

# A User Interface for Catalog Queries using ADQL

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# Overview

- CSCview interface to Chandra Source Catalog offers graphical query builder and ADQL editor.
- Interest from users and software developers in using the same interface to access more catalogs.
- VOQuery prototype uses CSCview front-end and Astrogrid middleware to query VO catalog services.

# Project Team

- Development:  
P. Zografou, M. Tibbetts, D. Van Stone, P. Harbo  
(SAO)
- Consulting:  
J. Lusted, D. Morris (*Astrogrid*)
- Planning:  
A. Lawrence, K. Noddle (*Astrogrid*)  
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File Edit View Tools Help

Search New Open Save Download Script Add Remove Up Down Select All Deselect

Chandra Source Catalog Release 1.0.1

Catalog Query Results Products

Versions:

- Release
    - 1.0.1
- Current Database

Version: Release 1.0.1

Date: 2009-07-21T15:09:08

Description: CSC Release 1.0.1 includes information about point and compact sources (observed spatial extents < ~30 arcsec) detected in a subset of ACIS imaging observations released publicly prior to the end of 2008. The released catalog has passed all quality assurance verification, and a statistical characterization of the source properties is available through the catalog user web site <http://cxc.cfa.harvard.edu/csc/>.

Search completed



Chandra Source Catalog Release 1.0.1

Catalog Query Results Products

Standard Queries:

- Standard Queries
  - Master Source Basic Summary
  - Master Source Summary
  - Master Source Photometry
  - Master Source Variability
  - Source Observation Summary
  - Source Observation Photometry

Source Properties:

- Galactic Coordinates
- Position Error Ellipse
- Source Flux Significance (S/N)
- Source Flags
  - conf\_flag
  - extent\_flag
  - pileup\_flag
  - sat\_src\_flag
  - streak\_src\_flag
  - var\_flag
  - var\_inter\_hard\_flag
  - man\_inc\_flag
  - man\_match\_flag
  - man\_reg\_flag

Select: top 100 distinct rows Save results to file

Result Set:

- name
- ra
- dec
- err\_ellipse\_r0
- conf\_flag
- sat\_src\_flag
- flux\_aper90\_b

Sort Order:

name ascending

Search Criteria:

(	significance	>	10	)	AND
(	var_flag	=	TRUE	)	

Cone Search: Equatorial

Name Resolver

ra: 00 42 44.31 dec: +41 16 09.41 radius: 1 arcmin

Search completed

File Edit View Tools Help



Chandra Source Catalog Release 1.0.1

Catalog Query Results Products

Standard Queries:

- ▼ Standard Queries
  - Master Source Basic Summary
  - Master Source Summary
  - Master Source Photometry
  - Master Source Variability
  - Source Observation Summary
  - Source Observation Photometry

Source Properties:

- ▶ Galactic Coordinates
- ▶ Position Error Ellipse
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- ▼ Source Flags
  - conf\_flag
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  - sat\_src\_flag
  - streak\_src\_flag
  - var\_flag
  - var\_inter\_hard\_flag
  - man\_inc\_flag
  - man\_match\_flag
  - man\_reg\_flag

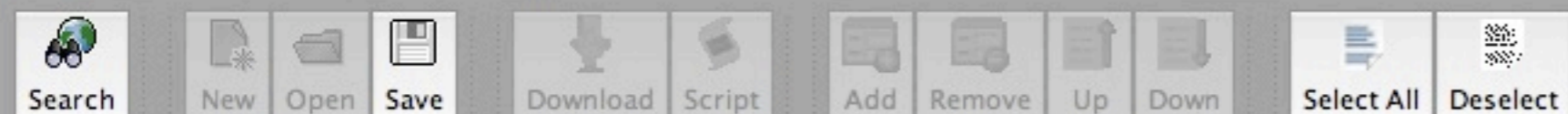
Astronomical Data Query Language:

