**Name**

**period**

Lunar Surface Features

As we continue our study of the features of the Moon, we now turn to the resources of the Internet. Thousands of images of the Moon are available. Using what you know about the physical nature of the Moon, you should be able to answer the questions below. It is not so much that there is going to be a right or wrong answer, but you should be able to defend your interpretation of the images.

There are two prime sources of images the first, of course is <http://spaceflight.nasa.gov/history/apollo/index.html>

which is NASA's Apollo history site , and the other source is <http://www.lpi.usra.edu/research/lunar_orbiter/>

which is the index page for the Lunar and Planetary Institute.

To start your investigation, go to the LPI site.

First, find a good image of the crater Plato. Lunar orbiter image IV-128-H1is a good choice. Plato is a rather large lunar crater with an obviously flat, smooth floor. The fact that one finds very few smaller craters within the walls of Plato should tell you something about the relative age of Plato.

#  Though Plato is a large crater, its floor is relatively smooth. How is it that the floor of this crater came to have its appearance?

Find an image of the crater called **Prinz**. Notice the feature called the Harbinger Mountains. north and east of **Prinz**. These mountains form part of the outer edge of Mare Imbrium, and are, of course, higher than the mare.

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# ② Prinz is only partially flooded. Why is only the southern rim of Prinz flooded?

Now find an image of **Bullialdus**, a crater with a very interesting effect called *terracing* on its inner walls.

#  Why does terracing occur on the inner walls of craters and how quickly do you think the terraces might have formed?

In Oceanus Procellarum one will find a crater, which was almost completely obliterated. This crater is named **Lubiniezky**. At the time of full Moon, we see this feature as a bright ring in the dark mare.

#  Why is it that only the rims of large diameter craters such as Lubiniezky are still seen after the mare has flooded?

Look for a good image of the crater **Descartes**, which is in the middle of a typical highland region on the Moon. The Apollo sixteen astronauts Mattingly and Duke landed their lunar module in this area to survey one of the oldest regions on the lunar surface. Why are the floors of some of the craters smooth and flat? Does this lead you to any conclusions concerning the thickness of the solid portion of the lunar crust in this region at the time of the formation of this crater?

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#  What are at least three ways that the highland regions different from the mare regions?

For our last Lunar Orbiter image, look for a good, wide view of the farside of the Moon. Image number I-037-M is a good one. You can look for a large crater called Korolev, which is on the farside. This crater and its surroundings are never visible from the surface of Earth. It clearly shows that the farside is quite different from the nearside. There are some geological explanations for this dichotomy which are discussed in your text.

 **What are the ways in which the Nearside of the Moon is different from the farside of the** Moon? Give at least two examples by noting those features and characteristics you used to make the determination.

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