

The 1970 Osaka World Exposition and the Limits of US Science Diplomacy in the Space Age

Teasel Muir-Harmony

Abstract: A moon rock, resting on a pedestal in the American Pavilion at the 1970 Osaka World Exposition, became the latest trophy for the U.S. in its fierce space race with the Soviet Union. The exhibit was part of a broader approach to American diplomacy in this period, where science and technology, or in this case a scientific specimen, were deployed to spread Western democratic values, win over international public opinion and counter anti-American sentiment. But the moon rock's physical resemblance to earth rocks prompted a broader discussion among Japanese audiences at the Expo about the aims of American scientific and technological progress, and the practicality and applicability of American cultural norms to Japanese visions of modernity. By considering what happens when scientific specimen travel outside of the laboratory context, outside the world of scientists, and into the world of foreign relations, this article investigates the complicated dynamics of science, material culture, and power during this critical juncture in the United States' engagement with Japan.

Keywords: Science Diplomacy, Space Race, Japan, United States, Material Culture, Soft Power, Moon, Project Apollo, International Relations

When astronauts Charles “Pete” Conrad and Alan L. Bean found a large rock near the north rim of the Moon’s Head Crater, they did not predict that this humble scientific specimen would soon appear on the front page of all major Japanese newspapers, that millions of people would wait hours to see it in person, or that it would play a role in U.S.-Japanese relations.

12055, as the moon rock was later designated, is roughly the size and shape of an eggplant. To untrained eyes, it appears identical to rocks found on Earth.¹ But, when the United States displayed it like a precious jewel, resting on metal prongs in a well-lit glass case, it became the

¹ Unlike rocks found on Earth, 12055 has impact pits—sometimes called zap pits-- ranging from .02 to .12 inches. High-velocity micrometeorites create these pits on lunar rocks, which do not mark terrestrial rocks because they are burned up in the Earth’s thick atmosphere before they can reach the ground. The most notable scientific insight 12055 offered investigators was more proof that at one-point areas of the lunar surface were molten. Basalts like 12055 confirmed the Moon’s tumultuous natural history. Charles Meyer, “12055, Pigeonite Basalt,” *Lunar Sample Compendium* (Astromaterials Research & Exploration Science, 2011).

most popular exhibit at the 1970 Osaka World Exposition. During the event's run from March 15th through September 13th, 12055 captured the attention of Japanese Prime Minister Sato Eisaku, the international press, and over eighteen million Expo '70 attendees.²

[Insert photo: American Pavilion 306 EX-3-12 a Moon Rock display009.tif]

[Caption: The moon rock in the American Pavilion at Expo '70. Credit: NARA]

For over a decade the United States and Soviet Union had been competing for international prestige and geopolitical advantage through impressive feats of space exploration. The Soviet Union initiated the competition, launching the first artificial satellite in 1957. The United States followed suit with Project Apollo, an ambitious and costly human lunar exploration program, which included Conrad and Bean's Apollo 12 mission. When 12055 arrived at the Lunar Receiving Laboratory in Houston, Texas in 1969, it became a scientific specimen, probed and photographed and examined by white-coated geologists collecting data about the content and evolution of the Moon. When 12055 arrived in Osaka, Japan, however, it took on a new role. Resting on its pedestal in the American Pavilion at Expo '70, 12055 became

² In 1970, numerous newspaper articles and United States Information Agency (USIA) reports dubbed 12055 the most popular exhibit at the expo. The limited capacity of the US pavilion restricted the number of people who could actually see the rock. For this reason, it is possible that more people saw other exhibits at the expo. Even so, the rock was extremely popular in discourse about the fair, at the time and in retrospect, even if the visitor count may not have been the highest at the expo. Jack Masey, the Deputy Commissioner General of Design for the US Pavilion, reflected that "Without question, the Moon rock on display in the space exhibit was not only the most popular object displayed in the US Pavilion, but was the most popular object of Osaka's Expo '70." Jack Masey and Conway Lloyd Morgan, *Cold War Confrontations: US Exhibitions and Their Role in the Cultural Cold War* (Baden, Switzerland: Lars Muller Publishers, 2008) 390. See also, Yukio Kawahara to the American Ambassador, 8 August 1970, Box 21, Folder "Press Relations," Osaka World Exhibition Office, 1968-1971 (hereafter Entry 1054), RG 306, National Archives and Records Administration (NARA); US Embassy Tokyo to Department of State and USIA Washington, 12 June 1970, Box 16, Folder "General Reports- Reaction Report- USPAV," Entry 1054, RG 306, NARA; "Impression of EXPO Visitors Favorable But Some Complaints" *Mainichi Daily News*, 21 March 1970; "US Pavilion: New Age Heralded In 'Image of America'" *Mainichi Daily News*, 3 July 1970; Charles Lynch, "Farewell to Expo" *Ottawa Citizen*.

the latest trophy for the U.S. in this fierce space race with the U.S.S.R. To borrow historian Susan Lindee's potent formulation, 12055 was a "material form of American victory."³ When put on display in the American Pavilion the moon rock incarnated American-style modernity.⁴ What are the roots and implications of this confluence of meanings—scientific specimen, diplomatic object, and national symbol-- for science as well as U.S.-Japanese relations?

Increasingly, historians have been investigating the deployment of science and technology, and technological systems, as forms of political power, especially in the Cold War world order of the 1950s and 1960s. In this period, the United States and the Soviet Union marshaled their technical and scientific eminence, attempting to influence and at times divert the trajectory of other national scientific and engineering research programs, building transnational ties through scientific exchanges and education, and inundating the world public with science-themed propaganda programming. The moon rock exhibit in Osaka was part of this broader approach to diplomacy, where science and technology, or in this case a scientific specimen, were deployed as instruments of soft power. Paired with information about the fearsome power of the Saturn V rocket used to travel to the Moon, the rock display was meant to influence the Japanese public by showcasing American advances in science while still signaling the nation's

³ Inspired by Susan Lindee's study of the United States' repatriation of atomic bomb victim body parts to Japan during roughly the same period, this article probes the links between science and diplomacy. Much like the victim remains Lindee analyzes, 12055 was a "material form of American victory." Although the US government's decision to send 12055 to Osaka raised a different set of moral and ethical questions and challenges than the decision to return atomic bomb victim body parts to Japan, both gestures were essential to the meaning of these objects. M. Susan Lindee "The Repatriation of Atomic Bomb Victim Body Parts to Japan: Natural Objects and Diplomacy," *Osiris*, Vol. 13, Beyond Joseph Needham: Science, Technology, and Medicine in East and Southeast Asia (1998), 379.

⁴ For a discussion of the history of the relationship of science and the nation-state and national identity, see Carol E. Harrison and Ann Johnson, "Introduction: Science and National Identity," *Osiris*, 2009, 24: 1-14.; The space race and its relationship to US foreign relations is treated in Teasel Muir-Harmony, "American Foreign Policy and the Space Race," in Oxford Research Encyclopedia of American History, February 2017, 1-21.; The geopolitical and ideological staging of Project Apollo is also treated in John Krige, Angelina Long Callahan, and Ashok Maharaj, *NASA in the World: Fifty Years of International Collaboration in Space* (New York: Palgrave Macmillan, 2013), 3-4.

technological and military might. Like other examples in Cold War science and technology, hard and soft power played complementary roles.⁵

And while historians of foreign relations have followed the paths of American art, dance, and music as they made their way to audiences around the world during the Cold War, the exhibition of science and technology rarely feature in these histories.⁶ Similarly, historians of science and technology treat numerous dimensions of science's role in American foreign policy, from international exchanges to nuclear weapons regulations to developments in communications, but typically overlook science's noteworthy presence in American public and cultural diplomacy.⁷ Although not often reflected in the history of foreign relations literature, in this period many US government officials recognized and celebrated science and technology as essential facets of American culture and society, not only as vectors of economic growth, military power, and prestige. Science became deeply embedded in the broader U.S. initiative to spread Western democratic values, win over international public opinion and counter anti-American sentiment.⁸ U.S. political leaders saw fertile ground for influencing politics and culture through science diplomacy in Japan in particular. Through a focus on the exhibition of a moon

⁵ Scholar of International Relations Joseph Nye Jr., coined the phrase "soft power," defining it as attractive or coercive power, as opposed to coercive or hard power. Although contrasted with "hard power," they are often used in concert. See Joseph Nye, *Bound to Lead: The Changing Nature of American Power* (New York: Basic Books, 1990) and Joseph Nye, *Soft Power: The Means to Success in World Politics* (New York: Public Affairs, 2004). This article contributes to analysis of the complicated interplay soft and hard power within science diplomacy, such as Audra Wolfe, *Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore: Johns Hopkins Press, 2018); John Krige *Sharing Knowledge, Shaping Europe: US Technological Collaboration and Nonproliferation* (Cambridge, MA: The MIT Press, 2016); Muir-Harmony, "Selling Space Capsules, Moon Rocks, and America," 127-142.; Ronald E. Doel and Kristine C. Harper, "Prometheus Unleashed: Science as a Diplomatic Weapon in the Lyndon B. Johnson Administration" *Osiris*, Vol. 21, (2006), pp. 66-85.

