



Overview of new features in SPLAT-VO

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SPLAT-VO Theses

VŠB – Technical University of Ostrava
Faculty of Electrical Engineering and Computer Science
Department of Computer Science

**Program pro interaktivní analýzu
spekter v prostředí Virtuální
observatoře**

**Programme for Interactive Spectra
Analysis in Virtual Observatory
Environment**

2013

David Andrešič

VŠB – Technical University of Ostrava
Faculty of Electrical Engineering and Computer Science
Department of Computer Science

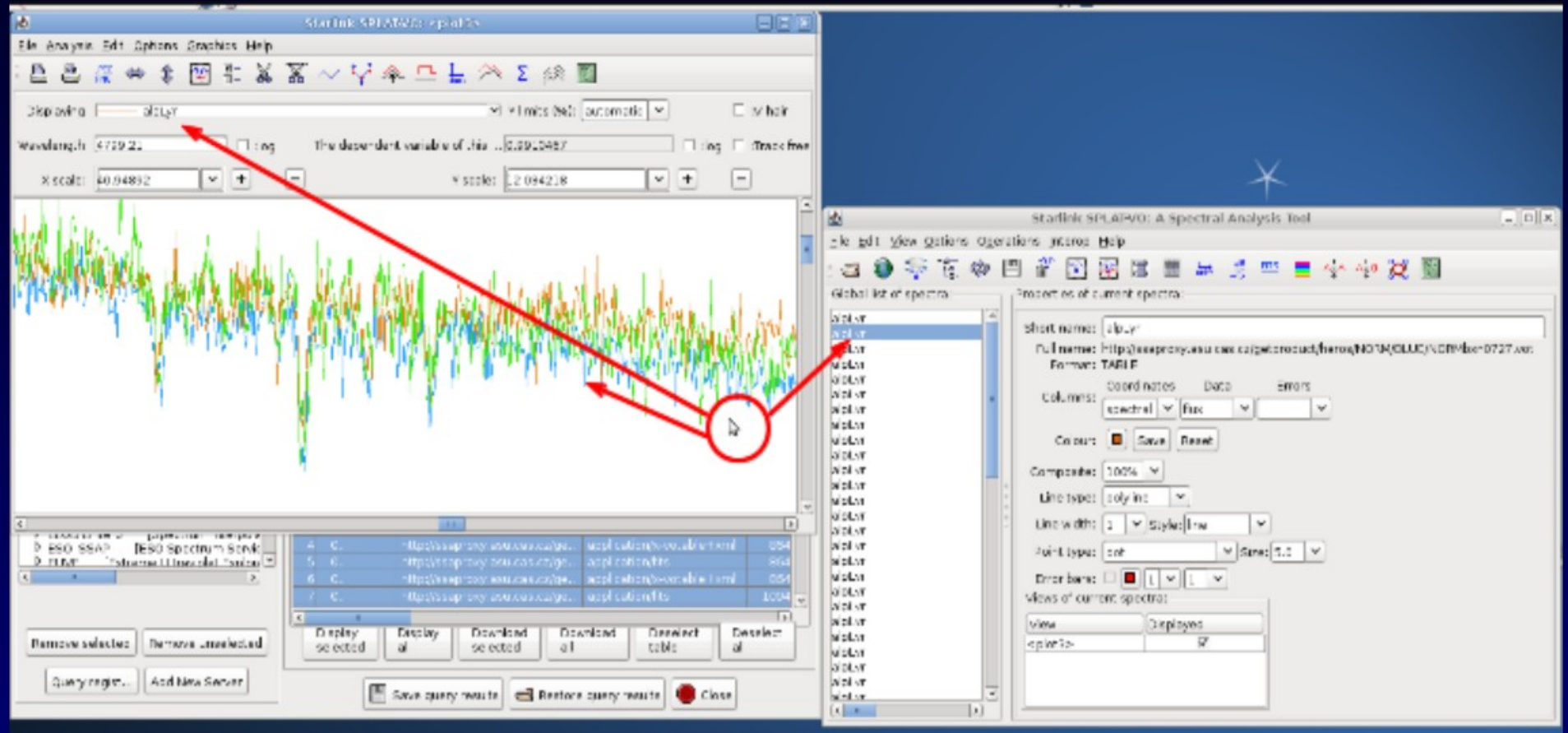
**Programme for the Post-processing and
Analysis of Complex Large-Scale
Spectroscopic Surveys Using the Virtual
Observatory Protocols**

