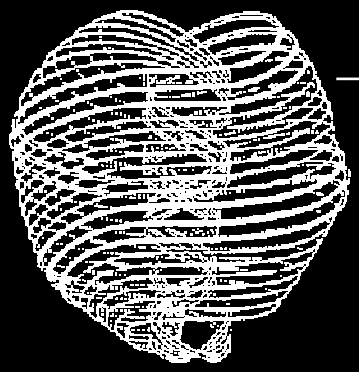
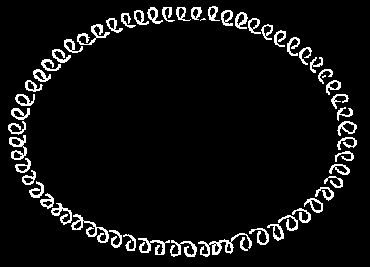
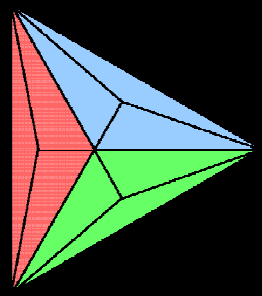




16800 circular turns of the 10 helical whorls of the UPA/subquark superstring

**UPA**



Type B triangle

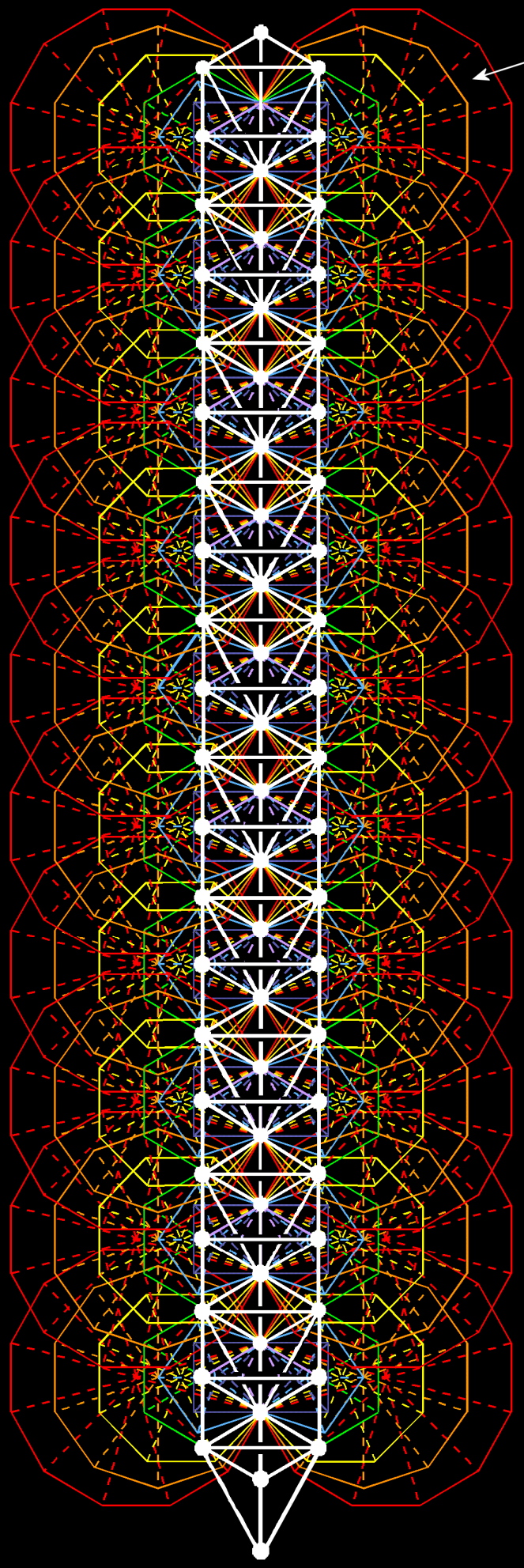
A polygon is Type C when its sectors are Type B triangles with 7 corners & **15** sides of 9 triangles, i.e., **31** geometrical elements, where **15** is the number value of YAH, the Godname of Chokmah, and **31** is the number value of EL, the Godname of Chesed. This means that each sector contributes 28 geometrical elements (5 corners, 14 sides & 9 triangles). The numbers of geometrical elements in a Type C polygon with n sides (note that it need not be regular) are:

| | |
|---|---|
| Number of corners of triangles = | 5n + 1 |
| Number of sides of triangles = | 14n |
| Number of triangles = | 9n |
| Total = | 28n + 1 |

The numbers of geometrical elements outside the root edge in each enfolded polygon of the inner Tree of Life are tabulated below:

| | Triangle (n=3) | Square (n=4) | Pentagon (n=5) | Hexagon (n=6) | Octagon (n=8) | Decagon (n=10) | Dodecagon (n=12) | Total |
|---|---|---|---|---|---|---|---|---|
| Corners | 14 | 19 | 24 | 24 | 39 | **48** | 59 | 227 |
| Sides | 41 | 55 | 69 | 69 | 111 | 139 | 167 | 651 |
| Triangles | 27 | **36** | 45 | 45 | **72** | 90 | 108 | 423 |
| Total | 82 | 110 | 138 | 138 | 222 | 277 | 334 | 1301 |

Outside the root edge of the 7 enfolded polygons are 423 triangles with 878 corners & sides. Of these, five corners & sides of the hexagon are shared with the outer Tree as its Pillar of Mercy. Similarly for the hexagon in the mirror-image set of 7 enfolded polygons, five corners & sides lie on the Pillar of Judgement. This leaves 873 corners & sides outside the root edge in each set of polygons that are intrinsic to them. They include the centre of the triangle, one of whose corners is the centre of the hexagon, the centre of the pentagon, one of whose corners is the centre of the decagon, and **31** polygonal corners. Hence, there are (873−2−**31**=840) intrinsic corners & sides of triangles that are *not* either corners of polygons or centres of polygons that are shared with other polygons. Outside the root edge of both sets of enfolded polygons are (840+840=1680) such intrinsic sides & corners. This is the number of circular turns in each of the 10 helical whorls of the UPA. Alternatively, it is the number of circular turns in each of the 10 half-revolutions of all 10 whorls. Representing either a whorl or a half-revolution of 10 whorls by a Tree of Life, the 8460 triangles in the **140** polygons enfolded in 10 overlapping Trees of Life contain 16800 corners & sides other than corners of polygons that surround their centres and which are unshared with these Trees. They correspond to the 16800 turns in the 10 whorls. This is the inner Tree of Life representation of the subquark state of the $E_8 \times E_8$ heterotic superstring.




**The outer & inner Tree of Life basis of the UPA as the subquark state of the $E_8 \times E_8$ heterotic superstring**