A Possible Structure for Geometry Found on the Giza Plateau

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Abstract: The large pyramidal objects found on the Giza Plateau have to date escaped a comprehensive and rigorous explanation as to the meaning and origins of their arrangement and geometry. This paper suggests how this geometry is far from capricious and models the structure of a projected, tessellated, hypercube lattice universe that can be described as being discrete and digital in expression. The hypercube lattice construct is then shown to emanate from a separate isolated analog space of continuity realized through the transcendental nature of circular geometry and Pi (π).

Furthermore, these pyramidal geometries receive polar inputs from continuous space via rotation and translate them into dimensional information that can be expressed in the hypercube lattice space by means of their deformation. Thus, the pyramidal geometry is a go-between or geometric transcendental translator existing between the analog universe of continuity and the digital universe of the hypercube.

Two independent spaces, one continuous and one noncontinuous, are shown to exist in active duality linked by the pyramidal geometry of Giza. Nonspecific Geometry (a new way of framing Euclidean axioms) will be developed during the course of the paper as necessary to understand the proposed actions.

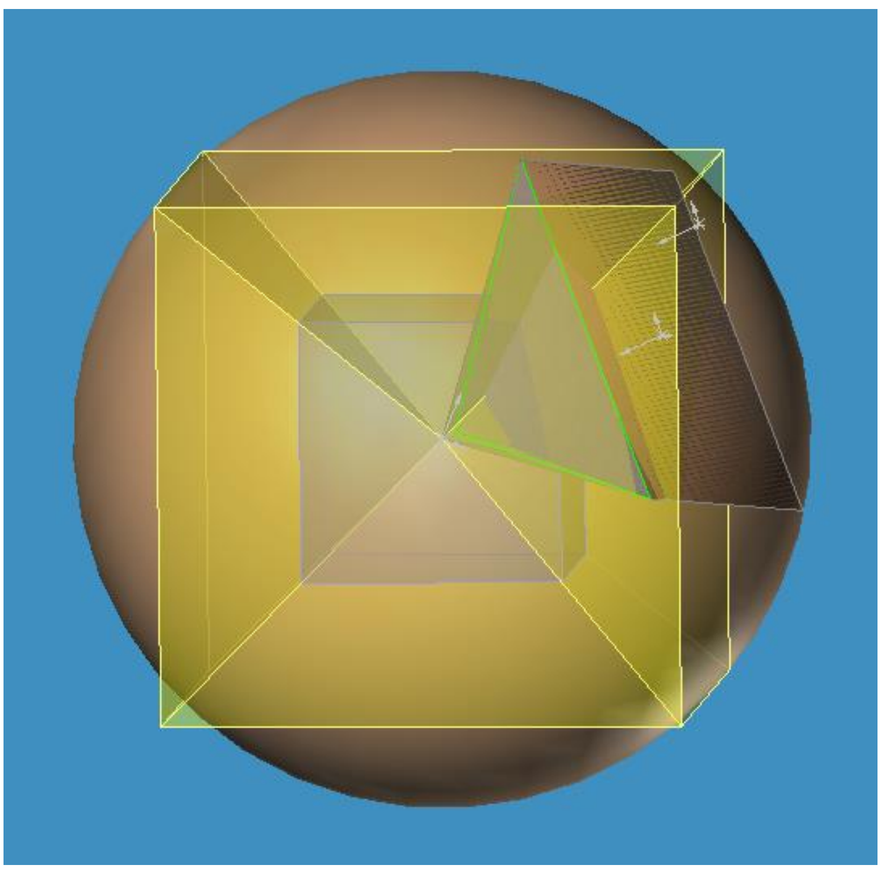


FIG. 1. Elemental Structure of Possible Universe Suggested at Giza

Nonspecific Geometry

This derivation relies heavily on an understanding of *Nonspecific Euclidean Geometry* which is a series of concepts developed by the author that allow the axioms of Euclidean geometry to gain a “dynamic flavor.” Point, line, and plane are the undefined terms that provide the underpinnings and beginnings for geometry. They are undefined in the sense that they are axiomatic – that is, they have no proof or definition – they just exist as being “self-evident” abstractions:

- Point: The most fundamental concept in geometry. It specifies location or position in space and has zero width, length or height. It is not possible to physically see a point, and it is usually depicted as a dot.
- Line: A point in motion creates a line. It has length, but no width or height.
- Plane: A line swept at right angles to its own direction forms a surface called a plane. Planes are two-dimensional and have length and width but no height. A plane extends indefinitely in all directions.

Some commentators have noted that it takes a “certain amount of faith” to go forward in geometric studies because these foundational axioms lay outside proof… Nonspecific Geometry will be developed to add “characteristics or description” to these fundamental abstractions that do not interfere with their usage as elements of geometric construction. In fact, with this new approach, clarity emerges which requires less faith on the part of the investigator and delivers rich possibilities.

The core association in Nonspecific Geometry is that a more complete description of points, lines, and planes incorporates the fact that these axiomatic entities are best described as being dynamic in nature, and they can be seen to be defined by what will be called inwardly and outwardly bound space. Inwardly bound space constantly shrinks infinitely and outwardly bound space constantly expands infinitely. See FIG. 2. (Note: these ideas are separate from the duality of spaces mentioned in the abstract.)

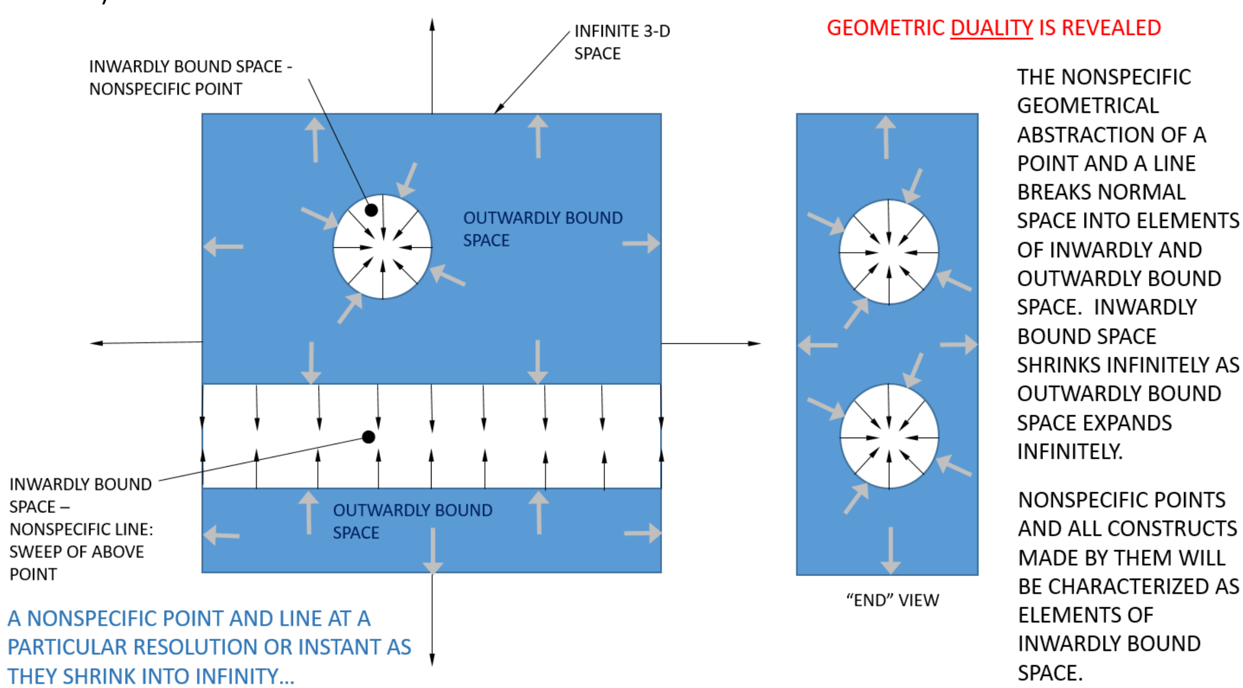


FIG. 2. Concept of Inwardly and Outwardly Bound Space

With the preceding definitions, a nonspecific geometric point can be viewed as an infinitely shrinking spherical entity with no lower bound. See FIG. 3. One can only observe this dynamic regression in stages or in "freeze frame" as it constantly retreats into the infinitely small. This infinitesimal construct has three, mutually perpendicular**, unextended** dimensions. Unextended dimensions are defined as hidden within the infinitesimal and not directly observable until they are developed or extended in the traditional sense. As the regression momentarily is suspended in a thought experiment (apt term borrowed from Einstein), an observer sees that at any particular instant there are a multitude of possible unextended locations for the point to exist at any chosen "sub" resolution. **An interpretation of this phenomenon is to say that the point is, in fact, vibrating between these *unextended* locations because of the innate uncertainty in absolute position (ω) that exists at that moment.** Thus, a nonspecific point actually defines an infinitesimal *nonspecific* locality in space.

Nonspecific Geometry highlights the fact why the traditional axiomatic definition of a point has been required because there is no way of conceptualizing absolute position. With the nonspecific point construction however, there is no absolute location implied or required. An observer is allowed to see "under the hood" so to speak and glimpse an allowed vibratory dynamic implicit to all geometric elements in a particular instant.

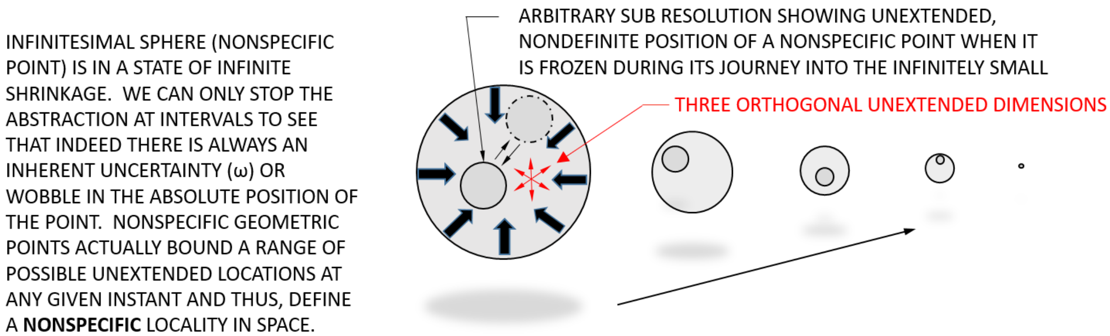


FIG. 3. A Nonspecific Point

Given this scheme, it will be useful to define the term domain as seen below for this discussion going forward. The future, nonspecific geometric development of the hypercube will rely on this concept. Domains can be both Euclidean and non-Euclidean in nature:

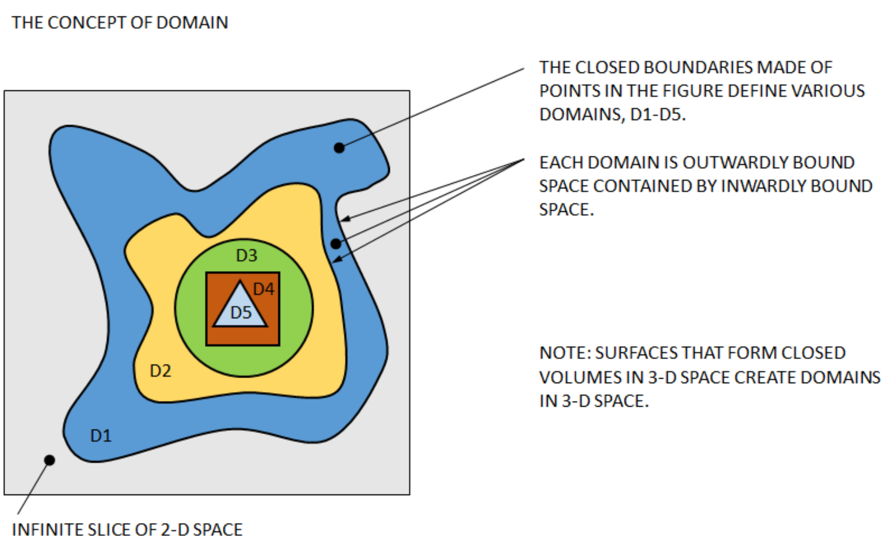


FIG. 4. Domain Defined

FIG. 5 below shows a sphere and a cube which are both three-dimensional domains. As depicted in the figure, section cuts reveal zones of uncertainty (ω) that exist in the locations of the elements of the inwardly bound surfaces that define these domains. Thus, the true locations of the surfaces that define these domains is not exactly known at any given instant as they shrink, and by Nonspecific Geometry, the domain defining surfaces themselves can be thought of as vibrating within their own zones of uncertainty. In essence, ω shrouds an absolute location for any geometric entity.

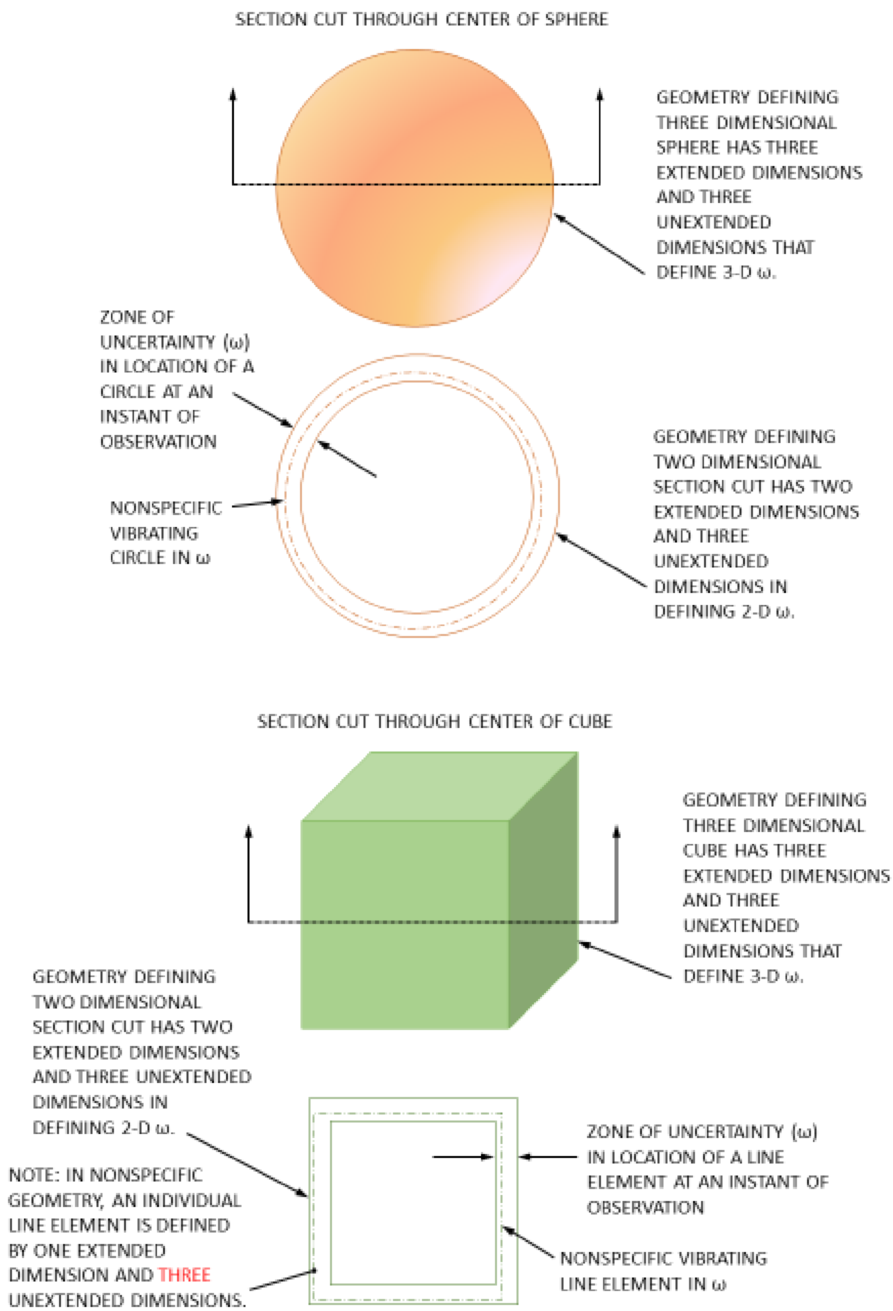
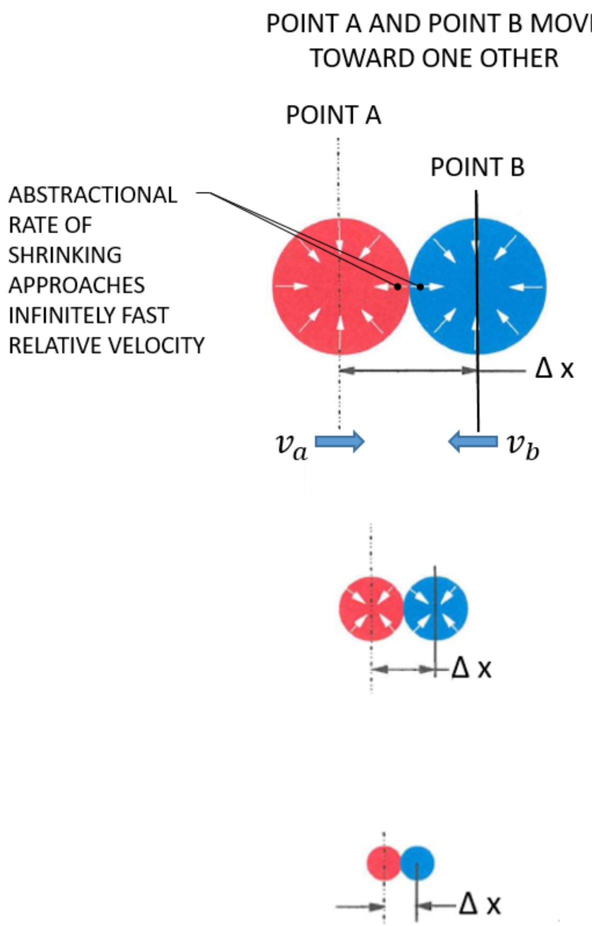


FIG. 5. Zones of Uncertainty in Domain Boundaries

Derivation of Noncontinuous Space

One of the immediate implications of Nonspecific Geometry is that traversing or moving through space requires a discrete action or modus operandi. Simply put, with Nonspecific Geometry, it is not possible to move through space in a continuous fashion because an infinite distance (Δ x) separates any two points. In another "thought experiment" below, two nonspecific geometric points are imagined to approach each other in a manner that exhibits this phenomenon. Note that the point centers depicted are in unextended space and shown passing through the "middle" of points A and B for the sake of discussion. In Nonspecific Geometry, the point centers are actually indeterminate and are seen below in an approximate position. The core argument though remains unaffected by this observation. See FIG. 6.