 Save results to file

```
SELECT DISTINCT top 100
m.productid,m.name,m.ra,m.dec,m.err_ellipse_r0,m.conf_flag,m.sat_src_flag,m.flux_aper90_b,m.flux_aper90_lohim_b,m.flux_aper90_hilim_b,m.significance,m.var_flag FROM master_source m WHERE ((( ( m.dec BETWEEN 41.25261388888889 AND 41.28594722222222 ) AND ( m.ra BETWEEN 10.662450612042186 AND 10.706799387957815 ) ) AND dbo.cone_distance(m.ra,m.dec,10.684625,41.269280555555554)<=1.0) AND ((m.significance > 10) AND (m.var_flag = 1))) ORDER BY name ASC
```

Search completed

File Edit View Tools Help



## Chandra Source Catalog Release 1.0.1

Catalog Query Results Products

Data Products:

20 rows found

Page 1 of 1

productid	name	ra	dec	err_ellipse_r0	conf_flag	sat_src_flag	flux
10665	CXO J004239.5+411614	00 42 39.57	+41 16 14.36	0.41	FALSE	FALSE	
8314	CXO J004239.9+411547	00 42 39.99	+41 15 47.51	0.05	FALSE	FALSE	
8307	CXO J004241.4+411523	00 42 41.43	+41 15 23.84	0.12	TRUE	FALSE	
7754	CXO J004242.1+411608	00 42 42.17	+41 16 08.17	0.07	FALSE	FALSE	
8313	CXO J004242.9+411543	00 42 42.99	+41 15 43.13	0.06	TRUE	FALSE	
8341	CXO J004243.1+411640	00 42 43.19	+41 16 40.21	0.11	FALSE	FALSE	
8340	CXO J004243.7+411632	00 42 43.74	+41 16 32.37	0.06	TRUE	FALSE	
8321	CXO J004243.8+411603	00 42 43.85	+41 16 03.80	0.10	TRUE	FALSE	
8339	CXO J004243.8+411629	00 42 43.85	+41 16 29.53	0.07	TRUE	FALSE	
8844	CXO J004244.3+411605	00 42 44.36	+41 16 05.28	0.10	TRUE	FALSE	
8324	CXO J004244.3+411608	00 42 44.36	+41 16 08.10	0.06	TRUE	FALSE	
8331	CXO J004244.6+411618	00 42 44.67	+41 16 18.14	0.08	TRUE	FALSE	
8334	CXO J004245.1+411621	00 42 45.11	+41 16 21.71	0.05	TRUE	FALSE	
8325	CXO J004245.5+411608	00 42 45.59	+41 16 08.59	0.09	TRUE	FALSE	
8332	CXO J004246.0+411619	00 42 46.00	+41 16 19.59	0.11	TRUE	FALSE	
8330	CXO J004246.9+411615	00 42 46.96	+41 16 15.56	0.05	FALSE	FALSE	
8588	CXO J004247.1+411628	00 42 47.17	+41 16 28.34	0.06	TRUE	FALSE	
8311	CXO J004247.8+411532	00 42 47.89	+41 15 32.88	0.05	FALSE	FALSE	
8316	CXO J004247.8+411549	00 42 47.87	+41 15 49.74	0.18	FALSE	FALSE	
8337	CXO J004248.7+411624	00 42 48.71	+41 16 24.47	0.12	FALSE	FALSE	

