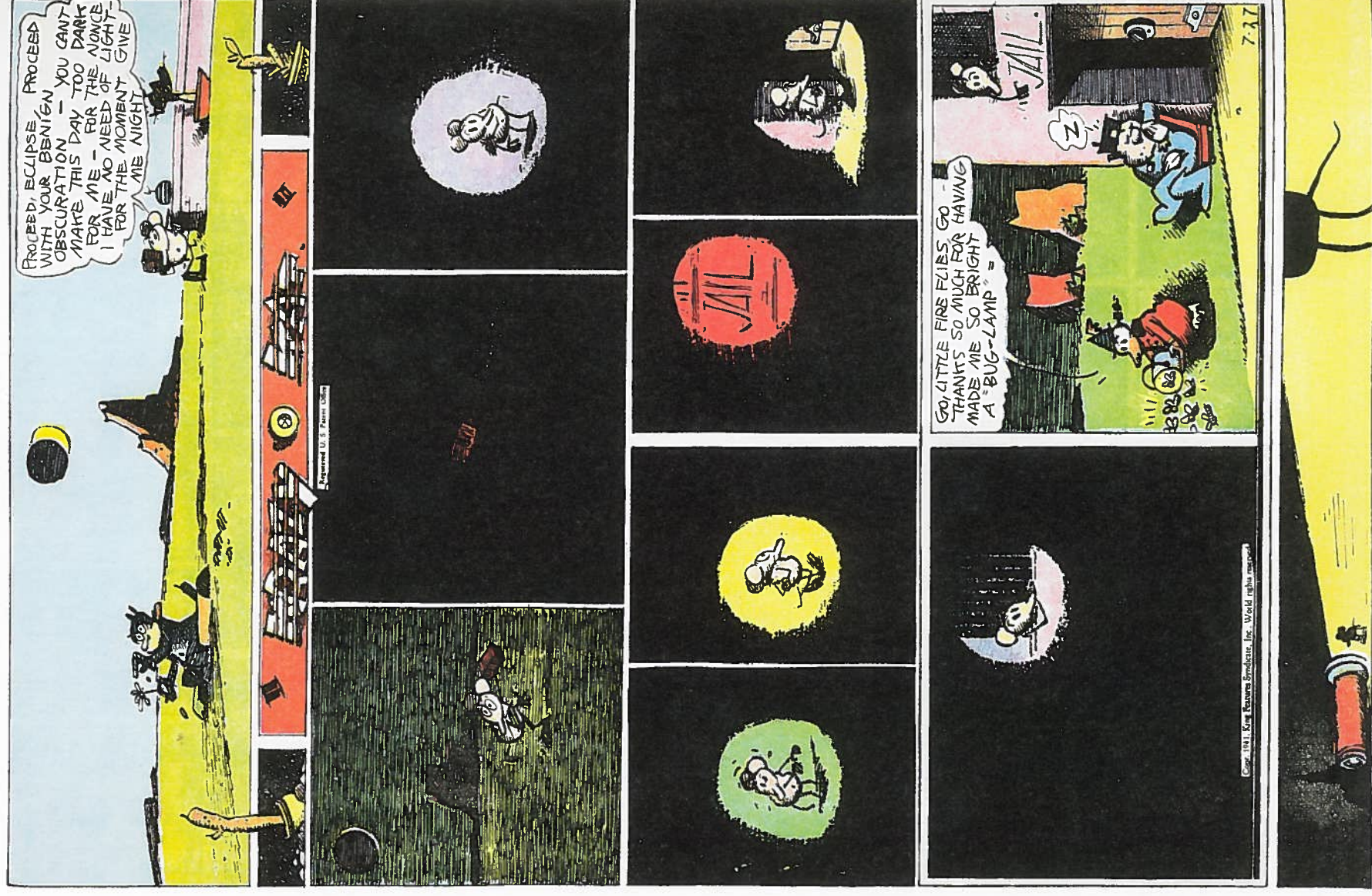


at Arcosanti in southern Arizona. (Turrell has sometimes speculated about whether the desert attracts eccentric artists or encourages artists' eccentricity and ambition.) French Surrealist painter Max Ernst lived for a time and was inspired by the expressive landscape of red rocks and mesas in nearby Sedona to the south, and American filmmaker John Ford forever memorialized the majestic Monument Valley just north of Roden Crater in his movies as the quintessential Western desert landscape. But it was George Herriman, the acclaimed early twentieth-century cartoonist that lived nearby part-time and famously set his pioneering Hearst-published comic strip *Krazy Kat* in the exact locale of Roden Crater, who specifically centered his nihilistic graphic slapstick in Coconino County. As comic-strip artist Bill Watterson has noted, "Virtually every panel features a different landscape, even if the characters don't move. The land is more than a backdrop. It is a character in the story, and the strip is 'about' that landscape as much as it is about the animals who populate it."⁵ Turrell is a *Krazy Kat* aficionado who has collected and annotated nearly all of Herriman's strips with their specific references to nearby Arizona landmarks; like Herriman, he is from Los Angeles and has made another home and his art in Coconino County, but he also recalls fondly his father's devotion to the comic strip.

AVIATION

The influence of Turrell's father, Archibald, is apparent in many aspects of the artist's life and work. After marrying Margaret Hodges, whose Quaker family included seventeenth-century religious refugees to Eastern Maryland, the senior Turrell died while James was still a boy. Archibald Milton Turrell was trained as an aeronautical engineer and worked in education for most of his career, running the technical program at Pasadena Junior College, where the first all-metal, low-wing monocoque aircraft was designed and certified. The Harlow, named for its designer, Max Harlow, was put into a limited production of ten aircraft. Turrell owns the rare serial number one as part of his small but personal collection of vintage aircraft that also includes two fully restored examples of Helio aircraft. The artist flew—and crashed—one of these types when he was airlifting monks out of Tibet during the 1960s non-government-sponsored peace work he performed as a Quaker conscientious objector to US military service. While he only remembers flying with his father once, it left an indelible impression of the joy of aviation and the unique experience of sky and land from the air. Flying from Baker, California, toward Alhambra (an airport that no longer exists), the light was leaving the sky at twilight. Watching the "bioluminescent-lichen-light of urban Los Angeles" begin to take over the nightscape, his father observed, "a peasant by day, a princess by night."

