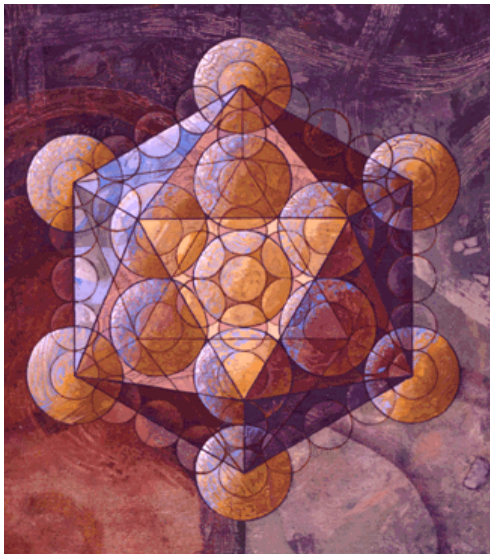

Sacred Geometry

Sacred geometry can be described as a belief system attributing a religious or cultural value to many of the fundamental forms of space and time. According to this belief system, the basic patterns of existence are perceived as sacred because in contemplating them one is contemplating the origin of all things. By studying the nature of these forms and their relationship to each other one may gain insight into the scientific, philosophical, psychological, aesthetic, and mystical laws of the universe.

The perfect and timeless realities of geometry are THE fundamental concepts of the universe. . . THE first archetypes. Sacred Geometry is literally the Architecture of the Universe. Anywhere in this cosmos, the Circle, Triangle, Square, Hexagon, etc. remain the same unchanging archetypes. Sacred Geometry is pure universal truth springing directly from God's Mind. Worlds turn in Sacred Geometry, and the galaxies spin because of it. The contemplation of God's Sacred Geometry has been eternally observed as a legitimate path of enlightenment, both scientific and spiritual. Studying the natural unfolding of the geometric archetypes aligns our human consciousness to the infinite and the eternal. In these studies and meditations we begin to see the way of things . . . the true nature of the universe.

Tiffiney Whitmire-

"All things throughout our universe seem to follow the same fundamental blueprint or geometric patterns. These geometrical archetypes, which reveal to us the nature of each form and its vibrational resonances. They are also symbolic of the underlying metaphysical principle of the inseparable relationship of the part to the whole. It is this principle of oneness underlying all geometry that permeates the architecture of all inseparability and union provides us with a continuous reminder of our relationship to the whole–a blueprint for the mind to the sacred foundation of all things created." We call this blueprint "Sacred Geometry".



The Origins of Sacred Geometry

Our experience and our reaction to all things beautiful is made possible by our unique ability to subconsciously recognize geometric order from transitory chaos. At this level, the perfection inherent in a Greek temple or a painting by Da Vinci is not simply because it is made of a particular material or hue but because the harmonic proportions contained in their design are bound by the laws of sacred geometry, which is itself the embodiment of harmonic waves of energy, melody and universal proportion. What our senses respond to is the geometrical and proportional harmonies and wave forms created through the application of sacred geometry.

As stated in Islam, and echoed in all Abrahamic and Hindu religions, sacred geometry provides the means to see the vestiges of God and Its multiplicity in the universal order of things. Remarkably, the Arabic religion still contains at its core one of the last unadulterated vestiges of primordial truth. Its mosques and art forms, as well as its latter-day architecture still incorporate many of the keys to the structure of the cosmos, symbols of the archetypal world as a creation of God. Indeed, intellectual Islam is to be commended for the way in which it has preserved a mathematical philosophy "akin to the Pythagorean-Platonic tradition of antiquity but in a totally sacred universe free of the nationalism and rationalism which finally stifled and destroyed the esoteric traditions of Greek intellectuality." Therefore it is not by accident that we see in Islamic art the very symbols which reflect the heart of matter.

As the last of the universal revelations- or religions- it is important to note that Islam has served as the curator of sacred geometry rather than its originator. It's not certain where the terrestrial origins of this knowledge stems from but its forms are evident throughout the yantras and mandalas of Hindu, Tibetan and Buddhist art, Celtic carvings and book adornment, even in native North American sand paintings.

The earliest known proprietors of sacred geometry were the Egyptians who embedded its secrets in the ground plans of their temples, their frescoes and, most blatantly, in the Giza pyramid which single-handedly contains most of the fundamental universal laws that many misled schoolchildren now attribute to Pythagoras. Although these enlightened people used geometry for all manner of terrestrial applications- hence the word 'geo-metry' or 'measure of the earth'- the aim was metaphysical in nature.

Because sacred geometry reflected the universe, its pure forms and dynamic equilibriums shared a higher purpose: the attainment of spiritual wholeness through self-reflection, thereby giving structural insight into the workings of the inner self. In other words, a way for the intuitive mind to find a reason for its existence: by journeying inwards, away from the three-dimensional world and towards fewer and more comprehensive ideas and principles.

As the renowned geometer Robert Lawlor observes:

" the implicit goal of this education was to enable the mind to become a channel through which the 'earth' (the level of manifested form) could receive the abstract, cosmic life of the heavens. The practice of geometry was an approach to the way in which the universe is ordered and sustained. Geometric diagrams can be contemplated as still moments revealing a continuous, timeless, universal action generally hidden from our sensory perception. Thus a seemingly common mathematical activity can become a discipline for intellectual and spiritual insight."

As a mirror of the heavens sacred geometry was liberally applied across the Egyptian landscape for millennia as a way to bestow universal order on Earth, as reflected in their Hermetic maxim 'As Above, So Below'. Consequently the practice of maintaining concrete records of this knowledge for posterity was reenacted throughout Europe in fabulous structures such as Chartres cathedral, one of the most impressive hymns to sacred geometry, and whose dissection alone has filled entire books.

That this knowledge made its way as far north as the British Isles can be clearly seen in the ground plans and blueprints of megalithic monuments, mediaeval cathedrals, and the plethora of stone circles. It is clear, therefore, that whatever lies behind sacred geometry was important enough for scholars to go to enormous lengths to preserve it for future generations.

With the advent of **X**-ray photography, science has discovered that the physical structure of elements are governed by a patterned array of intervals surrounding

a central node. The general assumption that the nature of matter is fundamentally composed of particles is rapidly giving way to the concept that the underlying patterns of the material world are geometric wave forms. The irony here is that by choosing to examine reality through geometry many ancient cultures find themselves close to the stance now adopted by modern science, and vice versa.

Little wonder, then, that sacred geometry was so important to the temple builders. And since the universe was created by God it theoretically followed that to embed physical structures with the ratios of creation the universe could be mirrored. In so doing, temples became doorways into the inner workings of the physical world and the inner world of consciousness. This interface would enable anyone so predisposed to integrate oneself with the gods. Sadly, as these temples have fallen by the wayside so too has our wonder of the unseen and our connection to it, presumably why the very fabric of our present society lies rudderless and bankrupt.

There are several major events which have led us to this sad reversal of thought. As Robert Lawlor understands it, "modern thought has difficult access to the concept of the archetypal because European languages require that verbs or action words be associated with nouns. We therefore have no linguistic forms with which to imagine a process or activity that has no material carrier."

The Renaissance saw the last great works based on sacred geometry which had been kept alive via Plato, and philosophies that survived suppression by the emerging Catholic Church. With the implementation of the Inquisition, the rise in secularism and a general move toward a rational and analytical view of the world, connections to holistic and metaphysical practices were severed. By the time Newton and the scientific secularism of the 17th century prevailed, rational logic had gained such a dominance that all esoteric knowledge was inevitably condemned as occult (literal meaning, 'that which is hidden').

Sacred Geometry Culture

Sacred Geometry is a term that is used by archaeologists, anthropologists, and geometricians. It includes the religious, philosophical, and spiritual beliefs that have surrounded geometry in many various cultures throughout history. It covers Pythagorean geometry as well as the relationships between organic curves and logarithmic curves. The "sacred" aspect of geometry has evolved as a result of different cultures. I have provided six different views of how different cultures have made geometry become sacred.

1. The Ancient Greeks: The ancient Greeks used certain geometrically-derived ratios. In this culture the cube traditionally symbolized kingship and earthy foundations. The Golden Section traditionally symbolized philosophy and wisdom. Therefore, if a building was dedicated to a king it would bear traces of cubic geometry and a building dedicated to a heavenly god would be constructed using Golden Section proportions.

The term "Golden Proportion" is historically the unique geometric proportion of two terms and it is designated by the 21st letter of the Greek alphabet - phi. Phi was known by cultures much older than the Greek. The three-term proportion is a:b :: b:c. That is, a is related to b as b is related to c. However, within the three-term continuous proportion there is a special sub-set where the third term is equal to the first term plus the second term, a:b :: b:(a+b), so that only two terms, a and b, are found in the three-term proportion. This is called Phi, the Golden Proportion. "The fact that it is a three-term proportion constructed from two terms is its first distinguishing characteristic, and is parallel with the first mystery of the Holy Trinity : the Three that are Two." (Lawlor 45) "The Golden Proportion represents indisputable proportional evidence of the possibility of a conscious evolution as well as of an evolution of consciousness." (Lawlor 47) The Golden Proportion is not an ordinary ratio. It is found naturally in nature. Its specific ratio is 1.618. For example, it describes the spiral of seeds in sunflowers and the shape of nautilus shells.

Jay Hambidge was an art historian at Yale during the 1920's. He discovered that the spirals on the Ionic column capitals of ancient Greek temples were laid out by the "whirling rectangle" method for creation of a logarithmic spiral. He did not find any "sacred meaning" for the logarithmic spiral form of the Ionic column capital. However, he did find that the Greek architects purposely constructed their temples according to "whirling rectangle" geometric ratios.

2. The Hindus: Before the Hindus erect any type of building, large or small, for religious purposes they first perform a simple geometric construction on the ground. This means that they construct a square from establishing due East and West. It is from this square that they lay out the entire building. The geometric construction is associated by prayers and religious observances. Another excellent example it the city of Anchor Wat in Cambodia that was build by early Vedic culture. It is completely constructed to mirror the constellation of the dragon as it was seen in the sky at about 10,000 B.C. Golden rations and fractal like stone work is also displayed throughout many Vedic temples.

3. The Christians: The cross is used as the major emblem for the Christian religion. In geometrical terms the cross, elaborated in the Medieval period, is the form of an unfolded cube. It was also associated with kingship. Many of the Gothic churches were built by proportions derived from the geometry inherent in the cube or the double-cube. Many Christian churches are still built in this form today.

4. The Ancient Egyptians: The ancient Egyptians used regular polygons in their construction, but discovered that these polygons could be increased while keeping the ratio of their sides by the addition of a strictly constructed area. This was named the "gnomon" by the Greeks. The god Osiris was given the recognition for the concept of the ratio-retaining expansion of a rectangular area. Egyptians also used the square as a symbol of kingship.

5. Ancient Armenians: Ancestral Armenians had a refined knowledge of astronomy and were able to predict astral events to an accurate degree. The oldest known observatories in the world are in Armenia. Possibly erected as early as 4200 BCE, Karahundj and the ca. 2800 BCE observatory at Metsamor allowed Ancestral Armenians to develop geometry to such a level they could measure distances, latitudes and longitudes, envision the world as round, and were predicting solar and lunar eclipses about 1000 years before the Egyptians began doing the same. The fortress cities and temples that have been excavated in Armenia (some going back as far as 7000 years) show a remarkable awareness of using sacred numbers and geometry in constructing sacred buildings, using a complex system of squares, rectangles, circles, polygons with intersecting patterns.

6. Neolithic Culture: Newgrange was built around 3,200 BCE. It is a circular mound of earth and stone and is about 250 feet in diameter. The interior is solid, but there is a single stone-lined passage that is 62 feet long and 3 feet wide. This passage terminates close to the center of the mound in a main chamber with a corbelled vault 20 feet high and three recessed chambers. The entrance of Newgrange incorporates a "roof box" that allows the sun, at sunrise on the morning of the winter solstice on December 21, to enter the interior. The sun penetrates the full length of the interior passage all the way to the main chamber. It is interesting to me that Newgrange was chosen to be a circle and that the sun plays a very important role in its architecture. As stated previously, The circle represents the sun and relates the natural aspects with the spiritual. There is only one sun and therefore, one God who is the universal lord. This also represents the number one.

Sacred Architecture

The term sacred geometry is also used for geometry which is employed in the design of sacred architecture or art. The underlying belief is that geometry and mathematical ratios discoverable from geometry also underlay music, cosmology, and other observable features of the natural universe. This belief was held from ancient times through the Renaissance and influenced the construction of temples and churches and the creation of religious art.

The Parthenon was created by the Greeks. The Greeks believed that everything, form the human body to the entire cosmos, was governed by an order accessible to human reason. The Parthenon was created as a temple for Athena Parthenos. It is located at the top of the Acropolis of Athens. It was built to house a huge gold and ivory statue of the goddess Athena.

The Parthenon is known as a geometrical masterpiece. It is very pleasing to the eye due to the unique architecture. The lines that are perceived as horizontals in fact are curved upward in the middle. The platform upon which the columns of the temple stand is slightly curved on all four sides. All of the columns are tilted inward slightly, and are placed closer together toward the corners of the building.

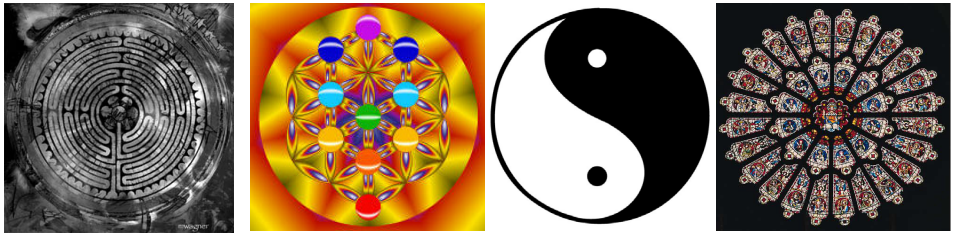
The geometrical aspect of the Parthenon is also very interesting. If you add the number of Columns on the front and then multiply them by 2 and add 1 you will get the number of columns on each side. (8x2 = 16, 16+1 = 17) This is said to be geometrically proportional. It is interesting that the number of columns chosen for the front was eight. Eight also represents the infinity symbol and looks like a spiral. The spiral is important when discussing aspects of the Golden Mean because the spiral helps describe the Golden Mean logarithmic spiral. The sunflower is an example. The sunflower has 55 clockwise spirals overlaid onto either 34 or 89 counterclockwise spirals. We recognise these numbers as part of the Fibonacci Series, which is generated by Phi.

In sacred geometry, numbers are combined with shapes to create a harmonious whole. The idea was to reunite humanity with the cosmic whole. Similar geometric patterns can be found in Sun Worship Temples throughout Mesopotamia and the Armenian Plateau, the shrines of Isis in Egypt, tabernacles of Jehovah, sanctuaries of Marduk, Christian churches and Islamic mosques. Throughout history, there have been some basic geometrical forms of which all the universe is composed, which can be generated by means of two tools used by mathematicians since the beginning of civilization: the straight edge and the compass. The construction of these basic shapes does not require measurement.

There are many other examples of Sacred Geometry that exist in architecture, statues, temples, and even maps. Sacred Geometry is very interesting as it can play a very important role in many different aspects of our lives. Sacred Geometry has many different avenues that can be explored.

Art and Architecture

The golden ratio, geometric ratios, and geometric figures were often used in the design of Egyptian, ancient Indian, Greek and Roman architecture. Medieval European cathedrals also incorporated symbolic geometry. Examples include: Labyrinth (an Eulerian path, as distinct from a maze), Mandala, Parthenon, Taijitu (Yin-Yang), Tree of Life, Rose Window, Celtic art such as the Book of Kells, and Yantra.



From the previous page: Labyrinth, Tree of Life, Yin-Yang, Rose Window respectivly

Yantra literally means loom, instrument or machine. In actual practice, a yantra is a symbolic representation of aspects of divinity. It is an interlocking matrix of geometric figures, circles, triangles and floral patterns that form fractal patterns of elegance and beauty. Yantras function as revelatory symbols of cosmic truths. They are said to represent a map of both the universe and an individual's mind or consciousness. A yantra and a mantra representing the same aspect of Divinity can be used together.

The Meaning of Numbers

"Mathematics, as the basis of all science, is itself a universal symbolism, a language into which all knowledge is eventually translated and rendered communicable. The key to all knowledge is in the science of numbers." (Sepharial 24)

1: One symbolizes manifestation, assertion, the ego, selfhood and isolation. In the philosophical sense, it represents the synthesis and fundamental unity of things. In a religious sense, it represents the lord. In a material sense, it represents the individual. It is the symbol of the Sun. Its color is white.

2: Two symbolizes plus and minus, active and passive, male and female, positive and negative and so on. It stands for the dualism of manifested life-God and Nature. It denotes agreement and separation. Its color is yellow or cream.

3: Three symbolizes the trinity of life, substance, and intelligence, of force, matter, and consciousness. The family-father, mother, and child. Its color is Violet.

4: Four is the number of reality and concretion. It is the cube or the square. It symbolizes the cross, segmentation, partition, order, and classification. Its color is Orange or antique gold.

5: Five represents expansion. It symbolizes inclusiveness, comprehension, understanding, judgement, reason, and logic. Its color is indigo or dark blue.

6: Six is the number of cooperation. It symbolizes marriage, a link, and connection. Six is the interaction of the spiritual and material. Six also represents art, music, dancing. Its color is pale blue or turquoise.

7: Seven is the number of completion. It represents time, space, duration, and distance. It also represents old age, death, or endurance, and immortality. Its color is silver or opalescence.

8: Eight is the number of dissolution. It denotes the law of cyclic evolution, the breaking back of the natural to the spiritual. Its color is Black or deep brown.

9: Nine is the number of regeneration. A new birth. It represents spirituality, premonition, and voyaging. It also represents penetration, strife, energy, and anger. Its color is red. The result of 3x3, nine represents an even greater holiness found in three.

10: According to St. Augustine, this number signifies perfection, because it is the sum of 3+7. It is found in the ten commandments, consisting of 3 laws pertaining to the love of God, and seven to the love of one's neighbor. In Hebraic liturgy it can be found in the ten shores of Egypt, the ten ropes of the tent of the tabernacle, the height of the cherubs in the temple and the ten horns of the apocalyptic beast. Ten is the round and perfect number that forms the basis of the decimal system and is the universal number for the Pythagoreans.

12: This number formed the basis of the Sumerian and Babylonian numerical system. It holds the twelve signs of the zodiac, the twelve months of the year, the twelve hours of the day. It was significant in Jewish religion: the twelve gates of paradise, the twelve tribes of Israel, the twelve bronze calves. In Christianity: the twelve apostles, the twelve stars around the head the apocalyptic woman, etc.

The superficial equivalents of the sphere, cone and cube are the circle, the triangle, and the square. These figures, used in symbolical thought, represent states of consciousness. These figures are related to the numbers 1, 3, 4, which denote God, Humanity, and Nature. One Being is represented as spirit, soul and body.

All geometrical relations are expressions of numerical ratios. "... we give natural assent to the power of numbers on which, in the Pythagorean concept, the universe is founded." (Sepharial 19)

The Shapes of the Sacred

As far back as Greek Mystery schools 2500 years ago, we as a species were taught that there are five perfect 3-dimensional forms -The tetrahedron, hexahedron, octahedron, dodecahedron, and icosahedron. Collectively these are known as The Platonic Solids -- and are the foundation of everything in the physical world. Modern scholars ridiculed this idea until the 1980's, when Professor Robert Moon at the University of Chicago demonstrated that the entire Periodic Table of Elements -- literally everything in the physical world -- is based on these same five forms! In fact, throughout modern Physics, Chemistry, and Biology, the sacred geometric patterns of creation are being rediscovered, giving us pause to contemplate how early civilization philosophically discerned these shapes without the aid of telescope or microscope.

Life itself as we know it is inextricably interwoven with geometric forms, from the angles of atomic bonds in the molecules of the amino acids, to the helical spirals of DNA, to the spherical prototype of the cell, to the first few cells of an organism which assume vesicle, tetrahedral, and star (double) tetrahedral forms prior to the diversification of tissues for different physiological functions. Our human bodies on this planet all developed with a common geometric progression from one to two to four to eight primal cells and beyond.

Almost everywhere we look, the mineral intelligence embodied within crystalline structures follows a geometry unfaltering in its exactitude. The lattice patterns of crystals all express the principles of mathematical perfection and repetition of a fundamental essence, each with a characteristic spectrum of resonances defined by the angles, lengths and relational orientations of its atomic components.

THE POINT · : At the center of a circle or a sphere is always an infinitesimal point. The point needs no dimension, yet embraces all dimension. Transcendence of the illusions of time and space result in the point of here and now, our most primal light of consciousness. The proverbial "light at the end of the tunnel" is being validated by the ever-increasing literature on so-called "near-death experiences". If our essence is truly spiritual omnipresence, then perhaps the "point" of our being "here" is to recognize the oneness we share, validating all "individuals" as equally precious and sacred aspects of that one.

THE CIRCLE ○: The circles represents the sun and relates the natural aspects with the spiritual. The circle is a two-dimensional shadow of the sphere which is regarded throughout cultural history as an icon of the ineffable oneness; the indivisible fulfillment of the Universe. All other symbols and geometries reflect various aspects of the profound and consummate perfection of the circle, sphere and other higher dimensional forms of these we might imagine.

PI π: The ratio of the circumference of a circle to its diameter, Pi, is the original transcendental and irrational number. (Pi equals about 3.14159265358979323846264338327950288419716939937511...) It cannot be expressed in terms of the ratio of two whole numbers, or in the language of sacred symbolism, the essence of the circle exists in a dimension that transcends the linear rationality that it contains. Our holistic perspectives, feelings and intuitions encompass the finite elements of the ideas that are within them, yet have a greater wisdom than can be expressed by those ideas alone.

SPHERE ● : The sphere is a circle in three dimensional shape constructed from the same diameter circle in every angle in space sharing the same central point. Starting with what may be the simplest and most perfect of forms, the sphere is an ultimate expression of unity, completeness, and integrity. There is no point of view given greater or lesser importance, and all points on the surface are equally accessible and regarded by the center from which all originate. Atoms, cells, seeds, planets, and globular star systems all echo the spherical paradigm of total inclusion, acceptance, simultaneous potential and fruition, the macrocosm and microcosm.

VESICA PISCIS  : The Vesica Piscis is formed by the intersection of two circles or spheres whose centers exactly touch. This symbolic intersection represents the "common ground", "shared vision" or "mutual understanding" between equal individuals. The shape of the human eye itself is a Vesica Piscis. The spiritual significance of "seeing eye to eye" to the "mirror of the soul" was highly regarded by numerous Renaissance artists who used this form extensively in art and architecture. The ratio of the axes of the form is the square root of 3, which alludes to the deepest nature of the triune which cannot be adequately expressed by rational language alone. From the vesica we can create the simplest of polygons, the equilateral triangle. The two triangles contained in this 'womb' are themselves symbolic of the world above and the world below, just as the left circle can represent spirit and the right one matter. It is symbolic to Christianity as representational of Jesus Christ and the Piscean age; as the Holy of Holies it carries the number 2368 in gematria, the number also equated with Jesus Christ.

EQUILATERAL TRIANGLE  : A three sided, three corner geometric shape with each side 60 degrees on each point. Spun on its axis it creates a cone. Derived from the intersection of two circles drawn through each other's center. Polygons can be made by adding equilateral triangles.

TETRAHEDRON  : A three sided equilateral triangle on each of its four sides. Think of it as a pyramid with three sides and a triangle for its base. It is the symbol of fire.

OCTOHEDRON  : A three sided equilateral triangle on each of its eight sides. Think of it as a three dimensional diamond shape. It is the symbol for air.

ISOCAHEDRAON  : A equilateral triangle on each of its twenty sides. It is the symbol for water.

Star Tetrahedron  : Sometimes referred to as a double tetrahedron or merkaba. Created from the precise intersection of two tetrahedrons forming a combination of right triangles. This is created within Metatron's cube from the fruit of life.

SQUARE ■: A unique geometrical figure; allows a precise division by two and multiples of two, by drawing only. With an inscribed cross it is possible to divide it into eight triangles, thus defining eight cardinal points (four cardinal directions and the four corners of the world). The symbolic opposite of the circle is the square which is considered material and of the earth. Both forms, when given equal areas and superimposed, become a symbol of the fusion between humanity and the universe, of spirit and matter. It is the first symbol and the one on whose proportions whole cosmological cities were founded.

SQUARE ROOT of **2**: The square root of 2 embodies a profound principle of the whole being more than the sum of its parts. (The square root of two equals about 1.414213562...) The orthogonal dimensions (axes at right angles) form the conjugal union of the horizontal and vertical which give birth to the greater offspring of the hypotenuse. The new generation possesses the capacity for synthesis, growth, integration and reconciliation of polarities by spanning both perspectives equally. The root of two originating from the square leads to a greater unity, a higher expression of its essential truth, faithful to its lineage.

The fact that the root is irrational expresses the concept that our higher dimensional faculties can't always necessarily be expressed in lower order dimensional terms - e.g. "And the light shineth in darkness; and the darkness comprehended it not." (from the Gospel of St. John, Chapter 1, verse 5). By the same token, we have the capacity to surpass the genetically programmed limitations of our ancestors, if we can shift into a new frame of reference (i.e. neutral with respect to prior axes, yet formed from that matrix-seed conjugation. Our dictionary refers to the word matrix both as a womb and an array (or grid lattice). Our language has some wonderful built-in metaphors if we look for them!

CUBE ❒: A square pulled out into three dimensions with six sides, each a perfect square. View on its corner it forms a hexagram. A cube is also called a hexahedron. It is the symbol of earth.

GOLDEN PROPORTION **Φ**: A ratio that has been used extensively throughout history to erect buildings, create artwork, etc. This ratio can be reproduced with root rectangles and their derivatives. The ratio is represented by Phi (Φ). Finally, all of this is combined to create complete harmony throughout a building. Every part is fixed in shape and size. Nothing can be added or removed without disturbing the harmony of the whole composition. This ratio can be seen in the shape of a sea shell to the patterns in leaves and anatomical proportions in man.

It goes by many names including: golden ratio, phi ratio, sacred, golden mean or divine proportion and is another fundamental measure that seems to crop up almost everywhere, including crops. (The golden ratio is about 1.6180339887498948482045868 34365638117720309180...) The golden ratio is the unique ratio such that the ratio of the whole to the larger portion is the same as the ratio of the larger portion to the smaller portion. As such, it symbolically links each new generation to its ancestors, preserving the continuity of relationship as the means for retracing its lineage.

The golden ratio has some unique properties and makes some interesting appearances:

Φ = phi^2 - 1; therefore 1 + phi = phi^2; phi + phi^2 = phi^3; phi^2 + phi^3= phi^4; ad infinitum.

Φ = 1 + 1/(1 + 1/(1 + 1/(1 + 1/(1 + 1/(1 + 1/...)))))...

Φ = (sec 72)/2 =(csc 18)/2 = 1/(2 cos 72) = 1/(2 sin 18) = 2 sin 54 = 2 cos 36 = 2/(csc 54) = 2/ (sec 36)

It gives rise to a spiral form which occurs in many natural forms and patterns of plant growth which, as Michell points out, "gives support to the tenet of traditional philosophy that number preceded creation and determined its development."

It is from the golden mean that we also extrapolate the pentagon and the five-pointed star, and with it the association with humanity since the human figure with outstretched limbs is similar to the pentagram. This was the symbol of the Pythagorean's humanistic science and consequently worn as a talisman of good health. Its symbolism frequently pervades native American philosophy, just as Christians associated the pentagram with Jesus. The pentagon is lunar and psychic; the angle between two sides of a pentagon is 108 degrees, 1080 being the characteristic lunar number.

phi = ratio of adjacent terms of the famous Fibonacci Series evaluated at infinity; the Fibonacci Series is a rather ubiquitous set of numbers that begins with one and one and each term thereafter is the sum of the prior two terms, thus: 1,1,2,3,5,8,13,21,34,55, 89,144... (interesting that the 12th term is 12 "raised to a higher power", which appears prominently in a vast collection of metaphysical literature)

Fibonacci ratios appear in the ratio of the number of spiral arms in daisies, in the chronology of rabbit populations, in the sequence of leaf patterns as they twist around a branch, and a myriad of places in nature where self-generating patterns are in effect. The sequence is the rational progression towards the irrational number embodied in the quintessential golden ratio. This most aesthetically pleasing proportion, phi, has been utilized by numerous artists since (and probably before!) the construction of the Great Pyramid. As scholars and artists of eras gone by discovered (such as Leonardo Da Vinci, Plato and Pythagoras), the intentional use of these natural proportions in art of various forms expands our sense of beauty, balance and harmony to optimal effect. Leonardo Da Vinci used the Golden Ratio in his painting of The Last Supper in both the overall composition (three vertical Golden Rectangles, and a decagon (which contains the golden ratio) for alignment of the central figure of Jesus. The outline of the Parthenon at the Acropolis near Athens, Greece is enclosed by a Golden Rectangle by design.

