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Numéro 54, hiver 2000–2001

URI : <https://id.erudit.org/iderudit/9485ac>

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Éditeur(s)

Le Centre de diffusion 3D

ISSN

0821-9222 (imprimé)

1923-2551 (numérique)

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Citer cet article

Amizlev-Shoham, I. (2000). *Sun Tunnels* and Archaeoastronomy. *Espace Sculpture*, (54), 34–36.

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Sun Tunnels and ARCHAEOASTRONOMY

For art-loving city-dwellers longing for nature, a trip to *Sun Tunnels*, in Utah's Great Basin Desert (or any Land art, for that matter), is likely to be a fulfilling experience, a perfect fusion of natural setting and art appreciation. For those seeking an added bonus, visiting during the summer or winter solstice ensures a magnificent sight. Four concrete tunnels placed in an open X configuration are aligned so that the sun rises and sets in the exact centre of two of the tunnels during the solstices.¹

In fact, *Sun Tunnels*, made by American artist Nancy Holt between 1973 and 1976, contains several references to astronomy. Other celestial elements are the differently sized holes drilled in the top half of each tunnel. The holes form various configurations that correspond to the stars in four different constellations: Columba, Draco, Perseus, and Capricorn. The holes' diameter, 18, 20, 23, and 25 centimetres, vary according to the magnitude of stars represented. The sun and moon shine through these holes, casting circular or oval shadows on the bottom surface and sides of the tunnels' interiors, thus forming constellations within the tunnels as well. The shapes and positions differ from hour to hour, day to day, and season to season, relative to the sun and moon's positions in the sky.

I planned a trip with a friend to see the summer solstice sunrise and sunset at *Sun Tunnels*. Upon landing in Salt Lake City, we rented a car and headed for the tunnels. The scenery on the way was spectacular. The sparkling crystals in the shallow water of the Bonneville Salt Flats, the convoy of mountains, the vast sky, the coyote, antelope, and fox sightings, all made us as

thrilled as two city girls starved for nature would be.

The setting for this artwork is true American wilderness. The desert is stark and, except for mountains in the far distance, the tunnels provide the only substantial thing for the eye to focus upon. A bed of low scrub brush grows on the cracked dry earth, but it is non-imposing.

There were other people at the tunnels when we arrived, confirming my suspicion that visitors tend to coordinate their trips to see alignments at landworks, if they exist. We watched the sun set in the tunnels with twenty-three people and three dogs. When the fleeting event was over, some people left while others set out for their tents. We slept in one tunnel and spent a rather freezing night.

Waking up was a unique experience. I was enclosed in a large concrete tunnel, the wind was howling, I was disoriented, cold, and felt very secluded. It was the epitome of "being in the middle of nowhere." Montello, the nearest town, was thirty-three kilometres away. Had others not been around, the sense of solitude would probably have been intensified.

I couldn't help thinking that this is how

our predecessors lived. And the fact that we were going to watch the sunrise through the tunnels during the summer solstice further compounded associations with the past. It reminded me of the numerous theories that I had read regarding megaliths, the Nazca lines, and other ancient sites said to be aligned astronomically.

There were about thirty-five people present in the morning. We watched the sun rise through two different tunnels, and again, when the event was over, many people left. We spent most of the day relaxing inside tunnels and looking at views through their openings, taking in the desert beauty and tranquillity. We listened to birds, looked at insects, and watched mini sandstorms in the distance lifting dry little shrubs and twirling them in the air. We spoke to people, napped, and went for walks.

New groups of people arrived in the evening to watch the sunset. After pitching their tents, they congregated in front of the tunnels that were going to frame the alignment, chattering excitedly while waiting for the sun to set. The sky had a pinkish hue with clouds dancing to the sun's melody.

Nancy Holt, *Sun Tunnels*, 1973-1976.
Photo : Iris Amizlev-Shoham (1997).



Everyone watched the alignment in silent harmony, while those with cameras photographed the event to record it. Finally, the sun descended through the tunnels again.

