

Astronomy for Kids - Mars

The Red Planet

Mars, probably more than any of our solar system neighbors, has had, and continues to have, a very large impact on our social, scientific and cultural lives. Throughout history, the appearance of Mars in the sky, with its somewhat ominous red color, has been interpreted as an omen that something important, and usually bad, was about to happen.

Wars have been started, rulers have been overthrown and, in the case of the famous "War of the Worlds" broadcast in 1938, entire populations have been thrown into panic. Countless books, both fiction and non-fiction, have been written about Mars and Hollywood has churned out lots of movies, both good and bad, about what might happen when we visit Mars or when the imagined inhabitants of Mars visit us. Modern science, using information from both past and current spacecraft, paints a more fascinating picture of the Red Planet than even the movie industry has been able to dream up.

A Shining Red Light in the Sky

Mars is one of the first things people look at when they get their first telescope, and it can remain a favorite observation target for as long as they own the telescope. Mars is the only planet where the average backyard astronomer can actually see the seasons change. Amateurs using a moderately sized telescope in good viewing conditions, can actually see the polar ice caps on Mars get bigger and smaller as the planet goes through summer and winter.

If you own a telescope and would like to know whether Mars is visible during any particular month, you can check the [Sky Maps](#) section here at Astronomy for Kids. If Mars is visible, we will tell you where and when to find it.

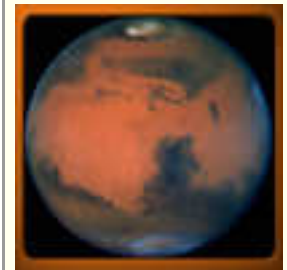
A Frigid Desert

When early astronomers started looking at Mars through their primitive telescopes, they could see that the planet seemed to change colors as time passed, with dark areas on the surface of the planet growing and then shrinking as time passed. It was thought at first that these dark areas were vegetation that grew during the Martian summer and then died off during the winter much as some plant life does here on Earth. Also, there appeared to be dark lines on the surface of the planet that some overenthusiastic observers thought were canals made by intelligent life forms on the planet. All of these "observations" just fueled the speculation, or perhaps wishful thinking, that Mars was inhabited by intelligent life. None of these early beliefs turned out to be true.

Mars Facts

Distance from Sun	Approximately 137 million miles
Number of Moons	Two
Diameter	4070 miles
Length of Day	24 Earth hours
Length of Year	687 Earth days
Name	Comes from the Roman god of war.
Visited by	Mariner, Viking, Pathfinder, Mars Observer, Climate Orbiter

Mars



A picture of Mars from the Hubble telescope.

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One thing that we have learned from the various spacecraft that have visited Mars is that it is a very cold, windy, desolate place. The dark areas that were originally thought to be vegetation turned out to be nothing more than dark rock that had been blown clean by the howling winds on Mars. The planet has an average surface temperature that is below zero even during the Martian summer and there are storms on the planet that can generate clouds of dust that can hide most of the planet's surface from our view.

If humans are to ever live on the surface of the Red Planet, we will have to do so either underground or in some kind of domed areas to protect us from the extreme cold and high winds that are common on Mars. In addition, we will have to find a way to extract water and oxygen from the icy soil. There are many obstacles to overcome before Mars becomes the inhabited planet envisioned by early astronomers and science fiction writers.

Surface of Mars



The [surface](#) of Mars.

Fear and Panic!

It is perhaps fitting that a planet with the ominous reputation of Mars should have two moons that are named for the horses that pulled the chariot of the Roman god of war. Phobos and Deimos are the greek words for fear and panic, respectively. The moons are very tiny and scientists now believe that they are actually captured asteroids that strayed too close to the planet and have remained in orbit ever since.

In spite of their small size, though, Phobos and Deimos have fascinating stories to tell. You can find out more about the two tiny moons by clicking on the link at right.

Mars' Moons



The [moons](#) of Mars.

We're Under Attack!

Many books have been written and movies made about Earth being attacked by beings from Mars, but the most famous of all the "Attacks from Mars" media was a radio broadcast that took place on October 30th, 1938. On that night, Orson Welles' Mercury Theater broadcast an adaptation of H.G. Wells' novel "War of the Worlds". In the novel, England comes under attack by evil creatures from Mars. Orson Welles adapted the story and broadcast it over the airwaves as if were happening live on the east coast of the United States. The story was told on the radio by actors impersonating news reporters, government officials and ordinary citizens. Even though listeners were told at the beginning of the broadcast that it was just a play, many people panicked and reacted like an attack was actually occurring. It is without a doubt the most famous and effective example of people being unintentionally led astray by by the mass media (or maybe the most famous example of people not paying close enough attention).

You can find out more about this famous radio broadcast and the novel that inspired it by following the links in the "Find Out more About Mars" section.

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Volcanoes and Canyons

Although most of Mars resembles nothing more than a rocky desert like you might find in the American West, there are still many features on the planet that are nothing like anything found here on Earth, or anywhere else for that matter. Valles Marineris, which is a canyon that would stretch almost from New York to California if were here on Earth is just one of those features. Another interesting fact about Mars is that it has many extinct volcanoes, the largest of these, Olympus Mons, is much larger than Mount Everest here on Earth. Olympus Mons is over 75,000 feet tall and over 350 miles wide at its base. These are just two examples of the wide variety of geographical features that make the surface of Mars a very interesting place.

Valles Marineris



The Grand Canyon of Mars.

Find Out More About Mars

[Mars Page at the Nine Planets Site](#)

The Mars section of the Nine Planets site has more detail about the Red Planet.

[Mars Exploration Center at the Jet Propulsion Laboratory](#)

The Mars Exploration Center has lots of material about the red planet, including information about missions to Mars, classroom activities and much more.

[War of the Worlds Broadcast](#)

Find out all about the famous broadcast that threw the nation into a panic. Don't think for a minute that it couldn't happen again.

[War of the Worlds Novel](#)

You can read the entire H.G. Wells novel on line!

[Mars in Our Culture](#)

A very good reference about Mars in our popular culture from the Ames Research Center at NASA.

Astronomy for Kids - Mars from the Hubble Space Telescope

Mars from the Hubble Space Telescope



Image courtesy of: Hubble Space Telescope

The Hubble Space Telescope took this beautiful image of Mars

Astronomy for Kids - The Moons of Mars

Phobos

Phobos is the larger of Mars' two moons, although it is still very tiny, being only about seventeen miles in diameter. You can see in the picture at right that Phobos has a an impact crater on one end that is very large relative to the size of the moon. The impact crater has striations, or streaks, spreading out from it that indicate that whatever struck the tiny moon did so with such force that it almost broke the moon into many pieces.



Image courtesy of: JPL/NASA

Deimos

Even though Deimos has many, many impact craters as a result of being struck by thousands of smaller objects during its long life, most of these craters have been filled by a layer of dust that covers the small moon. Like its companion moon, Deimos is slowly being drawn closer to the surface of Mars and will eventually impact in the surface of the red planet.



Image courtesy of: JPL/NASA

Astronomy for Kids - Valles Marineris

Valles Marineris from Viking 1



Image courtesy of: NASA, Viking 1 Mission

The Viking 1 mission took this image of Mars during its journey to the planet. You can see just how large Valles Marineris is in relation to the size of the planet.

Astronomy for Kids - The Surface of Mars

The Surface of Mars



Image courtesy of: NASA, Viking 1 Mission

After safely landing on Mars, the Viking 1 lander began sending back images of the planet's surface. As you can see from the image, it's a pretty desolate place.