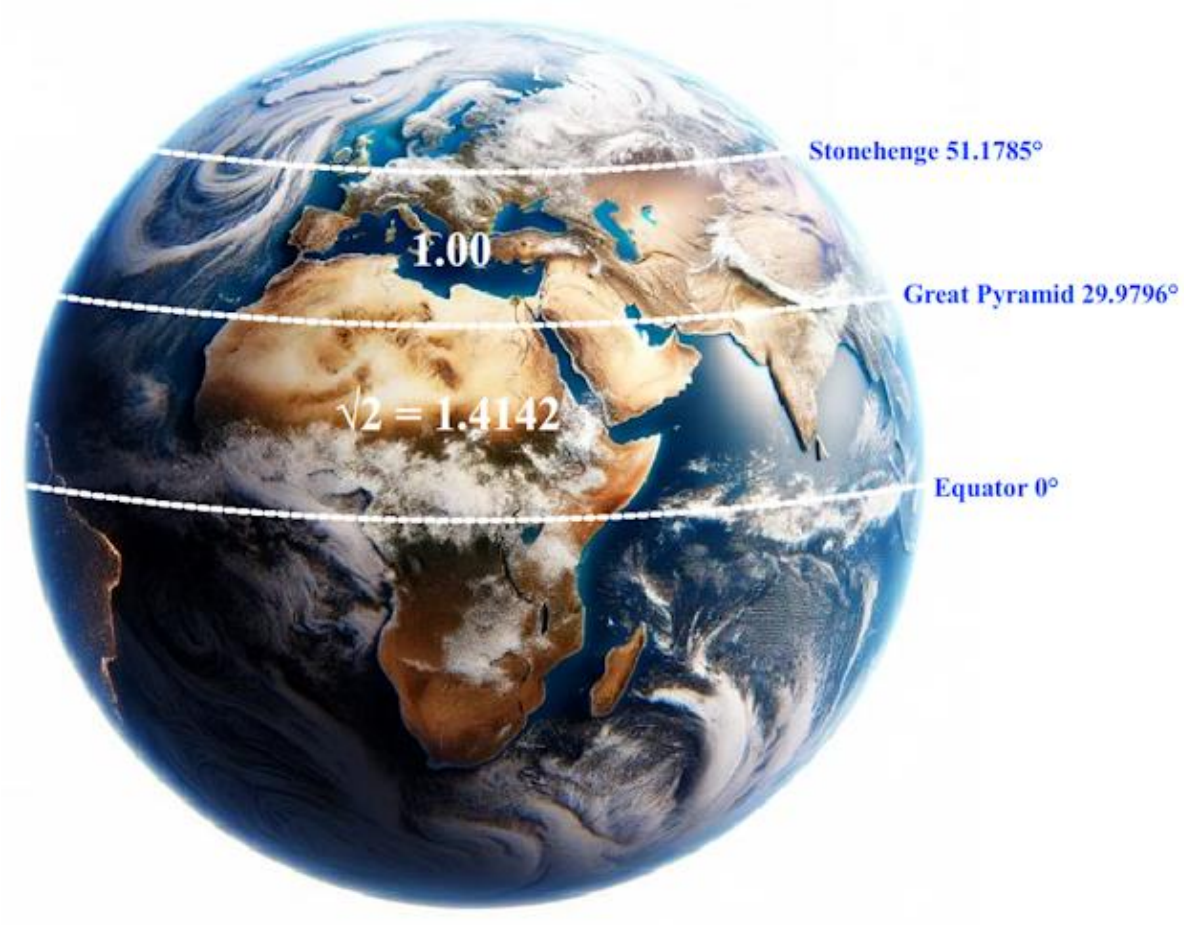


The Giza Stonehenge Connection

LARGE SCALE METROLOGY

Carl Balowski | December, 2023

Summary

Building upon this author's Giza Grid Theory, this article embarks on an explorative journey into the geometric and astronomical intellect that informed the construction of Stonehenge and the Great Pyramid of Giza, positing a shared foundational knowledge between these ancient marvels. It scrutinizes the geometrical sophistication and astronomical precision embedded in these structures, suggesting a profound connection with Heliopolis, the revered 'City of the Sun' in ancient Egypt. This connection is emblematic of the wider cultural and religious significance of the Nile, a life-giving force central to Egyptian civilization and its cosmological views. The study delves into the precise latitudinal alignments, the profound implications of the Silver Ratio in these ancient structures, and their intricate relationships with celestial bodies, proposing a sophisticated, unified cosmic vision held by these civilizations. It examines the enigmatic Station Stones at Stonehenge and the meticulously calculated placement of the Great Pyramid, which aligns with celestial and terrestrial realms, reflecting a deep understanding of sacred geometry and its connection to the Nile's life-sustaining properties. The article further explores the potential interconnectedness of ancient societies through trade routes and shared metrological systems, indicating that the Megalithic Yard and the Egyptian Royal Cubit might signify broader exchanges of knowledge facilitated by the Nile's extensive reach. The discovery of the Bush Barrow lozenges near Stonehenge adds another layer, suggesting a link to the astronomical and religious knowledge centered in Heliopolis and disseminated along the Nile. This exploration not only reveals the technical and spiritual acumen of our ancestors but also reflects on the profound human quest to understand and resonate with the cosmos, suggesting an ancient world far more interconnected through shared intellectual and spiritual pursuits than previously imagined.

