



APL

# MESSENGER

MErcury Surface, Space ENvironment, GEOchemistry, and Ranging

A NASA Discovery mission to conduct the first orbital study of the innermost planet

The background of the slide is a mosaic of images from the MESSENGER mission, showing the surface of Mercury with various craters and features. The MESSENGER spacecraft is visible in the center, orbiting the planet. The spacecraft has a yellow body and two large solar panels.

# MESSENGER: Mosaic Postcards from Mercury

Keri Hallau

MESSENGER EPO

Montana State University

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Why Mercury?

The Mission

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Science Operations

Who We Are

FAQs

Related Links

Contacts



Over 80,000 Images from Orbit about Mercury and Counting

Mission Elapsed Time  
August 3, 2004

DAYS	HRS	MINS	SECS
2 7 7 2	1 1	1 0	1 9

Mercury Orbit Insertion  
March 18, 2011  
00:45 UTC

DAYS	HRS	MINS	SECS
0 3 5 4	1 6	4 1	0 0

Time since Insertion Burn

Orbits Around Mercury

Orbits completed: 714

Time until start of next orbit  
(hh:mm:ss): 05:10:55  
*Orbit start is at maximum altitude.*

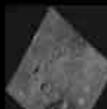
Enhanced Color View of Mercury's Hollows

## Mission News

March 2, 2012  
**MESSENGER Modifies Orbit to Prepare for Extended Mission**

MESSENGER successfully completed an orbit-correction maneuver this evening to lower its periaapsis altitude - the lowest point of MESSENGER's orbit about Mercury relative to the planet's surface - from 495 to 200 kilometers (254 to 124 miles).

## Featured Images



March 6, 2012  
**Portrait of a Scarp**

[more]

Information about Mercury Orbital Operations

Explore Orbital Data with QuickMap

MESSENGER Q&A

Where is MESSENGER?

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0 3 5 3	1 7	2 0	5 7

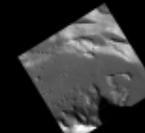
Time since Insertion Burn

Orbits Around Mercury

Orbits completed: 712

Time until start of next orbit  
(hh:mm:ss): 05:18:17  
Orbit start is at maximum altitude.

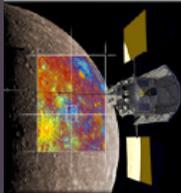
## Featured Images



March 5, 2012  
Stay on Target...

[more]

<http://messenger.jhuapl.edu>



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## EDUCATION AND PUBLIC OUTREACH

The Elusive Planet

The Mission

For Students

For Teachers

For The Community

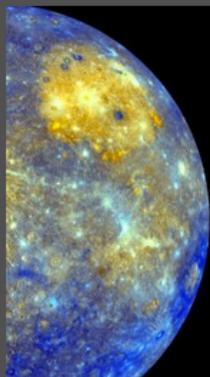


[view text only](#)

# A VISION OF DISCOVERY

## EDUCATOR WORKSHOPS

Saturday, March 10, 2012 | Pasadena, CA | Houston, TX | Portland, OR | Laurel, MD



### A VISION OF DISCOVERY

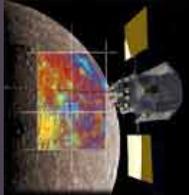
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Register by  
Wed., March 7th!  
[\(click here\)](#)

- Information about Mercury Orbital Operations
- Explore Orbital Data with QuickMap
- MESSENGER Q&A
- Where is MESSENGER?

# www.messenger-education.org



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# A VISION OF DISCOVERY

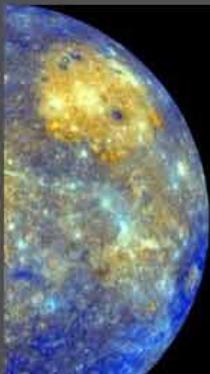
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Teachers Home Page  
 MESSENGER Education Modules  
 Mosaic Postcards from Mercury  
 Animations and Movies  
 MESSENGER Fellowship Program  
 Podcasts

view text only




# www.messenger-education.org

# Mosaic Postcards from Mercury

Exploring Mercury's surface environment ... one feature at a time...



## Mosaic Postcards

PRINT CARDS & GRIDS

Click to Get

## Surface Interactive

ONLINE EXPLORATION

Click to Begin



SELECT A CHOICE FROM ABOVE TO BEGIN

### The Mosaic Postcards Online

is designed to help you put your mosaic together and download any files you might need and more...

### The Surface Interactive

is designed to let you zoom up to many of the key features on Mercury's surface to learn more...

