Dissecting the Sri Yantra diagram reveals a range of precise information of a cosmological nature

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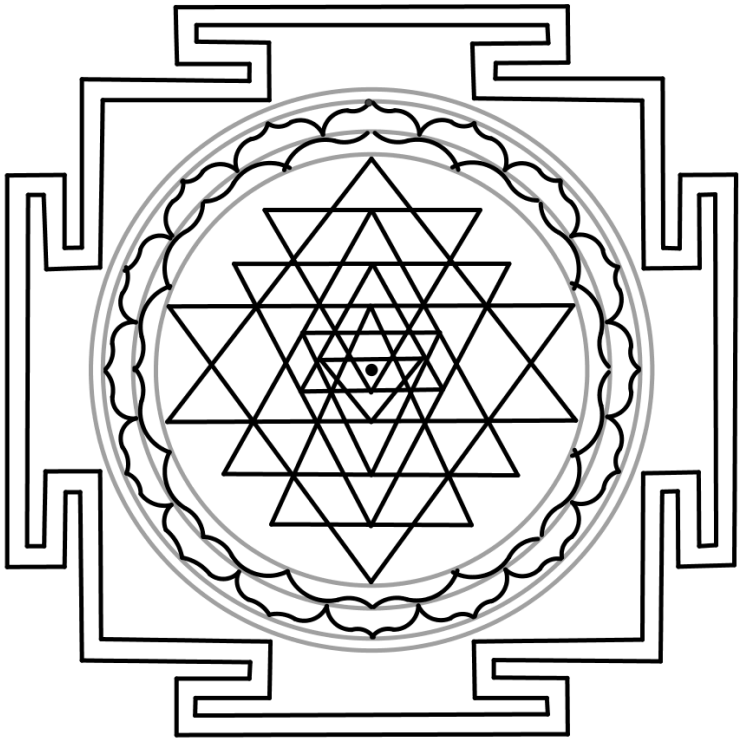
Abstract: A detailed examination of relative distances, shapes, dispositions, numerical symbolism, and 3-D perspective of the emblematic Sri Yantra diagram is presented and discussed. In particular, it is found that the emergence of (+) and (–) vacuum energy densities from a preexisting source, the cosmic expansion, and the occurrence of chemical elements, are all embedded in the diagram. The golden ratio as well.

1. Introduction

Whoever steps into the rich world of Hindu cosmology inevitably encounters the Sri Yantra, a geometric marvel that is far more than just a pretty pattern (Fig.1). The Sri Yantra, Shri Yantra, or Shree Yantra is a complex diagram (*yantra*) rooted in the Shri Vidya school of Hinduism. The earliest known drawings of the yantra seem to go back thousands of years B.C. This diagram is both a spiritual instrument and a cosmic blueprint, serving as a window into Indian notions of creation, consciousness, and reality [1]. The Yantra is a Tantric symbol of cosmic unity [2].

Figure 1: Typical layout of the Sri Yantra diagram



Comprising 9 main interlocking triangles, four upward and five downward, the Yantra embodies a complex symbolism. Further, the triangles varying in size create 43 smaller triangles in concentric levels. The central point known as “bindu” in the Hindu literature stands as the cosmic center, encompassed by concentric circles with 16 lotus petals on the far exterior. The external square seems to express expansion / contraction motions. The triangles are not randomly arranged. For instance, the work of Sathisha [3] and Bhatt [4] suggest that the Sri Yantra is not merely spiritual but a symbolic representation of universal scientific principles.

In this study, a detailed examination of the Yantra was carried out in relation to cosmology principles of modern physics. For this purpose, a Sri Yantra model with exact proportions was used [5].

Geogebra Classic 5.0.668.0-d software was utilized to measure relative distances and lengths.

2. The nine main triangles

The 2-D spatial arrangement of five downward triangles (colored in red) in opposition to four upward triangles (colored in blue) of similar sizes (except the smallest downward triangle that has no equivalent upward triangle) strongly suggest that they represent opposing forces or polarities. Further, there is an obvious progression in size as depicted in Fig.2 (small to large, numbered 1 to 5 with letters “R” and “B” standing for red and blue triangles respectively). And this progression appears to be initiated from the unique central point (“bindu”), evolving via division and polarization (or differentiation). It was quickly realized that this duality were likely describing the emergence and evolution of positive and negative energy densities in the vacuum.

