The Divine Measure Of Time & Space
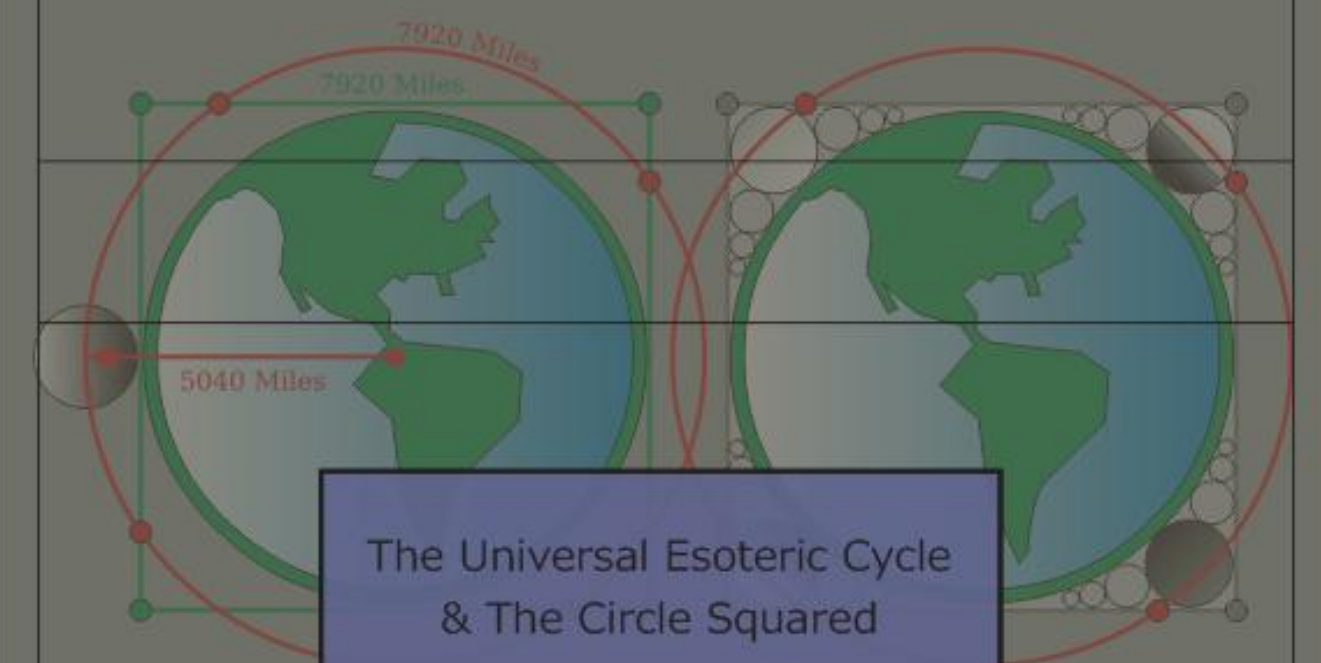
The Universal Esoteric Cycle
& The Circle Squared

$$\frac{4}{\pi} : 1 : \frac{\pi}{4}$$

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[This is a work in progress...]

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Introduction

Cycles are a fundamental part of human life in the physical universe. Our living planet and its biosphere are controlled and organized by cycles. Cycles are built into the cosmic and microcosmic structure of the universe. For example, on our planet we experience the cycle of night and day, the cycle of the four seasons, the cycle of the 365+ day year (etc.).

Repetitive cycles allow us to predict future outcomes based on past experience of the cycle. The Earth's annual cycle, for example, is composed of four seasons that we expect will repeat each year in a relatively consistent manner. The rational mind is naturally attuned to the logical linear repetition of cycles and our basic human perception (i.e. our basic interpretation of the world) is founded on this particular paradigm of logic. Our linear-based perception of the physical world is useful as we interact with our local environment during our day-to-day lives, but the mental body's rational perception is typically blind to other extraneous subtle, but powerful forces that are also influencing our world from behind the veil of material appearances. These forces originate and operate below the surface of mundane reality, but their influence penetrates into and subtly affects the world in which we live. These forces tend to surprise the rational mind by upsetting the expected consistency of the regular cycles of life.

Modern humanity understands that our planet's day/night cycle is due to the rotation of the Earth. We are also aware that the four seasons are caused by the tilt of the Earth on its axis in relation to the Sun around which it orbits (i.e. in a 365+ day cycle).

Theoretically, and based on this reasoned perception, the rational mind might assume that our experience of the four seasons will be consistent from year to year. This assumption is based on the fact that the course of the seasons repeats in an endless cycle that basically follows the cycle of planet Earth as it orbits around the Sun—a cycle that isn't likely to change anytime soon. But there is another more subtle influence that ensures that each cycle of the Earth around the Sun is different from the last. This influence is due to the movement of the Sun itself in a large circular sweep within the local region of our Milky Way galaxy. Of course, planet Earth and all of the Sun's satellites are carried with the Sun on its mysterious path through the heavens. Thus, even though every year winter occurs at the same point in Earth's orbit around the Sun, it is occurring in a slightly different region of the galaxy (i.e. due to the Sun's own orbital trajectory). Just how this changing cosmic influence effects the mundane cycles of planet Earth is unknown, and is not generally considered by the rational mind.

I have used the Earth's natural seasonal cycle as an example to demonstrate the characteristic nature of the subtle forces that transform an otherwise **mundane** cycle into an **esoteric** cycle. A mundane cycle is one that is relatively obvious to the rational mind. We call a cycle 'esoteric' when we also take into consideration the less obvious influences that are effecting the cycle 'externally', or from another 'dimension'.

Symbolically speaking, the orbit of the Earth around the Sun can be termed a mundane cycle when it is interpreted as following a repetitive circular (or elliptical) path. On the other hand, the 'esoteric' cycle of the Earth's orbit around the Sun also acknowledges the Sun's own movement through space and therefore is perceived not as a circle, but as a spiral. This example demonstrates how an extra (usually hidden or obscure) 'lateral' influence is applied to a 'mundane' cycle to convert it into an 'esoteric' cycle.

This book uses sacred geometry and mathematics to determine and describe the universal nature of esoteric cycles. It explains the basic form

and structure of the prototypical universal esoteric cycle, which as you will see, is very similar to the esoteric cycles described in the teachings of Theosophy.

The Creation Unit

Our quest to determine the structural nature of the prototypical universal esoteric cycle begins with what I call a 'creation unit'.

I define a creation unit as a circle with a diameter of one unit. This is the simplest geometric form and therefore it is ideally qualified to represent the fundamental unit of creation.[1]
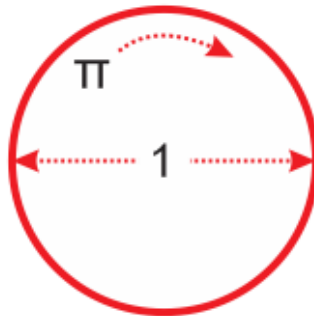
Figure 1 - The Creation Unit

A creation unit has a diameter of 1 and the length of its circumference is Pi (π).

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[1] A 'creation unit' is a form that abstractly represents an original cosmic building-block of the Universe. There are a total of seven primordial 'creation units'.

Pi is a mathematical constant. It is classed as an irrational number—meaning that its decimal never ends or repeats. It is also classed as a transcendental number because it also has other unusual mathematical properties.[2]

The nature and value of Pi is an important key that will help us determine the prototype of the universal esoteric cycle.

The length of the circumference of a circle is almost exactly equal to three times the length of its diameter. The reason why the circumference is **not** exactly equal to three times the diameter is a key to the mysteries (as you will discover as you read this book).

The discrepancy is represented by the irrational transcendental decimal portion of Pi.

The Pi constant is equal to:

~3.1415926535897 …

This is the measure of the circumference of a creation unit. The integer '3' represents three diameter lengths of one unit. The decimal portion continues indefinitely and symbolizes the mysterious transcendental and irrational influence that permeates the universe. It effectively prevents the circumference of a creation unit circle from ever completely closing.[3]

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[2] http://en.wikipedia.org/wiki/Pi
[3] That is, because it is a never-ending decimal.

The fact that a creation unit circle never closes is symbolic of the notion that there is no such thing as a closed cycle in the universe. The rational mind thinks it sees a closed cycle (i.e. a closed circumference) when it looks at a circle, but this is an illusion that is based on the mind's limited perception of the mundane material world.

It is remarkable that mathematicians have decided to use the words 'irrational' and 'transcendental' to describe the Pi decimal because these words also perfectly describe the esoteric influence that the Pi decimal represents within the divine Creation.[4]

The Sevenfold Circle of Creation

A 'creation unit' symbolizes the basic building-block that the Creator uses in the formation of a universe. As you will see below, the Creator must adjacently combine seven creation units in order to complete the larger circle that symbolizes the universe. In other words, the process involves positioning seven small circles adjacent to each other to create one large all-encompassing circle.

Like its component creation units, a universe is represented by a circle because a circle's circumference delineates in the simplest way possible a singular, self-contained region of space. The process of creation is symbolized as unfolding within the space (or area) inside the bounding perimeter of the circle's circumference.

The various characteristics of the geometry of a circle conceal with a veil of symbolism the deepest esoteric secrets of the universe. We are attempting to unveil some of those mysteries in this book.

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[4] But perhaps instead of 'irrational' the term 'supra-rational' would better describe its esoteric influence.

The Circle of Creation is produced by positioning seven creation unit circles adjacent to each other as follows…
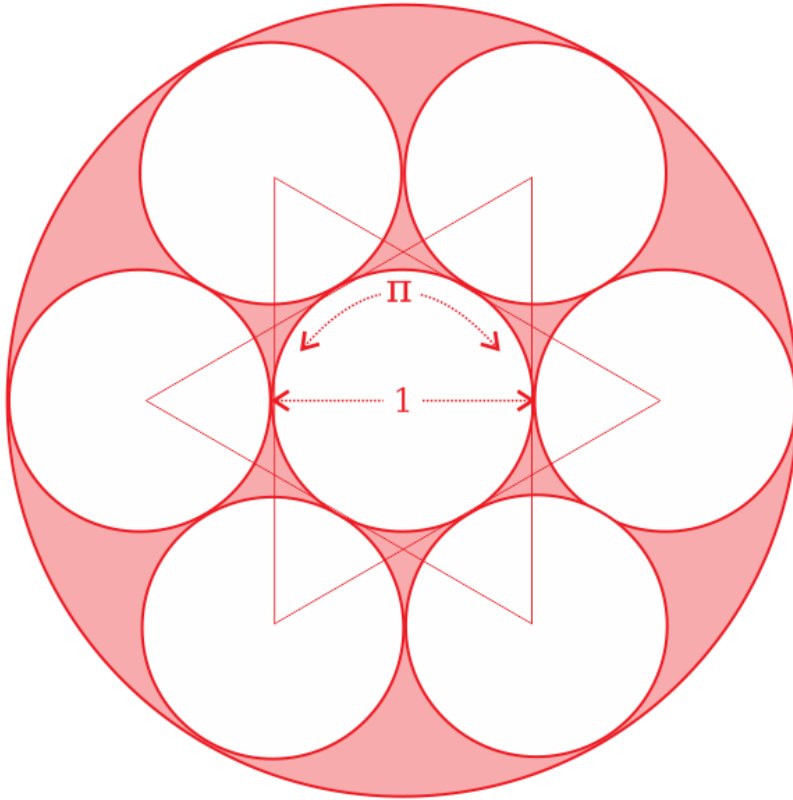
Figure 2 – The Sevenfold Circle of Creation

It is not until the seventh circle is finally added that the larger Circle of Creation (shaded pink above) is completed.

The Hebrew bible reveals this mystery in the *Book of Genesis* wherein the Creation is said to occur over a period of six days—that is, six days of form-building, and then a seventh day of 'rest'. In other words, the seventh day allows the Creator to establish Himself at the hidden centre of the physical universe.

The Mundane Cycle

Our normal 'rational' perception of the mundane world is represented by the six adjacent creation unit circles that touch the circumference of the larger Circle of Creation. The arrangement of these six circles reflects (in a symbolic sense) our characteristic linear spatial awareness, and also our linear perception of time. This is explained below.

It was the ancient Babylonians who divided the circle into six equal portions and then each of those six portions into sixty smaller measures that we now call degrees.
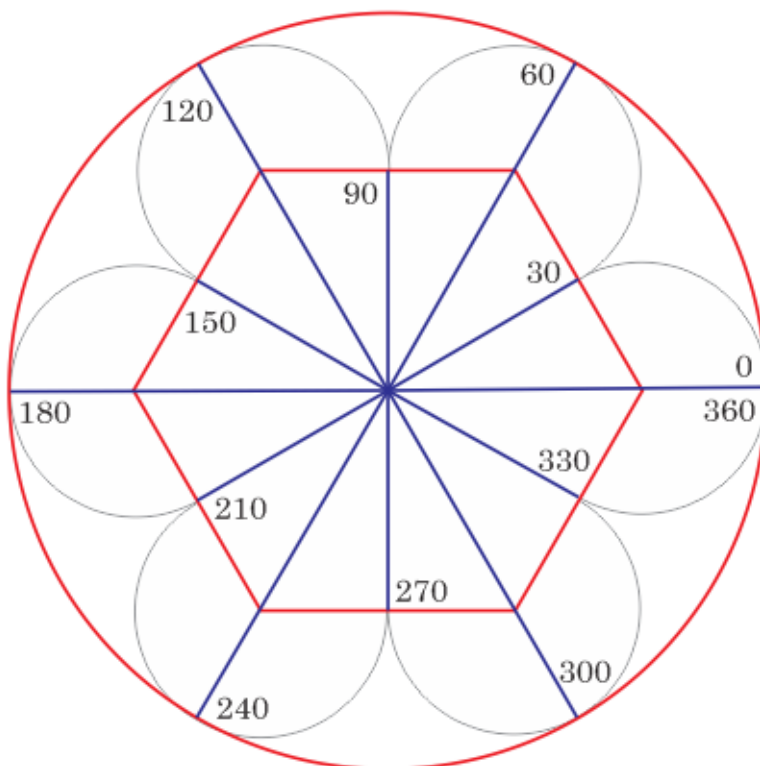
Figure 3 - The Hexagonal Division of the Circle

Since then, the 360 degree circle has formed the basis for our sense of direction as well as our basic measure of the angular relationship between points in space.

This hexagonal division of the circle is also the basis for our measurement of time. The 24 hours of a day are measured by a clock-face that is divided into twelve equal portions, or in other words, two interlaced hexagrams. Similarly, a year is divided into twelve months.

The illusory nature of the hexagonal division of space/time is represented in the Circle of Creation by the *apparent* omission of the seventh (i.e. central) creation unit circle in the process of dividing the circumference.

The rational mind sees a sixfold division of the circumference and therefore naturally assumes that only six elements (i.e. six creation unit circles) are involved in the division process, but in reality a seventh hidden central influence is also fundamentally implicated in the calculation. The influence of the seventh circle is present in the sixfold division, but it is not obviously included in the resulting numerical configuration. Symbolically speaking, this reflects the rational mind's tendency to be 'deceived' by a superficial 'six-fold' impression of the mundane world—it fails to notice the illusive seventh component.

The seventh (i.e. central) creation unit circle symbolizes the irrational transcendental decimal portion of Pi. It was the ancient Egyptian's knowledge of this esoteric mystery that led them to use the fraction $\frac{22}{7}$ to represent their sacred Pi approximation.[5]

The earliest evidenced conscious use of an accurate approximation for the length of a circumference with respect to its radius is of $3 + 1/7$ in the

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[5] The ancient Egyptians incorporated this esoteric proportion 22:7 into the design of the Great Pyramid of Giza.

designs of the Old Kingdom pyramids in Egypt. The Great Pyramid at Giza, constructed c.2550-2500 BC, was built with a perimeter of 1760 cubits and a height of 280 cubits; the ratio 1760/280 ≈ 2π. Egyptologists such as Professors Flinders Petrie] and I.E.S Edwards have shown that these circular proportions were deliberately chosen for symbolic reasons by the Old Kingdom scribes and architects. The same apotropaic proportions were used earlier at the Pyramid of Meidum c.2600 BC. This application is archaeologically evidenced, whereas textual evidence does not survive from this early period.[6]

The fraction 22/7 is equal to $3\frac{1}{7}$ where the irrational decimal portion of Pi is represented by $\frac{1}{7}$.

$$\boldsymbol{Pi} \cong 3.141592 \ldots$$

$$\boldsymbol{3\frac{1}{7}} \cong 3.142857 \ldots$$

$$\boldsymbol{\frac{1}{7}} \cong 0.142857 \ldots$$

As you can see, the Pi constant and 22/7 approximate each other quite closely.

Because the seventh creation unit circle is $\frac{1}{7}$ of the total number of creation unit circles that together compose the Circle of Creation it can be said to represent the $\frac{1}{7}$ portion of Pi[7]—or in other words, the decimal 0.142857…

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[6] http://en.wikipedia.org/wiki/Pi
[7] I.e. that portion of the Egyptian Sacred Pi estimate 22/7.

The rational mind does not see the $\frac{1}{7}$ decimal portion of Pi. Instead it sees (or thinks it sees) an exact threefold division of the circle's circumference (i.e. the '3' of $3\frac{1}{7}$), or two interlaced triangles producing the illusion of a hexagonal division.
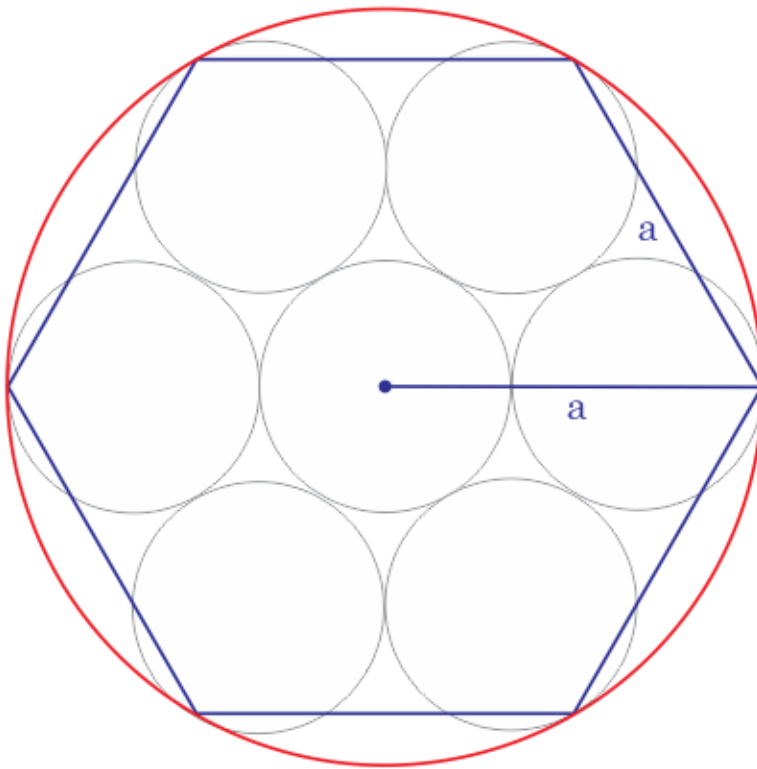
Figure 4 - Circle Radius = Hexagon Side

Another way of understanding the illusory perception that the hexagonal division of the circumference represents is by realizing that **each side of a hexagon is exactly equal to the radius of the circle in which it is inscribed**. This means that **the perimeter of the hexagon is equal to exactly three times the diameter of the circle**. But, we know that the length of the circumference of a circle is equal to a little bit more than three times its diameter. The discrepancy is represented by the irrational decimal portion of Pi. So in other words, the hexagon is *apparently* failing to include the Pi decimal in its division of the Circle of Creation's

circumference. The reason that it fails to do so is because the six sides of the hexagon are straight lines, whereas the circumference of the circle containing it is curved.