⁶ See Catherine Gunther Kodat, *Don't Act, Just Dance: The Metapolitics of Cold War Culture* (New Brunswick, NJ, 2015); Michael L. Krenn, *Fall-out Shelters for the Human Spirit: American Art and the Cold War* (Chapel Hill, NC, 2005); Penny M. von Eschen, *Satchmo Blows up the World: Jazz Ambassadors Play the Cold War* (Cambridge, MA, 2004)

⁷ John Krige and Kai-Henrick-Barth, eds. "Global Power Knowledge." In *Science, Technology and International Affairs*, *OSIRIS* Vol. 21.(Chicago: University of Chicago Press, 2006) 1-13.

⁸ An exception is Audra Wolfe's *Freedom's Laboratory* (2018), which highlights the role of scientists within American cultural diplomacy in the second half of the twentieth century.

rock at Expo '70, this article puts the cultural status of science in the foreground of the history of foreign relations during this critical juncture in the United States' engagement with the world.

By considering what happens when scientific specimen travel outside of the laboratory context, outside the world of scientists, and into the world of foreign relations, this article investigates the complicated dynamics of science, material culture, and power. Historians Gabrielle Hecht and Timothy Mitchell have both demonstrated how the material properties of technologies texture their political power, at times producing unforeseen results.⁹ This article argues that the same hold true for scientific objects. The look, size, shape, and color of 12055 both projected and restricted narratives of American scientific and technological achievements. The story of 12055, this article argues, reveals how the meaning of scientific objects are not simply culturally embedded, or imposed politically, but also configured by an object's materiality.

Given the high level of interest for spaceflight in Japan in 1970, American politicians, from Undersecretary of State U. Alexis Johnson to President Richard Nixon, anticipated that a moon rock exhibit would positively color perceptions of American national identity. A large rock would not only provide visible proof of U.S. technological and scientific preeminence; it might also shift attention away from U.S. involvement in Vietnam, U.S. military presence in Okinawa, and problematic trade negotiations, and other strains on U.S.-Japanese relations, many hoped.¹⁰ But, as this article examines, this particular piece of basalt refracted and amplified the complicated dynamics between the United States and Japan in 1970. Instead of wooing and

⁹ Gabrielle Hecht, "Introduction," *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge, MA: The MIT Press, 2011) 3.; See also: Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002); Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II* (Cambridge: The MIT Press, 1998).

¹⁰ John Logsdon, *After Apollo? Richard Nixon and the American Space Program* (New York: Palgrave Macmillan, 2015), 48.; U. Alexis Johnson, American Ambassador, Tokyo, to Leonard Marks, Director USIA, 19 December 1967, Box 2, Folder "EXH-Osaka 70," Entry A1 42, RG 306, NARA.

impressing millions of Japanese expo-attendees, as U.S. political leaders anticipated, 12055 prompted questions about the practicality and applicability of American cultural norms to Japanese visions of modernity.¹¹

In many ways, the exhibit of the moon rock at Expo '70 embodied an emerging dynamic between the U.S. and Japan, and as this article will argue, contributed to it as well. Expo '70 marked the economic and social transformation of Japan.¹² As one Japanese expo attendee recalled, "that was probably the first time that it began to feel like it wasn't the period after the war anymore."¹³ The Japanese economy was growing at a rate of between 10 and 15 percent a year. The United States, on the other hand, once touted as the model of modernization, was entering a period of perceived economic and cultural decline. As Japan became the third largest economy in the world, the U.S. economy was ending an over twenty-year stretch of sustained prosperity. The balance of power was shifting. The exhibit of 12055 took place at a moment that saw fundamental change between the two countries as well as within each individually, thrusting the moon rock into a broader conversation among both the Japanese public and politicians about the utility of American-style government-driven technological and scientific programs, and more generally American global leadership.¹⁴

¹¹ For an analysis of conceptions of "modernization" in Japanese history, see Sheldon Garon, "Rethinking Modernization and Modernity in Japanese History: A Focus on State-Society Relations," *The Journal of Asian Studies*, Vol. 53, No. 2 (May, 1994), pp. 346-366." For a discussion of views of the implications of U.S. investment in Project Apollo, see: Teasel Muir-Harmony "Selling Space Capsules, Moon Rocks, and America: Spaceflight in U.S. Public Diplomacy, 1961-1979," in Hallvard Notaker, Giles Scott-Smith, and David J. Snyder, eds., *Reasserting America in the 1970s: U.S. Public Diplomacy and the Rebuilding of America's Image Abroad* (University of Manchester Press, 2016), 127-142.

¹² T. Nakamura, *The Postwar Japanese Economy: Its Development and Structure, 1937-1994* (Tokyo: University of Tokyo Press, 1994).

¹³ David Anderson and Hiroyuki Shimizu, "Recollections of Expo 70: Visitors' Experiences and the Retention of Vivid Long-Term Memories," *Curator*, Vol. 50, No. 4 (October 2007), 445.

¹⁴ Philip Shabecoff, "Expo Marks Japan's Rise in Affluence," *New York Times*, 17 Mar 1970: 16.; Teasel Muir-Harmony "Selling Space Capsules, Moon Rocks, and America: Spaceflight in U.S. Public Diplomacy, 1961-1979," 127-142.

How did the material properties of the moon rock shade Japanese perceptions of American science, values, and global leadership? By exploring this question, this article reconsiders the limits of science diplomacy within the projection and exercise of power at the dawn of the 1970s. Furthermore, it evinces how the varied reactions that scientific specimen elicit, when traveling from place to place, from socio-political context to context, can put national identity and values into sharp relief. And in doing so, it exposes the risks of binding the image of science and the state closely together.¹⁵

The Image of US Science in Postwar Japan

In early August 1945, the United States dropped two atomic bombs on Japan, precipitating the end of World War II, and signaling the might of American science and technology. Nicknamed the “physicists war,” not only for the introduction of nuclear weapons but also for the impact of physics research on communications, computer, and aeronautic developments, World War II ascribed a new level of prestige to scientists and engineers and furthered a correlation between geopolitical power and scientific and engineering prowess.¹⁶ An article published in *Asahi Shimbun* less than a week after Emperor Hirohito announced that Japan would surrender, succinctly explained the defeat: “we lost to the enemy’s science.”¹⁷ Not only scientific research but scientific “reason” and “rationalization,” seemed to hold the answer to the war’s loss as well as the key to a prosperous future for Japan.¹⁸

¹⁵ Hecht, “Introduction,” (2011) 3.

¹⁶ Roy M. MacLeod, “Introduction: Science, Technology and the War in the Pacific” in Roy M. MacLeod ed. *Science and the Pacific War: Science and Survival in the Pacific, 1939-1945* (Dordrecht: Kluwer Academic Publishers, 2000), 1-3.

¹⁷ *Asahi Shimbun*, August 20, 1945 quoted in John Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: W.W. Norton & Company, 1999), 494.

¹⁸ Dower, *Embracing Defeat*, 494-495.

After the war, U.S. government officials hoped that Japan could provide economic and political stability in a region seemingly susceptible to communist influence. According to many U.S. policymakers, the answer to achieving this stability during and after Allied Occupation included revitalizing and transforming scientific and engineering practices. In Japan, the ideology of developmentalism had roots in the 1930s, but it was in the postwar period that the equating of scientific and technological progress with economic prosperity took firm hold.¹⁹ From the establishment of a bureau of scientific education to the redirecting of former military funds for the promotion of science among the public, the postwar government made science a major national priority at an unprecedented level.²⁰ At the same time, the U.S. sent American scientists and engineers to provide technical assistance, among other measures. Within this context, science diplomacy became an essential element in cementing American influence in Japan. And in turn, American political leaders hoped, cementing American influence within the larger Pacific region.²¹

In the 1950s, many American politicians found the integration of cultural diplomacy with political and economic diplomacy essential in improving US relations with Japan. Through extensive media programming-- utilizing radio, motion pictures, publications, and the press— and twenty-three US Information Centers in Japan, the US government amplified its efforts to combat communism in the region. Many of these cultural diplomacy activities highlighted American science and technology.²² For instance, the United States Information Agency (USIA)

¹⁹ Morris Low, "Displaying the Future: Techno-Nationalism and the Rise of the Consumer in Postwar Japan," *History and Technology*, Vol. 19, No. 3 (2003), 200.

²⁰ Dower, *Embracing Defeat*, 494-495.