Seeing this landwork and being familiar with others leads to inevitable questions about the similarities between them and ancient sites. What led Holt and other artists whose names are associated with Land Art to align some of their works astronomically?

During the 1960s and 70s, discoveries in the field of archaeoastronomy flourished and a boom of information led to an intensified awareness of prehistoric structures. Astonishing theories about ancient astronomy received widespread media coverage, were sensationalized and popularised in books, newspapers and magazines, thereby informing the general populace and possibly Land artists. Suddenly the mysteries that had shrouded these remains became clarified (though not unanimously accepted), endowing pre-

historic humans with capabilities previously unnoticed.

For pre-calendar, agricultural (or pastoral) groups whose existence depends on the fruitfulness of earth, noting the cycles of nature that affect the earth's fecundity could be indispensable. The evidence documenting ancient astronomy suggests that some archaeological sites might have been aligned to observe patterns that influenced the environment, thereby measuring times of year to gauge approximate dates of importance for Neolithic farmers.

Gerald Hawkins's revelations about Stonehenge, in *Stonehenge Decoded* (1965), were among the most famous of these hypotheses.² By "decoding" the megalithic monument using statistics and a computer, Hawkins proposed that Stonehenge was an ancient astronomical observatory, used as a reliable calendar for the predic-

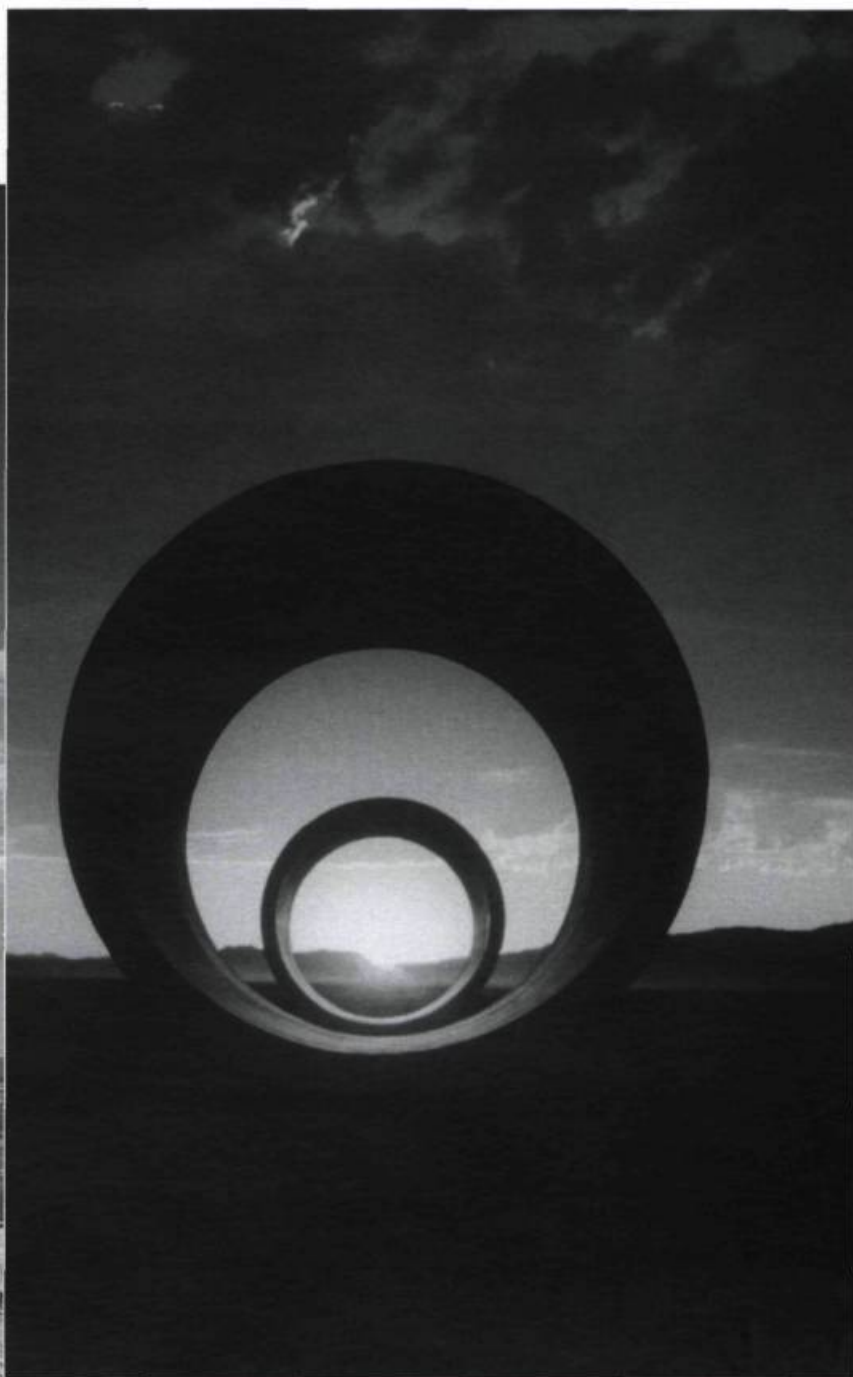
tion of seasons through its orientation to solstices and for signalling eclipses of the sun and moon.

