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Δ GYRE ⊙ OF STARS:
LITA ΔLBUQUERQUE'S STELLAR ΔXIS

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1. The helicopter circled fifteen hundred feet above the Baldwin Hills in Los Angeles. Photographer Michael Light was pushing himself as far out of the aircraft as the seatbelt and shoulder straps would allow, his attention and camera lens on the three hundred-plus figures below us. Wearing red jumpsuits and arrayed in a spiral, the participants surrounded the Baldwin Hills Scenic Overlook, which stands in between the Los Angeles International Airport and Culver City. Another thousand feet above us a professional skydiver, Anne Helliwell, jumped out of a small plane and began to plummet toward the top of the hill, red smoke trailing from her heels. She nailed the center of the overlook with a crisp upright landing, which in turn triggered the slow procession of the figures down the steep hillside stairs, unspooling their spiral as they went with Lita Albuquerque, dressed in a white jumpsuit, leading the way. Albuquerque's *Spine of the Earth* (2012) had begun. Almost an hour later it ended, the last of the volunteers having reached the bottom of the 287 concrete stairs that descend five hundred feet to the street below. 1.1 It was a late January morning in 2012 with mild flying weather, and Light and I were in the helicopter to document Albuquerque's newest land art piece, which was based on her original *Spine of the Earth*, an ephemeral work executed in the Mojave performances that for the first time created a coherent narrative for the birth of the Los Angeles art scene. Organized and funded in large part by the Getty Research

Institute and Getty Trust, respectively, the sprawling Pacific Standard Time Performance and Public Art Festival included the work of some thirteen hundred artists in sixty-eight museum exhibitions and seventy gallery shows. It covered pop art to modernist architecture, the rise of installation and multimedia art, Chicano and African-American art movements, and artists' collectives such as the Woman's Building. And it thoroughly expanded everyone's notion of how widespread land art was by 1980, the year that Albuquerque created the first *Spine of the Earth* work. **1.2** Land art, once more commonly known as earthworks, was not so much a coherent movement as a collision of minimalism, conceptual art, and Arte Povera that began in the 1960s. While the minimalists sought to exercise the seductive recursiveness found in information theory and cybernetics, the Arte Povera people worked with common materials both as a practical budgetary constraint and as a critique of capitalism. Michael Heizer and Walter De Maria were working in the deserts of California and Nevada at the end of that decade because they could draw lines a mile long in the dirt, or trace enormous overlapping circles with motorcycles over a dry lake bed. Size was critical to their artworks, and dirt the only affordable material. The Mojave Desert between Los Angeles and Las Vegas was an early proving ground for these artists, as well as for Lita Albuquerque. **1.3** A unique segment of PST was the eleven-day festival of performance and public art that commissioned artists to re-create, reinterpret, and reenvision seminal events from the past as well as to create new works. Artists such as Eleanor Antin, Judy Chicago, Suzanne Lacy, Robert Wilhite, and James Turrell installed and performed work both familiar and new. Among them was Albuquerque, who made what amounted to the second part of her 1980 earthwork performed on the dry lake bed of El Mirage Lake in the Mojave. The desert version of *Spine of the Earth* was an ephemeral drawing created by Albuquerque and executed with the help of art students from California State University, Long Beach. The work was choreographed in red, yellow, and black pigment, a drawing that connected heaven and earth through geometric forms oriented to celestial events. More than six hundred feet in diameter, the work could be seen in its entirety only from the air, a

physical circumstance that reinforced the connection of sky to ground. The central figure of the temporary installation was a red spiral, a traditional form used worldwide in rock art, as well as by artists such as Robert Smithson in Utah. **1.4** Albuquerque's 2012 performance echoed not just the deployment of spirals in land art and her first version of *Spine*; it was also a motif that she had used on the white expanse of the Ross Ice Shelf for her *Stellar Axis: Antarctica* project, executed late in 2006. The presence of land art "on the ice," a first for the continent, was a remarkable if logical evolution in Antarctic art, which offers the shortest and most geographically challenged art history in the world. **2.** The first artist inside the Antarctic Circle was William Hodges (1744–1797), who accompanied Captain James Cook (1728–1779) on his second circumambulation of the Pacific Ocean in 1772–75. Hodges was the leading edge of the slightly more than three hundred visual artists who have ever visited the continent. His participation in the expedition arose from the European colonial tradition of voyages of exploration to record newly encountered lands through art, not just in the writing and mathematics of ship's logs and the collection of local specimens. Although officers in the service of British expansionism were often trained as surveyors and topographical draftsmen, Cook among them, the inclusion of a landscape artist provided a depth of record during the age of the great sea voyages that would not be equaled until the invention of the camera in the mid-nineteenth century. Hodges was a classically trained landscapist who was taught topographical techniques by the sailors while aboard ship. His work thus served the government in two ways. First, his paintings and drawings were strategic documents recording the location of safe anchorages, the size of local watercraft in places like Tahiti, and potential geological resources. But second, his handsome watercolors were reproduced as lithographs that served to promote public enthusiasm for funding future explorations, thus promoting strategic military, economic, and political ends. **2.1** From the time of that voyage until the early twentieth century, the Antarctic was recorded and presented to the public through drawings, paintings, and prints produced by both the officers and exploration artists accompanying





