

CSCview

Chandra Source Catalog Data Access GUI

File Edit View Tools Help

Search Stop New Open Save Send Download Script

Chandra Source Catalog Release 1.1

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 Observation Variability
- Standard Search Criteria
 - Search by Observation Identification
 - Search for Variable Sources

Select: top 1000 rows Save results to file

Result Set:

Table	Name	Datatype	Units	Description
-------	------	----------	-------	-------------

Source Properties:

- Master Sources
 - msid
 - Source Name
 - name
 - Source Position
 - ICRS Equatorial Coordinates
 - ra
 - dec
 - Galactic Coordinates
 - Position Error Ellipse
 - Source Flux Significance (S/N)
 - Source Flags
 - Source Extent
 - Aperture Photometry
 - Spectral Hardware Data

Search Criteria:

Position Search:

- None
- Cone
- Crossmatch

Chandra Source Catalog Data Access

The Chandra Source Catalog (CSC) includes point source data extracted from ACIS and HRC imaging (non-grating) data sets, obtained from the start of the mission through the start of 2010.

Data excluded from the catalog, to be included in future releases:

- x *Extended sources which are greater than ~30 arcsec in extent*
- x *HETG and LETG grating data*

X-ray spatial, spectral, and temporal source properties may be downloaded through CSCview, many per CSC energy band (u, s, m, h, b, w).

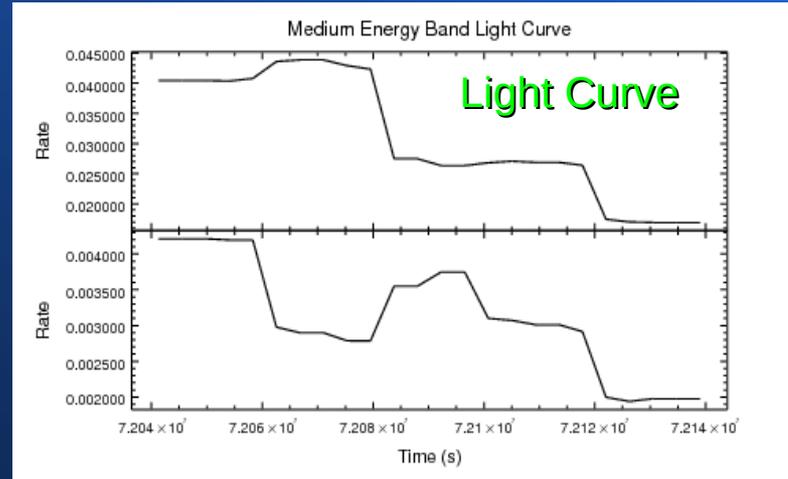
- **Source Position** *equatorial coordinates, off-axis angle*
- **Source Extent** *source region, PSF region*
- **Source Flux** *aperture photometry and spectral model fit fluxes*
- **Source Significance** *flux and detection*
- **Source Spectral Properties** *hardness ratios, power-law and blackbody model fit parameters*
- **Source Variability** *count rate, Gregory-Loredo, Kolmogorov-Smirnov, and Kuiper's variability probability*
- **Source Flags** *is the source variable? saturated? confused with another source?*
- **Observation Summary** *instrument configuration, data processing*

Chandra Source Catalog Data Access

You can also download analysis-ready data files through CSCview:

Source region Full-field

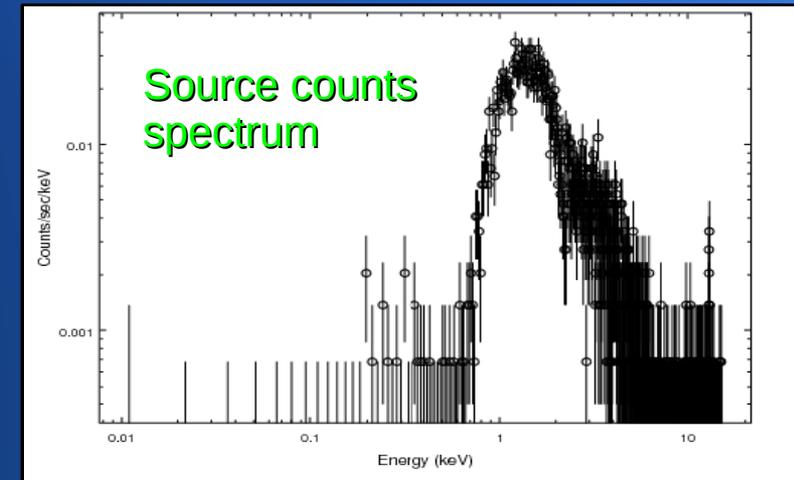
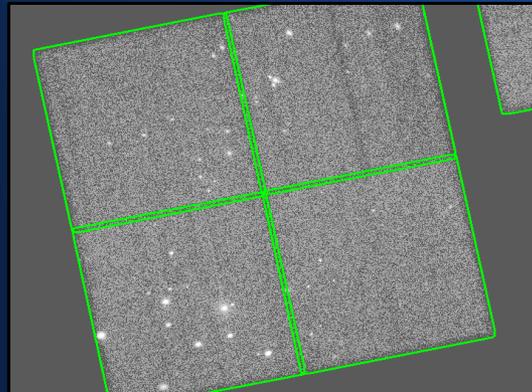
<i>events table & img</i>	<i>events table & img</i>
<i>pha spectrum</i>	<i>background image</i>
<i>ARF</i>	<i>exposure map</i>
<i>RMF</i>	<i>sensitivity map</i>
<i>exposure map</i>	<i>aspect histogram</i>
<i>PSF</i>	<i>bad pixel</i>
<i>light curve</i>	<i>field-of-view</i>
<i>region</i>	



