ODE Beta Tutorial - **Using the ODE map interface for exploring data set coverage**

The Map Search provides the user with a mechanism for visualizing the location of PDS data products on the surface of Mars, Mercury, and Earth's moon.

This tutorial will demonstrate how to:

- Navigate the map with the map toolbar
- View mission, instrument, product type coverage
- Select products by area and view search results
- Toggle coverage display options
- Zoom to features
- Set display filters

1. **View the Map Search Page**

http://odestage.rsl.wustl.edu/mars/indexMapSearch.aspx
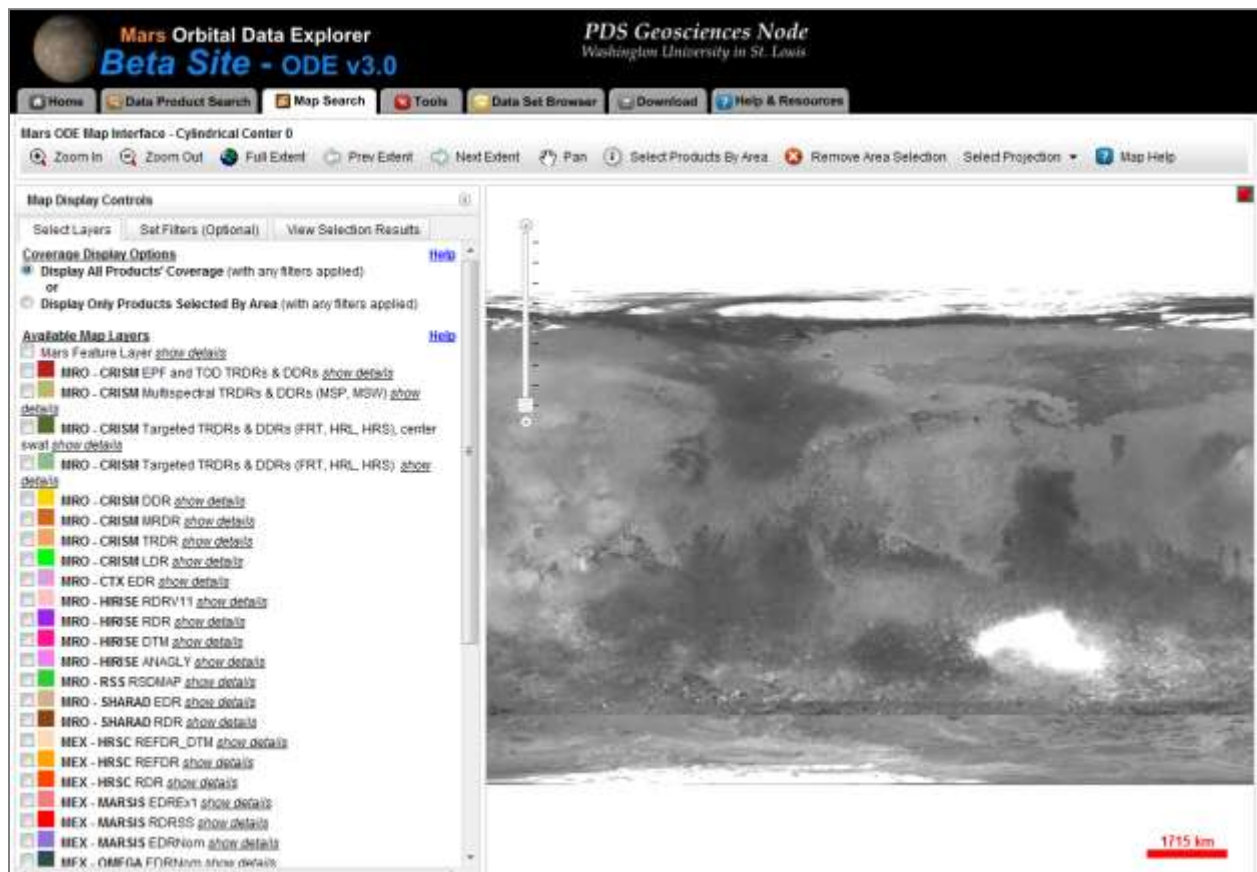
The map search page has three main components:

- At the top, a **Map Toolbar** contains controls for modifying the view of the map by zooming in and out, and panning the map. It also contains controls for selecting products that are displayed on the map and the option to cancel a selection. The user can additionally change the map projection or display a help page.
- **Map** - the map's display defaults to a cylindrical center point 0 longitude view. North polar, south polar, and cylindrical center point 180 longitude view are also available.
- **Map Display Controls** exist on the left site of the page. The controls provide functionality for selecting map layers to display, map filtering options, and viewing area selection search results.
  - **Select Layers** - Map product layers (feature layers) and basemaps can be toggled on and off. The transparency and order of the layers can be adjusted. Additionally, the functionality exists to display full coverage of a product's layer or limit it to your selection area.
  - **Set Filters (Optional)** - This tab allows the user to filter the map layer contents based on product id, landing site, and date/time filters. The map can be zoomed to a specific target feature, as well.
  - **View Selection Results** - The results of an area selection are displayed in a summary and detail list on this tab. The selected products can be added to the download cart from this location.
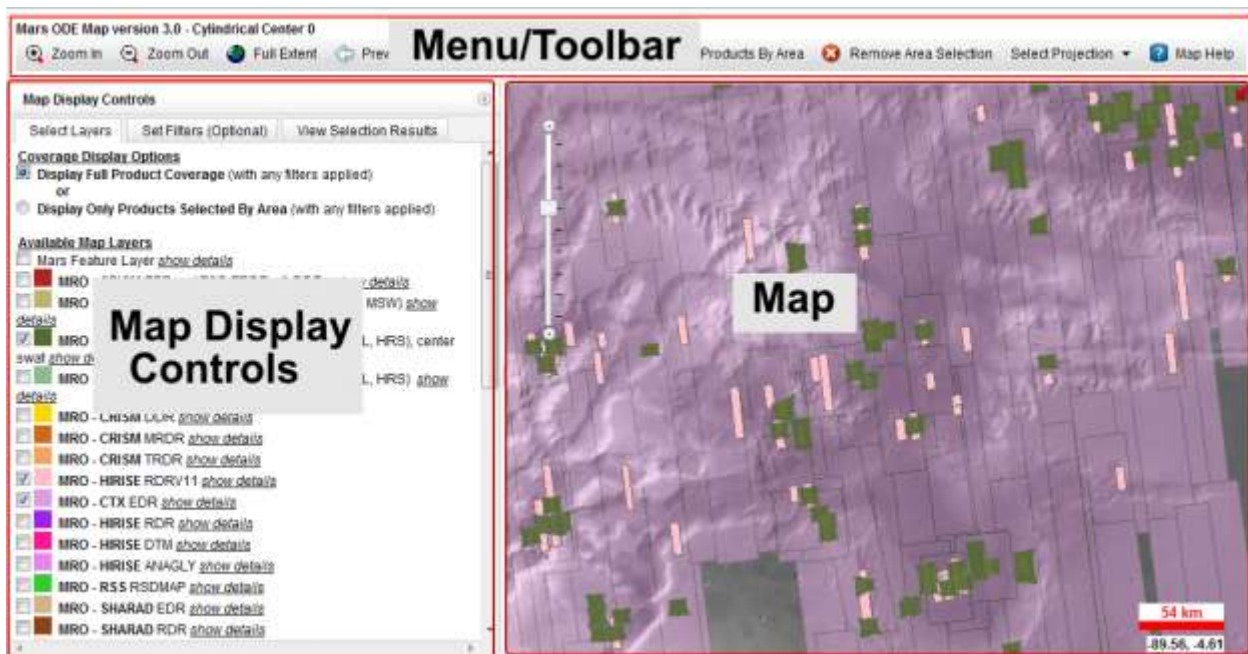
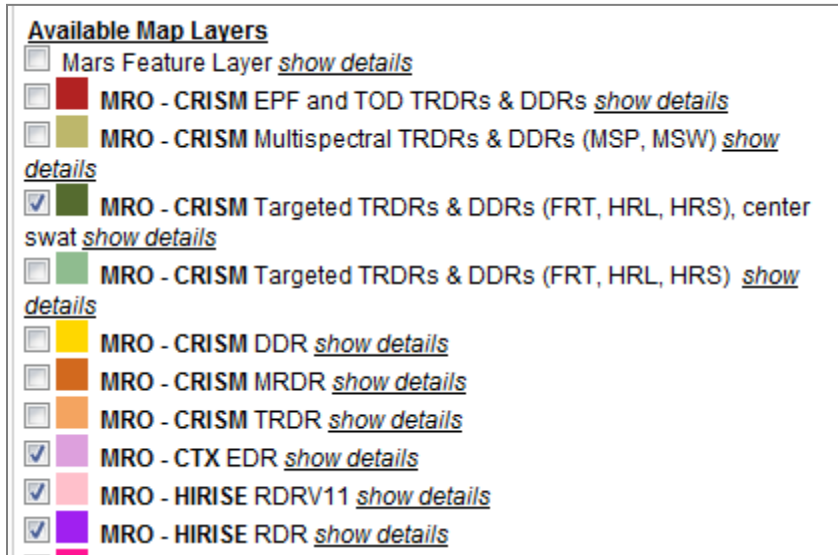2. **Navigate the map with the tools from the Map toolbar.**
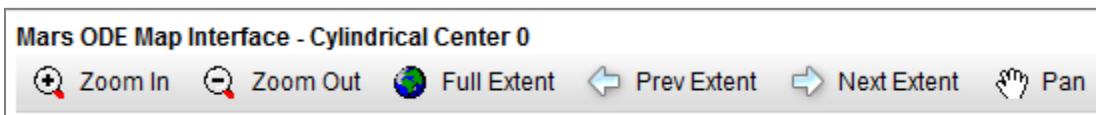
Experiment with these tools to become comfortable adjusting the zoom level and navigating the map.

