

The Enigma of the Giza Pyramids of Egypt

When and How were These Megaliths
Designed and Built?

Revision 1

Douglas Ettinger
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I. Introduction

The Giza Pyramids become a very special problem for this author. The author has always considered that these megalithic structures were built by a very technological advanced culture **prior** to the Great Deluge dated at about 11,500 years before present. And, then, the high-tech culture vanished, diminished, or was completely destroyed. Or, this advanced culture returned to repair and/or start building new megalithic structures shortly after Earth's surface returned to normal, livable conditions, and the oceans receded. The problem or enigma becomes that these structures have alignments with the existing north pole. If one of the main tenets as explained in the "The Great Deluge: Fact or Fiction" is the displacement of the Earth's crust and mantle latitudinally by 20 to 30 degrees, then how can these structures remain in this almost precise geodesic alignment? The dramatic movement of the Earth's crust with respect to the spin axis or north pole and the changed equator would certainly change the pyramids' casing wall alignments? One possibility is that these pyramids were built shortly after the oceans receded and that mankind's civilization quickly recovered with the help of the surviving peoples of this advance culture. Or, are there other possibilities?

Let's review all the facts (hopefully, all accurate and confirmed) about the Giza pyramids. The consensus dating for these structures is 2560 to 2540 BC for the Great Pyramid, also known as the Pyramid of Cheops or Khufu. The supposed dating for the other two major pyramids are Khafre (2520-2490 BC) and the smallest, Menkaure (2490-2472 BC). This dating is corroborated with the workers' town that is dated from the middle of the 4th dynasty (2520 to 2472 BC) which is a span of only 48 years that covers the reigns of Pharaohs - Khafre and Menkaure, the alleged builders of the Second and Third Giza Pyramids. Evidence leads to a hypothesis that a workforce of 10,000 laborers working in three-month shifts took about 30 years to build a pyramid. Leading Egyptologists apparently prefer this storyline to other estimates that require more than 200 years based on still unproven but typical, primitive types of construction of that era. Even this hypothesis has serious issues due to construction techniques that seem almost impossible.

It is very important to note that no radio carbon dating was used for the workers' urban complex. Only pottery shards, seal impressions, and stratigraphy were

used to date the site. Of course, the dating aligns itself neatly with the so-called certainty of the reigns of the Egyptian pharaohs. Radio carbon dating cannot measure the date of any megalithic rocks that makeup the construction of the pyramids. So-called tombs and mummies with organic materials have been either stolen or contaminated by tomb raiders. Archaeologists, back in the day when there was no knowledge of how to properly preserve a site for the future modern dating techniques, were not methodical. Of course, the Egyptian cultures of that day could have simply hijacked the existing structures that possibly date back to earlier times near the Great Flood. Any serious radio carbon dating of mummies and other organic items would be expected to agree with the reigns of the pharaohs, but no conclusions can be made about the dating of the actual Giza megaliths. There is good possibility that the pharaohs merely took possession of them to repair and then house their embalmed bodies, hopefully allowing ascension to an afterlife.

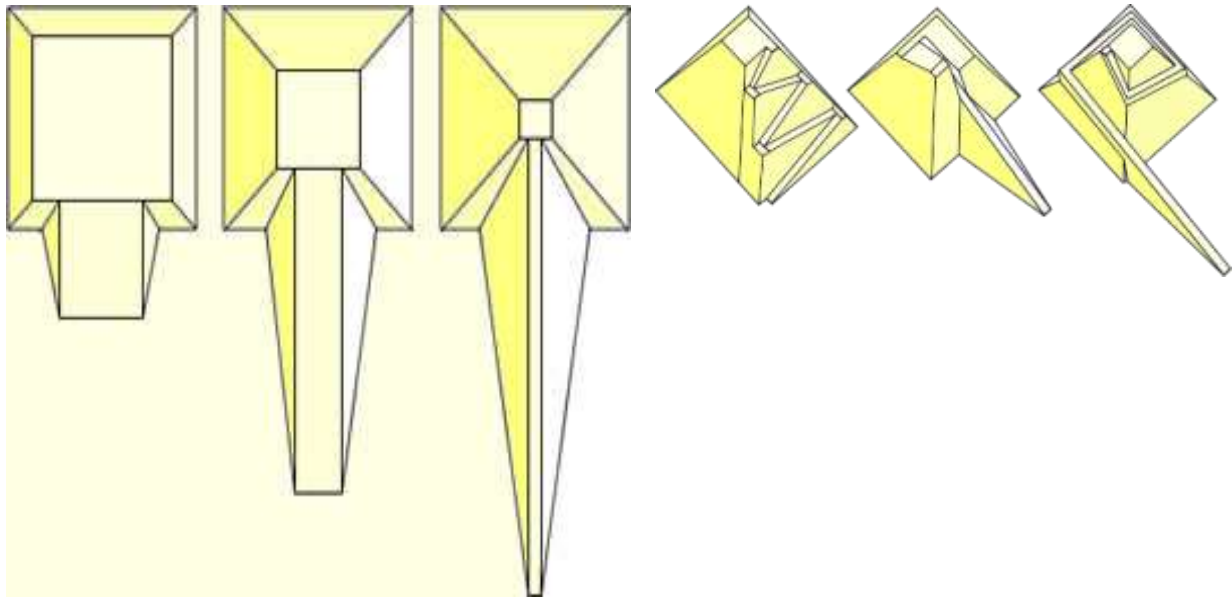
The party-line in Egypt is to corroborate all dating with the reigns of the various pharaohs and their dynasties. Most foreign Egyptologists support the same thinking of dynasty chronology because they must protect their academic tenure, existing accepted publications, and relationships with the Egyptian authorities. Today's Egyptians do not want any part of a concept about an ancient, advanced culture that goes any earlier than 3000 BC, and this includes even conquests by Ethiopians from the south. Egyptians are proud, steadfast, and stubborn about preserving their assumed ancient heritage.

The most important uncertainty for this paper is whether these megalithic structures existed before The Great Deluge, hypothesized to occur 11,500 years BP. Graham Hancock, a leading writer of non-consensus Egyptology, claims that the origin of these structures is dated to 10,000 BC; Hancock further states that the current monuments were architecturally evolved over top the much earlier structures. I personally prefer this very plausible hypothesis. Of course, for me, another option is possible in that the structures were completely built after the Great Deluge during a recovery period of about 1000 years with the help of some surviving elite who possessed the necessary advanced technology.



Aerial view of the Giza Pyramid complex.

In order to form one's own well-rounded educated opinion, one should review an excellent presentation of consensus history that illustrates supposed construction. The presentation is "The Secret Chambers and Doors of the Pyramids" which can be found on www.YouTube.com/watch?v=f3VzOa4hnMk. Dr. Zahi Hawass and Martin Isler present various ideas or theories such as ramps, wooden slideways, levers, and log snubbers. The video does reveal that no burial artifacts or related tributes were ever found in the Great Pyramid of Khufu which questions its function as a tomb. In fact, the only known figure of the ruler who built the greatest pyramid on Earth is a tiny statuette of King Khufu – no more than three inches high. How could a ruler with such an immense ego overlook having statutes and stone reliefs of himself such as later rulers who portrayed themselves in the Valley of Tombs and other numerous temples?