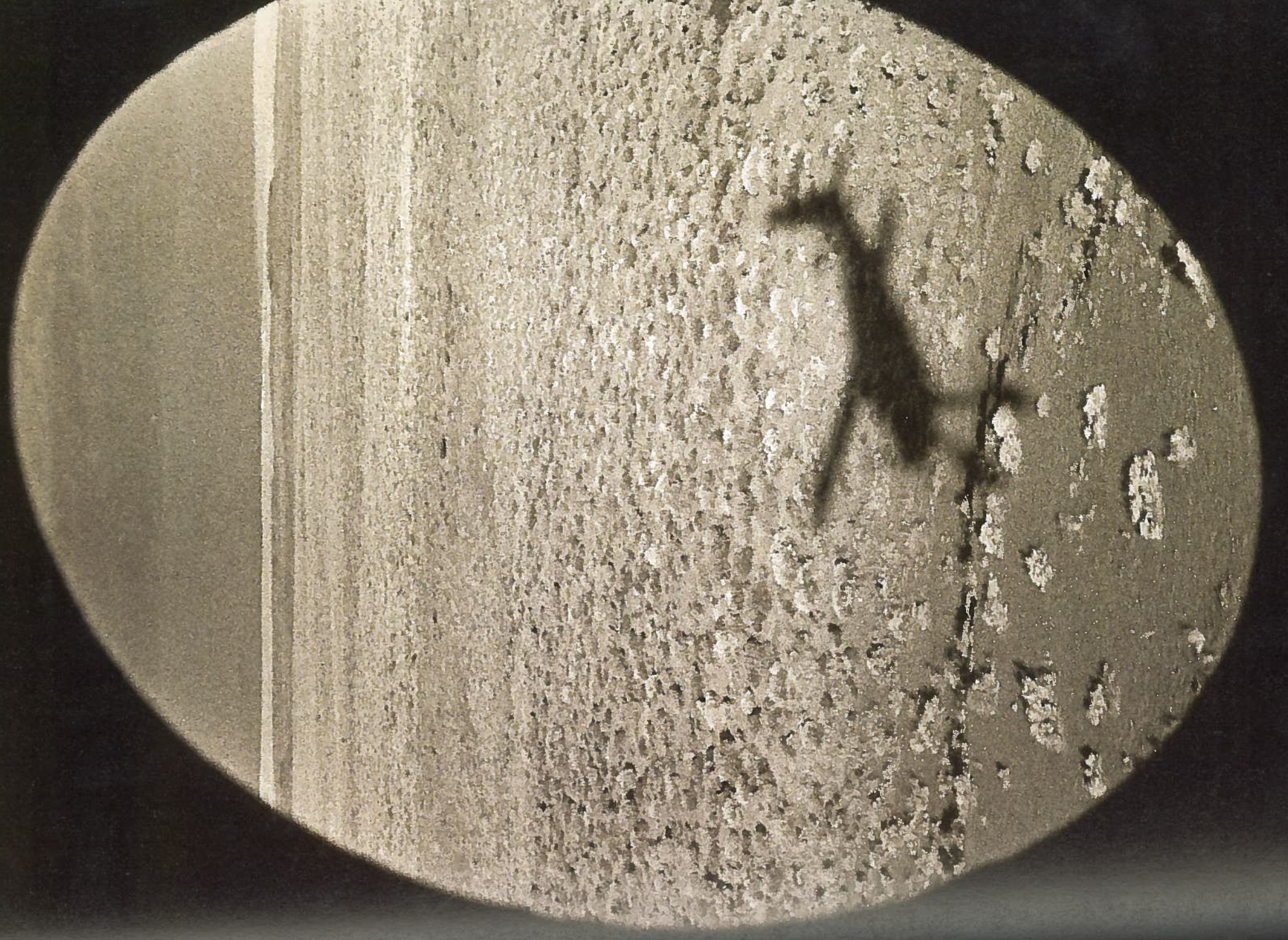
Turrell was bequeathed and still maintains his father's substantial library of volumes on civil aviation, including rare editions of books by French pioneer aviator and author Antoine de Saint-Exupéry, whose compelling descriptions of inner enlightenment gleaned from the aviator's aerial perspective of sky and land bear uncanny relevance to Turrell's own art in the landscape. As Exupéry proclaims in the opening paragraphs of "The Plane and the Planet," a chapter of *Wind, Sand and Stars* (1939), "The airplane has unveiled for us the true face of the earth.... We are able to judge man in cosmic terms, scrutinize him through our portholes as through instruments of the laboratory." As if describing Turrell's epiphany in finding, after a seven-month journey across the Western United States in his small plane, a natural crater in which to situate his artwork among northern Arizona's volcano fields, Exupéry writes, "This day, as I fly, the lava world is calm. There is something surprising in the tranquility of this deserted landscape where once a thousand volcanoes boomed to each other in their great subterranean organs and spat forth their





fire.”⁶ Or, as he continues, “Whence do men draw this passion for eternity, flung by chance as they are upon a scarcely cooled bed of lava, threatened from the beginning by the deserts that are to be...?”⁷ and looking at the land “by the grace of the airplane” to “ponder with even more bewilderment the fact that this earth that is our home is yet in truth a wandering star.”⁸ Exupéry was obviously partial to volcanoes. They feature prominently in the description of the eponymous protagonist of his well-known children’s book *The Little Prince* (1943), who comes from a planet so small that he may simply move his chair a few steps to see the sun set again and again—a childlike exaggeration of how the world shrinks by virtue of the airplane.⁹ At Roden Crater one sees the sun set more than once: first over the false horizon of the crater rim, then over the horizon looking from its rim, and then in the postsunset spectacle of light in Turrell’s inner Skyspace.

Aviation is not incidental to Turrell’s art. The artist has often remarked that his airplane has served as his studio. After college, as he restored historic aircraft or flew for profit, aviation helped fund his artistic pursuits. And many of his works are predicated on the fact that at high altitudes the sky is much clearer and of a deeper hue. At that altitude, Earth is a distant abstraction. Not only is the experience of land from the air revealing, as Exupéry describes, it can also be disorienting. As the pilot’s adage goes: one flies high and can see more, only to get lost, for our evolved sensory facilities of terrestrial spatial orientation are almost useless in the air. There is, for example, an altitude above the plane of Earth, about the same as the vantage from the almost mile-high rim of Roden Crater, where the horizon seems to curve up at each end,





