

INTERNATIONAL SPACE EXPLORATION UPDATE

Smart Power Through Space

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As Americans, we find communism profoundly repugnant as a negation of personal freedom and dignity. But we can still hail the Russian people for their many achievements in science and space, in economic and industrial growth, in culture, in acts of courage.—President John F. Kennedy, American University Commencement Address, June 10, 1963

Analytical Overview

Seven months after the Cuban missile crisis (a little more than two years after announcing plans to go to the Moon), President Kennedy praised the accomplishments of the Soviet space program—against whom we were racing to the Moon—during a commencement address at American University. Arguably, the Soviet space program was the sole example of the effective exercise of soft power by a superpower whose embrace of hard power was typified by its invasion of Hungary and Stalin’s question, “How many divisions does the pope have?” More recently, China has undertaken a significant effort to utilize soft power aspects of space to gain influence, particularly in the developing world, despite the fact that they tested an antisatellite weapon only months ago. Americans take great pride in their national accomplishments in space exploration. In fact, the successes of the space program are seen as being the greatest American achievements of the twentieth century. Currently, we have a unique opportunity to ensure that Americans in the next century not only take as much or more pride in our twenty-first century accomplishments in space, but that such a level of pride can be experienced by people all around the world for generations to come.

Exploration and the civil applications of space are obvious, high-profile, high-leverage mechanisms for exercising soft power. First, space exploration is an effective spotlighting tool, providing an extraordinarily visible means of signaling engagement and highlighting increased or renewed cooperation. Second, although space exploration activities are, broadly speaking, evolutionary and provide constant opportunities for the inclusion of new partners, the discrete, quantized nature of many space-related programs provides visible milestones and high-profile opportunities for punctuating the use of soft power, such as the Apollo-Soyuz Test Project. Third, the broad array of civil space applications provides a multitude of options for highly tailored cooperation. From exploration to remote sensing and climate change to digital economy integration, the sphere of engagement can be tailored to address security concerns or to provide significant information-gathering opportunities concerning the capabilities and intentions of other space-faring nations.

The United States is particularly well suited to make very effective use of space as an instrument of soft power for a number of reasons. First, as the CSIS Commission on Smart Power notes, the United States is the only global nation, and the expansion of the human sphere of influence into space is indisputably a global undertaking. Second, the successes and challenges of space exploration, from the Moon landing to the harrowing Apollo 13 mission, are dramatic examples of key American characteristics such as hope, enthusiasm, and optimism. Third, unlike other countries, U.S. civilian space activities have always been explicitly kept apart from the national security space activities of the defense and intelligence communities. However, space is a unique field of endeavor in which virtually no technology, practice, or technique is inherently limited in its application to the exercise of either hard or soft power. Nearly all space activities are, either directly or consequentially, axiomatically dual use. Therefore, a more active civilian space program can ultimately bolster the underlying infrastructure and technology needed to support hard power applications. Attempts to isolate a national space program can foster the development of broad indigenous capabilities, in much the same way that an arms embargo can encourage the rapid development of a robust national defense industrial base. International cooperation in civil space applications makes the costly independent pursuit of dual-use capabilities much less attractive to other nations.

Since the fall of the Berlin Wall and the subsequent emergence of the United States as the sole global nation, activity in space has changed drastically.

- In the 1990s, during the explosive growth of information technology and the Internet, commercial activity in satellite communications increased dramatically, following in the footsteps of Intelsat. Intelsat itself recently completed its mission

as a public organization. Today, the amount of data transmission through space is considerable, and our dependence on space is inconceivable to the average citizen around the world.

- During the 1991 Gulf War, the United States demonstrated to the world the asymmetric advantage that accrued to armed forces operating in close conjunction with space assets. This advantage has grown steadily to the point that the lack of space resources is now considered to be an asymmetric vulnerability.

Meanwhile, the budget of the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA)—the dominant U.S. civilian space agencies—were constrained and remained stable in constant dollar terms, meaning that the resources of these agencies are eroding steadily in two ways:

- Their budgets grew far less in terms of percentage of gross domestic product (GDP) or the federal budget, when compared to national security space expenditures.
- The number of ongoing operational missions that must be sustained before any new developments can be funded is ever increasing.

