

gallery



NEIL MAHER ON SHOOTING THE MOON

ON 22 APRIL 1970, the first Earth Day, citizens paraded, rallied, and protested for the environment with drawings, paintings, and illustrations—but not with photographs—of the entire Earth. No such photograph existed. In 1970, the reigning iconic image of the Earth from space was the first picture shown here, Earthrise, taken by Apollo 8 in late December of 1968. On 7 December 1972, an Apollo 17 astronaut snapped the second photograph below, which quickly replaced Earthrise as the image of Earth from space for an American public ready to “Think Globally, Act Locally.”

This essay explores the connections between technology, nature, and narrative in the production and reception of these two popular NASA photographs. While both these pictures are familiar to Americans today, the stories they tell are less well known, surprisingly divergent, and indicate that whether we are hiking close to home with map and compass or rocketing toward the Moon, technology mediates our contact with the environment and in doing so shapes the stories we tell about nature. As important, these extraterrestrial tales also suggest how the relationship between nature and technology in American culture shifted during four of the most turbulent years of the postwar period.¹

The technology used to create and publicize these two photographs was nearly identical. Both the Apollo 8 and Apollo 17 missions depended on three-stage Saturn 5 rockets, developed by NASA’s Wernher Von Braun, to transport astronauts far enough from Earth—approximately 240,000 nautical miles—to peer back at the entire planet. Astronauts from both missions also used similar photographic equipment; Apollo 8’s William Anders and Apollo 17’s Harrison Schmitt each used a 70mm handheld Hasselblad camera to take the photographs, and special high-resolution color film developed by Kodak to account for the absence in space of an atmospheric filter for light. Finally, technology helped make both images famous in the United States and abroad. The new medium of television made Earthrise an instant sensation when on Christmas Eve 1968, days before NASA released the photograph in printed form, Apollo 8 astronauts beamed



Photos
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it back live to TV sets around the world while taking turns reading from the *Book of Genesis*. For Whole Earth, NASA relied instead on print media, distributing the photograph to the press just twelve hours after Apollo 17's splashdown on 19 December 1972.²

The nature framed, recorded, and promoted by these technologies was also similar at first glance. The first image, Earthrise, portrayed nature through a spectrum of color; the white swirl of clouds, the deep blue of oceans, the light brown of land, and the dark black of the space environment. Nature in Whole Earth, the second photograph, seemed like a close-up version of Earthrise. "Wispy clouds add an unreal touch over the deep-blue seas and brown continent," reported the *Chicago Tribune* on 24 December 1972, just days after NASA released this photograph to the press.³ Yet Earthrise contained two elements not found four years later in Whole Earth: the lunar landscape, sloping in gray from left to right across the foreground of the frame, and the terminator line dividing nocturnal from diurnal environments along the middle portion of the planet. Whole Earth in 1972 was the first photograph of the entire planet free from solar shadow.

While the technology used and the nature depicted in these photographs were similar, the narratives surrounding the images differed. For Earthrise, the story began on 15 July 1960, when John F. Kennedy accepted the Democratic presidential nomination in Los Angeles, California. Declaring to his audience that he "faced west on what was once the last frontier," the future president announced that our westward experience was far from over. As Kennedy explained, "the problems are not all solved and the battles are not all won—and we stand today on the edge of a New Frontier."⁴ Placing a man on the Moon before the decade ended was integral to Kennedy's vision, and the Earthrise photograph, snapped by Apollo 8 as part of its mission to map the lunar surface for possible landing sites for Apollo 11, helped convert this campaign rhetoric into political reality.⁵ The image, with the lunar surface in the foreground, also indicated that during the late 1960s NASA had its sights fixed firmly on the Moon.

At the time, Earthrise was only the most recent in a long line of photographs enlisting nature to support American expansion at home and abroad. As early as 1868, photographs by Timothy O'Sullivan depicting the West's natural resources aided Clarence King in securing additional funding for his Fortieth Parallel Expedition, while four years later pictures by three photographers, including William Henry Jackson, helped convince Congress to establish Yellowstone National Park. As early as 1870, this practice of photographing nature to defend the country's expansion had gone international: In that year the federal government sent O'Sullivan to Panama to photograph landscapes for possible canal routes and later enlisted scores of photographers to document and support American efforts in both the Philippines and Haiti.⁶ Earthrise played a similar role. By figuratively depicting Kennedy's New Frontier in its sloping lunar surface, the Apollo 8 photograph helped extend America's Manifest Destiny into the ultimate wilderness—outer space.⁷

While Earthrise suggested an extension of America's land grab into the extraterrestrial, it also represented a shift in the frontier ideal from the natural

to the technological. Technology, Kennedy believed, was key not only to progress on the New Frontier but also to winning the Cold War. As Kennedy explained to Congress in May of 1961, by developing lunar spacecraft, liquid fuel boosters, and powerful engines capable of vertically lifting thousands of pounds, the United States could place men on the Moon by decade's end and, more importantly, "win the battle that is now going on around the world between freedom and tyranny."⁸ The moonscape in this first NASA photograph thus suggested more than possible landing sites for Apollo 11. Six months before Neil Armstrong took "one giant leap for mankind," Earthrise proclaimed to the world that the United States had already won the space race.

