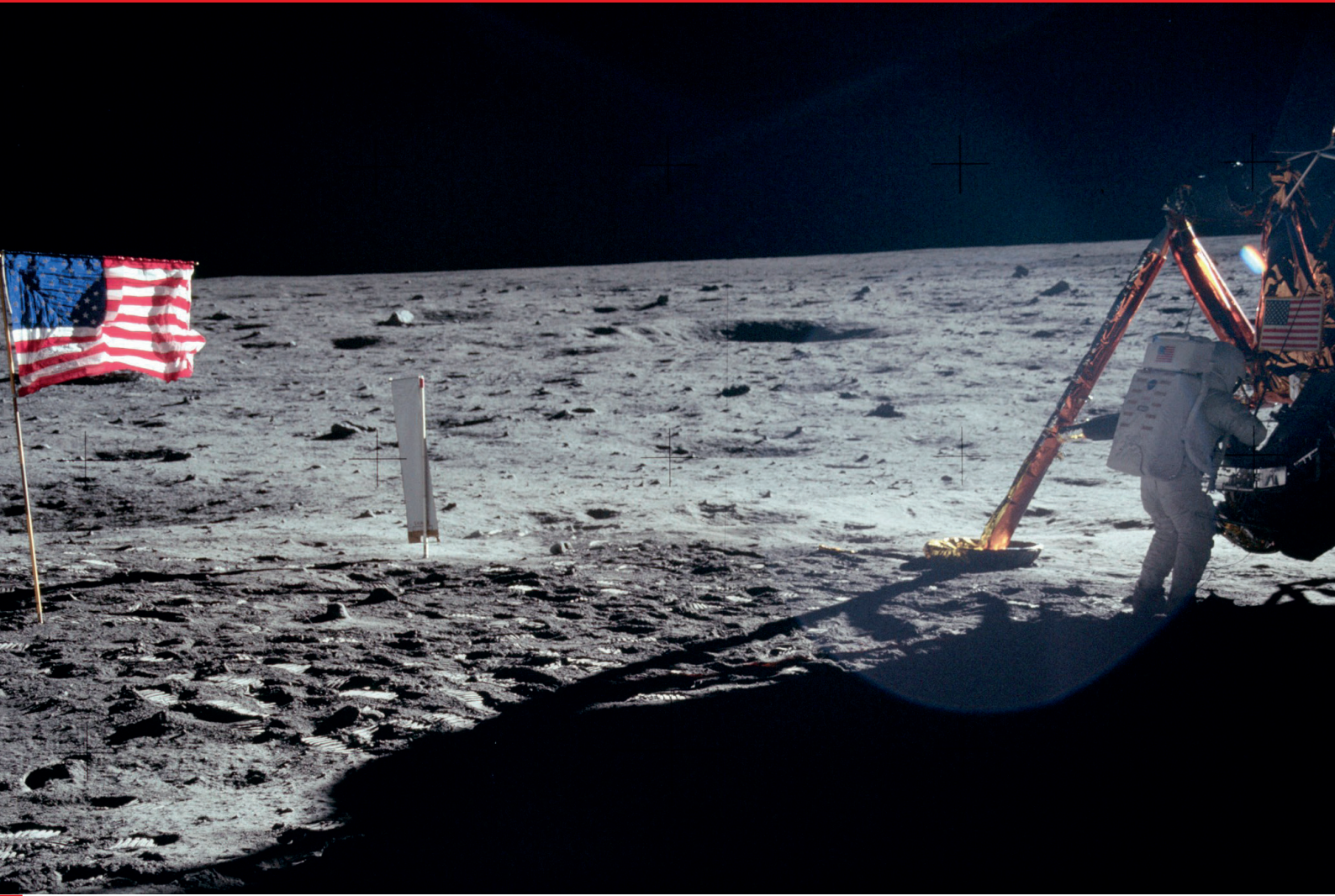




THIS DAY IN HISTORY

STUDY GUIDE



JUL. 20, 1969: ARMSTRONG WALKS ON THE MOON

Biographies, discussion questions, suggested activities and more

THE COLD WAR

Setting the Stage

After World War II, tensions mounted quickly between the United States and the Soviet Union despite having fought as allies during the war. Americans had long been wary of Soviet communism and were concerned about Russian leader Joseph Stalin's tyrannical rule of his country. Postwar Soviet expansion in Eastern Europe fueled a widespread American fear that the Russians were plotting world domination.

