

# Forty years ago man first walked on the moon

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US ambitions to send astronauts back to the moon as a prelude to missions to Mars have been put in doubt by budgetary constraints 40 years after man's triumphant landing on Earth's nearest neighbor.

Forty years ago on July 20, 1969, American astronaut Neil Armstrong realized the oldest dream of human civilizations when he became the first man to walk on the moon.

As an estimated 500 million people around the world waited with bated breath crowded around fuzzy television screens and radios, Armstrong stepped down the lunar module's ladder and onto the lunar surface.

"That's one small step for man, one giant leap for mankind," Armstrong

intoned, his words slightly distorted by distance and communications equipment, in a phrase now etched forever into the history books.

The excited crowds burst into cheers as he was joined by fellow astronaut Buzz Aldrin who described the "magnificent desolation" of the lunar landscape, never before witnessed in close up on Earth.

Only 12 earthlings have walked on the surface of the [moon](#), the Earth's lone mysterious satellite, which has fuelled our dreams and imaginations since the earliest humans walked the planet.

And the last moonwalk was already more than a generation ago in 1972.

But at the height of the Cold War, the [Apollo program](#) succeeded in proving America's dominance in the space race. Planting an American flag on the surface of the moon in 1969 scored major morale-boosting points over the Soviet Union.

The Apollo program, which led to six successful moon landings between 1969 and 1972, had begun eight years earlier in 1961 when then president John F. Kennedy threw down a bold challenge to Congress to put a man on the moon within the decade.

"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," Kennedy said.

The decision to shoot for the moon was above all a political one, said John Logsdon, curator and expert at the National Air and Space Museum.

The Soviet Union had been the first nation to put a satellite into orbit in 1957, with the launch of the Sputnik, and in 1961 Yuri Gagarin became

the first man to fly in space.

"The Soviet Union had defined space achievement the measure of power and desirability of a modern society and president Kennedy decided that leaving a dramatic space achievement only to the USSR was not in the US interest," Logsdon told AFP.

The space race became symbolic of the Cold War battle for dominance between competing ideologies and polarized world powers.

In 1970 just months after the lunar landings, Soviet dissident Andrei Sakharov in an open letter to the Kremlin wrote that America's ability to put a man on the moon proved the superiority of a democracy.

"NASA had been studying a mission to the moon prior to Kennedy's decision and had concluded that there was no major technological barrier," Logsdon said.

"On the other hand, there was little experience in building the kind of large and complex systems required to carry out the mission."

Thanks to America's growing prosperity and their scientific and technical achievements, the US swiftly put into motion the Apollo program. In 1969 it was estimated at some 25 billion dollars -- about 115 billion at today's value, or more than six times NASA's current budget.

But the Apollo program hit some setbacks. In 1967, three astronauts were killed in an accident on the ground.

Then in December 1968 Apollo 8 blasted off, and America's first manned flight around the moon took place.

Six months later it was followed by Apollo 10, a lunar reconnaissance

trip with three astronauts on board.

Then on July 16, 1969, Armstrong, the mission commander, Aldrin and Mike Collins settled themselves into the orbiting command module Columbia on the Apollo 11, which was taken up into space perched on the Saturn V rocket.

The huge rocket, towering some 111 meters (330 feet) high, lifted off from the Kennedy Space Center at 9:32 am (1332 GMT).

Four days later, Armstrong manually maneuvered the lunar module, dubbed "Eagle," to land on the moon's Sea of Tranquility.

"Houston, Tranquility Base here. The Eagle has landed," he told mission control in Houston, Texas.

At 22:50 pm (0250 GMT), the 38-year-old Armstrong left the module and stepped down a short ladder. With a small leap, he landed on the moon's surface at 22:56pm and 48 seconds (0256 GMT).

Twenty minutes later he was joined by the 39-year-old Aldrin.

Together they spent 21 hours on the moon's surface, planting the American Stars and Stripes and a steel plaque bearing a message of peace.

They collected some 21 kilos (43 pounds) of rocks and then returned to Columbia where Collins was awaiting them for a triumphal return to Earth.

They landed back on July 24, ditching into the Pacific Ocean.

**US manned space flight in doubt 40 years after moon**

## walk

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After the Columbia space shuttle disaster in 2003, former president George W. Bush decided to phase out the shuttle flights by 2003 and set a more ambitious mandate for America in space.

Launched in 2004, the so-called Constellation program aims to take Americans back to the moon by 2020 to use as a launch pad for manned voyages to Mars.

Without renouncing those objectives, President Barack Obama has named a commission of experts to review the US manned space flight program and make recommendations by the end of August.

The space shuttles, which have carried crews of astronauts into space since 1981, were conceived as reusable vehicles to transport heavy, bulky equipment into Earth's orbit, primarily for the construction of the International Space Station.

But the shuttle has kept the United States stuck in a low orbit for too long at a time when other countries like China are emerging as rivals in space, argues Michael Griffin, the former NASA chief who championed the Constellation program.

"I think we must return to the moon because it's the next step. It's a few days from home," he said. "Mars is only a few months from Earth."

In unveiling the Constellation program in 2004 to the Congress, Griffin said: "The single overarching goal of human space flight is the human

settlement of the solar system, and eventually beyond."

"In the long run, human populations must diversify if it wishes to survive," he said in an interview with AFP last year.

But NASA's budget is not big enough to cover the cost of Constellation's Orion capsule, a more advanced and spacious version of the Apollo lunar module, and the Ares 1 and Ares V launchers needed to put it in orbit.

Constellation is projected to cost about 150 billion dollars, but estimates for the Ares 1 have skyrocketed from 26 billion dollars in 2006 to 44 billion dollars last year.

With a space exploration budget of six billion dollars in 2009, Senator Bill Nelson of Florida said: "NASA simply can't do the job it's been given -- the president's goal of being on the moon by 2020."

Nelson, a former astronaut, deplored that between 2020 and 2015 the United States will have no way of transporting its [astronauts](#) to the ISS except aboard Russian Soyuz space craft.

Meanwhile, a group of active and retired NASA engineers, who are critical of the Constellation project, have been working in their spare time on a parallel project dubbed Jupiter Direct.

It envisions using the Orion capsule but replacing the Ares launchers with a family of launchers with common components based on existing shuttle technology.

Proposals presented to Obama's commission on human [space](#) flight estimate Jupiter's cost at 14 billion dollars, half the original estimate for the Ares 1.

The commission chairman, respected former Lockheed Martin chief executive Norman Augustine, said it comes down to money.

"With a few exceptions, we have the technology or the knowledge that we could go to Mars if we wanted with humans. We could put a telescope on the moon if we wanted," he said.

"The technology is by and large there. It boils down to what can we afford?"

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