Attributed to George Forster, *Ice Islands*, 1772-75



Herbert Ponting, *Photographing a skua*, 1911

them. Thus we have works by French painter Louis Le Breton documenting the landing of the Dumont d'Urville expedition on Adélie Land in 1840, and Charles Wilkes and his artists and officers making the first sketches of the continent in that same year. The first scientific expedition to visit Antarctic waters was made by the crew aboard the *HMS Challenger* in 1874. While John James Wild (1824–1900), the expedition's official artist, was sketching and painting, another crew member made the first photograph ever taken of a tabular iceberg. **2.2** Sir Robert Scott took Edward ("Bill") Wilson (1872–1912) with him on both his expeditions in 1901–4 (on the *Discovery*) and 1910–13 (on the *Terra Nova*). Wilson served as science officer and physician, but he was also an accomplished watercolorist. His paintings of both Antarctic landscapes and wildlife during the "Heroic Age" of Antarctic exploration established him as the most revered of all Antarctic artists. Strongly influenced by the work of J. M. W. Turner, Wilson sought to be factually accurate while approaching the sublime. When traveling with Scott and Ernest Shackleton along the Ross Ice Shelf during the 1901–4 journey, he kept a running sketch portfolio of the mountains forming the horizon, which he later estimated would stretch for more than eighty meters if pasted together. During that same voyage Shackleton ascended in a balloon on February 4, 1902, and took the first aerial photographs of the continent. **2.3** Wilson returned to Antarctica with Scott aboard the *Terra Nova* for the 1910–13 expedition, and again made both detailed maps and sketches of the terrain as well as watercolor paintings. This time, however, Scott included Herbert Ponting (1870–1935), the first professional photographer to visit the continent. Ponting also shot footage for the first Antarctic film, a classic in exploration cinematography, *With Captain Scott to the South Pole* (1912). The inclusion of artists by Scott and subsequent leaders of Antarctic expeditions was a deliberate financial calculation: they counted on the sale of images and ensuing reproduction rights to help repay the loans that made the quasi-private voyages possible. **2.4** Photography did not replace painting and drawing in the Antarctic any more than it did elsewhere, but the camera was an additive technology, and both painters and photographers continue to visit

the Antarctic. The tradition of artists working in the Antarctic was upheld during the first half of the twentieth century almost entirely through the efforts of official military artists accompanying the U.S. Navy, which was the logistical authority for American presence on the continent until the National Science Foundation (NSF) assumed that role for Antarctic operations in the late 1990s. The purpose of the military artists' program was (and remains around the world) the documentation of conflict and inspiration for members of the armed forces. The leading objective for the NSF's Antarctic Artists and Writers Program remains public outreach, a continuation of that centuries-old need to convince taxpayers to continue supporting an American strategic presence on the ice under the banner of science. Nonetheless, the objectives of the civilian-run NSF program would broaden over time to include more conceptual artists. **3.** A frequently repeated pattern in the visual representation of environments new to colonialists is an evolution from literal depiction to more abstracted and metaphorical views, and then into the use of the by-now familiar surroundings as a visual stage for more global concerns. The art history of the Antarctic is no exception to that of explorers and settlers encountering Africa, North America, or Australia, in part due to the fact that all of those regions underwent acculturation by European powers during the eighteenth through early twentieth century. But that commonality also arises because that is how human cognition utilizes what is at first space as it becomes place, which is in turn a mechanism that helps convert terrain into territory. **3.1** Almost all of the images of the Antarctic made until the mid-1950s were deliberately literal and representational. The Antarctic as an environment is so alien to most humans—historian Stephen Pyne has called it the nearest thing to outer space on earth—that expedition leaders and governments have sought within their limited budgets to simply bring the place more easily within the grasp of public understanding. Following the almost exclusively straight-ahead photographs and paintings of the Antarctic commissioned by the American military from American artists, contemporary art can be said to have arrived in the Antarctic in 1959 with Emil Schulthess (1913–1996), a prominent Swiss photographer who

convinced the U.S. Navy to include him as an artist in its Operation Deep Freeze IV expedition of 1958–59. Schulthess made numerous images of the continent, including panoramic landscapes, and portraits of the people working there. His most notable achievement on the ice, however, was a series of time-lapse fisheye photographs made at the South Pole and other locations. Schulthess then wrote and drew in graphic devices on the prints, such as city names and lines of longitude, to metaphorically link the Pole to places as diverse as London and Singapore. He thus connected the Antarctic to the more commonly known world, but also made an ironic gesture toward our anthropocentricism. Art made in and about the Antarctic had begun to move beyond the literal. **3.2** An Australian painter and the first woman artist in the Antarctic was Nel (Nellie) Law (1914–1990), who stepped onto the continent in 1961. Although her work started out in a relatively conventional, if mildly expressionistic, landscape mode, by the end of her career she was making highly patterned abstract images derived from ice formations. She was followed by her countryman Sidney Nolan (1917–1992) in 1964, and in 1975 by both the English painter David Smith (1920–1999) and the American landscape and color photographer Eliot Porter (1901–1990). Nolan's work, shaped by his vivid and nearly surreal aerial landscapes of the interior Australian deserts, extended the reach of modernism into the Antarctic, his paintings of glaciers as much about the flow of his emotions as the ice. Smith, who had served as an artist with the Royal Air Force during World War II, first went to the Antarctic as an official artist with the British Antarctic Survey. His initial trip resulted in mostly oil paintings, but during his second trip, in 1979–80, he concentrated on field sketches done with watercolors thinned with alcohol to keep them fluid while painting outside in the cold. Both his subsequent and slightly surreal oils, with their highly smoothed and modulated surfaces, and the watercolors, which were more like cognitive notes made while attempting to assimilate an alien terrain, broke almost completely with any semblance of topographical information. Like Law's paintings, they were more about the interaction of artistic practice with an extreme environment than they were about the specifics of Antarctic terrain. The work

