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TAKE THREE: THE MOON LANDING

Grounding the Space Race

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On July 15, 1969, while more than one million space enthusiasts flocked to Florida's Cape Canaveral to celebrate the final countdown of the Apollo 11 launch the following day, a less festive gathering took place just a few miles away in an empty field outside the western gate of the Kennedy Space Center. On one side of the clearing stood NASA's chief, Thomas O. Paine, with several space agency administrators, while at the other end waited the Southern Christian Leadership Conference's (SCLC) president, Ralph Abernathy, with twenty-five poor African American families, four scruffy mules pulling two rickety wagons, and, much to Paine's dismay, a phalanx of newspaper reporters and television news crews. When Abernathy's group began slowly marching hand-in-hand singing "We Shall Overcome," Paine and his entourage walked forward to meet them in the middle of the field. Abernathy then took a microphone, nodded toward the Apollo 11 rocket towering in the distance, and explained that his Poor People's Campaign had not traveled to the cape to protest the Apollo launch, but instead to demonstrate against the country's distorted sense of national priorities. "I want NASA scientists," he explained to the gathered press, "to tackle problems we face in society"[1] (Figure 1).

Other civil rights leaders had voiced similar concerns. "There is a striking absurdity in committing billions to reach the moon where no people live," explained Dr. Martin Luther King in December of 1966, "while the densely populated slums are allocated miniscule appropriations."[2] Although such worries involved a host of urban problems, from polluted drinking water to poor air quality to garbage-strewn streets, it was unhealthy housing that most concerned civil rights activists. "Some of those people watched men walk on the crater-pocked moonscape on television sets in rundown tenements in the ghettos of America," argued the National Urban League's executive director, Whitney Young. "They watched, while plaster peeled from the ceilings and rats scratched in the walls."[3]

To broadcast their concerns regarding the degraded urban environment, and the space race's role in exacerbating it, civil rights leaders employed tried-and-true strategies they had used during the 1950s and early 1960s to critique NASA in the early 1970s. Even before Abernathy had packed up his mules and left Cape Canaveral, for instance, other activists demanding cleaner inner cities organized a sit-in not at a Woolworth's counter in Greensboro, North Carolina, but rather underneath a full-size mock-up of the Apollo Lunar Landing Module at Mission Control in Houston, Texas.[4] Two years later, in a protest intended to mirror the Selma-to-Montgomery march of 1965, civil rights leaders planned a three-day, seventy-five-mile "March Against Moon Rocks" from Daytona Beach, Florida, to Cape Canaveral to demand that federal tax dollars be redirected from exploring space to helping

[1]Julian Scheer, "The 'Sunday of the Space Age'," *Washington Post*, December 8, 1972, A26.

[2]U.S. Congress, Senate Committee on Government Operations, Subcommittee on the Executive Reorganization, *Federal Role in Urban Affairs*, "Testimony of the Reverend Martin Luther King, Jr.," 89 Cong., 2nd sess., December 15, 1966, 2970.

[3]Whitney M. Young, "Men on the Moon," *Washington Daily News*, July 28, 1969.

[4]For descriptions of this sit-in, see "Hunger Protest Held at NASA: Welfare Group Sits By LM Mock-Up," *Toledo Blade* (Ohio), July 21, 1969, 5.

Figure 1. SCLC president Ralph Abernathy during the Poor People's Campaign demonstration at the Kennedy Space Center, July 15, 1969, Getty Images/Bettmann.

"the plight of the working poor."[5] Additional anti-NASA activism aimed at drawing attention to urban blight included boycotts of television coverage of Apollo launches, lunar landings, and moonwalks, as well as nonviolent demonstrations that interrupted both ticker tape parades and celebratory dinners held for returning astronauts.[6]

The national media, like the reporters covering Abernathy's Apollo 11 protest, quickly publicized these concerns. A case in point was the illustration the Louisville, Kentucky, *Courier-Journal* published, entitled "American Know-How" (Figure 2).[7] Drawn by cartoonist Hugh Haynie, the drawing depicts an obviously malnourished African American boy covered in rags in a run-down, inner-city tenement; plaster peels from the walls, a drooping rod hangs torn curtains, and a rat scampers at the boy's feet while he stares, with toy rocket ship in hand, through a cracked window at a bright full moon. The coverage and popularity of Gil Scott-Heron's 1970 recording, "Whitey on the Moon," similarly reflected this growing public awareness. "A rat done bit my sister Nell/And Whitey's on the moon," intones Scott-Heron to the accompaniment of African drums. "Her face and arms begin to swell/And Whitey's on the moon." Scott-Heron then runs through a litany of urban ailments—from a lack of hot water, electric lights, and working toilets in inner-city apartments to drug addiction and

[5]For coverage of this protest, see Associated Press, "Poor People's March Called on Launch," *Sarasota Journal* (Florida), January 28, 1971, 1B.