Meanwhile, the Soviets resented America's decades-long refusal to treat the USSR as a legitimate part of the international community. They also resented the late U.S. entry into the war, believing an earlier entry could have saved tens of millions of Russian lives. The USSR perceived America as a combative nation who took an unfairly interventionist approach to international relations.

This tense period between the two superpowers came to be known as the Cold War. The defining themes included the arms race; a growing threat of nuclear weapons; espionage and counter-espionage between the two countries; war in Korea; and a clash of words and ideals played out in the media. In the late 1950s, space would become another dramatic arena for this competition, as each side sought to prove the superiority of its technology, its military firepower and, by extension, its political-economic system.

In 1958, NASA was created in response to the Soviet Union's launch of its first satellite, Sputnik I. The Sputnik launch caught America by surprise and sparked fears that the Soviets might also be capable of sending missiles with nuclear weapons from Europe to America. The United States prided itself on being at the forefront of technology, and, embarrassed, immediately began developing a response, signaling the start of the U.S.-Soviet space race.

Cover photo: Neil Armstrong works at the Lunar Module in one of the few photos taken of him on the moon. NASA.

JUL. 20, 1969

ARMSTRONG WALKS ON

THE MOON



Neil Armstrong prepares for Apollo 11. Source: NASA

At 10:56 p.m. EDT, American astronaut Neil Armstrong, 240,000 miles from Earth, speaks these words to more than a billion people listening at home: "That's one small step for man, one giant leap for mankind." Stepping off the lunar landing module Eagle, Armstrong became the first human to walk on the surface of the moon.

The American effort to send astronauts to the moon had its origins in a famous appeal President John F. Kennedy made to a special joint session of Congress on May 25, 1961: "I believe 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 Earth." At the time, the United States was still trailing the Soviet Union in space development, and Cold War-era America welcomed Kennedy's bold proposal.

In 1966, after five years of work by an international team of scientists and engineers, the National Aeronautics and Space Administration (NASA) conducted the first unmanned Apollo mission, testing the structural integrity of the proposed launch vehicle and spacecraft combination. Then, on January 27, 1967, tragedy struck at Kennedy Space Center in Cape Canaveral, Florida, when a fire broke out during a manned launch-pad test of the Apollo spacecraft and Saturn rocket. Three astronauts were killed in the fire.

Despite the setback, NASA and its thousands of employees forged ahead, and in October 1968, Apollo 7, the first manned Apollo mission, orbited Earth and successfully tested many of the so-

phisticated systems needed to conduct a moon journey and landing. In December of the same year, Apollo 8 took three astronauts to the dark side of the moon and back, and in March 1969 Apollo 9 tested the lunar module for the first time while in Earth orbit. Then in May, the three astronauts of Apollo 10 took the first complete Apollo spacecraft around the moon in a dry run for the scheduled July landing mission.

At 9:32 a.m. on July 16, with the world watching, Apollo 11 took off from Kennedy Space Center with astronauts Neil Armstrong, Edwin Aldrin Jr. and Michael Collins aboard. Armstrong, a 38-year-old civilian research pilot, was the commander of the mission. After traveling 240,000 miles in 76 hours, Apollo 11 entered into a lunar orbit on July 19. The next day, at 1:46 p.m., the lunar module Eagle, manned by Armstrong and Aldrin, separated from the command module, where Collins remained. Two hours later, the Eagle began its descent to the lunar surface, and at 4:18 p.m. the craft touched down on the southwestern edge of the Sea of Tranquility. Armstrong immediately radioed to Mission Control in Houston, Texas, a famous message: "The Eagle has landed."

At 10:39 p.m., five hours ahead of the original schedule, Armstrong opened the hatch of the lunar module. As he made his way down the lunar module's ladder, a television camera attached to the craft recorded his progress and beamed the signal back to Earth, where hundreds of millions watched in great anticipation. At 10:56 p.m., Armstrong spoke his famous quote, which he later contended was slightly garbled by his microphone and meant to be "that's one small step for a man, one giant leap for mankind."