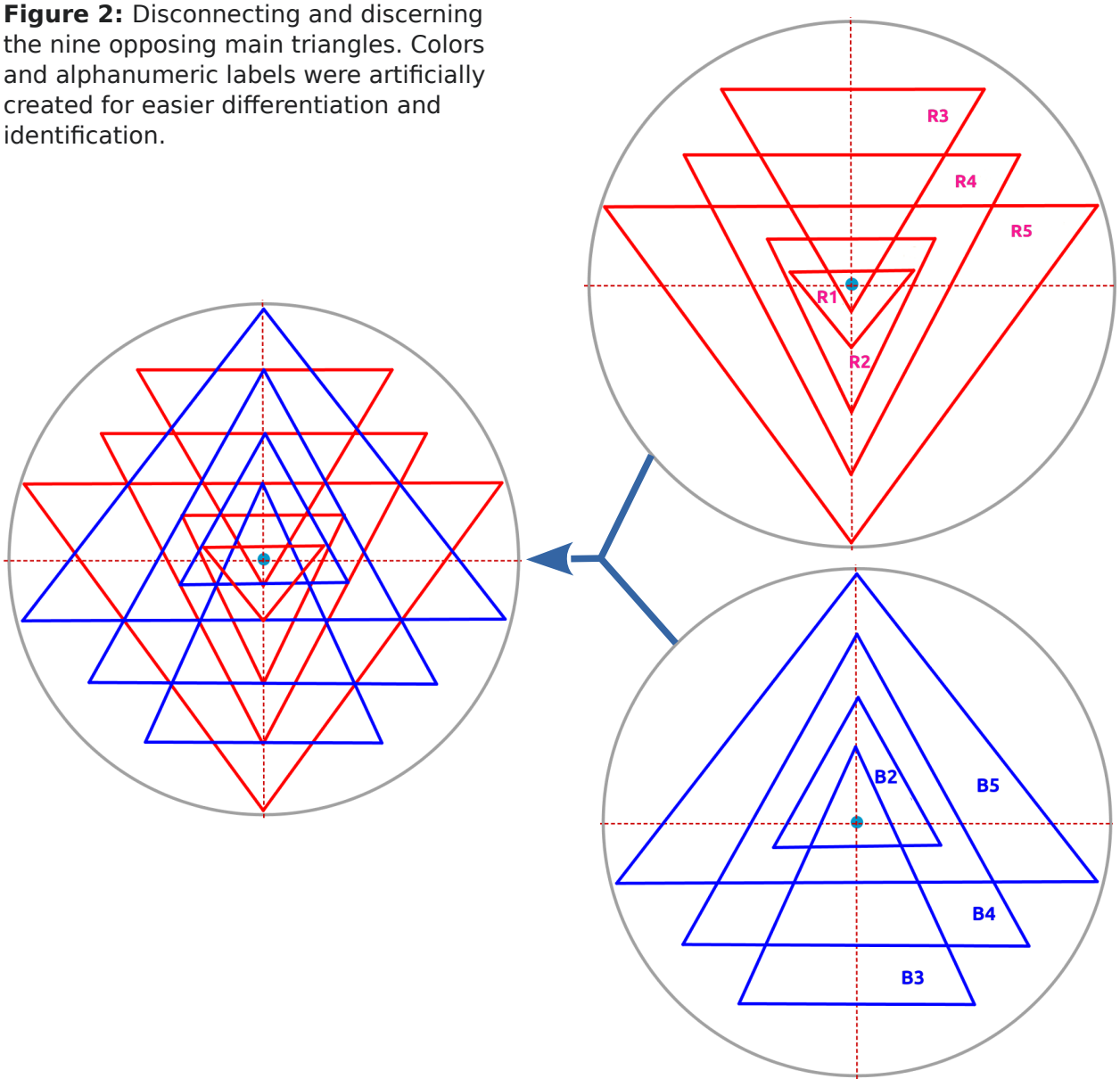
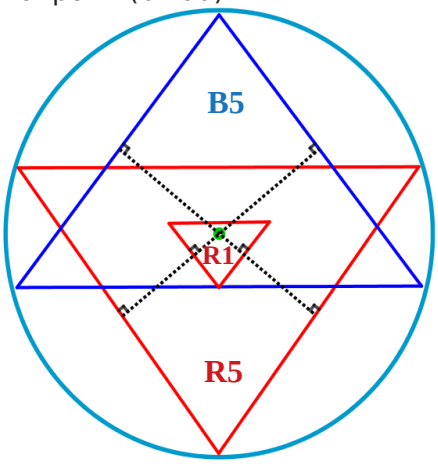


Figure 2: Disconnecting and discerning the nine opposing main triangles. Colors and alphanumeric labels were artificially created for easier differentiation and identification.

