Mars for Earthlings

LESSON 6: Igneous Rocks & Volcanics

Homework 1

Igneous Rocks & Volcanics_MFE

Google Olympus Mons

Purpose: Explore Olympus Mons using the Google Mars platform through HiRISE imagery and Colorized Terrain maps.

Preparation: Download Google Earth 6
http://www.google.com/earth/download/ge/agree.html

Directions/Questions:

Navigate to Olympus Mons

1. Open Google Mars (click on the planet with a ring)
2. Turn on the Global Maps Layer *Colorized Terrain*
3. Navigate to Olympus Mons- the tallest point on Mars
    a. What is the elevation of Olympus Mons?
4. Activate the *HIRISE Image layer* under the Spacecraft Image Layer Folder

Analyze Olympus Mons Images

5. Zoom in to the top of the Olympus Mons Caldera
    a. Find image PSP_004821_1985 from HIRISE [near the Hiker icon]
    b. Sketch what you see in the image below.

    c. What might you be seeing? Consider the context image of the Colorized Terrain map and list your observations.

6. Find image PSP_004531_1990: NW flank of Olympus Mons (note the compass in the upper right ~ 15-18km elevation, 18.56N 224.28E)
    a. Sketch what you see in the image below.

b. Can you make some interpretations about what you are observing?

Comparing Olympus Mons and Earth Analogs

7. Of the volcanic styles (mafic vs. felsic), which volcanic type fits Olympus Mons the best in your opinion? Explain your choice and why Olympus Mons cannot be classified as the other choices.

8. If you wanted to be sure about your volcano classification, what additional data would you need to confirm your choice in #7?

9. What volcano on Earth serves as the best comparison to Olympus Mons (you may need to do some outside research to answer this question adequately)?