

EARTH-438: Advanced Topics in Geophysics

Water in the Solar System

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Photo: Mariner 10/Mark Robison

This course will cover the origin and distribution of water in the solar system, especially on Earth, the moon, and Mars.

Topics will include Jacobsen's current research on the influence of water on the physical properties of Earth and planetary materials, which suggests that a layer deep within the planet, 400-600 km below the surface, might contain the majority of Earth's water budget. What implications would a deep-hydrous layer have on the dynamics of our planet? The search for life elsewhere in the solar system and beyond begins with the search for water. How might water be detected in remote environments such as the deep interior of planets or on the surfaces of distant moons and planets? These and other questions surrounding water in the solar system will be addressed through study of the recent literature on space exploration and experimental research.