
Apollo-Soyuz Test Project: A Case Study in Cold War Détente

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Let both sides seek to invoke the wonders of science instead of its terrors. Together let us explore the stars.¹

- President John F. Kennedy, 1961

At the peak of the Space Race, tensions between the United States and the Soviet Union reached an all-time high. America was embroiled in the Vietnam War and at every turn, the USSR and its leadership criticized the United States and its accomplishments in space (and on earth), while boasting about its own. Despite the Soviet Union's self-professed successes, it lost the race to land a man on the Moon. After 1969, the Soviet Union concentrated, not on a moon landing, but on launching and building space stations in low Earth orbit. Following the successful moon landing in 1969, NASA and the Soviet Academy of Science began to work on a joint mission that could, if done successfully, help ease tensions between the two super powers. The climate of intense tension between the two super powers had eased, primarily due to American exasperation over the continued war in Vietnam and disintegrating relations between the People's Republic of China and the USSR. The proposed space mission, which would become known as the Apollo-Soyuz Test Project (ASTP), was unprecedented. It was undertaken on opposite sides of the world, and both competing nations had to work together in space. It was also one of the first times the American people were given information about the Soviet Space Program, which had been shrouded in secrecy, even shielded from the USSR's own people. The ASTP is an example of how the USSR and the United States in the early 1970s attempted to achieve a policy of Détente, the relaxation of political tensions. This policy was born out of the two powers seeking global stability following decades of tensions and wars. Both sides wanted to show the world that they could work together in peace and become leaders without being enemies. The cooperation was short-lived, but it gave a glimpse of what could be possible for humanity moving into the final stages of the Cold War.²

Space cooperation has a long and complex history before the handshake in space between U.S. astronauts and Soviet cosmonauts. Following astronaut John Glenn's historic orbital launch in February 1962, Soviet Premier Nikita Khrushchev sent a letter to President Kennedy congratulating him on putting the first American in orbit around the Earth. Kennedy saw an opportunity to propose cooperation between the only two countries attempting the exploration of space. In a letter back to Khrushchev, Kennedy made five proposals for space cooperation: a joint weather satellite system, joint tracking stations in each other's territories, joint effort to map the Earth's magnetic

¹ Matthew J. Von Bencke, *The Politics of Space: a History of U.S.-Soviet/Russian Competition and Cooperation in Space* (Boulder, CO: Westview Press, 1997), 48.

² On the impulses driving Détente see Jeremi Suri, *Power and Protest: Revolution and the Rise of Détente* (Boston: Harvard University Press, 2003), and Jussi Hanhimäki, *The Rise and Fall of Détente: American Foreign Policy and the Transformation of the Cold War* (Washington, D.C.: Potomac Books, 2013); also see Wilfried Loth, *Overcoming the Cold War: A History of Détente* (London: Palgrave-MacMillan, 2002), and Stephan Kieninger, *Dynamic Détente: The United States and Europe, 1964-1975* (Lanham, MD: Roman and Littlefield Press, 2016).

field; he asked the Soviets to join the American led satellite transmission system, and a general exchange of space knowledge.³ Khrushchev responded positively to the letter, but nothing significant came of it until 1965, when an agreement was signed between the Americans and USSR to enact a joint review of the knowledge gained in space biology and medicine.⁴ This agreement would be the first step to show NASA and the United States that cooperation with the Soviets in space ventures was possible. It would lay the groundwork for the Détente of the 1970s.

In 1967, the Joint Space Panel (JSP), a group put together by the White House to oversee and report on NASA operations, filed a report offering recommendations and noting benefits of space cooperation with the Soviet Union. In the report, the JSP stated that cooperative efforts between the US and USSR could lead to more efficiency in NASA's space program but could also generate support for future NASA initiatives.⁵ The disaster of the Apollo 1 fire in 1967, in which 3 astronauts burned to death during a test on the launch pad, had shaken America's belief in the space program. The JSC felt that cooperation with the Soviet Union could gain back popular support. The JSC also recommended that NASA's own efforts toward international space programs should be expanded. However, NASA's measures to move past the Apollo 1 fire allowed it to continue its push to land on the Moon by 1969, and further space cooperation would have to wait until after it had won the Space Race.