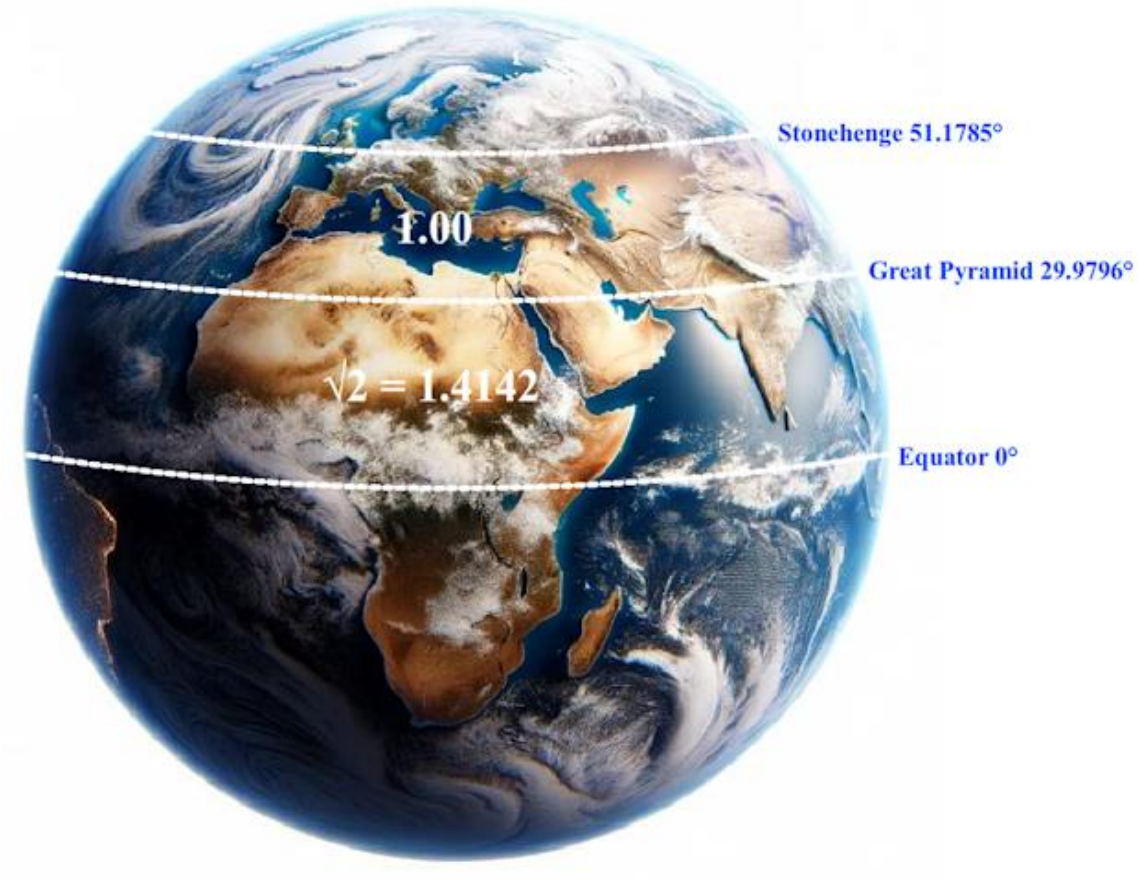
Why geometry?

Geometry, from the Ancient Greek words "geo-" meaning "earth" and "metron" meaning "measurement," initially referred to the practical art of land measurement or the measurement of the earth. This ancient practice, deeply rooted in the surveying and understanding of the physical layout of the land, has evolved over millennia into a comprehensive mathematical discipline exploring the properties and

relations of spatial entities. The prefix 'geo-' reflects its foundational concern with the physical and spatial aspects of the world, which is crucial in the study of significant ancient structures. Through the lens of geometry, as it relates to 'geo' - the earth, we aim to uncover how these ancient civilizations utilized their profound understanding of measurement to create monumental structures that have stood the test of time and continue to fascinate and puzzle us to this day.

Geographical Coordinates, Astronomical Alignments, and Mathematical Intricacies

The Equator, marking 0° latitude, is our baseline for understanding the precise locations of these ancient structures. Stonehenge sits at exactly 51.1785° north, while the Great Pyramid lies at 29.9796° north. The latitudinal difference between these two is a precise 21.1989°. This difference sets the stage for a deeper exploration into the mathematical and astronomical relationships that might link these ancient structures.

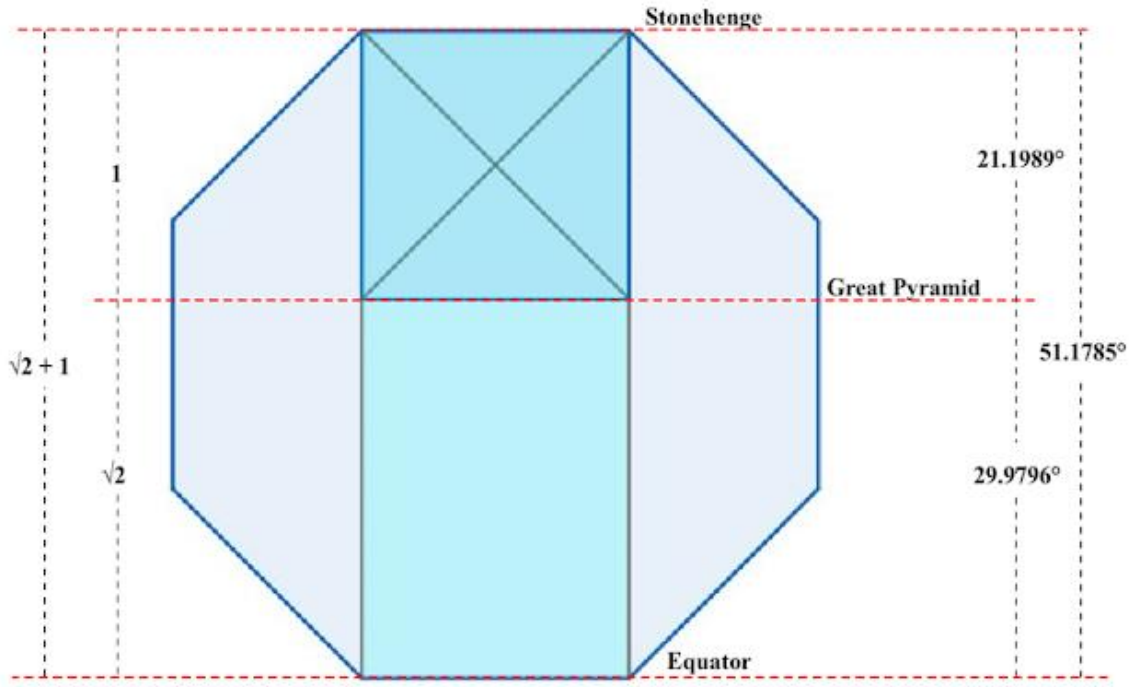


The large-scale √2 relationship between Giza and Stonehenge.



