



THIS DAY IN HISTORY

STUDY GUIDE



OCT. 4, 1957: SPUTNIK LAUNCHED

Biographies, discussion questions, suggested activities and more

THE COLD WAR

Setting the Stage

After World War II drew to a close in the mid-20th century, a new conflict began. Known as the Cold War, this battle pitted the world's two great powers—the democratic, capitalist United States and the communist Soviet Union—against each other. By the mid-1950s, the U.S.-Soviet Cold War had worked its way into the fabric of everyday life in both countries, fueled by the arms race and the growing threat of nuclear weapons, wide-ranging espionage and counter-espionage between the two countries, war in Korea and a clash of words and ideas carried out in the media. Beginning 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.

Space exploration served as another dramatic arena for Cold War competition. On October 4, 1957, a Soviet R-7 intercontinental ballistic missile launched Sputnik (Russian for “traveler”), the world's first artificial satellite and the first man-made object to be placed into the Earth's orbit. Sputnik's launch came as a surprise, and not a pleasant one, to most Americans. In the United States, space was seen as the next frontier, a logical extension of the grand American tradition of exploration, and it was crucial not to lose too much ground to the Soviets. In addition, this demonstration of the overwhelming power of the R-7 missile—seemingly capable of delivering a nuclear warhead into U.S. airspace—made gathering intelligence about Soviet military activities and, even more, “catching up” with the Soviets particularly urgent.

Cover photo: A replica of Sputnik 1, the first artificial satellite in the world to be put into orbit in outer space, National Air and Space Museum.

OCT. 4, 1957 SPUTNIK LAUNCHED



USSR 15 Years of Space Flight commemorative stamp

On October 4, 1957, the Soviet Union inaugurated the "Space Age" with its launch of Sputnik, the world's first artificial satellite. The spacecraft, named Sputnik after the Russian word for "satellite," was launched at 10:29 p.m. Moscow time from the Tyuratam launch base in the Kazakh Republic. Sputnik had a diameter of 22 inches, weighed 184 pounds and circled Earth once every hour and 36 minutes. Traveling at 18,000 miles an hour, its elliptical orbit had an apogee (farthest point from Earth) of 584 miles and a perigee (nearest point) of 143 miles. Visible with binoculars before sunrise or after sunset, Sputnik transmitted radio signals back to Earth strong enough to be picked up by amateur radio operators. Those in the United States

with access to such equipment tuned in and listened in awe as the beeping Soviet spacecraft passed over America several times a day. In January 1958, Sputnik's orbit deteriorated, as expected, and the spacecraft burned up in the atmosphere.

Officially, Sputnik was launched to correspond with the International Geophysical Year, a solar period that the International Council of Scientific Unions declared would be ideal for the launching of artificial satellites to study Earth and the solar system. However, many Americans feared more sinister uses of the Soviets' new rocket and satellite technology, which was apparently strides ahead of the U.S. space effort. Sputnik

was some 10 times the size of the first planned U.S. satellite, which was not scheduled to be launched until the next year. The U.S. government, military and scientific community were caught off guard by the Soviet technological achievement, and their united efforts to catch up with the Soviets heralded the beginning of the “space race.”

The first U.S. satellite, Explorer, was launched on January 31, 1958. By then, the Soviets had already achieved another ideological victory when they launched a dog into orbit aboard Sputnik 2. The Soviet space program went on to achieve a series of other space firsts in the late 1950s and early 1960s: first man in space, first woman, first three men, first space walk, first spacecraft to impact the moon, first to orbit the moon, first to impact Venus and first craft to soft-land on the moon. However, the United States took a giant leap ahead in the space race in the late 1960s with the Apollo lunar-landing program, which successfully landed two Apollo 11 astronauts on the surface of the moon in July 1969.