MAGNIFIED VIEW OF APPROACH

AS POINT B ASSUMES A TANGENCY CONDITION WITH POINT A FOR ILLUSTRATIVE PURPOSES, BOTH POINTS CONTINUE SHRINKING AT A RELATIVE "ABSTRACTIONAL" RATE THAT APPROACHES AN INFINITELY FAST VELOCITY BECAUSE THEY ARE INFINITESIMALS OF INWARDLY BOUND SPACE. AT THIS MOMENT, A DISTANCE, Δ x, SEPARATES THEIR "CENTERS." v_a AND v_b ARE EQUAL MAGNITUDE, EXTERNAL (EXTENDED) VELOCITIES OF POINT A AND B.

IN FRAME TWO, BOTH POINT A AND POINT B CONSTANTLY ***RETREAT TO THE INFINITESIMAL CONDITION AT AN EQUAL, ALMOST INFINITE, RELATIVE ABSTRACTIONAL RATE WHICH EXCEEDS OR EQUALS ANY POSSIBLE RELATIVE EXTERNAL (EXTENDED) VELOCITY OF POINT A AND POINT B.*** CASE SHOWN AT LEFT WHERE (v_a+ v_b) EQUALS VELOCITY OF RELATIVE INFINITESIMAL RETREAT WHICH MAINTAINS A TANGENCY CONDITION. A NEW SMALLER Δ x SEPARATES THEIR CENTERS.

IN FRAME THREE, ANOTHER SIMILAR TANGENCY CONDITION ENSUES WITH AN INCREMENTALLY SMALLER Δ x SEPARATING THE POINT "CENTERS."

THIS SERIES OF EVENTS CONTINUES UNTIL Δ x APPROACHES ZERO, BUT IN THE REALITY OF THE ABSTRACTION THAT DEFINES NONSPECIFIC GEOMETRIC POINTS (INWARDLY BOUND SPACE) Δ x NEVER GOES AWAY. IT ONLY GETS SMALLER AND SMALLER. IN THIS WAY, POINTS A AND B CAN NEVER TRAVERSE THE INFINITE DISTANCE THAT LIES BETWEEN THEM GIVEN THE INFINITESIMAL RETREAT OF INWARDLY BOUND SPACE IN EACH POINT. IN A TRADITIONAL APPROACH, Δ x "GOES TO ZERO IN THE LIMIT," BUT A LIMIT IS A MATHMATICAL DEVICE NOT REFLECTIVE OF THE TRUE NATURE OF INWARDLY BOUND SPACE – IT HAS NO LIMIT IN ITS ABSTRACTIONAL CONSTRUCT.

FIG. 6. An Infinite Distance Separates any Two Nonspecific Geometric Points

So how can the infinite distance between points A and B be traversed in a way consistent with the definition of outwardly and inwardly bound space being that which cannot be limited? Perhaps it is not possible to travel between two points in a continuous fashion. Here, one begins to see that a discrete, yet undescribed digital geometrical mechanism is necessary so that infinite geometrical distances can be "travelled." This dynamic/mechanism will be called *transformation*. See FIG. 7. At the same time, this budding digital universe requires a discrete dimensional scheme that incorporates the ability to display coded information content that originates from a necessary continuous-analog source/space to be derived later. The hypercube fulfills the digital, noncontinuous requirements of the above and enables transformation (see below) when used in a three-dimensional tiling of space that will be developed in the following pages.

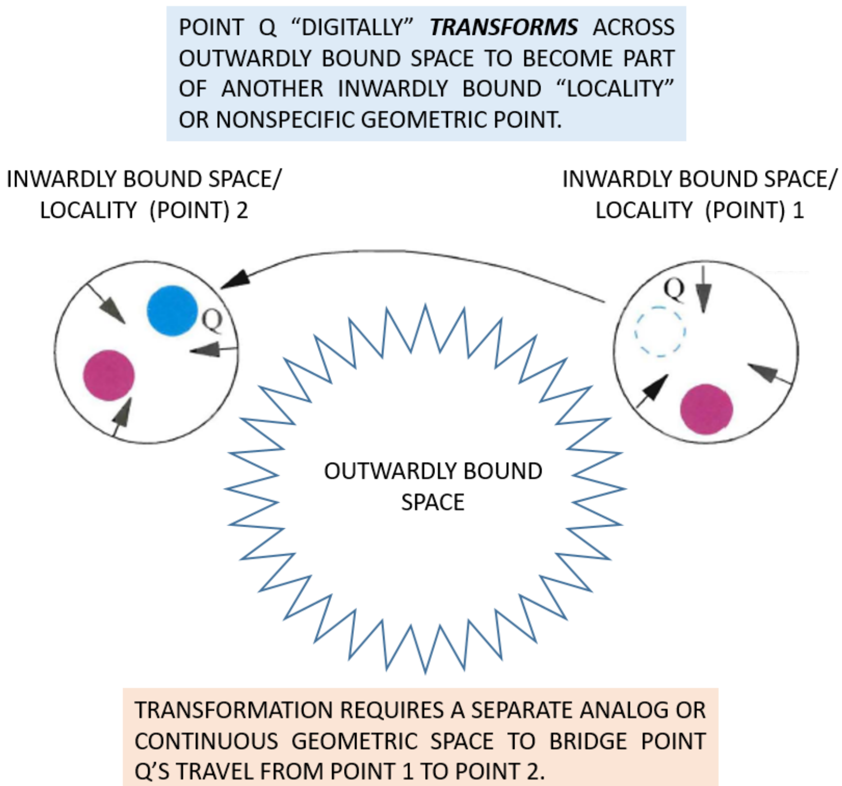


FIG. 7. A Transformation Schematic

The Hypercube and Nonspecific Multidimensionality

The nonspecific geometric derivation of the hypercube starts with the exercise of progressively creating the three, standard, normal, extended dimensions that result from the expansion of a nonspecific point. Eventually, this expansion forms a cube. Nothing different or insightful so far has been revealed in this discussion. However, after the third perpendicular expansion, the resulting cube (a three-dimensional domain) can be seen possessing a zone of uncertainty (ω) that envelopes its defining surfaces. See FIG. 5 and FIG. 8.

Visualization and development of the hypercube past the "cube stage" in three-space is best aided by viewing Victor Schlegel's drawing of a hypercube in perspective with four vanishing points created in 1882. See FIG. 9. Schlegel's prescient rendering clearly shows that a four-dimensional hypercube perspective (four lines of site) drawn in two dimensions yields an overall "cube within a cube" motif in three-space. Taking this cue from Schlegel, the budding hypercube in FIG. 8 can be finished with one more expansion within the cube along the sides of the other six hyperdimensional cubes that appear as trapezoidal prisms. This last expansion in hyperspace is normal to the sides of the original cube and along the four cube diagonals. See FIG. 10.

One way of viewing this resulting structure is to postulate that the appearance of another nested cube in three-space is a geometric "marker" associated with building higher dimensions but not in the usual sense. More to the point, the embedded, second cube is another orthogonal three-dimensional cubic domain with its own independent zone of uncertainty (ω_2). The relative uncertainty that exists in the positions of the geometric elements that define the larger and smaller cubes may be actually creating new dimensions and insulating higher dimensional domains from lower ones. (Upcoming further development of the geometry on the Giza Plateau will suggest a more detailed mechanism for domain isolation in which relative uncertainty is embedded.)

In this model, as seen in FIG. 11 *Hypercube A*, the domain of the large cube defines, represents, and contains the first three orthogonal dimensions. In a similar fashion, the second domain of the embedded cube defines, represents, and contains a second group of three orthogonal dimensions – four, five, and six. The transition from one three dimensional realm to another "higher" three dimensional realm is accomplished by the geometry of the hypercube which displays two simultaneously existing cubic domains of uncertainty characteristic of nonspecific geometric description.

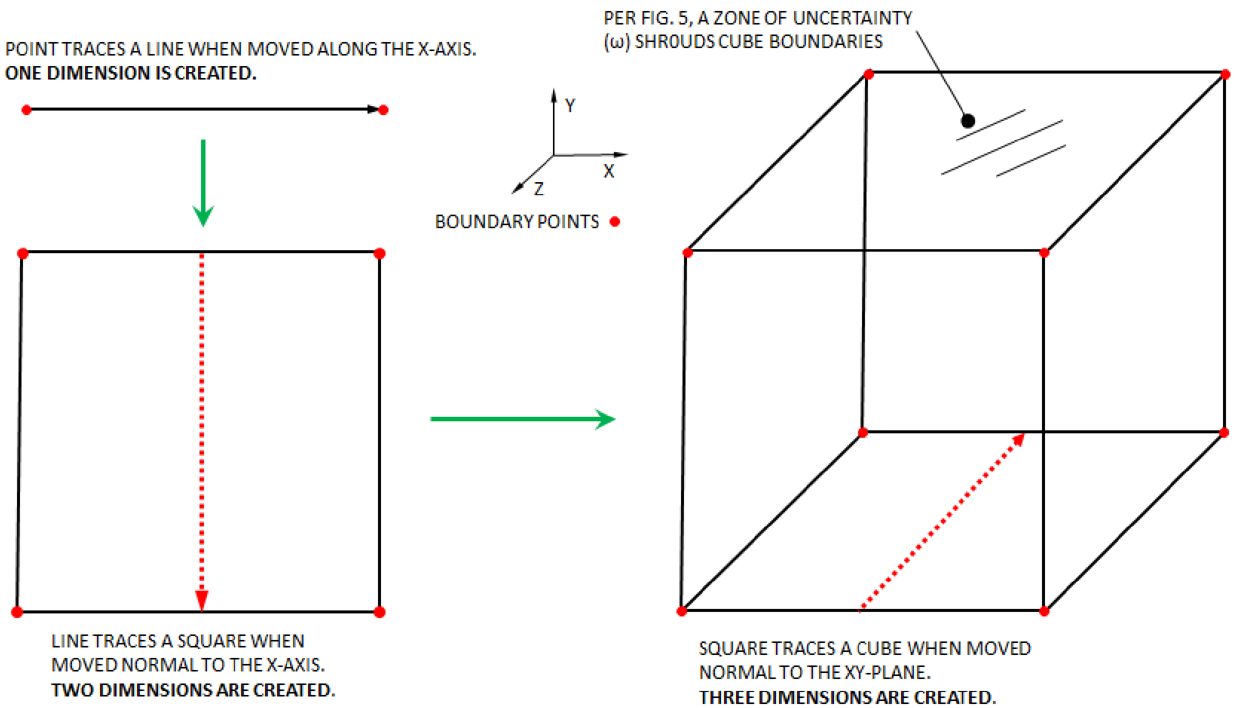


FIG. 8. Hypercube Derivation up to Three Dimensions

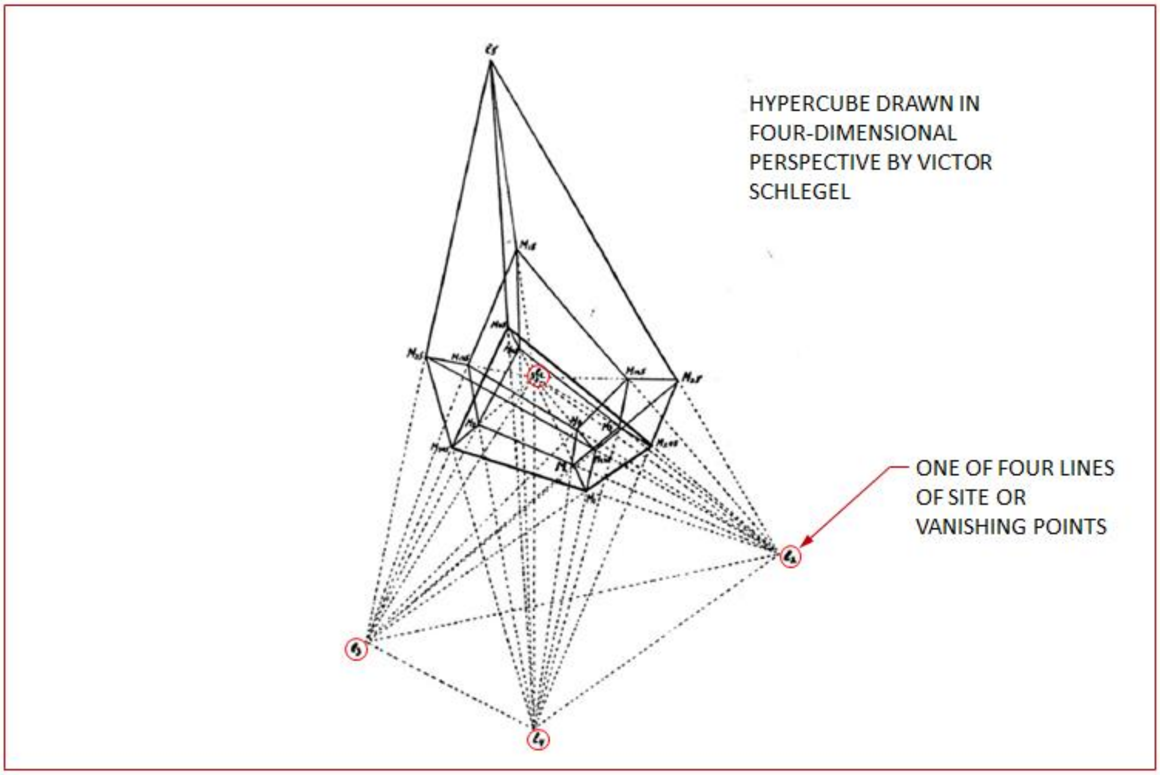


FIG. 9. Schlegel's Drawing of a Hypercube in Perspective with Four Vanishing Points – 1882.

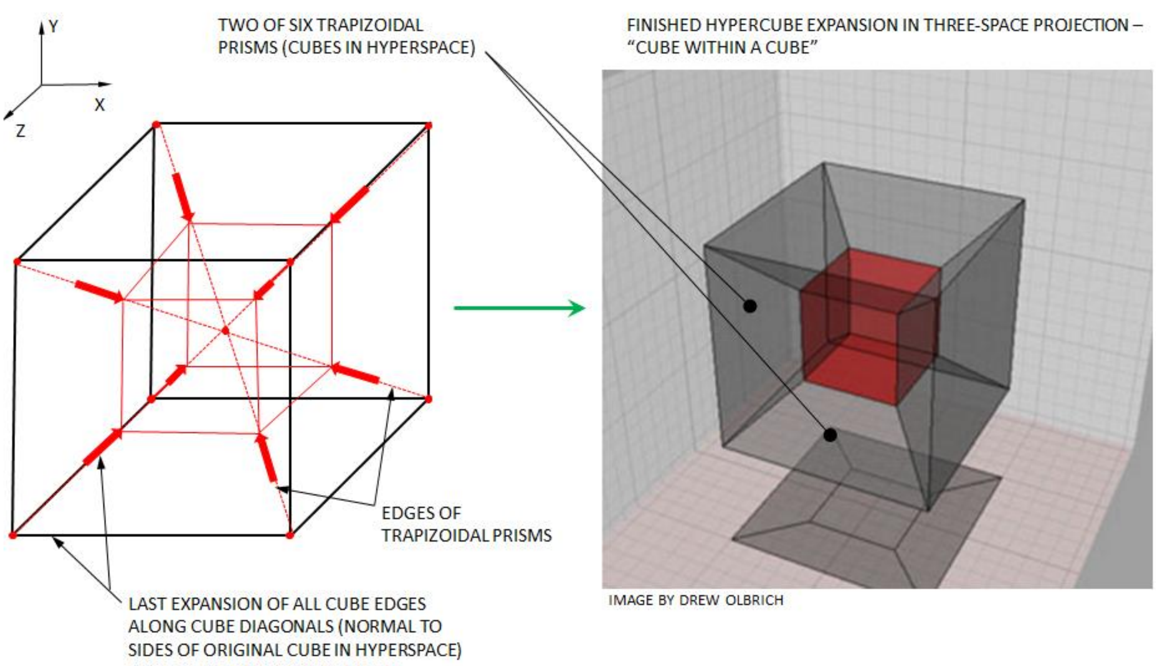


FIG. 10. Finished Hypercube

Hypercube B of FIG. 11 generalizes this phenomenon by showing that an infinite number (*n*) of isolated three-dimensional domains can be drawn within a standard hypercube. These domains only differ in how far up the hypercube diagonals they are positioned. Each domain is isolated by ω_n and carries three orthogonal dimensions: α, β, and γ.

