

JAMES TURRELL





WIMBLEDON SCHOOL OF ART

MERTON HALL ROAD SW19 3QA

Tel. 0181 540 0231

WITHDRAWN

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SOUTH BANK CENTRE

James Turrell: Air mass

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Wimbledon School of Art



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AIR MASS

JAMES TURRELL : Air Mass.

✓
THE SOUTH BANK CENTRE

It has been shown that the effect of the Earth's rotation is to produce regions of discontinuity of density in the ocean and of temperature in the atmosphere. These frontal regions also demarcate the boundaries of different air masses and the different water masses. However, these frontal regions are rarely in equilibrium. Such a balance of forces would not allow for the transfer of heat and other properties across the frontal surface.

Neil Wells, *The Atmosphere and the Ocean*, 1986

When two air masses of differing types encounter one another, they do not mix readily. Instead, the colder one slides under the warmer one and a transition zone develops between them. It is called a front because the concept was first discovered by Norwegian meteorologists during World War I when the newspapers spoke of such things as the "western front."

Louis J. Battan, *Weather*, 1974

The boundary between two different air masses is called a front. Important changes in weather and temperature often occur with the passage of a front.

Charles and Ruth Laird, *Weathercasting*, 1955

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NIGHT CURTAIN

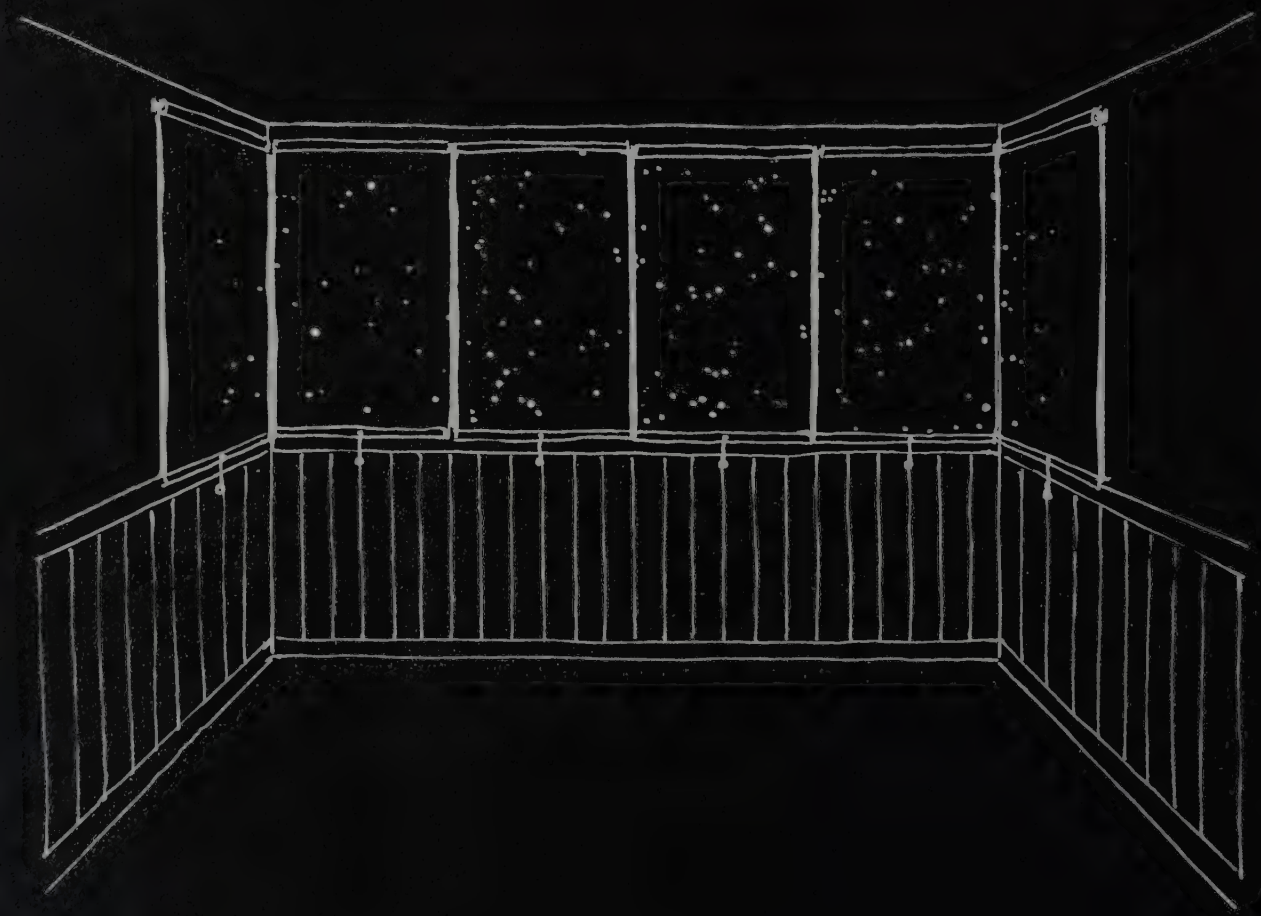
My father was very fond of birds. As the Director of a technical school in Pasadena and an aeronautical engineer, this interest in birds was a Romantic parallel to his involvement with flight. He loved to call in the birds, whistling in their unique way. Using more than one tone, by adding an overtone of a third, a fourth or a fifth to his whistle, he made the complex calls of various birds. These overtones were achieved by whistling the primary note, then changing the shape of the mouth by puffing out part of the cheek to get the overtone. He called in the birds to feed them. He particularly liked the mockingbird, because this bird imitated the songs of the other birds. He was able to introduce a song of his own to that of the mockingbirds.

My father would sit on the roof of the laundry closet, which was accessible from the second floor of our house, and call the birds to feed. Eventually he made a better place by roofing over the area and putting windows on three sides, so creating a special spot from which to call the birds.

This was a very odd time in America. It was 1942, and war had only recently been declared. There was great paranoia about the possibility of Japanese attacks on the West Coast. On one extraordinary night there was an incident which was a response to a real or imagined attack on the city. The anti-aircraft positions opened fire at what were thought to be attacking aircraft. Los Angeles was such a large city that shells fired from one part of the city would come down in another part of the city. This gave the impression there was an attack. Other positions returned fire, resulting in a large gun battle. No one knew for sure if there was an enemy attack. It seems Los Angeles has a long tradition of making no distinction between the imagined and the real. However, there was considerable damage to scattered parts of the city.

On the night of this attack, my father and mother celebrated the completion of the bird feeding room. In the midst of this real or imagined attack I was conceived. The bird room became my room. The events of that night showed that imaginary events could have as much effect on reality as events which were physically real.

At Pasadena Junior College my father developed programs where the students actually



built what they had designed. The architectural students built the houses they had designed, and the aeronautical engineering students built airplanes with an advanced design by Max Harlow. The Harlow PJC-2 was designed in 1934, built in 1935 and 1936, and licensed in 1937. It was a monocoque plane, which meant that there was no framework other than the skin itself. It had low wings, retractable gear, a fully faired engine and an enclosed cabin. One of the constructed examples was purchased by Howard Hughes, who later hired Harlow to build the H-1, the Hughes Racer. This famous plane had the same elliptical, low-wing, almost laminar-flow look to the design. One of my father's students, now an airline pilot, owns a PJC-2, which he had worked on as a student. I have flown this plane.

A connection existed between my father's involvement with the aircraft as an instrument of flight and the natural flight of birds, as well as with the birds as instruments of song. As a child, I had to surrender my room to my father when he needed to call in the birds. The room was inhabited by my father's presence and the birds' song. The room, with its windows on three sides, provided a panoramic view of 270°. The wainscot rose forty-two inches up to the window frames. The windows opened up completely so the birds could come in, while my father was protected from the rain and, in particular, the sun. This was important since he was fair-skinned and burned easily. He would sit endlessly and call in the birds. The room was occupied by song.

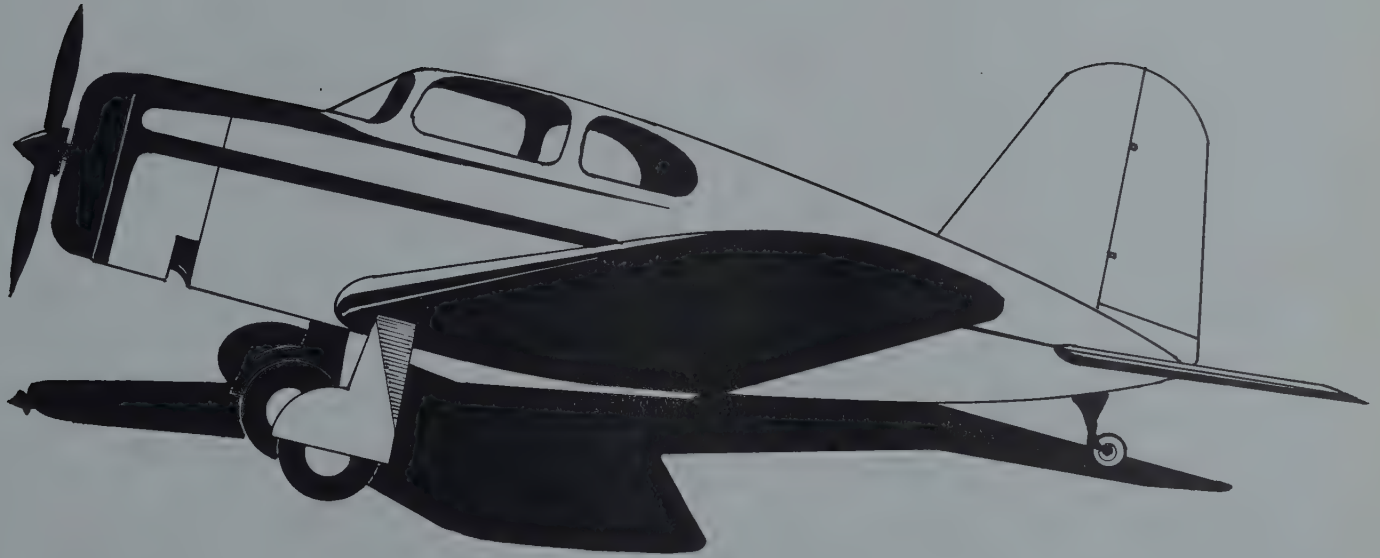
In my youth there was the considerable presence of astronomy in Pasadena. On Mount Wilson was the Hale Observatory. The huge 200 inch telescope of the Palomar Observatory was being created at Cal Tech in Pasadena at that very time. I went to school with the daughter of Horace Aubrey, the head of Mount Wilson-Palomar. Even my elementary school was named after the astronomer George Ellery Hale. There was considerable public interest in deep space.

Probably as a result of the air attack back in 1942, an edict had been issued for all houses to place blackout shades over the windows at night. My room had these dark green curtains with tar in the middle that were completely opaque. You could pull them down

and make the room quite dark in the day, although some light would come in around the edges. When I was six years old, in order to assert my own presence in the room, I took a pin or needle to these curtains and pierced them to make star patterns and the constellations. I would simply make bigger holes for stars of greater magnitude. Pulling down the curtains and darkening the room, you could see the stars in the middle of the day.

These weren't just holes in the curtains, they were holes in reality. By changing the reality of the conscious-awake state of day, one could see further into imagined space to the stars, which were actually there but obscured by the light of the sun. In the same room my father could still raise the curtains and open the windows to allow in the birdsong. The curtains did not last long and began to tear because they were riddled with so many holes. Several curtains were greatly weakened by the Milky Way.

Years later, after my father had died, I returned to the room. When consciousness leaves a space or an object there begins a death, a leaving. The room was no longer vital. But I heard a mockingbird. It sang my father's song.



Harlow PJC-2, made at Pasadena Junior College Technical School, licensed 1937 (drawn 1993)

I had flying experiences when I was young but my early memories of flight are influenced by stories, particularly the writing of Antoine de Saint-Exupéry. He described spaces within space, not defined physically by the architecture of form, but by pressures within the atmosphere that advance in the sky. He wrote about the experience of night flight with the advance of light or darkness. In *Wind, Sand and Stars* you gain a sense of atmosphere advancing to form amazing spaces that can be entered by flight.

I was also very interested in the idea of the journey into these spaces, so that consciousness moves into and inhabits the sky. The airplane is then seen as an instrument that comes from our own sensibility and takes us into space. There are people who have inhabited the space of the sky for some time – the Tibetans in the Himalayas, the Hopi on top of the mesas. The Hopi live near the cloud base of the summer cumulus which pass closely overhead. In a true sense they are actually inhabiting the sky.

As my father was particularly interested in aeronautics, I decided to be interested in sailing, an irony not lost on my mother. I built small sail boats. My father gave me a copy of the journal of Joshua Slocum, the first man to circumnavigate the earth by sea, single-handed, in the late 1890's. Sir Francis Chichester was the next to do it almost a century later. I was very interested to read about the voyages, which were journeys of self into another realm. It is in such accounts as those of Saint-Exupéry, or Slocum, or Chichester that you find the imagined merging with the real in the same way that truth can become stranger than fiction.

All this is connected with the expansion of territories of the self. At night in the city, light pollution closes off access to the stars. It actually physically limits the extension of our territory into the universe. It psychologically encloses our world and limits territory. My interest in flight, the journey and the sky is not much different from the Peter Pan syndrome of many artists. We do not wish to grow up because we want to have a life where the imagined can be as "real" as that which is commonly agreed upon as reality. The expansion of this "shared reality" then seemed to create a clear purpose to the somewhat solitary acts of these journeys of self.

My greatest interest in flying is soaring. Soaring gives a very good understanding of the conservation of momentum. There are no worries about “engine out” experiences because your entire flight experience is “engine out”. Landings are carefully planned. Soaring is flight which uses air that is moving upward, either from mechanical convection blowing against the mountain, or from the lift provided by thermals, which in summer is usually marked by the build-up of cumulus cloud, or by mountain lee wave. This lee wave is created by an obstruction which causes waves in the atmosphere downwind of the obstruction similar to standing waves in water downstream from a large stone. You find the waveforms, for example, behind the Himalayas, the Sierra Nevadas and the Rockies. There are even waves that come off certain landforms in England. New Zealand has very good wave soaring. Soaring is more than gliding, which is merely a downhill ride. Soaring is about getting up, staying up and going somewhere. There are also the jet streams, narrow streams of high speed air usually between the troposphere and the stratosphere, which some people are thinking of soaring, though no one has done it. The jet stream twists like a braid. If you are looking to the east, it rotates in a counter-clockwise mode. In the southern quadrants you could find lift and follow it, thus sustaining flight.

On a soaring journey you can plan a flight path advancing through interconnecting cones of possibility for landing sites, as when crossing a stream you don't leave one stone until there is another stone within stepping distance. With engineless flight the imagined cone is inverted, with the point over a possible landing field. The higher the altitude, the further away you can be from your landing site. The cone of possibility increases in size as you go up in altitude and is tilted towards the wind; the more you are upwind of the site, the further back you can glide downwind to land. When you have another landing site where cones of possibility coincide, you can advance into the next cone and proceed on your journey. Today's gliders have glide ratios of more than 50:1. If you are one mile up, you can glide fifty miles before you contact the earth without either updraft or downdraft, so you have very large cones of possibility and soaring becomes easier. In streeting clouds – clouds which arrange themselves in lines – you do not even need to spiral. Flying under



604 over Taos, New Mexico, thunderstorm in background

the cloud streets, you merely pull up when you meet updrafts to stay in them longer, and you push over to speed up as you pass through downdraft areas. This is sometimes called “dolphin flight”. There are many new strategies to flight now which make it possible to stay up most of the day without power. Soaring flight is like that of hawks, buzzards and eagles.

Flying out of South-East Asia, over Tibet and amongst the Himalayas, I saw great mountains, jungle and beautiful terrain on journeys that expanded the territories of self. As the instrument of flight becomes more refined, we begin to intellectualize the process and subvert the experience, so that pilots judge each other by their abilities in instrument flight (flight without seeing outside the plane) and in the quality of the landing, which is no more than the termination of the experience. It is like judging the dream by the manner in which you awakened. The more you have extraordinary experience in flight, the more you realize the difficulty in passing on the experience to others. Your experience becomes such that it is almost too difficult to talk about it. It seems useless to try to transmit the experience. It would be easier to send others on the flight itself. The idea of the Bodhisattva, one who comes back and entices others on the journey, is to some degree the task of the artist. It is a different role from that of one who is there when you get there. The Bodhisattva entices you to enter that passage, to take the journey. This is where I began to appreciate an art that could be a non-vicarious act, a seeing whose subject was your seeing.

With the experience of extremely high altitude flight, new vantage is gained. The veneer of atmosphere and surface of earth exists as an emulsion, as holder of image, holder of life. We develop, emerge out of earth and fade back into it. Our convention of burial mocks civilizations’ disintegration into earth. Civilizations are buried in the sands of time, then they can become exposed again. I began to see aerial photography as a form that looked upon the surface of the earth almost as the emulsion to be developed. Ancient cultures are revealed through differences in crop water retention, as with the discovery from the air of Woodhenge in England. Other cultures are dissolving back into the surface. Flying over the jungle and seeing the extreme beauty, you are aware that the jungle has

swallowed many planes. Craft go down and jungle folds right over. Out of the jungle other remnants of culture emerge such as the forms of stupas and temples – amazing visages.

Throughout Asia there are temples in large stupa form. The stupa which exists in Tibet is generally a solid form which is not entered. The symbolic language of the architecture reflects the relationship of earth to heaven and of conscious-awake daytime state to dream states and planes beyond. These relationships are expressed in the shapes of the stupa, from the base to the dome to the antenna.

