SSDC Catalog Web Pages Help

1. **INTRODUCTION**

All the SSDC catalog interactive web pages allow the user to perform advanced filtering operations, to choose the catalog layout and the table columns to be displayed. It is also possible to export the current view of the table in LaTeX, FITS, raw text or CSV formats.
The table, as displayed on the web page, can be sent to VO applications through a VO toolbox.

On each SSDC catalog page, further specific filters or functionalities are available by clicking the buttons under the Aitoff projection image, and the links included in the catalog references.
The detailed catalog description is available by clicking on the “Catalog Description” button.

Below are some useful tips.

2. Catalog Filtering

2.1 View/Export a subsample of columns (parameters)

By default, only a subset of catalog columns is displayed. The whole catalog information can be viewed through the “Show/hide columns” button. By clicking this button, the complete list of all the catalog columns appears on the screen with a checkbox aside. Those shown by default are already checked. After your selection, click the “Update Table Columns” button.

2.2 View/Export a subsample of rows (entries)

It is possible to select a subsample of entries according to a defined catalog parameter space. For example, to filter only those entries within a specific flux range and below a certain latitude, click on the “Advanced Filtering” button and check the flux and latitude boxes, then select ‘and’ rather than ‘or’, define the range of values and click “Filter Table” at the bottom of the page.

At the top right of the web page (just below the VO Tools menu), it is possible to “Search table columns” by inserting any text or number in the box. The search for matching substrings will be applied on all the selected columns fields, and it does not require any wildcard.
Source selection can be performed by source name or by coordinates through the “Cone Search” interface.

It may be necessary to exclude or include a sequential range of entries from the catalog.
On top of the first column on the left (the “Entry number” column), it is possible to toggle between two selection modes: Include or Exclude.
For example, to exclude the entries that go from 1 to 4, click on the “Include/Exclude” button at the top of the entries column in order to view “Exclude”, then click once on the green “Select” button inside the first entry box (the green button will turn into a black arrow), then click once on the “Select” button in the fourth entry box. The entries that go from 1 to 4 will be excluded from the catalog. The same procedure can be applied to “Include” only a range of entries, excluding the others. Please note that the column values in the new table will be renumbered, without keeping the original table numbers.
To filter a single entry, simply double click the “Select” green button: for example, if only the entry number 3 is needed, select “Include” at the top of the column and then click twice the “Select” button (second click on the black arrow) inside the entry box. On the contrary, to exclude the entry number 3, select “Exclude” at the top of the entry column and then click twice the “Select” button (second click on the black arrow).

At any time, all filters can be erased with the button “Reset all filters”, or by re-loading the catalog webpage.

2.3 View/explore entries or column values

For each entry it is possible to make different queries to other SSDC tools, clicking on the gray buttons available, such as “SSDC Data Explorer”**,** “Cross-search SSDC catalogs” (MMC), “Archive”, “Light Curve”, or other columns usually appearing on the left-hand side of the catalog table.
In particular**,** by clicking on the “SSDC Data Explorer”**,** it is possible to access all the SSDC internal and external queries which allow the user to navigate through other catalogs and to easily explore large multi-frequency datasets, from radio to TeV.

The catalog column values can be sorted by clicking on the up/down arrows, and in most cases a “Stats” button is available to execute statistical calculations. When available, a drop-down menu can be used to change the parameters or unit of measure to be displayed.

3. VO mode

3.1 Tested Browsers

The VO SAMP features of the SSDC catalogs web pages have been successfully tested with the latest versions of the following browsers: Chrome, Edge, Firefox and Opera.
As to this date (May 2021), the Safari browser is known to raise a “mixed content” error when connecting to the SAMP tool of choice (TOPCAT or Aladin). Future versions of Safari will likely overcome this issue.
For the moment, please refer to the following baseline of **successfully tested browsers:**

Operative System	Browser	Browser Version
Linux Ubuntu	Chrome	68.0.3440.106 (64 bit)
Mac OS X	Chrome	89.0.4389.128 (64 bit)
Windows 10	Chrome	90.0.4430.72 (64 bit)
Windows 10	Edge	89.0.774.77 (64 bit)
Linux Ubuntu	Firefox	87.0 (64 bit)
Linux CentOS	Firefox	70.0b14
Mac OS X	Firefox	87.0 (64 bit)
Windows 10	Firefox	87.0 (64 bit)
Linux Ubuntu	Opera	76.0.4017.94
Windows 10 Pro	Opera	75.0.3969.171

3.2 First Steps

Click on the "Connect to SAMP" button in the VO menu. Two clickable icons will appear (below the "Connect to SAMP" button) to allow for the VO applications (TOPCAT and Aladin) to be downloaded and executed on your system through the use of the Javascript libraries developed by Mark Taylor (http://www.star.bris.ac.uk/~mbt/topcat/).
As soon as the chosen application is ready, you will be able to upload your SSDC catalog to “TOPCAT”, or “Aladin” by clicking on the "Send" button. If the "Send" button does not appear straight away, try to click again on the "Connect to SAMP" button. At this point you should be able to interact with the VO applications through your web browser.
It is possible to select a subsample of entries, as described in section 2.2, and then send to the chosen VO application only that sample.

For further information or for assistance with the VO SAMP catalogs at SSDC, please contact us at the following page: https://www.ssdc.asi.it/feedback_all.html

Acknowledgement

We would like to acknowledge the use of the following open source technologies:

- samp.js, a SAMP (Simple Application Messaging Protocol) connectivity Javascript client library for web applications. The samp.js library has been designed by Mark Taylor (*http://astrojs.github.io/sampjs/*). The original work was supported by Microsoft Research, GAVO and STFC. For more details see also the web site *http://www.star.bristol.ac.uk/~mbt/websamp/*
- SAMP-Webtools, set of JavaScript tools for SAMP-enabled web applications.
- **Aladin** Sky Atlas, developed at CDS (Strasbourg, France). For more information see Bonnarell F. et al. Astron. Astrophys., Suppl. Ser., 143, 33-40, 2000.
- **TOPCAT** (Tool for OPerations on Catalogues And Tables), an interactive graphical viewer and editor for tabular data (Mark Taylor, Physics Department, Bristol University).