During 2010 there were two major developments in US space policy. The first was the announcement of a fundamentally different strategy for the future of US human spaceflight, made in connection with the 1 February release of President Obama’s Fiscal Year 2011 budget proposal for NASA. The second was the 28 June unveiling of a new US National Space Policy. Although the new strategy for human spaceflight proposed a major departure from the Apollo-era approach of the past four decades, the Obama national space policy, while taking a new and explicitly internationalist approach in many of its aspects, also reflected significant continuity with the principles and policies that have guided US space efforts for over 50 years. The Obama administration has moved out quickly to implement the international dimensions of its new policy, while the proposal for a change in human spaceflight strategy has engendered intense controversy. As discussed in my article in this issue of Space Policy, that strategy’s fate remains uncertain at the time of writing.

1. A new strategy for human spaceflight

The new space strategy set out by the White House on 1 February was at its foundation a proposal to move from the 20th-century approach to human spaceflight developed during the Apollo program (1961–1975) to a new approach consistent with 21st century national and international realities, and with future exploration and other strategic space objectives. It is not surprising that those with positive memories of Apollo and with vested interests in continuing the space status quo have been so strong in their opposition to the new approach; they are defending a space effort that has served them well. These critics were met for most of 2010 with a poorly articulated defense of the new strategy by its advocates inside and outside of the government. The result has been a polarized debate unprecedented in my more than four decades of close observation of space policy making.

Apollo was aimed at beating the Russians to the Moon; it was not propelled by a long-term vision of space exploration. To meet President Kennedy’s “before this decade is out” goal, NASA chose hardware and an architecture optimized for getting to the Moon as soon as possible; these choices had unfortunate consequences. The Apollo spacecraft and the magnificent Saturn V launcher proved not to be relevant to any post-Apollo mission that could gain political support in the early 1970s, and were quickly discarded. But in developing, testing, and operating the Apollo–Saturn system, NASA developed a large infrastructure, an extremely competent and dedicated work force, and a widespread space industrial base; those remain. One way of understanding the 40 years since Apollo is by viewing the Space Shuttle and the International Space Station programs as attempts to preserve and take advantage of that infrastructure, work force, and industrial base. Pursuing an “Apollo on steroids” approach to the Constellation program was an understandable sequel to those programs, once again trying to employ the heritage left by Apollo.

But this, like the hardware developed for Apollo and then abandoned, is ultimately a dead-end approach. Yale University organizational sociologist Gary Brewer observed more than 20 years ago
that during the Apollo program NASA came close to being “a perfect place” — the best organization that human beings could create to accomplish a particular goal. But Brewer went on, “perfect places do not last for long”. NASA was “no longer a perfect place”. The organization needed “new ways of thinking, new people, and new means”. He added: “The innocent clarity of purpose, the relatively easy and economically painless public consent, and the technical confidence [of Apollo]... are gone and will probably never occur again. Trying to recreate those by-gone moments by sloganeering, frightening, or appealing to mankind’s mystical needs for exploration and conquest seems somehow futile considering all that has happened since Jack Kennedy set the nation on course to the Moon”.

Introducing “new ways of thinking, new people, and new means” into the NASA approach to human spaceflight has not happened in the two decades since Brewer made his observations. That was the conclusion of the Columbia Accident Investigation Board in 2003, and much of the Apollo-era human spaceflight culture still remains intact. Trying to change that culture, which was based on a belief that only NASA had the competence and experience to send humans into space safely, and thereby close out the half century of Apollo-style human spaceflight, seems to be the essence of the new space strategy. There is no way of achieving that objective without wrenching dislocations; change is indeed hard.

Indeed, it may be too hard, at least in the short term. The NASA authorization bill passed by the Congress and signed by the president a few months ago is an uneasy compromise between key elements of change in the new strategy and preserving the status quo, particularly in terms of providing continuing work for the NASA and contractor work force. Whether that compromise proves workable, and change comes gradually but surely, or whether there is unwanted continuity in asking NASA to “do too much with too little,” is likely to take some time to determine.

