

Name: _____

Interpreting Lunar Orbiter Images

In this exercise you will be examining the features in a couple of images returned by the five Lunar Orbiter spacecraft during the years 1966 and 1967 in an effort to find suitable landing sites for the Apollo missions. The horizontal bands in the images are an artifact due to the way the images were produced and should be ignored. Each of the images has been divided into a grid with the letters A through Z along the vertical axis and the numbers 1 through 10 along the horizontal axis. You will be asked to locate certain features in the images by giving the coordinates of the cell or cells in which the feature is located. For example, let's say that a particular feature is located in a cell that lies at the intersection of the row labeled "B" and the column labeled "6" you would represent its coordinates as "B-6". When you have finished this activity you should be able to do the following:

- Interpret the Lunar Orbiter images by identifying the types of features that are present.
- Identify evidence for the kinds of processes (cratering, volcanic activity, crustal movements) that have taken place in the images.
- Identify the relative ages of the features in the images.

Figure 1 represents an area of the Moon that is centered at 13.36°N latitude and 56.27°W longitude in Oceanus Procellarum (near the west limb of the Moon).

Figure 2 represents an area of the Moon that is centered just below the crater Taruntius at a location of about 3°N latitude and 48°W longitude

Questions 1 through 5 refer to Figure 1.

Question 1 In Figure 1 identify the direction is the sunlight coming from (left, right, top, bottom)? Explain your reasoning.

Question 2 Identify and list the coordinates of several raised features.

Question 3 Identify and list the coordinates of several depressed features.

Question 4 Can you think of a possible cause for the raised features?

Question 5 Identify and list the coordinates of at least two linear features that appear to be of different origins? Can you suggest the origins of these linear features?

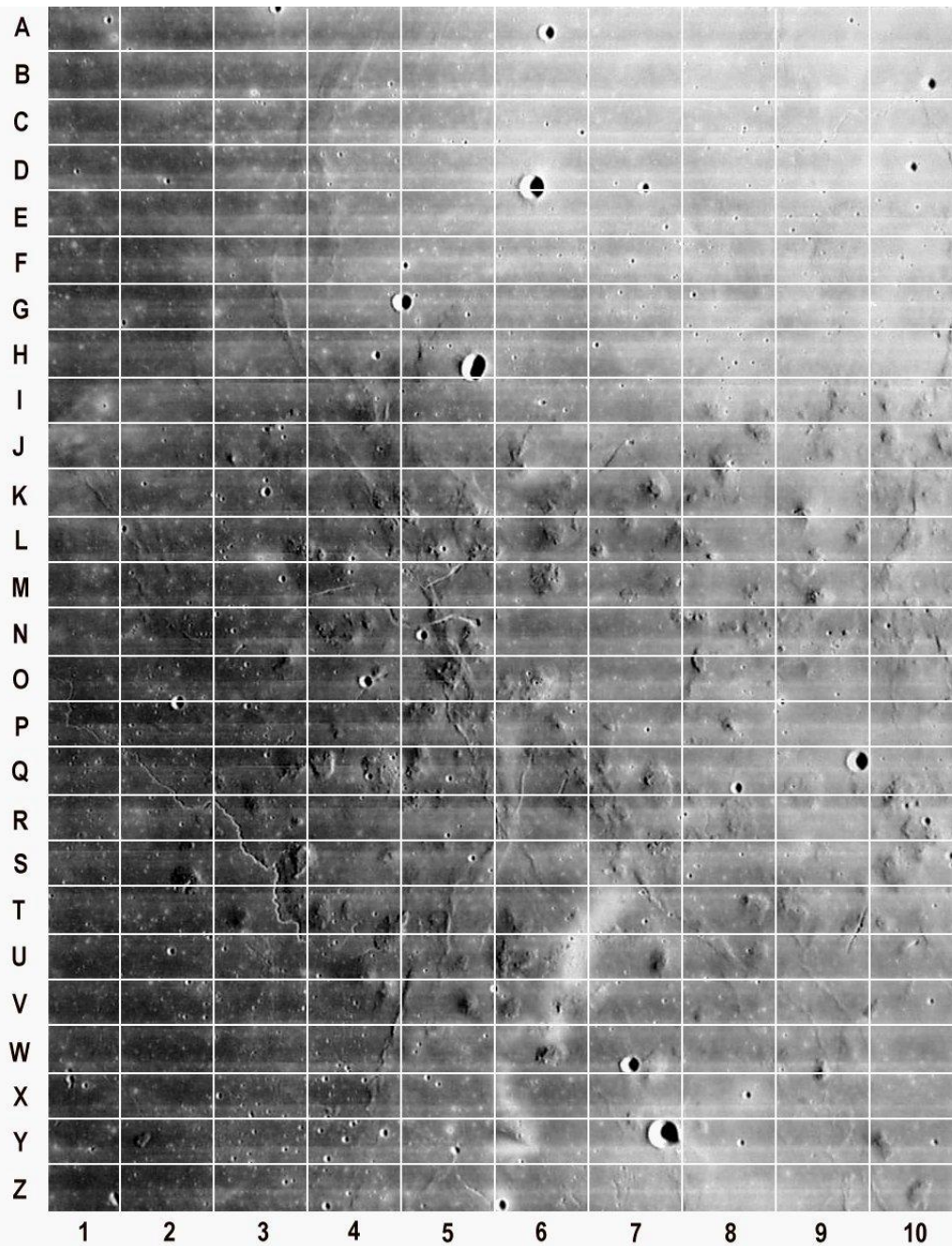


Figure 1

Questions 6 through 9 refer to Figure 2.

Question 6 What evidence can you identify in Figure 2 that indicates that lava flowed over this region?

Question 7 Can you identify two overlapping (superimposed) craters? How would you interpret this superposition?

Question 8 Which feature do you think is the oldest? Justify your answer.

Question 9 Which feature do you think is the youngest? Justify your answer.