**Program pro post-processing a analýzu
komplexních rozsáhlých
spektroskopických prohlídek v rámci
protokolů Virtuální observatoře**

2016

Bc. David Andrešič

Visual Selection of Spectra Highlighting



Visual Selection of Spectra – Deleting (Everywhere)

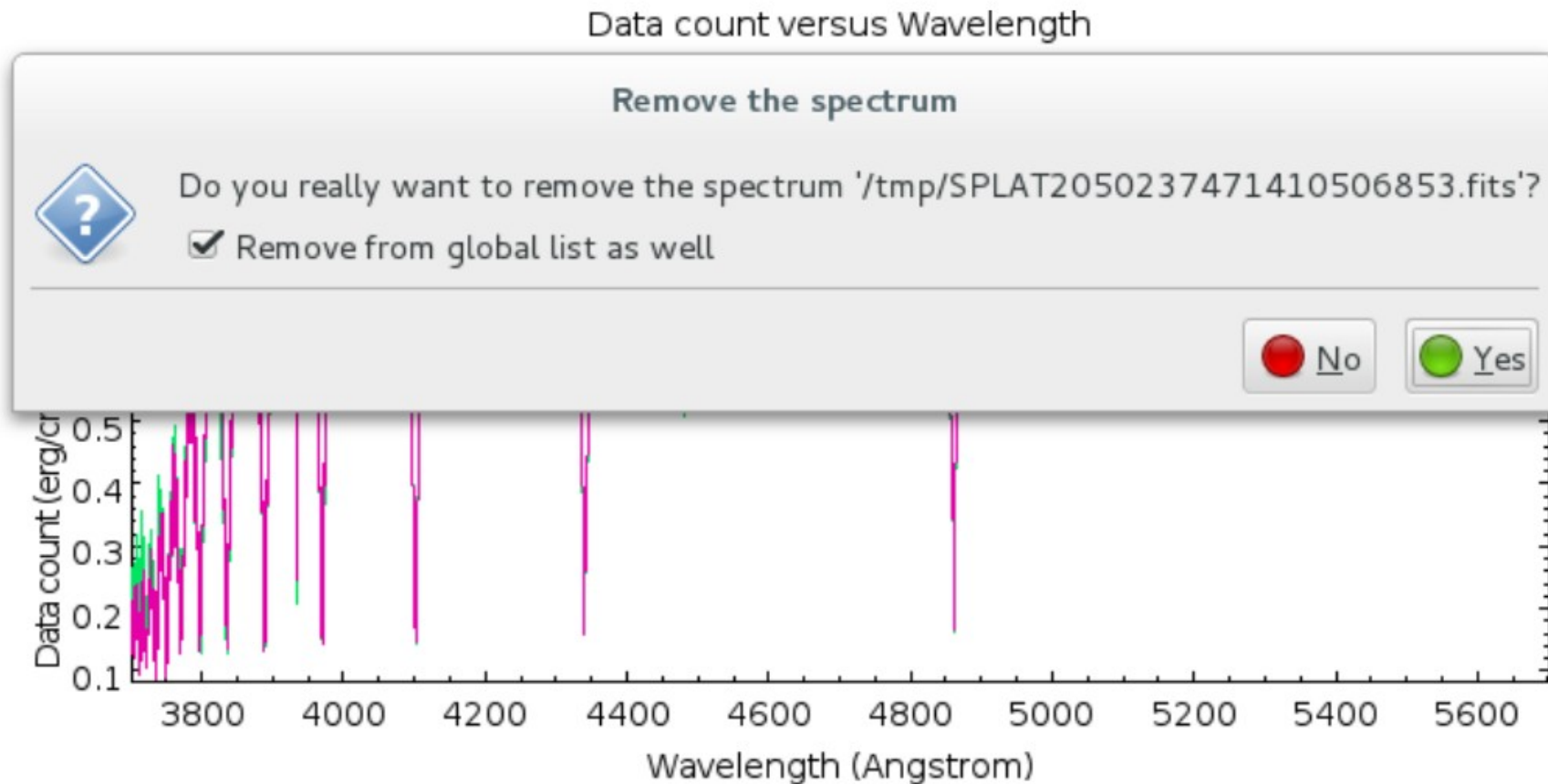


Figure 29: Visual delete of spectrum in action.

