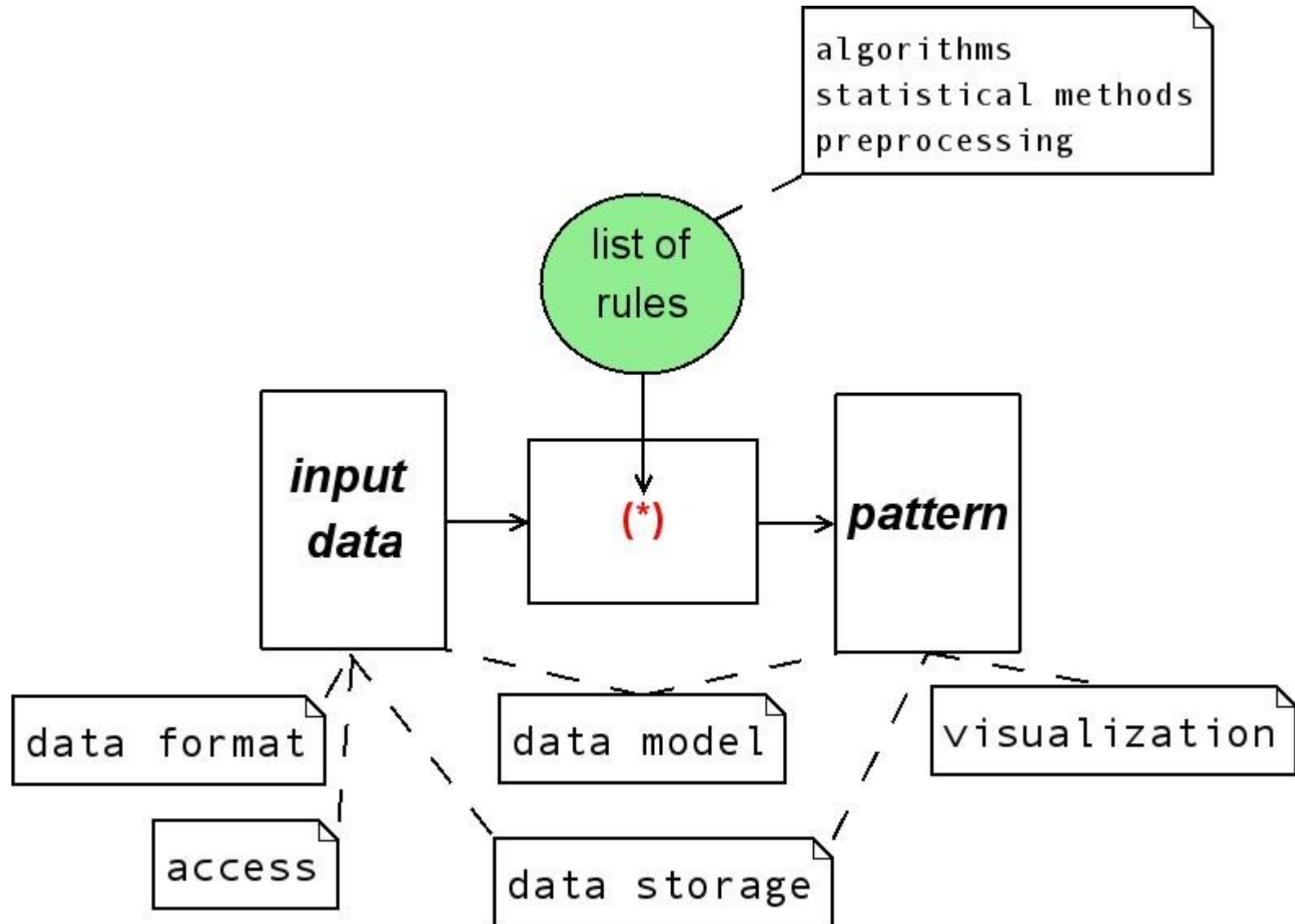
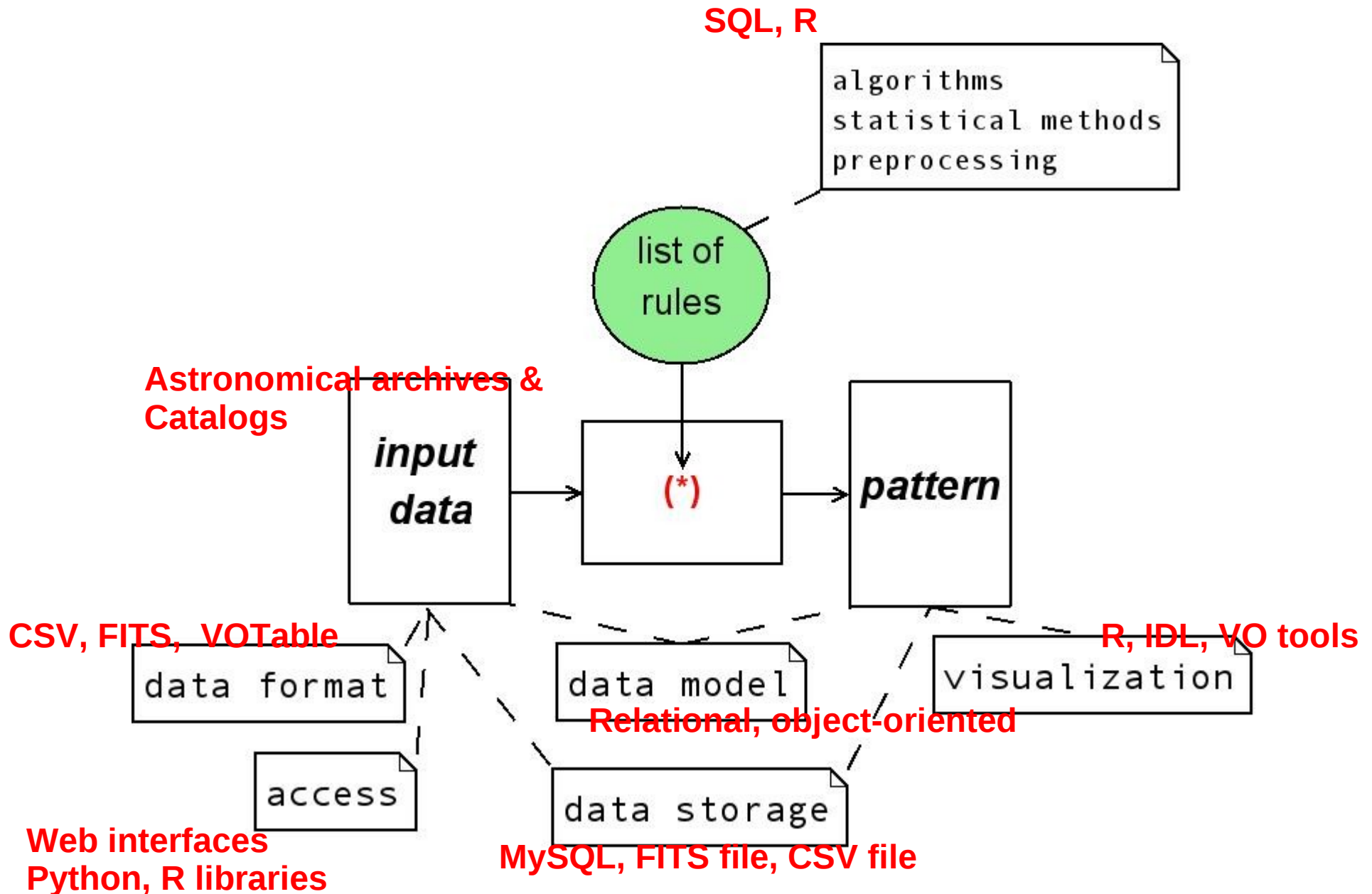


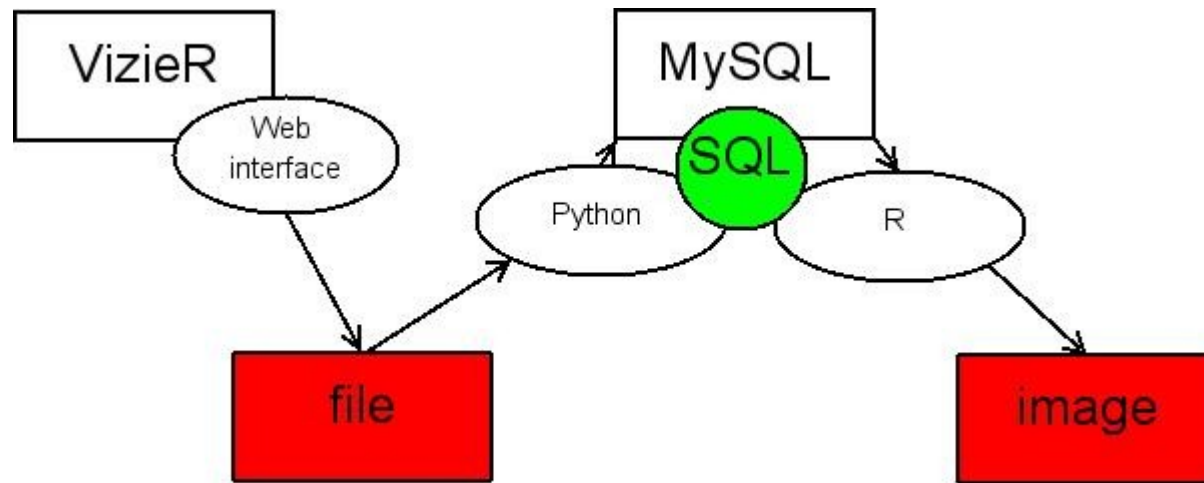
Data Mining



Data Mining: lectures so far

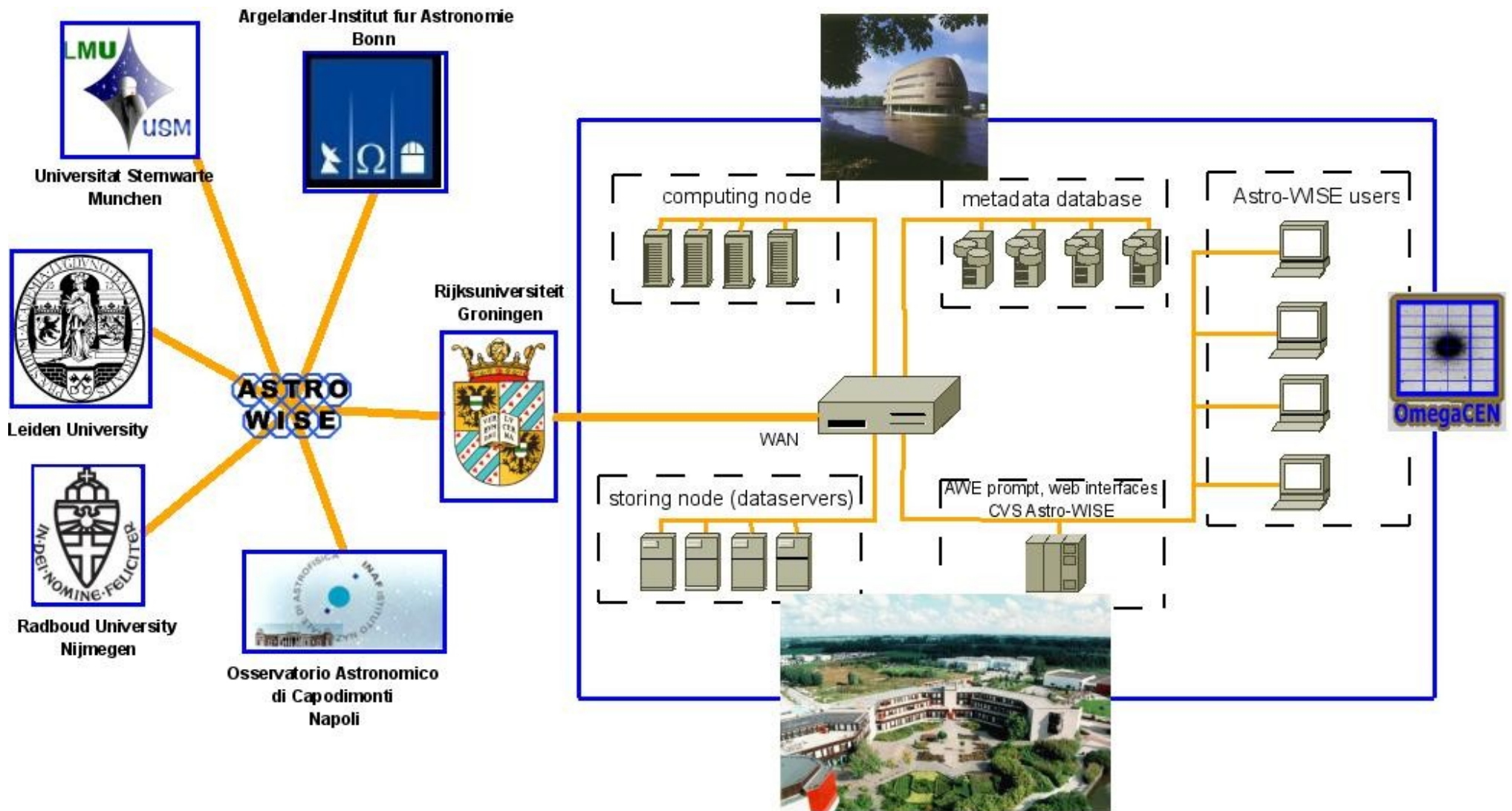


Data Mining: do it yourself



- MySQL data storage
- Python, R data processing & visualization
- Topcat visualization
- XML data format

