



ALADIN

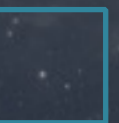


Aladin

The interactive sky atlas

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François-Xavier Pineau, Jean-Yves Hangouët, Thomas Keller



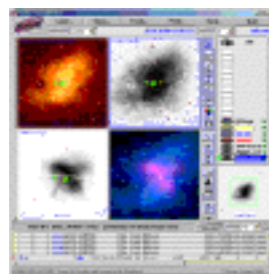
□ Visual exploration of the sky

- Aladin is a long term standing service of CDS
- Explore astronomical images & overlay additional information

CDS servers+External databases



Aladin Desktop



full functionalities

java

download on your machine
since 1999

Aladin Lite



preview mode

javascript

in your browser
since 2013

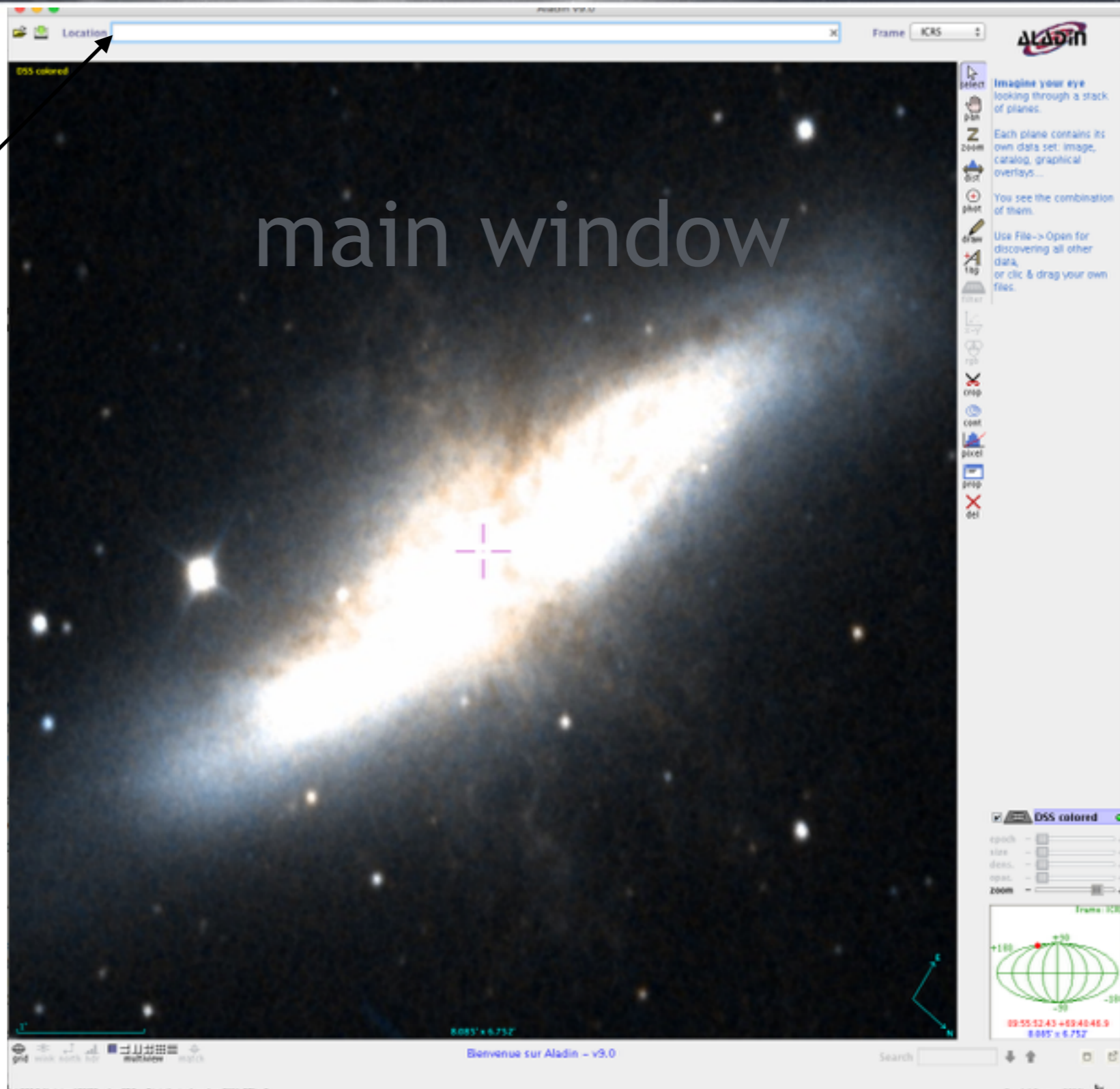
□ Aladin Desktop

- high level features desktop

type an object name here

