How to Break Up NASA

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The National Aeronautics and Space Administration (NASA) has a storied history, but today the agency is facing a wide range of problems. Consider the following concerns expressed recently about the agency by informed observers:

A recent National Research Council report concluded that "NASA is being asked to accomplish too much with too little," finding the agency to be unsustainable.

- The Space Shuttle program, still recovering from the loss of Columbia, is nearing its end. NASA Administrator Michael Griffin recently commented, "If we lost another vehicle I will tell you right now that I would be moving to shut the program down."
- On NASA's earth science programs, University of New Hampshire professor Berrian Moore, observed, "Today, when the need for information about the planet is more important than ever, this process of building understanding through increasingly powerful observations . . . is at risk of collapse."
- On NASA's space science programs, Mark V. Sykes, director of the Planetary Science Institute in Tucson, Arizona, and Heidi B. Hammel of the Space Science Institute in Boulder, Colorado, and Ridgefield, Connecticut, recently wrote, "NASA leadership is laying the groundwork for an American space science program in permanent retreat. Research and analysis programs - the very foundation of future exploration efforts - are being cut by more than 25 percent through the 2006 and 2007 budgets to help pay for increasing costs in human spaceflight."
- A forthcoming National Research Council report on aeronautics research recommended that the "US government should conduct a high-level review of organizational options for ensuring US leadership in civil aeronautics."

These perspectives are representative of concerns that NASA, which has struggled for decades to meet its own aspirations, is at a crossroads. And despite some notable successes, particularly in planetary exploration, it may now be time to rethink NASA as an institution.

At the core of NASA's problems are the challenges of transitioning to the post-Space Shuttle era. NASA's attempts to complete the space station program with the space shuttle while beginning to implement President Bush's "Vision for Space Exploration" have created budget pressures that have resulted in large cuts to space and earth science programs, with perhaps more to come.

To understand the options for US civil space policy requires understanding how NASA has arrived at the situation in which it finds itself and, most importantly, understanding the lessons of experience and how to apply them to future space policies. It may be time to consider wholesale institutional reform if space policy is to return to its glory days of achievement and excitement. This essay describes how NASA might be broken apart in order to focus and prioritize its many missions.

Next Logical Steps to Nowhere?

NASA's current 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 also a tribute to President John Kennedy's commitment to set foot on the moon during the decade of 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. NASA officials sought to focus post-Apollo space policy on a single vision - Mars. NASA developed a set of options focused on this vision: go to Mars sooner, go to Mars soon, or go to Mars later. But by this time, national policymakers, including President Nixon, had turned their attention from the moon (been there, done that) to the Vietnam War, and additional achievements in space were not high priorities. So the Mars vision was rejected.

NASA then sought to keep its vision alive by developing a more politically palatable approach. Thus it came up with what came to be characterized as the "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 and promised 48 flights per year at very low costs.

The logical step that would follow the Shuttle would be a space station in earth orbit, then followed by a mission to Mars. Today, NASA continues to pursue the vision first articulated 40 years ago.

Golden Handcuffs?

NASA's success in creating a political constituency in support of its "next logical steps" approach to the vision of landing a human on Mars has made change extremely difficult.

I first saw this constituency in action in 1991, when I served as an intern for the Science Committee of the US House of Representatives, then under the chairmanship of Congressman George Brown (D-CA). That year, the Appropriations Committee had voted to terminate the space station program, one of many congressional attempts to change NASA's approach to its vision. Chairman Brown, a fan of the space program, decided to take responsibility for leading the effort to overturn the cancellation and restore the program.

As an intern enlisted to play a small role in the Science Committee's campaign to reverse the Appropriations Committee's decision, I helped rite speeches and prepare "Dear Colleague" letters to members of the House. I recall having available briefing binders, which must have been prepared by NASA or their contractors, that described in incredible detail the number of space station contracts that went to individual congressional districts as well as the number of jobs in each district. The binders contained pages, prepared individually for each district, that could be copied and attached to a letter of support sent to each member's office. We made the case that canceling the space station was a jobs issue for individual districts. I'm not sure how big a role such information played in the ultimate vote to restore the station to the budget that year, but it seemed to me that it was a determining factor.

NASA's success in creating a structure of political support by spreading contracts around the nation in key congressional districts has made change difficult. Any alteration to the course that NASA is on 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.

What to do?

NASA has far more on its plate than it can handle under any realistic budget projection. And even under unlimited budgets, it may be that NASA simply needs institutional reform. While the solutions aren't obvious, here are some radical ideas for reforming US space policy:

1. Consider major institutional change

The Cold War structure of NASA may have made sense following Sputnik, but it may be outdated in the 21st century. Congress should be open to the possibility of major change in the organization of space policy.

2. Separate human space flight into its own agency

The NASA vision of going to Mars has a committed constituency both inside and outside the agency. So long as the US public and their elected representatives support such a 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 an agency focused narrowly on the vision of colonizing space - the Agency for Space Exploration and Settlement.

3. Move science programs to more appropriate agencies

Space and earth science programs could then be moved to agencies with missions more consistent with the goals of such research. For many years NASA's earth science program has faced challenges in transitioning its results and technologies to agencies with applied missions, such as the National Oceanic and Atmospheric Administration (NOAA) which focuses on weather, climate, water, and fisheries, among other areas. Many of NASA's mission-oriented earth science programs might be transferred to NOAA. This would not present a silver bullet solution to issues of technology transfer, but it would remove one important obstacle.

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 (NSF), which is the home to a wide range of basic research. NSF has become increasingly interdisciplinary and such diversity may, in fact, result in benefits tospace science research and current science and engineering within NASA.

Similarly, NASA's aeronautics programs might be moved to the National Institute of Standards and Technology (NIST) 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 across the country, 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 that suggested here may not make good sense or even be feasible. But it seems clear that US space policy will continue to face hard times unless policy makers begin to ask difficult questions that challenge the status quo. A proposal to break up NASA might be one way to open up such a discussion.

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For Further Reading

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