The diagram above demonstrates that the radius of a circle (a) is equal to the length of the side (a) of the inscribed hexagon. The illusion it symbolically portrays is that the circumference of the circle is equal to '$6\ x\ a$' whereas in fact it is equal to '$6\ x\ a$' plus a small amount reflecting the decimal portion of Pi. If $a = 0.5$ then the perimeter of the hexagram $= 3$, but the circumference of the circle $= 3\frac{1}{7}$ (approximately).

In other words, space and time are not linear (as is usually perceived by the rational mind) but rather, space and time are curved. Our standard measure of space/time, because it is based on the hexagonal division of a circle, reflects the limited illusory perspective of the rational mind and reinforces the false perception that space/time is linear.

The Universal Esoteric Cycle

In order to determine the structure of the universal esoteric cycle we must take into account the curvature of space and time as represented by the curvature of the circumference of the Circle of Creation. So we must divide the circumference not with a hexagon, but with some other form that incorporates as part of its essential nature the irrational decimal portion of Pi. In other words, a form that takes into account the curvature of the circle's circumference.

As it turns out, science has already discovered the esoteric measure of a circle's circumference. It is called a 'radian'.
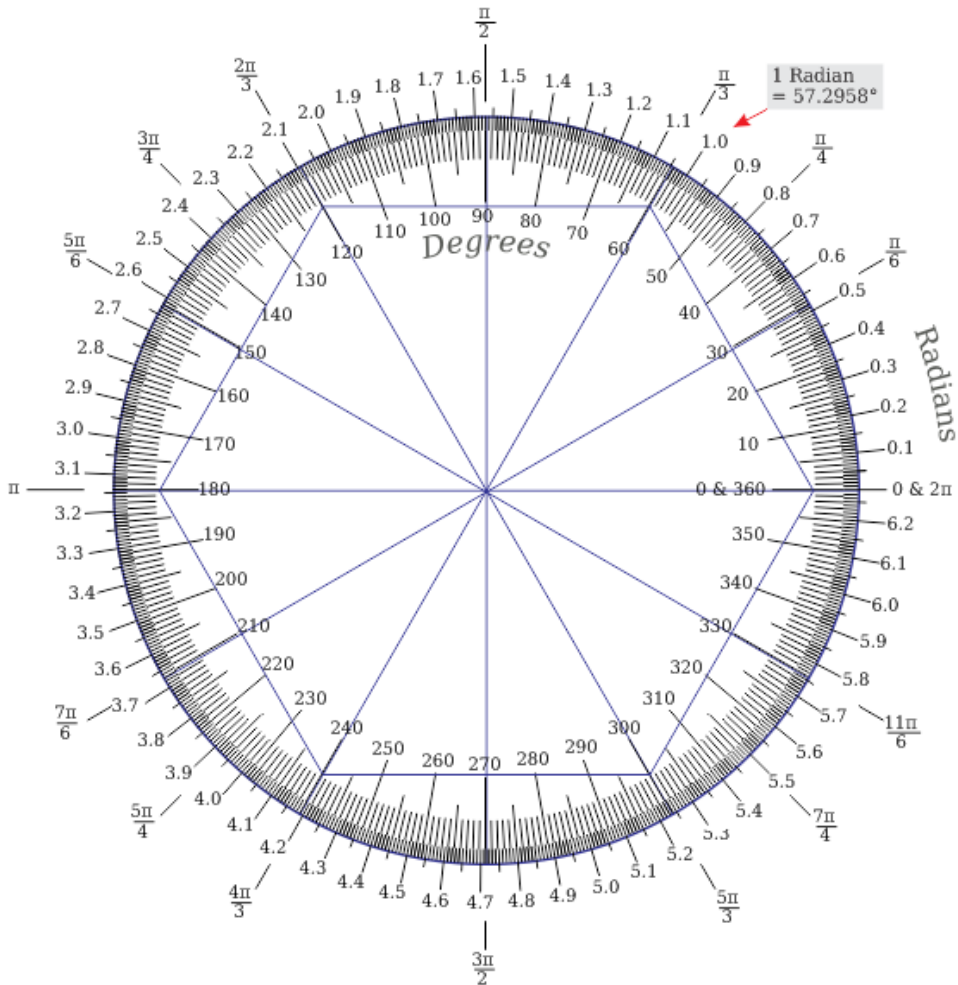
Figure 5 - The Radian Wheel

[Base image courtesy of Wikipedia.]

A radian is the esoteric (or 'non-linear') equivalent of one side of a hexagon. The hypothetical figure that is the radian-based esoteric equivalent of a hexagon has 44 curved sides, each of which is the length of one radian, and its existence spans seven adjacent dimensions. [8] This

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[8] In actual fact this figure has over 15840 sides and spans more than 2520 dimensions, but its full extent is subdivided into tiers of seven progressively linked sub-cycles. In other words, it represents an open system subdivided into

esoteric 44-sided figure does not have a name that is known in the modern world, but we could tentatively call it a 'radiagon'.

The Radian

An easy way to understand the difference between a radian and the side of a hexagon is by considering the following diagrams…
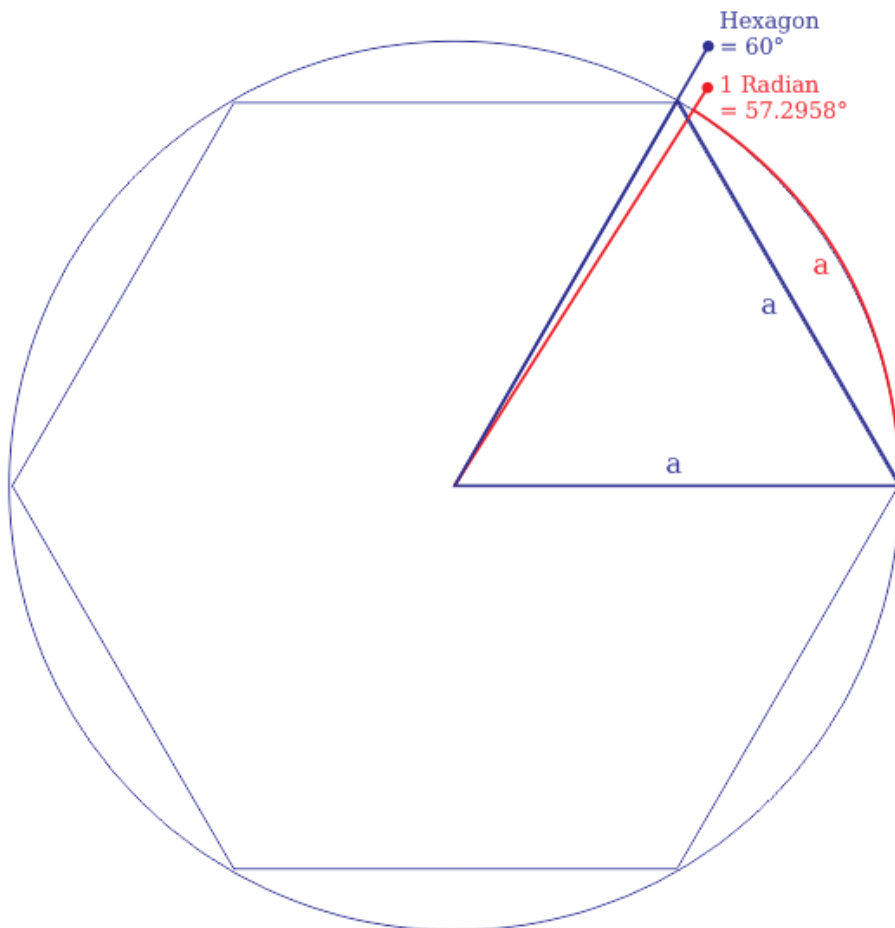
Figure 6 - Radian vs. Hexagon

linked groups of seven. In this book we are mainly examining the first tier of seven sub-cycles.

A radian represents the length of the radius of a circle as measured along its circumference. Its measure produces an angle of 57.2958°. The hexagonal division of the circumference, on the other hand, produces an angle of exactly 60° (i.e. a 'sextile').

In the diagram above, all three lines labelled 'a' are the same length. The red line labelled 'a' is equal to one radian. The slight difference in the angles formed by the red and blue lines is due to the curvature of the circle's circumference—i.e. symbolizing the curvature of space/time.

The side of a hexagon, like a radian, is equal to the length of the circle's radius, but unlike a radian, the hexagon applies a straight-line measurement to the circumference which is inappropriate because the circumference of a circle is curved. Thus, a hexagon represents a linear model of reality applied to an essentially curved structure. It symbolizes the mode of perception and thinking of the rational mind.

If, on the other hand, we divide the circumference of the circle using a radiagon we are appropriately applying a non-linear (or 'lateral') model of reality to a non-linear figure. This will lead to a more accurate perception (or symbolic representation) of the curved reality of time and space.

A radian incorporates in its division of the circumference of a circle the complete Pi constant whereas the side of a hexagon only considers the integer '3'—i.e. it ignores the irrational decimal portion of Pi.

Here's a mathematical demonstration of this comparison…

A creation unit circle has a diameter of one and a circumference equal to Pi (π).

Because the radian measure is based on a circle with a **radius** of one unit (rather than a **diameter** of one) we need to double the standard radian measure for this demonstration.

$$57.2958° \, x \, 2 \, = \, 114.5916°$$

Now we divide that number into the 360 degrees of a circle.

$$360° \, / \, 114.5916°$$

$$\cong \mathbf{3.14159}\ldots$$

$$= Pi$$

Applying the same procedure to a measure based on the side of a hexagon gives...

$$60° \, x \, 2 \, = \, 120°$$

$$360° \, / \, 120°$$

$$= \mathbf{3}$$

As you can see, the hexagon-based measure is exactly three. It omits the decimal portion of Pi from its linear division of the circle's circumference.

The Sevenfold Spiral

The division of a circle's circumference by a hexagon results in six equal sectors beginning from 0° and ending at 360° (i.e. returning to 0°). In other words, it closes the circle in a cycle that eternally repeats itself. The change that occurs during the cycle is regular and predictable because it represents a closed system—i.e. there are no obvious external variables impacting on, and affecting, the course of the cycle.

In reality, however, the universe is unpredictable, and regular cycles are always influenced by external forces that disrupt their regularity.

The radian-based (or radiagon-based) model we are developing and exploring during the course of this book incorporates as part of its natural structure the influence of these kinds of non-linear (or extra-dimensional) forces. These forces are concealed behind the veil of 'mundane appearances'. They emanate through that veil and encroach upon our world from the 'chaotic' realm of the supra-rational Unknown. The intuitive mind perceives and acknowledges these forces because it is not constrained by the rational mind's natural focus on surface appearances.

A radiagon is a hypothetical abstract geometrical figure with 44 curved sides spanning seven dimensions (or having seven tiers). The fact that it's composed of seven adjacent tiers reflects the inclusion of the seventh (i.e. central) creation unit circle in its division of the circumference of the Circle of Creation. As you know, the hexagonal (i.e. sixfold) division of the circumference represents a mundane perception of the world. A radiagonal (i.e. non-linear sevenfold) division of the circumference, on the other hand, symbolizes an esoteric (or 'intuitive') perception of the world.
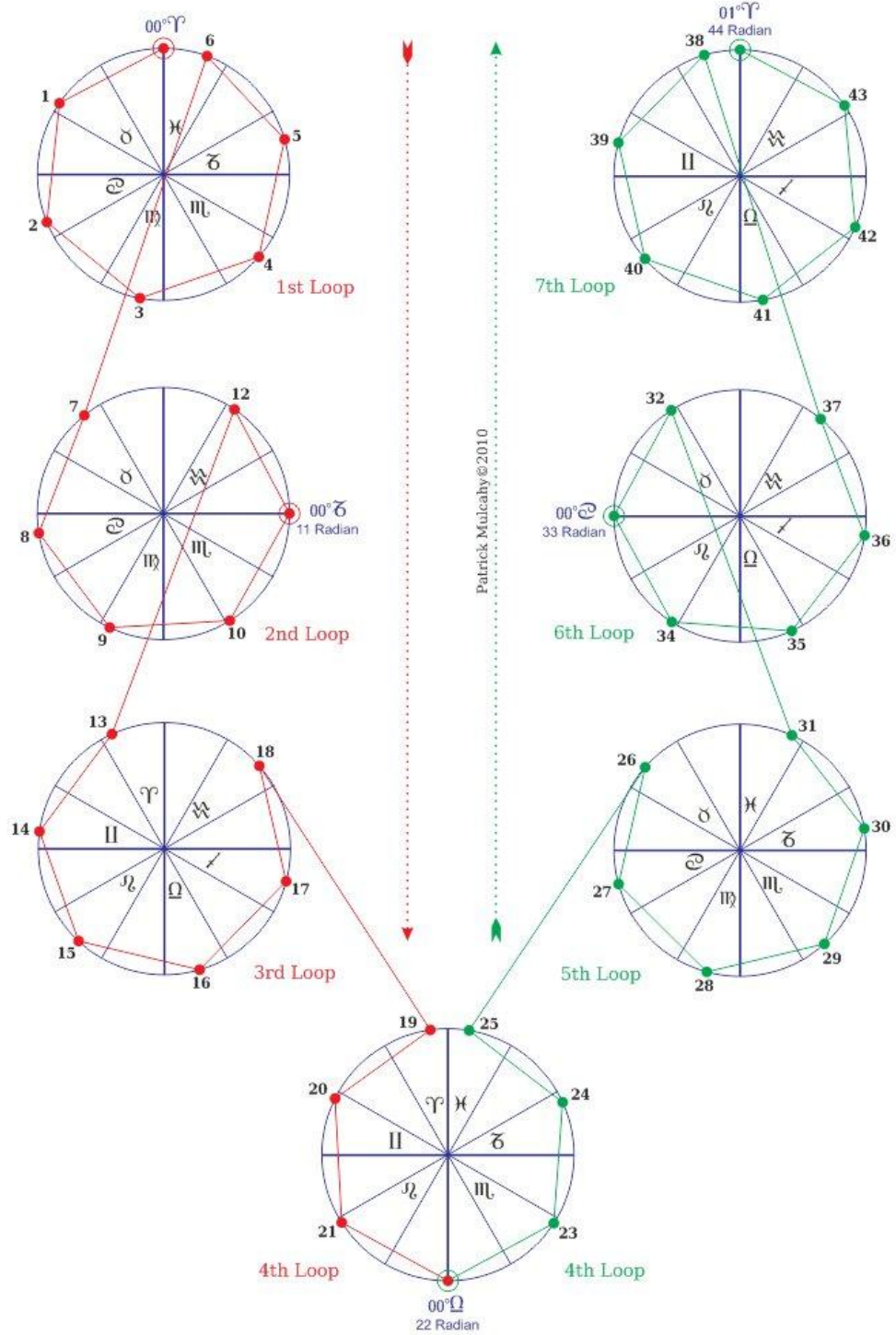
Figure 7 - The Universal Esoteric Cycle

When a radiagon is mapped to a circle it divides its circumference into sections of ~57.2958° (i.e. one radian). This mapping results in an uneven division of the circle and therefore a process of overlapping is required in order to complete the cycle it represents. The overlapping process produces a spiral form with multiple arcs (or levels) rather than one closed circle (as is produced by a hexagonal division).

The mapping of the radiagon to a circle produces a spiral of seven arcs. The spiral is divided into 44 sections (i.e. radians). Each arc of the spiral has seven sections—five sections in its main sweep, one section joining it to the previous arc, and one section joining it to the next arc. During the first sub-cycle, the first and fourth arcs contain six main sections plus the two adjoining sections.[9]

The diagram above is a two-dimensional representation of the first seven tiers of a radiagon. Its 44 curved sides form a spiral of seven arcs. I have used adjoining straight lines in order to clearly identify the 44 radian divisions of the spiral (or radiagon).

The sevenfold spiral is naturally divided into two mirrored halves. In the diagram above I have represented the UE Cycle (i.e. Universal Esoteric Cycle) as a descending spiral that reaches its lowest point halfway through the fourth arc (i.e. at the 180° point[10], or astrologically at 0° Libra). The cycle then rises through another three and a half arcs and returns to the 0° point (or astrologically, 0° Aries).

Note however, that the cycle returns not to exactly 0°, but rather to ~1°01'. I call this mathematical constant (i.e. 1.014°) the Radian Comma. (See below.) All these measures are approximate because the decimals involved in the calculations are irrational.

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[9] But these exceptions only occur in the first sevenfold tier of spiral arcs.
[10] To be more precise, its lowest point is ~180°30'.

This means that the sevenfold spiral does not end at 0°, but rather it flows into another sevenfold spiral that begins at 1°01' (and that ends at 2°02'). In other words, this repeating spiral-cycle is eternal and ever-changing. We can however, determine its rhythm, or harmonic pattern.

The UE Cycle is divided into tiers of seven linked sub-cycles, or a spiral of seven arcs that folds back upon itself. The turning point of the spiral occurs after 22 radian divisions. The spiral returns to nearly its starting point after 44 radian divisions (or 44 sides of the radiagon). The spiral returns to a point very close to one degree (i.e. 1°01') from its original starting position. Therefore we can extrapolate and state that the UE Cycle will experience another major return after 360 spirals—i.e. because each new sevenfold spiral begins almost exactly one degree after the previous spiral, and there are 360 degrees in a circle.

This means that the 'higher order' return of the UE Cycle occurs after $360 \ x \ 7 \ arcs$ (i.e. 2520 spiral arcs) or after $360 \ x \ 44 \ radians$ (i.e. 15840 radians[11]).

But the 15840 radian point doesn't mark the end of the UE Cycle because the cycle is also changing by approximately one minute of arc after each sevenfold spiral, and because these calculations are approximations of irrational numbers it means that the UE Cycle never actually completes (or closes)—it is eternal.

That is one effect that the irrational transcendental decimal portion of Pi has on the structure of our reality. Without it our universe would be represented by the closed regularity of a circle, and an extremely limited repetitive (relatively static) cycle of existence.

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[11] Or radiagon sides.

The Radian Comma

There's a close geometric parallel between the radian spiral and the 'spiral of fifths' (of music theory). The similarity is due to the fact that both spirals produce a very small residuum (or 'remainder') when they're overlaid onto a circular template. When the 'spiral of fifths' is forced to conform to the circle of seven musical octaves its natural form must be modified in order to remove the residuum.

The 'spiral/circle of fifths' is based on the ratio 3:2 (or the fraction 3/2) which is the most consonant non-octave interval (according to music theory/geometry).

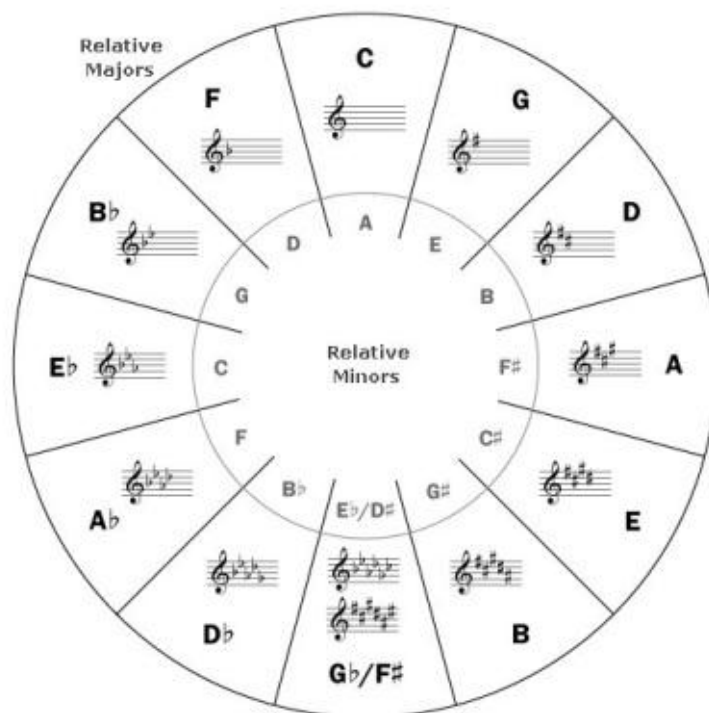Wikipedia describes the circle as follows:

Figure 8 - The Circle of Fifths

"...the circle of fifths is a circle of closely related pitches or key tonalities. Musicians and composers use the circle of fifths to understand and describe those relationships. The circle's design is helpful in composing and harmonizing melodies, building chords, and moving to different keys within a composition." [12]

Our Western musical system is challenged, however, by the 'circle of fifths' because in reality, it's not a circle, but rather, a spiral.

