National Aeronautics and Space Administration

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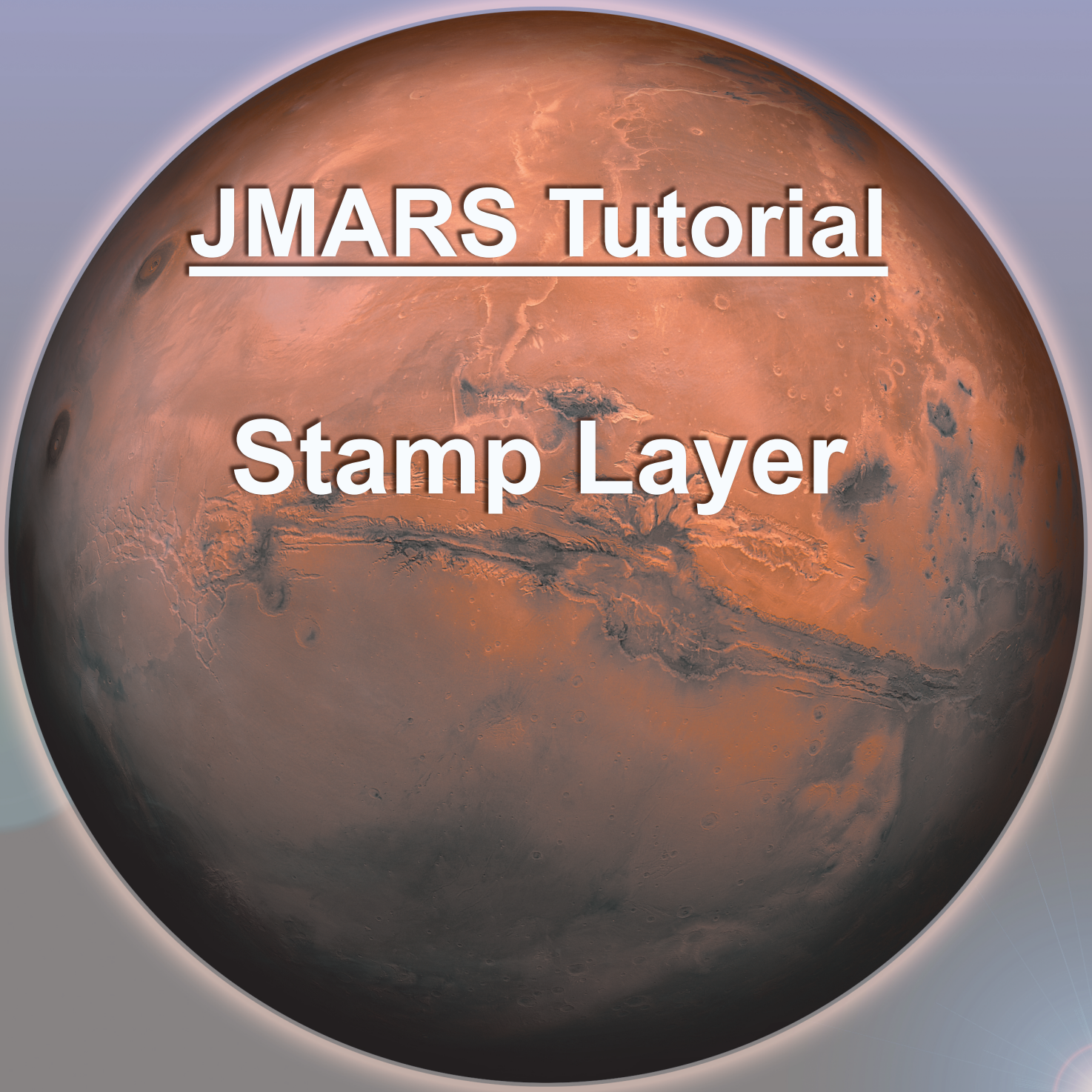
JMARS Tutorial

