S(VO) tools and Gaia:
VOSA, Clusterix and stellar libraries

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Astronomy ESFRI & Research Infrastructure Cluster
ASTERICS - 653477

Building SEDs in the VO: VOSA

A&A 492, 277–287 (2008)
DOI: 10.1051/0004-6361:200810395

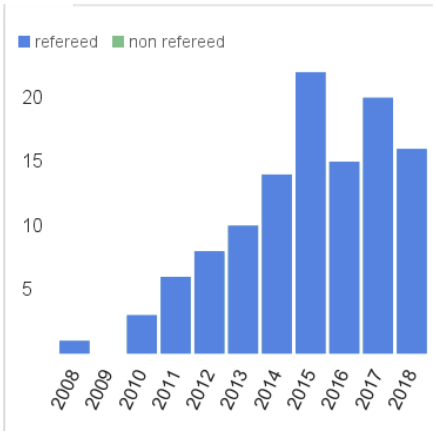
Astronomy & Astrophysics

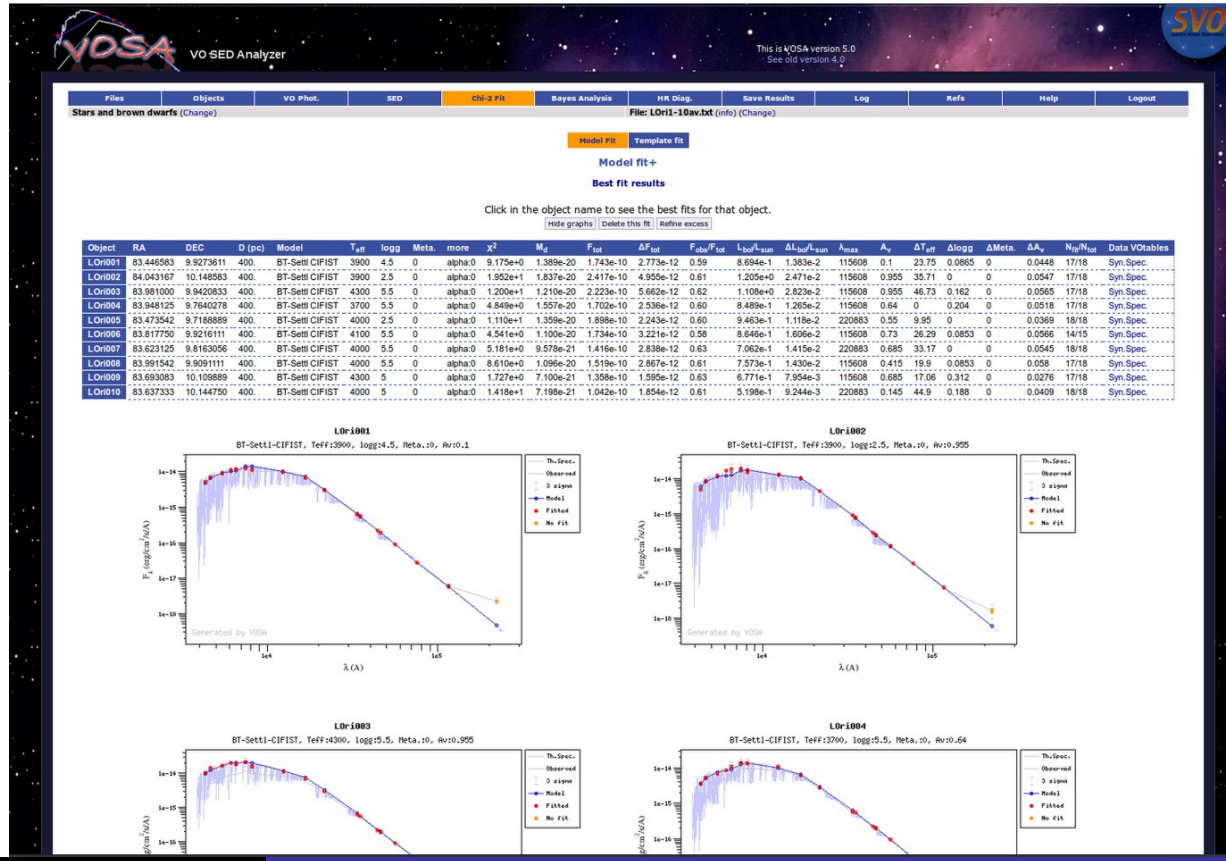
VOSA: virtual observatory SED analyzer

An application to the Collinder 69 open cluster*

A. Bayo[1,2], C. Rodrigo[1,2], D. Barrado y Navascués[1,2], E. Solano[1,2], R. Gutiérrez[1,2], M. Morales-Calderón[1], and F. Allard[3]

- Available since 2008.
- > 1500 users.
- > 4.700.000 objects.
- > 110 refereed papers.





Gaia info in VOSA: Parallaxes

SVO theoretical services | VOSA | Filters | Models | Documents | Other Services | My data | Newsletter | Uploads | LogOut

VO SED Analyzer — This is VOSA 6.0

This project has received funding from the European Union's Seventh Framework Programme (FP7-SPACE-2013-1) for research, technological development and demonstration under grant agreement no. 606740

Files | Objects | Build SEDs | Analyse SEDs | HR Diag. | Results | Help

Stars and brown dwarfs (Change) — File: RA:122.09242 , DEC:-64.73258 (info) (Change)

Coordinates | Distances | Extinction

Object distance

This panel allows you to query VO services to search for object distances using the object coordinates.

Take a look to the corresponding Help Section and Credits Page for more information.

You have already searched the VO for distances.
If you want to do it again, please

Delete VO data

Actions for all the objects in the file

Here you can set the "Final" value of the distance for all the objects at the same time. Depending on the choices that you make, the changes will be done for all the objects in the file when you click the 'Make all changes' button.

What values do you trust better?

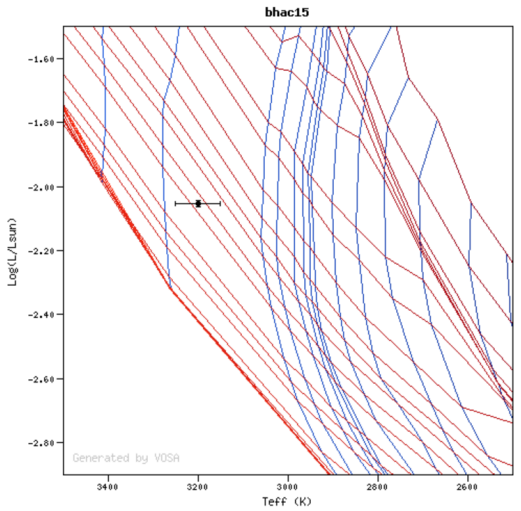
- Select first user value if available. And then, if not, always the VO value with the smallest uncertainty (smaller value for ΔDis/Dis).
- Select always the value with the smallest uncertainty (smaller value for ΔDis/Dis. If there is no value for ΔDis, we consider it the largest uncertainty).
- Select values by ranking: 1: --- 2: ---
  (Your first option will be chosen for every object if there is a value available. For those objects with no value in the first option, the second option will be chosen. And so on)

Apply changes depending on the uncertainty?

- Always
- Only when ΔDis/Dis <

Make all changes

Object	Model	T_{eff}		LogL		Age		Mass	
wise	BHAC15	3200	(3150,3250)	-2.0538	(-2.0634,-2.0445)	0.0452	..(0.0397,0.0667)	0.1779	(0.1350,0.1983)



Object			Final		User		GAIA DR2							Gaia TGAS							Hipparcos ne	
Name	RA (deg)	DEC (deg)	Dis (pc)	ΔDis (pc)	D (pc)	ΔDis (pc)	Δ (arcsec)	RA (deg)	DEC (deg)	Plx (mas)	ΔPlx (mas)	D (pc)	ΔDis (pc)	Δ (arcsec)	RA (deg)	DEC (deg)	Plx (mas)	ΔPlx (mas)	D (pc)	ΔDis (pc)	Δ (arcsec)	RA (deg)
wise	122.09242	-64.73258	101.421	0.567	---	---	0.028503255876644	122.09242555492928	-64.73257243033413	9.859854375144122	0.055096599814027584	101.421	0.567	---	---	---	---	---	---	---	---	---

Save Obj. Distances

Gaia info in VOSA: Photometry

SVO theoretical services | VOSA | Filters | Models | Documents | Other Services | My data | Newsletter | Uploads | LogOut

VOSA VO SED Analyzer

This is VOSA 6.0

This project has received funding from the European Union's Seventh Framework Programme (FP7-SPACE-2013-1) for research, technological development and demonstration under grant agreement no. 606740

Files | Objects | Build SEDs | Analyse SEDs | HR Diag. | Results | Help

Stars and brown dwarfs (Change) File: RA:122.09242 , DEC:-64.73258 (info) (Change)

