National Aeronautics and Space Administration



MARS EXPLORATION ROVERS EXCEEDED EXPECTATIONS

NASA's twin Mars Exploration rovers, Spirit and Opportunity, landed on opposite sides of Mars three weeks apart in January 2004.

The rovers far exceeded their planned 90-day life spans, with Opportunity working on the surface for 14.4 years, and Spirit for 6.2 years. Opportunity drove 28.06 miles (45.16 kilometers) on Mars, and Spirit drove 4.8 miles (7.73 kilometers).

Both rovers found compelling evidence of ancient wet conditions that may have sustained microbial life.

DAYS	S	- 14.4 YEARS
EXPECTED - 90 DAYS	SPIRIT - 6.2 YEARS	OPPORTUNITY - 14.4 YEARS

LIFESPAN

SPIRIT DISCOVERIES

- First surface mission to discover rocks with carbonate minerals, indicating a warmer, wetter era on Mars about 4 billion years ago.
 - Found nearly pure silica around Home Plate, which formed in hot springs and steam vents – on Earth, such conditions are conducive to life.

OPPORTUNITY DISCOVERIES



Tiny spheres of a mineral called hematite, nicknamed
"Blueberries," which formed by groundwater.

 Bright gypsum veins that formed when water flowed through underground fractures, leaving calcium behind.



• Clay minerals that formed in neutral-pH water that would have provided favorable environments for life.

www.nasa.gov