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The Space Policy of the Johnson Administration: Project Apollo and International Cooperation*

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Abstract

After Kennedy's assassination, the new President Johnson took over Project Apollo with the U.S.-Soviet joint lunar exploration proposal. But the Johnson administration implemented Project Apollo mostly through competition with the Soviet Union. This article reexamines historically how the Johnson administration implemented Project Apollo in terms of competition and cooperation with the Soviet Union during the Cold War, analyzing why and how the possibility of U.S.-Soviet joint lunar exploration disappeared from the policy choices. The Johnson administration implemented Project Apollo through competition with the Soviet Union to display U.S. power and ideas, while trying to advance other space programs through cooperation with the Soviet Union to ease the East-West tensions, as well as other countries to strengthen the Western bloc. In other words, the Johnson administration implemented Project Apollo by keeping the balance between international competition and cooperation through its comprehensive space policy.

Introduction

Lyndon B. Johnson took over several critical issues of U.S. foreign policy from John F. Kennedy. Project Apollo was one of them. In September 1963, President Kennedy proposed a U.S.-Soviet joint lunar exploration before the United Nations (UN) General Assembly, though the Kennedy administration two years earlier had decided on and carried out Project Apollo mainly to defeat the Soviet Union in the moon race. There had been serious discussions on the joint lunar exploration within the government until President Kennedy was assassinated. If the new President Johnson had put Kennedy's UN moon proposal into practice, the first lunar landing

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might have been accomplished as a U.S.-Soviet joint project. But the Johnson administration implemented Project Apollo mostly through competition with the Soviet Union.

The two aspects of Project Apollo during the Kennedy administration, competition and cooperation with the Soviet Union, have been examined especially after the end of the Cold War. In contrast, those during the Johnson administration have not been fully examined by taking advantage of the documents declassified in the past decade.[1)] However, to implement Project Apollo did entail no fewer political difficulties than to decide on it.

This article reexamines historically how the Johnson administration implemented Project Apollo in terms of competition and cooperation with the Soviet Union during the Cold War, analyzing why and how the possibility of U.S.-Soviet joint lunar exploration disappeared from the policy choices of the Johnson administration.[2)]

First, this article outlines Lyndon B. Johnson as a space champion and Project Apollo during the Kennedy administration, as the background of the space policy of the Johnson administration. Second, it examines how the new President Johnson took over Project Apollo and made an incremental decision to implement Project Apollo through competition with the Soviet Union during the year 1964. Third, it touches upon how the Johnson administration advanced space cooperation with the Western countries. Fourth, it describes how the Johnson administration continued to pursue U.S.-Soviet space cooperation while advancing Project Apollo steadily during the second term of the administration.

Finally, this article answers the question: "Why did the possibility of U.S.-Soviet joint lunar exploration disappear from the policy choices of the Johnson administration?" Conversely, "Why did President Johnson reach the conclusion that Project Apollo should be implemented through not cooperation but competition with the Soviet Union?" It also discusses the purpose and meaning of Project Apollo as the space policy of the Johnson administration in the Cold War, compared with that of the Kennedy administration.

A Space Champion: Lyndon B. Johnson

During the late 1950s and early 1960s, Lyndon B. Johnson was the very space champion in U.S. politics. His achievements in space policy were as follows: the U.S. response to the Soviet Sputnik as Senate Majority Leader and Chairman of the Preparedness Subcommittee of the Armed Services Committee, the creation of the National Aeronautics and Space Administration (NASA) as Senate Majority Leader

and Chairman of the Special Committee on Space and Astronautics, and the decision of Project Apollo as Vice President and Chairman of the National Aeronautics and Space Council (NASC).

When the Soviet Union succeeded in launching its first satellite, *Sputnik 1*, on 4 October 1957, Johnson was at his ranch in Texas. It is said that looking up the satellite flying across the sky, he "started to realize that this country of mine might perhaps not be ahead in everything."[3] With the "Sputnik shock" as a start, he became deeply involved in U.S. space policy. To investigate the U.S. failure to be first in space, Johnson managed the national and bipartisan hearings before his Preparedness Subcommittee from 25 November 1957 to 23 January 1958. Comparing the Soviet achievement to "Pearl Harbor" as the Japanese surprise attack of 7 December 1941, he stressed the importance of catching and passing the Soviet Union in space. Johnson finally submitted the report composed of seventeen recommendations, which would ask for increased space and missile spending, large rocket boosters for spaceflights, and a new federal space agency.

In February 1958, according to Johnson's report, the Senate voted to create the Special Committee on Space and Astronautics, which was to enact legislation for the new federal space agency. Johnson was unanimously chosen as its chairman. Although the Eisenhower administration wanted to establish a compact space agency and an advisory board for the agency, Johnson desired a more powerful space agency and a high-level space policy-making board such as the National Security Council (NSC). After the heated discussion and compromise between them, President Dwight D. Eisenhower signed on 29 July 1958 the "National Aeronautics and Space Act of 1958," which would establish the National Aeronautics and Space Administration (NASA) and the National Aeronautics and Space Council (NASC).[4]

Through his activities in U.S. Congress, Johnson asserted that the United States should win the space race with the Soviet Union. But he also advocated international cooperation in space for peace. Just after the NASA act was passed, Johnson stated in the U.S. Senate that "one of the finest actions of this Congress was its clear expression that the exploration of outer space should be a joint venture by all members of the United Nations."[5] Then, Johnson supported the U.S. proposal for the international control of outer space before the Political Committee of the UN General Assembly in November 1958. He argued on behalf of the American people that the United Nations "should assume the responsibility of leadership in promoting international cooperation in the exploration of outer space," stressing the peaceful uses of outer space.[6]

Thus Johnson succeeded in enhancing his fame as Democratic candidate for the 1960 presidential election, by practicing both "statesmanship" and "good politics" through U.S. space policy making. But it was John F. Kennedy who was inaugurated as President in January 1961. Johnson became Vice President. The new President gave Johnson the responsibility for the space policy making by designating him as Chairman of NASC for the following three reasons.[7] First, Johnson was far more versed in U.S. space policy than Kennedy. Second, the failure in U.S. space efforts might damage the presidency. Kennedy hoped to make a scapegoat of Vice President in time of need. Third, Vice President should be given some specific jobs so as not to interfere in President's authority. Probably understanding the reasons, Johnson accepted the job to be a great Vice President.

Project Apollo during the Kennedy Administration[8]

Although Kennedy, as well as Johnson, asserted that the United States should win the space race with the Soviet Union in the 1960 presidential campaign, the Kennedy administration formulated its space policy for international cooperation in the first months of the administration to relieve the East-West tensions, especially in the third world.

