Implementing The Vision For U.S. Space Exploration

Briefing to the President's Commission on Implementation of U.S. Space Exploration Policy

Sean O'Keefe
NASA Administrator

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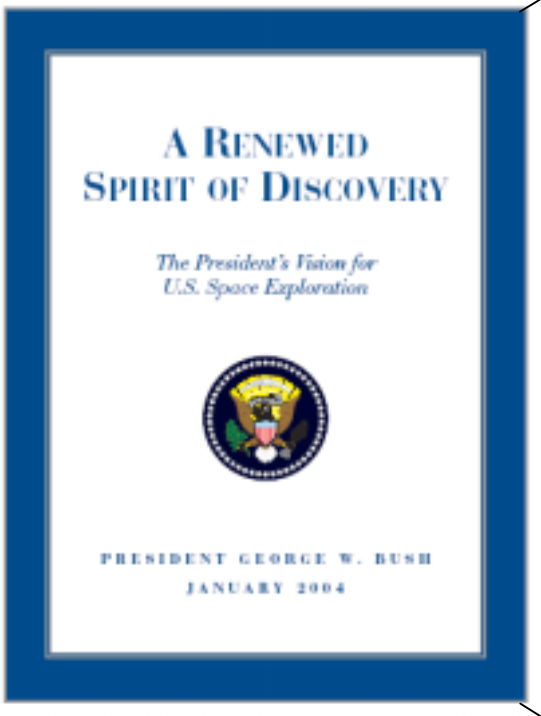
Vision for Space Exploration

THE FUNDAMENTAL GOAL OF THIS VISION IS TO ADVANCE U.S. SCIENTIFIC, SECURITY, AND ECONOMIC INTEREST THROUGH A ROBUST SPACE EXPLORATION PROGRAM



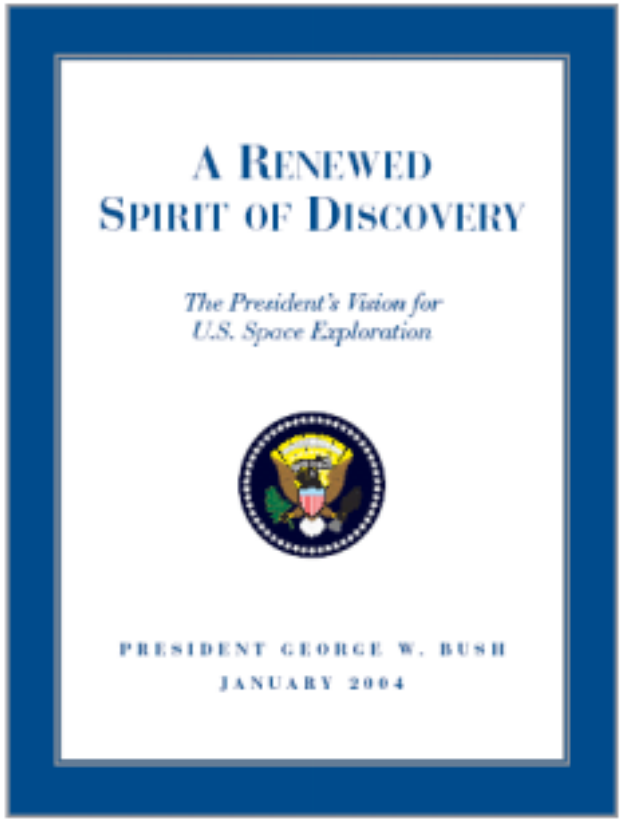
Implement a sustained and affordable human and robotic program to explore the solar system and beyond

Extend human presence across the solar system, starting with a human return to the Moon by the year 2020, in preparation for human exploration of Mars and other destinations;

Develop the innovative technologies, knowledge, and infrastructures both to explore and to support decisions about the destinations for human exploration; and

Promote international and commercial participation in exploration to further U.S. scientific, security, and economic interests.

