STONEHENGE
AN ACADEMY FOR THE STUDY OF PLANE REGULAR SHAPES

A FURTHER TREATISE ON A THEORY OF SHAPE

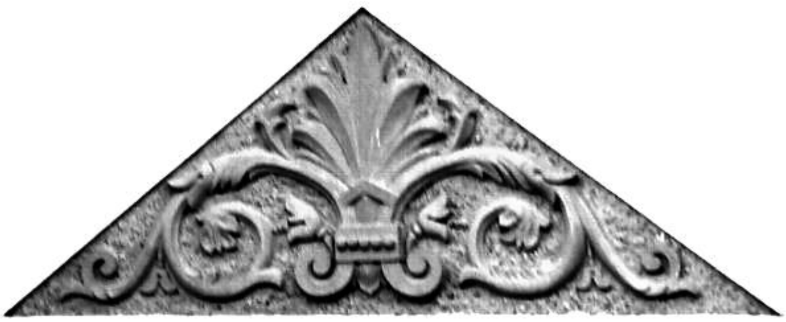
WHO KNEW WHAT & WHEN?
HOW DID THEY KNOW?

A CONTRIBUTION TOWARDS THE THEORY OF EVERYTHING

PART OF AN INTRO TO SUPERSYMMETRY?

By

John Marcus Crombie



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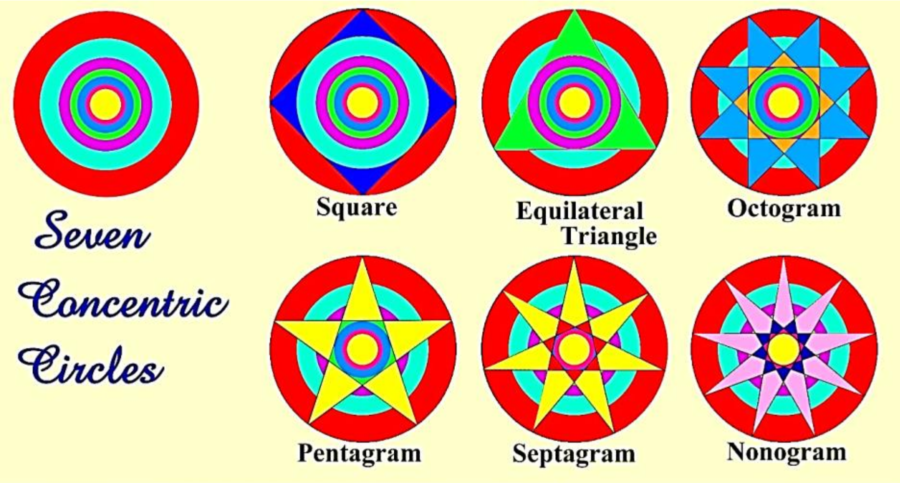
10 9 8 7 6 5 4 3 2 1

AN OUTLINE OF

A THEORY SURROUNDING

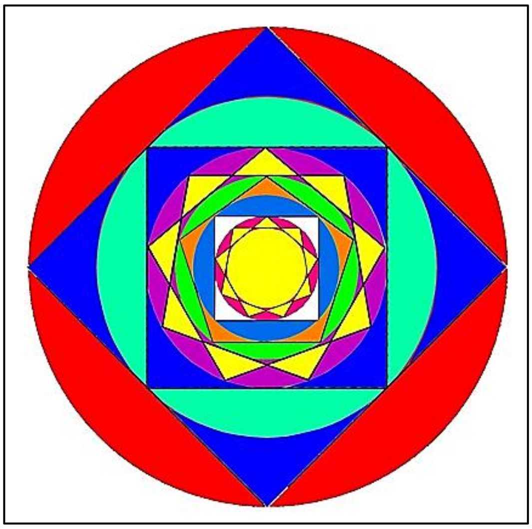
PLANE REGULAR SHAPE:



One of my next quests (*after the Holy Grail*) was to seek the concept that was called ***"The Seven Concentric Circles"***. In this exercise I have used the Outer Circle as a **common circumscribing circle** which produces six shapes, each contained between the common circumscribing circle and one of the other six circles which became the Inner Circle for one of the shapes.

This is just one more example of Seven Concentric Circles.

'*CATALYSTS*' IN SHAPE THEORY:

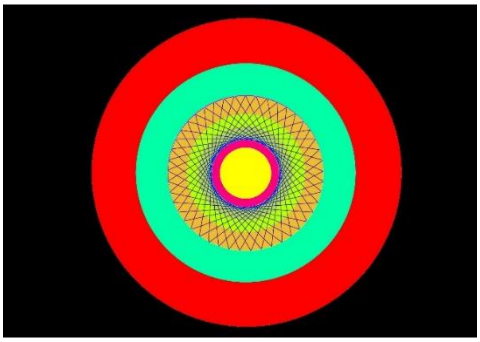


Above, we have produced six shapes utilising the 'nested' circles; one ***common*** outer circle and six inscribing circles such that each together with *the common outer circle* produced a shape.

We now look at the **adjacent circles:** Each adjacent pair produce a shape. But these are the **same** set of Seven Concentric Circles used above.

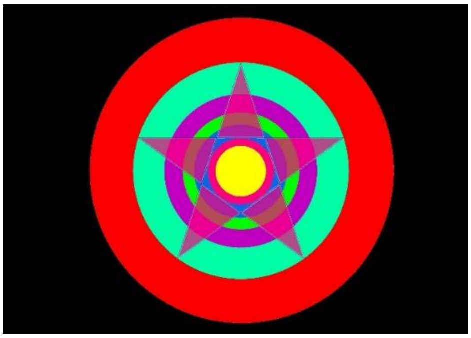
A third feature that was later revealed was that ***any pair*** in a set of these relevant circles, adjacent or otherwise, would produce plane regular shapes.

"A Shape Ratio x a Shape Ratio = another Shape Ratio"



FEATURES

Common Outer Circles
Common Inner Circles
Adjacent Circles
Catalysts
Any Pair in a System



Can you imagine the harmonics of the mathematics that would produce these results?

- These features confirmed the presence of a **system** in *Shape Theorems: e.g.* ***Shape x Shape = Shape****.*
- These features indicate a major part of the ***harmonious mathematics*** of the system.
- These features then led me to ***search for the underlying mathematical and graphical harmonics*** that could produce such a system.

SOME THEOREMS &/or FEATURES INDICATED BY THIS THEORY

"A Shape Ratio x a Shape Ratio = another Shape Ratio".

A method of graphically &/or mathematically multiplying a shape by a shape is invisible to us until we apply the two circles to each shape; the Circumscribing and the Inscribing Concentric circles; and learn to calculate their ratios.

When graphically multiplying a Shape by a Shape we NEST the shapes and their Circles such that 'The inner circle of the outer shape becomes the outer circle of the inner shape.'

"If in a set of three or more concentric circles a Shape Ratio exists between each adjacent pair of Concentric Circles then a Shape Ratio will exist between any pair of these circles."

Overall Physical Size of a shape has absolutely no effect upon its ratio.

A shape the size of a thimble will have the same ratio as the same shape the size of the Universe.

A natural code exists (2-1-2-0.5) that enables us to convert a numerically ordered list of Polygons into a list of Primary Polygrams.

A Primary Polygram is one that when its sides (or tangents) are extended outwards they form parallel lines or radiate out into space without meeting again to form another shape.

A Primary Polygram may contain all other polygrams of its own denomination as well as other harmonic inner shapes. It may also appear with itself in parallel in phase in various other denominations.

Because *"A Shape Ratio x a Shape Ratio = another Shape Ratio"* **then shape ratios may be derived with the use of a Matrix. Shape Ratios may also be divided in a Matrix.**

Continuous results of matrices of shape ratios may be utilised in generating and identifying shapes by computer *ad infinitum* **thus enabling the production of a 'genome' of shape** *ad infinitum***.**

With the exception of 2 and integer multiples of 2 all Plane Regular Shape Ratios are *Infinite* or incommensurable numbers that form *Finite* shapes – providing the border crossing from the infinite to the finite worlds. Can we also apply this *border crossing* **concept to Music and other compatible sensory entities and physical senses?**

QUESTIONS:

- Will **any** pair of circles, provided they are concentric, produce a Plane Regular Shape?
  - Any pair of circles, if they are concentric, will produce equilateral tangents or sides.
    Plane Regular Shapes have equilateral sides.
  - Any pair of circles, if they are concentric, will produce equi-angular apexes.
    Plane Regular Shapes have equi-angular apexes.

Graphically, I have only taken the production of shapes up to 72 points. There are infinitely more.

- What about circles which ostensibly have tangents that do not meet again at the point of commencement but in fact might do so if the procedure was continued *ad infinitum*? Will they form shapes?
- Can we confirm or dismiss the statement that *"Any pair of circles, provided they are Concentric, will produce a Plane Regular Shape"*?
- Or, do only pairs of circles in certain harmonic ratios comply?
- If **every** Plane Regular Shape has a Right Angled Triangle in its construction lines then, conversely, does **every** Right Angled Triangle have an associated Plane Regular Shape?

And:

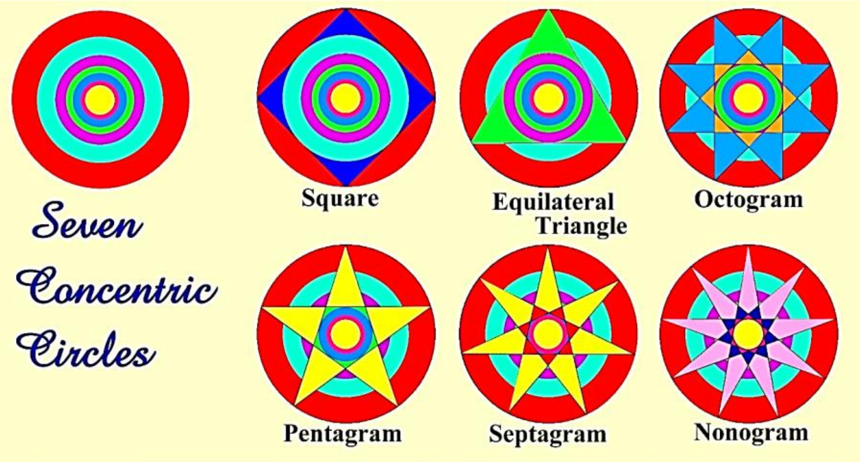
- given that Plane Regular Shapes have **Inner** Harmonic Shapes along with the Primary **Outer** Shapes

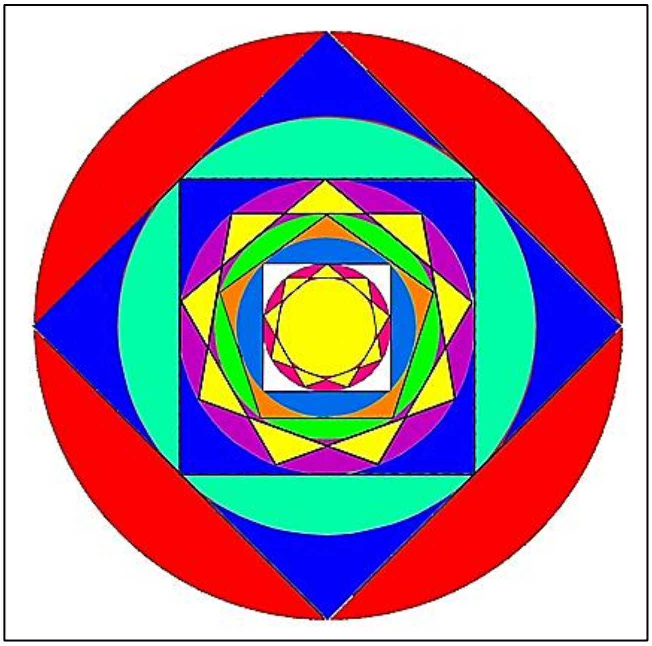
Then:

- How can it be determined whether the images produced by an audible frequency mechanism are Outer Primary images or their Harmonic Inner images?
- Will the Concentric Circles give us the answer?
- Will the *Hidden* ***Mathematical Harmonics*** reveal themselves in experiments such as Cymatics experiments?
- Will the **Construction Harmonics**, those inner shapes formed by the original tangents and the original pair of circles, be the only shapes revealed by a Cymatics experiment?

And if two "relevant" frequencies are played simultaneously:

- How can we ascertain how their respective Concentric Circles will mesh to form a new shape? Will they mesh one inside the other, nest, and produce a result graphically? Will they mathematically mesh to form a new ratio mathematically?
- Hans Jenny actually carried out this experiment. He reported a new ratio was formed!





These shapes I identified as being ***"Mathematical"*** harmonics.
This is a "Nested" system the ratios of each shape, when multiplied by the rest, will result in the overall ratio for the overall shape whose ratio can also be formed by dividing the overall outer circle by the overall inner circle. Graphically, we can see that this overall shape is the Nonogram, as seen in the image above.

RATIOS -–THE OVERVIEW

A summation of the Theory of the Harmonics of Plane Regular Shape.
An outline of the theory; its initial scope; and some of its possible applications.

Can you see Plane Regular Shape as a Frequency?

Observe Plane Regular Shapes to ascertain their common features:

- Polygons and Polygrams; the circle, the square and the equilateral triangle.
- Note that they all have some common characteristics:
  - *Naturally, they are all two-dimensional.*
  - *Given, they are all of course equi-angular and equi-lateral.*
  - *They can all have **Circumscribing AND Inscribing Circles** delineating their outer and inner boundaries. -–(The outer edges of the dough in the doughnut).*
  - *Each Shape has a unique **pair** of concentric circles present in a **unique Ratio** for that shape.*
  - *These ratios co-exist in a **set** that displays incredible harmonics – the harmonies of Nature.*

Using these common characteristics:

Devise a Method to numerically categorize these Unique Ratios:

- These ratios or numbers are not randomly selected numbers as used for simulation theory but are real, applicable numerical ratios derived from the shapes that actually can be used to produce and represent the shapes.
  - A number is obtained by dividing the shape's Outer Circle by its Inner Circle; As circles can be defined simply by the length of their diameters (all other entities being common to both circles) then the ratio of one diameter to the other diameter provides the ratio of one circle to the other. NB: No **AREA** calculations are required or used. –
    (*More like Euclid's Line Ratios*)
  - These Numbers epitomize the shapes both mathematically and graphically.
  - They control and represent the angles present in the points; in a reciprocal relationship except in the area of Dark Matter where they have crossed the Singularity and they exhibit an inverse orientation and become the reciprocal of the reciprocal. *In the area of Dark Matter the Outer Circle then becomes the Inner and the Inner Circle then becomes the Outer.*
  - *Perhaps Shapes are turned inside out in the area of Dark Matter.*
  - They can be the basis of a system of purely ***graphical mathematics***.
  - They constitute a system that is the epitome of *Visual Mathematics.*

Basic Assumptions:

- *Something from Nothing*:-
  - **Lines** have no width;
  - **Points** have no dimensions;
  - **Tangents** *without thickness* pass through only one *dimensionless* **point** on the *widthless and depthless* circumference of a circle.

- *This System of Ratios* forms **Harmonic Sequences** which lead to the discovery of ***Shape Theorems***.
    - *A Shape Ratio multiplied or divided by another Shape Ratio will produce yet another Shape Ratio which I refer to as a* ***Harmonic Multiplier****. These Harmonic Multipliers are also shapes.*
    - *Shape Ratios are only produced from Shape Ratios. (Music Frequencies from Music Frequencies etc.)*
    - *In a set of three or more concentric circles if a shape exists between each adjacent pair of circles then a shape will exist between any pair of these circles.* -–(*My Stonehenge Theorem*) *and* (*7 Concentric Circles*).
- *The nature* of these ***Shape Theorems*** prompts us to apply ***matrices*** to reveal more shape ratios.
    - These new ratios need to be then tested graphically.
    - Eventually there should exist a *'genome'* of Plane Regular Shape. – W*ithin the visible spectrum.*
    - These Ratios should enable the graphic production and testing of the Shapes by Computer.
    - Once a fairly substantial *'genome'* has been established then the pattern (or patterns) of ***harmonic multipliers*** should be revealed. This *'genome'* should, in reality, be infinite.

Approach the Theory as if you were in the period before Trigonometry; as if you were an Ancient:
There is evidence in Stone and in Clay Tablets that shape harmonics were known 5000 years ago.

- *Stonehenge; Durrington Walls; The Sanctuary; The Pyramids, Akhenaten's Atens;*
- *Clay Tablets*
    - *BM15285; The Quadrature or Spiral of Squares;*
    - *Ashmolean 1924.457 with the 07:12 multiplication table used later by Eratosthenes; (*Old Babylonian **Marad** School tablet, type III: multiplication table x 7:12.*)*
- *Hippias and Ptolemy; Plato; Eratosthenes;*
- **Antedeluvians**: *Anu, Adam, Noah,* ***Enmeduranki and the Divine Kibdu Tablet****;*

Harmonic Sequences within the Theory:

- Not just one but Several Harmonic Sequences are revealed by this theory.
    - **Brian Greene** of Columbia University seeks patterns. He also seeks harmonics *"like Music"*. Unfortunately he ignores the existence of Infinity and proposes *"Multiverses"*.
    - From an 'integer' ordered list of Polygons we can produce a sequence of Complimentary **Primary** shapes (mostly Polygrams) ad infinitum. -–cf. ***Cantor's Continuum Hypothesis***.
    - We can discern **Secondary** Shapes that stem from these Primary Shapes, possibly also from sequences of harmonics.
    - We can devise harmonic lists of ***'Index Numbers'*** for the shapes which illustrate more harmonies and enable the extension of the list of produced Complimentary Shapes.
    - We can then discover a repetitive **code** within Index Numbers existing within lists of these ***polygon – to – primary polygram*** shape conversions:-

2, 1, 2 0.5;	2, 1, 2 0.5;	2, 1, 2 0.5;	2, 1, 2, 0.5;	2, 1, 2 0.5;	2, 1, 2 0.5;

- The Size of Shape Ratios exists in some ***reciprocal order*** to that of the angles contained in the shapes except in the area of 'Dark Matter' (Inner circle divided by the Outer circle) where the sizes of angles and ratios are in a similar order.
- There are NO calculations using **π** in this system. There are no ***area*** calculations required nor do we measure the lengths of the circumferences. So, **π** becomes a red herring in this theory. This is a new approach to dealing with circles; - circle mathematics without **π**.
- Numerically ordered lists of certain shape ratios bear complete correlation with **Music Notes** after allowing for a ***harmonic differential*** which contains a ***'sorting' constant***.
- Numerically ordered lists of certain shape ratios bear complete correlation with **Square Roots of Integers** after allowing for a differential which contains a 'sorting' ***constant***.
- Numerically ordered lists of certain shape ratios should bear complete correlation with applicable lists of **Ptolemy's Chords** after allowing for a refinement of Ptolemy's numeration. *(*His work was, by his own admission, *'sufficient for the senses').*
- The ratio **√2** and the ratio **2** (√2x√2) along with multiples exist in all three entities: Music; Shape; Square Roots. They are the basic underlying harmonic influences. (I submit that they could be the source of the **anthyphairesis** theories of the late David Herbert Fowler of the Maths Institute at Warwick University in the U.K. and of the late Wilbur Knorr)
- The number 2 is a shape ratio (for the Equilateral Triangle) and in this theory we do not refer to it as "*doubling*" or "*halving*". When a shape ratio is being multiplied or divided by 2 it is being multiplied or divided by the equilateral triangle; by a shape in the true nature of the shape theorems.

The Incommensurable Nature of Shape Ratios:

- With the exception of 2 and its integer multiples all plane regular shape ratios are incommensurable numbers which give an insight into the workings of ***Infinity*** in our Universe. (But even 2 is √2 x √2.)
    - Although Shape, Music and Square Root Ratios are incommensurable they co-exist with other ratios *harmonically* in a totally commensurable manner within their own system.
    - They also co-exist *harmonically* in a totally commensurable manner with systems of other entities such as Music and Square Roots and Ptolemy's Chords (*and possibly therefore with Trigonometry subject to issues of accuracy?).*
    - This harmonic existence within the mechanism we know as *infinity* requires a rethinking of our approach to this contrivance.
        - Without *infinity* there would be NO Shape.
        - Without *infinity* there would be NO Music.
        - Without *infinity* there would be NO Square Roots.
        - Without *infinity* there would be NO Trigonometry.
        - Without *infinity* there would be NO Sorting Constants.
    - This theory requires that we embrace Infinity and not avoid it. **Mandelbrot** avoided Infinity specifically when he was developing his fractals theory. He set boundaries between +/- **2**.
    - We can embrace Infinity by accepting and recognizing the unique and special work played by incommensurable numbers in Music, Shape and Square Roots and by realizing that they can be commensurable in their own way with each other in their own environment.

Are ***shape undertones*** found in Cymatic experiments indicative of the ***music to shape*** relationship?

- If Music and Shape correlate then are the ***musical undertones*** found in the cymatically displayed note those that produce the known ***shape undertones*** of the required resulting shape?
- Would this explain problems experienced by UK's John Stuart Reid in his attempt to illustrate '*Dolphin Speak'* for Jack Kassewitz in Florida USA?
- Would this explain the difficulty in obtaining precise results from tuning frequencies and amplitudes in cymatics experiments?
- Would this explain the variances between Reid's results for the first two octaves of the piano and my attempt to align Music frequency with shape ratios? I know they correlate mathematically.
- Would this assist those attempting to explain vibrations in major electrical generating equipment?
- Would this remove the necessity to use *estimates* in Fourier Fast Transforms?

Shape Ratios do not require a Unit of Measurement:

- Regardless of size a square will always have a ratio of **√2**.
  - **2** will always be the ratio for the Equilateral triangle.
  - **√5 -1** will always be the ratio for the Pentagon.
  - **√5 + 1** will always be the ratio for the Pentagram. (NOT Φ as we are led to believe).
  - Note that these last two are *square roots* **+/-** 1. They are therefore not entities sharing a ratio.
- Perhaps these ratios, ***requiring no unit of measurement***, can indicate a way to reconcile quantum theory with relativity.
- Perhaps the two concentric circles that define each shape could be seen to represent the ***strong*** and ***weak*** forces giving shape to atoms of matter. The equation **$E=MC^2$**, by itself, does not allow for shape.
- When the Inscribing Circle equals the Circumscribing Circle the ratio of the circles is 1 – *the **Singularity***, - *(which is the ratio for the circles)*.

  When the strong force equals the weak force . . .???
- When the size of the Inscribing Circle is greater than that of the Circumscribing Circle there then exists a relationship between the circles which produces shape ratios that are the **reciprocals** of those on the other side of the Singularity. These reciprocal ratios are *Dark Matter* being less than 1.
- **There is no zero in this theory**. There is no "nothing". A "*Universe from nothing"* becomes meaningless.
- There is no beginning and no end . . . just positive and negative infinity.

The Universe and two – dimensional Circles:

- Black Hole formation relies heavily on circular structure. One can almost discern the presence of Inscribing and Circumscribing circles in their structure.
- The Rings of Saturn are a set of concentric circles.
- There are Spiral Galaxies. *In space these appear more as two dimensional than as three dimensional.*
- Rotations of Planets are more two-dimensional than three-dimensional.

Two Dimensional Shape versus Three Dimensional Shape:

- Since **Plato** introduced the five Regular Solids there has been little or no interest shown in two dimensional shapes. We have all accepted that **Euclid** had this area well covered. But, although Euclid used Inscribing and Circumscribing circles with his shapes he did not use them ***both together at the same time in a ratio one to the other***. This is a very fine distinction which has far reaching results.

- Although **Kepler** used both Circumscribing and Inscribing Circles together at the same time and seemed to be aware of the existence of some type of harmonics within the circuits of the planets he did not succeed in completely refining these harmonics. His harmonics consisted of ratios of certain whole integers. He fitted a plane shape *'plus a little more'* between the circuits of the planets. I think this *'little more'* is what I have refined as a *Differential* which I have found to contain a constant that enables shape ratios to sort square roots and music into order. I have not tried to refine Kepler's '*little more'* but I would hope that it could be done.
- ***Kim Veltman***, a mathematician, has written an unpublished thesis on Plato's Regular Solids which is what I call *the phone book of polyhedraphiliac mathematicians*. He has listed every person in the last 2500 years who dealt in any way with Plato's 3 dimensional regular solids but none who dealt specifically with 2 dimensional plane regular shapes. He also champions *"Visual Mathematics".*

Areas needing expansion and refinement in this theory:

- Correcting some ***erroneous numbers*** I have used to date which have some effect on the results.
- The correct alignment of music frequencies with shape ratios to correctly identify their cymatics. Cymatics images and frequencies by various researchers that agree may assist.
- **Refining** methods in cymatic experiments (**Extra fine** frequency and amplitude tuning needed in equipment);
- **Refined frequency** selection is outside the range of normal proprietary equipment; my mathematics has been calculated to 15 decimal places; (*we are dealing with infinite ratios*);
- **GOOD electronic Signal Equipment** becoming more rare, obsolete and difficult to obtain creates an emergency; But filtering out the low frequency noise in experiments would filter out some shapes.
- **Cymatics** (or ,if you prefer, Modal Phenomena) should become **a full science** using a theory of shape, given that it is now capable of complying with a system of Maths;

*If you think that Plane Regular Shape is already completely dealt with under the auspices of Geometry and Trigonometry then you are mistaken. These two branches of the sciences do not introduce **Shape Harmonics**. It seems to be that the Harmonics revealed through the **Ratios** of Plane Regular Shape address matters in Mathematics and Physics not otherwise accurately dealt with in these sciences.*

*There also seems to be a **relationship** between the harmonics in one entity and the harmonics in another entity. (Music – Shape – Square Roots of Integers – Planetary Motion – Nautical Creatures).*

*This is a totally new approach to this area of Mathematics and Physics and will not be found anywhere else. As it is a new approach I am aware that it will require time to be absorbed and assessed. There are no textbooks or references in existence. I can only refer to the work and theses of others who seem to be aware that they have something **missing** in the explanations for their frequency results. Their missing parameters can possibly be provided by this theory.*

***Adam Spencer**, one of the 'sleek geeks', in a recent (Aug 2015) Australian edition of Q&A on television stated that there seems to be a missing **'canonical' mathematical theory**. I am not saying that this theory is positively **it** but it is certainly missing from current mathematical content and is, I believe, a good candidate. Unfortunately proponents of "Pure" mathematics will never find it.*

This Graphical area of "Shape Theory" has been overlooked as we have developed Trigonometry and have rested upon our laurels safe in the belief that this area of Mathematics has been completely covered. **Ptolemy Claudius***, the father of Trigonometry, (though some claim Hippias), in 150ad developed his Chords to provide length measurements derived from angles of Polygons. He commenced with polygons as their angles were known at that time and the sides of the polygons became his chords. He merely estimated the chords for the angles in between using a rough method of harmonics based on integers. (30/29, 31/30, 32/31 . . .). At one point in his list of chords he threw all harmonics out the door and jumped 13 digits to arrive at a predetermined number.*

*Unknown to him **he was the closest person in history** to **not** discover this theory although he did relate the harmonics of music to the planetary motions. I only discovered Ptolemy's proximity to this theory after 10 years of research and I had the book containing his chords on my shelf the whole time! With one simple extra step he could have related his polygons to complimentary polygrams. His chord triangles, when inverted with the chord then lying along the diameter of his base (circumscribing) circle, provided the diameter for the inscribing circle for the complementary polygram. The ratio of his chord (with a little refinement) to the diameter of his Circumscribing circle actually would have shown him these harmonics and we could have had them for the last 1865 years. Instead we inherited Trigonometry which seems to have satisfied mankind's thirst for knowledge in this area ever since.*

And this is just a brief Outline of the subject and its integral theories!

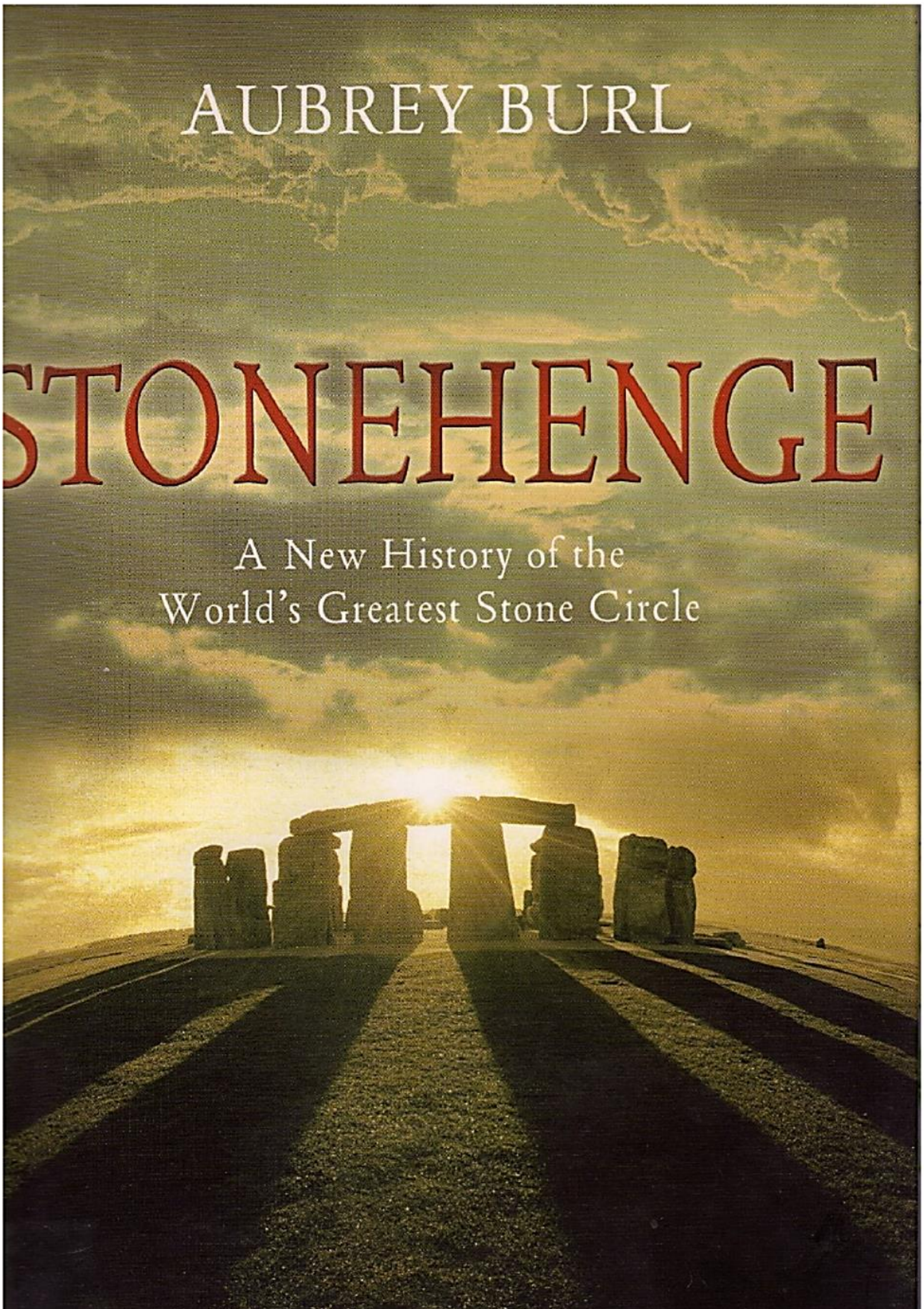
Somehow the ancients prior to 3,000bc embraced and understood the mystique that surrounded *"Plane Regular Shapes"*. How many Steles, Clay Tablets, Columns, or Walls were adorned with examples of the shapes. Furthermore, certain shapes were associated specifically with each of the gods and later with the Pharoahs.

It is my personal belief that this was part of the ***Knowledge*** that was given to Enmeduranki when he went to Heaven accompanied by Adam (Adap) in antediluvial times. Certain scholars align the time of Enmeduranki with the time of the biblical Enoch.

THE ANKH IS PASSED DOWN TO DESCENDANTS SO THEY ALSO MAY POSSESS AND USE THIS KNOWLEDGE.

STONEHENGE AND AUBREY BURL

(PROFESSOR OF ARCHAEOLOGY AT OXFORD)



WAS STONEHENGE LAID OUT MATHEMATICALLY OR GRAPHICALLY?

WHAT CAME FIRST – THE CHICKEN OR THE EGG?
ONE THING IS CERTAIN, THERE WAS NO USE OF TRIGONOMETRY.

My argument for Stonehenge's purpose lies in its perceived design. As Plane Regular Shapes appear to reside neatly between the various circles that constitute the ancient henge I felt compelled to tabulate the features of the monument as surveyed by Thom in1974 and to compare their measurements with the mathematical ratios that define the shapes.

Detail	Dimensions (Diameters) Aubrey Burl	Me
	By Survey…by measurement ?	By Ratio (visual graphics)
Aubrey Holes	87.000 m	87.000 m (Ratio …. Phi) (1.618033989)
Y - Holes	53.700 m (stated deviations….up to 2.4m)	53.76895701 m (Ratio…..Square) (1.414213562)
Z - Holes	39.100 m (stated deviations … up to 1.2 m)	38.02039412 m (Ratio .. pentagon) (1.236067978)
Sarsens	29.700 m (i/s)	30.75914496 m (Centre) 29.75914496 m (Inside) (Ratio…Equilateral Triangle) (2.000000000)
Sarsen Horseshoe		14.87957248 m (Inside)
Z - Holes	39.100 m	38.02039412 m (Ratio …. Phi) (1.618033989)
Bluestone Circle	(inner Nonogram)	23.49791374 m (Ratio…Equilateral Triangle) (2.000000000)
Bluestone Horseshoe		11.74895687 m
Sarsens	29.700 m (i/s)	30.75914496 m (Centre) 29.75914496 m (Inside) (inner Nonogram)
Bluestone Circle		23.49791374 m

My measurements derived from Shape Ratios and those of Aubrey Burl from Thom's 1974 survey vary overall at the Sarsen Circle by 2.354 inches or 59mm over 87 metres (87,000mm).

A variance of **0.000679827** over 87 metres (87,000mm).

THE SEPARATE PORTIONS OF THE 1974 THOM SURVEY:

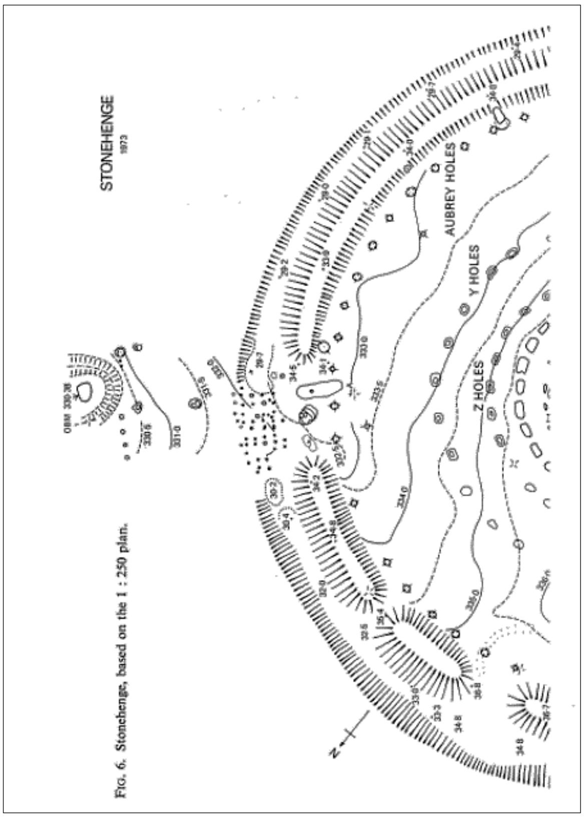
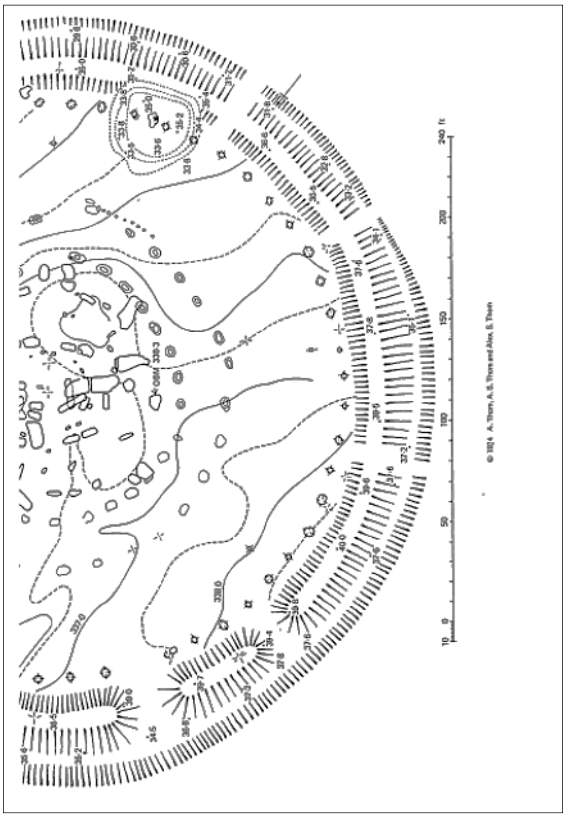


FIG. 6. Stonehenge, based on the 1 : 250 plan.



The two 'halves' supplied are not complete but I have overcome this problem by superimposing the separate Sarsen Circle survey over the two 'halves' and aligning the common features of the halves with it.

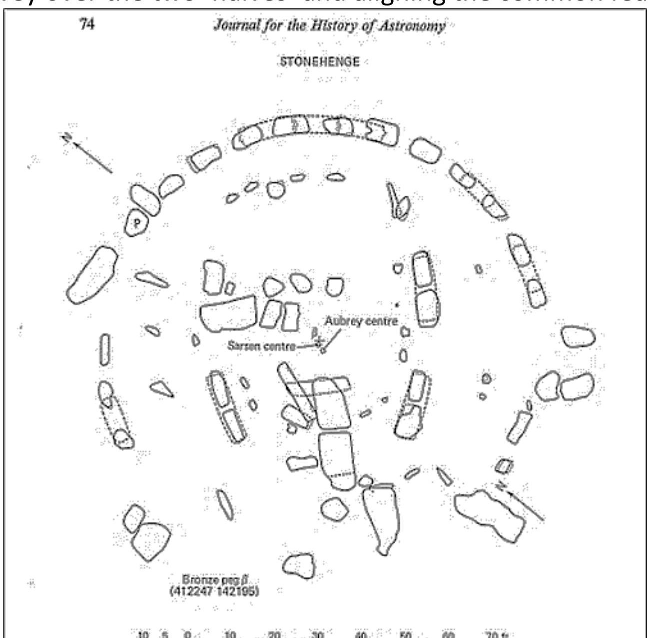
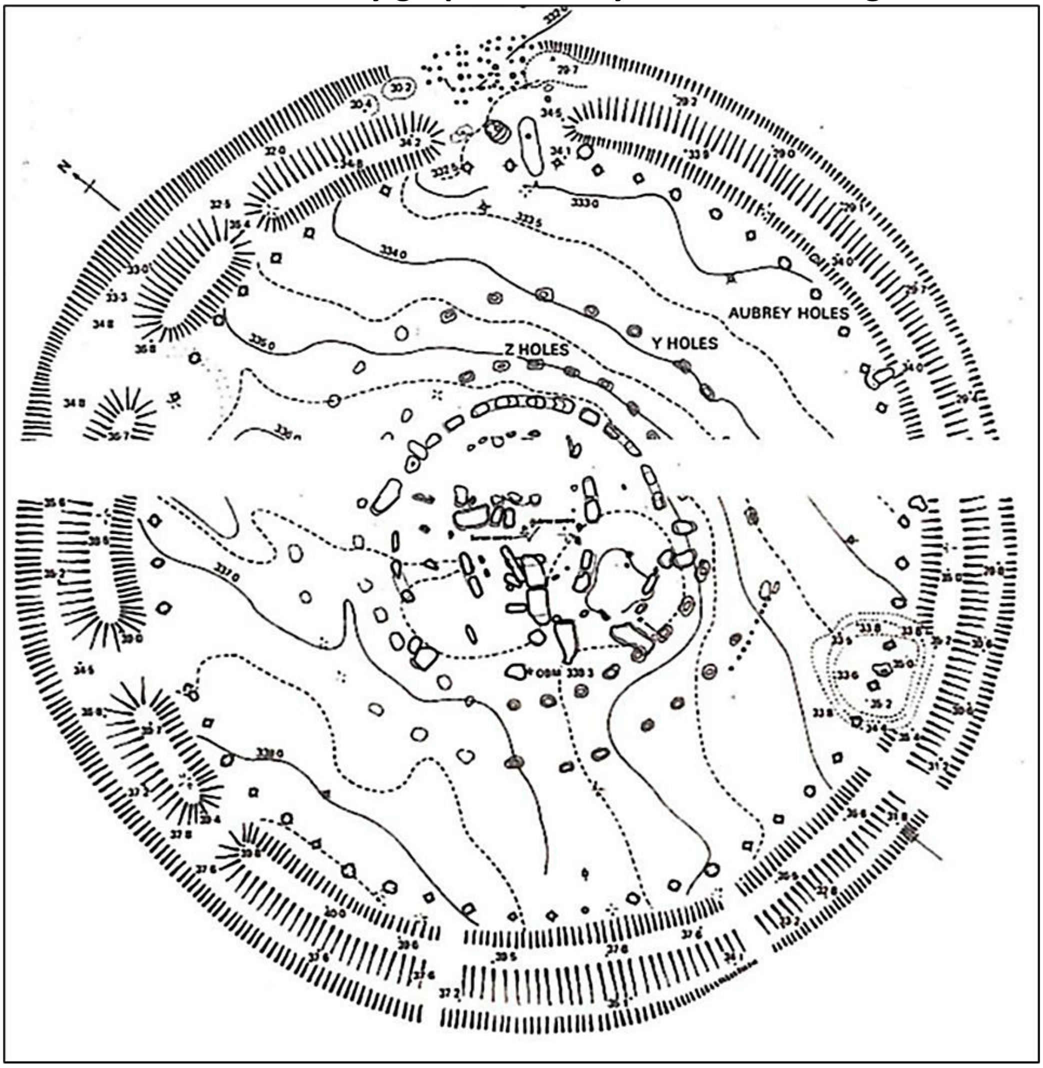


FIG. 4. The sarsen ring and its interior, based on the 1 : 84 plan.

