

DataLink

Feedback from an implementation for stellar libraries.

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IVOA Interoperability meeting
Victoria, May 2018



- 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	Paula Jofre	Eswar Reddy	David Montes	Claus Leitherer
09:30-10:00	Cristina Chiappini			Anke Arentsen	Gustavo Bruzual
10:00-10:30	Coffee-break	Coffee-break and posters			
10:30-11:00		Nicolas Lodieu	Bruno Dias	Renbin Yan	Natacha Zanon
11:00-11:30		Riano E. Giribaldi	Round-table "What does the VO do for us?", chair P. Prugniel	Yue WU	Luis Gabriel Dahmer Hahn
11:30-12:00	Anals Gonneau	Rodolfo Smiljanic		Ranjan Gupta	Closing
12:00-12:30	Clare Worley				
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	

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.

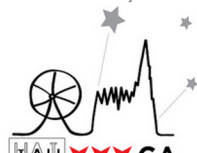
A report will be prepared before the next IAU GA in 2018.

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

Search
 (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 (?)	Group (?)	T _{eff} (K)	e _{Teff} (K)	logg (?)	e _{logg} (?)	[Fe/H] (?)	e _[Fe/H]
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	
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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-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)

Library	Star	FGK giants	Age	Distance	Parallax	Proper Motion	Radial Velocity	Stellar Type
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.url" datatype="char" arraysize="**"/>  
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-<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>
```

```
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<DESCRIPTION>Format for link to DataLink</DESCRIPTION>  
</FIELD>  
<FIELD name="access_url" ucd="meta.ref.url" utype="obscore:Access.Reference" datatype="char" arraysize="**">  
<DESCRIPTION>Link to DataLink</DESCRIPTION>  
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</FIELD>
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```
<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  
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</GROUP>  
</RESOURCE>  
</VOTABLE>
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VO Service: DataLink

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- <VOTABLE version="1.1" xsi:schemaLocation="http://www.ivoa.net/xml/VOTable/v1.1">
- <RESOURCE type="results">
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  <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://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum (vot)	#this	application/x-votable+xml
2	ESPaDOnS_betVir-1	http://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum (ascii)	#auxiliary	text/plain
3	ESPaDOnS_betVir-1	http://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum (fits)	#auxiliary	application/fits
4	ESPaDOnS_betVir-1	http://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum (vot)	#auxiliary	application/x-votable+xml
5	ESPaDOnS_betVir-1	http://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum (ascii)	#auxiliary	text/plain
6	ESPaDOnS_betVir-1	http://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum (fits)	#auxiliary	application/fits
7	ESPaDOnS_betVir-1	http://svo2.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://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum, resolution: 47.000 (ascii)	#auxiliary	text/plain
9	ESPaDOnS_betVir-1	http://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS original spectrum, resolution: 47.000 (fits)	#auxiliary	application/fits
10	ESPaDOnS_betVir-1	http://svo2.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://svo2.cab.inta-csic.es/VocatsV2/gbs/ssap.php?...	GBS normalized spectrum, resolution: 47.000 (ascii)	#auxiliary	text/plain
12	ESPaDOnS_betVir-1	http://svo2.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

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- <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	LepEor	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

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

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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

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

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

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:

Invoke

TOPCAT

TOPCAT

File Views Graphics Joins Windows VO Interop Help

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.woa.n...	Reference: Heiter et al. 2015					
14	http://www.woa.n...	Reference: Blanco-Cuaresma					
15	http://www.woa.n...	Reference: Jofre et al. 2014, ...					
16	http://www.woa.n...	Reference: Jofre et al. 2015, ...					
17	http://www.woa.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
 ulrike.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, A...	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 bar 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	K giants	4197	30	1.09	0.15	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-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.

26 sel / 80 src 455Mb

Aladin v10.0

Aladin v10.0

File View Interop Help

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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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.; Bergemann, 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.

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- 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)
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- Reference: Heiter et al. 2015, *A&A* 582, A49.
Reference: Bianco-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

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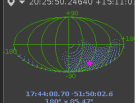
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UVES	G dwarfs	5902	66	4.3	0.03	2.2	0.8	0.33		
HARPS	F giants	4197	30	1.09	0.15	9.4	1	-0.05		
MARVAL	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		
ATLAS	FGK giants	4286	35	1.64	0.09	3.8	1	-0.53		
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UVES_POP	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		

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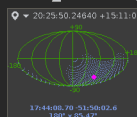
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Reference: Helter et al. 2015, A&A 582, A49.
Reference: Blanco-Cuadras et al. 2014, A&A 566, A98.
Reference: Jofre et al. 2014, A&A 564, A133.
Reference: Jofre et al. 2015, A&A 582, A81

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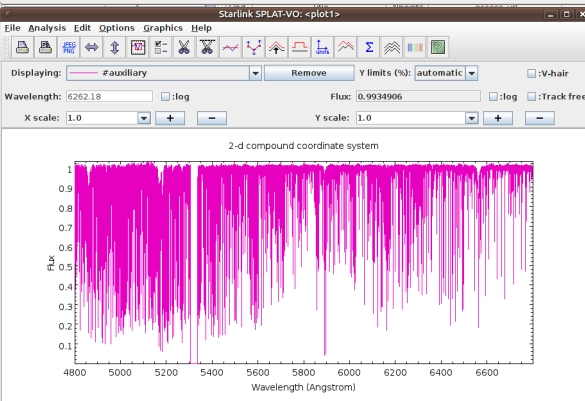
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File Analysis Edit Options Graphics Help

Displaying: #auxiliary Remove Y limits: automatic

Wavelength: 6262.18 Flux: 0.99

X scale: 1.0 Y scale: 1.0

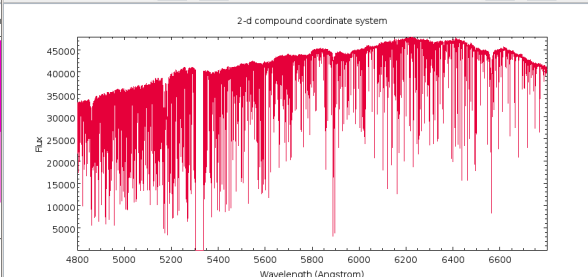
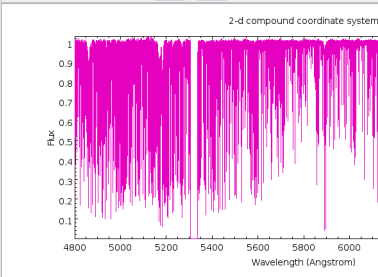
Starlink SPLAT-VO: <plot2>

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](#)

Predicate	Parent	Label	Comment
#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 (see the DataLink-1.0 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!