Another peculiarity is that the majority of triangles do not share centroids as could be expected, suggesting a carefully selected triangle positioning. Of great interest is that only R1, R5 and B5 (respectively the smallest and the two largest up and down triangles) have their perpendicular bisectors crossing at the central point (bindu). This is only possible when triangles have parallel sides. The fact that the smallest and largest triangles meet at the figure's central point suggest a cyclic pattern of expansion and contraction, somehow analog to the Big Bounce model of cosmology, in which the visible universe has no beginning nor end, but rather a cyclic appearance and disappearance [6].

Figure 3: Perpendicular bisectors from R1, R5, and B5 crossing at the central point (bindu)



3. Triangle perimeters reflecting vacuum energy densities ρ– and ρ+

Triangle perimeters were measured and meaningful correlations were revealed. On the other hand, triangle surface areas did not reveal straightforward workable information. In Table1 are summarized the perimeters measured in pixel. The absence of a triangle B1 in the Sri Yantra layout suggest that B1 has negligible size, and therefore a value of zero was reasonably attributed to its perimeter. Graphing these values produced Fig.4 below. To the X-axis was attributed sequential numbers starting with zero at the bindu. It was later found that using half-integers gave more meaningful and coherent results and, in addition, the red curve would go through origin (0,0). The latter normalizes rightly zero energy density at the origin X=0, regardless of the nature of the X scale (e.g. time).

Table 1: Triangle perimeters in pixel

X-axis	Y-axis Red triangles Perimeter in Pixel	Y-axis Blue triangles Perimeter in Pixel
1/2	0	0
3/2	1.107	0
5/2	1.895	1.827
7/2	2.7	2.92
9/2	3.66	3.798
11/2	4.594	4.534

Data from Table 1 were appropriately fitted with exponential functions, resulting in Fig.4 graph. As Fig.4 demonstrates, red triangles seem to expand exponentially, whereas blue triangles appear to asymptotically converge to a maximum energy value. Sadly, this limit is impossible to determine based on perimeters in pixel units. However and in accordance with the current ΛCDM model of cosmology, this graph reveals that red triangles would adequately mimic dark energy (DE), while blue triangles would perfectly correspond to the sum dark matter + baryonic matter (DM+BM).

Interestingly enough is the factor under the red triangle exponential growth, which was found to be equivalent to πe^{φ} (=13.817) with φ being the ubiquitous golden ratio.

The extrapolation of Fig.4 to higher values of X is presented in Fig.5, in which the two trends are explicit. It is posited that red & blue triangles symbolize respectively negative and positive energy densities (ρ– and ρ+), and in accordance with previous publications [7-9]. Further, it was found that the ratio of negative to positive energy density (red/blue) is exactly 2.25 at X=14.5, which coincidentally correspond to the value of DE/DM under the standard model of cosmology (~13.8 byrs after Big Bang). Coincidentally , the X-axis seems to adequately and precisely mirror a timescale in byrs.

Figure 4: Main Triangle perimeters

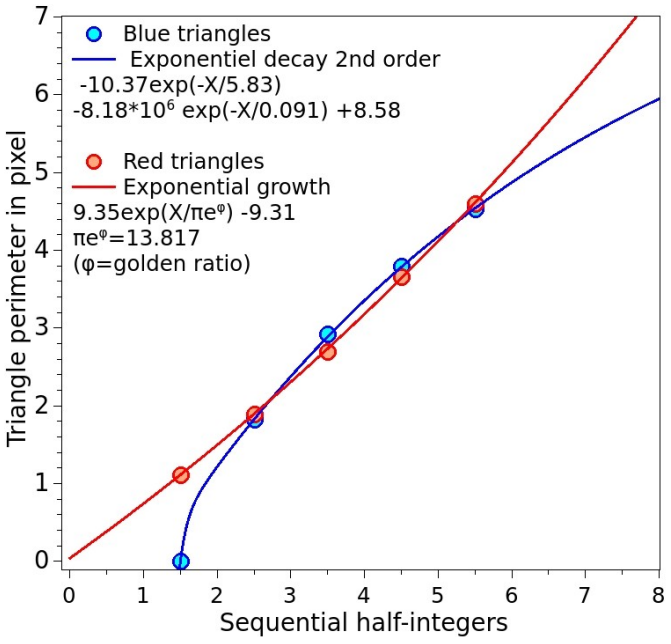
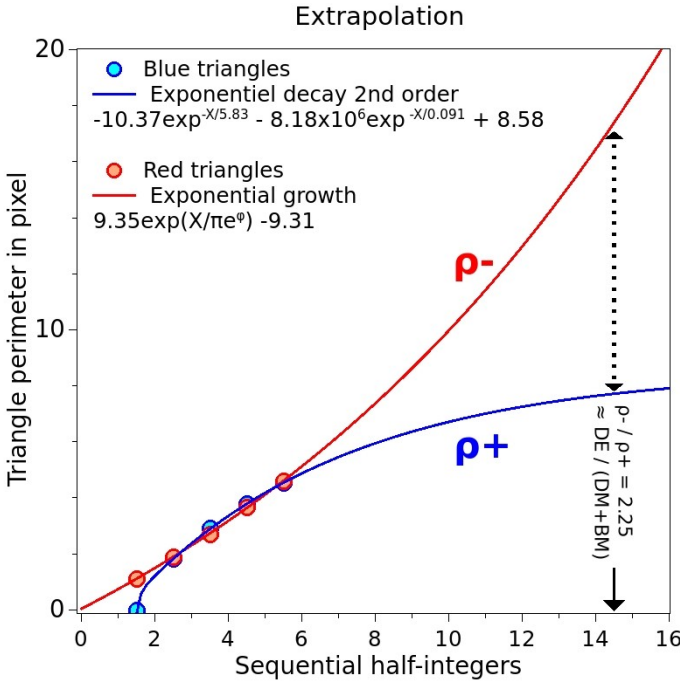


