Houston workshop marks key step in planning future Mars missions

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A recent workshop conducted for NASA by the Lunar and Planetary Institute (LPI) in Houston, marked a key step in the agency's effort to forge a new Mars strategy in the coming decades. A report that summarizes the wide range of cutting-edge science, technology and mission concepts discussed is available online.

Held in Houston June 12-14 and attended by scientists and engineers worldwide, the meeting was held to seek ideas, concepts and capabilities to address critical challenge areas in exploring the Red Planet. Discussions provided information for reformulating NASA's Mars Exploration Program (MEP) to be responsive to high-priority science goals and the challenge of sending humans to Mars orbit in the 2030s.

Participants identified a number of possible approaches to missions that can be flown to Mars in the coming decade that would make progress toward returning Martian samples -- a top priority of the Planetary Science Decadal Survey -- and make significant advances in scientific understanding of the planet, developing key technologies and advancing knowledge necessary for human exploration on and around Mars.

NASA's Mars Program Planning Group (MPPG), tasked with developing options for a reformulated MEP, will consider the workshop inputs in addition to budgetary, programmatic, scientific and technical constraints.

"Scientists and engineers came together to present their most creative

ideas for exploring Mars," said John Grunsfeld, an astronaut, astrophysicist and associate administrator for NASA's Science Mission Directorate at NASA Headquarters in Washington. "Great ideas come from challenging the best and brightest and igniting their passion and determination to succeed."

The MPPG reports to Grunsfeld, who chairs the agency-wide Mars reformulation effort along with William Gerstenmaier, NASA's associate administrator for Human Exploration and Operations Mission Directorate, Chief Scientist Waleed Abdalati and Chief Technologist Mason Peck. The official draft MPPG report is expected to be delivered to NASA for review at the end of the summer.

Concepts put forth tapped into significant benefits that could be gained from technology investments by NASA's Science Mission Directorate, Human Exploration and Operations Mission Directorate, and Office of the Chief Technologist. The participants also stressed the importance of establishing international collaboration early in the planning process and sustaining it throughout future missions.

"Future Mars exploration missions will require new concepts and technologies," said Michael Gazarik, director of NASA's Space Technology Program. "There were many innovative and transformational concepts presented at the workshop. With continued investments in cutting-edge technology, these will lead to increased capability, reduced mission risk and lower mission costs."

Workshop attendance included almost 200 scientists, engineers and graduate students from academia, NASA centers, federal laboratories, industry, and international partner organizations. More than 1,600 people participated online as the workshop proceedings were streamed live on the Internet.

"The LPI workshop provided a broad set of ideas for Mars exploration, including synergies between science, human exploration and technology development," Gerstenmaier said. "The number of workshop participants demonstrates the broad interest in Mars exploration."

The workshop provided a forum for broad community input on near-term mission concepts. Ideas for longer-term activities will be used to inform program architecture planning beyond the early 2020s. Workshop results represent individual perspectives from members of the scientific and technical community.

"The scientific and technical community has given us quite a range of ideas to consider in reformulating the Mars Exploration Program," said Doug McCuistion, director of NASA's Mars Exploration Program at the agency's headquarters. "Many concepts presented are highly relevant to the challenges the MPPG must address."

NASA will land its most advanced rover, Curiosity, on the surface of Mars in August. This mobile science laboratory will assess whether the past or present environment on Mars could support life. In 2013, NASA will launch the Mars Atmosphere and Volatile Evolution orbiter, the first mission devoted to understanding the Martian upper atmosphere.

More information: To view LPI's report, workshop presentation videos, and compilation of the abstracts, visit: www.lpi.usra.edu/meetings/marsconcepts2012/

Provided by NASA

https://phys.org/news/2012-06-houston-workshop-key-future-mars.html