Stamp Layer



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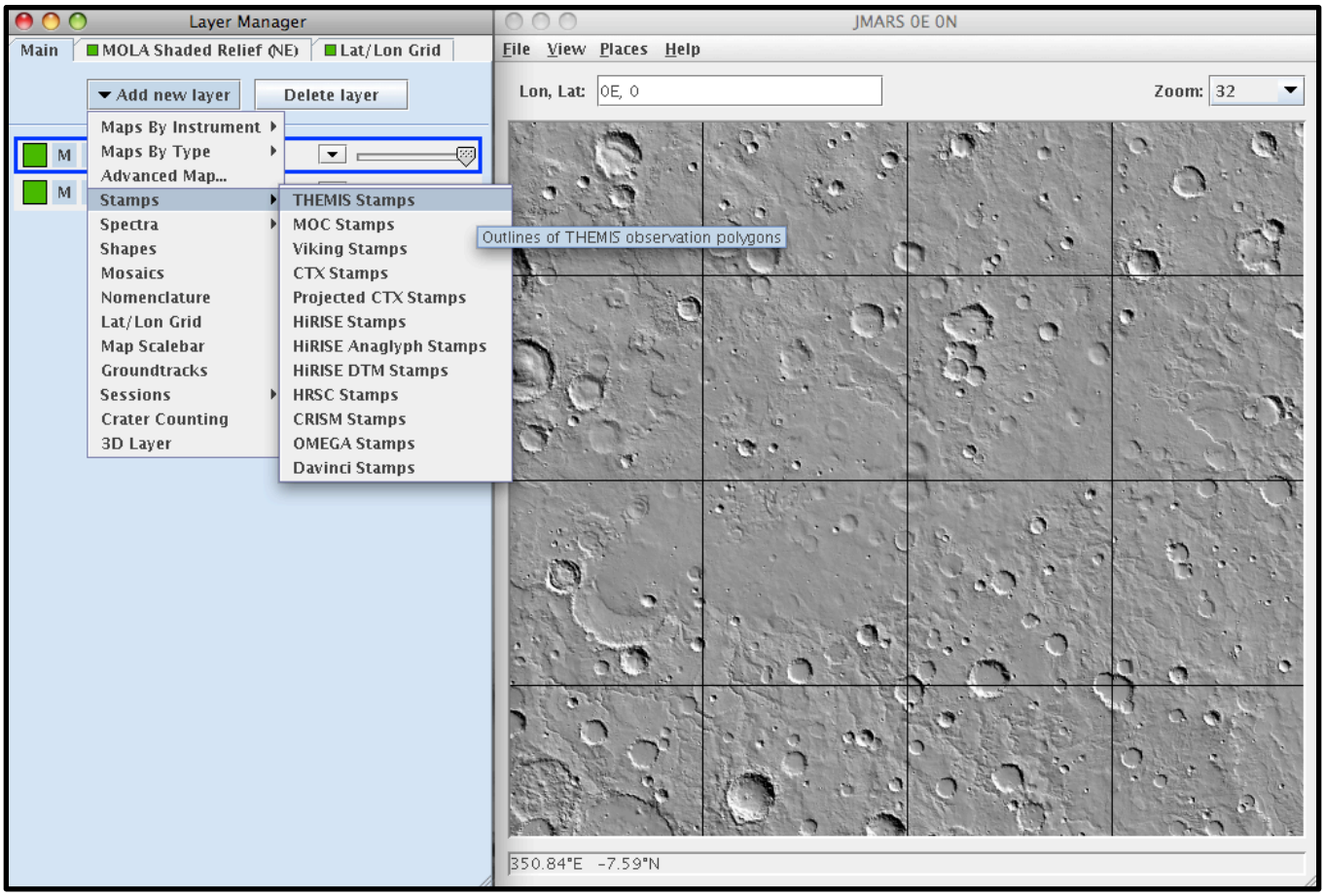
JMARS Stamps Tutorial
THEMIS

The *THEMIS Stamps Layer* will allow you to overlay THEMIS images onto planetary data in JMARS to: build a mosaic, be used to confirm the presence of specific features, or even to make measurements within. The stamp layer even gives the ability to utilize the viewer page for more intense data collection. This is an extremely quick and efficient way to collect large quantities of data through THEMIS images.

To access the *THEMIS Stamps Layer*, start by clicking "Add New Layer."



> Choose Stamps > THEMIS Stamps.

