

Mars for Earthlings

LESSON 14: Water World***In-Class Activity 2***

Water World_MFE

Where is the Carbonate on Mars?

Purpose: Become acquainted with the carbon cycle on Earth and how carbonate rocks are formed. Develop a line of evidence or explanation for the reasons why carbonate rocks are not abundant on Mars.

What is a carbonate rock?

Observe the rocks provided by your instructor

1. What are the similarities between these rocks?

2. Where might these rocks have been deposited/formed? What is your evidence?

Forming carbonate rocks on Earth

1. Hypothesize how carbonate rocks form in an aqueous environment.

2. Watch the following NASA video entitled “Keeping up with Carbon”:
<http://www.youtube.com/watch?v=FgEZpX3n5mo>
 - a. How does your hypothesis compare to what NASA shares?

 - b. Could the carbon cycle work on Mars? Why or why not?



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Carbonate rocks on Mars

1. Open up JMARS and view maps of carbonate rocks.
2. Where are the carbonate minerals most common?
3. What would you need to change about Mars today for Mars to be conducive to carbonate development?

Nili Fossae, Mars

1. Where might you find carbonates in Figure 1? Draw arrows to the region.
2. What is the basis for your decision?

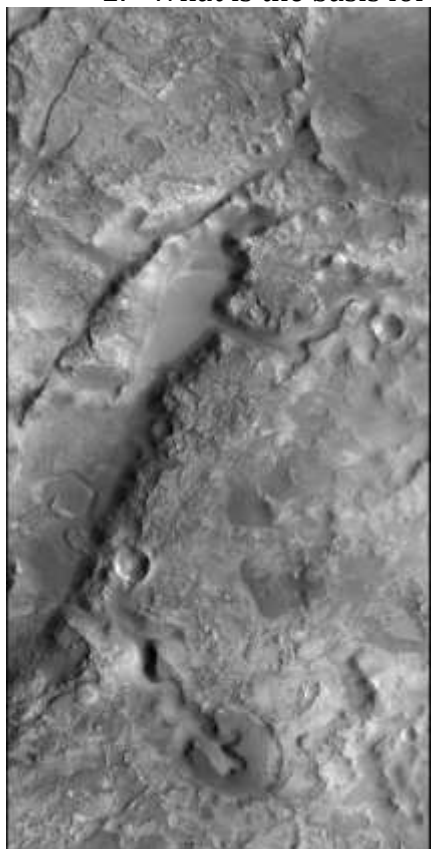


Figure 1: Nili Fossae Region Imaged by CTX
Image Credit: ASU/Malin Space Science Systems