

- GUI interface
- Python (jupyter notebook)

GACS <https://gea.esac.esa.int/archive/>

← → ↻ 🏠 🔍 <https://gea.esac.esa.int/archive/> 110 % 📄 📄 📄 📄 📄 📄


→ EUROPEAN SPACE AGENCY 📄 ABOUT ESAC 📄

gaia archive

HOME SEARCH SINGLE OBJECT VISUALISATION **HELP**

Welcome to the Gaia ESA Archive

Gaia is a European space mission providing astrometry, photometry, and spectroscopy of nearly 2000 million stars in the Milky Way as well as significant samples of extragalactic and solar system objects. The Gaia ESA Archive contains deduced positions, parallaxes, proper motions, radial velocities, and brightness measurements. Complementary information on multiplicity, photometric variability, and astrophysical parameters is provided for a large fraction of sources.



Top Features



Gaia Mission

News, Gaia alerts, information, and resources on the Gaia mission for the scientific community.



Download

Direct bulk download of Gaia data in ECSV format.



Software Tools

Software tools for resampling of spectra, calibration of data, etc.



Gaia DR3

Direct access to Gaia DR3 papers, known issues, tools, auxiliary data, etc.



Auxiliary Data

Small data sets related to calibration, photometric pass bands, exoplanets, asteroids, etc.



Citation

How to cite and acknowledge the use of Gaia data and where to find DOIs.



Partners

Partner data centres also serving Gaia data.

Basic Search

gaia archive

HOMESEARCHSINGLE OBJECTVISUALISATIONHELP

BasicAdvanced (ADQL)Query Results

PositionFile

☒ Name
☐ Equatorial

Target in ☒ Circle ☐ Box

Name Radius

arc sec

V* BF Oph resolved by Sesame Strasbourg (Simbad-NED-VizieR)

Search in:

gaiadr3.gaia_source

▶ Extra conditions

▶ Display columns

Reset Form

Show Query

Submit Query

Output is limited to 2,000 sources

Query results

gaia archive



HOME SEARCH VISUALISATION DOCUMENTATION

Basic Advanced (ADQL) Query Results



No job id ✕

source_id	ra deg	dec deg	parallax mas	phot_g_mean_mag mag	target_id	target_ra deg	target_dec deg	tar
3403818172572314624	83.63305926163925	22.014497367986387	0.5110426215408798	16.52713	crab	83.63308333333333	22.014499999999998	0.0
1070470609404512512	148.88822286209017	69.06529482014444	0.14951645680106435	15.130657	m81	148.88822108929168	69.06529470194445	0.0
4099865451647900032	280.1234395279787	-16.43018715902093	0.1329166497741847	16.48792	280.123456d-16.43d	280.123456	-16.43	0.0
4099865455957533824	280.12330903899357	-16.429706163598446	0.07390058276377748	18.363106	280.123456d-16.43d	280.123456	-16.43	0.0
4099865456015766912	280.1235040880978	-16.42990460665608		18.89173	280.123456d-16.43d	280.123456	-16.43	0.0

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Gaia EDR3 Data Model

Show query in ADQL form

VOTable



Download results

Advanced (ADQL)

gaia archive

HOME SEARCH SINGLE OBJECT VISUALISATION HELP VOSPACE SHARE

Basic Advanced (ADQL) Query Results

gaia



- Other
- Gaia Data Release 1
- Gaia Data Release 2
- Gaia Data Release 3
 - gaiadr3.gaia_source
 - gaiadr3.gaia_source_lite
 - Astrophysical parameters
 - Auxiliary
 - Cross match
 - Extra-galactic
 - Non-single stars
 - Performance verification
 - Reference frame
 - Science alerts
 - Simulation
 - Solar system
 - Spectroscopy
 - Variability
- Gaia Early Data Release 3
- User tables
- Shared to me (from farenou)

Job name: tutorial











Query examples

```
1 select top 10 * from gaiadr3.gaia_source
2 where parallax_over_error>10 and has_rvs='True'
3 order by random_index
```