3. Set Layer Visibility

The **Select Layers Tab** contains a list of all the product layers (mission/instrument/product type groupings) that are available for display, filtering, and product selection.
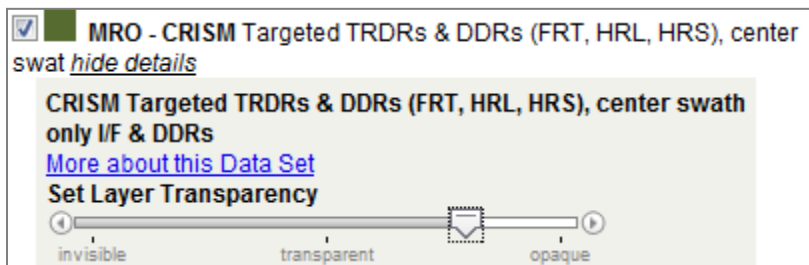
Select the checkboxes of the layers you wish to display on the map.

You can view more detail about the layer by clicking the show details link beside each layer name. This will expand a section where you can view more information about the layer. You will also see a link to more details about the layer. Additionally, you can adjust the layer transparency by dragging an adjustment control left or right.

Each layer can also be dragged to a higher or lower level of the map display. Simply right click on the layer name and drag it above or below other layers in the list. The closer to the top of the list that he layer sits, the higher level the layer will display on the map.

Now you can zoom to various detail levels and view the product coverage.

4. Selecting Products By Area

Zoom to an area you are interested in reviewing. Next, click the ⓘ Select Products By Area button from the Map Toolbar. Now you can use the mouse to draw a rectangular extent on the map to view the products covering that area.
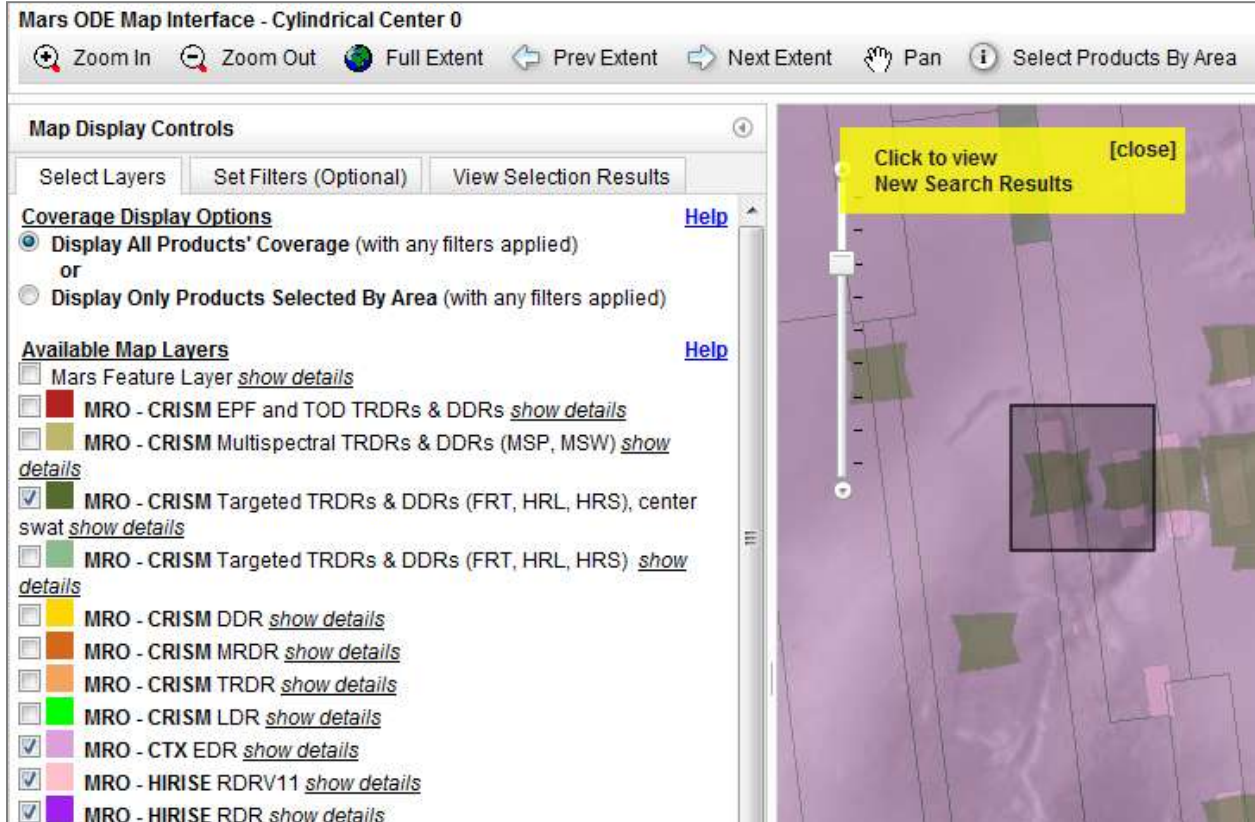
Click the yellow pop up box to view a search result list through the map interface.
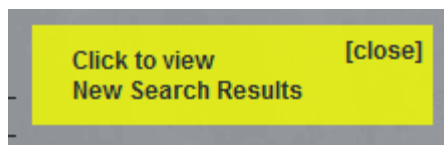
The search result summary and detail list are then displayed.