The Whole Earth photograph of 1972 tells a different story about the relationship between technology and nature in postwar America. Like Earthrise, this story also has roots in the California of the 1960s. Yet Whole Earth was the brainchild of a San Franciscan named Stewart Brand, who after ingesting Haight-Ashbury hallucinogens in February of 1966 wondered why we as a culture had not yet seen a photograph of the entire planet. If we had a color picture of the whole Earth, he argued at the time, "no one would ever perceive things in the same way."⁹ To spread his idea, Brand printed up several hundred buttons with the simple question: "Why Haven't We Seen a Photograph of the Whole Earth Yet?," and hawked them for a quarter apiece to college students at Berkeley, Stanford, Harvard, and MIT. He also mailed them to members of Congress, United States and Russian scientists, and to Marshall McLuhan and Buckminster Fuller. Soon, Brand's buttons were visible on shirt collars and lapels around Washington, D.C., and at NASA. Six years later Apollo 17 snapped Whole Earth.

Whereas the Earthrise narrative symbolized the continuation of the American frontier into outer space, the Whole Earth story erased that frontier by eliminating all reference to the lunar surface. Instead, this second photograph replaced the idea of the American frontier with a vision of non-American nature. Unlike Earthrise, which depicted the white, blue, and brown of generic clouds, seas, and land, Whole Earth portrayed identifiable environments, including the snow-capped terrain of the Antarctic in the south, the deep waters of the South Atlantic in the west and the Indian Ocean to the east, and in the north the arid lands of Africa and the Arabian Peninsula, which at the time, in December of 1972, were experiencing severe drought. By centralizing Africa, the Middle East, and Antarctica, argues geographer Denis Cosgrove, the Apollo 17 photograph "upsets conventional Western cartographic conventions."¹⁰ Whole Earth de-centered the United States and replaced it with an image of a more global natural environment.

Along with debunking the frontier narrative suggested in Earthrise, the missing moonscape in Whole Earth also provided an alternate tale about technology during the early 1970s. In Apollo 8's Earthrise, the ability to photograph the lunar surface was integral to Kennedy's belief that American space technology could help the United States win the Cold War. Whole Earth, on the other hand, pointed its technology not at new frontiers in space, but at an environmentally threatened home. Those like Stewart Brand, who embraced this new and powerful perspective of Earth, were not against technology but for it if

used in an environmentally sensitive way. E. F. Shumacher's "appropriate technology," Murray Bookchin's notion of "ecotechnologies," and of course Brand's *Whole Earth Catalog* were all part of this countercultural movement during the early 1970s that promoted alternative technologies such as windmills, thermal windows, and solar power cells as means to a more eco-friendly society.¹¹

What accounts for these competing tales? Why does the Earthrise story, which has its roots in the Cold War's use of technology to explore, map, and promote nature on America's final frontier, give way to a countercultural Whole Earth narrative that holds out the possibility of a technological salve for a sickly global environment? One possible answer lies in the years between Earthrise and Whole Earth, when the first Earth Day sparked the modern environmental movement.

Before that day in 1970, NASA had focused on examining nature "out there" on places like the Moon. Since then, however, NASA increasingly has examined nature back here on Earth. The process began in earnest in 1972, soon after Apollo 17 took the Whole Earth picture, when NASA launched its first Landsat satellite to help examine ecological changes from soil erosion and deforestation to ocean dumping, air pollution, and urban sprawl. It continues today through the space agency's "Mission to Planet Earth," which uses a network of space satellites to measure environmental change on a global scale.¹² As NASA continues to develop such technologies in the years to come, the people of planet Earth will continue to experience nature in novel ways, and to tell new stories about the environment we call home.

Neil Maher is assistant professor in the Federated History Department at the New Jersey Institute of Technology and Rutgers University, Newark. He is finishing revisions on his manuscript, *Nature's New Deal: The Civilian Conservation Corps and the Roots of the American Environmental Movement*, and will spend next year at the Smithsonian Institution's Air and Space Museum researching his next book project on the environmental history of NASA and the space race.

