

Advanced Aladin

Miriam Cortés



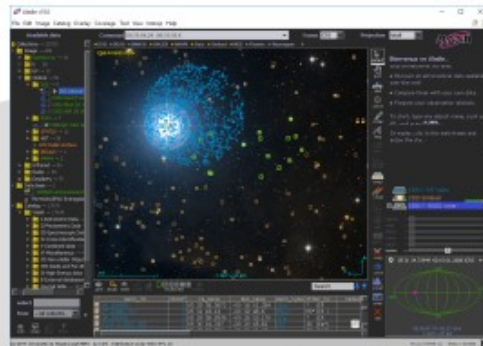
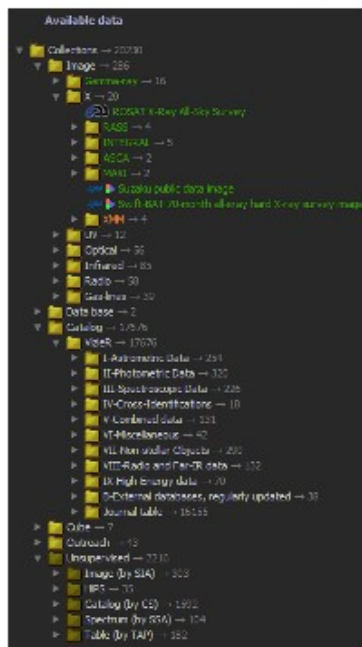
Astronomy ESFRI & Research Infrastructure Cluster
ASTERICS - 653477



What's new in release V10 ?

Discovery data tree

Integrated access to all CDS and other VO collections (>20,000 data sets)...



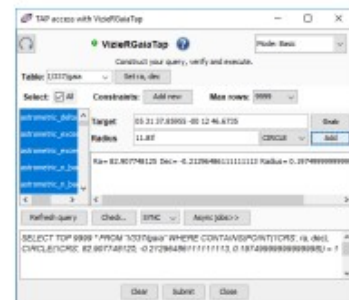
New look & feel

Modern and compact layout...

ALADIN

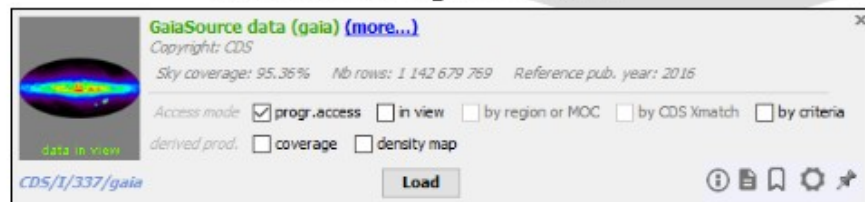
Multi-protocol support

HiPS, MOC, CS, SIA, SSA, TAP...



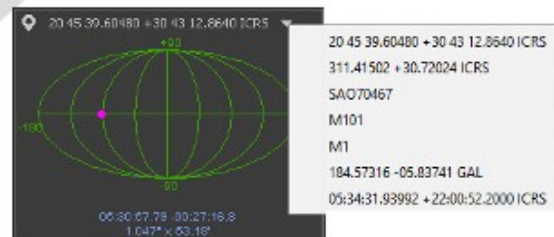
Access selector

Choose among all available access modes and derived products ...

