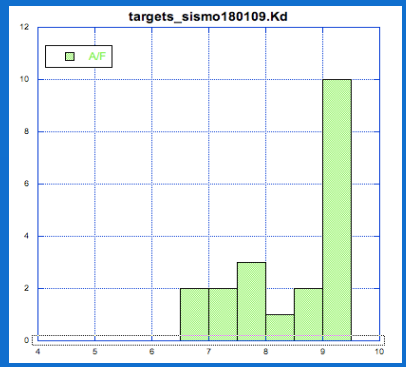
M. Auvergne. F. Fialho et al A and A

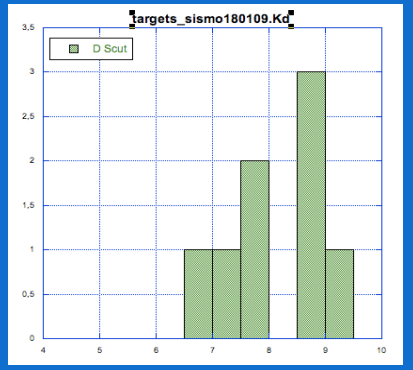
Magnitude distribution of the classes

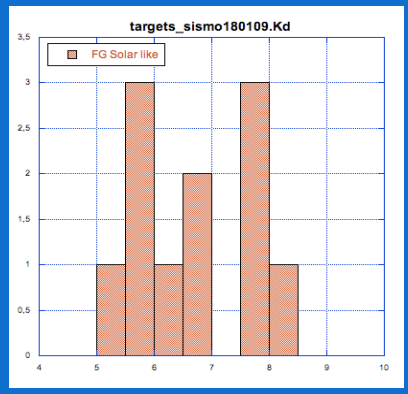


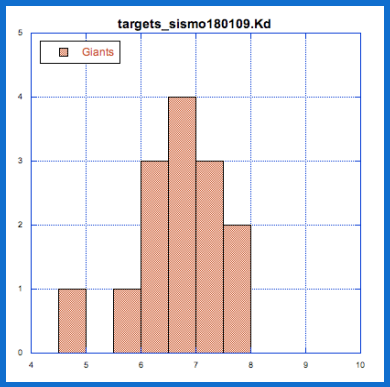




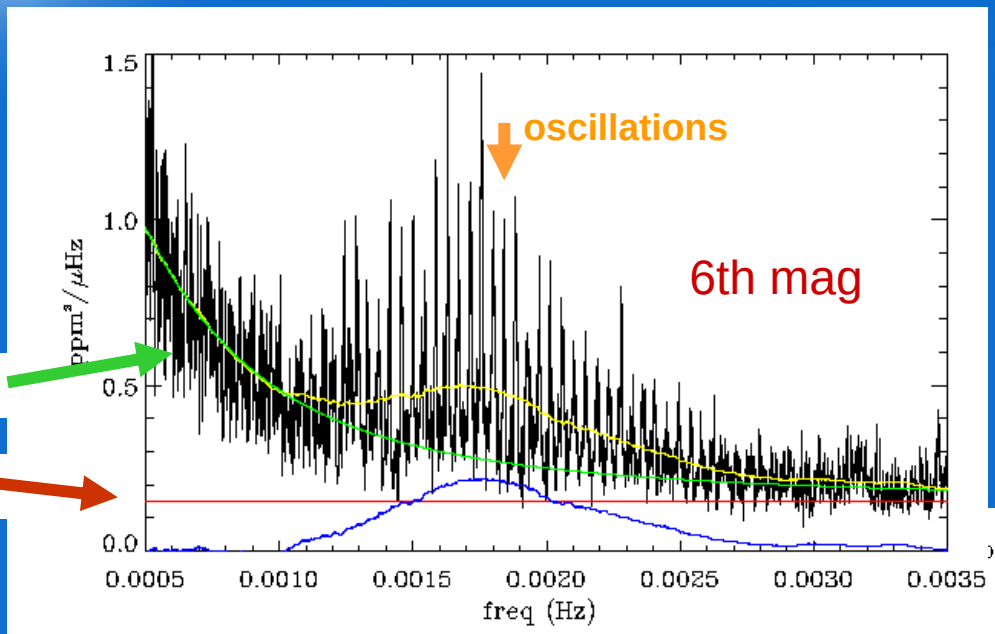


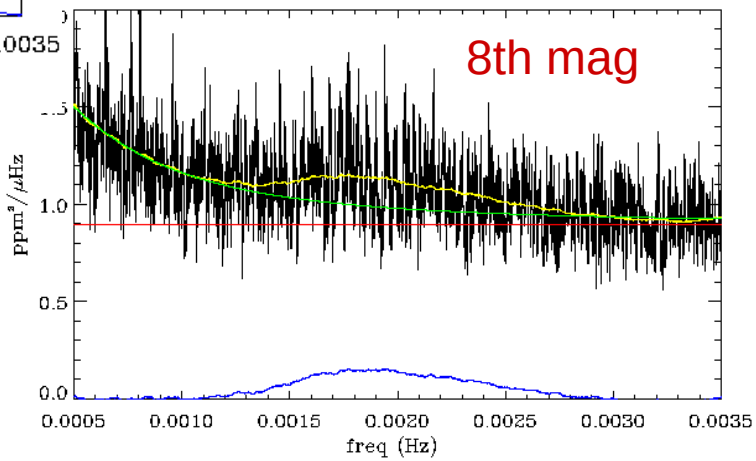






Solar oscillations in solar like stars





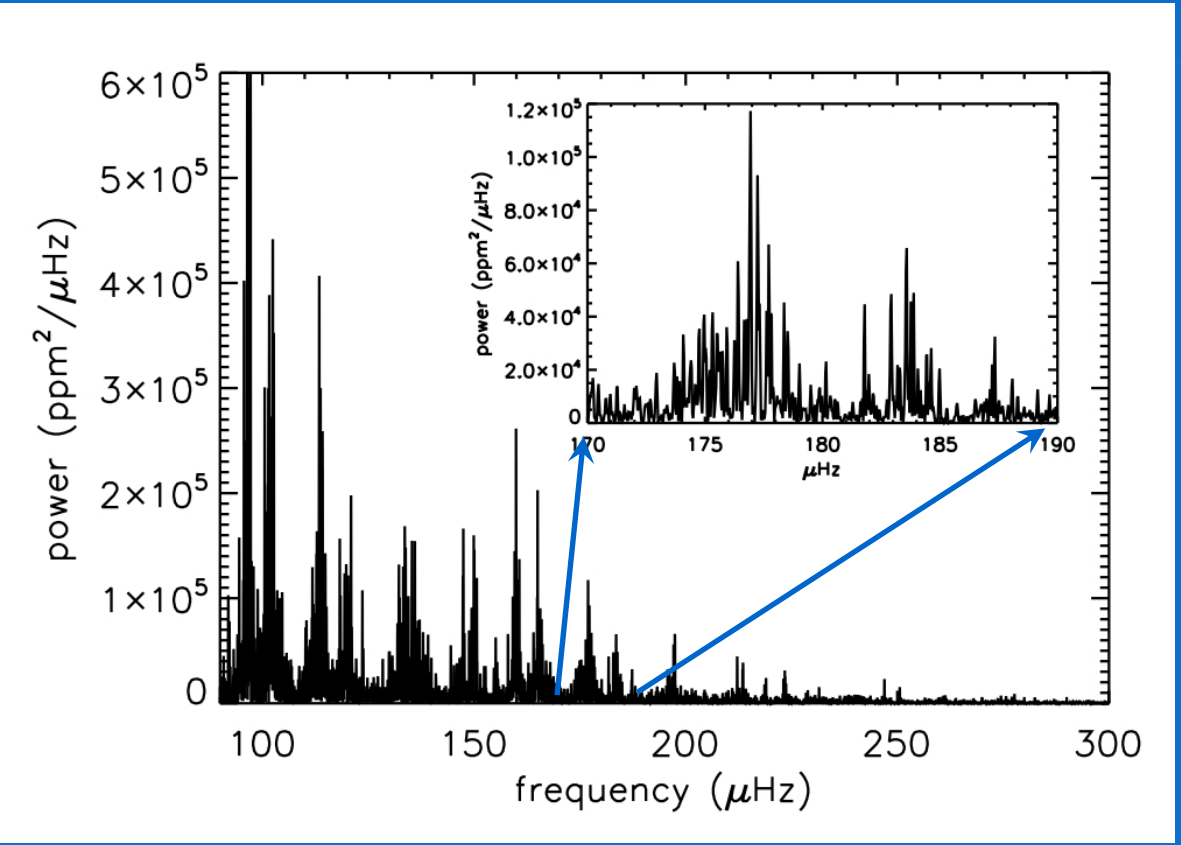
Eric Michel and
The SWG
In Science

Solar like oscillations in a massive star

HD 180642

β Ceph