FIG. 9, Schlegel's drawing of a hypercube in perspective with four vanishing points, validates that this construction is consistent. To generate the multiple locations for "sub cubes or sub domains" all one has to do is vary the angles of the lines of projection from the three vanishing points underneath Schlegel's hypercube.

Hypercube C of FIG. 11 shows a hypercube arrangement where each successive sub domain is geometrically half the size of the preceding one. As will be seen shortly, nature prefers this arrangement in expression, and it is found central to the geometry expressed on the Giza Plateau.

The expansion of multiple, isolated, three-dimensional realms within the hypercube as discussed above has been made possible by the core insights of Nonspecific Geometry. Up to now, the hypercube has been viewed only as a window into a fourth dimension. With Nonspecific Geometry, a new way of generating relative dimensional domains surfaces bestowing the hypercube with deeper descriptive capabilities.

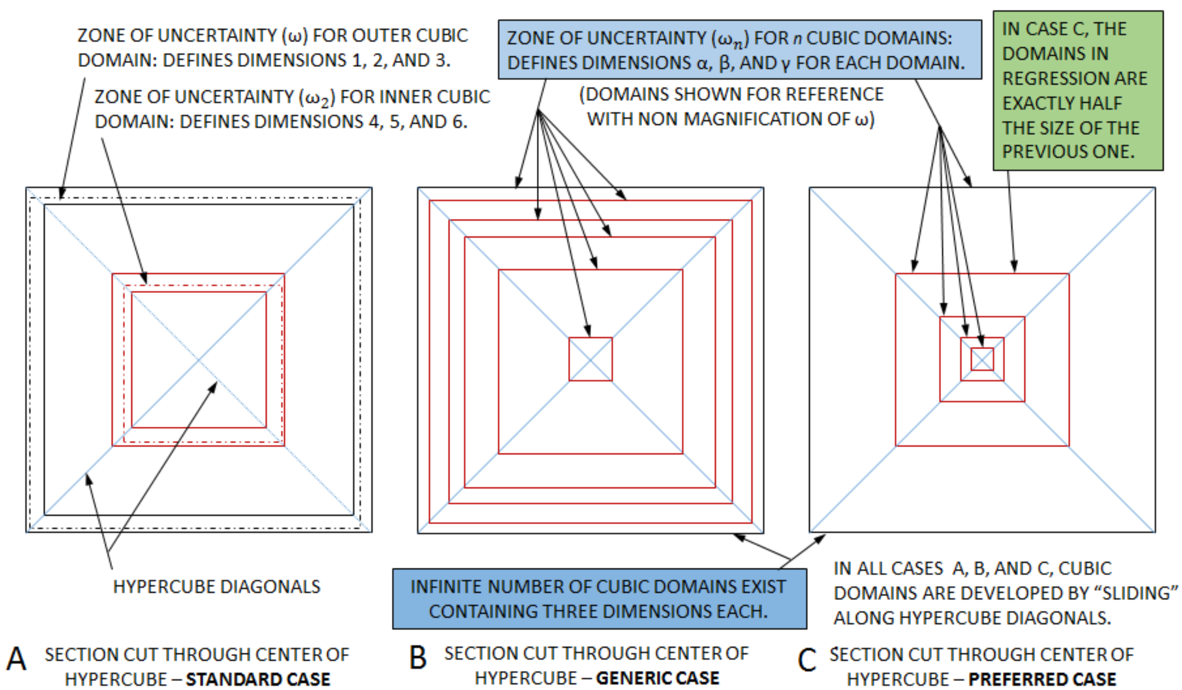


FIG. 11. Hypercube Evolution

Tessellated Hypercube Description of Noncontinuous Space

In order to overcome the aforementioned dilemma posed by a continuous, outwardly bound space of an infinite expanse existing between two nonspecific geometric points and the fact that information does manage to traverse that same infinity, a regular, three-dimensional, geometric domain for the sake of consistency should be used to tessellate space to allow for transformation. The hypercube meets all requirements identified and is shown in FIG. 12 in a starting configuration or block of twenty-seven (3 x 3 x 3) hypercubes which is the minimum number of cubes required to demonstrate hypercube scaling – a useful and necessary condition of infinite variability in hypercube size. Transformation occurs between each hypercube indexed from center to center, and the "starting block" extended to infinity in each of the standard, three, orthogonal dimensions creates a digital, noncontinuous space.

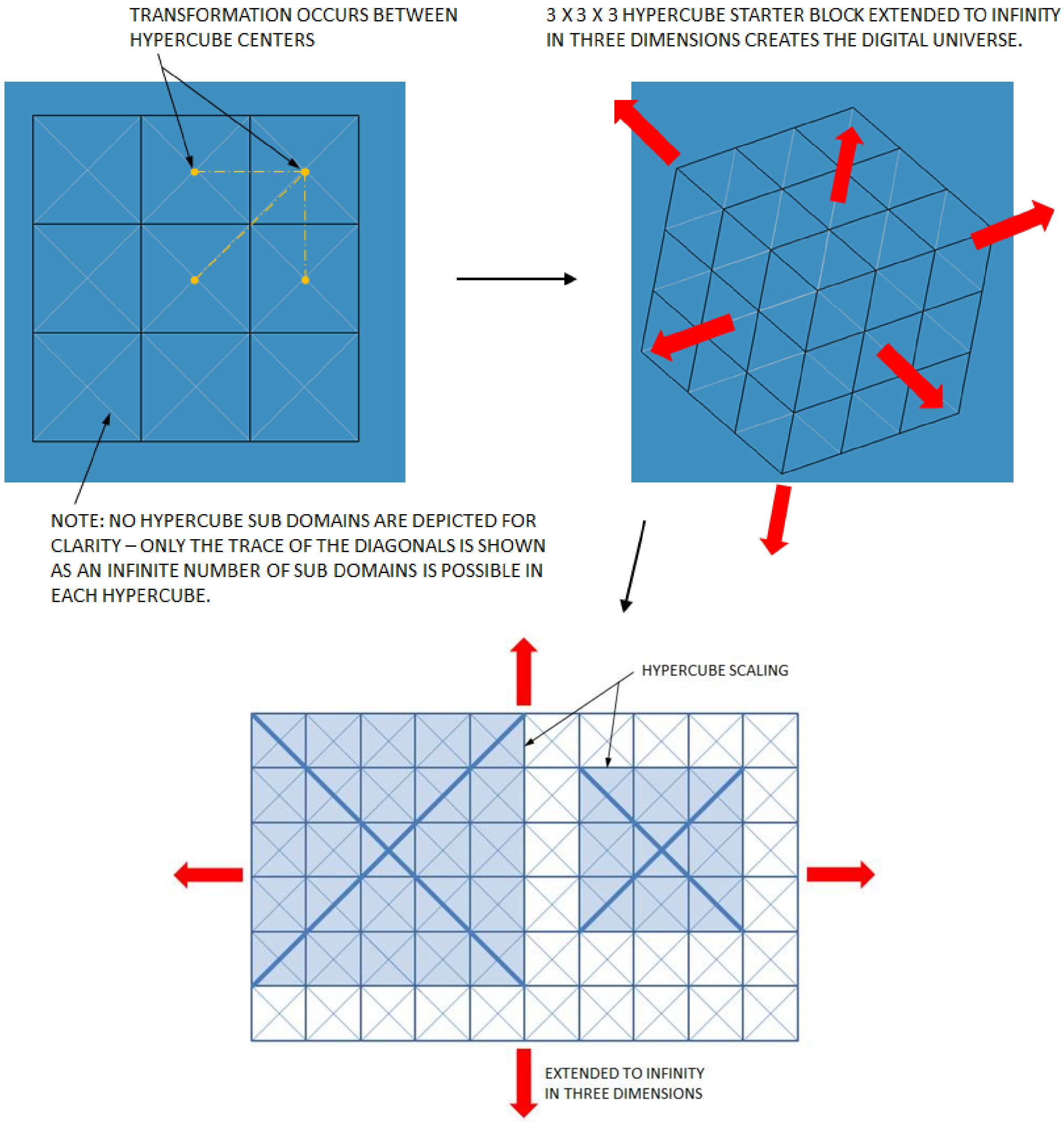
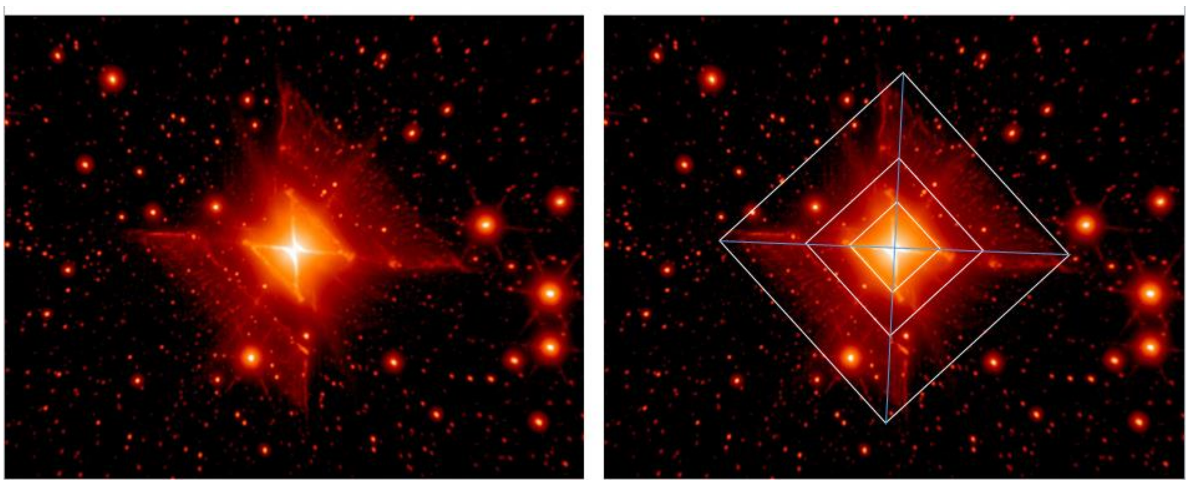


FIG. 12. Tessellated Hypercube Noncontinuous Space

The hypercube carries and expresses the transformed information by means of vibratory modes of its relevant geometry in differing zones of uncertainty (ω). A detailed description of this information handling scheme is better addressed during an upcoming discussion on the digital/analog universe interface.

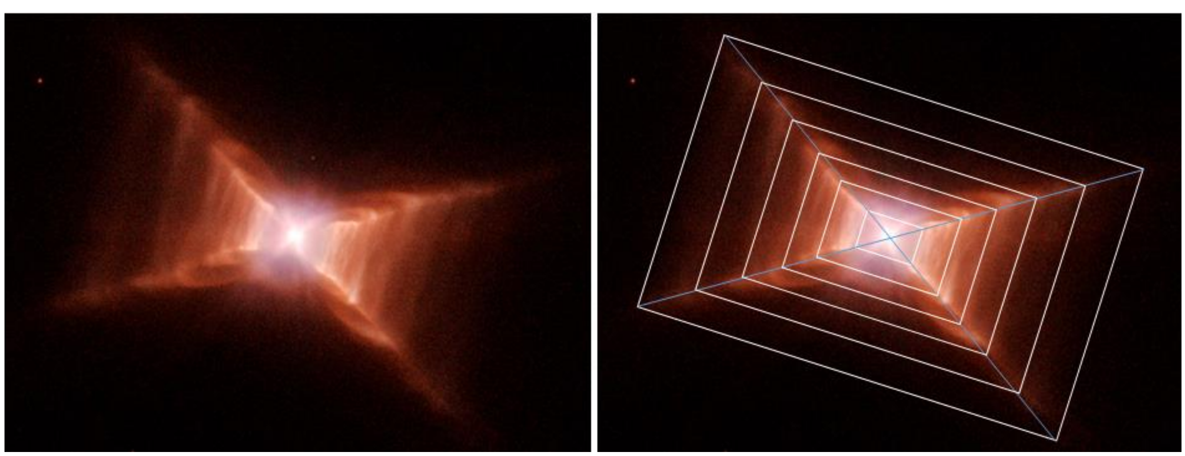
Evidence of Noncontinuous Space

Thus far, this paper has proposed a Nonspecific Geometry that demands through geometric axiom clarification and expansion the existence of both a noncontinuous digital and a continuous analog universe in order for information transfer and continuity. A hypercube tessellation that spans all of three-dimensional space has been offered as means of accomplishing the manifestation of a digital universe. Two nebulae seen in FIG. 13 offer perhaps startling evidence that the hypercube digital space hypothesis is a correct description. The complex and powerful dynamics of nebula production might have allowed for visualization of an underlying universal geometry.



MWC 922: THE RED SQUARE NEBULA

IMAGE CREDIT AND COPYRIGHT: PETER TUTHILL (SYDNEY U.) & JAMES LLOYD (CORNELL)



HD 44179: THE RED RECTANGLE NEBULA

IMAGE CREDIT: NASA, ESA, H. VAN WINKLE (CATHOLIC U. BELGIUM) & M. COHEN (BERKELEY)

FIG. 13. Hypercube Expansion Patterns in Nebulae

Nebula MWC 922 appears to strongly resemble the preferred case *Hypercube C* developed previously. Nebula HD 44179 looks to be an off axis picture of the generic case *Hypercube B* with symmetric, regular sub domains. (See FIG. 14 below.) Both nebulae demonstrate vast scaling of geometry.

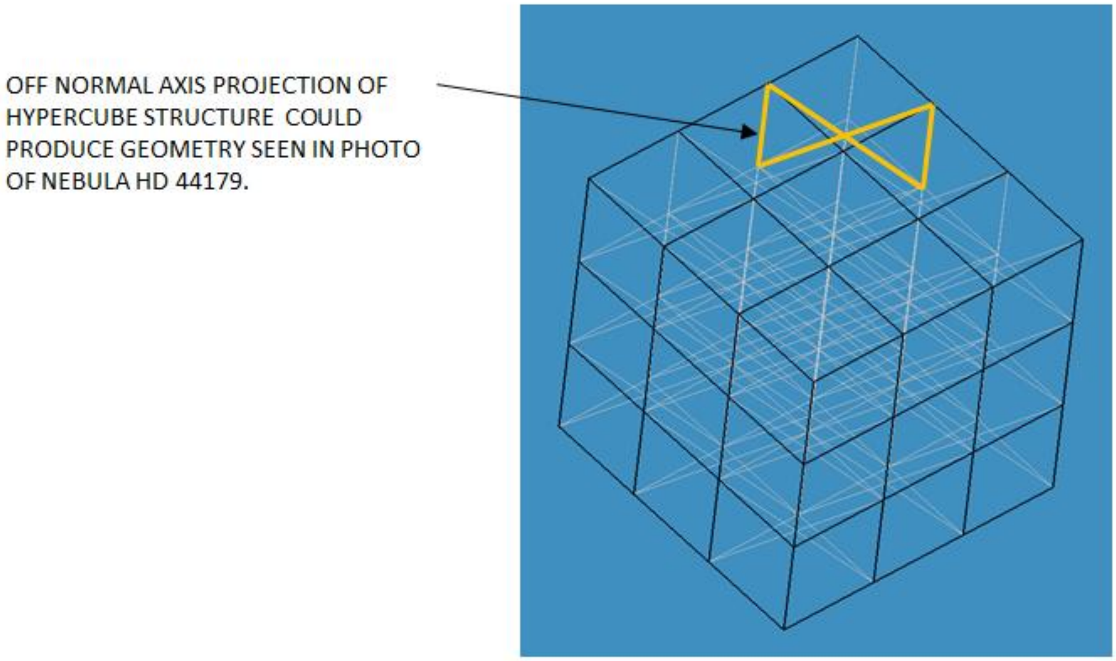


FIG. 14. Nebula HD 44179 Angle of Imaging

Hypercube Transcendental Structure Encoded at the Giza Plateau

While many investigators over the years have attributed multiple mathematical and geometric properties and relations to the pyramidal megastructures on the Giza Plateau, none of them provides a cohesive framework for further meaningful physical description of the universe. If a substantive link between the noncontinuous, digital universe of hypercube tessellation described above and the geometry of Giza can be found, then perhaps a greater understanding of the mechanics of the universe awaits.

Such a link does exist. In FIG. 15 below, a right pyramid is defined within and by the hypercube native geometry. In the figure, a red line defines an edge of this pyramid in the hypercube tessellation. Each hypercube would possess this structure, but only one pyramid edge is shown in one hypercube for clarity. The embedded pyramid is then seen in the figure expanded in three-dimensions residing in an envelope defined by hypercube diagonals.

The geometry of this particular "pyramid of interest" does not match the dimensions of any of the pyramids found at Giza. However, as will be demonstrated, it does directly correlate with all of the pyramidal geometry expressed at Giza under a certain analysis.

