

SED building at CDS

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Outline

- Description of photometric data in VizieR
 - photometric systems, filters
 - table / column metadata
- Implementation of « Edinburgh proposal »
- Aladin plugin

Description of photometric data

- Many catalogues containing photometry
 - describe each column
 - provide all necessary metadata
 - NOT EASY !!!
- Photometry Data Model
 - limited version better than nothing !



Photometric systems

- Existing collections : GCPD, ADPS
 - Filter Profile Services (SVO, NVO...)
- 118 described in VizieR at present

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 UBV from Arp (1958AJ.....63..118A) [GCPD , ADPS , ADPS2]
4	uvby	4	Strömngren (1957VA.....2.1336S) and Crawford (1966AJ.....71..114C)
9	Johnson	9	UBVRIJKLMN by Mendoza and Johnson (1963BOTT....3..305J) [GCPD]
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.....12..111D)
13	Geneva	13	7-color system UBVB1B2V1G by Golay (1972VA.....14...13G) [GCPD]
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..303E)
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 (1975AJ.....70...19E)
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) Gyldenfeldt [GCPD]
21	Vilnius	21	UPXYZVTS system by Kararas et al. (1968VilOB..22....3K) [GCPD , ADPS]

Photometric filters

- Description of individual filters
- 378 described in VizieR at present

photid	fltrid	famid	ucdid	filter	lambda0	dlambda	freq0	dfreq	Fmag0	Ncat	Ntup	comm
					um	um	GHz	GHz	Jy			
1	1	0	935	U	0.3502	0.0639	8.565e+05	1.566e+05	1.810e+03	0	0	from ADPS(λ_0)+NED
1	2	0	933	B	0.4425	0.0928	6.876e+05	1.467e+05	4.260e+03	0	0	from ADPS(λ_0)+NED
1	3	0	932	V	0.5544	0.0843	5.481e+05	8.416e+04	3.640e+03	0	0	from ADPS(λ_0)+NED
2	1	0	935	Uc	0.3938	0.035	7.613e+05	6.766e+04		0	0	from ADPS(λ_0)
2	2	0	933	B	0.4334	0.0714	6.917e+05	1.14e+05		0	0	from ADPS(λ_0)
2	3	0	932	V	0.5468	0.0588	5.483e+05	5.896e+04		0	0	from ADPS(λ_0)
4	1	837	935	u	0.3451	0.0349	8.687e+05	8.785e+04	1.310e+03	1	0	from ADPS(λ_0)+NED (1995PASP..107..945F)
4	2	840	934	v	0.4108	0.021	7.298e+05	3.731e+04	4.120e+03	1	0	from ADPS(λ_0)+NED (1995PASP..107..945F)
4	3	830	933	b	0.4669	0.019	6.421e+05	2.613e+04	4.150e+03	1	0	from ADPS(λ_0)+NED (1995PASP..107..945F)
4	4	843	932	y	0.5478	0.0237	5.473e+05	2.368e+04	3.600e+03	1	0	from ADPS(λ_0)+NED (1995PASP..107..945F)
4	5	0	933	Hbn	0.4857	0.0032	6.172e+05	4067		0	0	H β -narrow from ADPS(λ_0)
4	6	0	933	Hbw	0.4883	0.0143	6.14e+05	1.798e+04		0	0	H β -wide from ADPS(λ_0)
9	1	713	935	U	0.3531	0.0619	8.49e+05	1.488e+05	1.810e+03	1	0	from ADPS(λ_0)+NED
9	2	682	933	B	0.4442	0.0891	6.749e+05	1.354e+05	4.260e+03	2	0	from ADPS(λ_0)+NED
9	3	716	932	V	0.5537	0.0818	5.414e+05	7.999e+04	3.640e+03	8	0	from ADPS(λ_0)+NED
9	4	709	932	R	0.6938	0.1943	4.321e+05	1.21e+05	2.890e+03	0	0	from ADPS(λ_0)+NED (1995PASP..107..945F)
9	5	691	931	I	0.878	0.2176	3.414e+05	8.462e+04	2.280e+03	0	0	from ADPS(λ_0)+NED (1995PASP..107..945F)
9	6	693	929	I	1.25	0.32	3.98e+05	5.756e+04	1.610e+03	3	0	from ADPS(λ_0) +