[6]For examples of both formal and informal boycotts, see Edward Ezell, "Apollo: So What? Earth Turmoil Dims Triumph," *Williamson Daily News* (West Virginia), July 19, 1979, 20; and "The Talk of the Town: The Moon Hours," *New Yorker*, July 26, 1969, 26. For coverage of civil rights demonstrations during parades and dinners honoring astronauts, see Paul Montgomery, "Protests Interrupt City Welcome for Astronauts," *New York Times*, March 9, 1971, 1; and Steven V. Roberts, "Astronauts Find Mixed Reactions: The Uninvited Hold Protest as Diners Hail Crew," *New York Times*, August 15, 1969, 14.

[7]Hugh Haynie, "American Know-How," Louisville, Kentucky, *Courier-Journal*, July 17, 1969, np.

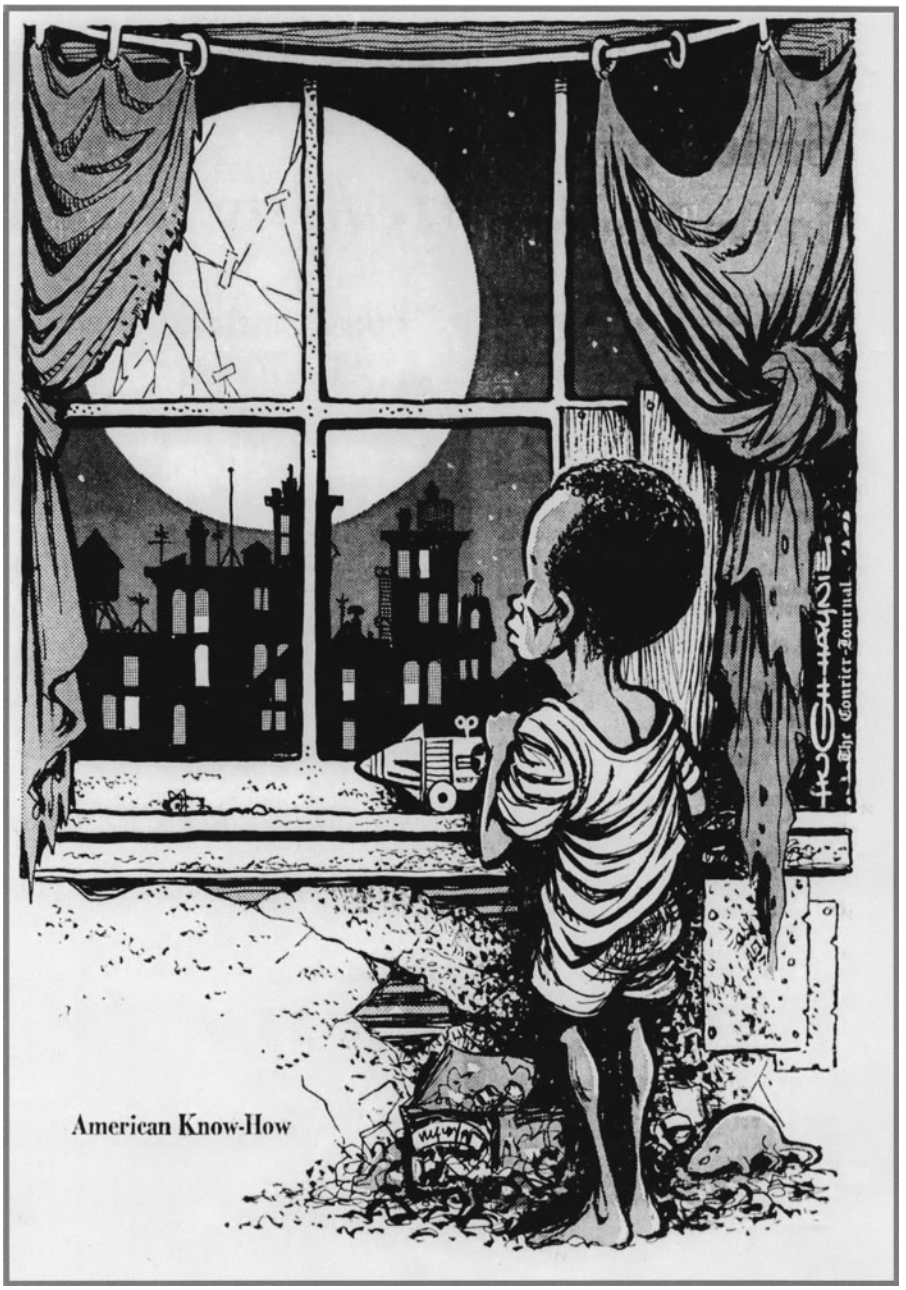

Figure 2. Hugh Haynie, "American Know-How," *Courier-Journal* (Louisville, KY), July 17, 1969. Gil Scott-Heron's song "Whitey on the Moon," on *Small Talk at 125th and Lenox* (Ace Records, 1970) made similar arguments: https://www.youtube.com/watch?v=goh2x_G0ct4&list=RDgoh2x_G0ct4#t=0

high medical bills associated with life in the unhealthy American ghetto—and tethers them to the cost of placing white men on the lunar surface.[8]

