

Space Policy Issues for the New Administration



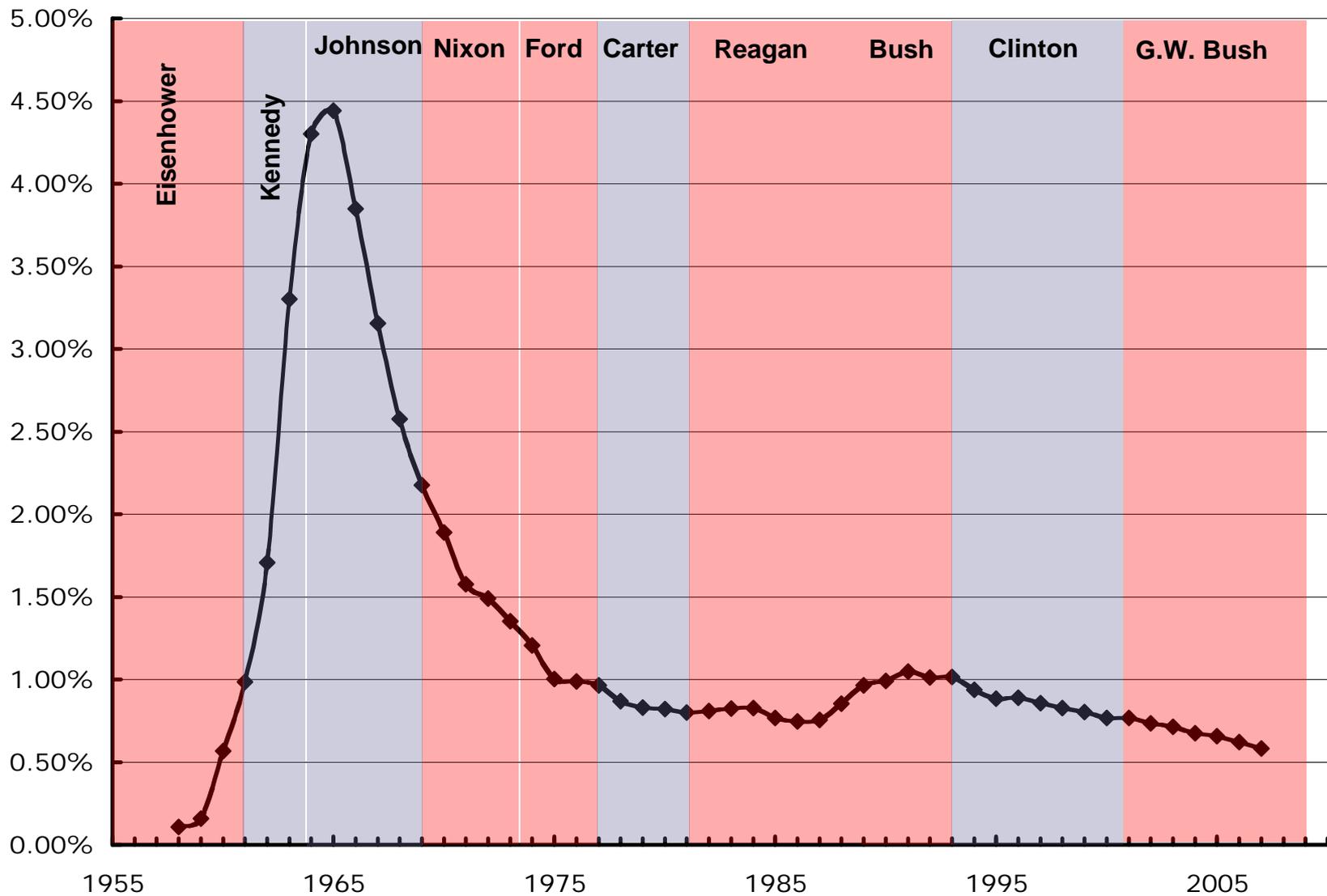
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Rationales for Spaceflight



- Scientific Discovery and Understanding
- National Security
- Economic Competitiveness
- Human Destiny/Survival of the Species
- National Prestige

