

NASA's Mars rover ready to "drive, drive, drive"

Irene Klotz, Reuters

(Reuters) - The Mars rover Curiosity was due to wrap up an exhaustive, weeks-long instrument check on Thursday, clearing the way for its first lengthy drive to determine whether the Red Planet has ever been hospitable to life, NASA officials said.

The six-wheeled, nuclear-powered rover landed five weeks ago inside a giant impact basin called Gale Crater, near the Martian equator, to conduct NASA's first astrobiology mission since the 1970s-era Viking probes.

For its final equipment check, Curiosity will maneuver its robot arm so its close-up camera touches the tray where processed rock and soil samples will be analyzed.

The rover, equipped with an array of the most elaborate laboratory instruments ever sent to a distant world, also has a bit of sightseeing on its agenda. Scientists want to obtain video footage of the Martian moon Phobos passing by the sun.

Starting Friday evening, the plan is to "drive, drive, drive" until scientists find a suitable rock for the rover's first robotic "hands-on" analysis, mission manager Jennifer Trosper told reporters during a conference call on Wednesday.

It will stop when scientists find suitable soil to scoop up and run through Curiosity's onboard chemistry lab.

All the while, the rover will be heading toward a site scientists have labeled "Glenelg," where three different types of rock intersect. Glenelg, which lies about 1,312 feet away from Curiosity's current position, was named by mission geologists after a rock formation in northern Canada.

The overall purpose of the \$2.5 billion Mars Science Lab mission is to search for places where microbial organisms could have evolved and been preserved. In addition to ferreting out the chemical and geologic footprints of water, Curiosity will hunt for organic compounds and other ingredients believed to be necessary for life.

Curiosity, which is designed to last two years, will venture about 4.3 miles from its landing site to climb a 3-mile-high mound of layered rock rising from the floor of Gale Crater. Dubbed Mount Sharp, it is believed to be the remains of sediment that once filled the 96-mile wide (154-meter) basin.

The rover has racked up 358 feet on its odometer during test drives. Before setting out for Mount Sharp, scientists expect to drive Curiosity about 131 feet a day during its planned trek to Glenelg, with several stops for science observations.

(Reporting by Irene Klotz; Editing by Steve Gorman and Stacey Joyce)

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