



# BeSS data validation

Standard, quality, advices for observers

*Valérie Desnoux*

*Celebrating the 10 year anniversary of BeSS*

*23-27 Oct 2017 Meudon (France)*

# Ressources Be

## Collaboration Pro-Am with C.Neiner (LESIA-Meudon)

**Base de données BeSS v1.0**

La base de données BeSS regroupe des spectres d'étoiles Be obtenus par des astronomes professionnels et amateurs. Cette base est maintenue au laboratoire GEPI de l'Observatoire de Paris-Meudon. Tout le monde peut interroger la base de données BeSS pour sélectionner les spectres d'étoiles Be de son choix ou pour consulter le catalogue.

Cependant, si ces données sont utilisées pour des publications scientifiques, merci de faire figurer la mention: "Ce travail a utilisé la base BeSS, opérée au GEPI, Observatoire de Paris-Meudon, France : <http://basebe.obspm.fr/>"

De plus, lorsque vous sollicitez beaucoup de spectres obtenus par la même personne, vous pouvez l'accueillir comme co-auteur dans votre publication. Il est suffisant de remercier dans votre publication les observateurs qui ont fourni moi de spectres.

Ceux qui le souhaitent peuvent aussi [s'inscrire comme observateur](#) pour déposer dans la base BeSS les spectres d'étoiles Be qu'ils ont collectés. Dans ce cas, les spectres déposés doivent être au format fits et leur entête doit contenir au minimum certains mots-clés ([voir Format](#)).

Nous vous remercions d'avance pour votre contribution!

Les administrateurs de BeSS (F. Cochard, B. de Batz, C. Martayan, M. Mekkas, C. Neiner)

**CRITÈRES DE SÉLECTION DES ÉTOILES BE**

Amplitude limite : 5  
Déclinaison limite : -25

**Liste des étoiles Be de magnitude inférieure à 5**  
Déclinaison limite : -25

Étoile	RA HD	AD	DEC	Magn.	Nb. obs.	1 an	2 mois	Dernier	Période Obs
omé Cas	4180	+08 44 40.5	+48 17 03.7	4.48	9	3	1	2008-10-10 21:30:17	180
gam Cas	5394	+08 56 42.5	+40 43 00.3	2.39	2723	25	8	2008-10-11 00:08:17	180
phi And	6811	+01 09 30.1	+47 14 30.5	4.25	144	5	2	2008-10-09 22:43:16	365
phi Per	10516	+01 43 39.8	+50 41 19.4	4.09	193	21	6	2008-08-27 22:31:15	365
eps Cas	14415	+01 54 23.7	+43 48 12.4	3.34	139	2	1	2008-10-10 22:23:09	365
3K Cam	20236	+03 19 58.3	+45 39 08.3	4.73	4	2	1	2008-10-09 23:48:27	365
psi Per	22192	+03 36 29.4	+48 11 33.5	4.31	1193	3	1	2008-10-10 23:07:44	365
ELECTRA	23302	+03 44 52.5	+24 06 48.0	3.71	87	3	1	2008-10-10 00:37:24	365
MEDUSE	23480	+03 46 19.6	+23 56 54.1	4.16	103	3	1	2008-10-10 01:25:18	365
ALCYONE	23630	+03 47 28.1	+24 06 18.5	2.87	116	5	1	2008-10-11 01:10:17	365
HD 24479	24479	+03 57 25.4	+43 04 20.2	4.95	4	2	2	2008-10-19 22:25:22	365
psi Per	24912	+03 58 57.9	+25 47 27.7	4.04	200	2	0	2008-02-02 21:50:24	365
48 Per	25940	+04 08 39.7	+47 42 45.0	4.00	12	3	0	2008-02-14 19:39:35	365
2 Ori	30739	+04 50 36.7	+08 54 00.6	4.35	2	0	0	2007-06-13 02:02:15	365
lam Eri	33328	+05 09 08.8	+08 45 14.7	4.25	37	1	0	2008-02-23 20:05:16	365

**BeSS report – September 2012**

- 153 spectra acquired
- 100 objects observed
- 15 observers contributed

The highest number of spectra was submitted by Franck Bouquet with 25 spectra closely followed by south hemisphere observer Terry Bobbles.

The most observed objects were 66 obj. pi Aps and gam Cas.

**# Obs BeSS Sept 2012**

Objects observed

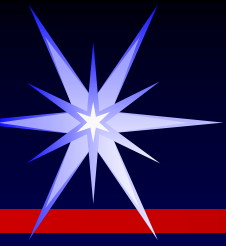
**Be Classique**

128 Tau	33 Ori	13 Tau	18 Pra	2 Ori	24 Aps	4 Per	18 Cas	48 Cas
100	100	100	100	100	100	100	100	100

Database BeSS for spectrum submission

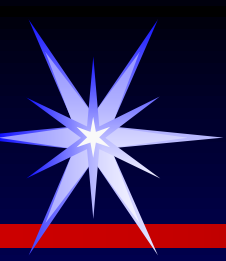
ARASBeAM is a portal to pick your target

BeSS monthly report to follow the latest events



Specific tools has been developped into Visual Spec  
All are available to observer before they submit  
A pdf on « how your spectra are validated » is available

Still recurrent errors are encountered...



