

IRTF Help

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IRTF Archive: Overview

The [NASA Infrared Telescope Facility \(IRTF\)](#) is a 3.2 meter telescope, optimized for infrared observations, and located at the summit of Mauna Kea, Hawai`i. Observing time is open to the entire astronomical community, and 50% of the NASA IRTF observing time is reserved for studies of Solar System objects.

For more information about the mission, please see the [NASA IRTF webpages](#). [IRSA's page on IRTF](#) has some standard information.

The IRTF Archive also includes data from TEXES, not all of which were taken at the IRTF. [IRSA's page on IRTF](#) includes information about TEXES.

The NASA IRTF Instruments and Archive

The instruments that are included in the NASA IRTF Archive at this time are:

SpeX Spectrograph and Guider

[SpeX](#) is a medium-resolution 0.7-5.3 micron spectrograph.

iSHELL Spectrograph and Guider/Imager

[iSHELL](#) is a high-resolution 1.1-5.3 micron spectrograph.

TEXES Spectrograph

[TEXES](#) is a spectrograph with three resolutions, high (R~100,000), medium (R~15,000), and low (R~3,000).

Please consult the [NASA IRTF website](#) for more information about these instruments.

The NASA IRTF Archive includes public data. Investigators have a 18 month proprietary period; data are publicly available in the archive after that. (PIs obtain their own proprietary data via [other means](#).)

Searching

The NASA IRTF Archive can be searched by object or by date range or by program ID. See [the searching section](#) for more information on how to search.

Results

Search results from the NASA IRTF Archive are displayed in a table that can be sorted and filtered further. See [the Results section](#) for more on results; see [the Tables section](#) for more specifically on tables.

Downloads

For more on data downloads, see ["Downloads"](#).

See the [IRTF page](#); to find the acknowledgement, DOI, and canonical papers to cite.

. Note that you can use the \facilities call in AASTeX to acknowledge IRSA as a facility you used in your journal article.

IRTF Archive: Searching

There are several ways to search the NASA IRTF Archive, which we now describe.

Cone searches with a specified radius

Specify a target by name or position in a variety of units (RA/Dec, Galactic, ecliptic) or a table of coordinates (in csv format or in [IPAC table file](#) format; use the [IPAC table validator](#) to check and reformat your input table before uploading.) By default, the cone search radius is a degree; this value must be between 1 and 5 deg. Optionally, you can also constrain the date range, the program ID, the instrument, and the observing conditions. Note that searches by date range are inclusive of the minimum date and exclusive of the maximum date.

All-sky searches by date or program ID.

Specify a date range or a program ID, and search over the whole sky. **This is the easiest way to download all the data associated with a given program.** Optionally, you can also constrain the date range, the program ID, the instrument, and the observing conditions.

Solar System objects (moving targets) by name or NAIF ID.

Specify the object name or its NAIF ID. Optionally, you can also constrain the date range, the program ID, the instrument, and the observing conditions.

Precovery searches by name or NAIF ID or orbital parameters.

This search looks for serendipitous observations of a Solar System target. Specify the object name or its NAIF ID, *OR* the MPC 1-line input, *OR* manually specify the orbital parameters. It does the calculation to figure where the object is as a function of time, and looks for data covering the object. Optionally, you can also constrain the date range, the program ID, the instrument, and the observing conditions. This calculation can take a long time; use long time baselines with caution.

You can additionally constrain:

Instruments: At this time, the instruments that are available are the SpeX spectrograph and guider, the iSHELL spectrograph and guider/imager, and the TEXES spectrograph. Note that the [results](#) for TEXES will appear in a different tab than SpeX and iSHELL.

IRTF Archive: Results

A NASA IRTF Archive search results page has three main sections:

Query criteria.

Summary of the requested search.

Matching observations.

This data table is searchable and filterable. [See the page on table interactions](#) for general table help; see below for column definitions.

Download Selected Observations.

Specify what data to package and download with your data; see the [Downloads section](#). Caution: packaged data can be very large files, and may take a long time to package and download.

To select observations, click on the checkbox to the left of the rows you wish to download; click on the checkbox at the top of the column of checkboxes to select all observations.

IRTF SpeX and iSHELL

The results table columns for IRTF SpeX and iSHELL are shown in table 1.