Source and background events and spatial region



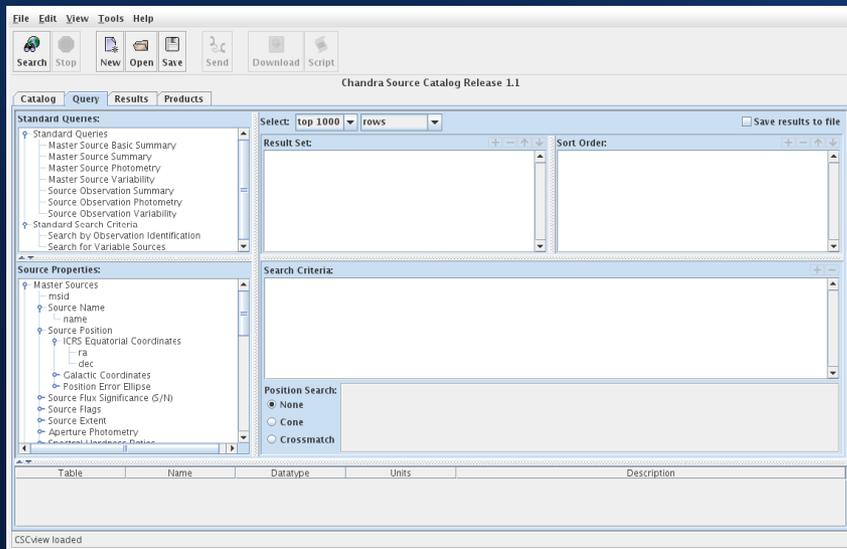
Full-field events and field-of-view spatial region



CSCview User Interface

Graphical User Interface (GUI)

CSCview, a Java applet which runs in a web browser



Command-line Interface (CLI)

Non-interactive access from the Unix command line using *cURL*, *Wget*, ...

Terminal

```
unix% curl -form query='SELECT m.name, m.ra, m.dec, m.flux_aper_b, FROM master_source m WHERE dbo.cone_distance(m.ra, m.dec, 83.773, -5.68464) <= 10' http://cda.cfa.harvard.edu/getProperties
```

```
unix% wget -O out.file 'http://cda.cfa.harvard.edu/csccli/getProperties?query=SELECT m.name, m.ra, m.dec, m.flux_aper_b FROM master_source m WHERE dbo.cone_distance(m.ra, m.dec, 83.7733, -5.68464) <= 10'
```

Launching CSCview

<http://cxc.harvard.edu/csc/>

Chandra X-ray Observatory

[CXC Home](#) [Proposer](#) [Archive](#) [Data Analysis](#)
[Instruments & Calibration](#) [NASA Archives and Centers](#)

Last modified: 14 July 2011

Google Custom Search
Search the CSC website

CHANDRA SOURCE CATALOG

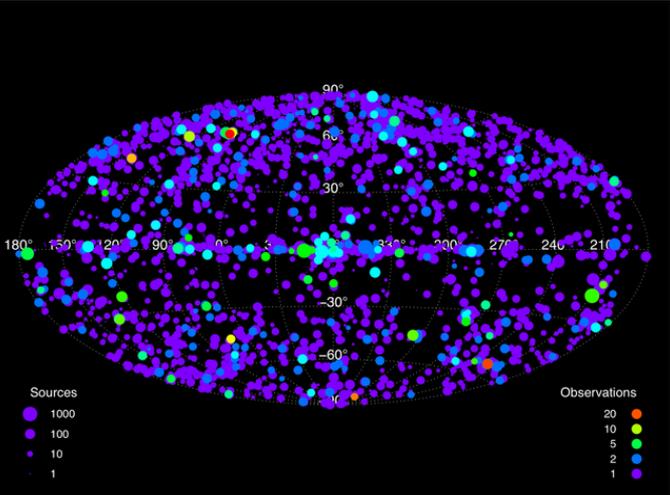
The Chandra Source Catalog
Release 1.1: Point and compact source catalog
[What's New?](#) | [Watch Out](#)

CSC Data Access:
[CSCview](#)
[CSCview Help](#)
[Command-line Interface](#)

