ARTICLE 8

SOME ENCODINGS OF 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 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 Tree of Life patterns embodying information about the microcosmic manifestation of this universal blueprint in the space-time continuum — the superstring. This article will examine another section of the inner 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 they are embodied in other sections discussed in previous articles.

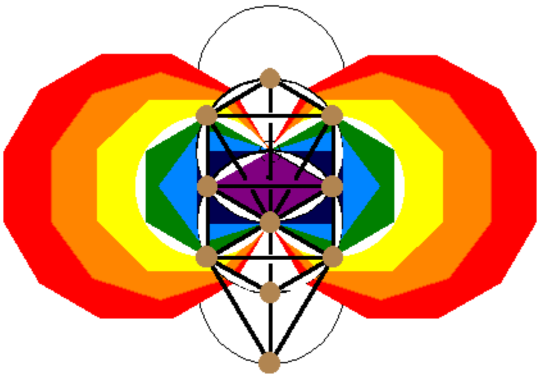


Figure 1

2 Properties of the First Four Polygons

The first four regular polygons enfolded in the Tree of Life are the triangle, square, pentagon and

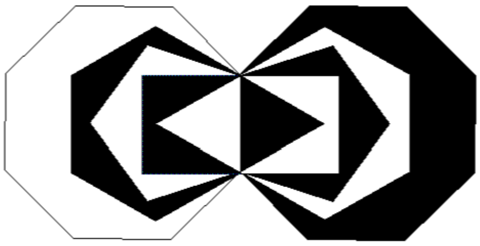


Figure 2. The first (4+4) polygons.

hexagon (*fig. 2*). The number of corners and yods in the first four polygons 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 four and (4+4) polygons are analysed by considering them firstly as separate and then as enfolded. Numbers appearing in **boldface** in the text indicate the number values of the Sephiroth, their Godnames, Archangels, Orders of Angels and Mundane Chakras. These are tabulated below.

TABLE 1. NUMBER VALUES OF THE SEPHIROTH

(Cited numbers are in shaded boxed)

Sephirah	Title	Godname	Archangel	Order of Angels	Mundane Chakra
Kether	620	21	314	833	636
Chokmah	73	15, 26	331	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
Number of corners of polygons = 3 + 4 + 5 + 6 = 18;
Number of sides of polygons = 18;
Number of corners and sides of polygons = 18 + 18 = **36**;
Number of tetractyses = 18;
Number of corners of tetractyses = 18 + 4 = 22;
Number of sides of tetractyses = 18 + 18 = **36**;
Number of corners and sides of tetractyses = 22 + **36** = 58;
Number of geometrical elements = 58 + 18 = **76**;
Number of yods = 19 + 25 + **31** + 37 = **112**;
Number of hexagonal yods = **15** + 20 + 25 + 30 = 90;
Number of yods on boundaries of polygons = 18 + 2×18 = 54 (54 – 18 = **36** hexagonal);
Number of yods on boundaries of tetractyses = 18 + 2×18 + 2×18 + 4 = 94 (94 – 22 = **72** hexagonal);

(4+4) separate polygons
Number of corners = 2×18 = **36**;
Number of sides = 2×18 = **36;**
Number of corners and sides of polygons **=** 2×**36** = **72**;
Number of tetractyses = 2×18 = **36**;
Number of corners of tetractyses = 2×22 = 44;
Number of sides of tetractyses = 2×**36** = **72**;
Number of corners and sides of tetractyses = 2×58 = 116;
Number of geometrical elements = 2×**76** = 152;
Number of yods = 2×112 = 224. Number of yods other than centres of polygons = 224 – 4 – 4 = **216**;
Number of hexagonal yods = 2×90 = 180;
Number of yods on boundaries of polygons = 2×54 = 108 (2×**36** = **72** hexagonal);
Number of yods on boundaries of tetractyses = 2×94 = 188 (2×**72** = 144 hexagonal);

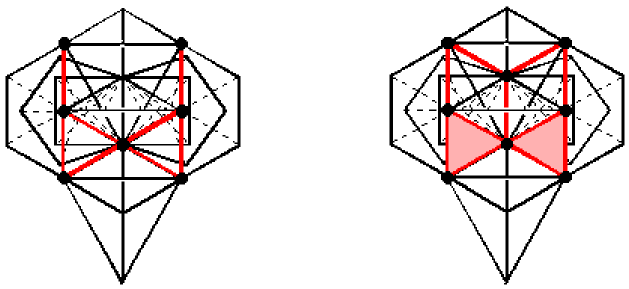
4 enfolded polygons
Number of corners = 3 + 2 + 3 + 4 = 12 (10 outside root edge);
Number of sides = 3 + 3 + 4 + 5 = **15** (**15** – 1 = 14 external);
Number of corners and sides of polygons = 12 + **15** = 27 (27 – 3 = 24 external);
Number of tetractyses = 18 – 1 = 17;
Number of corners of tetractyses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