When these forms emerged later out of memory, I wanted to make similar forms that were physically entered. Instead of symbolizing the relationship between the physical plane and those beyond, I wanted a visual confrontation between physical seeing and spaces that created an experience of seeing, familiar to us beyond our conscious-awake state, only we had never experienced it that way. This would be a seeing where the space of the sky would be brought into contact with the space we were in, as in *Air Mass* (see page 52). The sky would no longer be out there, away from us, but in close contact. This plumbing of visual space through the conscious act of moving feeling out through the eyes, became analogous to a physical journey of self as a flight of soul through the planes.

The most interesting places for physical flight generally have large topographical differentiation – mountains, valleys, eroded stone formations – places that give a sense of the surface of the planet. The American Southwest has this in the topography of Monument Valley, Grand Canyon, Lake Powell, Canyon de Chelly, the Painted Desert and the Rockies. This topography invites flight close to the earth. This “nap of earth” flight provides a constantly changing perspective.

The space up from this terrain is inhabited by weather phenomena. Heat structures are created in the thunderstorms and incredible visual worlds exist above the earth. Most action is at the weather front, the pressure dip. Frontal passage signifies entry into another air mass. This weather “picture plane” also brings a visual change in the weather, squall lines, dense curtains of rain and stacking cloud layers. Flight in the area of the front is not always recommended, but it is usually exhilarating. I remember Saint-Exupéry’s descrip-

tion of a flight over the sea between water spouts that existed like Greek columns from sea to cloud. Everything was very still except for the water spouts.

In the same way we could inhabit the spaces within the sky through the instrument of flight, we can consciously inhabit this space by moving the feeling of vision out through the eyes and so move consciousness out into the space. This is not to say that flight is not useful for the expansion of one's territory, only that the instrument of flight can sometimes subvert the purpose of the journey. At the time of the space race I was interested in our need to go to the moon, to substantiate our arrival in space. Although the earth is a far bigger orb than the moon, we do not feel ourselves to be "in space". We had to go to the moon and step on to it in order to have entered space. In 1969 we went to the moon and came back with the moon rocks. Three of these were displayed at the gallery at UCLA in triangular, prismatic, sealed and evacuated glass cases set upon sculpture stands. They were most ordinary looking rocks, appearing as if they had been found in someone's backyard. There was nothing distinctive about them. I was there for half an hour. Another couple was also examining them. We passed around the three stands, looking at each other and looking at the stones. Later in Japan, I was visiting the Osaka Expo, where the rocks were exhibited in the American Pavilion. Crowds of Japanese rushed to see these same three rocks. For us, our stone is the moon itself. We behold the cosmos through the macrocosm. The Japanese on the other hand, attuned, or perhaps conditioned, through the art of *bonseki*, the art of garden stones, and through other forms of visual poetry, are able to see the cosmos in a single stone.

I had gone to Osaka in connection with an art and technology project on which I had been working in Los Angeles. Sam Francis had lent me his studio in Tokyo. I also made a trip south to Suwanose and the Amami islands, along the volcanic chain between Kyushu and Okinawa. I was very impressed by some of the traditional Japanese forms of art, which seemed so modern. I also realized that the young Japanese artists had to react in some way against their own traditions in order to be artists. When I originally visited Europe I realized that it would be difficult to be an artist in Europe because so much art

had already been made and the culture constructed. In Northern Arizona there is little culture, but Frank Lloyd Wright, Max Ernst, Frederick Sommer and Zane Grey each existed here in isolation.

Having been raised as a Quaker, I was responsive to the straightforward, strict presentation of the sublime, which Japan seemed to offer. Through Sam Francis's father-in-law, a distinguished Japanese, I was introduced to the Japanese garden. I originally visited a garden near Izumu. After sitting for some time I went to the toilet. It was a low toilet over which you squatted. Then I noticed at eye level a small triangular window, which provided another view of the garden. The view opened onto the same part of the garden as a larger window above, except the view was scaled down. The small rocks appeared as mountains, blades of grass became wooded hillsides and the *bonsai* looked like large trees. The microcosm had become a macrocosm, which perfectly echoed the motifs and forms of the larger view. I then realized that the garden should be viewed from numerous vantage points. The garden assembled a universe of seeing, enabling you to pass from microcosm to macrocosm and back. Unlike many Western gardens where you have limited dimensionality, here the pattern of the design was submerged into different levels. On the surface it seemed as if there was no overall organization and the garden quite naturally dissolved into the far hillside. You had no sense of where the garden began or ended. I was discovering the depth of thought behind the design. Flying had also changed my perspective and sense of territory, allowing me different vantages. Saint-Exupéry remembered driving to the aerodrome in a taxi and realized that the lives of the people on the ground were defined differently because they never saw from the other vantage point of flight. But with this vantage came responsibility.

I was engaged in both cartography and photography. I was also an artist developing an art that was concerned with light. I came to the installation works wanting to bring the light of day into a landscape. I did not want to make a mark on the surface of the earth. I wanted to employ sunlight, moonlight and starlight to empower a work of art. Instead of competing with the sunset, I wanted to use it, to take it in. I created spaces with a

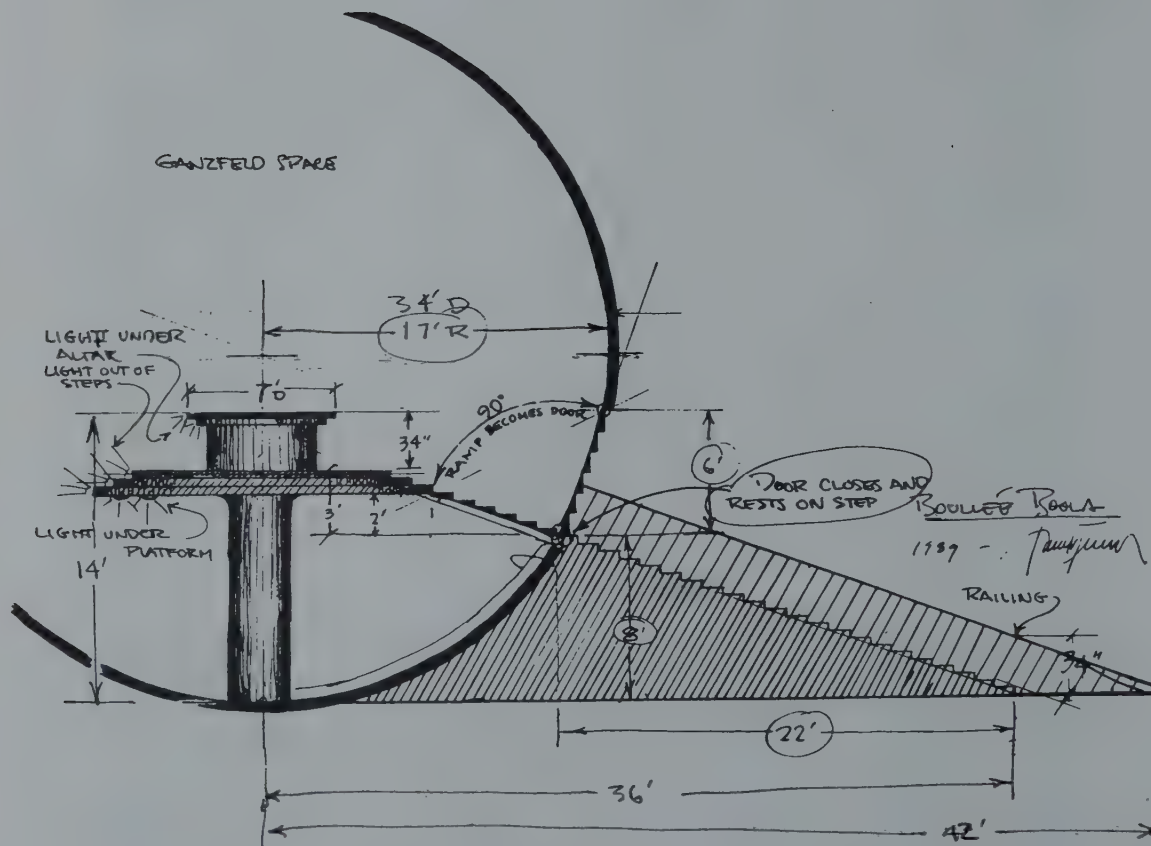


Windmill Hill, Hampshire, Ordnance Survey, 1922



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1908 10'

Woodhenge (Winter), Ordnance Survey, 1925



similarity to the *camera obscura*. I wanted the spaces entered to be an expression in light of what was outside. I formed an interior space to be sensitive to that which occurred in the space outside – a sensing space. The stupas that I saw in the jungle represented this relationship of inside to outside, of earth to cosmos symbolically. The experience of inside is formed by that which occurs outside. Looking into the interior space, we are observing a space which is itself looking. This inside space becomes an expression of the outside. Similarly, my work is not so much about my seeing, as it is about your seeing. There is no one between you and your experience. It is a non-vicarious art.

I work with the convention of the picture plane and framing. The first way of doing this is when the work is out, away from you, existing simply as a picture. Then you come to enter it through seeing. The second way involves the “window” of the picture plane, which is brought forward so that one enters the whole piece. The third way is when the picture plane is almost pulled over your head like a shirt. The light from inside then meets the light from outside in such a way that it becomes insignificant to determine from where exactly the light comes. You may ask yourself in the dream from where the light of the dream comes. The dream light has more clarity and lucidity of colour than light through open eyes. At times this seeing that we are able to generate from inside, as in the dream, merges with the seeing from without. This situation is manipulated in the dark spaces.

The picture plane is analogous to weather phenomena. The pressure front is the place of action between cold air and warm air. If you are on stage, the stage lighting can make it impossible for you to see the audience. You are in the same space, architecturally and physically, as the audience. They see you and the people in front of them. You see only the stage and into this mist. The penetration of vision is stopped without physical form. In the same way the sun lights the atmosphere during the day and you cannot see the stars. Take the lighting of the atmosphere away and the stars emerge out of the twilight. Similarities exist with a weather front. Action is at the trough or the pressure dip. Visual penetration can end at the front or extend through it. Again, without solid form, penetration of vision can be halted.

First, I am dealing with no object. Perception is the object. Secondly, I am dealing with no image, because I want to avoid associative, symbolic thought. Thirdly, I am dealing with no focus or particular place to look. With no object, no image and no focus, what are you looking at? You are looking at you looking. This is in response to your seeing and the self-reflexive act of seeing yourself see. You can extend feeling out through the eyes to touch with seeing.

When I went to Japan, especially to Suwanose, an active volcanic island, I felt to be on a living surface. The earth was a living skin. The aerial view reveals the vitality of the earth and the passing and re-emerging of cultures. Geology reinforces that view with the movement of continental plates, with subduction and volcanic re-emergence. I remember earthquakes in California, but on Suwanose the ground shook daily. Volcanoes, of course, connect to the centre of the earth with molten magma. The moment I saw the chain of volcanic islands south of Japan, I knew I wanted to find a volcano myself. Volcanoes and islands have a terrestrial *thingness* to them. Likewise, my interest in the perception of light is in giving it *thingness*. It exists just as a physical object has presence. I make *thingness* of perception by putting limits on it in a formal manner. There is no object there, only objectified perception. By putting into question physicality and *objectness*, the work may reveal more about physicality than any physical object.



Our culture is going through a strange time – looking at Eastern thought – their work with meditation, their sense of the body and mind and soul. We're approaching it through psychology. We're very physical. When we want to go into the universe, we can't look at a rock, like the Japanese, we have to actually go to the moon. We're so literal.

A Report on the Art and Technology Program, Los Angeles County Museum of Art, 1971



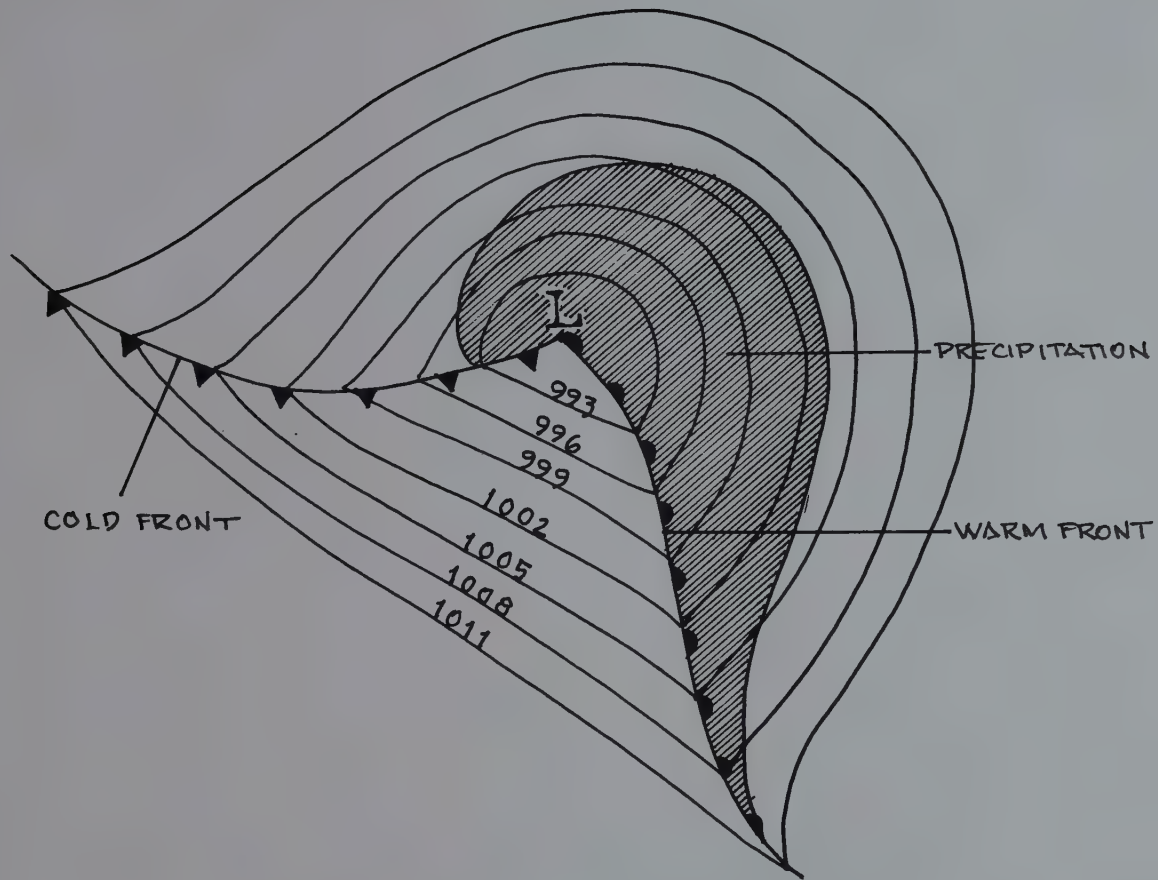
Medieval woodcut, anonymous

“He carefully cleaned out his active volcanoes.”

Antoine de Saint-Exupéry, *The Little Prince* (English edition), 1945 (© Editions Gallimard)

3

WARM FRONT



A boundary of relatively warm air, advancing into an area occupied by colder air, is called a warm front.

Charles and Ruth Laird, *Weathercasting*, 1955

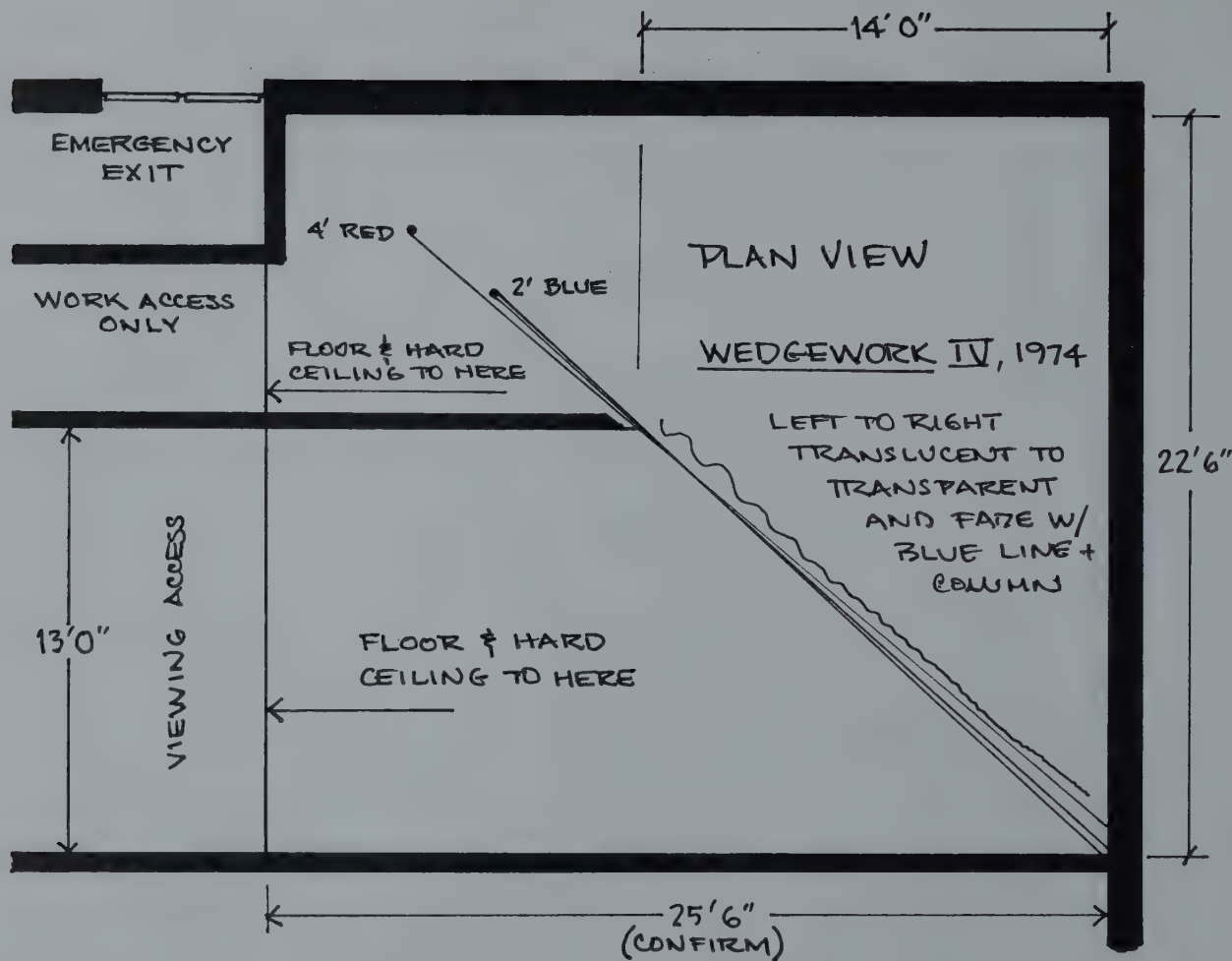
WEDGEWORK IV, 1974

The spatial manipulations of the *Shallow Space Constructions* were extended by moving the constructed wall further out into the room. By angling the non-abutted edge of the partition wall and positioning light at an angle to the end of the wall, the image of the light that shone from one side of the partition created a semi-transparent screen which stretched from the edge of the partition to a point where the image hit the side wall.

