

CubeAccess prototype on B0dega collection

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B0dega collection

Set of CO cubes for galaxies observed at
SubMillimeter Array SMA

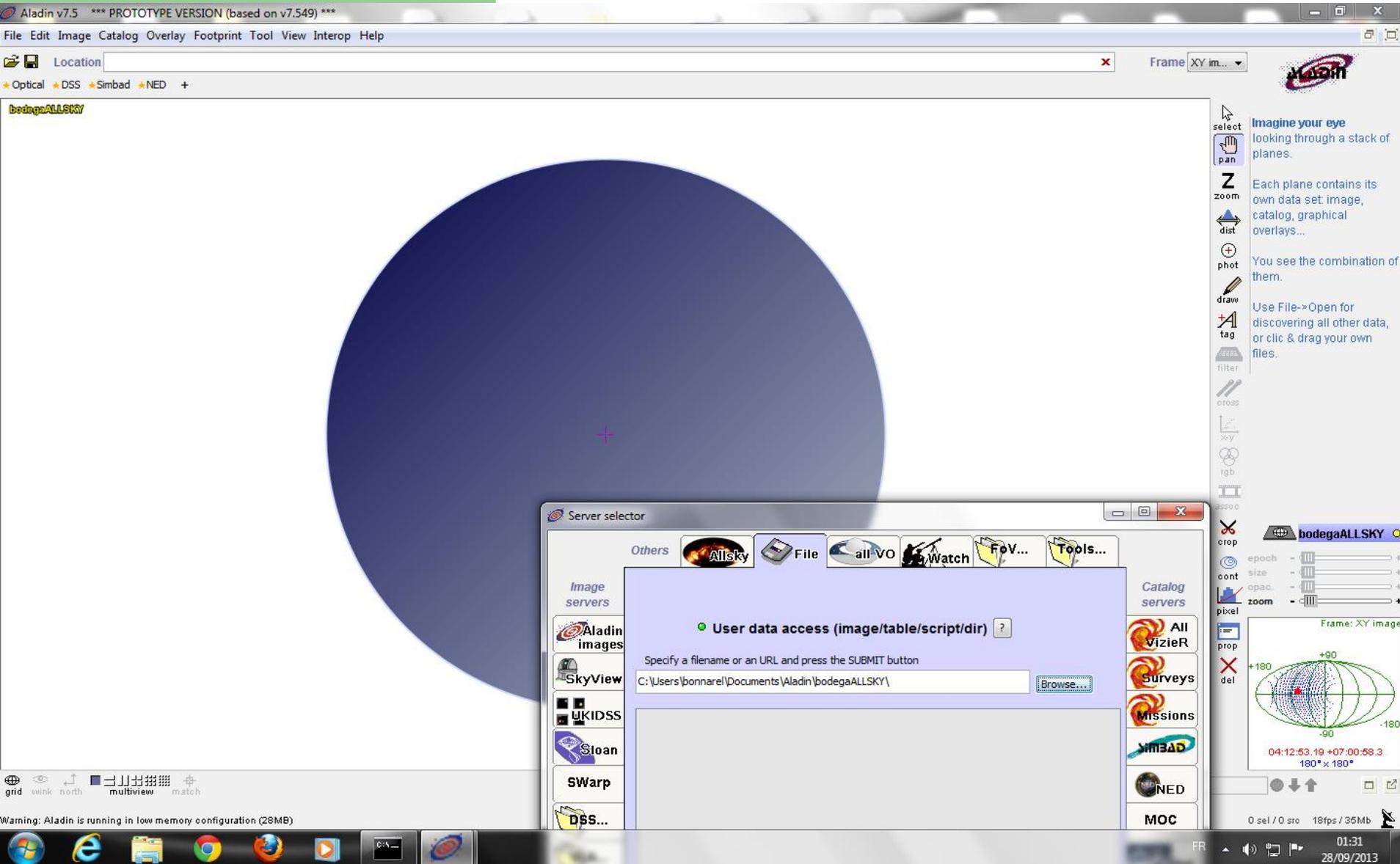
Archived and served by J.E. Ruiz at
IAA - CISC, Granada, Spain

Collection ported to CDS
by courtesy of IAA - CSIC

Scenario

- Galaxy discovery via HEALPIX allSKY map in Aladin (built from 2D average maps of the cubes)
- DataLinks for these galaxies
 - Retrieval
 - Updated SIA2 metadata (2013 Working draft)
 - AccessData (cutout, average maps, position velocity maps, spectra...)
 - STC-S syntax and old POS,SIZE,BAND syntax both work.
 - Etc ...