(4+4) enfolded polygons
Number of corners = 2×10 + 2 = 22 (22 – 2 = 20 external);
Number of sides = 2×14 + 1 = 29 (29 – 1 = 28 external);
Number corners and sides of polygons = 2×24 + 3 = 51 (51 – 3 = **48** external);

Number of tetractyses = 2×17 = 34;
Number of corners of tetractyses = 2×13 + 2 = 28 (28 – 2 = **26** external);
Number of sides of tetractyses = 2×30 + 1 = 61 (61 – 1 = 60 external);
Number of corners and sides of tetractyses = 2×43 + 3 = 89 (89 – 3 = 86 external);
Number of tetractyses and their sides = 2×47 + 1 = **95**;
Number of geometrical elements = 2×60 + 3 = 123 (123 – 3 = 120 external);
Number of yods = 2×90 + 4 = 184 (184 – 4 = 180 external);
Number of hexagonal yods = 2×77 + 2 = 156 (156 – 2 = 154 external);
Number of yods on boundaries of polygons = 2×38 + 4 = **80** (80 – 4 = **76** external);
Number of yods on boundaries of tetractyses = 2×**73** + 4 = 150 (150 – 4 = 146 external). Number of yods on boundaries other than corners outside root edge = 150 – 20 = 130.

3. Shared Yods and Geometrical Elements

In this section we shall analyse the properties that both the four 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. Figure 3 shows that three external corners, four external sides and one tetractys belonging to each set of four enfolded polygons are shared with the Tree of Life, that is, seven corners and sides (7 = 4th odd integer), eight corners, sides and tetractyses (8 = 4th even integer) and 16 (= 4^2) geometrical elements outside the root edge of both sets of polygons. The number of shared, external corners and sides = 2×(3+4) = 14. The root edge shares its lowest end point with the Tree of Life. The number of corners and sides of both sets of polygons which are shared = 14 + 1 = **15**. Figure 3 also shows that three external corners, five external sides and one tetractys belonging to each set 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**. When the (4+4) separate polygons become enfolded, the 224 yods in the former become the 184 yods in the latter, i.e.,



15 corners & sides shared with Tree of Life

21 corners, sides & tetractyses shared with 1-tree

Figure 3

4
4 4
40 = 4 4 4
4 4 4 4

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

yods disappear. Twelve yods outside the root edge in each set of polygons corresponding to Sephiroth above Malkuth are shared with the Tree of Life, i.e., 24 (= 4!) in all. Two yods of the root edge are also shared with the Tree of Life, making a total of **26** yods of both sets which are shared, where **26** 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>**

14 yods outside the root edge in each set of polygons are shared with the 1-tree, i.e., 28 in all, where 28 = 4×7 = 4×4th odd integer. The total number of shared yods = 28 + 4 = 32 = 4×8 = 4×4th even integer. The number of yods unshared with the Tree of Life = 184 – **26** = 158 (156 outside the root edge). The number of yods unshared with the 1-tree = 184 – 32 = 152. Of the 79 hexagonal yods of the 4 enfolded polygons, 13 are shared with the 1-tree, leaving 66 unshared, hexagonal yods.

The 16 triangles of the Tree of Life have 10 corners and 22 sides. Of these, seven corners, eight sides and two triangles are shared with the (4+4) enfolded polygons, leaving **31** unshared, geometrical elements.

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 number of corners and sides of the four polygons = 27. 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 and 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 and sides of the other set of 4 n polygons outside their root edges = **26**n + 1 – 3n = 23n + 1. The number of corners and sides of the 8n polygons enfolded in the n-tree = **26**n + 1 + 23n + 1 = **49**n + 2. Every set of 4 polygons has therefore **15** sides and **26** corners and sides, whilst every set of (4+4) polygons has **49** corners and sides. The 17 tetractyses in each set of 4 polygons have **31** sides with **73** yods on them outside their root edge. The 34 tetractyses of the (4+4) polygons have 61 sides with 150 (=**15**×10) yods on them, **80** of these being on the boundaries of the polygons, **76** outside their root edge. Of the 61 sides, 11 are shared with the 1-tree, leaving **50** sides that are unshared. The 1-tree also shares eight corners with both sets of polygons (see Figure 3), whose 34 tetractyses have 89 corners and sides. There are therefore (89 –11 – 8 = 70) unshared corners and sides, of which 20 are corners and **50** are sides. The 35 corners and sides in each set of polygons comprise 10 corners and 25 sides.