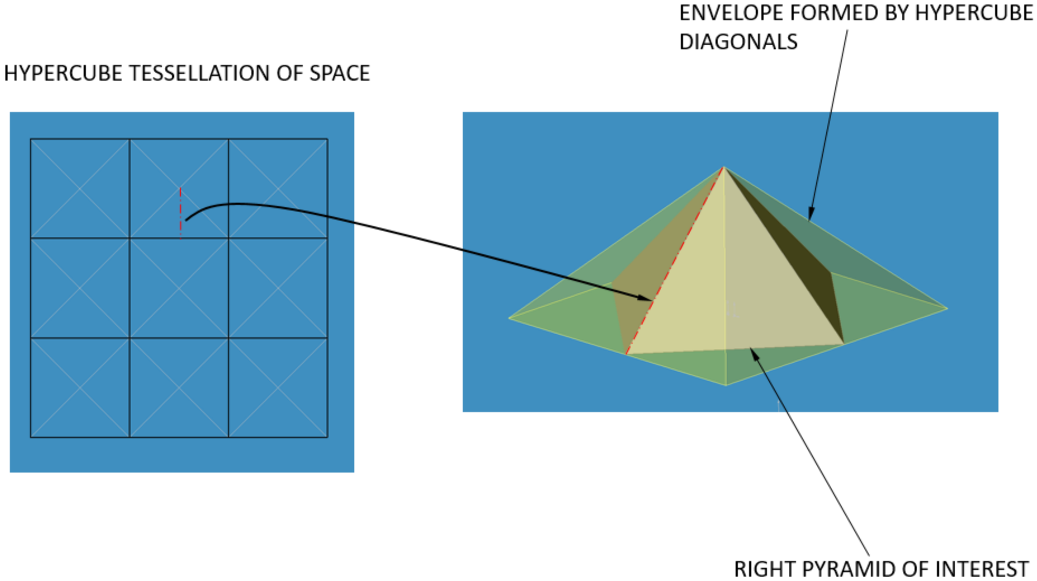


FIG. 15. Right Pyramid Defined in Hypercube Native Geometry

FIG. 16 through FIG. 20 show that the pyramids Khufu, Khafre, and Menkaure are embedded or nested features of the "right pyramid of interest" defined in the hypercube. Developing this geometry and insight starts with taking the base side length measurement of Khufu (755.73 ft.) and then overlaying/combining the geometry of the right pyramid of interest as seen in FIG. 16.

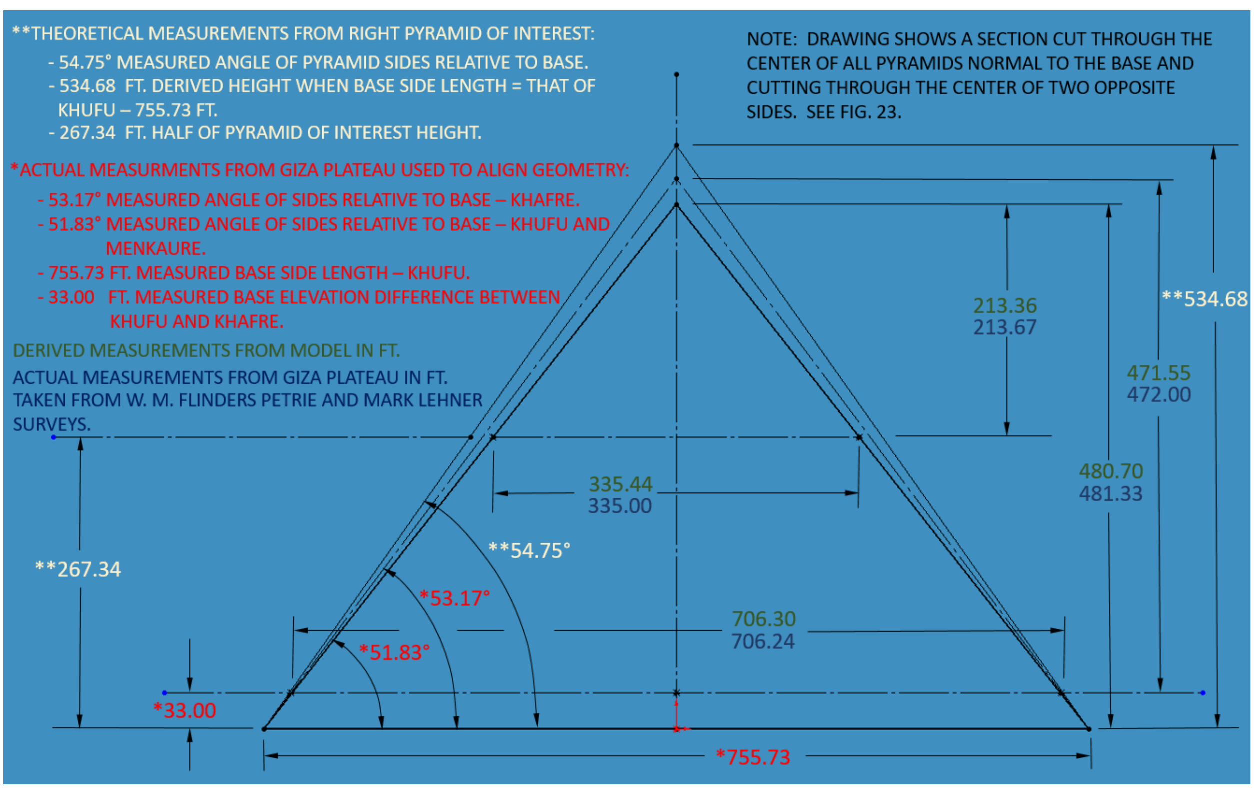


FIG. 16. Overlay of Giza Pyramid Geometry with the Pyramid of Interest

All of the defining measurements of the pyramids of Giza fit nicely into this scheme with high accuracy (within 6 inches of published data) given the fact that the true values of the original heights and base lengths of the pyramids are still not ultimately determined due to missing casing stones and other measurement dilemmas. FIG. 17 through FIG. 20 separate the entities in question for clarity.

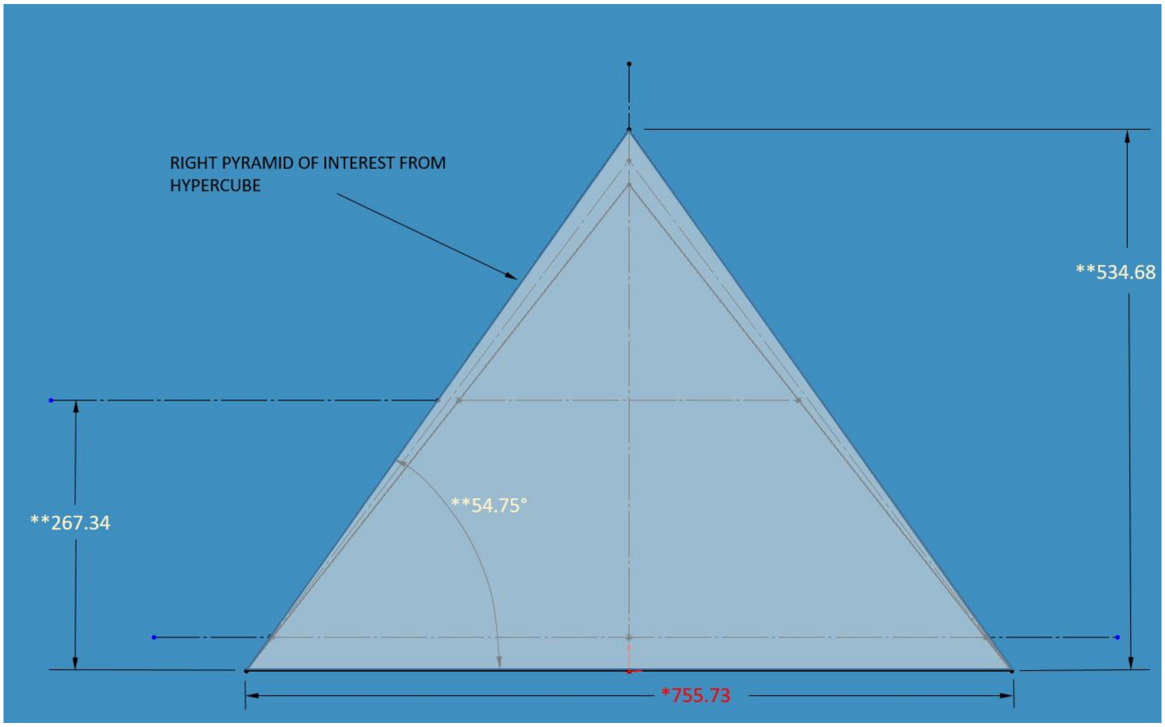


FIG. 17. The Pyramid of Interest

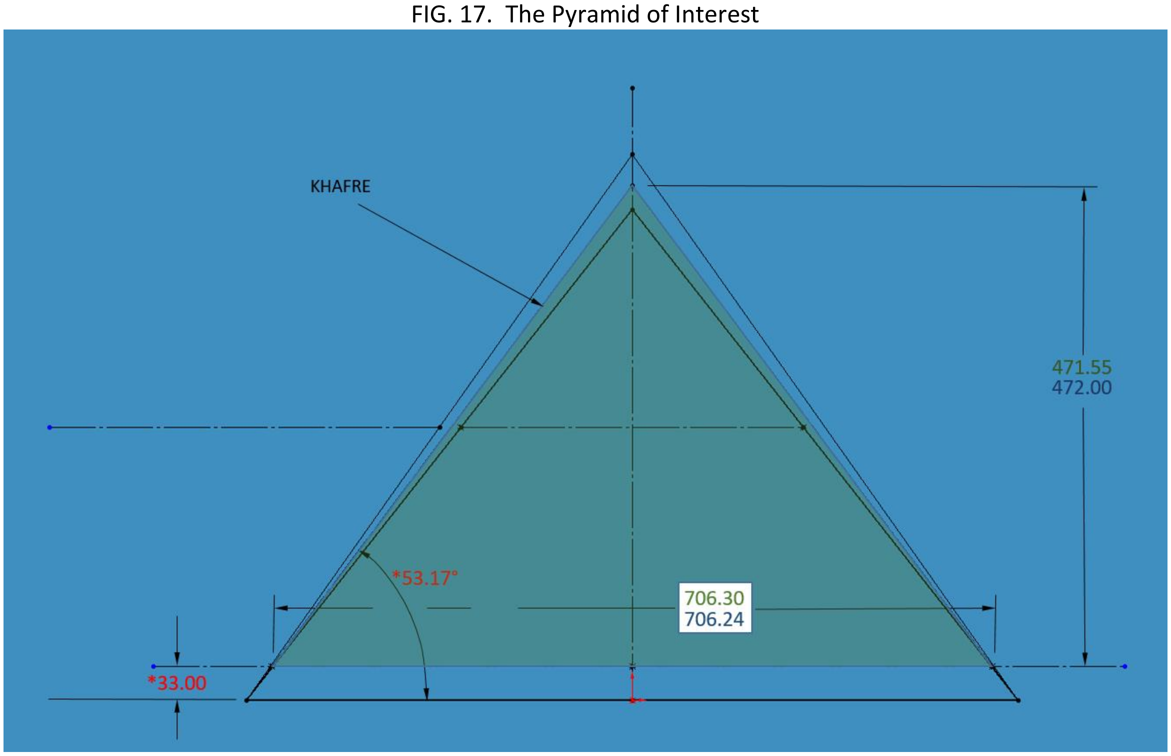


FIG. 18. The Pyramid Khafre

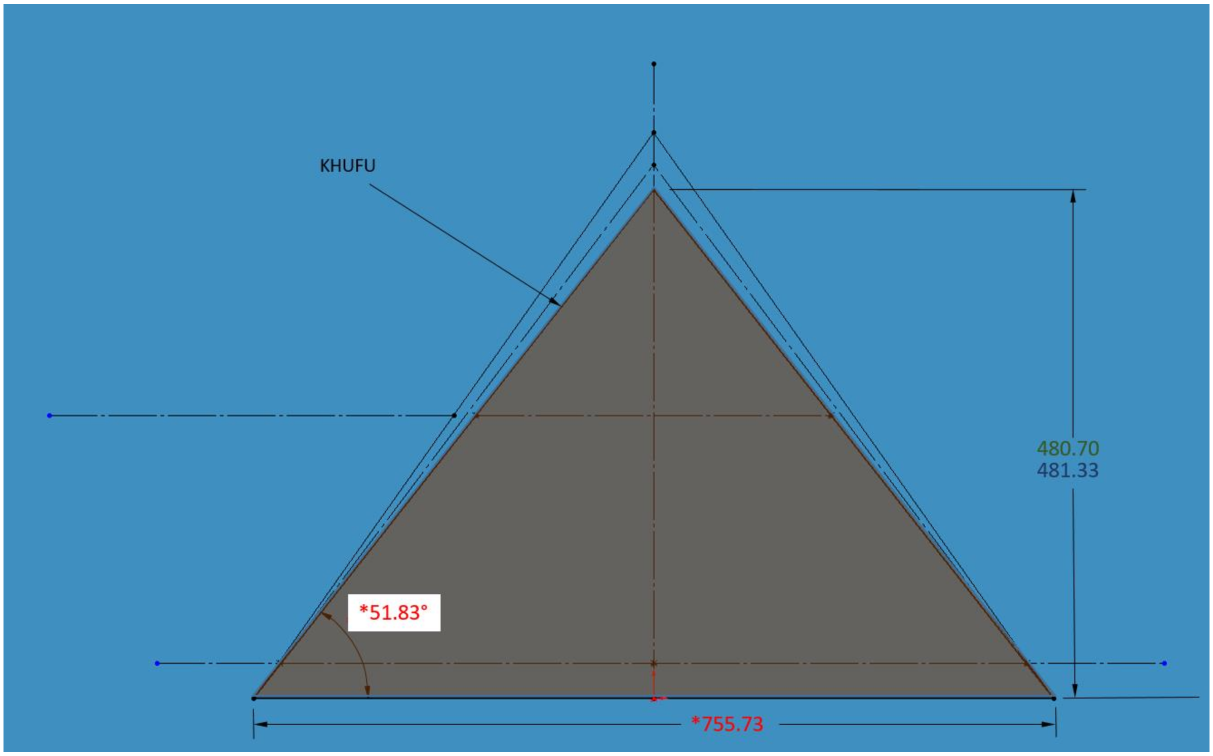


FIG. 19. The Pyramid Khufu

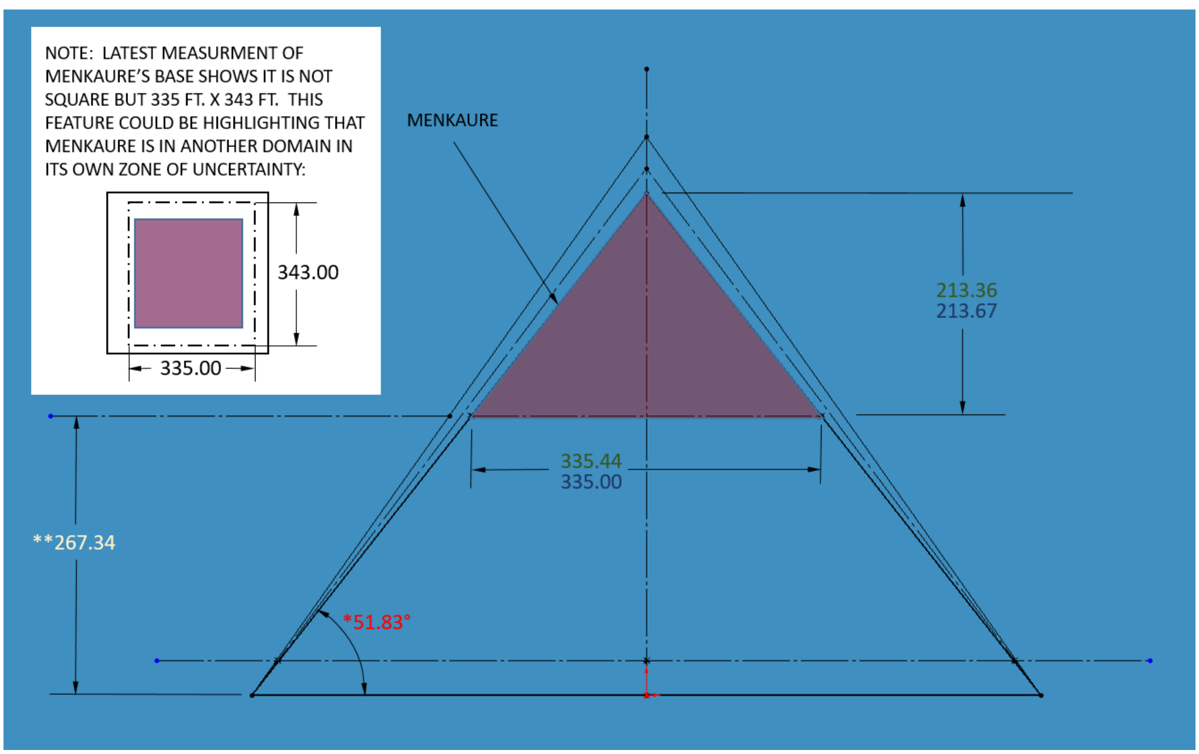


FIG. 20. The Pyramid Menkaure

A review of the preceding FIG. 16 through FIG. 20 hints that Khufu and Khafre represent deformations of the “pyramid of interest” defined by the hypercube. That is to say, the apex of the “pyramid of interest” is progressively shown as being “pushed downward or upward” in the schematic. This symbolism would indicate that Khafre is a medium level deformation and that Khufu is a maximum level deformation of the “pyramid of interest.”

Since this is hypercube derived geometry, Menkaure can be seen to reflect or represent a new pyramidal domain whose base is defined as being located at half the height of the original “pyramid of interest” during maximum deformation (Khufu). The fact that Khafre has 33 feet of its base “shaved off” correlates with Khafre being on ground at Giza that is 33 feet higher than that which Khufu sits. The probable meaning and symbolism of this disparity in elevation will be discussed later.

Given the above, the pyramids of Giza would appear to be diagrammatic in their geometry and purpose. These deformations are not true scale but would seem to impart or relate the dynamics of a fundamental physical message. How are these deformations occurring? And if the geometry is representative, not exact, where is this deformation happening?