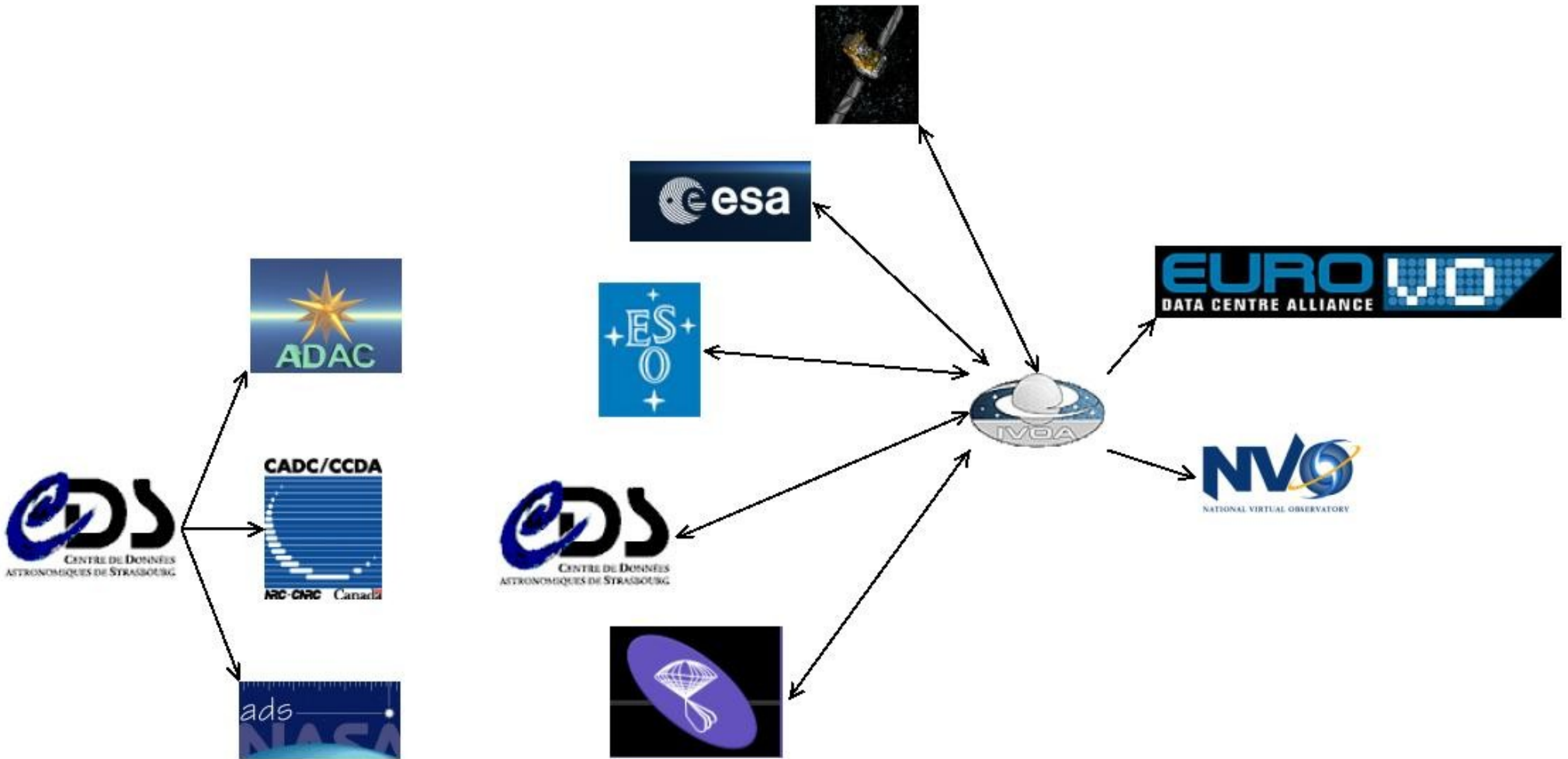
Information System



Data Mining: Global Information System

- SED coverage: optical & IR photometry, X rays, radio)
- Add-on values
- Multi-tasks – no predefined pipeline or data processing chain
- Data publishing

Data Storage in Astronomy

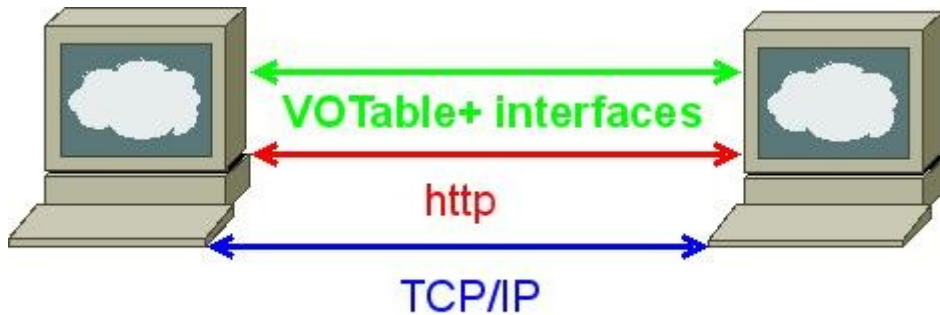


IVOA



www.ivoa.net

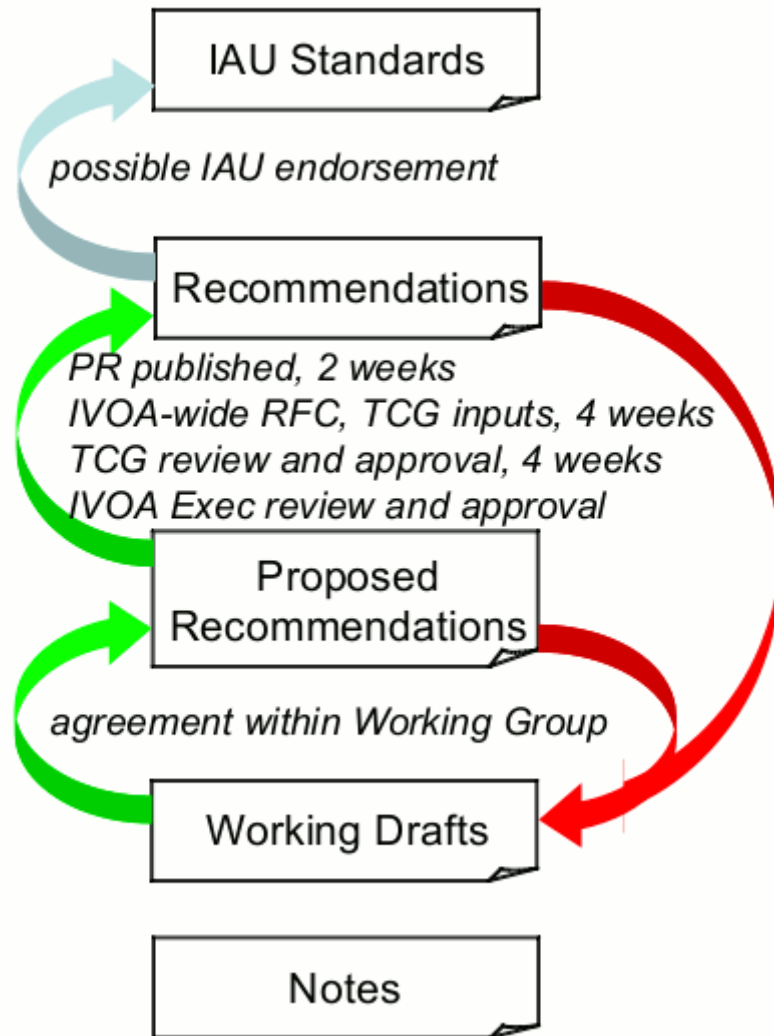
Virtual Observatory: Concept



- Unified approach to data access
- Common data knowledge repository
- Standards for applications

Virtual Observatory: Creation

IVOA Document Standards Process



- 2002 created as an alliance of international efforts
- Working Groups
- Draft, review period, standard accepted

Virtual Observatory: Standards & Interfaces

Technical Specifications

Group	Title	Most stable	In progress	Version history
App	Simple Application Messaging Protocol	1.11		1.11 1.11 1.10 1.00
DAL	Simple Cone Search	1.03		1.03 1.02 1.01 1.00
	Simple Image Access	1.0		1.0 1.0 1.0 1.01 1.00
	Simple Line Access	1.0	RFC	1.0 1.0
	Simple Spectral Access	1.04		1.04 1.03 1.02 1.01 1.01 1.00
	Table Access Protocol	1.0		1.0 1.0 1.0 1.0 1.0 1.00
DaM	Space-Time Coordinate Metadata for the Virtual Observatory (STC)	1.33		1.33 1.31 1.30 1.21 1.20 1.10 1.00
	Data Model for Astronomical DataSet Characterisation	1.13		1.13 1.12 1.12 1.11 1.10 1.00
	Simple Spectral Lines Data Model	1.0	RFC	1.0 1.0
GWS	IVOA Spectral Data Model	1.03		1.03 1.02 1.01 1.01 1.01 1.00
	IVOA Single-Sign-On Profile: Authentication Mechanisms	1.01		1.01 1.01 1.00 1.00
	VOSpace service specification	1.15	2.0	2.0 2.0 1.15 2.0 1.15 1.15 1.14 1.13 1.12 1.12 1.11 1.10 1.02 1.02 1.01 1.00 1.00
	IVOA Credential Delegation Protocol	1.0		1.0 1.0 1.01 1.01 1.00
	Universal Worker Service	1.0	RFC	1.0 1.0 1.0
ReR	IVOA Support Interfaces	1.0	RFC	1.0 1.0 1.0
	IVOA Web Service Basic Profile	1.0	RFC	1.0 1.0
	IVOA Identifiers	1.12		1.12 1.11 1.10 1.10 1.10 1.00
	IVOA Registry Interfaces	1.0		1.0 1.0 1.00 1.02 1.01 1.00
	Resource Metadata for the Virtual Observatory	1.12		1.12 1.12 1.10 1.10 1.01 1.01 1.00 1.00
Semantics	VOResource: an XML Encoding Schema for Resource Metadata	1.03		1.03 1.02 1.02 1.01 1.00
	VODataService: a VOResource Schema Extension for Describing Collections and Services	1.1	RFC	1.1 1.1 1.10
	An IVOA standard for Unified Content Descriptors	1.10		1.10 1.10 1.06 1.05 1.03
	UCD1+ Controlled Vocabulary	1.23		1.23 1.22 1.21 1.20 1.20 1.11 1.11 1.10 1.02 1.00
SDP	Maintenance of the list of UCD words	1.20		1.20 1.20 1.10 1.00
	Vocabularies in the Virtual Observatory	1.19		1.19 1.18 1.16 1.15 1.13 1.00
	IVOA Document Standards	1.0	1.2	1.2 1.2 1.2 1.2 1.1 1.1 1.0 1.0
VOE	Sky Event Reporting Metadata (VOEvent)	1.11		1.11 1.11 1.10 1.01
VQL	IVOA Astronomical Data Query Language	2.00		2.00 2.00 2.00 1.01 1.00
	IVOA SkyNode Interface	1.01		1.01 1.00
VOT	VOTable Format Specification	1.2		1.2 1.2 1.2 1.20 1.20 1.10 1.00

