

# NASA'S HUMAN SPACEFLIGHT PROGRAM CAN'T AFFORD ANOTHER RESET FROM THE NEXT PRESIDENT



NASA ADMINISTRATOR CHARLES Bolden likely expected a better reception when he testified before the Senate appropriators on March 10. After all, his agency had racked up some impressive achievements over the previous year. Last July, the New Horizons probe whizzed by Pluto and beamed back astonishing images of the previously unexplored dwarf planet. And on March 1, astronaut Scott Kelly returned to Earth after spending nearly a year in space on board the International Space Station, sharing his spectacular view from orbit with the entire world.

But instead of receiving congratulations from the Appropriations Committee for his agency's recent accomplishments, Bolden got a blast of bipartisan criticism of the Obama administration's proposed NASA budget. Republican committee chairman Senator Richard Shelby said that "NASA has failed to propose a truthful budget that can accomplish the agency's goals." The committee's ranking Democrat, Maryland Senator Barbara Mikulski, was equally critical, saying she wanted to work with her Republican counterpart "to reorder NASA's priorities."

America's space program has long been a source of tension between the Obama administration and Congress, no matter which party holds the reins of power on Capitol Hill. In 2010, the White House abruptly decided to end the human spaceflight program Constellation. Under-resourced and behind schedule, Constellation's cancellation made a certain amount of sense. But by failing to outline a replacement at the same time, the administration infuriated legislators.

That collision did ultimately wind up being productive: It got President Obama and Congress to agree upon Mars as America's long-run human space exploration goal. And they've made real progress toward that goal since 2010. In the last eighteen months alone, America has seen the first test flight of the Orion Multipurpose Crew Vehicle and the start of work on the Space Launch System rocket. NASA has issued contracts to private companies to launch astronauts to the International Space Station from the United States starting in 2017. Scott Kelly's year in space will help NASA scientists understand the challenges future astronauts will face during travel to Mars. Even in the face of tight budgets, NASA has begun to lay the foundation for a rejuvenated—and realistic—human space exploration program.

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But American astronauts aren't likely to set foot on Mars unless the next president resists the temptation to hit the reset button on America's human spaceflight program—again. Instead of commissioning yet another time consuming, high-level study of America's human spaceflight program that forces NASA to change direction, the next administration should build on the bipartisan foundation that's been laid over the last six years.

The agency's recent achievements are built on the solid bedrock of President Obama's 2010 National Space Policy and the 2010 NASA Authorization Act. Last October, NASA added to this foundation with its Journey to Mars report. Taken together, these three documents should give the next administration a solid space policy framework it shouldn't discard when the next president takes office.

Those guidelines leave plenty of room for the next administration to put its mark on America's human space exploration program—without ripping it up at the roots. NASA's Journey to Mars report provides a flexible, three-phase concept for progress. The first phase, which includes Scott Kelly's year-long mission on the ISS, tests the capabilities necessary for deep space exploration in low-Earth orbit. Next comes the "Proving Ground" phase, in which astronauts will learn how to live and work in the deep space around the Moon. Finally, the "Earth Independent" phase will culminate in a human voyage to Mars.

But NASA has yet to fill in the blanks when it comes to the Proving Ground phase. Beyond initial plans for a controversial asteroid redirect mission, there's a gap between immediate human spaceflight plans—the ISS and the commercial crew program—and the United States' long-term objective of sending humans to Mars. By making more concrete and detailed plans for the Proving Ground phase, the next administration can keep America's human space exploration program on track and make progress toward Mars at the same time.

Expeditions around the Moon can give NASA ambitious and immediate goals that can be carried out over the course of the next administration. Like Scott Kelly's one-year mission, these expeditions can give the American people clear signs of progress toward the ultimate goal of sending humans to Mars. Since a deep space habitat will be vital to any human mission to Mars, the next administration should look closely at testing potential habitats. NASA has already invested seed money to develop Proving Ground habitat concepts, and last year's bipartisan budget deal requires NASA to invest a further \$55 million in deep space habitat development.

Given the domestic and international challenges facing the United States in 2016, it's probably too much to ask this year's presidential candidates to present detailed space policy visions. But if the next president wants America to remain the leader in human space exploration, he or she can't waste time and energy going back to the drawing board. The next administration will inherit a solid human space exploration foundation on which it can build.

Another disruptive shift in NASA's goals wouldn't just jeopardize the foundation that's been built so far, but also America's leadership in human spaceflight. There's no reason to start from scratch. By developing expeditions to the Proving Ground, the next administration can make its own mark on America's human spaceflight program, reassert American leadership in space, and show progress toward Mars all at the same time.