Because all geometric solids are surrounded by a zone of uncertainty (ω) as described by Nonspecific Geometry, perhaps the Giza pyramids document in a diagrammatic way changes that occur in the zone of uncertainty of the “pyramid of interest” under unique conditions. See FIG. 21.

Further evidence that deformation or *vibration localization* in a zone of uncertainty could figure prominently in the monuments of Giza can be found in the fact that both Khufu and Menkaure show linear indentions on their side walls that might symbolically denote a maximum deformation amplitude in their zones of uncertainty. See FIG. 22.

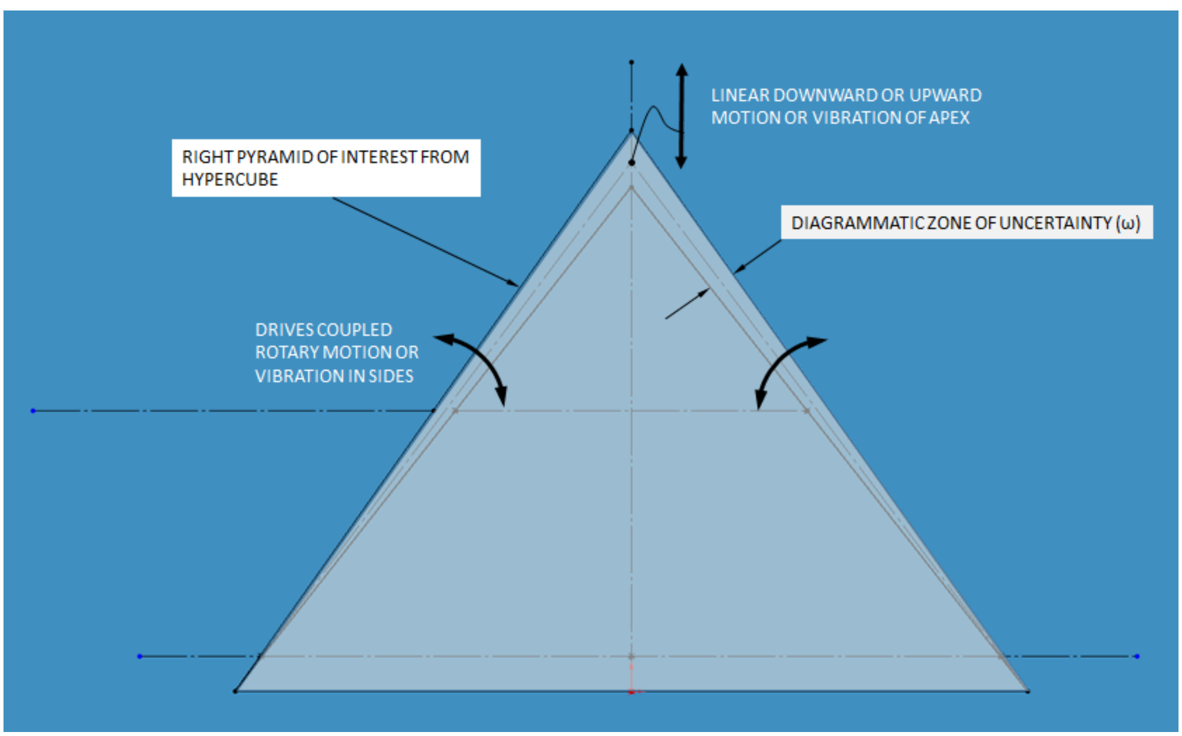


FIG. 21. Zone of Uncertainty Representation at Giza

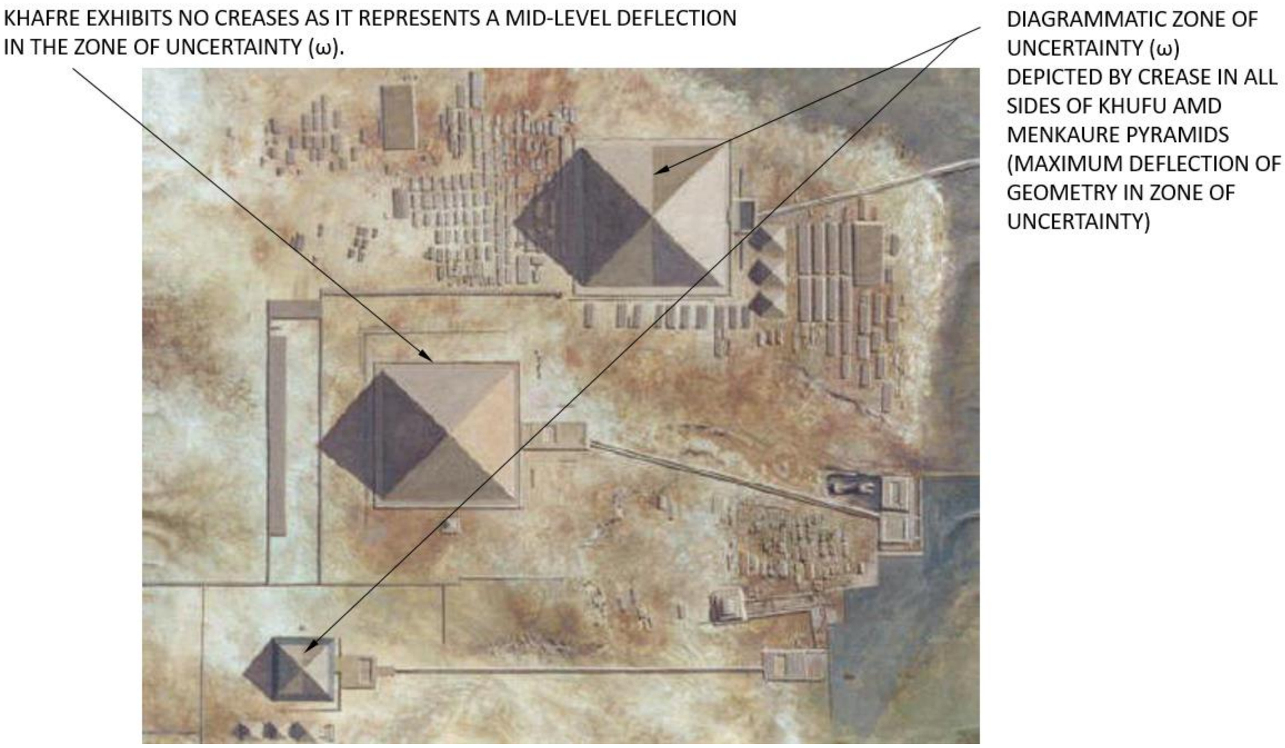


FIG. 22. Satellite Image of Giza Plateau Showing Crease Features

Notice in FIG. 21 that the zone of uncertainty (ω) associated with the "pyramid of interest" is unusual in that the geometry surrounding the pyramid would appear to vibrate both in rotation and in a linear manner simultaneously. The downward or upward linear deflection of the apex imparts a rotary motion to the geometry of the pyramid sidewalls in the zone of uncertainty. This type of movement in a zone of uncertainty has not been seen or developed yet. See FIG. 23 for a three-dimensional rendering of the "pyramid of interest" with its associated zone of uncertainty (ω) as defined by the Giza pyramids.

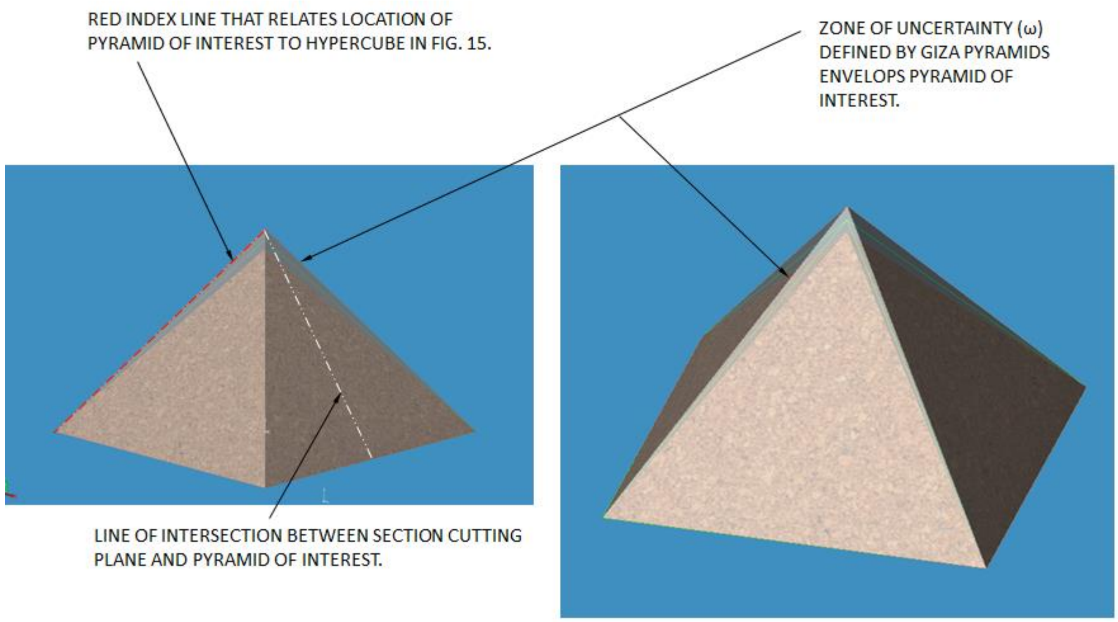


FIG. 23. Pyramid of Interest with its Zone of Uncertainty in 3-D

So what could be driving the odd vibratory movements of the geometry in the zone of uncertainty of the "pyramid of interest" and what does it mean? Since rotary motion appears to be an integral part of the dynamics in this diagrammatic zone of uncertainty specified by the geometry of Giza, then rotation of the "pyramid of interest" itself might be called for in the model to generate these deflections.

As described thus far, Nonspecific Geometry demands the existence of both a digital and analog universe so that information can be transferred across geometric infinities. The developed hypercube tessellation of space satisfies the digital requirement and need. A transcendental link between the digital and analog universes may be encoded by the Giza pyramids which appear to represent vibratory modes in ω specifically of the "pyramid of interest" found in the hypercube.

Going forward, the "pyramid of interest" will be referred to as the *Transcendental Pyramid* because its proposed mode of action will involve rotation and transference of information from an analog space [represented by a sphere defined by the transcendental number pi (π)] to the digital space of the hypercube.

Mode of Action of the Transcendental Pyramid

If the Transcendental Pyramid is rotated in two primary directions and swept about its apex in the hypercube it defines a sphere with a radius equal to the length of one of its non-base edges. See FIG. 24. This motion is advantageous for two reasons:

1. First, the sphere that is defined by this motion will serve as the analog source for information input into the Transcendental Pyramid.
2. Secondly, the sweeping action of the Transcendental Pyramid will be shown to enable translation of analog information of the sphere into digital information of the hypercube. ("Scanning" the sphere represents reading continuity space and thus, bridging the information gap existing between hypercubes in the digital tessellation.)

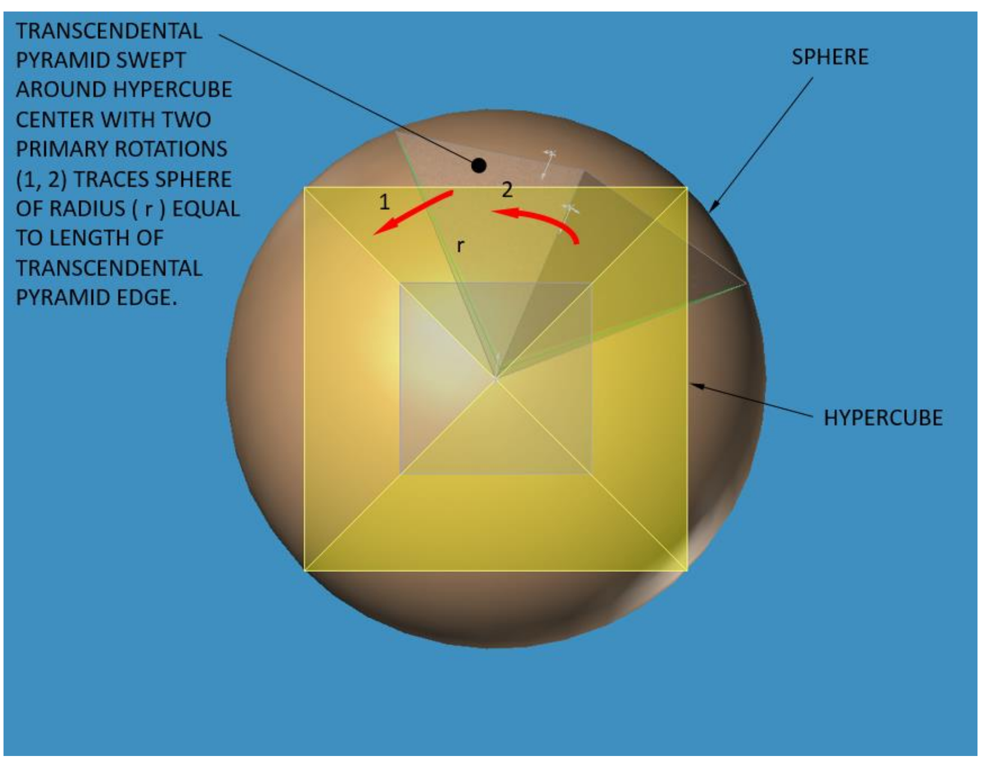


FIG. 24. Transcendental Pyramid Proposed Mode of Action

In order to better visualize the nature of the continuous analog input into the Transcendental Pyramid from the sphere, the primary Rotations 1 and 2 of the Transcendental Pyramid can be shown to generate two circles of differing diameters that are inscribed on the surface of the sphere by the four end points that define the pyramid base. See FIG. 25 -27. In other words, each end point that defines the pyramid base would trace or "experience" two defining circles during a sweep in any particular direction as a result of Rotations 1 and 2.

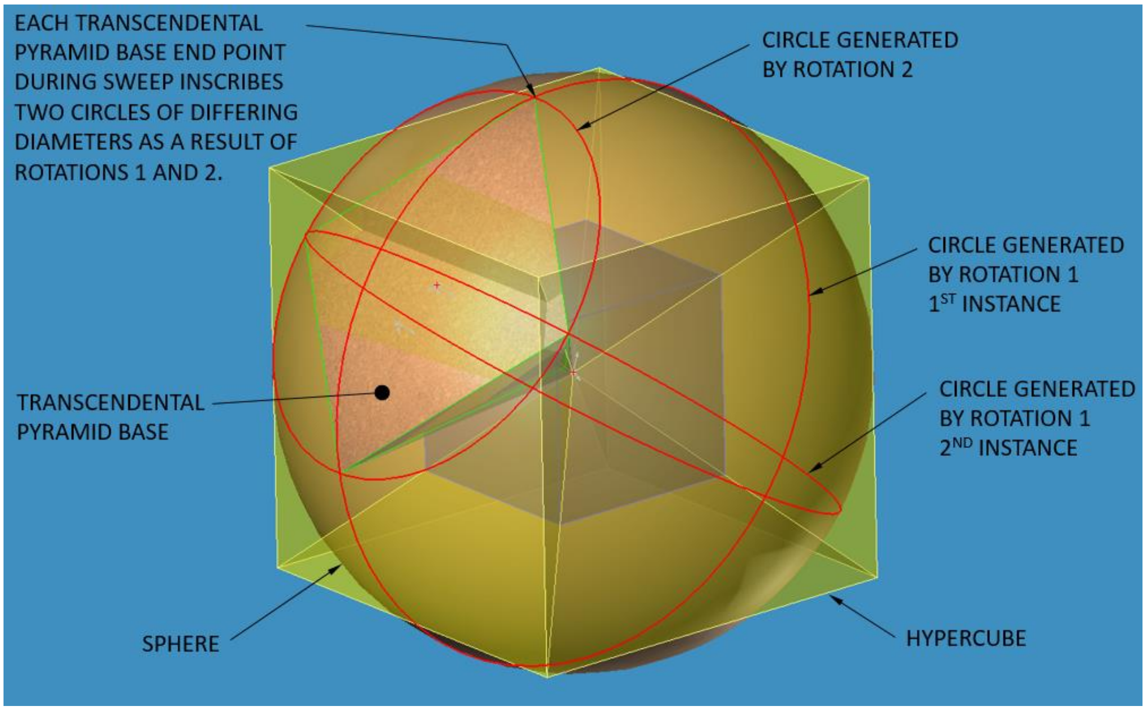


FIG. 25. Transcendental Pyramid Base Inscribes Two Defining Circles: Rotations 1 and 2