Bodega Healpix Allsky map : nothing is visible (too small images)



Bodega cubes footprints

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

Properties of the plane "bodegaALLSKY"

PlaneID: bodegaALLSKY
Format: HEALPix CDS tessellation
Transparency: -2.147483648E9
C:\Users\bonnarel\Documents\Aladin\bodegaALLSKY

HEALPix tessellation properties
Best pixel resolution: 805.2mas
Tile format: FITS true pixels (BITPIX=32)
Tile width: 512 pix (2^9)
HEALPix NSide: 262144 (2^18)

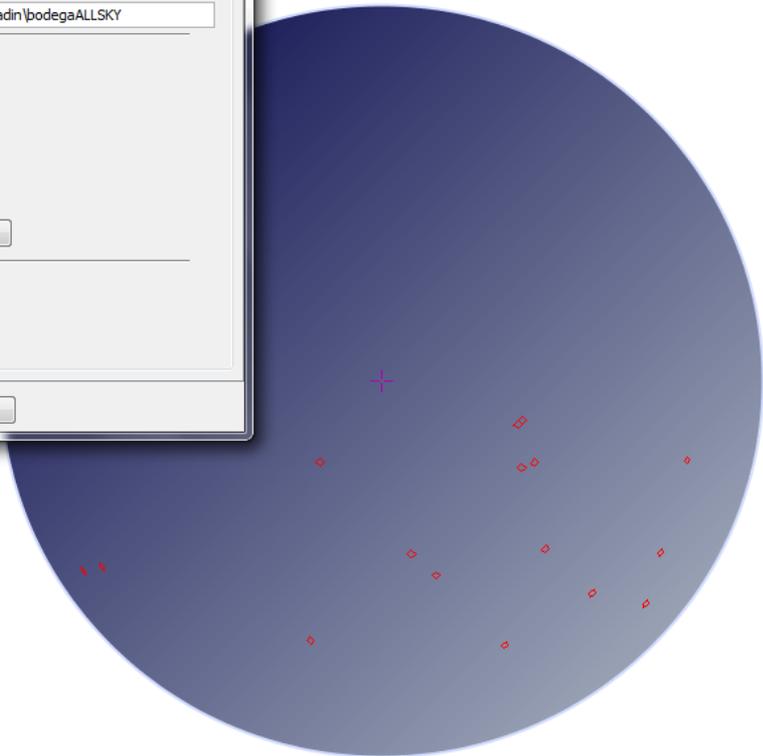
Get preview (jpeg)

HEALPix Coordsys: ICRS

More info: Footprint Progenitors

Used projection
.projection center: 04 12 53.19 +07 00 58.3
.method: SINUS
.frame: Default

Apply Close



160° x 160°

Stack controls:

- the icon: show/hide a plane
- size: change object size
- zoom: adjust field size.
- Opacity: adjust transparency.

The vue is drawn according to the projection of a reference plane.

For changing the reference, click on its check box.

bodegaALLSKY M
bodegaALLSKY

epoch - [] +
size - [] +
opac. - [] +
zoom - [] +

Frame: XY image
+180 +90
-90 -180
04:12:53.19 +06:37:30.4
180° x 180°

grid wink north multiview match

Warning: Aladin is running in low memory configuration (26MB)

0 sel / 0 src 23fps / 37Mb

FR 01:34 28/09/2013



Centering the view on object ngc 1022

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

File Edit Image Catalog Overlay Footprint Tool View Interop Help

Location **ngc 1022** Frame ICRSd

Optical DSS Simbad NED +

bodegaALLSKY

Stack controls:

- the icon: show/hide a plane
- size: change object size
- zoom: adjust field size.
- Opacity: adjust transparency.