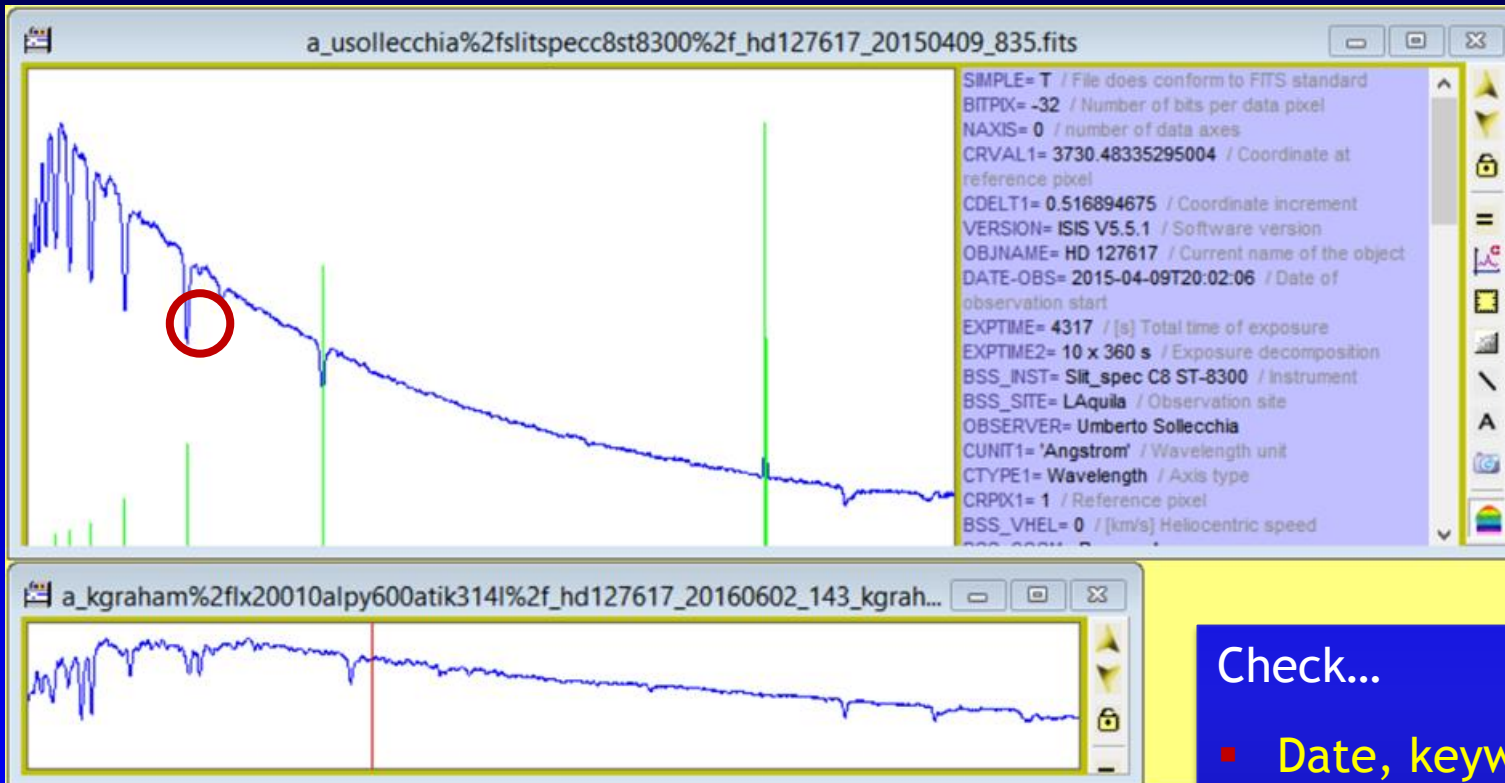
# L hires, lx 200...



## Check...

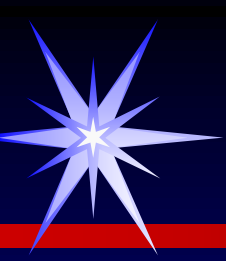
- Date & time
- Telluric lines position
- Last 2 BeSS spectra
- Fits keywords on processing applied
- Exptime, SNR, Instrument

# R<5000... Alpy, Lisa...



Check...