Maturity level: ■ Recommendation ■ Proposed Recommendation ■ Working Draft

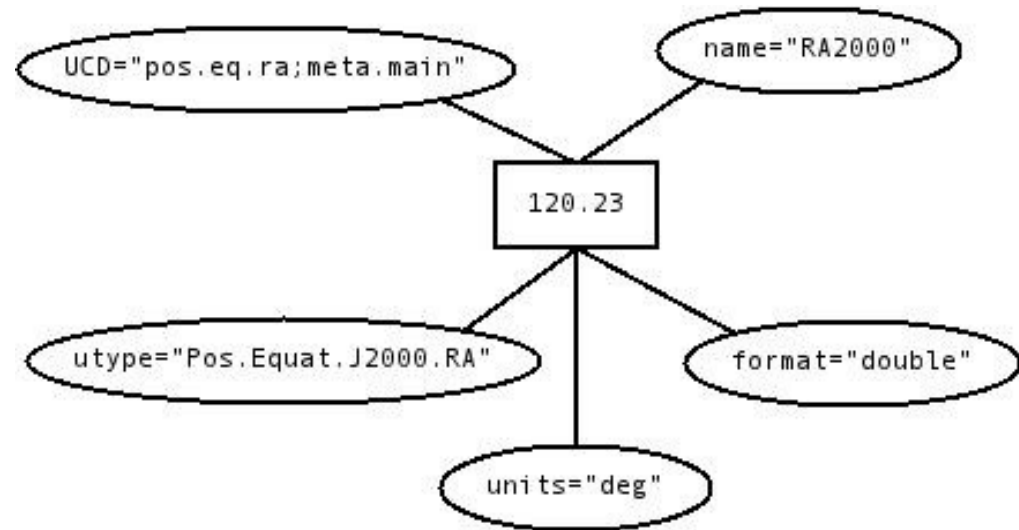
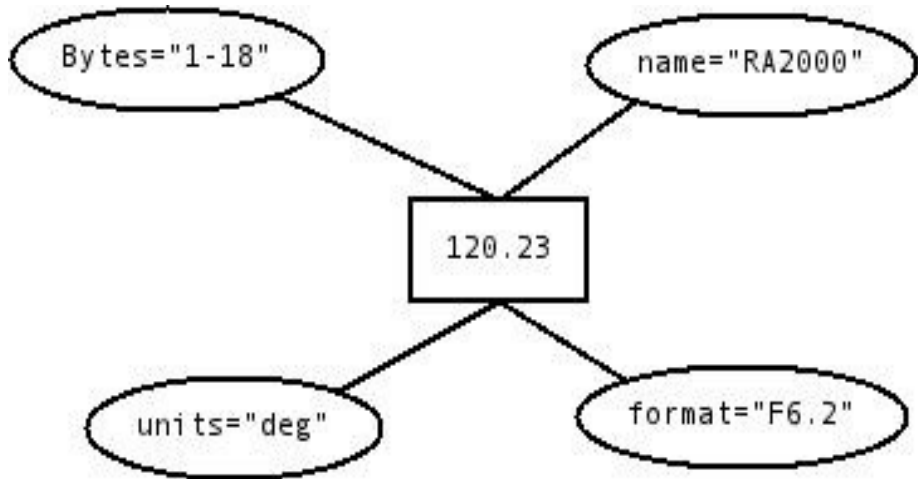
Data Description: Before VO

byte-by-byte description of file: [main.dat](#)

Bytes	Format	Units	Label	Explanations
1-	6 I6	---	HIC	[1/120313]+ Hipparcos Input Catalogue running number.
8-	11 A4	---	Comp	Component(s) considered in this entry
	13 A1	---	Target	*[A-Hjg] Satellite target in case of joint entry
15-	16 I2	h	RAh	Right ascension J2000 (hours), at Epoch
18-	19 I2	min	RAm	Right ascension (minutes)
21-	26 F6.3	s	RAss	Right ascension (seconds)
	28 A1	---	DE-	Declination J2000 (sign)
29-	30 I2	deg	DEd	Declination (degrees)
32-	33 I2	arcmin	DEm	Declination (minutes)
35-	39 F5.2	arcsec	DEs	Declination (seconds)
41-	44 I4	a	Epoch	* Epoch for the position, generally 2000
46-	49 F4.2	arcsec	e_RAs	* Mean error of the right ascension
51-	54 F4.2	arcsec	e_DEs	Mean error of the declination
	56 A1	---	r_RAs	* Source of position code (see Table B1)
58-	67 F10.6	deg	RAdeg	Right ascension J2000 (decimal degrees)
69-	78 F10.6	deg	DEdeg	Declination J2000 (decimal degrees)
80-	85 F6.2	deg	GLON	[0.0/360.0] Galactic longitude (decimal degs)
87-	92 F6.2	deg	GLAT	Galactic latitude (decimal degrees)
94-	99 F6.2	deg	ELON	[0.0/360.00] Ecliptic longitude (decimal deg)
101-106	F6.2	deg	ELAT	Ecliptic latitude (decimal degrees)
108-109	I2	h	RA1950h	Right ascension B1950, epoch=1950.0 unless Epoch differs from 2000 (hours)
111-112	I2	min	RA1950m	Right ascension (minutes)
114-119	F6.3	s	RA1950s	Right ascension (seconds)
	121 A1	---	DE1950-	Declination sign, B1950
122-123	I2	deg	DE1950d	Declination (degrees)
125-126	I2	arcmin	DE1950m	Declination (minutes)
128-132	F5.2	arcsec	DE1950s	Declination (seconds)
134-143	F10.6	deg	RA1950deg	Right ascension B1950 (decimal degrees)
145-154	F10.6	deg	DE1950deg	Declination B1950 (decimal degrees)
156-161	F6.3	arcsec/a	pmRA	*? Proper motion in RA, Equinox J2000.0
163-168	F6.3	arcsec/a	pmDE	?Proper motion in dec, Equinox J2000.0
170-173	F4.3	arcsec/a	e_pmRA	?Error of pmRA
175-178	F4.3	arcsec/a	e_pmDE	?Error of pmDE

- Direct specification of format
- User-defined description
- Positional format
- Units

General Data Description



- Data Model
- Translation

VO: VOTable



```
<?xml version="1.0"?>
<VOTABLE version="1.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.ivoa.net/xml/VOTable/v1.2"
xmlns:stc="http://www.ivoa.net/xml/STC/v1.30" >
  <RESOURCE name="myFavouriteGalaxies">
    <TABLE name="results">
      <DESCRIPTION>Velocities and Distance estimations</DESCRIPTION>
      <GROUP ID="J2000" utype="stc:AstroCoords">
        <PARAM datatype="char" arraysize="*" ucd="pos.frame" name="cooframe"
          utype="stc:AstroCoords.coord_system_id" value="UTC-ICRS-TOP0" />
        <FIELDref ref="col1"/>
        <FIELDref ref="col2"/>
      </GROUP>
      <PARAM name="Telescope" datatype="float" ucd="phys.size;instr.tel"
        unit="m" value="3.6"/>
      <FIELD name="RA" ID="col1" ucd="pos.eq.ra;meta.main" ref="J2000"
        utype="stc:AstroCoords.Position2D.Value2.C1"
        datatype="float" width="6" precision="2" unit="deg"/>
      <FIELD name="Dec" ID="col2" ucd="pos.eq.dec;meta.main" ref="J2000"
        utype="stc:AstroCoords.Position2D.Value2.C2"
        datatype="float" width="6" precision="2" unit="deg"/>
      <FIELD name="Name" ID="col3" ucd="meta.id;meta.main"
        datatype="char" arraysize="8"/>
      <FIELD name="RVel" ID="col4" ucd="spect.dopplerVeloc" datatype="int"
        width="5" unit="km/s"/>
      <FIELD name="e_RVel" ID="col5" ucd="stat.error;spect.dopplerVeloc"
        datatype="int" width="3" unit="km/s"/>
      <FIELD name="R" ID="col6" ucd="pos.distance;pos.heliocentric"
        datatype="float" width="4" precision="1" unit="Mpc">
        <DESCRIPTION>Distance of Galaxy, assuming H=75km/s/Mpc</DESCRIPTION>
      </FIELD>
      <DATA>
        <TABLEDATA>
          <TR>
            <TD>010.68</TD><TD>+41.27</TD><TD>N 224</TD><TD>-297</TD><TD>5</TD><TD>0.7</TD>
          </TR>
          <TR>
            <TD>287.43</TD><TD>-63.85</TD><TD>N 6744</TD><TD>839</TD><TD>6</TD><TD>10.4</TD>
          </TR>
          <TR>
            <TD>023.48</TD><TD>+30.66</TD><TD>N 598</TD><TD>-182</TD><TD>3</TD><TD>0.7</TD>
          </TR>
        </TABLEDATA>
      </DATA>
    </TABLE>
  </RESOURCE>
</VOTABLE>
```