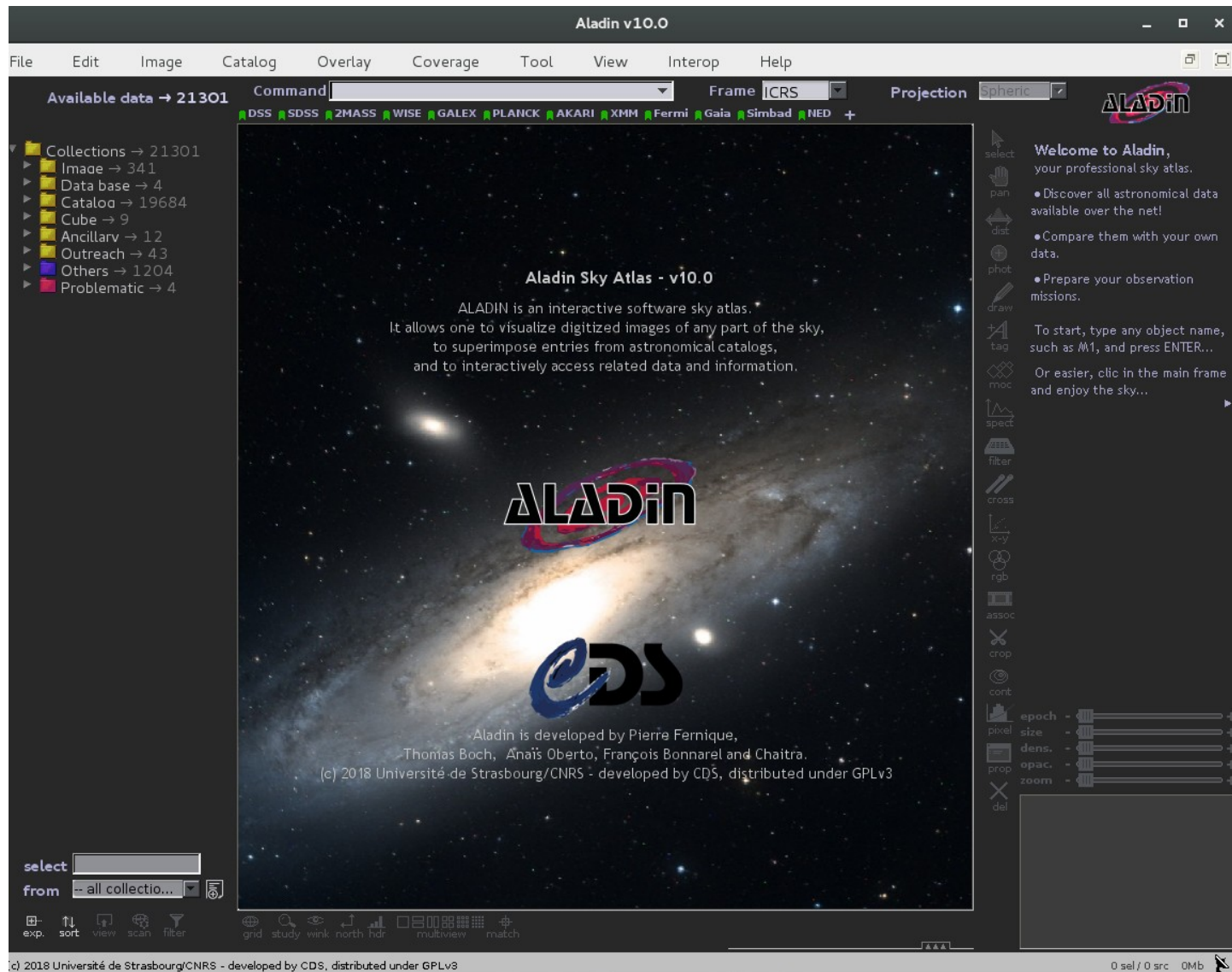


Target history controller

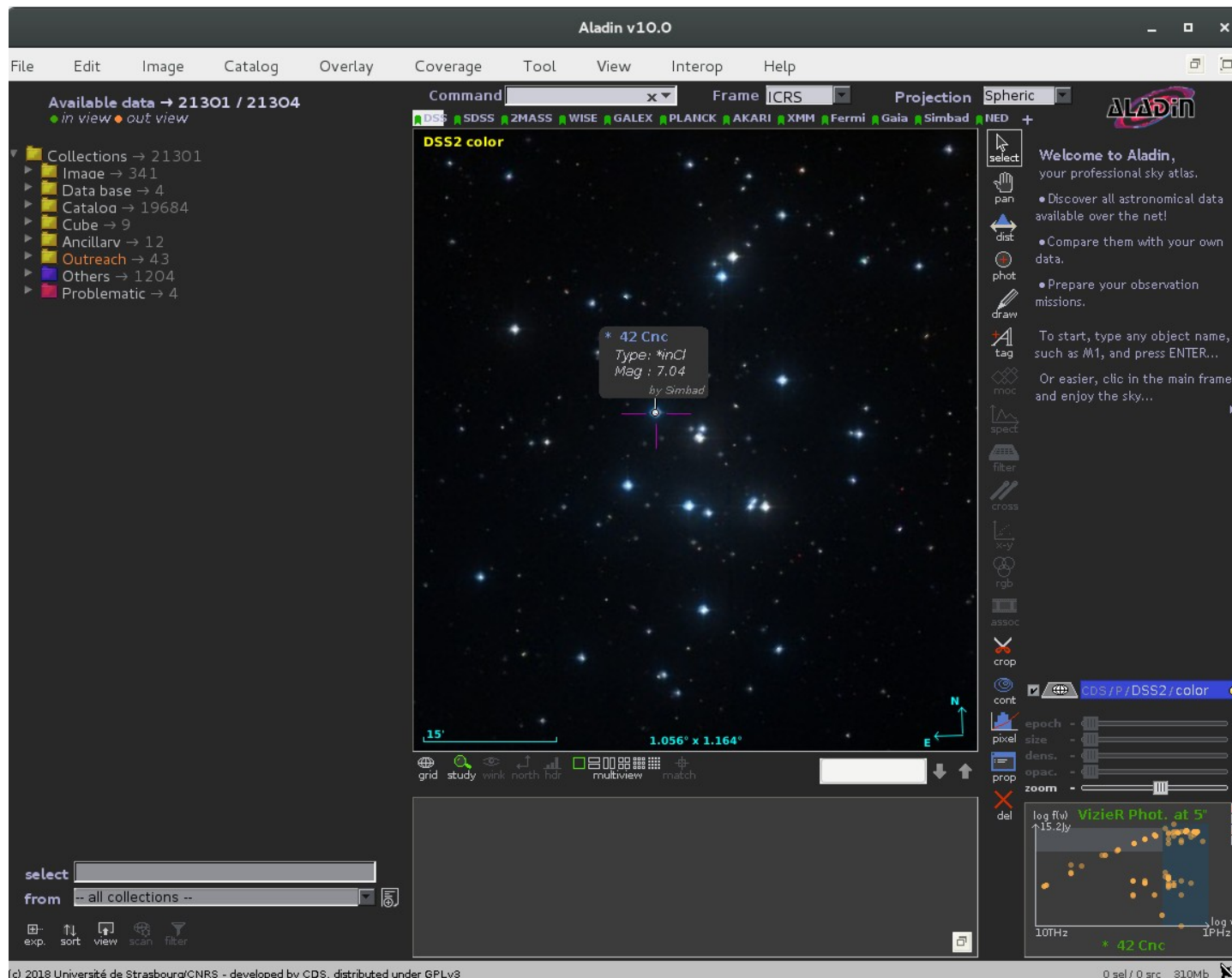
Come back to a previous target, command...



