

Datalink SIAV2 and SODA feedback



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acknowledges Chaitra, Carlos and DAL WG

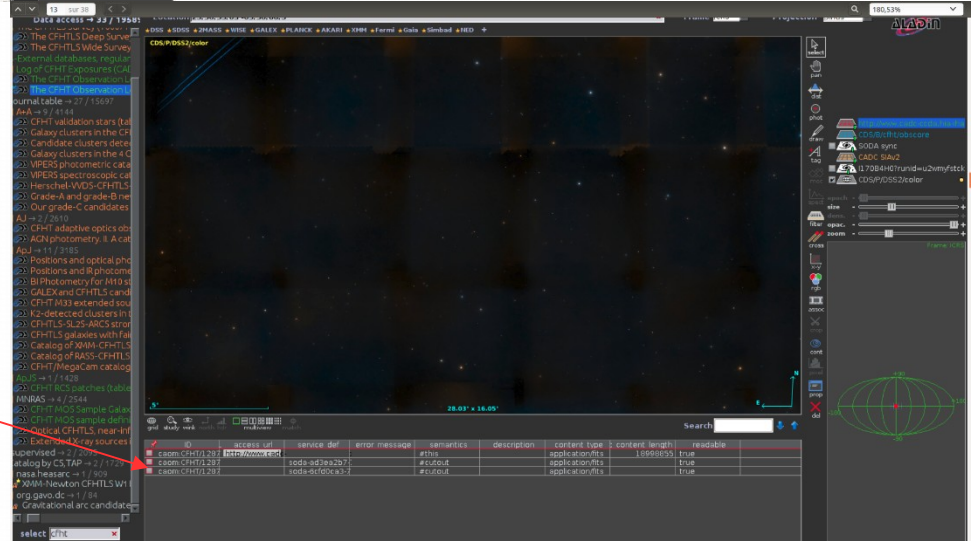


The datalink recognition problem outside obscore context



The field with the Datalink url is not recognized as such. Client cannot prepare appropriate behavior (DataLink popup window)

DataLink table is displayed in a wrong mode / not recognized as such



What does the current specification recommend ?

- In the case we are in Obscore :
 - Two fields give the `access_url` and `access_format` (Obscore names and utypes)
- If the table doesn't contain the `{links}` resource URL the specification says:
 - A DataLink Service descriptor helps us to define the `{links}` resource URL by referring to a column containing an ID of the datasets



Service descriptor

```
<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://example.com/mylinks" />
  <GROUP name="inputParams">
    <PARAM name="ID" datatype="char" arraysize="*" value="" ref="primaryID"/>
  </GROUP>
</RESOURCE>
```