²¹ John Beatty, "Scientific Collaboration, Internationalism, and Diplomacy" *Journal of the History of Biology*, Vol. 26, No. 2 (Summer, 1993) 211.; John Dower, "Occupied Japan and the American Lake," in Edward Friedman and Mark Selden eds., *America's Asia: Dissenting Essays on Asian-American Relations* (New York: Random House, 1969), pp. 146-206, p. 170.

²² Takeshi Matsuda, "Soft Power: The U.S. Cultural Offensive and Japanese Intellectuals," *The Asia-Pacific Journal*, Vol. 6, Issue 2, Feb. 1, 2008, 1-3.

hosted Atoms for Peace exhibits throughout Japan, drawing over 2.5 million visitors, as part of U.S. President Dwight Eisenhower's larger global initiative for alleviating atomic fear and swaying public opinion for nuclear power. Designed to encourage the Japanese people to overcome their "nuclear allergy," these exhibits linked nuclear energy with the idea of a peaceful and modern Japan using panel displays explaining nuclear physics, full-scale models of nuclear reactors, and models outfitted with electric lights to illustrate nuclear fission reactions. In response to the exhibits, the Japanese media described nuclear energy as "the most modern of technology," which "will open the way for a new industrial revolution" and supply unlimited possibilities for mankind."²³ Although just a decade had passed since the atomic bombings of Hiroshima and Nagasaki, and the 1954 US Castle Bravo thermonuclear test's radiation exposure of the Japanese *Lucky Dragon 5* crew was still fresh in minds, the Atoms for Peace exhibits received generally favorable reviews from the public, scientists, and political leaders alike.²⁴

With the advent of the space age in 1957, both Soviet and U.S. public diplomats turned their attention to space-themed exhibits, films, and events, recognizing that space accomplishments had not only become major indices of international power and standing, they were also wildly popular with audiences around the globe.²⁵ Shortly after Soviet cosmonaut, Yuri Gagarin became the first human to travel into space in April 1961, the Soviet Union sent him on an international goodwill tour, which included a stop in Japan. Gagarin's tour

²³ Excerpted from *Chugoku Shinbun*, November 26, 1954 and *Yomiuri Shinbun*, April 29, 1955. Quoted from Ran Zwigenberg, "The Coming of a Second Sun": The 1956 Atoms for Peace Exhibit in Hiroshima and Japan's Embrace of Nuclear Power," *The Asia-Pacific Journal*, Vol. 10, No. 6 (Feb 2012), 4-5.

²⁴ Ran Zwigenberg, "The Coming of a Second Sun," 1-16; On Eisenhower's Atoms for Peace Program see Kenneth Osgood, *Total Cold War: Eisenhower's Secret Propaganda Battle at Home and Abroad* (University of Kansas Press, 2006).

²⁵ Space themed exhibits were popular attractions at the 1958 Brussels World's Fair in Belgium; the Century 21 Exposition in Seattle in 1962; the 1964 New York World's Fair; and the Expo '67 in Montreal, Canada. For a history of World's Fairs and Exhibitions see Erik Mattie, *World's Fairs* (New York: Princeton Architectural Press, 1998).

substantiated Soviet claims of being first in space and gave a human face to the space race.²⁶ The following year, after John Glenn became the first American to orbit the Earth in February 1962, President John F. Kennedy decided to send his space capsule, the *Friendship 7*, on a worldwide tour to demonstrate the openness of the U.S. space program.²⁷ In its first hour on display in Japan, more than 12,000 people lined up to see the spacecraft at a large department store in downtown Tokyo. Several hundred police and guides were called on to direct the crowd into a line that climbed nine flights of stairs, zigzagged across the roof of the building and then descended back down nine flights of stairs to the first floor where the capsule was on display. After four days on display, more than 500,000 people attended the exhibit, “a crowd exceptional in size even by Tokyo standards,” according to a report prepared by the USIA.²⁸

In May 1963, astronaut John Glenn visited Japan with his family after serving as a voice communicator between Gordon Cooper on board *Faith 7* and a Project Mercury tracking ship stationed in the Pacific. Even though Glenn was on professional leave during his visit, he participated in press conferences, interviews, television appearances, and met with students in Japan. American Ambassador to Japan, Edwin O. Reischauer, observed that Glenn and his

²⁶ Cathleen Lewis, “The Red Stuff: A History of the Public and Material Culture of Early Human Spaceflight in the U.S.S.R.” (PhD diss., George Washington University, 2008), 136-137.

²⁷ The *Friendship 7* exhibit is covered in detail in Teasel Muir-Harmony, “Project Apollo, Cold War Diplomacy and the American Framing of Global Interdependence” (PhD diss., Massachusetts Institute of Technology, 2014), 79-104. In addition to Japan, the U.S. put the capsule on display in South Korea, the Philippines, Australia, Indonesia, Thailand, Burma, Ceylon, India, Pakistan, Turkey, Egypt, Nigeria, Ghana, Spain, Yugoslavia, France, England, Mexico, Brazil, Argentina, Chile, Columbia, and Bermuda.

²⁸ The USIA organized a series of exhibits and astronaut visits in Japan over the course of the 1960s. See: US Embassy Tokyo to Department of State, 24 June 1963, Box 4188, Entry 1613, RG 59, NARA.; Microcopy No. NK-10A, Roll No. 1, USIA Press Releases, Far East, John F. Kennedy Presidential Library (hereafter JFKL); USIS Tokyo to the USIA, 18 June 1962, Box 257, Folder “Outer Space, 14.B.5, Outer Space Exhibits, June-December, 1962, Part 1 of 2,” Entry 1613, RG 59, NARA; USIS Tokyo to USIA Washington, 4 September 1962, Box 258, Folder “Outer Space, 14.B.5, Outer Space Exhibits, June-December, 1962, Part 2 of 2,” Entry 1613, RG 59, NARA; USIS Tokyo to USIA Washington, 4 June 1962, Box 18, Folder “Japan, 1954-1964,” Entry A1 1039, RG 306, NARA; Walter M. Schirra Jr. and Richard Billings, *Schirra’s Space* (Boston, MA: Quinlan Press, 1988) 170. See also: Muir-Harmony, “Project Apollo, Cold War Diplomacy and the American Framing of Global Interdependence,” 79-104.

family “were [an] effective demonstration of typical American virtues.” He believed that “many seemed, for [the] first time, to appreciate [the] openness of the U.S. space program as compared to [the] Russian [program].”²⁹ The American press made similar observations. An *Associated Press* article noted, “There was one marked contrast between Glenn’s visit and that of Maj. Yuri Gagarin... [Gagarin] was kept under close wraps... Glenn traveled casually. He [Glenn] was accessible to almost anyone who wanted to ask him a question.”³⁰ *Nihon Keizai Shinbun*, a leading Japanese financial paper, also contrasted Gagarin and Glenn’s visits, observing that Gagarin wore a military uniform while Glenn dressed in a civilian suit and bowtie. Gagarin’s “actions and speeches gave the impression that he was under some restrictions” whereas “everything about [Glenn] was openly candid,” according to the paper.³¹ Reischauer recommended that President Kennedy be briefed on “Glenn’s fine contribution to U.S.-Japan relations,” which indicates that the political ramifications of the visit were ample, and deemed significant even at the highest level of American politics.³²

Shortly before the first lunar landing in 1969, Glenn wrote to President Nixon explaining that “the intense interest in our space program I experienced has not abated, but has even increased in Japan through the years....the Japanese follow our program as though it were their own.” Japanese news, as Glenn well knew, reported on the U.S. space program more than any other national news service in the world.³³ The response to the first lunar landing in Japan confirmed Glenn’s letter to the President: the Japanese public was tremendously enthusiastic about space exploration. Nearly a million people in Japan alone visited thirty-six Apollo 11

²⁹ US Embassy Tokyo to Department of State, 1 June 1963, Box 4188, Entry 1613, RG 59, NARA.

³⁰ “John Glenn Scores Hit During Tour of Japan,” *The Washington Post*, 2 June 1963, A3.

³¹ *Nihon Keizai Shinbun* quoted in “John Glenn Scores Hit During Tour of Japan,” *The Washington Post*, 2 June 1963, A3.

³² US Embassy Tokyo to Department of State, 1 June 1963, Box 4188, Entry 1613, RG 59, NARA.