Recommendations

Recommendation 1: Historically, funding levels for both civil and security space applications have been very closely matched. However, in recent years, the changing security environment and increased reliance on hard power has shifted this balance out of its natural equilibrium. Funding for civil space efforts in a number of areas, including exploration and remote sensing, should be increased to restore this balance and the necessary credibility needed to seize significant leadership opportunities for the United States through the involvement of international partners. To ensure that the United States derives maximum value from its civil space activities, changes in funding levels should be linked to implementation of other soft power initiatives, such as those outlined in recommendations 2, 3, and 4.

Recommendation 2: The United States should secure its historic leadership in remote sensing for Earth observation in two ways:

- First, by investing in future national infrastructure to monitor the 26 vital parameters of planet Earth and to make sure data continuity is maintained;
- Second, by continuing its support for Earth observation within the context of the Group on Earth Observations (GEO) and by implementing the Global Earth Observation System of Systems (GEOSS).

The creation of GEO was spearheaded by then-Secretary of State Colin Powell and the current NOAA administrator, former Navy Vice Admiral Conrad Lautenbacher. The remote sensing data collected by GEOSS through its satellites have greatly contributed to weather forecasting, water resource management, and biodiversity conservation capabilities. Furthermore, data from GEOSS helped us to better understand the nature of climate change. Absent positive U.S. leadership within GEO and GEOSS, this initiative could collapse, taking a clear opportunity for the United States to demonstrate global leadership with it.

Recommendation 3: The United States should build on the example of GEO and GEOSS and work to create an international forum for space exploration governance in order to play a strong leadership role. This role would involve coordinating and integrating exploration efforts among current and aspiring space-faring nations into a system of systems for exploration. Such a body would facilitate coordination of space exploration efforts, not only for greater synergy and cooperation between governments and corporations, but also for the reduction of the national cost of space activities. This would permit the many nations and private-sector entities that had been previously relegated to watching from the sidelines to join in such inspirational global space activities.

Recommendation 4: Space has become such a vital and integral part of our global world that human activity has expanded the boundary of our world. This boundary in space is both critical and vulnerable and must be protected. We should not rely only on hard power to protect Earth's orbiting assets. In particular, a fully integrated global space monitoring network is needed to monitor space debris and the complete operational environment for space activities. The United States should take the lead in implementing such a global system of systems in the same manner as GEO.

Recommendation 5: The United States must reassess the application of the International Trade in Arms Regulations (ITAR) as it is applied to space. Not only have these requirements harmed our domestic technological and manufacturing base, but they have had a drastic negative effect on both the hard and soft power utilization of space. Currently, ITAR dramatically increases the transactional costs of cooperation with the United States and therefore introduces a strong systemic global bias toward isolation. This encourages other nations to independently develop indigenous dual-use infrastructure and technology, potentially increasing their hard power capabilities, while reducing our ability to monitor new developments first hand.

Furthermore, by making cooperation with the United States less attractive, ITAR essentially facilitates the exercise of soft power through space by other nations.

Recommendation 6: The United States needs to address the gap in capability that will occur between 2010 and 2015. In 2010, NASA will retire their shuttle, which in the short term will mean an increase in funds. In the long term, however, this will create a gap in the capability of the United States to travel between Earth and the International Space Station. The United States has a responsibility to the International Space Station, and this gap will force it to fall short on its obligations. Relying on outsourcing this issue to a start-up company will not be accepted as a viable option by international partners. Therefore, the United States must find a way to fill this gap in capability by working with its international partners.

Marketing and Message

Within the United States: The attractiveness of space is due, in large measure, to its reflection of the strongly American inspirational values of hope, optimism, and enthusiasm for people all around the world. During the political turmoil of the 1960s, Apollo served as a beacon of hope and a counterpoint to the increasingly unpopular Vietnam War. This contrast illustrates the challenge of balancing hard and soft power priorities. More people cite the successes of the space program as the greatest accomplishment of the U.S. government during the twentieth century than they do maintaining peace, ending the Cold War, and winning World War II combined. However, much of the public perception of space exploration is firmly rooted in an often-romanticized perception of the Apollo era—a poll on the 20th anniversary of the Moon landing showed that more than 80 percent of respondents felt that the Apollo missions were worth the cost (Harris, July 1989). However, support for the Apollo program during the space race only briefly exceeded 50 percent (Harris, July 1969). Past support for space exploration was never as high as it is currently believed to have been, and public support for human exploration of the Moon is now much higher than it was during the height of the space race.

