



Strategic Space Development

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Obama Administration Impact on Space Policy

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Obama space policy

- Obama the candidate had some early space policy proclamations
 - A strong NASA
 - No weapons in space
 - Reduced spending on “un-proven” missile defense systems
 - Slowing down development of “Future Combat Systems”
- Obama elect has a more thought out policy that differs
 - A strong NASA (with more details)
 - Acquisition reform in defense systems
 - No weapons in space
 - Strong support of new programs like ORS
- Following is a projection of impact on space business



The first line of his policy

“When I was growing up, NASA united Americans to a common purpose and inspired the world with accomplishments we are still proud of. Today, NASA is an organization that impacts many facets of American life. I believe NASA needs an inspirational vision for the 21st Century. My vision will build on the great goals set forth in recent years, to maintain a robust program of human space exploration and ensure the fulfillment of NASA’s mission. Together, we can ensure that NASA again reflects all that is best about our country and continue our nation’s preeminence in space.”

-- Barack Obama



Timelines

- The FY09 budget has been set and approved
 - Reflects Bush administration policy
 - Reflects Bush administration priorities
 - Democratic congress imprints on space policy
- The FY10 budget will be submitted by the Bush administration
 - Reflects Bush administration policy
 - Reflects Bush administration priorities
 - Democratic congress imprints on space policy
 - Will have some impact of Obama administration priorities
 - Will give early indicators of hot button issues
- FY11 Budget will be first all Obama budget
 - Likely driven by stated priorities and space policy
 - Realities are not changeable and must be dealt with



Obama Civil Space Policy

- Inspire the world with both human and robotic space exploration
- Lead on global climate change, energy independence, and aeronautics
- Maintain a robust program of human space exploration
- Reach out to include international partners
- Engage the private sector to amplify NASA's reach
- Revitalized NASA to contribute to American economic growth
- Organizational authority with broad mandate to oversee integrated strategy and policy dealing with all aspects of the government's spacerelated programs
 - NASA, Department of Defense, NRO, Commerce Department, Transportation Department, Other federal agencies.
- Re-establish Space Council reporting to the president. It will oversee and coordinate civilian, military, commercial and national security space activities



Access to space

- **Retaining Options for Additional Shuttle Flights**

- Add at least one additional Space Shuttle flight to fly a valuable mission and to keep the workforce engaged

- Ensure adequate funding to support that additional flight so that it does not interfere with developing CEV.

- **Speeding the Next-Generation Vehicle**

- Expedite STS successor systems for carrying Americans to space to minimize gap

- Underfunding by the Bush administration has left NASA with limited flexibility

- **Using the Private Sector**

- Stimulate efforts in private sector to develop and demonstrate spaceflight capabilities

- COTS is a good model of government/industry collaboration.

- **Working with International Allies**

- Enlist international partners to provide International Space Station (ISS) cargo re-supply

- Eventually alternate means for sending crews to the ISS



International Space Station

- **Partnering to Enhance the Potential of the ISS**

Enlist other Federal agencies, industry and academia to develop innovative scientific & research projects on the ISS

- **Enabling Human Exploration**

Use the ISS for fundamental biological and physical research effects of space travel on humans

Test emerging technologies to enable such long term space travel.

- **Enhancing International Cooperation**

ISS has been a model for international cooperation to achieve peaceful objectives in space, helping develop positive relations with Russia during the 1990s

America must take the next step and use the ISS as a strategic tool in diplomatic relations with non traditional partners.

- **Retaining Options for Extended Operations**

Options to extend ISS operations beyond 2016

After investing so much in developing the ISS, it would be a shame not to utilize it to the fullest possible extent



Human Space Exploration

- **Continuing Research and Development Investments to Support Future Missions**
 - Robust research and technology development program
 - Address long-term needs for future human and robotic missions
 - Funding goal that maintains at least 10 percent of the total exploration systems budget for R&D
- **Drawing in International Partners**
 - Encourage a cooperative framework for the conduct of a long-term and sustainable international exploration initiative
 - Leverage resources and use space exploration as a tool of global diplomacy
 - Continue NASA's architecture studies and advanced planning to ensure the American space workforce remains engaged and that America can lead the world to long-term exploration of the Moon, Mars, and beyond, in a collaborative and cost-effective way
- **Partner to Improve Basic Capabilities**
 - Evaluate whether the private sector can safely and effectively fulfill some of NASA's need for lower earth orbit cargo transport



Robotic Exploration

- **Leveraging Robotic Capabilities to Explore the Solar System**

Increased investment in research, data analysis, and technology development across the full suite of exploration missions

Mars Sample Return mission

Future missions to the Moon

Asteroids and Lagrange points

Outer Solar System and other destinations.

- **Supporting Space-Based Observatories**

Hubble Space Telescope

Chandra XRay Observatory

Gamma Ray Observatory

Spitzer Space Telescope

Committed to a bold new set of such platforms and programs to expand our knowledge of the cosmos.



Earth Science

- **Studying the Earth and Monitoring Climate Change**

- Obama administration will lean forward to deploy a global climate change research and monitoring system

- Implement National Research Council decadal survey on Earth observations from space recommendations

- **Stopping Political Interference**

- Strengthen baseline climate observations and climate data records to ensure long-term and accurate climate records

- No support of climate change research data for political objectives.

