

# Spectra & images in VizieR



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# □ Introduction



- An indexation service dedicated for associated data spectra, images, time-series
  - Dedicated for the associated data published by authors in A&A, AAS, MNRAS and also from surveys
  - Metadatas informed by the authors and the CDS documentalists
- New VO services to access Data (in FITS/VOTable) managed by Saada
  - ObsCore meta-data
  - SIA/SSA and ObsTap access

## Data access URL

User interface : <http://cdsarc.u-strasbg.fr/assodata/>

SIA service : [http://cdsarc.u-strasbg.fr/viziersaada/siaservice?collection=\[vizier\]](http://cdsarc.u-strasbg.fr/viziersaada/siaservice?collection=[vizier])

SSA service : [http://cdsarc.u-strasbg.fr/saadavizier/ssaservice?collection=\[vizier\]](http://cdsarc.u-strasbg.fr/saadavizier/ssaservice?collection=[vizier])

ObsTAP service : <http://cdsarc.u-strasbg.fr/saadavizier.tap/tap>

# □ Saada architecture



## A database generator for images/spectra and tables VO oriented

- Documents (Fits/VOTable) indexation :  
provide the mappings with the resources headers
  - In a global table containing all resources
  - In dedicated tables for each VizieR catalogues
- Load test performed successfully
- Customizable metadata
- VO services : SIA, SSA, TAP and registry facilities
- API available to extract Fits/VOTable headers (used in the upcoming upload web interface to help authors to fill metadata)
- Adapted to pipelines which enable meta data in input (ant script for metadata ingestion)

# □ Integration progress



## Implementation progress

- VO data access : SIA, SSA, ObsTAP
- New services are in the registry

## Contents ingestion progress

- Data ingestion began, slowly ;  
the new pipeline needs an adaptation period for CDS
- Authors pipeline ingestion in test

## Saada updates version 2.26

- Use ObsCore (mandatory) as metadata
- API to map Fits header and ObsCore
- WCS detection Improvement (more projections are detected)
- Ingestion improvements for collections



## Metadata choice

- ObsCore DM limited to the mandatory items
- Choice discussed with the AAS editors
- Metadata adding :
  - em\_band : Gamma, Xray, EUV, UV, Optical, Millimeter, IR, ...  
(a spectral band alternative when the limits are not detected in headers)
  - has\_wcs detection flag

## Identifiers

- obs\_collection: the catalogue name  
example: SDSS, CoRoT, J/A+A/378/861
- obs\_id: the filename, example: 10144aa.fit
- obs\_publisher\_id: exemple: ivo://CDS/J/A+A/378/861?res=10144aa.fits

# □ The contents



## Currently available

- Images : 29 catalogues, ~18,000 images ?
- Spectra/time-series : 23 catalogues, ~84,000 documents

## In the pipeline

- Images : ~150 catalogues
- Spectra/time-series : ~150 catalogues

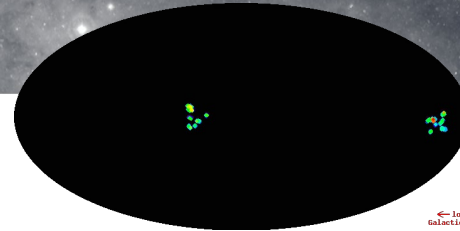
## And also 2 surveys

- CoRoT: ~170,000 time-series in Fits format
- Lamost : ~2,400,000 spectra in Fits format

# □ The Contents



## CoRoT time-series



European space telescope for exoplanet detection (CNES)  
<https://corot.cnes.fr/en/COROT>

- Spectral range : 300-950 nm (Optical)
- 2 modes of observations :
  - Bright star mode dedicated to very precise seismology  
10 stars in magnitude 6-9 (duration 20-150 days)
  - The faint star mode, observing a very large number of stars , to detect transits (~177,000 targets)  
12,000 stars observed in magnitude 12-15.5



Output : ~177,000 observations in FITS formats

VizieR catalogue : <http://vizier.u-strasbg.fr/viz-bin/VizieR?-source=B/corot>

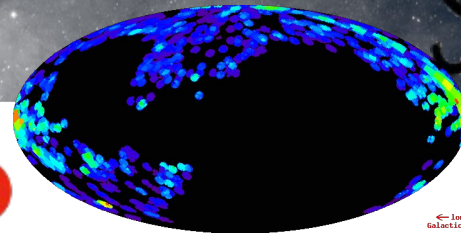
VizieR associated data :