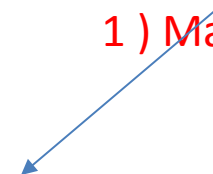
Comments

- **Solution 1 works if we have the URL in a column or add it**
 - Requires tagging column with appropriate utype, and add the format FIELD or PARAM
 - Works well if URL doesn't retrieve datalink at all rows
- **Solution 2 works if we have the ID used by DataLink in one column**
 - A DataLink Service descriptor helps us to define the {links} resource URL by referring to a column containing an ID of the datasets



```
<RESOURCE type="results">
  <INFO name="QUERY_STATUS" value="OK"/>
  <TABLE>
    <DESCRIPTION>SpeX Prism Library. Published spectra.</DESCRIPTION>
    <PARAM name="Creator" utype="ssa:DataID.Creator" datatype="char" arraysize="*" value="SVO"/>
    <PARAM name="DataSource" utype="ssa:DataID.DataSource" datatype="char" arraysize="*" value="survey"/>
    <PARAM name="CreationType" utype="ssa:DataID.CreationType" datatype="char" arraysize="*" value="archival"/>
    <PARAM name="Publisher" utype="ssa:Curation.Publisher" datatype="char" arraysize="*" value="SVO/CAB"/>
    <PARAM name="PublisherID" utype="ssa:Curation.PublisherID" datatype="char" arraysize="*" value="ivo://svo.cab"/>
    <PARAM name="PublisherDID" utype="ssa:Curation.PublisherDID" datatype="char" arraysize="*" value="ivo://svo.cab/cat/spex"/>
    <PARAM name="Reference" utype="ssa:Curation.Reference" datatype="char" arraysize="*" value="http://svo2.cab.inta-csic.es/vocats/v2/spex/documentation.php"/>
    <PARAM name="Contact.Name" utype="ssa:Curation.Contact.Name" datatype="char" arraysize="*" value="Enrique Solano"/>
    <PARAM name="Contact.Email" utype="ssa:Curation.Contact.Email" datatype="char" arraysize="*" value="esm@cab.inta-csic.es"/>
    <PARAM name="input:RA" datatype="double" value="180.000000"/>
    <PARAM name="input:DEC" datatype="double" value="0.000000"/>
    <PARAM name="input:SR" datatype="double" value="20.000000"/>
    <PARAM name="input:VERB" datatype="int" value="2">...</PARAM>
    <FIELD name="RA" ucd="POS_EQ_RA_MAIN" unit="deg" datatype="double">...</FIELD>
    <FIELD name="DEC" ucd="POS_EQ_DEC_MAIN" unit="deg" datatype="double">...</FIELD>
    <FIELD name="dis" ucd="POS_ANG_DIST_GENERAL" unit="arcsec" datatype="float">...</FIELD>
    <FIELD ID="name" name="name" ucd="ID_MAIN" unit="" datatype="char" arraysize="*">...</FIELD>
    <FIELD name="name_link" ucd="meta.ref.url" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="name2m" name="name2m" ucd="" unit="" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="jmag" name="jmag" ucd="" unit="mag" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="hmag" name="hmag" ucd="" unit="mag" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="ksmag" name="ksmag" ucd="" unit="mag" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="optspty" name="optspty" ucd="" unit="" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="nirspty" name="nirspty" ucd="" unit="" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="ref" name="ref" ucd="" unit="" datatype="char" arraysize="*">...</FIELD>
    <FIELD ID="dateobs" name="dateobs" ucd="" unit="" datatype="char" arraysize="*">...</FIELD>
    <FIELD name="access_format" ucd="meta.note" utype="obscure:Access.Format" type="hidden" datatype="char" arraysize="*">...</FIELD>
    <FIELD name="access_url" ucd="meta.ref.url" utype="obscure:Access.Reference" datatype="char" arraysize="*">...</FIELD>
  <DATA>
    <TABLEDATA>
      <TR>
        <TD>181.9465583</TD>
        <TD>2.7402583</TD>
        <TD>12099.007703582</TD>
        <TD>SDSS J120747.17+024424.8</TD>
      <TD>
        http://simbad.u-strasbg.fr/simbad/sim-basic?Ident=SDSS+J120747.17%2B024424.8
      </TD>
        <TD>J12074717+0244249</TD>
        <TD>15.58</TD>
        <TD>14.561</TD>
        <TD>13.986</TD>
        <TD>L8</TD>
        <TD>T0</TD>
      <TD>
        Looper, Kirkpatrick, and Burgasser (2007) AJ, 134, 1162
      </TD>
        <TD>2006 Dec 21</TD>
        <TD>application/x-votable+xml;content=datalink</TD>
      <TD>
        http://svo2.cab.inta-csic.es/vocats/v2/spex/dl.php?ID=SDSS+J120747.17%2B024424.8
      </TD>
    </TR>
  </TABLEDATA>
</DATA>
</TABLE>
</RESOURCE>
```