Search completed

File Edit View Tools Help



## Chandra Source Catalog Release 1.0.1

Catalog Query Results **Products**

15 products found

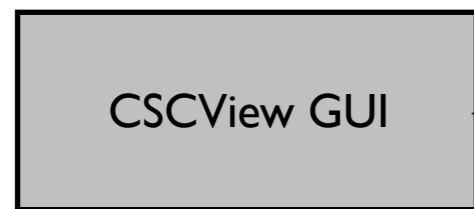
Total file size = 940,837 bytes

File name	File type	File size (in bytes)
acisf00311_000N001_r0034_reg3img3.jpg	reg3img_jpg	2,482
acisf01575_001N001_r0032_reg3img3.jpg	reg3img_jpg	2,684
acisf02896_000N001_r0022_reg3img3.jpg	reg3img_jpg	6,360
acisf01575_001N001_r0051_reg3img3.jpg	reg3img_jpg	3,600
acisf01575_001N001_r0056_reg3img3.jpg	reg3img_jpg	4,111
acisf00311_000N001_r0034b_lc3.fits	lightcurve	63,360
acisf01575_001N001_r0032b_lc3.fits	lightcurve	63,360
acisf01575_001N001_r0051b_lc3.fits	lightcurve	63,360
acisf01575_001N001_r0056b_lc3.fits	lightcurve	63,360
acisf02896_000N001_r0022b_lc3.fits	lightcurve	63,360
acisf00311_000N001_r0034_pha3.fits	spectrum	120,960
acisf01575_001N001_r0032_pha3.fits	spectrum	120,960
acisf02896_000N001_r0022_pha3.fits	spectrum	120,960
acisf01575_001N001_r0051_pha3.fits	spectrum	120,960
acisf01575_001N001_r0056_pha3.fits	spectrum	120,960

