ARTICLE 8

Some Encodings of the Superstring Structural Parameters 168 & 251 in Tree of Life Patterns

by

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1. Introduction

As well as having an outer form, the Tree of Life has an inner form hitherto unknown to students of Kabbalah as far as the author is aware. It consists (Fig. 1) of two identical sets of seven regular polygons: triangle, square, pentagon, hexagon, octagon, decagon and dodecagon, all polygons in each set being enfolded in

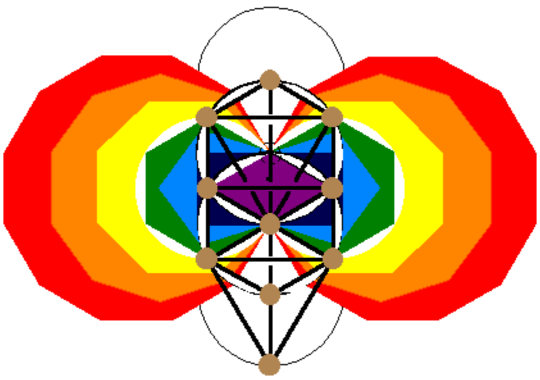


Figure 1. The outer & inner forms of the Tree of Life.

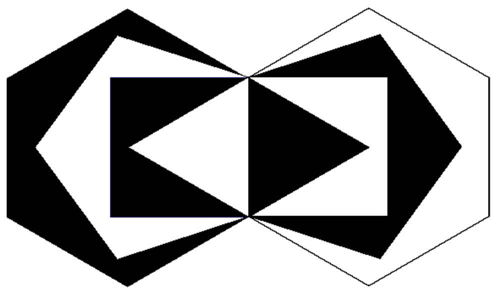


Figure 2. The first (4+4) enfolded polygons.

one another and joined at a common, so-called 'root edge.' In Articles 4–7 it was shown that dynamic and structural parameters of the superstring are encoded in several sections of this inner form of the Tree of Life. This is because the geometrical properties of these polygons and their yod populations generated by conversion of their sectors into tetractyses are determined by the number values of the Godnames assigned to the ten Sephiroth of the Tree of Life. This means that they constitute different but equivalent Tree of Life patterns embodying information about the microcosmic manifestation of this universal blueprint in the space-time continuum, namely, the superstring. This article will examine another section of the polygonal form of the Tree of Life, namely, its first four regular polygons. It will show how their properties, too, are prescribed by the Godnames. The way in which this section encodes certain superstring parameters will then be compared with how other sections discussed in previous articles embody them. This set has particular importance because the Tetrad Principle formulated in Article 1 states that numbers of universal (and therefore scientific) significance are the property of either the fourth member or the first four members of a class of mathematical objects (1). This is illustrated by the first four Platonic solids, which embody the numbers 240 and **248** (group parameters of the symmetry group E_8 predicted by superstring theory to describe the unified force between superstrings), the structural parameter **168** and the number 137 that determines the fine-structure constant.

2. Properties of the first four polygons

The first four regular polygons enfolded in the Tree of Life are the triangle, square, pentagon and hexagon (Fig. 2). The number of corners and yods in the first four polygons when their sectors are tetractyses are set out below:

	triangle	square	pentagon	hexagon
Number of corners =	3	4	5	6
Number of yods =	19	25	**31**	37

The geometrical properties and yod populations of the first four polygons and the first (4+4) polygons are analysed by considering them firstly as separate and then as enfolded. Numbers appearing in **boldface** in the text indicate various number values of the Sephiroth, their Godnames, Archangels, Orders of Angels and Mundane Chakras. These are tabulated below.

Table1. Number values of the Sephiroth.
(Cited numbers are in coloured cells)

Sephirah	Title	Godname	Archangel	Order of Angels	Mundane Chakra
Kether	620	21	314	833	636
Chokmah	73	15, 26	248	187	140
Binah	67	50	311	282	317
Chesed	72	31	62	428	194
Geburah	216	36	131	630	95
Tiphareth	1081	76	101	140	640
Netzach	148	129	97	1260	64
Hod	15	153	311	112	48
Yesod	80	49	246	272	87
Malkuth	496	65, 155	280	351	168

4 separate polygons

1. Number of corners of polygons = 3 + 4 + 5 + 6 = 18.
2. Number of sides of polygons = 18.
3. Number of corners & sides of polygons = 18 + 18 = **36**.
4. Number of sectors = 18.
5. Number of corners of sectors = 18 + 4 = 22.
6. Number of sides of sectors = 18 + 18 = **36**.
7. Number of corners & sides of sectors = 22 + **36** = 58.
8. Number of corners, sides & sectors = 58 + 18 = **76**.
9. Number of yods = 19 + 25 + **31** + 37 = **112**.
10. Number of hexagonal yods = **15** + 20 + 25 + 30 = 90.
11. Number of yods on boundaries of polygons = 18 + 2×18 = 54; (54–18=**36**) are hexagonal.
12. Number of yods on boundaries of tetractyses = 18 + 2×18 + 2×18 + 4 = 94; (94–22=**72**) are hexagonal.

(4+4) separate polygons

1. Number of corners of polygons = 2×18 = **36**.
2. Number of sides of polygons = 2×18 = **36**.
3. Number of corners & sides of polygons **=** 2×**36** = **72**.
4. Number of sectors = 2×18 = **36**.
5. Number of corners of sectors = 2×22 = 44.
6. Number of sides of sectors = 2×**36** = **72**.
7. Number of corners & sides of sectors = 2×58 = 116.
8. Number of corners, sides & sectors = 2×**76** = 152.
9. Number of yods = 2×**112** = 224. Number of yods other than centres of polygons = 224 – 4 – 4 = **216**.
10. Number of hexagonal yods = 2×90 = 180.
11. Number of yods on boundaries of polygons = 2×54 = 108; (2×**36**=**72**) are hexagonal.

12. Number of yods on boundaries of tetractyses = 2×94 = 188; (2×**72**=144) are hexagonal).

4 enfolded polygons

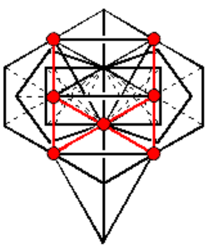
1. Number of corners of polygons = 3 + (4–2=2) + (5–2=3) + (6–2=4) = 12; (12—2=10) are outside root edge ("external").
2. Number of sides of polygons = 3 + (4–1=3) + (5–1=4) + (6–1=5) = **15**; (**15**–1=14) are external.
3. Number of corners & sides of polygons = 12 + **15** = 27; (27–3=24) are external.
4. Number of sectors = 18 – 1 = 17 (the triangle fills one sector of the hexagon).
5. Number of corners of sectors = (3+1=4) + (2+1=3) + (3+1=4) + 4 = **15**; (**15**–2=13) are external.
6. Number of sides of sectors = (3+3=6) + (3+4=7) + (4+5=9) + (5+4=9) = **31**; **(31**–1=30) are external.
7. Number of corners & sides of sectors = **15** + **31** = 46; (46–3=43) are external.
8. Number of sectors & their sides = 17 + **31** = **48**.
9. Number of corners, sides & sectors = 46 + 17 = 63; (63–3=60) are external.
10. Number of yods = 19 + (25–4=**21**) + (**31**–4=27) + (37–4–6=27) = 94; (94–4=90) are external. Of the 90 yods outside the root edge, (90–3=**87**) are not Sephirothic points of the outer Tree of Life.
11. Number of hexagonal yods = 94 – **15** = 79; (79–2=77) are external.
12. Number of yods on boundaries of polygons = 12 + 2×**15** = 42; (42–4=38) are external.
13. Number of yods on sides of tetractyses = **15** + 2×**31** = 77; (77–4=**73**) are external.

(4+4) enfolded polygons

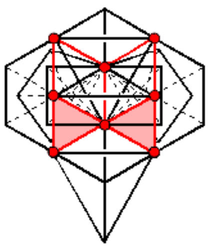
1. Number of corners of polygons = 2×10 + 2 = 22; (22–2=20) are external.
2. Number of sides of polygons = 2×14 + 1 = 29; (29–1=28) are external.
3. Number of corners & sides of polygons = 22 + 29 = 51; (51–3=**48**) are external.
4. Number of sectors = 2×17 = 34.
5. Number of corners of sectors = 2×13 + 2 = 28; (28–2=**26)** are external.
6. Number of sides of sectors = 2×30 + 1 = 61; (61–1=60) are external.
7. Number of corners & sides of sectors = 28 + 61 = 89; (89–3=86) are external.
8. Number of sectors & their sides = 34 + 61 = **95**.
9. Number of corners, sides & sectors = 89 + 34 = 123; (123–3=120) are external.
10. Number of yods = 2×90 + 4 = 184; (184–4=180) are external.
11. Number of hexagonal yods = 2×77 + 2 = 156; (156–2=154) are external.
12. Number of yods on boundaries of polygons = 2×38 + 4 = **80**; (**80**–4=**76**) are external.
13. Number of yods on sides of tetractyses = 2×**73** + 4 = 150; (150–4=146) are external. Number of yods on edges of tetractyses other than corners of polygons outside root edge = 150 – 20 = 130.