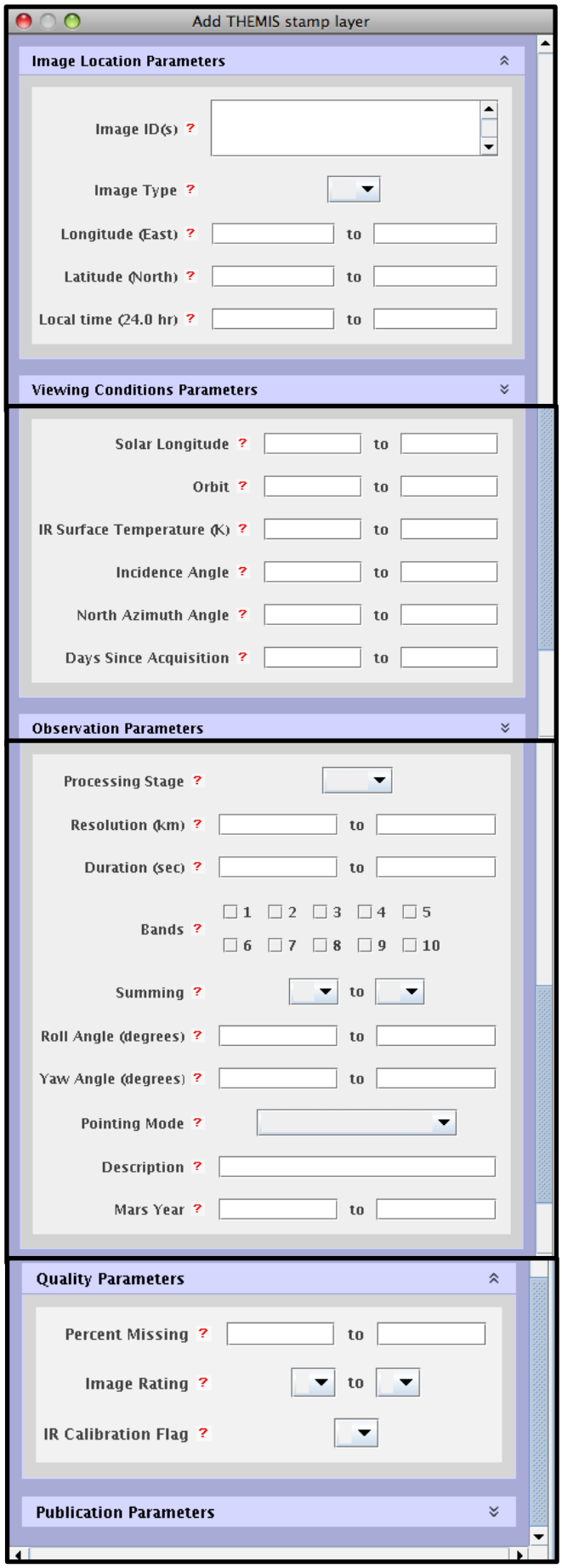


Image Location Parameters:

Image ID: Use to find a specific Image

Image Type: VIS or IR

Longitude: Can be used to narrow the search between certain longitudes.

Latitude: Can be used to narrow the search between certain latitudes.

Viewing Condition Parameters:

Solar Longitude (L_s): Represents the seasons on Mars and is a number between 0 and 360.

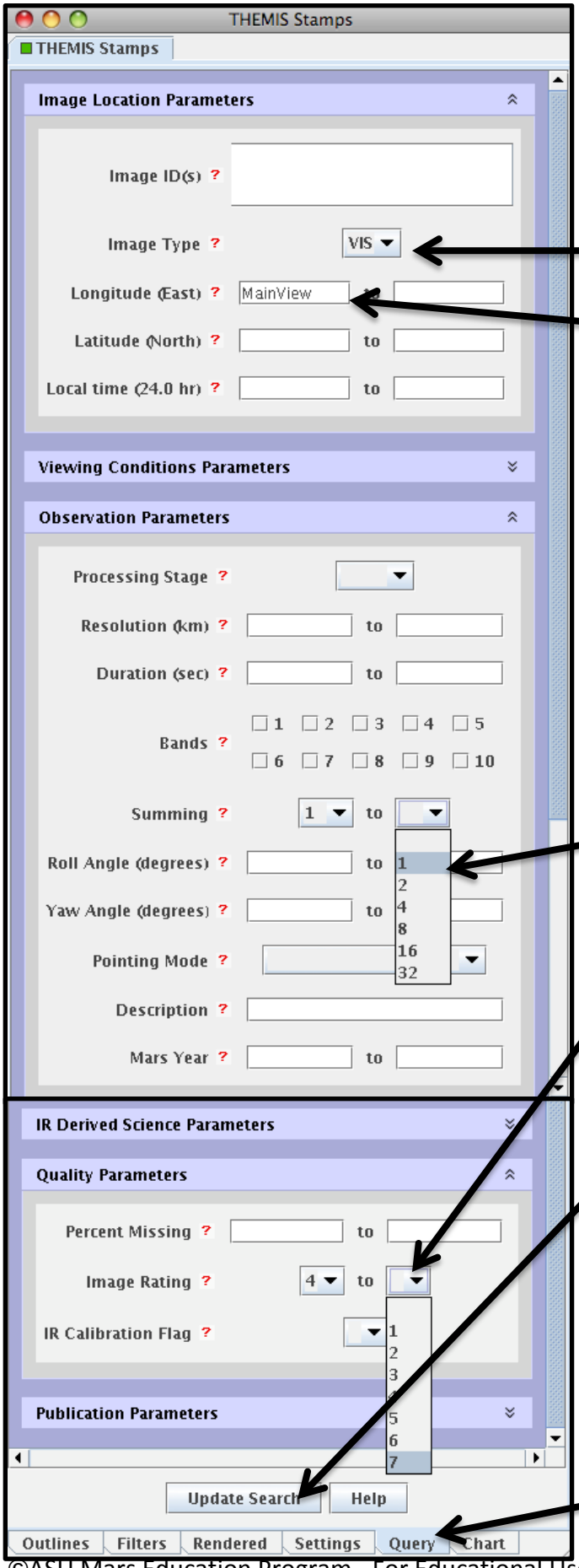
Observation Parameters:

Summing: Used to maintain full resolution of images.

