

SIMBAD TAP service is evolving to
simplify the usage for all users.

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SIMBAD TAP news

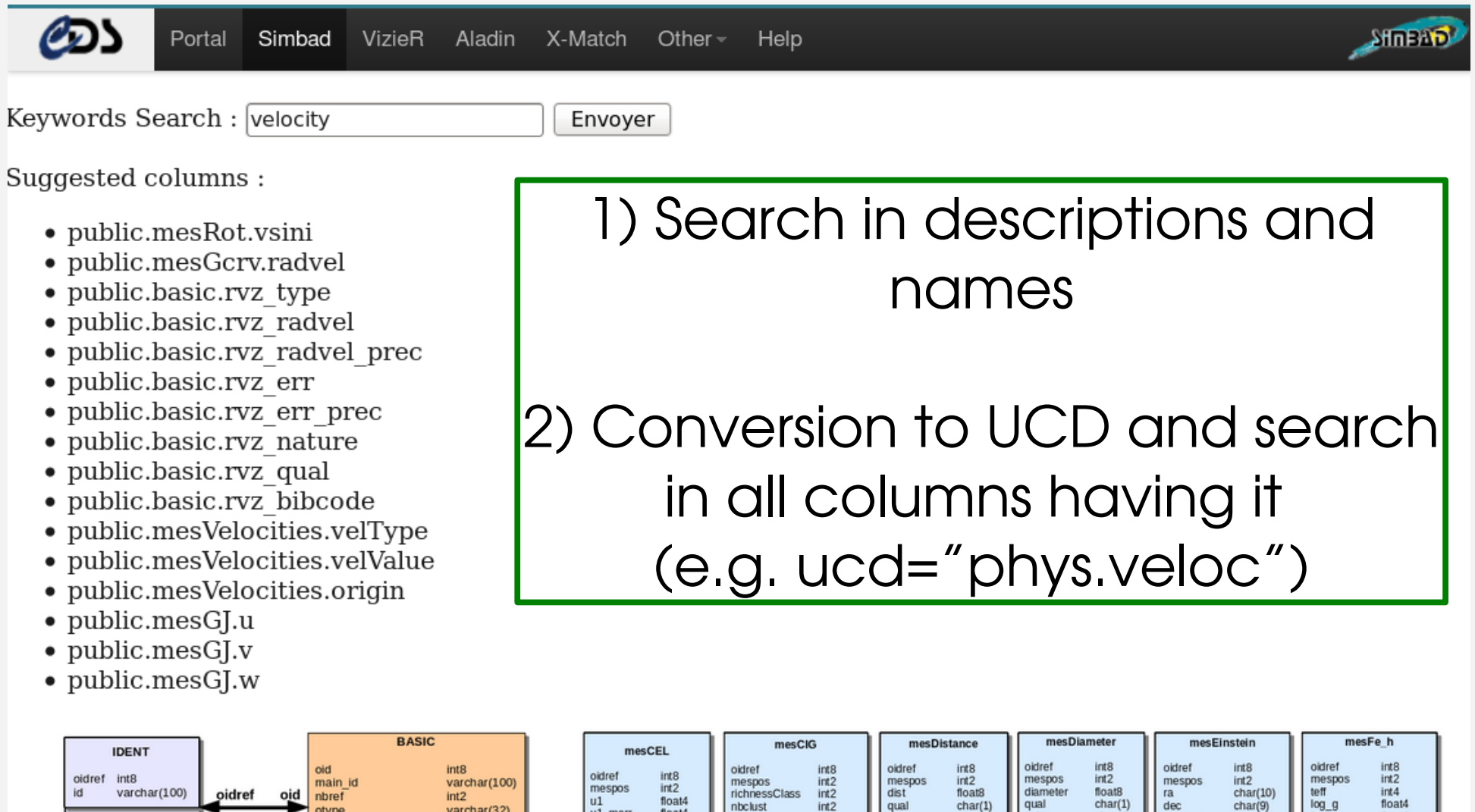
- **Search** keywords in tables
- Database **views** to replace subqueries/joins
- **Self generated** ADQL from a web query
- **Coverage** of a result (MOC)
- New TAPlib v2

... all available [now/soon]

SIMBAD TAP status

- **T**able **A**ccess **P**rotocol in SIMBAD is available since 2012
- About 120 users and 7000 queries per month in 2015
- 40 tables + 549 columns exposed

Search keywords in tables



Keywords Search :

Suggested columns :

