

MESSENGER MDIS DATA in the NASA Planetary Data System

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PDS Imaging Node, USGS

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LPSC MESSENGER MDIS Data Workshop
46th Lunar and Planetary Science Conference 2015

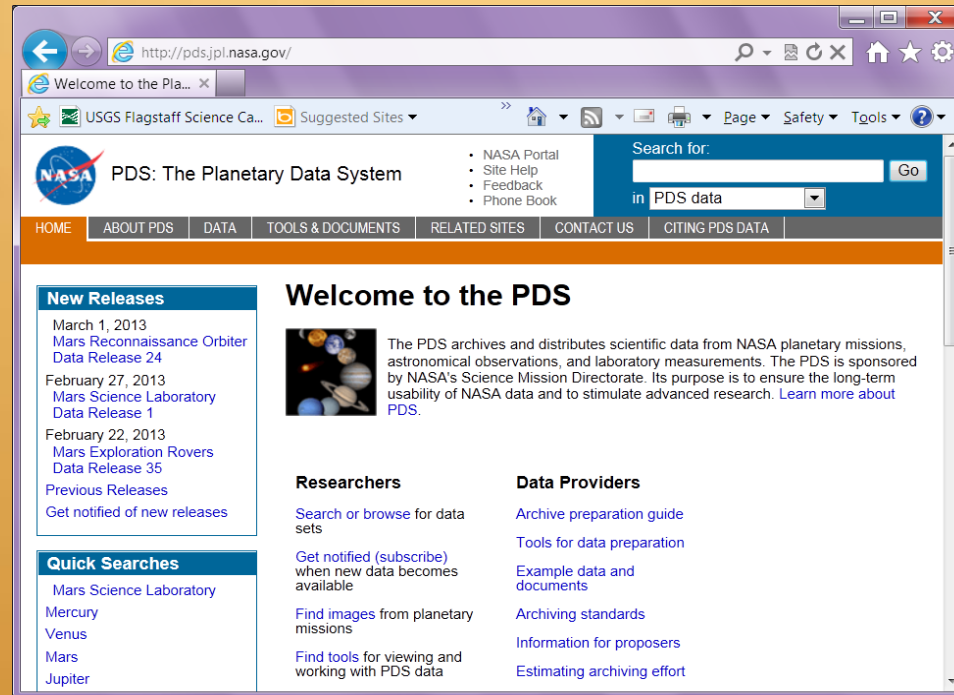
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U.S. Geological Survey

Jet Propulsion Laboratory

46th LPSC MESSENGER Data Workshop, 3.15.15

WHAT IS THE PLANETARY DATA SYSTEM (PDS)?



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

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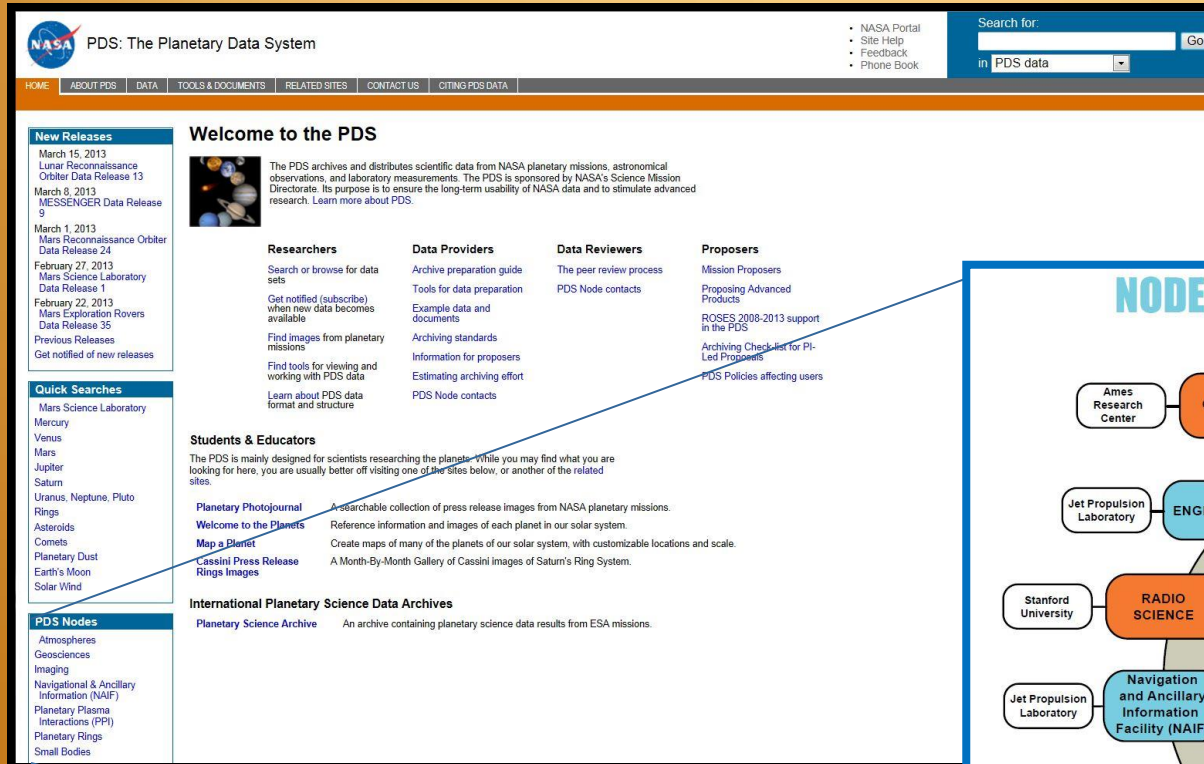
OVERVIEW

How to find MESSENGER MDIS data in the PDS:

- PDS Home Page, Imaging & Geosciences Data Nodes
- PDS Imaging Node
 - PDS Data Portal, Online Data Volumes
 - PDS Imaging Node Online Data Volumes
 - PDS Planetary Image Atlas
 - PDS Map-A-Planet
 - PDS Planetary Image LLocator Tool (PILOT)
- PDS Geosciences Node
 - Mercury Orbital Data Explorer

PDS HOME PAGE

<http://pds.nasa.gov>



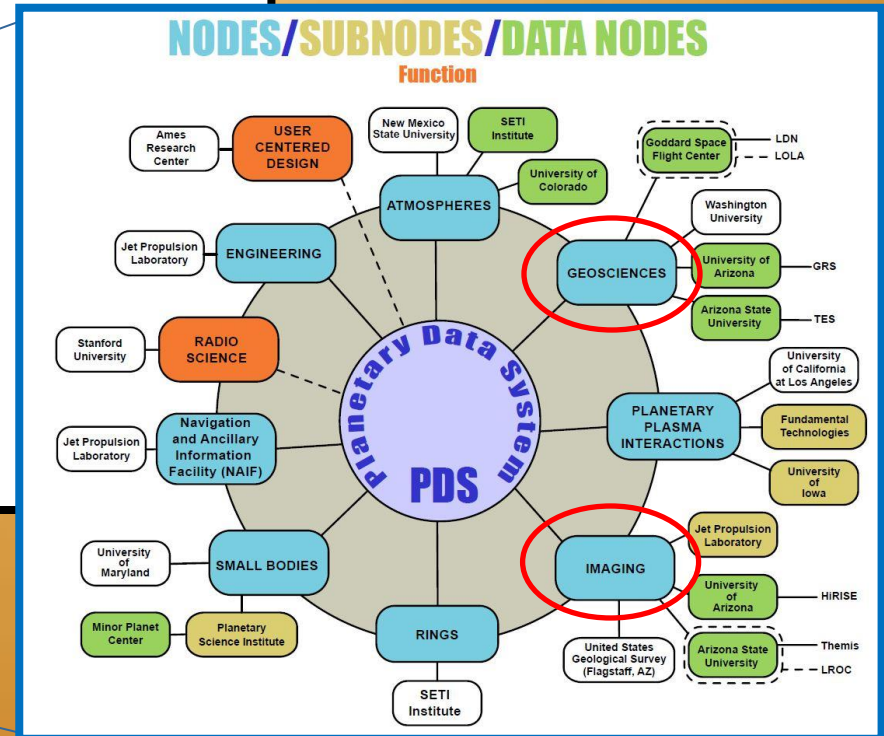
The screenshot shows the PDS Home Page with the NASA logo and the title "PDS: The Planetary Data System". A search bar is located at the top right. The main content area is divided into several sections: "New Releases" (listing recent data releases), "Welcome to the PDS" (a brief introduction), "Researchers" (links for searching and getting notified), "Data Providers" (links for archive preparation and tools), "Data Reviewers" (links for the peer review process), "Proposers" (links for mission proposals and support), "Students & Educators" (links for planetary photojournal and maps), and "PDS Nodes" (a list of participating institutions). A blue line points from the "PDS Nodes" section to the "Nodes/Subnodes/Data Nodes" diagram on the right.

MDIS Data:

PDS Home

PDS Imaging Node

PDS Geosciences Node



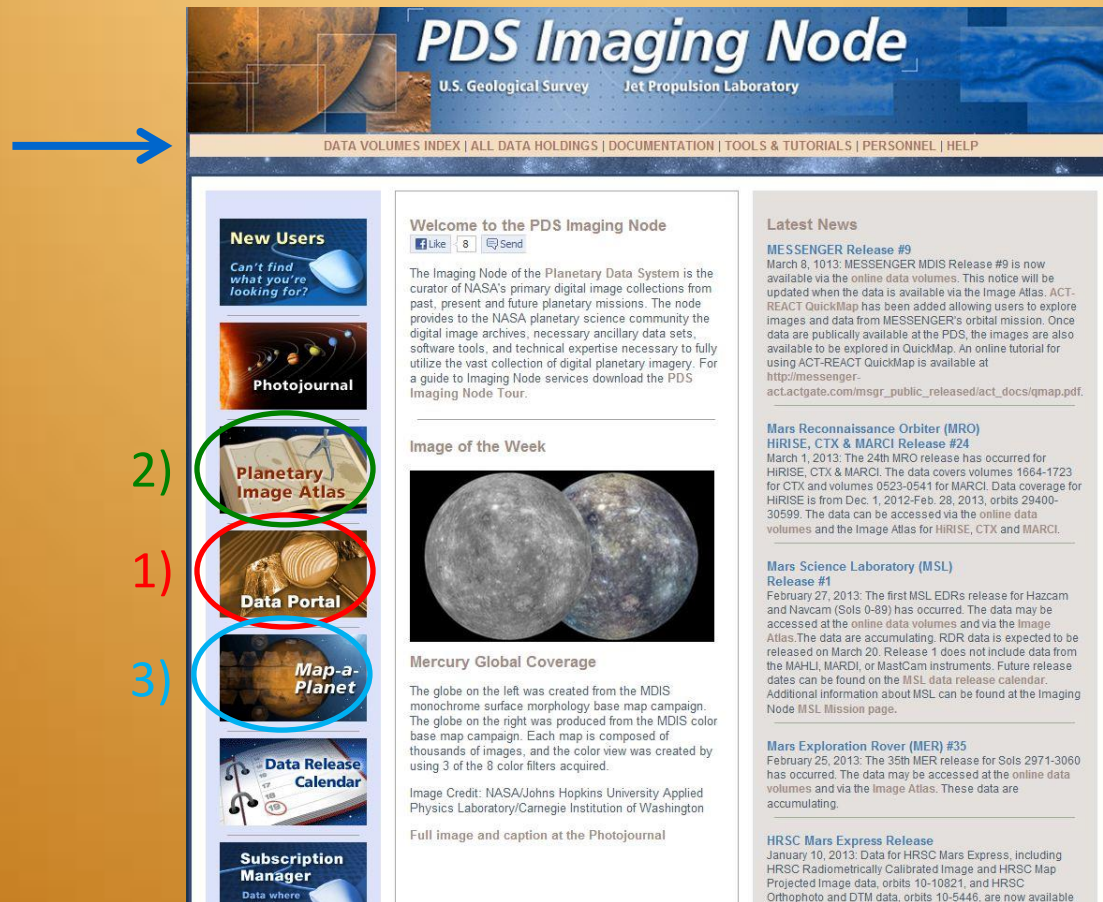
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PDS IMAGING NODE HOME PAGE



