



DAWN ACTIVITY LEADER GUIDE

VISUALIZING VESTA

Goal:

Compare features of two different areas of Vesta's surface.

Estimated time:
15-20 minutes

Who to do it with:
Ages: 10-Adult
Numbers: 1 or more!

What you need:

- Sticky Notes
- Image of Vesta from Hubble Space Telescope:
http://dawn.jpl.nasa.gov/multimedia/images/vesta_hub_lg.tif

How to do it:

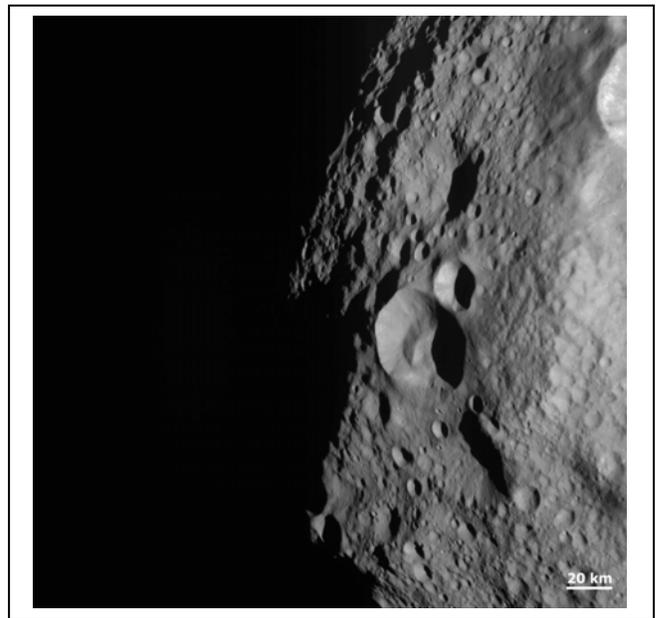
1. Ask learners what they know about asteroids. Elicit responses without comment. You may want to list these initial ideas on a piece of paper. Show an image of Vesta from Hubble Space Telescope (see link above) and discuss what the surface might be like.
2. Provide learners with a Venn diagram or ask them to draw one on a piece of paper (see example on page two of this leader guide).
3. Have two images of Vesta available (see examples on page two).
4. Have learners look closely at the two images. Then, write descriptions that are unique to the **August 20** image on the **left**. Write descriptions that are unique to the **August 11** image on the **right**. For those features that are common to both images, write the descriptions in the middle, where the two circles intersect. Observations can be qualitative (using word descriptions) or quantitative (using numbers and measurements).
5. Ask questions similar to the following:
 - a. Based on your observations of these images, how are the surfaces similar? (e.g., have areas that are dark and areas that are bright, have circular features with different depths) How are they different? (e.g., August 11 image has an overall rougher surface)
 - b. Based on your comparisons and contrasts, why do you think the two surface images are different? (e.g., these two areas of the same surface have had different impacts with smaller objects)

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- c. What factors may have caused these differences? (e.g., . In more recent impacts the debris that was kicked up settled back on the surface causing smoother areas.).

Why do it:

Dawn began orbiting Vesta in mid-July of 2011. The spacecraft imaged one of the largest mountains in the Solar System in the asteroid's southern hemisphere. Science findings also include an in-depth analysis of a set of troughs near Vesta's equator, and a close look at its intriguing craters. Vesta's surface appears to be much rougher than most asteroids in the main asteroid belt. This exercise allows students to make observations of a previously unexplored world.

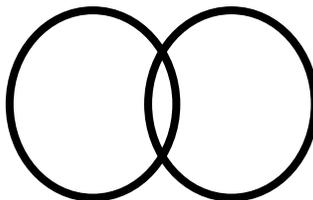


NASA's Dawn spacecraft obtained this image with its framing camera on **Aug. 20, 2011**. This image was taken through the camera's clear filter. The image has a resolution of about 260 meters per pixel.

NASA's Dawn spacecraft obtained this image with its framing camera on **Aug. 11, 2011**. This image was taken through the camera's clear filter. The image has a resolution of about 260 meters per pixel.

Sample Venn Diagram

August 20



August 11