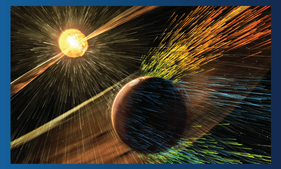
OCEANS LOST

Do planets lose their oceans over time?

Venus from Mariner 10

Billions of years ago, Venus may have been our solar system's first ocean world. Venus lacks a strong global magnetic field, which on Earth, helps to protect our atmosphere. A runaway greenhouse effect raised temperatures enough to boil off the water, which escaped into space due to the solar wind.

Mars with Water



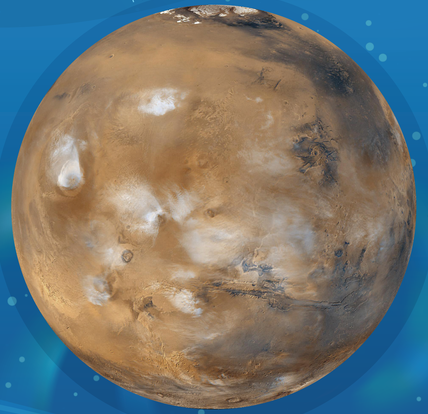
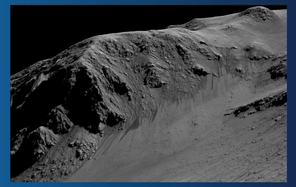
Mars was once much more Earth-like, with a thick atmosphere, abundant water, and global oceans (as in this artist's conception).

Billions of years ago, Mars lost its protective global magnetic field, leaving it vulnerable to the effects of our Sun: solar wind and space weather.

The MAVEN mission has measured Mars continuing to lose its atmosphere to the Sun at the rate of nearly 400 kilograms per hour.

Scientists estimate that Mars has lost approximately 87 percent of the water it had billions of years ago.

Mars



Most of the remaining water on Mars is frozen in the ice caps or trapped beneath the soil, but a small amount of muddy, brackish water can be seen moving down the side of Martian hills in the local summer.