

Photometry in VizieR Catalogues

Mark Allen, François Ochsenbein, Sebastien Derriere



VO-ICE Project



VizieR includes photometry meta-data

VizieR Result Page

Search Criteria
 Save in CDSportal
 Keywords: 0
 Tables: ..METAucd, ..UCDs, ..META sed, ..Elements, ..METApHOT
 Preferences: max: 1000, HTML Table, All columns, Compute
 Mirrors: CDS, France

Show constraint information

METAphot Table of Photometric Systems, in connection with METAFiltr (134 rows)
 Post annotation

Full photid	name	GCPD	comment
0		0	Unspecified filters found in various tables
1	Johnson-Morgan	1	Johnson & Morgan (1953ApJ...117..313J) [GCPD, ADPS, ADPS2]
2	UcBV	2	Cape UVB from Arp (1958AJ....63..118A) [GCPD, ADPS, ADPS2]
4	uvby	4	Strömgren (1957VA.....2.1336S) and Crawford (1966AJ....71..114C) [GCPD, ADPS, ADPS2]
9	Johnson	9	UBVRIJHKLMN by Mendoza and Johnson (1963BOTT....3..305J) [GCPD, ADPS, ADPS2]
10	Argue	10	(r r8 r9 i) red+infra-red by Argue (1967MNRAS.135...23A) [GCPD]
11	Walraven	11	VBLUW system by Walraven & Walraven (1960) [GCPD, ADPS, ADPS2]
12	DDO	12	(35,38,41,42,45,48) filters by McClure & van den Bergh (1976AJ....81..182M) [GCPD]
13	Geneva	13	7-color system UBVB1B2V1G by Golay (1972VA.....14...13G) [GCPD, , ADPS, ADPS2]
14	UBV-Eggen	14	UBV from Eggen & Sandage (1960MNRAS.120...79E) [GCPD]
15	102,65,62	15	Interference infra-red + optical filters by Eggen (1967ApJS...14..307E) [GCPD]
16	uvby-Eggen	16	Variation of the uvby system by Eggen (1976PASP...88..732E) [GCPD]
17	RI-Eggen	17	Variation of Kron-Cousins by Eggen (1965AJ....70...19E) [GCPD]
18	Johnson-Mitchell	18	(33,35,37,40,45,52,58,63,72,80,86,99,110) Johnson & Mitchell (1975RMxAA...1..299J) [GCPD]
19	Kron	19	VRI filters by Kron & Smith (1951ApJ...113..324K) [GCPD]
20	gnKmfu	20	Indices from 8 filters at (344,391,406,452,497,417,427,439nm) Gyldenkerne (1970A&AS....2....1D) [GCPD]
21	Vilnius	21	UPXYZVTS system by Kararas et al. (1968VilOB..22....3K) [GCPD, GCPD, ADPS, ADPS2]
22	Wood	22	12-color (uvbgyaot1hrt2i) by Wood (1969AJ....74..177W) [GCPD]
24	ubygri	24	Bahng (1958ApJ...128..572B) [GCPD]
25	jhk	25	Bahng (1969MNRAS.143...73B) infra-red extension [GCPD]
26	C(1)..C(8)	26	Morguleff & Gerbaldi 8-color system (1975A&AS...19..189M) [GCPD]
27	DAO	27	DAO (35,38,42,44,54,56) filters by Walker & Morris (1971AJ....76..246H) [GCPD]
28	yb1b2b3	28	4-filter (541,460,439,422)nm by Willstrop (1960MNRAS.121...17W) [GCPD]
29	UV,BG,R	29	filters (370,470,640)nm by Tifft (1958AJ....63..127T) [GCPD]
30	Lockwood	30	(78,87,88,104,105) near-IR filters by Lockwood & McMillan (1971) [GCPD]
31	PV-Eggen	31	2-filter Eggen (1955AJ....60...65E) [GCPD]

for example ...