The vue is drawn according to the projection of a reference plane.

For changing the reference, click on its check box.

epoch - [] +

size - [] +

cont - [] +

opac. - [] +

zoom - [] +

Frame: ICRSd

+180 +90 -180 -90

039.63625 -06.67739

180° x 180°

Warning: Aladin is running in low memory configuration (30MB)

0 sel / 0 src 25fps / 33Mb

FR 01:36 28/09/2013

Zoom on the NGC 1022 Average image in Healpix representation

Progenitor button makes OBsID appear in Access window

The screenshot displays the Aladin v7.5 software interface. The main window shows a dark blue background with a red diamond-shaped region representing the field of view. A zoomed-in view of a star cluster (NGC 1022) is visible within this region. Two windows are open over the main view:

- Properties of the plane "bodegaALLSKY"**: This window shows the following details:
 - PlaneID: bodegaALLSKY
 - Format: HEALPix CDS tessellation
 - Transparency: -2.147483648E9
 - File path: C:\Users\bonnarel\Documents\Aladin\bodegaALLSKY
 - HEALPix tessellation properties:
 - Best pixel resolution: 805.2mas
 - Tile format: FITS true pixels (BITPIX=32)
 - Tile width: 512 pix (2^9)
 - HEALPix NSide: 262144 (2^18)
 - HEALPix Coordsys: ICRS
 - Used projection:
 - .projection center: 04 12 53.19 +07 00 58.3
 - .method: SINUS
 - .frame: Default
- Access to original images**: This window shows a list of images, with "ngc1022" selected. It includes buttons for "Load orig. images" and "Close".

The right sidebar contains various controls and a legend for the visualization. At the bottom, a warning message states: "Warning: Aladin is running in low memory configuration (20MB)".

Warning: Aladin is running in low memory configuration (20MB)

The Windows taskbar at the bottom of the screen shows several icons for open applications and system utilities. The system tray on the right includes a search bar, volume control, network status, and a system clock displaying the time as 01:38 and the date as 28/09/2013.

DataLinks for this ObsID : fixed links and IVOA services

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

File Edit Image Catalog Overlay Footprint Tool View Interop Help

Location

Optical DSS Simbad NED +

bodegaALLSKY

Access to original images

ngc1022

Stack controls:

select
pan

the icon: show/hide a plane

Server selector

Others Allsky File all VO Watch FoV... Tools...

Image servers

Aladin images
SkyView
UKIDSS
Sloan
SWarp

Catalog servers

All vizier
Surveys
Missions
Simbad
NED
MOC
SkyBot
Others..

User data access (image/table/script/dir) ?

Specify a filename or an URL and press the SUBMIT button

C:\Users\bonnarel\Documents\Aladin\bodegaALLSKY\ Browse...

- Obsid: ivo://cds/bodega/ngc1022
 - Retrieval 0.0" x 0.0"
 - Cutout [64,64,8;192,192,24]
 - Average cube map
 - Position lambda map [1,1;256,256]
 - Dynamic AccessData
 - SIA2 Query

Reset Clear SUBMIT Close ?

Warning: Aladin is running in low memory configuration (29MB)

0 sel / 0 src 63fps / 34Mb

FR 01:39 28/09/2013

Cube average has been retrieved (fixed link)

The screenshot displays the Aladin v7.5 interface. The main window shows a red cube map. Two windows are open:

- Data Info Frame:** A window titled "Average cube map" with a table of metadata.
- Server selector:** A window for selecting data access options, showing a tree view with "Average cube map" selected.