- Date, keywords
- Match with H lines
- Continuum, bumps

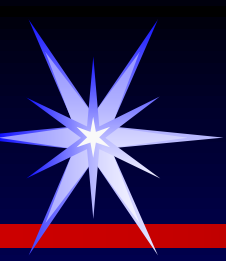


# Echelle spectra



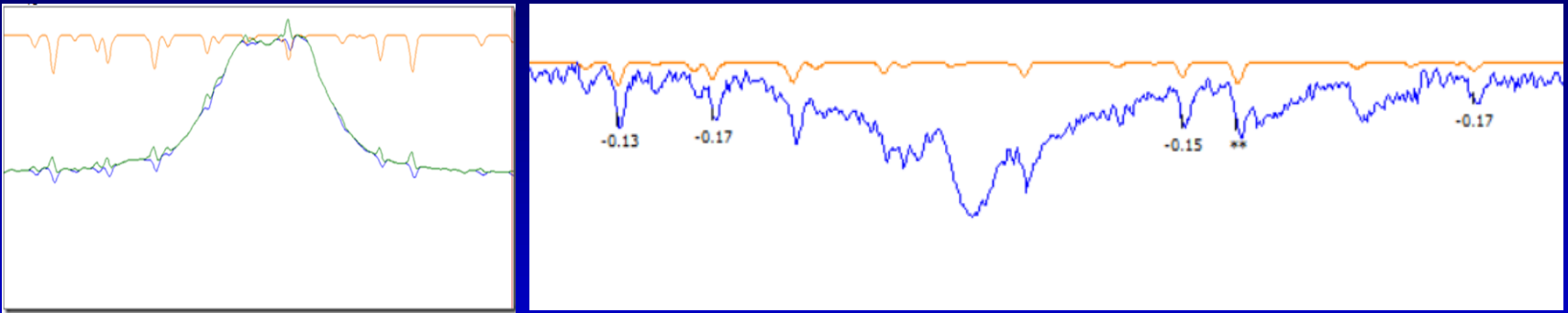
Same controls on the h-alpha order than for the Lhires one

On the BeSS screen... display few other orders, and specifically the order which contain h-beta to catch any calibration or order extraction issues, unusual ripples