SVO Example .
Cortesy of Carlos Rodri
1) Main Table



```

</FIELD>
▼<FIELD ID="semantics" arraysize="*" datatype="char" name="semantics" ucd="meta.code">
  ▼<DESCRIPTION>
    What kind of data is linked here? Standard identifiers here include science, calibration, preview, info, auxiliary
  </DESCRIPTION>
</FIELD>
▼<FIELD ID="content_type" arraysize="*" datatype="char" name="content_type" ucd="meta.code.mime">
  <DESCRIPTION>MIME type for the data returned.</DESCRIPTION>
</FIELD>
▼<FIELD ID="content_length" datatype="long" name="content_length" ucd="phys.size;meta.file" unit="byte">
  <DESCRIPTION>Size of the resource at access_url</DESCRIPTION>
  <VALUES null="-1"></VALUES>
</FIELD>
▼<DATA>
  ▼<TABLEDATA>
    ▼<TR>
      <TD>2MASS J11463232+0203414</TD>
      ▼<TD>
        http://svo2.cab.inta-csic.es/vocats/v2/spex/ssap.php?ID=2MASS+J11463232%2B0203414&label=spec_vot
        </TD>
      <TD>Spectrum (votable)</TD>
      <TD>#this</TD>
      <TD>application/x-votable+xml</TD>
      <TD>-1</TD>
    </TR>
    ▼<TR>
      <TD>2MASS J11463232+0203414</TD>
      ▼<TD>
        http://svo2.cab.inta-csic.es/vocats/v2/spex/ssap.php?ID=2MASS+J11463232%2B0203414&label=spec_txt
        </TD>
      <TD>Spectrum (ASCII)</TD>
      <TD>#auxiliary</TD>
      <TD>text/plain</TD>
      <TD>-1</TD>
    </TR>
    ▼<TR>
      <TD>2MASS J11463232+0203414</TD>
      <TD>http://adsabs.harvard.edu/abs/2004AJ...127.2856B</TD>
      <TD>Reference: Burgasser et al. (2004) AJ, 127, 2856</TD>
      ▼<TD>
        http://www.ivoa.net/rdf/Vocabularies/UCD#Metarefurl
        </TD>
      <TD>text/html</TD>
      <TD>-1</TD>
    </TR>
    ▼<TR>
      <TD>2MASS J11463232+0203414</TD>
      <TD>http://pono.ucsd.edu/~adam/browndwarfs/spexprism/</TD>
      <TD>Reference: SpeX Prism Library web page.</TD>
      ▼<TD>
        http://www.ivoa.net/rdf/Vocabularies/UCD#Metarefurl
        </TD>
      <TD>text/html</TD>
      <TD>-1</TD>
    </TR>
  </TABLEDATA>
</DATA>
</TABLEDATA>

```

SVO Example . Cortesy of Carlos Rodri 2) Datalink Table



LINK

- Use classical VOTABLE LINK instead (attached to the table level) with new **content-type = « votable/xml;datalink »**

<FIELD...> <LINK content-type="xxx" href="xxx" ...>

Example for a FITS image:

```
<FIELD name="Image" ucd="meta.ref.url" datatype="char" arraysize="1">  
  <DESCRIPTION>[YN] Epic image of this observation (FITS)</DESCRIPTION>
```

```
  <LINK content-type="image/fits" title="Image" href="http://vizier.u-strasbg.fr/viz-bin/nph-htx/A?%5cvizContent%7b${Image}foo&bar"/>  
</FIELD>...
```

- Current list of content-types : image/fits, spectrum/fits, catalog/fits , etc..
- Behavior of application (Aladin) changes according to that
- Add content-type = "application/x-votable+xml ;content=datalink »

```
<TABLE name=« Catalogue" >
```

```
  <LINK content-type=« application/x-votable+xml;content=datalink" title="DataLink" />
```

```
  ....
```

