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ON SCIENCE & PUBLIC POLICY

**The U.S. National**

**Space Policy**

by

Robert Joseph  
Under Secretary of State for Arms Control  
and International Security

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Washington, D.C.

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**Robert Joseph** serves as the Under Secretary of State for Arms Control and International Security. In this capacity, he is the principal State officer for non- and counter-proliferation matters, as well as for arms control, arms transfers, regional security and defense relations, and security assistance. Previously, he served as Special Assistant to the President and Senior Director for Proliferation Strategy, Counterproliferation and Homeland Defense, National Security Council. In this position he was responsible, under the supervision of the National Security Advisor, for developing and coordinating U.S. policies and strategies for preventing and defending against threats to the United States from weapons of mass destruction.

From 1992 until 2001, Dr. Joseph was Professor of National Security Studies and Director/Founder of the Center for Counterproliferation Research at the National Defense University. Prior to that he was U.S. Commissioner to the Standing Consultative Commission and Ambassador to the U.S.-Russian Consultative Commission on Nuclear Testing, Principal Deputy Assistant Secretary of Defense for International Security Policy, and Deputy Assistant Secretary for Nuclear Forces and Arms Control Policy.

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# *The U.S. National Space Policy*<sup>1</sup>

Robert Joseph  
Under Secretary of State for Arms Control  
and International Security

December 13, 2006

## **Introduction**

I would like to thank the Marshall Institute for the invitation and opportunity to discuss the President's recently released National Space Policy. Given the Institute's long-standing and impressive contributions to the promotion of understanding of space policy issues, I greatly welcome this opportunity.

The President's new National Space Policy – the first issued in nearly 10 years – sets forth the overarching national policy that governs the conduct of U.S. space activities. The policy is designed to ensure that our space capabilities are protected in a time of increasing challenges and threats. This is imperative because space capabilities are vital to our national security and to our economic wellbeing.

The scope of the new National Space Policy is broad. It explains the rationale behind the Administration's space initiatives. It calls for new efforts to develop a professional space cadre. It recommends stable funding, strengthens interagency partnerships, and encourages the development of a robust U.S. space-related science, technology, and industrial base. The Policy also, and importantly, continues to promote space cooperation with friends and allies.

Today, I would like to focus on what has remained consistent and what is new in this policy statement. I will then highlight the contributions of space assets to the global economy and our overall welfare. Finally, I will talk about the threats that face us as we expand our use of space and what the new policy proposes to do about those threats.

## **The New National Space Policy**

At its most basic level, U.S. space policy has not changed significantly from the beginning of our ventures into space. Consistent with past policies, the United States does not monopolize space; we do not deny access to space for peaceful purposes by

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<sup>1</sup> Prepared remarks of Robert G. Joseph, Under Secretary of State for Arms Control and International Security, delivered for the George C. Marshall Institute, December 13, 2006.

other nations. Rather, we explore and use space for the benefit of the entire world. This remains a central principle of our policy.

What the new policy reflects, however, are increased actions to ensure the long-term security of our space assets in light of new threats and as a result of our increased use of space. It establishes the goal of ensuring access to space-based imaging, communication, and positioning, navigation, and timing assets which are critical to fulfilling the full range of diplomatic, information, military, and economic activities that the United States undertakes.

To fulfill those activities, the policy puts new emphasis on strengthening inter-agency coordination, collaboration, and information sharing. Interagency cooperation must be integrated into the daily practices of our government agencies. The President's policy highlights the need for stronger integration of space situational awareness and intelligence collection and analysis.

The new policy also gives prominence to several goals only touched upon in previous policy documents, including: strengthening the space science and technology base, developing space professionals, and strengthening U.S. industrial competitiveness, especially through use of U.S. commercial space capabilities. Let me briefly address some of these goals.

We will expand our space-related science, technology, and industrial base by conducting and encouraging high-risk/high-payoff and transformational research. We are encouraging the use of awards and prizes to stimulate innovation, conducting the basic and applied research that increases capability and decreases cost, ensuring the availability of critical space-related industrial elements, and executing a sustained and affordable human and robotic program of space exploration.

We will develop and improve our cadre of space professionals — trained, talented people who can design, acquire, plan, operate, integrate, and sustain an increasingly complex, new generation of space systems. Without these professionals not only would our space systems eventually degrade and atrophy, but we would miss important opportunities for advancement in other related areas.

We know from experience how valuable this can be. Take, for instance, the influence that NASA's space professionals have had on the medical field. As many of you know, the image processing of CAT Scanners and MRI technology — used in hospitals worldwide — came from technology developed to enhance pictures of the Moon during the Apollo program. Kidney dialysis machines were developed as a result of a NASA-developed chemical process, and insulin pumps were based on technology used on the Mars Viking spacecraft. Even programmable heart pacemakers were first developed in the 1970s using NASA satellite electrical systems.