Save Spectrum to Local Text and CSV

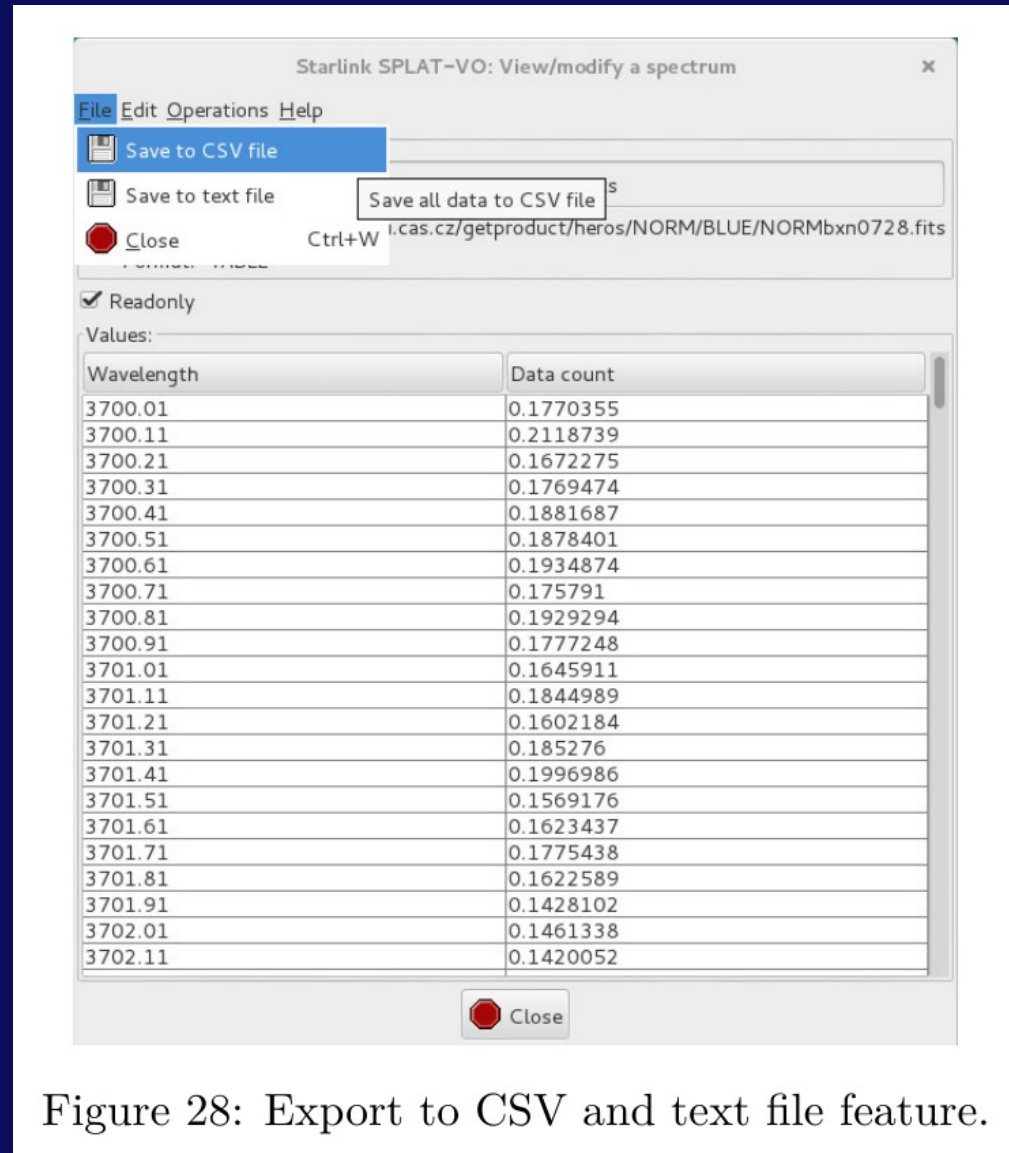


Figure 28: Export to CSV and text file feature.

Selection of Results in GUI

Query results:

HEROS OND CUTOUT HEROS OND

l...	ssa_score	ssa_targname	ssa_location	ssa_specstart	ssa_specend	ssa_aperture	mime
31	0.	alpLyr	Position ICRS 279.2349179...	5.85001E-7	8.30001E-7	0.000167	applica
32	0.	alpLyr	Position ICF	5.85001E-7	8.30001E-7	0.000167	applica
33	0.	alpLyr	Position ICF	5.85001E-7	8.30001E-7	0.000167	applica
34	0.	alpLyr	Position ICF	5.85001E-7	8.30001E-7	0.000167	applica
35	0.	alpLyr	Position ICF	5.85001E-7	8.30001E-7	0.000167	applica

Download
Info
Display

Selection > Copy current cell to clipboard
Copy current selection to clipboard
Copy all table data to clipboard