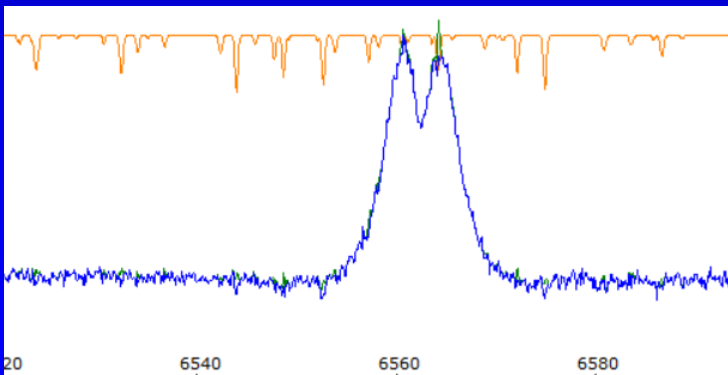


# Classical errors

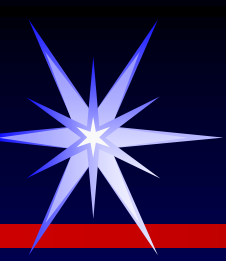
## Wavelength calibration



## Sometimes hard to detect



Very often !  
0.1 or 0.2 ang



# Less recurrent



- Date and time

DATE-OBS= '2011-08-02T 00:00:00' / Date of observation start

- Time collision

Automatically detected by Bess once validated

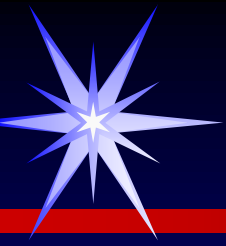
- Site lat and long

Check on google map, error on longitude sign

- Observation site

... after OHP, caught observations from OHP after the end of the meeting

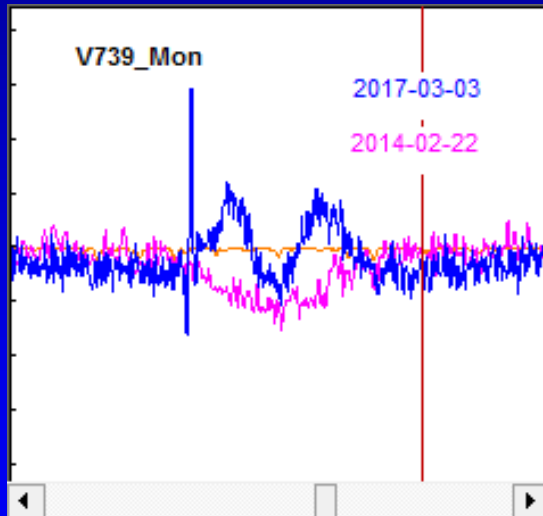


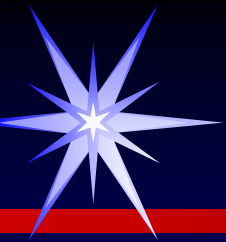


# Hot spots

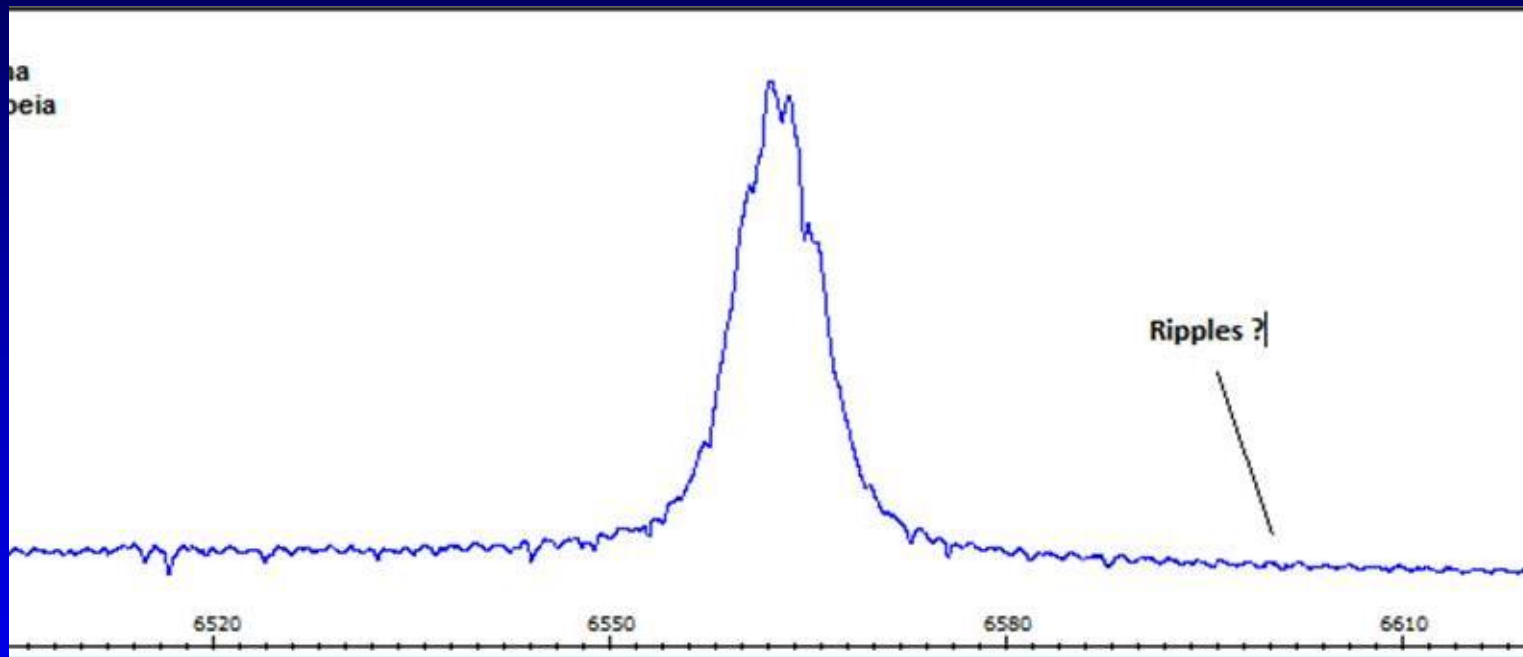


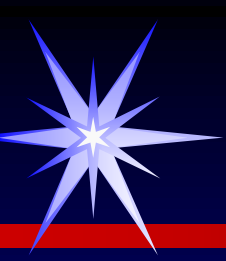
They all exhibit some “hot spots” . You can either go afterwards and do some interpolation on the profile itself (in Vpsec go in edit menu then pixel and you can edit manually the intensity of pixels, or through operations menu, interpolate zone after selecting the few bad pixels area) but much better as you have several spectra and more than one pixel concerned in some of them I recommend you go after the root cause: have a look at the images, including dark, see if you regenerate your cosmic file, or change the cosmic spots detection and correction thresholds. Thanks and you found a great Emission Event





# Ripple

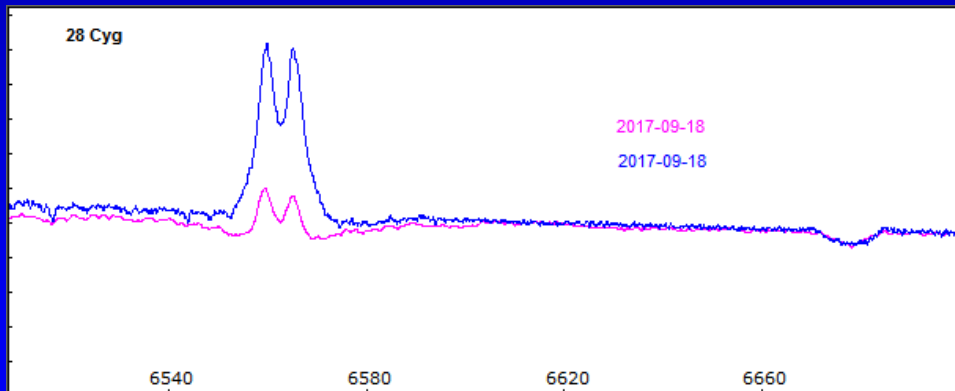


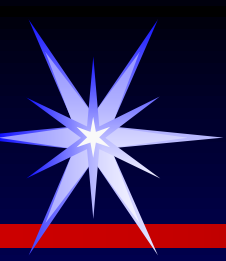


# Signal level



Hi  
I compared your spectrum with one observed the same day by Olivier Thizy and I found the profile quite different. I check on past spectra of 28 cyg, and such change was never recorded. I was wondering if something in the processing like dark sky subtraction or even wrong object selection was happening there. Can you check ?  
Thanks

