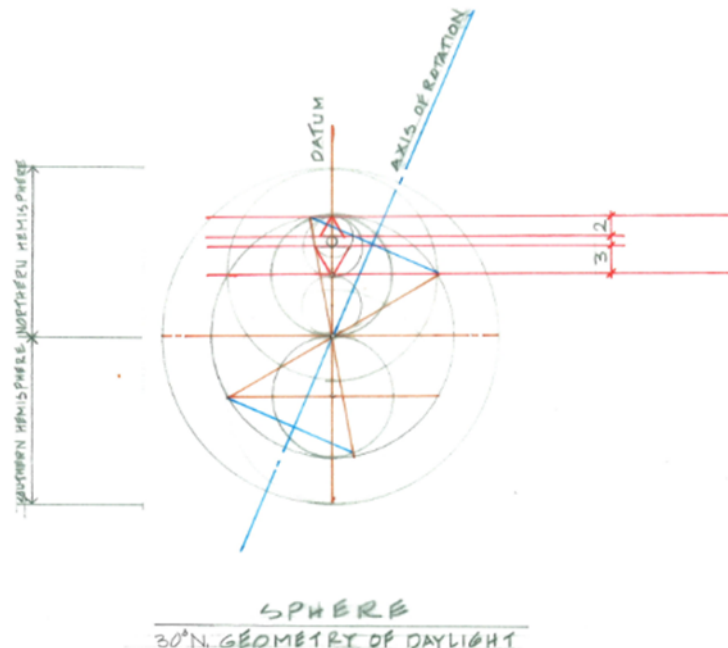


THE ART OF PROPORTIONS

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INTRODUCTION: “Trick or Truth: the Mysterious Connection between Physics and Mathematics”. The answer to this question, will solve major problems that has tangled-up our current arithmetic system and stumped the great mind of Albert Einstein. We must solve the proportional glitches inherent in our reckoning system, to arrive at the Holy Grail of science. It will be the art of proportions, which will open the doors to an all-encompassing concept that encapsulates the modules of nature into an algebraic equation expressed in form. The metrology of earth will define and support the thought experiments expressed in the mathematical principles of this Essay. Although zero, a concept of nothing that surfaced in India and later introduced into the Arabic number system is a useful manmade tool when applied as a place value, it's numerical assessment cannot be utilized to synchronize the geometric characteristics of large and small bodies, the proportional relationship that exists between physics and mathematics falls apart when the sequence crosses zero. Instead of using zero in the calculations, a system that captures the metrology of daylight in square and triangular form can be used, reducing the modules of daylight proportionally, ultimately arriving at a .666 module that defines the metrology of nature (**fig.2**). Understanding how to operate this ancient concept will resurrect a long lost language of mathematics, and lead mankind in a voyage of discovery, which will open the gates to a new frontier of scientific exploration.

The merger that took place in the Greco-Roman world between religious life and the Roman Empire also took place between religion and the mathematical teachings of the era. Therefore, it is logical to connect the Roman-Neopythagorean concepts of Nigidius Figulus, Apollonius of Tyana, and Nicomachus of Gerasa, with the emerging religion of Christianity (Dantzig, 44). Consequently, it was this milieu of scientific knowledge rooted in ratios of daylight that was embedded in the wisdom of the New Testament, a wisdom based on mathematical ideas that will be used to support the principles outlined in the body of this Essay (**fig.1**). The root of the ancient formula that defines the geometry of nature lies in the interpolation of ratios of daylight between the longest and shortest day of the year, a proportional ratio encapsulated in an algebraic equation expressed in form (**fig.2**). An equation that crosses scales between large and small bodies without ever reaching zero, as a result the circuitry of numbers is never broken.



(fig.1)

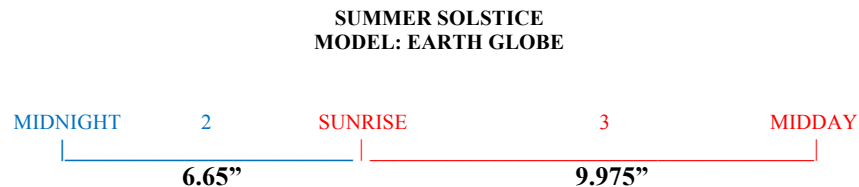
METROLOGY OF DAYLIGHT 30° N: Blue indicates a segmental portion of darkness of the a.m. cycle (SUB-A.M.). Red indicates a segmental portion of daylight of the a.m. cycle. The module of time defines the metrology of the unified laws of physics, and they are governed by the rotation of the earth: **midnight to sunrise**; **sunrise to high noon**. One solar cycle equals 360°, and the movement outlines the earth's daylight orbit trek, solstice to solstice to solstice. Half a cycle equals one phase of the sequence (180°) or a movement from solstice to solstice. Half a cycle or half of the 360° orbit trek defines a metrology that matches proportionally half a revolution, or half a spin cycle of the earth about its axis of rotation.

