

First Decade...
Lunar
Landing
1969-1979



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APOLLO 11: A GOOD ENDING TO A BAD DECADE

A quarter of a million miles from Earth, between a boulder field and a circle of craters, there is a small memento to an immeasurable human triumph. The object is a steel plaque bolted to the primary strut, or landing leg, of the U.S. lunar module, the Eagle. It bears a map of the world and this inscription:

Here men from the planet Earth

first set foot upon the Moon.

July 1969 A.D.

We came in peace for all mankind

-more-

June 1, 1979

The visitors stayed for less than a day. They walked in a setting unlike anything in their world and pressed their footprints into a substance that had been undisturbed for several billion years. When the ascent stage of the Eagle flew away, the landing gear and its inscription were left to the stark silence of the lunar surface.

The United States reached that historic achievement in eight years. Manned space flight to a foreign planet was the capstone to centuries of speculation and thought, and to the 20th Century explosion of aeronautics and rocketry.

With the establishment of NASA in 1958, the U.S. space effort became an operational enterprise as well as a focal point for research and development. That meant launching, operating and tracking vehicles and satellites and conducting the premier program for manned space flight: Project Mercury. In the spring of 1961 came the breakthrough -- a 15-minute, suborbital Mercury ride by Alan Shepard.

President Kennedy went before the Congress on May 24, 1961, and charged the government and the American people with landing a man on the Moon and returning him safely before the decade was out.

The Moon as the ultimate destination was not a sudden decision. Elements of the Apollo program had been put in motion even before the successful Mercury flights had begun. With the President's mandate, it was official. The space agency was pledged and the clock began running toward 1969.

With its sights on the Moon, NASA had settled on the concept of a lunar rendezvous as the best way of getting there and back. The master plan was to detach a small manned spacecraft from a command craft, make the lunar landing, and then catch up and dock with the mother ship in orbit. To perfect manned operations in space, the Gemini program was created. The Gemini missions, with a two-man crew, showed that astronauts could leave their confined, instrument-crammed positions and perform extravehicular activity, including walking in space. Gemini also proved that flights of several days duration caused no serious medical problems. And the critical techniques of flight management were refined and perfected in Mission Control, building for the complexities of Apollo.

Through the mid-1960s, the disparate parts of a gigantic technical undertaking came together, a meld of structures and sprawling facilities, machines and tiny, miniaturized instruments. Buildings went up that were major engineering feats in themselves.

Industry and universities joined hands with government and the military; contractors made components; scheduling led to shipping; a center at a domestic site complemented a space antenna overseas. All the hardware and communications had to synthesize as the decade waned.

Just before Christmas 1968, Apollo 8 headed for the Moon. Astronauts Borman, Lovell and Anders became the first humans to leave the Earth and enter the gravitational control of another solar body. Captured in a lunar orbit, they were the first to see the unknown back of the Moon and to track its lonely wasteland. Apollo 8 came home to ecstatic receptions and the last year of the 1960s had arrived.

By July 1969, the Apollo program had accelerated to the point where NASA was prepared for the first formal attempt to land men on the Moon. The conclusive push came from the performances of Apollo 9 and 10. The two missions, in March and May, had verified in space the command and service modules and the lunar module. Astronauts and equipment had gone through all phases of a collective dress rehearsal. They had done everything but touch down on the lunar crust.

When Apollo 10 floated down to the Pacific on May 26, the huge Saturn V rocket designated to launch the Apollo 11 spacecraft already was in position on Pad 39-A at the Kennedy Space Center. A countdown found all systems favorable and ended on the eve of the 4th of July. The next launch window was dependent on light conditions at the planned landing site, the Moon's Sea of Tranquillity, and the window would open at 9:32 a.m. EDT on July 16. The commitment was made to launch then.

The commander of Apollo 11, Neil Armstrong, described that morning:

"All was ready. Everything had been done. Projects Mercury and Gemini. Seven years of Project Apollo. The work of more than 300,000 Americans. Six previous unmanned and manned Apollo flights. Planning, testing, analyzing, training. The time had come.