Mars ODE Map Interface - Cylindrical Center 0

Zoom In   Zoom Out   Full Extent   Prev Extent   Next Extent   Pan   Select Products By Area

Map Display Controls

Select Layers   Set Filters (Optional)   View Selection Results

SELECTION RESULTS SUMMARY

Product Type	Search Results Count
MRO CRISM TRDR	16
MRO CTX EDR	3
MRO HIRISE RDRV11	5
Total Products Found	**24**

SELECTION RESULTS LIST

Output Results   ?

View in Table

Add All Results to Cart

Update Cart

Products Found: 24
☑ Display Product Thumbnails

Instrument	Product ID	
MRO CRISM TRDR	FRT000099DA_07_IF165L_TRR2	☐
MRO CRISM TRDR	FRT000099DA_07_IF165S_TRR2	☐
MRO CRISM TRDR	FRT000099DA_07_RA165L_TRR2	☐
MRO CRISM TRDR	FRT000099DA_07_RA165S_TRR2	☐
MRO CRISM TRDR	FRT0000BF00_07_IF165L_TRR2	☐
MRO CRISM TRDR	FRT0000BF00_07_IF165S_TRR2	☐

Click to view   [close]
New Search Results

The Product ID web links can be clicked to view detail pages of individual PDS products in new browser windows. These search results can be added to the download cart from this location.

The "Select Products By Area" button can be used to selected different areas on the map for new search results or the results can be cleared by clicking the "Remove Area Selection" button.
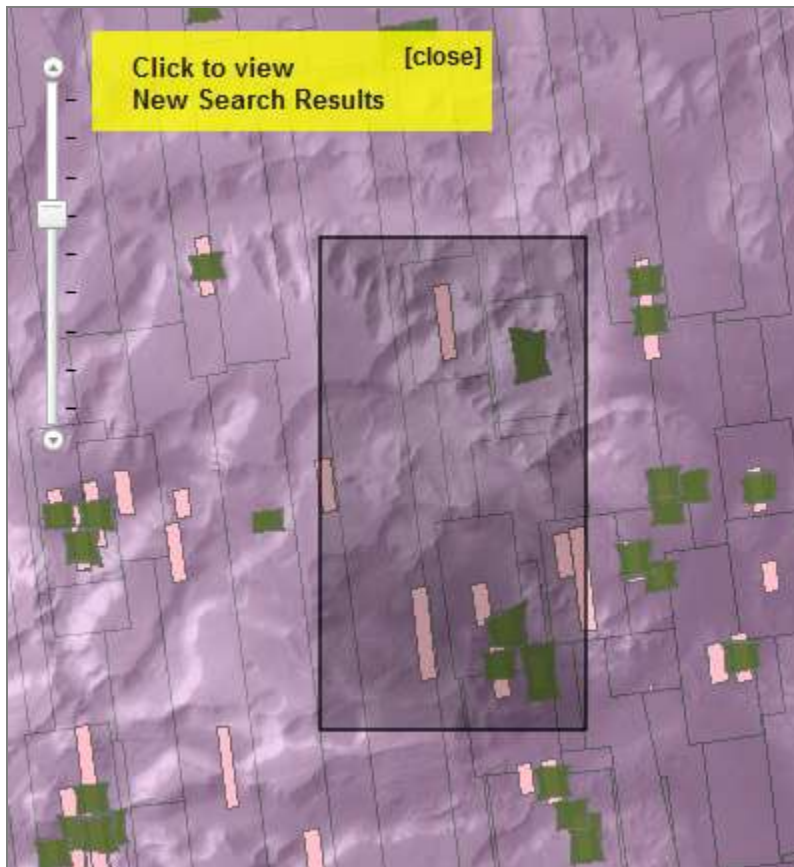
5. **Using Coverage Display Options**