Roden Crater is an amalgam of many symbolic architectures, both secular and sacred. The correspondences between the stupa and Roden Crater, as well as many of Turrell's Autonomous Structures, are obvious, yet Turrell's forms are not symbolic. Perhaps the most relevant aspect of the comparison is the expansive consideration of perception common to both, which has been a primary subject of Turrell's art from its beginning. One perceives a richly colored plane so flat and so present one imagines it to be a painting on the ceiling of a Turrell Skyspace when in fact one is confronted with an absence of ceiling—emptiness—opening to an ordinary pale blue evening sky. These encounters with Turrell's art tactfully undermine the certainty of our visual experience, but more importantly they expand our sense of the malleability and larger creative potential of our perception. How expansive might our perception be? Under the right circumstances, what could we see?

SEEING AND EXPERIENCE IN ART

Seeing is not just a function of light passing through a lens and forming an image on a screen—whether internal (the eye) or external (a film, for example). Seeing requires preparation. And the whole of our experience “prepares” our seeing at any given moment. Meditation is one technique to open up a view to the “light inside,” as Quakers call the interior spiritual dimension, but it can also affect our perception of everyday reality. The temporal aspects of sight are many, including the time it takes our eyes to adapt to dark environments and the fact that human sight is not a static image, a picture, but rather an assembly of many visual fragments gleaned by our constantly moving pupils. Turrell's study of perceptual psychology, including his experiences with colleague Robert Irwin and NASA scientist (as well as cofounder of the Southern California International Buddhist Meditation Center) Ed Wortz as part of the *Art and Technology* program at the Los Angeles County Museum of Art (LACMA) in 1969, reinforced his understanding of the temporal aspects of perception. Their art- and science-based investigations into the mechanics of perception were a reminder that the world looks and feels very different, even enhanced, under conditions of sensory deprivation.

Abstract Expressionism, which still dominated the critical center of the art world when Turrell was a student, often concretized gesture on a surface with large expanses of vibrant color, resulting in big canvases that are often referred to as “meditative.” Mark Rothko's paintings of pure color are consistently spoken about in terms of emanating light; they were used to define the ecumenical spiritual architecture of the

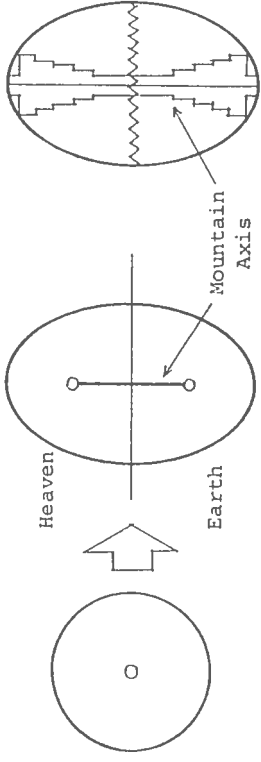


Fig. 150 : The Mountain in the World Egg.

contrary to our expectation of the limits of convexity. Drawn in epic proportion to evoke the infinity of an ever-expanding universe through the inner cosmos of underground chambers that hold filtered and isolated light emanating from the sky, Turrell's plans for Roden Crater suggest a deeply philosophical, as well as aesthetic, experience.

PHILOSOPHICAL FOUNDATIONS

Turrell often refers to the allegory of Plato's Cave as a starting point for his earliest projections of light into interior spaces. While Plato's allegory describes the illusion of reality, manifested in shadows that are only projections of more perfect forms, Turrell focuses us on the reality of the projected light—not in its capacity to create shadows, but as a thing in itself. His earliest works, the Mendota Stoppages, took the form of a room (his studio at the Mendota Hotel) whose windows were darkened by painting them black except for small scratches that allowed tiny slivers of light to enter. Like the first flickering of a projector being turned on in a dark cinema, this light had immediately physical qualities.