MY 'COMPOSITE' IMAGE

The basis for my graphical analysis of Stonehenge.



This image is purported to be derived from the 1974 survey of Stonehenge by Alexander Thom.
This separated parts of this survey are held at NASA Earth Sciences.

THE CIRCULAR FEATURES AT STONEHENGE

(From outer to inner)
Outer bank and ditch
Aubrey Hole Circle
Y-Hole circle
Z-Hole circle
Sarsen Circle
Bluestone circle

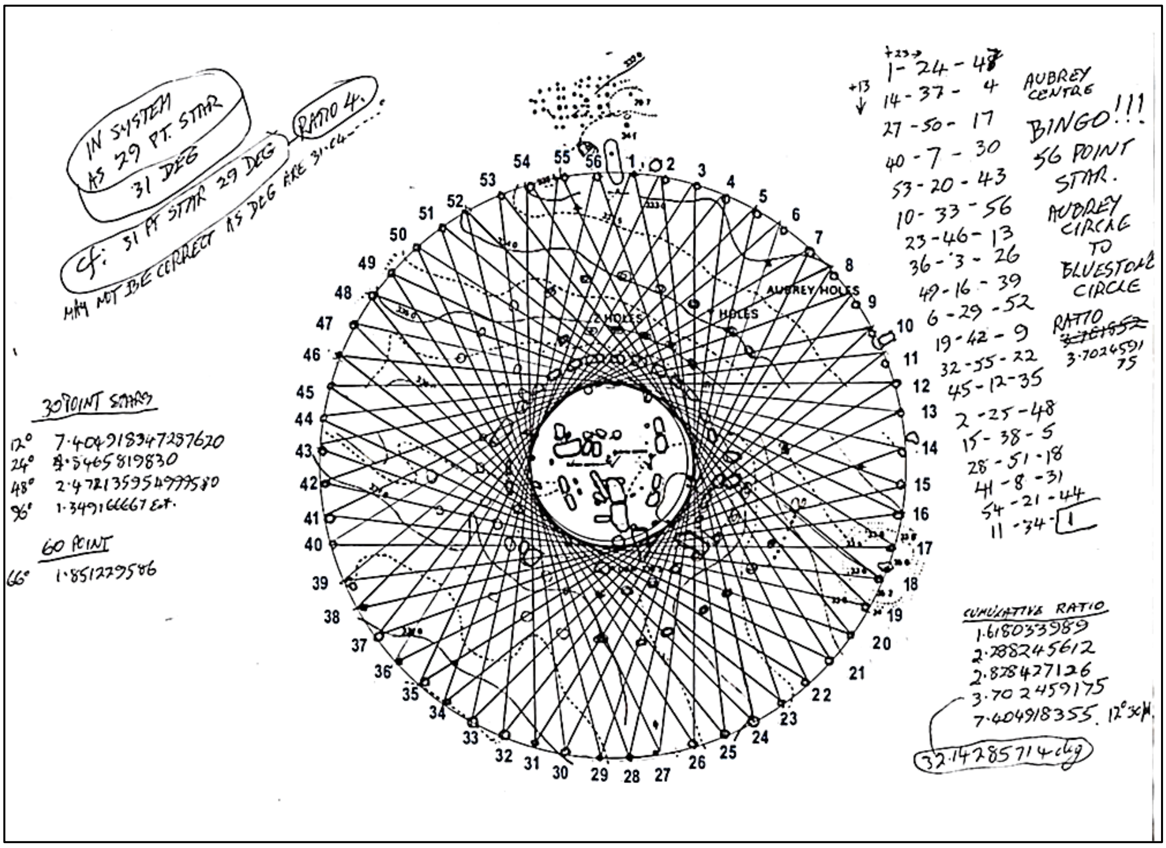
NON-CIRCULAR FEATURES

Sarsen Horseshoe
Bluestone Horseshoe
Altar Stone

MY OMG MOMENT

PLAYING DOT TO DOT AT STONEHENGE

THIS GAME WAS COMMENCED MERELY TO ASCERTAIN HOW MANY SHAPES COULD BE PRODUCED BY CONNECTING ALL THE VARIOUS COMBINATIONS OF AUBREY HOLES (DOTS) WITHOUT CONSIDERING ANY OTHER CIRCLES.
IT WAS DONE BY HAND.
THIS WAS THE ONLY COMBINATION THAT UTILISED **ALL** THE AUBREY HOLES AND THUS GAVE THE 'FORTUITIOUS' RESULTS OF A **56 POINT POLYGRAM**. EVEN MORE FORTUITIOUS WAS THE INDICATION THAT THE BLUESTONE CIRCLE WAS THE INSCRIBING CIRCLE WHILST THE AUBREY HOLE CIRCLE WAS THE CIRCUMSCRIBING CIRCLE THUS INDICATING ***A PRIMARY STAGE TO THE OVERALL LAYOUT***.
I PRODUCED THE SEQUENCE OF HOLE NUMBERS IN ADVANCE AND WHEN IT WAS SEEN TO UTILISE **ALL** 56 HOLES OF THE AUBREY CIRCLE IT WAS IMPERATIVE THAT I PRODUCE THE SHAPE. IT WAS AT THIS POINT THAT THE OMG MOMENT OCCURRED. THE SEQUENCE OF LINES CONNECTING THE AUBREY HOLES WERE TANGENTS TO THE **BLUESTONE CIRCLE**, CONSIDERED THE EARLIEST OF THE STONEHENGE FEATURES.



And the spacings between the relevant holes is the magical number **23**!

THE BLUESTONE CIRCLE WAS THEREFORE LINKED TO THE NUMBER OF AUBREY HOLES BUT WHICH CAME FIRST? IF SOME FORM OF MATHEMATICAL SHAPE RATIOS (OR EVEN JUST THE SHAPE ANGLES) WERE KNOWN THEN MATHEMATICALLY THE DISTANCE TO THE PLACEMENT OF THE BLUESTONE CIRCLE WOULD HAVE BEEN KNOWN; SO, USING THE AUBREY CIRCLE AND BLUESTONE CIRCLE AND TRACING OUT THE 56 POINT POLYGRAM THE AUBREY HOLES COULD HAVE BEEN POSITIONED AND DUG.

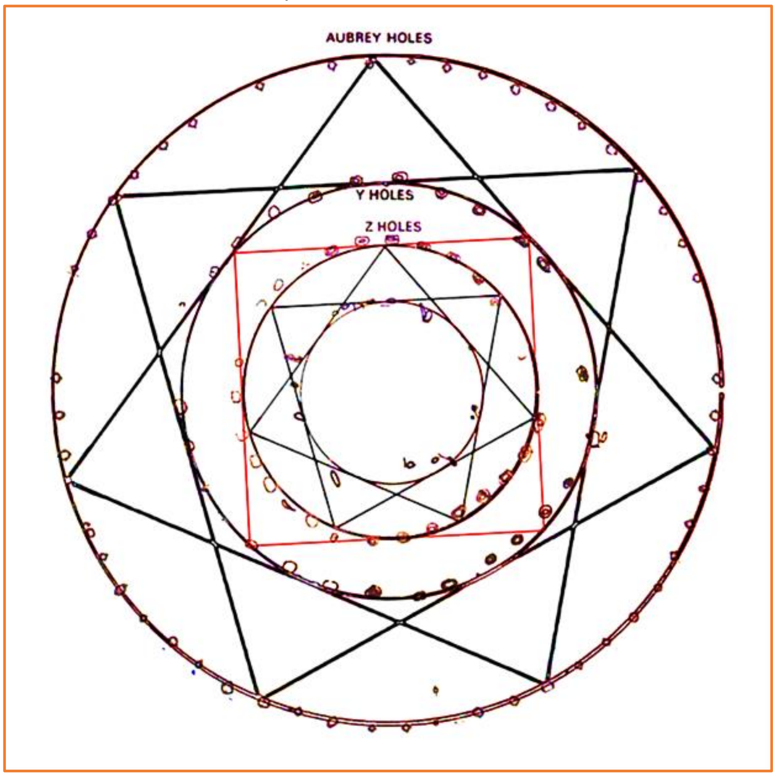
TOO, TOO EASY! BUT THEY WOULD HAVE HAD TO KNOW THE RATIOS IN ADVANCE! - In 3000BCE!
IF THEY KNEW THE RATIOS (OR SIMPLY JUST THE ANGLES) FOR **Φ** AND **√2** THEY COULD HAVE GRAPHICALLY CALCULATED THE *AUBREY HOLE CIRCLE TO BLUESTONE CIRCLE RATIO* . . . **Φ x √2 x Φ**

Old 'Bluestone' Stonehenge with Graphical Ratios

Φ x √2 x Φ

(Inner Septagram x Square x Inner Septagram)

Consequently this combination of shape ratios would have delineated the Y and Z Holes also.



With Stonehenge, without knowing the diameter of the Aubrey Hole Circle, one could still construct the existing henges **without any Unit of Measurement**.

The Ratios give us the Diameters, Radii, of each Circular feature with respect to the others. These circular features could be seen as ***Nested Circles***. As overall physical size of the shape is irrelevant to the calculation of the ratios; but, given a starting diameter for the Outer Circle the remaining circular features should naturally fall into place.

Knowing about

- The ***nesting*** of shapes;
- The ***shape theorem*** whereby ***shape x shape = shape***;
- The formation of another shape within the arena using adjacent circles would leave the remaining area within the ***nested circles*** as yet another shape again.
- The first graphical feature at Stonehenge being the Bluestone Circle which, along with the Aubrey Circle, provides the 56 point polygram, a shape;
- Once a shape was established, and given the ***shape theorem,*** the rest was natural.
- All of this seems to depend upon the first feature having been a shape.

THE INITIAL BLUESTONE HENGE RATIO: 3.702459175

Φ	1.618033989000000	38 degrees	7pts
√2	1.414213562000000	90 degrees	4pts
Φ x √2	2.288245610000000	52 degrees	45pts
Φ x √2 x Φ	3.702459175000000	32.14285714deg	56pts

Aubrey Burl, Professor of Archeology at Oxford, proclaimed in his book:
"Did it matter that there were 56 Aubrey Holes?"

WHY ANCIENT MONUMENTS ARE CIRCULAR

For Stonehenge to be any sort of monument to Plane Regular Shape it had to comply with what is now proclaimed by me to be my *"Shape Theorem"* which states that *"Shape X Shape = Shape".* To enable this to occur within its features the Monument had to be circular and **commence** with a Plane Regular Shape.

And the existence of this shape indicates the Bluestone Circle and Aubrey Circle combination to be Stage 1.

Should any area that did not represent a Plane Regular Shape have been excised from the balance area remaining at any time during its construction then the whole significance of Stonehenge as a Monument to Plane Regular Shape would have been diminished.

By starting with a Shape and then excising further shapes from the balance area, the remaining area always represented a shape. *(If of course "Shape X Shape = Shape" is a valid theorem).*

THUS, when it was time to replace the original *Bluestone Henge* by the current *Sarsen Henge,* the Plane Regular Shape theorem *"Shape X Shape = Shape"* was again applied.

SO, Stonehenge started with Plane Regular Shape; but why one with 56 apexes?

Multiples:

7 x 8; (8 x 7);	7 Octagrams or 8 Septagrams
4 x 14; (14 x 4);	14 Squares
2 x 28;	?
1 x 56;	The Bluestone Henge

Squares, Octagrams and Septagrams can all be found on ancient Mesopotamian steles and wall carvings and pyramids.

BUT, the 56 point Polygram shape was a Primary Shape and was not made up of its multiples.

BUT, of these multiples, 7 and 4 were later shown by me to be relevant number of points which gave us the Inner Septagram and the Square, marking out the Y-Holes and the Z-Holes.

AND was not the design of the Great Pyramid based on the angles from the Inner Septagram and the Square? **Φ and √2**.

WAS Stonehenge meant to be a Proof of the theorem *"Shape X Shape = Shape"*?

WERE Sitchin's "*Kibdu Secrets given to Enmeduranki*" the origins of the knowledge required to initiate the construction of the features of Stonehenge and of the Pyramids?

AND are these not enough explicit, obvious and massive examples of the application of *Shape Ratios* to silence the mathematicians who constantly proclaim *"They had no concept of Angle!"*

AND now I humbly submit to you the many and various Atens of Akhenaten which display publicly the ability to derive and use Angles of which they obviously had advanced concepts.

SHAPE THEORY AND THE STONEHENGE THEOREM

Nested Shapes

"If in a <u>set of three or more concentric circles</u> a Shape Ratio exists between each adjacent pair of Concentric Circles and given the first theorem that a Shape multiplied by a Shape equals a Shape then a Shape Ratio will exist between any pair of these circles in this <u>set of three or more concentric circles</u>."

This theorem is possible because of the **universal** application available to the first theorem:
And because of the method of "nesting" the Shapes to graphically multiply their Ratios.

"Nesting of shapes" is not a form of "Tessellation".

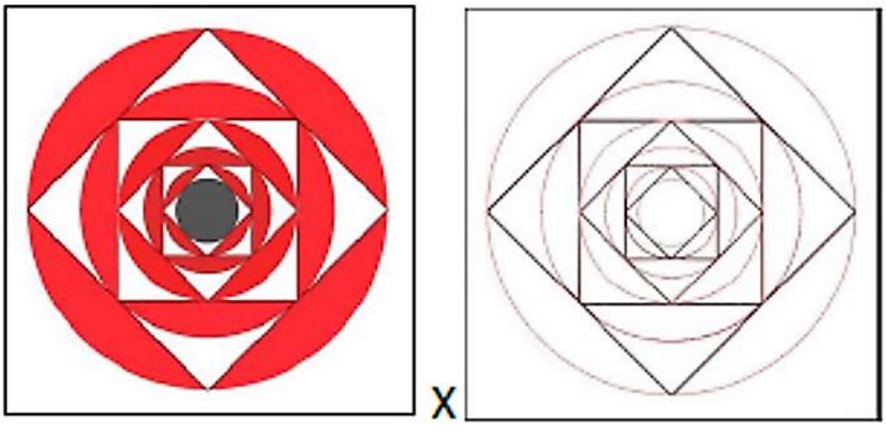
I call this my ***"Stonehenge Theorem"*** as the existence of this theorem was first indicated to me whilst experimenting with designs for Stonehenge and all its *'<u>nested</u>'* features. When I compared the shapes for the Bluestone Henge with those for the later Sarsen Henge it became obvious that even though there were major earthworks carried out to replace the Bluestone Henge with the Sarsen Henge the features for both henges were all concentric circles containing nested Shapes and nested shapes continued to be present regardless of the changes made to the features. **<u>This should have told us something!</u>**

The shapes are "nested" at Stonehenge and features were added as shapes. This could not have occurred by accident leaving me to believe that this knowledge was truly in vogue centuries (even millenia) prior to the years of Plato in Greece.

It was no accident that there are 56 Aubrey Holes at Stonehenge.
But Aubrey Burl stated in his book "Did it matter that there were 56 Aubrey Holes?"

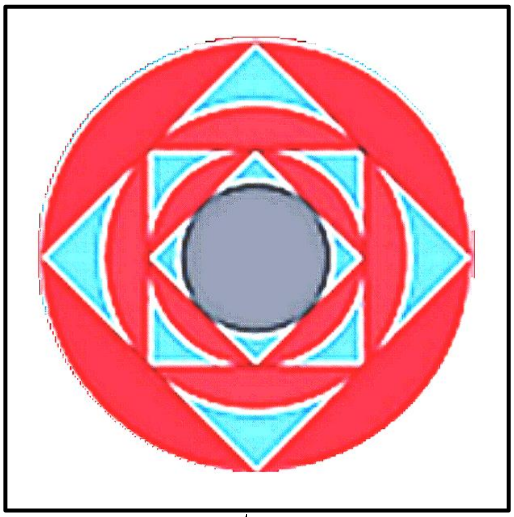
This was my first introduction to a possible application of the ***Harmonics of Plane Regular Shape***.

THE NESTING OF SQUARES, STONEHENGE, AND MEASURING WITHOUT A UNIT OF MEASUREMENT.

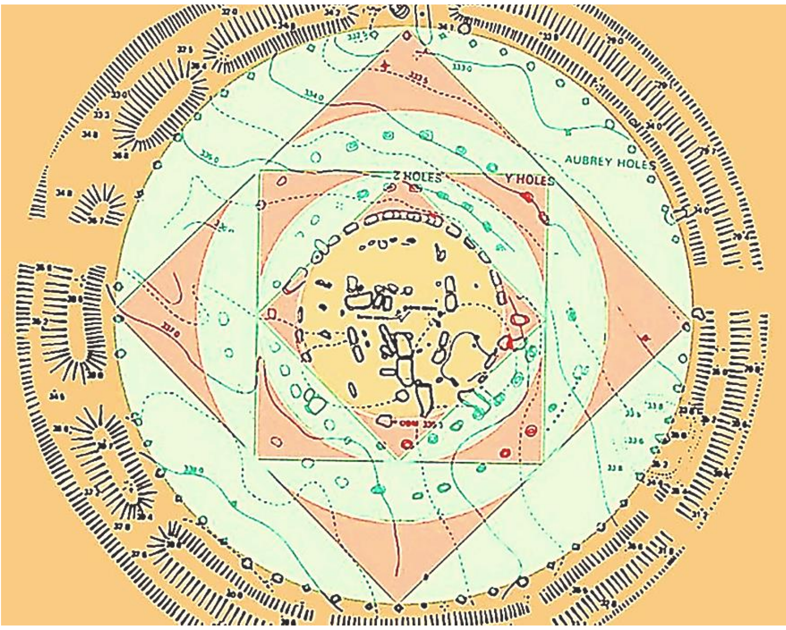


Throughout history, ancient and modern, the **Spiral of Squares** has appeared in the construction of structures and in mathematical instruments and calculations and in ancient clay tablets without any fanfare; without any acknowledgement of its role in the structures and calculations; without any explanation for its use; and possibly without any knowledge of its hidden harmonic traits.

Many theories about *Symmetry* are embodied in the repetition of the √2.



$\sqrt{2}$ x $\sqrt{2}$ x $\sqrt{2}$ = $\sqrt{8}$ = 2.828427125



<u>*CONSIDER THIS*</u>*:*

Inner Septagram x Square x Pentagon = $\sqrt{8}$ = 2.828427125

Φ x $\sqrt{2}$ x ($\sqrt{5}$ – 1)

1.618033989 x 1.414213562 x 1.236067978 = $\sqrt{8}$ = 2.828427125

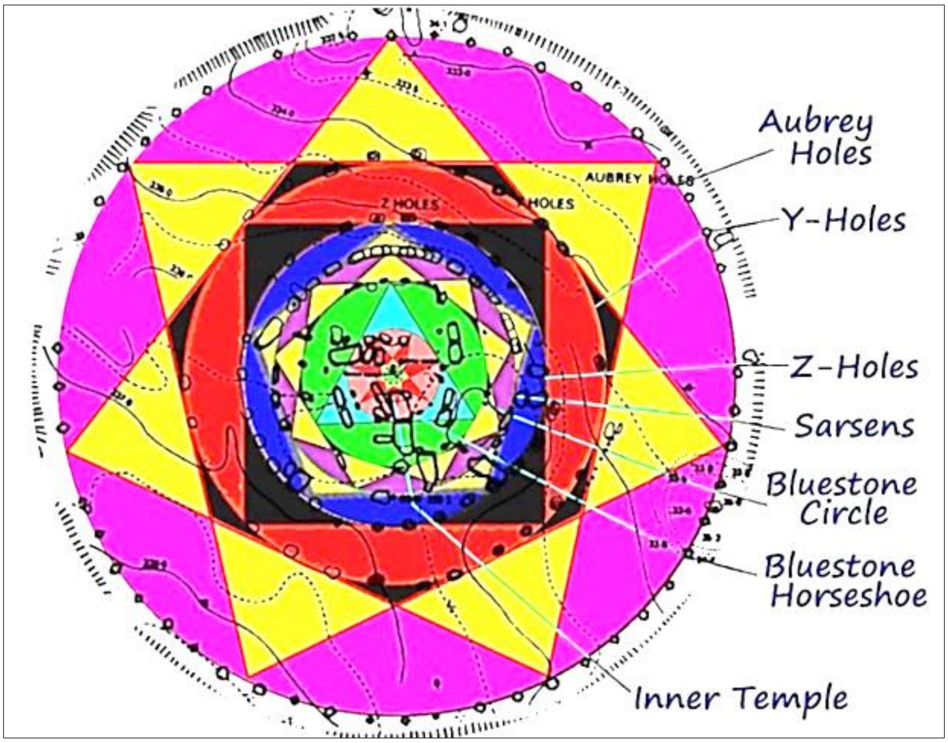
Or *Equilateral Triangle x Square* = $\sqrt{8}$ = 2.828427125

2 x $\sqrt{2}$

Or *Square x Square x Square* = $\sqrt{8}$ = 2.828427125

$\sqrt{2}$ x $\sqrt{2}$ x $\sqrt{2}$

SARSEN & BLUESTONE HENGES

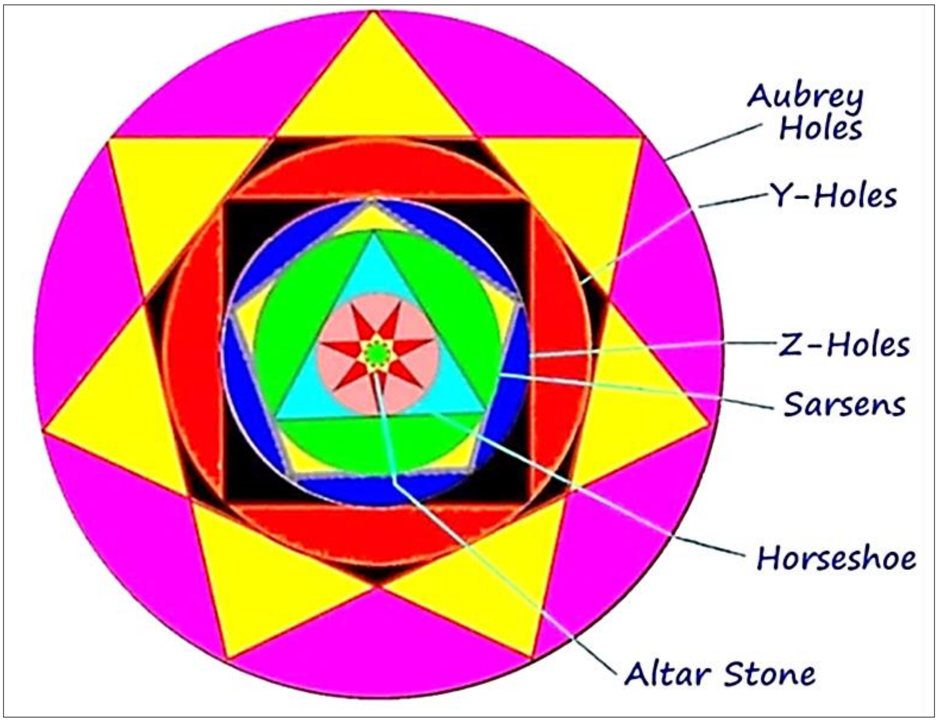


Inner Septagram x Square x Pentagon

= √8 = 2.828427125

Φ x √2 x (√5 – 1)

SARSEN HENGE – AS A CROP CIRCLE.



STONEHENGE STAGING TIMELINE
***3000bc** the layout begins.*

BLUESTONE CIRCLE – AUBREY HOLES

2500bce – ***Φ x √2 x Φ*** *or 1.618033909 x 1.414213562 x 1.618033989 for a total ratio of* ***3.702459174*** *which actually produces a polygram with 56 points –* ***The Aubrey Circle & Bluestones****!*

THEN

1800bce – **√2 x √2 x √2** – *Clay Tablet BM15285 from Larsa in Mesopotamia –* ***Spiral of Squares***

For a total ratio of ***2.828427125. -–The Aubrey Circle & The Sarsen Circle.***

THEN

***The Aubrey Circle* & SARSEN CIRCLE with X & Y HOLES**

1200bce – **√2 x Φ x (√5 – 1)** or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of* ***2.828427125***

***The Aubrey Circle* & SARSEN CIRCLE without X & Y HOLES**

The Spiral of Squares – **√2 x √2 x √2** *– for a total ratio of* ***2.828427125****.*

SARSEN CIRCLE plus X & Y HOLES*:*

√2 x Φ x (√5 – 1) or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of* ***2.828427125***

This is also my candidate for ***Plato's Geometric Number*** *– the Square, the Oblong, and the Five less the one.*

Graphically, this is the Inner Septagram x the Square x the Pentagon.

THEN

IN GREEK MATHEMATICS*:*

360bce – **√2 x √2 x √2** – *Plato's* ***Meno*** – √8 or √2 x √2 x √2 – This also is a total ratio of ***2.828427125***.

Plato has Socrates tell Meno if he cannot do the areas then look at the geometry. Look at it Graphically instead of Mathematically. Use Graphical Geometry instead of Trigonometry.

THEN

IN BUDDHIST MANDALA GEOMETRY:

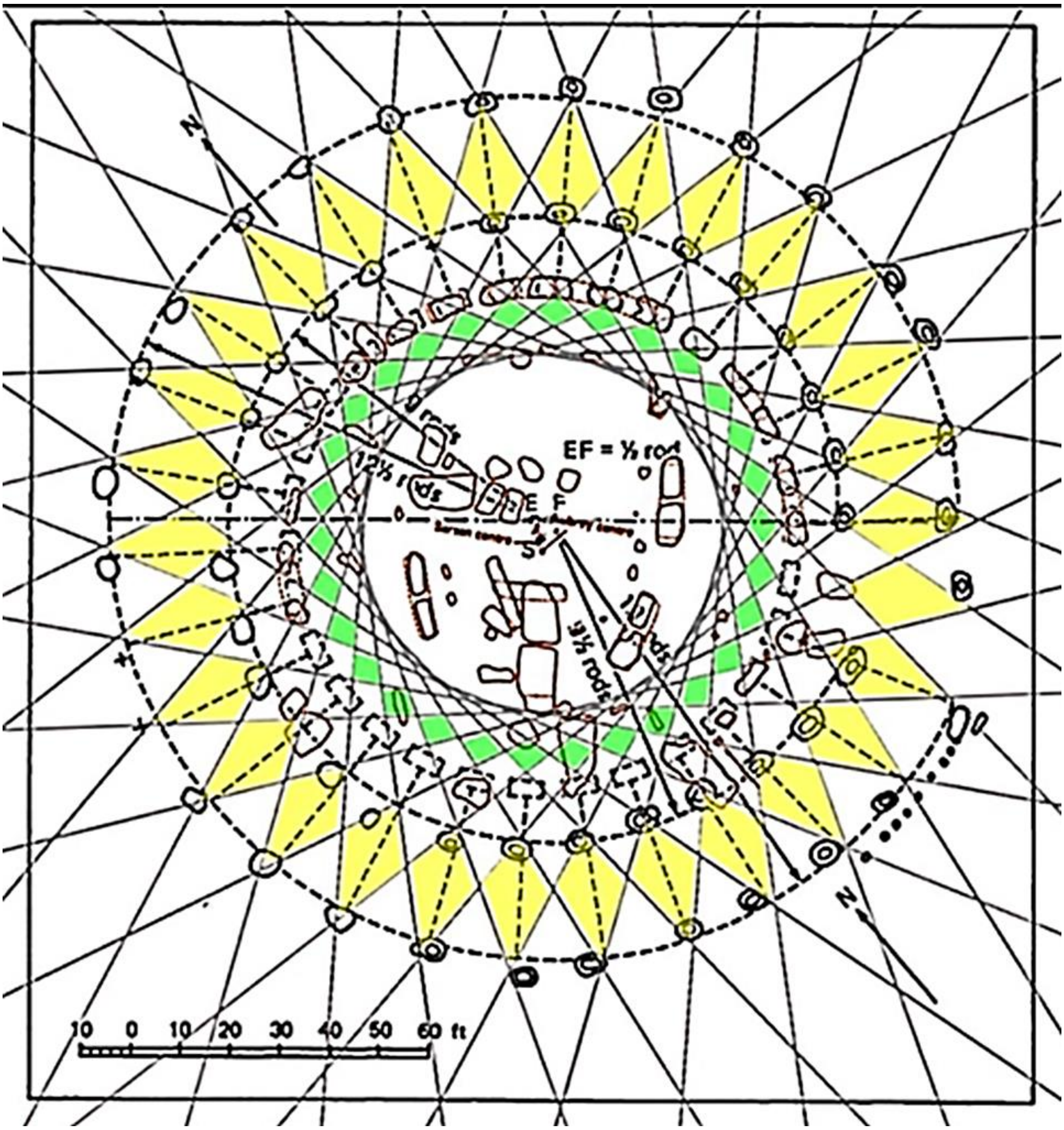
1000ce – **√2 x √2 x √2** – Ceiling in the Buddhist Temple at the Chaqchan Monastery

THEN

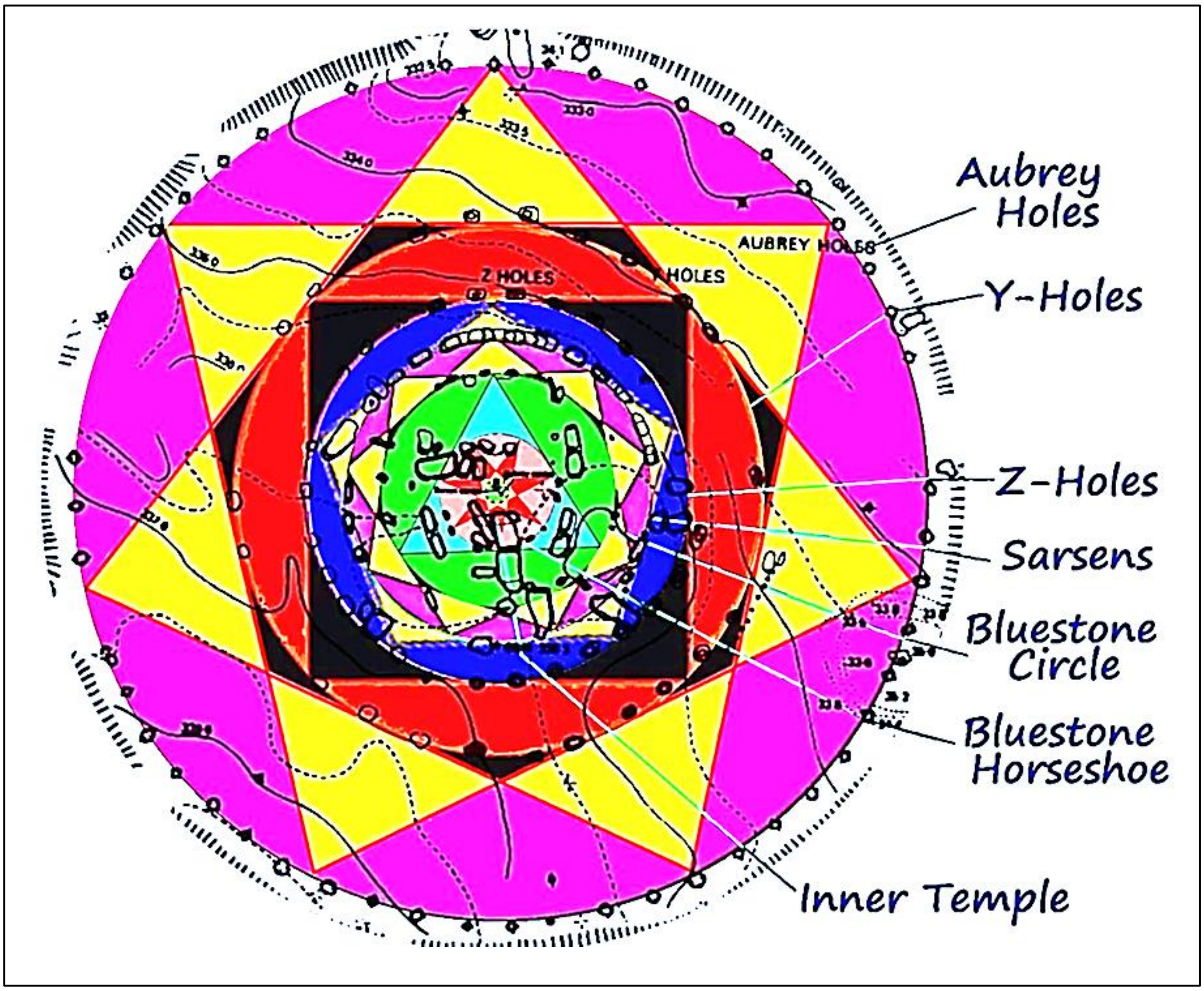
DURING THE RENNAISENCE:

1661ce – **√2 x √2 x √2** –Gardens in the ***Palace of Versailles***

Bosquet de l''toile -–Bosquet du Théâtre d''au -–Bosquets du Dauphin & de la Girondole

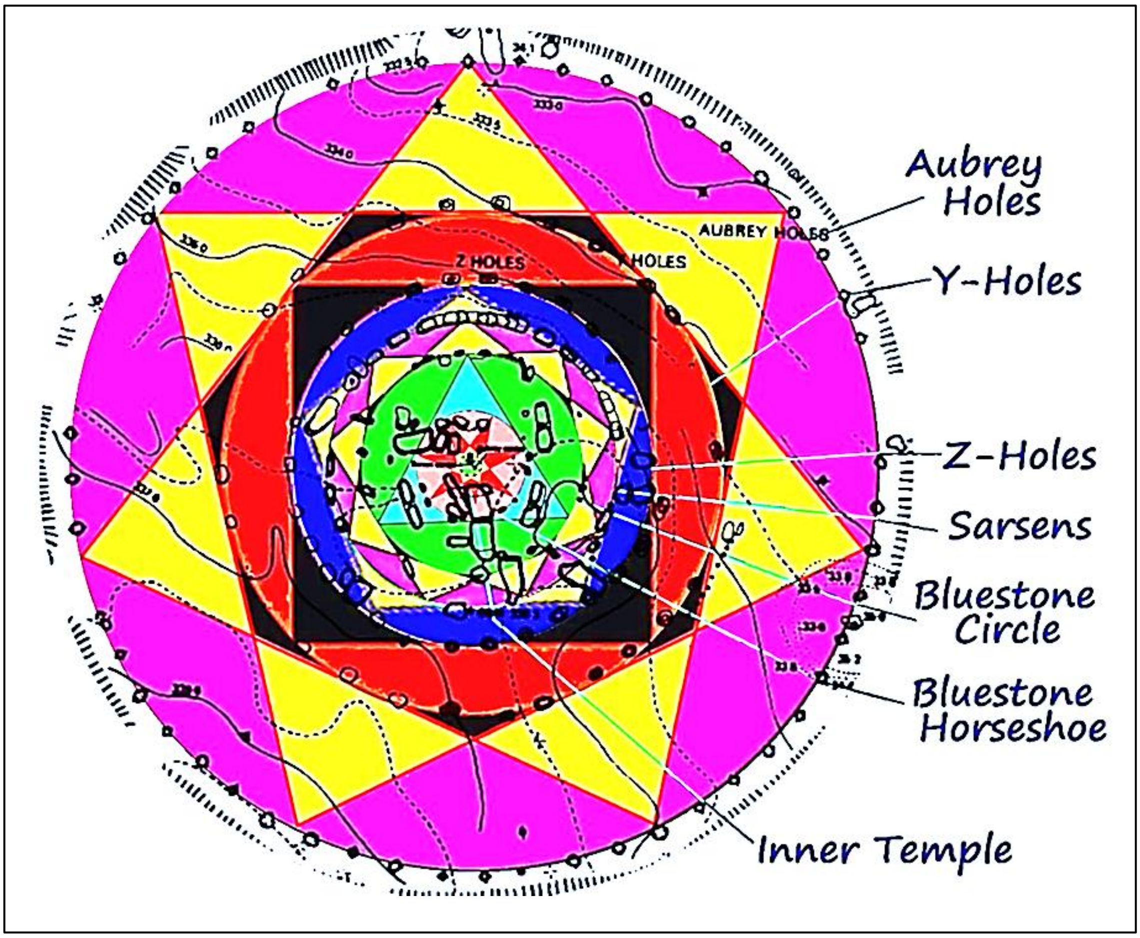

N
12½ rods
EF = ½ rod
E
F
S
9½ rods
N
10 0 10 20 30 40 50 60 ft

MY GRAPHICAL ANALYSIS OF STONEHENGE



PLATO’S GEOMETRICAL NUMBER

- **Φ** (inner septagram – the **oblong**)
- **√2** (the **square**)
- **√5-1** (the pentagon) – **“the square of 5 less the one.”**

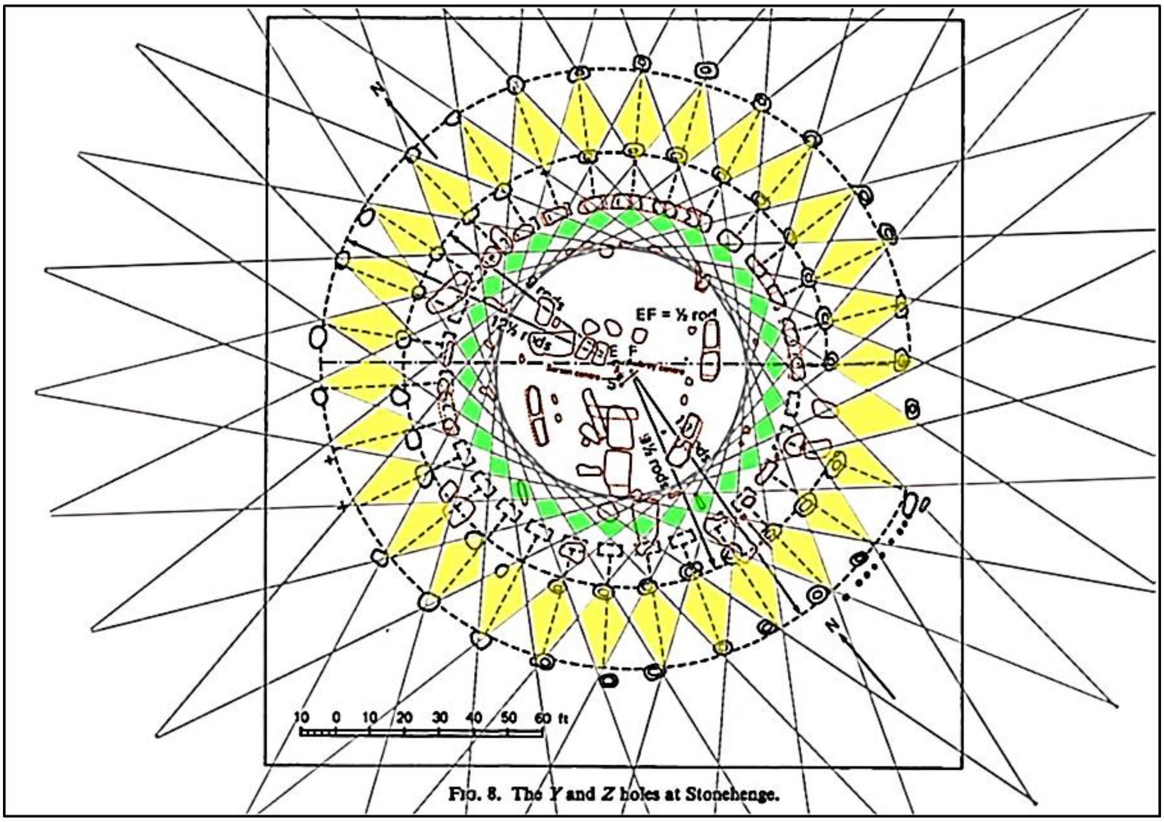


The sign above the entrance to Plato's Academy in Athens is said to have read, ***“Let no one ignorant of geometry enter”***.

“However, this inscription is not mentioned in any literature that predates a document from the middle of the 4th century AD, which was written about 750 years after Plato founded the Academy.”

*“Plato's Academy marked a revolution in ancient Greek education and was the first **institution of higher learning** in the Western world. It also inspired the creation of Aristotle's school, which, like the Academy, became a center for scientific research.”*

This 30 point polygram, when placed over Thom's 1974 Survey, shows a remarkable alignment with all the features of the X-Holes, Y-Holes, Sarsens, and even also, at the same time, with the Bluestone Circle. The Bluestone Circle goes close to being the Inscribing Circle for this portrayal.

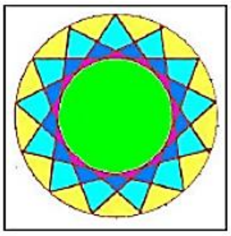
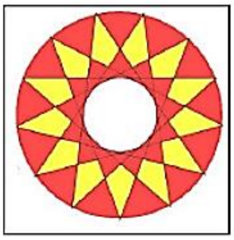
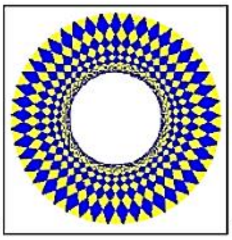
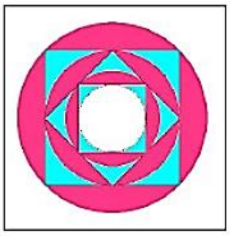
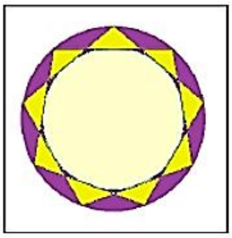


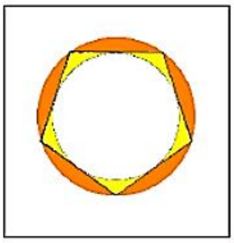
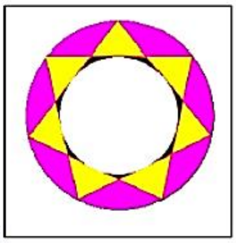
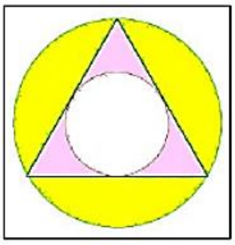
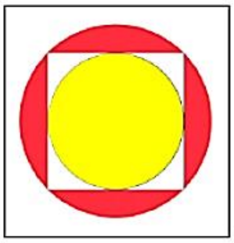
30 point 48 degree polygram (extended) – Inner circle the Bluestone Henge – Outer circle the Y-Hole circle – Features of the shape relate to the positioning of the Sarsens, X-holes and Y-holes.