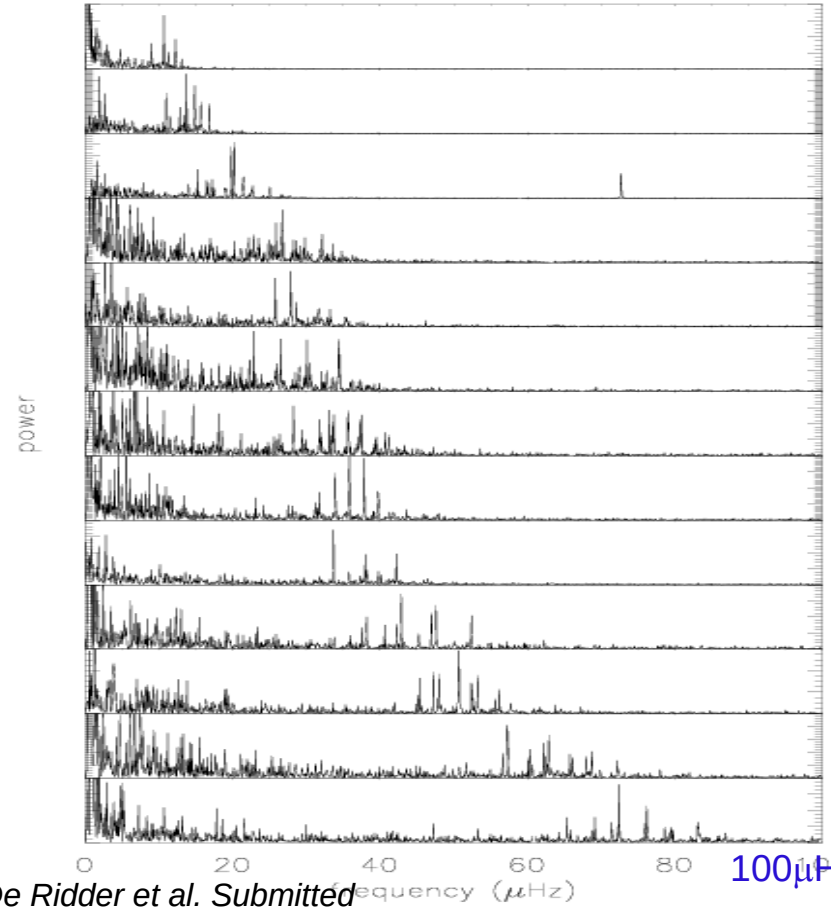
mv= 5.83
156 days



After substraction of the low frequency components

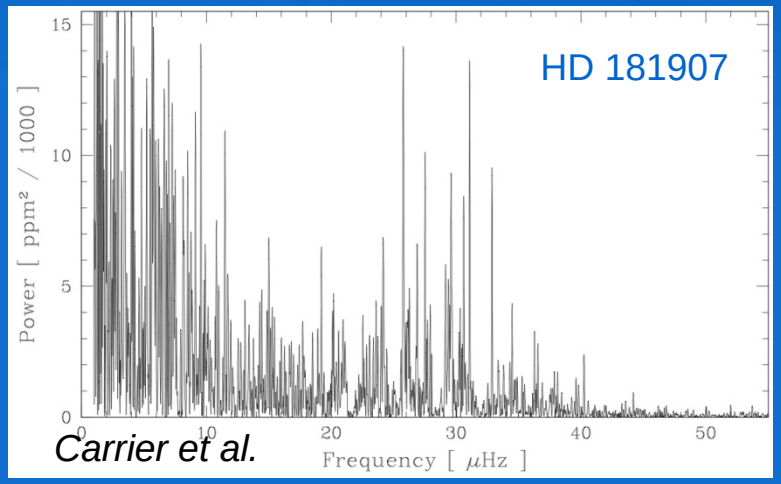
Solar like oscillations in many Red Giants

In both the seismo the exoplanet field

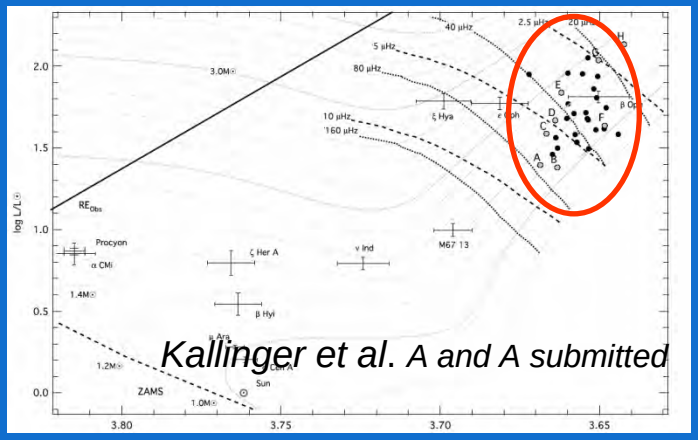


100μHz

De Ridder et al. Submitted



Carrier et al.



Kallinger et al. A and A submitted

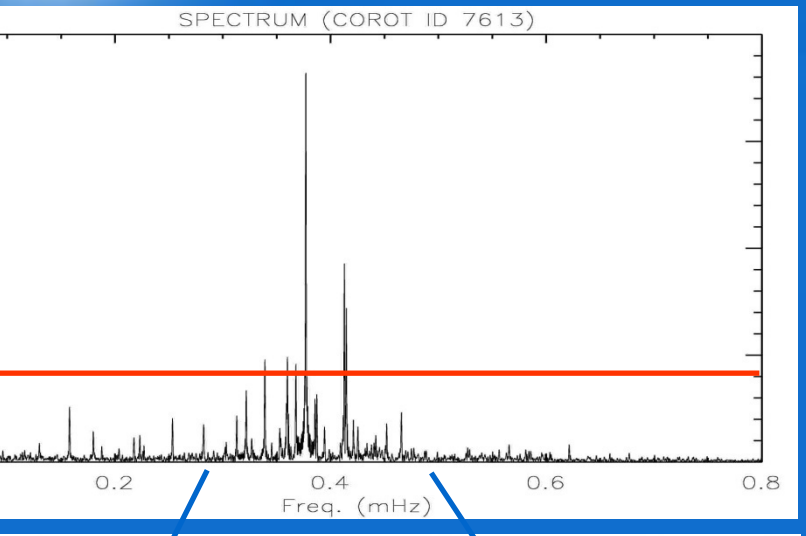
But ……

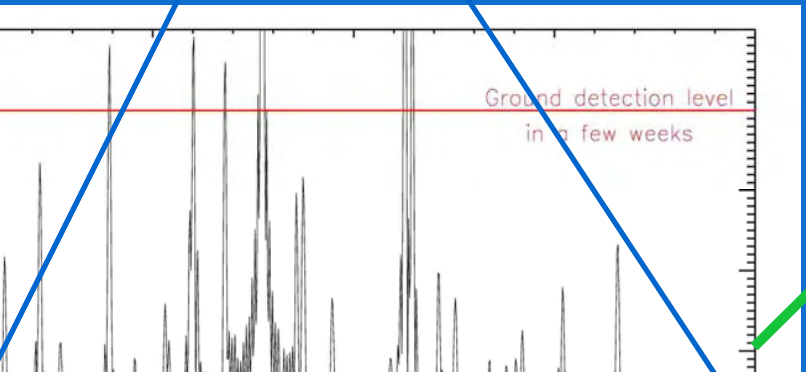
many have complex and presently unexplained behaviors

