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NASA reaction to failures wrong, scientist says

By Larry Wheeler
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WASHINGTON - The man who took NASA back to the moon with a low-budget spacecraft after a 25-year hiatus fears the nation's civilian space agency is taking the wrong steps in reacting to the failures of two high-profile Mars missions.

A blue-ribbon panel's report this week blamed the loss of the Mars Polar Lander and the Mars Climate Orbiter on inexperienced workers, inadequate testing, poor communications and lack of oversight. In response, NASA managers announced plans to create new review boards, require extra training regimes and appoint new bureaucrats to oversee future Mars missions.

That is absolutely the wrong thing to do, said Alan Binder, a lunar and planetary scientist who stunned the space science world in 1998 and 1999 with his successful \$63 million Lunar Prospector mission, which discovered evidence of water under the lunar surface.

"You can't do these missions with layers of people spread out all over the place," said Binder, 60, founder and director of the Lunar Research Institute in Tucson, Ariz.

Friday, Binder took his gospel to NASA headquarters here in Washington, D.C., where he met with NASA Administrator Dan Goldin to discuss his concerns. Binder said he requested the meeting and Goldin agreed to meet with him.

Pointing to his own project as a model for success, Binder said NASA should turn its space science missions over to small teams of experienced scientists and aerospace engineers who have sole responsibility for their project from conception through design, construction, launch and ultimately operations.

That is how you truly do things faster, better and cheaper, said Binder, borrowing a phrase Goldin has marketed as the touchstone for the space agency.

"If you have a small team with one person in charge with intimate knowledge of the hardware, everyone knows where the buck stops; that's how you do it," Binder said.

A veteran of the successful 1976 NASA Viking Mars Lander missions, Binder believes recommendations found in the Mars Program Independent Assessment Team report this week could compel NASA to return to its "old ways" of building expensive robotic craft one at a time for infrequent explorations of the heavens.

The assessment team, chaired by Tom Young, a former Lockheed Martin executive who also spent years working at NASA in various roles, suggested changes that seem to signal a return to NASA's preference for multiple oversight tiers.

Among them:

- A new Mars program office at headquarters.
- A new integrated Mars program office at the Jet Propulsion Laboratory in Pasadena, Calif.
- A new organization to oversee major flight projects to ensure consistent standards, review and corrective actions.

Despite the new layers, NASA is not turning back the clock, said Ed Weiler, associate administrator for space science.

"We will still do missions faster and cheaper but the emphasis will be on better," Weiler said at the press briefing where the Young report was released.

Interestingly, Young said his assessment team began their analysis of the failed Mars missions by trying to establish what "faster, better, cheaper" meant. Although Goldin had been pushing the concept since coining the phrase in 1992, Young's team could find no established definition of it.

"We endorse faster, better, cheaper but with a crisp definition of what it means," Young told reporters at the press briefing.

Expressed in terms of dollars, Young's team concluded \$200 million is probably about the appropriate level of spending for a successful "faster, better, cheaper" planetary mission because that's what was spent on Mars Pathfinder. The mission was a smashing success and thrilled the world on July 4, 1997, when it used an innovative air bag to cushion its landing and then sent forth a curious little rover to take stunning pictures of the Red Planet.

By contrast, NASA tried to deliver two spacecraft -Mars Climate Orbiter and Mars Polar Lander -for virtually the same price as Pathfinder, the Young report observed.

Binder argued that \$200 million is still too expensive but NASA officials and their counterparts at private sector aerospace companies like Lockheed Martin are reluctant to embrace his concepts.

"People recognize if things are done this way, you don't need a lot of middle management," Binder said. "It is that level of people who are resisting what we're taking about."

Others agree.

This isn't about money, it is a management issue, said Jim Muncy, a former staff member of the House Science Committee who is now a private space industry consultant.

"NASA management is at fault for trying to stuff too much into the program," Muncy said. "The way to do this successfully is with small, focused teams that are accountable rather than taking large organizations and trying to shoehorn them into a smaller budget."

Space agency officials have acknowledged they pushed too hard on the failed Mars missions, said Brian Welch, a NASA spokesman.

"But we don't intend to go back to the old way of doing business," Welch said. "We will continue to try to make space science as efficient as we can. We will try to do things in less time, for less money with more results."

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