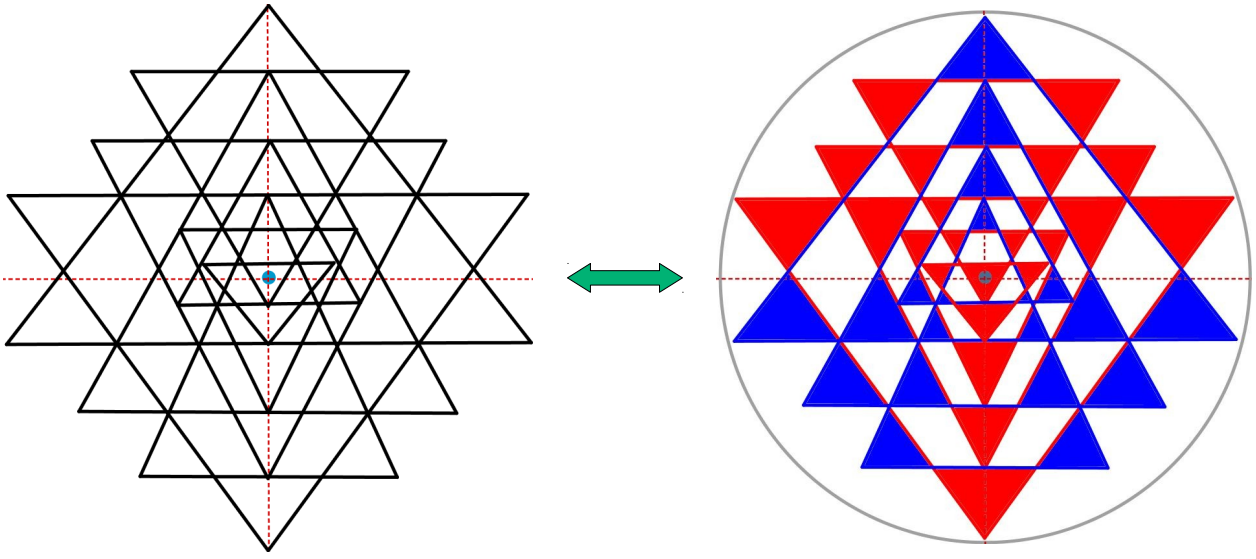
Figure 5: Extrapolation from Fig.4



4. The induced 43 small triangles

The nine central triangles, varying in size and position, give rise to a staggering 43 smaller triangles in concentric levels, with each red and blue triangle generating 3 smaller triangles from their own individual area, as depicted in Fig.6. From interior to exterior, we count respectively 1, 8, 10, 10, 14 small triangles around larger and larger truncated rhombi, as it were (Fig.8), indicative of a 1-14 progression with time (Fig.7).

Figure 6: Emergence of 43 small triangles from the intricate positioning and size of the 9 main triangles (artificial colors on the right side to facilitate identification).