The A.M. sequence is divided into two segments, a segment of **darkness** and a segment of **daylight** (SUB-A.M. and A.M.). On June 21, the longest day of the year, summer solstice, the sun rises at **4:59 A.M.** Therefore, between **midnight and sunrise** there are **4 hours and 59 minutes** of darkness; converting the time span into minutes, equals $(4 \times 60) + 59 = 299$ minutes; or $299 \times 60 = 17,940$ seconds; between **sunrise and 12:00 o'clock** there are $12:00 - 4:59 = 7:01$, seven hours and one minutes of daylight. Converting the daylight time span into minutes, equals $(7 \times 60) + 1 = 421$ minutes (Ayiomamitis, "Solar Image Gallery-Analemma"). The vertical alignment of the **Sun's Analemma curve** 12:28:16 UT+2 Jan 12/02- Dec 21/02 *Parthenon, Athens, Greece*; took place at 12:28:16 not 12:00 o'clock [4]. Therefore, by interpolating this data, we need to add the extra 28 minutes and 16 seconds to the daylight cycle from **sunrise to high noon**: $(7 \times 60) + 1 = 421 + 28$ equals 449 minutes or $[(449 \times 60) + 16 = 26,956$ seconds]. Using a proportional analogy we can find the ratio between **midnight to sunrise**: **sunrise to high noon**. **Darkness, midnight to sunrise ÷ Daylight, sunrise to high noon = 2 ÷ 3:**

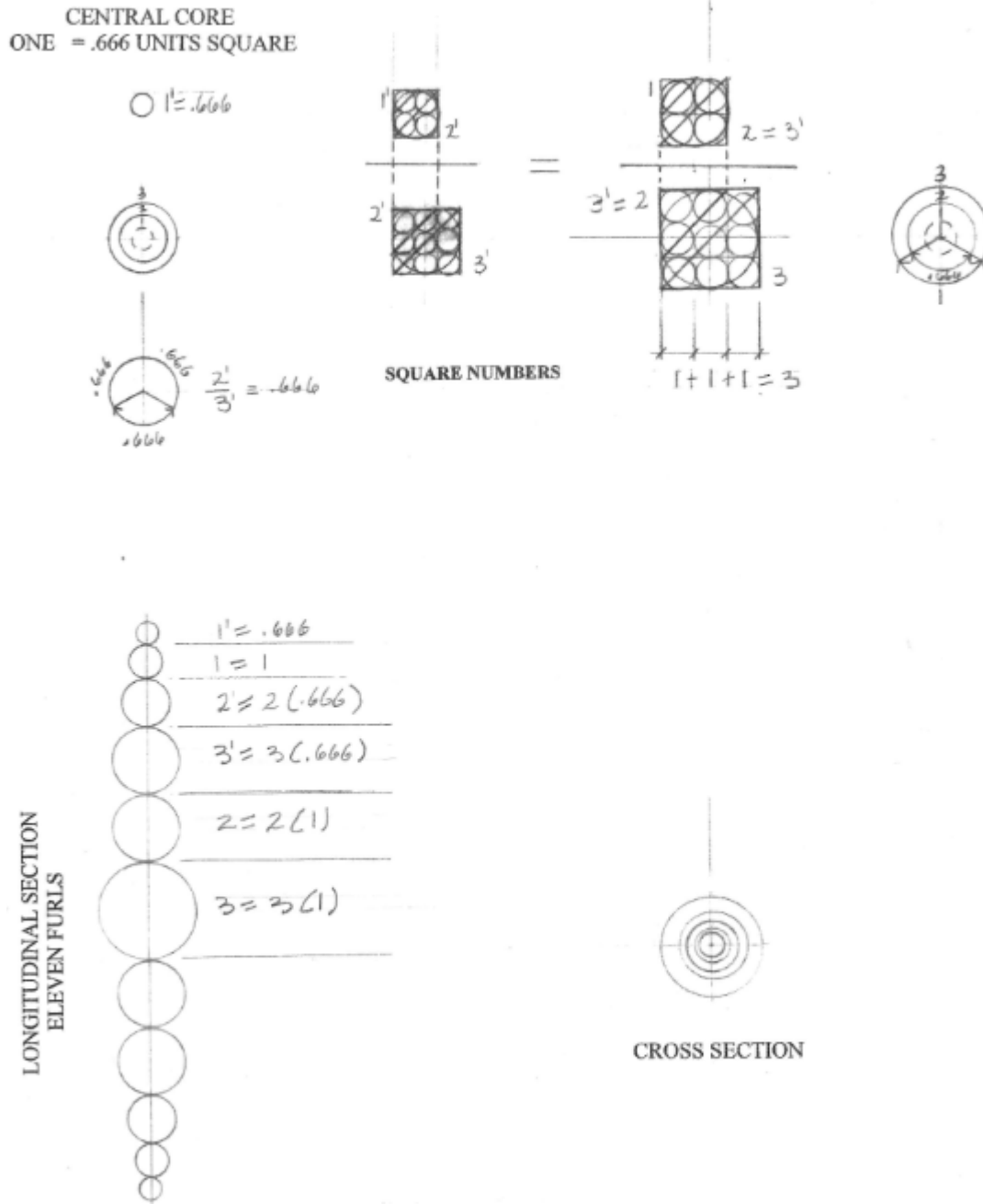
$X / 26,956 = 2 / 3$; $X = (2 \times 26,956) / 3$; $X = 17,970.67$ seconds. The ratio between **midnight to sunrise**: **sunrise to high noon** is 2:3, the same proportional ratio of daylight (**sunrise to high noon**) that exists between **winter solstice (2)** and **summer solstice (3)**.