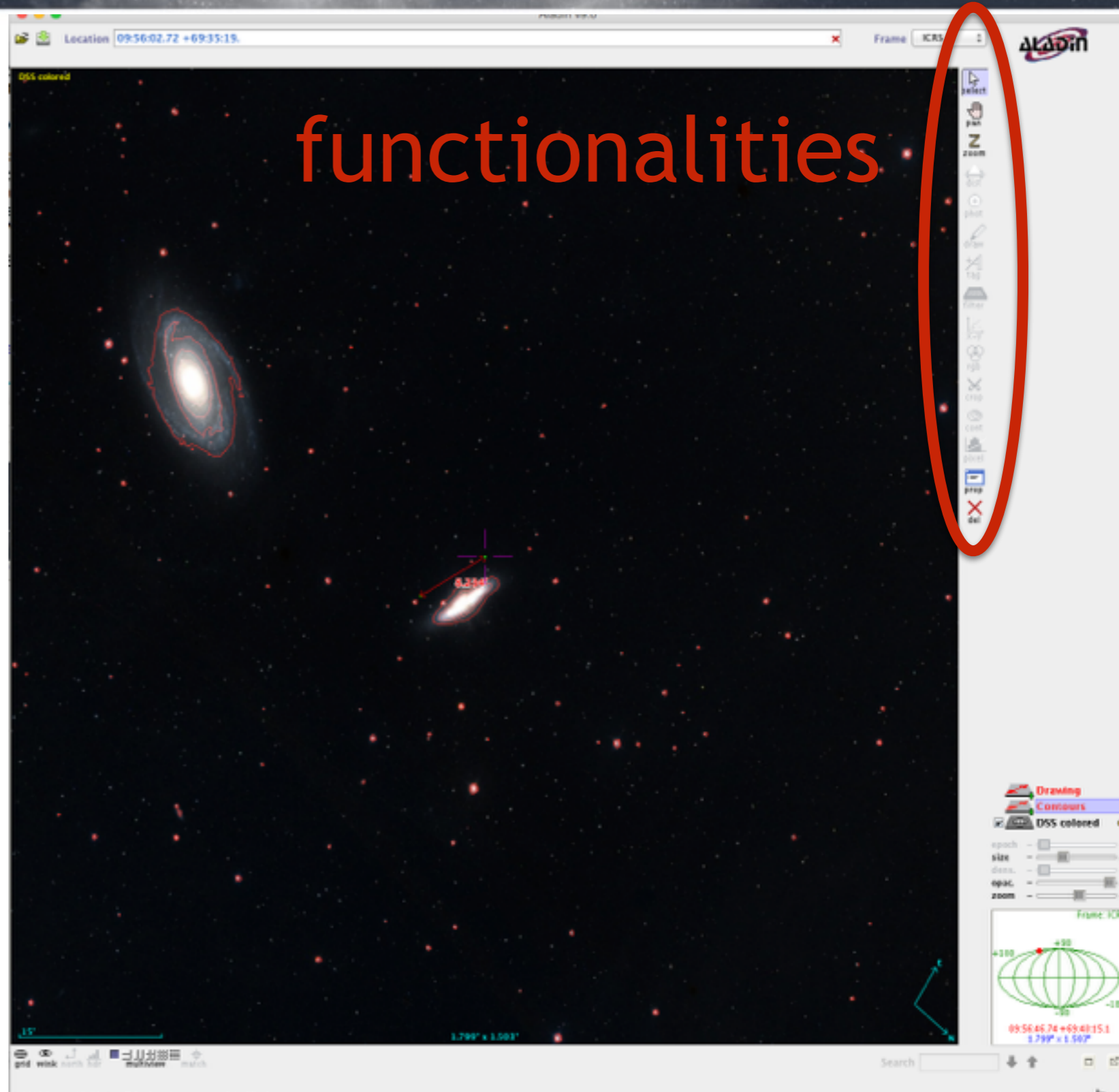
exemple: M82

resolved through sesame
DSS color survey by default



□ Aladin Desktop

- high level features desktop
 - zoom in and out (until full sky view)
 - pan
 - color tables
 - contours
 - text, drawings, ...



□ Aladin Desktop

wide data access

server selector

□ Aladin Desktop

query Simbad,
VizieR, ...

The image shows the Aladin Desktop interface. A 'Server selector' dialog box is open, allowing users to query various astronomical databases. The 'Simbad astronomical database' is selected, and the 'Display filter' is set to 'All objects'. The 'Target (ICRS, name)' is '09 55 34.36 +69 03 31.7' and the 'Radius' is '32.72\".