CSC Sky in Google Earth

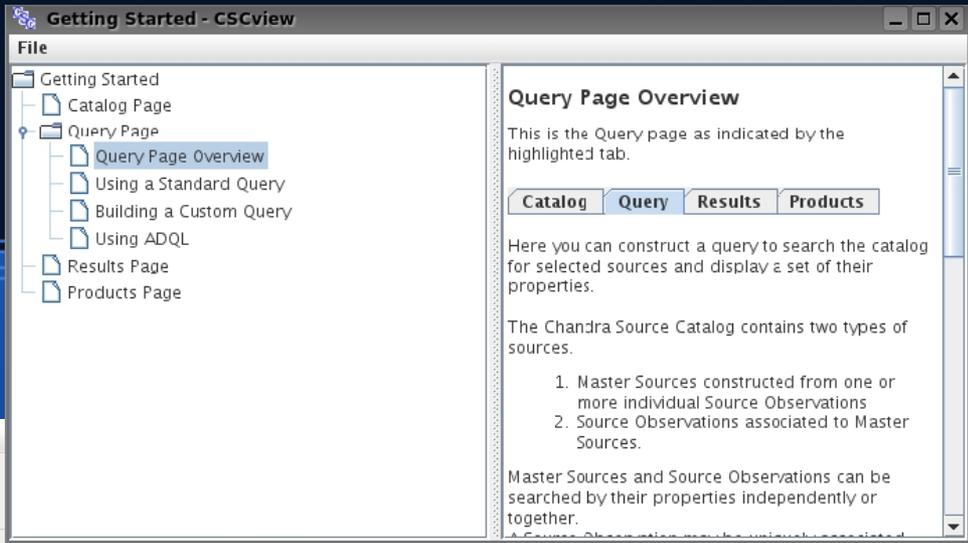
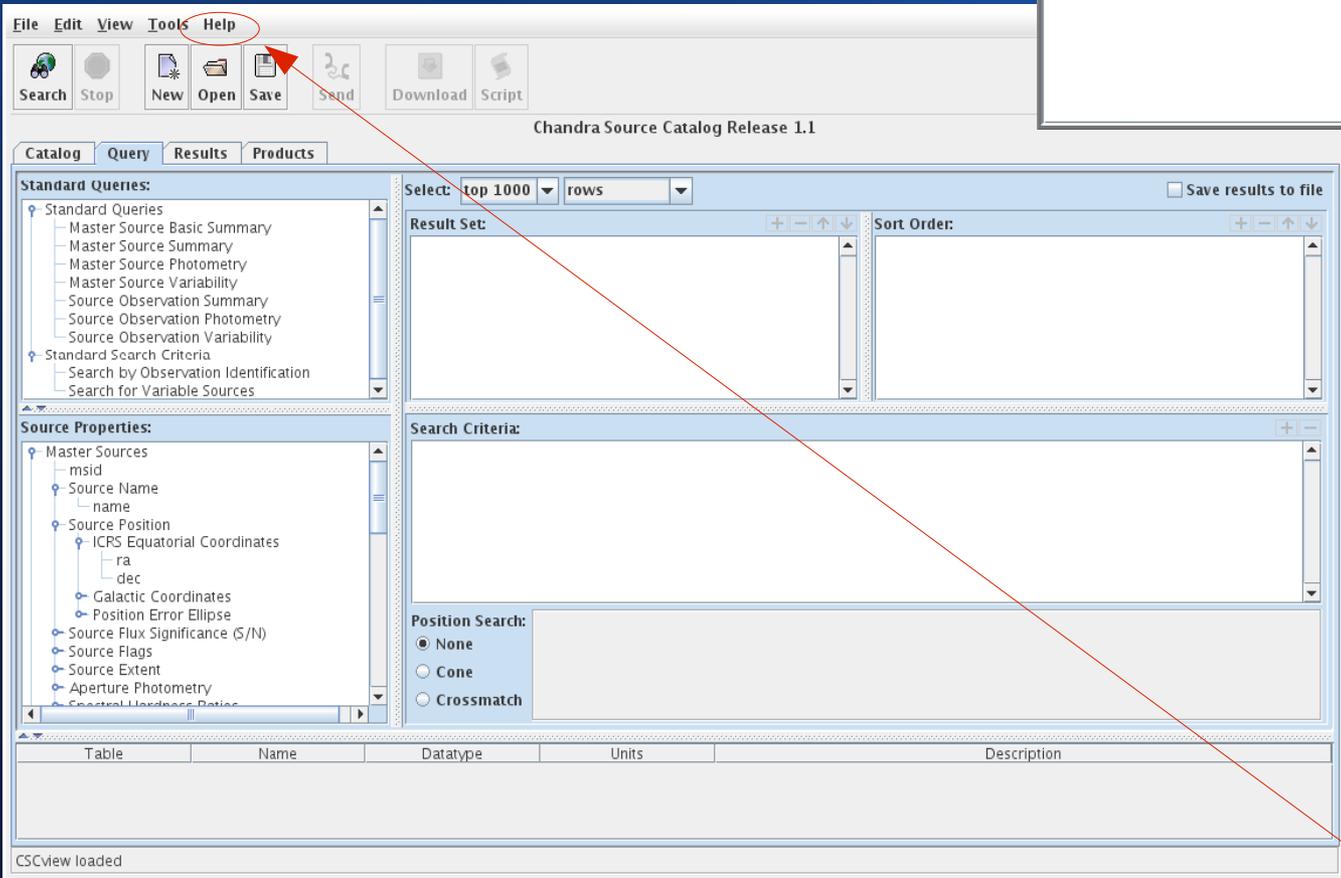
CSC-SDSS Cross-match Catalog
[CSC Sensitivity Map Service](#)

CSC Homepage
[About the Catalog](#)
[Catalog Organization](#)
[Catalog Release Views and Database Access Views](#)
[Catalog Statistical Characterization](#)
[Schedule and Status](#)
[Caveats and Limitations](#)
Creating the Catalog
[Observation Selection](#)



The locations of observations included in the CSC, in Galactic coordinates (click the image for equatorial coordinates).
The size of each symbol is proportional to the logarithm of the number of sources detected in the field, while the color encodes the number of closely-located observations.

CSCview opens on the Query tab



The Getting Started guide pops up alongside the GUI to help you construct queries; separate help documents are available on the CSC website, linked to the Help menu:

<http://cxc.harvard.edu/csc/gui/>

CSCview Catalog tab

(2) Click "Search"

(1) Choose "Release 1.1" or "Current Database view."

Release view: carefully reviewed, well-characterized, static version of the CSC.

Current Database view: dynamic but unstable version of the CSC; source properties and data products can be superseded at any time, and statistical properties of data are not guaranteed.

CSCview loaded

CSCview Query tab

Submit, clear, load, and save queries.

Use these buttons instead of a mouse cursor to move source properties around.

View Tools Help

Search Stop New Open Save Send Download Script

Chandra Source Catalog Release 1.1

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 Observation Variability
- Standard Search Criteria
 - Search by Observation Identification
 - Search for Variable Sources

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: all distinct rows Save results to file

Result Set: u.objid c.separation c.probability name ra dec err_ellipse_r0

Sort Order: u.objid ascending

Search Criteria: (pileup_flag = FALSE

Position Search: None Cone Crossmatch

User Table: user_table

Ra: col1 Radius: 3.0 arcmin Object ID: rowind...