Just as the lens of the camera can facilitate viewing of otherwise inaccessible images, Quaker, Buddhist, or Hindu practices of meditation are also intended to provide sight—or “insight”—beyond matter, toward a state of nondistinction between being and knowing, and between the knower and the known. The architectural embodiment of the Buddha takes the form of a stupa, a templelike structure that is both mound and cave; in the most general sense, it is also an *axis mundi*, a world-center, connecting the earth and the heavens. Most Southeast Asian temples, even the great Borobudur in central Java, which Turrell knows well, manifest the idea of the stupa—which also references the mythical Mount Meru vertically connecting Heaven and Earth. Hindu creation myths, like the *Vishnu Purana*, describe the cosmic egg of the universe containing a mountain at its center. In his book *The Symbolism of the Stupa* (1985), scholar Adrian Snodgrass describes the two foci and complementary poles of the ovoid Cosmic Egg as Heaven and Earth “by whose ‘interaction’ the phenomenal universe comes into existence.”¹⁰ Given the artist's familiarity with these ideas, it would be hard not to see Roden Crater as Turrell's Mount Meru, connecting Heaven and Earth—its ellipsoid Skyspace connecting the two foci of an ellipse to form the circle one sees looking up the long tunnel toward the sky.

appropriated the mechanization and ephemerality of the commercially oriented media. Both Minimalism and Pop resisted the Abstract Expressionists' pretensions to the spiritual and everlasting. "My fluorescent tubes never 'burn out' desiring a God,"¹¹ quipped Dan Flavin, who brought his Minimalist aesthetic to his work with light. And Andy Warhol deadpanned, "My work won't last anyway. I was using cheap paint."¹²

The situation was not so simple on the West Coast. Artists associated with the so-called Finish Fetish aesthetic, such as John McCracken, proved that in the land of surfboard craft and custom cars, Minimalism and handwork were not incompatible. Ed Ruscha depicted the word "HOLLYWOOD" against sublime sunsets, and artists associated with the Light and Space movement—including Turrell, Irwin, Maria Nordman, Helen Pashgian, and Doug Wheeler—indulged the ethereal but grounded it in perception, without fetishizing objects. Southern California art of the 1960s, developed far from the cultural epicenters of New York and Europe, evolved as a less polemical, more subtle, but no less ambitious extension of Modernism and as a reaction to the dominant Expressionist idiom.

Turrell dispensed with the object (and object for sale), seeking to bring the sky down to the ground while at the same time courting the mysterious and immaterial dimensions of pure light in constructed environments that contrasted sharply with Flavin's get-in-and-get-out Minimalism or the quick hit of the Pop image reflective of the accelerated pace of the industrialized, media-infused Jet Age. Instead, Turrell embraced the wondrous slow-motion view of Earth from the window of Exupéry's early aircraft, or the cosmos visible from pilot Michael Collins's 1969 Apollo XI spacecraft. For viewers here on Earth, Turrell paced experience with the slow rise and fall of light that accompanies the space between day and night.

THE SEEING BEHIND THE EYES

Turrell has more aggressively arrested his viewers for extended experiences of all-encompassing light in a series of works over the last decade that amplify the ideas developed in his experiments as part of LACMA's *Art and Technology* initiative. In what look like large, spherical medical-imaging machines or something out of a science-fiction movie, he has created small chambers where the experience of light is invasive. In freestanding, self-contained constructions beginning with the Gasworks from 1993, a technician, complete with white lab coat, assists a visitor in lying down on a slab that is rolled inside a large sphere (its interior completely empty without seams or edges) to become surrounded by light. Prone and looking up into nothingness except light of various colors slowly changing and also sometimes flickering as fast as a strobe, the viewer sees not just color, but soon strange fractures, lines emanating from a blank, centered circle that slowly reveal themselves as the radiating blood vessels in the iris around the viewer's own pupils. Turrell offers a glimpse not of something *out there* but of the light and space *behind* the eye. By this programmed and concentrated exposure to light, Turrell is also able to place the viewer in a "theta" or even "alpha" state of altered consciousness—the goal of much spiritually driven meditation practice. Turrell is well aware that there are many paths to inner enlightenment; art and programmed light-emitting diodes (LEDs) are among them. With a wry smile, Turrell can easily describe the phenomenon of color synesthesia by which, through practice and biofeedback, he can teach anyone to feel a specific color of light projected on the back of his or her neck, without it entering through the eyes, literally "seeing behind your head." Such is the multidimensional power of light and the complex and malleable sensing instrument that is a human being.



famous Rothko Chapel in Houston and to inspire contemplation. God and nature were the implied subjects of this ambitious artistic movement: Barnett Newman, who famously proclaimed "I am nature," played with time and light in his paintings, which featured a vertical "zip" implying an existential instant against a vast field of space and color. Similarly—and spiritually—Ad Reinhardt's Black Paintings do not reveal their color or their structure and substance without careful observation over a relatively long period of looking. In fact, their subtle surfaces seem designed to force meditative observation.