Johnson-
Morgan

VizieR Correlated Data

VizieR Correlated Data

[METAphot](#) Table of Photometric Systems, in connection with METAfltr (134 rows)

photid	name	GCPD	comment
1	Johnson-Morgan	1	Johnson & Morgan (1953ApJ...117..313J) [GCPD , ADPS , ADPS2]

[METAfltr](#) Details on filters in a photometry, used in connection with METAphot (654 rows)

photid	fltrid	famid	ucdid	filter	lambda0 um	dlambda um	freq0 GHz	dfreq GHz	Fmag0 Jy	Ncat	Ntup	comment
	1	0	935	U	0.3502	0.0639	8.565e+05	1.566e+05	1.790e+03	0	0	from ADPS(λ_0), F_0 from http://nsted
	2	0	933	B	0.4425	0.0928	6.876e+05	1.467e+05	4.063e+03	0	0	from ADPS(λ_0), F_0 from http://nsted
	3	0	932	V	0.5544	0.0843	5.481e+05	8.416e+04	3.636e+03	0	0	from ADPS(λ_0), F_0 from http://nsted

SDSS

VizieR Correlated Data

VizieR Correlated Data [\[Back\]](#) · [\[Forwd\]](#) · [\[Print\]](#) · [\[Close\]](#)

[METAphot](#) Table of Photometric Systems, in connection with METAfltr (134 rows)

photid	name	GCPD	comment
205	SDSS	0	Sloan Digital Sky Survey (http://www.sdss.org/) [ADPS , ADPS2]

[METAfltr](#) Details on filters in a photometry, used in connection with METAphot (654 rows)

photid	fltrid	famid	ucdid	filter	lambda0 um	dlambda um	freq0 GHz	dfreq GHz	Fmag0 Jy	Ncat	Ntup	comment
	1	1465	935	u'	0.3519	0.0555	8.519e+05	1.344e+05	3.631e+03	93	0	from ADPS (AB scale)
	2	1466	933	g'	0.482	0.1245	6.22e+05	1.607e+05	3.631e+03	129	0	from ADPS (AB scale)
	3	1467	932	r'	0.6247	0.1262	4.799e+05	9.695e+04	3.631e+03	139	0	from ADPS (AB scale)
	4	1468	931	i'	0.7635	0.1291	3.927e+05	6.639e+04	3.631e+03	128	0	from ADPS (AB scale)
	5	1469	929	z'	0.9018	0.1326	3.324e+05	4.888e+04	3.631e+03	110	0	from ADPS (AB scale)

Test system: VizieR Photometry Tool

The screenshot shows a web browser window titled "VizieR Photometry Tool" with the URL <http://cdsarc.u-strasbg.fr/vizPhoto.htx>. The browser's address bar includes navigation buttons, a search bar with "Google", and RSS and print icons. Below the browser window is a navigation menu with icons and labels for "Simbad", "VizieR", "Aladin", "Catalogs", "Dictionary", "Biblio", "Tutorials", and "Resources". The "VizieR" icon is highlighted. Below the menu is a purple banner with the text "VizieR Photometry Tool". The main content area contains a paragraph of text: "Simple test for getting photometric points formatted in a VOTable. The result should be conform to the Photometry model. For example, to get all photometric points of all sources from VizieR locate up to 5'' from 3C 273, just enter 3C 273 in the Target box." Below this text is a search form with a "VizieR" logo, a dropdown menu set to "any Catalog", an empty input field, the text "Target:", an input field containing "3c273", the text "Radius:", an input field containing "5", and a "Search" button.