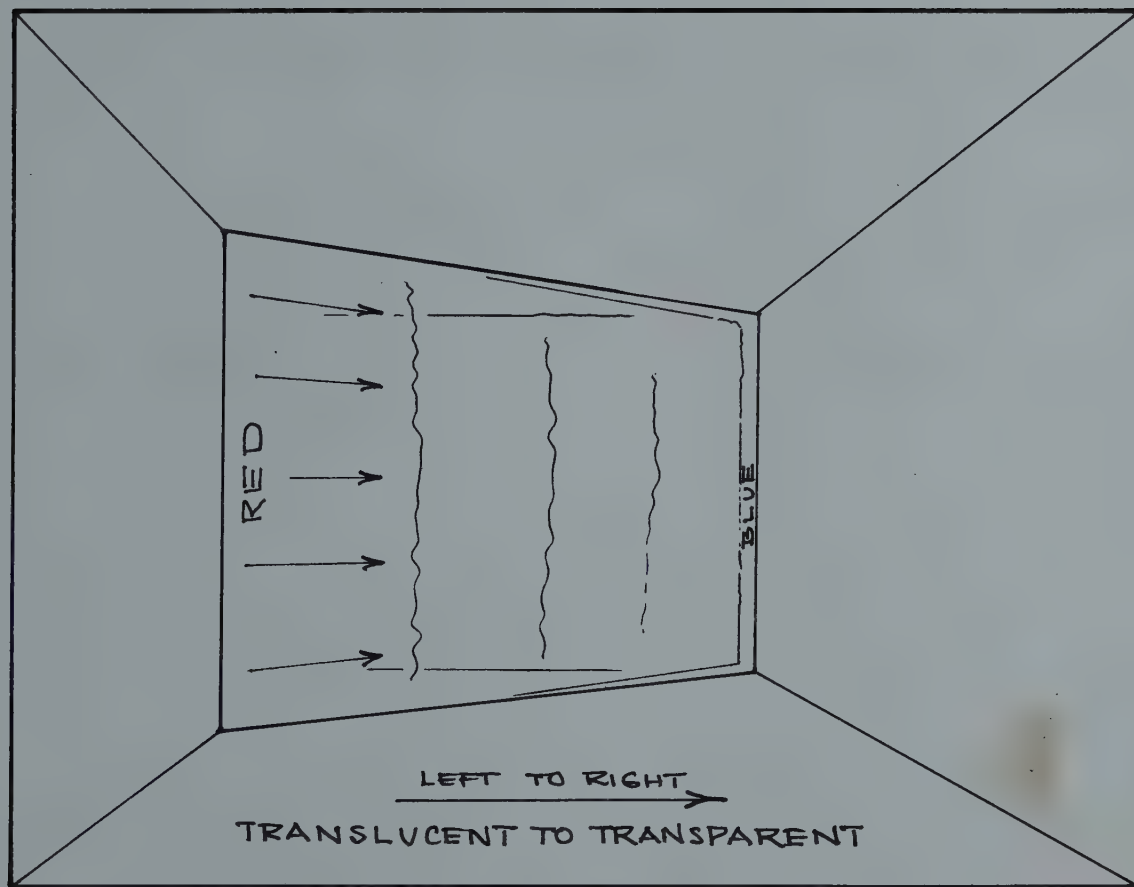
The first piece in this series was *Lodi*, which related directly to *Joecar*, a “Projection Piece”. The next piece, *Hallwedge*, was first made in a space cut away from the stairs leading to the basement of my studio in Ocean Park, Santa Monica, and it was later realized in a hallway at the Stedelijk Museum in Amsterdam. Further pieces were created by shortening the partition and moving it towards the centre of the room. In the final piece, the partition is positioned equidistant between the two end walls and the light screen bisects the remaining half of the room diagonally. The screen is perceived as a transparent, filmy, glassy surface through which one looks into a space that appears white. The sheet of white then reveals various colour differentiations from its edges inward, depending on the mix of light behind the partition wall. From the side nearest the partition wall the colours seem to ride on the surface, out in space. As you move across towards the corner, the light changes from translucent to transparent.

The light actually occupies space as opposed to being seen to shine on the surface of the wall. The colour should arrive with the light and not be painted on the wall. The surface of the wall is so well finished that you spend no time looking at it, but instead you see the space. The three different qualities of opaque, translucent and transparent light are present in the space.

Wedgework corresponds to the weather directly. “Wedging” occurs with a cold front and “shallow wedging” occurs with a warm front. As you approach a front there is a change in visibility, which happens very quickly if you fly towards it. When flying, this differentiation of vision happens through weather and water vapour. In *Wedgework* similar qualities of opacity, translucency and transparency are created by light simply inhabiting space.

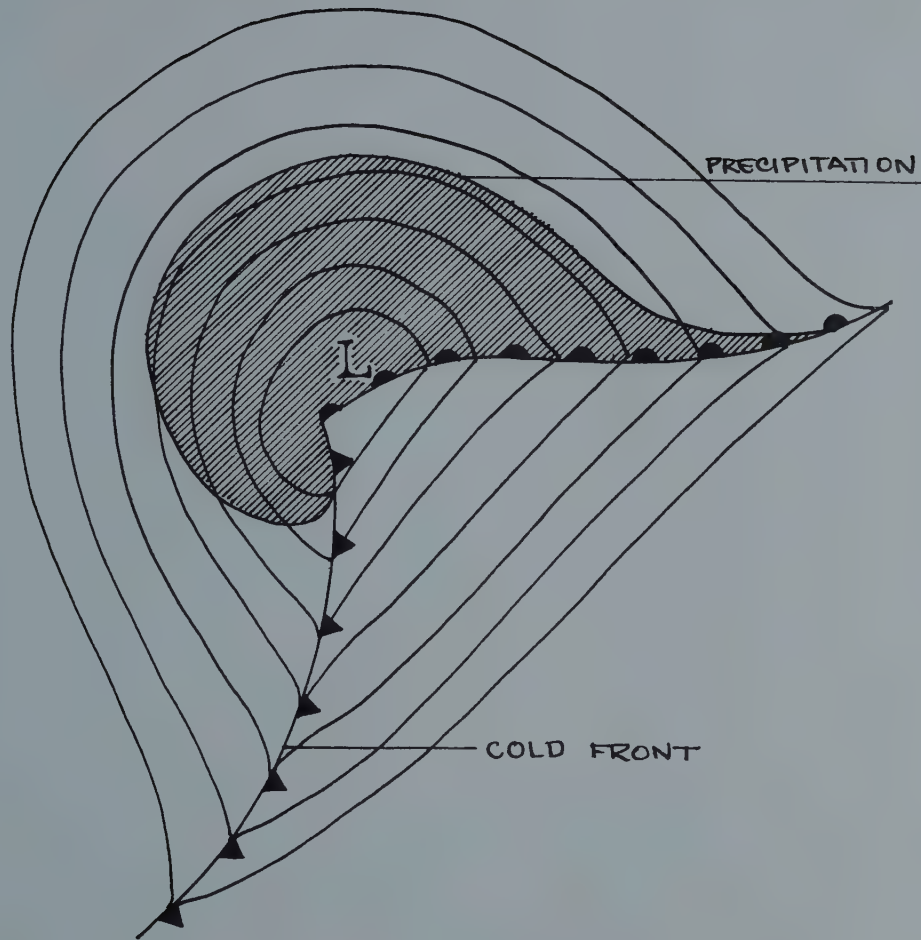


Plan view of *Wedgewood IV*, Hayward Gallery installation, London, 1993



WEDGEWORK IV, 1974 FOR THE HAYWARD

RED FROM LEFT, WHITENS WITH BLUE, BLUE
LINE IN CORNER. SCREEN DISSOLVE LEFT
TO RIGHT, GOES TO TRANSPARENT.



A boundary of relatively cold air of polar origin, advancing into an area occupied by warmer air, often of tropical origin, is called a cold front.

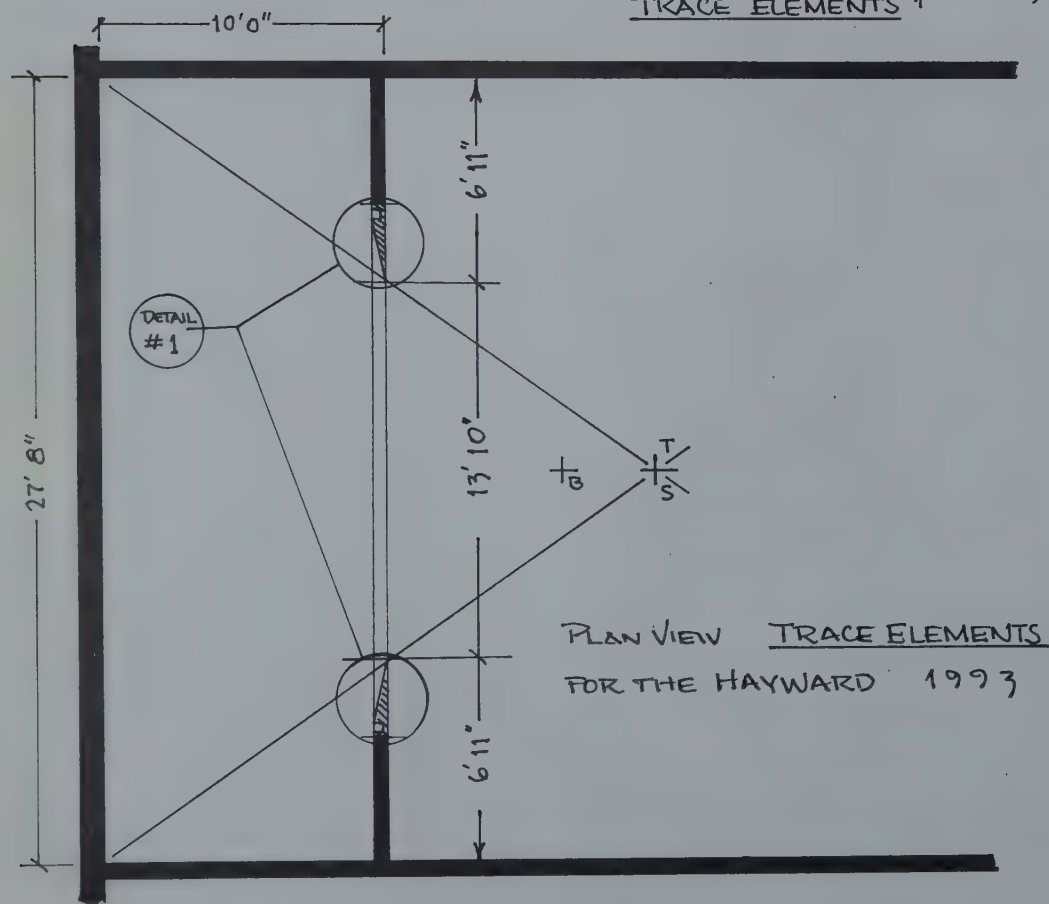
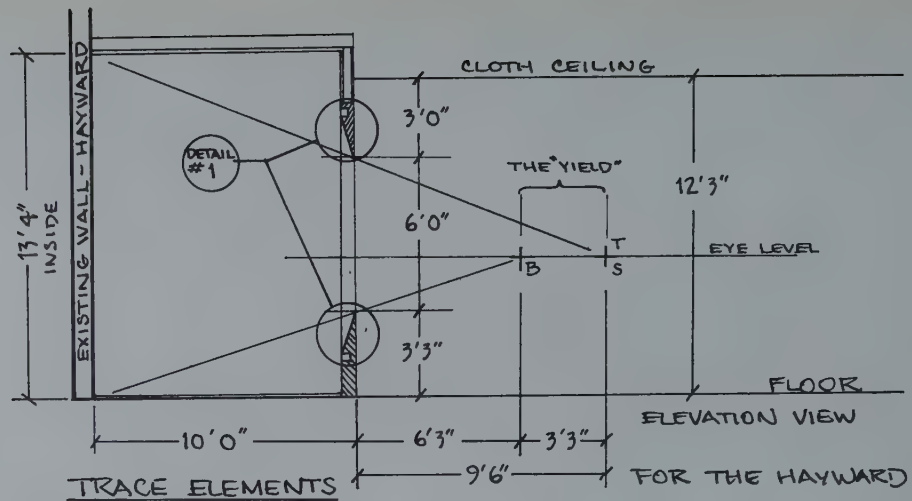
Charles and Ruth Laird, *Weathercasting*, 1955

TRACE ELEMENTS, 1990

Trace Elements is derived from the *Space Division* series and the *Danaë* series, where light is on both sides of a partition. I am dealing with the act of visual penetration. This is parallel to the visual penetration you have on stage, where your vision of the audience varies with the intensity of the light that is shining at you. The limits of vision are determined not by physical stoppage, but by quality of light. As you approach the front, where the action takes place, the light moves from in front to the periphery, allowing your vision to penetrate what was an opaque, flat plane. The piece yields to your vision. You plumb the space with vision.

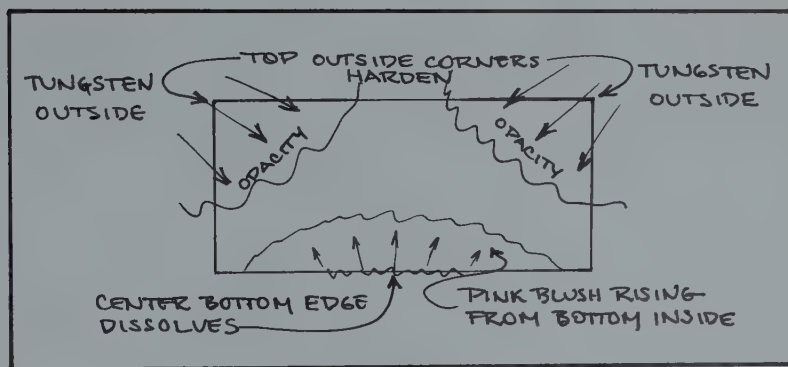
In *Trace Elements* there is a mix of colour. Although light is coming down from the top of the piece, it appears to rise from the bottom like the light that rises in the east as the sun goes down in the west, when you are actually looking at the shadow of the earth projected into the atmosphere. In painting, two dimensions are used to allude to three dimensions. Here there is a picture plane which appears to have two dimensions, but that turns out not to be the case. There seems to be a surface that is not there. Here there is a sense of touch, a desire to feel, but there is no object, just as there is no image and no point of focus. There is only perception itself. There is a tension from the state of desiring touch or from knowing there is something there to touch but not having done it. There is, of course, nothing to touch. The feeling comes with the eyes and the eyes have a feeling as important as physical touch. Just like the moment when you first meet someone and you have yet to touch, to kiss or to make love. Then the tension exists from not having done it. Here the tension cannot be satisfied by touch and so it is sustained. The eyes do the touching.





