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ART/ARCHITECTURE; A Sculptor Works Up an Exposé of the Stars' Secrets

By SUSAN KARLIN NOV. 3, 2002

IN a remote part of New Mexico, people will one day be able to look 13,000 years into the past or future. Or watch an hour of the earth's rotation. Or pinpoint the celestial equator.

So promises "Star Axis," a majestic astronomy-based artwork that has been taking shape during the last 26 years at the isolated Chupinas Mesa, 85 miles southeast of Santa Fe. An interplay of granite, sandstone, concrete and stainless steel, "Star Axis" will be 11 stories high and a quarter mile across when finished (the target date is 2006). Visitors walking through its cavernous complex of chambers connected by a tunnel will be able to experience the earth's movement through space and time while feeling a spiritual connection with the universe.

"The point of this art is to bring star geometry down into physical form and human scale," its creator, Charles Ross, 64, said recently by telephone. "Every angle, measurement and form is determined by star alignment. The chambers and tunnel precisely align you with the earth's axis and provide places to see the earth's spins in different time frames -- an hour of the earth's rotation, the shape of a season, the historic increments in our changing star alignment."

Over 40 years, Mr. Ross, a Manhattan-based sculptor with a background in physics and mathematics, has built an international reputation for works inspired by the properties of light and celestial movement. His large prism installations can be found at the Harvard Business School Chapel in Cambridge, Mass., the Federal Courthouse in Tampa, Fla., the Plaza of the Americas in Dallas and Saitama University in Tokyo. All create, on the buildings' atrium walls and floors, huge bands and patterns of the solar spectrum that change with the rotation of the earth.

But "Star Axis" remains Mr. Ross's most ambitious project and greatest labor of love. The size and scale of his work in the desert bring to mind that of Michael Heizer, James Turrell, Robert Smithson and Walter De Maria. The site will ultimately cost about \$3 million and is financed by individuals, corporations (which donated building materials), grants from the Thaw Charitable Trust, the Andy Warhol Foundation and others, and earnings from sales of Mr. Ross's other work. He estimates that \$600,000 more is needed to finish the project.

Visitors experience the changing earth-stars alignment as they walk through the site. "Star Axis" embodies a number of the earth's movements: its spinning around an axis, giving us our days and nights; its rotation around the sun, giving us our years; and its precession of the equinoxes, a conelike rotation of the earth's axis spanning 25,920 years, which slowly changes the earth's orbit and its celestial alignment. In other words, the earth points to different North Stars at different times in history. Today, in the Northern Hemisphere, the North Star is Polaris. During the building of the Pyramids, Thuban was the North Star; in about

11,000 years, the North Star will be Vega, now found directly overhead in the summer; and approximately 26,000 years from now, the earth will align once again with Polaris.

But appreciating "Star Axis" doesn't require a science degree. "You don't have to know the technical details," Mr. Ross said. "For me, math and physics became sculpture tools for looking into light in order to discover its qualities and forms. This art, this architecture, is an instrument for perception -- a place to sense how the earth's environment extends into the space of the stars."

The central feature of "Star Axis" is the Star Tunnel, which shows how Polaris has historically changed its orbit and will continue to do so. Visitors first enter the Equatorial Chamber, which shows the stars seen at the earth's equator, then move into the tunnel, which encloses a staircase that ascends the mesa at the same angle as the earth's axis. At different points in the tunnel, the circle of sky framed by the opening at the top of the stairs reveals Polaris's position during different periods between 11,000 B.C. and A.D. 15,000. Dates engraved in each stair will identify the years corresponding to the view from that spot -- showing, for example, Polaris's location in the sky as it existed for Nefertiti or Plato or Leonardo da Vinci.

The Star Tunnel emerges at the mesa's summit, continuing into the 52-foot-high Solar Pyramid, whose shadow marks the daily and seasonal movements of the sun. Inside the pyramid, the Hour Chamber will let viewers watch an hour of the earth's rotation at night through a 21-foot high triangular opening in the north wall. In that time, stars move from left to right across the opening, while Polaris remains at the apex.

Many of Mr. Ross's early supporters say they are awed by his singular vision and quiet determination to press forward with a seemingly insurmountable project.

"Charles is a very radical artist whose choices are directed more by desires, thoughts and ideas than selling in galleries," said Jean-Hubert Martin, the director of the Museum Kunst Palast in Düsseldorf, Germany. Mr. Martin commissioned a work from Mr. Ross called "The Year of Solar Burns," an expression of solar movement that is permanently installed in the 15th-century Chateau d'Oiron in France. "I have tremendous admiration for an artist who, year after year, raises money to create some fantastic piece just for the love of it. Very few artists can sustain such an effort over so many years."

Mr. Ross's cocktail of science and art began innocently enough in the late 50's. While studying mathematics and physics at the University of California in Berkeley, he took a sculpture class for an easy liberal-arts credit and was instantly smitten. He went on to a master's degree in sculpture in 1962 and began his prism work three years later, after, he said, the technical information came to him in a dream.

The ethereal nature of his work began to attract attention. "I was drawn to the fact that I was seeing work that went directly to the source of energy and color," said Virginia Dwan, Mr. Ross's art dealer some 30 years ago. "I'd never seen anything like that before." When Ms. Dwan later conceived the Dwan Light Sanctuary, an airy nondenominational chamber for quiet reflection at the United World College in Montezuma, N.M., she called on Mr. Ross to design prisms that would create changing spectral washes across its walls.

As time went on, Mr. Ross's exploration of light extended beyond prisms. His SoHo studio features "Particle Light Drawings," in which he depicts subatomic light behavior by exploding dry pigment onto paper using dynamite primer cord. "The Year of Solar Burns" chronicles the pattern of solar movement each day for one year. Mr. Ross created the piece by placing a

different white wooden plank under a large magnifying glass every day. As the sun crossed the sky, it burned an arched band into the wood; the curvature of the burns changes with the seasons, and their intensity varies with the weather. The planks fill the walls of one room of the chateau, while etchings of the burns run end-to-end in the floor, following their changing curvature, creating a double spiral.

"Star Axis" sprang from the "Solar Burns" project, which piqued Mr. Ross's interest in the precession. "Here's a star whose path encompasses the human field of vision," he said. "The orbit of Polaris goes from the size of a dime held at arm's length to a circle that encompasses your entire visual field. I thought, 'It's nice to know about this, but I want to know what it's like to walk through it, to capture it as a physical experience.' I realized you could walk through the entire 25,920-year cycle by aligning a tunnel with the axis of the earth."

That was 1971. Mr. Ross spent the next five years making blueprints, consulting with astronomers and engineers and scouring the Southwest for a site where he could see the curvature of the earth. Building began in 1976, setting Mr. Ross on a schedule of New York winters working on commissions and New Mexico summers overseeing "Star Axis."

"Fund raising is always year-round," he said, laughing.

With only enough money to hire some half-dozen workers each summer, he proceeded at a glacial pace. But with the light now literally and figuratively at the end of the tunnel, Mr. Ross next envisions opening "Star Axis" to the public by appointment and inviting artists to create nearby works incorporating sun, moon and starlight. Meanwhile, the project maintains an office at the College of Santa Fe, where Mr. Ross is an adjunct art professor, and has a Web site (www.staraxis.org).

"I never thought about how

long it would take -- but I had no idea it would take this long," Mr. Ross said. "Happily, the amount of time it's taken has enabled the work to evolve beyond just the Star Tunnel. It's made it a much richer piece than originally conceived. But now it's time to finish it."