"This interval [i.e. 3/2] has serious implications for the various tuning schemes of the chromatic scale, because in Western music, 12 perfect fifths and seven octaves are treated as the same interval. Equal temperament, today the most common tuning system used in the West, reconciled this by flattening each fifth by a twelfth of a Pythagorean comma (approximately 2 cents), thus producing perfect octaves. [13]

"When an instrument is tuned with the equal temperament system, the width of the fifths is such that the circle "closes". This means that ascending by twelve fifths from any pitch, one returns to a tune exactly in the same pitch class as the initial tune, and exactly seven octaves above it. To obtain such a perfect circle closure, the fifth is slightly flattened with respect to its just intonation (3:2 interval ratio).

"Thus, ascending by justly intonated fifths fails to close the circle by an excess of approximately 23.46 cents, roughly a quarter of a semitone, an interval known as the Pythagorean comma. In Pythagorean tuning, this problem is solved by markedly shortening the width of one of the twelve fifths, which makes it severely dissonant." [14]

The artificial closing of the circle of fifths is what our popular Western music system is based on. The procedure is implemented for 'ease of use'

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[12] http://en.wikipedia.org/wiki/Circle_of_fifths
[13] http://en.wikipedia.org/wiki/Pythagorean_comma
[14] http://en.wikipedia.org/wiki/Circle_of_fifths

and is another example of how the linear perception of the rational mind seeks to impose itself on our non-linear reality. If the Creator of our Universe took the same linear-based approach to His/Her work then S/He might remove the irrational decimal portion of Pi and round it to 3.0 (instead of $3.14159265358979323846\ldots$). Then a circle's circumference would be equal to exactly three times its diameter. But then our world would be a place of stasis and stagnation.

The Pythagorean Comma & the Earth Year Differential

The spiral of fifths is prevented from naturally becoming a closed circle by a geometric ratio called the Pythagorean Comma. This very small measure is considered an inconvenient discrepancy by Western music standards. Therefore, it's been removed from our Western music system in order to close the circle of fifths at precisely the same end-point as the circle of seven music octaves.

So, the Pythagorean Comma discrepancy arises when twelve perfect fifths are superimposed upon a circle of seven musical octaves. A slight 'overhang' means that the circle of fifths doesn't close in perfect alignment with the octave circle.

Here's how the Pythagorean Comma is calculated:

$$\frac{12\ Fifths}{7\ Octaves} = \frac{\left(\frac{3}{2}\right)^{12}}{2^7} = \frac{3^{12}}{2^{19}} = \frac{531441}{524288} = \mathbf{1.0136432647705078125}$$

$$Pythagorean\ Comma = \mathbf{1.0136432647705078125}$$

Interestingly, the same issue occurs when the spiral of 44 radians is mapped to a sequence of seven $360°$ circles (or arcs). And this suggests that a similar geometric principle is at work.

The radian spiral winds its way around seven arcs and slightly overhangs the end-point of the sevenfold circular pathway. As explained above, this is exactly what occurs in relation to twelve perfect fifths and seven octaves.

What is most fascinating is that the respective 'overhangs' are almost exactly equal.

Here's how the Radian Comma is calculated:

$$\left(44 \; x \; \frac{180}{\pi}\right) - (7 \; x \; 360) \; = \; \textbf{1.0142985756221185791}$$

$$Radian \; Comma \; = \; \textbf{1.0142985756221185791}$$

The Radian Comma arises because of the difference between 44 radians and seven 360 degree spiral arcs.

$$44 \; radians \; = \; 44 \; x \; \frac{180}{\pi} \; = \; \textbf{2521.014298}...°$$

$$7 \; spiral \; arcs \; = \; 7 \; x \; 360° \; = \; \textbf{2520}°$$

$$Difference = \; 2521.014298 - 2520 = \; \textbf{1.0142}98...°$$

Compare this value to the Pythagorean Comma (previously calculated):

$$Pythagorean \; Comma = \; \textbf{1.0136}432647705078125$$

$$Radian \; Comma \; = \; \textbf{1.0142}985756221185791$$

The difference between the Pythagorean and Radian commas is: 0.0006....

When each figure is rounded to three decimal places they're both equal to 1.014.

Interestingly, the radian comma is also reflected by the ratio of the average length of the Earth's tropical year to the 'ideal' length of an Earth year. The ideal length of an Earth year is figured as 360 days—corresponding to the number of degrees in a circle.[15] The actual length of a tropical year is approximately 365.24218967 days. Their ratio is:

$$Earth\,Year : Ideal\,Year = 365.24218967 : 360$$

$$Earth\,Year\,Differential = \mathbf{1.014}561637972\ldots$$

Compare this to the radian comma...

$$Radian\,Comma \; = \; \mathbf{1.014}2985756221185791$$

$$Earth\,Year\,Differential \; = \; \mathbf{1.014}561637972222222222222\ldots$$

The difference is only 0.00026 ...

This comparison between the Tropical Earth Year and the Ideal Year provides us with another example of the contrast that exists between a 'perfect' circular system and a natural non-linear system. And once again we see the difference between the two systems very closely approximating the radian comma value: 1.014.

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[15] Visit: http://www.ancient-world-mysteries.com/360-days-earth-year.html

The Tau Constant: $\frac{44}{7}$

In the field of mathematics there's a relatively new constant called Tau (τ) that's been promoted as a practical alternative to Pi (especially in radian-based mathematics).

The value of the Tau constant is $2\ x\ \pi$, or 6.2831...

The ancient esoteric value of the Pi constant is $\frac{22}{7}$.

We can therefore designate the esoteric value of Tau to be:

$2\ x\ \frac{22}{7}$, or $\frac{44}{7}$ (6.2857...)

Notice how the esoteric Tau (44/7) reflects the underlying principle of the radian spiral (and the UE cycle)—that is, 44 radians measured along a winding pathway of seven spiral arcs.

Characteristics of the UE Cycle

The universal esoteric cycle is not only divided into seven spiral arcs (or levels) but those seven arcs are also divided into two halves, and four quarters.

The two halves of the UE Cycle mirror each other and represent the two halves of a multi-dimensional near-circle. I say 'near-circle' because the circle doesn't actually close. It is, in fact, merely the first arc of an even bigger 360 arc mega-dimensional spiral (as explained above).

The UE Cycle reaches its halfway point after 3½ spiral arcs (or 22 radians) and then folds back upon itself.

The boundaries of the four quarters of the UE Cycle occur after 1¾ spiral arcs (or eleven radians) and are sign-posted by the four cardinal points (or degrees) of the zodiac.

The Four Cardinal Points

The UE Cycle begins at the first degree of Aries (or 0° of the 360° circle). This special degree corresponds with the Spring Equinox in the Northern Hemisphere of the Earth. Astrologically, this point represents 'new beginnings'. It coincides with the beginning of new life in the natural world. It's a time of germination, the hatching of eggs, and the birth of wild-life.

The spiral cycle of the UE Cycle proceeds from 0° Aries and winds its way to another milestone (i.e. another cardinal point) after eleven radians when it reaches 0° Capricorn (or the 270th degree of the circle). It then continues on and at 22 radians it reaches the lowest point of the cycle at 0° Libra (or the 180° point of the circle). The UE Cycle then begins its return via an 'upward' spiral, and at 33 radians it reaches 0° Cancer (i.e. the 90° point of the circle). Finally, after a total of 44 radians it reaches 1° Aries from where it begins a new seven-tiered spiral-cycle.

This progression through the four cardinal points (**in reverse order**) suggests a symbolic correspondence with the daily path of the Sun through the twelve astrological Houses (also in reverse order). This 'mundane' cycle occurs as the Earth rotates on its own axis during the course of 24 hours. The reversed (or clockwise) movement of the Sun through the Houses from dawn to noon to dusk is an illusion that is based on a perspective that is 'Earth-centric'—i.e. limited (and distorted) by the physical conditions of planet Earth. But all human-beings must experience life on Earth, tread the path of material existence, and eventually overcome the inherent limitations of physicality by becoming 'soul-conscious'. It is then that our perspective of the world becomes less subjectively oriented and we are able to move with the Sun on its true anti-clockwise path through the Heavens—from Aries to Pisces. To do this requires a shift of focus (symbolically and actually) from the Earth (i.e. the subjective personality) to the Sun (i.e. the soul). In other words, being 'Earth-centric' is like spinning yourself around and then declaring that the world is, in fact, revolving around you.

Even though the UE Cycle touches the four cardinal points in the reverse (i.e. clockwise) order, the cycle itself actually flows in the anti-clockwise direction around the circle of the zodiac. In other words, the UE Cycle traces the path of the Sun as it follows the true 'esoteric' order of the signs of the zodiac (i.e. from Aries to Pisces).
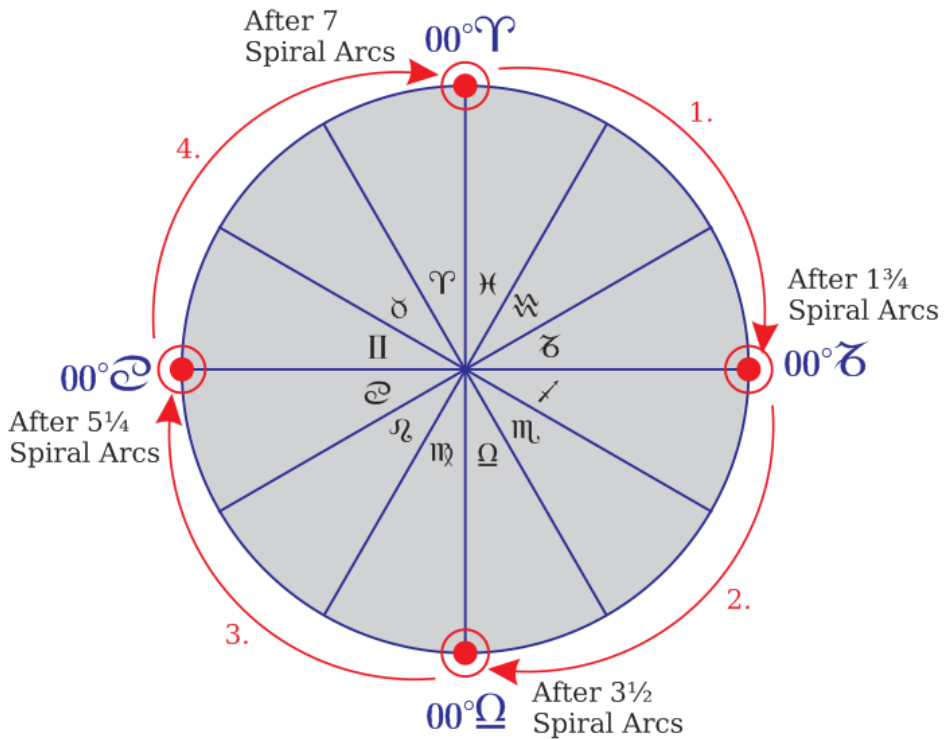
Figure 9 - The Clockwise Cardinal Point Cycle

Thus, as you can see, the UE Cycle embodies two cycles that are moving in opposite directions. The 44 radian cycle that spirals its way around the zodiac in an anti-clockwise direction, and a converse four-fold cycle that moves (in an illusory manner) through the four cardinal points in a clockwise direction. This interesting characteristic of the UE Cycle is something worth pondering.

The **descending** half of the UE Cycle, even though it is associated with the first six signs of the zodiac, is punctuated by the cardinal degree of Capricorn. Similarly, the **ascending** half of the cycle is punctuated by the cardinal degree of Cancer.

It may be that these four boundary markers represent 'turning points' or 'points of crisis' on the path of cosmic evolution. The clockwise order of their appearance may be associated with the need for evolving humanity to free itself from the 'wheel of illusion' that turns clockwise as the Earth rotates on its own axis.

The Mirroring Effect

The fact that the UE Cycle is split into two mirrored halves is of great significance.

The fourfold cardinal division of the UE Cycle, and the way that it naturally folds back upon itself in a mirror image suggests a descent through the first half of the zodiac and then a paralleling ascent through the second half of the cycle. The esoteric reason why the fourfold cardinal cycle touches the four cardinal points in **clockwise** order as the UE Cycle spirals **anti-clockwise** through the zodiac is a profound mystery.

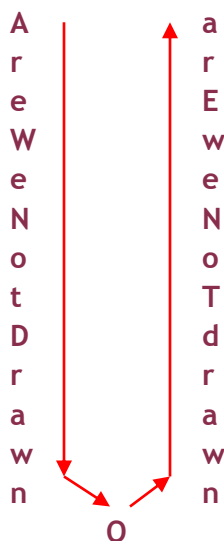The mirrored movement of the UE Cycle is of the nature of a palindrome, symbolically speaking. I touched on this subject in my earlier book *The Metaphysical Significance of Pi*—because the structure of a palindrome symbolizes nicely the Creation concept of '*the end is in the beginning and the beginning is in the end*'.

For example, consider the following palindrome…

Are we not drawn onward to 'New Era'?

This is a very apt example because the UE Cycle appears to reflect the structure of cosmic time cycles. (See *The Year of Brahma* below.)

The UE Cycle reflects back upon itself in the same way as a palindrome does, and therefore we can use a palindrome to illustrate the basic form of the UE Cycle.

```
A                a
r                r
e                E
W                w
e                e
N                N
o                o
t                T
D                d
r                r
a                a
w                w
n                n
        O
```

The above arrangement of the letters of the palindrome illustrates my point.

The descending half of the UE Cycle is represented by the words 'Are We Not Drawn'. This symbolizes the downward pull of gravity that draws each human soul into physical incarnation. The lowest point of the cycle is symbolized by the 'O' of 'Onward'. The ascending half of the cycle is represented by the words 'Onward To New Era'. This second half of the palindrome symbolizes the evolutionary force that pushes every incarnate human soul towards initiation and the transcendence of matter.
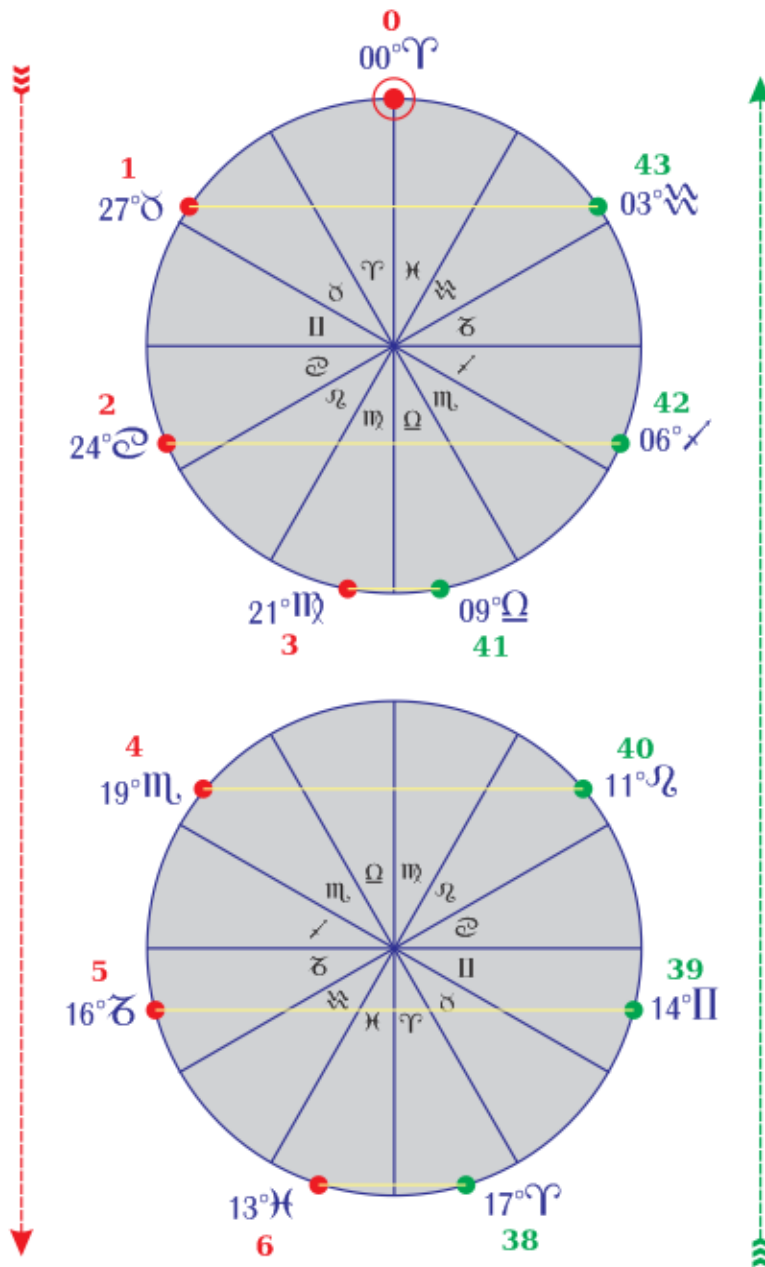
Figure 10 - The Mirroring Effect

The mirroring of the UE Cycle occurs across the Aries-Libra axis of the zodiacal circle. In my diagrams I have placed Aries at the top of the circle as was sometimes the custom in ancient times.[16] This has the effect of associating the ordered sequence of six signs from Aries to Libra (located on the left-hand side of the circle) with a process of deepening descent into manifestation.

The returning half of the cycle corresponds with an ascent through the six signs from Libra to Pisces (i.e. located on the right-hand side of the circle). It corresponds with a process of rising out of the depths of materiality and into higher planes of consciousness. This makes sense because these latter six signs are associated with progressive stages of initiation.[17]

The diagram above demonstrates the mirroring effect as it occurs within the circle of the zodiac. Only the first and last portions of the UE Cycle are shown. (The complete UE Cycle would consist of a series of seven vertically aligned circles.)

The figure demonstrates how the first six radian divisions mirror the last six radian divisions of the UE Cycle. If you are wondering why the zodiacal arrangement of the lower circle mirrors (or is in opposition to) the arrangement of the higher zodiacal circle it is because the figure is translating a spiral path into a vertical straight line.

The following table lists all the zodiacal degrees that constitute the complete UE Cycle. The left-hand column is mirrored by the right-hand column (and vice versa). The rows that are highlighted red show the position of the four cardinal points as they divide the UE Cycle into its four quarters.

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[16] And still is in some Eastern traditions.
[17] See the Theosophical writings of Alice Bailey for more information.

The Universal Esoteric Cycle			
0.	**0°Aries00'**	**44.**	**1°Aries01'**
1.	27°Taurus18'	43.	3°Aquarius43'
2.	24°Cancer35'	42.	6°Sagittarius25'
3.	21°Virgo53'	41.	9°Libra08'
4.	19°Scorpio11'	40.	11°Leo50'
5.	16°Capricorn29'	39.	14°Gemini32'
6.	13°Pisces46'	38.	17°Aries14'
7.	11°Taurus04'	37.	19°Aquarius57'
8.	8°Cancer22'	36.	22°Sagittarius39'
9.	5°Virgo40'	35.	25°Libra21'
10.	2°Scorpio57'	34.	28°Leo03'
11.	**00°Capricorn15'**	**33.**	**00°Cancer46'**
12.	27°Aquarius32'	32.	3°Taurus28'
13.	24°Aries51'	31.	6°Pisces10'
14.	22°Gemini08'	30.	8°Capricorn52'
15.	19°Leo26'	29.	11°Scorpio35'
16.	16°Libra44'	28.	14°Virgo17'
17.	14°Sagittarius02'	27.	16°Cancer59'
18.	11°Aquarius19'	26.	19°Taurus41'
19.	8°Aries37'	25.	22°Pisces24'
20.	5°Gemini01'	24.	25°Capricorn06'
21.	3°Leo13'	23.	27°Scorpio48'
22.	**00°Libra30'**		

The Divine Measure of Time

The Year of Brahma

The spiral-cyclic pattern of the UE Cycle is identical to the structure that underlies the Hindu theory of world cycles. This ancient Indian system of sacred time-cycles includes periods that define a Day, Year, and Age of Brahma.[18]

Each 'day' (also called a planetary 'manvantara') in a year of Brahma covers the period of the life of a planet. In Theosophical terms, it corresponds to a planetary 'chain' consisting of a series of seven 'globes' (and seven 'rounds').

