

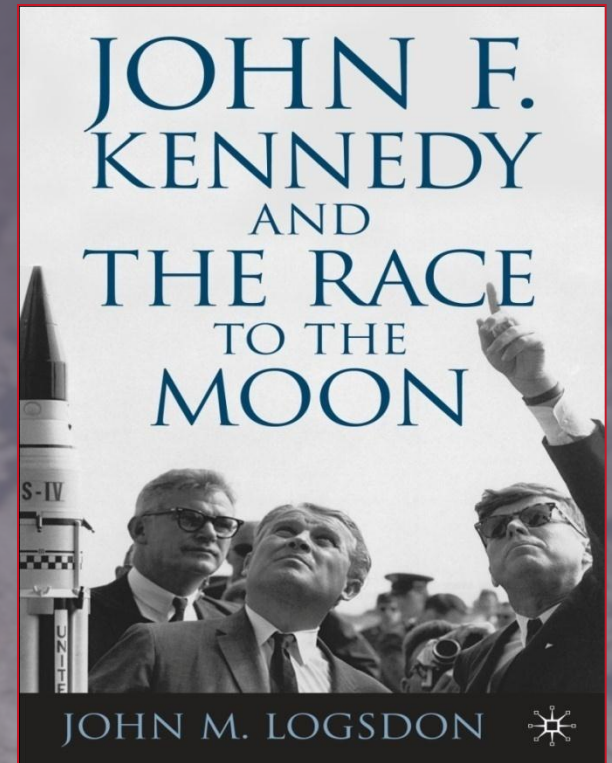
# JOHN F. KENNEDY and the RACE TO THE MOON

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# SOME KEY QUESTIONS

- **Why did JFK decide to send Americans to the Moon?**
- **What did he do in the remaining 30 months of his presidency to implement his decision?**
- **Was Apollo a success?**
- **What relevance does the Apollo experience have to today's debate over the future of human space exploration?**

# AS HE BECAME PRESIDENT

- **“Of all the major problems facing Kennedy when he came into office, he probably knew and understood least about space.”**      *Hugh Sidey, John F. Kennedy, President (1964)*
- **JFK delegated lead responsibility for space issues in his administration to Vice President Lyndon B. Johnson**
- **At the end of March 1961, Kennedy deferred a decision on the future of the U.S. human spaceflight program until the fall**



# YURI GAGARIN – FIRST HUMAN IN SPACE

APRIL 12, 1961



- Once again, the Soviet Union gained much positive reaction around the world by being first to send a human into orbit
- John F. Kennedy in response decided that the United States had to enter – and win – a space race. On April 14, he told his space advisers “There’s nothing more important.”
- Decision was also influenced by Bay of Pigs fiasco, April 17-20; but how much influence is not clear

# KENNEDY SETS OUT THE REQUIREMENTS

THE WHITE HOUSE  
WASHINGTON

April 20, 1961

MEMORANDUM FOR  
VICE PRESIDENT

In accordance with our conversation I would like for you as Chairman of the Space Council to be in charge of making an overall survey of where we stand in space.

1. Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man. Is there any other space program which promises dramatic results in which we could win?
2. How much additional would it cost?
3. Are we working 24 hours a day on existing programs. If not, why not? If not, will you make recommendations to me as to how work can be speeded up.
4. In building large boosters should we put out emphasis on nuclear, chemical or liquid fuel, or a combination of these three?
5. Are we making maximum effort? Are we achieving necessary results?

I have asked Jim Webb, Dr. Weisner, Secretary McNamara and other responsible officials to cooperate with you fully. I would appreciate a report on this at the earliest possible moment.



***“Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to go to the moon and back with a man? Is there any other space program which promises dramatic results in which we could win?”***

**John F. Kennedy to Lyndon B. Johnson  
April 20, 1961**

# WHY THE MOON?

- Technical rationale was recognizing that both US and USSR would have to develop a large new rocket to take people to the Moon and back
  - NASA leadership had told JFK on April 14 that the U.S. might win a race to the Moon, if adequate new funds were committed.
  - Wernher von Braun consulted; tells Lyndon Johnson on April 24 that “A rocket about ten times as powerful as the Soviet ... rocket is required” and “We have an excellent chance of beating the Soviets to the first landing of a crew on the moon”
- Political rationale provided by NASA Administrator James Webb and Secretary of Defense Robert McNamara in a May 8, 1961 memo
  - “It is men, not merely machines, that capture the imagination of the world.”
  - Large-scale space projects aimed at “enhancing national prestige” are “part of the battle along the fluid front of the cold war.”