New look & feel



Simbad & VizieR info



CDS X-match

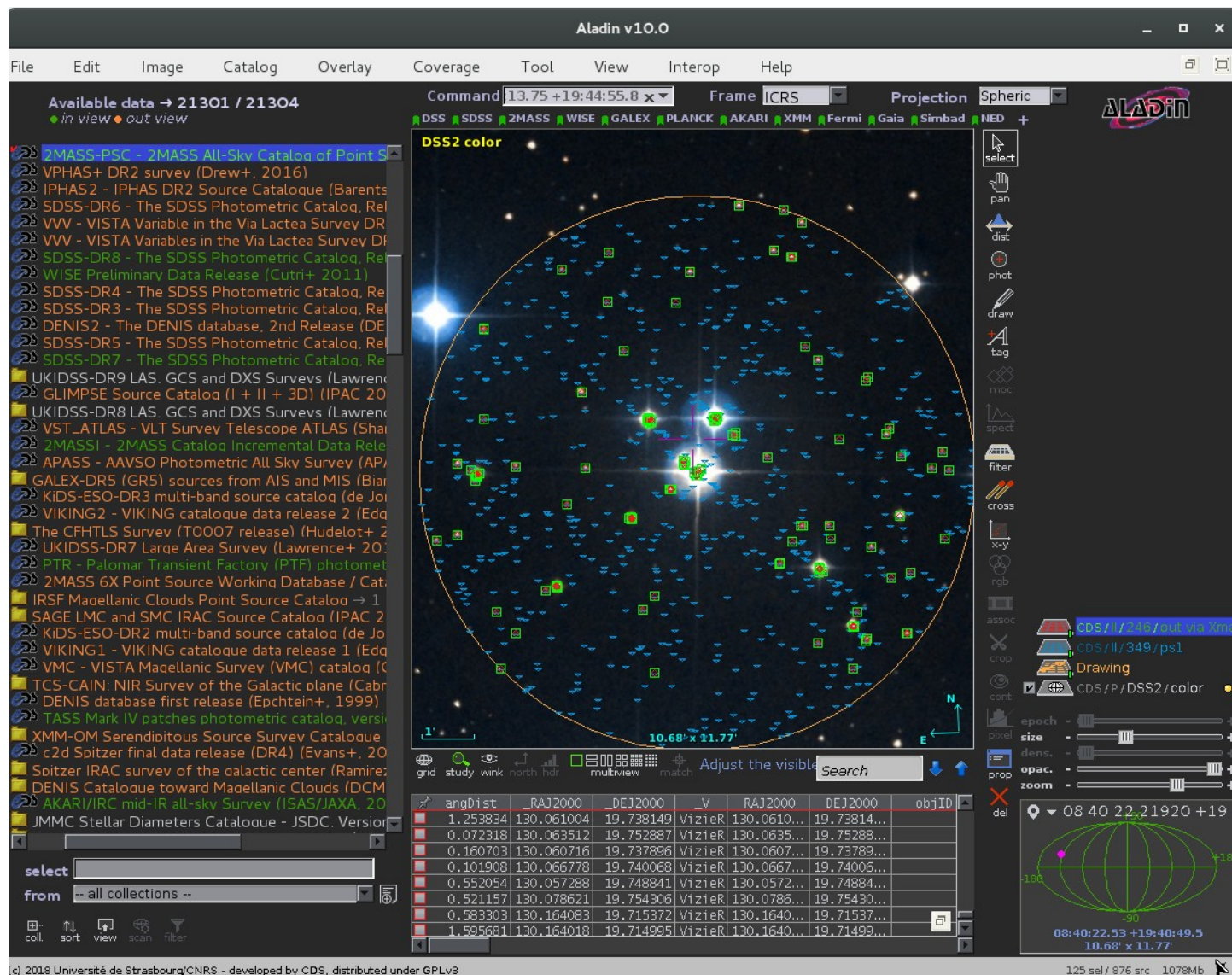


Image / Mosaic builder