Table 1: Results table columns for IRTF SpeX and iSHELL

Column name	Description	Units
group_id	observing group identification code	
previews	links to previews (see below)	
name	name of target or "calibration"	
ra	right ascension of target	degrees
dec	declination of target	degrees
date_time_of_obs	date and time of observation	JD
program_id	program ID	
proposal_pi	program principal investigator (PI)	
proposal_title	program title (not shown by default)	
datatype	data type in one-letter string: T=target, S=standard, C=calibration	
instrument_name	name of instrument	
order_sorting_filter	string describing order sorting filter	
guider_filter	string describing guider filter	
grating	string describing grating	
slit	string describing slit	
cross_dispenser_tilt	cross_dispenser_tilt	
slit_length	slit length	arcseconds
exposure_time	exposure time	seconds
wavelength_lower	lower wavelength bound	microns
wavelength_upper	upper wavelength bound	microns

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Column name	Description	Units
lunar_azimuth	lunar azimuth	degrees
lunar_elevation	lunar elevation	degrees
airmass	airmass	
seeing	seeing	arcsec
lunar_illumination	lunar fractional light illumination	percent
lunar_light	string describing lunar light level	
sky_transparency	string describing sky transparency	

Click on the gears in the upper right of the table to change which columns are shown.

Summary: In the summary column, there is a link to an HTML page ("summary") which consolidates information to help you evaluate whether you want to download the data. The included information is:

- program information
- target information
- data quality assessment information, if available
- weather summary (png)

Observing conditions appear in the results and include airmass, seeing, lunar light level (dark, grey, bright), and the sky transparency (photometric, cirrus, cloudy). These values may be incompletely or incorrectly populated in the database. If in doubt, downloading the data is recommended. [See the page on table interactions](#) for general table help, including information on how to filter your results. In brief, click on the "funnel" to enable boxes at the top of each column if they are not already there. To, e.g., filter to only show observations where the lunar light string is "bright", type "bright" in the box at the top of the "lunar_light" column. To only select where the lunar fractional light illumination is less than 0.8, type "< 8" in the box at the top of the lunar_illumination column.

TEXES

The results table columns for TEXES are shown in table 2.

Table 2: Results table columns for TEXES

Column name	Description	Units
observation_id	collection-specific unique observation identifier	
product_id	name of this product	
file_url	URL to retrieve the file	
name	name of target as provided by observer	
naif_id	NAIF id of moving target (will not be populated for inertial targets)	
ra	right ascension of target	degrees
dec	declination of target	degrees
date_of_obs	date and time of observation	JD
mjd	Modified Julian Date of observation	
program_id	collection-specific unique proposal identifier	

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Column name	Description	Units
proposal_pi	proposal principal investigator (PI)	
datatype	data type (calibration or target)	
instrument_name	name of instrument	
instrument_mode		
observing_mode	Observing mode (e.g., flat, nod, scan, stare)	
slit	string describing slit	
slit_width	slit width	
slit_length	slit length	
calibration_level	number indicating calibration level; larger numbers are more calibrated	
exposure_time	exposure time	seconds
wavelength_lower	lower wavelength bound	microns
wavelength_upper	upper wavelength bound	microns
spectral_resolution	spectral resolution	

Click on the gears in the upper right of the table in the results to change which columns are shown.

IRTF Archive: Tables

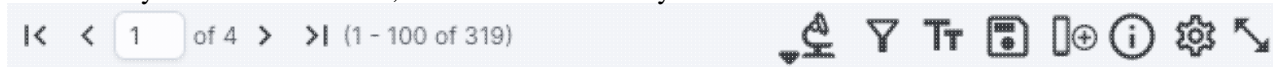
The IRTF Archive returns results in an interactive table. This section describes features of this interactive table.

Contents of page/chapter:

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Table Header

Immediately below the tab name, there can be several symbols:



which we now describe, going from left to right along the top of the catalog tab.



Table navigation

The first thing to notice is that (typically) only the first 100 rows of the retrieved table are displayed. In the example here, there are 319 sources that were retrieved as a result of the search, grouped into 4 'pages.' The left/right black arrows plus the page number allow you to navigate among these 'pages' of 100 sources each. Note that the entire set of results (not just the 100 rows you are currently viewing) can be sorted by clicking on any column's name.




Filter

Filters are complex and powerful enough that they are covered in a [separate section below](#).



Table as text

Clicking on this changes the table display into a fixed-width text display. The icon then changes to  click this again to return to the default table view.



Save table

This is how you can save the table. It has a [separate section below](#).



Add a column

This icon adds a new column to the table. This has a [separate section below](#).