³³ John Glenn to Richard Nixon, 12 June 1969, Box 3017, Folder “SP 10-1 US 5/1/69,” Entry 1613, RG 59, NARA.

exhibits scattered around the country leading up to the first lunar landing.³⁴ When the crew of Apollo 11 traveled to the Moon in July 1969, an estimate of ninety-percent of the population followed the television coverage of the mission.³⁵ Of the 800 members of the foreign press that descended on Cape Canaveral for the launch, 120 came from Japan, the largest representation of any country.³⁶ Prime Minister Sato woke up around 5 AM to watch the coverage and then conducted his first nonpolitical press conference, sharing a message of congratulations to the United States. “It was an epochal event in the history of mankind... made possible by the highly developed scientific and engineering technology of the U.S. courage and creativity,” Sato reflected.³⁷ In Tokyo, people left paper cranes at the United States Embassy for good luck.³⁸ Letters, telegrams, poems and drawings from the Japanese public filled the Embassy, USIA post, and President Nixon’s mailboxes. The USIS post in Tokyo reported, “one somewhat misguided youth thought his message would carry more meaning if written in blood.—it was!—it did!”³⁹ The White House endorsed Glenn’s proposal that the U.S. give top priority to sending Apollo astronauts to Japan as “a very effective antidote to current criticism of the US.” Although spaceflight was a visible and potent arm of American diplomacy around the world by 1969, in Japan it resonated with politicians and the public like nowhere else. Observing this, American government officials were quick to leverage the popularity of Project Apollo in any way they could.⁴⁰

³⁴ Apollo Operation Center to Henry Loomis, 6 August 1969, Box 15, Entry P 243, RG 306, NARA.

³⁵ “TV Viewing Rate Estimated at 90%,” *Japan Times*, July 22, 1969, p. 4

³⁶ Report to the Congress from the President of the United States, US Aeronautics and Space Activities for 1969.

³⁷ “Premier Pays Tribute to Astronauts,” *Japan Times*, July 22, 1969, p. 5.

³⁸ Apollo 11 Operations Office to Frank Shakespeare, 23 July 1969, Box 3, Folder “INF 2-3 Weekly Reports to Director,” Entry A1 42, RG 306, NARA; Embassy Tokyo to Secretary of State, 22 September 1969, Box 3015, Folder “SP 10 US 9/1/69,” Entry 1613, RG 59, NARA.

³⁹ US Embassy Tokyo to Secretary of State, 22 September 1969, Box 3015, Folder “SP 10 US 9/1/69,” Entry 1613, RG 59, NARA.

⁴⁰ Dan Oleksiw to Frank Shakespeare, June 1969, Box 4, Folder “SP- Space and Astronautics,” Entry A1 42, RG 306, NASA.

The upcoming World Exposition in Osaka presented the U.S. government with an auspicious opportunity for selling a positive image of America to the Japanese public at a decisive moment in U.S.-Japanese relations. Around the same time as the first lunar landing, the issue of U.S. military bases in Japan came into question as part of discussions about revising the US-Japan Security Treaty. Although Nixon stated that the U.S. would maintain the treaty, Japan would be expected to shoulder more defense costs.⁴¹ The U.S. began negotiating with Japan on Okinawa reversion, agreeing to return the sovereignty of Okinawa to Japan, to no longer store nuclear material on the island without Japanese government permission, and to maintain combat bases on the island for military operations in South Korea, Taiwan, and Vietnam. Alongside these discussions, criticism of U.S. involvement in Vietnam increased in Japan. By the beginning of 1970, protests would erupt in Japan against the revision to the treaty. Thousands of Japanese students voiced their outrage at the US military presence while the United States tried to win over the Japanese public at Expo '70. For many US government officials, space exploration had the potential to not only be the most compelling illustration of the potential output of American democratic society; it might even capture the interest and imagination of the Japanese public even in light of harsh criticism of the Security Treaty revision. Although U.S. officials recognized that a moon rock exhibit, and other space propaganda efforts, could not solve these larger foreign relations issues, many did hope that given the immense enthusiasm for space exploration in Japan, they might improve general attitudes toward the United States.⁴²

⁴¹ Mike M. Mochizuki, "U.S.-Japan Relations in the Asia Pacific Region," in Akira Iriye and Robert Wampler, eds., *Partnership: The United States and Japan, 1951-2001* (Tokyo: Kodansha International, 2001) 21-22.

⁴² John Walsh to Henry Kissinger, 27 June 1969, Box Box 3017, Folder "SP 10-1 US 5/1/69," Entry 1613, RG 59, NARA; John Glenn to Richard Nixon, 12 June 1969, Box 3017, Folder "SP 10-1 US 5/1/69," Entry 1613, RG 59, NARA.

In 1969, moon rocks were the newest, most exciting artifacts of the U.S. space program. After years of exhibiting capsules, space food, and other artifacts of American spaceflight, moon rocks offered audiences a unique physical connection to another world.⁴³ Immediately after the first lunar landing, U.S. government officials ranked locations for international moon rock exhibits based on political priorities. Japan placed second, right behind the Soviet Union. When selecting Japan as the second priority location, a USIA official explained, “the post feels that it could contribute to an atmosphere favorable to the United States in the days before Prime Minister Sato’s departure for the important Okinawa negotiations,” a statement that underscores the expectation that moon rocks were influential political commodities capable of swaying foreign relations outcomes. The USIA arranged a private showing of a moon rock in the Imperial Palace as well as an exhibit in the National Science Museum.⁴⁴ Emperor Hirohito, as one American Embassy officials observed, was “known to be extremely interested in space exploration.” The rock displayed at the Expo ‘70 would be larger and stay in Japan longer than the small rock from the Apollo 11 mission that U.S. officials sent to Japan to “contribute to [the] atmosphere” of Okinawa negotiations in 1969.⁴⁵

Preparing for Expo ‘70

By 1970, after rapid economic growth, Japan was well-positioned to host the first World Exposition in Asia. Initially, Japan proposed hosting this signature event in 1940, but the outbreak of World War II prompted the Expo’s cancellation.⁴⁶ Expo ’70, timed to mark the

⁴³ Wilson Dizard Jr., *Inventing Public Diplomacy* (Boulder, CO: Lynne Rienner Publishers, 2004) 113.

⁴⁴ Apollo Operations Office to Frank Shakespeare, 21 November 1969, Box 1, Entry A1 42, RG 306, NARA.

⁴⁵ American Embassy Tokyo to the American Consulate Sydney, October 1969, Box 22, Folder “SP 10 Giantstep IAF,” Entry 243, RG 306, NARA.

⁴⁶ Robert W. Rydell, “World’s Fairs and Museums,” in Sharon Macdonald ed., *A Companion to Museum Studies* (Oxford: Blackwell Publishing, 2006) 136.

2600th anniversary of Japan and the centennial of country's opening up to international commercial markets, was held on an 815-acre site in the Senri Hills of Osaka. Pavilions throughout the fairground reflected the theme of the Expo, "*Jinrui no shinpo to chōwa*" or "Progress and Harmony of Mankind," in exhibitions that presented visions of the future. This plurality of visions on view at the Expo corresponded with a concept put forward by Japanese Expo planners in the mid-1960s. Architecture critic Kawazoe Noboru expressed this approach in an article for the *Yomiuri Shimbun* newspaper: "Japan," he explained, "is not only continuing its high growth. It is the society where population density and medialization have progressed the furthest, and Japan itself has become a laboratory for a new civilization. Therefore, the Japan expo is not only about the search for Japan's future, but has a [broader] significance in the history of civilization."⁴⁷

Over the course of 183 days—from March to September—the Osaka World Exposition drew roughly 64 million visitors, making it the most heavily attended expo or World's Fair in history.⁴⁸ Out of these 64 million visitors, 62 million were Japanese at a time when the total population of Japan was 103 million. On an average peak day, over six-hundred thousand people crowded the 118 pavilions at the site, inspiring a play on the Expo's central theme: "Patience and Long Lines for Mankind."⁴⁹ Nearly eighty countries, ten provincial and municipal governments, four international organizations, and thirty-two domestic exhibitors participated in Expo 70.

⁴⁷ Kawazoe Noboru, "Bankokuhaku no bijon" [The Vision of the Expo], *Yomiuri Shimbun*, November 14, 1967, quoted from William O. Gardner, "The 1970 Osaka Expo and/as Science Fiction," *Review of Japanese Culture and Society*, Vol. 23, Expo '70 and Japanese Art: Dissonant Voices (December 2011), 33.

⁴⁸ The phrase "World's Fairs" was widely used until the 1967 Montreal World Exposition when it was changed to "world exposition." See: Midori Yoshimoto, "Notes to the Reader," *Review of Japanese Culture and Society*, Vol. 23, Expo '70 and Japanese Art: Dissonant Voices (December 2011), xii.

⁴⁹ Nobumichi Ariga, "Presenting the Past, Present, and Future of Technological Innovation: The Japanese Pavilion at Expo '70 as a Discourse on Science and Technology Policy," in Elena Canadelli, Marco Beretta, and Laura Ronzon eds., *Behind the Exhibit: Displaying Science and Technology at World's Fairs and Museums in the Twentieth Century* (Washington, DC: Smithsonian Institution Scholarly Press, 2019), 222.