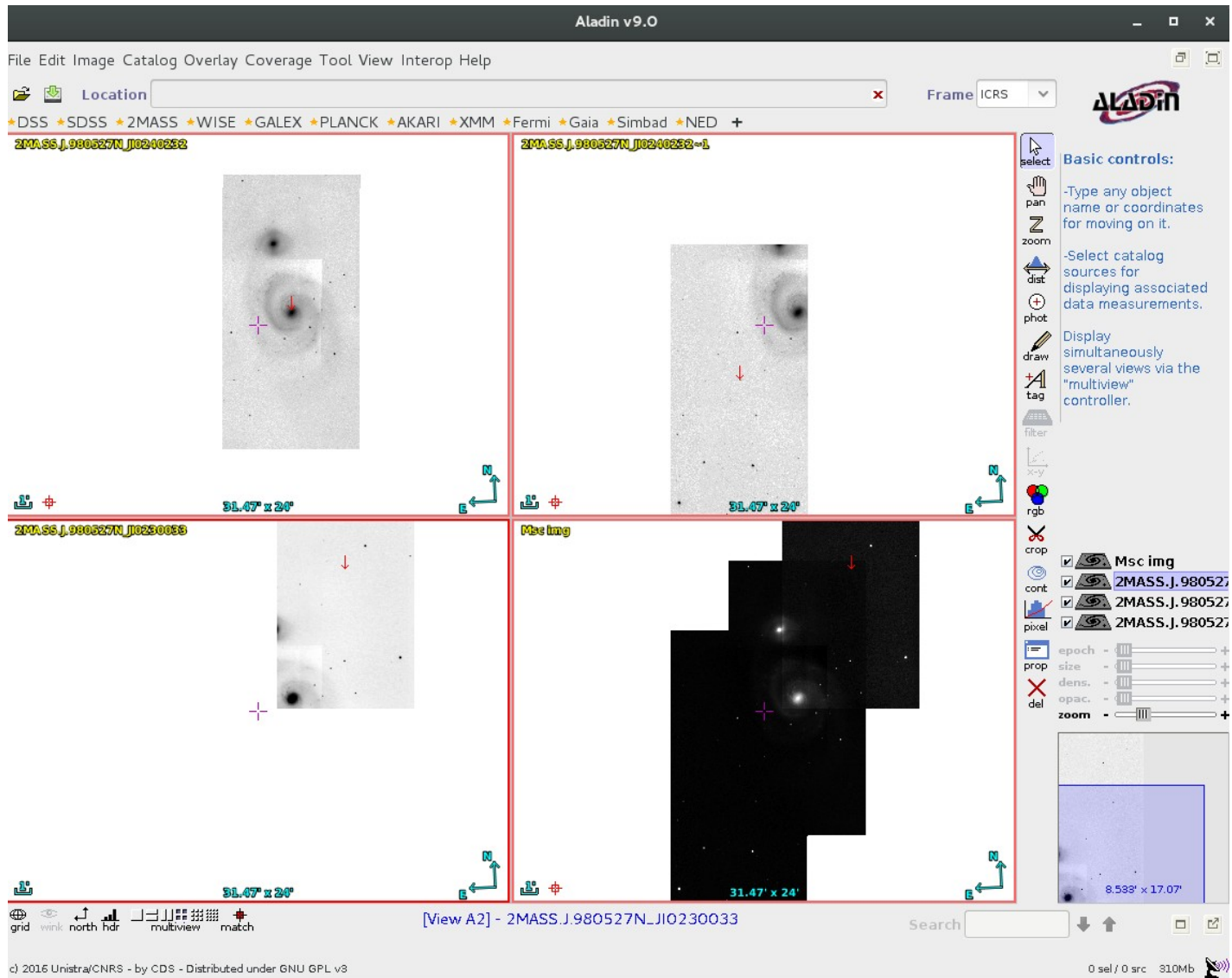


Image / Arithmetic operation

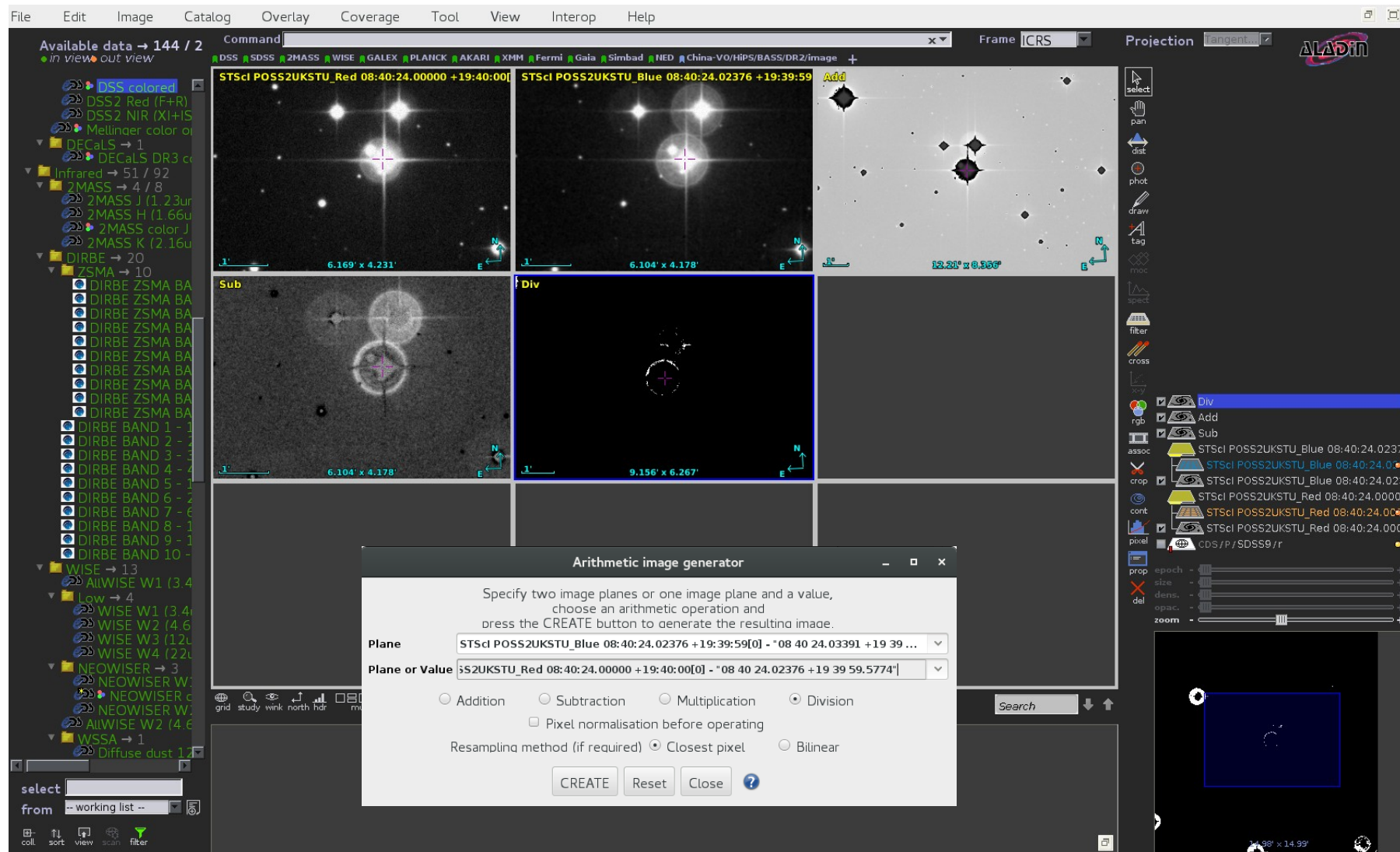
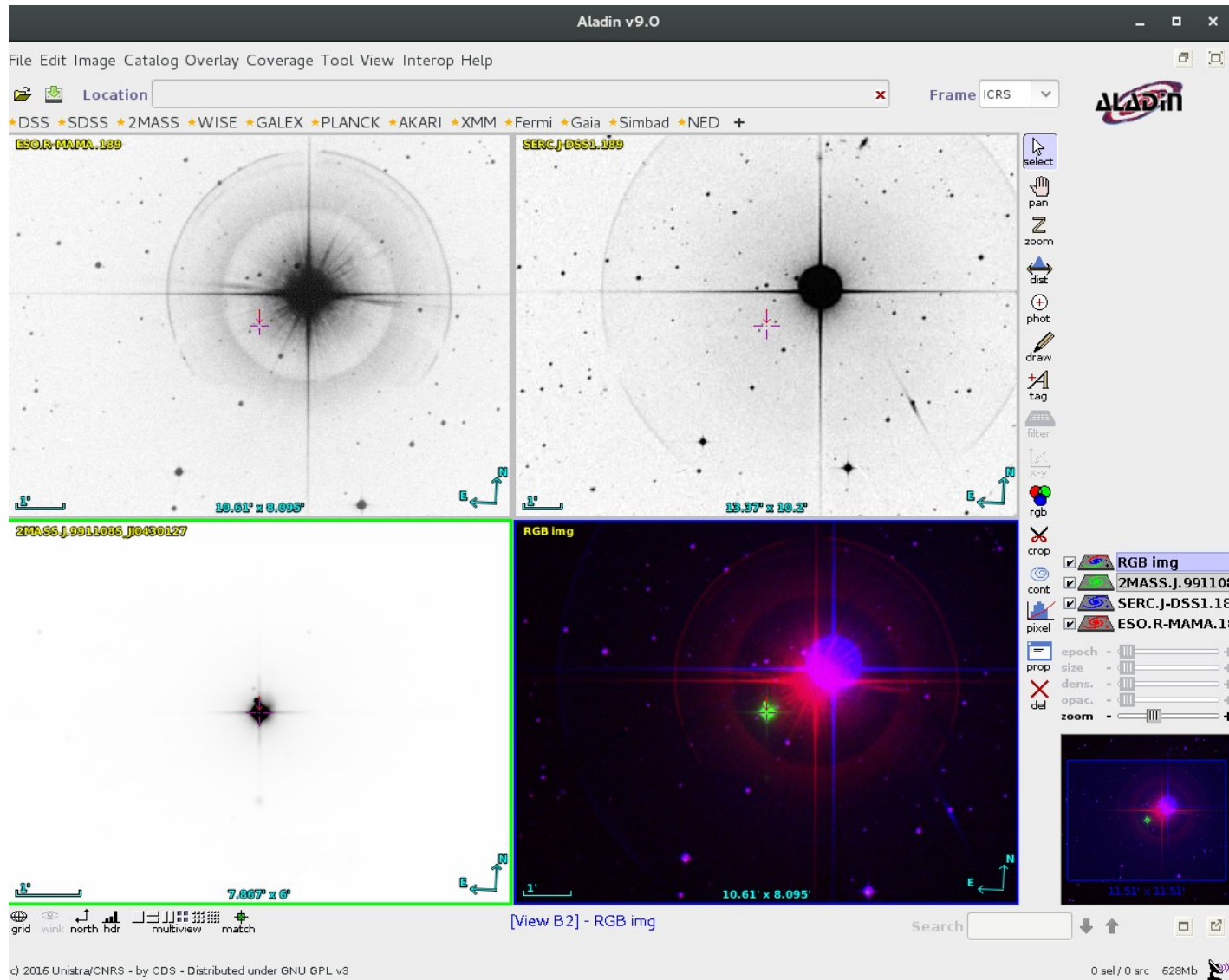