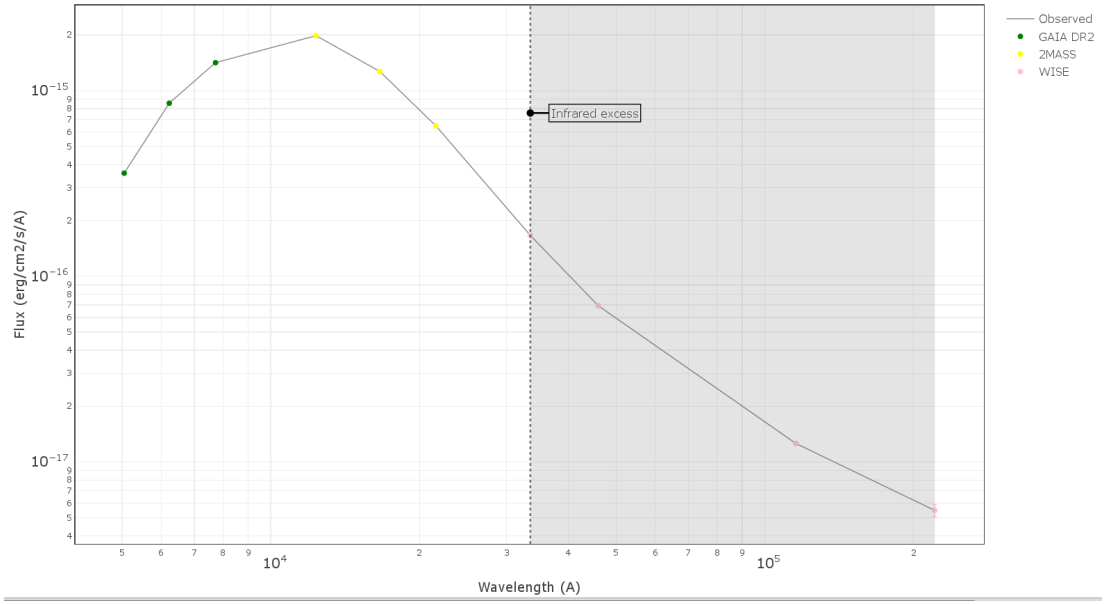
VO Photometry | SED edit/visualize

VO photometry

Delete this VO photometry

(Flux densities are given in erg/cm2/s/A)

Object	GAIA/GAIA2.Gbp	GAIA/GAIA2.G	GAIA/GAIA2.Grp	2MASS/2MASS.J	2MASS/2MASS.H	2MASS/2MASS.Ks	WISE/WISE.W1	WISE/WISE.W2	WISE/WISE.W3	WISE/WISE.W4
wise	3.59e-16	8.56e-16	1.41e-15	1.98e-15 ± 4.00e-17	1.27e-15 ± 2.45e-17	6.46e-16 ± 1.55e-17	1.66e-16 ± 3.36e-18	6.94e-17 ± 1.28e-18	1.26e-17 ± 3.36e-19	5.48e-18 ± 4.24e-19



Gaia info in VOSA: Photometry

Filter Profile Service

A repository of Filter information for the VO

Funded by INTA — Ministerio de Ciencia e Innovación

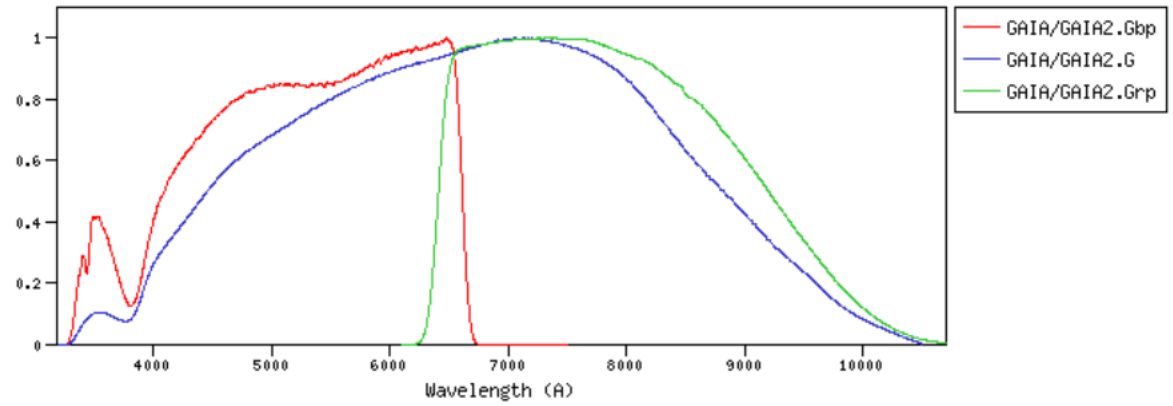
VO Service | Browse | Search | News | Help-Desk | AuthId: | Passw: | Login | Register

2MASS	AAO	AKARI	Astrosat	BOK	CAHA	CFHT	COBE	CTIO	DENIS	**GAIA**	GALEX	GCPD	Gemini	Generic
Geneva	GTC	Herschel	Hipparcos	HST	IAC80	ING	INT	IRAS	ISO	IUE	JWST	Keck	Kepler	KPNO
LasCumbres	LaSilla	LBT	LCO	LICK	Liverpool	LSST	McD	Misc	MKO	MMT	MSX	NIRT	NOAO	NOT
OAF	OAJ	OSN	P200	PAN-STARRS	Paranal	SAO	Scorpio	SkyMapper	SLOAN	SOFIA	Special	Spitzer	STELLA	Subaru
Swift	TCS	TD1	TESS	TJO	TNG	TNO	TYCHO	UKIRT	VATT	WFIRST	WHT	WISE	WIYN	

GAIA filters: GAIA0 | **GAIA2** | GAIA2r

Filter ID	λ_{mean}	λ_{eff}	λ_{min}	λ_{max}	W_{eff}	ZP (Jy)	Obs. Facility	Instrument	Description
GAIA/GAIA2.Gbp	5279.9	5050.0	3280	6719	2347.4	3534.7	GAIA	GAIA	GAIA Gbp filter, DR2
GAIA/GAIA2.G	6742.5	6230.0	3307	10451	4183.0	3296.2	GAIA	GAIA	GAIA G filter, DR2
GAIA/GAIA2.Grp	7883.7	7730.0	6255	10606	2756.8	2620.3	GAIA	GAIA	GAIA Grp filter, DR2

Filter Plots



Gaia & VOSA: Science case (I)

THE ASTRONOMICAL JOURNAL

Accurate Empirical Radii and Masses of Planets and Their Host Stars with *Gaia* Parallaxes

Keivan G. Stassun[1,2], Karen A. Collins[1,2], and B. Scott Gaudi[3,4]

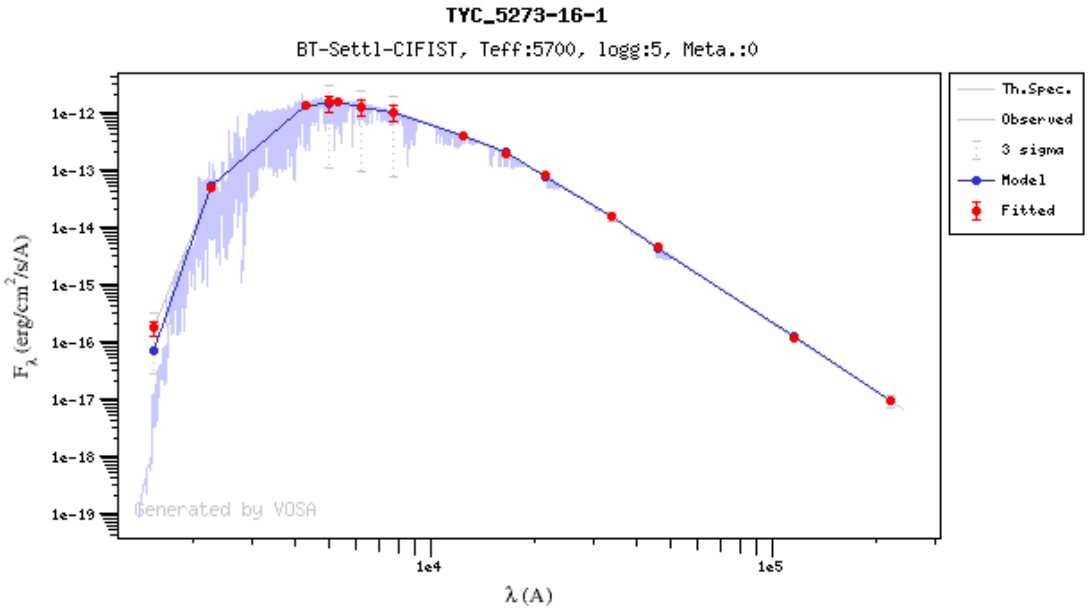
Published 2017 March 2 •

The Astronomical Journal, Volume 153, Number 3

$$\Delta F = \left(\frac{R_{planet}}{R_{star}}\right)^2$$

$$M_p = \frac{K_{RV}\sqrt{1-e^2}}{\sin i}\left(\frac{P}{2\pi G}\right)^{1/3} M_\star^{2/3}$$

Science case (I)



- Empirical determination (model independent) of the radii and masses of stars hosting planets.
- Fbol → empirical → VOSA
- Lbol=$4\pi D^2$Fbol (D from Gaia parallaxes) → VOSA + Gaia
- R=sqrt(Lbol/($4\pi\sigma$Teff^4)) → VOSA
- g= G M / R^2 → External info.