Equally important, the new policy is designed to foster the use of U.S. commercial space capabilities internationally. Not long ago, taking pictures of the Earth from space was limited to U.S. Government reconnaissance satellites, such as our first CORONA satellite in 1960. In 1986, the French firm Spot Image launched the Spot 1 satellite followed in 1999 by the first U.S. commercial imaging satellite, IKONOS. Now ordinary citizens can purchase photographs so detailed they can see individual trees, cars, roads, and houses. Today the United States, Japan, Israel, India, France, Russia, and China, among others, all have commercial imaging satellites on orbit, and space images are available for free through services like Google™ Maps and Google™ Earth. If the United States is not competitive in this growing field of commercial space, our expertise and leadership will vanish rapidly.

Since the articulation of the 1996 National Space Policy, the U.S. Government has been committed to using commercial imagery to augment its national capabilities, save money, and help maintain a strong domestic industrial base. President Bush strengthened that commitment of support to commercial providers in his Commercial Remote Sensing Space Policy, signed in April 2003. The stated goal of that policy is *“to advance and protect U.S. national security and foreign policy interests by maintaining the nation’s leadership in remote sensing space activities, and by sustaining and enhancing the U.S. remote sensing industry.”*

### **Importance of Space Assets to the Global Economy and National Security**

Perhaps we can best understand how space assets have dramatically changed and improved our lives by reflecting on how our lives would be affected without them. There was a glimpse of this almost a decade ago, at a time when we were much less dependent on space than we are today. Some may recall in May 1998, PanAmSat’s Galaxy 4 satellite lost its fixed orientation that allowed it to point its antenna towards the Earth. When service was lost, upwards of 45 million users lost their pager service – including doctors on call. Automated teller machines and gas stations could not process transactions; television and radio transmissions were interrupted – all this because of one satellite. This satellite was not a military satellite; it had not been attacked and a meteor had not hit it. The satellite simply malfunctioned. What if more than one satellite had gone out? What if the Global Positioning System went out today and there was no precision, navigation and timing signal? It is difficult to overestimate the impact of space-based assets on our daily lives.

The same is also true in other areas. The State Department could not conduct modern diplomacy without space assets. We communicate with our overseas posts, providing them critical guidance and information in real time via satellite communications. We also use satellite communications to disseminate information via the Voice of America, Radio Free Europe, Radio Free Asia, Radio and TV Marti, Radio Farda, and Arab-language broadcasts on Radio Sawa and Alhurra TV. The U.S.-Russia Direct Communications Link, sometimes referred to as the HOTLINE, is also satellite-based.

The HOTLINE is available 24/7 to transmit potentially time-urgent notifications to minimize the risk that a misinterpretation of an event could accidentally lead to a nuclear exchange.

The Defense Department has long acknowledged the vital importance of space. This is a reflection of the various critical national security space assets which the United States employs – such as the Defense Support Program and Space Based Infrared System – which perform early warning surveillance, detection and ballistic missile tracking functions; and the Defense Satellite Communications System that provides secure voice and data communications to our fielded forces. Like their commercial counterparts, the reliance on these space-based assets is only increasing.

While space assets are vital to U.S. national security and foreign policy, they are equally and increasingly important to the global economy and welfare. Take, for instance, the Global Positioning System. Use of GPS technology can be found almost everywhere. It is being used to improve productivity in areas as diverse as farming, mining, construction, surveying, even taxicab management and package delivery. It enhances public safety by preventing accidents, reducing the response times of ambulances, firefighters and other emergency services. Banks use the highly accurate timing signal from the on-board atomic clocks to guarantee all offices record transactions simultaneously around the world. Space systems, services, and capabilities provide weather forecasting, enable search and rescue missions, and provide for emergency communications. Science is improved by space-based monitoring of the Earth's crust to better aid in earthquake prediction, environmental protection is improved by the characterization of contaminated soil, sediment, and water sites, and space-based satellites ensure that international air and sea traffic arrive safely and navigate accurately.

Our new policy, like the 1996 policy, reiterates the principle that the U.S. is committed to free access and use of space by all nations. We reaffirm that space systems, used for peaceful purposes, must be able to pass through, and operate in, space without interference, and that peaceful purposes includes defense and intelligence-related activities. Though most of the assets in space are from a few countries, there is wide use of commercial imagery, communications, weather, and navigation, among many nations. Therefore, it is in our common interest to deter hostile states from impeding access to, or use of space for peaceful purposes.