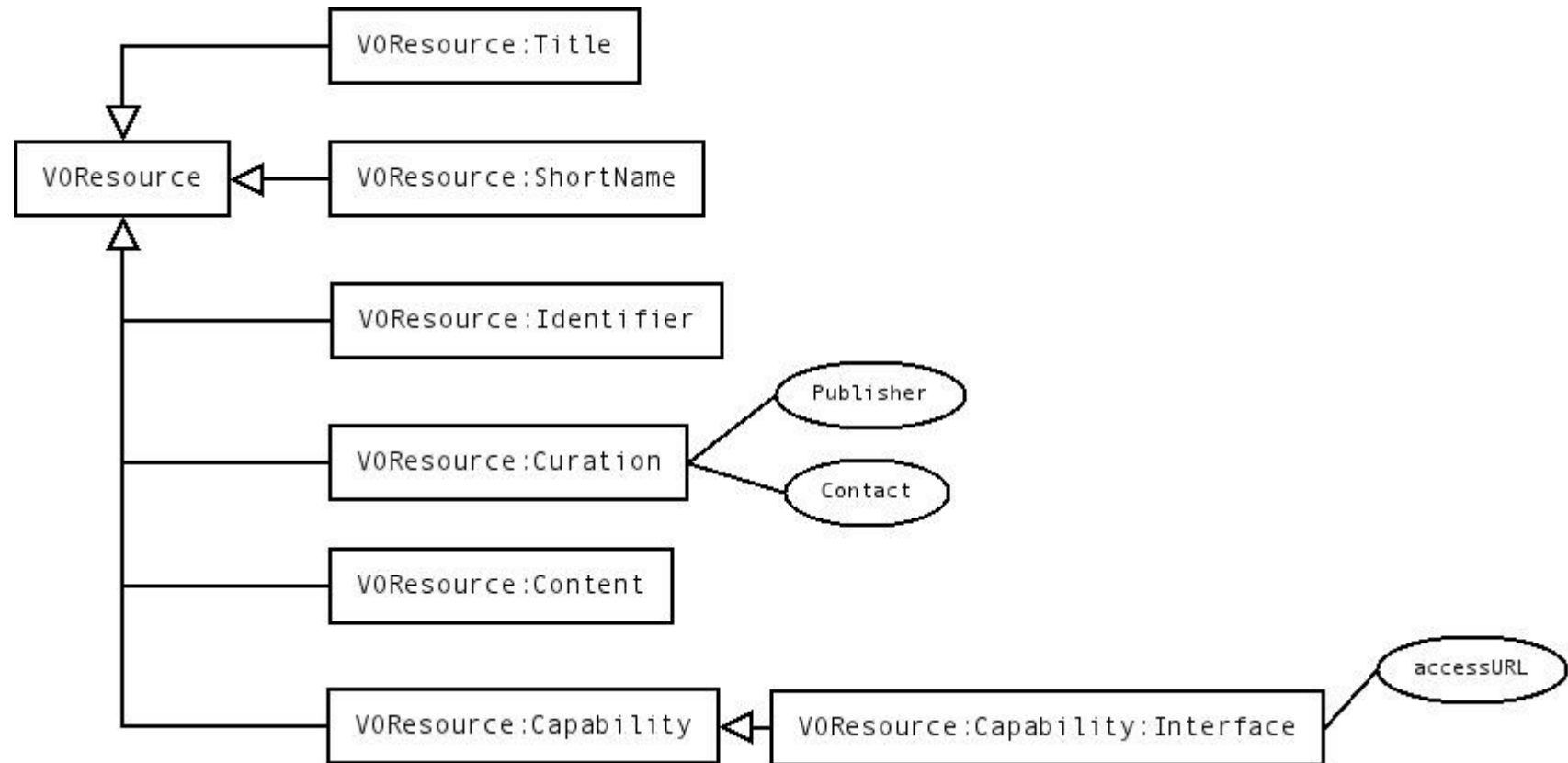
VOTable: FIELD

```
<FIELD name="RA" ID="col1" ucd="pos.eq.ra;meta.main" ref="J2000"
  utype="stc:AstroCoords.Position2D.Value2.C1"
  datatype="float" width="6" precision="2" unit="deg">
  <VALUES ID="RAdomain">
    <MIN value="0"/>
    <MAX value="360" inclusive="no"/>
  </VALUES>
</FIELD>
```

datatype	Meaning	FITS	Bytes
"boolean"	Logical	"L"	1
"bit"	Bit	"X"	*
"unsignedByte"	Byte (0 to 255)	"B"	1
"short"	Short Integer	"I"	2
"int"	Integer	"J"	4
"long"	Long integer	"K"	8
"char"	ASCII Character	"A"	1
"unicodeChar"	Unicode Character		2
"float"	Floating point	"E"	4
"double"	Double	"D"	8
"floatComplex"	Float Complex	"C"	8
"doubleComplex"	Double Complex	"M"	16

```
<VOTABLE version="1.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://www.ivoa.net/xml/VOTable/v1.2"
  xmlns:stc="http://www.ivoa.net/xml/STC/v1.30" >
  <RESOURCE name="myFavouriteGalaxies">
```

VO: Registry: VOResource



VO: Registry: VOResource

```
- <ri:VOResources xsi:schemaLocation="http://www.ivoa.net/xml/VOResource/v1.0">
- <ri:Resource status="active" updated="2007-05-14" xsi:type="cs:ConeSearch" created="2007-04-26">
- <vr:title>
  Cone Search interface for Objects for Wide-Field Imager at 2.2m, La Silla
  </vr:title>
  <vr:shortName>WFI@2.2m</vr:shortName>
- <vr:identifier>
  ivo://astro-wise/Project/ConeSearch/SourceList/WFI@2.2m
  </vr:identifier>
- <vr:curation>
  <vr:publisher ivo-id="ivo://astro-wise/Registry"> Astro-Wise local publishing register</vr:publisher>
- <vr:contact>
  <vr:name>Andrey Belikov</vr:name>
  <vr:email>A.N.Belikov@astro.rug.nl</vr:email>
  </vr:contact>
</vr:curation>
- <vr:content>
  <vr:subject>data repositories</vr:subject>
- <vr:description>
  The Wide-Field Imager (WFI) is an 8K x 8K pixel optical detector imaging one half degree on a side (approximately one full moon in area) permanently mounted on the 2.2m MPG/ESO telescope at La Silla in Chile.
  </vr:description>
  <vr:referenceURL>http://www.astro-wise.org/projects/OCAMVSTGT/</vr:referenceURL>
  <vr:contentLevel>Research</vr:contentLevel>
  <vr:contentLevel>University</vr:contentLevel>
- <vr:relashionship>
  <vr:relashionshipType>service-for</vr:relashionshipType>
  <vr:relatedResource ivo-id="ivo://astro-wise/Project/DataCollection/SourceList/WFI@2.2m">Objects for Wide-Field Imager at 2.2m, La Silla</vr:relatedResource>
  </vr:relashionship>
</vr:content>
- <vr:interface xsi:type="vr:ParamHTTP" qtype="GET">
- <vr:accessURL use="base">
  http://vo.astro-wise.org/ConeSearch?FORM=VOTABLE&PROJECT=WFI@2.2m
  </vr:accessURL>
  <vs:resultType>text/xml+votable</vs:resultType>
  <vs:resultType>text/html</vs:resultType>
</vr:interface>
</ri:Resource>
</ri:VOResources>
```


VO: Register



<http://www.us-vo.org/>



<http://www.euro-vo.org/pub/>



NVO Registry



NVO Directory Advanced Search - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://nvo.stsci.edu/vor10/advancedsearch.aspx

Most Visited openSUSE Getting Started Latest Headlines Mozilla Firefox

European Virtual Observatory NVO Directory Advanced Search European Virtual Observatory

 **NVO Directory** 

NVO Home Search Publish Developers Help Contact Us

Find Astronomical Data Resources

Available VO Resource Metadata tags are listed here.

Custom Predicate

(Example Custom Predicates)

--AND--

Title	<input type="text"/>	Short Name	<input type="text"/>
Publisher Name	<input type="text"/>	Identifier	<input type="text"/>
Waveband	<input type="text"/>	Subject	<input type="text"/>
Service Type	<input type="text"/>		

[Simple Query](#)

Developed with the support of the [National Science Foundation](#) under Cooperative Agreement AST0122449 with the Johns Hopkins University

[Member](#) [Meet the Developers](#)

Done

EuroVO Registry

EURO-VO :: Registry :: Welcome - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://registry.euro-vo.org/search.jsp

Most Visited openSUSE Getting Started Latest Headlines Mozilla Firefox

European Virtual Observatory EURO-VO :: Registry :: Welco...

- Authority
- Data Collection
- Service
- Registry
- Table Service
- Data Service
- Catalog Service
- Catalog Service (CDS)
- Cone Search (CS)
- Open Sky Node (OSN)
- Simple Image Access (SIAP)
- Proto Spectral Access (PSAP)
- Simple Spectral Access (SSAP)
- Simple Line Access (SLAP)
- Theoretical Spectral Access (TSAP)


Insert Resources

Update Resources

Validate Resources

EURO-VO Registry Resource Details

Member of



Done

It is possible to search for resources in various ways on the registry.

The first, and simpler one, is by keywords. Just enter one or more keywords separated by spaces in the appropriate input box on the right. The keywords can be linked either by "AND" (the default) or by "OR" logical functions.

Note that any text enclosed in double quotes (") will be considered as one "word", allowing searching for expressions or even full sentences. The search is case-insensitive and results are ordered by occurrences of the keywords in the resource.

Another method is to use the ADQL query language to effectuate more precise search. The Astronomical Data Query Language can be used in its XML or its String form.

Here is a query example in its XML form:

```
<?xml xmlns="http://www.ivoa.net/xml/ADQL/v1.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
<Condition xsi:type="intersectionSearchType">
<Condition xsi:type="likePredType">
<Arg xsi:type="columnReferenceType" xpathName="
<Pattern>
<Literal xsi:type="stringType" Value="%esa
</Pattern>
</Condition>
<Condition xsi:type="comparisonPredType" Compa
<Arg xsi:type="columnReferenceType" xpathName="
<Arg xsi:type="atomType">
<Literal xsi:type="stringType" Value="CDS"
</Arg>
</Condition>
</Condition>
</Where>
```

Here is the same query in its String form:

```
WHERE #description# LIKE '%esa#' AND #curation/p
```

The keyword search form

keywords:

AND OR

Search

The ADQL/XML search form

Search

The ADQL/JS search form

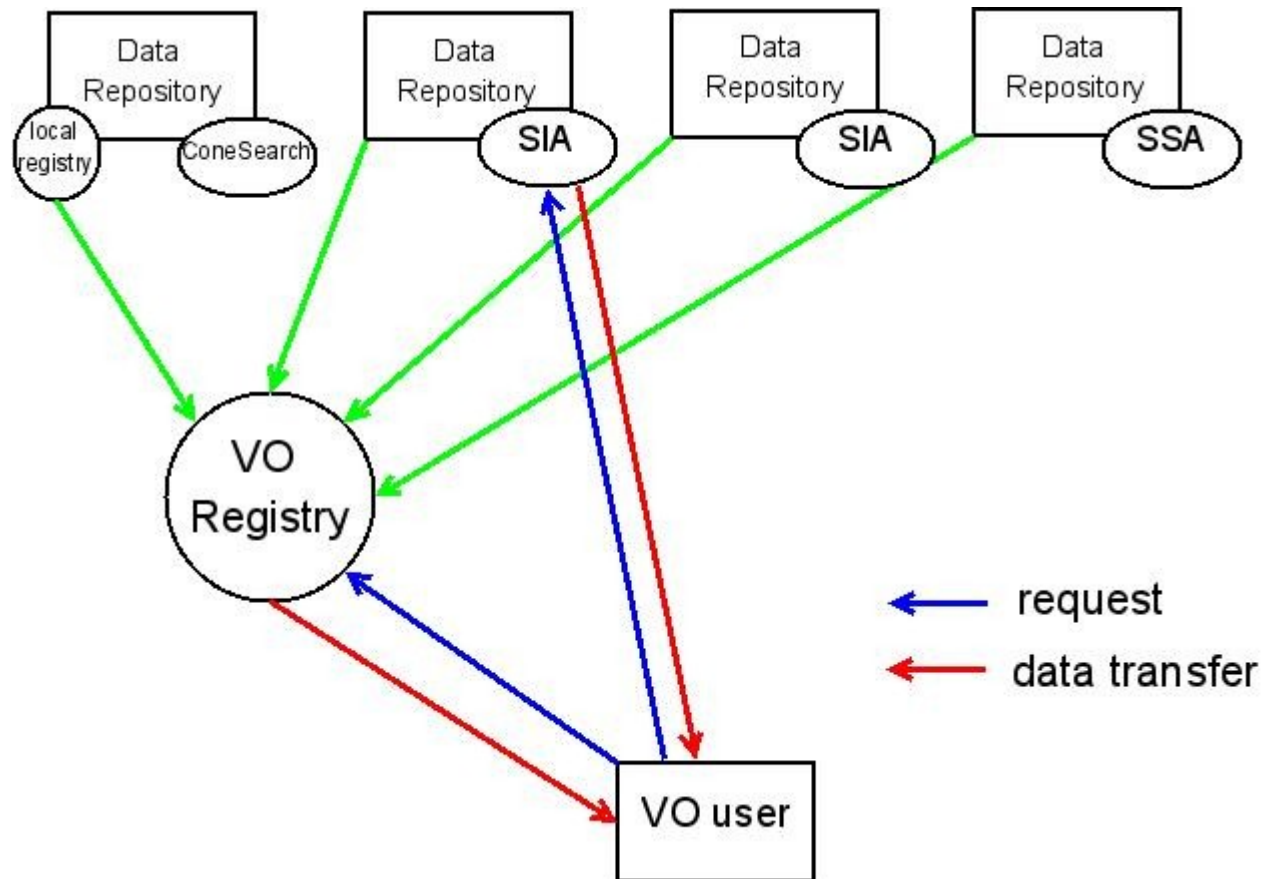
Search

The identifier search form

identifier:

