Mars for Earthlings

## LESSON 6: Igneous Rocks & Volcanics

***In-Class Activity 1***

*Lava Flows*

**Purpose**: Recognize a pahoehoe vs. a'a lava flow through video, explain why the flows differ, and hypothesize which flow might be more common on Mars.

**Resources**:
Mars Lava Coils: Discovery news article: http://www.space.com/15446-mars-lava-volcanoes.html

**Pahoehoe and A'a on Earth:**
Watch the following YouTube videos:

Video 1: http://www.youtube.com/watch?v=qTTLYx4Xo2k&feature=related
Video 2: http://www.youtube.com/watch?v=bWswq8PmRII

- What are the differences between the two lava flows?

**What is possible on Mars?**

1. Consider both the pahoehoe and a'a lava flows. Which lava flow do you think is more common to Mars? Substantiate your answers.

2. Figure 1 is a volcanic feature on Mars. What type of lava flow formed this feature? Explain your reasoning?

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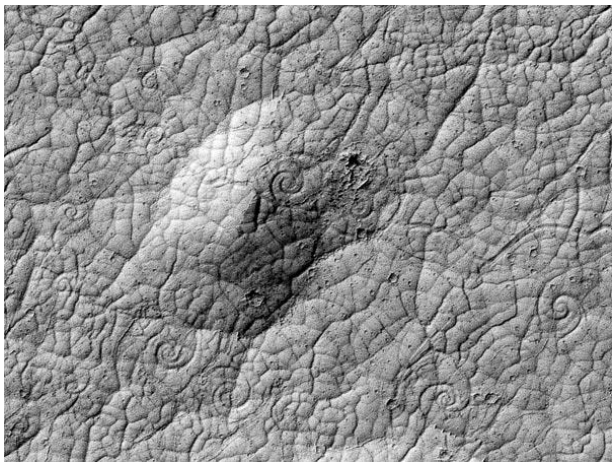

**Figure 1:** Spirals in Athabasca Valles, Credit: NASA/JPL/University of Arizona, Spirals are 16-98 ft wide. Image source: http://www.space.com/15446-mars-lava-volcanoes.html

## Understanding volcanic rocks

Of the rocks pictured below in Figure 2:

1. Which rocks are more likely to have formed by igneous processes on Earth?

2. Which rocks are more likely to have formed by igneous processes on Mars? Explain your reasoning.

3. Is it likely that any of the rocks pictured below could be found in Athabasca Valles (Figure 1)? Why or why not?

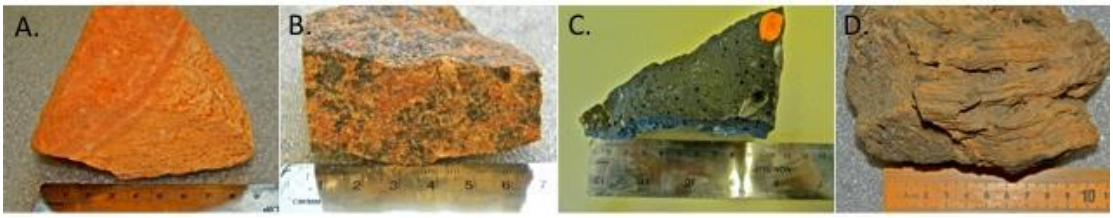


**Figure 2**

Image Credit: Levi Huish/University of Utah)