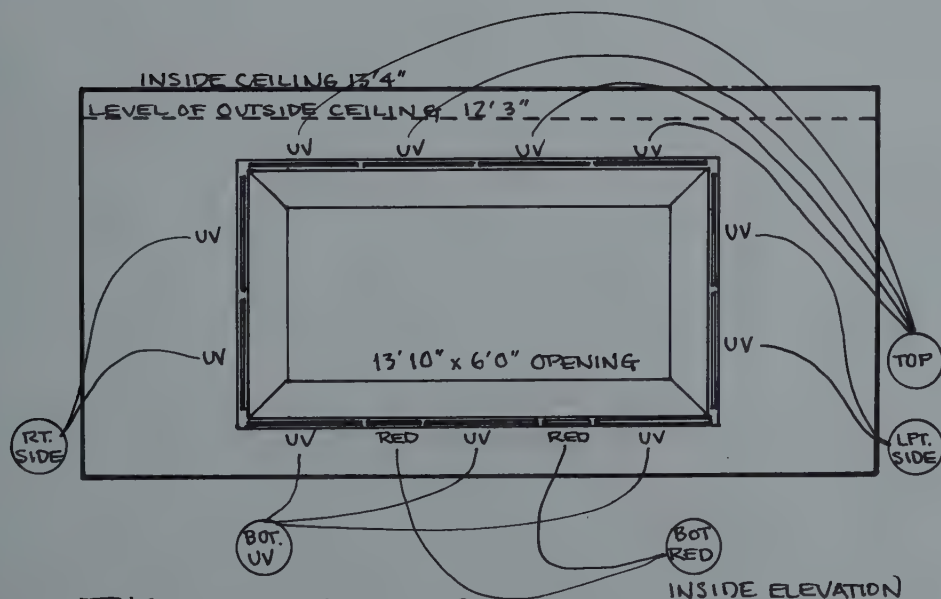
Plan and elevation views of *Trace Elements*, Hayward Gallery installation, London, 1993

LIGHTING DIRECTIONS: BEGIN WITH TOP LINE UV. DIM TO DISSOLVE BACK WALL TO CEILING JOIN. TURN OFF. DIM EACH SIDE SEPARATELY TO DISSOLVE SIDE WALL TO BACK WALL LINE. TURN OFF. DIM BOTTOM UV UNTIL JUST VISIBLE. TURN ALL FLUORESCENT ON AND ADD BOTTOM RED FOR JUST DISCERNABLE DAWNING. TURN ALL OFF. ADD OUTSIDE TUNGSTEN TO BRING OPACITY DOWN FROM TOP CORNERS, HARDEN TOP CORNERS, DISSOLVE CEN. TURN ALL ON. BALANCE INSIDE TO OUTSIDE FOR SCREEN.



TRACE ELEMENTS, 1993

OUTSIDE ELEVATION



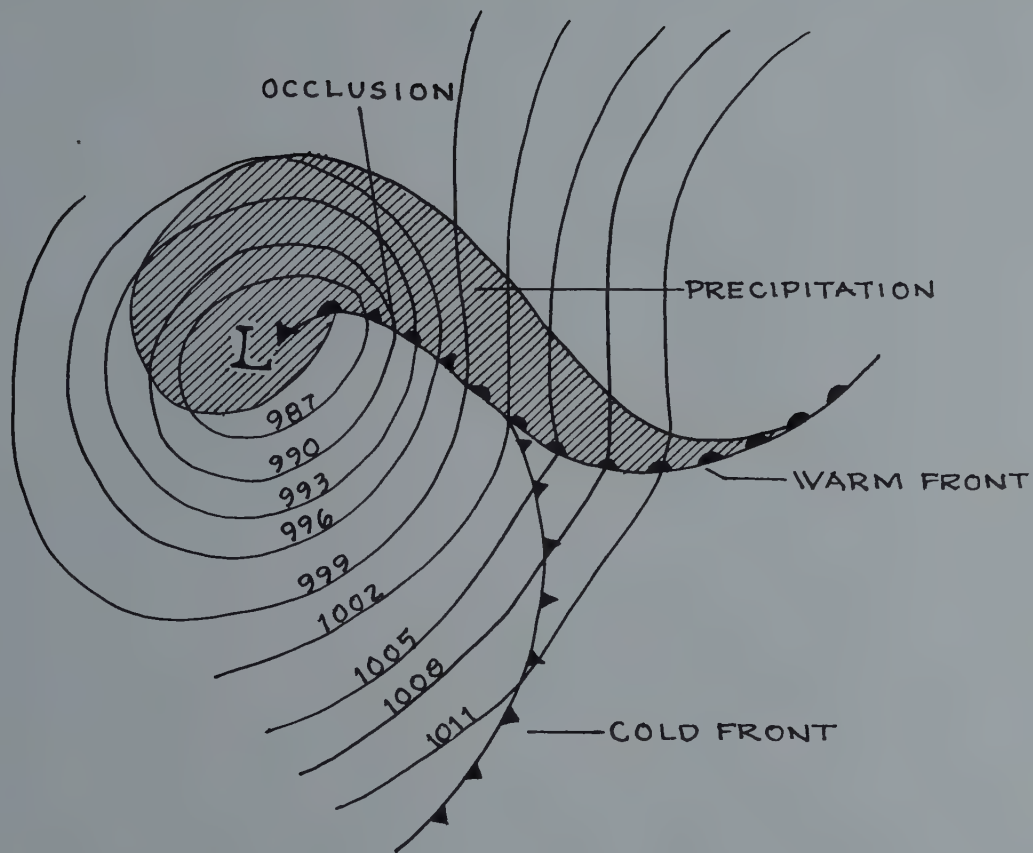
TRACE ELEMENTS, 1993

INSIDE ELEVATION

LIGHTING AND DIMMER ARRANGEMENT SEEN FROM INSIDE THE PIECE.

5

OCCLUDED FRONT

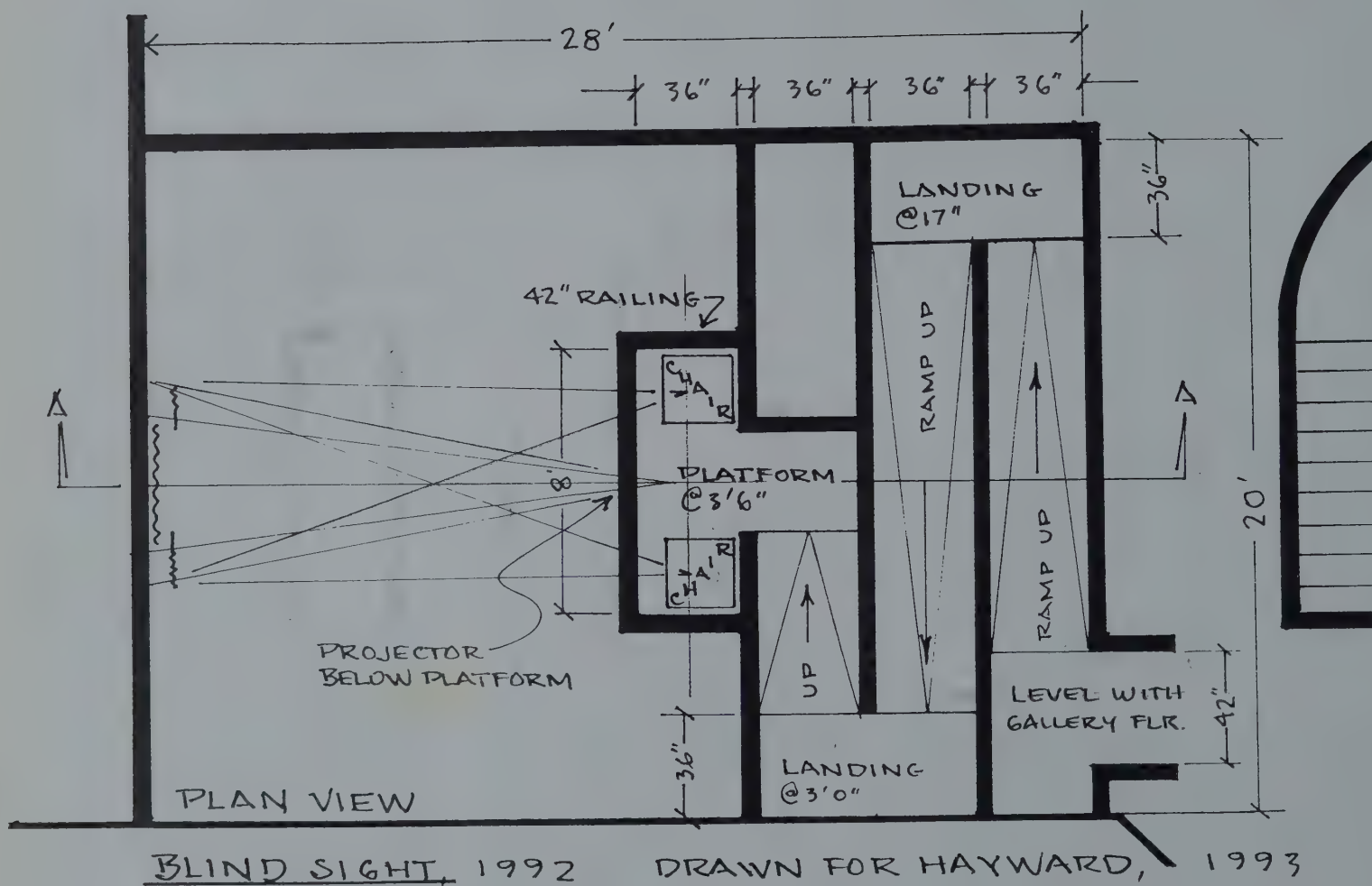


The line along which a cold front has overtaken a warm front at the ground is called an occluded front.

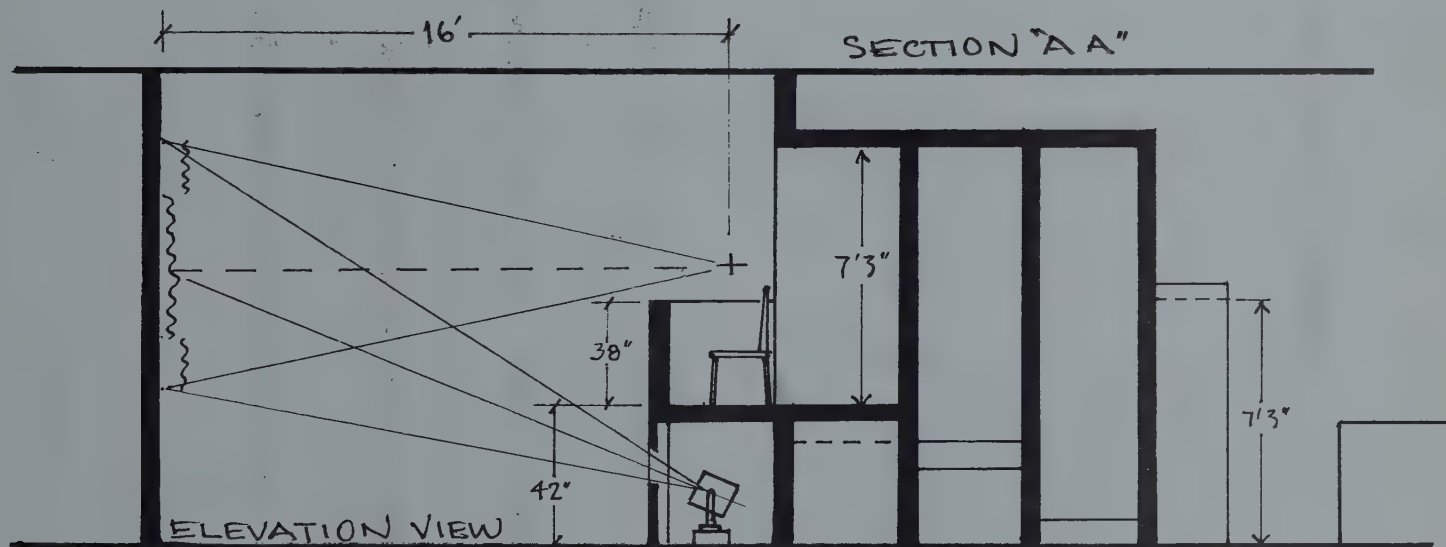
Charles and Ruth Laird, *Weathercasting*, 1955

BLIND SIGHT, 1992

Blind Sight refers to a condition, brought on by trauma or dysfunction, which inhibits people with sight from actually seeing. I am interested in the seeing that occurs within. In the lucid dream there is a greater sense of colour and lucidity than with the eyes open. I am interested in a place where the imaginative seeing and the seeing of the external world meet, where it is difficult to distinguish the seeing from within from the seeing from without. The image is of no interest other than it triggers the seeing from within. This seeing occurs near the edge of the cone area of the retina and it moves towards the rod area, which generates seeing over which you have complete control.



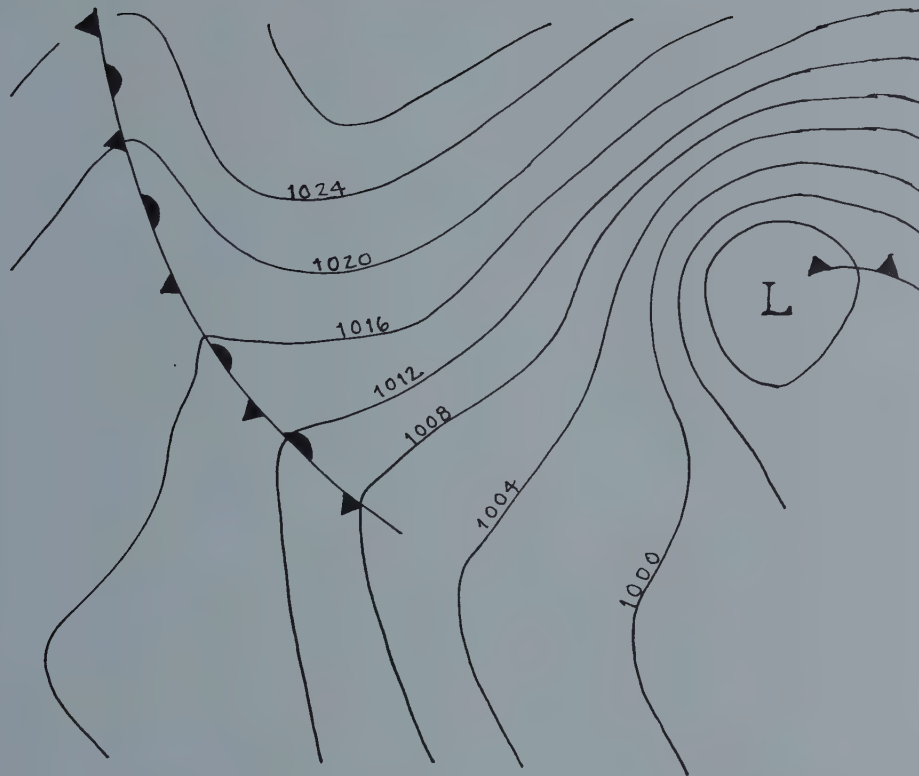
Plan view of *Blind Sight*, drawing of proposed installation, Hayward Gallery, London, 1993



BLIND SIGHT, 1992 DRAWN FOR THE HAYWARD, 1993

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STATIONARY FRONT



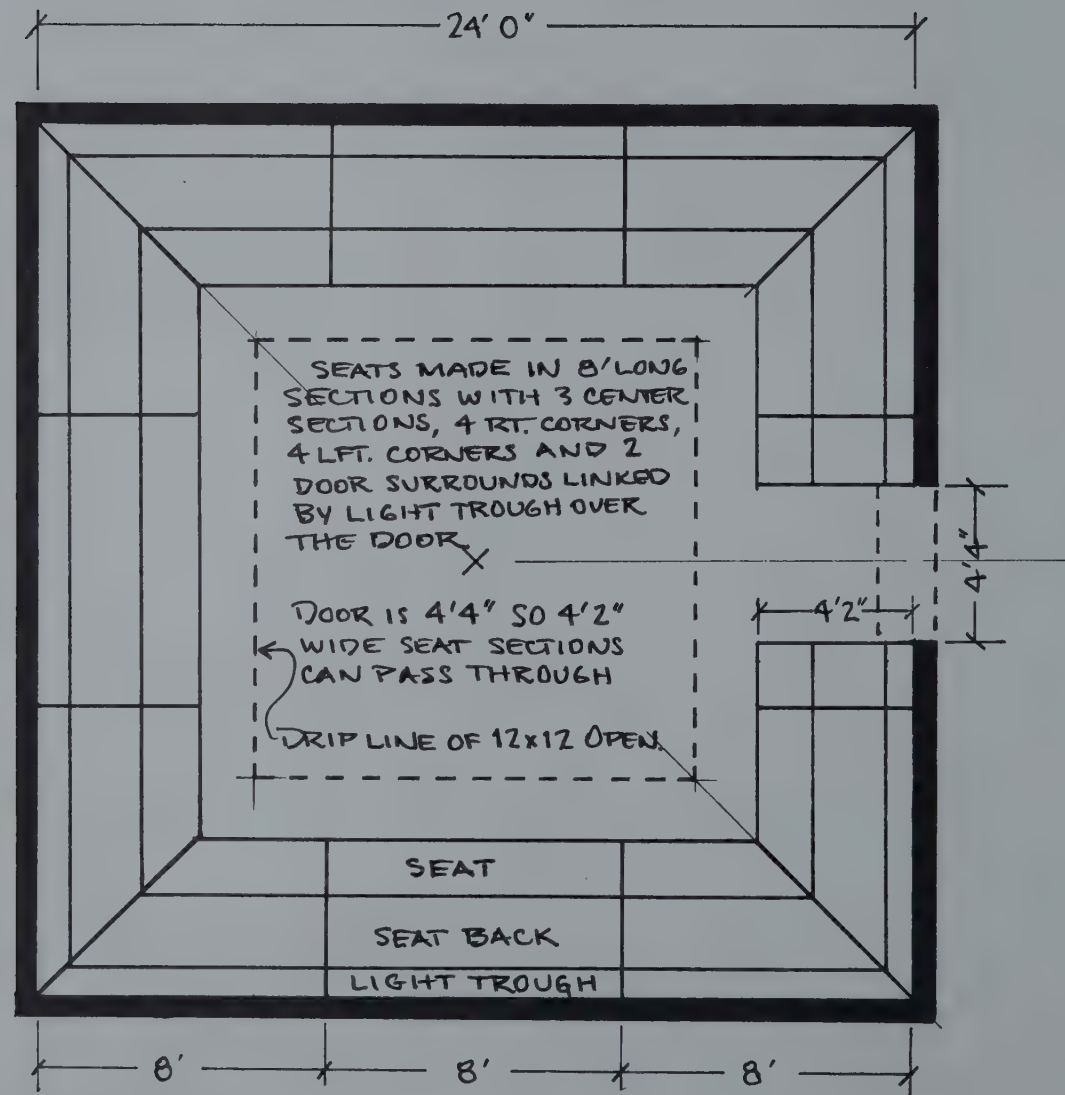
A boundary between two air masses, which shows little tendency at the time of observation to advance into either warm or cold areas, is called a stationary front.