Search

VO: Register



VO: ConeSearch

- Browse catalogs by coordinates
- RA, DEC, SR
- Input: desired coordinates
- Output: VOTable in internal format

```
- <vr:interface xsi:type="vr:ParamHTTP" qtype="GET">  
  - <vr:accessURL use="base">  
    http://vo.astro-wise.org/ConeSearch?FORM=VOTABLE&PROJECT=WFI@2.2m  
  </vr:accessURL>  
  <vs:resultType>text/xml+votable</vs:resultType>  
  <vs:resultType>text/html</vs:resultType>  
</vr:interface>
```

[http://vo.astro-wise.org/ConeSearch?FORM=VOTABLE&PROJECT=WFI@2.2m
&RA=0.0&DEC=0.0&SR=1.0](http://vo.astro-wise.org/ConeSearch?FORM=VOTABLE&PROJECT=WFI@2.2m&RA=0.0&DEC=0.0&SR=1.0)

VO: SIA

- Browsing repository of images
- POS=ra,dec SIZE=size1,size2
- Input: a rectangular area
- Output: VOTable with list of images

VO: SIA

```
- <VOTABLE version="1.0">
  <COOSYS ID="J2000" equinox="2000." epoch="2000." system="eq_FK5"/>
  - <RESOURCE type="results">
    <INFO name="QUERY_STATUS" value="OK"/>
    - <PARAM name="AWE-Observer" datatype="char" arraysize="*" value="AWE anonymous">
      - <DESCRIPTION>
        This parameter is designed to store the observer's name
      </DESCRIPTION>
    </PARAM>
    - <TABLE name="VOTABLE ALL">
      <DESCRIPTION>Table generated by AWWOTS</DESCRIPTION>
      <FIELD name="OBJECT" datatype="char" ucd="VOX:Image_Title" arraysize="*" />
      <FIELD name="INSRUMENT" datatype="char" ucd="INST_ID" arraysize="*" />
      <FIELD name="CRVAL1" datatype="double" ucd="POS_EQ_RA_MAIN" width="20" />
      <FIELD name="CRVAL2" datatype="double" ucd="POS_EQ_DEC_MAIN" width="20" />
      <FIELD name="Naxes" datatype="int" ucd="VOX:Image_Naxes" width="20" />
      <FIELD name="Naxis" datatype="int" ucd="VOX:Image_Naxis" arraysize="*" />
      <FIELD name="Scale" datatype="double" ucd="VOX:Image_Scale" arraysize="*" />
      <FIELD name="Format" datatype="char" ucd="VOX:Image_Format" arraysize="*" />
      <FIELD name="Filename" datatype="char" ucd="VOX:Image_AccessReference" arraysize="*" />
      - <FIELD name="OBJID" datatype="char" ucd="OBJID" arraysize="*">
        <LINK href="http://quality.astro-wise.org/QualityWISE?object_str=ReducedScienceFrame&object_id=${OBJID}&project=ALL"/>
      </FIELD>
      <FIELD name="QUALITY_LINK" datatype="char" ucd="QLINK" arraysize="*" />
    </TABLE>
  </RESOURCE>
- <DATA>
  - <TABLEDATA>
    - <TR>
      <TD>ALL NGC7626_6</TD>
      <TD>MPI-2.2.WFI</TD>
      <TD>350.083600268</TD>
      <TD>8.21692095067</TD>
      <TD>2</TD>
      <TD>2046 4098</TD>
      <TD>-6.611111111111e-05 6.611111111111e-05</TD>
      <TD>image/fits</TD>
    - <TD>
      http://ds.astro.rug.astro-wise.org:8000/Sci-GSIKKEMA-WFI-----%23844-ccd52---Sci-53262.7024522.fits
    </TD>
      <TD>'E40F8D26C73AF6DCE0307D814C066DB6'</TD>
    - <TD>
      http://quality.astro-wise.org/QualityWISE?object_str=ReducedScienceFrame&project=ALL&object_id='E40F8D26C73AF6DCE0307D814C066DB6'
    </TD>
  </TR>
  - <TD>
```

VO: SSA

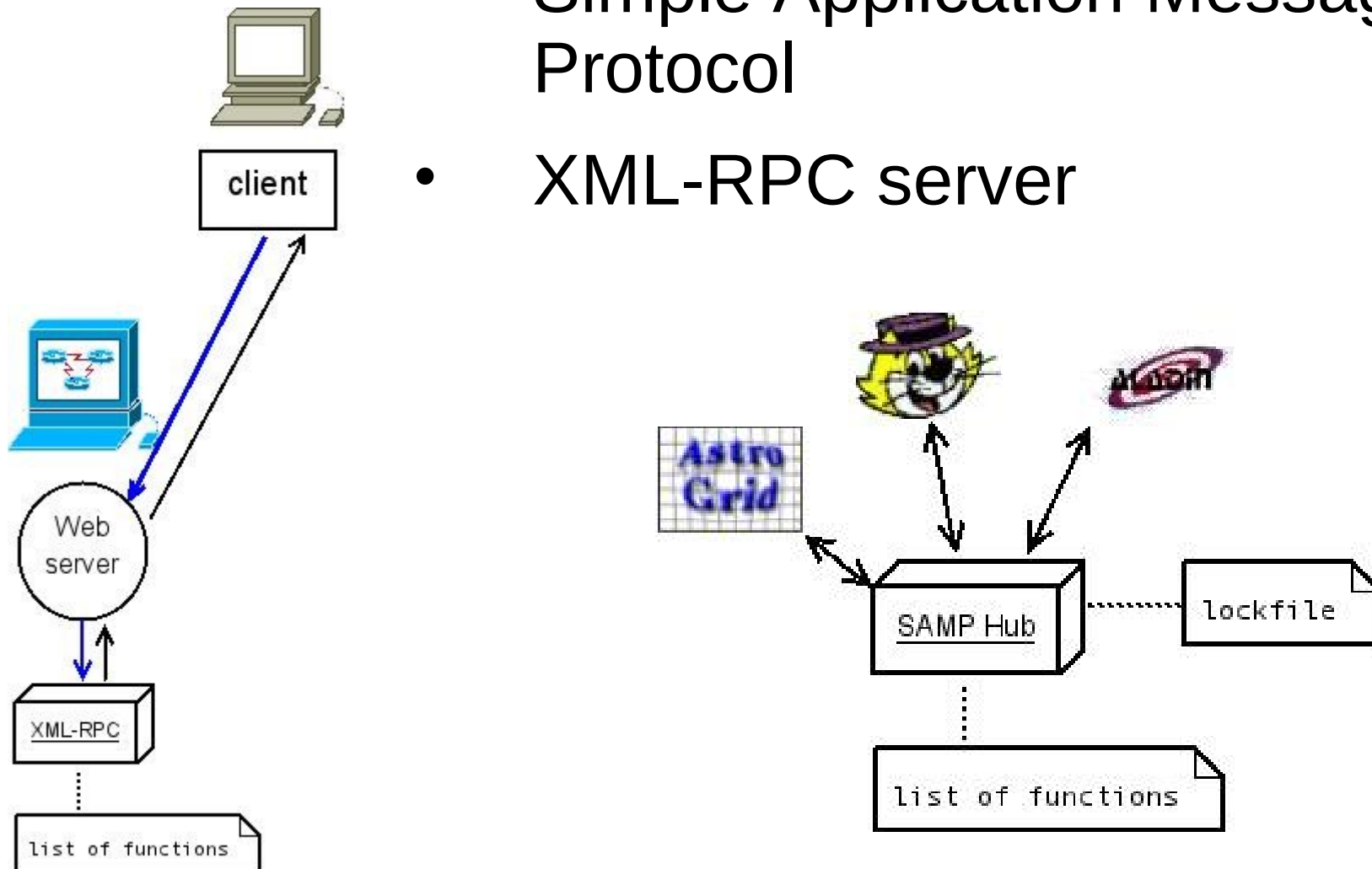
- Access to spectral data
- Positional and wavelength (band) coordinates
- Input: POS=ra,dec; SIZE=sr;
BAND=K;TIME=Epoch; FORMAT=votable
- Output: VOTable

VO: ADQL & TAP

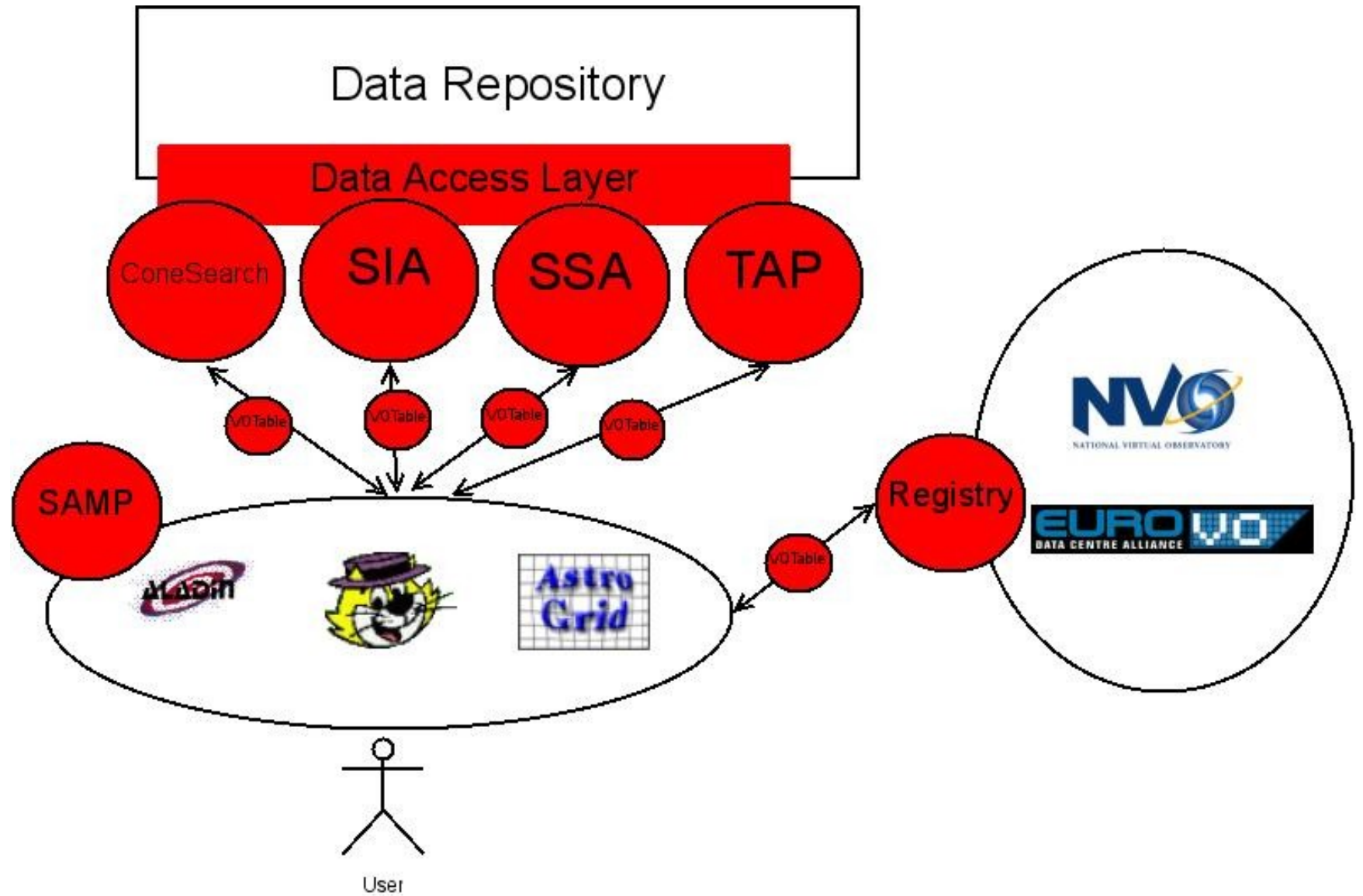
- ADQL: extension of SQL+astronomy-specific functions
- TAP: Table Access Protocol :
synchronous/asynchronous queries
- TAP: ADQL support