It was decided to examine the ratio of small triangles to respective main triangles, in terms of perimeters. The perimeter of all small triangles were measured in pixel (c.f. Fig.8). The sum of the 3 small triangles was then calculated and ratio'd to the corresponding main triangle. Results are presented in Table 2 and graphed in Fig.9

Table 2: Ratio of ∑small vs. large triangle (p=perimeters in pixel)

Main Triangles	**Small Triangles $\sum p_s$ ∑ perimeters of corresponding 3 small triangles in pixel**	**Ratio $P_L / \sum p_s$**
R_1	1.193	0.928
R_2	1.524	1.24
R_3	2.092	1.29
R_4	2.061	1.78
R_5	2.908	1.58
B_1	Nil	Nil
B_2	1.388	1.316
B_3	1.816	1.608
B_4	2.437	1.558
B_5	2.832	1.602

Figure 9: Ratio of main triangle to the corresponding sum of 3 induced small triangles

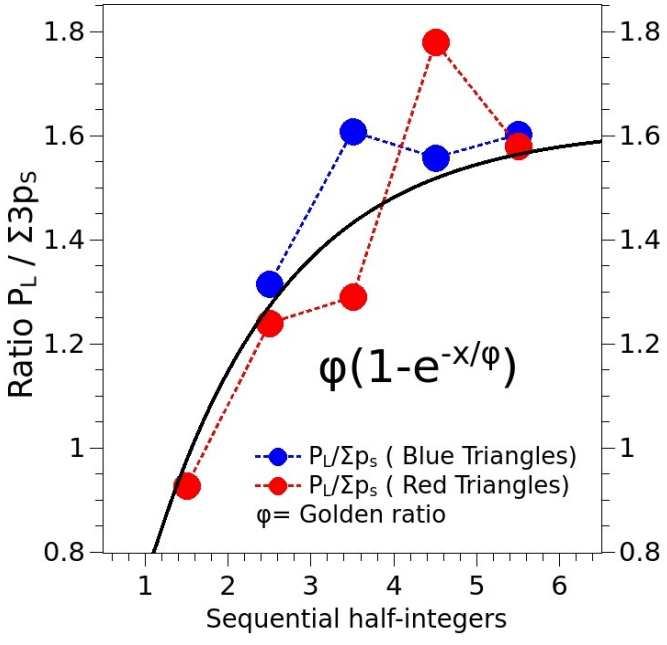
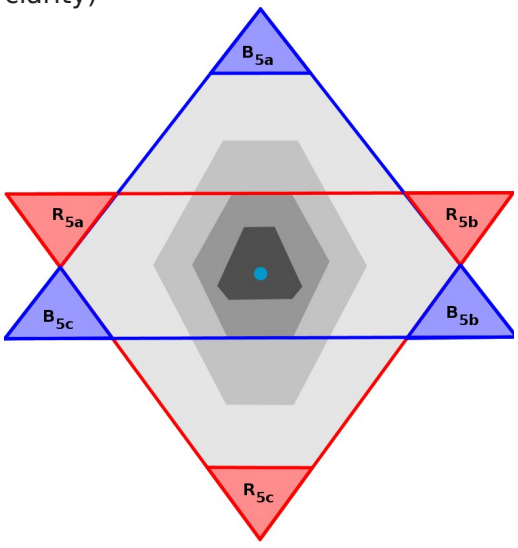


Figure 7: Small triangles sequence from 1 to 14 in concentric levels (inner to outer shell)

Figure 8: Three small triangle and corresponding main triangle (only 2 large triangles are shown here for clarity)



It was found that ratios seemingly converge in average toward the golden ratio as X progresses on the axis (Fig.9), in a fashion more or less similar to the Fibonacci sequence ratios converging to φ. More startling is the fitted exponential function shown in Fig.9 which involves the golden ratio twice within the same function:

$$Y=\varphi(1-e^{-x/\varphi}) \qquad [1]$$

The 14 small triangles on the exterior appear to be the end result of a progression from 1 to 14 as the cosmic expansion proceeds, indicative of a cosmological process. Number symbolism is discussed in paragraph 7.

5. The concentric circles

The concentric circles, either expressed or latent, are obviously an illustration of spacetime expansion (Fig.10). The four largest circles are inherent to the Sri Yantra figure, while the three smaller circles were constructed off the triangles network, based on existing knots and small triangles disposition.

The circles radii in pixel were quantified and graphed in Fig.11. Data were best fitted with a logistic function, which ended up closely mimicking the expansion of the universe as developed by the Big Bang theory, although without initial inflation. The 3-D equivalent of Fig.11 is constructed in Fig.12. It mirrors the common bell shape of universe expansion principles from current physics understanding.