Mars Year: As of 2011, we are in Mars Year 30. Depending on the mission, data can be pulled for specific years of that mission. THEMIS began in Mars Year 25.

Quality Parameters:

Image Rating: All THEMIS images have been ranked and assigned a number representing image quality. These rank from 1-7 (1 being lowest quality and 7 being highest quality)



General Instructions for importing THEMIS stamps to the Planet View window:

Image Location Parameters:

Image Type: Select "VIS"

Longitude: Right Click and Select "Set Lon/Lat to bounds of Main View" which will appear as "Main View" in the block.

****This is important to import only the stamps that are in the Main View of your Planet View window.** This will prevent JMARS from pulling every THEMIS stamp available and locking up.

Observation Parameters:

Summing: Set to "1 to 1" for best resolution.

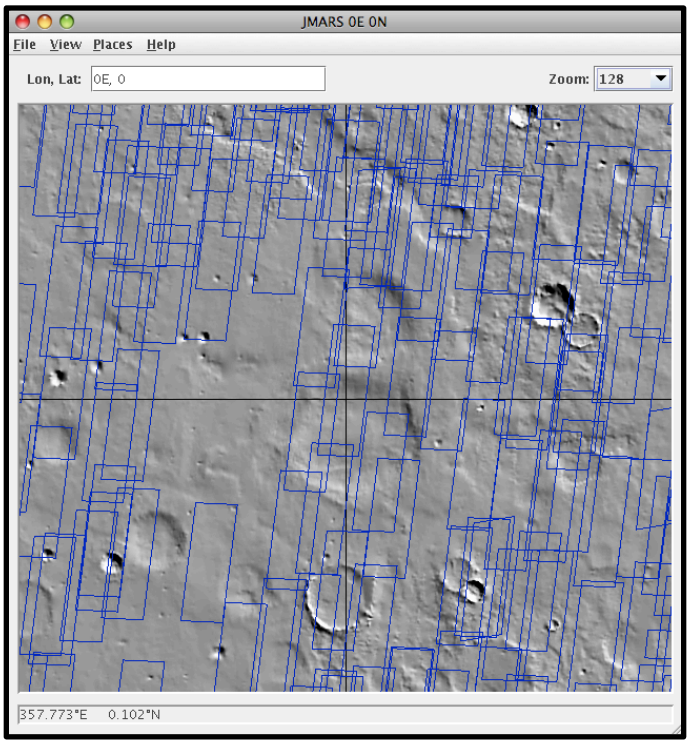
Quality Parameters:

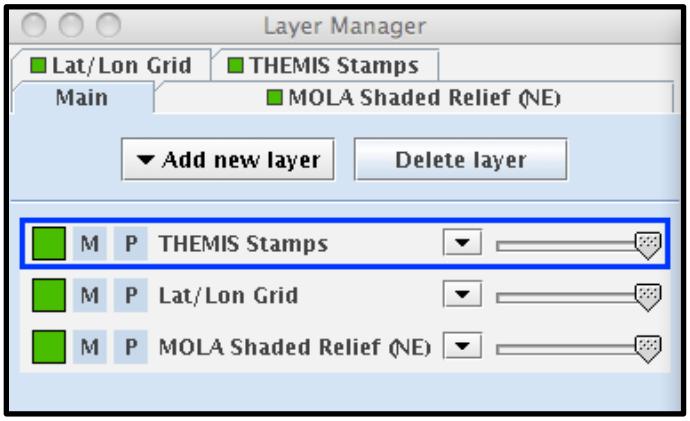
Image Rating: Set to "4 to 7" for best quality images

To Load the Stamps:

Click "*Update Search*"
The THEMIS stamps will appear in the Planet View window.

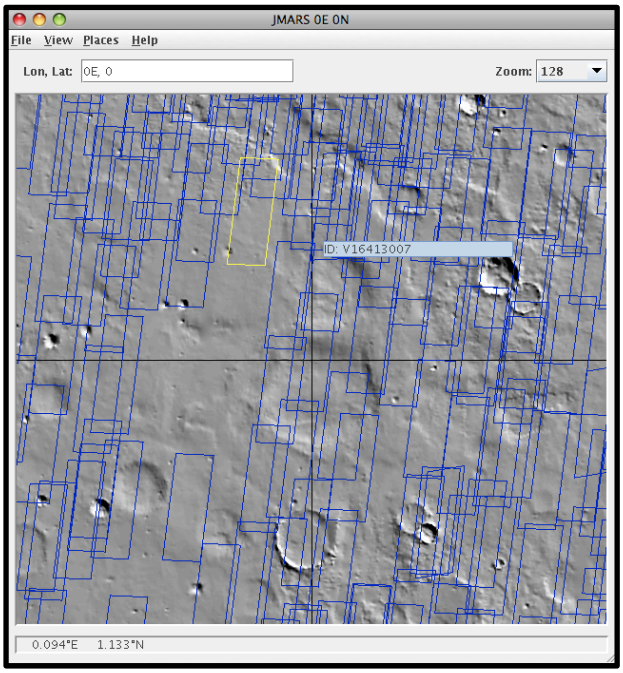
***If you ever need to modify these settings click the "*Query*" tab at the bottom. You will need to re-query each time you move the Planet View window.