PROPERTIES OF CIRCULAR GEOMETRY: The curvature of ALL CIRCLES are defined by a 2:3; 3:2 proportional ratio. Thus the spherical geometry of all CIRCULAR BODIES are also defined by the 2:3; 3:2 curvature of its circumference. The earth's 30th parallel can be defined by a 30° line from its center point Q (center of spherical body) to the external circumference of the sphere, ground surface (**fig.1**). On earth any point along the 30th parallel spins about a 23.5° inclined axis of rotation, which elevates a surface point up and down between solstices in reference the earth's Y axis line. The linear distance of the 30th parallel line on the ground-surface is synchronized with a time module that is defined by the 2:3 proportional ratios of daylight. The circumference of the 30th parallel line can be quantified proportionally by assigning a linear distance between midnight and midday, this length is half the circumference of the 30th parallel line, divide the total length of this line into two proportional segments defined by a 2:3 ratio. Sequentially the distance of the 30° N parallel line, from midnight to sunrise is two units of distance, while sunrise to midday is three units, the proportional length of the five segments can be expressed as a 2:3 ratio ($2 \div 3 = .666$, the signature of earth, and *man*). The connecting surface point of the two linear segments correlates with the geographical coordinate points of sunrise in the northern hemisphere, a point that also aligns with the earth's Y-axis plane.

PHYSICAL PROOF: Model / earth globe, summer solstice. Scale: linear length of 30th parallel line, midnight to midday equals 16.625 inches. Ratio of daylight 30th latitude between midnight to sunrise; sunrise to midday equals 2:3, the proportional distance between midnight to midday adds-up to five equal units. The 2:3 ratio divided proportionally from midnight to sunrise equals 6.65 inches, sunrise to midday equals 9.975 inches, $(6.65'' + 9.975'' = 16.625'')$.



PROPORTIONAL LENGTH OF 30TH PARALLEL LINE (SUB-A.M. and A.M.)
Scale: earth's globe linear length - midnight to midday equals 16.625 inches



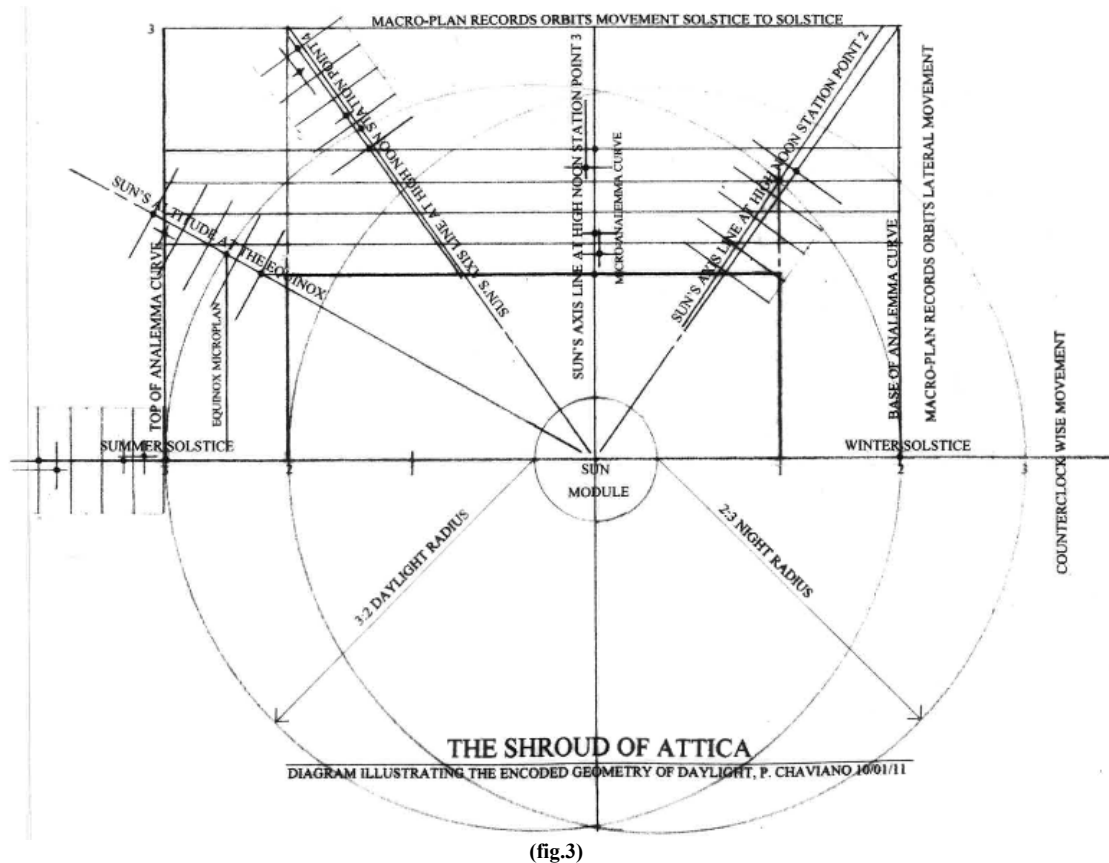
METROLOGY OF DAYLIGHT EXPRESSED IN SQUARE AND TRIANGULAR FORM

(fig.2)

