

Why Go to the Moon? The Many Faces of Lunar Policy



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The Moon as a Target for Human Exploration

- Moon captures the fancy of humankind.
 - The most dominant and changeable element in the night sky.
 - Kindles enthusiasm, joy, lust, fear, and horror.
 - Often associated with deities and supernatural activities.
- Moon fundamental part of modern popular culture.
- Moon early target for U.S./USSR space programs.

The von Braun Paradigm



- Human Earth orbital flights
- Winged reusable spacecraft
- Permanently inhabited space station
- Human lunar exploration
- Human expeditions to Mars

Rationales for Spaceflight

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

The Apollo Decision

“Fill ‘Er Up—I’m in a Race”

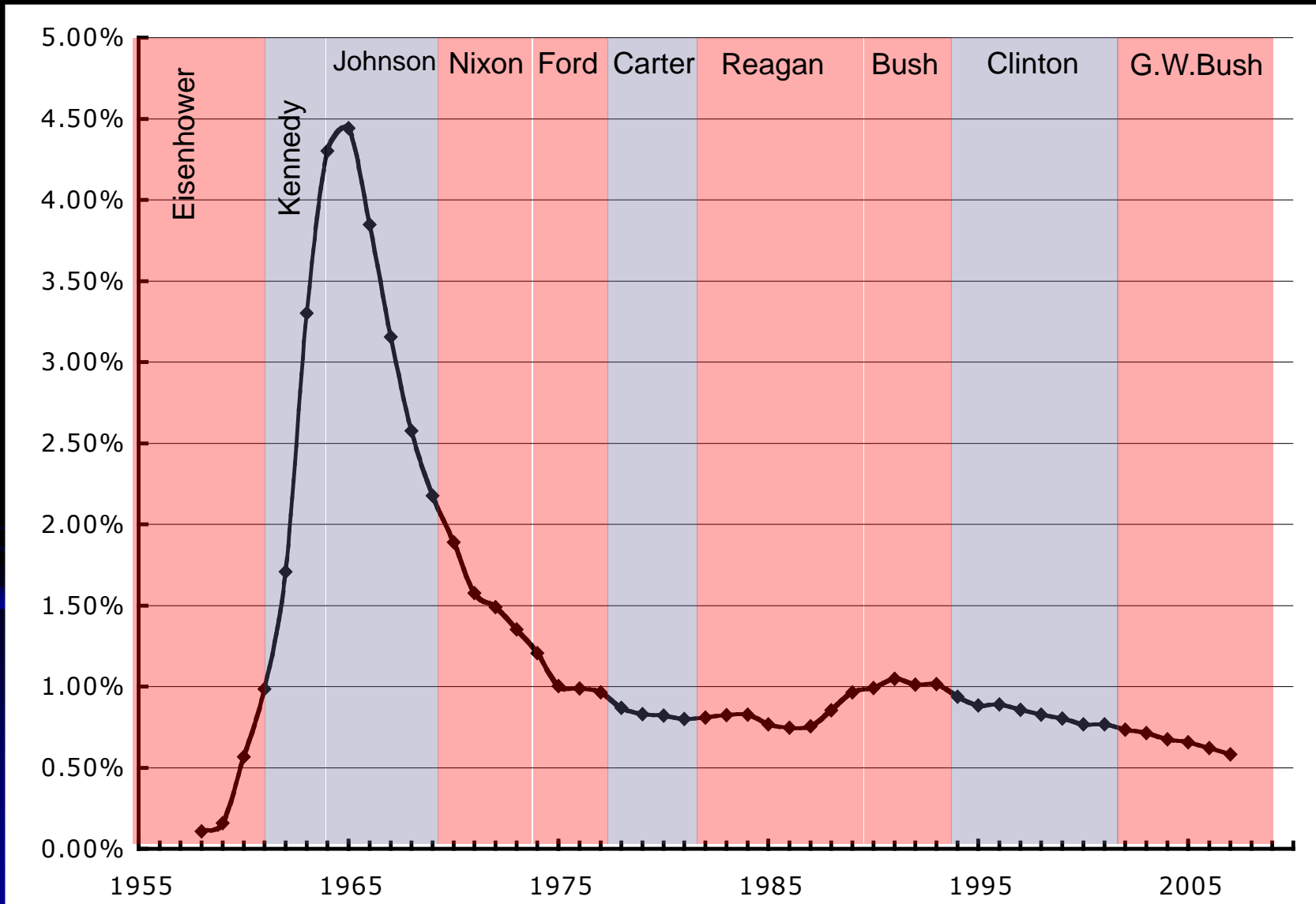


- Project Apollo was in large measure a result of Cold War rivalry
- JFK announcement, May 25, 1961
- “I believe this Nation should commitment itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish.”