After Nixon won the presidency of the United States in the 1968 election, he installed a Space Task Group (STG) that replaced the JSC. The STG was made up of Vice President Spiro Agnew, Secretary of Defense Melvin Laird, Presidential Science Advisor Lee Dubridge and NASA Administrator, Dr. Thomas O. Paine.⁶ This group, like the JSC, would make recommendations to President Richard Nixon regarding the space program, its direction and goals. Following the 1969 Moon landing by Neil Armstrong and Buzz Aldrin, Dr. Paine made a recommendation to the president on the subject of space cooperation. He and NASA had devised a plan to work with the Soviets to develop a compatible, universal docking technique in the event a need for a rescue mid-flight arose.⁷ Nixon liked the political implications of the cooperative plan and told Paine to forward it to his Soviet counterpart, Mstislav Keldysh. However, Russians ignored the plan until 1970, apparently out of a sense of wounded national pride following the U.S. moon landing.

In the early months of 1970, NASA decided to begin looking at what it would do after the Apollo program was finished. It still planned for eight more moon landings to last through 1974. Yet, obstacles began to arise. On January 4, 1970, NASA cancelled Apollo 20 in order to use its Saturn V rocket as a workshop to launch the post-Apollo Skylab space station.⁸ This announcement left Apollo 13 through 19 still in the cards. However, Congress decided to slash NASA's budget because it felt now that landing on the Moon was conquered, there was not much room for what many saw as frivolous NASA expenses, especially with a decline in the U.S. economy in the late 1960s and early 1970s. At the height of the Space Race in 1965, \$5.2 billion was allocated to NASA. After the cuts began, money allocation for NASA dropped to \$3.1 billion in 1971.⁹ Due to these

³Ibid, 52.

⁴ Walter Froehlich, *Apollo-Soyuz* (Washington, D.C.: NASA Office of Public Affairs, 1976), 30.

⁵ Joint Space Panels. *The Space Program in the Post-Apollo Period: a Report of the President's Science Advisory Committee* (Washington, D.C.: United States Government Printing Office, 1967), 43.

⁶ Cass Schichtel, *The National Space Program: From the Fifties to the Eighties* (Washington, D.C.: National Defense University Press, 1983), 72.

⁷ Alan Shepard et al, *Moonshot: the Inside Story of America's Race to the Moon* (Atlanta: Turner Publishing, 1994), 326.

⁸ National Aeronautics and Space Council, *Aeronautics and Space Report of the President, 1971* (Washington, D.C.: United States Government Printing Office, 1972), 1-2.

⁹ Ibid, 114.

budget cuts, NASA announced on September 2, 1970, that it cancelled Apollo 18 and Apollo 19.¹⁰ The final moon landing, Apollo 17, would take place in 1972.

With the end of the Moon landings in sight, pressure against U.S.-Soviet space cooperation diminished. In April 1970, the Soviet Academy of Sciences, the space agency of the USSR, proposed bilateral talks for future cooperation.¹¹ In May 1970, Dr. Phillip Hendler, the president of the National Academy of Sciences, brought Paine's docking system plan to Keldysh.¹² This time, instead of ignoring the proposal, Keldysh reacted positively and asked NASA representatives to attend a conference in Moscow with their ideas. During the Moscow technical conference in October 1970, the two space agencies decided that their efforts toward cooperation would be focused on the creation of universal docking equipment and systems.¹³ They also agreed to an exchange of technical information regarding radio guidance and rendezvous systems, and the formation of three joint teams to assure system compatibilities. This would initiate the first joint mission between Americans and Soviets.