The background shows a star field visualization with a red circle highlighting a specific object. The interface includes various toolbars and a search bar.

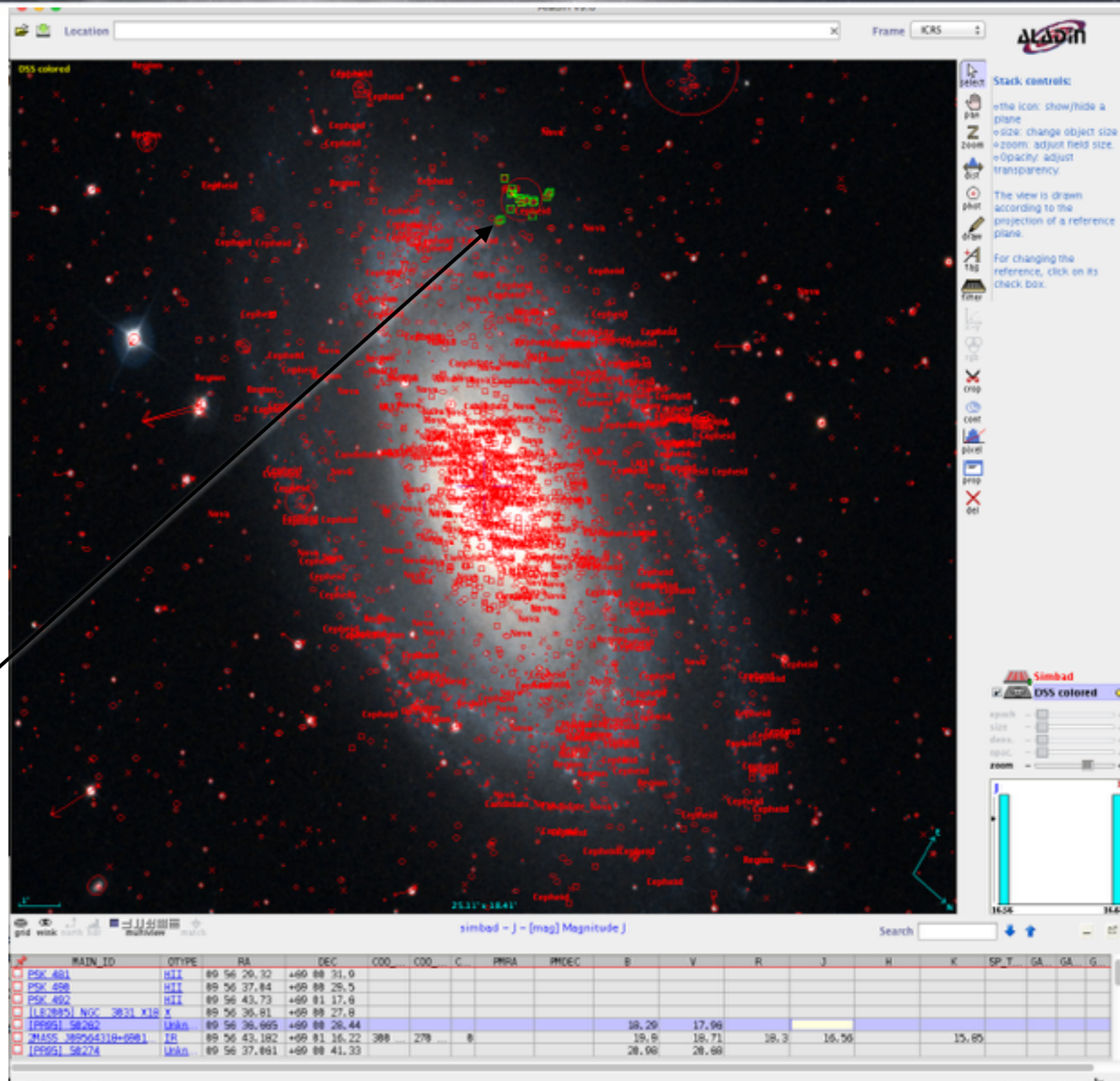
catalogs

□ Aladin Desktop

query Simbad,
Vizier, ...

graphical display

Measurements on
selected objects



Aladin Desktop

wide data access
images and more...

The screenshot shows the Aladin Desktop interface. On the left, a 'Server selector' window is open, displaying a tree view of data sources. The 'all VO' icon is highlighted with a green circle, and a green arrow points to it with the text 'portal to VO images, catalogs, spectra'. The 'HiPS' icon is circled in red, and the 'FOV...' icon is circled in blue. A blue box labeled 'Fields of View' is positioned over the main view. The main view displays a star field with overlaid contours and a filter panel on the right. A list of sources is visible at the bottom.