Pictures show the consensus opinions of how various ramps could have been used to move 2-ton to 10-ton rocks using primitive ropes, levers, and sleds.

II. Listing of Uncertainties and Questionable Hypotheses

What are the essential hypotheses and uncertainties that differ with the pyramids' conventional timelines for their supposed construction between 2550 and 2490 BC? They are listed and explained below.

1. The Uncertainty of Radio Carbon Dating.
2. Serious Doubts About the Pyramids Being Built with Bronze Age Technology.
3. Hypothesizing that Accurate Mathematical, Geodesic, and Astronomical Coincidences Possibly Date These Structures to Much Earlier Times.
4. Questions About the Giza Pyramids Actually Being Tombs.
5. Questions of Other Later Egyptian Pyramids Never Meeting the Higher Standards of Those in Giza.
6. Flooding of the Sphinx's Enclosure Walls.
7. Orion Correlation Theory.
8. Different Alignment of the Bottom Casing Stones to the Inner Stone Structure.

III. Uncertainty of Radio Carbon Dating

Radio carbon dating suffers the paradigm that the pyramids and other colossal stone structures could only have been made by the well-dated culture that lived during the Egyptian dynasties. No relics made from organic materials could have possibly survive more than 10,000 years without being picked over, destroyed, or removed, and possibly washed away by flooding. Honest dating is only possible by attempting to use the process of erosion by wind with very little by rain. The determined span of times for erosion are much longer than the ages of the pharaohs' dynasties. The only datable items around the environs of these structures would be the most recent that were left behind to be discovered by archaeologists of the past two centuries. The Egyptian power elite of recent times naturally wanted to claim these majestic structures as their own or of their close ancestors. They had interests in claiming these structures because in their eyes these structures had magical and religious powers which would aid them in controlling the large masses. There were many satellite structures, causeways, statuary, mortuary temples, small "queens" pyramids, boat pits, and cemeteries that surrounded the three Giza pyramids – some of which could be made with much less technical challenge and know-how. The pharaohs wanted to borrow the grandeur and mysterious significance of these pyramids. However, no radio carbon dating can expose the real timeline for these structures except tell the dating for the presence of the later, inexperienced and untrained peoples who thrilled in their appearance, bathed in the glory of the largest buildings of their time, and congregated close to their locations well after the real builders had vanished. Egyptian lives were fixated on going to an afterlife, perhaps because human consciousness feared death as a mysterious unknown and entering this unknown required some special powers thought to be known by the gods who really made the pyramids. Evidence of the expansive pyramid workers' tombs surrounding the pyramid complex not only revealed their approximate numbers but how important the afterlife was to the entire culture. The Egyptians' life purpose is almost based on going to the afterlife.

Current Egyptologists focus on the dating of the dynasties that go back no further than about 3000 BC. These scientists merely dismiss meager evidence of earlier times as anomalous data; or, because no data can be gathered except for vague

geological and climatic information. They latch securely to the timeline they want to believe in. The paradigm that human technological progress can only occur on a straight line beginning with the Stone Age of post-paleolithic times and continuing through the Bronze Age is paramount. Any deviation from this paradigm is totally dismissed as being impossible. Any advanced culture building these pyramids 3000 or more years earlier is simply fanciful thinking.

IV. Questioning Construction with Pre-Bronze Age Technology

There are serious doubts about the pyramids ever being built with Egypt's **pre-Bronze Age technology**. Supposedly, due to the number of workers' tombs, 10,000 workers took 30 years to build a pyramid. However, the Greek historian Herodotus, was told in 450 BC that the Great Pyramid had taken 400,000 men 20 years to build working in three-month shifts 100,000 men at a time. Even this estimate seems unlikely given the assumed available metallurgy and other tools of that age. There is also no evidence in Egypt that the invention of iron tools, the wheel, and pulley systems existed between 3000 to 2000 BC. The safe pulling and lifting of 10 to 100-ton rocks by simple ropes and levers is highly improbable.

An Egyptologist, Franz Lohner, devised a methodology of "rope rolls", wooden brackets supporting wooden pins mounted in copper sleeves, to pull these heavy stones up rather steep ramps, 52° inclines, to build these structures. Other less inclined ramps were considered as impossibilities since they would require as much stone as the pyramids themselves. Lohner's staggering figures for his construction technique taking 20 years requires 500 stones (from 2.9 to 10 tons each) being laid per day for 290 days per year equaling a total of 2,300,000 stones. Based on a 10-hour day, the rate of delivery is about 1 stone for every minute. As discussed in <http://www.ettingerJournals.com> "[A Brief History of Mankind's Chaotic Past](#)", the amazing flow rate of blocks needs to continue from cutting and removing blocks from various quarries; transporting to barges; sailing the Nile to the Giza site about 50 miles away; unloading barges, transporting to the site along causeways already supposedly constructed; finishing the stones; lifting finished stones onto Lohner's "rope rolls"; dragging them up a 52-degree incline; and fitting the stones into place with a precision that does not allow a piece of paper clearance between the joints. These estimates do not include the granite workers and movers for 100-ton stones for the alleged internal tombs; the

design and placement of internal ventilation shafts, the grand staircase, and entrance shafts. This unimaginable feat of construction technique and management is a total joke given the known skills and tools of Egyptian antiquity; an outright hoax has been allowed to fester and not be questioned and squashed. The current paradigm of uniform technological progress was established by academia during the 1700s and 1800s and still continues today.

V Mysterious Mathematical, Geodesic, and Astronomical Coincidences

Accurate mathematical, geodesic and astronomical coincidences of the Great Pyramid complex are inconceivable but real; the discussion of such coincidences being statistically possible is ridiculous. Precision measurements were made by Sir Flinders Petrie along the edges of buried casing stones left in-situ. He determined the pyramid sides are aligned to within four minutes of arc with true north using the North Star. The finished base was squared to a mean corner of only 12 seconds of arc. The ratio of the height to the perimeter was determined to be $22/7$, the value of 2π . Supposedly, in the days of the Egyptian dynasties, the value of π and the precise rotation axis of Earth were not known.

The Great Pyramid is a mathematical model of the northern hemisphere of Earth that has a scale of 1 to 43,200. Per this scale within a reasonable close accuracy the height of 481 feet is equal to the Earth's polar radius and the perimeter of 3020 feet ($4 \times 755'$) is equal to the Earth's perimeter at the equator. Per Graham Hancock's postulation, the value of 43,200 is a "precessional" number based on the Earth's precession where one complete wobble ($2 \times 23.5^\circ = 47^\circ$) takes 25,920 years. One precessional sub-division is $1/12^{\text{th}}$ of this time or better known as one zodiacal period of 2160 years. Taking 20×2160 years equals 43,200 years which divided by 12 equals 3600 years. This amount of years is predicted by Zecharia Sitchin in his book, *The Twelfth Planet*. Per Sitchin, 3600 years is the orbital time of the Nemesis star that orbits the Sun and comes through the inner solar system periodically affecting the accepted consensus of uniformitarianism or gradual change. Encoded in the geometry of the Great Pyramid are these geodesic and astronomical numbers and concepts that only a much earlier culture with superior intelligence has any chance of knowing.