# THE FLIGHT OF ALAN SHEPARD: A NECESSARY SUCCESS

- JFK's scientific advisers were unsure that a human could survive spaceflight, and his political advisers were worried about a possible failure so soon after the Bay of Pigs
- JFK became personally involved in the decision to proceed with the flight on live TV
- After several delays, Alan Shepard was launched on May 5 on a 15-minute "pleasant ride."
- Shepard and the other six Mercury astronauts came to the White House on the morning of May 8, and then paraded through Washington to wild acclaim.




# “WE SHOULD GO TO THE MOON”

- Most people remember JFK’s May 25, 1961, declaration that Americans should reach the Moon “before this decade is out.”
- Few remember his warning regarding the effort involved.







**“Democratic governments can achieve great things only if they meet two requirements: wisely choosing which policies to pursue, and then executing those policies.”**

William Eggers and John O’Leary, *If We Can Put a Man on the Moon . . .* (2009)

# THE APOLLO BUILDUP

- Costs of other NASA spaceflight programs in 2010 dollars

Space Shuttle — \$209.1 Billion

Space Station (Freedom + ISS) — \$55.3 Billion

- Construction of facilities

- FY 1961: \$98.2 million

- FY 1962: \$1.1 billion

- FY 1963: \$1.1 billion

- Apollo costs in 2010 dollars — \$151 Billion

Panama Canal — \$8.1 Billion

Manhattan Project — \$28 Billion

Interstate Highway System — \$128 Billion

- Personnel

- 1961: 29,900

- 1962: 29,900

- 1963: 29,900 in-house, 218,400 contractors – 1:7.3 ratio

# 1962 – GAINING MOMENTUM

- JFK visited NASA's Apollo facilities in September 1962
  - In Huntsville, he listened as NASA leaders and his science adviser debated best way to get to the Moon
  - In Houston, he made a stirring speech in support of the program
- JFK was told that it might be possible to get to the Moon sooner than NASA's late 1967 target, but that NASA Administrator Webb was not giving full support to Apollo





# TWO DIFFERING VIEWS ON U.S. SPACE GOALS

November 21, 1962

- President Kennedy –  
“Everything that we do ought really to be tied to getting on to the moon ahead of the Russians.”
- James Webb - “Why can’t it be tied to preeminence in space?”




# 1963 - GROWING CRITICISMS OF APOLLO

- President Eisenhower, security-oriented Republicans, and influential segments of the scientific and liberal communities were critical of Apollo's priority, each for a different reason
- JFK asked for reviews of Apollo benefits, costs, and schedule in April and August 1963
- Apollo was also having management and schedule trouble
- Congress was poised to cut NASA's budget by over 10%, from requested \$5.7 billion to \$5.1 billion, threatening the "end of decade" target



# JFK'S RESPONSE TO CRITICISMS

- Kennedy was quite concerned the growing criticisms of Apollo
  - In terms of maintaining political and public support for the program
  - In terms of Apollo being a vulnerability for him in the 1964 election
- On September 18, 1963, JFK met with James Webb to discuss the political problems associated with Apollo
  - JFK – “Right now, I don’t think the  space program has a lot of political positives. . . . I think this can be an asset, this program. . . . This is mid-journey and therefore everybody says ‘what the hell are we making this trip for’ but at the end of the thing they may be glad we made it. But I think we’ve got to defend ourselves now . . . Unless the Russians do something spectacular, the only way we can defend ourselves is if we put a national security rather than a prestige label on this.”
- JFK pursues two approaches to defending Apollo
  - Cooperation with the USSR in going to the Moon
  - Create a “military shield” to protect the program from its critics