of these four artists represents the beginning of the shift from literal to metaphorical depictions of the Antarctic, a freeing of the art from the strict burdens of representation. It is worth noting that none of the three painters in this group were Americans, who often mistake the Antarctic as the habitat of polar bears, a species found only in the Arctic. People from other countries were in general more geographically literate about the Antarctic than most Americans, and their work advanced more readily beyond the topographical. **3.3** Eliot Porter made two trips to Antarctica, first in 1975 and then in 1976, and the resulting book, *Antarctica* (1978), is cited more often as a visual influence than any other by artists who have since visited the continent. Porter was by then world renowned as the leading pioneer of color in landscape photography, and was the first artist selected by the National Science Foundation, versus the U.S. Navy, to visit the Antarctic. He was thus a progenitor, with Nolan and Law, for what would become the NSF's Antarctic Artists and Writers Program, which, along with similar national schemes sponsored by New Zealand, Australia, and the United Kingdom, has kept art alive on the continent. Porter's work, while ostensibly about landscape, was also about the formal tenets of his medium. His elimination of a horizon line in a photograph of the Labyrinth in Wright Valley, one of his characteristic framing strategies, turned the rocky maze in the McMurdo Dry Valleys into a pattern without scale. Nel Law would have understood immediately the process of abstraction by which he derived his composition. **3.4** Emil Schulthess had demonstrated in his photographs that prime tenet of contemporary art, a self-reflexivity that allows art to acknowledge its maker, the frame, and all the contradictions inherent in attempting to be a human standing outside nature while picturing it, a metaphysical conundrum. Law went from portraying Antarctic landscapes to abstracting them into pure pattern, while Nolan's and Smith's moody images laid bare the cognitive dissonance artists faced when attempting to deal with such an alien environment. Even Porter, who along with Ansel Adams was seen as the paragon of landscape photography in the United States, found himself intrigued with the formal modernist possibilities the Antarctic presented. By the last century's three-quarter mark,

enough documentary and representational images had been made of the continent that artists—and their sponsoring agencies—were becoming more comfortable enlarging Antarctic art from its role as an instrument of strategic concerns into a more contemporary aesthetic and broader cultural arena. Even after the beginning of the twenty-first century, however, many of the artists sent to the ice by the United States and other countries were traditional painters or straightforward nature and landscape photographers.

3.5 This thumbnail sketch of Antarctic art history is meant to illuminate how startling Albuquerque's accomplishment was when she created her large-scale installation on the Ross Ice Shelf, a project that was, in turn, a culmination of concerns threading through her entire artistic practice. That a woman would create the first land art installation on the continent is not surprising—the gender balance of the Antarctic Artists and Writers Program has been a nonissue for years—but the fact that the NSF would finally accept a proposal for a land art project at all, and at such scale, was remarkable.

3.6 As related earlier, the primary criterion used to choose artists sent to the Antarctic, from William Hodges to Eliot Porter and beyond, has not necessarily been artistic merit, but their utility in promoting public enthusiasm for funding future explorations. The primary purpose, as avowed in NSF guidelines, remains to provide public outreach. Much of the science conducted there is far too abstruse to be of genuine interest to laypeople, but the presentation of a sublime and genuinely pristine wilderness establishes an emotional loyalty to the continent that serves the cause. The goal of the NSF has been to document the physical form and conditions of the continent, and then make it comprehensible as a transcendent landscape suitable for preservation as a stage for scientific inquiry. That's a logical imperative, given the human need to first picture land in order to transform it into landscape, and to colonize terrain into territory.