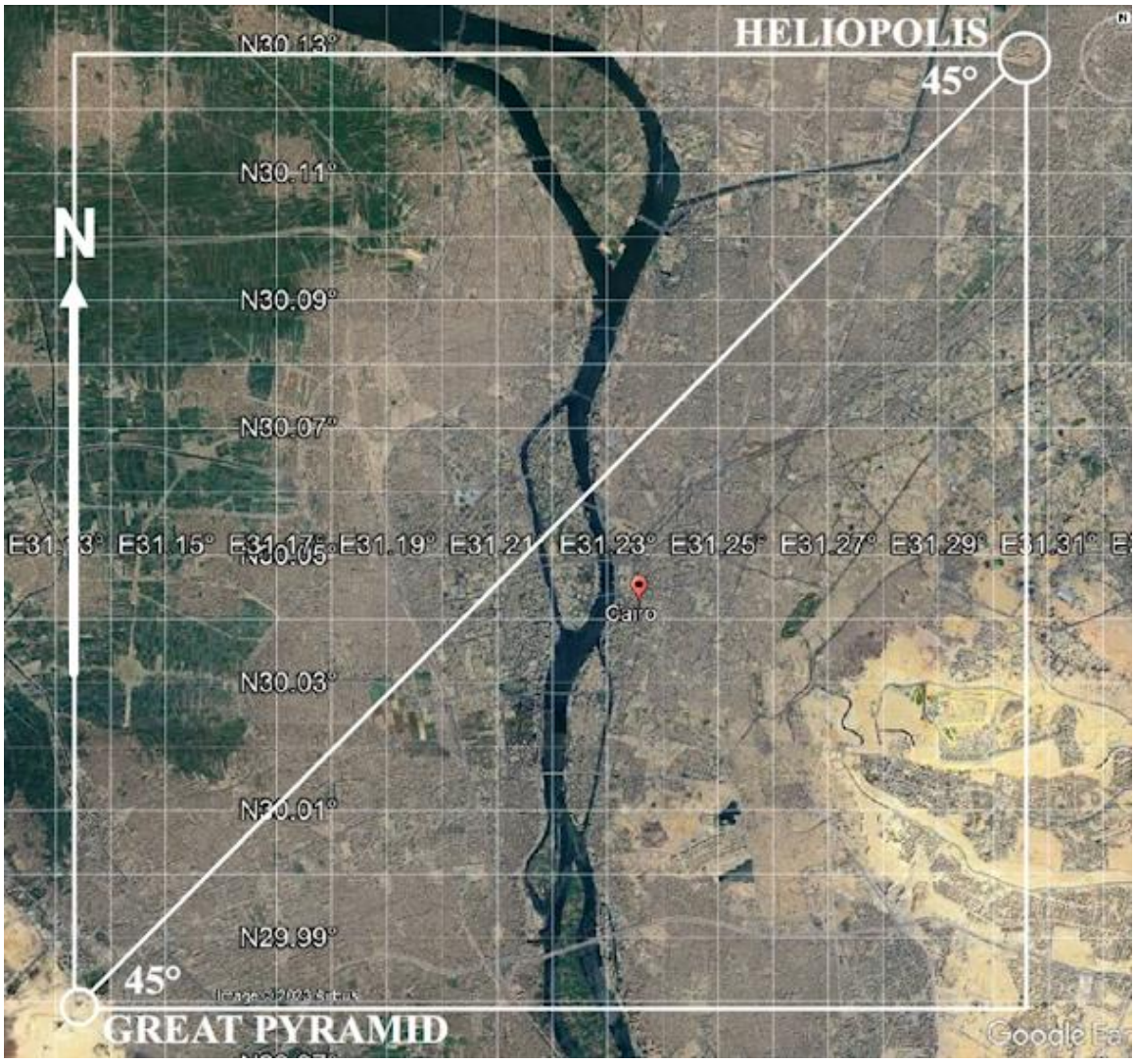
Latitudinal evidence from Google Earth of Giza (left) and Stonehenge (right).

Assigning the latitude of the Great Pyramid a hypothetical value of √2 reveals an intricate relationship where the latitudinal span from the Great Pyramid to Stonehenge becomes 1, setting Stonehenge's latitude at √2 + 1, or precisely 2.4142. This ratio, known as the Silver Ratio, reflects the relationship not only between the side of a square and its diagonal, but also the short and long sides of an octagon. This correlation between Giza and Stonehenge suggests a profound understanding of geometry and its large-scale application to the natural world.



Large-scale relationship of latitudes to octagon.

The placement of the Great Pyramid on the Giza Plateau was not a decision taken lightly but a meticulously calculated one. It was not only near the life-giving Nile but also positioned so its sides aligned perfectly to True North at 0°, with its diagonal at a 45° angle to Heliopolis, known as 'the City of the Sun.' This alignment is deeply symbolic, connecting the pyramid with the cult of the Heliopolitan creative sun god, Atum-Ra. The pyramid's latitudinal position, precisely proportionate to √2 when compared to Stonehenge and the Equator, alongside its perfect alignment with True North and Heliopolis, suggests an advanced need to harmonize into a cosmic synergy the terrestrial and celestial realms via ‘sacred geometry’. In essence, Giza, being at the base of the Nile Delta, was a place that not only satisfied the pragmatic needs of the pharaoh, but it was the ‘only’ place which could satisfy all the geometrical, religious, and astronomical criteria required for a priestly class that sought a theory of everything.