Fields of View

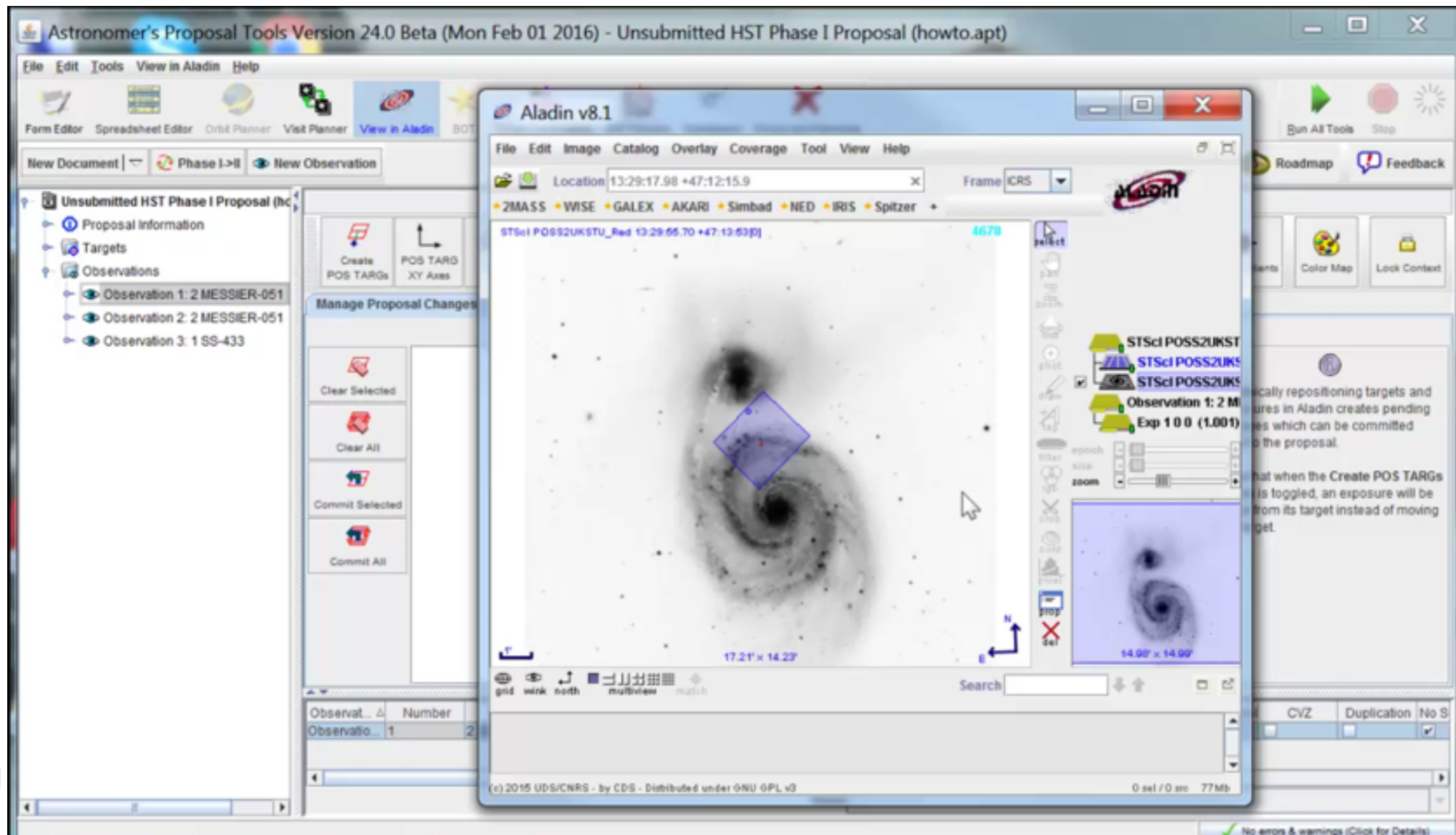
portal to VO
images, catalogs,
spectra

- WISE WSSA image
- GAIA TGAS catalog
- filter to show proper motions
- DSS contours
- ALMA footprint

Source	RA_ICRS	e_RA	DE_ICRS	e_DE	PLx	pmRA	pmDE	Di	<FG>	e_<FG>	<Magp>
78528947544723872	149.8172249816	8.159	60.3882585640	8.184	8.88	6.176	-8.385	8	1898288.82218	783.23496	18.423
78528947544723872	149.8172249816	8.159	60.3882585640	8.184	8.88	6.176	-8.385	8	1898288.82218	783.23496	18.423