Implementing the Vision

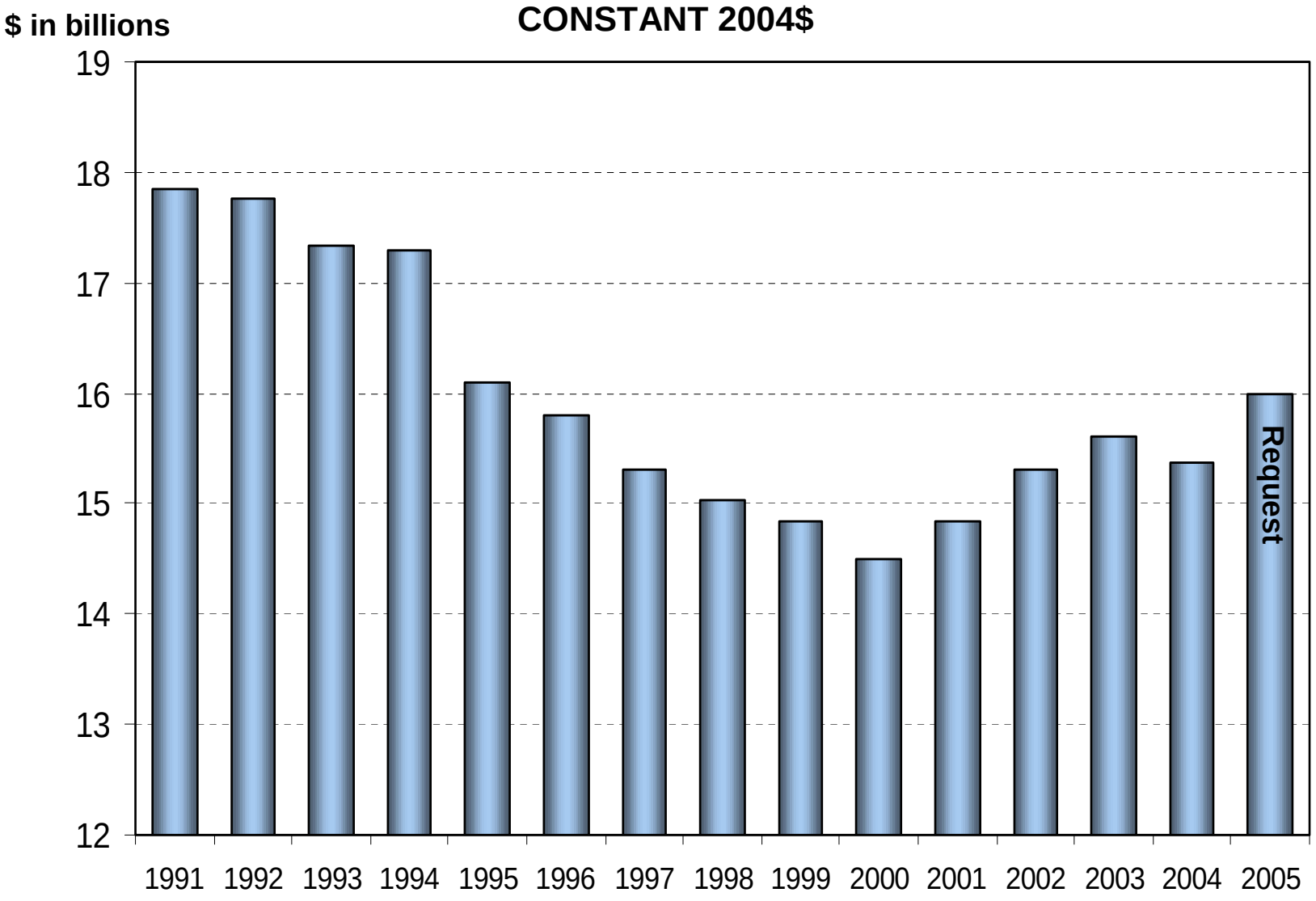


- The President directed NASA to implement America's bold new Space Exploration Vision
  - ➢ ***Explore***
    - ➢ ***Extend Human Presence***
      - ➢ ***Innovate***
        - ➢ ***Partner***
- Decades ago Apollo proved exploration was achievable, but fundamentally new approaches are required to explore space in a *sustained* and *affordable* manner
- Business-as-usual approach will not succeed
- In order to achieve the Vision, NASA must:
  - Set priorities
  - Fundamentally transform
  - Foster national capabilities