SPIRALS  : This spiral generated by a recursive nest of Golden Triangles (triangles with relative side lengths of 1, phi and phi) is the classic shape of the Chambered Nautilus shell. The creature building this shell uses the same proportions for each expanded chamber that is added; growth follows a law which is everywhere the same.

PENTAGON  : Five equal sides with each line attached to the other at 72 degrees. Represents the five limbs of man. A pentagon can be derived by several means using a compass and ruler.

PENTAGRAM  : Derived from the pentagon, it was in ancient times a symbol for health and salvation, and in the Middle Ages used as a symbol to repulse evil spirits. As a geometric form it has a multitude of different meanings. Its special relationship to the golden section represented the possibility of infinite divisions in both directions, making it more mystical.

HEXAGON  : Made by dividing the circumference of a circle by its radius. The simple construction method of this form gave it special meaning, and it could be observed in nature (beehives, the forms of basalt rocks), and had one symbolic form in 'Solomon's Seal'.

DUODECAHEDRON  : A three dimensional shape created from the construction of 12 pentagrams connected at their sides in space. It is the symbol of ether or spirit.

STAR OF DAVID  : The overlapping of both triangles produces the hexagon, also referred to as the Star of David. The characteristics and symbolism behind this figure are immense. It is also through the natural division of a circle into six parts which allows six circles to fit exactly around the circumference of an equal seventh. John Michell has studied the implications of the hexagon at length and further adds that it is "symbolic of the order of the universe in the fact that twelve equal spheres can be placed around a thirteenth so that each touches the nucleus and four of its neighbors, producing the geometer's image of twelve disciples grouped around the master. Christ, Osiris and Mohammed are among those who are represented as a central sphere with twelve retainers." It is also a common symbol in Islamic geometry, and its qualities are rational and solar, as evidenced by its 6x60-degree triangles which reflect the solar number 666.

THE SEVEN DAYS  : Represents the seven days of creation.

SEED OF LIFE  : Seed of life is the origin of all. The Seed of Life is a stage before the shape known as the Flower of Life which produces the "Fruit of Life". The Fruit of life is the blueprint of the universe; it contains every atom, molecular structure, life form and eventually everything in existence. Therefore, all things existing can be built from the shape of the seed of life.

TREE OF LIFE  : The Tree of Life can be derived from the Seed of Life by the placement of smaller circles at specific intersections of the circles. One may recognize this as the Tree of Life of the Kabbalah faith. The Tree of Life is a tool used to categorize and organize various mystical concepts, and is central to the teachings of Aleister Crowley and the Kabbalah. At its most simple level, it is composed of ten spheres, or emanations, called sephiroth (sing. "sephira") which are connected by twenty two paths. The sephiroth are represented by the planets and the paths by the characters of the Hebrew alphabet, which are subdivided by the five elements, the seven classical planets, and the twelve signs of the Zodiac.

Within the western magical tradition, the Tree is used as a kind of conceptual filing cabinet. Each sephira and path is assigned various ideas, such as gods, cards of the Tarot, astrological planets and signs, elements, etc. Within Thelema, the seminal book which defines all these correspondences is Liber 777 by Aleister Crowley, although there have been other influential writers on the topic.

Flower of Life  : The Flower of Life is a geometrical figure composed of multiple evenly-spaced, overlapping circles, that are arranged so that they form a flower-like pattern with a six-fold symmetry like a hexagon. In other words, the center of each circle is on the circumference of six surrounding circles of the same diameter.

The Temple of Osiris at Abydos, Egypt contains the oldest to date example. It is carved in granite and may possibly represent the Eye of Ra a symbol of the authority of the pharaoh. Other examples can be found in Phoenician, Assyrian, Indian, Asian, Middle Eastern, and medieval art.

A Flower of Life pattern can be constructed with a pen, compass and paper, by creating multiple series of interlinking circles. In some renditions, the rosette on the unofficial flag of Padania is a partial version of the "flower of life" pattern.

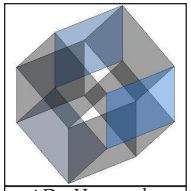
The Flower of Life pattern contains the basis of Metatron's Cube. From this pattern, all five of the Platonic solids can be derived.

Fruit of Life  : Based upon the flower of life, the fruit of life forms a new template that is used to draw Metatron's cube and derive all the platonic solids.

METATRON'S CUBE  : Metatron's Cube is another sacred symbol and is often used to ward off demons, for luck, for protection and also in alchemy. Metatron's cube contains all five of the Platonic solids. The Platonic solids have been known since antiquity although it was the Greeks who studied it in detail. Plato called them the 'perfect solids', as they were the most aesthetically beautiful and symmetrical. The criteria for a Platonic solid is that all their edges be equal, that there only be on regular polygonal surface with one angle, and that the points all fit on the surface of a sphere. There are exactly five known Platonic solids: the cube, the tetrahedron, the octahedron, the dodecahedron and the icosahedron. By systematically eliminating some of the lines from the Metatron's Cube, you can derive these solids.

The Fruit of Life has thirteen circles. [13=4=time] If each circle's center is considered a "node", and each node is connected to each other node with a single line, a total of seventy-eight lines are created. Within this cube, many other shapes can be found, including two-dimensionally flattened versions of the five platonic solids. In early kabbalist scriptures, Metatron supposedly forms the cube from his soul. This Cube can later be seen in Christian art, where it appears on his chest or floating behind him. Metatron's cube is also considered a holy glyph, and was often drawn around an object or person to ward off demons and satanic powers. This idea is also present in alchemy, in which the cube was favored as a containment circle or creation circle.

The simplest means of constructing Metatron's Cube is to begin with a cube flattened along a diagonal that passes through its center, such that it becomes a 2D figure, equivalent to a regular hexagon divided via its own diagonals into six equilateral triangles. The vertices of this 2D figure are then connected with additional lines. Several steps later, the full Metatron's Cube figure is formed.


4 D - Hypercube

HIGHER DIMENSIONALITY : The progression from point (0-dimensional) to line (1-dimensional) to plane (2-dimensional) to space (3-dimensional) and beyond leads us to the question - if mapping from higher order dimensions to lower ones loses vital information (as we can readily observe with optical illusions resulting from third to second dimensional mapping), does our "fixation" with a 3-dimensional space introduce crucial distortions in our view of reality that a higher-dimensional perspective would not lead us to? There is a wealth of good literature on this subject; it's always fascinating how nature propagates the same essence regardless of the magnitude of its expression...we can see the same order: atomic structures, planetary structures, solar systemic structures, galactic structures and cosmic structures throughout observable space. More proof if this concept will be related as this chapter continues.

Contemporary Usage

A contemporary usage of the term sacred geometry describes New Age and occult assertions of a mathematical order to the intrinsic nature of the universe. Scientists see the same geometric and mathematical patterns arise directly from natural principles.

Some of the most prevalent traditional geometric forms ascribed to sacred geometry include: the sphere, the vesica piscis, the 5 platonic solids, the torus (doughnut), the golden spiral, the tesseract (4-dimensional cube), and the merkaba (oppositely oriented and interpenetrating tetrahedrons).

Believers in sacred geometry also see religious and spiritual significance in crop circles, fractals and in ancient architecture, such as the Great Pyramid of Giza and Stonehenge.

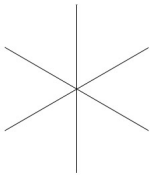
Manifesting the Sacred Shapes

Sacred geometry is a term that has been given to various geometrical representations of commonly occurring mathematical relationships in nature, and it is these relationships that pervade through music, cosmology, geometry and even physics. Our ancestors had come to observe and learn of these geometrical instances and it has usually been described and defined in terms of spiritual and divine allusions, often influencing decisions such as the construction of holy buildings and interpretation of events. And it was because of this association with nature and the divine that it came to be known as sacred geometry.

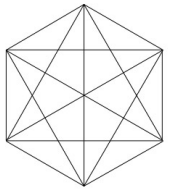
It is the recurring nature and pervasiveness of sacred geometrical concepts that they are often associated with spiritualistic principles, such as the creation of the Universe. Such interpretations are understandably the product of personal convictions and depend upon an individual's view of the universe, but exploring this would go beyond the scope of this article. The point is, there is much to explore in this field as it is a natural component of mathematics. The reason that very little analysis has been performed on this is due to the New Age associations that it has now come to be considered an integral part of, although this is an ignorant misconception that many people like to hold.

This section will show you how to create various sacred geometry objects, specifically the vesica piscis, the Egg of Life, the Flower of Life, the Fruit of Life, the Tree of Life and then using these to derive the five Platonic Solids. Along the way, I shall be associating a Universal Creation story along with the initial progression of the geometry, merely to demonstrate how these simple concepts can give rise to spiritual interpretations, although these do not reflect my personal beliefs. You can do this yourself if you have a compass to draw circles with and a pencil. Or, if you have a graphics software such as Adobe Photoshop, Illustrator or Paintshop Pro.

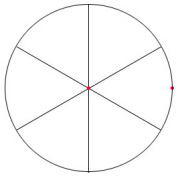
To begin with, draw a two-dimensional representation of the three spatial axes, X, Y and Z. In actuality, the sacred geometry derivations occur in the three dimensional space. However, for the sake of simplicity, we represent it in two dimensions as that is the form we are most comfortable with:



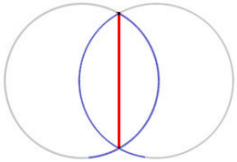
Next connect the points:



Now that we have the lines connected, we can make a circle from the octahedron by using the middle point as the center of the circle and any of the vertices of the octahedron as a measurement of the radius. Using these two points, we get a very simple circle.



Notice the two red dots in the image. One is at the center, and one is on the circumference of the circle. These two points now serve as the points from which to create a new circle.

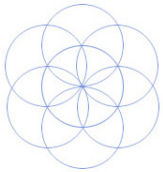


A new sphere is created, and this is symbolic to the first day of the Creation or Genesis.

This creates two interlocking spheres, and this is known as the vesica piscis.

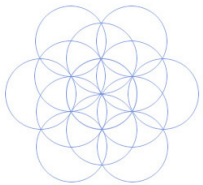
Notice the thick blue line running from the intersection points of the circle. The intersection points serve as the center point for the next circle to draw, again using the center of the original circle as radius of the new circle. Similarly, we continue until we have drawn six circles (spheres) around the original.

This creates the following shape or the beginning of a pattern:

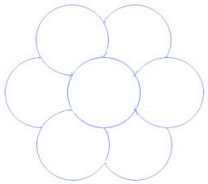


This figure is called the 7 Days of Creation. It is symbolic of Creation.

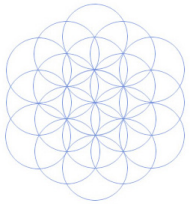
We now continue with another set of rotations, this time using the intersections of the outer circles with each other. If you're observant, you can already see which point will serve as the radius of the new outer circles we're about to draw.



Now, by erasing some of the lines from the image, we end up with a two dimensional representation of a three dimensional object. Keep in mind that these are all actually three dimensional objects, and the eighth sphere is directly behind the center sphere.

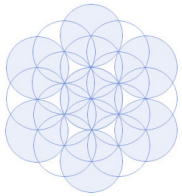


The figure above is called the Egg of Life.



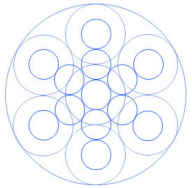
Getting back to the previous rotation we just made, if we use the same principle to create one more rotation of circles around it, we end up with a very important figure. The Flower of Life is pictured above.

The Flower of Life is an important aspect of Sacred Geometry and happens to be a mysteriously ubiquitous symbol across almost all cultures and religions. The oldest Flower of Life symbol has been found in the Temple of Osiris at Abydos in Egypt, in intricate detail. Other Flowers of Life have been found at the Golden Temple in India, Hampi and the Temples at Ajanta in India, Islamic mosques in the Middle East, old Roman sites in Turkey, as well as Spain, the Forbidden city in China, Morocco, Lebanon, Peru, Mexico and Austria.

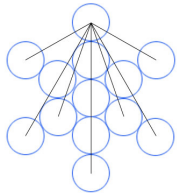


The Flower of Life is usually depicted by taking the seven main circles and completing the 'petals' overlaying them and its traditional significance has been to represent the seven days of Creation.

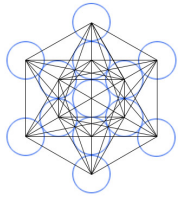
Notice the darkened circles in the image above. The Flower of life is periodic, because you can further draw circles within the half-circles in exactly the same manner as before, and this would create the Fruit of Life connected to other Fruits of Life.



We now take the Fruit of Life as represented by the darkened circles above and will now derive the Platonic solids from it. Start at one circle's center, and draw a line to the centers of all other circles.

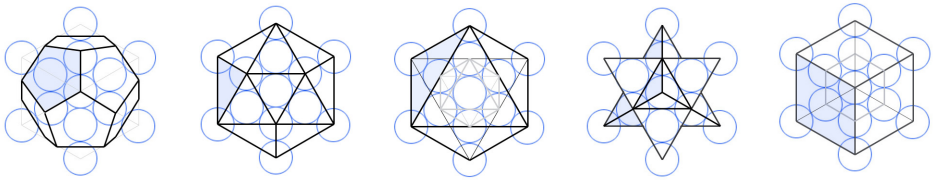


Do the same thing for each of the centers of the circles and you will finally end up with a seemingly complex set of connections. This is known as the Metatron's Cube.



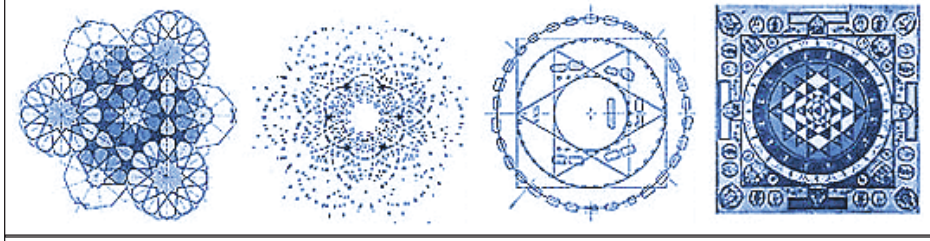
Metatron's cube contains all five of the Platonic solids. The Platonic solids have been

known since antiquity although it was the Greeks who studied it in detail. Plato called them the 'perfect solids', as they were the most aesthetically beautiful and symmetrical. The criteria for a Platonic solid is that all their edges be equal, that there only be on regular polygonal surface with one angle, and that the points all fit on the surface of a sphere. There are exactly five known Platonic solids: the cube, the tetrahedron, the octahedron, the dodecahedron and the icosahedron. By systematically eliminating some of the lines from the Metatron's Cube, you can derive these solids.



Duodecahedron Isocahedron Octohedron Tetrahedron(s) Cube

Further examinations of sacred geometry forms reveal the bases for fundamental icons such as the yin-yang, Hundu Mandalas and many religious icons throughout time and civilization. As pictured below, these shapes further lend themselves to additional figures in our direct experience of life forms, mathematics, and physical structures on the microscopic and macroscopic levels.



Pictured above from Left to right: Islamic Mosque floor plan, X-ray fractal pattern of Beryl, The ground plan of Stonehenge, and the Sri Yantra Mandala.

Ley Lines

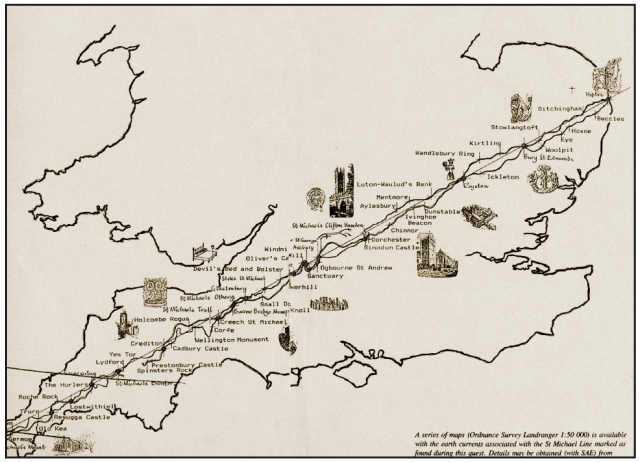
Ley lines are hypothetical alignments of a number of places of geographical interest, such as ancient monuments and megaliths. Their existence was suggested in 1921 by the amateur archaeologist Alfred Watkins, whose book The Old Straight Track brought the alignments to the attention of the wider public. The existence of alignments between sites is easily demonstrated. However, the causes of these alignments are disputed. There are several major areas of interpretation:

· Archaeological: A new area of archaeological study, archaeogeodesy, examines geodesy as practiced in prehistoric time, and as evidenced by archaeological remains. One major aspect of modern geodesy is surveying. As interpreted by geodesy, the so-called ley lines can be the product of ancient surveying, property markings, or commonly travelled pathways. Numerous societies, ancient and modern, employ straight lines between points of use; archaeologists have documented these traditions. Modern surveying also results in placement of constructs in lines on the landscape. It is reasonable to expect human constructs and activity areas to reflect human use of lines.

· Cultural: Many cultures use straight lines across the landscape. In South America, such lines often are directed towards mountain peaks; the Nazca lines are a famous example of lengthy lines made by ancient cultures. Straight lines connect ancient pyramids in Mexico; today, modern roads built on the ancient roads deviate around the huge pyramids. The Chaco culture of Northwestern New Mexico cut stairs into sandstone cliffs to facilitate keeping roads straight.

· New Age: The ley lines and their intersection points resonate a special psychic or magical energy, often including elements such as geomancy, dowsing or UFOs, stating that, for instance, UFO's travel along ley lines (in the way that one might observe that cars use roads and highways). These points on lines have electrical or magnetic forces associated with them.

· Sceptical: Sceptics of the actuality of ley lines often classify them as pseudoscience. Such sceptics tend to doubt that ley lines were planned or made by ancient cultures, and argue that apparent ley lines can be readily explained without resorting to extraordinary or pseudoscientific ideas.



The concept of ley lines was first proposed by Alfred Watkins. On June 30, 1921, Watkins visited Blackwardine in Herefordshire, and went riding near some hills in the vicinity of Bredwardine when he noted many of the footpaths therein seemed to connect one hilltop to another in a straight line. He was studying a map when he noticed places in alignment. "The whole thing came to me in a flash," he would later explain to his son. Some people have portrayed this "flash" as being some sort of mystical experience. However, some time before Watkins, William Henry Black gave a talk titled Boundaries and Landmarks to the British Archaeological Association in Hereford in September 1870. Here he speculated that "Monuments exist marking grand geometrical lines which cover the whole of Western Europe." It is possible that Watkins' experience stemmed from some half-recollected memories of an account of that presentation. Watkins believed that in ancient times, when Britain had been far more densely forested, the country had been crisscrossed by a network of straight-line travel routes, with prominent features of the landscape being used as navigation points. This observation was made public at a

meeting of the Woolhope Club of Hereford in September 1921. His work referred back to G. H. Piper's paper presented to the Woolhope Club in 1882 which noted that

"A line drawn from the Skirrid-fawr mountain northwards to Arthur's Stone would pass over the camp and southern most point of Hatterill Hill, Oldcastle, Longtown Castle, and Urishay and Snodhill castles." The ancient surveyors who supposedly made the lines were given the name "dodmen."

Watkins published his ideas in the books Early British Trackways and The Old Straight Track. Nevertheless, they were generally received with skepticism in the archaeological community. The archaeologist O. G. S. Crawford refused to accept advertisements for the latter book in the journal Antiquity, and most archaeologists since then have continued to be unaccepting of Watkins' ideas.

In 2004, John Bruno Hare wrote, "Watkins never attributed any supernatural significance to leys; he believed that they were simply pathways that had been used for trade or ceremonial purposes, very ancient in origin, possibly dating back to the Neolithic, certainly pre-Roman. His obsession with leys was a natural outgrowth of his interest in landscape photography and love of the British countryside. He was an intensely rational person with an active intellect, and I think he would be a bit disappointed with some of the fringe aspects of ley lines today."

Despite the largely negative reception to his ideas, some experts have made observations similar to Watkins': Megalithic researcher Alexander Thom offered a detailed analysis of megalithic alignments, proposing a standardization of measure by those who built megaliths. However, Thom avoided using the term "ley line" in his discussion of megaliths. The discovery by Europeans of the Nazca lines, man-made lines on desert pavement in southern Peru, prompted study of their astronomical alignments.

The New Age approach: magical and holy lines

Watkins' theories have been adapted by later writers. Some of his ideas were taken up by the occultist Dion Fortune who featured them in her 1936 novel The Goat-footed God. Since then, ley lines have become the subject of a few magical and mystical theories.

Two British dowsers, Captain Robert Boothby and Reginald Smith of the British Museum, have linked the appearance of ley lines with underground streams and magnetic currents. Underwood conducted various investigations and claimed that crossings of 'negative' water lines and positive aquastats explain why certain sites were chosen as holy. He found so many of these 'double lines' on sacred sites that he named them 'holy lines.'

Two German Nazi researchers Wilhelm Teudt and Josef Heinsch have also claimed that ancient Teutonic peoples contributed to the construction of a network of astronomical lines, called "Holy lines" (Heilige Linien), which could be mapped onto the geographical layout of ancient or sacred sites. Teudt located the Teutoburger Wald district in Lower Saxony, centered around the dramatic rock formation called Die Externsteine as the centre of Germany. Nazism often employed idea of superiority and associated Aryan descent with ancient higher cultures, often without regard for archaeological or historic fact.

By the 1960s, the ideas of a landscape crossed with straight lines had become convoluted with ideas from various geomantic traditions; mapping ley lines, according to New Age geomancers, can foster "harmony with the Earth" or reveal pre-historic trade routes. John Michell's writing can be seen as an example of this. He has referred to the whole face of China being heavily landscaped in accordance with the laws of Feng Shui. Michell has claimed that Neolithic peoples recognized that the harmony of society depended on the harmony of the earth force. And so in China, ancient Greece and Scotland men built their temples where the forces of the earth were most powerful.

Some skeptics have suggested that ley lines do not exist, and are a product of human fancy. Watkins' discovery happened at a time when Ordnance Survey maps were being marketed for the leisure market, making them reasonably easy and cheap to obtain; this may have been a contributing factor to the popularity of ley line theories. One suggestion is that, given the high density of historic and prehistoric sites in Britain and other parts of Europe, finding straight lines that "connect" sites (usually selected to make them "fit") is trivial, and may be easily ascribed to coincidence. The diagram to the right shows an example of lines that pass very near to a set of random points: for all practical purposes, they can be regarded as nearly "exact" alignments. Naturally, it is debated whether all ley lines can be accounted for in this way, or whether there are more such lines than would be expected by chance.

Regarding the trade-route theories, skeptics point out that straight lines do not make ideal roads in all circumstances, particularly where they ignore topography and require users to march up and down hills or mountains, or to cross rivers at points where there is no portage or bridge.

The existence of the observed alignments is not controversial. Both believers in magical and ancient theories of ley lines and skeptics of these theories agree that these alignments exist between megaliths and ancient sites. Most skeptics believe that their null hypothesis of ley-line-like alignments as due to random chance is consistent with the evidence. They believe that this consistency removes the need to explain the alignments in any other way. Some Chaos Magicians have views consistent with that approach, claiming it to be in accord with their generative view of chance. Still, others believe that further theories are needed to explain the observed evidence.

In discussing the arguments for and against the chance presence of ley alignments it is useful to define the term "alignment" precisely enough to reason about it. One precise definition that expresses the generally accepted meaning of Watkins' ley lines

defines an alignment as:

"a set of points, chosen from a given set of landmark points, all of which lie within at least an arc of 1/4 degree."

Watkins remarked that if this is accepted as the degree of error, then:

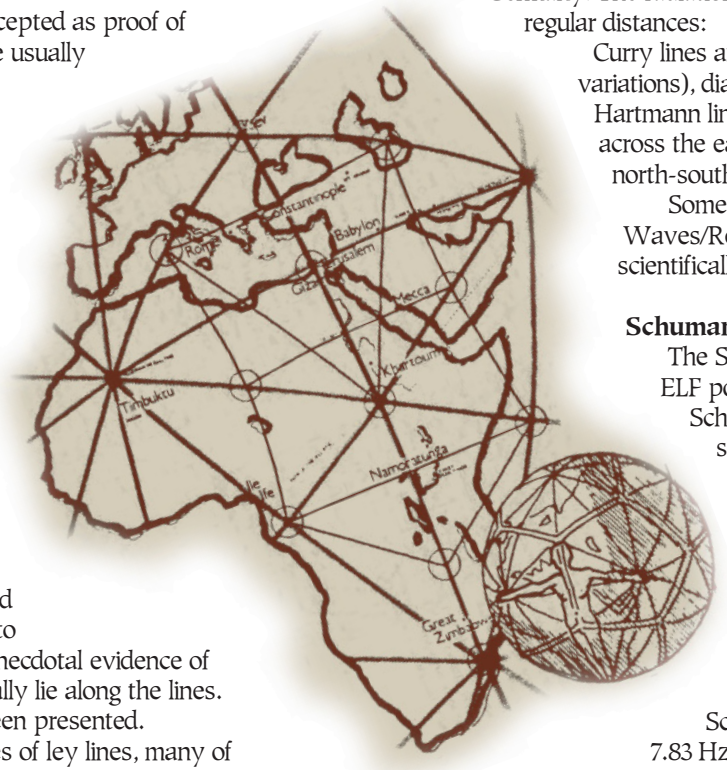
"if only three accidentally placed points are on the sheet, the chance of a three point alignment is 1 in 720."...

"But this chance by accidental coincidence increases so rapidly in geometric progression with each point added that if ten mark-points are distributed haphazard on a sheet of paper, there is an average probability that there will be one three-point alignment, while if only two more points are added to make twelve points, there is a probability of two three-point alignments."...

"It is clear that a three-point alignment must not be accepted as proof of a ley by itself, as a fair number of other eligible points are usually present."...

"A ley should not be taken as proved with less than four good mark-points. Three good points with several others of less value like cross roads and coinciding tracks may be sufficient."...

One should also bear in mind that lines and points on a map cover wide areas on the ground. With 1:63360 (1-inch-to-the-mile) maps a 1/100-inch (1/4 mm) wide line represents a path over 50 feet (15 m) across. And in travelling across a sheet, an angle of 1/4 degree encompasses something like an additional 600 feet (200 m).



Controversy

The demonstration of the plausibility of the current evidence under the null hypothesis is not a formal disproof of ley line claims. However, it does make skeptics likely to consider ley line theories as unsupported by the current evidence. Most skeptics would be willing to reconsider the hypothesis of ley lines if there were non-anecdotal evidence of physical, geomagnetic or archeological features that actually lie along the lines. Skeptics believe that no such convincing evidence has been presented.

There is a broad range of beliefs about and theories of ley lines, many of which are not falsifiable, and which are thus not generally amenable to the scientific method. Some people find ley lines compatible with a scientific approach, but much of the literature is written by people who are indifferent to or actively oppose such an approach. According to claims by investigators of ley line theories, some points along the lines possess higher magnetic energy than the average geomagnetic intensity. These claims have been published in "Places of Power" (Paul Devereux; Blandford Press, 1990) and "Lodestone Compass: Chinese or Olmec Primacy?" (John B. Carlson; Science, 1975). Some geomantic authors have investigated this phenomenon by studying telluric currents, geomagnetism, and the Schumann resonance (among other physical phenomena). Current data is not conclusive.

Curry Lines

Earth radiation is a theoretical geophysical phenomenon described primarily by the German authors Manfred Curry and Ernst Hartmann. They both describe a mystic force field (similar to Odic force, Mana, Qi) that covers the earth at regular intervals and can be detected by dowsing using a divining rod. It is not supposed to be detectable by common scientific instruments but some still connect it to telluric currents, which are actual phenomena, detectable by scientific instruments. Placing people or other living things in certain spots of the earth radiation knots is believed to be beneficial/harmful depending on radiation flow direction. It connects to the Gaia philosophy and vitalist school and is very popular in certain New Age circles in Europe, especially in Germany. The radiation is described as a grid-like arrangement with lines at regular distances:

Curry lines are supposed to be circa 3 meters apart (with variations), diagonally to the poles, east to west.

