Mining archival data using VO tools; SDSS & 2MASS

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What is the VO?

"A virtual observatory is a collection of interoperating data archives and software tools which utilize the internet to form a scientific research environment in which astronomical research programs can be conducted."

Wikipedia

Dictionary

- Registry: the yellow pages of the VO
- PLASTIC: PLatform for AStronomy Tool InterConnection
- Astro Runtime: Astrogrid Client Runtime (ACR), provides an interface to access functions from python
- VOTable: data stored in XML format
- SIA: Simple Image Access
- SSA: Simple Spectral Access
- MySpace: virtual space storage

Data Discovery	Spectral Analysis	Data visualisation and handling	SED building and fitting
Aladin ✔	SPLAT	TopCat ✔	VOSED
VO Desktop ✔	VOSpec	STILTS	Yafit
Datascope	Specview	VOPlot	easy-z
Octet	Euro-3D	VisIVO	GOSSIP
OpenSkyQuery	*NVO Spectrum*	VOCat	*NVO Filter*
VoEventNet		*Montage*	
ASPID		*VOStat*	
NED		*NVO Footprint*	

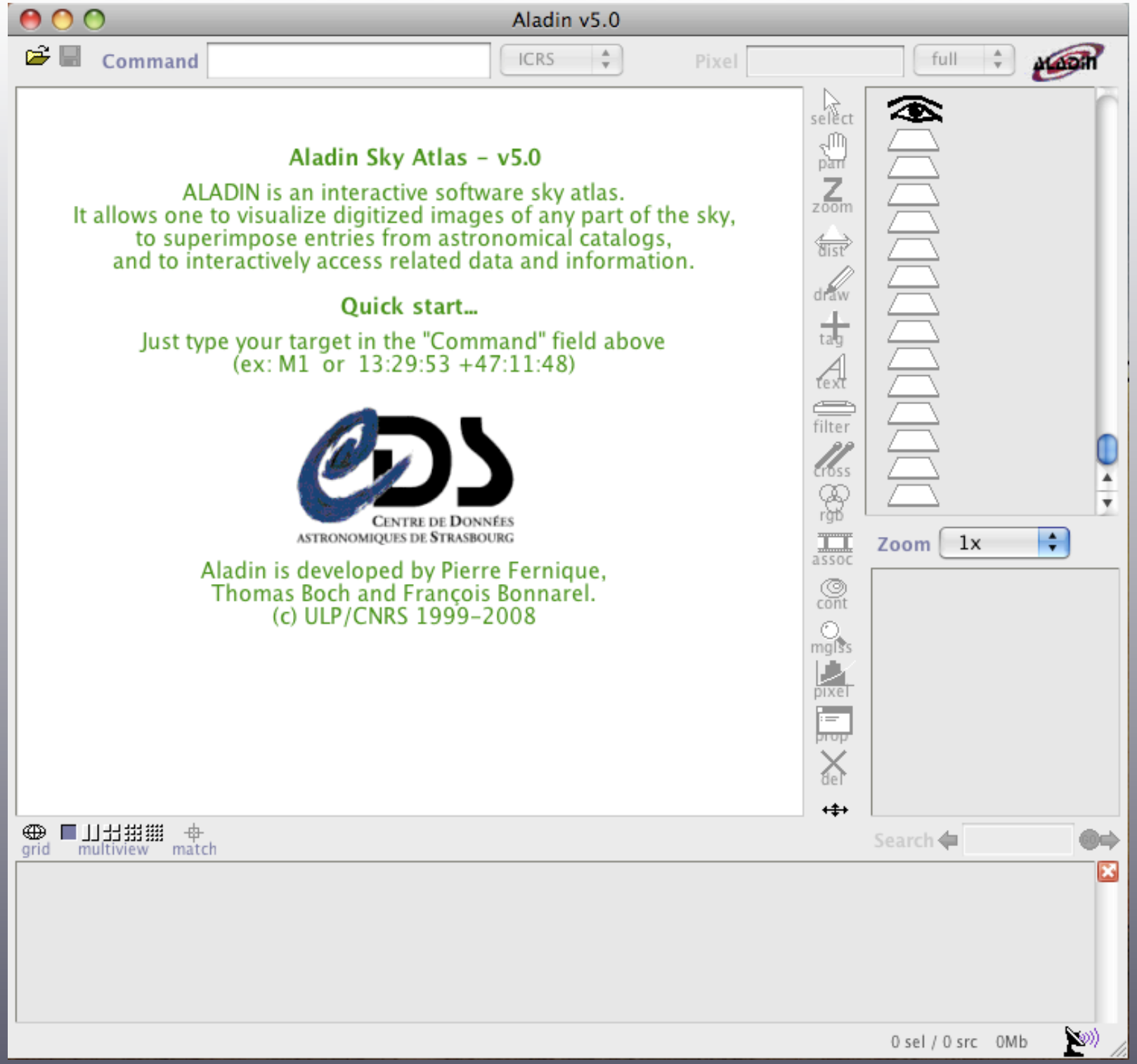
Aladin Sky Atlas

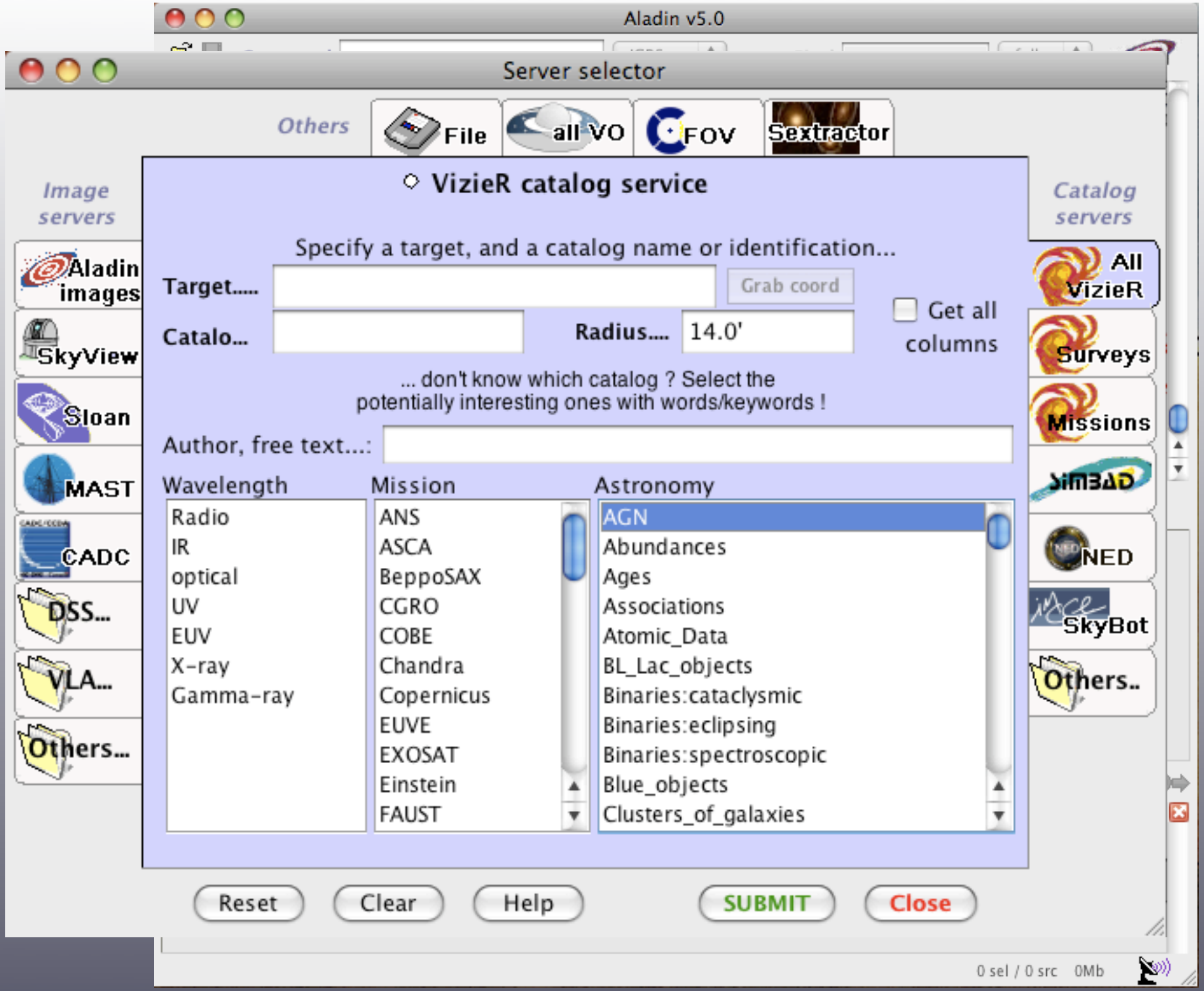
http://aladin.u-strasbg.fr/

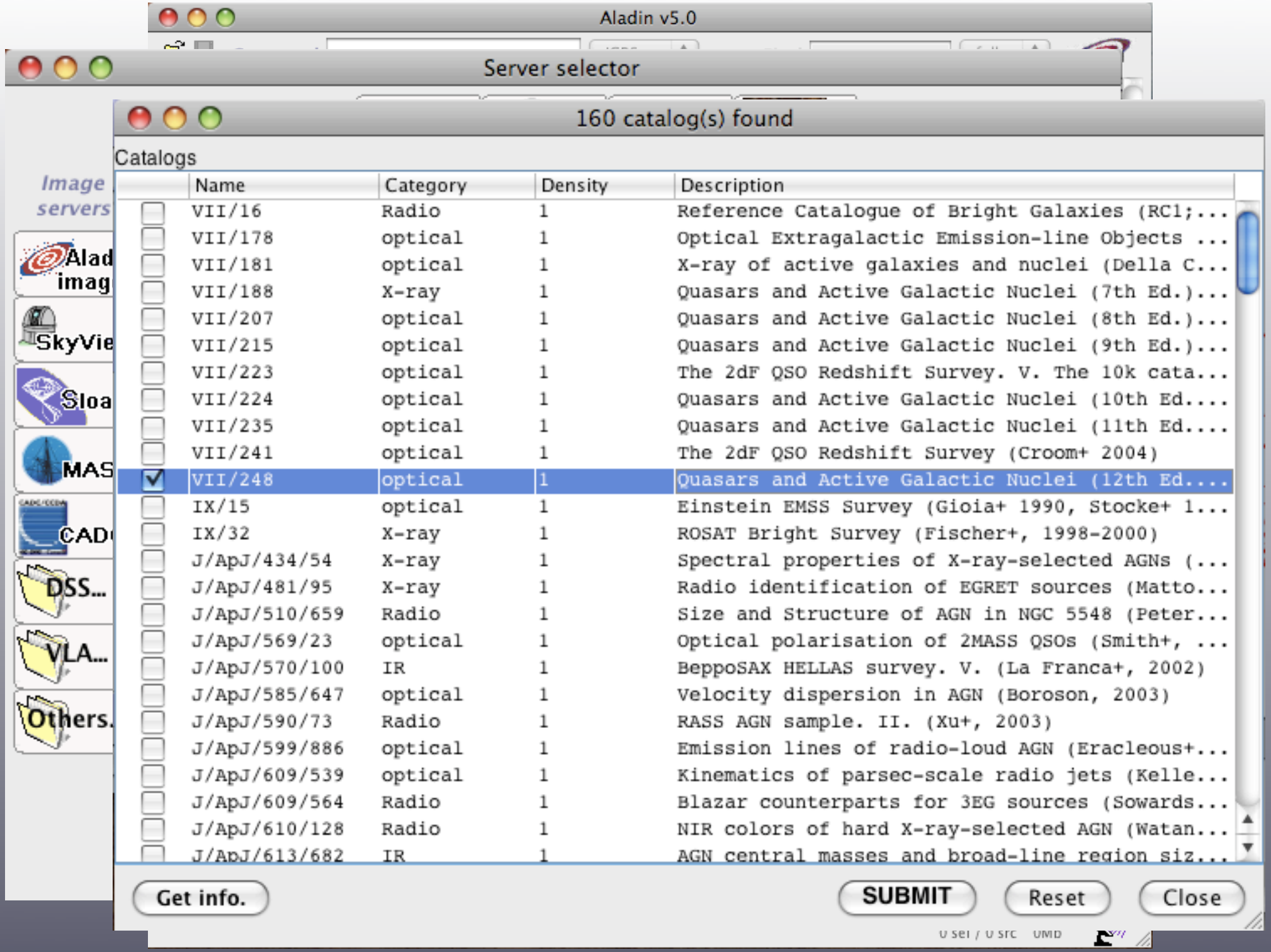
Description

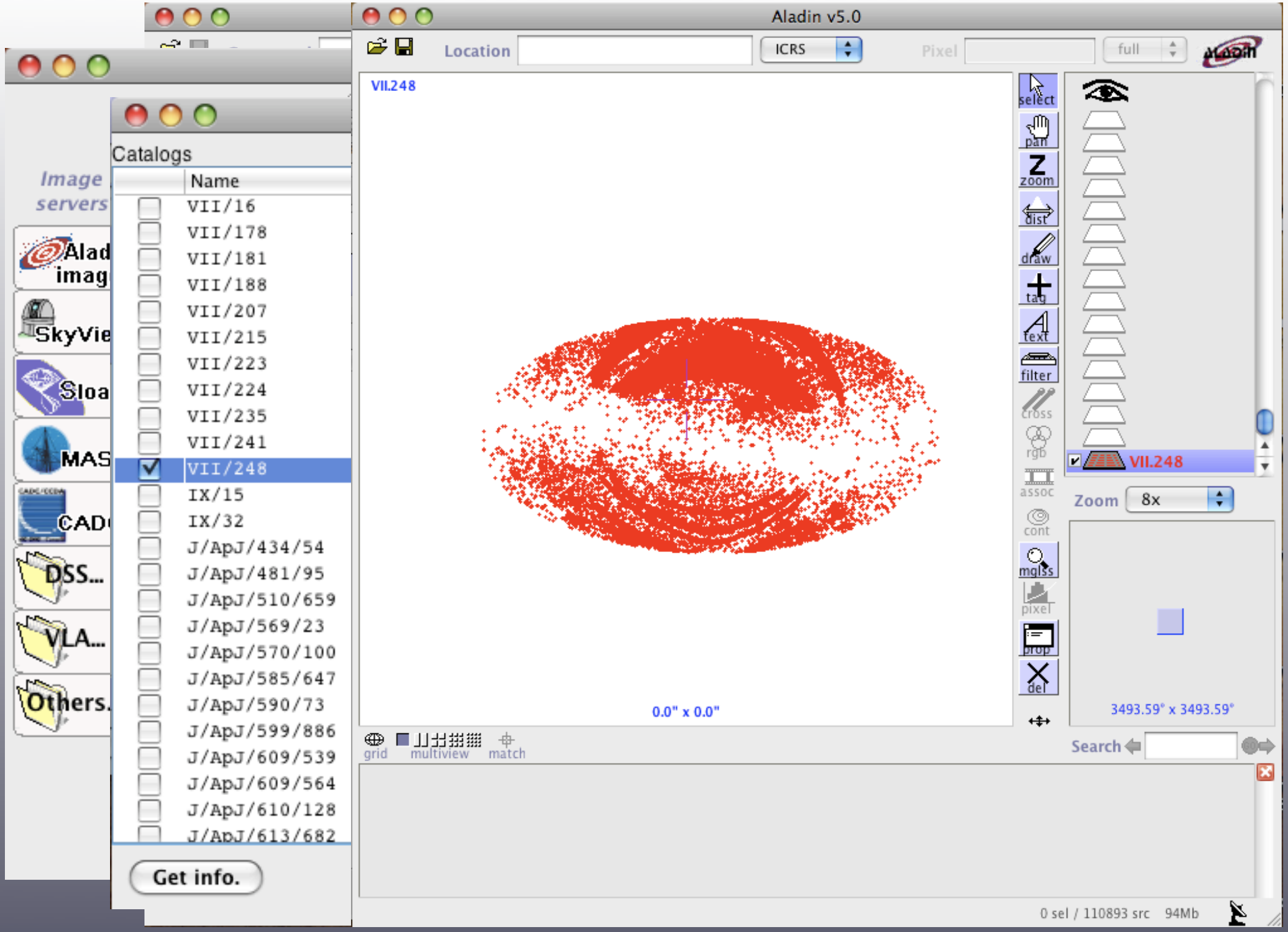
Aladin is an interactive software sky atlas allowing the user to visualize digitized astronomical images, superimpose entries from astronomical catalogues or databases, and interactively access related data and information from the Simbad database, the VizieR service and other archives for all known sources in the field.

The Aladin sky atlas is available in three modes: a Java Standalone application, a Java applet interface and a simple previewer.

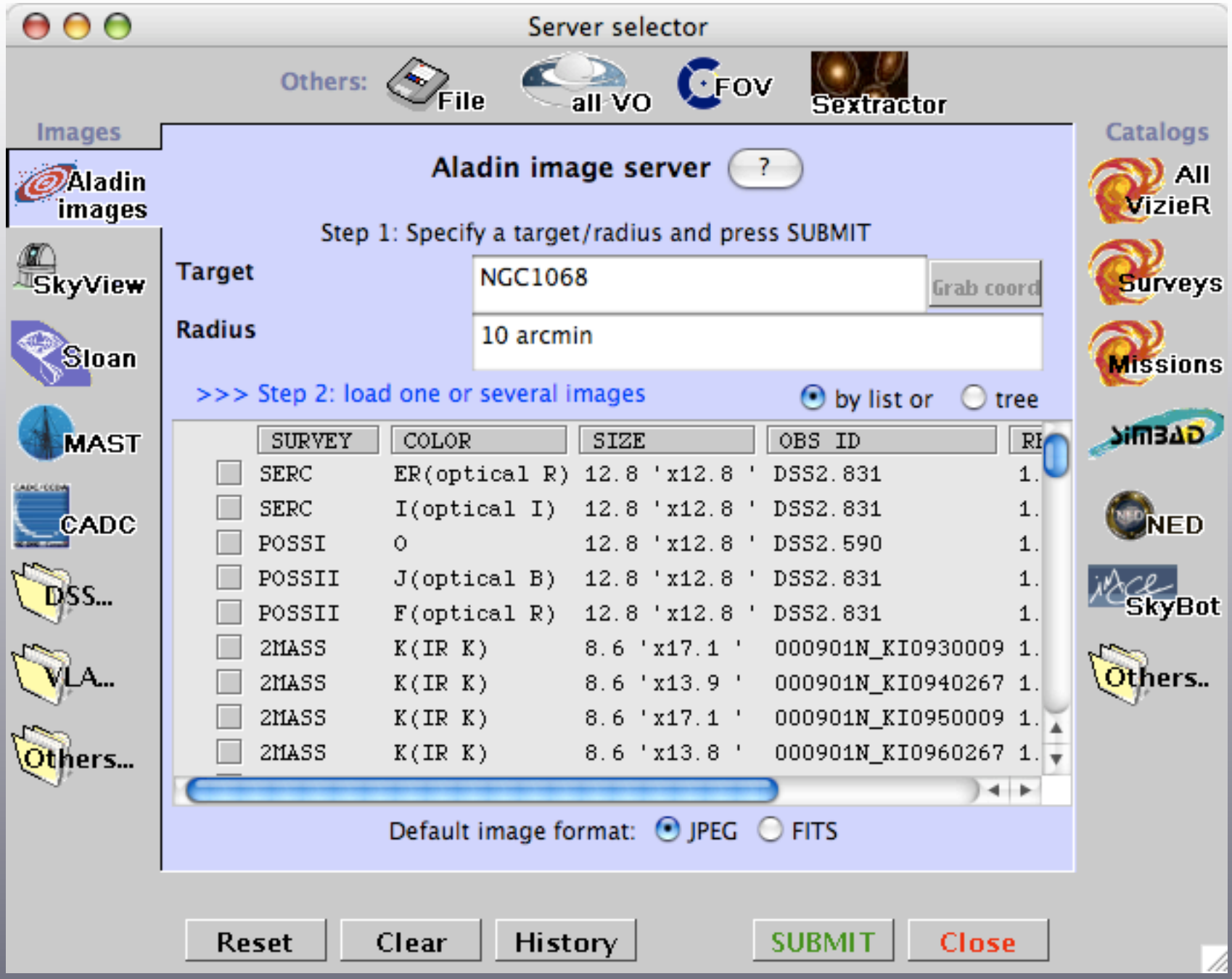

Aladin v5.0
Command
ICRS
Pixel
full
Aladin Sky Atlas - v5.0
ALADIN is an interactive software sky atlas.
It allows one to visualize digitized images of any part of the sky,
to superimpose entries from astronomical catalogs,
and to interactively access related data and information.
Quick start...
Just type your target in the "Command" field above
(ex: M1 or 13:29:53 +47:11:48)
CENTRE DE DONNÉES
ASTRONOMIQUES DE STRASBOURG
Aladin is developed by Pierre Fernique,
Thomas Boch and François Bonnarel.
(c) ULP/CNRS 1999-2008
select
pan
zoom
dist
draw
tag
text
filter
cross
rgb
assoc
cont
mgliss
pixel
prop
del
Zoom
1x
grid
multiview
match
Search
0 sel / 0 src 0Mb

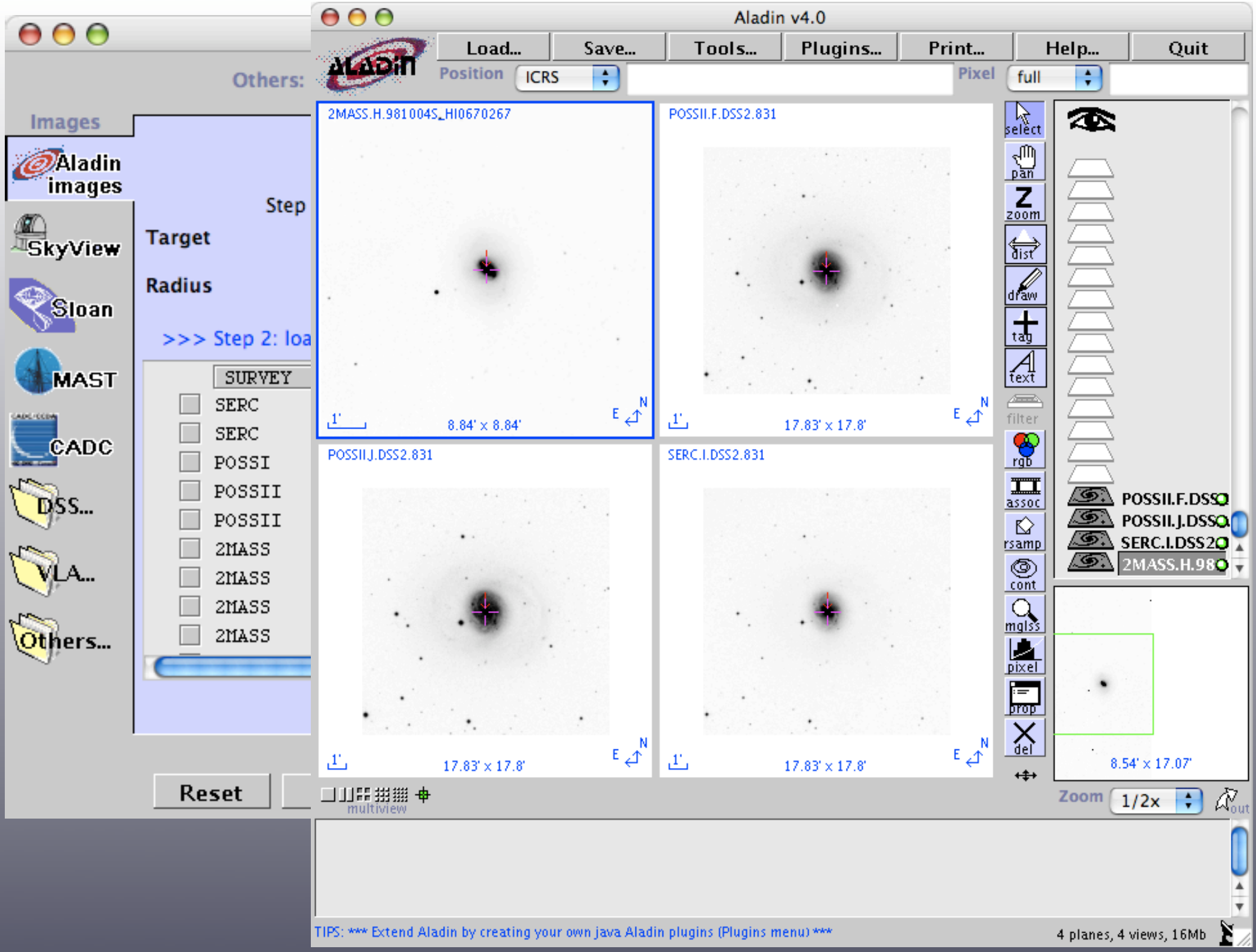

Aladin v5.0
Server selector
Others
File
all VO
FOV
Sextractor
Image servers
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
VizieR catalog service
Specify a target, and a catalog name or identification...
Target.....
Grab coord
Catalo...
Radius....
14.0'
Get all columns
... don't know which catalog ? Select the potentially interesting ones with words/keywords !
Author, free text...:
Wavelength
Radio
IR
optical
UV
EUV
X-ray
Gamma-ray
Mission
ANS
ASCA
BeppoSAX
CGRO
COBE
Chandra
Copernicus
EUVE
EXOSAT
Einstein
FAUST
Astronomy
AGN
Abundances
Ages
Associations
Atomic_Data
BL_Lac_objects
Binaries:cataclysmic
Binaries:eclipsing
Binaries:spectroscopic
Blue_objects
Clusters_of_galaxies
Catalog servers
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
Reset
Clear
Help
SUBMIT
Close
0 sel / 0 src 0Mb

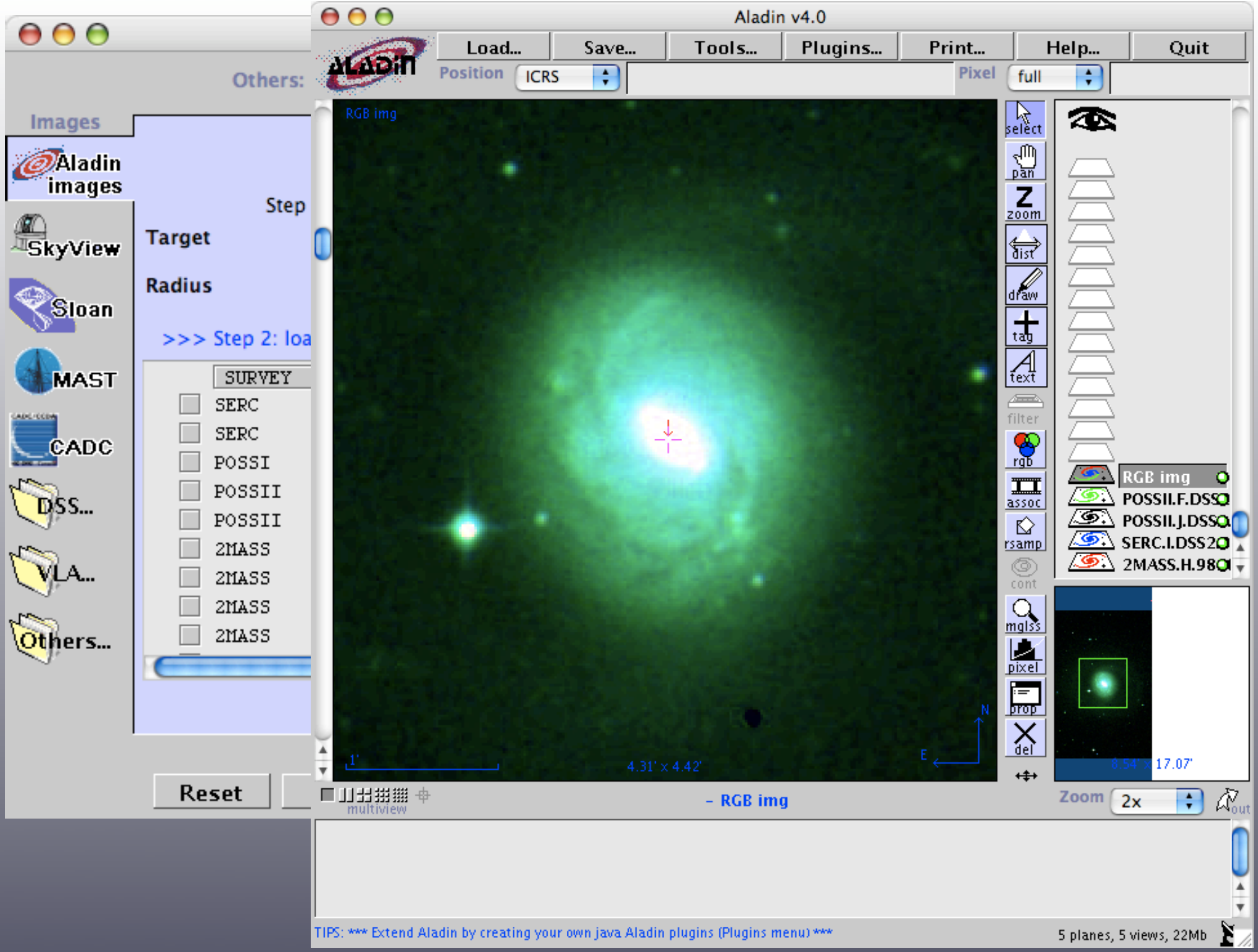

Aladin v5.0
Server selector
160 catalog(s) found
Catalogs
Image servers
Aladin imag
SkyVie
Sloa
MAS
CADC
DSS...
VLA...
Others.
Name
Category
Density
Description
VII/16 Radio 1 Reference Catalogue of Bright Galaxies (RC1;...
VII/178 optical 1 Optical Extragalactic Emission-line Objects ...
VII/181 optical 1 X-ray of active galaxies and nuclei (Della C...
VII/188 X-ray 1 Quasars and Active Galactic Nuclei (7th Ed.)...
VII/207 optical 1 Quasars and Active Galactic Nuclei (8th Ed.)...
VII/215 optical 1 Quasars and Active Galactic Nuclei (9th Ed.)...
VII/223 optical 1 The 2dF QSO Redshift Survey. V. The 10k cata...
VII/224 optical 1 Quasars and Active Galactic Nuclei (10th Ed....
VII/235 optical 1 Quasars and Active Galactic Nuclei (11th Ed....
VII/241 optical 1 The 2dF QSO Redshift Survey (Croom+ 2004)
VII/248 optical 1 Quasars and Active Galactic Nuclei (12th Ed....
IX/15 optical 1 Einstein EMSS Survey (Gioia+ 1990, Stocke+ 1...
IX/32 X-ray 1 ROSAT Bright Survey (Fischer+, 1998-2000)
J/ApJ/434/54 X-ray 1 Spectral properties of X-ray-selected AGNs (...
J/ApJ/481/95 X-ray 1 Radio identification of EGRET sources (Matto...
J/ApJ/510/659 Radio 1 Size and Structure of AGN in NGC 5548 (Peter...
J/ApJ/569/23 optical 1 Optical polarisation of 2MASS QSOs (Smith+, ...
J/ApJ/570/100 IR 1 BeppoSAX HELLAS survey. V. (La Franca+, 2002)
J/ApJ/585/647 optical 1 Velocity dispersion in AGN (Boroson, 2003)
J/ApJ/590/73 Radio 1 RASS AGN sample. II. (Xu+, 2003)
J/ApJ/599/886 optical 1 Emission lines of radio-loud AGN (Eracleous+...
J/ApJ/609/539 optical 1 Kinematics of parsec-scale radio jets (Kelle...
J/ApJ/609/564 Radio 1 Blazar counterparts for 3EG sources (Sowards...
J/ApJ/610/128 Radio 1 NIR colors of hard X-ray-selected AGN (Watan...
J/ApJ/613/682 IR 1 AGN central masses and broad-line region siz...
Get info.
SUBMIT
Reset
Close
0 sel / 0 src UMD

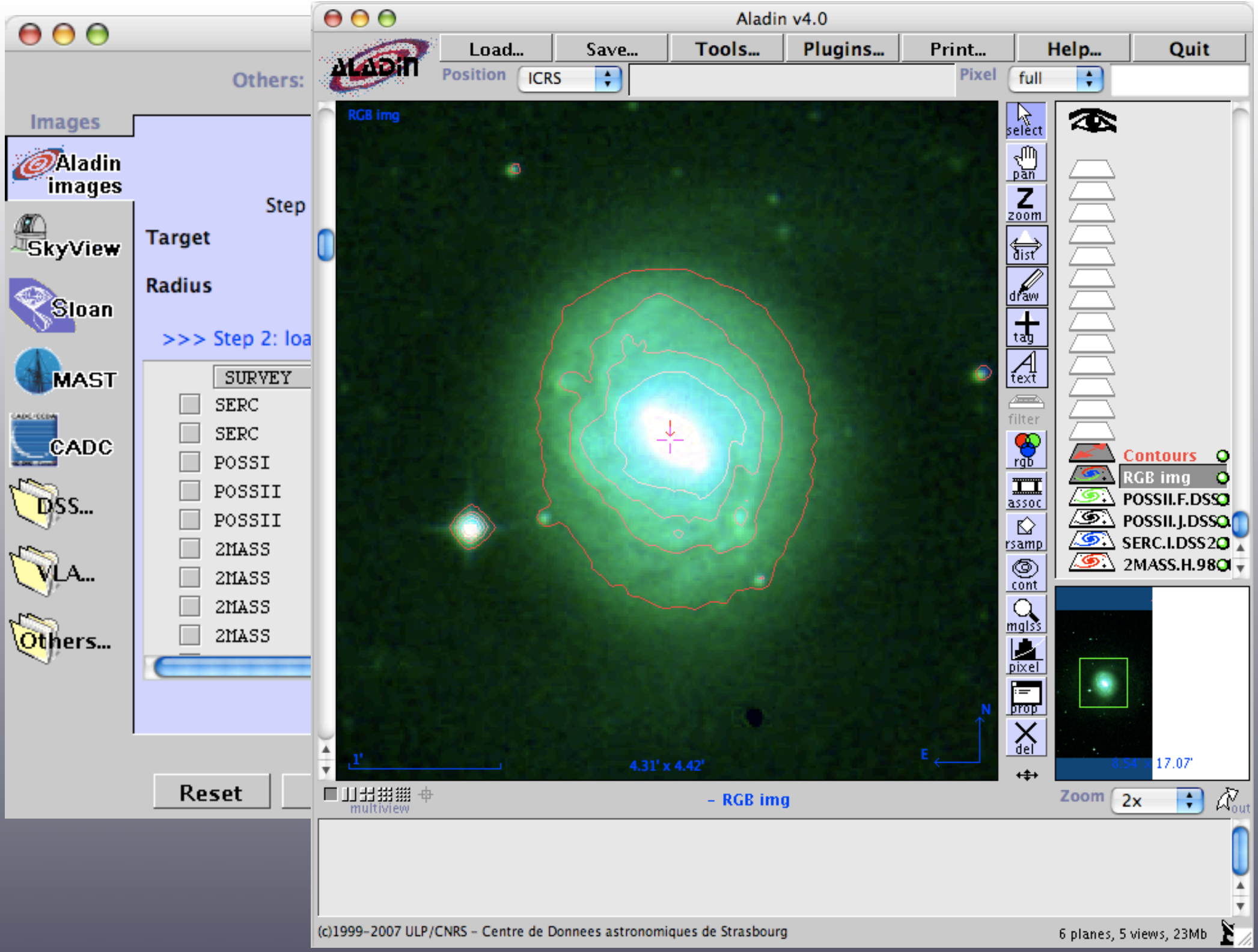

Aladin v5.0
Location
ICRS
Pixel
full
VII.248
Catalogs
Name
VII/16
VII/178
VII/181
VII/188
VII/207
VII/215
VII/223
VII/224
VII/235
VII/241
VII/248
IX/15
IX/32
J/ApJ/434/54
J/ApJ/481/95
J/ApJ/510/659
J/ApJ/569/23
J/ApJ/570/100
J/ApJ/585/647
J/ApJ/590/73
J/ApJ/599/886
J/ApJ/609/539
J/ApJ/609/564
J/ApJ/610/128
J/ApJ/613/682
Get info.
Image servers
select
pan
zoom
dist
draw
tag
text
filter
cross
rgb
assoc
cont
mgliss
pixel
prop
del
Zoom
8x
0.0" x 0.0"
3493.59° x 3493.59°
grid
multiview
match
Search
0 sel / 110893 src
94Mb

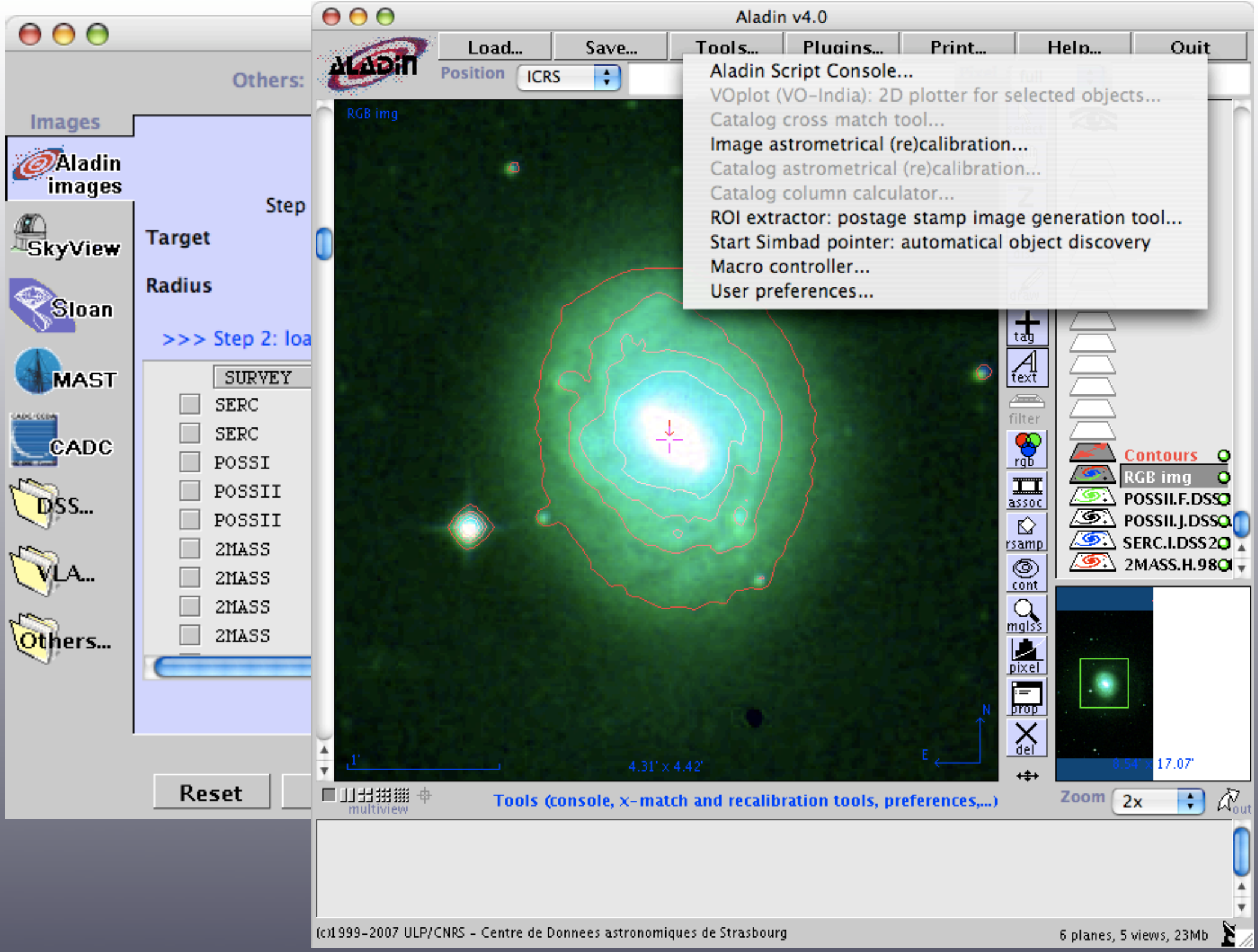
Server selector
Others:
File
all VO
FOV
Sextractor
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Aladin image server
?
>>> Step 1: Specify a target/radius and press SUBMIT
Target
NGC1068
Grab coord
Radius
10 arcmin
Step 2: load one or several images
by list or
tree
Default image format:
JPEG
FITS
Catalogs
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
Reset
Clear
History
SUBMIT
Close

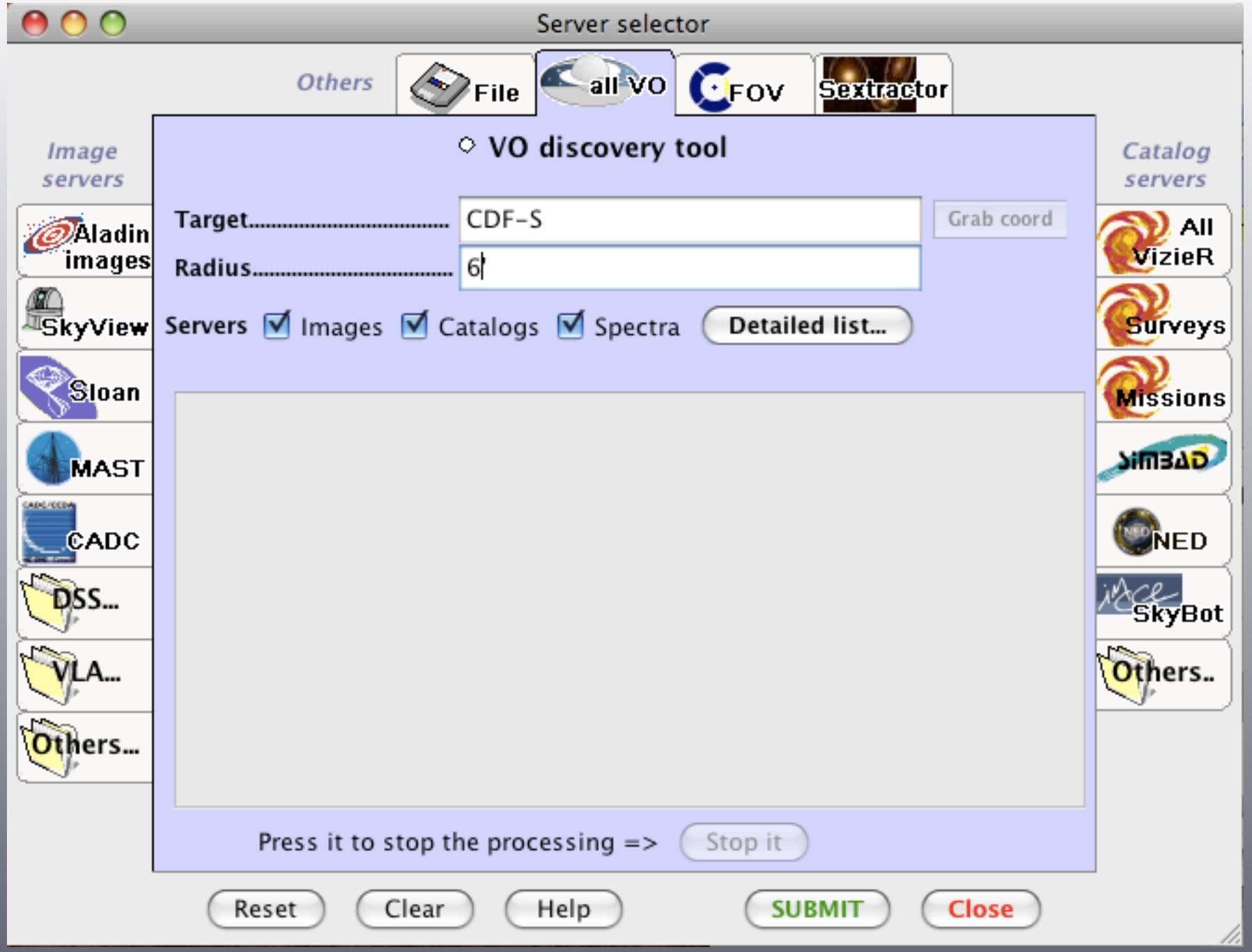

Server selector
Others:
File
all VO
FOV
Sextractor
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Aladin image server
?
Step 1: Specify a target/radius and press SUBMIT
Target
NGC1068
Grab coord
Radius
10 arcmin
>>> Step 2: load one or several images
by list or
tree
SURVEY COLOR SIZE OBS ID
SERC ER(optical R) 12.8 'x12.8 ' DSS2.831 1.
SERC I(optical I) 12.8 'x12.8 ' DSS2.831 1.
POSSI O 12.8 'x12.8 ' DSS2.590 1.
POSSII J(optical B) 12.8 'x12.8 ' DSS2.831 1.
POSSII F(optical R) 12.8 'x12.8 ' DSS2.831 1.
2MASS K(IR K) 8.6 'x17.1 ' 000901N_KI0930009 1.
2MASS K(IR K) 8.6 'x13.9 ' 000901N_KI0940267 1.
2MASS K(IR K) 8.6 'x17.1 ' 000901N_KI0950009 1.
2MASS K(IR K) 8.6 'x13.8 ' 000901N_KI0960267 1.
Default image format:
JPEG
FITS
Catalogs
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
Reset
Clear
History
SUBMIT
Close

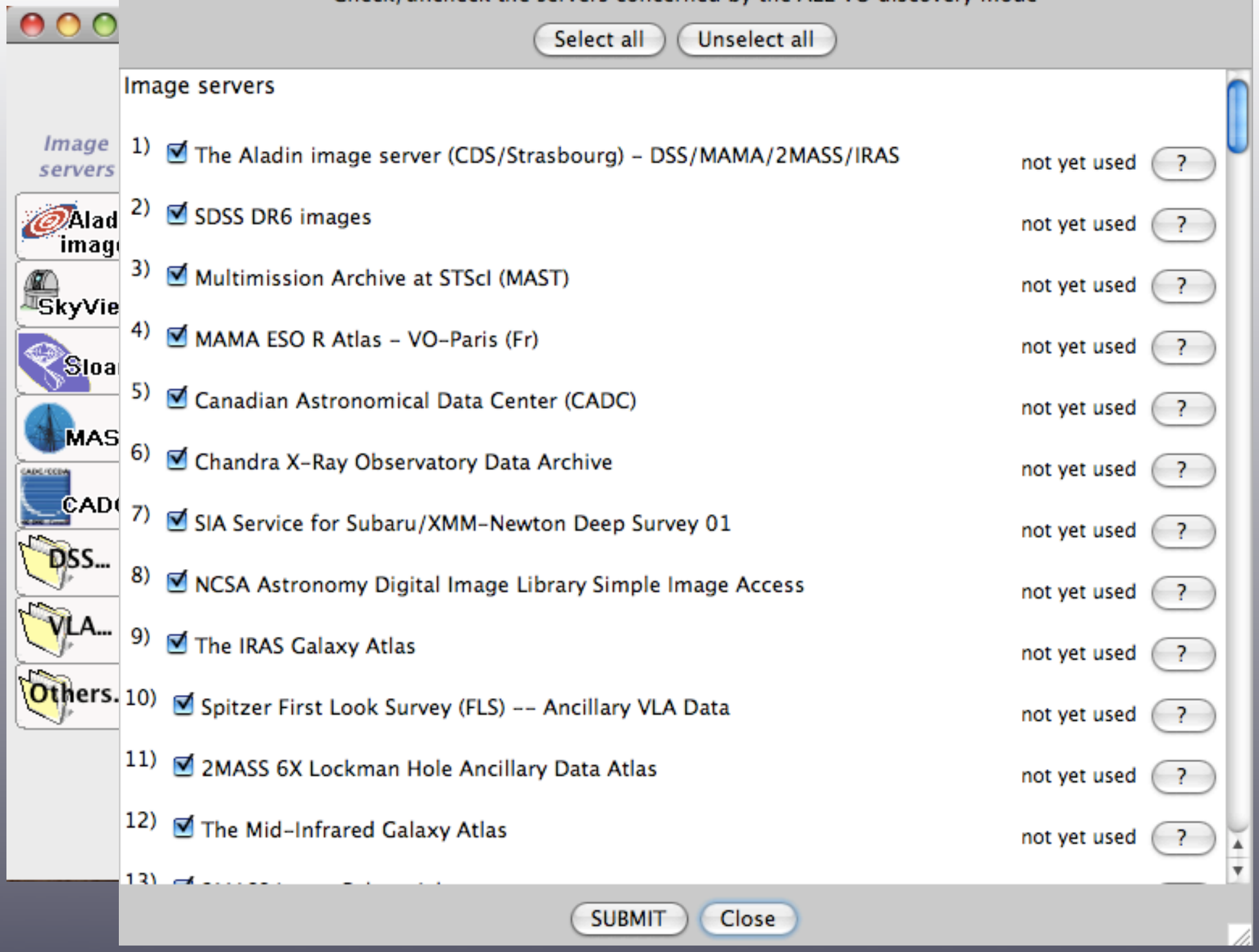

Aladin v4.0
Load...
Save...
Tools...
Plugins...
Print...
Help...
Quit
Position
ICRS
Pixel
full
2MASS.H.981004S_HI0670267
POSSII.F.DSS2.831
POSSII.J.DSS2.831
SERC.I.DSS2.831
8.84' x 8.84'
17.83' x 17.8'
17.83' x 17.8'
17.83' x 17.8'
select
pan
zoom
dist
draw
tag
text
filter
rgb
assoc
rsamp
cont
mglss
pixel
prop
del
POSSII.F.DSS
POSSII.J.DSS
SERC.I.DSS2
2MASS.H.98
8.54' x 17.07'
Zoom
1/2x
out
multiview
Others:
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Step
Target
Radius
>>> Step 2: loa
SURVEY
SERC
SERC
POSSI
POSSII
POSSII
2MASS
2MASS
2MASS
2MASS
Reset
TIPS: *** Extend Aladin by creating your own java Aladin plugins (Plugins menu) ***
4 planes, 4 views, 16Mb

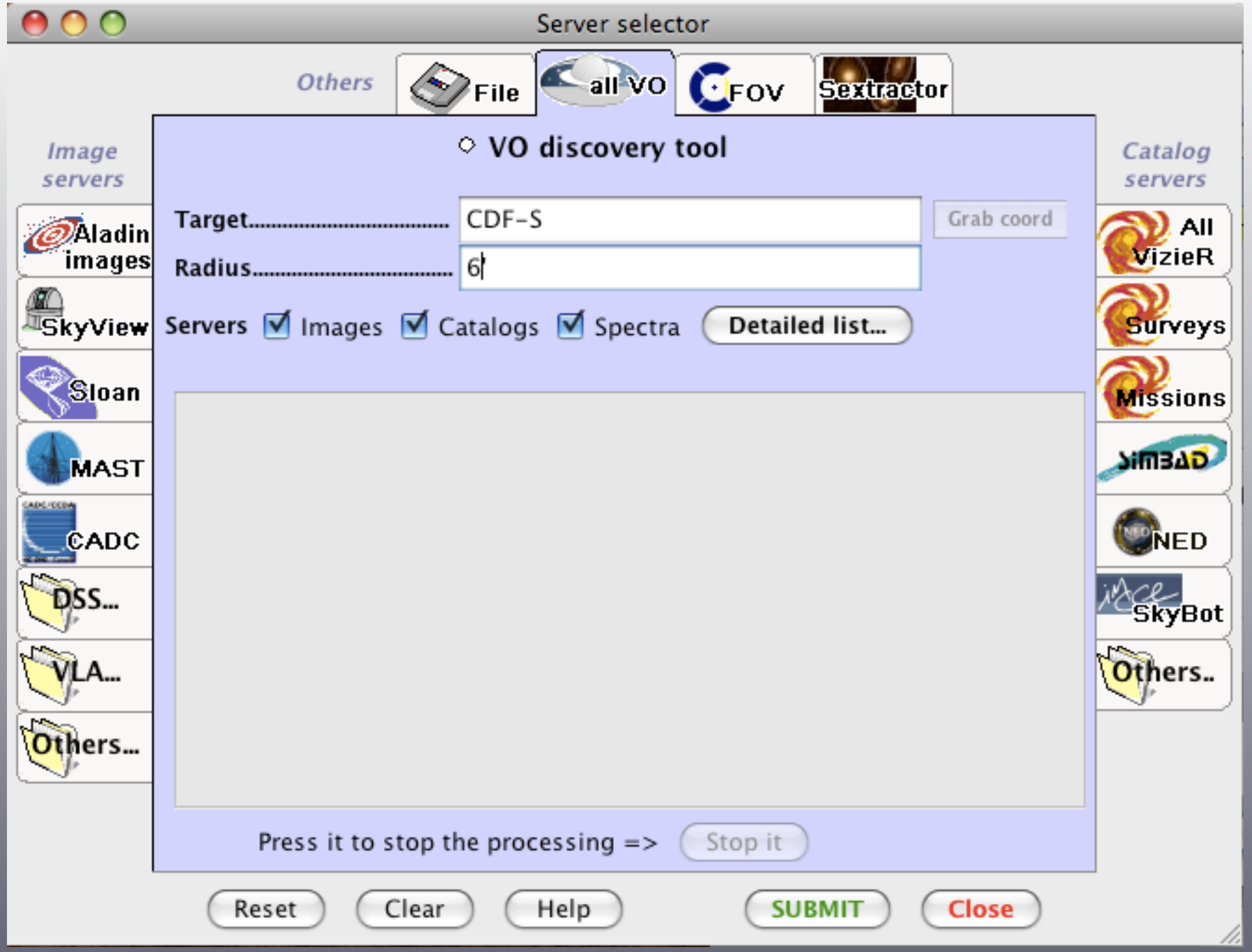

Aladin v4.0
Load...
Save...
Tools...
Plugins...
Print...
Help...
Quit
Position
ICRS
Pixel
full
RGB img
select
pan
zoom
dist
draw
tag
text
filter
rgb
assoc
rsamp
cont
mglss
pixel
prop
del
RGB img
POSSII.F.DSS
POSSII.J.DSS
SERC.I.DSS2
2MASS.H.98
1'
4.31' x 4.42'
N
E
8.54' x 17.07'
multiview
- RGB img
Zoom
2x
out
Others:
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Step
Target
Radius
>>> Step 2: loa
SURVEY
SERC
SERC
POSSI
POSSII
POSSII
2MASS
2MASS
2MASS
2MASS
Reset
TIPS: *** Extend Aladin by creating your own java Aladin plugins (Plugins menu) ***
5 planes, 5 views, 22Mb

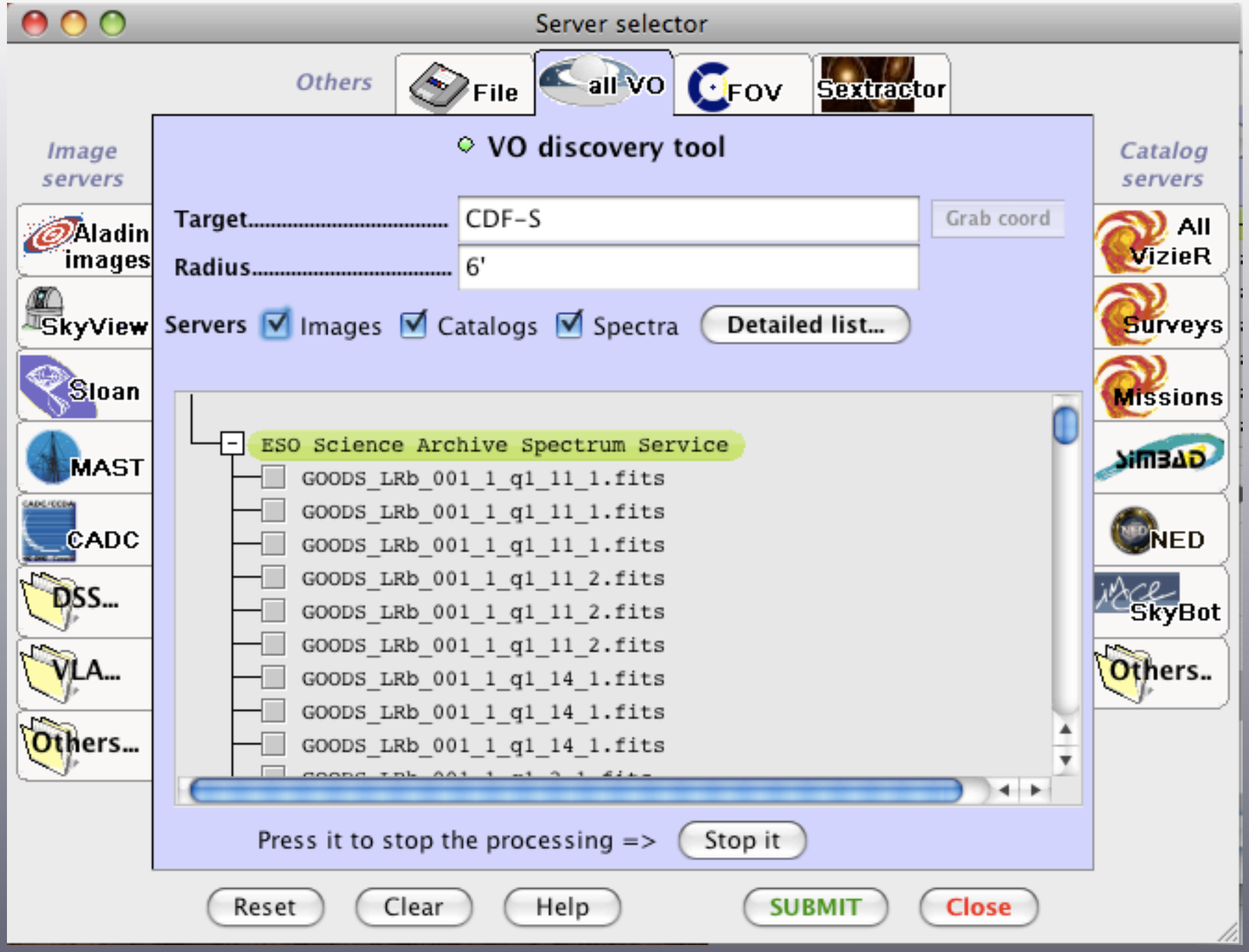

Aladin v4.0
Load...
Save...
Tools...
Plugins...
Print...
Help...
Quit
Position
ICRS
Pixel
full
RGB img
Others:
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Step
Target
Radius
>>> Step 2: loa
SURVEY
SERC
SERC
POSSI
POSSII
POSSII
2MASS
2MASS
2MASS
2MASS
Reset
select
pan
zoom
dist
draw
tag
text
filter
rgb
assoc
rsamp
cont
mglss
pixel
prop
del
Contours
RGB img
POSSII.F.DSS
POSSII.J.DSS
SERC.I.DSS2
2MASS.H.98
1'
4.31' x 4.42'
N
E
8.54' x 17.07'
multiview
- RGB img
Zoom
2x
out
(c)1999-2007 ULP/CNRS - Centre de Donnees astronomiques de Strasbourg
6 planes, 5 views, 23Mb

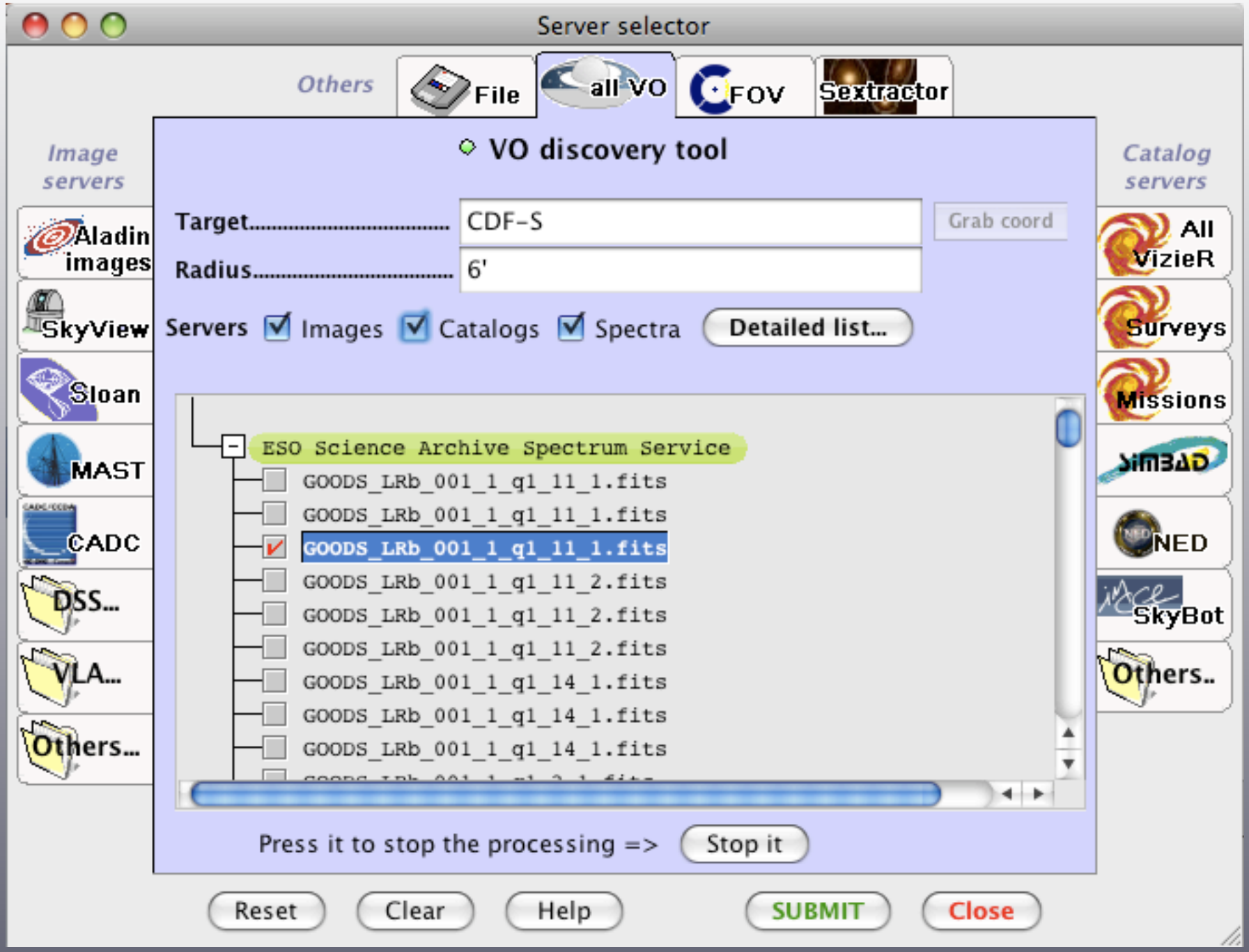

Aladin v4.0
Load...
Save...
Tools...
Plugins...
Print...
Help...
Quit
Position
ICRS
Aladin Script Console...
VOplot (VO-India): 2D plotter for selected objects...
Catalog cross match tool...
Image astrometrical (re)calibration...
Catalog astrometrical (re)calibration...
Catalog column calculator...
ROI extractor: postage stamp image generation tool...
Start Simbad pointer: automatical object discovery
Macro controller...
User preferences...
RGB img
Others:
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Step
Target
Radius
>>> Step 2: loa
SURVEY
SERC
SERC
POSSI
POSSII
POSSII
2MASS
2MASS
2MASS
2MASS
Reset
tag
text
filter
rgb
assoc
rsamp
cont
mglss
pixel
prop
del
Contours
RGB img
POSSII.F.DSS
POSSII.J.DSS
SERC.I.DSS2
2MASS.H.98
1'
4.31' x 4.42'
N
E
8.54' x 17.07'
multiview
Tools (console, x-match and recalibration tools, preferences,...)
Zoom
2x
out
(c)1999-2007 ULP/CNRS - Centre de Donnees astronomiques de Strasbourg
6 planes, 5 views, 23Mb

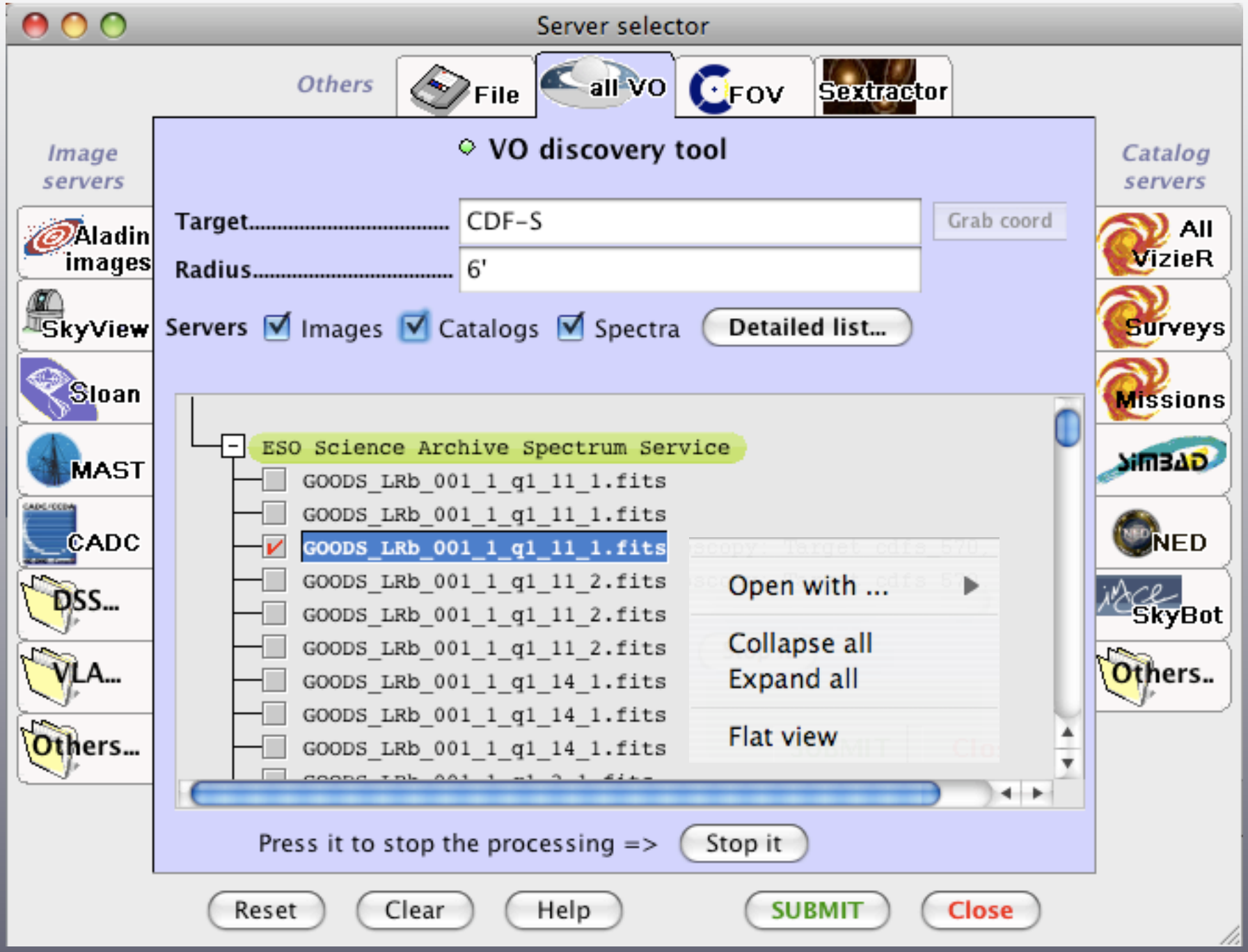

Server selector
Others
File
all VO
FOV
Sextractor
Image servers
VO discovery tool
Catalog servers
Aladin images
Target.....
CDF-S
Grab coord
Radius.....
6
All VizieR
SkyView
Servers
Images
Catalogs
Spectra
Detailed list...
Surveys
Sloan
Missions
MAST
SIMBAD
CADC
NED
DSS...
SkyBot
VLA...
Others..
Others...
Press it to stop the processing =>
Stop it
Reset
Clear
Help
SUBMIT
Close

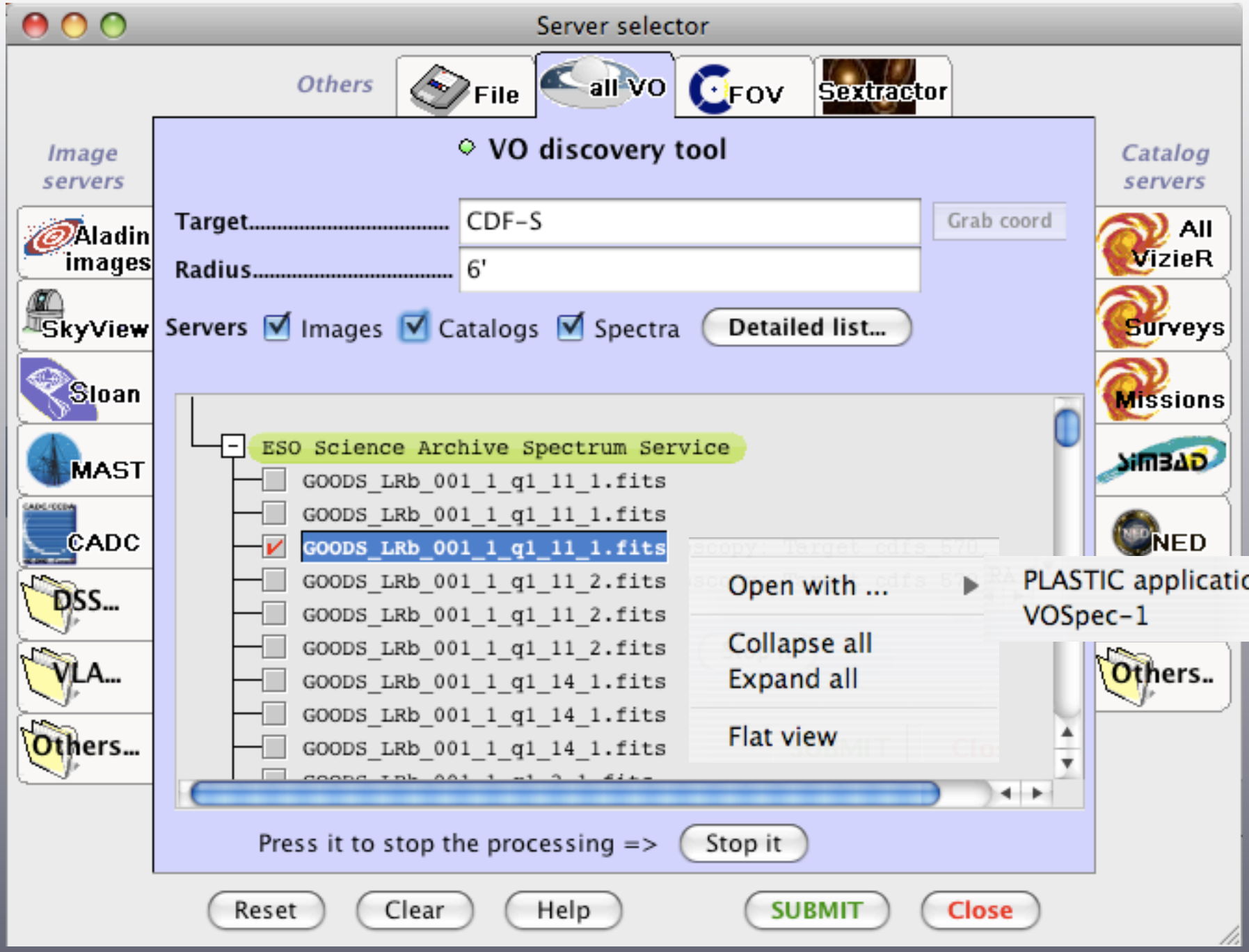

Liste des serveurs
Check/uncheck the servers concerned by the ALL VO discovery mode
Select all
Unselect all
Image servers
1) The Aladin image server (CDS/Strasbourg) - DSS/MAMA/2MASS/IRAS not yet used ?
2) SDSS DR6 images not yet used ?
3) Multimission Archive at STScI (MAST) not yet used ?
4) MAMA ESO R Atlas - VO-Paris (Fr) not yet used ?
5) Canadian Astronomical Data Center (CADC) not yet used ?
6) Chandra X-Ray Observatory Data Archive not yet used ?
7) SIA Service for Subaru/XMM-Newton Deep Survey 01 not yet used ?
8) NCSA Astronomy Digital Image Library Simple Image Access not yet used ?
9) The IRAS Galaxy Atlas not yet used ?
10) Spitzer First Look Survey (FLS) -- Ancillary VLA Data not yet used ?
11) 2MASS 6X Lockman Hole Ancillary Data Atlas not yet used ?
12) The Mid-Infrared Galaxy Atlas not yet used ?
SUBMIT
Close
Image servers
DSS...
VLA...
Others...