<http://cdsarc.u-strasbg.fr/viz-bin/test/votable?-phot&-c=3C273&-c.rs=5>

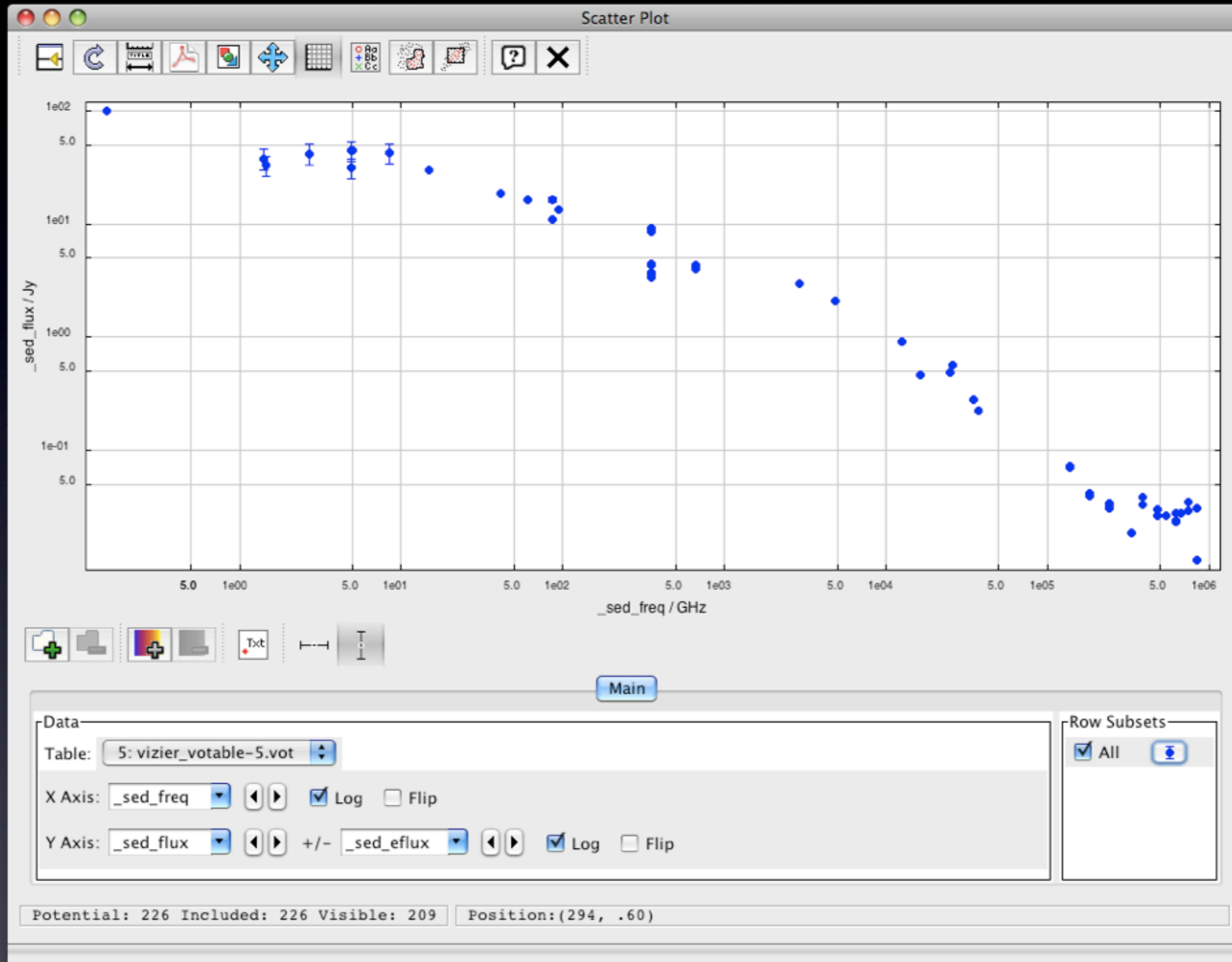
Calculations

- Flux from magnitudes
 - Effective wavelengths
 - decisions were necessary
 - which zero point to use
 - effective λ (depends on source)
- ➔ important photometry metadata closely linked