Hartmann lines run both east-west and north-south forming a grid across the earths surface with a distance of circa 2 meters in the north-south direction and 2.5 meters in the east-west direction.

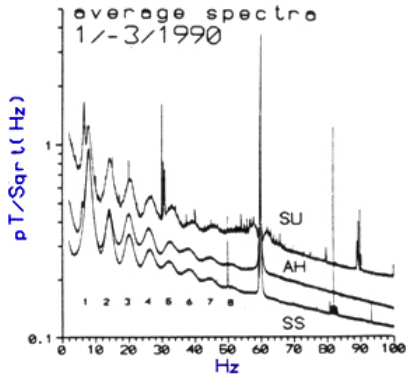
Some proponents of this theory will also mention Schumann Waves/Resonance (which, like telluric current, and is an actual scientifically detectable phenomena) and Black Lines.

Schumann Resonance

The Schumann Resonance is a set of spectrum peaks in the ELF portion of the Earth's electromagnetic field spectrum. Schumann resonance is due to the space between the surface of the Earth and the conductive ionosphere acting as a waveguide. The limited dimensions of the earth cause this waveguide to act as a resonant cavity for electromagnetic waves in the ELF band. The cavity is naturally excited by energy from lightning strikes. Since the seventh overtone lies at approximately 60 Hz, the cavity is also driven by the North American power grid. The lowest-frequency (and highest-intensity) mode of the Schumann resonance is at a frequency of approximately 7.83 Hz. Detectable overtones extend upwards into the kilohertz range. The phenomenon is named after physicist Winfried Otto Schumann who predicted it mathematically in 1952, but it was first observed by Nikola Tesla and formed the basis for his scheme for broadcast power and wireless communications (Tesla 1905).

The fundamental mode of the Schumann resonance is a standing wave in the Earth-ionosphere cavity with a wavelength equal to the circumference of the Earth. This lowest-frequency (and highest-intensity) mode of the Schumann resonance occurs at a frequency of approximately 7.83 Hz. The ninth overtone lies at approximately 60 Hz and thus the cavity is also driven by the North American power grid. Detectable overtones extend upwards into the kilohertz range. Schumann resonances are observed in the power spectra of the natural electromagnetic background noise, as separate peaks at

extremely low frequencies (ELF) around 8, 14, 20, 26, 32 and 60 Hz.

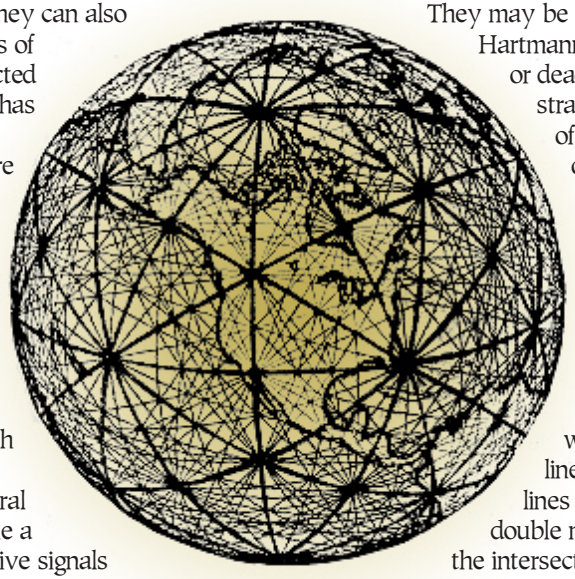


Schumann resonances are used to track global lightning activity. Owing to the connection between lightning activity and the Earth's climate they can also be used to monitor global temperature variations and variations of upper water vapor. Extraterrestrial lightning may also be detected and studied with Schumann resonances. Schumann resonance has been used for research and monitoring of the lower ionosphere on Earth and was suggested for exploration of lower ionosphere parameters on celestial bodies. Schumann resonances can be used to track geomagnetic and ionospheric disturbances. More recently, Schumann resonances have been used for monitoring transient luminous events – sprites, elves, jets, and other upper atmospheric lightning. A new field of interest using Schumann resonances is related to short-term earthquake prediction. Schumann resonances have gone beyond the boundaries of physics, invading medicine, raising interest in artists and musicians, and gaining interest from fringe fields such as psychobiology.

Lightning discharges are considered as the primary natural source of Schumann resonances. Lightning channels behave like a huge antenna which radiates electromagnetic energy as impulsive signals at frequencies below about 100 kHz. These signals are very weak, but the earth-ionosphere waveguide behaves like a resonator at ELF frequencies and amplifies the spectral signals from lightning at the resonance frequencies.

The real Earth-ionosphere waveguide is not a perfect electromagnetic cavity. Losses due to finite ionosphere electrical conductivity make the system resonate at lower frequencies than would be expected in an ideal case, and the observed peaks are wide. In addition there are a number of horizontal asymmetries – day-night transition, latitudinal changes in the Earth magnetic field, sudden ionospheric disturbances, polar cap absorption, etc. that complicate the Schumann resonance power spectra.

Today Schumann resonances are recorded by many stations around the world. The electromagnetic sensors used to measure Schumann resonances consist of two horizontal antennas for receiving the magnetic field in the north-south and the east-west direction and one vertical antenna for observing the vertical electric field. Since Schumann resonance frequencies are extremely low, practical antennas would have to be hundreds of kilometers long. In addition, the Schumann resonance electric field is much smaller than the static electric field in the atmosphere and the Schumann resonance magnetic field is orders of magnitude smaller than the Earth magnetic field. Therefore, special receivers and antennas are needed to measure Schumann resonances. The electric component is commonly measured with a ball antenna connected to a amplifier. The magnetic field is measured with magnetic induction coils consisting of tens of thousands of turns around material with very high magnetic permeability. From the very beginning of Schumann resonance studies, they were used to monitor global lightning activity by tracking changes in Schumann resonance field intensities. At any given time there are about 2000 thunderstorms around the globe producing ~50 lightning events per second. These thunderstorms create the background Schumann resonance signal.



Black Lines

Black lines seem to be naturally generated, although quite how is not known. They may be localized and do not form a network in the same way as Hartmann and Curry lines. This could be similar in nature to the "sha", or deadly energy lines of Chinese Feng-Shui. They can be curved, straight, at ground level or higher, even found in the upper levels of buildings. There have been described 2 types of Black lines, one as "black and depressed", the other as "shiny, black, hard and sharp." They could possibly represent the flow lines of a negative type of "orgone-type" energy as described by Wilhelm Reich.

Hartmann Lines

The Hartmann net consists of naturally occurring charged lines, running North-South and East-West. It is named after Dr. Ernst Hartmann, a well regarded German medical doctor, who first described it soon after the second world war. Alternate lines are usually positively and negatively charged, so where the lines intersect it is possible to have double positive charges and double negative charges, or one positive and one negative charge. It is the intersections that are seen to be a source of potential problems.

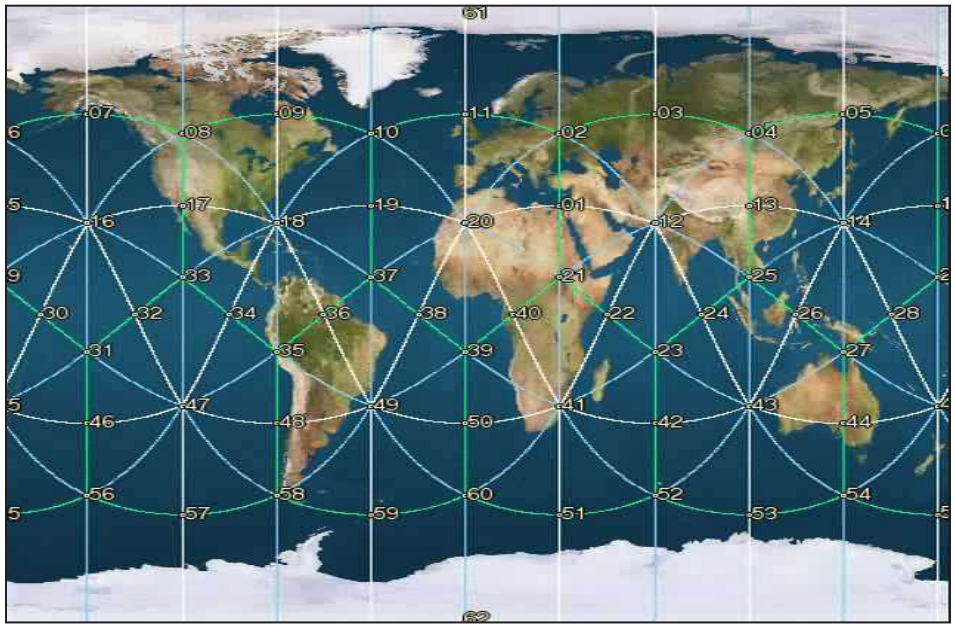
The Hartmann Net appears as a structure of radiations rising vertically from the ground like invisible, radioactive walls, each 21 centimeters (9 inches) wide. The grid is magnetically orientated, from North to South they are encountered at intervals of 2 metres (6 feet 6 inches), while from East to West they are 2.5 metres (8 feet) apart. Between these geometric lines lies a neutral zone, an unperturbed micro-climate. This network penetrates everywhere, whether over open ground or through dwellings. The Hartmann net has been defined using the Chinese terms of Yin and Yang. The Yin (North-South lines) is a cold energy which acts slowly, corresponds to winter, is related to cramps, humidity and all forms of rheumatism. The Yang (East-West lines) is a hot, dry rapidly acting energy. It is related to fire and is linked to inflammations. The points formed by the intersection of these lines, whether positive or negative, are dynamic environments sensitive to the rhythms of the hours and the seasons.

It has been suggested that both the Curry grids and Hartmann Net are earthing

grids for cosmic rays that constantly bombard the Earth, and that they can be distorted by other things, such as geological fault lines and underground mining. It is also possible to have spots where the Curry and Hartmann lines cross, causing further potential problems. These spots are generally seen to be more detrimental than a single crossing within the Curry or Hartmann system.

Becker-Hagens Grid Map

The husband-and-wife team of Becker and Hagens - created the map below. Becker is a Professor of Industrial Design at the University of Illinois, Chicago, and Bethe Hagens is a Professor of Anthropology at Governors State University. The Becker-Hagens grid cracked the code of the Platonic Solids' positions on Earth.



Becker and Hagens show us how these two shapes were first discovered, and then how they worked into the ultimate Earth Grid, which they called the Unified Vector Geometry 120 Polyhedron, or the UVG 120 Earth Star. They ascribe this discovery to the work of Ivan P. Sanderson, who was the first to make a case for the structure of the icosahedron at work in the Earth. He did this by locating what he referred to as vile vortices, or areas of the Earth where mysterious disappearances, mechanical failures and time-space distortions were seen to occur. These 3 scientists worked off of their combined talents to determine this "matrix of cosmic energy" that encircles the Earth. With this new formulation of the Global Grid, Becker and Hagens write:

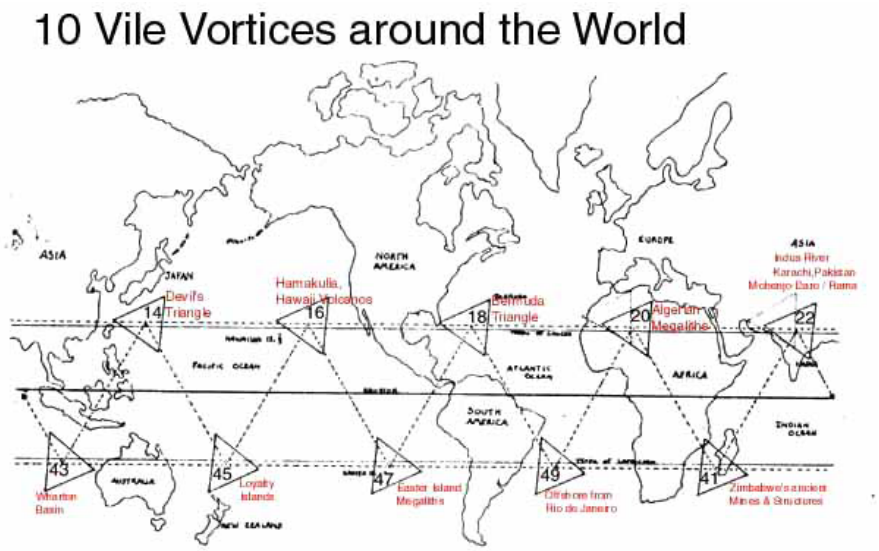
"These new lines and points, in conjunction with Sanderson's, now matched most of the earth's seismic fracture zones and ocean ridge lines as well as outlined worldwide atmospheric highs and lows, paths of migratory animals, gravitational anomalies, and even the sites of ancient cities."

Becker and Hagens' attention was drawn to this research through the work of Chris Bird, who wrote his article on the "Planetary Grid" in the New Age Journal of May 1975. They were so overwhelmed with this new information that they eventually set up a meeting with him to discuss the work. Soon after this, they "completed" the Grid, making it compatible with all the Platonic Solids, by inserting a creation from Buckminster Fuller's work. Quote from their work...

"We propose that the planetary grid map outlined by the Russian team Goncharov, Morozov and Makarov is essentially correct, with its overall organization anchored to the north and south axial poles and the Great Pyramid at Gizeh. The Russian map, however, lacks completeness, in our opinion, which can be accomplished by the overlaying of a complex, icosahedrally-derived, spherical polyhedron developed by R. Buckminster Fuller. In his book Synergetics 2, he called it the "Composite of Primary and Secondary Icosahedron Great Circle Sets." We have shortened that to Unified Vector Geometry (UVG) 120 spheres. We use the number 120 due to its easy comprehension as a spherical polyhedron with 120 identical triangles - all approximately 30, 60 and 90 in composition."

Earth's Anomalies

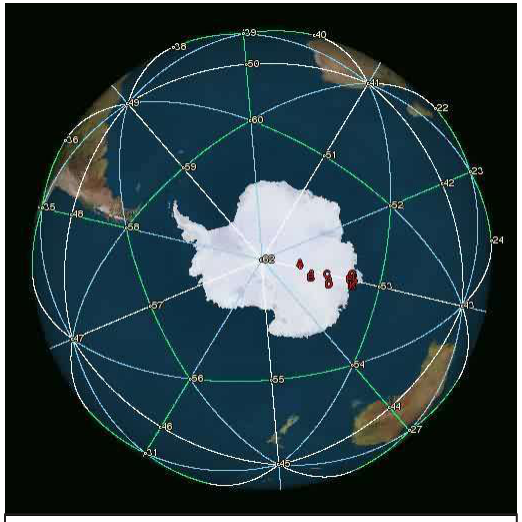
Another area of continuing disappearances and mysterious time-warps is the Devil's Sea located east of Japan between Iwo Jima and Marcus Island. Here events have become so sinister that the Japanese government has officially designated the area a danger zone. This area was significant enough to the work of Bermuda Triangle author Charles Berlitz that he wrote a whole book dedicated to it and the "bigger picture," entitled The Devil's Triangle. It is becoming more and more clear that our geometric shapes, expressed as the consciousness unit expanded to a planetary scale, are far more than abstract concepts of theoretical physics. What we have here are direct, quantifiable and measurable phenomena, and these geometry-based Grid patterns are simply the simplest, and therefore the best solution to the problem.



The "grid bands" on the Earth and how their effects shaped the Ring of Fire', the flowing of the Nile River, the "node point" of the Egyptian northern coast centered in 'Giza, and the vertical structure of the Yucatan Peninsula.

By referring back to the main map, the reader can clearly see that the entire Eastern side of Hudson Bay in Canada precisely follows the line from 18 in Florida to 9 in the Bay to 61 at the North Pole. Furthermore, all of England is precisely within the line created by point 20 in Africa, through point 11 in England to point 61 at the North Pole. So, there are a variety of ways to see this energy at work on Earth. One can begin to visualize this Grid energy as a living net of "wires" that are tightly stretched over a thin balloon. It is obvious to us that what we think of as randomly placed continents are actually conforming to this massive energy, disappearances, gravity loss, levitation and other related phenomena.

Becker-Hagens explain how these grid points seem to attract large population centers. Look at the South American landmass. Not only does it fit perfectly a Grid Triangle, but we can see a circular, bowtie-shaped energy at work in the actual shaping of the landmass itself. This "bowtie" is nearly centered within the diamond that is formed between points 18, 35, 37 and 49. We already saw the African "vile vortex" shaping a similarly large "bowtie" in the above diagrams. The offset of the South American landmass from being precisely within this "diamond" again could be accounted for by the pushing of the Mid-Atlantic Ridge, which follows the lines of the Global Grid with amazing precision. Looking back at the Becker-Hagens map, it is quite easy for us to see how this line clearly demarcates the separation between the continents, just as the Mid-Atlantic Ridge is the point of expansion between the two continental plates. An elliptical-shaped gravity field is clearly visible when the center is placed directly in node 15. If we use any standard image editing program and "drag out" an ellipse using point 15 as a center, we can indeed align it precisely with the island formations to the far west of our diagram. We can see the amazing connections of this energy formation as soon as we start looking at the diagram. We can try other center points besides 15, but the ellipse will not fit anywhere else as precisely as it does right at that spot.



Becker-Hagens Grid from the South Pole

This massive energy vortex seems to provide the clearest Grid counterpart for the existence of the Ring of Fire, which is a ring of volcanoes and tectonic activity surrounding the Pacific Ocean. When we look at this "grid ring" carefully, we can see that it represents the perfect fusion between the Earth's landmasses and the Global Grid. Going clockwise from the 12:00 point, the ring will perfectly touch a "square" of grid points, as 7, 31, 27 and 5. (Node point 27, near Australia, is the only one that isn't touched exactly.

We can also see that this ellipse is well defined by points 14 and 16, again Sanderson's incredibly powerful "vile vortices," the points of the icosahedron. We have already seen how the incredible gravitational force of these "vortices" was able to shape the entire upper Western half of Africa into an elegant, circular shape. Now, we are seeing two of these vortices working together to form an even larger shape. The ring forms part of the East Coast of China, as well as a good part of the upper Russian coastline surrounding node 5. It also defines part of the southern coastline of Alaska. The grid points 14 and 16 would be akin to the two poles of the dividing cell. The grid lines provide us with a simplified depiction of the "spindle fibers" that form in cell mitosis. The actual ring of energy that is created forms a precise analog of the nuclear membrane of the cell, as it continues its expanding, elliptical process of division.

Crop Circles

It is significant that as our alienation from all forms of spiritual and universal wonder increases, symbols bearing the hallmarks of an ancient, harmonious philosophy have suddenly begun manifesting in cereal crop.

Since they first appeared 30 years ago they have become more intricate and prevalent. In 2001 there were over 1,000 of them in England alone. They are getting incredibly complex. Keep in mind that they are created overnight, each stalk is bent at exactly 3" above the ground, some are 300 yards in width, there are strange sounds emanating from them, the grain from the bent stalks is supercharged with energy and sprouts into amazing plants, the seeds from the crop circles goes into the food chain, its in our beer and breakfast cereals. Some people are suggesting that the energy from the circles is changing human consciousness.

Even to the hardened skeptic crop circle designs reveal a facility by their makers of creating a visual harmony that is pleasing to the eye, much like an ancient temple or a classical painting. The proportions are balanced, the shapes rhythmic, their outlying elements forming part of an unseen whole. Upon close scrutiny even the small 'grapeshot' circles that flank certain formations lie at their given remote locations not by fluke but by engineered and premeditated design, markers and clues for the observer to follow and uncover. Not surprising, then, to find sacred geometry lying at the heart of the fundamental blueprints of many formations, sometimes blatantly, sometimes veiled like a

secret waiting to be uncovered only by the most persistent of minds.

But just as with sacred geometry and other esoteric principles, crop circles have been marginalized by practically the entire scientific community since they challenge the current world view simply because science is at odds to explain them. According to science, crop circles don't exist. Yet, as these examples demonstrate, crop circles, through their complicated geometric structure, are worthy of being ranked alongside mankind's greatest art forms.

When analyzing crop circle forms through the precise and unalterable practice of sacred geometry, one cannot help but appreciate that a mind of scholarly intelligence is involved, just as the great masters of Islamic and Egyptian art. As Keith Critchlow remarked, "were motivated by and versed in spiritual disciplines that gave content and meaning to their work and placed it in the tradition of aiding the viewer to raising his or her spiritual understanding."

That these symbols are occurring primarily in wheat, the very symbol of the Earth Mother, is significant in itself. Perhaps they are here to draw us as a race together by this interaction with our symbol of life? Maybe their geometric symbolism acts as a mandala which like its Buddhist counterpart contains the very vibrations that aid one in achieving inner transformation at this vulnerable moment in our history?

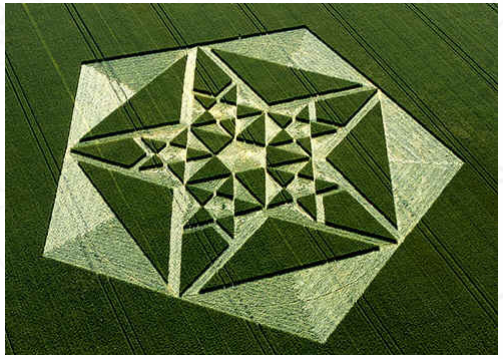
If neither of these apply then what we have strewn in fields across the world is nothing more than the highest form of cosmic art. Perhaps all of the above are true, and perhaps other explanations remain elusive. But one thing is certain- it is a lot of trouble for a bunch of individuals to go to, turning out during every night of the English summer for a quarter of a century, wading through muddy fields, and working with a brittle and imprecise canvas just to show the world they simply remained conscious throughout geometry lessons!

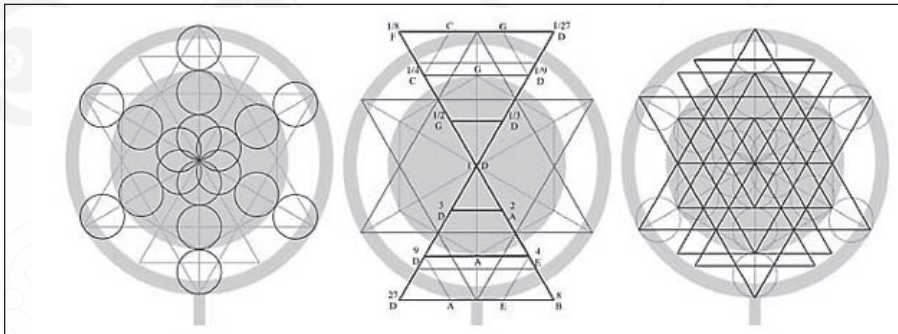
In crop circle designs we see recurring themes that are for the most part generated from within a circular form and continue, through proportional expansion, to develop well beyond the boundaries of the design. This is consistent with the principle of sacred geometry where the circle is the principal element since it lies at the heart of the creative principle. It's the representation of cosmic life, from the smallest atom to the largest planet. All things are divided from within itself so, paradoxically, all things are contained within it. It is therefore the symbol of the unknowable, of spirit and of heaven.

These primary geometric forms, along with their 3-dimensional counterparts, the Platonic solids, were thus observed by many ancient cultures to be the crystallizations of the creative thoughts of God as they emerge from the circular Unity. As a metaphor of universal order, sacred geometry is pervasive in imagery throughout history, from circular mandalas to sacred temples.

And now, crop circles.

Since that day when we decided to abandon our faith in the universal way and follow the mechanical codes of science our consciousness has shifted from one of reverence for all things sacred to the worship of abstract materialism. Consequently, our change of attitude has endangered our living, breathing celestial sphere and it's perhaps why crop circles, with their foundations based squarely upon sacred geometry, have chosen to appear at this particular point in time, reminding us that if only we observe the fundamental laws of the universe we may still be in time to discover the secrets of universal harmony and salvage our very own symbol of eternal life, the Earth.





Whiteparish Crop Circle (1987) in grey, Hexagonal alignment: the Drum of Shiva illustrating harmonic ratios in music, and incorporating the Sri Yantra Mandala

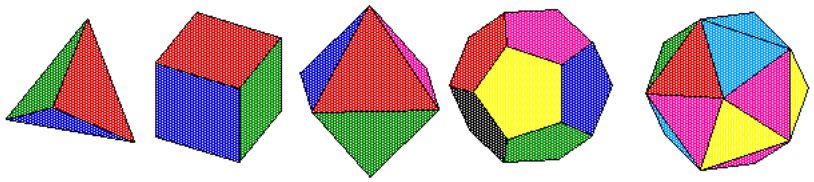
Music and Sacred Geometry

Legend recounts how Orpheus was given a lyre by Apollo. By playing his lyre, Orpheus produced harmonies that joined all of Nature together in peace and joy. Inspired by this Orphic tradition of music and science, Pythagoras of Samos conducted perhaps the world's first physics experiment. By plucking strings of different lengths, Pythagoras discovered that sound vibrations naturally occurred in a sequence of whole tones or notes that repeat in a pattern of seven.

Like the seven naturally occurring colors of the rainbow, the octave of seven tones — indeed, all of Creation — is a singing matrix of frequencies that can be experienced as color, sound, matter, and states of consciousness. This correlation of sound, matter, and consciousness is important. It is our intent that gives the direction and quality to Creation. In other words, what we can perceive dictates our perception.

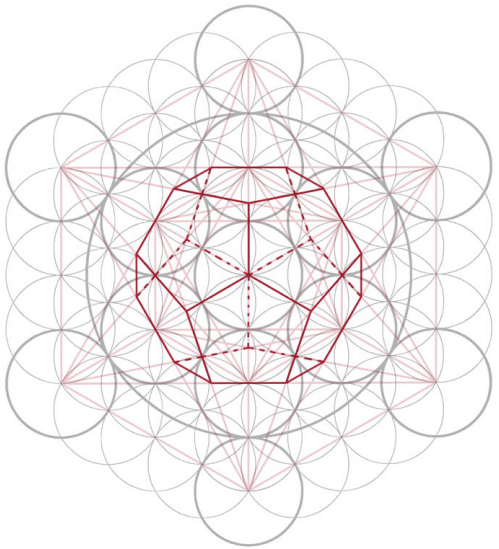
Many years ago, Micheal Helios discovered the musical proportions and corresponding tone scales for each of the Platonic shapes. He even tuned his keyboard to specific frequencies in order to achieve exact proportions. During his presentations, he

would play the scales and geometries of each shape, without disclosing to his listeners which geometric shape he was playing. Participants meditated on each piece as he was playing it, and then described which of the shapes they had experienced. The results were extraordinary. Every Platonic solid was correctly perceived, felt, and "seen" during each of the five musical meditations.

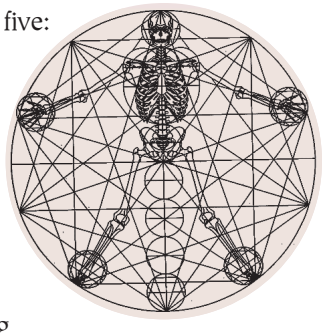


So let us look more closely at this as one example of the sacred geometric forms that permeate Creation. Through seeing the simplicity and complexity of the Dodecahedron in its relationship of shape and sound, perhaps we can intuit the rest. And through understanding our relationship to the Dodecahedron, perhaps we can begin to sense our own place within the Divine Song that is Creation.

The Dodecahedron is comprised of twelve pentagonal faces. It represents the fifth sacred element, the divine potentiality known as "ether or spirit." Considering that the Dodecahedron is made up of five-sided faces, it is fascinating that quantum physics researchers in the US and France have recently concluded that, based upon measurements of cosmic waves left over from the so-called "Big Bang," the universe itself is a Dodecahedron in form.



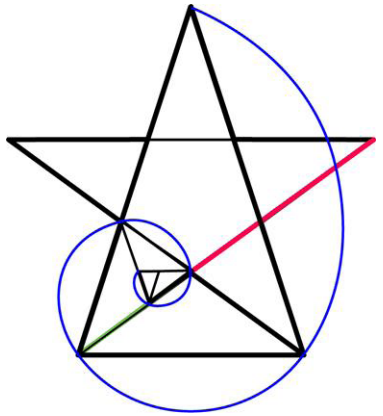
Besides the fact that there are five platonic solids and five corresponding basic elements of life, it can be shown that the entire human race is joined in these same basic sacred proportions. For the physical body, with the arms and legs spread, is overlaid by a pentagram, with the fifth point being at the top of the head and the reproductive organs at the exact center.