3. Shared yods & geometrical elements

In this section we shall analyse the properties that both the four polygons and the (4+4) enfolded polygons share with the Tree of Life or with the 1-tree.* We shall illustrate how the number 4, the Pythagorean Tetrad, expresses these shared properties, as it does all the properties of the outer and inner forms of the Tree of Life. Fig. 3 shows that three external corners, four external sides and one triangular sector belonging to each set of the four enfolded polygons are shared with the Tree of Life (or, rather, its projection onto the plane of the polygons). On each side of the root edge are seven shared external corners & sides (7 = 4th odd integer) and eight shared external corners, sides & sectors (8 = 4th even integer). 16 (= 4^2) geometrical elements outside the root edge of both sets of polygons are shared with the Tree of Life. 14 of them are external corners & sides. The root edge shares its lower end point with the Sephirah Tiphareth — or, rather, its projection. The root edge itself is not shared because it is only *part* of the projection of the Path connecting Kether and Tiphareth. The number of corners & sides of both sets of polygons which are shared = 14 + 1 = **15**. The Godname YAH with number value **15** therefore prescribes how many corners & sides the (4+4) enfolded polygons share with the Tree of Life. Fig. 3 also shows that three external corners, five external sides and one sector belonging to each set



15 corners & sides shared with Tree of Life



21 corners, sides & tetractyses shared with 1-tree

Figure 3. The Godnames YAH with number value **15** & EHYEH with number value **21** prescribe geometrical elements in the first (4+4) enfolded polygons that are shared with the Tree of Life.

* The n-tree is the lowest n trees of the Cosmic Tree of Life (see Article 5 for definition of the latter).

of polygons are shared with the 1-tree, whilst their root edge shares two corners and one side. The total number of geometrical elements shared with the 1-tree = 3 + 2×(3+5+1) = **21**. The Godname EHYEH (AHIH) with number value **21** prescribes how many geometrical elements the (4+4) enfolded polygons are shared with the 1-tree. Indeed, its letter values denote different groups of elements:

AHIH
A = 1: root edge;
H = 5: 5 external edges on one side of root edge;
I =10: 8 corners + 2 triangles;
H = 5: 5 external edges of other side of root edge.

When the (4+4) separate polygons become enfolded, the 224 yods in the former become the 184 yods in the latter, i.e.,

$$
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4\\
4\quad 4\\
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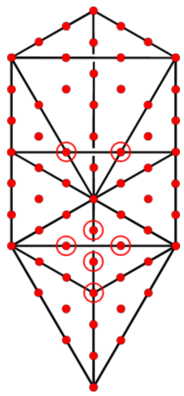
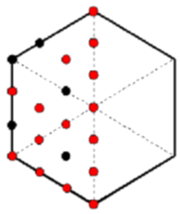
yods disappear. Fig. 4 shows the 70 yods in the 16 triangles of the Tree of Life when they are turned into tetractyses. 20 yods in a set of four polygons are shared with the Tree of Life (**36** yods in both sets), of which **15** yods lie on Paths. Thirteen red yods outside the root edge in each set lie on Paths, making a total of **26** such yods for both sets, where **26**, the number value of YAHWEH, is the number of combinations of (1+2+3+4=10) objects arranged in a tetractys:

n		**number of combinations = 2^n – 1**
1	A	$2^1 - 1 =$ 1
2	B C	$2^2 - 1 =$ 3
3	D E F	$2^3 - 1 =$ 7
4	G H I J	$2^4 - 1 =$ <u>**15**</u>
		TOTAL = <u>**26**</u>

In the case of the 1-tree, **15** yods outside the root edge in each set of polygons are shared with Paths of the 1-tree (34 yods in total). The number of yods outside the root edge not lying on Paths of the Tree of Life = 180 – **26** = 154. Including the two black yods on the root edge which do not lie on Paths (see Fig. 4), there are 156 such yods, where 156 is the **155**th integer after 1. The number of yods unshared with Paths of the 1-tree = 184 – 34 = 150 = **15**×10. Of the 79 hexagonal yods of the four enfolded polygons, 14 are shared with Paths of the 1-tree, leaving **65** unshared, hexagonal yods, where **65** is the number value of ADONAI, Godname of Malkuth.

The 16 triangles of the Tree of Life have 10 corners and 22 sides, that is, **48** geometrical elements. Of these, seven corners, eight sides and two triangles (17 elements) are shared with the (4+4) enfolded polygons, leaving **31** unshared, geometrical elements, where **31** is the number value of EL, Godname of Chesed.





20 (●) & (●) yods shared with Tree of Life

15 (●) yods shared with Paths (13 outside root edge)

Figure 4. **26** yods outside the root edge of the first (4+4) enfolded polygons lie on Paths of the outer Tree of Life.

The number of sides of the four enfolded polygons = **15.** The number of such sides of the 4n polygons enfolded in the n-tree = **15**n. The four enfolded polygons have 27 corners & sides. The topmost corner of the hexagon is shared with the lowest corner of its counterpart enfolded in the next higher tree. The number of corners & sides of the 4n polygons enfolded in the n-tree = **26**n + 1. As each root edge comprises two endpoints (corners) and one side, the number of corners & sides of the other set of 4n polygons *outside* their root edges = **26**n + 1 – 3n = 23n + 1. The number of corners & sides of the 8n polygons enfolded in the n-tree = **26**n + 1 + 23n + 1 = **49**n + 2. Each set of four polygons has therefore **15** sides and **26** corners & sides that are intrinsic to it, whilst every set of (4+4) enfolded polygons has **49** intrinsic corners & sides. The 17 tetractyses in each set of four polygons have **31** sides (30 external) and **15** corners with (2×**31** + **15**) = 77 yods lining their sides, i.e., **73** yods outside their root edge, where **73** is the number value of Chokmah. The 34 tetractyses of the (4+4) enfolded polygons have (2×30 + 1 = 61) sides with (2×**73** + 4 = 150 =**15**×10) yods on them. **80** yods are on the boundaries of the polygons and **76** are outside their root edge. Of the 61 sides, 11 are shared with the 1-tree, leaving **50** sides that are unshared, where **50** is the number value of ELOHIM, Godname of Binah. The 1-tree also shares eight corners of its 19 triangles with both sets of polygons (see Fig. 3), whose 34 tetractyses have 89 corners & sides. There are therefore (89 –11 – 8 = 70) unshared corners & sides, of which 20 are corners and **50** are sides. The 35 unshared corners and sides in each set of polygons comprise 10 corners and 25 sides.

4. How Godnames prescribe the first four polygons

Set out below are ways in which properties of the four polygons and the (4+4) polygons are prescribed by the number values of the Godnames assigned to the ten Sephiroth of the Tree of Life:

Kether: **21**	**21** geometrical elements in the (4+4) polygons are shared with the 1-tree.
Chokmah: **15**	The 4 enfolded polygons have **15** sides and **15** corners of their 17 tetractyses. The number of yods on the boundaries of the 34 tetractyses of the (4+4) polygons = 150 = **15**×10. This is also the number of yods in the (4+4) enfolded polygons that do not lie on Paths of the 1-tree. The (4+4) polygons share **15** corners & sides with the Tree of Life.
26	The (4+4) enfolded polygons have **26** corners outside their root edge. Every 4 enfolded polygons have **26** corners & sides. Outside their root edge, the (4+4) enfolded polygons share with the Tree of Life **26** yods on its Paths.
Binah: **50**	Number of corners and sides of the (4+4) enfolded polygons = 51 = **50**th integer after 1. The 34 sectors of the (4+4) enfolded polygons have **50** sides unshared with the 1-tree.
Chesed: **31**	Number of sides of 17 tetractyses in the 4 enfolded polygons = **31**. The Tree of Life has **31** geometrical elements unshared with the (4+4) enfolded polygons.
Geburah: **36**	The 4 separate polygons have **36** corners & sides and **36** sides of their 18 tetractyses. The polygons have **36** hexagonal yods on their boundaries. The (4+4) separate polygons have **36** corners and **36** sides.
Tiphareth: **76**	The 4 separate polygons have **76** geometrical elements. The (4+4) enfolded polygons have **76** yods outside their root edge on their boundaries.
Netzach: **129**	Tetractyses of the (4+4) enfolded polygons have 130 yods on their boundaries other than corners outside their root edge, where 130 = **129**th integer after 1.
Hod: **153**	The (4+4) enfolded polygons have 154 hexagonal yods outside their root edge, where 154 = **153**rd integer after 1.
Yesod: **49**	Every (4+4) enfolded polygons have **49** intrinsic corners & sides.
Malkuth: **65**	**65** hexagonal yods in the 4 enfolded polygons are unshared with Paths of the 1-tree. The (4+4) enfolded polygons have 156 yods unshared with Paths of the Tree of Life, where 156 = **155**th integer after 1.