Both nations had complex reasons for supporting the joint mission. While America found success going to the moon, the USSR was successful at making stations in low Earth orbit and ferrying cosmonauts up and down to them at a regular pace. However, following the moon landings, NASA found itself with no planned missions until the space shuttle was to launch in 1981. This gap, along with the budget cuts, created a surplus of astronauts and hardware for the United States. On the other side, the Soviets needed a high profile mission following the Soyuz 11 accident in 1971.¹⁴ After the reentry and landing of the Soyuz 11 capsule, the three cosmonauts inside were found dead. A leaky valve in their capsule caused the air to leak out and asphyxiated the cosmonauts.¹⁵ This tragedy, along with economic woes in the Soviet Union caused its people to question their support for the Soviet space program in the 1970s. A February 1971 *Washington Post* story recounted a large shipment of rotten potatoes in the Soviet Union. An outraged Russian woman shouted "we have rockets, right? Of course, right. We have *Sputniks*, right? Of course, right. They fly beautifully in outer space. So, I say to you dear friends, why don't we just send these rotten potatoes into outer space too."¹⁶ The Russian people were beginning to show irritation at the costly space program while many went hungry in the streets. Both sides had reasons why they needed this joint mission to work and look good.

On February 1972, in a meeting of the Senior Review Group, George Low, the Deputy Administrator of NASA, announced that the mission specifications had been ironed out between American and Soviet space agencies.¹⁷ The proposed mission, to be launched in 1975, would involve rendezvous and docking of a leftover Apollo craft and a Salyut space station. Low asked Dr. Henry Kissinger, Nixon's national security advisor, to request presidential approval for the mission. Due to the budget problems, NASA worried Congress would not allocate funds necessary to accomplish the mission. Dr. Kissinger assured Low a presidential decision was "no problem," and that the president was anxious to see the mission go ahead on schedule. Later in February, the Soviets were concerned that they would not be able to outfit and launch a Salyut Station by 1975. Due to these concerns, the

¹⁰ Ibid, 1-2.

¹¹ Jack Manno, *Arming the Heavens: The Hidden Military Agenda for Space, 1945-1995* (New York: Dodd, Mead & Co., 1984), 132.

¹² Shepard, 327.

¹³ William H. Schauer, *The Politics of Space: a Comparison of the Soviet and American Space Programs* (New York: Holmes & Meier, 1976), 225-226.

¹⁴ Tom D. Crouch, *Aiming for the Stars: the Dreamers and Doers of the Space Age* (Washington, D.C.: Smithsonian Institution Press, 1999), 77-78.

¹⁵ Manno, 133.

¹⁶ Asif A. Siddiqi, *The Soviet Space Race with Apollo* (Gainesville: University of Florida Press, 2000), 794.

¹⁷ "Minutes of Senior Group Meeting," February 11, 1972, in *Foreign Relations of the United States, 1969-1976, Volume XIV, Soviet Union, October 1971- May 1972*, David C. Geyer, Nina D. Howland and Kent Sieg, eds., (Washington, D.C.: United States Government Printing Office, 2006), 162-165.

two agencies decided to have the space linkup between an Apollo capsule and a Soyuz capsule using a docking module.¹⁸ The plans were in place for the United States to construct and ferry the docking module into space due to a stringent weight restriction on the Soyuz launch vehicle. The docking module would be a box shaped tunnel, 3.15 meters long, 1.42 meters in diameter and weigh six thousand kilograms.

Now that the mission plans were agreed on by both sides and in motion, construction began in the United States and Soviet Union to accomplish it. The Chrysler corporation built the Apollo launch vehicle that would be used for ASTP in January 1976 and then, after testing, put the vehicle into storage until October 1972.¹⁹ Due to the command and service module no longer being a moon mission vehicle, modifications were necessary. Modifications to the Apollo modules included: additional propellants for reaction control systems, heaters for thermal control, and outfitting the command module with instrumentation to display and control the new docking module.²⁰ The mission also planned for the extraction of the docking module out of the second stage rocket, much in the same way the command module extracted the lunar module from the Saturn rocket during missions to the Moon.

Although the technical side of the joint mission went smoothly by 1972, the political side of the picture stalled. In particular, there was still no official announcement to the public. Following President Nixon's trip to China in February 1972, plans were made for a summit in Moscow between Nixon and General Secretary of the Communist Party of the Soviet Union Leonid Brezhnev. The Soviets proposed that the two leaders sign a joint agreement on space cooperation at the Moscow summit to show commitment to the mission. In a memo, Dr. Kissinger told the president of the importance of the summit:

We are currently engaged in a whole series of negotiations ranging from trade issues, to scientific and outer space cooperation. Both of us stand to gain. But we must be realistic: a lasting and productive set of relationships, with perhaps hundreds or thousands of our people working with each other and perhaps billions of dollars of business activity, can only be achieved in a healthy political environment.²¹

The summit needed to go well to show the world that the two superpowers were not at each other's throats and were willing to work with one another. The space cooperation agreement was a small part of Kissinger and Nixon's vision for improved relations between the two super powers. In May 1972, following his "secret" trip to Moscow in April, Kissinger reported to Nixon that the space agreement was ready to be signed during the summit. In the memo, Kissinger explained the wording of the agreement and the free hand given to the respective space agencies.