With such a forward-looking event, American pavilion planners found the context ripe for showcasing the fruits of America's high-tech space sector.⁵⁰

In the United States, preparation for the American Pavilion began in 1967. As the American Ambassador of Japan, U. Alexis Johnson, explained to Leonard Marks, the Director of the USIA, "it is absolutely essential to put our best foot forward on Expo '70 not only because it is the first World's Fair in the Far East but also because we have so much at stake here on our image as we enter the decade of the seventies."⁵¹ The U.S. Congress appropriated 10 million dollars for the pavilion construction and programming and appointed Commissioner General Howard Chernoff as the director. The USIA led the organization of the American Pavilion, with Jack Masey at the helm. An experienced exhibit designer, Masey led the design team for the American Pavilion at the 1967 Montreal World Exposition as well as the 1959 American Pavilion in Moscow, which prompted the famous "kitchen debate" between US Vice President Nixon and Soviet leader Nikita Khrushchev.⁵² He was well aware of the geopolitical potential of a carefully tailored exhibit. Participation in the expo, Masey later observed, "was a political necessity for such an important ally and trading partner. America needed to make a case for its policies in the Far East," and the pavilion at Expo '70 played a critical role in presenting a positive picture of America in the region.⁵³

⁵⁰ David Anderson, "Osaka 1970," in John Findling and Kimberly Pelle, eds. *Encyclopedia of World's Fairs and Expositions* (Jefferson, NC: McFarland & Company, Inc., 2008) 345-349; Andrew Garn, *Exit to Tomorrow: World's Fair Architecture, Design, Fashion 1933-2005* (New York: Universe Publishing, 2007) 175; International Research Associates report on visitors' reactions, Dec. 22, 1970, Box 2, Folder "Reactions to US Pavilion at Expo '70 (1970)" RG 306 NARA.

⁵¹ U. Alexis Johnson, American Ambassador, Tokyo, to Leonard Marks, Director USIA, 19 December 1967, Box 2, Folder "EXH-Osaka 70," Entry A1 42, RG 306, NARA.

⁵² Jack Masey to Donald Slayton, Director of Flight Crew Operations at NASA, 6 May 1969, Box 25, Folder "Space Exhibit- NASA," Entry 2054, RG, 306 NARA; USIA 34th Semiannual Review of Operations January-June 1970, Box 11, Folder "General," Entry 2054, RG 306, NARA; Jack Masey and Conway Lloyd Morgan, *Cold War Confrontations* (2008).

⁵³ Masey and Morgan, *Cold War Confrontations*, 352.

Robert Sullivan, a USIA employee, observed that the experience gained at the 1967 Montreal World Exposition, “suggests strongly that a limited amount of market research could be useful in planning for an effective U.S. exhibit at the Osaka Fair. At bottom, an exhibit is a product. Selling a product requires knowing what the consumer expects and wants.”⁵⁴ As U.S. exhibit designers recognized, the American Pavilion should not be staged for the whole world because a vast majority of visitors would be Japanese. Although newspapers from every corner of the Earth reported on the exposition and seventy-six nations participated, for the most part, the audience came from Japan.⁵⁵ For this reason, the USIA hired Behaviormetrics, Inc. to conduct two companion studies, one in New York and one in Japan. The interviewees in New York, according to the market research team, were “in a much better position to make recommendations about a United States exhibition, as well as to provide a general background of attitudes towards the United States based on actual knowledge and experience, than Japanese who have never been to this country.”⁵⁶ The report stressed that “one area commanded universal assent, and this was the area of Science and Technology. Whether asked in free response question, pre-coded rank order form, or in other ways, this area invariably came out on top by a wide margin.”⁵⁷ Within the areas of science and technology, space and automobiles were the two most popular interests. The study conducted in Japan also reported that science and technology were “the overwhelming first choice, with Space Research the dominant category within it.”

⁵⁴Robert Sullivan to Miss White, 11 January 1968, Box 23, Folder “Public Opinion & Inquiries,” Entry 2054, RG 306, NARA.

⁵⁵ See, Masey and Morgan, *Cold War Confrontations*, 353; David Anderson and Hiroyuki Shimizu, “Recollections of Expo 70,” 436.

⁵⁶Study prepared by Behaviormetrics, Inc for USIA, 15 April 1968, Box 26, “Study-Osaka Exhibition Depth Interview,” Entry 2054, RG 306, NARA.

⁵⁷ Ibid.

Japanese fairgoers, the report concluded, would want to see space artifacts.⁵⁸ Exhibit designer Masey would later reflect, “the fact that we were able to do that in this country, you know penetrate outerspace, landing on the moon, etc. was of tremendous interest and importance. I would say a very serious important part of what we were doing in terms of presenting America.”⁵⁹

When US Vice President Spiro Agnew heard about the United States Pavilion at the Expo, he wrote to NASA Administrator Thomas Paine on the importance of exhibiting the country’s space accomplishments in Osaka. He suggested, “our Pavilion in Osaka should take full advantage of this unprecedented opportunity for reaching millions of Asians directly by presenting the most comprehensive and dramatic space exhibit that is possible to assemble.”⁶⁰ The attention of Asia, he proposed, would be focused firmly on the Expo, making it a key opportunity for replaying a positive image of the United States abroad and redirecting negative attention brought on by American involvement in the Vietnam War. Agnew asked briefings on the proposed scope of the space exhibits in particular and recommended that the pavilion display a moon rock because “the Japanese have in recent months manifested an intense interest in seeing samples of lunar surface material.”⁶¹ Attuned to the political potential of exhibiting the moon rock in Osaka, Agnew wanted to make sure NASA and USIA officials were as well.

NASA sent moon rock 12055 to display at the Expo, a particularly large specimen from the material collected during the Apollo 12 mission. A stainless-steel holder and wire held the rock in place inside a container constructed of anodized aluminum and Pyrex glass and filled dry

⁵⁸ Ibid.

⁵⁹ Jack Masey, interview with author, May 25, 2012.

⁶⁰ Spiro Agnew to Thomas Paine, 30 September 1969, Box 335, Folder “United States Information Agency,” Secretary of the Smithsonian (hereafter RU 99), Smithsonian Institution Archives, Washington, DC.

⁶¹ Ibid.

pure nitrogen atmosphere for keeping the rock safe from terrestrial contamination. To prevent the rock from loosening in the container, 12055 got its own seat on the airplane from Texas to Japan.⁶²

[Insert image: American Pavilion 306 EX 9 9 a003.tif]

[Caption: The space exploration exhibit in the American Pavilion at Expo '70. Credit: NARA]

The American pavilion and the moon rock exhibition in particular, were designed for maximum impact. Tailoring the display to the tastes and interests of the Japanese public, reflected a broader US approach to foreign relations in this period. By attempting to win the hearts and minds of the Japanese public and politicians through a moon rock display, US government officials were using carrots instead of sticks to steer US-Japanese relations and maintain military and economic alliance.⁶³ At the core of this approach lay an optimism about the moon rock's political potential. As an object from outer space, it closed the distance between the Earth and Moon, at a time when only a small handful of earthlings had ever escaped the planet's gravitational pull. Visitors could see a piece of the Moon close-up, and not far from home. The expectation that pavilion planners held about 12055's physical impressiveness, however, would prove misguided. 12055's material characteristics would undermine its soft power potential once it was put on public display.

⁶² Daniel H. Anderson Memoranda on the "Container for Lunar Sample Display—12055," 6 March 1970, Box 25, Folder "Space Exhibit- NASA," Entry 1054, RG 306, NARA

⁶³ On the role of soft power within US-Japanese relations, see: Matsuda, *Soft Power and Its Perils*, (2007) and Watanabe Yasushi and David L. McConnell, eds., *Soft Power Superpowers: Cultural and National Assets of Japan and the United States* (Armonk, NY: M.E. Sharpe, 2008).

While the US pavilion built on a long tradition in World's Fair history, where impressive objects from science and technology were put on prominent display, the planners of Expo '70 were charting new terrain. As one of the planners reflected, "rather than displaying hardware, or going to see it, isn't it more meaningful to create a software-like environment? ... we should gather together to exchange direct communication between people, each bringing our own cultures or non-physical traditions to exchange. Rather than an exposition, it would be a festival."⁶⁴ Again and again, Japanese planners emphasized exchange, communication, and the "information age," in opposition to displaying material objects at the Expo. Okamoto Taro, an artist who proposed Expo '70's Tower of the Sun centerpiece, explained, "the Expo is a festival. I don't think that expositions are fundamentally about learning various types of scientific knowledge. Rather," they should be sites where "surprise and joy are commingled."⁶⁵ Multi-screen displays, video projections, and elaborate soundscapes through the Expo grounds personified these planners' concepts of "festival," "software," and "information exchange."⁶⁶ Although the United States sent the moon rock to Osaka as a symbol of cutting-edge science and technology, when viewed within this context, it suddenly seems more like a relic of bygone World's Fairs than Japanese planners' "visions of the future." In reference to previous fairs, Tange Kenzō, the architect who oversaw the Expo '70 site design, reasoned, "exposing physical things, such as technology and the fruits of scientific engineering... doesn't have much meaning in the current age."⁶⁷

⁶⁴ "Nihon bankoku hakurankai no motarsau mono" [What the Japan Expo Will Bring About], *taidan* dialogue between Tange Kenzo and Kawazoe Noboru, *Shin kenchiku* (May 1970): 147, quoted from Gardner, "The 1970 Osaka Expo and/as Science Fiction," *Review of Japanese Culture and Society*, Vol. 23, Expo '70 and Japanese Art: Dissonant Voices (December 2011), 35.

