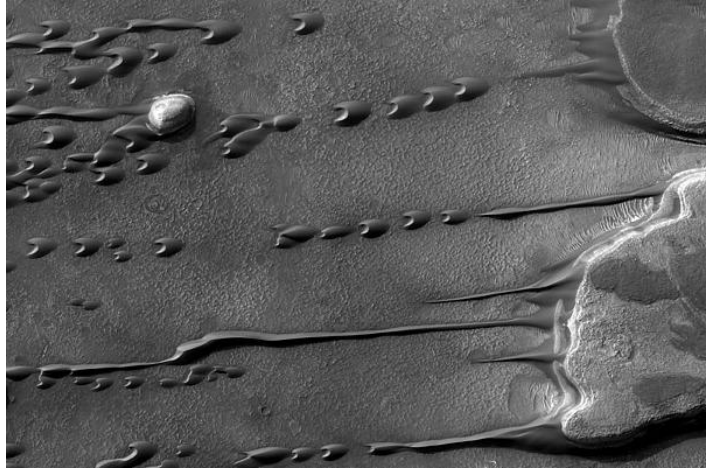


## Mars Atmosphere, Water and Weather

***Scientists also think that liquid water may lie underneath the sand dunes near the North Pole.***



### Heat Energy

The Earth tilts at 23 degrees. Mars has a tilt of 25 degrees. Therefore Mars has seasons similar to Earth's but they last twice as long because the Martian year (orbit around the sun) is about twice as long. Mar's rotation is very close to Earth's. A Martian day is only about ½ hour longer than Earth's.

However Mars is much further away from the sun than Earth, (141,000 miles vs. 93,000 miles). Less than half the amount of solar energy that reaches Earth reaches Mars. The thin atmosphere also has a big effect on the solar energy reaching the surface. Because the atmosphere is much thinner, more solar energy reaches the surface. However, the fact that the atmosphere is so thin also means it doesn't hold on to the solar energy as heat. The temperature on the surface of Mars averages about - 80 degrees below zero.

### Weather

Put all these factors together and you can understand the weather on Mars. There is no ocean, but because there are changes in the temperature of the ground, dusty winds can form. Other parts of Mars have ice clouds. The landers have observed clouds and snow falling near the ice caps. It is very cold. Temperatures have a range from 220 degrees below zero to 70 degrees below zero.

#### Questions

1. *How is the atmosphere of Mars different from Earth's*
2. *Where is water found on Mars?*
3. *How are Mars' icecaps the same as Earth's? How are they different?*
4. *Does Mars have seasons? How long is a Martian day?*
5. *How does Mars' distance from the sun affect the temperature on the surface?*