By landing on the moon, the United States effectively “won” the space race that had begun with Sputnik’s launch in 1957. For their part, the Soviets made four failed attempts to launch a lunar landing craft between 1969 and 1972, in-

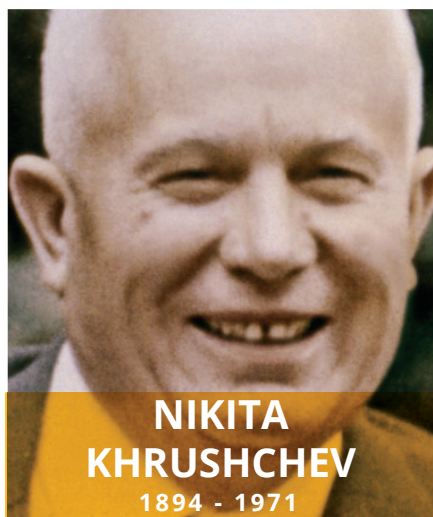
cluding a spectacular launch-pad explosion in July 1969. From beginning to end, the American public’s attention was captivated by the space race, and the various developments by the Soviet and U.S. space programs were heavily covered in the national media. This frenzy of interest was further encouraged by the new medium of television. Astronauts came to be seen as the ultimate American heroes, and earth-bound men and women seemed to enjoy living vicariously through them. Soviets, in turn, were pictured as the ultimate villains, with their massive, relentless efforts to surpass America and prove the power of the communist system.

With the conclusion of the space race, U.S. government interest in lunar missions waned after the early 1970s. In 1975, the joint Apollo-Soyuz mission sent three U.S. astronauts into space aboard an Apollo spacecraft that docked in orbit with a Soviet-made Soyuz vehicle. When the commanders of the two crafts officially greeted each other, their “handshake in space” served to symbolize the gradual improvement of U.S.-Soviet relations in the late Cold War-era. □

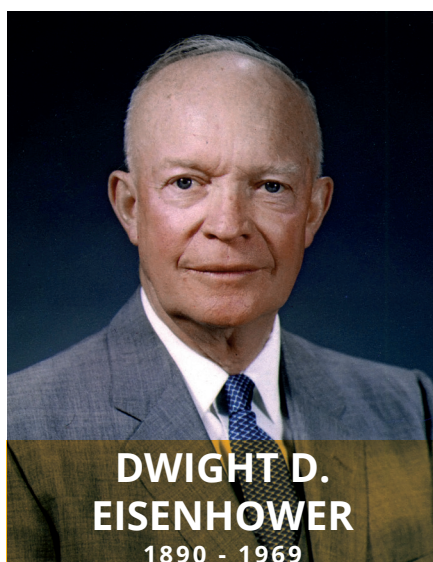
DID YOU KNOW?

The Sputnik satellite was a sphere with a diameter of just under two feet. It weighed less than 185 pounds.

PEOPLE TO KNOW



Khrushchev led the Soviet Union during the height of the Cold War, serving as first secretary of the Communist Party from 1953 to 1964 and premier from 1958 to 1964. Though he largely pursued a policy of peaceful coexistence with the West, he instigated the Cuban Missile Crisis by placing nuclear weapons 90 miles from Florida. At home, he initiated a process of “de-Stalinization” that made Soviet society less repressive. Yet Khrushchev could be authoritarian in his own right, crushing a revolt in Hungary and approving the construction of the Berlin Wall. Known for his colorful speeches, he once took off and brandished his shoe at the United Nations. Khrushchev was a staunch supporter of the Soviet space program, and was keenly aware of the apprehension the Sputnik launch caused in the United States. Although the so-called “missile gap” between Soviet and American technological strength was not as wide as the Americans feared, Khrushchev took steps to reinforce the misperception in order to strengthen his Cold War bargaining position.

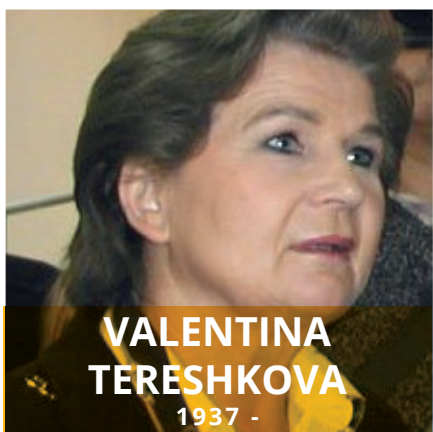


As supreme commander of Allied forces in Western Europe during World War II, Dwight D. Eisenhower led the massive D-Day invasion of Nazi-occupied Europe. In 1952, leading Republicans convinced Eisenhower to run for president; he went on to serve two terms in the White House (1953-1961). During his presidency, Eisenhower managed Cold War-era tensions with the Soviet Union under the looming threat of nuclear weapons, ended the war in Korea in 1953 and authorized a number of covert anti-communist operations by the CIA around the world. On the home front, where America was enjoying a period of relative prosperity, Eisenhower strengthened Social Security and created the massive new Interstate Highway System. In the wake of the Soviet launch of Sputnik in 1957, Eisenhower authorized the creation of the National Aeronautics and Space Administration (NASA), ushering in the Space Race. Though popular throughout his administration, he faltered in the protection of civil rights for African Americans by failing to fully enforce the Supreme Court’s mandate for the desegregation of schools.