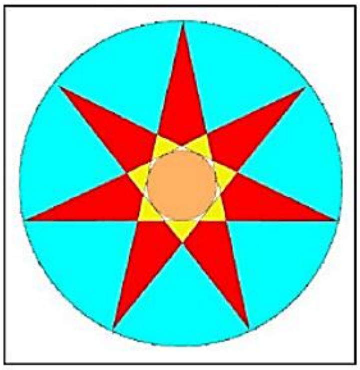
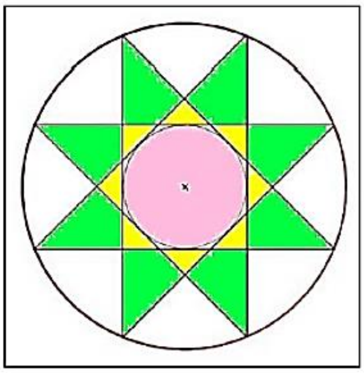
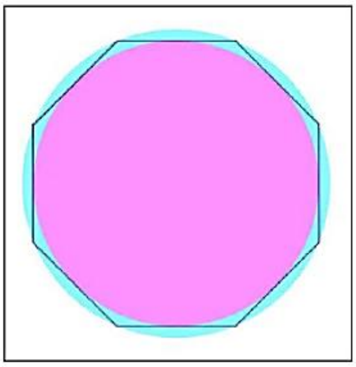
My 'Stonehenge Staging' (2016) utilising stagings by others but varied by me.
Explains the stages as follows:

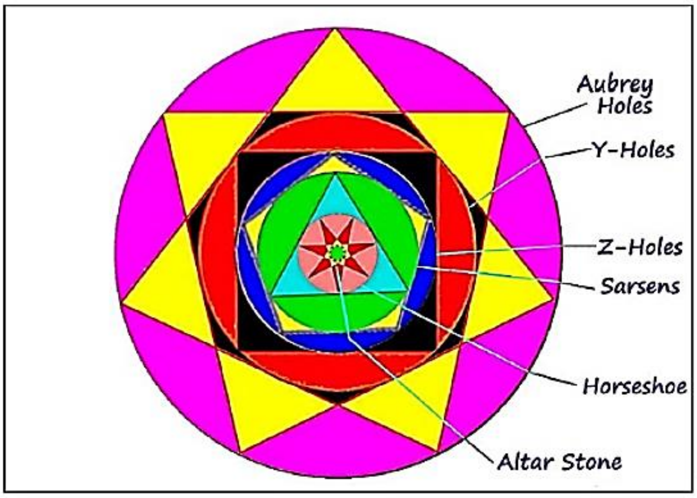
Stonehenge I comprises the Heel Stone, the ditch, the bank, together with the two stone-holes in the entrance, the post-holes on the causeway and near the Heel Stone, and possibly some wooden structure at the center of the circle.
Stonehenge II is the circle of bluestones in the Bluestone Circle, its Ratio to the Aubrey Circle (until now without Holes) this ratio being Φ x √2 x Φ giving us the 56 Aubrey Holes then the Avenue [leading to Stonehenge], the Heel Stone ditch, and possibly the two axial stone-holes on the Avenue.
Stonehenge IIIa comprises the setting of dressed bluestones, and the Y and Z Holes the layout requiring the use of perhaps a 30 point 48 degree polygram with a ratio of 2.472135956 and utilizing the Bluestone Circle formed in Stonehenge II above. An Equilateral Triangle with ratio 2.000000000 could then have been utilised with the Bluestone Circle as its Outer Circle to layout the Bluestone Horseshoe.
(30 point 48_0 polygram with a ratio of 2.472135956, divided by √2 = 1.748064099 13 point 69.2307_0 polygram.)
Stonehenge IIIb includes the Four Stations, the Slaughter Stone and its former companion. The Four Stations could have been used to form an Octagram as has been suggested elsewhere as the ratio for the Octagram multiplied by the ratio for the Octagon results in the ratio 2.828427125 (13 point 41.7857_0 polygram) which is the eventual ratio from the Aubrey Hole Circle to the Sarsen Circle.
Stonehenge IIIc the time for the Sarsen Circle and the Horseshoe of Sarsen Trilithons
Stonehenge IIId is represented by the existing setting of the bluestones in the circle and horseshoe, Q and R Holes.

SHAPES FOUND IN STONEHENGE

 x  x  x  x 

 x  x  x  x

 X  X 



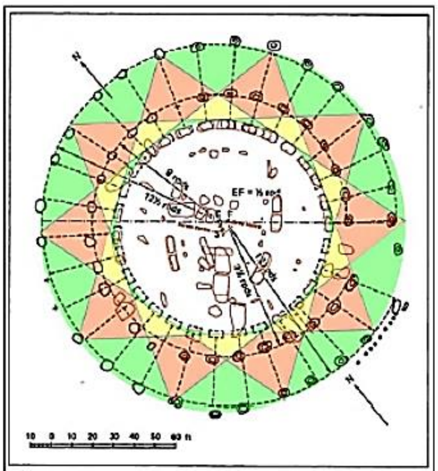
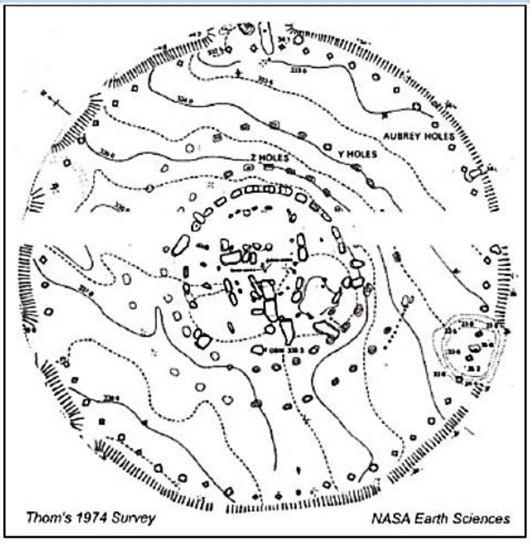
X


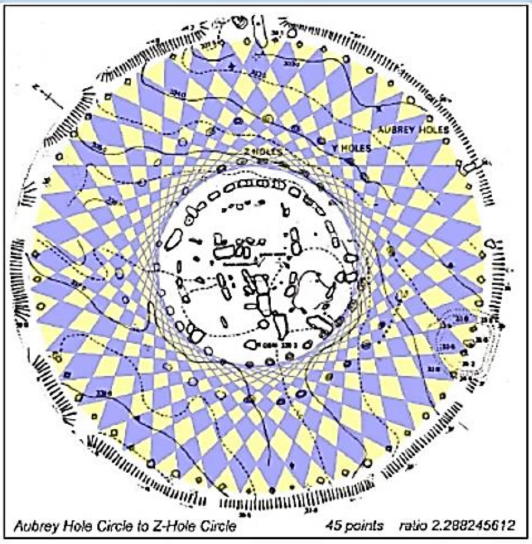
Fig. 8. The Y and Z holes at Stonehenge.

GRAPHICAL RATIOS OF STONEHENGE

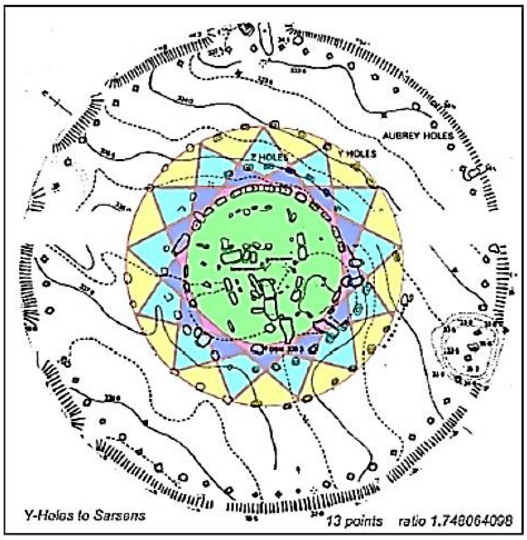


Thom's 1974 Survey NASA Earth Sciences

X

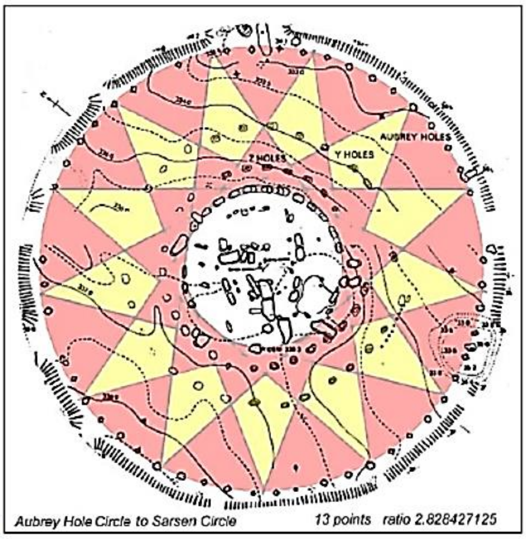


Aubrey Hole Circle to Z-Hole Circle 45 points ratio 2.288245612

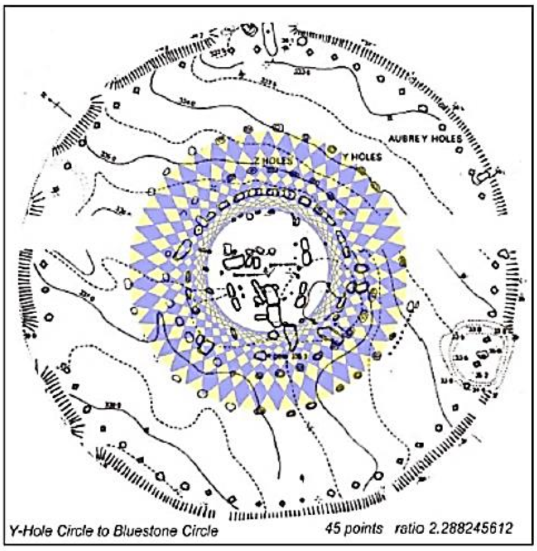


Y-Holes to Sarsens 13 points ratio 1.748064098

X

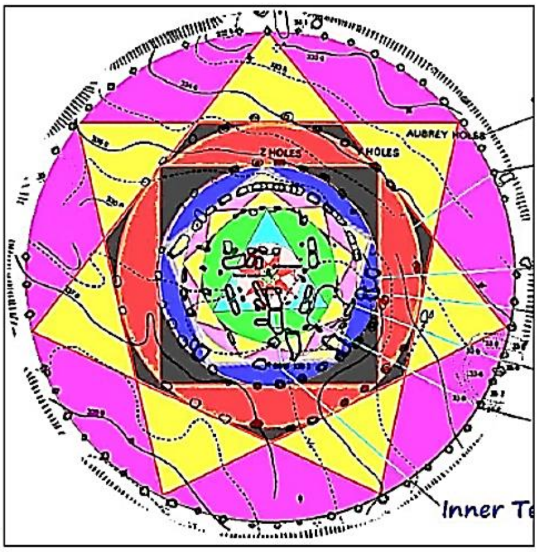


Aubrey Hole Circle to Sarsen Circle 13 points ratio 2.828427125

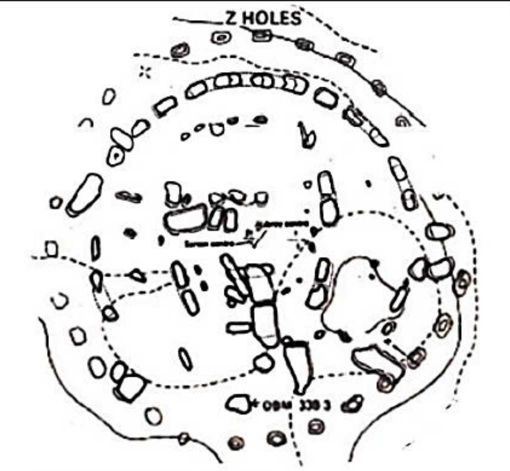


Y-Hole Circle to Bluestone Circle 45 points ratio 2.288245612

X

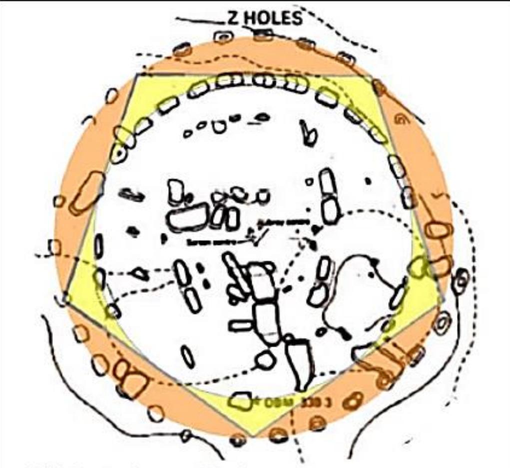


INSIDE THE SARSEN CIRCLE

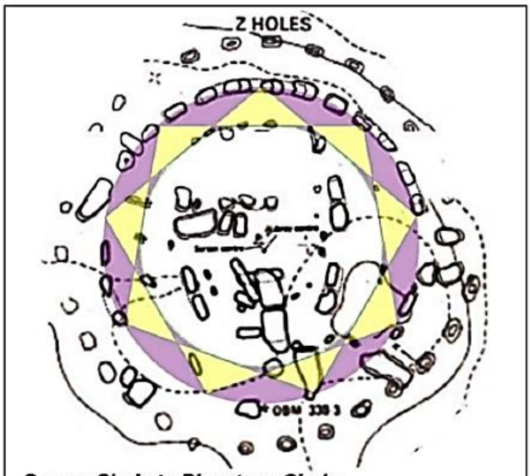


Z-Holes, Sarsens, Bluestone Circle,
Sarsen and Bluestone Horseshoes

X

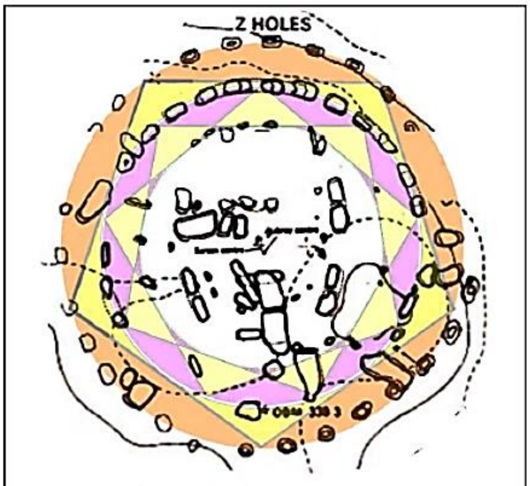


Z-Holes to Sarsen Circle
Pentagon Ratio 1.236067978

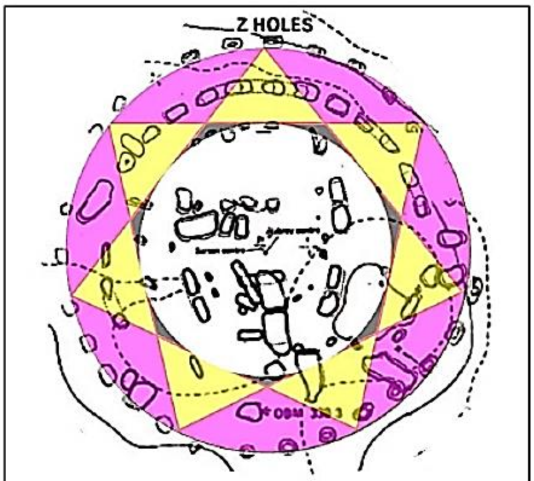


Sarsen Circle to Bluestone Circle
Inner Nonogram Ratio 1.309016995

X

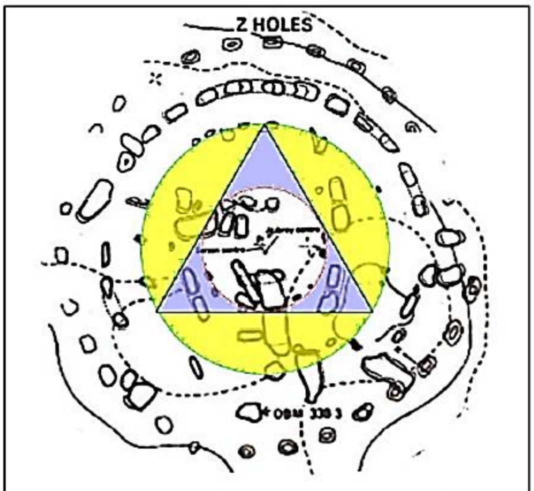


Z-Hole to Bluestone Circle



Z-Hole to Bluestone Circle

X

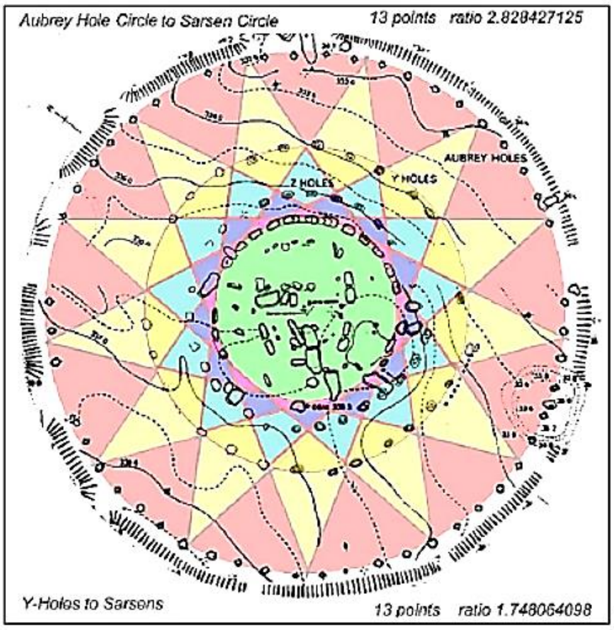


Bluestone Circle to Bluestone Horseshoe

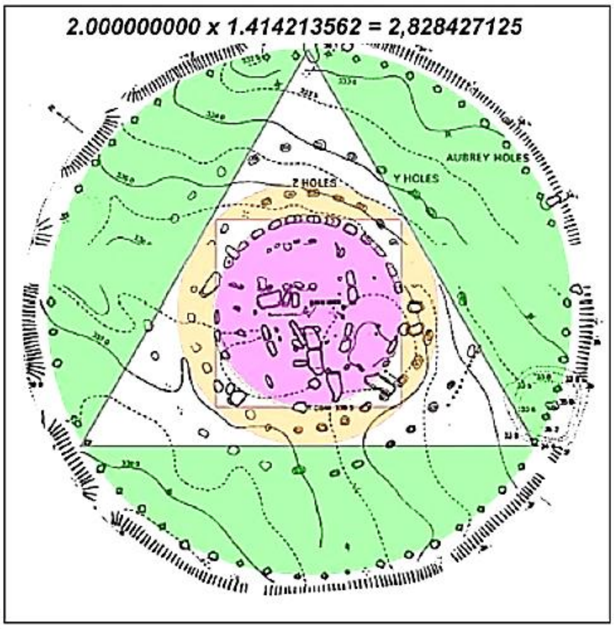
SHAPE x SHAPE = SHAPE

Plato's Meno and √8 or the Ratio 2.828427125 or (√2 x √2 x √2) or 2 x √2

Each of the following combinations of shape ratios multiplies out to 2.828427125, the ratio for the Aubrey Hole Circle to the Sarsen Circle.



X



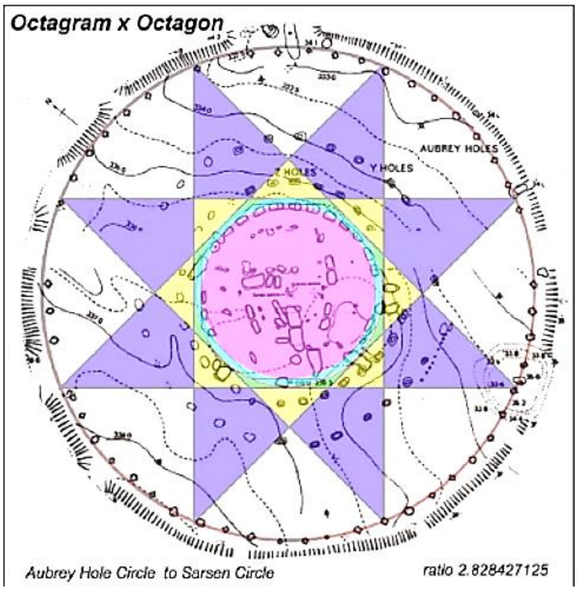
This 13 point image indicates Apexes at the Aubrey Holes, at the Y-Holes and at the Z-Holes

The outer shape at the Aubrey Holes is the 13 point Polygram with ratio 2.828427125

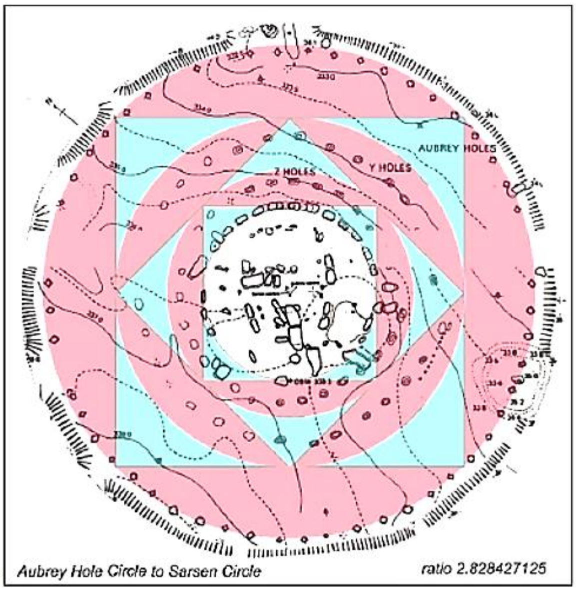
This image indicates the ratio from the Aubrey Holes to the Sarsen Circle.

2 x √2 or 2.828427125.

The Equilateral Triangle x A Square.



X



This 8 point Octagram multiplied by the 8 sided Octagon indicates the ratio from the Aubrey Holes To the Sarsen Circle

2.61312593 x 1.08239220034257

which gives us the ratio 2.828427125

This image shows us my Quadrature. from the Aubrey Holes To the Sarsen Circle √2 x √2 x √2.

A Square x a Square x a Square

which gives us the ratio 2.828427125

Also check these shape ratios against Aubrey Burl's stated measurements throughout his book.

STONEHENGE ORIGINS
According to:
Bettina Schulz Paulsson of the University of Gothenburg, Sweden

Sailors spread the ancient fashion for monuments like Stonehenge

HUMANS 11 February 2019

The origins of megaliths like Stonehenge have been a mystery.

By **Alison George**
Thousands of ancient stone structures, such as Stonehenge, are found throughout Europe. Now a long-standing puzzle of where the practise originated and how it spread has been solved.
Over the last century there have been ***two main views*** on the origins of the stone structures, known as megaliths.

One was that they started from a single source then spread over sea routes.

The other was that megalith construction developed independently in different locations.

To find out which was correct, **Bettina Schulz Paulsson of the University of Gothenburg, Sweden** analysed the dates from over **2000 megaliths** in Europe. She used statistical methods to narrow down previous estimations and get a better picture of where they built and in what order.

Schulz Paulsson found that megalith construction started in a single location in northwest France over a **period of 200-300 years around 4500 BC**. The tradition then spread through Europe spanning 2,000 years along the sea routes of the Mediterranean and Atlantic coasts, concentrated in coastal regions.

Stone Age Sailors

The pattern of how the megaliths spread over time also hints that societies developed sophisticated sea-faring technology, far earlier than previously thought.

"They were moving over the seaway, taking long distance journeys along the coasts," says Schulz Paulsson. This fits with other research she has carried out on megalithic art in Brittany, which shows engravings of many boats, some large enough for a crew of 12.

Read more: Unearthed: Why we've got monuments like Stonehenge all wrong

The previous view was that large boats capable of travelling long distance were only developed in the Bronze Age, some 2000 years later.

More than 35,000 megaliths such as stone circles and underground passage graves still exist throughout Europe, from Sardinia to Scandinavia.

"There were probably a lot more. This is just a small proportion of what was originally there in the landscape," says Schulz Paulsson.

THE SARSEN CIRCLE

Quotation from Aubrey Burl

Smith escaped to the comparative peace of Stonehenge. He was the first of a queue of astronomers endeavouring to make Stonehenge an observatory.

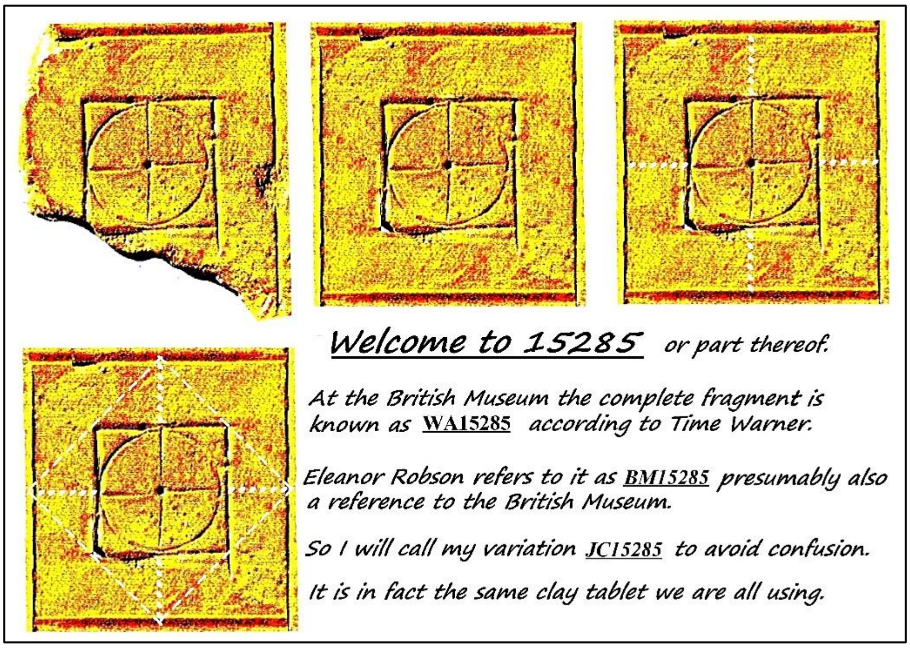
Plotting the circle at Stonehenge he decided its diameter was 110ft (33.5m), the same length as Inigo Jones had proposed. Stukeley thought the length was 60 druid cubits or 104ft (31.7m), and John Wood 97ft (29.6m). Petrie was more precise with 97ft 4in (29.7m). Even more exactly Alexander Thom found the distance to be 35.8 of his Megalithic Yards or 97ft 6in (29.7m). Amongst this cavalcade of architects and surveyors it was an amateur, John Aubrey, with his 'thirty two yards ½' or 97ft 6in, who agreed with Thom.

CH. 1: ANTIQUARIANS: RECOVERING STONEHENGE: TO AD 1900 39

MY QUADRATURE AND BM 15285

AN ANCIENT EXERCISE IN GRAPHICAL GEOMETRY:

1800bce



MY QUADRATURE

The clue to my view of the ***Square inside a square inside a square*** is to ignore all references to "***area***" and to π and to treat them as red herrings.

My white construction lines indicate that these squares have been inscribed in a proportion to each other that enables them to become my Quadrature. For simple "*School*" Tablets they are imbued with remarkable accuracy in their drawing. You may wish to argue that the central (Inscribing) circle was drawn with a compass; perhaps because of the hole in the centre, but bear in mind that the remarkable accuracy within this tablet could not have been achieved without some mark indicating the Centre of the Squares.

So, we have clay tablet "*school*" work from Larsa in Mesopotamia from about **1800bce** being reproduced in silver pendants by *Hilltribe Silversmiths* from Thailand in **2016**; 3816 years later and we still don't seem to completely understand it.

HILLTRIBE SILVER PENDANT

NOTE: Christian beliefs of what the Gifts of the Holy Spirit are:

Wisdom, Understanding, Counsel, Knowledge, Fortitude, Piety, Fear of the Lord.

Website:

The Cosmic Code - 3

www.bibliotecapleyades.net/**sitchin**/sitchinbooks06_03.htm

By the **Divine Tablet**, with a stylus, he will instruct him in the secrets of the gods. "....The Bible also recorded the heavenward ascent of the **pre-Diluvial patriarch.**..

Chapter Seven

SECRET KNOWLEDGE, SACRED TEXTS

"...."Everything that we know was taught to us by the gods," the Sumerians stated in their writings; and therein lies the foundation, throughout the millennia and unto our times, of ***Science*** and ***Religion***, of the discovered and the occult.

"First there was the ***Secret Knowledge*** that was revealed when ***Mankind*** was granted **Understanding** became Sacred **Wisdom**, the foundation of human civilizations and advancement. As to the secrets that the gods had kept to themselves **-** those, in the end, proved the most devastating to Mankind. And one must begin to wonder whether the unending search for *That Which Is Hidden*, sometimes in the form of mysticism, stems not from the wish to attain the divine but from a fear of what Fate the gods **-** in their secret conclaves or in hidden codes **-** have destined for ***Mankind***.

"....The *biblical Lord* challenged **Job** (in chapter 28) to stop questioning the reasons for his Fate, or its ultimate purpose; for **Man's knowledge - Wisdom and Understanding** - fall so far short of *God's*, that it serves no purpose to question or try to fathom divine will.

"That ancient treatment of ***Wisdom*** *and* ***Understanding*** *of the* ***secrets*** *of the heavens and the Earth* – of ***science*** **-** as **a divine domain to which only a few selected mortals can be given access**, found expression not only in canonical writings but also in such *Jewish mysticism* as the ***Kaballah***....

"....When *the Lord* granted wisdom to **selected humans**, the *Bible* held, He in fact shared with them **secret *knowledge* concerning the heavens and the Earth**. The *Book of Job* describes such knowledge as ***"Wisdom's Secrets,"*** which had not been revealed to him.

"*Revelation*, the sharing of secret ***knowledge*** with humanity through chosen initiates, began before the Deluge. **Adapa**, the offspring of **Enki**, to him was attributed the authorship of a work known by its English title *Writings Regarding Time*, [from] Divine **Anu** and Divine **Enlil -** a treatise that dealt with time reckoning and the calendar. The ***Tale of Adapa***, on the other hand, specifically mentions that he was taught, back in ***Eridu***, the arts of medicine and healing.

"....Sumerian records spoke of another, pre-Diluvial Chosen One.... Known in the texts as **EN.ME.DUR.ANNA** as well as **EN.ME.DUR.AN.KI** ("*Master of the Divine Tablets Concerning the Heavens"* or ***"Master of the Divine Tablets of the Bond Heaven-Earth"***).

"....Though the ***Tale of Adapa*** does not say so explicitly, it appears that he was allowed, if not actually required, to share some of his secret knowledge with his fellow humans, for else why would he compose the renowned book? In the case of **Enmeduranki** the transmission of the learned secrets was also mandated **-** ***but with the stricture that it must be limited to the line of priests, from father to son***, begun with **Enmeduranki**:

> The learned savant who guards the secrets of the great gods
> will bind his favored son with an oath before Shamash and Adad.
> *By the Divine Tablet, with a stylus, he will instruct him in the secrets of the gods*.

""The simplest and most straightforward explanation is that these men have the Y chromosome of Aaron," explained **Dr. Karl Skorecki** of the *Israel Institute of Technology in Haifa.*

"The tales of those who were initiated into the secret ***knowledge*** assert that the information was written down in "*books*." These, for sure, were not what we now call "*books*".... The many texts discovered in caves near the ***Dead Sea*** in Israel are referred to as the Dead Sea Scrolls, for they were texts inscribed on sheets of parchment (made mostly of goat skins).... *Ancient Egyptian texts* were written on papyrus - sheets made from reeds growing in the Nile River. And the earliest known texts, from ***Sumer***, were inscribed on ***clay tablets.***...

"....In which form were the "*books*" written by **Adapa**, **Enmeduranki**, and **Enoch** (360 of them by the latter!)? Bearing in mind that they are attributed to a time before the Deluge - thousands of years even before the Sumerian civilization - probably in none of the *post-Diluvial forms*, although the Assyrian king **Ashurbanipal** did boast that he could read "writing from before the Flood....." It would be logical to wonder whether the writing was done in what some *Sumerian* and *Akkadian texts* call ***Kital Ilani*** - "writing of the gods." References to such writings by ***the Anunnaki*** may be found, for example, in inscriptions dealing with the rebuilding of run-down temples, in which the claim was made that the reconstruction followed "the drawings from olden times and the writing of the *Upper Heaven*."

"....In ***Egypt*** it was **Thoth** who was venerated as the Divine Scribe. It was he who, after the *Council of the Gods* resolved to recognize **Horus** as the legitimate heir, inscribed on a metal tablet the *Decree of the Gods*, and the tablet was then lodged in the "divine Chamber of Records."

"....In the *Tales of the Magicians*.... it was said that the living but inanimate king and queen whom **Thoth** had punished guarded, in the subterranean chamber, "the book that the god **Thoth** has written with his own hand" and in which *secret knowledge concerning the Solar System*, astronomy, and the calendar was revealed. When the seeker of such "*ancient books of sacred writings*" penetrated the subterranean chamber, he saw the book "giving off a light as if the Sun shone there."

"What were those divine "books" and what kind of writing was on them?

"The epithet-name of **Enmeduranna**, "*Master of the Divine Tablets Concerning Heaven*," draws attention to the term ***ME*** in his name, translated here as "Divine Tablets." In truth no one can be sure what the ME's were, whether tablets or something more akin to computer-memory chips or discs. They were objects small enough to be held in one hand, for it was told that **Inanna/Ishtar**, seeking to elevate her city *Uruk*, to capital status, connivingly obtained from **Enki** scores of the ***ME***'s that were encoded with the secrets of Supreme Lordship, Kingship, Priesthood, and other aspects of a high civilization. And we recall that the evil **Zu** *stole from Enlil's Duranki the Tablets of Destinies and the ME's* which were ***encoded with the Divine Formulas***. Perhaps we will grasp what they were if we look to technology millennia ahead.

"....The *Bible* provides greater - and mind boggling - details regarding that first instance of sacred writings; then, the Bible explicitly states, ***God himself did the inscribing!***

"The tale begins in chapter 24 of the book of *Exodus*, when **Moses** and **Aaron** and **two** of his sons, and **seventy** of the Elders of Israel, were invited to approach ***Mount Sinai*** on the peak of which the *Lord* had landed in his ***Kabod***. There the dignitaries could glimpse the divine presence through a thick cloud, blazing as a "devouring fire." Then **Moses** alone was summoned to the mountaintop, to receive the ***Torah*** ("*Teachings*") and the ***Commandments*** that the *Lord God* had already written down.

INTERPRETING '*KIBDU' as in* '*<u>Kibdu Secrets</u>*'

UTILIZING:

"The Pennsylvania Sumerian Dictionary". University of Pennsylvania.

Retrieved 2009-02-20

SEEKING AN INTERPRETATION OF "KIBDU", AS IN

"THEY GAVE HIM THE DIVINE TABLET – THE "<u>KIBDU</u>" SECRET OF HEAVEN AND EARTH."

KI – B – DU *or* KIB – DU *or* KI – DU *or* KI – DU – B

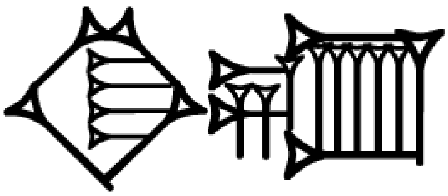
<u>ki [place]</u> <u>with (math.)</u>  <u>dub [TABLET]</u> 

ki- dub = math TABLET

If Kidub = Kibdu. (floating consonant)

Was the "Kibdu secret" a Maths Tablet?

Perhaps the 07; 12 multiplication tablet 1924.457 Ashmolean?



Ki <u>– with (math.)</u> du_{12}=<u>to perform (music)</u>

DOES "KIBDU" INCLUDE THE HARMONICS OF MUSIC – THE **07 12** MULTIPLICATION TABLET?
(OR MY SHAPE TO MUSIC HARMONICS?) (OR PLATO'S HARMONICS OF SIGHT AND SOUND?)

<u>Gilgamesh, The New Translation - Page 108 - Google Books Result</u>
https://books.google.com.au/books?isbn=131231141X

<u>Gerald J. Davis</u> - 2014 - Fiction

Proper names are not formed in this way, either in ***Sumerian*** or Akkadian. ... This would give us Gish-gi(n)-mash, which is clearly again (like En-***ki-du***) not an..

Kibdu or Ki-du or Ki-dub

KIBDU

TRANSLATE KIBDU AS IT APPEARS IN:-

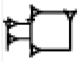
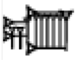
*"They gave him a Divine Tablet, the **kibdu** secret of Heaven and Earth . . . "*

In my own research the 07; 12 multiplication Table seemed to unite all the harmonies of the universe when their values are expressed in Sexagesimal Notation thus making it simple for the Ancients to recognise the Harmonics. In my own work I have been able to co-relate the Frequencies of Music Notes with the Ratios of Shape and with the Square Roots of Integers. Each of these also relates to the 07; 12 Tablet.

Dub [GO AROUND]

(30 instances)

dub [GO AROUND] (30x: ED IIIb, Old Akkadian, Ur III, Old Babylonian) wr. dab_6; dub "to go around, encircle, turn; to search; to tarry" Akk. *lawû*; *sahāru*

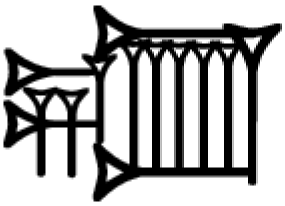
[1]		dab_6
[2]		dub

	3500	3000	2500	2000	1500	1000	(no date)
[1]		5	17	5			
[2]				2			

15 distinct forms attested; click to view forms table.

dub

1. to go around, encircle, turn

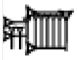


Dub [TABLET]

(1183 instances)

dub [TABLET] (1183x: ED IIIb, Ebla, Old Akkadian, Lagash II, Ur III, Early Old Babylonian, Old Babylonian) wr. Dub "tablet" Akk. *ṭuppu*

See dub bala [go over an account].

[1]  dub

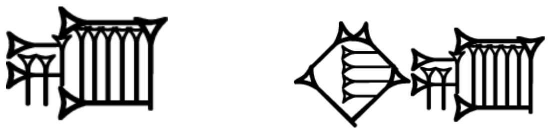
\+ -0 (1183x/100%).

	3500	3000	2500	2000	1500	1000	(no date)
[1]		143	983	54			

19 distinct forms attested; click to view forms table.

1. tablet

Dub **Ki-dub**



Ki [WITH]

ki [WITH] wr. Ki "with (math.)" Akk. *itti*

[1]  ki

1. with (math.)

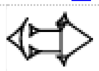
Akk. *itti*.

[2002] J. Hoyrup, Lengths Widths Surfaces 44.

(ki [place] + dar [split])

Du [SQUARE]

du [SQUARE] wr. du$_7$ "to square"

[1]  du$_7$

1. to square

[2002] J. Hoyrup, Lengths Widths Surfaces 24.

Du [PLAY]

(59 instances)

du [PLAY] (59x: ED IIIb, Old Akkadian, Ur III, Old Babylonian) wr. Du12-du12; du_{12} "to play (a musical instrument)" Akk. *lapātu*; *zamāru*

[1]		du_{12}-du_{12}
[2]		du_{12}
+	-0 (59x/100%).	

	3500	3000	2500	2000	1500	1000	(no date)
[1]		1	14	16			
[2]				25			

38 distinct forms attested; click to view forms table.

1. to play (a musical instrument) (59x/100%)

Akk. *Lapātu* "to touch, take hold of"; *zamāru*.

[1990] T. Krispijn, Akkadica 70 14.
[1980] J. Klein, Studies E.Y. Kutscher XXVII n80.

See ETCSL: du_{12}=**to perform (music)**.

ki [WITH] wr. Ki "with (math.)" Akk. *itti*

du_{12}=**to perform (music)**.
du [SQUARE] wr. du_7 "to square"
dub [**TABLET**], dub to go around, encircle, turn

ki- dub = math TABLET

PUBLISHED DIMENSIONS FROM OXFORD'S PROFESSOR OF ARCHEAOLOGY: AND HIS COMMENTS:

Aubrey Burl's Stonehenge Dimensions

Page Details

29, 30 Trench to Sarsens 32m John Aubrey 1666
30 Sarsens Diameter 29.7m John Aubrey 1666
30 Aubrey Hole spacing 4.9m William Hawley 1919 (16 feet)
13 ditto 4.880688587m
36 Theodolite Damaged + or - 4 degrees William Stukely 1724
36 NE Sarsens spacing twice as wide ditto
37 First accurate set of plans John Wood 1747
13 Aubrey Hole Circle diameter 87m John Aubrey 1666 (circ. 273.3185609) (759.2mm per degree)
15 Trilithon height 6m - 7.3m
16 Altar Stone 5m x 1m Inigo Jones 1620
13 Slaughter Stone 6.6m x 2.1m a sarsen
10 Four Station Stones 79.3m x 33.8m ' sarsens over 1m thick'
10 Inner edge of ditch diameter 104m
10 inner edge of bank diameter 91.7m
151 Station Stones survey 80m x 33.5 1973 and 78 Thom
91 to 92 34.7m 92 to 93 79.9m 93 to 94 32.7m 94 to 91 80.38m
what about metes and bounds descriptions in surveys?
176 stone 21 stands slightly outside the circumference
177 gaps half as wide as the sarsens one stone plus its gap 3.1m
gap 30 to 1 wider 29 to 30 and 1 to 2 were narrower.
actual sarsens perimeter 93.4m
154 rectangle and sarsens circle long sides 1m north and south of circumference of planned sarsens circle.