The *natural* way in which the Godname numbers appear in the above analysis of the geometrical properties of the polygons and their yod populations refutes the argument that their presence lacks real significance because it was contrived by various selections of these properties.

5. Connections between the 1-tree and the first four polygons

Having established that the ten Godnames prescribe the first four of the seven polygons and therefore define it as a 'Tree of Life pattern,' we will now explore their correspondence to the 1-tree.

The four enfolded polygons have 12 corners, of which ten are outside the root edge, one of them — the uppermost corner of the hexagon — being shared with the lowest corner of the hexagon enfolded in the next higher tree. Each set of 4n polygons enfolded in the n-tree has (9n+1) corners outside their n root edges. (10n+1) corners are associated with each set of 4n polygons. ADONAI, the Godname of Malkuth, prescribes the 10-tree because its number value **65** is the number of Sephirothic emanations in the 10-tree (what in previous articles were called 'Sephirothic levels,' or SLs). Enfolded on either side of its central pillar are 40 polygons of the first four types associated with which are (10×10 + 1 = **101**) corners, 91 of them being outside their root edges. **101** is the **26**th prime number and the number value of *Michael*, the Archangel of Tiphareth. The 25-tree is prescribed by ADONAI MELEKH, the full Godname of Malkuth, because its number value **155** is the number of SLs in the 25-tree. 100 polygons of the first four types with (10×25 + 1 = 251) associated corners are enfolded on either side of the central pillar of the 25-tree. The two words ADONAI and MELEKH prescribe its division into the 10-tree and the **15** trees above it:

251 = **101** + 150,

the number **101** denoting the 10 endpoints of root edges associated with the 40 polygons and their 91 external corners. Eleven of the latter are the highest and lowest corners of the 10 joined hexagons,

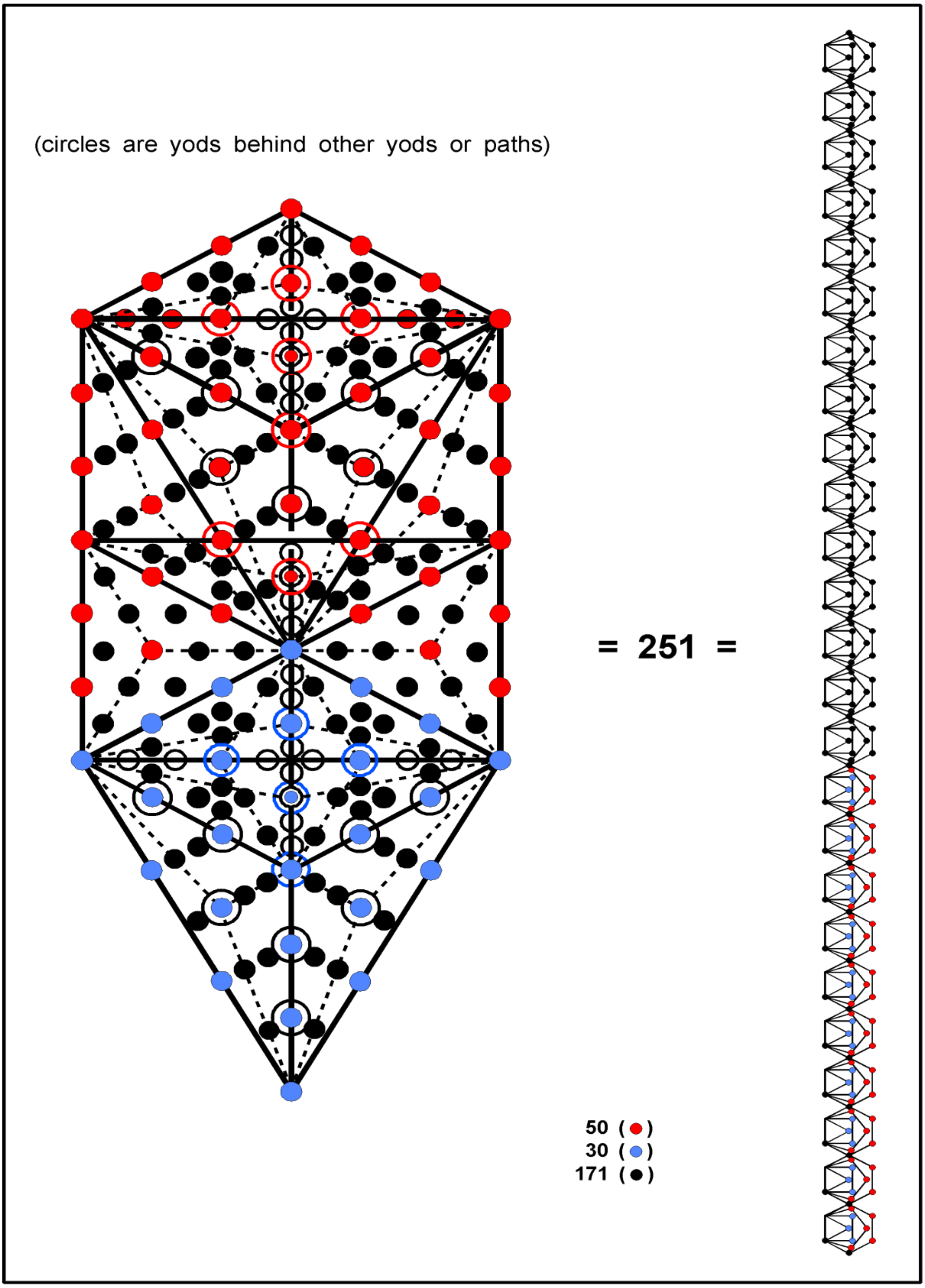


Figure 5. Correspondence between the 251 yods in the 1-tree and the 251 corners of the first four types of polygons enfolded in the 25-tree prescribed by ADONAI MELEKH, the Godname of Malkuth.

