

Mars rovers keep on roving

LOS ANGELES — The warranty expired long ago on NASA's twin robots motoring around Mars.

In two years, they have traveled a total of 7 miles in a climate where the average temperature is 67 below zero and where dust devils can reach 100 mph.

These two golf cart-size vehicles were expected to last only three months.

"These rovers are living on borrowed time. We're so past warranty on them," said Steven Squyres of Cornell University, the mission's main researcher. "You try to push them hard every day because we're living day to day."

The rover Spirit landed on Mars on Jan. 3, 2004, and Opportunity followed on Jan. 24. Since then, they've set all sorts of records and succeeded in finding evidence that water once flowed on Mars.

Part of the reason for their long survival is pure luck. Their lives were extended several times by dust devils that blew away dust that covered their solar panels, restoring their ability to generate electricity.

The rovers haven't been all get-up-and-go. Technical hiccups have at times limited their activity. At one point, Spirit had a balky front wheel, but engineers overcame the problem by driving it in reverse.

Last spring, Opportunity got stuck hub-deep in sand while trying to crest a foot-high dune and was freed after weeks of effort by the Earth-bound engineers.

Spirit has traveled more than 3 miles and beamed back 70,000 images, including panoramas of the rust-colored planet's surface. Opportunity has gone more than 4 miles and sent more than 58,000 images.

The Associated Press

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Instructions:

- * This article will be read to you two (2) times.
- * All written work will be done on the back of this sheet.
- * You will write down notes as you hear the readings.
- * You will then use your notes to help you answer questions.

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notes:

questions:

Why do the rovers live on borrowed time?

How has "luck" played a role in their survival?

How many images have been sent to Earth by the rovers?

In a composition of between 50 and 100 words

Why do you feel the rovers are important or unimportant to Earth scientists?