

# DataLink

Feedback from an implementation for stellar libraries.

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IVOA Interoperability meeting  
Victoria, May 2018



# Stellar spectral libraries

- Collections of spectra
  - object properties, classification.
  - spectrum.
  - additional files.
    - observation data.
    - finder chart.
    - spectra in different formats/resolutions.
    - auxiliary spectra.
    - preview image.
    - model fit results, analysis...
- Usually served as web pages.
  - Designed to offer everything together, linking different files.
- How to do a similar thing in the VO?
  - CS, SSAP + **Datalink**?



## International Workshop on Spectral Stellar Libraries

	Monday	Tuesday	Wednesday	Thursday	Friday
09:00-09:30	Opening	<b>Paula Jofre</b>	<b>Eswar Reddy</b>	<b>David Montes</b>	<b>Claus Leitherer</b>
09:30-10:00	<b>Cristina Chiappini</b>			<b>Anke Arentsen</b>	<b>Gustavo Bruzual</b>
10:00-10:30	Coffee-break	Coffee-break and posters			
10:30-11:00		<b>Nicolas Lodieu</b>	<b>Bruno Dias</b>	<b>Renbin Yan</b>	<b>Natacha Zanon</b>
11:00-11:30		<b>Riano E. Giribaldi</b>	Round-table "What does the VO do for us?", chair P. Prugniel	<b>Yue WU</b>	<b>Luis Gabriel Dahmer Hahn</b>
11:30-12:00	<b>Anals Gonneau</b>	<b>Rodolfo Smiljanic</b>		<b>Ranjan Gupta</b>	Closing
12:00-12:30	<b>Clare Worley</b>				
12:30-14:30	Lunch				
14:30-15:00	<b>Reynier Peletier</b>	<b>Petr Skoda</b>	Free-afternoon	<b>Alberto Krone-Martins</b>	Bus leaving Orotour to GRU
15:00-15:30				<b>Adam Burgasser (Jupyter notebook and github link)</b>	
15:30-16:00	<b>Alexa Villaume</b>	<b>Philippe Prugniel</b>		<b>Elizabeth Griffin</b>	
16:00-16:30	<b>Andre Milone</b>	<b>Carlos Rodrigo</b>			
16:30-17:00	Coffee-break			Coffee-break	

# 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.

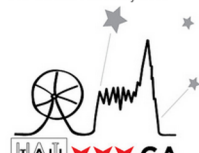
A report will be prepared before the next IAU GA in 2018.

## Search Scientific Bodies

Follow the IAU on social media



IAU General Assembly 2018



- Standardization is important.
  - VO: same formats, access protocols...
- One single service for “everything together”.
  - Not implementing different services for the catalogue, the spectra, the related images...
- Work in progress
  - meeting in Beijing last month,
  - IAU commission report in Viena,
  - meeting next year

## 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, Golmowski 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 9500Å), 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 A all stellar spectra observed at a resolving power of  $R = \lambda/\Delta\lambda \sim 10\,000$  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 6400Å up to the near infrared at 8900Å. We show spectral details of cool atmospheres at very high resolution ( $R=4000$ ).

(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

(Maximum Search Radius allowed: 180 degrees)

Don't use coordinates as search criterion

Hide additional search fields

Group (?)	---	-
T <sub>eff</sub> (?)		-
logg (?)		-
[Fe/H] (?)		-

105 data found.

RA (deg)	DEC (deg)	RA (hh:mm:ss)	DEC (hh:mm:ss)	Star (?)	Spectra (?)	ID (?)	Group (?)	T <sub>eff</sub> (K)	e <sub>Teff</sub> (K)	logg (?)	e <sub>logg</sub> (?)	[Fe/H] (?)	e <sub>[Fe/H]</sub>
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco	ESPaDOnS	ESPaDOnS_18Sco-1	G dwarfs	5810	80	4.44	0.03	0.01	
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco	HARPS	HARPS.Archive_18Sco	G dwarfs	5810	80	4.44	0.03	0.01	
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco	NARVAL	NARVAL_18Sco	G dwarfs	5810	80	4.44	0.03	0.01	
316.724802	38.749440	21:06:53.95	38:44:57.99	61CygA	ESPaDOnS	ESPaDOnS_61CygA-1	K dwarfs	4374	22	4.63	0.04	-0.33	
316.724802	38.749440	21:06:53.95	38:44:57.99	61CygA	NARVAL	NARVAL_61CygA	K dwarfs	4374	22	4.63	0.04	-0.33	
316.730266	38.742056	21:06:55.26	38:44:31.40	61CygB	NARVAL	NARVAL_61CygB	K dwarfs	4044	32	4.67	0.04	-0.38	
316.730266	38.742056	21:06:55.26	38:44:31.40	61CygB	ESPaDOnS	ESPaDOnS_61CygB-1	K dwarfs	4044	32	4.67	0.04	-0.38	
219.902058	-60.833993	14:39:36.49	-60:50:02.37	allCenA	UVES	UVES_allCenA-1	G dwarfs	5792	16	4.31	0.01	0.24	
219.902058	-60.833993	14:39:36.49	-60:50:02.37	allCenA	HARPS	HARPS.Archive_allCenA	G dwarfs	5792	16	4.31	0.01	0.24	
219.902058	-60.833993	14:39:36.49	-60:50:02.37	allCenA	HARPS	HARPS.Archive_allCenA-w	G dwarfs	5792	16	4.31	0.01	0.24	
219.896096	-60.837528	14:39:35.06	-60:50:15.10	allCenB	HARPS	HARPS.Archive_allCenB-w	G dwarfs	5231	20	4.53	0.03	0.22	
45.569888	4.089739	03:02:16.77	04:05:23.06	allCet	UVES	UVES_allCet-1	M giants	3796	65	0.68	0.23	-0.45	
45.569888	4.089739	03:02:16.77	04:05:23.06	allCet	NARVAL	NARVAL_allCet	M giants	3796	65	0.68	0.23	-0.45	
45.569888	4.089739	03:02:16.77	04:05:23.06	allCet	HARPS	HARPS.GBOG_allCet	M giants	3796	65	0.68	0.23	-0.45	
68.980163	16.509302	04:35:55.24	16:30:33.49	allTau	UVES	UVES_allTau	M giants	3927	40	1.11	0.19	-0.37	
68.980163	16.509302	04:35:55.24	16:30:33.49	allTau	NARVAL	NARVAL_allTau	M giants	3927	40	1.11	0.19	-0.37	
68.980163	16.509302	04:35:55.24	16:30:33.49	allTau	HARPS	HARPS.GBOG_allTau	M giants	3927	40	1.11	0.19	-0.37	
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	UVES	UVES_Arcturus-1	FGK giants	4286	35	1.64	0.09	-0.53	
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	ATLAS	ATLAS.Arcturus	FGK giants	4286	35	1.64	0.09	-0.53	
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	HARPS	HARPS.Archive_Arcturus	FGK giants	4286	35	1.64	0.09	-0.53	
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	NARVAL	NARVAL_Arcturus	FGK giants	4286	35	1.64	0.09	-0.53	
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus	UVES.POP	UVES.POP_Arcturus	FGK giants	4286	35	1.64	0.09	-0.53	

# 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 (?)
180		180

Don't use coordinates as search criterion

Hide additional search fields

Group (?)	---
Teff (?)	
logg (?)	
[Fe/H] (?)	

105 data found.