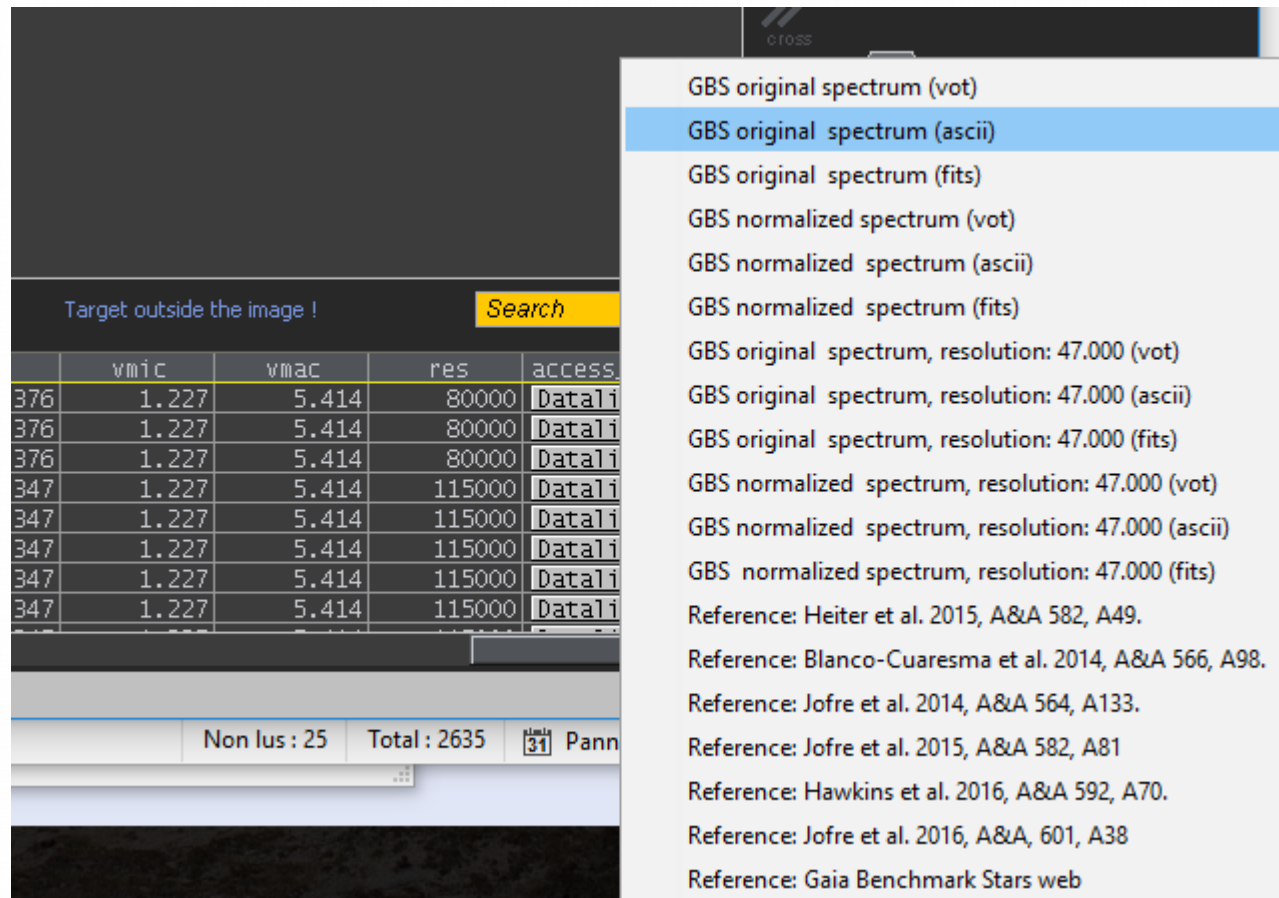


Proposal (implementation note)

- Beside current solutions, recommend usage of LINK element when we are in more complex cases
 - Templated URL
 - Title
 - Extends to simple LINK to any kind of datasets (spectra,TimeSeries, images, cubes ...)
- Writing an INFO tag with value DataLink in the response



Proposal (implementation note)