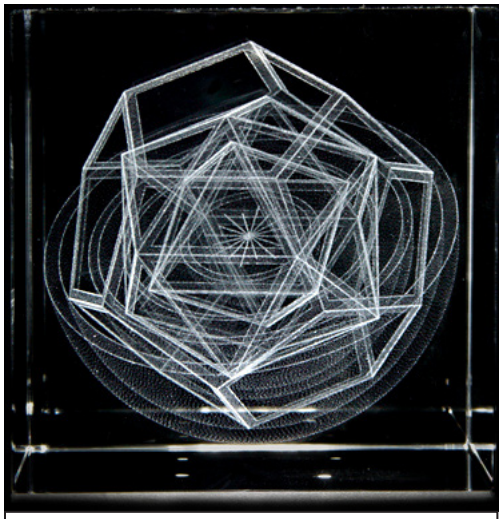
And each of these points also relates to the number five: five fingers at the terminus of each arm, five toes on each leg, and five openings on the face. Additionally, we each possess five senses of physical perception. So the Golden Mean proportions of the cosmos and our body temples are closely aligned with the harmony of the musical fifth.

If we can imagine the dodecahedronal-pentagonal shape of this One Song that is the universe, together with the pentagram geometry of the human body, we find inherent in both a divine proportion and a potential for harmonic perfection. The universe and humanity are singing geometries. And it is we ourselves who embody the geometry of the cosmos!

To follow this discussion, we first need to know that the Golden Mean and the Pentagram are closely related. For the angles of the five sides of a Pentagram are at a ratio of exactly 1.618 — the Golden Mean ratio, known mathematically as phi. As a result of this the various lines broken from the shape of a pentagram form a musical scale that can be used to tune and determine the notes from any given length of string. Hence the name, "pentamic" scale as discovered by Pythagoras.



The fifth is the interval found in most sacred music, and has a powerful harmonizing effect on the human energy system. It is the first harmonic sounded by a plucked string, and is what gives the note its depth and beauty. Its sacred sound is the hallmark of the Gregorian chant. In fact most divinely inspired music, including some New Age music and that of indigenous cultures, is built around the musical interval of the fifth. This music-geometry connection is well stated by Goethe, who said, "Sacred architecture is frozen music." The same is true of the "architecture" of the human body. It was Pythagoras who first described the fifth interval that has come to be universally recognized for its beauty. It is "an archetypal expression of harmony that demonstrates the 'fitting together' of microcosm and macrocosm in an inseparable whole. The fifth is a beautiful sound because it demonstrates how the universe works." And in building the phi proportions, along with those of the other musical intervals, into the designs of cathedrals and temples, the architects also are building in the effects of the musical intervals upon which the sacred proportions are based.



A 3D rendering of Kepler's conception of the planets occupying crystal spheres wedged between the five Platonic polyhedra

These effects, immediately experienced as harmonious, powerful, and centering, can be experienced first-hand when one enters a Gothic cathedral or an ancient Egyptian temple. Being inside such a space helps us to access other dimensions of consciousness. It is the same experience that is reached through listening to sacred music.

Plato believed that music was the strongest of all life's influences. In his treatise the Temaeus, he describes the numerical (vibrational-musical) creation of the physical universe and the soul that animates it. He called upon his students to activate the ancient shrines and sacred temples of the earth with sacred song, employing "perpetual choirs" in order to echo the harmonies of the Heavenly Choir. Plato's Republic describes the cosmos as being held together by eight spinning "whorls," like a giant spinning wheel with eight feminine weavers sounding the fabric of Creation. Each of the whorls contains a planet. And on each planet is a siren who sings her particular note and emits her specific color.

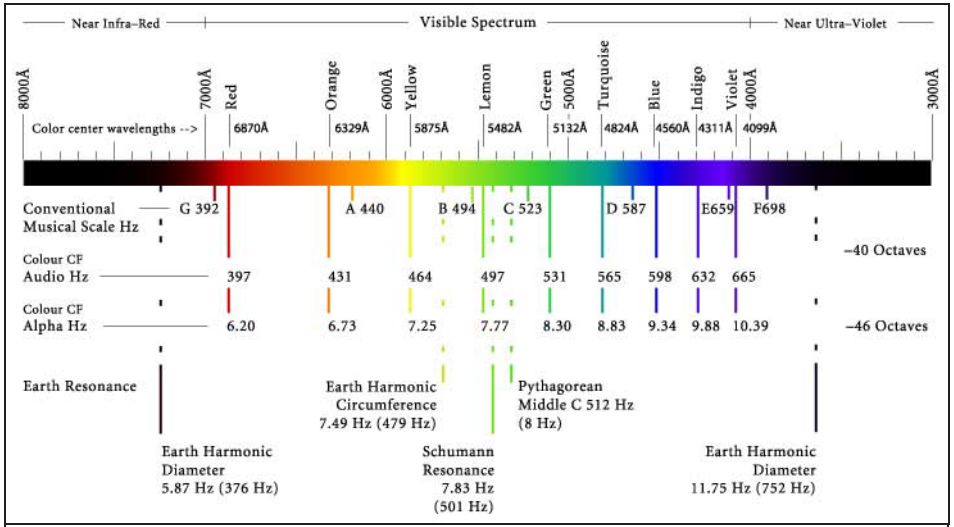
The work of German astronomer and mystic Johannes Kepler (1571-1630) focused on the five Platonic solids, their harmonic ratios, and how these shapes correlated with planetary orbits and sound frequencies. He found the musical tones of individual planets, and the musical scales of planetary movements. As Stephen Hawking reports, Kepler was even able to determine that "four kinds of voice are expressed in the planets: soprano, contralto, tenor, and bass." In finding the music of the cosmos, Kepler showed that life forms on Earth follow the same harmonic principles as those found in the stars.

Sound and Light - Vibrations in Space

Greek philosopher Pythagoras discovered a wonderful mathematical relation between the harmonic notes in music. He noticed that by depressing a string in different positions on the fingerboard of a guitar like string instrument that harmonic sounds were created. Some notes sounded better than others. At each depression of the string the string is divided in two different lengths and the ratio between these lengths were measured by Pythagoras. He marked down all the ratios that sounded harmonically well together. In this way he found geometric ratios for the sting harmonies. What Pythagoras had discovered is called the Diatonic musical scale, named after the fact that the string is divided into two lengths (Dia = two).

These ratios correspond with the frequencies of the notes produced by the white keys of the piano when attuned in the Diatonic scale. After the 7th note the octave of 8 notes is repeated only this time the first and the eighth note are doubled in frequency! The next 7 notes of the white keys on the piano follow the exact same ratio.

Now you may already know that the musical ratios discovered by Pythagoras



Audio Frequencies are 40 octaves down from visible light. Alpha Brainn frequencies are 46 octaves below the visible spectrum. Light is measured in wavelenghts (Ångstroms) and must be converted to frequency (Hz) before finding a color's corresponding lower harmonic frequency.

are the same ratios as the golden mean! Simply take a number out of the Fibonacci sequence and its successor and you have the musical ratio found by Pythagoras.

The Fibonacci sequence is the sequence that gives us beautiful harmonics in music. The diatonic scale is not the only musical scale, there are many more, in fact no piano today is tuned in the Diatonic scale. But the principle relation between harmonics in music and mathematical progressions of the Fibonacci sequence is real.

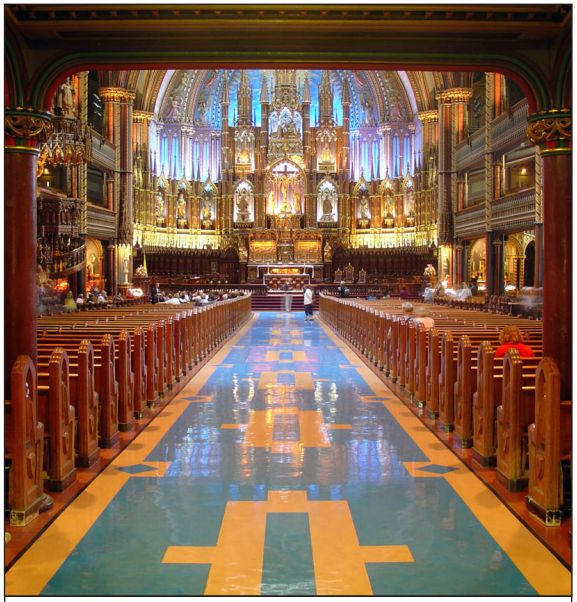
Now let's pretend that we've tuned a piano in the Diatonic scale and that we have extended the piano's keyboard with keys to provide for 49 octaves! That would be one gigantic piano and it would certainly no longer fit into your living room! But suppose that we could actually play on this piano. When we play the notes in the last two highest octaves, the keys on the furthermost right side of this piano, will correspond with the frequencies of the colors of light! There are seven keys in the highest octave that are the frequencies of the 7 primary colors of the spectrum of light, the 7 colors of the rainbow. So not only does the Fibonacci sequence define the ratios of harmonics in sound but also in the electromagnetic spectrum of light, it defines the 7 colors of the rainbow! Music and color are the same harmonic ratios.

We now know that many musicians like Beethoven, Mozart, Chopin, Bartók, Schubert and Debussy used the Fibonacci sequence and the Golden Mean ratio deliberately not in the notes but in the composition itself. For instance Beethoven used the Golden Mean in his famous Beethoven's Fifth. His famous opening motto not only appears on the first and the last bar of the symphony but also on the bar that represents the exact Golden Mean point of his symphony! Bela Bartók used both the Golden Mean and the Fibonacci sequence deliberately in his compositions using the measures 5, 8, 13, 21, 34, 55 and 89 to introduce new instruments such as strings, cellos, percussion etc. The question is why did these composers add sacred geometry into their music? Maybe they were not only famous musicians but also Freemasons?

Temples of Sound

Similar knowledge has come out of the hermetic tradition, which saw its Western resurgence in the beginning of the second millennium. During this time, hundreds of Gothic Cathedrals were constructed across Europe, all inspired by this Eastern hermetic knowledge that had just been rediscovered by the mystical order known as the Knights Templar.

Excavating Solomon's Temple in Jerusalem, the Knights Templar discovered vaults of hidden artifacts and scrolls that described the alchemical sciences of sacred geometry and architecture and their relationship to sound, astronomy, and life. Ancient sacred relics also are said to have been found, including the Ark of the Covenant, the Holy Grail, and secrets pertaining to Mary Magdalen and a Holy bloodline. Inspired by this material, the great Gothic cathedrals, including Chartres, Notre Dame, Salisbury, St. Denis, and Cluny, were designed and built using the principles of sacred geometry and harmonic acoustics.



Notre Dame Cathedral - Interior

Sacred music and chanting have been with us for centuries, but surges in its popularity occur at the crucial millennial turning points. This was so during the beginning of the first millennium, at the inception of Christianity, and during the era of the Grail Romances, which began around 1000 AD. And now today, as we forge a new paradigm and write our "script" for the next one thousand years, chanting has again come into prominence. The sacred architecture employed in the medieval cathedrals reflected specific acoustical properties that were conducive to the constant rounds of perpetual choirs maintained by the monks. Author John Michell, who has researched the tradition of "perpetual choirs" in ancient Britain, reports that these choirs were maintained in at least three sites: Glastonbury, Stonehenge, and Llantwit Major in Wales. Together, the sites form the rim of a circle in the landscape, with the center at an old Druid site called Whiteleafed Oak. Michel found that these sacred sites were equidistant from each other, and that their individual locations corresponded to sunrise points and sacred proportions.

Similarly, sacred sites in other cultures also were laid out in geometric relationship to each other, and were maintained with sacred music and chant, synchronized with the seasons and cosmic cycles.

Science is only now beginning to discover these interrelationships of sound and matter. Launching the new science of cymatics, Swiss researcher Hans Jenny (1904-1972) conducted experiments showing that inert powders, pastes, and liquids, when animated by audible, pure tones, would form into flowing patterns that mirrored those found throughout Nature, art, and architecture. He showed that there was a correlation between sound and form — that, in effect, the matter of the universe is a physical manifestation of vibration.

Breaking the Codes at Rosslyn Chapel

Stuart Mitchell has created a CD and book, "The Rosslyn Motet". His music project at Rosslyn Chapel has put him in the heart and eye of the world through the wire services. The theme is harmonic codes set into the masonry at Rosslyn Chapel that reflect the sacred patterns of creation that create a symphony.

Stuart and his father, a code breaking team, have discovered music's Holy Grail - hidden in intricate carvings at Rosslyn Chapel for almost 600 years. Music teacher Thomas Mitchell, 75, strived for 27 years before he and pianist son Stuart, 41, deciphered the symbols in the chapel which featured in the Da Vinci Code book and film. The pair will reveal the secret songs in a special concert at the Midlothian chapel next month. Thomas, of Edinburgh, said: "The music is the result of years of painstaking research, recreating secret notes hidden for almost 600 years in carvings on the arches within the chapel itself. "We believe this is the Holy Grail of music and, unlike the Da Vinci Code, it is absolutely factual."

Thomas was intrigued by the sculpted angels and hundreds of intricately carved cubes in the arches of the Lady Chapel. Using skills learned as an RAF code-breaker during the Korean War and his lifetime knowledge of classical music, he finally realized they depicted the vibrations of musical notes. He said: "It was a Eureka moment to end all Eureka moments. "Many angels were carrying musical instruments and some were even grouped as if they were a choir. "But one angel gave me the biggest problem. He was carrying something and at first I thought it was musical instrument which had been lost in the mists of time. "It was only when I realized that he was carrying a musical stave, the blueprint for all musical composition, that I knew I was looking at a secretly coded piece of music. "By recreating the patterns on each of the carved cubes, with Stuart's help, we unlocked the notes to find a haunting piece of music had been hidden in the arches for centuries. "For the choral sections, we've used the words from the hymns to St. John the Baptist taken from Matthew in the Old Testament which is fitting because the chapel itself is dedicated to St. Matthew."

Stuart, a classical composer and pianist, used computers to decipher the carvings' secret music. He has named the medieval music the Rosslyn Motet. He said: "I also used authentic mediaeval instruments to recreate the music exactly and it truly is a masterpiece. "While the Da Vinci Code was full of red herrings to make it a thrilling work of fiction, the Rosslyn Motet music is a tangible work people can listen to. For centuries, scholars have been convinced Rosslyn holds the key to many different areas of knowledge. "We think we've cracked one particularly fascinating code, although we're convinced Rosslyn holds many, many more."

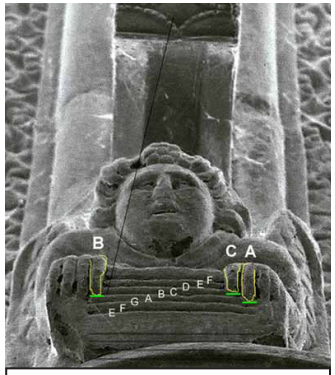
Four singers will join eight musicians playing mediaeval instruments to perform the Rosslyn Motet at Rosslyn on May 18. Simon Beattie, of the Rosslyn Chapel Trust, said: "We're looking forward to the event as this is a such an exciting and intriguing piece of work. "The music is particularly haunting and we cannot help feel this is yet another of the many puzzles that make Rosslyn such an astonishing place."

Rosslyn Chapel was built by Sir William Sinclair and Sir Gilbert Haye in the 15th century. Steeped in the history of the Knights Templar and Freemasonry, Roslyn's

mysteries are famous worldwide. Among the theories surrounding Rosslyn is that it is the secret resting place of the Holy Grail, the Ark of the Covenant and even the mummified head of Christ.

How They Broke the Code:

1. Carved angels and blocks above their head in arches of chapel baffled Thomas until he realized this one was holding a musical stave - and that the blocks signified notes.



The Scale in the Angel

2. Using this specially enhanced photo, Thomas and Stuart worked out that the carvings above the angel represent A, B and C.

3. Thomas and Stuart used this metal plate to recreate the ancient method of making notes. The plate is vibrated and sand poured on until it forms a particular pattern - indicating the correct pitch (See cymatics). The patterns match those carved into the arches of Rosslyn Chapel. "Basically we have calculated the frequencies of the 3 notes that the stave angel is pointing out and it amounts to this: A = 432 cycles per second, B = 488 cycles per second, C = 512 cycles per second which equals 1,432."

These three notes in modern tunings are: A = 440 cycles per second, B = 493 cycles per second, C = 523 cycles per second which equals 1456 (the year Sir Gilbert Haye Died).

Gilbert Hay (fl.1432-1456) or Sir Gilbert the Haye, Scottish poet and translator, was perhaps a kinsman of the house of Errol. If he is the student named in the registers of the University of St. Andrew's in 1418-1419, his birth may be fixed about 1403. He was in France in 1432, perhaps some years earlier, for a "Gilbert de la Haye" is mentioned as present at Reims, in July 1430, at the coronation of Charles VII. He has left it on record, in the Prologue to his Buke of the Law of Arrays, that he was "chaumerlayn umquhyle to the maist worthy King Charles of France." In 1456 he was back in Scotland, in the service of the chancellor, William, Earl of Orkney and Caithness, "in his castell of Roselyn," south of Edinburgh. The date of his death is unknown.

Hay is named by Dunbar in his Lament for the Makaris, and by Sir David Lyndsay in his Testament and Complaynt of the Papyngo. His only political work is The Buik of Alexander the Conquerour, of which a portion, in copy, remains at Taymouth Castle. He has left three translations, extant in one volume (in old binding) in the collection of Abbotsford: The Buke of the Law of Arms or the Buke of Bataillis, a translation of Honoré Bonet's Arbre des batailles, The Buke of the Order of Iinichthood from the Livre de l'ordre de chevalerie, The Buke of tile Governaunce of Princes, from a French version of the pseudo-Aristotelian Secrela secrelorum. The second of these precedes Caxton's independent translation by at least ten years.

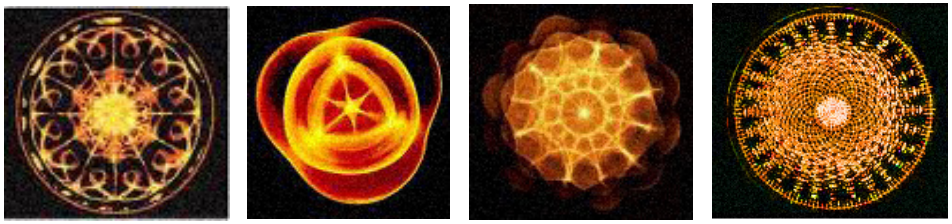
Cymatics

Cymatics, the study of wave phenomena, is a science pioneered by Swiss medical doctor and natural scientist, Hans Jenny (1904-1972). For 14 years he conducted experiments animating inert powders, pastes, and liquids into life-like, flowing forms, which mirrored patterns found throughout nature, art and architecture. What's more, all of these patterns were created using simple sine wave vibrations (pure tones) within the audible range. So what you see is a physical representation of vibration, or how sound manifests into form through the medium of various materials.

Dr. Jenny's methodology was meticulous, well documented, and totally repeatable. His fascinating body of work offers profound insights into both the physical sciences and esoteric philosophies. It illustrates the very principles which inspired the ancient Greek philosophers Heraclitus, Pythagoras and Plato, on down to Giordano Bruno and Johannes Kepler, the fathers of modern astronomy. "In the beginning was the word..." takes on a whole new meaning while looking at these experiments!

These cymatic images are truly awe-inspiring, not only for their visual beauty in portraying the inherent responsiveness of matter to sound, but also because they inspire a deep recognition that we, too, are part and parcel of this same complex and intricate vibrational matrix.

In this example we see how these simple particles in a fluid take on geometric structure, by nothing more than vibration:

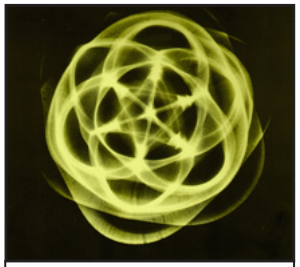


Notice the similarities? You are seeing something that many materials scientists have not yet accepted or even understood. Yet, the data has been available for decades.

In his research with the tonoscope, Jenny noticed that when the vowels of the ancient languages of Hebrew and Sanskrit were pronounced, the sand took the shape of the written symbols for these vowels, while our modern languages, on the other hand, did not generate the same result. How is this possible? Did the ancient Hebrews and Indians know this? Is there something to the concept of "sacred language," which both of these are sometimes called? What qualities do these "sacred languages," among which Tibetan, Egyptian and Chinese are often numbered, possess? Do they have the power to influence and transform physical reality, to create things through their inherent power, or, to take a concrete example, through the recitation or singing of sacred texts, to heal a person who has gone "out of tune"?

An interesting phenomenon appeared when he took a vibrating plate covered with liquid and tilted it. The liquid did not yield to gravitational influence and run off the vibrating plate but stayed on and went on constructing new shapes as though nothing had happened. If, however, the oscillation was then turned off, the liquid began to run, but if he was really fast and got the vibrations going again, he could get the liquid back in place on the plate. According to Jenny, this was an example of an anti-gravitational effect created by vibrations.

In the beginning of Cymatics, Hans Jenny states: "In the living as well as non-living parts of nature, the trained eye encounters wide-spread evidence of periodic systems. These systems points to a continuous transformation from the one set condition to the opposite set." Jenny is saying that we see everywhere examples of vibrations, oscillations, pulses, wave motions, pendulum motions, rhythmic courses of events, serial sequences, and their effects and actions. Throughout the book Jenny emphasizes his conception that these phenomena and processes not be taken merely as subjects for mental analysis and theorizing. Only by trying to "enter into" phenomena through empirical and systematic investigation can we create mental structures capable of casting light on ultimate reality. He asks that we not "mix ourselves in with the phenomenon" but rather pay attention to it and allow it to lead us to the inherent and essential. He means that even the purest philosophical theory is nevertheless incapable of grasping the true existence and reality of it in full measure. What Hans Jenny pointed out is the resemblance between the shapes and patterns we see around us in physical reality and the shapes and patterns he generated in his investigations.



Dr. Hans Jenny's 'Cymatics' research, vibration of water with colloid showing a star-tetrahedron

Jenny was convinced that biological evolution was a result of vibrations, and that their nature determined the ultimate outcome. He speculated that every cell had its own frequency and that a number of cells with the same frequency created a new frequency which was in harmony with the original, which in its turn possibly formed an organ that also created a new frequency in harmony with the two preceding ones. Jenny was saying that the key to understanding how we can heal the body with the help of tones lies in our understanding of how different frequencies influence genes, cells and various structures in the body. He also suggested that through the study of the human ear and larynx we would be able to come to a deeper understanding of the ultimate cause of vibrations.

It is important to remember that Dr. Jenny could increase the vibration and create a more complex form of geometry. All he was doing is taking the same fine particles, in the same fluid, and changing the pitch of the sound playing into the whole mix. Each geometric form is a stable pattern, which appears for each level of frequency — every time that frequency is played. Flowing movement was evident within the pattern, but the pattern itself does not change. It forms a structure. Change the pitch and the structures will change accordingly, but they will always be there, when the right tune is played. Similarly, in this Danish study, certain speeds of rotation created certain geometric patterns… certain patterns… every time!

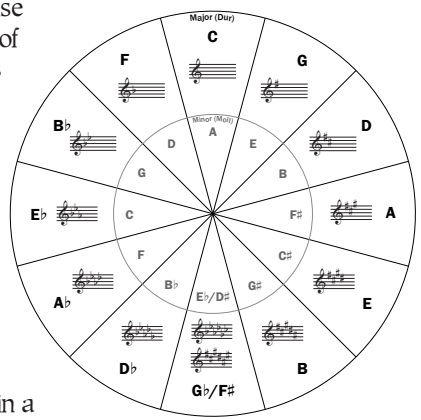
As Billy Yellow, a Navajo medicine man, sums it up: "Our task is to chant the world, chant the beauty. The world is a reflection of our chanting."

The Circle of Fifths and the Chakras

The Chakras are basically subtle energy centers in the human body. Their positions are being stated in Spinal Cord in the microform. They rotate in the formation of clockwise and anti-clockwise resulting to create invisible energy by which the organs of our body work. This invisible energy makes an outer circumference of our body (known a Aura) and protects us from negativities and diseases. It is as per the ancient Indian Sanskrit sutras (Spiritual books). They have been known in traditional Asian Alternative Medicines for thousand of years (i.e. Reiki, Ayurveda, Acupuncture, Acupressure etc.). They are used for diagnosis as well as for treating disorders on the physical, emotional and mental levels.

By applying the principles of progression to the harmonics of the fifth, a musical sequence that prefigures the harmonic relationships of the human energy system. For the Circle of Fifths delineates the chakra system in the human body. Each chakra is a spinning wheel. Here, we will also note that each chakra comprises, in both sound and color, a literal mandala of geometries.

The Circle of Fifths is a special device used in music theory to remember key signatures and other similar techniques. To create the circle, one may begin with any note. Then, going clockwise, each ascending note will be a perfect fifth above the previous note. You could also go counter-clockwise using fourths instead, since fourths are the inversion of fifths. Notice that the completed circle has all twelve notes of the chromatic scale.



As you may have noticed, if you read clockwise beginning with C and ending with C# you have a list of consecutive major sharp key signatures. C major has no sharps, G major has one sharp, D major has two sharps, and so on until C# major, which has seven sharps. If you read in a descending order beginning with C and ending with Cb, you have a list of consecutive major flat key signatures. C major has no flats, F major has one flat, Bb major has two flats, and so on until Cb major, which has seven flats. If you read in an ascending order beginning with A (whose minor key is the relative minor key of C major) and ending with A#, you have a list of consecutive minor sharp key signatures. If you read in a descending order beginning with A and ending with Ab, you have a list of consecutive minor flat key signatures.

In the Circle of Fifths we see another way in which the musical scale is related to Sacred Geometry, for the musical progression is an exact parallel to the Fibonacci sequence.

The Fibonacci sequence starts with the number 1, and proceeds by adding the two previous numbers. So the second number in the sequence also is 1, then 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, and so on. And a graph of this sequence almost exactly matches the spiral graph of the Golden Mean sequence. One is finite, the other infinite. "As above, so below." Fibonnaci realized that the natural branching, flowering, and spiraling forms in Nature followed the same uniform laws found in musical scales, for his sequence mathematically predicts all of the intervals that comprise the chords of music.

Vedic Kundalini philosophy teaches us that there are seven specific points or areas on the human body called "Chakras" and that when in harmony create what is known as the "serpent energy" or "Kundalini" energy. When all seven are in harmony they create health and harmony within the body itself. These Chakras have individual colors, elements, and tonal centers and when all of them vibrate in harmony it allows the Kundalini energy to flow freely.

The musical tones and colors traditionally associated with the chakras are:

1. BASE (or Root Chakra) resonates to the note 'C'. It's color is red and it is located at the base of your spine. It's the Chakra closest to the earth and represents earthly grounding. Fear is felt in this Chakra and it controls your fight or flight response. It is the Chakra of physical survival. When Unbalanced you may experience: Violence, anger, constipation, survival fears.

2. SACRAL (or Navel Chakra) resonates to the note 'D'. It's color is orange and it is located between the base of your spine and your navel. It represents your sexuality, creativity, emotions of anger, resentment and frustration. When Unbalanced you may experience: Sexual problems, jealousy, possessiveness, uterine or bladder problems, lower back pain.

3. SOLAR PLEXUS resonates to the note 'E'. It's color is yellow and is located in the solar plexus area, a few inches above the navel. Personal emotions are carried in this Chakra. Feelings of personal power, anger and hostility. Your sensitivity is stored here. It is the seat of your emotional living. When Unbalanced you may experience: Lack of will, overemphasis on power, anger, poor digestion, eating disorders, fear, hate.

4. HEART resonates to the note 'F'. It's color is green and it is located within your heart. It is the centre of love, harmony and peace. The Asians say that this is the house of the soul as it deals with issues of the soul. It is through this Chakra that we fall in love. We fall in love through our heart Chakra, then that emotion moves to the emotional centre, the solar plexus, then to the sexual Chakra for strong feelings of attractions, then to the base, which promotes feelings of wanting to settle down. We don't fall up in love - we fall down! When Unbalanced you may experience: Anger, heart problems, immune system problems, rigidity, lack of love, or a lack of compassion.