NASA and Soviet Academy of Sciences will oversee implementation. The rendezvous and docking systems of the US and Soviet spacecraft will be made compatible as to provide for joint missions and rescue operations. The US and USSR agree to a joint, manned spaceflight in 1975 using Apollo-type and Soyuz-type spacecraft. The two

¹⁸ Crouch, 78.

¹⁹ Roger E. Bilstein, *Stages to Saturn: a Technological History of the Apollo/Saturn Launch Vehicles* (Gainesville: University of Florida Press, 2003), 385.

²⁰ National Aeronautics and Space Council, *Aeronautics and Space Report of the President, 1972 Activities* (Washington, D.C.: United States Government Printing Office, 1973), 8-9.

²¹ "Memorandum from the President's Assistant for National Security Affairs (Kissinger) to President Nixon," April 19, 1972, in *Foreign Relations of the United States, 1969-1976, Volume XIV, 416-417.*

spacecraft will rendezvous and dock in space and the astronauts and cosmonauts will visit the respective space craft.²²

So, on May 24, 1972, President Nixon and Soviet Premier Kosygin signed the Agreement Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes. This solidified the commitment by both nations to oversee the preparation and execution of the Apollo-Soyuz Test Project slated for launch in 1975.

Work was finishing up on the technical side of the agreement when a 1972 Moscow technical conference brought together the teams working on their respective space crafts. Both sides independently created 2/5 scale models of their respective craft on wheels. When the two craft were wheeled together; they interlocked perfectly.²³ This was a milestone for the teams who found that if construction between two nations thousands of miles apart could come together perfectly; the same should happen in space when two crafts are traveling at thousands of miles per second.

The final milestone before the mission could go ahead was the announcement of who would fly the crafts into orbit and perform the historic docking. On January 30, 1973, the United States announced the crew that would fly the Apollo side of the joint mission.²⁴ Tom Stafford was announced as Mission Commander, along with Donald “Deke” Slayton as Docking Module Pilot, and Vance D. Brand as Command Module Pilot. Stafford had much flight experience as commander of Gemini IX and Apollo 10, the latter being the dress rehearsal for Armstrong’s moon landing. Stafford was also liked by the Russians because he served as a pallbearer at the state funeral for the Soyuz 11 crew.²⁵ Deke Slayton was an original Mercury astronaut who had been grounded due to heart fibrillations. He served NASA from Mercury to Apollo as its Lead Astronaut, meaning he created the crew rotations and decided who flew on what mission. In March 1972, Slayton, after a myriad of tests, was found to no longer suffer from heart problems and was put back onto active flight status.²⁶ Vance D. Brand was a rookie pilot and ASTP would be his first shot into space. The Soviets made their crew announcements during the 1973 Paris Air Show.²⁷ The commander of the Soyuz capsule would be Alexey Leonov, the first man to walk in space. Valeriy Nikolayevich Kubasov would serve as Leonov’s flight engineer. These two men also had storied careers prior to ASTP. Kubasov flew on Soyuz 5 in October 1969, during which he conducted space welding, metal smelting and equipment teardown and repair experiments.²⁸ Both were in line for the first Salyut mission in June 1971, but Kubasov got sick.²⁹ Then in July 1971, Salyut 2 exploded during launch before reaching orbit. Despite the recent setbacks for the Soviet cosmonauts, both crews were the best their nations had to offer. The flight crews, scientific staff, technical people and support staff unknowingly were going to become diplomats due to the cooperation between the two nations in fulfilling the mission.

