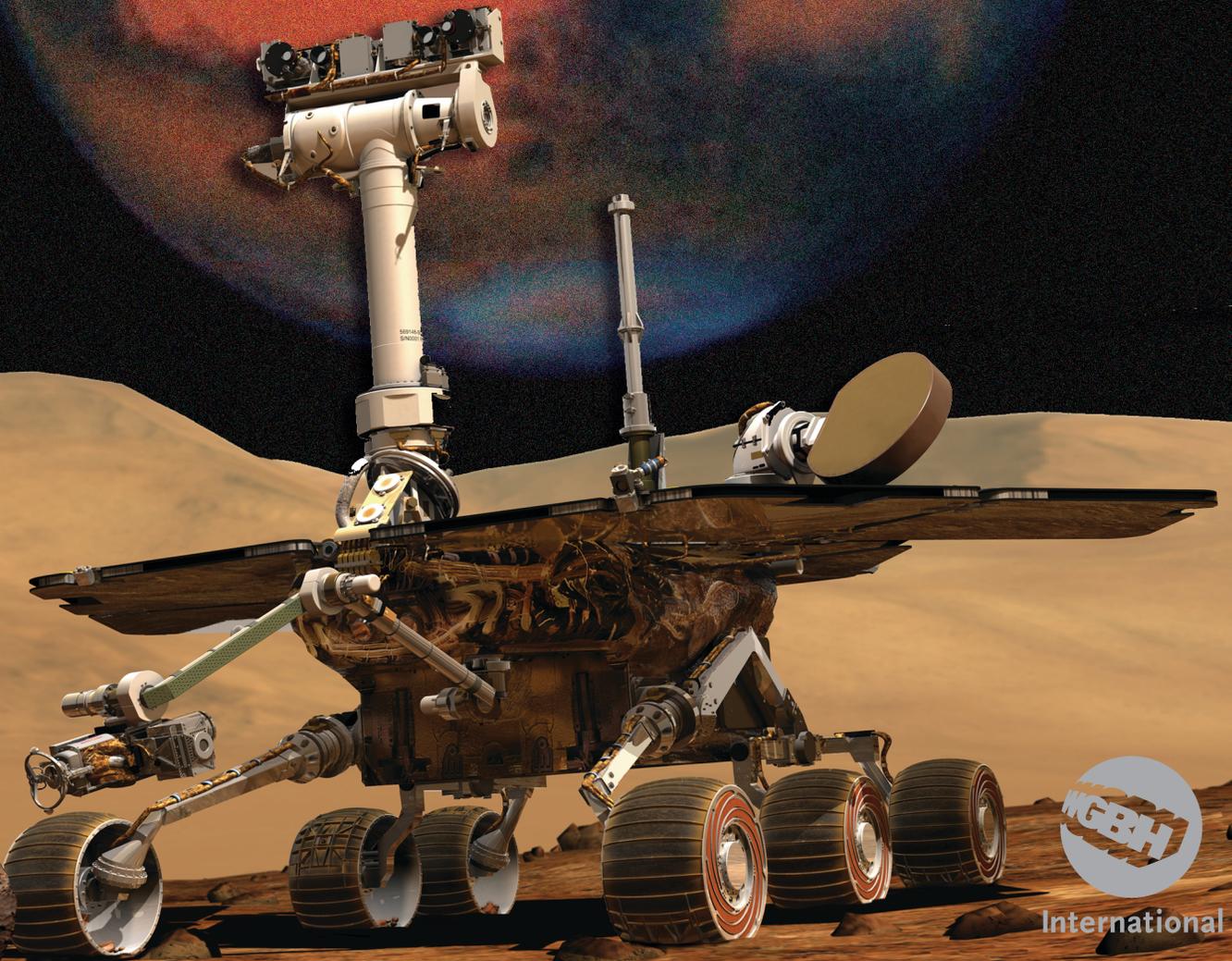


# MARS

## DEAD OR ALIVE

1 x 60



International

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1 x 60

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### CONTACT

**Tom Koch, Director**  
**WGBH International**  
125 Western Avenue  
Boston, MA 02134 USA

Tel 617-300-3893  
Fax 617-779-7900  
tom\_koch@wgbh.org  
www.wgbh.org/international

In January 2004, a strange sight unfolds on the planet Mars. Above a vast, dry lake bed south of the Martian equator, a conical vehicle parachutes toward the surface; then, just before touch down, it is enveloped by a gigantic protective airbag allowing the craft to bounce safely to a stop. Inside is *Spirit*, the most sophisticated rover ever launched from Earth, which NOVA covers in depth on *MARS Dead or Alive*.

NOVA spent months documenting the tension-filled process of building, testing, final checkout, and launch of a pair of spacecraft that are not only designed to be remote-controlled field geologists, but to perform in a demanding environment millions of miles from Earth. As NOVA shows, unexpected problems with designs for the parachute and airbags almost scuttled the mission, and a potentially catastrophic electronic problem on *Spirit* didn't turn up until the vehicle was completely inaccessible and awaiting launch.

Riding on the mission are not just the hopes of scientists seeking to answer baffling questions about the history of Mars, but the future of NASA's Mars exploration program itself. Twice in 1999 NASA probes arriving at Mars were lost without a trace. One of the few recent bright spots for Mars research was the surprising success of the experimental lander-rover *Pathfinder* in 1997, which was designed to test the airbag-landing technique.

*Pathfinder* was spawned by a freewheeling group of young scientists and engineers who are now back with the far more ambitious *Spirit* vehicle and its twin *Opportunity*, which make up what is officially called the Mars Exploration Rover (MER) project.

The MER science team is headed by planetary scientist Stephen Squyres of Cornell University, who conceived the project with the goal of probing the most burning questions in Mars science: Was there ever liquid water on the red planet? Were conditions ever suitable for life?

*Spirit* and *Opportunity* are mobile laboratories outfitted with visible light and infrared cameras to scan the landscape and locate promising rocks for investigation; a power tool to grind off the weathered surface; a microscope to examine the interior; and two other instruments to sniff out the rock's chemistry. In this way, the MER team hopes to find evidence of the liquid water that many scientists theorize was once abundant on Mars's surface but has since vanished.

And where there's water, there may have been life. The ultimate goal of *Spirit* and *Opportunity* is to shed light on this intriguing possibility and perhaps pave the way for the most versatile explorers of all—humans.

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## NOVA

### CREDITS

*Executive Producer:* Paula S. Apsell  
*Producer, Director, and Writer:* Mark Davis  
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