5. THROAT resonates to the note 'G'. It's color is blue and is located within the throat. It is the Chakra of communication, creativity, expression and judgement. Should you experience problems with your throat, it is sometimes said that if you draw the color blue to this area it will help you say what needs to be said. When Unbalanced you may experience: Difficulty communicating, emotions caught in the throat.

6. THIRD EYE (or Brow Chakra) resonates to the note 'A'. It's color is Indigo (a combination of red and blue). It is located at the centre of your forehead. This Chakra is used to question the spiritual nature of our life. It is the Chakra of question. Our inner vision is contained here, inner dreams gifts of clairvoyance, wisdom and perception. The dreams of our life are held in this Chakra. When Unbalanced you may experience: Headaches, poor eyesight, lack of concentration.

7. CROWN resonates to the note 'B'. It's color is violet and is located at the top of your head. It is the Chakra of Divine purpose, the Chakra of destiny. It balances the interior and the exterior and brings them into a harmonious whole. This Chakra is said to be your own place of connection to God. When Unbalanced you may experience: Depression, lack of grounding, lack of inspiration (because you're disconnected from your spiritual source).

The interweaving of the chakras that we get by applying to them the Circle of Fifths represents a more complex system than the traditional, linear progression. And it is interesting to note that in sound healing, the connections between these "chakra harmonics" reflect a strong correspondence between our issues. For example, in the Circle of Fifths progression, the root chakra (sexuality, survival, and money) is directly connected to the throat chakra (our expression; speaking our truth). And by working with these two chakras, we find that we can heal survival issues.

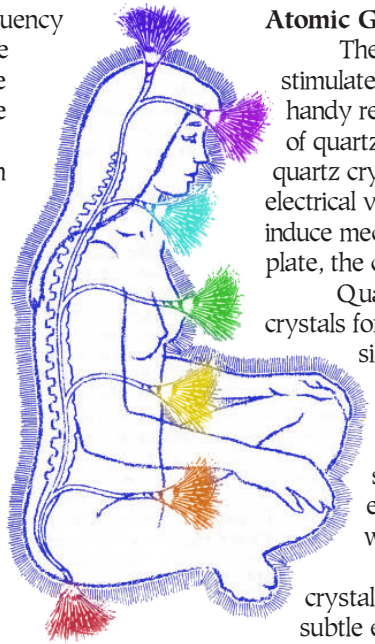
Using the GSR meter to detect human energy fields

Over the past twenty years Valerie Hunt, a Physical Therapist and Professor of Kinesiology at U.C.L.A. California, has developed a method of detecting certain peaks of high frequency electrical impulses within the human body, which she believes relate to a non-physical energy field surrounding the body. It corresponds to ancient teachings regarding the human aura and the system of vortices known as the Chakras.

Medical science has shown that all living creatures maintain electro-chemical processes in their bodies - human beings more so, because of the electrical activity of their brains. Complicated signal pulses are constantly being passed along nerve fibres throughout the body. Valerie's work involved the study of human muscle movement by means of Electromyographs. This instrument picks up the electro-chemical pulses sent

along the nerves to activate the muscles. The strength of the muscle reaction depends solely upon the frequency of such pulses. The highest pulse frequency in the motor nerves is around 250 Hz.

Sharp pulses like these, which can be heard as clicks in a loudspeaker amplifier, have higher frequency components, which follow a distinct pattern of attenuation in accordance with what is known as "Fourier Analysis". Valerie was therefore able to filter out these muscle signals and their higher frequency components. After doing this she was left with smaller signals in the range from 100 to 1600 Hz, which did not seem to emanate from the heart, nerves or brain. By producing a Frequency Spectrum of these signals Valerie showed that they formed distinct peaks at regular intervals, quite unlike what might have been expected from random noise.



This discovery lead Valerie to believe that the high-frequency electrical signals were the effect of another, non-physical energy system acting upon the human body. Something intangible, like the human aura and the legendary system of Chakras. She was lead to this conclusion after studying many EMG's, including those of a ballet dancer, who claimed that she was using this outer energy field to help her complete complicated choreographs.

Valerie then expanded her research to include people who claimed to be able to see the colors of the human aura, an energy field surrounding the body, although this caused some raised eyebrows among her colleagues. The vital aim of her research was to establish whether something immaterial, outside the body, could influence electro-chemical activity in the body. This might be the vital link between body and spirit which had occupied the minds of all philosophers since the time of Plato.

Pursuing her line of research, Valerie was able to associate particular peaks of the subtler frequencies both with a tone scale and with particular colors of the human aura as seen by psychics.

The Relationship of the Human Energy Field Frequencies to the colors of the Aura and the Chakras:

Color	Approx. Central Frequency Hz	Chakra
Red	200	Base
Orange	300	Sacral
Yellow	400	Stomach
Green	500	Heart
Blue	600	Throat
Indigo	700	Brow
Violet	800	Crown
Cream, White	1000	Astral
Golden	1400	Mental

By collecting sample fields from many individuals, Valerie was able to relate certain talents or abilities to specific frequency peaks in their energy field spectra. For instance, materialistically minded people had no significant peaks above the limit of 250 Hz. People with healing ability seemed to have frequency peaks between 400 and 800Hz. Persons with extra-sensory perception of some kind or other seemed to operate in a narrow band from 800 to 900 Hz. Those with energy peaks above 900Hz. are what she called "mystical personalities", able to act on information derived from "hunches".

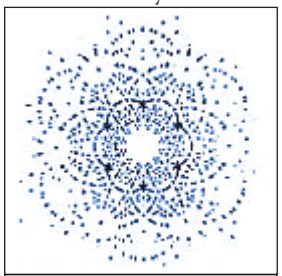
Atomic Geometry

The reason that quartz crystals are useful in telling time is that when they are stimulated with electricity, their oscillations are so regular and precise that they form a handy reference by which bits of time may be measured and displayed. This property of quartz crystals is a reflection of what is known as the piezoelectric effect. When quartz crystals are subjected to mechanical pressure, they produce a measurable electrical voltage. Conversely, when an electrical current is applied to a crystal, it will induce mechanical movement. If an alternating current is passed through the crystal plate, the charges oscillate back and forth at the resonant frequency of the crystal.

Quartz crystals are actually composed of silicon dioxide (SiO_2). While quartz crystals form the components of many electronic systems, it is the crystals of elemental silicon, which have been used as primary components of computer and solar technologies. Scientists have learned to grow special silicon crystals, which are infused with precise amounts of other elements during their formative stage. These added elements produce variants of silicon crystals that demonstrate specific degrees of electrical conductivity, optical activity, thermal conductivity, etc. This process is known as doping, and allows scientists to create crystals with specialized properties of energy transduction.

While scientists have chosen to explore the electronic properties of silicon crystals, it is quartz crystals that bear the greatest potential in the manipulation of subtle energies. All crystalline structures are formed of mathematically precise and orderly lattice arrays of atoms. In addition to the variety of grid-like lattice structures, some researchers feel that there are also spiral arrangements interwoven into the crystal structure. Crystals represent the lowest state of entropy possible because they have the most orderly structure in nature. The crystalline structure will respond in unique and precise ways to a wide spectrum of energies, including heat, light, pressure, sound, electricity, gamma rays, microwaves, bioelectricity, and even the energies of consciousness. In response to these varying energetic inputs, the molecular structure of the crystals will undergo particular modes of oscillation, thereby creating specific vibratory frequencies of energy emission.

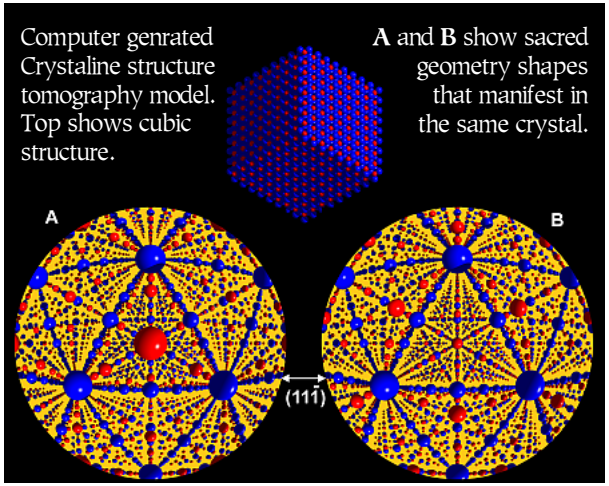
When you shoot x-rays down the axis of the atomic matrix of a crystal or metal, you'll get these little dots showing you exactly where the atoms are located. In this case, this is a beryl crystal that actually displays the Flower of Life pattern. The beryl crystal uses the pattern to arrange its atoms and form this specific crystal. It's really amazing that these little atoms simply line themselves up in space, often with enormous distances between them. These microscopic spaces are relatively vast, like between the stars in the night sky. The atoms perfectly align themselves in cubes and tetrahedrons and all kinds of geometric shapes. You can see how the atoms have arranged



X-ray pattern of Beryl

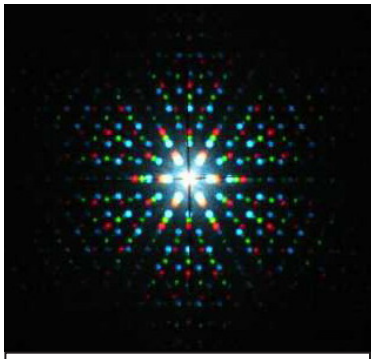
themselves in a cubical design. It's interesting that in all the various forms manifested in the Reality, the atoms themselves are spheres. Most researchers have overlooked this simple fact, but the sphere is the main form that everything came from in the beginning. It is important in understanding creation.

The entire fabric of everything in our existence is made up of "marbles"– all different sizes of spheres. We're sitting on a sphere, the Earth, and spheres are rotating around us. The Moon, Sun and stars are all spheres. The whole universe, from macrocosm to microcosm, is made up of little spheres in one way or another. The light waves moving through space are all spheres. We think of light as making waves through space, but it's much more complex. An electrical field spins one way around it and a magnetic field rotates at 90 degrees to the electrical field, and they expand in spherical patterns. When you see light coming directly toward you, it's white. But if it's not moving directly toward you, it's black. In fact, the entire night sky is filled with brilliant white light, but we see the light only when it's coming toward us. We don't see the light waves that move sideways from us; we just see black. If we could see it all, it would be blinding. Light is everywhere, and there is no place in space where it is not. The sphere is literally everywhere.



If you look at the hydrogen atom, the proton is compacted in the center and the electron is way out there orbiting the proton. If the proton were the size of a golf ball, the electron would be about a football field away–and that electron is moving at nine-tenths the speed of light. This means that the electron travels around the proton about 170,000 miles every second, held in place by the weak nuclear force. The electron moves around so fast that it appears as a cloud. In fact, it is called an electron cloud. There's only one electron, but it's moving so fast that it appears to make a sphere around the central proton.

As we can deduce, spheres are the primary component of the Reality we're experiencing. An atom is called an ion if it has too many or too few electrons and has either a positive or a negative charge. So the primary characteristics of an atom are its size and what charge it has. These two main factors determine whether or not different atoms will fit together into molecules. There are other subtle factors involved, but size and charge are primary. Atoms always line up in specific ways when they crystallize. They form into, say, a cube, and then that cube puts another cube next to itself and another cube next to it, and soon you get one cube connected to another, connected in turn to another cube and on and on, forming what is called a lattice. (See center of page illustration.) There are all kinds of ways that atoms can join. The resulting molecules are always associated with sacred geometry and the five Platonic solids.



Laser Diffusion image of a crystal atomic matrix

Even when you scrutinize a complicated molecule and break it down, you see the shapes in it, and they always revert to one of the five Platonic solids–no matter what the structure is. No matter what you call it–metal, crystal, anything else, it will always come down to one of these original five shapes. Crystals don't just happen as the result of a chemical reaction; they grow. Quartz crystals can be used in many different ways to process various types of energy. These functions are numerous and include reception, reflection, refraction, magnification, transduction, amplification, focusing, transmutation, transference, transformation, storage, capacitance, stabilization, modulation, balancing, and transmittance. The quartz crystal is capable of amplifying and directing the natural energies.

We are all composed of the same energy as everything else in creation; we are all expressions of an unseen unifying principle. We are all different manifestations of a unique, underlying, consciousness, and this consciousness is expressed through special geometric forms and arrangements that are repeated at both the microcosmic and macrocosmic levels. The subtle energies that determine form exist as repeating geometric patterns and shapes that influence the expression of systems ranging from the tiniest atom to the greatest galaxy.

Crystals and Energy Theory

There are at least a hundred thousand different kinds of crystals. But they can all be put into seven categories: cubic, trigonal, tetragonal, hexagonal, orthorhombic, monoclinic and triclinic. Six of those systems, used for organizing all known crystals, are derived from the cube, one of the Platonic solids. It's a matter of which angle you are viewing the cube from: the square, hexagonal or rectangular view as opposed to the normal 90-degree cubic angle. The seven crystalline classes represent a repeating pattern of symmetry and organization that can be found throughout the many kingdoms of nature, including the human kingdom. This section explains the shapes found in crystals throughout the universe and New Age Theory behind their uses in claiming to affect physical, mental and energy systems.

The trigonal or rhombohedral system (quartz, corundum, tourmaline, calcite) contains crystals that continually give off energy. They give off energy of a balanced nature. Crystals belonging to the trigonal class may be useful in balancing the subtle energies of the human body, especially when there is a particular lack of energy in one of the component systems such as the meridians. They can help balance energies of the brain as well as the subtle bodies. Although they are similar to crystals of the hexagonal system and possess certain common energetic qualities, trigonal crystals tend to be more varied in their uses. They assist in achieving sharper clarity than stones of the hexagonal class, which are both giving and receiving in their qualities. The trigonal system corresponds to the base or coccygeal chakra, which relates to the kundalini energies.

Crystals of the cubic system (garnet, metallic pyrite) have an energy pattern that can assist in the repair of damaged cellular structures, from the molecular level of DNA on up to the bones of the skeletal system. The cubic system also tends to resonate most with the sacral chakra in the human subtle energetic anatomy. Crystals of the hexagonal

classification (beryl, apatite, ice or snowflakes) are of a more complex nature than those with cubic lattice arrangements. They tend to give off energies, and to encourage processes of growth and vitality. Quartz is considered both hexagonal as well as trigonal. Crystals of the hexagonal classification can also be used for healing, energy balancing, communicating, and storing information. These crystals have an energy that tends to be associated with service. They can be helpful in focusing healing energy into the organs and endocrine glands, and also into the acupoints and meridians. They can assist in re-balancing the energies of all the chakras and subtle bodies. Additionally, crystals of this class can have beneficial effects upon consciousness in assisting the development of creativity and intuition, enhancing psychic abilities, and increasing attunement with the Higher Self. They tend to resonate most strongly with the solar-plexus chakra.

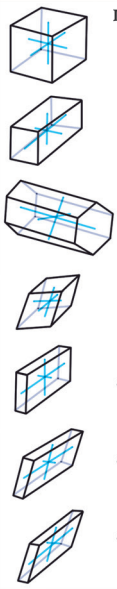
Stones belonging to the tetragonal system (zircon, wulfenite, idocrase) are half-giving and half-receiving crystals that are of a balancing nature. Crystals of this class have qualities allowing them to absorb many negative qualities of the Earth, yet they are also able to give forth positive vibrations. These stones act to transmute negativity. The tetragonal system also corresponds to the heart chakra. Through the lessons of the heart, there is a balancing of the soul's nature. Crystals of the tetragonal system channel vibrations into the Earth and create connections between basic structures and higher dimensions.

Stones belonging to the orthorhombic system (olivine, topaz, baryte) have a unique aspect of encircling and encompassing energy patterns, and thought forms. They can assist in bringing greater perspective to issues that may seem out of focus. They magnify consciousness in a way that allows one to switch from the perspective of the microcosm to the macrocosm and vice-versa. Crystals of the orthorhombic class help an individual isolate problems and contain them until they can be worked out at various levels of experience. Our problems cannot be dissolved, released, or transmuted until their inner meaning has been thoroughly grasped. All problems contain potential lessons for growth and are often external reflections of our inner struggles. This crystalline system relates best to the throat chakra or willpower, which carries the ability to accept or reject problems.

Crystals of the monoclinic system (gypsum, azurite, orthoclase) have a unique, constant pulsating action. Their nature is that of continual expansion and contraction, which helps serve as an impetus to action and growth as well as to the expansion and contraction of consciousness. Crystals of the monoclinic class also have a directional aspect. They can point the way to go by helping clear away obstructions to our inner vision. These stones can help clear our paths by dissolving trivial problems via their influence at higher energy levels. The monoclinic system corresponds to the third-eye chakra. By holding such crystals up to the third-eye chakra, one can be assisted in perceiving self and others on a multidimensional level of spirit.

Crystals of the triclinic system (axinite, plagioclase feldspars) possess aspects of completion within their makeup, in that they form a triad. The triad is a repeating form within nature and in the hierarchical structure of the universe. Triclinic crystals have an aspect of totality or completeness. They also help to balance the yin and yang energy within an individual. They assist in merging and harmonizing polarities of any type of energy that is unbalanced. Gemstones of the triclinic classification can help to balance personalities and attitudes that are too polarized or unbalanced. The triclinic system of crystals corresponds to the crown chakra–the highest energetic level in humans. Through the energies of this system and the crown chakra, there comes the highest form of understanding, of giving and receiving, and of all things that can be accomplished.

Seven Crystal Systems



Lengths of the Axes	Angles Between the Axis	Crystal System
all equal	all=90°	Cubic
2 equal 1 unequal	all=90°	Tetragonal
3 equal 1 unequal	1=90° 3=60°	Hexagonal
all equal	all≠90°	Rhombohedral
all unequal	all=90°	Orthorhombic
all unequal	2=90° 1≠90°	Monoclinic
all unequal	all≠90°	Triclinic

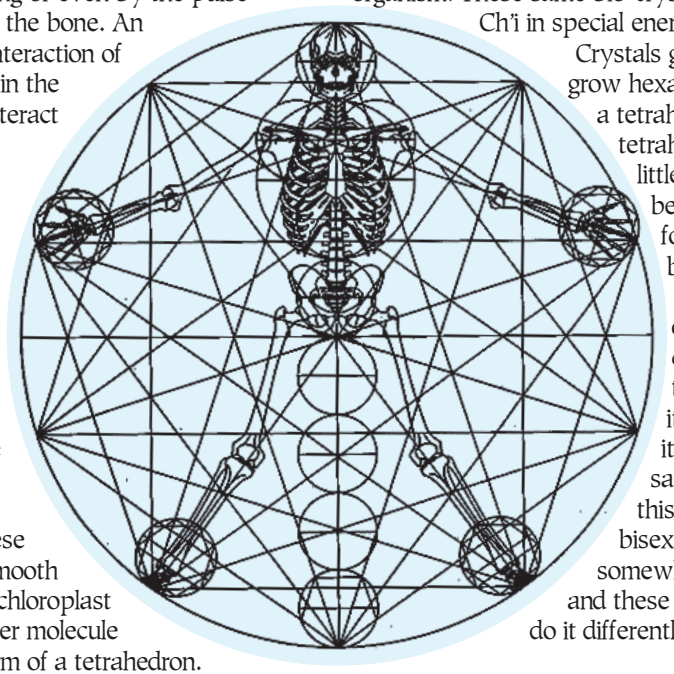
The Human Crystal

The key to understanding the assimilation of energy into our physical structure is through the awareness of our bodies as a series of synchronous, interacting crystal structures. Oscillating solid and liquid crystals form an overall energy pattern for the total body, linking the body on this level. Each organ, gland, nerve system, cell and protein structure, even the tissue salts in the body, shows a level of organization with some degree of crystalline-like function. Marcel Vogel, the world-renowned crystal expert, has pointed out that the human energy field exists as an array of oscillating energy points which have a layered structure and a definite symmetry. He points out that these properties fulfill the definition of a normal crystal in material form. Our bone structure has long been recognized as a solid crystal structure with piezoelectric properties.

A piezoelectric effect is the creation of an electromagnetic field pulse when a crystalline structure is physically stressed or pushed out of its normal shape. As a solid crystal, it has the ability to convert vibrational energy, such as sound or light, into magnetic and electric energy. Crystals can absorb, store, convert, amplify, transduce and transmit vibrational energies, which have biological effects. When physical stress or an electromagnetic field (EMF) is applied to a piezoelectric crystal, the crystal will change shape and generate an EMF. Bone, quartz and tourmaline are among the few crystal forms with piezoelectric properties. Studies suggest that the crystalline-like components of the extra-cellular matrix of bone, such as collagen and proteoglycans, possess piezoelectric qualities. It has also been established that mineralized tissue such as cartilage, dentin, teeth in general and relatively non-mineralized tissues such as keratin in skin, elastin, artery tissue, connective tissue (tendons and ligaments), and even some amino acid crystals (glysine, proline and hydroxyproline) all have piezoelectric properties.

The main forces, which create pulsed piezoelectric EMFs in bone, are the anti-gravity muscles, the cardiovascular system, voluntary muscles, and impact with the environment. Projected EMFs have the ability to create a piezoelectric response in bone. These EMFs have biological activity. These piezoelectric fields affect: cell nutrition, local pH control, enzyme activation and suppression, orientation of intra and extra-cellular macromolecules, migratory and reproductive activity of cells, synthetic capacity and specialized function of cells, contractility and permeability of cell membranes, and energy transfer. Another type of electric or electromagnetic field response is also found in bone structure, called streaming potentials, is an electrical field created by the flow

of ions, charged solutes, and cells such as red blood cells, through the tissues, carried by extra-cellular fluids such as blood through the extra-cellular matrix. When the bone is even subtly bent from pressure by such events as walking or even by the pulse of our arteries, the extra-cellular fluids are pumped through the bone. An electrical charge is created as a result of the electro-static interaction of the electrically charged fluids moving past the fixed charge in the crystalline bone structure. These electrical fluids can also interact with the piezoelectric fields of the bone.



There are other forms of crystalline-like systems in the body, and one of the most important is the liquid crystal. A liquid crystal is technically defined as having form, liquid properties, stored information and a measurable electromagnetic field. A liquid crystal can act simultaneously as liquid and crystal. The larger liquid crystal systems include fatty tissue, muscle and nerve tissue, the lymphatic system, white blood cells, and the various pleural and peritoneal linings. Muscle and nerve tissue exist as liquid crystal systems held in shape by bone and skin systems. The muscles have also been shown to have some piezoelectric properties. On a cellular level, all cells and cell membranes are considered liquid crystals. These include the plasma membrane, mitochondrial membrane, smooth and rough endoplasmic reticulum, nuclear membranes and chloroplast membranes. Bodily fluids also have crystal qualities. A water molecule contains the potential forms of all crystals in its primary form of a tetrahedron. Water can bring all different forms of ions into a crystalline state and hold them in solution. The more structured the water is, the higher concentration of ions it can hold. One of the most important ion solutions is the dissolved cell salts.

When the body cells and tissues become diseased or cancerous, the crystalline protein structures no longer have the proper configuration to maintain the water in a structured state. Ions and other solutes in the cell consequently become redistributed by the new pattern of unstructured water. If the water in the cell, extra-cellular fluid or blood plasma becomes structured, it will then be able to attract and hold more ions by virtue of its hydration shell patterns. Identical crystal resonant fields emanated by micronutrients are attracted to larger resonant fields emanated by the organism's larger crystalline and liquid crystalline patterns. This explains how micronutrients, homeopathic remedies, etc., through vibrating crystalline fields, are drawn to the appropriate resonating crystalline sites.

In An Atlas of Cellular Oscillators by P.R. Rapp, research in over 450 papers is cited in cataloging an atlas of biological and biochemical oscillators with a periodicity of one hour or less. This includes oscillations in enzyme-catalyzed reactions such as photosynthesis, oscillations in protein synthesis, and oscillations in cell membranes, secretory cells, neuronal cells, skeletal cells, smooth cells, heart muscle cells and cell movement.

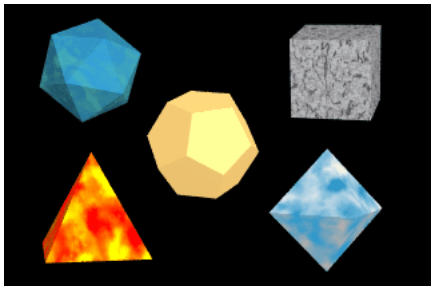
In a healthy state, the body's structures are a multi-leveled series of interacting systems and subsystems that resonate harmoniously. From this perspective, disease occurs when this synchronicity is thrown into disharmony. Each organ system or subsystem gives off a specific measurable electromagnetic field. The EMFs are measurable, subtle vibratory fields that can have great effect on the behavior of an organism. These same bio-crystalline elements amplify certain aspects of the life force or Ch'i in special energy circuits called meridians that run throughout the body.

Crystals grow very much like people in lots of ways. Our fields grow hexagonally, just as crystals do. Though the silicon molecule is a tetrahedron, when it forms quartz, it links with another silicon tetrahedron to form a cube. Then it throws out a long line of little star tetrahedrons or cubes to form a row. Then the row begins to spin, changing direction exactly at 60-degrees to form a hexagon, the same structure seen around the human body from above.

Crystals have genders. They're either male or female or both. If you know what to look for, you can look at a crystal and see where the next face is. If it is on the left, then it is rotating clockwise, and that crystal is female. If it is on the right, then it is rotating counterclockwise, and it is male. If there are faces on both sides at just about the same height, you should see two spirals moving around this crystal in opposite directions, and that crystal would be bisexual. Often, two crystals are joined at the base and wrap somewhat around each other. These are called twined crystals, and these are almost always male and female. It's rare for them to do it differently.

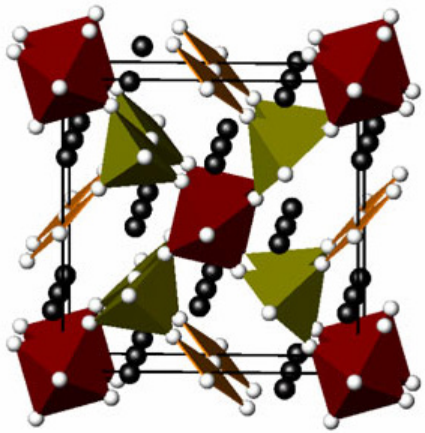
The Universe as a Crystal

The Perfect Solids feature prominently in the philosophy of Plato for whom they are named. Plato wrote about them in the dialogue Timaeus c.360 B.C. in which he associated each of the four classical elements (earth, air, water, and fire) with a regular solid. Earth was associated with the cube, air with the octahedron, water with the icosahedron, and fire with the tetrahedron. There was intuitive justification for these associations: the heat of fire feels sharp and stabbing (like little tetrahedra). Air is made of the octahedron; its minuscule components are so smooth that one can barely feel it. Water, the icosahedron, flows out of one's hand when picked up, as if it is made of tiny little balls.



By contrast, a highly un-spherical solid, the hexahedron (cube) represents earth. These clumsy little solids cause dirt to crumble and break when picked up, in stark difference to the smooth flow of water. The fifth Platonic solid, the dodecahedron, Plato obscurely remarks, "...the god used for arranging the constellations on the whole heaven". Aristotle added a fifth element, aithêr (aether in Latin, "ether" in English) and postulated that the heavens were made of this element, but he had no interest in matching it with Plato's fifth solid.

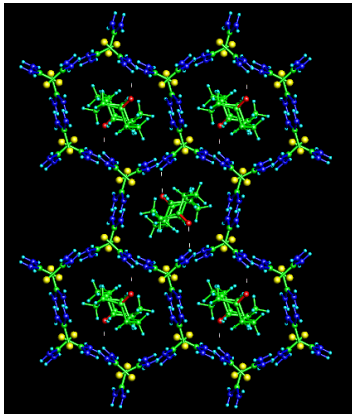
This way of defining all matter in the cosmos actually fits well with modern



Crystal structure of La6.4Ca1.6Cu6Ni2O20

interpretations of matter, energy, gas and plasma with ether being the quantum energy field that permeates all of space. Modern physics is just beginning to understand the ramifications of quantum energy and is currently waiting for the next advance in mathematics to move toward new ways of seeing reality.

The Periodic Table of Elements shows that every element, with a few exceptions that cannot be determined because they will not crystallize, is related to the cube. But on almost all the other elements we find this cubical relationship, except those atoms that fall outside the natural Table of Elements and those that are man-made. They don't happen in nature. Each atomic element has an associated crystalline structure. In every single case scientists have found that the different crystalline structures associated with atoms can be reduced to cubical structures while molecules conform to the perfect solids in usually fractal-like patterns. See examples provided.