Data Info Frame Table:

Field name	Value
Obsid	ivo://cds/bodega/ngc1022
Semantics	Average cube map
Service Type	AccessData function Average
reference	http://paladin.u-strasbg.fr:...
format	application/fits
size	4000000

Server selector Tree View:

- Obsid: ivo://cds/bodega/ngc1022
 - Retrieval 0.0" x 0.0"
 - Cutout [64,64,8;192,192,24]
 - Average cube map**
 - Position lambda map [1,1;256,256]
 - Dynamic AccessData
 - SIA2 Query

Warning: Aladin is running in low memory configuration (25MB)

ImageDM metadata for the cube: SIA2Query response

Data Info Frame

Display

CUBE_CO_NGC1022

Field name	UType	Value
Score	im:Query.Score	1
AssocID	im:Association.ID	None
AcRef	im:Access.Reference	http://alinda.u-strasbg.fr/Cubengc1022.dic
Format	im:Access.Format	image/fits
DataModel	im:Dataset.DataModel	ImageDM
DataLength	im:Dataset.Length	1600000
ImageNaxes	im:DataSet.Image.Naxes	3
ImageNaxis	im:DataSet.Image.Naxis	256 256 25
Title	Observation/Identifier	CUBE_CO_NGC1022
Title	im:DataID.Title	CUBE_CO_NGC1022
Creator	im:DataID.Creator	ivo://iaa/
ObservingProgramName	im:DataID.Collection	vo://iaa/bodega/
CreatorDID	im:DataID.CreatorDID	ivo://iaa/bodega#ngc1022/
CreatorVersion	im:DataID.Version	1.0
Instrument	im:Provenance.ObsConfig.Instrument	PicoVeleta
PublisherDID	im:Curation.PublisherDID	ivo://cds/
SpaceFrameName	im:CoordSys.SpaceFrame.Name	ICRS
TimeFrameName	im:CoordSys.TimeFrame.Name	TT
SpatialLocation	im:Char.SpatialAxis.Coverage.Location.Coord	39.636 -6.677deg
SpatialExtent	im:Char.SpatialAxis.Coverage.Bounds.Extent	1.3'
SpatialCalibration	im:Char.SpatialAxis.Accuracy.CalibrationStatus	Calibrated
SpatialResolution	im:Char.SpatialAxis.Resolution.RefVal	0.6"
TimeLocation	im:Char.TimeAxis.Coverage.Location.Coord	2008-11-01T10:36:06.3d
SpectralAxisUcd	im:Char.SpectralAxis.Ucd	em;freq
SpectralLocation	im:Char.SpectralAxis.Coverage.Location.Coord	1450000.0Hz
SpectralExtent	im:Char.SpectralAxis.Coverage.Bounds.Extent	500000.0Hz
SpectralStart	im:Char.SpectralAxis.Coverage.Bounds.Limits...	1200000.0Hz
SpectralStop	im:Char.SpectralAxis.Coverage.Bounds.Limits...	1700000.0Hz
SpectralCalibration	im:Char.SpectralAxis.Accuracy.CalibrationStatus	CALIBRATEDm
FluxAxisUcd	im:Char.FluxAxis.Ucd	phot.flux.density
MappingSpatialProjection	im:Data.Mapping.SpatialAxis.Algorithm	SIN
MappingCrval	im:Data.Mapping.RefValue	129.000000 129.000000 -46.0
MappingCrpix	im:Data.Mapping.RefPix	39.636249 -0.677499 -250000.0
MappingCdMatrix	im:Data.Mapping.CDMatrix	-0.0000833333 0.000000 0.000000 0.000 0.0...

Stick FoV in stack LOAD Close

Aladin

Frame ICRSd

Mouse controls:
o Left: source selection.
o Middle: quick panning.

Server selector

Others AllSky File all-VO Watch FoV... Tools...

Image servers

Catalog servers

- All VizieR
- Surveys
- Missions
- SimBAD
- NED
- MOC
- SkyBot
- Others..

User data access (image/table/script/dir) ?

Specify a filename or an URL and press the SUBMIT button

Browse...

```
Creator: ivo://iaa/  
Collection: null null  
CUBE_CO_NGC1022 0.0" x 0.0"
```

Reset Clear SUBMIT Close ?