Distinguished Visitors and Commentators

34 Edmund Halley, Roger Gale, Lords Pembroke and Winchelsea 1721 with Stukely
32 George Villiers, Duke of Buckingham & Inigo Jones 1620
29 Charles II and James 1663 August
37 Daniel Defoe 1724
18 Henry of Huntingdon early 1100's first chronicler
9 John Evelyn, diarist 1654
9 Ralph Waldo Emerson 1848
6 Samuel Pepys 1668

4 "Stonehenge in its Landscape" Rosamund Cleal, K.E.Walker, Rebecca Montague 1995

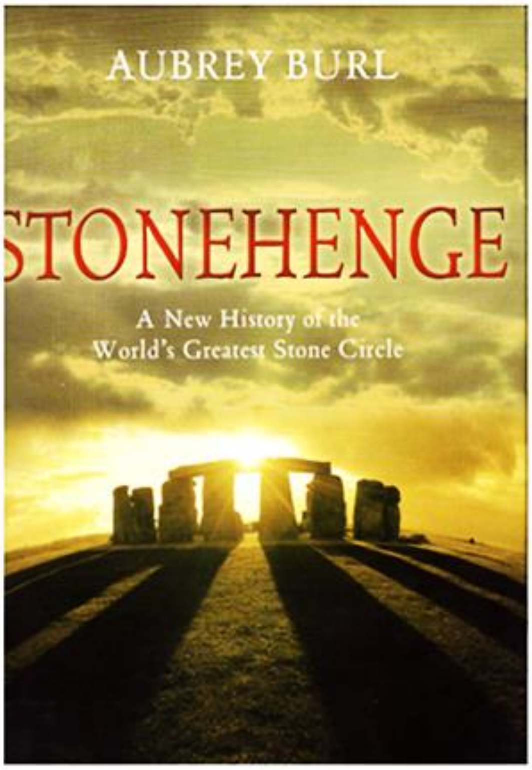
AUBREY BURL'S COMMENTS:

p. 2 Posts were set up and withdrawn; pits were dug, then backfilled. Its predecessor had contained a bewilderment of postholes. Everything had meaning and contained an elusive answer.

p. 57 In 1923 two irregularly concentric sets of postholes, unpoetically called the Y and Z Holes, were uncovered surrounding the sarsen ring. Whether they were laid out as poor circles or as an equally imprecise spiral is debatable. It has even been suggested that because there were 30 holes in each 'ring' they could have been used as a record of the days of a lunar month.[38]

p. 219 There was a half-hearted attempt to enhance a tumbledown ring. In 1923 Hawley and Newall located two very irregular rings of pits that had been dug outside the circle. Known as the Y and Z Holes, the innermost group, Z, was about 12ft (3.7m) outside the sarsens and the Y Holes a further 24ft (7.3m) away, but the so-called 'circles' could deviate by as much as 4ft (1.2m) and 8ft (2.4m) respectively. Temporarily 'distinguishing these holes by lettering', Hawley and Newall's identification has been retained for more than 80 years.

Numbered clockwise from the north-east entrance, the intention may have been to have 30 pits in each ring to correspond with the number of sarsens in the outer circle, but the project was never completed. For some reason the work began at the SSE outside Stone 9 with the digging of Z9 and Y9. With no possibility of a helpful marking-out rope, because of the obstructive sarsens, the rings of pits became ever more erratic and the workers gave up. The last hole of the outer ring, Y7, was only half-dug. Z8 was not even begun, perhaps because Stone 8 and its lintel had already fallen over the intended spot.



MY QUADRATURE AND ITS RATIOS AT WORK

2500bce

*The ratios for the initial Stonehenge structure (**Aubrey Holes to Bluestone Henge**)* will be seen to be: ***Φ x √2 x Φ***

*Or ratios 1.618033909 x 1.618033989 x 1.414213562 for a total of **3.702459174***
which appears to be the ratio for a **56 point polygram**, the exact number of Aubrey Holes.

1200bce

But, my analysis of Stonehenge (***Aubrey Holes to Sarsen Circle***) indicates the value: **√2 x √2 x √2**
or the ratio √8 which has a value that can also be arrived at by the equation: **√2 x Φ x (√5 – 1)**

1.618033989 x 1.414213562 x 1.236067978 = 2.828427125 = √2 x √2 x √2

(Plato's Nuptial or Geometric Number? – The Square, the Oblong, & the Square of 5 less the 1).

or

Inner Septagram x Square x Pentagon = √8 or = √2 x √2 x √2 or = 2 x √2

or

My Quadrature.

Compare now the dating of the Phases of Stonehenge given by Archeologists and by Carbon Dating and that given by Dr. Chris Witcombe from Sweet Briar College:

Was the use of the Bluestone Circle and later of the Sarsen Circle dictated by the ***mathematical ratios*** in vogue at the respective times?

MY CONTRIBUTION TO THE THEORY OF THE STAGING OF STONEHENGE

STONEHENGE STAGING TIMELINE

BLUESTONE CIRCLE – AUBREY HOLES

2500bce – ***Φ x √2 x Φ*** *or 1.618033909 x 1.618033989 x 1.414213562 for a total ratio of **3.702459174** which actually produces a polygram with 56 points – **The Aubrey Circle & and Bluestones**!*

THEN

1800bce – **√2 x √2 x √2** – *Clay Tablet BM15285 from Larsa in Mesopotamia – The Quadrature.*

THEN

SARSEN CIRCLE plus X & Y HOLES

1200bce – **√2 x Φ x (√5 – 1)** or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of **2.828427125***

Or the Quadrature – **√2 x √2 x √2** *– for a total ratio of **2.828427125** – without X & Y holes.*

√2 x Φ x (√5 – 1) or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of **2.828427125** is also my candidate for **Plato's Geometric Number** – the Square, the Oblong, and the Five less the one.Graphically, this is the Inner Septagram x the Square x the Pentagon.*

THEN **IN GREEK MATHEMATICS***:*

360bce – **√2 x √2 x √2** – *Plato's **Meno*** – √8 or √2 x √2 x √2 – This also is a total ratio of ***2.828427125***.

Plato has Socrates tell Meno if he cannot do the areas then look at the geometry.

THE MEANING OF "QUADRATURE":

'Quadrature' has multiple meanings in mathematics, astronomy, and experimental physical science:

- **Geometry**

A historical process of finding a square with the same **area** as a given plane figure. It can also refer to calculating the numerical value of that **area**.

- **Integral calculus**

A process of finding the **area** of a plane figure by dividing it into shapes of known area, then finding the limit of the sum of those **areas**.

- **Mathematical computing**

A process of numerically approximating definite integrals.

- **Astronomy**

An aspect of a heavenly body where its direction from Earth makes a right angle with the direction of the Sun. For example, the Moon is at east or west quadrature when it is at First or Last Quarter.

- **Experimental physical science**

A mathematical procedure that calculates the error in the result of an addition or subtraction. It is also used in Pythagoras' theorem about right triangles.

- Chapter 5 - Quadrature

Historically in mathematics, quadrature refers to the act of trying to find a square with the same **area** as a given circle. In math...

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- Quadrature | Integral Calculus, Complex Numbers & Geometry

quadrature, in mathematics, the process of determining the **area** of a plane geometric figure by dividing it into a collection of sh...

Britannica

- Error Analysis in Experimental Physical Science

In words, this says that the error in the result of an addition or subtraction is the square root of the sum of the squares of the...

University of Toronto

- Chapter 5 - Quadrature

Historically in mathematics, quadrature refers to the act of trying to find a **square** with the same **area** as a given **circle**. In math...

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Search for: What is the meaning of quadrature?

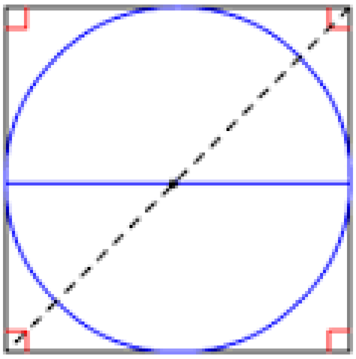
What is the quadrature in math?

quadrature, in mathematics, the process of determining the **area** of a plane geometric figure by dividing it into a collection of shapes of known **area** (usually rectangles) and then finding the limit (as the divisions become ever finer) of the sum of these **areas**

What is the quadrature in celestial navigation?

quadrature, in astronomy, that aspect of a heavenly body in which its direction as seen from the Earth makes **a right angle** with the direction of the Sun. The Moon at First or Last Quarter is said to be at east or west quadrature, respectively.

What is circle inscribed in unit square?



When a circle is inscribed in a square, the length of **each side of the square is equal to the diameter of the circle**. That is, the diameter of the inscribed circle is units and therefore the radius is units. The **area** of a circle of radius units is A = π r 2 .

Circles Inscribed in Squares - Varsity Tutors

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Search for: What is circle inscribed in unit square?

Can a square circumscribe a circle?

A circumscribed square of a circle is a square surrounding a circle such that **the circumference of the circle touches the midpoints of the four sides of the square**. The diameter of the circle is equal to the side length of the square.

Circumscribed Squares | Brilliant Math & Science Wiki Brilliant·

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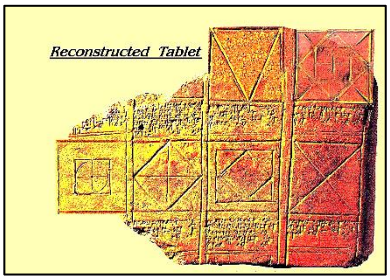
Search for: Can a square circumscribe a circle

The difference in the Stonehenge Ratio value between 2500bce and 1800bce is ***1.309016994*** and this is the ratio for the Inner Nonogram. So, the difference between the Bluestone Henge and the Sarsen henge is, naturally, another Plane Regular Shape.

Although there seemed to be major earthworks and construction works between the time of construction of the Bluestone Henge and the time of construction of the Sarsen Henge, *the underlying reliance upon the Ratios of Plane Regular Shape seems to have remained supreme*.

This would seem to verify that Plane Regular Shape Ratios were in fact used at Stonehenge from 2500bce to at least 1200bce and later in 360bce in Greece.

If this proposition is acknowledged then we can accept that ***Φ** and **√2*** were in use, at least in Mesopotamia, at or long before 2500bce.



CLAY TABLET BM 15875 & MY QUADRATURE

1700bce **√2 x √2 x √2**

From articles by Eleanor Robson

BM 15285: an Old Babylonian 'textbook'

BM 15285 is a clay tablet with several geometry problems on it. It isn't known what its exact date is, or even exactly where it was found, although the style of writing means it must be from early second-millennium southern Mesopotamia, so between 2000 and 1500 BCE.

The fragments that we have were found at different times in the British Museum's collections - maybe more of it will be found one day! We think that the original tablet must have measured about 28 x 35 x 5 cm. The columns should be read from left to right on the front, but from right to left on the back.

There must have been 41 illustrated problems of which 30 remain, in whole or in part. Each consists of a description of the figures in the accompanying diagram, and the question, 'What are their areas?'

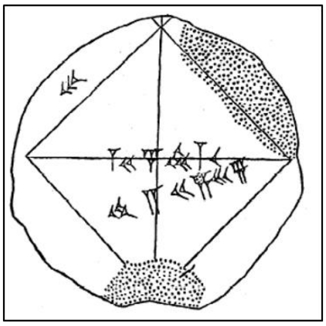
The text allows the figures to be restored, while the pictures enable technical terms to be identified. The diagrams are skew: Eleanor Robson says "Don't blame my drawing skills!"

Babylonian Maths: Babylonian Mathematics
1
http://motivate.maths.org/content/BabylonianMaths

There was no concept of angle *and the back of the tablet is very convex.*

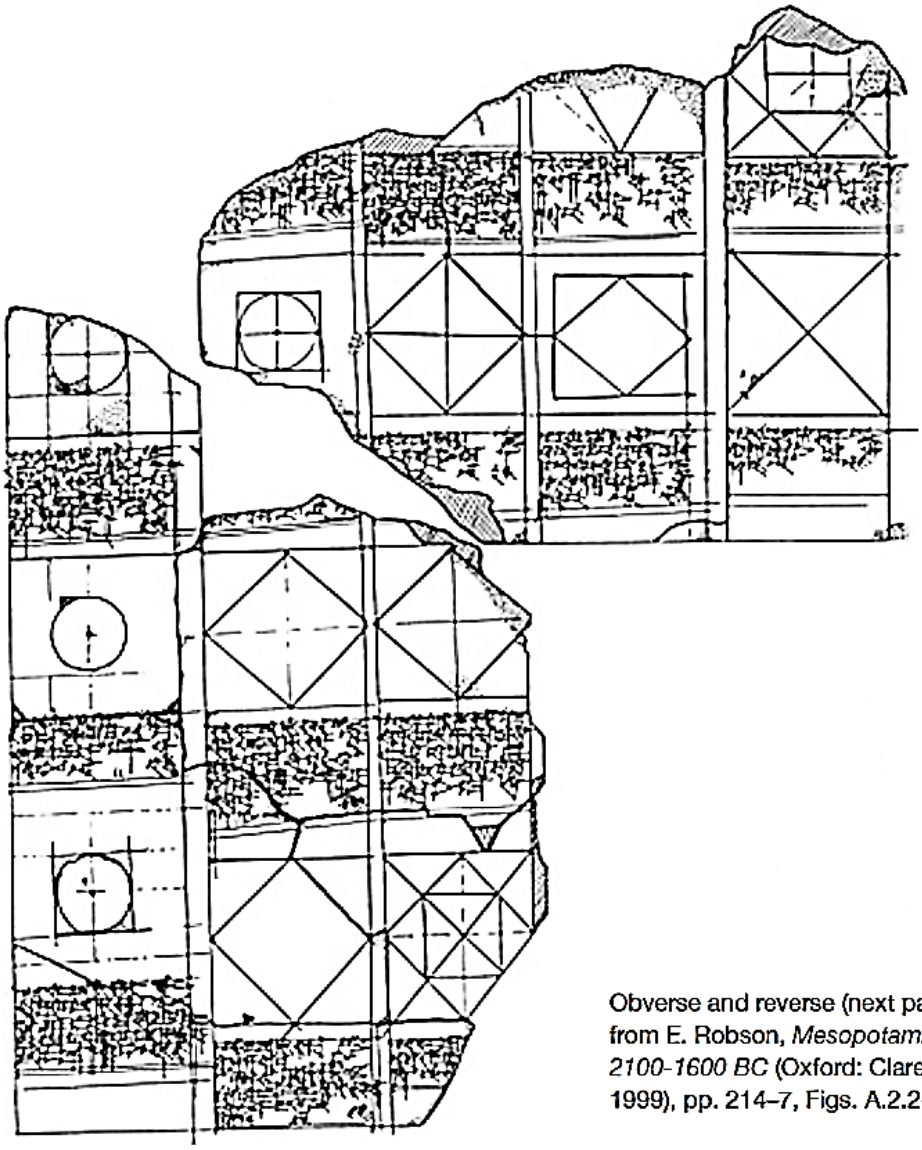
- *Each diagram is roughly 48 mm square, with horizontal and vertical guidelines dividing it into four smaller squares*
- *The circles were drawn **with a fixed compass**, about 11 mm in radius.*

*Students would have solved the problems on round 'hand tablets', so for instance on **YBC 7289** (right) the student was finding the diagonal of a square of length 30.*



YBC 7289, from Otto Neugebauer and Abraham Sachs, Mathematical Cuneiform

You can see some of the fragments we know about below and on the next page.

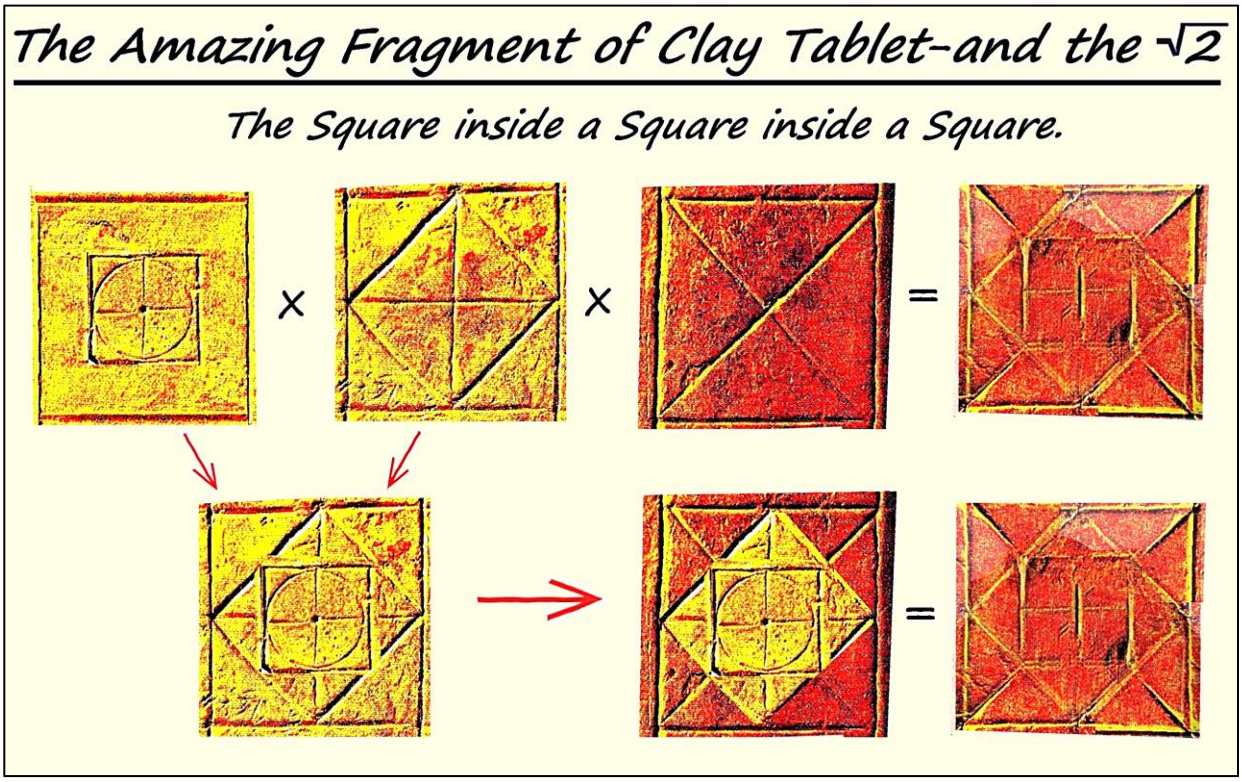


Obverse and reverse (next page) of BM 15285, from E. Robson, *Mesopotamian Mathematics, 2100-1600 BC* (Oxford: Clarendon Press, 1999), pp. 214–7, Figs. A.2.2-5

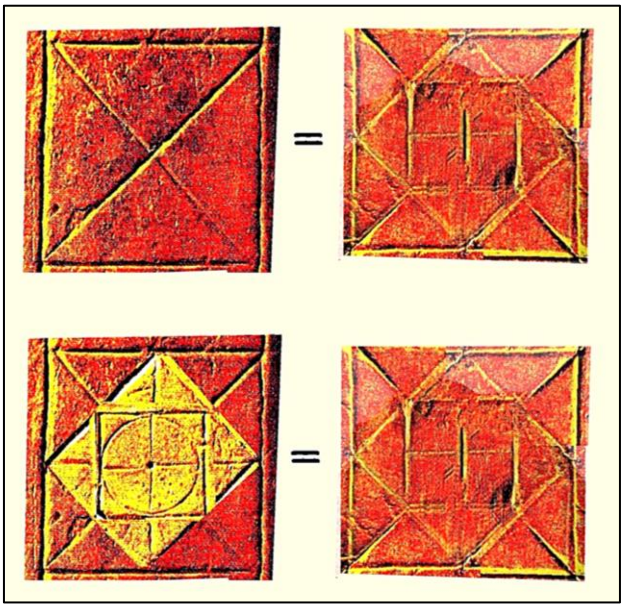
BM15285

This is my concept of the tablet if reconstructed and if the calculation of areas is ignored.

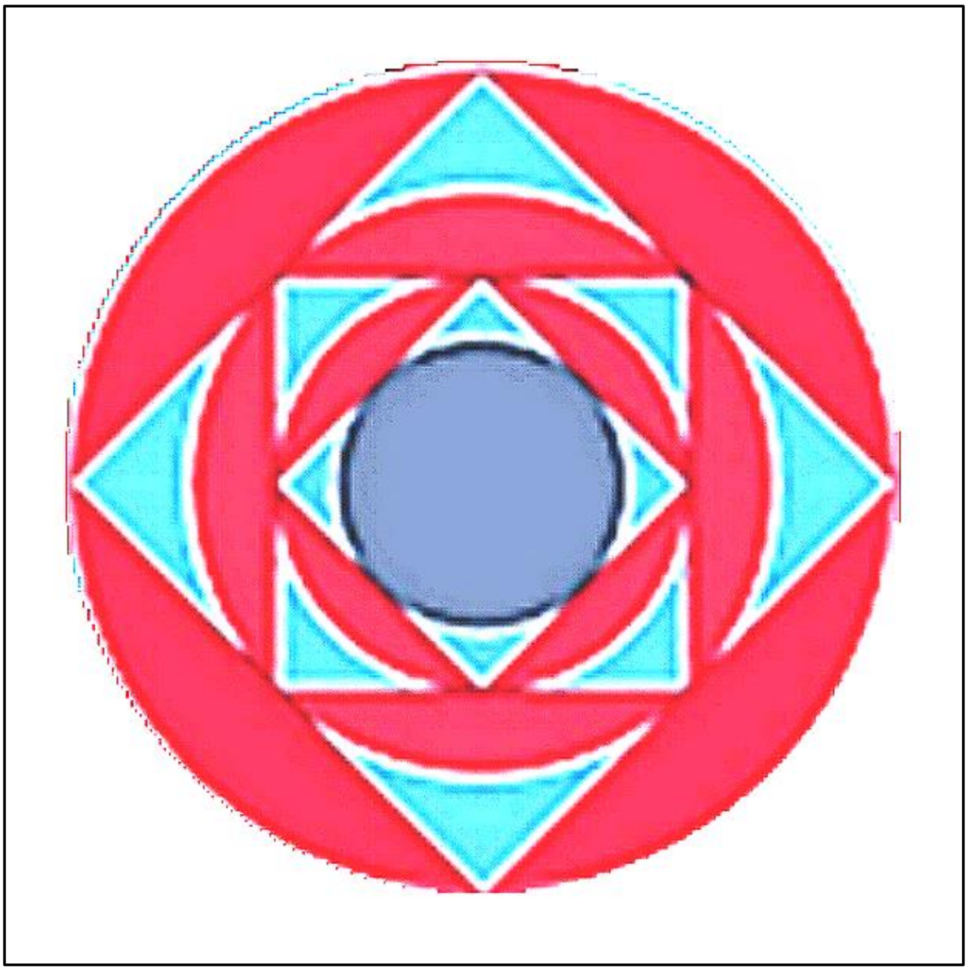
MY RECONSTRUCTION OF BM15285



THE ANCIENT INTRODUCTION TO MY QUADRATURE.



GRAPHICALLY: ***A SQUARE INSIDE A SQUARE INSIDE A SQUARE:***



MATHEMATICALLY: $\sqrt{2} \times \sqrt{2} \times \sqrt{2}$

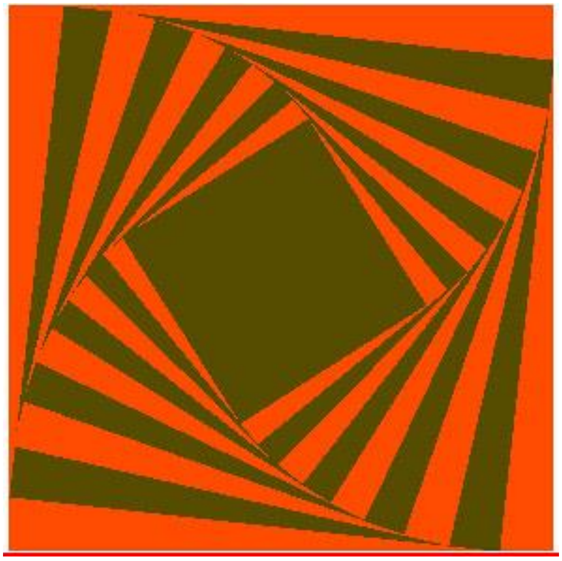
SQUARE INSIDE A SQUARE INSIDE A SQUARE . . .

About 8,510 results (0.59 seconds)

Search Results

Images for "square inside square"

java - How to draw and rotate square inside center of other square ...
Stack Overflow296 × 294Search by image
enter image description here



This is what I consider to be almost the theory behind the Apprentice's Pillar at Sinclair's Rosslyn Chapel

The initial appearance of the pillar is that it is round but a closer inspection reveals that it is a verticle stack of squares rotated such that each square is rotated just a little more than the one below it giving a visual impression that overall the pillar is round. My father would do this with a pack of cards.

At Rosslyn Chapel the base and capital of the pillar are both square.

17 Best images about Square In A Square quilt on Pinterest ...
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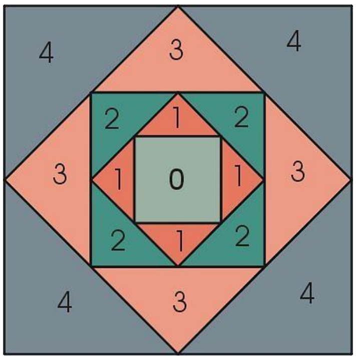
setting triangles calculator, or square in a square

Square in a Square in a Square quilt



It is appropriate here to refer again to the wisdom of David Fowler this time from the:

BULLETIN (New Series) OF THE AMERICAN MATHEMATICAL SOCIETY Volume 1, Number 6, November 1979

RATIO IN EARLY GREEK MATHEMATICS BY D. H. FOWLER

8. Anthyphairetic ratio theory.

*"We now consider the suggestion that the **ratio** of two numbers or magnitudes was defined by their anthyphairesis, **or some procedure intimately connected with anthyphairesis**, and **two ratios are equal if they have the same anthyphaireses**. For example, we have shown that the anthyphairesis of the diameter and side of a pentagon is a sequence of ones, and of a square the sequence: one, two, two, two, ..."*

This reference to the square would hold if we are referring to ***areas***. Linear anthyphairetic sequences would be 1, √2, √2, √2, ...

The following is an extract from Fowler's Obituary:

*"**Eudoxus** showed by a form of abstract algebra how to handle rigorously the case when two ratios are equal, without actually having to define them. His **theory was so successful that, in effect, it killed off perfectly good earlier theories of ratio,** and **Fowler's aim had been to find the evidence for the rediscovery of these previous theories."***

David Fowler again:

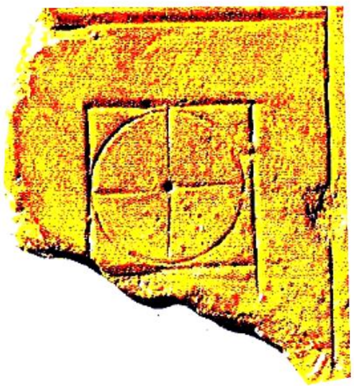
*"Dear John, I think that, to a large extent, history is manufactured by historians (or more casual commentators), so, from time to time, we should go back and examine the basis of each story. I'm interested here in **the precursors of proportion/ratio theory**, so let's look what early(?) reliable(?) evidence we might have. This evidence might come from many places: early source **texts**, people quoting accurately some source **text**, perhaps even some later commentator,... I do have one strong prejudice, that historians, including myself, tend not to be too careful when dealing with their own stories, or stories that they like."*

*.......So **lets look at ratio/proportion.***

*Here I believe that we have only *one* **piece** of early evidence (ie pre Book V) concerning proportion/ratio theory. It is in Aristotle's Topics (believed to be an early one of his books), 158ff, where he says*

*"But once the definition is stated, the said property is immediately manifest: for the **areas and the lines have the same antanairesis, and this is the definition of the same ratio**."*

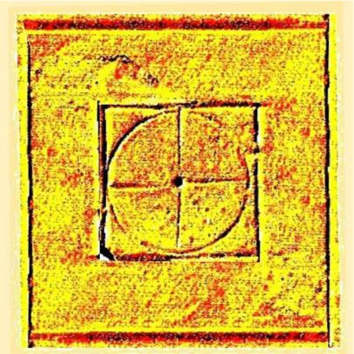
(There is a slight matter of that antan/anthu bit, but that has been gone over by scholars and, as a result, you can think it important or unimportant! I vote for unimportant.)



Tablet......15285

(Trustees of British Museum Version...**WA15285**)

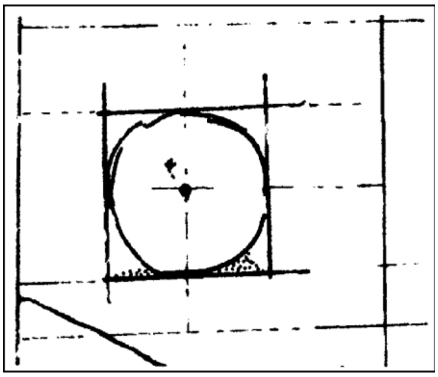
This is an illustration of part of the tablet purporting to be portrayed in *"The Age of God Kings 3000—1500BC"* Time-Warner Books, Sixth English Language Printing 1989 and referred to as WA15285 held by the Trustees of the British Museum



My Version....JC**15285** (WA15285 rectified)

This is my adjusted version with edges 'corrected' to give a more complete picture of the geometrical concept contained in the diagram even if this is not the concept being conveyed in its attached cuneiform text. Young maths students do not start with concepts like linear programming but are given the basics from which linear programming can later be derived if needed. Was it not the same here?

My point is that these were basic diagrams that, once they were mastered, led to ratios being obtained through the use of concentric circles which inevitably led to angles whose existence could not be denied even if their 'angle' could not be 'measured' then in ways and terms that we do today. I credit Robson with this quotation: "*For many people, the attraction of Plimpton 322 has been exactly its status as a "first infantile step" on the way to modern Western-style mathematics."* The only point we are debating here is the question as to how long it took for these steps to become ***ratios*** and later to develop into "*modern Western-style mathematics"* which has "*never embraced them publicly*."

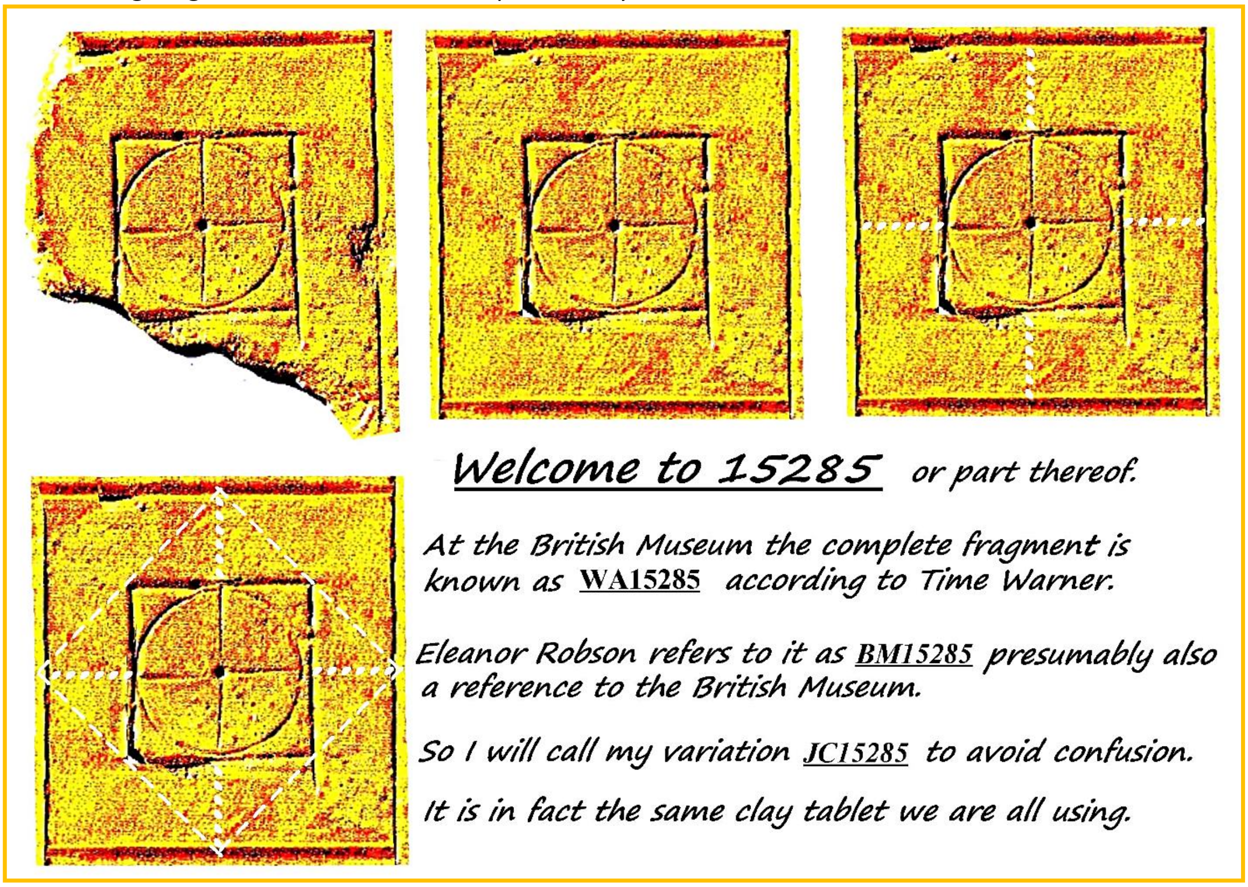


Eleanor Robson's Version.... **BM** **15285** and her explanation.
This is Eleanor Robson's version from her article in Historia Mathematica **28** (2001), 167–206 "*Neither Sherlock Holmes nor Babylon: A Reassessment of Plimpton 322".*

"**FIG. 3.** An Old Babylonian circle ***drawn with compasses*** (*detail of* **BM** **15285**, *drawing by the author*)."
"Figure 3, from a "text-book" on finding the ***areas*** *of geometrical figures, shows a circle inscribed in a square (**BM** **15285** [Robson 1999, 208–217]; **probably** from Larsa). **It gives clear evidence that circles could be drawn with compasses from a central point.** My argument is certainly not that the radius was not known in the Old Babylonian period, but simply that it was not central to the ancient mathematical concept of a circle."*

Are not these diagrams all purporting to be representative of the contents of **the same** Old Babylonian tablet? How do we all see the same simple diagram so differently? Eleanor Robson here confirms that perhaps the diameter was more *central to the ancient mathematical concept of a circle* than was the radius and this reasoning would agree with Euclid's "Circles are as the squares on their **diameters**". Euclid does not refer to the square on the radius. This profound finding by Robson would also agree with my statement that **the diameter of a circle may be equal to either the side of the square it inscribes or the diagonal of the square it circumscribes**. This concept would not be possible to see or explain if we substitute *radius* for *diameter*.

The following diagrams will illustrate more particularly **what I see in 15285**.



What I see in the original whole fragment 15285 is an overwhelming desire to comply with proportion to such an extent that it would appear that the circle was most probably made with a prepared tool and _not with a compass_. The square that it inscribes is totally proportional to the outside square 'boundary' to which it seems to have no visible connection at first. When a missing intermediate square is inserted then the extent of the proportion is revealed. If the concept of proportion *was not central to the ancient mathematical concept of a circle* why did they go to such an extent to preserve proportion in these simple "*mathematical exercises*" for trainee scribes or accountants, using wet clay? Why was this 'exercise' the major ratio for Stonehenge? Why did Plato in his *Timaeus* attribute creation to two concentric circles? Was it not proportion, in fact the proportion between two (concentric) circles that played a major role in the ancient mathematical concepts?

For me this concept was the first step that opened my mind to enlightenment, when my quest led me to it some years ago in 2005. To see it again in this tablet has reconfirmed for me the very strong possibility that my concentric circle ratios concept was in use even then in 1700BC. I see these results very clearly but when some see a debate on the radius of a circle in this diagram I fail to see its relevance. An allegory or fable that leads the lesson away from ratio is the overwhelming preoccupation with *Area*. However, when Robson penned the following words:

"In other words, a circumference which is half the length of the first surrounds a circle with a quarter of that first area, as we would expect"

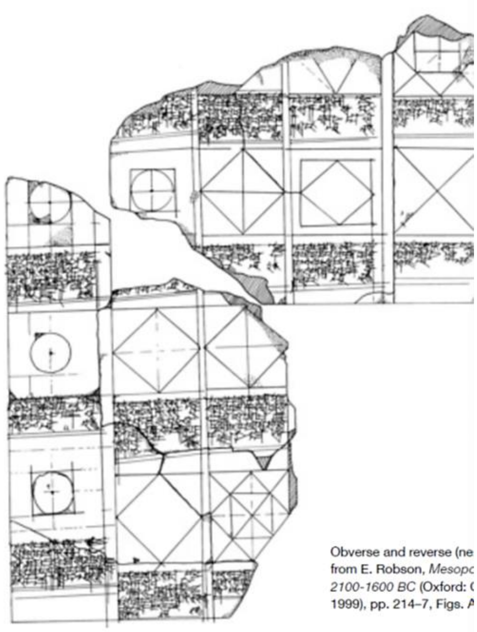
was she not also referring to proportion even if it is proportion of areas? Is there not an anthyphairesis in dealing with diameters and areas of circles? Does not a circle whose proportion is half that of the first together with the first form the Equilateral Triangle whose ratio is 2 or in this case $\sqrt{2} \times \sqrt{2}$?

Hoystrup who follows the work of Robson, sees in **WA15285** the following version of drawing the Octogram:
"Another proof is based on the construction of a rectangular octagon by superposition of two identical squares (see Figure 3). In spirit it is partially related to some of the diagrams in the Old Babylonian tablet BM15285 [ed. Robson 1999: 208–217], but the configuration itself is not present;
Cantor [1907: 108] refers to it as common in Pharaonic wall painting, but this can hardly be considered as evidence for mathematical reasoning based on it."

Robson on Circles .... based on BM15285

*"Apart from the arithmetical difference of having to work in base 60, these two examples illustrate beautifully a **fundamental distinction** between the modern circle and the ancient.*
*Whereas we are taught to conceptualise the circle as a figure generated by a radius rotating around the centre (as with a pair of compasses, and our formula A D ¼r 2), **in the Old Babylonian period it was seen as the figure surrounded by a circumference**. There are several other contemporary texts which corroborate this interpretation. For instance, YBC 7997: I 9–II 3 ([Neugebauer & Sachs 1945, text Pa]; probably from Larsa) gives instructions for finding the area of a circle with the same circumference as the second example ab."*

When Robson states in reference to the circle that " ***in the Old Babylonian period it was seen as the figure surrounded by a circumference*** this is not in any way contradictory to the theory of the concentric circles. A circle by itself can be none other than an illustration of a circumference. A pair of concentric circles by themselves is none other than a pair of concentric circumferences. It is when the circles are viewed in relation to their diameters that the magic is allowed to happen. Circumferences seem to infer area more easily than they infer lines. Diameters wear the guise of 'lines' much better.

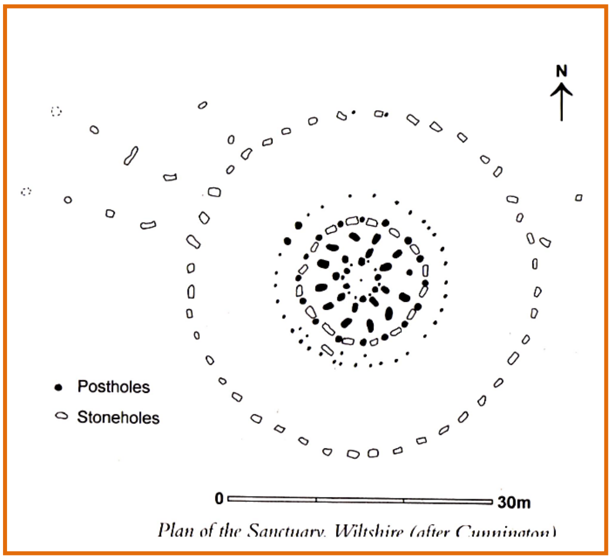


Obverse and reverse (ne
from E. Robson, *Mesopo*
2100-1600 BC (Oxford: (
1999), pp. 214-7, Figs. A

. Pythagoras invented his theorem around 550 B.C. The Babylonians, Bronowski concedes, had cataloged perhaps hundreds of triplets by 2000 B.C., long before Pythagoras.

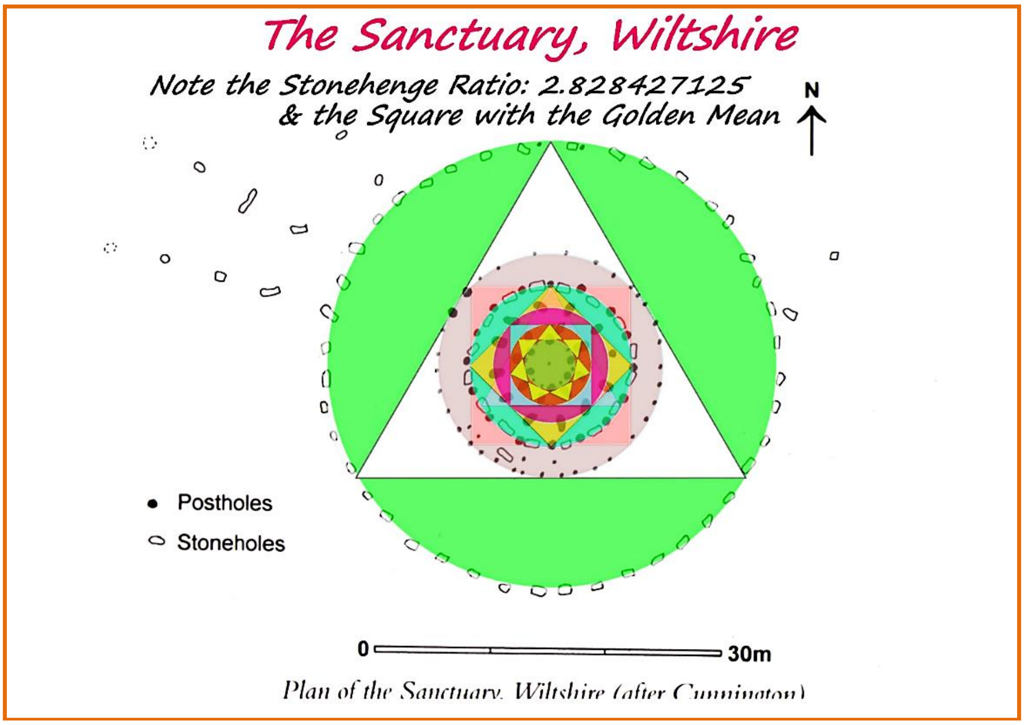
Lost Discoveries page 18

The Sanctuary, Wiltshire



If the clay tablet 15285 and Stonehenge were not proof enough of the use of the square inside the square or of the Spiral of Squares or of the manner in which the square is often set in interplay with the Golden Mean, along comes The Sanctuary at Wiltshire which seems to share ratios with Stonehenge itself. Are these ratios the engineering or architectural tools of the builders of these structures or are they some icons of religious belief? Perhaps they are simply items of coincidental dimensions! Are they philosophically dangerous?