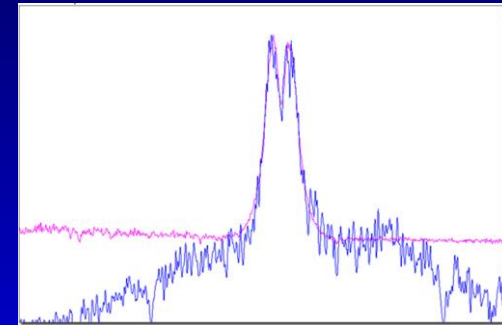
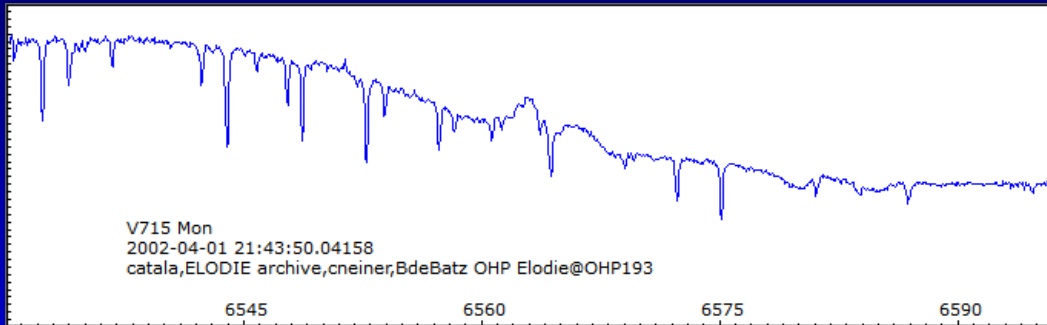




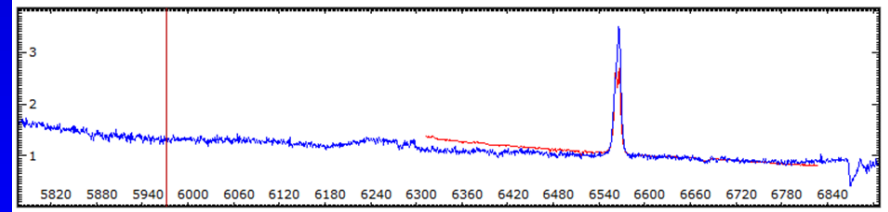
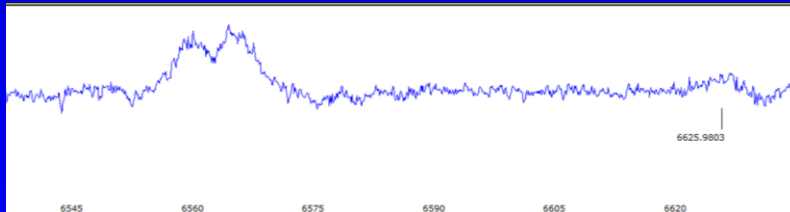
# Some unusual cases

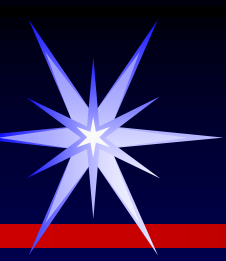


## Continuum



Also found unexpected bumps, due to bad flat, mis registration

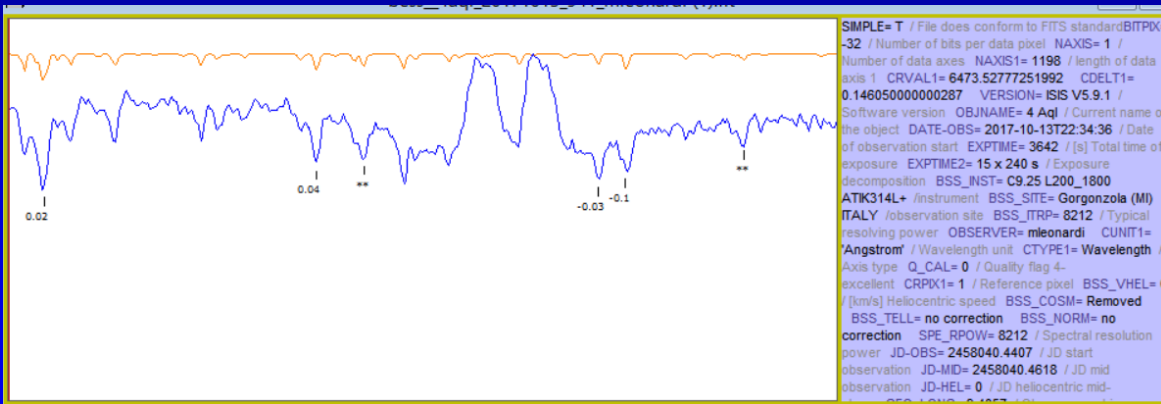




# Observability

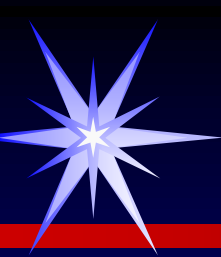
Just happened this week...

Validation de A\_mleonardi/c92512001800atik314l/\_4aql\_20171013\_941\_mleonardi.fit  
L'objet de coordonnées , n'était pas observable le 2017-10-13 22:34:1857.