4 How Godnames Prescribe the Four Polygons

Set out below are the ways in which properties of the sets of four and (4+4) polygons are prescribed by the number values of the Sephirothic titles, their Godnames, Archangelic Names, Angelic Names and Mundane Chakras:

Kether: **21** — **21** geometrical elements in the (4+4) polygons are shared with the 1-tree;

Chokmah: **15** — 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. The (4+4) polygons share **15** corners and sides with the Tree of Life;

26 — (4+4) enfolded polygons have **26** corners outside their root edge. Every 4 enfolded polygons have **26** corners and sides. The (4+4) enfolded polygons share **26** corners and sides with the Tree of Life;

Binah: **50** — Number of corners and sides of (4+4) enfolded polygons = 51 = **50**th integer after 1. (4+4) enfolded polygons have **50** sides unshared with the 1-tree;

Chesed: **31** — Number of sides of 17 tetractyses in 4 enfolded polygons **= 31.** Tree of Life has **31** geometrical elements unshared with (4+4) enfolded polygons;

Geburah: **36** — 4 separate polygons have **36** corners and sides and **36** sides of their 18 tetractyses. The polygons have **36** hexagonal yods on their boundaries. (4+4) separate polygons have **36** corners and **36** sides;

Tiphareth: **76** — 4 separate polygons have **76** geometrical elements. (4+4) enfolded polygons have **76** yods outside their root edge on their boundaries and 152 yods unshared with the 1-tree, where 152 = **76**th even integer;

Netzach: **129** — (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** — (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** corners and sides;

Malkuth: **65** — 66 hexagonal yods in the 4enfolded polygons are unshared with the 1-tree, where 66 = **65**th integer after 1;

155 — (4+4) enfolded polygons have 156 yods outside their root edge unshared with the Tree of Life, where 156 = **155**th integer after 1.

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

5 Connections Between 1-tree and the 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. The 4n polygons enfolded in the n-tree have (9n+1) corners outside their n root edges. There are (10n+1) corners 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). It has enfolded on either side of its central pillar 40 polygons with (10×10 + 1 = **101**) corners, of which 91 are outside their root edges (**101** = **26**th prime number = number value of Michael, Archangel of Tiphareth). The 25-tree, which is prescribed by ADONAI MELEKH, the full Godname of Malkuth, because its number value **155** is the number of SLs in the 25-tree, has 100 polygons of the first four types with (10×25 + 1 = 251) corners enfolded on each side of the central pillar. The components of the complete Godname prescribe the division:

$$251 = \mathbf{101} + 150,$$

the number **101** denoting the 10 corners on the central pillar and the 91 external corners of the polygons enfolded in the 10-tree. Of the latter, 11 are the highest and lowest corners of the 10 joined hexagons, 10 of these 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:

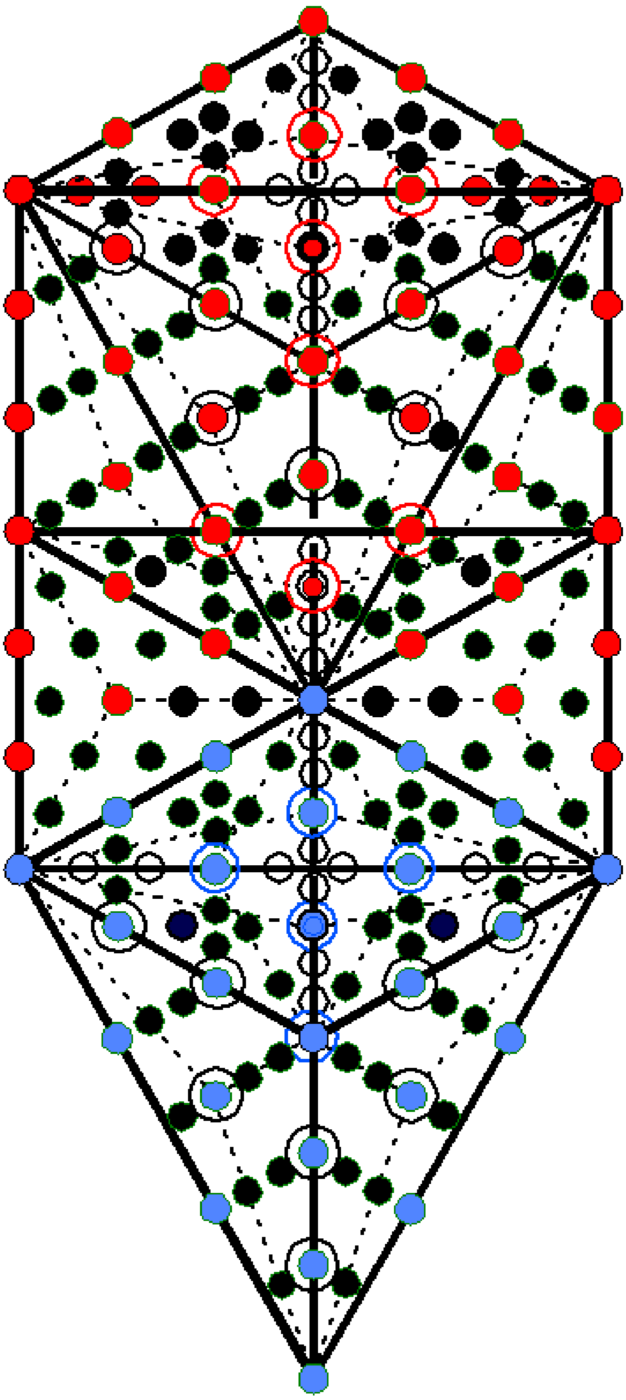
$$\mathbf{101} = 10 + 91 = 10 + 11 + \mathbf{80},$$

where

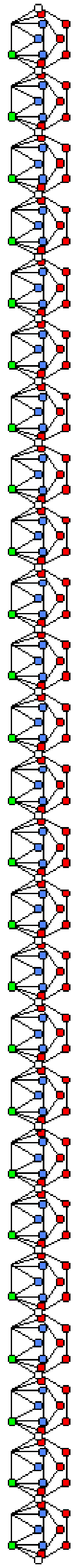
$$\mathbf{80} = 10\times(1 + 2 + 3 + 2)$$