Here is how A. E. Powell describes the cycle of seven globes…

Although the 7 globes of a chain all exist simultaneously, yet they are not all, at any given time, equally active in supporting life. Broadly speaking, at any given time, 1 globe only is active and fully functioning, the other 6 being in a dormant condition.

The globes come into full activity, i.e., they become fully inhabited by various classes of beings—with whom we shall deal in later chapters—in succession. First, globe A becomes active: after a vast period of time the life on it begins gradually to lessen and almost to disappear, passing to

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[18] **Brahma** (Sanskrit) [from the verbal root *brih* to expand, grow, fructify] The first god of the Hindu Trimurti or triad, consisting of Brahma, the emanator, evolver, and creator; Vishnu, the sustainer or preserver; and Siva, the regenerator or destroyer. Brahma is the vivifying expansive force of nature in its eternally periodic manvantaras. He stands for the spiritual evolving or developing energy-consciousness of a solar system which is also called the Egg of Brahma (brahmanda). [From: The Rakefet Theosophical Dictionary.]

the next globe—B. Globe A then becomes dormant, whilst B begins to awaken.

After another vast period of time, globe B in turn "goes to sleep", the greater part of the life passing on to the next globe in order, globe C.

This process continues until each globe in turn has awakened from its sleeping condition, has supported the main stream of life for an eon, and again become dormant. The period during which a globe is fully active, supporting the main stream of life, is called a globe-period.
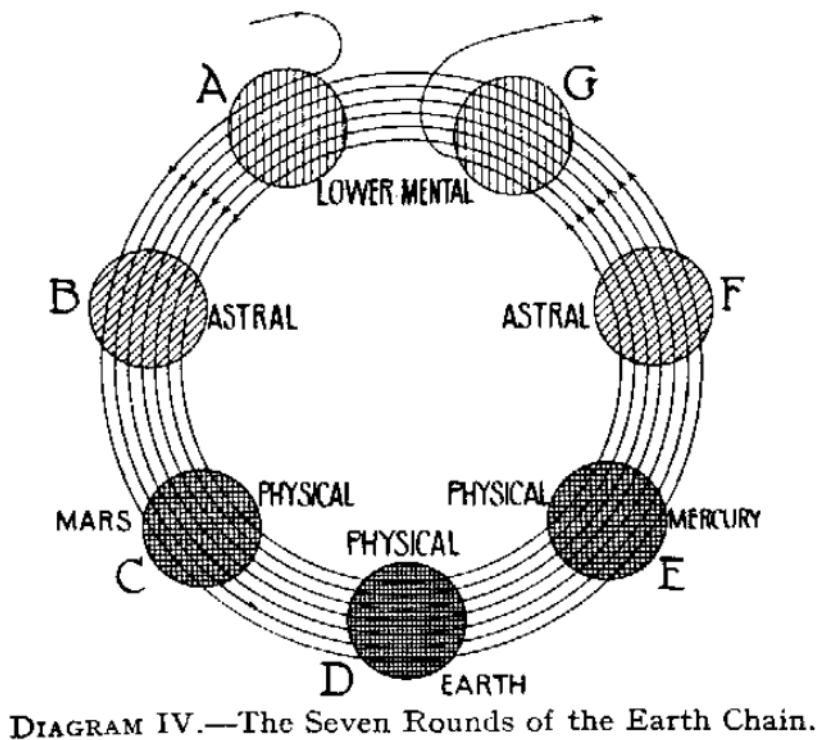

DIAGRAM IV.—The Seven Rounds of the Earth Chain.

Figure 11 - Image from 'The Solar System'

The passage of the spiral-cycle of life through all 7 globes is known as a round. A round thus consists of 7 globe-periods, or world-periods (as they are sometimes called).[19]

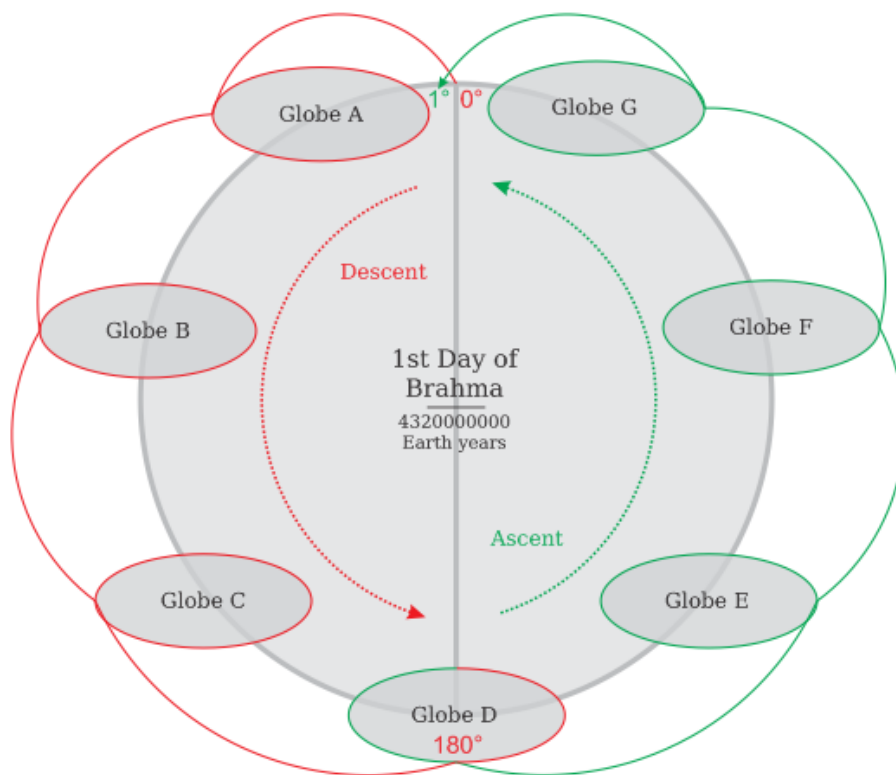[19] *The Solar System*. A. E. Powell. Pp. 14-15.

Figure 12 - Day One of a Year of Brahma

The second major period of the UE Cycle is termed a 'Night of Brahma'. It begins at 1 degree (i.e. 1° Aries) and ends at 2 degrees (i.e. 2° Aries). It involves another seven-fold cycle that spirals around the circumference of the main circle. It is essentially a period of rest during which the monads of life who inhabited the world during its 'day-time' are withdrawn into a planetary 'laya centre'[20] until the next day dawns and they are able to reincarnate once again in physical form.

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[20] The seven Laya centres are the seven Zero points, using the term Zero in the same sense that Chemists do, to indicate a point at which, in Esotericism, the scale of reckoning of differentiation begins. From the Centres … begins the differentiation of the elements which enter into the constitution of our Solar System. [*Secret Doctrine*, HPB. 1:138. See also: SD, 1:145-8.]

The first Night of Brahma ends at 2 degrees (i.e. 2° Aries). The full course of a 'Year of Brahma' thus involves a double cycle of $360 \; x \; 7 \; spiral \; arcs$, or $2520 \; x \; 2 \; = \; 5040 \; arcs.$ (We will return to the very important numbers 2520 and 5040 presently.)

$360 \; x \; 7 \; = \; \textbf{2520}$

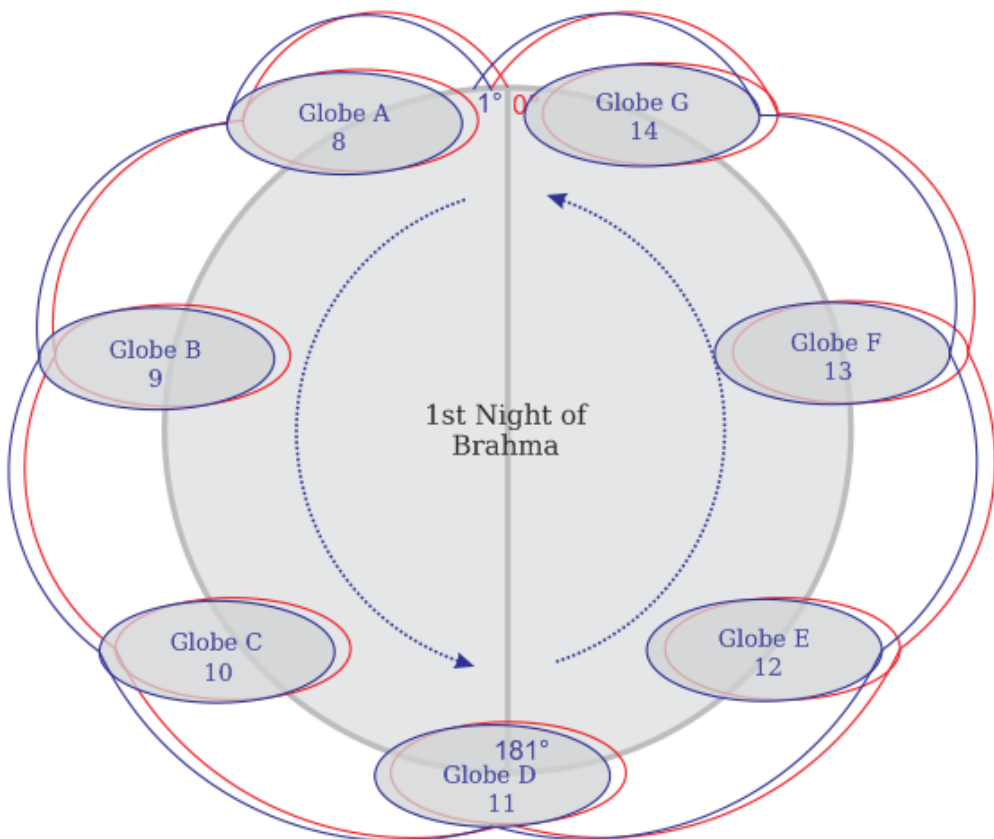$2520 \; x \; 2 \; = \; \textbf{5040}$

Figure 13 – Night One of a Year of Brahma

From the above we can deduce that a Year of Brahma is naturally divided into two halves at every level, and in every aspect of its structure.

Pi in the Hindu System

A full day/night cycle of Brahma is equivalent to:

$$4320000000 \; x \; 2 \; = \; \mathbf{8640000000} \; (Earth \; years)$$

And a full year of Brahma is calculated as:

$$8640000000 \; x \; 360 \; = \; \mathbf{3110400000000} \; (Earth \; years)$$

This number is interesting because, if we use a floating decimal point, it somewhat resembles the value of Pi.

$$\mathbf{3110400000000} \; (Year \; of \; Brahma)$$

$$\mathbf{3141592653589} \; (Pi - floating \; decimal)$$

In fact, the famous Hindu yogi Paramahansa Yogananda, in his best-selling book *Autobiography of a Yogi*, stated: "*The life span for a whole universe, according to the ancient seers, is 314,159,000,000,000 solar years, or 'One Age of Brahma'*".[21]

He was apparently suggesting that the ancient Hindu system of world cycles is based essentially on the Pi constant. This is interesting because the fundamental 'creation unit' circle has a diameter of one and the

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[21] *Autobiography of a Yogi*. Paramahansa Yogananda. Footnote.

length of its circumference is Pi—suggesting the existence of a major universal cycle that reflects the Pi figure.

The diameter unit measure in the diagram below would need to equal 10^{12} (i.e. 1000000000000) in order to produce a circumference (or cycle length) of 3,141,592,653,589 (or one Year of Brahma). Symbolically speaking, the exponent '12' in 10^{12} could be associated with the twelve 'months' of the Year of Brahma. To produce a cycle equivalent to one Age of Brahma the diameter value would need to be 10^{14}.
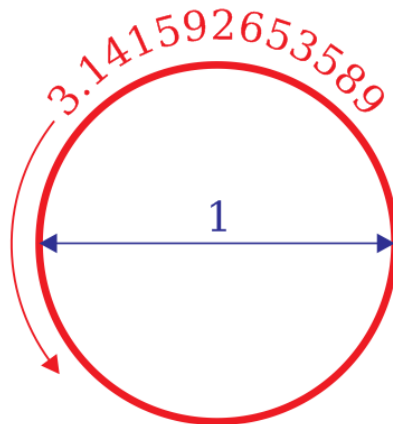

Figure 14 – Basis of Hindu System?

The ancient Hindu system is, in fact, based on multiples of the number 108[22], and especially of the number 432 (i.e. $4 \, x \, 108$).

$1 \, x \, 432 \; = \; \textbf{432} \, (basis \; of \; Kali \; Yuga)$

$2 \, x \, 432 \; = \; \textbf{864} \, (basis \; of \; Dvapara \; Yuga)$

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[22] In ancient India, Vedic seers had calculated the following distances which modern scientific measurements have reconfirmed: * The distance between the Earth and Moon is 108 times the diameter of the Moon (true) * The distance between the Earth and Sun is 108 times the diameter of the Sun (true) * The diameter of the Sun is 108 times the diameter of the Earth (close - the number is closer to 109.2) Wikipedia.

$$3 \times 432 \; = \; \textbf{1296} \; (basis\ of\ Treta\ Yuga)$$

$$4 \times 432 \; = \; \textbf{1728} \; (basis\ of\ Satya\ Yuga)$$

The traditional figures for an Age and Year of Brahma resemble the Pi constant, but unlike Pi, they are *rational* numbers (being the result of the multiplication of rational numbers). Pi is an *irrational* number (as explained previously). Thus, it appears that the Hindu system might represent an effort to approximate Pi using rational numbers—just as the ancient Egyptians did with their sacred Pi fraction $\frac{22}{7}$.

Here is a quote on the subject from Sepharial...

"The value of π, which expresses the relations of the circumference to the diameter of a circle, was concealed in the great cycle known as the Age of Brahma, 311,040,000,000,000 years. This age is one hundred years of Brahma, and a Brahmic year is therefore 3,110,400,000,000 solar years. This number is again divided by 360, which gives the value of the Brahmanic Day or 8,640,000,000 years. Then by adding together the value for the age, year and the day of Brahma, we have 314159, etc., which is the familiar value of π or very nearly, 355 divided by 113."[23]

$$
\begin{array}{r l}
8{,}640{,}000{,}000 & (Day\ of\ Brahma) \\
3{,}110{,}400{,}000{,}000 & (Year\ of\ Brahma) \\
311{,}040{,}000{,}000{,}000 & (Age\ of\ Brahma) \\
\hline
\end{array}
$$

$$\textbf{314,159,040,000,000}$$

$$\textbf{314,159,265,358,979} \; (Pi-floating\ decimal)$$

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[23] *The Kabala of Numbers*, by Sepharial, p.12.

As you can see, the resulting figure is quite an accurate (floating decimal) approximation of Pi.

The Precession Cycle

Interestingly, when we use a floating decimal point, the traditional figure given for a year of Brahma is the same as the sum of twelve precession cycles, or $12 \, x \, 25920 \; years$. This suggests that the number 25920 is somehow associated with the twelve months of the year of Brahma.

$$Year \, of \, Brahma \; = \; \mathbf{311040}0000000$$

$$Twelve \, Precession \, Cycles \; = \; 12 \, x \, 25920 \; = \; \mathbf{311040}$$

$$120{,}000{,}000 \, x \, 25920 \; = \; \mathbf{3110400000000}$$

$$12 \, x \, 259{,}200{,}000{,}000 \; = \; \mathbf{3110400000000}$$

The figure 25920 years for a precession cycle is an approximation of the currently accepted scientific estimate (i.e. $\sim25786 \; years$) but it appears to have been an important symbolic figure in ancient times. Plato referred this number to the Great Year, and it is also implied in the ancient Hindu world cycle calculations (as shown above).

The number 25920 is derived by designating the rate of the Earth's precession as 1° every 72 years (which is an approximation). Thus, a full 360° cycle of precession is calculated as:

$$360 \, x \, 72 \; = \; \mathbf{25920} \; years$$

Some Further Considerations

As previously explained, the mundane measure of time and space on planet Earth is based on the ancient Babylonian division of a circle into 360 degrees. Our most common instruments for measuring space and time—i.e. the compass and the clock—are both configured according to the Babylonian hexagonal system of measurement.

But the hexagonal division of the circle (on its own) fails to incorporate the subliminal influence of the mysterious **esoteric principle** of time/space. The esoteric principle is represented by the original creation unit located at the centre of the seven-fold Circle of Creation. The centre circle does not touch the outermost circumference, and therefore, is not *directly* used in the mundane division of space and time.
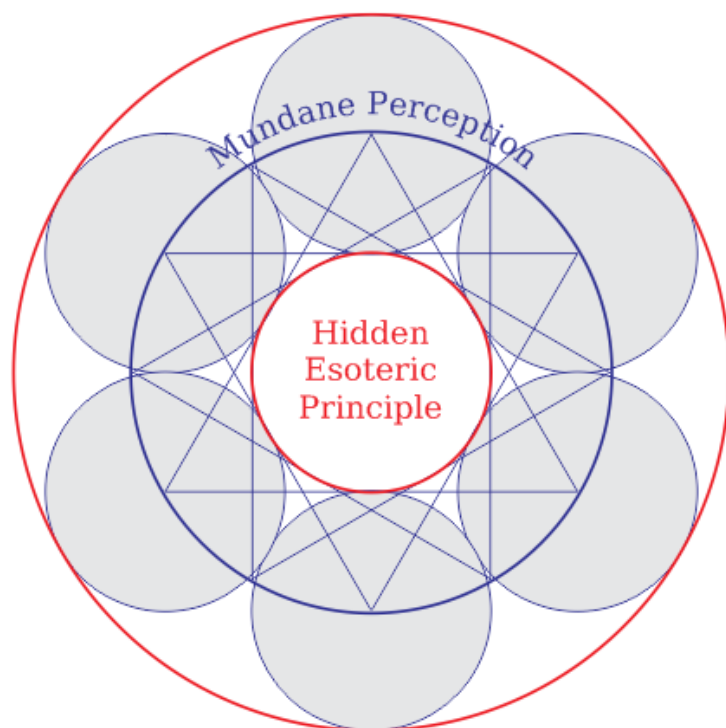

Figure 15 - The Mundane Division of the Circle

The mundane division of the circle is achieved using hexagrams (or hexagons) that are drawn using the six creation units that touch the circumference of the Circle of Creation. These six circles represent the outer (or surface) appearance of things and emphasize the 'form aspect' of the world, whereas the central seventh circle symbolizes the concealed inner esoteric dimension of life in the universe.

The omission of the seventh circle in the hexagonal (i.e. 360 degree) division of the Circle of Creation is symbolized by the fact that the number 360 has for its factors all the natural numbers from 1 to 10 **except** for the number 7.

The smallest factors of **360** are:

$$1, 2, 3, 4, 5, 6, \ldots \ 8, 9, 10$$

As you can see, the number 7 is missing in the series.

The divine measure of time/space is represented by the number **2520**. This number is the least common multiple (LCM) of the first ten digits. So, in other words, unlike the number 360, it **does** include seven in its list of factors.

The smallest factors of **2520** are:

$$1, 2, 3, 4, 5, 6, 7, 8, 9, 10$$

Thus, the number 360 can be said to represent the calendar of the mundane year (as recorded in various ancient calendar systems[24]) while the number 2520 is associated with the divine[25] esoteric (or cosmic) year.

The mundane hexagonal division of space and time is useful for measuring the material qualities, quantities, and attributes of the physical world, but is not (by itself) ideally suited to measuring the **esoteric** influences and dimensions of life. In order to esoterically measure time we need to factor in its spiral-cyclic nature. The mundane cycle (or circle) of time is transformed into an esoteric spiral by the influence of a force that impinges upon it laterally and pushes it in a particular direction—i.e. towards the fulfilment of the divine Will and Purpose of the Creator of the universe.