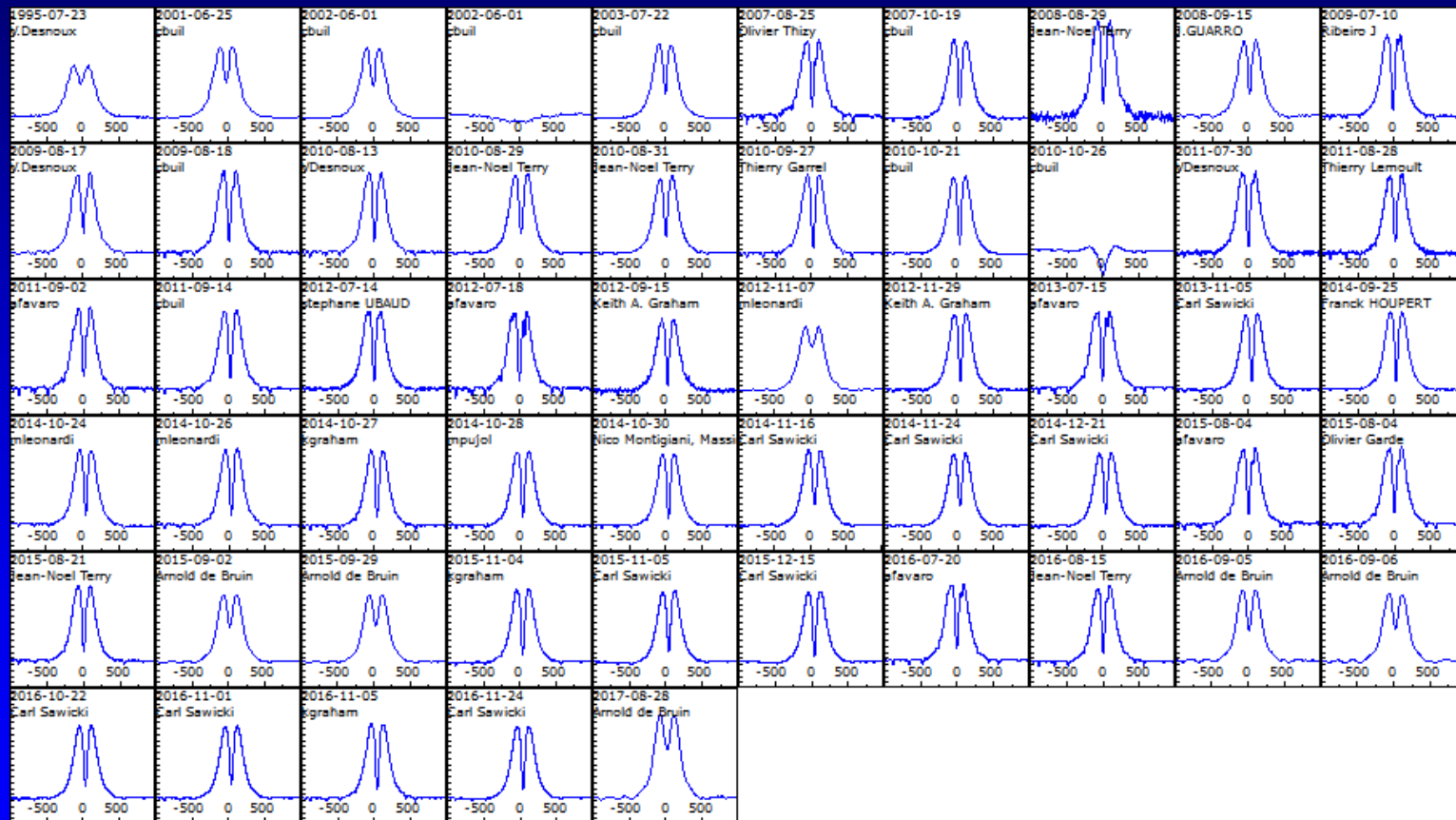
4 Aql  
Italy site  
22:34 UT

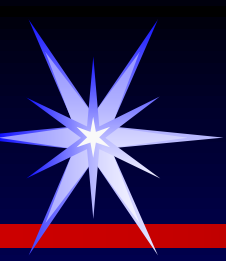
Thanks BeSS !



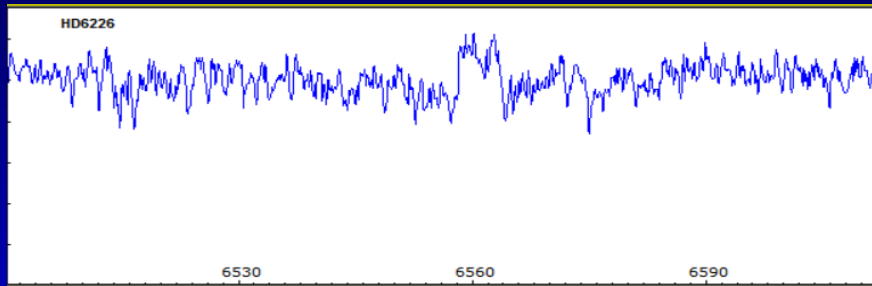
# Object error

Very hard to detect... is it real or mistake ?