FOUNDATION OF PYTHAGOREAN MATHEMATICS: The ratio of night at 30° N, summer solstice from midnight to sunrise is two, the ratio of daylight from sunrise to midday is three, $2+3 = 5$. The ratio of daylight from midday to sunset is three, the ratio of night from sunset to midnight is two, $3+2 = 5$; $5+5 = 10$. Ten, we have arrived at "Pythagoras perfect TEN" (Dantzig, 42) This system is simple, and because of its simplicity it is elegant, there is no need for exotic mathematics to arrive at the 2:3 proportional module of nature, $2 \div 3 = .666$; the signature of all spherical bodies, the metrology of the ideal Hellenic man and also the metrology of the suns/earth's Analemma curve. Additionally as stated by John in *The Book of Revelation*: "it is a number that stands for a person. His number is six hundred and sixty-six" (The New American Bible, 400) Algebraic equation expressed in form: when the 2:3 modules of daylight found in nature are stacked-up proportionally in an ascending and descending order, the column consists of eleven contiguous modules (fig.2): circle of one units (where $1 = .666$), circle of one unit (where $1 = 1$), circle of

two units (where $1=.666$), circle of three units (where $1=.666$), circle of two units (where $1=1$) followed by a circle of three units (where $1=1$), circle of two units (where $1=1$) circle of three units (where $1=.666$), circle of two unit (where $1=.666$), circle of one (where $1=1$), circle one (where $1=.666$). The circle of two units (where $1=1$) numerator of equation and the circle of three units (where $1=.666$) denominator, are equal in circumference. The longitudinal section of eleven modules outlined by the algebraic equating expressed in form matches Mathews in the “11-dimensional membranes” found in M-Theory (78).

SHROUD OF ATTICA: The length of the chord that connects **tangent point a**, and **tangent point b** proportionally correlates with **one arc of circle b**, (**fig.5**): four contiguous linear modules of **one of circle b** (one linear length of .666 units equals three contiguous circles with circumferences of .666 units) matches the height of the sun’s Analemma curve at high noon, plotted between winter and summer solstice (station point 1 to station point 5). The widest girth of the sun’s Analemma curve is defined by the earth’s orbit lateral movement, between station point 1 (winter solstice) and station point 2 (mid-quarters). This phase is defined by a 45° line from the sun’s CENTER POINT O, out to the orbit trek (an orbit point along the earth’s path that divides the winter solstice from the vernal equinox). The shallowest breadth of the Analemma curve is outlined by the orbit movement between station point 3 the vernal equinox and station point 4 (at mid-quarters), a curvature that is outlined on the opposite side of the solstice axis of the sun’s Analemma curve (the 2:3 ratio of daylight is caused by the asymmetrical location of the equinox point). The reversed mirror image of the curve is plotted by the return trip of the earth around the sun back to the winter solstice position. The Shroud of Attica plots the curvature of the sun’s Analemma curve (**fig.3**), at station point 1, 2, 3, 4, and 5 of the orbit trek. Geometric krater: attributed to the Hirschfeld Workshop, date: ca 750-735 B.C. Greek (The Metropolitan Museum of Art, “The Collection Online: Terracoter krater”).



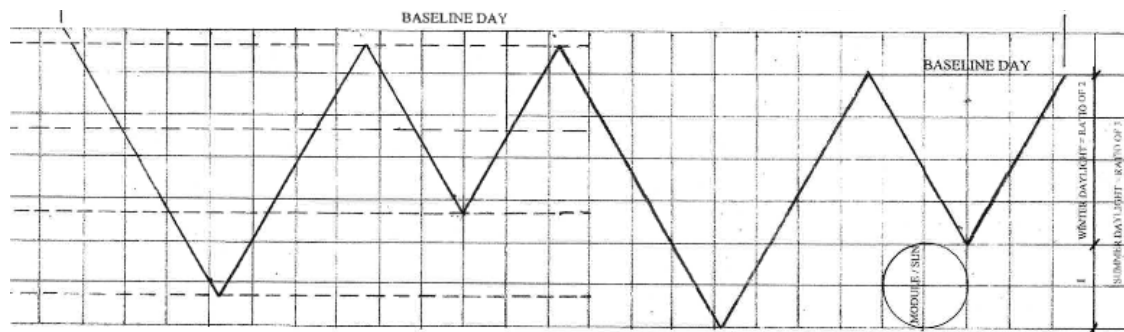
GEOMETRY OF DAYLIGHT EQUALS PARTICLE PHYSICS’ STANDARD MODEL CONCEPT: The 2:3 ratios of daylight is converted into a **circular module of three equal arcs**, the module of **one** is used to create a square with sides of **three** units and a pair of triangular forms, a triangle base **three** and a triangle base **two**; then the form is reduced to a square with sides of **two** units using the same module of **one**; the **two unit square** is divided into a pair of triangles, base one and base **two**. The triangle base one is converted into a square of one unit sides, one unit is then looped into a circle (**fig.5**). Interestingly this same metrology of form constitutes the identical properties found in the make-up of particle physics! Where three quarks makes up a proton (protons and neutrons have equal mass), and as captured in the matrix of the “Standard Model” (Lincoln, 39) the protons are divided into three generations: Up, Charm and Top all three quarks have a $+2/3$ electrical charge of the proton. The Down, Strange and Bottom quarks have $-1/3$ of the protons charge. Each generation expands in mass, to arrive at the $-1/3$ charge; in geometric form: the 1:2 ratio expressed in form is made up of a pair of triangles, a triangle base two and a triangle base one, and