I have been referring to the central creation unit as the **seventh** circle in order to differentiate it from the other six creation units that touch the circumference of the Creation Circle. But the centre circle is, in fact, the first (or original) creation unit to appear during the process of Creation. The other six creation units arrange themselves around the central circle only after the first creation unit has manifested (and established itself) as the 'genesis point' of the universe.

So, the original creation unit represents the **1st Principle** of Creation, which in Theosophical terms is called the divine Will-Purpose aspect. Microcosmically, it's associated with the plane of Atma (Divine

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[24] …And in its adjusted form in our modern 365+ day calendar.

[25] The divine year is termed the Year of Brahma in the ancient Hindu system. As previously noted, the Year of Brahma corresponds to the 2520 x 2 spiral-arcs of a double circuit of the UE Cycle. As explained above, the figure 2520 does not include the 360 Nights of Brahma—i.e. the intermediate cycles of 'pralaya'. (See below for further clarification.)

Intelligence) and on the kabbalistic Tree of Life diagram its microcosmic expression is represented by the sefirah Da'at.

The original creation unit impresses the intention of the divine Will upon the fabric of Creation. The 1st Principle initiates the creative process from high levels of Being and then becomes covered (or hidden) by the six creation units that cluster around it to form the larger Circle of Creation. In other words, after the initial creative impulse the source of that impulse becomes hidden below the surface of the 'material' universe by six layers of consciousness/substance. As already explained, these six represent how/what we perceive with our normal (or mundane) perception, and hence their use in configuring our standard systems of time/space measurement.

The centre creation unit thus represents an original impacting lateral force that is the starting point of the universe, and that moves the circle of time and space on a spiral path towards the fulfilment of the divine Will and Purpose. The completion (or relative completion) of that spiral path is symbolized by the number 2520 (i.e. one UE Cycle).[26]

Even though the original creation unit circle represents the influence of the 1st Principle it also expresses the esoteric (or 'numerological') qualities of the number seven. As you know, the influence of the number seven is missing (or rather, 'concealed') in the 360 degree model of reality. This is symbolized for us by the conspicuous absence of the number seven in the factors of 360. The esoteric model of reality, however, as represented by the UE Cycle, is seen to remedy this deficiency because its exemplary number 2520 includes the number seven in its series of factors.

Numerologically, the number seven expresses the influence of Heaven upon Earth. It represents the grounding of subtle cosmic forces, and the

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[26] And 5040 representing a double UE Cycle.

manifestations that arise in our lives as a result of those forces. Typically, these kinds of influences go unrecognized, or are dismissed as nonsense by the concrete rational mind. A good example of the type of expression (and psychological reaction) engendered by the number seven is the crop circle phenomenon (and the whole issue of 'extraterrestrial visitors' in general).

Interestingly, the geometric structure of the UE Cycle implies that our physical universe (as a coherent whole) is very possibly moving along a path (or trajectory) within an even larger unknown, undefined Space/Substance.

When we think about the universe we might imagine it as an expanding sphere of matter (in its various gradations and forms) that originally emanated (during the 'Big Bang') from a singular **motionless point**. But the nature of the UE Cycle suggests that the 'genesis point' of universal emanation (i.e. the starting point of Creation) was (and still is) in a state of motion, and therefore, so is the universe that was spawned by it. We cannot perceive the outer macrocosmic movement of our universe because our senses are constrained by (and within) the substance of its body.

This concept can be best understood using Theosophical principles.

Theosophy teaches that every entity in the universe is basically spherical[27] and in motion. For example, every star is spherical and moving on its own unique trajectory. We can therefore assume (based on the principle of 'as below, so above') that the universe as a whole is also basically spherical and in motion.

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[27] Even those beings who do not physically appear to be spherical are surrounded by a relatively spherical aura (or etheric envelope).

Theosophy also teaches that every entity embodies a host of 'lesser' (or 'microcosmic') entities who together compose its vehicle(s) of expression. But the lesser entities are necessarily unconscious of the 'lateral' movement of the greater entity of whom they are a small part. In other words, the extent of the body of the greater entity constitutes a completely self-contained 'universe of being' for its constituent lesser entities. The Self-created, Self-defined limit of the body of the greater entity (i.e. its outer perimeter) forms a 'ring-pass-not' that naturally restricts the awareness and movement of the lesser entities who exist within it. That is because the lesser entities are all formed of the same substance as the body of their host, and they are fixed according to their specialized functions within that body. They are physically unable to extend themselves beyond the scope of their natural functions, or outside of the substance of which they and their macrocosmic host are formed.

Theosophy teaches that the universe is the body of expression of a great and living Entity (called Brahma), and because we are constituent parts of its body (and our senses and instruments are formed of the substance of its body) we are unable to perceive its 'lateral' movement through the surrounding super-ethereal substance **in which IT exists**. That rarefied substance is of a higher order of density than the substance from which the universe is itself made. The full extent of our physical senses (and scientific instruments) have evolved to function within (and detect) the substance of the universe itself and can never sense anything that exists outside the substance of the universe.

Similarly, a water molecule in a raindrop has no awareness of, or means of detecting, the atmosphere through which it is falling.

The number 2520 is programmed into the UE Cycle in two different ways. It is present in the structure of one complete UE Cycle, and it also figures importantly in the smaller, seven-fold sub-cycle.

The sub-cycle consists of a seven-arc spiral that folds back upon itself at the 3½ arc point (as previously described). The two halves (descending and ascending) mirror each other across the circle of the zodiac.

The seven arcs of the sub-cycle each consist of 360 degrees, so the seven spiral arcs represent a descending and returning passage through a total of 2520 degrees.

Sub-cycle:

$7 \, x \, 360° \, = \, \mathbf{2520} \, (degrees)$

When the seven-fold sub-cycle returns, its starting point shifts 1° anti-clockwise around a larger 360 degree circle. Because each degree of the circle comprehends a sub-cycle of seven spiral arcs so the total number of spiral arcs in one UE Cycle is 2520.

UE Cycle:

$360 \, x \, 7 \, arcs \, = \, \mathbf{2520} \, (spiral \, arcs)$

Another interesting mathematical characteristic of the number 2520 is that it's an EPORN (Equal Product Of Reversible Numbers). An EPORN is a

number that can be expressed as the product of two reversible numbers in two different ways.

In fact, of all numbers, 2520 is the first and smallest EPORN. This unusual numerical characteristic of 2520 is illustrated as follows…

$$012 \times 210 = 2520$$

$$120 \times 021 = 2520$$

It is quite extraordinary that the mathematical structure of the number 2520 exhibits this mirroring quality because, as you know, in terms of the UE Cycle, it represents a series of sub-cycles that mirror each other in much the same way.

The 'Seven Times' Prophecy

The number 2520 is associated with a very well-known biblical prophecy called the 'Seven Times' prophecy. If you Google '2520 prophecy', for example, you will see countless pages on the WWW devoted to this mysterious prophecy.

The 2520 year period (of the 'Seven Times' prophecy) is especially associated with the following eleven verses of the Bible.[28]

Leviticus 26:28. Then I will walk contrary unto you also in fury; and I, even I, will chastise you seven times for your sins.

The name 'Seven Times prophecy' comes from the above verse (and surrounding verses) of *Leviticus*.

Interpreters of the Bible have theorized that when the scripture refers to a 'time' it is referring to a 'prophetic year' of 360 days. Thus, 'seven times' refers to a period of $7 \: x \: 360 \: days$, or $2520 \: days$.

It has also been generally agreed by Biblical interpreters that a day of divine time is equivalent to a year of Earth time. Therefore, the 'Seven Times' prophecy is usually said to refer to a period of 2520 Earth years.

The following biblical verses describe a half 'Seven Times' prophetic period of 1260 days, or 3½ cycles. This is significant because the UE sub-cycle is naturally divided into two mirrored halves of 3½ spiral-arcs each.

Daniel 7:25. And he shall speak great words against the most High, and shall wear out the saints of the most High, and think to change times and laws: and they shall be given into his hand until a time and times and the dividing of time.

Daniel 12:7. And I heard the man clothed in linen, which was upon the waters of the river, when he held up his right hand and his left hand unto heaven, and sware by him that liveth for ever that it shall be for a time,

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[28] All quotes are from the King James Version.

times, and an half; and when he shall have accomplished to scatter the power of the holy people, all these things shall be finished.

Revelation 11:2. But the court which is without the temple leave out, and measure it not; for it is given unto the Gentiles: and the holy city shall they tread under foot forty and two months.[29]

Revelation 11:3. And I will give power unto my two witnesses, and they shall prophesy a thousand two hundred and threescore days, clothed in sackcloth.

Revelation 11:9. And they of the people and kindreds and tongues and nations shall see their dead bodies three days and an half, and shall not suffer their dead bodies to be put in graves.

Revelation 11:11. And after three days and an half the Spirit of life from God entered into them, and they stood upon their feet; and great fear fell upon them which saw them.

Revelation 12:6. And the woman fled into the wilderness, where she hath a place prepared of God, that they should feed her there a thousand two hundred and threescore days.

Revelation 12:14. And to the woman were given two wings of a great eagle, that she might fly into the wilderness, into her place, where she is nourished for a time, and times, and half a time, from the face of the serpent.

Revelation 13:5. And there was given unto him a mouth speaking great things and blasphemies; and power was given unto him to continue forty and two months.

A common designation of the 'half cycle' is "*a time, and times, and half a time*" which is interpreted as follows…

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[29] Forty-two months of 30 days is equivalent to 1260 days.

'A time' = 1

'Times' = 2

'Half a time' = ½

1 + 2 + ½ = **3½**

The 'half cycle' (i.e. of 3½ spiral arcs) is important because the first half cycle carries us to the point of deepest and densest manifestation, while the second half cycle takes us to a new high point of elevation, and a new beginning.

The Number 5040

I mentioned earlier that every day of Brahma is followed by an equal period of night, and that therefore the Year of Brahma actually involves a double UE Cycle, or two revolutions of the Circle of Creation.

Therefore a full Year of Brahma covers 720 degrees and is actually comprised of $2520 \, x \, 2 \, spiral \, arcs$. This is mathematically significant because it derives a very important number in the field of Esotericism...

$2520 \, x \, 2 = \textbf{5040}$

The number 5040 is equivalent to 7! ('seven factorial') and therefore, in an esoteric sense, represents a very potent expression of the number seven...

$$7! = \mathbf{1\;x\;2\;x\;3\;x\;4\;x\;5\;x\;6\;x\;7} = 5040$$

And it also has another interesting attribute…

$$\mathbf{7\;x\;8\;x\;9\;x\;10} = 5040$$

The number 5040 is particularly significant because it embodies a special geometric relationship between the Earth and the Moon.

$$Mean\;Radius\;of\;Earth\; = \;\mathbf{3960}\;miles$$

$$Mean\;Radius\;of\;Moon\; = \;\mathbf{1080}\;miles$$

$$Mean\;Radius\;of\;Earth + Moon\; = \;\mathbf{5040}\;miles$$

Symbolically, we could say of the Earth+Moon that the Earth represents the 360 'Days of Brahma', and the Moon represents the 360 'Nights of Brahma' because, as previously explained, the number 5040 represents the double UE Day/Night cycle of the Year of Brahma.

Amazingly, these figures also provide a solution to the ancient geometric puzzle known as 'squaring the circle'.[30]

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[30] The following solution to the problem is based on equalizing the circumference of a circle with the perimeter of a square.

The Divine Measure of Space

Squaring the Circle

The phrase 'squaring the circle' is traditionally associated with the challenge of drawing a circle and square of equal areas using only a ruler and compass. Historically, this has been proven to be an impossible task due to the irrationality of Pi.

A variation on the original challenge involves equating the length of the circumference of a circle with the length of the perimeter of a square. As far as I know, this is also impossible to achieve with a straight-edge and compass, but an approximate figure is sometimes drawn using the established dimensions of the Earth and Moon. The procedure revealed below however, involves the use of functions and relationships that exist within the *natural* geometry of a circle inscribed within a square.

Before we begin constructing a squared circle diagram from scratch using abstract geometric functions let's look at the Earth-Moon 'geophysical' model of the design we are aiming to replicate. (See the diagram below.)

The diagram below shows a green square precisely enclosing the Earth, and a red concentric circle surrounding it at a distance. The radius of the red circle is proportionally equivalent to the combined radii of the Earth and the Moon (i.e. 5040 miles). Note the number 5040.

The linear distance between the green dots (i.e. positioned at the corners of the green square) is 7920 miles—i.e. corresponding to the mean diameter of the Earth. The radial distance between the red dots (i.e.

placed at each quarter arc of the red circle's circumference) is also 7920 miles (i.e. using 22/7 for π)[31].[32]
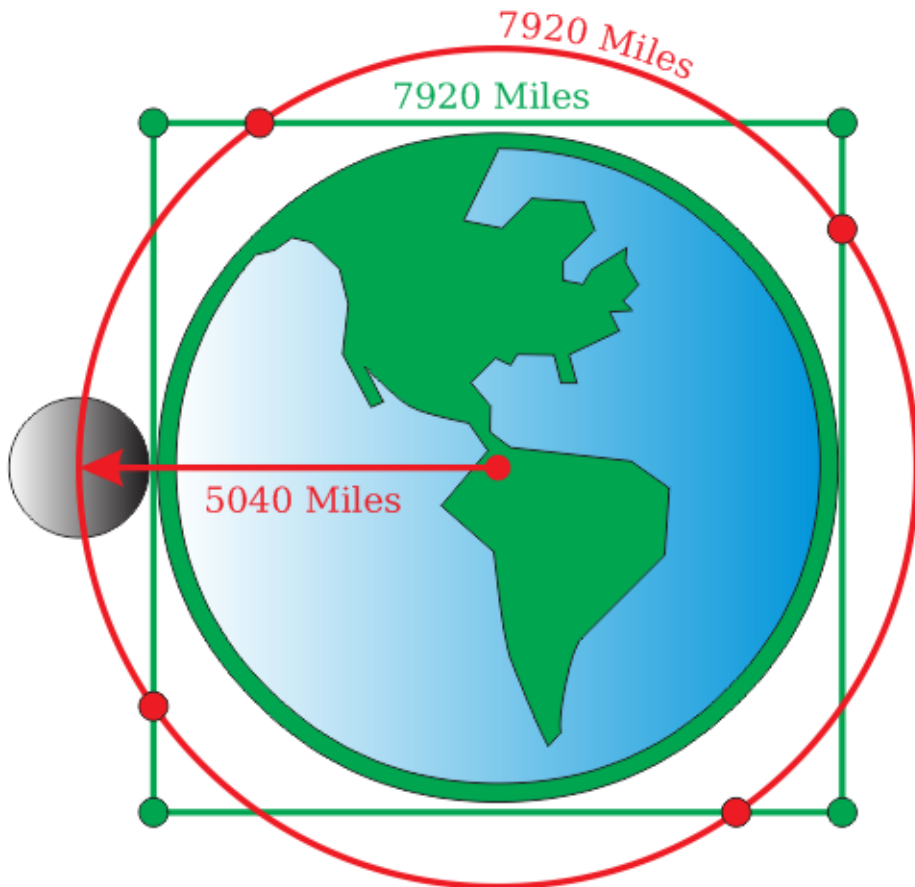
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[31] If scientific Pi is used the result is approximate.
[32] It is interesting to note that $7920 = 8\,x\,9\,x\,10\,x\,11$. We already know that $5040 = 7\,x\,8\,x\,9\,x\,10$.

In other words, the perimeter of the green square, and the circumference of the red circle are the same length—i.e. $4 \times 7920 = 31680\,miles$.

The number 5040 (as represented in the diagram by the radius of the red circle) is thus seen to be a major key to transforming **linear** measurement (i.e. the squared Earth) into **non-linear** measurement (i.e. the red circle of the Earth+Moon). It does so also in the double UE Cycle of the Year of Brahma (as previously explained).

Squared Circle Methodology

The following model for squaring the circle is not based on the known geophysical dimensions of the Earth and Moon. Nor is it based on a convoluted application of the Phi constant. The construction of the diagrams (below) is based on the **simple internal geometry of the squared circle figure itself**. The included diagrams are designed to reveal the natural geometry of the squared circle, and in the process, also to lend weight to the historical 'Pi Theory' of design of the Great Pyramid of Giza.

The following simple exercise demonstrates the ratios involved.

1. First, draw a circle 20cm in diameter. This circle represents the Earth. (I suggest using 20cm because it's easy to convert. See below.)
2. Next, draw a square that encloses the circle and adjacently touches its circumference. Of course, the length of each side of the square will be 20cm (i.e. because the diameter of the circle is 20cm).
3. Now, draw a second concentric circle of radius length 12.73cm— i.e. its circumference extends 2.73cm beyond the circumference of the 20cm circle. This circle is concentrically positioned around the first circle. This second circle's diameter is 25.46cm.

4. Finally, draw a small circle whose circumference adjacently touches the first circle. This circle represents the Moon. The centre of this third small circle can be located anywhere on the circumference of the large outer concentric circle.
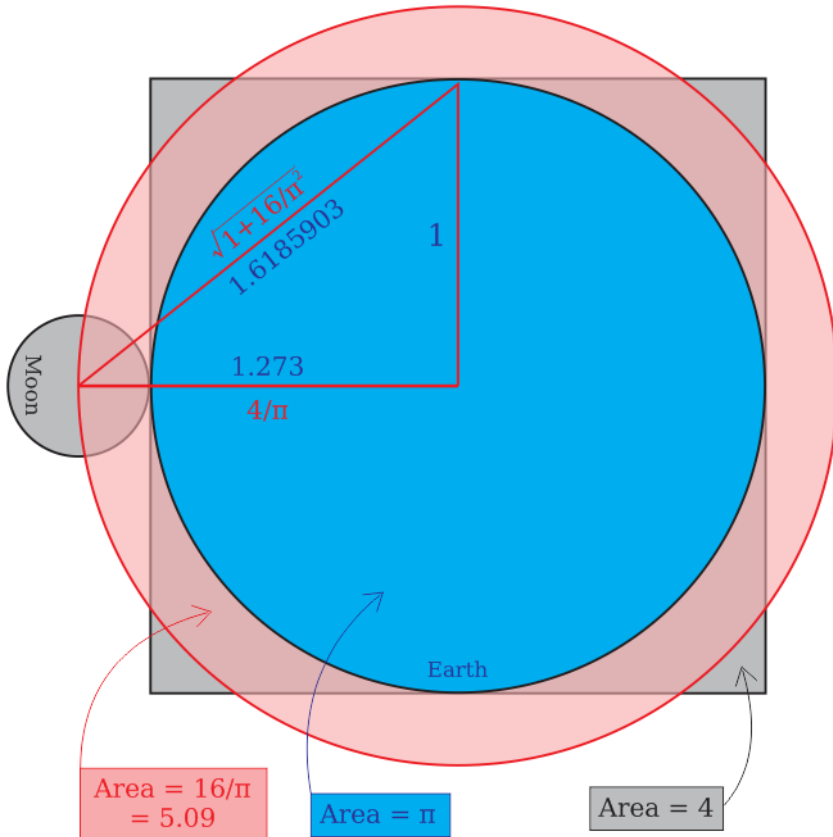

Figure 17 – Major Squared Circle Relationships

The measurements used in the procedure described above are all proportionally based on the radius of the first circle (which can be any length). The larger concentric circle (i.e. the second circle drawn) always has a radius that is $\frac{4}{\pi}$ ($\cong 1.273$) times the radius of the first circle. The value $\frac{4}{\pi}$ is the ratio of the area of the square to the area of the inscribed circle. **This ratio $4/\pi$ is the key to the entire process of successfully squaring the circle.**

By using the key value $4/\pi$, the Earth and Moon circles are always precisely in proportion to their cosmic counter-parts. Why this is so is a great mystery. It suggests that the $4/\pi$ ratio has special physical and symbolic significance for our Earth/Moon system. (See below.)

When the $4/\pi$ ratio is used to square the circle, the length of the circumference of the outer concentric circle is always **exactly the same length** as the perimeter of the square (whose corners it overlaps). And, the ratio of the area of the **outer circle** to the area of the **square** is also equal to $4/\pi$ (or ~ 1.273). (See below.)

