

Budget squeezes the dreams of Mars explorers

Top Mars scientists fear an end to a carefully crafted campaign under way since 1994 to explore the red planet ahead of an eventual human landing.

By **Brian Vastag**
The Washington Post

Mars explorers should be ecstatic. At Cape Canaveral, the biggest, most sophisticated rover ever aimed at our planetary neighbor sits atop a towering Atlas V rocket. Dubbed Curiosity, the \$2.5 billion dune-buggy-sized robotic scientist is poised for a Nov. 25 launch. Arrival is scheduled for next August.

And yet, top Mars scientists are worried and angry. They fear an end to a carefully crafted campaign under way since 1994 to explore the red planet ahead of an eventual human landing.

At a White House meeting during the last week of October, administration officials "were clearly not very keen on signing up" for unmanned Mars missions in 2016 and 2018, said Daniel Britt, who attended the meeting as head of the planetary-science division of the American Astronomical Society.

That presents an international problem. In 2009, NASA agreed to jointly fund the dual missions with the European Space Agency, a longtime partner in space. But now, "the administration's position is that they cannot commit to the plan of Mars in 2016 and 2018," said Jim Green, director of NASA's planetary-science division.

Because interplanetary missions can take a decade to plan and build, Mars scientists say time is running out to fund the two probes.

"The Mars program is now in a trajectory to, in effect, go out of business," said Scott Hubbard, a Stanford University professor who revitalized NASA's Mars exploration program after two missions to the planet failed in 1999. "That would be a tragedy."

White House officials said no decision to kill the Mars program has been made. The administration is deliberating how to mete out NASA's uncertain budget, said Rick Weiss, a spokesman for the White House Office of Science and Technology Policy.

On Thursday, the Senate and House began negotiating the NASA budget for fiscal year 2012. The Senate version, passed earlier in the week, would provide \$17.9 billion, including \$1.5 billion for the planetary-science division, which houses the Mars program. The Republican-led House wants to cut the agency budget to \$16.8 billion.

For now, NASA is moving ahead with planning the 2016 and 2018 Mars missions, the next steps in an effort to deliver a huge scientific prize to Earth: canisters of Martian rocks and soil.

"There's broad consensus that Mars once had a habitable environment," said veteran Mars explorer Jim Bell, president of the Planetary Society. "It may still be habitable below the surface."



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But remotely feeling around the surface of a planet million of miles away has its limits. So for decades, explorers have dreamed of grabbing a piece of Mars for detailed study on Earth.

The agency has already paid out \$46 million to contractors to build instruments for the 2016 launch. That mission would send a joint U.S.-European probe, the Trace Gas Orbiter, to sniff the Martian atmosphere. It would remain in place to beam signals back to Earth from a dirt-grabbing rover to be launched in 2018.

The 2018 rover would gather samples chosen as most likely to show signs of current or past life on Mars and stow them in canisters. A rocket sent on a subsequent mission would grab the canisters and launch them into Martian orbit, where yet another vehicle would fly them back to Earth.

This year, space scientists formally chose the Mars-sample-return campaign as their highest priority "flagship" mission. When setting priorities, NASA generally follows the advice of such "decadal surveys," which represent a consensus of experts.

But at the October meeting, officials from the White House Office of Management and Budget and the Office of Science and Technology Policy cited the cost and duration of the plan, which would stretch beyond 2020, as factors weighing against it, Britt said.

Mars scientists broke the retrieval campaign into four flights to spread out its costs. They then proposed the agreement with Europe to reduce NASA's commitment, and they reduced the payload from two rovers to one.

Despite this squeezing, the United States has already reneged on part of the agreement. In April, NASA said it could no longer afford the rocket to launch the 2016 mission. That move pushed the Europeans to seek a rocket from the Russian space agency, Roscosmos.

"It is unfortunate we have not been better partners ... because of the budgetary situation we find ourselves in," NASA's Green said to agency science advisers Monday.

Privately, European Space Agency officials have expressed frustration, several sources said. Publicly, the agency is presenting a more patient face.