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 which are unshared with adjacent hexagons. Therefore,

(circles are yods behind other yods or paths)



= 251 =



50 (●)
30 (●)
171 (●)

10 (●)
11 (○)

Figure 4

251 =

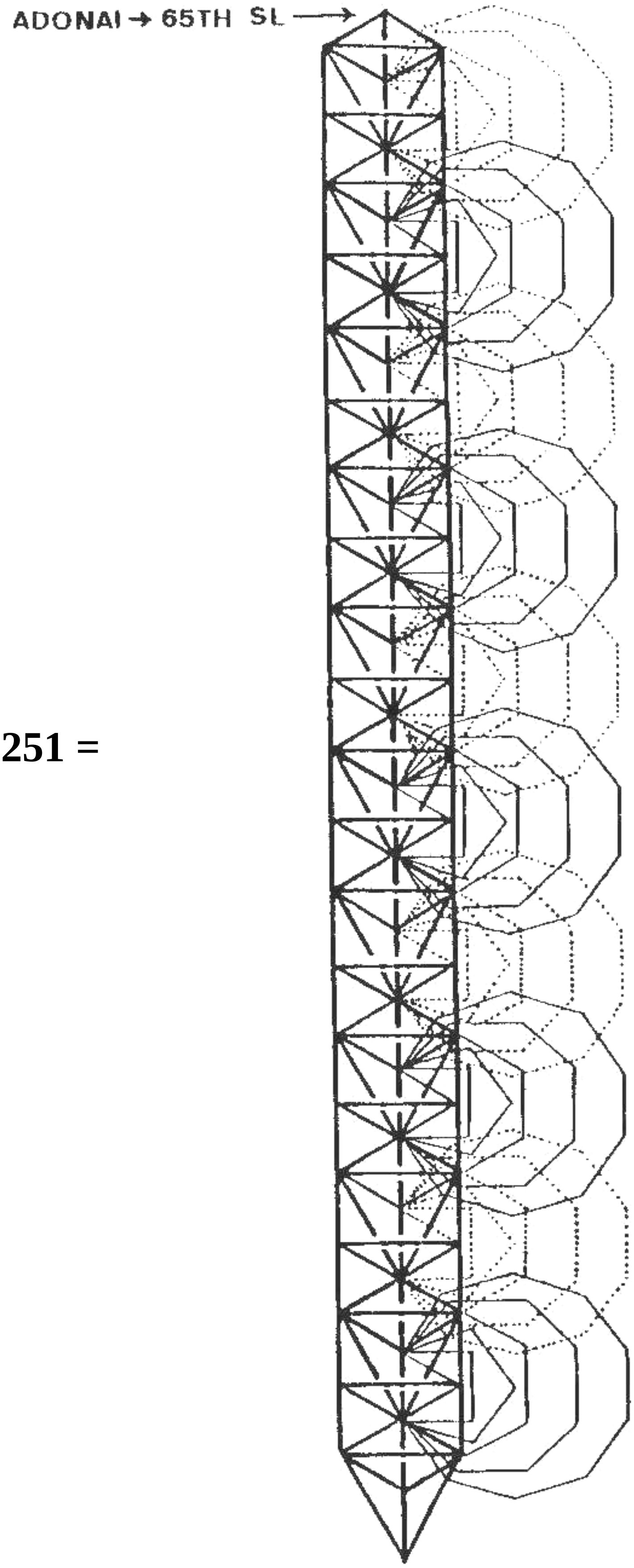


Figure 5

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

where 30 is the number of external corners of the first two polygons enfolded in the lowest ten trees and **50** is the number of corners of the last two polygons. Figure 4 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) and that, when the three sectors of each triangle are turned into tetractyses, the 1-tree contains 251 yods. The reason why the two remarkable parallels:

251 yods in 1-tree ↔ 251 corners of 4 polygons enfolded in 25-tree

(30 + **50** = **80**) yods in 1-tree ↔ (30 + **50** = **80**) outer corners of 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 encodes the *same* number as any section of CTOL which corresponds 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, i.e., the lowest of the seven planes formally corresponding to Malkuth. In Articles 2 and 5 these tree levels were identified with the 25 spatial dimensions that quantum mechanics predicts for spinless strings. This is why the Godname ADONAI MELEKH assigned to Malkuth defines 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-supergavity 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.** This is why the first six polygons enfolded on either side of the 10-tree have 251 corners (*fig. 5*), for the (6+6) polygons also constitute a Tree of Life pattern (see Article 4 for their prescription by the ten Godnames). The first four polygons enfolded in the 10-tree have 10×10 + 1 = **101** corners. The **101**:251 pattern of differentiation observed for the first four polygons enfolded in the 10-tree and in the 25-tree is exactly the same for the first four and first six polygons enfolded in the 10-tree because the latter are both Tree of Life patterns. It is also why the five largest polygons in the set of seven — the pentagon, hexagon, octagon, decagon and dodecagon, which were shown in Article 7 to be prescribed by the Godnames — contain 251 yods. Of the 30 combinations of their respective yod populations: **31**, 37, **49**, 61 and **73**, only *one* pair of combinations generates any of the possible divisions:

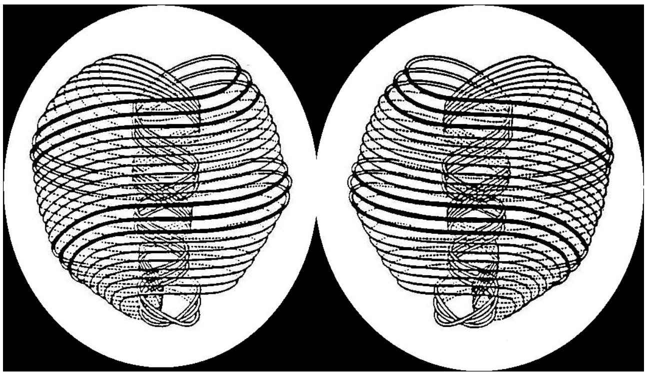
$$251 = \mathbf{101} + 150 = 91 + 160 = \mathbf{80} + 171,$$

that are present in the four polygons enfolded in the 25-tree and 10-tree, as discussed earlier. This is the pentagon and octagon with **80** yods and the hexagon, decagon and dodecagon with 171 yods. The tetractyses in the former combination have **15** corners and those in the latter have **31** corners, showing how the Godnames of Chokmah and Chesed prescribe this fundamental differentiation present in both the 1-tree and the first four polygons enfolded in the 25-tree.

6 Encodings of 10-String Structure Of Superstring

What is the meaning of the ubiquitous encoding of the number 251 and its division into **80** and 171? These numbers have a remarkable interpretation in terms of the ten-fold structure of the basic unit of matter described (1) 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 (2) derived from higher-dimensional, extended objects called 'D-branes,' as will be explained shortly. *En passim*, it should be mentioned 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 these numbers to be parameters of the outer and inner forms of the Tree of Life.

Magnified with what the author has called 'micro-psi' (3), 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.' These spiral in 2½ revolutions in parallel tracks and separate at its lowest point 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



NEGATIVE POSITIVE

Figure 6 The two types of UPAs

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 (*Fig. 6*). Three, so-called ‘major’ whorls appear thicker than the remaining seven, so-called ‘minor’ whorls. The reason for this is as follows: each coil in a stringy whorl is a circular helix made up of seven smaller coils spaced the same distance apart. Each of these is another helix with seven coils, and so on. There are seven orders of helices. Every

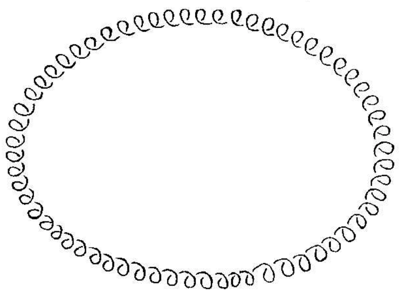


Figure 7. A whorl is a helix with 1680 coils.

25 helical coils of a given order in a major whorl comprise 176 coils of the next higher order, whereas in a minor whorl they consist of 175 such coils. This augmentation of one extra coil 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. 7*). Leadbeater said (4) that he checked his count of these coils by studying 135 different UPAs, which were found to have the same number of coils 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 and detailed correlation of their constituent particles with predictions based upon facts about nuclei and their quark composition established (5) 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* 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 torus, or doughnut, is a surface generated from the circumference of a circle when its centre moves around the circumference of another circle in a plane at right angles to it. The 6-torus is its 6-dimensional version. The six higher orders of helices in each whorl represent the winding of a close 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. But he described not one closed string but *ten* such strings. If superstrings were fundamental, he should have observed only one closed string. This indicates that the picture of superstrings as simple loops is just that — a simplistic version of the truth. Superstrings cannot be fundamental but, instead, 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. Hence space-time must have more than ten dimensions. There are five types of superstrings, and one of them has been shown (6) 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 strings. 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 the additional strings. 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 the author's book *The Image of God in Matter* (7) and in Article 2, 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 strings 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 think 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 such 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