Display selected Display all D selected Deselect all

Save query results Restore query results Close

Figure 27: *SSA Query Results* window enhancements

SAMP Sender Reworked

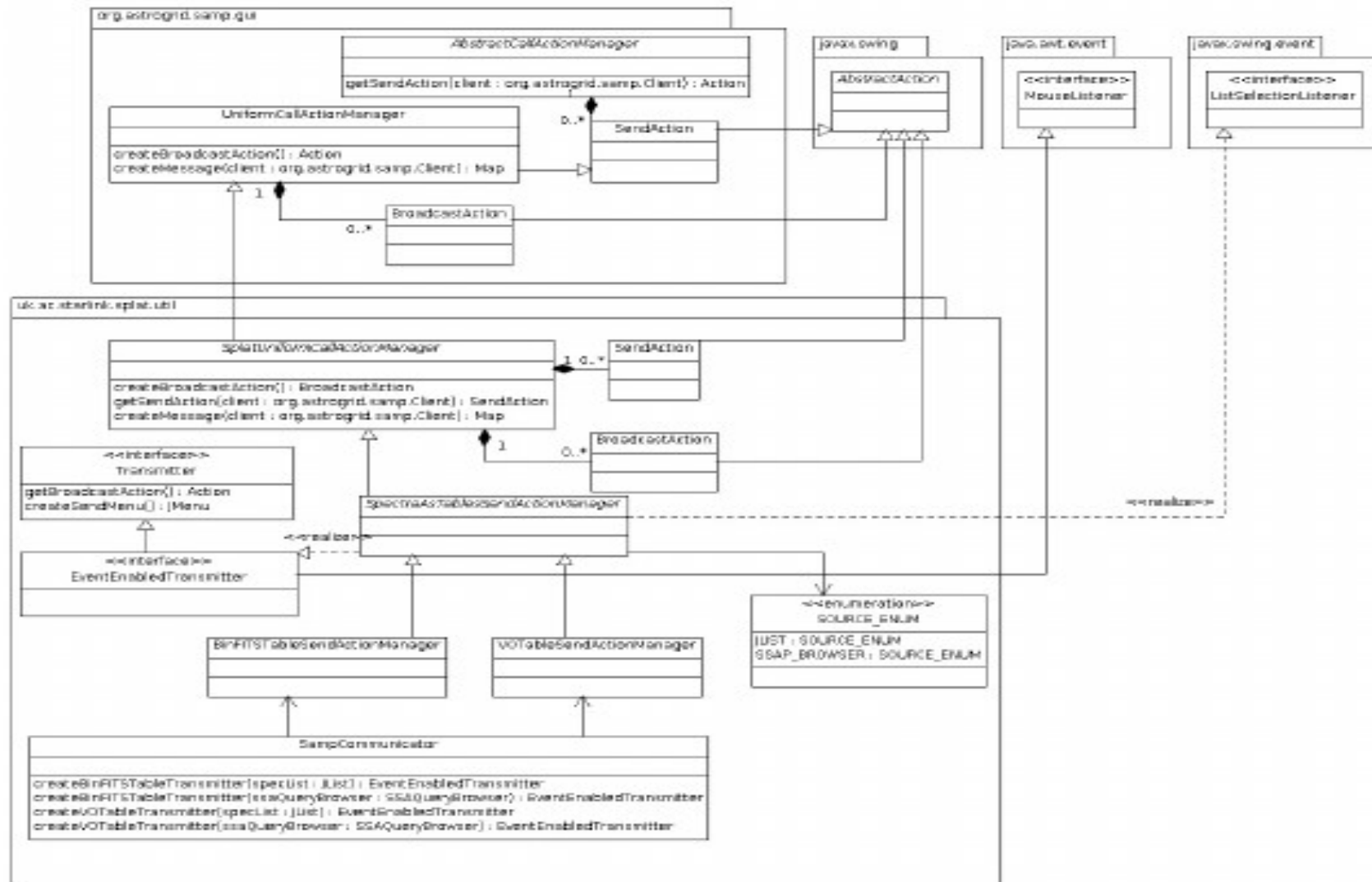