< Navigate from here also

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

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DATA PORTAL

The PDS Imaging Node Data Portal is a scroll-down list that leads you to the Online Data Volumes, Image Atlas and Mission Documentation

 Mars Science Laboratory	HAZCAM NAVCAM MAHLI MARDI Mastcam	Mars	Atlas Product Search Online Data Volumes	PC 27, 2013 HAZCAM & NAVCAM EDRs RDRs Expected Mar 20, 2013 Release 1 does not include data from the MAHLI, MARDI, or MastCam instruments.
 MESSENGER	MDIS	Mercury Venus	Atlas Product Search Online Data Volumes Documentation	MDIS Release #8 September 7, 2012 Note that the science collection during the third Mercury encounter was interrupted due to a spacecraft safe-mode demonstration. Please refer to the release files for more information of how the data sets were affected by that interruption.
 Phoenix	SSI, RAC, OM	Mars	Atlas Product Search Online Data Volumes Documentation	SSI, RAC, OM Final Release #3 May 4, 2009 Sols 91-152
 Viking Lander	LCS	Mars	Atlas Product Search Product Search Online Data Volumes Documentation	Mission Complete Viking 1 Last data received November 11, 1982 Viking 2 Last data received April 11, 1980
 Viking Orbiter	VISA VISB	Mars Deimos Phobos	Atlas Product Search Product Search Online Data Volumes Documentation	Mission Complete Viking 1 Last data received August 7, 1980 Viking 2 Last data received August 11, 1977

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

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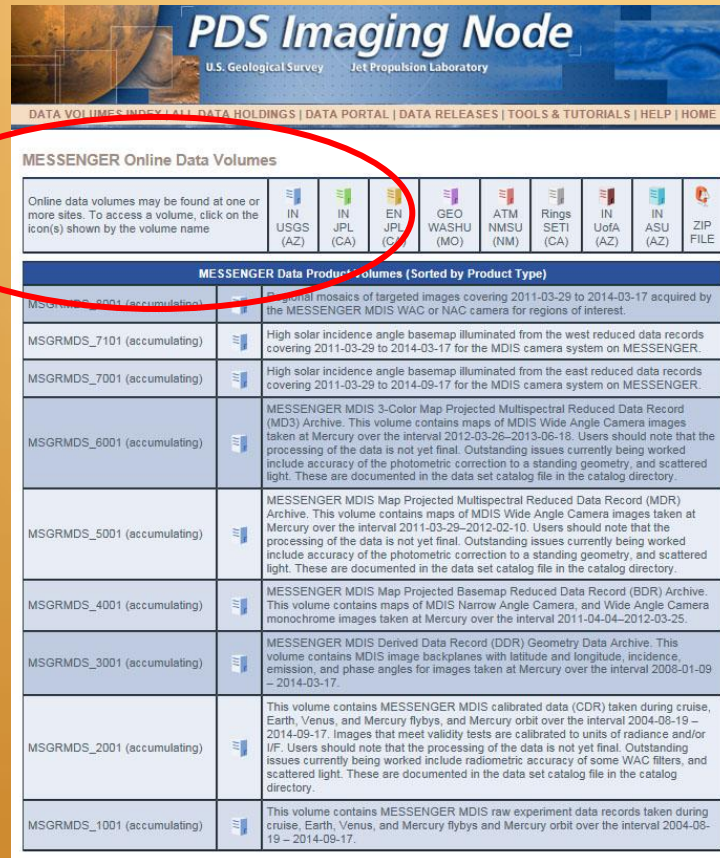
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ONLINE DATA VOLUMES

<http://img.pds.nasa.gov/volumes/mess.html>



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DATA VOLUMES INDEX | ALL DATA HOLDINGS | DATA PORTAL | DATA RELEASES | TOOLS & TUTORIALS | HELP | HOME

MESSENGER Online Data Volumes

Online data volumes may be found at one or more sites. To access a volume, click on the icon(s) shown by the volume name

IN USGS (AZ)	IN JPL (CA)	EN JPL (C)	GEO WASHU (MO)	ATM NMSU (NM)	Rings SETI (CA)	IN Uofa (AZ)	IN ASU (AZ)	ZIP FILE
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MESSENGER Data Product Volumes (Sorted by Product Type)	
MSGRMDS_1001 (accumulating)	Regional mosaics of targeted images covering 2011-03-29 to 2014-03-17 acquired by the MESSENGER MDIS WAC or NAC camera for regions of interest.
MSGRMDS_7101 (accumulating)	High solar incidence angle basemap illuminated from the west reduced data records covering 2011-03-29 to 2014-03-17 for the MDIS camera system on MESSENGER.
MSGRMDS_7001 (accumulating)	High solar incidence angle basemap illuminated from the east reduced data records covering 2011-03-29 to 2014-03-17 for the MDIS camera system on MESSENGER.
MSGRMDS_6001 (accumulating)	MESSENGER MDIS 3-Color Map Projected Multispectral Reduced Data Record (MDR) Archive. This volume contains maps of MDIS Wide Angle Camera images taken at Mercury over the interval 2012-03-26-2013-06-18. Users should note that the processing of the data is not yet final. Outstanding issues currently being worked include accuracy of the photometric correction to a standing geometry, and scattered light. These are documented in the data set catalog file in the catalog directory.
MSGRMDS_5001 (accumulating)	MESSENGER MDIS Map Projected Multispectral Reduced Data Record (MDR) Archive. This volume contains maps of MDIS Wide Angle Camera images taken at Mercury over the interval 2011-03-29-2012-02-10. Users should note that the processing of the data is not yet final. Outstanding issues currently being worked include accuracy of the photometric correction to a standing geometry, and scattered light. These are documented in the data set catalog file in the catalog directory.
MSGRMDS_4001 (accumulating)	MESSENGER MDIS Map Projected Basemap Reduced Data Record (BDR) Archive. This volume contains maps of MDIS Narrow Angle Camera, and Wide Angle Camera monochrome images taken at Mercury over the interval 2011-04-04-2012-03-25.
MSGRMDS_3001 (accumulating)	MESSENGER MDIS Derived Data Record (DDR) Geometry Data Archive. This volume contains MDIS image backplanes with latitude and longitude, incidence, emission, and phase angles for images taken at Mercury over the interval 2008-01-09-2014-03-17.
MSGRMDS_2001 (accumulating)	This volume contains MESSENGER MDIS calibrated data (CDR) taken during cruise, Earth, Venus, and Mercury flybys, and Mercury orbit over the interval 2004-08-19-2014-09-17. Images that meet validity tests are calibrated to units of radiance and/or I/F. Users should note that the processing of the data is not yet final. Outstanding issues currently being worked include radiometric accuracy of some WAC filters, and scattered light. These are documented in the data set catalog file in the catalog directory.
MSGRMDS_1001 (accumulating)	This volume contains MESSENGER MDIS raw experiment data records taken during cruise, Earth, Venus, and Mercury flybys and Mercury orbit over the interval 2004-08-19-2014-09-17.

****This is currently the only way to access DDRs, MDRs, BDRs, MD3s, HIWs, HIEs, and RTMs**

This is a good option if you are familiar with PDS volumes and know exactly what you're looking for.

Index of /data/mess-h-mdis-5-rdr-mdr-v1.0

Name	Last modified	Size	Description
Parent Directory		-	
MSGRMDS_5001/	07-Feb-2013 13:12	-	

Index of /archive/mess-e_v_h-mdis-2-edr-rawdata-v1.0/MSGRMDS_1001

Name	Last modified	Size	Description
Parent Directory		-	
AAREADME.TXT	28-Dec-2011 14:09	10K	
BROWSE/	08-Jan-2010 12:32	-	
CALIB/	08-Jan-2010 12:32	-	
CATALOG/	30-Jul-2012 13:29	-	
DATA/	18-Jun-2012 14:51	-	
DOCUMENT/	19-Jun-2012 11:41	-	
ERRATA.TXT	20-Jun-2012 09:55	10K	
INDEX/	19-Jun-2012 11:42	-	
VOLDESC.CAT	20-Jun-2012 09:58	2.6K	

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THE PDS VOLUMES AND WHAT THEY CONTAIN

<http://img.pds.nasa.gov/volumes/mess.html>

Volume Name	Product Type
MSGRMDS_1001	EDR – Experiment Data Record
MSGRMDS_2001	RDR – Reduced Data Record
MSGRMDS_3001	DDR – Derived Data Record, Image Backplanes
MSGRMDS_4001	BDR – Basemap Data Record
MSGRMDS_5001	MDR – Multispectral Data Record
MSGRMDS_6001	MD3 – 3-Color Multispectral Data Record
MSGRMDS_7001	HIE – High Solar Incidence Angle Basemap, East Illumination
MSGRMDS_7101	HIW – High Solar Incidence Angle Basemap, West Illumination
MSGRMDS_8001	RTM – Regional Targeted Mosaics

The full definitions of the various types of data products can be found on each respective volume within the DOCUMENT directory in the related Software Interface Specification (SIS) document.

ORGANIZATION OF THE DATA ON THE MDIS PDS VOLUMES

The **EDRs** and **CDRs** are organized into subdirectories (within the DATA or CDR directory) containing the EDRs/CDRs for one day of the mission. The directory name is of the form YYYY_DOY where YYYY is the year, and DOY is the day of year. An inclusion of a EDR/CDR in a folder is determined by the UTC time of the start of the exposure.

The **BDRs** and **MDRs** are organized into subdirectories based on the Mercury Chart containing the BDR/MDR. Latitude and longitude limits of Mercury Charts and the corresponding subdirectory names are given in the table below.

Quadrangle	Subdirectory name	Latitude (degrees)	Longitude (deg. east)
H-1 Borealis	H01	65 to 90	0 to 360
H-2 Victoria	H02	22.5 to 65	270 to 360
H-3 Shakespeare	H03	22.5 to 65	180 to 270
H-4 Liguria	H04	22.5 to 65	90 to 180
H-5 Apollonia	H05	22.5 to 65	0 to 90
H-6 Kuiper	H06	-22.5 to 22.5	288 to 360
H-7 Beethoven	H07	-22.5 to 22.5	216 to 288
H-8 Tolstoj	H08	-22.5 to 22.5	144 to 216
H-9 Solitudo Criophori	H09	-22.5 to 22.5	72 to 144
H-10 Pieria	H10	-22.5 to 22.5	0 to 72
H-11 Discovery	H11	-65 to -22.5	270 to 360
H-12 Michelangelo	H12	-65 to -22.5	180 to 270
H-13 Solitudo Persephones	H13	-65 to -22.5	90 to 180
H-14 Cyllene	H14	-65 to -22.5	0 to 90
H-15 Bach	H15	-90 to -65	0 to 360

PDS PLANETARY IMAGE ATLAS

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

The screenshot shows the Planetary Image Atlas website. The header features the title "Planetary Image Atlas" in a large, white, serif font against a blue background with a grid pattern. Below the header is a navigation bar with links: NEW SEARCH, DATA PORTAL, ABOUT, HELP, FEEDBACK, and HOME. The main content area is divided into two columns. The left column, titled "Current Selection", shows "Viewing all documents!". Below this is a "Search" section with a text input field and a button. A "Mission" filter is active, displaying a list of missions: 2001 mars odyssey (2015659), cassini (697055), chandryan (21645), clementine (1913595), galileo (20123), icross (113044), lunar reconnaissance orbiter (2960124), magellan (72818), mars exploration rover (6902264), mars express (86422), mars global surveyor (243227), mars pathfinder (17899), mars reconnaissance orbiter (1231195), mars science laboratory (4058300), messenger (597766), and phoenix (256433). The "mars science laboratory (4058300)" entry is circled in red. The right column shows "Results Per Page: 24" and a pagination link "< 1 2 3 ... 890115". Below this are "Grid View" and "Sort View" buttons. The main display area shows two image thumbnails, each with a "Browse Not Available" message and a "ABDR_04_D257_V02" label. The thumbnails show a view of Earth from space.