Info link

You may or may not see this icon. This is an "information" button and, if it exists, it may provide additional information about the table. It could have information about the job that was used to retrieve it:

Table Info [X]

Job Info | Table Metadata

Phase: COMPLETED
 Start Time: 2024-03-27T22:36:00.976019398Z
 End Time: 2024-03-27T22:36:03.803012715Z
 Service URL: https://irsatest.ipac.caltech.edu/cgi-bin/Gator/nph-query?outfmt=1&catalog=allwise_p3as_psd&spatial=
 Summary: 319 rows found
 ID: 1711578960976

[?]

where the direct link to the job is given there (and can be copied by clicking on the clipboard, ready to be pasted into a helpdesk query, for example), with a job id as shown. It could also just have information about the table metadata:

Table Info [X]

Job Info | Table Metadata

Table Meta

DATABASE: AllWISE Source Catalog (allwise_p3as_psd)
 DATETIME: 2024-03-27 15:36:01
 EQUINOX: J2000
 fixlen: T
 ORIGIN: IPAC Infrared Science Archive (IRSA), Caltech/JPL
 RowsRetrieved: 319
 SIMULATED_TABLE: n
 SKYAREA: polygon(270.99828 -24.44978, 270.84541 -24.44957, 270.84571 -24.31057, 270.99842 -24.31078)
 SQL: 'WHERE (no constraints)
 SQL: SELECT (45 column names follow in next row.)
 StatusFile: /workspace/TMP_9GL701_10732/Gator/irsa/10732/log.10732.html

[?]

where the information about this table includes information about the query that produced it.



Row details

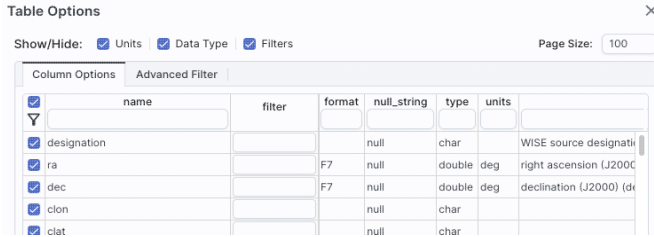
You may or may not see this icon. This is how you get more information about the currently-selected row. It has a [separate section below](#).



Table options

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Clicking on this icon brings up options for the table, e.g., how many rows are displayed per page, which columns are shown, metadata about each column if available, whether units and data types are shown at the top of the column, shown here:



By default, it is often but not always the case that all columns are shown. To show or hide columns, select the tickbox in each given row. The default page size is 100 rows. Note that expanding the page size to numbers much greater than 100 may result in a substantial performance degradation (e.g., your browser will appear to freeze or not appear to be doing anything while it manages and renders the large table). See the [Filters section below](#) for more things to do from the table options pop-up.



Expand

Clicking on this expands the catalog window pane to take up the entire browser window. To return to the prior view, click on "Close" in the upper left.



Help

The last option on the top of the catalog tab may be a context-sensitive help marker, which should bring you to this online help.

Table Columns


The table is shown exactly as it appears in the corresponding database, with all columns as defined for that database.

Depending on what you did to display a table, the columns that are shown may be in easily-human-readable form, or may reflect column names used within the individual catalog. Please consult the detailed documentation associated with your specific archive if the headers are not clear to you.

Clicking on the column names sorts the table by that column; clicking once sorts in ascending order, clicking a second time sorts in descending order, and clicking a third time returns the table to the original order. Small arrows appear next to the column names to remind you if the column is sorted in ascending or descending order.

Tips and Troubleshooting



You can hide or display columns; click on the gears () to get to the table options, and tick the box corresponding to the row you want to hide or show.

Adding Columns



This icon allows you to add a new column to your catalog. When you click on it, it brings up this pop-up window:

This window asks for:

- *Name* of the column (required) -- it cannot have special characters like a minus sign or a percent symbol; you can only use letters, numbers, and underscores.
- *Mode* "Enter expression" or "Use preset function" -- options shown here correspond to "Enter expression" options; the preset function options are included in the last bullet here.
- *Expression* (required) -- using basic SQL operators, you can manipulate columns to create the new column. (See more on this below.)
- *Data Type* -- specify if your new column is a double precision floating point ("double"), a long integer ("long"), or a string ("char").
- *Precision* -- if you have selected "double" for data type, select how many decimal places your new column should display. For example, if you want the numbers to display as 1.23, enter "F2".
- *Units* -- specify the units of your new column. For more information, see [IWOA documentation](#)
- *UCD*, or unified content descriptor -- for VO compliance, add this for your new column. For more information, see [IWOA documentation](#)
- *Description* -- add a description for your new column.
- *Select a preset* -- if you select "Use preset function", you can choose (a) "set filtered rows to 'true' and the rest to 'false'", (b) "set selected rows to 'true' and the rest to 'false'", or (c) "number rows in current sort order". These options are useful for tagging items you have selected in myriad ways (from plots, images, complicated filters), or ordered in complicated ways. For example, if you have constructed a complicated filter, then you can create a column that is true for the selected rows; if you cancel the complicated filter, you can then easily recreate the complicated filter by simply filtering on your newly created column.