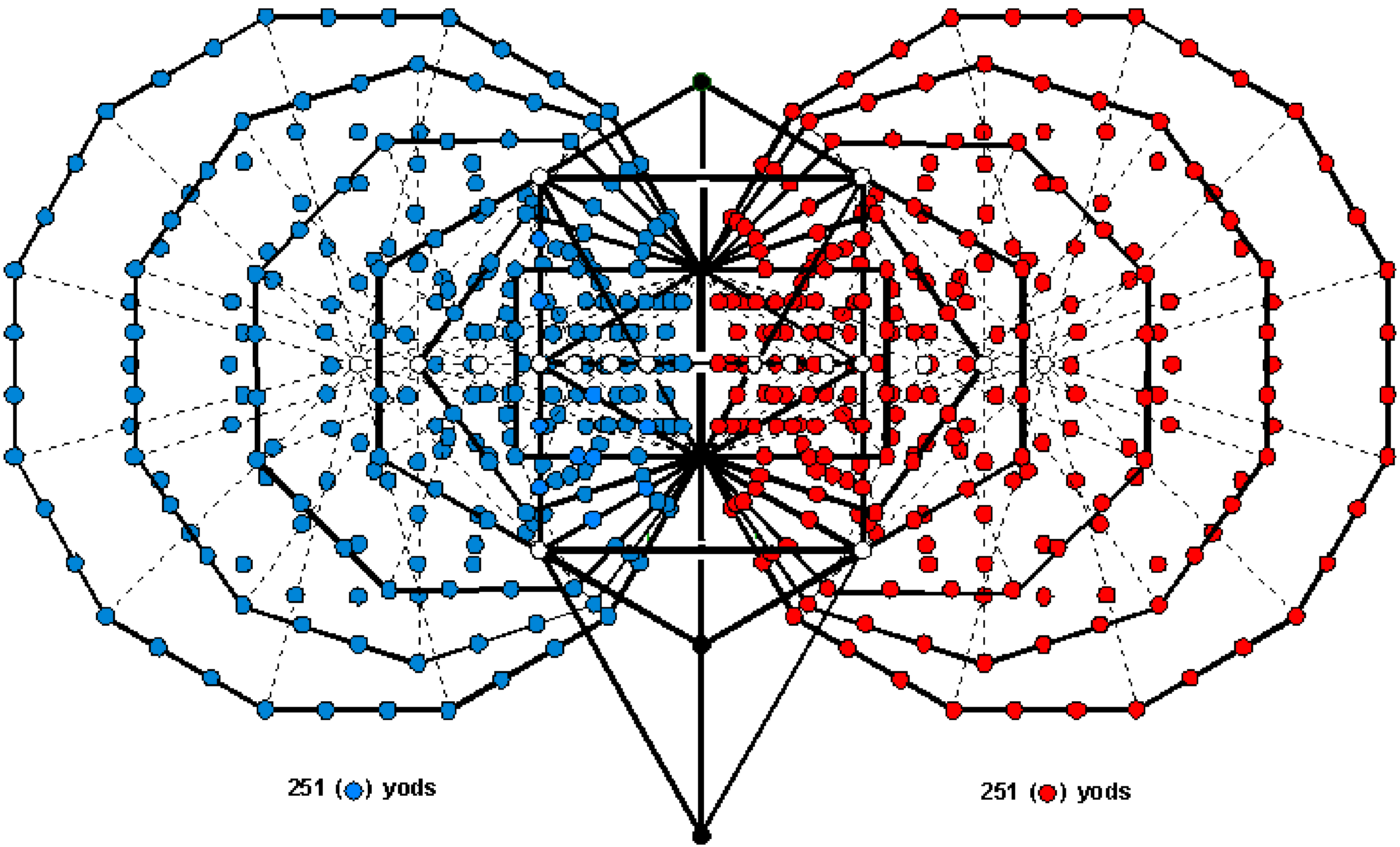


Figure 8. 251 yods outside root edge are not Sephirothic points or centres (○)

for all ten curves, there are

$$100 + 150 + 1 = 251$$

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

This explains why there are 251 yods in both the 1-tree with its triangles turned into three tetractyses and its equivalent Tree of Life patterns described earlier. Each yod symbolises one of the numbers or co-ordinate variables needed to define ten separate points in **26-**dimensional space-time. The reason why the 1-tree with *single* tetractyses contains **80** yods is that each of the ten curves comprising the superstring has eight transverse co-ordinates in its 10-dimensional space-time, so that the superstring itself has 10×8 = **80** such variables or geometrical degrees of freedom.

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 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-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 (8). 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. 8*).