Charles and Ruth Laird, *Weathercasting*, 1955

AIR MASS, 1993

In *Air Mass* the picture plane is above you. You do not move towards the front as you do in *Trace Elements*. Change takes place in the space itself. The greatest change is noticed at the cusp of the change from day to night, or from night to day. Going from day to night, at first there is light but there is no presence, like a flashlight in the desert sun. As the exterior light is reduced there is a predominance of light on the inside. The space then encourages you to be a bottom dweller at the bottom of an ocean of air. The sky is no longer out there, but it is right on the edge of the space you are in. The sense of colour is generated inside you. You will notice during the change from night to day an intensity of colour that you will find nowhere else. If you then go outside you will see a different coloured sky. You colour the sky. The work is about your seeing not mine. The colours can be intensely sublime and beyond what we would normally see. The amount of light in the space allows for the seeing of several planets and a few stars, but there is a blackness of depth and softness that is unparalleled, because it has no surface. The blackness is a complete black body, absorbing and sucking light. It arises simply out of the contrast between the inside of a space where there is light in relation to a space where there is none.

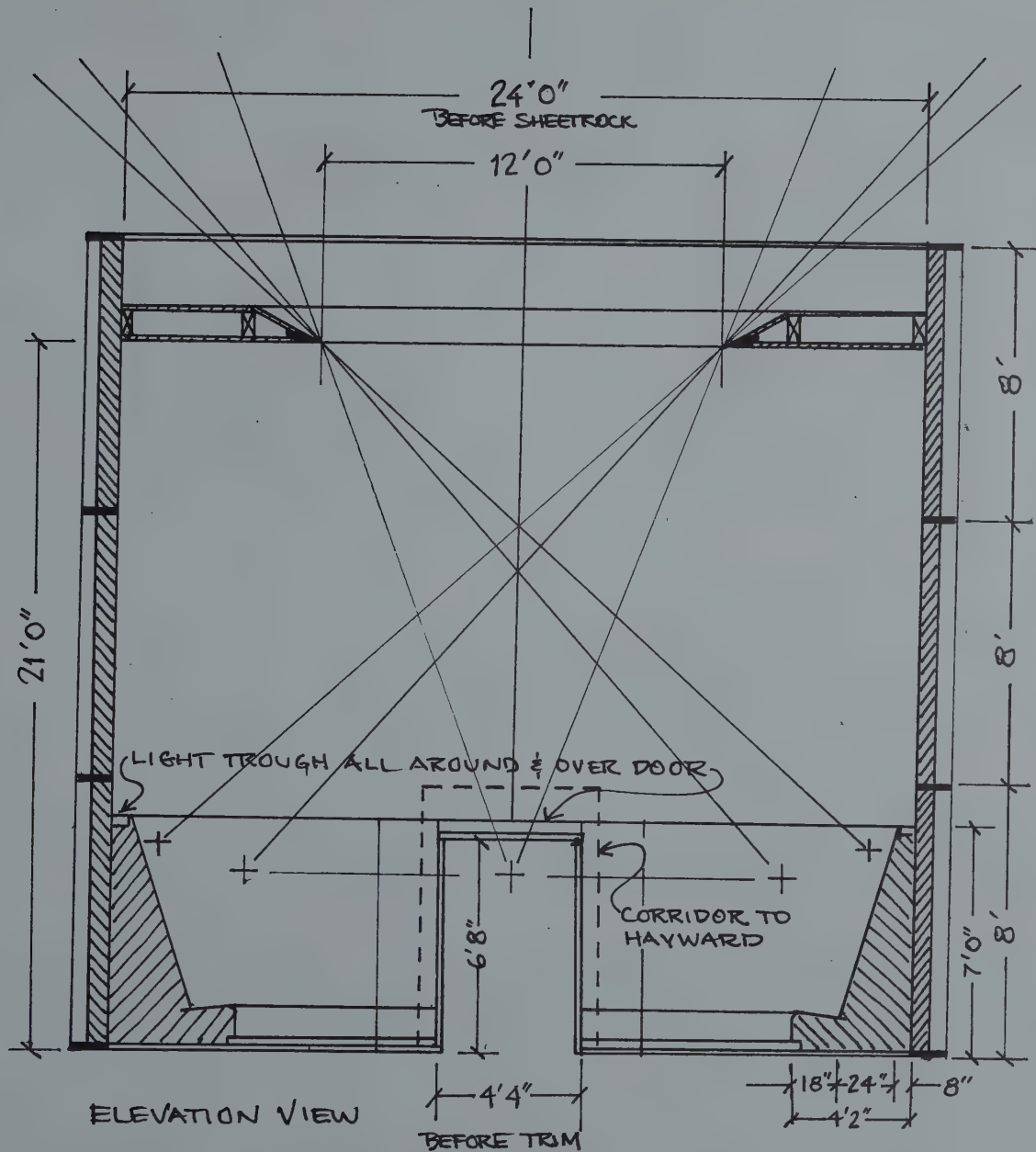




PLAN VIEW

AIR MASS, 1993

FOR THE HAYWARD



AIR MASS, 1993

FOR THE HAYWARD

7

RODEN CRATER

The spaces I encountered in flight encouraged me to work with larger amounts of space and with a more curvilinear sense of the space of the sky and its limits. The *Skyspaces* worked with limited amounts of the sky space brought down to and against the rectilinear limits of the interior space. There is little shaping of the limits within these spaces.

If you stand on an open plain you will notice that the sky is not limitless and it has a definable shape and a sense of enclosure, which is referred to as celestial vaulting. If you lie down the shape changes. Clearly, these limits are malleable. I looked for a hemispherically-shaped, dished space, between 400 and 1,000 feet above a plain, in order to work with the limits of the space of the sky. The plain would provide the opportunity for celestial vaulting. The dish shape would effect changes in the perception of the size and shape of the sky. The height above the plain was important so that the slight quality of concave curvature to the earth experienced by pilots at low altitudes would increase the sense of celestial vaulting after you emerged from the crater space. I also wanted a high-altitude site so that the sky would be a deeper blue, which would increase a sense of close-in celestial vaulting from the bottom of the crater.

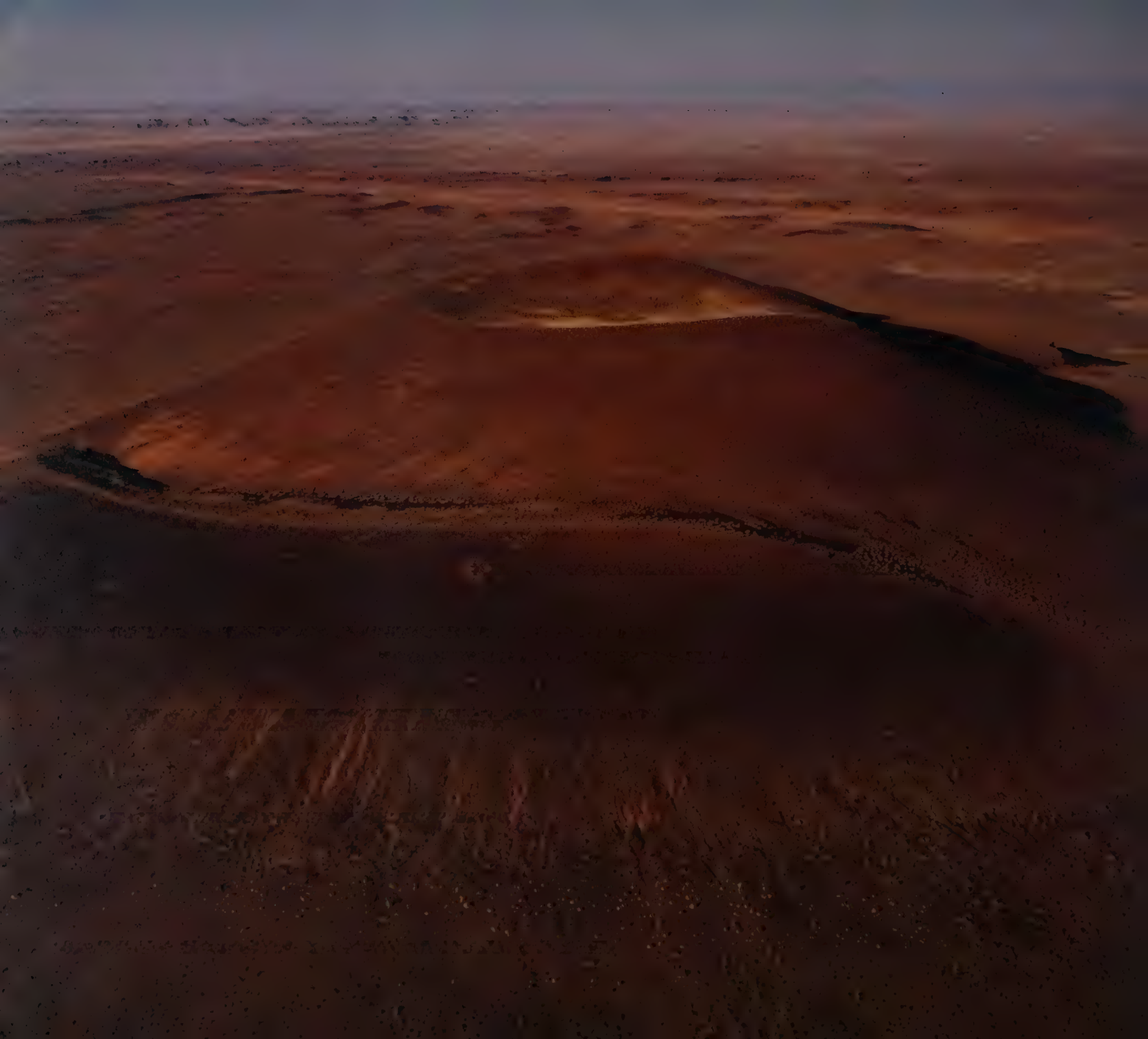
I flew all the Western states looking for a site and found Roden Crater, a volcano on the edge of the Painted Desert. Rather than impose a plan upon the landscape, I decided to work in phase with the surroundings of the volcano. The site is approached from the west, driving across the desert. The road makes a half circle on the north side of the crater and comes up a ravine on its northeast side. At the top of the ravine you reach a walkway that follows the circular malapai rim of the fumarole on the northeast side of the crater. The walkway is approximately 250 feet above the plain and gives the first sense of the expansion of space. From here, a trail proceeds up the side of the fumarole. At the top of the fumarole there will be several different spaces, which are themselves pieces which work with the space of the sky. Some of the events in the spaces might occur daily, some semi-annually, equidistant from the solstices, and others will be very infrequent. From these spaces on top of the fumarole, a tunnel extends 1,035 feet and is aligned to capture the southernmost moonset. The tunnel is a semicircular arch $8\frac{1}{2}$ feet in diameter and 9 feet

tall. It will allow full vision of the lunar disc when the alignment occurs. As you proceed up the tunnel you will be able to see only sky. The entrance from the tunnel into the crater is made through an intermediate space and as you emerge the sense of enclosure will recede as you enter the large space of the open sky.

At Roden Crater I was interested in taking the cultural artifice of art out into the natural surround. I did not want the work to be a mark upon nature, but I wanted the work to be enfolded in nature in such a way that light from the sun, moon and stars empowered the spaces. Usually art is taken from nature by painting or photography and then brought back to culture through the museum. I wanted to bring culture to the natural surround as if one was designing a garden or tending a landscape. I wanted an area where you had a sense of standing *on* the planet. I wanted an area of exposed geology like the Grand Canyon or the Painted Desert, where you could feel geologic time. Then in this stage set of geologic time, I wanted to make spaces that engaged celestial events in light so that the spaces performed a “music of the spheres” in light. The sequence of spaces, leading up to the final large space at the top of the crater, magnifies events. The work I do intensifies the experience of light by isolating it and occluding light from events not looked at. I have selected different portions of sky and a limited number of events for each of the spaces. This is the reason for the large number of spaces. Each space essentially looks to a different portion of sky and accepts a limited number of events.

I wanted to advance from the floor of the desert up into the sky. I did not want to go up a mountain and down into a hole. This is the reason for the tunnels leading to the top. Advancing from the east or the west, the path up into the bowl describes a stepped or truncated pyramid that arrives at a bowl at least 600 feet above the surrounding terrain. In this top space, the sky literally changes shape as you move about the crater. Lying down in the top crater space you can notice the shape of the sky change. Clearly this shaping of the sky is malleable and formed by our perception. After you walk out of this space and up to the top lip of the crater and then look out over the horizon, you will notice the earth slant beneath and towards you. People flying between 600 and 3,000 feet notice the earth

curving beneath them the wrong way. This sense of concave curving below balances the sense of the convex curving of the sky above. The volcano, the bowl-shaped space above the plain, provides the possibility for this conjunction.



Light is a powerful substance. We have a primal connection to it. But, for something so powerful, situations for its felt presence are fragile. I form it as much as the material allows. I like to work with it so that you feel it physically, so you feel the presence of light inhabiting a space. I like the quality of feeling that is felt not only with the eyes. It's always a little bit suspect to look at something really beautiful like an experience in nature and want to make it art. My desire is to set up a situation to which I take you and let you see. It becomes your experience. I am doing that at Roden Crater. It's not taking from nature as much as placing you in contact with it.

Mapping Spaces, 1987

My work is more about your seeing than it is about my seeing, although it is a product of my seeing. I'm also interested in the sense of presence of space; that is space where you feel a presence, almost an entity – that physical feeling and power that space can give.

Roden Crater has knowledge in it and it does something with that knowledge. Environmental events occur; a space lights up. Something happens in there, for a moment, or for a time. It is an eye, something that is itself perceiving. It is a piece that does not end. It is changed by the action of the sun, the moon, the cloud cover, by the day and the season that you're there, it has visions, qualities and a universe of possibilities.