16"

1.568" x 92.5"

1.28" x 1.28"

grid wink north multiview match

Warning: Aladin is running in low memory configuration (8MB)

0 sel / 0 src 63fps / 65Mb

FR 01:42 28/09/2013

Aladin opened a menu based on accessData method. CUTOUT syntax in STC-S

Data Info Frame

Display

CUBE_CO_NGC1022

Field name	UType	Value
Score	im:Query.Score	1
AssocID	im:Association.ID	None
AcRef	im:Access.Reference	http://alinda.u-strasbg.fr/Cubengc10...
Format	im:Access.Format	image/fits
DataModel	im:Dataset.DataModel	ImageDM
DataLength	im:Dataset.Length	1600000
ImageNaxes	im:DataSet.Image.Naxes	3
ImageNaxis	im:DataSet.Image.Naxis	256 256 25
Title	Observation/Identifier	CUBE_CO_NGC1022
Title	im:DataID.Title	CUBE_CO_NGC1022
Creator	im:DataID.Creator	ivo://iaa/
ObservingProgramName	im:DataID.Collection	vo://iaa/bodega/
CreatorDID	im:DataID.CreatorDID	ivo://iaa/bodega#ngc1022/
CreatorVersion	im:DataID.Version	1.0
Instrument	im:Provenance.ObsConfig.Instrument	PicoVeleta
PublisherDID	im:Curation.PublisherDID	ivo://cds/
SpaceFrameName	im:CoordSys.SpaceFrame.Name	ICRS
TimeFrameName	im:CoordSys.TimeFrame.Name	TT
SpatialLocation	im:Char.SpatialAxis.Coverage.Locatio...	39.636 -6.677deg
SpatialExtent	im:Char.SpatialAxis.Coverage.Bounds...	1.3'
SpatialCalibration	im:Char.SpatialAxis.Accuracy.Calibrati...	Calibrated
SpatialResolution	im:Char.SpatialAxis.Resolution.RefVal	0.6"
TimeLocation	im:Char.TimeAxis.Coverage.Location....	2008-11-01T10:36:06.3d
SpectralAxisUcd	im:Char.SpectralAxis.Ucd	em;freq
SpectralLocation	im:Char.SpectralAxis.Coverage.Locati...	1450000.0Hz
SpectralExtent	im:Char.SpectralAxis.Coverage.Bounds...	500000.0Hz
SpectralStart	im:Char.SpectralAxis.Coverage.Bounds...	1200000.0Hz
SpectralStop	im:Char.SpectralAxis.Coverage.Bounds...	1700000.0Hz
SpectralCalibration	im:Char.SpectralAxis.Accuracy.Calbra...	CALIBRATEDm
FluxAxisUcd	im:Char.FluxAxis.Ucd	phot.flux.density
MappingSpatialProjection	im:Data.Mapping.SpatialAxis.Algorithm	SIN
MappingCrval	im:Data.Mapping.RefValue	129.000000 129.000000 -46.0
MappingCrxpix	im:Data.Mapping.RefPix	39.636249 -0.677499 -250000.0
MappingCdMatrix	im:Data.Mapping.CDMatrix	-0.000083333 0.000000 0.000000 0.0...

Stick FoV in stack LOAD Close

Access to original images

Frame ICRSd

Basic controls:

-Type any object name or coordinates for moving on

Server selector

Others Allsky File all VO Watch FoV... Tools...

Image servers

SIA2 EtaCarOIII Cube AccessData ?

Fill in all these fields and press the SUBMIT button

ID - Data Set ID:

FUNCTION:

CUTOUT:

POS:

SIZE:

BAND:

COORD SYSTEM:

Reset Clear SUBMIT Close ?