Figure 23: Simplified class diagram of *spectra as table* SAMP sender.

SAMP sending spectra as TABLES

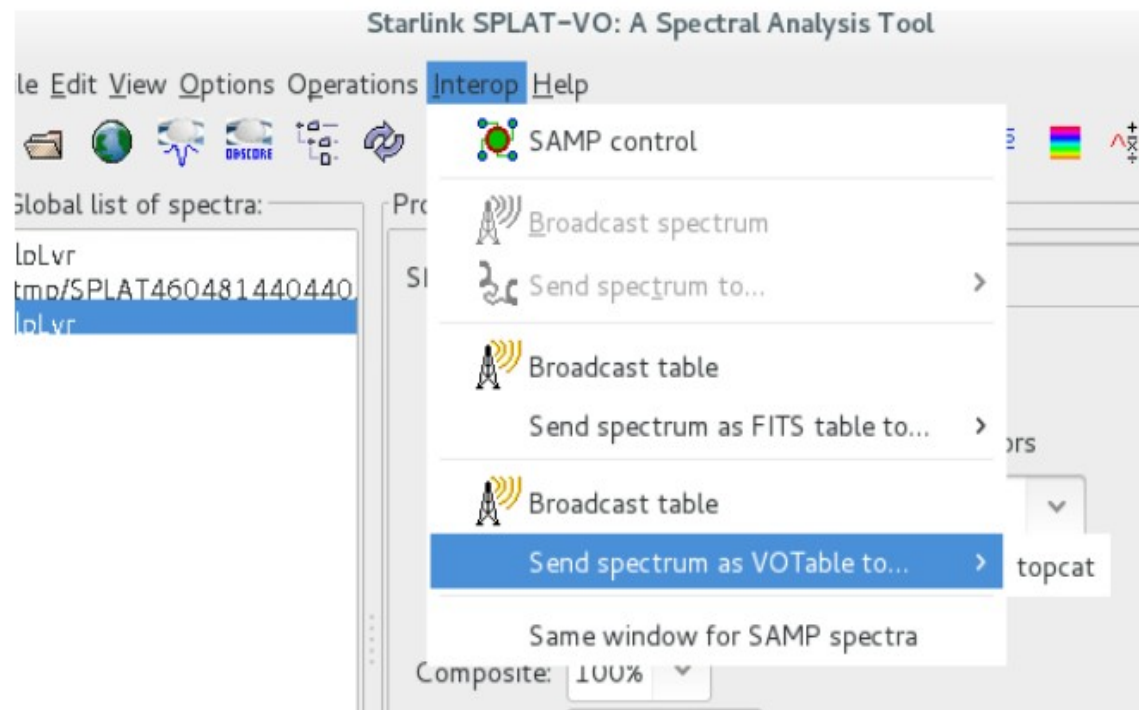


Figure 24: Sending spectrum as table via SAMP from *Main Window*.