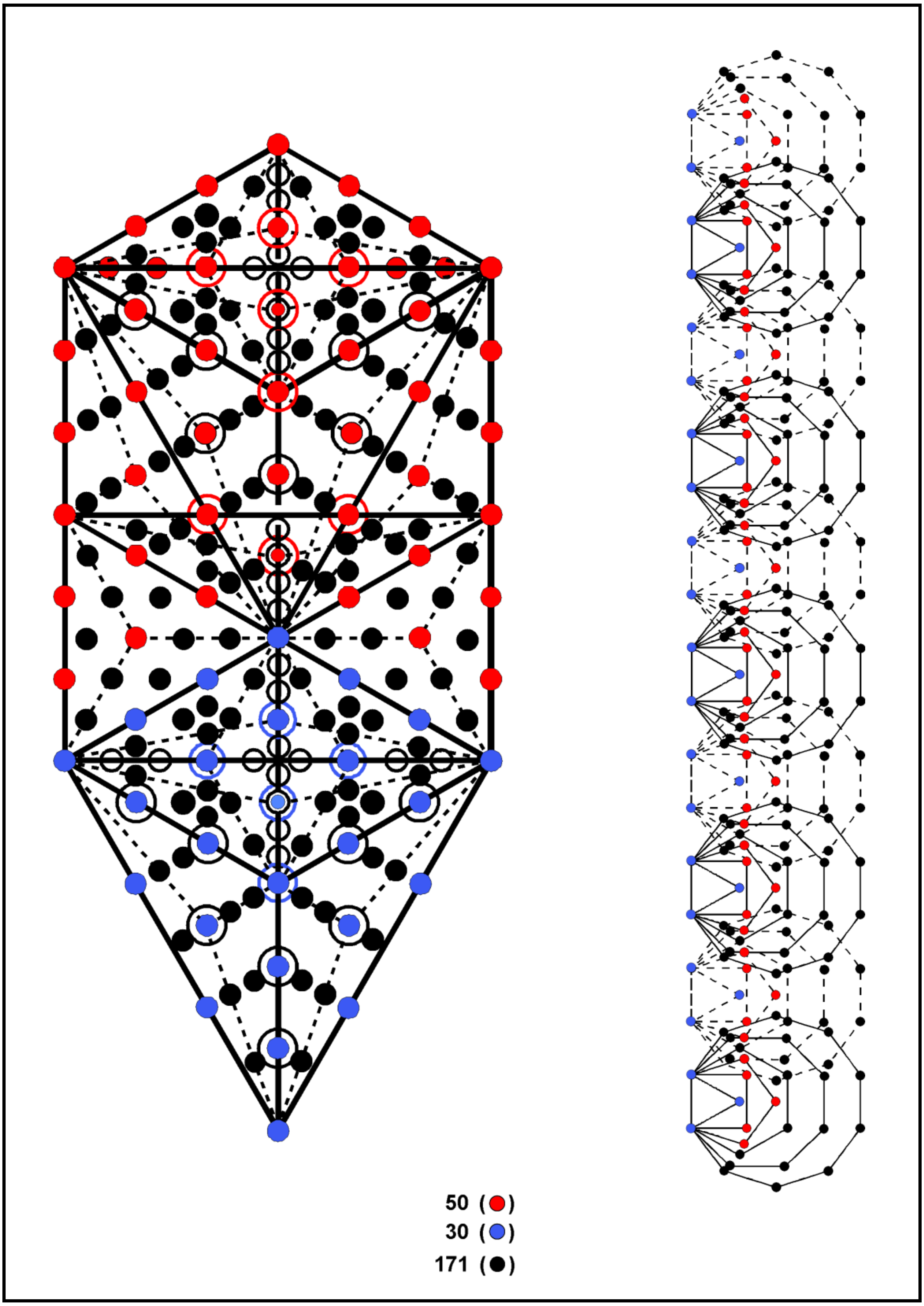


Figure 6. Correspondence between the 251 yods in the 1-tree and the 251 corners of the first six types of polygons enfolded in the 10-tree that is prescribed by ADONAI.

10 of them belonging exclusively to the hexagons enfolded in the 10-tree and one being also the lowest corner of the hexagon enfolded in the 11th tree. The number **101** therefore has the geometrical differentiation:

$$\mathbf{101} = 10 + 91 = 10 + 11 + \mathbf{80},$$

where

$$\mathbf{80} = 10\times(1+2+3+2)$$

is the number value of Yesod and ‘1’ denotes the corner of the triangle in each tree outside their root edges, ‘2’ denotes the two corners of the square, ‘3’ denotes the three external corners of the pentagon and ‘2’ denotes the two external corners of the hexagon that are unshared with adjoining hexagons. Therefore,

$$\mathbf{80} = 10\times(1+2) + 10\times(3+2) = 10\times3 + 10\times5 = 30 + \mathbf{50},$$

where 30 is the number of external corners of the first two polygons enfolded in the 10-tree and **50** is the number of corners of the last two polygons enfolded in the 10-tree. Fig. 5 displays the types of corners of the 100 polygons of the first four types enfolded on one side of the 25-tree prescribed by ADONAI MELEKH. It also shows that, when its 19 triangles are turned into tetractyses, the 1-tree contains **80** yods (30 yods belong to the Lower Face formed by Tiphareth, Netzach, Hod, Yesod and Malkuth, leaving **50** yods in the Upper Face) and that, when the three sectors of each triangle are turned into tetractyses, the 1-tree contains 251 yods — the same as the number of corners of the 100 polygons. The reason why the two remarkable parallels:

251 yods in 1-tree ⟷ 251 corners of first 4 polygons enfolded in 25-tree
(30+**50**=**80**) yods in 1-tree ⟷ (30+**50**=**80**) outer corners of first 4 polygons enfolded in 10-tree

exist is that, being the lowest of the 91 overlapping trees making up the Cosmic Tree of Life and therefore its most ‘Malkuth’ level, the 1-tree embodies the same parameters as any section of CTOL that bears a formal correspondence to Malkuth — in this case, the 25-tree, whose 25 trees are the counterpart of the 25 tree levels of the 7-tree mapping the physical plane, the lowest of the seven planes that corresponds to Malkuth. In Articles 2 and 5, these tree levels were interpreted as the 25 spatial dimensions that quantum mechanics predicts for spinless strings. This is why the Godname ADONAI MELEKH assigned to Malkuth (physical universe) refers to the 25-tree and why the Godname ADONAI prescribes its ten lowest trees, corresponding to which are the 10 tree levels signifying the ten spatial dimensions of 11-d supergravity space-time. **Analogous structures defined by the set of Godname numbers — whether of the outer or the inner form of the Tree of Life — must embody the *same* numbers and display the *same* pattern of differentiation of whatever these numbers signify because they are equivalent, holistic objects that embody the divine paradigm.** This is why the first six polygons enfolded on either side of the 10-tree have 251 corners (Fig. 6), for the (6+6) polygons also constitute a Tree of Life pattern (see Article 4 (2) for their

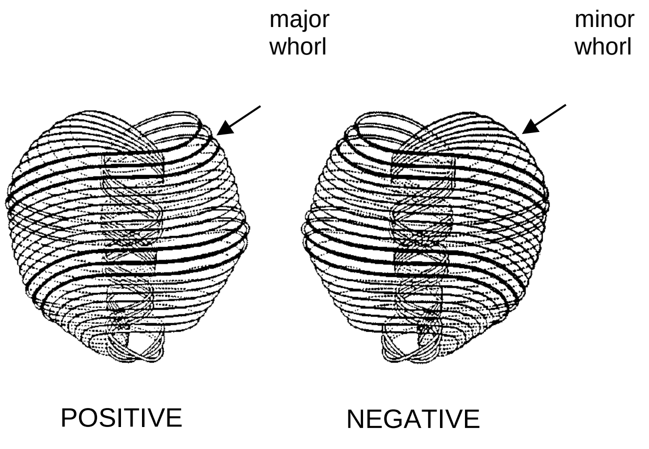


Figure 7. The two types of UPAs.

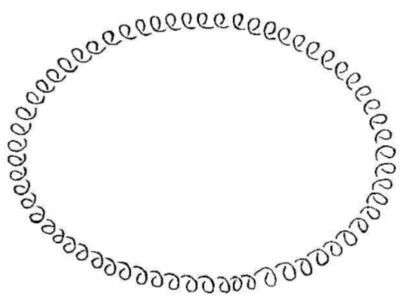


Figure 8. A whorl is a helix with 1680 turns.

prescription by the ten Godnames). The triangles have 30 corners, the squares & pentagons have **50** corners and the hexagons, octagons & decagons have 171 corners. This is the same 30:**50**:171 pattern as displayed by the yods in the 1-tree (see Fig. 5).

6. Encodings of 10-whorl structure of superstring

What is the meaning of the ubiquitous geometrical encoding of the number 251 and its division into the numbers **80** and 171? These numbers have a remarkable interpretation in terms of the ten-fold structure of the basic unit of matter described (3) by the Theosophists Annie Besant and C.W. Leadbeater over a century ago with the aid of a yogic siddhi (psychic ability) with the Sanskrit name of 'anima.' Moreover, they support the author's theory of superstrings (4) derived from higher-dimensional, extended objects called 'D-branes,' as will be explained shortly. *En passim*, it should be pointed out that the theory has not been tailored in order to procure this agreement. It was conceived by the author for purely scientific reasons long before he discovered that these numbers characterise the outer and inner forms of the Tree of Life.

Magnified with what the author has called 'micro-psi' (5), the basic constituent of atoms, which Besant and Leadbeater called the 'ultimate physical atom' (UPA), were seen to consist of ten closed curves, or 'whorls' (Fig. 7). These spiral in 2½ revolutions in parallel tracks and separate at the bottom of the particle into sets of seven and three curves, which then twist 2½ times in opposite directions about the axis of spin of the UPA before returning to its top. Besant and Leadbeater noticed two types of UPAs: a 'positive' variety in which the whorls spiral downwards clockwise as observed from its top and a 'negative' type in which they wind around their axis in an anticlockwise sense. Each is the mirror image of the other. Three, so-called 'major' whorls appear thicker than the remaining seven, so-called 'minor' whorls. The reason for this is as follows: each circular turn in a stringy whorl is a circular helix made up of seven smaller turns spaced the same distance apart. Each of these is another helix with seven turns, and so on. There are seven orders of helices. Every 25 helical turns of a given order in a major whorl comprise 176 turns of the next higher order, whereas in a minor whorl they consist of 175 such turns. This augmentation of one extra turn in every 25 of the next lower order extends throughout the seven orders of helices in a major whorl, making it consist of more higher-order helices and appear thicker than a minor whorl.

Each of the ten whorls was found to be essentially a circular helix with 1680 turns or coils (Fig. 8). Leadbeater said (6) that he checked his count of these coils by studying 135 different UPAs, which were found to have the same number of turns in their whorls whatever the elements in which they were found.