Dec: col2 Sigma: 1.0 arcsec

Table	Name	Datatype	Units	Description
Data Products	dataset_id	int		Dataset identifier used to access Data Products
Master Sources	name	varchar		Source name in the format 'CXO Jhhmmss.s +/- ddmms'
Master Sources	ra	double	deg	Source position, ICRS right ascension
Master Sources	dec	double	deg	Source position, ICRS declination
Master Sources	err_ellipse_r0	double	arcsec	Major radius of the 95% confidence level error ellipse
Master Sources	conf_flag	boolean		Source regions overlap (source is confused)
Master Sources	sat_src_flag	boolean		Source is saturated in all observations: source properties are un...

New table for crossmatch succeeded

Build a custom query:
Use the provided source properties to specify your desired results and optional search conditions.

Create New Table

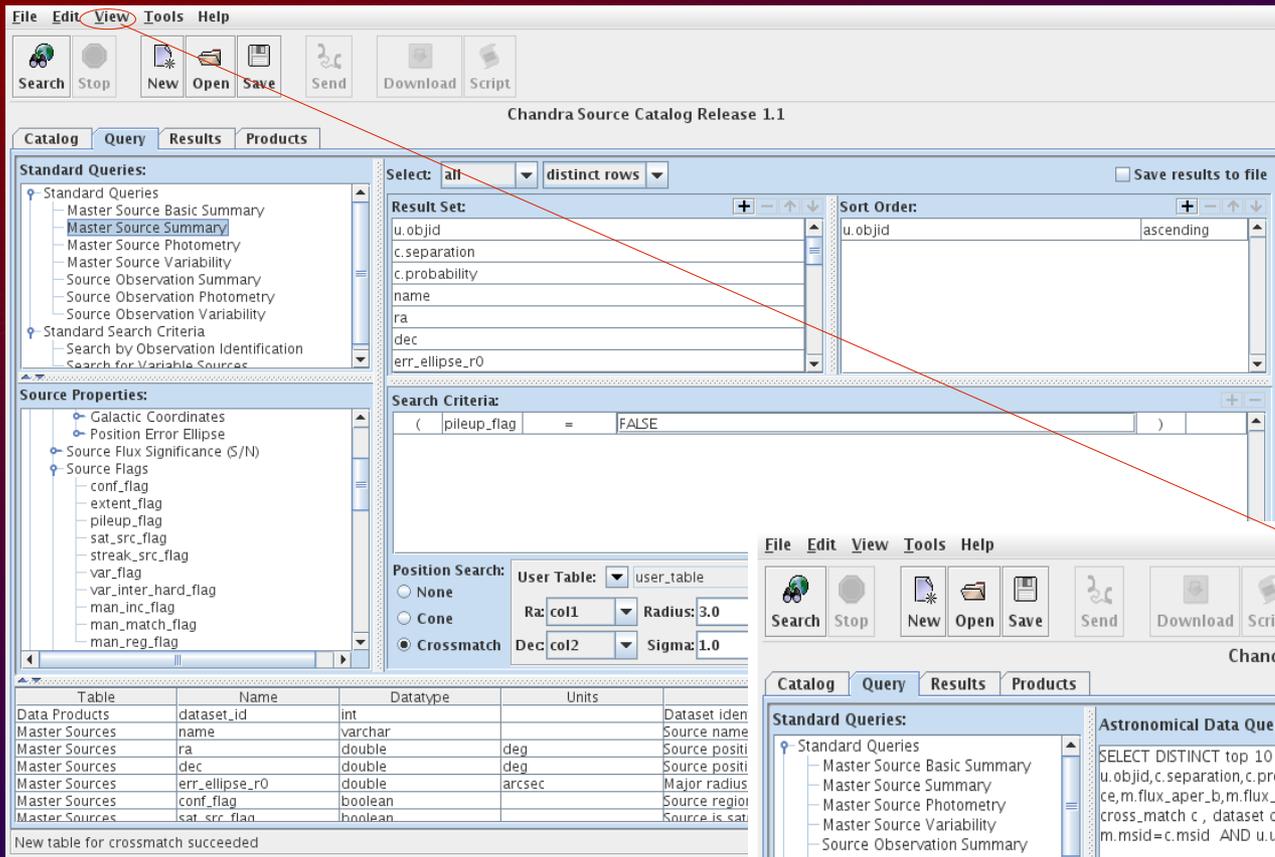
Each column must be separated by a tab. Clear

16.56530 0.80412
41.00765 -15.6776
60.98613 -17.05616
333.86372 -16.19251
220.87989 27.41019