[http://csdarc.u-strasbg.fr/assocdata/?obs\\_collection=B/corot](http://csdarc.u-strasbg.fr/assocdata/?obs_collection=B/corot)

# □ The Contents



## Lamost spectra (DR1)



The Large sky Area Multi-Object Fiber Spectroscopic Telescope (LAMOST)  
<http://www.lamost.org/public/?locale=en>

Spectral ranges : 370-900nm (Optical)

Observations : 2204696 objects including

- 1,944,329 stars, 12,082 galaxies, 5017 quasars
- 243268 unknown objects.

Output : 2,204,860 spectra

VizieR catalogue : <http://vizier.u-strasbg.fr/viz-bin/VizieR?-source=V/146>

VizieR associated data :

[http://cdsarc.u-strasbg.fr/assocdata/?obs\\_collection=V/146](http://cdsarc.u-strasbg.fr/assocdata/?obs_collection=V/146)

Lamost SSA service : (China-VO) <http://dr1.lamost.org/voservice/ssap>



Figure 1 LAMOST



# □ Demo



# Associated data web interface



## Search associated data among the VizieR catalogues

This web page is an access to the VizieR A result of the documentation assigned by documentalist team (see the VizieR inges

### VO compatibility

The meta-data and the search engine are The data are gathered with the Saada eng

Simple search  ObsTAP Query

Request :

```
SELECT TOP 500 [default] FROM obscure
WHERE dataproduct_type = 'image'
AND 1=CONTAINS(POINT('ICRS',s_ra,s_dec),CIRCLE('ICRS',266.416833, -29.007806,1))
```

Simple search

ObsTAP Query

Search by position :

Search by spectral band :

Search by time data :   (MJD)

Search by catalog/Identifier:

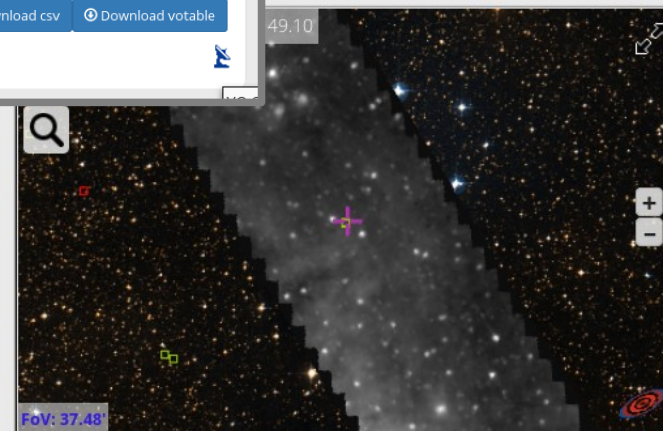
Spectrum / Time series  Image

500 entries max

ns. This tool is the by the CDS



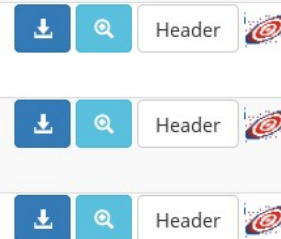
d by VO softwares. on.



Show 10 entries

43 entries

Preview	Target	Data collection	Ra	Dec	Band min (nm)	Band max (nm)	Begin time (MJD)	End time (MJD)	Facility
	CENTERM27M03	II/243	266.278	-29.186	7,000.000	15,000.000	50,350.645		ISO
	CENTERM57M03	II/243	266.098	-29.441	7,000.000	15,000.000	50,350.738		ISO
	CENTER15	II/243	266.051	-28.699	7,000.000	15,000.000	50,174.178		ISO



# □ Saada and VizieR



## Use VizieR images in Aladin using SIA

The screenshot shows the Aladin v9.0 interface. At the top, the location is set to 18:03:43.09 -20:46:12.7. The main window displays a multi-wavelength astronomical image with a red rectangular region of interest. A white box highlights a specific source, and a blue arrow points to it. A VizieR photometry plot is overlaid on the image, showing log flux density (log f<sub>ν</sub>) versus log frequency (log ν). The plot has a y-axis labeled 'log f<sub>ν</sub> 670μJy' and an x-axis labeled 'log ν 10THz'. The plot shows a single data point at approximately 18 03 43.09 -20 46 12.7. The interface includes a toolbar on the right with various tools like select, pan, zoom, and a list of data layers on the right side. At the bottom, there is a table of data layers and a search bar.