PEOPLE TO KNOW



In April 1961, less than four years after the Sputnik launch, Soviet pilot, engineer and cosmonaut Yuri Gagarin became the first man to fly into outer space. Gagarin spent 1 hour and 29 minutes orbiting Earth aboard the spacecraft Vostok 1, during which he made only one statement, "Flight is proceeding normally; I am well." Upon his return, the 27-year-old Gagarin, the son of a carpenter, became an international celebrity. Gagarin's triumph was a painful blow to the United States, which had scheduled its first space flight for May 1961. What's more, a U.S. astronaut wouldn't match Gagarin's feat of orbiting the Earth until February 1962, when astronaut John Glenn made three orbits in Friendship 7. (By that time, cosmonaut Gherman Titov had already become the second Soviet to make it to space, making 17 orbits of Earth over 25 hours in Vostok 2 in August 1961.) On March 27, 1968, some eight years after his historic flight, Gagarin was killed when a two-seater MiG-15 fighter jet he was flying crashed outside a small town near Moscow during a routine training flight. Gagarin's ashes were placed in a niche in the Kremlin wall, while his hometown of Gzhatsk was renamed Gagarin in his honor.



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.

SEE IT



Commemorative Sputnik stamp, USSR



Vostok 1 after landing



Original NASA insignia

CONCURRENT EVENTS



HYDROGEN BOMB SUCCESSFULLY TESTED

On May 20, 1956, the United States conducted the first airborne test of an improved hydrogen bomb, dropping it from a plane over the tiny island of Namu in the Bikini Atoll in the Pacific Ocean. The successful test indicated that hydrogen bombs were viable airborne weapons and that the arms race had taken another giant leap forward. The hydrogen bomb was carried by a B-52 bomber and released at an altitude of more than 50,000 feet. The device exploded at about 15,000 feet. This bomb was far more powerful than those previously tested and was estimated to be 15 megatons or larger (one megaton is roughly equivalent to 1 million tons of TNT). Observers said that the fireball caused by the explosion measured at least four miles in diameter and was brighter than the light from 500 suns. The massive open-air blast caused concerns among scientists and environmentalists about the effects of such testing on human and animal life. During the coming years, a growing movement in the United States and elsewhere began to push for a ban on open-air atomic testing. The Limited Test Ban Treaty, signed in 1963 by the United States, the Soviet Union and Great Britain, prohibited open-air and underwater nuclear testing.



LITTLE ROCK NINE

In a key event of the American Civil Rights Movement, nine black students enrolled at formerly all-white Central High School in Little Rock, Arkansas, in September 1957, testing a landmark 1954 U.S. Supreme Court ruling that declared segregation in public schools unconstitutional. The court had mandated that all public schools in the country be integrated “with all deliberate speed” in its decision related to the groundbreaking case *Brown v. Board of Education of Topeka*. On September 4, 1957, the first day of classes at Central High, Governor Orval Faubus of Arkansas called in the state National Guard to bar the black students’ entry into the school. Later in the month, President Dwight D. Eisenhower sent in federal troops to escort the “Little Rock Nine” into the school, and they started their first full day of classes on September 25.