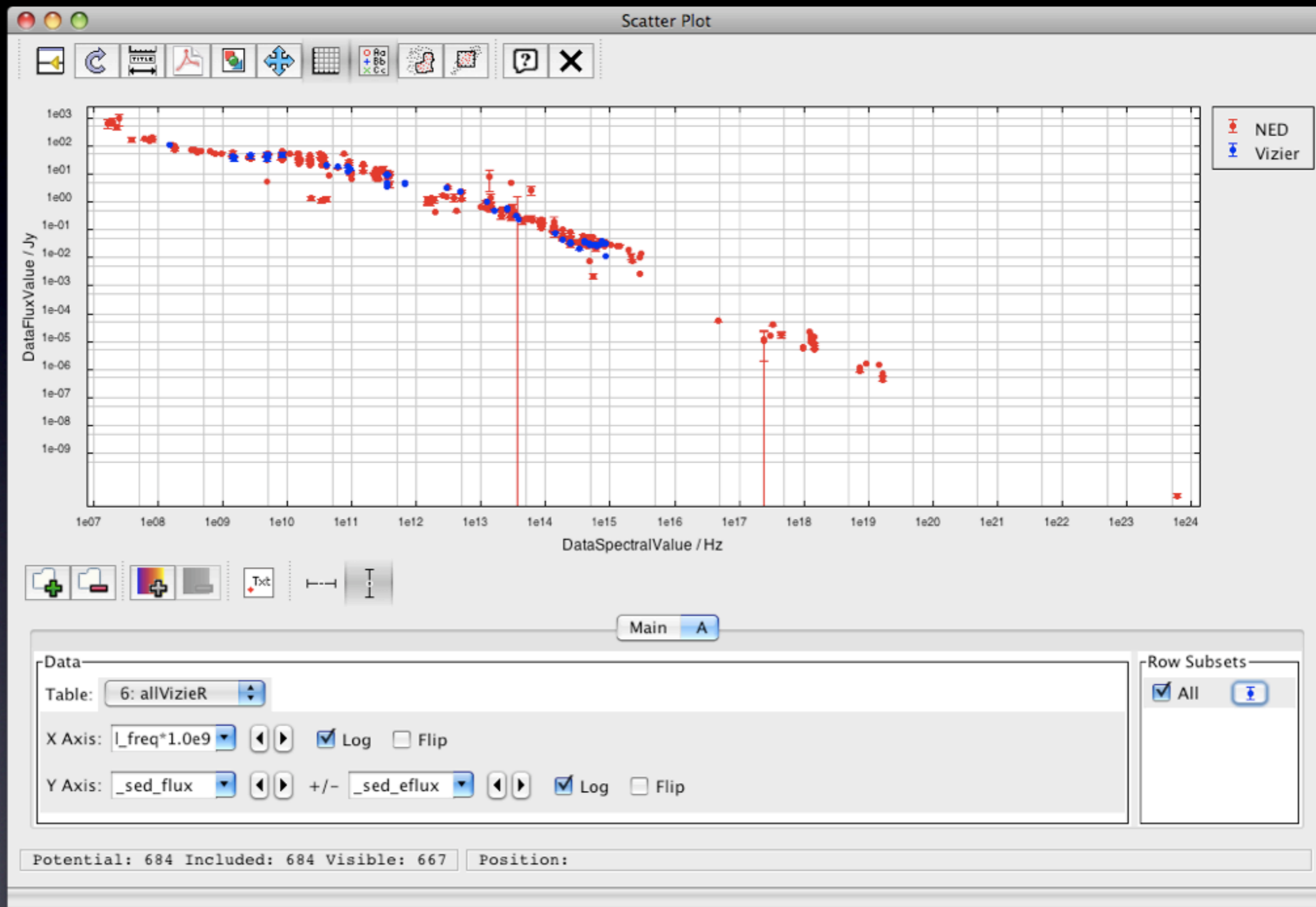
Conforms to developing Photometry serialization

```
<DESCRIPTION>all VizieR catalogues</DESCRIPTION>
<!-- RowName: -source=${_tablename()}&${_ID()} -->
<!-- Definitions of GROUPs and FIELDs -->
<GROUP ID="_sed" name="Flux1" ucd="phot" utype="spec:PhotometryPoint">
  <DESCRIPTION>The SED group is made of 4 columns: mean frequency, flux, flux error, and filter designation</DESCRIPTION>
  <FIELDref ref="sed1_freq" utype="photdm:PhotometryFilter.SpectralAxis.Coverage.Location.Value"/>
  <FIELDref ref="sed1_flux" utype="spec:PhotometryPoint"/>
  <FIELDref ref="sed1_eflux" utype="spec:PhotometryPointError"/>
  <FIELDref ref="sed1_filter" utype="photdm:PhotometryFilter.identifier"/>
</GROUP>
<FIELD name="_RAJ2000" ucd="pos.eq.ra;meta.main" ref="J2000" datatype="double" width="10" precision="6" unit="deg"><!-- ucd="POS_EQ_RA_MAIN" -->
  <DESCRIPTION>Right ascension (FK5) Equinox=J2000.0 Epoch=J2000.000, proper motions taken into account (computed by VizieR, not part of t
</FIELD>
<FIELD name="_DEJ2000" ucd="pos.eq.dec;meta.main" ref="J2000" datatype="double" width="10" precision="6" unit="deg"><!-- ucd="POS_EQ_DEC_MA" -->
  <DESCRIPTION>Declination (FK5) Equinox=J2000.0 Epoch=J2000.000, proper motions taken into account (computed by VizieR, not part of the o
</FIELD>
<FIELD name="_tablename()" ucd="meta.table" datatype="char" arraysize="32"><!-- ucd="ID_TABLE" -->
  <DESCRIPTION>Table name</DESCRIPTION>
</FIELD>