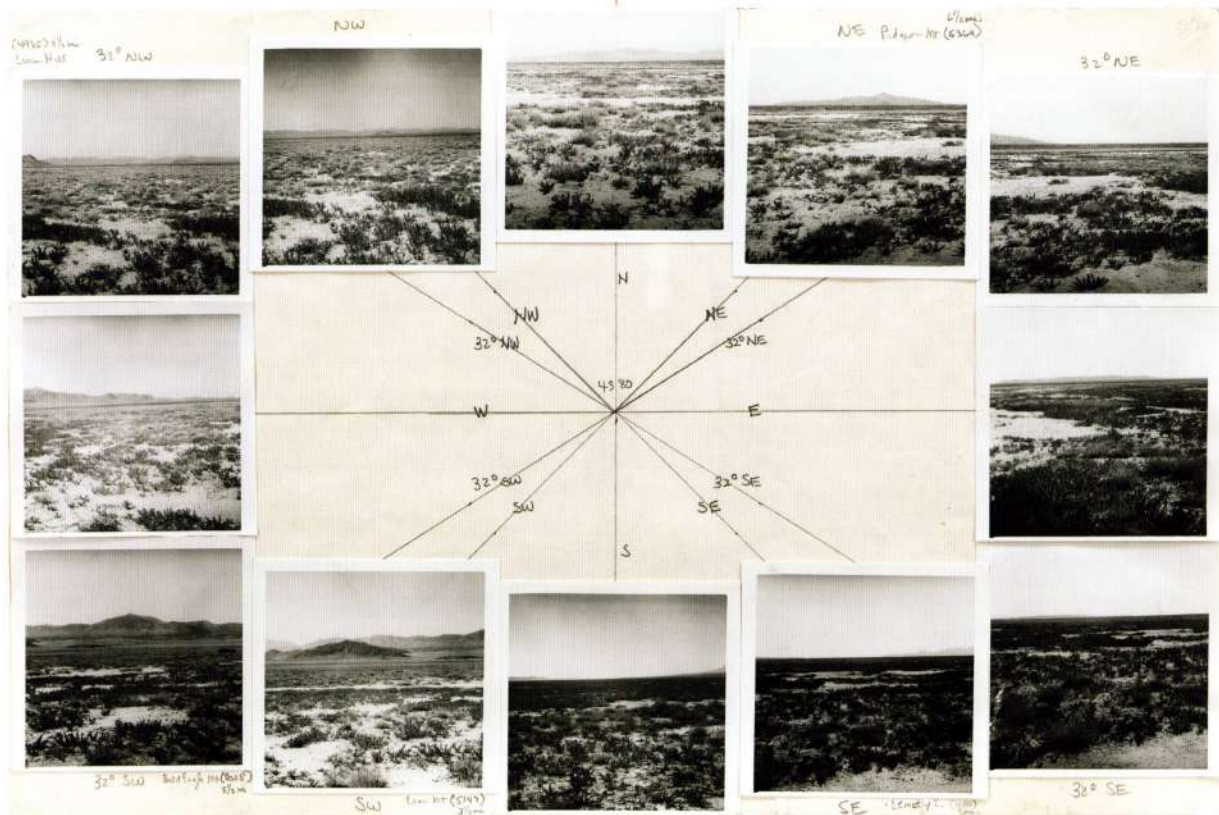
3.7 As Americans continued to experience and become more familiar with the Antarctic through the work of the NSF-sponsored artists, and even more widely through media images and popular films such as *March of the Penguins* (2005) and Werner Herzog's *Encounters at the End of the World* (2007), that began to change.

With the acceptance of Albuquerque's project the American art program joins those of other countries supporting contemporary Antarctic art installations, including Chris Drury with the British Antarctic Survey, Andrea Juan with the National Antarctic Affairs of Argentina Chancellery, and Andrew Rogers from Australia (on a private expedition).

4. It is sadly untrue that water flows down drains in opposite directions in the Northern and Southern Hemispheres. Supposedly the Coriolis effect caused by the rotation of the earth, which actually does cause storms to spin counterclockwise in the north and clockwise in the south, would have the same effect on water running out the bottom of a basin; but, in fact, the effect is far too weak at such intimate spatial and temporal scales. This is not to say, however, that things don't appear to spin differently at the two poles, which is partly why Lita Albuquerque found herself standing out in the middle of ninety-nine ultramarine spheres on the Ross Ice Shelf in late December 2006 during the austral solstice (winter in the north, but summer in the Antarctic).

4.1 Albuquerque was intrigued by a singular imaginary phenomenon. The earth rotates west to east. If you are standing in the Northern Hemisphere, this makes the stars above you appear to rotate counterclockwise around the polestar. If you are standing in the Southern Hemisphere, they appear to be rotating in a clockwise direction. If, like Albuquerque, you are an artist who has worked for three decades with your orientation to the stars, you might imagine that in the center of the earth—as light from the two apparent motions met—the geometric figure created by the crossing of light rays would be a helix, or a spiral with a constant diameter. She imagined the two spiraling lines of light from opposite poles intertwining, thus forming a double helix much like a strand of DNA. How Albuquerque came to execute an artwork in the antipodes based on this perceptual twist stems from both the history of land art projects and our social construct of the Antarctic.

4.2 Albuquerque credits her fascination with the stars and constellations with growing up as a child in Carthage and watching the bright bowl of the night sky revolve over her head, rising and setting over the twin horizons of the desert in northern Africa and the dark waters of the Mediterranean. Albuquerque, who was born