Due to the close proximity and working relationship between the two nations, interaction on the part of flight crews and space program members was inevitable. However, many of those who worked for NASA did not speak Russian, while many of those who worked for the Soviet Academy of Sciences did not speak English.³⁰ The first step of training for everyone was to break down the

²² “Memorandum from the President’s Assistant for National Security Affairs (Kissinger) to President Nixon,” May 15, 1972, in *Foreign Relations of the United States, 1969-1976, Volume XIV, 846-847.*

²³ Froehlich, 36-37.

²⁴ Edward Clinton Ezell and Linda Newman Ezell. *The Partnership: a History of the Apollo-Soyuz Test Project* (Washington, D.C.: NASA Scientific and Technical Information Office, 1978), 247.

²⁵ Manno, 133.

²⁶ Shepard, 324.

²⁷ Ezell, 249.

²⁸ Shepard, 337.

²⁹ Siddiqi, 815.

³⁰ Shepard, 336.

language barrier. Language training for the astronauts alone added up to 1/3 of their training hours: between 600 and 1000 hours spent learning Russian.³¹ To ease the language barrier, support staff created dictionaries of common terms for everyone involved; half of each page was in Russian and the other half was in English and contained a detailed flight plan in both languages.³² When the American delegation went to Star City, Russia, to work on the flight, they found that the Soviets had built a private hotel for them.³³ The astronauts found that their rooms were bugged with listening devices.³⁴ However, instead of getting angry, they amused themselves by loudly asking for things. To their surprise, the things they asked for would be in their rooms waiting for them when they would return after working at the Russian space center. Due to the close working proximity, both sides began to find that they had more in common than not. Professor Konstantin D. Bushuyev, the Soviet Technical Director for ASTP, stated “in our joint work there had been only one contradiction: Dr. Lunney (Bushuyev’s U.S. counterpart) drinks black coffee and I drink coffee with cream.”³⁵ Charles W. Busch, Chief of Communications Operation Integration Plans, found that “both sides had sons that needed haircuts and kids who listened to too much loud music.”³⁶ The cultural understanding and cooperation had given insights to both sides about the other. No longer did many of the personnel involved see the other as their enemy in the Cold War; they saw them as colleagues. This did more for the relaxation of relations than any agreement could have achieved.

By 1975, ASTP was ready to launch. Following the successful test flight of Soyuz 16, a dress rehearsal for ASTP, spirits were high, and many were ready for the launch in July 1975. On July 15, the Soyuz 19 rocket launched out of Baikonur Cosmodrome. This was the first Soviet flight broadcast on live television in the USSR and around the world.³⁷ Seven and a half hours later the Apollo Saturn 1B launched from Kennedy Space Center in Florida. After two days of maneuvers, the Apollo command module met up with the Soyuz capsule. The landmark linkup began with communications between US and Soviet craft for the first time:

Slayton: Soyuz, Apollo. How do you read me?
Kubasov: Very well. Hello everybody.
Slayton: Hello, Valeriy. How are you? Good day, Valeriy.
Kubasov: Excellent... I’m very happy. Good morning.
Leonov: Apollo, Soyuz. How do you read me?
Slayton: Alexey, I hear you excellently. How do you read me?
Leonov: I read you loud and clear.
Slayton: Good.³⁸

Despite sounding like a high school language class, this was a profound moment in the history of space flight. Finally, on July 17, 1975, two crafts from two superpowers met up in space and docked for the first time. When the hatch was finally opened between the two space crafts, Tom Stafford shook the hand of Alexey Leonov. The two crews traded respective flags and commemorative plaques, then Leonov gave the Apollo astronauts sketches of them he drew during their joint training.³⁹ President Gerald Ford, over radio, congratulated both crews on their accomplishments,

³¹ Chester M. Lee and Lyndon B. Johnson Space Center, *Apollo-Soyuz Mission Report* (San Diego: American Astronautical Society, 1976), 102.

³² Froehlich, 37.

³³ Shepard, 342.

³⁴ Crouch, 78.

³⁵ Froehlich, 57.

³⁶ *Ibid.*, 57-58.

³⁷ *Ibid.*, 18.

³⁸ Von Bencke, 81.