Civil rights activists were not alone in criticizing the space race for diverting both public attention and federal tax dollars from problems closer to home. College students from the New Left held sit-ins at several university laboratories responsible for developing space technologies

[8]Gil Scott-Heron, "Whitey on the Moon," on *Small Talk at 125th and Lenox*, Ace Records, 1970.

for NASA, which then retooled the hardware to help the U.S. military wage war in Vietnam. Environmentalists and environmental scientists conducted a public relations campaign, much of it appearing in the pages of the *Bulletin of the Atomic Scientists*, that criticized the space agency for polluting the Earth with its rockets and failing to include serious scientific experiments on the Apollo missions. Feminists during the 1970s, led by the National Organization for Women and *Ms.* magazine, lobbied Congress, initiated letter-writing campaigns, picketed NASA headquarters in Washington, DC, and even held mock beauty pageants with Apollo astronauts as contestants to protest the space agency's all-male astronaut corps. Even the hippie counterculture, which had its own massive gathering at Woodstock a mere month after the Apollo 11 liftoff, openly opposed what it called the "military-industrial-space complex" through its alternative music, art, guerilla theater, and experimentation with drug-induced "inner space."[9]

Such widespread grassroots disapproval of Apollo helped to weaken overall public support for space exploration. This was most obvious within the black community; a Gallup survey conducted in late July 1969, just days after Abernathy marched on the Kennedy Space Center, found that African Americans opposed a proposed mission to Mars by a three-to-one margin.[10] Such skepticism soon seeped into the populace at large. Again according to Gallup, which conducted more than thirty national polls between 1965 and 1975 on the American space program, popular support for Apollo began waning in the late 1960s and plunged throughout the 1970s as public concern with domestic issues rose.[11] Worry about the degraded, unhealthy urban environment was one such issue, and Congress responded in the early 1970s by slashing NASA's budget by more than twenty percent.[12]

In an effort to staunch NASA's plummeting popularity, along with its dwindling budget, the space agency began redirecting resources from outer space to inner cities. Administrators sponsored research, such as the study by General Electric titled *Applications of Aerospace Technologies to Urban Community Problems*.[13] They co-sponsored conferences with the municipal governments of struggling cities, such as Oakland, California, on "Space, Science, and Urban Life," during which engineers, scientists, and politicians discussed how systems management techniques involving space technology could be applied to urban settings.[14] The space agency even created its own Urban Systems Project Office, which was a cooperative effort among the space agency, the Department of Housing and Urban Development (HUD), and the Atomic Energy Commission, that was charged with researching, testing, and developing aerospace technologies to improve the urban environment.[15] "If we can overcome the problems of water and air pollution and sewage disposal for a trio of men in space," explained one NASA

[9]For an extensive discussion of grassroots opposition by these movements to NASA and the space race, see Neil M. Maher, *Apollo in the Age of Aquarius* (Cambridge, MA, 2017).

[10]George Gallup, "Public Cool to Manned Mars Landing," *Washington Post*, August 7, 1969, F4.

[11]For discussions of this drop in popular support for Apollo, see Herbert Krugman, "Public Attitudes Toward the Apollo Space Program, 1965–1975," *Journal of Communication*, no. 27 (Autumn 1977): 87–93.

[12]For historical data on NASA's total budget for these years in both real and in 2008 inflation-adjusted dollars, see United States President, United States, National Aeronautics and Space Council, *Aeronautics and Space Report of the President: Fiscal Year 2008 Activities* (Washington, DC, 2008), "Appendix D-1A: Space Activities of the U.S. Government, Historical Table of Budget Authority (in millions of real-year dollars)," 146, and "Appendix D-1B: Space Activities of the U.S. Government, Historical Table of Budget Authority (in millions of inflation-adjusted FY 2008 dollars)," 147.

[13]M. L. Feldman, L. A. Gonzalez, and A. B. Nadel, *Application of Aerospace Technologies to Urban Community Problems*, September 23, 1965, Document ID: 19660022604, Accession ID: 66N31894, Report Number: NASA-CR-76524; RM-65TMP-53, Contract-Grant-Task Number: NASA Order R-5177, NASA Technical Report Server, 2.

[14]*Space, Science, and Urban Life: Proceedings of a Conference Held in Oakland, California, March 28–30, 1963* (Washington, DC, 1963), 1.