in Santa Monica in 1946, was schooled as a child in both Tunisia and Paris but returned to the California coast in 1957 and earned a degree in art history from the University of California, Los Angeles, in 1968. By then Michael Heizer had started throwing dye out onto the playas of the Mojave to make minimalist gestures, and in 1969 would introduce Walter De Maria, Robert Smithson, and the latter's partner, Nancy Holt, to the pleasures of art making in the desert. It was the "heroic age" of earthworks, which has at times been characterized as a movement away from the commodification of art in the marketplace and toward a reengagement with the world. **4.3** In reality it was nothing as cohesive as a movement at all, just a handful of artists around the world who were making interventions in the landscape versus objects for galleries. Michael Heizer was the son of famous anthropologist Robert F. Heizer, and as a child often accompanied his father to sites such as the Olmec ruins at La Venta in southeastern Mexico and the Egyptian ruins at Saqqara. Heizer became interested in bringing a Mesoamerican vocabulary into American sculpture as an antidote to what he considered the stifling domination of European influences. Others artists, such as Richard Long and Hamish Fulton in the United Kingdom, were more interested in walking through the landscape as performances, their annotated maps and photographs often the only traces remaining. Heizer would go on to bulldoze dirt into longer-lasting monolithic sculptures in Nevada, while Smithson would push rocks out into the Great Salt Lake in 1970 to form an entropic spiral that evoked the rock art of prehistoric peoples. Holt, after Smithson's death, would align her four concrete *Sun Tunnels* (1976) out on the empty flats west of the lake. Their open ends would accept the rising and setting sun during the solstices on roughly June 21 and December 21 each year. Holes were drilled into the tops of the enormous tubes to line up precisely with various constellations on those days, their diameters varying to indicate the apparent magnitudes, or relative brightness, of the stars. **4.4** It is a truism that the history of the Western landscape tradition in art is based, through the inclusion of the horizon in almost every picture, on the implied relationship of heaven to earth, or sky to ground, and many early earthworks artists often

referenced the sky. While Heizer was finishing *Double Negative* on Nevada's Virgin River Mesa (or Mormon Mesa) in Nevada and Smithson dumping rocks to extend his *Spiral Jetty*, Robert Morris was constructing his open-air *Observatory* in the Netherlands, which in form and function referenced Stonehenge. In 1977 Walter De Maria set out four hundred stainless steel poles in New Mexico to create *The Lightning Field*, a direct bridge between ground and sky. The most elaborate of all these works is that by James Turrell, who in 1974 was flying around in a plane to find the perfect volcanic cinder cone that he could tunnel through and transform into an observatory meant to reshape the viewer's perception of space. *Roden Crater* in northern Arizona has become a facility not so much about art, perhaps, as about procession and ritual, with visitors gazing at the sky while supine on a plinth. **4.5** Several strands of landscape intervention were developing during the 1970s. At one extreme was Heizer, who was not interested at all in landscape per se—to him it was just affordable dirt and space with which explore formal matters of sculpture through large shapes. Following another line was Turrell, with his ceremonial passages. The transitory treks of Long and Fulton represented a performative aspect, as did the very early work of another young Englishman, Andy Goldsworthy, who would later earn renown for fashioning ephemeral gestures out of ice and twigs. Under the influence of Smithson and Long, Goldsworthy balanced rock cairns on tidal flats and created temporary drawings by walking on the sands at low tide. In years to come he would make more permanent works, such as his serpentine rock wall at the Storm King Art Center in the Hudson Valley, a piece informed by neolithic maze designs. While Heizer and Turrell were hoping to build for the ages, all that remains of many works by the three later artists are photographs. And until Heizer has finished his mile-long *City* project and Turrell his crater, most people will have seen only photos of those works in progress. **4.6** By 1978 Albuquerque was herself strewing rocks and dry pigments across the landscape, initially on the ocean bluffs above Malibu and then farther afield on El Mirage Dry Lake, a dry lake bed north of Los Angeles. The first artwork she describes as belonging to her mature oeuvre was *Malibu Line*, a

shallow trench fourteen inches wide and forty-one feet long filled with ultra-marine powdered pigment. In photographs, the only surviving trace of the ephemeral work, the viewer is at the near end of the line, which extends outward to the edge of the bluff, where it abuts the lighter azure of the ocean, which in turn meets the even paler blue sky at the horizon. The spectrum of hues constitutes a continuum of connection between earth and sky negotiated by the artist. 4.7 The six-mile-long EL Mirage is the nearest dry lake bed to downtown Los Angeles, and in 1968 both Heizer and De Maria had been using it, along with other alkali flats in the Mojave, as *tabulae rasae* for earth drawings. Heizer, for example, was carving circular drawings with motorcycle wheels on Jean Dry Lake in Nevada, while De Maria set out his *Desert Cross* (1969) in white chalk on EL Mirage. The works could be fully apprehended only from the air, much in the same way as required by the Nazca Lines in Peru. The two contemporary artists were investigating the formal properties of their practice, how to exercise forms so large that they couldn't fit into a gallery—works so large, in fact, that the artists couldn't afford to make them in any medium other than free dirt. The playa works done by Heizer in the late 1960s were the precursors to his major earthworks, and a decade later the flats would become the stage upon which Albuquerque would extend her initial foray into land art. 4.8 What Albuquerque sought in her Mojave works was less an exploration of form for form's sake than a way to connect what was beneath her feet with what was above her head, to reconnect our awareness of how earth and sky touch in the arid clarity of the desert night. Another Malibu piece from 1978, *Moonshadow*, was a nine-foot circle of wood set into the ground and containing a layer of what was fast becoming her trademark blue. Although the title of *Rock and Pigment Installation* from later that year gives no clue to its celestial orientation, it was in actuality a three-hundred- by five-hundred-foot model of a constellation directly above the Mojave at that season, but of course invisible during daylight. Albuquerque had long been interested in Mayan sacred architecture and how it linked earth to the heavens. She calls her constellatory analog a "mirroring of the sky," a practice also stemming from her