In much the same way that the Apollo program and Vietnam War era were then the two most visible displays of soft and hard power, we are now faced with a similar situation. Throughout the entire Cold War, support for soft and hard power use of space was carefully balanced. We must now signal to the world that we are not a nation that lives by use of military force alone. We must increase our support of civil space utilization and exploration to bring it back in line with spending on military and intelligence applications of space.

Public opinion is mixed about the prospect of increasing space program funding. An April 2007 Harris poll showed almost half of respondents supported cutting the space program to reduce the deficit; yet in a March 2007 Zogby poll, 71 percent of respondents opposed any cut in NASA funding. Opposition to increased funding must be considered in light of widespread confusion about the current levels of funding for civil space applications versus the historical highs seen during space race. At its height, NASA funding amounted to approximately 0.8 percent of GDP (and this was in the budgetary context of the Vietnam War) as opposed to the current amount of less than one-eighth of 1 percent. Only one in five Americans correctly estimates NASA spending at less than 1 percent of the budget, while a plurality believes that NASA funding accounts for 1 percent to 5 percent of the budget, and roughly one-third believes that NASA consumes more than 10 percent of the total budget.

While a simple increase in the level of national support is a clear signal of our interest in broader engagement and a commitment to a rational balance between all of our soft and hard power activities, it also creates an opportunity for a compelling display of U.S. global leadership. A highly visible commitment to civil space exploration and utilization will restore U.S. credibility and allow the United States to assume its traditional global leadership role. More generally, space exploration is a high-payoff, low-risk opportunity for U.S. leadership—in no case has a significant expenditure of political capital in support of civil space activities failed to provide high returns on investment. The most spectacular returns from space exploration have been cases where the initial engagement, and consequently the visibility of U.S. leadership, has been the greatest. Yet even in cases where a given space initiative fell short of expectations, virtually no penalty was incurred.

As we approach the 35th anniversary of the retreat from the lunar surface we must carefully balance our priorities—neither neglecting pressing problems at home nor forgetting future generations. A stable balance between the short and long term and between hard and soft power is contingent in large measure on increased support for civil space operations. Over the longer term, we should strongly consider supporting our civil space activities at a minimum of 1 percent of the federal budget, with a long-term goal of supporting our space program at the rate of 25 cents per American per day.

Around the World: Although it would be sufficient to simply increase funding and aspire to more ambitious goals, an excellent way to augment this effort, restore U.S. leadership credibility, and make the most effective use of space as an instrument of soft power is for the United States to reach out and engage the entire world in areas such as remote sensing, space tracking, and space exploration. Such a leadership initiative will be best focused by promoting short-term and longer-term applications in tandem.

Over shorter time horizons, funding should be increased for practical applications with clear deliverables, such as using remote sensing to help understand and address global climate change, or through the establishment of a global space monitoring network. Orbiting satellites provide 99 percent of all our data on the environment—data we need to better understand global climate change—and provide us with the tools we need to effectively and responsibly address such changes. We should take an active leadership role in joining with other nations to coordinate all of our efforts to better understand Earth through full funding of our participation in the Global Earth Observation System of Systems. Similarly, a GEO-like system for monitoring the health and pollution of our space environment will be an important step in increasing transparency and ensuring reliable access to space for all nations.

For longer-term projects, the emphasis should be on investing in the future of our children and humanity and the importance of leadership in human exploration and the use of space. This kind of inspirational leadership is exemplified by the role of human space exploration in encouraging young people to pursue engineering and science careers, which will be needed to avert the looming decline in our technical workforce, as well as fostering general worldwide growth of the technological base needed to confront the problems of the twenty-first century.

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