CASTRO TAKES POWER IN CUBA

On February 16, 1959, Fidel Castro was sworn in as president of Cuba, after leading a guerrilla campaign that forced right-wing dictator Fulgencio Batista into exile. Along with his brother Raul, Argentinian revolutionary Che Guevara and others, the anti-American Castro had, in 1955, formed the revolutionary 26th of July Movement, named for the date of his failed 1953 attack on a Cuban military base. With support for Batista waning, the 26th of July rebels defeated Batista’s forces at Santa Clara in December 1958. Batista fled to the Dominican Republic on January 1, 1959, and Castro took command of the Cuban military, before becoming prime minister less than two months later. Castro’s Cuba was the first communist state in the Western Hemisphere, and he would retain control of it into the 21st century, outlasting 10 U.S. presidents who opposed him with economic embargoes and political rhetoric. After the collapse of the Soviet Union in 1991, Castro lost a valuable source of aid, but he made up for it by courting European and Canadian investment and tourism. In July 2006, Castro temporarily ceded power to his brother Raul after undergoing intestinal surgery. His struggles with illness continued, however, and he officially stepped down in February 2008. Castro died on November 25, 2016, at age 90.

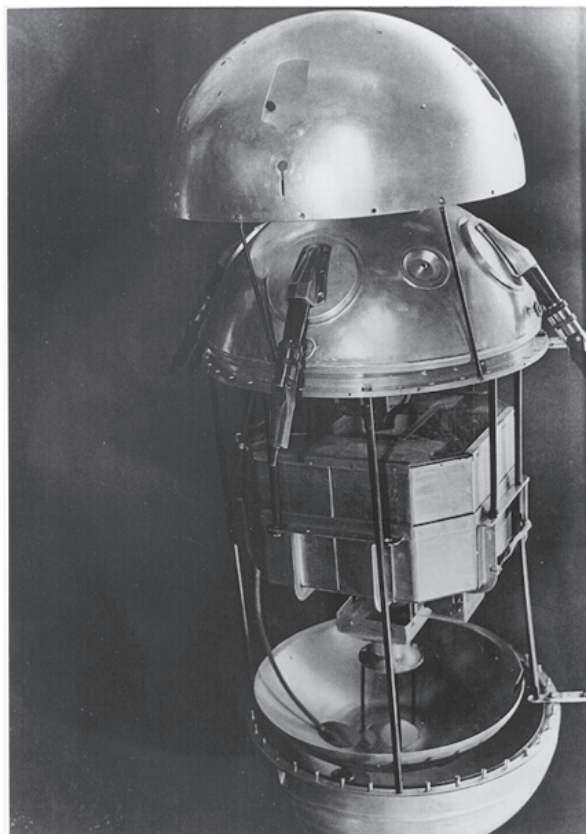
DISCUSSION QUESTIONS



Vostok 1 mission patch

- 1 How do you think average Soviet citizens felt about the Sputnik launch? How did this differ from how Americans felt? How about people in other countries?
- 2 How do you think the Cold War contributed to the Space Race?
- 3 Is space exploration still important today? Why or why not?

SUGGESTED ACTIVITIES



Sputnik

FRONT PAGE NEWS

The Sputnik launch was front page news around the world. In groups or individually, ask students to create two newspaper front pages documenting the launch—one from the U.S. perspective and one from the USSR perspective. Newspapers should include headlines, imagery and at least one article depicting how each country would have viewed and reported the news.

PEN PALS

Ask students to imagine how American and Soviet students would have viewed the launch of Sputnik. Then ask students to imagine how a set of Soviet and American pen pals might have talked about the launch and have them write two letters—one from a Soviet student describing the launch and a reply from his American pen pal describing how the launch was greeted in the United States.

SPACE HEROES

In an era when astronauts live in space for months at a time, space travel can feel commonplace. But the men and women who pioneered space flight demonstrated great bravery and curiosity in the face of unknown dangers. Ask students to choose an astronaut or cosmonaut from any country or time period to study and prepare a presentation on his or her life and work. Presentations can include personal background; education and training; motivation for space travel; achievements; and legacy.

RESOURCES

Video: A U.S. news report announces the launch of Sputnik

<http://www.history.com/topics/space-race/videos/soviets-launch-sputnik>

Video: The Space Race

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

Transcript: President Eisenhower's address to the American people on science and national security, November, 1957

<http://www.presidency.ucsb.edu/ws/?pid=10946>

Audio: Sputnik's beeping

<https://www.youtube.com/watch?v=ZtwgqpUibfU>

Diagram: Sputnik (Note: need Flash player)

http://www.nytimes.com/interactive/2007/09/24/science/space/20070924_SPUTNIK_GRAPHIC.html#tab1

Infographic: Sputnik

<https://www.space.com/17888-first-satellite-sputnik-1-explained-infographic.html>