In his book, *The Dimensions of Paradise*, by John Michele, and the book, *God's Secret Formula*, by Peter Plichta, the hidden secrets of the Great Pyramid are explained. The mathematical logic and geometry is clearly revealed in a YouTube presentation, "Great Pyramid Mathematical Secrets". Supposedly, if you can believe all the mathematical and geometrical manipulations being perpetrated by ancient human intelligence, then the pyramid's dimensions encode the Pythagorean triangle dimensions; the proportionate dimensions of the Moon's and Earth's diameters; the basis for the numbering system to the base 10; the basic harmonic system; a conceptual four dimensional space; and the number 81 which embodies the number of stable elements, the ratio of the Moon's velocity to the Earth's, and Moon's mass to that of Earth. The derived numbers do work out, but are they from a combination of manipulation and pure coincidence? You be the judge.

The Giza Pyramids as well as some others in Egypt are all remarkably close to a "golden pyramid" which has a direct relationship to an irrational number called the golden ratio. The Great Pyramid has a slope of $51^{\circ} 52'$ which is extremely close to this "golden pyramid's" inclination of $51^{\circ} 50'$ and the π -based pyramid of $51^{\circ} 51'$. The other Giza pyramids with similar angles are Khafre and Menkaure with $52^{\circ} 20'$ and $50^{\circ} 47'$ respectively. A controversy developed in 1950 with Eric Temple Bell, a mathematician and historian, that stated only the right triangle of 3:4:5 was known by the Egyptians of that time. The designers of those times indicated no knowledge of the Pythagorean theorem or irrational numbers such as π or the golden ratio. Since that time more accurate dimensions were made to yield even better data to collaborate the "golden pyramid" dimensions. The debate continues today. Either earlier, superior intelligence created the architectural designs; or the ancient Egyptians did have this knowledge to make these designs; or, an unbelievable coincidence of the pyramids' inclined angles for a "golden triangle" occurred.

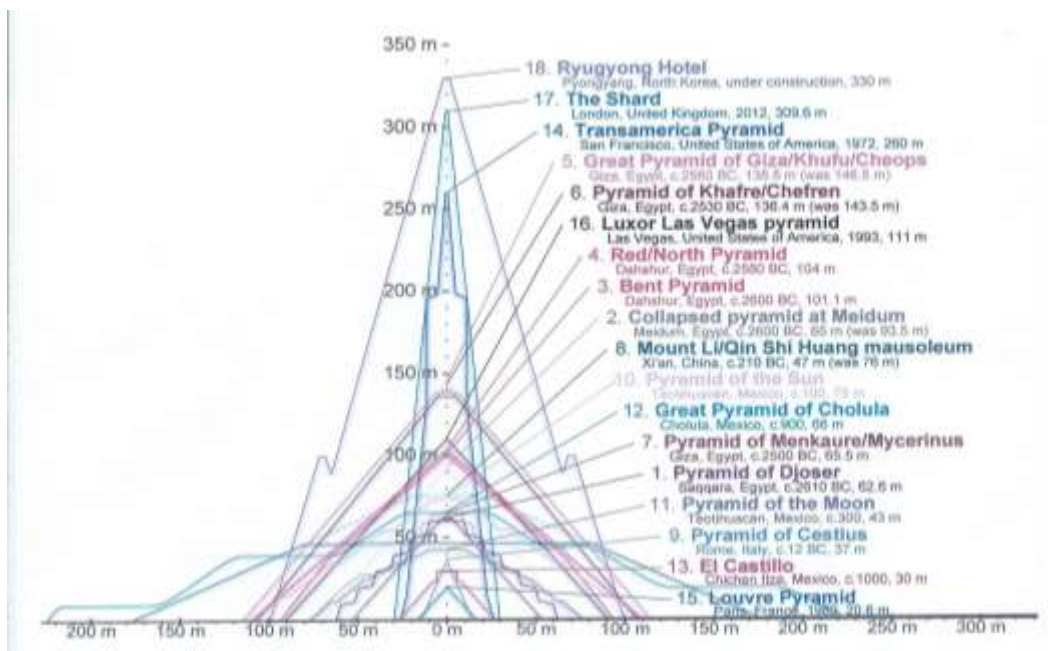
VI. Were the Pyramids Actual Tombs?

Are the Giza Pyramids actually **tombs of Pharaohs** as Egyptologists want us to believe? There are no inscriptions of stone relief carved inside the Great Pyramid's so-called King's or Queen's Chambers. The 5th and 6th dynasties after Khufu's reign have pyramid texts and statues and paintings of the pharaohs inside the Tombs of the Dead much farther south along the Nile River. Why are the Giza pyramids completely void of these commemorative inscriptions? This anomaly is a complete mystery unless you might imagine that these colossal structures were not ever meant as tombs or any such memorial to the pharaohs. Some exterior temples yielded some statues of the Khufu, Khafre, and Menkaure; but, none were ever found inside or on the pyramids named in their honor. Vast fields of cemeteries and mastabas for lesser royals surrounded the pyramids, giving a strong belief that the pyramids were indeed built for the major pharaohs for their tombs. The only solid evidence is a wooden ship dated at 2500 BC which was found in a sealed pit at the foot of the Great Pyramid believed to be built for Khufu, the second pharaoh of the 4th Dynasty.

Pyramid construction ended at the end of the Middle Kingdom (2055 to 1650 BC) and all the pyramids were believed to be robbed during the Middle Kingdom and the New Kingdom (1570 BC to 1069 BC) covering the 18th to 20th Dynasties of Egypt. The New Kingdom was famous for the construction of the royal tombs in the desert valley known as the Valley of the Kings. So, why did this prodigious task of going to the afterlife inside a pyramid cease? And, why did elaborate tombs with mummies keep being built when it could be readily seen that the tombs would be eventually looted? Perhaps, practicality, took over and the task of building pyramids was determined conveniently to not be required to reach the afterlife. Or, just maybe the art of pyramid building was either lost or never achieved by the Egyptian dynasties. Perhaps, the pyramids of a much earlier period and of unknown function were hijacked by the earliest dynasties that became part of a recovering Nile River Valley civilization.

VII. Construction Standards of Giza Pyramids Far Exceeded Later Ones

Only a few other Egyptian pyramids meet the **high construction standards** of the Giza complex. All the other pyramids of Egypt with very few exceptions were either just started, unfinished, were step pyramids, were much less volume, and made of smaller sizes of rocks. These pyramids are mostly in a state of collapse and appear as crumbling mounds of broken stone and sand. They are poor “copycats” of the ones most tourists go to see on the Giza plateau. The prime exceptions are the Red Pyramid and the Bent Pyramid of the Dahshur site south of Giza. The volumes of Khufu and Khafre are respectively 2,583,000 and 2,211,000 cubic meters. The Red and Bent Pyramids are respectively 1,694,000 and 1,237,000 cubic meters. None of the other pyramids come close to attaining the volumes of even the smallest Giza pyramid, Menkaure, having 235,183 m³ except for the step-pyramid of Djoser with 330,400 m³. These megalithic structures of Giza are larger by a factor of 10 than the other pyramids of Egypt and also of other pyramid locations on Earth. Why do these Giza pyramids stand so far above the others and have a construction that bewilders modern engineers? Is the feat of their construction even possible today?