RA (deg)	DEC (deg)	RA (hh:mm:ss)	DEC (hh:mm:ss)	Star
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco
243.905289	-8.369441	16:15:37.27	-8:22:09.99	18Sco
316.724802	38.749440	21:06:53.95	38:44:57.99	61CygA
316.724802	38.749440	21:06:53.95	38:44:57.99	61CygA
316.730266	38.742056	21:06:55.26	38:44:31.40	61CygB
316.730266	38.742056	21:06:55.26	38:44:31.40	61CygB
219.902058	-60.833993	14:39:36.49	-60:50:02.37	allCenA
219.902058	-60.833993	14:39:36.49	-60:50:02.37	allCenA
219.902058	-60.833993	14:39:36.49	-60:50:02.37	allCenA
219.896096	-60.837528	14:39:35.06	-60:50:15.10	allCenB
45.569888	4.089739	03:02:16.77	04:05:23.06	allCet
45.569888	4.089739	03:02:16.77	04:05:23.06	allCet
45.569888	4.089739	03:02:16.77	04:05:23.06	allCet
68.980163	16.509302	04:35:55.24	16:30:33.49	allTau
68.980163	16.509302	04:35:55.24	16:30:33.49	allTau
68.980163	16.509302	04:35:55.24	16:30:33.49	allTau
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus
213.915300	19.182409	14:15:39.67	19:10:56.67	Arcturus

### ID: HARPS.Archive\_Arcturus

#### 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-Cuadras 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)

ID	Star	Library	Resolution	SNR	RA	DEC	Distance	Parallax	Proper Motion
HARPS	HARPS.Archive_Arcturus	FGK giants	4286	35	1.64	0.09	-0.53		
NARVAL	NARVAL_Arcturus	FGK giants	4286	35	1.64	0.09	-0.53		
UVES.POP	UVES.POP_Arcturus	FGK giants	4286	35	1.64	0.09	-0.53		





# VO services?

- We want to be able to link all this information to a main record, with enough visibility
- VO discovery service (SCS, SSA...): get list of records:
  - object
  - coordinates
  - properties
  - SSA: link to spectrum
  - ...
  - + **Link to Datalink**
    - ⇒ series of links to associated info

# VO Service: SSA (SCS)

```
<FIELD ID="SpecURL" name="SpecURL" utype="ssa:Access.Reference" ucd="meta.ref.uri" datatype="char" arraysize="**"/>  
<FIELD ID="SpecFmt" name="SpecFmt" utype="ssa:Access.Format" datatype="char" arraysize="**"/>  
<FIELD ID="SpecSize" name="SpecSize" utype="ssa:Access.Size" unit="byte" datatype="char" arraysize="**"/>
```

```
- <TD>  
  http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=ESPaDOnS_HD49933-1&l=ori_vot  
</TD>  
<TD>application/x-votable+xml</TD>  
<TD>1700000</TD>
```

```
<FIELD name="access_format" ucd="meta.note" utype="obscore:Access.Format" type="hidden" datatype="char" arraysize="**">  
<DESCRIPTION>Format for link to DataLink</DESCRIPTION>  
</FIELD>  
<FIELD name="access_url" ucd="meta.ref.uri" utype="obscore:Access.Reference" datatype="char" arraysize="**">  
<DESCRIPTION>Link to DataLink</DESCRIPTION>  
<LINK content-type="application/x-votable+xml;content=datalink" title="Datalink"/>  
</FIELD>
```



```
<TD>application/x-votable+xml;content=datalink</TD>  
<TD>  
  http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=ESPaDOnS_HD49933-1&sl=ori_vot  
</TD>
```

```
- <RESOURCE type="meta" utype="adhoc.service">  
  <PARAM name="standardID" datatype="char" arraysize="**" value="ivo://ivoa.net/std/DataLink#links-1.0"/>  
  <PARAM name="accessURL" datatype="char" arraysize="**" value="http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php"/>  
  - <GROUP name="inputParams">  
    <PARAM name="ID" datatype="char" arraysize="**" value="" ref="gbsid"/>  
  </GROUP>  
</RESOURCE>  
</VOTABLE>
```

# VO Service: DataLink

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- <VOTABLE version="1.1" xsi:schemaLocation="http://www.ivoa.net/xml/VOTable/v1.1">
- <RESOURCE type="results">
  <INFO name="standardID" value="ivo://ivoa.net/std/DataLink#links-1.0"/>
  <INFO name="QUERY STATUS" value="OK"/>
  - <TABLE name="dlresponse">
    <DESCRIPTION>Data links for ESPaDOnS_betVir-1</DESCRIPTION>
    - <FIELD ID="ID" arraysize="*" datatype="char" name="ID" ucd="meta.id;meta.main">
      - <DESCRIPTION>
        Publisher data set id; this is an identifier for the dataset in question and can be used to retrieve the data.
      </DESCRIPTION>
    </FIELD>
    - <FIELD ID="access_url" arraysize="*" datatype="char" name="access_url" ucd="meta.ref.url">
      <DESCRIPTION>URL to retrieve the data.</DESCRIPTION>
    </FIELD>
  
```

	ID	access_url	description	semantics	content_type
1	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum (vot)	#this	application/x-votable+xml
2	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum (ascii)	#auxiliary	text/plain
3	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum (fits)	#auxiliary	application/fits
4	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum (vot)	#auxiliary	application/x-votable+xml
5	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum (ascii)	#auxiliary	text/plain
6	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum (fits)	#auxiliary	application/fits
7	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum, resolution: 47.000 (vot)	#auxiliary	application/x-votable+xml
8	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum, resolution: 47.000 (ascii)	#auxiliary	text/plain
9	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum, resolution: 47.000 (fits)	#auxiliary	application/fits
10	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum, resolution: 47.000 (vot)	#auxiliary	application/x-votable+xml
11	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum, resolution: 47.000 (ascii)	#auxiliary	text/plain
12	ESPaDOnS_betVir-1	http://vo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum, resolution: 47.000 (fits)	#auxiliary	application/fits
13	ESPaDOnS_betVir-1	http://cdsads.u-strasbg.fr/abs/2015A&A...582A..49H	Reference: Heiter et al. 2015, A&A 582, A49.	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html
14	ESPaDOnS_betVir-1	http://cdsads.u-strasbg.fr/abs/2014A&A...566A..98B	Reference: Blanco-Cuaresma et al. 2014, A&A 566, A9...	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html
15	ESPaDOnS_betVir-1	http://cdsads.u-strasbg.fr/abs/2014A&A...564A..13J	Reference: jofre et al. 2014, A&A 564, A133.	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html
16	ESPaDOnS_betVir-1	http://cdsads.u-strasbg.fr/abs/2015A&A...582A..81J	Reference: Jofre et al. 2015, A&A 582, A81	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html
17	ESPaDOnS_betVir-1	http://cdsads.u-strasbg.fr/abs/2016A&A...592A..70H	Reference: Hawkins et al. 2016, A&A 592, A70.	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html
18	ESPaDOnS_betVir-1	http://cdsads.u-strasbg.fr/abs/2017A&A...601A..3...	Reference: Jofre et al. 2016, A&A, 601, A38	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html
19	ESPaDOnS_betVir-1	https://www.blancocuaresma.com/s/benchmarkstars	Reference: Gaia Benchmark Stars web	http://www.ivoa.net/rdf/Vocabularies/UCD#Met...	text/html