In order to construct the expression for your new column, your input should follow the syntax of an SQL expression. If you click on the magnifying glass next to the form input, you get a pop-up window that can help you construct an expression; click "apply" to apply the expression.

You need to use the column names exactly as they appear in your catalog. Supported operators are: +, -, *, /, =, >, <, >=, <=, !=, LIKE, IN, IS NULL, IS NOT NULL. You may use functions as well; for a list of all available functions, [see here](#) . Some examples include:

- "w3mpro" - "w4mpro"
- $\text{sqrt}(\text{power}(\text{"w3sigmpro"}, 2) + \text{power}(\text{"w4sigmpro"}, 2))$
- $(\text{"ra"} - 82.0158188) * \text{cos}(\text{radians}(\text{"dec"}))$

- "phot_g_mean_mag"-(5*log10(1000/"parallax") - 5)

Tips and Troubleshooting




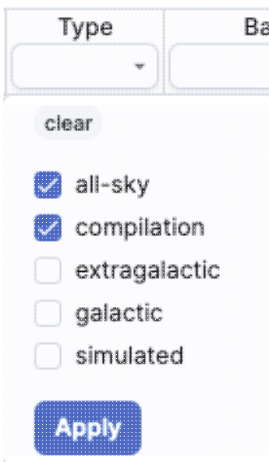
- When you create a new column that is calculated from other columns, it is created statically. That is, it is not dynamically updated like a spreadsheet, but calculated once and left alone after that.
- When you create a new column, the header of the new column is red to let you know that the column is not present in the original catalog.
- When you save the catalog, the header of the saved catalog indicates that you have added a column. When you load the catalog back into the tool, the header of the new column is still red.
- You can edit or delete columns after you have created them; click on the gears () to get to the table options, and then click on the edit icon to bring up a dialog box to edit or delete the column.
- You can hide columns; click on the gears () to get to the table options, and tick the box corresponding to the row you want to hide or show.

Table Filters



Filters are a *very* powerful way of exploring the table full of search results. Click on this icon  in order to start the process of adding filters. A text entry box appears above each of the current catalog columns, with a small version of the filter icon corresponding to that row on the far left. You can type operators and values in these boxes -- hit return or tab after typing or click in another box to implement the filter.

Example: From a catalog, show only those sources with declination above a certain value (say, 31 degrees), type "> 31" in the box at the top of the "dec" column. Or, if you have retrieved a WISE catalog and would like to only view the objects with a W1 (3.4 micron) profile-fitted magnitude less than 6 magnitudes, in the box at the top of the 'w1mpro' column, type "< 6" in the form.



For columns (fields) with a limited set of choices, on the right edge of the text entry box, an arrow appears; click on it to get a drop-down from which you can select the available choices. To implement the filter, make the choices, and click "Apply" when you are done. Click "clear" in the top of the drop-down menu to remove that filter.

After you impose a filter, then the number of rows in the table is restricted according to the rules you have specified, and the "filters" icon on the top right of the catalog pane has changed to remind you that there has

been a filter applied, in this case four filters: . To clear the filters, click on the cancel filters icon (which also appears after you impose filters): .

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Filters can be used in combination. Note that the filters between columns are logically "AND"ed together, but filters within the same column can be logically "AND"ed or "OR"ed together; examples are below.

The available logical operators are :

- = which means 'equal to' (exactly!), e.g., the parameter on which you are querying (the column headers as shown) is exactly equal to this value you are specifying.
- > which means 'greater than'
- < which mean 'less than'
- != which means 'not equal to' (exactly!)
- >= which means 'greater than or equal to'
- <= which means 'less than or equal to'
- IN which means 'included within this list', e.g., the parameter on which you are querying is included within the list you are specifying (if the column filter is free-form text, type "value1,value2" and it will give you rows that have value1 or value2).
- LIKE which means 'resembles the text that is entered', e.g., the text resembles the text that you type in the box.
- IS which effectively is the same as =
- IS NOT which effectively is the same as !=

Examples:

- Retain rows for which a certain parameter is not an empty string: !="
- Retain rows for which a certain parameter is not NULL and is larger than 1.234: > 1.234 and IS NOT NULL
- Retain rows that have values between -0.5 and 1.25: > -05 and < 1.25
- Retain rows with a parameter greater than one value or exactly not equal to another value: > 12345 or != 3000
- Retain rows with a parameter equal to one of the values in a list: IN a,b,c,d

You may also be able to select rows one at a time via the far left column and then filter that down. Example: Retrieve a catalog of any sort. Select rows by ticking the box on the far left, say, every other row out of the first 12. Click on the filter icon on the top of the column. The filter is imposed to only include the 6 rows you selected.