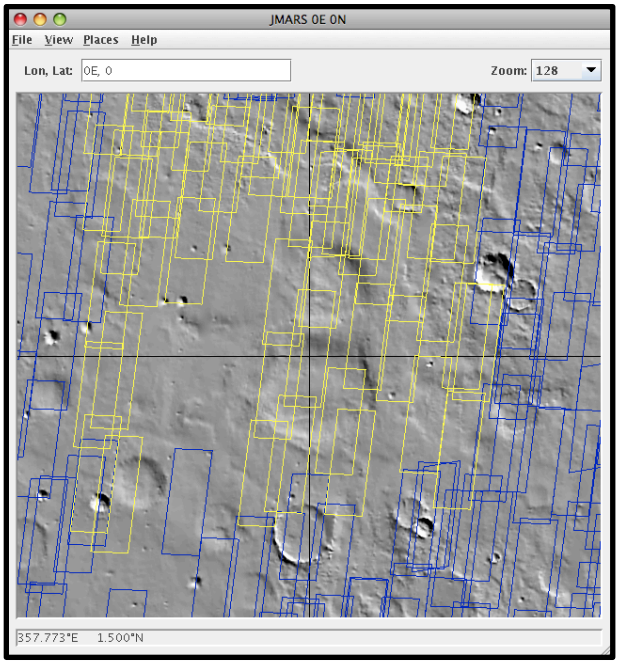




Once you hit *Update Search*, the THEMIS stamps will load into your Planet View window. Each of these blue rectangles is a THEMIS image.

To view and individual THEMIS image or a group of them in more detail, we will need to Render them.



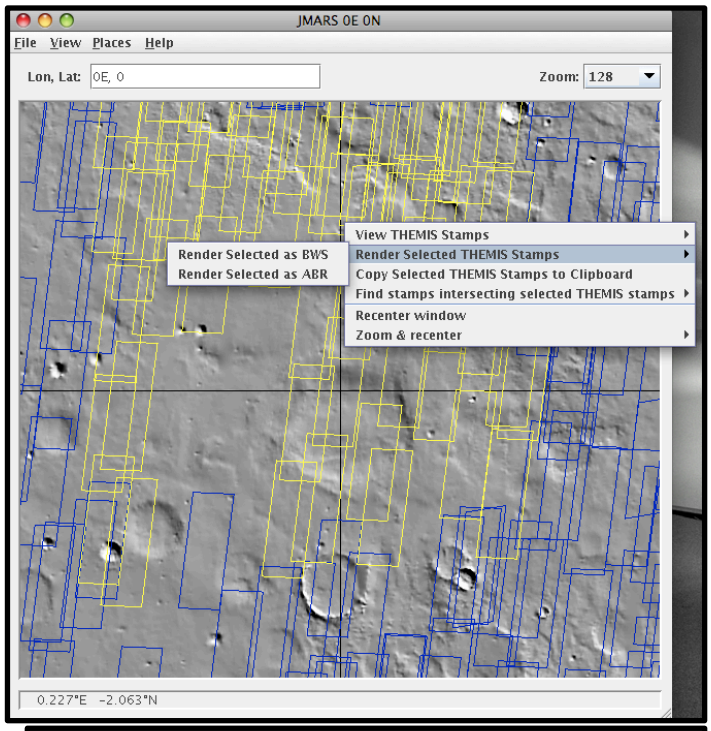


To Render and Image:

1. Go back to the *Layer Manager* and make sure the blue box is selected around the THEMIS stamps layer.
2. Select a specific THEMIS stamp (it will turn yellow when selected) or click and drag across a group of images to select them all.

Rendering Continued:

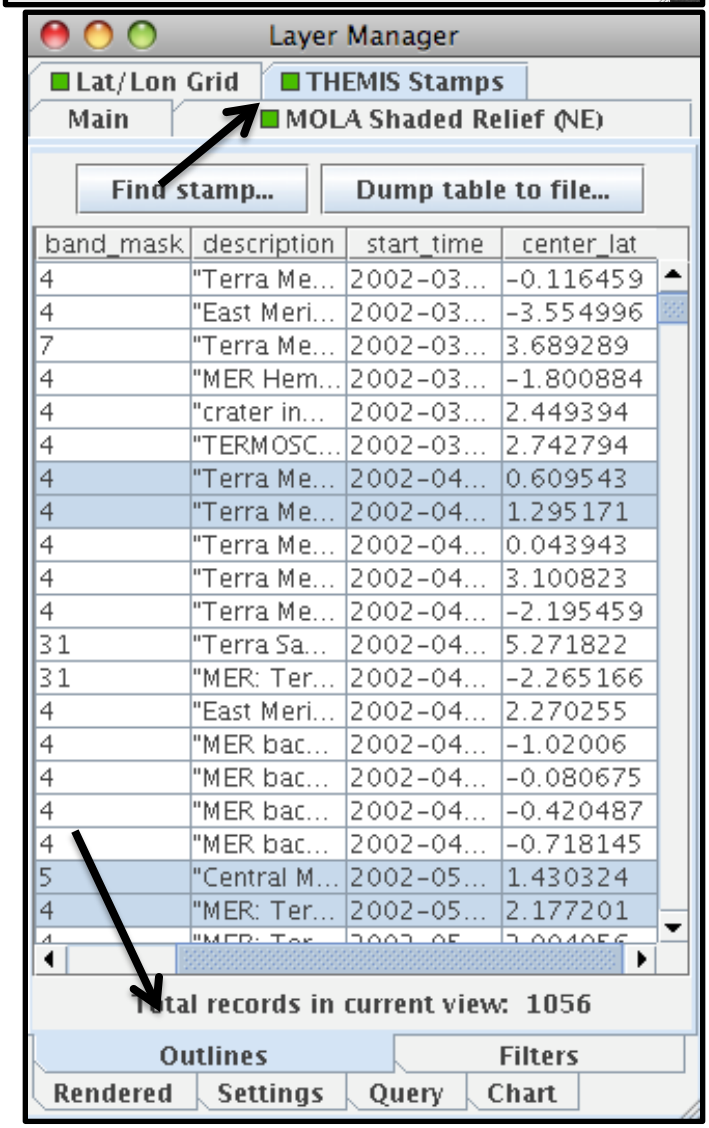
3. Right click on the single yellow stamp or the group of yellow stamps.
4. Select > Render Selected THEMIS Stamps > Render Selected as BWS.
5. For a grouping, it will take a few minutes to load all of the images, for a single it will render fairly quickly.
6. Once images are rendered, you can zoom in closer for a better view of the image.



Using THEMIS Stamps tab to collect data:

Data can be automatically collected for you in the *THEMIS tab* as you render images and select images. To view this data:

1. Click on the *THEMIS Stamps tab* at the top of the *Layer Manager*.
2. Click on the *Outlines tab* at the bottom of the *Layer Manager*.
3. At the top of the table you will find the Image ID # (file id) and the Center Latitude of the images.
4. All of the images in blue are currently selected on your *Planet View* screen. All of the ones in white represent the remaining THEMIS images in the *Planet View* not selected.

