



M³ Data Tutorial

Hosted by the M³ Science Team

EPSC/DPS

Fall 2011





Tutorial Goals

- Learn how to access M³ data and search for areas of interest
- Learn about available M³ data, the instrument, and what you need to know about the data
- Please fill short survey out at the end of the tutorial



M³ Release Updates/Information

- <http://pds-imaging.jpl.nasa.gov/>

PDS Imaging Node
U.S. Geological Survey Jet Propulsion Laboratory

INDEX | ALL DATA HOLDINGS | DOCUMENTATION | TOOLS & TUTORIALS | PERSONNEL | HELP

Welcome to the PDS Imaging Node

The Imaging Node of the Planetary Data System is the curator of NASA's primary digital image collections from past, present and future planetary missions. The node provides to the NASA planetary science community the digital image archives, necessary ancillary data sets, software tools, and technical expertise necessary to fully utilize the vast collection of digital planetary imagery. For a guide to Imaging Node services download the **PDS Imaging Node Tour**.

Image of the Week

Seasonal Changes in Northern Mars

Latest News

Mars Reconnaissance Orbiter (MRO) HiRISE, CTX & MARCI Release #16
March 1, 2011: The 16th MRO release has occurred for HiRISE, CTX & MARCI. The data covers Volumes 1157-1216 for CTX and Volumes 351-371 for MARCI and can be accessed at the online data volumes and via the Image Atlas for HiRISE, CTX and MARCI.

Mars Exploration Rover (MER) #27
February 23, 2011: The 27th Mars Exploration Rover (MER) release for Sols 2251-2340 has occurred. The data may be accessed at the online data volumes and via the Image Atlas. These data are accumulating.

Moon Mineralogy Mapper (M³) Re-Release #1
February 10: Optical Period 1, Level 1B data products which were released on September 9, 2010, have been superseded and are now available at the online data volumes. Additionally, a number of Optical Period 1, Level 0 data products which were absent in the original release are now present. For more info about M³, go to <https://m3.jpl.nasa.gov/>. Go to Chandrayaan-1 M³ for more info at the mission page. Search capability via the Imaging Atlas will be available at a later date.



How To Find M³ Data

Noah E. Petro

M³ Data Tutorial at EPSC/DPS

October 2011





How to Find M³ Data

- This tutorial will guide you through the steps necessary to find M³ data for areas of interest.
- Uses:
 - PDS Imaging Node hosted by JPL.
 - The Lunar Orbital Data Explorer hosted by the PDS Geosciences Node at Washington University.
- Requires web connection, web browser (tested using Safari 5.0.2 and Firefox 6.0.2).
- Typical data cubes are ~2.4 GB.



https://m3.jpl.nasa.gov/m3data.html

M3 - Moon Mineralogy Mapper

nasa.gov https://m3.jpl.nasa.gov/ Google

M3 - Moon Mineralogy Mapper

 **Jet Propulsion Laboratory**
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MOON MINERALOGY MAPPER

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M³ and India's First Mission to the Moon

The Moon Mineralogy Mapper (M³) is one of two instruments contributed by NASA to India's first mission to the Moon, Chandrayaan-1. M³, a state-of-the-art imaging spectrometer, has provided the first mineralogical map of the lunar surface at high spatial and spectral resolution. By analyzing the data, scientists are determining the composition of the surface of the Moon.

Scientists will use this information to answer questions about the moon's origin and geologic evolution, as well as the evolution of terrestrial planets in the early solar system's history. Future lunar exploration will use data from M³ to locate resources, including water, that can support exploration of the Moon and beyond.

Chandrayaan-1 was India's first mission to the Moon. The spacecraft carried five instruments and a probe that were built in India and six instruments contributed by foreign partners. "Chandrayaan" was derived from two ancient Sanskrit words, Chandra, meaning moon, and yaan, which may be translated as voyage or craft.