In April 1961, however, the Kennedy administration suffered the two shocks, the "Gagarin shock" and the "Bay of Pigs shock." The Soviet Union succeeded in the first human spaceflight by putting Yuri A. Gagarin aboard *Vostok 1* into the Earth orbit on 12 April. Subsequently, the Kennedy administration failed badly in the invasion of the Bay of Pigs in Cuba to overthrow the Castro administration several days after Gagarin's flight. Kennedy ordered Johnson to investigate the present U.S. space activities and propose a new space program to beat the Soviet Union in space. Drawing together various opinions within the government, Congress, and communities of space specialists, Johnson completed the consensus-building to decide on a new space program, which would realize the first human lunar landing. In his memorandum for the President, Johnson recommended that we should tackle the "manned exploration of the moon" by 1966 or 1967, in order to attain "world leadership in space during this decade."[9]

Thanks to Johnson's efforts, the Kennedy administration decided swiftly on Project Apollo in May 1961. However, even right after the announcement of Project Apollo, the Kennedy administration also tried to realize some U.S.-Soviet space cooperation including human lunar exploration. In the Vienna summit of June 1961, Kennedy proposed U.S.-Soviet joint lunar exploration to Soviet Premier Nikita S. Khrushchev in order to confirm the Soviet response to Project Apollo, and

found a political and diplomatic value in the realization of the U.S.-Soviet space cooperation. The Kennedy administration continued to seek after space cooperation with the Soviet Union while advancing Project Apollo.

After the UN General Assembly resolution for international space cooperation of December 1961, the Kennedy administration started the negotiations through the NASA-Soviet Science Academy channel about space science cooperation when John H. Glenn succeeded in the first U.S. orbital flight aboard the Mercury spacecraft *Friendship 7* on 21 February 1962.

The Cuban missile crisis of October 1962 made the Kennedy administration recognize the importance of both international cooperation and competition through space policy. While Kennedy made up his mind to proceed firmly with Project Apollo to compete with the Soviet Union, he continued the negotiations with the Soviet Union about space science cooperation. Supporting the implementation of Project Apollo, Vice President Johnson as Chairman of NASC was mainly involved in communications satellite problems, which would lead to the creation of the International Telecommunications Satellite Consortium (INTELSAT) in August 1964.[10)]

On 20 September 1963, President Kennedy proposed U.S.-Soviet space cooperation through Project Apollo itself, not only in space science, before the UN General Assembly.[11)] The reasons were the following: the cooperative atmosphere right after the conclusion of the Limited Test Ban Treaty (LTBT) in August 1963, the final conclusion of the NASA-Soviet Science Academy agreement on space science in the same month, and the increasing criticism toward the huge cost of Project Apollo. However, as Kennedy had decided on the proposal with two Special Assistants for the President, Arthur M. Schlesinger, Jr. and McGeorge Bundy, just a few days before his speech, even Vice President Johnson didn't know it until the last minute.

While Kennedy's proposal brought surprise and confusion to the U.S. domestic society, especially Congress, the Soviet Union assumed an ambiguous attitude toward it. But on 26 October 1963, Soviet Premier Khrushchev stated at a press conference that "We are not at present planning flight by cosmonauts to the moon.... We do not want to compete with the sending of people to the moon without careful preparation."[12)] This statement plunged Project Apollo into a crisis. U.S. Congress and the White House started to examine the slowdown of Project Apollo and review the whole U.S. space program.

At that time, Jerome B. Wiesner, Special Assistant to the President for Science and Technology, proposed to Kennedy "a joint program in which the USSR

provides unmanned exploratory and logistic support for the U.S. Apollo manned landing."[13] Accepting the proposal, Kennedy ordered NASA Administrator James E. Webb to prepare a specific plan along the line, by issuing the National Security Action Memorandum No. 271 on 12 November 1963.[14]

The Department of State was formulating the U.S. policy for the compatibility between Project Apollo and space cooperation with the Soviet Union. The internal document stated that:

> "it seems clear that net national U.S. advantage lies in sticking with the policy of going to the moon as quickly as possible—alone if need be but preferably with maximum feasible international cooperation—without the Russians if need be but preferably with them. Credit would accrue to the U.S. for national success in sending an American to be the first man on the moon; even greater credit, in the minds of most non-Americans, would accrue to the nation which leads a cooperative enterprise and makes the leading contribution to it."[15]

In short, its conclusion was that the United States should certainly advance Project Apollo while pursuing the maximum amount of space cooperation with the Soviet Union, and moreover that the U.S. Ambassador to the United Nations Adlai E. Stevenson should repeat Kennedy's joint lunar proposal again at the UN General Assembly the next month. However, President Kennedy fell to an assassin's bullet in Dallas, Texas on 22 November 1963.

Kennedy's Legacy: Apollo and U.S.-Soviet Cooperation

In the first weeks after Kennedy's assassination, the new President Johnson basically continued the policies of the Kennedy administration, including Project Apollo. What Johnson had to do first as President was to gain the confidence of many people that felt grief and despair over the death of their beloved leader and then had a sense of mistrust toward the new one. As previously arranged, the U.S. Ambassador Stevenson made the following speech at the First Committee of the UN General Assembly on 2 December 1963:

> "President Kennedy proposed before the General Assembly last September to explore with the Soviet Union opportunities for working together in the conquest of space, including the sending of men to the moon as representatives of all our countries. President Johnson has instructed me to reaffirm that offer today. . . . We should explore the opportunities for practical cooperation,

> beginning with small steps and hopefully leading to larger ones. . . . In any event, our policy of engaging in mutually beneficial and mutually supporting cooperation in outer space—with the Soviet Union as with all nations—does not begin or end with a manned moon landing. There is plenty of work yet to come before that—and there will be even more afterward."[16)]

Right after Stevenson's speech, the further approach to the Soviet Union was discussed within the Department of State. The internal document stated that:

> "It is possible that the Soviets do not feel that they are called upon to make any particular reply to a proposal set forth and repeated in speeches before the United Nations. Therefore, it would seem advisable at some time early in 1964 to make a private bilateral approach to the USSR, asking whether the Soviet would like to discuss the possibilities of cooperation on a manned lunar landing."[17)]

However, there appeared a sign of change in President Johnson's stance toward U.S.-Soviet space cooperation. In his first State of the Union Message on 8 January 1964, Johnson mentioned that "we must assure our pre-eminence in the peaceful exploration of outer space, focusing on an expedition to the moon in this decade—in cooperation with other powers if possible, alone if necessary."[18)] This wording seemed to be a little more competition-oriented than Stevenson's statement one month before.

Johnson was waiting for a final report which Kennedy asked in November 1963 NASA Administrator Webb to prepare. On 31 January 1964, Webb submitted to Johnson the report titled "US-USSR Cooperation in Space Research Programs."[19)] It recommended that:

> "On balance, the most realistic and constructive group of proposals which might be advanced to the Soviet Union, . . . , relates to a joint program of unmanned flight projects to support a manned lunar landing. These projects should be linked so far as possible to a step-by-step approach, ranging from exchange of data already obtained to joint planning of future flight missions."