```

- <FIELD ID="content_length" datatype="long" name="content_length" ucd="phys.size;meta.me" unit="byte">
  <DESCRIPTION>Size of the resource at access_url</DESCRIPTION>
  <VALUES null="-1"> </VALUES>
</FIELD>
- <DATA>

```

# TOPCAT

TOPCAT

File Views Graphics Joins Windows YO Interop Help

Table List  
1: Gala Benchmarks-180d

Current Table Properties

Label:  
Location:  
Name:  
Rows:  
Columns:  
Sort Order:  
Row Subset:

Activation Actions:

SAMP  
Messages: Clients:

179 / 742 M

TOPCAT(1): Table Browser

Window Subsets Help

Table Browser for 1: Gala Benchmarks-180d

	star	Title	WaveResPow	SpecURL	SpecFmt	SpecSize	access_url	access_format	gsid
1	HD220009	GBS original spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_GB06_HD22
2	HD220009	GBS normalized spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_GB06_HD22
3	HD220009	GBS original spectrum (vot)	80000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	NARVAL_HD220009
4	HD220009	GBS normalized spectrum (vot)	80000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	NARVAL_HD220009
5	tauCet	GBS original spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_Archive_tauC
6	tauCet	GBS normalized spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_Archive_tauC
7	tauCet	GBS original spectrum (vot)	65000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	ESPaD0nS_tauCet-
8	tauCet	GBS normalized spectrum (vot)	65000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	ESPaD0nS_tauCet-
9	tauCet	GBS original spectrum (vot)	80000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	NARVAL_tauCet
10	tauCet	GBS normalized spectrum (vot)	80000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	NARVAL_tauCet
11	HD201891	GBS original spectrum (vot)	66320	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	UVES_HD201891
12	HD201891	GBS normalized spectrum (vot)	66320	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	UVES_HD201891
13	alfCet	GBS original spectrum (vot)	80000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	NARVAL_alfCet
14	alfCet	GBS normalized spectrum (vot)	80000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	NARVAL_alfCet
15	alfCet	GBS original spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_GB06_alfCet
16	alfCet	GBS normalized spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_GB06_alfCet
17	alfCet	GBS original spectrum (vot)	90000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	UVES_alfCet-1
18	alfCet	GBS normalized spectrum (vot)	90000	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	UVES_alfCet-1
19	LepusEnr	GBS original spectrum (vot)	1.150000E5	http://sv02.cab.int...	application/x-votable+xml	17000000	http://sv02.cab...	application/x-votable+xml;content=datalink	HARPS_GB06_alfCet

TOPCAT

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Table List

1: Gala Benchmarks-180d

Current Table Properties

Label:  
Location:  
Name:  
Rows:  
Columns:  
Sort Order:  
Row Subset:

Activation Actions:

SAMP

Messages: Clients:

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TOPCAT(1): Activation Actions

Window Actions Help

Activation Actions for 1: Gala Benchmarks-180d

Actions

- Invoke Service
- Use Sky Coordinates
- Send Sky Coordinate
- Display image
- Load Table
- Plot Table
- Send FITS image
- Send Spectrum
- Display Cutout Image
- Download URL
- View in Web Browser

Description

Invoke a service defined by a ServiceDescriptor attached to the table

Configuration

Action: View DataLink Table

Name:

Description:

Base URL: http://svo2.cab.inta-csic.es/vocats/v2/gbs/c

IVOID:

Standard ID: lvo://voa.net/std/DataLink#links-1.0

Status

Invoke now on row 1

Results

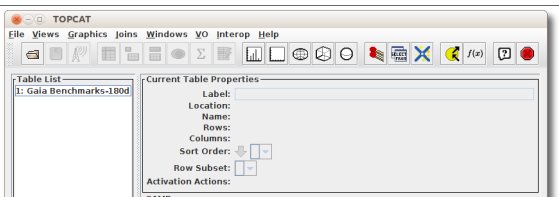
Seq	Row	Status	Message
1	1	OK	Loaded 19 rows (http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS)

TOPCAT(1): Table Browser

Window Subsets Help

Table Browser for 1: Gala Benchmarks-180d

star	Title	WaveResPow	SpecURL	gbsid
1	HD220009	GBS original spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_GB06_GHD22
2	HD220009	GBS normalized spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_GB06_GHD22
3	HD220009	GBS original spectrum (vot)	80000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=NARVAL_HD220009
4	HD220009	GBS normalized spectrum (vot)	80000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=NARVAL_HD220009
5	tauCet	GBS original spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_Archive_tauCet
6	tauCet	GBS normalized spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_Archive_tauCet
7	tauCet	GBS original spectrum (vot)	65000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=ESPaD0nS_tauCet-1
8	tauCet	GBS normalized spectrum (vot)	65000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=ESPaD0nS_tauCet-1
9	tauCet	GBS original spectrum (vot)	80000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=NARVAL_tauCet
10	tauCet	GBS normalized spectrum (vot)	80000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=NARVAL_tauCet
11	HD201891	GBS original spectrum (vot)	66320	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=UVES_HD201891
12	HD201891	GBS normalized spectrum (vot)	66320	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=UVES_HD201891
13	alfCet	GBS original spectrum (vot)	80000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=NARVAL_alfCet
14	alfCet	GBS normalized spectrum (vot)	80000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=NARVAL_alfCet
15	alfCet	GBS original spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_GB06_alfCet
16	alfCet	GBS normalized spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_GB06_alfCet
17	alfCet	GBS original spectrum (vot)	90000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=UVES_alfCet-1
18	alfCet	GBS normalized spectrum (vot)	90000	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=UVES_alfCet-1
19	LepEor	GBS original spectrum (vot)	1.150000E5	http://svo2.cab.inta-csic.es/vocats/v2/gbs/dl.php?ID=HARPS_GB06_alfCet



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**DataLink Table**

	semantics	description	content_type	ID	access_url	service_def	error_mess
1	#this	GBS original spectrum (vot)	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
2	#auxiliary	GBS original spectrum (ascii)	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
3	#auxiliary	GBS original spectrum (fits)	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
4	#auxiliary	GBS normalized spectrum (vot)	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
5	#auxiliary	GBS normalized spectrum (ascii)	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
6	#auxiliary	GBS normalized spectrum (fits)	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
7	#auxiliary	GBS original spectrum, resolu...	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
8	#auxiliary	GBS original spectrum, resolu...	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
9	#auxiliary	GBS original spectrum, resolu...	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
10	#auxiliary	GBS normalized spectrum, res...	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
11	#auxiliary	GBS normalized spectrum, res...	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
12	#auxiliary	GBS normalized spectrum, res...	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
13	http://www.moa.n...	Reference: Heiter et al. 2015, ...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