He then planted his left foot on the gray, powdery surface, took a cautious step forward, and humanity had walked on the moon.

"Buzz" Aldrin joined him on the moon's surface at 11:11 p.m., and together they took photographs of the terrain, planted a U.S. flag, ran a few simple scientific tests, and spoke with President Richard M. Nixon via Houston. By 1:11 a.m. on July 21, both astronauts were back in the lunar module and the hatch was closed. The two men slept that night on the surface of the moon, and at 1:54 p.m. the Eagle began its ascent back to the command module. Among the items left on the surface of the moon was a plaque that read: "Here men from the planet Earth first set foot on the moon—July 1969 A.D.—We came in peace for all mankind."

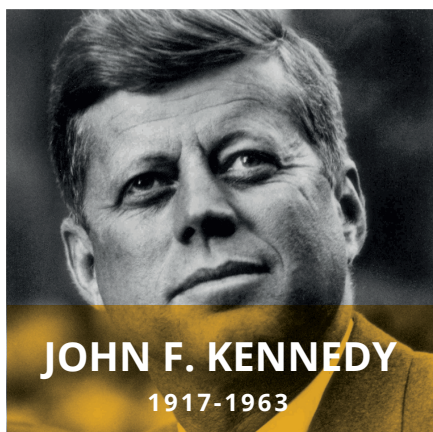
At 5:35 p.m., Armstrong and Aldrin successfully docked and rejoined Collins, and at 12:56 a.m. on July 22 Apollo 11 began its journey home, safely splashing down in the Pacific Ocean at 12:51 p.m. on July 24.

There would be five more successful lunar landing missions, and one unplanned lunar swing-by, Apollo 13. The last men to walk on the moon, astronauts Eugene Cernan and Harrison Schmitt of the Apollo 17 mission, left the lunar surface on December 14, 1972. The Apollo program was a costly and labor intensive endeavor, involving an estimated 400,000 engineers, technicians, and scientists, and costing \$24 billion (close to \$100 billion in today's dollars). The expense was justified by Kennedy's 1961 mandate to beat the Soviets to the moon, and after the feat was accomplished ongoing missions lost their viability.□

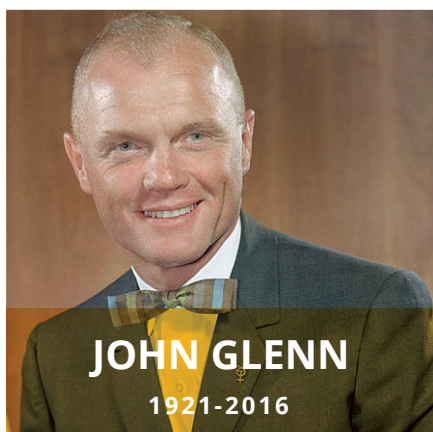
DID YOU KNOW?

During the Apollo 11 moon landing mission, Buzz Aldrin used a felt-tip pen to fix a broken circuit breaker in the Eagle lunar module. The switch was essential for take off and reconnecting with the command module that would take them back to Earth.

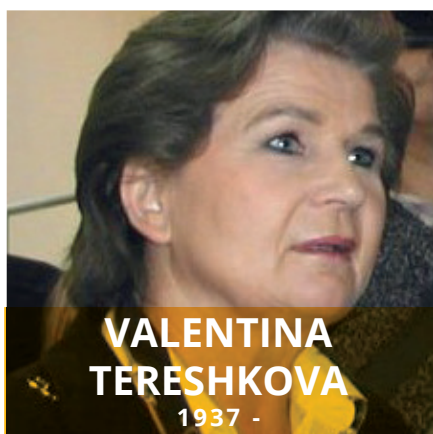
PEOPLE TO KNOW



Elected in 1960 as the 35th U.S. president, 43-year-old John F. Kennedy became the youngest man and the first Roman Catholic ever to hold that office. As president, Kennedy confronted mounting Cold War tensions in Cuba, Vietnam and elsewhere. He also led a renewed drive for public service and eventually provided federal support for the growing civil rights movement. In 1961, President Kennedy made the bold, public claim that the U.S. would land a man on the moon before the end of the decade. In February 1962, John Glenn became the first American to orbit Earth, and by the end of that year, the foundations of NASA's lunar landing program--dubbed Project Apollo--were in place. In 1969, eight years after the president's proclamation, the Apollo 11 mission put a man on the moon.