Quick Facts

Instrument

Type: Imaging Spectrometer

Wavelength: 0.43 to 3.0 microns

Weight: 8.3 kg

Field of View: 24 degrees, providing a 40 km swath from 100 km altitude

Imaging Modes:

Global: 140 m spatial, 20-40 nm spectral

Target: 70 m spatial, 10 nm spectral

Lunar Map: Over 97% of the lunar surface mapped in Global mode

Mission

Spacecraft: Chandrayaan-1, India

Lifetime: October 22, 2008 to August 30, 2009

Launch Vehicle: Polar Satellite Launch Vehicle, India

Launch Site: Satish Dhawan Space Centre, India

Lunar Orbit: 100 and 200 km, polar

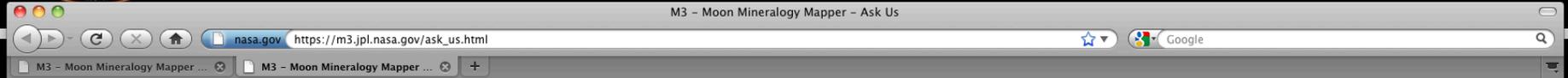
The M³ Instrument is funded by NASA as a [Discovery Program](#) Mission of Opportunity.

Site Manager: Mary White





"Ask Us"



MOON MINERALOGY MAPPER

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Ask Us - Questions or Comments?

Submit your question or comment and we will answer it as soon as we can.

* = required input.

Your first name*

Your last name*

Your email address*

Your affiliation

Select type of comment or question

Select your subject category

Enter your message





The Lunar Orbital Data Explorer

- Start at the Data Product Search Tool
 - <http://ode.rsl.wustl.edu/moon/indexProductSearch.aspx>
 - <http://tinyurl.com/lunarODE>

Lunar Orbital Data Explorer [Click To Try The New Beta Site!](#) *PDS Geosciences N Washington University in St. Louis*

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

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.

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

Select One or More Desired Data Sets (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 Product Center Latitude / Longitude (Show Options - 0 Parameters Set)

Filter by Time Range (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 View Results on Map

Display Product Thumbnails on search results page

- The PDS has unveiled a Beta version of the ODE (v3.0)
- This beta version has an important feature that will make finding M³ data of interest much easier.
- This tutorial will guide you through the Beta version of the ODE as the improvements are very useful.



ODE Beta Version – Go To Data Product Search



Lunar Orbital Data Explorer
Beta Site - ODE v3.0

Click To Return
To The Live Site

PDS Geosciences Node
Washington University in St. Louis

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- Data Product Search
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WELCOME TO THE LUNAR ORBITAL DATA EXPLORER - BETA V3.0

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.**



Currently Updating Data Sets

LRO DLRE GDR_L2
LRO DLRE GDR_L3
LRO DLRE PRP
LRO DLRE RDR

What does this mean?

- New PDS data products are being loaded into the website or current content is being updated.
- New PDS data products may be available through the product search page, but have not been loaded into the map services.

[Click here for more detail](#)



Data Product Search

Search for orbital science products across missions, instruments, and data sets via time, location, and product ids.



What's New

See what's new with ODE



- [LOLA RDR Query](#)
- [DIVINER RDR Query](#)
- [Product Type Coverage](#)



Help & Resources

Access the ODE help, find additional resources, and see what's coming



Data Set Browser

Browse through the orbital data set files stored in the PDS archives



Available Data Sets

A full list of mission, instrument, and product types available in Lunar ODE



Download Cart

Download products added to the cart from the product search



Mars ODE



Mercury ODE



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DATA PRODUCT SEARCH

Reset Form ?

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

?

Select One or More Desired Data Sets (Released PDS Archives)

STEP 2. SET ADDITIONAL FILTERING PARAMETERS (OPTIONAL)

Select a Product ID or filter by a partial Product ID

Find by Product Location

Filter by Time Range

STEP 4. SUBMIT QUERY

View Results in Table

View Results on Map

Display Product Thumbnails on search results page

STEP 3. PREVIEW SEARCH RESULTS SUMMARY (OPTIONAL)

Preview Search Results Summary

STEP 4. SUBMIT QUERY

View Results in Table

Select Results on Map Display

Display Product Thumbnails on search results page

Scroll to
bottom of
page and
check
box.