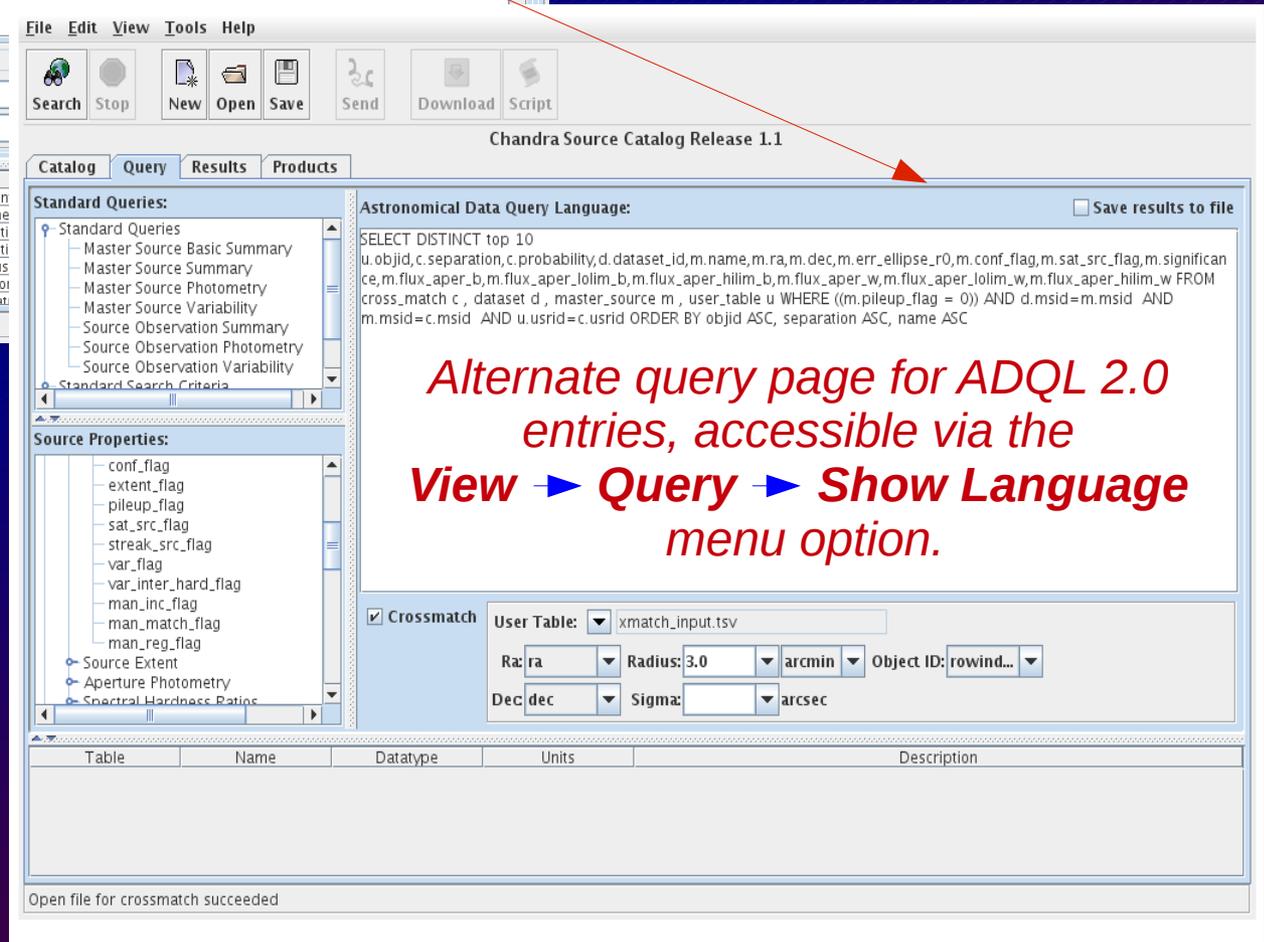
OK Cancel

Search with a **Standard Query** by choosing one from the list and dragging it towards the right.

Enter a list of source positions to cross-match against the CSC.



CSCview Query tab



*Alternate query page for ADQL 2.0 entries, accessible via the **View** → **Query** → **Show Language** menu option.*

Enter a query in the main view of the Query tab and see its ADQL 2.0 translation in the “language” view.

CSCview Query tab → ADQL view

The screenshot shows the CSCview Query tab interface. The 'Query' tab is selected, and the 'Astronomical Data Query Language' section is active. A blue oval highlights the ADQL query text area, and a blue arrow points from it to the command-line example below. The interface includes a menu bar (File, Edit, View, Tools, Help), a toolbar with icons for Search, Stop, New, Open, Save, Send, Download, and Script, and a title bar 'Chandra Source Catalog Release 1.1'. The 'Query' tab is highlighted with a red box. The 'Standard Queries' list on the left includes 'Master Source Summary'. The 'Source Properties' list on the left includes 'Galactic Coordinates', 'Position Error Ellipse', 'Source Flux Significance (S/N)', and 'Source Flags'. The 'ADQL query' text area contains the following SQL query:

```
SELECT DISTINCT
u.objid, c.separation, c.probability, m.name, m.ra, m.dec, m.err_ellipse_r0, m.conf_flag, m.sat_src_flag, m.significance, m.flux_aper_b, d.
dataset_id, m.flux_aper_lolim_b, m.flux_aper_hilim_b, m.flux_aper_w, m.flux_aper_lolim_w, m.flux_aper_hilim_w, m.extent_flag, m.hard
_hm, m.hard_hm_lolim, m.hard_hm_hilim, m.hard_ms, m.hard_ms_lolim, m.hard_ms_hilim, m.var_intra_index_b, m.var_inter_index_b, m.
var_intra_index_w, m.var_inter_index_w FROM cross_match c , dataset d , master_source m , user_table u WHERE ((m.pileup_flag =
0)) AND d.msid=m.msid AND m.msid=c.msid AND u.usrid=c.usrid ORDER BY objid ASC
```

Below the query text area, there is a red text instruction:

Enter an ADQL 2.0 query in this space, one which you would enter into the 'query' field of a cURL or Wget command-line statement.

Below the instruction, there is a blue text example of a cURL command:

```
unix% curl --form query=' '
' http://cda.cfa.harvard.edu/cscli/getProperties '
```

Below the command, there is a 'Crossmatch' section with the following fields:

Crossmatch

User Table:

Ra: Radius: Object ID:

Dec: Sigma:

At the bottom of the interface, there is a table with the following columns: Table, Name, Datatype, Units, and Description.