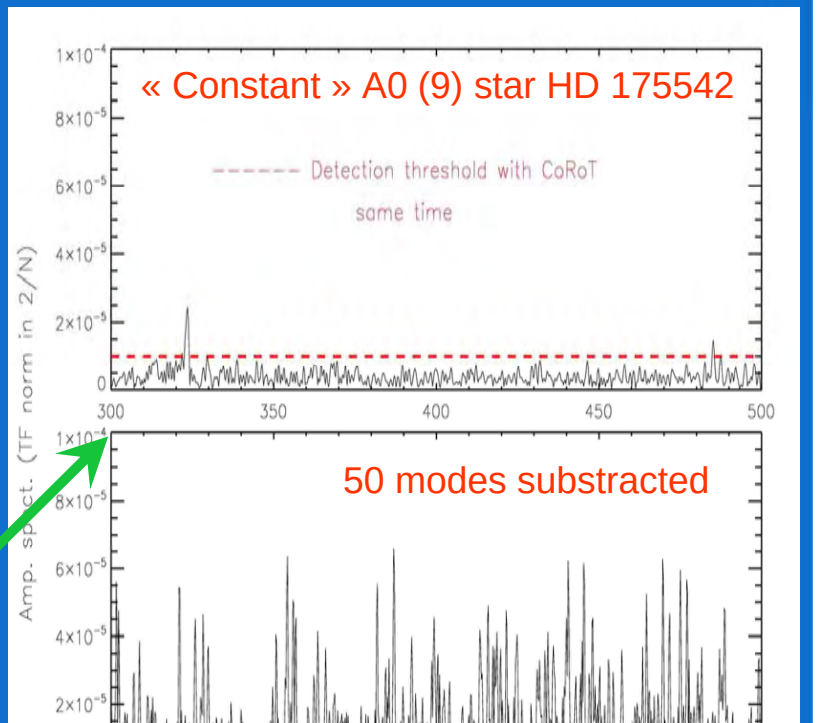
The large amplitude oscillators complexity

HD 174936 (8.7) in SRc01, 27 days

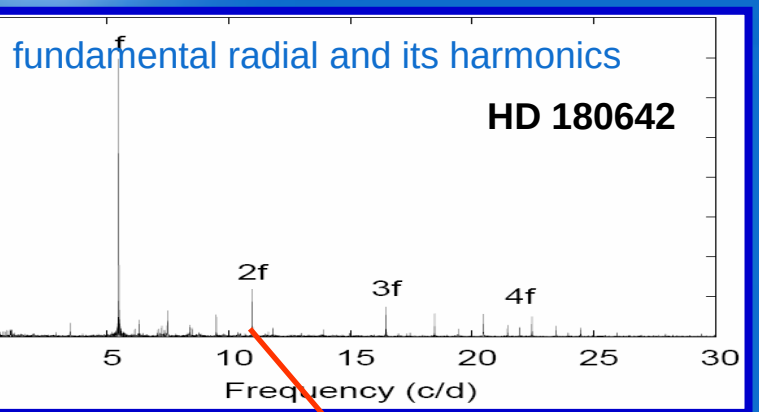
L. Lefevre, E. Michel et al.





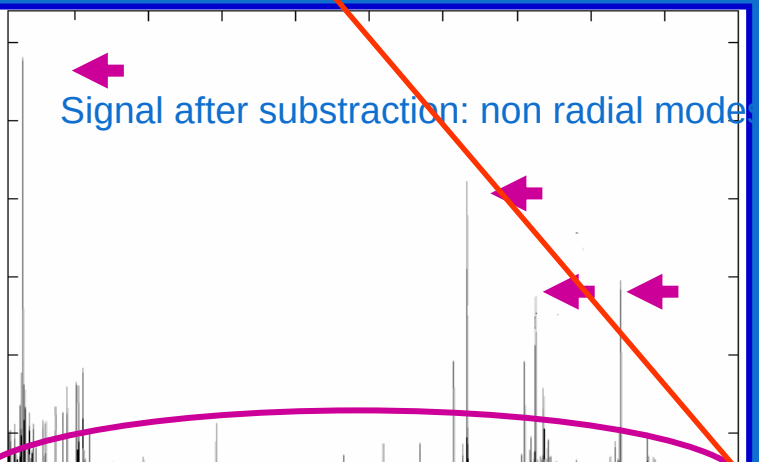


Very low frequencies in β Ceph and Bes

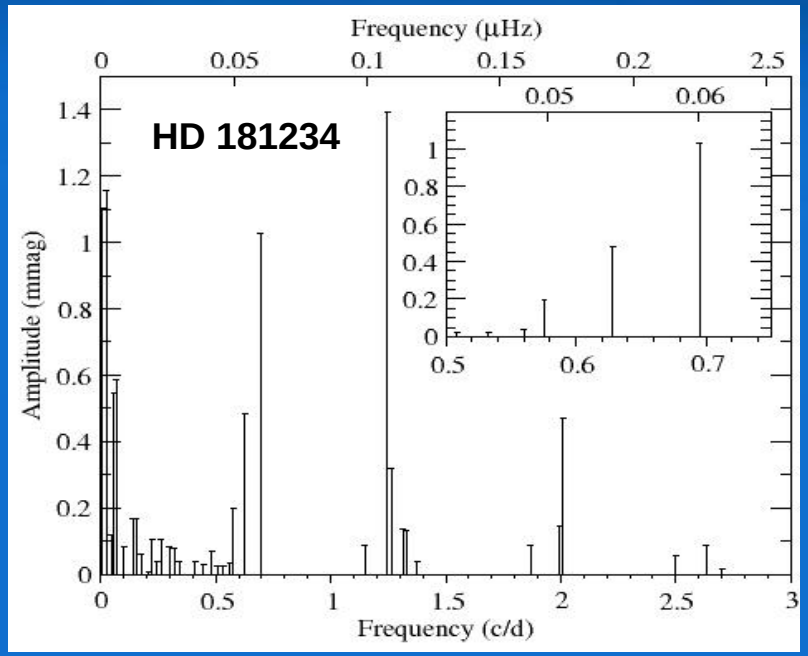


fundamental radial and its harmonics

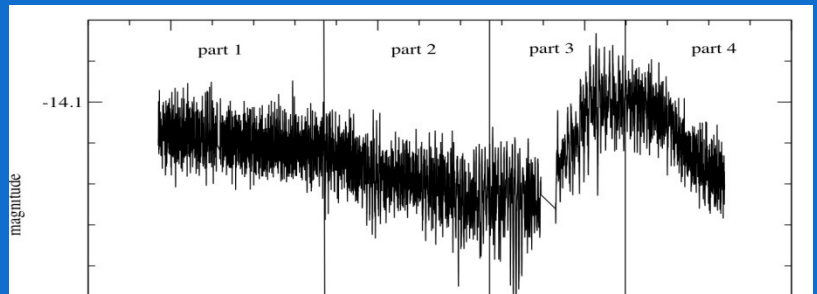
HD 180642



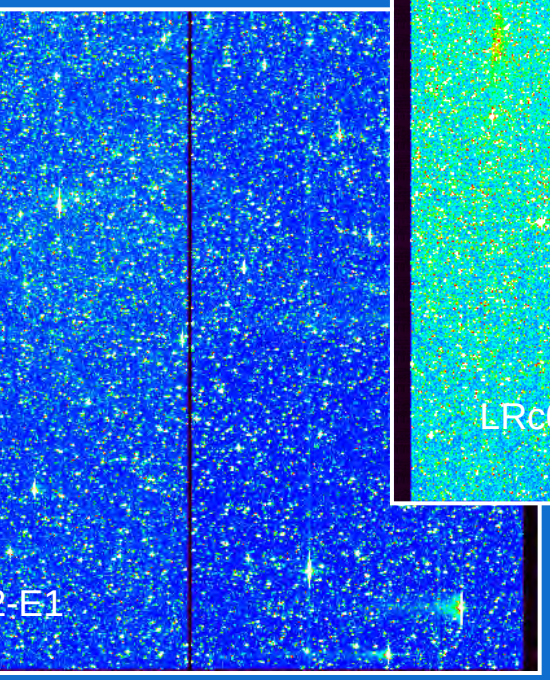
Signal after substraction: non radial modes