Target outside the image ! Search

	vmic	vmac	res	access
376	1.227	5.414	80000	Datali
376	1.227	5.414	80000	Datali
376	1.227	5.414	80000	Datali
347	1.227	5.414	115000	Datali
347	1.227	5.414	115000	Datali
347	1.227	5.414	115000	Datali
347	1.227	5.414	115000	Datali
347	1.227	5.414	115000	Datali

Non lus : 25 Total : 2635 31 Pann

- 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&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
- Reference: Hawkins et al. 2016, A&A 592, A70.
- Reference: Jofre et al. 2016, A&A, 601, A38
- Reference: Gaia Benchmark Stars web



Semantics

- Semantic tells what is the status of the resource we link to the dataset with respect to it :
 - This → an avatar of the dataset itself
 - Preview → a preview of the dataset
 - Cutout,proc → service applied to the dataset
 - Auxiliary → associated file (eg log file, etc..)
 - Nothing to attach TimeSeries, Spectra to sources in a catalog
- Proposal for attached dataproducts in this context :
 - Create « associated data » semantics and branch. Add spectrum TimeSeries, etc
 - Other proposals by Markus
 - Endorsed note or semantics procedure



Description and descriptor/table relationship

- Description field very useful to distinguish fields with the same semantics:
 - Recommendation to add it
- Generally service descriptors address all the main table rows
 - It's note the case in the {links} response
 - It can be managed, but wouldn't an autodescription of the service be better (DataLink-next ?)
 - In that case {links} response would only contain fixed url or root url of services for a dataset



BROWSING inside an archive file

- Tar, zip, hdf etc...
- Could be nice to describe links inside such archives
 - Changing `access_url` and media type
 - `DataLink-next`



SIAV2 feedback

(new version)

- For COLLECTION , INSTRUMENT, FACILITY, etc.. values are unknown:
 - Free strings
 - Parameters only used if we know the database content
 - Proposal of adding a PARAMETER « CONTENT » with values « COLLECTION », « INSTRUMENT », etc...
- Virtual data discovery is missing
 - SIAV2 + SODA in one shot.
 - Add a parameter for distinguishing the two modes (VIRTUAL=TRUE/FALSE?)
- Service implementing SIAV2 and SIAV1 at the same time.
 - Different endpoints ?
 - VERSION parameter ?



SODA feedback

- Feedback rather poor at the moment:
 - GAVO (califa)
 - CADC
 - CASDA (script mode)
 -
 - No service from ALMA, LOFAR, etc...
- Feedback within Aladin interface
 - Description in DataLink needed
 - Better distinction between synchronous and asynchronous services



SIAV2/SODA/Datalink in Aladin

The screenshot shows the Aladin software interface. At the top, the menu bar includes File, Edit, Image, Catalog, Overlay, Coverage, Tool, View, Interop, and Help. Below the menu bar, the 'Available data' section shows 'Command' set to '23:30:13.64 +15:45:39.5', 'Frame' set to 'ICRS', and 'Projection' set to 'Aitoff'. A toolbar on the right contains various icons for navigation and analysis, such as 'select', 'pan', 'dist', 'phot', 'draw', 'tag', 'moc', 'spect', 'filter', 'cross', 'x-y', 'rgb', 'assoc', and 'crop'. A central panel displays a 'DSS2 color' image of a star field with a central source highlighted by a reticle. A scale bar indicates '15"' and the image dimensions are '1.804' x 55.19"'. Below the image, a search bar is visible. At the bottom, a table lists data products with columns for 'access url', 'dataprodu... t...', 'dataprodu... su...', 'calib level', 'obs collection', and 'obs id'. A tooltip is displayed over the first row of the table, providing additional information about the data product.