Statistical analysis of the UPA populations determined by Besant and Leadbeater for all 111 of what they assumed were chemical atoms, as well as detailed correlation of their constituent particles with predictions based upon facts about nuclei and their quark composition, established (7) that the UPA is a constituent of the up and down quarks making up protons and neutrons in atomic nuclei. The string-like nature of the whorls is self-evident. In fact, were it not for the fact that the UPA comprises *ten* stringy whorls, not one whorl, its identification with what physicists call the 'superstring' would be just as obvious. Superstring theory predicts that space-time has ten dimensions, so that a microscopic, 6-dimensional space exists beyond ordinary, large-scale space. One of the models for this space that string theorists have considered is the so-called '6-d torus.' The 2-torus, or doughnut, is the surface generated when the centre of a circle moves around another circle (1-torus) in a plane at right angles to it. The 6-torus is its 6-dimensional version. The six higher orders of helical spirillae in each whorl represent the winding of a closed string around successively smaller, mutually perpendicular circles, each a 1-dimensional space. In other words, Leadbeater's description of the higher-order structure of the UPA is consistent with this type of space. However, he described the UPA not as one closed string but as *ten* closed curves. If superstrings were fundamental, he would have observed only one closed whorl. This indicates that the current picture of superstrings as simple loops winding around some compact, 6-dimensional space is just that — a simplistic version of the truth. Instead, they must be derived from more general, extended objects called 'D-branes.'

Some string theorists have suggested that 1-dimensional strings may result from the wrapping of D-branes around a curled-up dimension. But this cannot be one of the six curled-up dimensions predicted by superstring theory because each string-like whorl winds itself around all six of these circular dimensions, not five of them. Hence space-time must have more than ten dimensions. There are five types of superstrings, and one of them has been shown (8) to result from the wrapping of a 2-dimensional sheet (2-brane) around one of the ten spatial dimensions predicted by supergravity theories. But this still creates only *one* string, whereas Leadbeater's investigations imply that superstrings actually consist of ten separate, closed curves. The only possibility is for space to have more than ten dimensions, the wrapping of a D-brane around the extra dimensions being responsible for these curves. The only candidate available is the **26-**dimensional space-time predicted for spinless strings by quantum mechanics but rejected by physicists for many years until the so-called 'heterotic superstring model' was proposed. In Article 2 (9), it was proposed that a 11-brane (a 11-dimensional object) existing in **26**-dimensional space-time wraps itself around ten of the **15** higher, curled-up dimensions beyond supergravity space-time, the topology of this 10-dimensional space creating ten non-intersecting curves whose separation is an illusion because they are simply the projection into superstring space-time of a single, higher-dimensional, extended object. Imagine a 2-dimensional being living on a sheet. As he is unaware of the third dimension of space, he would perceive a cylinder with thick walls that penetrated the sheet at right angles to it as two concentric circles that would move together but keep separate. He would have no way of knowing that they were part of one object. Instead, he would believe that they were different objects. In the same way, the ten whorls of the UPA exist as separate objects only in the 11-dimensional space of supergravity space-time; they are really part of one object that extends into **15** higher dimensions.

The author's theory has the following consequence: just as the position of a point in large-scale space is defined by three numbers — its spatial co-ordinates —so a point in 25-dimensional space is located by 25 numbers. Any point on a curve in 10-dimensional space is located by ten co-ordinates. But if the curve has been created by a D-brane wrapping itself around the curled-up dimensions of a higher space, then there are **15** hidden co-ordinate variables defined for that point. Ten different curves will have (10×10=100) spatial co-ordinate variables in supergravity space-time and (10×**15**=150) higher co-ordinate variables. Including the time co-ordinate, which is common to all ten curves, there are:

$$100 + 150 + 1 = 251$$

co-ordinate variables defining the ten curves, of which **101** variables define them in 11-dimensional, supergravity space-time and 150 variables remain hidden because they refer to the space beyond this space-time.

This explains why there are 251 yods in the 1-tree with its triangles turned into three tetractyses and why the 60 polygons enfolded in ten overlapping Trees of Life have 251 corners, as described earlier. *Each yod or corner symbolises one of the numbers or co-ordinate variables needed to define ten separate points in **26-**dimensional space-time — the geometrical origin of the superstring as the Malkuth manifestation of the Tree of Life blueprint*. The reason why the 1-tree with *single* tetractyses contains **80** yods is that each of the ten curves that comprise the superstring has eight transverse spatial co-ordinates, so that the superstring itself has (10×8=**80**) such variables or geometrical degrees of freedom. A single Tree of Life has 70 yods. Its ten Sephirothic yods denote the ten longitudinal coordinates of points on ten closed curves and its 60 other yods denote their 60 coordinates in the 6-dimensional, compactified space in which superstrings exist as superstrings.

We saw earlier that the 251 corners of the first four polygons enfolded in the 25-tree split up into the ten corners of the root edges in the 10-tree, the 11 uppermost and lowermost corners of the hexagons enfolded in the 10-tree, **80** external corners and 150 corners of the 60 polygons enfolded in the **15** trees above the 10-tree. The 11 hexagonal corners symbolise the time co-ordinate and the ten longitudinal co-ordinate variables of the ten curves comprising the superstring. The ten corners of the root edges denote their co-ordinate variables defined with respect to the tenth dimension of supergravity space-time and the 150 corners signify the 10×**15** = 150 co-ordinate variables 'hidden' so to speak in the ten curves because they refer to the space whose **15** dimensions beyond supergravity space-time correspond to the **15** trees in the 25-tree above the 10-tree. The ten independent corners in each set of four polygons symbolise the ten curves, whist similar corners denote different co-ordinates of the same curve. The **101** corners of the polygons enfolded in the 10-tree denote the (10×10 + 1 = **101**) space-time co-ordinate variables of the ten curves of the superstring in 11-

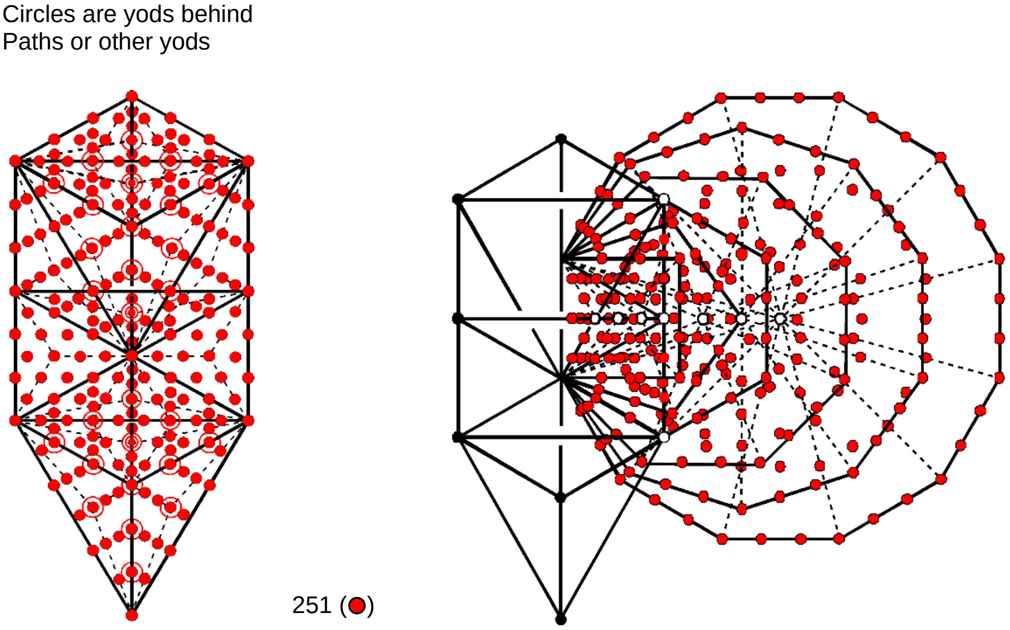


Figure 9. The seven enfolded polygons have 251 yods outside the root edge that are either not Sephirothic points or centres (O).

dimensional space-time and the 150 corners of the polygons enfolded in the **15** trees of the 25-tree beyond the 10-tree symbolise the (10×**15**=150) co-ordinate variables of the ten curves defined with respect to the **15**-dimensional space beyond supergravity space-time.

The number 251 is encoded in the seven enfolded polygons as follows: this set of polygons contains 260 yods outside their root edge (10). Of these, three are located at the positions of Chokmah, Chesed and Netzach in the Tree of Life and six are centres of the polygons ((the yod coinciding with Chesed is the centre of the hexagon). There are therefore (260–3–6=251) yods in the seven enfolded polygons outside their root edge that are not Sephirothic points or centres (Fig. 9).