Image / RGB builder



File / Load instrument FoV

The screenshot displays the Aladin v9.0 software interface. On the left, the 'Server selector' panel is open, showing a list of instruments and their fields of view. The 'Instrument fields of view' section is active, displaying a table of instruments and their descriptions. The table includes columns for Instrument, Telescope, Description, and Author. The 'WFCINT' instrument is highlighted in blue. Below the table, there are buttons for 'Create your own...', 'Load it...', 'Reset', 'Clear', 'SUBMIT', and 'Close'.

The main window shows a star field with a red rectangular region of interest (FoV) overlaid. The region is labeled 'WFCINT POSSI.E-DSS1.187 LOW'. The interface also includes a 'Catalog servers' panel on the left, a 'Frame' dropdown menu set to 'ICRS', and a 'Location' input field showing '15:25:45.67 +28:59:38.5'. The bottom status bar indicates '© 2016 Unistra/CNRS - by CDS - Distributed under GNU GPL v3' and '0 sel / 0 src 334Mb'.

Instrument	Tele...	Description	Author
CFH12K	CFHT	Large field camera	CFH
ESPADONS	CFHT	Echelle Spectropolarimetric device	CFH
MEGACAM	CFHT	Wide field imaging camera	CFH
MEGAPRIME	CFHT	Wide field imaging camera + quiders	CFH
WIRCAM	CFHT	Wide field IR camera	CFH
HST	HST	All Hubble Space Telescope FoVs	STScI/T...
WFCINT	INT	Isaac Newton Telescope Wide Field	Luis Cor...
SOFI	NTT	ESO NTT single CCD camera	ESO-CDS
SuprimeCam	SUBARU	The Subaru Prime Focus Camera (Su...	CDS/S...
Schulman32	Schulma...	Schulman 32-inch Telescope	Adam Bl...
HSC	Subaru	Hyper-SuprimeCam	Herve B...
VIRcam	VISTA	Wide Field IR camera	Laurent ...
FORS1	VLT	ESO FOCal Reducer/low dispersion S...	ESO-CDS
FORS2	VLT	ESO FOCal Reducer/low dispersion S...	ESO-CDS
ISAAC	VLT	ESO infrared imager and spectrograph	ESO-CDS
VIMOS	VLT	ESO VIMOS mosaic camera	ESO
DECam	Victor M...	Dark Energy Camera with imaging (b...	Luis Cic...
WFI	WFI2.2m	ESO Wide Field Imager	ESO
PFIP	WHT	William Herschell Telescope mosaic ...	Luis Cor...
EPICMOS	XMM	Sensitive imaging (0.1 to 15 keV)	CDS
EPICpn	XMM	High resolution (<0.03ms)	CDS

Tools / Remote tools/Tools / Sextractor

Server selector

Others

Image servers

- Aladin images
- SkyView
- UKIDSS
- Sloan
- DSS...
- VLA...
- Archives...
- Others...

Catalog servers

- All VizieR
- Surveys
- Missions
- Simbad
- NED
- SkyBot
- Gaia
- Others...

S-extractor facility (v2.8.6)

Image reference: 2MASS.J.000130N.J00630232

Threshold (x RMS): 4.0

Mag zero point:

Saturation (ADU):

stellar FWHM (arcs...): 1.2

Filter type: default.conv

Phot diam. apertur...:

Background type: GLOBAL

Backgd annulus thi...:

Display filter: Object elongation

INFO on this server

Reset Clear **SUBMIT** Close ?

Aladin v9.0

File Edit Image Catalog Overlay Coverage Tool View Interop Help

Location: Frame: ICRS

+DSS +SDSS +2MASS +WISE +GALEX +PLANCK +AKARI +XMM +Fermi +Gaia +Simbad +NED +

7.067° x 5.386°

8.53° x 17.07°

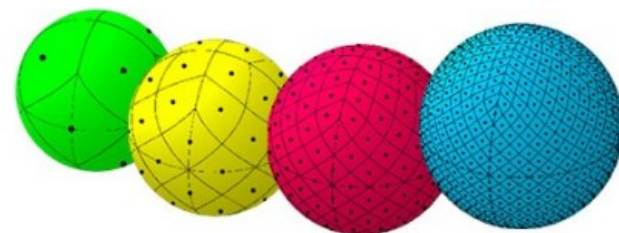
Search

NUMBER	MAG ISO	MAGERR ISO	MAG ISOCOR	MAGERR I...	MAG APER	MAGERR A...	MAG AUTO	MAGERR A...	MAG BEST	MAGERR B...	X IMAGE	Y IMAGE	ALPHA J2...	DELTA J2...
28	-4.7090	0.0423	-5.2878	0.1162	-4.8140	0.0423	-5.5304	0.0570	-5.5304	0.0570	246.060	530.517	230.5967...	+29...