Available data: Command Frame Projection

Available data: in view out v. DSS PanSTARRS SDSS 2MASS GALEX Gaia Simbad NED +

X-ray → 24
UV → 27
ROSATWFC → 3
ROSAT Wide
ROSAT Wide
ROSAT Wide
GALEX → 3
GALEX GR6 A
GALEX GR6
GALEX GR6 A
Swift → 15
HST → 6
HST → 28
Skymapper → 7
SDSS → 7
CFHTLS → 12
Swift → 6
UVOT → 6
Combined S
Combined S
Combined S

select
from -- a...

grid study wink north hdr multiview match

This source at the reticle location (z

access url	dataprodu t...	dataprodu su...	calib level	obs collection	obs id
http://...	cube		3	CALIFA	califa/datadr3,
http://...			3	CALIFA	califa/datadr3,
http://...			3	CALIFA	califa/datadr3,
http://...			3	CALIFA	califa/datadr3,

This cube, larger coverage lower resolution
This cube, smaller coverage higher resolution
An interactive service on this dataset.
An interactive service on this dataset.
The full dataset. (size 145575360 byte)
A preview for the dataset.

epoch -
size -
dens. -
opac. -
zoom -

163.49809 -60.44
+90
+15
-90
-80
23:30:13.64 +15:45:39.5
1.804' x 55.19"

4 sel / 7 src 406Mb

(c) 2018 Université de Strasbourg/CNRS - d

SIAV2/SODA/Datalink in Aladin

Aladin v10.0 *** PROTOTYPE VERSION (based on v10.076) ***

File Edit Image Catalog Overlay Coverage Tool View Interop Help

Available data → 21208 / 2121 Command Frame ICRS Projection Aitoff

● in view ● out view DSS PanSTARRS SDSS 2MASS GALEX Gaia Simbad NED +

Service dc.zah.uni-heidelberg.de

● Cutout prototype for SODA server ?

Fill in all these fields and press the SUBMIT button

Target (ICRS, name)

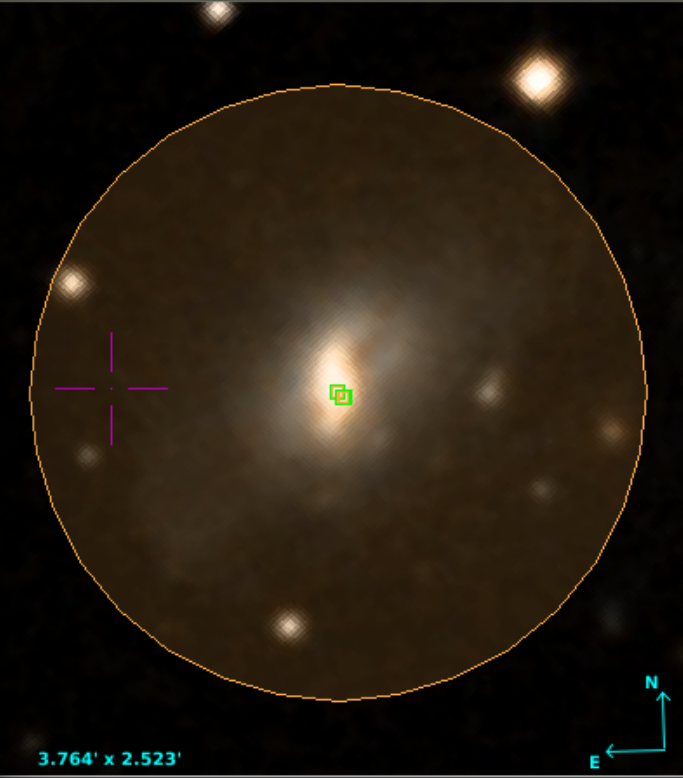
Radius

Time

Band

Pol

ID



Adjust the visible area (click & drag + mouse wheel)

Search

select	access url	dataprodu	dataprodu	calib level	obs collection	obs id
<input checked="" type="checkbox"/>	http://dc.zah.uni-heidelberg.de/adr3/COMB/UGC12633.COMB.rscube.fits	cube		3	CALIFA	califa/datadr3/...
<input checked="" type="checkbox"/>	http://dc.zah.uni-heidelberg.de/adr3/COMB/UGC12633.COMB.rscube.fits	cube		3	CALIFA	califa/datadr3/...

