

The space race

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On May 25, 1961, President John F. Kennedy spoke before a special joint session of Congress and challenged the country to safely send and return an American to the Moon before the end of the decade. President Kennedy's vision for the three-year old National Aeronautics and Space Administration (NASA) motivated the United States to develop enormous technological capabilities and inspired the nation to reach new heights.

Eight years after Kennedy's speech, NASA's Apollo program successfully met the president's challenge. On July 20, 1969, the world witnessed one of the most astounding technological achievements in the 20th century. Neil Armstrong and Edwin "Buzz" Aldrin became the first humans to set foot on the Moon, while Mike Collins orbited the Moon in the Command Module. Armstrong's words, "That's one small step for [a] man, one giant leap for mankind," were heard around the world and inspired a generation. This amazing accomplishment required the collaboration of hundreds of thousands of determined individuals and the committed resources of our nation.

The "race to space" was initiated on October 4, 1957 with the successful launch by the Soviet Union of Sputnik I. Sputnik, the world's first artificial satellite, measured the size of a beach ball (58 cm or 22.8 inches in diameter), weighed only 83.6 kg (183.9 lbs), and orbited the Earth in 98 minutes on an elliptical path. Although relatively small in size, its impact was huge. Americans did not want to be left in the dust by the Soviet's technological advances.

This was at the height of the Cold War and America also worried that the Soviets would use this technology for military purposes. Concerns over Soviet capabilities to launch nuclear weapons quickly emerged and heightened fears among Americans. Despite being economically overshadowed by the United States, the Soviet Union continued its ominous presence in the arms race and space race.

A newly organized NASA met challenges along the way as they strived to meet the goal set by President Kennedy. Despite a rough start to catch the Soviet Union, the United States became the first country to conduct a manned lunar orbit in December of 1968 (Apollo 8). This was followed by the first lunar landing on July 20, 1969 (Apollo 11). The United States celebrated this victory as Kennedy's vision and the hope of a nation was fulfilled.

Timeline: Americans in space, 1961–1972

1961

Mercury Redstone 3¹

5 May 1961 — Earth Suborbital (Shepard)

Mercury Redstone 4²

21 July 1961 — Earth Suborbital (Grissom)

1962

Mercury Atlas 6³

20 February 1962 — Earth Orbiter (Glenn)

Mercury Atlas 7⁴

24 May 1962 — Earth Orbiter (Carpenter)

Mercury Atlas 8⁵

3 October 1962 — Earth Orbiter (Schirra)

1963

Mercury Atlas 9⁶

15 May 1963 — Earth Orbiter (Cooper)

1965

Gemini 3⁷

23 March 1965 — Earth Orbiter (Grissom, Young)

Gemini 4⁸

3 June 1965 — Earth Orbiter (McDivitt, White)

Gemini 5⁹

21 August 1965 — Earth Orbiter (Cooper, Conrad)

Gemini 7¹⁰

4 December 1965 — Earth Orbiter (Borman, Lovell)

Gemini 6A¹¹

15 December 1965 — Earth Orbiter (Schirra, Stafford)



Figure 1. Astronaut Alan Shepard is pulled from the water after his Mercury capsule “splashes down” in the Atlantic Ocean, May 5, 1961. The Mercury program tested procedures for putting astronauts into earth orbit.

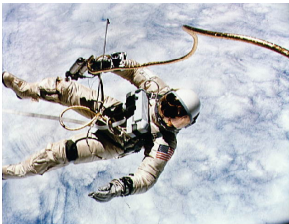


Figure 2. Ed White performs the first “spacewalk” by a U.S. astronaut outside the Gemini 4 capsule, June 3, 1965. The Gemini program demonstrated the ability of humans to live and work in space.

1966

Gemini 8¹²

16 March 1966 — Earth Orbiter (Armstrong, Scott)

Gemini 9A¹³

3 June 1966 — Earth Orbiter (Stafford, Cernan)

Gemini 10¹⁴

18 July 1966 — Earth Orbiter (Young, Collins)

Gemini 11¹⁵

12 September 1966 — Earth Orbiter (Conrad, Gordon)

Gemini 12¹⁶

11 November 1966 — Earth Orbiter (Lovell, Aldrin)

1968

Apollo 7¹⁷

11 October 1968 — Earth Orbiter (Schirra, Eisele, Cunningham)

Apollo 8¹⁸

21 December 1968 — Lunar Orbiter (Borman, Lovell, Anders)

1969

Apollo 9¹⁹

3 March 1969 — Earth Orbiter (McDivitt, Scott, Schweikart)

Apollo 10²⁰

18 May 1969 — Lunar Orbiter (Stafford, Young, Cernan)

Apollo 11²¹

16 July 1969 — Lunar Landing (Armstrong, Aldrin, Collins)

Apollo 12²²

14 November 1969 — Lunar Landing (Conrad, Bean, Gordon)

1970

Apollo 13²³

11 April 1970 — Lunar Mission - Landing Aborted (Lovell, Haise, Swigert)

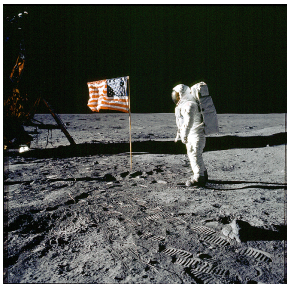


Figure 3. Edwin “Buzz” Aldrin on the surface of the moon, July 20, 1969. The Apollo program was designed to reach the moon, land astronauts on the lunar surface, and return them to earth. Early missions tested the lunar orbiter and lunar lander; Apollo 8 was the first mission to orbit the moon, and Apollo 11 the first to land men on the moon.

1971

Apollo 14²⁴

31 January 1971 — Lunar Landing (Shepard, Mitchell, Roosa)

Apollo 15²⁵

26 July 1971 — Lunar Landing (Scott, Irwin, Worden)

1972

Apollo 16²⁶

16 April 1972 — Lunar Landing (Young, Duke, Mattingly)

Apollo 17²⁷

7 December 1972 — Lunar Landing (Cernan, Schmitt, Evans)

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Notes

1. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=MERC3>.
2. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=MERC4>.
3. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1962-003A>.
4. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1962-019A>.
5. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1962-052A>.
6. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1963-015A>.
7. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1965-024A>.
8. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1965-043A>.
9. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1965-068A>.
10. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1965-100A>.
11. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1965-104A>.
12. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1966-020A>.
13. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1966-047A>.
14. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1966-066A>.

15. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1966-081A>.
16. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1966-104A>.
17. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1968-089A>.
18. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1968-118A>.
19. See <http://nssdc.gsfc.nasa.gov/database/MasterCatalog?sc=1969-018A>.
20. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1969-043A>.
21. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1969-059A>.
22. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1969-099A>.
23. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1970-029A>.
24. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1971-008A>.
25. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1971-063A>.
26. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1972-031A>.
27. See <http://nssdc.gsfc.nasa.gov/nmc/masterCatalog.do?sc=1972-096A>.

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