

Where No Flag Has Gone Before: Political and Technical Aspects of Placing a Flag on the Moon

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Introduction

President John F. Kennedy, in his historic speech of September 1962, expressed his vision of space exploration for an audience assembled in the stadium of Rice University. Earlier that year he had challenged the United States to go to the moon within the decade. The space race was well underway and Kennedy, in foreseeing the role his country was to play in space exploration, also alluded to a role for flags. “[W]e mean to lead [the exploration of space]. For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace.”¹ Thirty years later, as we prepare to return to the moon and continue on to Mars, it is time to reconsider the political and technical aspects of placing a flag on the lunar surface.

Political Aspects

Domestic Considerations

The political aspects of the first lunar flag-raising were twofold — both domestic and international. NASA relies upon Congress for its funding and

¹John F. Kennedy, “Address at Rice University in Houston on the Nation’s Space Effort, September 12, 1962,” in *Public Papers of the Presidents of the United States: John F. Kennedy, 1962* (Washington: GPO, 1963), 669.

therefore has always been very cognizant of the need for good public relations. Astronauts were considered national heroes, and the flag of the United States has been a common symbol used in all aspects of the manned space program. NASA's spacecraft and launch vehicles have always been decorated with flags. Edward H. White II became the first American astronaut to "walk in space" on 4 June 1965, and his space suit was one of the first to be adorned with a flag patch.² Following this tradition, flags have been used on the suits of astronauts from many countries. Use of flags in the space program created controversy, however, only when it became apparent that a flag would be planted on the moon.



NASA JSC Photograph S05-30431

Edward H. White II displays the U.S. flag on his space suit during his historic spacewalk, or EVA.

²White's crewmate, James A. McDivitt, also wore a flag on his suit. The astronauts purchased the flags themselves, but following their flight NASA made the flag patch a regular feature on the space suits. Dick Lattimer, *All We Did Was Fly to the Moon* (Gainesville, Fla.: Whispering Eagle Press, 1983), 23; "Stars & Stripes Flew High on Gemini 4," *Dispatch: a Newsletter for Members of the Space Patch Collectors Club*, June 1986, 1; Buzz Aldrin, *Men From Earth* (New York: Bantam Books, 1989), 129; corroborated by Robert Spann, 1964–1966 Project Engineer for the Gemini Support Office of the Space Suit Office at the Manned Spacecraft Center (MSC), personal communication, 10 Sept. 1992.

International Considerations

Prior to the *Apollo 11* moon landing, many member states of the United Nations (U.N.) adopted the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies of 27 January 1967 (commonly known as the Outer Space Treaty). Article II of the treaty clearly states that “[o]uter space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”³ The United States, a signatory to the treaty, could not claim the moon. Therefore, raising a flag on the lunar surface would merely be a symbolic gesture — an expression of triumph similar to the planting of a flag on Mount Everest or at the North and South Poles. The legal status of the moon clearly would not be affected by the presence of a U.S. flag on the surface, but NASA was aware of the international controversy that might occur as a result.⁴

In January of 1969, President Richard M. Nixon’s inaugural address stressed the international flavor of the Apollo program. “As we explore the reaches of space, let us go to the new worlds together — not as new worlds to be conquered, but as a new adventure to be shared.”⁵ NASA officials noted the tone of the speech, and there was some discussion within the agency that a United Nations flag could be used for the flight.⁶ This was one of the possibilities considered by the Committee on Symbolic Activities for the First Lunar Landing, which was appointed by Thomas O. Paine, NASA Acting Administrator, on 25 February of that year. The committee was instructed to select symbolic activities that would not jeopardize crew safety or interfere with mission objectives; that would “signalize the first lunar landing as an historic forward step of all mankind that has been accomplished by the United States;” and that would not give the impression that the United States was “taking possession of the moon” in violation of the Outer Space Treaty. The committee considered several options including the possibilities of leaving a United States flag or an adaptation of the solar wind experiment in the

³“Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies,” in *United States Treaties and Other International Agreements* (Washington: GPO, 1968), 18:2413.

⁴Adrian Bueckling, “Flaggen Auf Dem Mond,” *Zeitschrift für Luftrecht und Weltraum-rechtsfragen* 19 (1 Jan. 1970): 19–24.