VO: Plastic/SAMP

- Simple Application Messaging Protocol
- XML-RPC server



VO



VO Tools



topcat

R,V,C

<http://www.star.bris.ac.uk/~mbt/topcat/>



Aladin

R*,V*,C

<http://aladin.u-strasbg.fr/>

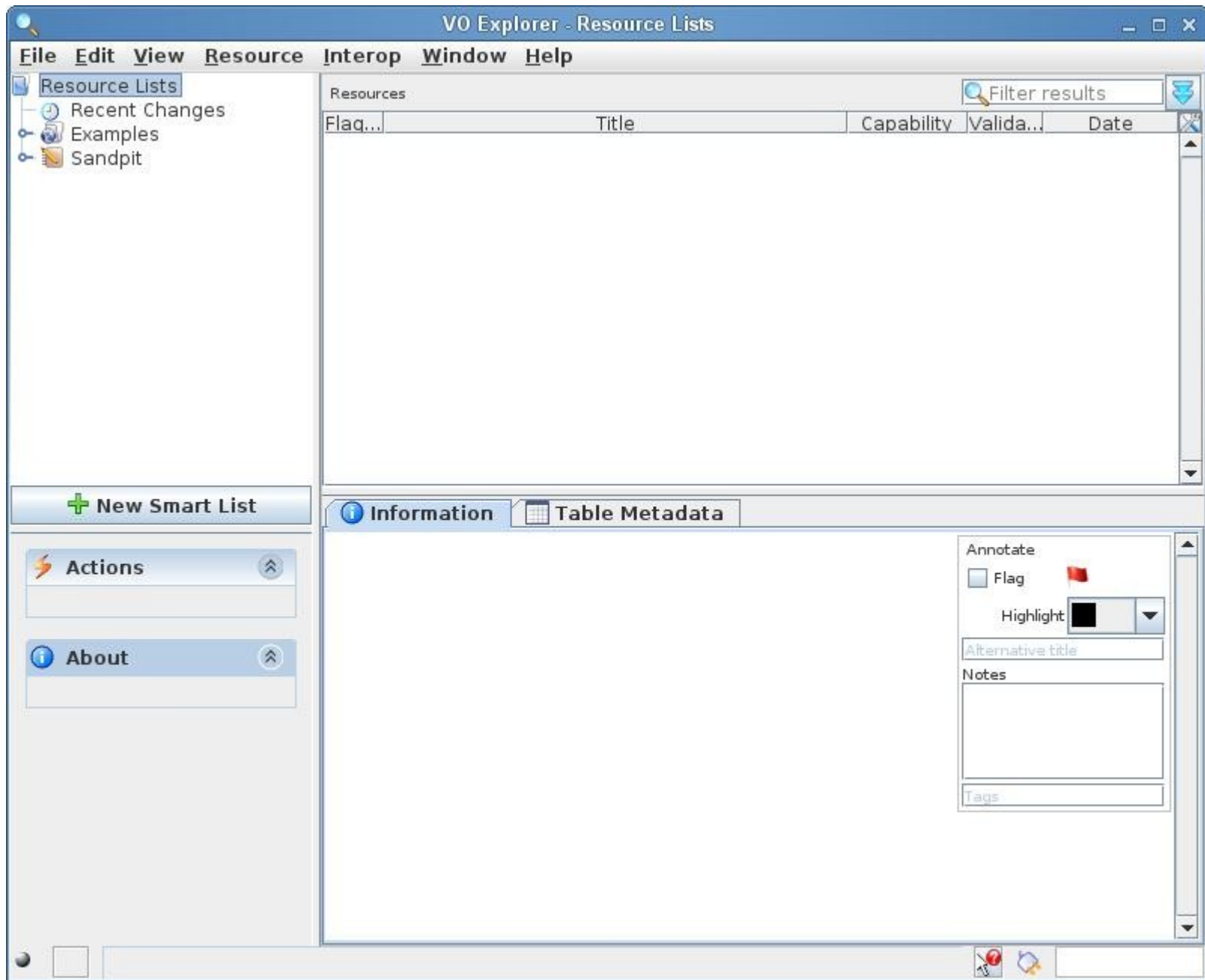


AstroGrid
VODesktop

R

<http://www.astrogrid.org/wiki/Home/AboutAGDesktop>

VO Tools: Astrogrid



VO Explorer - 2MASS

File Edit View Resource Interop Window Help

Resource Lists
Recent Changes
Examples
Sandpit
2MASS

The search named: 2MASS query

Contains resources which match all of the following conditions:

Any main field contains 2MASS

+ New Smart List

Actions

About

Query Text
default = 2MASS

Matches 260 of 9401 resources

Create Cancel

VO Explorer - 2MASS

File Edit View Resource Interop Window Help

Resource Lists

- Recent Changes
- Examples
- Sandpit
- 2MASS**

+ New Smart List

Actions

Position Query

About

Selection: CatalogService

Further Info
 Email Curator

Contents of 2MASS - 216 resources Filter results

Flag...	Title	Capability	Valida...	Date
	2MASS 6X Lockman Hole Ancillary Data Atlas			2007-04-11
	2MASS All-Sky Atlas Image Service		②	2008-05-01
	2MASS All-Sky Catalog of Point Sources (Cutri+...		①	2008-01-10
	2MASS All-Sky Extended Source Catalog			2008-04-07
	2MASS All-Sky Point Source Catalog			2008-04-07
	2MASS All-Sky Quicklook Image Service			2007-04-11
	2MASS Catalog Intermediate Data Release (IP...		①	2008-01-16
	2MASS IR star clusters in the Galaxy (Bica+, 20...		①	2005-02-23
	2MASS Large Galaxy Atlas			2007-04-11
	2MASS M-dwarf discoveries (Kirkpatrick+ 1997)		①	1999-02-02
	2MASS colours of Magellanic cloud star cluster...		①	2008-04-23
	2MASS counterparts for OH/IR stars (Lewis+, 2...		①	2004-12-03
	2MASS observation of BL Lac objects (Chen+, ...		①	2006-09-10
	2MASS observations of Be stars (Zhang+, 2005)		①	2006-09-10
	2MASS observations of IRAS 14 LUGs (Chen+		①	2007-10-02

Information

2MASS 6X Lockman Hole Ancillary Data Atlas

Short Name LH IVOA-ID ivo://irsa.ipac/Lockman-Hole
 Resource Type CatalogService Created 2004-04-21 Updated 2007-04-11

Content Type archive Level research
 These Lockman Hole (LH) data represent a preliminary analysis of the deep 2MASS observations of this region, and are not a product endorsed by the 2MASS project. These data are described in The Astronomical Journal, Volume 125, Issue 5, pp. 2521-2530 "A Deep 2MASS survey of the Lockman Hole" by Beichman et al. [Further Information...](#)

Waveband Coverage infrared

This resource describes a **Image access service (SIAP)**
 Service Type pointed Maximum File size 250000000 Maximum Results Returned