pondering Navajo sand paintings, the carefully deployed rocks and raked lines in Japanese gardens, and the alignments found in ancient Anasazi sites such as Chaco Canyon. In 1980 she completed her most elaborate "terrestrial painting" to date, a large drawing on EL Mirage that included a six-hundred-foot diameter spiral based on the golden section. A wooden circle propped up at one corner of the frame indicated the direction of the sun, and from it extended a vivid yellow line, a ray of light made manifest. Enclosed in an expansive square of black pigment, *Spine of the Earth* was large enough to need an aerial vantage point for viewing. 4.9 A video documentation of the first *Spine* project makes clear three things. First, the artist poured the pigment by hand from cans, often while the wind was blowing. It was a labor-intensive process that required it to be accepted as meditative practice as well as an artistic one, the wind taken not as an opposing force but as a collaborator. Second, her work was as much about performance as object, a dance as much as a drawing. And third, the dispersal of the pigments by the wind left the windward edge of the pour a clean line, while downwind the powders feathered off as if they were paint pushed by a brush. The geometry, which could have been somewhat minimal and harsh, was thus softened and made far more interesting by interaction with local conditions, another level of process. "Dust to dust," as Albuquerque says. Also in 1980, she executed a work for the International Sculpture Conference in the nation's capital, turning the Washington Monument into a gnomon for a giant sundial on the National Mall by cutting and filling with red pigment three chevron-shaped trenches at the cardinal directions touched or implied by the shadow of the obelisk during the day. The shadow the obelisk cast did, in fact, momentarily reside within one of the V shapes as the sun moved across the sky. Albuquerque had moved from merely alluding to the relationship of ceremonial architecture to celestial events and into actually reconnecting a major secular monument to that root. Although collateral materials such as preparatory drawings remained as evidence of her artistic process, the enduring trace was photographic documentation of the sculptures, which were more event than objects. Each of her land works was increasingly performative, involving



groups of assistants (often her students) rehearsed beforehand in their ritual construction. **4.10** Albuquerque's incorporation of such an iconic monument led to an invitation from Egyptian officials for her to create an ephemeral piece near the pyramids at Giza for the Sixth International Cairo Biennale, held in 1996. Choosing to evoke the powerful and traditional symbol of the bee, she planned to lay out a six-pointed honeycomb pattern south of the pyramids. In preparation she hired a local surveyor to map the site. The Egyptian surveyor decided that the design was in actuality a Star of David pattern, which led to accusations that Albuquerque was a Zionist imperialist (read: Israeli spy). After intense negotiations the artist managed to avoid imprisonment, public stoning, or expulsion from the country. She resurrected an earlier plan to locate the pyramids in a field of stars, and re-created the constellations above with circles of the deep blue raw pigment. *Sol Star* was promptly awarded one of the event's major prizes, even as the desert winds were beginning to disperse the work's three tons of ultramarine powder. Albuquerque notes, however, that a year later enough of the project remained visible that at least one visiting and overly enthusiastic amateur Egyptologist mistook the design for an alien landing site. **4.11** Inevitably, any large-scale human-made pattern on the ground that has a celestial orientation, and that can be fully perceived only from the air, will be identified by the more speculative among us as an extraterrestrial-related artifact, whether it is the Nazca lines in Peru, crop circles, or a contemporary artwork. Clearly Albuquerque had tapped into a metaphorical device that was as ancient and powerful as the constellations picked out in paleolithic rock shelters and as contemporary as Middle Eastern politics. Albuquerque had consistently manifested the connections between heaven and earth, secular astronomy and sacred authority, and art history with her own biography throughout her body of work, and the consequent public resonance created by *Sol Star* fueled her ambition to involve not just monuments in her practice, but the entire planet. **4.12** The North and South Poles have always exerted a persistent metaphorical force as well as a magnetic one. Ever since the Greeks postulated that the earth was a sphere with a continent at the bottom

(theoretically to balance the mass of the known northern lands), people have speculated about the connection of the poles to the cosmos. Peopled by aliens or prehistoric creatures, seen as the entrance to the center of the earth or a place emitting strange rays, the mythopoesis of the Antarctic continent was only heightened when James Ross (1800–1862) first sailed into what would later be named the Ross Sea and discovered there the world's southernmost active volcano, Mount Erebus. Pictures and accounts of the volcano inspired Jules Verne to write *Journey to the Center of the Earth* (1864), and Erebus continues to be the setting for contemporary science fiction novels. And it is the same volcano from which steam billows at 12,448 feet behind Lita Albuquerque's back that's visible in the photographs and video taken as she and her team set out ninety-nine ultramarine globes on the largest single piece of ice in the world, the Ross Ice Shelf. **5.** *Stellar Axis: Antarctica* can thus be construed as a logical concatenation of the art world, Antarctic history, and Lita Albuquerque's career. Artists had urged the NSF for years to send land artists to the ice, and because Andy Goldsworthy had worked with ice at the North Pole in 1989, his name came up frequently. Both Richard Long and Hamish Fulton, accomplished in the outdoor arts, were mentioned as well. While some scientists are perfectly comfortable with contemporary installation and performance art, the majority is not. Ephemeral and conceptual work is simply outside their comfort zone. So, as inevitable as it might seem that someone such as Albuquerque should go to the ice, it took two tries before the NSF panel finally accepted her application, in 2004. *Stellar Axis: Antarctica* would be the first large-scale installation work created on the continent. **5.1** Albuquerque had two strong visual ideas compelling her to continue her mirroring of constellations begun in the Mojave and Egypt. First was that the stars are invisible during the Antarctic daylight, which at the South Pole lasts for six months, from September to March. Her project would maintain the figure-to-ground relationship of stars to sky, but reverse the light at the planet's diurnal maximum of the winter solstice. The white ice becomes the black sky, the dark blue spheres the light of shining stars. It's an elegant if oblique reference to how astronomers of the early