SAMP Sending Spectra as TABLES

The screenshot shows the 'Starlink SPLIT-VO: Query VO for Spectra' window. A context menu is open over the 'Interop' menu, with the option 'Send result spectra as FITS table to...' selected. The 'Optional Parameters' table is visible, and the 'SEND QUERY' button is at the bottom right. The 'Query results' section shows a table with 5 rows of data.

U...	Name	Value	UCD
<input type="checkbox"/>	APERTURE	__NULL__	instr.fov
<input type="checkbox"/>	SNR	__NULL__	stat.snr
<input type="checkbox"/>	REDSHIFT	__NULL__	src.redshift
<input type="checkbox"/>	TARGETCLASS	__NULL__	src.class
<input type="checkbox"/>	PUBDID	__NULL__	
<input type="checkbox"/>	CREATORID	__NULL__	meta.id
<input type="checkbox"/>	MTIME	__NULL__	
<input type="checkbox"/>	WILDTARGET	__NULL__	
<input type="checkbox"/>	WILDTARGETC...	__NULL__	
<input type="checkbox"/>	TOP	-1	
<input type="checkbox"/>	PUNID	NULL	

Query results:

l...	ssa_score	ssa_targname	ssa_location	ssa_specstart	ssa_specend	ssa_aperture	mime
1	0.	alpLyr	Position ICRS 279.2349179...	3.70001E-7	5.70001E-7	0.000167	applica
2	0.	alpLyr	Position ICRS 279.2349179...	3.70001E-7	5.70001E-7	0.000167	applica
3	0.	alpLyr	Position ICRS 279.2349179...	3.70001E-7	5.70001E-7	0.000167	applica
4	0.	alpLyr	Position ICRS 279.2349179...	3.70001E-7	5.70001E-7	0.000167	applica
5	0.	alpLyr	Position ICRS 279.2349179...	3.70001E-7	5.70001E-7	0.000167	applica

Figure 25: Sending spectrum as table via SAMP from *Query VO for spectra* window.

Setup of GitHub Issues

The screenshot displays the GitHub interface for the repository `SPLAT-VO/starjava`. The top navigation bar includes links for Pull requests, Issues, and Gist. Below the repository name, there are buttons for Watch (2), Star (0), and Fork (0). The main content area shows a list of 16 open issues, with 2 closed issues. The issues are sorted by author and include details like the number of open/closed issues and the author's name.

Issue Title	Label	Author	Open/Closed
Time series support	enhancement	anc140	18 Open / 2 Closed
Global spectra list <-> SSAP Query Browser interconnection	enhancement	anc140	17 Open / 0 Closed
Analyze spectra memory usage	question	anc140	16 Open / 0 Closed
Increase heap size	enhancement	anc140	15 Open / 0 Closed
Spectra lazy loading	enhancement	anc140	14 Open / 0 Closed
Spectra groups	enhancement	anc140	13 Open / 0 Closed
Working space	enhancement	anc140	12 Open / 0 Closed
SSAP Query Window: Datalink copy	enhancement	anc140	11 Open / 0 Closed
Spectrum viewer: send via SAMP	enhancement	anc140	10 Open / 0 Closed
Plot window: Visual spectra selection delays	bug	anc140	9 Open / 0 Closed
Multi-HDU FITS files	bug	anc140	8 Open / 0 Closed
Wishlist item: python scripting		mscm1st	6 Open / 0 Closed

Figure 43: Official SPLAT-VO issue tracker in GitHub Issues.