The report also recommended in detail about the timing and form of further U.S. initiatives toward the Soviet Union that:

> "(a) Continuing interest should be expressed through the existing NASA-Soviet Academy channel, in a positive Soviet response to the proposals for cooperation already made by President Kennedy

> and by you [President Johnson].
> (b) No new high-level U.S. initiative is recommended until the Soviet Union has had a further opportunity (possibly three months) to discharge its current obligations under the existing NASA-USSR Academy agreement, or, in the alternative, until the Soviets respond affirmatively to the proposal you [President Johnson] have already made in the UN. . . ."

From the very nature of things, NASA didn't want its own programs, especially Project Apollo, to be influenced by the ambiguous attitude of the Soviet Union, though it never closed the window for international cooperation. In addition, Kennedy's science advisor Wiesner, who supported international space cooperation, had already returned to his university at the change of government because he had originally planned to be in the administration for only a few years.[20] Within the Johnson administration, there existed no strong advocate for space cooperation.

President Johnson endorsed the Webb report by issuing the National Security Action Memorandum No. 285 on 3 March 1964. It noted that:

> "This report presents a reasonable and persuasive approach to a program of cooperation with the Soviet Union in the field of outer space. . . . I [President Johnson] will expect NASA and the other responsible departments and agencies to keep this report under continuing review, and to keep me currently advised of the progress being made with the Soviet Academy under the current agreement, and also of any Soviet response to our initiatives at the United Nations on cooperation in outer space."[21]

The memorandum asked NASA Administrator Webb to prepare further recommendations for President Johnson to deal with U.S.-Soviet space cooperation "by the first of May." Johnson seemed to want to decide on his general policy including U.S. space policy by that time. In fact, Johnson set forth his own vision, the "Great Society," in late May.

Thus Johnson took the waiting stance by keeping open his options about U.S.-Soviet joint lunar exploration without any more high-level initiatives. He also approved the continuation of the NASA-Soviet Academy channel between NASA Deputy Administrator Huge L. Dryden and Academician Anatoly A. Blagonravov that had existed since the Kennedy administration. Both countries had concluded the "Bilateral Space Agreement of 8 June 1962" and the follow-up "First Memorandum of Understanding of 20 March and 24 May 1963." As of the spring

of 1964, the basic position of the Johnson administration was that the United States should be prepared to go as far as the Soviet Union was willing to go, but should not itself get out in front.[22] It meant continuing pursuing the balanced U.S.-Soviet space cooperation.

On 26 March 1964, Dryden wrote Blagonravov that the United States was particularly interested in the possibility of coordinated launchings of experimental weather satellites as well as in concluding final technical arrangements for exchanges of satellite meteorological data.[23] Under the previous agreements, both countries were to cooperate in observations and tests utilizing the U.S. passive communications satellite *Echo 2*. Although the U.S. side didn't expect much outcome of the Echo program, the Soviet side did forward the data to the U.S. side when the satellite was actually launched on 25 January. This was the first fulfillment of U.S.-Soviet space cooperation.

But there was no response from the Soviet Union to Dryden's proposal as well as the U.S. initiative at the United Nations. Therefore on 30 April, Webb requested Johnson's approval to defer any further recommendations on U.S.-Soviet space cooperation to the President until late June because Dryden and Blagonravov would meet at the UN Outer Space Committee in Geneva from 22 May to 12 June.[24]

Johnson's Incremental Decision to Implement Project Apollo

1964 was the year when Johnson had to not only guide the United States toward stability by setting Kennedy's unfinished policies on track, but also win the presidential election. Johnson needed his own policy slogan like Kennedy's "New Frontier." On 22 May 1964, Johnson announced his larger vision, the "Great Society," to enrich and elevate American national life and civilization.[25] Project Apollo was part of the "Great Society" because it would induce both short- and long-term economic growth.[26]

At the UN meeting in Geneva, the United States and the Soviet Union agreed a "Second Memorandum of Understanding and a Protocol" for space cooperation on 6 June 1964.[27] They provided for further implementation of the existing agreements, particularly the establishment and use of the Washington-Moscow weather data link, called later the "cold line," and new cooperation in the preparation and publication of a major review of space biology and medicine. Although having a meeting at the UN Outer Space Committee in New York again, both countries could not agree on the joint review of space biology and medicine. After all, without referring to the space biology and medicine project, the Second Memorandum of Understanding was signed and became effective on 5 November

1964.[28] It was only little more than a reaffirmation of the previous agreements.

During the 1964 negotiations, the Soviet Union finally began its own human lunar landing program on 3 August,[29] and succeeded in launching the first three-person spacecraft, *Voskhod 1*, on 12 October. Two days later, Nikita S. Khrushchev was dismissed from Chairman's post. The new Soviet leadership headed by Leonid I. Brezhnev and Alexei N. Kosygin needed ideological and political orthodoxy abroad and at home to get stability. They criticized Khrushchev for his policy failures: coexistence with the United States, declining rates of economic growth, the conflict with Communist China, restlessness in Eastern Europe, and so forth. There could be no thought of partnership or friendship with the United States.[30] However, compared with those during the Kennedy administration, the U.S.-Soviet relations in 1964 were not so bad that the United States had to cooperate with the Soviet Union through Project Apollo. Rather, the relations produced the atmosphere of space competition like after Sputnik and Gagarin.

In the 1964 presidential campaign, an issue on U.S. space policy was how to advance Project Apollo. Until then, the Republicans had criticized not only the huge cost of Project Apollo but also Johnson's space cooperation policy through the NASA-Soviet Academy channel.[31] Johnson as Democratic presidential candidate argued that the United States should carry on Project Apollo "to maintain our position of leadership of the Free World," stressing values of broad international cooperation without referring to the possibility of the U.S.-Soviet joint lunar exploration.[32]

On the other hand, Senator Barry M. Goldwater as Republican presidential candidate asserted that the United States should balance Project Apollo with other space programs, especially military ones, and in international space cooperation "give first priority to joint work with our Allies—the advanced free democracies—rather than with the Communist nations."[33] But the polls in the spring and fall of 1964 showed that three quarters of the public said Project Apollo should be maintained at its current pace or speeded up.[34] Under the slogan of the "Great Society," Johnson won the 1964 presidential election and became the elected U.S. President.