This diagram shows the scale of height and volume of the Giza pyramids to worldwide structures including the most modern.

VIII. Flooding of the Great Sphinx Enclosure Walls

The famous Great Sphinx statue which is part of the Pyramid of Khafre complex has an anomalous feature that dates the structure 5000 or more years before the beginning of the Egyptian dynasties. **Flooding of the Sphinx's enclosure walls reveals an earlier geological time** when North Africa had a very wet climate. The indicated erosion of these walls could not have occurred during the reign of the pharaohs when North Africa had the same desertification as today. Egyptologists insist the Great Sphinx was built in 2500 BC by pharaoh Khafra, the supposed builder of the second pyramid of Giza. However, there are no inscriptions that connect Khafra. Even the mutilated and weather-worn face is thought to be a face of the Negroid race by some forensic specialists.

The water erosion hypothesis is postulated and defended by Robert M. Schoch, a geologist, and John Anthony West, an author of alternative Egyptology. They claim that only prolonged and extensive rainfall could have caused the erosion mostly on the western enclosure wall indicating dramatic climate change. There were known periods of "Green Sahara" caused by the collapsing ice sheets bringing rain from about 8000 to 6000 BC. The last wet phase is predicted to have ended prior to 4500 BC – well before the beginning of the Egyptian dynasties.



This picture of the Great Sphinx shows the long-term water erosion of the enclosure walls.

This erosion also upsets the timeline for consensus Egyptologists. The erosion is impossible today due to a stone quarry which interrupts any water flow. These stones were used for the Khufu Pyramid which came before the Khafre's Pyramid. Hence, Khafre's is supposedly younger and could not possibly have been related to the construction of the Great Sphinx.

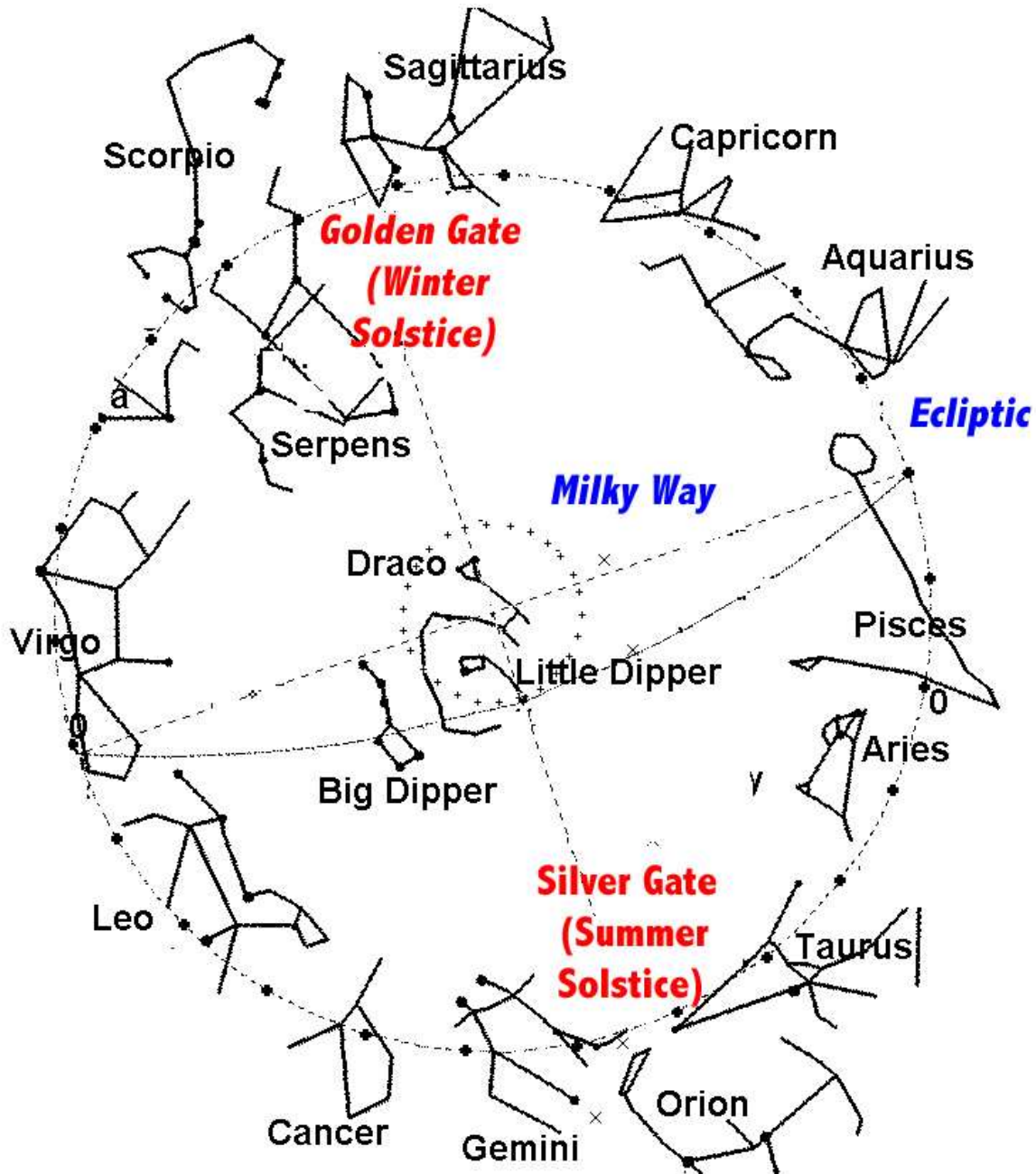
IX. Fringe Hypotheses

The most interesting and mysterious features of the Giza pyramids fall into a terminology called fringe hypotheses or pseudo-archaeology. These hypotheses of particular interest are called the "Orion correlation theory" and the "Casing wall re-alignment phenomena". They are used together to prove a change of the Earth's geoid during the Great Deluge. The magnetic and gravitational forces created by a close encounter of a rogue celestial body jerked the Earth's crust and mantle about the core by 20 to 30 degrees latitudinally, thereby changing the location of the poles, but not the spin axis tilt. At first, the author was completely mystified that the Giza pyramids were aligned almost perfectly with true North. The author was also convinced that the megalithic structures found throughout the world, especially the Giza pyramids, were created by an advanced civilization that vanished during and after the Great Deluge of 11,500 years BP. How could the Great Pyramid be still aligned with true North when the Earth's crust and mantle were displaced or rotated after the pyramids' construction? The answer is revealed and possibly proven by further analysis of the "Orion correlation theory" and the "Casing wall re-alignment phenomena" taken together. In fact, this amazing analysis tries to predict the amount of rotation of the Earth's crustal/mantle unit.