Time is required to examine and absorb any work of art. Turrell has routinized that ritual in his Skyspaces by framing it, for example, as the transition between sunset and darkness, or darkness and sunrise. One imagines Turrell's own delight at his first Skyspace, seeing a progressive expression in color followed by darkness that echoes both Rothko's and Reinhardt's achievements without a drop of colored paint. The contemplative experience of changing light in a Turrell Skyspace inevitably induces quiet contemplation on the part of its audience, not unlike the silent meditative Quaker meeting—a connection made explicit in the title of his second Skyspace, *Meeting*. Much of the art of the 1960s was made in reaction to the heroic, almost religious, gestural handwork of Abstract Expressionism. While the industrial-materials aesthetic of East Coast Minimalism mostly banished the artist's hand and its allusions to nature, Pop Art

GANZFELD

Irwin and Turrell's LACMA experiments with Wortz yielded many insights into the nature of the perceiving subject, suggesting that the experience of phenomena including art is very much *in* the eye of the beholder. Surrounding someone with an indeterminate, unpatterned, unfocused, homogeneous field of view—a ganzfeld, or “entire field” in German—is a technique of sensory deprivation pioneered in the 1950s and revived in the early 1970s to enhance extrasensory perception.¹³ The experience of an indeterminate, unfocused, infinite space is also a distinct phenomenon experienced by pilots flying in clouds. In these environments there is no up, no down, no left, no right. In aviation, it is referred to as “instrument flight” because the human senses cannot be relied upon to provide spatial orientation; thus, pilots must ignore their senses and rely only on the information provided by mechanical instruments to determine proper control inputs for flight.

Having placed light physically in an interior, made recesses in architecture to hold volumes of light, cut apertures in walls and ceilings that rendered the sky as a physical plane, and moved into the landscape to create new architecture—inside a natural volcano and freestanding in space—Turrell eventually returned to the precisely controlled environments of his earliest experiments in perceptual psychology and encountered in flight. Like the pilot's experience flying with no instruments into clouds lit by filtered sunlight and reflected flashes of an aircraft's position lights and strobes, these environments—titled Ganzfelds and sometimes referred to by the artist as “new landscapes”—transcend any existing artistic definition of painting, sculpture, or even installation, and their experience prompts a reconsideration not only of the art object, but of the viewer as well.

Before entering one of Turrell's recent Ganzfelds—a carefully calibrated, blank, nearly seamless environment (in which a good scuff mark could render a measurable, but undesirable, reading of space)—a visitor first engages in a ritual of removing his or her shoes. An antechamber recalls the artist's Space Division Constructions, dim rooms with a primary wall on which a rectangle of color (looking like a planar monochrome painting) reveals itself upon closer inspection to be a rectangular aperture into an indeterminate volume of colored light. In a Ganzfeld, however, stairs lead up to the bottom of a color rectangle and the viewer is invited to walk “through” the “picture plane” into the volume holding the hue, which is actually a room, a space of light, with no seeming particular termination point, an experience that feels vaguely like stepping “through the looking glass.” After some adjustment, one senses the outlines of the container's interior walls that appear to be painted whatever color of changing light the artist has programmed. Some steps ahead one encounters a terminus of the floor, beyond which is another, potentially infinite, amount of space. Within that sensed infinity as well as the space occupied by the sensing visitor, Turrell has programmed, in precise sequence, speed, and coordination, the color and intensity of specific light (driven by computers and projected from LEDs in seven blending colors) flooding the space inhabited by the viewer and the indeterminate space beyond. The sequence of colors is key; at certain moments one's entire grasp of boundaries, of walls, ceiling, floor, dissolves. The experience is often less “extrasensory” than transgressive: color and light literally enter the body. Though less obvious at first, one's vision is projected into the environment and affects, in turn, the body of the color sensed.