⁶⁵ Quoted from Gardner, "The 1970 Osaka Expo and/as Science Fiction," 35.

⁶⁶ *Ibid.*, 36.

⁶⁷ "Nihon bankoku hakurankai no motarsau mono" [What the Japan Expo Will Bring About], *taidan* dialogue between Tange Kenzo and Kawazoe Noboru, *Shin kenchiku* (May 1970): 147, quoted from Gardner, "The 1970 Osaka Expo and/as Science Fiction," 35.

The Japanese National Pavilion echoed the broader approach described by Expo '70 planners. The science and technology galleries raised questions about how science, through technology, should transform society. Interactive models demonstrated the need for earthquake resistant architecture in Japan while a mockup of an “ideal” industrial city “of the sun and greenery” integrated environmentally conscious design like an air-pollution observatory, greenbelts, and low-sulfur fuel oil. A magnet-levitated high-speed train model, impressed visitors and suggested imminent advances in transportation which would allow visitors to travel from Tokyo to Osaka in slightly over an hour. As Nobumichi Ariga has argued, these exhibits were “intended to highlight independent technologies,” a goal tied to a wider “discourse on independent technology [that] had become dominant among the [Japanese] authorities by the end of the 1960s.”⁶⁸ Like other elements of Expo '70, the Japanese Pavilion was not just future facing. As Ariga observed,, it reflected an effort “by a growing nation to fashion itself as a modern country,” by outlining a probable future built on Japanese innovation and economic growth.⁶⁹

Visiting the Expo

When Expo '70 opened in March, massive crowds formed at the American Pavilion, which prompted officials to extend pavilion hours. From the moment the expo opened in the morning until it closed at night, a long continuous line snaked from the entrance of the pavilion. An article in *Nihon Keizai* described the experience:

⁶⁸ Ariga, “Presenting the Past, Present, and Future of Technological Innovation,” 227-229

⁶⁹ *Ibid.*, 222.

At the entrance, guards group visitors into about 100 persons. “You’re now about to land on the moon- in ten seconds,” says a guard. Children waiting in line chorus: “10, 9, 8, 7...” “Zero! Please enter and enjoy yourself.” After the humorous exchange, visitors push through the revolving door.⁷⁰

When visitors entered the American Pavilion, they took a prescribed path that wound through exhibits on photography, American painting, sports, architecture, folk arts, and contemporary art before reaching a large open area devoted to U.S. space accomplishments. All of these exhibits were housed in a giant cable-stiffened pneumatic dome, based on a concept first developed by NASA in 1967. The Pavilion, which the media often referred to the building as a “Band-Aid” or “giant pincushion,” had an understated appearance from the outside but was open and airy inside. This low-posture architecture was meant to communicate that the U.S. was a superpower that did not have to prove its might, especially in contrast to the Soviet Pavilion, which soared above all other buildings at the Expo.⁷¹

[Insert image: American Pavilion 306 EX-311 a LEM and Orbiter007.tif]

[Caption: Crowds snack through the space exhibit at the American Pavilion at Expo '70. Credit: NARA]

⁷⁰ The *Nihon Keizai* had a circulation of 700,000 in 1970. Yukio Kawahara translated the article for the American Ambassador. Yukio Kawahara to US Ambassador, 26 April 1970, Box 14, Entry A1 42, RG 306, NARA.

⁷¹ See: Garn, *Exit to Tomorrow*. 176; Jack Masey to Donald Slayton, Director of Flight Crew Operations at NASA. May 6, 1969, Box 25, Folder “Space Exhibit- NASA” RG 306 NARA; USIA 34th Semiannual Review of Operations January-June 1970, Box 11, Folder “General” RG 306 NARA; Jack Masey and Conway Lloyd Morgan, *Cold War Confrontations* (2008).

The *Shukan Shonen*, a weekly Japanese youth magazine, narrated the excitement many visitors felt when reaching the last exhibit in the American Pavilion: “You pass through a long, concrete tunnel and enter the light, airy exhibit area that looks like a gymnasium... pay attention overhead,” instructs the author of an article. “Go down a flight of stairs,” he continues, “and you’re in the space exhibit area. Your pace quickens unconsciously.” The article describes scientific satellites hanging from the ceiling, the Gemini 12 capsule, a lunar surface mock-up, space suits, food, and equipment.⁷² The USIA had worked closely with NASA to ensure that the full-scale replica of the Apollo 11 landing site mirrored what the visitors would have seen on their television sets when they watched Buzz Aldrin working with a core sample device while Neil Armstrong took pictures in July 1969.⁷³

The author of the *Shukan Shonen* article explained, “The biggest single attraction of the Expo ‘70 Osaka Exhibition is the ‘Moon Rock.’ There are people who practically run out of the U.S. Pavilion once they’ve reached this spot.” This popular publication’s enthusiastic description of the moon rock parallels much of the Japanese media commentary during the expo.⁷⁴ The *Nihon Keizai* describes a very similar experience: “Let’s now take a peek at the reason for the popularity of the U.S. Pavilion...“Visitors in front of the “Moon Rock” without fail gasp in surprise. The rock itself is not much—a black lump a little larger than a fist. But it came from the moon—the moon that brightens roads at night from way out in space—the Moon that existed only in the world of fairy tales.”⁷⁵ The *Mainichi Daily News* described a similar scene:

⁷² Yukio Kawahara to the American ambassador, 8 August 1970, Box 21, Folder “Press Relations,” Entry !054, RG 306, NARA.

⁷³ Jack Masey to Julian Scheer, 4 August 1969, Box 25 “Space Exhibit- NASA,” Entry 2054, RG 306, NARA; Pat Ezell to Thom Geismar, 27 October 1969, Box 25, “Space Exhibit- General (design)” RG 306 NARA; USIA Memo on loan agreement from Whirlpool Corp. Undated Box 25 “Space Food,” Entry 2054, RG 306, NARA; Masey and Morgan, *Cold War Confrontations*, 374-398.

⁷⁴ Yukio Kawahara to the American ambassador, 8 August 1970, Box 21, Folder “Press Relations,” Entry !054, RG 306, NARA.

⁷⁵ Yukio Kawahara to US Ambassador, 26 April 1970, Box 14, Entry A1 42, RG 306, NARA.

“Thousands of people join the throng in a long queue waiting for entrance, taking the attitude that two to three-hour wait ‘can’t be helped.’ Almost all of them are there for a glimpse of the first souvenir from space, the moon rock.” Unlike the spacious Soviet pavilion, the United States pavilion was small and had a very limited capacity, making demand higher and lines longer. Some visitors waited in line for four to six hours to gain admittance to the American Pavilion. As one man explained why he decided to wait in a long line, “We cannot return home without seeing the moon rock.”⁷⁶

Both the Japanese and foreign press covered the moon rock exhibit extensively before and during Expo ‘70. Most articles that discussed the American Pavilion highlighted the moon rock display above other exhibits. The *Japan Times* predicted, “Of course the key exhibition, and probably the most popular, will be the display of an actual sample of moon rock which was obtained by American astronauts on their lunar mission.”⁷⁷ Before Expo ‘70 opened, a substantial percentage of articles on the expo featured the image of the moon rock, while descriptions of the American Pavilion often started off with information about the size, rarity, and importance of the specimen. During the expo, newspapers featured images of the exhibit with captions like, “To get in the U.S. Pavilion for a look at the moon rock is one of the hardest jobs at the EXPO site.”⁷⁸ Although there was a preexisting enthusiasm for space exploration in Japan, the efforts of the USIA along with the media’s coverage of the pavilion boosted the image

⁷⁶ “EXPO Race Seen At US Pavilion,” *Mainichi Daily News*, 30 March 1970, Box 18, Folder “Press Clippings Regarding U.S. Pavilion Jan 21, 1970-March 13, 1970,” Entry 2054, RG 306, NARA.

⁷⁷ “Parade of Pavilions” *The Japan Times*, 9 March 1970.