If we look at space in the definition of a crystal we can begin to understand the universe in a new light...

-Crystal Definition:

The regular form which a substance tends to assume in solidifying, through the inherent power of cohesive attraction. It is bounded by plane surfaces, symmetrically arranged, and each species of crystal has fixed axial ratios.

-Liquid crystal Definition:

a liquid exhibiting properties of a crystal that are not shown by ordinary liquids.

-Liquid Definition:

fluid matter having no fixed shape but a fixed volume.

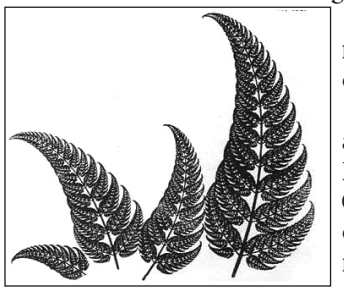
Our universe clearly fits within the definition of a liquid. All of its energy/matter (volume) is fixed and does not change, yet the universe flows as it expands. It exhibits the form of a crystal in its matrix of hydrogen atoms that fill the majority of space in a uniform pattern, only disturbed by gravity. The crystal of space is permeated by electromagnetic energy that reacts to changes in the matrix similarly to a crystal. Our universe has a fixed structure that grows based upon its matter/velocity. The planets, stars and nebula are much like inclusions when visually offered up within the universe as a whole. They are disturbances within the uniform matrix of space created from space itself. In fact, the latest scientific observations show that the galaxy superstructures that exist, but do not fit into the current Big Bang Theory, neatly fit into a harmonic theory of the universe that accurately predicts its current matter distribution and also accurately discerns the Hubble constant, which is the expansion rate and age of the universe. The universe is resonating like a crystal.

Natural Forms

Many forms observed in nature can be related to geometry (for sound reasons of resource optimization). For example, the chambered nautilus grows at a constant rate and so its shell forms a logarithmic spiral to accommodate that growth without changing shape. Also, honeybees construct hexagonal cells to hold their honey. These and other correspondences are seen by believers in sacred geometry to be further proof of the cosmic significance of geometric forms. Scientists, on the other hand, see such phenomena as the logical outcome of natural principles.

The Fractal Principle

The most commonly-known fractal is the Mandelbrot Set, which was originally discovered by Dr. Benoit Mandelbrot on a contract with IBM, studying the flow patterns of electromagnetic energy through AT&T's telephone lines across America. He was hoping to calculate a way in which they could pinpoint spontaneous and unpredictable losses of electrical power in the lines — and when he started mapping it all out, a pattern emerged on the graph. What really put Mandelbrot through the roof was to then walk into another room in the same office, and see this same graph appear again on a chalkboard… in this case emerging from a study of economic activity!

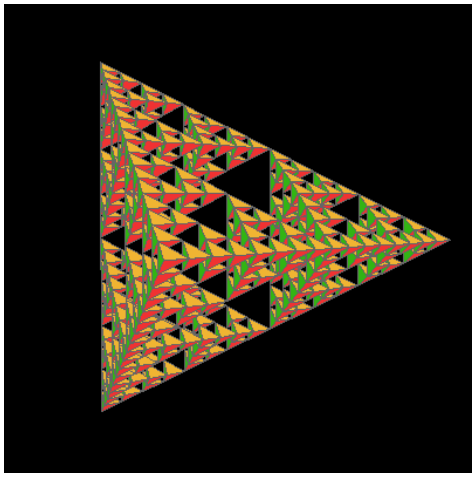


Since then, the same principle has been applied to natural phenomena… like rivers, plant leaves, flowers, crystals, galaxy formations and trees.

The word "fractal" was coined less than twenty years ago by one of history's most creative mathematicians, Benoit Mandelbrot, whose seminal work, The Fractal Geometry of Nature, first introduced and explained concepts underlying this new vision. Although prior mathematical thinkers like Cantor, Hausdorff, Julia, Koch,

Peano, Poincare, Richardson, Sierpinski, Weierstrass and others had attained isolated insights of fractal understanding, such ideas were largely ignored until Mandelbrot's genius forged them at a single blow into a gorgeously coherent and fruitful discipline.

Mandelbrot derived the term "fractal" from the Latin verb frangere, meaning to break or fragment. Basically, a fractal is any pattern that reveals greater complexity as it is enlarged. Thus, fractals graphically portray the notion of "worlds within worlds" which has obsessed Western culture from its tenth-century beginnings.



Traditional Euclidean patterns appear simpler as they are magnified; as you home in on one area, the shape looks more and more like a straight line. In the language of calculus such curves are differentiable. The trajectory of an artillery shell is a classic example. But fractals, like dendritic branches of lightning or bumps of broccoli, are not differentiable: the closer you come, the more detail you see. Infinity is implicit and invisible in the computations of calculus but explicit and graphically manifest in fractals.

Whether generated by computers or natural processes, all fractals are spun from what scientists call a "positive feedback loop." Something, data or matter, goes in one "end," undergoes a given, often very slight, modification and comes out the other. Fractals are produced when the output is fed back into the system as input again and again.

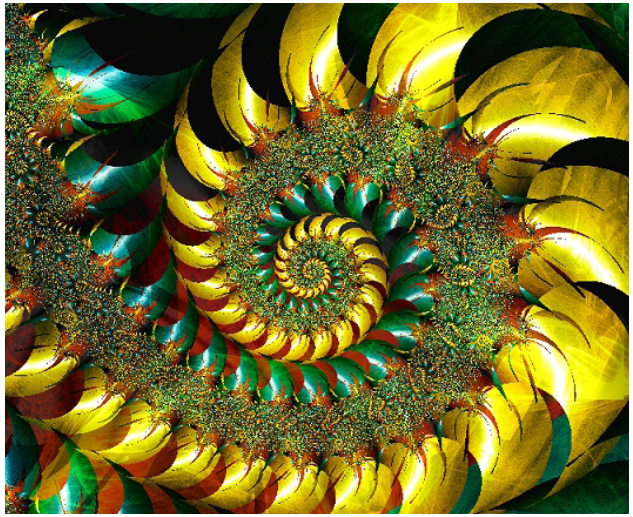
Fractals show us that the simplest engines of change often produce exquisitely elaborate patterns. Such systems are at work all around us, from the stock market to the stars. And to the fractal artist, Mandelbrot's insights echo Kandinsky's assertion that "the process of creation is the same in art and nature."

The pattern we see on a holographic plate is a real-world demonstration of a 'fractal' as well. 'Fractals' are patterns that mysteriously govern a variety of different phenomena in nature… revealing an underlying order within apparent chaos. All you do is take a set of very simple (mathematical) rules, and then repeat them many times over… and stunning patterns emerge.

Sacred Fractal Geometry

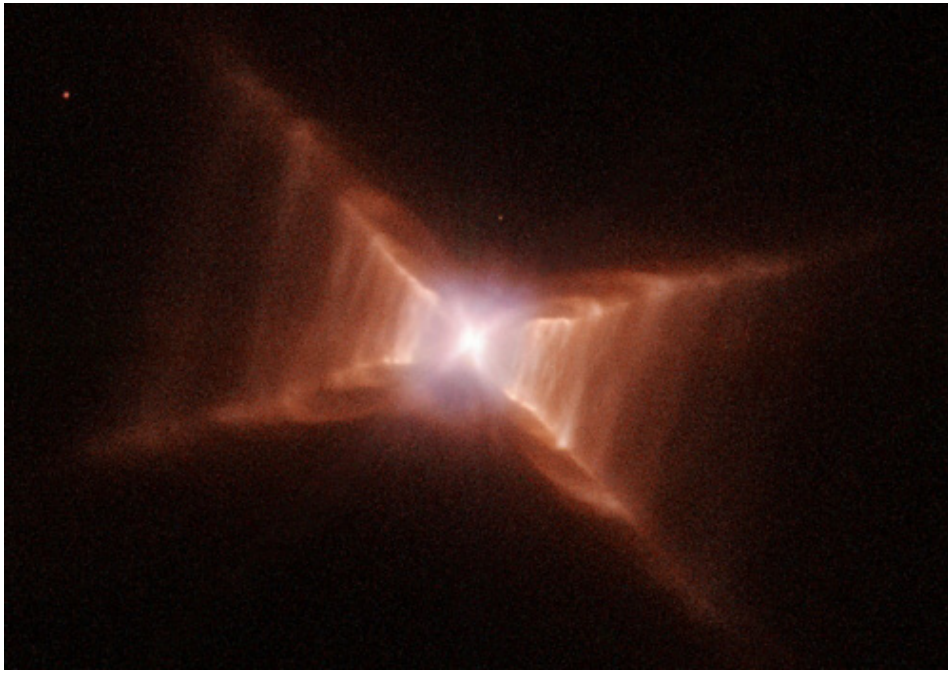
Fractals and Sacred geometry are based upon the same mathematics. Ironically, Clear examples of Sacred Geometry (and Golden Mean geometry) in Nature and matter come together in: All types of crystals, natural and cultured, The hexagonal geometry of snowflakes, Creatures exhibiting logarithmic spiral patterns: e.g. snails and various shell fish, Birds and flying insects, exhibiting clear Golden Mean proportions in bodies and wings, The way in which lightning forms branches, The way in which rivers branch, The geometric molecular and atomic patterns that all solid metals exhibit, The way in which a tree spans out so that all its branches receive sunlight. Another, perhaps less obvious but most significant example of this special ratio can be found in Deoxyribonucleic Acid (DNA) - the foundation and guiding mechanism of all living organisms.

The list could go on and on, but the point is well made. Fractal mathematics is a tool used to describe the forms and patterns we see around us based upon sacred geometry. When we expand our focus to the hidden architecture of the Cosmos, the underlying 'fractal' nature of the Universe expresses itself in geometry. That is the hidden connection between all different phenomena we see in nature, from the tiniest to the largest sizes.



Fractal Cosmos

Although it is remotely possible that the star's explosion only blasted out in one direction, creating more of a pyramid shape, what you are probably seeing is a perfect cube. Since all four sides are equal in length and at perfect 90-degree angles to each other, and again it has structured 'rungs' in it as we saw in the previous image, the scientists are totally baffled… it has even GREATER symmetry than the 'rectangle' nebula. Here's where the mystery comes in.



Rectangle Nebula-Hubble Telescope

Nebula photographs offer stunning, visible proof that geometry plays more of a role in the forces of the Universe than most of us may ever believe. Our scientists can only struggle to understand this within their existing mainstream models. Yet, we already have key elements in place to help explain it. Benoit Mandelbrot announced in 1977 that the distribution of galaxies in space shows a fractal pattern. Images from the best telescopes, equipped with CCD cameras and backed by digital processing, now show enough detail to add support to his observation. The implications are immense. Fractal patterns can be seen throughout the entire Universe, at every level of size… now revealed in giant gas clouds leaving conventional scientists scratching their heads…


Red Square Nebula

All you're looking at here is an exploding star, with dust shooting out of it… but clearly there is some type of energy field that is structuring that dust as it expands, into a very precise geometric pattern:

The problem is that typical magnetic fields, in the conventional physics models, simply do not allow for such geometric precision. The scientists truly do not know what to make out of things like this!

If Sacred Geometry is a Reality, it sets the basic argument for how something like this could be happening…

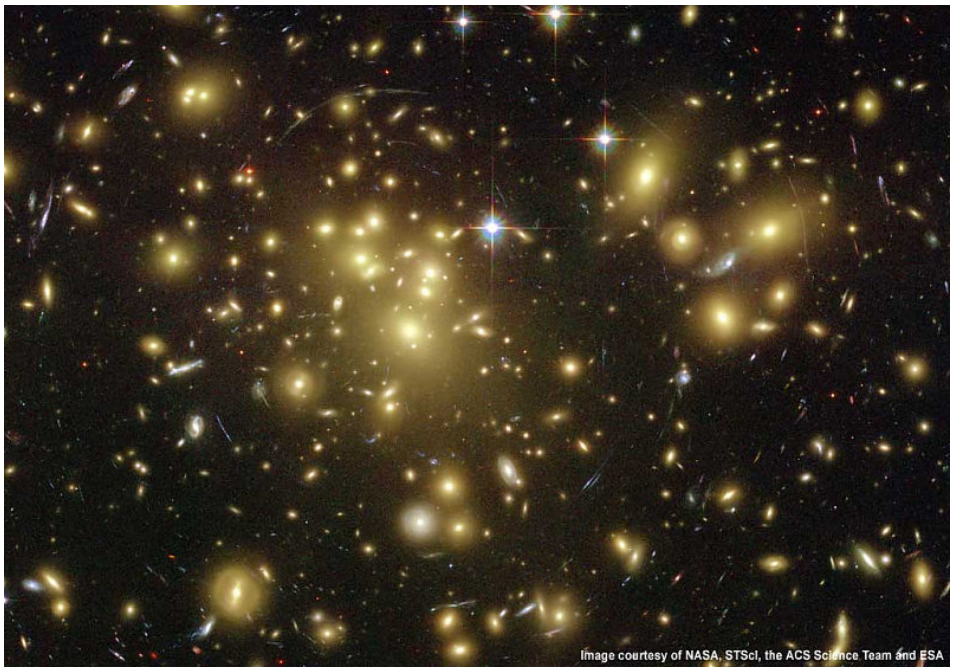


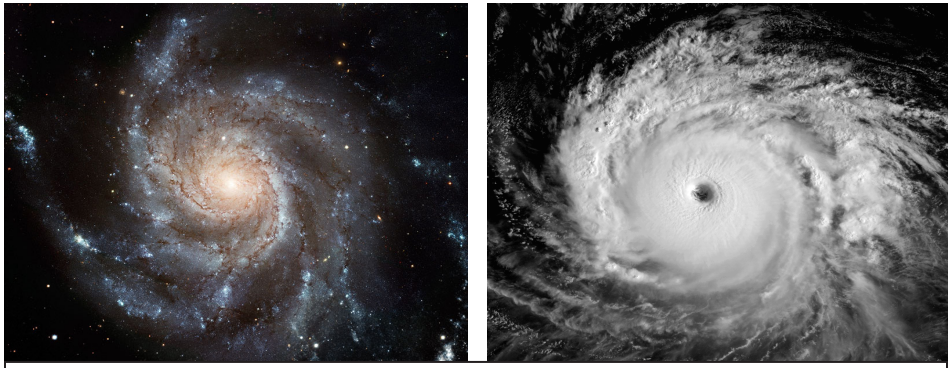
Image courtesy of NASA, STScI, the ACS Science Team and ESA

The Universe and Everything

If you consider that all matter, energy and consciousness as we know it is part of a Unified Field, which exists outside our 'known' three dimensions, then consider that this field behaves like a fluid.

As discussed in the science of cymatics when a fluid is vibrated, it crystallizes, and forms geometry as seen in the pictures of that section. In this case, vibration is what causes the 'fluid' to crystallize. In Dr. Jenny's experiments, vibration (technically 'pulsation') takes the fine 'particles' that you would never otherwise see or be able to measure, and causes them to gather together, eventually gaining enough strength that they 'crystallize' into geometric pattens.

With this knowledge, then we have all sorts of implications including the fact that harmonics work at all different levels of size scale. If you strike a key on the piano, you hear that note, but you hear many other notes as well — known as the overtone scale. This is a basic fact of harmonics… you keep seeing the same vibrations re-appearing in smaller intervals. This can explain how the 'vibrations' of crystal emerge in a gigantic nebula of interstellar dust. How a hurricane reflects the geometry of a galaxy and how mathematical equations can model the shapes we see in the universe.


Hubble Telescope example of a Spiral Galaxy and a Satillite Image Hurricane Rita

Super-Symmentry (Sacred shapes on all levels)

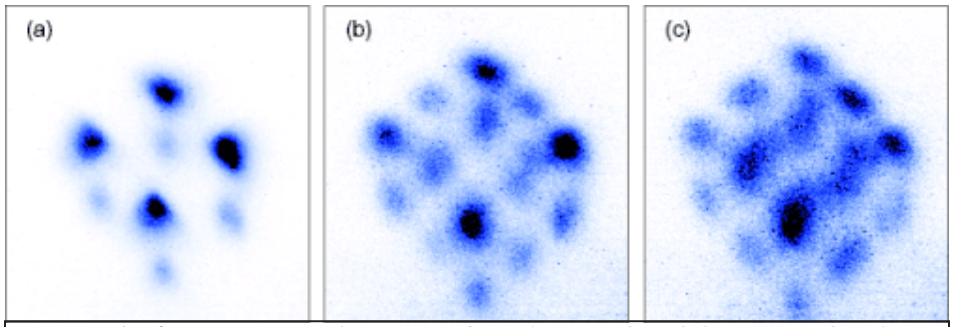
These patterns do not just occur in the vastness of space… they equally occur at the tiniest level of atoms and molecules, as can be seen, for example, in the cubical structure of ordinary table salt, or sodium chloride:


Salt on Matrix-Smithonian Institute

The crystal cube is another manifestation of a unified system of physics that many scientist do not understand the rules behind. Geometry determines structure throughout the Universe, at every level of size… and it continues to be in effect as you zoom in smaller and smaller on the quantum scale.

In a Divine Cosmos, well aware of its model, we are dealing with a form of 'quantum energy field' where the same

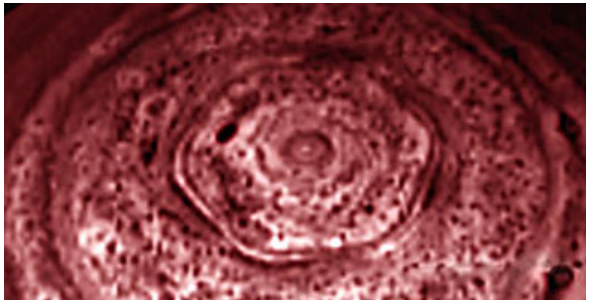
patterns appear at ALL different levels of size. This diagram from Ray Tomes shows how the average distances between various objects in the Cosmos will continue rising at a uniform rate — i.e. by a factor of 34560 — from the smallest quantum level all the way up to the Universe itself. Keep this in mind when you see the form of a grain of table salt in a giant nebula of interstellar gas:

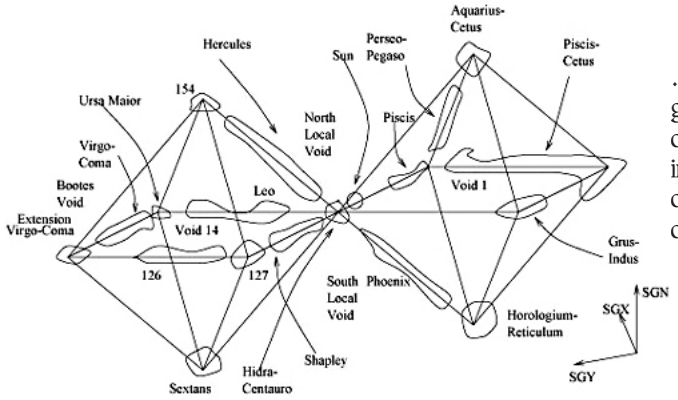


Example of strontium atoms being merged together using laser light to manipulate the atoms into forming a cubic solid with only 27 atoms. Somehow the atoms "know" how to combine across the quantum levels of space.

Sacred Geometry emerges from the sub-quantum level of Planck's Constant, the smallest size energy can be in the Universe…through to a mysterious, little-known phenomena of atoms to group together into perfect geometric 'microclusters', which then take on strange properties unknown in any other type of matter…through to the behavior of the Earth's crust as it has grown apart over time, following precise geometric boundaries in the process…

…now including the obviously geometric 'hexagon' on Saturn's north pole…





…going on up to gigantic super-clusters of galaxies arranging into a geometric 'matrix' of diamond-shaped octahedrons:

And finally, the background radiation of the entire Universe — the leftover dust from the early days of its formation (Left) — shows a clear duodecahedron shape as well, when you play 'connect the dots' with the lobes.

The Universe could be shaped like a soccer ball, say mathematicians. The idea is prompted by data from NASA's Wilkinson Microwave Anisotropy Probe (WMAP) satellite. This sees back to when the Universe was about 380,000 years old, and reveals the all-pervading radiation left over from the Big Bang - the cosmic microwave background.

There are fluctuations in this background, like waves in the sea. They are the legacy of the small lumps in the early Universe that gave rise to stars and galaxies.

An infinite Universe would contain waves of all sizes. The WMAP did not see any very large waves. This points to space being finite - for the same reasons that you don't see breakers in your bathtub.

The best explanation for these observations is that the cosmos is a Poincaré dodecahedral space, says a team led by Jeffrey Weeks, an independent mathematician based in Canton, New York. Mathematical models of a spherical, solid Universe edged by 12 curved pentagons produce the patterns seen in the background radiation without any special fine-tuning. "It fits the data surprisingly well," says Weeks.

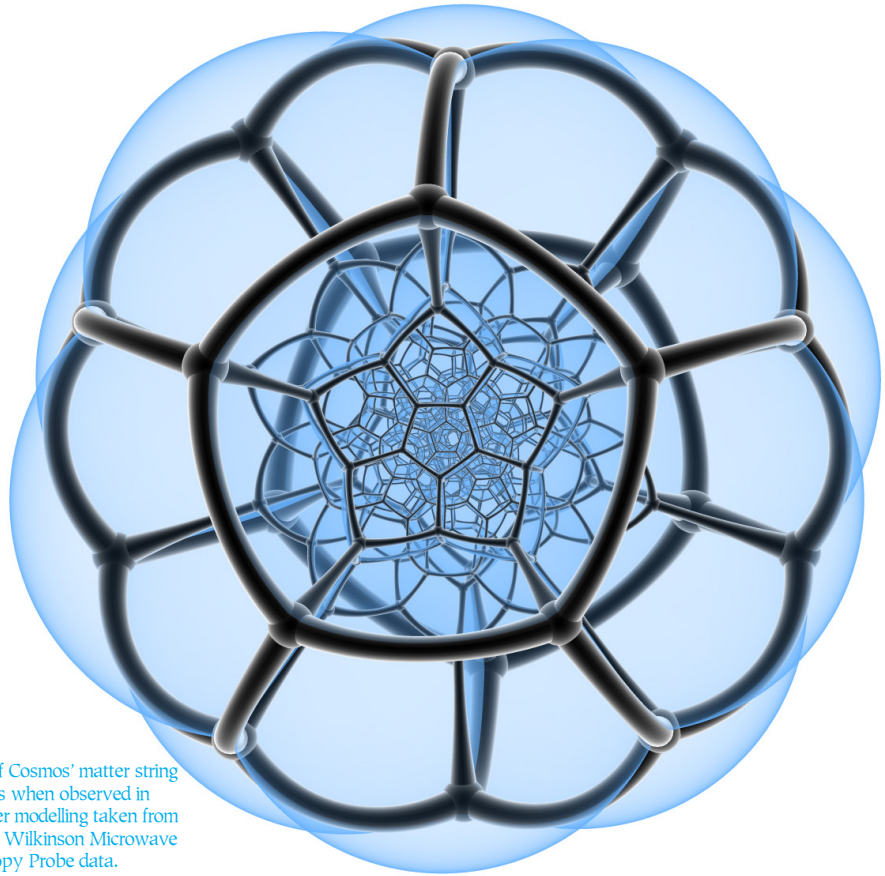


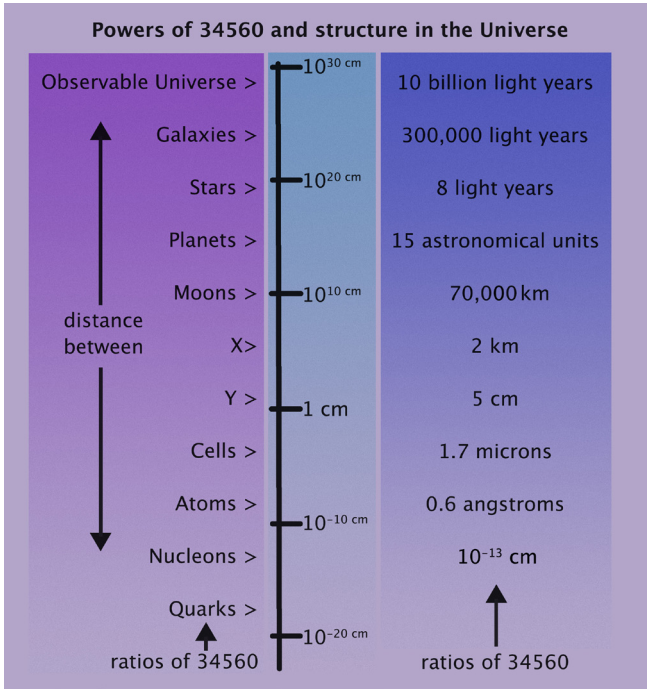
Image of Cosmos' matter string filaments when observed in computer modelling taken from NASA's Wilkinson Microwave Anisotropy Probe data.

The dodecahedron is "a nice solution", agrees cosmologist Janna Levin of the University of Cambridge, UK. But other geometries could produce similar patterns in the microwave background, she warns. "It's going to be a surprise if the Universe has chosen such a beautiful platonic form," she says. "And I'd be surprised if the Universe was so small." Most physicists assume that the Universe is infinite, explains Levin. But Einstein's theories actually say nothing about whether the Universe stops or not.

Additional analysis of this same body of data discovered that it not only had an octahedron shape in it, there was a giant 'dodecahedron' as well. Beware when searching for this data, everyone outside America calls a soccer ball a 'football', so look for key phrases like "Cosmos shaped like a football": So, there is already abundant evidence that these 'dimensional' forces exist, from the smallest to the largest levels of size in the Cosmos.

Cycles of Scale

When you hear an "A", such as by striking a tuning fork, Western musicians set it at 440 cycles of vibration per second. That's all a musical note is… it is a speed of vibrations, per second, for air molecules. The vibrations travel through the air from the tuning fork to your ear. If there was no air to move, then there is no medium to carry the sound. In the case of the dimensional energy fields of the universe, they exist everywhere, and behave like a fluid, often referred to as quantum foam. What Dr. Ray Tomes discovered is that the crucial vibration in this fluid is not 440 cycles, but rather



34560. As we expand in size throughout the Universe, this same 'harmonic' is at work.

Matter is organized energy as stated and proven by Einstein's $E=mc^2$ formula. The "E" is Energy and the "m" is mass or matter while the "c" is the speed of light. Energy is vibrational frequencies we can discern from the structure of the world around us. Energy can take the form of sound, heat, light and radio waves. All energy is in fact a wave or vibration in space. These vibrations affect space and the matter within it which in turn causes matter to vibrate according to its structure. All space it filled with quantum energy as dictated by Quantum Mechanics. Therefore, three-dimensional geometries emerge in a variety of forms, from the quantum level all the way up to the known Universe as directed by the matrix of energy within this universe which resonates at 34560 cycles per second.

The Quantum Field

If we're seeing such redundancy in the way matter and energy functions — like 'crystals' growing out of a dimensional 'fluid' by vibration — then are there many ways in which we can practically study and use this knowledge… such as to build a new technology? Yes… and the technology is called a hologram.

In order to set up the point about how holograms relate back to physical matter, we need to learn a little more about the hidden properties of quantum physics first.

Though it is outside the scope of this article to go into detail, matter presents numerous examples showing us that it has a hidden 'quantum energy field' that keeps it going. Otherwise, the idea of electrons perpetually circling a nucleus and never running out of energy is another paradox… along the same lines as 'perpetual motion.'

How could these electrons possibly continue whirling along and never lose any of their energy, causing them to weaken and ultimately crash into the nucleus? The answer, is that electrons are like a candle flame — they draw off of an energy source to stay 'lit'. In the case of a candle flame, you have wax and oxygen… whereas electrons (along with all other forms of matter) draw off a 'quantum' energy field — which used to be called the 'aether'. No one can agree on what it's called, but all cutting-edge scientists, mainstream or otherwise, are realizing that it has to be there. Some refer to it as Zero Point Energy, or the Hutchenson Effect or Quantum Foam. This energy is not the microwave background radiation of the universe, but it is the energy of the universe on the quantum level that sub-atomic particles exist in. It has to be there according to quantum mechanics, the most proved theory of mankind.