In December 1964, NASA Administrator Webb reported to President Johnson the situations about U.S.-Soviet space science cooperation, by concluding that:

> "Our experience since June suggests that the Soviets are willing to cooperate in a generalized and limited way, but that they remain relatively inflexible with respect to commitments in negotiation and are laggard in execution. . . . We shall continue to examine our

> developing program for possible opportunities for cooperation with the Soviet Union. For the immediate future, it might be useful to convey to top Soviet leadership, as opportunity affords, our dissatisfaction with the painfully slow and limited progress to date, as well as with Soviet reluctance to enter into reasonable arrangements for implementing agreements. It may be that Soviet leadership does not know of these limitations in performance."[35)]

But Johnson did not accept the idea of interacting with the top Soviet leadership. Through the presidential campaign, Johnson had almost decided that the United States should implement Project Apollo through competition with the Soviet Union, while trying to advance U.S.-Soviet space cooperation through the NASA-Soviet Academy channel without any high-level initiative. After that, Johnson would basically entrust space matters to the new Vice President Hubert H. Humphrey as Chairman of the National Aeronautics and Space Council (NASC). Thus, U.S.-Soviet space cooperation was not mentioned in either Johnson's State of the Union Message of 4 January or his inaugural address of 20 January 1965.[36)]

Space Cooperation with the Western Countries

One day before NASA Administrator Webb submitted to President Johnson his report about U.S.-Soviet space cooperation, on 30 January 1964, the Department of State finished a report titled "Planning Implications for National Security of Outer Space in the 1970s."[37)] The report was "a pioneering study, the first to relate the scientific-technical intelligence and political factors involved in our future space policy relating to national security problems." It recommended that the United States should "seek international cooperation in space and space-related activities not only from the point of view of gaining such foreign support as our program may require, but also from the standpoint of the broader foreign policy objectives which can be served." It also stated that the United States "will have to take account of active and increasingly sophisticated space programs conducted by other countries, particularly the Western European countries and Japan."

Around the mid 1960s, other countries, following the United States and the Soviet Union, were emerging in space activities. While the Vietnam War was intensifying, President Johnson suggested to NASA Administrator Webb in September 1965 that U.S. space programs should contribute further to U.S. foreign policy objectives.[38)] Since then, the United States started to advance space cooperation with Europe, especially West Germany and France, and Japan as one of its diplomatic measures. The purposes were to strengthen the containment policy

against the Communist bloc, to prevent the outflow of their space technology to third countries, to maintain the U.S.-dominated INTELSAT established in August 1964, and to control their capability to develop nuclear weapons delivery system. From 1966 to mid 1967, the United States arranged the conditions, as shown in the National Security Action Memorandum (NSAM) 294, 338, and 354, to extend space cooperation with Europe first and then Japan.[39)]

President Johnson also directed that the United States should take active steps to encourage the construction of earth-station links to the worldwide communications satellite system in selected less-developed countries by issuing NSAM 342 in March 1966.[40)] Thus the Johnson administration was striving to advance space cooperation not only with the Soviet Union but also with other countries, especially the Western countries.

On the same day as the Department of States finished the report on the 1970s space activities, on 30 January 1964, President Johnson asked NASA Administrator Webb to describe NASA's future program after Apollo. In May 1964, Webb proposed two programs, the exploration of Mars through an unmanned landing and further exploration of the Moon.[41)] But during 1964, Johnson made an incremental decision to implement Project Apollo through completion with the Soviet Union, and as his only priority. Therefore, Johnson took a two-track approach to NASA space programs: supporting Project Apollo and resisting the post-Apollo planning.

Disappearance of U.S.-Soviet Joint Lunar Exploration

After the ouster of Khrushchev, U.S.-Soviet relations got worse as the United States began its first bombings of North Vietnam while the new Soviet Premier Kosygin visited Hanoi in February 1965. But NASA Deputy Administrator Dryden continued his endeavor to promote U.S.-Soviet space cooperation. In March and April 1965, he proposed to Blagonravov several new and specific possibilities of U.S.-Soviet space cooperation: avoiding planetary contamination and coordinating their unmanned probes to Mars and other planets. But Blagonravov replied that the Soviet Union once again had no interest in either these or other new proposals and it was backing away from the bilateral relationship itself.[42)]

Around that time, the Soviet side was interested in space competition, not cooperation, with the United States. On 18 March 1965, Soviet cosmonaut Alexei A. Leonov aboard *Voskhod 2* succeeded in the first spacewalk. Soviet new leader Brezhnev, like Khrushchev at the time of Sputnik and Gagarin, publicized Leonov's walk televised as the evidence of Soviet national power. Two and half months later, on 3 June 1965, U.S. astronaut Edward H. White aboard *Gemini 4* succeeded in the

first American spacewalk.

Still Dryden continued the exchange of opinions with Blagonravov at the meeting of the international Committee on Space Research (COSPAR) in May 1965. Dryden directly inquired whether the political and military situation had any effect on their space cooperation relationship. Blagonravov relied that "the political situation did not have any effect on the cooperation between the USSR Academy of Sciences and NASA" and "in all these [space] endeavors it was indeed rather hard to get away from the military."[43] At the end of the COSPAR meeting, the Soviet side concluded that in order to broaden space cooperation "we must first have real disarmament."[44]

While there was almost no progress in the negotiations for U.S.-Soviet space science cooperation, the basic U.S. space policy was under consideration within the Johnson administration. On 13 April 1965, Vice President Humphrey first as Chairman held the National Aeronautics and Space Council (NASC) to discuss international aspects of space program. He asserted that "our activities in space and in aeronautics are important parts of President Johnson's Great Society" and "international cooperation in the peaceful uses of outer space is a cornerstone of United States policy."[45]

After the meeting of NASC, the Department of State prepared the following report from the viewpoint of U.S. national security and international posture.

> "The latest world-wide opinion survey conducted by USIA [United States Information Agency] early in 1964 in nineteen countries and major cities indicated that, by large margins, the public abroad believes that the USSR is ahead of the U.S. in space activities and, perhaps by association, in nuclear strength and general scientific development. . . .
>
> An improvement in the image abroad of our space program relative to that of the Soviets requires first and foremost successful completion of the space flight programs to which the U.S. is already committed publicly. . . .
>
> In addition, such improvement will require an enlarged public relations program and extension of the NASA international cooperative programs. . . .
>
> It is also important that we take advantage of all significant opportunities to extend the development and use of practical applications of space technology which can engage the effective participation of other countries and from which other countries can

> derive direct benefit, e.g.: communications satellites, meteorological satellites and broadcast satellites."[46)]

For U.S. foreign policy objectives, the report stressed to advance both human spaceflight programs, Gemini and Apollo, and international cooperation in practical applications.[47)] This was the very basic U.S. space policy of the Johnson administration.