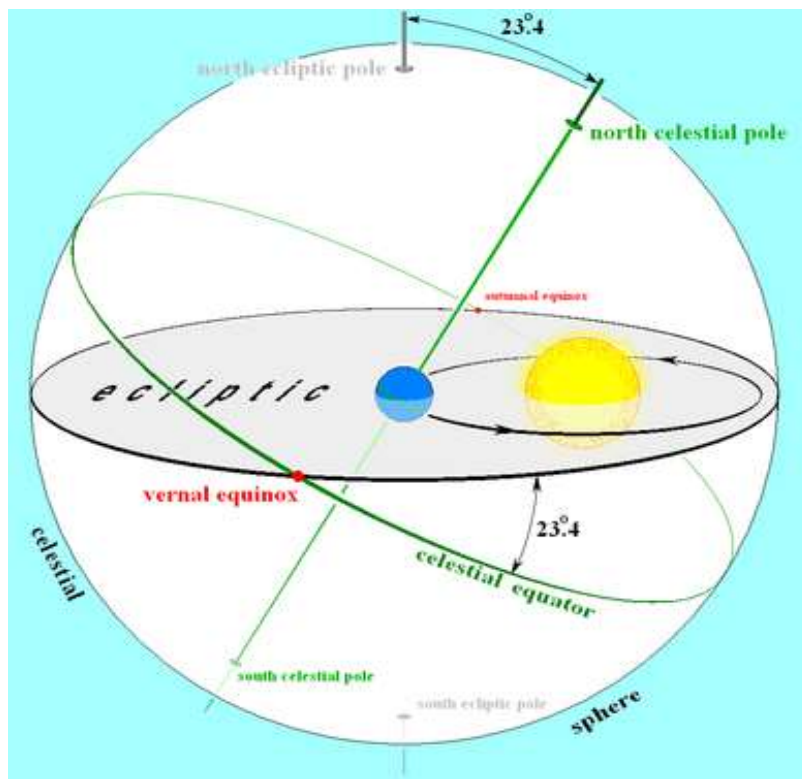
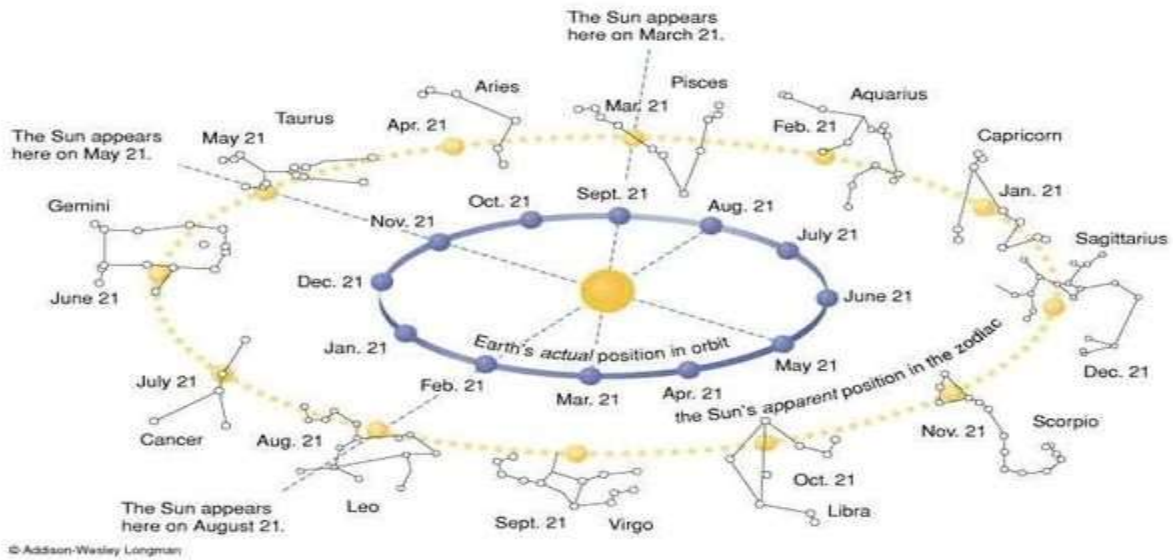
X. Orion Correlation Theory

The **Orion correlation theory** championed by Robert Bauval in 1983 and later by Graham Hancock is based on the ancient Egyptian belief that the god Osiris was the god of rebirth and afterlife. The word 'origin' is derived from Osiris; Osiris was the first pharaoh with Horus being his son. The theory states that the three Giza pyramids align with the three bright stars (Alnitak, Alnilam, and Mintaka) in the belt of the Orion constellation. This alignment is believed by the pharaohs to guide them to the afterlife or the heavens where Osiris exists. The Orion

constellation is well known by most cultures throughout the world, especially by ancient sailors who navigated by the stars. Orion is easily viewed, due to its location close to the celestial equator, throughout an entire precessional cycle. Hancock implies that the arrangement of the pyramids was selected relative to the mirror image of how Orion's belt appeared about 10,000 BC.



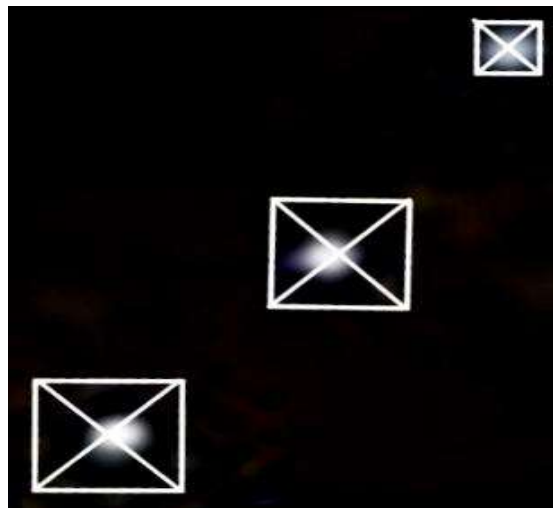
This simple star map shows the relationship of Orion to the Zodiac constellations; its position is always close to the celestial equator.



The above diagrams Sun's and Earth's positions relative to the Zodiac and how the north ecliptic and celestial poles are different due to the Earth's tilt of 23.4° .