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2 sel / 67 src 333Mb

- **Multi-object coverage (MOC):** Method for describing sky regions
- Based on **Healpix** (list of HEALPIX cells stored in a FITS binary table)
 - Equal-area cells & isolatitude → Speed.



Window Help

VizieR Server
Server: <http://vizier.u-strasbg.fr/>

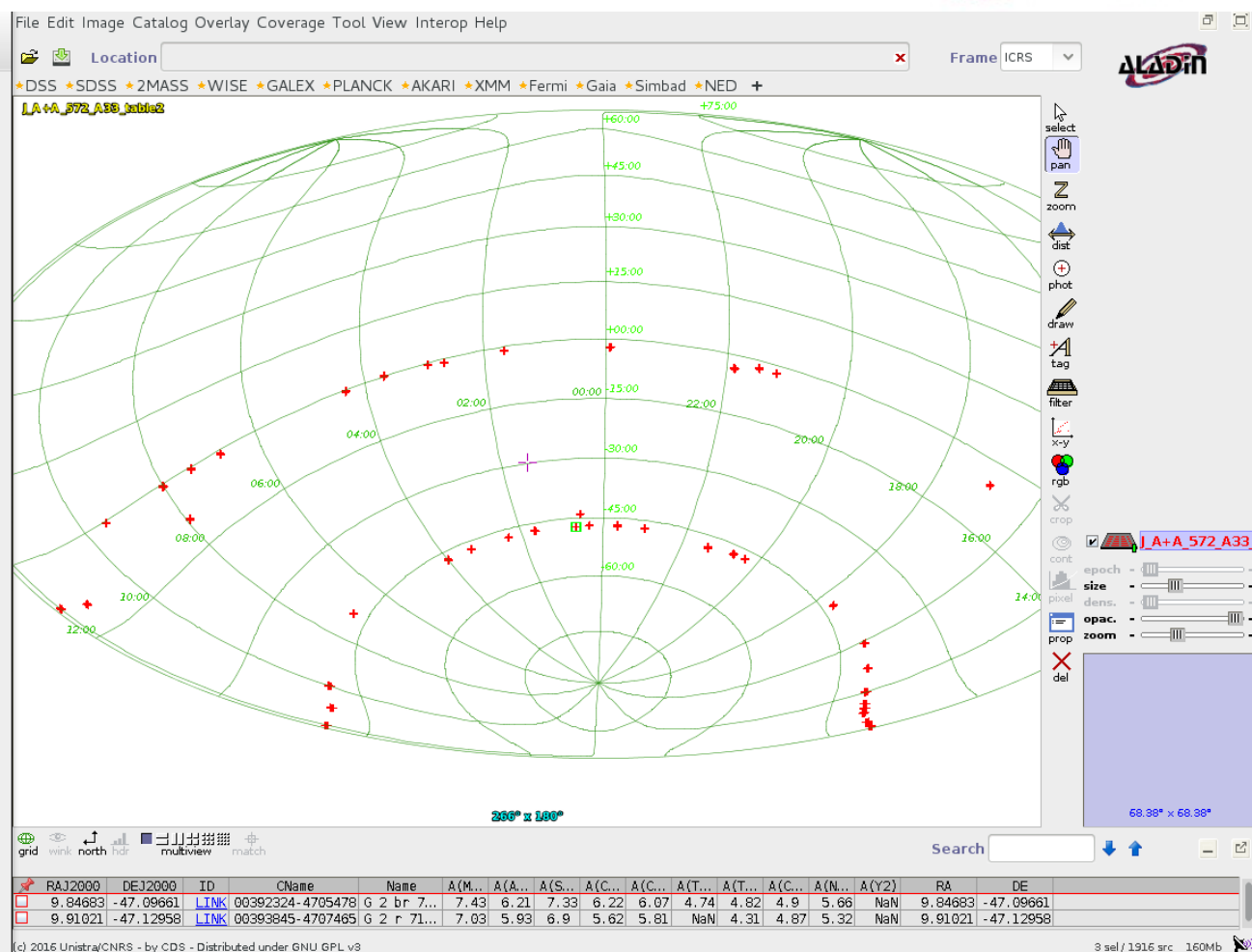
Row Selection
☐ Cone Selection
 Object Name: Resolve
 RA: degrees (J2000)
 Dec: degrees (J2000)
 Radius: degrees
☒ All Rows
 Maximum Row Count: 100000

Column Selection
Output Columns: standard

Catalogue Selection
 By Category By Keyword Surveys Missions
 Keywords: mikolaitis
☐ Sub-Table Details ☐ Include Obsolete Tables
 Search Catalogues Cancel Search

Δ Name	Popularity	Density	Description
J/A+A/572/A33	736	0	Abundances from Gaia-ESO Survey (Mikolaitis)
J/A+A/573/A55	215	0	Gaia-ESO Survey: Tr 20, NGC4815, NGC670
J/A+A/582/A81	1293	0	Gaia FGK benchmark stars: abundances (Mikolaitis)
J/A+A/595/A18	109	0	Lithium abundances in AMBRE stars (Guigou)