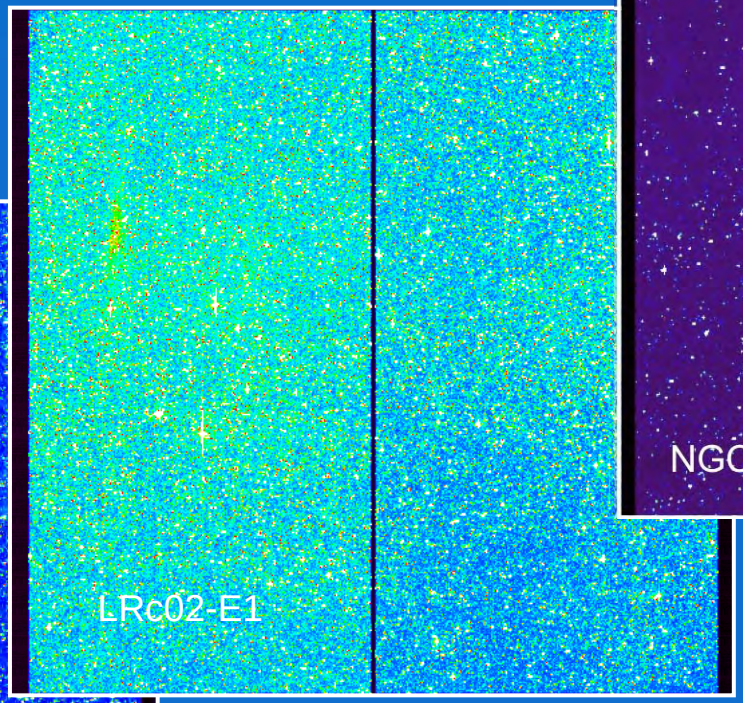


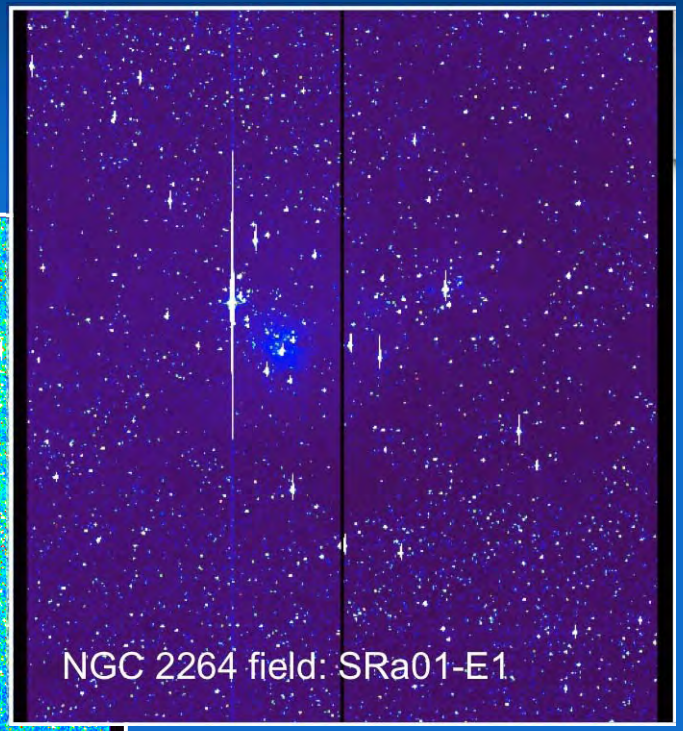
C. Neiner and The Be Team



The exofield



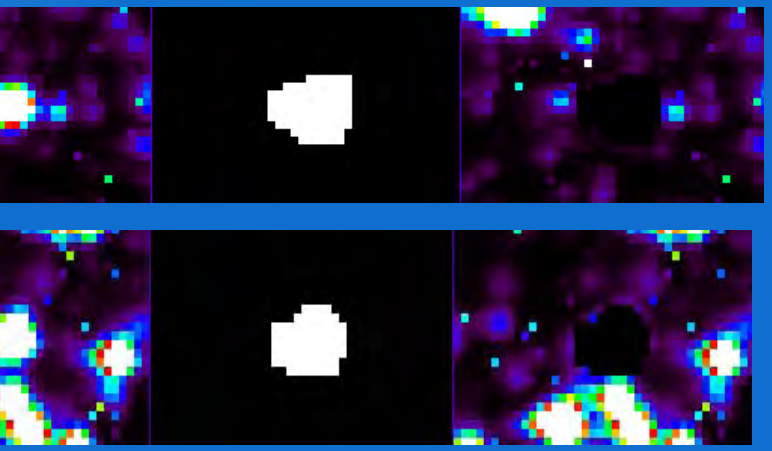




For each exo-CCD
Selection of 5700 stars
Priority to FGK dwarfs

The CoRoT Exo Data

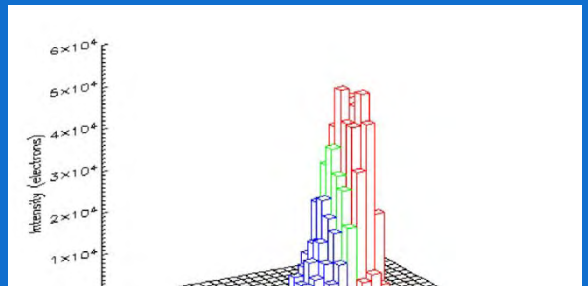
erture photometry (250 ajusted masks)



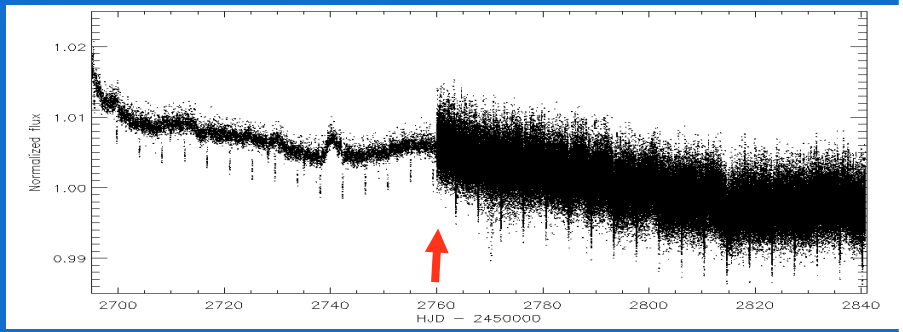
olors

14.5 total

00



* Oversampling at 32s from alarm



* Imagettes 40 per CCD (under evaluation)

