

Physical Properties of Mars - Educator's Guide (Ages 12-15)



At the end of these Night Sky activities students will understand:

- Mars is a small rocky planet
- Mars has a hostile surface with two main terrain types
- Mars and Earth have similar internal structures
- A planet's rotation rate can be measured by observing the movement of its surface features.

Astronomy background information

Mars is the fourth planet from the Sun. Mars is about half as wide as Earth and is covered with pale desert areas with darker mountainous regions. Like Earth, Mars has a day and night cycle. This lasts just over 24 hours and was first measured in the 17th century when astronomers observed features on the planet moving in and out of view.

Before spacecraft reached the planet, it was believed simple organisms could exist on its surface. We now know that the Martian atmosphere is far too thin to allow organisms from Earth to survive there. However, the planet was less hostile in the past when its atmosphere was thicker.

Like the Moon, Mars is covered in craters from meteoroid impacts. The rate of crater formation has been constant for most of the history of the Solar System. Astronomers can use the cratering rate to estimate the age of an area of a planet by counting how many craters there are per unit area (crater distribution).

Due to the planet's low mass its core has cooled considerably more than Earth's. As a result, on Mars the "magnetic dynamo effect" has shut down and there is no planetary magnetic field.

Accessible Learning:

- Text size can be increased in the Preferences section
- Star numbers can be reduced by sliding two fingers down the screen

Night Sky App Essential Settings

No essential settings are required for this activity.