2. Enhanced international cooperation

The new National Space Policy directs US government agencies to look for increased opportunities for international cooperation in a wide variety of areas, ranging from space science to space surveillance and maritime domain awareness. This approach reflects the broader foreign policy strategy of the Obama administration. For example, Secretary of State Hillary Clinton said in a July 2010 speech:

Our approach to foreign policy must reflect the world as it is, not as it used to be. It does not make sense to adapt a 19th-century concert of powers or a 20th-century balance-of-power strategy. We cannot go back to Cold War containment or to unilateralism.... We will lead by inducing greater cooperation among a greater number of actors and reducing competition, tilting the balance away from a multi-polar world.

This approach stands in rather stark contrast to the unilateralist path to leadership articulated in the 2006 Bush administration space policy. It also recognizes that in the space arena other nations and groups of nations have developed, and are continuing to develop, world-class space capabilities, and that unless they are engaged with the USA as they pursue their own objectives, other poles of space leadership will emerge.

Included in areas for increased cooperation are several national security and dual use space activities, in particular space situational awareness. In pursuit of the policy’s objectives, representatives of the Department of State and Department of Defense have in recent months carried out a series of consultations in various venues around the world regarding ways of working together in such areas; this represents a significant departure from past US practice, and could represent a significant change in how the USA advances its own interests in the security space arena.

NASA is currently constrained in its ability to seek new cooperative opportunities, although outreach in space and Earth science to new as well as traditional partners is being pursued. However, the confusion in the US human spaceflight effort makes it particularly difficult for the USA to maintain its leading position in this arena. After spending several years following the US lead in planning for a Moon-focused global exploration program, other countries (or at least their space agencies) were among those surprised by the unilateral US decision to abandon the lunar goal. The choice of a near Earth object as the initial destination for US exploration does not offer many opportunities for non-US contributions. Only if the USA reverses its policy of not accepting non-US contributions to future space transportation systems could there be a significant global exploration effort initially focused on destinations other than the Moon; indeed, such a policy reversal might even enable a truly international return to the Moon.

3. Ensuring space sustainability

Perhaps the most significant changes in the new policy are the explicit recognition that “it is in the shared interest of all nations to act responsibly in space to help prevent mishaps, misperceptions, and mistrust” and the pledge that the USA will take a leading role in “preserving the space environment for the responsible, peaceful, and safe use of all users”. In order to give substance to this declaration, by the end of 2010 US representatives had traveled widely, discussing in bilateral and multilateral settings enhanced cooperation in orbital debris mitigation and space situational awareness and proposing additional “transparency and confidence building mechanisms to encourage responsible actions in, and the peaceful use of, space.” The United States has signaled that it is open to adhering to a voluntary “code of conduct” or “rules of the road” to guide actions in space. In what could be a major departure from the Bush administration space policy, the new statement adds that “the USA will consider proposals and concepts for arms control measures”. Subsequent statements by US representatives have made it clear that such measures might even include negotiating a space arms control treaty that would, for example, ban debris-creating anti-satellite weapons. There is a significant qualification, however: any arms control treaty would have to be “equitable, effectively verifiable, and enhance the national security of the United States and its allies”.

As public and private space efforts continue to increase, there is the very real possibility that proliferation of orbital debris, accidental collisions, or unintended radio-frequency interference could limit access to specific orbits. As the global economy becomes ever more dependent on space-based services, the possibility of disruptions of the ability to make reliable use of space could have profound economic consequences. As more countries make space systems an important element of their national security posture, the possibility of purposeful interference with, or the disabling or destruction of, those systems is a threat to global stability. Thus steps to limit these possibilities are of paramount importance in keeping the space environment a global commons available for all to use for peaceful and productive purposes. Recognizing the need for international norms to govern activities in space could be the most lasting heritage of the new US national space policy.

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