The Quantum

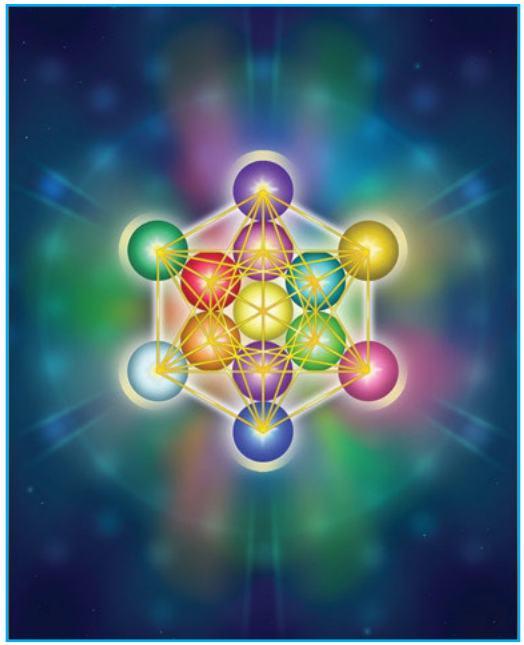
What is this thing, the "quantum"? It's a bundle of energy, an indivisible unit that can be sliced no more. Max Planck showed us a hundred years ago that light is emitted not in a smooth, steady flow, but in quanta. Then physicists found quantum jumps of energy, the quantum of electric charge and more. In the small-scale world, everything is lumpy. And more than just lumpy. When events are examined closely enough,

uncertainty prevails; cause and effect become disconnected. ...chance guides what happens...

Albert Einstein, for one, could never accept this world view. ... "I still cannot believe God plays dice." Then he added, "But maybe I have earned the right to make my mistakes."

Every modern advance in technology owes its success to the discovery of a very peculiar theory of the sub-atomic world called quantum mechanics. Unlike classical physics—the laws of bodies in motion, for instance, which are boringly predictable as they slavishly obey mathematical formulae—the traditional understanding of quantum mechanics is probabilistic, not concrete. One cannot predict behavior in the sub-atomic world in advance; one can only calculate odds. That is, until an observer steps up, leans in close and actually takes a peek at a streaking photon of light. Suddenly, in measuring the energy or position of a particle, probability becomes certainty, the indeterminate becomes real, the particle reveals its secrets to the observer.

In other words, in classical physics, a tree falling in the forest makes a sound whether a person is there to hear it or not. But in quantum mechanics, nothing can be certain, nothing can be known, unless a mind is there to observe and measure what has occurred.



Stranger still, recent experiments in quantum mechanics have suggested that a single photon of light is able to be in two widely-separated places simultaneously, a result that is utter foolishness in the material world of classical physics, but seems to be business-as-usual among the invisible particles that are the building blocks of our concrete, material world.

If Einstein had been a baseball fan, he might have observed that God not only pitches a blistering fastball (299,792,458 meters per second!), but quantum mechanics proves that he throws an unhittable curveball, too.

Enlightenment Science, full of youthful hubris, claimed that it could unravel the secrets of the universe and prove that "God" was nothing more than a set of mechanical laws governing the passage of day to night and life to death. But God has had the last laugh. As the search for understanding drives us deeper into the foundations of life and the mechanics of the universe, we have discovered awesome complexity, unexpected mystery, and mounting evidence that some Genius might just be the Source of all that we are and see. Turning back to quantum mechanics, the apparent requirement for a conscious, thinking observer who stands outside of the system and takes notes leaves many physicists cold.

Quantum theory has become the darling of modern physics because of its elegance and perfect experimental track record. Perhaps some future variation of the theory will free it from any connection to the mind. But for the moment, the philosophical implication of quantum mechanics is that the universe cannot exist in a vacuum—at the level of indivisible particles, the universe has been constructed with a built-in need for conscienceness. Or God. Or both. Quantum theory seems to require us to step beyond the material to the metaphysical. It suggests a need for consciousness, for mind, for something that is more than just a collection of synapses in a glob of gray-matter. It seems to demand something transcendent, like intelligence or being. Perhaps the most awesome implication of quantum mechanics is the possibility that the universe only functions because it is continually observed by one who never blinks nor sleeps.

King David seems as wise today as he did 3,000 years ago:

> "The heavens tell of the glory of God.
> The skies display his marvelous craftsmanship.
> Day after day they continue to speak;
> night after night they make him known.
> They speak without a sound or a word;
> their voice is silent in the skies;
> yet their message has gone out to all the earth,
> and their words to all the world.

The Holographic Principle

Now that we've seen the same geometric patterns emerging throughout the entire Universe, a strictly 'quantum' interpretation of these energy fields doesn't stand up to inspection. The same pattern you see in a close-up picture of a salt crystal is now also appearing in two different 'cubical' nebulae that our astronomers have discovered… along with superclusters of galaxies, and even the distribution of dust at the fringes of the Known Universe.

Again, for this same reason, labeling these fields as 'quantum' is a mistake, because they can also take on much larger levels of size. How could anything in the Universe be able to retain its basic structure through so many changes? The first part of the answer is in the holographic principle.

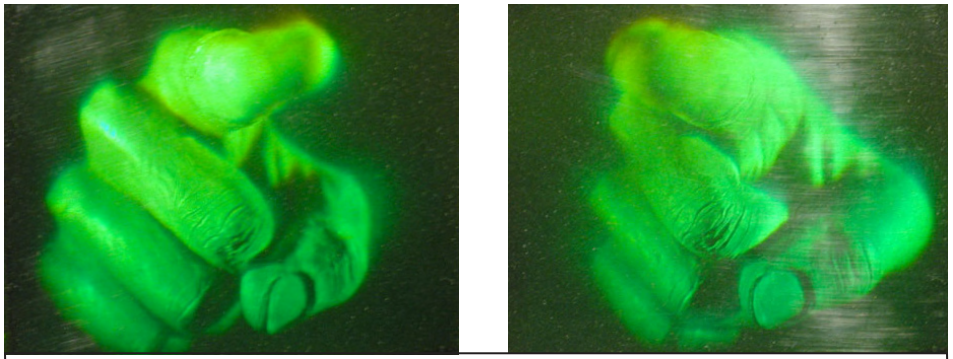
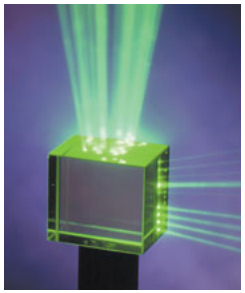


Image of a holographic hand. The finger actually moves in 3-dimensional space while on a 2-D surface. Same picture from two angles.

The 'holographic' principle comes from a simple but mysterious discovery. Start by recording an image of a three-dimensional object on a 'holographic plate,' which is basically a two dimensional film that captures a holographic image.

The amazing thing about holograms are that the 3-dimensional space seems to be captured and recorded in two dimensions. The ramifications of this is to show that light can be recorded completely in a 2-dimesional space, not like a photograph, but with real spacial dimensionality.



A hologram is a three-dimensional photograph made with the aid of a laser. To make a hologram, the object to be photographed is first bathed in the light of a laser beam. Then a second laser beam is bounced off the reflected light of the first and the resulting interference pattern (the area where the two laser beams commingle) is captured on film. When the film is developed, it looks like a meaningless swirl of light and dark lines. But as soon as the developed film is illuminated by another laser beam, a three-dimensional image of the original object appears. The three-dimensionality of such images is not the only remarkable characteristic of holograms. If a hologram of a rose is cut in half and then illuminated by a laser, each half will still be found to contain the entire image of the rose. Indeed, even if the halves are divided again, each snippet of film will always be found to contain a smaller but intact version of the original image. Unlike normal photographs, every part of a hologram contains all the information possessed by the whole.

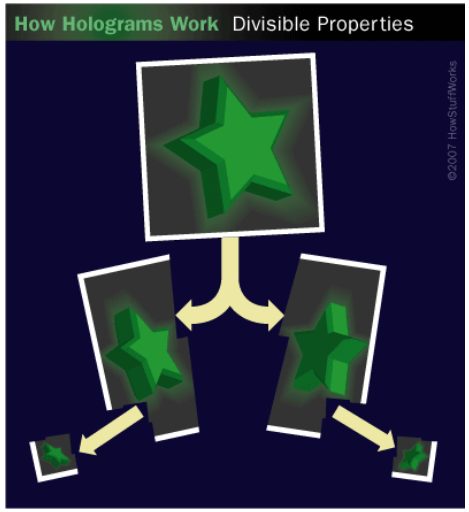
Faster than Light Speed

Over two decades ago, a team of physicists made a startling discovery–Subatomic particles communicate instantaneously over vast distances. This discovery, though it reinforces the concepts of quantum nonlocality and quantum interconnectedness, raises serious questions about the nature of reality by introducing the possibility of communication at faster than light speeds. Physicist David Bohm purposed the solution to faster than light signaling between particles by suggesting the holographic "whole in every part" model for reality. This section introduces these concepts, diagramming Bohm's analogy of "the nonlocal fish and interconnectedness".

More than a few great minds boggled when Alain Aspect's team of physicist at the University of Paris' Institute of Optics discovered that subatomic particles could instantly communicate with each other at faster than light speeds. This phenomenon conflicts with Einstein's theory of Special Relativity, which expressly forbids speeds exceeding that of light. Einstein said this would allow for time travel, a notion he considered too paradoxical to consider.

But if particles are not sending signals at faster than light speeds , it means that something even more bizarre might be going on. Michael Talbot (1993, p.145) points out in his book Mysticism and the New Physics that, in light of Aspect's findings, we must consider that "some of our most cherished and accepted notions about reality are in error."

What cherished notions? Objective reality, for one. On the subatomic level, the distinction between observer and object disappears. Time flows both forward and backward symmetrically, location becomes 'nonlocality", indeterminate, and 'matter' is mostly empty space. What we 'see' has more to do with our consciousness than anything that might be 'out there'. (Goswami, 1995, p. 107)



Physicist David Bohm (1917-1992) said that reality doesn't even exist. He suggested that the universe, in spite of its tangible appearance, is one huge hologram.

Bohm explains the analogy of the "nonlocal fish" to demonstrate: Pretend you are from another universe and have no idea what a fish is and have never seen an aquarium. You are shown a fish in a tank only you are in another room, observing the fish via two TV cameras set at different angles, transmitting their images onto two separate screens. There is only one fish in the tank, but you see two. When one moves the other moves immediately in a different, but concurrent way, as if they were communicating instantaneously. Bohm suggested that this is what is happening on the subatomic level in Aspect's experiment. We see two particles when actually there is only one. Remember, a hologram is no ordinary projection. It creates a three dimensional image when illuminated by a laser. Probably the most interesting thing about a hologram is that if you break it down into segments, each separate bit will still, when illuminated, project an image of the whole original picture. If you had a hologram of a green star and you broke it into twenty little pieces, each piece, when illuminated, would still project the entire star image.

Bohm believed that this explained the mystery of nonlocality. He says it's not due to faster than light signals but due to the fact that separateness is an illusion. At a deeper level of reality, there is only one fish. This is the nature of Bohm's universe, a seamless quantum interconnectedness. Bohm believes it means that when we try to divide the universe up into things like electrons and photons and so on, we are only performing an abstraction. 'Out there', the universe is always a seamless and indivisible whole and hence electrons exist only as ideas in our minds. The world does not yield to us directly. A description of the world always stands in between, and all too often when we think we are analyzing a phenomenon, we are really only analyzing a concept and therefore the use of a word."

This is an excellent example of how we see sacred geometry in the cosmos. The 'holographic' principle is well at work in the energy fields responsible for salt crystals and nebulae alike. The hidden, dimensional energy of the Cosmos, which underlies all matter, energy and consciousness as we know it, keeps repeating itself again and again, at every level… just like a hologram at any size.

Bohm is not alone in his theory of the holographic universe. Neurophysiologist Karl Pribram has also worked with the holographic nature of reality and applies it directly to the brain. He believes that memories are not encoded in neurons but in patterns of nerve impulses that interconnect in the brain the same way a hologram contains information in every part of its whole. Pribram believes the brain is itself a hologram and his theories are gaining support among other scientists.

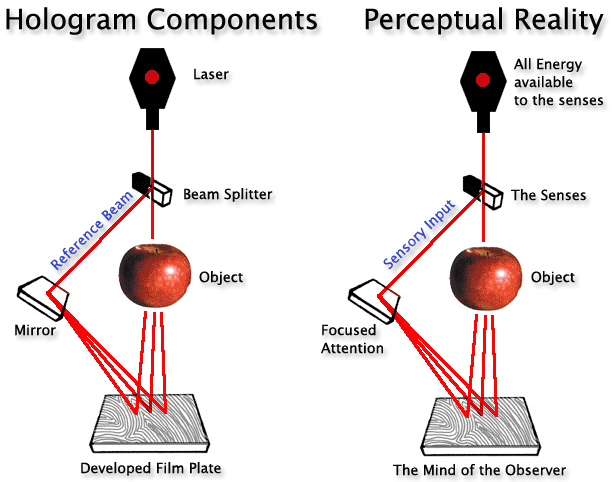
The brain as hologram offers solutions to puzzling problems , for example,

memory retrieval and association. If someone says to us the word sky our brain doesn't sift through some alphabetical storage to find a file cabinet with the letter S, then wade through it to find the 'posts' containing relevance to sky . When we hear the word sky, it instantaneously sweeps through all our thoughts and memories associated with sky simultaneously. This is what makes creativity possible, that every thought is contained in every other thought. Those who are not shocked when they first come across quantum theory cannot possibly have understood it.

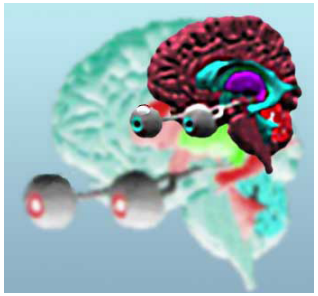
Holographic Consciousness

Maybe the most difficult question raised in science ever is called the 'hard problem' or the 'binding problem'. It is the problem of how the immaterial world of our thoughts and feelings interfaces with the material world of our body. Emotional states caused by our thoughts and feelings (immaterial world) are immediately reflected in the physiology of our body (material world). For instance, when an immaterial thought pops up in your brain to raise your hand, immediately your brain starts to produce neurotransmitter messengers that are carried along the nervous system. Electrical impulses are sent to the muscles in your hand that will finally respond to your initial thought. Now how is this possible? How can something immaterial as a thought have a real noticeable physical effect? It happens all the time in your body!

Since Descartes decided that there is a split between body and mind we are not likely to get answers from Newtonian physics. Then how can the bridge between the immaterial world of the mind and the material world of the body be crossed? Maybe we can get some answers from quantum physics?



Interestingly enough, we do have evidence that this 'holographic' principle works with consciousness as well. Dr. Karl Pribram has conclusively demonstrated the 'holographic' principle with his research involving the brain. Dr. Pribram is increasingly showing proof that the brain must be processing or recording information by such a 'holographic' principle. This has been proven in what some people would consider to be 'barbaric' laboratory experiments, in which the brains of laboratory animals like rats, mice and salamanders have been sliced, diced, liquefied, lobotomized and abused in every imaginable way. And yet, tasks that these creatures learned, their visual acuity, etc… were unaffected! Motor coordination may suffer, but the information is still there.



Most people are not aware of this, since there obviously ARE cases where permanent brain damage occurs in human beings. We all too easily forget how many 'miracles' there are, though… where people lose significant amounts of brain tissue and, although they may require physical recovery, their memories and cognitive abilities essentially remain intact.

Pribram showed that not only our memories but all our cognitive processes, smell, taste, hearing and seeing may be explained by holographic principles. Let's take visual perception as an example. The current view of science is that the picture of the world is projected through the lens of the eye onto a canvas, the retina in the back of the skull, and that this picture is somehow 'digitized' by the brain and its pixels stored.

Pribram proved that dedicated nerve cells in the eye respond to certain frequencies of electromagnetic waves that hit the eye. The picture is viewed as a set of frequencies and not as individual dots or pixels. Now how can a picture contain frequencies you may ask? Well in a process called Fourier transformation, spatial information can be translated into a frequency spectrum. Jean Fourier proved that any kind of waveform could be constructed from pure sine waves. When multiple sine waves of different frequencies, phase and amplitudes are superimposed, any kind of waveform can be constructed. The process of determining the constituents of the wave is called spectrum analysis and is mathematically described by the inverse Fourier transformation. The inverse Fourier transformation is used to create the original wave from the spectrum of sine waves. Now Fourier transformations can also be applied to two-dimensional spatial information. What Pribram found was that the cortex of the brain conducts a Fourier transformation on the visual image in the eye and distributes the constituent frequencies of the picture all over the neurons in the brain. So the picture is actually internalized and memorized as a wave interference pattern among neurons, just like the hologram stores the picture. The original memory of the picture can be reconstructed from the holographic representation by the inverse Fourier transformation creating a visual image inside our head.

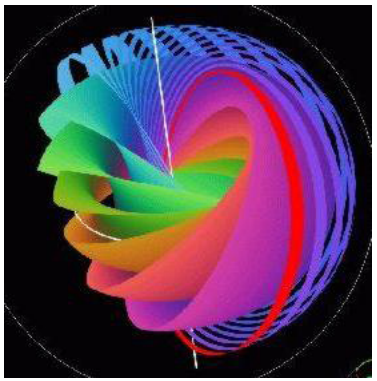
The construction of an image from a spectrum of individual sine wave frequencies is the technique used in the MRI (Magnetic Resonance Imaging) scanner used in hospitals. The MRI scanner also uses Fourier transformations to construct a holographic image of the scanned body from the excited hydrogen atoms in the water molecules in the body. This MRI technique has been developed by Walter Schempp who later contributed to the quantum brain theory stating that memories are not actually stored within the brain itself but in the fabric of space, the physical vacuum. The brain acts simply as a reader/writer tool to access the physical vacuum where the holographic memory is stored as a wave pattern.

When we combine Karl Pribram's holographic theory of the brain with David Bohm's theory that our universe as a whole is just a giant hologram, we get an interesting view of reality, called the holographic paradigm. In the holographic paradigm,

the universe is seen as just a huge repository of electromagnetic frequencies encoding multiple levels of reality. The brain, using Fourier analyses, decodes one channel out of a blur of electromagnetic frequencies in the universe and from this constructs our inner representation of reality. Our brain is limited to receiving only a limited range of frequencies from the outside world and hence receives a limited scope of reality. We could say that the brain tunes into one reality much like a radio only tunes into one station.

Torsion Field Communications

Torsion fields are separate and distinct from classical electro-magnetic and gravity fields. Generators for these fields can be shielded against electro-magnetic fields and the torsion field still manifest itself through such shielding. Torsion fields can be generated, detected, switched on and off (such as for communication purposes), and are a distinct type of energy field not included in classical physics. Torsion field emanations can travel at velocities at least as high as 109 times the speed of light. Torsion fields can interact with laser beams (change frequency); affect biological processes; are generated by melting or solidifying some materials; affect quartz crystals; affect some electronic components; can favorably change some beverages; and have been noted to affect gravity.

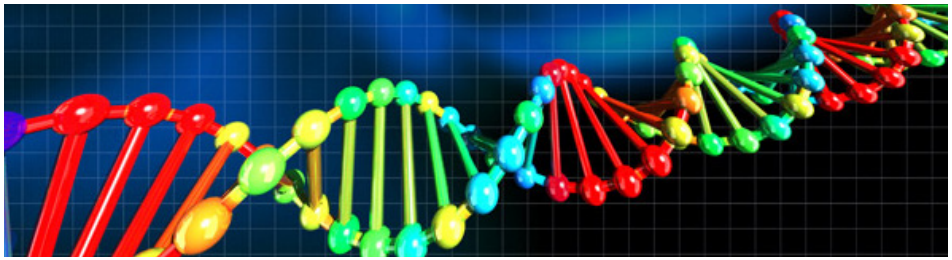


The Russians have performed considerable work in the field of torsion and in some situations; the term 'spin' field is used synonymously with the term torsion. Basically, the Russians strongly believe in Einstein's theory of relativity and his statements that nothing can go faster than the speed of light. With this view they feel that electric, magnetic, and gravitic fields all support propagation velocities that are at the speed of light. Shipov is an excellent reference for these theories where he described additional equations based upon a geometry theory on the field equations. Like others, he espoused the view that space-time curvature was representative of looking at geometrical changes. Shipov claimed that the vacuum was homogeneous in his theory. Russians have done many experiments relating to the detection of a "torsion field."

One German scientist hired by the Russians, realized that this 'quantum' effect extended throughout the Known Universe. I refer to Dr. Hartmut Muller with his "Global Scaling Theory". If you go to Muller's website and poke around for a while, you'll discover the ideas to build gadgets with this technology — including the beginning of a non-electromagnetic wireless internet technology, as well as a non-electromagnetic cell phone technology.

"Why wouldn't our leaders want to release this technology right away?" You may ask. Simple, really… the signal only exists where it is generated, and where it is received… it is presently untraceable in the space between. With Muller's technology, you've created a giant, stable geometric wave (what they call a torsion wave) between the sending and receiving devices. The implications are grand, not only could signals be sent through space, but quite possible, energy and even matter could be moved through space at the speed of the torsion wave. Since we spend the majority of our lives moving "things" around from one place to another, what human potential could devices like this free up for future generations. Not to mention why we keep searching for extraterrestrial signals but don't find other civilizations using radio technology. After a civilization becomes technically advanced, it would find that communicating at the speed of light would be impractical when traveling between stars.

The Energy of DNA (a theory)



The DNA double helix as the template of all life forms has been around in science for some fifty years now since its discovery by Crick and Watson. Our knowledge about DNA since then has dramatically increased. DNA stores the chemical molecular instructions for cellular reproduction. It is a blueprint for the reproduction of all the proteins that are found in the cells of an organism. The human body contains an estimated 70.000 to 90.000 different proteins.

The unravled DNA helix is a twisted double string. Each string is made of around 3.1 billion nucleotides. The nucleotides are all linked together to form this immense chain. There are only four different base nucleotides used in the chain. These bases are denoted by their initial character adenine (A), cytonsine (C), guanine (G) and thymine (T).

Three of these bases in a chain form a triplet or codon. There are $4^3 = 64$ different types of codons in the DNA chain. Each triplet or codon is the genetic equivalent for one amino acid, the building block of a protein. One protein consists of some hundred amino acids, so it takes the same number of codons to code one protein. The sequence of codons that encodes a single protein is called a gene.

Table of codon-amino acid assignments

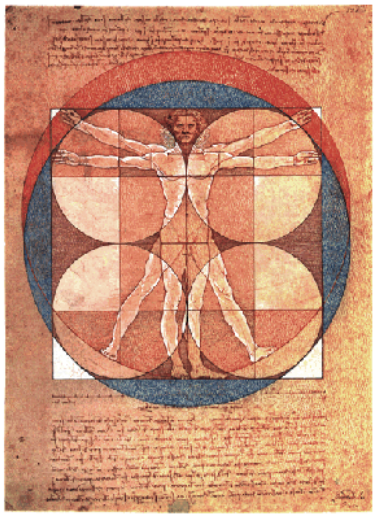
Amino Acid	Codons					
Isoleucine			AUU	AUC	AUA	
Phenylalanine			UUU	UUC		
Valine			GUU	GUC	GUA	GUG
Leucine	UUA	UUG	CUU	CUC	CUA	CUG
Methionine						AUG
Tryptophan						UGG
Alanine			GCU	GCC	GCA	GCG
Glycine			GGU	GGC	GGA	GGG
Cysteine			UGU	UGC		
Tyrosine			UAU	UAC		
Proline			CCU	CCC	CCA	CCG
Threonine			ACU	ACC	ACA	ACG
Serine	AGU	AGC	UCU	UCC	UCA	UCG
Histidine			CAU	CAC		
Glutamate					GAA	GAG
Asparagine			AAU	AAC		
Glutamine					CAA	CAG
Aspartate			GAU	GAC		
Lysine					AAA	AAG
Arginine	AGA	AGG	CGU	CGC	CGA	CGG
STOP	UGA				UAA	UAG

Nucleotides form base pair bridges between the two DNA strings. One of the nucleotides of a base pair is in one of the DNA strings, the other in the opposite DNA string. In this way the base pairs form a bridge, a chemical bond between the two DNA strings tying them together in a twisting staircase like a double helix.

Of the complete chain of triplets in a complete DNA string only 5% is used for the coding and reproduction of proteins. The other 95% is called junk or dormant DNA; it seems to be a senseless repetition of triplets that western science simply doesn't know what to do with it. For a very long time scientists believed that the 95% non-coding part

of the DNA is completely redundant. There is now evidence that the non-encoding DNA is not useless after all but in fact may be more important than the encoding codons. Revolutionary new discoveries revealed that the idea that the inherited genetic make up of an organism cannot be changed is wrong. It has been proven that the sequence of the DNA molecule's codons can be reprogrammed or repaired.

Physically, a human being is more like musical expression than a set of construction blueprints. The human body has near-perfect symmetry and economies of expression through fractal geometry that are quite evident in the structure of the circulatory system, for example, or the nervous system. Just look at a drawing of veins and arteries and you'll notice the fractal patterns of geometry – the same patterns you'll see drawn in the underside of a leaf.



The same is also true with human hair and skin cells. Every police detective knows that the human fingerprint is made up of readily identifiable patterns that are connected through a sort of biological artistry. In any human fingerprint, you'll notice the loops, swishes and curves that give strong clues to the underlying fractal geometry. Fingerprints aren't built with cellular bricks, they're built with repeating patterns that give us strong clues about the true structure of our DNA.

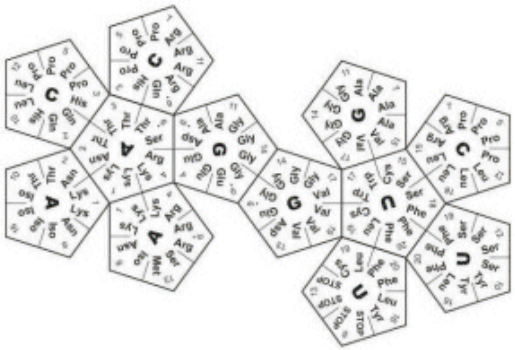
Fractal geometry is also the dominant form of physical structure in nature. In fact, it was the study of plant leaves and mollusk shells that led to the discovery of fractal geometry.

Throughout the human body, from the lining of the cells of the stomach to the structure of the eye, you find patterns that go way beyond mere construction blueprints. The human body is a symphony, a grand musical masterpiece played out in billions of variations across the planet.

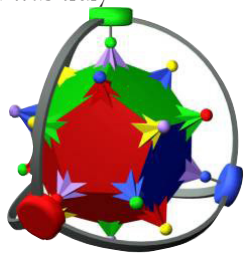
The DNA is a holographic reflection of the whole being. The repeating patterns of genes and the symmetry of the double helix are all expressions of music. The human genome is a symphony, and it is through this symphony that we play the music of life. Combined with environmental factors and energetic factors (such as parental love), the symphony of human DNA creates a physical being. But it doesn't stop there. It also helps create the framework for an emotional being, an energetic being and a spiritual being.

Some scientists see nothing but cold, hard construction blueprints in that DNA. Others see God in the symphony, or Mother Nature directing the orchestra. It is easy to see a miracle of life, created with such masterful poetry and music that it is something to behold, to honor and to be humbled by. It is the ultimate statement of our connection to nature, for everywhere you look in nature, you see the same patterns we express, carried out in a range of melodies through the plants, animals and even the waters and skies. Looking closely at ourselves, we cannot help but notice nature–if we are keen observers.

Your body is made up of millions of different proteins: for brain cells, liver cells, heart cells, bone cells, muscle cells, etc. All of these proteins are built from 20 basic amino acids, which are the same throughout all creatures on Earth… and they have all been found in space as well. The "genetic code" is a long-standing list of rules for how these amino acids can combine together to build the proteins in your body. Yet no scientist understands why these relationships exist, or how they were formed.



Enter Dr. Mark White. He was the first to ingenuously map out these relationships across a three-dimensional surface… and what he found was truly revolutionary. What Dr. White found was that you can understand the genetic code… by mapping out the 20 amino acids across the surface of a dodecahedron.



Furthermore, the geometry of the tetrahedron is involved as well, sliding over the surface of the dodecahedron to allow the protein synthesis to take place. Bear in mind that this is the same geometry that we're seeing at work in all levels of the cosmos… and it is building humanity as well.

Dr. White also reveals that the 'ideal' form of the DNA helix occurs when you map it out over a dodecahedron — and that is not a unique discovery. What IS unique is the cracking of the genetic code — showing how we are made. The geometry is like the 'computer' that processes the information potentials in our DNA.

