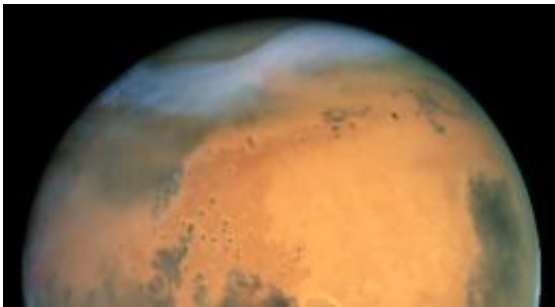


Telltale tells story of winds at Phoenix landing site

September 16 2009



Mars, as seen by the Hubble Space Telescope. Image credit: NASA

Wind speeds and directions were measured for the first time in the Mars polar region using the Phoenix lander's Telltale instrument. Astronomers recorded Easterly winds of approximately 15-20 kilometres per hour during the martian mid-summer. When autumn approached, the winds increased and switched round to come predominantly from the West. While these winds appeared to be dominated by turbulence, the highest wind speeds recorded of up to nearly 60 kilometres per hour coincided with the passing of weather systems, when also the number of dust devils increased by an order of magnitude. The results are being today at the European Planetary Science Congress in Potsdam by Dr Haraldur Gunnlaugsson.

Phoenix landed in the North [polar region](#) of [Mars](#) on May 25, 2008 and operated successfully for 151 sols (1 sol is a Martian day, which is 37

minute longer than a day on Earth). The Telltale device consisted of a lightweight tube suspended on top of a meteorological mast, roughly two meters above the local surface. The onboard camera continuously imaged the deflection of the tube in the wind, taking more than 7500 images during the mission.

“Telltale has given us a wealth of information about the local Martian wind velocities and directions. At the Phoenix landing site, we were able to see meteorological changes caused by interactions between the dynamic north pole, where there are ever changing evaporation processes, and the Martian atmosphere” said Dr Gunnlaugsson.

Mars is typically a rather windy place and learning more about the planet’s climatic conditions will contribute to the understanding of the Martian [water cycle](#) and the identification of areas on the red planet that could sustain life. Local wind measurements by the Telltale instrument, amended with daily images of the whole northern hemisphere by the Mars Reconnaissance Orbiter spacecraft, have allowed astronomers to gain much deeper information on weather systems on Mars.

“We’ve seen some unexpected night-time temperature fluctuations and are starting to understand the possible ways dust is put into suspension in the [Martian atmosphere](#). For example, we could see that some of the dust storms on Mars do not require the existence of high winds,” said Dr Gunnlaugsson.

Telltale was designed and constructed in Denmark at the Mars Simulation Laboratory at the Aarhus University as a part of the Canadian built meteorological package for Phoenix.

"The challenge was to develop an instrument sensitive enough to detect very light breezes and at the same time able to withstand the violent vibrations during the mission launch. The Telltale instrument, although

quite simple, has operated very successfully in the thin atmosphere of Mars,” said Dr. Gunnlaugsson.

Source: Europlanet

Citation: Telltale tells story of winds at Phoenix landing site (2009, September 16) retrieved 10 April 2024 from <https://phys.org/news/2009-09-telltale-story-phoenix-site.html>

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