Ctrl+Space for query autocompletion

Reset Form

Submit Query

Status			Job	Creation date	Num. rows	Size	
✓	<input type="checkbox"/>		tutorial	05-Sep-2023, 15:08:42	10	10 KB	     
✓	<input type="checkbox"/>		nssclustermembers	04-Sep-2023, 12:18:21	1677	41 KB	     
✓	<input type="checkbox"/>		clustermembers	04-Sep-2023, 12:10:38	1291929	18 MB	     
✗	<input type="checkbox"/>		1688112102119O	30-Jun-2023, 10:01:42	0	0 KB	     
✓	<input type="checkbox"/>		1688111570175O	30-Jun-2023, 09:52:50	5	1 KB	     
✓	<input type="checkbox"/>		1688111241925O	30-Jun-2023, 09:47:21	5	1 KB	     
✓	<input type="checkbox"/>		1687964899643O	28-Jun-2023, 17:08:19	5	1 KB	     
✓	<input type="checkbox"/>		1687964772941O	28-Jun-2023, 17:06:12	5	1 KB	     
✓	<input type="checkbox"/>		1687964748598O	28-Jun-2023, 17:05:48	5	1 KB	     
✓	<input type="checkbox"/>		1687964714680O	28-Jun-2023, 17:05:14	0	1 KB	     

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Download format: VOTable Apply jobs filter Select all jobs Delete selected jobs

ADQL : tables tree

The screenshot shows the Gaia Archive web interface. At the top is a dark red header with the text 'gaia archive' and navigation tabs: 'HOME', 'SEARCH', 'SINGLE OBJECT', and 'VISUALISATION'. Below this is a sub-header with tabs: 'Basic', 'Advanced (ADQL)', and 'Query Results'. The 'Advanced (ADQL)' tab is selected. A search bar contains the text 'gaia'. Below the search bar are five icons: a globe, a document, a star, a table, and a share icon. A list of table names is displayed, including 'ra_pseudocolour_corr', 'dec_pseudocolour_corr', 'parallax_pseudocolour_corr', 'pmra_pseudocolour_corr', 'pmdec_pseudocolour_corr', 'astrometric_matched_transits', 'visibility_periods_used', 'astrometric_sigma5d_max', 'matched_transits', 'new_matched_transits', 'matched_transits_removed', 'ipd_gof_harmonic_amplitude', 'ipd_gof_harmonic_phase', 'ipd_frac_multi_peak', 'ipd_frac_odd_win', 'ruwe', 'scan_direction_strength_k1', and 'scan_direction_strength_k2'. The 'ruwe' table is highlighted in yellow. Below the table name, its properties are listed: Name: ruwe, Description: Renormalised unit weight error (with a link 'Click here for more information'), Units: (empty), Utype: (empty), Ucd: stat.error, Data type: float, Indexed: Yes.

Select external TAP services (e.g. VizieR table)

Upload a user table
Remove a user table
Positional cross-match between two tables
Edit table properties (e.g. ra/dec columns)
Share a table

See the full content of the tables
links to the on-line documentation

ADQL: query editor

Job name:

Query examples

```
1 select top 10 * from gaiadr3.gaia source
2 where parallax over_error>10 and has_rvs='True'
3 order by random_index
```

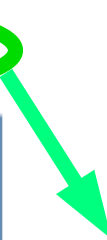
Ctrl+Space for
query
autocompletion



Reset Form




































































Submit Query








```
SELECT gaia.source_id, gaia.ra, gaia.dec, gaia.parallax, gaia.pmra,  
gaia.pmdec, tmass.*  
FROM gaiadr3.gaia_source AS gaia  
JOIN gaiadr3.tmass_psc_xsc_best_neighbour AS xmatch USING  
(source_id)  
JOIN gaiadr3.tmass_psc_xsc_join AS xjoin USING  
(clean_tmass_psc_xsc_oid)  
JOIN gaiadr1.tmass_original_valid AS tmass ON  
xjoin.original_psc_source_id = tmass.designation  
WHERE  
gaia.l BETWEEN 302.90 AND 303.00 AND  
gaia.b BETWEEN -44.03 AND -43.93 AND  
tmass.ph_qual = 'AAA'
```