³⁹ Shepard, 355-356.

while Victor Balahov, a Soviet TV personality, read congratulations on behalf of General Secretary Leonid Brezhnev. Following the ceremonies, the crews enjoyed a joint meal.⁴⁰ On the Soyuz side of the docked craft, the Apollo astronauts enjoyed apple juice, reconstituted strawberries, Roquefort cheese, apples, plums, and tubes of borsht that the cosmonauts labeled “vodka.” On the Apollo side, the cosmonauts were treated to potato soup, bread, strawberries and grilled steak. The day had been a culmination of work involving hundreds of thousands of people, but the mission was not over.

Over the next few days, the crews carried out experiments, both separately and together.⁴¹ Apollo carried equipment for twenty-three science and technical experiments. Soyuz carried six experiments in astrophysics and biology. Five joint experiments were planned to be completed by both crews while docked and undocked. Following the completion of all experiments and mission objectives, the two craft undocked for a final time. The Soyuz capsule reentered the Earth’s atmosphere on July 21, while Apollo stayed in space until the 24th to finish up its experiments. While the Soyuz capsule landed without incident, the Apollo crew suffered from complications during reentry. While they were descending under the power of parachutes, the crew noticed a yellow gas in their capsule.⁴² The gas caused eye irritations and severe coughing in the crew. When their capsule hit the water, it rolled upside down but inflatable balloons righted it. Stafford was able to unbuckle his straps and get oxygen masks to the crew. Following their recovery from the ocean and return ceremony, the crew complained of discomfort and chest pain when they took deep breaths. The doctors diagnosed them with irritation of respiratory tract. An analysis of the capsule following recovery found that the Earth Landing System had not been activated by the astronauts. This caused one of the landing thrusters to be stuck open and allowed thruster propellant in the form of nitrogen tetroxide to enter the cabin. However, no complications arose and the astronauts were released from medical observation a few days later. This ended the voyage of the Apollo-Soyuz Test Project and was the final flight of the American space program until the launch of the space shuttle in April 1981.

Following the successful completion of the ASTP, NASA looked forward to further cooperation with the Soviets. In 1974, NASA proposed the shuttle would fly to a future Salyut station and dock with it in order to test the building of an international space station.⁴³ The Russians responded that they wanted to wait and see the outcome of ASTP first. In May 1975, George Low submitted an idea for an astronaut/cosmonaut swap and a space station linkup, but again the Russians wanted to wait until ASTP was completed. Nothing new occurred until 1977 when the two nations signed an agreement to propose future missions in space cooperation.

However, the change in political climate soon challenged all plans for future cooperation. President Jimmy Carter grew displeased with the Soviet suppression of the Polish Solidarity Movement.⁴⁴ Conflicts between the United States and USSR over Ethiopia, Angola, Shaba, Yemen, Cambodia and Cuba occurred throughout the late 1970s. The Soviets, worried about U.S. attempts to militarize space, demanded that NASA discontinue its development of the shuttle program if the 1977 agreement was to go ahead. This was seen as impossible for NASA and the government who saw the shuttle as the next step in the U.S. space program. Finally, the December 27, 1979, Soviet invasion of Afghanistan fatally doomed the agreements. The age of cooperation would be over. The Cold War would reignite once again.

⁴⁰ Ibid.

⁴¹ Froehlich, 72.

⁴² Ibid, 98-106.

⁴³ Crouch, 80.

⁴⁴ Von Bencke, 87.

The Apollo-Soyuz Test Project occurred during a time in the Cold War when relations between the United States and Soviet Union were improving. The Space Race was over and the conflict in Vietnam was winding down by the early 1970s. Both space agencies saw this relaxing of relations as an opportunity to do something together in space. Space exploration was one of the cornerstones of each nation's political identity. By coming together and achieving a cooperative mission, Americans and Soviets showed the world that the two superpowers could coexist and do something for the betterment of humanity. Despite the breakdown of relations that occurred after ASTP, both space agencies learned they could work together. They both came out better on the scientific front. NASA and the Soviet Academy of Sciences personnel became diplomats and represented their countries well during their dealings with each other. Each side learned from the other and broke down barriers created by the Cold War. The Apollo-Soyuz Test Project was a testament to how, if the political atmosphere allowed it, great things could be accomplished with cooperation between the two great superpowers of the world.