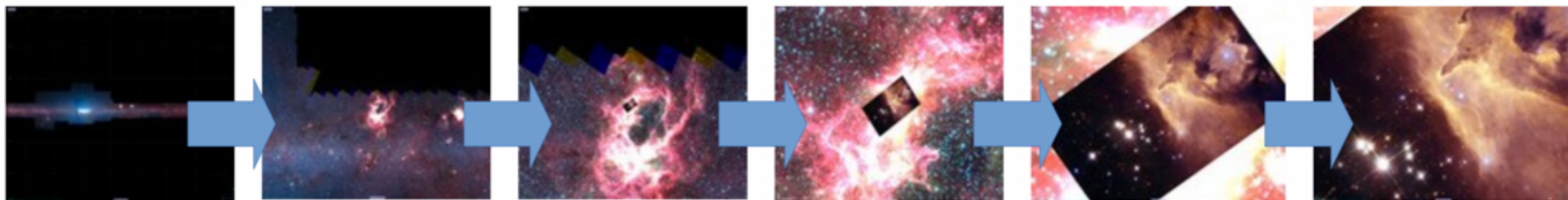
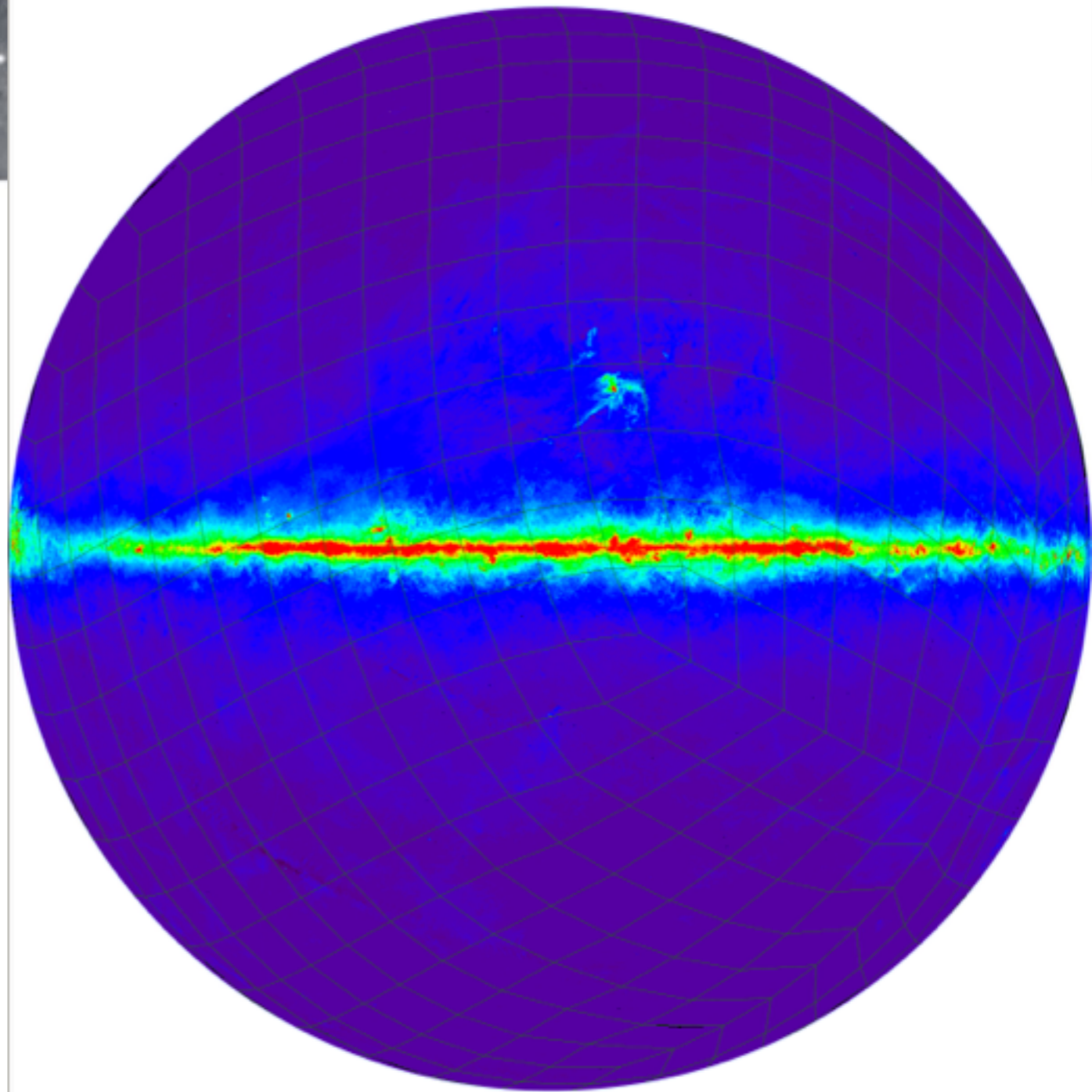
□ Aladin Desktop usage