the common module for both triangles is the module of one, where one is one of three; thus the module is $1/3$, matching the charge of the Down, Strange and Bottom Quarks.

ANCIENT MATHEMATICAL WISDOM: The correlation between the metrology of daylight and the mathematical wisdom found in John's vision in Revelation are the same, and to make sense of his mathematical clues outlined by the author "wisdom is needed here" must understand the prevailing Neopythagorean doctrine taught in the first century of the Common Era, when The Book Of Revelation was written (The New American Bible, Revelation 13:18). Therefore, by connecting the prevailing arithmetic exploration of "square and triangular numbers" (Dantzig, 43), we find the key that unlocks the secret world of John's apocalyptic message! The Neo-Pythagorean system of scientific exploration was rooted in the geometry of ratios of daylight: "on Earth as it is in Heaven" (The New American Bible, Matthew 6:9). This symbolic message found in Christianity's sacred text, is an accurate statement that defines the proportional laws of nature. The .666 circular modules inherent in the earth's geometry and the .666 module of the heavens are similar in form, yet different in scale, as documented in the attached drawing outlining the orbit motion (fig.6). The sun's Analemma curve is proportionally larger than the earth's Analemma curve, yet they are both similar in composition. The sun and the earth's Analemma curve both are defined by a central solstice axis line, this internal core is made-up of a column of sixteen contiguous modules of .666 units (fig.5). And it was this scientific exploration rooted in ratios of daylight which explains Protagoras' statement "Man is the measure of all things" (Gottlieb, 112). The shape of man is proportional to the earth/sun's Analemma curve. Thus Democritus' concept (circa 460 B.C.) of "atoms" also makes sense when arrived at using the 2:3 metrology of daylight, as articulated by a geometric equation expressed in square and triangular form (fig.5) (Gottlieb, 97). Ten proportional units equals the circumference of the earth's sphere at the 30th latitude, it is this geometric ratio ($2+3+3+2$) that provides the proportional metrology of all spherical forms. The 2:3 ratio of the earth's curvature is what frames the proportional size of the sun as seen from earth. The sequence of 1 to 2 to 3, is what defines the geometry of circular motion. The metrology of three in one was also clearly outline in Biblical Scripture. The Neo-Pythagorean knowledge encoded in the New Testament was derived from the 3:2; 2:3 geometry of daylight, a physical reality tied to the relationship that exists between the longest to the shortest day of the year, a derivative of the earth's orbit and orientation of the earth's axis of rotation during summer and winter solstices. This quantifiable ratio was directly encrypted in the numerology of three found in the New Testament. The ratio between the longest night, and the longest day of the year can be encapsulated into a mathematical ratio equal to 3:3.

Through rigorous observations of the sun's movement in the sky, I was able to assemble a series of drawings that lead to a methodology that expressed the ratio of daylight geometrically. Ultimately arriving at a proportional module equal to .666 units of circular motion. Yet to find supporting evidence that aligned with my research, I looked everywhere, including modern science and ancient philosophy, and it was in the past that I found mathematical concepts that mirrored my own thought experiments. "God created man in his image" (The New American Bible, Genesis 1:27) this descriptions correlates geometrically with the metrology of the earth and sun's Analemma curve (fig.5), and is tied directly to Protagoras' statement that "man is the measure of all things" (Gottlieb, 112). This modular system of measurement is encoded in the photographed image of the sun's Analemma curve (Ayiomamitis, "Solar Image Gallery- Analemma"). And in the 2:3 framework of triangular shapes that makes-up the composition of the engraved lines depicted in "the world's oldest example of abstract art" (Whitehouse, 2002), a sketch that was made approximately 70,000 years ago. It is critical to document that the Blombos matrix (fig.4) is a sophisticated calendar that tracked the movement of earth around the sun, and a 2:3 geometric pattern that can be used to interpolate the sun's own orbit in the cosmos. The baseline gap recorded in the matrix indicates the crossing of the solstice axis line by the earth's orbit movement, a physical girth tied to the earth's fixed axis of rotation, it monitors the leading and trailing position of a surface point between orbit phases (Whitehouse, 2002).

