

Name: \_\_\_\_\_  
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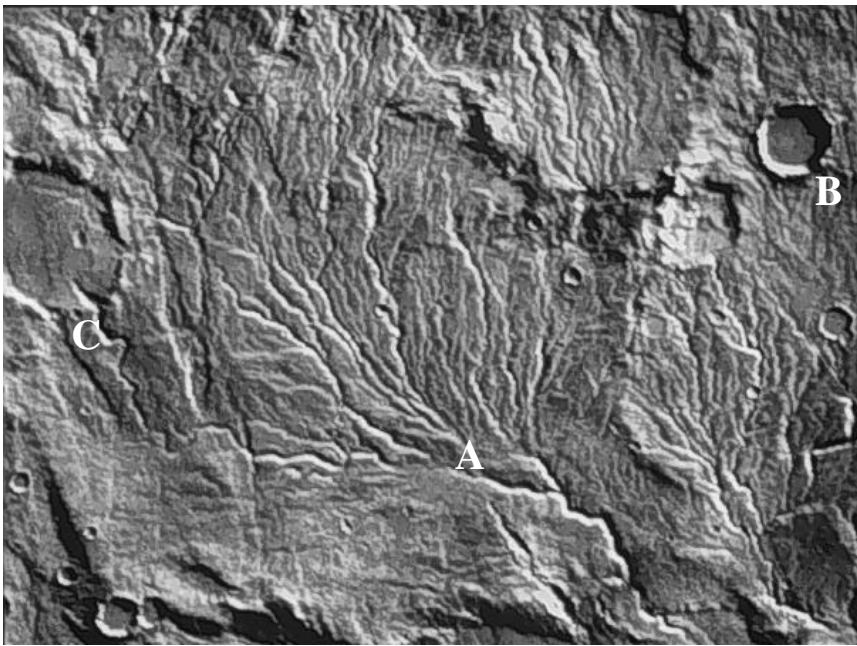
Section : \_\_\_\_\_  
Date: \_\_\_\_\_

## PHYSICS 102 IMAGE IDENTIFICATION

**Purpose:** To practice interpreting images from other planets.

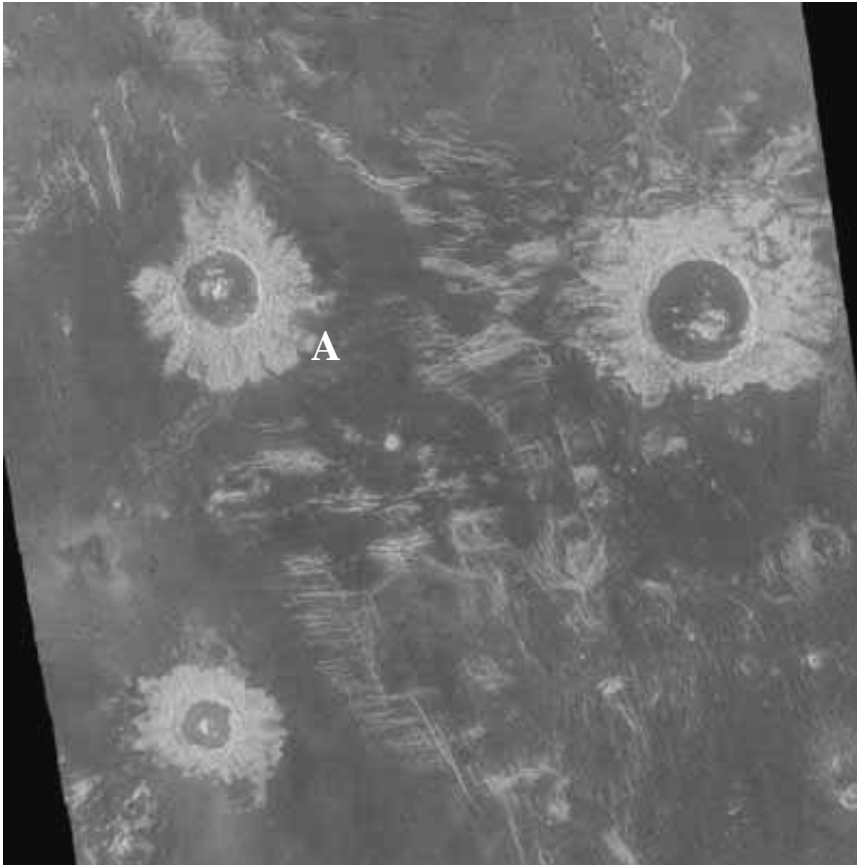
For each of the following images answer these questions:

- For each letter marked on the image, what is the surface feature indicated? (1/2 point each)
- How can you tell what features these are? (1 point each)
- What geologic surface processes formed them? (1/2 point each)
- What planet do you think this might be and why? (1 point per image)
- In what order (oldest to youngest) were the features formed (if more than one) and why? (1 point per image)



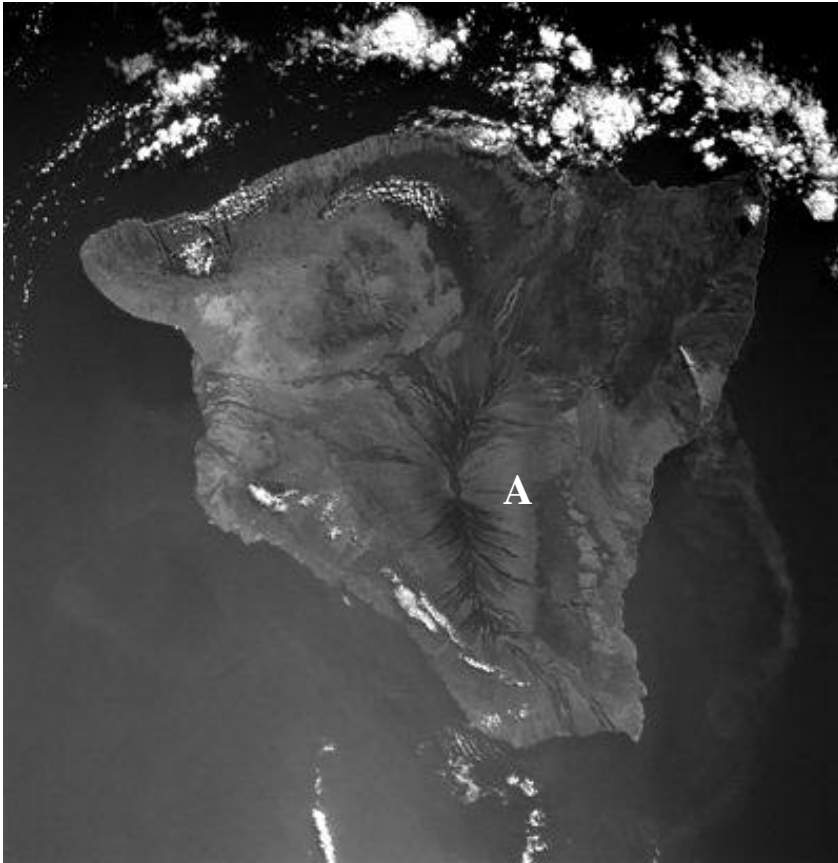
**Figure 1**

- A: (a) River valley (b) sinuous, branching (c) erosion  
B: (a) impact crater (b) perfectly circular with a raised rim and no obvious lava flow features (c) impact cratering  
C: (a) impact crater (b) oval shape, but no evidence of overlapping calderas, raised rim, plus existence of other impact craters nearby (c) impact cratering  
(d): Mars; erosion only takes place on Earth and Mars and there aren't this many impact craters on Earth  
(e): C, A, B; C is older than B because the water from B cuts the rim of C, C is older than B because it is more eroded. The relative ages of A and B are ambiguous.



**Figure 2**

A: (a) impact crater (b) perfectly circular with a central peak and ejecta blanket visible (c) impact cratering  
(d): Venus because the bright eject and dark floor of the impact crater suggest a radar image



**Figure 3**

A: (a) volcano (b) central oval with dark, radiating flows. Flows are sinuous, indicating either water or lava, but, since they emanate from a single region and don't branch, they are most likely lava flows. (c) volcanism  
(d): Earth. The featureless area is likely water and the white, puffy areas are probably clouds. Water and clouds suggest Earth.



**Figure 4**

- A: (a) impact crater (b) very circular with a raised rim and no evidence of lava flows or overlapping calderas (c) impact cratering
- B: (a) impact crater (b) perfectly circular with a raised rim and no evidence of lava flows or overlapping calderas (c) impact cratering
- C: (a) ridge (b) higher on one side than the other, relatively straight, no branching (c) tectonics
- (d) Mercury. Only Mercury has this many impact craters and these distinctive shrinking ridges.
- (e) A, C, B. A is older than C because the ridge cuts through A. C is older than B because impact crater B is not affected by the ridge at all.