On February 20, 1962, John Glenn became the third American in space and the first to orbit the Earth when he successfully completed three orbits aboard the space capsule Friendship 7. In the midst of Cold War tensions and the very real fear that the Soviet Union was winning the space race, Glenn's accomplishment brought a sense of pride and relief to Americans and instantly made the 31-year-old Glenn a national hero. Glenn resigned from NASA in 1964, and in 1974 was elected to the U.S. Senate, where he represented Ohio for 25 years. In October 1998, Senator Glenn returned to space at the age of 77 as a payload specialist aboard the space shuttle Discovery, making him the oldest person ever to fly in space. Glenn died on December 8, 2016, at the age of 95, following several years of declining health.



Valentina Vladimirovna Tereshkova was born in 1937 to a peasant family in Russia. She began work at a textile factory when she was 18, and at age 22 she made her first parachute jump with a local aviation club. Her enthusiasm for skydiving brought her to the attention of the Soviet space program, which sought to put a woman in space as a means of achieving another space "first" before the United States. An accomplished parachutist, Tereshkova was well equipped to handle one of the most challenging procedures of a Vostok space flight: the mandatory ejection from the capsule at about 20,000 feet during reentry. She was chosen to take part in the second dual flight in the Vostok program and on June 16, 1963, aboard Vostok 6, Tereshkova became the first woman to travel into space. After 48 orbits and 71 hours, she returned to Earth, having spent more time in space than all U.S. astronauts combined to that date.



Neil Armstrong began his career as a Navy pilot and joined the National Advisory Committee for Aeronautics after his service, spending 17 years as an engineer and test pilot. He eventually joined the astronaut program at NASA in 1962, where his first mission was commander of Gemini 8, where he took part in the first successful docking of two vehicles in space. A few years later, on July 20, 1969, at the age of 38, Armstrong became spacecraft commander to Apollo 11, the first manned lunar landing mission. Armstrong became the first human to walk on the surface of the moon, nearly 240,000 miles from Earth. After the successful mission, Armstrong went on to become a highly decorated NASA administrator and a professor of aerospace engineering. He was forever remembered by the words he spoke to more than a billion people as he walked on the moon: "That's one small step for man, one giant leap for mankind."

