SPACE RESEARCH

30-5-2020

HISTORY OF INTERNATIONAL SPACE RESEARCH

“We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win.”

– John F. Kennedy

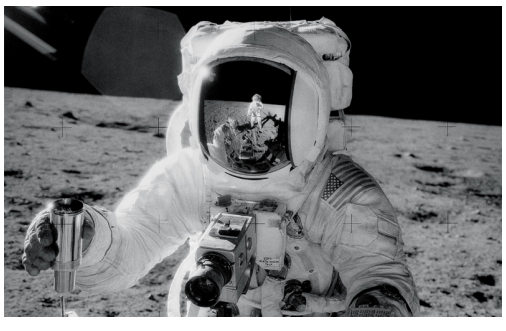
THE BIRTH OF SPACE EXPLORATION

Humans have always looked up into the night sky and dreamed about space. However, it was only in the latter half of the 20th century that rockets were developed that were powerful enough to overcome the force of gravity to reach orbital velocities, paving the way for space exploration to become a reality.

In the 1930s and 1940s, Nazi Germany saw the possibilities of using long-distance rockets as weapons, which led to the creation of the infamous V-2 missiles used in World War II. After World War II, the United States and the Soviet Union created their own missile programs.

On Oct. 4, 1957, the Soviets launched the first artificial satellite, Sputnik 1, into space. Four years later on April 12, 1961, Russian Lt. Yuri Gagarin became the first human to orbit Earth in Vostok 1. His flight lasted 108 minutes, and Gagarin reached an altitude of 327 kilometers (about 202 miles).

THE AMERICAN SPACE PROGRAM



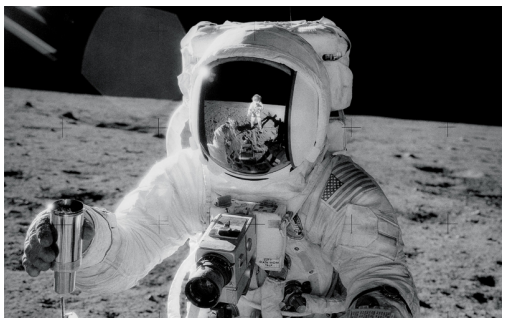
The first U.S. satellite, Explorer 1, went into orbit on Jan. 31, 1958. In 1961, Alan Shepard

became the first American to fly into space. On Feb. 20, 1962, John Glenn's historic flight made him the first American to orbit Earth.

On July 20, 1969, astronaut Neil Armstrong took "one giant leap for mankind" as he stepped onto the moon. Six Apollo missions were made to explore the moon between 1969 and 1972.

By the early 1970s, orbiting communications and navigation satellites were in everyday use, and the Mariner spacecraft was orbiting and mapping the surface of Mars. By the end of the decade, the Voyager spacecraft had sent back detailed images of Jupiter and Saturn, their rings, and their moons. Skylab, America's first space station, was a human-spaceflight highlight of the 1970s, as was the Apollo Soyuz Test Project, the world's first internationally crewed (American and Russian) space mission.

INTERNATIONAL COOPERATION AND THE FUTURE OF SPACE EXPLORATION



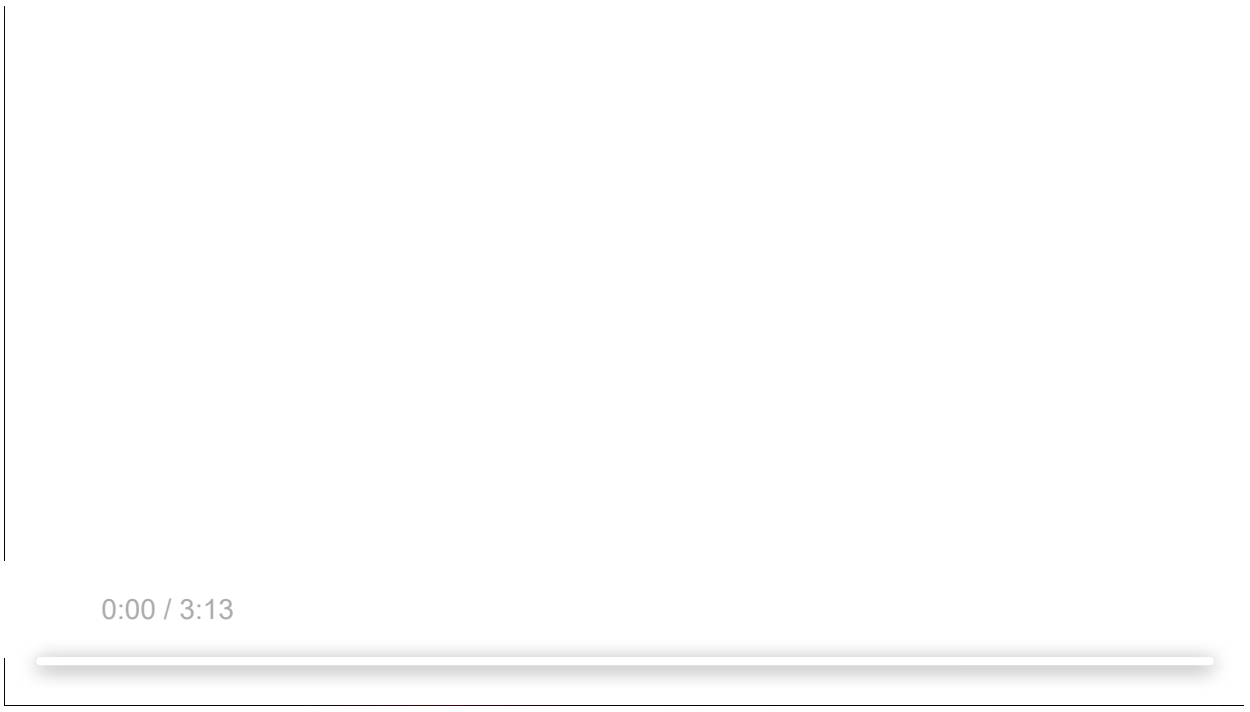
In the 1980s, satellite communications expanded to carry television programs, and people were able to pick up the satellite signals on their home dish antennas. Satellites discovered an ozone hole over Antarctica, pinpointed forest fires, and gave us photographs of the nuclear power plant

disaster at Chernobyl in 1986. Astronomical satellites found new stars and gave us a new view of the center of our galaxy.

In April 1981, the launch of the American space shuttle Columbia ushered in a period of reliance on the reusable shuttle for most civilian space missions, which would go on for over 30 years. However, the shuttle program was not without tragedy, with the Challenger disaster in 1986 and the Columbia disaster in 2003, resulting in the deaths of 14 astronauts. Discovery was the first of the three active space shuttles to be retired, completing its final mission on March 9, 2011; Endeavour did so on June 1. The final shuttle mission was completed with the landing of Atlantis on July 21, 2011, closing the 30-year space shuttle program.

The International Space Station is a research laboratory in low Earth orbit. With many different partners contributing to its design and construction, this high-flying laboratory has become a symbol of cooperation in space exploration, with former competitors now working together. The station has been continuously occupied since the arrival of Expedition 1 in November of 2000. The station is serviced by a variety of visiting spacecraft: the Russian Soyuz and Progress; the American Dragon and Cygnus; the Japanese H-II Transfer Vehicle; and formerly the Space Shuttle and the European Automated Transfer Vehicle. It has been visited by astronauts, cosmonauts, and space tourists from 17 different nations.

Modern space exploration is reaching areas once only dreamed about. Mars is focal point of modern space exploration, and manned Mars exploration is a long-term goal of humanity.



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