Interestingly enough, President Johnson also gave a little thought to a possible new initiative for U.S.-Soviet joint lunar exploration. He asked Dryden to draw up a specific proposal for his address, which was scheduled to deliver at the celebration in June 1965 of the twentieth anniversary of the United Nations. Johnson might have wanted to ease the intensifying moon race to some extent. Dryden responded with a draft recommending that:

> "First, the United Nations establish a U.N. Commission on Lunar Exploration to formulate additional principles to guide nationally sponsored exploratory expeditions in their activities on the moon. . . .
>
> Second, the United States and the USSR establish a joint US-USSR Commission on Lunar Exploration for the following purposes:
>
> 1. To report to the United Nations the present status of the national expeditions now in progress for unmanned scientific investigations of the moon and the initial manned landings and return. . . .
>
> 2. To plan a joint program for the further exploration of the lunar surface during the next decade, to include joint expeditions and bases, exchange of personnel and participation by other countries and by representatives of the UN.
>
> 3. To prepare the draft of a bilateral implementing agreement for consideration by the US and the USSR, leading to an officially approved treaty."[48)]

These proposals were too ambitious and ideal. Johnson rejected them and did not refer to space at the UN anniversary celebration on 25 June 1965. At that moment, the possibility of the U.S.-Soviet joint lunar exploration disappeared from the policy choices of the Johnson administration.

Persistence in U.S.-Soviet Space Cooperation

But Johnson didn't abandon the pursuit of U.S.-Soviet space cooperation in general. After the flight of *Gemini 5* on 21 August 1965, Johnson proposed officially both the deliberations on space law at the United Nations and the U.S.-

Soviet space exchange as follows:

> "We believe the heavens belong to the people of every country. We are working and we will continue to work through the United Nations—our distinguished Ambassador, Mr. Goldberg, is present with us this morning—to extend the rule of law into outer space.We intend to live up to our agreement not to orbit weapons of mass destruction and we will continue to hold out to all nations, including the Soviet Union, the hand of cooperation in the exciting years of space exploration which lie ahead for all of us. Therefore, I have—today, in fact—directed Mr. James Webb, the administrator of our civilian space program, after conferring with the Secretary of State and our Ambassador to the United Nations and others, to invite the Soviet Academy of Science[s] to send a very high level representative here next month to observe the launching of Gemini 6.
>
> I hope that he will find it convenient to come. We will certainly give him a warm welcome in America."[49)]

In the internal circular telegram, Secretary of State Dean Rusk explained that "This invitation is part of continuing US efforts seek ways to improve relations with USSR where possible. Presence [of] Soviet scientist at Gemini VI launch would dramatize public, open nature of our space program. Hopefully it would lead to further moves toward US-Soviet cooperation [in] this field. It should be noted invitation extended without condition of reciprocity."[50)]

The Soviet side refused the invitation just by stating that "Soviet Scientists positively evaluate cooperation between our countries in the study of cosmic space for purposes of its peaceful use. However at the present time our representative cannot avail himself of your invitation."[51)] The U.S.-Soviet relations were getting worse because of the Vietnam War, and the Soviet couldn't show American scientists the Soviet top-secret rocket launchings in return, though the U.S. side hadn't asked for it.[52)]

Again through the NASA-Soviet Science Academy channel, Dryden tried to work out a new arrangement for the space medicine projects during the session of the UN Outer Space Committee of October 1965.[53)] On 6 January 1966, NASA Administrator Webb, who had taken over as the U.S. representative owing to the sudden death of Dryden, asked Blagonravov to share the results of experiments conducted by Soviet *Venera 3*, which succeeded in the first impact on Venus on 16 November 1965. Blagonravov replied that he didn't have the authority to give the

information.[54] Between March and May 1966, Webb suggested to Blagonravov that the Soviet side propose areas for discussion to extend space cooperation between the two countries. Blagonravov replied that the Soviet Union was not yet ready for further cooperation.[55] Around that time, the Soviet side had been confused as Sergey P. Korolev, Chief Designer of the Soviet space programs, was down by illness and died on 14 January 1966.[56]

Nevertheless, the Soviet side suddenly began to furnish satellite meteorological data through the inactive "cold line" on 11 September 1966, and continued until the spring of 1967. This was the second fulfillment of U.S.-Soviet space cooperation, following the *Echo* satellite experiments in early 1964. In response, President Johnson made the following statement at a joint communiqué on space cooperation between the United States and West Germany on 27 September 1966:

> "But we go beyond that. We seek—and we shall continue to seek—cooperation in space with the Soviet Union. We have an agreement to exchange certain kinds of space data. We have shared information on variations in the earth's magnetic field. We will soon publish jointly American and Soviet material on space biology and medicine."[57]

In parallel with the persistent pursuit of U.S.-Soviet space cooperation, the Johnson administration had been striving to develop the deliberations on space treaty at the United Nations.[58] In May 1966, President Johnson announced that "we need a treaty laying down rules and procedures for the exploration of celestial bodies. . . . I am asking Ambassador Goldberg, in New York, to seek early discussions of such a treaty in the appropriate United Nations body."[59] This announcement triggered the submission of each space treaty draft by the United States and the Soviet Union between June and September. After the heated discussions and concessions between both countries, the UN General Assembly adopted the Resolution 2222 (XXI) including a draft of the "Treaty of Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (the Outer Space Treaty)" on 19 December 1966.[60]

Why did the United States and the Soviet Union reach an agreement of the Outer Space Treaty? First, both countries wanted to prevent the expansion of armaments into space by excluding the inter-continental ballistic missiles (ICBM). Second, both countries tried to show their improved relations to the world through the conclusion of the Outer Space Treaty because the United States suffered from the Vietnam War while the Sino-Soviet split was growing. Third, both countries

wanted to take legal measures concerning outer space and the celestial bodies while they were competing fiercely to go to the moon. Thus, there existed three kinds of strategies of both countries: nuclear, diplomacy and space. Above all, it is important that the moon race and the Outer Space Treaty were the two sides of international space activities during the 1960s: competition and cooperation.

On 27 January 1967, U.S. *Apollo 204*, later renamed *Apollo 1*, caught fire and killed three American astronauts; on the same day, the Outer Space Treaty was signed by the United States, the Soviet Union, and the United Kingdom. On 23 April, Soviet *Soyuz 1* capsule crashed and killed a cosmonaut. Webb asserted at a press conference that the United States and the Soviet Union should cooperate more effectively in space activities to prevent space accidents.[61] Subsequently, Webb proposed to Blagonravov that during the COSPAR meeting scheduled in July, both countries get together to review progress "as required every six months under the Bilateral Space Agreement." But Blagonravov rejected the meeting on the grounds that he was unable to arrange the presence of Soviet experts.[62]

From 23 to 25 June 1967, U.S. President Johnson and Soviet Premier Kosygin met at Glassboro, New Jersey. They discussed the problems on the Middle East, Vietnam, the Strategic Arms Limitation Talks (SALT), antiballistic missiles (ABM), and nuclear nonproliferation, which led to the conclusion of the Nuclear Non-Proliferation Treaty (NPT) on 1 July 1968. Although the tensions between both countries were easing somewhat, space cooperation didn't seem to be placed on the summit ageda except the Outer Space Treaty.