- Used to discover, explore and compare datasets
- Aladin Desktop is also used for preparing observations:
 - incorporated in APT tool for HST since 2006
 - used in GuideCam for ESO observations since 2015



□ HiPS

- Hierarchical Progressive Surveys
- Display a survey progressively
 - The more you zoom, the more details you see
- stemmed from healpix
 - tessellation of the sphere
 - all-sky projection
- Fernique et al. (2015)
2015A&A...578A.114F
- images, but also catalogs and data cubes
- HiPSgen to generate HiPS from collection of images



Aladin Desktop and HiPS

HiPS is now the default tab in Aladin server selector

Server selector

Others **HiPS** File all VO Watch FoV... Tools...

Image servers

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

Catalog servers

Progressive surveys (HiPS) ?

Target (ICRS, name) 17 45 40.04 -29 00 28.
Radius 22.29°

- Image
 - Gamma-ray
 - X
 - UV
 - Optical
 - Infrared
 - 2MASS
 - UltraVista
 - WISE
 - AllWISE color [WISE acknowledgment](#)
 - AllWISE W1 (3.4um) [WISE acknowledgment](#)
 - WSSA
 - WSSA 12um [Meisner & Finkbeiner \(2013\) \(2013arXiv1305.0002v1\)](#)

Default format: Preview (jpg/png) Full pixel dynamic (fits)

Reset Clear **SUBMIT** Close ?

wide range of wavelength, resolution, sky coverage

Aladin

Location 09:56:02.72 +69:35:19. Frame ICRS

DSS colored

Drawing Contours

epoch size dec. eqec. zoom

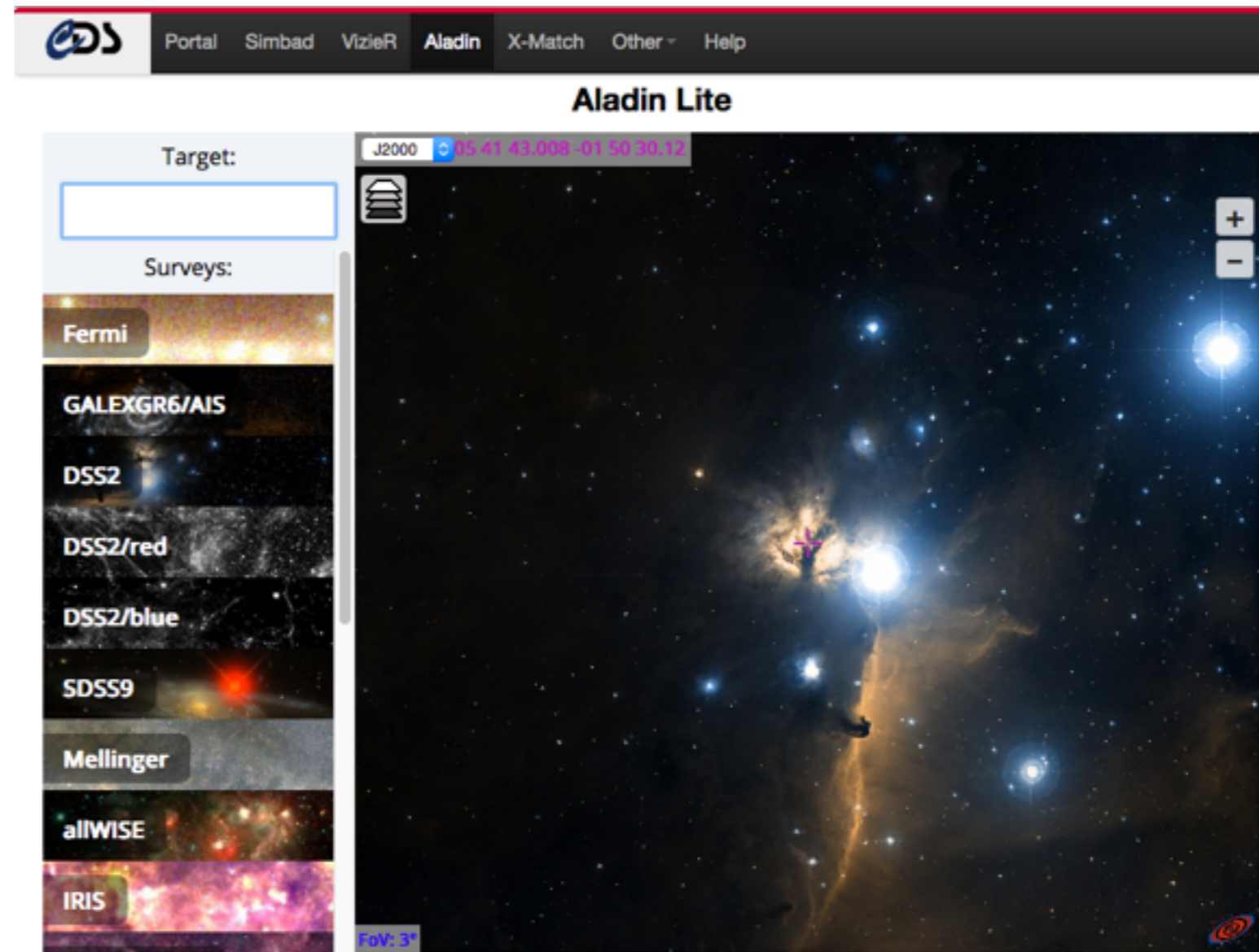
Gaia Others..