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DATA PRODUCT SEARCH

Reset Form

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

Select One or More Desired Data Sets (Released PDS Archives) (Hide Options - 1 Parameter Set)

- Map location data is available for these products.
- Observation time data is available for these products.
- This data set is currently being processed in ODE. [Click for more detail](#)

Lunar Reconnaissance Orbiter

DLRE - DIVINER Lunar Radiometer Experiment

Other Product Types

- RDR - Reduced Data Rec. (See Tools: DIVINER RDR Query Tool) [Data Set Description](#)
- GDR_L2 - Gridded Data Record Level 2 [Data Set Description](#)
- GDR_L3 - Gridded Data Record Level 3 [Data Set Description](#)
- PRP - Gridded Data Record Polar Resource Products [Data Set Description](#)

LAMP - Lymap Alpha Mapping Project

Other Product Types

- RDR - Reduced Data Record [Data Set Description](#)
- GDR - Gridded Data Record [Data Set Description](#)

LEND - Lunar Exploration Neutron Detector

Other Product Types

- RDRALD - Reduced Data Record [Data Set Description](#)
- RDRCHK - Reduced Data Record [Data Set Description](#)
- RDRDLD - Reduced Data Record [Data Set Description](#)
- RDRRSCI - Reduced Data Record [Data Set Description](#)

LOLA - Lunar Orbiter Laser Altimeter

Other Product Types

- RDR - Reduced Data Rec. (See Tools: LOLA RDR Query Tool) [Data Set Description](#)
- GDRDEC - Gridded Data Record Counts [Data Set Description](#)
- GDRDEM - Gridded Data Record Shape Map [Data Set Description](#)

- GDRDRM - Gridded Data Record Roughness Map [Data Set Description](#)
- GDRDSM - Gridded Data Record Slope Map [Data Set Description](#)
- GDRDGM - Gridded Data Record Geoid [Data Set Description](#)

- GDRPSR - Gridded Data Record Permanently Shadowed Map [Data Set Description](#)
- GDRSKY - Gridded Data Record Sky Visibility [Data Set Description](#)
- SHA - Spherical Harmonic Data Records

- SHA - Spherical Harmonic Data Records

LROC - Lunar Reconnaissance Orbiter Camera

Other Product Types

ISRO's Chandrayaan-1

M3 - Moon Mineralogy Mapper

Other Product Types

- CALIMG - Calibrated Image [Data Set Description](#)
- CALIMGV2 - Calibrated Image Version 2 [Data Set Description](#)

- Click “Select One or More Desired Data Sets” to get a list of all available data, scroll down to get to “ISRO’s Chandrayaan-1”
- Click box next to “CALIMG-Calibrated Image” below “ISRO’s Chandrayaan-1”
- NOTE: When Level 2 data is made available, this option will change (note, it will likely still be “Calibrated Image” with the other options being changed)



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Lunar Prospector
{GRS, NS, APS, MAG, ER} - Gamma Ray Spectrometer, Neutron Spectrometer, APS, Magnetometer, Electron Reflectometer Raw Data

- MDR - Lunar Prospector MERGED Level 0 Data [Data Set Description](#)

ER - Electron Reflectometer

- DATAL2 - Level 2 ER data [Data Set Description](#)
- ER_3D - Nasa Lv 1B omni-directional 3-D electron flux data [Data Set Description](#)
- ER_HI - Nasa Lv 1B omni-directional high-resolution flux data [Data Set Description](#)
- ER_LO - Nasa Lv 1B omni-directional low-resolution flux data [Data Set Description](#)

GRS - Gamma Ray Spectrometer

- RDR - Gamma Ray Spectra Reduced Data Record [Data Set Description](#)

MAG - Magnetometer

- DATA - Nasa Lv 1B data [Data Set Description](#)
- DATAL2 - Level 2 MAG data [Data Set Description](#)
- DATAL3 - Level 3 MAG data [Data Set Description](#)
- DATAL4 - Level 4 MAG data [Data Set Description](#)

NS - Neutron Spectrometer

- RDR - Neutron_Counting_Rate Reduced Data Record [Data Set Description](#)

RSS - Radio Science Subsystem

- GRAV - Gravity [Data Set Description](#)
- LOSAPDR - Line of Sight Acceleration Profile Data Record [Data Set Description](#)

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

STEP 3. PREVIEW SEARCH RESULTS SUMMARY (OPTIONAL)

Preview Search Results Summary

STEP 4. SUBMIT QUERY

Display Product Thumbnails on search results page

- Scroll to bottom of page, click on “View Results on Map”





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Lunar ODE Map Interface - Cylindrical Center 0