Annotate

Flag

Highlight

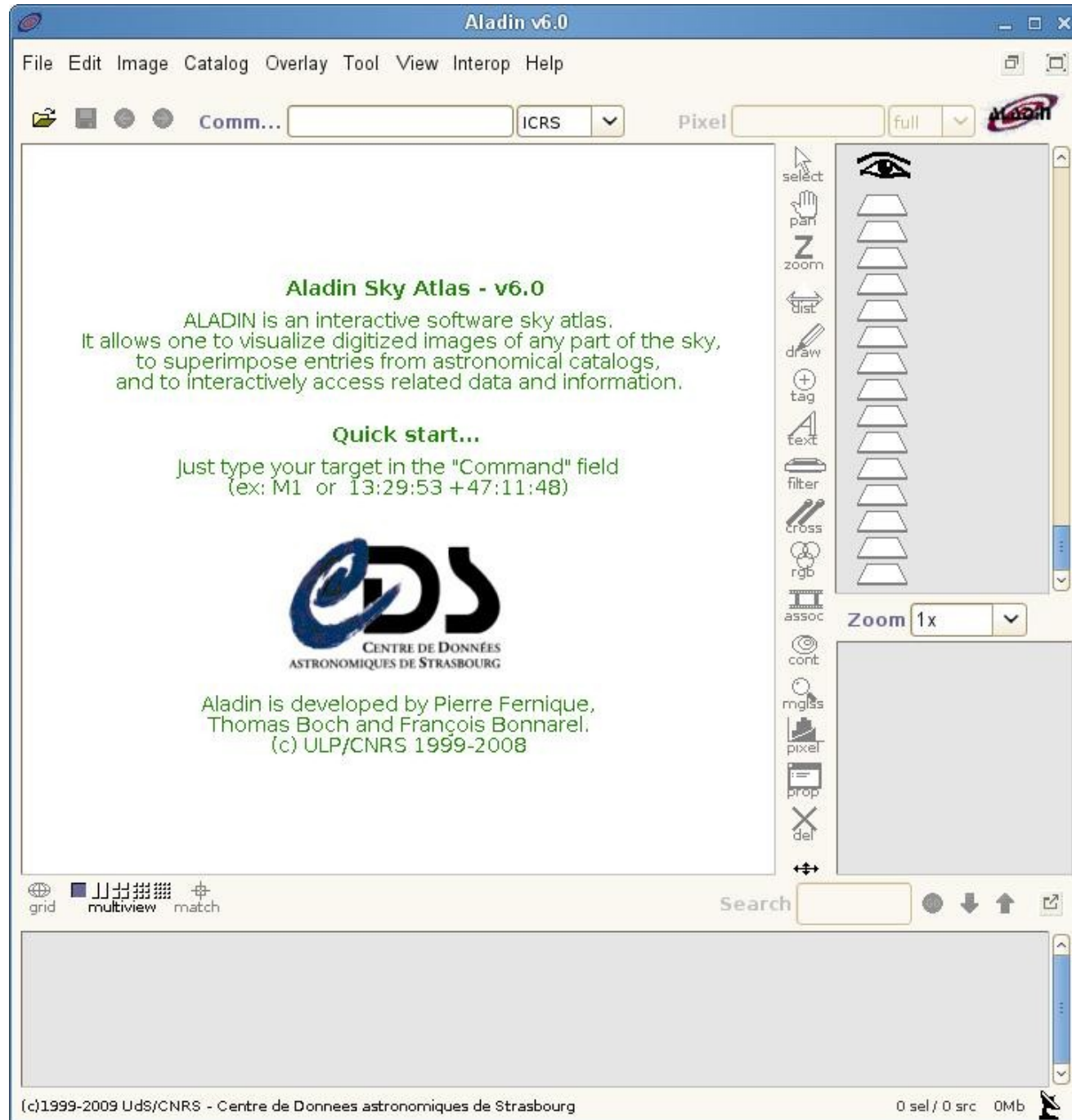
Alternative title

Notes

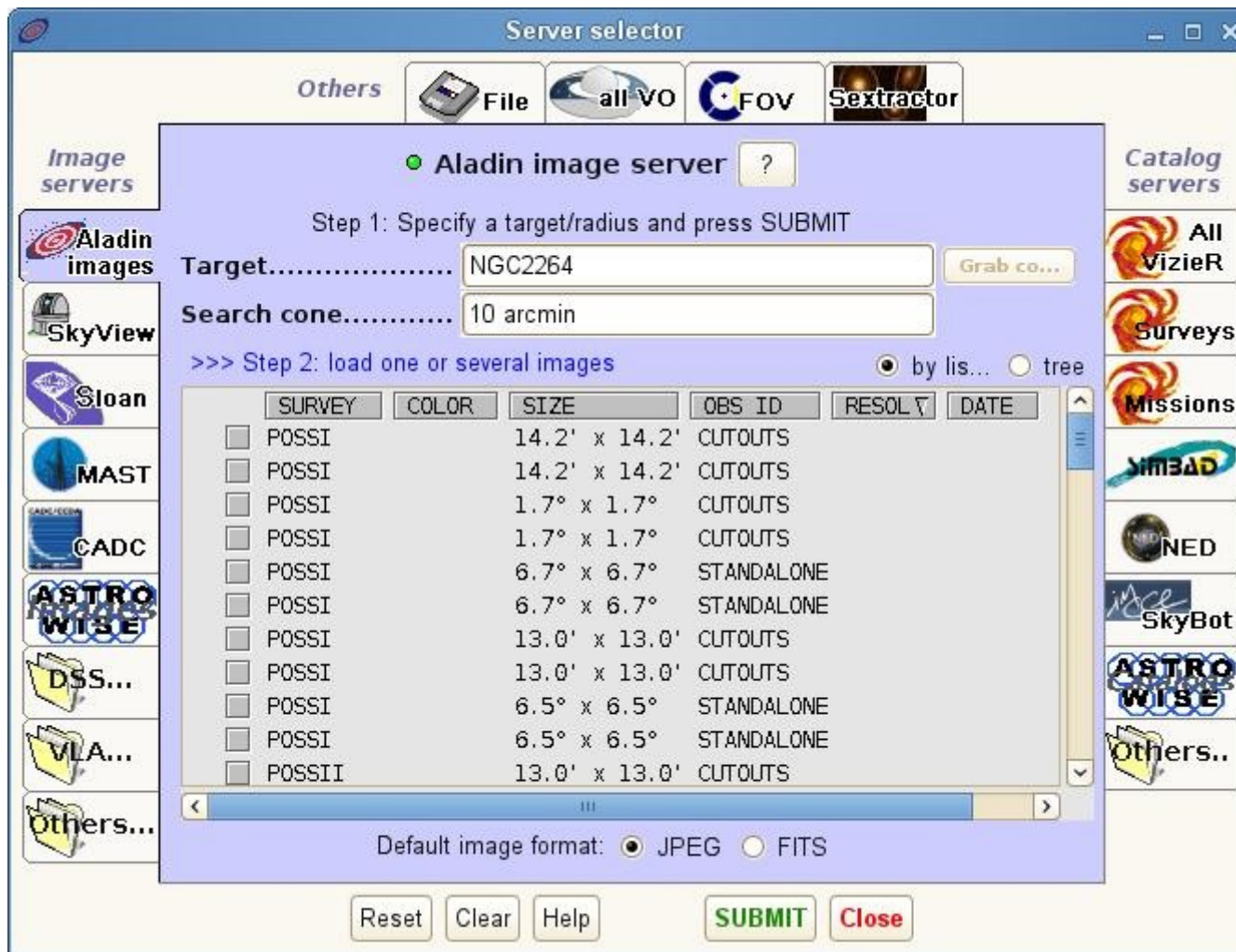
Tags

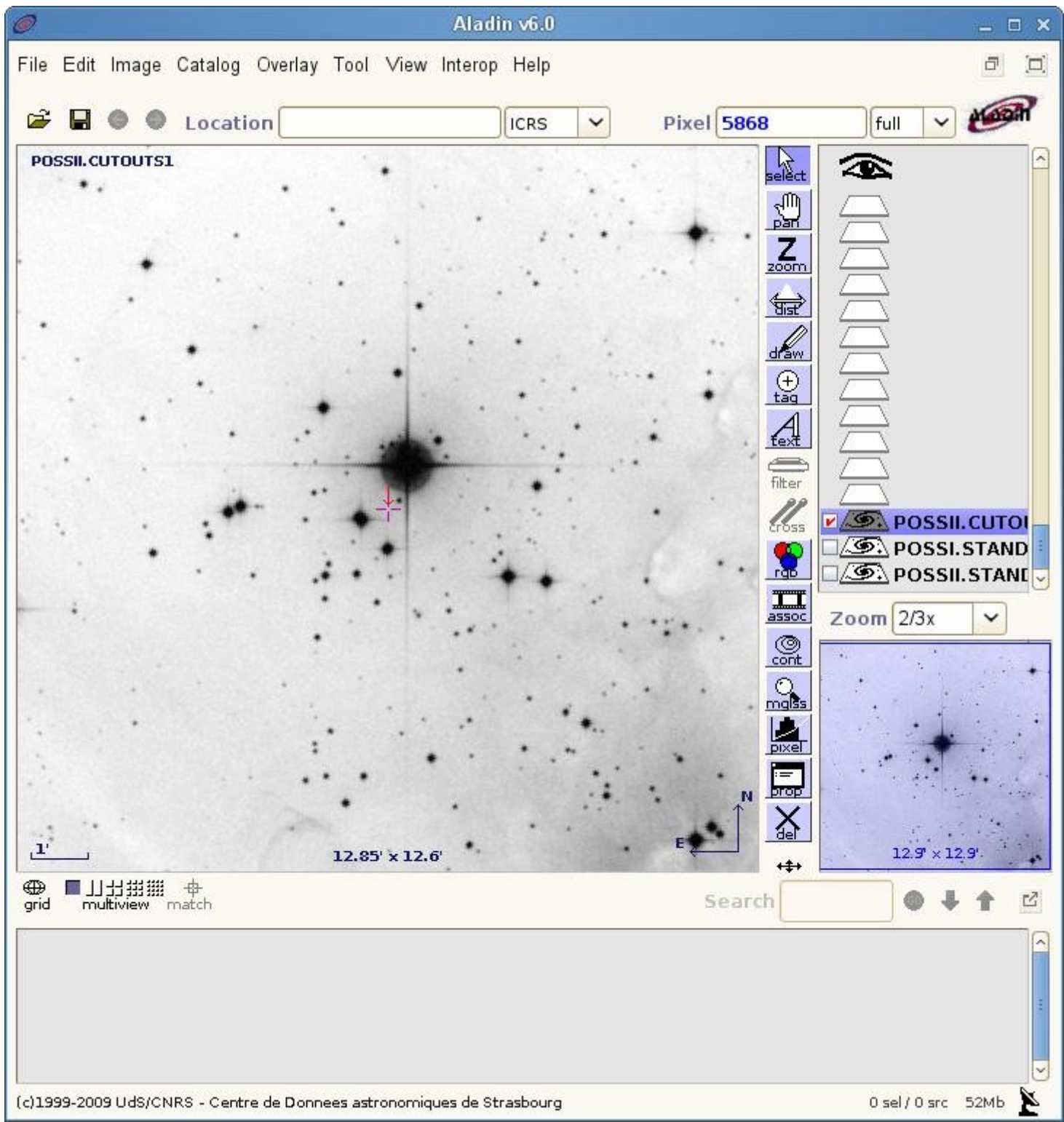
Loading annotations from Availability

VO Tools: Aladin








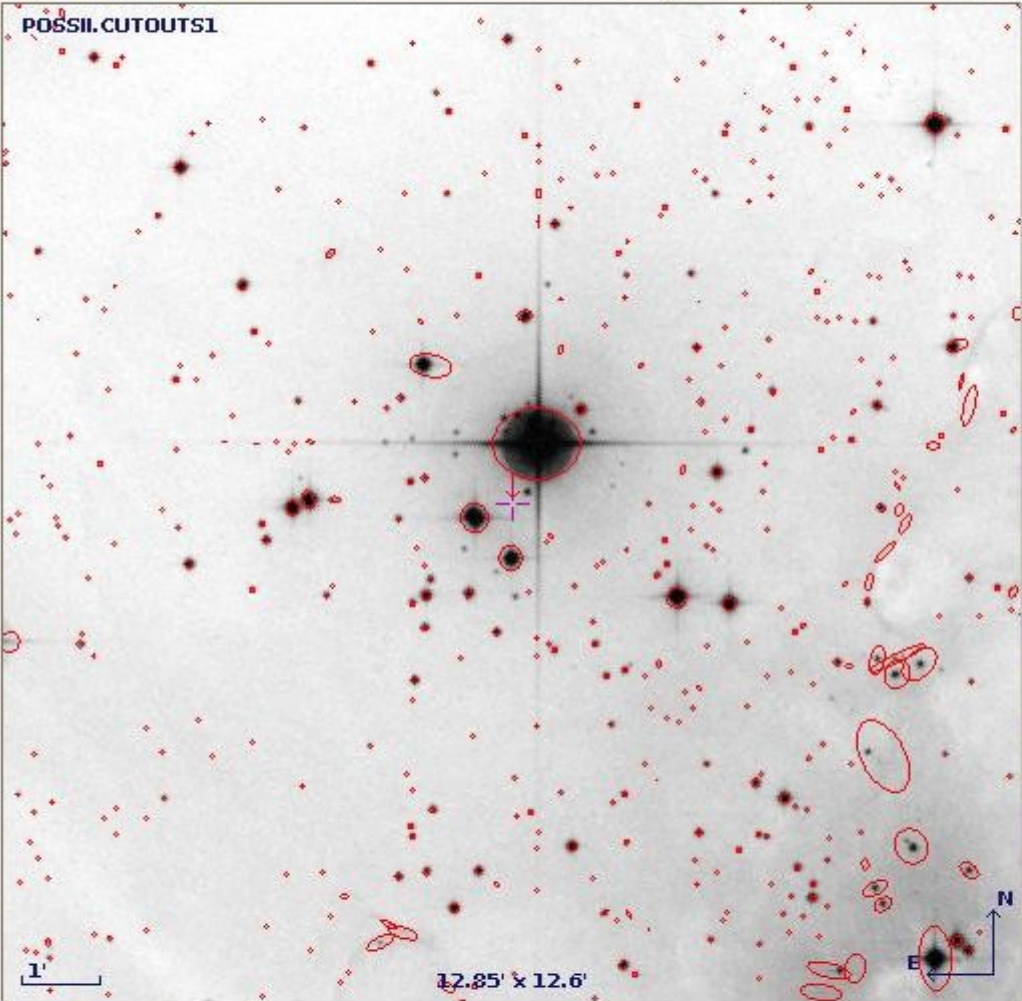


Aladin v6.0

File Edit Image Catalog Overlay Tool View Interop Help

Location ICRS Pixel full 

POSSII.CUTOUTS1



1' 12.85' x 12.6'