Server selector
Others
File
all VO
FOV
Sextractor
Image servers
VO discovery tool
Catalog servers
Aladin images
Target.....
CDF-S
Grab coord
Radius.....
6
All VizieR
SkyView
Servers
Images
Catalogs
Spectra
Detailed list...
Surveys
Sloan
Missions
MAST
SIMBAD
CADC
NED
DSS...
SkyBot
VLA...
Others..
Others...
Press it to stop the processing =>
Stop it
Reset
Clear
Help
SUBMIT
Close


Server selector
Others
File
all VO
FOV
Sextractor
VO discovery tool
Image servers
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Catalog servers
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
Target.....
CDF-S
Grab coord
Radius.....
6'
Servers
Images
Catalogs
Spectra
Detailed list...
ESO Science Archive Spectrum Service
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_14_1.fits
GOODS_LRb_001_1_q1_14_1.fits
GOODS_LRb_001_1_q1_14_1.fits
Press it to stop the processing =>
Stop it
Reset
Clear
Help
SUBMIT
Close


Server selector
Others
File
all VO
FOV
Sextractor
VO discovery tool
Image servers
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Catalog servers
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
Target.....
CDF-S
Grab coord
Radius.....
6'
Servers
Images
Catalogs
Spectra
Detailed list...
ESO Science Archive Spectrum Service
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_14_1.fits
GOODS_LRb_001_1_q1_14_1.fits
GOODS_LRb_001_1_q1_14_1.fits
Press it to stop the processing =>
Stop it
Reset
Clear
Help
SUBMIT
Close


Server selector
Others
File
all VO
FOV
Sextractor
Image servers
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
VO discovery tool
Target.....
CDF-S
Grab coord
Radius.....
6'
Servers
Images
Catalogs
Spectra
Detailed list...
ESO Science Archive Spectrum Service
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_1.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_14_1.fits
GOODS_LRb_001_1_q1_14_1.fits
GOODS_LRb_001_1_q1_14_1.fits
Open with ...
Collapse all
Expand all
Flat view
Press it to stop the processing =>
Stop it
Catalog servers
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
Reset
Clear
Help
SUBMIT
Close


Server selector
Others
File
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Sextractor
VO discovery tool
Image servers
Aladin images
SkyView
Sloan
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CADC
DSS...
VLA...
Others...
Catalog servers
All VizieR
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Target..... CDF-S
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Spectra
Detailed list...
ESO Science Archive Spectrum Service
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GOODS_LRb_001_1_q1_11_2.fits
GOODS_LRb_001_1_q1_11_2.fits
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Open with ...
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Expand all
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PLASTIC applications:
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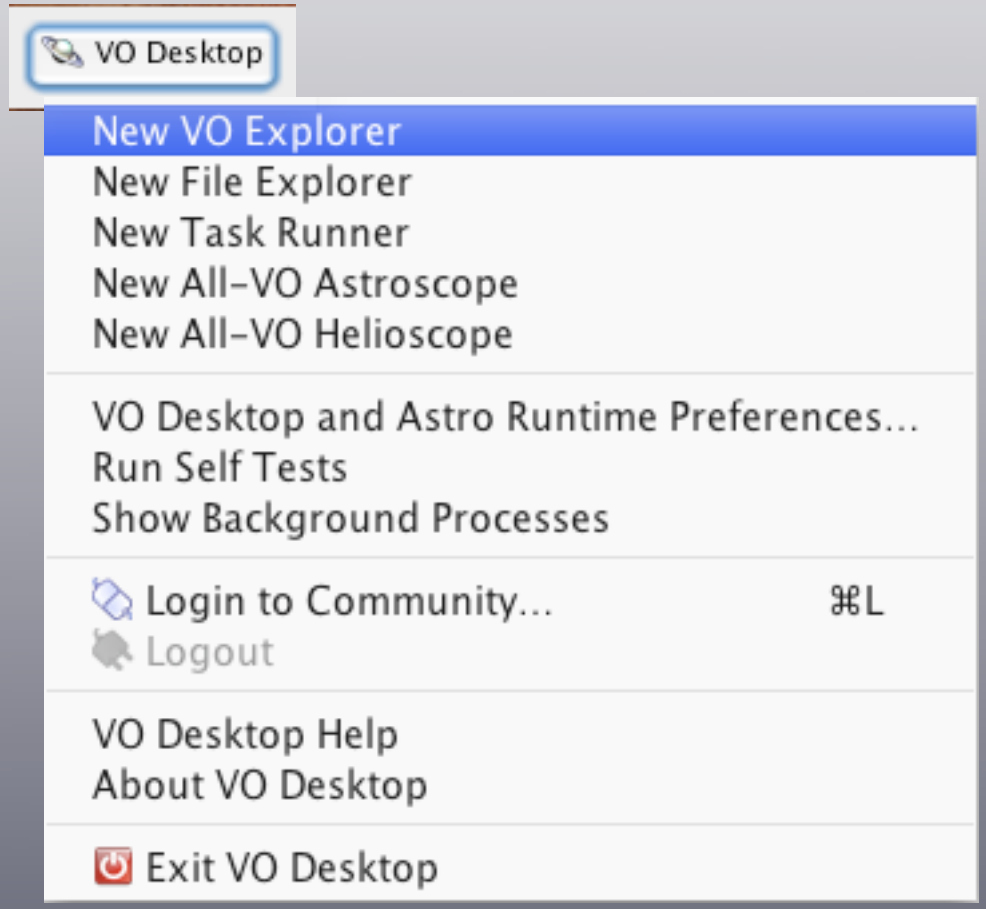
Press it to stop the processing =>
Stop it
Reset
Clear
Help
SUBMIT
Close

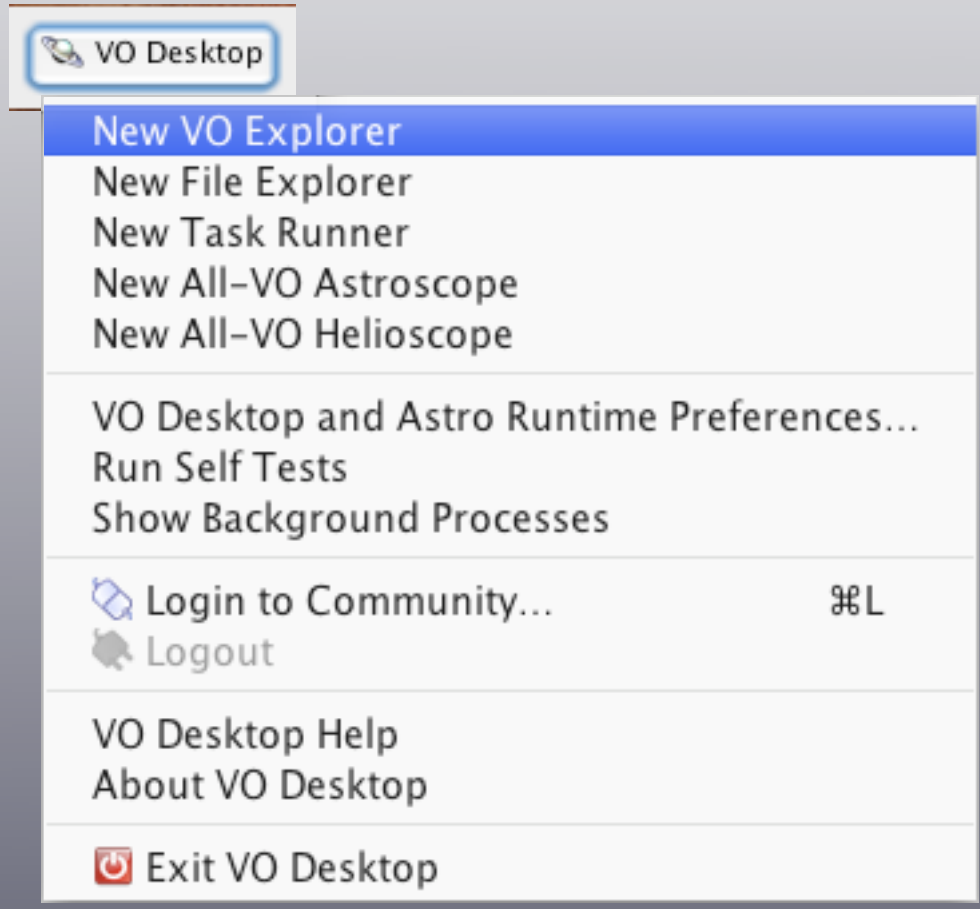
Astrogrid VO Desktop

http://www.astrogrid.org/



Astrogrid VO Desktop

http://www.astrogrid.org/



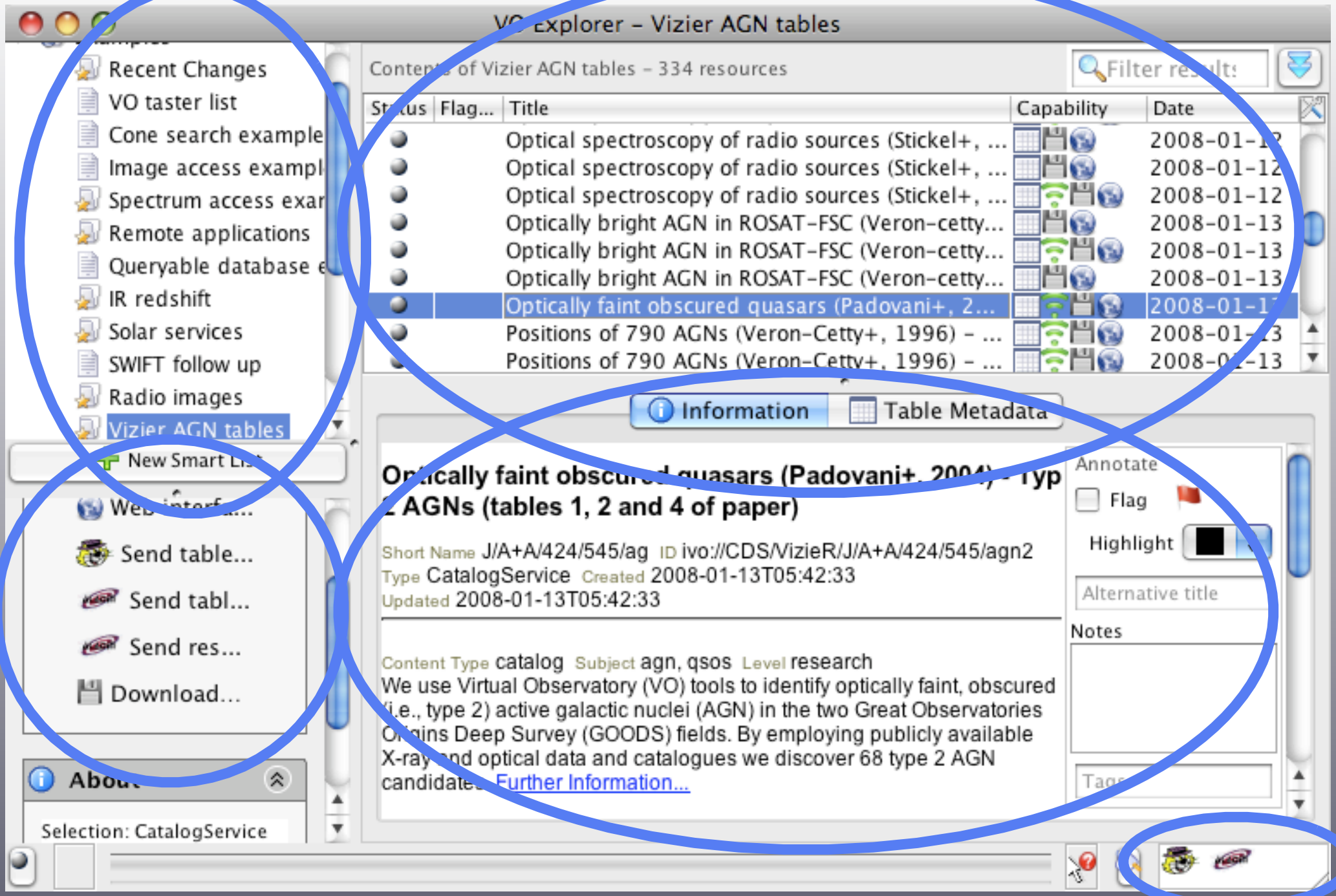

VO Explorer – Vizier AGN tables
Recent Changes
VO taster list
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Image access exampl
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Remote applications
Queryable database e
IR redshift
Solar services
SWIFT follow up
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About
Selection: CatalogService
Contents of Vizier AGN tables – 334 resources
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Date
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Optical spectroscopy of radio sources (Stickel+, ...
Optical spectroscopy of radio sources (Stickel+, ...
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Optically bright AGN in ROSAT-FSC (Veron-cetty...
Optically bright AGN in ROSAT-FSC (Veron-cetty...
Optically faint obscured quasars (Padovani+, 2...
Positions of 790 AGNs (Veron-Cetty+, 1996) - ...
Positions of 790 AGNs (Veron-Cetty+, 1996) - ...
2008-01-13
Information
Table Metadata
AGNs (tables 1, 2 and 4 of paper)
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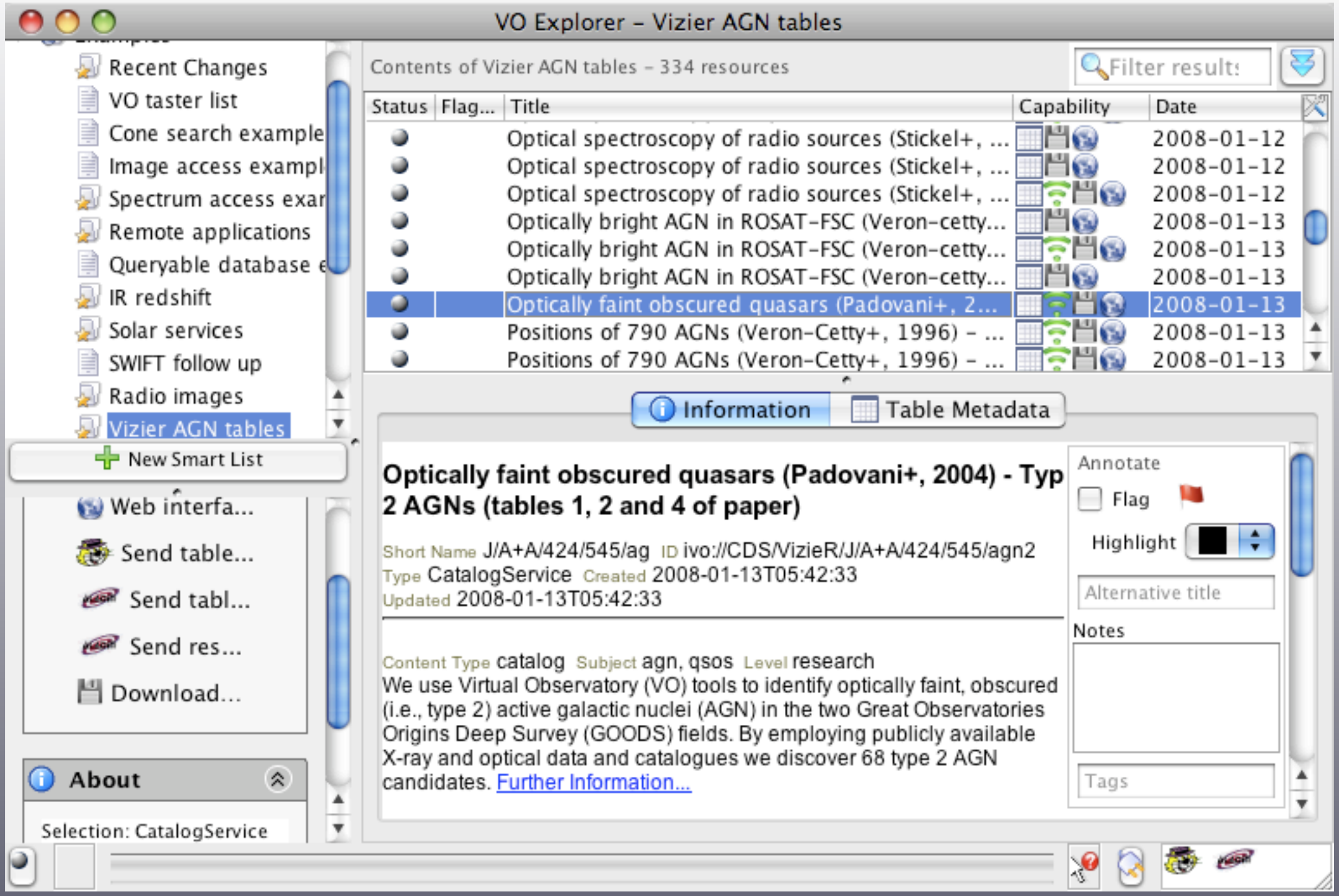
Type CatalogService Created 2008-01-13T05:42:33
Updated 2008-01-13T05:42:33
Content Type catalog Subject agn, qsos Level research
We use Virtual Observatory (VO) tools to identify optically faint, obscured (i.e., type 2) active galactic nuclei (AGN) in the two Great Observatories Origins Deep Survey (GOODS) fields. By employing publicly available X-ray and optical data and catalogues we discover 68 type 2 AGN candidates
Further Information...
Annotate
Flag
Highlight
Alternative title
Notes
Tags


VO Explorer – Vizier AGN tables
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IR redshift
Solar services
SWIFT follow up
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Contents of Vizier AGN tables – 334 resources
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Optically bright AGN in ROSAT-FSC (Veron-cetty... 2008-01-13
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Optically faint obscured quasars (Padovani+, 2... 2008-01-13
Positions of 790 AGNs (Veron-Cetty+, 1996) - ... 2008-01-13
Positions of 790 AGNs (Veron-Cetty+, 1996) - ... 2008-01-13
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Table Metadata
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Updated 2008-01-13T05:42:33
Content Type catalog Subject agn, qsos Level research
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Annotate
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Alternative title
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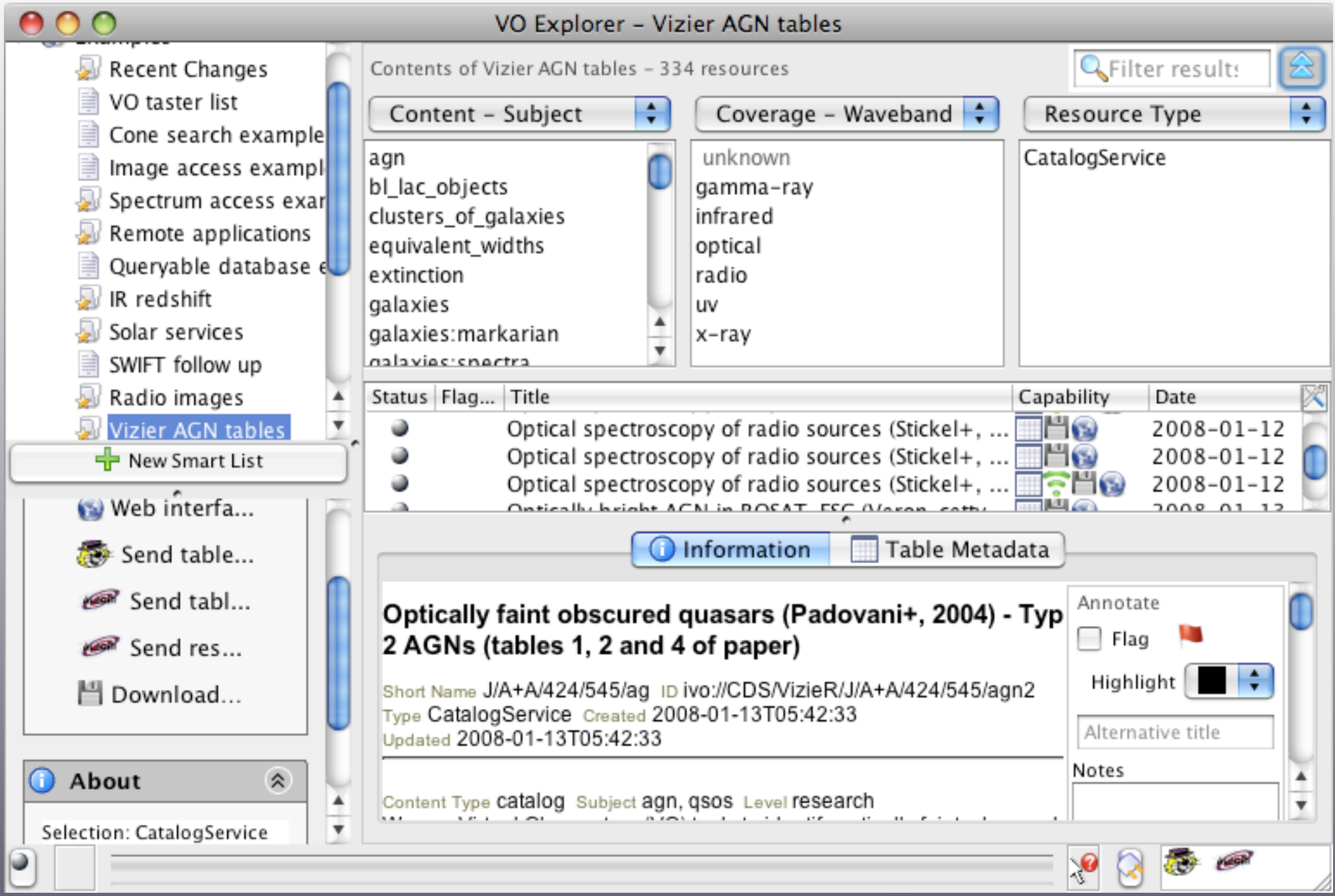
Tags


VO Explorer – Vizier AGN tables
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Solar services
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Contents of Vizier AGN tables – 334 resources
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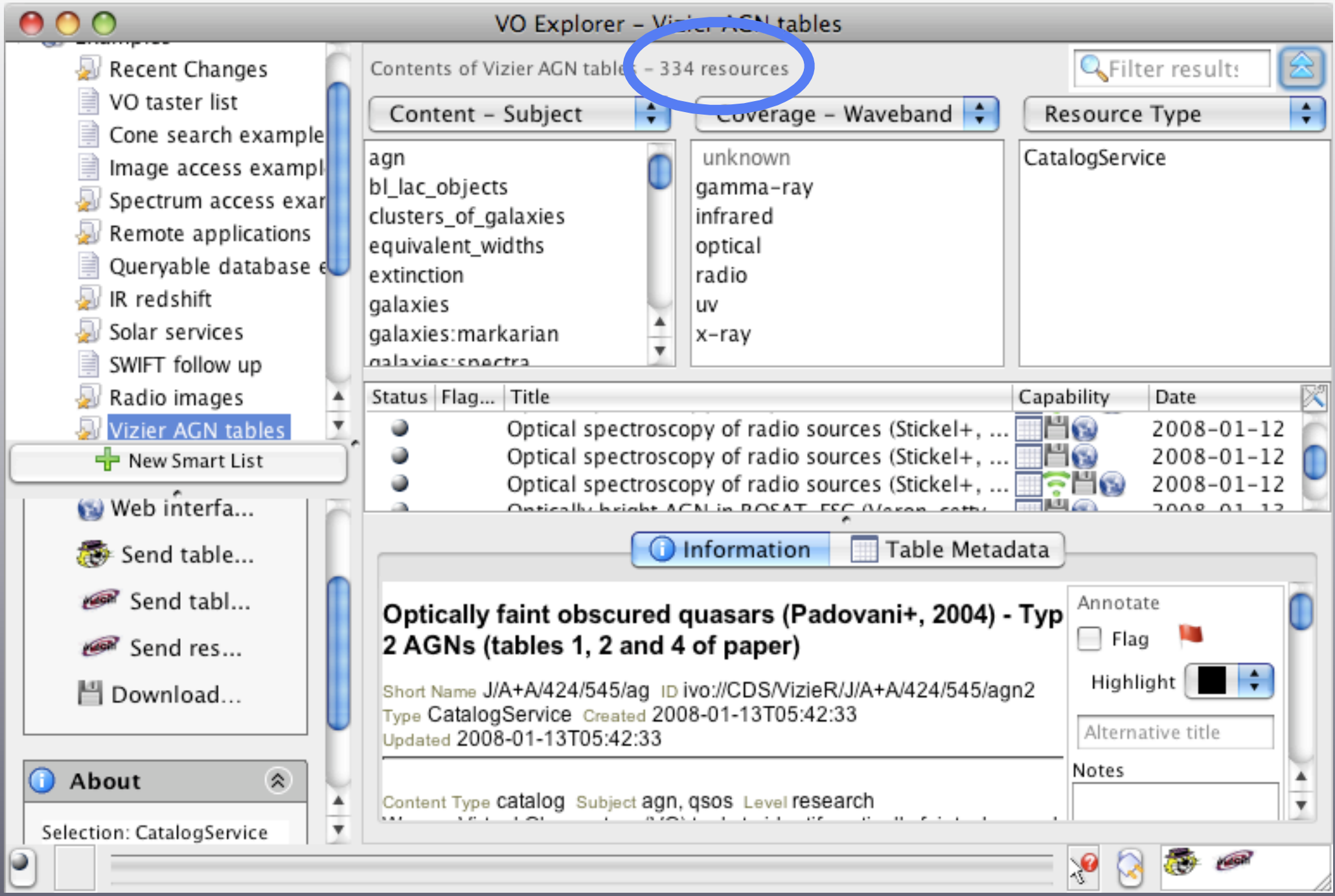
VO Explorer – Vizier AGN tables
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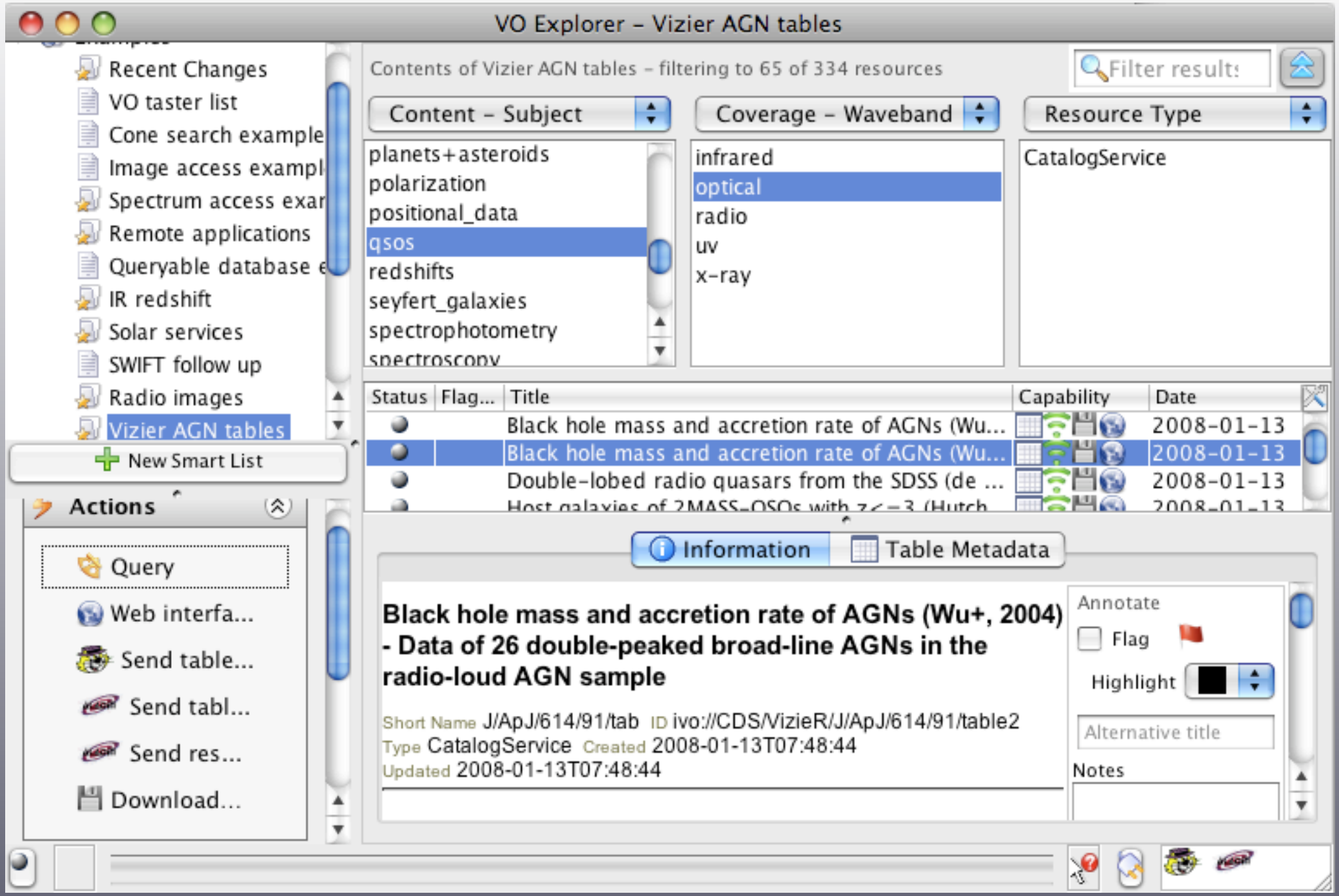
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Coverage – Waveband
Resource Type
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Double-lobed radio quasars from the SDSS (de ...
2008-01-13
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Table Metadata
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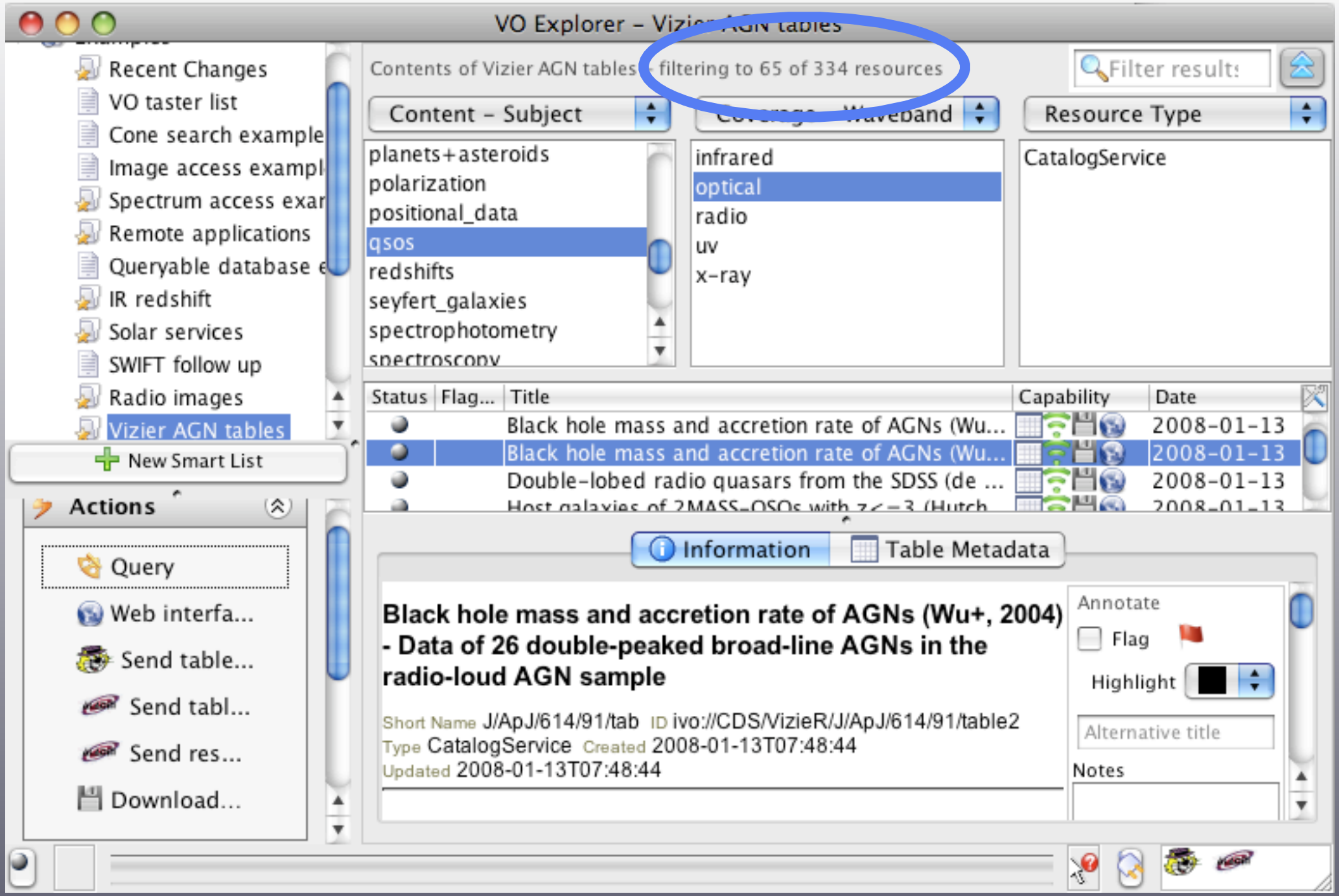
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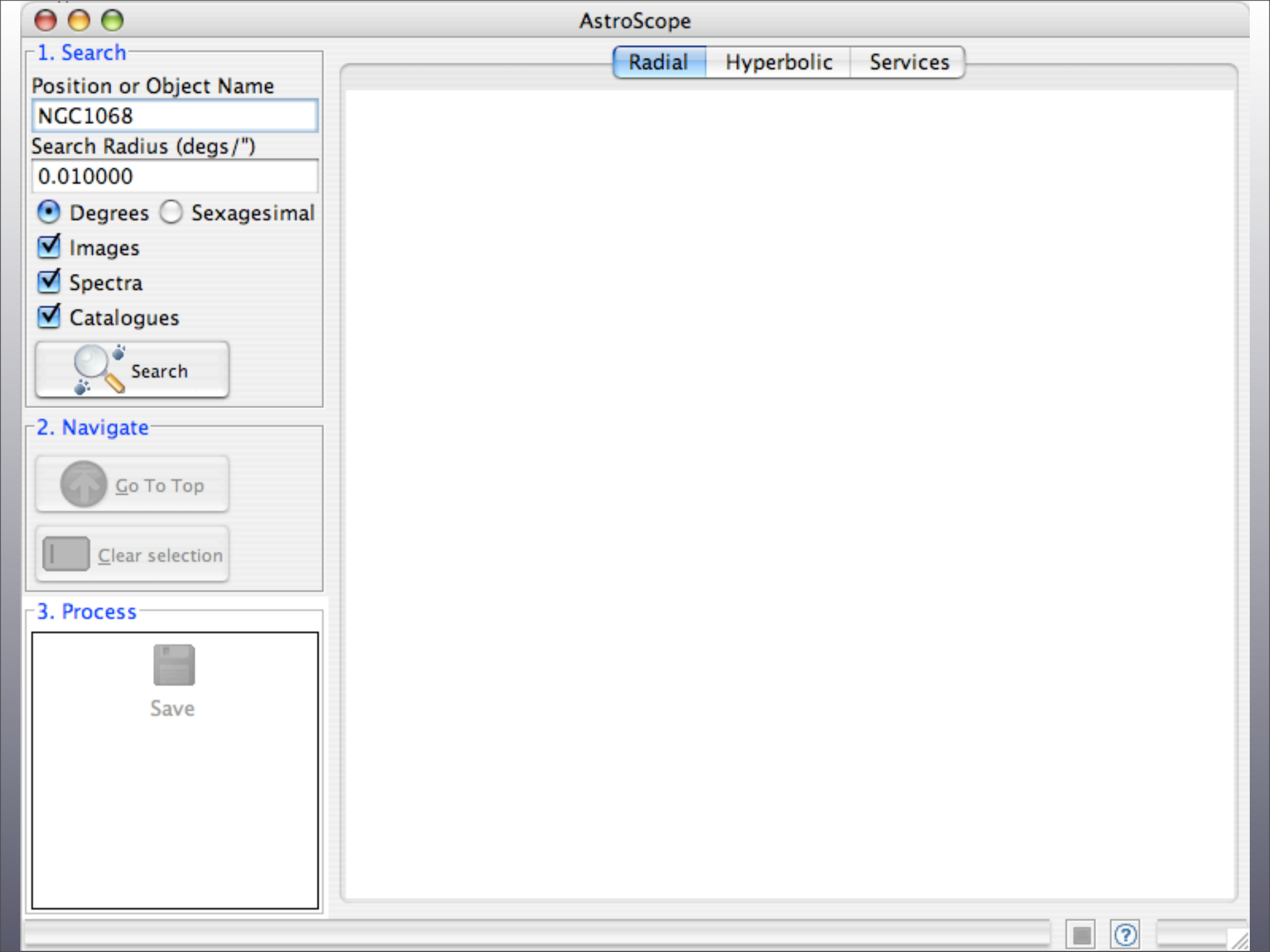
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Position or Object Name
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Search Radius (degs/")
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Degrees
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Search
2. Navigate
Go To Top
Clear selection
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Radial
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AstroScope

1. Search

Position or Object Name

40.670125,-0.013444

Search Radius (degs/")

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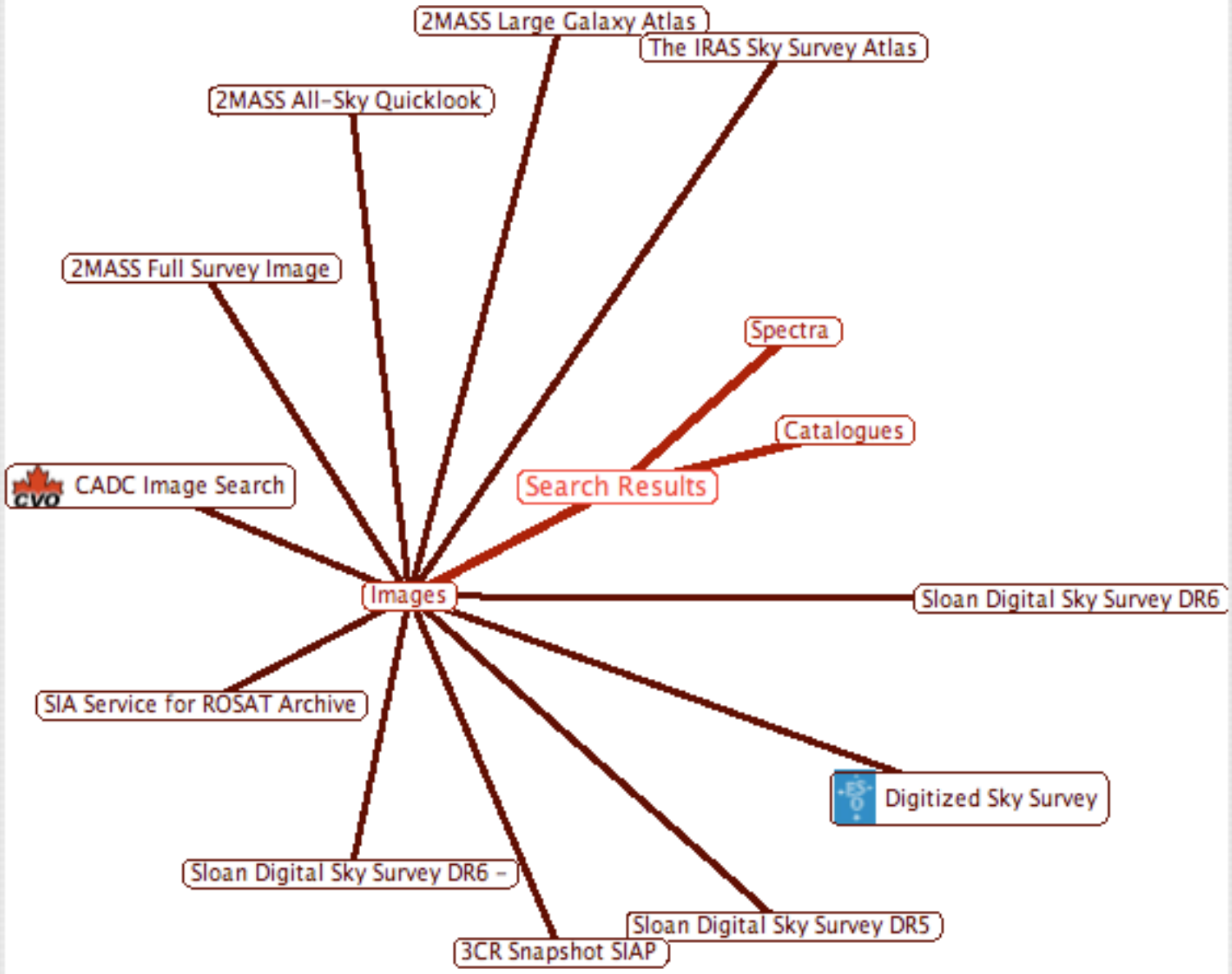
Radial Hyperbolic Services



Sloan Digitized Sky Survey - 10 results

AstroScope

1. Search

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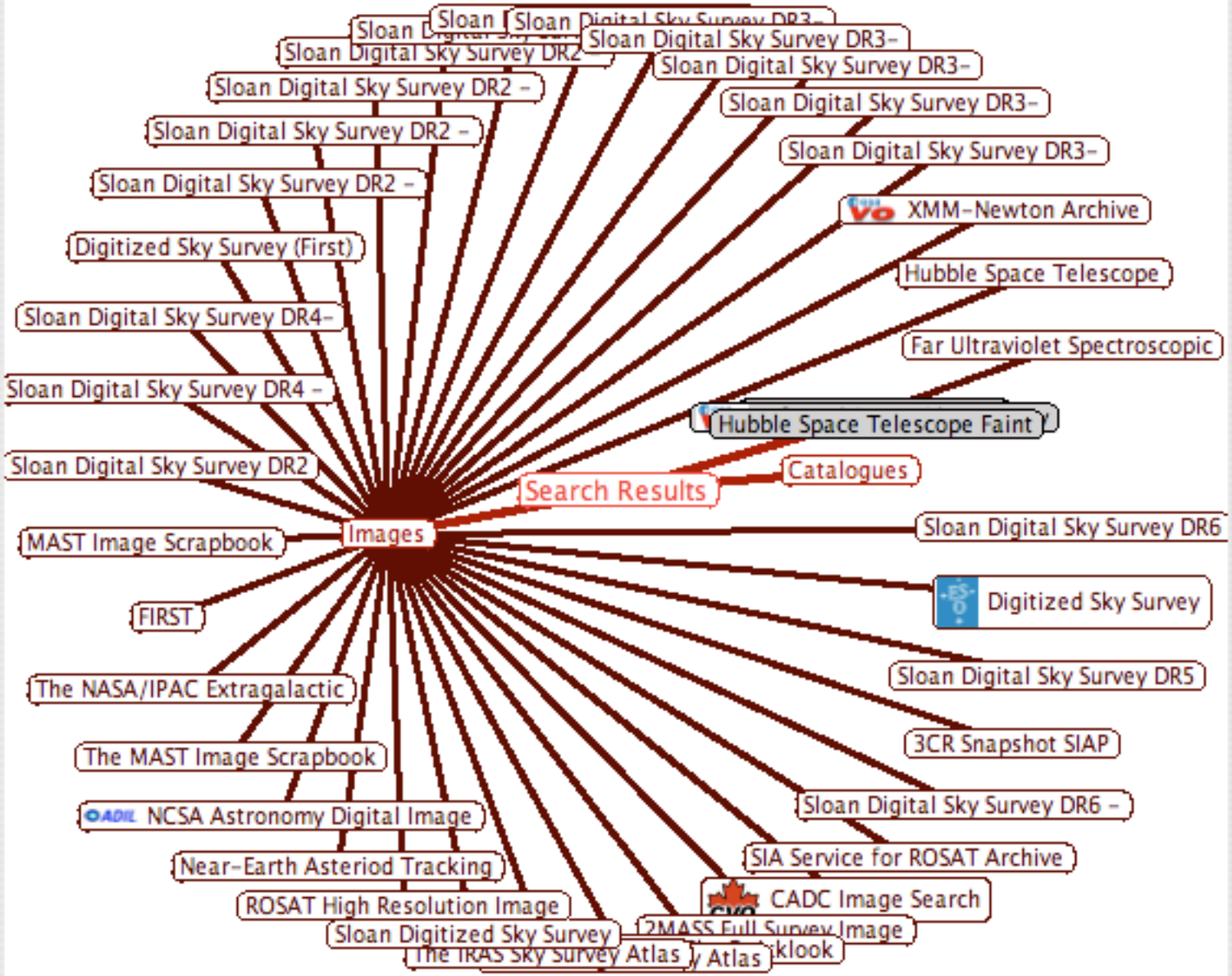
Radial Hyperbolic Services



Cep B/OB3 Star-Forming Region Chandra X-Ray Point Source Catalog - 0 results

AstroScope

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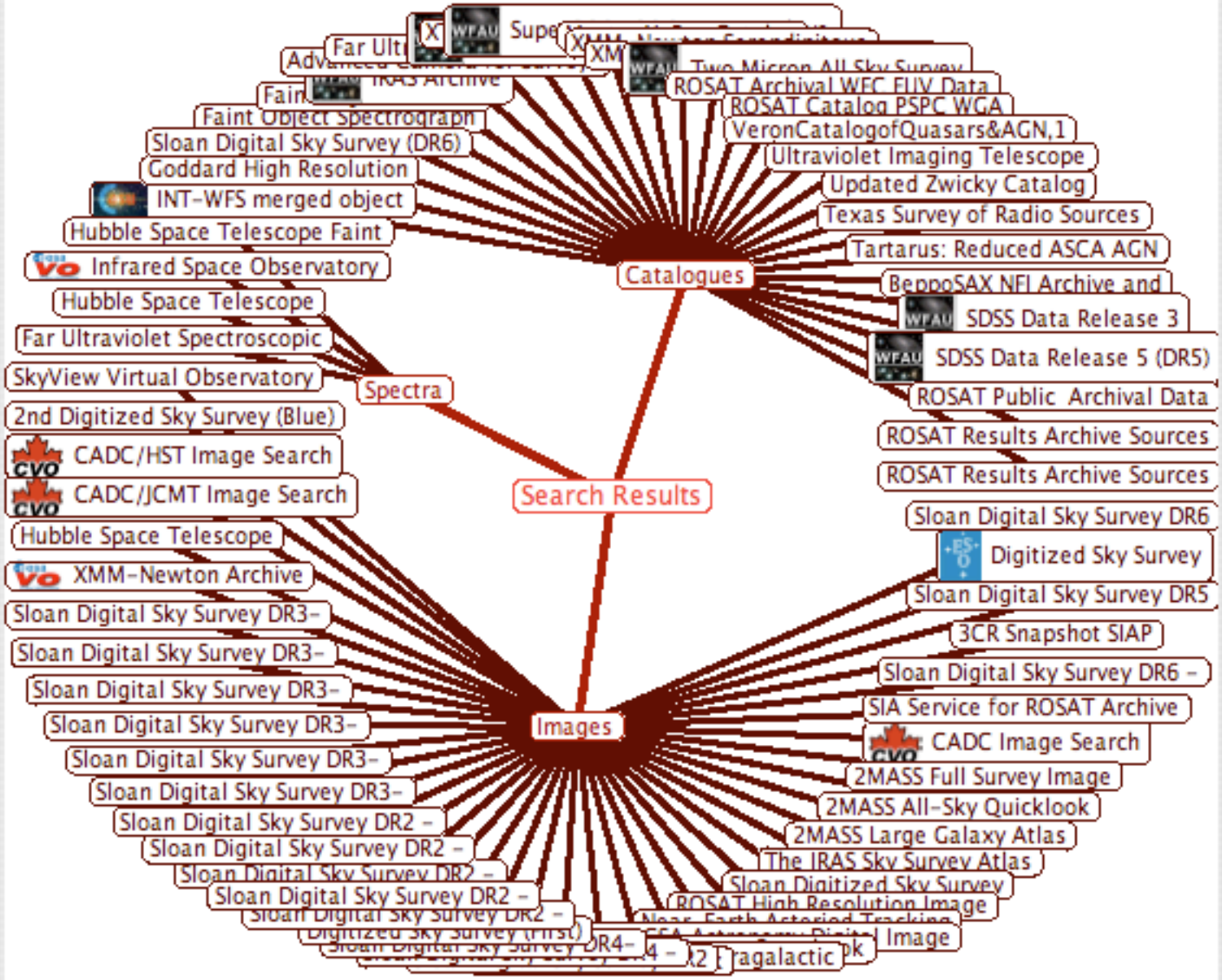

ROSAT Radio-Loud Quasars Catalog - 0 results

AstroScope

1. Search

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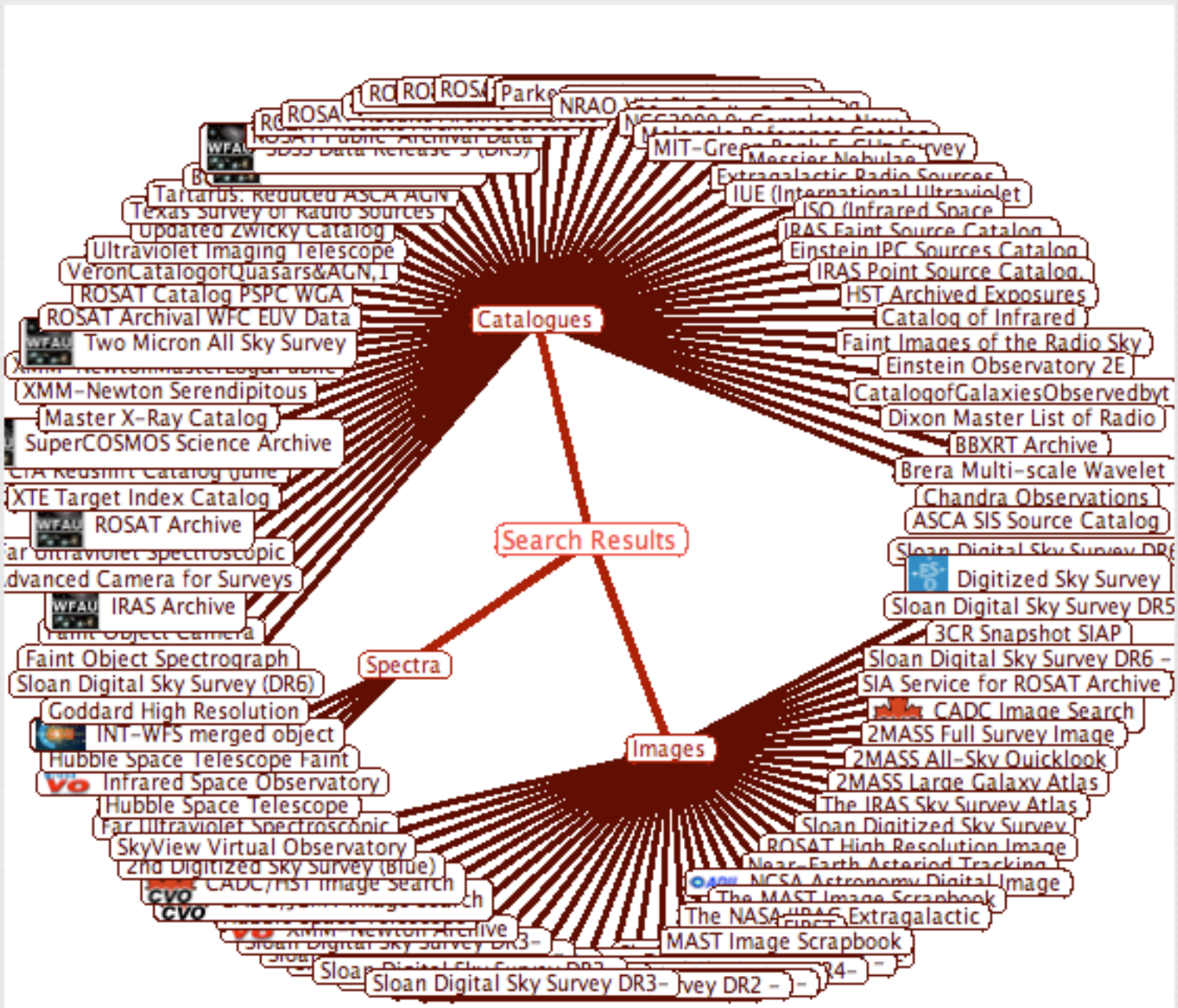
Radial Hyperbolic Services



ASCA GIS Source Catalog (AMSS-I + AMSS-II) - 1 results

AstroScope

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Search Radius (degs/")

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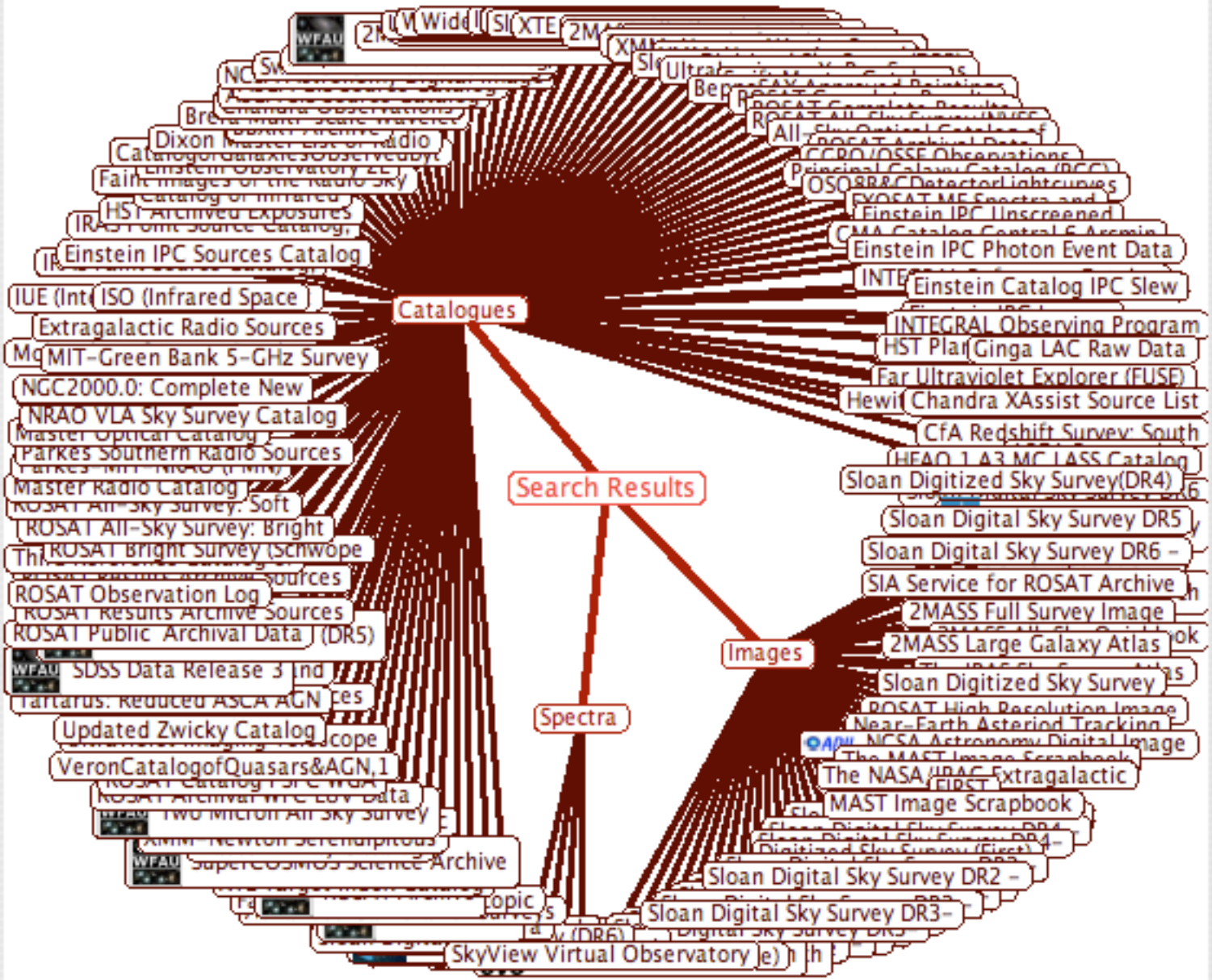
Radial Hyperbolic Services