It seems that regardless of the number of stages in the construction of the henge the ratios are still adhered to by the builders even if the stages are millennia apart. If they were a construction tool then they were possibly used for thousands of years in proportioning the features on the site both in relation to each other and in relation to the site.



Remember we are talking 1700 ~ 2800BC.

***MATHEMATICALLY*: √2 x √2 x √2 (or 2 x √2) x Inner Sanctum.**

In the Sanctuary the ratios seem to be: The Equilateral Triangle (which is √2 x √2); then the Square (√2); then another square (√2); then another square (√2); followed by the Golden Mean (1.618033989) (Φ). The Sanctuary is a good example of the knowledge of and application of the Quadrature at that time.

Maud Cunnington

From Wikipedia, the free encyclopedia

Maud Edith Cunnington (née Pegge) (24 September 1869 – 28 February 1951) was a Welsh-born archaeologist, most famous for her pioneering work on the prehistoric sites of Salisbury Plain.

She was born at Briton Ferry in Glamorgan to Charles Pegge, a doctor who ran Vernon House, the last privately owned asylum in Wales. One of seven children, Cunnington's older brother Edward followed his father as a doctor, and was also a notable rugby player and Welsh international. Maud was educated briefly at Cheltenham Ladies' College. In 1889, she married Ben Cunnington who was the honorary curator of Devizes Museum. Their only son, Edward, was killed in the First World War.

From 1897, Maud carried out early Rescue archaeology work during development in the area but also carried out full excavations at some of the most important sites in British archaeology. These included the first known Neolithic causewayed enclosure at Knap Hil, the Iron age village at All Cannings Cross, West Kennet Long Barrow, Figsbury Ring, Woodhenge, (which she named) and The Sanctuary. This last monument she rediscovered as it had been lost since William Stukeley saw it in the eighteenth century. Woodhenge and The Sanctuary were bought by the Cunningtons and given to the nation. In 1931, she was elected president of the Wiltshire Archaeological and Natural History Society.

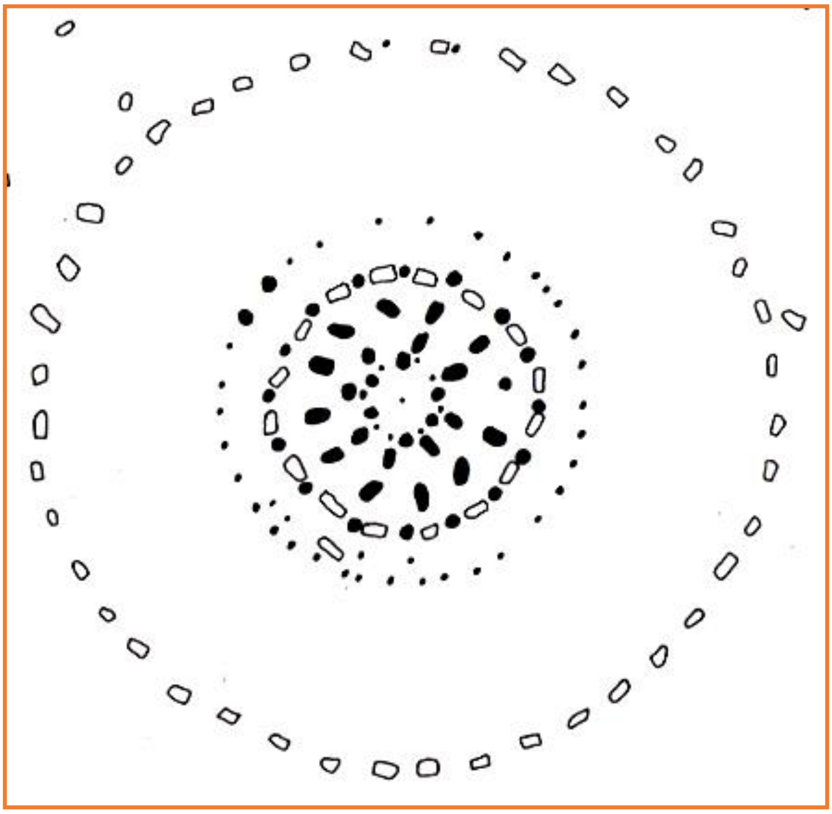
In 1948 she was made CBE for services to archaeology, the first woman archaeologist to receive the honour. Bedridden since 1947, and suffering from Alzheimer's disease however, she never knew of the accolade. When she died at home a few years later she left almost all her property (£14,000) to Devizes Museum, (now Wiltshire Heritage Museum) allowing a salaried curator to be appointed for the first time. Her husband had died a few months previously.

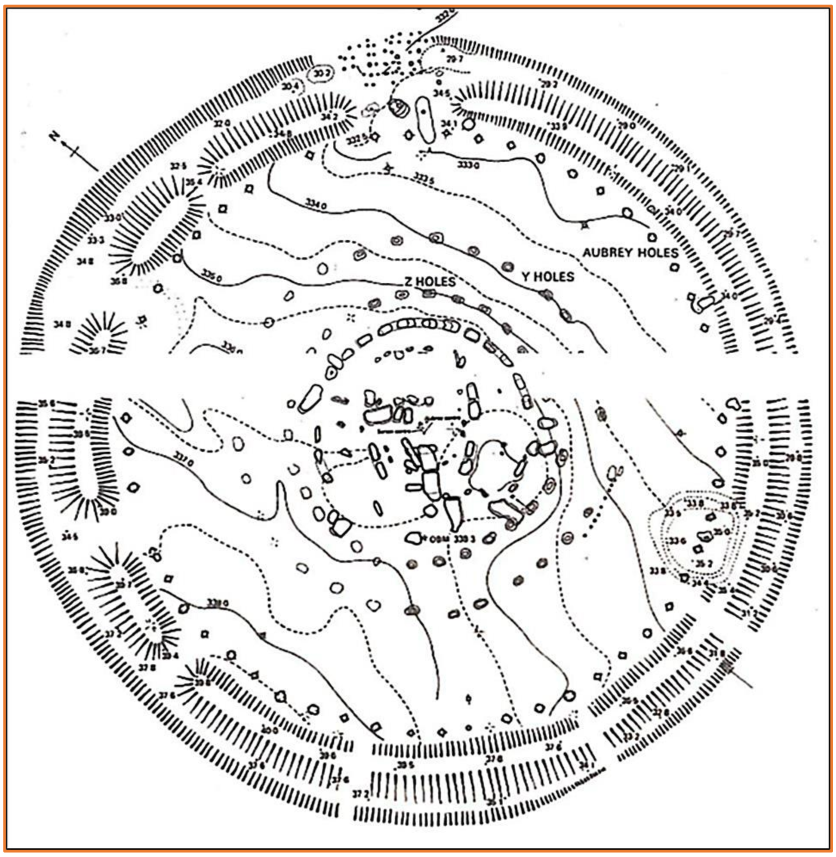
Source[edit]

- Rundle, P, *Cunnington , Maud Edith (1869-1951)*, Oxford Dictionary of National Biography, Oxford University Press, 2004 accessed 23 September 2005

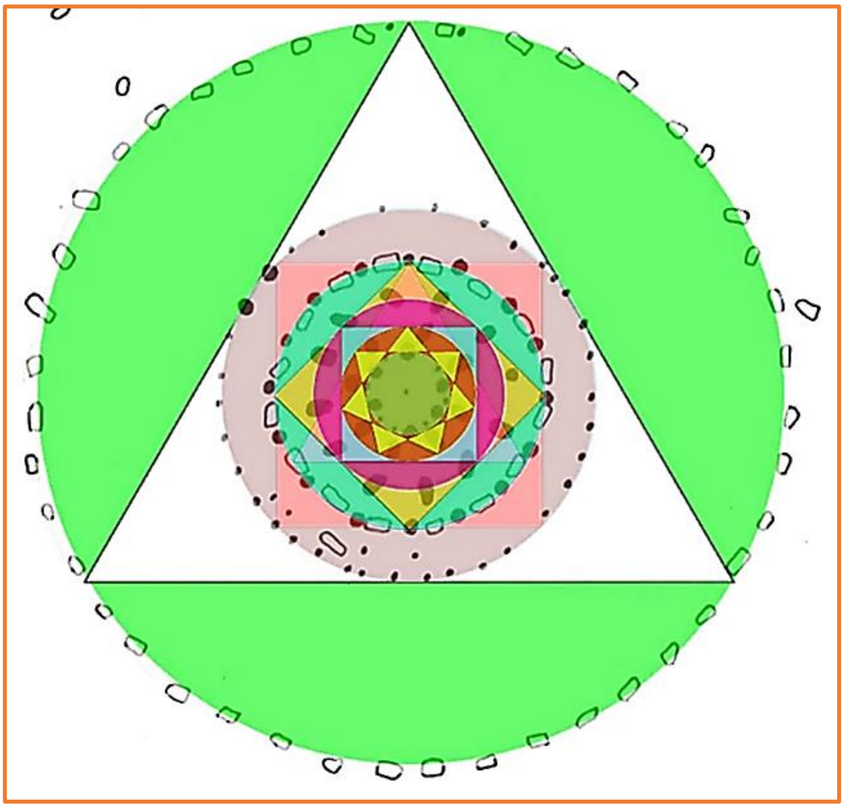
This page was last modified on 21 March 2014 at 22:53.

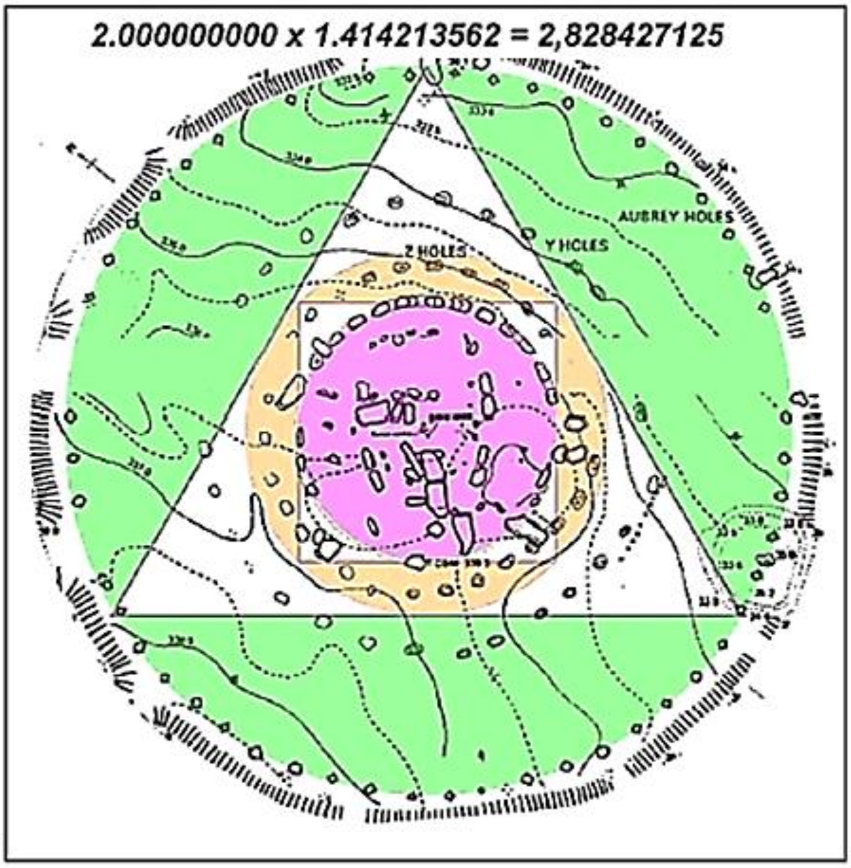
THE SANCTUARY vs STONEHENGE:



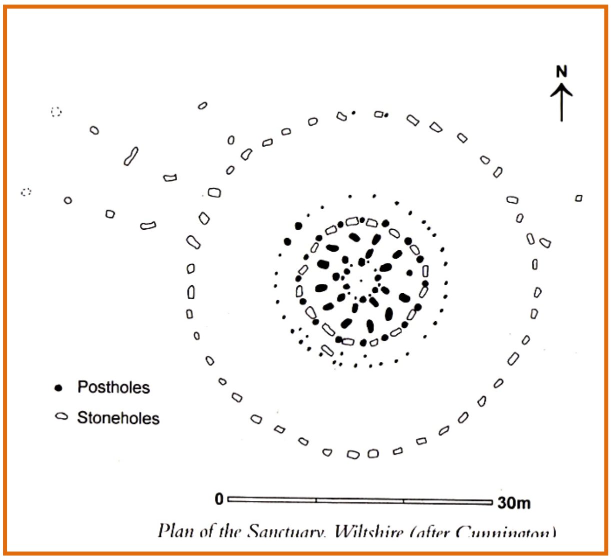


AN INTERPRETATION OF THE SANCTUARY vs STONEHENGE:





The Sanctuary, Wiltshire



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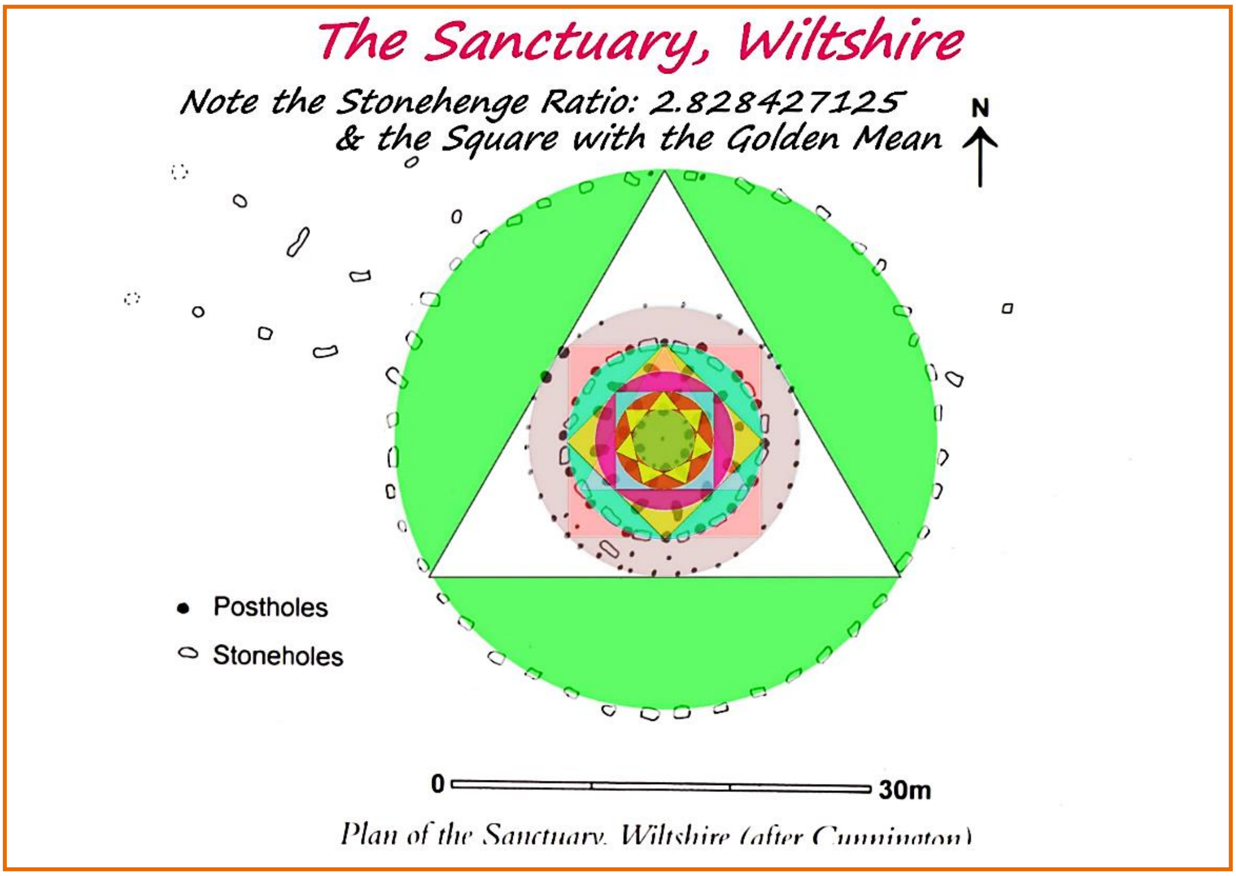
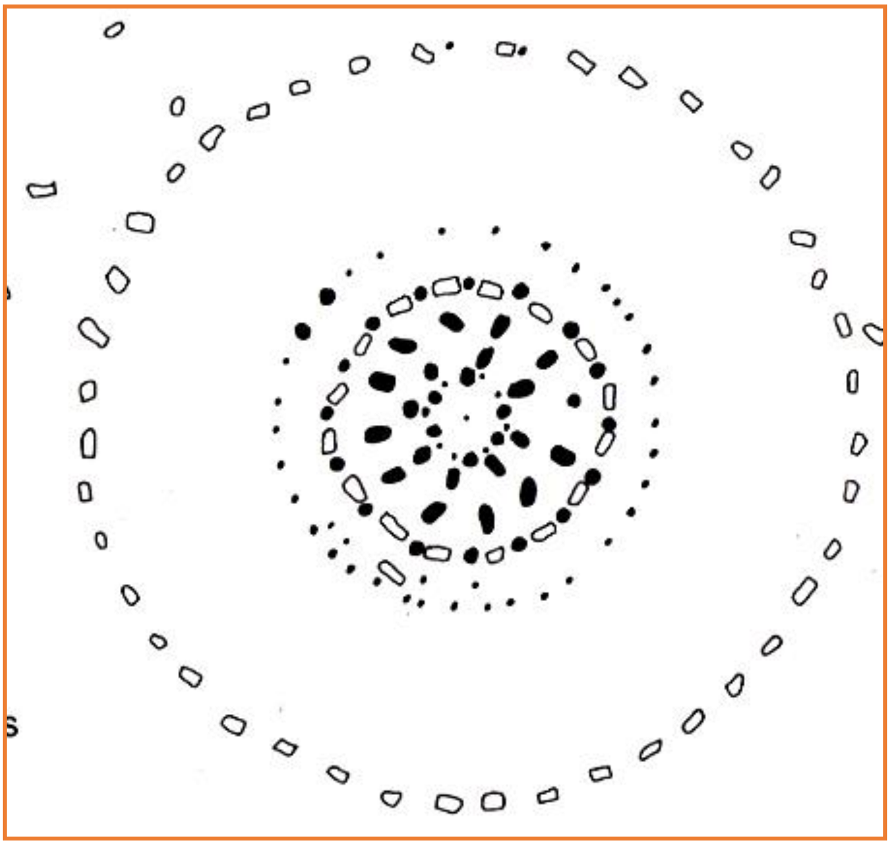


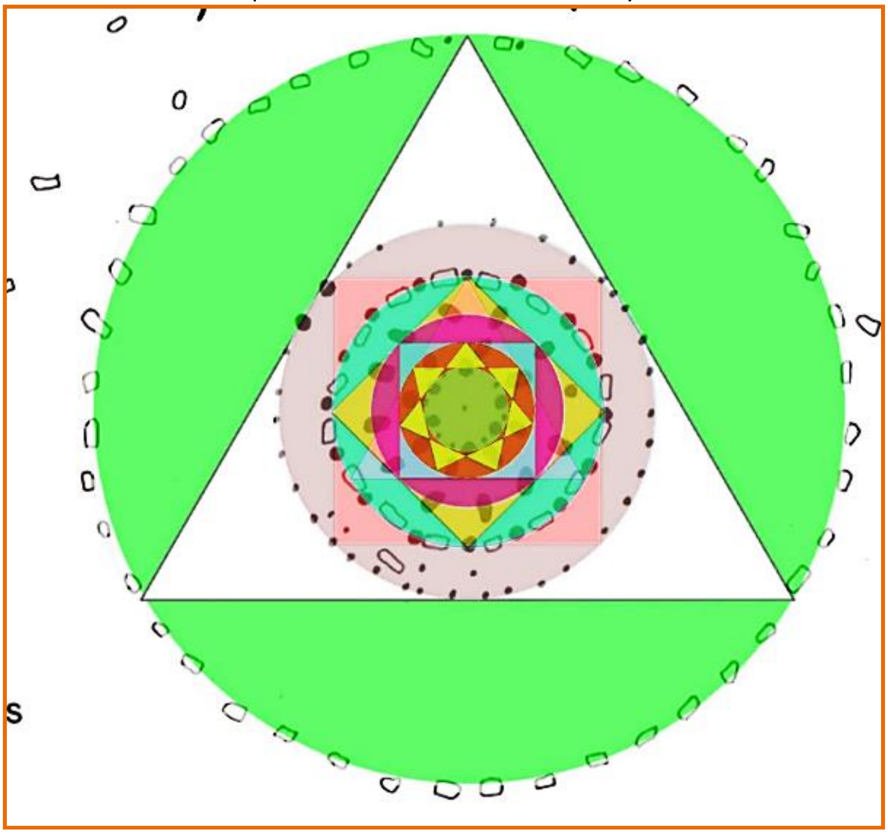
Remember we are talking 1700BC to 2800BC.

<u>MATHEMATICALLY</u>: √2 x √2 x √2 (or 2 x √2) x Inner Sanctum.

A 42 HOLE PERIMETER AT THE SANCTUARY.

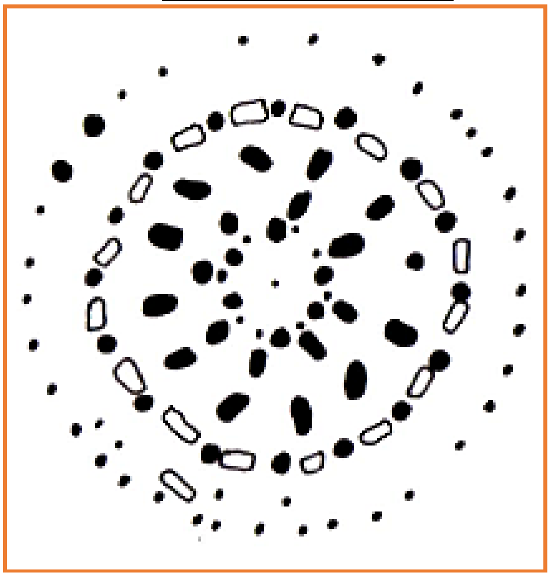


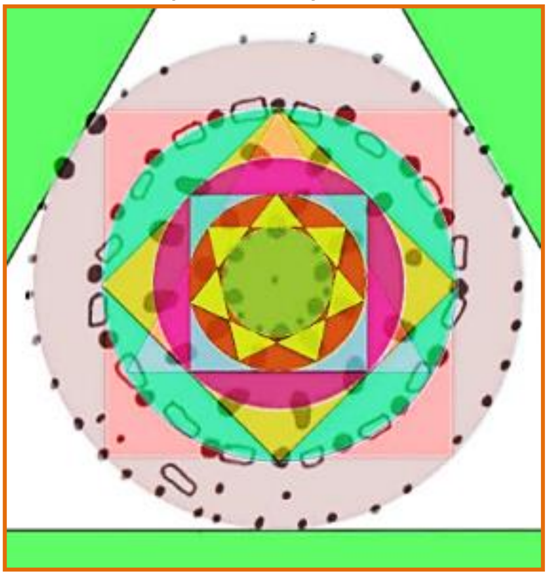
(14 EQUILATERAL TRIANGLES)



THE INNER SANCTUM OF THE SANCTUARY

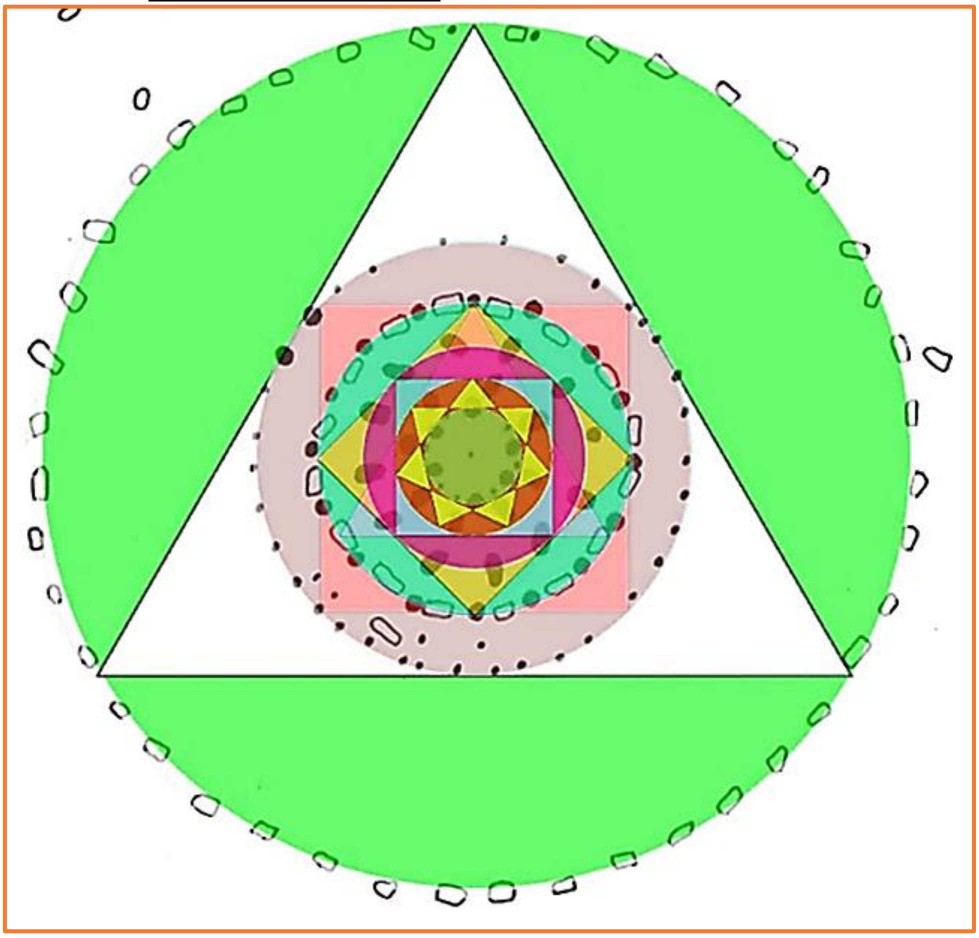
MATHEMATICALLY: ***√2 x √2 x √2 (or 2 x √2) x Φ***

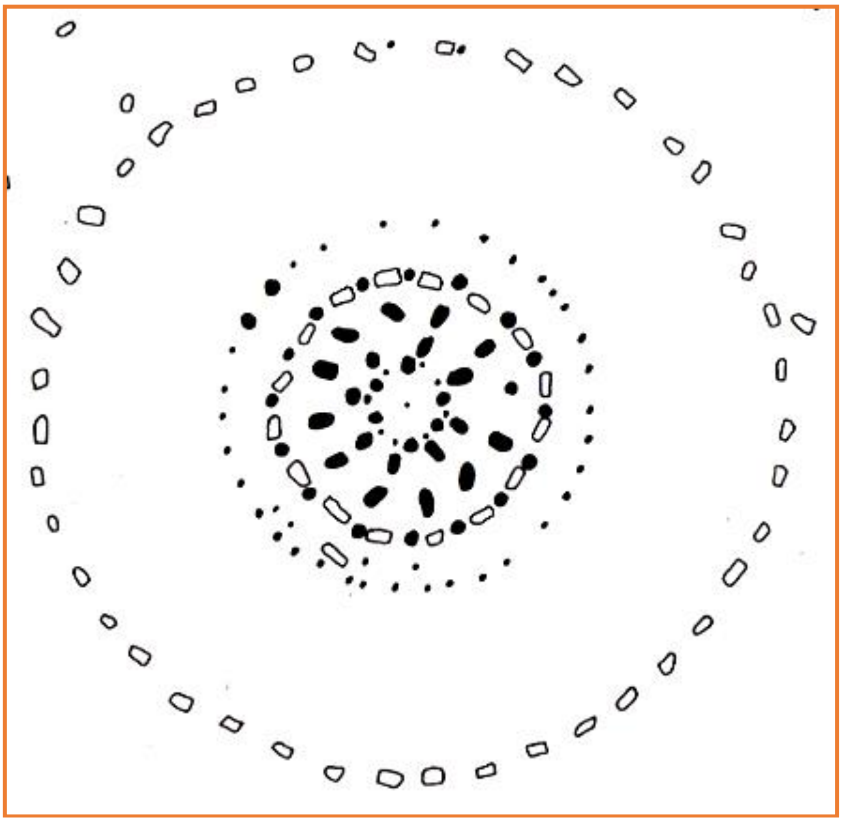


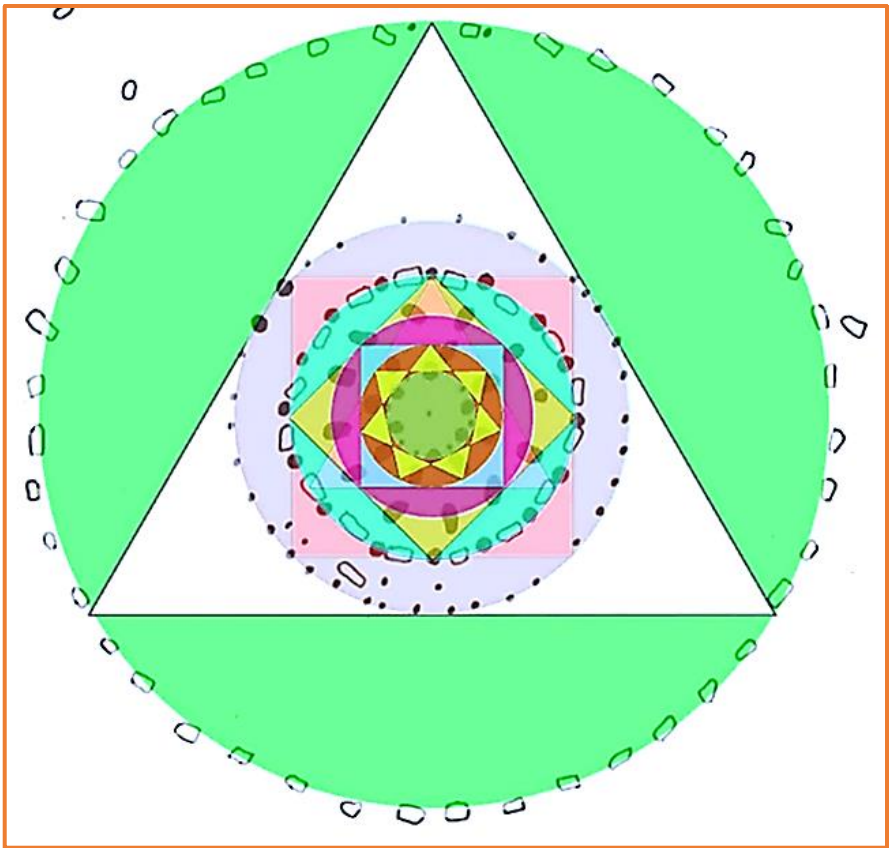


OVERALL

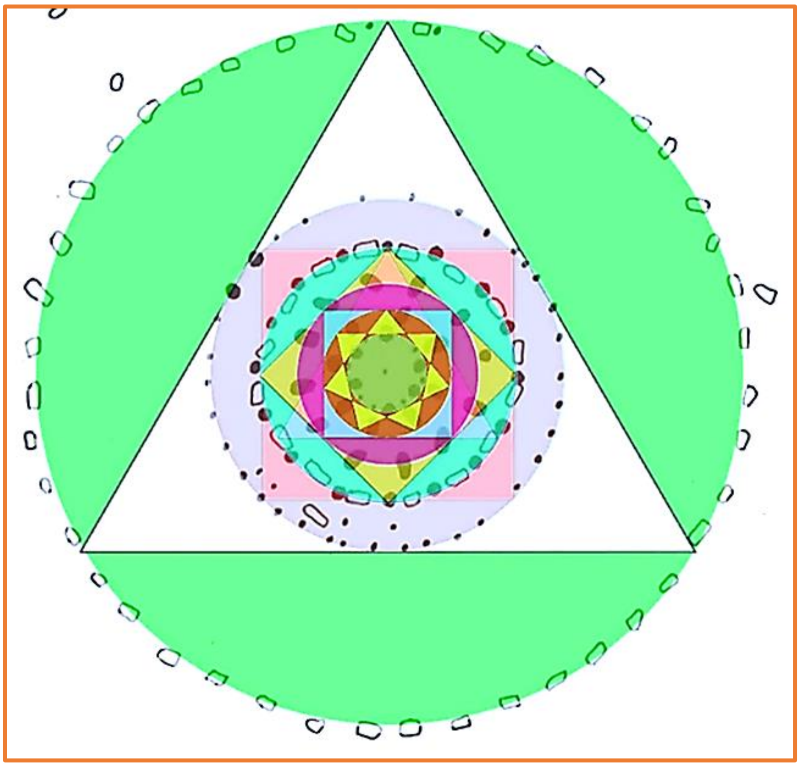
MATHEMATICALLY: ***2 x √2 x √2 x √2 x Φ***







THE SANCTUARY vs STONEHENGE:



THE SANCTUARY

OVERALL

2 x √2 x √2 x √2 x Φ

2.000000000 X 1.414213562 X 1.414213562 X 1.414213562 X 1.618033989

OUTER CIRCLE TO INNER SANCTUM

2 x √2 or 2.000000000 x 1.414213562 *for a total ratio of* 2.828427125
= A 13 POINT POLYGRAM

INNER SANCTUM

1.414213562 X 1.414213562 X 1.618033989
= 3.236067978
= A PENTAGRAM

STONEHENGE

OVERALL

Φ x √2 x (√5 – 1) x √2 x √2 x septagram

OUTER CIRCLE TO INNER SANCTUM

Φ x √2 x (√5 – 1)

Φ x √2 x (√5 – 1) or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of* ***2.828427125***
= A 13 POINT POLYGRAM

INNER SANCTUM

√2 x √2 x 4.576491223248880

25	**septagram 25.7142857**	**4.576491223248880**

SHAPES AND THEIR RATIOS EMPLOYED AT THESE CIRCLES.

BASED ON √2

100	inner nonogram	1.309016994000000
20	20 degrees nonogram	5.656854249492380
41	13pts 41.53846154deg	2.828427124746190
60	Equilateral Triangle	2.000000000000000
90	Square	1.414213562373100
77	7pts ф 77.14285714deg	1.618033989000000
25	septagram 25.7142857	4.576491223248880
108	pentagon	1.236067977499790
36	pentagram	3.236067977499790
45	octogram	2.618033989000000

DURRINGTON WALLS vs STONEHENGE:

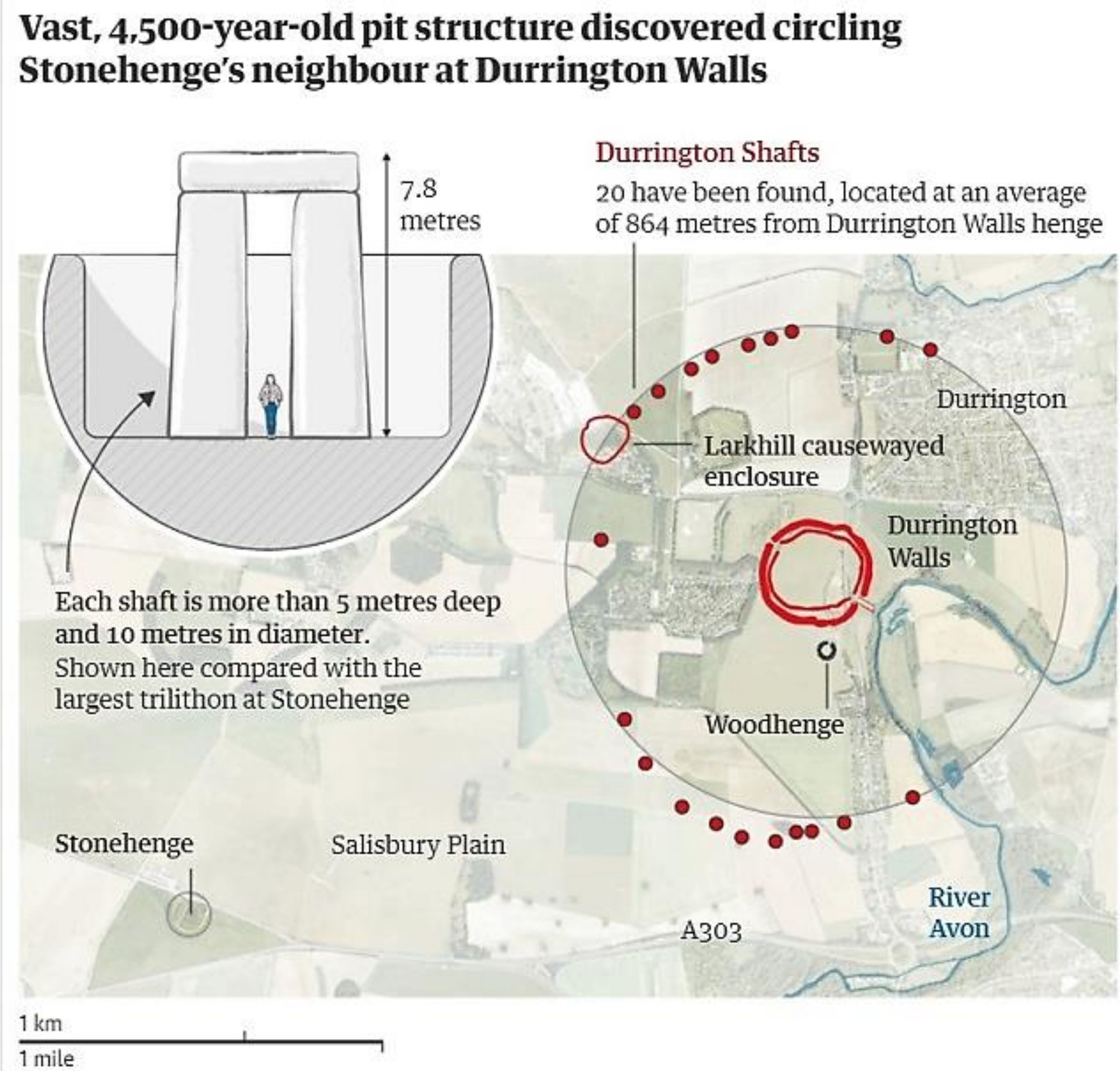
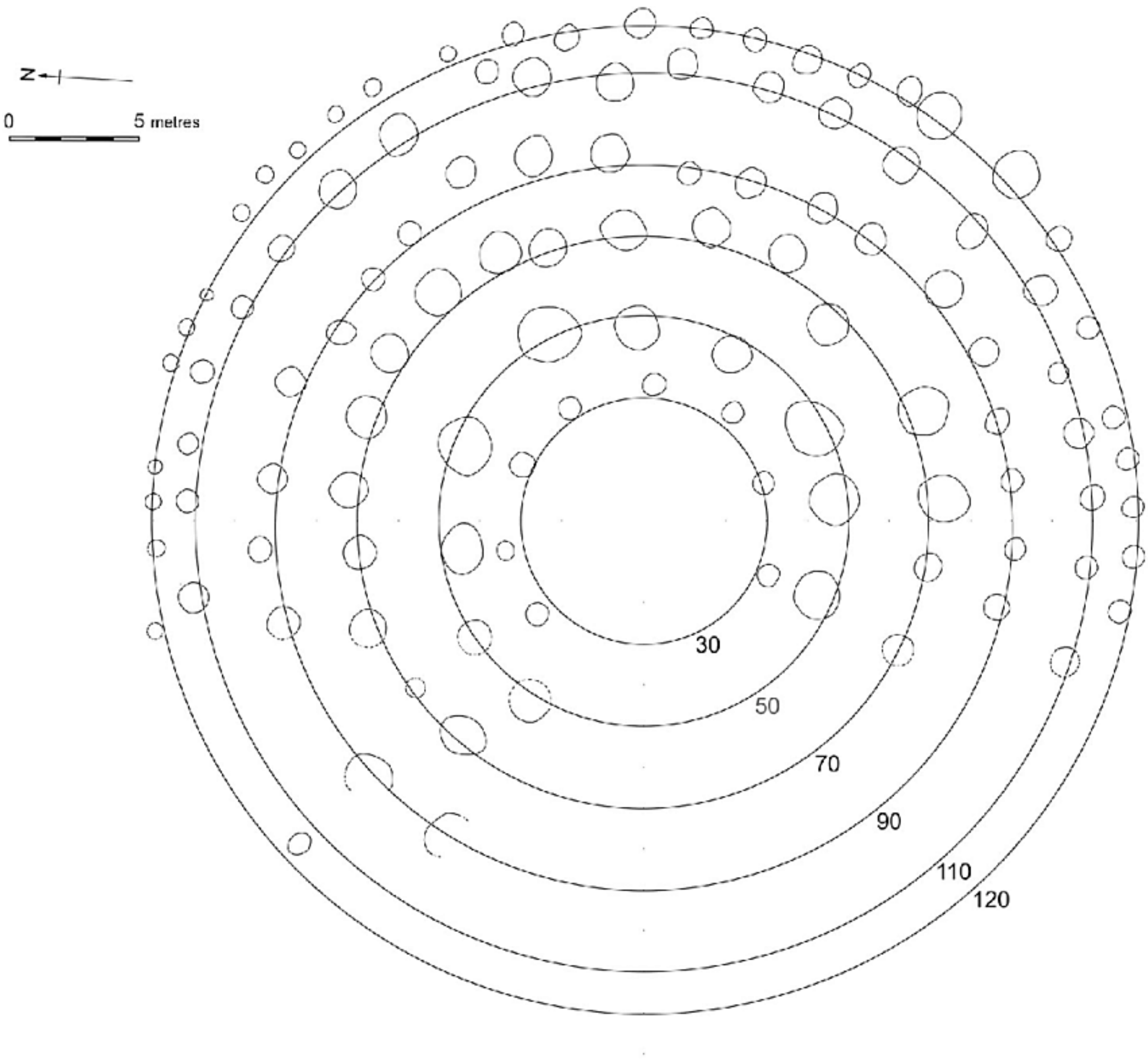