Apollo Resolve—May 25, 1961

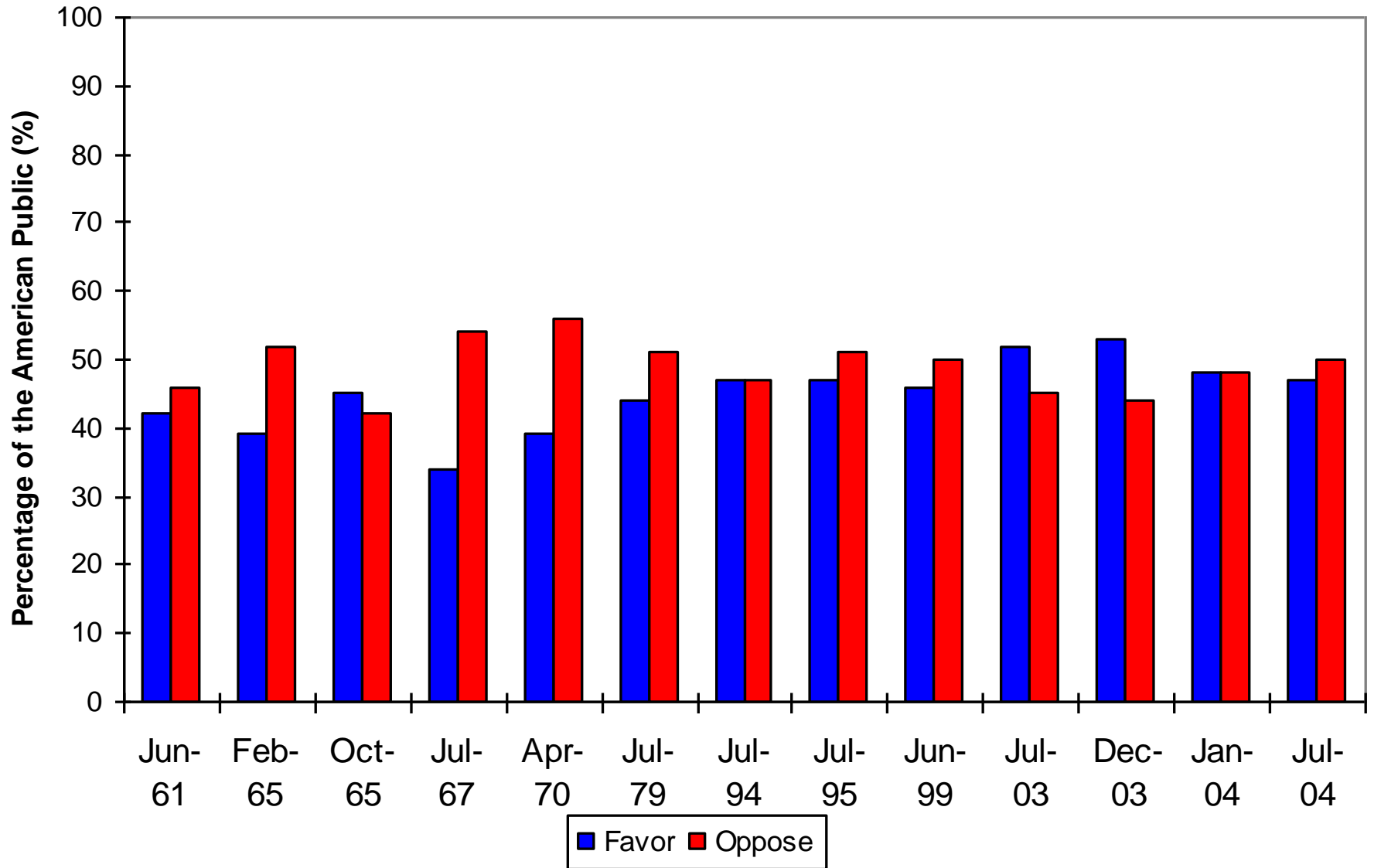
- “Let it be clear—and this is a judgment which the Members of the Congress must finally make—...I am asking the Congress and the country to accept a firm commitment to a new course of action—a course which will last for many years and carry very heavy costs: 531 million dollars in fiscal '62—and estimated seven to nine billion dollars additional over the next five years. If we are to go only half way, or reduce our sights in the face of difficulty, in my judgment it would be better not to go at all....”
- “I believe we should go to the moon. But I think every citizen of this country as well as the Members of the Congress should consider the matter carefully in making their judgment, to which we have given attention over many weeks and months, because it is a heavy burden, and there is no sense in agreeing or desiring that the United States take an affirmative position in outer space, unless we are prepared to do the work and bear the burdens to make it successful. If we are not, we should decide today and this year.”