AstroScope

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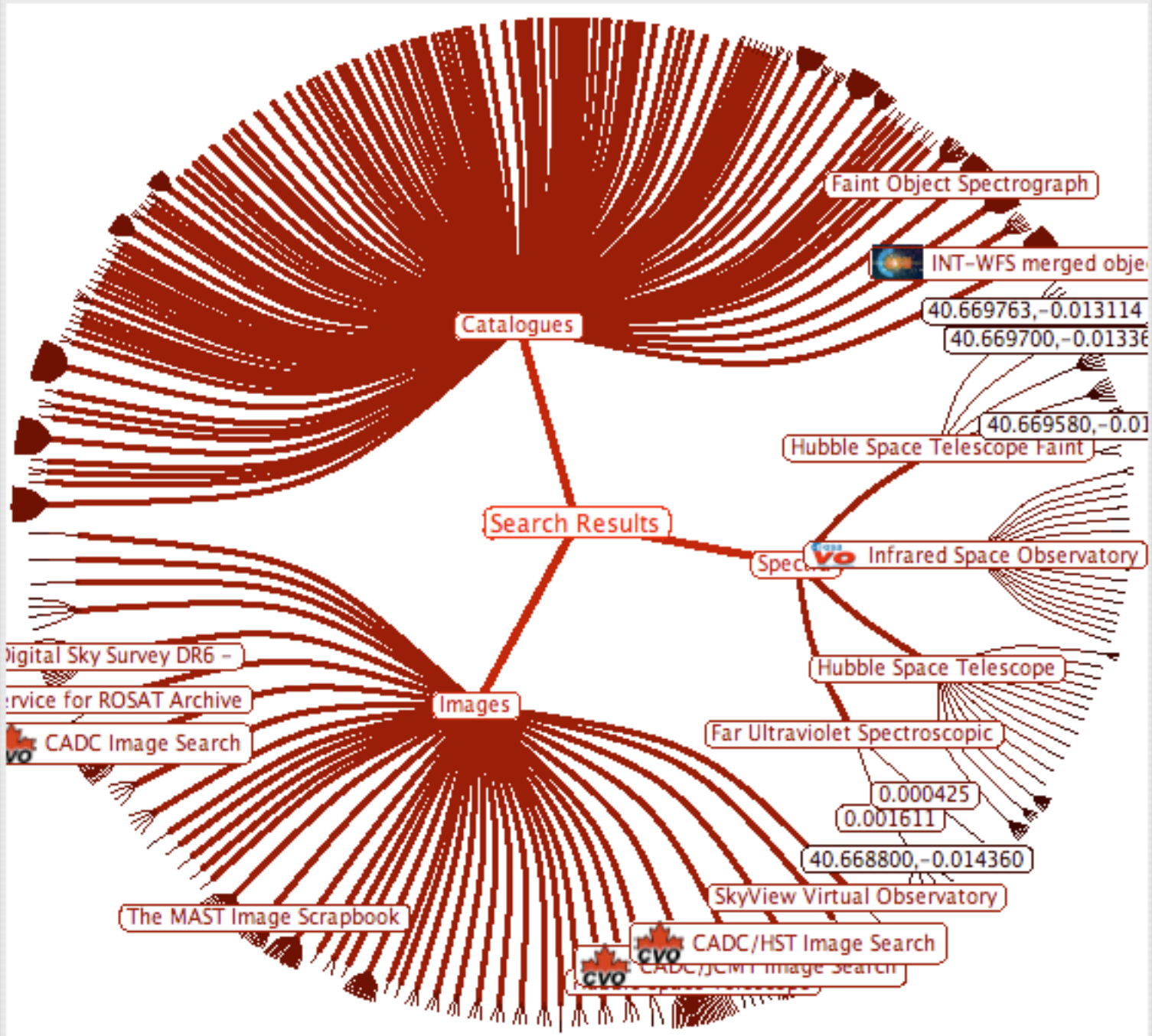
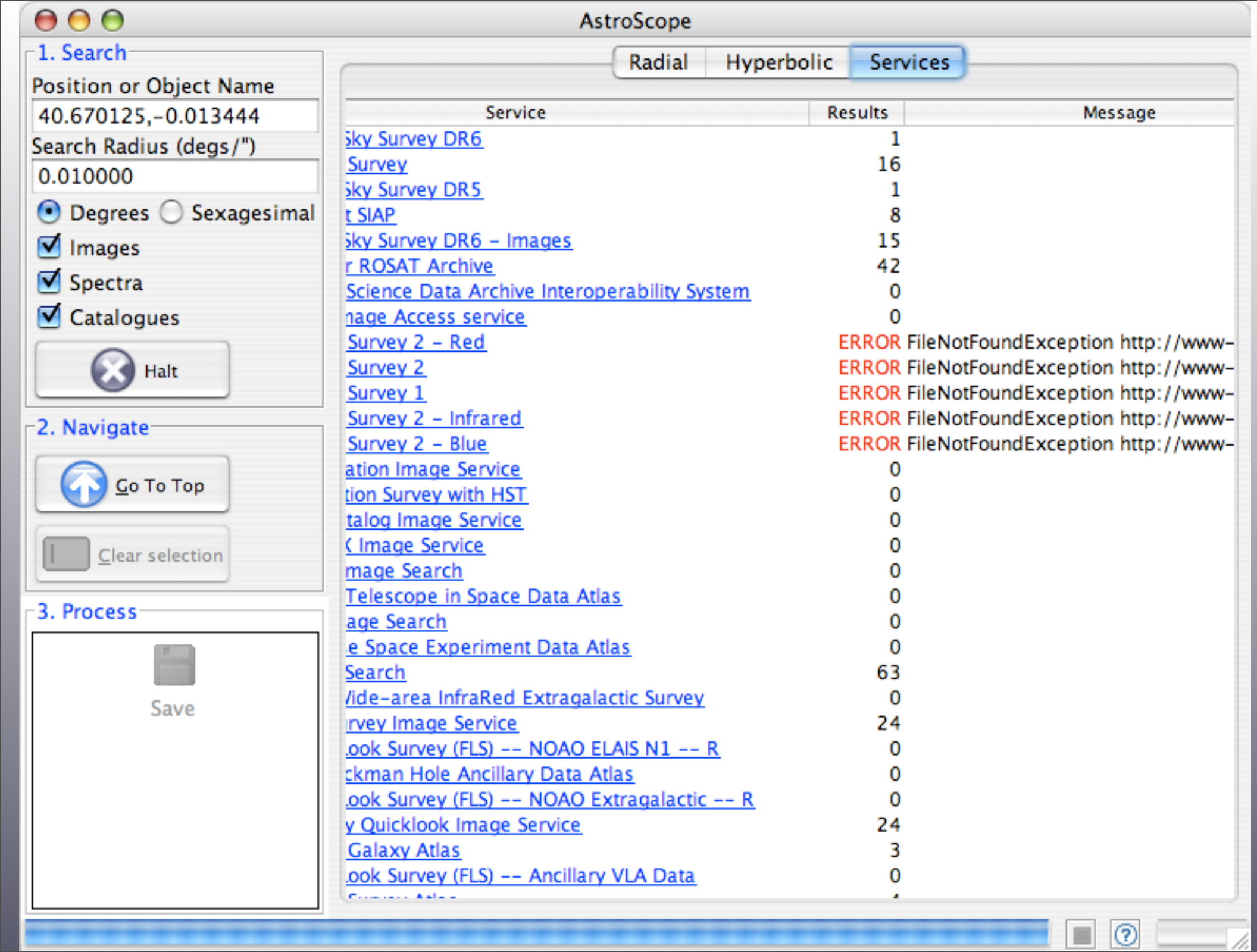
Radial Hyperbolic Services




AstroScope
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sky Survey DR6 1
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sky Survey DR5 1
t SIAP 8
sky Survey DR6 - Images 15
r ROSAT Archive 42
Science Data Archive Interoperability System 0
nage Access service 0
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Survey 2 ERROR FileNotFoundException http://www-
Survey 1 ERROR FileNotFoundException http://www-
Survey 2 - Infrared ERROR FileNotFoundException http://www-
Survey 2 - Blue ERROR FileNotFoundException http://www-
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y Quicklook Image Service 24
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AstroScope

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Search Radius (degs/")

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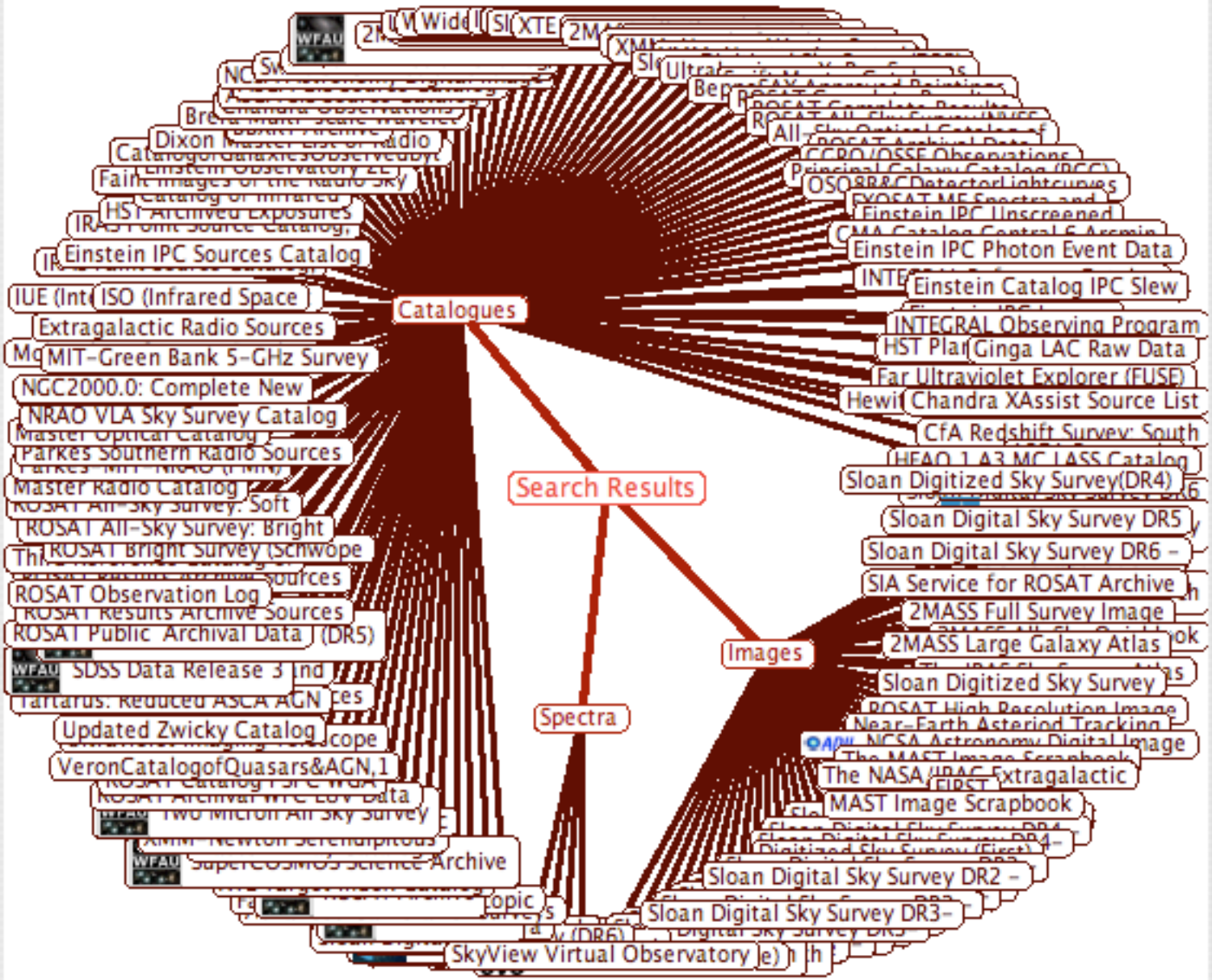
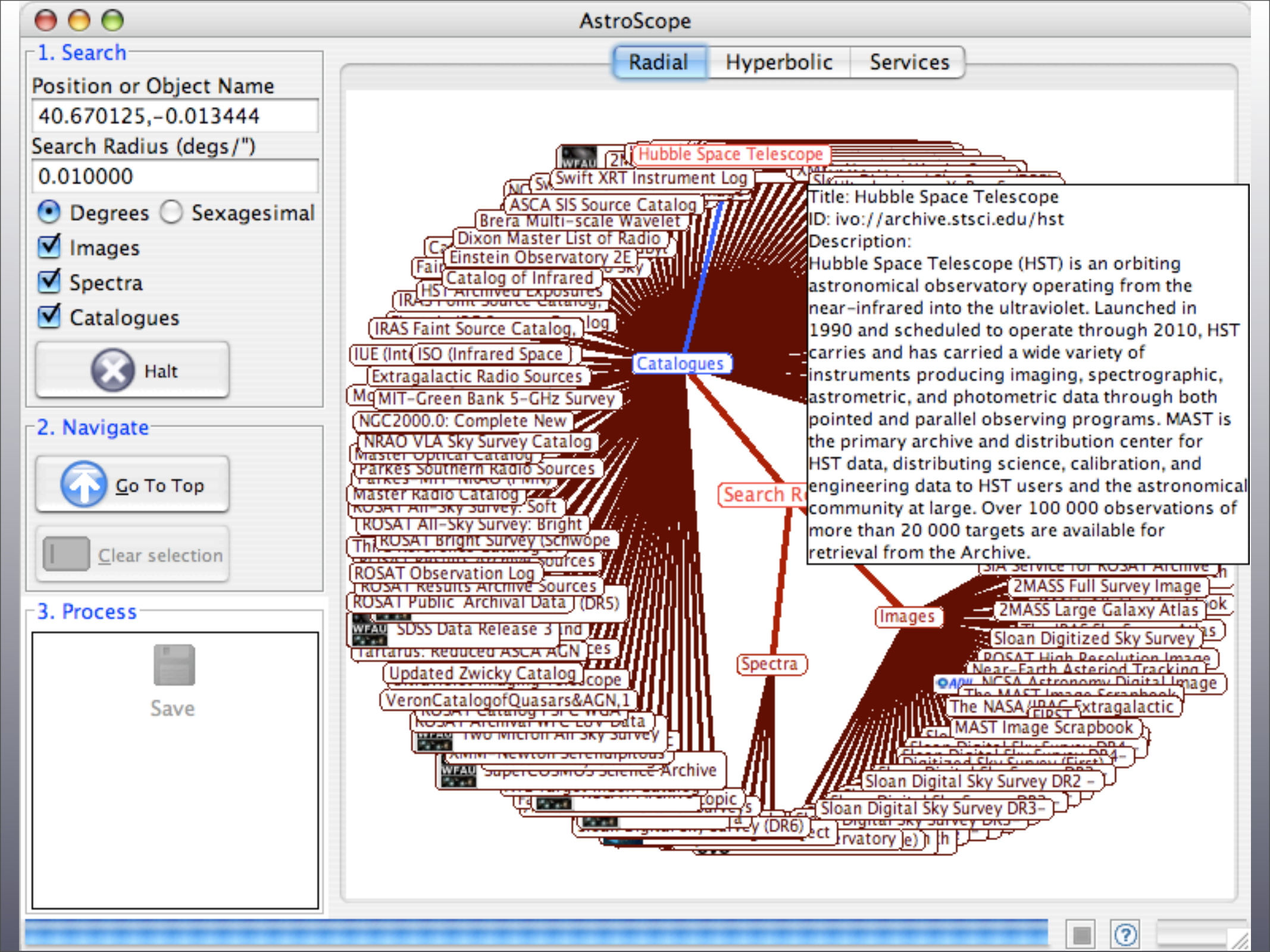
Radial Hyperbolic Services

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Hubble Space Telescope
Swift XRT Instrument Log
ASCA SIS Source Catalog
Brera Multi-scale Wavelet
Dixon Master List of Radio
Einstein Observatory 2E
Catalog of Infrared
IRAS Faint Source Catalog,
ISO (Infrared Space
Extragalactic Radio Sources
MIT-Green Bank 5-GHz Survey
NGC2000.0: Complete New
NRAO VLA Sky Survey Catalog
Parkes Southern Radio Sources
Master Radio Catalog
ROSAT All-Sky Survey: Soft
ROSAT All-Sky Survey: Bright
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ROSAT Observation Log
ROSAT Public Archival Data (DR5)
SDSS Data Release 3
Updated Zwicky Catalog
VeronCatalogofQuasars&AGN,1
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Catalogues
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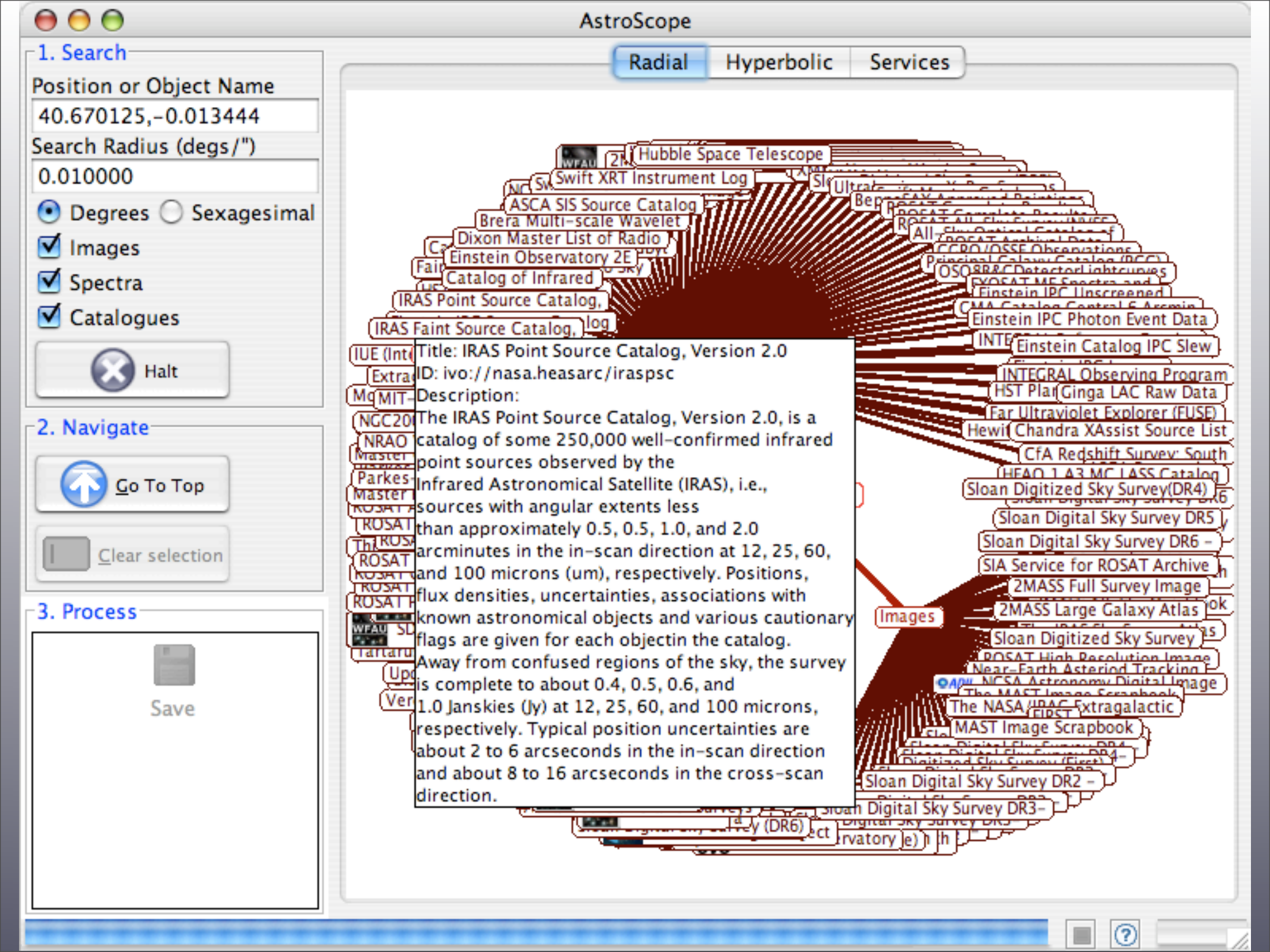
Images
2MASS Full Survey Image
2MASS Large Galaxy Atlas
Sloan Digitized Sky Survey
Near-Earth Asteriod Tracking
The NASA/IPAC Extragalactic
MAST Image Scrapbook
Sloan Digital Sky Survey DR2 -
Sloan Digital Sky Survey DR3-
Title: Hubble Space Telescope
ID: ivo://archive.stsci.edu/hst
Description:
Hubble Space Telescope (HST) is an orbiting astronomical observatory operating from the near-infrared into the ultraviolet. Launched in 1990 and scheduled to operate through 2010, HST carries and has carried a wide variety of instruments producing imaging, spectrographic, astrometric, and photometric data through both pointed and parallel observing programs. MAST is the primary archive and distribution center for HST data, distributing science, calibration, and engineering data to HST users and the astronomical community at large. Over 100 000 observations of more than 20 000 targets are available for retrieval from the Archive.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Catalog of Infrared
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IRAS Faint Source Catalog,
Einstein IPC Photon Event Data
Einstein Catalog IPC Slew
INTEGRAL Observing Program
Ginga LAC Raw Data
Far Ultraviolet Explorer (FUSE)
Chandra XAssist Source List
CfA Redshift Survey: South
Sloan Digitized Sky Survey(DR4)
Sloan Digital Sky Survey DR5
Sloan Digital Sky Survey DR6 -
SIA Service for ROSAT Archive
2MASS Full Survey Image
2MASS Large Galaxy Atlas
Sloan Digitized Sky Survey
Images
MAST Image Scrapbook
Sloan Digital Sky Survey DR2 -
Sloan Digital Sky Survey DR3-
Title: IRAS Point Source Catalog, Version 2.0
ID: ivo://nasa.heasarc/iraspsc
Description:
The IRAS Point Source Catalog, Version 2.0, is a catalog of some 250,000 well-confirmed infrared point sources observed by the Infrared Astronomical Satellite (IRAS), i.e., sources with angular extents less than approximately 0.5, 0.5, 1.0, and 2.0 arcminutes in the in-scan direction at 12, 25, 60, and 100 microns (um), respectively. Positions, flux densities, uncertainties, associations with known astronomical objects and various cautionary flags are given for each objectin the catalog. Away from confused regions of the sky, the survey is complete to about 0.4, 0.5, 0.6, and 1.0 Janskies (Jy) at 12, 25, 60, and 100 microns, respectively. Typical position uncertainties are about 2 to 6 arcseconds in the in-scan direction and about 8 to 16 arcseconds in the cross-scan direction.

AstroScope

1. Search

Position or Object Name

40.670125,-0.013444

Search Radius (degs/")

0.010000

Degrees Sexagesimal

Images

Spectra

Catalogues

Halt

2. Navigate

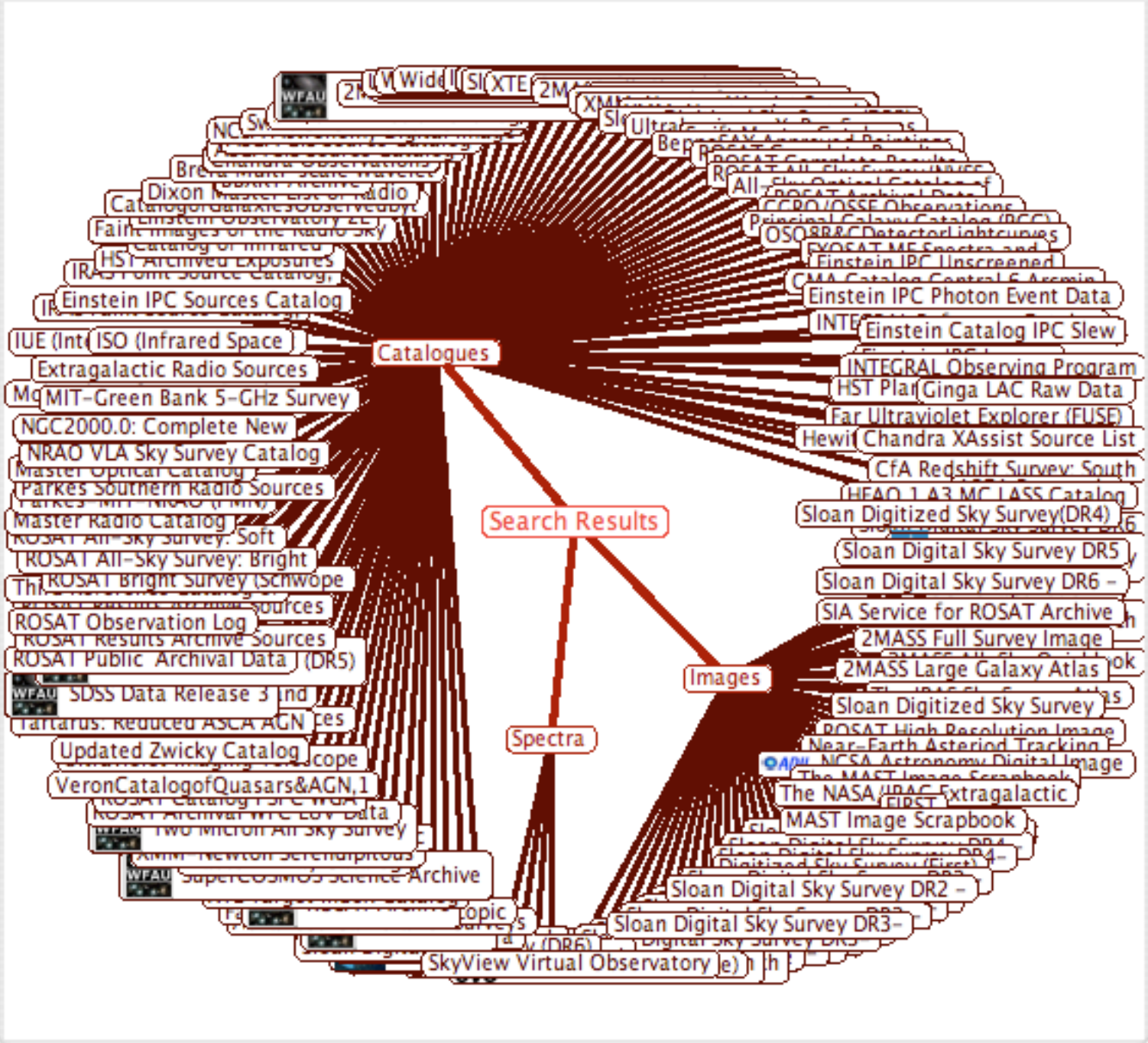
Go To Top

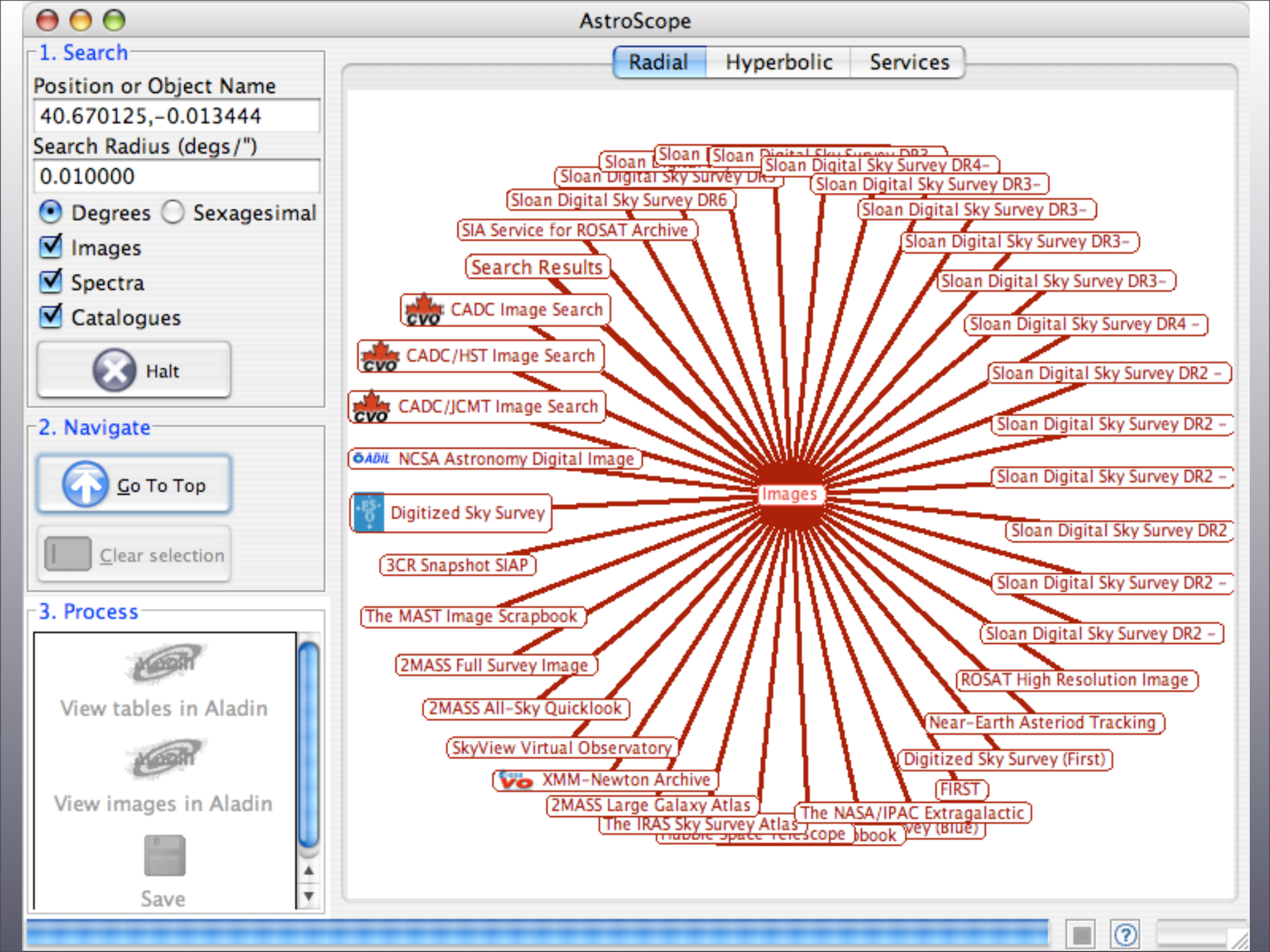
Clear selection

3. Process

Save

Radial Hyperbolic Services




AstroScope
1. Search
Position or Object Name
40.670125,-0.013444
Search Radius (degs/")
0.010000
Degrees
Sexagesimal
Images
Spectra
Catalogues
Halt
2. Navigate
Go To Top
Clear selection
3. Process
View tables in Aladin
View images in Aladin
Save
Radial
Hyperbolic
Services
Images
Sloan Digital Sky Survey DR4-
Sloan Digital Sky Survey DR3-
Sloan Digital Sky Survey DR6
Sloan Digital Sky Survey DR3-
SIA Service for ROSAT Archive
Sloan Digital Sky Survey DR3-
Search Results
Sloan Digital Sky Survey DR3-
CADC Image Search
Sloan Digital Sky Survey DR4 -
CADC/HST Image Search
Sloan Digital Sky Survey DR2 -
CADC/JCMT Image Search
Sloan Digital Sky Survey DR2 -
NCSA Astronomy Digital Image
Sloan Digital Sky Survey DR2 -
Digitized Sky Survey
Sloan Digital Sky Survey DR2
3CR Snapshot SIAP
Sloan Digital Sky Survey DR2 -
The MAST Image Scrapbook
Sloan Digital Sky Survey DR2 -
2MASS Full Survey Image
ROSAT High Resolution Image
2MASS All-Sky Quicklook
Near-Earth Asteriod Tracking
SkyView Virtual Observatory
Digitized Sky Survey (First)
XMM-Newton Archive
FIRST
2MASS Large Galaxy Atlas
The NASA/IPAC Extragalactic
The IRAS Sky Survey Atlas

AstroScope

1. Search

Position or Object Name

40.670125,-0.013444

Search Radius (degs/")

0.010000

Degrees Sexagesimal

Images

Spectra

Catalogues

Halt

2. Navigate

Go To Top

Clear selection

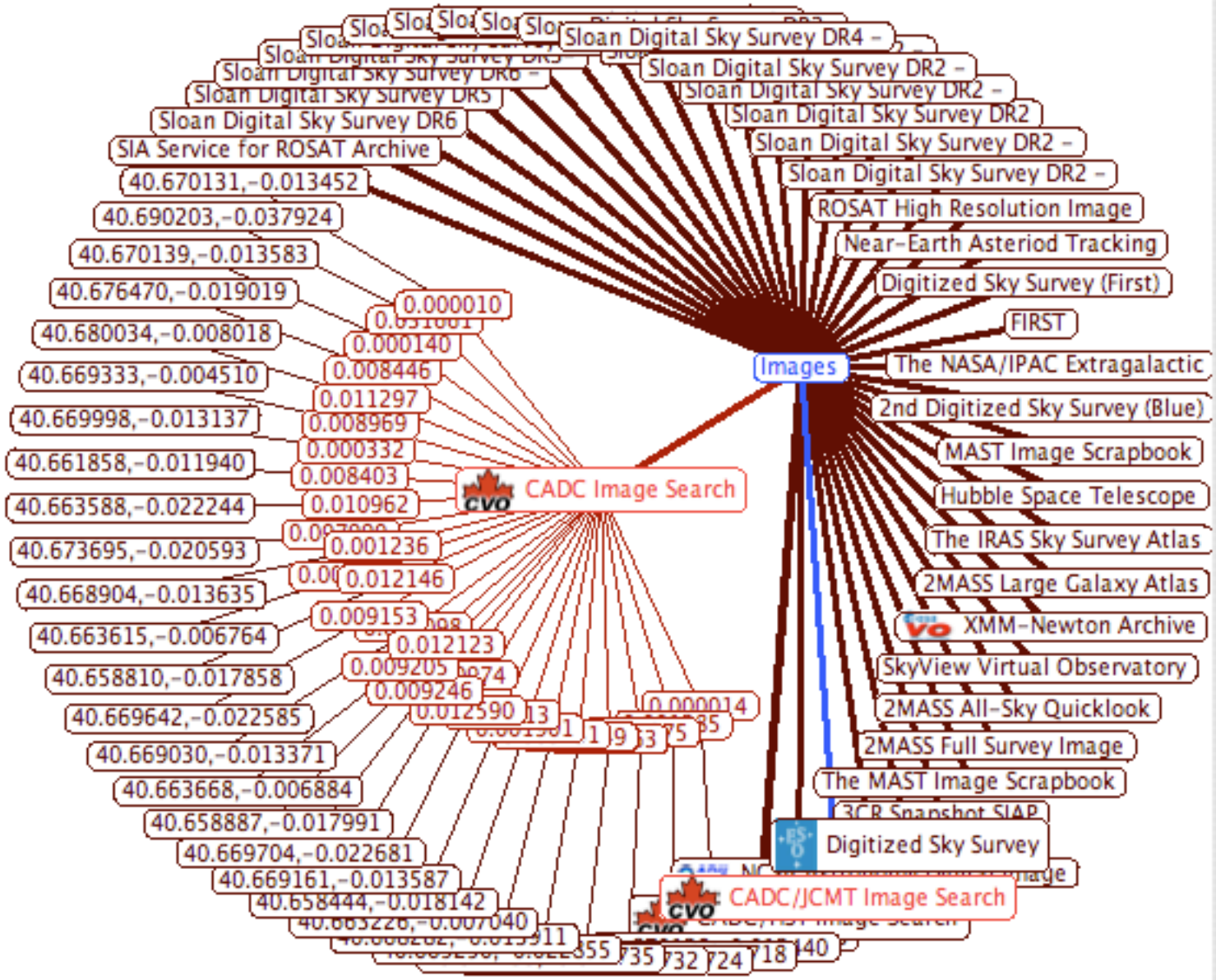
3. Process

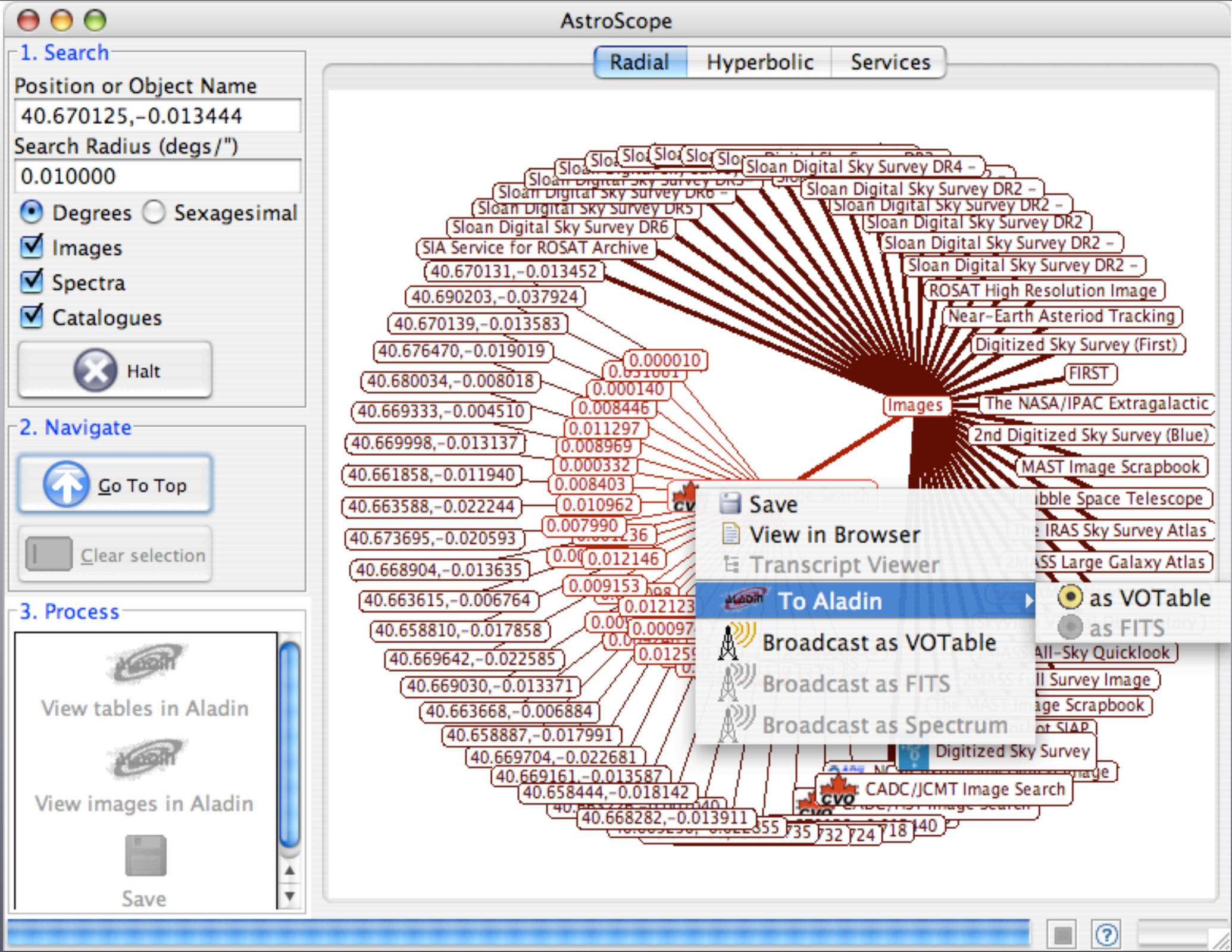
View tables in Aladin

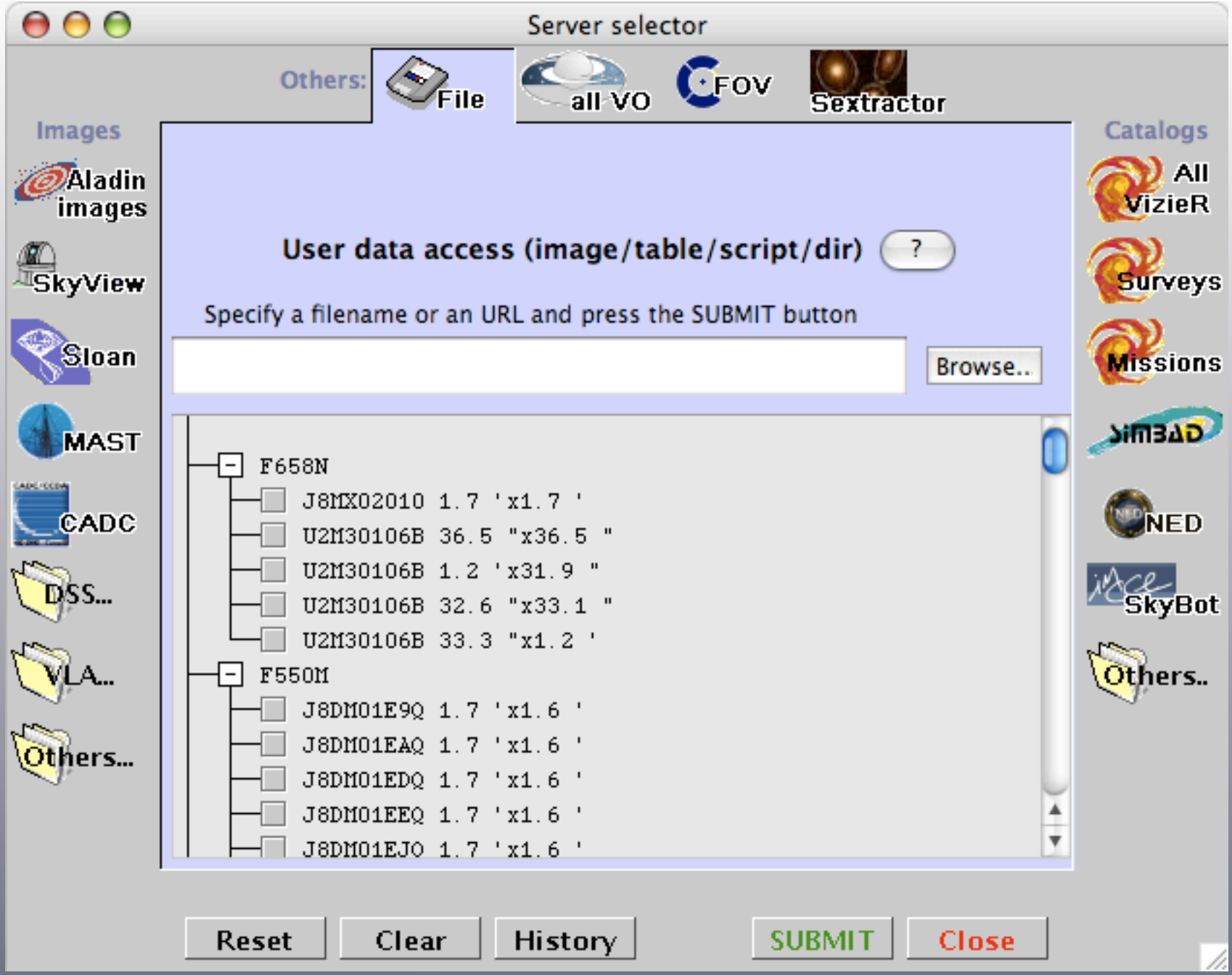
View images in Aladin

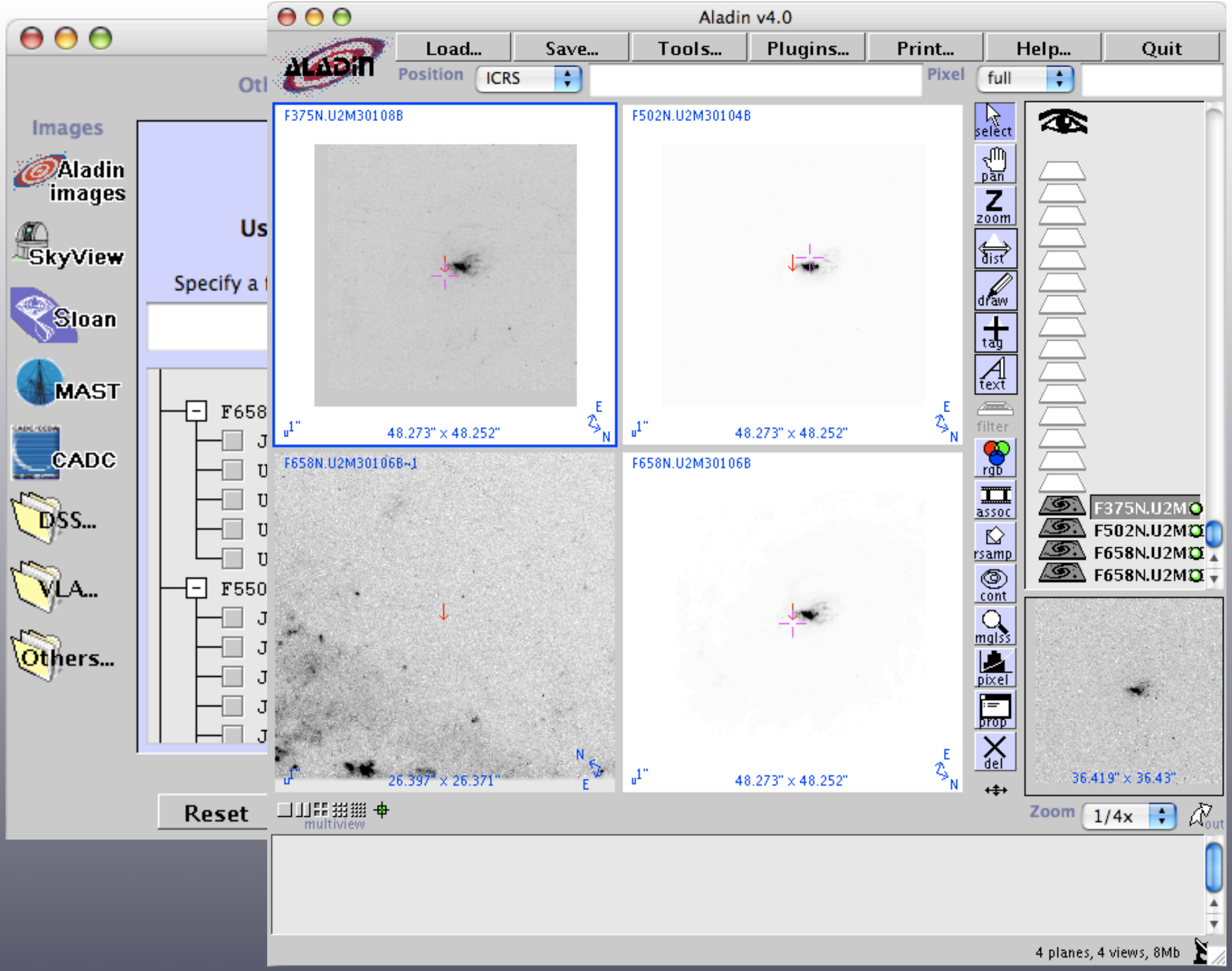
Save

Radial Hyperbolic Services




AstroScope
1. Search
Position or Object Name
40.670125,-0.013444
Search Radius (degs/")
0.010000
Degrees
Sexagesimal
Images
Spectra
Catalogues
Halt
2. Navigate
Go To Top
Clear selection
3. Process
View tables in Aladin
View images in Aladin
Save
Radial
Hyperbolic
Services
Sloan Digital Sky Survey DR4 -
Sloan Digital Sky Survey DR2 -
Sloan Digital Sky Survey DR2 -
Sloan Digital Sky Survey DR2
Sloan Digital Sky Survey DR2 -
Sloan Digital Sky Survey DR2 -
ROSAT High Resolution Image
Near-Earth Asteriod Tracking
Digitized Sky Survey (First)
FIRST
The NASA/IPAC Extragalactic
2nd Digitized Sky Survey (Blue)
MAST Image Scrapbook
Sloan Digital Sky Survey DR6
SIA Service for ROSAT Archive
40.670131,-0.013452
40.690203,-0.037924
40.670139,-0.013583
40.676470,-0.019019
40.680034,-0.008018
40.669333,-0.004510
40.669998,-0.013137
40.661858,-0.011940
40.663588,-0.022244
40.673695,-0.020593
40.668904,-0.013635
40.663615,-0.006764
40.658810,-0.017858
40.669642,-0.022585
40.669030,-0.013371
40.663668,-0.006884
40.658887,-0.017991
40.669704,-0.022681
40.669161,-0.013587
40.658444,-0.018142
40.668282,-0.013911
0.000010
0.000140
0.008446
0.011297
0.008969
0.000332
0.008403
0.010962
0.007990
0.012146
0.009153
0.012123
Images
Save
View in Browser
Transcript Viewer
To Aladin
Broadcast as VOTable
Broadcast as FITS
Broadcast as Spectrum
as VOTable
as FITS
Digitized Sky Survey
CADC/JCMT Image Search


Server selector
Others:
File
all VO
FOV
Sextractor
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Catalogs
All VizieR
Surveys
Missions
SIMBAD
NED
SkyBot
Others..
User data access (image/table/script/dir)
?
Specify a filename or an URL and press the SUBMIT button
Browse...
F658N
J8MX02010 1.7 'x1.7 '
U2M30106B 36.5 "x36.5 "
U2M30106B 1.2 'x31.9 "
U2M30106B 32.6 "x33.1 "
U2M30106B 33.3 "x1.2 '
F550M
J8DM01E9Q 1.7 'x1.6 '
J8DM01EAQ 1.7 'x1.6 '
J8DM01EDQ 1.7 'x1.6 '
J8DM01EEQ 1.7 'x1.6 '
J8DM01EJQ 1.7 'x1.6 '
Reset
Clear
History
SUBMIT
Close

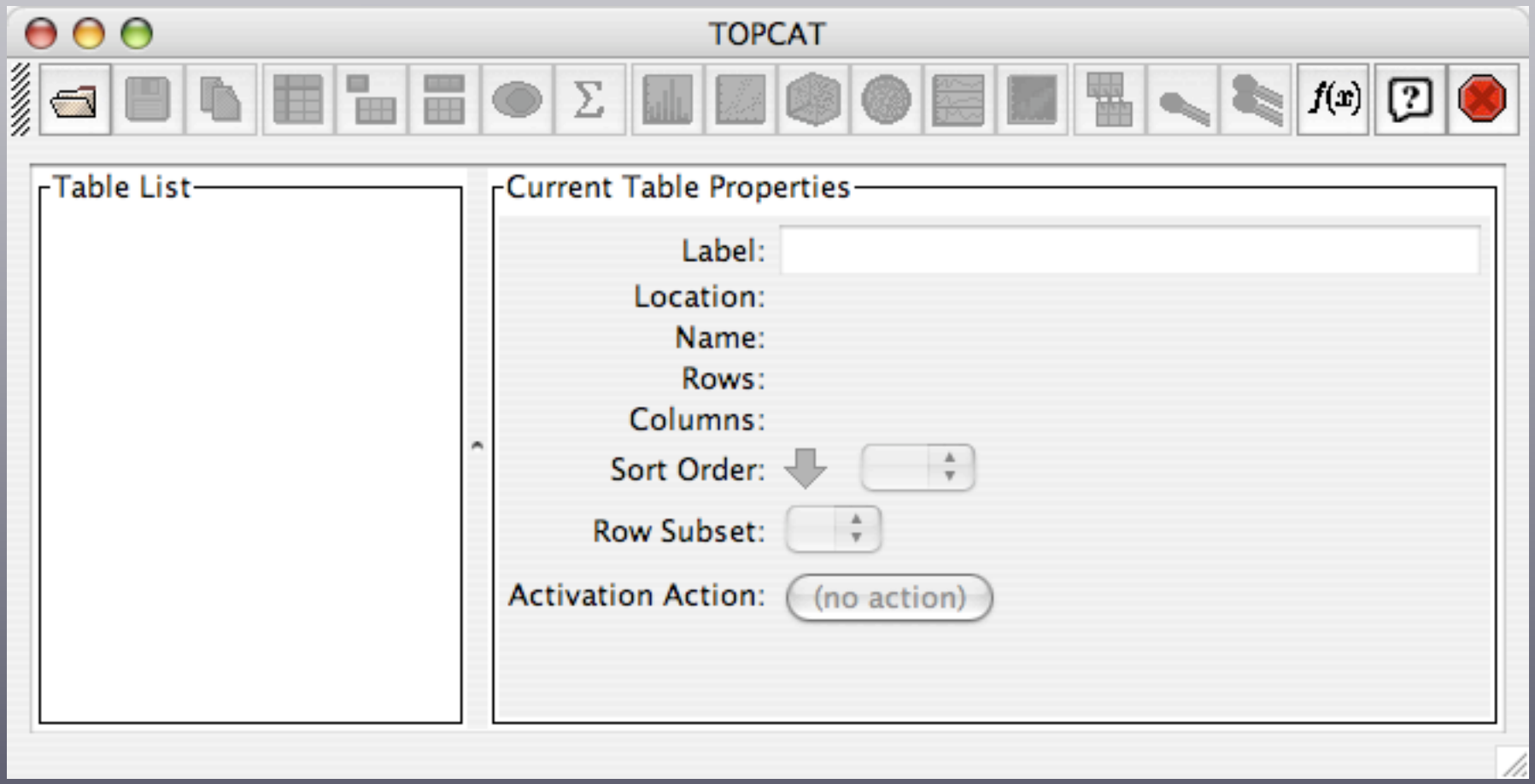

Aladin v4.0
Load...
Save...
Tools...
Plugins...
Print...
Help...
Quit
Position
ICRS
Pixel
full
F375N.U2M30108B
48.273" x 48.252"
F502N.U2M30104B
48.273" x 48.252"
F658N.U2M30106B~1
26.397" x 26.371"
F658N.U2M30106B
48.273" x 48.252"
select
pan
zoom
dist
draw
tag
text
filter
rgb
assoc
rsamp
cont
mgISS
pixel
prop
del
F375N.U2M
F502N.U2M
F658N.U2M
F658N.U2M
36.419" x 36.43"
Zoom
1/4x
out
multiview
4 planes, 4 views, 8Mb
Images
Aladin images
SkyView
Sloan
MAST
CADC
DSS...
VLA...
Others...
Reset

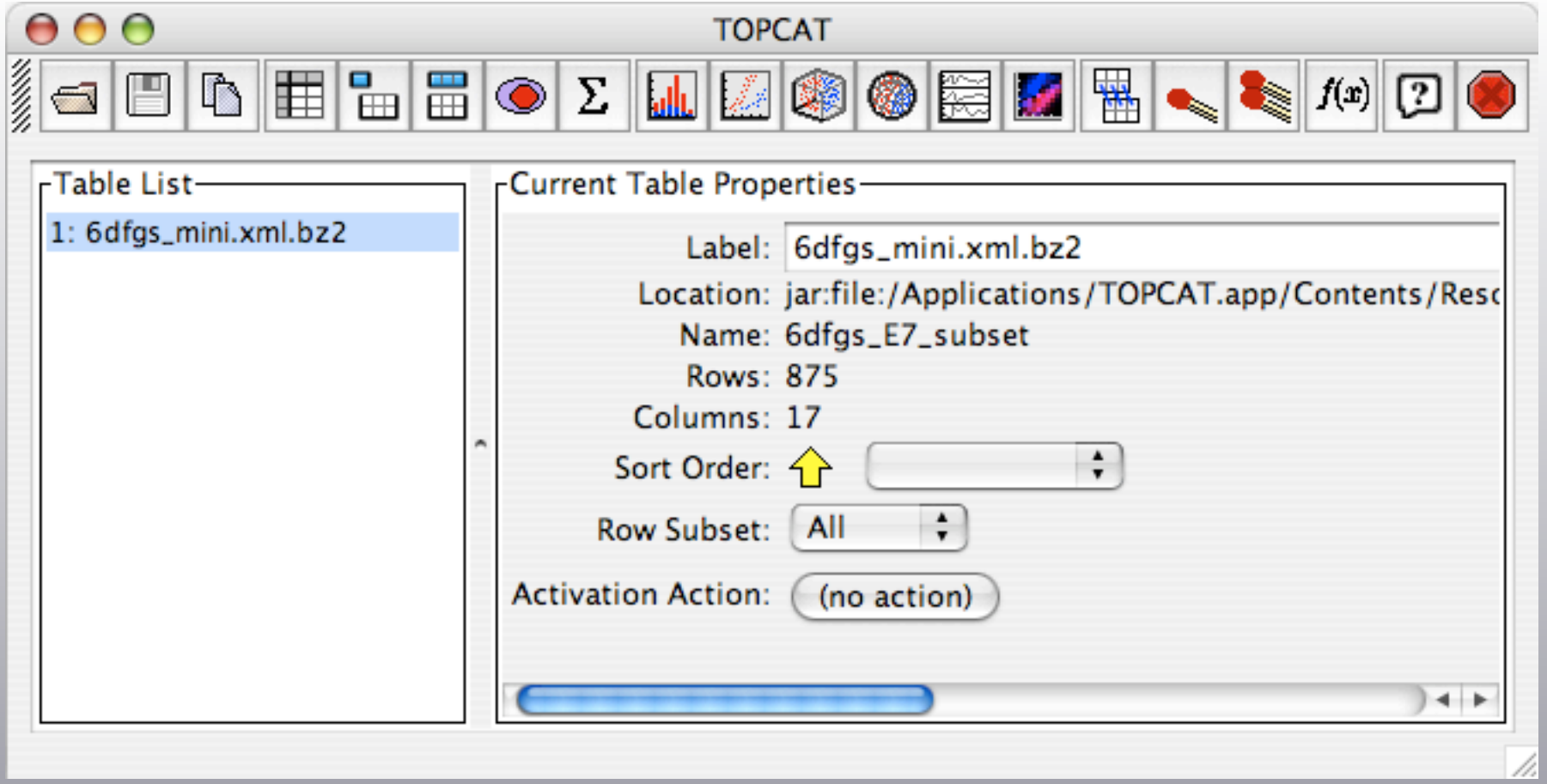
Topcat

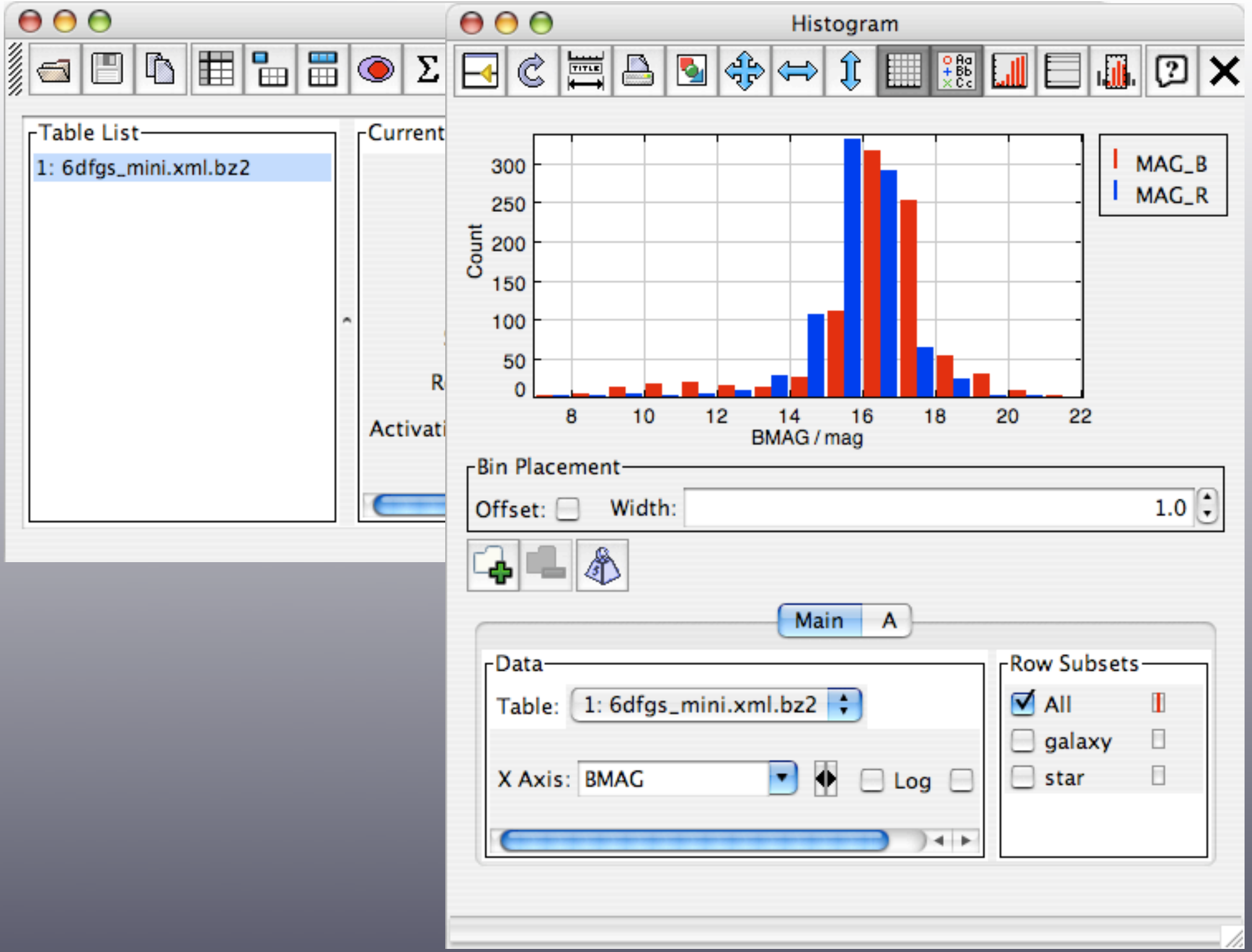
http://www.star.bris.ac.uk/~mbt/topcat/

TOPCAT: Tool for OPerations on Catalogues And Tables

TOPCAT is an interactive graphical viewer and editor for tabular data.




TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)


Histogram
Table List
1: 6dfgs_mini.xml.bz2
Current
Activati
Count
300
250
200
150
100
50
0
8
10
12
14
16
18
20
22
BMAG / mag
MAG_B
MAG_R
Bin Placement
Offset:
Width:
1.0
Main
A
Data
Table:
1: 6dfgs_mini.xml.bz2
X Axis:
BMAG
Log
Row Subsets
All
galaxy
star

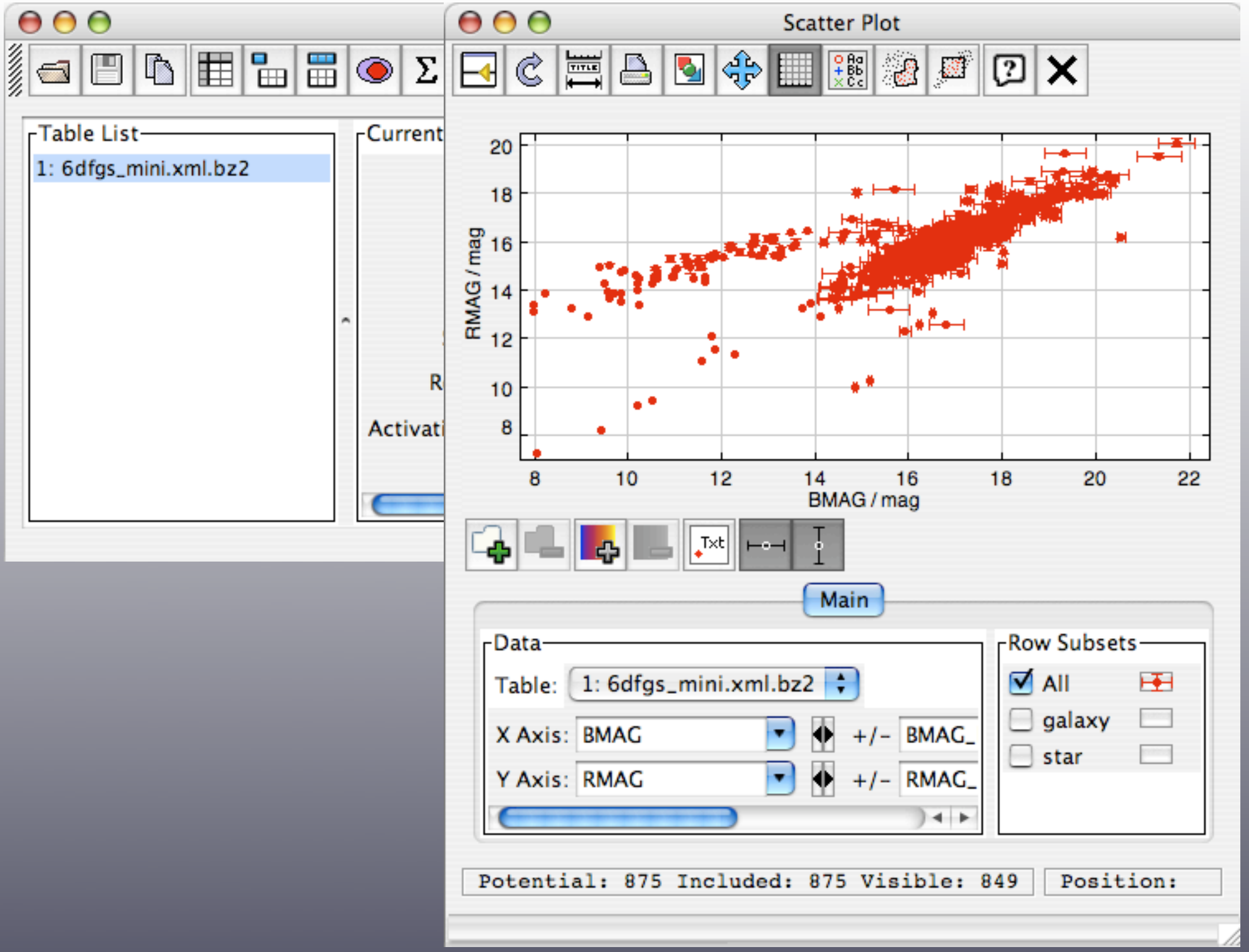


Table List
1: 6dfgs_mini.xml.bz2
Current
Scatter Plot
RMAG / mag
BMAG / mag
20
18
16
14
12
10
8
8
10
12
14
16
18
20
22
Txt
Main
Data
Table:
1: 6dfgs_mini.xml.bz2
X Axis:
BMAG
+/-
BMAG_
Y Axis:
RMAG
+/-
RMAG_
Row Subsets
All
galaxy
star
Potential: 875 Included: 875 Visible: 849
Position:

3D

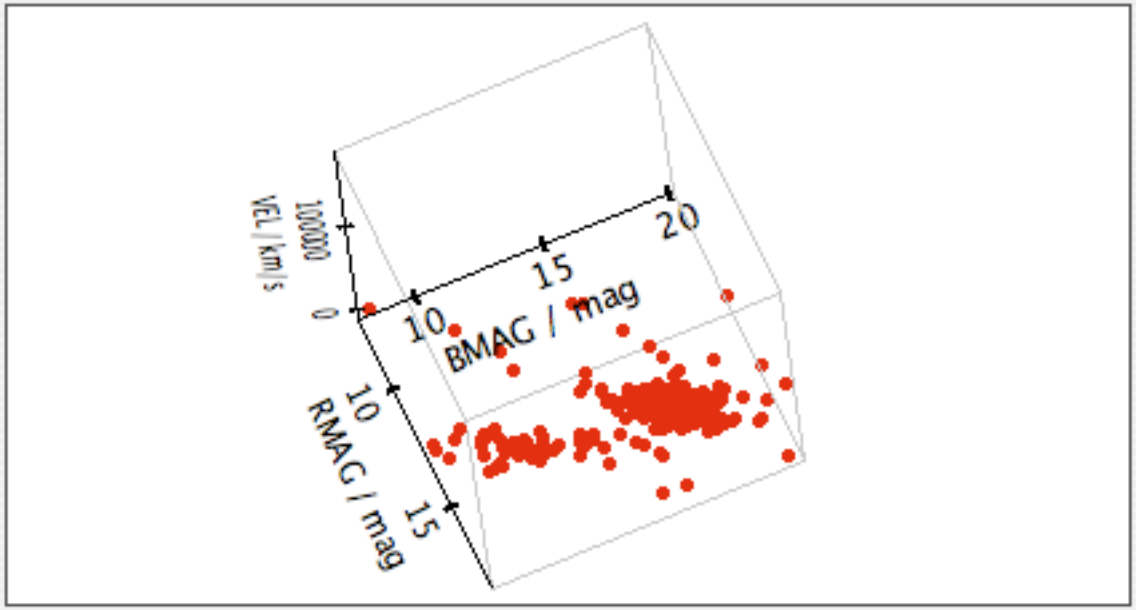
Table List

1: 6dfgs_mini.xml.bz2

Current

R

Activat



Main

Data

Table: 1: 6dfgs_mini.xml.bz2

X Axis: BMAG Log

Y Axis: RMAG Log

Z Axis: VEL Log

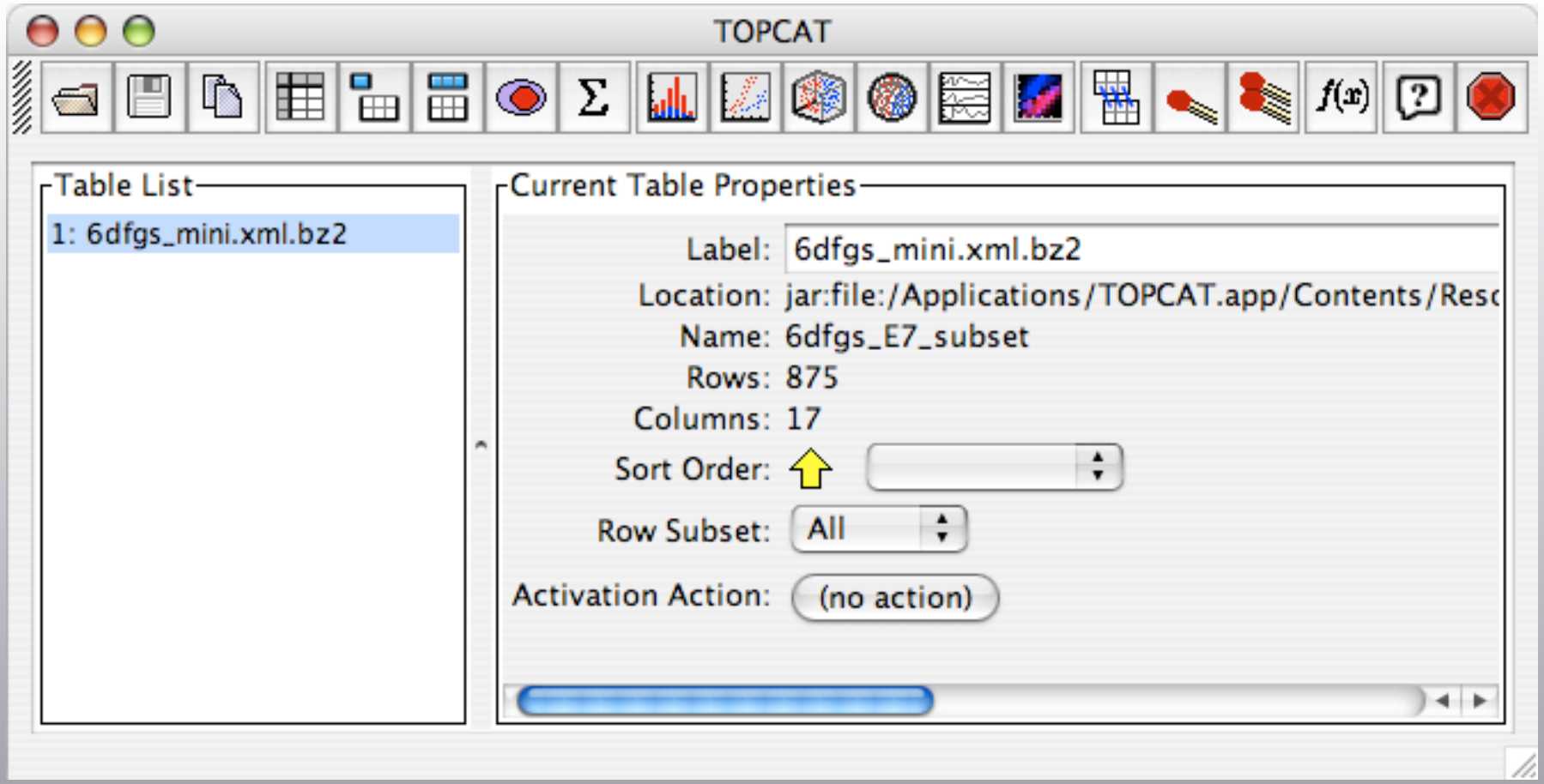
Row Subsets

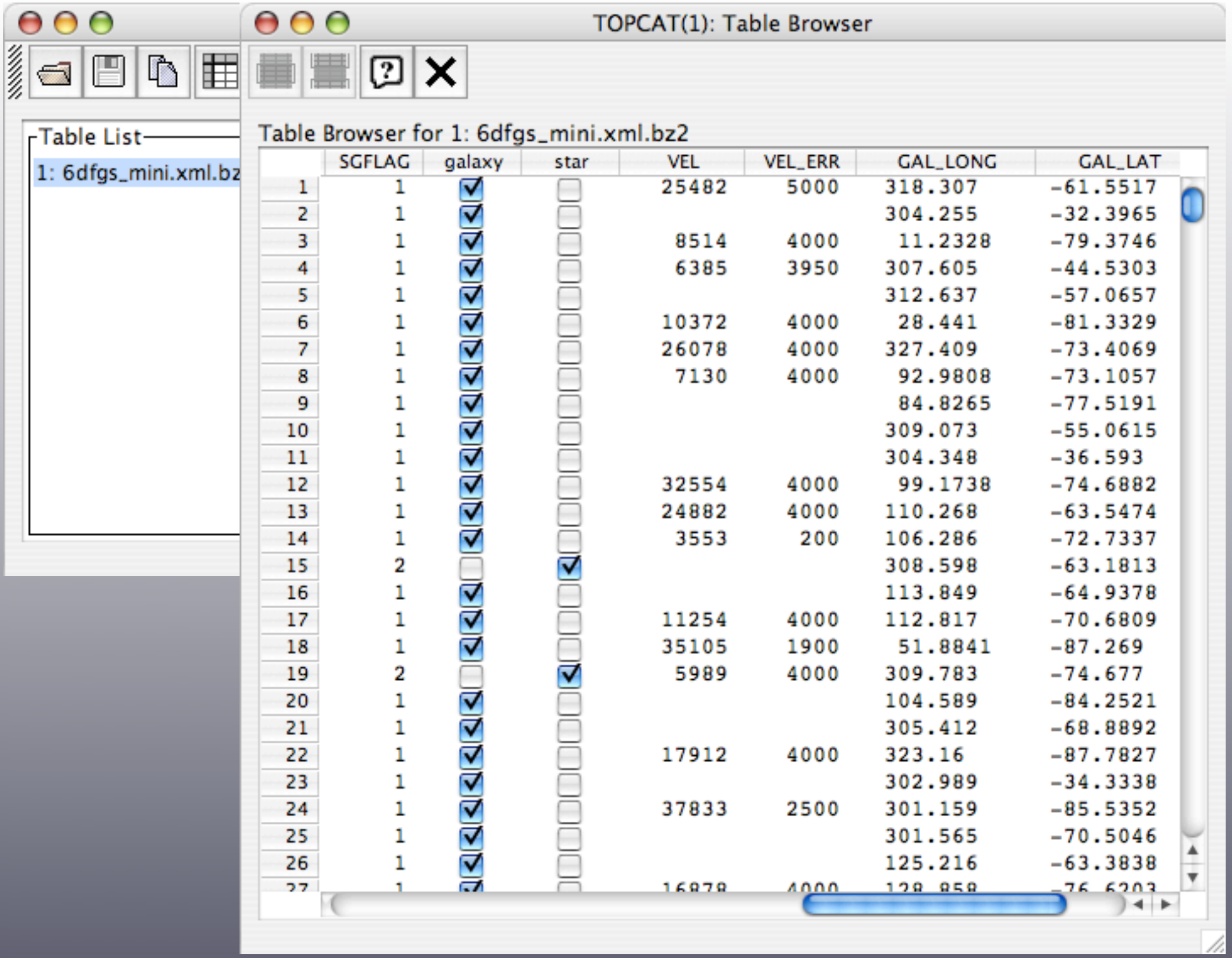
All

galaxy

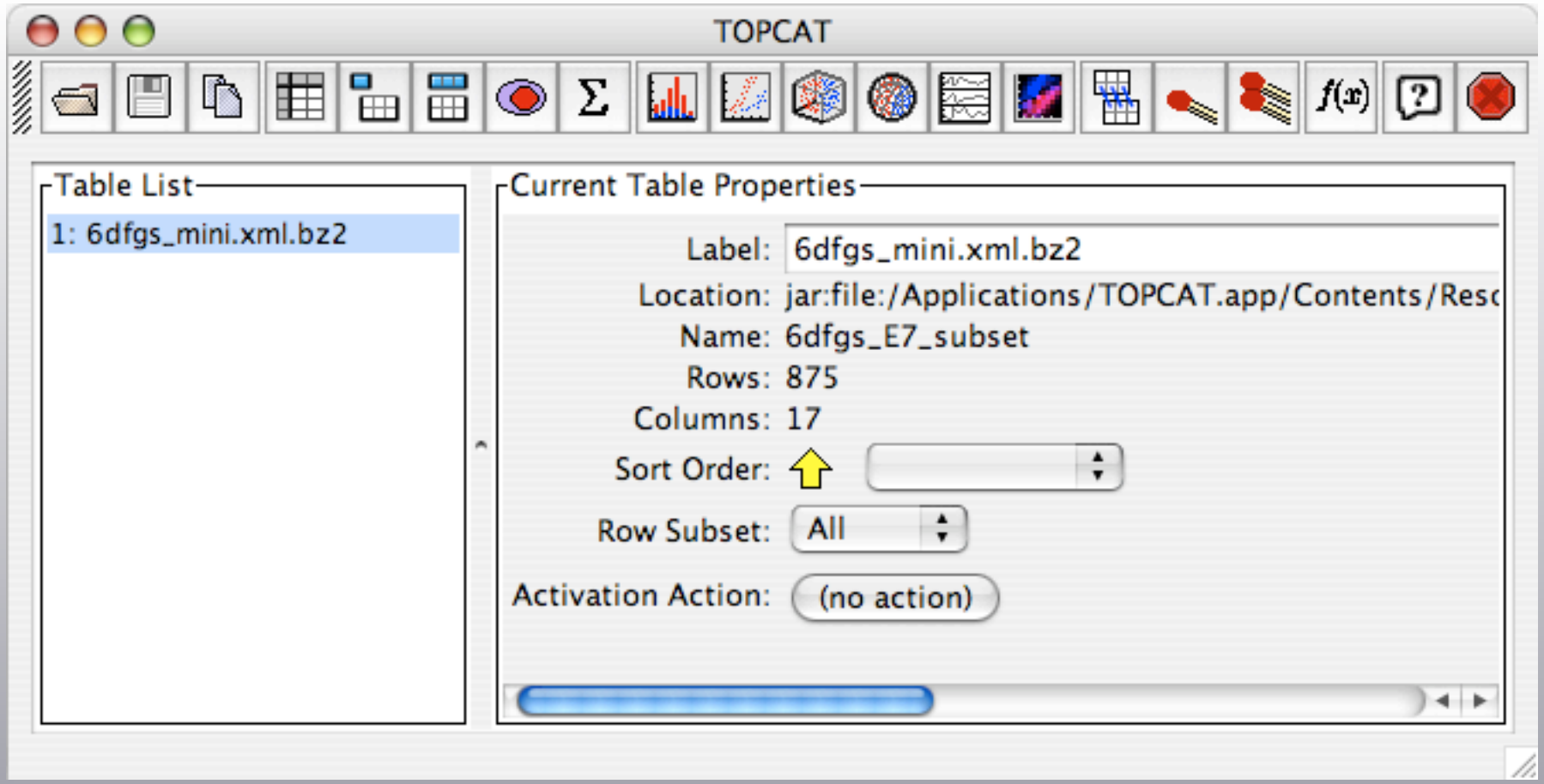
star

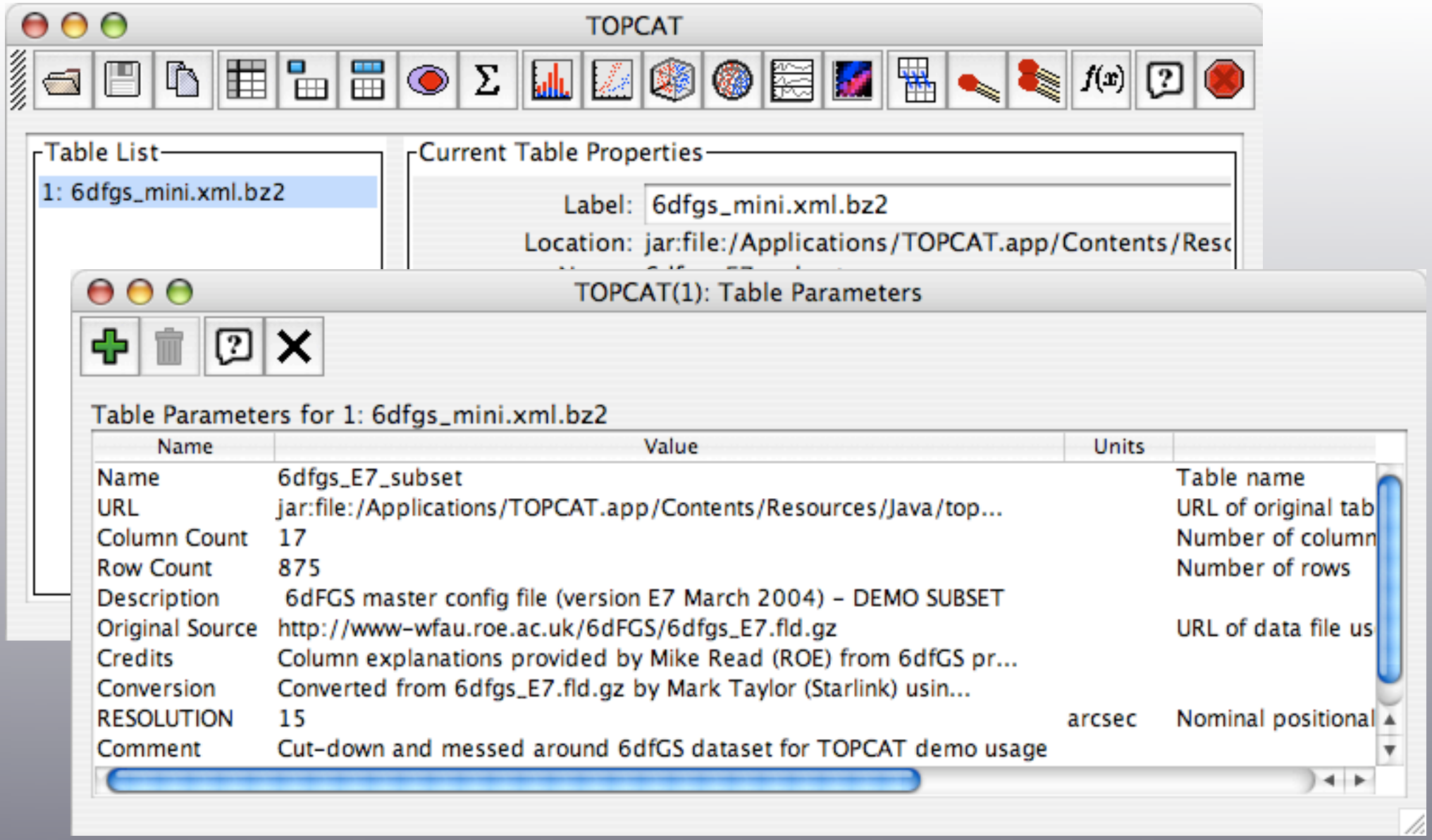
Potential: 875 Included: 875 Visible: 335

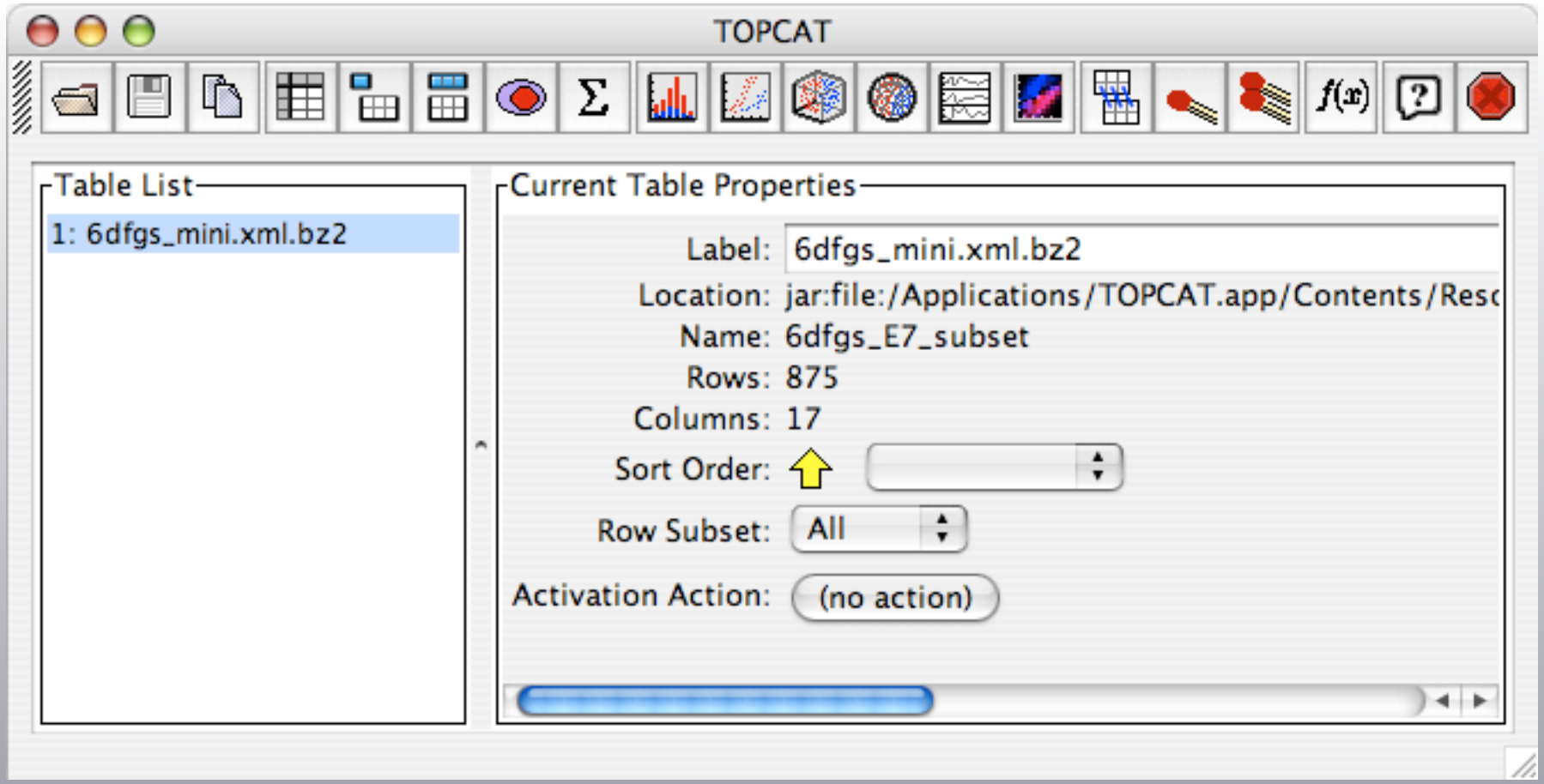

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

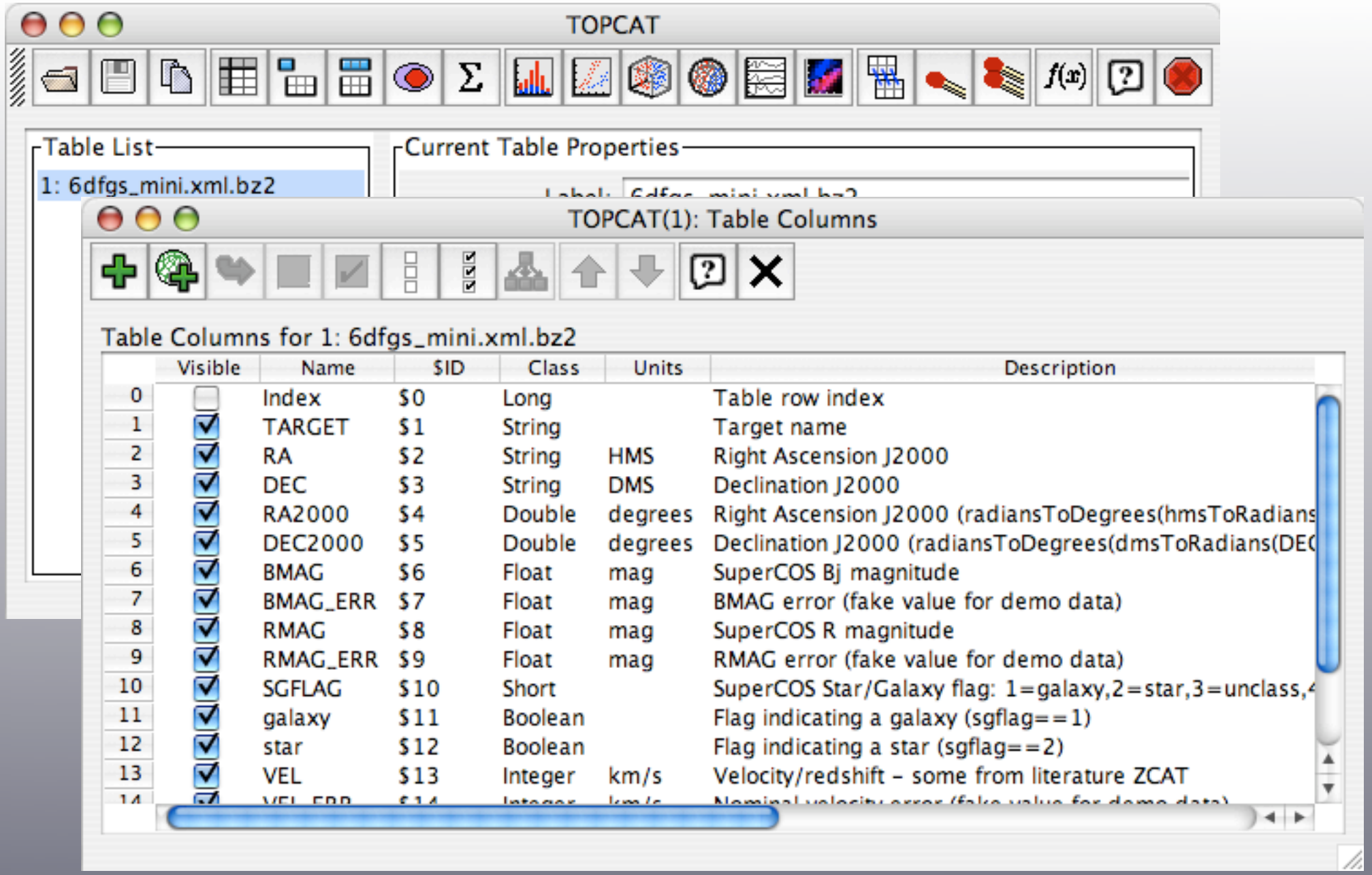


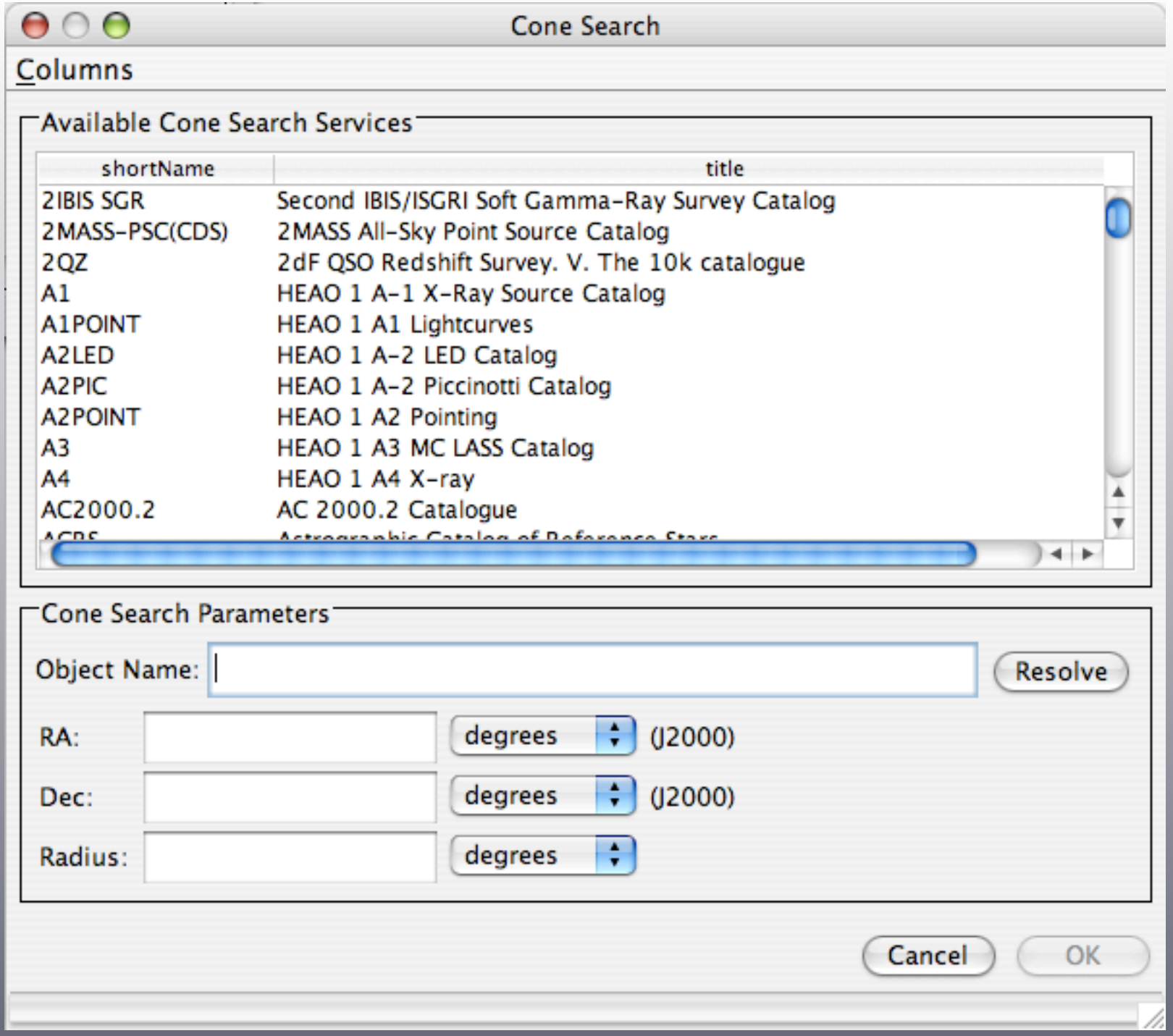
	SGFLAG	galaxy	star	VEL	VEL_ERR	GAL_LONG	GAL_LAT
1	1	☑	☐	25482	5000	318.307	-61.5517
2	1	☑	☐			304.255	-32.3965
3	1	☑	☐	8514	4000	11.2328	-79.3746
4	1	☑	☐	6385	3950	307.605	-44.5303
5	1	☑	☐			312.637	-57.0657
6	1	☑	☐	10372	4000	28.441	-81.3329
7	1	☑	☐	26078	4000	327.409	-73.4069
8	1	☑	☐	7130	4000	92.9808	-73.1057
9	1	☑	☐			84.8265	-77.5191
10	1	☑	☐			309.073	-55.0615
11	1	☑	☐			304.348	-36.593
12	1	☑	☐	32554	4000	99.1738	-74.6882
13	1	☑	☐	24882	4000	110.268	-63.5474
14	1	☑	☐	3553	200	106.286	-72.7337
15	2	☐	☑			308.598	-63.1813
16	1	☑	☐			113.849	-64.9378
17	1	☑	☐	11254	4000	112.817	-70.6809
18	1	☑	☐	35105	1900	51.8841	-87.269
19	2	☐	☑	5989	4000	309.783	-74.677
20	1	☑	☐			104.589	-84.2521
21	1	☑	☐			305.412	-68.8892
22	1	☑	☐	17912	4000	323.16	-87.7827
23	1	☑	☐			302.989	-34.3338
24	1	☑	☐	37833	2500	301.159	-85.5352
25	1	☑	☐			301.565	-70.5046
26	1	☑	☐			125.216	-63.3838
27	1	☑	☐	16878	4000	128.858	-76.6203

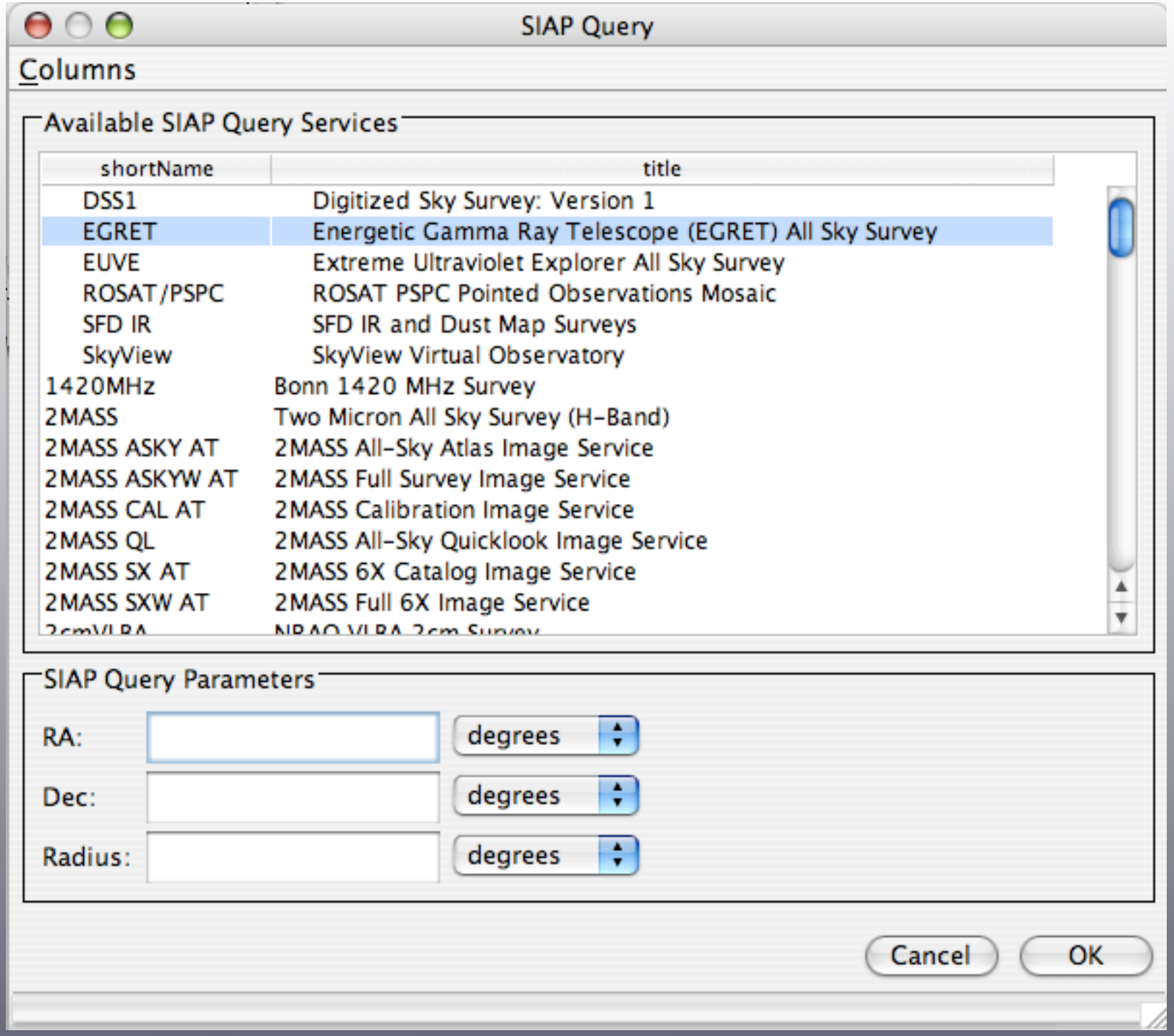

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

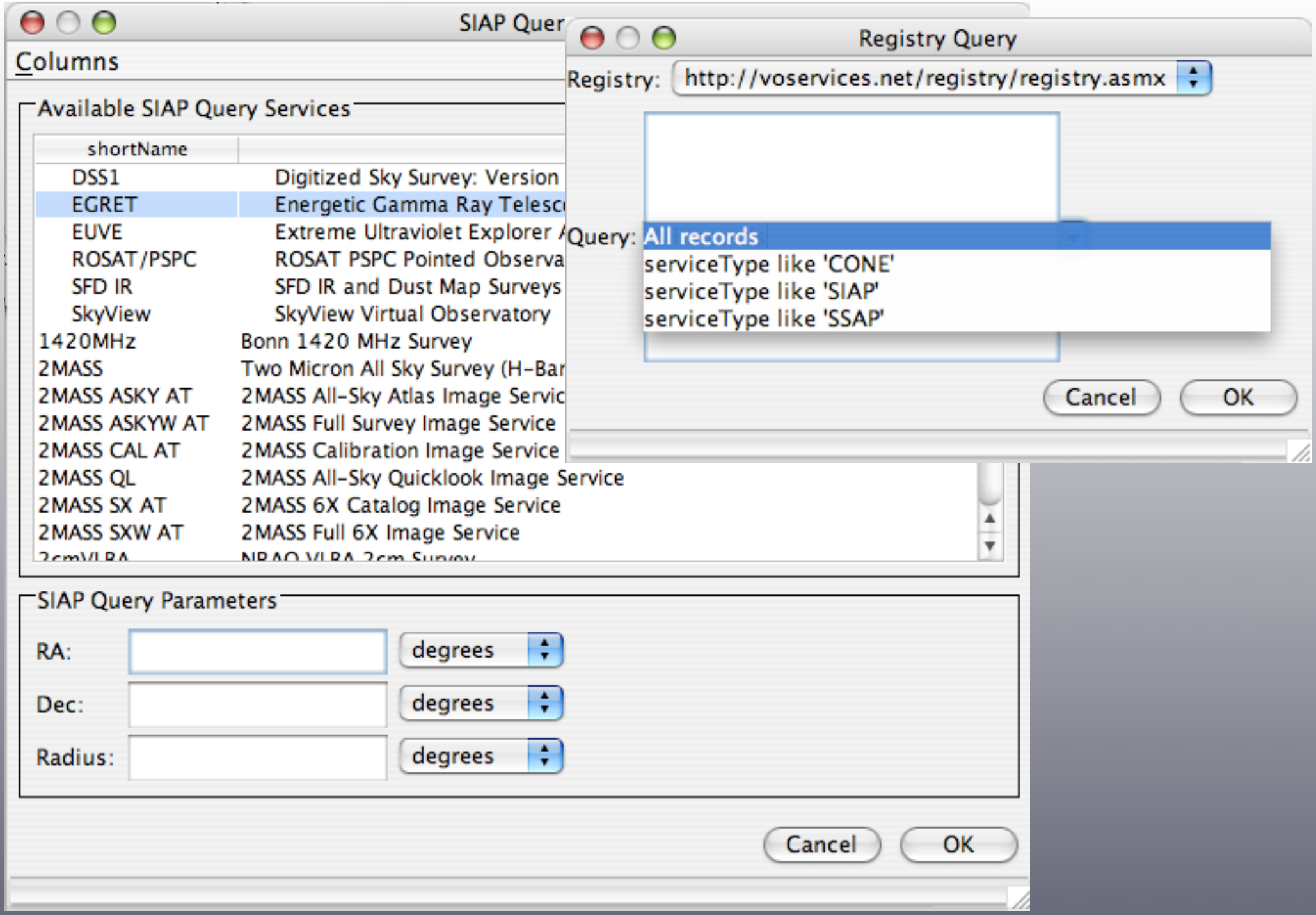

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
TOPCAT(1): Table Parameters
Table Parameters for 1: 6dfgs_mini.xml.bz2
Name
Value
Units
Name 6dfgs_E7_subset Table name
URL jar:file:/Applications/TOPCAT.app/Contents/Resources/Java/top... URL of original tab
Column Count 17 Number of column
Row Count 875 Number of rows
Description 6dFGS master config file (version E7 March 2004) - DEMO SUBSET
Original Source http://www-wfau.roe.ac.uk/6dFGS/6dfgs_E7.fld.gz URL of data file us
Credits Column explanations provided by Mike Read (ROE) from 6dfGS pr...
Conversion Converted from 6dfgs_E7.fld.gz by Mark Taylor (Starlink) usin...
RESOLUTION 15 arcsec Nominal positional
Comment Cut-down and messed around 6dfGS dataset for TOPCAT demo usage

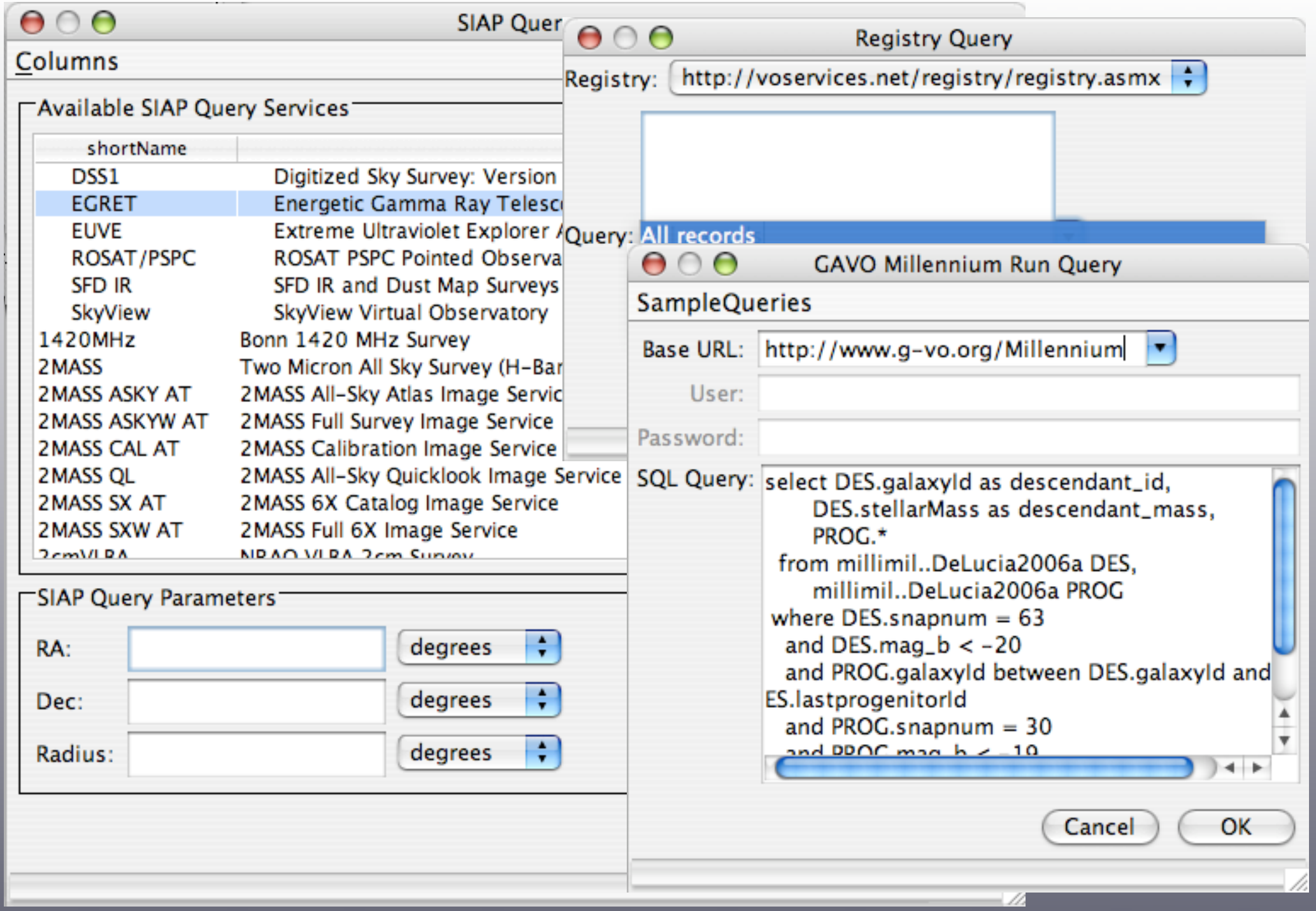

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

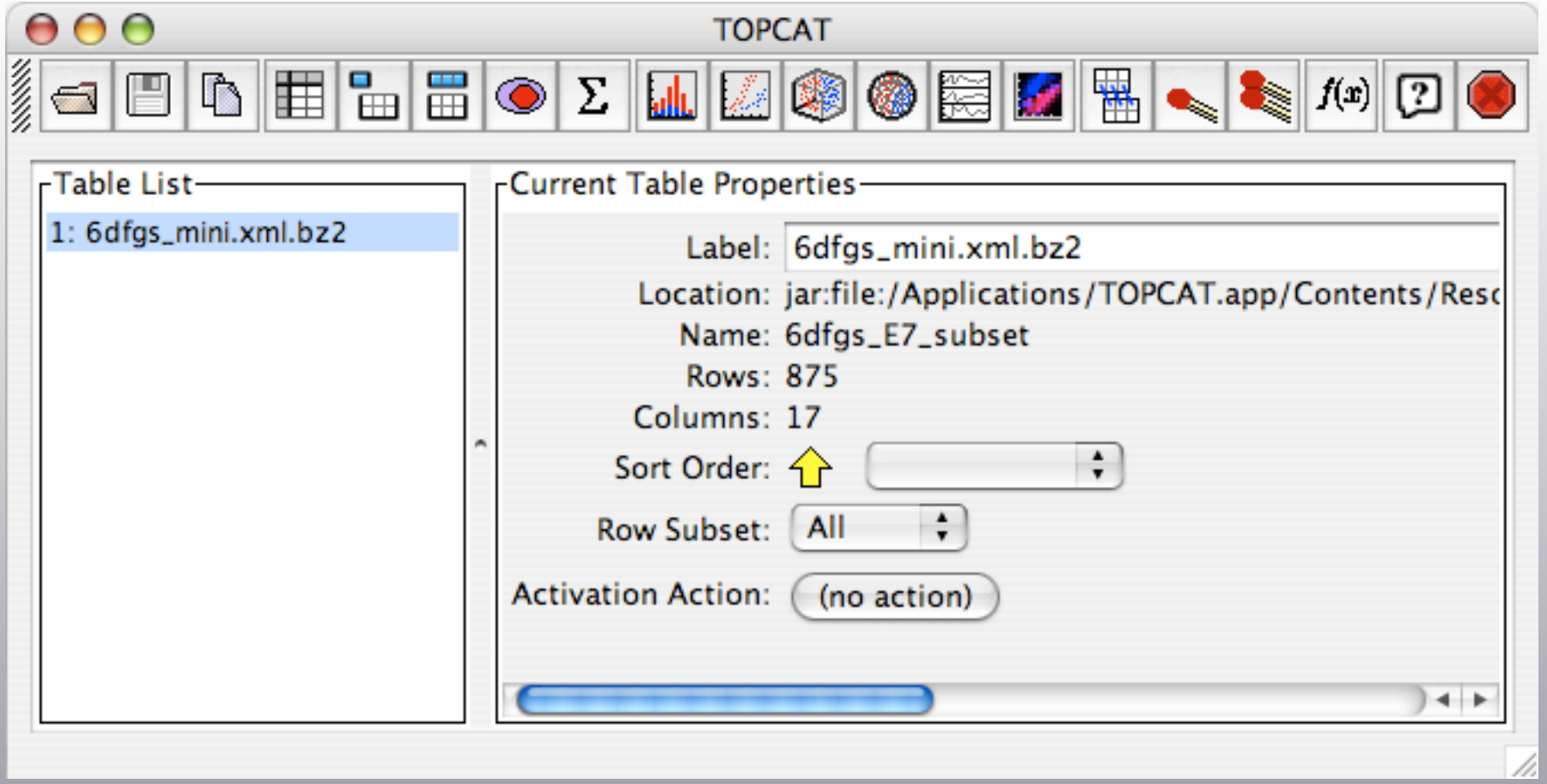

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
TOPCAT(1): Table Columns
Table Columns for 1: 6dfgs_mini.xml.bz2
Visible
Name
$ID
Class
Units
Description
0 Index $0 Long Table row index
1 TARGET $1 String Target name
2 RA $2 String HMS Right Ascension J2000
3 DEC $3 String DMS Declination J2000
4 RA2000 $4 Double degrees Right Ascension J2000 (radiansToDegrees(hmsToRadians
5 DEC2000 $5 Double degrees Declination J2000 (radiansToDegrees(dmsToRadians(DE(
6 BMAG $6 Float mag SuperCOS Bj magnitude
7 BMAG_ERR $7 Float mag BMAG error (fake value for demo data)
8 RMAG $8 Float mag SuperCOS R magnitude
9 RMAG_ERR $9 Float mag RMAG error (fake value for demo data)
10 SGFLAG $10 Short SuperCOS Star/Galaxy flag: 1=galaxy,2=star,3=unclass,
11 galaxy $11 Boolean Flag indicating a galaxy (sgflag==1)
12 star $12 Boolean Flag indicating a star (sgflag==2)
13 VEL $13 Integer km/s Velocity/redshift - some from literature ZCAT

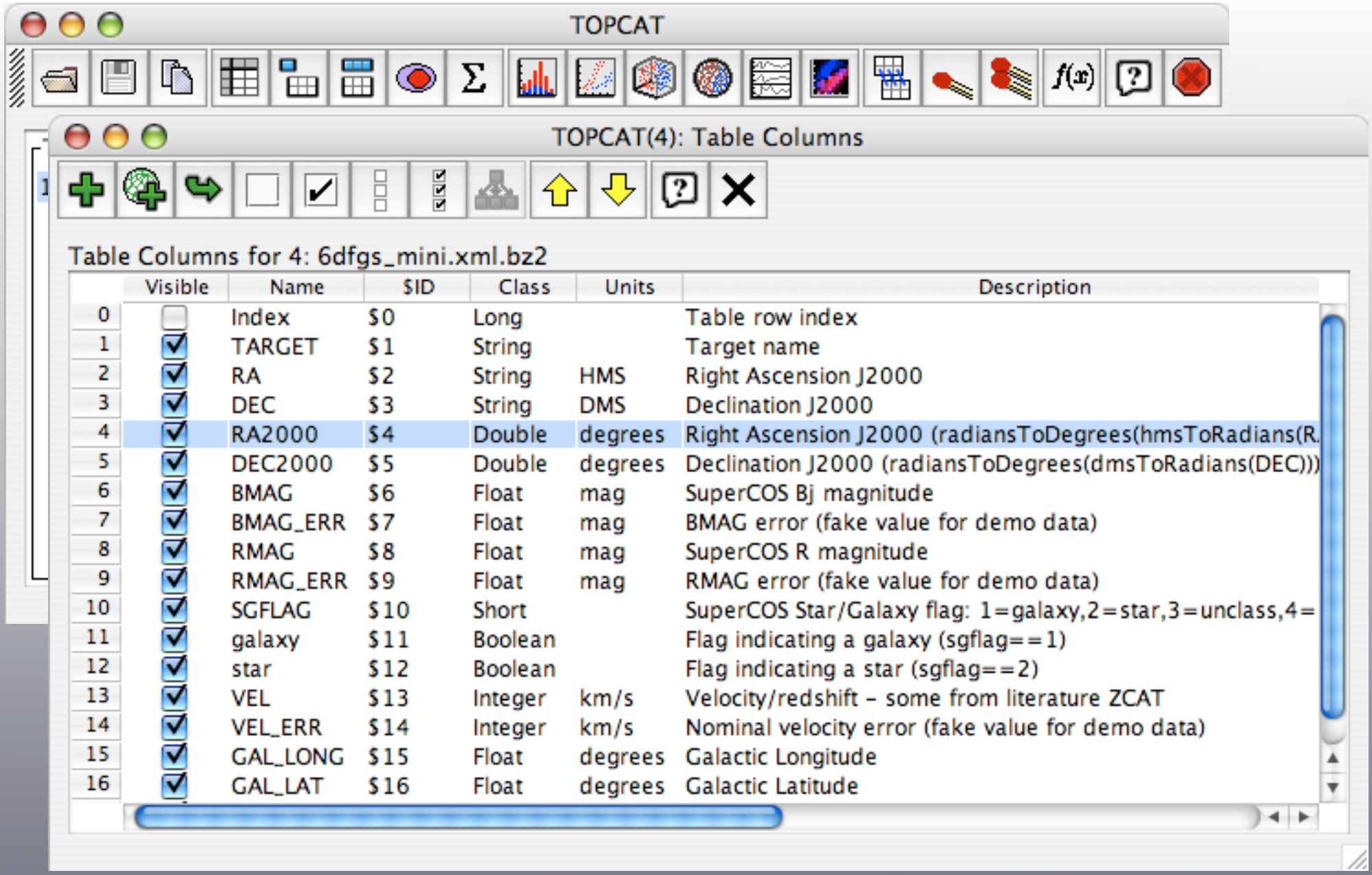

Cone Search
Columns
Available Cone Search Services
shortName
title
2IBIS SGR
Second IBIS/ISGRI Soft Gamma-Ray Survey Catalog
2MASS-PSC(CDS)
2MASS All-Sky Point Source Catalog
2QZ
2dF QSO Redshift Survey. V. The 10k catalogue
A1
HEAO 1 A-1 X-Ray Source Catalog
A1POINT
HEAO 1 A1 Lightcurves
A2LED
HEAO 1 A-2 LED Catalog
A2PIC
HEAO 1 A-2 Piccinotti Catalog
A2POINT
HEAO 1 A2 Pointing
A3
HEAO 1 A3 MC LASS Catalog
A4
HEAO 1 A4 X-ray
AC2000.2
AC 2000.2 Catalogue
Cone Search Parameters
Object Name:
Resolve
RA:
degrees
(J2000)
Dec:
degrees
(J2000)
Radius:
degrees
Cancel
OK


SIAP Query
Columns
Available SIAP Query Services
shortName
title
DSS1
Digitized Sky Survey: Version 1
EGRET
Energetic Gamma Ray Telescope (EGRET) All Sky Survey
EUVE
Extreme Ultraviolet Explorer All Sky Survey
ROSAT/PSPC
ROSAT PSPC Pointed Observations Mosaic
SFD IR
SFD IR and Dust Map Surveys
SkyView
SkyView Virtual Observatory
1420MHz
Bonn 1420 MHz Survey
2MASS
Two Micron All Sky Survey (H-Band)
2MASS ASKY AT
2MASS All-Sky Atlas Image Service
2MASS ASKYW AT
2MASS Full Survey Image Service
2MASS CAL AT
2MASS Calibration Image Service
2MASS QL
2MASS All-Sky Quicklook Image Service
2MASS SX AT
2MASS 6X Catalog Image Service
2MASS SXW AT
2MASS Full 6X Image Service
SIAP Query Parameters
RA:
degrees
Dec:
degrees
Radius:
degrees
Cancel
OK

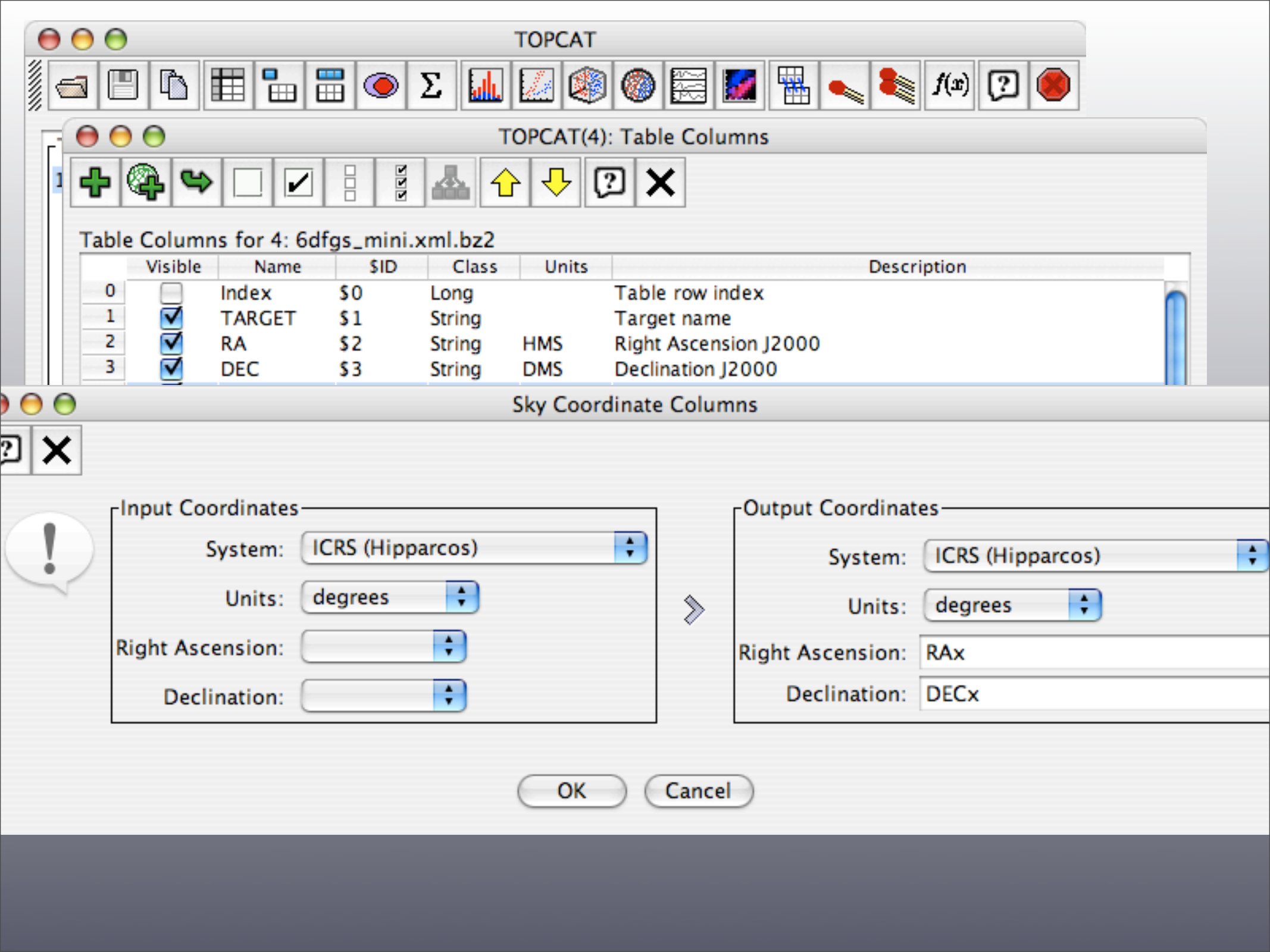

SIAP Quer
Columns
Available SIAP Query Services
shortName
DSS1 Digitized Sky Survey: Version
EGRET Energetic Gamma Ray Telesc
EUVE Extreme Ultraviolet Explorer A
ROSAT/PSPC ROSAT PSPC Pointed Observa
SFD IR SFD IR and Dust Map Surveys
SkyView SkyView Virtual Observatory
1420MHz Bonn 1420 MHz Survey
2MASS Two Micron All Sky Survey (H-Bar
2MASS ASKY AT 2MASS All-Sky Atlas Image Servic
2MASS ASKYW AT 2MASS Full Survey Image Service
2MASS CAL AT 2MASS Calibration Image Service
2MASS QL 2MASS All-Sky Quicklook Image Service
2MASS SX AT 2MASS 6X Catalog Image Service
2MASS SXW AT 2MASS Full 6X Image Service
SIAP Query Parameters
RA:
degrees
Dec:
degrees
Radius:
degrees
Cancel
OK
Registry Query
Registry: http://voservices.net/registry/registry.asmx
Query: All records
serviceType like 'CONE'
serviceType like 'SIAP'
serviceType like 'SSAP'
Cancel
OK

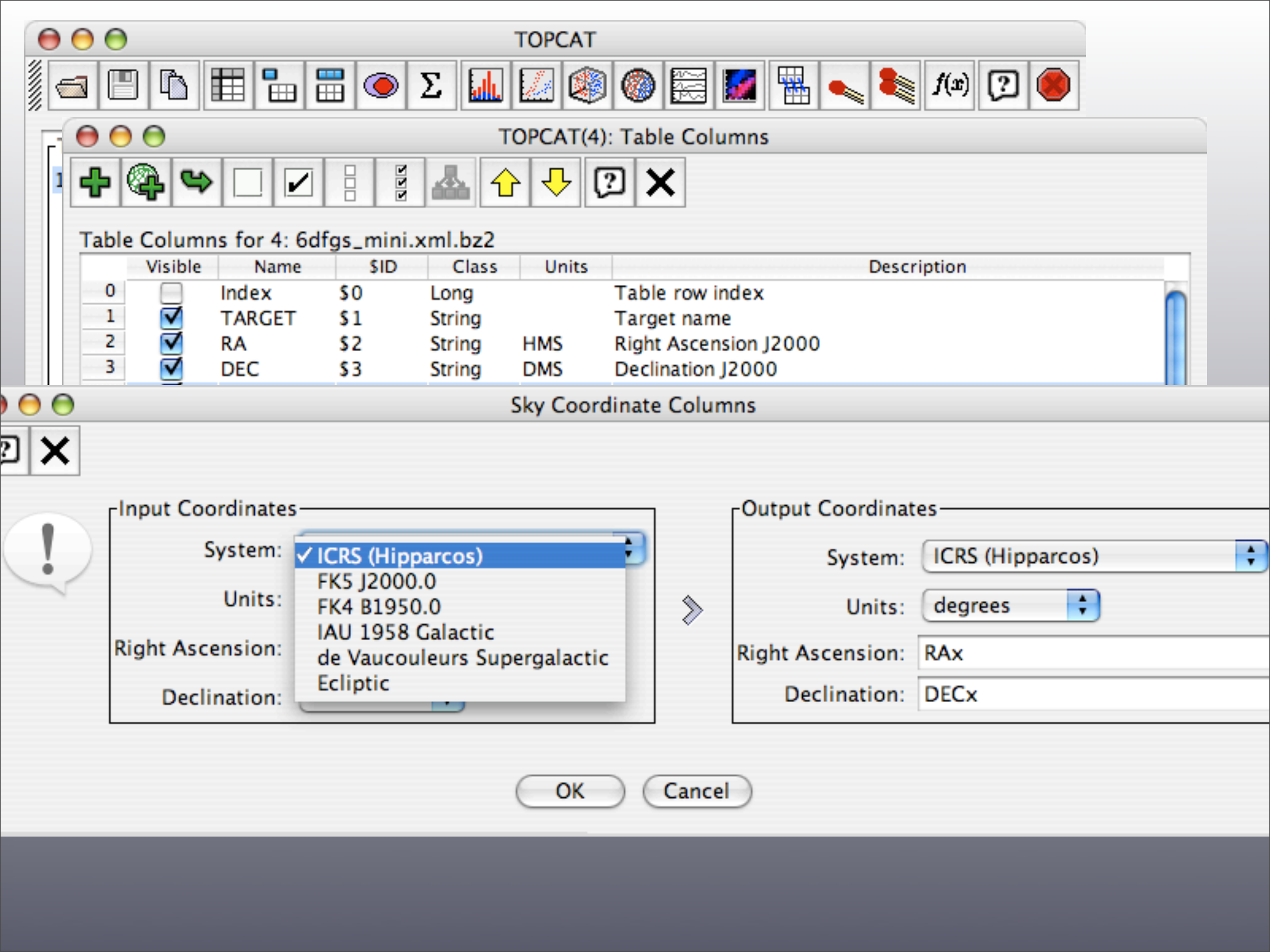

SIAP Quer
Columns
Available SIAP Query Services
shortName
DSS1 Digitized Sky Survey: Version
EGRET Energetic Gamma Ray Telesc
EUVE Extreme Ultraviolet Explorer A
ROSAT/PSPC ROSAT PSPC Pointed Observa
SFD IR SFD IR and Dust Map Surveys
SkyView SkyView Virtual Observatory
1420MHz Bonn 1420 MHz Survey
2MASS Two Micron All Sky Survey (H-Bar
2MASS ASKY AT 2MASS All-Sky Atlas Image Servic
2MASS ASKYW AT 2MASS Full Survey Image Service
2MASS CAL AT 2MASS Calibration Image Service
2MASS QL 2MASS All-Sky Quicklook Image Service
2MASS SX AT 2MASS 6X Catalog Image Service
2MASS SXW AT 2MASS Full 6X Image Service
SIAP Query Parameters
RA:
degrees
Dec:
degrees
Radius:
degrees
Registry Query
Registry: http://voservices.net/registry/registry.asmx
Query: All records
GAVO Millennium Run Query
SampleQueries
Base URL: http://www.g-vo.org/Millennium
User:
Password:
SQL Query:
select DES.galaxyId as descendant_id,
DES.stellarMass as descendant_mass,
PROG.*
from millimil..DeLucia2006a DES,
millimil..DeLucia2006a PROG
where DES.snapnum = 63
and DES.mag_b < -20
and PROG.galaxyId between DES.galaxyId and
ES.lastprogenitorId
and PROG.snapnum = 30
Cancel
OK

