



## Apollo 8: Humankind's First Mission to the Moon

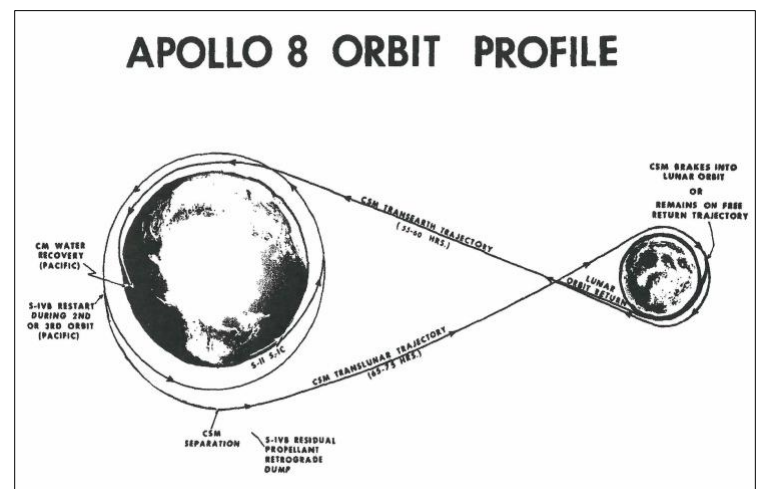
With President John F. Kennedy's deadline to land a man on the Moon by the end of the decade approaching rapidly and the USSR successfully sending Zond probes to the Moon and back with animals on board, NASA made the bold decision to send its next Apollo mission to the Moon, in December of 1968. The Lunar Module lander was not yet ready, so the plan for Apollo 8 was to leave Earth orbit, travel to the Moon, orbit it 10 times and then return home. Until this mission, the farthest humans had even traveled in space was just 850 miles from Earth.

*All photos courtesy of NASA unless otherwise noted.*



## Major Mission Objectives:

- First crewed flight on the Saturn V booster
- First crewed spacecraft to leave Earth orbit
- First Apollo spacecraft to enter lunar orbit
- Extensive study of the lunar surface, including locating and characterizing future landing sites
- Testing of all Apollo components other than the Lunar Module in translunar space and lunar orbit
- Successfully reenter Earth's atmosphere and return astronauts safely to splashdown
- Note: the mission's orbit profile inspired the mission patch design with its "figure eight"



## The Crew



*From left to right: Lovell, Anders and Borman.*

The Apollo 8 crew included two veterans and one “rookie” astronaut. Commander Frank Borman and Command Module pilot James (Jim) Lovell were veterans of Gemini 7, a 14-day endurance mission featuring the first crewed rendezvous in space. Lovell also had flown on Gemini 12. Apollo 8 was the first flight for Bill Anders, an astronaut who had joined the program five years earlier. Borman retired after Apollo 8. Anders left the astronaut program some time later without flying again. Lovell would be the Commander of the “successful failure” Apollo 13 mission of April 1970.

## Launch and Flight

Apollo 8 launched on its six-day mission on December 21, 1968, from Launch Complex 39A at Cape Kennedy (later renamed Cape Canaveral), Florida. After less than three hours in Earth orbit, the S-IVB third stage engine boosted the spacecraft to 24,000 mph, fast enough to leave Earth’s orbit.

At about three days into the flight the spacecraft passed behind the Moon, where the crew fired their Service Propulsion System engine to slow the spacecraft down just enough to remain in lunar orbit.

During the crew’s 10 Christmas Eve orbits of the Moon, they made observations, conducted a television broadcast in which they read from the biblical “Book of Genesis” and took the iconic “Earthrise” photo of the Earth rising over the Moon.

Apollo 8’s two-and-a-half-day trip home ended with a pinpoint splashdown in the Pacific Ocean on December 27, 1968.





## Mission Highlights

- Six-day mission was a technical success
- Greatest velocity experienced by humans
- First humans to leave Low Earth Orbit
- First humans to see the entire Earth at once
- First humans to fly through the Van Allen Belts
- Measured Van Allen Belt radiation levels
- Successfully practiced celestial navigation
- First humans to enter and remain in lunar orbit
- First humans to see the far side of the Moon
- Mapped and studied the Moon, including the characterization of future Apollo landing sites
- First crewed spacecraft to reenter Earth's atmosphere from a speed of over 24,000 mph

## Mission Insights

NASA's bold decision to "go for the Moon" with Apollo 8 paved the way for two more test missions before NASA would ultimately send astronauts to land on the Moon.

The iconic "Earthrise" photo taken during Apollo 8 showed the world how fragile Earth looks from space. In fact, Earth Day was first celebrated in 1970, and its flag continues to feature an image of Earth much like that first seen by Apollo 8.

In the United States 1968 was a year of significant political and social upheaval. To some at least, Apollo 8 capped the year on a positive note, leading Time magazine to name Apollo 8's crew its "Men of the Year."

The Apollo 8 spacecraft now resides at the Chicago Museum of Science and Industry.

*Time Magazine photo courtesy of Wikipedia.  
Apollo 8 image courtesy of the Chicago Museum of Science and Industry.*