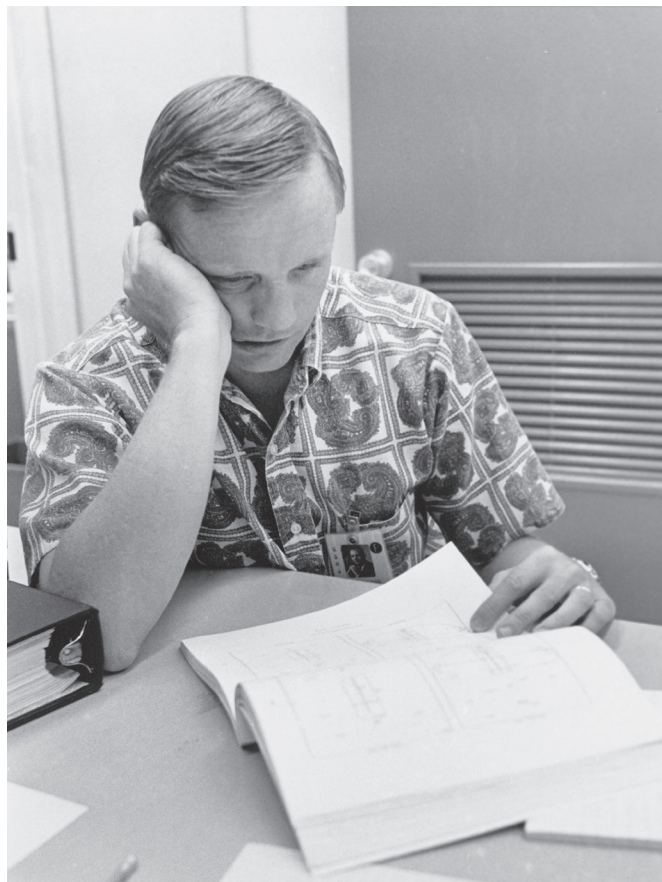


A German mechanical engineer and physicist, Wernher von Braun developed the most sophisticated rockets of his time. He originally produced long-range ballistic missiles and built the first rocket to enter the fringes of space for Nazi Germany. During World War II, Von Braun surrendered to the Americans and was taken to the United States, where he continued his rocketry work. Von Braun eventually shifted his loyalty to America and became a U.S. citizen. When NASA was formed in 1968, he was called upon to oversee the Saturn launch vehicles. It was Von Braun's Saturn rockets that took 27 Americans to the moon; 12 of these astronauts walked on the lunar surface.

SEE IT



Dryden pilot Neil Armstrong is seen here next to the X-15 ship #1 (56-6670) after a research flight. This was the first X-15 flight to use the ball nose, which provided accurate measurement of air speed and flow angle at supersonic and hypersonic speeds.

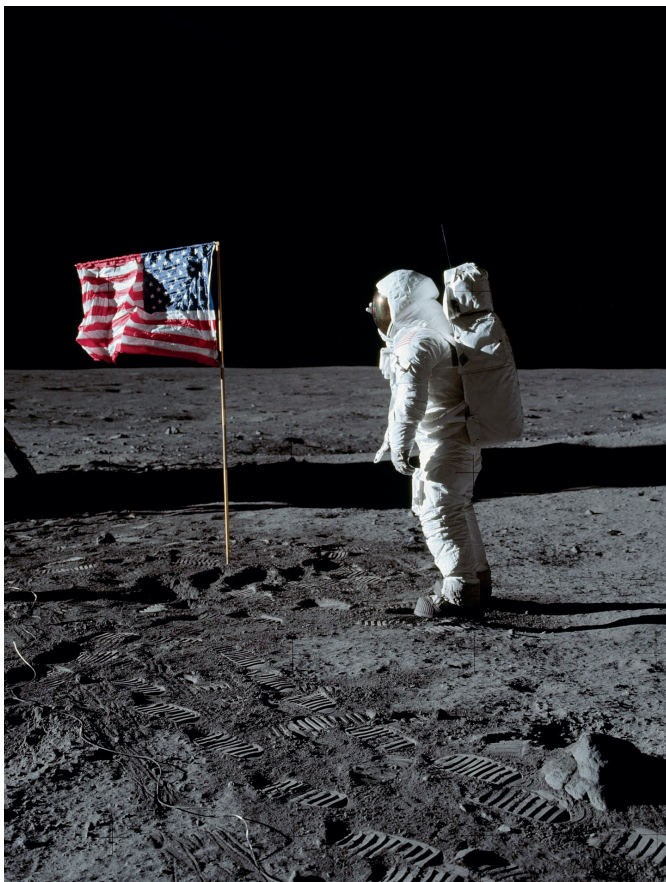


Neil Armstrong reviews flight plans. Photo filed 14 July 1969. By NASA.