- Zoom In
- Zoom Out
- Full Extent
- Prev Extent
- Next Extent
- Pan
- Select Products By Area
- Remove Area Selection
- Select Projection
- Map Help
- Beta Details

Map Display Controls

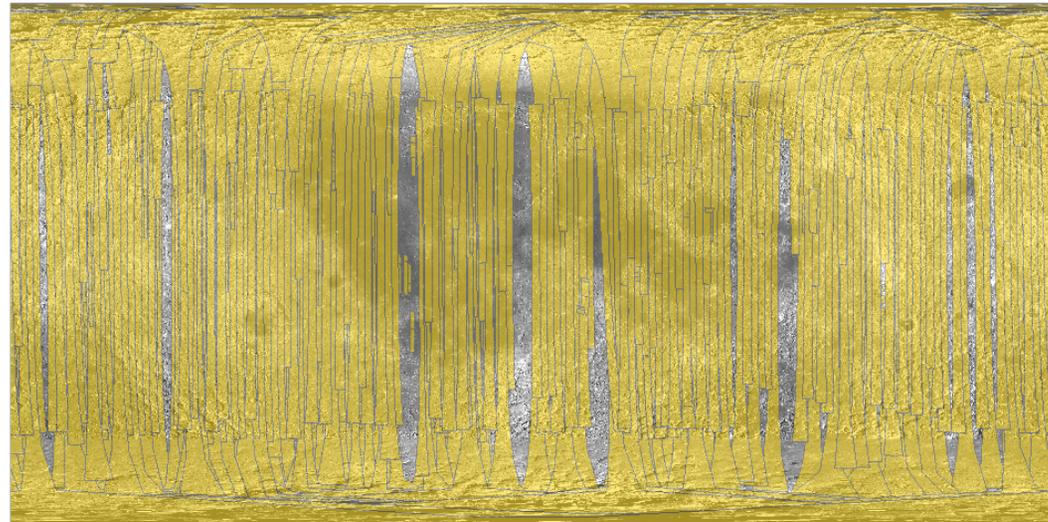
Select Layers Set Filters (Optional) View Selection Results

Coverage Display Options

- Display All Products' Coverage (with any filters applied)
- or
- Display Only Products Selected By Area (with any filters applied)

Available Map Layers

- Moon Feature Layer [show details](#)
- LRO - DLRE RDR [show details](#)
- LRO - DLRE GDR_L2 [show details](#)
- LRO - DLRE GDR_L3 [show details](#)
- LRO - LAMP GDR [show details](#)
- LRO - LOLA RDR [show details](#)
- LRO - LOLA GDRSKY [show details](#)
- LRO - LOLA GDRPSM [show details](#)
- LRO - LOLA GDRDGM [show details](#)
- LRO - LOLA GDRDSM [show details](#)
- LRO - LOLA GDRDRM [show details](#)
- LRO - LOLA GDRDEM [show details](#)
- LRO - LOLA GDRDEC [show details](#)
- LRO - LROC EDRNAC [show details](#)
- LRO - LROC EDRWAC [show details](#)
- LRO - LROC CDRWAC [show details](#)
- LRO - LROC CDRNAC [show details](#)
- LRO - LROC SDRDTM [show details](#)
- LRO - LROC MDRWVS [show details](#)
- LRO - LROC MDRWUV [show details](#)
- LRO - LROC BDRWMV [show details](#)
- LRO - LROC BDRWGL [show details](#)
- LRO - LROC BDRROI [show details](#)
- LRO - LROC BDRNPL [show details](#)
- LRO - MRFLRO MAPCDR [show details](#)
- CH1-ORB - M3 CALIMG [show details](#)
- CH1-ORB - M3 CALIMGV2 [show details](#)
- CLEM - A-Star EDR [show details](#)
- CLEM - B-Star EDR [show details](#)
- CLEM - HIRES MDIM [show details](#)
- CLEM - HIRES EDR [show details](#)



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Lunar ODE Map Interface - Cylindrical Center 0

Zoom In Zoom Out Full Extent Prev Extent Next Extent Part Select Products By Area Remove Area Selection Select Projection Map Help Beta Details

Map Display Controls

Select Layers Set Filters (Optional) View Selection Results

Coverage Display Options

Display All Products' Coverage (with any filters applied)