This option is useful after the "Select Products By Area" button on the map toolbar has been used to select an area on the map to query. The option can be used to limit the map layer to only display products that intersect the selected area. After this option has been enabled, new selection areas can be created to display only the products of those locations, as well.
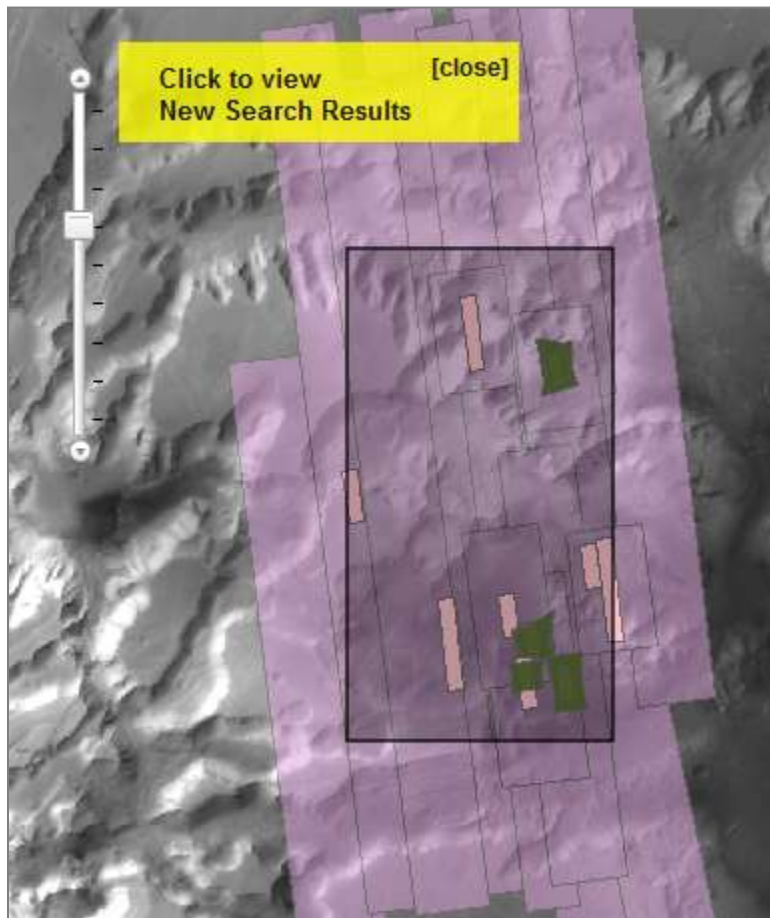
Here an example of the default setting to "**Display All Products' Coverage**":

Here are the results when the option is set to "**Display Only Products Selected By Area**":

If you choose the "**Display Only Products Selected By Area**" and select a large area, a map product limit will be reached at 500 products per layer. A warning will be displayed that provides two suggestions. You can either select a smaller area with the "Select Products By Area" option. The alternative is change the map display back to the default of "Display All Products' Coverage".

6. **Features - Select Area or Zoom To**
The "**Features - Select Area or Zoom To**" section allows the user to zoom the map to named features of Mars, Mercury, and Earth's moon. The functionality also allows the user to select the location at the same time, which is the equivalent of selecting the area with the "Select Products By Area" button.

The **Feature Type** drop down box contains a list of features types. Select Chaos from the list.


This list filters the results of **Feature Name** drop down box. The Feature Name drop down box contains a list of all of the features of the type selected from the previous box. Select Aram Chaos from the list of feature names.

There are several options after selecting the desired **feature name**.