If you click on the table options icon (), you get a pop-up that includes a place to filter columns. Here is an example of the table columns for a typical IRTF result, filtered to just be calibration data :

Table Options Page Size: 100

Show/Hide: Units Data Type Filters

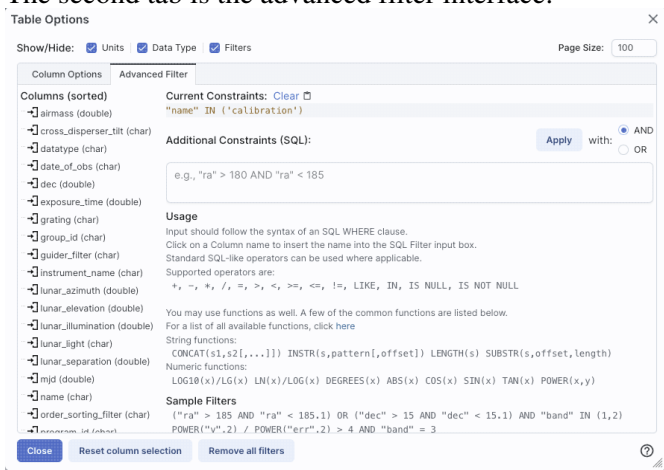
Column Options Advanced Filter

<input type="checkbox"/>	name	filter	format	type	units	arraySize	description
<input checked="" type="checkbox"/>	group_id			char	*		collection-specific unique observation identifier
<input checked="" type="checkbox"/>	summary			char	*		
<input checked="" type="checkbox"/>	name	IN ('calibration')		char	*		name of intended target
<input checked="" type="checkbox"/>	ra		F6	double	deg		
<input checked="" type="checkbox"/>	dec		F6	double	deg		
<input checked="" type="checkbox"/>	date_of_obs			char	*		
<input checked="" type="checkbox"/>	mjd		F9	double	d		
<input checked="" type="checkbox"/>	program_id			char	*		collection-specific unique proposal identifier
<input checked="" type="checkbox"/>	proposal_pi			char	*		proposal principal investigator
<input type="checkbox"/>	proposal_title			char	*		proposal title
<input checked="" type="checkbox"/>	datatype			char	*		
<input checked="" type="checkbox"/>	instrument_name			char	*		name of instrument used to acquire observation
<input checked="" type="checkbox"/>	order_sorting_filter			char	*		
<input checked="" type="checkbox"/>	guider_filter			char	*		
<input checked="" type="checkbox"/>	grating			char	*		

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You can type in constraints in the filter box in much the same way as you can from the catalog itself; note that the column description is included here, which may make this way of setting filters more useful when working with a new (to you) catalog.

The second tab is the advanced filter interface:



Here, the columns are listed alphabetically on the left, the constraints you have imposed are in the "current constraints" box, and you can apply additional SQL constraints via the free-form text box. Hints for syntax are given below the entry box. This window can be resized such that you can see the whole set of hints and imposed filters. Note that in this interface, column headers must be enclosed within double quotes.

Cancelling filters

After you impose a filter, then the "filters" icon on the top right of the catalog pane has changed to remind you

that there has been a filter applied, in this case just one filter:



To clear all the filters at once, click on the

cancel filters icon (which also appears after you impose filters):



Tips and Troubleshooting

- If you impose logically inconsistent restrictions such as "exposure_time > 160" and "exposure_time < 100" (">160;<100" in the filter box for a column called "exposure_time"), no data will result, because no data are (can be) both less than 160 seconds long and greater than 100 seconds long at the same time. However, "exposure_time > 160 or < 100" works just fine (">160 or <100" in the filter box for the column "exposure-time").
- If you impose nonsensical filters (like using a letter where a number should be, like "w1snr < f") then it will let you know that something has gone really wrong, and let you go back to fix it.
- However, a filter like "ph_qual < f" could be valid -- if the column with which you are working is a string, then a string is a valid filter. It is case-insensitive. For the ph_qual column in the 2MASS catalog, the values are always three letters, such as AAA or ABA or CUU. A filter like "ph_qual < f" will operate as if you have alphabetized the list. Any string that starts with A comes before F and so will be retained. If you do "ph_qual < BBB" then AAA will be left in, but so will "BAU", because alphabetically, BAU precedes BBB.
- If you impose filters from a plot, it can manifest as several filters on the catalog, e.g., one for each side of the square you have drawn on the plot. If you want to remove, say, just one of the four filters (rather than all of them by cancelling all filters), you can do so from the table options pop-up.
- If you want to copy all of the "current constraints", even if the entire field is not visible to you, you can click on the clipboard icon to copy the entire string, and then paste it into another field or application to

see what it is.