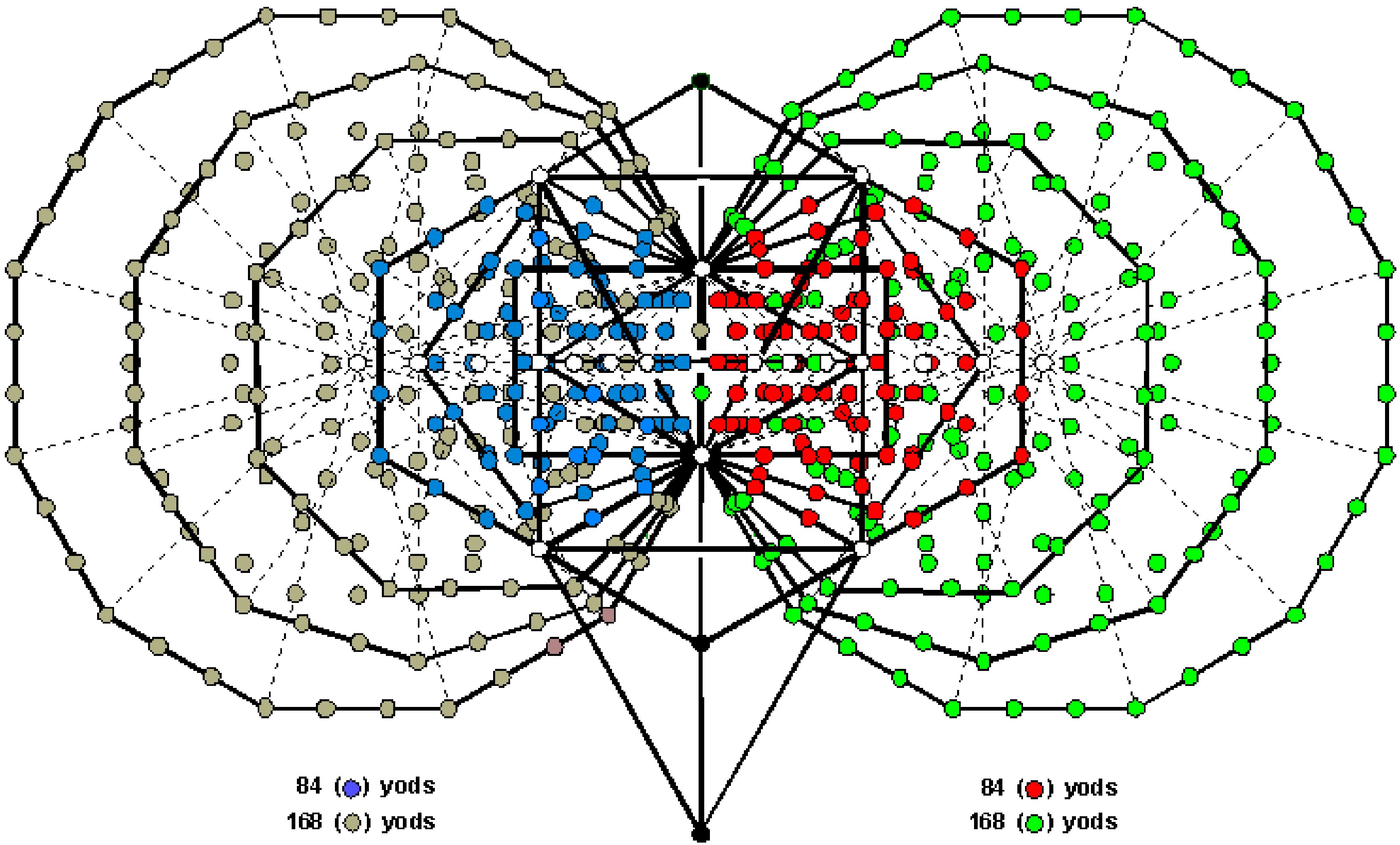


Figure 9. 168 yods outside root edge in first (4+4) polygons and 168 yods in outer 3 polygons are not centres or Sephirothic points (○).

7 Encoding of Number 168 As Structural Parameter of 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 polygons. The number of yods outside the root edge which are not Sephirothic points or centres = 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 (*fig. 9*). This is the number value of Cholem Yesodeth, the Mundane Chakra of Malkuth. 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 and proved (9) by the author to be the superstring constituent of up and down quarks — for this number quantifies the *form* of the superstring. Ten overlapping Trees of Life have **80** polygons of the first four types containing (10×**168** = 1680) yods outside their root edges 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.

We saw earlier that there are 251 yods outside the root edge of the seven enfolded polygons that are not Sephirothic points or centres, of which 84 are in the first four polygons. There are therefore (251 – 84 = 167) such yods in the last three polygons. 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 (167 + 1 = **168**) yods associated with each of the last three polygons (*fig. 9*). There are **168** yods outside the root edge of the first (4+4) polygons and **168** yods associated with each set of the last three polygons which are not Sephiroth of the tree or centres of polygons, i.e., (**168** + **168** + **168** = 504) yods. The (70 + 70) polygons enfolded in ten overlapping trees have 10×504 = 5040 such yods. This number