NASA Percentage of Federal Budget



Candidate Obama on Space Issues

- Released space policy statement January 2008 promising support and funding for civil space programs. More extensive policy released on August 16, 2008.
- Advocated shortening the gap in human spaceflight capability after the termination of shuttle flights, but offered few details.
- Supported a return to the Moon by 2020, but wants to revisit NASA's top-level goals and objectives.
- Proposed reestablishing a Space Council to improve interagency coordination and national goal-setting.
- Regarding national security space, opposed weapons in space but recognized the pressing need for protection measures and space situational awareness. He favors negotiations on "rules of the road."
- Recognized the value of commercial space; endorsed public/private partnerships, prize competitions, NASA's COTS program, commercial use of the space station, and revision of ITAR.

Major Open Policy Questions

- Where does NASA/space exploration rate in the new administration's agenda?
- Who will be on the NASA leadership team?
- What are the budget priorities? (For administration? For NASA?)
- What mix of missions are appropriate for the future?
- What commitments exist for continued leadership in space and for large international cooperative ventures?
- Whither human spaceflight?

Whither Human Spaceflight?

1. What is the future for humans in space?
2. What is the current state of U.S. access to space and what should be its capabilities through 2030?
3. What short- and long-term effect will the *Columbia* accident and its aftermath have upon commercial, military, scientific, international space activities?
4. Does the U.S. have the political will to sustain expansive human spaceflight for the future?
5. What major space policy decisions must be taken in 2009-2012 period?

Challenges for Return to the Moon



- Ensure public support.
- Build on initial experiences; broaden international activities.
- Emphasize military, civil, and commercial operations in Earth orbit as part of the pathway to lunar operations.
- Interweave exploration, science, technology development, commerce, and infrastructure development.
- Explain the “why” of a return to human lunar exploration.

Human Spaceflight Policy Issues

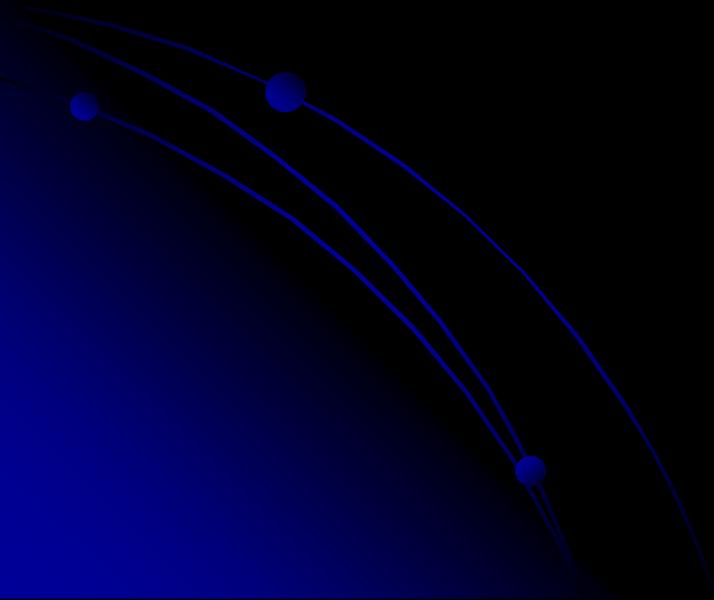
- Human spaceflight should focus on tangible results.
- NASA should reflect nation's space policy, not an administration's.
- International Space Station—what's its use?
 - What's its research plan—the current research plan is largely undefined.
 - Rebuild international enthusiasm for ISS utilization, invite opportunities for broadened international relations.
 - NASA still seen as partner of choice in cooperative civil space activities. Opportunities exist.
- The Gap: recognize and demonstrate to political leaders that gap cannot be completely closed.
 - Pursue multiple options for human space access. Relying on Russia as only option to support space station undermines larger strategic agenda.
 - Use additional funds to advance Constellation timeline; limit extension of shuttle program. This remains a difficult proposition, with risk management, technology development, and fiscal responsibility key issues.
 - Reassess and revalidate or jettison Constellation architecture.