Planetary Image Atlas

NEW SEARCH | DATA PORTAL | ABOUT | HELP | FEEDBACK | HOME

Current Selection
Viewing all documents!

Search
(press ESC to close suggestions)

Mission

- 2001 mars odyssey (2015659)
- cassini (697055)
- chandryan (21645)
- clementine (1913595)
- galileo (20123)
- icross (113044)
- lunar reconnaissance orbiter (2960124)
- magellan (72818)
- mars exploration rover (6902264)
- mars express (86422)
- mars global surveyor (243227)
- mars pathfinder (17899)
- mars reconnaissance orbiter (1231195)
- mars science laboratory (4058300)
- messenger (597766)
- phoenix (256433)

Results Per Page: 24 < 1 2 3 ... 890115

Grid View | Sort View

Browse Not Available
ABDR_04_D257_V02

Browse Not Available
ABDR_SUMMARY_04_D257_V02

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Product Search – Finding MDIS

The screenshot displays the Planetary Image Atlas web interface. The header features the title "Planetary Image Atlas" and navigation links: NEW SEARCH, DATA PORTAL, ABOUT, HELP, FEEDBACK, and HOME. On the left sidebar, the "Current Selection" section shows a filter for "ATLAS_MISSION_NAME=messenger". Below this, the "Search" section includes a text input field and a list of filter categories: Mission, Instrument, Product Type, Lighting Geometry, Filters, Lat/Lon Bounding Box, Time Constraints, Orbital Mission Constraints, Landed Mission Constraints, PDS Archive Constraints, Maps, Report / Sort View Updates, and Bulk File Download. The "Instrument" category is expanded, and "mdis (597766)" is selected. The main content area shows a grid of six image thumbnails, each labeled with a file ID (e.g., Cw1518219448_RA_4) and a "Click on image to display browse" button. The top right of the main area displays "Results Per Page: 25" and "displaying 1 to 34 of 597766".

PDS PLANETARY IMAGE ATLAS

Searching on Geometry Parameters

The screenshot shows the 'Planetary Image Atlas' web application. The 'Current Selection' sidebar on the left is circled in red and contains the following filters:

- remove all
- (x) ATLAS_MISSION_NAME:messenger
- (x) ATLAS_INSTRUMENT_NAME:imdis
- (x) TARGET_NAME:mercury
- (x) PRODUCT_TYPE:edr

The 'Search' section below it includes a search bar and a list of filter categories: Mission, Instrument, Target, Product Type, Lighting Geometry, Filters, Lat/Lon Bounding Box, Time Constraints, and Orbital Mission Constraints. The 'Orbital Mission Constraints' section is also circled in red and contains four sliders:

- Solar Azimuth (0 to 360 deg): 0 to 360
- Solar Distance (0 to 820000000 km): 0 to 820000000
- Solar Longitude (-45 to 360 deg): -45 to 360
- Spacecraft Altitude (0 to 1000000 km): 0 to 1000000

The main content area displays a grid of image thumbnails. The first row shows three images with IDs EW1021675631B, EW1021675630B, and EW1021675590B. The second row shows three images with IDs EW1021675589B, EN1021674563M, and EN1021674559M. The third row shows three more images. Each image has a small icon for download, print, and other actions.

PDS PLANETARY IMAGE ATLAS

Searching on Lighting Geometry

The screenshot displays the Planetary Image Atlas search interface. The left sidebar contains a 'Current Selection' section with a red circle around it, listing filters: remove all, (x) ATLAS_MISSION_NAME:messenger, (x) ATLAS_INSTRUMENT_NAME:mdis, (x) TARGET_NAME:mercury, and (x) PRODUCT_TYPE:edr. Below this is a 'Search' bar and a 'Lighting Geometry' section with three sliders: Emission Angle Range (0 to 180 deg), Incidence Angle Range (0 to 180 deg), and Phase Angle Range (0 to 180 deg). The right panel shows a grid of image thumbnails with IDs like EW1021675631B, EW1021675630B, EW1021675590B, EW1021675589B, EN1021674563M, and EN1021674559M. The interface includes a navigation bar with links like NEW SEARCH, DATA PORTAL, ABOUT, HELP, FEEDBACK, and HOME.

PDS PLANETARY IMAGE ATLAS

Searching on Time Parameters

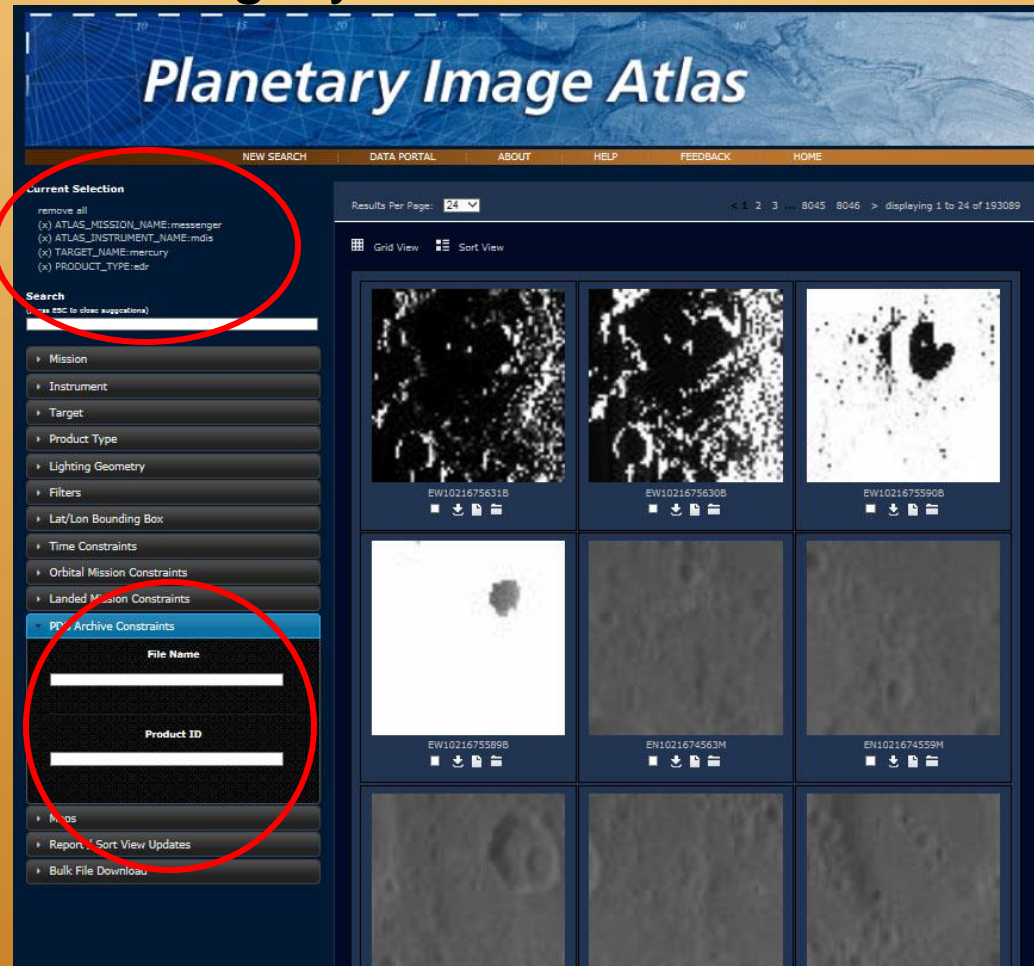
The screenshot shows the Planetary Image Atlas search interface. The left sidebar contains a 'Current Selection' section with a list of filters: ATLAS_MISSION_NAME:messenger, ATLAS_INSTRUMENT_NAME:mdia, TARGET_NAME:mercury, and PRODUCT_TYPE:edr. Below this is a 'Search' section with a text input field and a 'Search' button. The 'Time Constraints' section is highlighted with a red circle and contains the following fields:

- Spacecraft Clock Start Count Range (0 to 180 deg): 0.0 to 1039090181.103
- Start Time Range: yyyy-mm-dd to yyyy-mm-dd
- Stop Time Range: yyyy-mm-dd to yyyy-mm-dd
- Product Creation Time Range: yyyy-mm-dd to yyyy-mm-dd

The right side of the interface shows a grid of image thumbnails. The top row contains three thumbnails with IDs EW10216756318, EW10216756308, and EW10216755908. The bottom row contains three thumbnails with IDs EW10216755898, EN1021674563M, and EN1021674559M. The interface also includes a 'Results Per Page' dropdown set to 24 and a 'displaying 1 to 24 of 193089' indicator.

PDS Planetary Image Atlas

Searching By File Name or Product ID



PDS PLANETARY IMAGE ATLAS

Create a Report or View Thumbnail

Current Selection

- remove all
- (x) ATLAS_MISSION_NAME:messenger
- (x) ATLAS_INSTRUMENT_NAME:mdis
- (x) TARGET_NAME:mercury
- (x) PRODUCT_TYPE:edr

Search

(Grow) (shrink) (clear suggestions)

Mission

Instrument

Target

Product Type

Lighting Geometry

Filters

Lat/Lon Bounding Box

Time Constraints

Orbital Mission Constraints

Landed Mission Constraints

PDS Archive Constraints

Maps

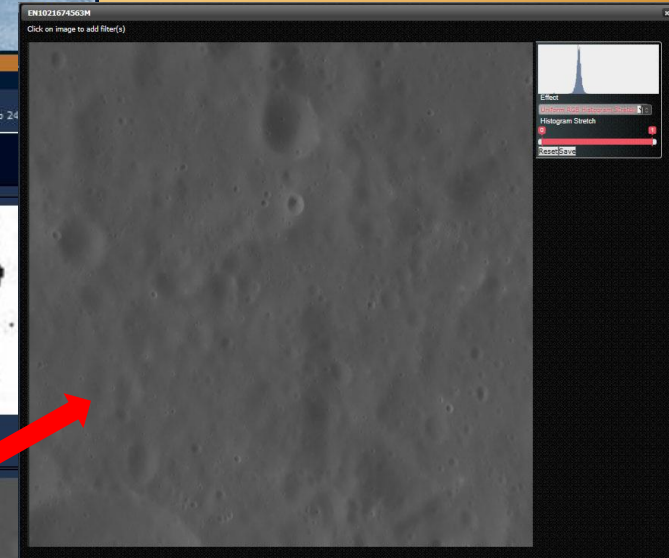
Report / Sort View Updates

Select Report Fields:

- CENTER_FILTER_WAVELENGTH
- CENTER_LATITUDE
- CENTER_LONGITUDE
- DATA_QUALITY_ID
- DATA_SET_ID
- DETECTOR_TEMPERATURE
- EMISSION_ANGLE
- EXPOSURE_DURATION
- EXPOSURE_TYPE
- FILE_NAME
- FILE_PATH
- FILTER_NUMBER
- FILTER_TEMPERATURE
- LOCAL_PLANE_TEMPERATURE
- HORIZONTAL_PIXEL_SCALE
- INCIDENCE_ANGLE
- INSTUMENT_ID
- MESS_COMP_ID
- MESS_COMP_EST

Download CSV

Update Fields



PDS PLANETARY IMAGE ATLAS

Getting Multiple Results: Download via Zip or Wget

The screenshot displays the Planetary Image Atlas web interface. On the left, the 'Current Selection' panel shows filters for Mission, Instrument, Target, Product Type, Lighting Geometry, Filters, Lat/Lon Bounding Box, Time Constraints, Orbital Mission Constraints, Landed Mission Constraints, PDS Archive Constraints, Maps, and a 'Bulk File Download' button. A red circle highlights the 'Bulk File Download' button. In the center, a grid of image thumbnails is shown, with one thumbnail (EN1021674563M) circled in red. A red arrow points from the 'Bulk File Download' button to the circled thumbnail. On the right, a terminal window displays the following commands:

```
wget -O EN1021674563M.IMG 'http://pds-imaging.jpl.nasa.gov/pds/prod?q=OFSN+3D+/data/messenger//MSGRMDs_1001/DATA/2013_259//EN1021674563M.IMG+AND+RT+%3D+RAW'
wget -O EN1021674551M.IMG 'http://pds-imaging.jpl.nasa.gov/pds/prod?q=OFSN+3D+/data/messenger//MSGRMDs_1001/DATA/2013_259//EN1021674551M.IMG+AND+RT+%3D+RAW'
wget -O EN1021674555M.IMG 'http://pds-imaging.jpl.nasa.gov/pds/prod?q=OFSN+3D+/data/messenger//MSGRMDs_1001/DATA/2013_259//EN1021674555M.IMG+AND+RT+%3D+RAW'
wget -O EN1021674547M.IMG 'http://pds-imaging.jpl.nasa.gov/pds/prod?q=OFSN+3D+/data/messenger//MSGRMDs_1001/DATA/2013_259//EN1021674547M.IMG+AND+RT+%3D+RAW'
wget -O EN1021674559M.IMG 'http://pds-imaging.jpl.nasa.gov/pds/prod?q=OFSN+3D+/data/messenger//MSGRMDs_1001/DATA/2013_259//EN1021674559M.IMG+AND+RT+%3D+RAW'
```

PDS MAP-A-PLANET

Map-A-Planet provides access to the *MESSENGER/Mariner 10 Global Mosaic*

<http://www.mapaplanet.org>

USGS
science for a changing world
Astrogeology Research Program

Map-a-Planet
PDS Imaging Node

Explore global imagery of the planets and satellites from a variety of missions in an easy to use web interface. Customize and download your own image maps of the Moon, Mars, Venus, and other planets and moons.

To get started:

1. Select a planet or moon from the buttons on the right.
2. Click on the image of the dataset you'd like to explore.
3. *Start exploring!*
4. Select resulting images for download.
5. ... and also 'Order' custom products .

WHAT IMAGERY WILL I FIND HERE?
FAQS
HELP
MEET THE TEAM

WHAT'S NEW? AND FEATURED DATA SETS
LRO-LOLA Gridded Data Record Digital Elevation Model!
September 2012
» LOLA lunar elevation data are now

PLANETS & EARTH'S MOON
MERCURY VENUS MOON
MARS

MOONS OF JUPITER
CALLISTO EUROPA GANYMEDE
IO

MOONS OF SATURN

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PDS MAP-A-PLANET

Map-A-Planet allows Pan and Zoom, Ordering, and other functions

The screenshot shows the 'PDS Imaging Node' website interface for 'Map-a-Planet Explorer: Mercury - Messenger MDIS/Mariner10 Mosaic'. The interface includes a navigation toolbar with icons for pan, zoom, and other map functions, which are circled in red. Below the toolbar are sections for 'Image Information' and 'Advanced Options'. The 'Advanced Options' section contains settings for image size (360 x 720), resolution (2), scale (21.29301 km/px), projection (Simple Cylindrical), grid (No Grid), and stretch (Auto). The main display area shows a grayscale mosaic of Mercury's surface, with a coordinate grid ranging from -180 to 180 longitude and -90 to 90 latitude. Below the image, there are fields for 'Longitude: --' and 'Latitude: --', and a note to 'Move mouse cursor over the image to view coordinates'. At the bottom right, there is a link to 'View and Save: Image | GIS World file'.

USGS PDS Imaging Node

HOME HELP SEARCH ABOUT US

Map-a-Planet Explorer: Mercury - Messenger MDIS/Mariner10 Mosaic

Navigation Toolbar

Image Information

Advanced Options

Make changes to image parameters below and click the *Submit Changes* button below.

Image size: 360 x 720
height x width

Resolution: 2 Full res.: 85.17 px/deg

Scale: 21.29301 km/px

Projection: Simple Cylindrical
Polar Stereographic available via 'order' above.

Grid: No Grid

Stretch: Auto
Preserve science integrity? See FAQ or Order page note regarding stretch options.

Longitude: -- Latitude: --
Move mouse cursor over the image to view coordinates

View and Save: Image | GIS World file

PDS MAP-A-PLANET

Order your area of interest

USGS PDS Imaging Node

HOME HELP SEARCH ABOUT US

Map-a-Planet Explorer: Mercury - Messenger MDIS/Mariner10 Mosaic

Navigation Toolbar




Image Information


Advanced Options

Make changes to image parameters below and click the *Submit Changes* button below.

Image size: ☐ 361 x 360
height x width

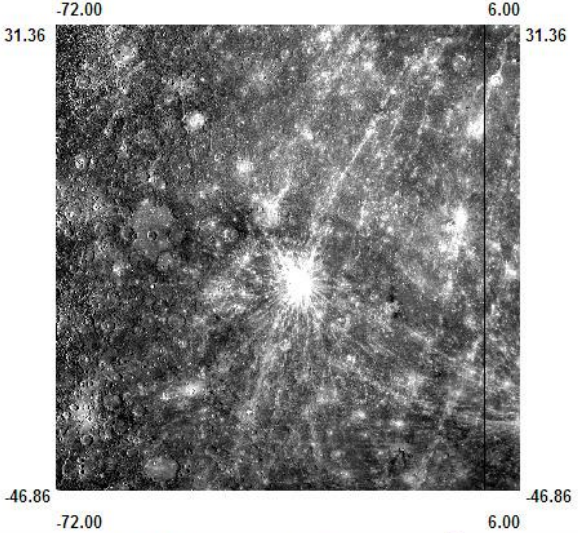
Resolution: ☐ 4.615384 Full res.: 85.17 px/deg


Scale: 9.22697 km/px

Projection: Simple Cylindrical
Polar Stereographic available via 'order'  above.


Grid: No Grid

Stretch: Auto
Preserve science integrity? See FAQ or Order page note regarding stretch options.



Longitude: -- Latitude: -- 

Move mouse cursor over the image to view coordinates

View and Save: [Image](#) | [GIS World file](#) 

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PDS MAP-A-PLANET

Orders can be placed in multiple formats, and options

Map-a-Planet Explorer: Order Form

Welcome to the Map-a-Planet Explorer Order Form page. Please complete the information below and click the *Submit Order* button at the bottom of the form to complete your order.

Order Settings & Information

The table below show the settings that will be used to create your image map. To change these settings, modify the settings in the *Advanced Options* below, or [return to your image map in Explorer](#).

System: Mercury	Resolution: 4.61538461538461	North: 31.36
Data set: Messenger MDIS/Mariner10 Mosaic mess_m123m10	Scale: 9.22697	South: -46.86
Grid: none	Image Size: 361 x 360	East: 6.00
Stretch: auto	Projection: Simple Cylindrical	West: 288

Please provide the following information. You will be contacted via e-mail when your product is ready for download. Depending on the size and complexity of your order and current system load, it may take up to 24 hours for your product to be created.

Name:

Affiliation:

E-Mail Address:

Note: If you wish to preserve the scientific integrity of the data pixel values (PDS, ISIS, or RAW formats only), select **Stretch="None"** under "Advanced Options" when ordering.

Select the image format and whether or not you'd like a GIS World file generated, then hit *Submit Order* at the bottom of the page.

Image Format++	Output Pixel Type*	Apply Custom Function*	GIS World File?
<input checked="" type="radio"/> JPEG	<input checked="" type="radio"/> Dataset native	Enter function: NONE	<input type="radio"/> Yes
<input type="radio"/> GIF	<input type="radio"/> 8bit	See additional instruction .	<input checked="" type="radio"/> No
<input type="radio"/> TIFF	<input type="radio"/> 16bit-LSB	Then enter desired Bands	
<input type="radio"/> PDS	<input type="radio"/> 32bit-LSW	and Stretch="None" below.	
<input type="radio"/> ISIS		Resulting product is 32bit.	
<input type="radio"/> RAW			

++ Must select "8bit" for TIFF, JPEG, or GIF orders.

* Applicable for PDS, ISIS, & RAW orders.

Advanced Options

Make changes to image parameters below and click the *Submit Changes* button below.

Image size: ☐ 361 x 360
height x width

Resolution: ☒ 4.615384 Full res.: 85.17 px/deg

Scale: 9.22697 km/px

Projection: Simple Cylindrical
Center Latitude of Projection = ±90 when selecting Polar Stereographic for order.

Grid: No Grid

Stretch: Auto
Preserve science integrity? See FAQ or Order page note regarding stretch options.

Resample: Nearest Neighbor

North (top): 31.36

West (left): 288 **West < east:** **East (right):** 6.00

South (bottom): -46.86

Center Longitude of Projection: -33
☒ Use the center longitude of the image as the center longitude of projection.

SUBMIT ORDER **RESET FORM**


PDS Imaging Node

U.S. Geological Survey

Jet Propulsion Laboratory

PDS MAP-A-PLANET

Confirm and Order your data product. Email notification will be sent to you.

 **PDS Imaging Node**

HOME HELP SEARCH ABOUT US

MAP-A-PLANET ORDER CONFIRMATION

Your custom image map order is shown below, please review and confirm your information. You MUST click on "SEND ORDER" if you wish to complete your order.

SEND ORDER

REQUESTER TIME = "2013-03-14T12:51:42"
REQUESTER NAME = "Lisa Gaddis"
REQUESTER AFFILIATION = "USGS"
REQUESTER MAILBOX = "lgaddis@usgs.gov"

Data Set Requested "mess_m123m10"
Bands Selected "1,1,1"
Custom Equation "NONE"
Function Type Requested ""
Pixel type "DEFAULT"
Resolution (pixels/degree) "4.61538461538461"
Positive longitude "EAST"
Format "JPEG"
Projection "SIMPLE_CYLINDRICAL"
west longitude "288"
east longitude "6.00"
north latitude "31.36"
south latitude "-46.86"
Center longitude "-33"
Center latitude "0"
Grid Line Frequency "none"
Resample Method "nearest_neighbor"
Density Stretch Type "auto"
World Files Created "NO"

[Return to the Map-a-Planet Homepage](#)
Map-a-Planet Version 1.0
Web Page Curator: [Patty Garcia](#)
Development Team

PLANETARY IMAGE LOCATOR TOOL

HTTP://PILOT.WR.USGS.GOV

Demo!