Figure 3

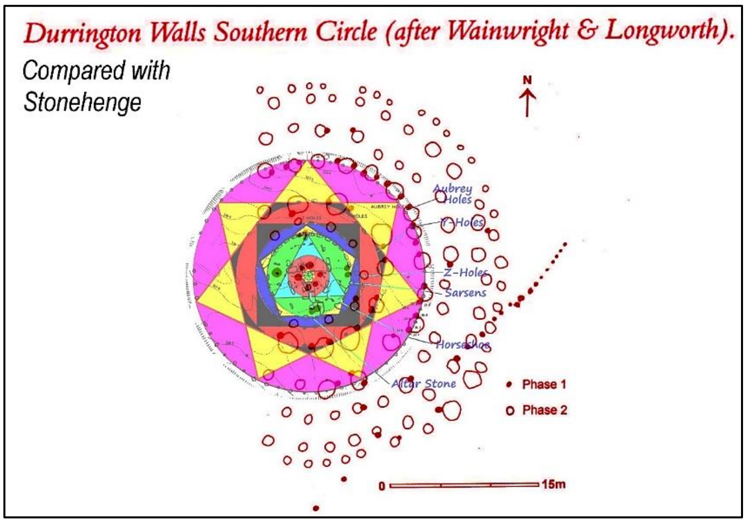
Download

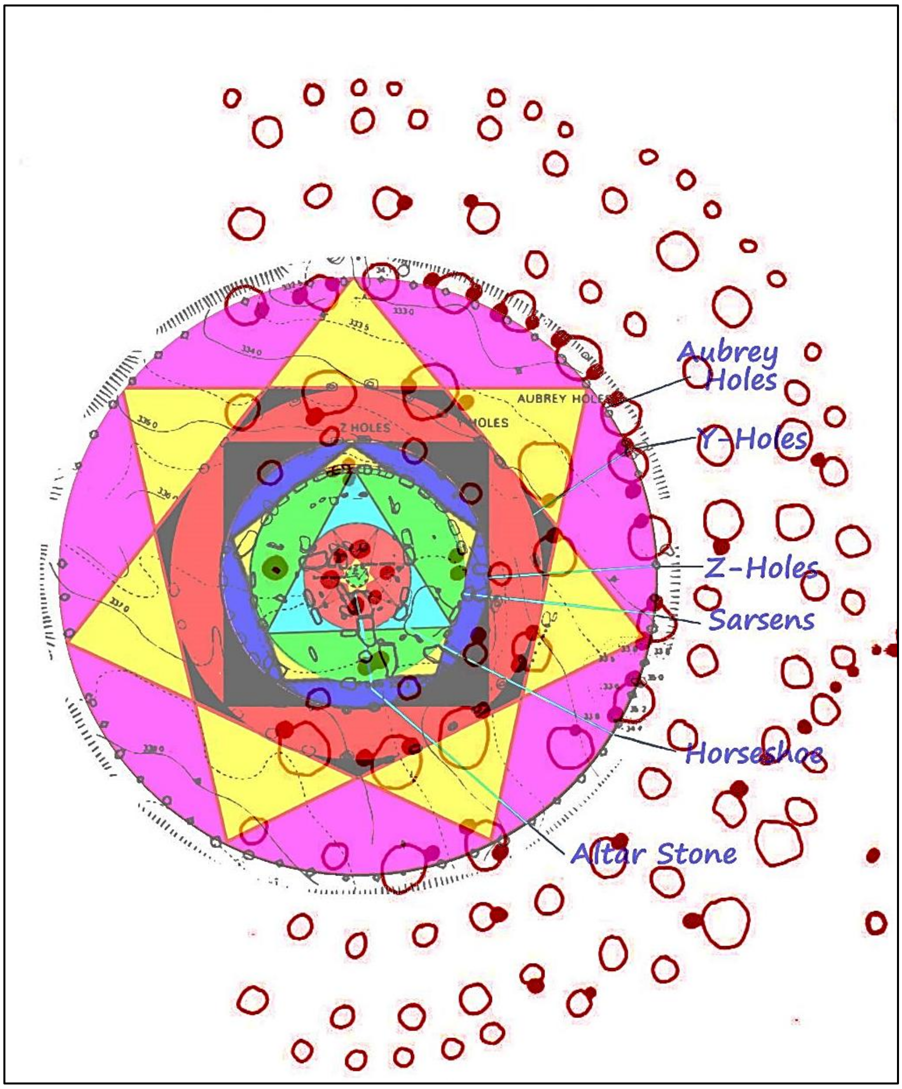
View publication

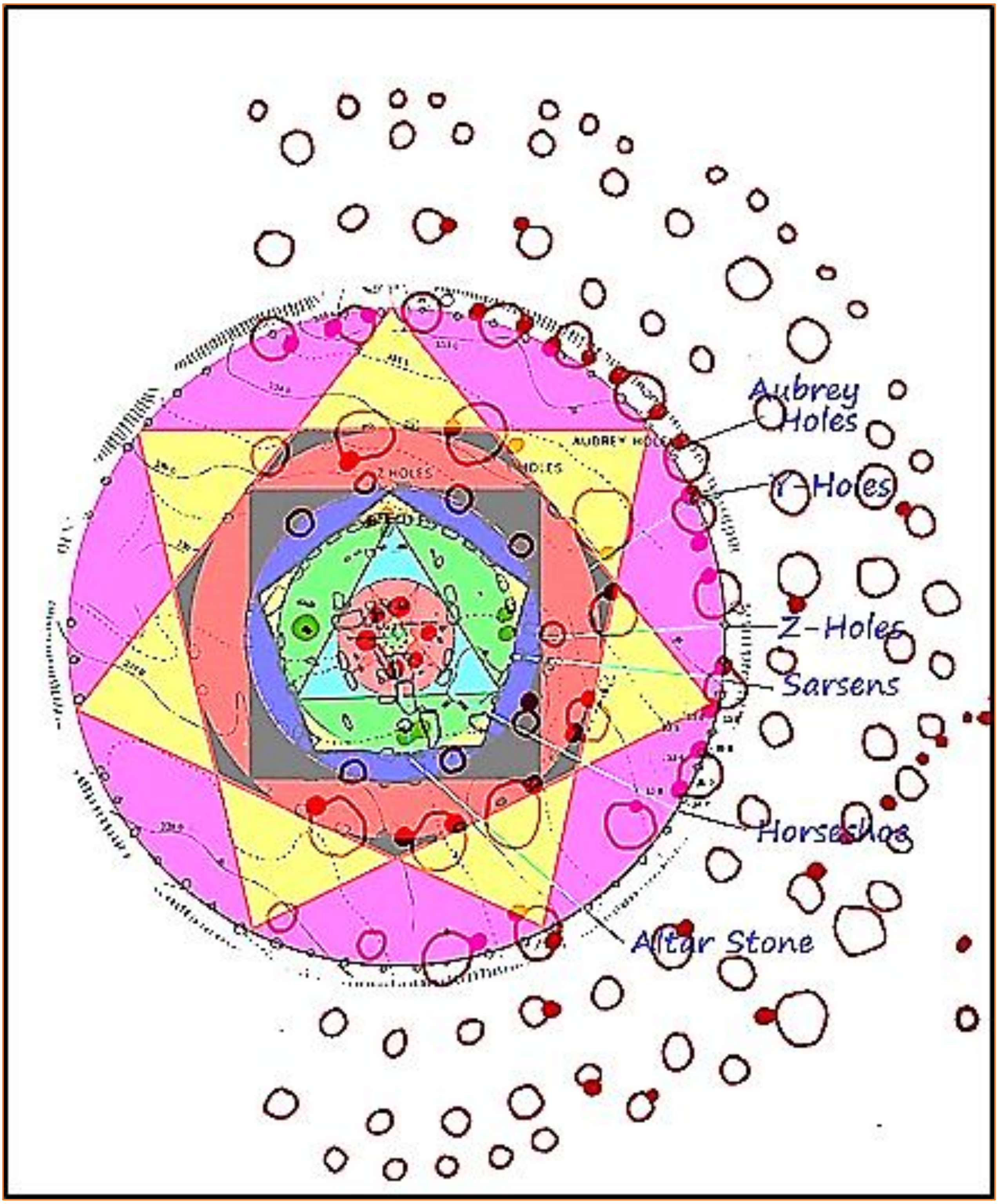


"Plan of the Phase 2A and 2B postholes at the Durrington Walls Southern Circle overlain by superimposed concentric circles with diameters of between 30 and 120 long feet, (after Wainwright with Longworth 1971, Fig. 12, supplemented by additional data from Parker Pearson et al. 2008, Fig. 8)."

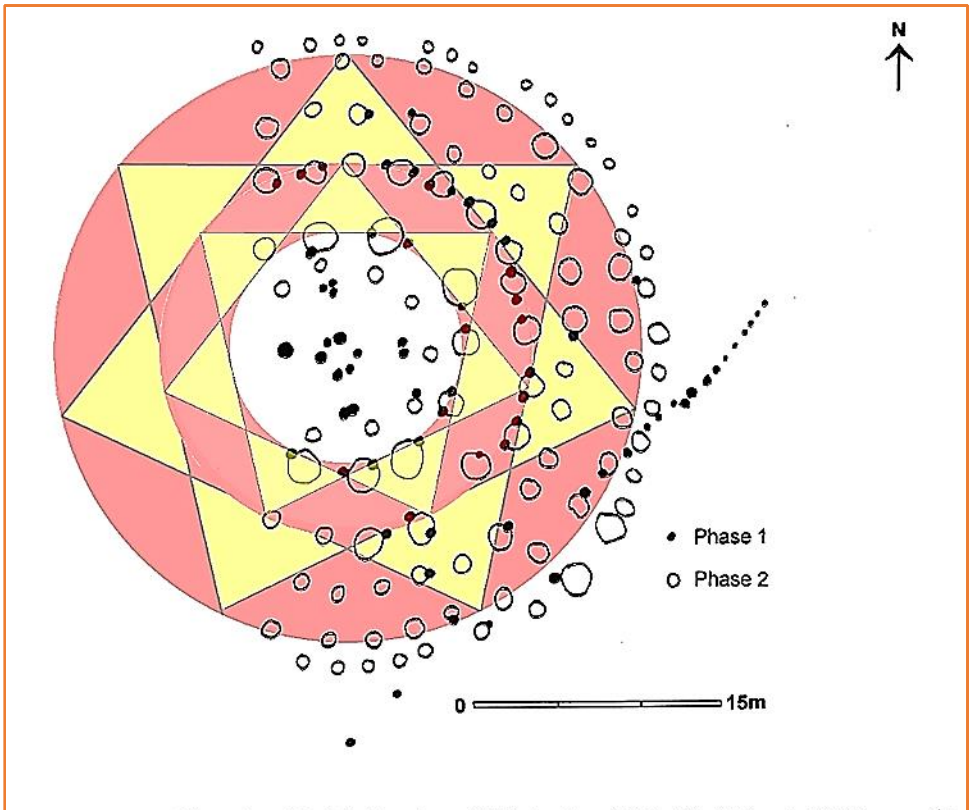
DURRINGTON WALLS vs STONEHENGE:







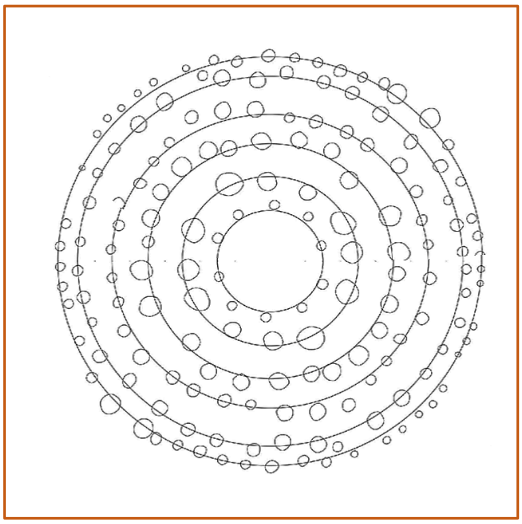
Aubrey Holes
Y-Holes
Z-Holes
Sarsens
Horseshoe
Altar Stone
AUBREY HOLES
Z HOLES
Y HOLES

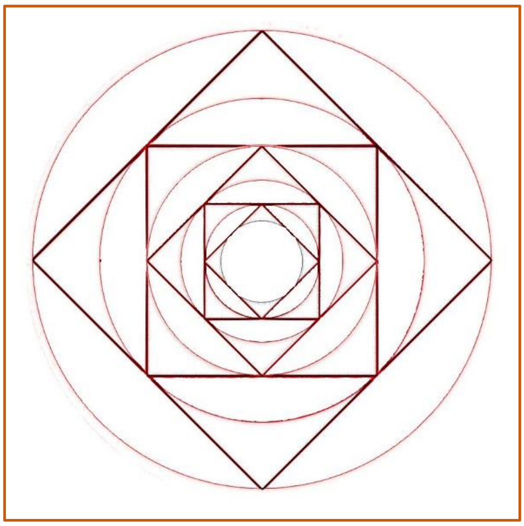


Phases 1 and 2 of the Durrington Walls Southern Circle (after Wainwright & Longworth).

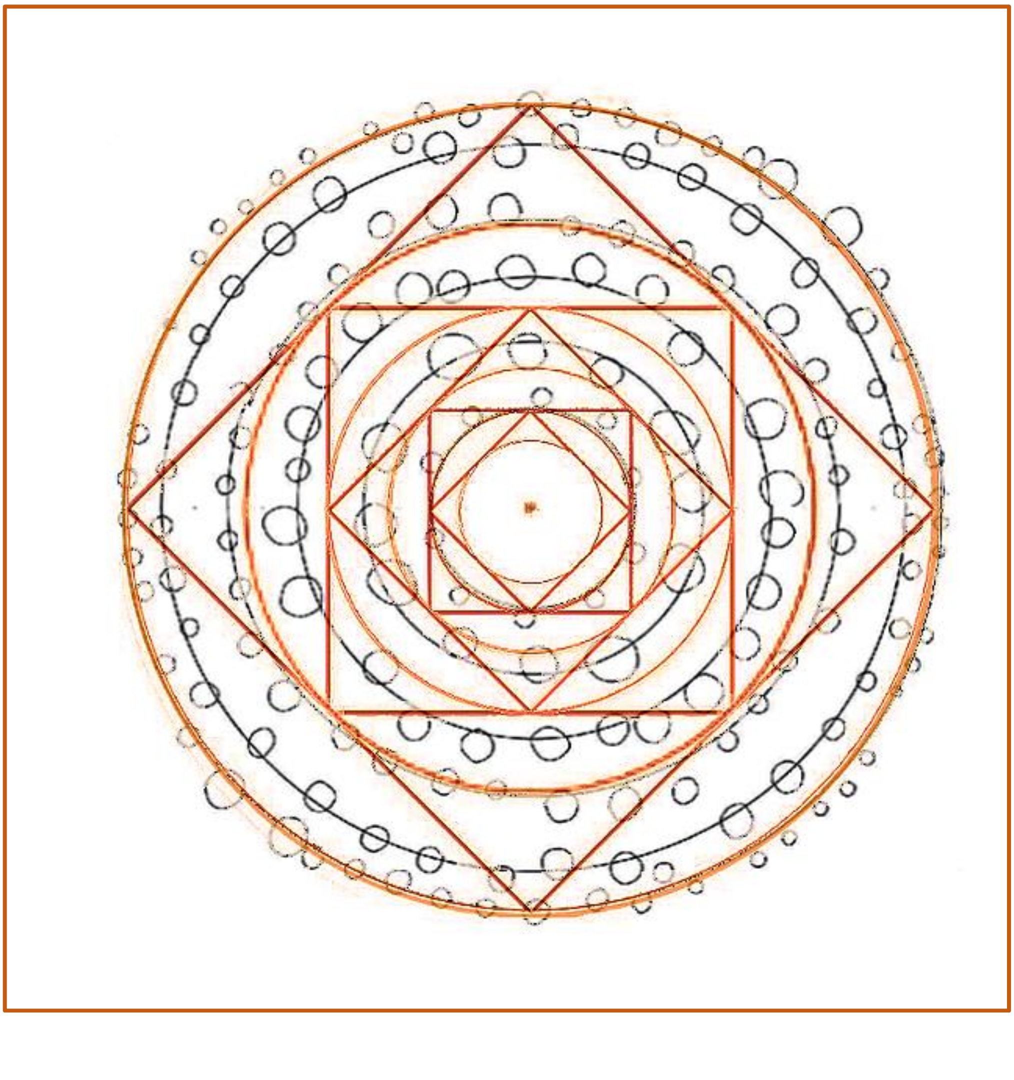
5 STEPPED QUADRATURE AND DURRINGTON WALLS

DURRINGTON WALLS AND MY 5 STEPPED QUADRATURE

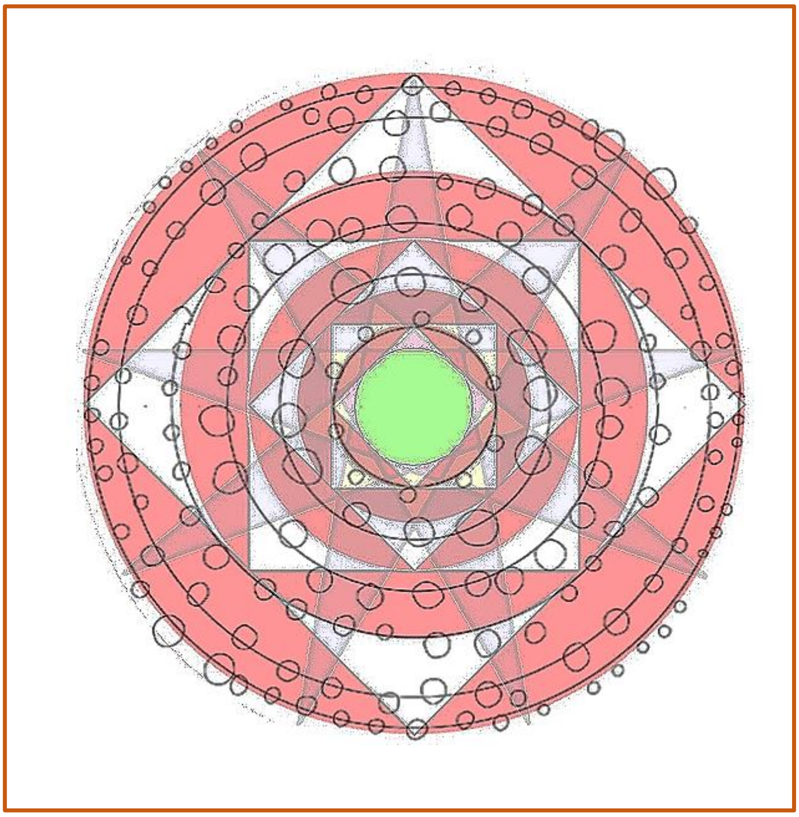


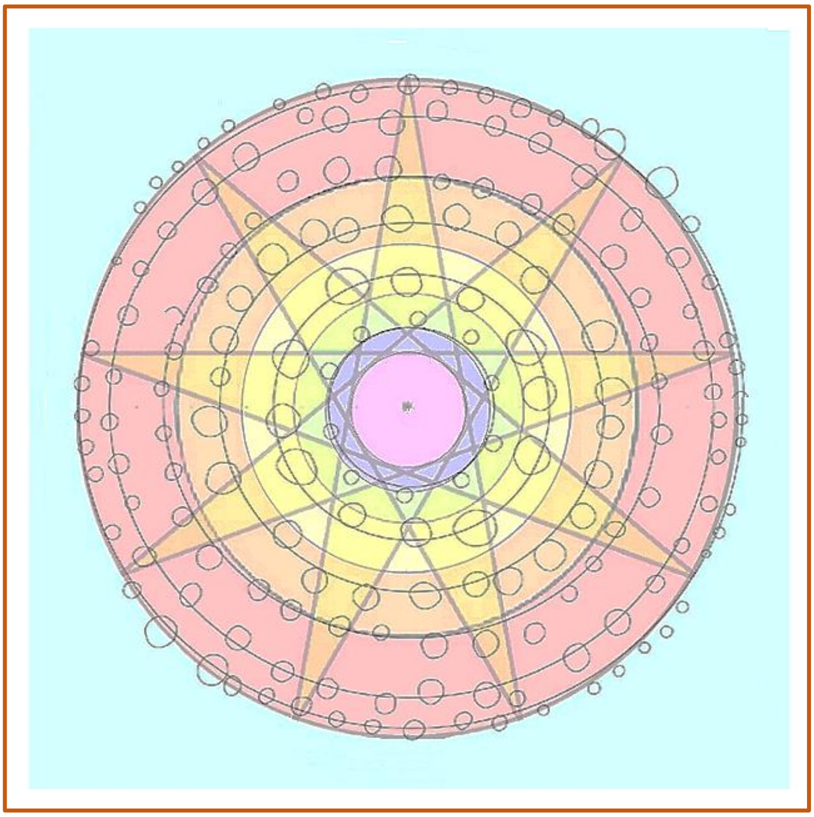


√2 x √2x √2 x √2 x √2

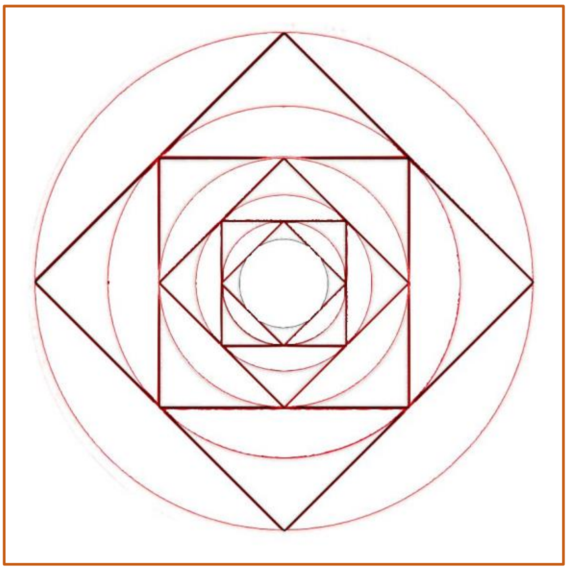


MY 5 STEPPED QUADRATURE superimposed over DURRINGTON WALLS:





AS IN ALL MY WORKINGS . . . "Shape x Shape = Shape"

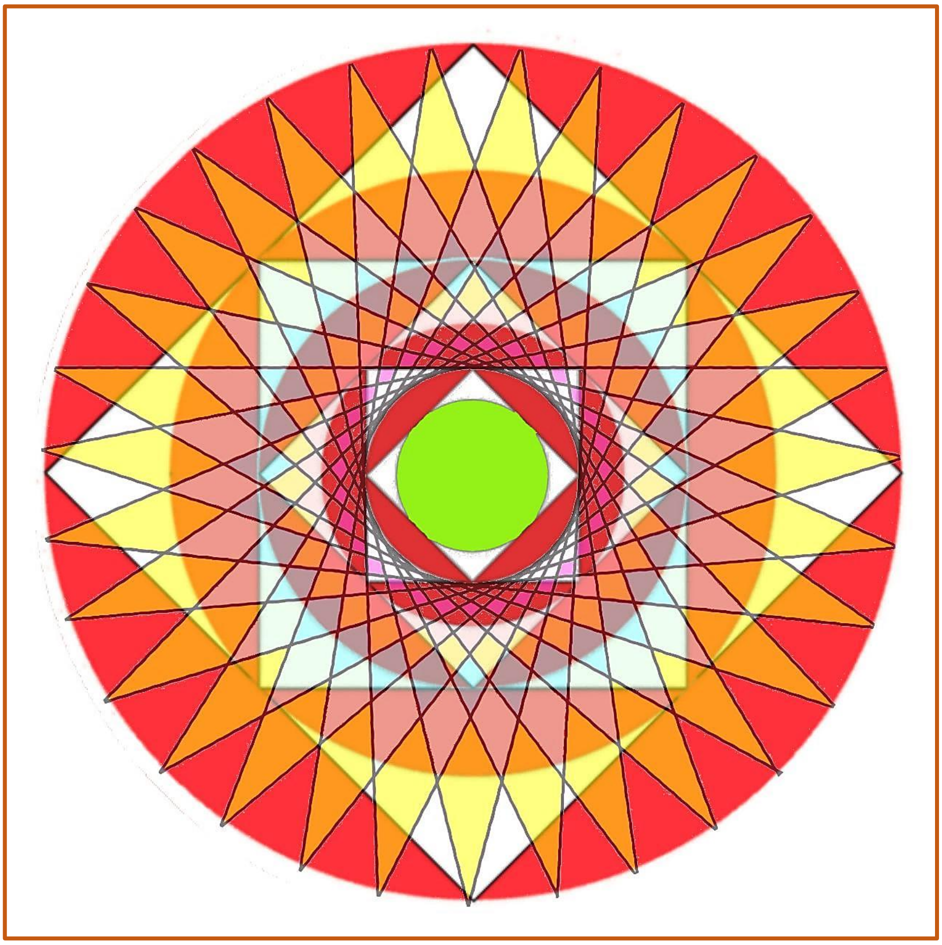


EACH SQUARE STAGE REPRESENTS THE RATIO FOR ANOTHER SHAPE:

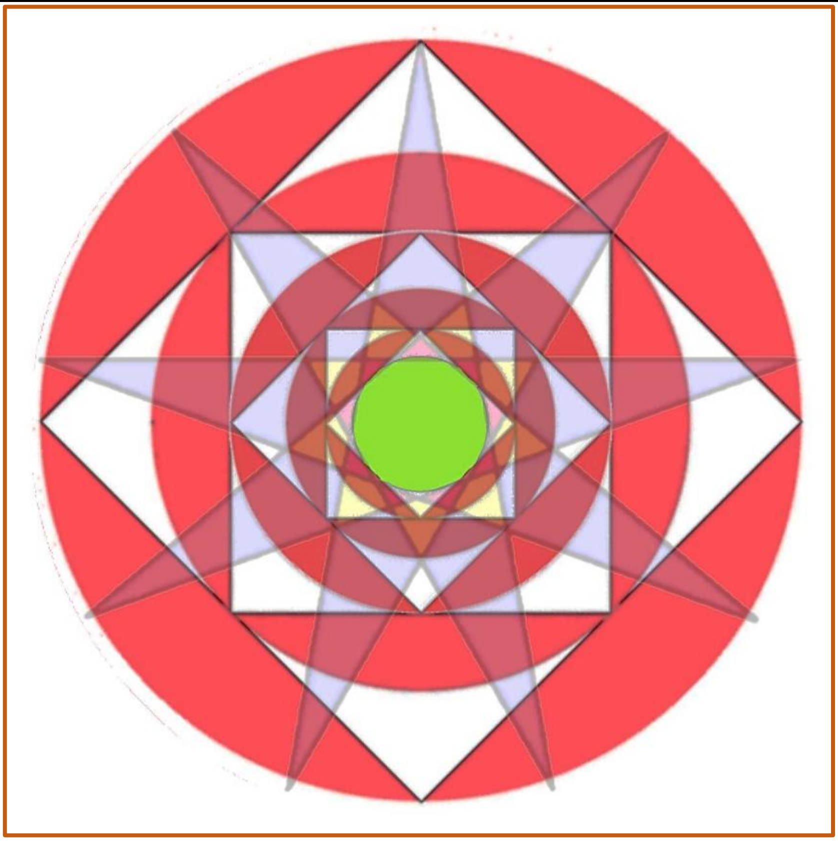
- THE INNER SQUARE = 1,414213562 = A SQUARE - *√2*
- THE NEXT SQUARE = 2.000000000 = AN EQUILATERAL TRIANGLE. - *√2 x √2*
- THE THIRD SQUARE = 2.828427125 = A 13 POINT POLYGRAM - *√2 x √2 x √2.*
- THE FOURTH SQUARE = 4.000000000 = A 31 POINT POLYGRAM - *√2 x √2 x √2 x √2.*
- THE FIFTH SQUARE = 5.656854248 = A NONOGRAM - *√2 x √2 x √2 x √2 x √2.*
- *A SIXTH SQUARE WOULD EQUAL 8.000000000 AND WOULD BE ANOTHER 13 POINT POLYGRAM*

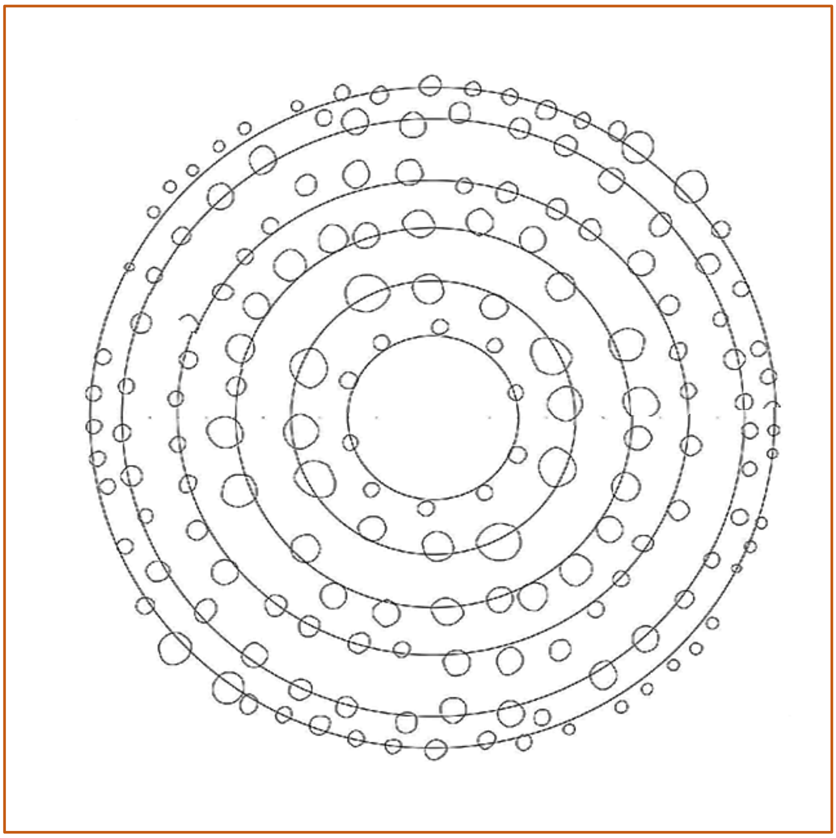
4 STEPPED QUADRATURE WITH A RESULTING 31 POINT POLYGRAM

√2 x √2x √2 x √2

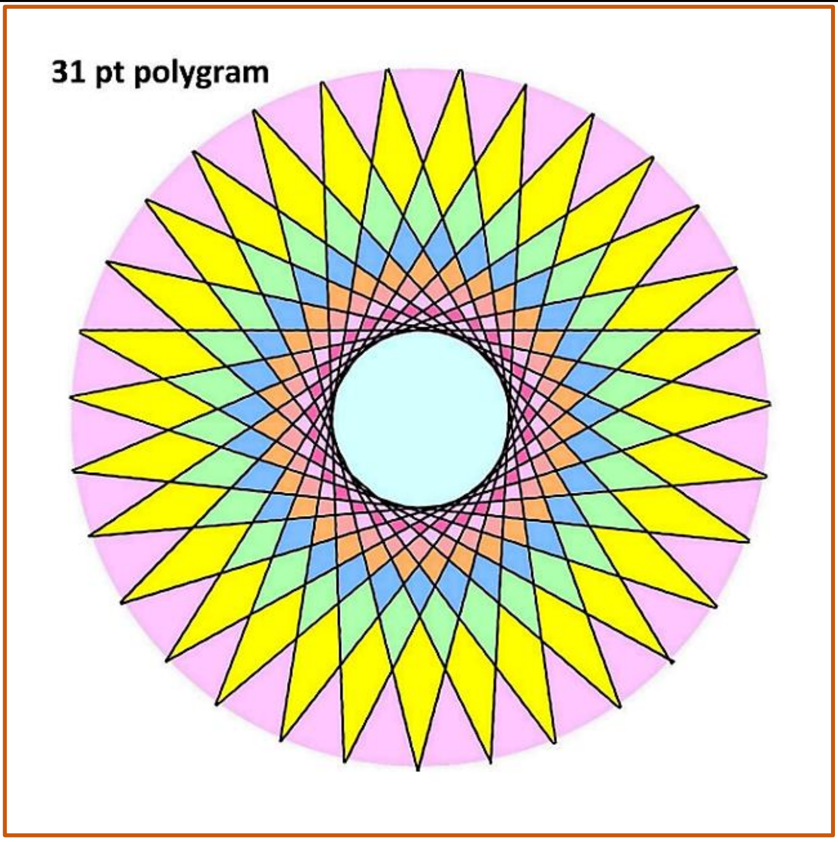


THE FIFTH SQUARE = 5.656854248 = A NONOGRAM - *√2 x √2 x √2 x √2 x √2.*

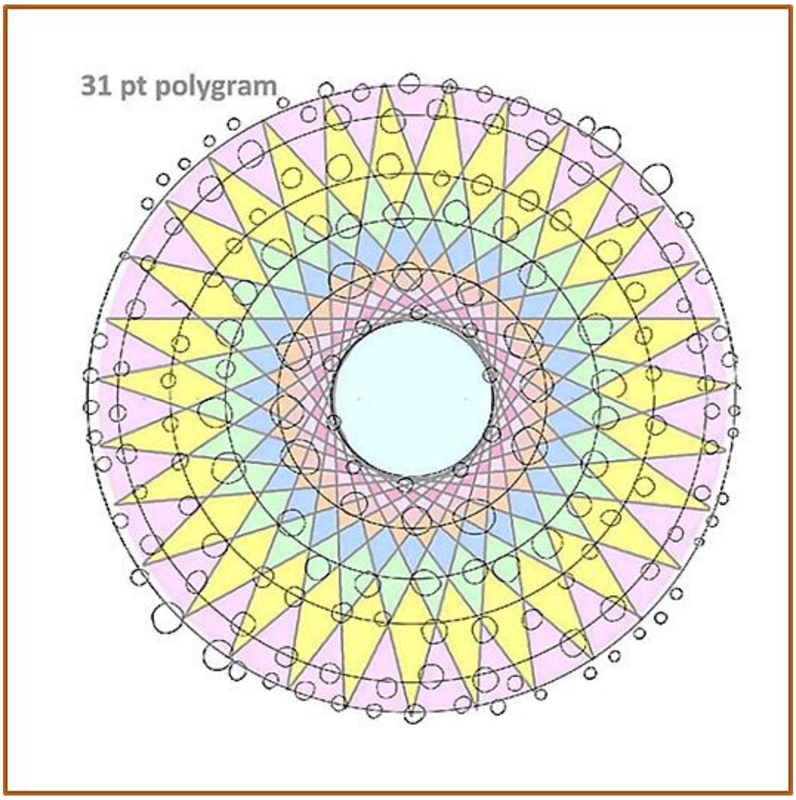




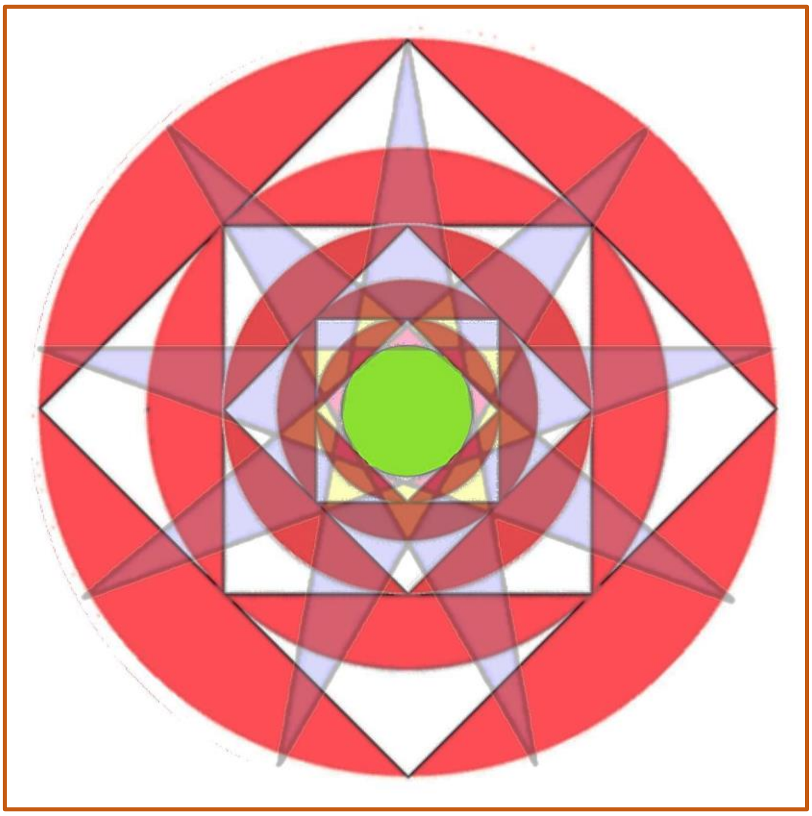
THE FOURTH SQUARE = 4.000000000 = A 31 POINT POLYGRAM - *√2 x √2 x √2 x √2.*

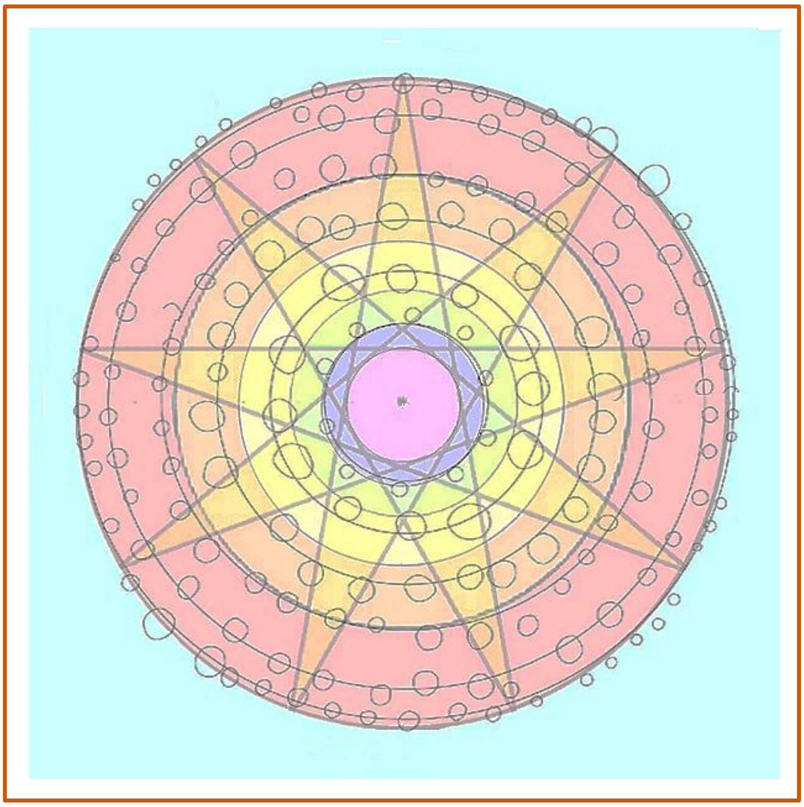


MY 4 STEPPED QUADRATURE over DURRINGTON WALLS

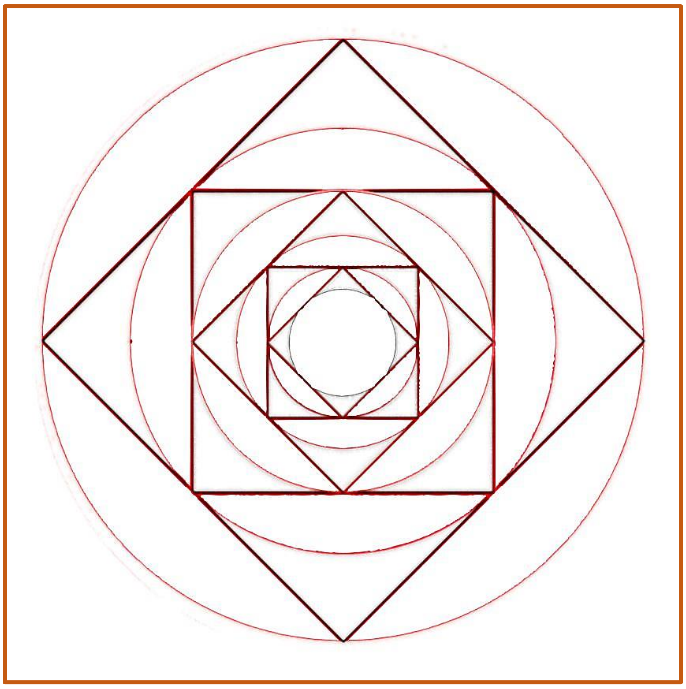


THE FIFTH SQUARE = 5.656854248 = A NONOGRAM - *√2 x √2 x √2 x √2 x √2*



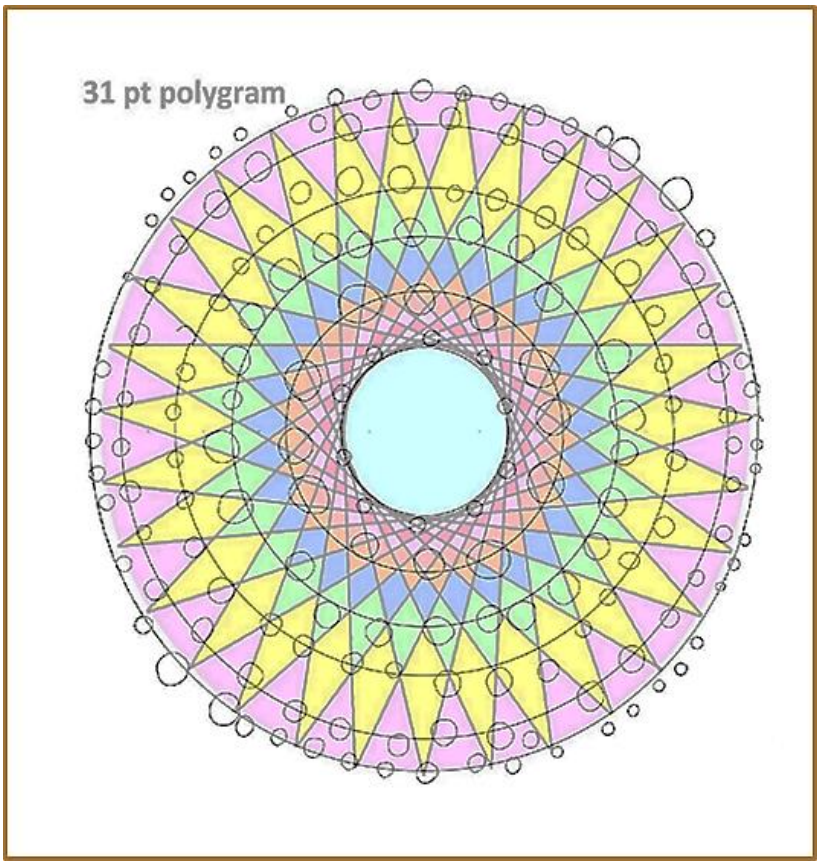


AS IN ALL MY WORKINGS . . . "Shape x Shape = Shape"



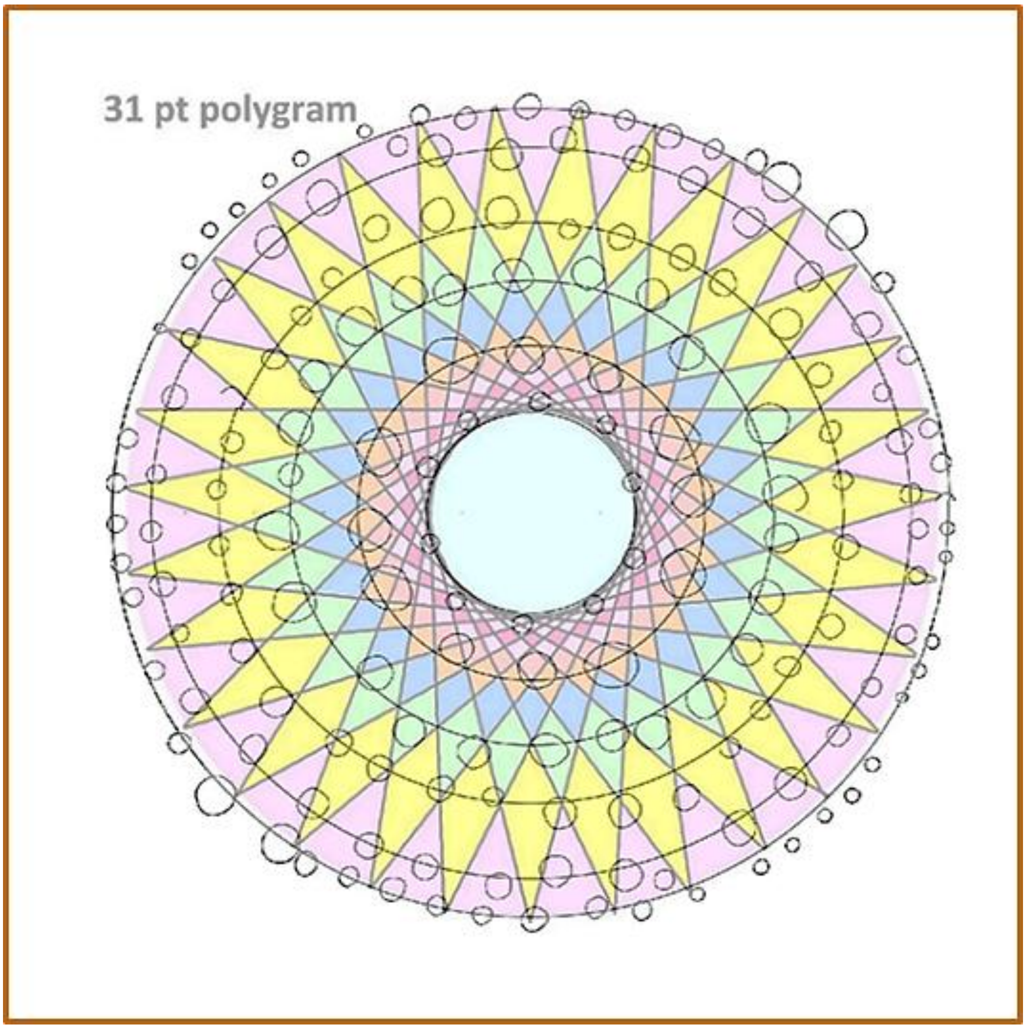
EACH SQUARE STAGE ADDED INTRODUCES THE RATIO FOR ANOTHER SHAPE:

- THE INNER SQUARE = 1,414213562 = A ***SQUARE*** - *√2*
- THE NEXT SQUARE = 2.000000000 = AN ***EQUILATERAL TRIANGLE***. - *√2 x √2*
- THE THIRD SQUARE = 2.828427125 = A ***13 POINT POLYGRAM*** - *√2 x √2 x √2.*
- THE FOURTH SQUARE = 4.000000000 = A ***31 POINT POLYGRAM*** - *√2 x √2 x √2 x √2.*
- THE FIFTH SQUARE = 5.656854248 = A ***NONOGRAM*** - *√2 x √2 x √2 x √2 x √2.*
- *A SIXTH SQUARE WOULD EQUAL 8.000000000 AND WOULD ALSO BE A **13 POINT POLYGRAM***



THE FOURTH SQUARE = 4.000000000
= A ***31 POINT POLYGRAM***
= √2 x √2 x √2 x √2.