Implementing The Vision – A Sustained, Affordable, Long-Term National Effort

- **What?**
  - Strategy to achieve the Vision
  - “System of systems” approach
  - Capability and systems integration
  - Partnering
  - Leverage entrepreneurial opportunities
- **Who?**
  - Organizational transformation
  - Requirements definition
  - Capability management
- **How?**
  - Process transformation
  - Best in Government, Best Nationally
  - Continuing success in achieving program implementation milestones

NASA Historical Funding



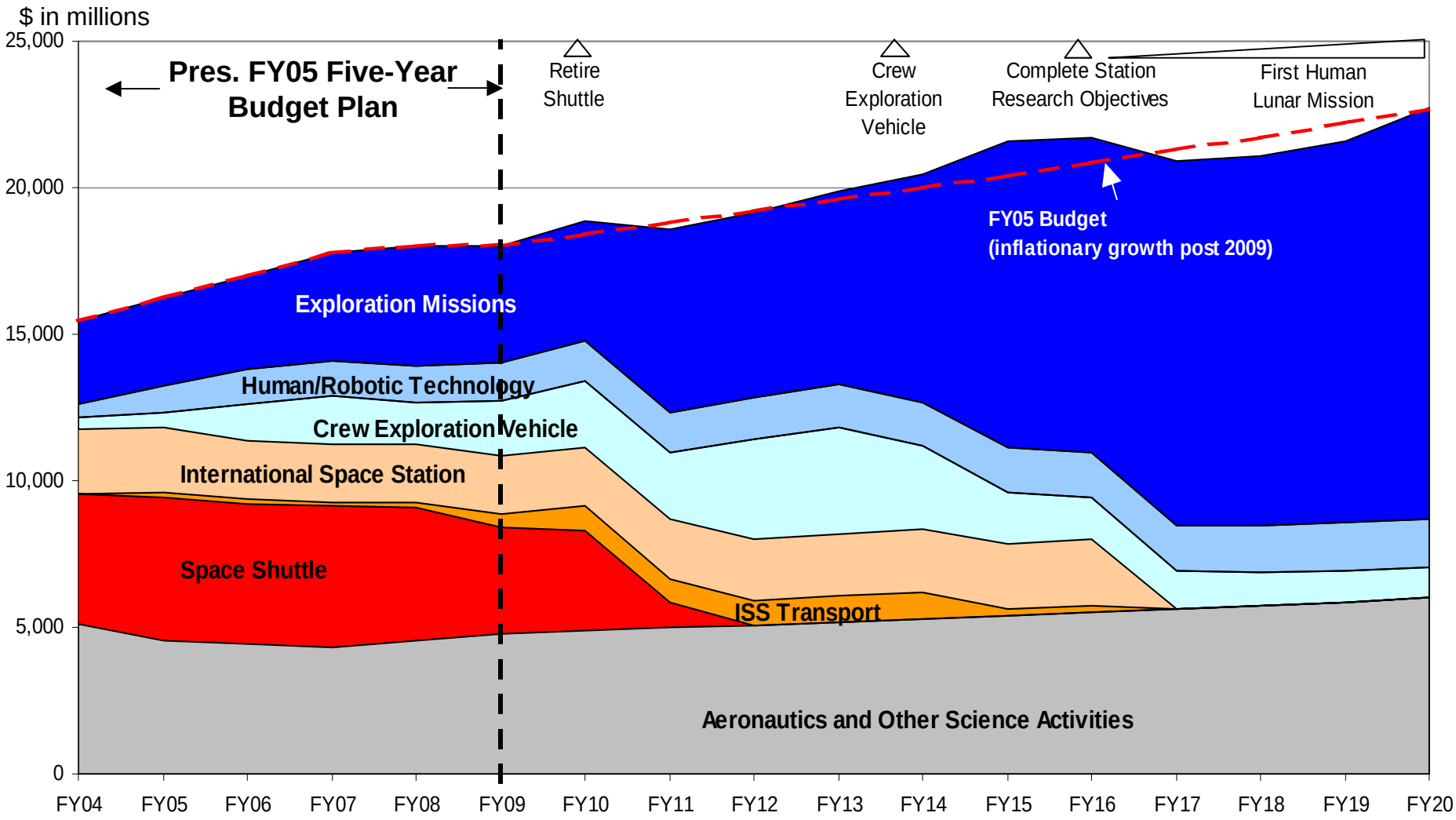
Affordability of the Vision

- **This plan is affordable to the Nation**
  - NASA's Budget fits within the President's overall plan to cut the deficit in half in five years and assumes a long-term projection of only inflationary growth
  - NASA's budget is only 0.7% of total Federal budget; this contrasts with 4.5% in the mid-1960's and 1.0% just ten years ago
- **This plan provides a sufficient investment in our Nation's space program**
  - This plan assumes setting priorities, retiring completed programs, and investing in new content that is achievable based on reasonable programmatic assumptions
  - This plan is flexible with investments made as milestones are successfully achieved, a stepping stone at a time
  - This plan places a premium on early technology investments that promise to reduce costs and on flight demonstrations that reduce risks

NASA – First Steps to Implement the Vision

- **Build on Major NASA Successes and Implement Vision First Steps**
  - **Return the Space Shuttle to Flight**
  - **Complete assembly of the International Space Station**
  - **Conduct research on International Space Station critical to exploration beyond low Earth orbit**
  - **Operate in Deep Space** – For example, operate Mars Rovers with unprecedented science return and public response, Cassini to Saturn, Genesis return, Messenger launch to Mercury
