

Accéder aux données*

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Gaia Data Release 1

- 1 B of stars with positions and G magnitudes
- 2 M of TGAS stars with positions, parallaxes and proper motions
- Lightcurves of a subset of RR Lyrae (2595) and Cepheid (599) variables
- 2152 ICRF quasars with positions and G mag.
- pre cross-matched tables between Gaia DR1 and large catalogues

Gaia Data Release 1

- starting from 14 September 2016
- available via Gaia Archive and partner data centres



- soon at V0-Paris
- demos on querying and retrieving data from Gaia Archive

Astronomical Data Query Language

- is a flavour of SQL for astronomers to access databases via TAP
- is an IVOA standard: www.ivoa.net/documents/latest/ADQL.html
- provides rich geometry data types/functions
 - BOX, CENTROID, CIRCLE, POINT, POLYGON and REGION
 - CONTAINS and INTERSECTS
 - COORDSYS, COORD1, COORD2, AREA and DISTANCEC
- Nicolas introduces SQL/ADQL...

Demo

archives.esac.esa.int/gaia

exercise 3: search with ADQL Form

gaia archive
esa

HOME SEARCH STATISTICS VISUALIZATION HELP DOCUMENTATION VOSPACE SHARE

Simple Form ADQL Form Query Results

[Query examples](#)

Job name:

1 `SELECT * FROM gaiadr1.gaia_source WHERE CONTAINS(POINT('ICRS',gaiadr1.gaia_source.ra,gaiadr1.gaia_source.dec),CIRCLE('ICRS',10.6847083,41.26875,1))=1`

Reset Form
Submit Query

Status	Job	Creation date	Num. rows	Size	
✓	14742842267370	19-Sep-2016, 13:23:46	41588	7 MB	
✓	14742841614010	19-Sep-2016, 13:22:41	10026	1 MB	
✓	14742820771030	19-Sep-2016, 12:47:57	23685	4 MB	
✓	14742818915100	19-Sep-2016, 12:44:51	4498	825 KB	

Gaia DR1

- gaiadr1.allwise_best_neighbour
- gaiadr1.allwise_neighbourhood
- gaiadr1.allwise_original_valid
- gaiadr1.aux_qso_icrf2_match
- gaiadr1.cephheid
- gaiadr1.ext_phot_zero_point
- gaiadr1.gaia_source
 - solution_id
 - source_id
 - random_index
 - ref_epoch
 - ra
 - ra_error
 - dec

exercise 4: upload personal data

gaia archive

HOME SEARCH STATISTICS VISUALIZATION HELP DOCUMENTATION VOSPACE SHARE

Simple Form ADQL Form Query Results

Gaia DR1

- [gaiadr1.allwise_best_neighbour](#)
- [gaiadr1.allwise_neighbourhood](#)
- [gaiadr1.allwise_original_valid](#)
- [gaiadr1.aux_qso_icrf2_match](#)
- [gaiadr1.cepheid](#)
- [gaiadr1.ext_phot_zero_point](#)
- [gaiadr1.gaia_source](#)
 - solution_id
 - source_id
 - random_index
 - ref_epoch
 - ra
 - ra_error
 - dec
 - dec_error
 - parallax
 - parallax_error
 - pmra
 - pmra_error
 - pmdec
 - pmdec_error
 - ra_dec_corr
 - ra_parallax_corr
 - ra_pmra_corr
 - ra_pmdec_corr
 - dec_parallax_corr
 - dec_pmra_corr
 - dec_pmdec_corr
 - parallax_pmra_corr

Job name:

```
1 SELECT * FROM gaiadr1.gaia_source WHERE CONTAINS(POINT('ICRS',gaiadr1.gaia_source.ra,gaiadr1.g
```

Status	Job	Creation date
✓ <input type="checkbox"/>	14742842267370	19-Sep-2016, 13:23:46
✓ <input type="checkbox"/>	1474284	
✓ <input type="checkbox"/>	1474282	
✓ <input type="checkbox"/>	1474281	
✓ <input type="checkbox"/>	1474275	
✓ <input type="checkbox"/>	1474274	
✓ <input type="checkbox"/>	1474274	
✓ <input type="checkbox"/>	1474274	
✓ <input type="checkbox"/>	1474274	
✓ <input type="checkbox"/>	xmatch_	

GAIA Catalogue Upload

Select a file no file selected

(*) File format

(*) Table name

Table description

(*) mandatory field

exercise 5: cross-match two tables

The screenshot shows the Gaia archive web interface. At the top, there is a navigation bar with links for HOME, SEARCH, STATISTICS, VISUALIZATION, HELP, DOCUMENTATION, VOSPACE, and SHARE. Below this, there are tabs for Simple Form, ADQL Form, and Query Results. The ADQL Form tab is active, and a SQL query is visible in the editor: `1 SELECT * FROM gaiadr1.gaia_source WHERE CONTAINS(POINT('ICRS',gaiadr1.gaia_source.ra,gaiadr1.gaia_source.dec),CIRCLE('ICRS',`. A red box highlights a star icon in the top toolbar.

The left sidebar shows a tree view of Gaia DR1 tables, with 'gaiadr1.gaia_source' selected. Below the table name, a list of columns is visible, including 'solution_id', 'source_id', 'random_index', 'ref_epoch', 'ra', 'ra_error', 'dec', 'dec_error', 'parallax', 'parallax_error', 'pmra', 'pmra_error', 'pmdec', 'pmdec_error', 'ra_dec_corr', 'ra_parallax_corr', 'ra_pmra_corr', 'ra_pmdec_corr', 'dec_parallax_corr', 'dec_pmra_corr', 'dec_pmdec_corr', 'parallax_pmra_corr', 'parallax_pmdec_corr', 'pmra_pmdec_corr', 'astrometric_n_obs_al', 'astrometric_n_obs_ac', 'astrometric_n_good_obs_al', and 'astrometric_n_good_obs_ac'.

The main content area displays the 'GAIA Cross-Match' dialog. It features a yellow star icon and the title 'GAIA Cross-Match'. Below the title, there are two dropdown menus for 'Table A' (set to 'gaiadr1.gaia_source') and 'Table B' (set to 'user_ishih.xrbinaryes'). An 'Output table name' field contains 'xmatch_gaia_source_xrbinaryes'. A 'Simple' tab is selected, and a 'Radius' field is set to '1.0' with the unit '(in arcseconds)'. At the bottom of the dialog, there are 'Cancel' and 'Execute' buttons.

Using applications



TOPCAT



TAP service entry:

<http://gea.esac.esa.int/tap-server/tap>

Advanced

- integrating **The Archive** into your research work flow with open source techniques
- W3C standard, Http connection with RESTful interface
- IVOA standards: www.ivoa.net
 - Table Access Protocol (TAP)
 - Universal Worker Service (UWS)
 - VOTable, VOSpace,...
- neutral to platforms/languages
- Gaia tools/apis have already appeared on Github
- After DR1, managing/manipulating data locally will become trickier...