⁵Richard Nixon, “Inaugural Address, January 20, 1969,” in *Public Papers of the Presidents of the United States: Richard Nixon, 1969* (Washington: GPO, 1971), 3.

⁶George M. Low, memo to Director of JSC, 23 Jan. 1969, on file at the JSC History Office.

form of a flag, leaving a set of miniature flags of all nations, and leaving a commemorative marker on the surface.⁷

The committee's report recommended using only the flag of the United States during the lunar extravehicular activity (EVA). In addition, the committee suggested that a plaque bearing an inscription ("Here men from the planet Earth first set foot upon the moon July 1969, A.D. We came in peace for all mankind") be mounted on the lunar module to emphasize that the purpose of the mission was one of exploration and not conquest. The original plaque design featured a U.S. flag, but the graphic was changed to pictures of the eastern and western hemispheres of the Earth to symbolize the crew's point of origin. It was decided that, in addition to the large flag, 4 by 6 inch flags of the 50 states, the District of Columbia, the U.S. territories, and flags for all member countries of the United Nations and several other nations, would be carried in the lunar module and returned for presentation to governors and heads of state after the flight.⁸

Technical Aspects

Design and Engineering Constraints

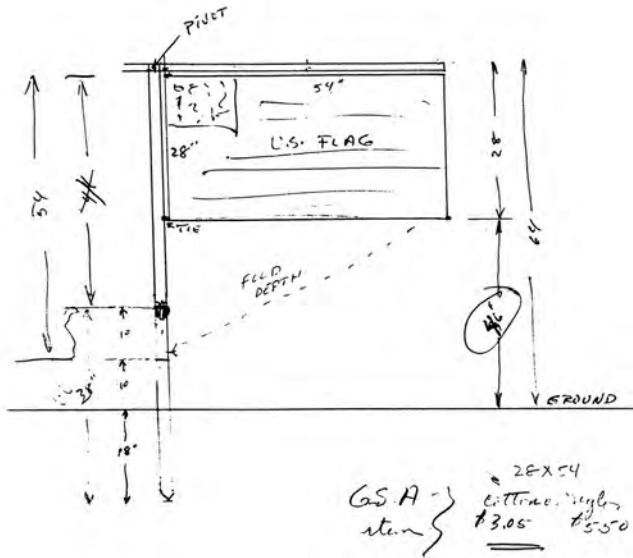
Work on the lunar flag assembly began about three months prior to the *Apollo 11* mission. Robert Gilruth, Director of the Manned Spacecraft Center (MSC)⁹ and a member of the Committee on Symbolic Activities, asked Jack Kinzler, Chief of Technical Services Division at MSC, for ideas regarding the EVA. Kinzler suggested that a full-size U.S. flag could be deployed using a specially designed flagpole. He drew up a preliminary sketch and the idea

⁷T. O. Paine, NASA Acting Administrator, memo to Associate and Assistant Administrators and Center Directors, 25 Feb. 1969, on file at the NASA Headquarters (HQ) History Office; George M. Low, memo to Director of JSC, 23 Jan. 1969, on file at the JSC History Office; Willis H. Shapley, NASA Associate Deputy Administrator and Chairman of the Committee on Symbolic Activities, memos to Dr. Mueller of the Apollo Program Office, 19 Apr. 1969 and 2 July 1969, and memo to the Administrator of NASA, n.d., on file at the NASA HQ History Office; Leonard Jaffe, Director for Space Science and Applications Programs, memo to the Associate Administrator for Space Science and Applications, 13 Mar. 1969, on file at the NASA HQ History Office.

⁸Jack Kinzler, MSC Chief of Technical Services (retired), interview with the author, 30 Aug. 1992. Following the presentation of 4 by 6 inch flags to several heads of state, it was discovered that some of the national flags flown were obsolete. Dr. Whitney Smith of the Flag Research Center was contacted by NASA and asked to check the remaining flags for accuracy. Whitney Smith, personal communication, 29 Apr. 1992.

⁹In 1973 the Manned Spacecraft Center was renamed the Lyndon B. Johnson Space Center and is commonly referred to as JSC.

was presented to the committee. Working with Deputy Division Chief Dave McCraw, he worked out the details of the lunar flag assembly over several days. The design was based on a number of engineering constraints. For example, to compensate for the lack of an atmosphere on the lunar surface, the flag assembly included a horizontal crossbar to give the illusion of a flag flying in the breeze.¹⁰



Lunar Flag Assembly — Kinzler's preliminary sketch.