DURRINGTON WALLS LAYOUT
USING "*PLANE REGULAR SHAPE RATIOS*"

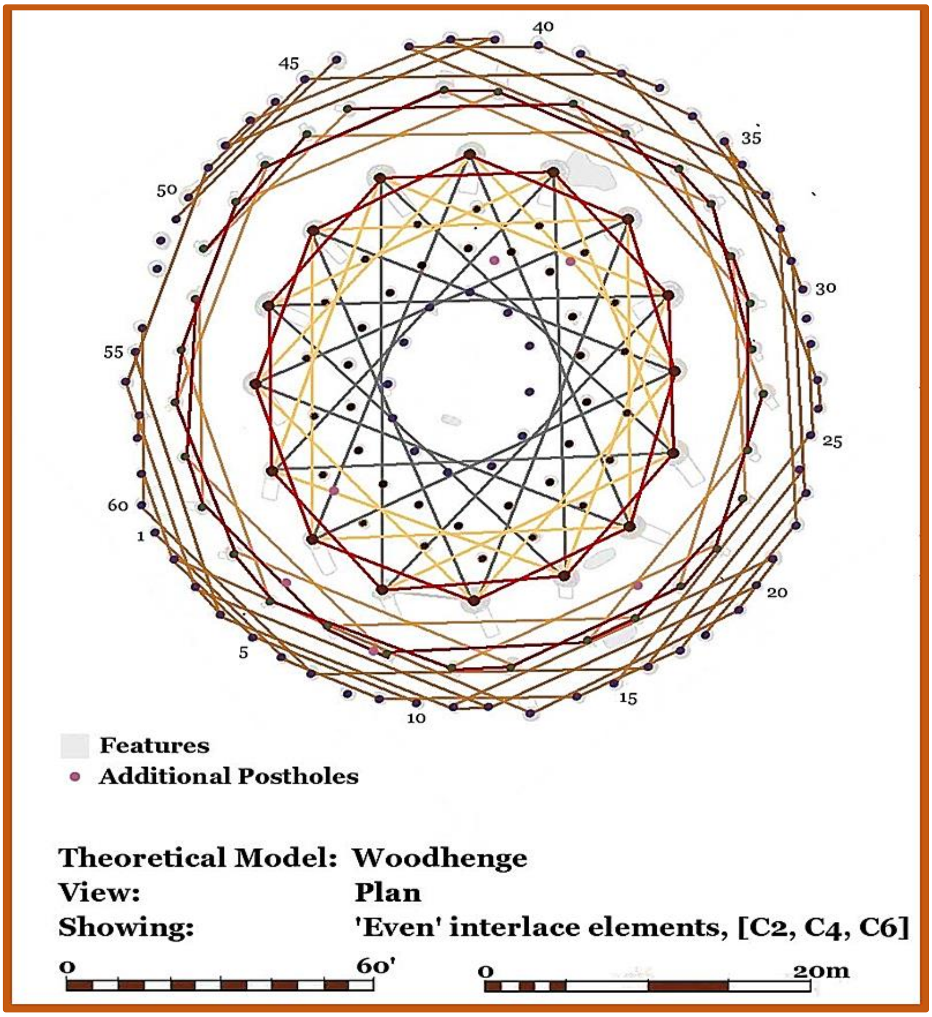


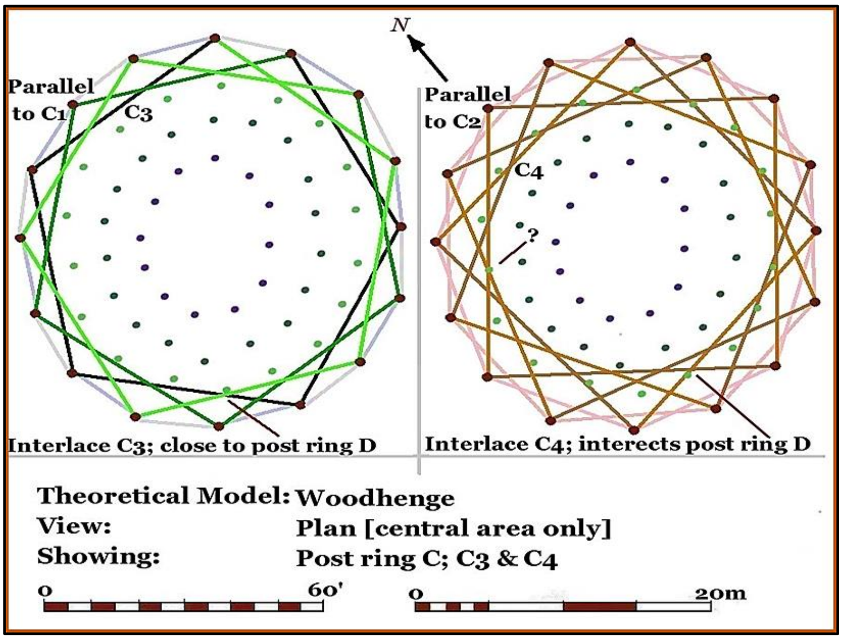
This 31 point polygram is almost an unbelievable fit for the circles that have been drawn thru or adjacent to the circles of postholes. With one exception, these drawn in circles match the apexes of the outer and inner harmonic shapes for this outer 31 point polygram. (If we align the outer 31 point apexes with the overall outer drawn circle.)

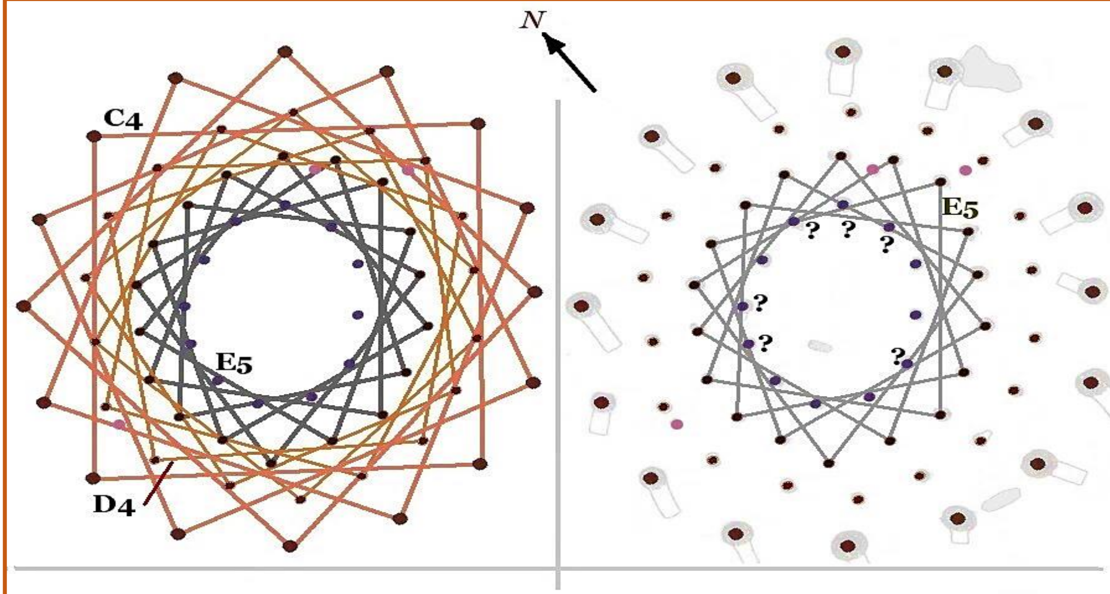
Inexplicably, the drawn line for the second circle in has postholes that seem to align closely with the apexes of the 31 point polygram/

WOODHENGE LAYOUT

USING "*INTERLACINGS*"

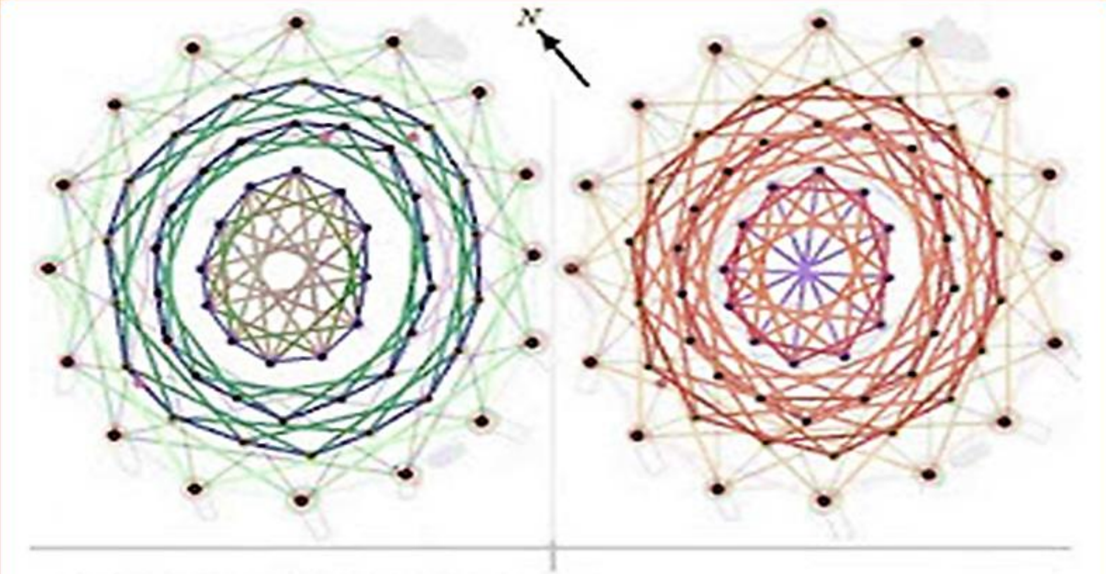






Theoretical Model: **Woodhenge**
View: **Plan [central area only]**
Showing: **Elements linking / Details of E5**

0 60' 0 20m



Theoretical Model: **Woodhenge**
View: **Plan [central area only]**
Showing: **Post rings D, E & F; odd / even elements**

0 60' 0 20m

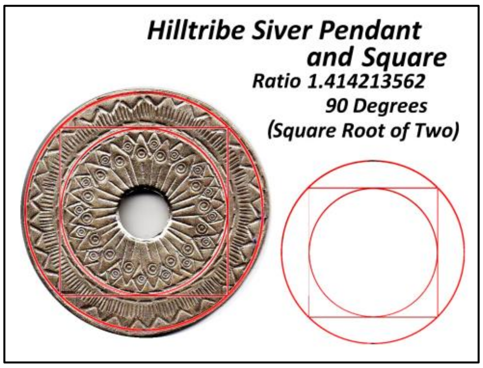
THAI *HILLTRIBE* SILVER PENDANT:

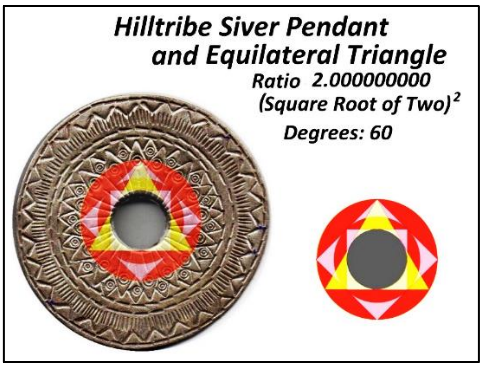
Just when I think I have discovered something new this Silver pendant falls into my possession. I purchased it at a sale at a daughter's favourite shop at Mooloolaba when it had a closing down sale. I merely went in to purchase a memento for her.

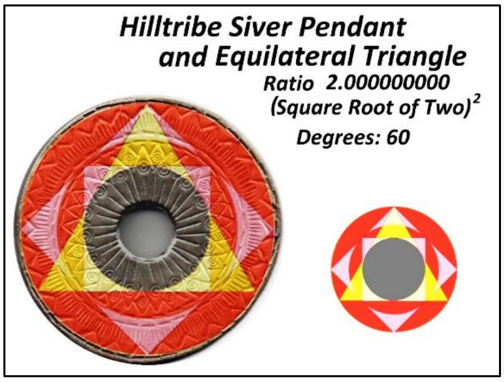
This Pendant is absolutely full of shape-forming circles. It is obvious that jewellers need a certain geometry in order to cut and shape gems.

This specific mixture of 3, 4, 8, 13, and **31** sided shapes shows a certain knowledge of the area around my theory. One would have expected a 30 or 32 point polygram around the outside but that would not have supplied the ratio for the ***quadrature*** to the fourth degree as is illustrated.

An Inscribing Circle is also stamped into this item.







An item that initially seems to be just ornamental is steeped in ancient Philosophies. I wonder how long they have used this geometry in Thailand. Did it come from ancient Tibet? Is it new to them or is it ancient knowledge that has been continually utilised there?

HILLTRIBE THAI SILVER PENDANT
Shapes and Ratios

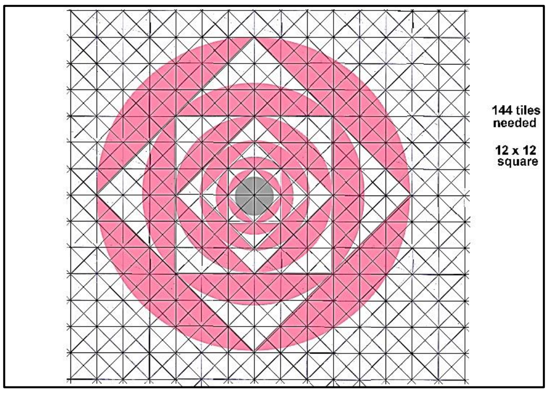
This pendant displays the most exotic features of the Ancient **Quadrature**: (**√2x√2x√2x√2**) . . .

- See Plato's **Meno**;
- See Clay Tablet **BM15285** (Larsa 1800bce);
- See the late David Herbert Fowler's (and the late Wilbur Knorr's) "***Anthyphairesis***";
- See Stonehenge Layout – **Aubrey Holes to Sarsens**;
- See Durrington Walls and The Sanctuary;

HILLTRIBE - THAI SILVER PENDANT

SHAPES	DEGREES	RATIOS	IN TERMS OF √2	IN OTHER TERMS
31 point polygram	29.032258064516100	4	√2 x √2 x √2 x √2	2 X 2
Quadrature to 4th. Degree	90, 90, 90, 90	√2, 2, 2x√2, 4	√2 x √2 x √2 x √2	2 X 2
octagram	45	2.613125929752760	√[(√2 x √2 x √2) + (√2 x √2 x √2x √2)]	√6.8284271247462
			√[(√2 x √2 x √2x √2) + (√2 x √2 x √2)]	√[4 + 2.8284271247462
square	90	1.414213562373100	√2	2 / √2
octagon	135	1.082392200292390	√[1 + (√2)/2]	√1.70710678118655

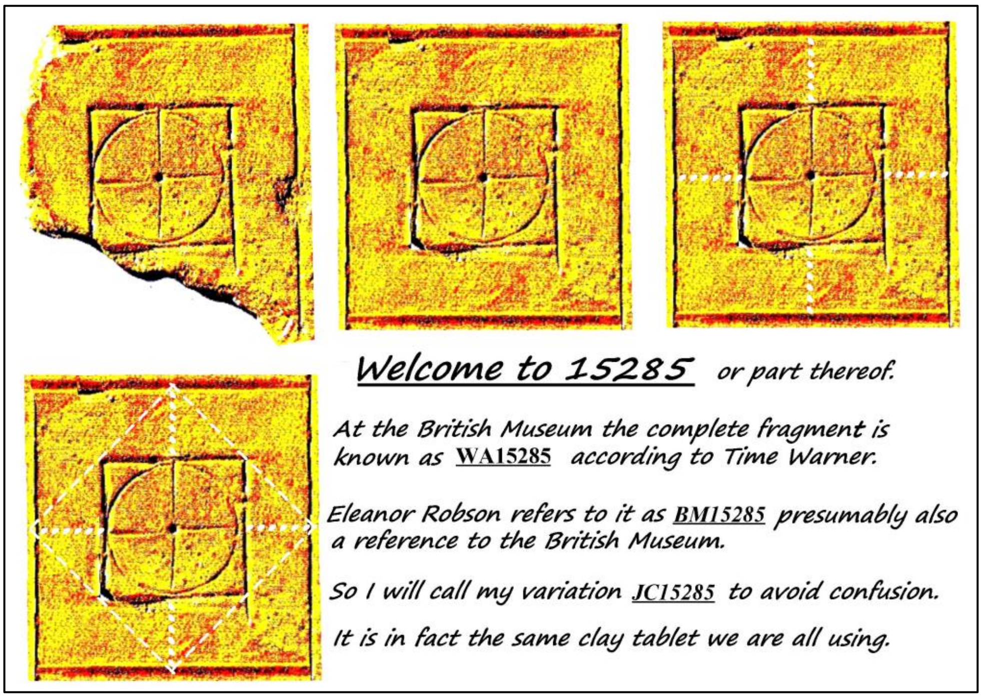
MY QUADRATURE AND THE TILED FLOOR



The sides of each square within its red circle align alternatively with the Verticles & Horizontals and then with the Diagonals

This tiled floor provides all the construction lines necessary to produce the Quadrature.

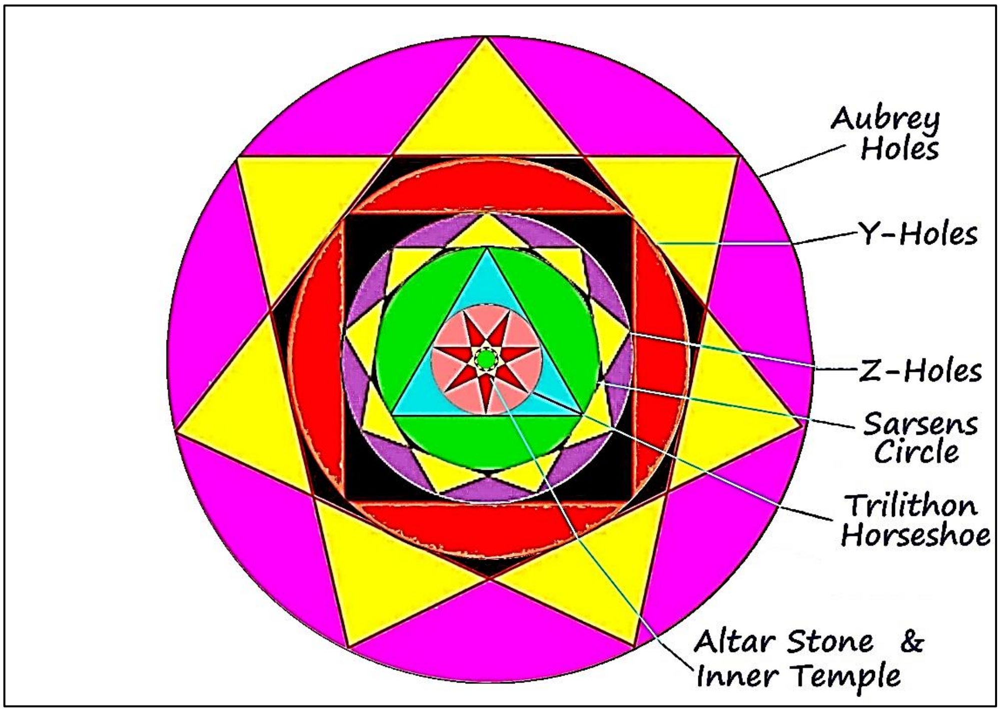
MY QUADRATURE AND BM 15285



The clue to my view of the Quadrature is to ignore all references to "***area***" and "***circumferences***" along with π and to treat them as red herrings.

My white construction lines indicate that these squares have been produced in a proportion to each other that enables them to become the Quadrature. For simple *"School"* Tablets they are imbued with remarkable accuracy in their drawing. You may wish to argue that the central (Inscribing) circle was drawn with a compass; perhaps because of the hole in the centre, but bear in mind that the remarkable accuracy within this tablet could not have been achieved without some mark indicating the Centre of the Squares.

So, we have clay tablet "school" work from Larsa in Mesopotamia from about **1800bce** being reproduced in silver pendants by Hilltribe Silversmiths from Thailand in **2016**; 3816 years later and we still don't seem to completely understand it.



We seem to view Stonehenge as a structure separate from the daily influences of our lives. We seek to imbue it with so much uninterpretable mystique that so many of us would file it in the *"Too Hard"* basket rather than try to place it neatly within its historical context.

Too often we think of people from the ante and post deluge periods as being nincompoops. We give them no credit for having the knowledge to design and build the structures that are still being unearthed today. Too many mathematicians simply state "They had no concept of angle!" when it is blatantly obvious that they had better knowledge than most of us today, professors included.

Even Noah could build his enormous Ark.

BULLETIN (New Series) OF THE AMERICAN MATHEMATICAL SOCIETY
Volume 1, Number 6, November 1979
RATIO IN EARLY GREEK MATHEMATICS BY D. H. FOWLER

Knorr sees the construction and classification of incommensurable magnitudes (Books II and X of Euclid's *Elements)* as "a massive project which engaged the best efforts of the most notable fourth-century mathematicians: Theodorus, Theaetetus, Archytas and Eudoxus,"[2] and he extends the proposal by Becker and others [3] that, before the development of Book V-type proportion theory by Eudoxus, ***proportion was characterised using the 'Euclidean' subtraction algorithm, in a procedure called anthyphairesis.***

But we make one modification to Knorr's account: we shall argue that this anthyphairetic definition, introduced by Theaetetus and used by Eudoxus before his discovery of the more powerful and general Book V Definition 5, was ***used to develop a theory of ratio, not of proportion***, and we examine this conjecture against the available evidence.

For reasons that we set out (in §10), ***the anthyphairetic theory, once superceded, would be forgotten and misunderstood; therefore contemporary testimony is the only reliable guide***. **Thus, from the following approximate limiting dates [4]**: Plato (428—347); Theaetetus (414—369); Eudoxus (395—340); Aristotle (384—322)**; and the discovery of Book V-type proportion theory[5] around 350, we see that the writings of Plato and his associates in the Academy, where in fact the developments were taking place, provide the best evidence.** Relevant passages are considered in §§2, 5, 8, and 10.

Secondly, since the bulk of our knowledge of ***fourth-century mathematics*** comes to us via Euclid's *Elements* (c.300), we examine that for vestiges of the anthyphairetic theory in §§3, 4, 6, and 11, and point out ***the different characteristics of ratio and proportion theory*** (§§3 and 10). All this discussion rests on an appreciation of the ***historical role of anthyphairesis*** and an understanding of its ***mathematical implications***. The procedure itself, as found in the *Elements,* is described in §6; two basic geometrical calculations using it are performed in §7; and the historical evidence for it is set out in §8;

3. The notion of ratio.

It is a curious, obvious, and unexplained fact that the ***Elements does not contain a precise definition of ratio***, though the word ***logos*** is used frequently with this meaning**. Book V**, Definition 3 introduces it:

A ratio {logos) is a sort of relation in respect of size between two magnitudes of the same kind,

but its sense is defined in the celebrated Definition 5 where ***what is actually considered is the equality of two ratios***. Definition 6 then introduces retrospectively an alternative terminology:

Let [four] magnitudes which have the same ratio be called proportional (analogori),

and **Book V** goes on to study proportionality among magnitudes; so proportionality is a relationship that may or may not hold or be relevant.

To emphasise this difference between **ratio and proportion**: given four objects a, *b,* c, and *d,* we can always answer either 'Yes, they are in proportion'; or 'No, they are not in proportion'; or 'The idea of proportion is irrelevant (since ***a*** and ***b***, or ***c*** and ***d,*** cannot be compared)'. The procedure of Book V does not assign meanings to ***a:b*** and ***c:d*** separately and then assert that they are equal—for this reason, we shall use the abbreviation ***a:b::c:d*** for proportions, rather than ***a:b = c:d***.

A ratio is an independent meaning for ***a:b*** and, in most treatments, it follows a definition of proportion and corresponds to an 'equivalence class' of proportions; this step is in no sense considered in the *Elements,* no alternative definition of ratio apart from **V**, Definition 3 is proposed, and so ratios can only be meaningfully considered there within a proportion. (**19**)

Proportionality among four numbers is defined, independently and differently, in **VII**, Definition 20:

Numbers are proportional when the first is the same multiple, or the same part, or the same parts, of the second that the third is of the fourth. (20).

Commentators rarely point out the unsatisfactory nature of this definition: it is a vivid, though incomplete, description of four numbers in proportion, and not the mathematical criterion needed for the foundation of a theory.

(Compare it with **V**, Definition 5. This latter, as a description, is almost impenetrable, though its latent power and scope are enormous.)

SCIAMVS 1 (2000), 11–48

Mathematical cuneiform tablets in Philadelphia Part 1: problems and calculations

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Introduction

SCIAMVS 1 Mathematical cuneiform tablets in Philadelphia

Tablet 11: N 4942

Figure 11: N 4942 obverse (reverse blank)

This tablet shows a numbered diagram of a **semicircle** (Figure 11, Figure 12).

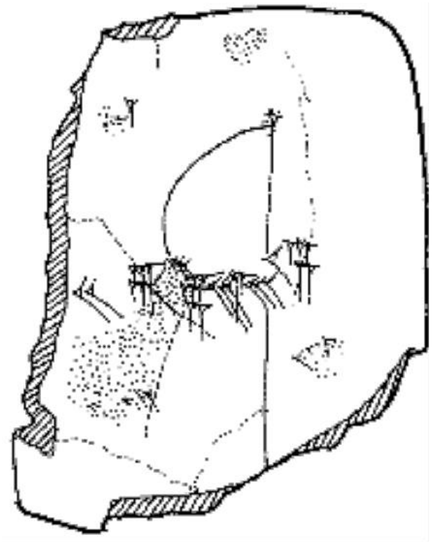


Figure 11: N 4942 obverse

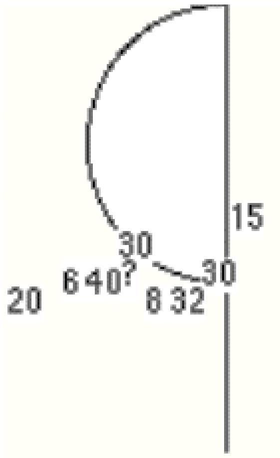


Figure 12: Transcription of the diagram on N 4942

At first sight this looks like the solution to a problem about a semicircle, but none of the relationships are evident in the numbers (cf. Robson 1999: 39).

Area = 0;15 X semicircumference X diameter

Area = 0;22 30 X diameter2

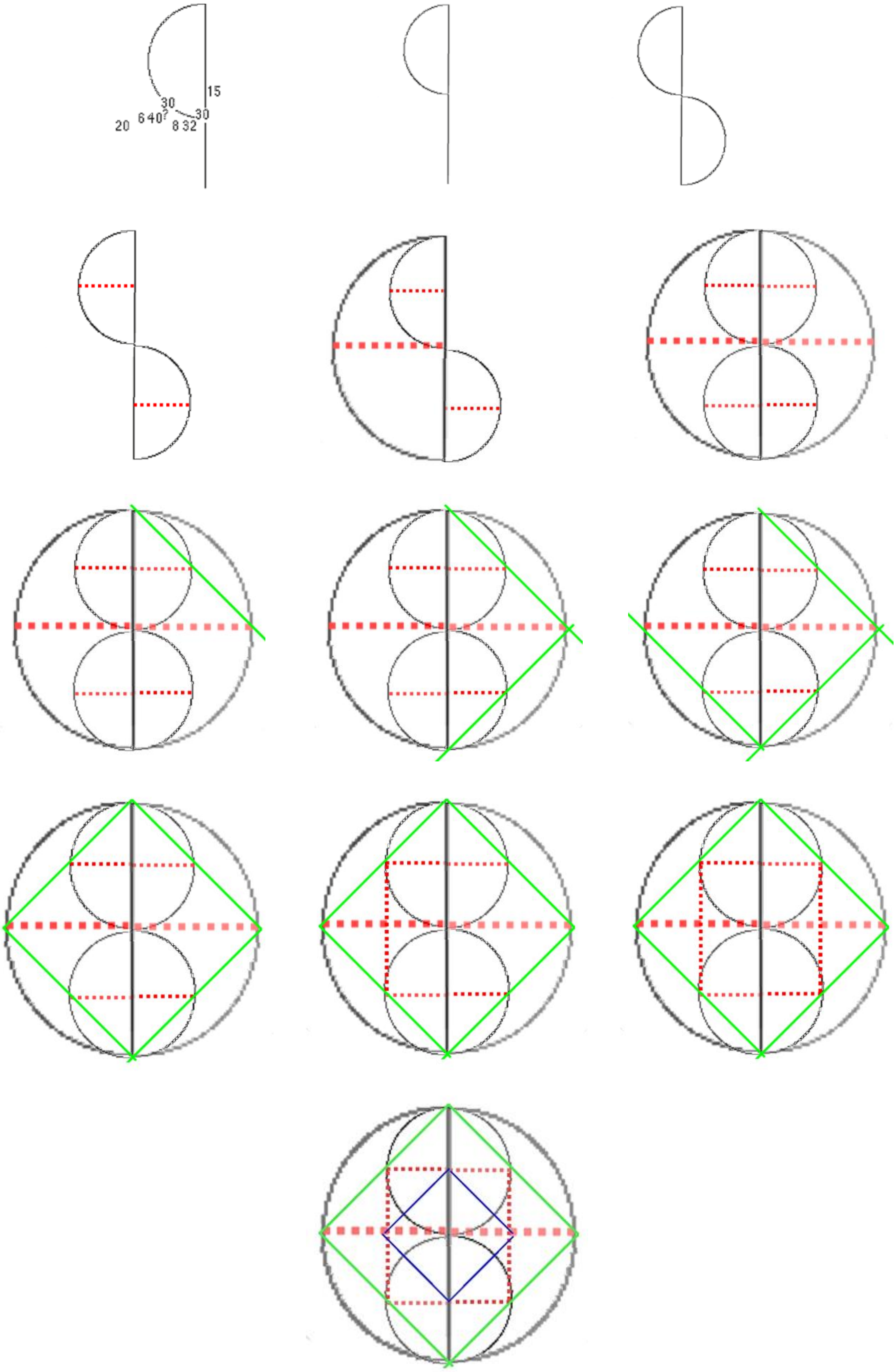
Area = 0;10 X semicircumference2

Instead we may be dealing with powers of 2:

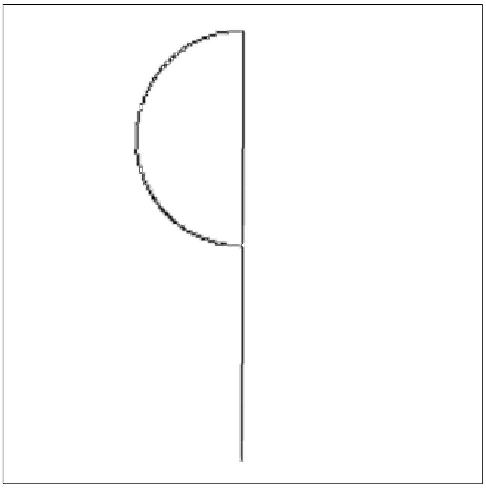
0;30 X 0;30 = 0;15 (i.e. 1/2 X 1/2 = 1/4)

8 32 (= 29) and 0;06 40 (= 1/9).

*THIS IS WHAT CAN BE ACHIEVED USING **GRAPHICAL** GEOMETRY* on N 4942*:*
NO MATHEMATICS . . . NO TRIGONOMETRY.

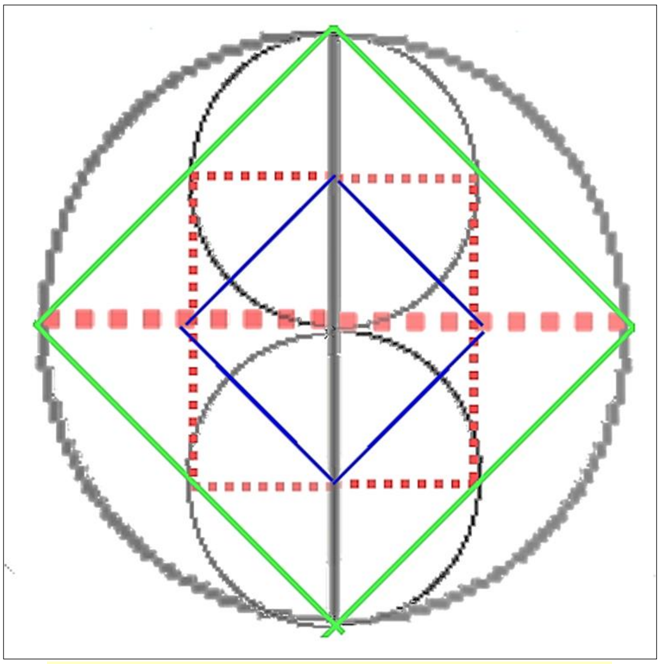


RATIO AND PROPORTION
FROM:



N 4942

TO:



USING ONLY GRAPHICAL GEOMETRY

Refer now to the images on BM15285.

In true Plato's Meno style look at BM15285 and its images without attempting to interpret the cuneiform mathematical exercises. Just look at the graphics. Just look at the ***Graphical*** Geometry. Compare it to the Graphical Geometry above derived by me graphically from **N 4942**; knowing only that for a square the *long* side equals the *short* side and therefore one can simply find the radius of the semi-circle.

I'm not inferring that they would not do the Maths (even with Sexagesimals) but would you use Sexagesimals if you could simply use ***Graphical*** Geometry?

One does not even have to be an amateur Sherlock Holmes.

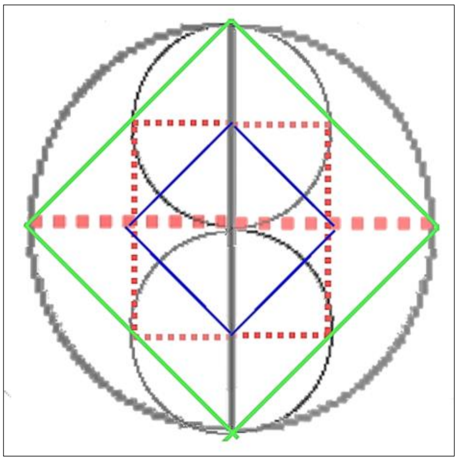
“What was the extent of the knowledge of Geometry in these ancient times?”