Table column description

- 2063 columns described for 523 catalogues

<u>catid</u>	<u>tabid</u>	<u>colid</u>	<u>photid</u>	<u>fltrid</u>	<u>photid1</u>	<u>fltrid1</u>
2225	<u>5</u>	<u>4</u>	<u>701</u>	<u>1</u>	0	0
2225	<u>5</u>	<u>6</u>	<u>701</u>	<u>2</u>	0	0
2225	<u>5</u>	<u>8</u>	<u>701</u>	<u>3</u>	0	0
2225	<u>5</u>	<u>10</u>	<u>701</u>	<u>4</u>	0	0
2243	<u>1</u>	<u>12</u>	<u>207</u>	<u>1</u>	0	0
2243	<u>1</u>	<u>16</u>	<u>207</u>	<u>2</u>	0	0
2243	<u>1</u>	<u>20</u>	<u>207</u>	<u>3</u>	0	0
2243	<u>1</u>	<u>24</u>	<u>707</u>	<u>13</u>	0	0
2243	<u>1</u>	<u>34</u>	<u>707</u>	<u>14</u>	0	0
2243	<u>3</u>	<u>16</u>	<u>207</u>	<u>3</u>	0	0
2243	<u>3</u>	<u>17</u>	<u>207</u>	<u>3</u>	0	0
2246	<u>1</u>	<u>7</u>	<u>206</u>	<u>1</u>	0	0
2246	<u>1</u>	<u>11</u>	<u>206</u>	<u>2</u>	0	0
2246	<u>1</u>	<u>15</u>	<u>206</u>	<u>3</u>	0	0

Use these metadata

- Compute new flux columns (e.g. from mags)
 - new capability to be implemented in VizieR
- Or... just provide the metadata

Provide these metadata in the VOTable

- GROUP following « Edinburgh proposal »
 - Data provider : PROVIDE METADATA !
 - SED clients (e.g. **VOSpec**) : figure how to use it

```
<GROUP name="Flux" ucd="phot" utype="phfdm:PhotometryPoint">
```

```
<DESCRIPTION>For NVSS, the frequency is the same for all table rows and stored in a param attached to the photometry group.</DESCRIPTION>
```

```
<PARAM name="Freq" ucd="em.freq" unit="GHz" datatype="float" value="1.4" utype="phfdm:PhotometryFilter.SpectralAxis.Coverage.Location.Value" />
```

```
<FIELDref ref="phot_f1" ucd="phot.flux.density;em.radio.750-1500MHz" utype="phfdm:PhotometryPoint.Value.value" />
```

```
<FIELDref ref="phot_e1" ucd="stat.error;phot.flux.density;em.radio.750-1500MHz" utype="phfdm:PhotometryPoint.Value.error" />
```