Choose Mercury (for EDRs Only):

PILOT



Planetary Image Locator Tool | access to NASA's largest spacecraft imagery archive

Mercury 259,592 Images

Venus 7,254 Images

Earth 47,639 Images

Moon 2,824,163 Images

Mars 1,592,191 Images

Deimos 246 Images

Phobos 444 Images

Jupiter 85,491 Images

Adrastea 23 Images

Amalthea 227 Images

Callisto 1,933 Images

Europa 2,192 Images

Ganymede 2,247 Images

Himalia 393 Images

Io 3,063 Images

Metis 27 Images

Thebe 46 Images

Saturn 336,855 Images

Atlas 1,100 Images

Calypso 830 Images

Daphnis 419 Images

Deimos 2,953 Images

Enceladus 16,222 Images

Epimetheus 1,544 Images

Helene 1,523 Images

Hyperion 4,767 Images

Iapetus 8,936 Images

Janus 2,339 Images

Methone 624 Images

Mimas 5,653 Images

Pallene 709 Images

Pan 1,161 Images

Pandora 1,266 Images

Phoebe 2,271 Images

Polydeuces 429 Images

Prometheus 3,516 Images

Rhea 14,074 Images

Telesto 821 Images

Tethys 8,578 Images

Titan 18,349 Images

Ymir 66 Images

Uranus 5,024 Images

Ariel 101 Images

Miranda 90 Images

Oboron 74 Images

Titania 102 Images

Umbriel 100 Images

Neptune 5,590 Images

Nereid 188 Images

Triton 613 Images

Untargeted Images

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News

PILOT / UPC Data Release October 2014: Lunar Reconnaissance Orbiter
Oct 17, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: Lunar Reconnaissance Orbiter / LROCNACRelease #19. Mapped Images: 52,715. Unmapped Images: 8. Please visit PILOT to access/download. [Read more](#)

PILOT / UPC Data Release September 2014: Mars Reconnaissance Orbiter - CTX
Sep 19, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: MARS RECONNAISSANCE ORBITER / CTXRelease #30. Mapped Images: 2,510. Unmapped Images: 1. Please visit PILOT to access/download. [Read more](#)

PILOT / UPC Data Release September 2014: Mars Reconnaissance Orbiter - Marci
Sep 19, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: MARS RECONNAISSANCE ORBITER / MarciRelease #30. Mapped Images: 1,970. Unmapped Images: 294. Please visit PILOT to access/download. [Read more](#)

PILOT / UPC Data Release September 2014: MESSENGER
Sep 12, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: MESSENGER Release #12MDIS-NAC. Mapped Images: 16,395. Unmapped Images: 222 MDIS-NAC. Mapped Images: 5,410. Unmapped Images: 364. Please visit PILOT to access/download. [Read more](#)

PILOT / UPC Data Release June 2014: Mars Reconnaissance Orbiter - CTX
Jun 27, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: MARS RECONNAISSANCE ORBITER / CTXRelease #29. Mapped Images: 1,859. Unmapped Images: 0. Please visit PILOT to access/download. [Read more](#)

PILOT / UPC Data Release June 2014: Mars Reconnaissance Orbiter - Marci
Jun 27, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: MARS RECONNAISSANCE ORBITER / MarciRelease #29. Mapped Images: 1,859. Unmapped Images: 396. Please visit PILOT to access/download. [Read more](#)

PILOT / UPC Data Release March 2014: Mars Reconnaissance Orbiter - CTX
Mar 7, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: MARS RECONNAISSANCE ORBITER / CTX. Mapped: 1,787 Unmapped: 2 Total: 1,789. The strat times... [Read more](#)

PILOT / UPC Data Release: Odyssey - THEMIS_IR
Jan 21, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: Mars Odyssey / THEMIS_IR. Mapped: 1,412 Unmapped: 0 Total: 1,412 [Read more](#)

PILOT / UPC Data Release: Odyssey - THEMIS_VIS
Jan 21, 2014
The NASA/USGS PDS Imaging Node has added the following data to the Unified Planetary Coordinate (UPC) Database. MISSION / INSTRUMENT: Mars Odyssey / THEMIS_VIS. Mapped: 1,067 Unmapped: 0 Total: 1,067 [Read more](#)

PILOT / UPC Data Release: Mars Reconnaissance Orbiter - CTX
Sep 5, 2013

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PLANETARY IMAGE LOCATOR TOOL

Select MESSENGER Images (NAC, WAC or Both)

USGS science for a changing world

PILOT

PDS NASA

Home Mercury Missions Map Advanced Stereo

Select one or more image sets...

Mission	Images	Maps	Unmaps	Info
Mariner 10 (1974)				
• VID A	<input type="checkbox"/> 2,007 mapped	<input type="checkbox"/> 1,245 unmapped		
• VID B	<input type="checkbox"/> 2,035 mapped	<input type="checkbox"/> 1,270 unmapped		
Messenger (2008 - 2014)				
• MDIS-NAC	<input checked="" type="checkbox"/> 128,373 mapped	<input type="checkbox"/> 1,984 unmapped		
• MDIS-WAC	<input type="checkbox"/> 118,157 mapped	<input type="checkbox"/> 6,618 unmapped		

SEARCH TIPS

1. Enable the search button by selecting one or more images sets on the **Missions** tab.
2. *Mapped* images have lat/lon coordinates and photometric keywords
3. *Unmapped* images have incomplete data. The images had errors during processing because of improper labels or spacecraft information. Lat/Lon and photometric keywords are unavailable. NOTE: although the sets cannot be mapped, they still may contain quality imagery.
4. Use **Map** tab to limit your search by creating a bounding box (optional). After you complete a search, the map tab will also allow you to view footprints for mapped imagery.
5. Use **Advanced** tab to limit your search by setting ranges for dates and photometric keywords (optional).
6. When you are ready to search, click the search button. If you refine your search, you must re-click the search button.
7. The **Total** will show up above. **Results** will show up in this panel. If your result set is greater than 50,000 images, you will only receive a total.
8. Click on action buttons to investigate images. Use checkboxes to select images.
9. To download selected images, click the arrow in the **Select** box (upper right).

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PLANETARY IMAGE LOCATOR TOOL

Initiate the search:

USGS science for a changing world

PILOT

PDS NASA

Home Mercury Missions Map Advanced Stereo

Select one or more image sets...

Mariner 10 (1974)

- VID A ☐ 2,007 mapped ☐ 1,248 unmapped
- VID B ☐ 2,035 mapped ☐ 1,270 unmapped

Messenger (2004-2014)

- MDIS-NAC ☐ 128,373 mapped ☒ 1,984 unmapped
- MDIS-WAC ☐ 116,157 mapped ☐ 6,518 unmapped

total 1984

Order: Date (ASC)

1 2008-01-09 2 2008-01-14 3 2008-01-14 4 2008-01-14 5 2008-01-14 6 2008-01-14 7 2008-01-14

8 2008-01-14 9 2008-01-14 10 2008-01-14 11 2008-01-14 12 2008-01-14 13 2008-01-14 14 2008-01-14

15 2008-01-14 16 2008-01-14 17 2008-01-14 18 2008-01-14 19 2008-01-14 20 2008-01-14 21 2008-01-14

22 2008-01-14 23 2008-01-14 24 2008-01-14 25 2008-01-14 26 2008-01-14 27 2008-01-14 28 2008-01-14

29 2008-01-14 30 2008-01-14 31 2008-01-14 32 2008-01-14 33 2008-01-14 34 2008-01-23 35 2008-10-03

36 2008-10-03 37 2008-10-04 38 2008-10-06 39 2008-10-06 40 2008-10-06 41 2008-10-06 42 2008-10-06

43 2008-10-06 44 2008-10-06 45 2008-10-06 46 2008-10-06 47 2008-10-06 48 2008-10-06 49 2008-10-06

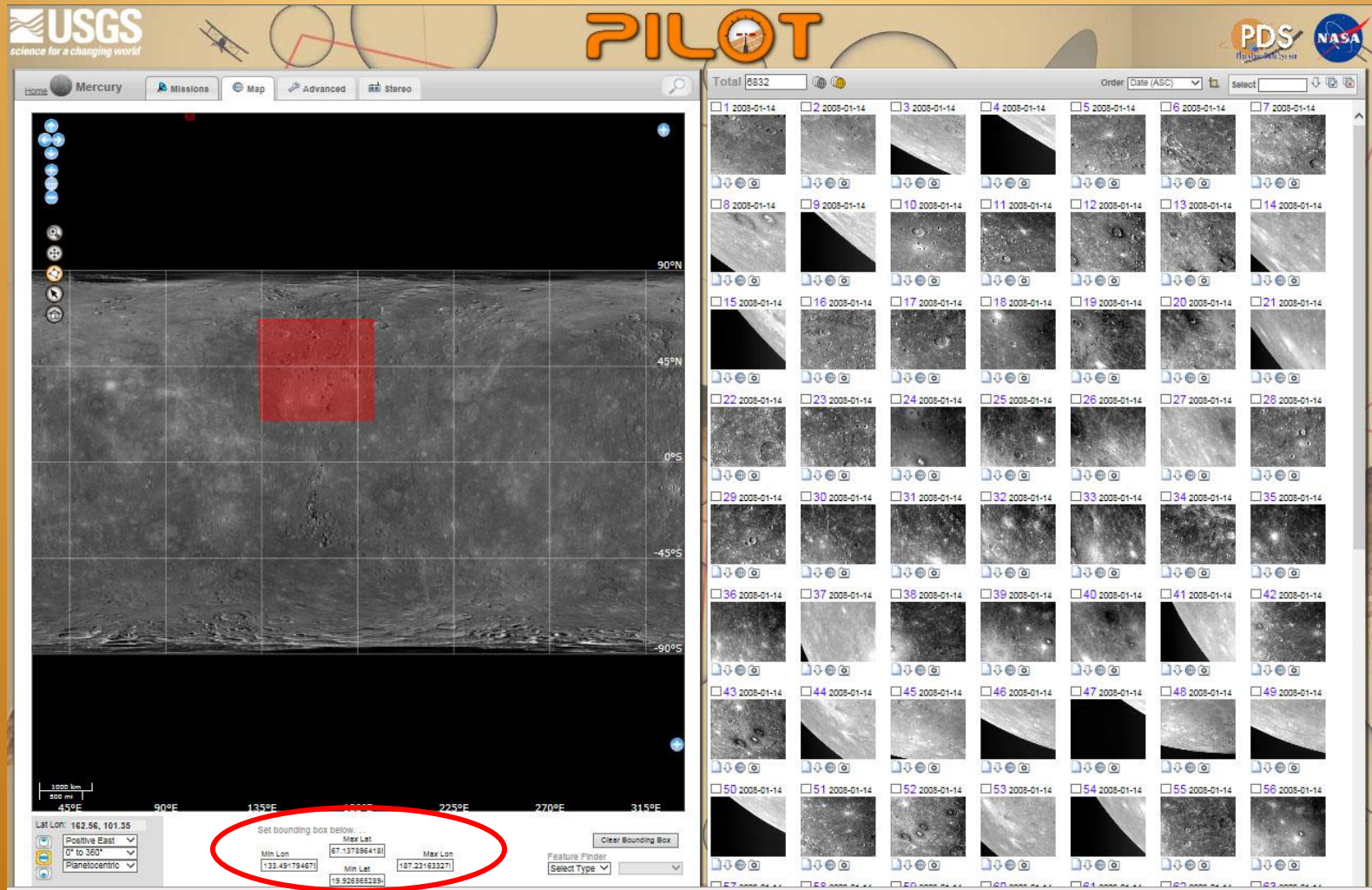
50 2008-10-06 51 2008-10-06 52 2008-10-06 53 2008-10-06 54 2008-10-06 55 2008-10-06 56 2008-10-06