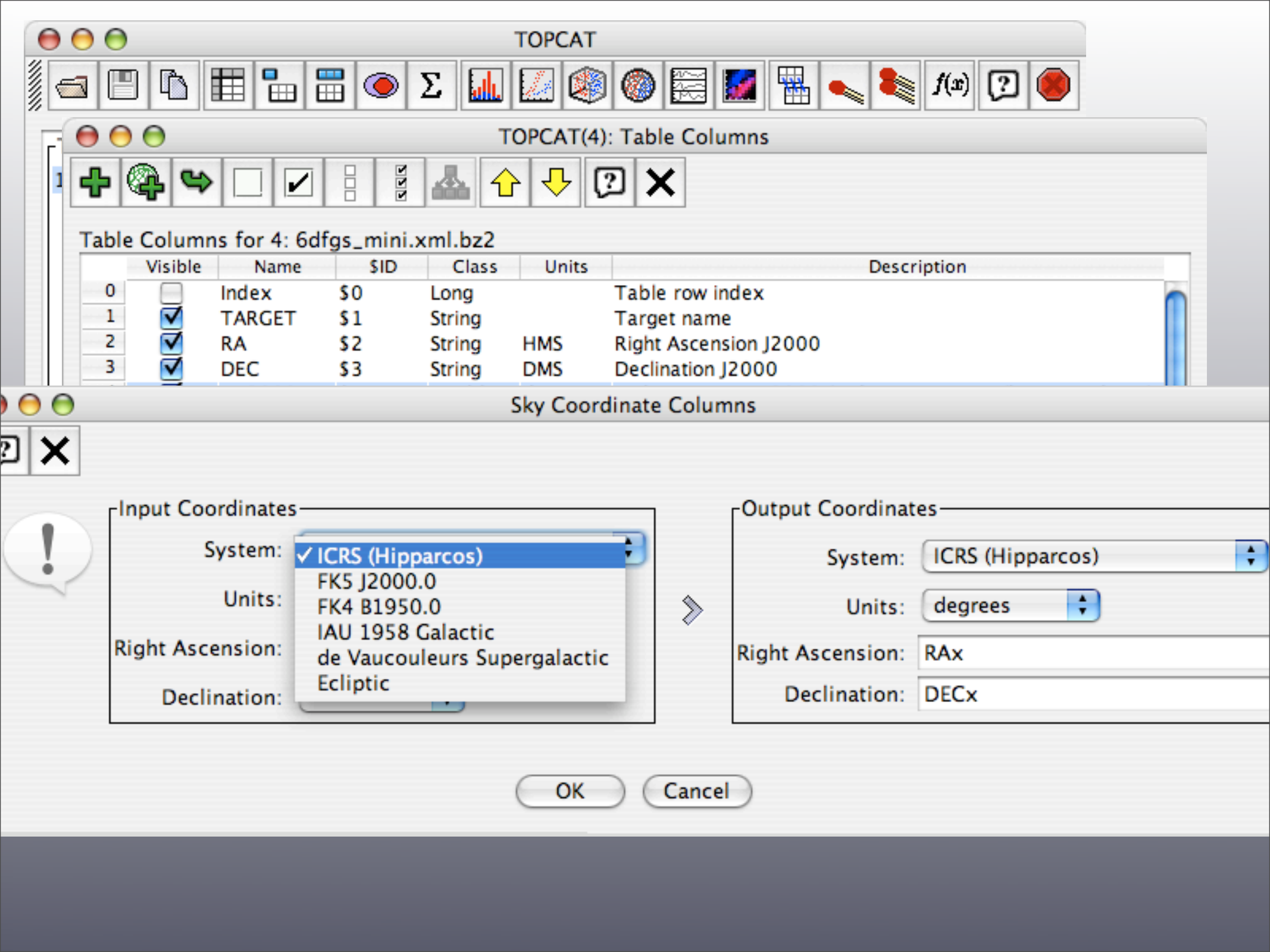

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

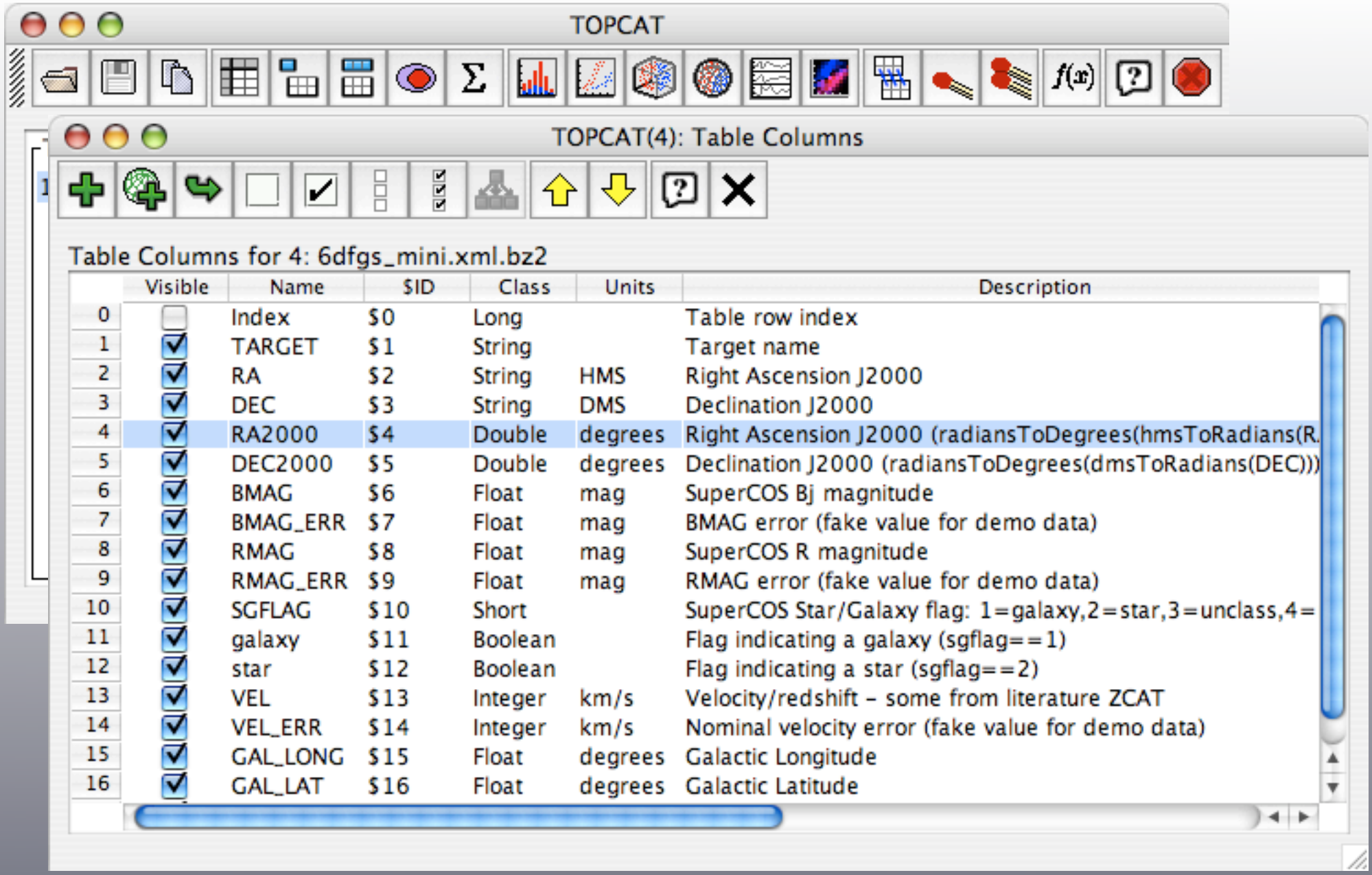


	Visible	Name	$ID	Class	Units	Description
0	☐	Index	$0	Long		Table row index
1	☑	TARGET	$1	String		Target name
2	☑	RA	$2	String	HMS	Right Ascension J2000
3	☑	DEC	$3	String	DMS	Declination J2000
4	☑	RA2000	$4	Double	degrees	Right Ascension J2000 (radiansToDegrees(hmsToRadians(R.
5	☑	DEC2000	$5	Double	degrees	Declination J2000 (radiansToDegrees(dmsToRadians(DEC)))
6	☑	BMAG	$6	Float	mag	SuperCOS Bj magnitude
7	☑	BMAG_ERR	$7	Float	mag	BMAG error (fake value for demo data)
8	☑	RMAG	$8	Float	mag	SuperCOS R magnitude
9	☑	RMAG_ERR	$9	Float	mag	RMAG error (fake value for demo data)
10	☑	SGFLAG	$10	Short		SuperCOS Star/Galaxy flag: 1=galaxy,2=star,3=unclass,4=
11	☑	galaxy	$11	Boolean		Flag indicating a galaxy (sgflag==1)
12	☑	star	$12	Boolean		Flag indicating a star (sgflag==2)
13	☑	VEL	$13	Integer	km/s	Velocity/redshift - some from literature ZCAT
14	☑	VEL_ERR	$14	Integer	km/s	Nominal velocity error (fake value for demo data)
15	☑	GAL_LONG	$15	Float	degrees	Galactic Longitude
16	☑	GAL_LAT	$16	Float	degrees	Galactic Latitude

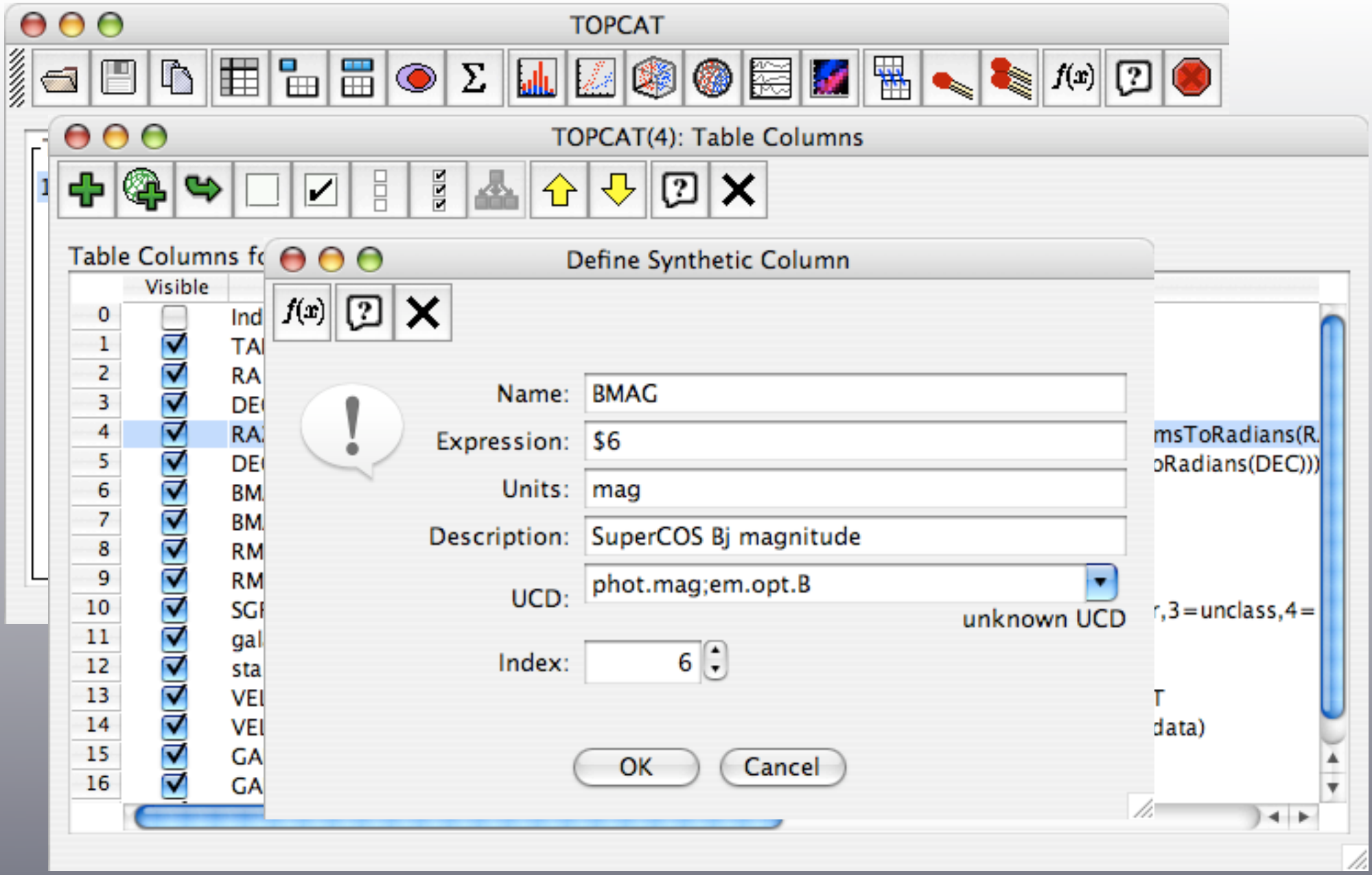

TOPCAT
TOPCAT(4): Table Columns
Table Columns for 4: 6dfgs_mini.xml.bz2
Visible
Name
$ID
Class
Units
Description
0
Index
$0
Long
Table row index
1
TARGET
$1
String
Target name
2
RA
$2
String
HMS
Right Ascension J2000
3
DEC
$3
String
DMS
Declination J2000
Sky Coordinate Columns
Input Coordinates
System:
ICRS (Hipparcos)
Units:
degrees
Right Ascension:
Declination:
Output Coordinates
System:
ICRS (Hipparcos)
Units:
degrees
Right Ascension:
RAx
Declination:
DECx
OK
Cancel

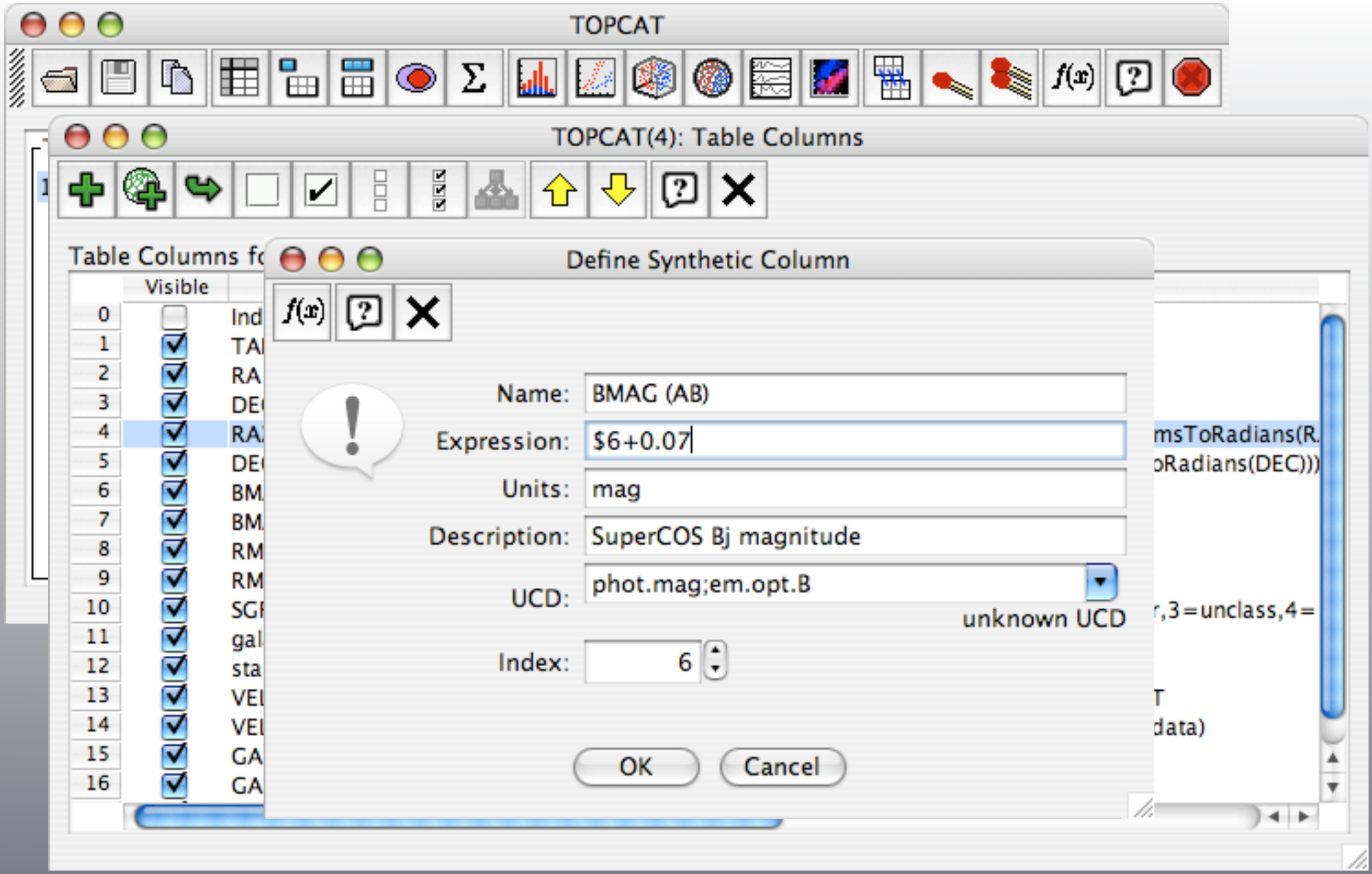

TOPCAT
TOPCAT(4): Table Columns
Table Columns for 4: 6dfgs_mini.xml.bz2
Visible Name $ID Class Units Description
0 Index $0 Long Table row index
1 TARGET $1 String Target name
2 RA $2 String HMS Right Ascension J2000
3 DEC $3 String DMS Declination J2000
Sky Coordinate Columns
Input Coordinates
System:
Units:
Right Ascension:
Declination:
ICRS (Hipparcos)
FK5 J2000.0
FK4 B1950.0
IAU 1958 Galactic
de Vaucouleurs Supergalactic
Ecliptic
Output Coordinates
System: ICRS (Hipparcos)
Units: degrees
Right Ascension: RAx
Declination: DECx
OK
Cancel

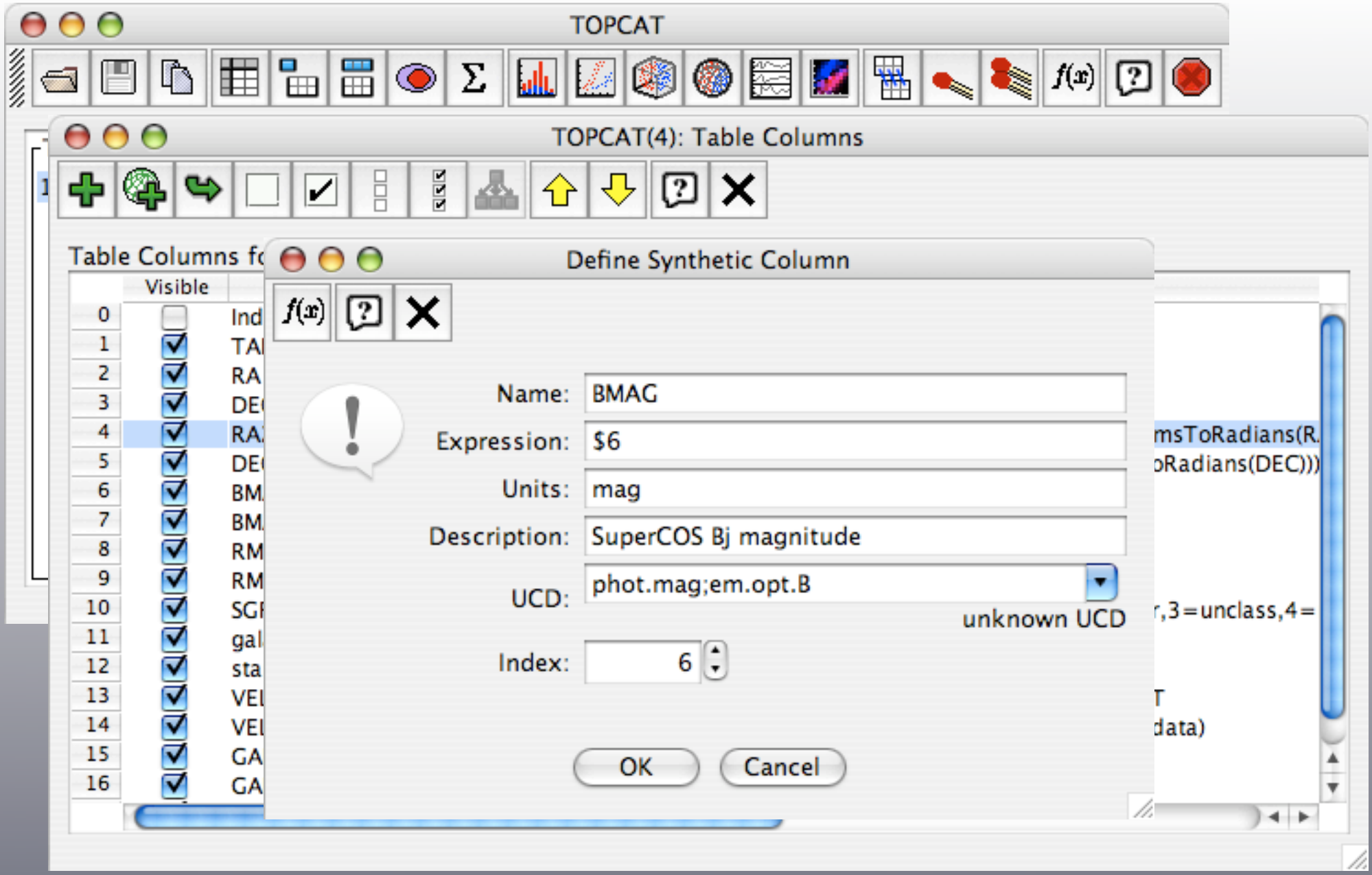

TOPCAT
TOPCAT(4): Table Columns
Table Columns for 4: 6dfgs_mini.xml.bz2
Visible
Name
$ID
Class
Units
Description
0
Index
$0
Long
Table row index
1
TARGET
$1
String
Target name
2
RA
$2
String
HMS
Right Ascension J2000
3
DEC
$3
String
DMS
Declination J2000
Sky Coordinate Columns
Input Coordinates
System:
Units:
Right Ascension:
Declination:
ICRS (Hipparcos)
FK5 J2000.0
FK4 B1950.0
IAU 1958 Galactic
de Vaucouleurs Supergalactic
Ecliptic
Output Coordinates
System:
ICRS (Hipparcos)
Units:
degrees
Right Ascension:
RAx
Declination:
DECx
OK
Cancel

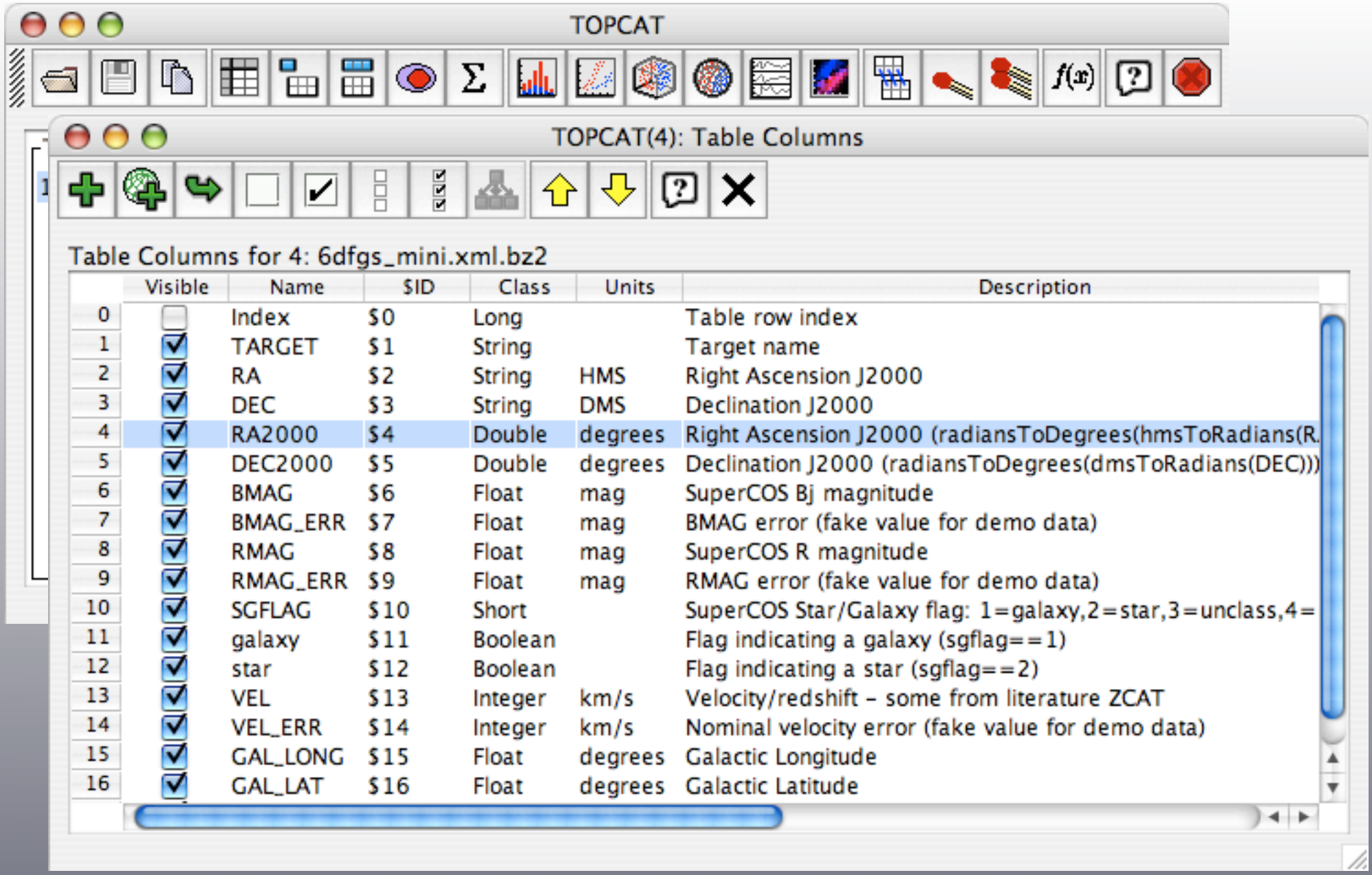


	Visible	Name	$ID	Class	Units	Description
0	☐	Index	$0	Long		Table row index
1	☑	TARGET	$1	String		Target name
2	☑	RA	$2	String	HMS	Right Ascension J2000
3	☑	DEC	$3	String	DMS	Declination J2000
4	☑	RA2000	$4	Double	degrees	Right Ascension J2000 (radiansToDegrees(hmsToRadians(R.
5	☑	DEC2000	$5	Double	degrees	Declination J2000 (radiansToDegrees(dmsToRadians(DEC)))
6	☑	BMAG	$6	Float	mag	SuperCOS Bj magnitude
7	☑	BMAG_ERR	$7	Float	mag	BMAG error (fake value for demo data)
8	☑	RMAG	$8	Float	mag	SuperCOS R magnitude
9	☑	RMAG_ERR	$9	Float	mag	RMAG error (fake value for demo data)
10	☑	SGFLAG	$10	Short		SuperCOS Star/Galaxy flag: 1=galaxy,2=star,3=unclass,4=
11	☑	galaxy	$11	Boolean		Flag indicating a galaxy (sgflag==1)
12	☑	star	$12	Boolean		Flag indicating a star (sgflag==2)
13	☑	VEL	$13	Integer	km/s	Velocity/redshift - some from literature ZCAT
14	☑	VEL_ERR	$14	Integer	km/s	Nominal velocity error (fake value for demo data)
15	☑	GAL_LONG	$15	Float	degrees	Galactic Longitude
16	☑	GAL_LAT	$16	Float	degrees	Galactic Latitude

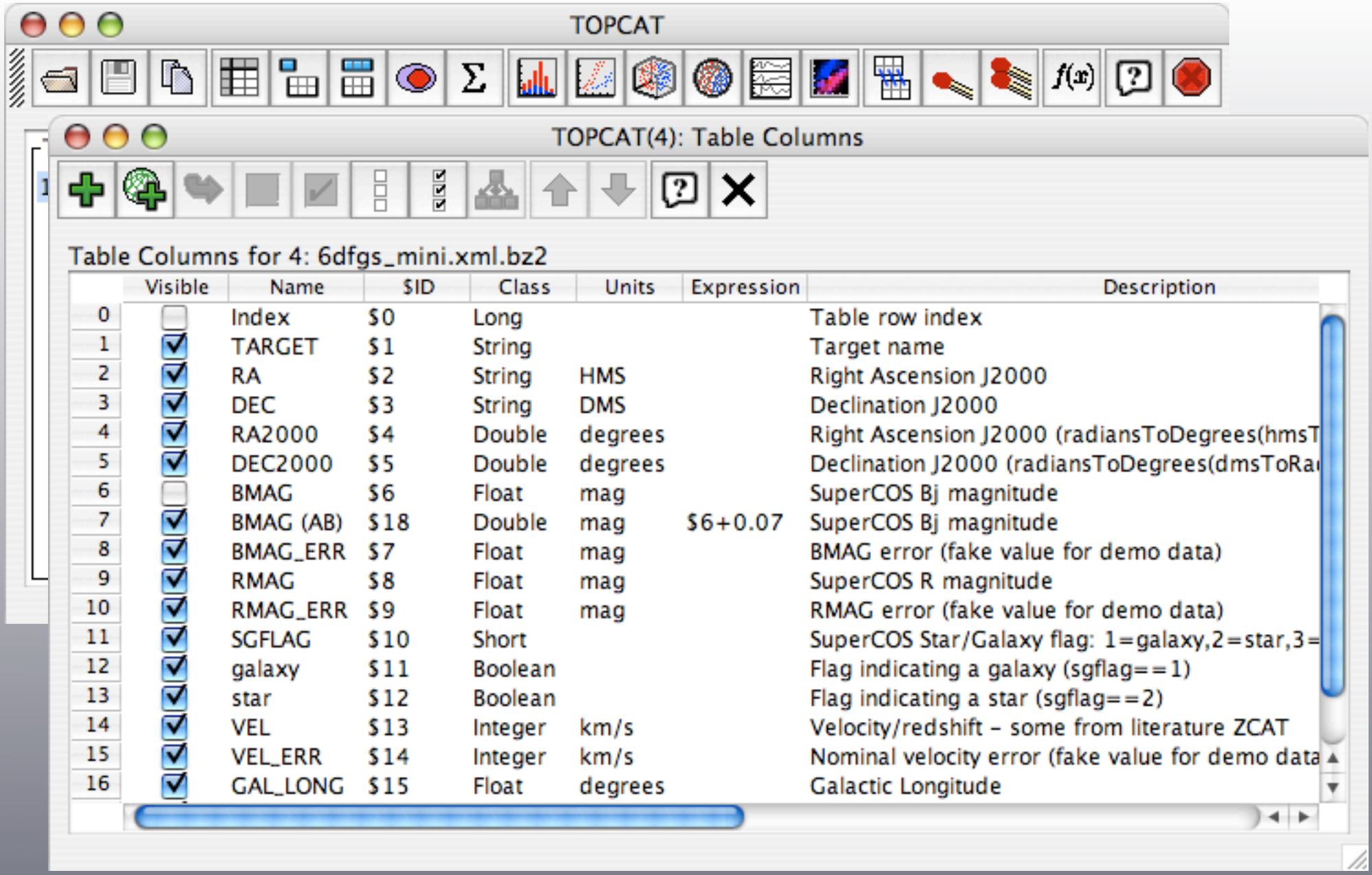

TOPCAT
TOPCAT(4): Table Columns
Table Columns fo
Visible
Define Synthetic Column
Name: BMAG
Expression: $6
Units: mag
Description: SuperCOS Bj magnitude
UCD: phot.mag;em.opt.B
unknown UCD
Index: 6
OK
Cancel


TOPCAT
TOPCAT(4): Table Columns
Table Columns fo
Visible
Define Synthetic Column
Name: BMAG (AB)
Expression: $6+0.07
Units: mag
Description: SuperCOS Bj magnitude
UCD: phot.mag;em.opt.B
unknown UCD
Index: 6
OK
Cancel

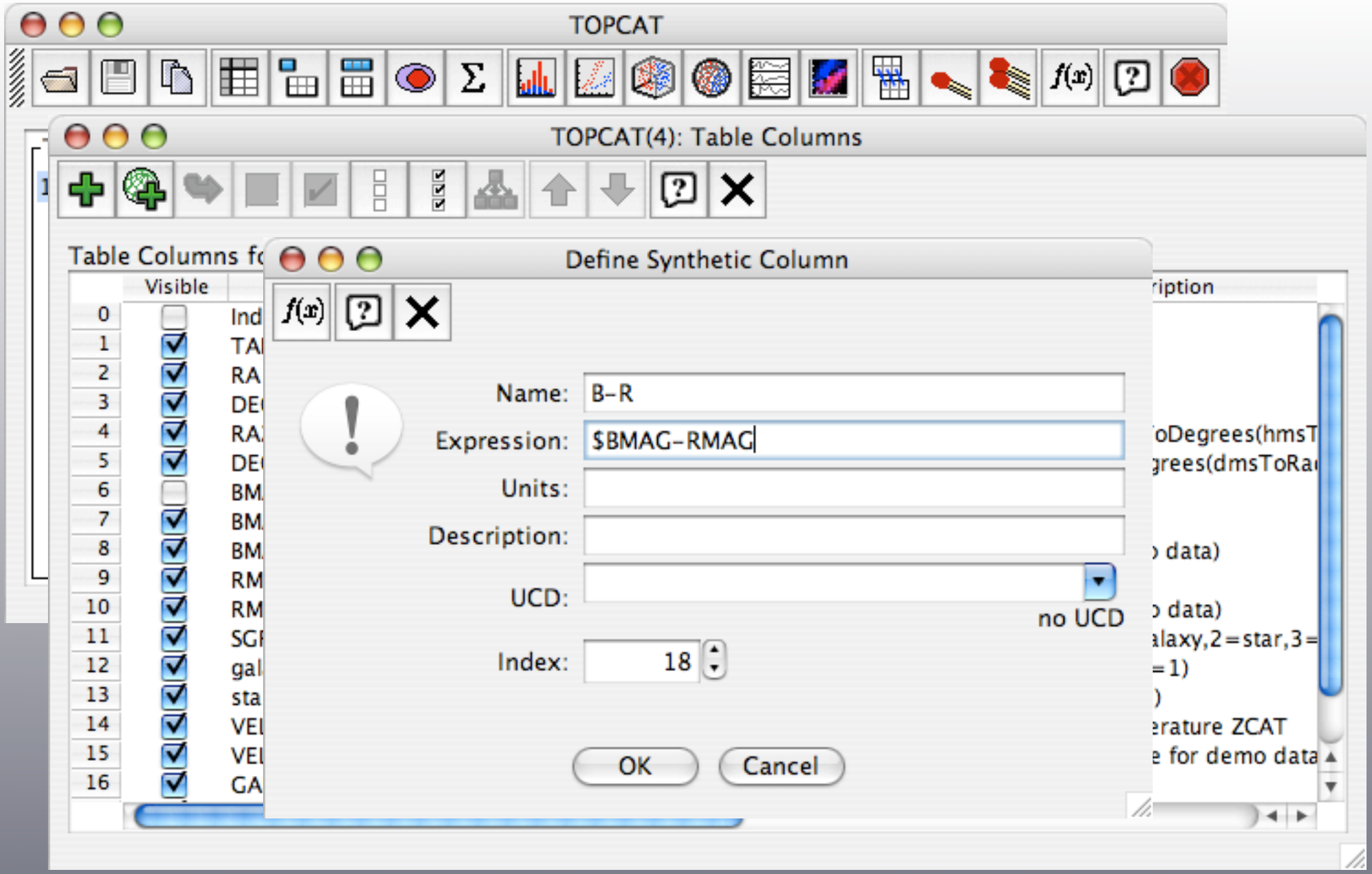

TOPCAT
TOPCAT(4): Table Columns
Table Columns fo
Visible
Define Synthetic Column
Name: BMAG
Expression: $6
Units: mag
Description: SuperCOS Bj magnitude
UCD: phot.mag;em.opt.B
unknown UCD
Index: 6
OK
Cancel

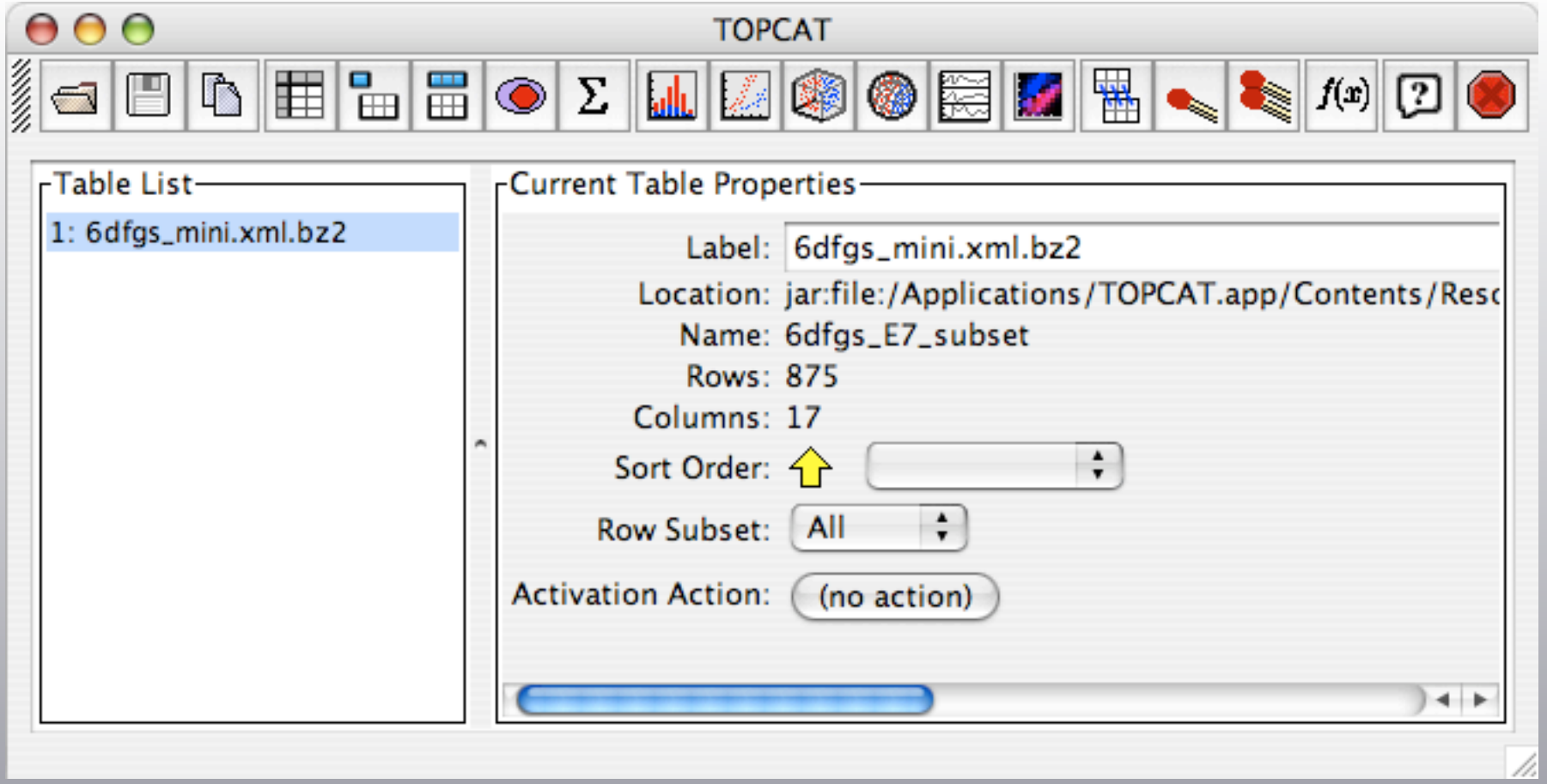


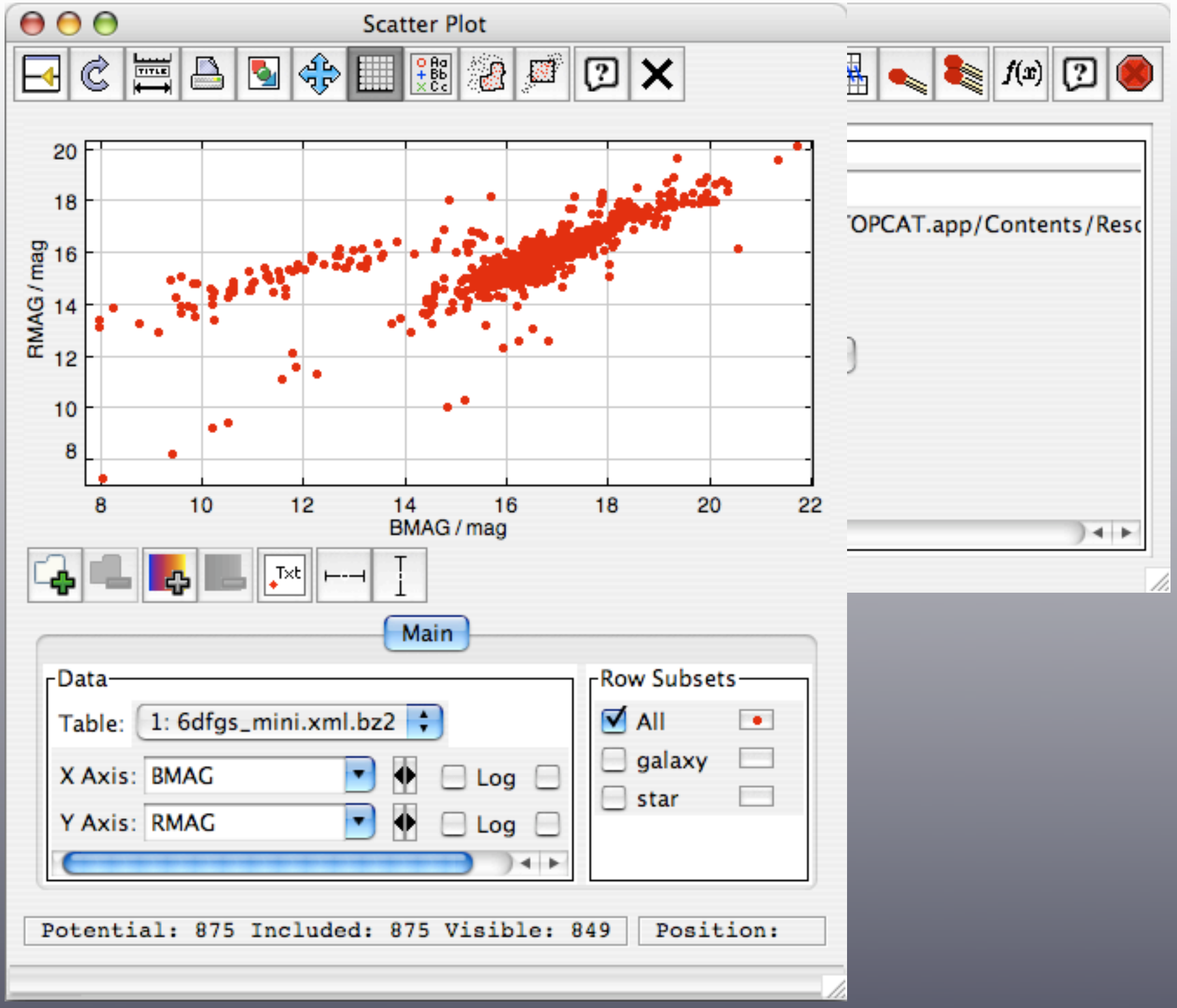
	Visible	Name	$ID	Class	Units	Description
0	☐	Index	$0	Long		Table row index
1	☑	TARGET	$1	String		Target name
2	☑	RA	$2	String	HMS	Right Ascension J2000
3	☑	DEC	$3	String	DMS	Declination J2000
4	☑	RA2000	$4	Double	degrees	Right Ascension J2000 (radiansToDegrees(hmsToRadians(R.
5	☑	DEC2000	$5	Double	degrees	Declination J2000 (radiansToDegrees(dmsToRadians(DEC)))
6	☑	BMAG	$6	Float	mag	SuperCOS Bj magnitude
7	☑	BMAG_ERR	$7	Float	mag	BMAG error (fake value for demo data)
8	☑	RMAG	$8	Float	mag	SuperCOS R magnitude
9	☑	RMAG_ERR	$9	Float	mag	RMAG error (fake value for demo data)
10	☑	SGFLAG	$10	Short		SuperCOS Star/Galaxy flag: 1=galaxy,2=star,3=unclass,4=
11	☑	galaxy	$11	Boolean		Flag indicating a galaxy (sgflag==1)
12	☑	star	$12	Boolean		Flag indicating a star (sgflag==2)
13	☑	VEL	$13	Integer	km/s	Velocity/redshift - some from literature ZCAT
14	☑	VEL_ERR	$14	Integer	km/s	Nominal velocity error (fake value for demo data)
15	☑	GAL_LONG	$15	Float	degrees	Galactic Longitude
16	☑	GAL_LAT	$16	Float	degrees	Galactic Latitude

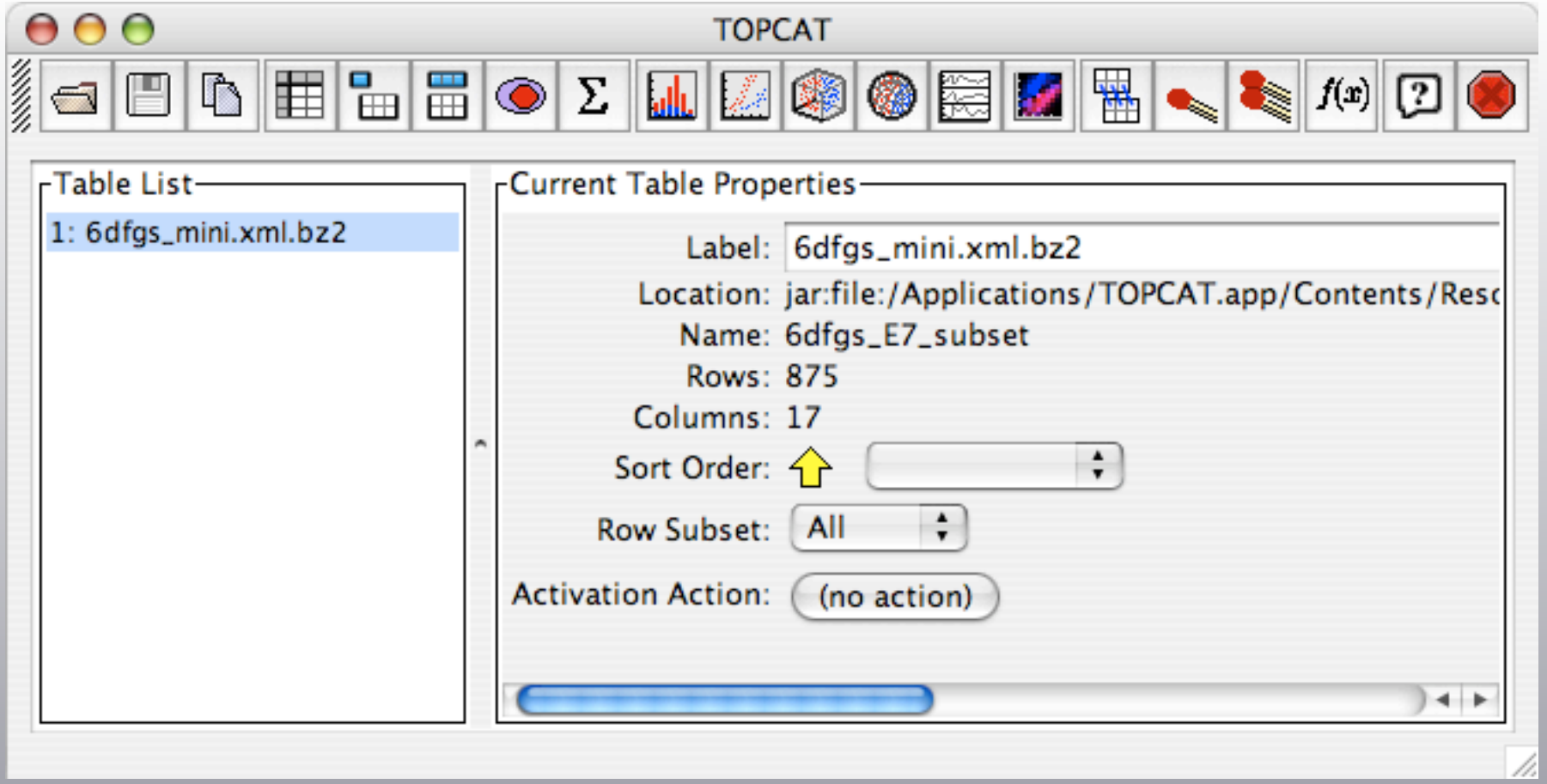


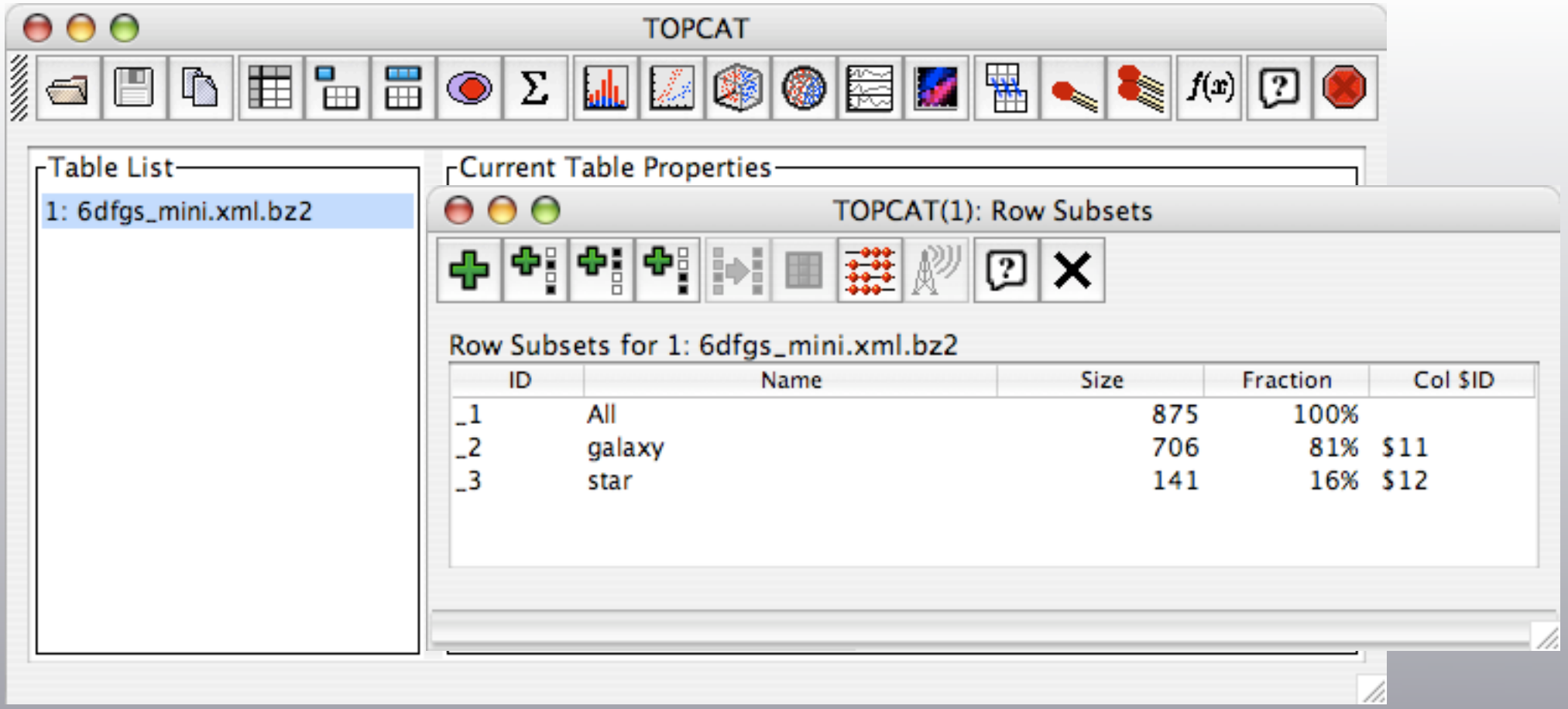
	Visible	Name	$ID	Class	Units	Expression	Description
0	☐	Index	$0	Long			Table row index
1	☑	TARGET	$1	String			Target name
2	☑	RA	$2	String	HMS		Right Ascension J2000
3	☑	DEC	$3	String	DMS		Declination J2000
4	☑	RA2000	$4	Double	degrees		Right Ascension J2000 (radiansToDegrees(hmsT
5	☑	DEC2000	$5	Double	degrees		Declination J2000 (radiansToDegrees(dmsToRa
6	☐	BMAG	$6	Float	mag		SuperCOS Bj magnitude
7	☑	BMAG (AB)	$18	Double	mag	$6+0.07	SuperCOS Bj magnitude
8	☑	BMAG_ERR	$7	Float	mag		BMAG error (fake value for demo data)
9	☑	RMAG	$8	Float	mag		SuperCOS R magnitude
10	☑	RMAG_ERR	$9	Float	mag		RMAG error (fake value for demo data)
11	☑	SGFLAG	$10	Short			SuperCOS Star/Galaxy flag: 1=galaxy,2=star,3=
12	☑	galaxy	$11	Boolean			Flag indicating a galaxy (sgflag==1)
13	☑	star	$12	Boolean			Flag indicating a star (sgflag==2)
14	☑	VEL	$13	Integer	km/s		Velocity/redshift - some from literature ZCAT
15	☑	VEL_ERR	$14	Integer	km/s		Nominal velocity error (fake value for demo data
16	☑	GAL_LONG	$15	Float	degrees		Galactic Longitude

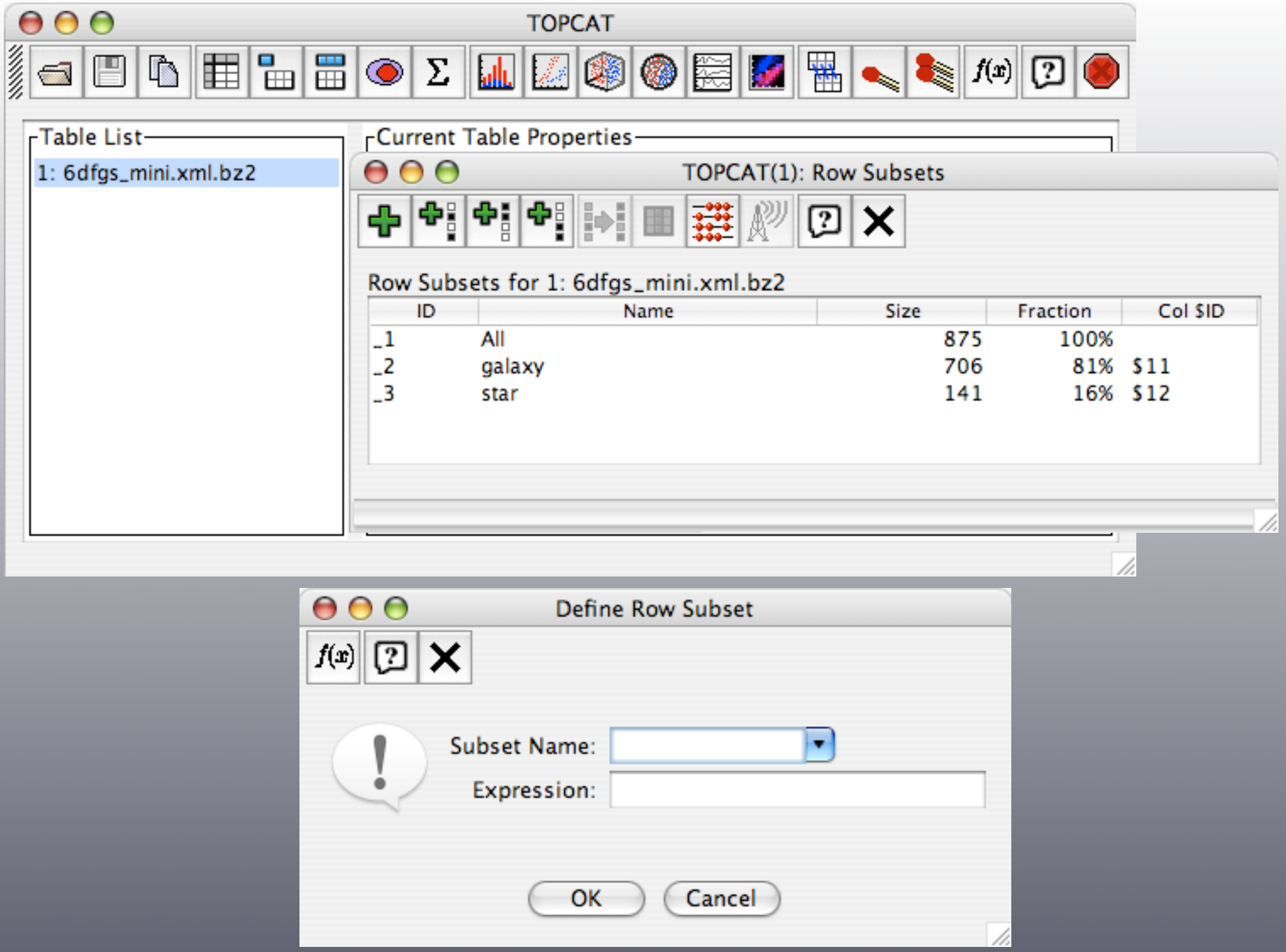

TOPCAT
TOPCAT(4): Table Columns
Table Columns fo
Visible
Define Synthetic Column
Name: B-R
Expression: $BMAG-RMAG
Units:
Description:
UCD:
no UCD
Index: 18
OK
Cancel

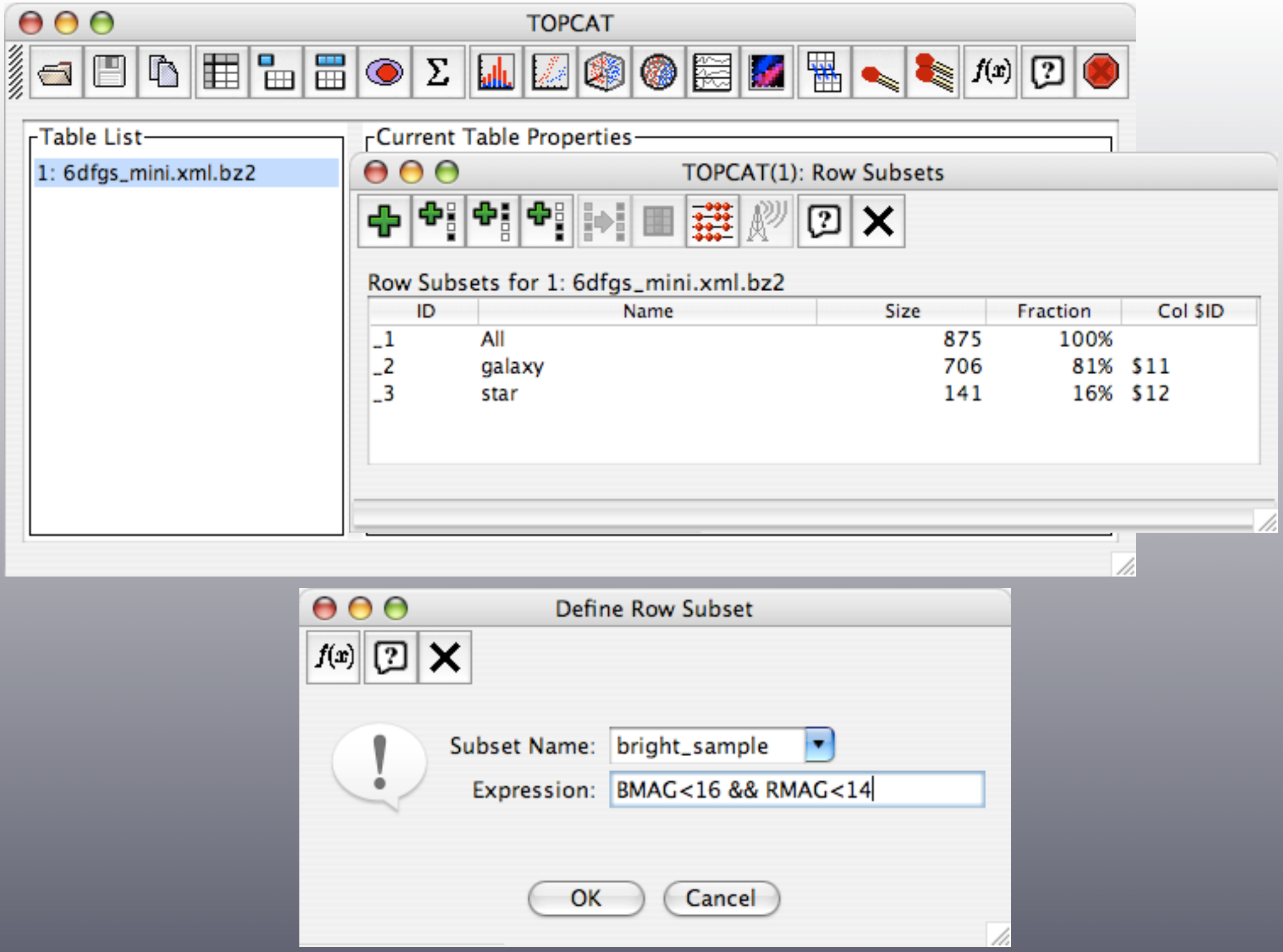

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

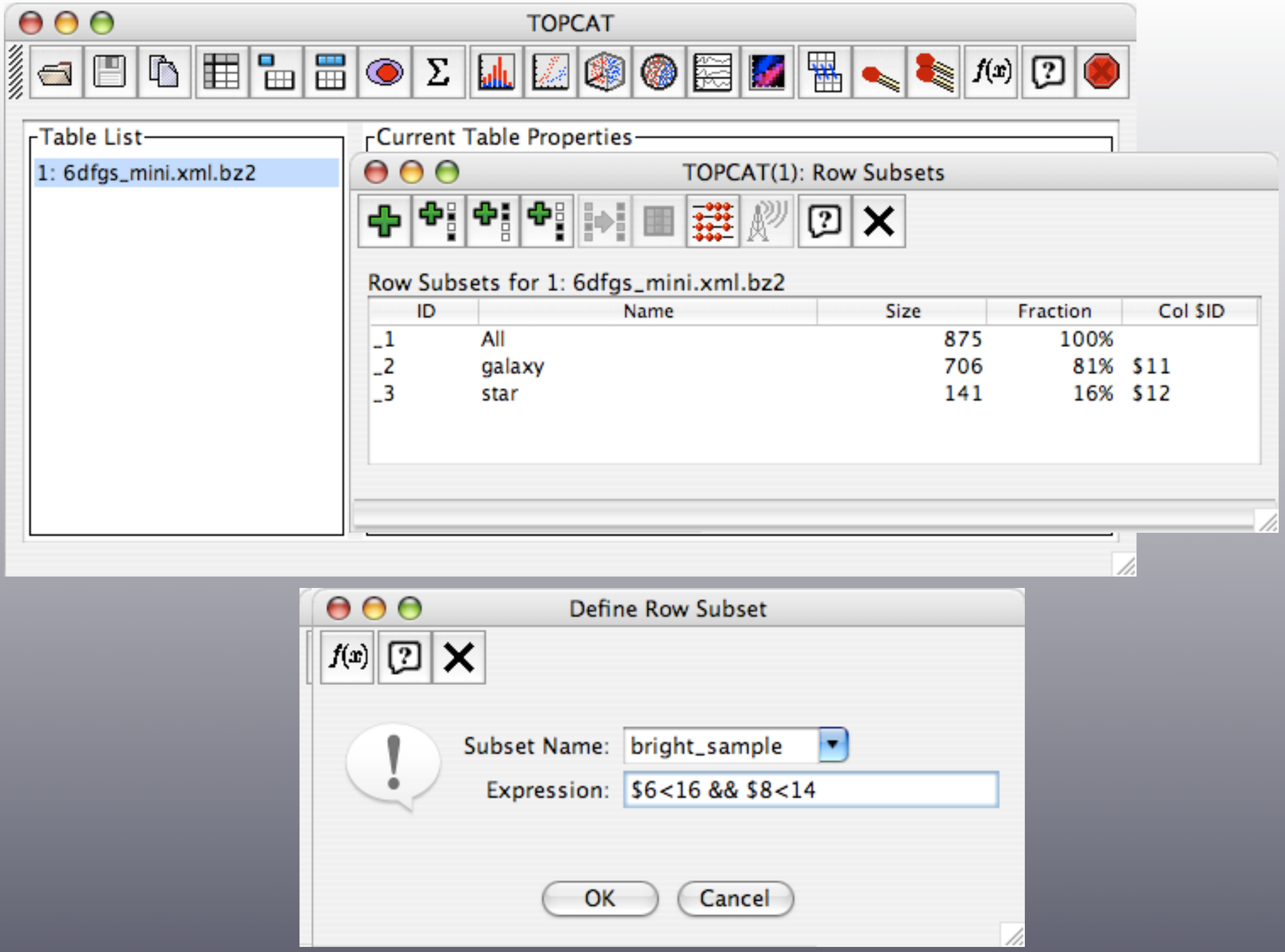

Scatter Plot
RMAG / mag
BMAG / mag
20
18
16
14
12
10
8
8
10
12
14
16
18
20
22
Txt
Main
Data
Table:
1: 6dfgs_mini.xml.bz2
X Axis:
BMAG
Log
Y Axis:
RMAG
Log
Row Subsets
All
galaxy
star
Potential: 875 Included: 875 Visible: 849
Position:
OPCAT.app/Contents/Resc