Shortly after these and similar speculations become well-known, Land artists such as Holt, Robert Morris, James Pierce, Charles Ross, Michelle Stuart, James Turrell, and Bill Vazan created works that are astronomically aligned, featuring the sun, moon and stars as sculptural elements. The appearance of such landworks coinciding with the new ideas about ancient sites is interesting and suggests, if not a direct causality between the two, a general awareness of archaeoastronomy. One may logically conclude that artists are affected by their knowledge of prehistoric astronomy.

From their comments, we can infer that

Nancy Holt, *Sun Tunnels*, 1973-1976. Photo: Amizlev-Shoham (1997).

Nancy Holt, *Sun Tunnels*. Summer solstice sunrise, June 21, 1997. Photo: Amizlev-Shoham.



the motivation for using sky observations in their work is a combination of wanting to mark time and the cycles of nature, as well as a yearning for primal roots. Obviously, modern art does not require the information provided by a rudimentary calendar; it rather alludes to a more abstract concept of time, one closer to what we imagine was perceived by the ancients.

Aside from the seasonal cycles that aligned works measure, shifting natural forces transform the colors and shadows of landworks and their surroundings. *Sun Tunnels* is one of the most elaborate such works, as it offers three different ways of gauging the hour. One can tell time according to the shadows cast by the tunnels themselves, by light penetrating the tunnels through their openings, and by the presence and location of spots of light piercing through the constellation holes. Spending a full day at any three dimensional object or "environment" above ground that casts shadows is like observing a sun-dial. Moreover, landworks whose structural elements feature the periodic apparition of alignments measure time on a seasonal scale.

It appears that the experience of the sky is pertinent to Land artists, while the science of astronomy is much less critical. Watching an alignment can instill a sense of continuity with the past, as we imagine Neolithic farmers watching celestial events at ancient sites. By the power of association, astronomically aligned landworks link viewers with their predecessors, helping them to look back in time and to think about how it might have felt to observe the sky and events taking place within it through the structural features of ancient sites especially built for such purposes.

The use of alignments in modern art can be a means of reminding people of ancient ways, by reinforcing the perception of our predecessors as living in tune with the forces of nature. Modern astronomy has solved many mysteries and instigated new puzzles, but ironically, as knowledge about the universe is gained, an intimacy with the sky is lost. Whether due to a lack of need or the demystification of nature, contemporary urban societies are rarely connected with the sky. Holt and other artists encourage viewers to reconnect with it by placing their landworks outside, with the sky, its elements, and nature as their mediums.

These preoccupations still prevail in Land Art today, more than thirty years after

its onset. Artists still seek to escape the museum establishment and revel in the formal liberties that exterior locations allow. Some continue to align their works astronomically, thereby extending their efforts beyond the landscape into the celestial sphere, resulting in an intensified outdoors factor and a universal language of form.