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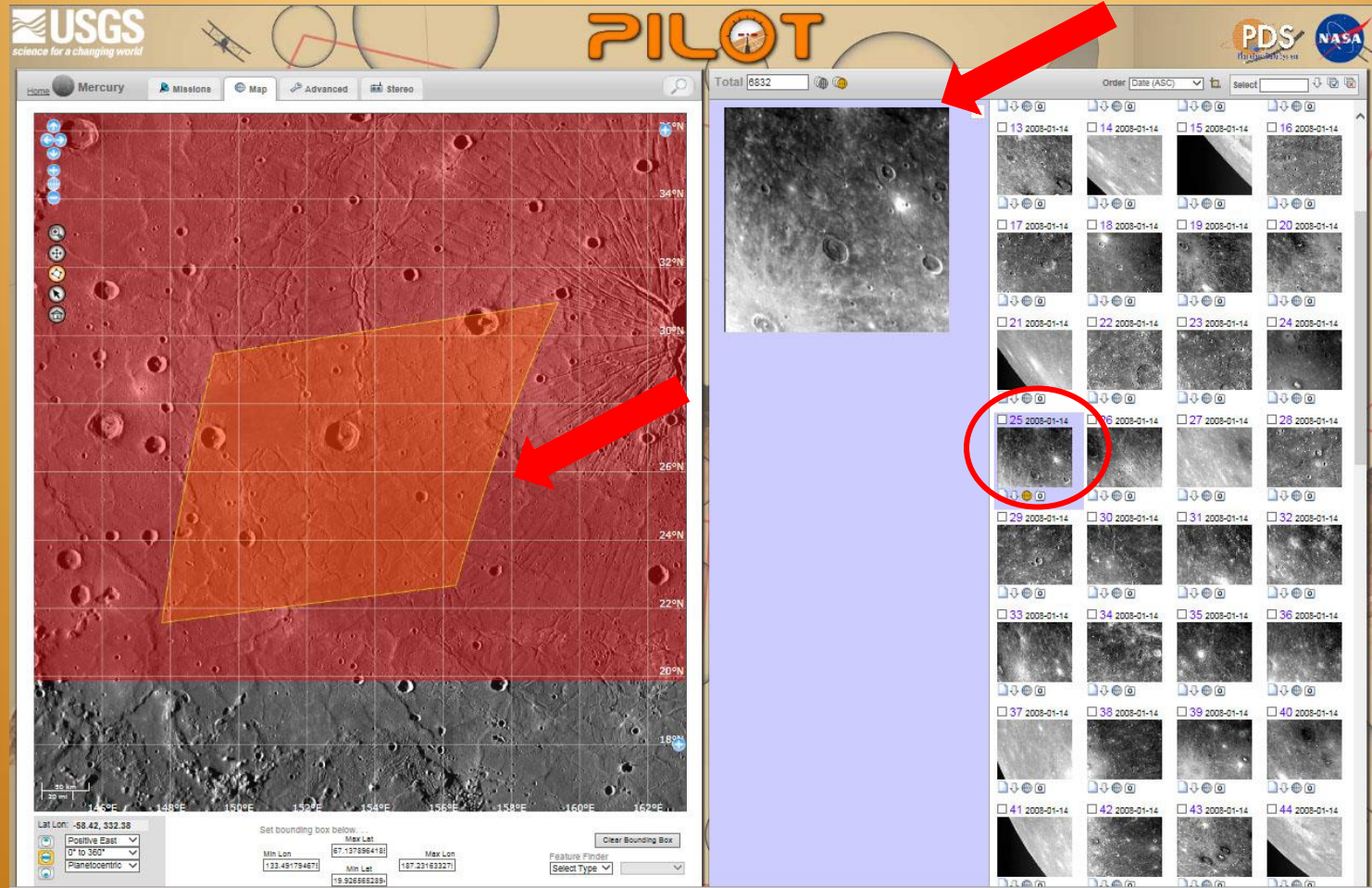
Planetary Image Locator Tool

Identify your area of interest



PLANETARY IMAGE LOCATOR TOOL

Use individual controls to display footprint, info, or to download:



PLANETARY IMAGE LOCATOR TOOL

Advanced Search Options are also available:

The screenshot shows the PILOT (Planetary Image Locator Tool) interface. The top navigation bar includes 'Home', 'Mercury', 'Missions', 'Map', 'Advanced' (highlighted with a red circle and a red arrow), and 'Store'. The 'Advanced' tab is selected, showing search filters for MDIS-MAC. The filters include Start Time (2008-01-09 to 2014-09-17), Solar Longitude (0 to 360), Mean Ground Resolution (0 to 115575), Minimum Phase Angle (13 to 142), Maximum Phase Angle (15 to 143), Minimum Incidence Angle (0 to 120), Maximum Incidence Angle (0 to 180), Minimum Emission Angle (0 to 85), and Maximum Emission Angle (1 to 90). A red arrow points to the 'Advanced' tab. The right panel displays a grid of 48 image thumbnails, each labeled with a date (e.g., 17 2008-01-14). A larger image of the Mercury surface is shown on the left side of the right panel. The bottom of the interface has a 'Clear Settings' button.

PLANETARY IMAGE LOCATOR TOOL

Select Images and Download Options

The screenshot displays the PDS Imaging Node PILOT tool interface. The top navigation bar includes the USGS logo, 'Mercury' mission selection, and tabs for 'Missions', 'Map', 'Advanced', and 'Stereo'. The main content area is divided into three sections:

- Left Panel:** A list of image sets with checkboxes for mapped and unmapped data. The 'Messenger' (2008 - 2014) set is selected, showing 128,373 mapped and 1,984 unmapped images.
- Center Panel:** A 'Download or Process' dialog box with three options: 'Download CSV file' (selected), 'Download BASH script with wget calls', and 'Projection on the Web (POW)'. A 'Go!' button is at the bottom.
- Right Panel:** A grid of 32 image thumbnails, each with a date range (e.g., 2008-01-14) and a selection checkbox. The 32nd thumbnail is highlighted.

Red arrows point to the 'Download or Process' panel and the 'PDS' logo in the top right corner.

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PLANETARY IMAGE LOCATOR TOOL

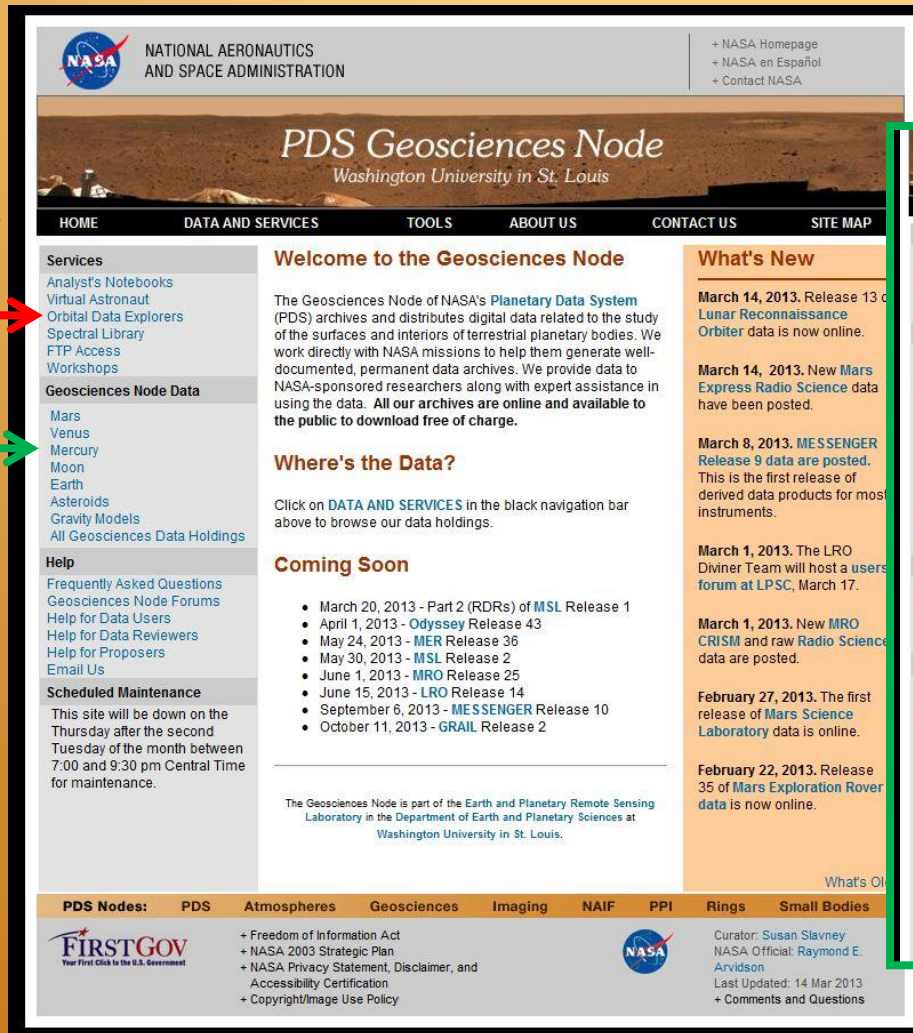
The PILOT WGET Script can be used to download your selected images.

```
USAGE="USAGE: upcget-20130313.sh -t TARGET_DIR"
while [ $# -ge 1 ]; do
    case $1 in
        -t)    shift; $TARGET=$1 ;;
        -*)    echo $USAGE; exit 1 ;;
        esac
    shift
done

CURRENTDIR=`pwd`
if [ "$TARGET" != "" ]; then
    cd $TARGET
fi

wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2011_210/EN0220458374M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_102/EN0242632860M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_102/EN0242632883M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_198/EN0250966598M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_200/EN0251110393M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_201/EN0251167859M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_221/EN0252928369M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_222/EN0252985886M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_222/EN0252985892M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_222/EN0253014691M.IMG
wget -nd http://pdsimage.wr.usgs.gov/Missions/MESSENGER/MSGRMDS_
1001/DATA/2012_222/EN0253014695M.IMG
```


PDS GEOSCIENCES NODE



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

+ NASA Homepage
+ NASA en Español
+ Contact NASA

PDS Geosciences Node

Washington University in St. Louis

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Frequently Asked Questions
Geosciences Node Forums
Help for Data Users
Help for Data Reviewers
Help for Proposers
Email Us

Scheduled Maintenance
This site will be down on the Thursday after the second Tuesday of the month between 7:00 and 9:30 pm Central Time for maintenance.

Welcome to the Geosciences Node
The Geosciences Node of NASA's Planetary Data System (PDS) archives and distributes digital data related to the study of the surfaces and interiors of terrestrial planetary bodies. We work directly with NASA missions to help them generate well-documented, permanent data archives. We provide data to NASA-sponsored researchers along with expert assistance in using the data. All our archives are online and available to the public to download free of charge.

Where's the Data?
Click on **DATA AND SERVICES** in the black navigation bar above to browse our data holdings.

Coming Soon

- March 20, 2013 - Part 2 (RDRs) of MSL Release 1
- April 1, 2013 - Odyssey Release 43
- May 24, 2013 - MER Release 36
- May 30, 2013 - MSL Release 2
- June 1, 2013 - MRO Release 25
- June 15, 2013 - LRO Release 14
- September 6, 2013 - MESSENGER Release 10
- October 11, 2013 - GRAIL Release 2

The Geosciences Node is part of the Earth and Planetary Remote Sensing Laboratory in the Department of Earth and Planetary Sciences at Washington University in St. Louis.

