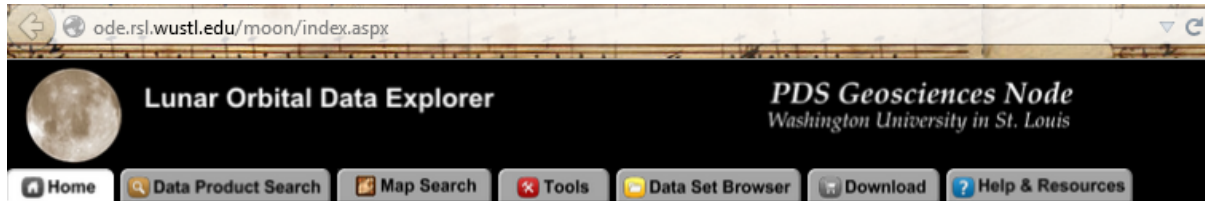













The Geosciences Node from Washington University is available at: <http://ode.rsl.wustl.edu/moon/index.aspx>. They archive the data related to the study of planetary surfaces.



## WELCOME TO THE LUNAR ORBITAL DATA EXPLORER

The PDS Geosciences Node Lunar Orbital Data Explorer (ODE) provides search, display, and download tools for the PDS science data archives of the Lunar Reconnaissance Orbiter, the Clementine, the Lunar Prospector, and the Indian Space Research Organisation's Chandrayaan-1 missions to Earth's moon. **Choose one of the above tabs to start using ODE.**

<b>A</b>  <b>Data Product Search</b> Search for orbital science products across missions, instruments, and data sets via time, location, and product ids.	 <b>What's New</b> See what's new with ODE
 <b>Additional Tools</b> <ul style="list-style-type: none"><li>• <a href="#">LOLA RDR Query</a></li><li>• <a href="#">DIVINER RDR Query</a></li><li>• <a href="#">Product Type Coverage</a></li></ul>	<b>B</b>  <b>Help &amp; Resources</b> Access the ODE help, find additional resources, and see what's coming
 <b>Data Set Browser</b> Browse through the orbital data set files stored in the PDS archives	<b>C</b>  <b>Available Data Sets</b> A full list of mission, instrument, and product types available in Lunar ODE
<b>E</b>  <b>Download Cart</b> Download products added to the cart from the product search	<b>D</b>  <a href="#">Mars ODE</a>  <a href="#">Lunar ODE</a>  <a href="#">Mercury ODE</a>  <a href="#">Venus ODE</a>

The Lunar Orbital Data Explorer is produced by the [PDS Geosciences Node](#) at Washington University in St. Louis.

Send comments to [odewebmaster@wunder.wustl.edu](mailto:odewebmaster@wunder.wustl.edu).

Welcome to the lunar orbital data explorer, the explorer can also be used for *other planetary bodies* [D]. On the homepage you can find the *Data Product Search* [A], *Help & Resources* [B], *Available Data Sets* [C] and the *Download Cart* [E]. We will start with the *Data Product Search* [A].

**DATA PRODUCT SEARCH**

Planetary science data stored in PDS is organized by [data products](#) and [data sets](#). A data set is a collection of related data products, usually products acquired by a particular instrument and processed in a certain way. The data set also includes all documentation and supporting materials needed to understand and use the data products. A data product is a set of measurements resulting from a science observation, usually products acquired by a particular instrument and processed in a certain way.

No filtering parameters are set in the product search form. Filtering parameters can be cleared with the "Reset Form" button. [Reset Form](#)

**STEP 1. SELECT DATA SETS TO SEARCH (A SELECTION IS REQUIRED)**

**Select One or More Desired Data Sets (Released PDS Archives)** (Show Options - 0 Parameters Set)

**STEP 2. SET ADDITIONAL FILTERING PARAMETERS (OPTIONAL)**

**Select a Product ID or filter by a partial Product ID** (Show Options - 0 Parameters Set)

**Find by Location or Feature** (Show Options - 0 Parameters Set)

**Filter by Time Range** (Show Options - 0 Parameters Set)

**Filter by Observation Angle** (Show Options - 0 Parameters Set)

**STEP 3. PREVIEW SEARCH RESULTS SUMMARY (OPTIONAL)**

[Preview Search Results Summary](#)

**STEP 4. SUBMIT QUERY**

**A selection must be made in Step 1 to submit a query.**

[View Results in Table](#) [Select Results on Map Display](#)

Display Product Thumbnails on search results page

Step 1 gives you the opportunity to select one or various available data sets. Do not be surprised, there are plenty and it may take a little bit of time and research to find what you are looking for.

Step 2 provides you with additional filtering parameters. If you know the image ID or a location of an image it is very useful to use the filtering option. Filtering images by a precise or rough location looks like this:

ode.rsl.wustl.edu/moon/index pds download

# Lunar Orbital Data Explorer

PDS Geosciences Node  
Washington University in St. Louis

Home Data Product Search Map Search Tools Data Set Browser Download Help & Resources

Select a Product ID or filter by a partial Product ID (Show Options - 0 Parameters Set)

Find by Location or Feature (Hide Options - 0 Parameters Set)

Select a Specific Feature

A selected feature's Latitude and Longitude bounding box will be used for search criteria.