14	http://www.moa.n...	Reference: Blanco-Cuaresma e...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
15	http://www.moa.n...	Reference: Jofre et al. 2014, A...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
16	http://www.moa.n...	Reference: Jofre et al. 2015, A...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
17	http://www.moa.n...	Reference: Hawkins et al. 201...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		

**Row Link Type**  
Fixed Access URL

**Row Detail**

access\_url: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

content\_type: application/x-votable+xml

content\_length:

description: GBS original spectrum (vot)

semantics: #this

URL: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

Type: TABLE      Action: Load Table      Invoke

Result:

format	gbsid
xml:content=datalink	HARPS.GBOG_HD220009
xml:content=datalink	HARPS.GBOG_HD220009
xml:content=datalink	NARVAL_HD220009
xml:content=datalink	NARVAL_HD220009
xml:content=datalink	HARPS.Archive_taucet
xml:content=datalink	HARPS.Archive_taucet
xml:content=datalink	ESPaD0nS_taucet-1
xml:content=datalink	ESPaD0nS_taucet-1
xml:content=datalink	NARVAL_taucet
xml:content=datalink	NARVAL_taucet
xml:content=datalink	UVES_HD201891
xml:content=datalink	UVES_HD201891
xml:content=datalink	NARVAL_alfCet
xml:content=datalink	NARVAL_alfCet
xml:content=datalink	HARPS.GBOG_alfCet
xml:content=datalink	HARPS.GBOG_alfCet
xml:content=datalink	UVES_alfCet-1
xml:content=datalink	UVES_alfCet-1
xml:content=datalink	HARPS.GBOG_alfCet-1

TOPCAT

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Table List

- 1: Gaia Benchmarks-180d
- 2: ssap.php?ID=HARPS.G

Current Table Properties

Label: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

Location: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.G

Name: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

Rows: 200,000

Columns: 3

Sort Order:

Row Subset: All

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DataLink Table

#	semantics	description	content_type	ID	access_url	service_def	error_mess
1	#this	GBS original spectrum (vot)	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
2	#auxiliary	GBS original spectrum (ascii)	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
3	#auxiliary	GBS original spectrum (fits)	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
4	#auxiliary	GBS normalized spectrum (vot)	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
5	#auxiliary	GBS normalized spectrum (ascii)	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
6	#auxiliary	GBS normalized spectrum (fits)	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
7	#auxiliary	GBS original spectrum, resolu...	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
8	#auxiliary	GBS original spectrum, resolu...	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
9	#auxiliary	GBS original spectrum, resolu...	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
10	#auxiliary	GBS normalized spectrum, res...	application/x-votable+xml	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
11	#auxiliary	GBS normalized spectrum, res...	text/plain	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
12	#auxiliary	GBS normalized spectrum, res...	application/fits	HARPS.GBOG_HD220009	http://svo2.cab.inta-csic.es/vo...		
13	http://www.moa.n...	Reference: Heiter et al. 2015, A...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
14	http://www.moa.n...	Reference: Blanco-Cuaresma e...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
15	http://www.moa.n...	Reference: Jofre et al. 2014, A...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
16	http://www.moa.n...	Reference: Jofre et al. 2015, A...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		
17	http://www.moa.n...	Reference: Hawkins et al. 201...	text/html	HARPS.GBOG_HD220009	http://cdsads.u-strasbg.fr/abs/...		

Row Link Type: Fixed Access URL

Row Detail

access\_url: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

content\_type: application/x-votable+xml

content\_length:

description: GBS original spectrum (vot)

semantics: #this

URL: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

Type: TABLE      Action: Load Table      Invoke

Result:

# TOPCAT

TOPCAT

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Table List

- 1: Gaia Benchmarks-180d
- 2: ssap.php?ID=HARPS.G

Current Table Properties

Label: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
Location: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.G  
Name: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
Rows: 200,000  
Columns: 3  
Sort Order:   
Row Subset: All

TOPCAT(2): Table Browser

Window Subsets Help

Table Browser for 2: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

	wavelength	flux	error
1	4800.	0.33784	0.00138
2	4800.01	0.33916	0.00138
3	4800.02	0.34006	0.00139
4	4800.03	0.33807	0.00138
5	4800.04	0.33011	0.00135
6	4800.05	0.32109	0.00131
7	4800.06	0.31473	0.00128
8	4800.07	0.30529	0.00124
9	4800.08	0.2909	0.00119
10	4800.09	0.2726	0.00111
11	4800.1	0.25574	0.00104
12	4800.11	0.24291	0.00099
13	4800.12	0.23368	0.00095
14	4800.13	0.23334	0.00095
15	4800.14	0.23935	0.00098
16	4800.15	0.24722	0.00101

DataLink Table

	semantics	description
1	#this	GBS original spectrum (vot)
2	#auxiliary	GBS original spectrum (ascii)
3	#auxiliary	GBS original spectrum (fits)
4	#auxiliary	GBS normalized spectrum (vot)
5	#auxiliary	GBS normalized spectrum (ascii)
6	#auxiliary	GBS normalized spectrum (fits)
7	#auxiliary	GBS original spectrum, resolved
8	#auxiliary	GBS original spectrum, resolved
9	#auxiliary	GBS original spectrum, resolved
10	#auxiliary	GBS normalized spectrum, resolved
11	#auxiliary	GBS normalized spectrum, resolved
12	#auxiliary	GBS normalized spectrum, resolved
13	http://www.moa.n...	Reference: Heiter et al. 2015
14	http://www.moa.n...	Reference: Blanco-Cuadros
15	http://www.moa.n...	Reference: Jofre et al. 2014
16	http://www.moa.n...	Reference: Jofre et al. 2015
17	http://www.moa.n...	Reference: Hawkins et al. 201

	service_def	error_mess
1	...	...
2	...	...
3	...	...
4	...	...
5	...	...
6	...	...
7	...	...
8	...	...
9	...	...
10	...	...
11	...	...
12	...	...
13	...	...
14	...	...
15	...	...
16	...	...
17	...	...

Row Link Type: Fixed Access URL

Row Detail

access\_url: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
content\_type: application/x-votable+xml  
content\_length:  
description: GBS original spectrum (vot)  
semantics: #this  
URL: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot

Type: TABLE Action: Load Table Invoke

Result:



# TOPCAT

TOPCAT

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Table List  
1: Gaia Benchmarks-180d  
2: ssap.php?ID=HARPS.GB

Current Table Properties  
Label: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
Location: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GB  
Name: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
Rows: 200,000  
Columns: 3  
Sort Order:   
Row Subset: All

TOPCAT(2): Table Browser

Window Subsets Help

Table Browser for 2: ssap.php?ID=HARPS.GBOG

	wavelength	flux	error
1	4800.	0.33784	0.00138
2	4800.01	0.33916	0.00138
3	4800.02	0.34006	0.00199
4	4800.03	0.33807	0.00138
5	4800.04	0.33011	0.00135
6	4800.05	0.32109	0.00131
7	4800.06	0.31473	0.00128
8	4800.07	0.30529	0.00124
9	4800.08	0.2909	0.00119
10	4800.09	0.2726	0.00111
11	4800.1	0.25574	0.00104
12	4800.11	0.24291	0.00099