NASA Percentage of Federal Outlays

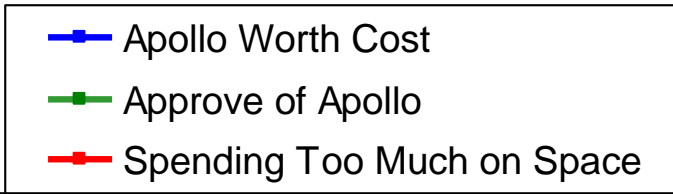
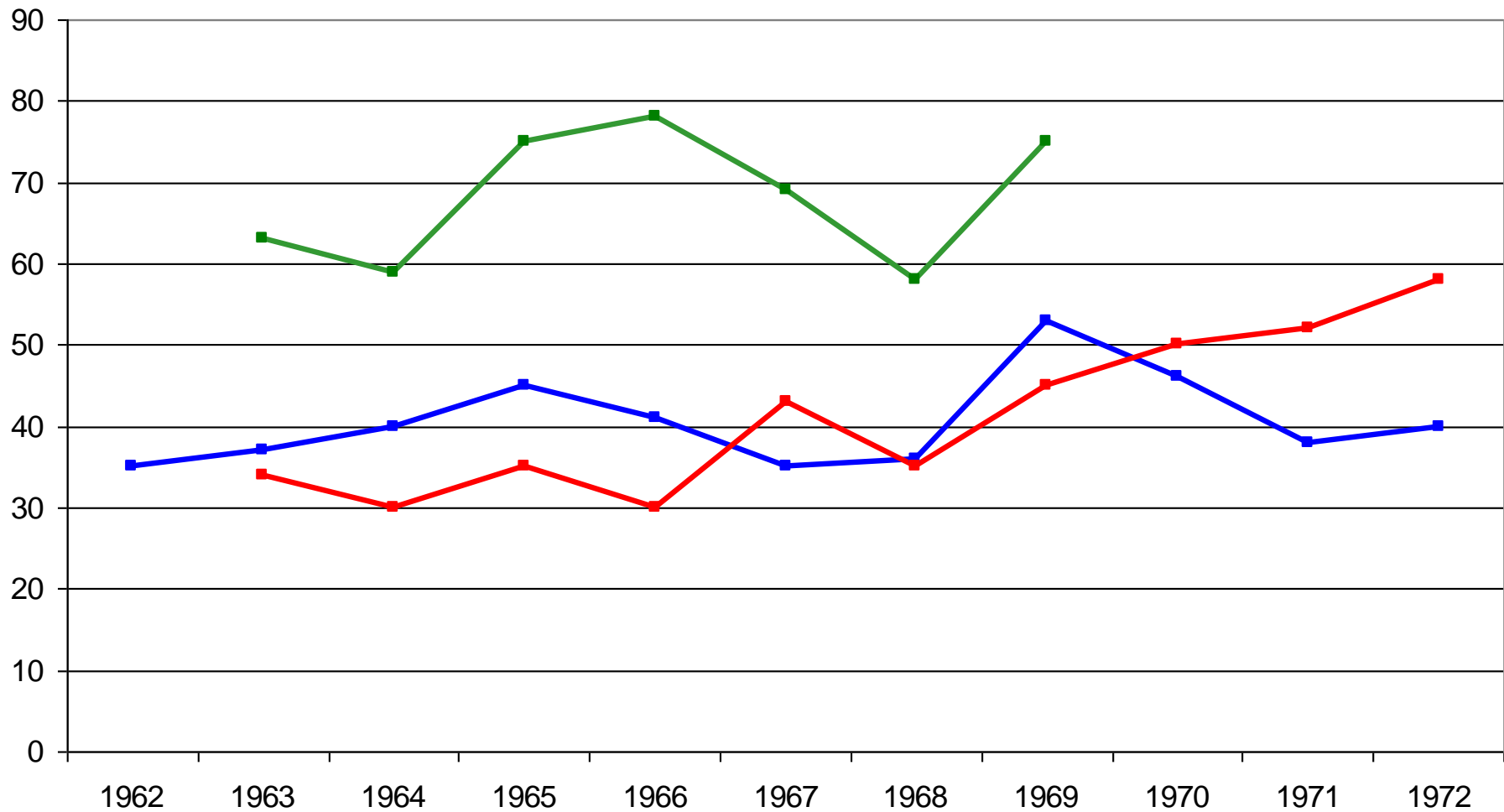