⁷⁸ *Mainichi Daily News*, 21 March 1970, Box 18, Folder “Press Clippings Regarding U.S. Pavilion Jan 21, 1970-March 13, 1970,” Entry 1054, RG 306, NARA.

of the moon rock as the ‘must see’ artifact at the expo, a phenomenon confirmed by many expo attendees.⁷⁹

With thousands of new visitors pouring into the pavilion every hour, traffic jams quickly formed in front of the moon rock case.⁸⁰ *New York Times* art critic John Canaday commented that the entire structure of the American Pavilion, “for 999 visitors out of 1,000 is only a shelter for a piece of moon rock... the U.S. Pavilion might just as well be cleared right now of everything but the moon rock, which would make room for the crowds that want to see it.”⁸¹ Echoing Canaday’s quip, American Pavilion Guide Conan Grames recalled that “when you said to people “do you have a question,” that was the question you got: “where is the moon rock?”⁸² Charles Lynch of the *Ottawa Citizen* agreed. “The Japanese are fascinated by a hunk of the Moon,” he explained, “and the U.S. could have skipped building a pavilion and just done the moon bit, and dominated the expo.” Even in foul weather, he continued, a huge line remained outside the United States Pavilion while no one waited to get into the Soviet Pavilion.⁸³

The media often compared the American and Soviet Pavilions in their coverage of the expo. The Soviet Pavilion, the largest at the fairground, contained almost three times more floor space than the American Pavilion. Like the American Pavilion, its primary exhibits focused on space exploration. Although its halls were filled with precision instruments, a hydro-jetliner and models of spaceships, it did not capture the media attention that the moon rock claimed. An American Embassy telegram reported to President Richard Nixon that when the Expo officially

⁷⁹ David Anderson, Hiroyuki Shimizu, and V Yau, EXPO 70’ English transcription: Participant interviews by emergent themes. Unpublished report on: “Visitors’ long-term memories of the 1970 Japan World Exposition, Osaka,” 2005, Faculty of Education, University of British Columbia. Vancouver, Canada.

⁸⁰ Philip Shabecoff, “Moon Rock Fascinates Osaka Crowd,” *The New York Times*, 16 March 1970, 14.

⁸¹ John Canaday, “A Wonderful Land Inhabited by Wonderful People- I Mean Canada,” *New York Times*, 5 April 1970, 111.

⁸² Conan Grames, interview with author, August 16, 2012.

⁸³ Charles Lynch, “Farewell to Expo,” *Ottawa Citizen*, Box 19, Folder “Press Clippings- Misc.,” Entry 1054, RG 306, NARA.

opened, the media “said U.S. was [the] ‘star’ pavilion, drawing approximately 90,000 visitors to the Soviet’s about 70,000 and the Japanese National Pavilion just a little less.” The coverage of the expo, the telegram said, focused on “the ‘draw’ of [the] moon rock and [the] ‘actual’ hardware in [the] U.S. Space Exhibit.”⁸⁴ An article in *Kobe Shimbun*, a Japanese newspaper, supports this claim. The United States was “the winner in space competition” with the Soviet Union, the article explained, because its displayed artifacts were real. “In the end,” the article noted, “it’s the impact of real things. The Soviets also have a space exhibit. But they are models and cannot compare with the real Apollo.”⁸⁵ Although crowds could not touch the moon rock, they knew it was rare and precious, an impression reinforced by its elaborate gemstone-like presentation.

Space exploration images and themes saturated all corners of the fairgrounds, not just the exhibit halls of the American and Soviet pavilions. A large image of the Apollo 8 *Earthrise* photograph buttressed the official Expo guide’s description of the central theme of the expo: “Progress and Harmony for Mankind.” Standing in the center of the fairground the 70-meter tall “Golden Sun Tower,” became the most prominent landmark of the expo, housing an exhibit on the evolution of man crowned by a display of the “Universe” on the upper level. Expoland, the amusement park within the exposition, also themed many of its attractions on space exploration. Five large balloons representing unknown planets greeted visitors at the entrance, while rides like a space station the Astrojet, simulated taking a trip to outer space.⁸⁶ Some of the Japanese

⁸⁴ Draft of the USIA Eight Annual Report to Congress on Special International Exhibitions for the fiscal year 1970, 17 August 1970, Box 11, Folder “General,” Entry 2054, RG 306, NARA; US Embassy in Tokyo to USIA Washington, 16 March 1970, Box 16, Folder “General Reports- Press Preview (3/10/70) Media Reaction,” Entry 2054, RG 306, NARA; USIA Memo for President Richard Nixon, 17 March 1970, Box 11, Folder “EXH 8-1 Reactions- Criticism Public,” Entry 1054, RG 306, NARA.

⁸⁵ Article translated by USIA. Press comment summary on the US pavilion at Osaka. 28 August 1970, Box 14, Folder “Exhibits- Osaka 70 1970,” Entry A1 42, RG 306, NARA.

⁸⁶ *Expo '70 Official Guide* (Suita, Japan: The Japan Association for the 1970 World Exposition, 1970)

private pavilions featured space-related themes and exhibits as well. The Mitsui Group built a dome where visitors could take a “trip into outer space,” with the aid of a series of projectors, electronic equipment, and special effects. The Hitachi Group Pavilion featured a “sky lobby” and computerized flying simulation, letting visitors feel as if they were aboard flying saucers. Various Japanese private pavilions’ food concessions themed their menu items on space exploration, with offerings like a “Space Course,” “Apollo Curry and Rice,” “Apollo 12 Rice Cake” and “Apollo Lunch.”⁸⁷

Responses to the Moon Rock

The moon rock was undeniably popular. Its prominent role in media coverage, in scholarship, and in Expo attendees’ memories, cannot be denied. But the significance of this popularity, and whether or not it served U.S. foreign relations interests, is less clear. Although official reports and newspaper coverage applauded the moon rock exhibit, reactions in Japan were more diverse and complicated than these initial accounts might suggest. One visitor, a man in his mid-thirties who visited the expo with his wife, articulated a common reaction “What is the use of this [moon rock]?” As far as he could tell, “it was just a piece of trophy brought from the Moon.”⁸⁸

Thirty-four years after Expo ‘70, David Anderson and Hiroyuki Shimizu conducted a series of oral history interviews with expo attendees to study the long-term memories of exhibitions. When asked about the significance of the expo in general, interviewees often referred to the moon rock even if they could not remember what the rock looked like in person. One university student recalled, “everyone was saying “The moon rock! The moon rock!” We

⁸⁷ Ibid.

⁸⁸ Anderson, D., Shimizu, H., & Yau, V., (2005).

lined up, we reached the end and saw it. I don't remember what it looked like; I only remember that we lined up!" Many interviewees said that the moon rock was the most memorable part of the entire Expo after the size of the crowds and their frustration over not being able to see all the exposition had to offer. But, although it held a prominent place in their memories, descriptions of the rock are vague, and many questioned the rationale of the U.S. retrieving rocks from the Moon.⁸⁹

A housewife who visited the Expo five times commented on how unimpressed she was by the display: "Probably the most popular place was for the moon rock. It wasn't that big at all! So, I was SO disappointed! We saw it about two times, but the first time we saw it we were so shocked! And we said to ourselves "This is the moon rock?" It wasn't any different to stones here on Earth." Viewed with the naked eye, 12055 was not distinguishable from earth rocks. Like many scientific specimens, without the aid of instruments, it is impossible to simply "see" the evidence hidden at the microscopic level. What expo attendees could see, was a rock that looked like it was found in someone's backyard, propped up carefully on a pedestal.⁹⁰

Another woman who made her living fixing kimonos, also surprised by the size of the rock said, "I thought it was going to be big, but it was actually quite small!" A forty-two-year-old woman from Akashi, commented it "looked like the color of a rat—black, charcoal!" A little girl, impressed by the huge crowds, remembered,

At that time everyone was talking about the moon rock. When I saw the rock, it seemed like it was quite a distance away, and it was just a rock, I was so

⁸⁹ Anderson and Shimizu, "Recollections of Expo 70," 439.

⁹⁰ For a discussion of lunar science, including see Donald Beattie, *Taking Science to the Moon: Lunar Experiments and the Apollo Program* (Baltimore: Johns Hopkins University Press, 2001).

disappointed. It was really just a normal rock. I thought if I saw it up close for real it would be either twinkling or glittering. I was very disappointed. I said to myself “I lined up for this?! I remember that well.