Two other major constraints were the weight of the assembly and the stowage space required. The team designed the entire assembly to be as lightweight as possible — when completed it weighed only 9 pounds and 7 ounces. They reduced the size of the package by developing a two-part telescoping pole apparatus with a telescoping crossbar. It was also necessary to design a flagpole that could be easily assembled and deployed by astronauts wearing space suits. Space suits used for the lunar surface EVA were pressurized to approximately 3.7 pounds per square inch and, as a result, the amount of force that the astronauts could apply with their gloved hands was limited and their range of movement was restricted.

A 3 by 5 foot nylon flag, obtained through the government supply catalog,¹¹ was altered by sewing a hem along the top. The crossbar, hinged

¹⁰ Kinzler, interview, 30 Aug. 1992.

¹¹ It is uncertain who manufactured the flag that was deployed by the *Apollo 11* crew.



NASA Press Release 69-83K, p. 122

Astronaut Reach Constraints.

to the pole, went through this hem, and a loop sewn around the bottom of the flag secured it to the pole. An astronaut would unfurl the flag by extending the telescoping crossbar and by raising it first to a position just above 90 degrees. He then lowered it to a position perpendicular to the pole where

According to a NASA Press Release of 3 July 1969, “the Stars and Stripes to be deployed on the Moon was purchased along with several others made by different manufacturers at stores in the area around the Manned Spacecraft Center near Houston. In order to attach the flag properly to its aluminum staff it was necessary to remove the binding and labels. For this reason the name of the manufacturer cannot be determined.” (NASA Press Release 69-83E, 3 July 1969, on file at the JSC History Office) In *All We Did Was Fly to the Moon*, 121, Dick Lattimer states that the flags that went to the moon were made by Annin & Co. Randy Beard, Sr., of Annin contacted the Public Affairs Office at NASA Headquarters regarding the flag shortly after the moon landing. His company had supplied many flags to NASA throughout the manned space flight program. Beard was told that three secretaries had been sent out to buy 3 by 5 foot nylon flags during their lunch hours. After they had returned, it was discovered that all of them had purchased their flags at Sears. Annin was the official flag supplier for Sears at the time, so this story seemed to confirm that the flag had been made by Annin. Beard was informed that NASA would not confirm the manufacturer of the flag because they didn’t “want another Tang” — in other words, the agency did not want another advertising campaign based on the fact that a commercial product had been used by the astronauts. (Randy Beard, Sr., Annin & Co., personal communication, 24 Aug. 1992 and 10 Sept. 1992.) Jack Kinzler was unable to verify that the flags were purchased at local stores or that the labels were removed. His notes indicate that the flags were purchased from the Government Stock Catalog for \$5.50. (Kinzler, interview, 30 Aug. 1992.)

a catch prevented the hinge from moving. The upper portion then slipped into the base portion of the flagpole, which had been driven into the ground using a lunar geological hammer. A red ring was painted around the base of the assembly 18 inches from the bottom to aid the astronauts in judging the distance that the pole had penetrated the surface.¹²

Finally, it was necessary to protect the flag during the descent portion of the lunar landing. To make the flag easily accessible during the EVA, it was mounted on the left-hand side of the ladder on the Lunar Module (LM). This also reduced the amount of equipment that had to be carried inside the already crowded vehicle. It was estimated, however, that the LM ladder would be heated to 250°F by the descent engines as they fired during the descent staging phase of the landing. The ladder would experience temperatures up to 2,000°F during the 13 seconds of the touchdown phase. Tests run on the flag determined that it would withstand temperatures of only up to 300°F. These conditions made it necessary to design a protective shroud for the flag assembly. The shroud design was the work of the Structures and Mechanics Division of the Manned Spacecraft Center. It consisted of a stainless steel outer case separated from an aluminum layer by Thermoflex insulation. Several layers of thermal blanketing material were placed between the shroud and the flag assembly, limiting the temperature experienced by the flag to 180°F.¹³

Construction and Testing

All of the work on the flag assembly and on the flag shroud was performed in the workshops at the Manned Spacecraft Center. Alterations to the flag were done in the fabrics shop, the sheet metals shop constructed the flagpole, and another shop anodized the flagpole—electrolytically coating the aluminum to give it a gold color and a stiff protective surface. Tubing used in the construction of the pole was about an inch in diameter with a wall approximately $\frac{1}{32}$ of an inch thick. The telescoping feature of the pole was created by using different sizes of tubing that slid neatly into each other. A capped bottom allowed the upper portion of the pole to slide easily into the lower portion. The base of the lower section was designed with a hardened steel point to make it easier to drive into the lunar soil. Cost of materials was relatively low—the flag was purchased for \$5.50 and the tubing cost approximately \$75. The cost of the shroud has been estimated at

¹²Kinzler, interview, 30 Aug. 1992.