Data: <http://www.gpoaccess.gov/usbudget/fy08/hist.html>, NASA History Office, <http://thomas.loc.gov/>

SHOULD THE GOVERNMENT FUND HUMAN TRIPS TO THE MOON?



Public Support for Apollo





Legacies of Apollo



- Strong belief that visionary presidential leadership would overcome all political challenges and ensure success.
- Faith in ability of presidents to dominate the political system persisted long after others had declared “imperial presidency” an illusion.
- All major human spaceflight initiatives predicated on this belief:
 - Space Shuttle Decision.
 - Space Station Decision.
 - National Aero-space Plane.
 - Space Exploration Initiative.
 - Vision for Space Exploration.

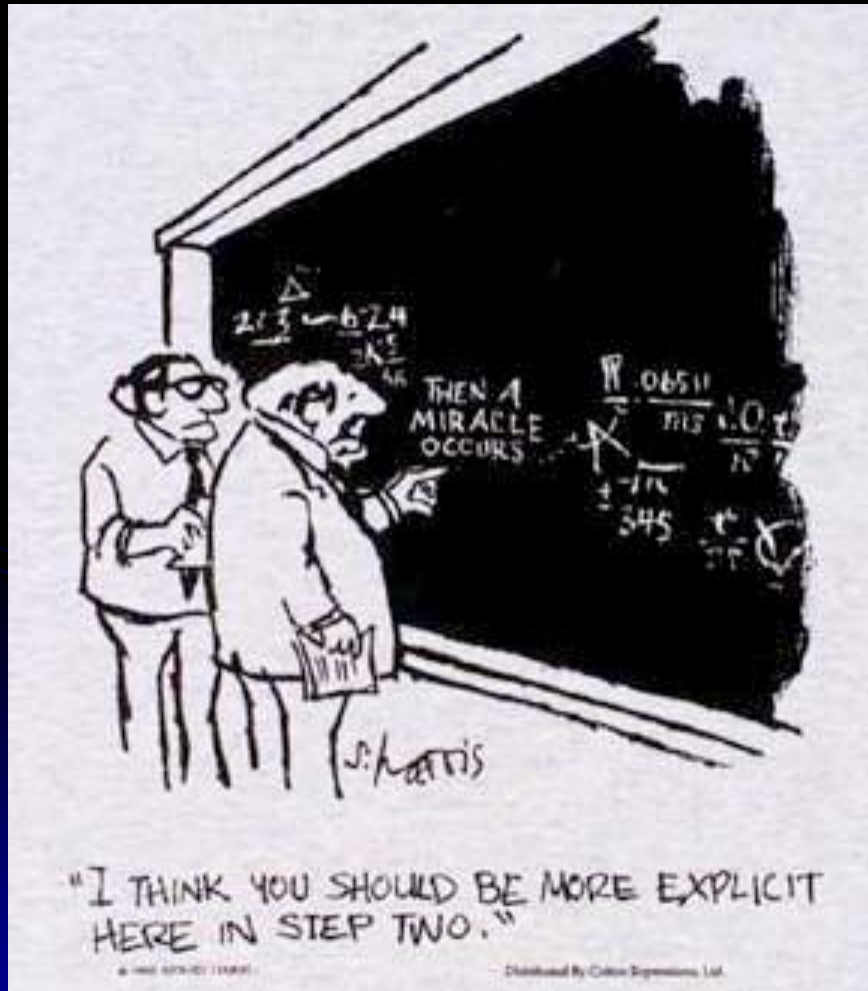
Making the Moon a Second Home

- Space Task Group Report, 1969.
 - Post-Apollo program that included
 - Space Shuttle.
 - Space Station.
 - Moon base.
 - Human expedition to Mars.
 - Nixon approved Space Shuttle, January 1972.
- Space Exploration Initiative, July 20, 1989.
 - Moon base.
 - Human expedition to Mars.
 - Died by 1991 because of \$400B price tag.