grid multiview match

Search

0 sel / 456 src 106Mb

(c)1999-2009 Uds/CNRS - Centre de Donnees astronomiques de Strasbourg

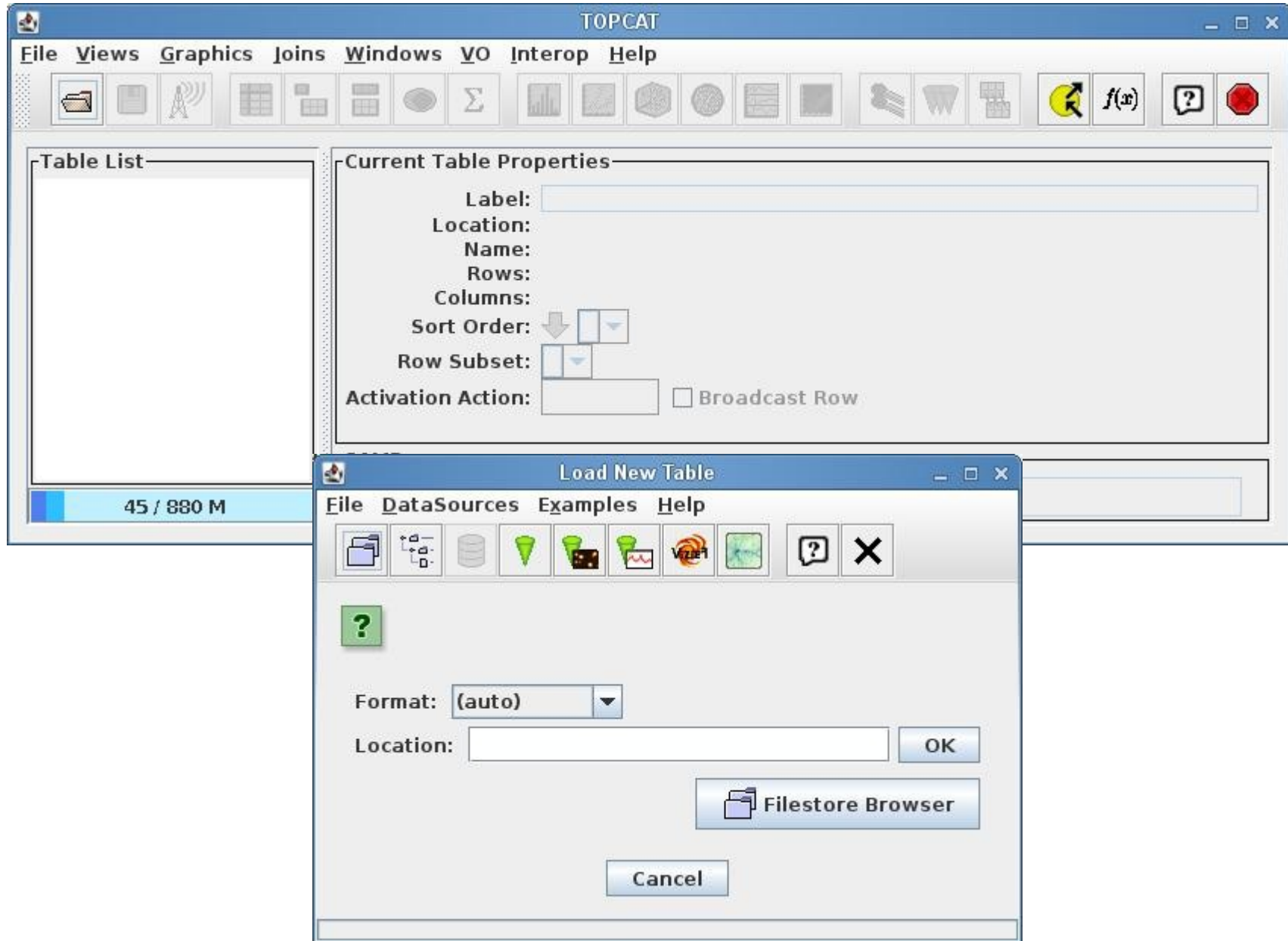
Tools: select, pan, zoom, dist, draw, tag, text, filter, cross, rgb, assoc, cont, mqlss, pixel, prop, del

Layers: S-ex POSSII.C, POSSII.CUTO, POSSI.STAND, POSSII.STAND

Zoom 2/3x

Thumbnail: 12.9' x 12.9'

VO Tools: topcat



SAMP

Aladin v6.0

File Edit Image Catalog Overlay Tool View Interop Help

Location ICRS Pixel 8946 full

POSSII.CUTOUTS1

select pan zoom dist draw tag text filter cross rgb assoc cont mqls pixel prop del

Zoom 2/3x

12.85' x 12.6'

12.9' x 12.9'

grid multiview match




Search 60

NUMBER	MAG ISO	MAGERR ISO	X IMAGE	Y IMAGE	ALPHA J2...	DELTA J2...	A WORLD	B WORL
<input type="checkbox"/> 254	-13.6279	0.0112	493.503	331.033	100.2188...	+9.8685457	0.000568...	0.000516
<input type="checkbox"/> 255	-16.5629	0.0028	508.146	314.400	100.2146...	+9.8638940	0.001992...	0.001901
<input type="checkbox"/> 256	-15.9749	0.0031	547.031	309.648	100.2036...	+9.8625778	0.001320...	0.001242
<input type="checkbox"/> 257	-11.6199	0.0390	452.522	340.899	100.2305...	+9.8712922	0.000365...	0.000322
<input type="checkbox"/> 258	-10.4049	0.0826	448.594	337.760	100.2316...	+9.8704117	0.000290...	0.000223






(c)1999-2009 Uds/CNRS - Centre de Données astronomiques de Strasbourg 67 sel / 456 src 42Mb

SAMP Control

File Connect Help

Clients | **Received Messages** | **Sent Messages**

MType	Sender	Status
table.highlight.row	 Aladin	> Notified
table.highlight.row	 Aladin	> Notified
table.highlight.row	 Aladin	> Notified
table.highlight.row	 Aladin	> Notified
table.highlight.row	 Aladin	> Notified

MType:
Message ID:
Sender:
Receiver:
Status:
Message
Response

TOPCAT

File Views Graphics Joins Windows VO Interop Help


















































Table List
 1: 2MASS-PSC-60m
 2: USNO-B1-60m
 3: match(1,2)
 4: S-ex POSSII.CUTOUTS1

Current Table Properties
 Label: S-ex POSSII.CUTOUTS1
 Location: img13307.fits/out
 Name:
 Rows: 456
 Columns: 14
 Sort Order:  
 Row Subset: All 
 Activation Action: Broadcast Row

SAMP
 Messages:  Clients:    

82 / 880 M

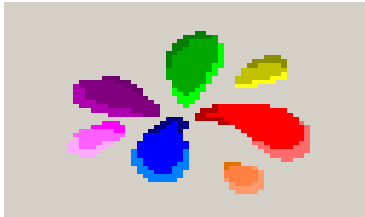
VO Tools: Spectra



<http://www.sciops.esa.int/index.php?project=ESAVO&page=vospec>



<http://sdc.laeff.inta.es/vosed/index.jsp>



<http://star-www.dur.ac.uk/~pdraper/splat/splat-vo/>

VO Tools: Visualization



<http://vo.iucaa.ernet.in/~voi/voplot.htm>



<http://visivo.oact.inaf.it/index.php>

VO Tools: Publishing

- Automatic publishing – submit data to CDS, reduce data in Astro-WISE



<http://saada.u-strasbg.fr/saada/>

Workflow Management System

- Eclipse <http://www.eclipse.org/>
- Taverna <http://www.taverna.org.uk/>



Service panel

Filter: Clear

Import new services

- ▶ Biomoby @ <http://moby.ucalgary.ca/moby/MOBY-Central.pl>
- ▶ Soaplab @ <http://www.ebi.ac.uk/soaplab/services/>
- ▶ WSDL @ <http://soap.bind.ca/wsd/bind.wsd>
- ▶ WSDL @ <http://soap.genome.jp/KEGG.wsd>
- ▶ WSDL @ <http://www.ebi.ac.uk/ws/services/urn:Dbfetch?wsdl>

Found 1537 services [Biomoby service <http://moby.ucalgary.ca/moby/MOBY-Central.pl>]

Workflow diagram



Workflow explorer Details Validation report

- Workflow1
 - Workflow input ports
 - Workflow output ports
 - Services
 - Data links
 - Control links
 - Merges

File Edit Insert View Workflows Advanced Help



Design Results myExperiment

Service panel

Filter: Clear

Import new services

- ▶ Biomoby @ <http://moby.ucalgary.ca/moby/MOBY-Central.pl>
- ▶ Soaplab @ <http://www.ebi.ac.uk/soaplab/services/>
- ▶ WSDL @ <http://soap.bind.ca/wsd/bind.wsd>
- ▶ WSDL @ <http://soap.genome.jp/KEGG.wsd>
- ▼ WSDL @ <http://www.ebi.ac.uk/ws/services/urn:Dbfetch?wsdl>
 - ⚙ fetchBatch - Get a set of database entries (see <http://www.ebi.ac.uk/Tools/webservices/servi>)
 - ⚙ fetchData - Get a database entry (see <http://www.ebi.ac.uk/Tools/webservices/services/dbfet>)
 - ⚙ getDbFormats - Get a list of formats for a given database (see <http://www.ebi.ac.uk/Tools/we>)
 - ⚙ getFormatStyles - Get a list of available styles for a format of a database (see <http://www.ebi>)

Workflow explorer Details Validation report

- ▼ Workflow1
 - 📁 Workflow input ports
 - 📁 Workflow output ports
 - ▼ Services
 - ▼ fetchBatch
 - 🔗 db
 - 🔗 format
 - 🔗 ids
 - 🔗 style
 - 🔗 attachmentList
 - 🔗 fetchBatchReturn
 - 📁 Data links
 - 📁 Control links
 - 📁 Merges

Workflow diagram



db	format	ids	style
fetchBatch			
attachmentList	fetchBatchReturn		

File Edit Insert View Workflows Advanced Help



Design Results myExperiment

Workflow runs

Remove

Click on a run to see its values
 Click on a service in the diagram
 to see intermediate values (if available)

Workflow1 2010-10-16 23:09:15

Graph Progress report

Name	Status	Queued iterations	Iterations done	Iterations w/errors	Average time/iterat...	First iteration started	Last iteration ended
Workflow1	Finished	-	-	-	924 ms	23:09:15	23:09:16
fetchBatch	Finished	0	1	1	72 ms	23:09:16	23:09:16

Finished
 Pause
 Cancel

Refresh intermediate values

Show workflow results

Save all values

Workflow results

File Edit Insert View Workflows Advanced Help



Design Results myExperiment

Service panel

Filter: Clear

Import new services

- ▶ Biomart @ <http://www.biomart.org/biomart/martservice>
- ▶ Biomoby @ <http://moby.ucalgary.ca/moby/MOBY-Central.pl>
- ▶ Soaplab @ <http://www.ebi.ac.uk/soaplab/services/>
- ▶ WSDL @ <http://soap.bind.ca/wsd/bind.wsd>
- ▶ WSDL @ <http://soap.genome.jp/KEGG.wsd>
- ▼ WSDL @ <http://www.ebi.ac.uk/ws/services/urn:Dbfetch?wsdl>
 - ⚙️ fetchBatch - Get a set of database entries (see <http://www.ebi.ac.uk/Tools/webservices/ser>
 - ⚙️ fetchData - Get a database entry (see <http://www.ebi.ac.uk/Tools/webservices/services/dbfet>
 - ⚙️ getDbFormats - Get a list of formats for a given database (see <http://www.ebi.ac.uk/Tools/we>

Workflow explorer Details Validation report

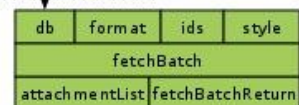
- ▼ Workflow1
 - ▼ Workflow input ports
 - ▲ fetchmine
 - ▼ Workflow output ports
 - ▼ storeResults
 - ▼ Services
 - ⚙️ fetchBatch
 - 🎯 db
 - 🎯 format
 - 🎯 ids
 - 🎯 style
 - 🔍 attachmentList
 - 🔍 fetchBatchReturn
 - ▼ Data links
 - 🔗 fetchmine -> fetchBatch:db
 - 🔗 fetchBatch:fetchBatchReturn -> storeResults
 - ▼ Control links
 - ▼ Merges

Workflow diagram



Workflow input ports

fetchmine ▲



Workflow output ports

storeResults ▼



Service panel

Filter: Clear

Import new services

- Concatenate Files
- Execute Command Line App
- Get Environment Variables as XML
- List Files by Extension
- List Files By Regex
- Read Text File
- Write Text File

- ▶ jdbc
- ▶ list

Workflow explorer Details Validation report

Execute_SQL_Query

- driver
- params
- password
- provideXml
- sql
- url
- userid
- resultList
- xmlresults

fetchBatch

- db
- format
- ids
- style
- attachmentList
- fetchBatchReturn

Read_Text_File

- fileurl
- filecontents

Workflow diagram