XI. Debunking the Debunkers

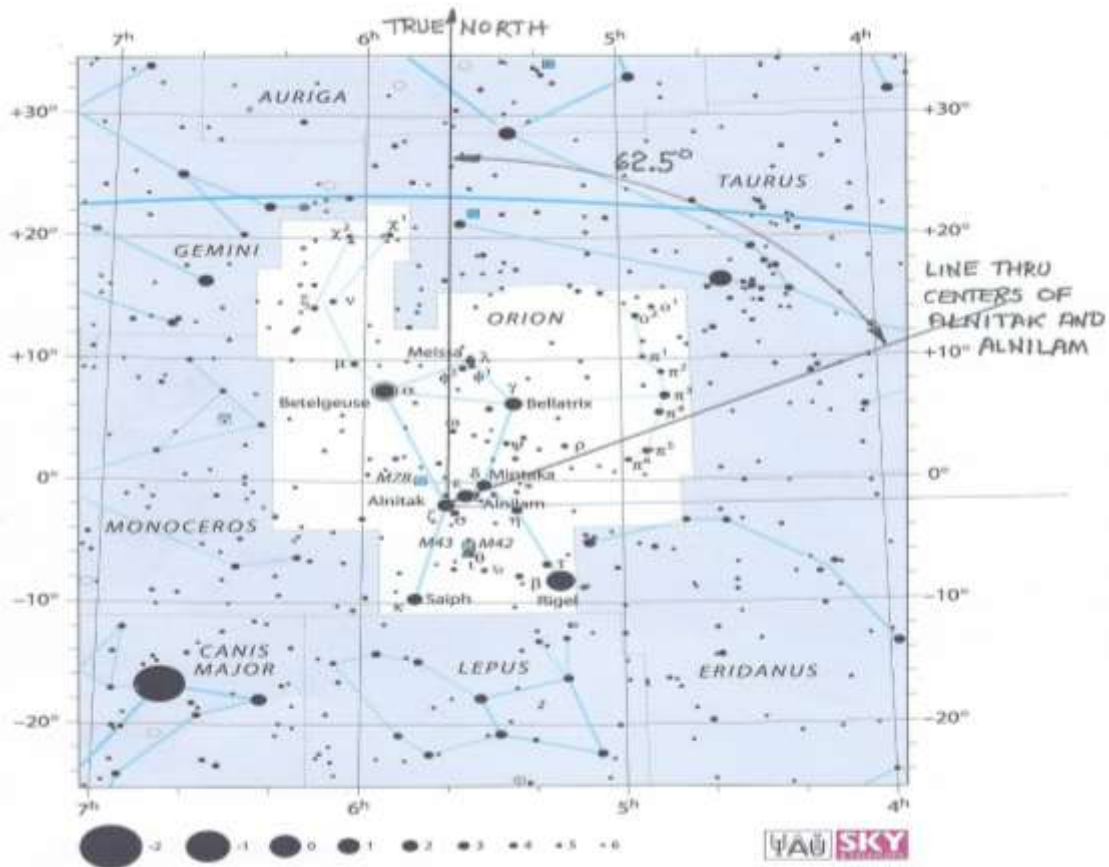
However, some debunkers of the theory revealed the three stars appear to have the same apparent brightness and questioned why Menkaure is a much smaller pyramid. The debunkers go on to say that the Menkaure pyramid should appear north instead of south of a straight line drawn through the apexes of the other two pyramids if a mirror image is used. My investigations have proven the debunkers are very possibly wrong. The star, Mintaka, representing Menkaure, is definitely smaller. Using modern astronomical tools, Menkaure has a measured radius of 6,300,000 km whereas Alnitak and Alnilam have much larger radii of 16,000,000 and 16,700,000 km respectively. Also, Mintaka has a noticeable slower proper motion than the other two stars. The right ascension and declination of Mintaka's proper motions are 0.64 and -0.69 whereas the R.A. and declination of Alnitak and Alnilam are 3.19 and 2.03 / 1.49 and -1.06 respectively. For 10,000 years or more these faster proper motions could have caused the star Mintaka to move from north to south of the straight line drawn through the larger two stars. A thorough planetarium study is required for confirmation. Of course, knowledge that Mintaka is the smaller star and the other two are of almost equal size could only be known by advanced knowledge and tools that the ancient Egyptians were assumed to not possess.



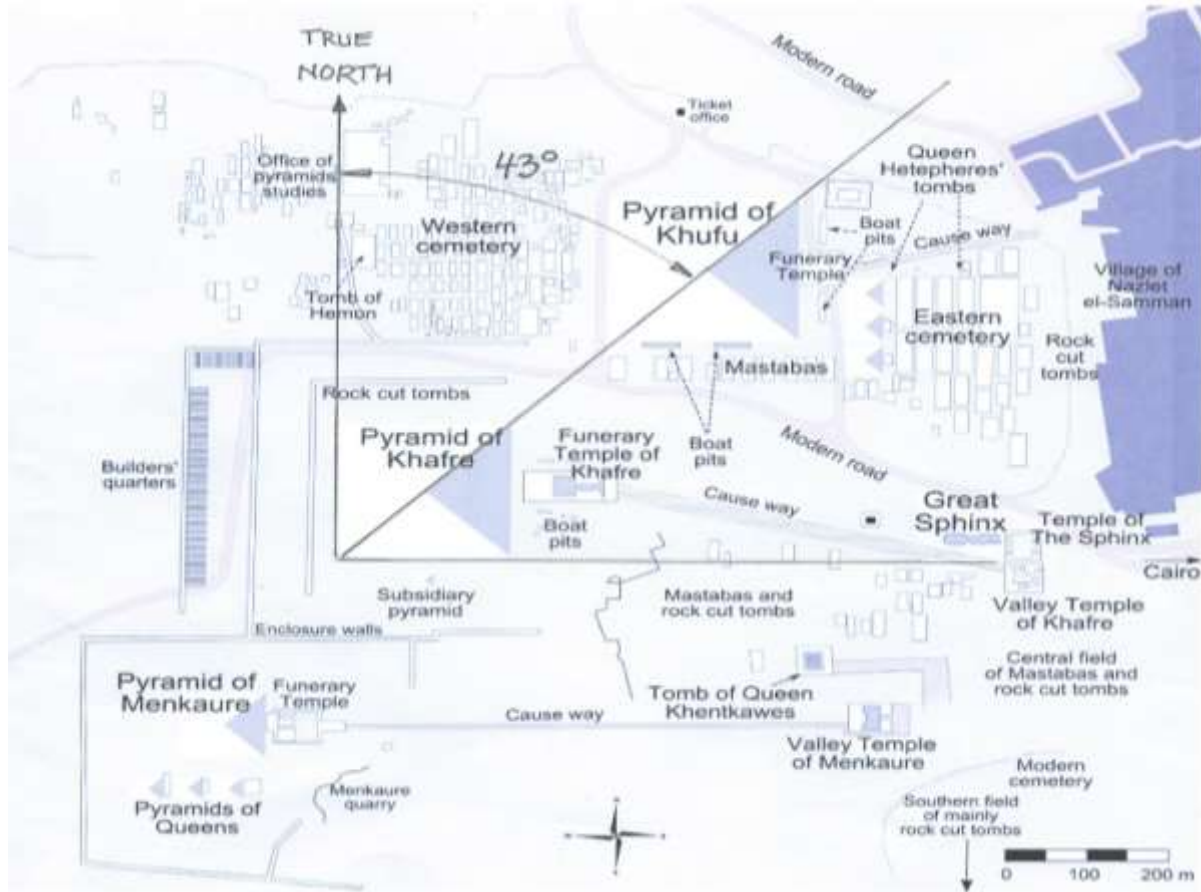
The Orion Belt of Stars is Superimposed on the Giza Pyramids. The smallest pyramid, Menkaure, is slightly off the straight line through the centers of the larger two pyramids, similar to the smallest star, Mintaka, which is off the straight line through the center of the larger two stars.

XII. The Angle of the Straight Line Through the Pyramid Apexes

Now, the most amazing anomalous thing about the theory was not emphasized. Neither the well-known theorists nor the debunkers questioned the angle of the line through the two apexes of the 1st and 2nd pyramids that is made with true North of the Earth. That angle taken from a plan view of the Giza complex is 43° from true North. The same angle of the line through the stars, Alnitak and Alnilam in Orion's belt taken from an accurate star map, makes an angle of 62.5° with true North. The difference is 19.5°. Why would this important alignment feature be omitted or ignored? Great attention was given to aligning the wall's edges to true North and spacing the pyramids the same way as the belt stars appeared in the sky. The theory for this paper is that the designers did not ignore this alignment feature.