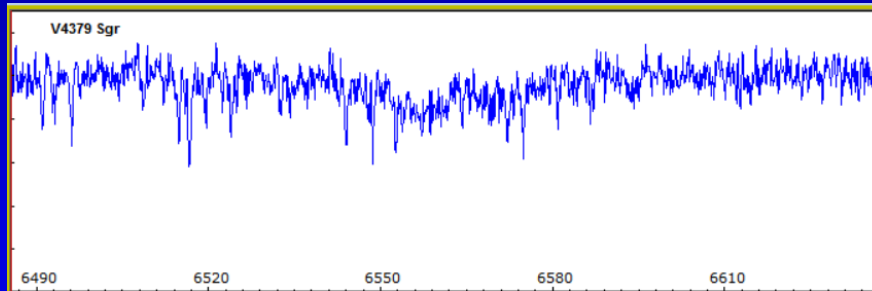




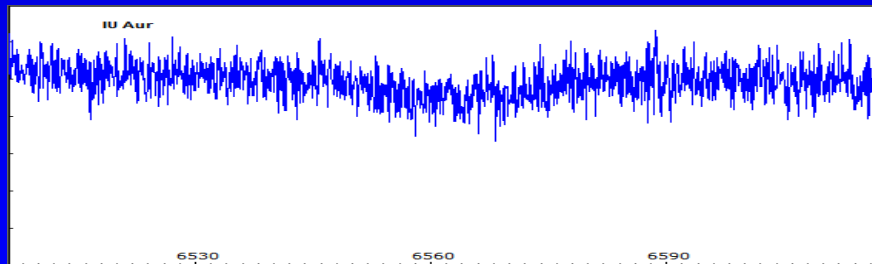
# Signal to noise

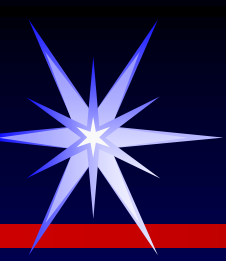


Very rarely not accepted, but it happened 2-3 times



Trigger advices for checking guiding, processing, Spectro efficiency...





# Pain points...



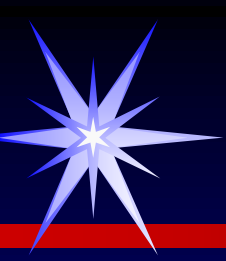
Wavelength calibration... shall encourage people to check before submission

Continuum... high res, low res... lack of consistency

Object error... shall we have a tag in the database

Date & time... if BeSS is not detecting issues, need to trust





# Communication



BeSS validation guide

## How your BeSS spectra are validated

By V. Desnoux – BeSS admin team

This guide is targeted for observers who are eager to learn how their spectra are validated when submitted to BeSS. It will explain the different point controlled and will provide some examples.

### Who is validating

We are 4 to 5 amateurs, not professionals. To be "certified" there is a period of "test" during which the admin team doubles check the spectra, confirms if there is an issue and a professional is available for all questions. So the admin team is amateurs plus a professional who explains the key points to check and is the referee in case of any doubt.

The rules for BeSS are set in accordance to the database objectives: collect Be stars spectra to sustain an outburst statistical study.

### What does a « validator »

Vspec has a specific tool to help for the validation. The function is not private and any observer can use Vspec to check the spectrum before submitting, as any validator would do.

The spectrum is load in Vspec. On the right side of the profile window there is a button with Bess logo. That's here. Click and see...

*Depending of the spectrum resolution the script will be slightly different*

### Lhires

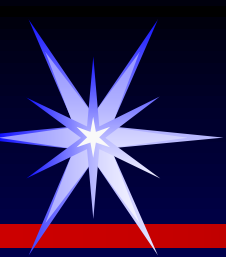
On click, the spectrum will be zoomed on the H-alpha region and the telluric lines synthetic spectrum will be overlaid. Few telluric lines will be detected and the shift with theoretical value will be displayed. If the detection failed a "\*" will be displayed. In parallel, on the right side of the profile the fits header will be displayed.

In the meantime, if the computed is connected to internet, Vspec will connect to BeSS and download and display the two latest spectra of the object found in the database.