Search

□ Aladin Lite

<http://aladin.u-strasbg.fr/AladinLite/>

- **Web HiPS visualizer**
 - view HiPS images
 - graphical overlays
 - catalogs, footprint
 - zoom, pan, select
- **In any web browser**
 - no plugin nothing to install
 - run on any device
- API Javascript



The screenshot displays the Aladin Lite web interface. At the top, there is a navigation bar with the CDS logo and links for Portal, Simbad, VizieR, Aladin, X-Match, Other, and Help. Below this, the title "Aladin Lite" is centered. The main interface is divided into two panels. On the left is a sidebar with a "Target:" input field and a "Surveys:" section containing a list of survey thumbnails: Fermi, GALEXGR6/AIS, DSS2, DSS2/red, DSS2/blue, SDSS9, Mellinger, allWISE, and IRIS. The main panel on the right shows a large star field with a bright star highlighted in pink. At the top of this panel, the J2000 coordinates "05 41 43.008 -01 50 30.12" are displayed. A "FoV: 3°" label is visible at the bottom left of the main panel. On the right side of the main panel, there are zoom in (+) and zoom out (-) buttons.

Are you a developer interested in integrating Aladin Lite in your project ? Have a look at the [dedicated documentation](#).

→ Thanks for acknowledging Aladin Sky Atlas

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✉ Contact

□ easy to embed in a webpage

Choose options:

Width	<input type="text" value="400"/>	px
Height	<input type="text" value="400"/>	px
Image survey	<input type="text" value="DSS colored"/>	
Initial location	<input type="text" value="Position or object name"/>	
Initial FoV	<input type="text" value="60"/>	degrees

Then copy/paste the following code in your page:

```
<!-- include Aladin Lite CSS file in the head section of your page -->
<link rel="stylesheet" href="http://aladin.u-strasbg.fr/AladinLite/api/v2/latest/aladin.min.css" />

<!-- you can skip the following line if your page already integrates the jQuery library -->
<script type="text/javascript" src="http://code.jquery.com/jquery-1.9.1.min.js" charset="utf-8"></script>

<!-- insert this snippet where you want Aladin Lite viewer to appear and after the loading of jQuery -->
<div id="aladin-lite-div" style="width:400px;height:400px;"></div>
<script type="text/javascript" src="http://aladin.u-strasbg.fr/AladinLite/api/v2/latest/aladin.min.js" charset="utf-8"></script>
<script type="text/javascript">
  var aladin = A.aladin('#aladin-lite-div', {survey: "P/DSS2/color", fov:60});
</script>
```