- If you are choosing filters from a list of terms, cancelling those filters might not work the way it cavalierly seems like it should. If a down arrow appears next to the filter box, then a list of options you can select is available. Tick the boxes you want, and click "Apply" to apply the filter. Now, if you want to change the filter, click the down arrow, select different options, and click "Apply" again to re-impose the new filter. To remove the filter, you have to treat it like you would when applying a modified second filter -- unselect the choices, or hit 'clear', and **then hit Apply again**. If you deselect the choices and then click elsewhere in the window without hitting clear, your actions are interpreted as 'cancel without doing anything' as opposed to 'impose the new filter I just set' (which is 'cancel all filters'). When you are resetting the filter to be 'select nothing', it is treating that as a new filter setting, so you need to set up that filter and click 'Apply' in order for it to understand.
 - If you impose filters from a plot, image, or table, you can cancel them from a plot, image, or table. That is, if you impose filters from a plot, and different additional filters from the image, when you click the 'cancel filters' icon from the table, *all* the filters are canceled at once. If you have filters imposed from multiple places, clicking on 'cancel filters' doesn't cancel just the filters imposed from that place; it cancels all of them. If you want to be able to reconstruct a complicated set of filters, though, you can add a column to your table that is one of the preset functions -- set it to true if the row is filtered. Then you can cancel all your filters at any time but you can easily recover the filtered data by filtering on that one new column.
-

Row Details



This icon is not always available. When it is available, when you click on it, a new pop-up window appears with information about the row you have selected:

Row Details: irsa_catalog_search_results.tbl ✕

(1 - 51 of 51)

<input type="checkbox"/>	Name char	Value char	Units char	Type char
<input type="checkbox"/>	cntr_01	1		long
<input type="checkbox"/>	dist_x	0.602755	arcsec	double
<input type="checkbox"/>	pang_x	122.272629	deg	double
<input type="checkbox"/>	objname_01	HD787		char
<input type="checkbox"/>	ra_01	3.0415960000E+0		double
<input type="checkbox"/>	dec_01	-1.7938278000E+1		double
<input type="checkbox"/>	designation	J001210.01-175618.1		char
<input type="checkbox"/>	ra	3.0417448	deg	double
<input type="checkbox"/>	dec	-17.9383674	deg	double
<input type="checkbox"/>	sigra	0.0167	arcsec	double
<input type="checkbox"/>	sigdec	0.0157	arcsec	double
<input type="checkbox"/>	sigradec	-0.0050	arcsec	double
<input type="checkbox"/>	w1mpro	-0.781	mag	double
<input type="checkbox"/>	w1sigmpro	null	mag	double
<input type="checkbox"/>	w1snr	0.3		double
<input type="checkbox"/>	w1rchi2	2.183E-4		double
<input type="checkbox"/>	w2mpro	-0.011	mag	double
<input type="checkbox"/>	w2siampro	null	mag	double

This information is sometimes called a "property sheet."

This table consists of each of the columns of the retrieved catalog with additional information about each field where available. (Not every catalog may have this information available.) For additional information, please consult the full documentation that accompanies the catalog.

Note that if you leave the pop-up or tab open as you select different rows in your main table (or catalog), it is dynamically updated.

Tips and Troubleshooting

- The property sheet is a more expanded, vertical view of the information shown in a row of a catalog, along with documentation of the catalog columns. If you think of the main table (catalog) view as a single row that you have to scroll left and right to see in its entirety, this view is sort of an orthogonal view, where you have all of the same contents of that row but shown as its own table, with the full header description, if available, and you can scroll up and down to see the entire contents (as opposed to left-right). *This is sometimes a more user-friendly way to view any given row.*
- Because you can sort/filter the data in the property sheet, you can restrict what values are shown. Those filters are respected as you page through your main table.
- When changing rows in the main table, the property sheet scrolls to preserve the visibility of whatever row in the details tab is highlighted. If you scroll down in the property sheet *without changing the highlight*, when you change rows in the main table, because the first row in any table is always

highlighted by default, the property sheet will scroll back to the top.

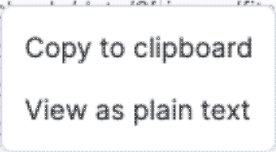
Table Cells

Some cell values may be too long for the cell space. If that is the case, an ellipsis ("...") will appear in the cell as you mouse over it:

access_url	access
char	c
https://irsa.ipac.caltech.edu/dat: ...	image/fi
https://irsa.ipac.caltech.edu/data/Sf	image/fi
https://irsa.ipac.caltech.edu/data/Sf	image/fi

If you click on the ellipsis, you get a drop-down menu:

access_url	access_fo
char	char
https://irsa.ipac.caltech.edu/dat: ...	image/fits
https://irsa.ipac.caltech.edu/data/Sf	image/fits
https://irsa.ipac.caltech.edu/data/Sf	image/fits
https://irsa.ipac.caltech.edu/data/Sf	image/fits
https://irsa.ipac.caltech.edu/data/Sf	image/fits
https://irsa.ipac.caltech.edu/data/Sf	image/fits



from which you can choose to copy the cell value or view it in a pop-up window.