The "**Select Area & Zoom To Feature**" button will zoom to the location of the selected feature and select the area the same as if it was selected with the "Select Products By Area" button. See example:
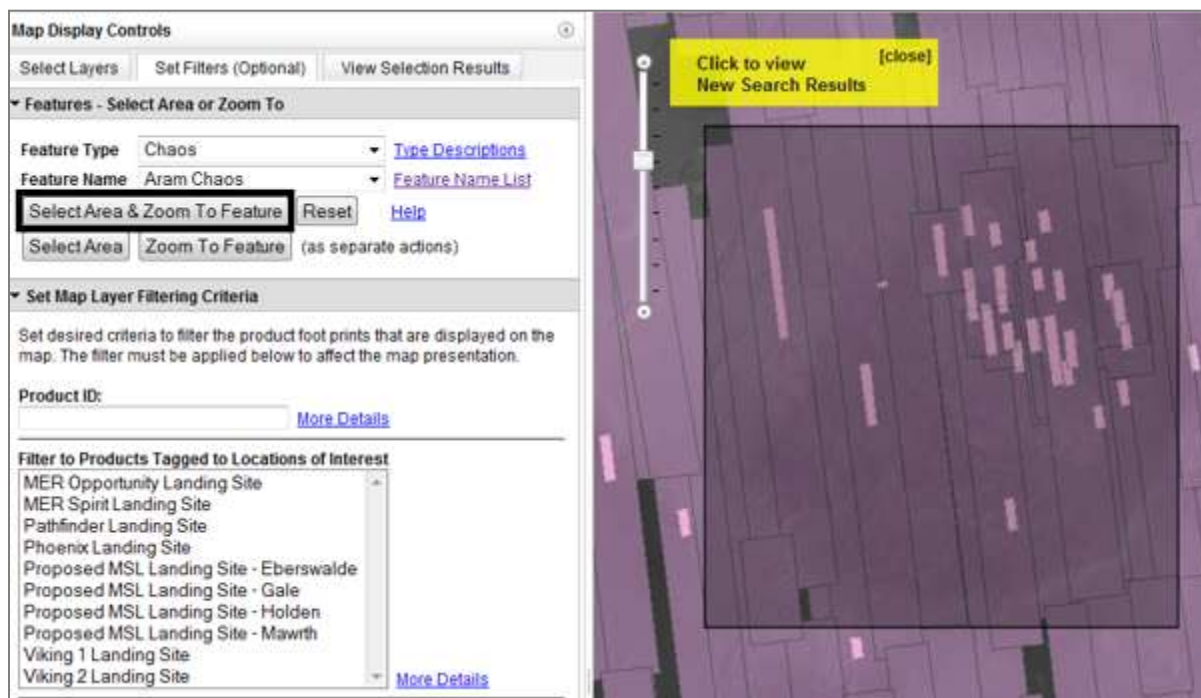
The "**Select Area**" button will select the location of the feature the same as if it was selected with the "Select Products By Area" button, but the map will not zoom to the location. See example:
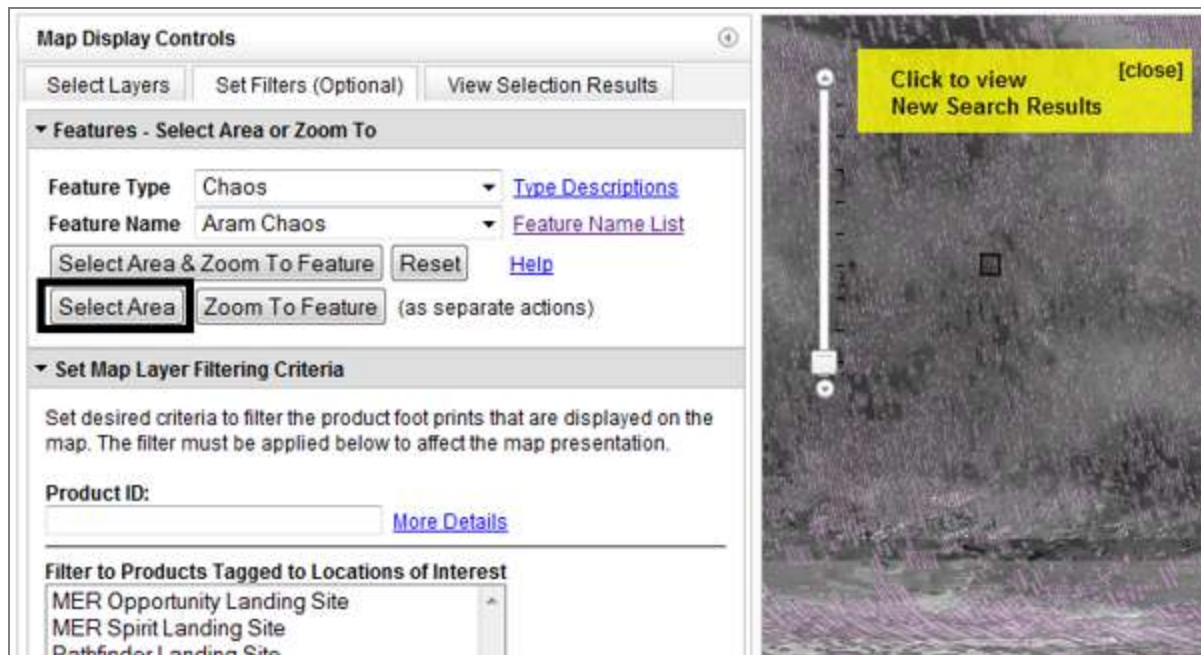
The "**Zoom To Feature**" button will zoom to the location of the feature, but it will not select the area. See example:
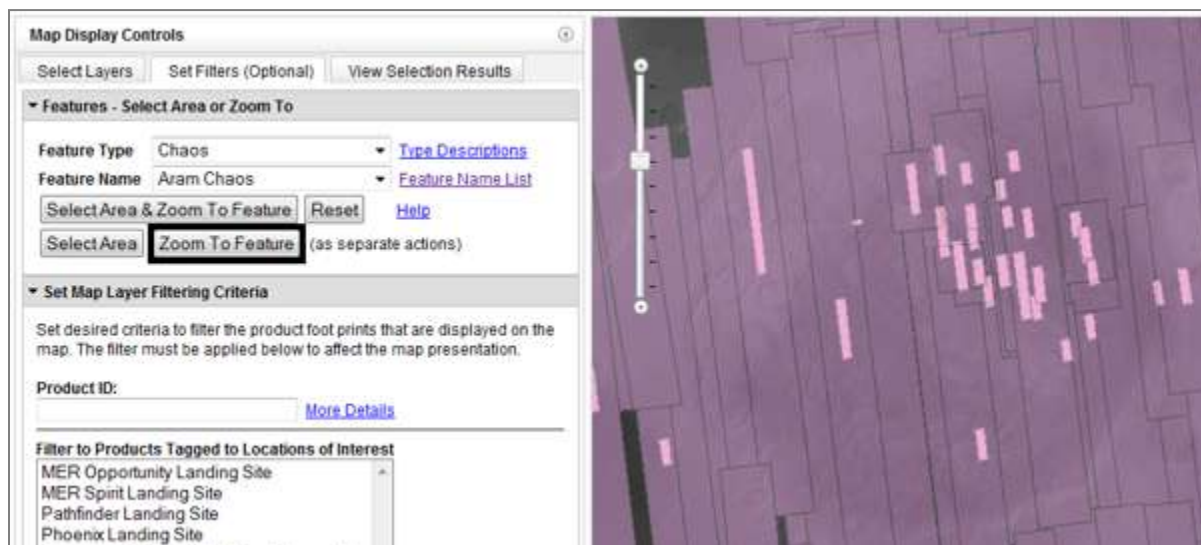
The "**Reset**" button will zoom to map to the full extent and deselect any selected area. This will also remove any products listed in the "View Selection Results" tab. See example:
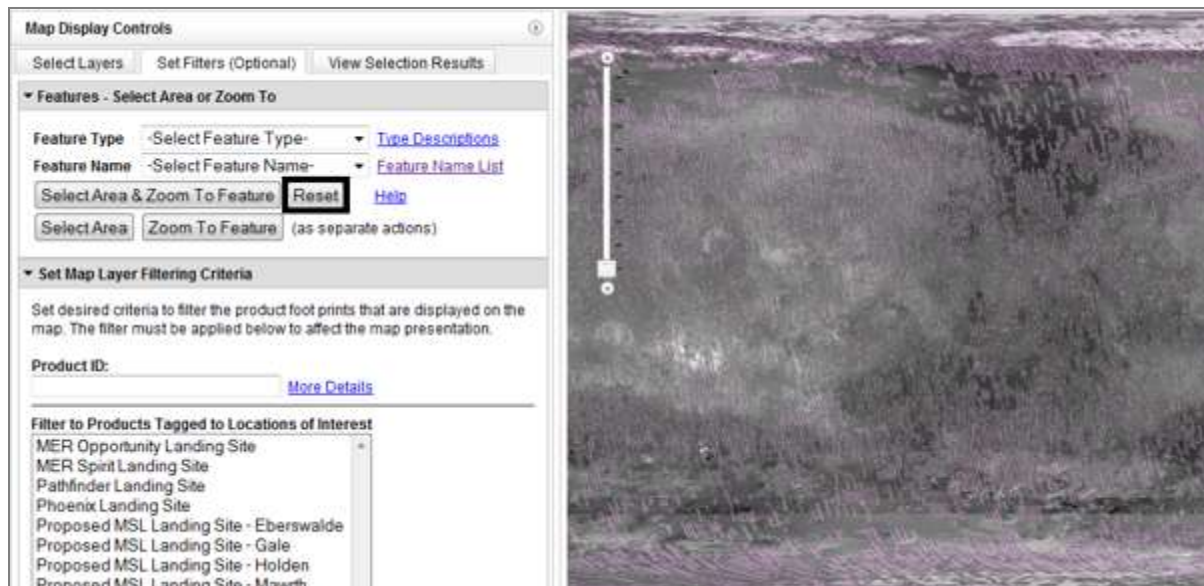
7. Set Map Layer Filtering Criteria

