Mars for Earthlings

LESSON 10: Meteorite and Impact Craters

In Class Activity 1

Is it a Meteorite?

Purpose: Discover the criteria used to identify meteorites.

Is it a Meteorite?

Observe the rocks provided by your instructor. Mark Yes or No for whether or not you think the rock is a meteorite. Also note if the rock is: igneous, metamorphic, or sedimentary.

	Yes	No	Lithology
Rock A			
Rock B			
Rock C			
Rock D			

What criterion/criteria are you using to identify whether or not a rock is a meteorite? Explain below:

How big will the crater be?

Observe Meteor Crater in Arizona (pictured below) measuring: 0.737 mi in diameter, and 550 ft deep

Figure 1: Photograph by David Roddy, United States Geological Survey.

1. Did scientists find any of the meteorite (you may need to do some outside research)?

2. What factors influence the size of the crater? List at least 5 below.

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Calculate your own crater size!

1. Using the below link, calculate the size of 3 craters with varying parameters. Record the parameters and results below. http://www.lpl.arizona.edu/tekton/crater_c.html

2. What parameter do you find to be the most influential in the size of a crater?

Google Mars & Craters

3. Using Google Earth, find the Mawrth Valles region (22.43_N 343.03_E) in the Mars navigation. Using the ruler tool, determine the average diameter of craters in the region. Write the average below.

4. What might this say about the ages of these craters compared to other regions? Is it more like the area to the South or to the North?

Testing your skills

Which image below is a meteorite, Figure 2 or Figure 3? List your criteria.

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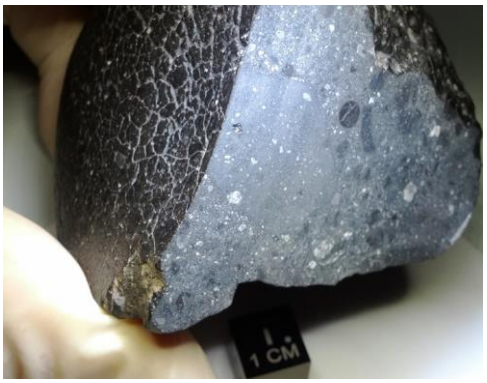

Figure 2 (Source: http://www.nasa.gov/mission_pages/mars/news/mars20130103.html)

Figure 3 (Source: Levi Huish, University of Utah)