- public.mesRot.vsin1
- public.mesGcrv.radvel
- public.basic.rvz_type
- public.basic.rvz_radvel
- public.basic.rvz_radvel_prec
- public.basic.rvz_err
- public.basic.rvz_err_prec
- public.basic.rvz_nature
- public.basic.rvz_qual
- public.basic.rvz_bibcode
- public.mesVelocities.velType
- public.mesVelocities.velValue
- public.mesVelocities.origin
- public.mesGJ.u
- public.mesGJ.v
- public.mesGJ.w

1) Search in descriptions and names

2) Conversion to UCD and search in all columns having it (e.g. ucd="phys.veloc")

IDENT	BASIC	mesCEL	mesCIG	mesDistance	mesDiameter	mesEinstein	mesFe_h
oidref int8 id varchar(100)	oid int8 main_id varchar(100) nbref int2 otype varchar(32)	oidref int8 mespos int2 u1 float4 u1_merr float4	oidref int8 mespos int2 richnessClass int2 nbclust int2	oidref int8 mespos int2 dist float8 qual char(1)	oidref int8 mespos int2 diameter float8 qual char(1)	oidref int8 mespos int2 ra char(10) dec char(9)	oidref int8 mespos int2 teff int4 log_g float4

Views replacing subqueries/joins

- Writing ADQL queries to get data of interest could be too complex, with many joined tables.
- Thanks to **views**, SIMBAD schema is **simpler** to understand and queries are simpler to write.
 - > Usage of views will replace multiple subqueries or joins in ADQL queries.

Views replacing subqueries/joins

- **Concatenation** in the same field of all object types or identifiers

BEFORE

```
SELECT id2.id FROM ident as id1
  JOIN ident as id2 USING(oidref)
 WHERE id1.id = 'M44';
```

id

```
-----
M 44
NAME PRAESEPE CLUSTER
NAME BEEHIVE
NGC 2632
Cl Melotte 88 [.....]
```

NOW

```
SELECT ids FROM ident
  JOIN ids USING(oidref)
 WHERE id = 'M44';
```

ids

```
-----
M 44 | NAME PRAESEPE CLUSTER | NAME
BEEHIVE | NGC 2632 | Cl Melotte 88
[.....]
```

Views replacing subqueries/joins

- A new view composed of many **subqueries** to convert multiple joins in **distinct columns**

| *BEFORE* |

```
| SELECT main_id,B.flux as "B", V.flux as "V" FROM basic  
| JOIN (SELECT flux,oidref FROM flux WHERE filter='B') as B  
| ON oid=B.oidref  
| JOIN (SELECT flux,oidref FROM flux WHERE filter='V') as V  
| ON oid=V.oidref  
| WHERE otype='G..' AND B.flux<4
```

```
|      main_id      | B | V  
|-----|-----|  
| NAME SMC          | 2.79 | 2.2  
| LEDA 3129223     | 0.754 | 0.895  
| .....  
|
```

Views replacing subqueries/joins

- A new view composed of many **subqueries** to convert multiple joins in **distinct columns**

| *NOW*

```
| SELECT main_id,B,V FROM basic  
| JOIN allfluxes ON oid=oidref  
| WHERE B<4 AND otype='G..';
```

```
|          main_id          |   B   |   V  
| -----|-----|-----  
| NAME SMC                 | 2.79  | 2.2  
| LEDA 3129223             | 0.754 | 0.895  
| ...
```


Self generated ADQL from a web query

From SIMBAD web page results (like a query by coordinates), a new link helps the user to write the equivalent query in ADQL language :

Number of rows : 22

N	Identifier	dist(asec)	Otype	ICRS (J2000) RA	ICRS (J2000) DEC	Sp type	#ref 1850 - 2015
1	BD+36 4308	0.00	*	20 54 05.6889	+37 01 17.380	OB-e	4
2	TYC 2700-2084-1	64.82	*	20 54 00.321	+37 01 09.09	~	0
3	TYC 2700-2634-1	81.01	*	20 54 06.544	+37 02 37.74	~	0
4	TYC 2700-234-1	152.73	*	20 54 10.600	+37 03 38.34	~	0
5	TYC 2700-1136-2	197.61	*	20 53 49.191	+37 01 13.90	~	0
6	TYC 2700-1136-1	199.16	*	20 53 49.061	+37 01 14.74	~	0
7	ADS 14406	199.17	**	20 53 49.06	+37 01 14.7	~	2
8	1RXS J205350.2+365935	211.89	X	20 53 50.201	+36 59 35.02	~	0
9	TYC 2700-1024-1	235.64	*	20 54 14.825	+37 04 46.10	~	0
10	CCDM J20544+3704B	240.41	*	20 54 22.10	+37 03 35.9	~	0
11	TYC 2700-142-1	242.48	*	20 54 21.068	+37 03 55.15	~	0
12	BD+36 4310	261.93	*	20 54 18.2342	+36 57 42.864	K0	1
13	1RXS J205419.2+365737	273.42	X	20 54 19.198	+36 57 37.01	~	0
14	TYC 2700-118-1	278.76	*	20 54 22.482	+36 58 04.42	~	0
15	TYC 2700-974-1	279.28	*	20 53 45.146	+36 59 05.33	~	0
16	TYC 2700-170-1	310.67	*	20 53 49.0873	+37 05 16.167	~	0
17	TYC 2700-676-1	416.97	*	20 53 32.737	+37 03 32.30	~	0
18	TYC 2700-674-1	440.26	*	20 54 24.5389	+36 54 59.501	~	0
19	TYC 2700-1234-1	449.65	*	20 54 11.5618	+37 08 41.505	~	0
20	BD+36 4307	455.45	*	20 53 59.7889	+36 53 47.450	K0	0
21	IRAS 20526+3646	458.10	IR	20 54 39.3	+36 57 39	~	0
22	HD 199234	473.57	*	20 54 41.99631	+37 04 25.3506	K0	9

