

NASA needs a new vision

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The National Aeronautics and Space Administration (NASA) has a storied history, forged in years following the Soviet Sputnik launch, and culminating with the incredible achievement of landing humans on the moon. But today the agency is facing a wide range of problems. Nowadays, when a space shuttle safely returns to Earth, there is a palpable sense of relief.

The august National Research Council concluded that "NASA is being asked to accomplish too much with too little," finding the agency to be unsustainable. The Space Shuttle program is nearing its end. NASA Administrator Michael Griffin commented, "If we lost another vehicle, I will tell you right now that I would be moving to shut the program down." University of New Hampshire Professor Berrian Moore observed that NASA earth science program is "at risk of collapse."

NASA's situation is grounded in decisions made almost 40 years ago in the aftermath of the Apollo program. The Apollo program was both a strategy of the Cold War and a tribute to President John F. Kennedy's commitment to set foot on the moon during the 1960s. It was not part of a comprehensive approach to colonizing or commercializing space. Congress actually began reducing funding for Apollo in the mid-1960s, and a post-Apollo approach to space policy was needed by the time that Neil Armstrong set foot on the moon.

In the early 1970s, NASA officials sought to focus space policy on a single vision - Mars - and proposed options for the post-Apollo era: go to Mars immediately, soon, or go later. But by this time, national policymakers, including President Richard Nixon, had turned their attention from space to the Vietnam War. The Mars vision was rejected. NASA then came up with what it called "next logical steps" leading in the end to Mars, but starting with a reusable space vehicle that could, in principle, be justified for reasons other than an ultimate Mars mission. Hence, NASA partnered with the military to develop what came to be known as the Space Shuttle, promising 48 flights per year at about \$50 million per launch. The logical step that would follow would be a space station, followed by a mission to Mars. Today, NASA strains to pursue that vision articulated 40 years ago with a shuttle that costs more than \$1 billion per launch, which happens several times a year.

NASA's success in creating a structure of political support by spreading contracts around the nation has made change difficult. Any alteration to the course will necessarily face opposition, if the changes result in termination of contracts and the loss of high-paying jobs in important congressional districts. As a result, NASA's political successes have, to some degree, constrained its ability to implement needed policy change.

Today, NASA has far more on its plate than it can handle under any realistic budget projection. And even with unlimited budgets, it may be that NASA simply needs institutional reform, starting with breaking up

the agency. Here is one way that could be done:

-- **Separate human space flight.** As long as the American public and their elected representatives support NASA's Mars vision for space exploration, an institutional arrangement should be created where such a vision can be pursued on its merits, and not conflated with science. NASA could be broken up, creating a new agency focused only on the vision of colonizing space.

-- **Move science programs to more appropriate agencies.** Space and earth science programs could be moved to agencies with missions more consistent with the goals of such research. Many of NASA's mission-oriented earth science programs might be transferred to the National Oceanic and Atmospheric Administration, which is home to weather, water, climate and fisheries services. NASA's space science program, focused on exploration of space via robotic missions such as its highly successful Mars programs, might be transferred to the National Science Foundation, which is the home to a wide range of research. Similarly, NASA's aeronautics programs might be moved to the National Institute of Standards and Technology, which has an impressive track record of working with a wide range of industries.

NASA is organized in a modular, decentralized manner around laboratories and centers in many locations, as well as in various universities and contractors. Such an organizational structure would make any reorganization fairly straightforward from an institutional perspective, although the political obstacles would likely be significant.

A proposal such as this may not make good sense or even be feasible. But U.S. space policy will continue to face hard times unless policymakers begin to challenge the status quo. It may be better to begin asking such questions now, rather than in the aftermath of another space flight tragedy.

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