Figure 10: (3+4) concentric circles from Sri Yantra

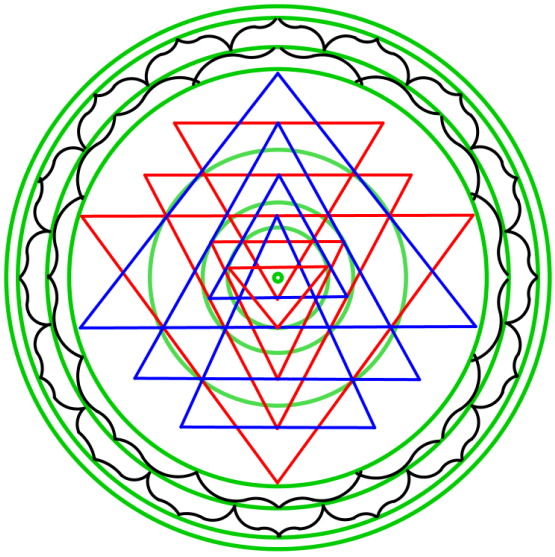


Figure 12: 3-D construction from Fig.11

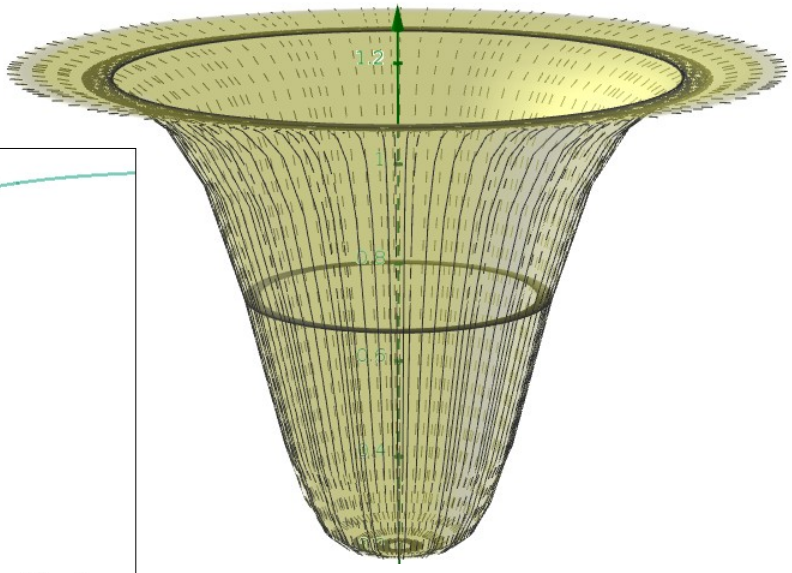
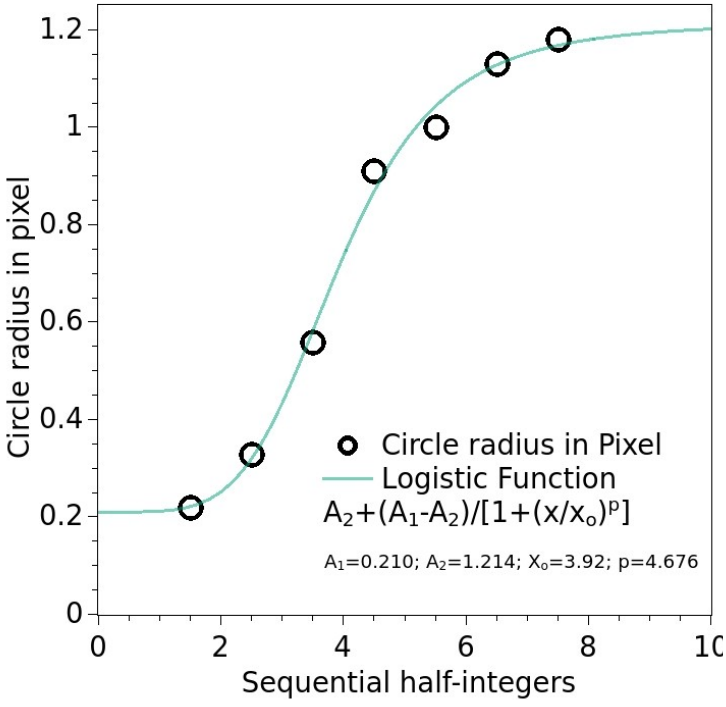