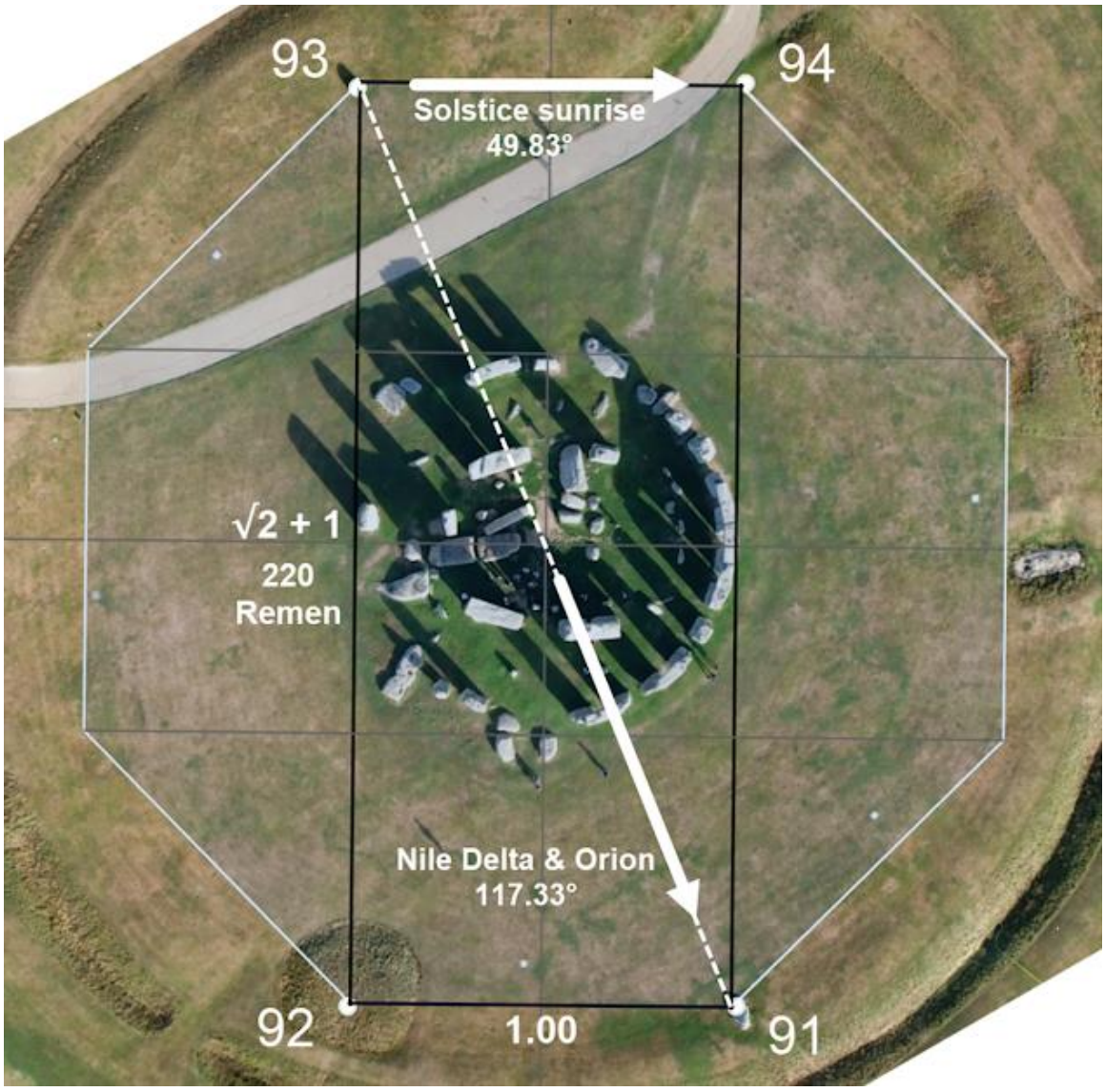


Perfect 45° diagonal between the Great Pyramid and Heliopolis. Verified on Google Earth.

Station Stones Rectangle: A Geometric and Astronomical Marvel

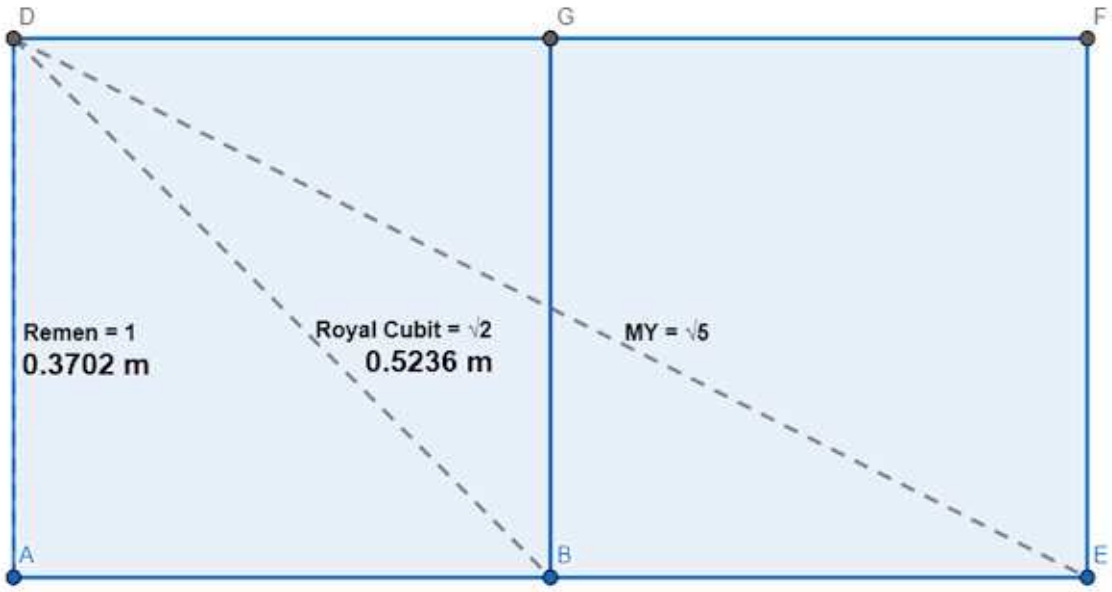
The Station Stones at Stonehenge form a fascinating and enigmatic part of the monument's structure. Positioned on the preexisting Aubrey Circle, these stones, numbered 91, 92, 93, 94, and averaging about 1.25 m wide, are perhaps the first stones erected at the site and are arranged to approximate the Silver Ratio rectangle found inherently in the octagon as shown above. Stone 91 has fallen backwards and Stones 92 and 94 are missing and have been replaced with markers which identify their discovered original sockets. Stone 93, which I

hypothesize is critical for understanding Stonehenge, is fortunately still in place. This near-perfect silver ratio rectangle, while not achieving the absolute precision of modern standards, nonetheless demonstrates a sophisticated understanding of geometry and, as we shall see, a deliberate intent to incorporate this knowledge into the sacred architecture.



Station Stones rectangle indicating its relationship to the Remen, Octagon, Summer Solstice sunrise and alignment with both Orion / Nile Delta.

The use of the Silver Ratio in the Station Stones Rectangle is a testament to the ancient Egyptians' practical use of the Remen and Royal Cubit. These measurements, integral to Egyptian construction and cosmology, are understood to be derived from the relationship between the side of a square and its √2 diagonal, embodying the principle of the Silver Ratio. A single Egyptian Royal Cubit equals to 0.5236 meters, whilst the Remen equals 0.3702 meters. The short and long sides of the Station Stones rectangle, measuring 33.741 m and 81.458 meters respectively, are significant not only for its ratio but for its orientation within the broader context of Stonehenge. These dimensions and the rectangle's positioning are thought to be integral to understanding the entire site's astronomical and ceremonial use. The total perimeter of the Station Stones' rectangle is 230.4 meters, which intriguingly not only matches the length of one side of the Great Pyramid's base but is simultaneously equal to 440 Royal Cubits. Consequently, the long side of the Station Stone rectangle, measuring 81.458 meters, is equivalent to 220 Egyptian Remen, which precisely matches the quarter diagonal of the Great Pyramid. These measurements are not arbitrary; they are a deliberate reflection of astronomical and geometrical knowledge, translating celestial observations into terrestrial structures and indicating a profound interconnection between the builders of Stonehenge and Giza.