Automatic Re-building on Dockerized Jenkins hosted by AI CAS

The screenshot displays the Jenkins web interface for the job 'Project SPLAT-VO_Build-installer'. The top navigation bar includes the Jenkins logo, a search field, and the user 'David Andresic' with a 'log out' link. The breadcrumb trail shows 'jenkins > SPLAT-VO > SPLAT-VO_Build-installer'. On the left sidebar, there are navigation links: 'Back to Dashboard', 'Status', 'Changes', 'Workspace', 'Build with Parameters', 'Delete Project', and 'Configure'. Below these is the 'Build History' section, which lists several builds with their IDs and timestamps. The main content area is divided into two panels. The left panel, titled 'Project SPLAT-VO_Build-installer', provides a description of the job: 'Builds SPLAT-VO and creates its installation package.' It includes instructions on how to build and create the installation package, such as selecting a Git branch and downloading the package. The right panel, also titled 'Project SPLAT-VO_Build-installer', shows the parameters for the build. A dropdown menu for 'Branch' is open, showing options like 'origin/stits205', 'origin/splatmaster', 'origin/IAMRTSTESTS', 'origin/jeef', and 'origin/master'. Below the dropdown, there is a note: 'You must have built the project at least once, to get entries in the list above. If you wipe out your workspace, the plugin needs to clone the repository before it can list the tags/revisions. This may take some time if you have a slow connection or the repository is big.' A 'Build' button is visible at the bottom of this panel. The bottom section of the page shows the build log for the current build, which includes steps like 'Setting the GUI preferences', 'Adding resource: flag.eng', 'Adding resource: InfoPanel.info', 'Adding resource: Installer.image', 'Adding resource: shortcutSpec.xml', 'Adding resource: Unix_shortcutSpec.xml', 'Adding native library: ShellLink.dll', 'Adding content of jar: file:/var/jenkins_home/userContent/12Pack/lib/standalone-compiler.jar/bin/panels/HelloPanel.jar', 'Adding content of jar: file:/var/jenkins_home/userContent/12Pack/lib/standalone-compiler.jar/bin/panels/InfoPanel.jar', 'Adding content of jar: file:/var/jenkins_home/userContent/12Pack/lib/standalone-compiler.jar/bin/panels/InstallPanel.jar', 'Adding content of jar: file:/var/jenkins_home/userContent/12Pack/lib/standalone-compiler.jar/bin/panels/ShortcutPanel.jar', 'Adding content of jar: file:/var/jenkins_home/userContent/12Pack/lib/standalone-compiler.jar/bin/panels/SimpleFinishPanel.jar', 'Building installer jar: /var/jenkins_home/jobs/SPLAT-VO/./splat-vo.jar', 'Copying the skeleton installer', 'Copying 8 files into installer', 'Merging 7 jars into installer', 'Writing 1 Pack into installer', 'Writing Pack 0: Base', '[End]', 'Build time: Wed Apr 06 09:09:21 UTC 2016', 'Clear the mess ...', 'Renaming the splat-vo.jar to splat-vo_20160406.0909.jar and moving it to the download directory ...', 'Renaming the splat-vo.jar to splat-vo_20160406.0909.jar', 'Renaming the splat-vo_20160406.0909.jar to /var/jenkins_home/userContent/builds/20160406.0909/splat-vo_20160406.0909.jar', 'removed /var/jenkins_home/userContent/builds/latest/splat-vo_20160213.1235.jar', 'Done ...', and 'Finished: success'.

Figure 45: Jenkins CI for SPLAT-VO - main job detail with parameters and result.