"We had a great deal of confidence. We had confidence in our hardware: The Saturn rocket, the command module and the lunar module. All flight segments had been flown on the earlier Apollo flights with the exception of the descent to and the ascent from the Moon's surface and, of course, the exploration work on the surface. These portions were far from trivial, however, and we had concentrated our training on them.

"Months of simulation with our colleagues in the Mission Control Center had convinced us that they were ready.

"Although confident, we were certainly not overconfident. In research and in exploration, the unexpected is always expected. We were not overly concerned with our safety, but we would not be surprised if a malfunction or an unforeseen occurrence prevented a successful lunar landing.

"As we ascended in the elevator to the top of the Saturn on the morning of July 16, 1969, we knew that hundreds of thousands of Americans had given their best effort to give us this chance. Now it was time for us to give our best."

Apollo 11 lifted off in a classic launch, precisely on time. Eleven minutes later, Armstrong and his crew of Edwin E. Aldrin and Michael Collins were in Earth orbit. In less than three hours, the Saturn was fired and the preprogrammed escape from Earth completed; they were on their way to the Moon.

On the fifth day of the mission, their spacecraft circling the Moon at 60 miles altitude, Armstrong and Aldrin entered the lunar module Eagle and separated from the command module Columbia, leaving Collins alone in orbit. It was July 20.

The descent, controlled by engine burns, took the astronauts to the surface in two and one half hours. At 4:18 p.m. EDT, Neil Armstrong broke the tension: "Houston, Tranquility Base here, the Eagle has landed."

After hours of checkoff, Armstrong squeezed through the module's hatch and moved slowly down the 10-foot ladder. At 10:56 p.m. he said, "That's one small step for a man, one giant leap for mankind." Neil A. Armstrong, 38, of Wapakoneta, Ohio, stood on another planet.

Armstrong set up a television camera and examined the fine-grained soil beneath his feet. Less than 15 minutes later, Buzz Aldrin followed him to the surface. Hundreds of millions of people saw the two astronauts in their bulky suits as they plodded around the grey surface, performing their assigned tasks. The next day, with their scientific experiments deployed and rock samples collected, Armstrong and Aldrin blasted off to rendezvous with the command ship in orbit. Just before docking, as he watched the Eagle's approach, Mike Collins remembered thinking, "for the first time on this incredible flight I feel it is going to happen... we are a long way from home but from here on it should all be downhill... we are really going to carry this off."

The aircraft carrier Hornet, with recovery helicopters and divers, was waiting southwest of Hawaii. On the afternoon of July 24, Apollo 11 splashed down in the South Pacific. Over one-fifth of the world's population had watched the Moon landing sequence, at least one half of the world knew about it. Excitement was worldwide for an event in the saga of mankind that seemed to transcend nationality. But for Americans, Apollo 11 also left a feeling of renewal in the national spirit. Years of war, assassination and domestic chaos could not diminish the shining moment. It was a good end to a bad decade.

In the ensuing 10 years, NASA has built upon the epoch of Apollo 11 with its affirmation of American vision and competence. Subsequent lunar landings, then the close of the Apollo program and reduced budgets only turned the agency to new directions. The manned flights of Skylab and Apollo Soyuz were followed by the exploration of Mars, the Venus probes and other planetary investigations. Parallel advances in the satellite system brought expanded and cheaper world communications, astronomical discoveries, remote sensing techniques with the potential of managing world resources. All of these projects signified the permanent status of man in the space environment. They contributed to the next evolutionary step -- the Space Shuttle.

In the 1980s, the Shuttle will operate as the common carrier of space transportation. Spacecraft and launch equipment are returnable and reusable. The multiple payloads in the cargo bay can be placed where wanted and picked up or repaired in orbit. Besides scientific experiments, the Shuttle will allow for manufacture and in time, may precipitate structures in space. New programs are certain to grow from the routine findings of others.

Of all the Shuttle aspects, the human progression may be the most remarkable. Peoples of the world are going to be accommodated and made to feel at home in space, not just astronauts and cosmonauts, but medial beings, willing to leave their planet for brief or extended periods.

The missions that came after Apollo proved that humans can live comfortably and work productively in space for long spans of time. And in all historical and scientific narratives, and in the annals of courage, July 20, 1969, will defer to the few who were first.