### **Threats to U.S. Space Assets**

Space systems are, by their very nature, vulnerable to a range of threats. Space is a harsh environment in which to operate. Meteors, solar flares, and debris can cause harm to our space assets. Other threats are man-made. These threats include jamming satellite links or blinding satellite sensors, which can be disruptive or can temporarily deny access to space-derived products. Anti-satellite weapons — whether kinetic or conventional -- or Electro-Magnetic Pulse (EMP) weapons can permanently and irre-

versibly destroy satellites. Military force can be employed against ground relay stations, communication nodes, or satellite command and control systems to render space assets useless over an extended period of time. Adversaries can also employ denial and deception techniques to confuse or complicate our information collection.

Moreover, the ability to restrict or deny our freedom of access to, and operations in space is no longer limited simply to nation states. With knowledge of space systems, their orbits, and the means to counter them being readily available, both state and non-state actors can acquire or develop knowledge about our systems, their capabilities, and how to disrupt or destroy them. For instance, non-government satellite observers track satellites and post their orbits on the Internet. Terrorist groups might employ GPS jammers; or our ground stations and communications nodes could be disabled or destroyed by terrorists using, for example, rocket-propelled grenades. Terrorists, like state adversaries, understand our vulnerabilities and have targeted our economy in the past, as they did on 9/11. Thus, our space infrastructure could be seen as a highly lucrative target and today more actors have greater access to increasingly sophisticated technologies and capabilities that will improve their ability to interfere with U.S. space systems, services, and capabilities.

For our part, we must take all of these threats seriously because space capabilities are essential or “vital” to the operation of our telecommunications, transportation, electrical power, water supply, gas and oil storage and transportation systems, emergency services, banking and finance, and continuity of government services. And, just as the U.S. Government reserves the right to protect these infrastructures and resources on land, so too do we reserve the right to protect our space assets. This principle, in fact, was first established for the United States by President Eisenhower and is enshrined in the 1967 Outer Space Treaty.

Consistent with this principle, the United States views the purposeful interference with its space systems as an infringement on our rights, just as we would view interference with U.S. naval and commercial vessels in international waters.

If these rights are not respected, the United States has the same full range of options — from diplomatic to military — to protect its space assets as it has to protect its other critical assets. There is also a broad range of means, both passive and active, by which space assets may be protected or the effects of the loss of their services minimized. These means include non-space back-ups, on-board sub-component redundancy, maneuvering, system hardening, encryption, and frequency agility.

The United States is more dependent upon space than any other nation. Recognition of the importance of the activities conducted in space led prior Administrations to state that “unimpeded access to and use of space is a vital national interest.” Earlier in the Administration, the Space Commission report highlighted that “the U.S. is an attractive candidate for a space Pearl Harbor,” because the political, military, and

economic value of our nation's activities in space may provide the motive for an adversary to attack U.S. space assets. Ensuring the freedom of space and protecting our interests in this medium are priorities for U.S. national security and for the U.S. economy.

But not all countries can be relied upon to pursue exclusively peaceful goals in space. A number of countries are exploring and acquiring capabilities to counter, attack, and defeat U.S. space systems. In view of these growing threats, our space policy requires us to increase our ability to protect our critical space capabilities and to continue to protect our interests from being harmed through the hostile use of space.

To achieve this end, the United States needs to remain at the forefront in space, technologically and operationally, as we have in the air, on land, and at sea. Specifically, the United States must have the means to employ space assets as an integral part of its ability to manage crises, deter conflicts and, if deterrence fails, prevail in conflict.

### **International Cooperation**

By maintaining the right of self-defense, the United States is not out to claim space for its own. This is not about establishing a U.S. monopoly of space, as some have asserted. In fact, even a cursory reading of the new policy statement demonstrates the exact opposite. There is significant emphasis on international cooperation throughout the National Space Policy, and in other related policy directives on space transportation, commercial space imagery, space exploration and positioning, navigation and timing.

The new policy recognizes that, as space-related commerce grows, competition will grow as well, and the United States will move to remain competitive in areas where we have economic and security interests.

We are not transitioning away from broader international initiatives like the International Space Station. On the contrary, we are embracing them to a greater degree than ever before. One need only look at NASA for proof of this commitment. Through the ongoing assembly of the International Space Station, as well as through shuttle launches, NASA is continuing our long tradition of international cooperation. Modules from Europe and Japan will be lofted to complete the station by 2010. Even now, the crew of the space shuttle Discovery proudly counts a Swede among its ranks and will be returning with yet another international crew-member – in this case from Germany.