7. Encoding of 168 as the structural parameter of the superstring

We found in Section 2 that the first four enfolded polygons have 90 yods outside their root edge. Of these, three are located at Sephiroth and three are centres of these polygons. The number of their yods outside the root edge which are not Sephirothic points or centres of these polygons = 90 – 3 – 3 = 84, where

$$84 = 1^2 + 3^2 + 5^2 + 7^2,$$

i.e., the sum of the squares of the first *four* odd integers, showing how the Pythagorean Tetrad determines this number. The two sets of four polygons therefore have (84+84=**168**) such yods. This is the number value of *Cholem Yesodoth*, the Mundane Chakra of Malkuth. (90–3=**87**) yods outside the root edge of the first four enfolded polygons do not coincide with Sephiroth. This is the number value of *Levanah*, the Mundane Chakra of Yesod, which is the Sephirah next above Malkuth in the Tree of Life. That this particular Sephirah is involved is highly significant and yet more evidence of how information about the subatomic world is encoded in the Tree of Life and its equivalent sections. This is because Malkuth signifies the outer, *physical* form of whatever is designed according to the blueprint of the Tree of Life. It is therefore appropriate that **168** is the kernel of the number 1680 — the number of coils in each helical whorl of the UPA described by Besant and Leadbeater with a form of remote-viewing and proved (11) by the author to be the superstring constituent of up and down quarks — for this number quantifies the *form* of the superstring — the basic unit of *physical* matter. Ten overlapping Trees of Life have **80** polygons of the first four types containing (10×**168**=1680) yods that are not Sephirothic points or centres. This demonstrates that the number 1680 is truly a parameter of the Tree of Life, for it quantifies a property of a section of the inner form of *ten* Trees of Life, each a representation of a Sephirah. In fact, as the UPA/superstring is the microphysical manifestation of the Tree of Life blueprint, each whorl is the corresponding manifestation of a Sephirah, the three major whorls corresponding to the Supernal Triad of Kether, Chokmah and Binah and the seven minor whorls corresponding to the seven Sephiroth of Construction. As the microscopic manifestation of a Sephirah, a whorl is a Tree of Life in itself, so that it is represented by ten Trees of Life. As a circularly polarised standing wave, its 1680 oscillations are the manifestation of the 1680 yods in the first (4+4) polygons enfolded in ten overlapping Trees of Life other than its centres or corners that coincide with SLs of the ten trees.

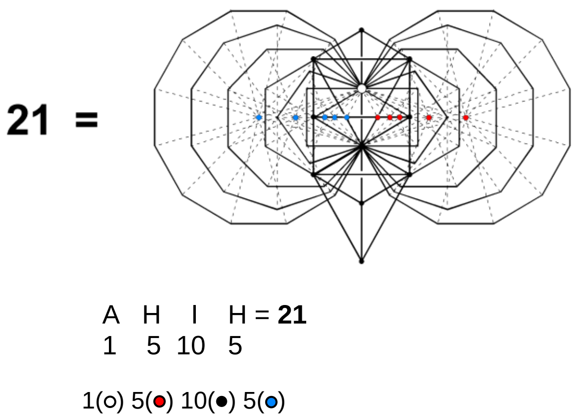


Figure 10. The letter values of EHYEH, Godname of Kether, denote the ten Sephiroth, Daath and the (5+5) centres of polygons that do not coincide with any of their corners.

The significance of the excluded yods is that they belong to the **21** yods prescribed by the Godname EHYEH that are either Sephiroth, Daath or centres of the two sets of five independent polygons whose centres do not coincide with any of their corners (Fig. 10). In fact, the letter values of EHYEH denote the various classes of such yods. There are seven of these yods per set of four enfolded polygons (five outside the root edge), so that the set of 40 polygons enfolded on each side of the central pillar of the ten trees have 71 yods that are either Sephirothic points or centres (the significance of this number will be revealed shortly). Seventy of these yods are intrinsic to the ten trees because the topmost corner of the hexagon enfolded in the tenth tree coincides with the lowest corner of the hexagon enfolded in the eleventh tree. **50** of these yods are outside the ten root edges and 20 are their endpoints. ELOHIM, Godname of Binah with number value **50**, prescribes the yods that are either Sephirothic points or centres of polygons (see Fig. 4). The counterpart of this **50**:20 division in a single Tree of Life is the 20 yods in the tetrahedron with corners at Netzach, Hod, Yesod & Malkuth and the **50** yods outside it. The division, which (as later articles will demonstrate), is characteristic of holistic systems, appears in the formula for the number Y(n) of yods in n overlapping Trees of Life:

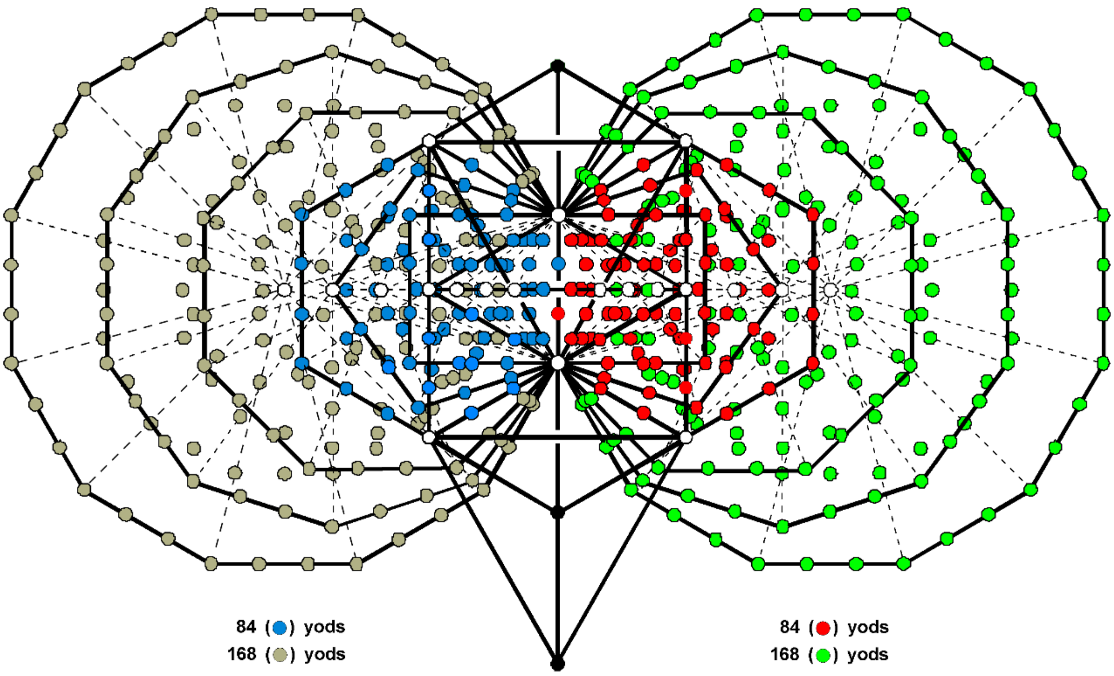


Figure 11. **168** yods in the first (4+4) enfolded polygons and **168** yods in the last (3+3) polygons are not centres or Sephirothic points (○).

$$Y(n) = \mathbf{50}n + 20.$$

We saw earlier that there are 251 yods outside the root edge of the seven enfolded polygons that are not Sephirothic points or centres. 84 yods outside the root edge of the first four enfolded polygons are not centres of *their* polygons but a corner of the pentagon is the centre of the decagon, so that there are 83 yods outside the root edge that not Sephirothic points or centres of any of the seven polygons. There are therefore (251–83=**168**) yods in the last three enfolded polygons outside their root edge that are not Sephirothic points or centres, whilst (including the root edge) there are (84+84=**168**) yods in the first (4+4) polygons that are not such. Now consider the root edges in overlapping trees. The yod at their lower ends is at the position of Tiphareth of that tree and the yod at their upper ends coincides with Daath, i.e., Yesod of the next higher tree. One of the two remaining yods of the root edge may be considered to be associated with one set of polygons and the other may be considered to be associated with the other set. This means that there are **168** yods in the first (4+4) enfolded polygons that are not Sephirothic points or centres of any polygon. There are therefore (**168**+**168**+**168**=504) yods in the (7+7) enfolded polygons that are not Sephirothic points or centres (Fig. 11). The (70+70) polygons enfolded in ten overlapping trees have (10×504=5040) such yods. This number has the property:

$$5040 = 71^2 - 1 = 3 + 5 + 7 + \ldots + 141.$$

In other words, 5040 is the sum of the first 70 odd integers, starting with 3. This number, which we shall shortly show is a structural parameter of superstrings, is prescribed by ELOHA, the Godname of Geburah with number value **36** because 71 is the **36**th odd integer. As a Tree of Life contains 70 yods when its 16 triangles are turned into tetractyses (see Fig. 4), we discover the amazing property that the number of yods other than Sephirothic points or centres in the

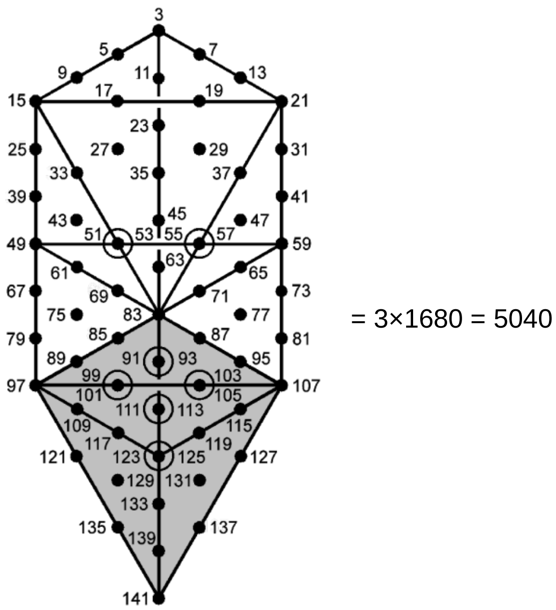


Figure 12. Numerically embodied in the Tree of Life is the number of turns in the three major helical whorls of the UPA/superstring.

