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First Decade... Lunar Landing 1969-1979



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VIKING CAMERAS REVEAL NEW MARTIAN FROST LAYER

Spacecraft cameras on Mars have revealed a new layer of water frost on the surface of the Utopia Plains landing site of Viking Lander 2, creating a scientific puzzle for NASA scientists.

It is Martian winter again, and a thin layer of frost can easily be seen in the photographs. In September 1977, Viking Lander 2 found frost on the surface during the Martian northern winter. (That was one Martian year or almost two Earth years ago.)

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(NASA-News-Release-79-107) VIKING CAMERAS REVEAL NEW MARTIAN FROST LAYER (National Aeronautics and Space Administration) 4 P

Scientists associated that frost collection with a major dust storm that had obscured the planet's surface before and during that period.

But recent observations have shown no dust storms on Mars this year -- in fact, the atmosphere is clearer than scientists have seen it since the Vikings arrived in 1976. So no one is certain just what triggers the appearance of frost.

This much is believed: dust particles in the atmosphere pick up bits of solid water (ice). That combination is not heavy enough to settle to the ground. But carbon dioxide, which makes up 95 per cent of the Martian atmosphere, freezes and adheres to the particles and they become heavy enough to sink. Warmed by the Sun, the surface evaporates the carbon dioxide and returns it to the atmosphere, leaving behind the water and dust. The resulting frost layer may be only one-thousandth of an inch thick.

The pictures are among data still being received from one orbiter and two landers more than three years after NASA's Viking spacecraft landed on Mars.

The Viking mission has now gone into a new stage, called the Survey Mission, and the first data from that period has been received at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

The lander portion of the Survey Mission is scheduled to continue through 1990, more than 15 years after Viking 1 and Viking 2 were launched.

Both Viking landers have been placed in an automatic condition that allows them to function unattended. Lander 1 transmits its information to Earth once a week.

Since the Martian atmosphere has become unusually clear, Viking Orbiter 1 is taking high-resolution pictures of the Martian surface with a clarity not obtained before. (Viking Orbiter 2 was shut down July 24, 1978, after it ran out of attitude-control gas. Viking Orbiter 1 is expected to cease operations early next year.)

Viking 1 was launched Aug. 20, 1975, and arrived in Mars orbit July 19, 1976. Viking Lander 1 touched down on the Chryse Plains July 20, 1976.

Viking 2 was launched Sept. 9, 1975. It reached Mars Aug. 7, 1976, and Lander 2 descended to the surface Sept. 3, 1976. The planned lifetime for the spacecraft was 90 days after landing.

Viking is managed and controlled for NASA's Office of Space Science by JPL, a government-owned facility operated for NASA by the California Institute of Technology. Kermit Watkins is Viking project manager; Dr. Conway Snyder is Viking project scientist.

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Note:

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