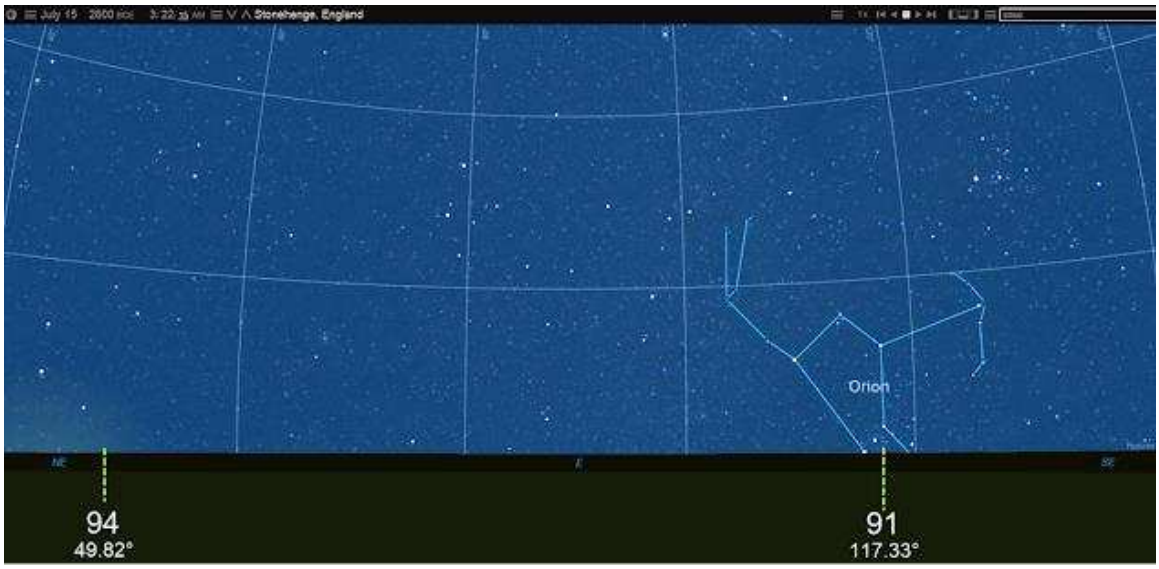
The Remen, Royal Cubit and Megalithic Yard (MY) are all comprehended in the 2 : 1 rectangle, also known as the double-square.

It has long been known that the main axis of Stonehenge was meant to pinpoint the rising of the Summer Solstice sun, ca 2600-2400 BC, however little attention has been paid to the fact that the Station Stone rectangle, the earliest stone structure on site, is perpendicular to the main axis, meaning that the short sides of the Station Stone rectangle also point directly to the Summer Solstice sunrise. In this way an ancient observer could stand at stone 93 and observe the Solstice sunrise at an azimuth of 49.83° over the edge of stone 94. Therefore, I believe that stone 93 was likely the first Station Stone erected at the site and is critical in understanding how Stonehenge relates to ancient Egypt and the silver ratio.

The diagonal of the Station Stones rectangle (as viewed from stone 93 to 91) is a critical element of its design, pointing not only toward the Bolbitine mouth of the Nile Delta, but also to the astronomical rising of Orion's belt at an azimuth of 117.33° only minutes before the Summer Solstice sunrise, ca 2600 BC. This alignment is not merely coincidental but a deliberate manifestation of understanding the relationship between the site's geometry and the wider geographical and cosmological context. The diagonal as viewed over stone 91 acts as a symbolic line, connecting the sacred space of Stonehenge with the ancient lands of Egypt, suggesting an ancient understanding of geography, the intent of which was to, at a minimum, demonstrate that the builders at Stonehenge had a terrestrial interest in the cosmology of ancient Egypt.

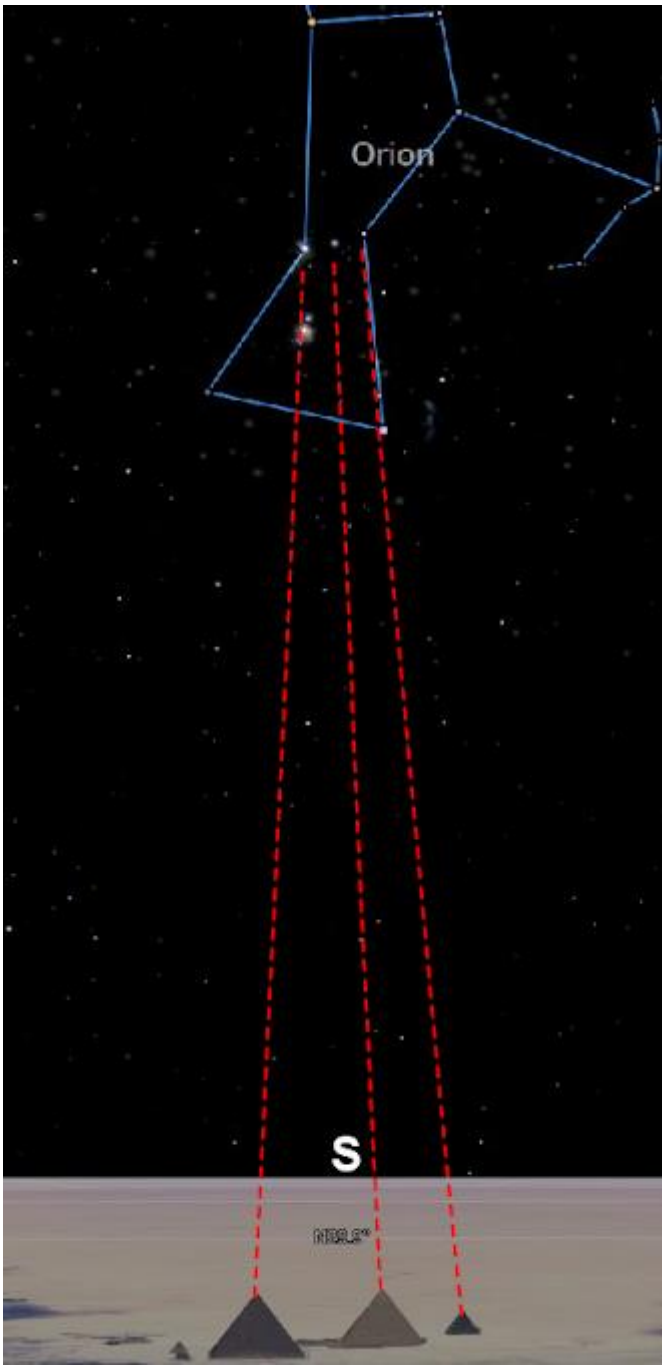
Orion was an astronomical feature of great significance in ancient Egyptian cosmology. Orion was associated with Osiris, the god of rebirth and afterlife, and his origins are believed to be rooted in the prehistoric fertility cults of Andjety, an early Egyptian god of the fertile Nile Delta.