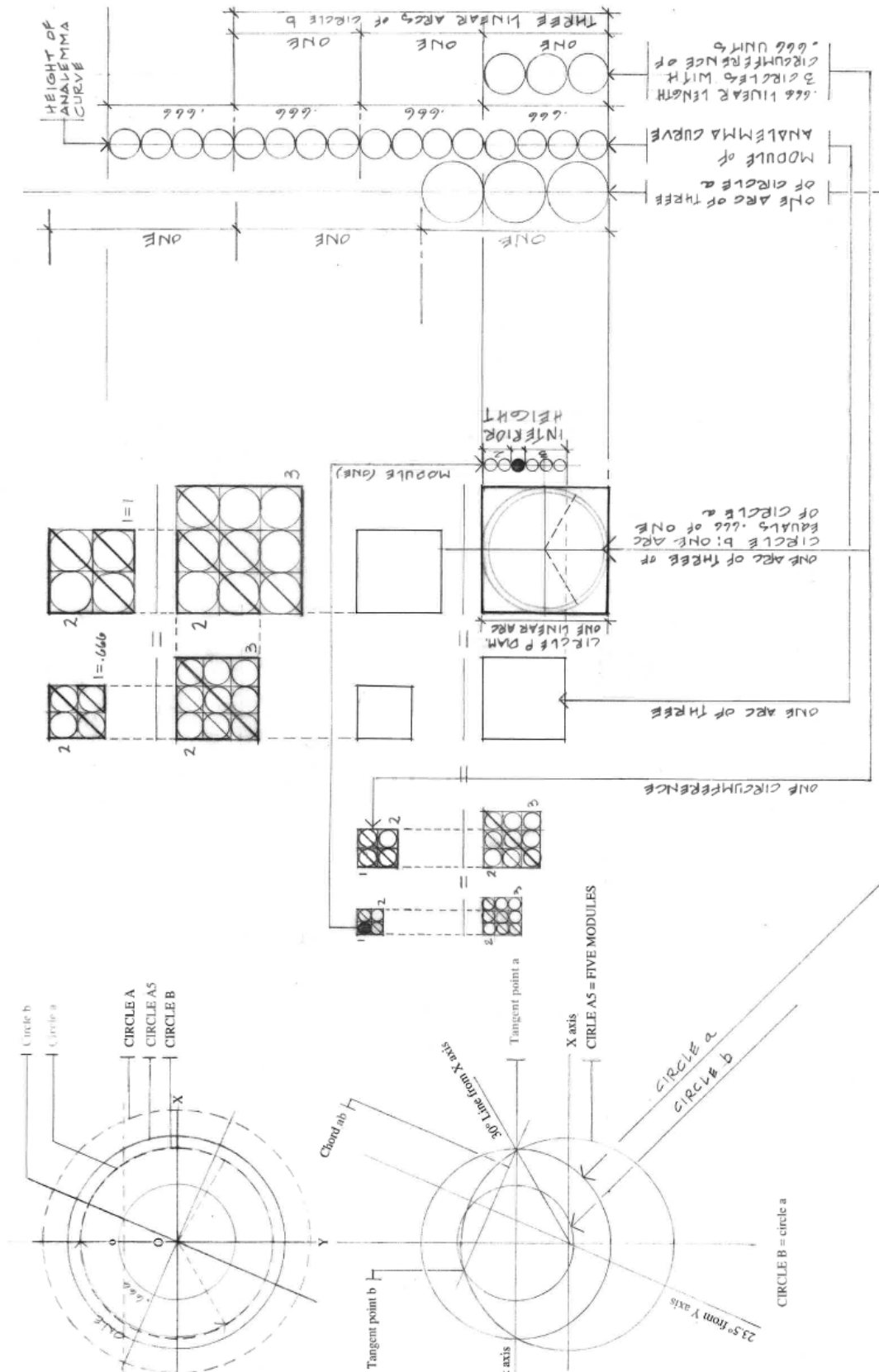
DAYLIGHT SOUTHERN- HEMISPHERE



MATRIX

BLOMBOS CAVE DRAWING - OUTLINED BY A 2:3 PROPORTIONAL RATIO OF DAYLIGHT
SUN MODULE EQUALS ONE UNIT

(fig.4)



