Mars in Observations and History

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Mars, the Fourth Rock from the Sun

Mars, one of the original seven *planetes* of the solar system: Sun, Mercury, Venus, Moon, Mars, Jupiter, Saturn.

Galileo observed Mars in 1610 with a telescope (20x).

Christiaan Huygens in 1659, based on observations with his 50x telescope, wrote that “The rotation of Mars, like that of Earth, seems to have a period of 24 hours.”

Giovanni Domenico Cassini worked out the distance to Mars in 1672.

Before Huygens’ death (1695), he wrote in *Kosmotheros* that the planets must have plants and animals, otherwise “we should sink them below the Earth in Beauty and Dignity; a thing that no Reason will permit.”
1777: Friedrich Wilhelm Herschel (and sister Caroline) noted polar caps, “the two remarkable bright spots on Mars.”

1783: Herschel worked out the tilt of Mars' axis, ~28 degrees. Seasons on Mars must be similar to ours, but twice as long. Herschel found evidence of a Martian atmosphere, concluding that Martians “probably enjoy a situation in many respects similar to ours.”

1877: Asaph Hall discovered the two Martian satellites, Phobos and Deimos and calculated the mass of Mars.

1877: Giovanni Virginio Schiaparelli, inspired as a child by a total solar eclipse to study astronomy, began his systematic mapping of Mars.

*canali*: channels or canals, or *fume*: rivers

H.G. Wells born in 1866
1890: William Pickering and Percival Lowell began a correspondence about setting up an observatory to observe Mars at opposition in October, 1894. The new observatory was to be in the Territory of Arizona and called Lowell Observatory.

May 1894, from the Boston Commonwealth:
Lowell's objective was to study the solar system. “This may be put popularly as an investigation into the condition of life on other worlds, including last but not least their habitability by beings like [or] unlike man...”

Regarding Schiaparelli's canali: “Speculation has been fruitful as to what these markings on our next to nearest neighbor in space may mean. Each astronomer holds a different pet theory on the subject and pooh-poohs those of all the others. Nevertheless, the mostet self-evident explanation from the markings themselves is probably the true one; namely, tht in them we are looking upon the result of the work of some sort of intelligent beings...”

The preceeding historical information was taken from The Planet Mars: A History of Observation and Discovery, by William Sheehan
http://www.uapress.arizona.edu/onlinebks/MARS/CONTENTS.HTM
Atmosphere: Mostly carbon dioxide, some water vapor
Surface Pressure: 0.01 bars (Venus is 92 bars)
Temperature: Average -63 deg C (-81 deg F)
Day: 24 hours 37 minutes
Year: 687 Earth days
Axial Tilt: 25 deg
Diameter: 6791 km (4220 miles)
Distance from Sun: 229 million km (142 million miles)
Moons: 2, Phobos and Deimos
Gravity: 0.375 Earth
Observing Mars in the Modern Era

1965: Mariner 4 flew by Mars -- Lots of craters, no canals
1969: Mariners 6 and 7, confirmed no canals
1971: Mariner 9, placed into orbit
1976: Viking landed on the surface of Mars