Many people use the standard geophysical approximation 1.273 (or 0.273) when they are drawing the squared circle diagram.[33] They use it because they don't realize that the true number/ratio (of which 1.273 is merely an approximation) is built into the very foundation of the geometry of the circle in the square. This oversight also leads people to mistakenly attach the Phi (φ) constant to various dimensions of the squared circle. Fortunately, because the $4/\pi$ ratio is implicit in the geometry of the squared circle, these erroneous correspondences can be discarded.

$$\frac{Mean\ Radius\ of\ Moon}{Mean\ Radius\ of\ Earth}$$

$$= \frac{1080}{3960}\ miles$$

$$=\ 0.273$$

The standard 0.273 figure is determined scientifically using the calculation above, and is then added to a circle radius of 1 unit to draw the second concentric circle. This represents the conventional geophysical approach to squaring the circle.

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[33] This figure is sourced from the actual geophysical dimensions of the Earth and Moon (i.e. as recorded by Science).

The method employed herein, however, replaces the 1.273 approximation with the true and perfect value $4/\pi$. No prior knowledge of the geophysical measurements of the planets are required in order to construct the diagram because this value exists fundamentally as part of the geometry of the squared circle. This means that ancient geometers[34] had no need to physically measure the dimensions of the Earth and Moon with scientific instruments in order to weave those dimensions into their architecture.

The natural geometry employed in this method also demonstrates that the apparent presence of Phi (φ) in the squared circle figure is basically an illusion. What looks like Phi in the geometry of the figure is, in fact, the expression $\sqrt{1 + 16/\pi^2}$.

$$\sqrt{1 + \frac{16}{\pi^2}} = 1.6185903\ldots(\cong \varphi)$$

This value[35] is extremely close to Phi ($\varphi \cong 1.6180327\ldots$)—the difference being only ~ 0.0006—but it's derivation is very different (as you can see).[36]

Key Relationships Within the Squared Circle

The total area of the square in the squared circle diagram is equal to $2\,x\,2 = 4$. Esoterically, the number 4 symbolizes the prison of the Form principle.

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[34] For example: The ancient Egyptians.
[35] Note: I have used sacred Pi (22/7) in the calculation. When scientific Pi is used the value is $\sim 1.6189931\ldots$
[36] This is not to say, however, that the expression's close proximity to Phi is insignificant.

In the diagram (below) the blue 'Earth' circle is wholly contained within the boundaries of the four sides of the square. The area of the blue circle is equal to the Pi (π) constant. (See below.)

The red circle in this sacred geometric scheme produces numbers that are close to the value of Phi (φ). I don't know the reason for this coincidence, but it makes esoteric sense because, in the diagram, the red circle symbolizes 'non-linear' time and space.[37] Note, however, my previous remarks explaining that the numbers, although close to Phi, are not actually Phi. (Also, see below for further elucidation.)
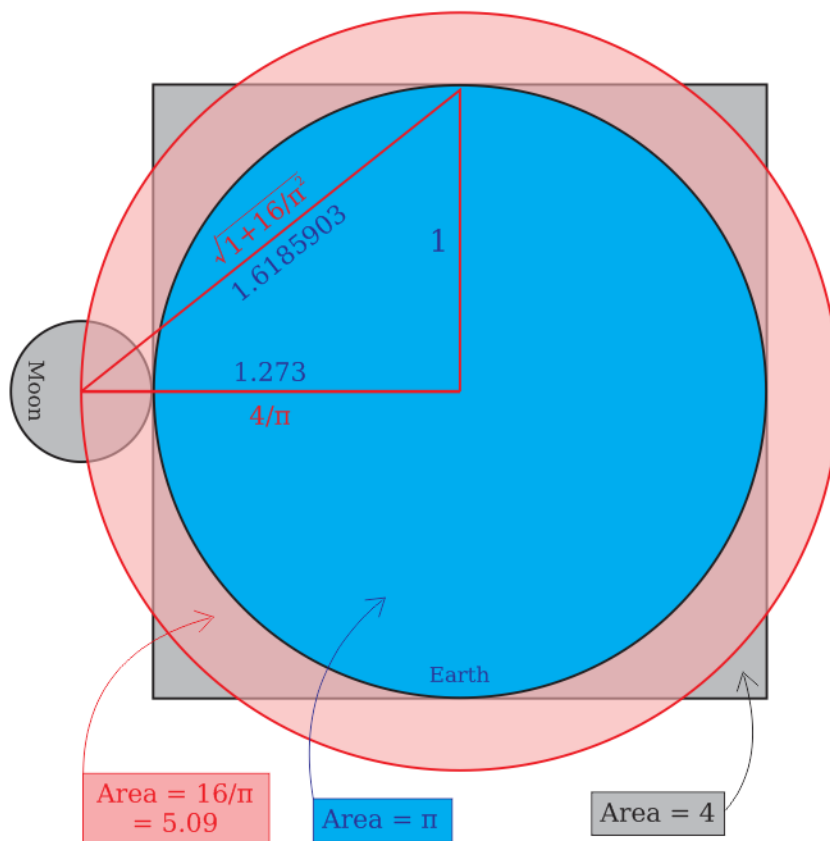
Figure 18 - Calculating the Earth+Moon Circle

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[37] The Phi constant is associated with many spiral forms that occur in nature.

The radius of the red circle corresponds to the Earth+Moon radius (i.e. 5040 miles) and in the more abstract version of the squared circle diagram this radius is close to the value of the square root of Phi ($\sqrt{\varphi}$). My belief, however, is that the correct representation of the red circle's radius is $4/\pi$.

Similarly, I believe that the true area of the red circle is $16/\pi$, which is very close in value to $Phi\ x\ Pi$ ($\varphi\ x\ \pi$). Both of these expressions are almost exactly equal to 5 square units. I maintain however, that $16/\pi$ is the correct expression and produces the correct value.

The area of the red circle (~5 sq. units) can be understood to symbolically transcend the bounded area of the square (4 sq. units). This symbolism is based on the very different esoteric meanings of the numbers 5 and 4, and their associated pentagram and square.
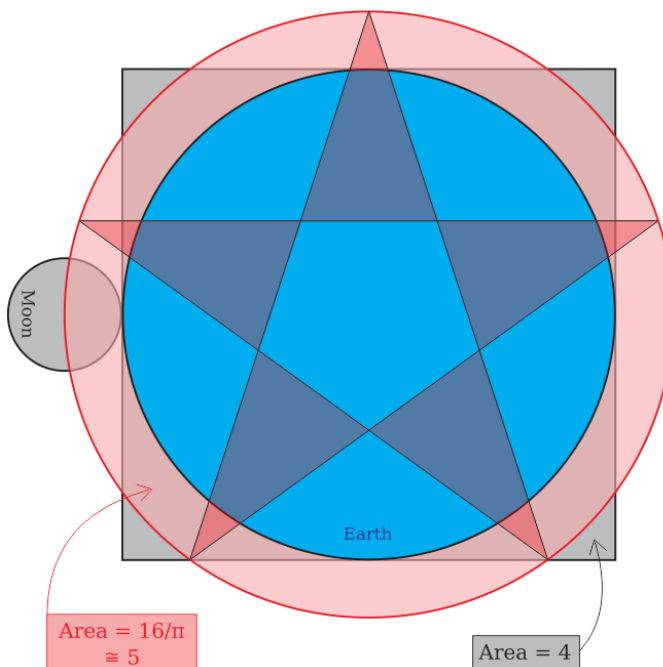
Figure 19 - The Square (4) Evolves to a Pentagram (5)

The various area ratios present in the figure are crucial to determining (and verifying) many of the diagram's other dimensions. You will discover as we proceed that they are all involved in an amazing process that symbolizes transcendence beyond the physical plane. The key to the whole scheme is the ratio $4/\pi$.

This $4/\pi$ ratio is **critically** important because it's our starting point. Symbolically, it describes the initial conditions of the Earth circle, and mathematically, it gives us the value of the radius of the larger red circle. Knowing this ratio, we don't need to rely on the scientifically measured dimensions of the Earth and Moon in our calculations, or on an artificially introduced Phi constant.

$$\frac{Area\ of\ Square}{Area\ of\ Blue\ Circle} = \frac{4}{\pi} \cong 1.273$$

The $4/\pi$ ratio is rounded to 1.273 from 1.272727 … which is a value derived using the sacred Pi fraction (22/7). When the standard scientific value of Pi is used, the figure is 1.273239 … which when rounded down produces the same approximation: 1.273.

It is quite remarkable that $4/\pi$ happens to provide us with the correct conversion ratio for the combined radii of the Moon and the Earth!

In the diagram, the radius of the blue circle represents the radius of the Earth. It is designated as 1 unit. The radius of the red circle adds the radius of the Moon to the Earth's radius—correctly asserting that the Moon's radius is equivalent to ~0.273 of the Earth's radius. The estimated mean radius of the Earth is 3960 miles. Therefore, the mean radius of the Moon is $0.2727\ x\ 3960 \cong 1080\ miles$. This is the commonly accepted approximation.

It has been noted by past researchers that the 'Earth+Moon' radius of the red circle is very close to the value of the square root of Phi ($\sqrt{\varphi}$), and this is, of course correct. But the true derivation of the radius comes from the $4/\pi$ ratio—i.e. the ratio between the area of the square (4) and the area of the inscribed blue circle (π) representing the Earth. There is an important symbolic reason for this, which is explained below.

$$\frac{Area\ of\ Square}{Area\ of\ Blue\ Circle} = \frac{4}{\pi} \cong 1.273$$

$$Square\ Root\ of\ Phi = \sqrt{\varphi} \cong 1.272$$

The closeness of these two values suggests a **symbolic association** between the red circle and the Phi constant.
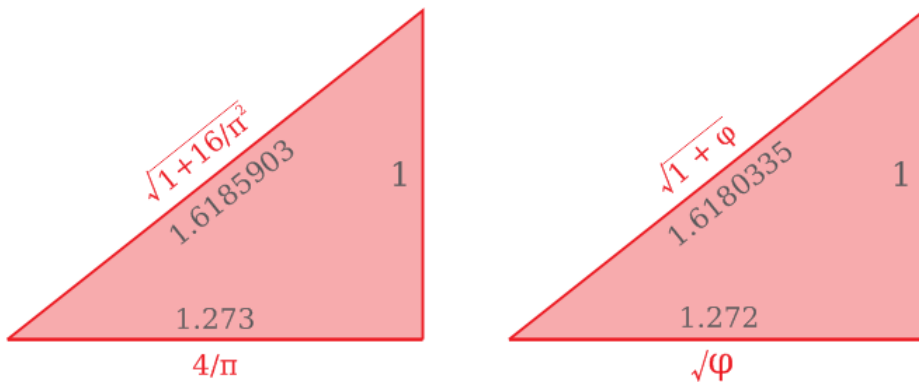
Figure 20 - The Phi Connection

This close link also carries over to the area value of the red circle. The total area of the red Earth+Moon circle is calculated as…

$$Area\ of\ Red\ Circle\ =\ \frac{16}{\pi}\ \cong\ \mathbf{5.09}$$

$$Phi\ x\ Pi\ =\ \varphi\ x\ \pi\ \cong\ \mathbf{5.08}$$

$$\frac{16}{\pi} \cong 5.09 \qquad\qquad \varphi\ x\ \pi \cong 5.08$$
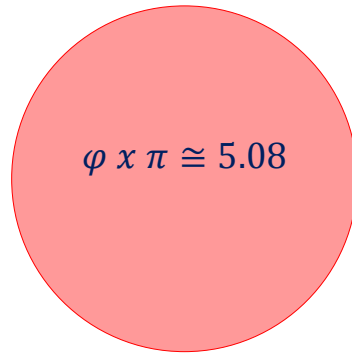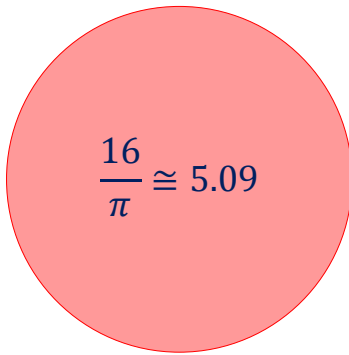
The $16/\pi$ fraction is derived directly from the inherent geometry of the squared circle. The alternative Phi-based calculation $Phi\ x\ Pi$ ($\varphi\ x\ \pi$) is alien to the natural geometry of the figure. It's introduced artificially in order to point out an interesting approximation (and correspondence) to the true $16/\pi$ result of ~5.09.

The ratio of the area of the red circle to the area of the blue circle is…

$$\frac{16}{\pi} \quad : \quad \pi$$
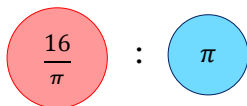
$$\frac{Area\ of\ Red\ Circle}{Area\ of\ Blue\ Circle}\ =\ \frac{\mathbf{16}}{\boldsymbol{\pi^2}}\ \cong\ 1.6198347$$

This result is also quite close to the value of Phi (φ)—1.6180327 ... but it's definitely not Phi because it's based on a different geometric principle.

The principle it's based on is naturally present in the geometry of the circle inscribed within a square. The numerical closeness, however, does suggest another symbolic link to the famous mathematical constant Phi.

The right-angled triangle in the diagram is a fascinating geometric figure. One side gives the radius of the blue Earth circle (1). Another side gives the radius of the red Earth+Moon circle ($4/\pi$), and the hypotenuse value ($\sqrt{1 + 16/\pi^2}$) is remarkably close to Phi.

$$\sqrt{1+16/\pi^2}$$
1.6185903

1

1.273

$4/\pi$

Moon

Earth

Area = $16/\pi$
= 5.09

Area = π

Area = 4
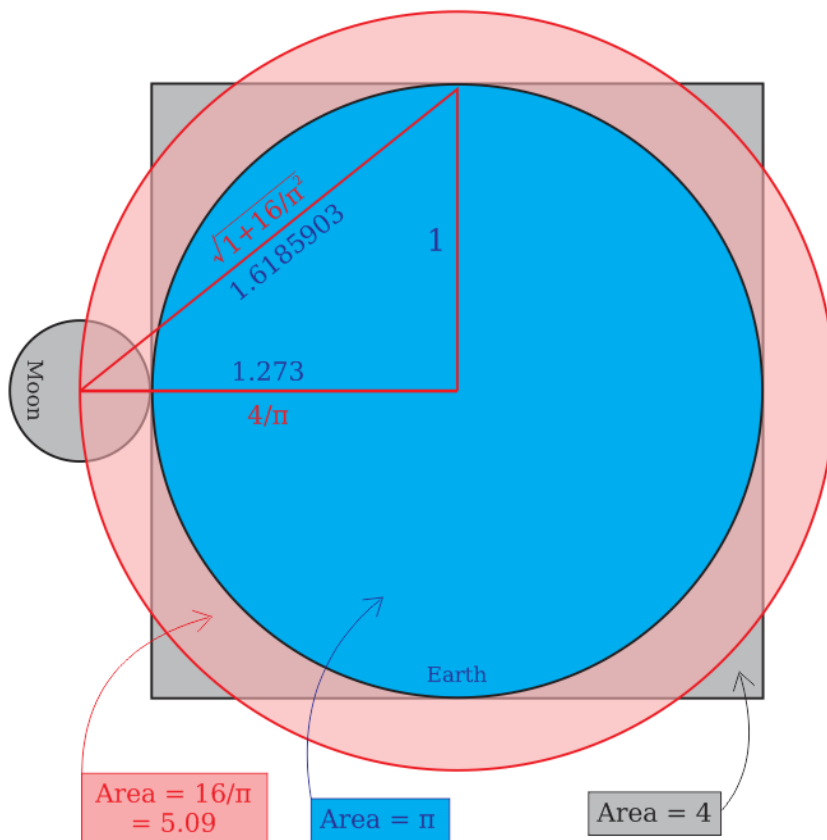
The position of the triangle in the diagram suggests that the hypotenuse may symbolize a **path of transition** from the blue Earth circle to the larger red Earth+Moon circle—i.e. because the hypotenuse links the circumference of the former with the circumference of the latter.

Thus, the triangle's various dimensions reveal some very interesting geometric relationships that exist between the blue and red circles.

The geometry of the squared circle diagram above provides (in principle) the solution to the challenge of squaring the circle because the circumference of the red circle **is exactly** the same length as the perimeter of the square. Solutions derived using other methods tend to produce results that are only approximations.

Perimeter of Square

$2 + 2 + 2 + 2 = \mathbf{8}$

Red Circle Cirmcumference $(2\pi r)$

$2\pi \, x \dfrac{4}{\pi} \, = \, \mathbf{8}$

In standard presentations of the solution the circumference is shown only to **closely approximate** the length of the square's perimeter. That is because in standard presentations the standard approximation 1.273 (or $\sqrt{\varphi}$) is used instead of the key geometric ratio $4/\pi$. When the key ratio is used, the two instances of Pi (π) in the calculation cancel each other out and leave an exact figure of 8 units for the length of the circumference. If, instead, the approximate figure 1.273 is used in the calculation (i.e. in place of $4/\pi$) the result is 7.99849 which is, of course, not as satisfying.
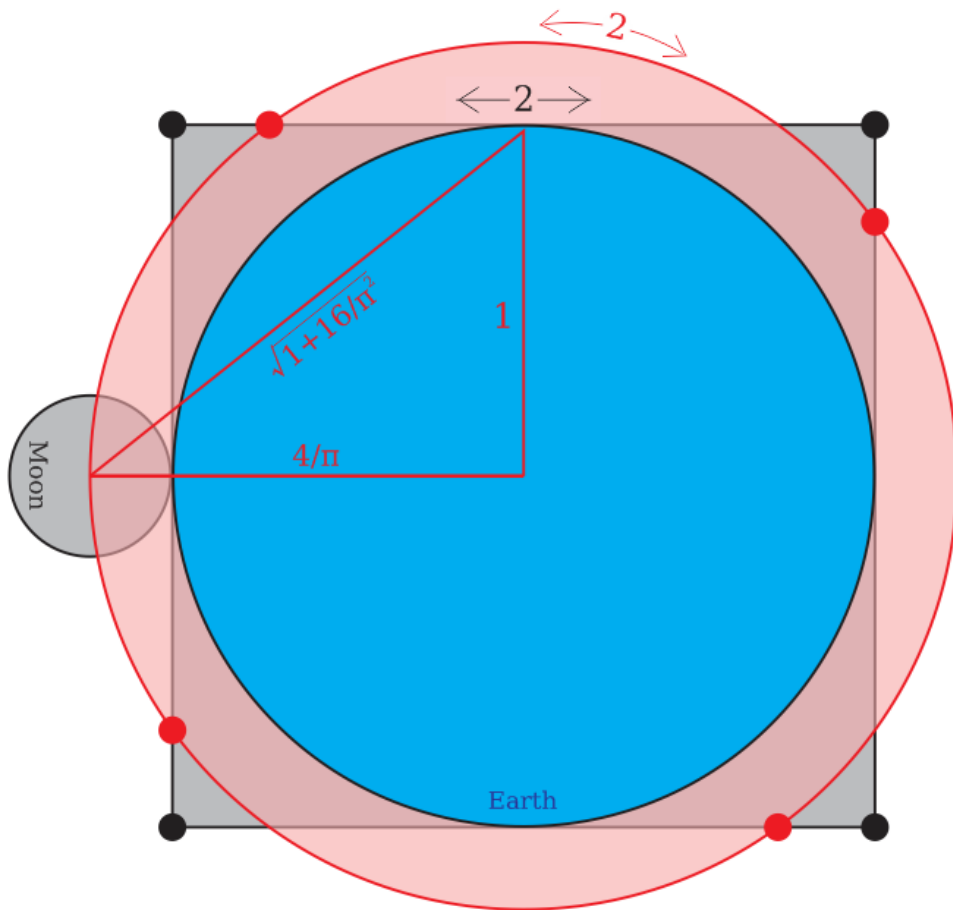
Figure 21 - Perimeter = Circumference

As you can see, the squaring of the circle has essentially transformed linear measurement (i.e. the sides of the square) into non-linear measurement (i.e. the circumference of the circle). The straight-line distance between the square's black dots is two units, as is the curved distance between the circle's red dots. This image, therefore, is reminiscent of the diagram used previously to show the difference between the side of a hexagon and a radian.