Wikimedia Commons

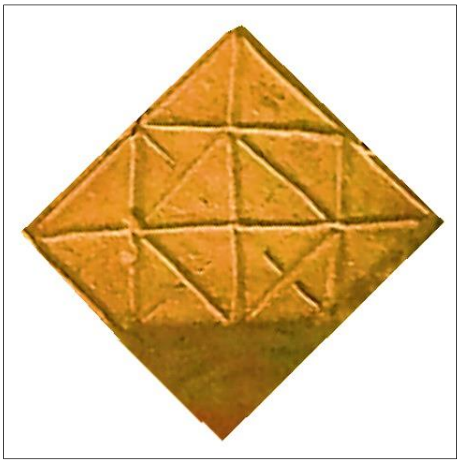
“File:Compilation of plane geometry problems from Larsa.jpg – Wikimedia Commons”

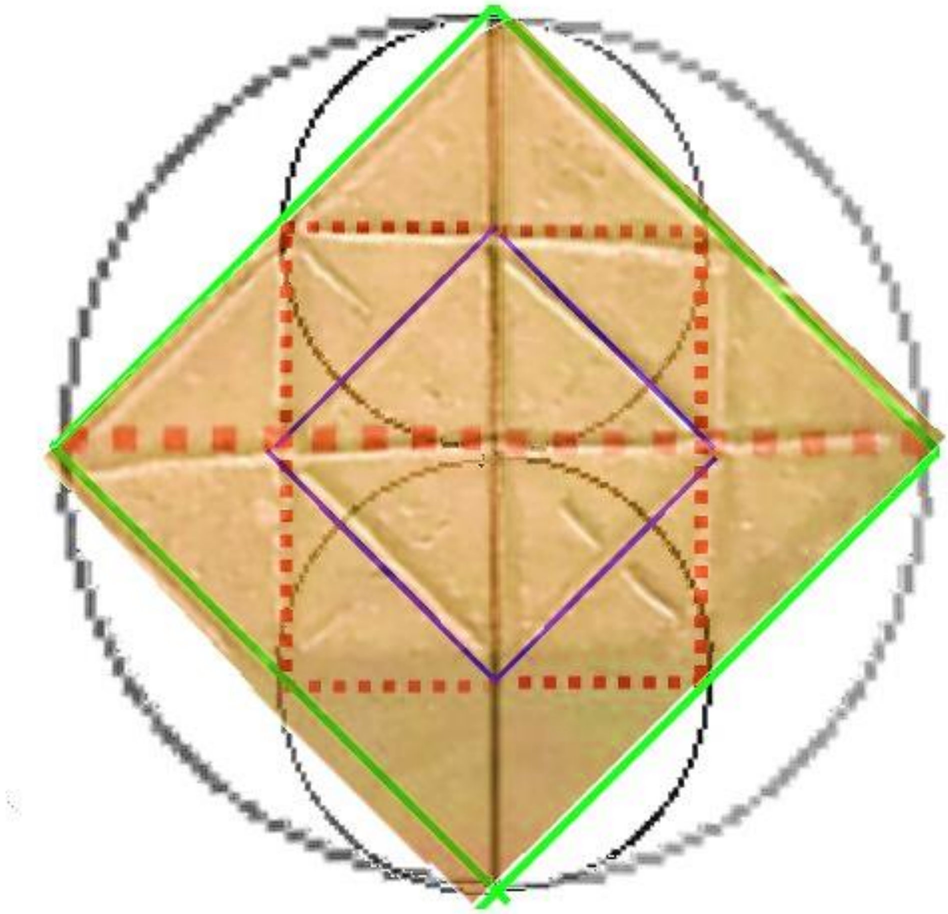
BM15285

N 4942



BM15285

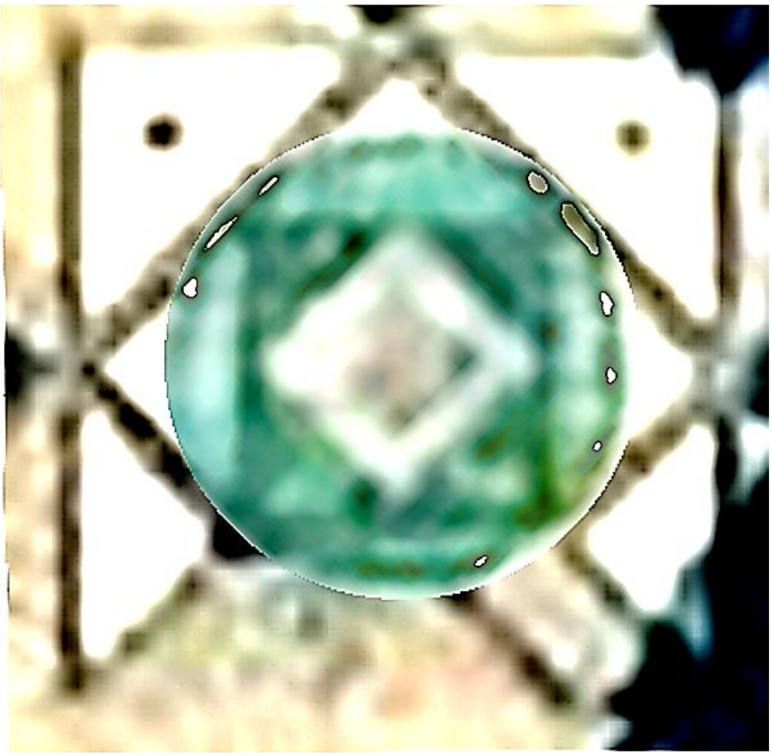




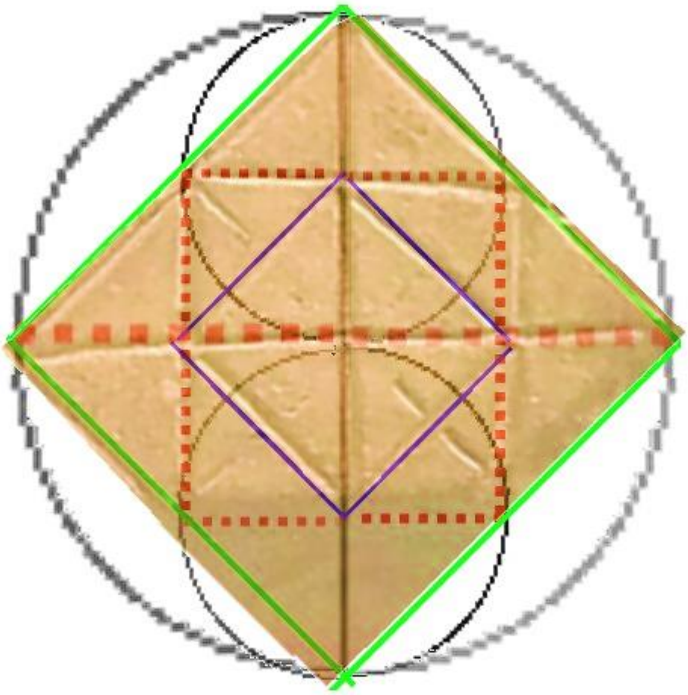
We seem to view Stonehenge as an item separate from the daily influences of our lives. We seek to adorn its history with uninterpretable mystique so that it may always remain unfathomable.

THE GLASS PYRAMID AT THE LOUVRE

AND THE SQUARE INSIDE A SQUARE INSIDE A SQUARE



AN AERIAL VIEW OF THE LOUVRE PYRAMID



N 4942 and BM15285

THE LOUVRE GLASS PYRAMID

AND THE SQUARE INSIDE A SQUARE INSIDE A SQUARE

THE SQUARE INSIDE A SQUARE INSIDE A SQUARE

$\sqrt{2} \times \sqrt{2} \times \sqrt{2}$
= Square x Square x Square

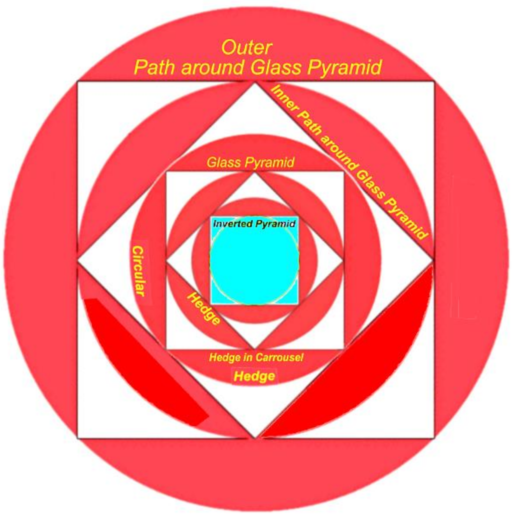
$= 2 \times \sqrt{2}$
= Equilateral Triangle x Square.

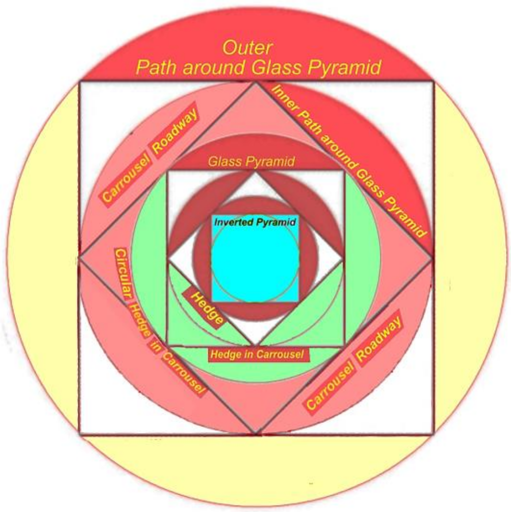
= 2.828427125
= Ratio for a 13 point polygram.

N 4942 and BM15285
= 2.828427125

Stonehenge, Woodhenge and Durrington Walls

MERGED DIMENSIONS for GLASS PYRAMID and CAROUSEL

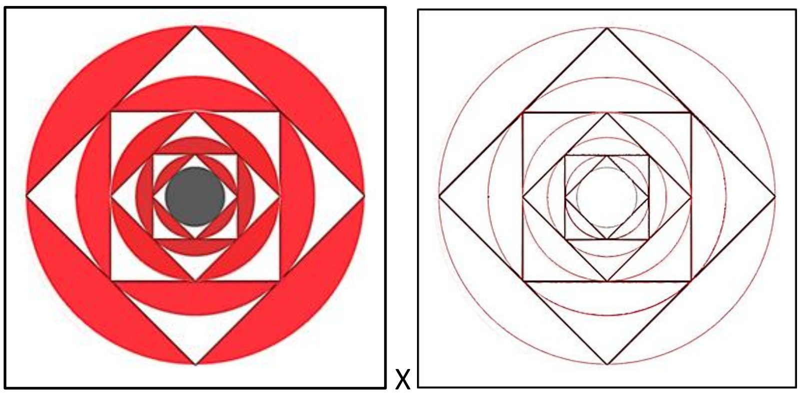




GLASS PYRAMID

CAROUSEL

MY QUADRATURE, STONEHENGE AND MEASURING WITHOUT A UNIT OF MEASUREMENT.



Throughout history, ancient and modern, my Quadrature has appeared in the construction of structures and in mathematical instruments and calculations without any fanfare; without any acknowledgement of its role in the structures and calculations; without any explanation for its use; and possibly **without any knowledge of its hidden harmonic traits**.

Many theories about *Symmetry* are embodied in the repetition of the √2.

MY INPUT TO A POSSIBLE HISTORY OF THE QUADRATURE
*(ALSO **STONEHENGE STAGING** TIMELINE)*

BLUESTONE CIRCLE – AUBREY HOLES

2500bce – ***Φ x √2 x Φ*** *or 1.618033909 x 1.414213562 x 1.618033989 for a total ratio of **3.702459174** which actually produces a polygram with 56 points – **The Aubrey Circle & and Bluestones**!*

THEN

1800bce – **√2 x √2 x √2** – *Clay Tablet **BM15285** from Larsa in Mesopotamia – **The Quadrature***

*For a total ratio of **2.828427125.***

THEN

SARSEN CIRCLE with X & Y HOLES

1200bce – **√2 x Φ x (√5 – 1)** or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of **2.828427125***

SARSEN CIRCLE without X & Y HOLES

Or the Quadrature – **√2 x √2 x √2** *– for a total ratio of **2.828427125**.*

SARSEN CIRCLE plus X & Y HOLES*:*

√2 x Φ x (√5 – 1) or 1.618033989 x 1.414213562 x 1.236067978 *for a total ratio of **2.828427125***

*This is also my candidate for **Plato's Geometric Number** – the Square, the Oblong, and the Five less the one. **Graphically**, this is the Inner Septagram* **Φ** *x the Square* **√2** *x the Pentagon* **(√5 – 1)**.

THEN

IN GREEK MATHEMATICS*:*

360bce – **√2 x √2 x √2** – *Plato's **Meno*** – √8 or √2 x √2 x √2 – This also is a total ratio of ***2.828427125***.

Plato has Socrates tell Meno if he cannot do the areas then look at the geometry.

THEN

IN BUDDHIST MANDALA GEOMETRY:

1000ce – **√2 x √2 x √2** – Ceiling in the Buddhist Temple at the Chaqchan Monastery

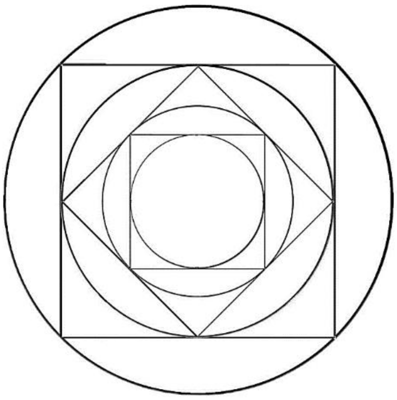
THEN

DURING THE RENNAISENCE:

1661ce – **√2 x √2 x √2** –Gardens in the ***Palace of Versailles***

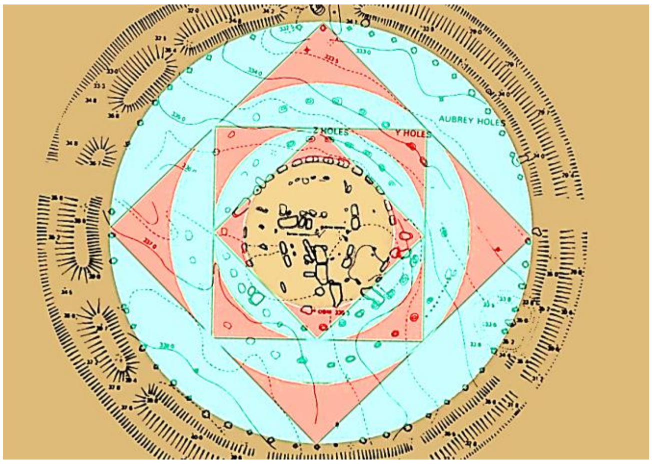
Bosquet de l'Étoile - Bosquet du Théâtre d'Eau - Bosquets du Dauphin & de la Girondole

MY QUADRATURE (OR A SQUARE INSIDE A SQUARE INSIDE A SQUARE)



It is interesting that some people seek to interpret results of shape experiments in the 'elegant' terms of Φ and √2 for it is my contention that these are **shape ratios** and are present together in many ancient structures including the Parthenon, the Pyramid of Khufu, Stonehenge, Durrington Walls and 'The Sanctuary'.

For Stonehenge, the overall ratio taken from the Aubrey Holes circle (the circumscribing circle) to the Sarsens Circle (measured to the centres of the thickness of the Sarsens) is 2 x √2 or more correctly, √2 x √2 x √2 or √8. This reflects the Dynamic Symmetry of Jay Hambidge. It is also reflective of the Quadrature and Plato's Meno and the graphics on Clay Tablet BM15285 (Larsa 1700bce). This, in the quadrature, includes the outer circle, the three squares moving inwards, and the inner circle of the third square in. If, the outer circle is viewed as representing the Aubrey Holes, then the inner circle of the third square in would represent the Sarsen Circle (drawn at the centres of the Sarsens).



STONEHENGE AND MY QUADRATURE (Aubrey Holes to Sarsen Circle)

But, my analysis of Stonehenge indicates that this ratio √2 x √2 x √2 or √8 can **also** be arrived at by the equation:

√2 x Φ x (√5 – 1)

(Plato's Nuptial or Geometric Number – The Square, the Oblong, & the Square of 5 less the 1).
or 1.618033989 x 1.414213562 x 1.236067978 = 2.828427125
or Inner Septagram x Square x Pentagon = √8 or = √2 x √2 x √2 or = 2 x √2 or = The Quadrature.

Amazingly, in deference to Aubrey Burl, the Ratios for the ***Octagram*** and ***Octagon*** when multiplied give us the same result of 2.828427125 – or √8 or √2 x √2 x √2 or The Quadrature. So, the Station Stones (or Octagram) could be relevant to the positioning of the Sarsen Circle if we also take the Octagon into account.

Did not Plato, in deriving his geometrical number, use the terms *"square", "oblong", and "square of 5 less the one"?*

Was Plato's geometrical number √2 x Φ x (√5 – 1) as in Stonehenge?

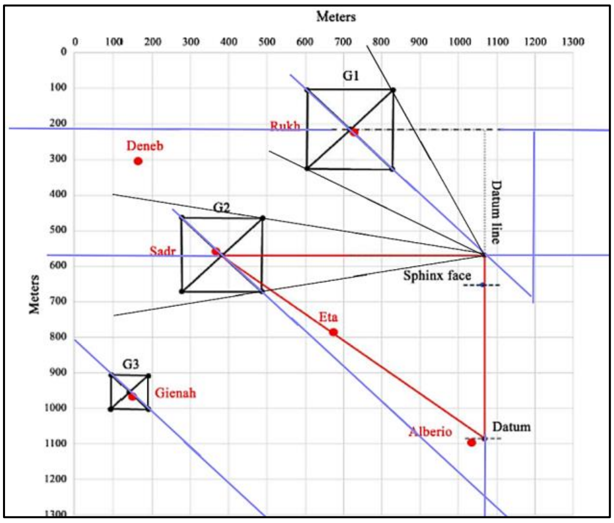
Unfortunately "square" and "oblong" in Theaetetus interpretations are used to distinguish between even and odd numbers; but then again √2, the ratio for the square, is an "Even" number. Is Φ an odd number?

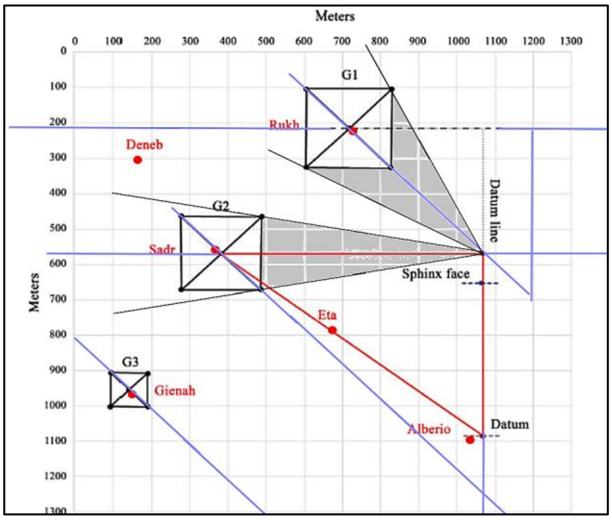
The ***Aubrey Holes to Bluestone Henge*** *Ratio* will be seen to be *Φ x √2 x Φ or 1.618033909 x 1.618033989 x 1.414213562 or 3.702459174* which appears to be the ratio for a **56 point polygram**! How convenient; epecially for advocates for the current proposed Stage I of the Construction. This should answer many queries, even some by Aubrey Burl, who refers to this type of analysis simply as *'numeration'*; and *"does it matter that there are 56 holes?"*

CROSS-SECTIONAL VIEWS FROM BESIDE THE SPHINX.

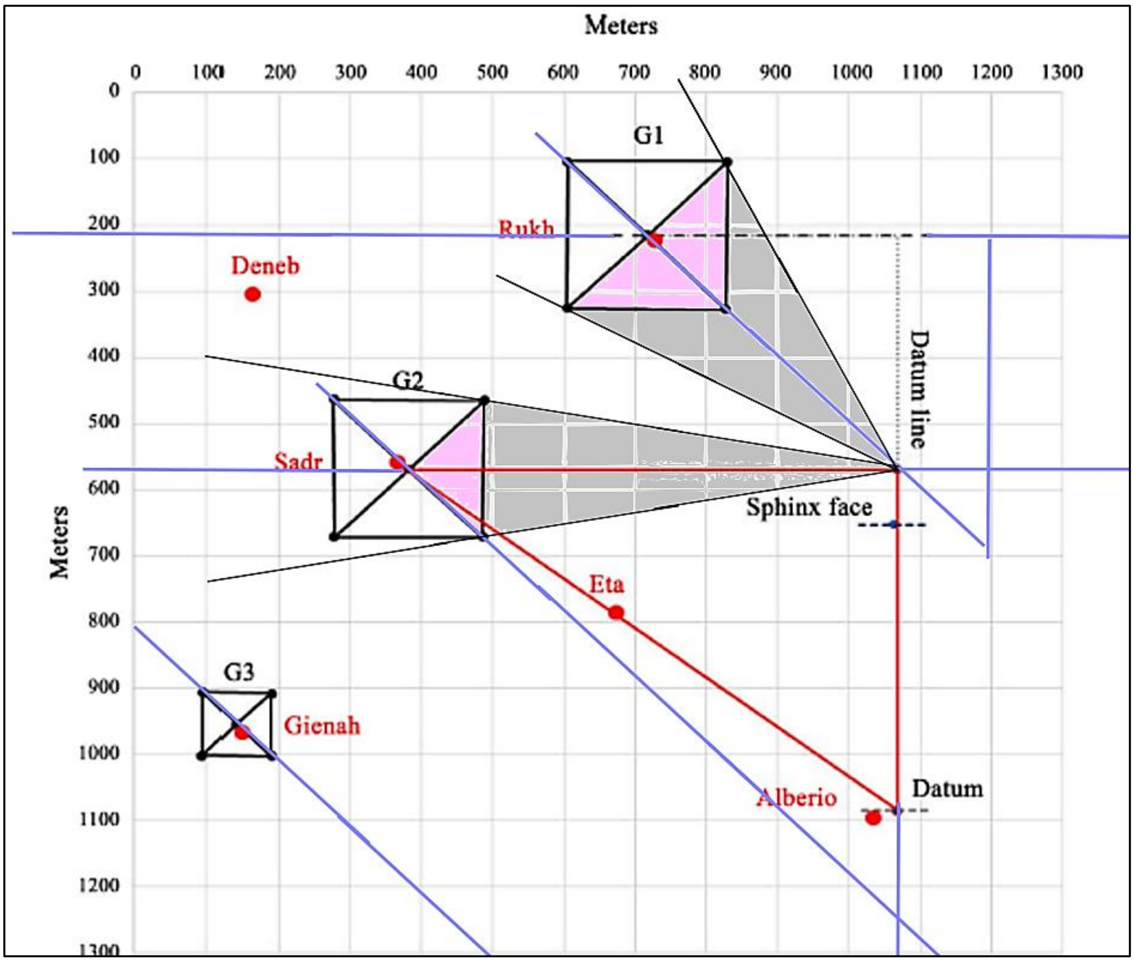
SIDE vs DIAGONAL VIEWS of PYRAMIDS

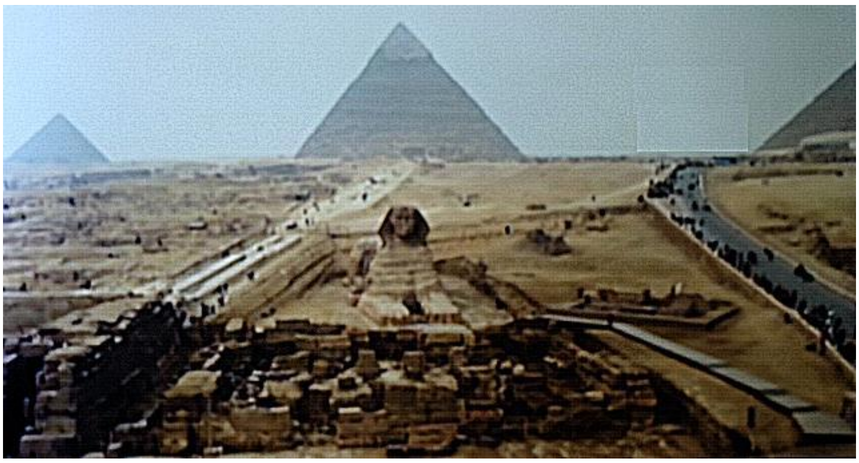
FOCAL POINT ADJACENT TO THE SPHINX.

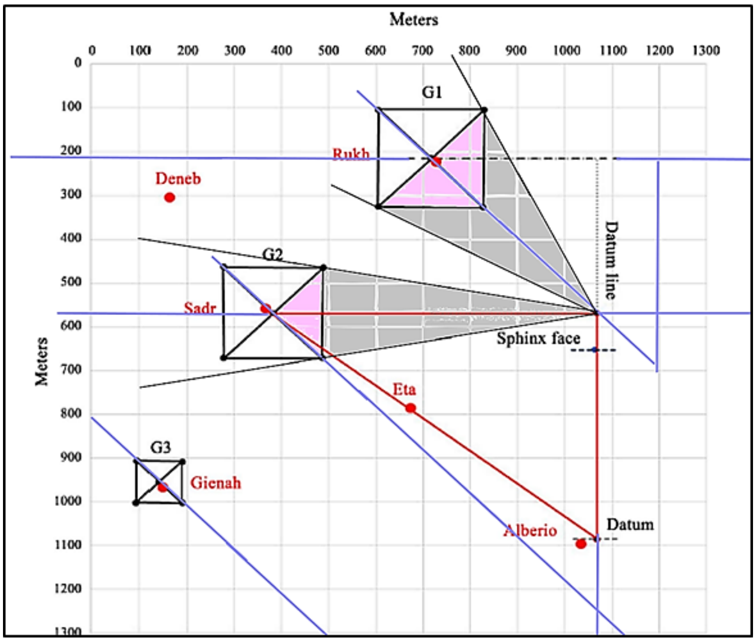




CROSS-SECTIONAL VIEWS



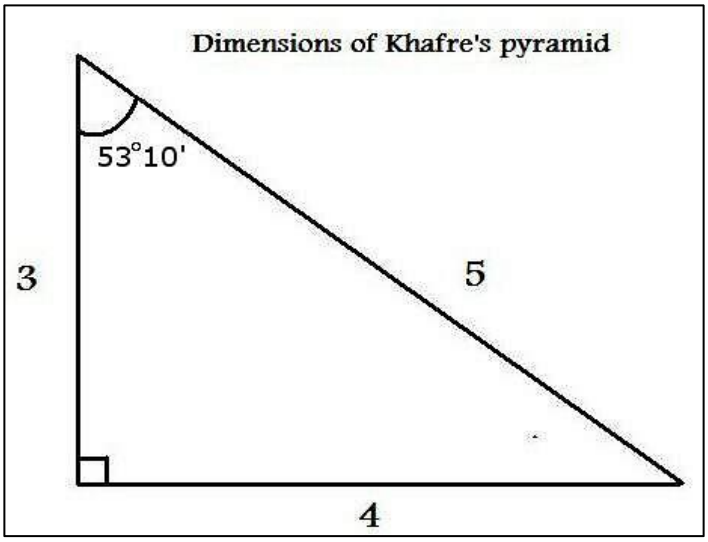




The "Survey Workroom" to the right hand side of the Sphinx and the Temples.
As shown above this Workroom may not be aligned with the Sphinx or with the Temples but is indeed aligned well and truly with both of the large Pyramids

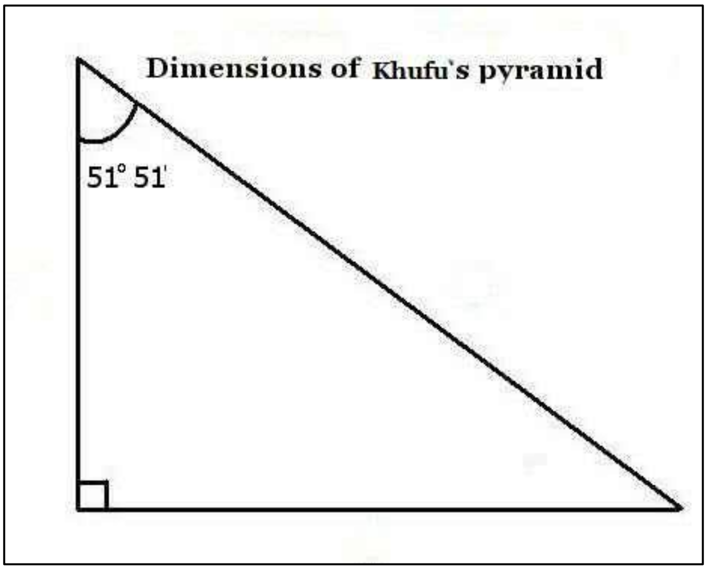
Note the "Architect's Platform" to the right of the Sphinx.
It is orientated to both pyramids.
The corners line up with Kafre's Pyramid's square cross section.
The Cross section of the Platform lines up with Khufu's diagonal corners.

www.ancient-wisdom.co.uk/



Khafre's pyramid

*"The exterior angle of **Khafre**'s pyramid is 53° 10', which is (almost exactly) angle formed by a **3:4:5 triangle**. Khafre's pyramid is attached to the Sphinx via a causeway that runs **30°** off true East. The exterior angle of Khafre's pyramid is the same as the latitude of Arbor Low, which sits exactly **2° north of Stonehenge**."*



Khufu's pyramid

*"The exterior angle of **Khufu**'s pyramid is **51° 51'**, which in geometric terms is **(360/7) x 4** or **(4/7th of 90°)**, which is a highly significant figure as it is the same latitude as Silbury hill, Europe's largest stepped pyramid (c. 3,000 BC), which itself has an exterior angle of 30° (The same latitude as Giza).*

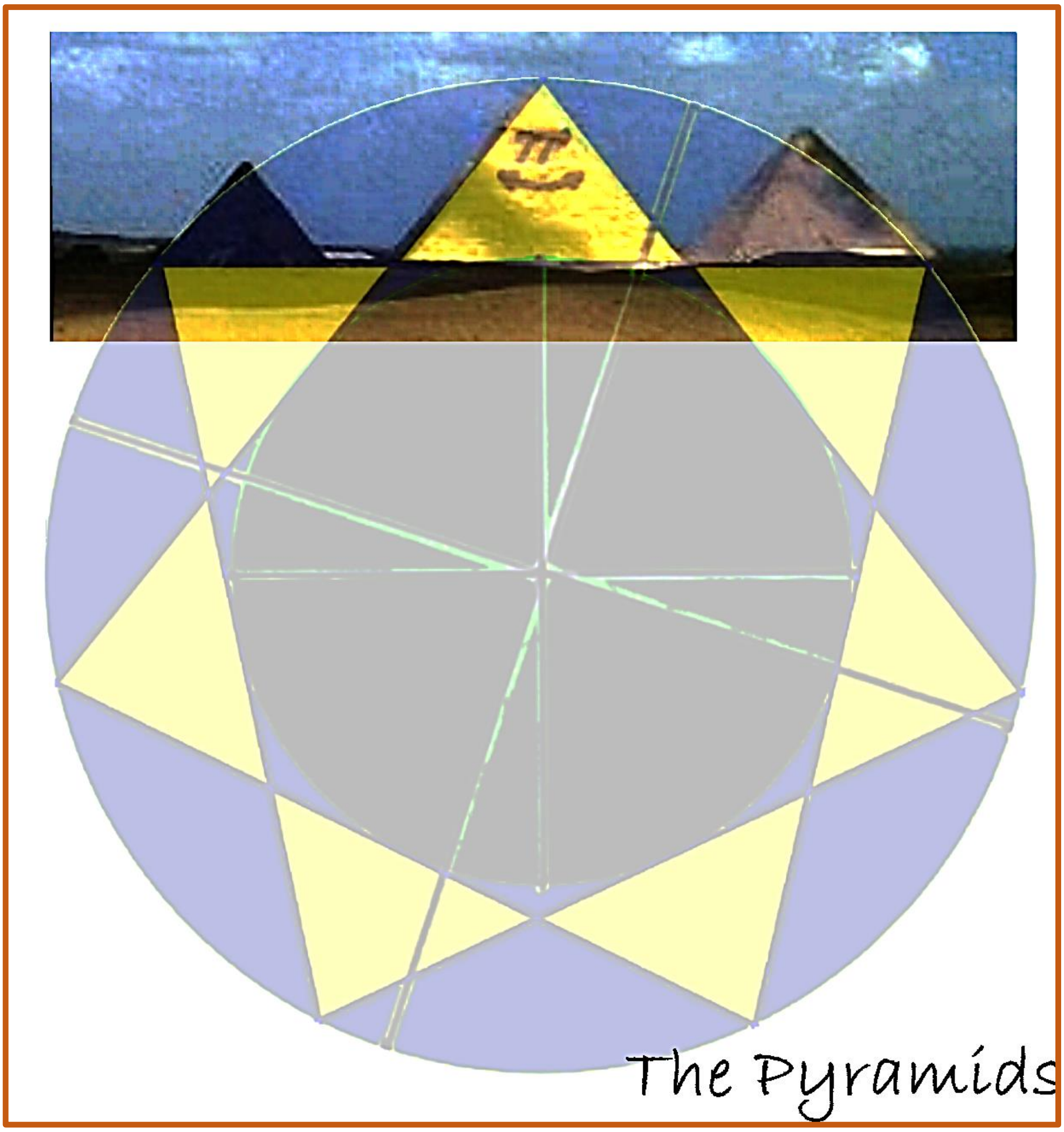
The same angle is repeated at the avenue leading from Stonehenge, and the angle from Avebury to the 'Sanctuary'."

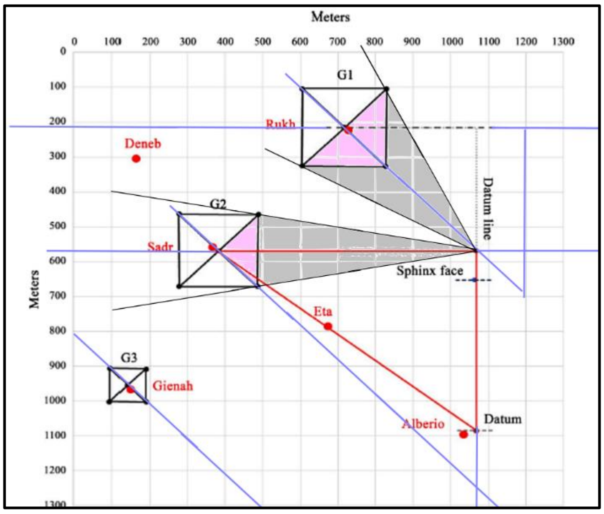
360/7
51.42857143^0 **Septagram**

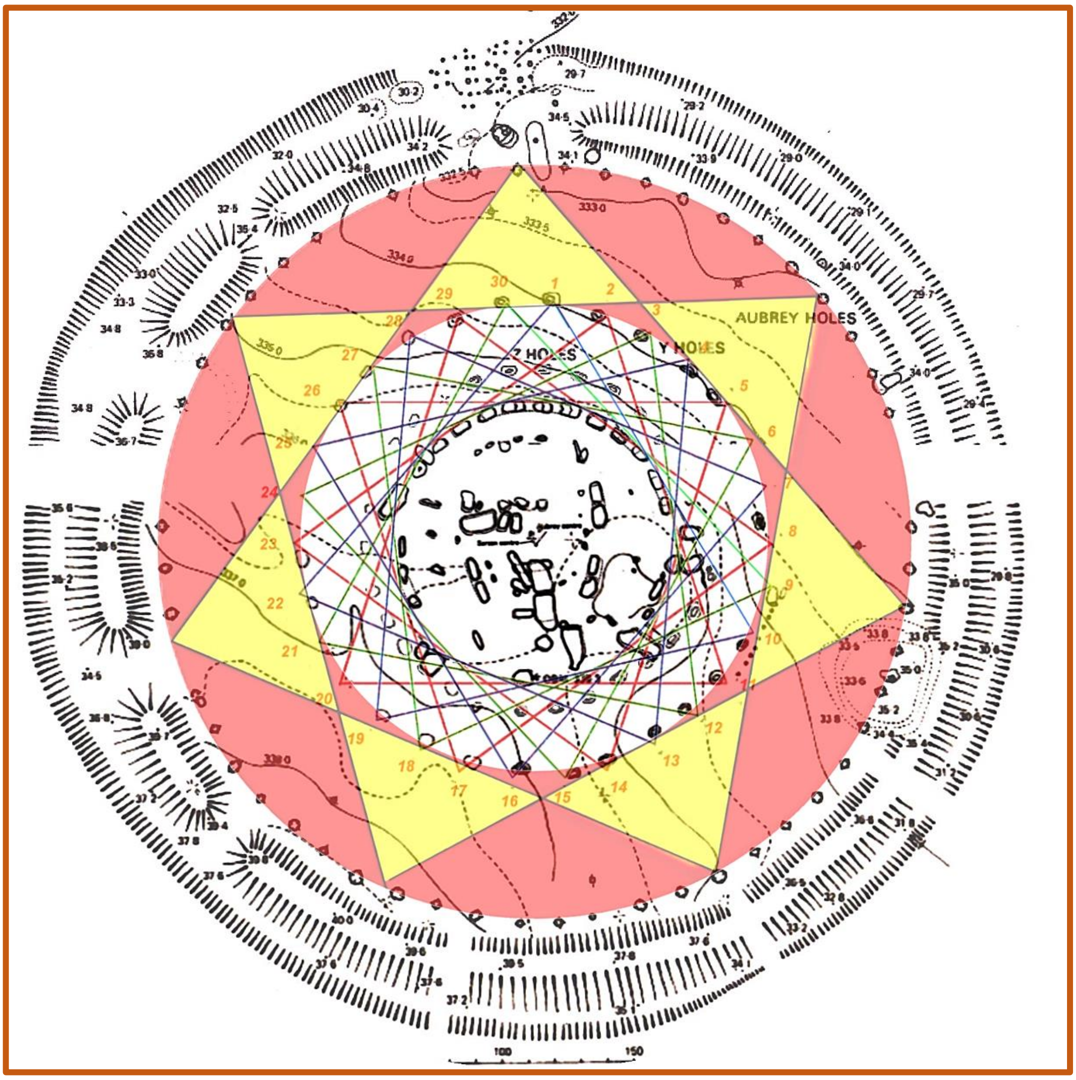
x 4
205.7142857

53^0 10'
90^0
$36^0$50' **Inner Septagram** (approx)

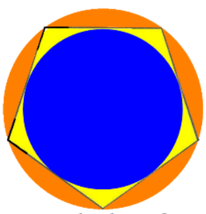
$51^0$51'
90^0
$38^0$09'


The Pyramids


Meters
Meters
G1
G2
G3
Rukh
Deneb
Sadr
Eta
Gienah
Alberio
Datum
Datum line
Sphinx face

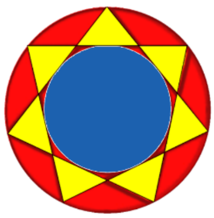


8 x 7 = 56



1.236067978
Pentagon

1.414213562
Inner
Square



1.618033989
Inner
Septagram

In mathematical terms this is expressed as 1.618033989 **x** 1.414213562 **x** 1.236067978.
In English terms this is expressed as the Inner Septagram **x** the Square **x** the Pentagon.
In graphical Tangential Geometry terms this is expressed at Stonehenge by the ratio of the Aubrey Holes to the **Y** Holes; by the ratio of the **Y** Holes to the **Z** Holes; and by the ratio of the **Z** Holes to the circle through the centres of the Sarsens.

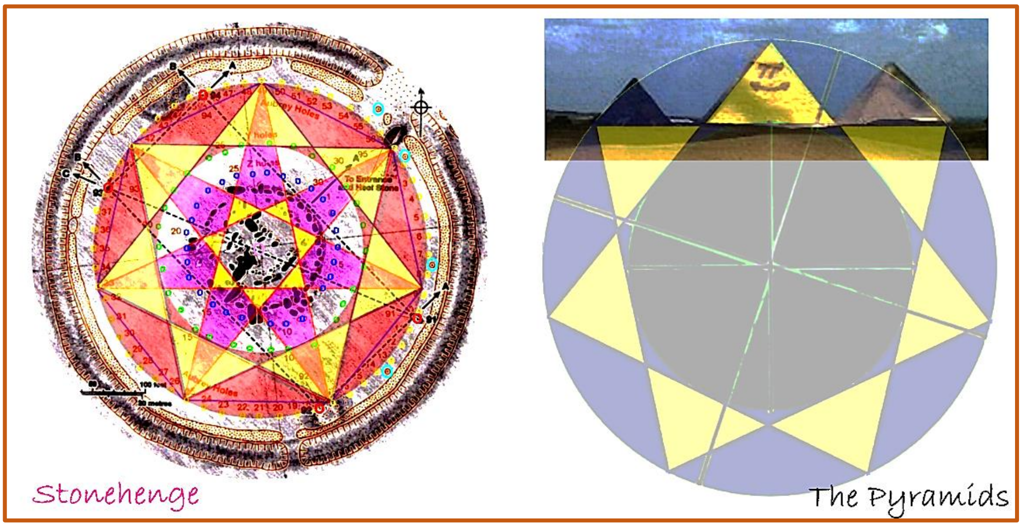
In Simple Complexity terms **2 x √2** can also be expressed as:

the Ratio of the Equilateral Triangle multiplied by the Ratio of the Square;
the square root of 8;
the product of a square x a square x a square;
the length of the points of a nonogram and of a septagram;

but could not all of this be merely coincidental and thus, in the words of Aubrey Burl, merely "numeration"?

If you are really addicted to mathematics you will find that ***the Septagram divided by the Golden Mean*** produces the same result, (**2 x √2**) along with ***the Nonogram when divided by the Equilateral Triangle***.
Stonehenge is calling out loud and clear. Are we listening? Is the presence of these ratios still purely coincidental?

An Egyptian Stonehenge or A Stonehengian Egypt?



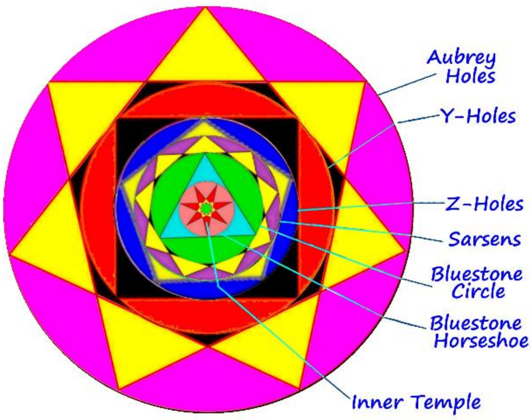
If you can accept my theory on ***Stonehenge and the Circular Golden Mean*** along with my theory on the ***Pyramids and the Circular Golden Mean***, can you accept a possible connection between the two? Both megalithic marvels are around the same era given a century or millenia or two.

Many are those who have proposed this connection and many are the reasons for making these connections. Breaking News has a story of another Woodhenge about 900 metres to the North West of Stonehenge thus placing the three henges in a line. Once again the similarity with Orion's Belt and the Pyramids may be entertained.

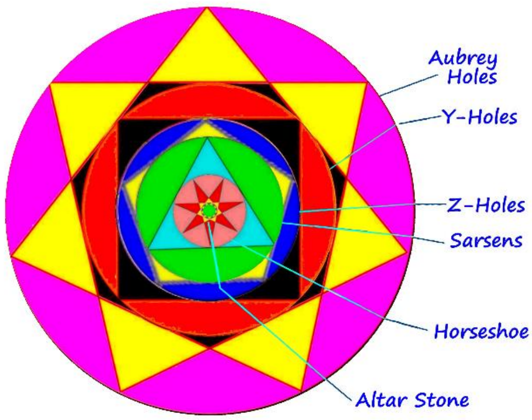
Coincidences will mount and mount until they become an irresistible force.

If we perceive Stonehenge in terms of the shapes of the Seven Concentric Circles then perhaps the Mathematics can follow afterwards. There truly is no need to calculate the irrational numbers to discover the Master Plan.

The Ratios of Old 'Bluestone' Stonehenge



The Ratios of New 'Sarsen' Stonehenge



What remains to be appreciated is the intricate manner in which each of its intrinsic ratios has been employed in the overall design. Ask me what I think was the purpose of Stonehenge and my reply would have to be 'An Institute for Higher Learning'. This academy would have preceded Plato and Academes by thousands of years. There is no doubt that these concentric ratios bear a great resemblance to the contents of Timaeus.

<u>Questions remain for the archaeologist of the future</u>:-

What happened to the Nonogram between the old Bluestone Stonehenge and the new Sarsen Stonehenge?

Why was it removed from the design?

Can these graphical methods be useful in interpreting unexcavated monuments located by ultrasound?

Why is the Stonehenge area popular for the construction of crop circles?

Mathematically,
Graphically
Philosophically,
Stonehenge exhibits Intelligent Human Design.
But not Trigonometrically!

SANTO AND MY QUADRATURE

√2 x √2 x √2 or A Square inside a Square inside a Square

Santo Casella

Follow Artist

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Geometric Abstraction IV

91cm (W) x 91cm (H) x 30cm (D)

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