If you view it in a pop-up window, it will attempt to format it in a readable fashion:



which, for most cells, will be functionally indistinguishable from no special formatting. It will only matter for very complicated cells.

Saving Tables

Click on the diskette icon (), if available, to save the table.

You obtain this pop-up:

Save table [X]

File format
IPAC Table (.tbl)

File name
table_WISE-allwise_p3as_psd-Polygon.tbl

File location: Local File Workspace

Save table as displayed
 Save table as originally retrieved

The table will be saved in its current state, including its sorting order and derived columns, but excluding rows not accepted by any filters applied, as well as any hidden columns.

Save Cancel [?]


You have several choices to make. In order, they are:




File format

You can save the table in a variety of formats:

File format

- IPAC Table (.tbl)
- IPAC Table (.tbl)
- Comma-separated values (.csv)
- Tab-separated values (.tsv)
- VOTable - TABLEDATA (.vot)
- VOTable - BINARY2 (.vot)
- VOTable - FITS (.vot)
- Parquet file with VOTable metadata (.parquet)
- Region (.reg)


It defaults to saving it as an [IPAC table file](#) , which is basically ASCII text with headers explaining the type of data in each column, separated by vertical bars.

Other formats include comma-separated values (csv, suitable for, e.g., Excel), tab-separated values (tsv), and three different versions of [VO tables](#) . You can save the file in [parquet file format](#) , which is a highly efficient, compressed, column-oriented format for tabular data that has been adopted by many recent wide area survey projects. You can also save the file in [DS9 Regions file format](#) , which really has no meaning in the context of the IRTF tool.

File name

The tool tries to make a guess at a sensible filename. Feel free to change it to something that makes sense to you.

File location

You may save your file to a local file (on your disk) or, if you are [logged in](#), in the [IRSA Workspace](#) .

Modifications to the table

Depending on what you have been doing to the table at this point, you may have [filtered](#) or [added columns](#). If you want to save the table as it is currently displayed, with all filters as imposed and any columns hidden, and any added columns as shown, select "Save table as displayed." If you want to save the original table, with all rows and the original columns intact, choose "Save table as originally retrieved."

Table Navigation

At any time, you can move among tables by just clicking on the tab name.

There is also another way to navigate among the table tabs.

On the far right, there is a downward pointing arrow. When you click on it, you get a drop-down, showing all the tabs that are loaded. From there, you can select the tab you want to bring to the foreground.

IRTF Archive: Downloads

To select data for download, click on the checkbox on the far left of the data table, or click on the box at the top of that column to select every row.

IRTF SpeX and iSHELL

By default, related data are automatically packaged together with data downloads from the NASA IRTF archive. *Caution:* packaged data can be very large files, and may take a long time to package and download. You can choose what to include:

Selected Data

The data you have selected is, of course, included. To select observations, click on the checkbox to the left of the rows you wish to download; click on the checkbox at the top of the column of checkboxes to select all observations.

Related Standard Groups

Include standards obtained near the observation of interest and related to it.

Related Calibration Groups

Include calibration frames related to the observation of interest.

IE Logs

Include instrumentation logs. This file includes key events logged by the TCS and instruments to document sequences of events during observing to help understand the archived data.

Weather data

Include weather data.

Program information

Include information about the program that obtained the observation of interest.

TEXES

TEXES data, in contrast, does not bundle all of the calibration data automatically with the selected data. You will need to select the relevant data, line by line, to download it. Still, it is the case that packaged data can be very large files, and may take a long time to package and download.

All data

You can choose to have the observations sorted into directories. (See the "Organize downloads into directories" checkbox.) If this box is not checked, the data will unzip into a flight directory structure (e.g., no subdirectories). If this box is checked, the data will unzip into a multiply-nested set of subdirectories, e.g., 2016B/20160803/data/2016B048/sbd_20160803_151141. If you download only one or two observations, this structure may seem funny; it makes more sense if you are downloading many observations. In any case, you can rearrange the data organization once you download the data.

Click on the 'download' button to download your data.

Note that **you** control where the data are saved on your disk through your browser; your browser may be configured to store all downloads in a particular location on your disk. Look for a "Downloads" folder or search for recently modified files.