Filters can be applied to the feature layers you have set visible in the map interface. The filters will limit the products displayed in each layer. Options are provided for filtering by PDS product id, points of interest (existing and proposed landing sites on Mars), and PDS product date time.

Filtering by Product ID

The product id filter option is designed for advanced users who are familiar with PDS product naming conventions. Each PDS data product has a unique product id. Individual data products can be found with an exact match or multiple products can be found using the wild card parameter.

Exact Product ID

Partial Product ID with ending wildcard character

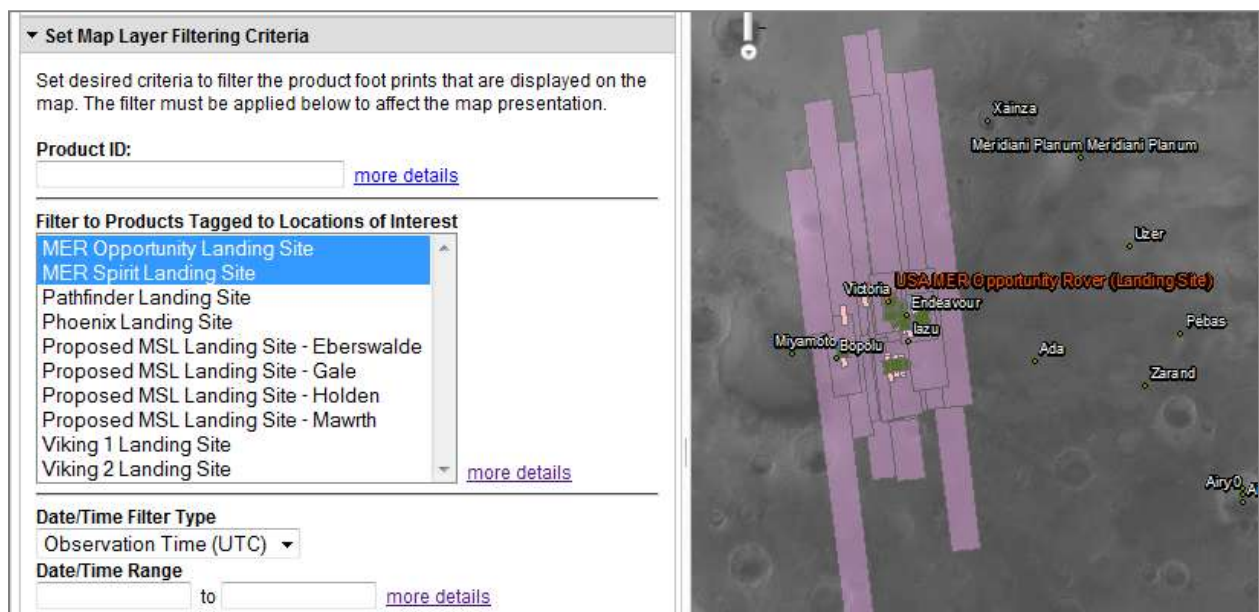**Leading wildcard character ending with partial Product ID**

Partial Product ID with ending wildcard character in the middle

Product ID:
FRT00007*TRR2

Filter to Products Tagged to Locations of Interest

PDS and Non-PDS data in the Mars ODE site have been flagged if they intersect the proposed MSL landing sites and the existing landing sites listed below. Select one or more sites to filter products of the selected data sets by this affiliation.

Here is an example of this filter in use to display only products of the selected layers that intersect the MER Opportunity and Spirit Landing Sites.

Date/Time Filter

You may also filter your query by observation time or product creation time. An observation time query filters products by observation UTC Start and Stop time range. It will find products with an observation time within the specified range, and products with an observation range covering your query parameters. The product creation time query finds products that were created by instrument teams within the specified UTC time range.

You may filter by either a single value or a value range. If you enter just a single value in the first field, ODE will select products that start with the entered value. For example, if you enter "2007-11", ODE will return only products with an observation time that covers or falls in 2007-11-xxTxx:xx:xx. If you enter "2007-11-01T00.13.27", ODE will return only products with an observation period during that point in time. You may also enter a range by entering values in both fields. ODE will select products within that range, products that cover the range, and products that overlap the range.

Applying Filters

When working with the "Map Layer Filtering Criteria", there are three controls to manage the filter implementation.

The "Apply Filter" button will apply any filters you have set to the displayed map layers. You should see the map display change after this button is pushed. It will also update the "Search Criteria Status" to "Filter Applied", to indicate the current filtering status.

The "Remove Filter" button will remove any filters you have set to the displayed map layers, but it will keep the values you have entered in the filtering text boxes. By not removing the values from the filtering text boxes, you can apply and remove filters quickly while working with the map interface. It will also update the "Search Criteria Status" to "Filter Not Applied", to indicate the current filtering status.

The Clear Fields button will remove any filters you have set to the displayed map layers. You should see the map display change after this button is pushed. Additionally, the button will remove the values you have entered in the filtering text boxes. It will also update the "Search Criteria Status" to "Filter Not Applied", to indicate the current filtering status.