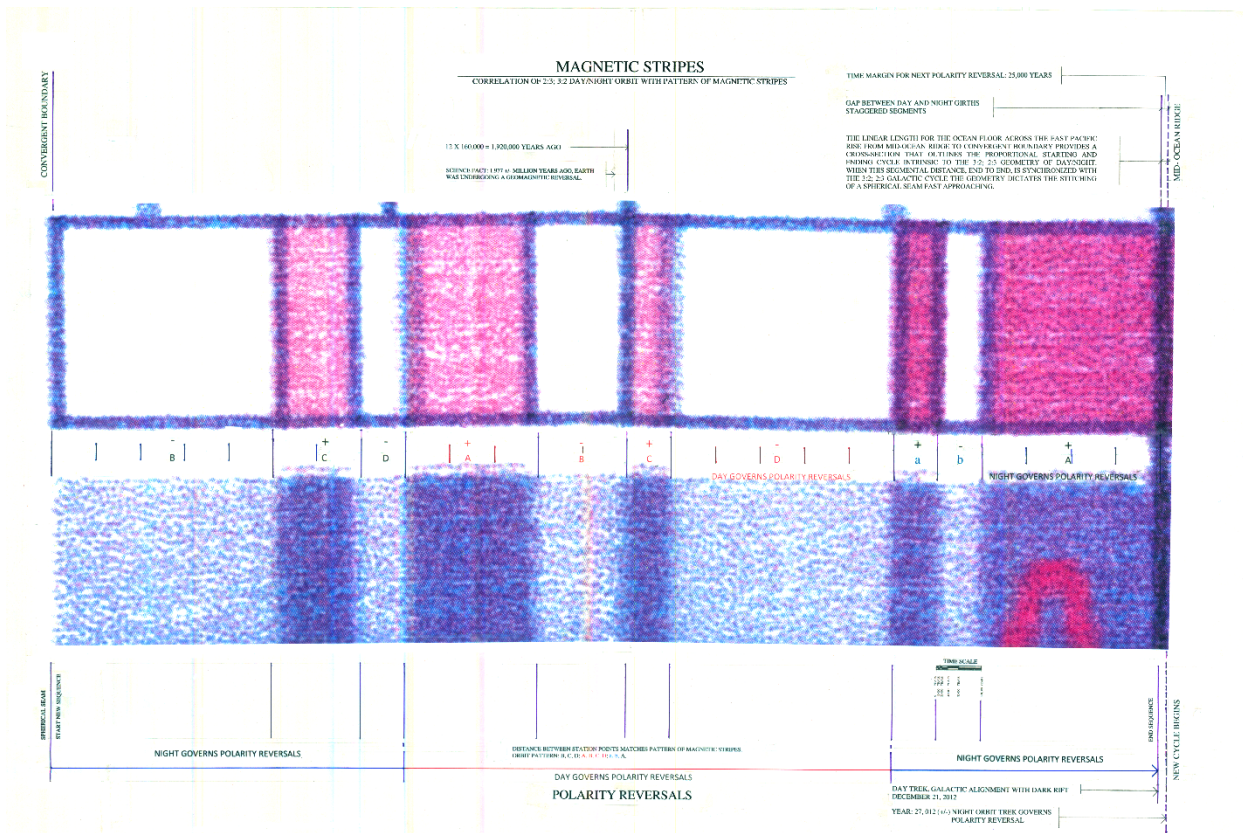
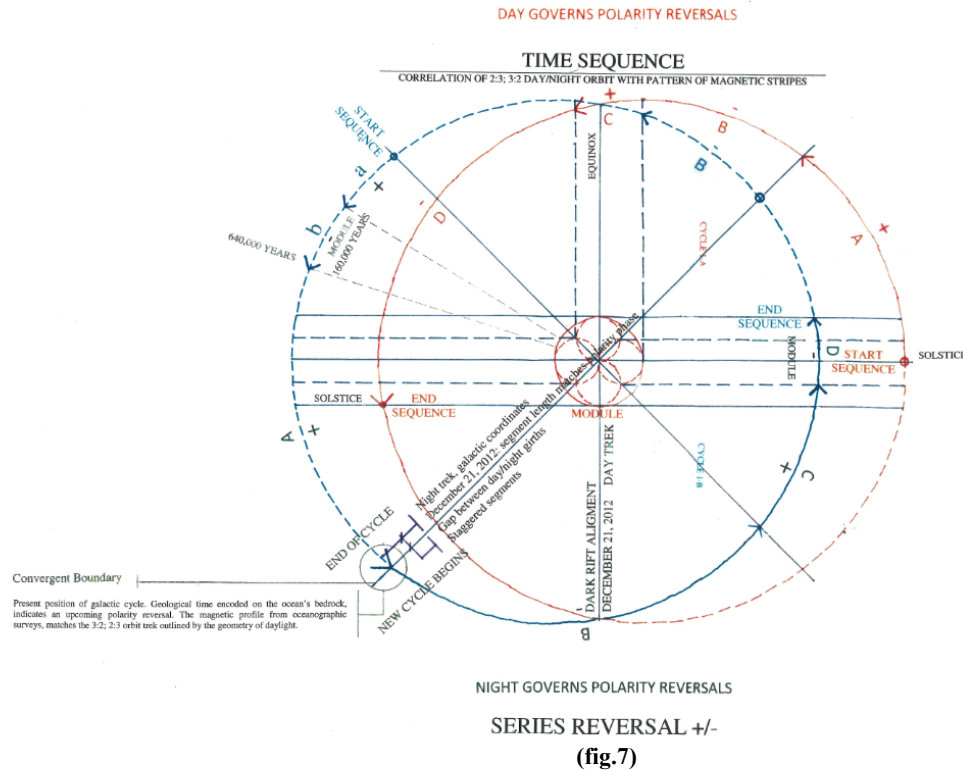
METROLOGY OF DAYLIGHT
(fig.5)

