

Data Visualization

The MAST Portal offers a variety of browsing and visualization tools, most of which are described in the [Browsing Data](#) chapter of the [Portal Guide](#).

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Browsing and Visualization

The [MAST Portal](#) provides functionality to assess the applicability of search results to your scientific purpose. See the [Portal Guide](#) for details, including descriptions of the following:

- See [Browsing Data](#) for a high-level view of how to navigate between multiple searches.
- See the [Search Results Grid](#) for tools that help you browse observation metadata, or capture the results of a query as a persistent URL.
- See [Refining Results with Filters](#) to down-select which results are presented.

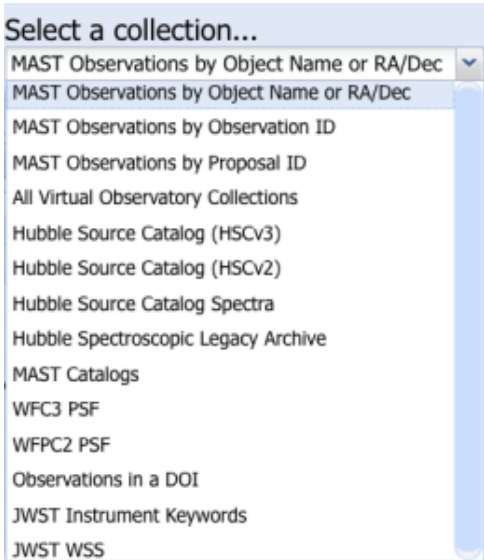
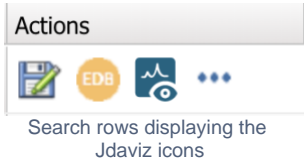
Tools for browsing the content of data files are available via links embedded in each row of the table. Only tools that are applicable for the data type(s) have active buttons or links. See the following articles in the [Portal Guide](#) for extensive descriptions:

- See [Data Browsing Tools](#) for options to display image thumbnails or cutouts, overlay an image on a sky survey, or view timeseries data.
- See the [Astroview](#) tool for displaying wireframes of search results superimposed on a sky survey

Visualization with Jdaviz

The primary aim of data visualization in the [MAST Portal](#) is to enable the discovery and selection of data that are relevant and of sufficient quality and depth to address the searcher's scientific goals. This is particularly important for spectroscopic data. For JWST, which produces very advanced data products, a new, more capable tool takes the place of the classic spectral viewer tool.

The [Jdaviz](#) package enables quick-look and analysis in your browser of JWST Level-3 spectroscopic data products. Follow this tutorial to learn how to view the default Minimum Recommended Product for an observation. For more detailed documentation, see the complete [Jdaviz in MAST](#) guide. The following example illustrates how to invoke the Jdaviz tool in the MAST Portal.

	Instruction	Notes
1	<p>Perform a Portal search by target or coordinates. A basic or advanced search work equally well.</p> <p>See the Jdaviz Portal Search page for more detailed information on navigation from the Portal basic and SI keyword search pages.</p>	
2	<p>A Jda action icon will appear for rows in the results table that are viewable with the Jdaviz tool.</p>	

3

Click the **Jdaviz** action icon to reveal a dropdown menu, with multiple options. Select the first (default) option, which will display the default Minimum Recommended Product in Jdaviz.

For information for the option **Select which file to open**, see [Searching for Jdaviz-Compatible Data](#).

Actions

Instrument

Filters

Target Name

Observation ID

EDB

EDB

EDB

EDB

Visualize spectral data products in Jdaviz in MAST

Display default minimum recommended product: mast:jwst/product/jw01128-o007_s00002_nirspec_f070lp-g140h-s200a2-subs200a2_s2d.fits in SpecViz2D

Search through other data products related to this observation to display in Jdaviz

4

The **"Search through other data products related to this observation"** option will open a new browser tab and load the designated data product into the "Jdaviz in MAST" web application. The result will look something like the figure below. This specific example shows the file **jw01128-o007_s00002_nirspec_f070lp-g140h-s200a2-subs200a2_x1d.fits**

Jdaviz in MAST

Specviz

Docs | API | Help | SHAW

Search for related data products associated with the current observation

Search

Open Data In

TYC 4433-1800-1

Basic Info

Target Info

Instrument Info

Target Name

target_name

TYC 4433-1800-1

Target RA

target_ra

272.145

Target Dec

target_dec

69.4580

Target Classification

target_classification

N/A

Instrument

instrument

NIRSPEC

Exposure Type

exp_type

NRS_FIXEDSLIT

Template Name

template

NIRSPEC Fixed Slit Spectroscopy

Channel

channel

N/A

Filter

filter

F070LP

Grating

grating

G140H

Resolution

resolution

~100 (Prism), ~1000 (Medium-Resolution Gratings), ~2000 (High-Resolution Gratings)

No selection (create new)

Flux density [Jy]

Wavelength [um]

Once loaded, the Jdaviz in MAST spectroscopic quicklook page can be used to quickly inspect a spectroscopic data product. On the left-hand side is a sidebar panel of information. In the center/right the data product is loaded into the Jdaviz application. Jdaviz has different configurations which are optimized for different types of data products, i.e. 1-D, 2-D, or 3-D spectroscopic data. The example shown above has loaded data into the [Specviz](#) configuration. For a complete description of the quick-look page and the available Jdaviz configurations, see the [Viewing Individual Spectra](#) article (not yet available) for more details

For Further Reading...

- [MAST Portal Guide](#)
- [Browsing Data](#) in the Portal
- [Data Browsing Tools](#) in the Portal
- [Jdaviz in MAST](#)