Unzip Troubleshooting

IRTF Help

If you have an old computer and/or an old OS, and if you download more than one observation at a time, then you may very well get a zip file you cannot unpack. It complains that it is corrupted :

```
warning [IRTF.zip]: 4098391235 extra bytes at beginning or within zipfile
(attempting to process anyway)
error [IRTF.zip]: start of central directory not found;
zipfile corrupt.
(please check that you have transferred or created the zipfile in the
appropriate BINARY mode and that you have compiled UnZip properly)
```

This is because the zip files are bigger than a threshold (likely 4 GB for your machine). If you have a recent version of the unzip software, it should just work and you will never notice. If you have an only sort of old version, you can try to "repair" the file (use "zip -F IRTF.zip --out IRTF2.zip" and then "unzip IRTF2.zip"). If that still doesn't work for you, you can update the unzip software. On a Mac, if you use Homebrew, type "brew install unzip". Homebrew will get the software but then express reluctance to install it for you, making it seem like you are doing something terribly risky in updating the software. So, you should invoke it using the full path /usr/local/opt/unzip/bin/unzip rather than via an unqualified unzip. If you are not comfortable doing that, the workaround is to download one observation at a time (one row from the GUI), and unzip them from the command line (as opposed to double-clicking on the zip file) -- then it will nest all of the files properly, as if you had downloaded just one big zip file.

If you have a Windows machine, try [7zip](#) .

IRTF Archive: User Registration for the IRSA Archives

There is one user registration for all IRSA applications, but data access, preferences, search history, data tagging, etc., are all unique to each archive.

While you certainly **do not have to register** to search the archive, download data, analyze data, and write a paper, you may wish to register.

Most catalogs in the Catalog Search Tool are public, so for most users, there is no need to log in.

On the other hand, *if you are trying to gain access to some of the proprietary data in a particular archive, you will need to log in* so that the system grants you access to that data. Not all archives served by IRSA have proprietary data. If you got email from an archive's Help Desk about account information, you may already have an account; else you can set up an account (see below). Once you have set up an account, please send us an email at the IRSA Help Desk and we'll tie your new account to your proprietary data.

Login

The "Login" link is in the far top right of the page.

Select this option to log in if you know your password, or to create a new account.

Create New Account

Find this option by selecting "Sign in" in the far top right of the browser window, and then "Create an account" appears as an option in the lower left of the pop-up window.

Select this option to create a new account.

Forgot your Username or Password

If you do not remember your username or password, select this option to retrieve this lost information.

Find this option by selecting "Sign in" in the far top right of the browser page, and then "forgot your password?" appears as an option below the Login button.

Edit Profile

Find this option by logging in, and then clicking on your account name in the top right of the browser window. Then, select "Edit Profile" to change your password on an existing account.

Change Password


Find this option by logging in, and then clicking on your account name in the top right of the browser window. Then, select "Change Password" to change your password on an existing account.

Update Email

Find this option by logging in, and then clicking on your account name in the top right of the browser window. Then, select "Update Email" to change your email on an existing account.


IRTF Archive: FAQs



Do you have any tutorial videos?

Yes. There are Data Discovery Tool video tutorials available at the [IRSA YouTube channel](#) . Also see the playlist of tutorials relevant for more than one archive.

How do I get more help?

The "Help" blue tab leads you into this online help. You can also download a PDF version of this manual; look at the top of the help window.

You can submit questions to the [IRSA Help Desk](#) .

Found a bug? If you think you have found a bug, before reporting it, please check [this central list](#) , and read this online help. It may be a "feature" we already know about. If you have found a new, real bug then please do contact us via the [IRSA Help Desk](#) . Please include your operating system version and your browser software and version. If you can, please also include any specific error message you may have gotten. (NB: In our testing, copying shortcuts worked on Windows and Linux; the command-C did not work on Macs, but selecting and clicking the right mouse button did.)

IRTF Archive: Notice to Users -- Privacy Notice

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- The date and time you access our site
- The pages you access (recorded by the text and graphics files that compose that page)
- The Internet address of the website from which you linked directly to our site.

We use the summary statistics to help us make our site more useful to visitors, such as assessing what information is of most and least interest to visitors, and for other purposes such as determining the site's technical design specifications and identifying system performance or problem areas.

The website also collects and stores information about your search options, such as:

- Name resolver choice (NED/Simbad)
- Page size (number of rows)
- Which search results (tabs) should be displayed
- Email address, if provided, for email notifications
- Search parameters so that you can resubmit your search via your search history
- Data tags, if you create one
- Plus, additional preferences that may be developed in the future, such as those tied to the visualization options.

IRTF Help

If you register as a user, these options will be kept in our database (along with your login ID and password via MD5 hash) and used for your session the next time you log in. If you do not register as a user, these options are set via cookies kept on your computer; if you clear your cookies and start a new session, these preferences are lost.

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