Other Key Space Policy Issues

- Identify overlaps between DoD, NASA, and commercial sectors. Reframe roles and missions.
- Mend DoD/NASA relationships.
- Increase NASA budget or narrow NASA's mission.
- NASA funding:
 - Essentially flat since end of Cold War.
 - Funding level of the FY08 NASA Authorization Bill is equivalent to the purchasing power of the FY94 budget in constant dollar terms.
- Allow commercial companies to take over tasks that the government doesn't need to be involved in—suborbital, low Earth orbit transport, power systems, logistics.
- NASA Education:
 - Look proactively for creative ways to use space activities to educate/inspire young people.
 - Virtual experiences.
 - Larger non-space core audiences.



Backup Slides



President's Key Statements on Space (1)

- **Space Leadership:** “United States should maintain its international leadership in space while at the same time inspiring a new generation of Americans to dream beyond the horizon. NASA not only will inspire the world with both human and robotic space exploration, but also will again lead in confronting the challenges we face here on Earth.”
- **Interagency Cooperation:** “Increase interagency sharing of expertise and technologies, including research and technical information. Continue and intensify effort to work with international allies on space exploration and climate change research. Use space as a strategic tool to strengthen relations with allies, reduce future conflicts, and engage members of the developing world.”

President's Key Statements on Space (2)

- **Constellation Program & Human Space Exploration:**
“Make the necessary investments to ensure we close the gap as much as is technically feasible and to minimize reliance on foreign space capabilities. Work with the space industry to ensure retention of workforce and technical capabilities during the transition from the shuttle to its successor:
 - Retain option for additional shuttle flights.
 - Speed up next-generation vehicle.
 - Stimulate private-sector efforts.
 - Work with international partners.”
- Endorses the goal of sending human missions to the Moon by 2020, as a precursor in an orderly progression to missions to more distant destinations, including Mars.

President's Key Statements on Space (3)

- **Space Station:** “Ensure that NASA and other federal agencies are fully utilizing the ISS to conduct research that can help address global challenges, provide economic benefits to Earth, and support long-term human exploration. Retain options for operations beyond 2016.”
- **Space Industrial Base:** “Expand the American skill base in science and engineering. Review ITAR to reevaluate restrictions imposed on American companies, with a special focus on space hardware.”
- **Space Science:** Supports a robust program of robotic exploration on the major cross-cutting themes and recommended new missions established by the decadal survey of the National Research Council.
- **Earth Science & Climate Change:** “Given the urgency of climate-related monitoring...the Obama administration will lean forward to deploy a global climate change research and monitoring system that will work for decades to come. The recommendations in the recent National Research Council decadal survey on Earth observations from space will guide priorities.”

President's Key Statements on Space (4)

- **Applications Research:** “Renew NASA’s commitment to innovation-driving basic research. Encourage public/private space technology partnerships to spur innovation in space and aeronautics. Establish multi-agency programs that focus on rapid maturation of advanced concepts and transfer to industry. Expand the use of prizes for revolutionary technical achievements and funds for joint industry/government rapid-to-consumer technology advances. Establish new processes and procurement goals to promote the use of government facilities.
- **Space Security:** “Develop an international approach to minimizing space debris. Enhance capabilities for space situational awareness. Protect our assets in space by pursuing new technologies and capabilities that allow us to avoid attacks and recover from them quickly. The Operationally Responsive Space program... is a way to invest in this capability. Work with other nations to develop ‘rules of the road’ for space to ensure all nations have a common understanding of acceptable behavior.”
- **Offensive Space Systems:** “Oppose the stationing of weapons in space and the development of anti-satellite weapons.”

President's Key Statements on Space (5)

- **S&T Education:** “Establish educational (K-12) access to government programs. Support non-traditional approaches, such as design competitions and Internet collaborations to engage students. Support university programs that partner NASA, DOT, DOD and NOAA with academia to provide hands-on training experiences at the college level. Encourage public officials to have two-way dialogs with the public to discuss the national agenda for space.
- **Aeronautics:** Pursue more long-term fundamental research to reduce the risk associated with advancing the state of the art. Support research to address aviation safety, air traffic control, and noise reduction. Support research to dramatically improve the fuel efficiency of military and civilian aircraft.