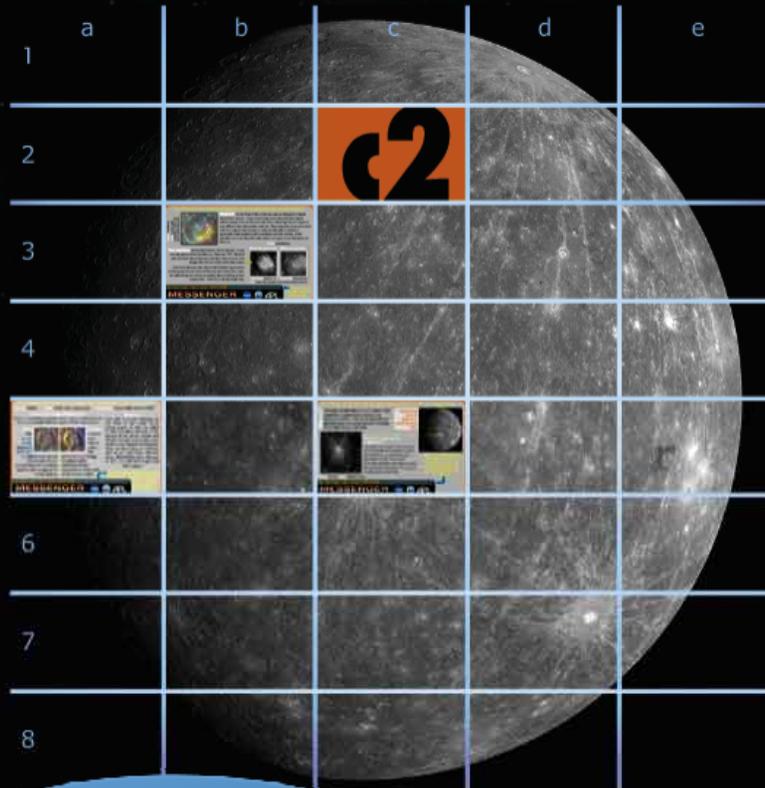
MESSINGER   APL

[www.messenger-education.org/mosaic](http://www.messenger-education.org/mosaic)

# Mosaic Postcards from Mercury ONLINE

Exploring Mercury's surface environment... one feature at a time...

HOME ▶



## Mosaic Postcards

... have been created for a few features on Mercury's surface. Click on one of the "cards" to learn more about the features. Click any grid space to zoom and print your own mosaic postcards.

To create your own mosaic of mercury, select 'print blank grids' & 'print all cards' below.

### BONUS LINK

Learn more about the mosaic process used by the MESSENGER team.  
[click here...](#)



print blank grids  
with instructions



print all cards  
with instructions

CREATE YOUR OWN  
MOSAIC OF MERCURY

[+] fullscreen



1. Print the blank grid instructions!
2. Choose the option that works best for you  
(mouse over each to learn more)
3. Create your blank grid!

Mosaic Postcards from Mercury ONLINE  
Exploring Mercury's surface environment... one feature at a time...

HOME

return to grid

### Print Blank Grids

If you would like to make a mosaic using the mosaic postcards, you will need a blank grid on which to affix your cards.

Here are 3 blank grids with a planet limb (i.e. the outline of a planet) and columns and row labels corresponding to the mosaic post card labels.

### Make a Mosaic

**Printable Instructions:** Here is a printable page showing instructions for all three blank grid options.

blank\_grid\_instructions.pdf

blank\_grid.pdf

blank\_grid\_printable\_pages.pdf

blank\_grid\_labeled\_onepageprint.jpg

Full Screen

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HOME ▶



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print blank grids  
with instructions



print all cards  
with instructions

CREATE YOUR OWN  
MOSAIC OF MERCURY

# Mosaic Postcards from Mercury ONLINE

Exploring Mercury's surface environment... one feature at a time...

HOME

return to grid



all\_card\_frons\_withlabels.pdf



all\_cards\_frons\_nolabels.pdf



6\_mpcs\_backs.pdf



blank\_card\_template.pdf

fronts

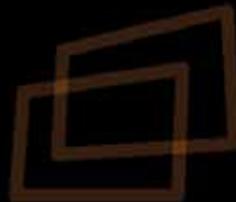
backs

## Print the Cards

You can print each grid image here. You can choose images with coordinate labels in the lower left corner of each grid space or 'no labels'.

For 6 of the grid spaces an informational card 'back' was created to teach more about the features found on the 'front'.