A twenty-eight-year-old woman recalled, “I remember not feeling very impressed. I didn’t feel disappointed, but I felt “this is what it is... hmmm!” After waiting in line for five hours, a sixth-grade elementary student, responded, “Wow it’s a moon rock, and then as [she] looked at it very closely,” asked herself, “is it really a moon rock?” Perhaps surprised by its humble appearance, this expo attendee was enthusiastic about seeing the rock and said “wow, wow,” even though what she saw did not leave a large impression.⁹¹

American Pavilion Guide John Baer recalled that “the moon rock was the biggest draw. It was also the most boring place to be posted. Being at the moon rock was all about keeping people moving and saying yes, it was the real thing.” Like the other American guides in Osaka for the Expo, Baer spoke Japanese fluently. Throughout a week he would be stationed at various places around the Pavilion, answering questions from visitors. He explained that “Almost everyone asked if it [the moon rock] was the real thing. And that’s about all.” When asked if he found the moon rock interesting or compelling he said “Not at all. It just looked like any rock, encased in glass.”⁹² This frequent comparison of 12055 to earth rocks is suggestive of the growing questioning of the purpose and significance of American space exploration prompted by moon rock exhibits throughout the world, which sharpened criticism of wasteful government spending, U.S. involvement in Vietnam and civil rights tensions.⁹³

⁹¹ Anderson, D., Shimizu, H., & Yau, V., (2005).

⁹² John Baer, email correspondence, July 27, 2012.

⁹³ While the moon rock at Expo’ 70 drew the largest crowds, additional moon rocks exhibits on each continent also illustrate the tension between enthusiasm and disappointment, between celebration and critique of government

Mail Art by Sending Stones, a project conceived by Horikawa Michio, a Niigata-based artist and founding member of the avant-garde “Group Ultra Niigata” or GUN, captured the broader sentiment expressed in Japan about the value of moon rocks. As Neil Armstrong was taking his first steps on the Moon in July 1969, Horikawa stepped onto the dry riverbed of the Shinano River in Western Japan. With the coverage of the Apollo 11 mission playing on a portable radio in the background, Horikawa assigned his class of local Middle School students to collect “a stone on the Earth weighing 300 grams,” paralleling in real-time Aldrin and Armstrong’s collection of moon rocks. In a statement titled “69721115620,” a reference to the local time in Japan when Armstrong first stepped on the Moon, Horikawa explained, “I am not interested in rocks on the moon. Let us have a thought that will transcend this event.” He urged introspection and a heightened sense of the “physical existence of humankind.” Humans are made of chemical elements, like the moon rocks, but what sets them apart, Horikawa pointed out, is “emotion and passion.”⁹⁴ When recounting the story, Horikawa explained that he saw the simultaneous collection of rocks that day, from the Shinano riverbed in Japan and from the lunar surface by the Apollo 11 crew, as actions taking place in the same universe. Horikawa selected eleven of the rocks his students gathered, as a nod to the Apollo 11 mission number, wrapped wire around them, and affixed paper mailing tags. He then brought the rocks to the local post office and mailed them to artists and art critics. Although the only direct reference to Apollo 11

spending, which was often triggered by moon rock exhibits in this period. Within the first year, millions upon millions of people lined up to see this lunar material in USIA organized events around the world. *Report to the Congress from the President of the United States on United States Aeronautics and Space Activities*, 1970, 84. See also, Matthew Tribbe, *No Requiem for the Space Age: The Apollo Moon Landings and American Culture* (New York: Oxford University Press, 2014) 10-13.; Teasel Muir-Harmony, “Selling Space Capsules, Moon Rocks, and America,” 127–42.

⁹⁴ Michio Horikawa, “69721115620,” statement dated July 26, was first published in the Nakajo Middle School student council newspaper (August 9).

was the subtle inclusion of the time of the first lunar landing, according to Horikawa the reference to moon rocks, and the larger meaning, was clear to all the recipients.

Horikawa continued collecting stones from the riverbed with each new lunar mission. In December 1969, he sent President Nixon a black stone as a “Christmas present,” intended to convey three meanings. First, that Nixon should be focusing on Earth-based problems instead of the Moon. Second, the color of the stone referenced death in the Vietnam War as well as U.S. race problems. And lastly, as a symbolic protest akin to “stone throwing.” The American Embassy in Tokyo expressed Nixon’s “great appreciation for your thoughtfulness in sending him a most unusual Christmas gift” in an official thank-you letter. Asserting that earth rocks were just as important as moon rocks, and gathering earth rocks was equally important to gathering moon rocks, Horikawa’s project captured wide-spread questioning among the Japanese public of programs like Apollo. Horikawa also sent thirteen rocks to the *Tokyo Biennale 1970*, coinciding with the Apollo 13 mission launched in April 1970 as well as Expo ’70, just a short train ride away in Osaka.⁹⁵

Conclusion

Questions about the proper application of science and technology crystallized around, or in, the lump of basalt displayed at Expo ’70. Why spend billions of dollars to retrieve a rock that looks identical to earth rocks, visitors asked. What is the value of 12055? What does it mean for a nation to invest in an Apollo-like program? What types of scientific and technological programs should a society pursue? 12055 not only acted as a symbol of modernity and power but also of the values of a society that invests in Apollo-like engineering and scientific enterprises.

⁹⁵ Michio Horikawa, interview with author, June 2016; Reiko Tomii, *Radicalism in the Wilderness: International Contemporaneity and the 1960s Art in Japan* (Cambridge, MA: MIT Press, 2016)

For many expo attendees, the moon rock exhibit at Expo '70 illustrated the United States' squandering of its economic resources and aroused skepticism of American priorities and cultural norms. One pavilion visitor reflected in retrospect, "I don't agree with the American view of the world that pouring money into science and technology will improve human life."⁹⁶ This is a poignant statement, revealing the potential risks of using scientific specimen as diplomatic objects.

The impact of public diplomacy is notoriously difficult to measure. USIA Director Edward R. Murrow was known for his quip that no cash register rung when people's minds were changed. The USIA conducted polls, clipped newspaper articles, counted the number of program attendees, among other measures, but adding up the influence of agency programs on the hearts and minds of the world public, or their effect on U.S. political interests, would prove elusive throughout the 1960s and 1970s.⁹⁷ Even so, it is clear that 12055's seeming similarity to earth rocks, undercut the political message that exhibit designers and U.S. government officials had hoped the exhibit would convey. The rock became a problematic representation of American achievement precisely because its humble appearance and questionable value to Japanese audiences provided fodder for critiquing U.S. government initiatives as not only wasteful but also misguided and silly.

Japanese journalists branded the Expo '70 fairgrounds, "*mirai no toshi*" or "the city of the future."⁹⁸ Conflicting notions of progress and the future—especially what future society Japan should pursue—came to a head in front of 12055. This moon rock exhibition roused

⁹⁶ Anderson, D., Shimizu, H., & Yau, V., (2005).

⁹⁷ Dizard, *Inventing Public Diplomacy*, 5.; Although U.S. Congress criticized the USIA for not devising a satisfactory way to measure its influence, no sufficient measures had been found within the first twenty years of the agency's operation. See, Report to the Congress, "Telling America's Story To The World—Problems and Issues," United States Information Agency by the comptroller general for the United States, 25 March 1974.

⁹⁸ Gardner, "The 1970 Osaka Expo and/as Science Fiction," 26.

critical reassessments of American cultural norms and national priorities at a time when Japan exhibited its own vision of the future throughout the Expo '70 fairgrounds. The moon rock may have been the most popular exhibit at Expo '70, but popularity was not love or even high cultural regard. It graced the front pages of newspapers, prompted long, long lines, and captivated millions of people. But, the moon rock disappointed more than it awed. And although it clearly demonstrated the robustness of American engineering and scientific abilities, and evidenced that astronauts did in fact journey to the Moon, 12055 did not signal all the meanings U.S. officials sought to attach to the hunk of basalt. Its physical resemblance to earth rocks made the race to the Moon seem superfluous. Why spend billions of dollars to collect rocks on the moon, when we have our very own rocks here on Earth, many in Japan asked.

The moon rock prompted a broader discussion among Japanese audiences about the aims of American scientific and technological progress. Horikawa echoed many Japanese Expo attendee's responses to the American moon rock in a message affixed to an earth stone he sent President Nixon: "Nothing changes in the universe if humanity stood on the Moon and brought back stones."⁹⁹ In Osaka, American science diplomacy encountered its limit, as the moon rock exhibit became a nexus for debates about the soundness of American notions of modernity twenty-five years after WWII ended. Instead of looking across the Pacific, the emerging economic powerhouse looked inward, finding "independent technology" and "information exchange" better aligned with Japanese visions of the future.

⁹⁹ Charles Merewether and Rika Iezumi Hiro eds., *Art, Anti-Art, Non-Art: Experimentations in the Public Sphere in Postwar Japan, 1950-1970* (Getty Research Institute, 2007) 123.; Chris Abani, *Hands Washing Water* (Copper Canyon Press, 2013) 82.; Reiko Tomii, "After the "Descent to the Everyday": Japanese Collectivism from Hi Red Center to The Play, 1964-1973," in Blake Stimson and Gregory Sholette eds, *Collectivism After Modernism: The Art of Social Imagination After 1945* (University of Minnesota Press, 2007) 64.

Teasel Muir-Harmony is a curator at the Smithsonian National Air and Space Museum.