

CASSIS Aladin Plugin



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Summary

- Why this plugin ?
- How it works
- Demonstration
- What's next ?
- Links

Why this plugin ?

- Pierre Fernique contact Jean-Michel Glorian in January 2021
 - Fix bug on API plugin in Aladin 11 beta
 - Discussion in Aladin and CDS Team to get VO tools specially for hyperspectral radio cube, to extract spectra and to identify lines
 - An old plugin “QuickViz” developed in 2013 was a candidate to do that, but was not maintained
 - The CASSIS Team retrieved the source of this plugin in 2014
 - Question of Pierre>
Have you done something with it ?
 - Response of Jean-Michel>
No, but we would like also to deal with hyperspectral cubes especially for ALMA data
- => All agree to say: Do not create a new tool for spectral cubes !

How it works 1/2



- Discover and display cubes from the VO using SIAv2 and OBS-TAP from the local machine
- Apply cutout on data cube with Datalink and SODA
- Select a region with spec, phot and draw with Aladin tool
- Interpret the spatial dimension

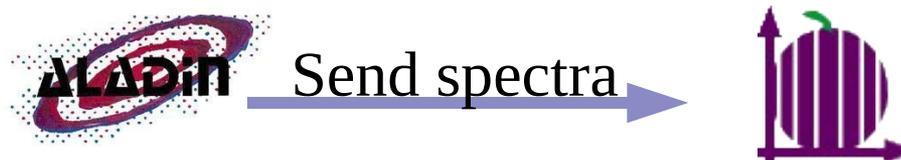


- Discover and display spectra from the VO using SSAP and EPN-TAP or from the local machine
- Apply spectral tools like fitting a curve
- Line identification using VAMDC or SLAP
- Select or zoom in the spectral range
- Interpret the spectral and flux dimension



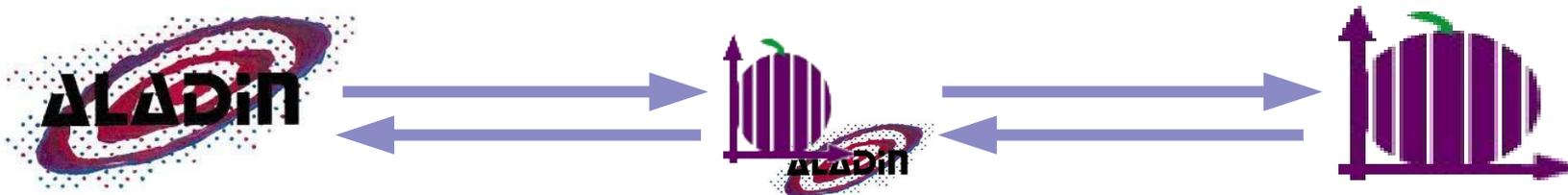
How it works 2/2

Using SAMP



Using API plugin of Aladin

- Both applications share the same Java virtual machine share the memory buffers and can communicate instructions



- Send events when
 - the stack is changed
 - The cursor is moved
 - A position or region is selected or removed
- Listen Aladin / CASSIS events
- Compute spectra and send them to CASSIS
- Send instructions to Aladin/CASSIS depends on the events received
- Change the color of spectra
- Zoom in the spectra
- Select a spectral range
- Select, remove spectra

Demonstration

- Make lines identification on a Muse Hyperspectral DataCube from ESO service
 - Using target : V* V2423 Ori or JW 756 : SESAME, SIMBAD
 - Find a MUSE cube in the ESO TAP service : REG TAP, OBS-TAP
 - Apply cutout on the cube (spatial and spectral) : Datalink and SODA
 - Install and run CASSIS plugin
- Extract spectra from the selection region in Aladin using spect, phot and draw tool and sent them to CASSIS
- Move the cursor In Aladin depend on the selected spectrum in CASSIS
- Move the slide in Aladin in the spectral dimension, when user zoom or click on a spectrum in CASSIS
- Move the selection in Aladin and see the evolution of the spectrum in CASSIS
- Change color of a spectrum in CASSIS to change the region color in Aladin
- Remove selection/spectrum from Aladin or CASSIS.
- Create Image in Aladin when selected a spectral range in CASSIS
- Customize the display of line informations in CASSIS
- Doing line identification in CASSIS using NIST VAMDC service

What's next ?

- Manage multiple cubes
- Improve the display of each pixels selected in a phot or a draw region
- Manage the spectral range selection between CASSIS and Aladin
- Ask users more confirmation in the units used to interpret the Cube
- Fix bugs :-)

=> For any problems,
Please contact us cassis-team@irap.omp.eu

Links

- CASSIS
<http://cassis.irap.omp.eu>
- OVGSO-DC
<https://ov-gso.irap.omp.eu/>
- IVOA
<http://www.ivoa.net>
- VAMDC
<http://portal.vamdc.org>
- NIST
<https://physics.nist.gov:8000/nodes/asd/tap/>
- Aladin
<https://aladin.u-strasbg.fr/>
- SESAM
<http://sesam.obspm.fr/>