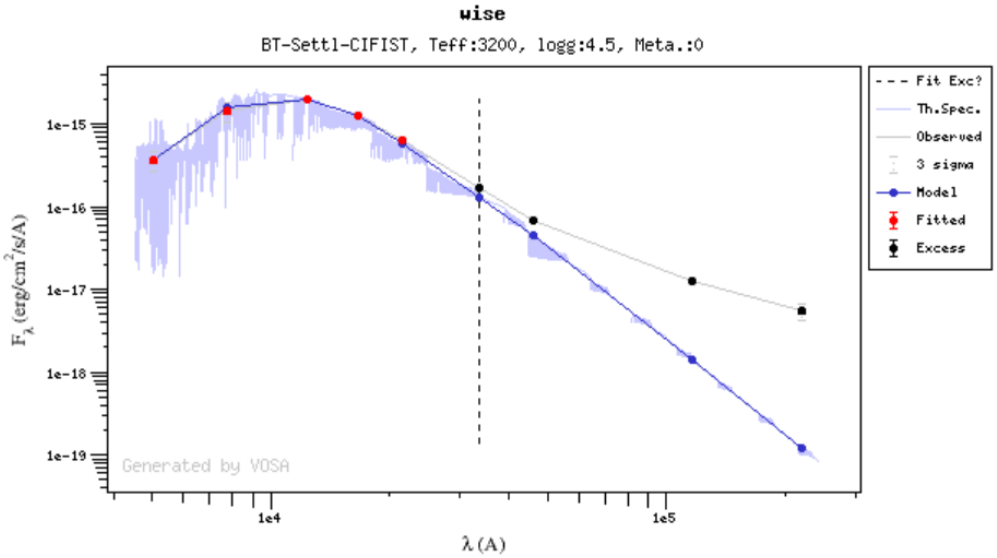
Science case (II)

MNRAS **accepted**, 1–12 (2018) Preprint 21 February 2018 Compiled using MNRAS LATEX style file v3.0

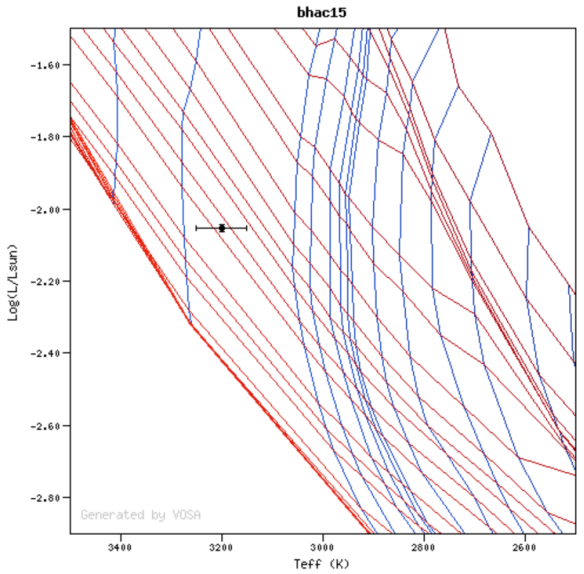
WISE J080822.18−644357.3 – a 45 Myr-old accreting M dwarf hosting a primordial disc

Simon J. Murphy*[1], Eric E. Mamajek[2,3] and Cameron P. M. Bell[4]
[1]*School of Physical, Environmental and Mathematical Sciences, University of New South Wales Canberra, ACT 2600, Australia*
[2]*Jet Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove Dr., Pasadena, CA 91109, USA*
[3]*Department of Physics & Astronomy, University of Rochester, Rochester, NY 14627, USA*
[4]*Leibniz Institute for Astrophysics Potsdam (AIP), An der Sternwarte 16, 14482 Potsdam, Germany*

Object	RA	DEC	D (pc)	Model	A_v	T_{eff}	logg	Meta.	more	χ^2	M_d	F_{obs}/F_{tot}	L_{bol}/L_{sun}	$\Delta L_{bol}/L_{sun}$	R_1	R_2	M_1	M_2
wise	122.09242	-64.73258	101.421	BT-Settl CIFIST	---	3200	4.5	0	---	1.693e+1	4.641e-21	0.47	8.834e-3	1.926e-4	3.063e-1	3.057e-1	1.083e-1	1.078e-1



Object	Model	T_{eff}		LogL		Age		Mass	
wise	BHAC15	3200	(3150,3250)	-2.0538	(-2.0634,-2.0445)	0.0452	..(0.0397,0.0667)	0.1779	(0.1350,0.1983)

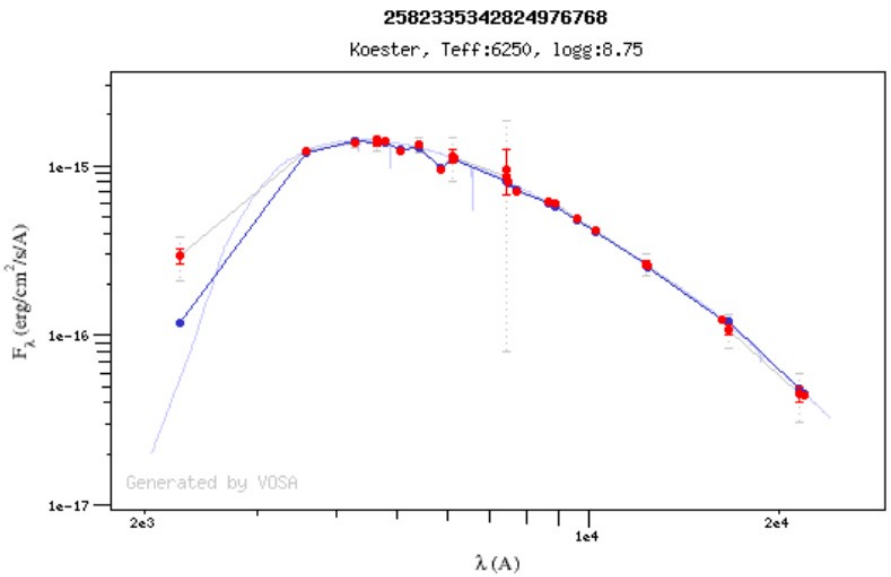


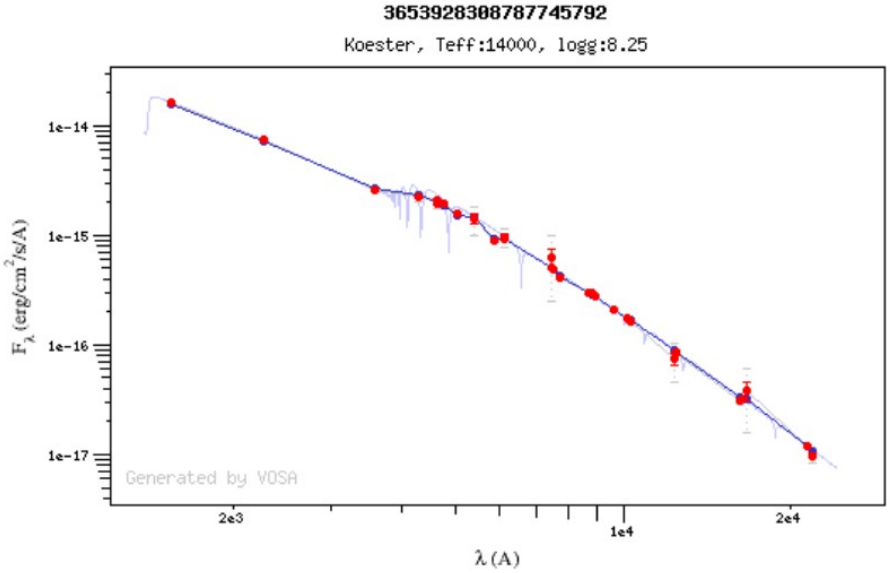
Science case (III)

MNRAS **000**, 1–16 () Preprint 26 May 2018 Compiled using MNRAS LATEX style file v3.0

A White Dwarf catalogue from *Gaia*-DR2 and the Virtual Observatory

F. M. Jiménez-Esteban[1,2,3]★, S. Torres[4,5], A. Rebassa-Mansergas[4,5], G. Skorobogatov[4], E. Solano[1,2], C. Cantero[4], C. Rodrigo[1,2]





Spectral stellar libraries

- Follow-up observations of 10^9 objects is simply impossible.

  - Gaia must be able to classify the sources (stars, galaxies, QSOs, asteroids,...) and estimate physical parameters (Teff, logg, Av,...) for stars.

    - Automated algorithms are requested.

      - Algorithms must be validated using well-controlled spectral stellar libraries.