Warning: Aladin is running in low memory configuration (14MB)

0 sel / 0 src 63fps / 49Mb

FR 01:46 28/09/2013

Cube cutout in action

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

File Edit Image Catalog Overlay Footprint Tool View Interop Help

Location 039.63258 -06.67755

Frame ICRSd

Basic controls:

- Type any object name or coordinates for moving on it.
- Select catalog sources for displaying associated data measurements.
- Display simultaneously several views via the "multiview" controller.

select
pan
zoom
dist
phot
draw
tag
filter
cross
x-y
rgb
asso c
crop
epoch
cont
opac
pixel
prop
del

Cube ngc1022/sim
Average cube map
bodegaALLSKY M2
bodegaALLSKY

epoch -
size -
opac. -
zoom -

35.7" x 36"

46.56" x 26.25"

Adjust the visible area (click&drag + mouse wheel)

Warning: Aladin is running in low memory configuration (13MB)

0 sel / 0 src 63fps / 50Mb

FR 01:47
28/09/2013

BAND average map on the same cutout definition

The screenshot displays the Aladin v7.5 software interface. The main window shows a band average map of NGC 1022, with a central crosshair and a coordinate display at the bottom center: $46.56^{\circ} \times 23.25^{\circ}$. The interface includes a menu bar (File, Edit, Image, Catalog, Overlay, Footprint, Tool, View, Interop, Help), a toolbar with various icons, and a sidebar with a 'Catalog servers' list containing: All VizieR, Surveys, Missions, SIMBAD, NED, MOC, SkyBot, and Others.. A 'SIA2 ETaCarOIII Cube AccessData' dialog box is open on the left, with the following fields: 'ngc1022', 'band_average_map - averages several bands', and 'E ICRS 39.636 -6.677 0.005 SpectralInterval 1300000 1500000 Hz'. The dialog has 'Reset', 'Clear', 'SUBMIT', and 'Close' buttons. The bottom status bar shows 'Warning: Aladin is running in low memory configuration (19MB)', '0 sel / 0 src 63tps / 44Mb', and the date '28/09/2013'.

Looking to the neighbourhood, choose the next galaxy

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

File Edit Image Catalog Overlay Footprint Tool View Interop Help

Location: 040.66383 -07.85494 Frame: ICRSd

Optical DSS Simbad NED +

bodegaALLSKY

[VV98] J024250.8-075913 (17.36,QSO)

[VV98] J024250.8-075913 (17.36,QSO) [by Simbad]

Search

Warning: Aladin is running in low memory configuration (15MB)

0 sel / 0 src 167fps / 48Mb

FR 01:50 28/09/2013

Discover what it is with SIMBAD. NGC 1084

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

File Edit Image Catalog Overlay Footprint Tool View Interop Help

Location: 041.49969 -07.57864 Frame: ICRSd

★ Optical ★ DSS ★ Simbad ★ NED +

bodegaALLSKY

20.93' x 0.656'

simbad - COO_ERR_MAJA - [mas] Coordinate error major axis

Search

MAIN ID	OTYPE	RA	DEC	COO ...	COO ...	C...	PMRA	PMDEC	B	V	R	J	H	K	SP T...	GA...	GA...	G...	BI...
NGC 1084	GinG...	02 45 59.926	-07 34 43.10						11.59	10.73	10.55	8.841	8.205	7.93		2.62	1.00	40	239

Warning: Aladin is running in low memory configuration (19MB)

1 sel / 11 src 48fps / 44Mb

02:10 28/09/2013

Dynamic AccessData link choice

Aladin v7.5 *** PROTOTYPE VERSION (based on v7.549) ***

File Edit Image Catalog Overlay Footprint Tool View Interop Help

Location

Optical DSS Simbad NED +

bodegaALLSKY

Access to original images

ngc1084

Server selector

Image servers

Others Allsky File all VO Watch FoV... Tools...

Catalog servers

All VizieR

Surveys

Missions

Simbad

NED

MOC

SkyBot

Others..

User data access (image/table/script/dir) ?

Specify a filename or a URL and press the SUBMIT button

Browse...

Obsid: ivo://cds/bodega/ngc1084

- Retrieval 0.0" x 0.0"
- Cutout [64,64,8;192,192,24]
- Average cube map
- Position lambda map [1,1;256,256]
- Dynamic AccessData**
- SIA2 Query

Reset Clear SUBMIT Close ?