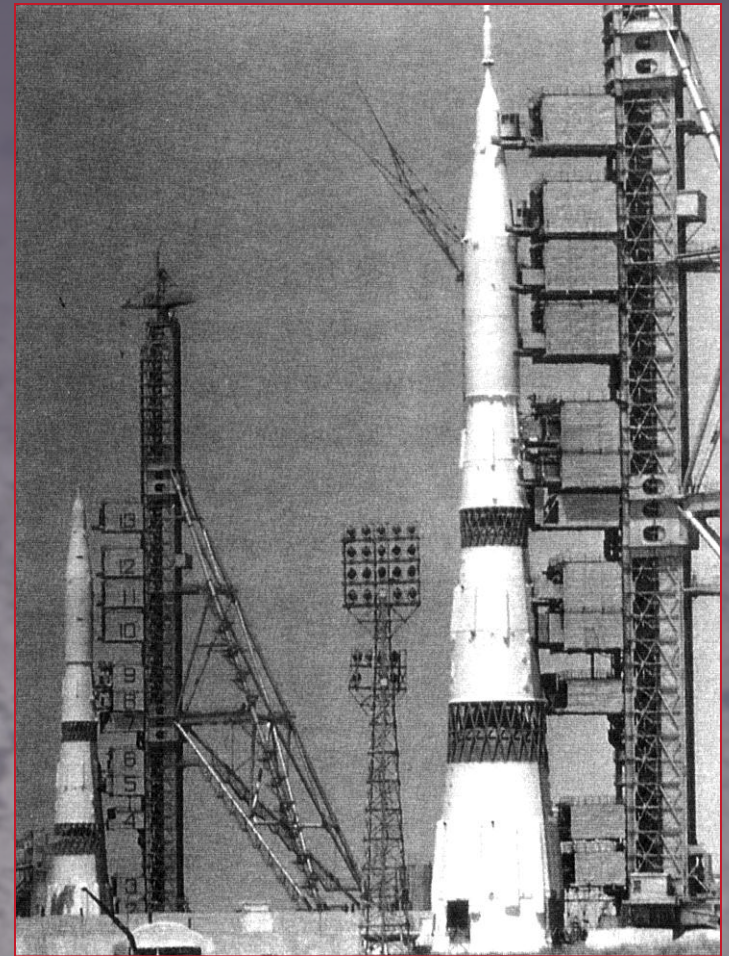
# GOING TO THE MOON WITH THE SOVIET UNION: PURSUIT OF AN ILLUSION?

- In his Inaugural Address, JFK suggested to the Soviet Union “together let us explore the stars.” He never lost the hope for U.S.-Soviet space cooperation, even as he decided to compete
- Ten days after announcing his decision to go to the Moon, JFK met Nikita Khrushchev in Vienna and proposed going to the Moon together. Khrushchev said “no”
- On September 20, 1963, Kennedy spoke to the General Assembly of the United Nations and proposed US – USSR cooperation in lunar exploration
- What might have happened If Khrushchev had said “yes” in 1963 and if Kennedy had lived?



# WAS THE SPACE RACE REAL?

- At the time Kennedy made the decision to go to the Moon, the United States did not know whether the USSR had a lunar landing program
- Repeated CIA estimates in 1961, 1962, and 1963 found no hard evidence of Soviet lunar landing program, but suggested that one was likely to exist
- Soviet Union in 1963 said it was not planning a lunar landing program. In fact, such a program was not approved until 1964
- During JFK's presidency, the United States was racing itself!





# WERE CHANGES IN THE WIND?

- White House began a major review of the U.S. space program in October 1963, at least in part because of JFK's interest in demonstrating the national security and military value of Apollo
- Slowing down or even canceling Apollo were considered; some senior JFK advisors favored at least relaxing the "end of the decade" deadline.
- NASA was concerned that the White House not announce changes in Apollo before the review was complete
- Robert McNamara and his DOD associates were consistent in their view that Apollo had no direct military value
- BOB, which was managing the review, concluded that "in the absence of clear changes in the technical or international situations, the only basis for backing off" from the end of the decade goal was fiscal, but that the costs of the program could be accommodated in projected budgets.
- JFK was assassinated before results of review reached his desk



# JFK REGAINS HIS ENTHUSIASM

- JFK visited Cape Canaveral on November 16, 1963
- He was briefed on Apollo-Saturn plans
  - Robert Seamans – “maybe for the first time, [JFK] began to realize the dimensions of these projects”
- Kennedy also viewed a Saturn 1 booster being readied for a December launch; that launch would give the U.S. a lead in lifting power
- Kennedy came away from his visit very enthused about what he had seen.