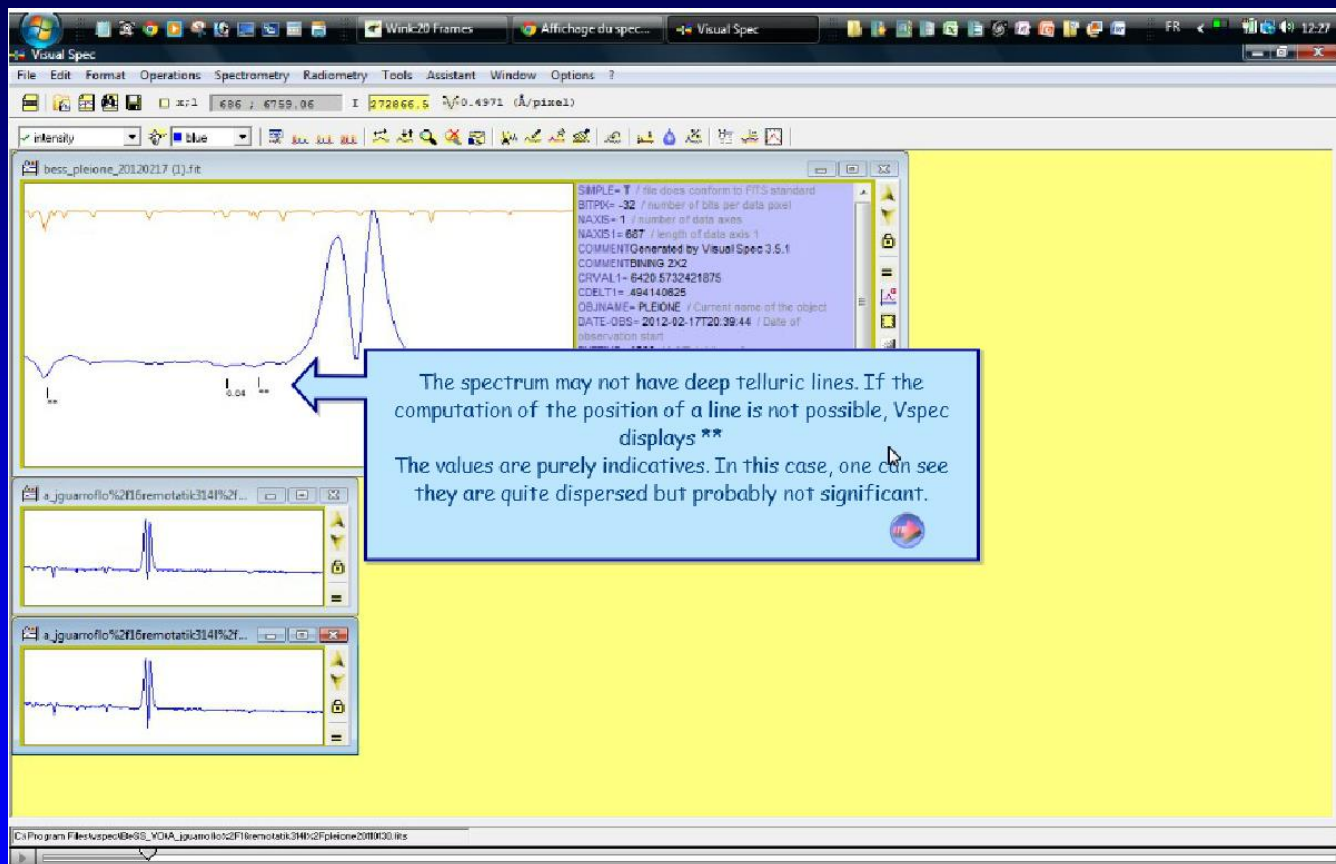
Pdf on how the spectra are validated

Explain about usage on filling cards, naming instrument or objects

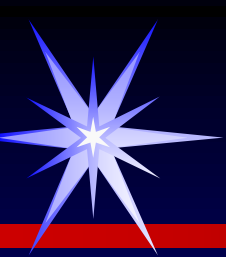
Examples of classical errors



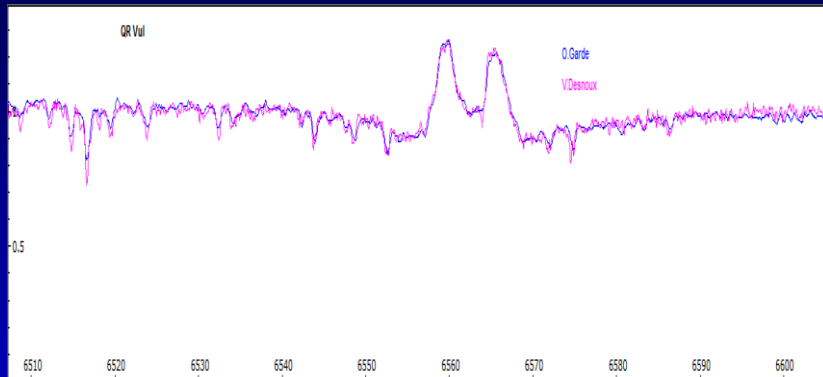
# Tutorial on Visual Spec



[http://www.astrosurf.com/vdesnoux/wink/Wink\\_BeSS\\_en.htm](http://www.astrosurf.com/vdesnoux/wink/Wink_BeSS_en.htm)



# Now the good news...



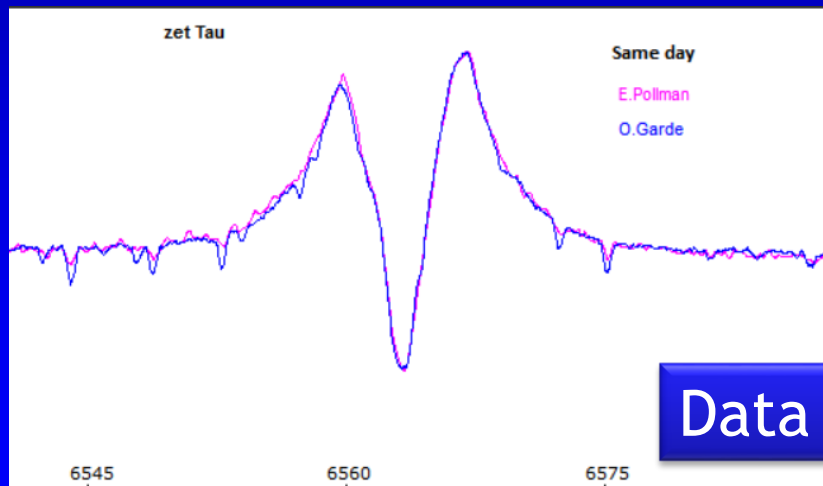
## QR Vul

19-07-2017

RC400 Astrosib-Eshel-ATIK460EX 6x600s

Vs

C8 LHRES3\_2400 ATIK460EX 6x300s



## Zeta Tau

RC400 Astrosib-Eshel-ATIK460EX 10x75s

Vs

EP3-C14-LHRES-Grating2400-Nova402 2400s

Data consistency is achievable !