Figure 11: Circles radii in pixel



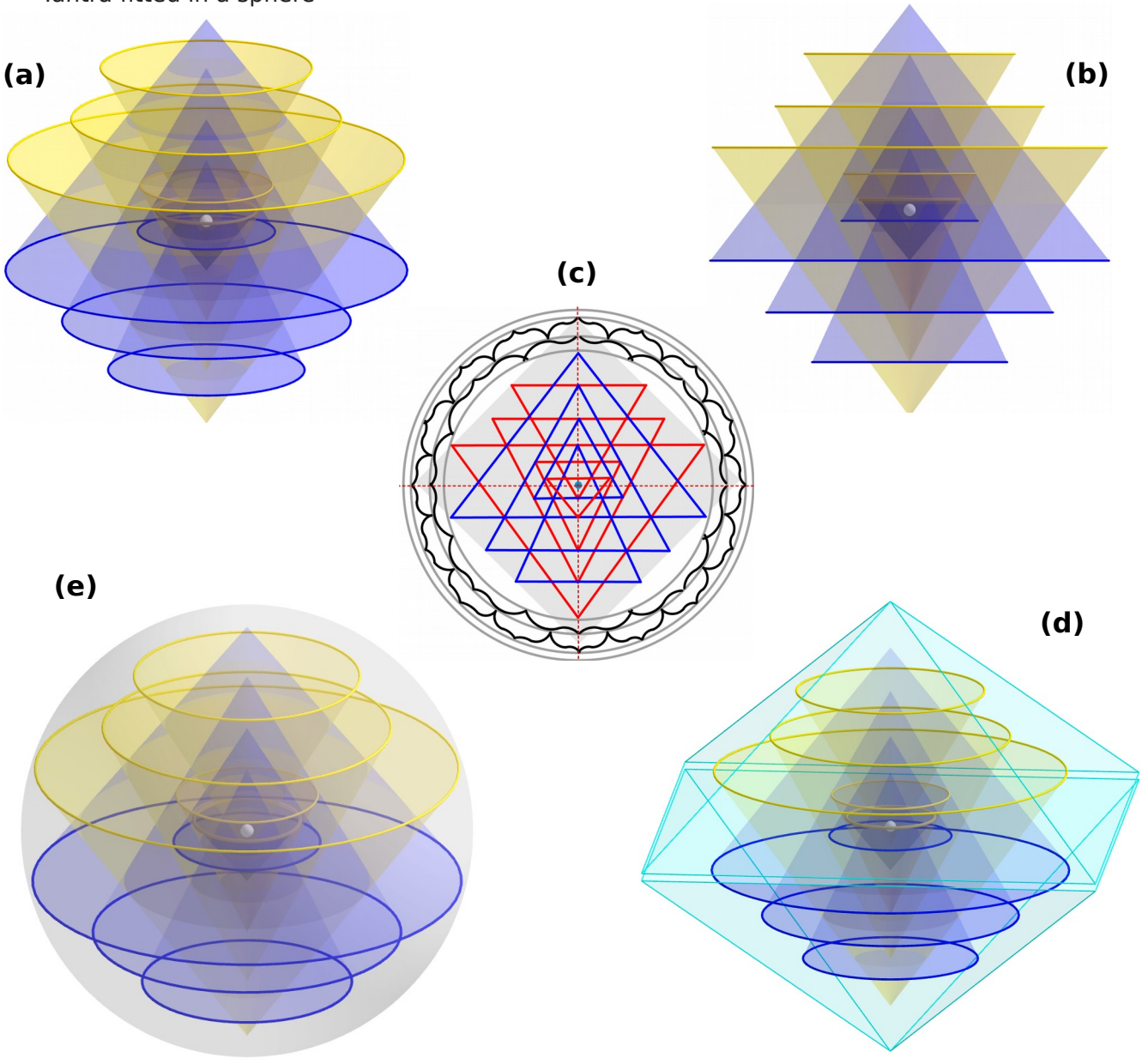
6. The 3-Dimensional Sri Yantra

The question arose whether the common Sri Yantra was a 2-D blueprint of a more sophisticated 3-D structure. In this eventuality, the nine main triangles would likely have cone shape, as depicted in Fig.13a, and therefore the 2-D Sri Yantra layout (Fig.13b) would be the observation of the straight up 3-D construction at 90° angle (perpendicular).

Further, one can readily figure out a square hint in the Sri Yantra 2-D pattern (Fig.13c). This square would be the base for a pyramid or/and octahedron (Fig.13d), while the outer circle would be a sphere (Fig.13e).

The hypothetical 3-D structure of the Sri Yantra reveals hidden geometry that might be helpful in understanding the details of the cosmological insight depicted by the iconic Sri Yantra design, as well as its mysterious provenance.