Table	Name	Datatype	Units	Description
Data Products	dataset_id	int		Dataset identifier used to access Data Products
Master Sources	name	varchar		Source name in the format 'CXO Jhhmmss.s +/- ddmms'
Master Sources	ra	double	deg	Source position, ICRS right ascension
Master Sources	dec	double	deg	Source position, ICRS declination
Master Sources	err_ellipse_r0	double	arcsec	Major radius of the 95% confidence level error ellipse
Master Sources	conf_flag	boolean		Source regions overlap (source is confused)
Master Sources	sat_src_flag	boolean		Source is saturated in all observations: source properties are unreliable

New table for crossmatch succeeded

CSCview Results tab

File Edit View Tools Help

Search Stop New Open Save Send Download Script

Chandra Source Catalog Release 1.1

Catalog Query **Results** Products

Data Products: Select all 4 of 5 rows matched, 7 rows returned

Source Region:
 Event List
 Image
 Spectrum
 ARF
 RMF
 Exposure Map
 PSF
 Light Curve
 Region

Full Field:
 Event List
 Image
 Background Image
 Exposure Map
 Sensitivity Map
 Aspect Histogram
 Bad Pixel File
 Field of View

Energy Bands:
 wide [HRC] broad [ACIS]
 hard [ACIS] medium [ACIS]
 soft [ACIS] ultrasoft [ACIS]

Select	View	u.objid	c.separation (arcsec)	c.probability	name	ra (deg)	c (c
<input checked="" type="checkbox"/>	Q	1	0.017112997733483057	0.5055621052154217	CXO J010615.6+004814	16.565295359999997	0.804121
<input type="checkbox"/>	Q	1	54.24790919204978	0.0	CXO J010619.2+004823	16.580180860000002	
<input checked="" type="checkbox"/>	Q	3	0.01683471906199563	0.4720757060121488	CXO J040356.6-170322	60.986132119999999	-17.05616
<input type="checkbox"/>	Q	3	179.58975257519748	0.0	CXO J040350.6-170559	60.961019300000004	-
<input checked="" type="checkbox"/>	Q	4	0.01818357482855628	0.4652402136242174	CXO J221527.2-161133	333.86372425	-
<input type="checkbox"/>	Q	5	29.56176222424523	1.281882521377532E-178	CXO J144329.0+272442	220.87082871	27.41184
<input checked="" type="checkbox"/>	Q	5	0.01304011731303792	0.5305862777076792	CXO J144331.1+272436	220.87988610000002	

After the query is submitted, the Results tab opens with a table of search results; each row represents a source, and each column a selected property characterizing the source.

Product Type	Product Specifier	Format	Description
Source Region Event List	regevt3	FITS table	Photon event list, with associated GTIs recorded in consecutive FITS HDUs
Source Region Image	regimg_w	FITS image	Per-energy-band background-subtracted, exposure corrected images (photons/s*cm^2); HRC wide energy band
Source Region Image	regimg_b	FITS image	Per-energy-band background-subtracted, exposure corrected images (photons/s*cm^2); ACIS broad energy band
Source Region Image	regimg_h	FITS image	Per-energy-band background-subtracted, exposure corrected images (photons/s*cm^2); ACIS hard energy band

Create script canceled

CSCview Results tab

File Edit View Tools Help

Search Stop New Open Save Send Download Script

Chandra Source Catalog Release 1.1

Catalog Query Results Products

Data Products:

- Source Region:
 - Event List
 - Image
 - Spectrum
 - ARF
 - RMF
 - Exposure Map
 - PSF
 - Light Curve
 - Region
- Full Field:
 - Event List
 - Image
 - Background Image
 - Exposure Map
 - Spectrum
 - Region

Select	View	u.objid	c.sep (arcsec)
<input type="checkbox"/>	Q	1	0.0171129
<input type="checkbox"/>	Q	1	54.247
<input checked="" type="checkbox"/>	Q	3	0.016834
<input type="checkbox"/>	Q	3	179.589
<input checked="" type="checkbox"/>	Q	4	0.018183
<input type="checkbox"/>	Q	5	29.561
<input type="checkbox"/>	Q	5	0.013040

Source Region Image regimg_b FITS image

Source Region Image regimg_h FITS image

Download canceled

Source Preview - CSCview <2>

File

u.objid	c.separation (arcsec)	c.probability	name	ra (deg)
3	0.01683471906199563	0.4720757060121488	CXO J040356.6-170322	60.9861321199999

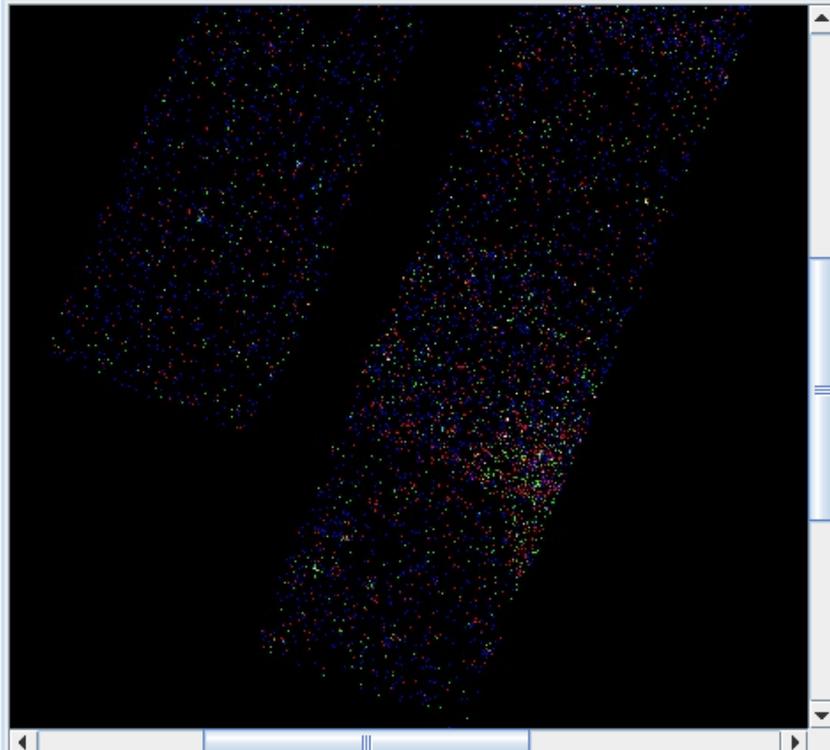
Source Region:
 Tricolor Image
 Image
 PSF

Full Field:
 Image

Energy Band:
 wide [HRC]
 broad [ACIS]
 hard [ACIS]
 medium [ACIS]
 soft [ACIS]
 ultrasoft [ACIS]

Blocking Factor: 4

Image Scale: 1



Width: 4033.7408 arcsec Height: 4033.7408 arcsec

Preview source region events and PSF images in various energy bands, and broad-band full-field images.