¹³Kinzler, interview, 30 Aug. 1992; T. Moser, “Insulation Configuration,” drawing and data from the personal files of Jack Kinzler.



NASA JSC Photograph S69-38748

Flag Assembly and Shroud.

several hundred dollars due to the materials involved. Construction of the prototypes was achieved in several days, and after a week the team had made a few backup assemblies, as well as some to be used for crew training purposes. Demonstration tests were performed in which the flag assembly was folded, packed, unpacked, erected, and deployed to assure that it would operate properly. Kinzler flew to the Kennedy Space Center (KSC) in Florida to participate in a mockup review of the lunar flag assembly on 25 June 1969. The astronauts were included in several of these tests as part of their EVA training so that they would be familiar with deployment procedures.¹⁴

Preflight Preparation

Packing of the flag assembly followed a written 12-step procedure which required up to 5 people to ensure that it was tightly packed. Wooden blocks and plastic ties were used by the team to keep the packed flag together as they progressed through the steps. These packing aids were removed when the flag was placed into the thermal package. After the flag was rolled into the thermal package a thermal rip strip made with Velcro was used to close

¹⁴Kinzler, interview, 30 Aug. 1992; JSC Technical Services Division, "Weekly Activities Report — June 23–27, 1967," on file at the JSC History Office.

the package. The strip had a pull-tab at the top to make it easier for the astronauts to open the package once they were on the lunar surface. This thermal package was then installed into the metal shroud following a 4-step procedure. A small block of Thermaflex insulation was placed around the bottom and top ends of the pole to protect the flag ends from hot brackets. The flag packing for the *Apollo 11* flight was performed in Jack Kinzler's office and was approved by the Chief of Quality Assurance who was present during the procedure. Once the flag thermal package was properly stowed inside the shroud, it was taken to the launch site at KSC to be mounted on the ladder of the LM.¹⁵

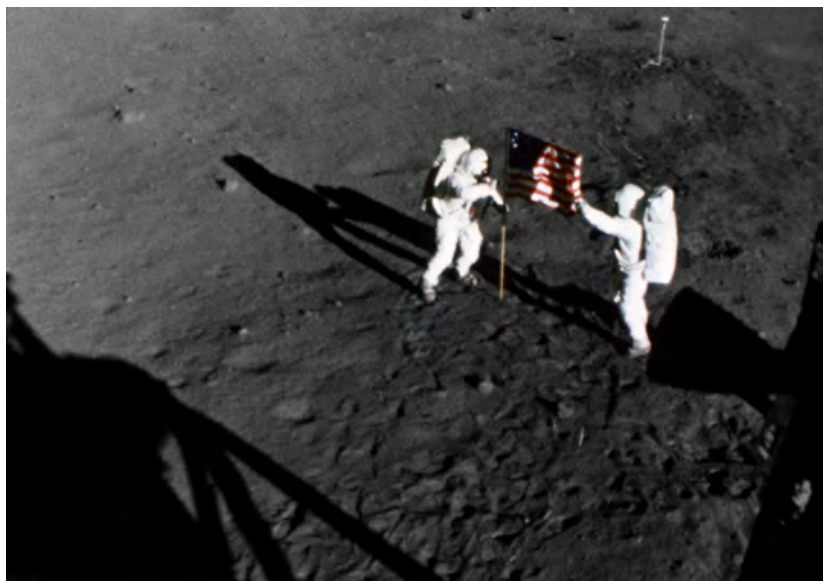
Because the final decision to fly the flag and attach the plaque was made so close to the launch date, a Lear jet was chartered to fly Kinzler, George Low (Manager of the Apollo Spacecraft Program), Low's secretary, the flag assembly, and the commemorative plaque to KSC before the launch. The flag and plaque were installed on the LM of *Apollo 11* at 4:00 in the morning as the spacecraft sat atop its Saturn V rocket ready for launch. Kinzler had written an 11-step procedure for mounting the assembly on the ladder and personally supervised the installation. Proper installation was vital if the astronauts were to be able to deploy the flag on the lunar surface. An astronaut first released the shroud "pip" pin by squeezing it and then pulling it out, and then released the main flag assembly "pip" pin. A spring tension against the flag poles was released when the pins were pulled, allowing easy removal of the shroud. The astronaut then pulled the Velcro strip off the insulation package and discarded the wrapping materials.