<https://www.cosmos.esa.int/web/gaia-users/archive/writing-queries>

ADQL: Job list

Status		Job		▼ Creation date	Num. rows	Size							
✓	<input type="checkbox"/>		tutorial	05-Sep-2023, 15:08:42	10	10 KB							
✓	<input type="checkbox"/>		nssclustermembers	04-Sep-2023, 12:18:21	1677	41 KB							
✓	<input type="checkbox"/>	 	clustermembers	04-Sep-2023, 12:10:38	1291929	18 MB							
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✓	<input type="checkbox"/>		1688111570175O	30-Jun-2023, 09:52:50	5	1 KB							
✓	<input type="checkbox"/>		1688111241925O	30-Jun-2023, 09:47:21	5	1 KB							
✓	<input type="checkbox"/>		1687964899643O	28-Jun-2023, 17:08:19	5	1 KB							
✓	<input type="checkbox"/>		1687964772941O	28-Jun-2023, 17:06:12	5	1 KB							

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Download format: VOTable 

Apply jobs filter


Select all jobs ☐

Delete selected jobs

Information about the DataLink protocol and ancillary products can be found in the [Archive Help](#)

Job ID: 16939193227350

IDs Column:

 Show Data

Data release

Data structure



5000 sources max

MCMC MSC (10)



MCMC GSP-Phot (5)



RVS mean spectra (10)



XP mean sampled spectra (9)




XP mean continuous spectra (9)



Epoch photometry (1)

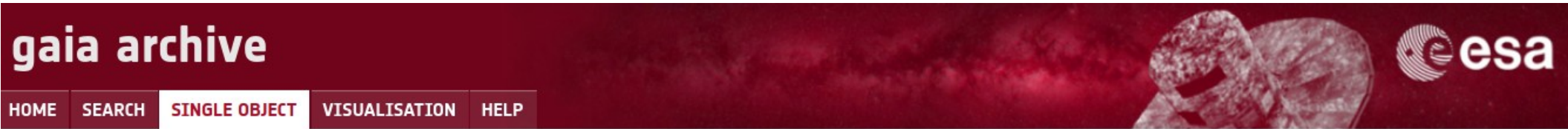


Download format

 Save All Data

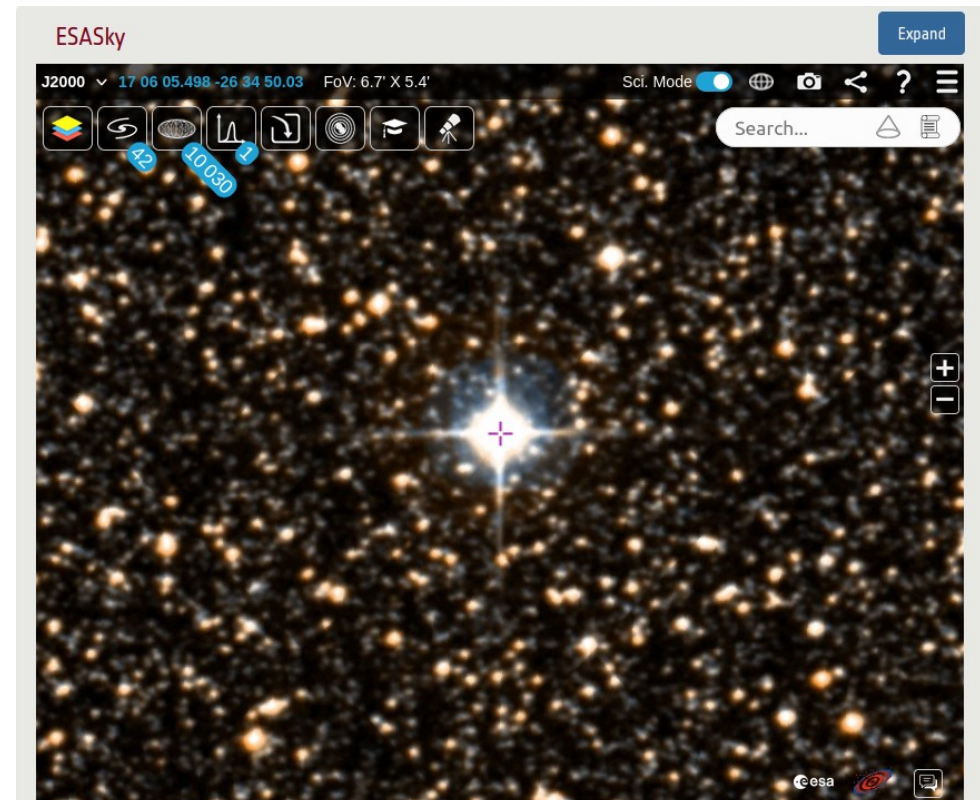
Depending on the amount and type of data retrieved,
Archive response times range from seconds to minutes.