CSCview Results tab

Save the table of search results to a TSV or VOTable format file.

File Edit View Tools Help

Search Stop New Open Save Send Download Script

Chandra Source Catalog Release 1.1

Catalog Query Results Products

Data Products:

- Source Region:
 - Event List
 - Image
 - Spectrum
 - ARF
 - RMF
 - Exposure Map
 - PSF
 - Light Curve
 - Region
- Full Field:
 - Event List
 - Image
 - Background Image
 - Exposure Map
 - Sensitivity Map
 - Aspect Histogram
 - Bad Pixel File
 - Field of View

Energy Bands:

- wide [HRC] broad [ACIS]
- hard [ACIS] medium [ACIS]
- soft [ACIS] ultrasoft [ACIS]

4 of 5 rows matched, 7 rows returned

Select	View	u.objid	c.separation (arcsec)	c.probability	name	ra (deg)	c
<input checked="" type="checkbox"/>	Q	1	0.017112997733483057	0.5055621052154217	CXO J010615.6+004814	16.565295359999997	0.804121
<input type="checkbox"/>	Q	1	54.24790919204978	0.0	CXO J010619.2+004823	16.580180860000002	
<input checked="" type="checkbox"/>	Q	3	0.01683471906199563	0.4720757060121488	CXO J040356.6-170322	60.986132119999999	-17.05616
<input type="checkbox"/>	Q	3	179.58975257519748	0.0	CXO J040350.6-170559	60.961019300000004	-
<input checked="" type="checkbox"/>	Q	4	0.01818357482855628	0.4652402136242174	CXO J221527.2-161133	333.86372425	-
<input type="checkbox"/>	Q	5	29.56176222424523	1.281882521377532E-178	CXO J144329.0+272442	220.87082871	27.41184
<input checked="" type="checkbox"/>	Q	5	0.01304011731303792	0.5305862777076792	CXO J144331.1+272436	220.87988610000002	

Retrieve data files for selected sources in the results table:

Highlight one or more rows in the table and the desired data products in the provided list, then click "Search".

Product Type	Product Specifier	Format	Description
Source Region Event List	regev3	FITS table	Photon event list, with associated GTIs recorded in consecutive FITS HDUs
Source Region Image	regimg_w	FITS image	Per-energy-band background-subtracted, exposure corrected images (photons/s*cm ²); HRC wide energy band
Source Region Image	regimg_b	FITS image	Per-energy-band background-subtracted, exposure corrected images (photons/s*cm ²); ACIS broad energy band
Source Region Image	regimg_h	FITS image	Per-energy-band background-subtracted, exposure corrected images (photons/s*cm ²); ACIS hard energy band

Create script canceled

CSCview Products tab

The screenshot shows the CSCview interface with the 'Products' tab selected. The main window displays a table of 196 selected files with columns for Name, Size (bytes), Product, and Format. A blue arrow points to the table with the text: "List of data products requested in the Results tab." Below the table, two dialog boxes are shown. The 'Download Products' dialog box has a red text overlay: "Download a single tar file containing the selected data products, OR" with a red arrow pointing to the 'Save Batch File' dialog box. The 'Save Batch File' dialog box has a red text overlay: "Retrieve a download script containing a list of Wget commands – one for each data file – to be executed on the Unix command line for a batch download." The 'Download Products' dialog box shows 'File Name: cscpackage.tar' and 'Files of Type: .tar'. The 'Save Batch File' dialog box shows 'File Name: cscbatch' and 'Files of Type:'.

File Edit View Tools Help

Search Stop New Open Save Send Download Script

Chandra Source Catalog Release 1.1

Catalog Query Results **Products**

Select all 196 files selected: 3,389,909,760 bytes 196 files found

Select	Name	Size (bytes)	Product	Format
<input checked="" type="checkbox"/>	acisf00881_000N001_evt3.fits	472,320	Full-Field Event List	FITS table
<input checked="" type="checkbox"/>	acisf02182_000N001_evt3.fits	2,687,040	Full-Field Event List	FITS table
<input checked="" type="checkbox"/>	acisf02180_000N001_evt3.fits	3,012,480	Full-Field Event List	FITS table
<input checked="" type="checkbox"/>	acisf02185_001N002_evt3.fits	2,260,800	Full-Field Event List	FITS table
<input checked="" type="checkbox"/>	acisf00881_000N001_b_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf00881_000N001_h_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf00881_000N001_m_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf00881_000N001_s_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf00881_000N001_u_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf02182_000N001_b_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf02182_000N001_h_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image
<input checked="" type="checkbox"/>	acisf02182_000N001_m_exp3.fits	50,414,400	Full-Field Exposure Map	FITS image

Download Products

Save In: science

Download a single tar file containing the selected data products, OR

File Name: cscpackage.tar

Files of Type: .tar

Save Cancel

Save Batch File

Save In: science

Retrieve a download script containing a list of Wget commands – one for each data file – to be executed on the Unix command line for a batch download.

File Name: cscbatch

Files of Type:

Save Cancel

Search completed

Troubleshooting

Why can't I find my source?

The source is in the catalog, but your search criteria are too strict:

Have you set a flux threshold unrealistically high, or used a very small cone search radius in a search on source position?