While there was no obvious change in the interactions through NASA-Soviet Academy channel, Edward C. Welsh, Executive Secretary of NASC, reported on 9 October 1967 to Vice President Humphrey that:

> "It has been and continues to be the policy of the U.S. to seek areas of mutually beneficial cooperation with the USSR in space activities. This policy practice is based on the assumption that such cooperation would improve relations between the two nations and might introduce some economy either by joint projects or through coordinated avoidance of unnecessary duplication of effort. . . .
>
> In spite of this gloomy picture regarding Soviet cooperation, it seems reasonable that we should continue to try not only because it might assist in the space program, but also because it might have broader international impact."[63]

Accepting the recommendations of his space advisors, President Johnson continued to explore U.S.-Soviet space cooperation. He made the following speech

at a special White House ceremony celebrating the coming into force of the Outer Space Treaty on 10 October 1967:

> I want to renew, therefore, today, America's offer to cooperate fully with any nation that may wish to join forces in this last—and greatest—journey of human exploration. Space is a frontier common to all mankind and it should be explored and conquered by humanity acting in concert.
>
> We have urged cooperation:
>
> —in exploring the planets, or any portion of the solar system,
>
> —in the use of tracking facilities, so that our brave astronauts and cosmonauts may fly with much greater safety,
>
> —in mapping the earth,
>
> —in exchanging bioscientific information, and,
>
> —in international satellite communications.
>
> We again renew these offers today. They are only the beginnings of what should be a long, cooperative endeavor in exploring the heavens together. . . .
>
> The first decade of the space age has witnessed a kind of contest. We have been engaged in competitive spacemanship. We have accomplished much, but we have also wasted much energy and resources in duplicated or overlapping effort.
>
> The next decade should increasingly become a partnership—not only between the Soviet Union and America, but among all nations under the sun and the stars.[64)]

This speech recapitulated what the space policy of the Johnson administration was. But the Soviet side made no direct response to Johnson's proposal to revive U.S.-Soviet space cooperation. Also, the negotiations over space cooperation through the NASA-Soviet Academy channel remained deadlocked. Finally, both countries couldn't realize any substantive space cooperation between them, except for the Outer Space Treaty, during the 1960s.

The Johnson administration concluded many agreements with the Soviet Union during five years.[65)] The U.S.-Soviet relations in general were not so bad in spite of the Vietnam War and the Soviet invasion of Czechoslovakia in August 1968. In particular, the Outer Space Treaty was the fruit of international space cooperation between both countries. Thanks to that, the Johnson administration could advance Project Apollo through competition with the Soviet Union while the Soviet Union didn't have to compromise other negotiations over space cooperation. Within the

United States, NASA plunged into budget crises almost every year during the Johnson administration. But President Johnson's ultimate support and NASA Administrator Webb's great effort enabled Project Apollo to progress almost as scheduled.[66)]

In the end, there was the extremely keen moon race in the late 1960s.[67)] In the summer of 1968, the United States got the information that the Soviet Union would attempt the first human circumlunar flight ahead of the United States, in order to diminish the political effect of the first human lunar landing by the United States. As NASA hurriedly moved up its flight schedule, the United States succeeded in the first human circumlunar flight by *Apollo 8* on 21 December 1968. The Soviet Union also refused to back down when the United States launched *Apollo 11*. On 3 July, the Soviet Union tried to launch the giant N-1 rocket, equivalent to the U.S. Saturn rocket to launch the Apollo spacecraft, but the Soviet rocket collapsed back onto the pad. Still on 13 July, the Soviet Union launched the unmanned probe, *Luna 15*, to return a sample of moon rocks. But the Soviet probe crashed into the surface of the moon. Following Kennedy's pledge, the United States succeeded in the first human lunar landing by *Apollo 11* on 20 July 1969, half a year after President Johnson left office.

Conclusion

The Johnson administration implemented Project Apollo through competition with the Soviet Union while trying to advance other space programs through cooperation with the Soviet Union as well as other Western countries.

Since the Sputnik shock, Lyndon B. Johnson was involved in U.S. space policy. He repeatedly asserted that the United States should win the space race with the Soviet Union, but also advocated international space cooperation through the United Nations. In the Kennedy administration, Johnson as Vice president and Chairman of NASC contributed to the decision on Project Apollo in May 1961, arguing that the United States should attain world leadership in space.

Although the Kennedy administration pursued further both space competition, by Project Apollo, and space cooperation, by space science programs, with the Soviet Union, President Kennedy proposed U.S.-Soviet joint lunar exploration in September 1963. After Kennedy's assassination, the new President Johnson took over Project Apollo with the joint lunar proposal. But he took a waiting stance with regard to the proposal, by continuing the NASA-Soviet Academy negotiations without any more high-level initiatives. Because of the start of the Soviet human lunar landing program, the ouster of Soviet Premier Khrushchev, and the U.S.

presidential campaign in 1964, Johnson made an incremental decision to implement Project Apollo through competition, not cooperation, with the Soviet Union.

While the Vietnam War was intensifying, the possibility of U.S.-Soviet joint lunar exploration disappeared in mid 1965. But the Johnson administration continued to pursue U.S.-Soviet space science cooperation while extending space cooperation with other Western countries. The conclusion of the Outer Space Treaty in January 1967 and the Nuclear Non-proliferation Treaty (NPT) in July 1968 relaxed the East-West tensions, while the United States and the Soviet Union were running the fierce moon race. Although the Apollo budget was always criticized during his administration, Johnson continued to support Project Apollo to the end. Therefore, the credit for the implementation and success of Project Apollo should go to Johnson, though the first human lunar landing was realized during the next Nixon administration.

Why did the possibility of U.S.-Soviet joint lunar exploration disappear from the policy choices of the Johnson administration? Or, why did President Johnson reach the conclusion that Project Apollo should be implemented through not cooperation but competition with the Soviet Union?

The first reason was the "moderate" U.S.-Soviet relations of those days. Despite the Vietnam War and the Soviet hard-line policy, the relations didn't need Project Apollo through space cooperation. If it had been better, both countries could have realized more U.S.-Soviet space cooperation. Also if it had been worse like during the Kennedy administration, the joint lunar exploration might have been needed to relax the tensions.

The second was the U.S. domestic politics. Most of the U.S. people, especially Republicans, didn't want the joint lunar exploration. They hoped to win the space race to the moon because they had experienced the feeling of defeat in the past two races: the first satellite, Sputnik, and the first human spaceflight, Gagarin. In addition, the joint lunar exploration would become the reason to reduce the budget of Project Apollo because the space race during the Cold War was one of the main reasons to maintain the huge space budget.

The third was the division of roles in the space policy of the Johnson administration. The purpose of Project Apollo during the Kennedy administration was not only the display of U.S. power and ideas but also the relaxation of the tensions in the Cold War.[68] But the Johnson administration advanced other space programs, especially the space science program and the conclusion of the Outer Space Treaty, through cooperation with the Soviet Union to ease the East-West tensions. Therefore, the administration could implement Project Apollo through

competition with the Soviet Union only to display U.S. power and ideas. Moreover, the Johnson administration advanced other space programs, such as INTELSAT, through cooperation with the Western countries to strengthen the bloc.