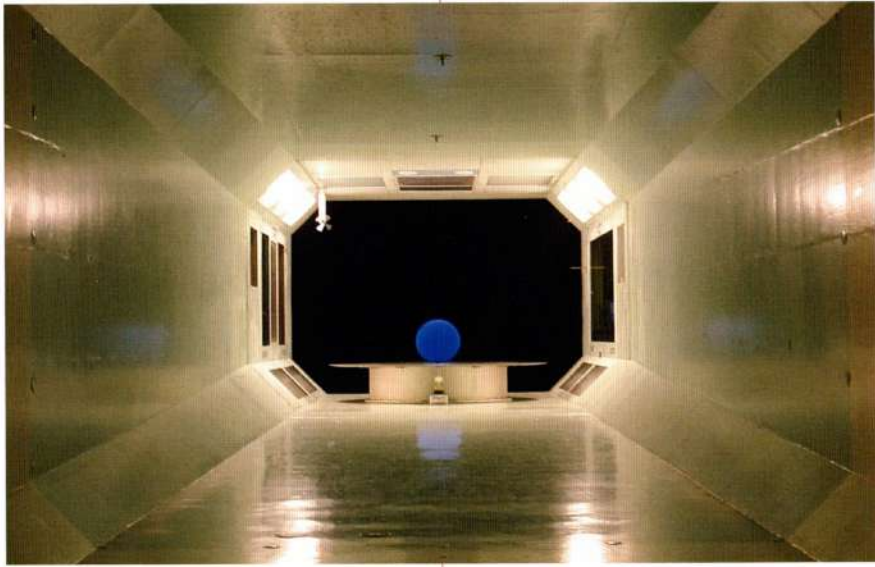
twentieth century worked, mostly by examining the more sensitive negatives of photographs made through telescopes, versus the positive prints, which inherently had a lower level of resolution. 5.2 Albuquerque's *Stellar Axis* alludes to, among other things, the history of navigation and its artistic influences from ancient times through the space age. Simon Balm, an astrophysicist who had earlier worked at the South Pole, served as the team's astronomer. Using the Global Positioning System (GPS) satellites to determine the position of the brightest ninety-nine stars in the Southern Hemisphere, he then plotted their corresponding positions on the ice. The first space-borne navigational system was put into orbit by the U.S. Navy in 1960 (the five satellites of the Transit system or NavSat, for Navy Navigation Satellite System), which allowed ships to establish their positions on an hourly basis. The first GPS satellite was launched in 1978, its more than two dozen instrumental arrays initially intended to allow the military to precisely target enemy troops and facilities with the greatest precision. Since then it has made possible everything from Google Earth to navigation units in automobiles, as well as navigational-based drawings on the earth by new-media artists. 5.3 The other idea Albuquerque had was based on how one could conceive of light passing through the planet as if it were shafts of information, photons literally bringing us news of the universe. Then she realized that the starlight striking the two poles, if it were able to continue through the earth, would of course meet in an imaginary construct. It was in talking with Balm when she learned that to a person standing at the North Pole the stars would seem to spiral in a counterclockwise fashion, but that the earth's rotation would produce the perception at the South Pole that the stars were spiraling clockwise. The consequent double helix became an analog for the universal codification of information over time that is present in the strands of DNA. 5.4 Albuquerque started thinking about *Stellar Axis* in 1992 during a visit to New Zealand, where she said she literally "felt the gravitational pull" of the South Pole. She conceived of it as a pair of complementary works executed simultaneously at both poles, but the logistical realities required a series of compromises. When the NSF accepted her application to produce