Libraries: Intrinsic difficulties

- Synthetic vs observational libraries
- Different information
  - Atomic and molecular lists
  - Abundance scales
- Different approaches for handling the same physical process
  - Clouds / dust models for very cool stars
  - Mass-loss, magnetic fields
  - Emission from circumstellar envelopes.
- Different numerical treatment
- …

Sanity checks are mandatory

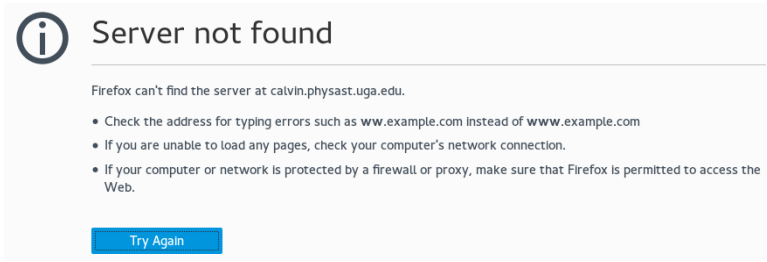
Libraries: Extrinsic difficulties

- Discovering and gathering information

THE ASTRONOMICAL JOURNAL, 128:829–841, 2004 August

ATLAS VERSUS NEXTGEN MODEL ATMOSPHERES: A COMBINED ANALYSIS OF SYNTHETIC SPECTRAL ENERGY DISTRIBUTIONS

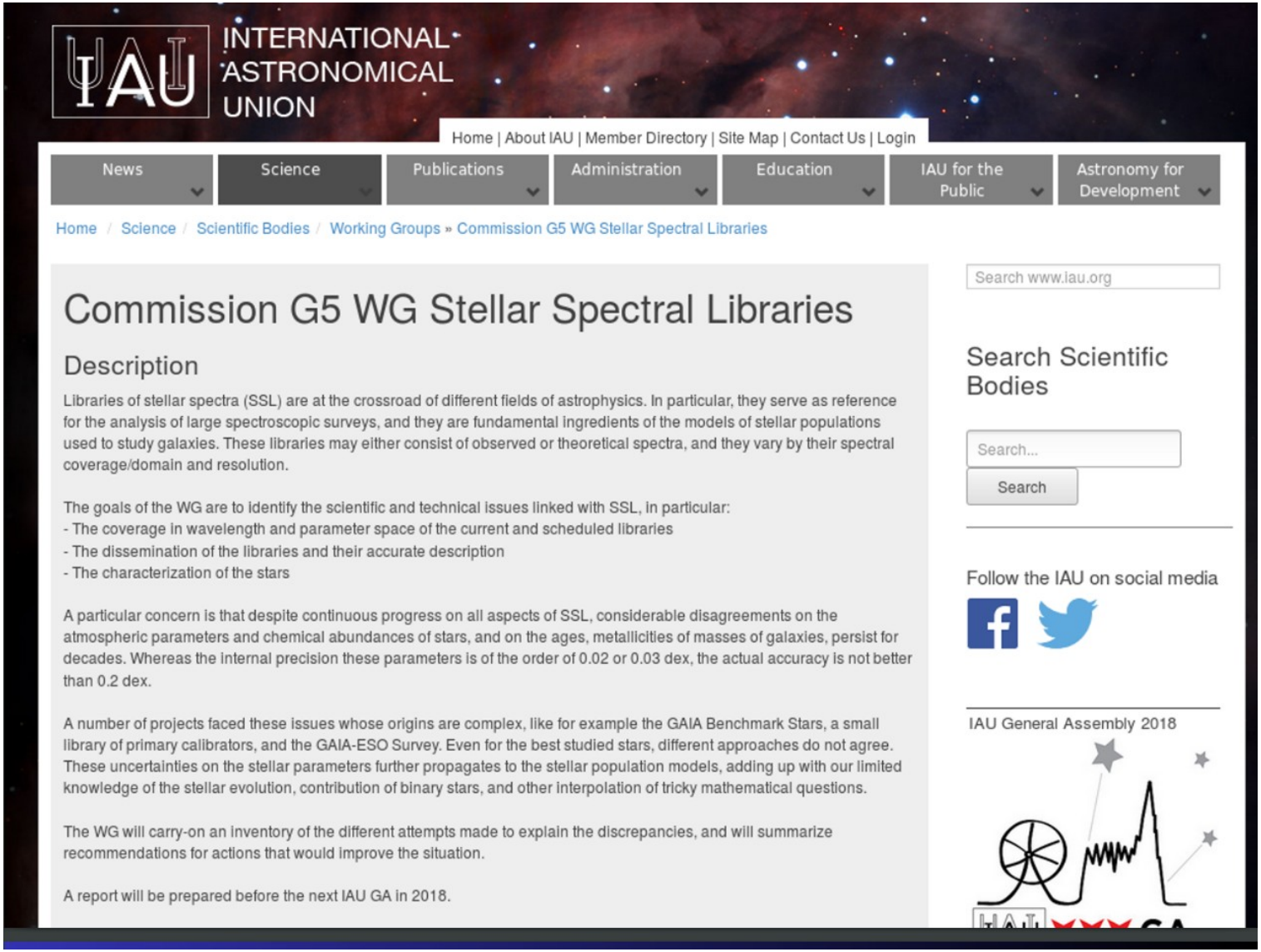
[3] See ftp://calvin.physast.uga.edu/pub/ and http://dilbert.physast.uga.edu/~yeti. Note that the libraries of dwarf and giant stars available at these sites have lower $T_{\rm eff}$ limits than the published ones.



```
SDSC GRID  [+0.0]  VTURB 2.0 KM/S   L/H 1.25
      PROGRAM READFLUX
C     SAMPLE PROGRAM READS THIS FILE ON UNIT 1
      DIMENSION Hnu(1221),HnuCONT(1221),WAVE(1221)
      CHARACTER*80 TITLE
      DO 11 ISKIP=1,22
   11 READ(1,1)
C     wavelength in nm
      READ(1,1)WAVE
    1 FORMAT(10F10.2)
      DO 8 MODEL=1,500
C     ergs/cm**2/s/hz/ster
      READ(1,2,END=9)TITLE
    2 FORMAT(A80)
      PRINT 3,MODEL,TITLE
    3 FORMAT(I5,1X,A80)
      READ(1,4)Hnu
      READ(1,4)HnuCONT
    4 FORMAT(8E10.4)
    8 CONTINUE
    9 CALL EXIT
      END
      9.09      9.35      9.61      9.77      9.96     10.20     10.38     10.56
     10.77     11.04     11.40     11.78     12.13     12.48     12.71     12.84
     13.05     13.24     13.39     13.66     13.98     14.33     14.72     15.10
     15.52     15.88     16.20     16.60     17.03     17.34     17.68     18.02
     18.17     18.61     19.10     19.39     19.84     20.18     20.50     21.05
     21.62     21.98     22.30     22.68     23.00     23.40     24.00     24.65
```

International Workshop on Spectral Stellar Libraries

	Monday	Tuesday	Wednesday	Thursday	Friday
09:00-09:30	Opening	Paula Jofre	Eswar Reddy	David Montes	Claus Leitherer
09:30-10:00	Cristina Chiappini			Anke Arentsen	Gustavo Bruzual
10:00-10:30		Coffee-break and posters			
10:30-11:00	Coffee-break				
11:00-11:30		Nicolas Lodieu	Bruno Dias	Renbin Yan	Natacha Zanon
11:30-12:00	Anais Gonneau	Riano E. Giribaldi	Round-table "What does the VO do for us?", chair P. Prugniel	Yue WU	Luis Gabriel Dahmer Hahn
12:00-12:30	Clare Worley	Rodolfo Smiljanic		Ranjan Gupta	Closing
12:30-14:30	Lunch				
14:30-15:00	Reynier Peletier	Petr Skoda	Free-afternoon	Alberto Krone-Martins	Bus leaving Orotour to GRU
15:00-15:30					
15:30-16:00	Alexa Villaume	Philippe Prugniel		Adam Burgasser (Jupyter notebook and github link)	
16:00-16:30	Andre Milone	Carlos Rodrigo		Elizabeth Griffin	
16:30-17:00	Coffee-break			Coffee-break	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Astronomy for Development
Home / Science / Scientific Bodies / Working Groups » Commission G5 WG Stellar Spectral Libraries
Commission G5 WG Stellar Spectral Libraries
Description
Libraries of stellar spectra (SSL) are at the crossroad of different fields of astrophysics. In particular, they serve as reference for the analysis of large spectroscopic surveys, and they are fundamental ingredients of the models of stellar populations used to study galaxies. These libraries may either consist of observed or theoretical spectra, and they vary by their spectral coverage/domain and resolution.
The goals of the WG are to identify the scientific and technical issues linked with SSL, in particular:
- The coverage in wavelength and parameter space of the current and scheduled libraries
- The dissemination of the libraries and their accurate description
- The characterization of the stars
A particular concern is that despite continuous progress on all aspects of SSL, considerable disagreements on the atmospheric parameters and chemical abundances of stars, and on the ages, metallicities of masses of galaxies, persist for decades. Whereas the internal precision these parameters is of the order of 0.02 or 0.03 dex, the actual accuracy is not better than 0.2 dex.
A number of projects faced these issues whose origins are complex, like for example the GAIA Benchmark Stars, a small library of primary calibrators, and the GAIA-ESO Survey. Even for the best studied stars, different approaches do not agree. These uncertainties on the stellar parameters further propagates to the stellar population models, adding up with our limited knowledge of the stellar evolution, contribution of binary stars, and other interpolation of tricky mathematical questions.
The WG will carry-on an inventory of the different attempts made to explain the discrepancies, and will summarize recommendations for actions that would improve the situation.
A report will be prepared before the next IAU GA in 2018.
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IAU General Assembly 2018

Stellar libraries: SVOCat

Stellar Spectral Libraries

CaT. Empirical Calibration of the Near-IR Ca II Triplet

The project is dedicated to the empirical calibration of the Ca II triplet and stellar population synthesis modelling. For this purpose, we make use of a new stellar library of 706 stars in the near-IR spectral range (from 8348 Å to 9020 Å with a FWHM of 1.5 Å) which spans a wide range of updated atmospheric parameters.