# WHAT WOULD JOHN F. KENNEDY HAVE DONE IF HE HAD LIVED?

- Continue to push for cooperation with the Soviet Union?
- “Turn off the clock,” relaxing the end of the decade deadline?
- Back off of the lunar landing goal altogether?
- Stay the course?



Remarks in San Antonio, November 21, 1963





# JOHN F. KENNEDY AND THE RACE TO THE MOON

- Two images of John Kennedy as president
  - “a worldly, perceptive, strong and judicious leader, exuding confidence and charisma”
  - “a shallow, cynical, passionless and vainglorious politician, a traditional Cold Warrior, a weak and vulnerable president”
- With respect to the lunar landing program
  - “there was never a major decision like this made with the same degree of eyes-open, knowing-what-you’re-getting-in-for character”
    - *BOB official Willis Shapley*
  - Kennedy’s response to Gagarin and the Bay of Pigs was “redolent of presidential panic.” JFK was seeking “a quick, theatrical reversal of his administration’s flagging position”
    - *Presidential historian Michael Beschloss*
- “Perhaps Apollo could not be justified, but, by God, we could not *not* do it” – historian Walter McDougall



# IF WE CAN PUT A MAN ON THE MOON, WHY CAN'T WE . . . ?

- The belief persists that Apollo can serve as a model for other long-term, large-scale undertakings
- But the conditions that made Apollo possible are difficult, perhaps impossible, to reproduce
  - The objective sought was technologically feasible
  - There existed a dramatic “occasion for decision”
  - Government leadership and public were supportive of undertaking positive government actions with high short-term costs and long-term benefits
- Perhaps the Apollo experience was unique, and its most relevant lesson is that governments can achieve great things under the right set of circumstances, but that those circumstances will vary over time and objective sought

# APOLLO AND U.S. POWER & PRIDE

- Apollo landings came at the end of a horrible decade in U.S. history. They provided a positive antidote to the events of the 1960s
- Veteran diplomat U. Alexis Johnson – “There is no question that the success of Apollo 11 mission did more to bolster prestige abroad than any single event since the termination of the Pacific War in 1945.”
- The image of a U.S. astronaut and the American flag on the lunar surface remains a potent symbol of American achievement

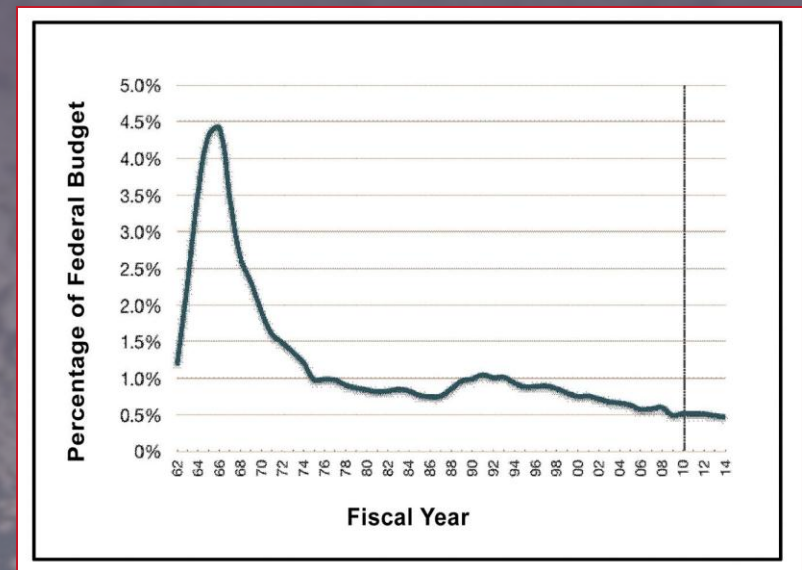


Apollo 11 astronauts welcomed in Mexico City



# THE POST-APOLLO SPACE PROGRAM: A RETREAT FROM THE MOON

- Apollo was not sustainable. Richard Nixon in 1970 declared that the priority of the space program had to be determined by normal politics. That has remained the case for forty years.
- There was thus no political support for a continued large-scale space program focused on human exploration, and the systems developed for Apollo were quickly abandoned. But the Apollo-era NASA institutional base and organizational culture persist.
- NASA and its supporters in Congress and industry have never adjusted to the new reality, and have continued to hope for another Apollo-like effort.



