

# NASA and the Early Apollo Flights of the 1960s

BARBARA KLEIN: I'm Barbara Klein.

STEVE EMBER: And I'm Steve Ember with EXPLORATIONS in VOA Special English. The nineteen sixties were exciting times in space exploration. Today look back at the first flights of the Apollo program designed to land humans on the moon.

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BARBARA KLEIN: The decision to go to the moon was made in May, nineteen sixty-one. President John Kennedy set the goal in a speech to Congress and the American people.

JOHN KENNEDY: "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the 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."

STEVE EMBER: At the time President Kennedy first spoke about landing humans on the moon, the Soviet space program seemed far ahead. The Soviet Union had put the first satellite into Earth orbit. A Soviet spacecraft was the first to land instruments on the moon. And a Soviet cosmonaut, Yuri Gagarin, was the first man in space.

The United States had sent an astronaut of its own into space for the first time in nineteen sixty-one. Alan Shepard made only a fifteen-minute flight in the little one-man Mercury spacecraft. But his flight gave Americans the feeling that the United States could pull ahead of the Soviet Union in the space race.

There was great public support for President Kennedy's moon landing goal. And Congress was ready to spend the thousands of millions of dollars that a moon landing program would cost.

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BARBARA KLEIN: Much happened in the months after America decided to go to the moon. New space flight centers were built. Designs for launch rockets and spacecraft were agreed on. And a new spaceflight program -- Project Gemini -- was begun. Flights in the two-man Gemini spacecraft tested the men, equipment and methods to be used in the Apollo program to the moon. Gemini let astronauts learn about the dangers of radiation and the effects of being weightless during long flights. Astronauts learned to move their spacecraft into different orbits and to join with other spacecraft.

STEVE EMBER: While the Gemini program prepared astronauts for Apollo flights, NASA engineers were designing and building the Apollo spacecraft. It was really two spacecraft. One was a cone-shaped command module. The astronauts would ride to the moon in the command module. And they would return home in it. The second craft was a moon-landing vehicle. Two astronauts would ride in it from the orbiting command module to the moon's surface. Later, the landing vehicle would carry them back to the command module for the return trip to Earth.

BARBARA KLEIN: Engineers also were working on a huge new rocket for Apollo. It needed much more power than the rockets used to launch the one-man Mercury and the two-man Gemini flights. The Apollo rocket was called Saturn. Two Saturn rocket systems were built. One was the Saturn One-B. It did not have enough power to reach the moon. But it could launch Apollo spacecraft on test flights around the Earth.

The other was the Saturn Five. It would be the one to launch astronauts to the moon. Saturn One-B rockets launched six unmanned Apollo spacecraft. The test flights showed that all the rocket engines worked successfully. They also showed that the Apollo spacecraft could survive the launch and could re-enter Earth's atmosphere safely.

STEVE EMBER: By the end of nineteen sixty-six, NASA officials considered the Apollo spacecraft ready for test flights by astronauts. Three astronauts were named for the first manned Apollo test flight: Virgil Grissom, Edward White and Roger Chaffee. Four weeks before the flight, the three men were in the command module at Cape Kennedy, Florida. They were testing equipment for the flight.

Suddenly, fire broke out in the spacecraft. When rescuers got the door open, they found the flames had killed the three astronauts. Grissom, White and Chaffee were the first Americans to die in the space program.

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BARBARA KLEIN: Engineers redesigned and rebuilt the Apollo command module. They designed a new door that could be opened more quickly. They improved the

electrical wiring. And they used only materials that would not burn easily. By November, nineteen sixty-seven, the moon launch rocket, Saturn Five, was ready for a test flight. It thundered into space perfectly, pushing an unmanned Apollo spacecraft more than eighteen thousand kilometers up into the atmosphere.

STEVE EMBER: The huge Saturn rocket, as tall as a thirty-six-floor building, was the heaviest thing ever to leave Earth. It weighed more than two million seven hundred thousand kilograms. The noise of its rockets was one of the loudest man-made sounds ever created.

At the end of the test flight, the speed of the Apollo spacecraft was increased to forty thousand kilometers an hour. That was the speed of a spacecraft returning from the moon. The spacecraft re-entered the atmosphere without damage. Apollo flights Five and Six tested the moon-landing module and the Saturn Five rocket.

BARBARA KLEIN: Astronauts first flew in the Apollo spacecraft in October, nineteen sixty-eight. Apollo Seven astronauts Walter Schirra, Walter Cunningham and Donn Eisele spent eleven days orbiting the Earth. They tested the spacecraft systems. And they broadcast, for the first time, live television pictures of men in orbit. Everything worked perfectly.

STEVE EMBER: The successful flight of Apollo Seven led NASA officials to send the next flight, Apollo Eight, to the moon. The launch was early on the morning of December twenty-first, nineteen sixty-eight. Millions of people were watching on television.

Astronauts Frank Borman, James Lovell and William Anders were in the spacecraft at the top of the Saturn Five rocket. NASA officials counted down the seconds: five, four, three, two, one. The mighty engines fired. Slowly the giant rocket lifted off the Earth.

BARBARA KLEIN: Three hours later, NASA officials told the crew that everything was "OK" for what they called TLI, or trans-lunar injection. This meant the Apollo Eight astronauts could fire the rocket that would send them from Earth orbit toward the moon. Less than three days later, Apollo Eight was orbiting the moon. The American spacecraft was just one hundred ten kilometers from its surface.

On December twenty-fourth, the astronauts made a television broadcast to Earth. They described the moon's surface as a strange, gray, lonely place. And, as they talked, people on Earth could see pictures of the moon on their television sets.

FRANK BORMAN: "And from the crew of Apollo Eight, we close with good night,

good luck, a Merry Christmas – and God bless all of you, all of you on the good Earth."

Apollo Eight returned to Earth without problems. It landed in the Pacific Ocean near a waiting ship.

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STEVE EMBER: Apollo Eight showed that humans could travel to the moon and return safely. The next step was to test the lunar landing craft.

That was the job of the astronauts of Apollo Nine: James McDivitt, David Scott and Russell Schweickart. They spent ten days in Earth orbit during March, nineteen sixty-nine.

During the flight, they separated the lunar lander from the command module and flew it for eight hours. They tested all its systems. Then, they joined the two spacecraft together again, just as astronauts would do after a moon landing.

Engineers decided that after Apollo Nine, one more test flight was needed. They wanted to test the landing module near the moon. So astronauts Tom Stafford, John Young and Eugene Cernan did that during the flight of Apollo Ten.

BARBARA KLEIN: They reached the moon in May, nineteen sixty-nine. Astronauts Stafford and Cernan entered the landing craft and separated it from the command ship. Stafford and Cernan flew the lander down to only thirteen kilometers from the moon. They described the moon during a radio and television broadcast. "It is like wet clay," they said. "Like a dry river bed in New Mexico or Arizona. It is a beautiful sight."

On May twenty-third, the lander rejoined the command module one hundred kilometers above the moon. Apollo Ten started for home. The final testing was done. Apollo was ready to land on the moon. That will be our story next week.

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STEVE EMBER: This program was written by Marilyn Rice Christiano and produced by Mario Ritter. I'm Barbara Klein.

BARBARA KLEIN: And I'm Steve Ember. You can find other programs about the American space program at our web site, [voaspecialenglish.com](http://voaspecialenglish.com). Join us again next week as we continue the story of the Apollo space flights on EXPLORATIONS in VOA Special English.