Single Object



Gaia DR3 4111834567779557376

Astrometry	Photometry	Spectroscopy	Astrophysical parameters
Description	Value	Unit	
Equatorial ICRS (RA,DEC) at epoch 2016	256.5229102004, -26.5805651308	deg	
Galactic (l, b) at epoch 2016	357.0803450631, 8.5731964881	deg	
Parallax	1.1538 ± 0.0241	mas	
RA proper motion	0.3896 ± 0.0256	mas yr ⁻¹	
DEC proper motion	-0.2893 ± 0.0165	mas yr ⁻¹	
Renormalised unit weight error	0.837		



Single Object

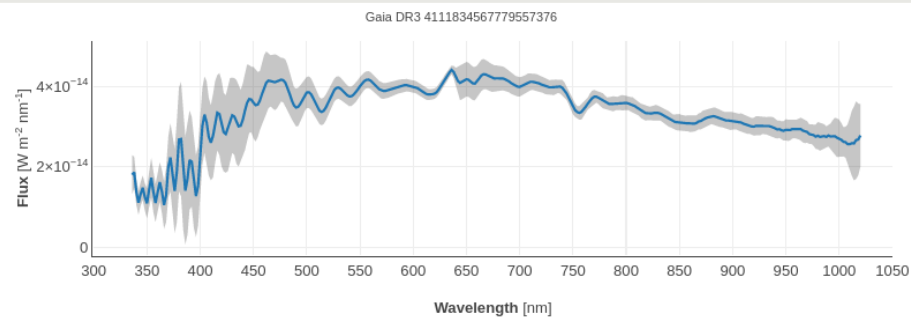
gaia archive

HOME SEARCH SINGLE OBJECT VISUALISATION HELP



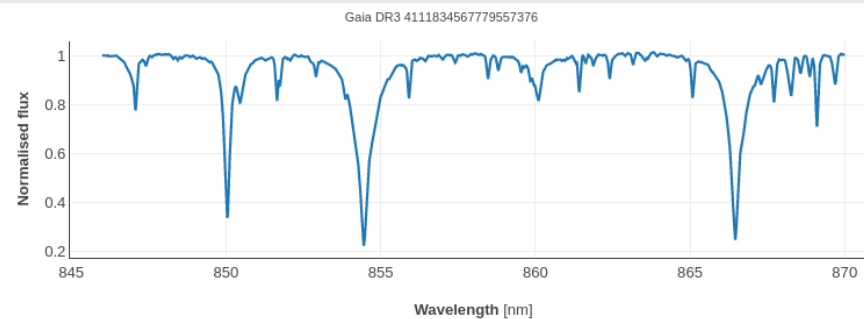
BP/RP (XP) Spectrum

Expand



RVS Spectrum

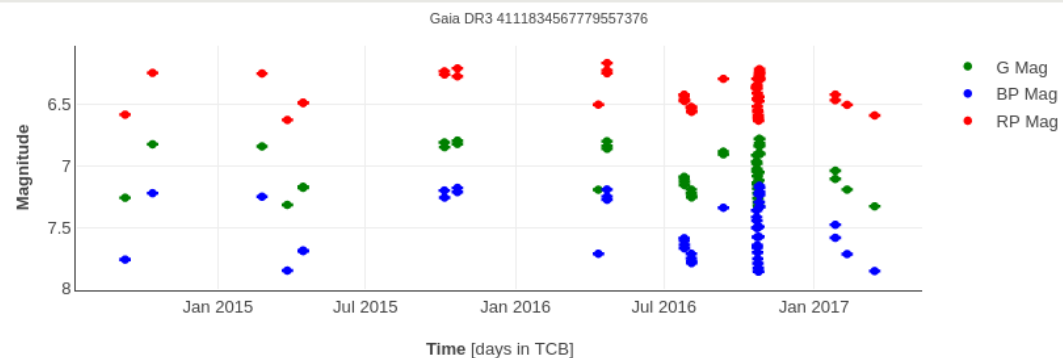
Expand



Epoch Photometry

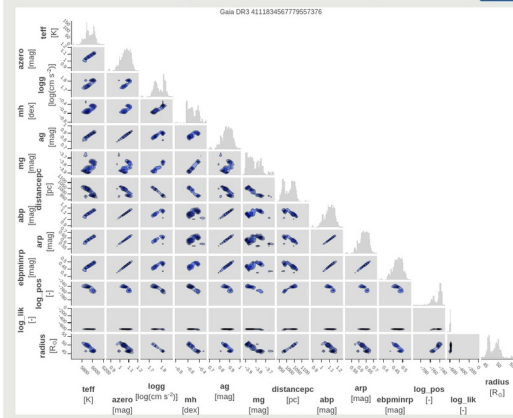
Show errors

Expand



Markov Chain Monte Carlo samples: General Stellar Parametrizer from Photometry (GSP-Phot)