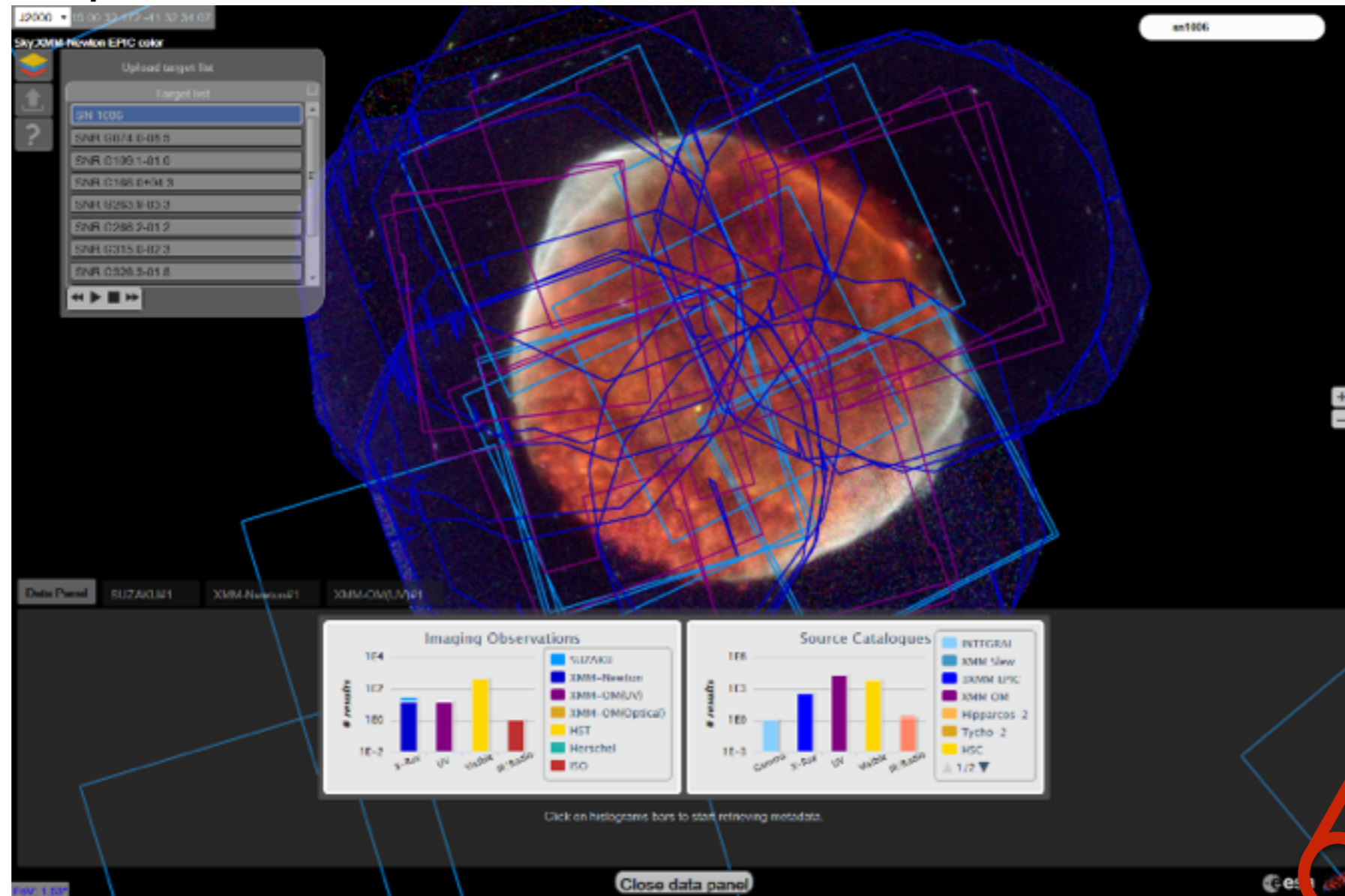
□ Aladin Lite everywhere (Nov 2016)

- (*) ESASky
- (*) LIGO Skymap viewer
- (*) ARCHES Walker
- MOPRA pointing
- (*) JUDO2
- Akari explore tool
- Cassis atlas Spitzer spectra
- (*) GLIMPSE 360
- (*) CADE
- (*) ADS All Sky Survey
- Maser DB
- Webb Deep-Sky Society
- Galaxy of interactive stars
- (*) Gamma-Sky
- eHST
- DACE
- <http://www.tauceti.caltech.edu>
- UWISH2
- Olimpiadi italiane di astronomia
- ICRAR What's up
- NOAO Data Labs
- Planck Legacy archive
- SkyWatch
- (*) Gaia archive visualization interface
- EXOSS Citizen Science
- Giraffe archive
- (*) Astrodeep
- (*) XMM X-Class
- Clusterix SVO
- BlackCAT
- GALAH
- XMM Newton at IRAP
- Subaru Suprime cam
- Skymapper Skyviewer
- (*) ESO Phase3 query interface

(*) with CDS direct collaborations

□ example: ESA Sky

- discovery portal for ESA space mission data
- highly visible implementation of Aladin Lite



- fully based on Aladin Lite functionalities
- large technical support from CDS during development

□ Aladin



- **Aladin Desktop**

- high level features **desktop**
- access images, catalogs, footprints
- **full range of functionalities**
- interoperable with VO tools
 - Aladin is a VO portal
 - used to validate most standards
- Used for observation preparation tools (APT, GuideCam)
- going all hierarchical now! (HiPS)

- **Aladin Lite**

- **Web** HiPS visualizer
- preview mode
- embed in any webpage
- **easy appropriation**
- **highly used in wide range of sites/services**
- basic functions... but more and more!