The special ratio that provided the key to this transformative process is $4/\pi$. It corresponds with the Earth+Moon mean radius of 5040 miles—which

is the number of spiral arcs (i.e. $2 \, x \, 2520$) in a Year of Brahma (or double UE Cycle).
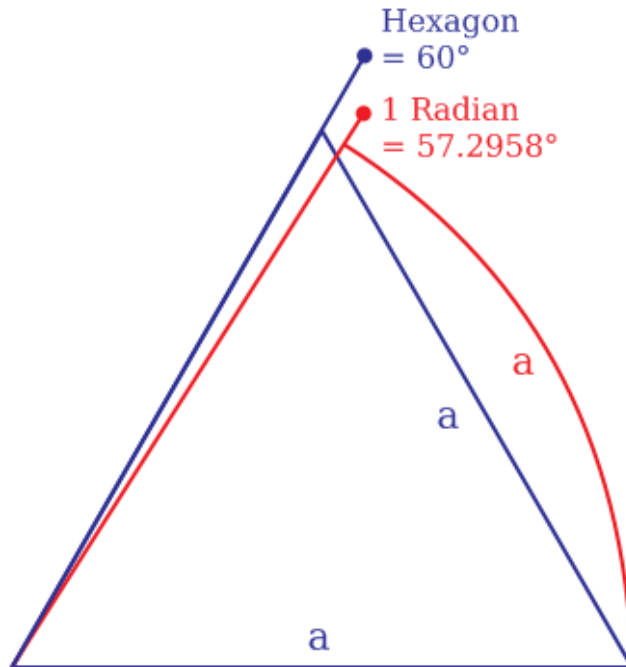
Figure 22 - Hexagon Side vs. Radian

The final ratio we need to examine is the ratio between the area of the red circle and the area of the square...

$$\frac{Area \, of \, Red \, Circle}{Area \, of \, Square}$$
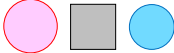
$$(16/\pi)/4 \; = \; \frac{4}{\pi} \; \cong 1.273$$

Significantly, the result is precisely the same ratio as our starting ratio—i.e. the ratio between the area of the square and the area of the blue Earth circle…

$$\frac{Area\ of\ Square}{Area\ of\ Blue\ Circle}$$

$$\frac{4}{\pi} \cong 1.273$$

The relationship between the three figures—the red circle, the square, and the blue circle, can thus be expressed as follows:

$$\frac{16}{\pi} : 4 : \pi$$

Which reduces to…

$$\frac{4}{\pi} : 1 : \frac{\pi}{4}$$

(The square is represented by the middle term of each ratio.)

This is a final verification that our methodology is correct. The $4/\pi$ ratio is the ratio that, right at the start, enabled us to begin the process of squaring the circle. It did so by providing us with the correct length of the radius of the red Earth+Moon circle. And so we end at the beginning—with one important difference.
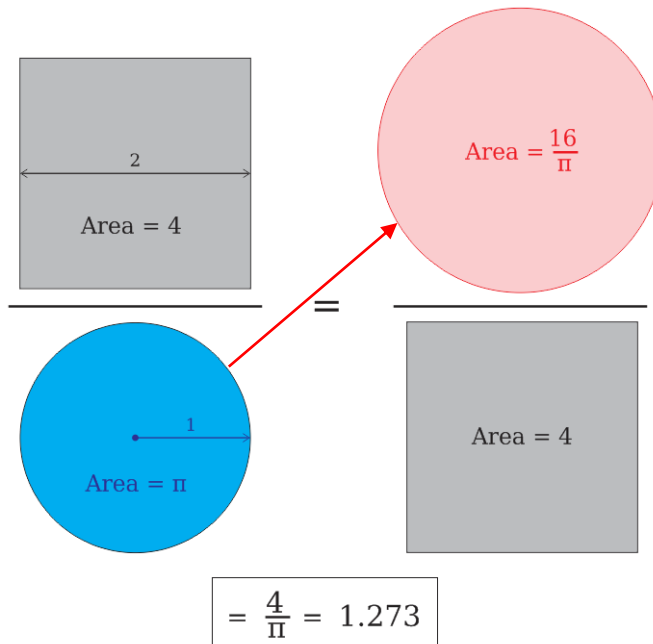
Figure 23 – The Two Expressions of the 4/Pi Ratio

The area of the red circle is seen to symbolically 'overcome' the limitations of the square (which the blue Earth circle could not do). The new 'evolved' version of the ratio (above right) has the square (4) as the denominator (i.e. positioned below) and the red circle ($16/\pi$) as symbolically 'transcendent' (i.e. positioned as the numerator above the square).

It appears, therefore, that the original ratio of the area of the square to the area of the Earth circle (i.e. $4/\pi$) is a symbolic reference to the

original restrictive physical conditions of the Earth—i.e. when it initially is wholly contained by the elemental square of linear-based materialism.

The solution to Earth overcoming the limitations of the dominion of the square is symbolized by the ratio of the area of the red Earth+Moon circle to the area of the square. In this new expression of the $4/\pi$ ratio the red circle assumes the dominant position above the elemental square, symbolizing both a rising above, and an expansion beyond the original limitations of the Form principle. The circumference of the red circle exceeds the boundaries of the square symbolically suggesting the emergence of consciousness from the 'egg of matter'. This is a profound sacred geometric message that appears to be programmed into the physical structure of our Earth-Moon system.

The red circle can therefore be understood to symbolize the Earth in an evolved state—i.e. after it has evolved beyond the limitations of the Form principle (as represented by the square).

Symbolically speaking, the means by which the blue Earth circle is able to make the transition to (and become) the red 'evolved and expanded' circle is via the hypotenuse expression $\sqrt{1 + 16/\pi^2}$. Its value is extremely close to Phi, and therefore may symbolically refer to a spiral path. Be that as it may, it is also likely that the $\sqrt{1 + 16/\pi^2}$ expression has a deep symbolic meaning (and esoteric application) in its own right. All we need to do is find it.

The Great Pyramid of Giza

From the above we can deduce that the dimensions of the Great Pyramid of Giza are based on the squared circle diagram (i.e. as presented in this

book). The standard explanation for the pyramid's dimensions usually involves an artificially (and convolutedly) introduced Phi (φ) constant.
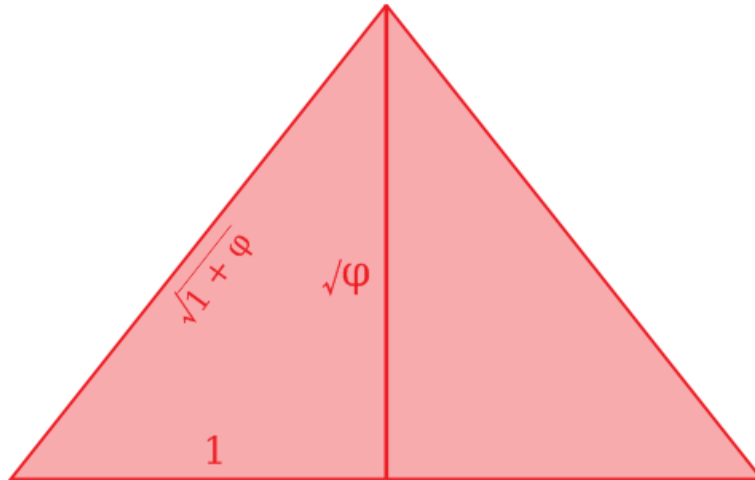

Figure 24 - The Great Pyramid - Phi

But as I have demonstrated, the most likely and most appropriate geometric basis for the proportions of the Great Pyramid is the ratio $4/\pi$.
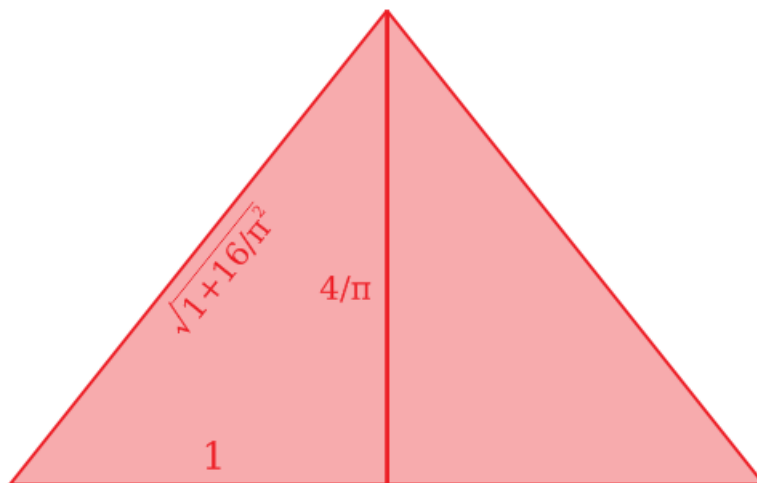

Figure 25 - The Great Pyramid - 4/Pi

The $4/\pi$ ratio is approximately equal to 28/22 when the Egyptian sacred Pi fraction 22/7 is substituted for Pi. This result increases the likelihood that the ancient Egyptians employed the geometric model described herein because their measurement system was based on the number 28.

$$1\,Cubit\ =\ 7\,Palms$$

$$1\,Palm\ =\ 4\,Fingers$$

$$1\,Cubit\ =\ 28\,Fingers$$

The 28/22 connection becomes easier to see when the following diagram is considered...
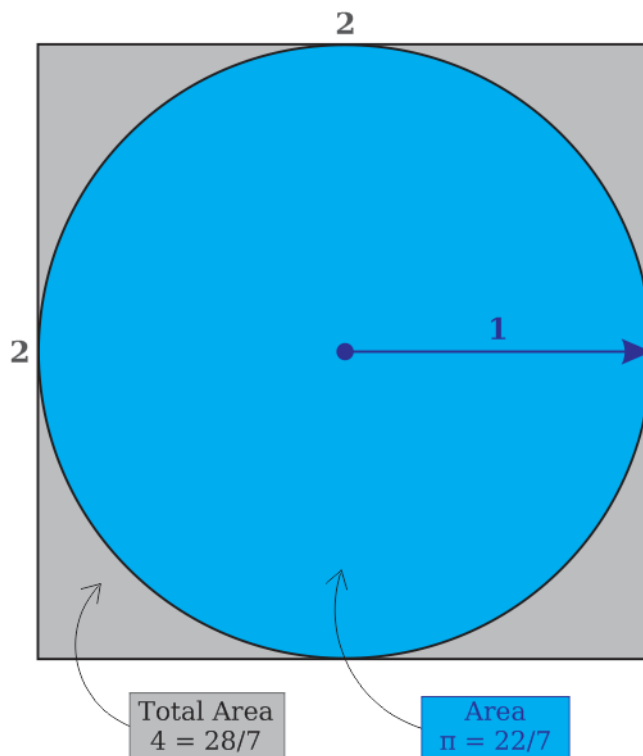
Figure 26 - The Ancient Egyptian 4/Pi Ratio

The $28/22$ ancient Egyptian approximation of the $4/\pi$ ratio is actually derived from the squared circle diagram above.

The total area of the grey square is $28/7 = 4$. The area of the blue circle is $22/7$—this being the ancient Egyptian approximation for Pi. Therefore, the ancient Egyptian $4/\pi$ ratio is calculated as…

$$4 : \pi$$

$$\square : \bigcirc$$

$$28/7 : 22/7$$

$$= \frac{28}{22}$$

$$\cong 1.273 \cong \frac{4}{\pi}$$

So, the expression $28/7 = 4$ describes the area of a square with a side length of two units, while a circle inscribed within that square has an area of $22/7$ and a radius of one unit. Is it a coincidence that the ancient Egyptian system of measurement is fundamentally based on all three numbers included in this simple mathematical expression?

$$\frac{28}{7} = 4$$

$28\ Fingers\ (1\ Cubit)$

$7\ Palms\ (1\ Cubit)$

$4\ Fingers\ (1\ Palm)$

$1\ Cubit$

Designing the Great Pyramid

In his book *Das Ratsel der Pyramiden*[38], Kurt Mendelssohn presents an ingenious diagram showing how the ancient Egyptians could have squared the circle using the $4/\pi$ principle.

His methodology is based on a stack of four adjacent circles of 1 unit diameter—or what I have termed 'creation units'.
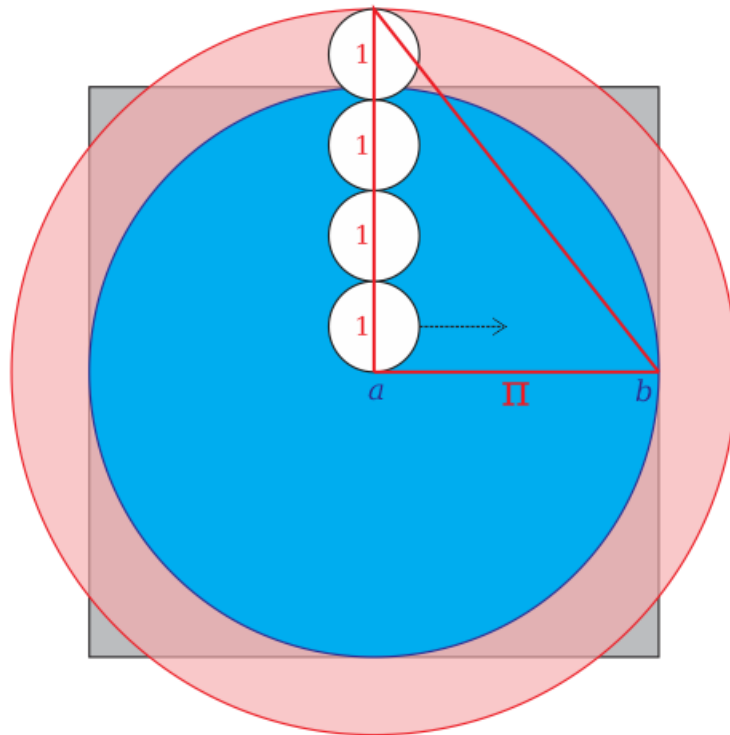

Figure 27 - The Mendelssohn Methodology

To draw the radius of the blue Earth circle (and mark the midpoint of the perimeter of the grey square) one creation unit circle is rolled the length

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[38] *Das Ratsel der Pyramiden*, Kurt Mendelssohn. Pg. 85. Weltbild Verlag GmbH, Augsburg 1993.

of its circumference (i.e. from *a* to *b*, as shown above). The length of the blue circle's radius (and the circumference of each creation unit circle) is equal to Pi (π). The Pi radius corresponds to the distance from the centre of the base of the Great Pyramid to the midpoint of its base side. In other words, it represents half the length of the base of the Great Pyramid.

The corresponding proportional height of the Great Pyramid is determined by adding together the four 'creation unit' diameters (as per the diagram above).

So the resulting right-angled triangle resembles the famous 3-4-5 Pythagorean triangle except that the '3' is replaced with Pi (i.e. 3.14159 …) and the hypotenuse becomes ~5.086 (i.e. $\sqrt{16 + \pi^2}$).[39]
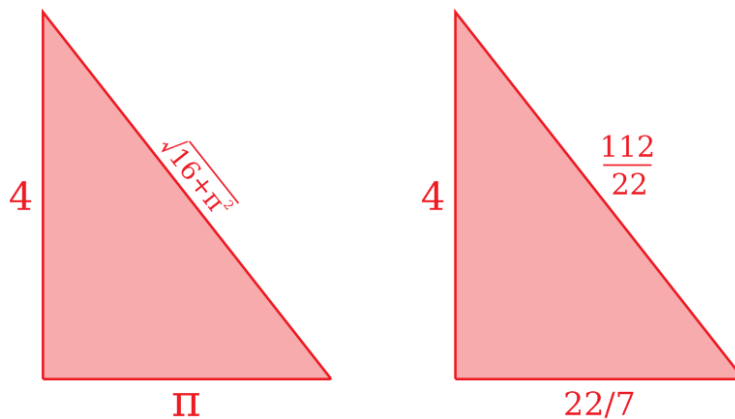

Figure 28 - The Ancient Egyptian Pyramid Triangle

Significantly, the three sides of the triangles (above) mirror the area values of our original squared circle diagram. In that diagram the area of the grey square is equal to 4, the area of the blue circle is equal to Pi (π), and the area of the red circle is equal to $16/\pi$ (~5.092).

[39] Note that this value is very close to $16/\pi$ (5.092)–that is, the area of the red Earth+Moon circle in our original squared circle diagram. It is also very close to $\pi \, x \, \varphi$ (5.083) as previously explained.

$$\frac{16}{\pi} \; : \; 4 \; : \; \pi$$
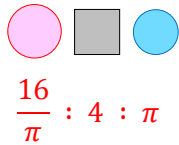
When the sacred Pi fraction is used in the calculation then the triangle's hypotenuse becomes $112/22$, or $56/11$. The fractional value $112/22$ is what the ancient Egyptians would have used when they were employing the $4/\pi$ principle to determine the dimensions of the Great Pyramid.

Thus, Mendelssohn's diagram reveals a practically useful method for building the $4/\pi$ principle into the design of the Great Pyramid of Giza. In my opinion, this methodology proves that the Great Pyramid was built in accordance with the $4/\pi$ ratio, and that its association with the Phi constant (i.e. $\sqrt{\varphi}$) is merely a coincidence—albeit an esoterically meaningful coincidence.

The strongest evidence that the ancient Egyptians used this methodology when they designed the Great Pyramid is revealed in the numbers that they chose for the pyramid's dimensions. When Mendelssohn's pyramid blueprint is used as a basis, these specially selected figures allow for incredibly easy and precise conversions during the pyramid building process. And this in turn, suggests that the ancient Egyptian system of cubit measurement was originally based on the $4/\pi$ geometry of the Great Pyramid.

The height of the Great Pyramid is estimated to have been $280 \; cubits$. This value is quite probable because the ancient Egyptians employed a measure of $28 \; fingers$ to one cubit. As explained previously, their measurement system appears to have been closely associated with the expression $28/7 = 4$.

If we convert the elements of Mendelssohn's basic diagram to the known dimensions of the Great Pyramid we find that the length of the circumference of each of the four creation unit circles must be 220 *cubits*.

The side length of the Great Pyramid is thought to have been 440 *cubits*, so one rotation of a creation unit circle needs to measure half that length (i.e. 220 *cubits*) from the centre of the base to the midpoint of the base side.

Of great significance is the fact that a circle whose circumference measures 220 *cubits* has a diameter of almost exactly 70 *cubits*.[40]
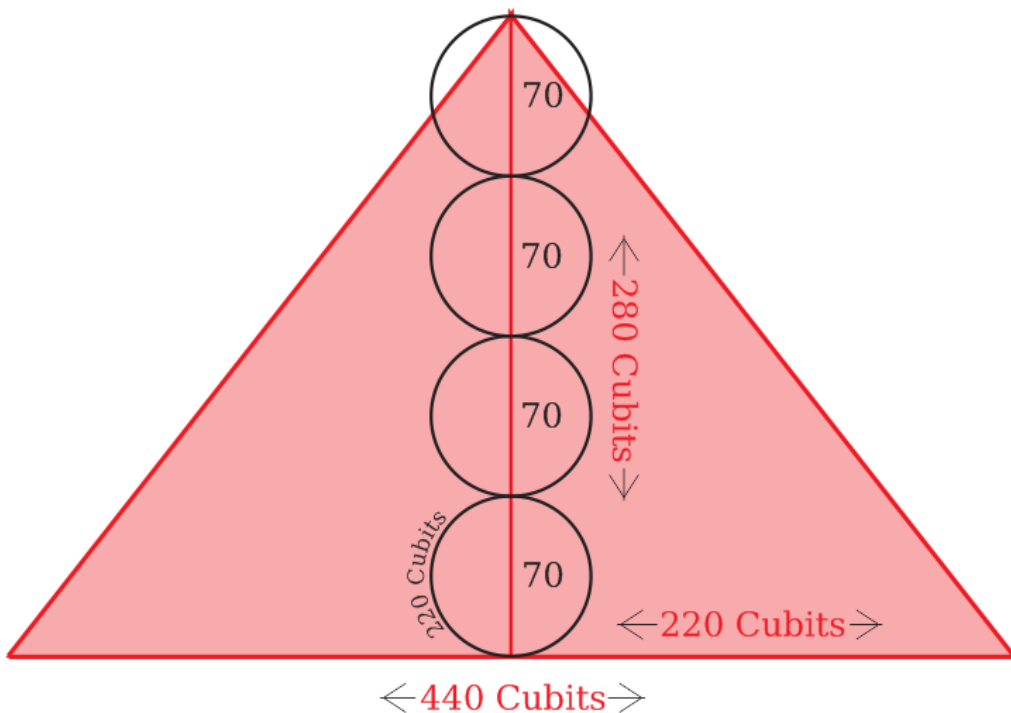
Figure 29 - Dimensions of the Great Pyramid in Cubits

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[40] The precise figure is 70.028 … *cubits*.