Apollo 11 crew portrait. By NASA

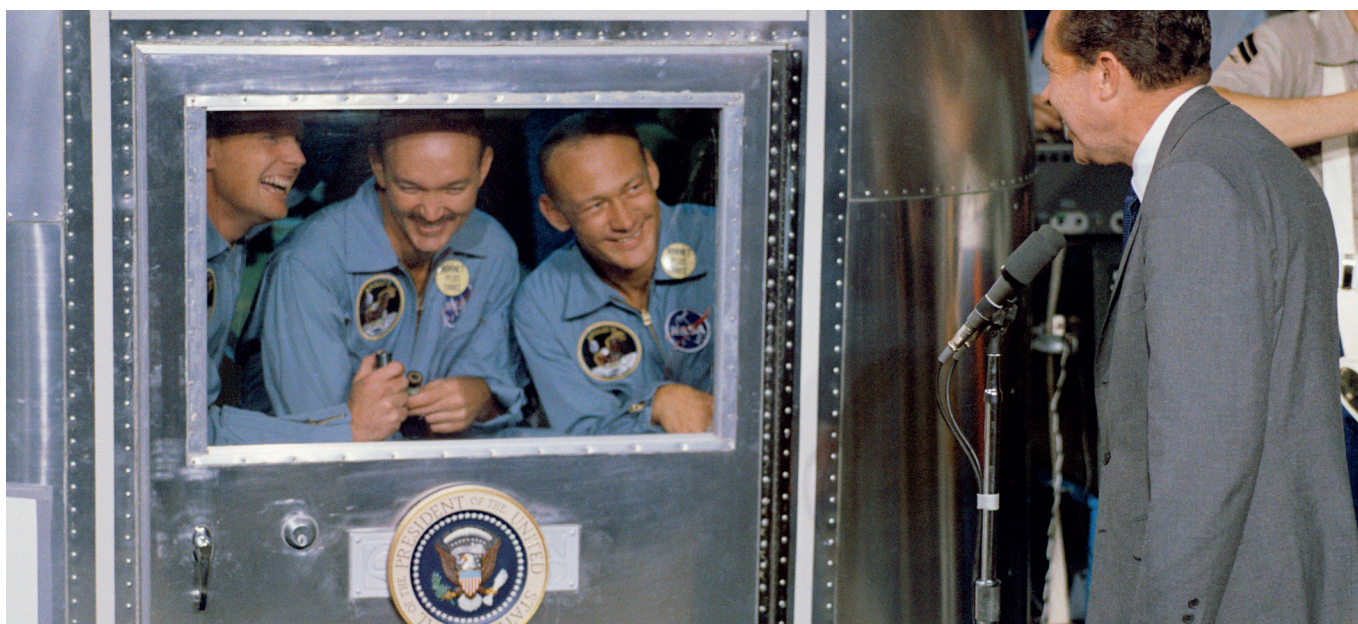
SEE IT



Astronaut Buzz Aldrin salutes the deployed United States flag during an Apollo 11 Extravehicular Activity (EVA) on the lunar surface. By NASA / Neil A. Armstrong



Astronaut Buzz Aldrin on the moon. By NASA.



President Richard M. Nixon was in the central Pacific recovery area to welcome the Apollo 11 astronauts aboard the USS Hornet, prime recovery ship for the historic Apollo 11 lunar landing mission. Already confined to the Mobile Quarantine Facility (MQF) are (left to right) Neil A. Armstrong, commander; Michael Collins, command module pilot; and Edwin E. Aldrin Jr., lunar module pilot. By NASA.

CONCURRENT EVENTS



WOODSTOCK

Before Coachella and Lollapalooza, there was Woodstock. Conceived as “Three Days of Peace and Music,” Woodstock, which took place August 15-18, 1969, was an event concocted by three music promoters looking to make enough money to build a recording studio near the arty New York town of Woodstock. When they couldn’t find an appropriate venue in the town itself, the promoters decided to hold the festival on a 600-acre dairy farm in Bethel, New York, some 50 miles from Woodstock. Although only 186,000 tickets were sold, thousands of early arrivals camped out at the gates and the promoters made the decision to open the concert to everyone, free of charge, in order to prevent unruly crowds. Soaked by rain and wallowing in the muddy mess of the dairy fields, close to half a million young fans best described as “hippies” euphorically took in the performances of acts like Janis Joplin, The Grateful Dead and a closing solo guitar performance of “The Star Spangled Banner” by Jimi Hendrix. The term “Woodstock Nation” later would be used as a general term to describe the youth counterculture of the 1960s.