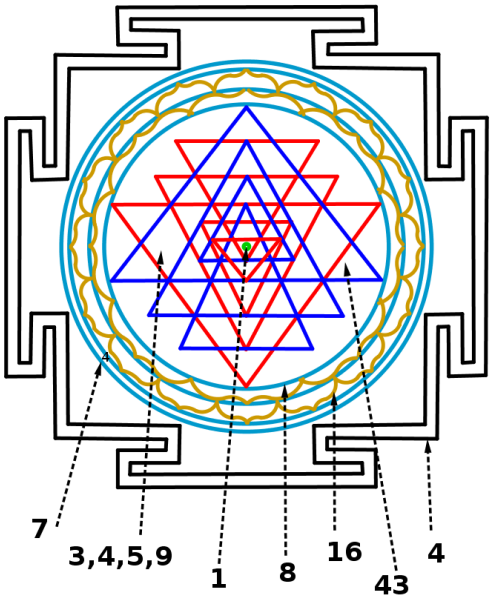
Figure 13: (a) Sri Yantra 3-D model; (b) 90° view of the 3-D Sri Yantra; (c) Undefined square deducted from the Sri Yantra design; (d) 3-D Sri Yantra fitted in an octahedron; (e) 3-D Sri Yantra fitted in a sphere



7. Sri Yantra & numbers symbolism

The Sri Yantra appears to be a paragon of precision and knowledge within the rich world of Hindu cosmology. It is a subtile representation of concentrated energies. All the minute details of the Sri Yantra have astonishing intuitive connections to cosmological processes and mathematical purport, and abounds numeric values that carry unambiguous relevance to cosmology. Some of these numbers can be identified as 1, 3, 4, 5, 7, 8, 9, 14, 16, and 43 (Fig.13).

Figure 13: Manifest numbers in the design of Sri yantra



The number 1 carries the uniqueness, the origin and source of all creation from which the cosmos comes into existence, and to which it goes back at the end of its lifetime. This is the bindu symbolizing a preexisting cosmic consciousness, from which emerges the cosmos through self-division and recombination processes [8-9]. It can also endorse the point of singularity pre-existent to the Big Bang event in the standard model of cosmology [10].

The number 3 is found within the triangles themselves. If the bindu is the seed, then the primary triangle is the sprout. The number 3 can be traced back to multiple processes or conditions of critical cosmological interest. One of them is certainly the generation of 3 quarks in nucleons [11-12] as the source of baryonic matter. Another meaning is the emergence of the first two cosmic entities from the preexisting cosmic consciousness, through self-division and recombination [7-9], in a manner following the Fibonacci sequence [1,1,2,3..] and the golden ratio (Fig.14). The latter has been honored by the Trinity in Christianity for thousands years (Father, Son, Holy Spirit) [13]. Hinduism also praises the two offspring (Son and Holy Spirit) as Prakriti / Purusha or Shakti / Shiva binaries.

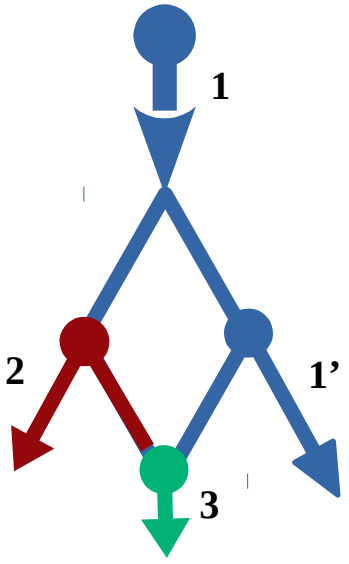


Figure 14: The initial self-divisions of the primal Substance leading to two daughters with opposing polarities

The 9 triangles are very likely referring to the 9 fragmentation of the primal cosmic Substance (consciousness), from which multiple recombination pathways drove the emergence of the cosmos [7].

8 & 16 are interrelated, since 8 gives rise to 16 via self-division, as the cosmos expands, which is symbolized by the expanding lotus flower circles. It has been advanced that chemical elements could be classified from sixteen oscillatory patterns [14].

The number 43 corresponding to {(6*7)+1} appears to be linked to the octahedron geometry and the so-called flower-of-life pattern.

This number 43 seems to have a critical reality in the cosmos structural make up, and will be developed in a future article.

The number 14, which corresponds to the number of small triangles on the outer circle of the central figure, seems to be related to the number of “worlds” as described in Hindu scriptures [15], or possibly dimensions as related to modern mathematics. It was also demonstrated that the 64-tetrahedron grid concealed 14 octahedron cavities [16].

The number 4, 5, 7, 10 can be linked to numerous cosmological principles, and will not be discussed any further in this article.

The Sri Yantra is a geometric masterpiece. It stands as a remarkable testament to the forward-thinking cosmological concepts held by ancient Indians, especially considering their limited technological development. Far from being simplistic, their understanding of the universe, as embodied in this complex diagram, was deeply sophisticated. The origin of this human knowledge is puzzling [17].

8. References

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