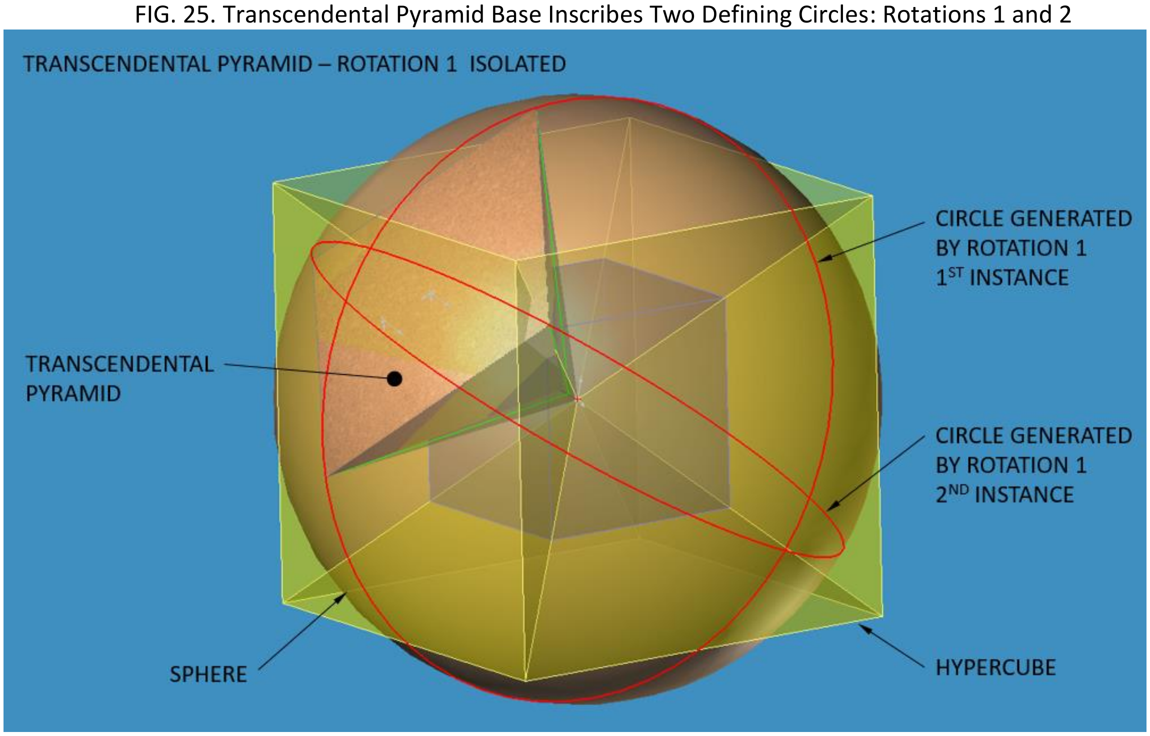


FIG. 26. Transcendental Pyramid Base Inscribes Rotation 1

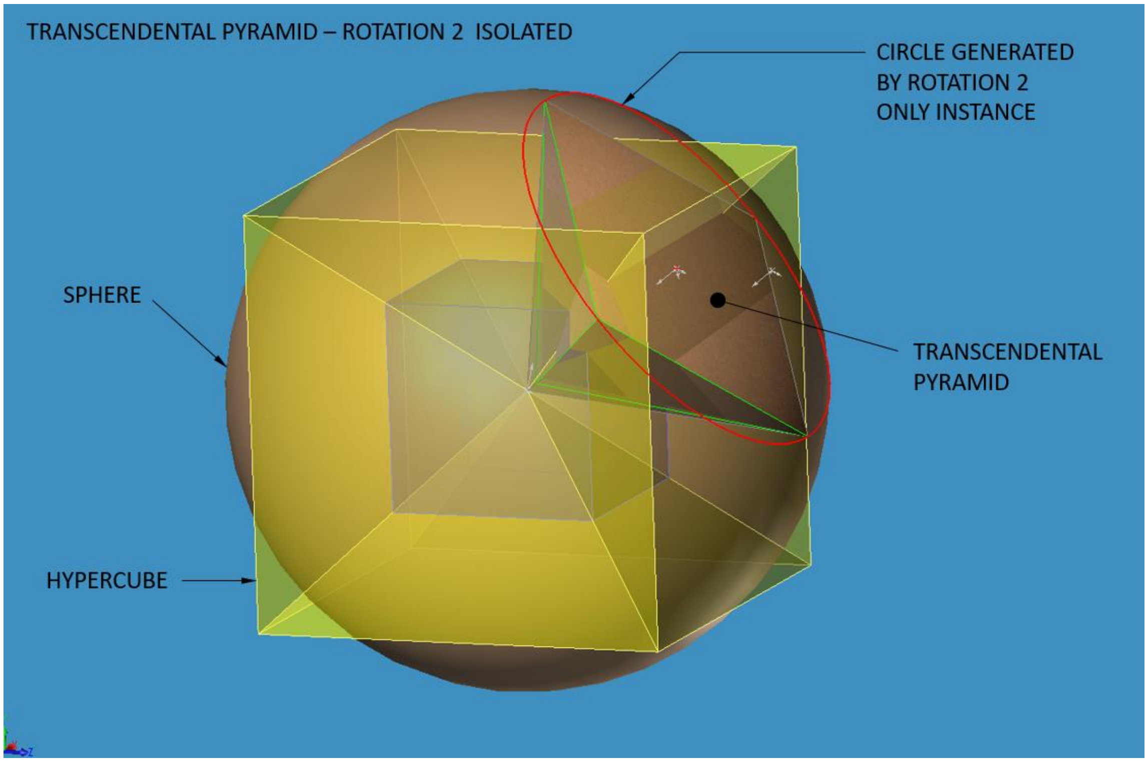


FIG. 27. Transcendental Pyramid Base Inscribes Rotation 2

Note that in FIG. 25 and FIG. 26 two instances of the Rotation 1 circle are shown. Diagrammatically, two circles are shown to emphasize the fact that when the Transcendental Pyramid is swept completely around the sphere in both Rotation 1 and 2, all four pyramid base points experience the generated circle of Rotation 1. This fact requires that two Rotation 1 circles be shown to cover all four base points.

From the perspective of Nonspecific Geometry, these two circles have the capacity to drive and shape the vibrations of the Transcendental Pyramid in its zone of uncertainty (ω) as it rotates and sweeps the sphere. The peculiar diagrammatic zone of uncertainty speculated to exist encoded at Giza is the proposed result.

To reach this conclusion, it is important first to understand a basic mode of vibration of a circle in its zone of uncertainty (ω). FIG. 28 shows a fundamental mode of vibration in a circular zone of uncertainty. In this example in the figure, the circle vibrates radially (grows and shrinks in circumference) centered in its zone of uncertainty. This motion emulates the heritage of the transcendental number Pi (π) in a circumference calculation. As the magnitude of π continually fluctuates in its never ending, non-definite manner, the resulting smearing of the value of the circumference of the circle is reflective of the behavior of vibrations in the circle's zone of uncertainty in Nonspecific Geometry.

Actually, in this model, the above vibratory scheme is initially generated by the analog sphere itself as it oscillates in its three-dimensional zone of uncertainty (ω) in a fundamental manner. See FIG. 29. The driving circles of Rotation 1 and 2, by being on the surface of the sphere, sympathetically match their respective basic motions in their zones of uncertainty to those of the sphere.

If the circles generated by the Transcendental Pyramid base during Rotation 1 and Rotation 2 are given the above described fundamental vibratory mode in their zones of uncertainty, then the hypothesized deformation or vibrational patterns of the pyramid's sidewalls encoded at Giza can be seen to develop in their associated zones of uncertainty (ω). See FIG. 30 and FIG. 31.

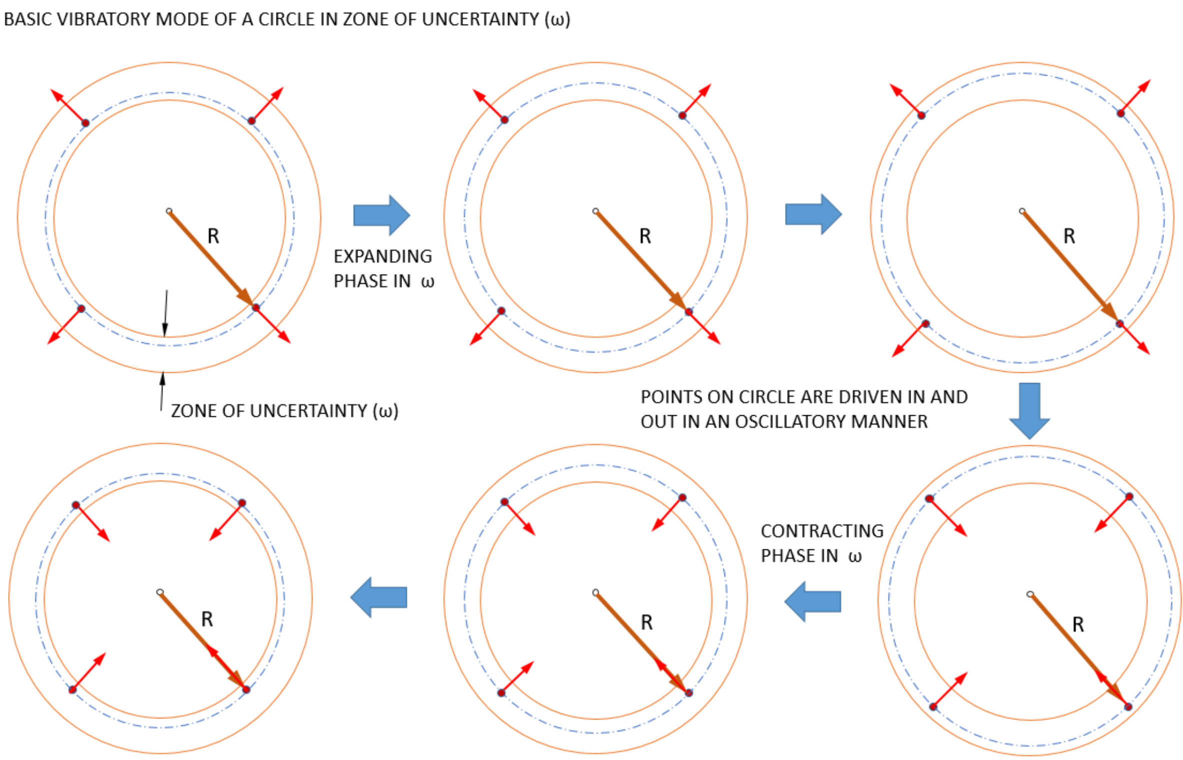


FIG. 28. Fundamental Oscillating Vibratory Mode of a Circle in Zone of Uncertainty

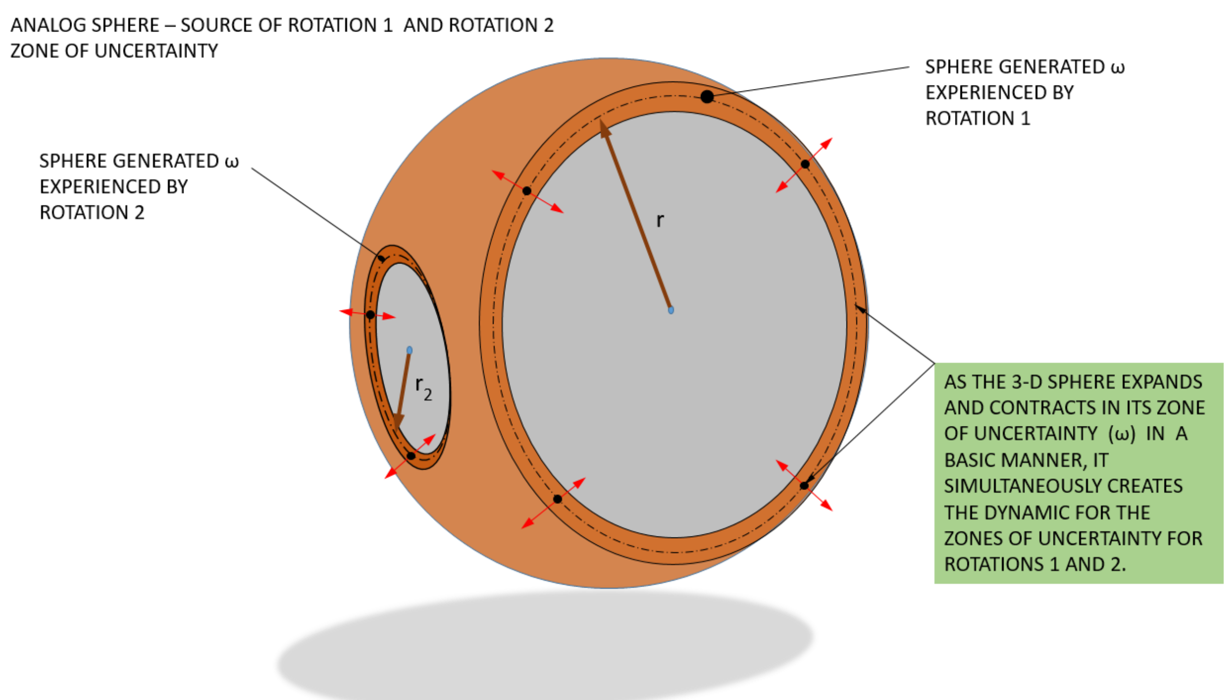


FIG. 29. Analog Sphere Generates ω for Rotation 1 and 2

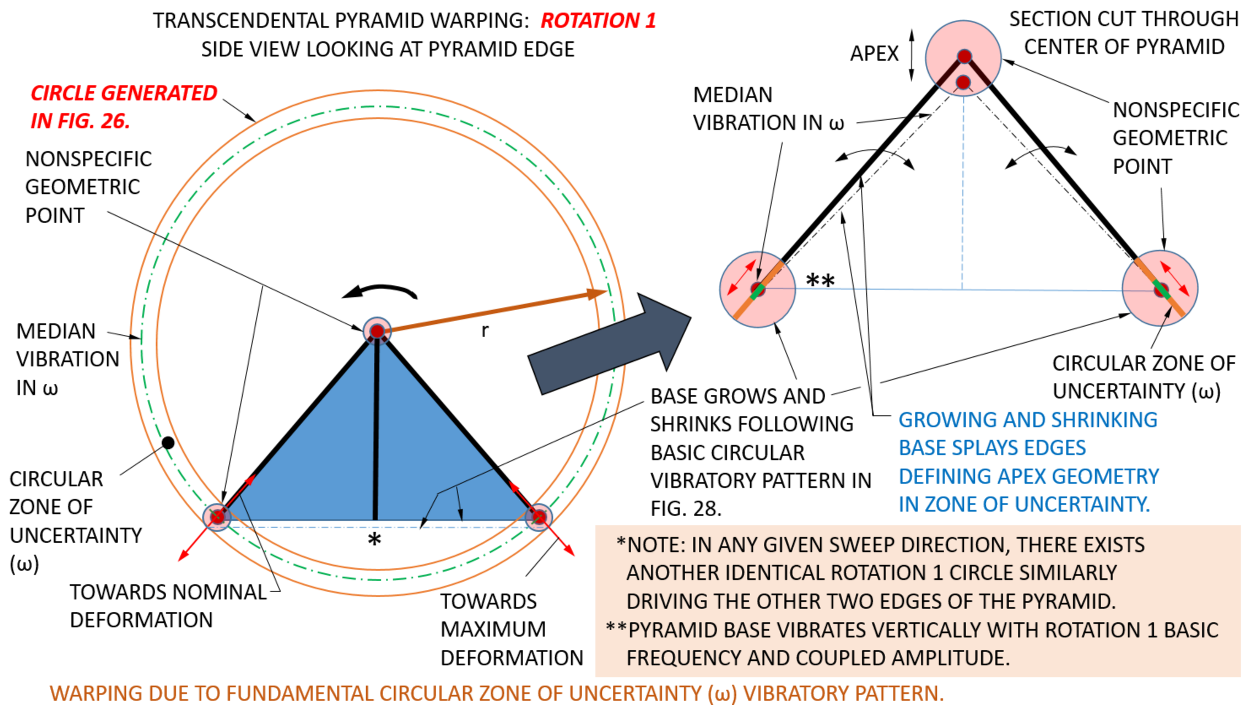


FIG. 30. Rotation 1 of Transcendental Pyramid

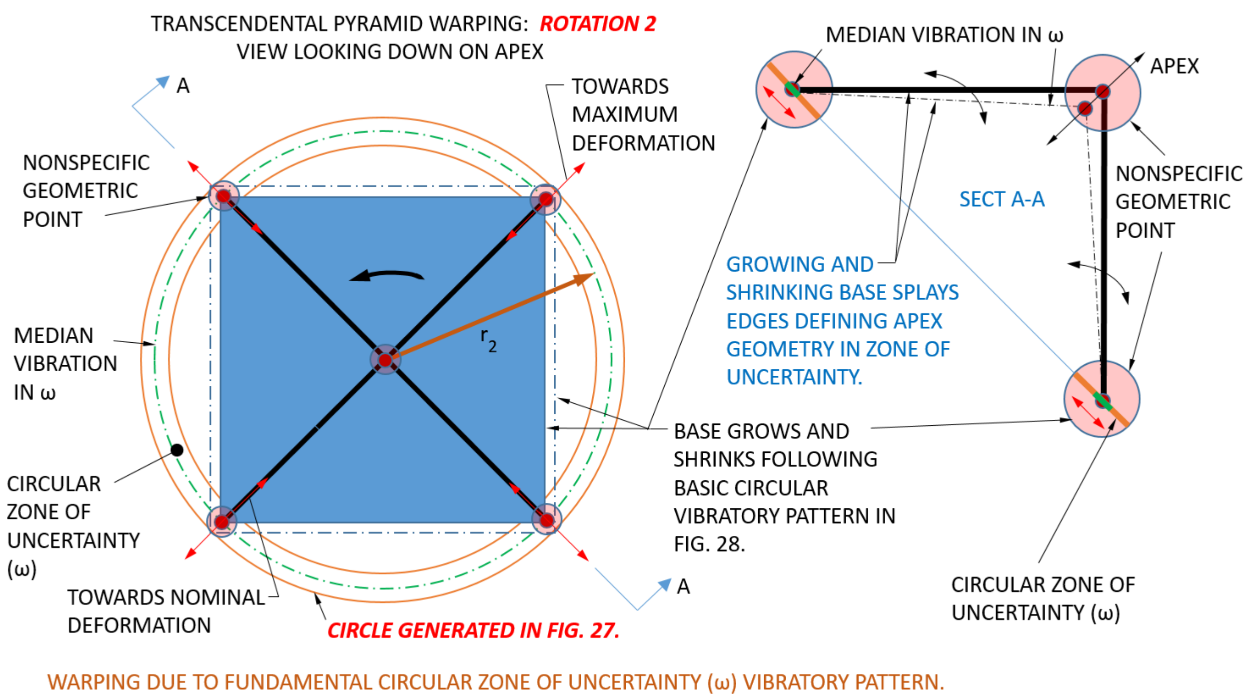


FIG. 31. Rotation 2 of Transcendental Pyramid

In FIG. 30, the Transcendental Pyramid is shown frozen as it spins during Rotation 1. It is thought that the base endpoints experience the basic circular vibration pattern (frequency and amplitude) imparted to them during rotation where they intersect the circle generated by Rotation 1. This boundary between the continuous, analog space and the zone of uncertainty of the pyramid creates a fundamental imbalance or dynamic in unextended space. The oscillations of the circle in its zone of uncertainty (ω), or unextended space, are conjectured to periodically drive the Transcendental Pyramid by deforming the base and by splaying its non-base edges in the zone of uncertainty (ω) that surrounds the pyramid. As the lines that define the Transcendental Pyramid non-base edges are "pulled and pushed" in the zone of uncertainty in response to the circle's driving actions, it is hypothesized that in unextended space (or ω) the apex of the pyramid is pulled downward or pushed upward in response. Thus, cyclic rotary motion is induced in the sides of the pyramid. (A more developed mechanics might shed light on the details of why this speculated phenomenon occurs.)

