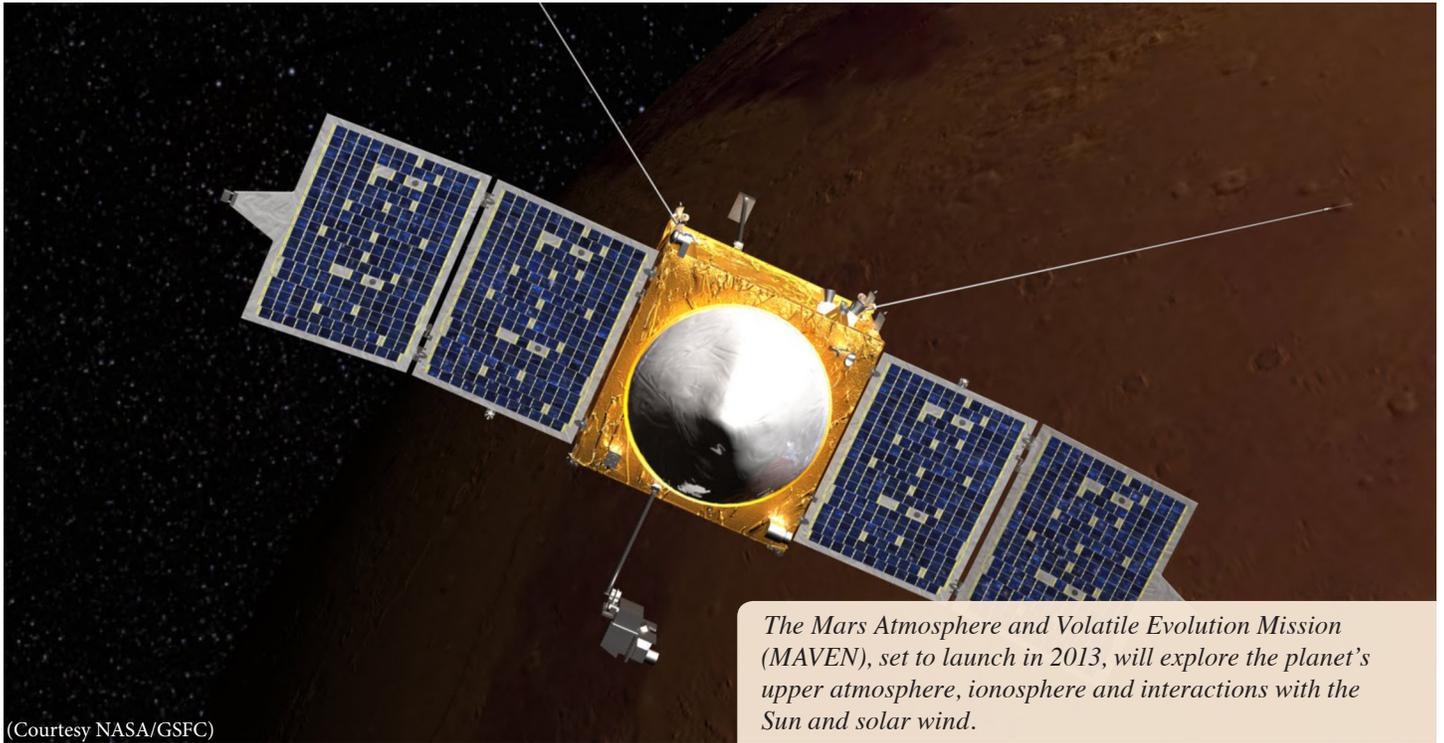


# MAVEN

Mars Atmosphere and Volatile Evolution Mission



(Courtesy NASA/GSFC)

*The Mars Atmosphere and Volatile Evolution Mission (MAVEN), set to launch in 2013, will explore the planet's upper atmosphere, ionosphere and interactions with the Sun and solar wind.*

## Frequently Asked Questions

### What is the purpose of MAVEN?

MAVEN focuses primarily on the state of the upper atmosphere, the processes that control it, and current atmospheric loss. Scientists think this loss could be key to explaining changes in Martian climate over the last four billion years.

### Why is climate change important on Mars?

The atmosphere on Mars is about 1% as thick as Earth's atmosphere and is mostly carbon dioxide; the average surface temperature is 50°C below the freezing point of water. However, this may represent a change from the past: images show features formed by liquid water; chemical evidence suggests longstanding liquid water at the surface. If liquid water was present early in Mars' history, perhaps life also existed. Scientists seek to understand why the early, warm, wet Martian climate became today's cold and dry climate.

### Where did Mars' early thick atmosphere go?

The abundant water and carbon dioxide that were present on early Mars have been lost, either to space or to the crust. MAVEN will explore the relative importance of these processes.

### Will MAVEN look for life on Mars?

Determining whether Mars ever had life is an important goal for NASA. By exploring the history of Mars' water and atmosphere,

## Quick Facts

**Launch date:** Nov. 18, 2013 (start of three-week launch window)

**Launch location:** Cape Canaveral Air Force Station, Florida

**Launch vehicle:** Atlas V-401

**Mission target:** Mars

**Primary duration:** One Earth year after arrival at Mars

**Project description:** Led by Principal Investigator Bruce Jakosky of LASP, MAVEN is a NASA Mars Scout mission carrying eight instruments designed to orbit Mars and explore its upper atmosphere.

#### LASP provides:

- The Imaging Ultraviolet Spectrometer (IUVS) instrument
- The Langmuir Probe and Waves (LPW) instrument
- Science operations and data center
- Education and Public Outreach (EPO)

#### Other organizations involved:

- NASA Goddard
- University of California, Berkeley
- Lockheed Martin Corp.
- NASA Jet Propulsion Laboratory

MAVEN will determine the habitability of Mars by microbes. Sample return missions will be required in order to look for evidence of life on Mars.

To read more about the MAVEN mission, visit:

<http://lasp.colorado.edu/maven>.

*The Laboratory for Atmospheric and Space Physics (LASP) combines all aspects of space exploration through our expertise in science, engineering, mission operations, and data management. As an institute at the University of Colorado Boulder, LASP includes students throughout our activities. Learn more at <http://lasp.colorado.edu>.*