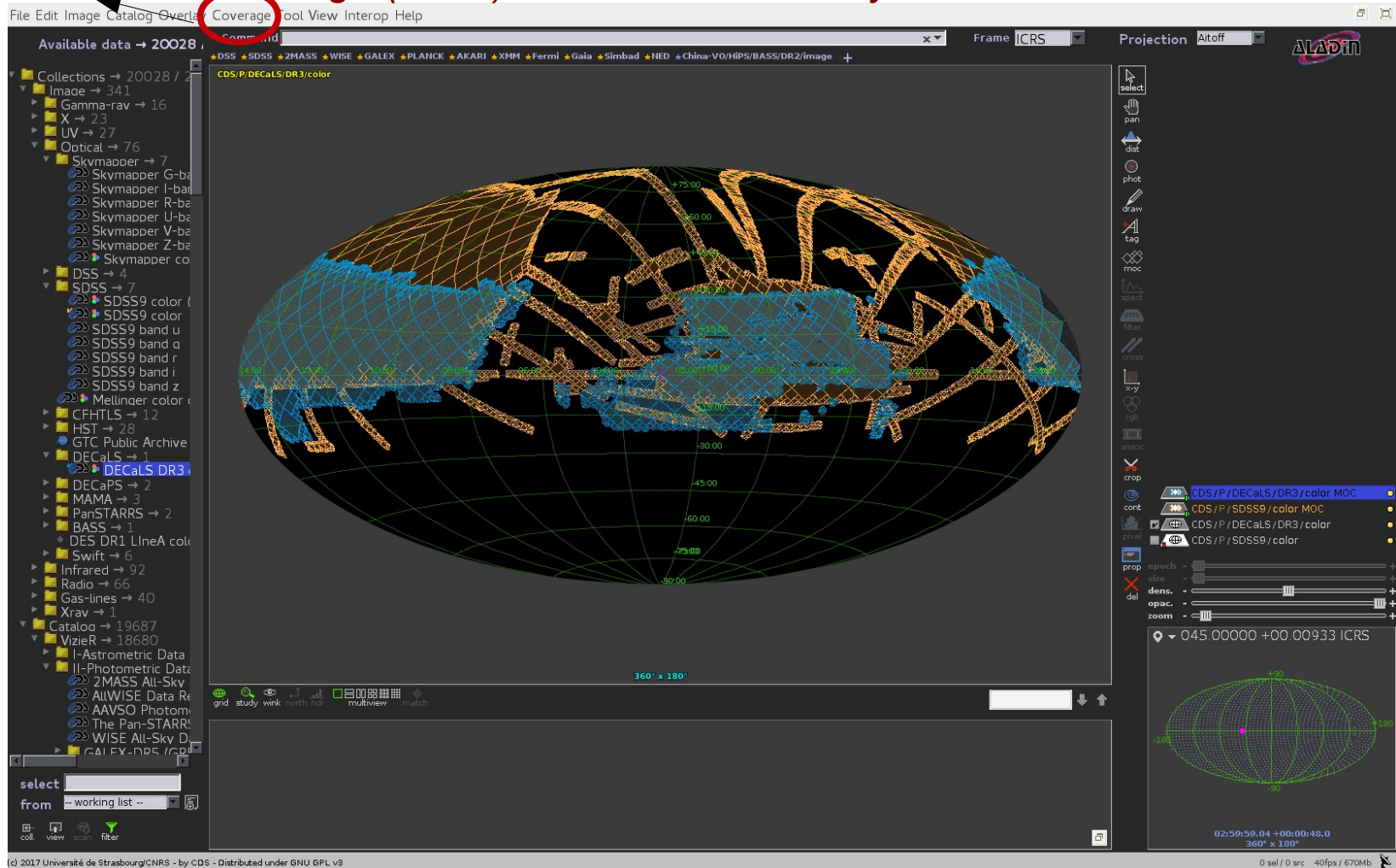
OK



MOC

How to know the area in common between two surveys?

Load the coverage (MOC) of the current survey



Case #4: Aladin

How to know the area in common between two surveys?

Logical operations

The screenshot displays the Aladin v10.0 software interface. The main window shows a celestial globe with various survey footprints overlaid. The 'Coverage' menu is circled in red. Two dialog boxes are open:

- Properties** (Properties of the plane "Int J-PLUS-DR201709_footprintCDS/P/SDSS9/color"): This dialog shows the plane's ID, origin, color, format, coverage, best MOC area, drawing method, and coordinate system. It also includes an overlay opacity/transparency slider.
- MOC operations**: This dialog allows users to specify one or two MOC planes, choose a MOC operation (Union, Intersection, Subtraction, Difference, Complement), and press the CREATE button to generate the resulting MOC.

The 'MOC operations' dialog shows two planes selected:

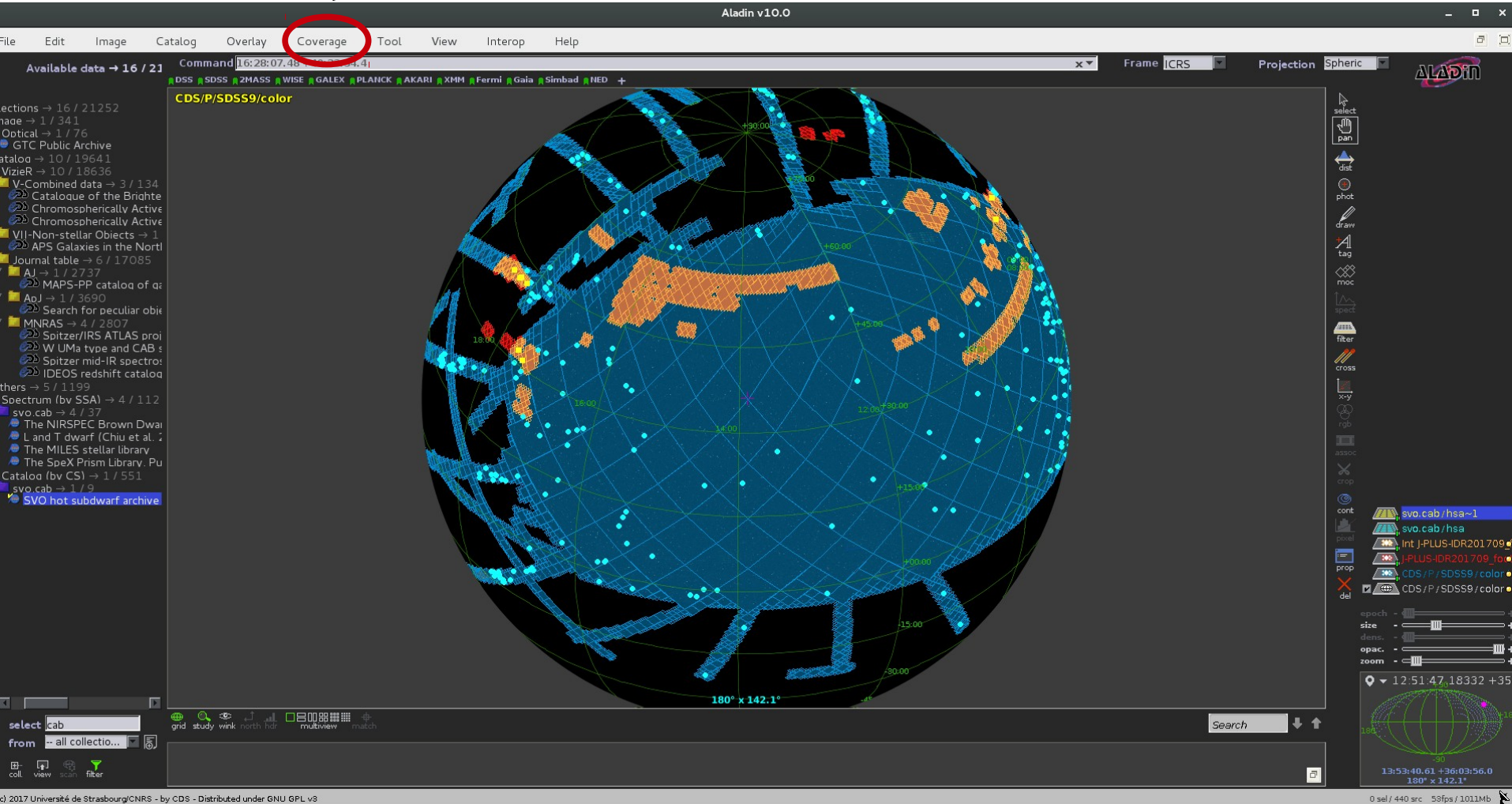
- Plane 1: J-PLUS-DR201709_footprint - "22 41 51.36791 +19 03 15.4649"
- Plane 2: CDS/P/SDSS9/color MOC-1 - "22 41 51.36791 +19 03 15.4649"