(More info)

L and T dwarfs (Chiu et al. 2006)

L and T dwarf data archive from Chiu et al. 2006, Golimowski et al. 2004 and Knapp et al. 2004.

(More info)

STELIB.

The objective of the STELIB Stellar Library is to build an homogeneous library of stellar spectra in the visible range (3200 to 9500A), including stars of all spectral types, luminosity classes and metallicity that can be observed from the ground with the current instrumentation.

(More info)

X-Shooter Spectral Library

The X-Shooter Spectral Library is a collection of 3000–25000 Å all stellar spectra observed at a resolving power of R = λ/Δλ ~ 10 000 with the medium-resolution spectrograph X-Shooter at the Very Large Telescope (VLT).

(More info)

FGKM stellar Library, Yee et al. 2017

Precision Stellar Characterization of FGKM Stars using an Empirical Spectral Library.

(More info)

MILES stellar library

The MILES stellar library consist of ~1000 stars spanning a large range in atmospheric parameters. The spectra were obtained at the 2.5m INT telescope and cover the range 3525-7500Å at 2.50Å (FWHM) spectral resolution.

(More info)

The NIRSPEC Brown Dwarf Spectroscopic Survey. Low-Resolution Data.

The Brown Dwarf Spectroscopic Survey (BDSS) is designed to study near-infrared moderate-to-high resolution spectra for a large sample of low-mass stars and sub-stellar mass objects in the M and newly defined L and T dwarf classes.

(More info)

Gaia FGK Benchmark Stars

The Gaia FGK Benchmark Stars are a common set of calibration stars, covering different regions of the HR diagram and spanning a wide range in metallicity. It is a homogeneous library in the visual range (480-680 nm) of high resolution and signal to noise ratio (S/N) spectra corresponding to the 34 Benchmark Stars and 5 metal-poor candidates.

(More info)

SpeX Prism Library

This site is build as a basis to provide Virtual Observatory access to the published spectra in the SpeX Prism Library.

(More info)

UVES/VLT M subdwarfs

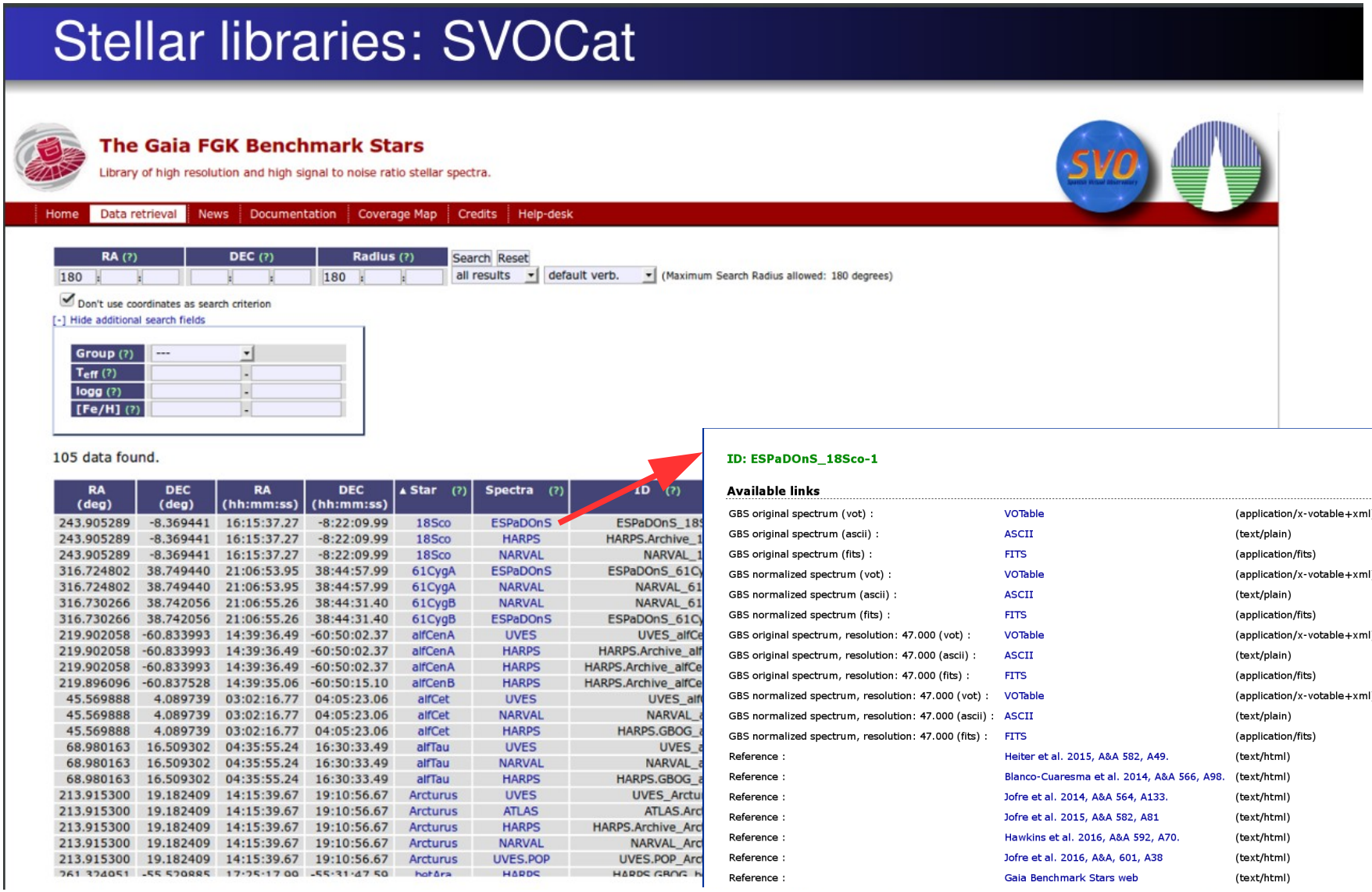
This library presents UVES/VLT high resolution spectra of three late-K subdwarfs and 18 M subdwarfs. Our atlas covers the optical region from 6400A up to the near infrared at 8900A. We show spectral details of cool atmospheres at very high resolution (R~40000).

(More info)

If you use this service in your research, please include the following acknowledgement in any resulting publications:

"Based on data from the Spectral Stellar Libraries services developed by the Spanish Virtual Observatory in the framework of the IAU Comission G5 Working Group : Spectral Stellar Libraries".

Stellar libraries: SVOCat



The Gaia FGK Benchmark Stars

Library of high resolution and high signal to noise ratio stellar spectra.

Home | Data retrieval | News | Documentation | Coverage Map | Credits | Help-desk

RA (?) | DEC (?) | Radius (?) | Search | Reset

180 | 180 | all results | default verb. | (Maximum Search Radius allowed: 180 degrees)

Don't use coordinates as search criterion

[-] Hide additional search fields

Group (?) ---

T_{eff} (?)

logg (?)

[Fe/H] (?)

105 data found.

RA (deg)	DEC (deg)	RA (hh:mm:ss)	DEC (hh:mm:ss)	▲ Star (?)	Spectra (?)	ID (?)
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco	ESPaDOnS	ESPaDOnS_18S
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco	HARPS	HARPS.Archive_1
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco	NARVAL	NARVAL_1
316.724802	38.749440	21:06:53.95	38:44:57.99	61CygA	ESPaDOnS	ESPaDOnS_61Cy
316.724802	38.749440	21:06:53.95	38:44:57.99	61CygA	NARVAL	NARVAL_61
316.730266	38.742056	21:06:55.26	38:44:31.40	61CygB	NARVAL	NARVAL_61
316.730266	38.742056	21:06:55.26	38:44:31.40	61CygB	ESPaDOnS	ESPaDOnS_61Cy
219.902058	-60.833993	14:39:36.49	-60:50:02.37	alfCenA	UVES	UVES_alfCe
219.902058	-60.833993	14:39:36.49	-60:50:02.37	alfCenA	HARPS	HARPS.Archive_alf
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45.569888	4.089739	03:02:16.77	04:05:23.06	alfCet	NARVAL	NARVAL_
45.569888	4.089739	03:02:16.77	04:05:23.06	alfCet	HARPS	HARPS.GBOG_
68.980163	16.509302	04:35:55.24	16:30:33.49	alfTau	UVES	UVES_a
68.980163	16.509302	04:35:55.24	16:30:33.49	alfTau	NARVAL	NARVAL_a
68.980163	16.509302	04:35:55.24	16:30:33.49	alfTau	HARPS	HARPS.GBOG_a
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	UVES	UVES_Arctu
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	ATLAS	ATLAS.Arc
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	HARPS	HARPS.Archive_Arc
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	NARVAL	NARVAL_Arc
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	UVES.POP	UVES.POP_Arc
261.324951	-55.529885	17:25:17.99	-55:31:47.59	betAra	HARPS	HARPS.GBOG_b

ID: ESPaDOnS_18Sco-1

Available links

GBS original spectrum (vot) :	VOTable	(application/x-votable+xml)
GBS original spectrum (ascii) :	ASCII	(text/plain)
GBS original spectrum (fits) :	FITS	(application/fits)
GBS normalized spectrum (vot) :	VOTable	(application/x-votable+xml)
GBS normalized spectrum (ascii) :	ASCII	(text/plain)
GBS normalized spectrum (fits) :	FITS	(application/fits)
GBS original spectrum, resolution: 47.000 (vot) :	VOTable	(application/x-votable+xml)
GBS original spectrum, resolution: 47.000 (ascii) :	ASCII	(text/plain)
GBS original spectrum, resolution: 47.000 (fits) :	FITS	(application/fits)
GBS normalized spectrum, resolution: 47.000 (vot) :	VOTable	(application/x-votable+xml)
GBS normalized spectrum, resolution: 47.000 (ascii) :	ASCII	(text/plain)
GBS normalized spectrum, resolution: 47.000 (fits) :	FITS	(application/fits)
Reference :	Heiter et al. 2015, A&A 582, A49.	(text/html)
Reference :	Blanco-Cuaresma et al. 2014, A&A 566, A98.	(text/html)
Reference :	Jofre et al. 2014, A&A 564, A133.	(text/html)
Reference :	Jofre et al. 2015, A&A 582, A81	(text/html)
Reference :	Hawkins et al. 2016, A&A 592, A70.	(text/html)
Reference :	Jofre et al. 2016, A&A, 601, A38	(text/html)
Reference :	Gaia Benchmark Stars web	(text/html)

Explore parameter space for VO Stellar Libraries

These are the available parameters for each library. Please, select which ones you want to compare and then click 'Plot'.