Warning: Aladin is running in low memory configuration (17MB)

0 sel / 0 sto 56fps / 46Mb

FR 01:52 28/09/2013

CUTOUT DEFINED IN POS SIZE BAND

Data Info Frame

Display

CUBE_CO_NGC1084

Field name	UType	Value
Score	im:Query.Score	1
AssocID	im:Association.ID	None
AcRef	im:Access.Reference	http://alinda.u-str...
Format	im:Access.Format	image/fits
DataModel	im:Dataset.DataM...	ImageDM
DataLength	im:Dataset.Length	2250000
ImageNaxes	im:DataSet.Image...	3
ImageNaxis	im:DataSet.Image...	300 300 25
Title	Observation/Ident...	CUBE_CO_NGC1084
Title	im:DataID.Title	CUBE_CO_NGC1084
Creator	im:DataID.Creator	ivo://iaa/
ObservingProgra...	im:DataID.Collection	ivo://iaa/bodega/
CreatorDID	im:DataID.Creator...	ivo://iaa/bodega#...
CreatorVersion	im:DataID.Version	1.0
Instrument	im:Provenance.Ob...	PicoVeleta
PublisherDID	im:Curation.Publis...	ivo://cds/
SpaceFrameNa...	im:CoordSys.Spac...	ICRS
TimeFrameName	im:CoordSys.Time...	TT
SpatialLocation	im:Char.SpatialAxi...	41.499 -7.578deg
SpatialExtent	im:Char.SpatialAxi...	1.5'
SpatialCalibration	im:Char.SpatialAxi...	Calibrated
SpatialResolution	im:Char.SpatialAxi...	0.6"
TimeLocation	im:Char.TimeAxis...	2008-11-01T02:23...
SpectralAxisUcd	im:Char.SpectralA...	em;freq
SpectralLocation	im:Char.SpectralA...	1490000.0Hz
SpectralExtent	im:Char.SpectralA...	500000.0Hz
SpectralStart	im:Char.SpectralA...	1240000.0Hz
SpectralStop	im:Char.SpectralA...	1740000.0Hz
SpectralCalibrati...	im:Char.SpectralA...	CALIBRATEDm
FluxAxisUcd	im:Char.FluxAxis.Ucd	phot.flux.density
MappingSpatialP...	im:Data.Mapping.S...	SIN
MappingCrval	im:Data.Mapping....	151.000000 151.0...
MappingCrpix	im:Data.Mapping....	41.4995837 -7.57...
MappingCdMatrix	im:Data.Mapping....	-0.0000833333 0.0...

Stick FoV in stack LOAD Close

Help

Frame ICRSd

Access to original images

ngc1084

select pan zoom

Server selector

Others Allsky File all VO Watch FoV... Tools...

Image servers

Catalog servers

- All VizieR
- Surveys
- Missions
- IMBAP
- INED
- MOC
- SkyBot
- Others..

○ SIA2 ETaCarOIII Cube AccessData ?

Fill in all these fields and press the SUBMIT button

ID - DataSet ID	ngc1022
FUNCTION	copy - simple cutout
CUTOUT	
POS	41.50,7.579
SIZE	0.005,0.005
BAND	1500000.0;1600000.0
COORD SYSTEM	ICRS

Reset Clear SUBMIT Close ?

48.66" x 28.25"

36.7" x 36"

Warning: Aladin is running in low memory configuration (8MB)

0 sel / 0 src 143fps / 65MB

FR 10:35 29/09/2013

Some feedback

- This is :
 - not SIA2 query followed by Cube DataAccess,
 - but DataLink then DataAccess and description by metadata
- Utypes list: some differences between Spectrum, Char2, ObsCore and ImageDM
 - Not always for good reasons: harmonisati
 - Restart from Char2 to understand the differences
- Mapping in the response ?
- AccessData in SIA2 : From acref or via DataLink