Equat. Gal SGal Ecl

[Store this result in the CDS portal](#)

Send this query directly in the database (TAP) [try it in ADQL query](#)

To bookmark this query, right click on this link: [simbad:coo=20 54 05.689 +37 01 17.38,rad=8 arcmin](#) equivalent in the popup menu

[simbad.u-strasbg.fr/simbad/sim-tap?txtQuery=SELECT+ra,dec,main_id+AS+"Main ...CONTAINS\(POINT\('ICRS',RA,DEC\)](#)

Simbad: TAP Service

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ADQL QUERY TO EXECUTE (or choose an example:

```
SELECT ra,dec,main_id AS "Main identifier" FROM basic
WHERE CONTAINS(POINT('ICRS',RA,DEC),CIRCLE('ICRS',313.523704,37.021494,8.0/60))=1
```

Check !

Coverage of a result (MOC)

- The coverage of a query is available :
- Automatically in the properties of a job
 - As a new MOC “output” format

Query N°1434118549356A

General Query Coverage (MOC) Execution Parameters

Projection: AITOFF Cartesian
 Display grid

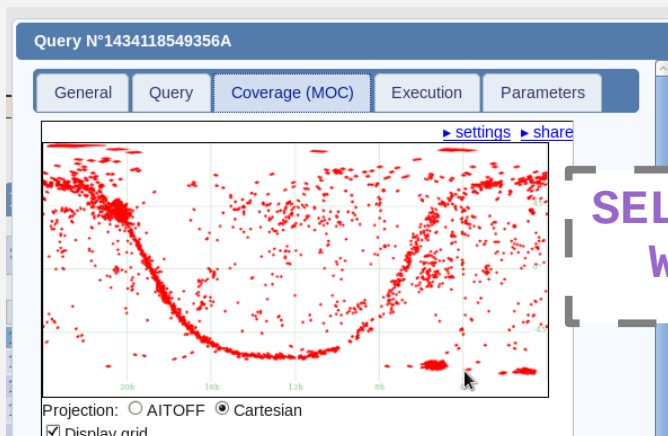
Destruction	
ED	16:15:49 on 17/6/2015
ED	16:15:27 on 17/6/2015
ED	16:15:01 on 17/6/2015
ED	16:14:53 on 17/6/2015
	00:02:49 on 15/6/2015
	23:53:28 on 14/6/2015
	23:47:29 on 14/6/2015
	23:44:28 on 14/6/2015
	23:37:13 on 14/6/2015

ID	Date	Duration	Status	Completion Time
1433886449395A Example 7	9/6/2015	49ms	ERROR	23:47:29 on 14/6/2015
1433886268806A Example 7	23:44:28 on 9/6/2015	48s 169ms	ERROR	23:44:28 on 14/6/2015
1433885833589A Example 7	23:37:13 on 9/6/2015	253ms	COMPLETED	23:37:13 on 14/6/2015

Coverage of a result (MOC)

Constraints :

- The query should use the table “basic” containing the healpix cell (the selected fields are ignored to generate the MOC).
- MOC is generated without limitation of output rows (on the initial ADQL query).
- Max resolution of 3.4' (order=10 / nside=1024).



```
SELECT ra,dec FROM basic  
WHERE otype = 'HII';
```


Near-term perspectives

- Currently SIMBAD TAP is being updated to the new version of TAPlib
 - > *see next talk by Gregory Mantelet*
- Assess how to provide pagination to get results step by step
- Show an interactive database diagram