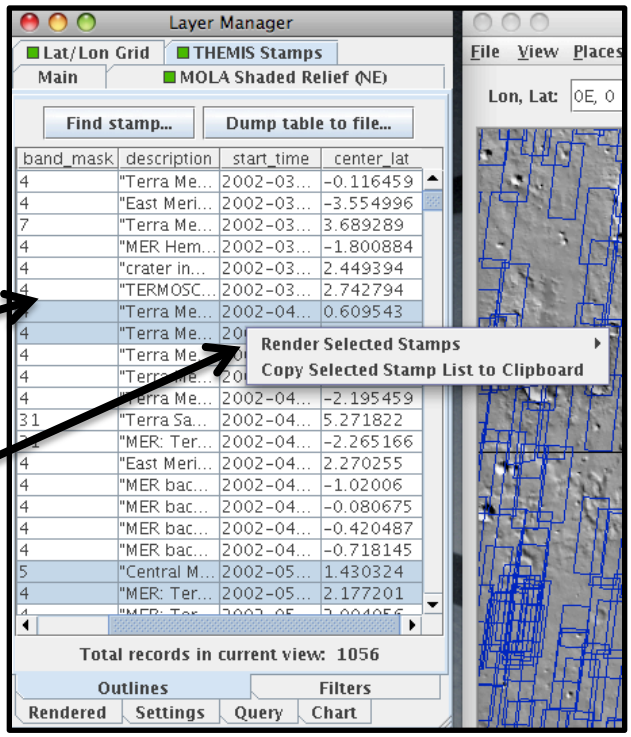


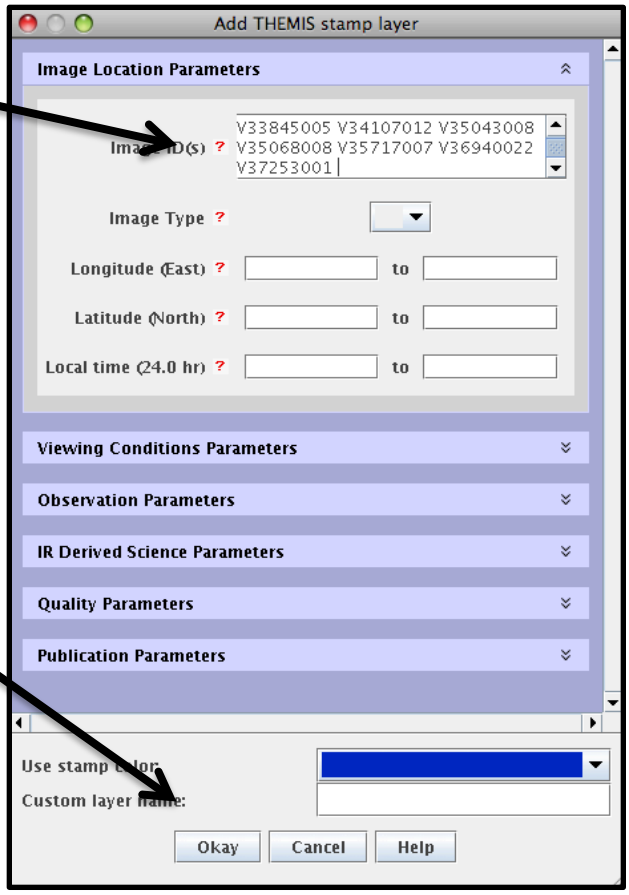
band_mask	description	start_time	center_lat
4	"Terra Me...	2002-03...	-0.116459
4	"East Meri...	2002-03...	-3.554996
7	"Terra Me...	2002-03...	3.689289
4	"MER Hem...	2002-03...	-1.800884
4	"crater in...	2002-03...	2.449394
4	"TERMOSC...	2002-03...	2.742794
4	"Terra Me...	2002-04...	0.609543
4	"Terra Me...	2002-04...	1.295171
4	"Terra Me...	2002-04...	0.043943
4	"Terra Me...	2002-04...	3.100823
4	"Terra Me...	2002-04...	-2.195459
31	"Terra Sa...	2002-04...	5.271822
31	"MER: Ter...	2002-04...	-2.265166
4	"East Meri...	2002-04...	2.270255
4	"MER bac...	2002-04...	-1.02006
4	"MER bac...	2002-04...	-0.080675
4	"MER bac...	2002-04...	-0.420487
4	"MER bac...	2002-04...	-0.718145
5	"Central M...	2002-05...	1.430324
4	"MER: Ter...	2002-05...	2.177201

Collecting Data Continued:

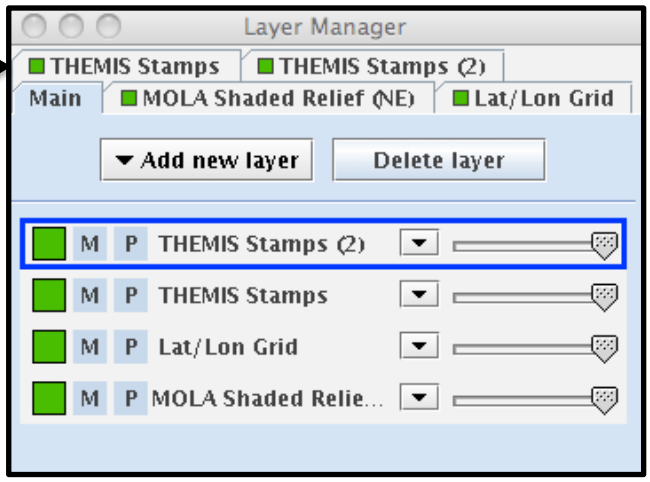
To create a data table with a running collection of images you wish to keep, you will need to follow the following steps.

1. Right click on the blue data in the data table. (This will only represent images that have been selected).
2. Select > Copy *Selected Stamp List* to Clipboard.
3. Click back to the Main View of your *Layer Manager* > Add New Layer > Stamps> *THEMIS Stamps*.
4. Paste into the Image ID Box and hit “OK”.





1. Now your *Layer Manager* will have a *THEMIS Stamps Layer* and a *THEMIS Stamps Layer (2). THEMIS Stamps (2)* will be where we keep a running tally of Image ID #'s as we find more images for our research.