Deployment and Performance

The first U.S. flag on the moon was deployed by Neil Armstrong and Edwin "Buzz" Aldrin during their historic EVA on 20 July 1969 (at 4 days, 14 hours and 9 minutes mission-elapsed time). The flag was seen worldwide on live television. At their technical crew debriefing, Armstrong and Aldrin reported few problems with the deployment. They had trouble extending the horizontal telescoping rod and could not pull it all the way out. This gave the flag a bit of a "ripple effect," and later crews intentionally left the rod partially retracted. The *Apollo 11* astronauts also noted that they could drive the lower portion of the pole only about 6 to 9 inches into the surface. It is uncertain if the flag remained standing or was blown over by the engine

¹⁵Kinzler, interview, 30 Aug. 1992; Kinzler, "Flag Folding Procedure" and "Flag Installation in Shroud (Procedure)," from the personal files of Jack Kinzler; Kinzler, personal communication, 9 Sept. 1992.

blast when the ascent module took off. The only design change made as the result of performance on the lunar surface was in the catching mechanism of the horizontal crossbar's hinge. The *Apollo 12* crew could not get the catch to latch properly and, as a result, the flag drooped slightly. Later models of the flag assembly had a double-action latch that would work even if the horizontal bar was not raised above a 90-degree angle.¹⁶



NASA JSC Photograph S69-40308

Neil Armstrong and Buzz Aldrin deploy the first U.S. flag on the moon.

¹⁶Kinzler, interview, 30 Aug. 1992; JSC Technical Services Division, "Weekly Activities Report—July 7–11, 1969," on file at the JSC History Office; Kinzler, "Mounting Flag Assembly on Ladder (Procedure)," from the personal files of Jack Kinzler. Also these materials on file at the JSC History Office: "*Apollo 11* GOSS NET (Ground Operational Support System Network) Transcripts," Tape 71/10, p. 390; NASA JSC Mission Operations Branch Flight Crew Support Division, *Apollo 11* Technical Crew Debriefing (U), Vol. 1, 31 July 1969, pp. 10–43 to 10–45; NASA JSC, Apollo News Center, "*Apollo 11* Postflight-Crew Press Conference," 12 Aug. 1969. Buzz Aldrin noted that "just beneath the powdery surface, the subsoil was very dense. We succeeded in pushing the flagpole in only a couple of inches. It didn't look very sturdy." (Buzz Aldrin, *Men From Earth*, 242.) No film footage of either the *Apollo 11* or *Apollo 12* liftoff from the lunar surface is available, so it could not be determined if those flags remained standing. The *Apollo 14* Mission Film (JSC-563) clearly shows that the flag from that mission remained standing after liftoff.

Reactions to the Flag Deployment

Even though the event took only 10 minutes of the 2½ hour EVA, for many people around the world the flag-raising was one of the most memorable parts of the *Apollo 11* lunar landing. There were no formal protests from other nations that the flag-raising constituted an illegal attempt to claim the moon. Buzz Aldrin, in an article written for *Life* magazine, stated that as he looked at the flag he sensed an “almost mystical unification of all people in the world at that moment.” A few published articles expressed regret that NASA had chosen not to plant a U.N. flag, either in addition to or alongside that of the United States. Prior to the mission, several members of Congress relayed letters from their constituents to NASA that recommended (or in some cases opposed) the use of specific flags. Flags mentioned in these letters included the U.S. flag, the U.N. flag, and the Christian flag.¹⁷ The congressional debate heated up in the House of Representatives as the body considered NASA’s appropriations bill for Fiscal Year 1970. On 10 June 1969, NASA formally notified members of Congress that a decision had been made to raise the U.S. flag on the lunar surface. The House approved the appropriations bill on that same day after amending it to include a flag provision. This measure did not actually affect the *Apollo 11* mission, but did make it clear to NASA where many members of Congress stood on the flag issue. A House and Senate conference committee agreed on the final version of the bill on 4 November 1969 which included a provision that “[t]he flag of the United States, and no other flag, shall be implanted or otherwise placed on the surface of the moon, or on the surface of any planet, by members of the crew of any spacecraft . . . as part of a mission