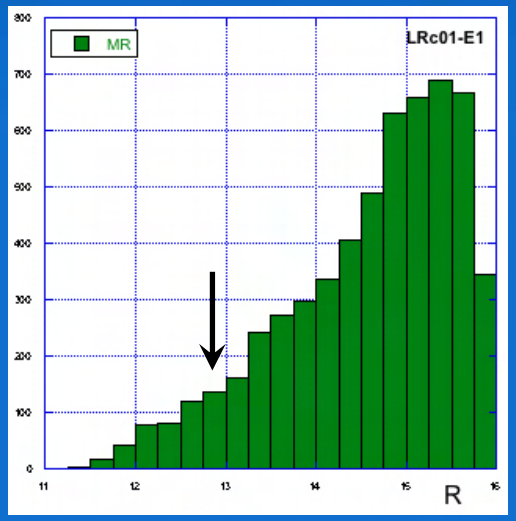
Different populations in the two eyes

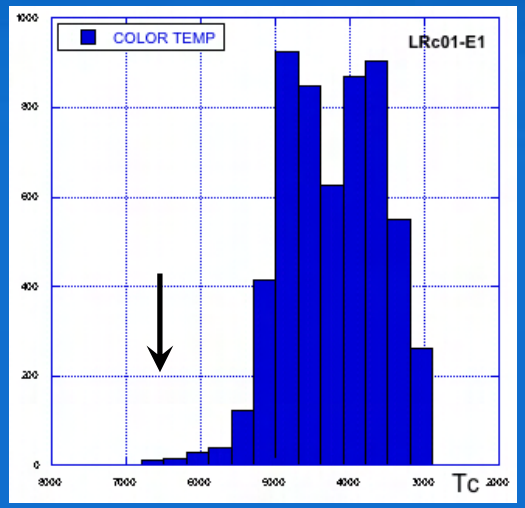
re LRc01_E1

5698*

Red Gaints

1 Mira



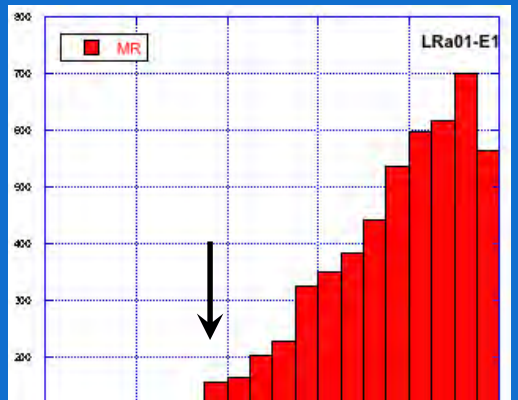


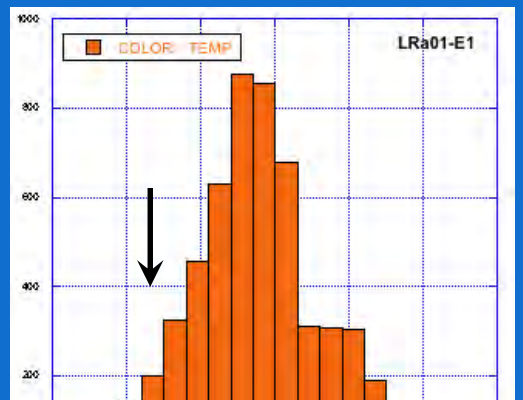
Centre LRa01_E1

5723 *

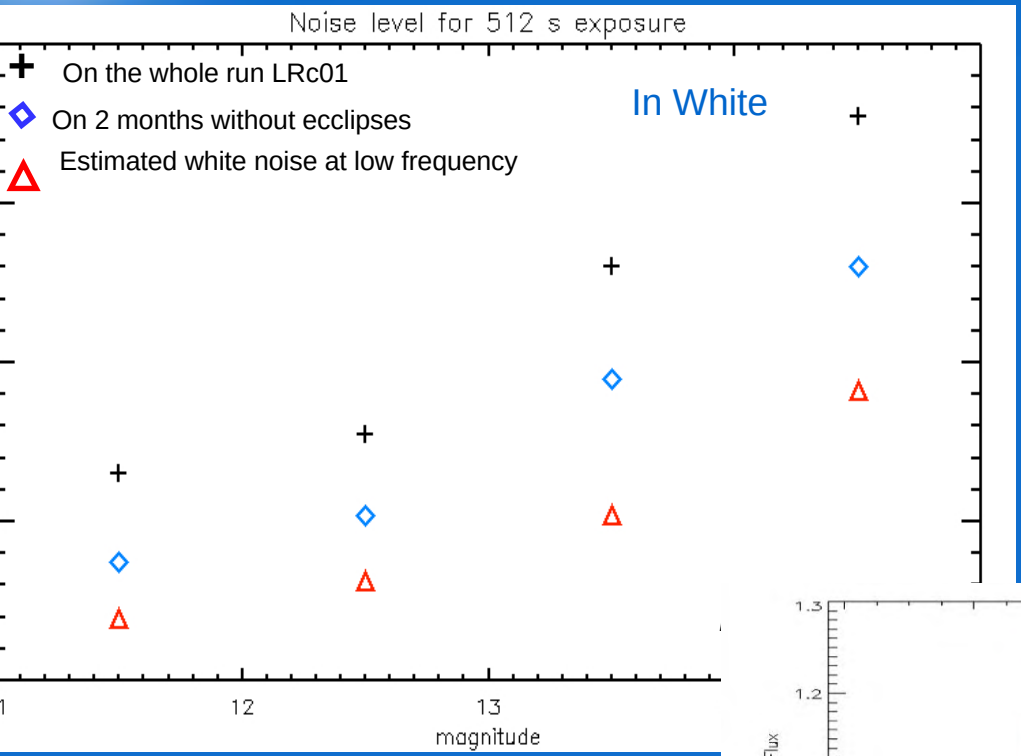
10 Red Giants

olitze 25 members





Performances in the exoplanet field



At R= 12.5, In the interval 3-10 hours
$\sigma = 7.10^{-4}$ over 512s

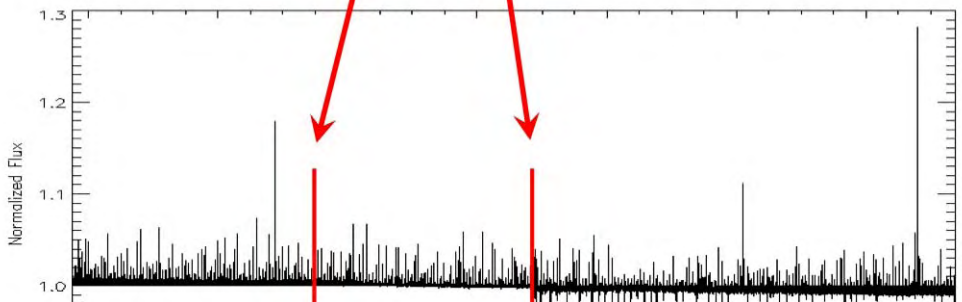
Jitter correctipns

Improvements (V2)