  - **Push the boundaries of science and technology -** For example, X-43A test flight, GP-B launch, Hubble ultra-deep field, Stardust comet encounter
  - **Lead Federal Government in President's Management Agenda** - only agency to receive "green" in human capital planning and budget/performance integration

Strategy Based on Long-Term Affordability



NOTE: Exploration missions – Robotic and eventual human missions to Moon, Mars, and beyond
Human/Robotic Technology – Technologies to enable development of exploration space systems
Crew Exploration Vehicle – Transportation vehicle for human explorers
ISS Transport – US and foreign launch systems to support Space Station needs especially after Shuttle retirement

Implementing the Vision – Next Steps

- **NASA Is Exploring The Best Ways To Move Forward**
- **Key Questions:**
  - How should we leverage the technical capabilities in industry and academia?
  - What partnerships and common goals should we pursue with other Federal agencies?
  - Are there innovative opportunities for commercial participation to spur economic opportunity and to defray cost?
  - How should we best engage with the international community, government, academia and industry to further U.S. exploration goals?
  - What tools do we need to strengthen critical workforce skills and adjust as necessary?
  - How do we shed unneeded institutional capacity while retaining critical capabilities?
  - What further efforts are required to ensure optimal integration of across the NASA?

- **NASA Outreach Nationally to Innovate and Inspire**
  - Outreach nationally with schools, universities, industry, and nonprofits to communicate Vision and broaden participation
  - Discussion across the Executive Branch and with Congress
  - Discussion with International Space Station Partners and other space-faring nations

- **NASA Will Move Rapidly To Use The Commission's Recommendations To Further Shape Vision Implementation**