

PDS GEOSCIENCES NODE

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Overview

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- Highlights
 - ▣ LRO
 - ▣ LCROSS
- Issues
 - ▣ Large volume data deliveries
 - ▣ NSSDC
- Looking forward

LRO Highlights

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- LRO is now preparing for Release 3, 9/15/10, with deliveries at 3-month intervals
- Geo-led instruments and data sets:
 - ▣ LOLA, 4 data sets, typical delivery ~200 GB
 - ▣ Diviner, 2 data sets (more to come), typical delivery >600 GB
 - ▣ LEND, 2 data sets, typical delivery ~3 GB
 - ▣ Mini-RF, 3 data sets (more to come), typical delivery ~5 **TB**
- Typical user metrics: ~8500 files, 230 users in July 2010
- Geo is also lead node for all 7 instrument teams + SPICE

LRO Issues

- Unexpectedly large Mini-RF data volume has been a challenge
 - ▣ Example: Mini-RF delivery of 10 TB took 5 days to compute checksums; found 5 files with checksum errors
 - ▣ Issue: More than 2 weeks lead time needed for ingestion and validation
 - ▣ Solution: More frequent deliveries than the scheduled 3 month interval

- Peer review issue has come up
 - ▣ Some users of LEND data get unexpected results; question the quality of the documentation and/or calibration
 - ▣ Considering additional peer review of actual data, as well as review of processing pipeline ahead of time

Lunar Orbital Data Explorer Update

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- Diviner
- LEND
- Mini-RF
- LROC (Imaging)
- LAMP (Imaging)
- LOLA (Geosciences/
LOLA Data Node)
- Existing: Clementine, Lunar Prospector Datasets
- ISRO Chandrayaan-1 Mini-RF (When Released)
- ISRO Chandrayaan-1 Moon Mineralogy Mapper (Imaging) (When Released)

The screenshot shows the Lunar Orbital Data Explorer (ODE) website. The browser window title is "Lunar Orbital Data Explorer - Ho...". The page header includes a moon image, the title "Lunar Orbital Data Explorer", and the logo for "PDS Geosciences Node Washington University in St. Louis". A navigation bar contains links for Home, Data Product Search, Tools, Data Set Browser, Download, and Help & Resources. The main content area features a welcome message and a grid of tool tiles: Data Product Search, What's New, Additional Tools, Help & Resources, Data Set Browser, Available Data Sets, and Download Cart. At the bottom, there are links for Mars ODE and Mercury ODE, and a footer with contact information.

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

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

WELCOME TO THE LUNAR ORBITAL DATA EXPLORER - WEB1

The PDS Geosciences Node Lunar Orbital Data Explorer (ODE) provides search, display, and download tools for the PDS science data archives of the Clementine and Lunar Prospector missions to Earth's moon (LRO and other lunar data sets will be added when released). Choose one of the above tabs to start using ODE.

- 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
- Additional Tools**
• 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**

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.

LCROSS Highlights and Issues

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- LCROSS Spacecraft and (most) Earth-based data are now archived. Impact was 10/9/09.
- Lesson: It was difficult for the LCROSS Project to prepare and deliver 23 data sets in six months.
- Issue: One of the four Earth-based data providers is way behind.
- We took advantage of Analyst Notebook developments for MER and Phoenix to rapidly develop the LCROSS Analyst's Notebook

LCROSS Analyst's Notebook

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<http://an.rsl.wustl.edu/lcross/lcrossbrowser/>

The screenshot shows the LCROSS Analyst's Notebook website. At the top left, there is a pencil icon and the title "LCROSS Analyst's Notebook". Below this is a navigation bar with five tabs: "Home" (with a checkmark), "Mission Summary" (with a red circle), "Data" (with a yellow circle), "Resources" (with a green circle), and "Help" (with a blue circle). In the top right corner, there is the NASA Planetary Data System logo, the text "GE SCIENCES", and links for "About" and "Comments".

The main content area contains the following text:

The Lunar Crater Observation and Sensing Satellite (LCROSS) mission was flown in 20089 to confirm the presence or absence of water ice in a permanently shadowed region at the lunar south pole. [\[Read more\]](#)

Use the navigation tabs above to explore the LCROSS Mission or select a mission phase from the image below to access LCROSS data.

Below the text is a large image showing the mission phases. On the left is a small image of Earth, and on the right is a large image of the Moon. A white curved line connects the Earth to the Moon, with various mission phases labeled along it: QUICK LOOK, STAR FIELD, SWINGBY, EARTH LOOK 1, MIR LOOK, EARTH LOOK 2, SEPARATION, PRE-IMPACT, and IMPACT. At the bottom right of the image, there are two more labels: LCROSS DOWNLOADS and EARTH BASED DATA.

Geosciences Node Archives Transferred to NSSDC

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- 48 volumes archived at NSSDC
- 3 volumes delivered, not yet archived
 - NSSDC ingest software can't interpret older elements, such as times ending in Z, or old format catalog files
- 71 volumes assigned IDs by NSSDC, in queue for delivery
- 962 volumes waiting for NSSDC to assign IDs
- 3429 volumes not delivered yet

Transfer to NSSDC - Issues

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- How best to transfer large accumulating data sets, e.g. MRO CRISM?
 - Current plan is to purchase set of disk drives for data transfers, to be shared by all nodes
 - When to transfer – wait until end of mission?
- Will NSSDC have the capacity to accept large volumes of data delivered to them?