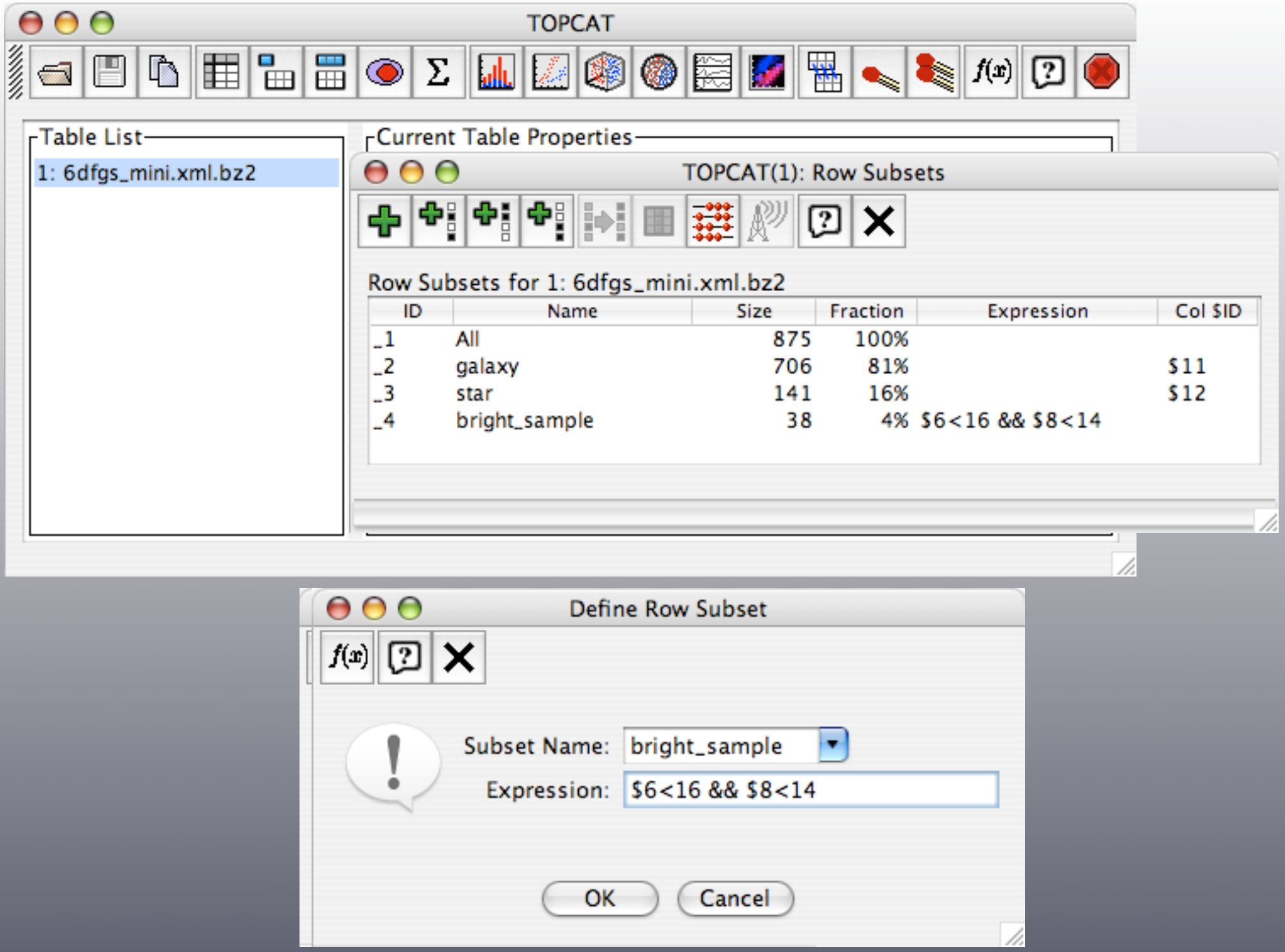

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

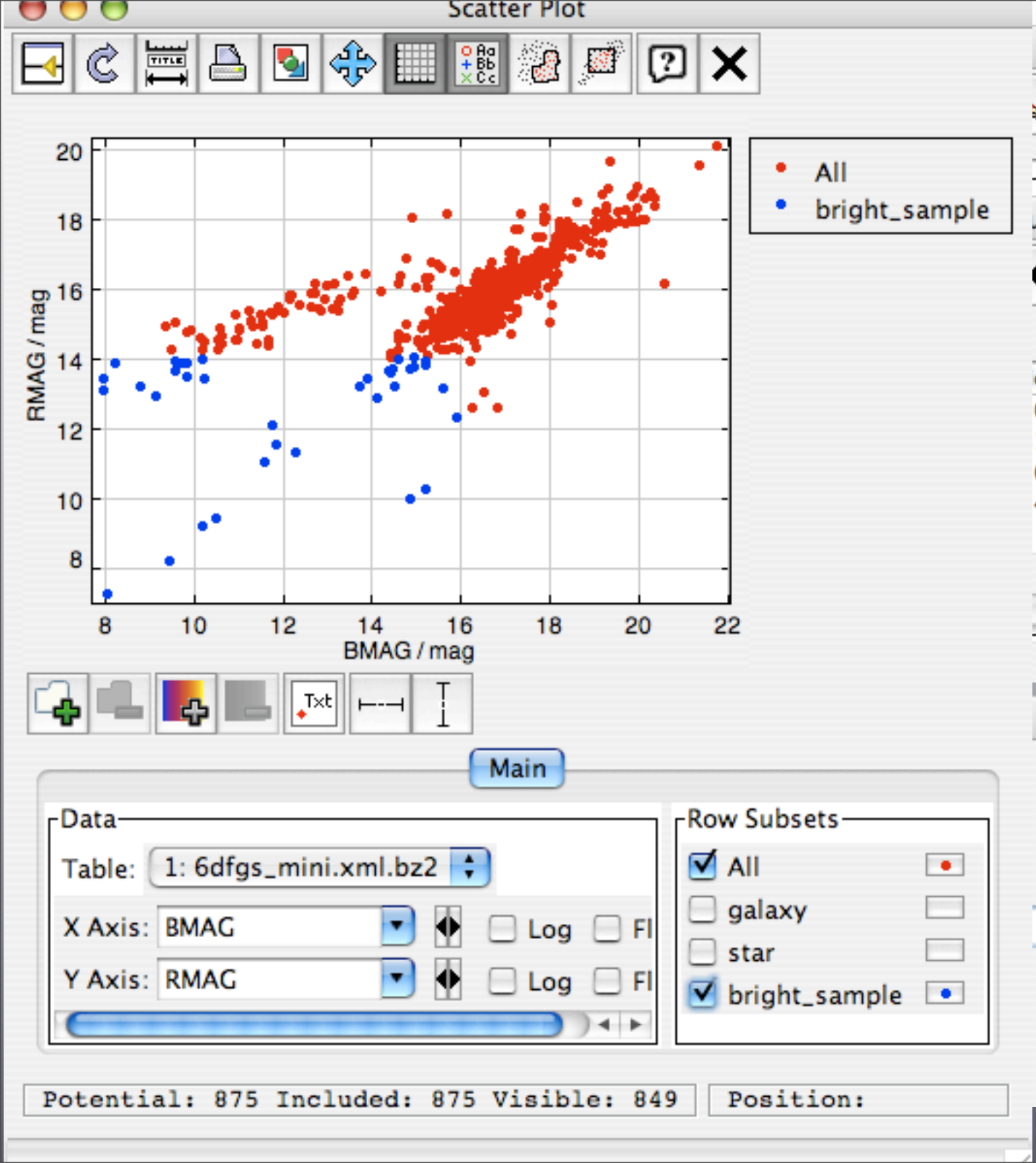

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
TOPCAT(1): Row Subsets
Row Subsets for 1: 6dfgs_mini.xml.bz2
ID
Name
Size
Fraction
Col $ID
_1
All
875
100%
_2
galaxy
706
81%
$11
_3
star
141
16%
$12

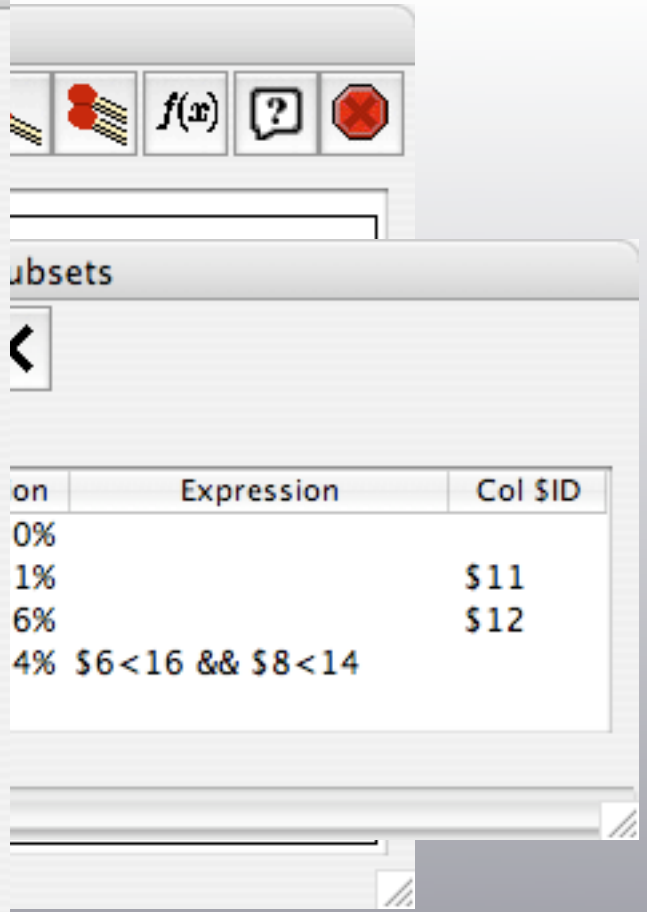

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
TOPCAT(1): Row Subsets
Row Subsets for 1: 6dfgs_mini.xml.bz2
ID
Name
Size
Fraction
Col $ID
_1
All
875
100%
_2
galaxy
706
81%
$11
_3
star
141
16%
$12
Define Row Subset
Subset Name:
Expression:
OK
Cancel

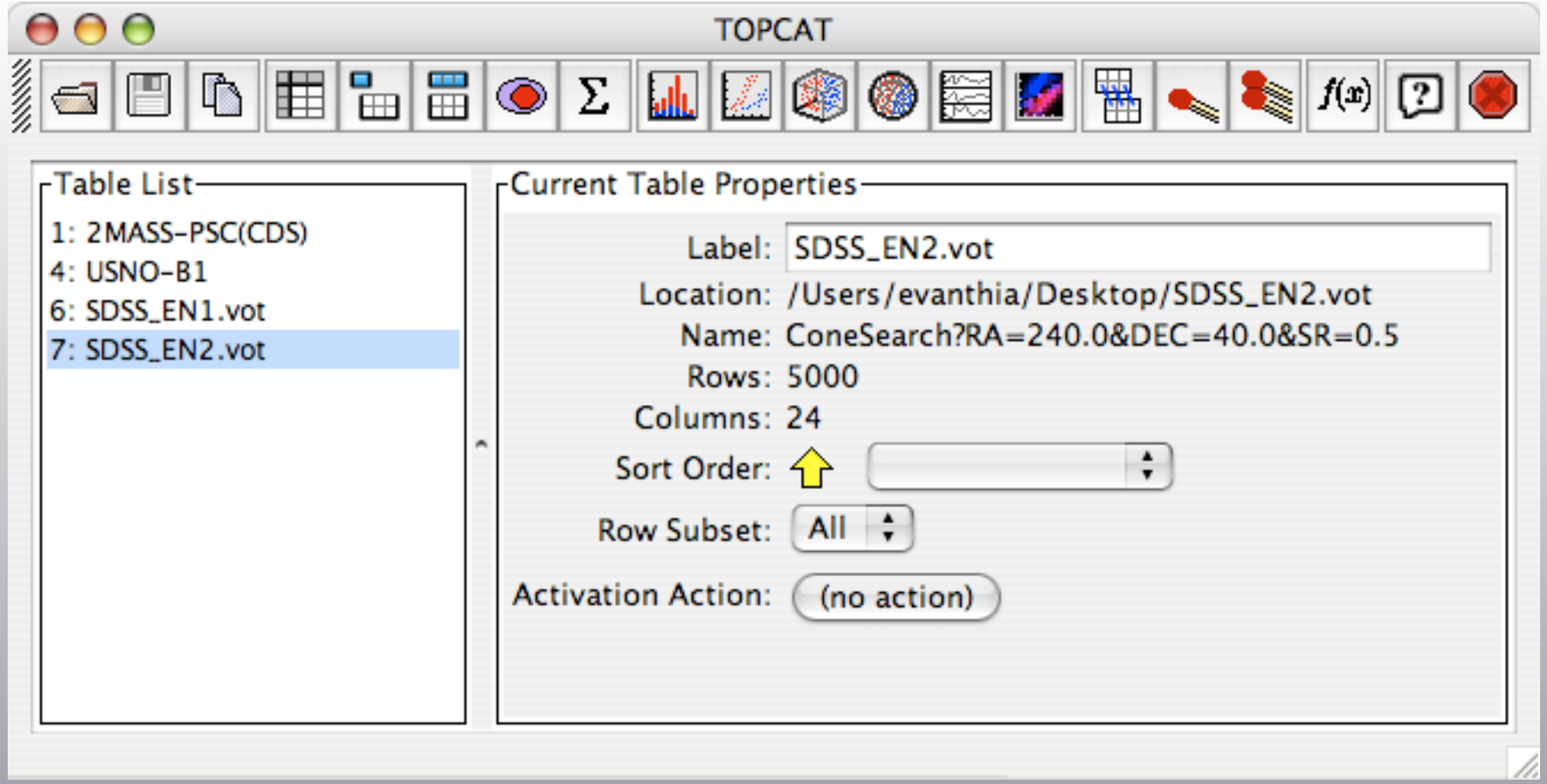

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
TOPCAT(1): Row Subsets
Row Subsets for 1: 6dfgs_mini.xml.bz2
ID
Name
Size
Fraction
Col $ID
_1
All
875
100%
_2
galaxy
706
81%
$11
_3
star
141
16%
$12
Define Row Subset
Subset Name:
bright_sample
Expression:
BMAG<16 && RMAG<14
OK
Cancel

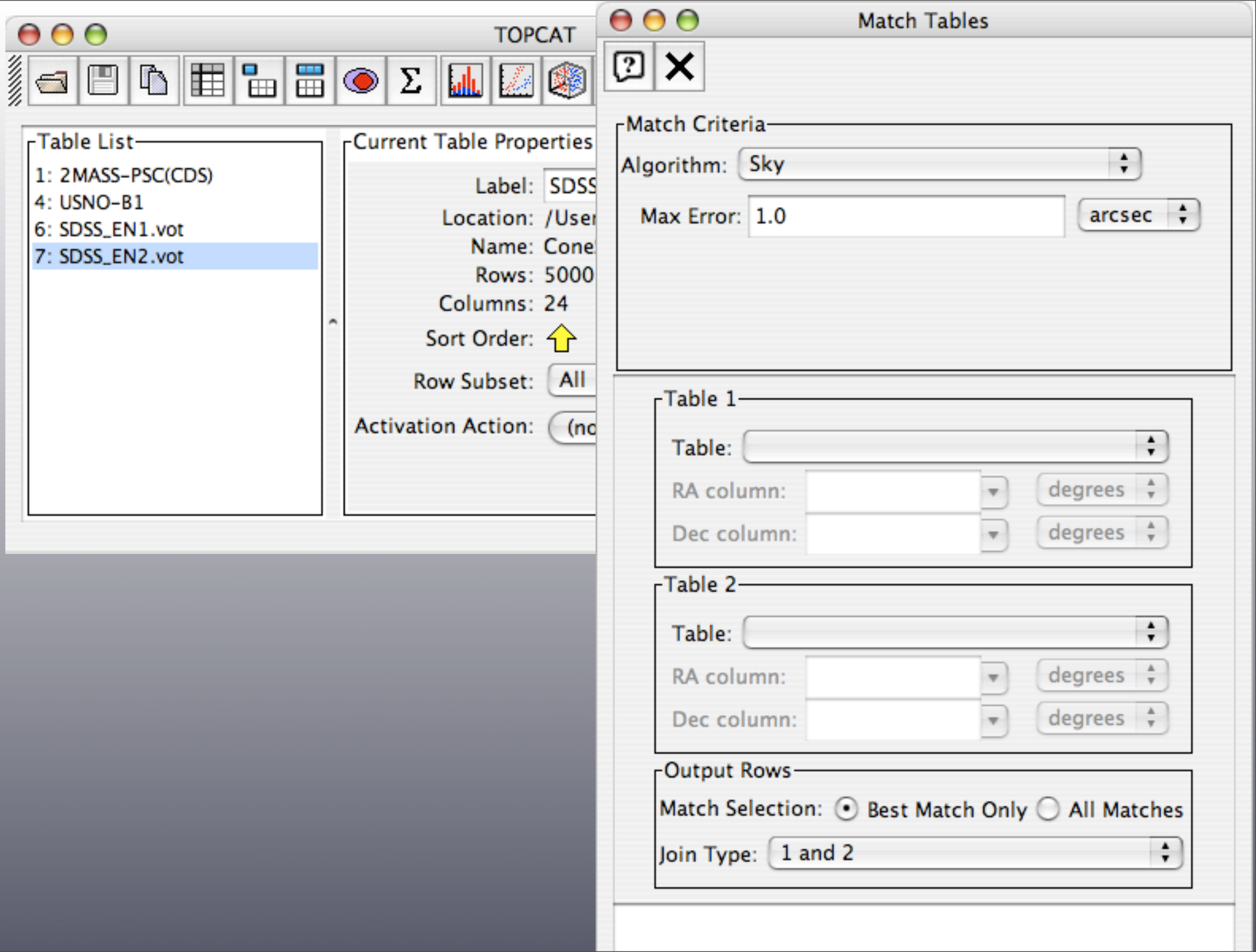

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
TOPCAT(1): Row Subsets
Row Subsets for 1: 6dfgs_mini.xml.bz2
ID
Name
Size
Fraction
Col $ID
_1
All
875
100%
_2
galaxy
706
81%
$11
_3
star
141
16%
$12
Define Row Subset
Subset Name:
bright_sample
Expression:
$6<16 && $8<14
OK
Cancel

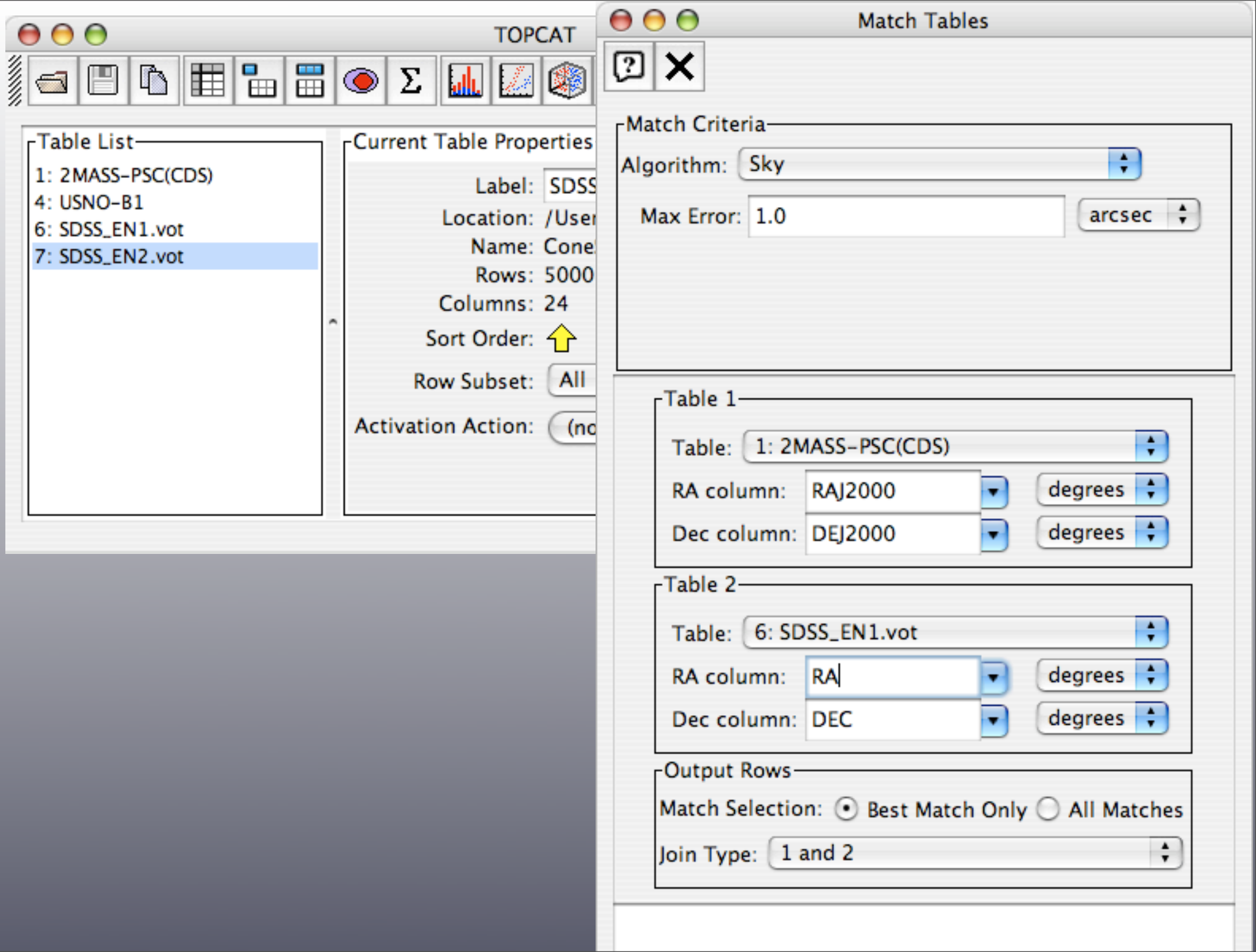

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
TOPCAT(1): Row Subsets
Row Subsets for 1: 6dfgs_mini.xml.bz2
ID Name Size Fraction Expression Col $ID
_1 All 875 100%
_2 galaxy 706 81% $11
_3 star 141 16% $12
_4 bright_sample 38 4% $6<16 && $8<14
Define Row Subset
Subset Name: bright_sample
Expression: $6<16 && $8<14
OK
Cancel

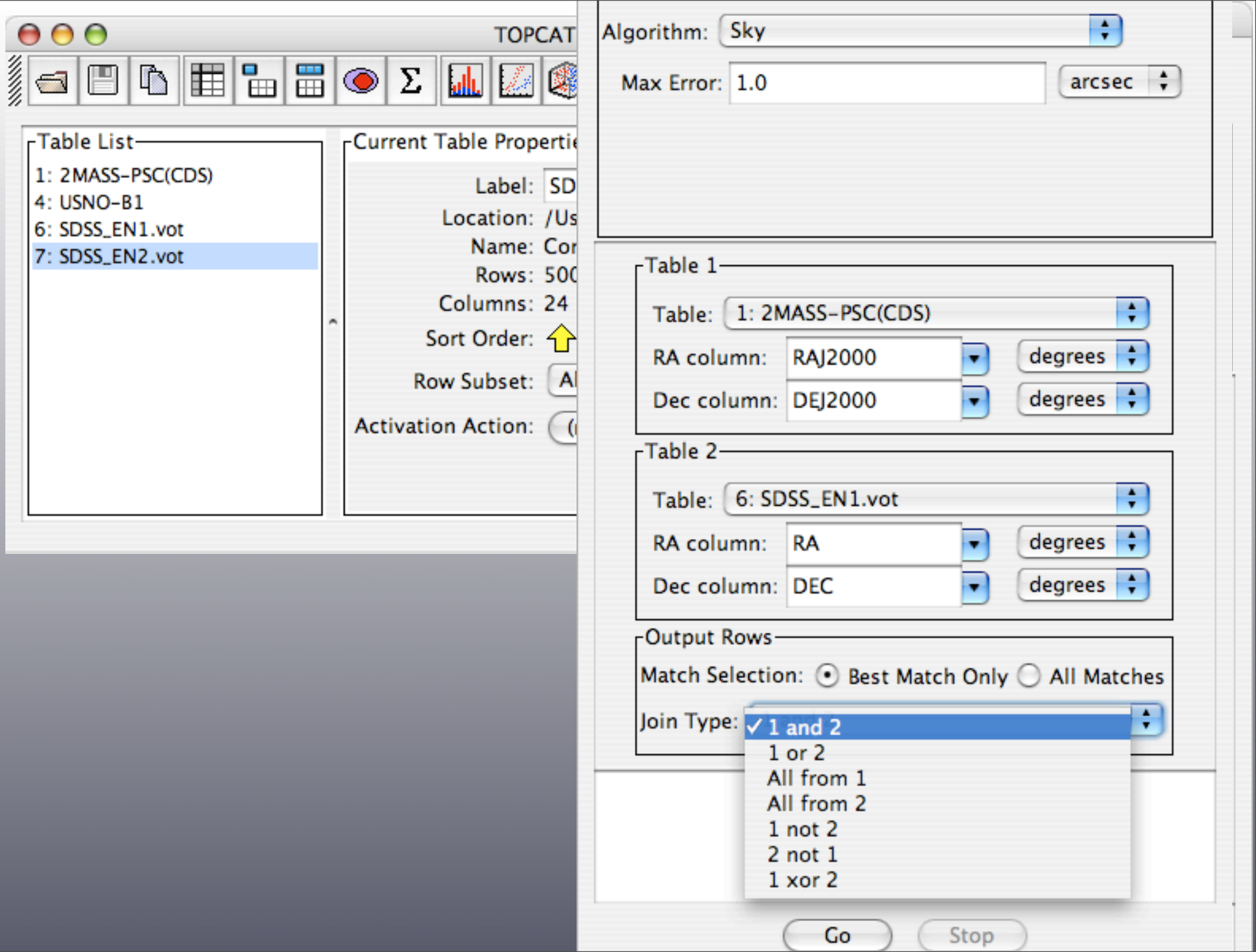

Scatter Plot
All
bright_sample
RMAG / mag
BMAG / mag
20
18
16
14
12
10
8
8
10
12
14
16
18
20
22
Txt
Main
Data
Table:
1: 6dfgs_mini.xml.bz2
X Axis:
BMAG
Log
Fl
Y Axis:
RMAG
Log
Fl
Row Subsets
All
galaxy
star
bright_sample
Potential: 875 Included: 875 Visible: 849
Position:

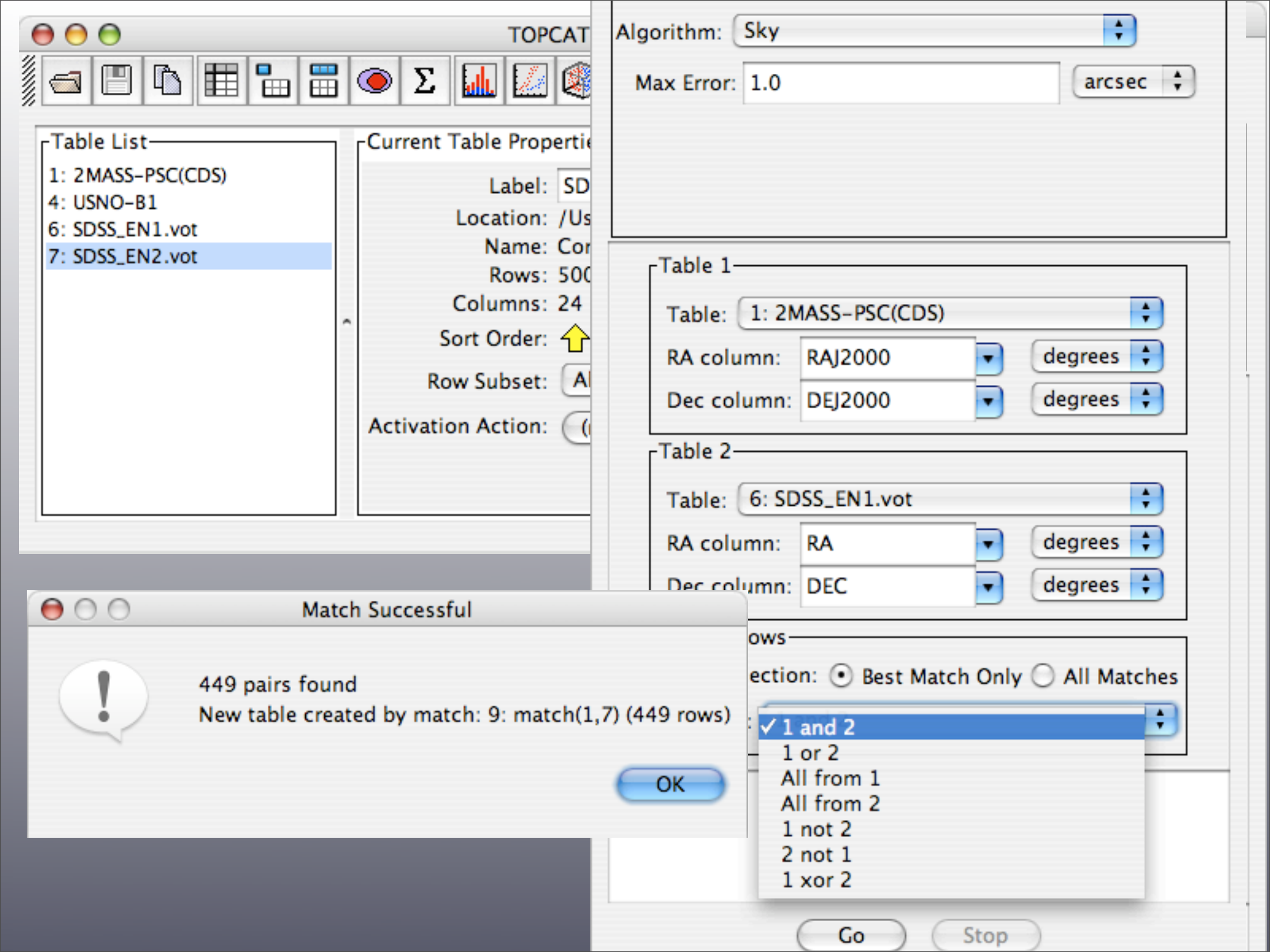

ubsets
on
Expression
Col $ID
0%
1%
$11
6%
$12
4%
$6<16 && $8<14

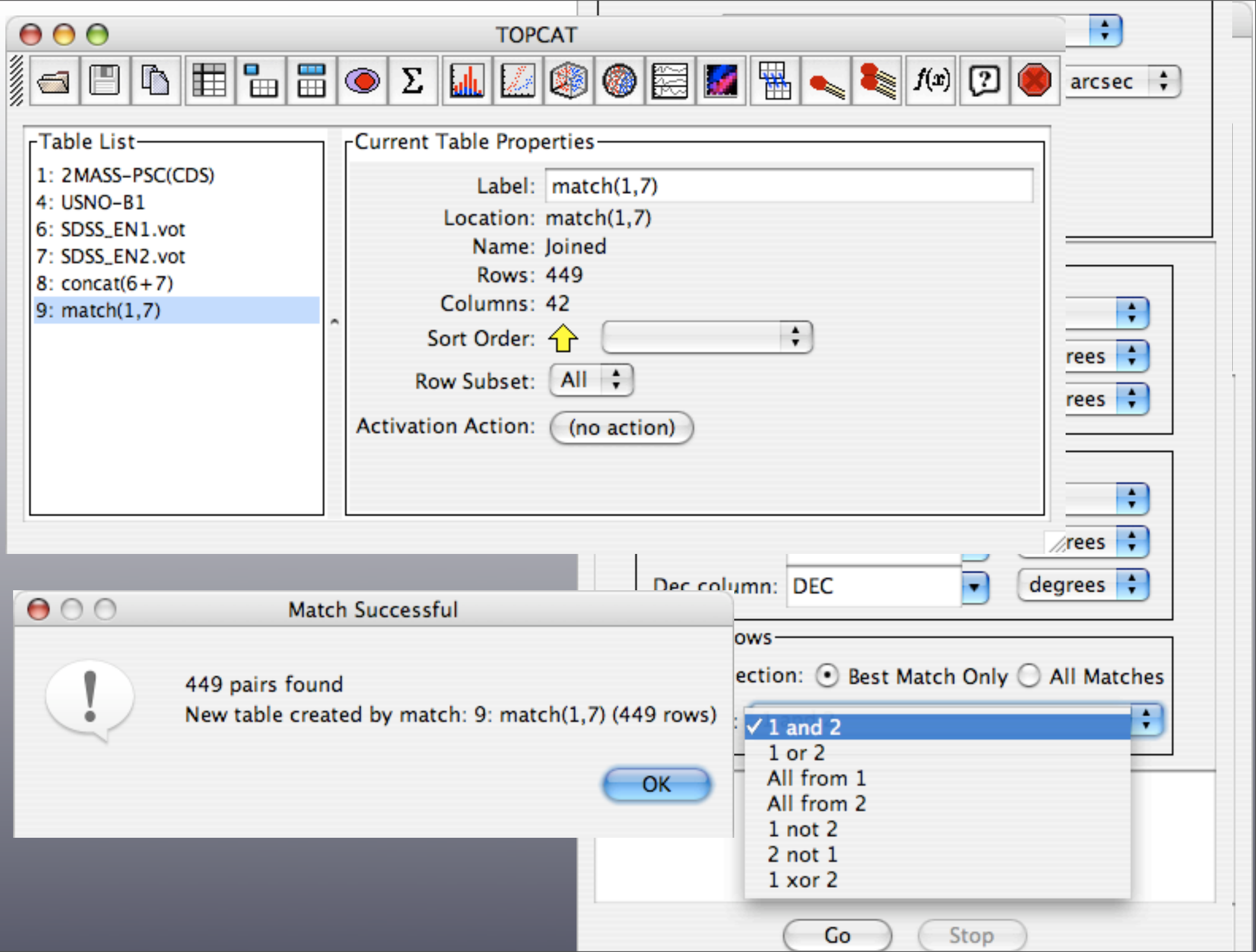

TOPCAT
Table List
1: 2MASS-PSC(CDS)
4: USNO-B1
6: SDSS_EN1.vot
7: SDSS_EN2.vot
Current Table Properties
Label: SDSS_EN2.vot
Location: /Users/evanthia/Desktop/SDSS_EN2.vot
Name: ConeSearch?RA=240.0&DEC=40.0&SR=0.5
Rows: 5000
Columns: 24
Sort Order:
Row Subset: All
Activation Action: (no action)

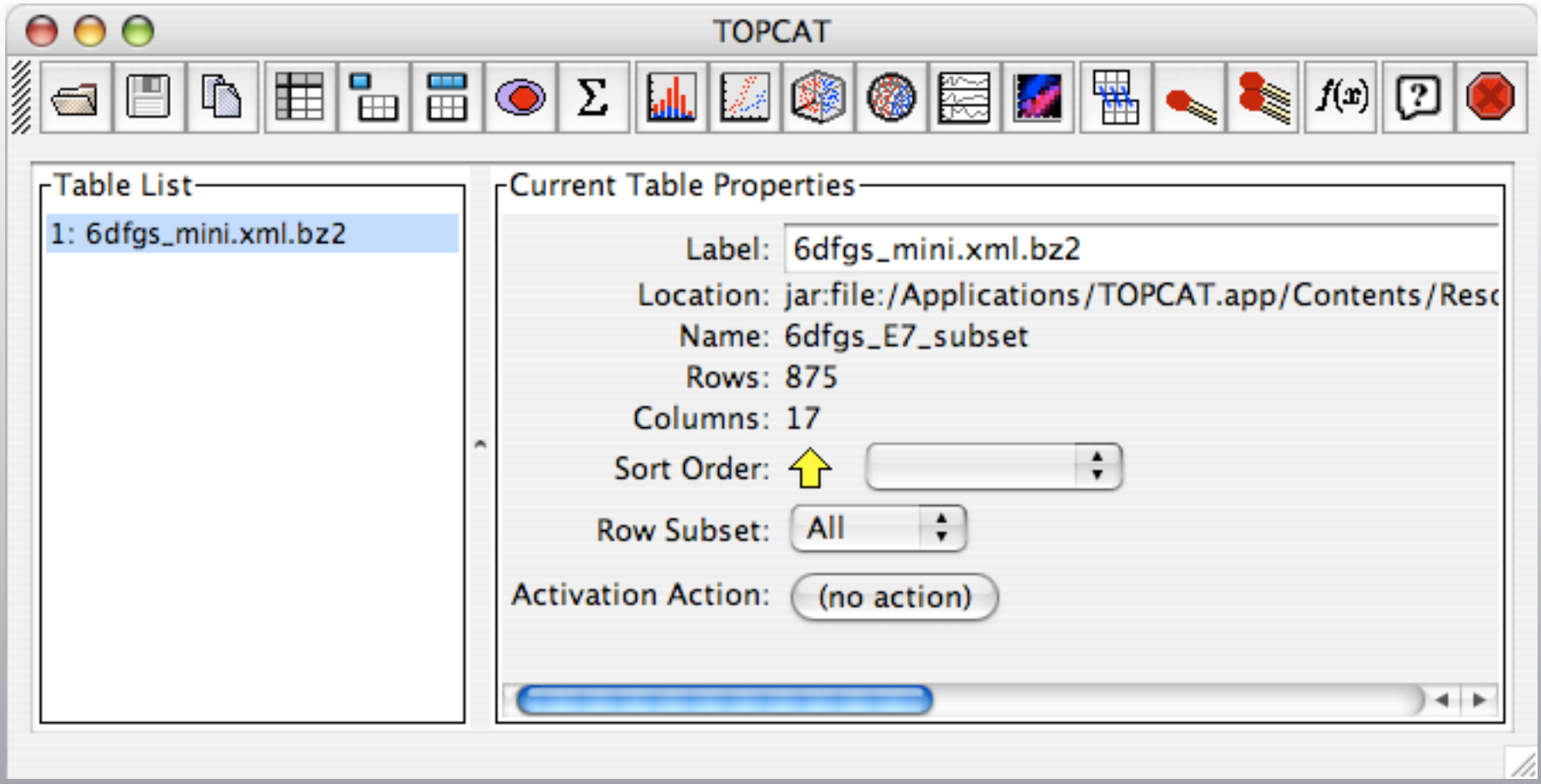

TOPCAT
Table List
1: 2MASS-PSC(CDS)
4: USNO-B1
6: SDSS_EN1.vot
7: SDSS_EN2.vot
Current Table Properties
Label: SDSS
Location: /User
Name: Cone
Rows: 5000
Columns: 24
Sort Order:
Row Subset: All
Activation Action: (nc
Match Tables
Match Criteria
Algorithm: Sky
Max Error: 1.0
arcsec
Table 1
Table:
RA column:
degrees
Dec column:
degrees
Table 2
Table:
RA column:
degrees
Dec column:
degrees
Output Rows
Match Selection: Best Match Only All Matches
Join Type: 1 and 2

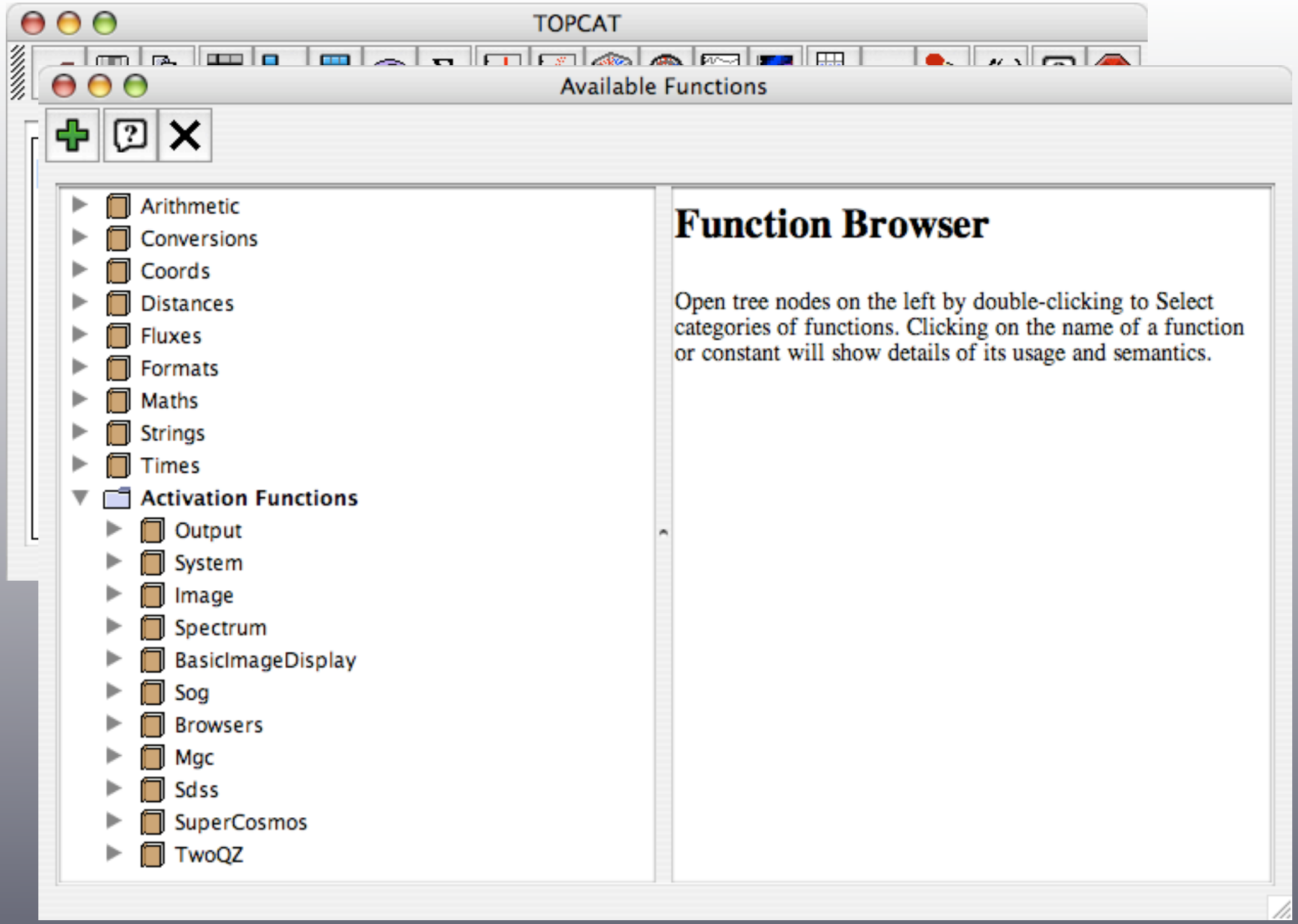

TOPCAT
Table List
1: 2MASS-PSC(CDS)
4: USNO-B1
6: SDSS_EN1.vot
7: SDSS_EN2.vot
Current Table Properties
Label: SDSS
Location: /User
Name: Cone
Rows: 5000
Columns: 24
Sort Order:
Row Subset: All
Activation Action: (no
Match Tables
Match Criteria
Algorithm: Sky
Max Error: 1.0
arcsec
Table 1
Table: 1: 2MASS-PSC(CDS)
RA column: RAJ2000
degrees
Dec column: DEJ2000
degrees
Table 2
Table: 6: SDSS_EN1.vot
RA column: RA
degrees
Dec column: DEC
degrees
Output Rows
Match Selection: Best Match Only All Matches
Join Type: 1 and 2

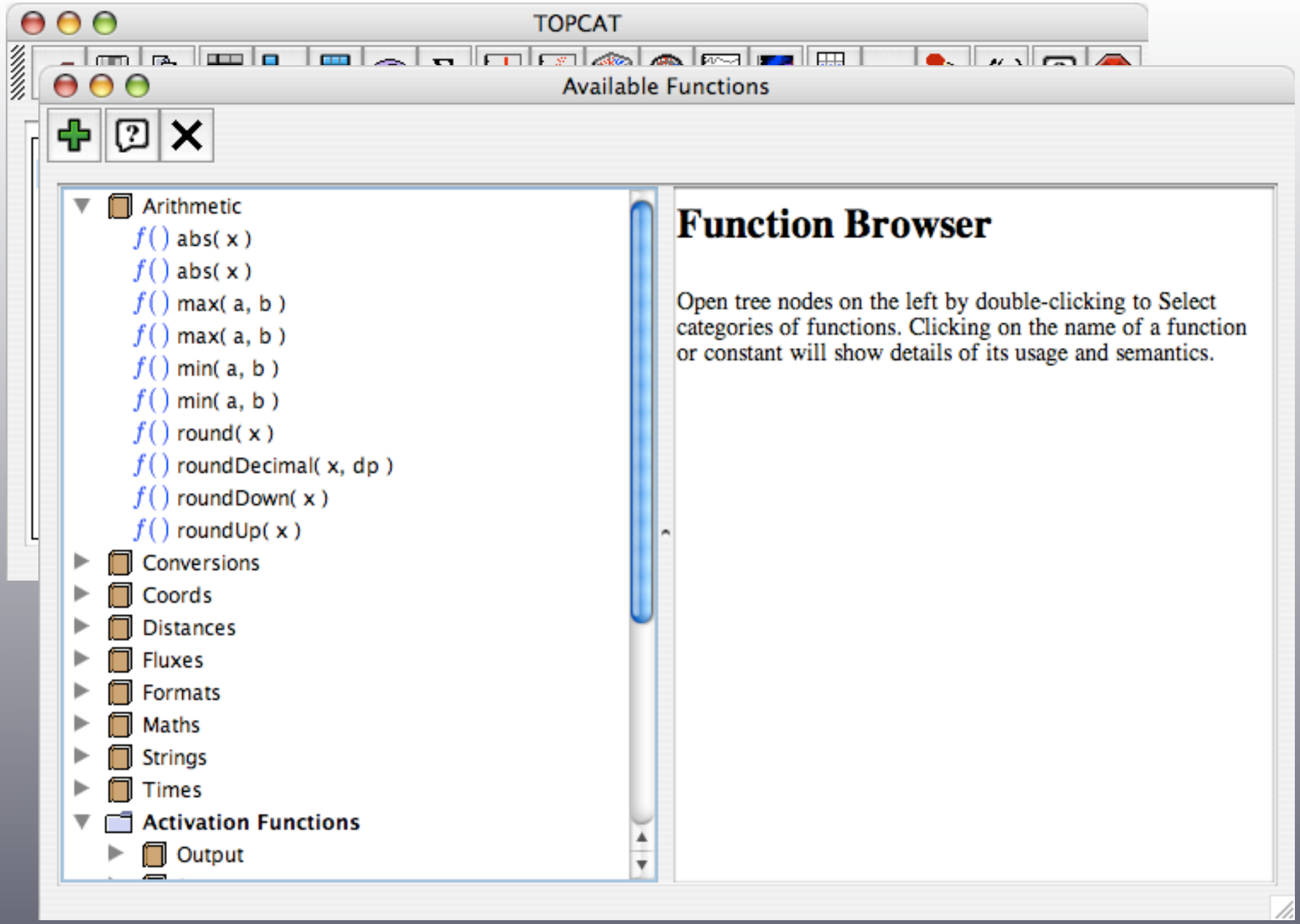

TOPCAT
Table List
1: 2MASS-PSC(CDS)
4: USNO-B1
6: SDSS_EN1.vot
7: SDSS_EN2.vot
Current Table Properti
Label: SD
Location: /Us
Name: Cor
Rows: 500
Columns: 24
Sort Order:
Row Subset: Al
Activation Action:
Algorithm: Sky
Max Error: 1.0
arcsec
Table 1
Table: 1: 2MASS-PSC(CDS)
RA column: RAJ2000
degrees
Dec column: DEJ2000
degrees
Table 2
Table: 6: SDSS_EN1.vot
RA column: RA
degrees
Dec column: DEC
degrees
Output Rows
Match Selection: Best Match Only All Matches
Join Type: 1 and 2
1 or 2
All from 1
All from 2
1 not 2
2 not 1
1 xor 2
Go
Stop

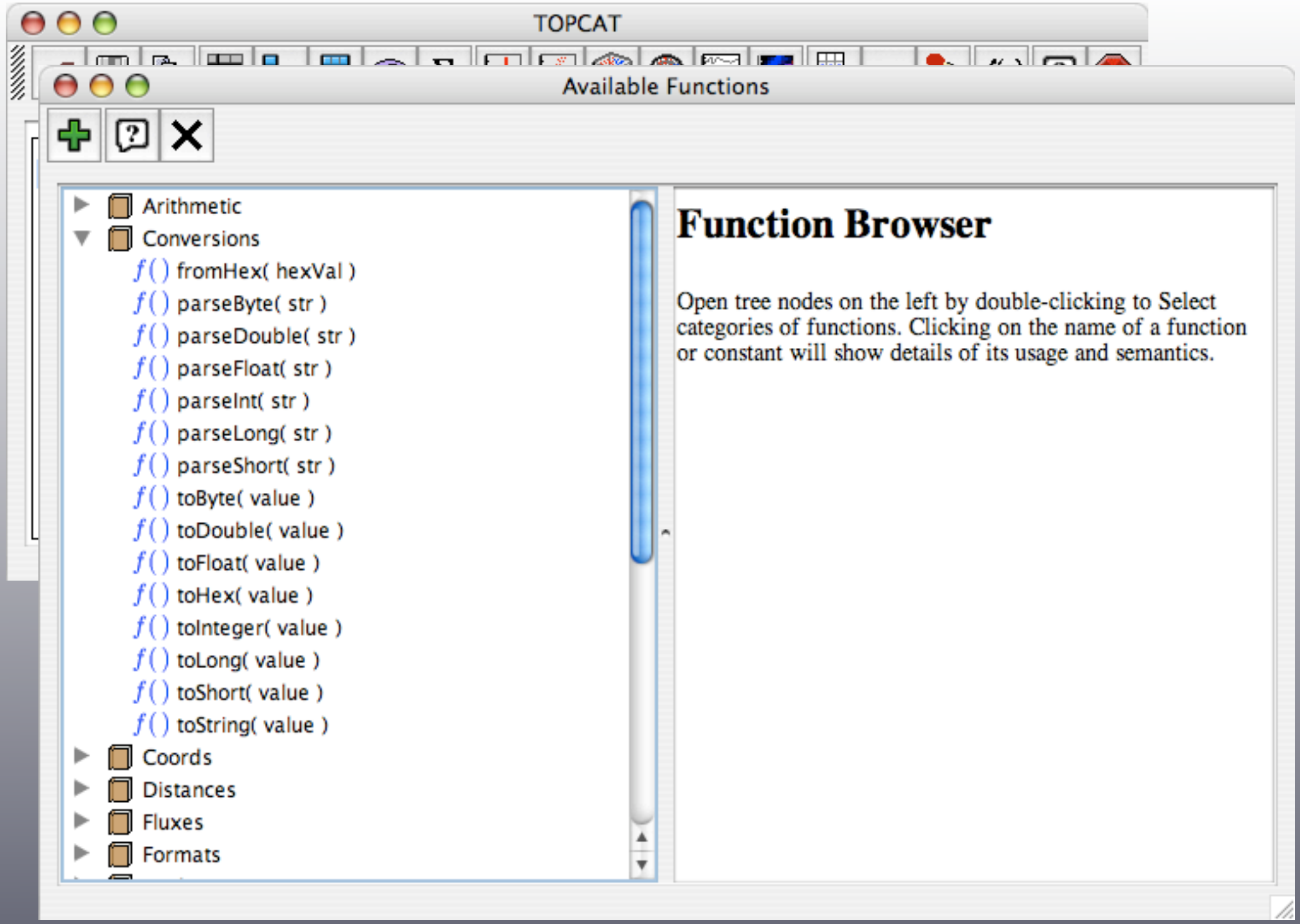

TOPCAT
Table List
1: 2MASS-PSC(CDS)
4: USNO-B1
6: SDSS_EN1.vot
7: SDSS_EN2.vot
Current Table Properti
Label: SD
Location: /Us
Name: Cor
Rows: 500
Columns: 24
Sort Order:
Row Subset: Al
Activation Action:
Algorithm: Sky
Max Error: 1.0
arcsec
Table 1
Table: 1: 2MASS-PSC(CDS)
RA column: RAJ2000
degrees
Dec column: DEJ2000
degrees
Table 2
Table: 6: SDSS_EN1.vot
RA column: RA
degrees
Dec column: DEC
degrees
ows
ection: Best Match Only All Matches
1 and 2
1 or 2
All from 1
All from 2
1 not 2
2 not 1
1 xor 2
Go
Stop
Match Successful
449 pairs found
New table created by match: 9: match(1,7) (449 rows)
OK

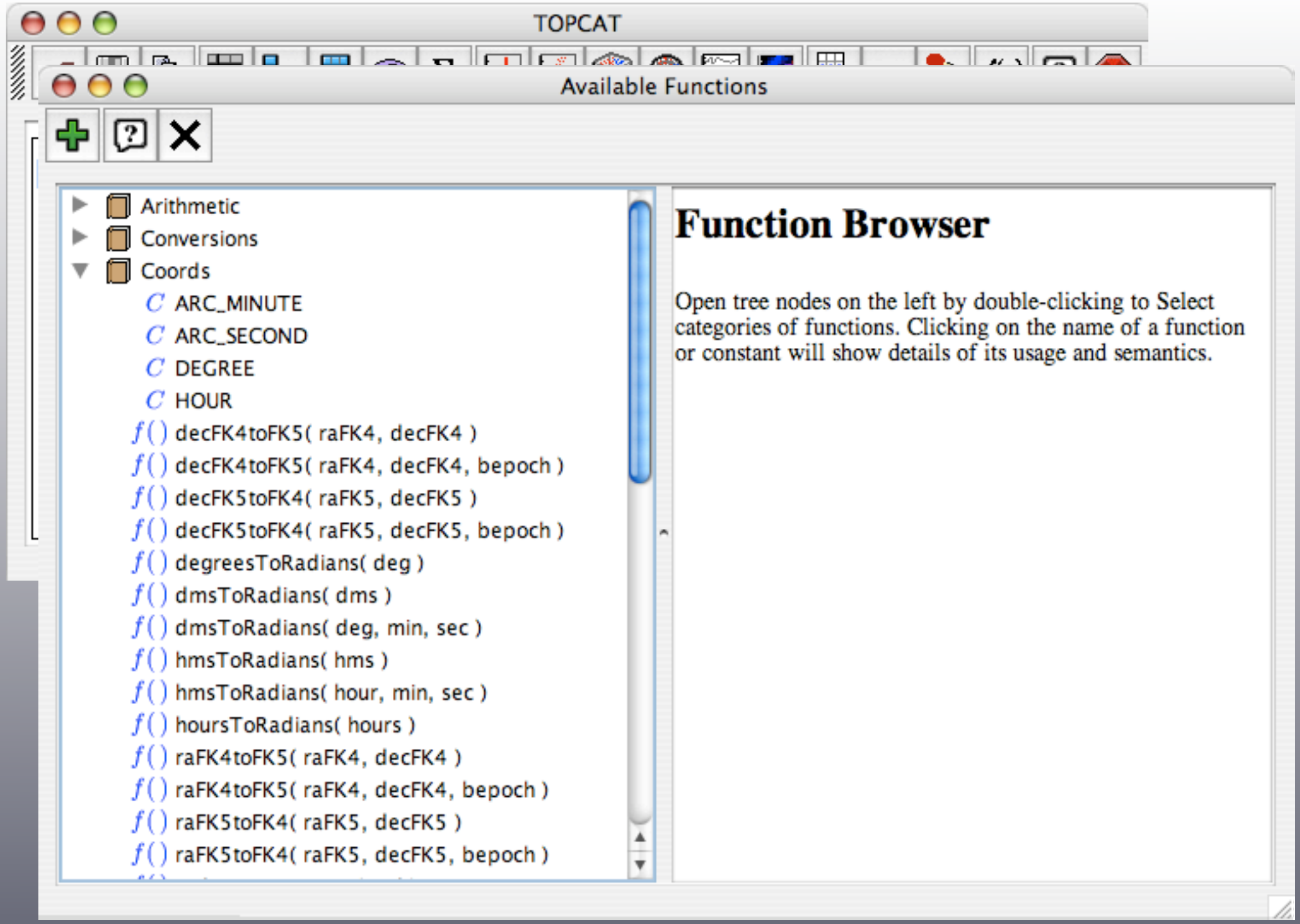

TOPCAT
Table List
1: 2MASS-PSC(CDS)
4: USNO-B1
6: SDSS_EN1.vot
7: SDSS_EN2.vot
8: concat(6+7)
9: match(1,7)
Current Table Properties
Label: match(1,7)
Location: match(1,7)
Name: Joined
Rows: 449
Columns: 42
Sort Order:
Row Subset: All
Activation Action: (no action)
arcsec
rees
rees
rees
Dec column: DEC
degrees
ows
ection: Best Match Only All Matches
1 and 2
1 or 2
All from 1
All from 2
1 not 2
2 not 1
1 xor 2
Go
Stop
Match Successful
449 pairs found
New table created by match: 9: match(1,7) (449 rows)
OK