13	4800.12	0.23368	0.00095
14	4800.13	0.23334	0.00095
15	4800.14	0.23935	0.00098
16	4800.15	0.24743	0.00101

DataLink Table

	semantics	description
1	#this	GBS original spectrum (vot)
2	#auxiliary	GBS original spectrum (ascii)
3	#auxiliary	GBS original spectrum (fits)
4	#auxiliary	GBS normalized spectrum (vot)
5	#auxiliary	GBS normalized spectrum (ascii)
6	#auxiliary	GBS normalized spectrum (fits)
7	#auxiliary	GBS original spectrum, resolved
8	#auxiliary	GBS original spectrum, resolved, ascii
9	#auxiliary	GBS original spectrum, resolved, fits
10	#auxiliary	GBS normalized spectrum, resolved
11	#auxiliary	GBS normalized spectrum, resolved, ascii
12	#auxiliary	GBS normalized spectrum, resolved, fits
13	http://www.moa.nu/...	Reference: Heiter et al. 2015
14	http://www.moa.nu/...	Reference: Blanco-Cuaresma et al. 2015
15	http://www.moa.nu/...	Reference: Jofre et al. 2014
16	http://www.moa.nu/...	Reference: Jofre et al. 2015
17	http://www.moa.nu/...	Reference: Hawkins et al. 2015

Row Link Type: Fixed Access URL

Row Detail

access\_url: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
content\_type: application/x-votable+xml  
content\_length:  
description: GBS original spectrum (vot)  
semantics: #this  
URL: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
Type: TABLE Action: Load Table  
Result:

Plane Plot

Window Layers Subsets Plot Export Help

flux

wavelength / angstrom

Frame Legend Axes STILTS

Position Subsets Form

Table: 2: ssap.php?ID=HARPS.GBOG\_HD220009...  
X: wavelength  
Y: flux

TOPCAT

File Views Graphics Joins Windows VO Interop Help

Table List

- 1: Gaia Benchmarks-180d
- 2: ssap.php?ID=HARPS.G

Current Table Properties

Label: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
 Location: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.G  
 Name: ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
 Rows: 200,000  
 Columns: 3  
 Sort Order:   
 Row Subset: All

DataLink Table

	semantics	description	content_type	id	access_url	save_def	error_message
1	#this	GBS original spectrum (vot)					
2	#auxiliary	GBS original spectrum (ascii)					
3	#auxiliary	GBS original spectrum (fits)					
4	#auxiliary	GBS normalized spectrum (vot)					
5	#auxiliary	GBS normalized spectrum (ascii)					
6	#auxiliary	GBS normalized spectrum (fits)					
7	#auxiliary	GBS original spectrum, resolved					
8	#auxiliary	GBS original spectrum, resolved					
9	#auxiliary	GBS original spectrum, resolved					
10	#auxiliary	GBS normalized spectrum, resolved					
11	#auxiliary	GBS normalized spectrum, resolved					
12	#auxiliary	GBS normalized spectrum, resolved					
13	http://www.hoa.n...	Reference: Heiter et al. 2015					
14	http://www.hoa.n...	Reference: Blanco-Cuaremas					
15	http://www.hoa.n...	Reference: Jofre et al. 2014, ...					
16	http://www.hoa.n...	Reference: Jofre et al. 2015, ...					
17	http://www.hoa.n...	Reference: Hawkins et al. 201					

Row Link Type: Fixed Access URL

Row Detail

access\_url: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
 content\_type: application/x-votable+xml  
 content\_length:  
 description: GBS original spectrum (vot)  
 semantics: #this  
 URL: http://svo2.cab.inta-csic.es/vocats/v2/gbs/ssap.php?ID=HARPS.GBOG\_HD220009&label=ori\_vot  
 Type: TABLE  
 Result:

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**Title:** Gaia FGK benchmark stars: Effective temperatures and surface gravities  
**Authors:** [Heiter, U.](#); [Jofré, P.](#); [Gustafsson, B.](#); [Korn, A. J.](#); [Soubiran, C.](#); [Thévenin, F.](#)  
**Affiliation:** AA(Institutionen för fysik och astronomi, Uppsala universitet, Box 516, 751 20, Uppsala, Sweden) urlike.heiter@physics.uu.se, AB(Institute of Astronomy, University of Cambridge, Madingley Rd, Cambridge, CB3 0HA, UK), AC(Institutionen för fysik och astronomi, Uppsala universitet, Box 516, 751 20, Uppsala, Sweden; Nordita, Roslagstullsbacken 23, 106 91, Stockholm, Sweden), AD(Institutionen för fysik och astronomi, Uppsala universitet, Box 516, 751 20, Uppsala, Sweden), AE(Univ. Bordeaux, CNRS, LAB, UMR 5804, 33270, Floirac, France), AF(Université de Nice-Sophia Antipolis, CNRS (UMR 7293), Observatoire de la Côte d'Azur, CS 34229, 06304, Nice Cedex 4, France)  
**Publication:** Astronomy & Astrophysics, Volume 582, id.A49, 33 pp. ([A&A Homepage](#))  
**Publication Date:** 10/2015

# Aladin v10.0

Aladin v10.0

Command: 17:44:08.70 -51:50:02.6

Frame: 2000 Projection: Spheric

DSS | SDSS | 2MASS | WISE | GALEX | PLANCK | AKARI | XMM | Fermi | Gaia | Simbad | HED | svo.cab/cat/miles +

DSS2 color

180° x 85.47°

svo.cab/cat/gbs

Field: access\_url  
Value: http://svo2.cab.inta-csic.es/vocats  
UCD: meta.ref.url  
Utype: obcore:Access.Reference  
Link to DataLink

select pan dist phot draw tag zoom speed fiber cross zoom copy paste

svo.cab/cat/gbs~2  
svo.cab/cat/gbs~1  
svo.cab/cat/gbs  
CDS/P/DSS2/color

epoch size opacity zoom

20:25:50.24640 +19:11:0  
180° x 85.47°

26 sel / 80 src 276s / 499Mb

access_url	RA	DEC	dis	star	obsId	origin	ingroup	teff	e_teff	logg	e_logg	vsini	e_vsini	feh	e
More info	206.0362...	-51.8340...	269159.0...	nuAra	HARPS, Ar...	HARPS	G_dwarfs	5902	66	4.3	0.03	2.2	0.8	0.33	
More info	229.0359...	-51.8240...	328159.0...	nuAra	UVES, nuA...	UVES	G_dwarfs	5902	66	4.2	0.03	2.2	0.8	0.33	
More info	19.18240...	19.18240...	308209.1...	Arcturus	HARPS	HARPS	M_giants	4286	35	1.05	0.15	3.8	1	-0.53	
More info	213.9153...	19.18240...	308209.1...	Arcturus	NARVAL, Ar...	NARVAL	FGK_giants	4286	35	1.64	0.09	3.8	1	-0.53	
More info	213.9153...	19.18240...	308209.1...	Arcturus	ATLAS, Ar...	ATLAS	FGK_giants	4286	35	1.64	0.09	3.8	1	-0.53	
More info	213.9153...	19.18240...	308209.1...	Arcturus	UVES_Arc...	UVES	FGK_giants	4286	35	1.64	0.09	3.8	1	-0.53	
More info	213.9153...	19.18240...	308209.1...	Arcturus	UVES_POP...	UVES_POP	FGK_giants	4286	35	1.64	0.09	3.8	1	-0.53	
More info	213.9153...	19.18240...	308209.1...	Arcturus	HARPS, Ar...	HARPS	FGK_giants	4286	35	1.64	0.09	3.8	1	-0.53	

grid study link comb box multiview meta

Search

# Aladin v10.0

Aladin v10.0

Command: 22:35:08.48 -66:13:24.6

DSS SDSS 2MASS WISE GALEX PLANCK AKARI XMM Fermi Gaia Simbad NED svo.cab/cat/miles +

DSS2 color

180° x 85.47°

Search

	origin	ingroup	teff	e_teff	logg	e_logg	vsini1	e_vsini1	feh	e_feh
HARPS	G dwarfs	5902	66	4.3	0.03	2.2	0.8	0.33		
UVES	G dwarfs	5902	66	4.3	0.03	2.2	0.8	0.33		
HARPS	F giants	4197	30	1.09	0.09	3.4	1	-0.53		
MARVAL	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		
ATLAS	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		
UVES	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		
UVES_POP	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		
HARPS	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		

Reference: Blanco-Cuaresma et al. 2014, A&A 566, A98.  
Reference: Jofre et al. 2014, A&A 564, A133.  
Reference: Jofre et al. 2015, A&A 582, A81.

26 sel / 80 src 455Mb

# Aladin v10.0

Aladin v10.0

File Interop Help

Command 22:35:08.48 -66:13:24.6

Frame |2000

Projection Spherc



DSS2 color

DSS SDSS 2MASS WISE GALEX PLANCK AKARI XMM Fermi Gaia Simbad NED svo.cab/cat/miles +

select  
pan  
data  
plot  
zoom  
crosshair  
filter  
crosshair  
copy  
paste  
print  
help  
search

svvo.cab/cat/gbs-2  
svvo.cab/cat/gbs-1  
svvo.cab/cat/gbs  
CDS/P/DSS2/color

search: 20:25:50.24640 +15:11:0

17:44:00.70 -15:50:02.6  
100" x 85.47"

26 sel / 30 src 455Mb