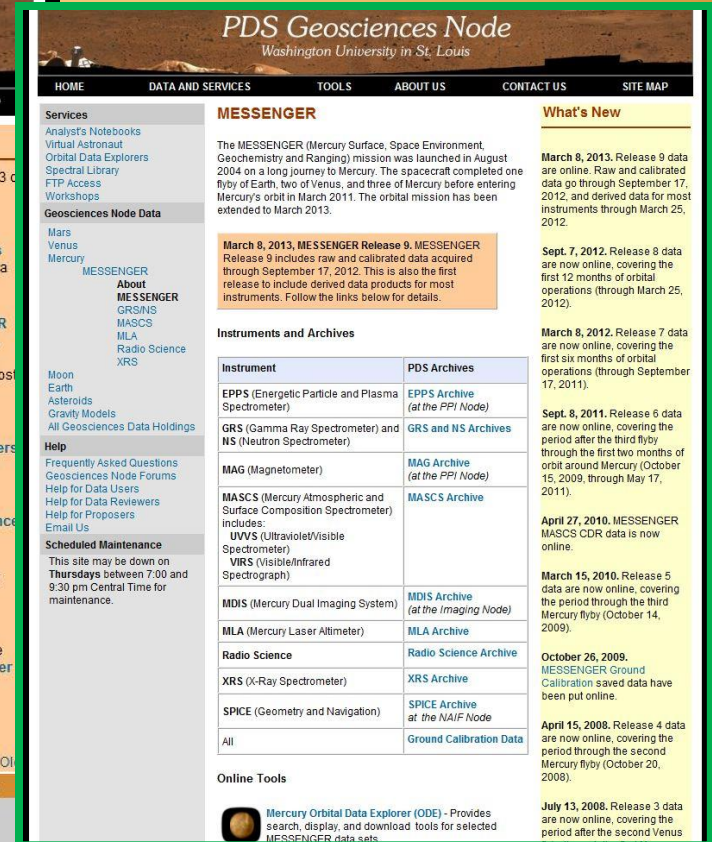
PDS Nodes: PDS Atmospheres Geosciences Imaging NAIF PPI Rings Small Bodies

FIRSTGOV
Your First Click to the U.S. Government

- + Freedom of Information Act
- + NASA 2003 Strategic Plan
- + NASA Privacy Statement, Disclaimer, and Accessibility Certification
- + Copyright/Image Use Policy

NASA

Curator: Susan Slavney
NASA Official: Raymond E. Arvidson
Last Updated: 14 Mar 2013
+ Comments and Questions



PDS Geosciences Node

Washington University in St. Louis

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Help for Data Users
Help for Data Reviewers
Help for Proposers
Email Us

Scheduled Maintenance
This site may be down on Thursdays between 7:00 and 9:30 pm Central Time for maintenance.

MESSENGER
The MESSENGER (Mercury Surface, Space Environment, Geochemistry and Ranging) mission was launched in August 2004 on a long journey to Mercury. The spacecraft completed one flyby of Earth, two of Venus, and three of Mercury before entering Mercury's orbit in March 2011. The orbital mission has been extended to March 2013.

March 8, 2013, MESSENGER Release 9, MESSENGER Release 9 includes raw and calibrated data acquired through September 17, 2012. This is also the first release to include derived data products for most instruments. Follow the links below for details.

What's New
Sept. 7, 2012, Release 8 data are now online, covering the first 12 months of orbital operations (through March 25, 2012).
March 8, 2013, Release 9 data are online. Raw and calibrated data go through September 17, 2012, and derived data for most instruments through March 25, 2012.
Sept. 8, 2011, Release 6 data are now online, covering the period after the third flyby through the first two months of orbit around Mercury (October 15, 2009, through May 17, 2011).
April 27, 2010, MESSENGER MASCS CDR data is now online.
March 15, 2010, Release 5 data are now online, covering the period through the third Mercury flyby (October 14, 2009).
October 26, 2009, MESSENGER Ground Calibration saved data have been put online.
April 15, 2008, Release 4 data are now online, covering the period through the second Mercury flyby (October 20, 2008).
July 13, 2008, Release 3 data are now online, covering the period after the second Venus

Instruments and Archives

Instrument	PDS Archives
EPSS (Energetic Particle and Plasma Spectrometer)	EPSS Archive (at the PPI Node)
GRS (Gamma Ray Spectrometer) and NS (Neutron Spectrometer)	GRS and NS Archives
MAG (Magnetometer)	MAG Archive (at the PPI Node)
MASCS (Mercury Atmospheric and Surface Composition Spectrometer) includes: UVVS (Ultraviolet/Visible Spectrometer) VIRS (Visible/Infrared Spectrograph)	MASCS Archive
MDIS (Mercury Dual Imaging System)	MDIS Archive (at the Imaging Node)
MLA (Mercury Laser Altimeter)	MLA Archive
Radio Science	Radio Science Archive
XRS (X-Ray Spectrometer)	XRS Archive
SPICE (Geometry and Navigation)	SPICE Archive at the NAIF Node
All	Ground Calibration Data

Online Tools
Mercury Orbital Data Explorer (ODE) - Provides search, display, and download tools for selected MESSENGER data sets.

<http://geo.pds.nasa.gov/>

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MERCURY ORBITAL DATA EXPLORER

Beginning Your Search: Select Data Product Search,
Data Set Browser, Map Search, etc.

<http://ode.rsl.wustl.edu/mercury/index.aspx>

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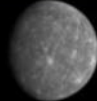
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MERCURY ORBITAL DATA EXPLORER

PDS GEOSCIENCES NODE

HTTP://ODE.RSL.WUSTL.EDU/MERCURY/INDEXPRODUCTSEARCH.ASPX

Beginning Your Search: Select Data Set, Location, Feature, etc.



Mercury Orbital Data Explorer

PDS Geosciences Node
Washington University

[Home](#) [Data Product Search](#) [Map Search](#) [Tools](#) [Data Set Browser](#) [Download](#)

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 (Released PDS Archives)** (Show Options - 1 Parameter)

STEP 2. SET ADDITIONAL FILTERING PARAMETERS (OPTIONAL)

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

☒ **Find by Product Location** (Show Options - 1 Parameter)

☒ **Filter by Time Range** (Show Options - 2 Parameters)

STEP 3. PREVIEW SEARCH RESULTS SUMMARY (OPTIONAL)

STEP 4. SUBMIT QUERY

☒ Display Product Thumbnails on search results page

MESSANGER

GRS - Gamma Ray Spectrometer

☐ CDR - Calibrated Data Record [Data Set Description](#)☐ RDR - Reduced Data Record [Data Set Description](#)☐ DAP - Derived Analysis Product [Data Set Description](#)

MASCS - MERCURY ATMOSPHERIC AND SURFACE COMPOSITION SPECTROMETER

☐ UVVCDR - UVVS Calibrated Data Record [Data Set Description](#)☐ VIRCDR - VIR Calibrated Data Record [Data Set Description](#)☐ UVVDDR - UVVS Derived Data Record [Data Set Description](#)☐ VIRDDR - VIR Derived Data Record [Data Set Description](#)☐ VIRDAP - VIR Derived Analysis Product [Data Set Description](#)

MDIS-NAC - Mercury Dual Imaging System - Narrow Angle Camera

☐ CDRNAC - Narrow-Angle Calibrated Data Record [Data Set Description](#)☐ DDNAC - Narrow-Angle Derived Data Record [Data Set Description](#)☐ RTMNAC - Narrow-Angle Map-projected Regional Targeted Mosaics [Data Set Description](#)

MDIS-WAC - Mercury Dual Imaging System - Wide Angle Camera

☐ CDRWAC - Wide-Angle Calibrated Data Record [Data Set Description](#)☐ DDWAC - Wide-Angle Derived Data Record [Data Set Description](#)☐ MDRWAC - Wide-Angle Map-projected Multispectral Data Record [Data Set Description](#)☐ RTMWAC - Wide-Angle Map-projected Regional Targeted Mosaics [Data Set Description](#)

☒ **Find by Product Location** (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 Latitude and Longitude coverage area

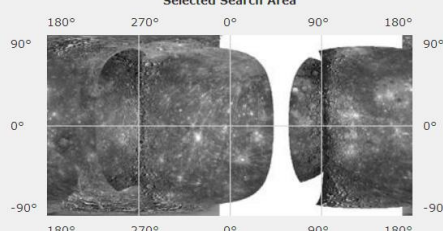
Mercury Orb uses [planetocentric coordinates](#) that are based on the product's center latitude and longitude.

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

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MERCURY ORBITAL DATA EXPLORER

Preview Your Results or Submit Query

processed in a certain way.

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

☒ Select One or More Desired Data Sets (Released PDS Archives) (Show Options - 1 Parameter 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 Location (Show Options - 0 Parameters Set)

☒ Filter by Time Range (Hide Options - 2 Parameters Set)

Select Desired Time Range Enter a single value or a range. Example Range

Observation Time (UTC) 2012-03-01 to 2012-03-02 1999-02-28T00:00:00.000 to 2012-05-21T17:03:36.000

Observation Time (UTC) - the midpoint time between observation start and stop time, e.g. 2007-05-24T12:59:59
Creation Date (UTC) - the time when a product was created, e.g. 2007-05-24T12:59:59

STEP 3. PREVIEW SEARCH RESULTS SUMMARY (OPTIONAL)

Preview Search Results Summary

Product Type	Search Results Count
MESSENGER MDIS-NAC CDRNAC	874
Total Products Found	874

STEP 4. SUBMIT QUERY

View Results in Table Select Results on Map Display

☒ Display Product Thumbnails on search results page

MERCURY ORBITAL DATA EXPLORER

Viewing Your Results, More Information

The screenshot displays the Mercury Orbital Data Explorer interface. The top navigation bar includes links for Home, Data Product Search, Map Search, Tools, Data Set Browser, Download, and Help & Resources. The main content area is divided into two panels. The left panel, titled 'SEARCH RESULTS', shows 'Products Found: 874' and a list of products. The right panel, titled 'CN0239076795M_RA_3', provides detailed information about the selected product, including links to 'More About this Product Type (help page)', 'PDS Volume', 'AAREADME.TXT', 'ERRATA.TXT', 'Catalog Files', 'Data Product Software Interface Specification (PDF)', 'PDS Source Location', and 'Instrument Website'. A red circle highlights these links, and a red arrow points from the product ID 'CN0239076795M_RA_3' in the search results to the detailed view panel.

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

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

SEARCH RESULTS
Output Results View on Map Back To Search ?

Products Found: 874
☒ Display Product Thumbnails Update Cart

1 2 3 4 5 6 7 8 9

Instrument	Type	Product ID	Obs Time
MESSENGER MDIS-NAC	CDRNAC	CN0239074534M_IF_3	2012-03-01T07:31:08.834
MESSENGER MDIS-NAC	CDRNAC	CN0239074534M_RA_3	2012-03-01T07:31:08.834
MESSENGER MDIS-NAC	CDRNAC	CN0239075154M_IF_3	2012-03-01T07:41:28.835
MESSENGER MDIS-NAC	CDRNAC	CN0239075154M_RA_3	2012-03-01T07:41:28.835
MESSENGER MDIS-NAC	CDRNAC	CN0239076791M_IF_3	2012-03-01T08:08:45.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076791M_RA_3	2012-03-01T08:08:45.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076795M_IF_3	2012-03-01T08:08:49.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076795M_RA_3	2012-03-01T08:08:49.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076799M_IF_3	2012-03-01T08:08:53.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076799M_RA_3	2012-03-01T08:08:53.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076819M_IF_3	2012-03-01T08:09:13.838

CN0239076795M_RA_3
[More About this Product Type \(help page\)](#)
[PDS Volume](#) [AAREADME.TXT](#) [ERRATA.TXT](#) [Catalog Files](#)
[Data Product Software Interface Specification \(PDF\)](#)
[PDS Source Location](#) [Instrument Website](#)

Browse Meta Data Label Related Products M

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

MERCURY ORBITAL DATA EXPLORER

Results can be viewed on Map

The screenshot displays the Mercury Orbital Data Explorer web application. The top navigation bar includes links for Home, Data Product Search, Map Search, Tools, Data Set Browser, Download, and Help & Resources. The main content area is divided into two panels. The left panel, titled 'SEARCH RESULTS', shows 'Products Found: 874' and a table of search results. The right panel, titled 'Mercury Orbital Data Explorer', shows a map view of Mercury with various data layers overlaid. A red circle highlights the 'View on Map' button in the search results panel, and a red arrow points from it to the map view.