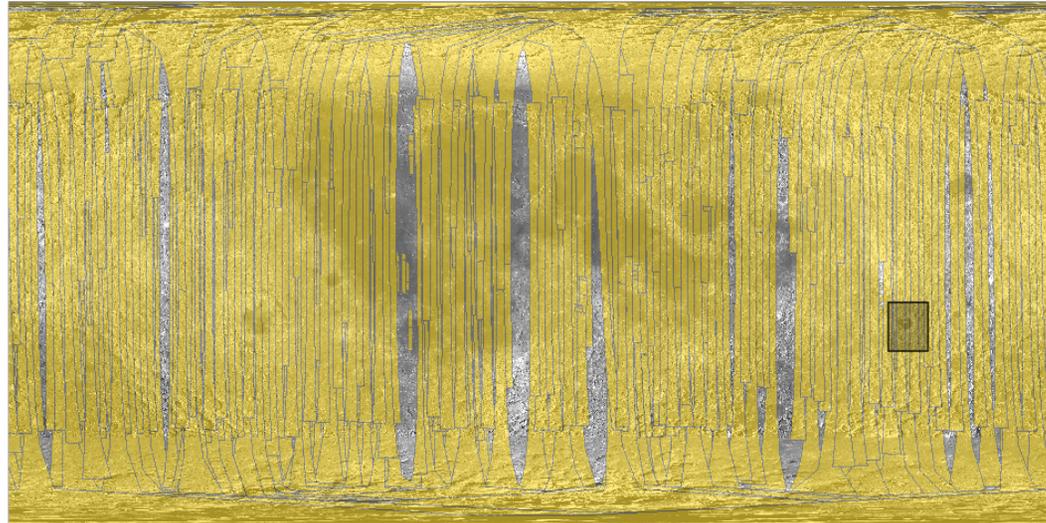
or

Display Only Products Selected By Area (with any filters applied)

Available Map Layers

- Moon Feature Layer [show details](#)
- LRO - DLRE RDR [show details](#)
- LRO - DLRE GDR_L2 [show details](#)
- LRO - DLRE GDR_L3 [show details](#)
- LRO - LAMP GDR [show details](#)
- LRO - LOLA RDR [show details](#)
- LRO - LOLA GDRSKY [show details](#)
- LRO - LOLA GDRPDM [show details](#)
- LRO - LOLA GDRDGM [show details](#)
- LRO - LOLA GDRDSM [show details](#)
- LRO - LOLA GDRDRM [show details](#)
- LRO - LOLA GDRDEM [show details](#)
- LRO - LOLA GDRDEC [show details](#)
- LRO - LROC EDRNAC [show details](#)
- LRO - LROC EDRWAC [show details](#)
- LRO - LROC CDRWAC [show details](#)
- LRO - LROC CDRNAC [show details](#)
- LRO - LROC SDRDTM [show details](#)
- LRO - LROC MDRWVS [show details](#)
- LRO - LROC MDRWUV [show details](#)
- LRO - LROC BDRWMV [show details](#)
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- CH1-ORB - M3 CALIMG [show details](#)
- CH1-ORB - M3 CALIMGV2 [show details](#)
- CLEM - A-Star EDR [show details](#)
- CLEM - B-Star EDR [show details](#)
- CLEM - HIRES MDIM [show details](#)
- CLEM - HIRES EDR [show details](#)

Click to view
New Search Results [close]



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- Click on “Select Products By Area” at top [red], drag over area of interest, then click “Click to View New Search Results” [green]



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Lunar ODE Map Interface - Cylindrical Center 0

Zoom In Zoom Out Full Extent Prev Extent Next Extent Pan Select Products By Area Remove Area Selection Select Projection Map Help Beta Details

Map Display Controls

Select Layers Set Filters (Optional) View Selection Results

SELECTION RESULTS SUMMARY

Product Type	Search Results Count
CH1-ORB M3 CALIMG	8
Total Products Found	8

SELECTION RESULTS LIST

Output Results ?