	dataprod...	c: target n...	obs id	obs coll...	obs publ...	access url	access f...	ai s s s	s region	s t t t e r	em band	o ucd	pol states	facility...	instr
image	-	1806-203	21cm.fits	J/A+A/53...	ivo://CD...	http://c...	applicat...	1 2 - 0	FoV	7 4!		obs.image	I	VLA	VLA
image	-	G011.033...	24mu.fits	J/A+A/53...	ivo://CD...	http://c...	applicat...	8 2 - 0	FoV	0		obs.image	NotSet		
image	-	10.25972...	8mu.fits	J/A+A/53...	ivo://CD...	http://c...	applicat...	8 2 - 0	FoV	0		obs.image	NotSet		

ASOV 2016 - spectre/images dans VizieR

# The Saada web interface



saadavizier vizier>SPECTRUM>sp\_V\_146

about

- vizier
  - IMAGE
  - SPECTRUM
    - sp\_J\_AA\_439\_11
    - sp\_J\_AA\_572\_A
    - sp\_J\_AA\_580\_A
    - sp\_J\_ApJ\_755\_9
    - sp\_J\_AA\_563\_A
    - sp\_J\_AA\_582\_A
    - sp\_J\_AA\_570\_A
    - sp\_J\_ApJS\_110
    - sp\_J\_AA\_564\_A
    - sp\_V\_127A
    - sp\_J\_ApJS\_122
    - sp\_J\_AA\_512\_A
    - sp\_J\_AA\_414\_6
    - sp\_J\_AA\_567\_A
    - sp\_J\_AA\_545\_A
    - sp\_III\_251
    - sp\_J\_ApJS\_172
    - sp\_V\_146

Previous Next Show 10 entries Showing 1 to 10 of 100 entries

Access	Position	Name	Energy Range (m)	time range	_z	_class
	22:32:04.92+01:08:32.1 (s)	LAMOST	3.70E-07 - 9.08E-07	19/10/2012 20:17:3 to 21:8:2	2.1281	QSO
	22:25:51.07+01:15:51.5 (s)	LAMOST	3.70E-07 - 9.10E-07	19/10/2012 20:15:2 to 21:2:36	0.8131	QSO
	22:26:44.79+00:50:20.0 (s)	LAMOST	3.70E-07 - 9.10E-07	19/10/2012 20:15:2 to 21:2:36	3.0457	QSO
	22:28:04.03+00:57:39.5 (s)	LAMOST	3.70E-07 - 9.10E-07	19/10/2012 20:15:2 to 21:2:36	2.0860	QSO
	22:30:22.69+01:59:52.3 (s)	LAMOST	3.70E-07 - 9.10E-07	19/10/2012 20:8:17 to 20:59:0	1.2613	QSO
	22:32:35.21+02:47:55.8 (s)	LAMOST	3.70E-07 - 9.06E-07	19/10/2012 20:12:16 to 21:2:21	2.1509	QSO
	22:29:36.31+01:43:11.2 (s)	LAMOST	3.70E-07 - 9.10E-07	19/10/2012 20:17:13 to 21:8:29	0.5028	QSO
	22:34:12.49+00:59:06.2 (s)	LAMOST	3.70E-07 - 9.10E-07	19/10/2012 20:18:56 to 21:14:25	2.1509	QSO
	22:35:23.57+02:24:46.2 (s)	LAMOST	3.70E-07 - 9.08E-07	19/10/2012 20:16:38 to 21:5:5	0.6260	QSO
	22:37:10.96+02:10:51.2 (s)	LAMOST	3.70E-07 - 9.08E-07	19/10/2012 20:16:38 to 21:5:5	3.0822	QSO

Previous Next Show 10 entries Showing 1 to 10 of 100 entries

**SUBMIT**

Position Const on Keywords UCD based Const Pattern Plain Text Query

Result Limit

100

2/2



Query Mode

Available Keywords

- wat1\_001 (String)
- crval1 (double)
- cd1\_1 (double)
- crpix1 (int)
- ctype1 (String)
- dc\_flag (int)
- class (String)

Active Constraints

\_z > 0 -  
AND \_class = QSO -

cdsarc.u-strasbg.fr/saadavizier/# | le