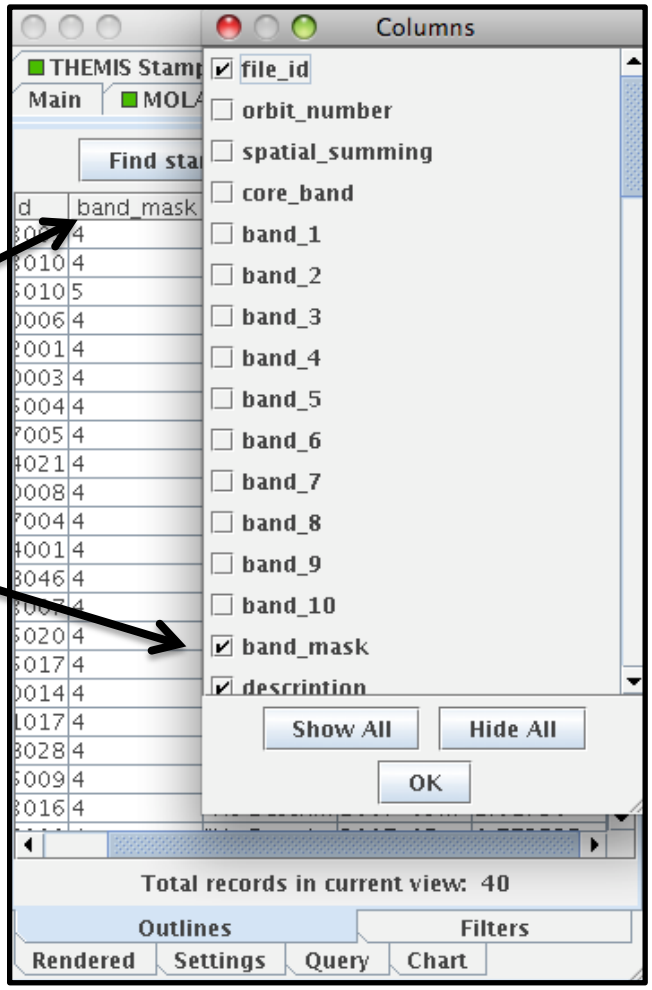


2. To add more images, follow the same procedures to select images in the Planet View window to keep, copy all of the blue data from the "Outlines" of *THEMIS Stamps Layer*, and paste the new data at the end of the previous Image ID #'s on *THEMIS Stamps (2).*

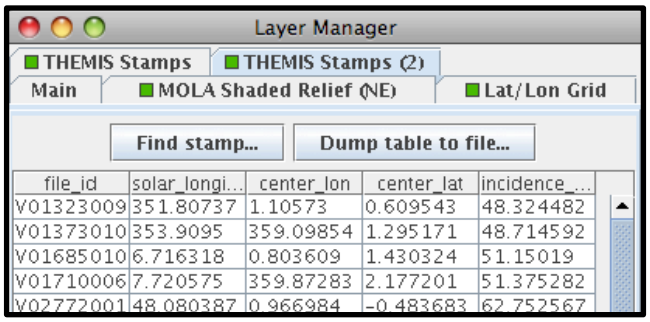
   ***It is important to paste at the end of the previous Image ID 's so that you do not overwrite the other data you would like to keep.

3. If you are interested in data for your table other than Image ID and Center Longitude you can add new columns to the table that will auto fill with information for you.

4. Right click on one of the headings. You will receive a list of possible data to choose from. Place a checkmark in the box to include information and delete checkmarks to remove information.

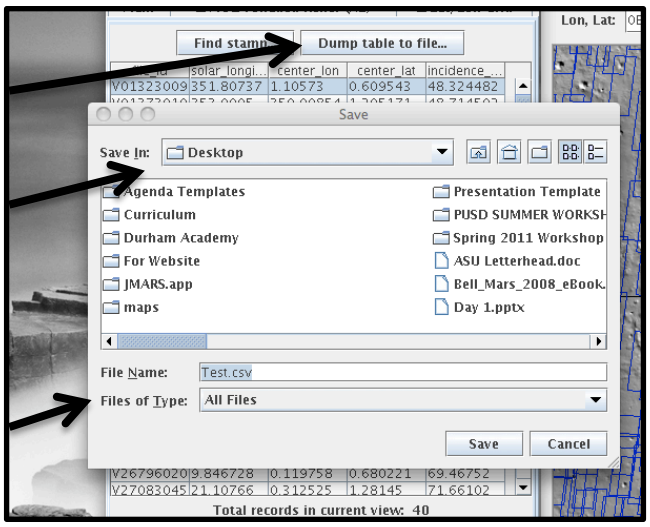


The new *Data Table* will look something like this:



To save your data table to an Excel Spreadsheet

1. Click > Dump table to file.
2. Select the file destination where you would like to download the file.
3. Name the file, for example "Test."
4. Make sure the file type is .csv.



JMARS Stamps Tutorial
CTX and HiRISE

Context Camera (CTX) was designed to obtain grayscale (black & white) images of Mars at 6 meters per pixel scale. These images are relatively higher resolution than THEMIS images.

High Resolution Imaging Science Experiment (HiRISE) camera offers image quality at 30cm per pixel, giving us an ultrahigh resolution image in comparison to the THEMIS image.

To access the *CTX* and *HiRISE* Stamps start by clicking "Add New Layer."

> Choose Stamps > CTX stamps.
> Choose Stamps > HiRISE stamps.

The steps explained in the THEMIS Stamps tutorial are the same for settings, rendering, and exporting data. Any subtle differences between these stamp layers actually make these layers easier to work with.