F. Fialho

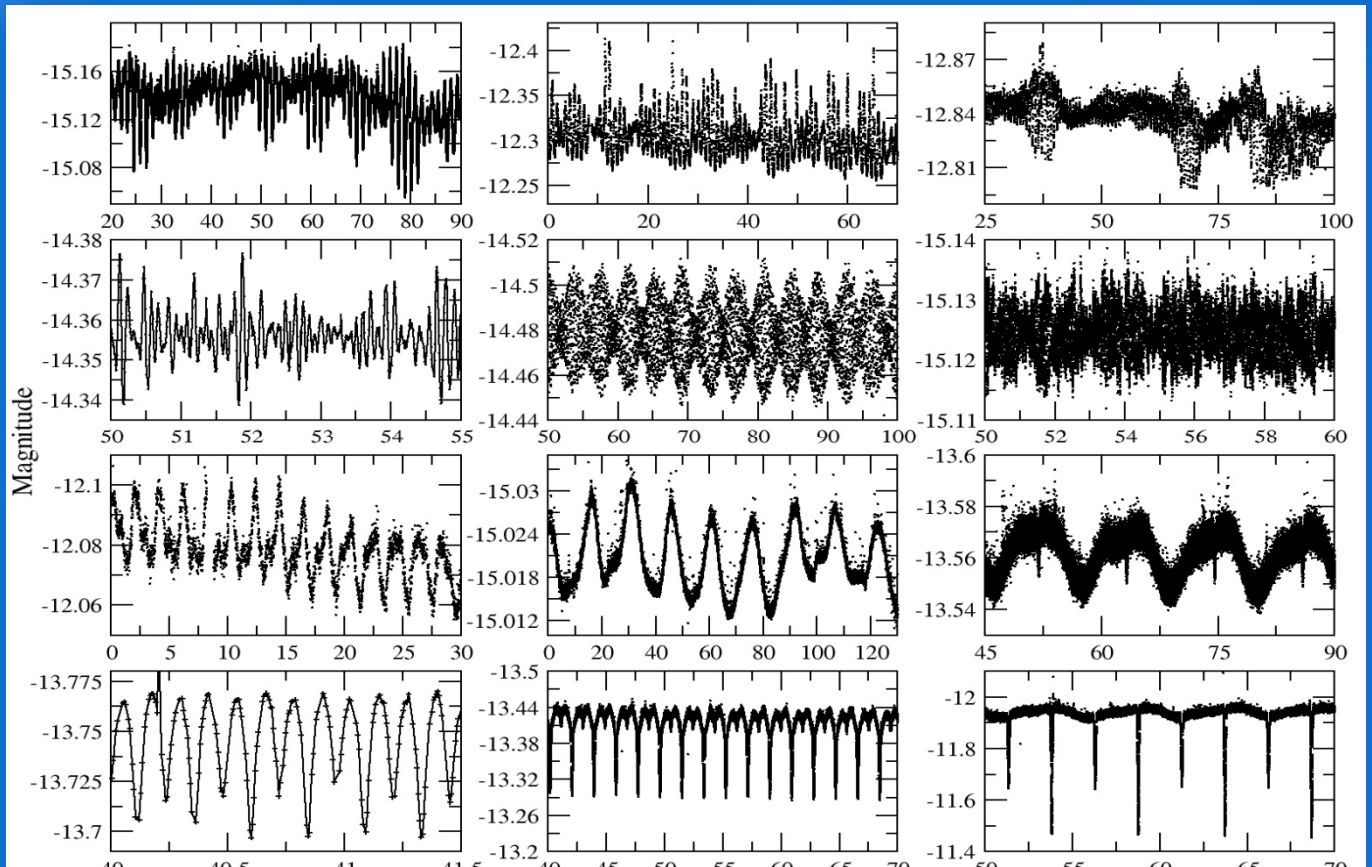
Period

without eclipses



Automatic classification

J. Debosssher, L. Sarro, et al.



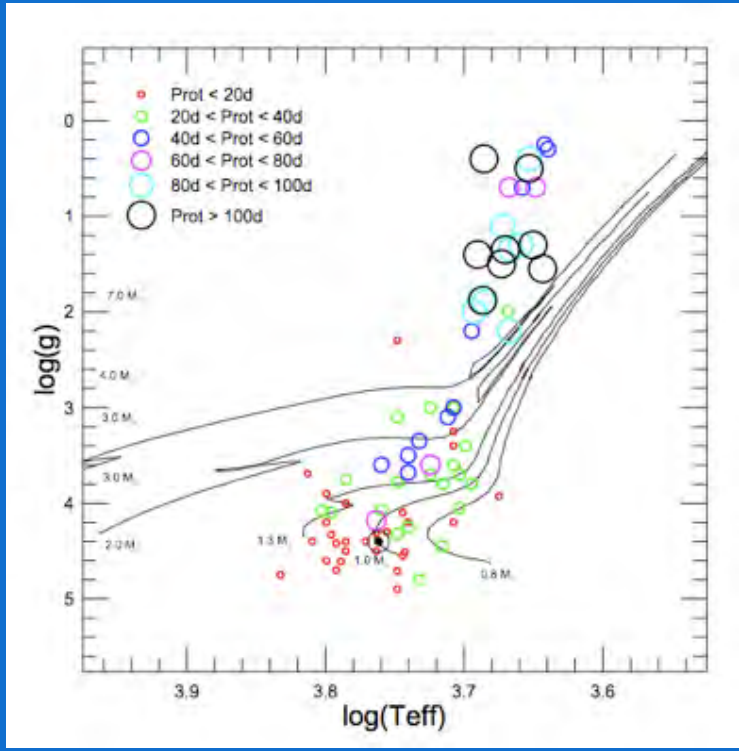
SPB/Be

High freq

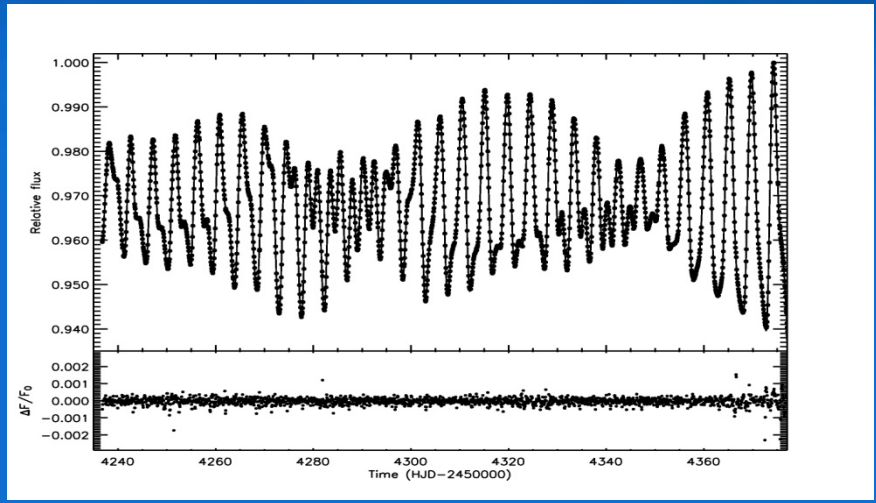
rot

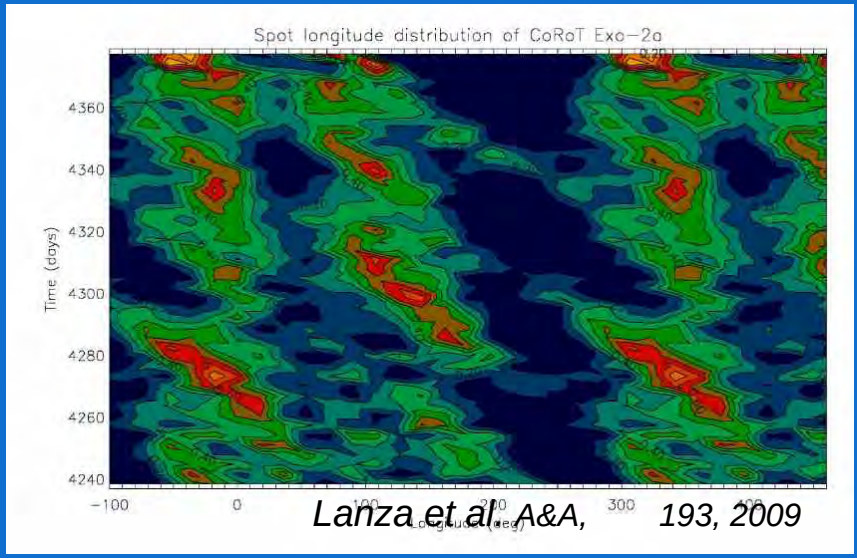
binaries

Rotation



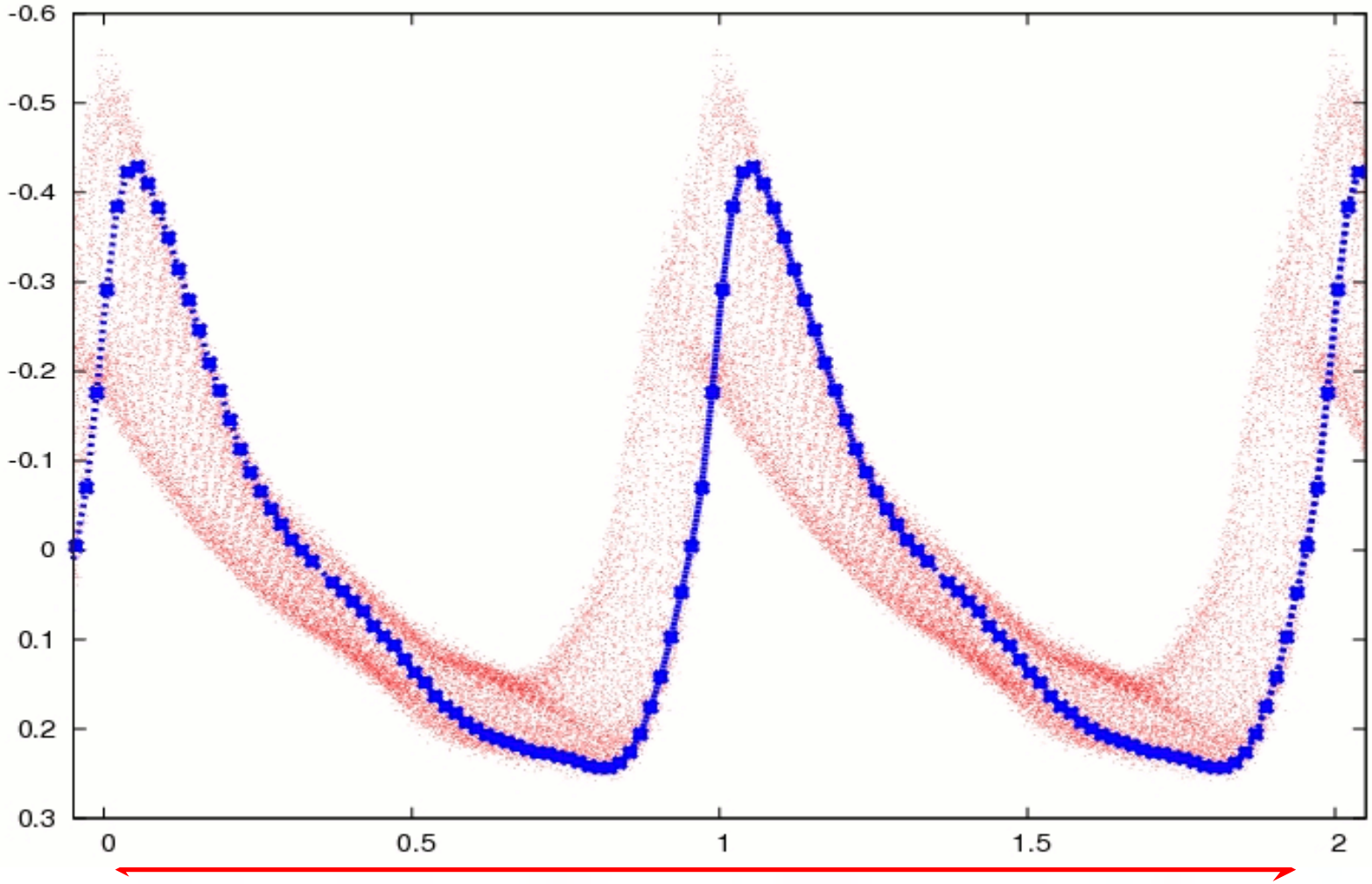
Natal group (with spectroscopy)