While Albers beautifully demonstrated in his abstract paintings how one color is affected by its relation to another, Turrell in his Ganzfelds completely unanchors color from any objectivity whatsoever. By surrounding the viewer with changing sequences of pure color, the artist has made an artwork that collaborates with

109. *Apparent Flattening of the Vault of Heaven*¹

When we survey the sky from the open fields, the space above us does not generally give us the impression of being infinite, nor of being a hollow hemisphere spanning the earth. It resembles, rather, a vault whose altitude above our heads

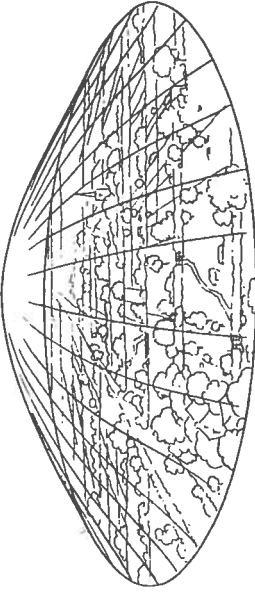


FIG. 97. The sky seems to arch over the earth like a kind of dome. It is less than the distance from ourselves to the horizon (Fig. 97). It is an impression and not more than that, but for most of us a very convincing one, so that its explanation must be psychological and not physical.

the viewer's constantly changing frame of reference. Not only is one color prepared for by another, but the blending of those colors, their understanding, is a function of us as perceiving beings, as much as it is given by the artist. Science dictates that our eyes “white balance” in any given environment. That is, if one stares into red for a time, one's eyes diminish that red toward white. But if the red is suddenly removed, one's sight is biased against red and will see green where there is none. And if blue is quickly introduced into this “afterimage” of green, a yellow appears. Yet no science can explain the uncanny feeling that there is no space, no difference, between us and the object of our perception.

For centuries aesthetic philosophers have pondered the conundrum of the seemingly impenetrable gap between the object we perceive—“out there”—and the construction of our perceptions—“in here.” In his utterly simple, entirely abstract, construction-environment-artwork, Turrell has obliterated the philosophical and actual barriers between subject and object, as if the ideal forms and their shadows on Plato's cave wall have merged into one ultrareality.

PERCEPTION AND TRUTH

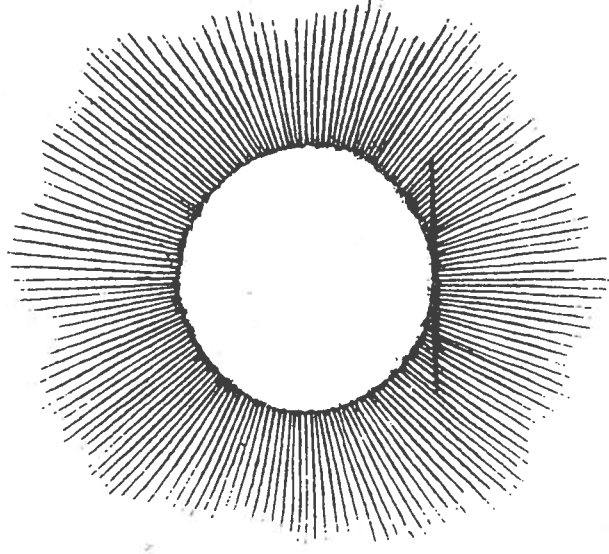
A bit of perceptual magic. A slight of the artist's hand. A sense of illusion. Yet all that artistic machinery in Turrell's environments—walls built, earth moved, perceptions warped—brings us closer to awareness of truths central to our experience: that reality is in constant collaboration with our perception; that vision can only be understood in time as well as space and light; that our understanding is not just a reading of the world but is actually shaped by our environment; and that this environment, the object of our perception, is shaped by our perceiving eyes. By moving millions of cubic yards of earth, Turrell has subtly revised the topology of the inner bowl of Roden Crater, adjusting his “readymade” natural volcano such that when

I look at the sky from the bottom of the bowl, the sky seems to be a tall vaulting dome and not the flat plane above my head to which I have become accustomed. The early twentieth-century Belgian astronomer Marcel Minnaert predicted the effect of near-space on our sense of far-space in his 1937 treatise "The Nature of Light & Colour in the Open Air" (translated into English in 1954, in time for Turrell's studies at Pomona College).¹⁴ But Science cannot sculpt the sky into a dome—even though by all scientific measurements it is, yet it is never perceived that way because of the bias of the shape of our eyes and our evolution as humans.