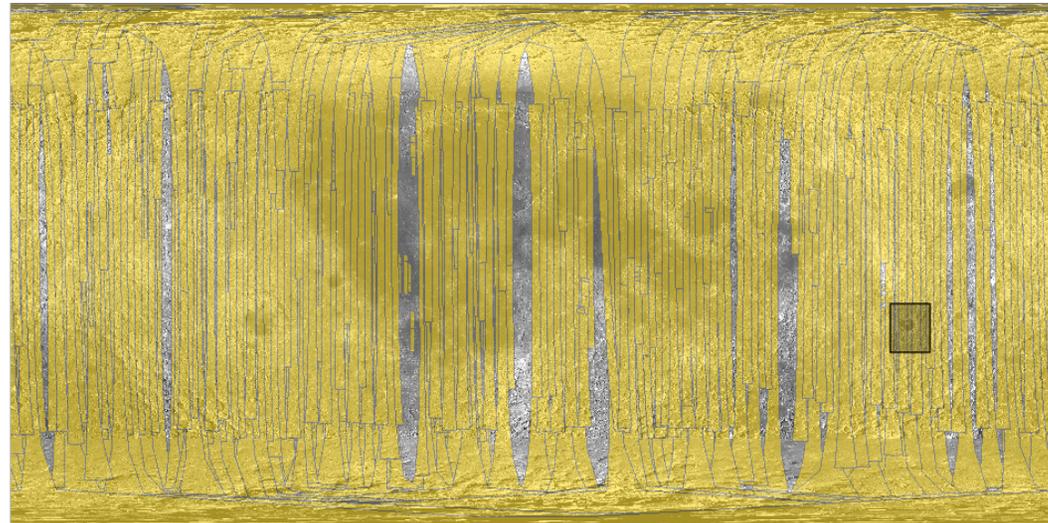
View in Table

Add All Results to Cart

Products Found: 8

Display Product Thumbnails

Instrument	Product ID	
CH1-ORB M3 CALIMG	M3G20090529T061013_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090529T100749_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090529T143509_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090529T183825_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090529T230608_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090530T030925_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090530T073724_V01_RDN	<input type="checkbox"/>
CH1-ORB M3 CALIMG	M3G20090626T142653_V01_RDN	<input type="checkbox"/>



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- At left, a list of all cubes located in the area of interest will be shown. Click “Add All Results to Cart.”



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

Map Display Controls

Select Layers Set Filters (Optional) View Selection Results

SELECTION RESULTS SUMMARY

Product Type	Search Results Count
CH1-ORB M3 CALIMG	8
Total Products Found	8

SELECTION RESULTS LIST

Output Results ?

View in Table

Add All Results to Cart

Update Cart

Products Found: 8

Display Product Thumbnails

Instrument	Product ID	<input type="checkbox"/>	
CH1-ORB M3 CALIMG	M3G20090529T061013_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090529T100749_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090529T143509_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090529T183825_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090529T230608_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090530T030925_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090530T073724_V01_RDN	<input checked="" type="checkbox"/>	In Cart
CH1-ORB M3 CALIMG	M3G20090626T142653_V01_RDN	<input checked="" type="checkbox"/>	In Cart



- The files you selected will be *"In Cart"*.
- Click on Download tab, at top, to continue to order those files.



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SELECTED ITEMS FOR DOWNLOAD

PDS Data products are **freely available to the public**. The ODE download cart allows a user to select multiple products and individual files for convenient download. For most requests, the ODE system will acquire, compress, and place the requested files on an FTP server. The user will receive an email when the files are ready for download.

[More Product Download Information](#)

Confirm the products you have selected for download. After removing any unwanted products, click the continue button.

STEP 1. REVIEW PRODUCTS SELECTED FOR DOWNLOAD

Empty the Cart

Products Selected for Download: **8**

Size of current cart selections: **28.041 GB**

View Products Selected for Download

(Show Selection List - 8 Products)

STEP 2. DO YOU WISH TO ADD ADDITIONAL DATA SET FILES TO THE CART? - CREATE MINI-ARCHIVE

The Mini-Archive option will add all related files from the PDS Archive including: documentation, software, errata, extras, catalogs, indexes, and the browse images of any products selected for download.