```
gbs_ori_txt_HARPS.Archive_muAra.txt [Read-Only] (/tmp/n...
File Edit View Search Tools Documents Help
gbs_ori_txt_HARPS.Archive_muAra.txt *
51 #Column 3: error
52 4800.000 31827.8125 154.654083252
53 4800.010 32159.0664062 156.263687134
54 4800.020 31911.0976562 155.058792114
55 4800.030 31972.3183594 155.356262207
56 4800.040 31699.0839844 154.028579712
57 4800.050 31396.8945312 152.560241699
58 4800.060 31177.6816406 151.495056152
59 4800.070 30560.7949219 148.497543335
60 4800.080 29477.4394531 143.233428955
61 4800.090 28264.0878906 137.337661743
62 4800.100 27293.6328125 132.622131348
63 4800.110 26466.9902344 128.605392456
64 4800.120 26056.2636719 126.609634399
65 4800.130 25617.7578125 124.478904724
66 4800.140 25557.0078125 124.183788191
67 4800.150 26233.296875 127.469856262
68 4800.160 27187.9804688 132.10874939
69 4800.170 28317.8203125 137.598724365
70 4800.180 29737.9082031 144.499069214
71 4800.190 30456.1308594 147.988967896
72 4800.200 31434.8222656 152.744506836
73 4800.210 32394.015625 157.405319214
74 4800.220 32552.6054688 158.175918579
75 4800.230 32955.046875 160.13142395
76 4800.240 33500.9414062 162.783966064
77 4800.250 33542.2265625 162.984573364
78 4800.260 33701.6992188 163.759475708
79 4800.270 33725.2148438 163.873733521
80 4800.280 33747.0351562 163.979751587
81 4800.290 33770.4170688 163.947681318
```

- GBS original spectrum (vot)
- GBS original spectrum (ascii)
- GBS original spectrum (fits)
- GBS normalized spectrum (vot)
- GBS normalized spectrum (ascii)
- GBS normalized spectrum (fits)
- GBS original spectrum, resolution: 47.000 (vot)
- GBS original spectrum, resolution: 47.000 (ascii)
- GBS original spectrum, resolution: 47.000 (fits)
- GBS normalized spectrum, resolution: 47.000 (vot)
- GBS normalized spectrum, resolution: 47.000 (ascii)
- GBS normalized spectrum, resolution: 47.000 (fits)

Reference: Helter et al. 2015, A&A 582, A49.  
Reference: Blanco-Cuaresma et al. 2014, A&A 566, A98.  
Reference: Jofre et al. 2014, A&A 564, A133.  
Reference: Jofre et al. 2015, A&A 582, A81

Plain Text	Tab Width: 4	Ln 1, Col 1	INS						
HARPS	# g1 ants	4197	35	1.64	0.09	3.8	1	-0.53	
NARVAL	FGK g1 ants	4286	35	1.64	0.09	3.8	1	-0.53	
ATLAS	FGK g1 ants	4286	35	1.64	0.09	3.8	1	-0.53	
UVES	FGK g1 ants	4286	35	1.64	0.09	3.8	1	-0.53	
UVES_POP	FGK g1 ants	4286	35	1.64	0.09	3.8	1	-0.53	
HARPS	FGK g1 ants	4286	35	1.64	0.09	3.8	1	-0.53	

Command 22:35:08.48 -66:13:24.6

DSS SDSS 2MASS WISE GALEX PLANCK AKARI XMM Fermi Gaia Simbad NED svo.cab/cat/miles +

Frame 2000

Projection Spherc

ALADIN

DSS2 color

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- Associated Articles (Breadcrumbs History)
- Also-Read Articles (Breadcrumbs History)
- Translate This Page

Title: Gaia FGK benchmark stars: Metallicity

Authors: Jofre, P.; Heiter, U.; Soubiran, C.; Bianco-Cuaresma, S.; Worley, C. C.; Pancino, E.; Cantat-Gaudin, T.; Magrini, L.; Bergmann, M.; González Hernández, I. I.; Hill, V.; Lardo, C.; de Laverny, P.; Lind, K.; Masseron, T.; Montes, D.; Mucciarelli, A.; Nordlander, T.; Reza-Bianco, A.; Sabuck, I.; Sarro, F.; Sousa, S. G.; Taberner, H.; Valignani, A.; Van Eck, S.

Affiliation: A&amp;IInstitute of Astronomy, University of Cambridge, Madingley Rd, Cambridge, CB3 0HA, UK; pjofo@ast.cam.ac.uk; IAB UMR 5804, Univ. Bordeaux - CNRS, 33270, Floirac, France); ADIDepartment of Physics and Astronomy, Uppsala University, Box 516, 75120, Uppsala, Sweden; urtikr.heiter@physics.uu.se; ACILAB UMR 5804, Univ. Bordeaux - CNRS, 33270, Floirac, France); A&amp;IInstitute of Astronomy, University of Cambridge, Madingley Rd, Cambridge, CB3 0HA, UK; Laboratoire Lagrange (UMR7293), Univ. Nice Sophia Antipolis, CNRS, Observatoire de la Côte d'Azur, 06304, Nice, France); AFINAF - Osservatorio Astronomico di Bologna, via Ranzani 1, 40127, Bologna, Italy; ASI Science Data Center, via del Politecnico s/n, 00133, Roma, Italy); AGINAF, Osservatorio Astronomico di Padova, Vissio Osservatorio 5, Padova, 35122, Italy; Dipartimento di Fisica e Astronomia, Università di Padova, vicolo Osservatorio 3, 35122, Padova, Italy); AH(NAF/Osservatorio Astrofisico di Arcetri, Largo Enrico Fermi 5, 50125, Firenze, Italy); AIIInstitute of Astronomy, University of Cambridge, Madingley Rd, Cambridge, CB3 0HA, UK; Max-Planck-Institut für Astrophysik, Karl-Schwarzschild-Str. 1, 85741, Garching, Germany); AIIInstituto de Astrofísica de Canarias, 38200 La Laguna, Tenerife, Spain); AK(Laboratoire Lagrange (UMR7293), Univ. Nice Sophia Antipolis, CNRS, Observatoire de la Côte d'Azur, 06304, Nice, France); ALINAF - Osservatorio Astronomico di Bologna, via Ranzani 1, 40127, Bologna, Italy); AM(Laboratoire Lagrange (UMR7293), Univ. Nice Sophia Antipolis, CNRS, Observatoire de la Côte d'Azur, 06304, Nice, France); AN(Institute of Astronomy, University of Cambridge, Madingley Rd, Cambridge, CB3 0HA, UK); AG(Institute of Astronomy, University of Cambridge, Madingley Rd, Cambridge, CB3 0HA, UK); Institut d'Astronomie et d'Astrophysique, Univ. Libre de Bruxelles, CP 226, Bd du Triomphe, 1050

GBS original spectrum (vot)  
 GBS original spectrum (ascii)  
 GBS original spectrum (fits)  
 GBS normalized spectrum (vot)  
 GBS normalized spectrum (ascii)  
 GBS normalized spectrum (fits)  
 GBS original spectrum, resolution: 47.000 (vot)  
 GBS original spectrum, resolution: 47.000 (ascii)  
 GBS original spectrum, resolution: 47.000 (fits)  
 GBS normalized spectrum, resolution: 47.000 (vot)  
 GBS normalized spectrum, resolution: 47.000 (ascii)  
 GBS normalized spectrum, resolution: 47.000 (fits)

Reference: Heiter et al. 2015, A&amp;A 582, A49.

Reference: Bianco-Cuaresma et al. 2014, A&amp;A 566, A98.

Reference: Jofre et al. 2014, A&amp;A 564, A133.

Reference: Jofre et al. 2015, A&amp;A 582, A81

180° x 85.47°

Search

origin	ingroup	teff	e.teff	logg	e.logg	vsini	e.vsin1	feh	e.
HARPS	G dwarfs	5902	66	4.3	0.03	2.2	0.8	0.33	
UVES	G dwarfs	5902	66	4.3	0.03	2.2	0.8	0.33	
HARPS	F giants	4197	30	1.09	0.15	9.4	1	-0.05	
MARVAL	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53	
ATLAS	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53	
UVES	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53	
UVES_POP	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53	
HARPS	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53	

www.cab.cat/gbs-2  
 www.cab.cat/gbs-1  
 www.cab.cat/gbs

prop  
 del  
 speech: -  
 size: -  
 desc: -  
 open: -  
 zoom: -

CDS/PL/DSS2/color

20:25:50.24640 +15:11:0

17:44:00.70 -51:50h:02.6

180° x 85.47°

26 sel / 30 src 455MB

# Aladin v10.0

Aladin v10.0

File Interop Help

Command 22:35:08.48 -66:13:24.6

Frame |2000

Projection |Spherc

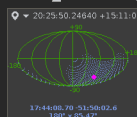


DSS2 color

wavelength	flux	error
4800.000	31827.81...5	154.6540...
4800.010	32159.06...	156.2636...
4800.020	31911.09...	155.0587...
4800.030	31972.31...	155.3562...
4800.040	31699.08...	154.0285...
4800.050	31396.89...	152.5602...
4800.060	31177.68...	151.4950...
4800.070	30560.79...	148.4975...
4800.080	29477.43...	143.2334...
4800.090	28264.08...	137.3376...
4800.100	27293.63...	132.6221...
4800.110	26466.99...	128.6053...
4800.120	26056.26...	126.6096...
4800.130	25617.75...	124.4789...
4800.140	25557.00...	124.1837...
4800.150	26233.29...	127.4698...
4800.160	27187.98...	132.1087...
4800.170	28317.82...	137.5987...
4800.180	29737.90...	144.4990...
4800.190	30456.13...	147.9889...
4800.200	31434.82...	152.7445...
4800.210	32394.01...	157.4053...
4800.220	32552.60...	158.1759...
4800.230	32955.04...	160.1314...
4800.240	33500.94...	162.7839...
4800.250	33542.22...	162.9845...
4800.260	33701.69...	163.7594...
4800.270	33725.21...	163.8737...
4800.280	33747.03...	163.9797...
4800.290	33740.41...	163.9476...

GBS original spectrum (vot)  
GBS original spectrum (ascii)  
GBS original spectrum (fits)  
GBS normalized spectrum (vot)  
GBS normalized spectrum (ascii)  
GBS normalized spectrum (fits)  
GBS original spectrum, resolution: 47.000 (vot)  
GBS original spectrum, resolution: 47.000 (ascii)  
GBS original spectrum, resolution: 47.000 (fits)  
GBS normalized spectrum, resolution: 47.000 (vot)  
GBS normalized spectrum, resolution: 47.000 (ascii)  
GBS normalized spectrum, resolution: 47.000 (fits)  
Reference: Helter et al. 2015, A&A 582, A49.  
Reference: Blanco-Cuadras et al. 2014, A&A 566, A98.  
Reference: Jofre et al. 2014, A&A 564, A133.  
Reference: Jofre et al. 2015, A&A 582, A81

e_vstn1	feh	e
0,8	0,33	
0,8	0,33	
1	-0,53	
1	-0,53	
1	-0,53	
3,8	1	-0,53
3,8	1	-0,53
3,8	1	-0,53



17:44:00.70 -51:50:02.6  