the first half of the project in the Antarctic, all the agency could offer her was a chance to lay out the ninety-nine spheres on the Ross Ice Shelf at just short of latitude 78° south. The actual point of the earth's rotation, the pole at 90° south, wasn't available. All the flights to the South Pole were filled, as they had been for several years, with supplies and construction materials for the new station being built there, as well as science projects such as IceCube, an array of neutrino sensors suspended vertically downward throughout a cubic kilometer of ice. She accepted the revised location, which was fortunate. It was hard enough working for a week to set out her project on the ice shelf a few miles from McMurdo Station, where the temperature seldom veers below zero degrees Fahrenheit during December. Trying to do the project at the South Pole's Amundsen-Scott Station, which is ten thousand feet above sea level and thirty to fifty degrees colder, would have been a nightmare. 5.5 Albuquerque assembled a small team to assist her in construction and documentation of the project. In addition to Balm, who would act as the group's Antarctic field guide as well as astronomer, the photographer Jean de Pomereu, filmmaker Sophie Pegrum, and cinema-tographer Lionel Cousin would accompany her. Everyone would be needed to mount the spheres on the ice shelf. The spheres had to be manufactured so that they could be shipped in halves in order to meet the available air cargo space requirements, and snow anchors had to be devised so the spheres would not blow away and thus violate Antarctic Treaty provisions regarding waste on the continent. And, in fact, the team subjected test spheres to 110-mile-per-hour winds in a test tunnel as required by the science agency. Albuquerque worked on a number of preliminary sketches, not only to make sure they could envision the project in a way that would ensure its completion in the time allotted, but also to sell in order to raise funds. Although the NSF program provided transportation, polar gear, and room and board while the team was at McMurdo, the cost of project materials and associated expenses were up to the artist. 5.6 The team arrived at McMurdo aboard an Air National Guard C-130 Hercules on December 7, 2006, then spent a week getting their gear ready and completing the survival courses required before being let

loose on the ice. Albuquerque and team took two days to locate the “perfect” site and decided on a four-hundred-foot diameter area located off the road between the Pegasus and Willy Field ice runways, several miles away from the station. Six trips in PistenBully tracked vehicles were required to ferry out the crates one at a time, a two- to three-hour journey each way of clanging along in the noisy and uncomfortable vehicles. It was worth the trouble: the site out by the runways offered a clear and expansive view of Ross Island and the steaming Mount Erebus, a sublime place to work during the evenings with the sun only a few degrees above the horizon. After Albuquerque selected what she thought would make the most aesthetic center point for the work, Balm bored out a hole for the first forty-inch-long aluminum post with a gasoline-powered drill. The team planted the post, then screwed onto it the forty-eight-inch sphere representing the brightest star in the sky, Sirius. It was December 14, the process to mount just one sphere had taken hours, and solstice was on December 22, their target for completion. There wasn’t much time to enjoy the view. 5.7 All ninety-eight other “stars” of descending magnitude, represented by graduated spheres in seven steps down to ten inches, were aligned from that point according to Balm’s GPS. The array when completed would represent the ninety-nine brightest stars of the dome of the “night” sky from horizon to horizon, translated into polar coordinates, and scaled within the four-hundred-foot circle. Each “star” required positioning, drilling, anchoring the post, and screwing the sphere onto it, sometimes taking as many as forty rotations to mount the orb securely. It was frustrating and tiring work, even as it was exhilarating. Videos of the process of mounting the first sphere are a testament to the team’s patience and endurance, and to the insistence of the astronomer and the artist that it had to be done right, that each sphere must be low enough that it touch the ice, but high enough that all of the orb could be perceived. 5.8 It took the team that entire week to install *Stellar Axis*, a job that in the Mojave probably could have been done in a couple of long days; but they made it in time for fifty-one people from McMurdo to troop out on the summer solstice and walk to the center of the piece. Albuquerque and Balm had stomped out between the spheres an

Archimedean spiral—that elegant and simple form so evident throughout nature that maintains an even distance between turnings. Everyone took the ten minutes to walk its path until meeting at the endpoint. As the participants unwound from the center, Pegrum filmed the procession from a helicopter, while de Pomereu and Cousin photographed and filmed it from the ground. Pegrum flew in circles, clockwise, with the figures in their red polar parkas walking out until they had completed three revolutions. And then, as Antarcticans will often do, the pedestrians made a spontaneous gesture. Everyone dropped on their backs; snow angels. The effect was surprisingly unsentimental, neither a sappy gesture nor an ironic one, but simply an acknowledgment of the connection between earth and sky. 5.9 The connection running from the red spiral of the first *Spine of the Earth* through the red-parka-clad walkers of the spiral in *Stellar Axis* and into the unfurling red spiral of the second *Spine* in 2012 is both simple and complex. The signature ultramarine pigment Albuquerque has used for decades in her sculptures, land art, and two-dimensional pieces is often remarked upon, but that color has been balanced with red all along. 6. By almost unanimous acclaim, Stephen Pyne’s *The Ice: A Journey to Antarctica* (1986) is one of the best contemporary books written about the Antarctic. Both a natural and a cultural history of a continent, and the most thorough explication of its frozen regimes and varieties of ice, it is also a grand work of historical theory. Pyne studied at the University of Texas under William H. Goetzmann, the historian who first parsed exploration into two great stages of discovery, one starting with the circumnavigational voyages of Europeans that outlined the shape of the continents, the other with the interior exploration of those continents through overland travels that cataloged their contents. Pyne was awarded a MacArthur Fellowship partly on the basis of his defining a Third Great Age of Discovery, which is characterized by images brought to us by remote sensing. Pyne’s expanded definitions for the three ages of discovery are multifaceted and subtle, but part of his thesis is that the primary venue for the Third Age is outer space—the solar system and beyond—and that the Antarctic is the terrestrial threshold to that farther realm. Not only was the continent’s

Sphere Wind Load Testing (Image 12 of 13), digital image, 2006



Sphere Fabrication (Image 7 of 25), digital image, 2006

