

# MARS

## FACT SHEET

### ORIGINS

- **Mars** has two moons, Phobos and Deimos, discovered in 1877 by astronomer Asaph Hall. He named them for the Greek gods, sons of Ares and Aphrodite. Their names mean fear and panic. When the Romans renamed the Greek gods, Ares became Mars.
- **Mars** takes its name from the Roman God of War because of its blood-red colour.
  - The ancient Greeks called the planet Ares after their God of War. To ancient Chinese astronomers, it was 'The Fire Star' while Egyptian priests called it 'Har Desher' or 'The Red One.'
  - **Mars'** colour derives from the rock and dust coating its iron-rich surface.
- In 1609, Italian astronomer Galileo Galilei observed **Mars** with a primitive telescope; he became the "Father of Observational Astronomy."

### IN RELATION TO SOLAR SYSTEM/EARTH

- **Mars** is the fourth planet from the Sun and is the second smallest planet in the solar system.
  - Its diameter is 4,220 miles (6,792 km.), which is about 53% of Earth's.
- The Mars Close Approach is the point at which **Mars** and Earth are the closest distance from each other –around 34 million miles (54.7 million km.).
  - It occurs about every two years.
  - *Mark your calendars!!!* The next Mars Close Approach is October 6, 2020.
- In 2003, **Mars** made its closest approach to Earth in nearly 60,000 years, coming within 34.8 million miles (56 million km.) of our planet. According to NASA, it won't be that close again until 2287.
- Pieces of **Mars** have fallen to Earth!
  - Scientists have found traces of Martian atmosphere within meteorites that have been violently ejected from **Mars**, which have helped them study the Red Planet.
- A Martian year is the equivalent of 687 Earth days, but a day on the Red Planet only lasts 40 minutes more than one on Earth.
  - *Mark Your Calendars!!!* The next Martian New Year will be March 23, 2019.

## ATMOSPHERE/CLIMATE

- **Mars** is a terrestrial planet with a thin atmosphere composed primarily of carbon dioxide with some other elements.
  - The composition of **Mars'** atmosphere is extremely similar to that of Venus, one of the least hospitable atmospheres in all of the solar system. The main component in both atmospheres is carbon dioxide (95% for **Mars**, 97% for Venus.)
- **Mars** is currently emerging from an ice age that ended 400,000 years ago.
- In the winter, **Mars** can get down to temperatures of -195 degrees Fahrenheit (-126 degrees Celsius) while in the summer, the Red Planet can reach temperatures of 70 degrees Fahrenheit (21 degrees Celsius).
- On **Mars**, you'd experience 62.5% less gravity than you're used to on Earth, so if you weighed 100 lbs. (45 kg) on Earth, you would weigh only 38 lbs. (17 kg) on **Mars**.
  - Martian surface gravity is only 37% of the Earth's (meaning you could leap nearly three times higher on Mars).

## GEOGRAPHY/TOPOGRAPHY

- The surface of **Mars** is divided by two hemispheres:
  - The northern hemisphere of **Mars** has few craters but is more geologically active than Red Planet's more heavily cratered southern hemisphere.
- Move over, Saturn! One day, **Mars** will have a ring, too!
  - In the next 30-50 million years, **Mars'** largest moon, Phobos, will be torn apart by gravitational forces leading to the creation of a ring that could last up to 70 million years.
- **Mars** has the largest dust storms in the solar system.
- Tsunamis: Martian oceans may have had tsunamis like those on Earth. The tallest may have reached as high as 400 feet (121 metres), just slightly shorter than the London Eye.
- Ice Caps: Like Earth, **Mars** has ice caps at its poles. The northern cap is up to two miles (3.2 km) deep and covers an area slightly larger than Texas.
- Volcanoes: One of **Mars'** many volcanoes, Olympus Mons, is the tallest/largest volcano in the entire solar system!
- Canyons: **Mars'** largest canyon, Valles Marineris, is nearly four times deeper, about nine times longer and 20 times wider than the Grand Canyon, making it the largest canyon in the entire solar system.

## LIFE ON MARS

- Hints of life? In 2014, the Curiosity Rover discovered 'burps' of methane, which NASA scientists have said could indicate "life or ancient life."

- In 2018 scientists found evidence of a lake one mile below the surface of Mars's southern polar ice cap. Liquid water could contain life.

### **MISSIONS TO MARS**

- Launch Rate: Missions to **Mars** from Earth have become increasingly rare. After 23 launches in the 1960s and 1970s, there have been just 12 global spacecraft launches to Mars in this century.
- NASA plans to launch a manned mission to the Moon by 2023 and use it as a base for future Mars missions.