Download Options:	
<input checked="" type="checkbox"/> Selected Products (label, data product, and browse images)	Products Selected for Download: 8 Files from Product selections: 81 Size of current cart selections: 28.04 GB
<input type="checkbox"/> Selected Products' Derived Files (map projected, etc.)	Derived files: 16 Size of derived files: 0 MB
<input type="checkbox"/> Mini-Archive Files (related files from the PDS Archive including: documentation, software, errata, extras, catalogs, and indexes)	Files from Mini-Archive selections: 59 Size of Mini-Archive files: 252 MB
Selection Total	Products Selected for Download: 8 Files from selections: 81 Size of current cart selections: 28.04 GB This cart selection should be available for download in approximately: 11.52 hours* There is currently 1 download request in the queue being processed.

STEP 3. REVIEW SELECTIONS AND PROCEED TO CHECKOUT

When you are content with your selection of products and individual files, proceed by clicking the continue button.

Continue >

- In the “Download” tab, you’ll note that the 8 files are in your Cart
- Option of adding additional files (the Selected Products option is the default)
- Click Continue



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DOWNLOAD SETUP

[< Back](#) [?](#)

Details for acquiring the selected data files:

1. The Geosciences Node will retrieve the files you have requested and place them in a user specific FTP folder for your download. After the completion and submission of this form, an automated system will prepare the FTP site for you to download the selected files from. You will receive an email when the files are ready for download. The email will include the FTP address and username.

Select format: Zip Tar Tar.Gz No Compression

Terms and Conditions

PDS data products and data set files are freely available to the public.

Policy for Citations of PDS Data [click here for a new window](#)

Your email:

(You will be notified at this email address when the files are ready for download.)

- Finally, you order your files by grouping them together (Zip, Tar, Tar.Gz are the file bundling options)
- Enter your email address, and in a few hours (or so) you will receive an email with an FTP link (odewebmaster@wunder.wustl.edu), it took about 10 hours to get these files



PDS Imaging Node

USGS ASTROGEOLOGY SCIENCE CENTER & JET PROPULSION LABORATORY

NASA Planetary Data System: Access to Moon Mineralogy Mapper Archives

PDS Imaging Node



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The screenshot shows the PDS website homepage. At the top left is the NASA logo and the text 'PDS: The Planetary Data System'. To the right is a search bar with a 'Go' button and a dropdown menu set to 'PDS data'. Below the search bar is a navigation menu with links for HOME, ABOUT PDS, DATA, TOOLS & DOCUMENTS, RELATED SITES, and CONTACT US. The main content area is titled 'Welcome to the PDS' and includes a note about a major redesign. There are four columns of links: Researchers, Data Providers, Data Reviewers, and Proposers. On the left side, there are three vertical menus: 'Quick Searches' listing various celestial bodies, 'PDS Nodes' listing different data categories, and 'PDS Support' listing management and engineering links. At the bottom left, there is a 'New Releases' section with dates and mission names.

- **The Planetary Data System (PDS)** archives and distributes scientific data from NASA planetary missions, astronomical observations, and laboratory measurements.
- Its purpose is to ensure the long-term usability of NASA data and to stimulate advanced research.
- The PDS is sponsored by NASA's Science Mission Directorate.

<http://pds.nasa.gov>

PDS Imaging Node



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The screenshot shows the PDS website interface. At the top, there is a search bar with the text 'Search for: in PDS data' and a 'Go' button. Below the search bar, there are navigation links: HOME, ABOUT PDS, DATA, TOOLS & DOCUMENTS, RELATED SITES, CONTACT US. The main content area is divided into several sections: 'Quick Searches' (Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, Rings, Asteroids, Comets, Planetary Dust, Earth's Moon, Solar Wind), 'PDS Nodes' (Atmospheres, Geosciences, Imaging, Navigational & Ancillary Information (NAI), Planetary Plasma Interactions (PPI), Planetary Rings, Small Bodies), 'PDS Support' (Planet Management, Engineering), 'New Releases' (December 6, 2010 Chandrayaan-1 Moon Mineralogy Mapper Release 1, December 1, 2010 Mars Reconnaissance), 'Researchers', 'Data Providers', 'Data Reviewers', 'Proposers', 'Student', and 'Welcome to the PDS'. The search results section shows 'Moon mineralogy mapper' with 1-6 of 6 results (0.003 seconds). The results include 'Data Set: CH1-ORB MOON M3 2 LD RAW NEAR-IR SPECTRAL IMAGES V1 0' and 'Instrument: MOON MINERALOGY MAPPER'.