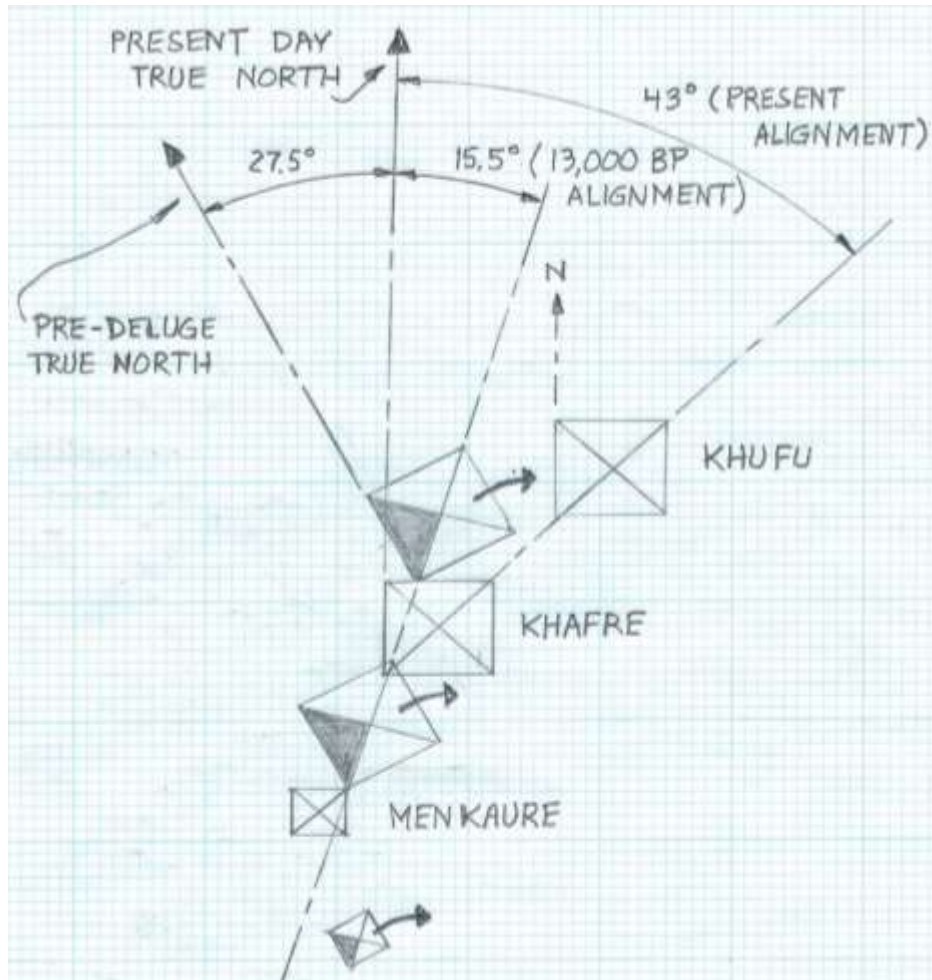
This accurate star map shows celestial coordinates of stars in Orion Constellation. The angle of a straight line through the largest two stars in the Orion Belt makes an angle of 62.5 with true North.



The casing wall edges of the Giza pyramids are almost perfectly aligned with true North. A straight line through the apexes of the largest two pyramids makes an angle of 43° with true North which differs by 19.5° with straight line through the largest two stars.

XIII. Earth's Crustal/Mantle Displacement is Predicted

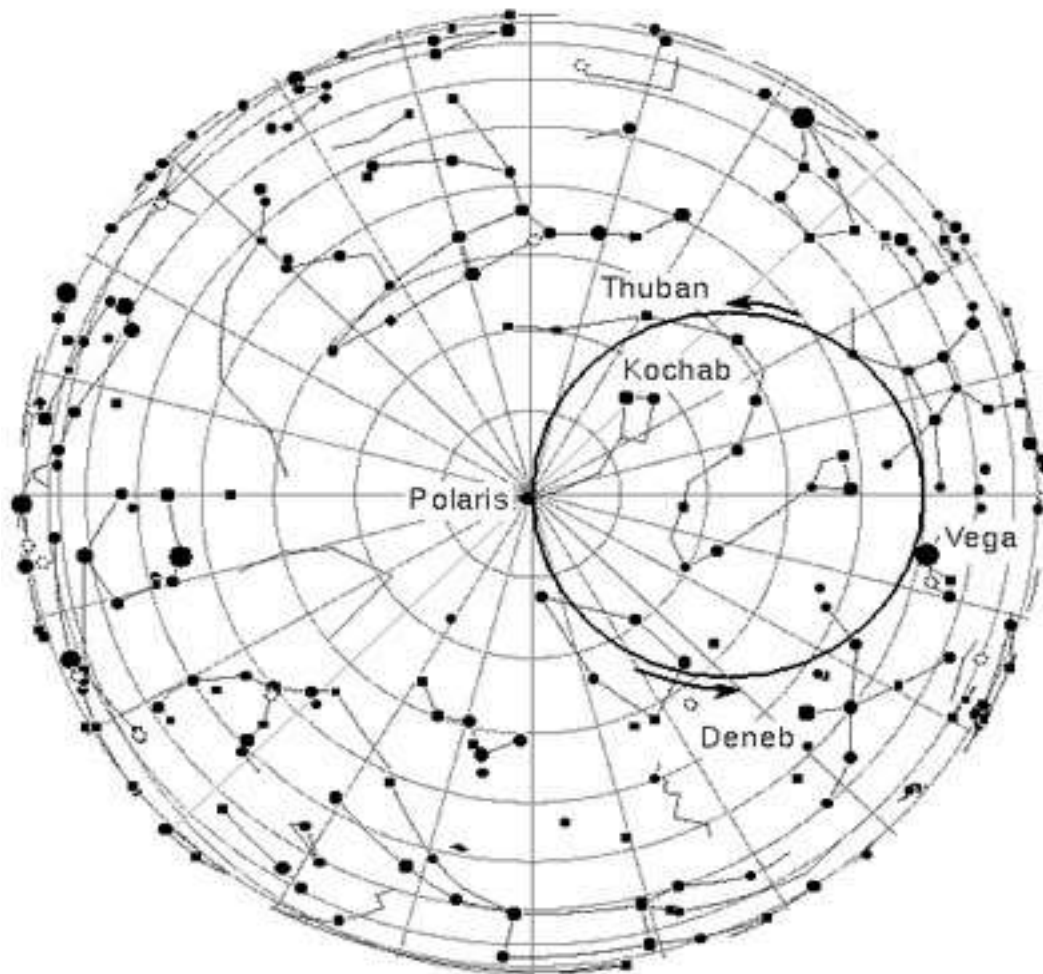
The incredible answer is that the Earth's predicted crustal displacement during the Great Deluge of 20° to 30° is reflected in this difference of these angles. The landform under the Pyramids that includes the entire Mediterranean region rotated about 27° clockwise. A layout of the pyramid complex's rotation reveals that the alignment of the casing edges during pre-diluvium times were perpendicular to the aligned walls of today's true North. See the layout below.



This sketch or layout demonstrates how the landmass under the pyramid complex was rotated roughly 27.5° from its original alignment of 15.5° . The addition of these two angles equals the present pyramid alignment to true North of 43° . Hence, this specific feature of the Orion Correlation predicts the rotation or displacement of the Earth's crustal/mantle unit about the liquid core by an estimated amount.