BIRTH OF THE INTERNET

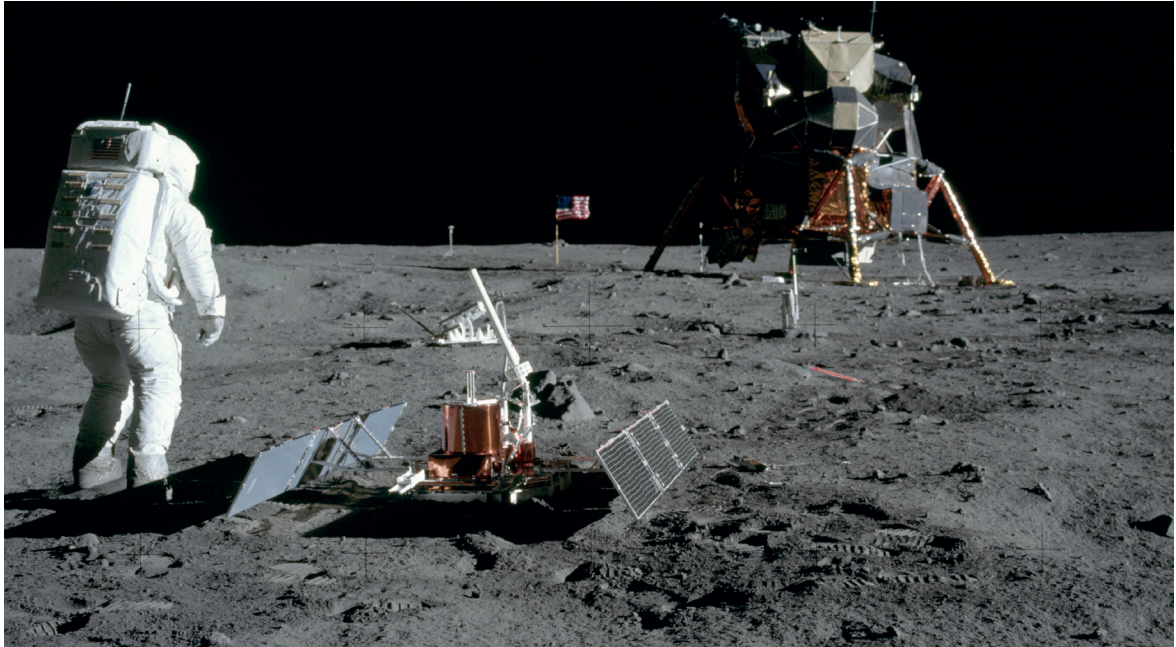
During the Cold War, computer scientists proposed a “galactic network” of computers that would enable U.S. government leaders to communicate even if telephone lines were destroyed by a Soviet attack. The Advanced Research Projects Agency Network or ARPAnet was created, and the first working prototype of the internet was born. On October 29, 1969, ARPAnet delivered its first message to another computer--the word LOGIN (although the system crashed midway through, sending only the letters “L” and “O”). As more computers joined ARPAnet, it evolved into an international, unified network of computers. Throughout the 1980s, the network was used primarily by researchers and scientists to send files and data, until Swiss programmer Tim Berners-Lee introduced a “World Wide Web” of information that anyone around the world could retrieve--introducing the internet that we know today.



ANTI-WAR DEMONSTRATIONS

On October 15, 1969, National Moratorium antiwar demonstrations were conducted across the United States involving hundreds of thousands of people. It was an effort by David Hawk and Sam Brown, two antiwar activists, to forge a broad-based movement against the Vietnam War. The organization initially focused its effort on 300 college campuses, but the idea soon grew and spread nationwide to include smaller rallies, marches and prayer vigils. The demonstrations involved a broad spectrum of the population, including those who had already participated in antiwar demonstrations and many who had never before raised their voices against the war. The protest, as a nationally coordinated anti-war demonstration, was considered unprecedented; news anchor Walter Cronkite called it “historic in its scope. Never before had so many demonstrated their hope for peace.”

