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Cosmic Views

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First rover views of Martian dust devils?

Some keen-eyed observers, scanning the latest raw images coming back from the rover Spirit in Gusev Crater, have located several images that seem to be the first yet to show the long-awaited dust devils in action. Nobody from the rover teams has commented yet -- I'll ask them about it at the LPSC in Houston next week.

It's too soon to say, but this may turn out to be another case like the original discovery of Martian dust devils, during the Pathfinder mission. The discovery was made not by NASA scientists, but by someone downloading the fresh images online and analyzing them before the science team had noticed.

It'll be interesting to see how this story unfolds. We know there are dust devils in Gusev, their tracks are all over the place, but we should be able to learn a lot by seeing them in action -- for one thing, get a better handle on their frequency, size and distribution. This could be very important.

For example, Sushil Atreya of the University of Maryland has done an analysis, presented at last fall's Division of Planetary Sciences meeting, that suggests dust devils could be producing prodigious amounts of peroxides in the atmosphere, which would immediately precipitate out as grains of peroxide ice to coat the surface -- perhaps accounting for the long-hypothesized, but never detected, peroxides that were assumed to explain the Viking results in 1976 without the need for living organisms. Anyway, Atreya thinks the peroxide is destroying methane, which would mean there's really much more methane being produced on Mars than would be assumed based on the present levels in the atmosphere. This could make all the difference in trying to figure out whether the methane is a signature of life. And those calculations, in turn, depend crucially on exactly how large, how frequent and long-lasting and how fast-moving the dust devils are. All of this might eventually be easier to gauge once there's a real sampling of Spirit camera data.

One speculation is that the dust devils may have been around all along, but were only detected because Spirit has climbed high enough to give a better angle, with the dust devils profiled against the dark plain. Against the pale sky, they would not be noticeable, although now that they've been seen someone might go back and reprocess a lot of images and find earlier cases.

About Me

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I've been writing about science, especially about space exploration and astronomy, for more than 25 years. I wrote a book ("Life on Mars", 1979), a couple thousand newspaper stories for the Boston Globe (I was their science writer from 1983 to 2001), and lots of magazine articles (New Scientist, Wired, Technology Review, Astronomy, Sky & Telescope, etc.). This is my first attempt at blogging.

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So far, I've seen at least four or five examples that show one thing that I believe is almost certainly a dust devil, very clearly silhouetted, and two or more other possible ones, all within minutes of each other. That certainly suggests a very active dust-devil season may be underway. Someone has constructed a very good view, blinking back and forth between the view with and without the pale funnel of the dust devil. [HERE](#) is the link.

Meanwhile, here's the basic image. See if you can find it -- it's not easy. It's right at the horizon, very small and pale.



posted by David L Chandler @ 3:34 PM

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