Lanza et al. A&A, 193, 2009

RR Lyrae: RRab with Blashko effect

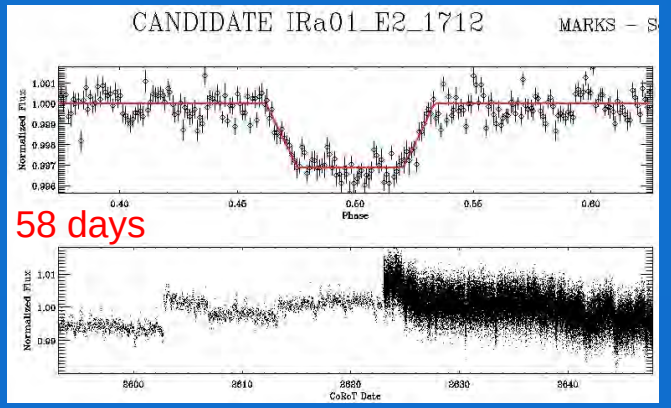


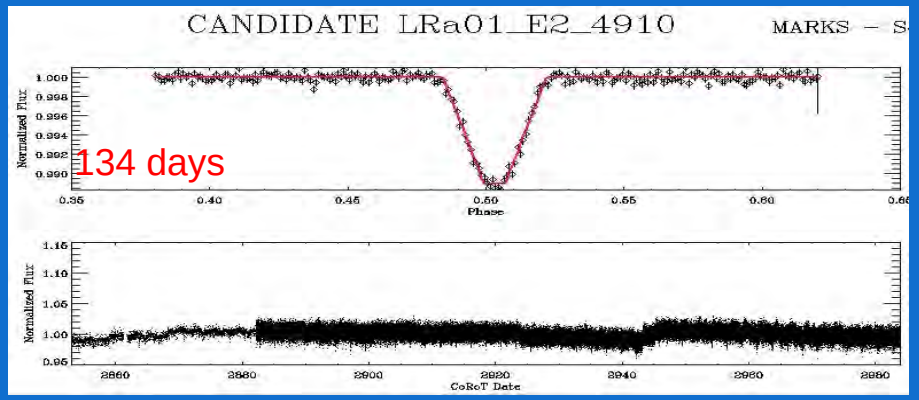
The search for exoplanets

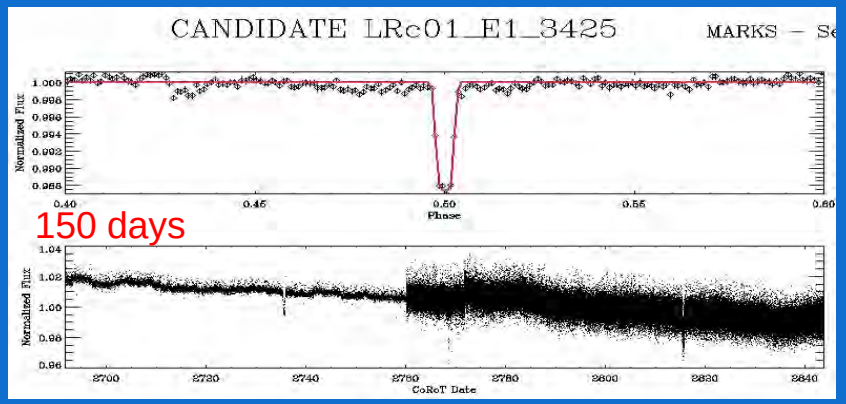
Run	N° targets
IRa01	9881
SRc01	6975
LRc01	11408
LRa01	11408
SRa01	8350
LRc02	11616
SRc02	11616
SRa02	10405
LRa02	11616
Total	**93 275 (46000 LR)**

The Alarm Mode

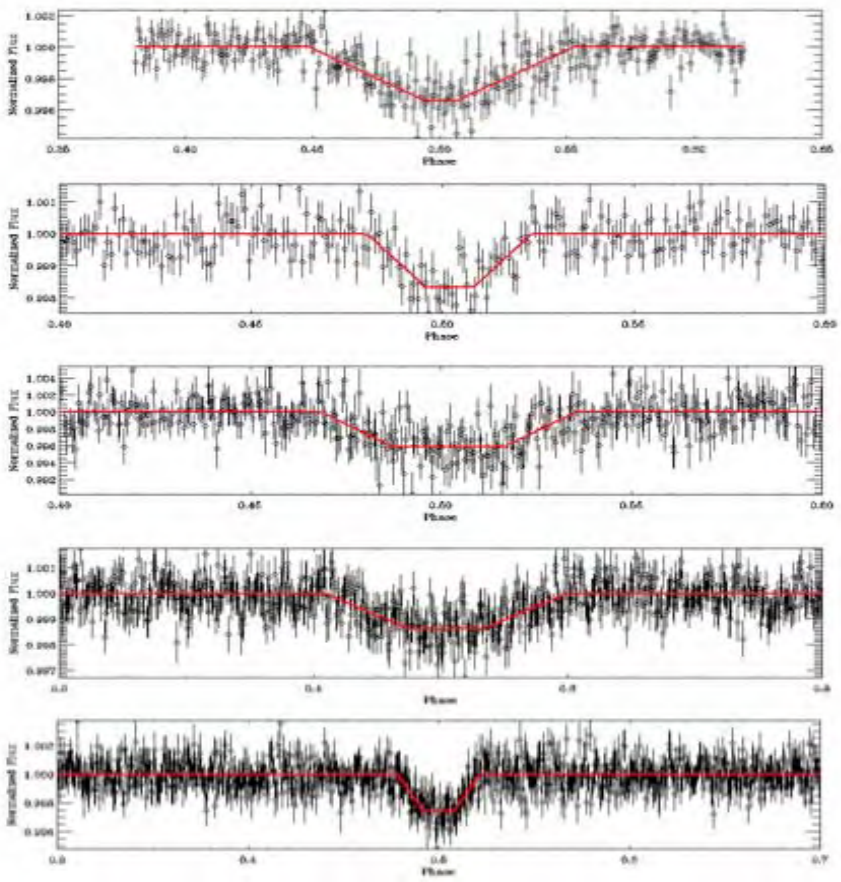
LRa01	Initial set	alarmes
Beginning	900	0
1st update	849	51
2nd update	655	245
3rd update	700	200
4th update	700	200

