NASA chief defends Obama's space plan

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NASA Administrator Charles F. Bolden Jr. discusses the agency's future during a visit to MIT on Monday, May 10. Photo: Bill Litant

In a lecture on Monday at MIT, NASA Administrator Charles F. Bolden Jr. defended President Barack Obama's controversial plans for the U.S. space agency's future and touted the president's plan to invest billions of dollars in basic science research.

Some in Congress have criticized Obama's proposal to cancel the Constellation program, which would have sent humans to the moon by 2020, saying such a move will effectively cede U.S. space leadership to other nations. But Bolden noted that the White House's plan would also invest an additional $6 billion in NASA over the next five years,

including a 60-percent increase in earth sciences research funding, as well as a 20-percent increase in planetary sciences research. Such an expansion could revitalize NASA's ties with institutions like MIT, which has played an instrumental role in the agency since NASA was founded in 1958.

"The frustration for me is that we always talk about the cancellation of Constellation," former astronaut Bolden said of his appearances before Congress and interviews with the media, in which he has been grilled over the president's plan. "But we are adding an incredible amount of money for research."

Bolden was at MIT to deliver the 20th annual Massachusetts Space Grant Consortium (MSGC) public lecture, titled "Looking Ahead to the Future of NASA." Headquartered at MIT, the MSGC's primary goal is to represent NASA in Massachusetts by supporting space exploration and research by the state's students and teachers.

David Mindell, the Frances and David Dibner Professor of the History of Engineering and Manufacturing and director of MIT's Program in Science, Technology, and Society, said that Bolden's defense of Obama's proposal wasn't surprising, given that it's his job to do so. "But the proposal does recommend a fresh approach that, though risky, could reinvigorate human spaceflight in the U.S. and restart research — at MIT and many other places — that had been sacrificed for the Constellation program," he said.

Professor of Aeronautics and Astronautics and Engineering Systems Dava Newman agreed, saying that the proposal would strengthen — not weaken — U.S. leadership in space. "The budget for science, engineering and technology development, testbeds and flight experiments is extraordinary, and if realized, will help NASA once again become the agency to realize exploration (both human and robotic) and

major technological breakthroughs both in space and here on Earth," Newman said. "It's very exciting to think of this future investment in science, engineering and technology and to think that MIT students and faculty will be part of the community to shape NASA's future and to realize this vision.

Looking ahead

During his talk, Bolden said NASA was going through what he called a "difficult, but very interesting" period. As a former astronaut who completed four space flights, Bolden expressed sadness about the prospect of ending NASA's space-shuttle fleet, admitting he is "emotionally attached" to the shuttle program. But he insisted that NASA is "committed" to Obama's new era of space exploration, which calls for a flexible path approach for NASA to gain progressively more experience, such as a lunar fly-by or exploration of asteroids, before making a trip to Mars. The plan also calls for developing a "heavy-lift" system to launch spacecraft into deep space, as well as technologies to protect humans from long-term radiation. In the future, NASA would lease vehicles from private companies to ferry astronauts to and from the International Space Station.

"The president, with my full agreement, made a change — a big change," Bolden said of Obama's decision to undertake a new direction for NASA, adding that the agency's fundamental goal "to boldly advance the human presence beyond the cradle of Earth," has not changed, and that Mars remains an "especially compelling target."

Bolden outlined several tracks that NASA has proposed to achieve its goals, such as developing robotic technologies to scout new targets and test precision landings. He said the agency remains focused on using the International Space Station to learn more about human health issues, referring to ongoing work by ISS researchers to develop a salmonella

vaccine.

He pledged NASA's commitment to develop a commercial launch industry for carrying humans into low Earth orbit, but said that the agency was still fine-tuning specific operations details, such as whether a crew would be trained at NASA facilities. He also said the agency was honoring Obama's request to collaborate with other countries like Saudi Arabia to foster science research.

When pressed to name a timetable for a manned mission to Mars, Bolden said it was "pretty vague," but that if NASA started to develop the architecture for a heavy-lift launch vehicle right now, it could be as soon as the early 2020s that a spacecraft orbits the moon, and maybe 2025 for a spacecraft or robot to land on an asteroid. Those advances could make travel to Mars a reality by 2030, he said.

Regardless of a timetable, Bolden insisted that NASA's future must include increased collaboration with research institutions like MIT, noting that, "we can't carry out this work without engaging the public."

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