In FIG. 31, Rotation 2 deforms the base of the Transcendental Pyramid, and thus, splays the non-base edges of the pyramid in the pyramid's zone of uncertainty in a manner similar to Rotation 1 but in a different direction relative to Rotation 1. Once again, the basic oscillations of Rotation 2's circle in its zone of uncertainty cause periodic contraction and expansion of the pyramid's base which in turn forces the pyramid's non-base edges to be "pushed or pulled" in ω. The Transcendental Pyramid's apex reacts by being pulled downward or pushed up in unextended space as in Rotation 1.

It is important to remember that the *driving* frequencies and amplitude variation for both Rotation 1 and Rotation 2 are the same and originate in the analog sphere's three-dimensional zone of uncertainty. The sphere in this model modulates a basic three-dimensional vibratory pattern in its zone of uncertainty (ω) that is "read" by the Transcendental Pyramid by means of deformation or vibration localization in its zone of uncertainty (unextended geometry) during Rotation 1 and Rotation 2.

Although the deformations in the Transcendental Pyramid have been determined along and normal to the non-base edges, the deformation pattern and geometric ratios remain similar to those diagrammatically encoded at Giza that are found by cutting through the center of a Transcendental Pyramid face. See FIG. 32.

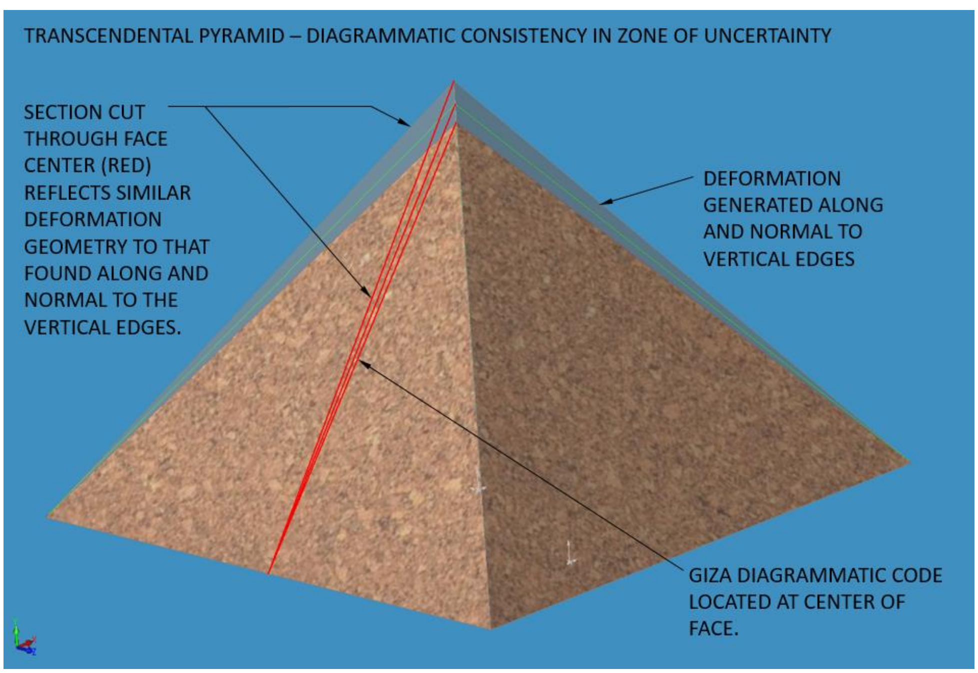


FIG. 32. Transcendental Pyramid Diagrammatic Consistency

Information Handling in the Transcendental Pyramid

Now that variable information content (frequency and amplitude input) has been read from a sphere (representative of analog, continuous space) and has been conveyed to the Transcendental Pyramid via deformation [vibration localization in the pyramid's associated "warped" zone of uncertainty (ω)], the pyramid must now display, hold, and react to these continuous, cyclic patterns and fluctuations in order to pass them to the hypercube representative of the digital universe. FIG. 33 – FIG. 35 suggest how analog driven frequencies and amplitudes are expressed in the Transcendental Pyramid.

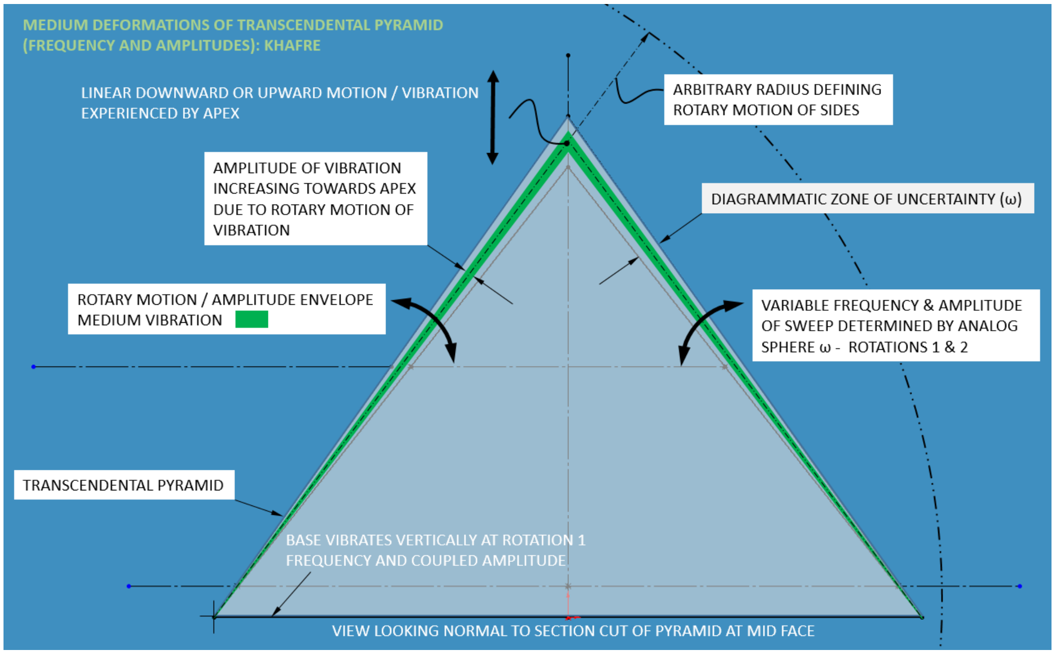


FIG. 33. Medium Level Vibration in Transcendental Pyramid: Khafre

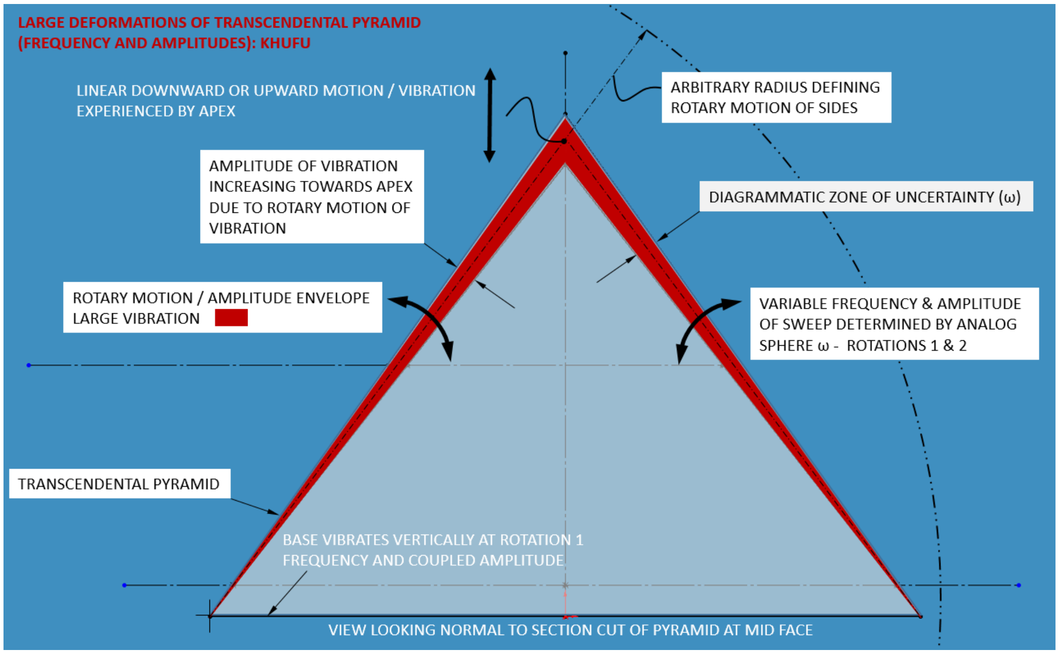


FIG. 34. Large Level Vibration in Transcendental Pyramid: Khufu

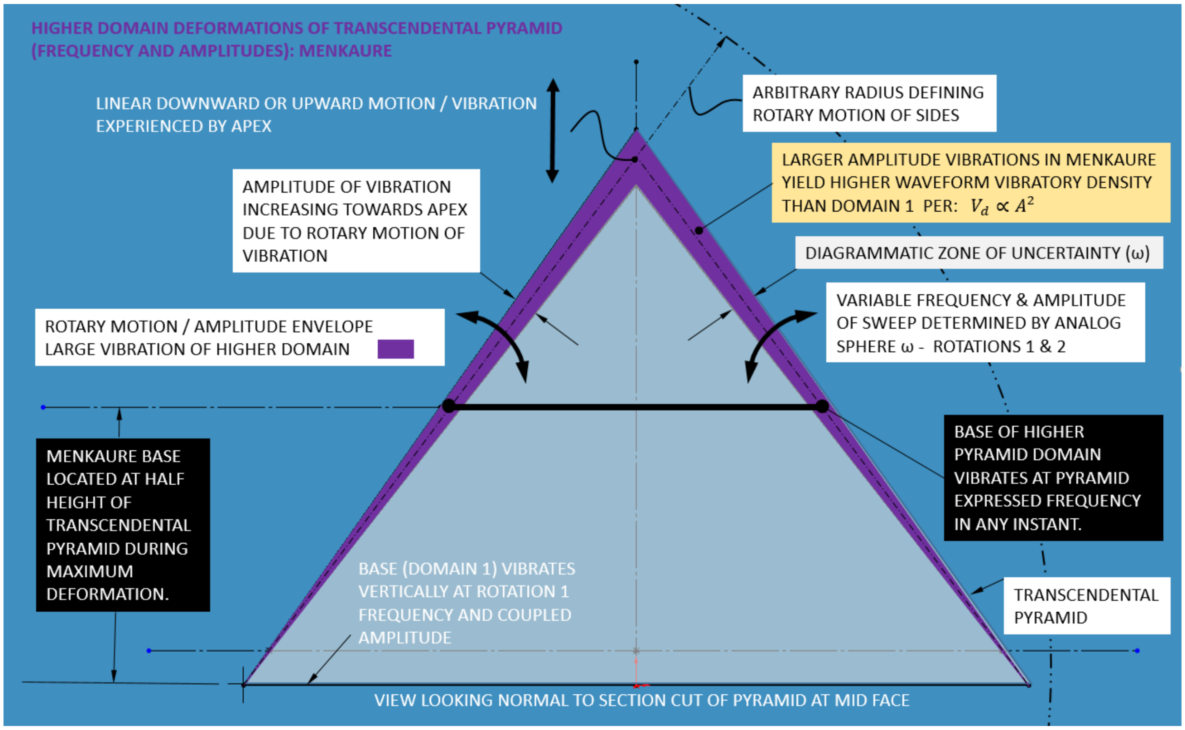


FIG. 35. Next Domain Vibration in Transcendental Pyramid: Menkaure

FIG. 33 – FIG. 35 reflect the fact that in all vibratory modes of the Transcendental Pyramid the amplitude of the cyclic deformations in the zone of uncertainty increases linearly as one moves toward the apex. Consequently, the waveform vibratory density of successively higher pyramid domains (those whose base is moving toward the apex and have larger average amplitude variation as a result) grows as well in the geometric model per the relation:

$$V_d \propto A^2$$

Where V_d is waveform vibratory density and A is waveform amplitude.
Waveform vibratory density equates to energy density in a physical system.

Menkaure's base is located and specified to be halfway up the Transcendental Pyramid's height during maximum deformation by Giza; this fact indicates that a "medium or middle jump" to the next pyramid domain is preferred under some conditions in nature that are to be determined. See The Red Square Nebula in FIG. 13. Note that the energy density in the nebula appears to increase in the higher hypercube domains. The Red Rectangle Nebula also in FIG. 13 similarly displays increasing energy density in higher hypercube domains. However, its domains are not spaced at half step intervals. As will be shown, Transcendental Pyramid domains directly correlate with hypercube domains.

In summary:

$$f_{tp} = f_r = f_{r_2} = f_{as}$$

Where f_{tp} = the frequency of the Transcendental Pyramid
f_r = the frequency of Rotation 1 driving circle
f_{r_2} = the frequency of Rotation 2 driving circle
f_{as} = the frequency of the analog sphere

$$A_{tp} = A_r + A_{r_2}$$

Where A_{tp} *= the amplitude of the Transcendental Pyramid apex deformation*
A_r *= the amplitude of apex deformation induced by the Rotation 1 driving circle*
A_{r_2} *= the amplitude of apex deformation induced by the Rotation 2 driving circle*

See FIG. 36 below for a graphic summary of Transcendental Pyramid amplitude distribution and magnitude.

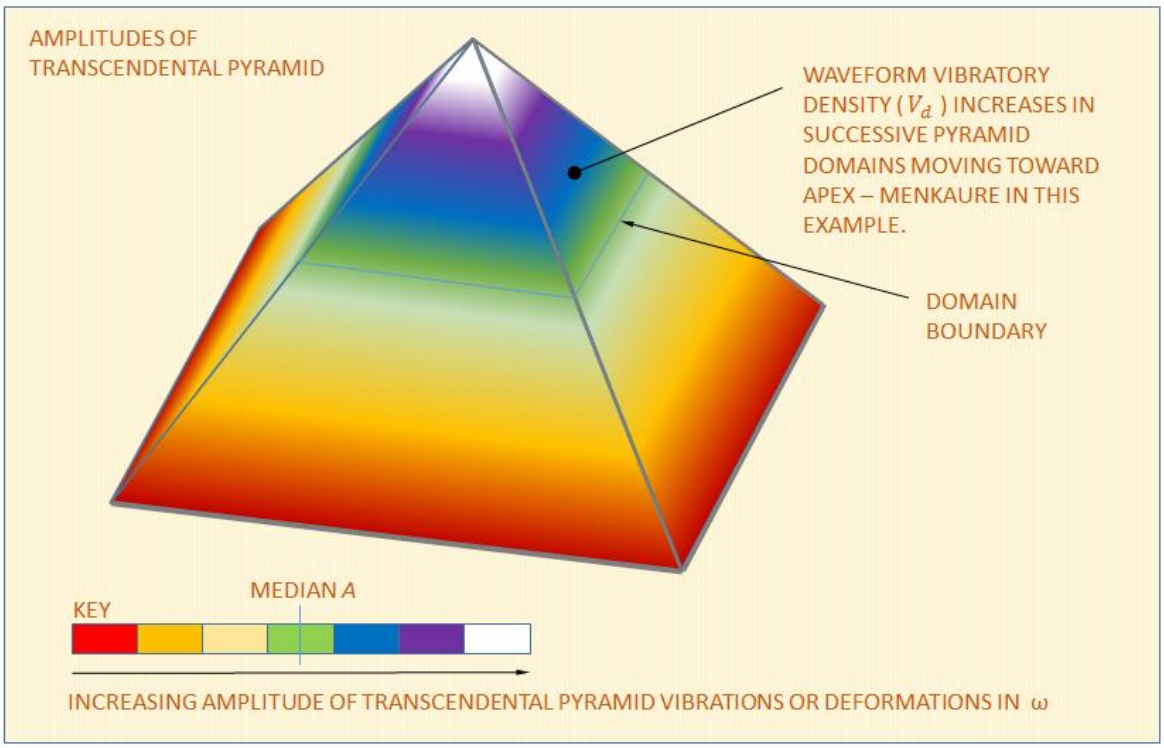


FIG. 36. Color Coded Amplitudes in Transcendental Pyramid: Featuring Menkaure

Excitation of the Hypercube

The Transcendental Pyramid performs three tasks simultaneously. First, as discussed previously, it must read the state of continuity present in the analog universe which is represented by the nonspecific geometry of a sphere. Secondly, the read information from the analog universe is actively stored in the zone of uncertainty (ω) of the pyramid via driven frequencies and amplitude localization. Lastly, the Transcendental Pyramid must “download” the continuously stored and updated information into the hypercubes of the hypercube tessellation to manifest the proposed digital universe.

