

# Rock appears mysteriously in front of Mars Opportunity rover

January 20 2014, by Bob Yirka

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Credit: NASA

(Phys.org) —The lead scientist for NASA's Mars rover exploration team (Steve Squyres) has announced that recent images beamed back by the Opportunity rover show a rock sitting in a place nearby where there wasn't one just twelve days prior. The image, he says, has caused quite a commotion with the rover team as possible explanations for the sudden appearance of the rock are bandied about. The announcement was part of a meeting at California Institute of Technology to celebrate a decade

of service by the tiny rover.

Opportunity has of course, far outlived expectations. What was originally supposed to be a three month tour has now passed ten years. In all that time, nothing on the planet's surface has changed of its own accord. Until now. Opportunity sent back an image of the landscape just ahead of it, then twelve days later, sent back another image of virtually the same landscape (Opportunity is waiting in place for bad weather to subside). The images showed everything to be the same except for a small [rock](#)—a jelly doughnut sized rock. How it got there has NASA's best scratching their heads. Thus far, they have two main likely explanations: either the rock was tossed to that spot after a meteorite impact nearby, or far more likely, it came to rest there as a result of clumsy maneuvering by Opportunity itself. The rover is having trouble getting around these days as one of its actuators has failed. This means one wheel winds up scrapping the ground during turns, producing what Squyres described as "chatter" which he said could have caused some debris to be flung to where the rock is now sitting.

An initial inspection of the rock indicates that it's very high in sulphur and potassium—it has bright white edges with a deep ruby red center, and looks very much like a jelly doughnut. The rover team has named it "Pinnacle Island." Squyres reported that the rock appears to be in an upside-down position, which means it's showing a face that has not been impacted by the Martian atmosphere, for perhaps millions of years.

The rover team plans to conduct further tests on the rock, and will almost certainly have the [rover](#) spin around as soon as it's able to see if other rocks have appeared as well.

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