The viewer's eye—not the artist's eye, nor God's eye—is the subject of Turrell's work. His constructions, the Skyspaces in particular, are recursive descriptions of perception; we have access through the eye, from inside the container of our body, within Turrell's architectural container, to the sky and universe thanks to the distinctive aperture that is the signature element of his art. It was Kepler, astronomer and mathematician, who not only was able to divine the elliptical paths of planetary orbits and absorb that into an expanded definition of a universal geometry but also was the first to suggest that "vision occurs through a picture of the visible things on the white, concave surface of the retina"¹⁵ inside the eye. Turrell's largest Skyspace sits in the base and center of Roden Crater's convex, slightly oblong bowl like an eyeball set within the skull of the planet. Turrell calls it the Crater's Eye and his numerous aerial photographs and topological drawings bear out the resemblance of the crater to an eye, presumably witness to the heavens above.

Turrell's practice can be considered in light of other creative human attempts to consider the simplest forms as a conduit to the largest of ideas and experiences. Among the most astounding aspects of Turrell's art is how much is achieved in radically simplified "minimal" forms and how, even in its most reduced construction, his art is informed by and considers a vast territory of ideas from Western and Eastern art, philosophy, science, and religion.

The deceptively simple forms of Turrell's art can channel the most subtle of experiences. Isolating and shaping the phenomena of light in space and time through our perception, his art collapses the distance between the perceiving subject and the object of perception—akin to the Buddhist meditative practice of merging outside and inside to promote receptivity to a more spiritual, universal nature. Similarly, Turrell's modern Skyspaces engender the most essential of experiences. As religious historian Mircea Eliade noted, "Most ancient sanctuaries were ... built with an aperture in the roof, an 'eye of the dome,' symbolizing breakthrough from plane to plane, communication with the transcendent," which Eliade suggested was an echo of the "cosmological symbolism already present in the structure of primitive habitations."¹⁶ If ancient humans built sacred architecture as a reflection of their own bodies—out of a desire to bring the cosmos inside a contemplative space and thereby bring it inside themselves—perhaps the goal of artists like Turrell is not so different.



— Puncto iunguntur in uno.

NOTES

- 1 Niamh Coghlan, "New Interpretations of Color," *Aesthetica*, April 1, 2011, <http://www.aestheticamagazine.com/new-interpretations-of-colour>.
- 2 Sun and Moon Space is also the title of the entire project in the artist's earliest drawings for Roden Crater.
- 3 The sun achieves this alignment once each year on the summer solstice, the moon on its 18.61-year cycle known as the major lunar standstill.
- 4 James Turrell, *Emblemata* (Tempe, AZ: Segura Publishing, 2000).
- 5 Bill Waterson, "An Appreciation: A Few Thoughts on Krazy Kat," in *Krazy Kat and the Art of George Herriman: A Celebration*, ed. Craig Yoe (New York: Abrams Comic Arts, 2011), 10.
- 6 Antoine de Saint-Exupéry, Lewis Galantière, and John O'Hara Cosgrave, *Wind, Sand and Stars* (New York: Reynal & Hitchcock, 1959), 65.
- 7 *Ibid.*, 67.
- 8 *Ibid.*, 68.
- 9 The Little Prince is illustrated putting "his planet in order" by carefully cleaning out his active volcanoes.
- 10 Adrian Snodgrass, *The Symbolism of the Shippa* (Ithaca, NY: Cornell University, 1985), 228.
- 11 Dan Flavin, to Elizabeth Baker, June 27, 1967, published in Flavin, "Some Other Comments: More Pages from a Spleenish Journal," *Artforum*, December 1967, 20.
- 12 Robert O'Byrne, "Archive: Andy Warhol," *Apollo*, September 1, 2011.
- 13 In one simple experiment, each of the two halves of a divided ping-pong ball are placed over each eye of a subject.
- 14 Turrell later discovered errors of scale in the scientist's calculations.
- 15 David C. Lindbergh, *Theories of Vision from Al-Kindi to Kepler* (Chicago: University of Chicago Press), 200.
- 16 Mircea Eliade and Willard R. Trask, *The Sacred and the Profane: The Nature of Religion* (New York: Harcourt, Brace, 1959; reprinted in 1987), 58.