Observational Libraries

		x	y
☑	GBS	teff	logg
☐	CaT	teff	logg
☐	MILES	teff	logg
☐	UVES	teff	logg
☐	STELIB	teff	logg
☐	XSL	---	---
☑	Yee2017	teff	logg
☐	ELODIE	teff	logg
☐	IACOB	---	---
☐	NGSL	teff	logg

Theoretical Libraries

		x	y
☐	Kurucz	---	---
☐	Coelho	---	---

Plot Options

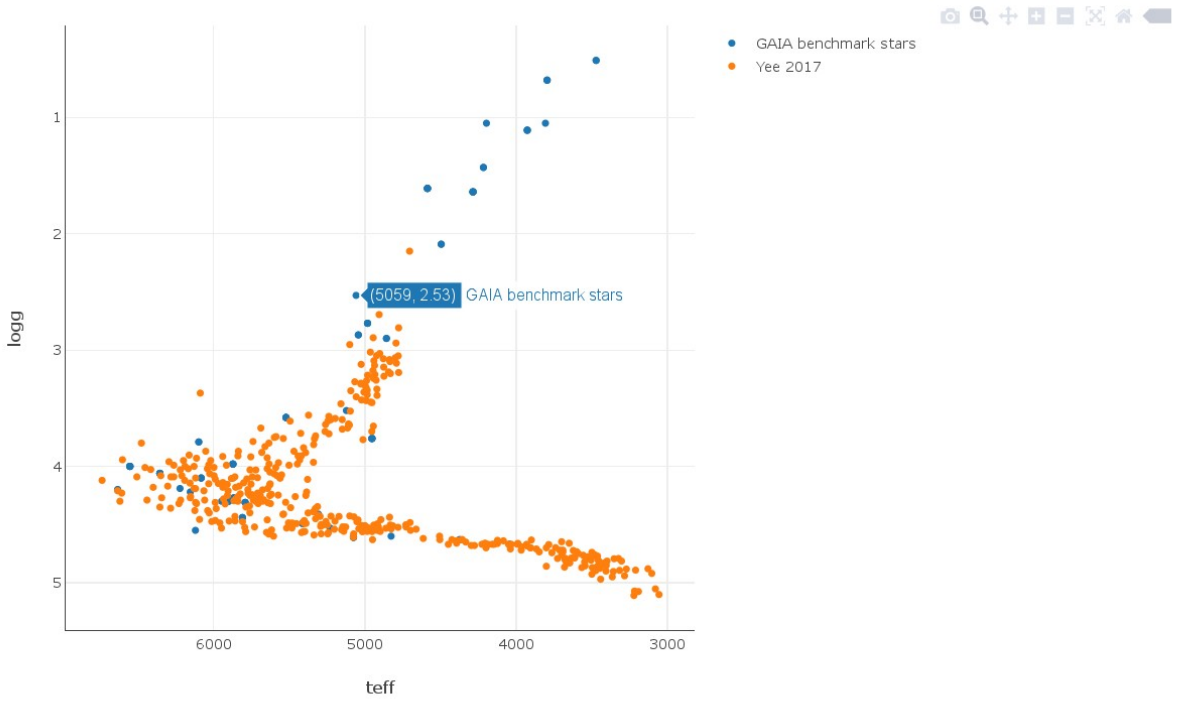
x : ☑ Flip ☐ Log

y : ☑ Flip ☐ Log

☐ Plot density map

Plot

You can also preselect what parameters



Download this data as: CSV ASCII VOTable

Available Resources | Stellar Libraries at SVO | Theoretical Libraries at SVO | Explore parameters | Crossmatch libraries | Tutorial: TOPCAT | Help-Desk

Crossmatch VO Stellar Libraries

These are the available libraries. Please, select which ones you want to compare and then click 'Compare'.

Libraries

- [x] GBS
- [ ] CaT
- [x] MILES
- [ ] UVES
- [ ] STELIB
- [ ] X-Shooter
- [ ] Yee2017
- [ ] ELODIE

Options

You can decide what to show for each type of data in the results table.

	Min	Max	Ave	Err	Libs
RA	☐	☐	☑	☑	☐
DEC	☐	☐	☑	☑	☐
name					☑
teff	☑	☑	☑	☑	☑
logg	☑	☑	☑	☑	☑
feh	☑	☑	☑	☑	☑
vmag	☐	☐	☐	☐	☐