- **Find Moon Mineralogy Mapper (M3) data**

- Search the PDS Data Catalog from the **PDS Home Page**

- Within PDS

- **Imaging Node**

- Online Data Volumes
- Image Atlas Product Search
- Mission Pages

- **Geosciences Node**

- Orbital Data Explorer

PDS Home Page: <http://pds.nasa.gov>

PDS Imaging Node



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PDS: The Planetary Data System

- NASA Portal
- Site Help
- Feedback
- Phone Book

Search for: Go

in PDS data

HOME ABOUT PDS DATA TOOLS & DOCUMENTS RELATED SITES CONTACT US

Overview Archive Preparation Guide Information for Proposers Data Dictionary Lookup Reference Lookup Subscriptions Other Tools

Subscription Service

Welcome to the PDS Subscription Service. Sign up to receive an e-mail notification when any of the following are updated or modified:

- data sets by mission
- software
- documentation
- data sets by target

Current Subscribers

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Please read the [Subscription Manager Help Page](#) for instructions. For additional assistance, contact the [PDS Operator](#).

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NASA Webmaster: PDS Operator
NASA Official: William Knopf
Last updated: December 2010

- Subscribe to the **PDS Subscription Service** to receive email notification when new data are released

http://pds.jpl.nasa.gov/tools/subscription_service/top.cfm



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NASA PDS Imaging Node: Access to M3 Archives

PDS Imaging Node



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Data Portal

- Pointers to data and mission information
 - Atlas Product Search
 - Online volumes
 - Archive documentation
 - Mission & instrument overview
- Data release status

Mission Info	Instruments	Targets	Data Access Documentation, Tutorials	Status
 Cassini-Huygens	ISS Radar VIMS	Moon Jupiter Saturn	Atlas Product Search Atlas Demo (QT movie) Online Data Volumes Documentation	Latest release #23 includes ISS & VIMS, and RADAR data
 Chandrayaan-1	Moon Mineralogy Mapper (M ³)	Moon	Atlas Product Search <small>new</small> Online Data Volumes Documentation	Release #1 Optical Period 1, Level 0 and Level 1B data products 11/18/2008 - 2/14/2009
 Clementine	A-STAR, B-STAR HIRES, LWIR NIR, UVVIS	Moon Earth	Atlas Product Search <small>new</small> Online Data Volumes Documentation	Mission Complete Last data received May 7, 1994

<http://img.pds.nasa.gov/portal/>

M3 Data Tutorial EPSC\DPS
PDS Imaging Node

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Planetary Image Atlas

- Mission-specific: search, browse & download by
 - Product type
 - Lat/Long
 - Orbit
 - Time
 - Etc
- Cross-mission: search, browse & download by:
 - Target
 - Lat/Long
- User tutorial available @ 'Intro' tab

Planetary Image Atlas

NEW SEARCH MULTI MISSION SEARCH DATA PORTAL ABOUT HELP FEEDBACK HOME

Chandrayaan-1

Instrument: MOON_MINERALOGY_MAPPER

Product Search:
Get Count
Get Results
Reset Tab
Reset All

Records Found: 0

Current Constraints:
There are no constraints applied to your search.

Sample Chandrayaan-1 Image:

TEXT AND FORM SEARCH CRITERIA ARE COMBINED
TEXT BASED SEARCH

(Type text, select suggested text, hit enter/return key, add value if needed, then mouse click 'Add Constraint'.)
(Repeat these steps to add additional criteria.)

FORM BASED SEARCH

Intro QuickSearch Product Geometry Instrument Time Feature Map Results

Quick Search

- Criteria selected on all forms combine to formulate your search.
- Selecting nothing returns ALL products.
- Click Get Count to evaluate the query without retrieving results.
- Click Get Results to submit your query.
- All tabs do not need to be filled out.

Product Type	<input type="checkbox"/> CALIBRATED_IMAGE	Target Name	<input type="checkbox"/> MOON	Units
	Min	Max	Valid Range	
Orbit Number			00141 to 01184	N/A
Start Time			2008-11-18 22:28:04 to 2009-02-14 10:13:15 or 2008-323T22:28:04 to 2009-045T10:13:15	N/A
Stop Time			2008-11-18 22:28:04 to 2009-02-14 10:37:01 or 2008-323T22:28:04	N/A

<http://pds-imaging.jpl.nasa.gov/search>



Questions?