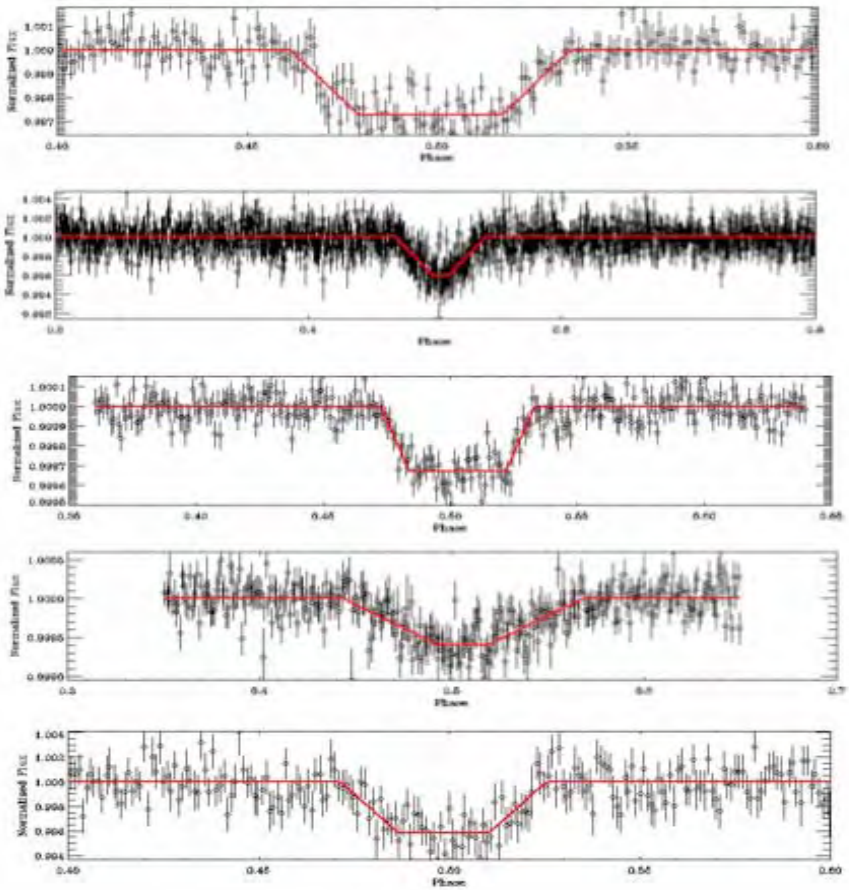






The variety of candidates

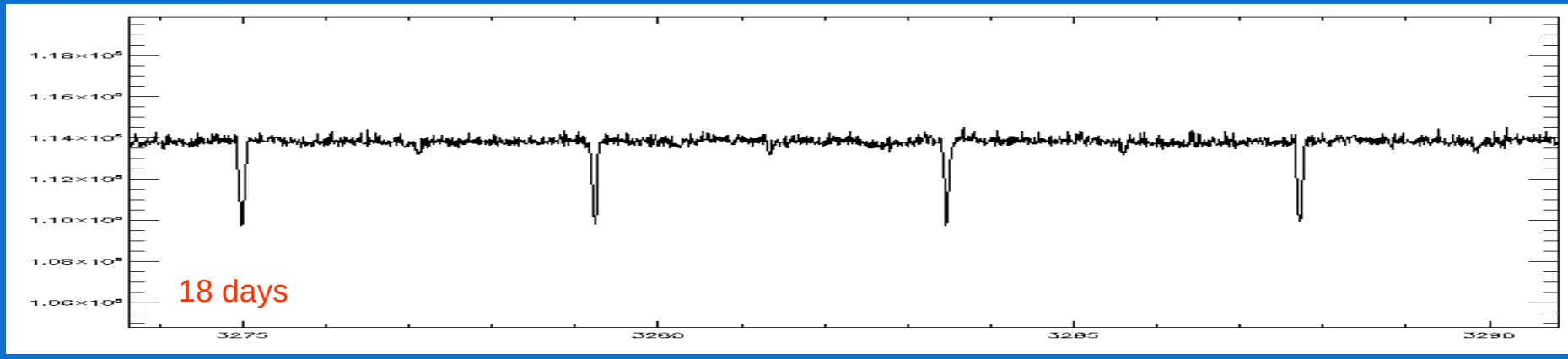


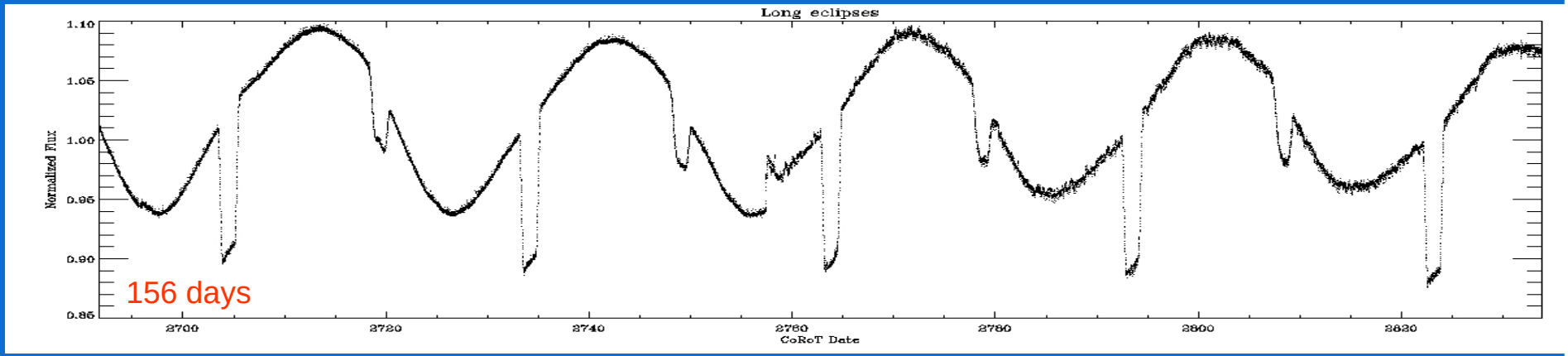


From Transits to Planet Candidates

From 230 to 30/40 per run

Elimination of binaries directly on the CoRoT LC

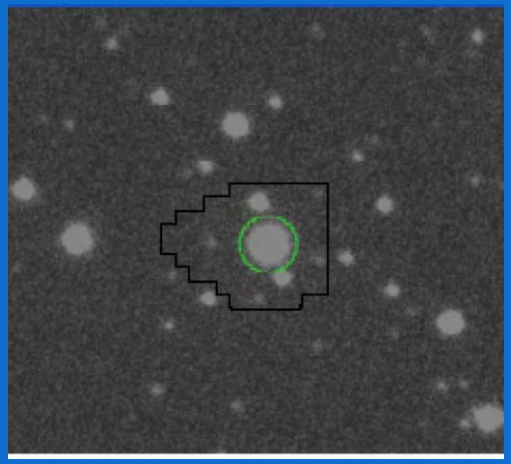




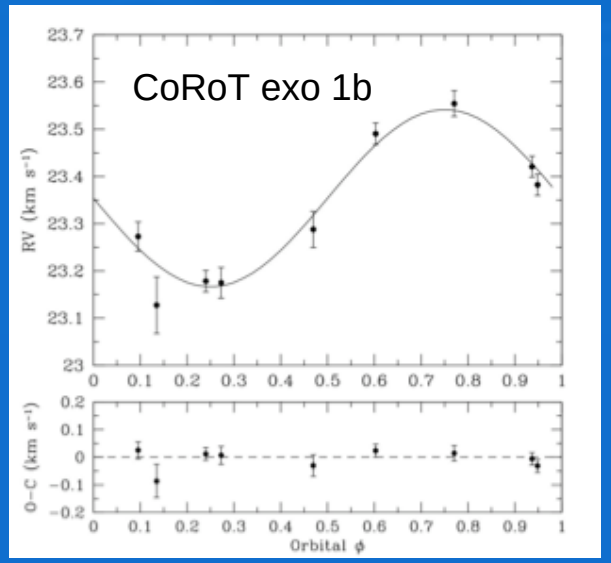
From candidate to confirmed planets

From 30 to ……..2 or 3

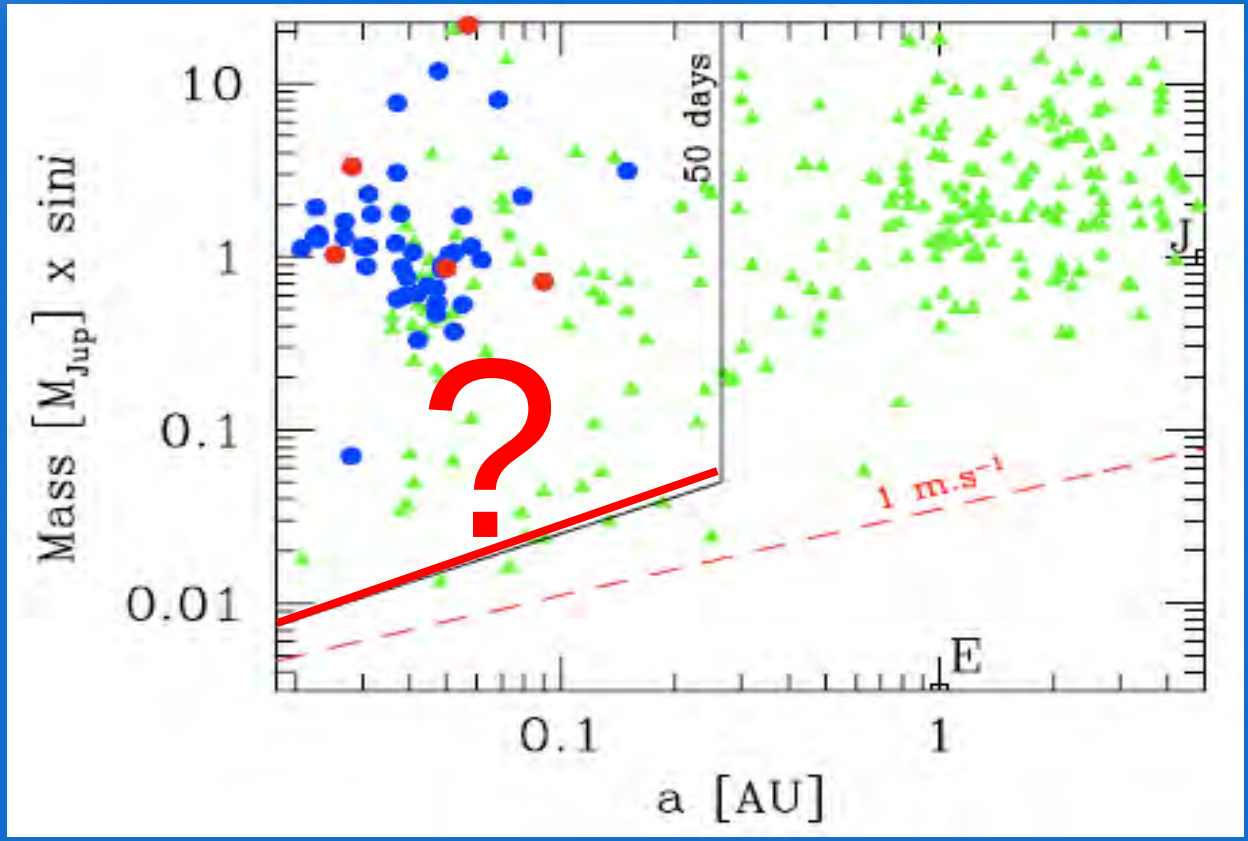
*** Ground based Photometry**
- higher resolution
- variability of nearby contaminating stars



* Very high resolution imaging



* Radial velocity detection

A long way to go.....

The CoRoT domain