<FIELD name="_ID()" ucd="meta.id" datatype="char" arraysize="64"><!-- ucd="ID_IDENTIFIER" -->
  <DESCRIPTION>String which identifies the row</DESCRIPTION>
</FIELD>
<FIELD ID="sed1_freq" name="_sed_freq" ucd="em.freq" unit="GHz" datatype="double" width="10" precision="E6"><!-- ucd="OBS_FREQUENCY" -->
  <DESCRIPTION>Mean frequency, in GHz</DESCRIPTION>
</FIELD>
<FIELD ID="sed1_flux" name="_sed_flux" ucd="phot.flux.density" unit="Jy" datatype="float" width="9" precision="E3"><!-- ucd="PHOT_FLUX_DENS" -->
  <DESCRIPTION>Corresponding flux density, in Jy</DESCRIPTION>
</FIELD>
<FIELD ID="sed1_eflux" name="_sed_eflux" ucd="stat.error;phot.flux.density" unit="Jy" datatype="float" width="8" precision="E2"><!-- ucd="E" -->
  <DESCRIPTION>Mean error (standard deviations) of flux density</DESCRIPTION>
</FIELD>
<FIELD ID="sed1_filter" name="_sed_filter" ucd="meta.id;instr.filter" unit="" datatype="char" width="32" arraysize="32*"><!-- ucd="INST_FIL" -->
  <DESCRIPTION>Filter designation, in the form photoSystem:filterName</DESCRIPTION>
</FIELD>
<DATA><TABLEDATA>
<TR><TD>187.277920</TD><TD>+02.052383</TD><TD>I/280B/ascc</TD><TD>recno=1138730</TD><TD>138.15e+3</TD><TD>68.3e-3</TD><TD>1.4e-3</TD><TD>2MASS:
<TR><TD>187.277920</TD><TD>+02.052383</TD><TD>I/280B/ascc</TD><TD>recno=1138730</TD><TD>181.69e+3</TD><TD>39.1e-3</TD><TD>1.0e-3</TD><TD>2MASS:
<TR><TD>187.277920</TD><TD>+02.052383</TD><TD>I/280B/ascc</TD><TD>recno=1138730</TD><TD>241.77e+3</TD><TD>21.2e-3</TD><TD>0.8e-3</TD><TD>2MASS:
```