Expand



Single Object



Target/Coordinates

Gaia DR3 4111834567779557376



Download ^



Select Structure

Individual



Select Format

VO Table

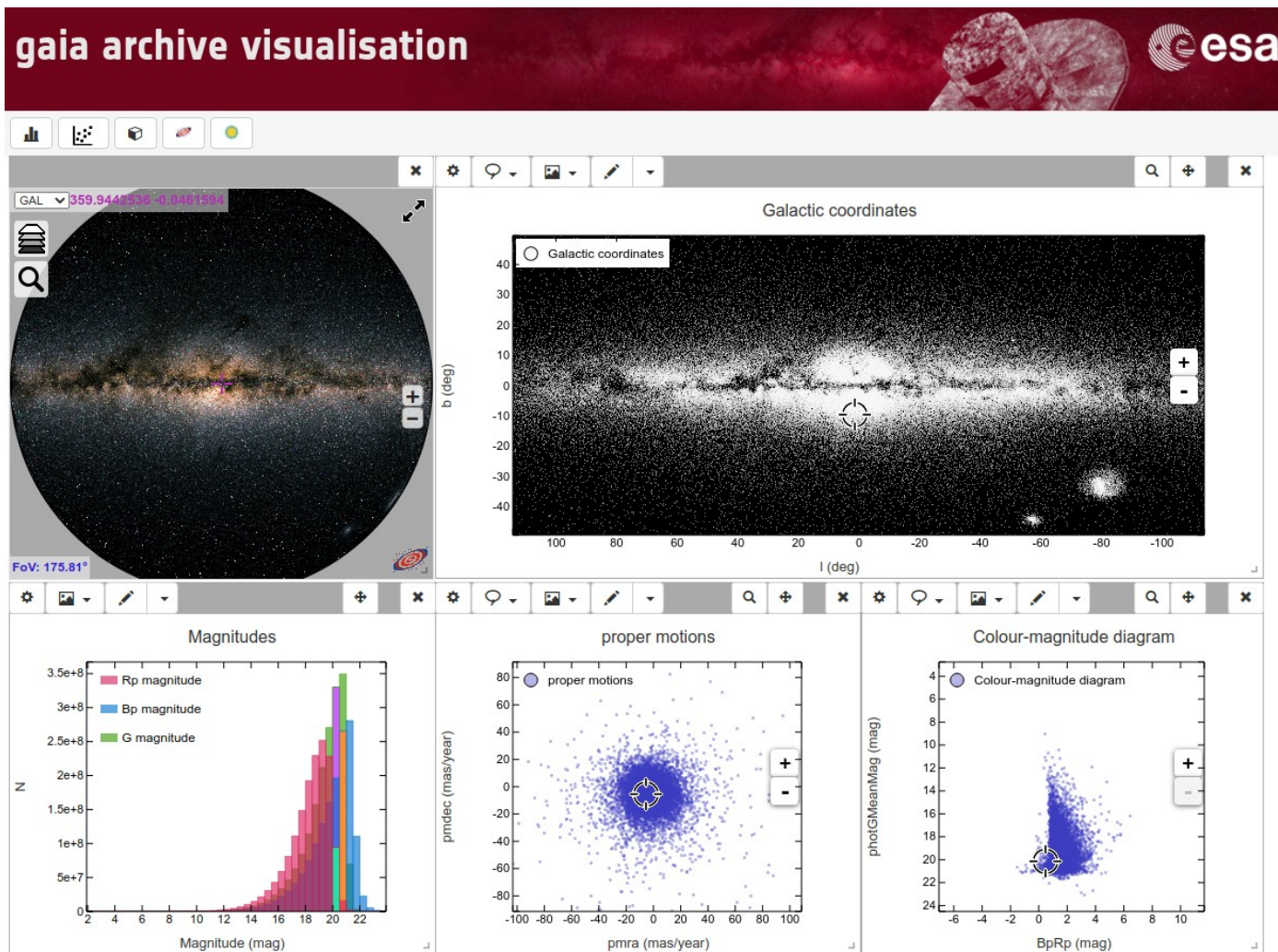


- ☒ All
- ☒ Epoch photometry
- ☒ XP mean sampled spectrum
- ☒ XP mean continuous spectrum
- ☒ RVS mean spectrum
- ☒ MCMC MSC
- ☒ MCMC GSP-Phot

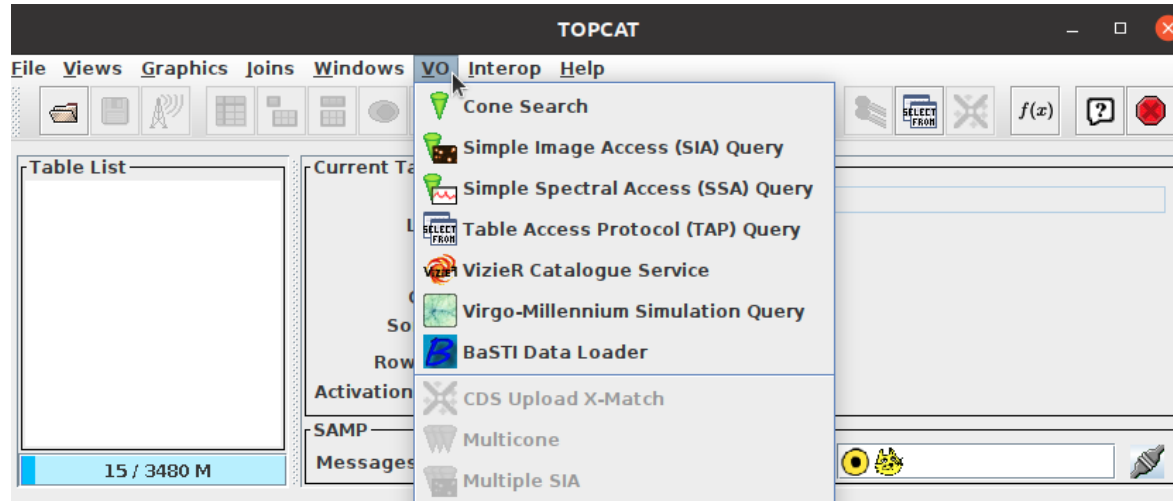
Save file



Visualisation



TOPCAT



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

TOPCAT

The image displays the TOPCAT software interface, which is used for astronomical data analysis. The main window is titled "TOPCAT" and shows a menu bar with options like File, Views, Graphics, Joins, Windows, Interop, and Help. A green arrow points from the "Interop" menu to the "Cone Search" window, and another green arrow points from the "Table Access Protocol (TAP) Query" window to the "Interop" menu.

The "Cone Search" window (left) shows the "Available Cone Services" section with a registry URL of <http://reg.g-v-o.org/tap> and keywords "gaia dr3". It lists various services, including "ARI-Gaia", "DR3 lite Cone", and "GAIA DR3". The "Cone Parameters" section shows a cone URL of https://gea.esac.esa.int/tap-server/conesearch?TABLE=gaia_dr3, object name "GJ473", RA "88.3223395", Dec "9.0210534", and Radius "5".

The "Table Access Protocol (TAP) Query" window (right) shows the "Metadata" section with a list of tables and columns. The "Service Capabilities" section shows the query language as "ADQL-2.0" and the maximum rows as "3000000 (default)". The "ADQL Text" section contains a query:

```
SELECT TOP 100000
  designation, source_id, ra, dec, parallax, bp_rp, phot_g_mean_mag,
  phot_g_mean_mag+5*log10(parallax/100) AS mag_g
FROM gaia_dr3.gaia_source
WHERE parallax > 10
AND parallax_over_error > 10
AND astrometric_excess_noise < 1
```

The "Run Query" button is visible at the bottom right of the window.

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