

Mercury Geology

Observing Features on Mercury

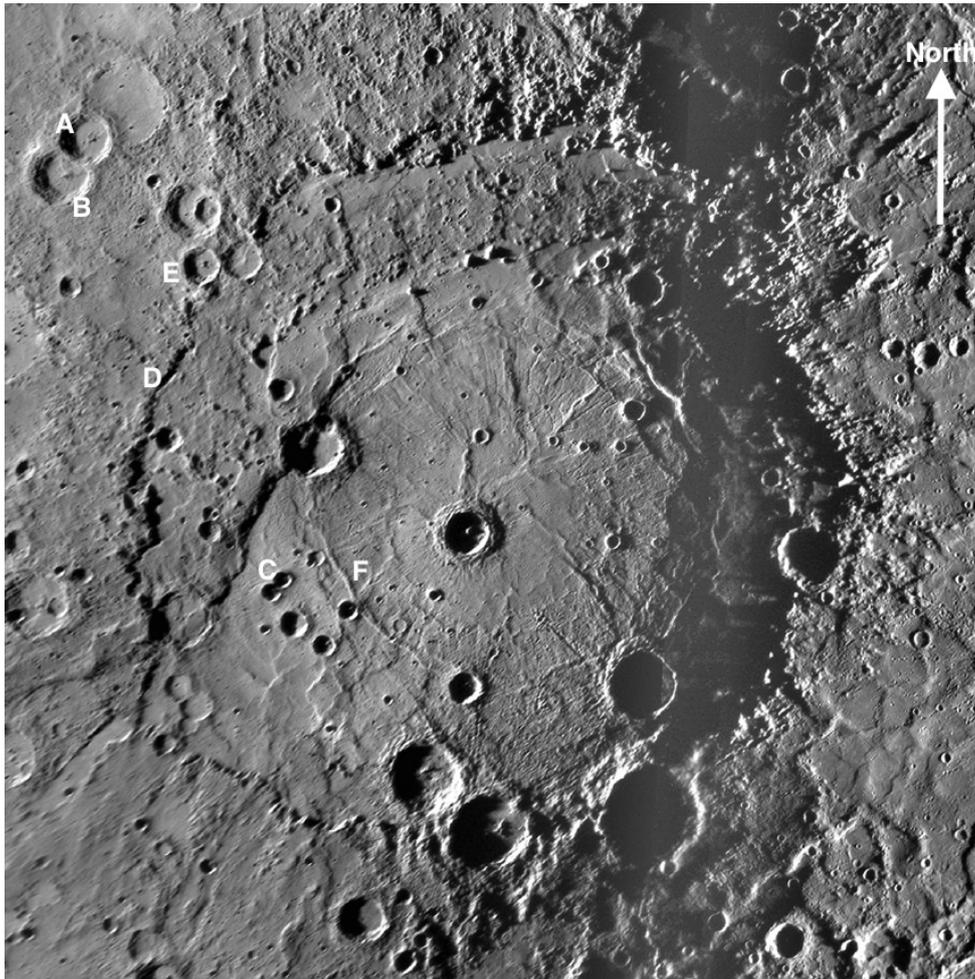
Classroom Activity

Material List:

- Pen/Pencil

Outline:

This is a Messenger image of Rembrandt Crater on Mercury. The image is about 1000km across. The questions concern the geological features visible in the image. Bear in mind that three principal features of Mercurian geology are craters, faults and areas covered by volcanic lava.



Online Observatory: onlineobservatory.eu

The online observatory collaboration consists of the following partners:

Baldone Observatory, Brorfelde Observatory, Cardiff University, Harestua Solar Observatory, Helsinki Observatory



Procedure:

1

Take a look at the image of a crater on Mercury and then work your way through the following questions.

1. Identify an area that appears to consist of young rocks. Draw a ring around it on the picture and label it Y.
2. Identify an area that appears to consist of older rocks. Draw a ring around it on the picture and label it O.
3. Examine the shadows inside the craters on the left side of the image. Which way is the sun shining in this image? *Select from: east to west, west to east, north to south, south to north.*
4. Rembrandt is the large circular feature in this frame. Its right side is in shade. Also, the craters on the right side of the picture have shadows on the right. Why do you think this is, bearing in mind how the crater shadows looked in question 3? (Clue, it isn't something that happened on Mercury itself!)
5. Examine the two craters A and B. Which is the older of the two?
6. How did you conclude which crater was oldest?
7. Feature D is one of the many arcuate reverse faults seen on Mercury, running along the west side of Rembrandt. Examine crater E. Is the crater older or younger than the fault? Select from: older, younger.



8. Look at the craters near to C. These are younger craters. Give two reasons for reaching this conclusion.

9. Looking at all the craters and their likely relative ages, what do you notice about them as they get younger?

- 9b. For a bonus 2 marks, can you explain why this may be?

10. Feature F is the edge of something. What do you think it is and what direction was it moving?

Assessment:

Switch papers and use the model answers to mark each other's work.

Total =

15