Reasons to Return to the Moon

- Political.
- Scientific—discover something on Moon that is critical to humanity.
- Environmental.
 - Something on Moon is essential too sustaining life on Earth.
 - Earth is incapable of sustaining Human life.
- Space exploration as a long-term framework for development of spacefaring people.
- A spiritual quest—exploration and the human spirit.
- Something else?

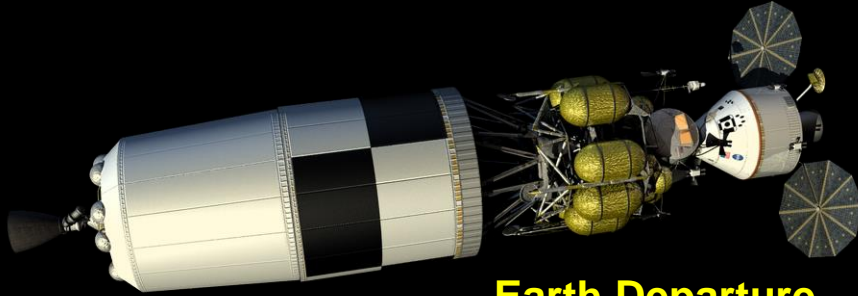
Challenges for Return to the Moon



- 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.

Constellation Program Components

**Ares V:
Heavy Lift
Launch
Vehicle**



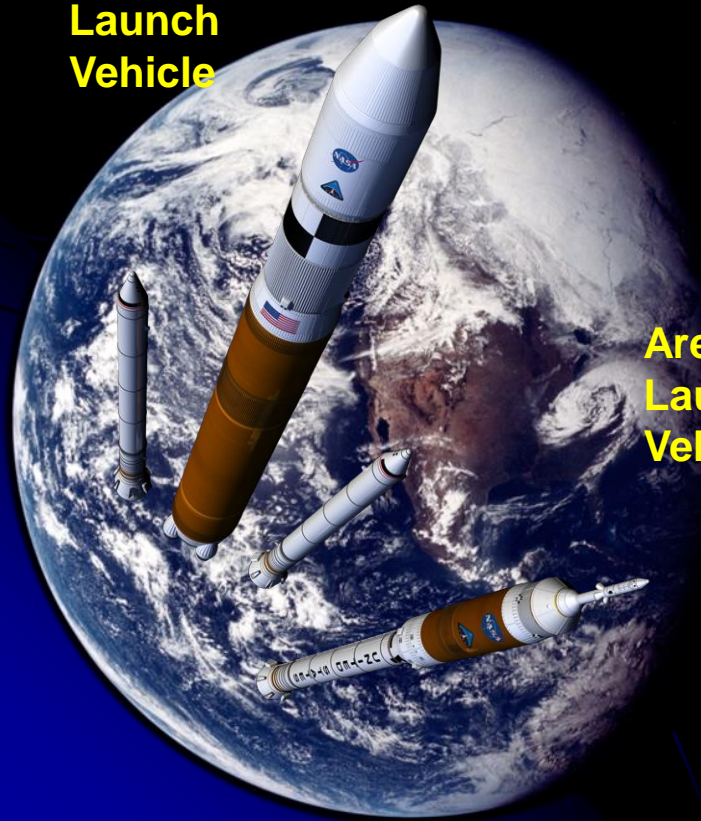
**Earth Departure
Stage**

**Orion: Crew
Exploration
Vehicle**



**Ares I: Crew
Launch
Vehicle**

**Lunar
Surface
Access
Module
(LSAM)**



Current Exploration Agenda



Human Civilization



Scientific Knowledge



**Exploration Preparation
Core Themes**



Global Partnerships



Economic Expansion



**Public Engagement
Crosscutting Themes**

If spending had to be cut on federal programs, which two federal program(s) do you think the cuts should come from? (Harris Poll 4/10/2007)

Program	Total %	Republican %	Democrat %	Independent %
Space program	51	44	58	49
Welfare	28	43	18	29
Defense spending	28	8	45	28
Farm subsidies	24	29	25	22
Environmental programs	16	30	7	14
Homeland Security	12	3	14	21
Transportation	11	16	9	9
Medicaid	4	6	3	2
Education	3	4	1	2
Social Security	2	3	*	2
Medicare	1	2	*	1

Five Questions for the Future of 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 2025?
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 should be taken by 2010?