# A NEW APPROACH TO SPACE EXPLORATION?

- Recent attempts to propose a new strategy for space exploration have so far resulted in an uncomfortable compromise between those who want to retain the Apollo approach to human space flight and those who seek change.
- Meanwhile, NASA continues to be an organization striving to do too much with too little.
- It is not clear whether the United States has the political will – as mobilized by John Kennedy a half-century ago – to commit itself to a sustainable and productive program of human space exploration.





# THE NEXT ROUND OF SPACE EXPLORATION: A GLOBAL UNDERTAKING?



# THE HERITAGE OF APOLLO

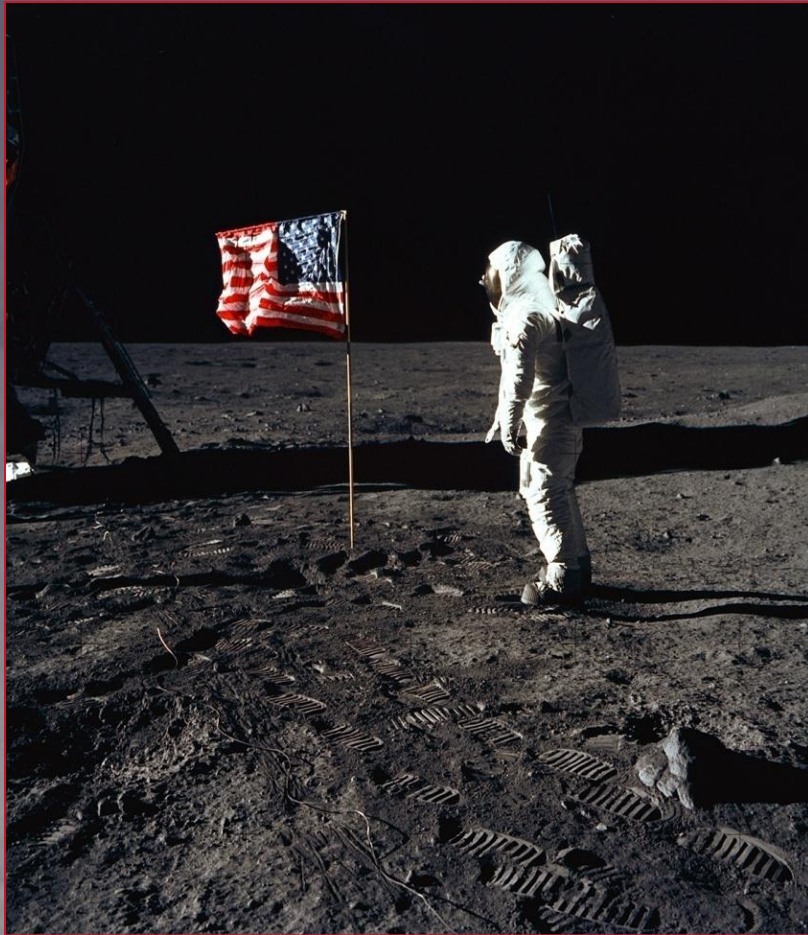


**“To see the Earth as it truly is, small and blue and beautiful in that eternal silence where it floats, is to see ourselves as riders on the Earth together, brothers on that bright loveliness in the eternal cold—brothers who know now that they are truly brothers.”**

*— Archibald McLeish, December 25, 1968*



# THE HERITAGE OF APOLLO



“In undertaking the lunar landing program, John Kennedy linked the politics of the moment with the dreams of centuries and the aspirations of the nation...In the long sweep of history, it is one of the ways in which he will be most remembered.”