This celestial alignment might have been of particular importance to the people who constructed and used Stonehenge, mirroring the significance that Osiris / Andjety held in Egyptian culture. The alignment with Orion's Belt and the Nile Delta suggests an understanding of the movements of the stars and their role in marking seasons, navigating, and mythmaking, further underscoring the astronomical sophistication of these ancient peoples.



A viewing from Station Stone 93, twenty-five minutes before the Summer Solstice sunrise over Station Stone 94 ca 2600 BC. Note the rising of Orion's belt over Station Stone 91.

This celestial alignment harmonizes with a modified version of the Orion Correlation Theory, which posits that the three main pyramids of Giza are aligned with the three stars of Orion's Belt during the Autumnal Equinox, ca 2600 BC. This suggests a deliberate intention to mirror the heavens on Earth, creating a stellar map that aligns earthly structures with celestial bodies. The diagonal pointing precisely to the Nile Delta and rising of Orion's Belt from Stonehenge on the Summer Solstice could be seen as a further extension of this cosmic map, linking Stonehenge to the same celestial narrative and indicating a shared or parallel astronomical tradition. This connection between the ground and the stars speaks to the ancients' desire to understand their place in the universe and to align their spiritual and physical lives with the rhythms of the cosmos.

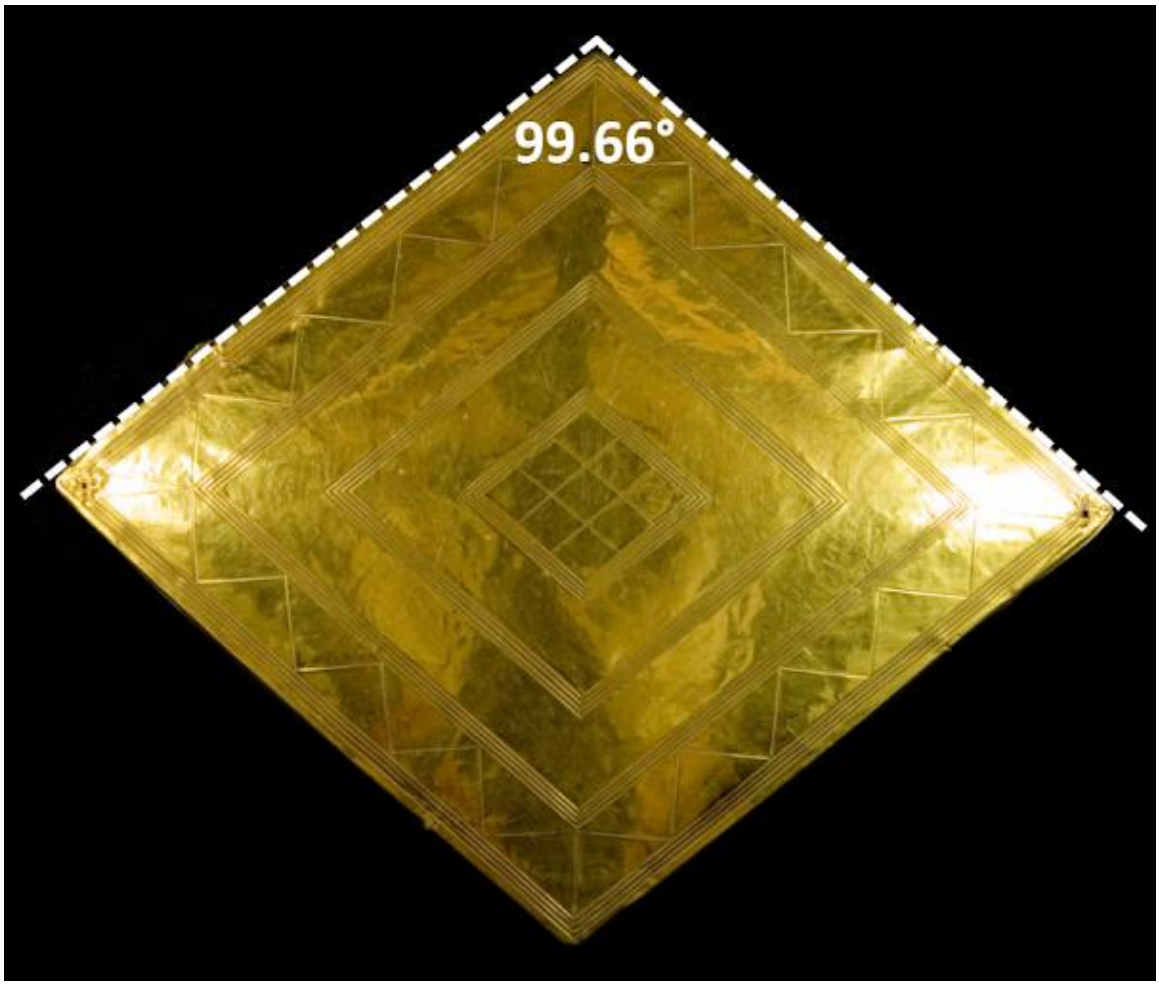


Looking due south on the Vernal Equinox ca 2600 BC. Mapping of Orion's belt to the pyramids on the Giza Plateau.

Unearthing Connections: Bush Barrow Lozenges, Priest-like Chieftains, and Harmonizing Mathematics, Astronomy, and Religion

The discovery of the Bush Barrow lozenges near Stonehenge, in the grave of a prestigious individual often referred to as a priest-like chieftain, provides a compelling glimpse into the beliefs and astronomical knowledge of the people associated with Stonehenge. It is thought that this individual was buried around 2000 BC, but his effects are of unknown origin and may have been centuries older and ceremonially passed down to him. It is quite possible that he was the last in line of a long priesthood that went defunct. The larger lozenge, with its intricate design and precise angle of 99.66°, reflects the angular distance between the solstice sunrise and sunset as observed from Stonehenge before 2500 BC. The angular distance of both the Summer Solstice sunrise and sunset is 49.83° as measured from True North. Meaning that the sunrise is 49.83° 'east' of True North and the sunset is 49.83° 'west' of True North, making for a total angular distance between the sunrise and sunset 99.66°, for 49.83 x 2 = 99.66.