100" x 85.47"

26 sel / 80 src 455Mk

# SPLAT-VO 3.14

Starlink SPLAT-VO: Query VO for Spectra

File Options Resolver Interop Help

Service selection options  
Data Source  
 Observed data  Theoretical data

Wave Band  
 Radio  Millimeter  Infrared  
 Optical  UV  EUV  
 X-ray  Gamma-ray  ALL

Tags

SSAP Servers

short name	title
AXIS-XMS	AXIS-XMS Optical Spec...
BEFS	Berkeley Extreme and ...
BeSS	Be Stars Spectra
califa ssa	CALIFA DR3
CaT library	CaT Library, Empirical C...
CDFS SSAP	Optical Spectroscopy L...
CFA Hectospec	CFA Hectospec Spectra
Chandra	Chandra Observations
Chiu2006	L and T dwarf (Chiu et ...
COROT ARCHIVE	THE COROT PUBLIC AR...
CSIRO ASKAP SSA	CSIRO ASKAP Science ...
EHST/HLA/SSA	European Hubble Leg...
EHST/HST/SSAP	European HST SSAP ...
ELDIE	ELDIE archive
ELDIEinterp	Spectrum interpolator...
ELVIE	Extreme Ultraviolet Ex...
F/H Orders SSAP	Flash/Heros Split-Orde...
FEROS SSAP	FEROS Public Spectra
Flash/Heros SSAP	Flash/Heros SSAP
FUSE	Far Ultraviolet Spectro...
Gaia Benchmarks	The Gaia FGK Benchm...
GALEX	Galaxy Evolution Explo...
GAUDIVO	SSAP for GAUDI
H.E.S.S.	High Energy Stereosc...
HEAVENS @ ISDC	Mining the HEAVENS w...
Herschel SSAP	Herschel ESA Archive
HFA	HyperLeda FITS Archiv...
HIG	HI Extragalactic Datab...
HPOL	Wisconsin Halfwave Sp...
HST_FOS Spectra	Hubble Space Telesco...

Search parameters:  
Simple Query

Object:

Deci:

Radius:

Time:

Query Format:

Wavelength calibration:

Flux calibration:

Optional Parameters

Use	Name	Value	UCD
<input type="checkbox"/>			

Query: <SERVER>?REQUEST=queryData&POS=15.0,1.0&SIZE=122.0

Query results:

**Gaia Benchmarks**

Ind.	Title	Npoints	access_url	access_format	SpecSize	SpectralSI	Assockey	AssocID
1	G85 original spec	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_HARPS.Archive_tauCet
2	G85 original sped	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_HARPS.Archive_tauCet
3	G85 original spec	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fits	assoc_HARPS.Archive_tauCet
4	G85 normalized sj	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_HARPS.Archive_tauCet
5	G85 normalized s	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_HARPS.Archive_tauCet
6	G85 normalized s	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fits	assoc_HARPS.Archive_tauCet
7	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_ESPaD0nS_tauCet-1
8	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_ESPaD0nS_tauCet-1
9	G85 original spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fits	assoc_ESPaD0nS_tauCet-1
10	G85 normalized spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_ESPaD0nS_tauCet-1
11	G85 normalized spectrum (as...)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_ESPaD0nS_tauCet-1
12	G85 normalized spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fits	assoc_ESPaD0nS_tauCet-1
13	G85 original spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_NARVAL_tauCet
14	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_NARVAL_tauCet
15	G85 original spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fits	assoc_NARVAL_tauCet
16	G85 normalized spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_NARVAL_tauCet
17	G85 normalized spectrum (as...)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_NARVAL_tauCet
18	G85 normalized spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fits	assoc_NARVAL_tauCet
19	G85 original spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_HARPS.G80G_HD2200...
20	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_HARPS.G80G_HD2200...
21	G85 original spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fits	assoc_HARPS.G80G_HD2200...
22	G85 normalized spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_HARPS.G80G_HD2200...
23	G85 normalized spectrum (as...)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_HARPS.G80G_HD2200...
24	G85 normalized spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fits	assoc_HARPS.G80G_HD2200...



# SPLAT-VO 3.14

Links	ID	access_url	description	semantics	content_type
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 original spectrum (vot)	#this	application/x-vota...
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 original spectrum (ascii)	#auxiliary	text/plain
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 original spectrum (fits)	#auxiliary	application/fits
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 normalized spectrum (vot)	#auxiliary	application/x-vota...
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 normalized spectrum (ascii)	#auxiliary	text/plain
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 normalized spectrum (fits)	#auxiliary	application/fits
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 original spectrum, resolution: 47.000 (vot)	#auxiliary	application/x-vota...
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 original spectrum, resolution: 47.000 (ascii)	#auxiliary	text/plain
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 original spectrum, resolution: 47.000 (fits)	#auxiliary	application/fits
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 normalized spectrum, resolution: 47.000 (vot)	#auxiliary	application/x-vota...
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 normalized spectrum, resolution: 47.000 (ascii)	#auxiliary	text/plain
HARPS.Archive.tauCet		http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	G85 normalized spectrum, resolution: 47.000 (fits)	#auxiliary	application/fits
HARPS.Archive.tauCet		http://cdsads.u-strasbg.fr/abs/2015A&A...58...	Reference: Heiter et al. 2015, A&A 582, A49.	http://ww...	text/html

Value	UCD

Close

	Ind.	title	npoints	access_url	access_format	specsize	SpectralSI	Assockey	AssocID
Be Stars Spectra	1	G85 original spec	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_HARPS.Archive.tauCet
CaLFA DR3	2	G85 original spec	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_bt	assoc_HARPS.Archive.tauCet
CaT library	3	G85 original spec	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fts	assoc_HARPS.Archive.tauCet
CDFS SSAP	4	G85 normalized sfo	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_HARPS.Archive.tauCet
CfA Hectospec Spectra	5	G85 normalized s	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_bt	assoc_HARPS.Archive.tauCet
Chandra	6	G85 normalized s	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fts	assoc_HARPS.Archive.tauCet
Chiuz2006	7	G85 original spectrum	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_ESPa0n0ns.tauCet-1
COROT ARCHIVE	8	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_bt	assoc_ESPa0n0ns.tauCet-1
CSIRO ASKAP SSA	9	G85 original spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fts	assoc_ESPa0n0ns.tauCet-1
EHST/HLA/SSA	10	G85 normalized spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_ESPa0n0ns.tauCet-1
European HST SSAP ...	11	G85 normalized spectrum (as...)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_bt	assoc_ESPa0n0ns.tauCet-1
ELODIE	12	G85 normalized spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fts	assoc_ESPa0n0ns.tauCet-1
ELODIEinterp	13	G85 original spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_NARVAL.tauCet
ELVE	14	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_bt	assoc_NARVAL.tauCet
FIH Orders SSAP	15	G85 original spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fts	assoc_NARVAL.tauCet
FEROS SSAP	16	G85 normalized spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_NARVAL.tauCet
FlashHeros SSAP	17	G85 normalized spectrum (as...)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_bt	assoc_NARVAL.tauCet
GAUSE	18	G85 normalized spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fts	assoc_NARVAL.tauCet
Gala Benchmarks	19	G85 original spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	ori_vot	assoc_HARPS.G80G.HD2200...
GALEX	20	G85 original spectrum (ascii)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	ori_bt	assoc_HARPS.G80G.HD2200...
GAUDNVO	21	G85 original spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	ori_fts	assoc_HARPS.G80G.HD2200...
HEAS & S...	22	G85 normalized spectrum (vot)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	17000000	1E-10 L	nor_vot	assoc_HARPS.G80G.HD2200...
HEAVENS @ ISDC	23	G85 normalized spectrum (as...)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	10000000	1E-10 L	nor_bt	assoc_HARPS.G80G.HD2200...
Herschel SSAP	24	G85 normalized spectrum (fits)	200000	http://svo2.cab.inta-csic.es/vo...	application/x-votable+...	16000000	1E-9 L	nor_fts	assoc_HARPS.G80G.HD2200...
HFA		HyperLeda FITS Archiv...							