In its drive to implement President Bush's vision of returning to the moon and landing a person on Mars, NASA is encouraging other nations' space agencies to join in this bold endeavor. This embracing of international partnerships reflects the U.S. policy of pursuing scientific, economic and international cooperation based on the par-

ticipants' capabilities, expertise and interest. This approach has led to a high degree of cooperation between NASA and its international partners, a result we view as very positive.

In short, the United States does not intend to pursue its objectives in space alone. To the contrary, we will energetically pursue our goals in space exploration, space utilization, and scientific discovery while inviting like-minded partners to join us. President Bush established international collaboration as a key element of his January 2004 **Vision for Space Exploration**. Likewise, the Global Earth Observation System, mentioned in the National Space Policy, is a major step forward in international collaboration with 55 countries and over 30 international organizations working together to fill observation gaps, provide natural disaster warning, environmental monitoring, and improve economic benefits. As the President has stated, the **Vision for Space Exploration** is a journey, not a race, and we call on other nations to join us on this journey, in a spirit of cooperation and friendship.

The Outer Space Treaty, drafted almost 40 years ago, is at least as relevant and applicable today as it was then. It has established the guiding principles for space operations by which we believe all nations should conduct themselves. We assess that these principles work. A quick look at some of the Treaty's key provisions shows: that space shall be free for all to explore and use; that space activities shall be carried out in accordance with international law, including the Charter of the United Nations, which guarantees the right of self defense. The Treaty also prohibits placing weapons of mass destruction in orbit and prohibits the parties from interfering with the assets of others.

Beyond the Outer Space Treaty, the United States is already a State Party to the Convention on International Liability for Damage Caused by Space Objects, and to the Convention on Registration of Objects Launched into Outer Space, and the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space.

Despite the long-standing and effective international space treaty regime, centered on the Outer Space Treaty, there are those who advocate negotiating new multilateral agreements that we believe to be unnecessary and counterproductive. We do not need to enter into new agreements; rather we should be seeking to gain universal adherence to existing agreements, including the Outer Space Treaty, and we should concentrate our efforts on real threats, such as those to the nuclear nonproliferation regime which, as a consequence of actions by Iran and North Korea, are under great strain.

We see no value in proposals such as the Prevention of an Arms Race in Outer Space, commonly referred to as PAROS. Advocates of PAROS argue that we need another international agreement to prevent an arms race in space. There is no arms

race in space and we see no signs of one emerging. Instead, we believe our efforts should focus on ensuring free access to space for peaceful purposes and deterring the misuse of space. This does not require a new treaty regime. That is precisely what our National Space Policy states, and we believe that will have more of a deterrent influence than an additional set of international constraints – constraints that would be unverifiable and constrain only those who comply and not cheat.

For our part, we will continue to abide scrupulously by our existing international agreements, including the Outer Space Treaty. Given the vital importance of our space assets, foreclosing technical options to defend those space assets in order to forestall a hypothetical future arms race in space, is not in the national security interest of the United States.

### **Conclusion**

Our new National Space Policy identifies the overarching principles, goals, and guidelines for U.S. space activities. The United States is committed to safeguard and expand the peaceful uses of space. Indeed, the first principle stated in the U.S. National Space Policy is:

“The United States is committed to the exploration and use of outer space by all nations for peaceful purposes, and for the benefit of all humanity.”

The United States has been, and will continue to be, a leader in expanding the use of space for peaceful purposes. Our advances in space in the fields of communication, medicine, and transportation, as well as many others, have come to benefit not just Americans, but all of mankind, including citizens of countries that have not yet ventured into space. Our policy is intended to ensure that this advancement continues and that all will see the benefits that come with free access to and security of space.

To ensure free access to space, however, we must continue to develop a full range of options to deter and defend against threats to our space infrastructure. Deterrence requires first and foremost a clear statement of what interests are vital. We have made clear that protecting space assets is a vital national interest. No nation, no non-state actor, should be under the illusion that the United States will tolerate a denial of our right to the use of space for peaceful purposes. We reserve the right to defend ourselves against hostile attacks and interference with our space assets. We will, therefore, oppose others who wish to use their military capabilities to impede or deny our access to and use of space. We will seek the best capabilities to protect our space assets by active or passive means.

The policy is not a statement of a hostile, unilateral approach, but a call for meaningful cooperation that benefits all. We will pursue diplomatic efforts to gain the broadest possible appreciation of the benefits all nations gain from peaceful uses of

outer space and we will be vigorous in our defense of this international right.

In closing, we believe that the new National Space Policy represents reasoned judgments and a positive path to a more secure and prosperous future.

Thank you for your attention.

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