Compare

Instead, you can make a plot of two params

x : teff ☐ Flip ☐ Log

y : logg ☐ Flip ☐ Log

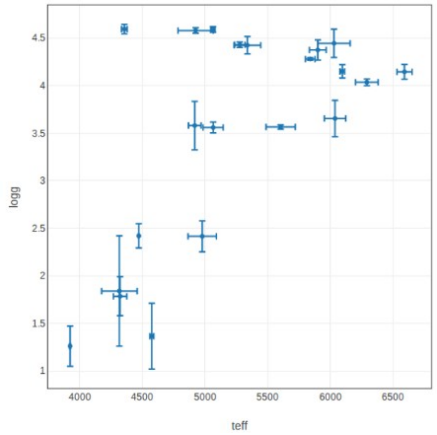
Plot

Download these data as: CSV ASCII VOTable

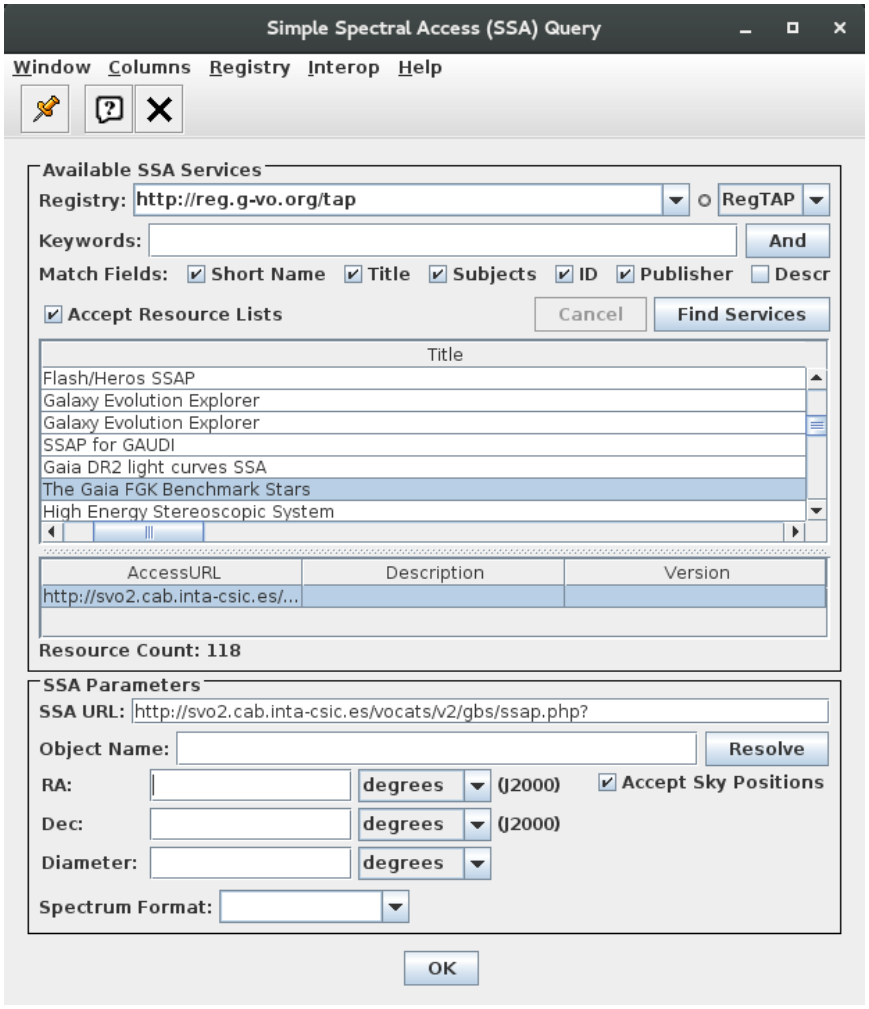
Send table to VO Apps

21 objects are present in both libraries

RA		DEC		name		teff					
ave	err	ave	err	GBS	MILES	min	max	ave	err	GBS	MILES
350.086	0.000167586	5.38131	2.90049e-6	HD220009	HD220009	4217	4418	4317.5	142.128	4217	4418
26.0171	6.07458e-5	-15.9375	1.44887e-5	tauCet	HD010700	5264	5414	5339	106.066	5414	5264
317.996	2.22433e-5	17.7277	3.33769e-5	HD201891	HD201891	5854	5948	5901	66.468	5948	5854
45.4068	8.51391e-5	-28.0916	3.21291e-5	epsFor	HD018907	5009	5123	5066	80.6102	5123	5009
53.2326	0.000132472	-9.45825	6.1274e-6	epsEri	HD022049	5052	5076	5064	16.9706	5076	5052
55.092	0.000114342	-3.21697	6.50538e-6	HD22879	HD022879	5814	5868	5841	38.1838	5868	5814
316.725	0.000139953	38.7494	2.85545e-5	61CygA	HD201091	4342	4374	4358	22.6274	4374	4342
55.8121	9.1969e-6	-9.76339	8.5963e-7	delEri	HD023249	4884	4954	4919	49.4975	4954	4884
17.0683	7.96475e-6	54.9203	2.87371e-5	muCas	HD006582	5249	5308	5278.5	41.7193	5308	5249
68.9801	0.000115107	16.5093	1.71926e-6	alfTau	HD029139	3922	3927	3924.5	3.53553	3927	3922
281.777	0.000112905	74.7254	2.33602e-6	HD175305	HD175305	4899	5059	4979	113.137	5059	4899
102.708	0.000262335	-0.540886	4.24263e-6	HD49933	HD049933	6550	6635	6592.5	60.1041	6635	6550
235.763	6.75966e-5	-10.9335	6.95104e-7	HD140283	HD140283	5522	5687	5604.5	116.673	5522	5687
148.191	6.90871e-5	26.0069	3.76882e-5	muLeo	HD085503	4472	4474	4473	1.41421	4474	4472
213.915	0.000212393	19.1824	6.48569e-6	Arcturus	HD124897	4286	4361	4323.5	53.033	4286	4361
178.245	9.04333e-5	37.7187	1.68317e-5	Gmb1830	HD103095	4827	5025	4926	140.007	4827	5025
147.234	0.000182628	13.7443	3.07098e-5	HD84937	HD084937	6228	6356	6292	90.5097	6356	6228
208.671	0.000114695	18.3977	1.46584e-5	etaBoo	HD121370	5978	6099	6038.5	85.5599	6099	5978
210.633	0.000219602	9.68609	1.17734e-5	HD122563	HD122563	4566	4587	4576.5	14.8492	4587	4566
183.006	0.000209774	13.2613	1.18083e-5	HD106038	HD106038	5940	6121	6030.5	127.986	6121	5940
177.674	0.000122991	1.76472	1.90828e-7	betVir	HD102870	6083	6109	6096	18.3848	6083	6109



Stellar libraries in the VO



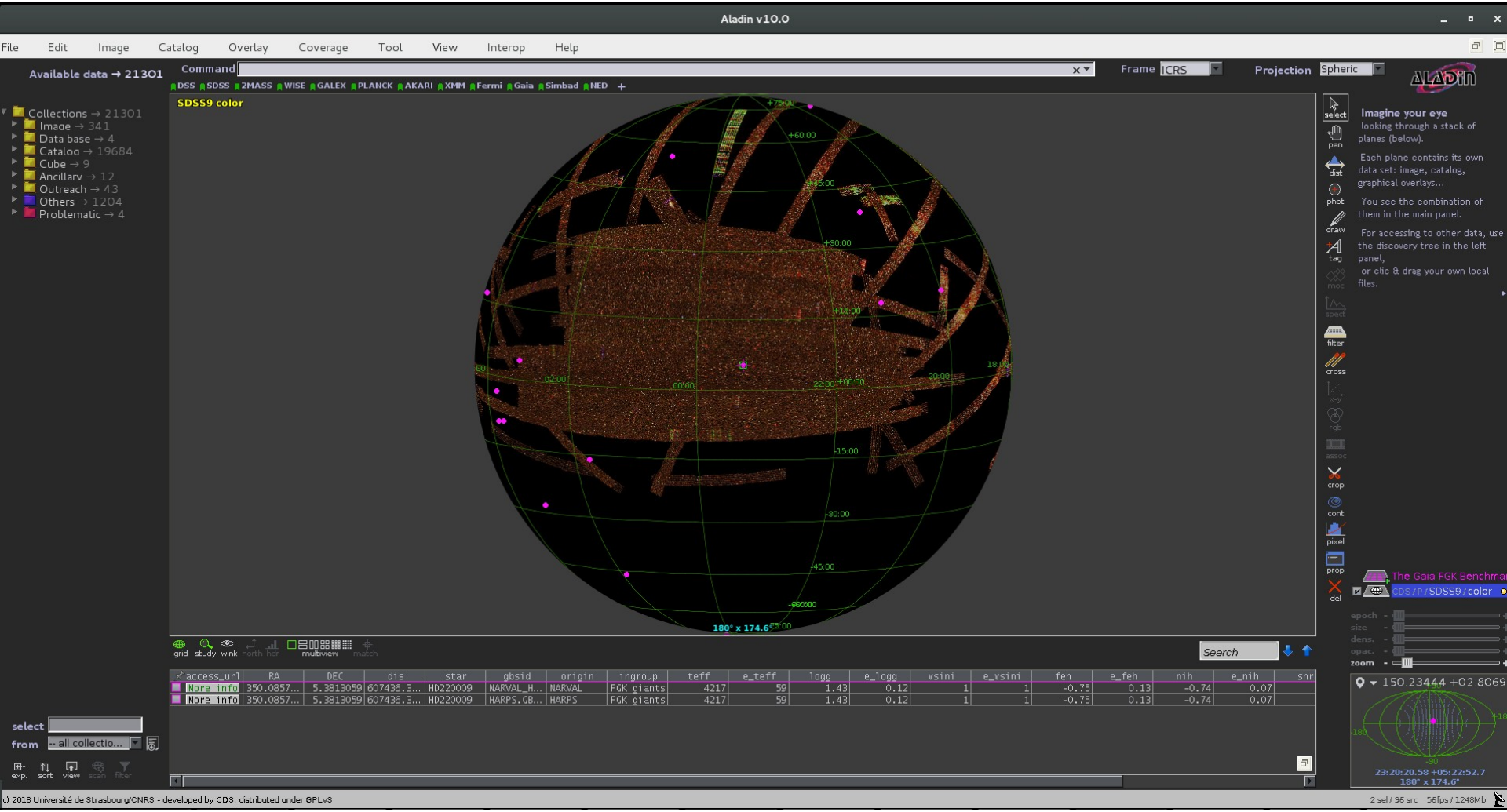
148.190902	26.006953	09:52:45.82	26:00:25.03	muLeo	NARVAL
148.190902	26.006953	09:52:45.82	26:00:25.03	muLeo	ESPaDOnS
114.825498	5.224988	07:39:18.12	05:13:29.96	Procyon	HARPS
114.825498	5.224988	07:39:18.12	05:13:29.96	Procyon	UVES.POP
114.825498	5.224988	07:39:18.12	05:13:29.96	Procyon	UVES
114.825498	5.224988	07:39:18.12	05:13:29.96	Procyon	UVES
114.825498	5.224988	07:39:18.12	05:13:29.96	Procyon	NARVAL
114.825498	5.224988	07:39:18.12	05:13:29.96	Procyon	ESPaDOnS
28.411421	-46.302668	01:53:38.74	-46:18:09.60	psiPhe	HARPS
28.411421	-46.302668	01:53:38.74	-46:18:09.60	psiPhe	UVES
				Sun	HARPS
				Sun	HARPS
				Sun	HARPS
				Sun	NARVAL
				Sun	UVES
				Sun	UVES
				Sun	ATLAS
				Sun	HARPS
				Sun	NARVAL
26.017014	-15.937480	01:44:04.08	-15:56:14.93	tauCet	ESPaDOnS
26.017014	-15.937480	01:44:04.08	-15:56:14.93	tauCet	HARPS
26.017014	-15.937480	01:44:04.08	-15:56:14.93	tauCet	NARVAL