- **Supporting Global Food and Water Needs**

- The Global Precipitation Measurement mission is an international effort to improve climate, weather, and hydrological predictions through more accurate and more frequent precipitation measurements

- Launch this mission without further delay.

- **Enhancing Earth Mapping**

- Continue support for the Landsat Data Continuity Mission



Coordination in space

- DOD invests heavily in space assets critical to conducting military operations
- DOD spends > \$22 B in space which is more than NASA's annual budget
- NRO operates satellites that are essential to national security & global stability
- National Oceanic and Atmospheric Administration operates an array of weather satellites that provide billions of dollars of benefit to the U.S. taxpayer
- NASA can work more closely with other federal agencies to take advantage of their expertise and technologies
 - Sharing research and technical information, Better coordination of acquisition programs
 - Ensure an integrated and fully coordinated national space program through National Aeronautics and Space Council
- Appoint an Assistant to the President for Science and Technology Policy
 - Will report directly to the president
 - Deeply involved in establishing research priorities
 - Reflect the nation's needs and use best available advice from experts



Space Security

- **Keeping our space assets free of threats of disruption will be priority**
 - Not only a military concern, but also an issue relevant to commercial and scientific operators
 - Developing an international approach to minimizing space debris
 - Enhancing capabilities for space situational awareness
 - Managing increasingly complex space operations are important steps towards sustaining our space operations.
- **Negotiating Agreements on "Rules of the Road"**
 - Develop "rules of the road" for space to ensure nations have a common understanding of acceptable behavior
- **Opposing Weaponization of Space**
 - Space assets are increasingly important to our national security and our economy, but also extremely vulnerable
 - China's successful test of an anti-satellite missile in January 2007 signaled new arms race in space
 - Opposes the stationing of weapons in space and the development of anti-satellite weapons
- **Protecting America's Space Assets**
 - Pursue new technologies and capabilities that allow us to avoid attacks and recover quickly
 - Operationally Responsive Space program makes systems more robust and less vulnerable



Space Commercialization

- **Enhancing the Role of NASA as a Premier Institution of Innovation**

- Renew NASA's basic research that the private sector can use to develop new products for American consumers.

- **Increasing Commercialization Benefits**

- Promote cost sharing initiatives between government and industry

- Increase the state of the art in microelectromechanical systems & nanotechnology

- Establish multi-agency programs that focus on rapid maturation of advanced concepts and transfer to industry for commercialization.

- **Jumpstarting Consumer Technology**

- Expand the use of prizes for revolutionary technical achievements to benefit society

- Funds for joint industry/government rapid-to-the consumer technology advances.

- **Supporting Commercial Access to Space**

- Stimulate the commercial use of space and private sector utilization of the ISS

- Establish new processes and procurement goals to promote using government facilities



Revising Aerospace Export Control

- Some sections of the International Traffic in Arms Regulations (ITAR) have unduly hampered the competitiveness of domestic aerospace industry
- Outdated restrictions have cost billions of dollars to American satellite and space hardware manufacturers
- Customers have decided to purchase equipment from European suppliers
- Direct a review of the ITAR to reevaluate restrictions imposed on American companies, with a special focus on space hardware that is currently restricted from commercial export
- Direct revisions to the licensing process to ensure that American suppliers are competitive in the international aerospace markets, without jeopardizing American national security



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Strategic Space Development

Analysis



NASA

- Big winner in space science and Earth science
- Big budget winner – expect 20% annual funding increases
- Expect more numerous decadal survey missions
- Expect NASA centers to be more in the business of hardware building
- Moon will stay on agenda as main manned target
- Increased funding and temp for CEV and ARES systems
- Increase in international cooperation
- Increased pressure for industry to “partner” with NASA
- Increased R&D budgets
- Increased staffing problems in industry and government positions



DoD Space

- Acquisition reform
 - Banner under which defense cuts or stagnant budgets are justified
 - Expect some real acquisition reform with even less TSPR policies
- Responsive Space
 - Expect this to be the tip of the spear in promoting acquisition reform
 - Large budget winner with 20-40% increases in funding
- Space Control
 - Defensive systems will see static to increased budgets
 - Offensive systems will go even more black or suffer budget setbacks
 - Missile defense is in reality a ASAT system extant
- Intelligence systems
 - More commercial reliance such as Geoeye
 - Less traditional big systems



Missile Defense

- Space Based weapons will be political hot button
 - Openly against in policy statement
 - Proliferating threats may force hand
 - If it goes forward, expect more and deeper security levels for this area
 - Curious case of FY2009 congressional funding of this program
- Less emphasis on evolving missile and theater defense capabilities
- Congressional regional job concerns will prevent strong ideological reaction and budget reduction
- Not expected to be a strong future spending on anything other than existing operational systems



Commercial Space

- Unbridling effect of export control reform
- Increased “partnership” between government and industry
 - Programs
 - Facilities
 - People
 - Technology
- Increased reliance on COTS and Commercial Resupply for ISS and other space operations
- Increased emphasis on international competitiveness
- Push for military reliance on commercial systems for communications and overhead imagery