

NASA's new Mars rover reaches Florida launch pad

Irene Klotz, Reuters

NASA's Mars Science Laboratory, a \$2.5 billion rover designed to assess that planet's suitability for life, arrived at its Florida launch pad on Thursday in preparation for a planned November 25 liftoff, the U.S. space agency said.

The spacecraft, which is about the size of a small car, was scheduled to be hoisted by crane to the top of an unmanned Atlas 5 rocket at Cape Canaveral Air Force Station, NASA spokeswoman Lisa Malone said.

Powered by heat from the decay of radioactive plutonium, the rover is expected to spend one Martian year -- 687 Earth days -- exploring a massive crater that has a 3-mile-high mountain rising from its floor. That is about twice the height of the rock layers exposed in the Grand Canyon.

Scientists do not know how the mountain formed, but it may be the eroded remnant of sediment that once completely filled the crater.

With its 10 science instruments, including two tools that can chemically analyze pulverized rock, the rover named Curiosity is designed to determine if the landing site, known as Gale Crater, has or ever had the organics necessary for life.

Curiosity will join the smaller rover Opportunity, which has been exploring another region of Mars since 2004, and several orbiters, including Europe's Mars Express. But scientists are concerned that the United States is not following through with funding for follow-on missions.

'MAKES NO SENSE'

"NASA has had a string of successful missions since 1996 and killing off the (robotic science) program makes no sense," said Robert Zubrin, an aerospace engineer and founder of the Mars Society, a space exploration advocacy group.

"This is a very alarming situation," Zubrin said.

Of particular concern is the lack of funds for missions to Mars beyond 2013, when a satellite to analyze the Martian atmosphere is scheduled to launch.

Scientists have been counting on missions in 2016 and 2018 to lay the groundwork for a return flight bringing samples from Mars back to Earth, a step that is considered important toward learning if Mars currently harbors life or ever had it. The missions were to be conducted jointly with Europe.

"We had an agreement," Zubrin said. "We are betraying our commitment and now

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Europe is searching for Russian collaborators to take our place."

Russia, which has not launched a planetary mission in 15 years, plans to end that hiatus with a launch next week of a spacecraft and lander to explore the Martian moon Phobos. The mission also includes China's first planetary probe, a Mars orbiter.

NASA's robotic science program has been hit by budget constraints and by about \$5 billion of cost overruns for the James Webb Space Telescope, the successor to the Hubble Space Telescope, which is targeted to launch in 2018 but likely to be delayed.

Now that the shuttle program has ended, NASA's human space flight program is also in transition as the agency works to turn over crew transport missions to and from the International Space Station to the private sector, and to develop its own craft that can travel farther than the station's low-Earth orbit.

The rover was built by NASA's Jet Propulsion Laboratory in Pasadena, California. The Atlas 5 rocket that will carry it into space was built by United Space Alliance, a joint venture equally owned by the Boeing Co and Lockheed Martin Corp.

(Reporting by Jane Sutton; Editing by Will Dunham)

(This story corrects the cost overrun amount in paragraph 13)

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