[15]On the creation of NASA's Urban Systems Project Office, see "To Use Space Technology on Earth: Urban Systems Project Office Set Up Here: Hays Heads It," *Roundup* (Johnson Space Center newspaper), April 14, 1972, 4.

Figure 3. Aerial view of HUD low income housing project, which included heating, cooling, and waste management systems developed by NASA, in Jersey City, New Jersey, circa mid-1970s.

administrator at the Oakland conference, "we may learn much that is valuable about the same problems for our cities."[16]

During the 1970s, NASA put such learning into practice. In 1972, for example, scientists and engineers at NASA's Langley Research Center in Virginia, which had developed technology to recycle wastewater on board the Apollo spacecraft, began working with General Electric to design, fabricate, and test a similar water-treatment system for cities.[17] Two years later NASA teamed up with the Environmental Protection Agency to create an "air pollution detection program" that reconfigured instruments originally developed to identify contaminants in space capsule interiors to measure instead urban air pollution.[18] "Extension of this concept from space ships and space living quarters," argued one NASA publication, "indicates that it should be possible to provide atmospheres for entire cities."[19] Finally, perhaps because civil rights leaders were especially concerned with degraded living conditions, NASA technicians retooled the Apollo space capsule's energy-efficient heating and cooling system, as well its waste management system, and installed them in a low-income housing project being built by HUD in Jersey City, New Jersey (Figure 3).[20]

During the 1970s and into the early 1980s, the space agency reacted similarly to the criticisms of the antiwar, environmental, feminist, and counterculture movements. In response

[16]James Web, "Address by James E. Webb, Administrator National Aeronautics and Space Administration, Space, *Science and Urban Life Conference*, Oakland, California, March 30, 1963," NASA News Release, March 30, 1963, Folder: 3755: Webb-Space, Science and Urban Life Conference, Oakland, California, March 30, 1963, Washington, DC, NASA History Collection, NASA Headquarters Archive, Washington, DC, 14–15.

[17]Todd Anuskiewicz, William Thompson, and Sandra O'Hara, *Technology Utilization Program Report 1974*, NASA SP-5120 (Washington, DC, 1975), 40.

[18]Ibid., 37–39.

[19]Feldman et al., *Application of Aerospace Technologies*, 24–27.

[20]On this research by NASA, see "USPO Conducts Technical Studies for MIUS Project," *Roundup* (Johnson Space Center newspaper), December 20, 1974, 4. For descriptions of the Jersey City low-income housing project by HUD, see C. W. Hurley, J. D. Ryan, and C. W. Phillips, "Performance Analysis of The Jersey City Total Energy Site: Final Report," volume 13 in the HUD Utilities Demonstration Series (NBSIR 82-2474), Department of Housing and Urban Development (Washington, DC, 1982).

to protests from the New Left, NASA administrators scrapped research and development of several space technologies intended to aid the U.S. military in Vietnam and instead launched Landsat satellites to help developing countries, including Vietnam, assess their own natural resources. To appease environmentalists and environmental scientists, the space agency actively preserved land and conserved wildlife at Cape Canaveral while beefing up the quantity and quality of scientific experiments on its moon missions. To accommodate feminists, in 1973 NASA began medically testing women's bodies for possible space flight, and one decade later finally launched the first American woman, Sally Ride, into orbit.[21] Administrators at NASA even catered to the hippies, who were moving in droves to rural communes "off the grid," by retooling solar power technology used in the Apollo command module for use in individual homes. Although such efforts by NASA produced quite different results, with some movements benefitting substantially and others not at all, they illustrate the civilian space agency's attempt to respond to the American public.[22]

Abernathy's Poor People's Campaign at the Apollo 11 launch was one such public. While NASA's efforts to spin off space technologies to clean up the inner city ultimately failed to improve daily life for African American urbanites, Abernathy's protest successfully illustrated that the moon landing meant more, historically, than a victory lap after a decade-long race against the Russians. The liftoff on that hot summer day in July of 1969, along with additional demonstrations against space exploration by antiwar, environmental, feminist, and counterculture activists, fueled the grassroots movements of the 1960s and 1970s. These movements, in turn, transformed the space race by pressuring NASA to turn its technology back around, both literally and figuratively, on ourselves. Thus while the Apollo 11 moon landing helped launch the social and political revolution of the late 1960s, that revolution grounded the space race by redirecting it toward problems back on Earth.

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[21]Many second wave feminists were aware not only that the Soviet Union launched into space the first woman, Valentina Tereshkova, but also that in the early 1960s thirteen American women underwent medical examinations at a private clinic to assess their physiology for space flight. For a wonderful analysis of this early history, see Margaret Weitekamp, *Right Stuff, Wrong Sex: America's First Women in Space Program* (Baltimore, 2005).

[22]Maher, *Apollo in the Age of Aquarius*.