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CELESTIALLY ALIGNING BERNAL SPHERE

Abstract

As we blaze our trail of human exploration and settlement throughout the solar system and cosmos over the millennia we ask... what artifacts do we use to tie it all back to the legacy of where we came from and who we are? The ancients used architecture to orient their place in the cosmos and built their monumental structures to the cardinal directions and astronomical alignments. The pyramids of Egypt, the Chaco Canyon civilization, Globeki Tepi built 12,000 years ago are only a few examples that attest to this. Will future planetary bases or in-space settlements do the same, orient its site development for a human experience of understanding where we came from, where we are going, where we are?

Positioning and navigation technologies are with us, but we can also use the ancient ways of building monuments to our legacy aligned to astronomical markers, planet azimuths, or structures aligned to a planet's coordinate system. We can use astronomical alignments in our site planning to extend to a network of monumental architecture we create for the Moon, Mars, and in-space locations and beyond.

Conscience life seeks to further understand its existence and place in the universe. So as with humans, pushing our knowledge and meaning of our place in the universe goes beyond survival, it's about curiosity and exploration. We submit that a future of new worlds with structures that are astronomically aligned between planets connecting to some starting point as a bread crumb trail of where our expansion into the solar system began is paramount for future generations or unknown civilizations to understand us and know where we came from.

Presented is an investigation of an adaptive habitable structure as a monument to a future that speaks to the human permanence in the universe. Our proposed structure is a scaled model of the solar system, as a futuristic concept based on the ancient knowledge of encoding astronomical alignments in the placement of the structure. We expand on this knowledge by investigating a rotating system of multiple interlocked Bernal-like spheres that are fixed on the orbital paths of individual solar system planets. As architects, we propose research of a habitable structure that takes advantage of its location in the solar system with construction of a Bernal-like sphere which continually aligns itself to the orbits of the planets so that they are in constant view of line of sight from the structure.