Time Series Support (SSA and DataCube)

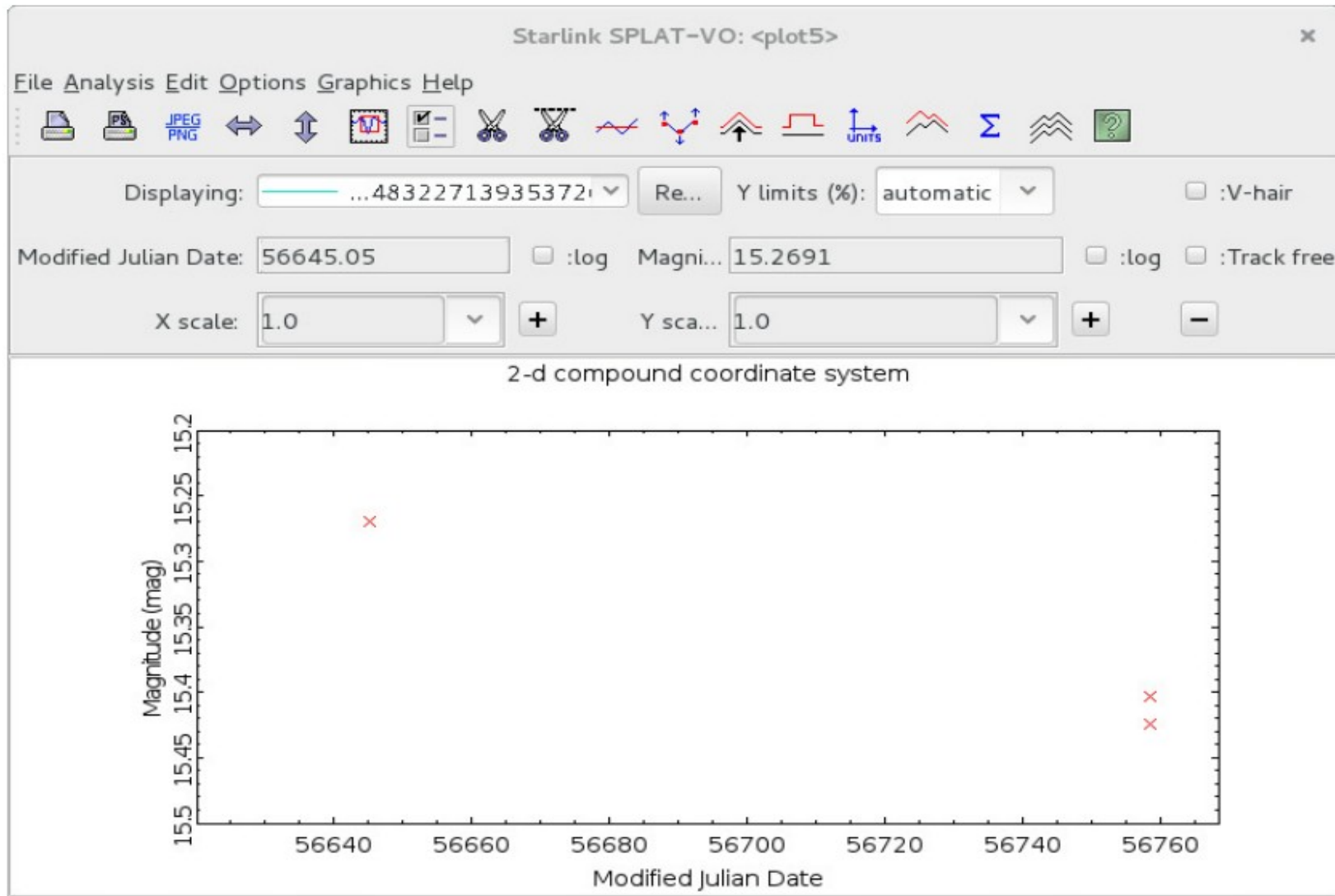


Figure 26: Time series demonstrational support example.

Future Plans

(Sparse) Data Cubes for Time Series

Handling of Spectra (and Time Series) as Groups

Saving and Restoring Workspace in Reusable Format

Masive amount handling (open files exhausted)

Dependence on Starlink Libraries in C - binaries

Refactoring

Unit Tests and Automatic Building

ObsCore + DataLink detailed windows

One student for one year Aneta Doubková + maintaining collaboration with David and possibly his employer.

Source Code

<https://github.com/SPLATVO/starjava/tree/splatmaster>

<https://github.com/SPLAT-VO/starjava/issues>

<https://github.com/SPLAT-VO/starjava/tree/splat-ond>

DEMO