

CRATERS ON THE MOON ACTIVITY INSTRUCTIONS

OBJECTIVES

- Demonstrate what causes craters.
- Use a model of the Moon's surface to explain the best time to view Moon craters.

ACTIVITY DURATION

10 minutes

MATERIALS



These materials are included in the Star Party host kit.

- 9-inch pie tin (or similar “Moon pan”)
- Flour
- Bag of cocoa mix
- Bag of “asteroids” (rocks)
- Flashlight

SETTING

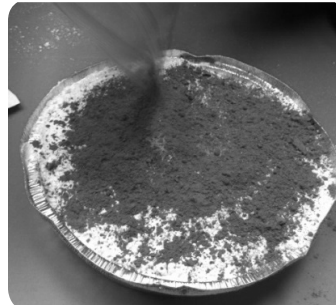
Outside at night, or inside a darkened room (if doing indoors, lay down newspaper or tarp first)

PREPARATION

1. Fill your “Moon pan” at least 1 inch deep with flour.
2. Smooth the surface.



3. Sprinkle with a dusting of cocoa mix.



PROCEDURE

1. Gather your audience and ask: “When is the best time to see the Moon through a telescope?” (Audience may say full moon.)
2. “Let’s find out! Do you want to see craters?” (Yes!)
3. Explain that your “Moon pan” will represent a small area of the Moon’s surface. You might encourage discussion about what the Moon’s surface is like.
4. Invite someone to make a mountain range or two.



Procedures continue on reverse

PROCEDURE, CONTINUED

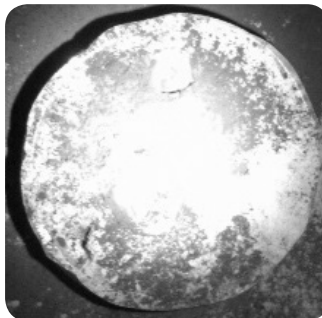
5. To make craters, hand out rocks to volunteers. Tell everyone that the rocks will represent asteroids that bombarded the Moon early on in the Moon's history (and sometimes still do).

6. Have volunteers come up one at a time to drop rocks into the pan to make craters. To make the point that not all asteroids hit the Moon, have volunteers stand with their backs to the Moon pan and drop the rocks over their shoulders. Only some of the rocks will hit the Moon pan. **[TIP: Don't let anyone throw the rocks up in the air or at any people.]**



7. What does everyone observe? You'll see craters (round bowl-shaped holes). You might also see crater features such as raised rims, ejecta (debris thrown out of the crater), or long thin "rays" extending like spokes of a wheel from the crater. Although in this model you may see the rock that made the crater sitting on the crater floor, on the real Moon the rocks hit so hard they are blown to bits.

8. Demonstrate full moon by holding the Sun (flashlight) where it will be when the Moon is full—that is, hold the flashlight so that it shines straight over the lunar surface.



9. Ask: "How much detail can you see?" (Not much. It looks pretty flat.)

10. "Now let's make a quarter moon." Hold the Sun so that it shines from the side. "Now what do you see?" (Much more detail!)



11. Ask: "Is full moon the best time to see detail?" (No, it's better when we can see the shadows.)

12. "Now let's look at the real Moon through binoculars and telescopes!"

MORE RESOURCES

Watch a 2-minute video of a similar activity:

"Astronomy Activity: Spotting Craters"

<http://www.youtube.com/watch?v=V6yMxa9L9x0>

(You can also find this video at <http://www.youtube.com/user/NightSkyNetwork>)

The first part of the video uses a pre-made model of the Moon's surface. At 1 minute, 10 seconds, visitors make craters using materials like those in the Star Party Kit.

CREDITS

We are grateful to the NASA Night Sky Network (<http://nightsky.jpl.nasa.gov/>) and the Astronomical Society of the Pacific for granting permission to modify materials they created.



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