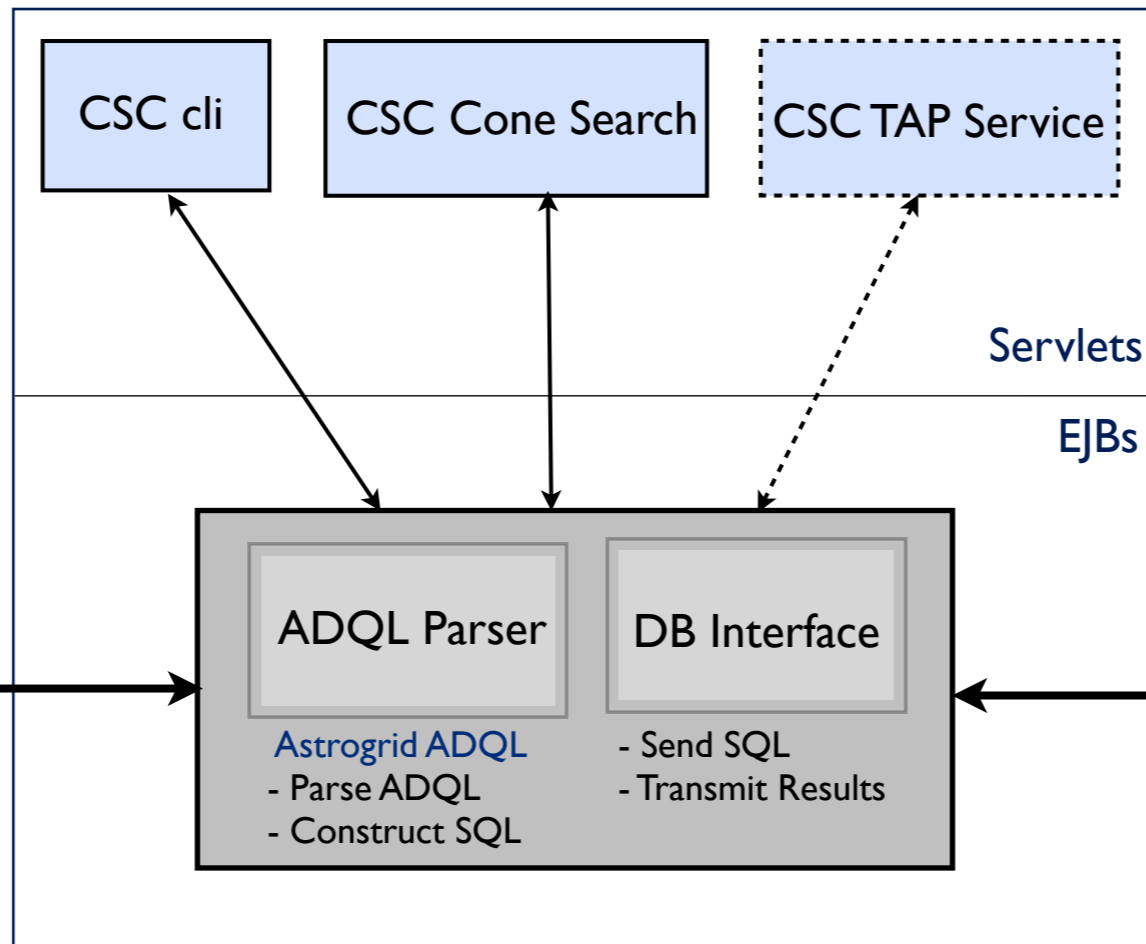
Search completed



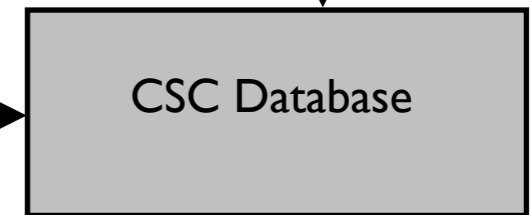
## CSCview



Java Applet  
- Build, Edit Query  
- Display Results

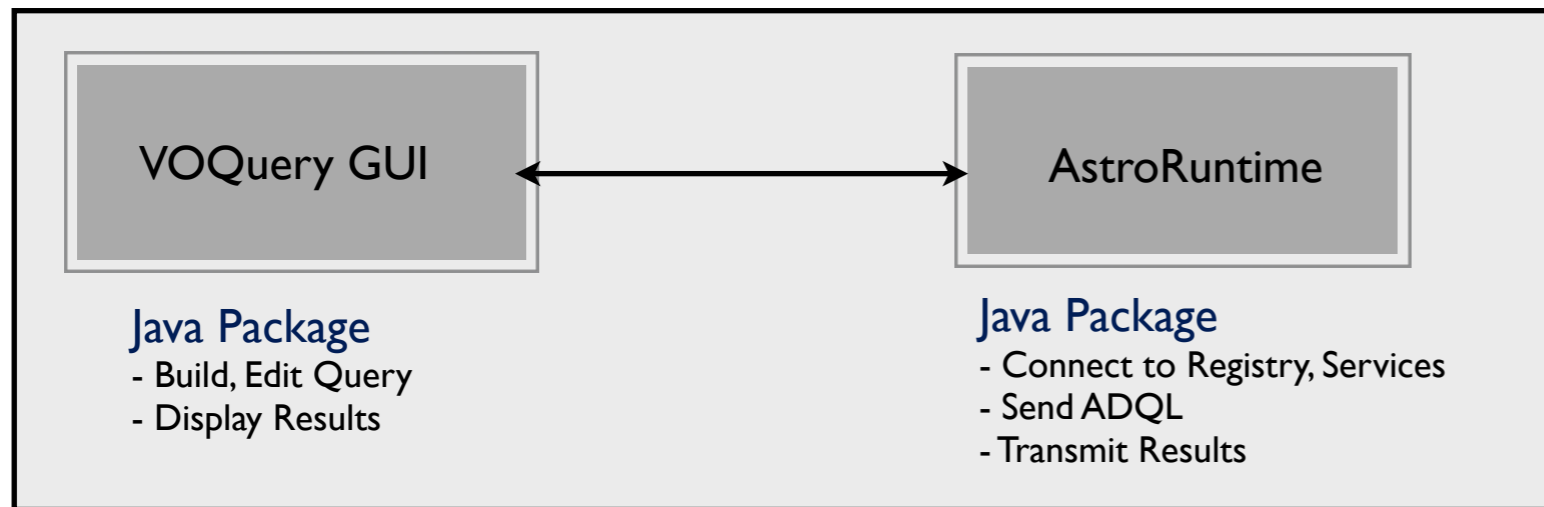


J2EE Server

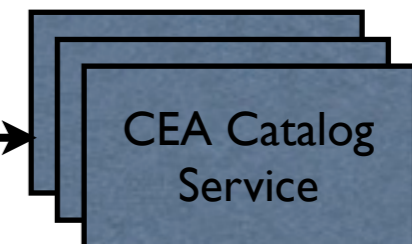
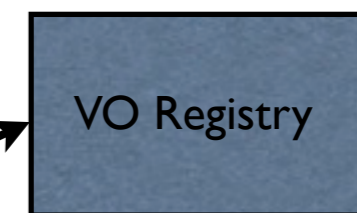