XIV. Understanding Full Precessional Cycle Affects

Before declaring this alignment difference as a crustal rotation, one must understand the astronomical significance of the Earth's precession. Precession changes the angle that Orion's Belt makes in the sky. Going back 13,000 years ago assumes a time before the Great Deluge when an advance civilization built these pyramids. This time span represents one half of a precessional period of 26,000 years when the Earth's wobble changed its angle by 47° which is twice the tilt of the Earth's axis. In other words, the full precession angle motion takes every 13,000 years. The right ascension and declination of each star is not fixed from year to year. The Earth's wobble due to the Moon and Sun changes the coordinates of celestial objects. Every 50 years or so, star maps are updated.



The path of the precession of the Earth's rotation axis.
It takes 26,000 years to complete a full 360° wobble.

Hence, if the pyramid configuration was aligned to the stars 13,000 years BP by its designers, then the change in angle from today's 62.5 degrees should be different by 47°. This means that in 13,000 BP the alignment to true North was $62.5^\circ - 47^\circ = 15.5^\circ$. However, the crust rotated in the interim and produced a difference of 19.5° derived from subtracting the current pyramid alignment angle of 43° from true North from the current star alignment angle of 62.5° from true North. A table below helps to clarify this phenomenon.

Angles are from Earth's true North (not compass north)	Angle of line through center of two largest stars in Orion's Belt	Angle of line through apexes of two largest Giza pyramids	Difference of angles
19,500 years BP	39°	39° (if aligned and built at this time)	0° (as chosen by design)
13,000 years BP	15.5° ($62.5^\circ - 47^\circ$)	15.5° (if aligned and built at this time)	0° (as chosen by design)
Present time	62.5° (from Sky Map)	43° (from plan view of complex)	19.5° (predicted landform rotation)

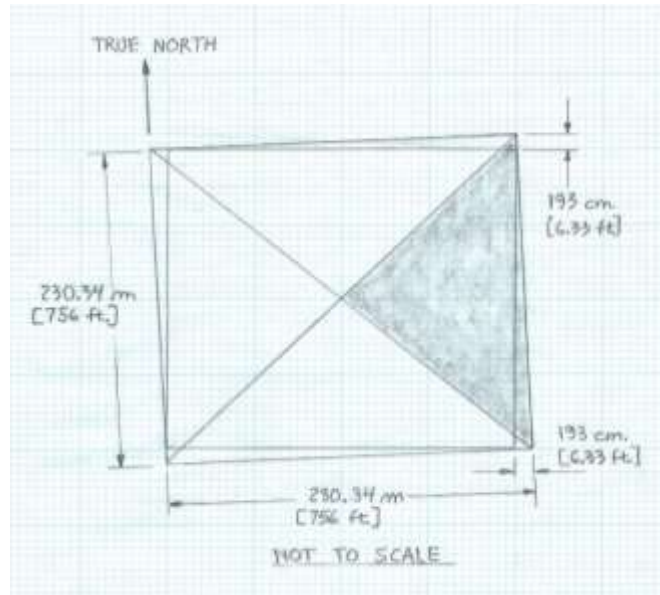
Note: 47° is the full precessional angle that occurs every 13,000 years.

The star field can be considered relatively constant over 100s of thousands of years with respect to the ecliptic or the plane of the Earth's orbit. The ecliptic is closer to unmoving against the background of stars, its motion due to solar system precession being roughly 1/100 that of the celestial equator. Hence, the tracking of Orion's Belt angle is primarily due to the Earth's precession which is carefully considered. The star coordinates against the ecliptic are virtually constant.

XV. Realignment of the Casement Wall Stones

The pre-diluvian North Pole postulated location is just east and north of the Hudson Bay in Canada (from “The Great Deluge: Fact or Fiction”). An angle of 27.5° is determined by using approximate curvilinear Euclidean geometry. The angle is formed by intersecting two lines that go through Giza with one running through the present North pole and the other running through the pre-flood pole. These angle lines almost match the alignment of the pyramid walls aligned to each north pole location with respect to the predicted clockwise rotation of the landform under the pyramids. The wall edges that align to each pole location are, of course, 90° apart. The close match is totally unexpected, but, apparently occurred accidentally as was discovered by Sir Flinders Petrie in 1880-82 and published in the *Pyramids and Temples of Gizeh*. This mismatch was obviously also discovered by the original pyramid designers and fixed sometime after the Great Deluge event by performing a **realignment of the casing stones**.

These new casing stones of the Great Pyramid are slant-faced, flat-topped, and are highly polished white limestone. However, all the casing stones fell off during subsequent earthquakes or local flooding or were taken for other building projects down through the ages. Only the lowest course of casing stones is left in situ around the base. These casing stones are made to high precision, equal to opticians work, and were used by Petrie to measure the alignments and slopes of the walls. He discovered that the casing stones are oriented differently from the construction of the core stones. The difference in orientation was measured at each corner as 193 centimeters or 6.33 feet. Petrie attributed the difference to a construction error. I have great difficulty in believing the entire core was off by about 193 cm when the average error of the four sides of the base for the casing stones was only 58 mm for the total length of 230 m on a side.



The hypothesis is that the technocrats of an advanced civilization fixed the alignment of the pyramids after the Great Deluge by either re-installing or adding new casing stones to each pyramid since the inner stone structures almost aligned with the new true North Pole.

The real reason for this different orientation is that after the Great Deluge and crustal displacement, the designers, with their advanced technology, survived and wished to restore the alignments of the pyramids as they were before the Flood. Since the final resting place for the construction of the cores were only disoriented slightly, the installation of new casing stone surface was an easy and reasonable repair. Why were these alignments so important to this advanced culture? Speculation is that alignment to the Earth's magnetic and electrical fields were required for some technical reason or that these structures were markers for surveying the Earth's surface for crustal/mantle shifting, continental drifting, and spin axis disturbances. You are welcome to deduce your own speculations.

XVI. Conclusions

The conclusions of this paper are now delineated.

1. The pyramids of Giza existed prior to the Great Flood of 11,500 BP; they were neither designed nor built by the Egyptian dynasties and were more likely not meant to be tombs.
2. During the crustal/mantle displacement of the Great Flood the landform rotated under the pyramids and re-oriented their wall edges and the arrangement of their mirror image with the stars of Orion's belt.
3. The amount of rotation of the landform is likely correlated with the amount of latitudinal displacement of the crust that confirms the approximate location of the pre-diluvian North Pole. The predicted clockwise rotation resulted in crustal disturbances at plate boundaries throughout the Mediterranean and Middle Eastern regions such as earthquakes, tsunamis, volcanism, raising and sinking of landmasses, and the opening of a major rift in northern Africa. These events started after the Great Flood and are still occurring today.
4. The advanced culture survived the Flood, but its power was greatly diminished due to the destruction of its infrastructure including human resources, crops, livestock, and communication systems.
5. The surviving elite fixed the Pyramids of Giza for their own mysterious ends by rebuilding the casement stones to align with the new true North Pole and Earth's spin axis.
6. It has to be assumed that other megalithic structures around the world that have some geodesic or astronomical alignments were either built after the Great Flood or were repaired afterward.

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