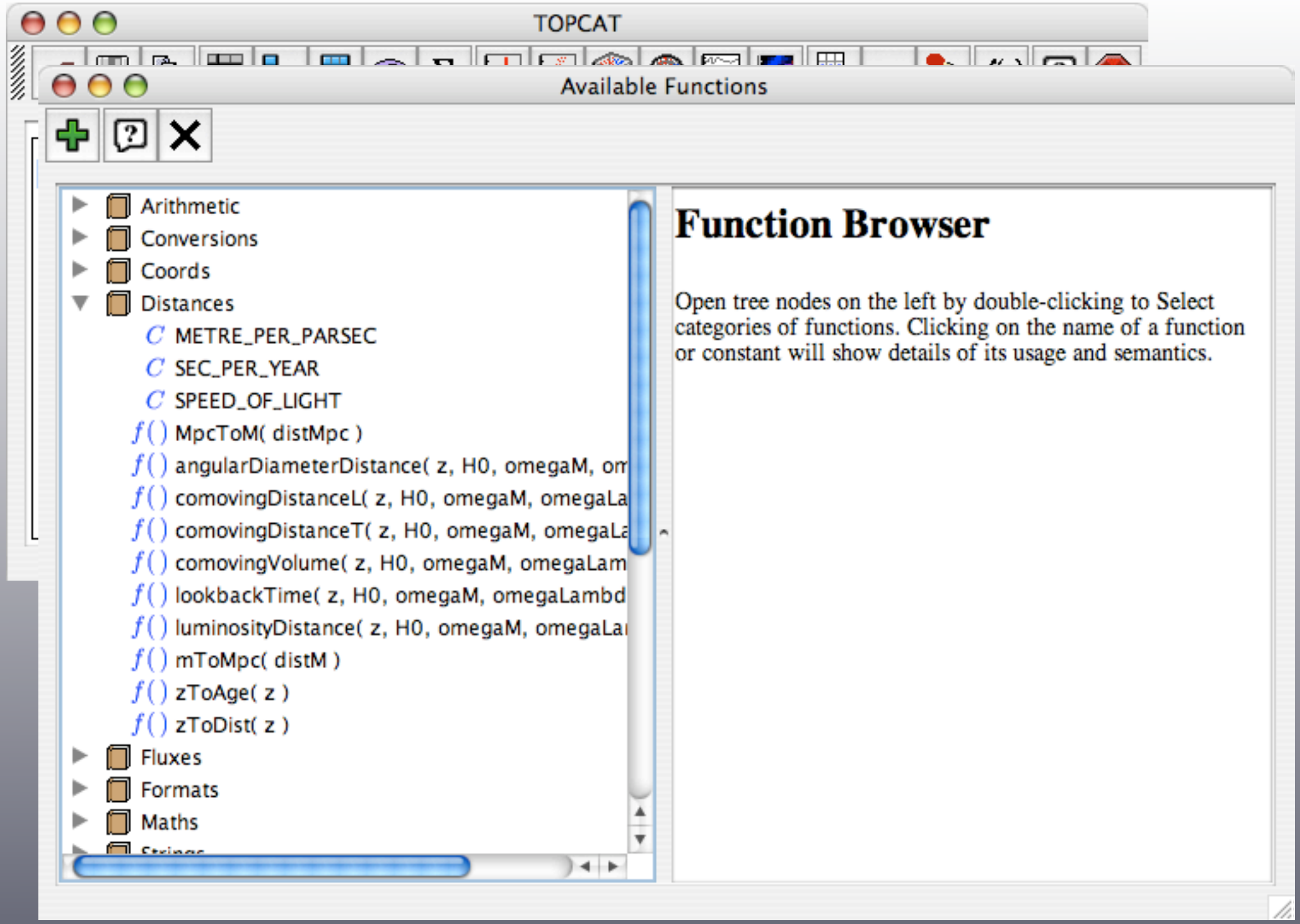

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

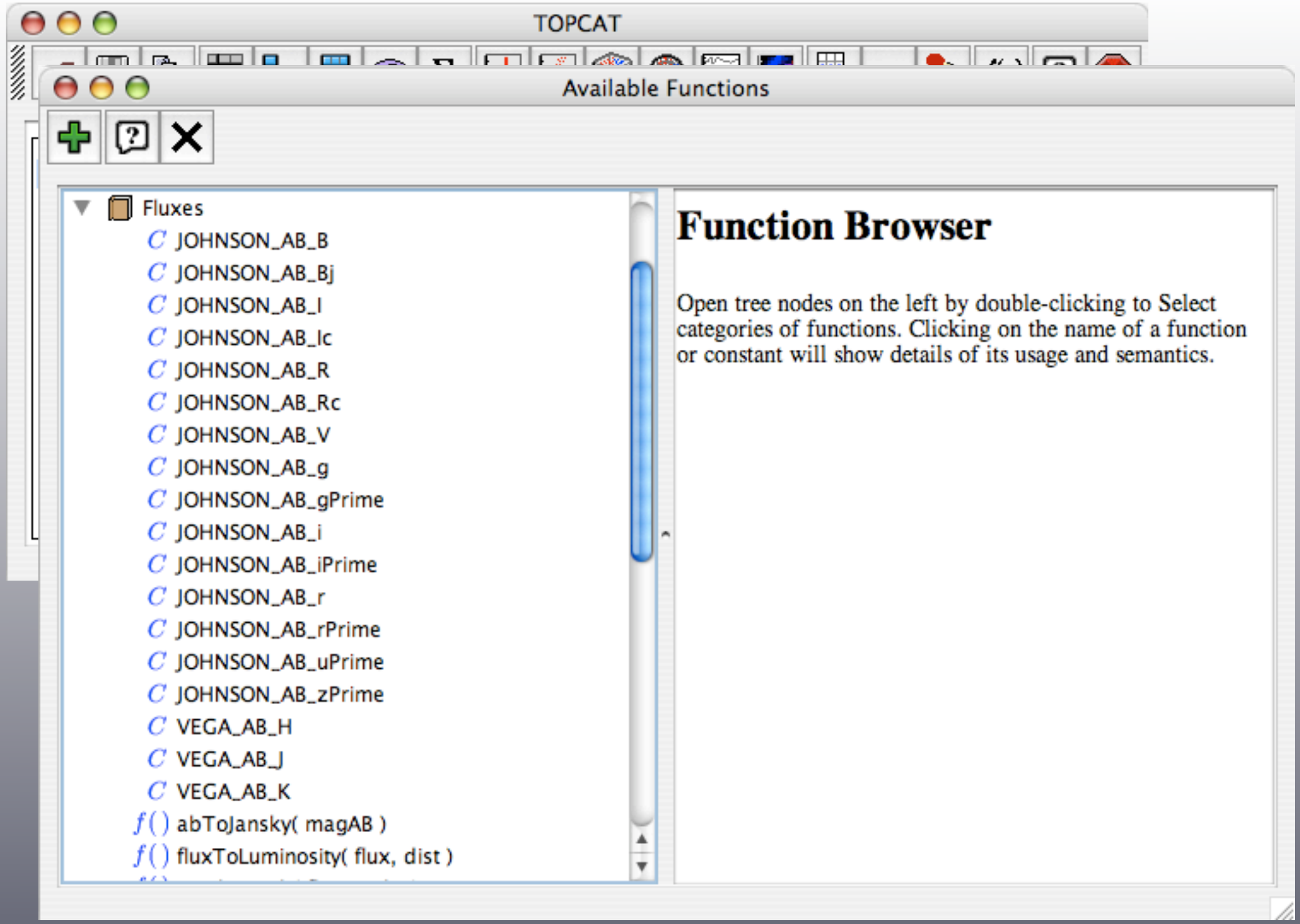

TOPCAT
Available Functions
Arithmetic
Conversions
Coords
Distances
Fluxes
Formats
Maths
Strings
Times
Activation Functions
Output
System
Image
Spectrum
BasicImageDisplay
Sog
Browsers
Mgc
Sdss
SuperCosmos
TwoQZ
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

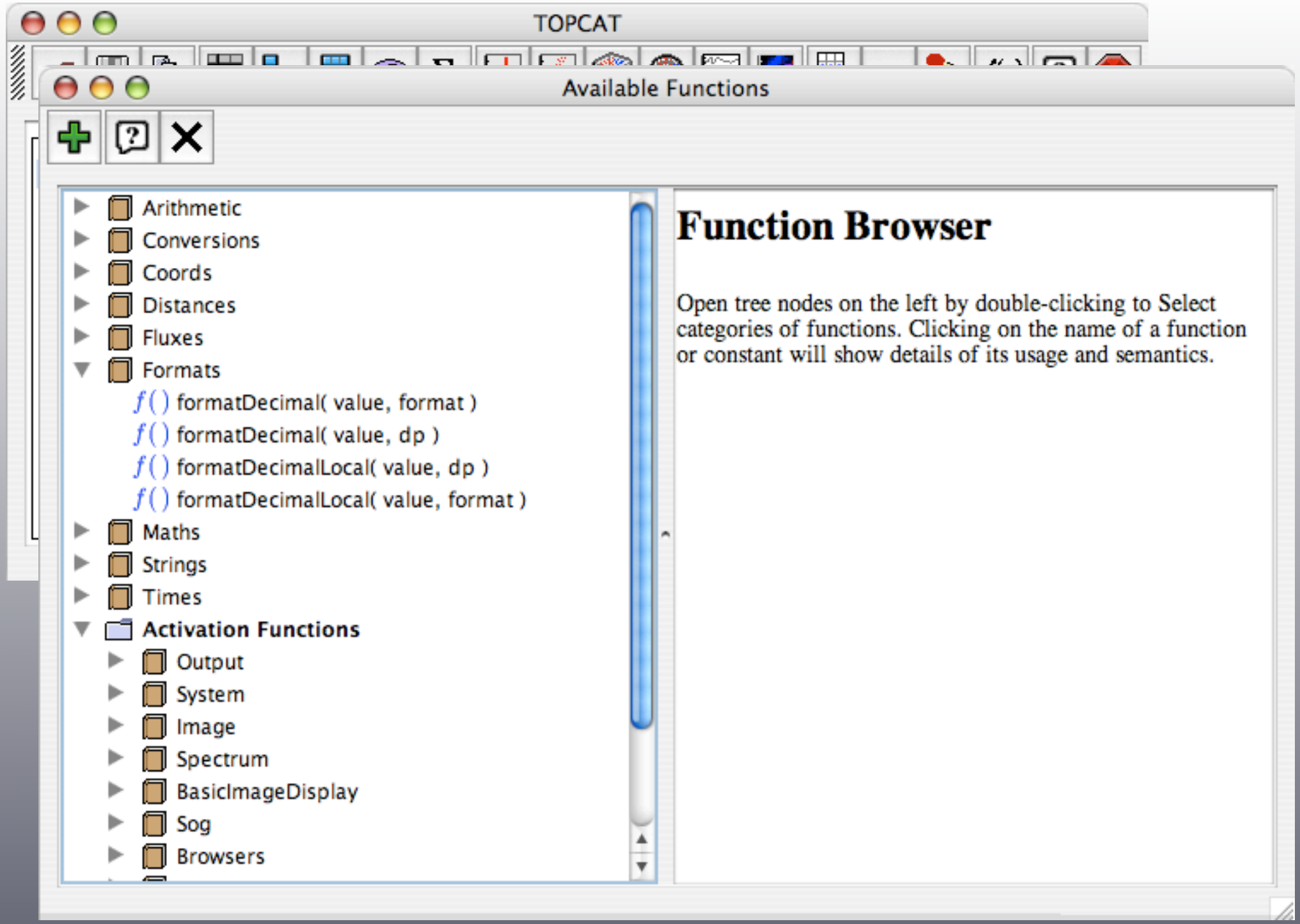

TOPCAT
Available Functions
Arithmetic
f( ) abs(x)
f( ) abs(x)
f( ) max(a, b)
f( ) max(a, b)
f( ) min(a, b)
f( ) min(a, b)
f( ) round(x)
f( ) roundDecimal(x, dp)
f( ) roundDown(x)
f( ) roundUp(x)
Conversions
Coords
Distances
Fluxes
Formats
Maths
Strings
Times
Activation Functions
Output
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

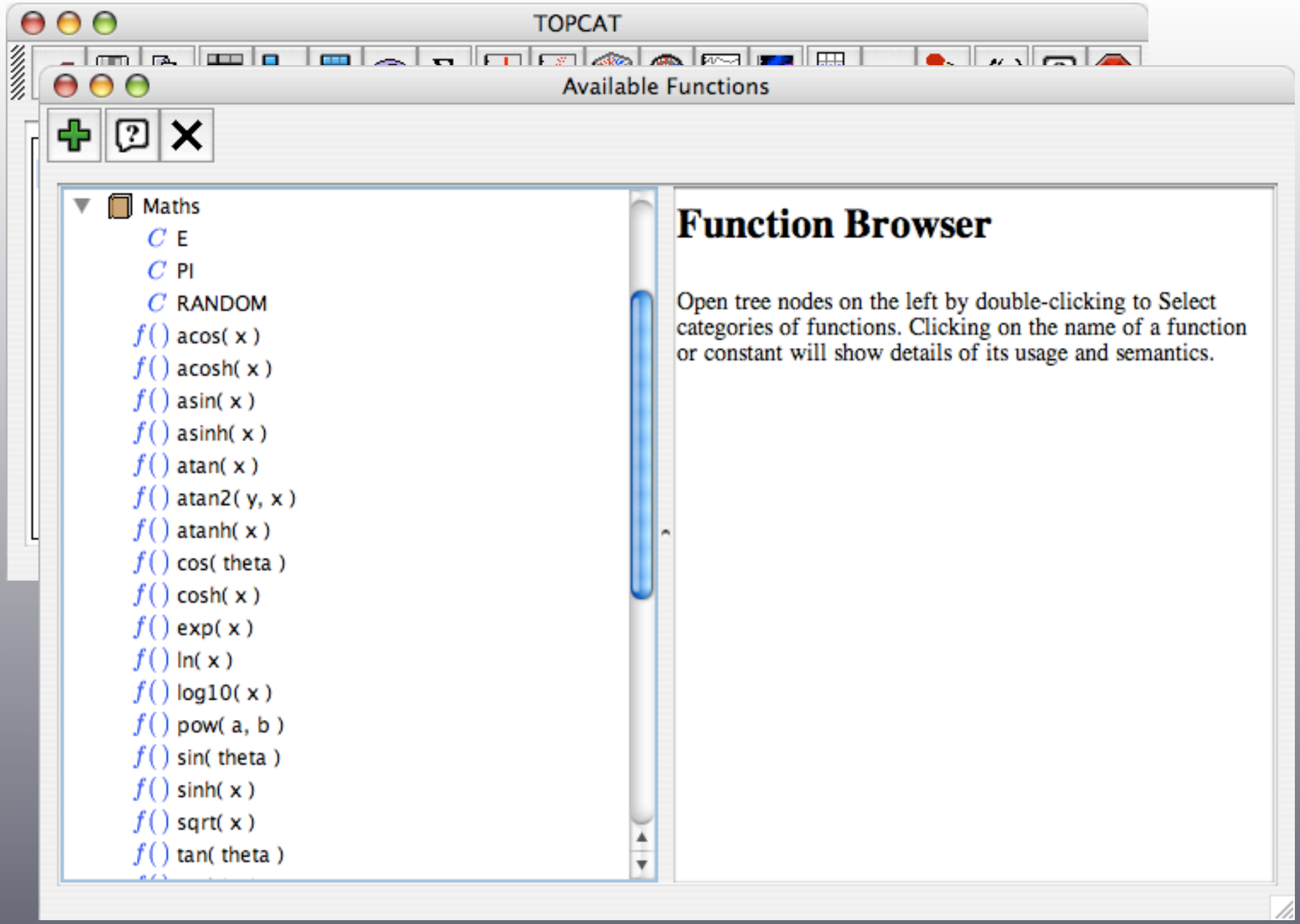

TOPCAT
Available Functions
Arithmetic
Conversions
f( ) fromHex(hexVal)
f( ) parseByte(str)
f( ) parseDouble(str)
f( ) parseFloat(str)
f( ) parseInt(str)
f( ) parseLong(str)
f( ) parseShort(str)
f( ) toByte(value)
f( ) toDouble(value)
f( ) toFloat(value)
f( ) toHex(value)
f( ) toInteger(value)
f( ) toLong(value)
f( ) toShort(value)
f( ) toString(value)
Coords
Distances
Fluxes
Formats
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

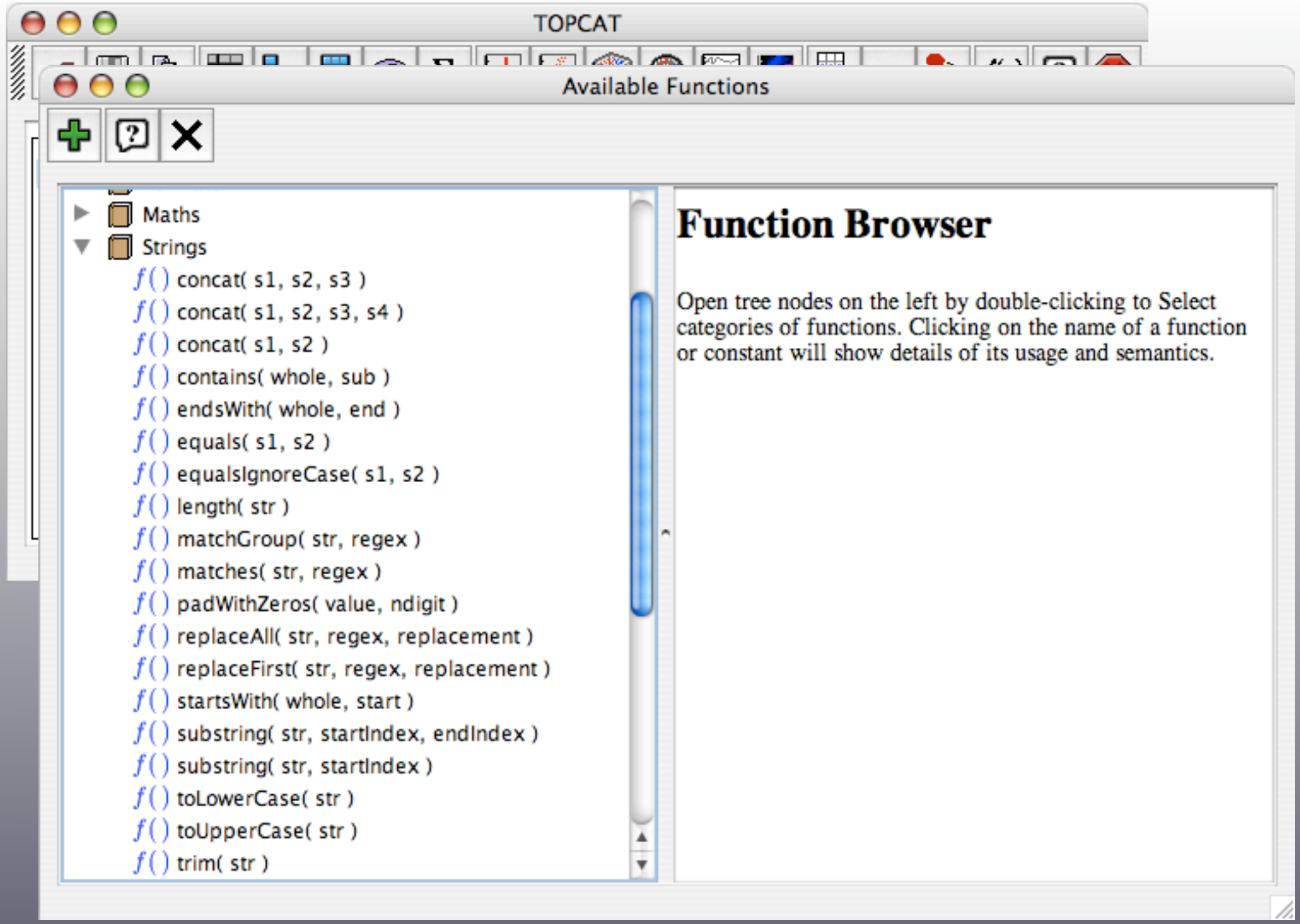

TOPCAT
Available Functions
Arithmetic
Conversions
Coords
ARC_MINUTE
ARC_SECOND
DEGREE
HOUR
decFK4toFK5(raFK4, decFK4)
decFK4toFK5(raFK4, decFK4, bepoch)
decFK5toFK4(raFK5, decFK5)
decFK5toFK4(raFK5, decFK5, bepoch)
degreesToRadians(deg)
dmsToRadians(dms)
dmsToRadians(deg, min, sec)
hmsToRadians(hms)
hmsToRadians(hour, min, sec)
hoursToRadians(hours)
raFK4toFK5(raFK4, decFK4)
raFK4toFK5(raFK4, decFK4, bepoch)
raFK5toFK4(raFK5, decFK5)
raFK5toFK4(raFK5, decFK5, bepoch)
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

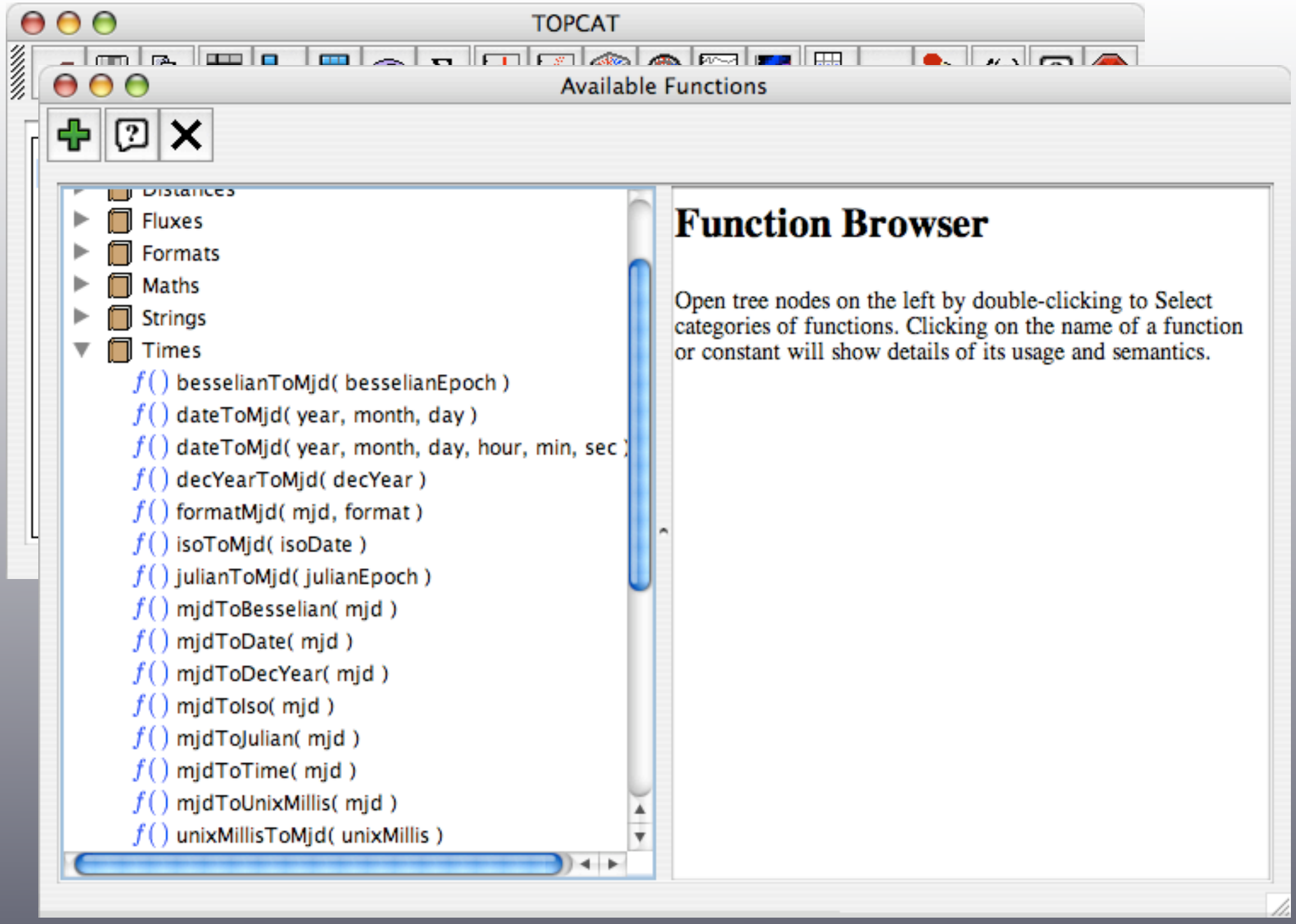

TOPCAT
Available Functions
Arithmetic
Conversions
Coords
Distances
METRE_PER_PARSEC
SEC_PER_YEAR
SPEED_OF_LIGHT
MpcToM(distMpc)
angularDiameterDistance(z, H0, omegaM, om
comovingDistanceL(z, H0, omegaM, omegaLa
comovingDistanceT(z, H0, omegaM, omegaLa
comovingVolume(z, H0, omegaM, omegaLam
lookbackTime(z, H0, omegaM, omegaLambd
luminosityDistance(z, H0, omegaM, omegaLa
mToMpc(distM)
zToAge(z)
zToDist(z)
Fluxes
Formats
Maths
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

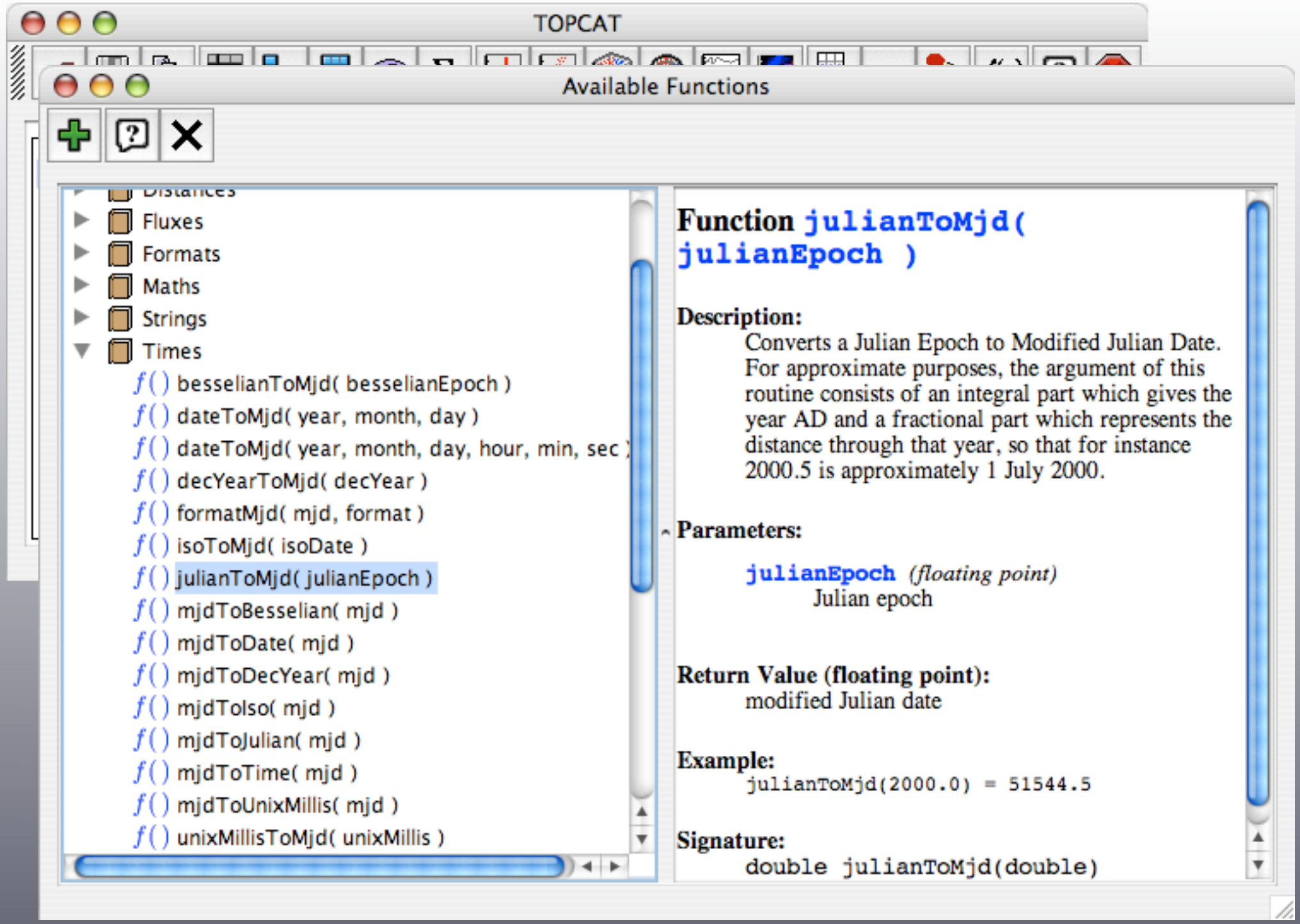

TOPCAT
Available Functions
Fluxes
JOHNSON_AB_B
JOHNSON_AB_Bj
JOHNSON_AB_I
JOHNSON_AB_Ic
JOHNSON_AB_R
JOHNSON_AB_Rc
JOHNSON_AB_V
JOHNSON_AB_g
JOHNSON_AB_gPrime
JOHNSON_AB_i
JOHNSON_AB_iPrime
JOHNSON_AB_r
JOHNSON_AB_rPrime
JOHNSON_AB_uPrime
JOHNSON_AB_zPrime
VEGA_AB_H
VEGA_AB_J
VEGA_AB_K
abToJansky(magAB)
fluxToLuminosity(flux, dist)
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

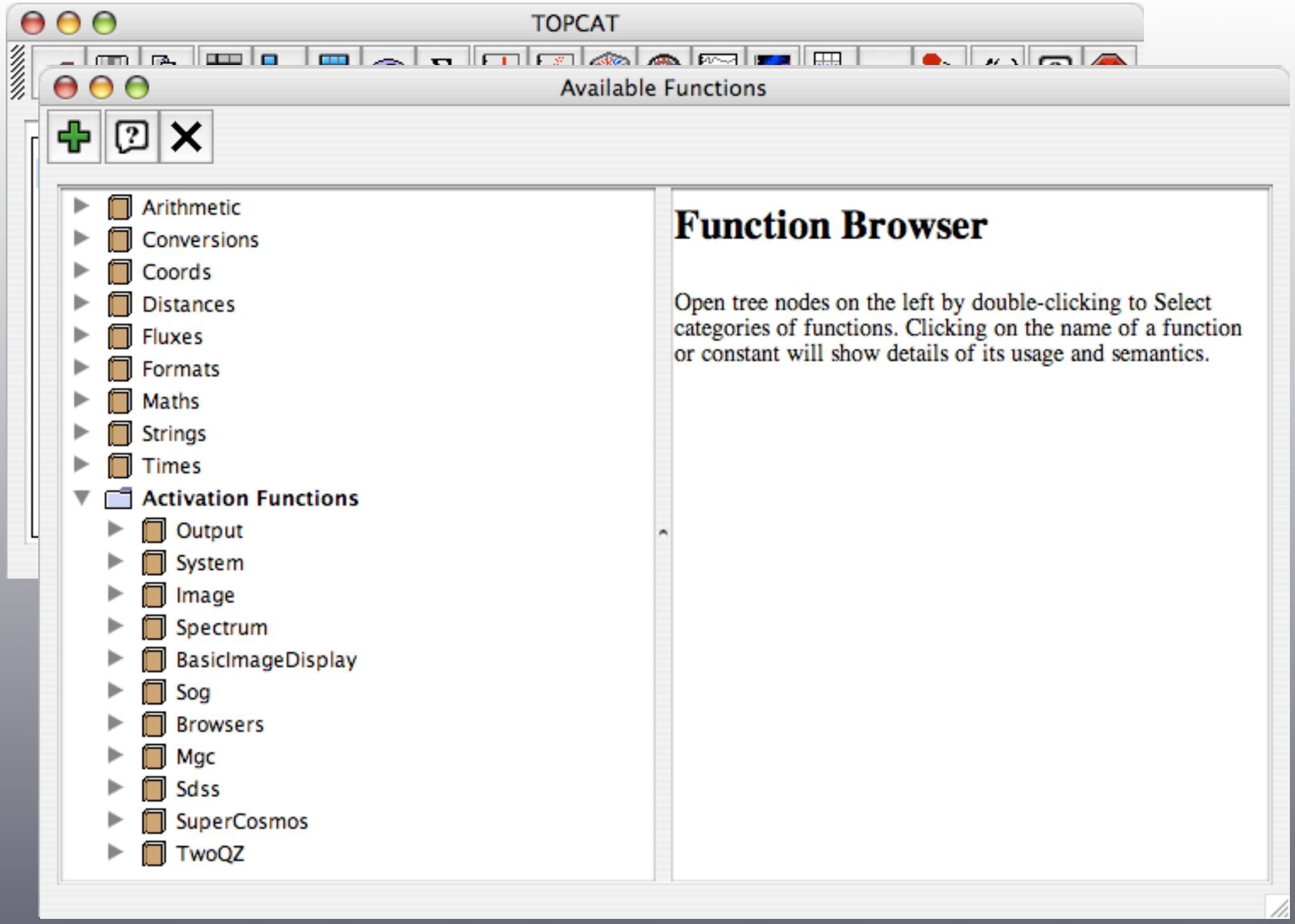

TOPCAT
Available Functions
Arithmetic
Conversions
Coords
Distances
Fluxes
Formats
f( ) formatDecimal(value, format)
f( ) formatDecimal(value, dp)
f( ) formatDecimalLocal(value, dp)
f( ) formatDecimalLocal(value, format)
Maths
Strings
Times
Activation Functions
Output
System
Image
Spectrum
BasicImageDisplay
Sog
Browsers
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.

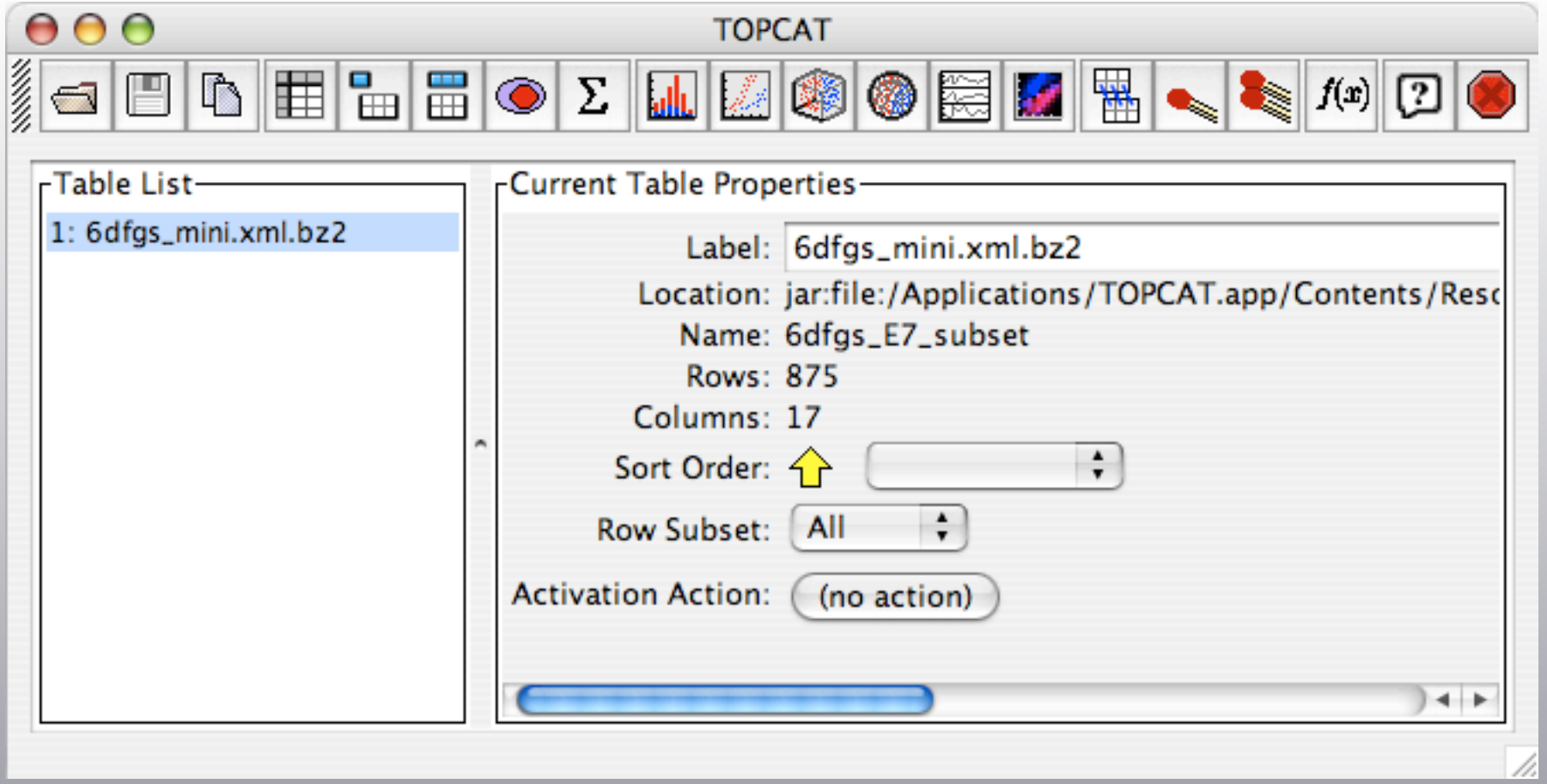

TOPCAT
Available Functions
Maths
E
PI
RANDOM
acos(x)
acosh(x)
asin(x)
asinh(x)
atan(x)
atan2(y, x)
atanh(x)
cos(theta)
cosh(x)
exp(x)
ln(x)
log10(x)
pow(a, b)
sin(theta)
sinh(x)
sqrt(x)
tan(theta)
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.


TOPCAT
Available Functions
Maths
Strings
f( ) concat(s1, s2, s3)
f( ) concat(s1, s2, s3, s4)
f( ) concat(s1, s2)
f( ) contains(whole, sub)
f( ) endsWith(whole, end)
f( ) equals(s1, s2)
f( ) equalsIgnoreCase(s1, s2)
f( ) length(str)
f( ) matchGroup(str, regex)
f( ) matches(str, regex)
f( ) padWithZeros(value, ndigit)
f( ) replaceAll(str, regex, replacement)
f( ) replaceFirst(str, regex, replacement)
f( ) startsWith(whole, start)
f( ) substring(str, startIndex, endIndex)
f( ) substring(str, startIndex)
f( ) toLowerCase(str)
f( ) toUpperCase(str)
f( ) trim(str)
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.


TOPCAT
Available Functions
Distances
Fluxes
Formats
Maths
Strings
Times
f( ) besselianToMjd(besselianEpoch)
f( ) dateToMjd(year, month, day)
f( ) dateToMjd(year, month, day, hour, min, sec)
f( ) decYearToMjd(decYear)
f( ) formatMjd(mjd, format)
f( ) isoToMjd(isoDate)
f( ) julianToMjd(julianEpoch)
f( ) mjdToBesselian(mjd)
f( ) mjdToDate(mjd)
f( ) mjdToDecYear(mjd)
f( ) mjdToIso(mjd)
f( ) mjdToJulian(mjd)
f( ) mjdToTime(mjd)
f( ) mjdToUnixMillis(mjd)
f( ) unixMillisToMjd(unixMillis)
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.


TOPCAT
Available Functions
Fluxes
Formats
Maths
Strings
Times
f( ) besselianToMjd(besselianEpoch)
f( ) dateToMjd(year, month, day)
f( ) dateToMjd(year, month, day, hour, min, sec)
f( ) decYearToMjd(decYear)
f( ) formatMjd(mjd, format)
f( ) isoToMjd(isoDate)
f( ) julianToMjd(julianEpoch)
f( ) mjdToBesselian(mjd)
f( ) mjdToDate(mjd)
f( ) mjdToDecYear(mjd)
f( ) mjdToIso(mjd)
f( ) mjdToJulian(mjd)
f( ) mjdToTime(mjd)
f( ) mjdToUnixMillis(mjd)
f( ) unixMillisToMjd(unixMillis)
Function julianToMjd(julianEpoch)
Description:
Converts a Julian Epoch to Modified Julian Date. For approximate purposes, the argument of this routine consists of an integral part which gives the year AD and a fractional part which represents the distance through that year, so that for instance 2000.5 is approximately 1 July 2000.
Parameters:
julianEpoch (floating point)
Julian epoch
Return Value (floating point):
modified Julian date
Example:
julianToMjd(2000.0) = 51544.5
Signature:
double julianToMjd(double)


TOPCAT
Available Functions
Arithmetic
Conversions
Coords
Distances
Fluxes
Formats
Maths
Strings
Times
Activation Functions
Output
System
Image
Spectrum
BasicImageDisplay
Sog
Browsers
Mgc
Sdss
SuperCosmos
TwoQZ
Function Browser
Open tree nodes on the left by double-clicking to Select categories of functions. Clicking on the name of a function or constant will show details of its usage and semantics.


TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

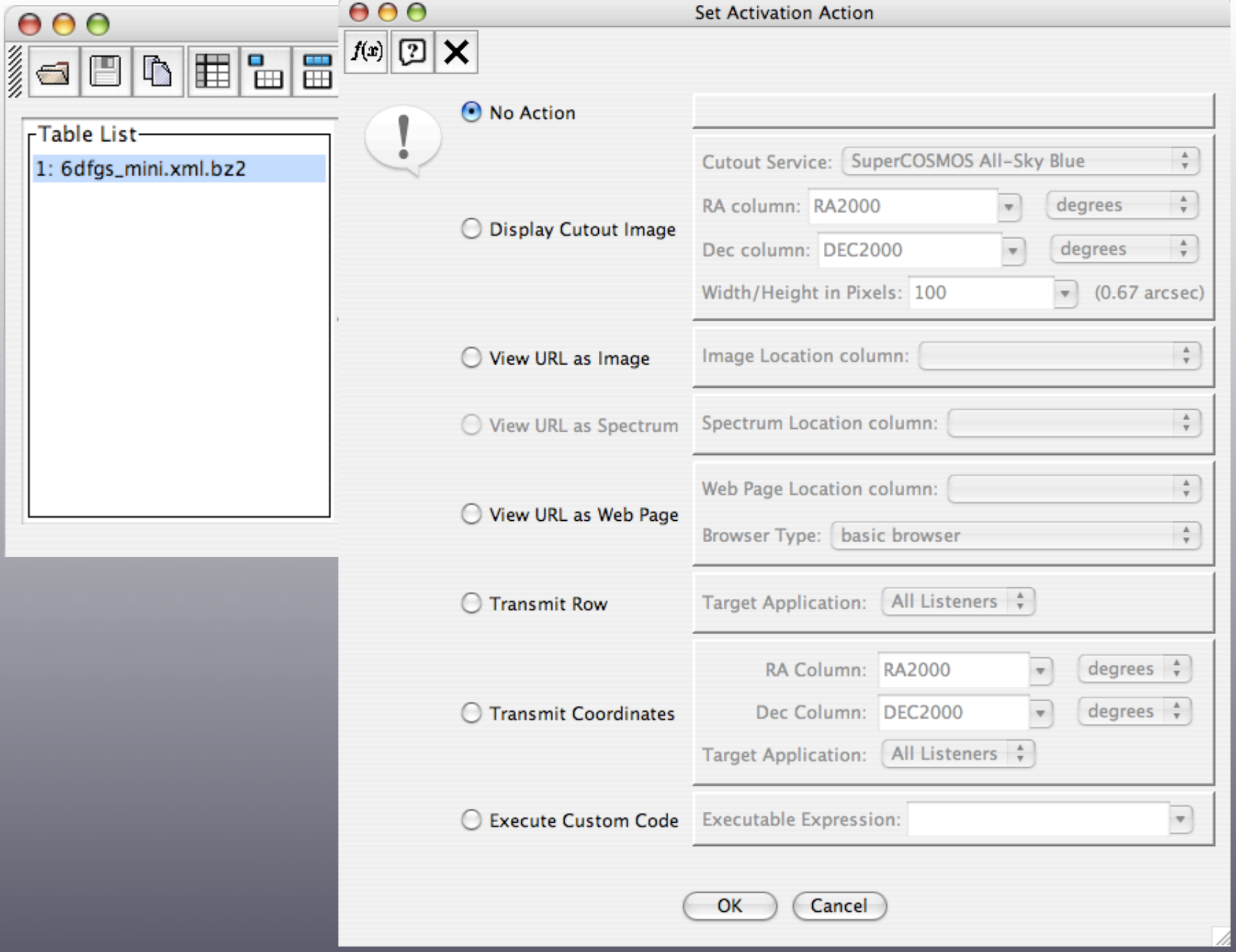


Table List
1: 6dfgs_mini.xml.bz2
Set Activation Action
No Action
Display Cutout Image
Cutout Service: SuperCOSMOS All-Sky Blue
RA column: RA2000
degrees
Dec column: DEC2000
degrees
Width/Height in Pixels: 100
(0.67 arcsec)
View URL as Image
Image Location column:
View URL as Spectrum
Spectrum Location column:
View URL as Web Page
Web Page Location column:
Browser Type: basic browser
Transmit Row
Target Application: All Listeners
Transmit Coordinates
RA Column: RA2000
degrees
Dec Column: DEC2000
degrees
Target Application: All Listeners
Execute Custom Code
Executable Expression:
OK
Cancel

Set Activation Action

f(x)

No Action

Display Cutout Image

Cutout Service: SuperCOSMOS All-Sky Blue

RA column: RA2000 degrees

Dec column: DEC2000 degrees

Width/Height in Pixels: 100 (0.67 arcsec)

View URL as Image

Image Location column:

View URL as Spectrum

Spectrum Location column:

View URL as Web Page

Web Page Location column:

Browser Type: basic browser

Transmit Row

Target Application: All Listeners

Transmit Coordinates

RA Column: RA2000 degrees

Dec Column: DEC2000 degrees

Target Application: All Listeners

Execute Custom Code

Executable Expression:

OK Cancel

Set Activation Action

f(x)

No Action

Display Cutout Image

Cutout Service: SuperCOSMOS All-Sky Blue

RA column: RA2000 degrees

Dec column: DEC2000 degrees

Width/Height in Pixels: 100 (0.67 arcsec)

View URL as Image

Image Location column:

View URL as Spectrum

Spectrum Location column:

View URL as Web Page

Web Page Location column:

Browser Type: basic browser

Transmit Row

Target Application: All Listeners

Transmit Coordinates

RA Column: RA2000 degrees

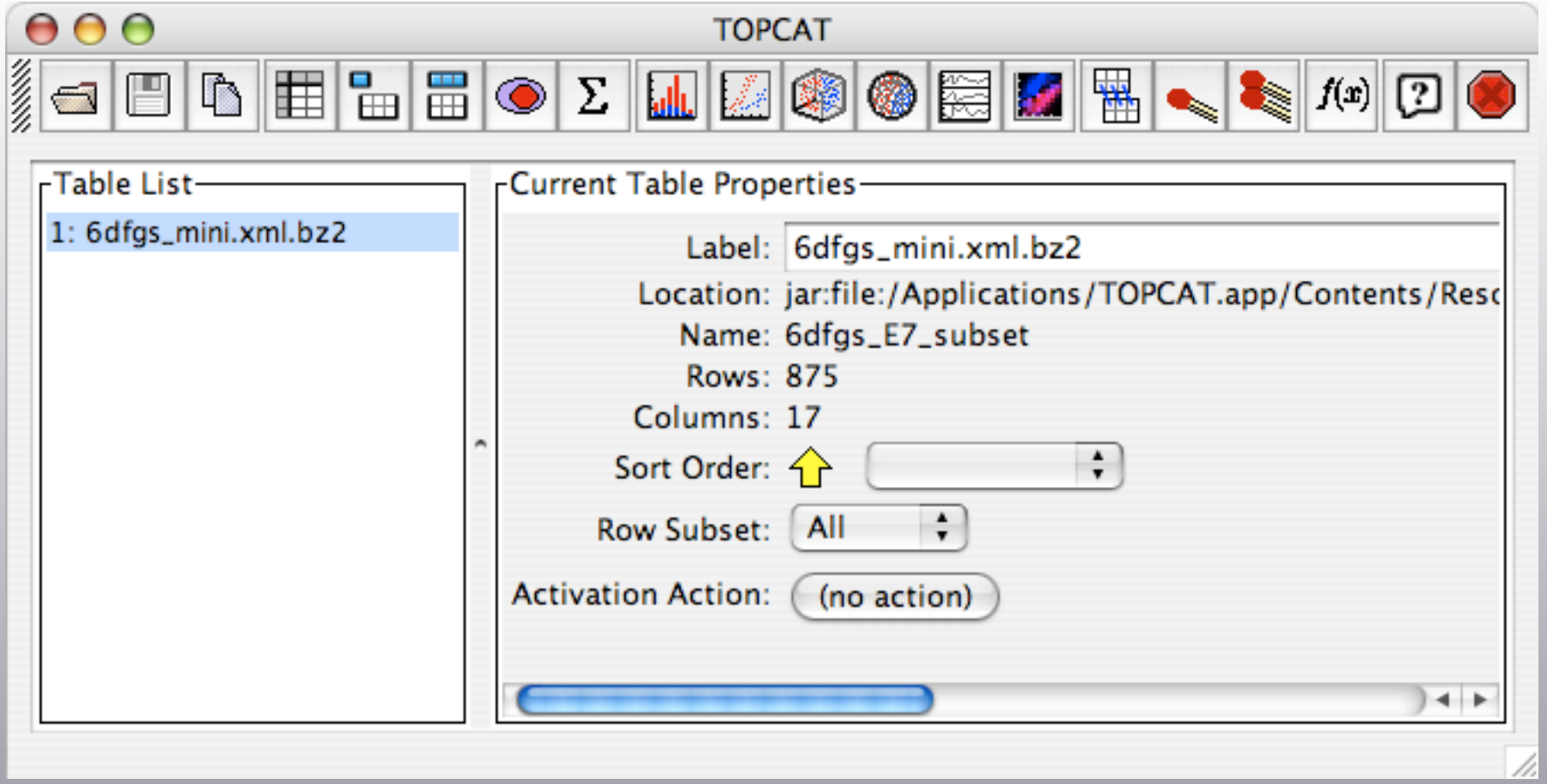
Dec Column: DEC2000 degrees

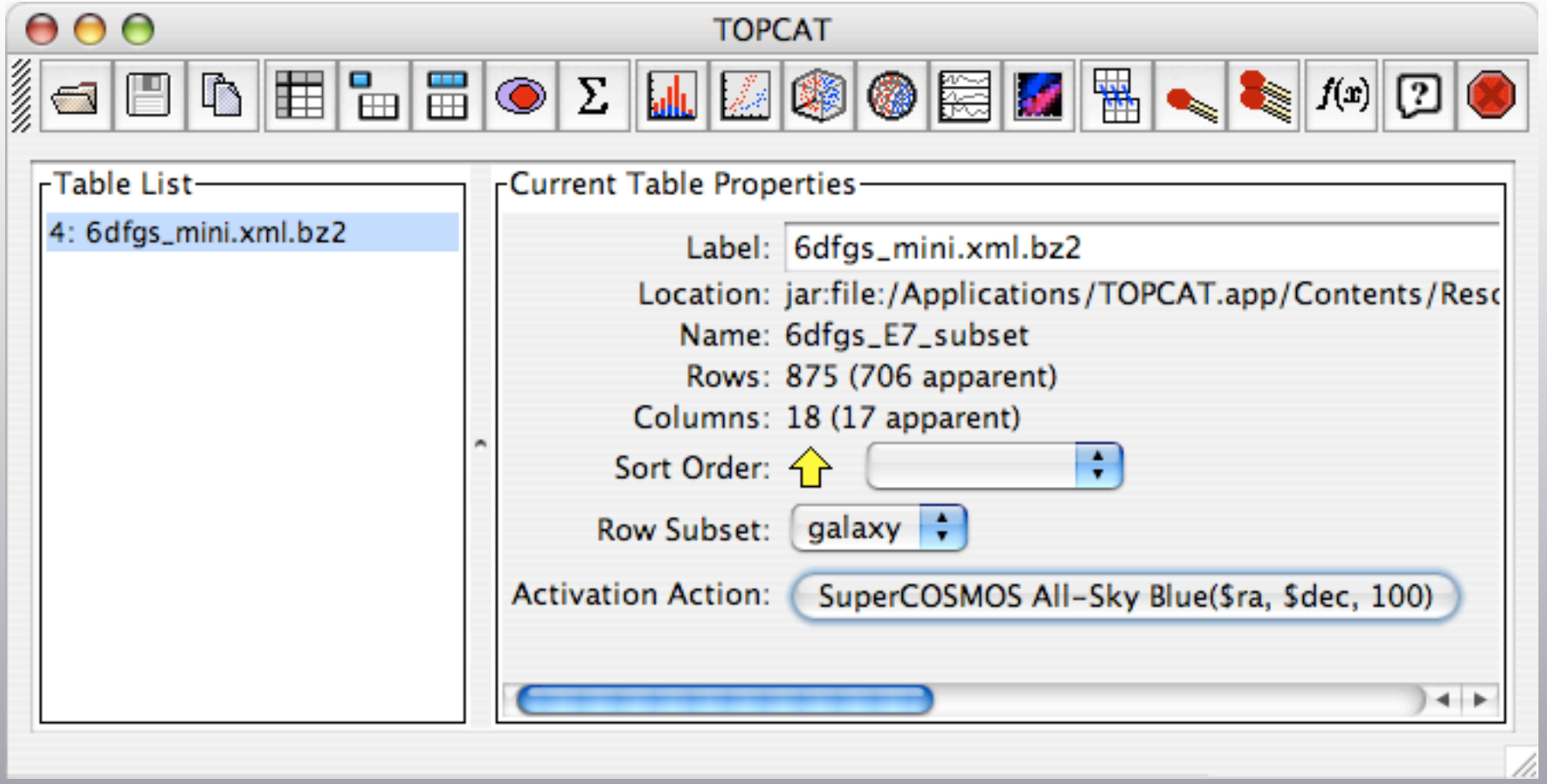
Target Application: All Listeners

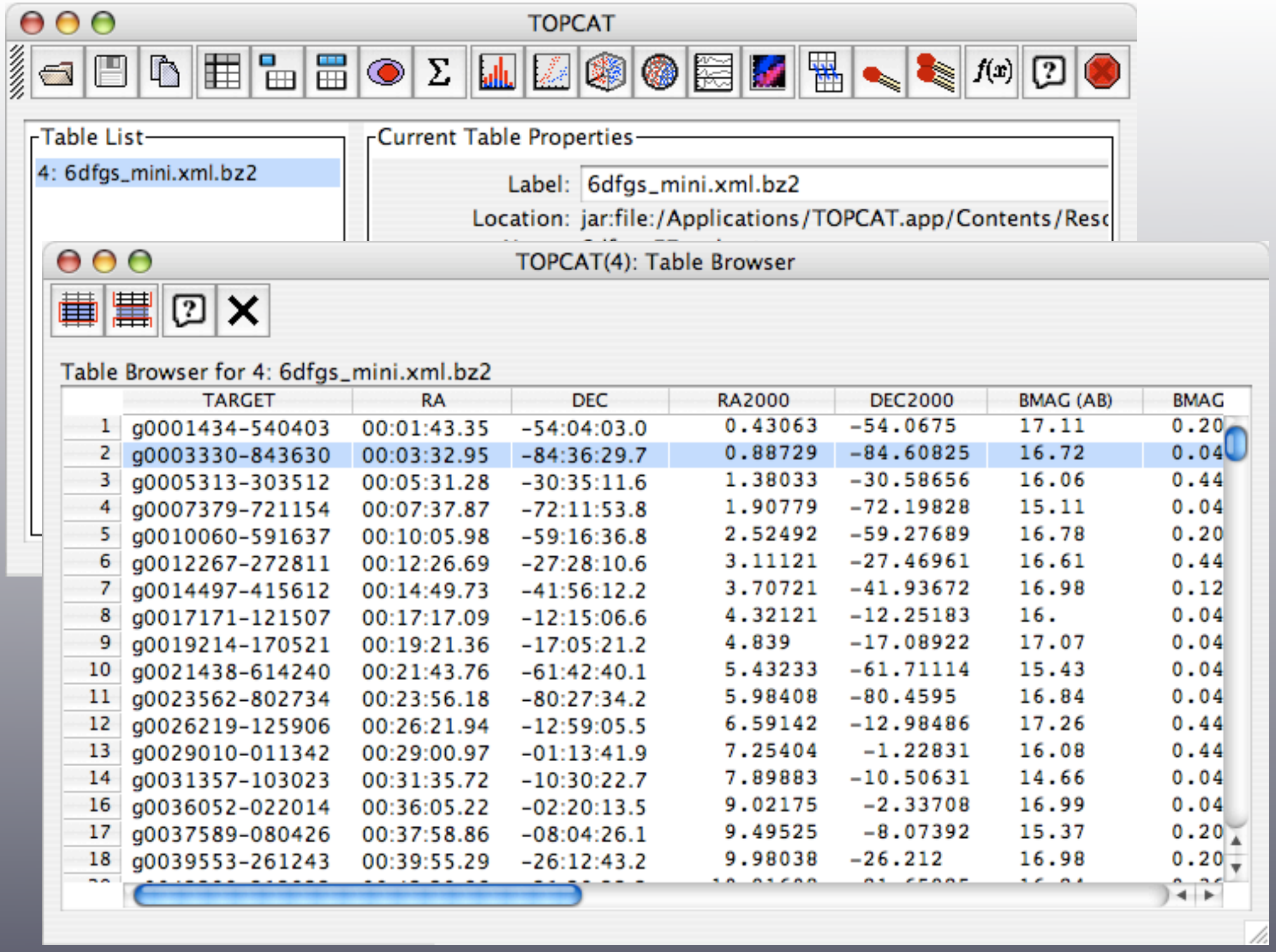
Execute Custom Code

Executable Expression:

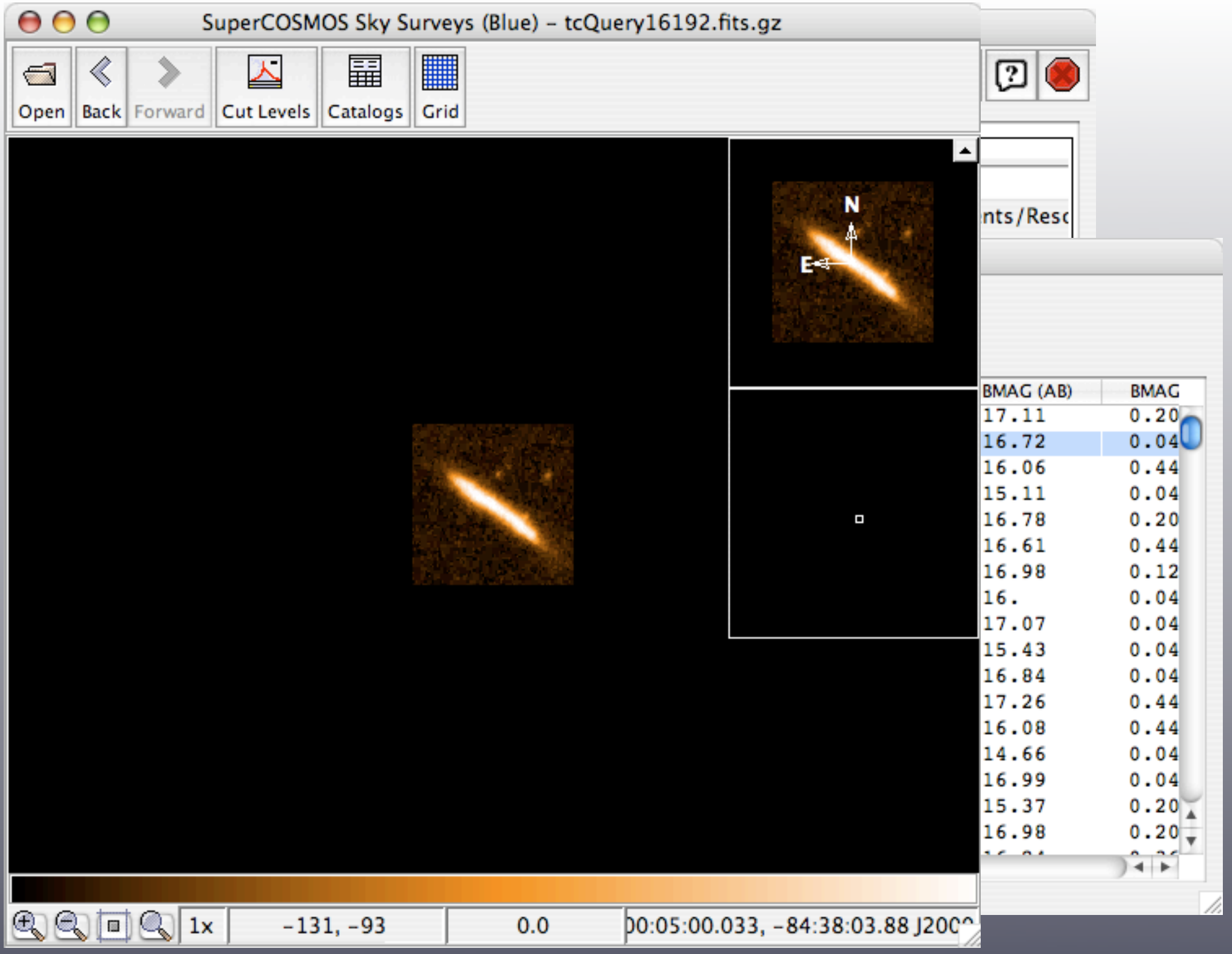
OK Cancel

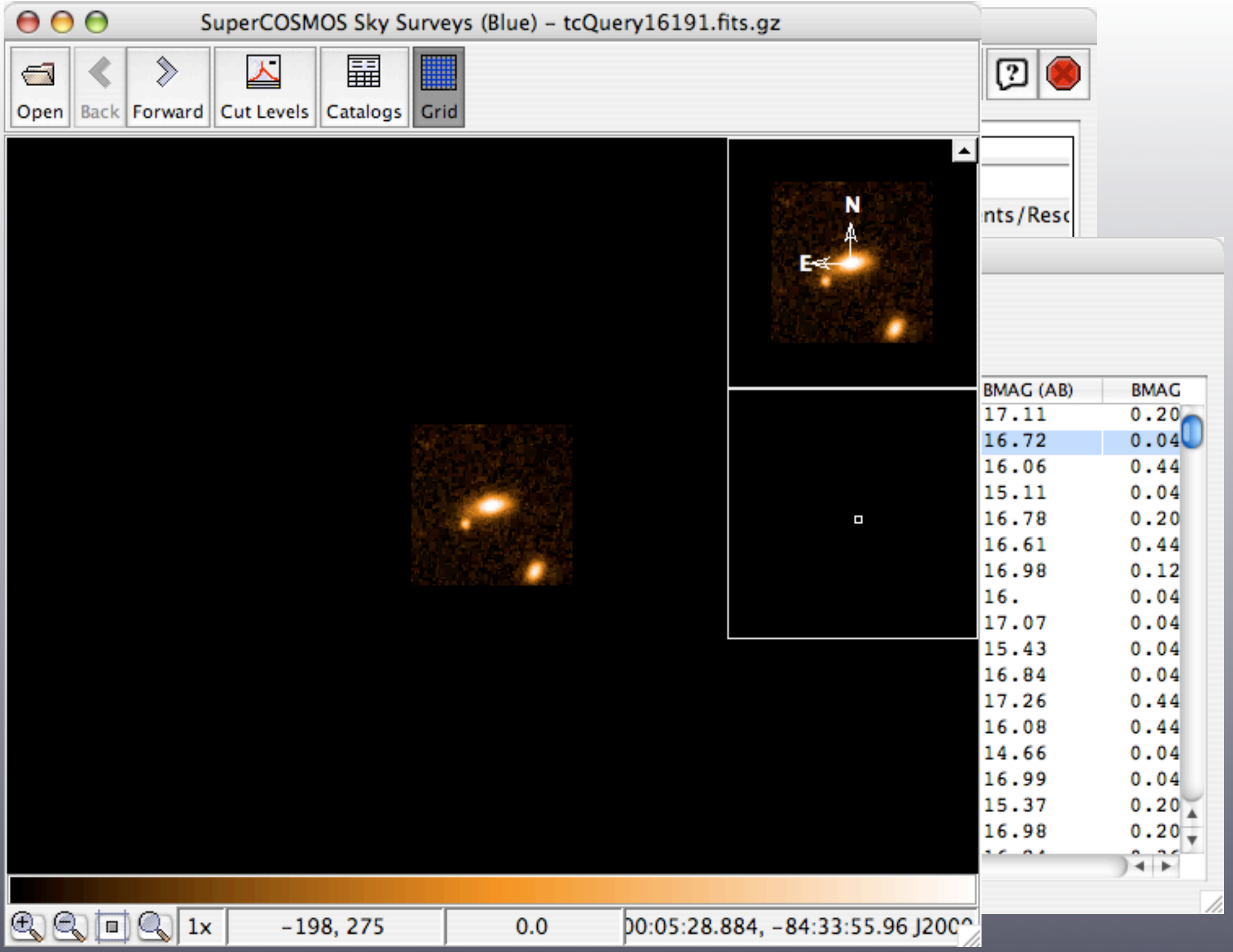

TOPCAT
Table List
1: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875
Columns: 17
Sort Order:
Row Subset: All
Activation Action: (no action)

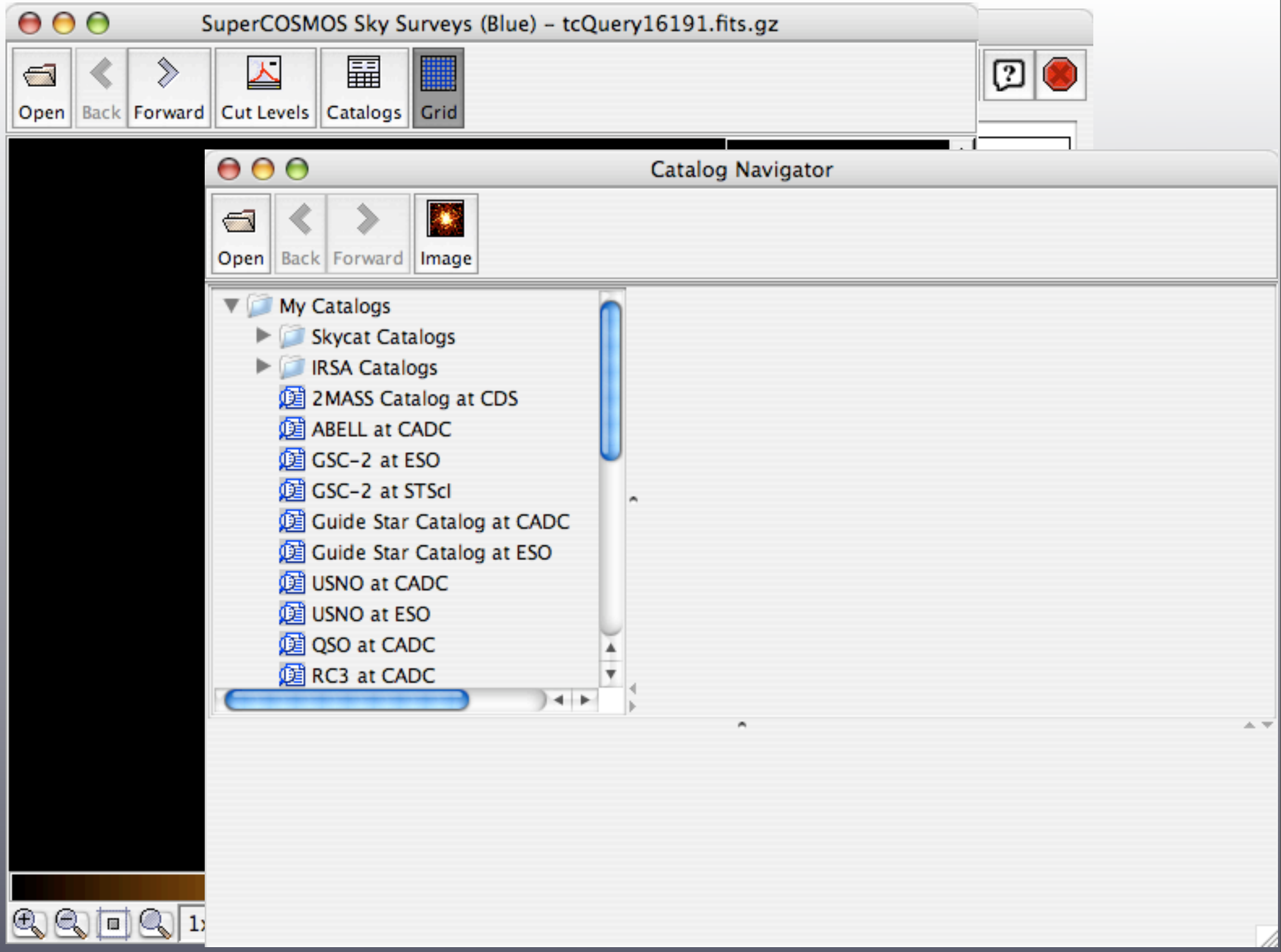

TOPCAT
Table List
4: 6dfgs_mini.xml.bz2
Current Table Properties
Label: 6dfgs_mini.xml.bz2
Location: jar:file:/Applications/TOPCAT.app/Contents/Resc
Name: 6dfgs_E7_subset
Rows: 875 (706 apparent)
Columns: 18 (17 apparent)
Sort Order:
Row Subset: galaxy
Activation Action: SuperCOSMOS All-Sky Blue($ra, $dec, 100)



	TARGET	RA	DEC	RA2000	DEC2000	BMAG (AB)	BMAG
1	g0001434-540403	00:01:43.35	-54:04:03.0	0.43063	-54.0675	17.11	0.20
2	g0003330-843630	00:03:32.95	-84:36:29.7	0.88729	-84.60825	16.72	0.04
3	g0005313-303512	00:05:31.28	-30:35:11.6	1.38033	-30.58656	16.06	0.44
4	g0007379-721154	00:07:37.87	-72:11:53.8	1.90779	-72.19828	15.11	0.04
5	g0010060-591637	00:10:05.98	-59:16:36.8	2.52492	-59.27689	16.78	0.20
6	g0012267-272811	00:12:26.69	-27:28:10.6	3.11121	-27.46961	16.61	0.44
7	g0014497-415612	00:14:49.73	-41:56:12.2	3.70721	-41.93672	16.98	0.12
8	g0017171-121507	00:17:17.09	-12:15:06.6	4.32121	-12.25183	16.	0.04
9	g0019214-170521	00:19:21.36	-17:05:21.2	4.839	-17.08922	17.07	0.04
10	g0021438-614240	00:21:43.76	-61:42:40.1	5.43233	-61.71114	15.43	0.04
11	g0023562-802734	00:23:56.18	-80:27:34.2	5.98408	-80.4595	16.84	0.04
12	g0026219-125906	00:26:21.94	-12:59:05.5	6.59142	-12.98486	17.26	0.44
13	g0029010-011342	00:29:00.97	-01:13:41.9	7.25404	-1.22831	16.08	0.44
14	g0031357-103023	00:31:35.72	-10:30:22.7	7.89883	-10.50631	14.66	0.04
16	g0036052-022014	00:36:05.22	-02:20:13.5	9.02175	-2.33708	16.99	0.04
17	g0037589-080426	00:37:58.86	-08:04:26.1	9.49525	-8.07392	15.37	0.20
18	g0039553-261243	00:39:55.29	-26:12:43.2	9.98038	-26.212	16.98	0.20


SuperCOSMOS Sky Surveys (Blue) – tcQuery16192.fits.gz
Open
Back
Forward
Cut Levels
Catalogs
Grid
N
E
BMAG (AB)
BMAG
17.11 0.20
16.72 0.04
16.06 0.44
15.11 0.04
16.78 0.20
16.61 0.44
16.98 0.12
16. 0.04
17.07 0.04
15.43 0.04
16.84 0.04
17.26 0.44
16.08 0.44
14.66 0.04
16.99 0.04
15.37 0.20
16.98 0.20
1x
-131, -93
0.0


SuperCOSMOS Sky Surveys (Blue) – tcQuery16191.fits.gz
Open
Back
Forward
Cut Levels
Catalogs
Grid
N
E
BMAG (AB)
BMAG
17.11 0.20
16.72 0.04
16.06 0.44
15.11 0.04
16.78 0.20
16.61 0.44
16.98 0.12
16. 0.04
17.07 0.04
15.43 0.04
16.84 0.04
17.26 0.44
16.08 0.44
14.66 0.04
16.99 0.04
15.37 0.20
16.98 0.20
1x
-198, 275
0.0


SuperCOSMOS Sky Surveys (Blue) – tcQuery16191.fits.gz
Open
Back
Forward
Cut Levels
Catalogs
Grid
Catalog Navigator
Open
Back
Forward
Image
My Catalogs
Skycat Catalogs
IRSA Catalogs
2MASS Catalog at CDS
ABELL at CADC
GSC-2 at ESO
GSC-2 at STScI
Guide Star Catalog at CADC
Guide Star Catalog at ESO
USNO at CADC
USNO at ESO
QSO at CADC
RC3 at CADC

(Very few) things about SDSS & 2MASS

Sloan Digital Sky Survey (SDSS)

http://www.sdss.org/

The SDSS uses a dedicated, 2.5-meter telescope on Apache Point, NM, equipped with two powerful special-purpose instruments. The 120-megapixel camera can image 1.5 square degrees of sky at a time, about eight times the area of the full moon. A pair of spectrographs fed by optical fibers can measure spectra of (and hence distances to) more than 600 galaxies and quasars in a single observation.