As the Transcendental Pyramid sweeps around the analog sphere gathering input, it at the same time, distributes its vibrational state in ω to the hypercube found at the center of each analog sphere in this model. See FIG. 37. This transfer of information is conjectured to occur when the pyramid edges become periodically coincident (red in the figure) with hypercube native geometry as the pyramid rotates within the sphere. The vibratory state of the pyramid's edge in ω imbues the same zone of uncertainty geometry and dynamics into the hypercube structure defining hypercube domains.

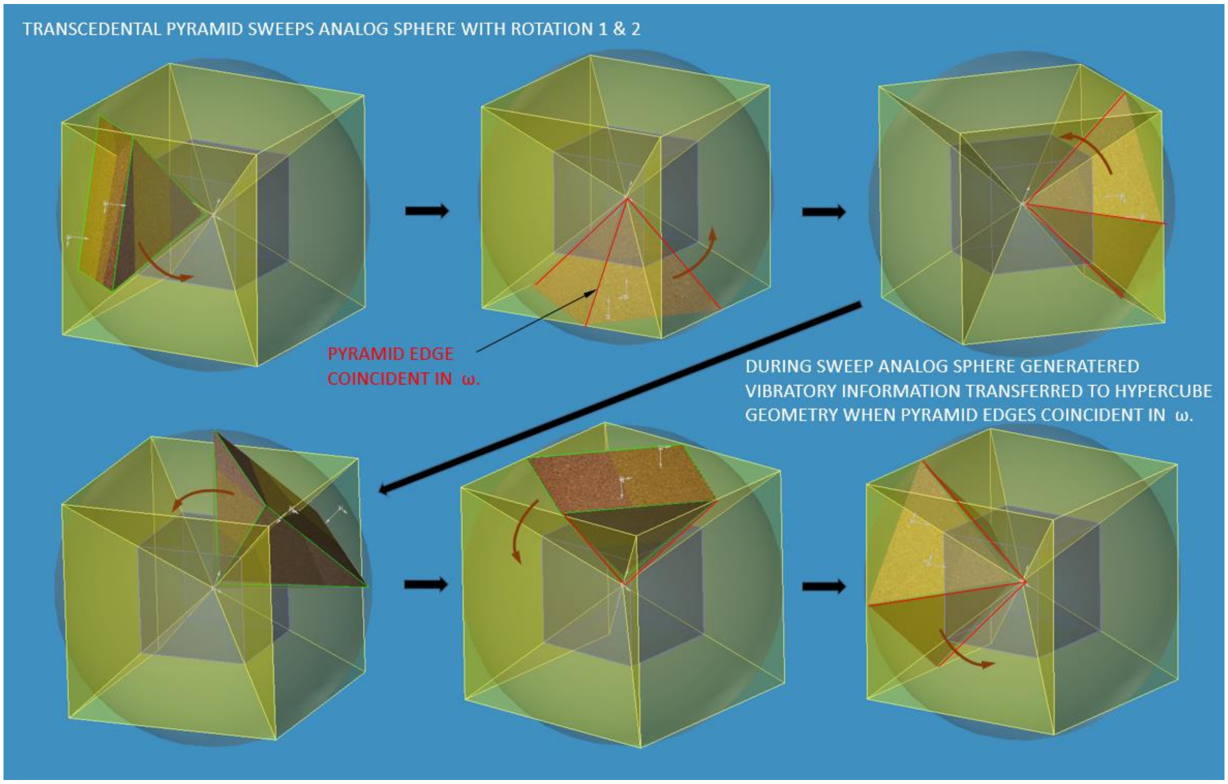


FIG. 37. Hypercube Receives Transcendental Information

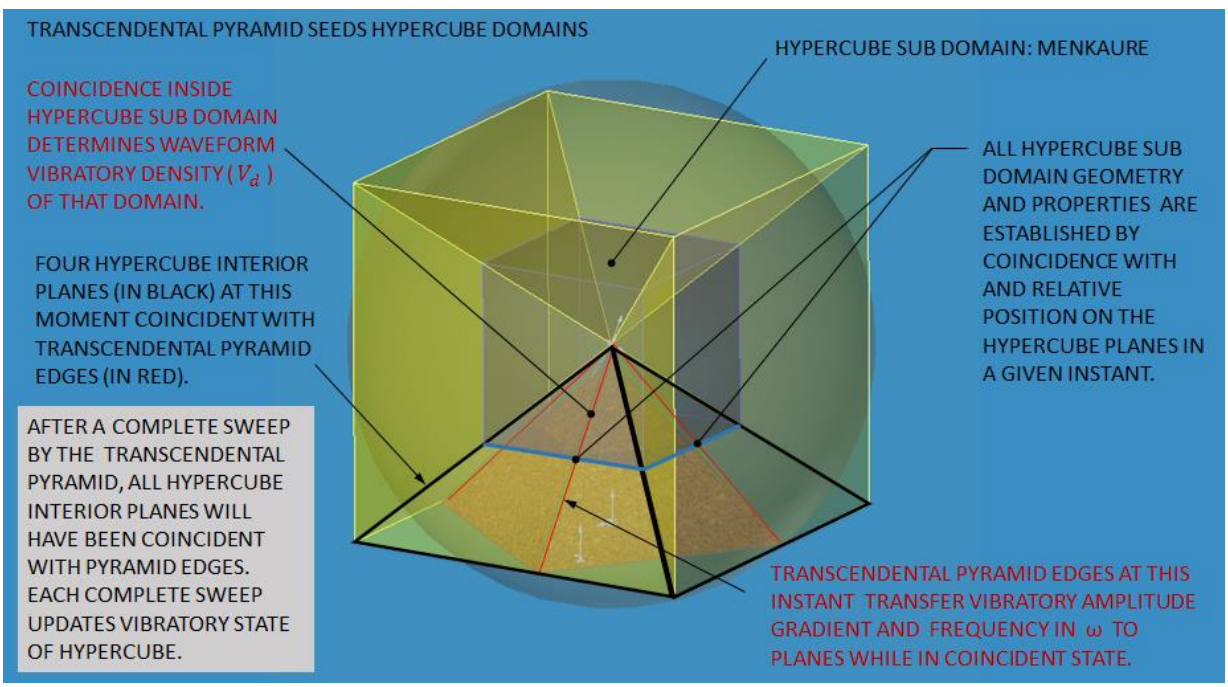


FIG. 38. Hypercube Domains Established by Transcendental Pyramid

In FIG. 38, the planes defined by the hypercube diagonals are seeded with amplitude and frequency Information that originates in the Transcendental Pyramid's zone of uncertainty (ω). As seen in FIG. 38, hypercube sub domains are also established by the hypercube interior planes during coincidence with the pyramid's edges. Each hypercube sub domain geometry specifies a unique waveform vibratory density (V_d) based upon the amplitude gradient that the pyramid edges transmit into the hypercube's interior planes and the sub domain's position relative to the Transcendental Pyramid apex. The closer that the hypercube sub domain geometry is to the apex, the higher the waveform vibratory density it holds. The vibratory mode or pattern of a particular hypercube domain or sub domain is thought to correspond to a unique Standard Model particle or photon.

FIG. 39 highlights the fact that hypercube sub domains can be seen to be driven in content by corresponding Transcendental Pyramid sub domains that match in position relative to the pyramid apex. There are an infinite number of hypercube sub domains defined by the Transcendental Pyramid amplitude gradient existing in ω and by nonspecific geometry: relative uncertainty itself. Within each hypercube sub domain exists three isolated mutually perpendicular dimensions as described earlier in the text. Both relative uncertainty and the amplitude gradient isolate the hypercube sub domains from each other.

As graphically shown in FIG. 39, higher waveform vibratory densities in the hypercube are found in the higher, innermost to the apex, hypercube sub domains. This phenomenon is what is seen in the nebulae photos in FIG. 13 with more light (energy) visible in the inner sub domains of the apparently large, scaled hypercubes in space. (In a real physical system energy density equals waveform vibratory density.) The light visible in the nebulae is most likely a byproduct of a higher energy, unseen dynamic or process that is isolated from detection because it is projected or exists in higher hypercube sub domains. However, the resulting or residual pattern of visible light can be seen and imaged in the hypercube sub domain of the camera lens.

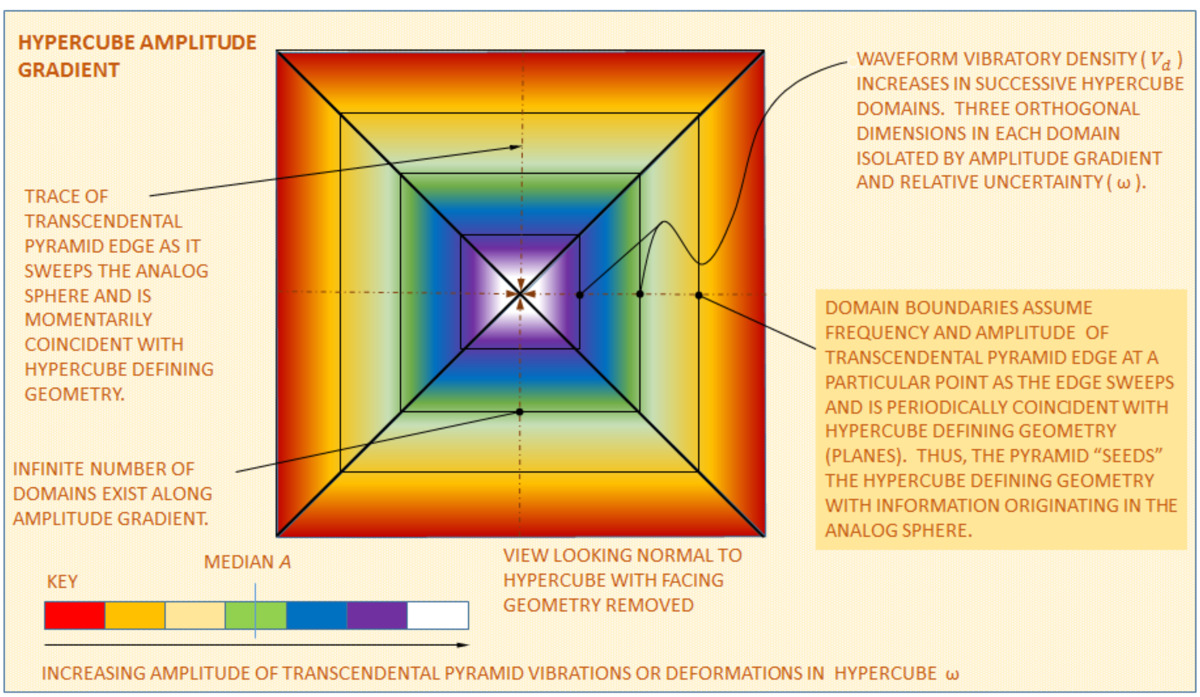


FIG. 39. Color Coded Amplitudes in Hypercube

Summary

Armed with the ideas that are central to Nonspecific Geometry, the large pyramidal objects on the Giza Plateau can be analyzed and given meaning consistent with both the issues and the clarity that the new geometry brings. Constructing points, lines, and planes out of a duality of inwardly and outwardly bound space creates infinitesimals with internal dynamics that support the infinities and the uncertainties usually marginalized in more typical analysis.

Applying these concepts to a study of space reveals that an infinite distance separates two, nonspecific geometric points. To solve this continuity dilemma, a separate digital (noncontinuous) space and an analog (continuous) space were proposed to exist simultaneously in a dual state. The analog source space bridges the infinity of "distance" by definition and provides information continuity to the digital space. This process is called transformation. In essence, the digital universe or space is a projection of the analog universe or space.

A hypercube tessellation was developed to satisfy the dimensional and digital context required for the noncontinuous space of direct experience. Photographic evidence of this supposition in regards to the digital universe was provided by images of two nebulae which strongly resemble hypercube geometry and that are currently unexplained.

Furthermore, geometric solids/domains were shown to be enveloped by a zone of uncertainty in absolute position symbolized by the Greek letter omega (ω). By embracing the zone of uncertainty, useful dynamics were discovered to aid in decoding Giza's probable meaning. Higher dimensions in the digital universe were argued to result from the relative uncertainty that exists between hypercube domains and from the waveform density gradient that results from the transcendental translation of information from the analog universe.

A Transcendental Pyramid was discovered in and defined by hypercube native geometry. By means of two rotations, this pyramid is thought to read the vibratory state of a sphere by deforming in its zone of uncertainty (ω). The sphere generated by the rotation and sweeping motion of the Transcendental Pyramid base represents continuity and thus, the analog, continuous universe. The Giza Pyramids Khufu, Khafre, and Menkaure are proposed to be diagrammatic in nature and show important deformation/vibratory boundaries of the zone of uncertainty in the Transcendental Pyramid as it processes information (both frequency and amplitude) from the analog sphere. Each hypercube in the noncontinuous space has access to the information content of the sphere through the Transcendental Pyramid mechanism described above which at the same time warps hypercube internal geometry in the zone of uncertainty. As a result, transformation is enabled and continuity preserved. See FIG. 40.

The mechanics derived are of a basic nature and provide a framework for further investigation and detail. While this proposed structure is of necessity geometric to handle the infinities that present themselves in the analysis, the actual physical elements that are organized and explained by this geometry are not known at present. Perhaps a linearly polarized light field creates the digital universe and a circularly polarized light field comprises the analog universe. Since all Standard Model particles are thought to originate in photonic collisions, this conjecture may bear investigation.

As a footnote and conclusion to this summary, it was mentioned earlier in the text that the Giza Pyramid Khafre in FIG. 18 has thirty-three feet of its base shaved off which corresponds to the real pyramid sitting on land that is thirty-three feet higher than Khufu's base. Since Khafre represents a mid-level or average deformation of the Transcendental Pyramid, then it would not be unreasonable to posit that Khafre could be a cosmic "you are here sign" in terms of average energy density on Earth. Khafre symbolically buried in the ground thirty-three feet points to a rather lowly spot on the Transcendental Pyramid. This fact is indeed humbling in the greater scheme of things…

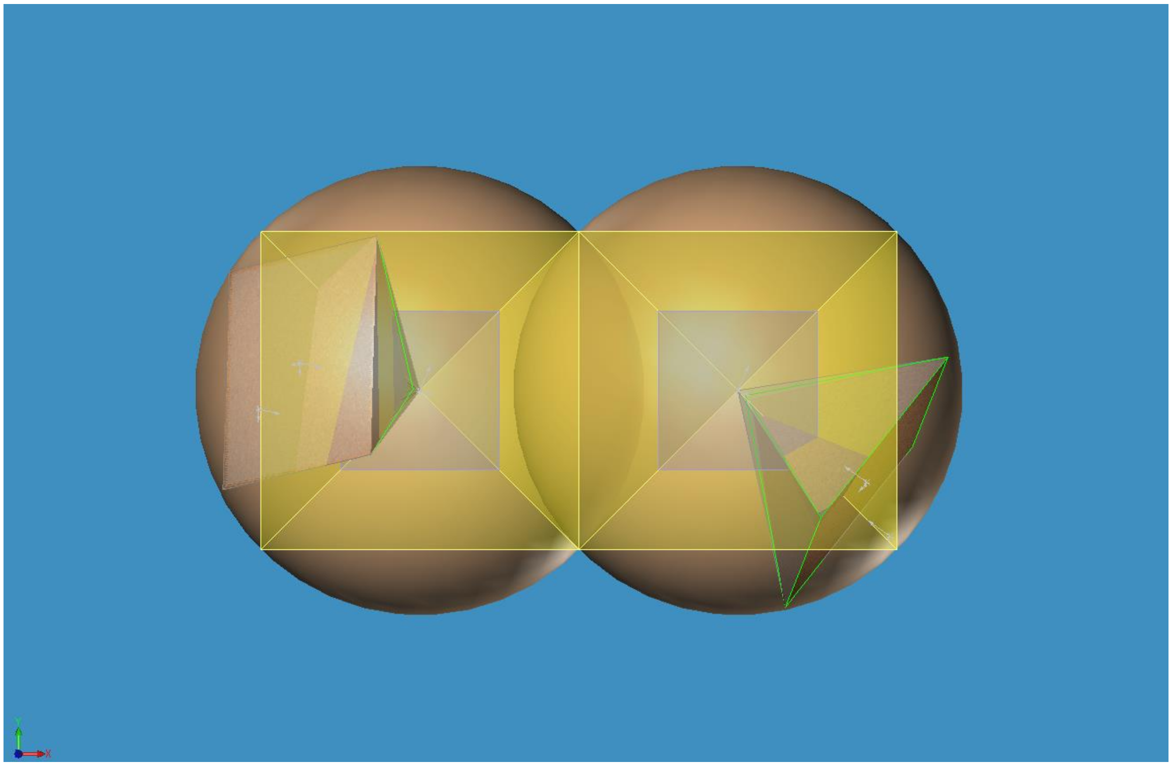


FIG. 40. Elements of a Dual Universe in Action