RDBMS Server  
- Process Query  
- Return Results

## VOQuery



Java Application



Registered Catalogs

Search | New | Open | Save | Send | Broadcast | Add | Remove | Up | Down | Select All | Deselect

Catalog Query Results

41 Catalogs

Title	Subject
Hinode EIS Level 0 and Level 2	hinode solar dsa
Datacenter for Solar Event Catalogue	solar data on events
Solar Image Data for EIT CDS and Yohkoh	solar data soho eit cds yohkoh
XMM SUSS	survey source
2dF Galaxy Redshift Survey: object catalogue	redshift
Catalogue of astrometric stars from the Carlsberg Meridian Circle Version 14	astrometry
INT-WFS merged catalogue of objects	
INT-WFS catalogue of observations	
IPHAS IDR: service	iphas
Hipparcos catalogue	
SKADS Simulated Sky	simulated radio galaxies agn
TPM N-Body DM Halo Catalogue	
Cambridge GMRT surveys catalogues	surveys, catalogs, radio continuum
<b>XRTGRBCat</b>	<b>gamma rays: bursts, x-rays: observations, catalogues</b>
UKSSDC digisonde archive	digital ionosonde
UKSSDC STEREO SECCHI archive	solar euvi coronagraph imager
UKSSDC TRACE archive	solar
UKSSDC WDC data archive	wdc geophysical indices imf ionospheric geomagnetic
6dF Galaxy Survey Data Release 2	6df survey galaxy galaxies redshift redshifts 2mass
6dF Galaxy Survey Data Release 3	6df survey galaxy galaxies redshift redshifts 2mass

Description: The swift-XRT catalogue of Gamma Ray Bursts.

Enhanced ground positions, light curve and spectrum parameters for Gamma Ray Bursts observed by swift.

Reference URI: <http://www.swift.ac.uk/>

XRTGRBCat

Search | New | Open | Save | Send | Broadcast | Add | Remove | Up | Down | Select All | Deselect

Catalog Query Results

140 Objects

Select: top 500 rows

Save Results to File

- + avespec
- grbenhpos
  - name
  - target\_id
  - ra
  - dec
  - positionerr
- + lcfits
- + resspec

Result Set:

- grbenhpos.name
- grbenhpos.target\_id
- grbenhpos.ra
- grbenhpos.dec
- grbenhpos.positionerr
- avespec.tname
- avespec.target\_id

Sort Order:

Search Criteria:

```
( grbenhpos.target_id = avespec.target_id ) AND
( grbenhpos.positionerr <= 1.5 ) AND
( grbenhpos.target_id = avespec.target_id ) AND
( grbenhpos.positionerr <= 1.5 )
```

Name	Description	Units	UCD	Datatype
avespec	Time average spectral fits			
grbenhpos	Table of GRB ground enhanced positions.			
grbenhpos.name	GRB name		ID	char
grbenhpos.target_id	Swift target ID		ID_MAIN	int
grbenhpos.ra	Ground enhanced RA (J2000.0)	deg	POS_EQ_R...	double
grbenhpos.dec	Ground enhanced Dec (J2000.0)	deg	POS_EQ_D...	double

Query loaded

Search | New | Open | Save | Send | Broadcast | Add | Remove | Up | Down | Select All | Deselect

Catalog Query Results

140 Objects

- + avespec
- grbenhpos
  - name
  - target\_id
  - ra
  - dec
  - positionerr
- + lcfite
- + resspec

Astronomical Data Query Language:

Save Results to File

```
SELECT top 500
grbenhpos.name,grbenhpos.target_id,grbenhpos.ra,grbenhpos.dec,grbenhpos.positionerr,avespec.tname,avespec.target_id,avespec.GalNH,avespec.z,avespec.WTnh,avespec.WTnhpos,avespec.WTnhneg,avespec.WTbeta,avespec.WTbetapos,avespec.WTbetaneg,avespec.PCnh,avespec.PCnhpos,avespec.PCnhneg,avespec.PCbeta,avespec.PCbetapos,avespec.PCbetaneg,grbenhpos.name,grbenhpos.target_id,grbenhpos.ra,grbenhpos.dec,grbenhpos.positionerr,avespec.tname,avespec.target_id,avespec.GalNH,avespec.z,avespec.WTnh,avespec.WTnhpos,avespec.WTnhneg,avespec.WTbeta,avespec.WTbetapos,avespec.WTbetaneg,avespec.PCnh,avespec.PCnhpos,avespec.PCnhneg,avespec.PCbeta,avespec.PCbetapos,avespec.PCbetaneg
FROM avespec , grbenhpos WHERE ((grbenhpos.target_id = avespec.target_id) AND (grbenhpos.positionerr <= 1.5) AND (grbenhpos.target_id = avespec.target_id) AND (grbenhpos.positionerr <= 1.5))
```

Name	Description	Units	UCD	Datatype
avespec	Time avarage spectral fits			
grbenhpos	Table of GRB ground enhanced positions.			
grbenhpos.name	GRB name		ID	char
grbenhpos.target_id	Swift target ID		ID_MAIN	int
grbenhpos.ra	Ground enhanced RA (J2000.0)	deg	POS_EQ_R...	double
grbenhpos.dec	Ground enhanced Dec (J2000.0)	deg	POS_EQ_D...	double

Query loaded

Search New Open Save Send Broadcast Add Remove Up Down Select All Deselect

Catalog Query Results

171 rows found

Page 1 of 1

name	target_id	ra	dec	positionerr	tname
GRB 050219B	106442	81.317	-57.758	1.5	GRB 050219B
GRB 050315	111063	306.476	-42.6	1.5	GRB 050315
GRB 050318	111529	49.712	-46.396	1.4	GRB 050318
GRB 050319	111622	154.2	43.549	1.4	GRB 050319
GRB 050408 - HETE burst	20004	180.572	10.853	1.4	GRB 050408 - HETE burst
GRB 050416A	114753	188.478	21.058	1.4	GRB 050416A
GRB 050502B	116116	142.542	16.997	1.4	GRB 050502B
GRB 050505	117504	141.764	30.273	1.4	GRB 050505
GRB 050525A	130088	278.136	26.34	1.5	GRB 050525A
GRB 050712	145581	77.701	64.913	1.5	GRB 050712
GRB 050713A	145675	320.539	77.075	1.4	GRB 050713A
GRB 050713B	145754	307.815	60.946	1.4	GRB 050713B
GRB 050714B	145994	169.698	-15.547	1.5	GRB 050714B
GRB 050716	146227	338.587	38.684	1.4	GRB 050716
GRB 050717	146372	214.352	-50.533	1.5	GRB 050717
GRB 050724	147478	246.185	-27.541	1.5	GRB 050724
GRB 050726	147788	200.05	-32.064	1.4	GRB 050726
GRB 050730	148225	212.071	-3.772	1.4	GRB 050730
GRB 050802	148646	219.274	27.787	1.4	GRB 050802
GRB 050803	148833	350.658	5.786	1.4	GRB 050803

Name	Description	Units	UCC
name	SwiftXRTGRBCat.grbenhpos.name: GRB name		ID
target_id	SwiftXRTGRBCat.grbenhpos.target_id: Swift target ID		ID_M
ra	SwiftXRTGRBCat.grbenhpos.ra: Ground enhanced RA (J2000.0)	deg	POS
dec	SwiftXRTGRBCat.grbenhpos.dec: Ground enhanced Dec (J2000.0)	deg	POS
positionerr	SwiftXRTGRBCat.grbenhpos.positionerr: Position error radius, 90% confidence	deg	FRR

Search completed

# Conclusion

- A CSCview like interface can be made to query more catalogs by using existing components.
- VOQuery will evolve to access TAP services.
- VOQuery is missing CSCview features that are very desirable but not supported in the VO
  - Standard Queries
  - Structured Metadata
  - Data Products