Sun Tunnels is timeless. Despite its creation and status as art, it could have functioned thousand of years ago as a foreteller of seasons, like Stonehenge (barring obvious formal dissimilarities, such as the tunnel shapes and the use of concrete as a medium — contrary to other landworks that do share formal affinities with ancient sites), and if the tunnels resist weathering (a possibility, considering the relative durability of concrete), might be practical thousand of years from now. If *Sun Tunnels* had been made today instead of during the 1970s, it would be just as effective (though perhaps lacking an impact as one of the earliest aligned landworks). Whether alignments are viewed thousands of years ago, two decades ago, today, or far into the future, contact with the sky and the cycles of nature is inevitable.

Holt sums up this concept: "I feel that the need to look at the sky — at the moon and stars — is very basic, and it is inside all of us. So when I say my work is an exteriorization of my own inner reality, I mean I am giving back to people what they already have in them."³ Her belief, that all humans share an innate intimacy with the sky, might be shared by other artists that choose to reinstate this ancient interest. For anyone spending time outside, the sun, moon and stars become vital components of one's existence as they guide all activities.

If the need to look at the sky is as basic as Holt believes, the attraction to *Sun Tunnels* is not likely to dissipate. In fact, the tunnels have become more popular with time as regards visitors during the summer solstice (muddy roads make access during the winter solstice difficult).⁴ The apparition of Land Art during the latter 1960s coincided with an ecological awareness, a time when many people regarded their predecessors with nostalgia, imagining that they had lived in harmony with nature. Environmental concerns have not abated since then, and similar assumptions about the ancients are maintained, hence the ongoing appeal of astronomically aligned landworks. ■

NOTES :

1. The solstices occur during the sun's cycle through its annual orbit in relation to the fixed stars. These are the longest and shortest days of the year. In the northern hemisphere, they occur June 21-22 and December 21-22 respectively, during which the sun is furthest from the equator.
2. Gerald S. Hawkins, *Stonehenge Decoded* (New York: Dell Publishing Co., Inc, 1965).
3. Janet Saad-Cook, "Touching the Sky: Artworks Using Natural Phenomena, Earth, Sky and Connections to Astronomy," *Leonardo* 21 (1988): 128.
4. Nancy Holt, interview by author, tape recording, Montreal/Finland, 15 July 1997.

L'auteure « re-visite » les *Sun Tunnels* que l'artiste américaine Nancy Holt a réalisés entre 1973 et 1976 dans le désert de l'Utah. Quatre cylindres en béton alignés de telle sorte que, lors des solstices, le soleil se lève et se couche en plein centre de deux d'entre eux. Cette œuvre, en fait, recèle plusieurs références à l'astronomie : les configurations des perforations sur le dessus de chaque cylindre correspondent aux étoiles de quatre constellations, tandis que la lumière du soleil et de la lune pénètre ces orifices, dessinant des constellations au fond des tuyaux et sur les parois internes qui varient d'heure en heure, de jour en jour et de saison en saison. D'ailleurs, des études sur l'astronomie ancienne soulignent que certains sites archéologiques auraient été aménagés dans le but d'observer des motifs qui influençaient l'environnement, comme de mesurer les époques de l'année pour prévoir les dates importantes pour les cultivateurs de l'époque néolithique.

« Je crois, affirme Nancy Holt, que le besoin de contempler le ciel — la lune et les étoiles — est fondamental et présent en chacun de nous. Ainsi, lorsque je prétends que mon travail est une extériorisation de ma propre réalité intérieure, je veux dire que je redonne aux gens ce que déjà ils possèdent au fond d'eux-mêmes. » Cette croyance — que tous les humains partagent un lien d'intimité inné avec la voûte céleste — est aussi partagée par certaines artistes qui choisissent de rétablir cet intérêt ancestral. Pour quiconque vivant beaucoup à l'extérieur, le soleil, la lune et les étoiles constituent des composantes essentielles puisque ce sont eux qui guident toutes les activités de la vie.