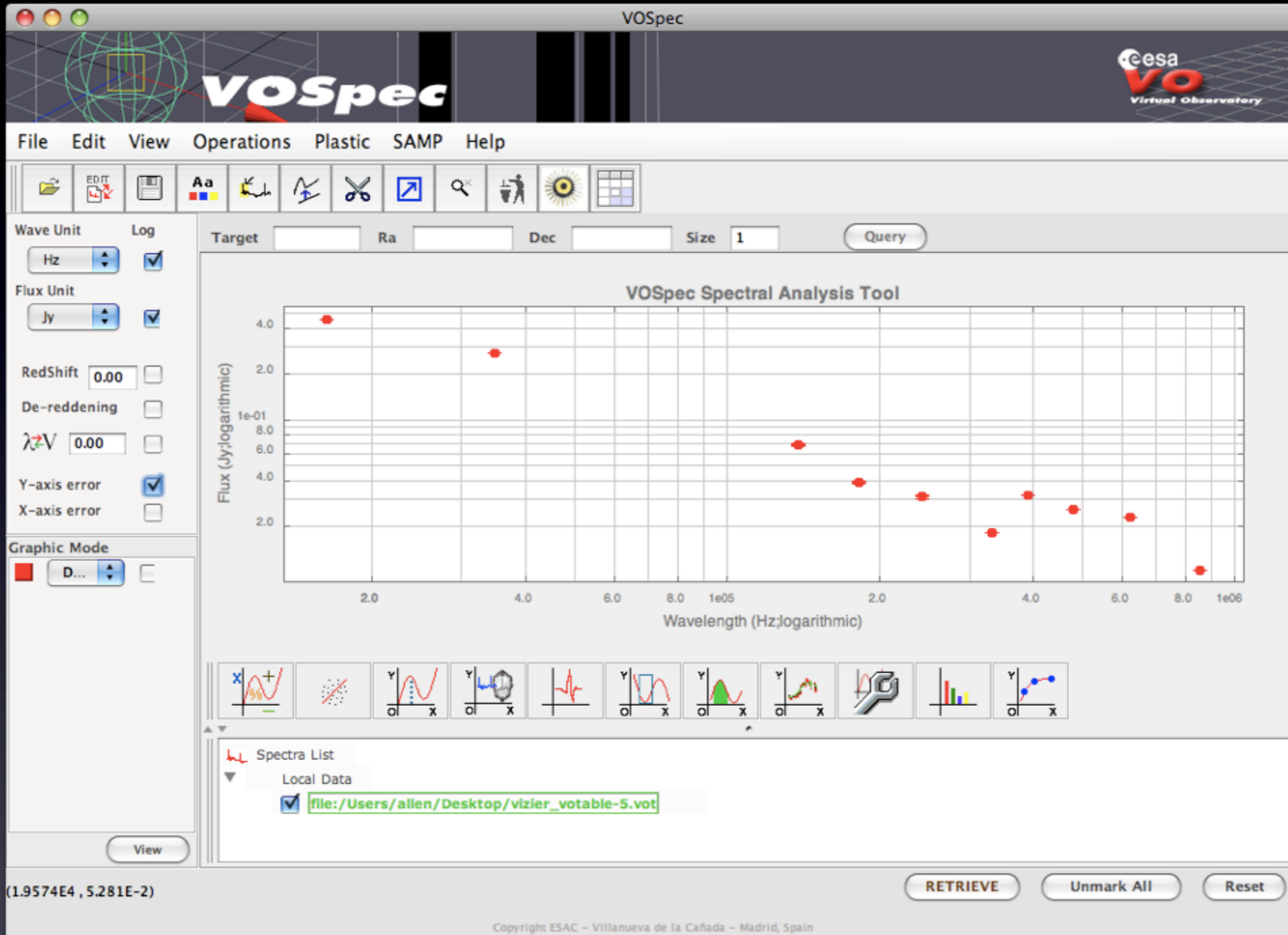
VizieR SED shown in Topcat