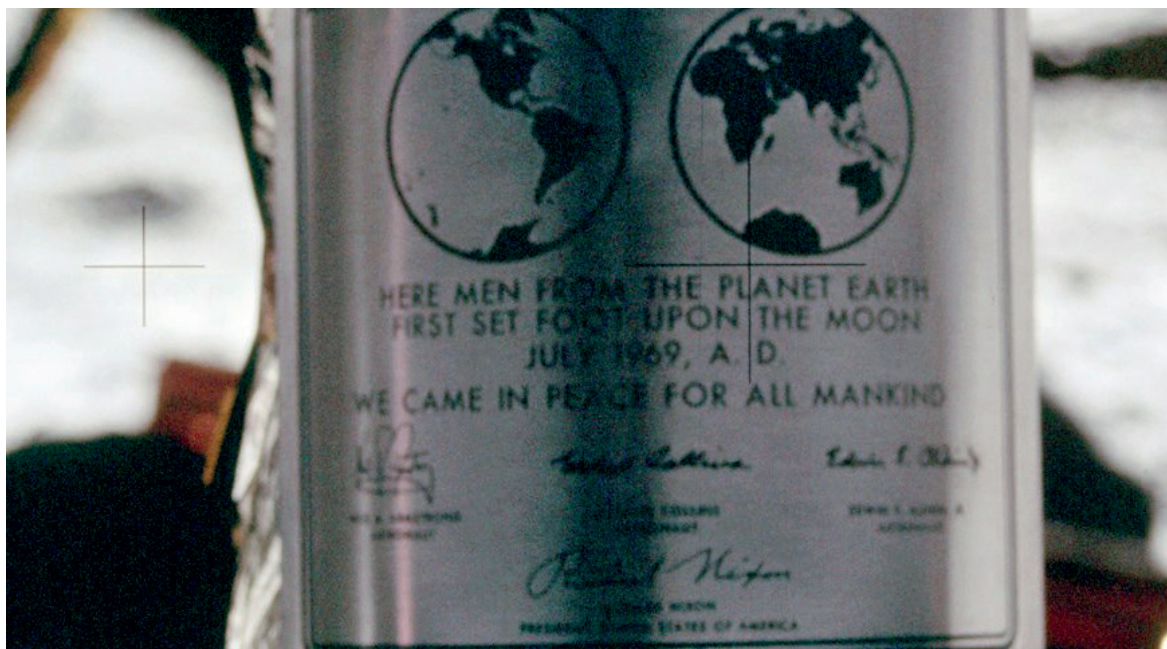
DISCUSSION QUESTIONS



Astronaut Edwin E. "Buzz" Aldrin Jr., Lunar Module pilot, is photographed during the Apollo 11 extravehicular activity on the Moon.
By NASA

- 1 Why do you think exploration is important? What discoveries have explorers made in the past?
- 2 How do you think average Americans felt about the space race? How do you think the Soviets felt?
- 3 What do you think it would be like to live in space? What would you need to survive there?

SUGGESTED ACTIVITIES



Photograph of the Apollo 11 lunar module EAGLE's ladder showing the stainless steel dedication plaque stating that this was the place that Man first walked on the lunar surface from NASA. Source: NASA.

NEW FRONTIERS

Have students break up into small groups and come up with a new or “first” exploration they would want to see. Have them visualize the exploration in a presentation with images, props or drawings. What would it take to support this journey? Who would represent the country or the world? What would they encounter? Why would it be important for society?

SPACE JOURNAL

Have students research the living conditions and work of astronauts in space. In what ways is life different in space than on Earth? What do astronauts work on in space? How does space affect their bodies? What do they eat? How do they sleep and exercise? Ask the students to imagine they were an astronaut and describe a day in their life in the form of a journal entry.

MEET THE ASTRONAUTS

Individually or in small groups, ask students to research the life and work of an astronaut. Then, ask them to create the “NASA file” on that astronaut. The file can include highlights of the astronaut’s upbringing; education; reasons for becoming an astronaut; and accomplishments.

RESOURCES

Video: Sound Smart: Red Scare

<http://www.history.com/topics/cold-war/red-scare/videos/red-scare>

Video: Sound Smart: House Un-American Committee

<http://www.history.com/topics/cold-war/huac/videos/huac>

Video: The Space Race

<http://www.history.com/topics/cold-war/cold-war-history/videos/the-space-race>

Audio: JFK Sets Sights on Moon

<http://www.history.com/speeches/john-f-kennedy-sets-sights-on-moon>

Video: JFK's New Frontier

<http://www.history.com/topics/space-race/videos/space-jfks-new-frontier>

Audio: JFK on First American to Orbit Earth

<http://www.history.com/speeches/jfk-on-first-american-to-orbit-earth>

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RESOURCES

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Audio: Armstrong Walks on the Moon

<http://www.history.com/speeches/neil-armstrong-walks-on-the-moon>

Article: Apollo 11

<http://www.history.com/topics/apollo-11>