The 'Intersection' operation is selected. The 'CREATE' button is highlighted.

Case #4: Aladin

How to know the area in common between two surveys?

Filter a table by MOC



HIPS

- Hierarchical Progressive Survey
- Visualize a survey “*a la Google maps*”.
- Multi-scale view of images with capability to zoom and pan on any region.

Astronomy & Astrophysics manuscript no. Fernique_Allen_04May2015
May 12, 2015

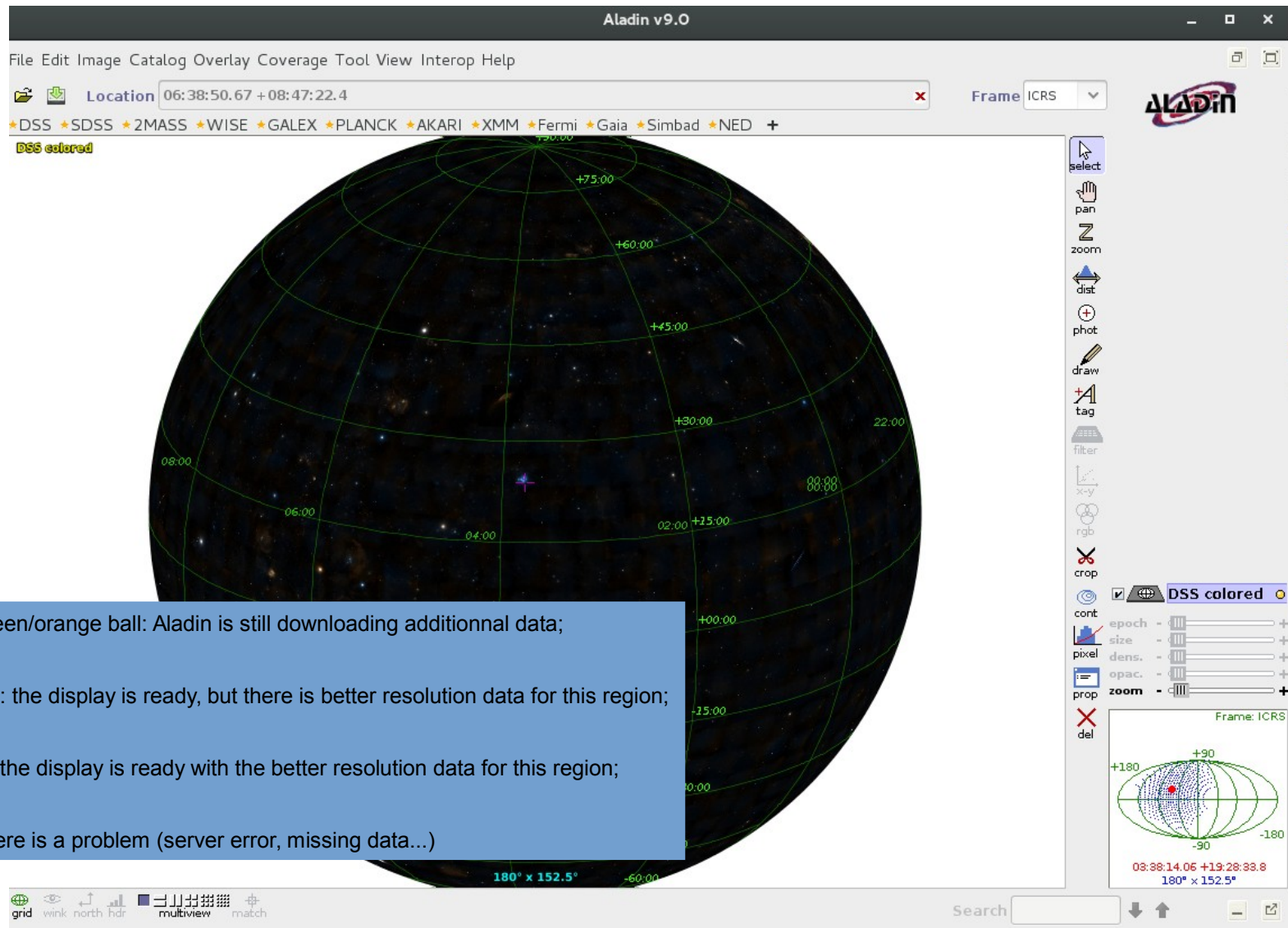
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Hierarchical progressive surveys

Multi-resolution HEALPix data structures for astronomical images, catalogues, and 3-dimensional data cubes

P. Fernique¹, M. G. Allen¹, T. Boch¹, A. Oberto¹, F-X. Pineau¹, D. Durand², C. Bot¹, L. Cambrésy¹, S. Derriere¹, F. Genova¹, and F. Bonnarel¹

HIPS



- blinking green/orange ball: Aladin is still downloading additional data;
- orange ball: the display is ready, but there is better resolution data for this region;
- green ball: the display is ready with the better resolution data for this region;
- red ball: there is a problem (server error, missing data...)