NOTES

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1. On technology, nature, and narrative as mutually constitutive, see David Nye, *Narratives and Spaces: Technology and the Construction of American Culture* (New York: Columbia University Press, 1997), especially the introduction. Many of my ideas regarding narrative in environmental history come from William Cronon, "A Place for Stories: Nature, History, and Narrative," *The Journal of American History* 78 (March 1992): 1347-76. The literature on these two photographs is scant. For the best analysis, see Denis Cosgrove, "Contested Global Visions: One-World, Whole-Earth, and the Apollo Space Photographs," *Annals of the Association of American Geographers* 84 (1994): 270-94.
2. On the technological history of the Saturn 5 rocket, see Walter McDougall, *The Heavens and the Earth: A Political History of the Space Age* (Baltimore: Johns Hopkins

- University Press, 1985), 196-98. On the development of photographic equipment used by NASA, see Ron Schick and Julie Van Haaften, *The View From Space: American Astronaut Photography, 1962-1972* (New York: C.N. Potter, Distributed by Crown, 1988), 12, 92. On the televised image of Earthrise, see Cosgrove, "Contested Global Visions," 275; and Vicki Goldberg, *The Power of Photography: How Photographs Changed Our Lives* (New York: Abbeville Press, 1991), 54-56.
3. "One Last View of Earth," *Chicago Tribune*, 24 December 1972. The photograph appeared on the front page of the Sunday edition along with a one-paragraph caption.
 4. "Let the Word Go Forth": *The Speeches, Statements, and Writings of John F. Kennedy* (New York: Delacorte Press, 1988), 100-2, as quoted in Patricia Nelson Limerick, "The Adventures of the Frontier in the Twentieth Century," in *The Frontier in American Culture: An Exhibition at the Newberry Library, August 26, 1994-January 7, 1995*, ed. Richard White, et al. (Berkeley: University of California Press, 1994), 80.
 5. On Apollo 8's mission to map the lunar surface, see Cosgrove, "Contested Global Visions," 274.
 6. There is a rich literature on the links between nature photography and imperialism. For the American West, see Goldberg, *Power of Photography*, 43-45. For international examples, see Nancy Stepan, *Picturing Tropical Nature* (Ithaca, N.Y.: Cornell University Press, 2001); James Ryan, *Picturing Empire: Photography and the Visualization of the British Empire* (Chicago: University Press of Chicago, 1998); Eleanor Hight and Gary D. Sampson, eds., *Colonialist Photography: Imagining Race and Place* (New York: Routledge, 2002); and Benito Vergara, *Displaying Filipinos: Photography and Colonialism in Early Twentieth-Century Philippines* (University of the Philippines Press, 1995).
 7. This notion that the United States' space program represents an extension of America's Manifest Destiny is argued persuasively in Limerick, "Adventures of the Frontier," 89.
 8. John F. Kennedy, "Special Message to Congress on Urgent National Needs, 25 May 1961," *Public Papers of the Presidents of the United States, John F. Kennedy, January 20 to December 31, 1961* (Washington, D.C.: U.S. Government Printing Office, 1962), 205. Patricia Limerick makes a similar argument about the technological frontier in her essay, "Adventures of the Frontier," 88. For the argument that the American frontier has become a metaphor for progress, see David Wrobel, *The End of American Exceptionalism: Frontier Anxiety from the Old West to the New Deal* (Lawrence: University of Kansas Press, 1993), 145.
 9. Stewart Brand, "Why Haven't We Seen the Whole Earth Yet?," in *The Sixties: The Decade Remembered Now, By The People Who Lived it Then*, ed. Linda Obst (New York: Random House/Rolling Stone Press, 1977), 168. See also, Stewart Brand, "The Earth from Space," *Rolling Stone*, 15 May 2003, 124; and Goldberg, *Power of Photography*, 54.
 10. Denis Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination* (Baltimore: Johns Hopkins University Press, 2001), 261.
 11. For a wonderful examination of the appropriate-technology movement, see Andrew Kirk, "Appropriating Technology: The Whole Earth Catalog and Counterculture Environmental Politics," *Environmental History* 6 (July 2001): 374-94.
 12. On the history of Landsat, see Pamela Mack, *Viewing the Earth: The Social Construction of the Landsat Satellite System* (Cambridge: MIT Press, 1990). On NASA's "Mission to Planet Earth," see William Stevens, "NASA Plans a 'Mission to Planet Earth,'" *New York Times*, 25 July 1989, C1; William Stevens, "Huge Space Platforms Seen as Distorting Studies of Earth," *New York Times*, 19 June 1990, C1; and Harold Schmeck Jr., "Earth Satellites Viewed as Vital Tools in Protecting World Resources as Population Soars," *New York Times*, 9 June 1970, 21.