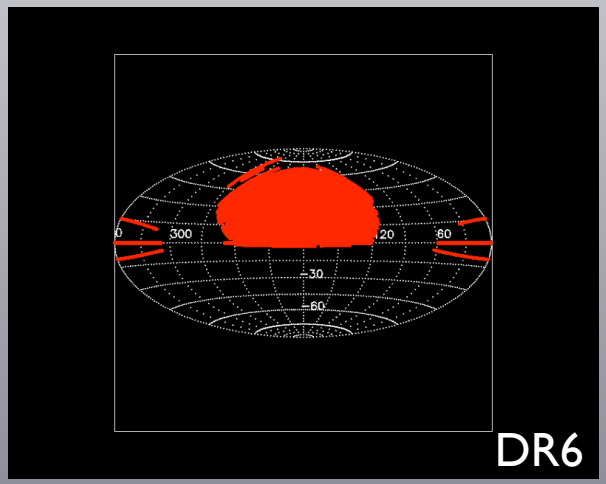
The survey was begun in 2000, and aims to map 25% of the sky and obtain observations on around 100 million objects and spectra for 1 million objects. The main galaxy sample has a median redshift of 0.1; there are redshifts for luminous red galaxies as far as z=0.4, and for quasars beyond z=6.

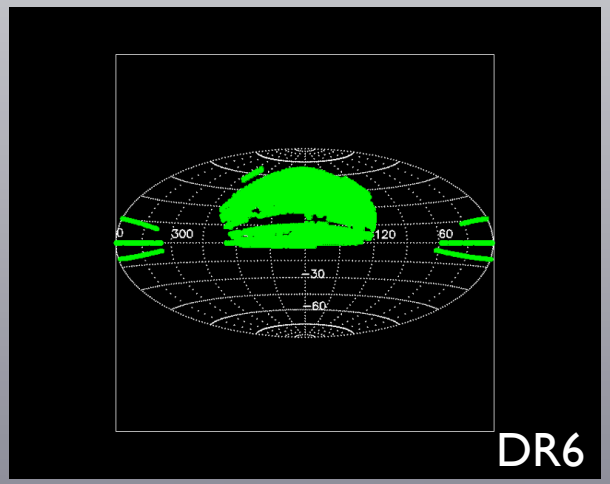
Simultaneous imaging in 5 filters: ***u, g, r, i, z***

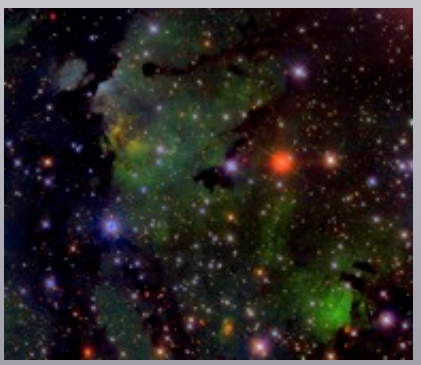
Sloan Digital Sky Survey (SDSS)

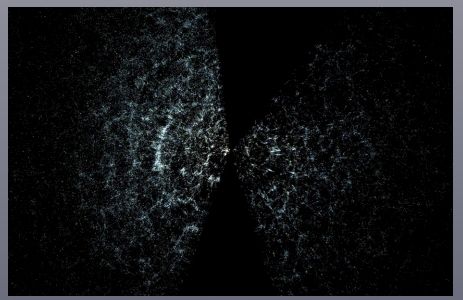
http://www.sdss.org/

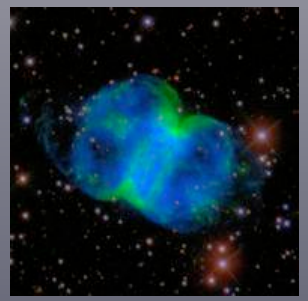
The SDSS completed its first phase of operations — SDSS-I — in June, 2005. Over the course of five years, SDSS-I imaged more than **8,000** square degrees of the sky in five bandpasses, detecting nearly **200 million** celestial objects, and it measured spectra of more than **675,000** galaxies, **90,000** quasars, and **185,000** stars.











2 Micron All Sky Survey (2MASS)

http://www.ipac.caltech.edu/2mass/

http://pegasus.astro.umass.edu/

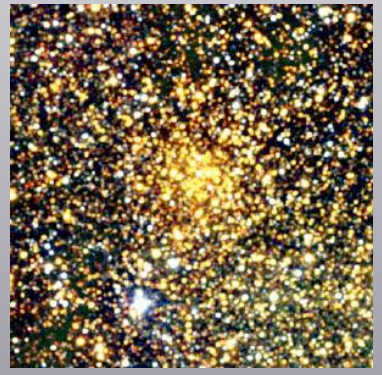
Observations for the Two Micron All-Sky Survey (2MASS) began in 1997 and were completed in 2001 at two telescopes located one each in the northern and southern hemispheres (Mt. Hopkins Arizona and Cerro Tololo/CTIO Chile, respectively) to ensure coverage of the entire sky. The most ambitious project to map the night sky to date, the final (post-processing) data release for 2MASS occurred in 2003. The whole sky was covered using photometric system of three infrared wavebands around 2 micrometres (μm): J (1.25 μm), H (1.65 μm), and K_s (2.17 μm).

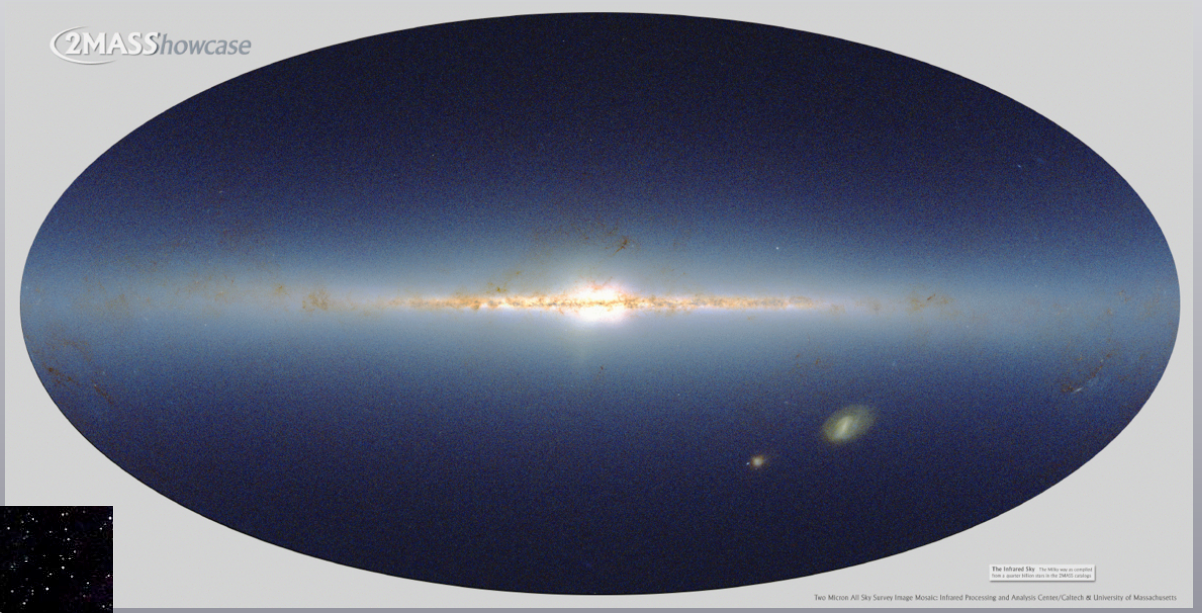
More than 300 million point sources and 1 million extended sources were catalogued.

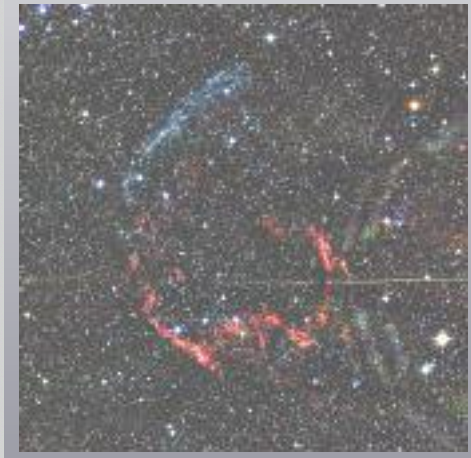
2 Micron All Sky Survey (2MASS)

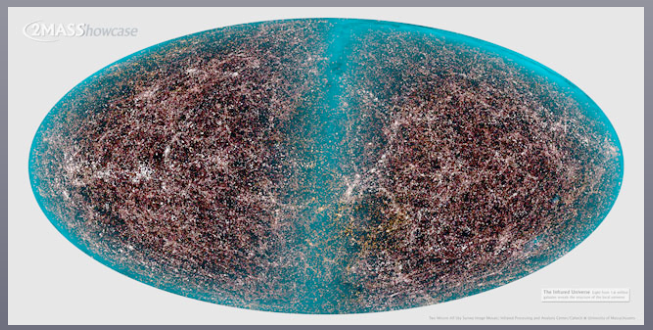
http://www.ipac.caltech.edu/2mass/

http://pegasus.astro.umass.edu/









A note about the magnitudes ...

(useful when one deals with catalogues)

SDSS magnitudes

- psfMag, to be used for photometry of distant (i.e. isolated and point-like) quasars or for colours of stars
- petroMag, to be used for photometry of nearby galaxies
- cmodel, to be used for photometry of galaxies
- model, to be used for colours of galaxies (extended objects)

For a detailed description see:
http://www.sdss.org/dr6/algorithms/photometry.html

2MASS magnitudes

PSC

- j/h/k_m, default magnitude, 4" radius aperture
- j/h/k_m_stdap, 'standard' aperture magnitude curve-of-growth corrected 4" radius

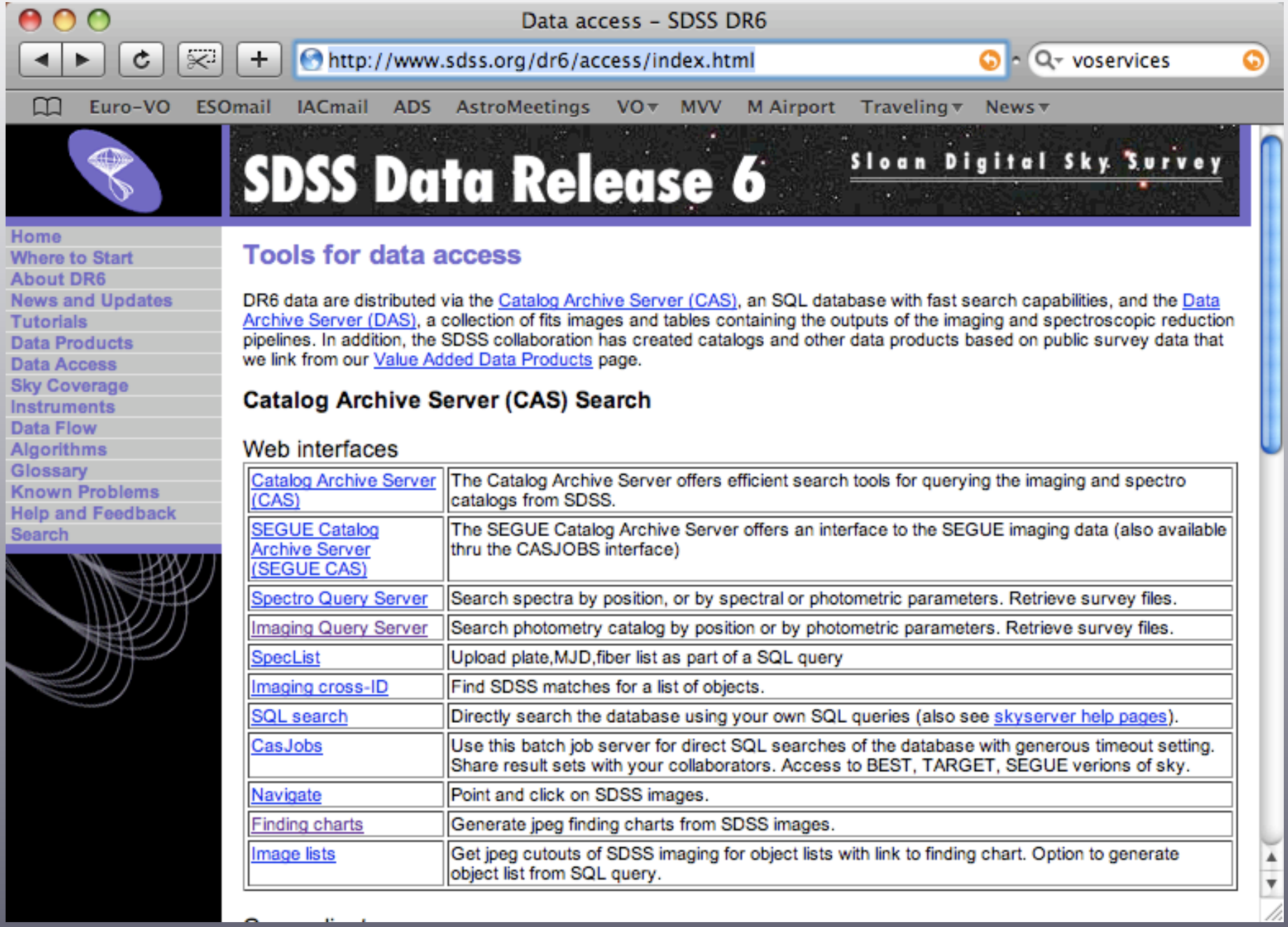
XSC

- j/h/k_m_k20fe, j/h/k_m_fe, j/h/k_m_ext, j/h/k_mnsurfb_eff
- j/h/k_m_k20fc, j/h/k_m_e, j/h/k_m_fc, j/h/k_m_i20e, ...

http://irsa.ipac.caltech.edu/cgi-bin/Gator/nph-scan?submit=Select&projshort=2MASS

Accessing SDSS & 2MASS data through the standard interfaces

SDSS Images


Data access - SDSS DR6
http://www.sdss.org/dr6/access/index.html
voservices
Euro-VO ESOmail IACmail ADS AstroMeetings VO MVV M Airport Traveling News
SDSS Data Release 6
Sloan Digital Sky Survey
Home
Where to Start
About DR6
News and Updates
Tutorials
Data Products
Data Access
Sky Coverage
Instruments
Data Flow
Algorithms
Glossary
Known Problems
Help and Feedback
Search
Tools for data access
DR6 data are distributed via the Catalog Archive Server (CAS), an SQL database with fast search capabilities, and the Data Archive Server (DAS), a collection of fits images and tables containing the outputs of the imaging and spectroscopic reduction pipelines. In addition, the SDSS collaboration has created catalogs and other data products based on public survey data that we link from our Value Added Data Products page.
Catalog Archive Server (CAS) Search
Web interfaces
Catalog Archive Server (CAS) | The Catalog Archive Server offers efficient search tools for querying the imaging and spectro catalogs from SDSS.
SEGUE Catalog Archive Server (SEGUE CAS) | The SEGUE Catalog Archive Server offers an interface to the SEGUE imaging data (also available thru the CASJOBS interface)
Spectro Query Server | Search spectra by position, or by spectral or photometric parameters. Retrieve survey files.
Imaging Query Server | Search photometry catalog by position or by photometric parameters. Retrieve survey files.
SpecList | Upload plate,MJD,fiber list as part of a SQL query
Imaging cross-ID | Find SDSS matches for a list of objects.
SQL search | Directly search the database using your own SQL queries (also see skyserver help pages).
CasJobs | Use this batch job server for direct SQL searches of the database with generous timeout setting. Share result sets with your collaborators. Access to BEST, TARGET, SEGUE verions of sky.
Navigate | Point and click on SDSS images.
Finding charts | Generate jpeg finding charts from SDSS images.
Image lists | Get jpeg cutouts of SDSS imaging for object lists with link to finding chart. Option to generate object list from SQL query.

SDSS Images

SkyServer DR6 Imaging Query

http://cas.sdss.org/astrodr6/en/tools/search/IQS.asp

voservices

Euro-VO ESOmail IACmail ADS AstroMeetings VO MVV M Airport Traveling News

Sloan Digital Sky Survey / SkyServer

Home | Tools | SQL Search | Schema | Finding Chart | Download | Projects | DR6 | DAS | Site Search | Help

DR6 Tools

- Getting Started
- Famous places
- Get images
- Scrolling sky
- Visual Tools
- Search
  - Radial
  - Rectangular
  - SQL
  - Imaging Query
  - Spectro Query
- Object Crossid
- CasJobs

Imaging Query Form

Submit Request

Limit number of output rows (0 for unlimited) to 0

Output Format: (•) HTML ( ) XML

Please see the Query Limits help page for **timeouts** and **row limits**. To get FITS files from the Data Archive Server (DAS), save results to CSV file and upload it to DAS retrieval form

Parameters to return

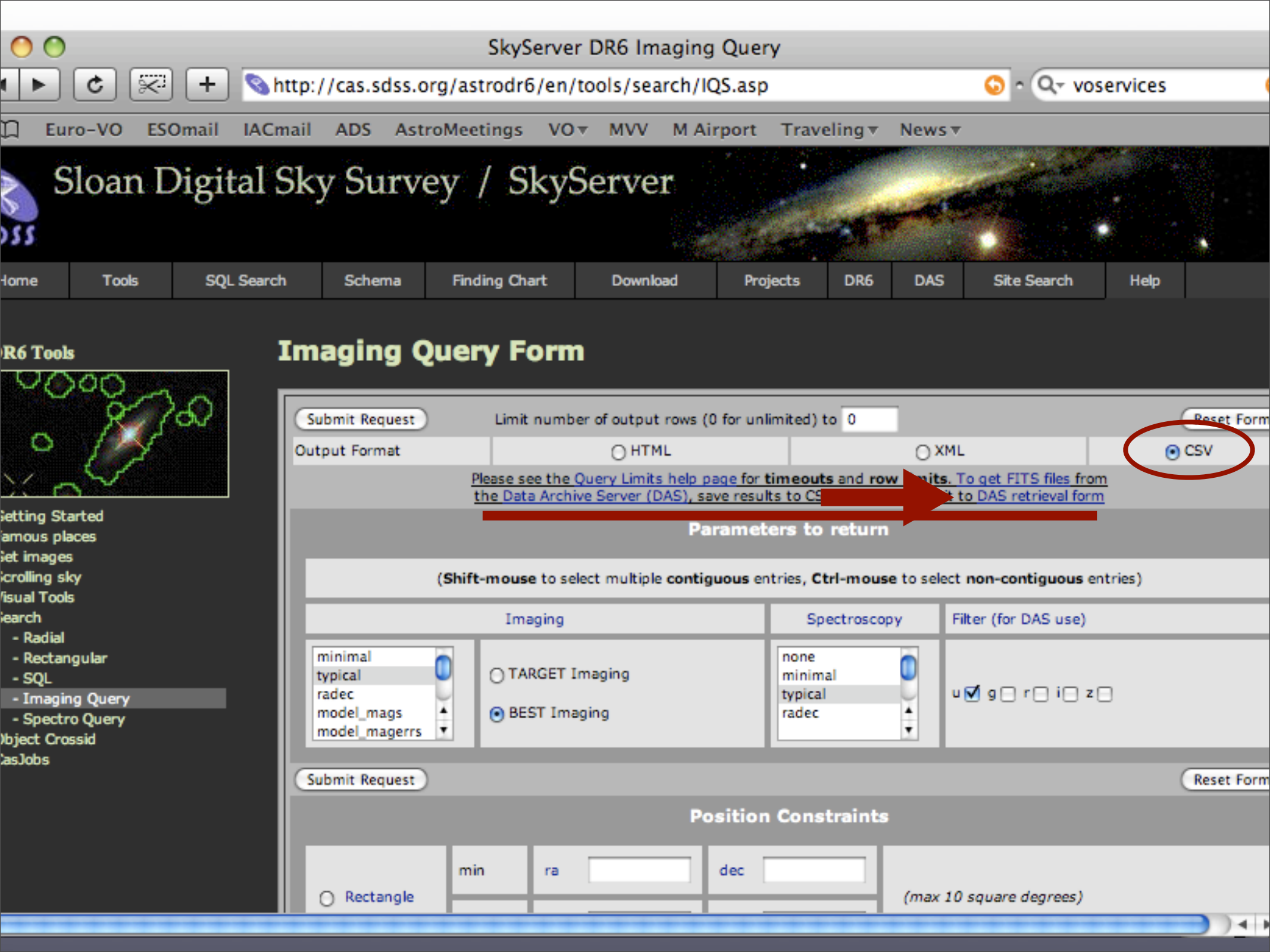
(**Shift-mouse** to select multiple **contiguous** entries, **Ctrl-mouse** to select **non-contiguous** entries)

Imaging		Spectroscopy	Filter (for DAS use)
minimal typical radec model_mags model_magerrs	( ) TARGET Imaging (•) BEST Imaging	none minimal typical radec	u [x] g [ ] r [ ] i [ ] z [ ]

Submit Request

Position Constraints

	min	ra	dec


SkyServer DR6 Imaging Query
http://cas.sdss.org/astrodr6/en/tools/search/IQS.asp
voservices
Euro-VO ESOmail IACmail ADS AstroMeetings VO MVV M Airport Traveling News
Sloan Digital Sky Survey / SkyServer
Home Tools SQL Search Schema Finding Chart Download Projects DR6 DAS Site Search Help
R6 Tools
Getting Started
Famous places
Get images
Scrolling sky
Visual Tools
Search
- Radial
- Rectangular
- SQL
- Imaging Query
- Spectro Query
Object Crossid
CasJobs
Imaging Query Form
Submit Request
Limit number of output rows (0 for unlimited) to 0
Reset Form
Output Format
HTML
XML
CSV
Please see the Query Limits help page for timeouts and row limits. To get FITS files from the Data Archive Server (DAS), save results to CS to DAS retrieval form
Parameters to return
(Shift-mouse to select multiple contiguous entries, Ctrl-mouse to select non-contiguous entries)
Imaging
Spectroscopy
Filter (for DAS use)
minimal
typical
radec
model_mags
model_magerrs
TARGET Imaging
BEST Imaging
none
minimal
typical
radec
u g r i z
Submit Request
Reset Form
Position Constraints
Rectangle
min
ra
dec
(max 10 square degrees)

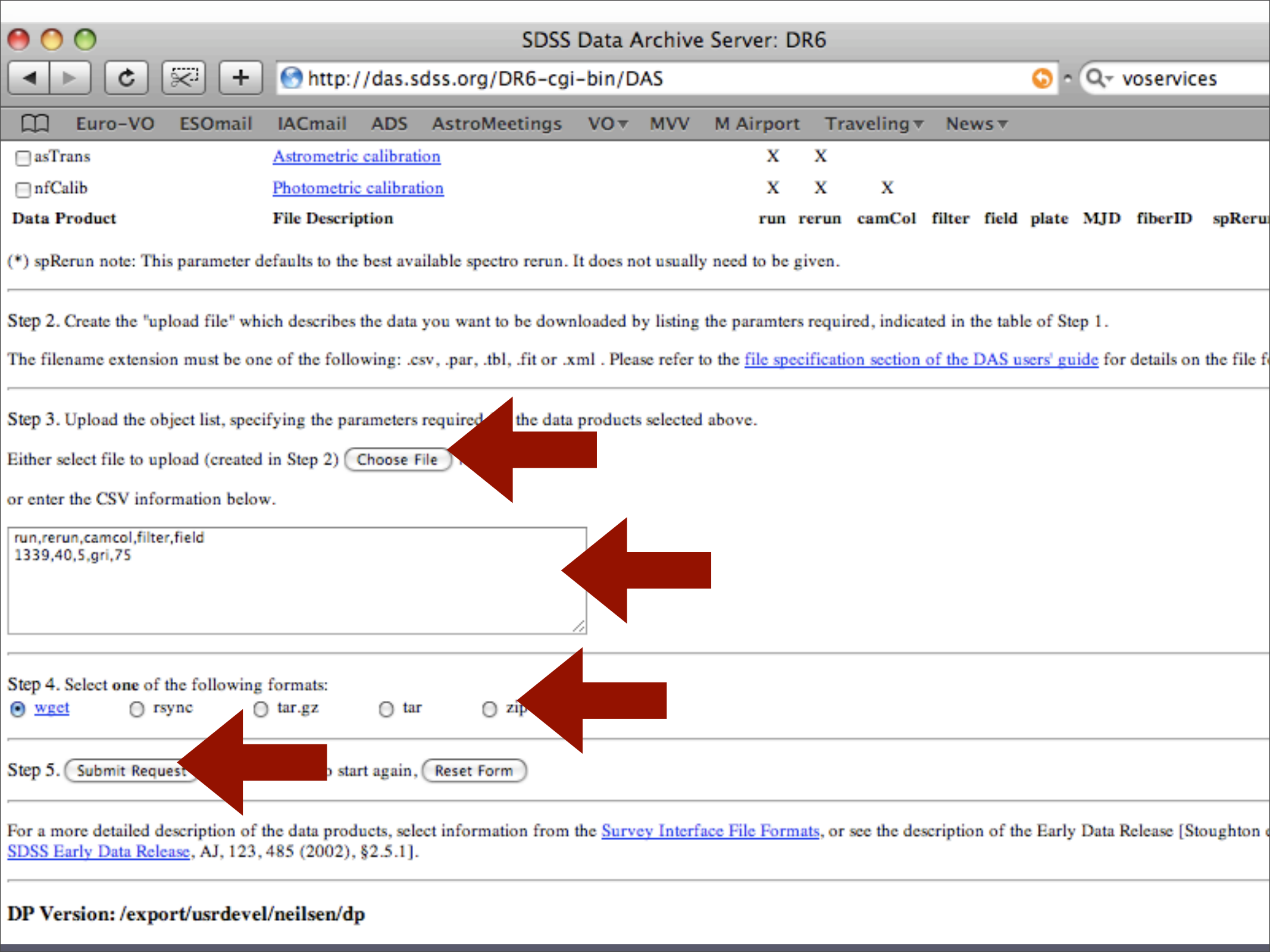
SDSS Data Archive Server: DR6

Available Image Products Available Spectro Products DAS Users' Guide

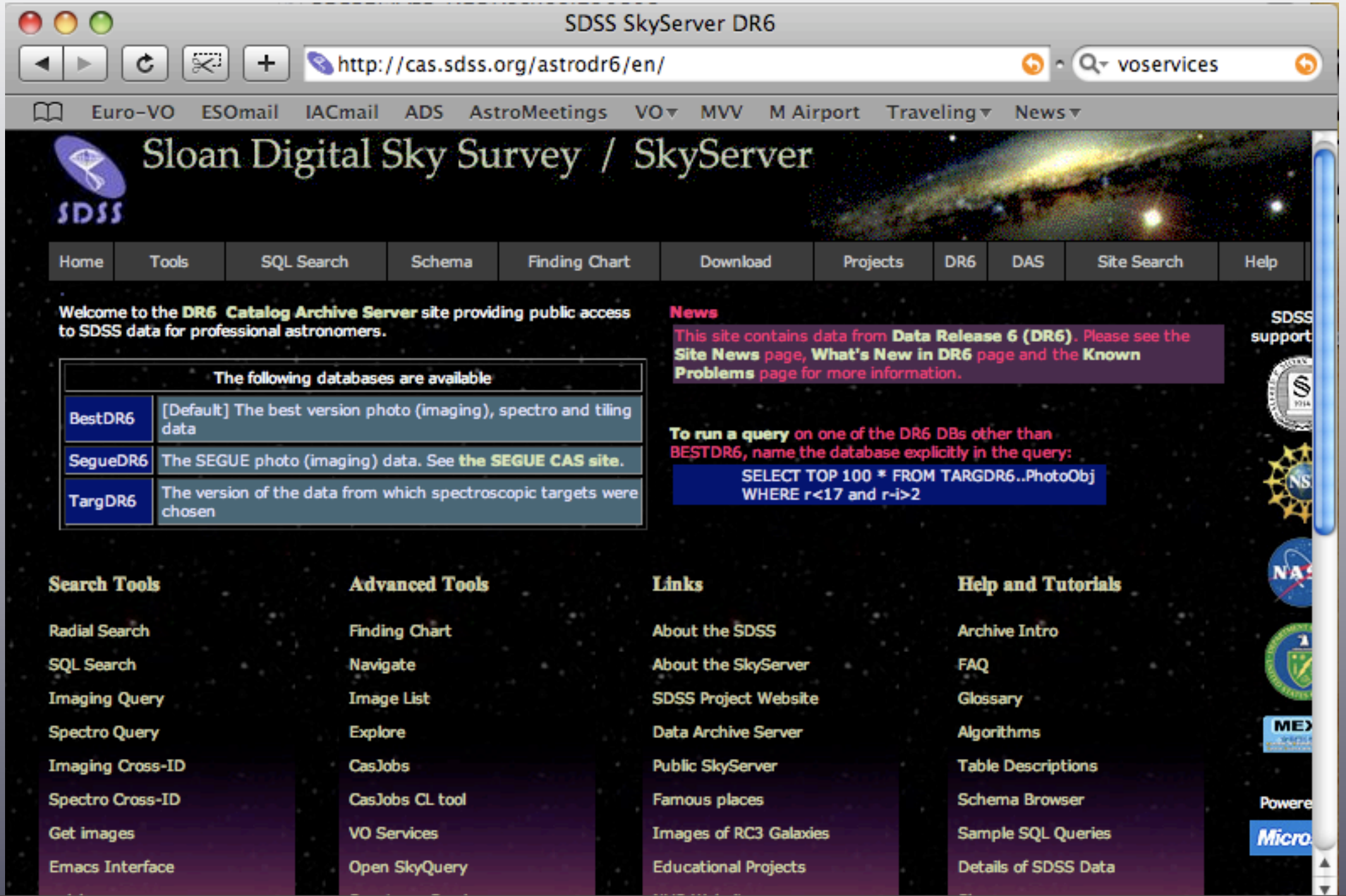
Submit Request or, if you want to start again, Reset Form

Step 1. Select one or more data products.

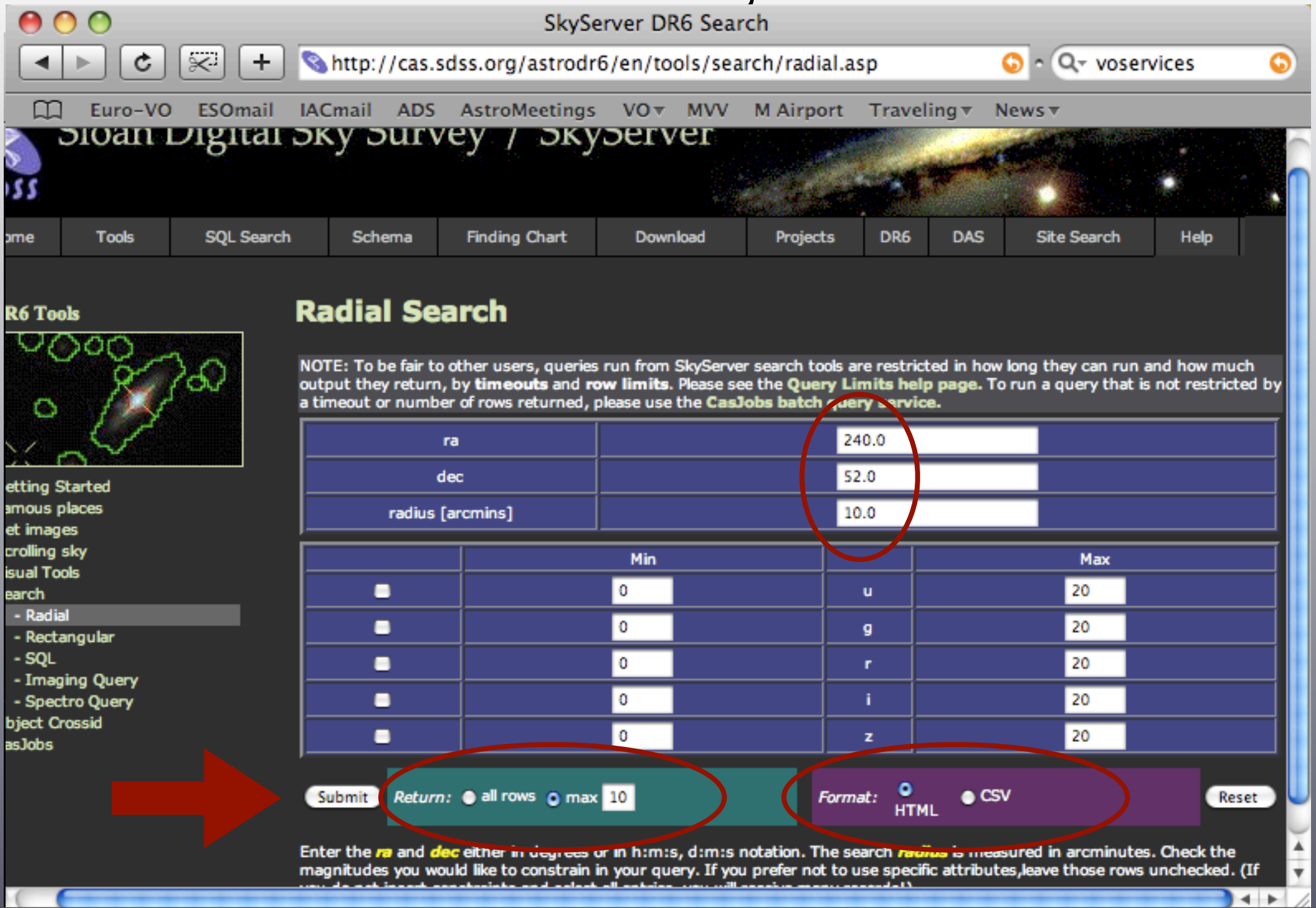
Data Product	File Description	run	rerun	camCol	filter	field	plate	MJD	fiberID	spReru
fpC	Corrected imaging frame	X	X	X	X	X				
fpBIN	Binned imaging frame	X	X	X	X	X				
fpM	Mask frame	X	X	X	X	X				
fpObjc	Catalog of Imaging Objects	X	X	X		X				
fpAtlas	Atlas Images for a field	X	X	X		X				
targetTsField	Target Summary for a field, target version	X	X	X		X				
targetTsObj	Calibrated catalog for a field, target version	X	X	X		X				
bestTsField	Target Summary for a field, best version	X	X	X		X				
bestTsObj	Calibrated catalog for a field, best version	X	X	X		X				
tsObjFromMap	Calibrated catalog for targetted objects						X	X		
spPlate	extracted, calibrated spectra for a plate						X	X		x
spZbest	best fit spectroscopic classifications and redshifts						X	X		x
spZall	all fit spectroscopic classifications and redshifts						X	X		x
spZline	line fits						X	X		x
spSpec	One extracted, calibrated spectrum, with 1d parameters						X	X	X	x
spPlotGif	Plot of one spectrum (.gif)						X	X	X	x
spPlotPs	Plot of one spectrum (.ps.gz)						X	X	X	x
asTrans	Astrometric calibration	X	X							


SDSS Data Archive Server: DR6
http://das.sdss.org/DR6-cgi-bin/DAS
voservices
Euro-VO ESOmail IACmail ADS AstroMeetings VO MVV M Airport Traveling News
asTrans Astrometric calibration X X
nfCalib Photometric calibration X X X
Data Product File Description run rerun camCol filter field plate MJD fiberID spRerun
(*) spRerun note: This parameter defaults to the best available spectro rerun. It does not usually need to be given.
Step 2. Create the "upload file" which describes the data you want to be downloaded by listing the paramters required, indicated in the table of Step 1.
The filename extension must be one of the following: .csv, .par, .tbl, .fit or .xml . Please refer to the file specification section of the DAS users' guide for details on the file f
Step 3. Upload the object list, specifying the parameters required the data products selected above.
Either select file to upload (created in Step 2) Choose File
or enter the CSV information below.
run,rerun,camcol,filter,field
1339,40,5,gri,75
Step 4. Select one of the following formats:
wget rsync tar.gz tar zip
Step 5. Submit Request start again, Reset Form
For a more detailed description of the data products, select information from the Survey Interface File Formats, or see the description of the Early Data Release [Stoughton
SDSS Early Data Release, AJ, 123, 485 (2002), §2.5.1].
DP Version: /export/usrdevel/neilsen/dp

SDSS Catalogues



SDSS Catalogues



Remember the magnitudes?

	Visible	Name	$ID	Class	Description
4	☑	camcol	$4	Short	
5	☑	field	$5	Short	
6	☑	obj	$6	Short	
7	☑	type	$7	Short	
8	☑	ra	$8	Double	
9	☑	dec	$9	Double	
10	☑	u	$10	Double	
11	☑	g	$11	Double	
12	☑	r	$12	Double	
13	☑	i	$13	Double	
14	☑	z	$14	Double	
15	☑	Err_u	$15	Double	
16	☑	Err_g	$16	Double	
17	☑	Err_r	$17	Double	

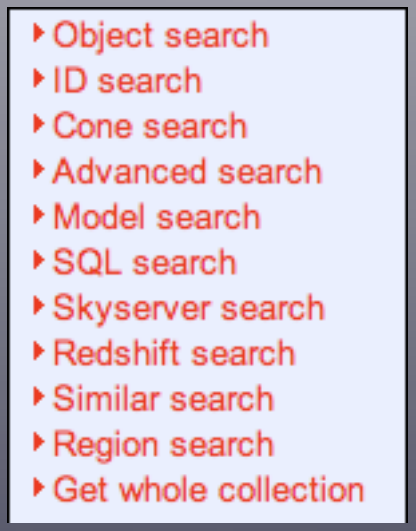
?

SDSS Spectra

Same procedure as with images:
create a CSV file with spectro info
load it into the DAS retrieval form
save the fits files locally
send them to a tool
...

OR

VO Services Website: http://www.voservices.org
Spectrum Services



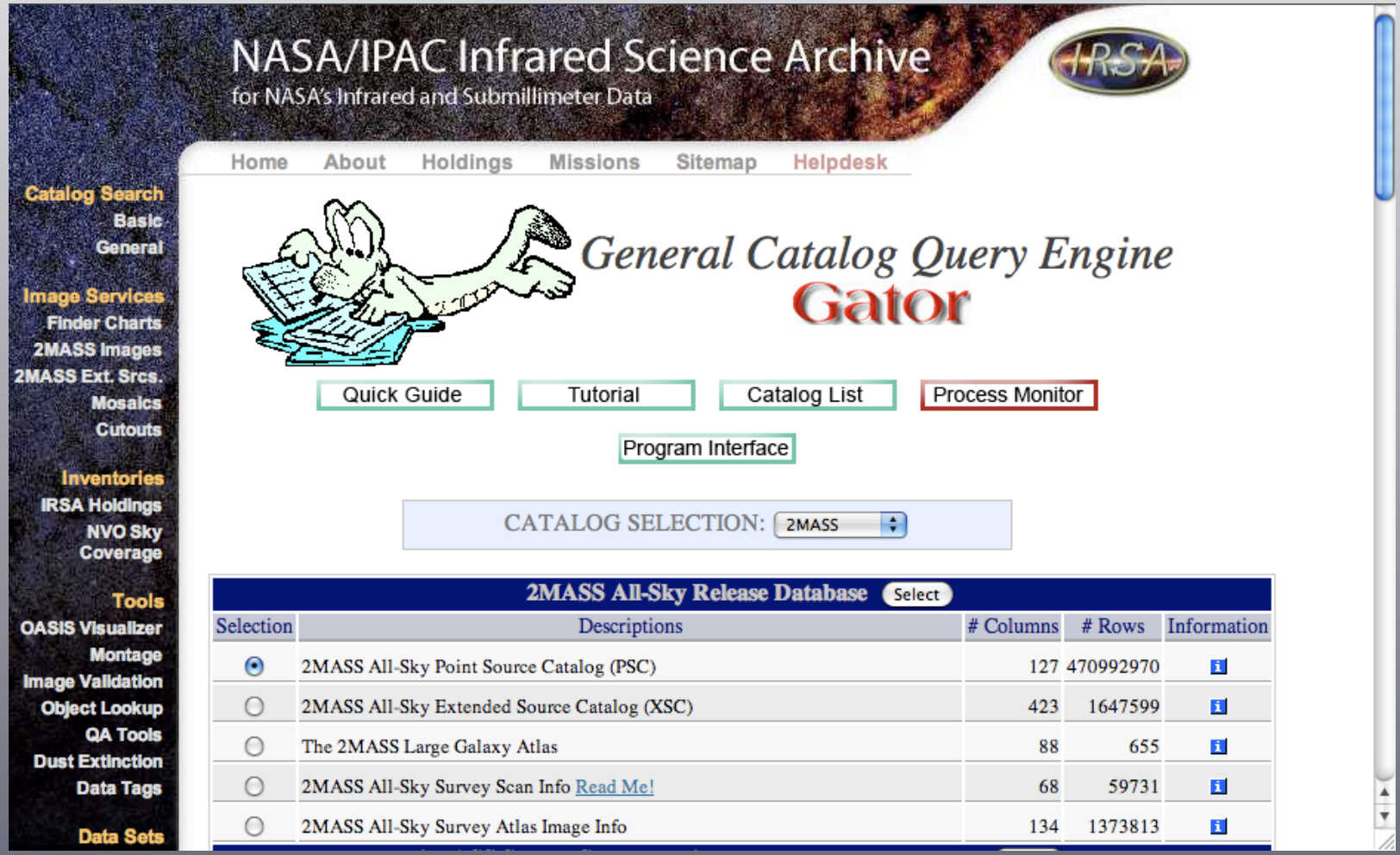
Hey, but this is already going Virtual!

2MASS from Gator

http://irsa.ipac.caltech.edu/cgi-bin/Gator/nph-scan?submit=Select&projshort=2MASS

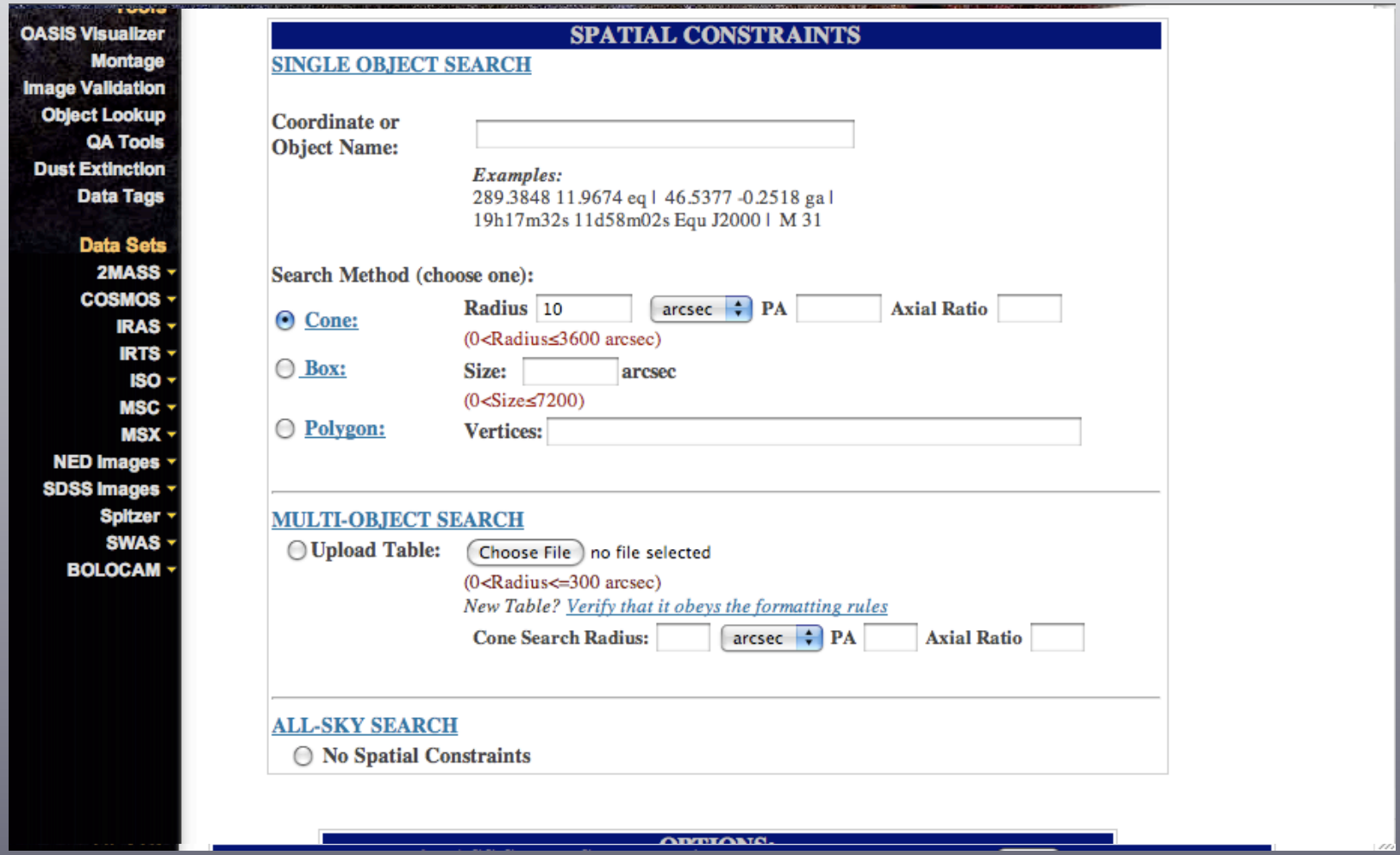
2MASS from Gator

http://irsa.ipac.caltech.edu/cgi-bin/Gator/nph-scan?submit=Select&projshort=2MASS



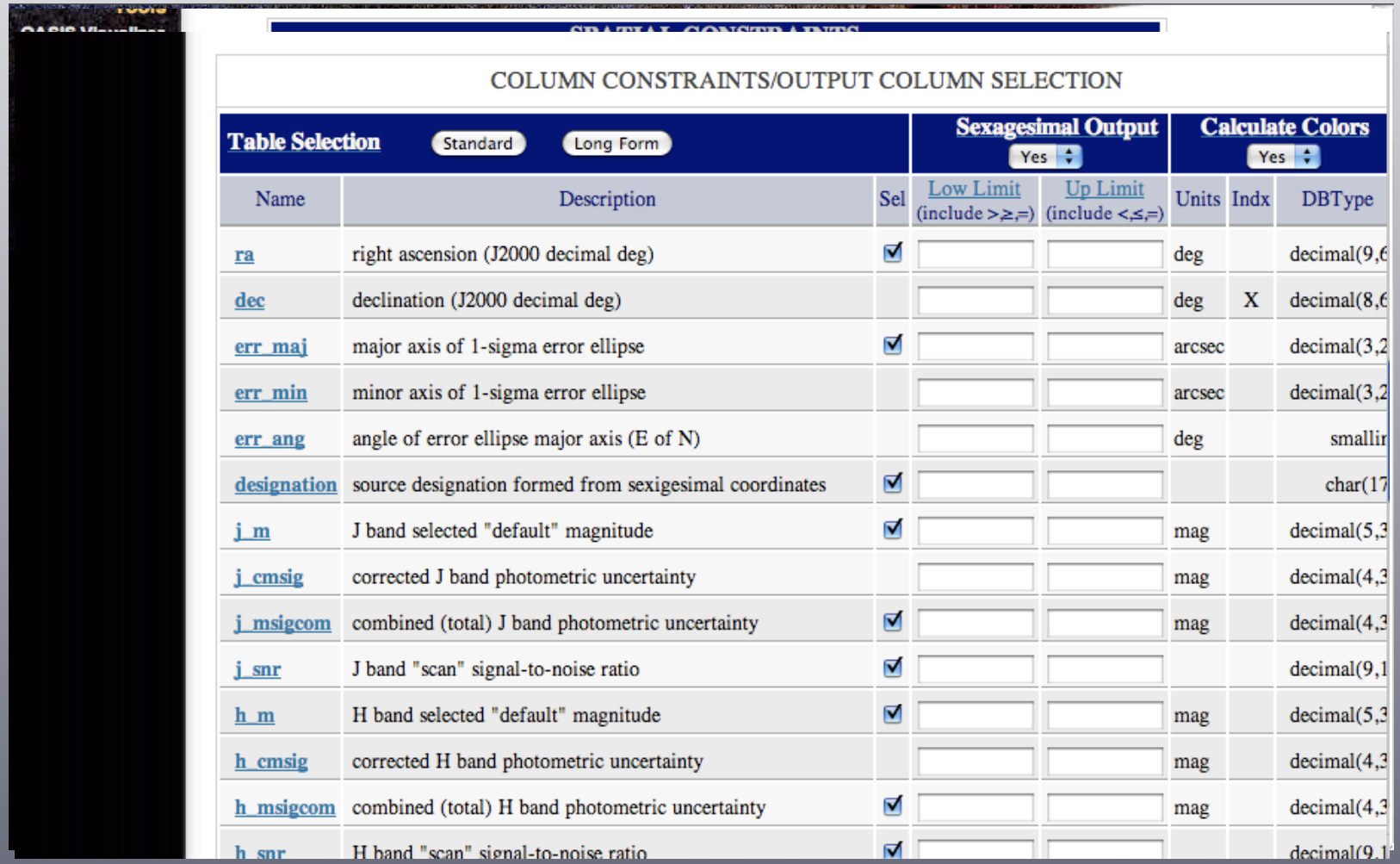
2MASS from Gator

http://irsa.ipac.caltech.edu/cgi-bin/Gator/nph-scan?submit=Select&projshort=2MASS



2MASS from Gator

http://irsa.ipac.caltech.edu/cgi-bin/Gator/nph-scan?submit=Select&projshort=2MASS



COLUMN CONSTRAINTS/OUTPUT COLUMN SELECTION

Table Selection (Standard / Long Form)			Sexagesimal Output: Yes		Calculate Colors: Yes		
Name	Description	Sel	Low Limit (include >,≥,=)	Up Limit (include <,≤,=)	Units	Indx	DBType
ra	right ascension (J2000 decimal deg)	☑			deg		decimal(9,6
dec	declination (J2000 decimal deg)				deg	X	decimal(8,6
err_maj	major axis of 1-sigma error ellipse	☑			arcsec		decimal(3,2
err_min	minor axis of 1-sigma error ellipse				arcsec		decimal(3,2
err_ang	angle of error ellipse major axis (E of N)				deg		smallir
designation	source designation formed from sexigesimal coordinates	☑					char(17
j_m	J band selected "default" magnitude	☑			mag		decimal(5,3
j_cmsig	corrected J band photometric uncertainty				mag		decimal(4,3
j_msigcom	combined (total) J band photometric uncertainty	☑			mag		decimal(4,3
j_snr	J band "scan" signal-to-noise ratio	☑					decimal(9,1
h_m	H band selected "default" magnitude	☑			mag		decimal(5,3
h_cmsig	corrected H band photometric uncertainty				mag		decimal(4,3
h_msigcom	combined (total) H band photometric uncertainty	☑			mag		decimal(4,3
h_snr	H band "scan" signal-to-noise ratio	☑					decimal(9,1

Accessing SDSS & 2MASS data through the VO

Aladin, TOPCAT, VOdesktop

in the directory ~/voexercise there are 3 jar files:
Aladin.jar, topcat_full.jar and vodesktop-2008.1-app.jar

to launch any of them:
java -jar filename.jar

if you think you need more memory:
java -Xmx512M -jar filename.jar

try them!

Accessing SDSS images & catalogues:

launch VOdesktop
(***first*** launch VOdesktop and then the other applications, aka "VO hazards")

New Smart List -> Any main field contains SDSS
Create

Select, eg, The SDSS Photometric Catalogue, Release 6
Query (241.5163, 55.4252, 0.233) -> Search
options: send tables to Aladin; send tables to TOPCAT

Select Sloan Digital Sky Survey DR5 - Images
Query -> Search -> right-click on "Sloan Digital Sky Survey DR5" inside Astroscope
View as Service Table - > Select a fits file -> right-click and send to Aladin

Accessing SDSS (2MASS) images:

(launch Aladin & TOPCAT)

in Aladin: load -> Sloan (SkyView) -> 16 00 00 52 00 00, in 14' - submit
select images an send to Aladin main window
RGB
load SDSS catalogue in the same area
...

TOCAP can also query SIAPs - try it:
in TOPCAT load -> DataSources -> SIAP query -> SDSS (2MASS) send catalogue to Aladin
...

OR
if you want to have a quick look at your sources with TOPCAT
Activation Action -> Display Cutout Image -> Select -> OK
by clicking on any entry of your table, a customized cutout will pop-up

Accessing SDSS & 2MASS catalogues:

(launch Aladin & TOPCAT)

in Aladin: load -> Vizier (or all VO) -> 16 00 00 52 00 00, in 14', optical
SDSS DR6 - submit
right-click -> broadcast to TOPCAT
view table with TOPCAT
check columns - which magnitudes are there?

repeat with 2MASS PSC, same target, IR
send to TOPCAT, check columns
cross-match: can be done either with Aladin or TOPCAT

in TOPCAT load -> DataSources -> Cone Search -> query SDSS DR6 on the same position, repeat with 2MASS PSC, check columns etc

Multiple queries from SDSS & 2MASS catalogues:

So far we only dealt with a search around one position;
what if we need to find SDSS and/or 2MASS photometry for a list of objects?

Scripting within the VO environment is feasible

One way is using python scripts (e.g. conesearch_test.py in ~/voexercise)

you need: conesearh_test.py; VOTable.py; a VOTable of your choice

conesearch_test.py:

```
# SETUP VARIABLES
...
# search radius
radius= 0.01
# list of registries we will use
cones = [
         "ivo://sdss.jhu/services/DR4CONE"
       , "ivo://irsa.ipac/2MASS-PSC"
       , "ivo://ned.ipac/Basic_Data_Near_Position"
     ]

# required columns:
nameCol = vot.getColumnIdx('Name')
raCol = vot.getColumnIdx('RAJ2000')
decCol = vot.getColumnIdx('DECJ2000')
```

to create a VOTable:
start from an ascii file containing a lost of sources (coordinates and a column name are a must) and a header that looks like
Name, RAJ2000, DECJ2000 ... (they have to match the column names defined in the script)

Load the ascii file into TOPCAT and save as VOTable

conesearch.py can be modified, changing the registries to be queried and the search radius. As it is, it queries the SDSS DR4, the 2MASS XSC and NED.

Try it:
launch VOdesktop (Astro RunTime runs at the background)
> python conesearch_test.py
select you VOTable from the pop-up window

the script will create a directory per source; explore the contents with TOPCAT

to query other resources, try to find the ivo identifiers and replace them in the script:

- ESA VO registry: http://esavo.esa.int/registry/
- NVO registry: http://nvo.stsci.edu/VORegistry/index.aspx
- AstroGrid registry: http://registry.astrogrid.org/astrogrid-registry/

```
# list of registries we will use
cones = [
        "ivo://sdss.jhu/services/DR4CONE"
      , "ivo://irsa.ipac/2MASS-PSC"
      , "ivo://ned.ipac/Basic_Data_Near_Position"
    ]
```

http://www.euro-vo.org/pub/

EURO VO

The Euro-VO projects: VOTECH EuroVO-DCA

Science
- Software
- Recipes User Manual
- Scientific Workflows
- Research Initiative
- Science Cases
- Scientific Papers
- Science Advisory Committee
- Acknowledging
- Helpdesk

Technical
- Software
- Registries
- Tutorials
- IVOA Standards ⇒

Data Centres
- Overview
- Partners
- Work Packages

The European Virtual Observatory EURO-VO

The EURO-VO project aims at deploying an operational Virtual Observatory (VO) in Europe. Its objectives are technology take-up and VO compliant resource provision, building the technical infrastructure and to support its utilization by the scientific community.

From AVO to EURO-VO

The Astrophysical Virtual Observatory (AVO) together with further national VO projects created the foundations of a regional-scale infrastructure by conducting a research and demonstration programme on the VO scientific requirements and technologies. AVO was a collaborative project of European organizations in 2002-2004 and was jointly funded by the European Commission under the 5th Framework Programme (HPRI-CT-2001-50030). The EURO-VO work programme is the logical next step from AVO as a Phase-B deployment of an operational VO in Europe.

News & Highlights

NEW Census of the European astronomical data centers

The EURO-VO Data Centre Alliance project (http://www.euro-vo.org/pub/dca/overview.html) is a Coordination Action funded by the European Commission within the Sixth Framework Program. It aims at helping European astronomical data centres to publish their data and services in the Virtual Observatory, using standards defined by the International Virtual Observatory Alliance (IVOA). EuroVO-DCA operates by coordinating the sharing of expertise, organizing Workshops, and providing assistance, in

The Euro-VO proje

Science
- Software
- Recipes User Manu
- Scientific Workflo
- Research Initiative
- Science Cases
- Scientific Papers
- Science Advisory Committee
- Acknowledging
- Helpdesk

Technical
- Software
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Data Centres
- Overview
- Partners
- Work Packages

	Tool/Description	Version	Download/Launch
	DATA DISCOVERY		
	Aladin: An interactive software sky atlas allowing the user to visualize digitized images of any part of the sky, to superimpose entries from astronomical catalogs	V5 (February 2008)	Standalone version
	Workbench: A desktop application for working with the Virtual Observatory. It can explore data resources, query remote catalogs, and construct workflows to automate tasks.	2007.1.1	Download Page
	Datascope: A Web Service for discovering and exploring data in the Virtual Observatory from archives and data centres around the world.	V2.1 (March 2007)	Web Service
	SPECTRAL ANALYSIS		
	VOSpec: A multiwavelength spectra analysis tool, with access to both Spectral services (SSAP) and Theoretical Spectral services (TSAP).	V3.0	Launch java applet
	SPLAT: A spectra analysis tool.	Version: 3.8-5	Download Page
	Specview: 1-D spectral visualization and analysis	2.14.1	Download Page or Run Applet
	Euro3D: Analyse datasets in Euro3D FITS format.		Launch Java Webstart or Java applet
	DATA VISUALISATION AND DATA HANDLING		
	Topcat: An interactive graphical viewer and editor for tabular data. It understands a number of different astronomically important formats (including FITS and VOTable) and more formats can be added.	3.2 (January 2008)	Download Page
	VOPlot: A tool to visualise astronomica data.	1.4.1 Beta	Download Page
	VisIVO: A visualisation and analysis software for astrophysical data.		

(IVOA). EuroVO-DCA operates by coordinating the sharing of expertise, organizing Workshops, and providing assistance, in