The fourth was the actual progress of U.S. and Soviet space programs. During 1964, the United States began the development of the Apollo spacecraft and the Saturn booster rocket, and the Soviet Union finally started its human lunar landing program. In terms of space technology, the window for the joint lunar exploration might be open only around when Kennedy proposed in the fall of 1963.

The combination of all these reasons made the possibility of U.S.-Soviet joint lunar exploration disappear from the policy choices of the Johnson administration in mid 1965. Most of all, the comprehensive space policies of the Johnson administration enabled President Johnson to reach the conclusion that Project Apollo should be implemented through not cooperation but competition with the Soviet Union. In order to implement Project Apollo as scheduled, the Johnson administration needed the space competition, rather than cooperation, with the Soviet Union.

Through the implementation of Project Apollo, the United States displayed its national power and ideas, or values, and regained its international status in the field of space activities, though the Johnson administration couldn't regain the domestic public support because of the hopeless Vietnam War. It is true that Project Apollo was a symbol of the U.S.-Soviet space race during the Cold War. However, it should be noted that the Johnson administration implemented Project Apollo by keeping the balance between international competition and cooperation through its comprehensive space policy. The balance meant pursuing cooperation in the competition. Thereby, the United States attained world leadership in space.

Notes

1) As the earlier studies on the space policy of the Johnson administration, Robert A. Divine, "Lyndon B. Johnson and the Politics of Space," in Robert A. Divine ed., *The Johnson Years, Volume Two: Vietnam, the Environment, and Science* (Lawrence, KS: University Press of Kansas, 1987), pp. 217-253, and Robert Dallek, "Johnson, Project Apollo, and the Politics of Space Program Planning," in Roger D. Launius and Howard E. McCurdy eds., *Spaceflight and the Myth of Presidential Leadership* (Urbana and Chicago: University of Illinois Press, 1997), pp. 68-91. Also for more details about U.S.-Soviet space cooperation during the 1960s, Arnold W. Frutkin, *International Cooperation in Space* (Englewood Cliffs, NJ: Prentice-Hall, 1965), Dodd L. Harvey and Linda C. Ciccoritti, *U.S.-Soviet Cooperation in Space* (Miami: University of Miami, 1974), Edward Clinton Ezell and Linda Newman Ezell, *The Partnership: A History of the Apollo-Soyuz Test Project* (Washington, DC: NASA SP-4209, 1978), Walter A. McDougall, *...the Heavens and the Earth: A Political History of the*

Space Age (New York: Basic Books, 1985), and Yuri Y. Karash, *The Superpower Odyssey: A Russian Perspective on Space Cooperation* (Reston, VA: AIAA, 1999).

2) This article is a sequel to the following: Hirotaka Watanabe, "The Kennedy Administration and Project Apollo: International Competition and Cooperation through Space Policy," *Osaka University Law Review*, Number 56, February 2009, pp. 31-48.
3) Transcript of interview with Lyndon B. Johnson conducted by Walter Cronkite for CBS television, 5 July 1969, quoted in John M. Logsdon, *The Decision to Go to the Moon: Project Apollo and the National Interest* (Cambridge, MA: MIT Press, 1970), p. 21.
4) Logsdon, *The Decision to Go to the Moon*, pp. 22-24.
5) "Report on the activities of the Second Session of the 85th Congress," delivered on the floor of the U.S. Senate, 23 August 1958, reprinted in U.S. Senate, Committee on Aeronautical and Space Sciences, *Statements by Presidents of the United States on International Cooperation in Space: A Chronology, October 1957-August 1971* (Washington, DC: U.S. Government Printing Office, 1971), pp. 58-59.
6) "Supporting statement of Senator Lyndon B. Johnson on the United States' proposal for the international control of outer space," delivered before the Political Committee of the United Nations' General Assembly, 17 November 1958, reprinted in U.S. Senate, *Statements by Presidents of the United States on International Cooperation in Space*, pp. 60-63.
7) Dallek, "Johnson, Project Apollo, and the Politics of Space Program Planning," pp. 70-74, and Logsdon, *The Decision to Go to the Moon*, pp. 67-71.
8) For more details, Watanabe, "The Kennedy Administration and Project Apollo."
9) Lyndon B. Johnson, Vice President, Memorandum for the President, "Evaluation of Space Program," 28 April 1961, in John M. Logsdon, et al. eds., *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume I: Organizing for Exploration* (Washington, DC: NASA SP-4407, 1995), pp. 427-429.
10) "The National Aeronautics and Space Council during the Tenure of Lyndon B. Johnson as Vice President and during His Administration as President, January 1961-January 1969," 8 January 1969, the Lyndon B. Johnson Library (hereafter LBJL), pp. 62-98.
11) "Address Before the 18th General Assembly of the United Nations," 20 September 1963, *Public Papers of the Presidents of the United States, John F. Kennedy, 1963*, pp. 693-698.
12) *Izvestiya*, 26 October 1963, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 124.
13) Document 408, Memorandum From the President's Special Assistant for Science and Technology (Wiesner) to the President, "The US Proposal for a Joint US-USSR Lunar Program," 29 October 1963, in U.S. Department of State, *Foreign Relations of the Unites States, 1961-1963, Volume XXV, Organization of Foreign Policy; Information Policy; United Nations; Scientific Matters* (hereafter *FRUS, 1961-1963, Volume XXV*), and the John F. Kennedy Library (hereafter JFKL). Available at <http://www.state.gov/r/pa/ho/frus/kennedyjf/>.
14) Document 410, National Security Action Memorandum No. 271, "Cooperation with the USSR on Outer Space Matters," 12 November 1963, *FRUS, 1961-1963, Volume XXV*.
15) Document 411, Memorandum From the Assistant Secretary of State for International Organization Affairs (Cleveland) to Acting Secretary of State Ball, "In Outer Space, Too, It Takes Two To Tango," 20 November 1963, *FRUS, 1961-1963, Volume XXV*.
16) Reprinted in John M. Logsdon, et al. eds., *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume II: External Relationships*

(Washington, DC: NASA SP-4407, 1996), p. 179.