select from all collections

filter epoch - size - dens. - opac. - zoom -

05 26 13.74513

+90
-90

SIAV2/SODA/Datalink in Aladin

Aladin v10.0 * PROTOTYPE VERSION (based on v10.076) *****

File Edit Image Catalog Overlay Coverage Tool View Interop Help

Available data → 21208 / 2121 Command Frame ICRS Projection Aitoff

● in view ● out view

▶ Collections → 21208

- ▶ Image → 341
- ▶ Data base → 4
- ▶ Catalog → 19565
- ▶ Cube → 8
- ▶ Solar system → 47
- ▶ Ancillary → 7
- ▶ Outreach → 44
- ▶ Others → 1180
- ▶ Problematic → 4
- ▶ Unsupervised → 8

DSS2 color

1' 4.517' x 3.102'

grid study wink north hdr multiview match

Search

ALADIN

Welcome to Aladin, your professional sky atlas.

- Discover all astronomical data available over the net!
- Compare them with your own data.
- Prepare your observation missions.

To start, type any object name, such as M1, and press ENTER...

filter

- [SODA]dc.zah.uni-hei
- org.gavo.dc-tap~2.xi
- CDS/P/DSS2/color

epoch - [slider] +

size - [slider] +

assoc dens. - [slider] +

opac. - [slider] +

crop zoom - [slider] +

cont 23 30 15.31866 +15 45

pixel

SIAV2/SODA/Datalink in Aladin

The screenshot displays the Aladin v10.0 interface, a prototype version based on v10.076. The main window shows a star field with a large orange circle indicating a selected region. A dialog box titled "Service dc.zah.uni-heidelberg.de" is open, showing a "Cutout prototype for SODA server" form. The form includes fields for Target (ICRS, name), Radius, Time, Band, Pol, and ID. A dropdown menu is open, showing options: ASYNC, SYNC, and ASYNC (highlighted in orange). A yellow arrow points from the highlighted ASYNC option to a text box containing the following descriptions:

- This cube, larger coverage lower resolution
- This cube, smaller coverage higher resolution
- An interactive service on this dataset.
- An interactive service on this dataset.
- The full dataset. (size 145575360 byte)
- A preview for the dataset.

The interface also shows a menu bar (File, Edit, Image, Catalog, Overlay, Coverage, Tool, View, Interop, Help), a status bar (Available data → 21208 / 2121), and a right sidebar with various tools and filters.

SIAV2/SODA/Datalink in Aladin

The screenshot displays the Aladin v10.0 interface, a web-based astronomical data viewer. The main window shows a zoomed-in view of a star field with a large yellow circle highlighting a specific region. A text overlay asks "Sync/Async of same service?". A yellow arrow points from this text to a dropdown menu in a form titled "Cutout prototype for SODA server". The form contains the following fields:

- Target (ICRS, name): 23 30 15.31866 +15 45 25.4362
- Radius: 18.65"
- Time: [empty]
- Band: 0.0 1.0E-6
- Pol: I, Q, U
- ID: :adr3/COMB/UGC12633.COMB.rscube.fits
- Service type: ASYNC

Buttons at the bottom of the form include "Reset", "Clear", "Submit", and "Close". A table at the bottom of the interface shows data access information:

access url	dataproduc t...	datapr
http://dc.zah.uni-heidelberg.de	cube	
http://dc.zah.uni-heidelberg.de	cube	

The right sidebar contains navigation tools (select, pan, dist, phot, draw, tag, moc, spect, filter, cross, zoom, rgb, assoc, crop, cont, pixel) and a "Welcome to Aladin" message with instructions on how to use the platform.

summary

- Datalink and other stuff implementation note
- New semantics values
- New version of SIAV2
- DataLink next ?
- SODA next → not at the moment

