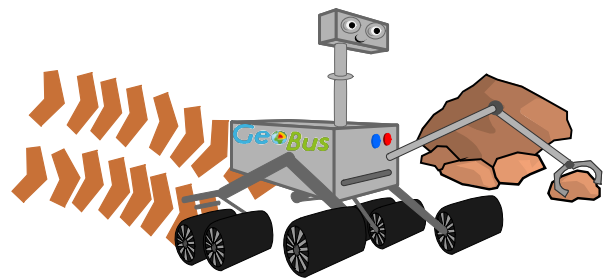


Plate Tectonics On Mars



Consider the images below showing two of the main geological features on the surface of Mars. By comparing each to similar features found on Earth, explain how it is thought to have formed and therefore what evidence it might contain about Plate Tectonics on Mars.

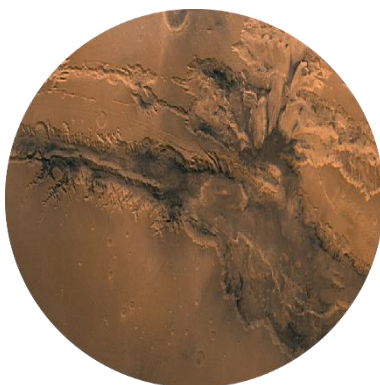
Olympus Mons:

Feature - large shield volcano

Evidence of magma rising to surface and erupting, possibly as a result of plate movements, but large size suggests any mantle upwelling constrained to one place (i.e. crust is not moving above hotspot like on Earth - Hawaii chain of volcanic islands) therefore Plate Tectonics less active than on Earth and no longer occurring?



Valles Marineris:



Feature - potential rift valley?

Evidence of crust being torn apart, large rift system thought to be 150km across. Evidence of active Plate Tectonics (in the past) but indicating a crust split in to only two large plates, rather than multiple smaller plates found on Earth.

Also evidence within rift of very steep sided canyon walls, typically found on Earth where faults have occurred. Faults = crust movement.