Download all results as VOTable or CSV file

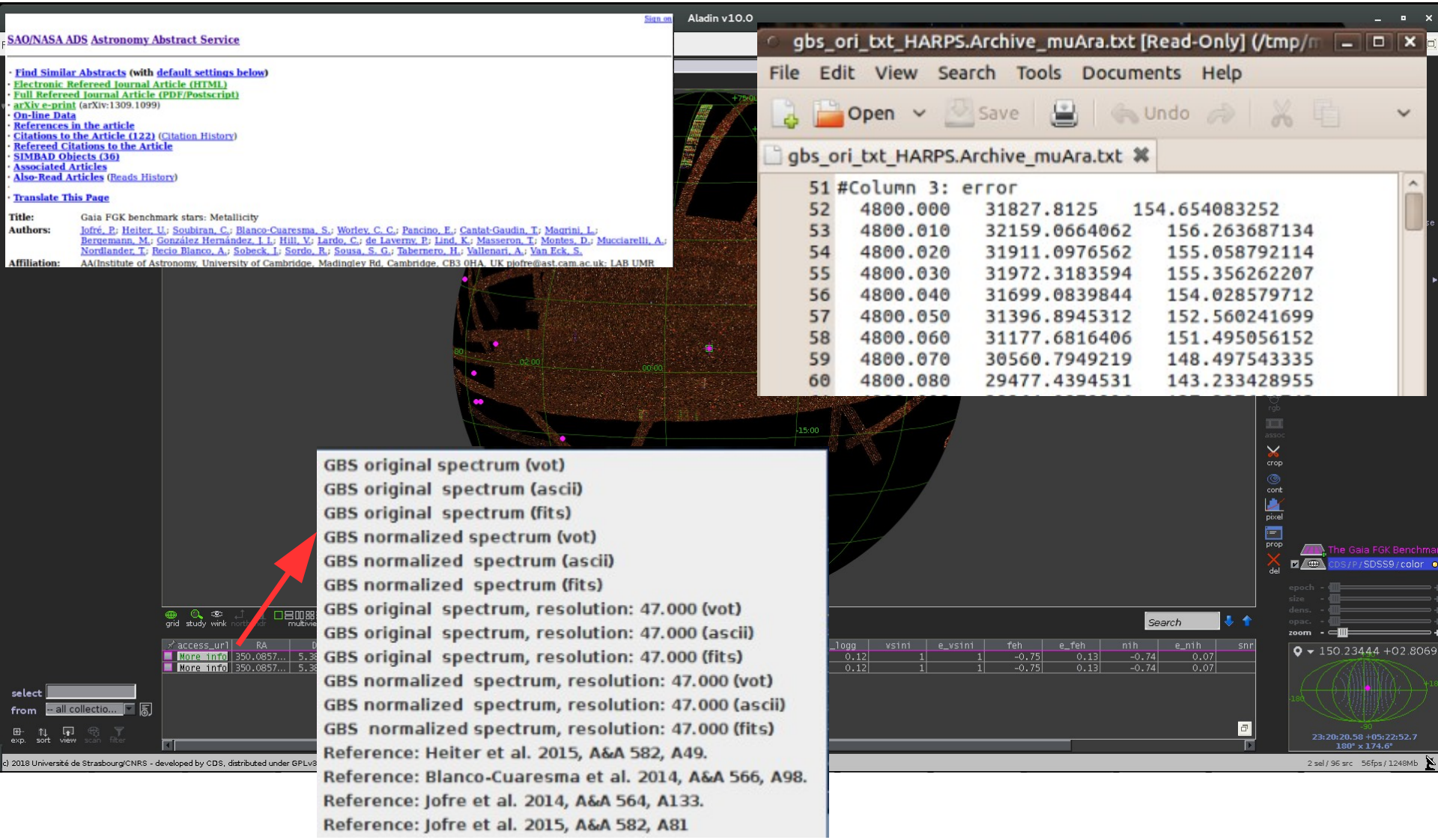
You can send these results to other VO Applications if they are already open other interesting VO applications.

Send table to VO Apps | Send table to VO Apps (as SSAP)

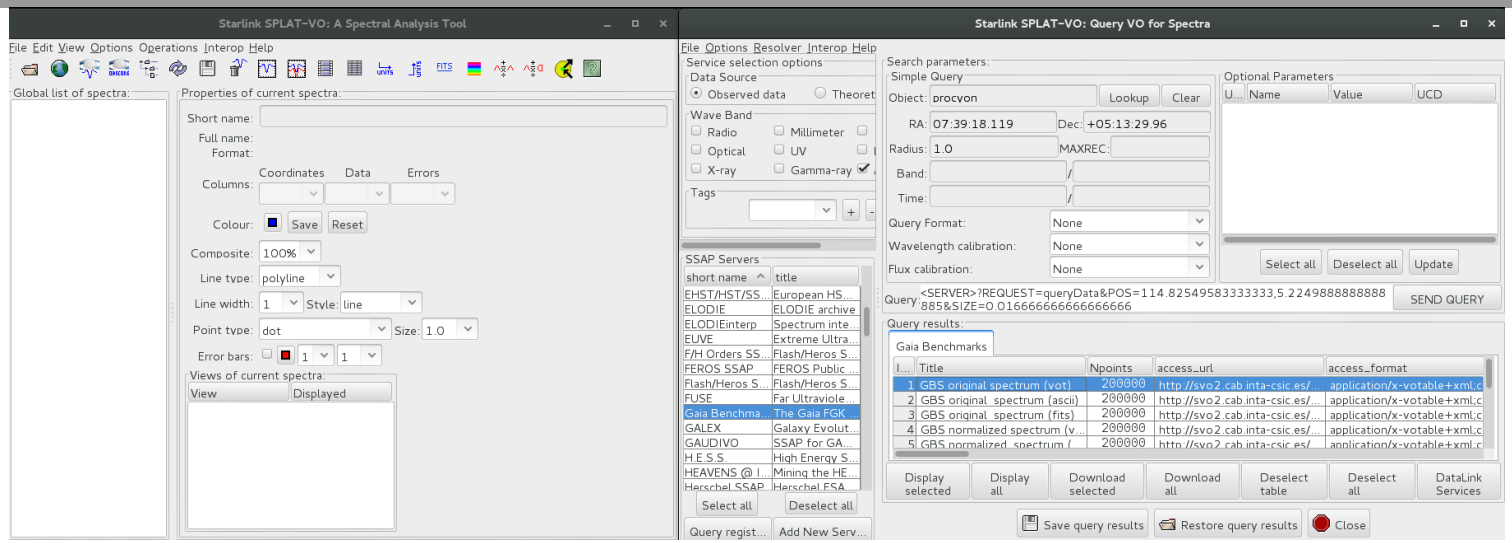
Stellar libraries in the VO

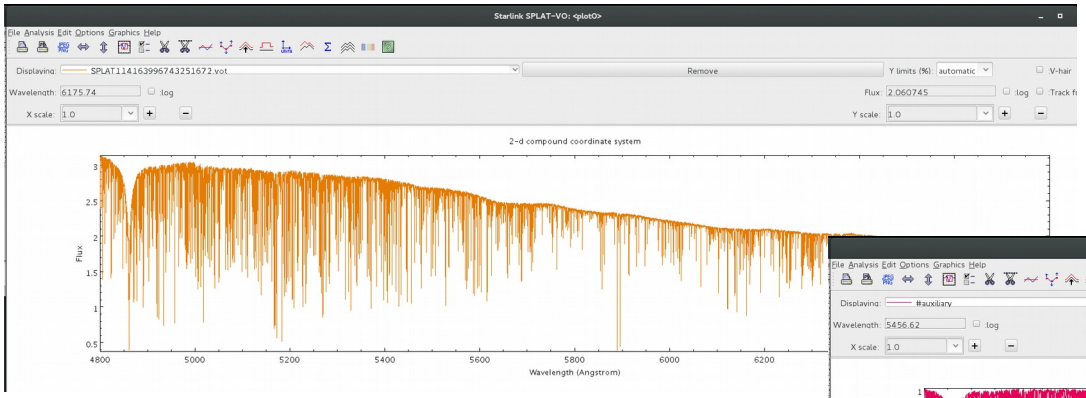


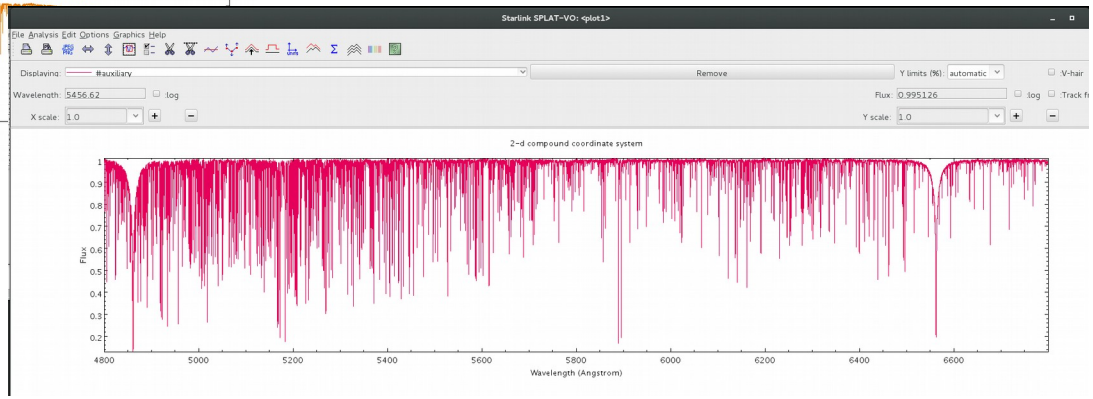
Stellar libraries in the VO



Stellar libraries in the VO







Conclusions

Miércoles 30 de mayo, 9:30 - 11:00

- **La ciencia con Gaia (IV)**
  - Gaia and the local dark matter density (Hamish Silverwood)
  - Statistical detection of the tidal streams of the globular clusters using Gaia data (Carles García Palau)
- **Proyectos futuros y en curso (debate abierto)**
  - ¿Qué herramientas podemos compartir? Algunos ejemplos:
    - Todo DR2 con distancias bayesianas y extinción
    - Uso de la máquina GENIUS
  - Obtención de datos desde tierra en los próximos meses
  - Otros...