Feature Type:  [Feature Type Descriptions](#)

Feature Name:  [Full Feature Name List](#)

OR

Directly specify a Latitude and Longitude coverage area

Lunar ODE uses [planetocentric coordinates](#) that are based on the product's center latitude and longitude. [?](#)

**Max Latitude**  
(-90 to 90)

**Western most Longitude**  
(0 to 360)

**Eastern most Longitude**  
(0 to 360)

**Min Latitude**  
(-90 to 90)

**Selected Search Area**

180° 270° 0° 90° 180°

90°

90°

0°

0°

-90°

180° 270° 0° 90° 180°

Filter by Time Range (Show Options - 0 Parameters Set)

Filter by Observation Angle (Show Options - 0 Parameters Set)

**STEP 3. PREVIEW SEARCH RESULTS SUMMARY (OPTIONAL)**

After selecting the instrument and area you can view the results in a table or map. The map view looks like this:

The screenshot shows the Lunar Orbital Data Explorer (ODE) interface. At the top, the URL is `ode.rsl.wustl.edu/moon/indexProductSearch.aspx` and the search bar contains `pds download image data`. The page header includes the Lunar Orbital Data Explorer logo and the PDS Geosciences Node logo (Washington University in St. Louis). Below the header is a navigation bar with links for Home, Data Product Search, Map Search, Tools, Data Set Browser, Download, and Help & Resources.

The main interface is titled "Lunar ODE Map Interface - Cylindrical Center 0" and includes a toolbar with options for Zoom In, Zoom Out, Full Extent, Prev Extent, Next Extent, Pan, Select Products By Area, Remove Area Selection, Select Projection, and Map Help.

The "Map Display Controls" panel on the left has three tabs: "Selected Layers", "Set Filters (Optional)", and "View Selection Results". The "View Selection Results" tab is active, showing a "SELECTION RESULTS SUMMARY" table:

Product Type	Search Results Count
LRO LROC EDRNAC	202
<b>Total Products Found</b>	<b>202</b>

Below the summary is a "SELECTION RESULTS LIST" with a table of products:

Instrument	Product ID
LRO LROC EDRNAC	<a href="#">M106905927LE</a>
LRO LROC EDRNAC	<a href="#">M1096443794LE</a>
LRO LROC EDRNAC	<a href="#">M1096443794RE</a>
LRO LROC EDRNAC	<a href="#">M1098787459LE</a>
LRO LROC EDRNAC	<a href="#">M1098787459RE</a>
LRO LROC EDRNAC	<a href="#">M1098808922RE</a>
LRO LROC EDRNAC	<a href="#">M1101152439LE</a>

Buttons for "Output Results", "View in Table", "Add All Results to Cart", and "Update Cart" are also present. The main map area shows a purple-toned lunar surface with a red square highlighting a specific region. A small thumbnail of the moon is visible within the red square.

In this view you also have the options to change your search in *Select Layers* and *Set Filters*. The *View Selection Results* shows the data set you selected and the overall amount of found images (here 202). On the right a map presents the results of your data search. The red square of the chosen location and all image data within and nearby that square are shown as footprints on the map. In the left corner you have a list of the image results including their *Product ID*. By moving the mouse over an image in the result list it will be also marked in the map view:

This screenshot is similar to the first one, but with red arrows highlighting the interaction between the product list and the map. A red arrow points to the product ID `M1096443794LE` in the "SELECTION RESULTS LIST" table. Another red arrow points to a small black rectangular footprint on the map, which is located within the larger red square area, indicating that the selected product is being highlighted on the map.

At the bottom of the page, the URL is updated to: `ode.rsl.wustl.edu/moon/indexproductpage.aspx?product_id=M1096443794LE&product_idGeo=17956259`

By clicking on a *product ID* a new tab/window will open in your browser. You can see a detailed view of the selected image and further information, which are useful for data analysis. The image can be added to cart and downloaded later [E] or immediately. Download format is often .img or .tif, but dependent on the data set!

ode.rsl.wustl.edu/moon/indexproductpage.aspx?product\_id=M1096443794LE&product\_idGeo=17956259

**Lunar Orbital Data Explorer** *PDS Geosciences Node*  
Washington University in St. Louis

Home Data Product Search Map Search Tools Data Set Browser Download Help & Resources

**M1096443794LE**  
LRO LROC EDRNAC - Experiment Data Record Narrow Angle Camera

[Product Description and Data Set Documents \(click to show\)](#)

Browse Meta Data Label Related Products Map Context

Browse Image - the image below is not the actual data product

PDS Product Files		Derived Files
<b>Product Files &amp; Labels</b> <span style="float: right;">KB</span>		
<a href="#">m1096443794le.img*</a>		129,001
<i>Product Data File with Label</i>		
<b>Browse Files</b> <span style="float: right;">KB</span>		
<a href="#">m1096443794le_pyr.tif*</a>		32,001
<i>Browse Image</i>		
<b>Product Summary</b>		
Instrument Host ID	LRO	
Instrument ID	LROC	
Product Type	EDRNAC	
Observation Time	2012-07-09T03:28:57.703	
UTC Start Time	2012-07-09T03:28:47.027	
UTC Stop Time	2012-07-09T03:29:08.379	
Start Orbit Number	13950	
Stop Orbit Number	13950	
Center Latitude	15.085	
Center Longitude	7.755	
Maximum Latitude	15.62	
Minimum Latitude	14.55	
Westernmost Longitude	7.64	
Easternmost Longitude	7.87	
Producer ID	LRO_LROC_TEAM	
Comment	TARGET OF OPPORTUNITY	

Add Product to Cart Remove Product from Cart [Cart & Download Help](#)

**CLICK BELOW FOR BROWSE IMAGE**

- This PDS product is hosted at the LROC PDS Data Node. Click below to go to this product at the LROC web site.

\* Indicates a download link from another PDS data node.