So, the smaller lozenge, often dismissed as merely decorative, has a specific angle of 117.83°. From Stonehenge, the azimuth of 117.83° points not only toward the western half of the Nile Delta, but exactly toward Heliopolis, the City of the Sun. Being only a half degree greater than 117.33°, this azimuth can be obtained by looking from eastern edge of Stone 93 to the western edge of stone 91 using the parallax sighting technique. This is astounding, for the azimuth of 117.83° is instrumental in understanding the layout of the pyramids in accordance with Heliopolis and the Winter Solstice sunrise on the Giza Plateau, as demonstrated in the 'Giza Grid' study! These artifacts suggest that the individual buried with them inherited a significant role at Stonehenge, likely akin to that of a high priest at Heliopolis, entrusted with the sacred knowledge of celestial movements and alignments. However, by 2000 BC his inheritance had long lost its usefulness, especially in respect to the Station Stones whose sightings were now blocked by dozens of standing stones. In this regard the artifacts became mere tokens of his authority and status, and were buried with him as passports for his afterlife journey.

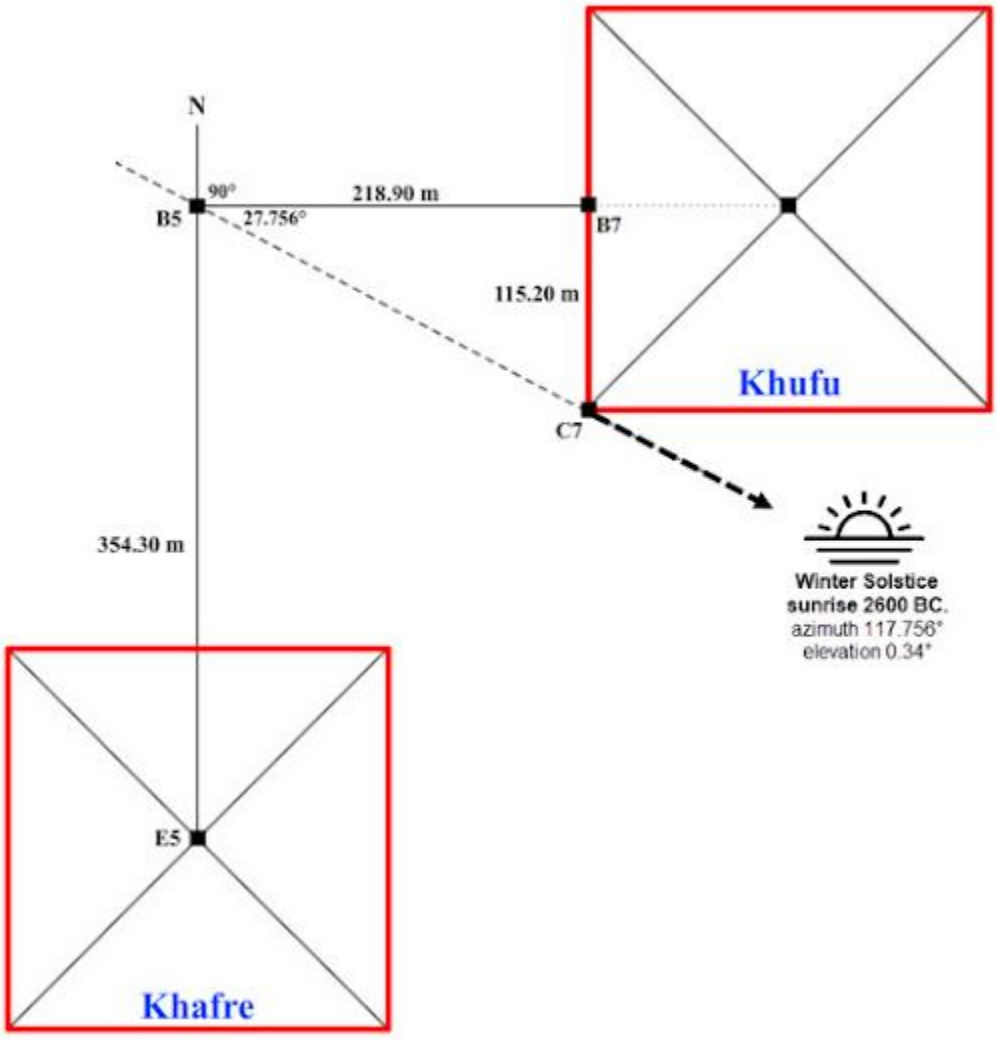


Large Bush Barrow Lozenge demonstrates the angular distance between Summer (and Winter) Solstice sunrise and sunset at Stonehenge ca 2600 BC.



Small Bush Barrow Lozenge demonstrates both the azimuth to Heliopolis from Stonehenge and the azimuth of the Winter Solstice sunrise at Giza ca 2600 BC.

The role of these chieftains at Stonehenge can be intriguingly compared to the priests of Heliopolis, one of ancient Egypt's most important religious centers. These priests were likely custodians of sacred knowledge relating to astronomy, theology, and geometry. They were responsible for maintaining the calendar, predicting celestial events, and ensuring that religious ceremonies were conducted in accordance with cosmic rhythms. The parallel between the artifacts found with the Bush Barrow chieftain and the duties of the priests of Heliopolis suggests a potential similarity in their roles as keepers of astronomical and religious knowledge, bridging the gap between the living and the divine through their understanding of the cosmos and planning techniques such as the Giza Grid.



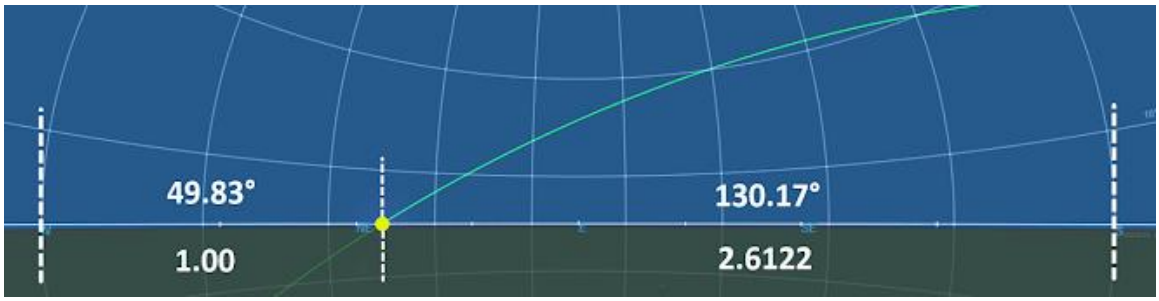
A diagram from the Giza Grid Theory. The azimuth of the Winter Solstice sunrise at Giza as viewed over cornerstone C7 from sacred point B5.

