



DATA SHEET

SOLAR SYSTEM: MARS

Mars has been studied remotely by telescopes and spacecraft. Scientific instruments have also been deployed on its surface.

Meteorites originating from Mars have been studied too. Most are comprised of an igneous rock known as basalt. The oldest Mars meteorite, an *orthopyroxenite*, is estimated to be 4.1 Ga old. It also has minerals that formed by reactions between the original material and water that formed 3.9 Ga. The oldest known minerals from Mars are 4.4 Ga old. The youngest known rocks from Mars are basaltic meteorites, rocks known as *shergottites*, the youngest of which are about 180 Ma old.

SOME FACTS ABOUT MARS

1

Mars is just 1.5 Astronomical Units (AU) from the Sun. That's 227 940 000 km

2

Surface temperatures on Mars are about 223 K (-87 to -5°C),

3

Mars' atmosphere is composed primarily of carbon dioxide (about 96 percent), with minor amounts of other gases such as argon and nitrogen..

4

It's mean density is: $3.93 \times 10^3 \text{ kg m}^{-3}$. This is almost as high as Earth's.

5

It's comparative volume is 0.149 (Earth = 1)

6

On Mars and in meteorites from Mars, we see a variety of rock types: basalt,, arenites, argillite, impactites, and evaporites. These rocks types are composed of minerals such as amphiboles, carbonates, feldspars, hematites, olivines, phosphates, phyllosilicates, pyroxenes, silicates, and sulfates (jarosite and gypsum).

7

Early in Martian history there were really active volcanoes, fed by rising magmas. Unlike Earth, Mars doesn't have tectonic plates that move over hotspots. So instead of getting a chain/arc of volcanoes, the result is one massive volcano. If you take into account the lower gravity on Mars, volcanoes can reach great heights - like Olympus Mons.