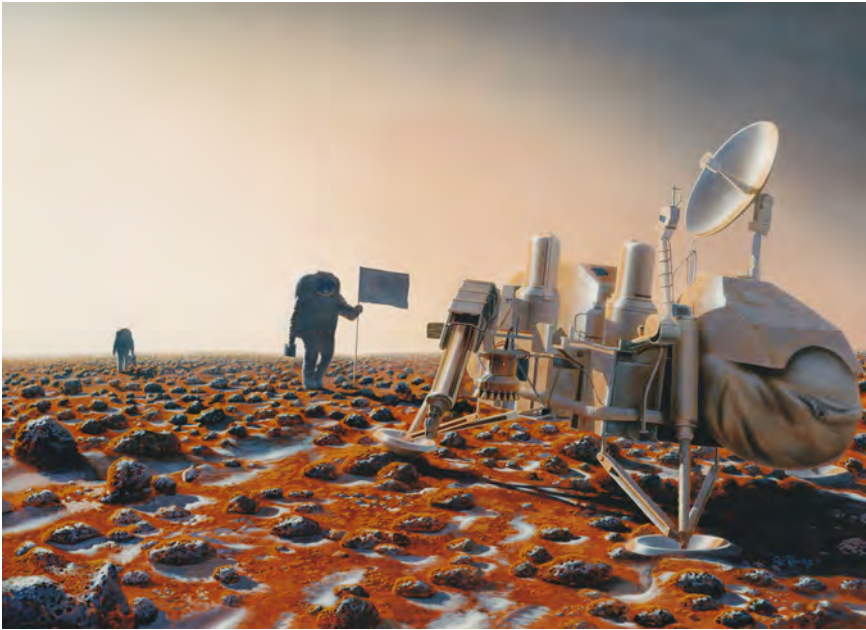
¹⁷ Edwin E. Aldrin, Jr., “Lunar Dust Smelled Just Like Gunpowder,” *Life*, 22 Aug. 1969, 26; Bueckling, “Flaggen,” 19–24; Eugene Brooks, “Legal Aspects of the Lunar Landing,” in *International Astronautical Federation, Colloquium on the Law of Outer Space, 12th, Mar del Plata, Argentina, October 5–10, 1969, Proceedings*, 160–61. Also these materials on file at the NASA HQ History Office: Fanny Ventadour, “U.S. Flag On Moon Improper: Reader,” letter to the editor, *Orlando Sentinel*, 17 July 1969; Donald C. Drake, “Flag on Moon Offers an Example for Man,” *Philadelphia Inquirer*, 10 Aug. 1969; Robert F. Allnutt, NASA Assistant Administrator for Legislative Affairs, letters to: Representative Clark MacGregor (28 Jan. 1969), Senator J. W. Fulbright (11 Feb. 1969), Representative William Scott (13 May 1969), Senator Wallace F. Bennett (1 July 1969), Representative Richard L. Ottinger (2 July 1969), Senator Margaret Chase Smith (22 July 1969); T. O. Paine, NASA Acting Administrator, letter to Lee A. DuBridge, Science Advisor to the President, 30 Jan. 1969. Also, these materials on file at the JSC History Office: “It’s All Ours — And Everyone Else’s,” *Iberian Daily Sun*, 22 July 1969, p. 35; “— In Peace for All Mankind,” *Philadelphia Inquirer* (date unknown); “. . . So Proudly We Hailed,” *The Seattle Times*, 21 July 1969; “Let’s All Cheer,” *Huntsville News*, 18 July 1969.