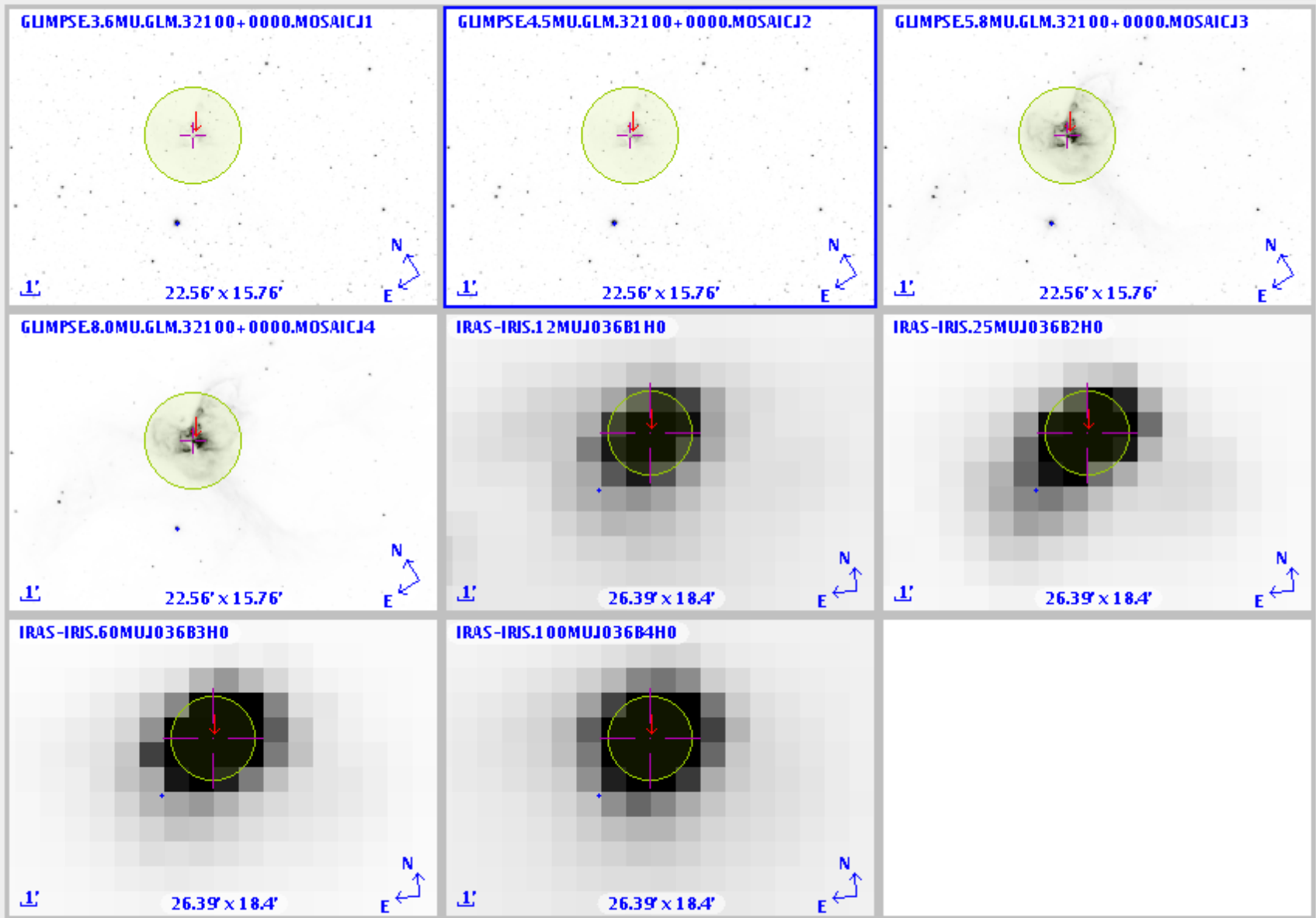
```
</GROUP>
```

NVSS



Aladin plugin

- SED from set of calibrated images
 - define region in images
 - compute fluxes
 - display SED
- Also capable to read VOTable with photometry <GROUP>



select
pan
zoom
dist
phot
draw
tag
filter
cross
rgb
assoc
crop
cont
mglss
pixel
prop
del

Drawing
 DIRBE
 J/ApJS/154/6
 J/ApJS/154/6
 GLIMPSE.5.8MU
 GLIMPSE.3.6MU
 GLIMPSE.4.5MU
 GLIMPSE.8.0MU
 IRAS-IRIS.25MU
 IRAS-IRIS.12MU
 IRAS-IRIS.100M
 IRAS-IRIS.60MU

Zoom 1/4x

33.8' x 33.8'

- Drawing - 0
- ★ J/ApJS/154/673/DIRBE[0]
- ★ VII/73/irasss[0]
- ★ VII/73/irasss[1]
- Drawing - 1

 Title: Background: Axis:
SED: J/ApJS/154/673/DIRBE[0] 