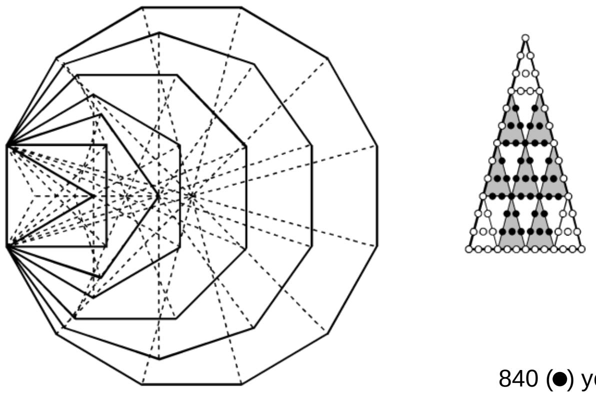
polygons enfolded in ten trees is the sum of the odd integers that can be assigned to the yods in a single Tree of Life (Fig. 12). Its Lower Face (shown shaded) has 30 yods, the rest of the Tree of Life having 40 yods. The sum of the 40 odd integers 3, 5, … 81 outside the Lower Face is $41^2 - 1 = 1680$, so that the sum of the 30 integers composing the Lower Face is 5040 – 1680 = 3360 = 2×1680. Numerically, therefore, the encoding of the number 5040 in the Tree of Life causes it to split into the numbers 1680 and 3360. Compare this with the fact that the 5040 yods in the polygons enfolded in 10 trees which are not Sephirothic points or centres comprise the 1680 such yods in the first (4+4) polygons enfolded in each tree and the 3360 yods of the last (3+3) polygons (see above). The Lower Face of the Tree of Life creates the *same* split (3360+1680) as that created by the division of the seven polygons into, respectively, the last three ones and the first four ones. Notice that this has not been concocted, for the integers are assigned in Fig. 12 sequentially from left to right, running down the page. Also, notice that the sum of the integers at the position of the ten Sephiroth is

$$\begin{array}{c} 3 \\ \mathbf{15}\quad \mathbf{21} \\ \mathbf{49}\quad 59\quad 83 \\ 107\quad 97\quad 125\quad 141 \end{array} = 700 = \begin{array}{c} 70 \\ 70\quad 70 \\ 70\quad 70\quad 70 \\ 70\quad 70\quad 70\quad 70, \end{array}$$

i.e., the sum of the Pythagorean Decad assigned to each of the 70 yods in the Tree of Life! This exemplifies the beautiful, mathematical design of the Tree of Life.

What the replication of the pattern of encoding of the number 5040 is telling us (quite apart from the importance of the number itself) is that the numbers 1680, 3360 and 5040 must have significance vis-à-vis the superstring as the microphysical actualisation of the Tree of Life blueprint. In fact, 1680 is the number of helical turns of each whorl component of the superstring, being the number of oscillations of the circularly polarised waves running around each closed curve. 3360 is the number of such turns per revolution of all ten whorls (each whorl makes five revolutions, comprising 336 turns per revolution), whilst 5040 (=3×1680) is the number of turns in the three major whorls of the UPA. The 1680 yods in the **80** polygons of the first four types enfolded in the ten trees symbolise the 1680 turns of the first major whorl, which corresponds to Kether in the Tree of Life. The 1680 yods in the 30 polygons of the last three types that are enfolded in the ten trees signify the 1680 turns of the second major whorl, which corresponds to Chokmah. The 1680 yods that are their mirror images in the 30 polygons of the last three types enfolded on the other side of the central pillar in the ten trees correspond to the 1680 turns of the third major whorl, which corresponds to Binah. The two mirror-image halves of the inner Tree of Life are the manifestation of the opposite polarities of Chokmah and Binah,

3360 =



840 (●) yods in triangle, octagon & decagon

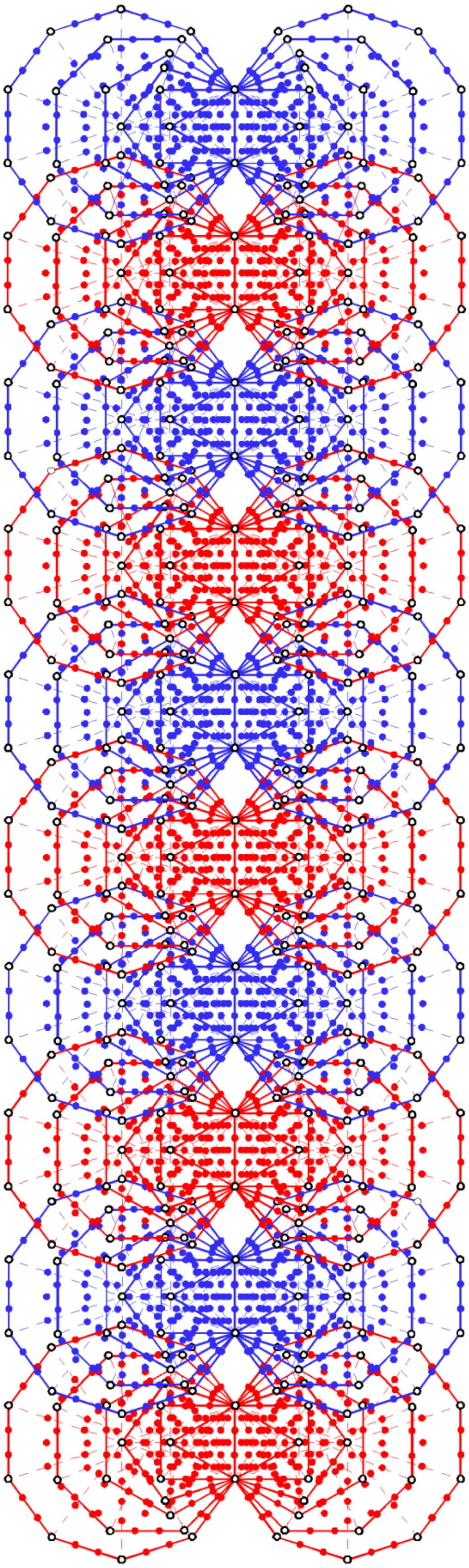
840 (●) yods in square, pentagon & dodecagon

1680 (○) yods

Figure 13. The number (3360) of 1st-order spirillae in each revolution of the 10 whorls of the UPA/superstring is the number of yods in the seven enfolded polygons with 2nd-order tetractyses as their sectors. They comprise 1680 hexagonal (black) yods of tetractyses denoting Sephiroth of Construction inside the 40 sectors of all polygons except the hexagon, as well as 1680 yods that either line its edges or belong to the hexagon or tetractyses at corners of each 2nd-order tetractys.

which have the Kabbalistic titles of *Abba* and *Aima*, the Cosmic Father and Cosmic Mother, representing the male and female principles (what are called ‘yang’ & ‘yin’ in Taoism).