The fact that four adjacently stacked circles with a diameter of $\sim 70\,cubits$ each have a circumference of exactly $220\,cubits$ is surely beyond coincidence. These round numbers (of cubits) indicate the deliberate intention of the builders to choose measurements that are easily derived from the $4/\pi$ pyramid blueprint (as presented above). To my mind, this proves beyond doubt that the ancient Egyptians designed the Great Pyramid using the $4/\pi$ ratio, and that their measurement system is also based on it.

Notice that the four 'creation unit' pyramid circles reflect the ancient Egyptian sacred Pi fraction 22/7.
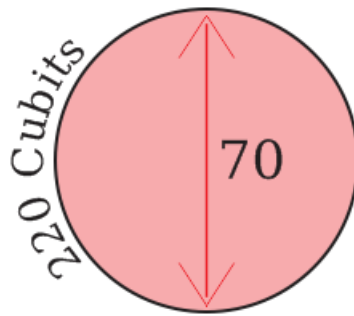
$$\frac{220}{70} = \frac{22}{7}$$

Figure 30 - Pyramid Pi Circle

Strongly reinforcing the $4/\pi$ pyramid design theory is the fact that we also see in these cubit figures another allusion to the expression $28/7 = 4$.

$$\frac{280\ cubits}{70\ cubits} = \frac{28}{7} = 4$$

The above expression is relevant to the design of the Great Pyramid **only if** the builders employed Mendelssohn's pyramid design methodology. As previously explained, the ancient Egyptian system of measurement is fundamentally based on the numbers 4, 7, and 28.

Four Circles = 280 *cubits (Height of Pyramid)*

Circle Diameter ≅ 70 *cubits*

Circle Circumference = 220 *cubits*

One rotation of circle required to mark boundary.

Here are some interesting WWW references pertaining to the geometry of the Great Pyramid of Giza.

Pi and the Great Pyramid

Mystic Places – The Great Pyramid

The Golden Ratio & Squaring the Circle in the Great Pyramid

Squaring the Circle: Marriage of Heaven and Earth

The 4/Pi Spiral

From the above, it appears that a hidden message in the design of the Great Pyramid is that Space (like Time) is also curved and spiral-shaped (i.e. non-linear). This is suggested by the fact that encoded within the physical dimensions of the Great Pyramid is a representation of the 4/Pi-based 'squared circle' blueprint. But how are we to understand this notion of Space being non-linear and spiral-shaped?

I have intimated (above) that the squared circle diagram symbolizes a basic principle of evolution in the universe. I will now elaborate further on that theme.

Symbolically speaking, a circle enclosed within a square represents:

Square – The fixed limitations of the environment within which an organism (or organised collective) evolves.

Circle – An organism that is evolving within the fixed limitations of its environment (i.e. within the square).

Environment

Organism

Figure 31 - Organism and Environment

In the diagram, the blue circle symbolizes a singular autonomous entity (or unified collection of entities). The entity is evolving along a path of evolution, but its development is constrained by a set of fixed laws that characterize its natural environment (i.e. as symbolized by the square).

As evolution proceeds, eventually the entity reaches a certain limit (or plateau) of growth within its environs. As this critical threshold is reached the entity spontaneously develops a new 'higher' faculty that facilitates its entry into a new realm of experience—i.e. into a qualitatively different environment in which it can continue to evolve its newly acquired faculty.

Modern science has called this mysterious evolutionary process the principle of 'emergence'. It is a relatively new scientific theory that recognizes and acknowledges the periodic occurrence of major evolutionary 'jumps' to new levels of potentiality. These 'quantum jumps' produce organic complexities and novel qualities unseen in lower levels, and they build upon and (in a sense) transcend the activity of the lower levels. According to the 'strong emergence' view-point the newly emergent phenomenon also has a top-down causal influence on the lower level phenomenon upon which it is overlaid. Therefore, we see in this theory of Emergence the approach of science to the metaphysical teachings of Theosophy.[41]

A good example of the principle of Emergence at work is the major evolutionary shift that occurred when homo-sapiens (as a collective entity) developed the ability to use reason, and the human mental faculty emerged. At a microcosmic level this process also involved the emergence of the 'ego' (i.e. a strongly unifying sense of individuality) within each member of the human family. Thus, the theory of Emergence helps to explain scientifically why the human race (at a critical stage of evolution) collectively developed new qualities (and complexities) that fundamentally distinguished them from the other animal species.

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[41] For a comprehensive analysis of the theory of Emergence I thoroughly recommend the book: *Mind & Emergence* by Philip Clayton. Oxford University Press, 2004.
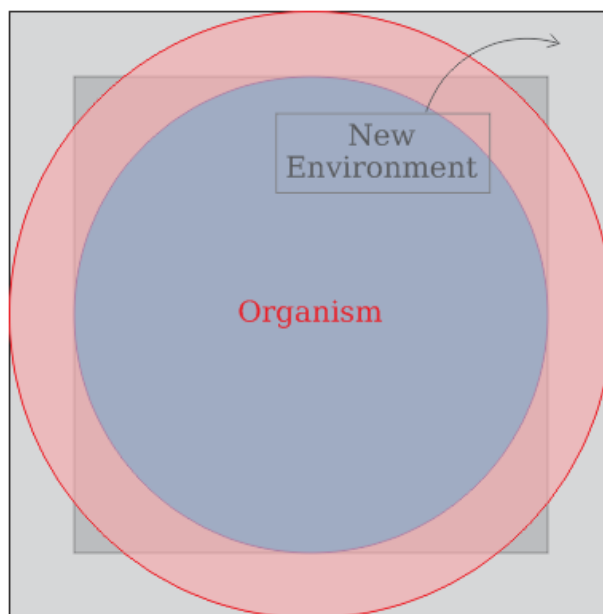
Figure 32 - The Process of Emergence

The process of Emergence is symbolized (in the diagram) by the lengthening of the radius of the blue circle to that of the red circle. This allows the entity to expand beyond the confines of the dark grey square into a new environment with new boundaries and limitations—i.e. as represented by the larger light grey square. Mathematically, in order to achieve this expansion to a new level of emergence the radius of the original blue circle is multiplied by 4/Pi (see below). Note however, that the blue circle continues to exist and function within its original domain (i.e. the dark grey square). The red circle represents the further extension of the entity's awareness into a new higher realm of activity.

As previously explained, the circumference of the red circle is the same length as the perimeter of the dark grey square—i.e. that contains its lower expression (the blue circle). This correlation indicates (in a symbolic manner) that the entity has achieved a 'breakthrough'. The entity has successfully integrated the evolutionary requirements of its previous environment (i.e. as represented by the dark grey square) and this has triggered an expansion (of consciousness) to the next level of emergence.

The newly emerged evolving entity is now represented by the red circle, or to put it more accurately, the red circle represents a new level of awareness for the evolving entity. It still maintains its connection with (and awareness of) the lower level of its manifestation (as represented by the blue circle). The light grey square symbolizes the new environmental parameters that constrain the entity's growth in its newly emerged form. When the entity eventually reaches the next threshold of evolution a new 'higher' level of awareness will emerge and the red circle will expand beyond the natural limitations that have been fixed by the light grey square. In mathematical terms, the radius of the red circle (like that of the blue circle before it) will be multiplied by 4/Pi thereby enabling it to shift to the next 'higher' level of emergence.
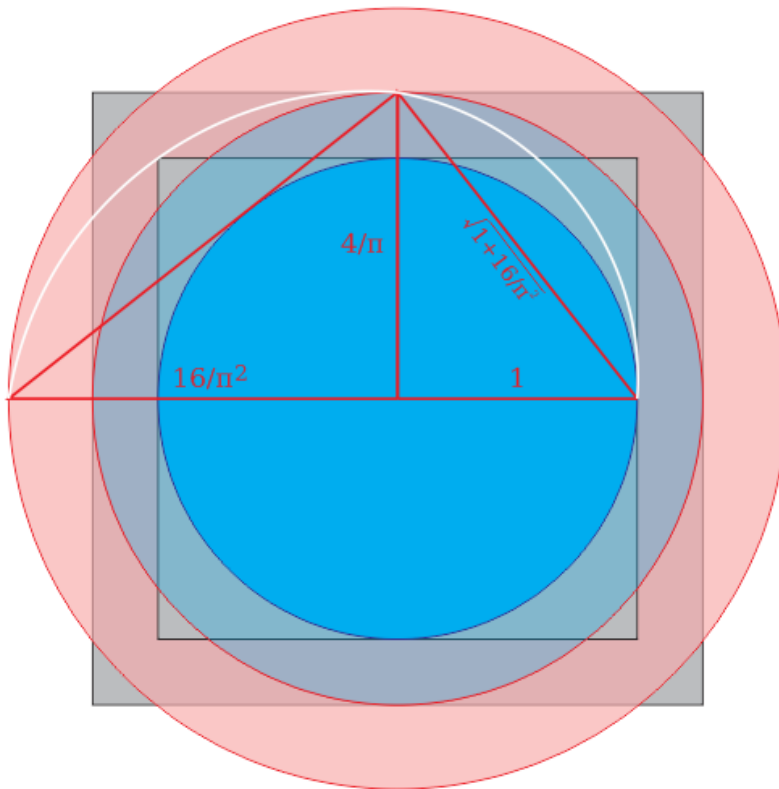
Figure 33 - The 4/Pi Principle & Emergence

Thus, according to the theory of Emergence, the process of evolution is punctuated by an intermittent series of transcendent jumps to new higher levels of manifestation (and also awareness, or being). Symbolically speaking, the 'quantum jump' to each new level of emergence is made possible (and implemented) by the 4/Pi principle. In the diagram (below) the radius of every concentric circle in the expanding series is multiplied by 4/Pi in order to produce the next larger concentric circle. This has the effect of producing a continuous spiral that moves outward from the circumference of one circle to the next.
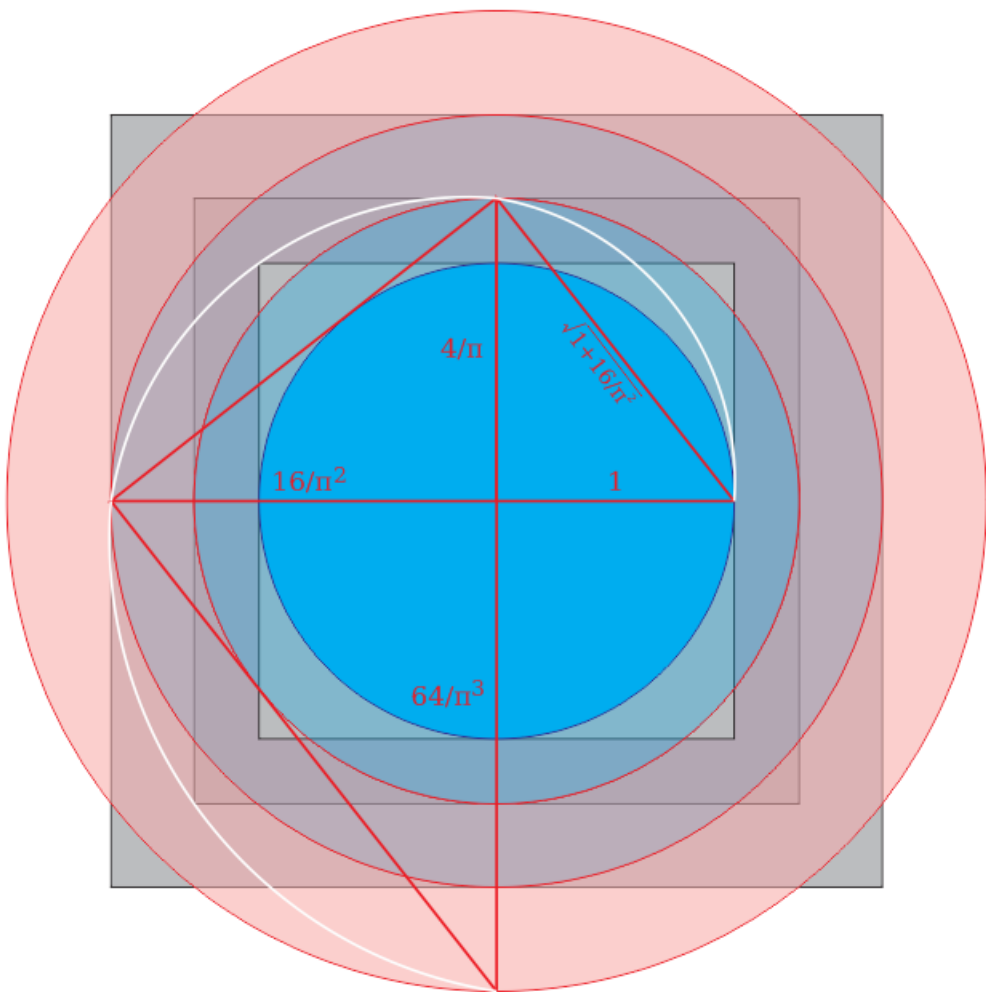
Figure 34 - The 4/Pi Spiral

In the diagram above, the radius of the original blue circle is $1\,unit$. The next higher level of emergence is represented by a circle with a radius of $1(x\,4/\pi) = 4/\pi$. The following level of emergence is represented by a circle of radius $4/\pi(x\,4/\pi) = 16/\pi^2$. Then, the next level of emergence is characterized by a circle whose radius is equal to $16/\pi^2\,(x\,4/\pi) = 64/\pi^3$. Thus, symbolically speaking, the appearance of each consecutive level of emergence involves a multiplication of the 4/Pi principle.

Notice (in the diagram) an interesting geometric property of the first two 4/Pi spiral triangles…
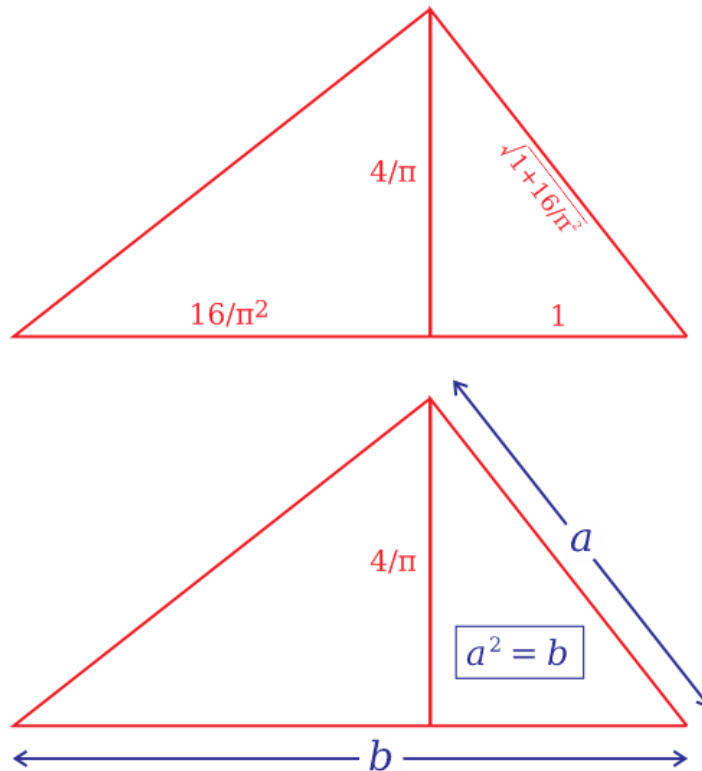
Figure 35 - The 4/Pi Spiral Triangle

As previously explained, the length of side 'a' of the triangle above is very close to the Phi (φ) constant, but it is derived differently to Phi. This

coincidence means that the 4/Pi spiral triangle is quite similar to the famous Phi 'Golden Triangle'.

The 4/Pi spiral also somewhat resembles the 'Fibonacci spiral', but in fact, they differ quite considerably. The Fibonacci spiral is based on a series of adjacent squares, whereas the 4/Pi spiral is based on a series of adjacent triangles the sides of which represent the radii of a series of 'squared circles'.
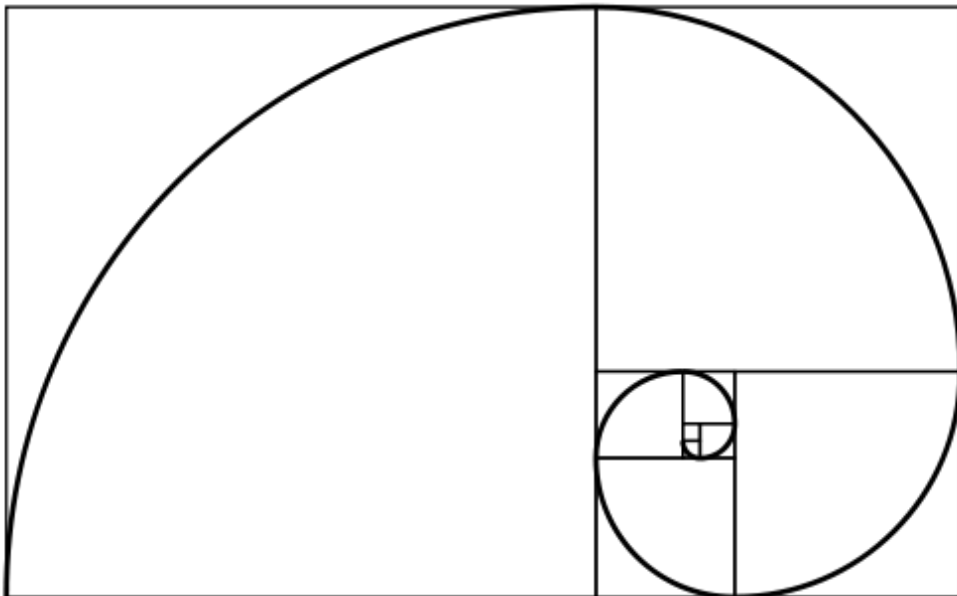

Figure 36 - The Fibonacci Spiral

[Image courtesy of Wikipedia.]

As you can see, each section of the Fibonacci spiral is contained within a perfect square. The equivalent sections of the 4/Pi spiral are contained within rectangular forms.

The 4/Pi spiral is thus symbolic of an evolutionary movement through a progressive series of distinct, but interdependent, emergent levels of

manifestation. Entry into each new level is symbolized by the squaring of the circle—a feat that's achieved using the 4/Pi principle.

The Great Pyramid can therefore be said to symbolize the profoundly significant periodic 'quantum leaps' into new realms of manifestation and experience that naturally occur during the course of evolution. Another name for this rare and mysterious aspect of the evolutionary process is 'Initiation'.

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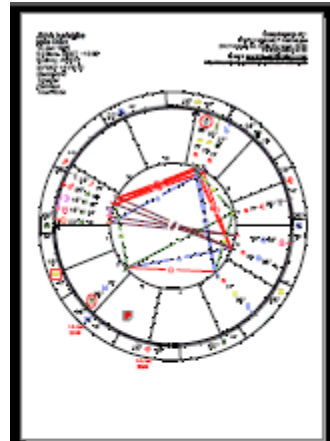(A survey of your next 20 years)
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