Occluded Front, The Museum of Contemporary Art, Los Angeles, 1985



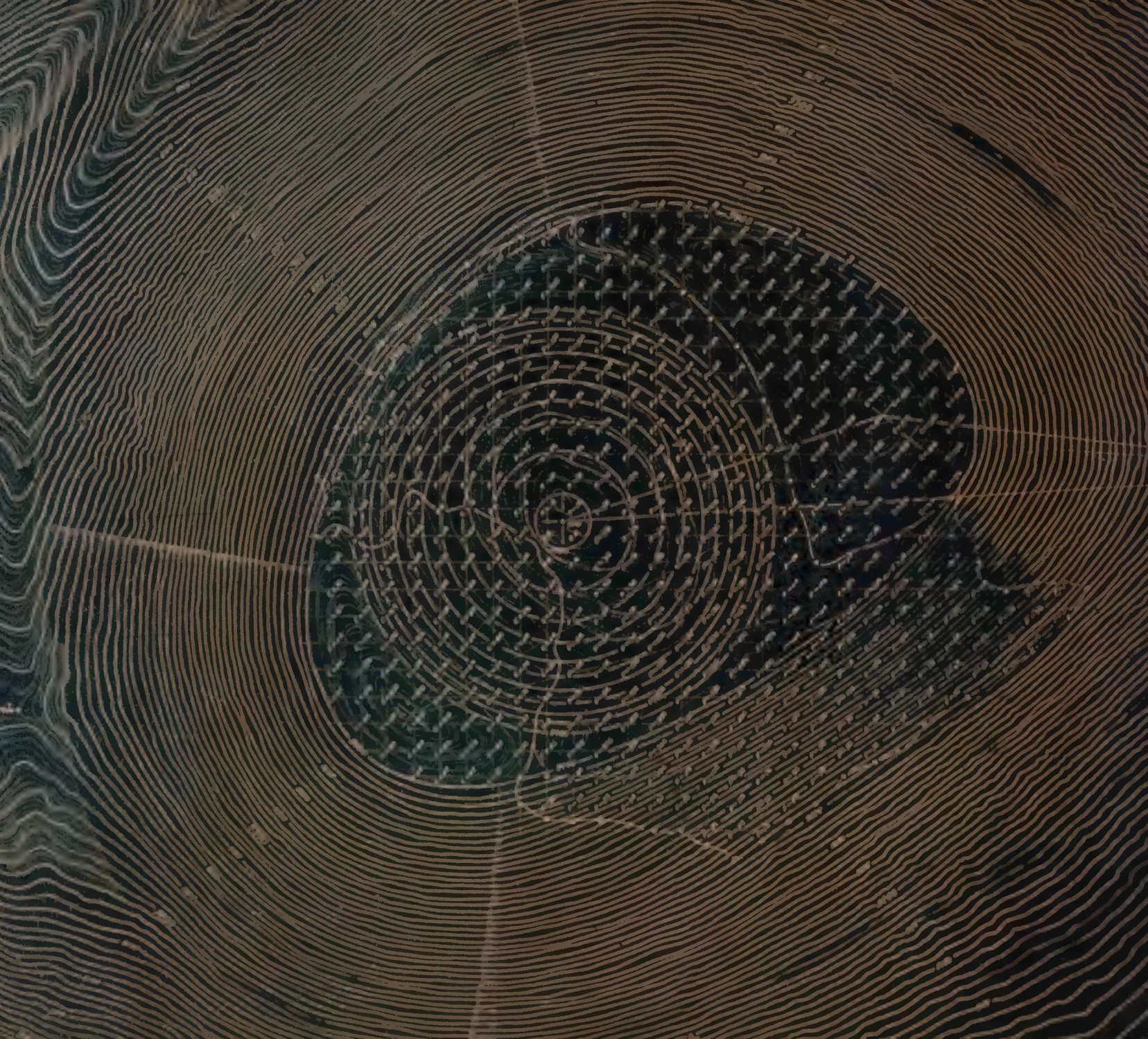
Initial crater topo, 1983-1984

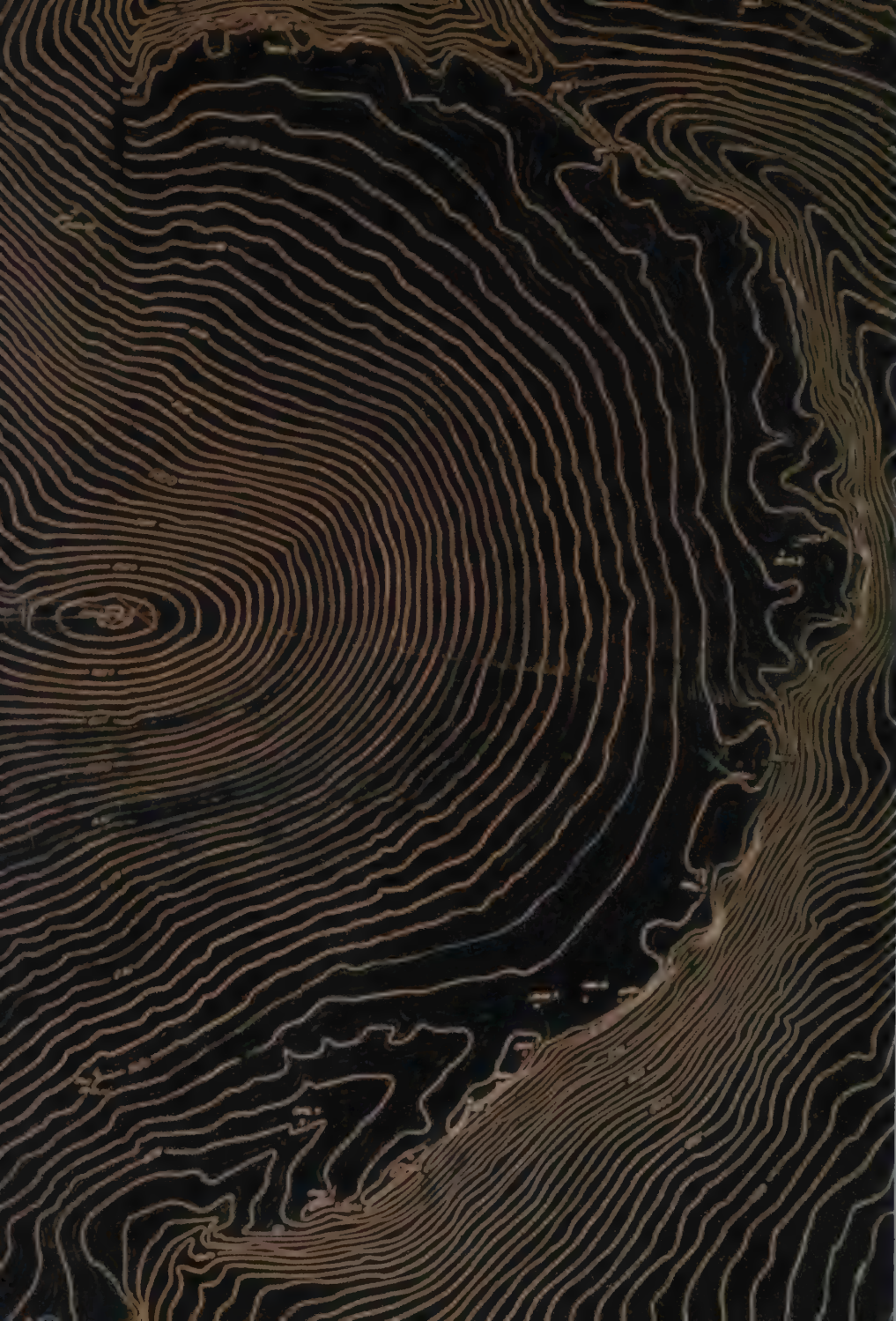


Fumarole walkway with solar and lunar alignments, 1983

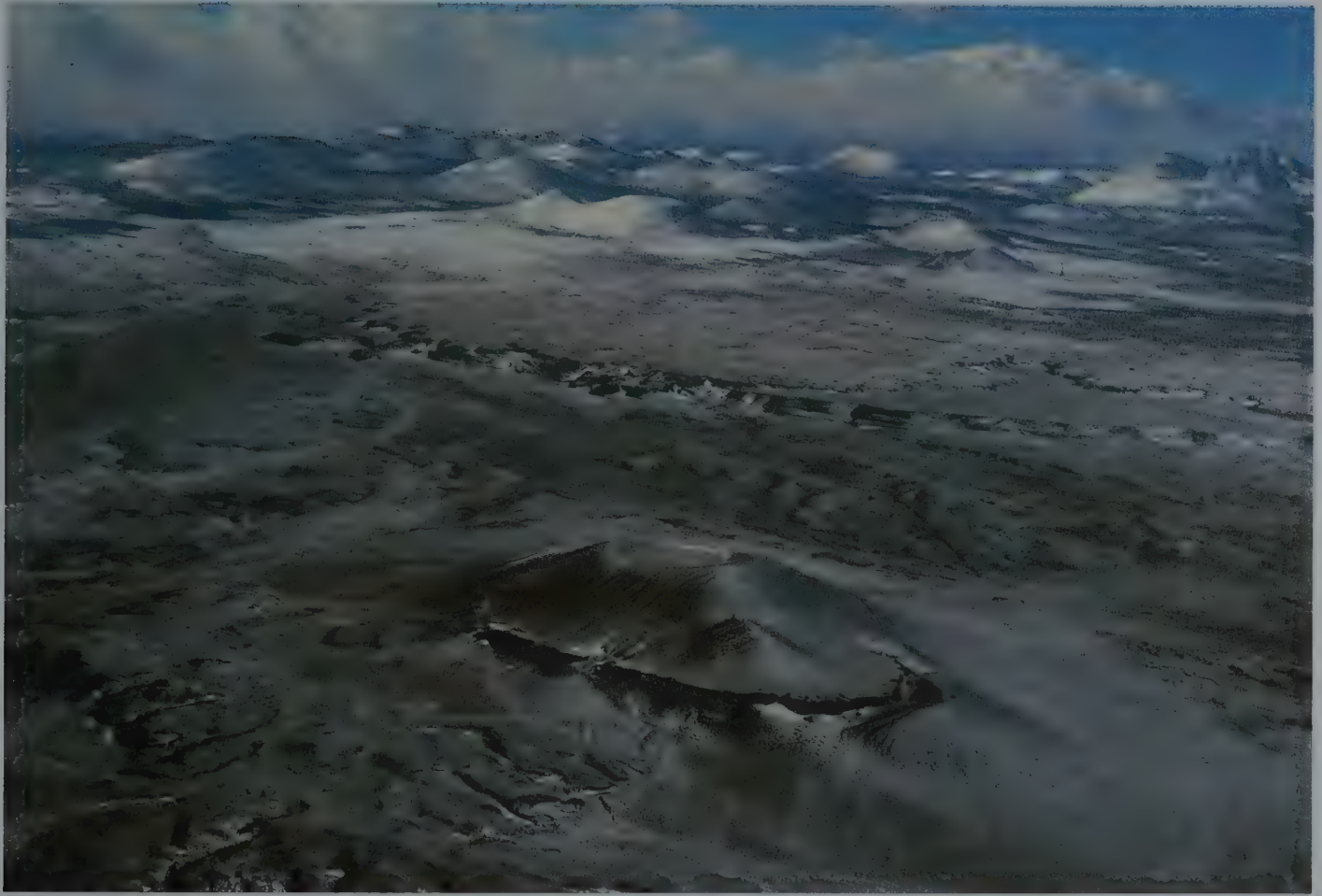


Crater and cross-section with fumarole arc, 1985





Roden Crater, cut and fill topo



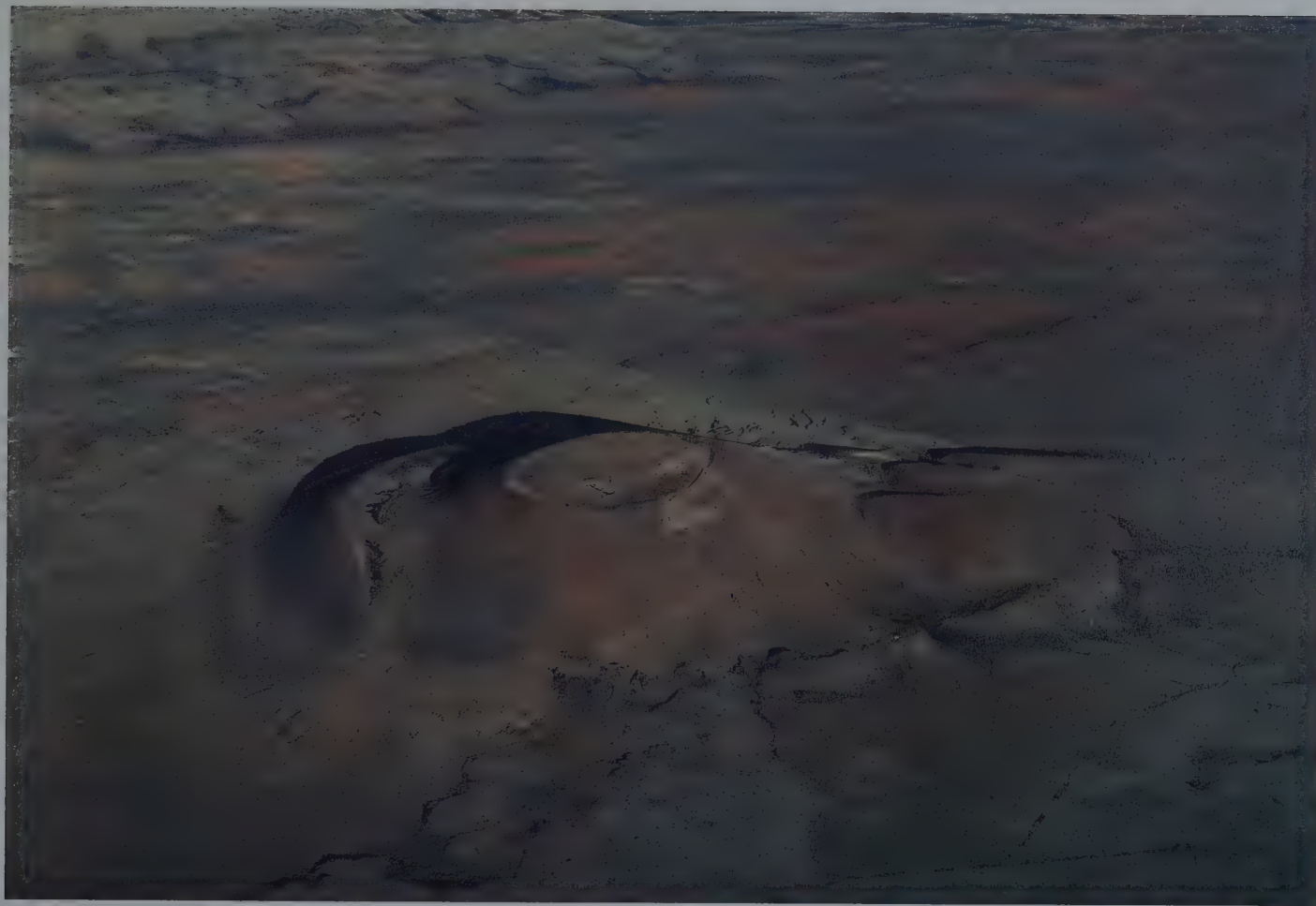
Roden Crater and the cinder hills in snow



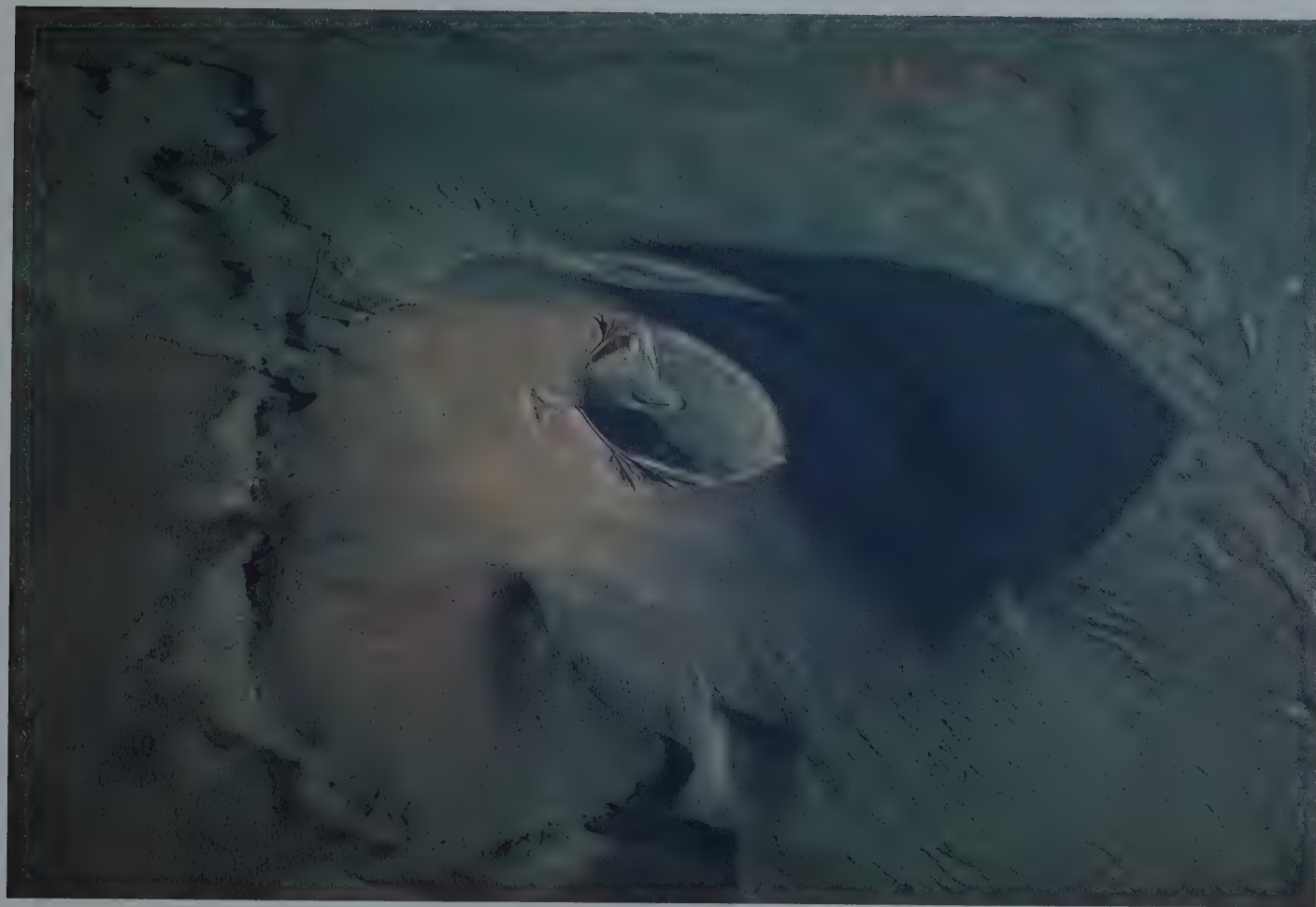
Roden Crater in snow looking towards northwest