$3\times1680 = 5040 =$

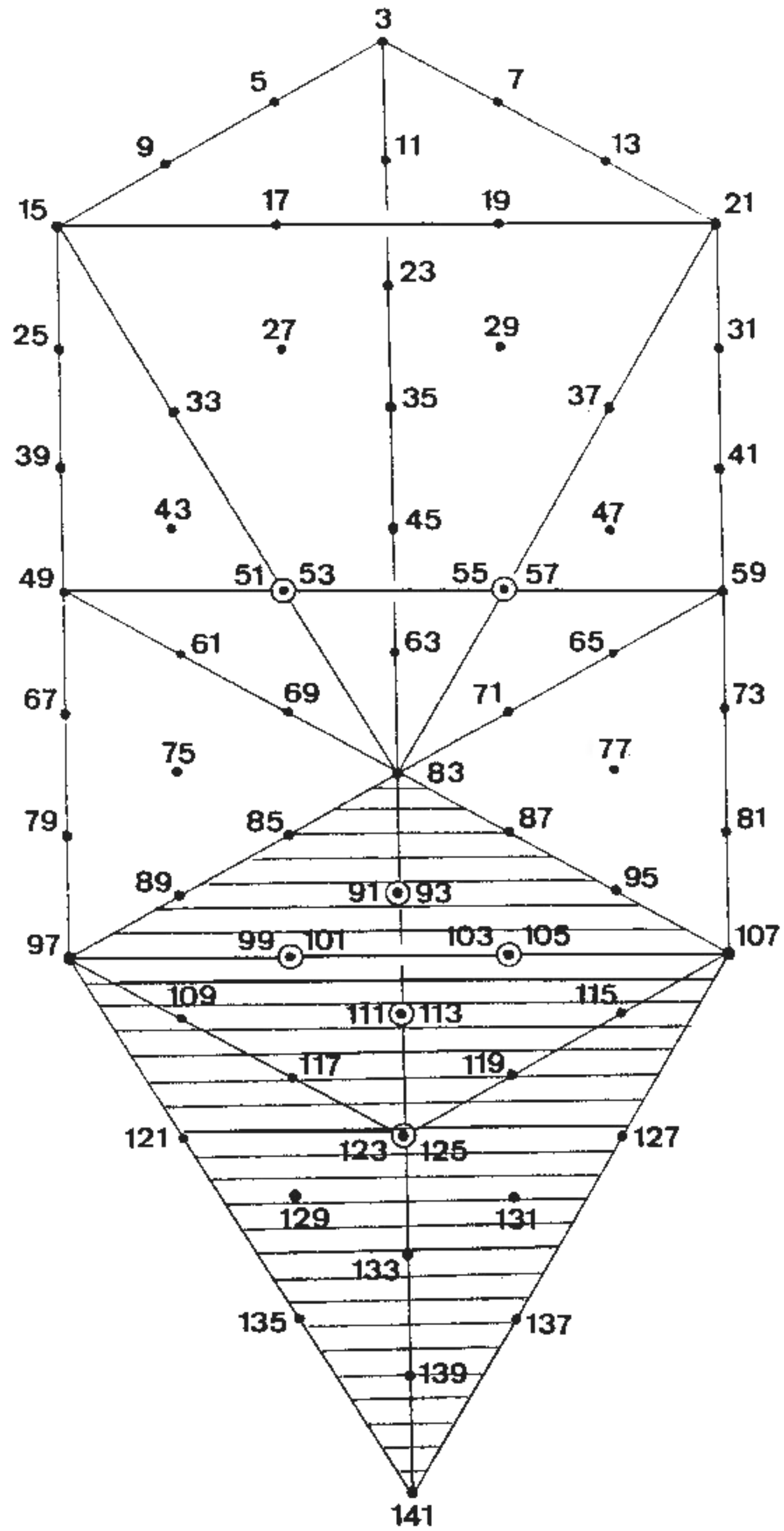


Figure 10. Numerically embodied in the Tree of Life is the number of coils in the three major whorls of the UPA/superstring.

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. As a Tree of Life contains 70 yods when its 16 triangles are turned into tetractyses, we discover the amazing property that the number of yods other than Sephirothic points or centres in the 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. 10*). 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 up into 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 outside the root edges of 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 and its exterior create 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 Figure 10 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

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

i.e., the sum of the Pythagorean decad assigned to each of the 70 yods in the Tree of Life! This exemplifies the beautiful, ‘magical,’ 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 string component of the superstring and is the number of oscillations of the circularly polarised waves running around each closed string. 3360 is the number of such turns per revolution of all ten strings (each string makes five revolutions, 336 turns per revolution), whilst 5040 is the number of turns in the three major whorls of the UPA. The 1680 yods in the first (4+4) polygons enfolded in each of the ten trees representing the whorls/strings symbolise the 1680 turns of the first major whorl, which corresponds to Kether in the Tree of Life The 1680 yods in one set of the last three polygons enfolded in the ten trees signify the 1680 turns of the second major whorl, which corresponds to Chokmah. The 1680 yods in their mirror image on the other sides of their root edges correspond to the 1680 turns of the third major whorl, which corresponds to Binah.

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 form of the Tree of Life — and has proved that it encodes a number embodied in both the outer and inner forms of the Tree of Life which is the number of degrees of freedom or co-ordinate variables characterising ten curves in **26**-dimensional space. 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 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 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’ whereby numbers and geometry join together in the mathematical design of the cosmic blueprint called the Tree of Life and its manifestation in space-time as the superstring, although, as we have seen and as Article 5 discussed in more detail, the superstring is only the end of the story, not its beginning ……

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5. Ref. 3;
6. 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;
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