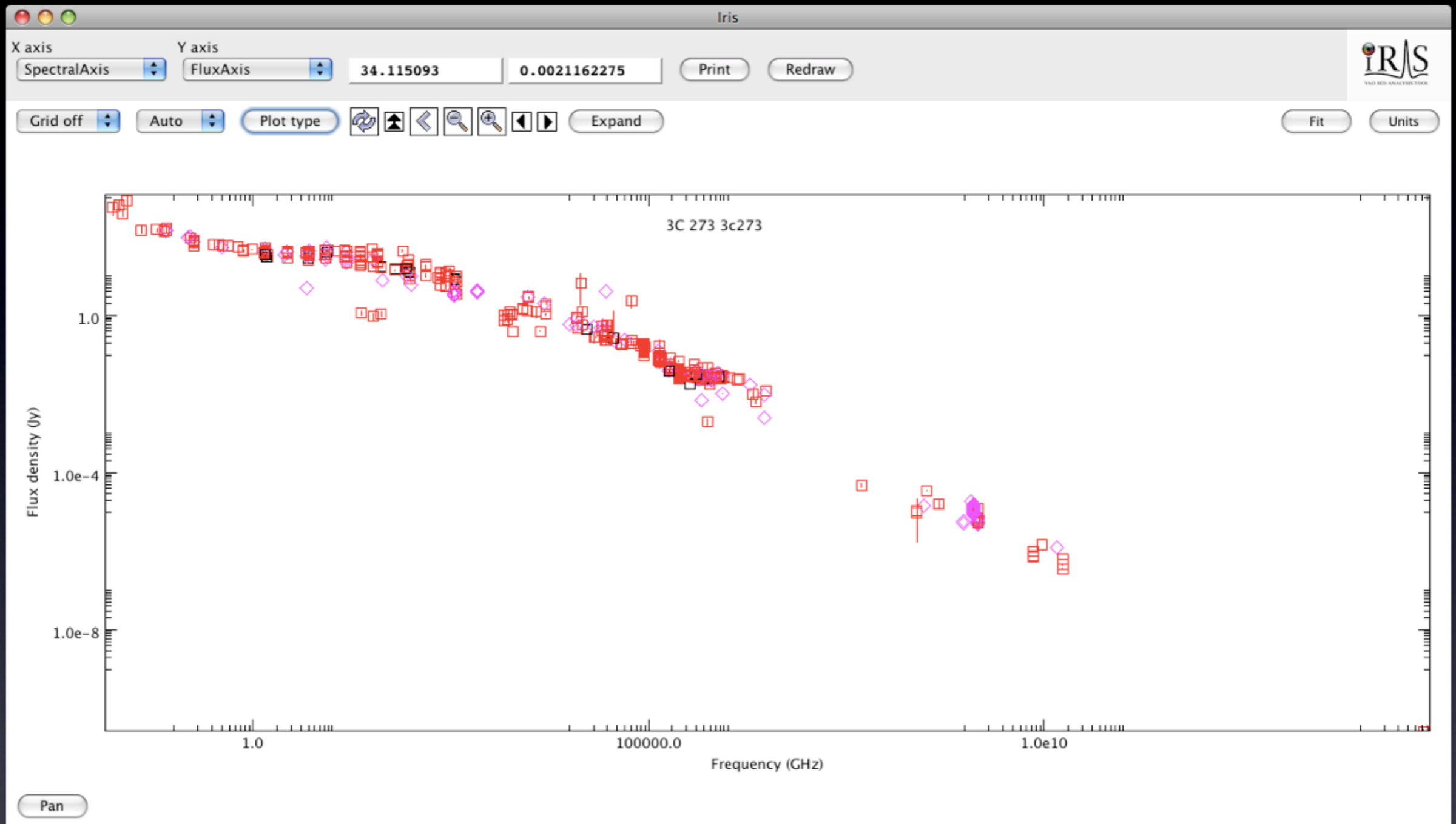
VizieR SED (blue) & NED SED (red)