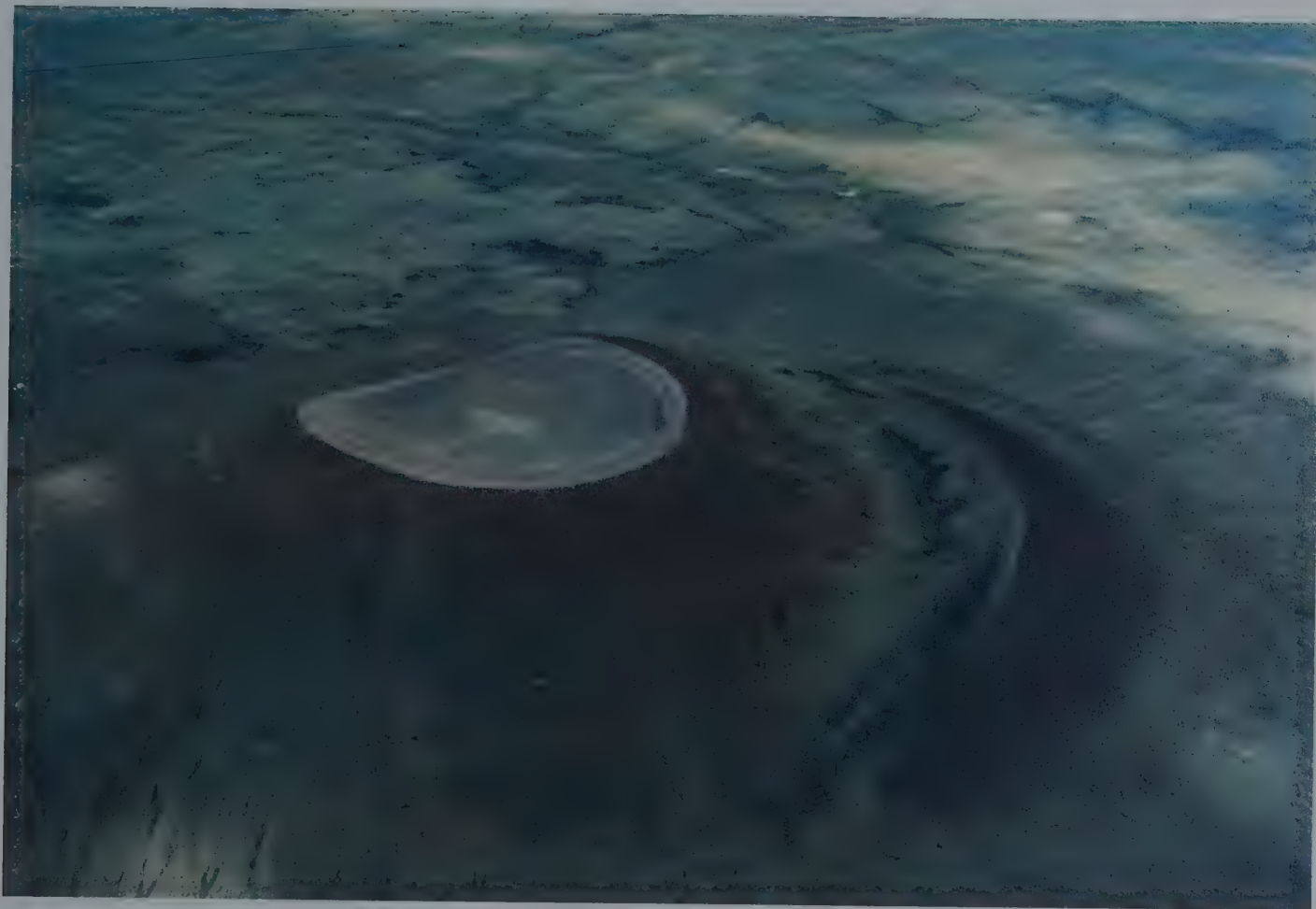
Roden Crater in snow showing lava flow



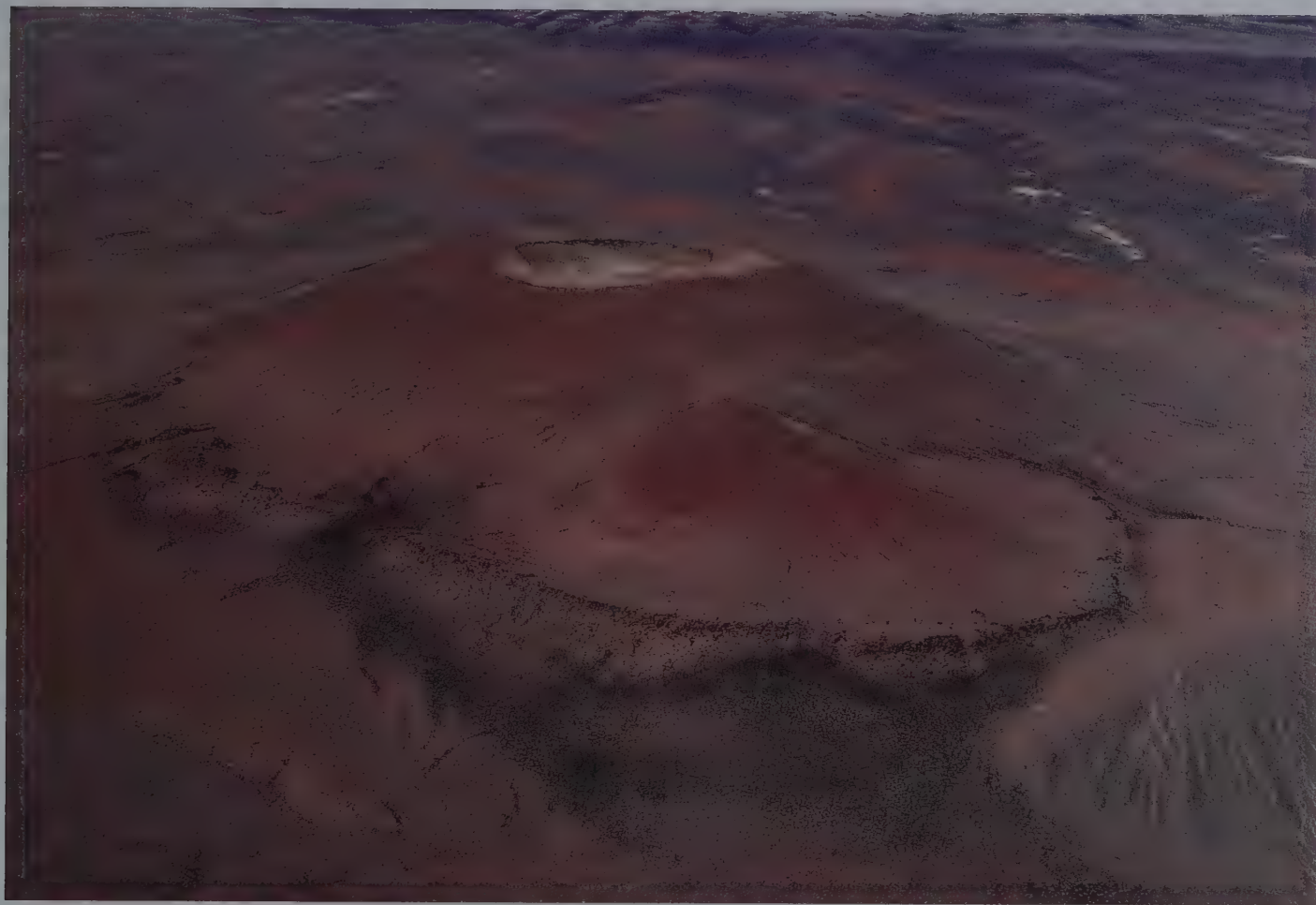
Roden Crater at beginning of second stage of crater bowl reshaping, looking west



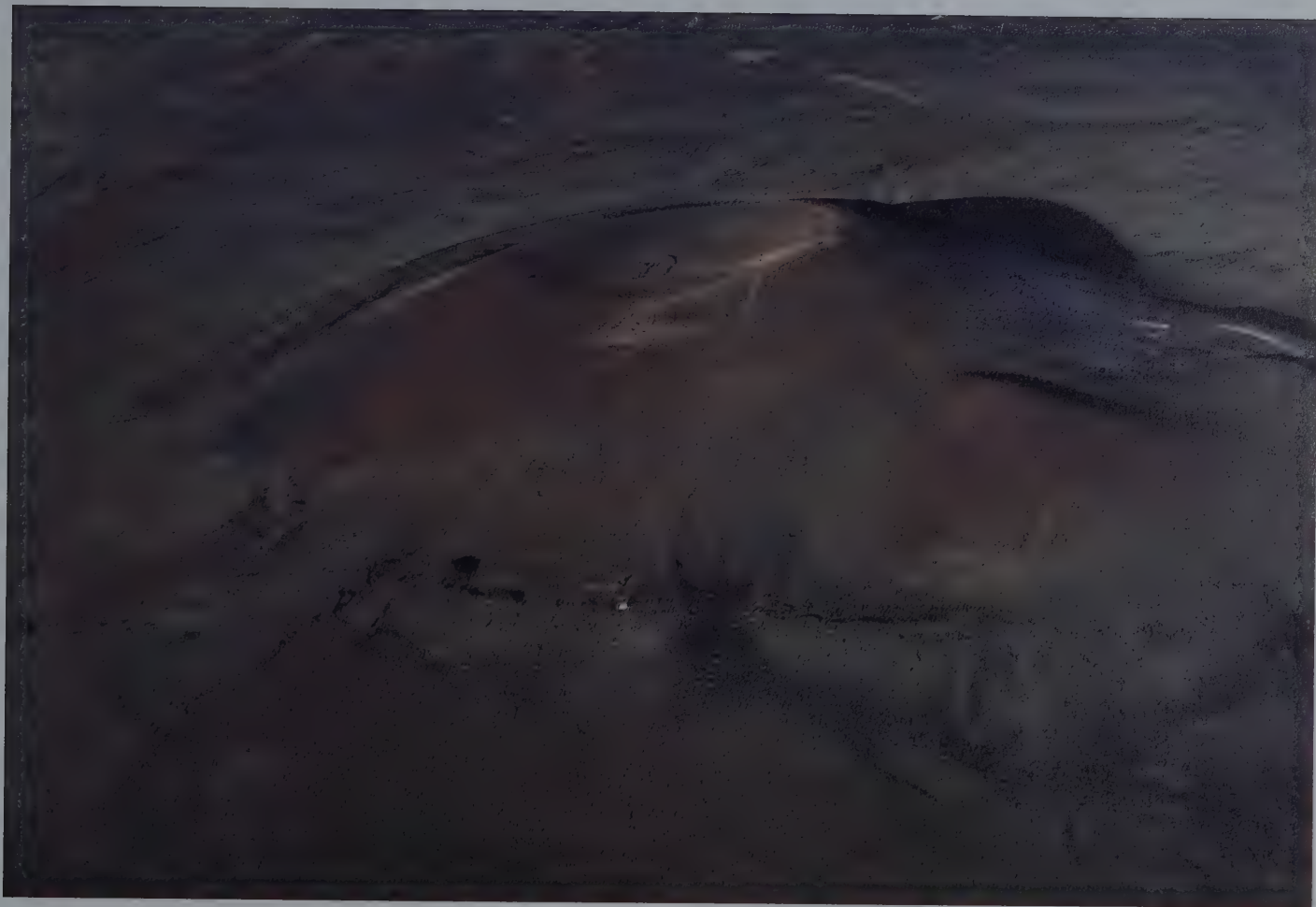
Roden Crater further into second stage of crater bowl reshaping



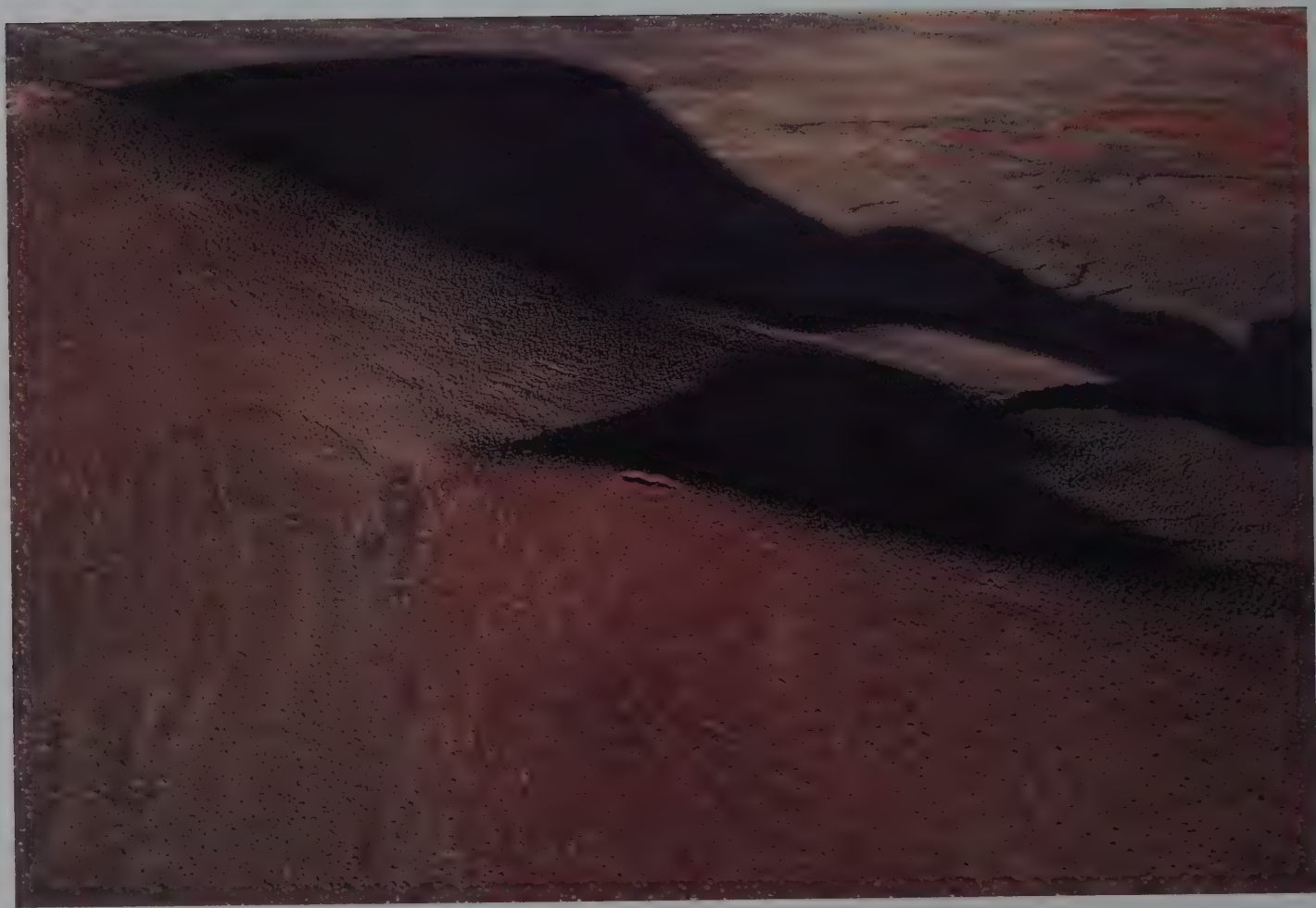
First stage of crater bowl reshaping looking southwest



Roden Crater looking southwest



Roden Crater at beginning of second stage of crater bowl reshaping, looking southwest



Roden Crater fumarole with summer solstice test trench, looking west



Roden Crater and fumarole before any reshaping of bowl, looking south-southwest



First stage of crater bowl reshaping, aerial oblique looking northeast



Roden Crater bowl with fumarole to lower right, original contours



First stage of crater bowl reshaping, vertical shot, straight down (south at top)



Roden Crater from the Kellum Ranch looking north-northeast



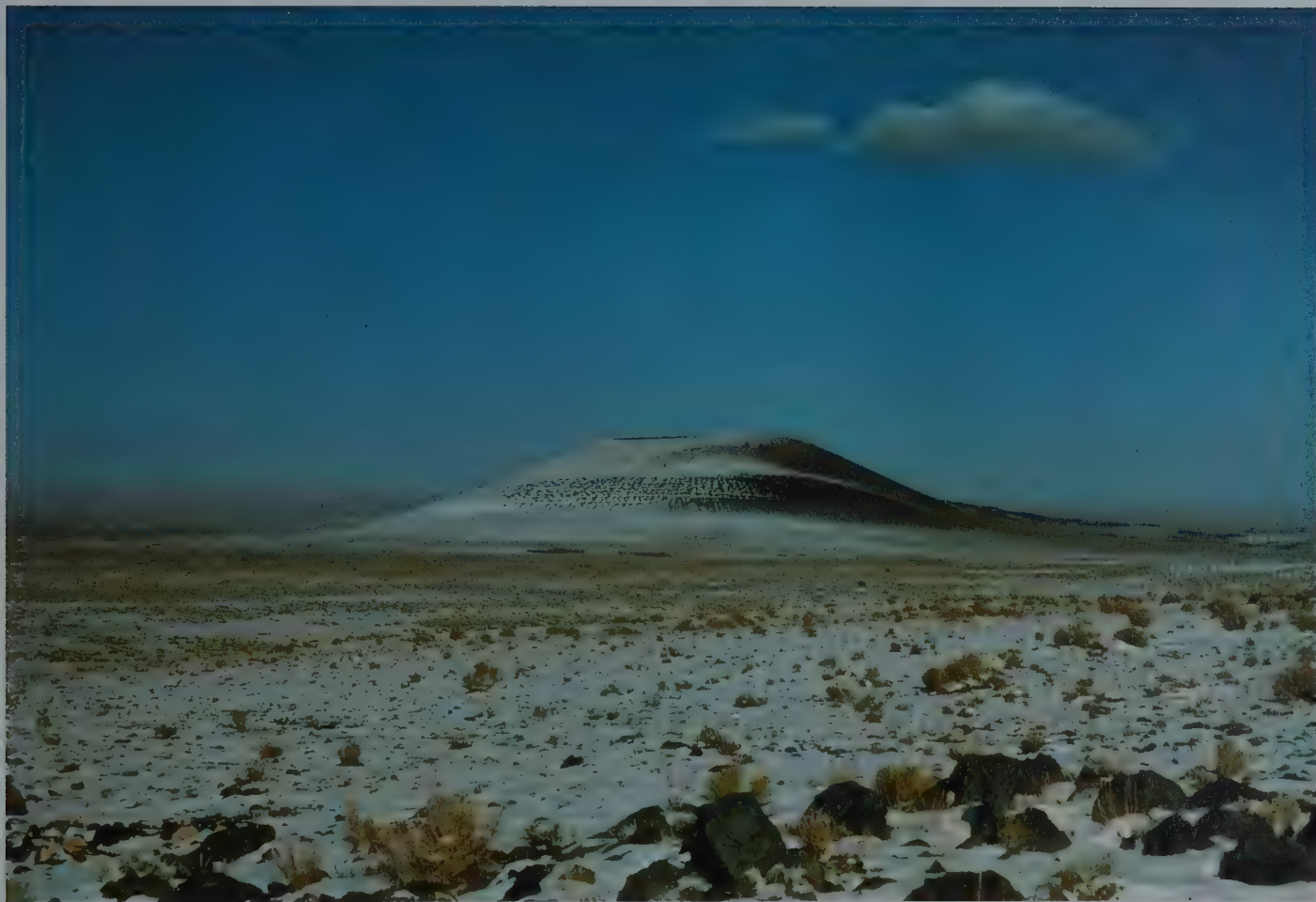
Roden Crater from the lava flow looking northeast