17) Document 412, Memorandum From the Deputy Legal Advisor of the Department of State (Meeker) to the Deputy Under Secretary of State for Political Affairs (Johnson), "Cooperation with the Soviets on a Joint Expedition to the Moon," 4 December 1963, *FRUS, 1961-1963, Volume XXV*.
18) "Annual Message to the Congress on the States of the Union," 8 January 1964, *Public Papers of the Presidents of the United States, Lyndon B. Johnson, 1963-64* (hereafter *PPP, LBJ, 1963-64*), p. 117.
19) James E. Webb, Administrator, NASA, to the President, 31 January 1964, with attached: "US-USSR Cooperation in Space research Programs," in Logsdon, *Exploring the Unknown, Volume II*, pp. 168-182.
20) Gregg Herken, *Cardinal Choices: Presidential Science Advising from the Atomic Bomb to SDI,* Revised and Expanded Edition (Stanford, CA: Stanford University Press, 2000), pp. 146-147.
21) Document 25, National Security Action Memorandum No. 285, "Cooperation with the USSR on Outer Space Matters," 3 March 1964, in U.S. Department of State, *Foreign Relations of the Unites States, 1964-1968, Volume XXXIV, Energy Diplomacy and Global Issues* (hereafter *FRUS 1964-1968, Volume XXXIV*). Available at <http://www.state.gov/r/pa/ho/frus/johnsonlb/>.
22) Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, pp. 141-142.
23) Hugh L. Dryden, "Letter to Anatoly A. Blagonravov," 26 March 1964, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 142.
24) Document 26, "Letter From the Administrator of the National Aeronautics and Space Administration (Webb) to President Johnson," 30 April 1964, *FRUS 1964-1968, Volume XXXIV*.
25) "Remarks at the University of Michigan," 22 May 1964, *PPP, LBJ, 1963-64*, pp. 704-707.
26) Dallek, "Johnson, Project Apollo, and the Politics of Space Program Planning," pp. 76-78.
27) Document X-83, "United States-Soviet Agreement on Implementation of a Cooperative Space Research Program," in U.S. Department of State, *American Foreign Policy: Current Documents, 1964* (Washington, DC: U.S. Government Printing Office, 1967), pp. 1164-1168.
28) Document 29, "Letter From the Administrator of the National Aeronautics and Space Administration (Webb) to President Johnson," 18 December 1964, *FRUS 1964-1968, Volume XXXIV*.
29) Asif A. Siddiqi, *Sputnik and the Soviet Space Challenge* (Gainesville, FL: University Press of Florida, 2003), pp. 395-408, and James Harford, *Korolev: How One Man Masterminded the Soviet Drive to Beat American to the Moon* (New York: John Wiley & Sons, Inc., 1997), pp.246-275.
30) Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, pp. 149-151, and Karash, *The Superpower Odyssey*, pp. 59-62.
31) Karash, *The Superpower Odyssey*, p. 55, and Divine, "Lyndon B. Johnson and the Politics of Space," p. 234.
32) "Views of the Presidential Candidates on the Future of the U.S. in Space," *Missiles and Rockets*, 26 October 1964, pp. 16-18.
33) *Ibid.*, and Divine, "Lyndon B. Johnson and the Politics of Space," p. 234.
34) Dallek, "Johnson, Project Apollo, and the Politics of Space Program Planning," pp. 78-79.

35) Document 29, "Letter From the Administrator of the National Aeronautics and Space Administration (Webb) to President Johnson," 18 December 1964, *FRUS 1964-1968, Volume XXXIV*.
36) "Annual Message to the Congress on the State of the Union," 4 January 1965, and "The President's Inaugural Address," 20 January 1965, *PPP, LBJ, 1965*, pp. 2 and 71-73.
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39) *Ibid.*, pp. 3-17. NSAM 294, "U.S. Nuclear and Strategic Delivery System Assistance to France," 20 April 1964, NSAM 338, "Policy Concerning U.S. Assistance in the Development of Foreign Communications Satellite Capabilities," 15 September 1965 (Revised 12 July 1967), and NSAM 354, "U.S. Cooperation with European Launcher Development Organization (ELDO)," 29 July 1966. Available at <http://www.lbjlib.utexas.edu/johnson/archives.hom/NSAMs/nsamhom.asp>.
40) NSAM 342, "U.S. Assistance in the Early Establishment of Communications Satellite Service for Less-Developed Nations," 4 March 1966.
41) Dallek, "Johnson, Project Apollo, and the Politics of Space Program Planning," p. 79.
42) Dryden, Letter to Blagonravov, 5 March and 27 April 1965, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 147.
43) Dryden, Memorandum of Conversation with Blagonravov, 14 May 1965, at Mar del Planta, Argentina, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, pp. 153-154.
44) *Ibid.*, p. 155.
45) Document 30, "Memorandum Form the Executive Secretary of the National Aeronautics and space Council (Welsh) to Vice President Humphrey," 1 March 1965, and Document 31, Editorial Note, *FRUS 1964-1968, Volume XXXIV*.
46) Document 32, "Paper Prepared in the Department of State," 26 April 1965, *FRUS 1964-1968, Volume XXXIV*.
47) Project Gemini developed two-person spacecrafts and techniques of orbital rendezvous and docking, which were required later in lunar landing missions of Project Apollo.
48) Hugh L. Dryden, Letter to President Lyndon B. Johnson transmitting draft statement for inclusion in UN address scheduled for delivery 25 June 1965, informal, undated, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, pp. 140-141.
49) "The President's News Conference of August 25, 1965," *PPP, LBJ, 1965*, p. 918.
50) Document 34, "Circular Telegram From the Department of State to Certain Posts," 26 August 1965, *FRUS 1964-1968, Volume XXXIV*.
51) Document 35, "Telegram From the Embassy in the Soviet Union to the Department of State," 8 September 1965, *FRUS 1964-1968, Volume XXXIV*.
52) Karash, *The Superpower Odyssey*, p. 63, and Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 155.
53) Dryden, Letter to Blagonravov, 27 August 1965 and 1 December 1965, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 155.
54) Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 156.

55) *Ibid.*
56) Siddiqi, *Sputnik and the Soviet Space Challenge*, pp. 511-516, and Harford, *Korolev*, pp. 275-285.
57) "Remarks During a Visit to Cape Kennedy With Chancellor Erhard of Germany," 27 September 1966, *PPP, LBJ, 1966*, pp. 1074-1077.
58) McDougall, *...the Heavens and the Earth*, pp. 415-420.
59) "Statement by the President on the Need for a Treaty Governing Exploration of Celestial Bodies," 7 May 1966, *PPP, LBJ, 1966*, pp. 487-488.
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61) James E. Webb, Russian Accident Statement, NASA News Release, 24 April 1967, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 157.
62) James E. Webb, Letter to Anatoly A. Blagonravov, 2 June 1967, and Anatoly A. Blagonravov, Letter to James E. Webb, 3 July 1967, quoted in Harvey and Ciccoritti, *U.S.-Soviet Cooperation in Space*, p. 157.
63) Document 61, "Memorandum From the Executive Secretary of the National Aeronautics and Space Council (Welsh) to Vice President Humphrey," 9 October 1967, *FRUS 1964-1968, Volume XXXIV*.
64) "Remarks at Ceremony marking the Entry Into Force of the Outer Space Treaty," 10 October 1967, *PPP, LBJ, 1967*, pp. 918-920.
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66) Dallek, "Johnson, Project Apollo, and the Politics of Space Program Planning," pp. 79-88.
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68) For more details, Watanabe, "The Kennedy Administration and Project Apollo."