The structural parameter 5040 is embodied in the inner form of a single Tree of Life. When the sectors of its



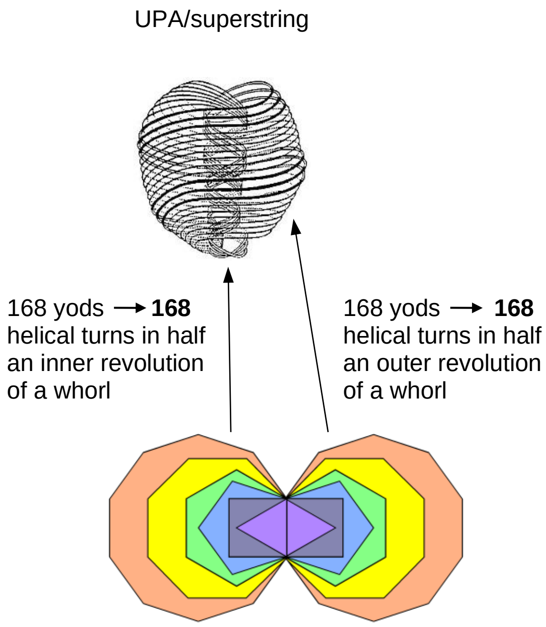
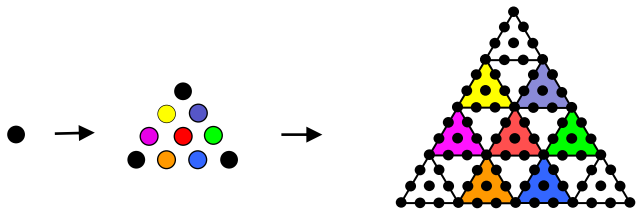


Figure 14. Associated with each set of the first 6 polygons enfolded on either side of the central pillar of 10 overlapping Trees of Life are 1680 yods other than their 251 corners. The 3360 yods symbolise the 3360 turns in one revolution of all ten helical whorls of the superstring. The 251 corners symbolise the 251 space-time coordinates of points on 10 closed curves in **26**-dimensional space-time. The two mirror-image halves express the inner & outer half-revolutions of all ten whorls of the UPA/superstring, each whorl making 5 complete revolutions. A half-revolution of each whorl in the outer part of the UPA is the outward-going (yang) phase of a cycle; a half-revolution in its inner part is the returning, yin phase of this cycle. The Godname ELOHIM with number value **50** prescribes the **50** revolutions of the whorls. They are symbolised in a single Tree of Life by the **50** corners of the first (6+6) enfolded polygons.

1680 ()

1680 ()

seven enfolded polygons are transformed into 2nd-order tetractyses, each with 85 yods:



the set of polygons contain 3360 yods (Fig. 13) (12). 1680 yods either lie on edges of sectors or belong to 1st-order tetractyses at the corners of each 2nd-order tetractys. There are 840 yods inside the sectors of the triangle, octagon & decagon and 840 yods inside the sectors of the square, pentagon & dodecagon, each of these sets of polygons having **21** sectors. Transformed by the 2nd-order tetractys, the seven enfolded polygons exhibit the same 1680:1680 division of yods as found in the last (3+3) polygons enfolded in ten overlapping Trees of Life. The same pattern occurs in the first (6+6) polygons enfolded in ten trees (Fig. 14). Each set of six enfolded polygons has 195 yods, of which **26** are corners, leaving 169 yods. Associated with each set are **168** yods, so that there are (1680+1680=3360) yods in the 120 polygons of the first six types enfolded in ten trees other than their 482 corners. Each set of 60 polygons has 251 corners that symbolise the 251 space-time coordinates of ten independent points in 26-dimensional space-time. The Tree of Life parameter 251, which was found in Section 5 to be embodied in the 1-tree as its 251 yods and in Section 6 to be the number of yods outside the root edge of the seven enfolded polygons other than Sephirothic points or centres, reappears again in a new Tree of Life pattern as the number of corners of the 60 polygons enfolded in 10 overlapping Trees of Life that contain 1680 yods.

8. Conclusion

The Tree of Life has an inner form defined by its geometry and prescribed by the number values of the ten Kabbalistic Godnames. As demonstrated in earlier articles, various sections of this inner structure are also prescribed by the Godname numbers and encode the same set of parameters quantifying their geometrical properties and yod populations. This article has analysed one such section — the first four regular polygons enfolded in the outer Tree of Life — and has proved that it encodes a number embodied in both the outer and inner forms of the Tree of Life as the number of degrees of freedom or co-ordinate variables characterising ten curves in the **26**-dimensional space-time predicted by quantum mechanics for spinless strings. This agrees with the century-old, paranormal description of the basic constituent of matter by the Theosophists Annie Besant and C.W. Leadbeater and with its interpretation by the author as the superstring constituent of up and down quarks. Independent confirmation of this came from the appearance of the paranormally obtained number 1680 as a natural property of both sets of the first four polygons *and* as a similar property of the last three polygons. Such simultaneity cannot plausibly be due to coincidence because it is obvious that the chance of the same number happening to appear in two different sets of polygons making up the seven polygons is extremely small — even more so when choice of both combinations is restricted by the number values of the ten Godnames. What this and previous articles have presented is evidence of an enormous 'conspiracy' that theologians might prefer to call 'divine design' whereby number and geometry join together in the mathematical design of the cosmic blueprint called the Tree of Life and its microscopic manifestation in space-time as the superstring. However, as we have outlined here and as Article 5 discussed in more detail, the superstring is only the end of the story, not its beginning ……

References

1. Phillips, Stephen M. Article 1: "The Pythagorean nature of superstring and bosonic string theories," http://smphillips.mysite.com/Article01.pdf.
2. Phillips, Stephen M. Article 4: "Godnames prescribe the inner Tree of Life," http://smphillips.mysite.com/Article04.pdf.
3. *Occult Chemistry*, Annie Besant and C.W. Leadbeater (1st ed., 1908; 2nd ed., 1919; 3rd ed., 1951; reprinted 3rd ed., 1994).
4. For a non-technical overview, See Article 2 at the author's website.

5. *Extra-sensory Perception of Quarks*, Stephen M. Phillips (Theosophical Publishing House, Wheaton, Ill., U.S.A., 1980).

6. *Occult Chemistry*, 3rd ed., p. 23.

7. Ref. 5 and *ESP of Quarks and Superstrings*, Stephen M. Phillips (New Age International, New Delhi, India, 1999).

8. For example, see: "Superstrings in D = 10 from supermembranes in D = 11," M.J. Duff, P.S. Howe, T. Inami and K.S. Stelle, *Phys. Lett.* B, vol. 191 (June 1987), 70–74, and: "Heterotic and type I string dynamics from eleven dimensions," P. Horava and E. Witten, *Nucl. Phys*. B 460 (1996), 506–524.

9. Phillips, Stephen M. Article 2: "The physical plane and its relation to the UPA/superstring and space-time," http://smphillips.mysite.com/Article02.pdf.

10. Ref. 2, p. 2.

11. Ref. 7.

12. Proof: The 2nd-order tetractys has 85 yods, of which 13 yods line each of its sides. When each of the n triangular sectors of an n-sided, regular polygon is turned into a 2nd-order tetractys, there are (85–13=**72**) independent yods per sector of the polygon. Its yod population = **72**n + 1, where "1" denotes the yod at the centre of the polygon. The polygonal form of the inner Tree of Life consists of a triangle, square, pentagon, hexagon, octagon, decagon and dodecagon. They are enfolded in one another and share the same base, or what the author has called the "root edge," as they should be thought of as growing out of this fundamental line joining Daath and Tiphareth in the Tree of Life. When the seven separate polygons are superposed on one another in their enfolded state, corresponding members of the set of 13 yods forming what becomes their shared side coincide and therefore must not be counted separately in a calculation of their yod population. Below are listed the yod populations of each polygon and (except for the triangle) their numbers of yods outside the root edge:

Polygon	**n**	**Number of yods = 72n + 1**	**Number of yods outside root edge**
triangle	3	217	
square	4	289	289 – 13 = 276
pentagon	5	361	361 – 13 = 348
hexagon	6	433	433 – 13 = 420
octagon	8	577	577 – 13 = 564
decagon	10	721	721 – 13 = 708
dodecagon	12	865	865 – 13 = 852

Total = 3385.

Inspection of Fig. 2 reveals that the tip of the triangle opposite the root edge is also the centre of the hexagon (the triangle is simply a triangular sector of the hexagon). Similarly, the tip of the pentagon is the centre of the decagon. With 2nd-order tetractyses as their sectors, the centre of the triangle where corners of its three 2nd-order tetractyses meet is also the central yod of the tetractys at the centre of the 2nd-order tetractys constituting a sector of the hexagon (see diagram opposite). The 11 yods between corners on each of the two sides of the triangle outside its shared base coincide with yods on the sides of this sector of the hexagon. There are (1 + 1 + 1 + 2×11 = 25) yods in the total population calculated above that coincide with yods belonging to other polygons (these are the only yods occupying the same positions). In determining the yod population when the separate polygons are superposed, these yods must be subtracted in order to avoid double-counting Therefore, the yod population of the seven enfolded polygons constructed from 2nd-order tetractyses = 3385 – 25 = 3360.

The central yod of the 2nd-order tetractys coincides with the common vertex of the three sectors of the triangle