Roden Crater from ground level looking northeast



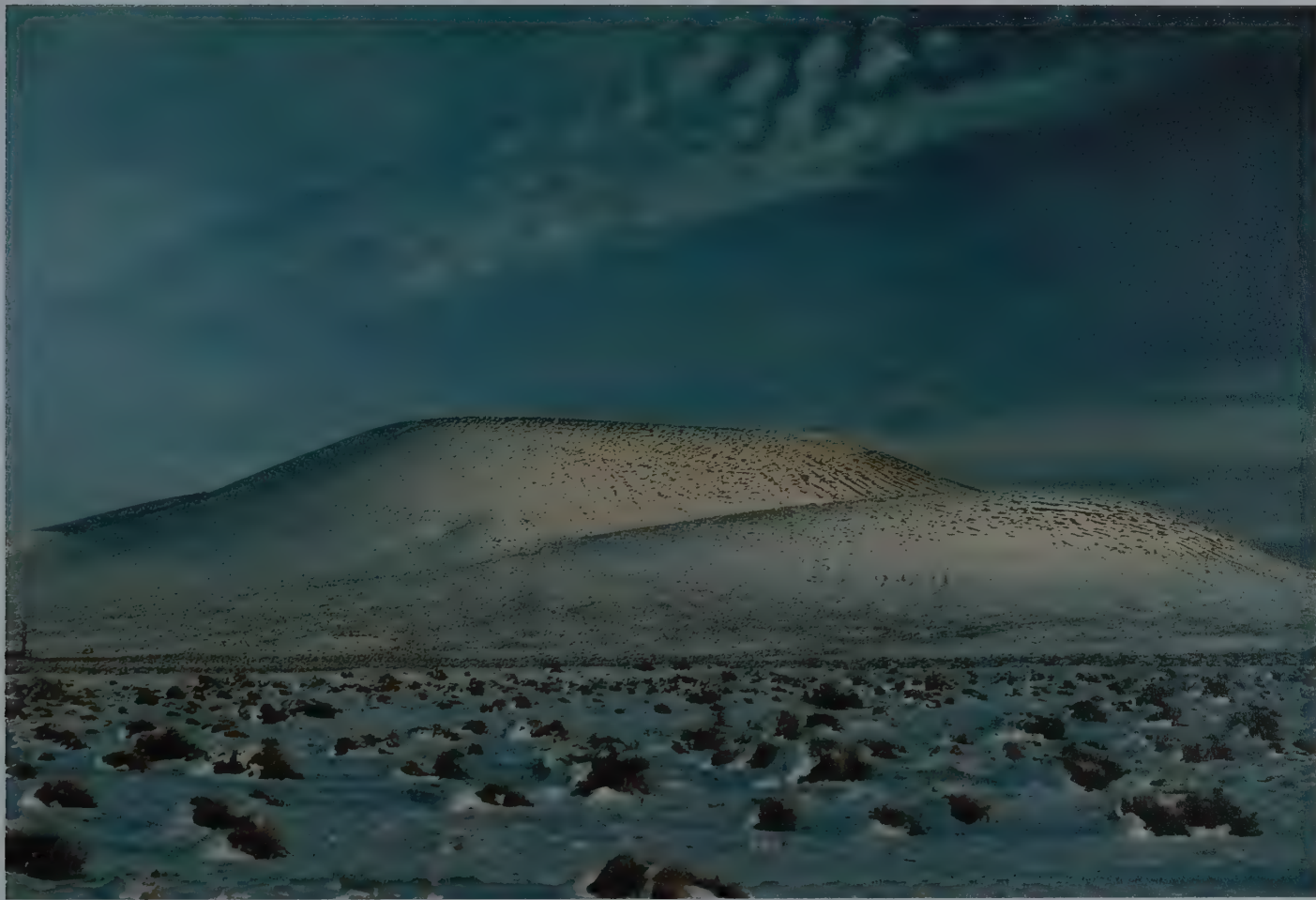
Roden Crater in cloud shadow from edge of lava flow looking northeast



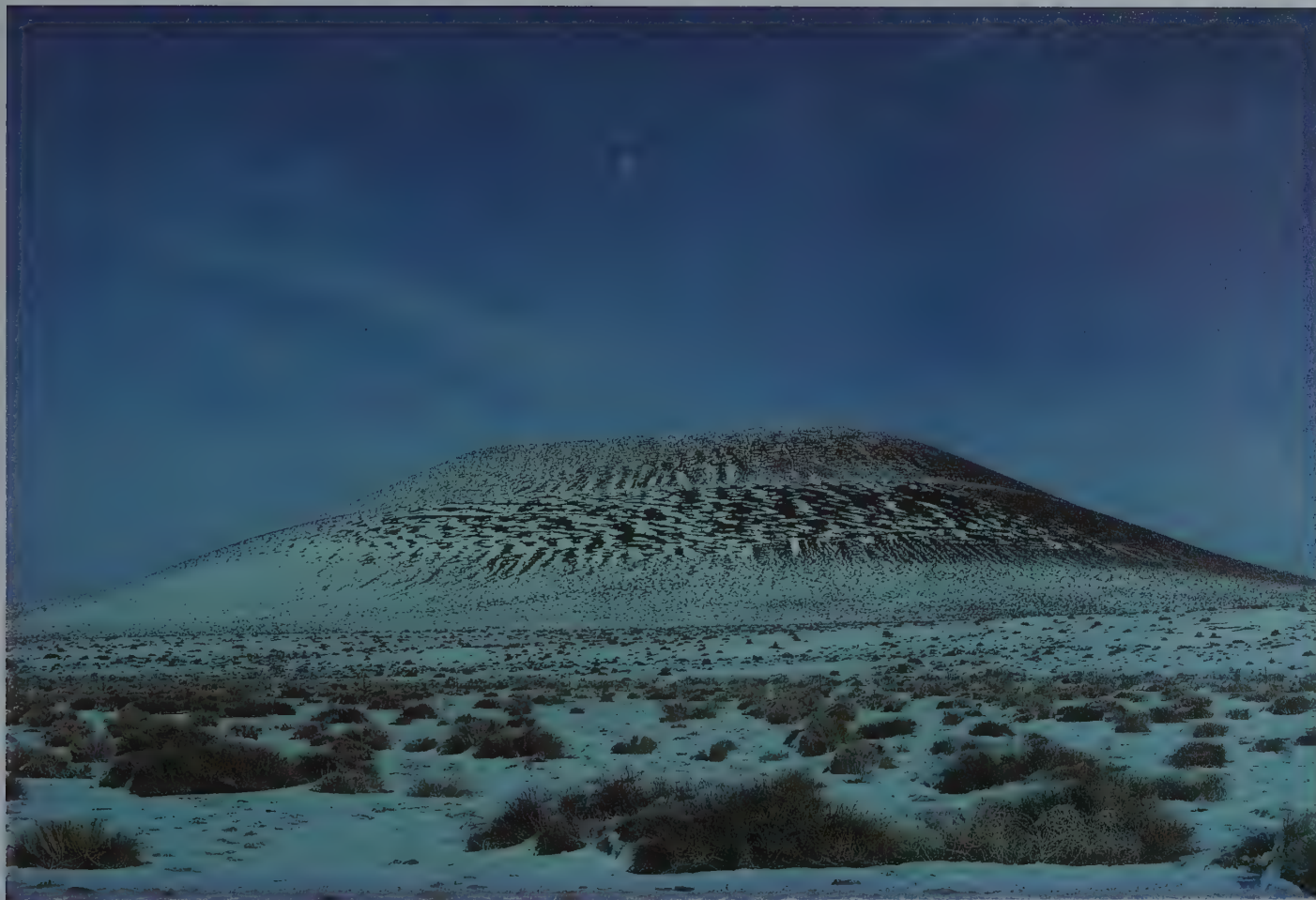
Roden Crater in snow looking northeast



Roden Crater in snow from Roden Springs cattle tank



Roden Crater in snow looking east-southeast



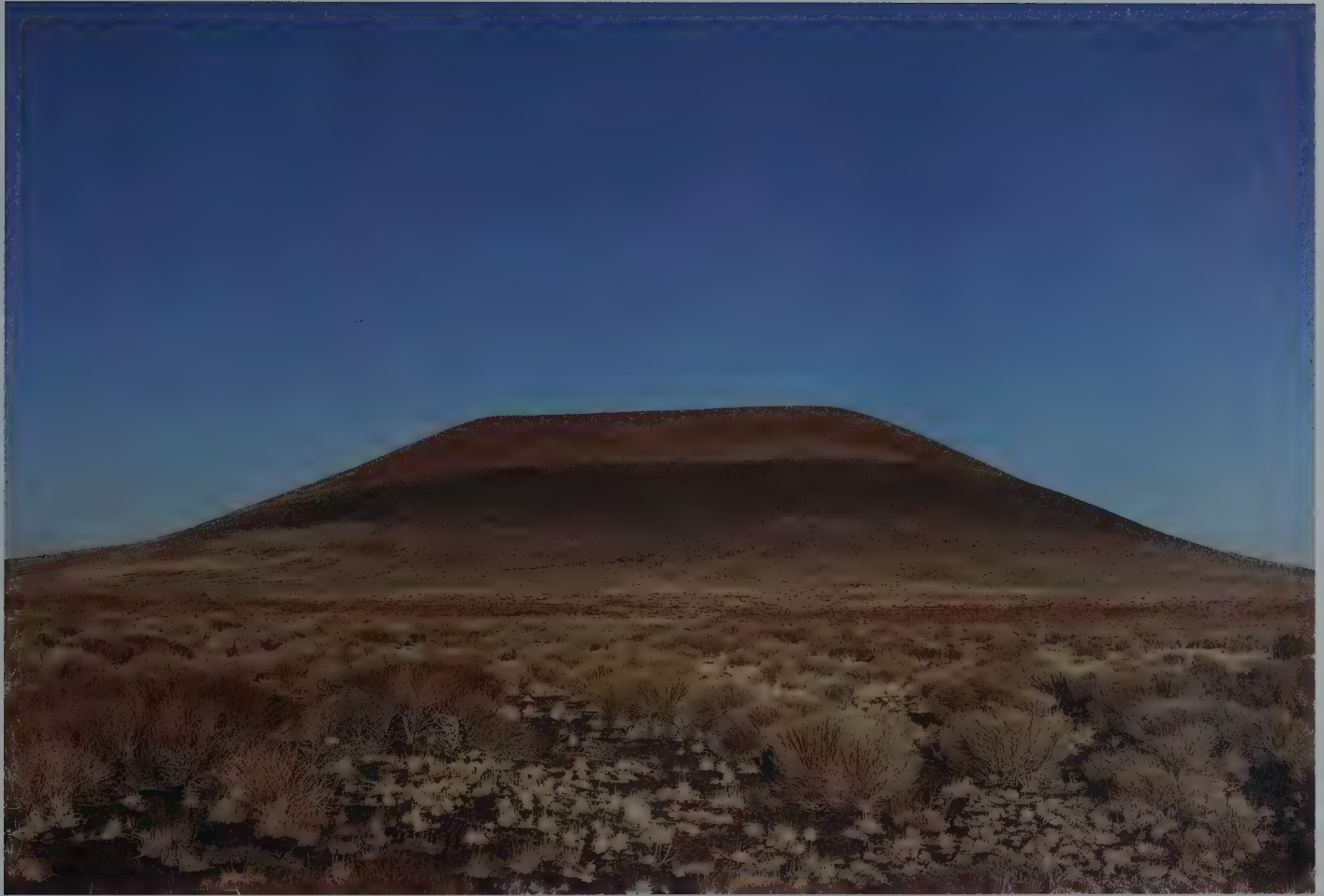
Roden Crater with wind-drifted snow looking northeast



Roden Crater in cloud shadow looking east from lava ledge



Roden Crater at sunset just before the earth's shadow covers it, looking northeast



Roden Crater looking northeast



Roden Crater with typical summer cumulus clouds of the August monsoon season



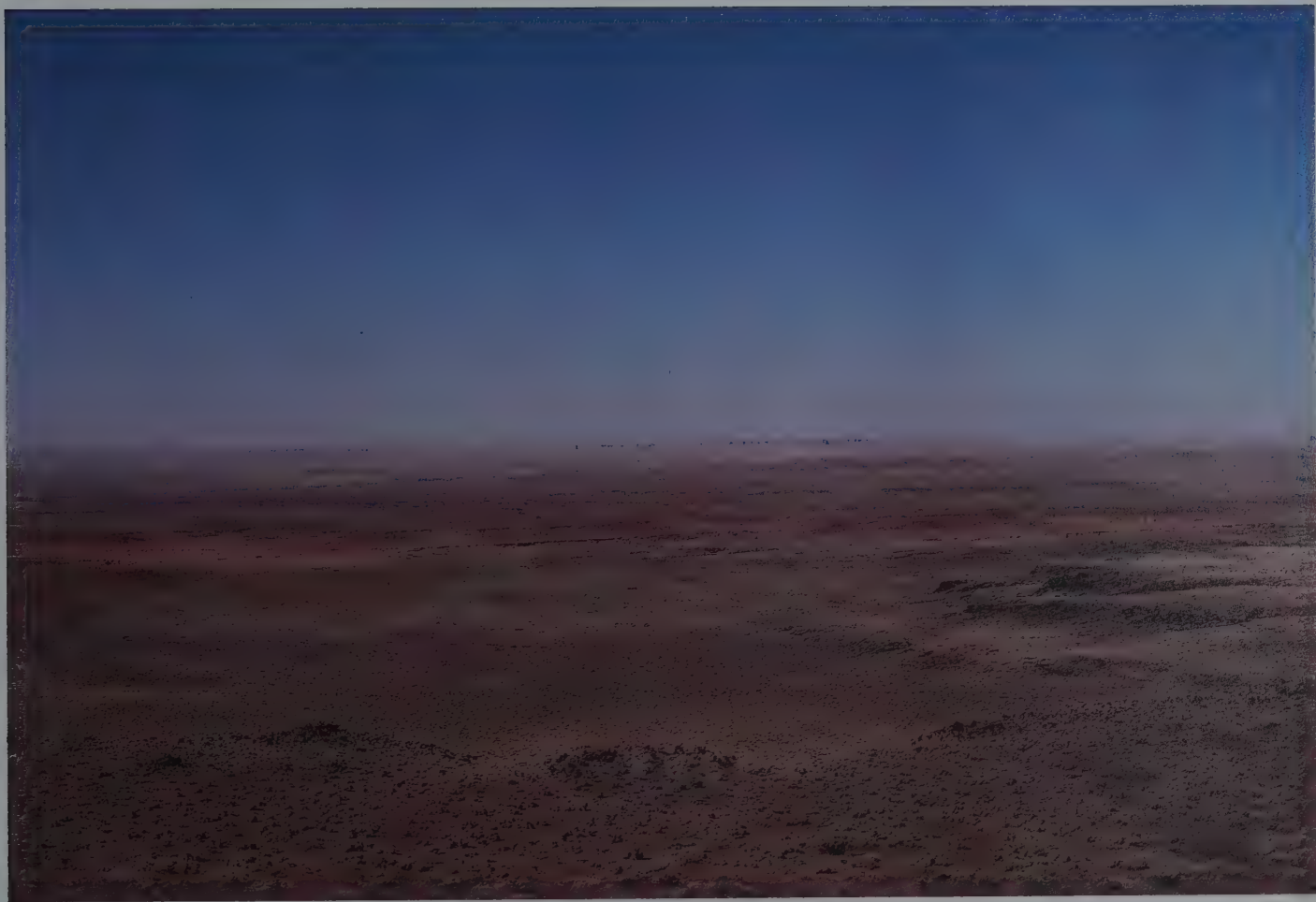
Roden Crater in summer



Sunrise in crater, west rim, orange/blue colour shift



Sunset over crater rim



Looking east across lava flow from top of Roden Crater

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Island Publishing, Flagstaff, Arizona, to be published in 1994.

A more complete bibliography of writings on and by James Turrell can be found in *James Turrell, The Art of Light and Space* by Craig Adcock.



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Front cover: Roden Crater, original contours

Back cover: Earth's shadow advancing up Roden Crater at sunset

Frontispiece and page 119: Landscape, Amboseli National Park, Kenya,

© Stan Osolinski/Oxford Scientific Films.

The photographs on pages 22 and 23 are from *Air-Photography for Archaeologists* by O.G.S. Crawford, B.A., F.S.A., HMSO, London, 1929.

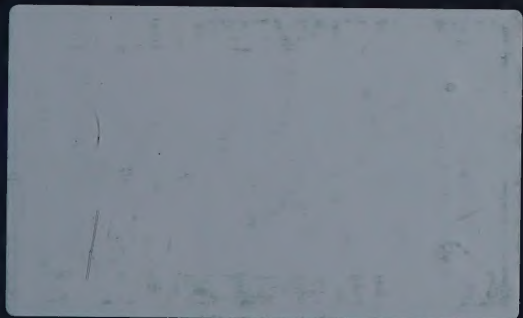
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