HIG		HiXtragalactic Datab...							
HPOL		Wisconsin Halfwave Sp...							
HST.FDS.Spectra		Hubble Space Telesco...							

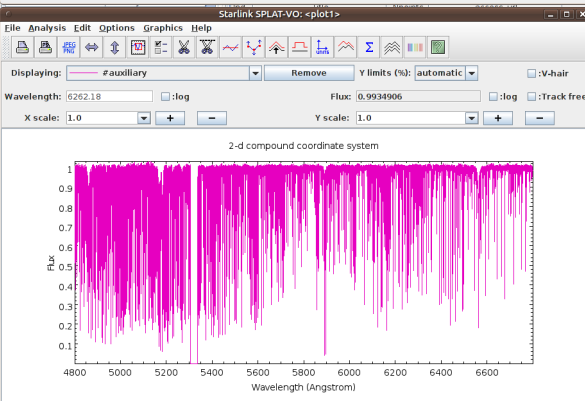
<input type="button" value="Display selected"/>	<input type="button" value="Display all"/>	<input type="button" value="Download selected"/>	<input type="button" value="Download all"/>	<input type="button" value="Deselect table"/>	<input type="button" value="Deselect all"/>	<input type="button" value="DataLink Services"/>
<input type="button" value="Save query results"/>		<input type="button" value="Restore query results"/>		<input type="button" value="Close"/>		



# SPLAT-VO 3.14

ID	access_url	description	semantics	content_type
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum (vot)	#this	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum (vot)	#auxiliary	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum, resolution: 47,000 (vot)	#auxiliary	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum, resolution: 47,000 (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum, resolution: 47,000 (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum, resolution: 47,000 (vot)	#auxiliary	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum, resolution: 47,000 (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum, resolution: 47,000 (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://cdsads.u-strasbg.fr/abs/2015A&A...58...	Reference: Heiter et al. 2015, A&A 582, A49.	http://ww...	text/html

Close



Access Format	Specsize	SpectralSI	AssocKey	AssocID
tion/x-votable+...	17000000	1E-10 L	ori_vot	assoc_HARPS.Archive_tauCet
tion/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_HARPS.Archive_tauCet
tion/x-votable+...	16000000	1E-9 L	ori_fits	assoc_ESPaD0nS_tauCet-1
tion/x-votable+...	17000000	1E-10 L	nor_vot	assoc_HARPS.Archive_tauCet
tion/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_HARPS.Archive_tauCet
tion/x-votable+...	16000000	1E-9 L	nor_fits	assoc_HARPS.Archive_tauCet
tion/x-votable+...	17000000	1E-10 L	ori_vot	assoc_ESPaD0nS_tauCet-1
tion/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_ESPaD0nS_tauCet-1
tion/x-votable+...	16000000	1E-9 L	ori_fits	assoc_ESPaD0nS_tauCet-1
tion/x-votable+...	17000000	1E-10 L	nor_vot	assoc_ESPaD0nS_tauCet-1
tion/x-votable+...	10000000	1E-10 L	nor_fits	assoc_ESPaD0nS_tauCet-1
tion/x-votable+...	17000000	1E-10 L	ori_vot	assoc_NARVAL_tauCet
tion/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_NARVAL_tauCet
tion/x-votable+...	16000000	1E-9 L	ori_fits	assoc_NARVAL_tauCet
tion/x-votable+...	17000000	1E-10 L	nor_vot	assoc_NARVAL_tauCet
tion/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_NARVAL_tauCet
tion/x-votable+...	16000000	1E-9 L	nor_fits	assoc_NARVAL_tauCet
tion/x-votable+...	17000000	1E-10 L	ori_vot	assoc_HARPS.G80G_HD2200...
tion/x-votable+...	10000000	1E-10 L	ori_tbt	assoc_HARPS.G80G_HD2200...
tion/x-votable+...	16000000	1E-9 L	ori_fits	assoc_HARPS.G80G_HD2200...
tion/x-votable+...	17000000	1E-10 L	nor_vot	assoc_HARPS.G80G_HD2200...
tion/x-votable+...	10000000	1E-10 L	nor_tbt	assoc_HARPS.G80G_HD2200...
tion/x-votable+...	16000000	1E-9 L	nor_fits	assoc_HARPS.G80G_HD2200...

load Deselect table Deselect all DataLink Services

store query results Close

# SPLAT-VO 3.14

ID	access_url	description	semantics	content_type
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum (vot)	#this	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum (vot)	#auxiliary	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum, resolution: 47,000 (vot)	#auxiliary	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum, resolution: 47,000 (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS original spectrum, resolution: 47,000 (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum, resolution: 47,000 (vot)	#auxiliary	application/x-vota...
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum, resolution: 47,000 (ascii)	#auxiliary	text/plain
HARPS.Archive_tauCet	http://svo2.cab.inta-csic.es/vocats/v2/gbs/ss...	GBS normalized spectrum, resolution: 47,000 (fits)	#auxiliary	application/fits
HARPS.Archive_tauCet	http://cdsads.u-strasbg.fr/abs/2015A&...58...	Reference: Heiter et al. 2015, A&A 582, A49.	http://ww...	text/html

Starlink SPLAT-VO: <plot1>

File Analysis Edit Options Graphics Help

Displaying: #auxiliary Remove Y limits: automatic

Wavelength: 6262.18 Flux: 0.99

X scale: 1.0 Y scale: 1.0

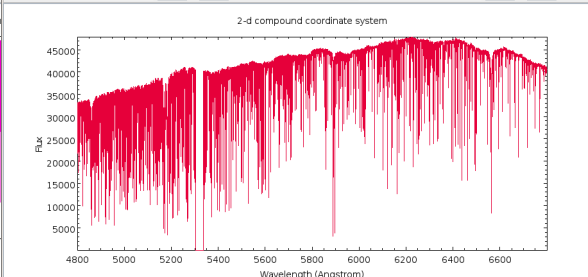
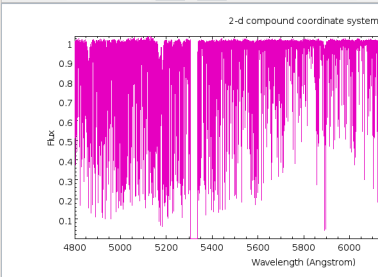
Starlink SPLAT-VO: <plot2>

File Analysis Edit Options Graphics Help

Displaying: #auxiliary Remove Y limits (%): automatic

Wavelength: 5029.51 Flux: 33397.34

X scale: 1.0 Y scale: 1.0



## Datalink core ontology

This is the description of the namespace <http://www.ivoa.net/rdf/dataLink/core/core> as of 2014-10-30.

Terms in this vocabulary are intended for use in the semantics column in the output from the DataLink-1.0 {links} capability. The terms here describe the relationship of the linked resource to the thing identified by the input ID value(s) and ID field in the record.

As specified in DataLink-1.0, terms from the vocabulary may be used in the Dataink output using only the fragment (e.g. #word) form (since this is the core vocabulary). We use this form below as the short form of the equivalent fully qualified term (e.g. <http://www.ivoa.net/rdf/datalink/core#word>).

Alternate formats: [RDF](#) [TTL](#)

<b>Predicate</b>	<b>Parent</b>	<b>Label</b>	<b>Comment</b>
#this		the data itself	the primary (as opposed to related) data of the identified resource
#progenitor		Progenitor	data resources that were used to create this dataset (e.g. input raw data)
#derivation		Derivation	data resources that are derived from this dataset (e.g. output data products)
#auxiliary		Auxiliary	auxiliary resources
#weight	#auxiliary	Weight map	resource with array(s) containing weighting values
#error	#auxiliary	Error map	resource with array(s) containing error values
#noise	#auxiliary	Noise map	resource with array(s) containing noise values
#calibration		Calibration data	resource used to calibrate the primary data
#bias	#calibration	Bias calibration data	used to subtract the detector offset level
#dark	#calibration	Dark calibration data	used to subtract the accumulated detector dark current
#flat	#calibration	Flat field calibration data	used to calibrate variations in detector sensitivity
#preview		Preview	low fidelity but easily viewed representation of the data
#preview-image	#preview	Image preview	preview of the data as a 2-dimensional image
#preview-plot	#preview	Plot preview	preview of the data as a plot (e.g. spectrum or light-curve)
#proc		Processing	server-side data processing result
#cutout	#proc	Cutout	a subsection of the primary data

## Datalink core ontology

This is the description of the namespace <http://www.ivoa.net/rdf/dataLink/core/core> as of 2014-10-30.

Terms in this vocabulary are intended for use in the semantics column in the output from the DataLink-1.0 {links} capability. The terms here describe the relationship of the linked resource to the thing identified by the input ID value(s) and ID field in the record.

As specified in DataLink-1.0, terms from the vocabulary (vocabulary). We use this form below as the short form

Alternate formats: [RDF](#) [TTL](#)

Predicate	Parent	Label
#this		the data itself
#progenitor		Progenitor
#derivation		Derivation
#auxiliary		Auxiliary
#weight	#auxiliary	Weight map
#error	#auxiliary	Error map
#noise	#auxiliary	Noise map
#calibration		Calibration data
#bias	#calibration	Bias calibration data
#dark	#calibration	Dark calibration data
#flat	#calibration	Flat field calibration data
#preview		Preview
#preview-image	#preview	Image preview
#preview-plot	#preview	Plot preview
#proc		Processing
#cutout	#proc	Cutout

## more precise vocabulary?

- auxiliary-spectrum
  - auxiliary-spectrum-science
  - auxiliary-spectrum-error
- auxiliary-image
- auxiliary-bibcode
- ...

server-side data processing result  
a subsection of the primary data

- applications understand datalink as one would expect.

⇒ Good

although visibility of datalink is not always that good

- SSA: more than one column with URL's

- not easy to find out which one is the spectrum and which one is the datalink
- “tricks” are needed.

⇒ Need some improvement in protocol (?)

- Datalink content / semantics

- Not enough semantics information to identify link content.
- For instance, “this is a spectrum”

⇒ We need more terms in Datalink vocabulary (?)

THANK YOU!