VERTICAL COMPOSITION OF THE SUN'S ANALEMMA CURVE: Modular tessellation of circles, a geometry that makes-up the earth and sun's Analemma curve's internal core, and a column that spirals into a double helix composition of sixteen .666 modules. **Outline:** Divide the composition of the Analemma curve into four equal circles (circle b; circle b; circle b; circle b). Each square contains a circle b defined by the enclosing perimeter of a square (A square with sides of one unit of length and obtained from circle b, the square surrounds the circle yet it's not tangent to the circle). The square can be expressed by a pair of triangles; a right triangle base three and a right triangle base two. This 2:3 ratios is expressed by a pair of triangles, which ties the proportional geometry of the sun's Analemma curve to a module directly extrapolated from the 2:3 ratios of daylight, and a module that can be used to frame the perimeter of the rectangle composed of four contiguous squares (b + b + b + b) (fig.5).

Each circle b (outlined by the winter solstice alignment at tangent point b) provides the modules that form the rectangle of the Analemma curve. Each circle b can be reduced in scale into three separate generations of proportional modules in which all modules are intertwined. Thus the total height of the Analemma curve can be expressed as a composition of four contiguous squares, and each square can be defined by a pair of triangles, a triangle base three and a triangle base two. A triangle base three is divided by three equal modules of ones; therefore the total height of the Analemma curve can also be defined by three circular modules of one times four squares which equal twelve circular modules of ones. When the linear length of one side of the square is looped into a circle, the linear segment of the side can be proportionally defined by three circles in which each circumference equals one side of the square in measurement. This methodology of varying scales is the process used by nature to assemble its forms: galaxies, stars, and planets including the metrology of man (feet to navel, navel to top of head is proportionally synchronized with the geometry of the Analemma curve, winter solstice point to crossing point at equinox, equinox point to winter solstice point, proportions of ideal Hellenic man).

CONCLUSION: Are there hidden patterns in things that seem random to us now? Yes, the pattern outlining "the magnetic stripes mapped for the volcanic rock making up the ocean floor" prepared by the U.S. Naval Oceanographic Office, is a good example to examine (USGS, 1999). The chaotic order of magnetic stripes, seems random, yet the sequence is not unsystematic, by following the outline of the earth's 2:3 daylight orbit trek, the metrology of polarity reversals on earth can be tessellated (fig.7). The geometry of Day/Night cycles and the "zebra stripe-like magnetic patterns" are synchronized with each other (USGS, 1999). When the arcs of day and night cycles are stretched-out into a linear segment, the measurements of each part correlates with the sequential pattern of magnetic shifts found in the four million year cycle of polarity reversals locked in bedrock on the ocean floor, across the East Pacific Rise from Mid-Ocean Ridge to Convergent Boundary (fig.8). Governing pattern of polarity reversals: B, C, D; A, B, C, D; a, b, A. The polarity reversals on earth are directly tied to the sun's orbit motion in the cosmos, the sun's orbit trek follows the same geometry as the earth's orbit motion, therefore by interpolating the 2:3, 3:2 earth's orbit pattern, the sun's motion in space can also be recorded.

The last Yellowstone's caldera eruption took place 640,000 years ago matching the time line of earth's last polarity shift. This cycle of time linearly matches the normal present phase (A), and can be converted into a time scale by dividing the 640,000 year sequence into four equal parts, one part equals 160,000 years, a unit of time that matches the length of segments: D, C, a, b. The correlation of the polarity reversal sequence, with the modular geometry found in the metrology of a 2:3 orbit trek, proofs the scientific precision encoded in the ancient system of mathematics, expressed in the geometry of square and triangular numbers. The linear length of the ocean floor across the east Pacific Rise from Mid-Ocean Ridge to Convergent Boundary provides a cross-section that outlines the proportional starting and ending cycle intrinsic to the 2:3; 3:2 geometry of daylight (fig.8). (USGS, 1999). When the arc of daylight from solstice to dark rift alignment, December 21, 2012 is placed on top of arc A of current polarity night cycle, from end of segment b, towards mid-quarters of our normal present phase arc (A) (fig.7); the end point of the linear length marked our coordinate point in the cycle on December 21, 2012. The linear gap between the end of the segment and the mid-quarter's tangent point, outlines the stitching of a spherical seam and the distance can be proportionally measured, the length of the gap indicates that the time margin for the next polarity reversal is approximately twenty five thousand years, a time scale with a margin of error that is too close for comfort (fig.7). This geometrical pattern of day/night cycles is directly tied to the earth's polarity reversals and imperative to understand, for mankind's own existence on the planet will be dramatically effected by this geological period of nature.



Daylight Overlay - LINEAR SEGMENT OF POLARITY REVERSALS: B, C, D, A, B, C, D, a, b, A
 "Magnetic stripes mapped for the volcanic rock making up the ocean floor" - U.S. Naval Oceanographic Office (USGS, 1999)
(fig.8)

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