SEARCH RESULTS

Products Found: 874

☒ Display Product Thumbnails

1 2 3 4 5 6 7 8 9

Instrument	Type	Product ID	Obs Time
MESSENGER MDIS-NAC	CDRNAC	CN0239074534M_IF_3	2012-03-01T07:31:08.834
MESSENGER MDIS-NAC	CDRNAC	CN0239074534M_RA_3	2012-03-01T07:31:08.834
MESSENGER MDIS-NAC	CDRNAC	CN0239075154M_IF_3	2012-03-01T07:41:28.835
MESSENGER MDIS-NAC	CDRNAC	CN0239075154M_RA_3	2012-03-01T07:41:28.835
MESSENGER MDIS-NAC	CDRNAC	CN0239076791M_IF_3	2012-03-01T08:08:45.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076791M_RA_3	2012-03-01T08:08:45.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076795M_IF_3	2012-03-01T08:08:49.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076795M_RA_3	2012-03-01T08:08:49.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076799M_IF_3	2012-03-01T08:08:53.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076799M_RA_3	2012-03-01T08:08:53.837
MESSENGER MDIS-NAC	CDRNAC	CN0239076819M_IF_3	2012-03-01T08:09:13.838

Mercury Orbital Data Explorer

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Map Display Controls

Select Layers | Set Filters (Optional) | View Selection Results

Coverage Display Options

☒ Display All Products Coverage (with any filters applied) or

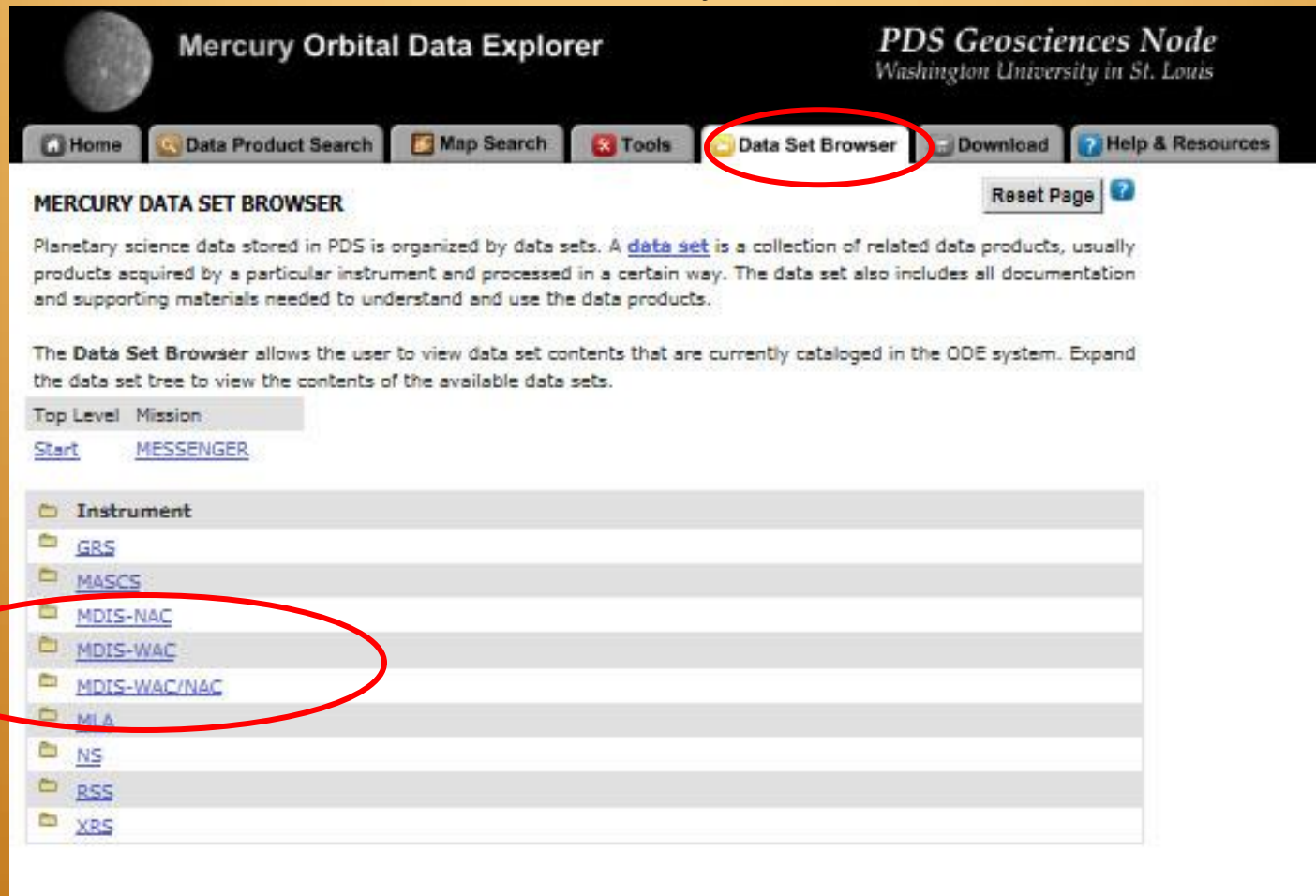
☐ Display Only Products Selected By Area (with any filters applied)

Available Map Layers with footprints

- ☐ Mercury Feature Layer [show details](#)
- ☐ MESSENGER - MASCS VINDOR [show details](#)
- ☐ MESSENGER - MASCS UVVODR [show details](#)
- ☐ MESSENGER - MASCS VINDOR [show details](#)
- ☐ MESSENGER - MASCS UVVODR [show details](#)
- ☐ MESSENGER - MDIS-NAC RTRNAC [show details](#)
- ☐ MESSENGER - MDIS-NAC CDRNAC [show details](#)
- ☒ MESSENGER - MDIS-NAC EDRNAC [show details](#)
- ☐ MESSENGER - MDIS-WAC CDRNAC [show details](#)
- ☐ MESSENGER - MDIS-WAC EDRNAC [show details](#)
- ☐ MESSENGER - MDIS-WAC RTRNAC [show details](#)
- ☐ MESSENGER - MDIS-WACNAC RORWOR [show details](#)
- ☐ MESSENGER - MDIS-WACNAC RORWOR [show details](#)
- ☐ MESSENGER - MDIS-WACNAC MAPHIV [show details](#)
- ☐ MESSENGER - MDIS-WACNAC MAPHIE [show details](#)
- ☐ MESSENGER - MLA ROR [show details](#)
- ☐ MESSENGER - MLA ROR [show details](#)
- ☐ Mercury MLA-Based Topographic Map [show details](#)
- ☒ Mercury Global Mosaic [show details](#)

MERCURY ORBITAL DATA EXPLORER

Data Set Browser: Find data by Data Set ID and Volume



The screenshot displays the Mercury Orbital Data Explorer website. The header features a Mercury planet icon, the title "Mercury Orbital Data Explorer", and the affiliation "PDS Geosciences Node, Washington University in St. Louis". A navigation bar includes links for Home, Data Product Search, Map Search, Tools, Data Set Browser (highlighted with a red circle), Download, and Help & Resources. The main content area is titled "MERCURY DATA SET BROWSER" and includes a "Reset Page" button. It provides an explanation of data sets and instructions for using the browser. Below this, there are links for "Top Level" and "Mission", with "MESSENGER" selected. A tree view of instruments is shown, with "MDIS-WAC" and "MDIS-WAC/NAC" highlighted by a red circle. The instrument list includes GRS, MASCS, MDIS-NAC, MDIS-WAC, MDIS-WAC/NAC, MLA, NS, RSS, and XBS.

Mercury Orbital Data Explorer
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Washington University in St. Louis

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

MERCURY DATA SET BROWSER [Reset Page](#) [?](#)

Planetary science data stored in PDS is organized by 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.

The **Data Set Browser** allows the user to view data set contents that are currently cataloged in the ODE system. Expand the data set tree to view the contents of the available data sets.

Top Level Mission


[Start](#) [MESSENGER](#)

Instrument

- [GRS](#)
- [MASCS](#)
- [MDIS-NAC](#)
- [MDIS-WAC](#)
- [MDIS-WAC/NAC](#)
- [MLA](#)
- [NS](#)
- [RSS](#)
- [XBS](#)

MERCURY ORBITAL DATA EXPLORER

Requesting Your Files, Creating a Mini-Archive

**Mercury Orbital Data Explorer**

PDS Geosciences Node
Washington University in St. Louis

HomeData Product SearchMap SearchToolsData Set BrowserDownloadHelp & Resources

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: 18 Files from Product selections: 18 Size of current cart selections: 60 MB
<input checked="" type="checkbox"/> Selected Products' Derived Files (map, projected, etc.)	Derived files: 36 Size of derived files: 0 MB
<input checked="" type="checkbox"/> Mini-Archive Files (related files from the PDS Archive including: documentation, software, errata, extras, catalogs, and indexes)	Files from Mini-Archive selections: 184 Size of Mini-Archive files: 171 MB
Selection Total	
Products Selected for Download: 18 Files from selections: 238 Size of current cart selections: 231 MB This cart selection should be available for download in approximately: 1.06 hours*	

* Your cart selections include externally hosted files, which may take the Geosciences Node longer to acquire and organize for your download.

If you require the files immediately: Expand the product list above, and check "Display Individual Files of the Products". Then click the individual product files to directly download them from the source.

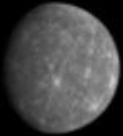
STEP 3. REVIEW SELECTIONS AND PROCEED TO CHECKOUT

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

Continue >

MERCURY ORBITAL DATA EXPLORER

Choose a Format, Enter E-mail Address, Submit Request



Mercury Orbital Data Explorer

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[Home](#) [Data Product Search](#) [Map Search](#) [Tools](#) [Data Set Browser](#) [Download](#) [Help & Resources](#)

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.)

Submit Request Please only click this button once. Multiple clicks may result in problems with your request.

MERCURY ORBITAL DATA EXPLORER

You will receive email with instructions for accessing your data:

The files that you have requested from the PDS Geosciences Node have been placed in an FTP folder for you.

Your requested files are located at the following FTP address:

<ftp://geoftp.wustl.edu/20130308T154642942>

Username: geoftp

Password: Odeuser1

The files will remain on the FTP site for 7 days. If you experience problems with our FTP site, contact odewebmaster@wunder.wustl.edu

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QUESTIONS?

Important URLs

PDS Imaging Node: <http://img.pds.nasa.gov/>

PDS Data Portal: <http://img.pds.nasa.gov/portal/>

PDS IN Online Volumes: <http://img.pds.nasa.gov/volumes/mess.html>

PDS Planetary Image Atlas:

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

PDS PILOT: <http://pilot.wr.usgs.gov/>

Geosciences Orbital Data Explorer:

<http://ode.rsl.wustl.edu/mercury/index.aspx>

PDS Map-A-Planet: <http://www.mapaplanet.org>

For More Information, Contact Us

Lisa Gaddis – lgaddis@usgs.gov

Patty Garcia – pgarcia@usgs.gov

Thank You!