## Make a Mosaic



# select a file

Mouse over files to see unique instructions

1. Choose the option that works best for you  
(mouse over each to learn more)
2. EASY one-click printing
3. Print only the cards you want

# Make a mosaic of Mercury



**MESSENGER**  
 NASA APL

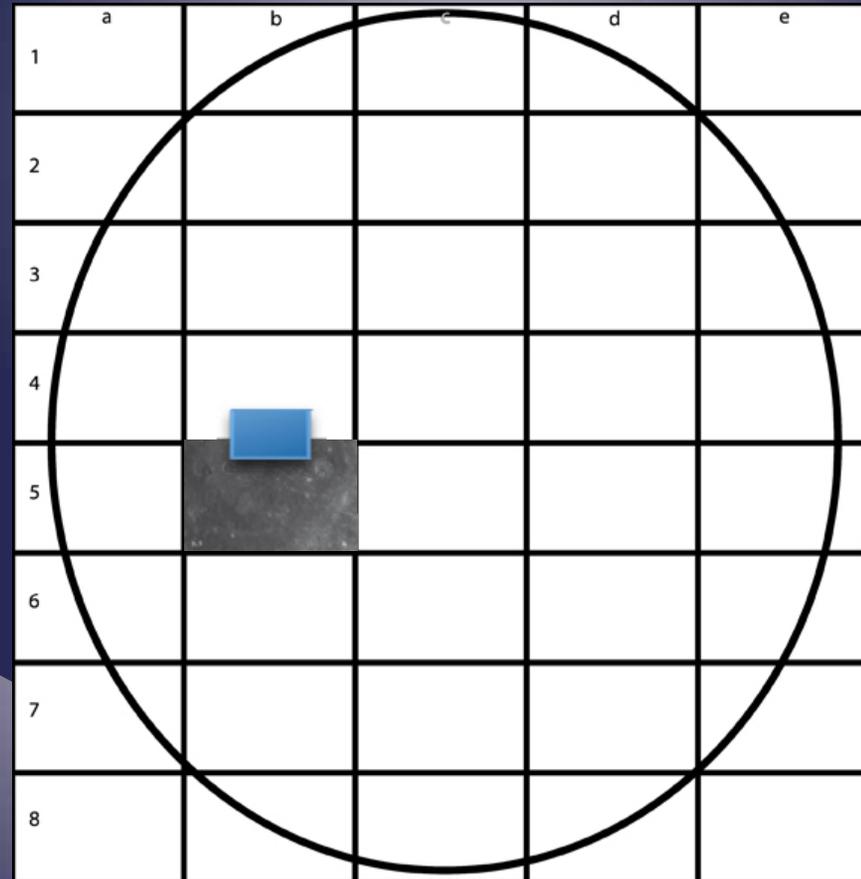
What do the craters tell us? Generally, outward-facing images like this tell us about the distribution of rock types.

**Bluff**-The impact created a peak in the center of this crater. The peak is composed of material that came from as deep as 10 km below the surface, so crater peaks like this help us learn about what types of rocks are buried in this region of Mercury.

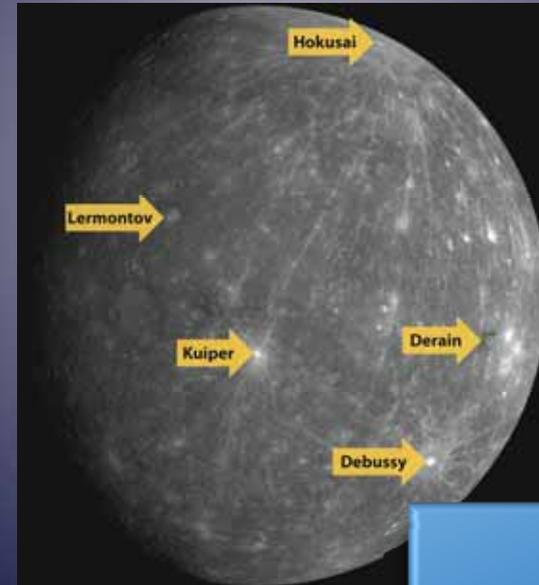
**OHMASE** The impact formed the rim around this crater by excavating (digging up and moving) material in a process that exposes rock that would otherwise be buried by the brown rock surrounding the crater.

**Rocked** These smooth plains are likely hardened volcanic lava that filled an old crater.

APL



# Assemble a puzzle of Mercury



Hints...

# Create your own MPC



## Resources:

- \* MPC Surface Interactive
- \* Gallery

# Our Plan...

1.



2.



3.

