

Solar winds stripped Mars' atmosphere

NASA's MAVEN spacecraft has observed the direct impact of a solar storm on Mars' atmosphere, showing that solar particles energised gases in the upper atmosphere, causing them to blast into space – stripping the planet of its once-thick, water-rich atmosphere

MAVEN SPACECRAFT

Launch weight:

2,550kg

High-gain antenna:

Diameter 2.1m

Articulated payload platform

"Gull-wing" solar array

LPW* boom

*Langmuir Probe and Waves

Magnetometer boom

INSTRUMENTS

■ **Particles and Fields Package**

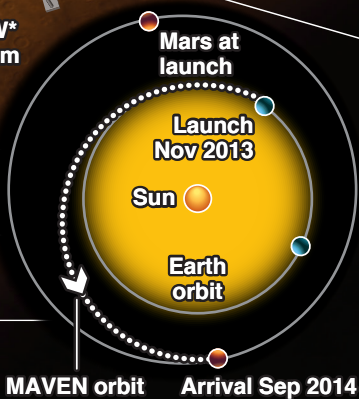
Six sensors for studying solar wind, Martian ionosphere and magnetic field

■ **Remote Sensing Package**

Measures global characteristics of upper atmosphere and ionosphere

■ **Neutral Gas and Ion Mass**

Spectrometer: Measures composition of upper atmosphere

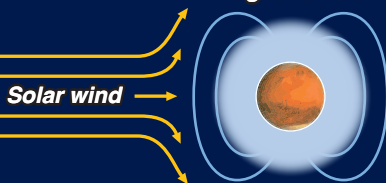


MAVEN orbit

Arrival Sep 2014

EARLY MARS

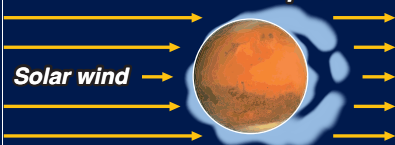
Magnetic field



Warmer planetary core generates stronger magnetic field, protecting atmosphere from solar wind

MARS ATMOSPHERE LOSS

Atmosphere



Decline of magnetic field due to core cooling. Atmosphere slowly stripped away by solar wind