Try relaxing or reducing the number of search conditions and re-submit your query.

The source is not in the catalog:

- * *The source did not pass quality assurance filters for inclusion in the catalog; e.g., the signal-to-noise was too low, or the source flux was fainter than the Chandra limiting sensitivity.*

Learn more here: http://cxc.harvard.edu/csc/faq/src_inclusion.html

- * *The source was observed by Chandra but the CCD on which it lies was excluded from the catalog because it contains extended emission.*

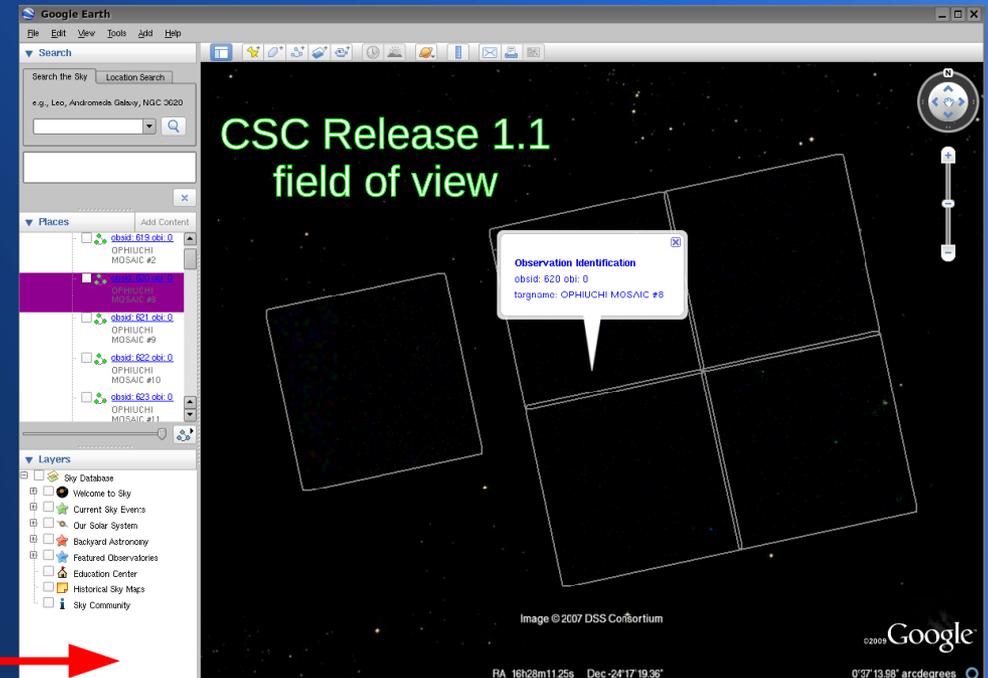
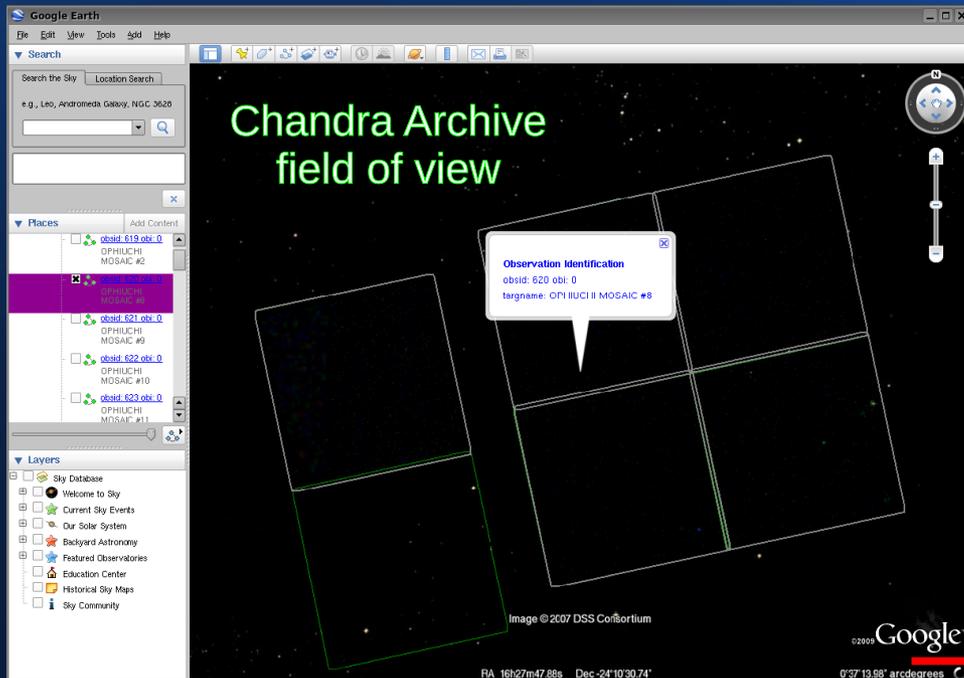
If you know the ObsID, check for it in the list of “dropped chips” for CSC Release 1.1:
http://cxc.harvard.edu/csc/faq/dropped_chips.html

Troubleshooting

Why can't I find my source?

Search for your source in the CSC interface to Sky in Google Earth, where you can visually inspect Chandra observations for dropped chips.

<http://cxc.harvard.edu/csc/googlecat/>



dropped chip

CSC Resources

<http://cxc.harvard.edu/csc/>

Refer to the CSC website for:

- * step-by-step *CSCview* and data analysis tutorials;
- * high-level descriptions of source properties and data files included in the catalog;
- * answers to frequently asked questions;
- * *How & Why* topics;
- * catalog science requirements and specifications; and
- * a thorough summary of the catalog statistical characterization.

Submit questions to the

CXC Helpdesk

<http://cxc.harvard.edu/helpdesk>