Silver Ratio Horizon

The builders of Stonehenge and the Great Pyramid placed great importance on harmonizing mathematics, astronomy, and religion. The precise segmentation of the horizon at Stonehenge during the Summer Solstice sunrise, reflecting the diagonal of a Silver Ratio rectangle, indicates a deliberate integration of celestial movements into terrestrial structures. This phenomenon, observable only at Stonehenge's specific latitude, suggests an attempt to create a sacred landscape where the movements of the heavens are reflected on the ground. The diagonal of the rectangle, equivalent to the side of an octagon's longest diagonal,

points precisely toward the Bolbitine mouth of the Nile Delta and the rising of Orion's Belt, symbolizing the gateway to Egypt and the celestial connection. This alignment is not coincidental but a deliberate manifestation of understanding the relationship between circular and octagonal geometry. The rectangle's perimeter, reflecting the pyramid's base, and its orientation, reflecting the gateway to Egypt, together symbolize the unity between earthly construction and celestial harmony.

In the realm of archeoastronomy, the segmentation of the horizon at Stonehenge is a marvel of geometric precision which, like a majority of this study, had gone unnoticed. As stated, during the Summer Solstice sunrise, the sun rises at an azimuth of approximately 49.82° from true north. This azimuth creates a division of the horizon that is deeply symbolic and mathematically significant. On the eastern horizon, the angle gap between the Summer Solstice sunrise at (49.83°) and True North (0°) is exactly 49.83°, making the angle gap between the same sunrise and Due South (180°) exactly 130.18°, for 180 - 130.17 = 49.83. The division of the eastern horizon by the Summer Solstice sunrise effectively splits the eastern horizon at Stonehenge into the same ratio of the Station Stones' diagonal to its side, for 130.18 / 49.83 = 2.6122 and the rectangle's diagonal to its side is 2.6131, creating a percentage error of only 0.034%. This division of the horizon mirrors the diagonal of the Silver Ratio and Station Stone rectangle, aligning with the geometry of an octagon. Only at Stonehenge ca 2600 BC is the division of the horizon into this ratio possible. All of the above precise alignments and measurements demonstrate a deliberate attempt to import and encode mathematical and religious significance from Egypt into the location and structure at Stonehenge, harmonizing earthly dimensions with celestial observations.



Summer Solstice sunrise divides the eastern horizon according to the ratio of the Station Stones' diagonal at Stonehenge, ca 2600 BC

Conclusion: A Tapestry of Interconnected Knowledge

The hypothesis that the builders of Stonehenge and the Great Pyramid of Giza shared a common pool of knowledge and symbolically linked their sites through astronomy, geometry, religion, metrology, and building activity presents a captivating narrative. This shared legacy, embodied in the stones of Stonehenge and the pyramids of Giza, invites us to view these monuments not just as isolated wonders but as part of a grander scheme reflecting a profound understanding of the cosmos. As we continue to explore and unravel the mysteries of these ancient sites, we uncover not only the past but also gain insight into the collective human journey to understand our place in the universe. This exploration into the shared knowledge of ancient builders bridges continents and cultures, revealing a universal quest for harmony between the earth, sky, and the human spirit. The mathematical details, astronomical alignments, and the mysterious Bush Barrow lozenges all contribute to a tapestry of interconnected knowledge, suggesting that our ancestors were far more connected and advanced than we might have ever imagined. The incorporation of both the Giza Grid Theory and a revised Orion Correlation Theory into this narrative of interconnectedness adds another layer of complexity and wonder, suggesting that the ancients looked to the stars not just for guidance and inspiration but as a fundamental part of their spiritual and physical world.

To this end, embarking on a journey through our ancient past often uncovers narratives of interconnected civilizations, each with profound astronomical knowledge and maritime prowess. While the above hypothesis has a fair amount of 'circumstantial' evidence, it still resides in the realm of speculation, suggesting a past where ideas might have traversed vast distances, weaving together cultures in their understanding of geometry, the sun, stars, and megaliths.

In Egyptian history, Heliopolis, known as the 'City of the Sun,' is a city of monumental significance. Revered as the cult center of Atum-Ra, it symbolized the primordial site of creation and was integral to Egyptian cosmogony. The priesthood of Heliopolis, deeply versed in astronomical knowledge, played a significant role in influencing Egyptian architecture, as seen in the geometrical and astronomical alignments of the pyramids. The Great Pyramid of Giza, a marvel of ancient engineering, harmonizes

its colossal form with celestial and cardinal orientations, reflective of the astronomical and religious beliefs originating from Heliopolis.

Parallel to the Egyptian marvels is Stonehenge, a prehistoric monument in Britain. The massive stones, arranged in specific patterns, align with the solstices, indicating an advanced understanding of celestial movements. The construction of Stonehenge, requiring significant logistical and engineering skills, shares the engineering and geometrical complexities seen in Egyptian constructions, suggesting a broader architectural and astronomical dialogue in ancient times.

The discovery of the Bush Barrow chieftain near Stonehenge adds another dimension to this narrative. The grave goods and artifacts found with the chieftain, particularly the gold lozenges, suggest his high societal status, possibly akin to that of a priest or ritual leader. His role at Stonehenge might have paralleled that of a priest at Heliopolis, engaging in astronomical observations and religious ceremonies. This parallel suggests complex societal structures around Stonehenge, akin to those in Heliopolis.

Possibly enhancing this narrative of interconnected ancient societies is the role played by amber trade routes, the rise of bronze metallurgy and astronomy, and the seafaring of the Minoan civilization. The amber routes, spanning from Northern Europe to the Mediterranean, were more than mere commercial pathways; they were conduits of cultural and intellectual exchange. The Minoan civilization, renowned for its maritime prowess and positioned strategically in the Mediterranean between Egypt and Europe, could have facilitated the exchange of ideas, including astronomical and architectural knowledge, potentially linking Egypt's knowledge with Northern Europe, or vice versa. The simultaneous early use of bronze in Europe and Egypt around 3100 BC, marks a significant technological advancement in both regions. This parallel development in metallurgy suggests the possibility of exchanges of techniques and knowledge through trade networks, impacting various domains from tool-making, artistry and metrology.

To this end, the relationship between Britain's Megalithic Yard and the Egyptian Royal Cubit raises questions about shared metrological systems. Could there have been indirect (or even direct) exchanges of knowledge facilitated by these trade networks? The influence of Heliopolis' astronomical knowledge, possibly extending beyond Egypt,

might have played a role in the architectural designs of megalithic constructions elsewhere, including Stonehenge. It is my hope that I have added valuable information to the conversation.