... the funds for which are provided entirely by the Government of the United States.” The amendment, in deference to the Outer Space Treaty, concluded with the statement “[t]his act is intended as a symbolic gesture of national pride in achievement and is not to be construed as a declaration of national appropriation by claim of sovereignty.”¹⁸

Although the amendment was passed and became law, technically NASA was not required to deploy a U.S. flag on each of the following Apollo missions. Spencer M. Beresford, NASA’s General Counsel, noted in a report to the Associate Deputy Administrator that “the managers on the part of the House further clarified the intent of the provision during the conference by stipulating that this section should not be construed to mean that the American flag must necessarily be implanted or otherwise placed on the surface of the moon or the surface of any planet on each and every landing subsequent to an initial landing.” Regardless of this interpretation, the Apollo flights could have been considered exempt since, as pointed out by a member of the House of Representatives, several international partners had contributed to portions of the Apollo Program.¹⁹ This is also likely to be the case if NASA sends astronauts back to the moon or on to Mars.

¹⁸“ ‘Plans’ for Apollo to Land U.N. Flag Questioned,” *Space Daily*, 31 Mar. 1969, p. 145; Robert F. Allnutt, NASA Assistant Administrator for Legislative Affairs, letters to Representatives Robert H. Michel and Richard L. Roudebush, both dated 8 Apr. 1969; T. O. Paine, NASA Administrator, letter to Senator Birch Bayh, 18 Apr. 1969; “Mathias Asks Flags for Next Apollo,” *Washington Post*, 28 May 1969; “Rarick Calls for Placing of U.S. Flag on the Moon,” *Space Daily*, 29 May 1969, p. 132; “ ‘Put an American Flag on the Moon’ – Bennett,” *Space Daily*, 3 June 1969, p. 148; Congressman Joe L. Evins, “American Flag to be Placed on Moon by *Apollo 11* Astronauts,” *Congressional Record*, 91st Cong., 1st sess., 1969, 115, pt. 12: 15982; Congressman Symington, “The Implantation of a Flag on the Moon,” *Congressional Record*, 91st Cong., 1st sess., 1969, 115, pt. 12: 15859–60; “Moon Exploration: 2 Flags to be Hoisted,” *Washington Star*, 11 June 1969; William Hines, “Big Congressional Flap Over Flag,” *Washington Star*, 29 June 1969; Congressman James G. Fulton, “*Apollo 11* Flags,” *Congressional Record*, 91st Cong., 1st sess., 1969, 115, pt. 15: 19685–86; “Conferees Agree on Space Budget and Flag Rule,” *Philadelphia Evening Bulletin*, 5 Nov. 1969 — all on file at the NASA HQ History Office. Also, National Aeronautics and Space Administration Authorization Act, 1970, Public Law 91-119, sec. 8, *United States Statutes at Large* (Washington: GPO, 1970), 83:202.

¹⁹Spencer M. Beresford, NASA General Counsel, opinion for the Associate Deputy Administrator, 5 Dec. 1969, on file at the JSC History Office; Symington, “The Implantation of a Flag on the Moon.” Symington notes four examples of international cooperation in the Apollo program: (1) tracking stations around the world which, for the most part, were provided rent-free by the host governments; (2) the solar wind experiment that was developed by Swiss scientists who were funded by the Swiss government; (3) a team of 150 scientists selected to examine lunar samples included 36 members from 8 other countries who would participate at the expense of their respective countries; and (4) rocket monitor sounding probes that were conducted by a Brazilian space agency team for the Apollo program.



NASA JSC Photograph S91-52337

“Return to Utopia,” by Pat Rawlings, shows man’s arrival at the *Viking 2* landing site. Flags will most likely accompany humans as they explore the planets.

The Future

President George Bush, speaking on the steps of the National Air and Space Museum on the 20th anniversary of the *Apollo 11* moon landing, proposed that lunar/Mars exploration should be the nation’s long-term objective in space exploration. “[T]he Apollo astronauts left more than flags and footprints on the Moon; they also left some unfinished business. For even 20 years ago, we recognized that America’s ultimate goal was not simply to go there and go back, but to go there and go on.”²⁰ Although Bush did not include the concept of international cooperation in his vision of the space exploration initiative, there are many who recognize that the political climate has changed since the days of Apollo. Space exploration and space projects have become international, and missions on the scale of a lunar base or a Mars mission will probably require international funding to make them feasible. It will be interesting to see which flags join that of the United States on the lunar surface and which will be the first flags on Mars. One thing is

²⁰George Bush, “Remarks on the 20th Anniversary of the *Apollo 11* Moon Landing, July 20, 1989,” in *Public Papers of the Presidents of the United States: George Bush, 1989* (Washington: GPO, 1990), 991.

clear — as humans explore the solar system, we will likely see flags continue to go “where no flag has gone before.”