VizeR SED loaded in VOSpec as VOTable



... in the VAO SED Importer & IRIS tool



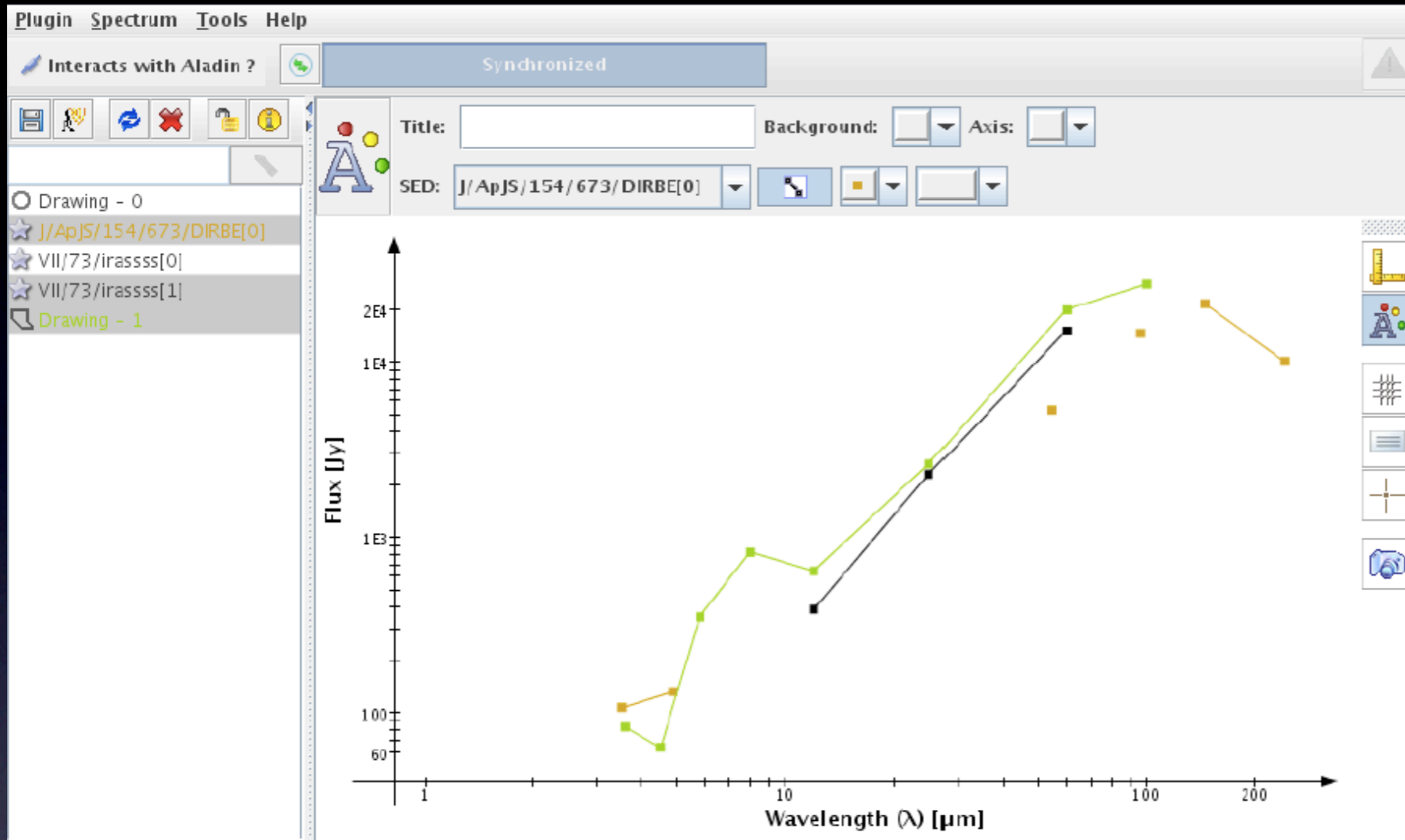
using 'coplot'

Development ongoing

- incomplete - in particular for high energy data
 - ▶ photometry metadata curation continuing
- currently a votable from a cone-search type service, others being explored
- provenance original data/metadata very important - exploring ways of exposing this

Summary

- Significant photometry metadata curation effort
- Cross-catalogue photometry combined into SEDs
- Exposed as cone-search type service
- VizieR SEDs from catalogues useable in range of tools



Aladin

Clear Frame CRSD

GLIMPSE.5.8MU.GLM.32100+0000.MOSAICJ3
22.56" x 15.76"

IRAS-IRIS.25MUJ036B2H0
26.39" x 18.4"

IRAS-IRIS.60MUJ036B3H0
26.39" x 18.4"

IRAS-IRIS.100MUJ036B4H0
26.39" x 18.4"

IRAS-IRIS.60MUJ036B3H0
26.39" x 18.4"

IRAS-IRIS.100MUJ036B4H0
26.39" x 18.4"

IRAS-IRIS.60MUJ036B3H0
33.8" x 33.8"

Zoom 1/4x

Search

0 sel / 5975 src 90Mb

View A1 - GLIMPSE.3.6MU.GLM.32100+0000.MOSAIC.I1

grid north multiview match

(c) 2010 UDS/CNRS - by CDS - Distributed under GNU GPL v3