The genetic code has an overall symmetry that represents the primary organizing force behind the code itself. The genetic code is not only an operating system that builds proteins but also a search engine that efficiently finds proteins and protein populations. The symmetry of genomes and the symmetry of their codes of translation are tightly integrated.

Dr. White's data raises questions with the idea that we arose from 'random mutations' as in the Darwinian model. The basic rules of how our bodies are constructed, on the smallest level, are the same rules we see governing quantum physics, microcluster physics, planetary physics, galactic physics and the structure of the cosmos.

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DNA, in my view, is a holographic reflection of the whole being. The repeating patterns of genes and the symmetry of the double helix are all expressions of harmony. The human genome is a symphony, and it is through this symphony that we play the music of life. Combined with environmental factors and energetic factors (such as parental love), the symphony of human DNA creates a physical being. But it doesn't stop there. It also helps create the framework for an emotional being, an energetic being and a spiritual being.

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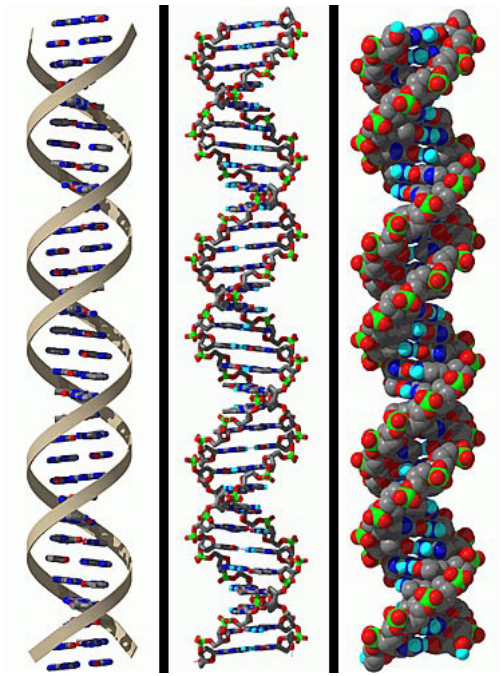


Human Genome project

The most profound research ever performed on the 5% encoding triplets of the human DNA string was conducted in an international joint effort called the International Human Genome Project. The task of the Human Genome Project was to identify the complete structure of the human DNA and map its triplets and genes. Since the human body contains at least 70.000 different proteins, it was expected to find at least some 100.0000 genes in the human DNA, 70.000 to explain the physical reproduction of the human body (protein encoding genes) and some 30.000 different genes to explain the differences in personality and character of a human being. When the first draft version of the human genome was finished in 2001 and the final version in 2004, the high hopes and expectations of biologists throughout the world were shattered when only 30.000 genes were found in the human DNA. Thirty thousand genes in the human genome are only three hundred more that it takes to build a mouse. The Human Genome Project also revealed that we share 98 percent of our genes with chimpanzees.

All our assumptions about DNA as being the sacred book of life containing all the text to write each chapter in biology now have to be re-evaluated. The DNA differences between a human being and a primate that we evolved from are simply too small to account for the differences in appearance let alone the immense difference in conscious awareness and intelligent abilities. On the DNA level we have more in common with dolphins than with apes.

While western science invested in the International Human Genome Project focusing on the 5% of the encoding triplets of DNA, in the Soviet Union in 1990 a group of Russian scientists of the Russian Academy of Sciences was formed to study the complete human genome. This research was led by Dr. Pjotr Garjajev, member of the Russian Academy of Sciences as well as the Academy of Sciences in New York. The Russian research was taking a wide angle and held an open view in their studies. The research team included bio physicists, molecular biologists, embryologists and even linguistic experts. Their research revealed that the supposed junk DNA that has been completely neglected and forgotten by western mainstream science, was no redundant leftover of evolution at all. Linguistic studies revealed that the sequencing of the codons of the non-coding DNA follow the rules of some basic syntax. There is a definite structure and logic in the sequence of these triplets, like some biological language. Research further revealed that the codons actually form words and sentences similar to our ordinary human language.

Scientists have conducted much research on the origins of human languages and the origins of the grammatical rules that are so essential to all human languages; however they have always failed to find the source. But now for the first time in history the origins of language may be surprisingly attributed to DNA. The language of the genes is much, much older than any human language that was ever uttered on this globe. It is even conceivable that the DNA grammar itself served as the blueprint for the development of human speech.

Whereas the western Human Genome Project deciphered the 'machine language' code of the DNA molecule, the structure of the DNA 'bits' formed by the sequence of nucleotides, Russian scholars discovered the higher level language present in DNA. Another amazing fact that Garjajev's group discovered was that the DNA is by no means a closed book of life. He discovered that the text of the DNA book can be altered. The codons of the DNA string can be rearranged in different sequences. In other words the software of the human genome our DNA molecule can be reprogrammed. Research revealed that the triplets in the DNA string are able to exchange places.

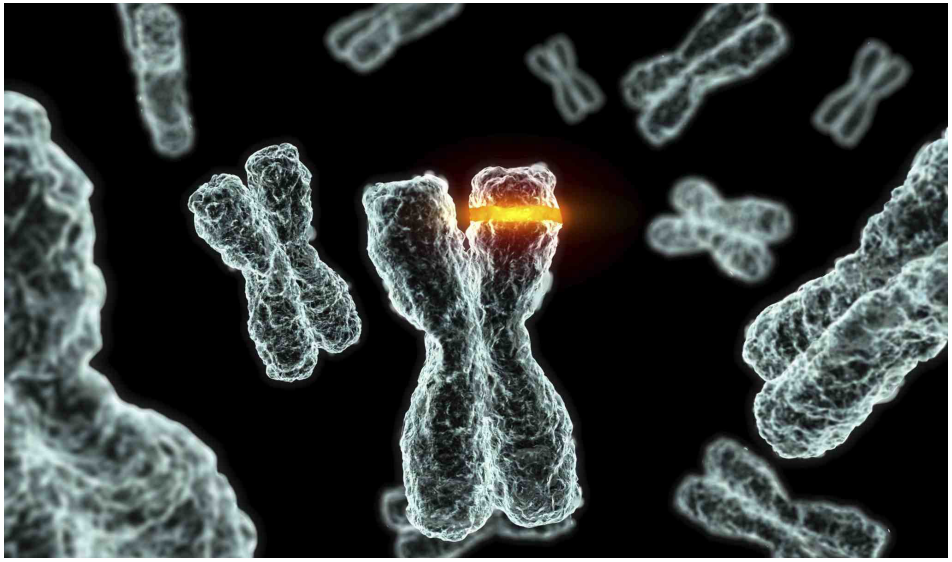
Since the DNA was found to have a syntax and semantics akin to our human languages, it indicated that our currently restricted understanding of DNA serving only for the coding of the reproduction of proteins for the chemical make up of an organism, is only half of the story.

When in vitro DNA in test tubes was exposed to coherent laser light, the laser light spiralled along the DNA helix as if it was guided by the structure of the DNA molecule. The most amazing effect was noticed when the DNA itself was removed

and the laser light kept spiralling! The vacuum of the space that was just previously occupied by the DNA had changed and something caused the laser light to keep spiralling. These effects have been measured and remained for quite some time after the DNA was removed. The effect is now becoming well known as the DNA phantom effect. Vladimir Poponin and his team of Russian Academy of Sciences repeated the work of Garjajev at the Hearthmath Institute in the U.S.A. Poponin concluded again that a field structure was formed in the physical vacuum even when the original DNA was removed. We've seen similar examples of vacuum changes before that could be attributed to torsion fields.

DNA Programming

The most astonishing experiment that was performed by Garjajev's group is the reprogramming of the DNA codon sequences using modulated laser light. From their discovered grammatical syntax of the DNA language they were able to modulate coherent laser light and even radio waves and add semantics (meaning) to the carrier wave. In this way they were able to reprogram the DNA in living organisms, by using the correct resonant frequencies of DNA. The most impressive discovery made so far is that spoken language can be modulated to the carrier wave with the same reprogramming effect. Now this is a baffling and stunning scientific discovery! Our own DNA can simply be reprogrammed by human speech, supposing that the words are modulated on the correct carrier frequencies!



Whereas western science uses complicated bio chemical processes to cut and paste DNA triplets in the DNA molecule, Russian scientist use modulated laser light to do exactly the same thing. The Russians have proven to be very successful in repairing damaged DNA material within the cells. Laser light therapies based on Garjajev's findings are already applied in some European academic hospitals with success on various sorts of skin cancer. The cancer is cured without any remaining scars.
Dr. Bruce Lipton disagrees with this axiom of Darwinism completely and says that cells themselves have the ability to perfectly reprogram their own DNA when the external environment demands it. Harvard geneticist John Kearns delivered the first proof for Dr Lipton's remarkable hypothesis in 1988. He placed bacteria that could not digest milk sugar (lactose) in an environment that only contained lactose, so it was their only possible source for food. Instead of dying off these bacteria were able to reprogram their DNA such that they were able to survive and feed on the lactose. So Lipton is another independent source claiming that DNA reprogramming is possible.

Bio-Wave computer

The wave processing and modulating properties of DNA have revealed a total new purpose for the DNA molecule. For a long time we have believed that the only purpose for DNA was that it served as the carrier of genetic information for the reproduction of life. This now seems to be only half of the equation.

Garjajev and others in a paper titled the 'DNA wave Biocomputer' postulates that DNA is no less than an intelligent biological computer. It is an intelligent apparatus that is able to store and retrieve biological information from all the cells of the body, connecting the chromosomes of all cells into a holistic continuum, a kind of biological internet inside the body. The DNA chromosomes acquire unlimited information from the metabolisms that occur in each and every cell and in turn produce regulative electromagnetic signals as a feedback. All of the billions of cells that make up our body are in instantaneous communication with each other. In quantum mechanical terms, they are non-locally connected. This allows for coordination of the countless complex biochemical events that take place inside our body to be regulated in a coherent way. Information exchange in the body by means of the nervous system and the intercellular biochemical molecular diffusions, are processes that are way too slow to explain the instantaneous response our body is able to give to external stimuli, nor can it account for the stunning coherence in which all of our bodily functions act in unison.

According to Garjajev, the genomic information of the organism is also stored non-locally, this means that it is not restricted to the DNA molecules itself. The DNA molecule merely acts as a storage device that is able to read and write the genomic information from a non-local distributed field. DNA acts like a fractal environment that stores the coherent blue laser light in a holographic way. This genomic hologram can be read using either electromagnetic or acoustic fields.

Morphic genetic fields encode genetic information that is shared by all members of a species. The DNA wave biocomputer model proposed by Garjajev and his group shed a whole new light not only on where and how the genetic information is actually stored but also where it initially came from. If in reality genetic information is stored in morphic fields in the fabric of space and time, we may have to re-evaluate Darwin's evolution theory.

Other proof that our body is a single super coherent operating bio-system comes from Cleve Backster. He has been able to prove that cells isolated from the human body still remain in communication with our body even if they are transported far away from the body. He used two lie detectors, one was connected to a volunteer, the other to cell samples that were taken from his mouth and stationed twelve kilometres away from this person. Backster was able to prove that changes in the emotional state of the person being tested were reflected in both lie detectors simultaneously, the one attached to the person's body and the one to the isolated sample of cells. The only explanation for this experiment is that all our bodily cells are connected non-locally no matter how far they are apart and that this connection remains even when cells are isolated from the body.

Emotional Wave Patterns

On close examination from the top view of the DNA it has a dodecahedron shape. It takes ten Phi spirals to create the dodecahedral helical shape of the DNA spiral. The DNA molecule as a wave shape is attuned to our bodies and able to receive its emotions. Daniel Winter explains the implosion of long waves into short waves as the mechanism that conveys the emotions of the heart to our DNA. The scale (wavelength) is different but the ratio of the wavelengths is the same maintaining the Golden Mean ratio. Not only do emotions feed our DNA impacting cellular metabolism, the consumption of food and the overall state of our health.

Many studies have revealed that there is a clear relation between our mental and emotional state and our health. People who suffer from depression and negative emotions for long periods will eventually suffer damage to their physical health as well. Fear is a very negative emotion that does not benefit health. Scientific studies have proven that no matter how well babies are fed, when they lack the caressing and loving touch of their mothers they could eventually die! The loving hugs of the mother are critical to the overall health of the infant.

Daniel Winter makes it abundantly clear that our emotions program our DNA and shape the immune system of our cells. Negative emotions destroy the coherence of the immune system while positive emotions enhance it. According to Winter the healthiest thing to do is to have as much bliss and ecstasy as possible in our lives since it is the healthiest emotion, which in the long run gives us longevity.

Quantum Evolution

Quantum physicist Amit Goswami is his book 'The visionary window' believes that the quantum leaps in the development of species may be explained by quantum science. A number of quantum scientists have created the foundation for what they call quantum evolution.

The basic idea of quantum evolution is that gene mutations take place in the quantum state and not in the classical state of Newtonian physics. Quantum superpositions of gene mutations do not manifest immediately in the phenotype of the organisms but accumulate in the gene pool of the species over millions of years. Goswami mentions that morphic genetic fields could be the storage space for these quantum mutations. Quantum mutations allow for an endless number of possible gene combinations taking place at the same time. Only changes in the genome of a new life form that makes biologically more sense eventually collapse from the quantum state to the classical state. He mentions that consciousness must be involved to trigger the collapse of the quantum state before the new specie emerges.

Quantum evolution could explain why transitional life forms were never found in the fossil records, since the transitional life forms only virtually existed in the quantum realm. It's only in quantum leaps that complete new species emerge. After these new species have come into existence, nature uses the natural selection process to select those genes that are available in the gene pool of the new specie that best fits the environment. However the adaptive changes of the specie to new environmental situations have always been available in the collective gene pool. So quantum evolution embraces Darwinism in the sense that it believes that the natural selection mechanism is a pressure that allows for species to adapt in the metastasis period in between quantum leaps of new species.

Unlike Darwinism believing that there is no purpose in evolution, Goswami's theory states that there is a discernable direction in evolution from simple to more complex life forms. He believes that the conscious choice for the collapse of the quantum potential of genes to create new species is in accord with a greater plan.

The fundamental question indeed is why did life on Earth develop from primitive unconscious single cellular life to self-aware human beings? What could be the purpose of self-awareness if evolution is only about Darwin's survival strategies of selfish genes? The new discoveries outlined in this book describing an intelligent all pervasive cosmic energy that is omnipresent in the universe and that is also able to serve as a recording medium for the morphic genetic fields of DNA, seem to contradict Darwinism and lend credit for the Intelligent Design and quantum evolution theories. Also the physics of chaos theory seems to support the Intelligent Design theory of Michael Behe. The fractal attractors of chaos theory raise the philosophical question if there is a purpose in the universe are we pulled towards a final goal? Is evolution a pulling process towards an

end goal somewhere in the future or are the random Darwinist mutations still pushing us forward randomly?

Future Silicon-Carbon Evolutionary Leap

The sixth element on the Periodic Table is carbon. It is the most important element as far as we're concerned, because it's us. It makes up organic chemistry; it is the element that makes our bodies possible. We have been told that carbon is the only living atom on the Periodic Table, that only organic chemistry produces life, nothing else. But that's definitely not true. This was suspected as far back as the '50s when scientists began to study these things. They realized that silicon, which is directly below carbon on the chart (one octave apart), also exhibits the principles of life. There appears to be no difference. Silicon makes endless patterns, and it will react chemically with almost anything that comes near and form something with it. Carbon has the same ability, making endless forms and chains and patterns and reacting chemically with almost anything nearby. This is the primary characteristic that makes carbon a living atom.

Apparently, nature has invented this silicon-based sponge. It produces silicon filaments, very similar to optical fibers used in the telecommunication industry. Two things are particularly amazing:

1. It is made of silicon, and not carbon. Not one carbon based amino acid or protein.
2. The filament is produced at "room temperature" (where "room" means the bottom of the mediterranean sea), not at high temperature like human-made optical fibers. this means that other substances, which would help light to propagate, but dislike high temperature, can be used by the little sponge… and, indeed, they do! The resulting fiber is stronger and potentially more efficient. It has an optical fiber skeleton.

On a chemical level, it appears that there should also be silicon life forms and as discovered recently, there is. Some of these were found several miles deep in crevices in the ocean. Silicon sponges were found – live sponges that grow and reproduce, demonstrating all the principles of life, and with not a single carbon atom in their bodies! The Earth, which is over 7000 miles in diameter, it's crust, 30 to 50 miles thick, is, like an eggshell, made up of 25% silicon, but because silicon reacts with just about anything, the crust is actually 87% silicon compounds. That means that the Earth's crust is almost pure crystal, 30 to 50 miles deep. This implys that we are on a huge crystal ball floating through space at seventeen miles a second, totally oblivious of the connectedness of carbon life with silicon life.

We're making computers that are performing all kinds of incredible things. The computer is rapidly moving humankind into a new experience of life on Earth. What are computers made of? Silicon. And what is the computer industry trying to do as fast as it can? It trying to make self-aware computers. We're close to accomplishing this, if we haven't already. So here we are, carbon-based life forms creating silicon based life forms, and we're interacting with each other. When we have self-aware silicon-based computers, nothing will ever be the same again. We're going to have two different life forms/components of the Earth connecting with each other, and the speed with which we will evolve at that point, aside from everything else, is going to be very fast – faster than anything we would normally expect.

Gods associated with Sacred Geometry

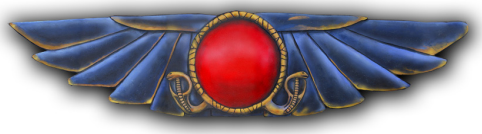
Sacred geometry can be described as a belief system attributing a religious or cultural value to many of the fundamental forms of space and time. According to this belief system, the basic patterns of existence are perceived as sacred because in contemplating them one is contemplating the origin of all things. By studying the nature of these forms and their relationship to each other one may gain insight into the scientific, philosophical, psychological, aesthetic, and mystical laws of the universe

Alah - God of the Islamic faith, Akin in power and scop to Yehweh, Jahovah and God. The name of God to the Muslims. Allah, through the Koran and the strucutre of his temples is a manifestation of sacred geometry. The keeper and inventor of its forms and creator of the universe. His love of sacred geometry can be seen in the temples, writning and scriptures of this religion.

Al-Kutbay - A Nabataean god of knowledge, commerce, writing, and prophecy. The name means, roughly, "the scribe"; it comes from the Arabic root ktb which means 'to write.' A carving at the foot of Jebal Rumm, discovered in 1959 by J. Strugell, is dedicated to al-Kutbay. Another inscription in Wadi Es Siyyagh, on the way to the main spring of Petra, contains the phrase "in front of Kutbay, this very god." Other sites around Arabia contain inscriptions dedicated to him. Nabataeans and other mercantile Arab tribes brought the worship of al-Kutbay to Egypt. A temple to the god has been discovered at Qasr Gheit, built in characteristic Egyptian style. An altar-base in this temple, is inscribed with the Nabataean dedication: "from Hawyru son of Geram to al-Kutbay." In the Hellenistic era, al-Kutbay was associated with Hermes and Mercury.

Ashur - Aššur (also Ashur, Assur; written A-šur, also Aš-šùr, in Neo-Assyrian often shortened to Aš) was the head of the Assyrian pantheon. His origins are unknown

but he is one of the Mesopotamian city gods, namely of the city Assur (pronounced Ashur), once the capital of the Old Assyrian kingdom. It might therefore be that he was a personification of the city itself. From about 1300 BC priests attempted to replace Marduk with Ashur in Enuma Elish. From the reign of Sargon II he was identified with Anshar the father of An, probably because the similarities of the names. In this version of the Enuma Elish Marduk does not appear and instead Ashur slays Tiamat as Anshar. Some scholars have claimed that Ashur was represented as the solar disc that appears frequently in Assyrian iconography. However evidence points out that it is in fact the sun god Shamash. Many Assyrian kings had names that included the name Ashur, including, above all, Ashurnasirpal, Esarhaddon (Ashur-aha-iddina), and Ashurbanipal.



The symbols of Ashur include: a winged disc with horns, enclosing four circles revolving round a middle circle; rippling rays fall down from either side of the disc; a circle or wheel, suspended from wings, and enclosing a warrior drawing his bow to discharge an arrow; the same circle; the warrior's bow, however, is carried in his left hand, while the right hand is uplifted as if to bless his worshippers.

An Assyrian standard, which probably represented the "world column", has the disc mounted on a bull's head with horns. The upper part of the disc is occupied by a warrior, whose head, part of his bow, and the point of his arrow protrude from the circle. The rippling water rays are V-shaped, and two bulls, treading river-like rays, occupy the divisions thus formed. There are also two heads—a lion's and a man's—with gaping mouths, which may symbolize tempests, the destroying power of the sun, or the sources of the Tigris and Euphrates. Jastrow regards the winged disc as "the purer and more genuine symbol of Ashur as a solar deity". He calls it "a sun disc with protruding rays", and says: "To this symbol the warrior with the bow and arrow was added—a despiritualization that reflects the martial spirit of the Assyrian empire".[1]

Coeus - In Greek mythology, Coeus (also Koios) was the Titan of intelligence. Titans are the giant sons and daughters of Uranus (Heaven) and Gaia (Earth). With his sister Phoebe, Titan of Brilliance and the Moon, Coeus fathered Leto and Asteria. Leto copulated with Zeus (the son of fellow Titans Cronus and Rhea) and bore Artemis and Apollo. As with the other Titans, Coeus was overthrown by Zeus and other Olympians. In Roman mythology he is known as Polus.

Hermes-Trismegistus - The Thrice Great. Both Thoth and Hermes were gods of writing and of magic in their respective cultures. Thus, the Greek god of interpretive communication was combined with the Egyptian god of wisdom as a patron of astrology and alchemy. In addition, both gods were psychopomps; guiding souls to the afterlife.

The majority of Greeks, and later Romans, did not accept Hermes Trismegistus in the place of Hermes.

The Hermetic literature added to the Egyptian concerns with conjuring spirits and animating statues that inform the oldest texts, Hellenistic writings of Greco-Babylonian astrology and the newly developed practice of alchemy. In a parallel tradition, Hermetic philosophy rationalized and systematized religious cult practices and offered the adept a method of personal ascension from the constraints of physical being, which has led to confusion of Hermeticism with Gnosticism, which was developing contemporaneously.

As a divine fountain of writing, Hermes Trismegistus was credited with tens of thousands of writings of high standing, reputed to be of immense antiquity. Plato's Timaeus and Critias state that in the temple of Neith at Sais, there were secret halls containing historical records which had been kept for 9,000 years. Clement of Alexandria was under the impression that the Egyptians had forty-two sacred writings by Hermes, encapsulating all the training of Egyptian priests. Siegfried Morenz has suggested (Egyptian Religion) "The reference to Thoth's authorship...is based on ancient tradition; the figure forty-two probably stems from the number of Egyptian nomes, and thus conveys the notion of completeness." The Neo-Platonic writers took up Clement's "forty-two essential texts".

The so-called "Hermetic literature", the Hermetica, is a category of papyri containing spells and induction procedures. In the dialogue called the Asclepius (after the Greek god of healing) the art of imprisoning the souls of demons or of angels in statues with the help of herbs, gems and odors, is described, such that the statue could speak and prophesy. In other papyri, there are other recipes for constructing such images and animating them, such as when images are to be fashioned hollow so as to enclose a magic name inscribed on gold leaf.

Hermes Trismegistus is accredited with the name Trismegistus, meaning the "Thrice Great" or "Thrice Greatest" because, as he claims in The Emerald Tablet of Hermes Trismegistus, he knows the three parts of the wisdom of the whole universe. The three parts of the wisdom are alchemy, astrology, and theurgy.

Alchemy - The Operation of the Sun - For Hermeticism, Alchemy is not the changing of physical lead into physical gold.[15] Rather, one attempts to turn themselves from a base person (symbolized by lead) into an adept master (symbolized by gold). The various stages of chemical distillation and fermentation, among them, are metaphorical for the Magnum Opus (Latin for Great Work) performed on the soul.[16]

Astrology - The Operation of the Moon - Hermes claims that Zoroaster discovered this part of the wisdom of the whole universe, astrology, and taught it to man. In Hermetic thought, it is likely that the movements of the planets have meaning beyond the laws of physics and actually holding metaphorical value as symbols in the mind of The All, or God. Astrology has influences upon the Earth, but does not dictate our actions, and wisdom is gained when we know what these influences are and how to deal with them.

Theurgy - The Operation of the Stars - There are two different types of magic, according to Giovanni Pico della Mirandola's Apology, completely opposite of one another. The first is Goëtia, black magic reliant upon an alliance with evil spirits (i.e. demons). The second is Theurgy, divine magic reliant upon an alliance with divine spirits (i.e. angels, archangels, Gods). Theurgy translates to "The Science or art of Divine Works" and is the practical aspect of the Hermetic art of alchemy. Furthermore, alchemy is seen as the "key" to theurgy, the ultimate goal of which is to become united with higher counterparts, leading to the attainment of Divine Consciousness.

The Me and Enki - The Sumerian Civilization constitutes the earliest record of human endeavor which is amply supported by physical evidence in the form of writings and artifacts. Particularly striking is the apparent fact that, quite suddenly in historical terms, civilization blossomed in the Tigris-Euphrates valley ("the land between the rivers") with all manner of new and heretofore absent innovations and aspects of civilization. Suddenly there was writing, animal husbandry, irrigation for farming, temples for worship, and so forth and so on.

The Sumerian record is quite clear about the source of such civilized attributes. They called these gifts **The Me** and were derived directly from the gods. Specifically, the Me were the "holy laws of heaven and earth", and included such diverse elements as kingship, priesthood, truth, dagger and sword, art of prostitution, resounding musical instruments, arts of power and treachery, lamentations and rejoicing of the heart, deceit, perceptive ear, holy purification rites, dismay, counseling, assembled family, and procreation. It is also worth mentioning such attributes included the making of beer.

Perhaps more significantly for our purposes, the source of the **Me** were the Sumerian gods, which were referred to collectively as the "**Annunaki**". In one myth the Sumerian God of Wisdom, Enki, is supposedly tricked by Inanna, the "Queen of Heaven" into giving her the Me, which she can in turn take back to her city and share with her subjects. The fact that Enki may have allowed such a transfer of secret knowledge is less relevant than the apparent fact that the gods of Sumer were the original source of civilization and its attributes – and quite possibly the source of exoteric teachings and wisdom. (It has been said that, if an ancient story agrees with a religion, it is called history. If it does not agree with that religion, it is called myth.)

Metatron - The myths of Metatron are extremely complicated, and at least two separate versions exist. The first version states he came into being when God created the world, and immediately assumed his many responsibilities. The second claims that he was first a human named Enoch, a pious, good man who had ascended to Heaven a few times, and eventually was transformed into a fiery angel. Some later books adopt the first version, some the second, and in other literature both are combined. There are even two versions of the name Metatron, one spelled with seven letters, the other with six, lacking the Hebrew letter "yod." The Kabbalists explained that the six-letter name represents the Enoch-related Metatron, while the seven-letter name refers to the primordial Metatron. Despite the elaborate debate, the origin of Metatron's name is not clear. Many attempts have been made to explain it, but none of them is satisfactory, since the word has no real meaning or root in any language. Some authors think it may be derived from private meditations and visions.

Metatron is one of the most important angels in the heavenly hierarchy. He is a member of a special group that is permitted to look at God's countenance, an honor most angels do not share. In the literature, Metatron is often referred to as "the Prince of the Countenance."

In the Babylonian Talmud, Metatron is mentioned only three times, but the references are important. All three relate to the problem of Metatron's immense power, which may have caused some people to confuse him with God. In later literature he was even mentioned as the "lesser Yahweh" – a serious blasphemy for the strictly Monotheistic Judaism. Later, some authors tried to resolve the issue by showing how the Hebrew letters of the name of a mythical predecessor, the angel Yahoel (later to be entirely identified with Metatron), were the same letters as those in the name of Yahweh. Another legend states that God himself named him so, out of affection. A fascinating legend tells of a particularly interesting and famous Jewish heretic, Elisha ben Avuyah, who saw Metatron sitting by God's side, occupying the same type of throne. This made Elisha suspect that two equal powers operated in the universe – God and Metatron. The legend continues to explain that he made a false assumption, which indeed cost Elisha his position within the Jewish community. According to these scholars, God permitted Metatron to sit because, as God's scribe, he recorded the good deeds of the Nation of Israel. This story works very well with two of Metatron's many heavenly tasks: a scribe and an advocate, defending the Nation of Israel in the heavenly court.

In another tale - Enoch, a pious teacher, scribe and leader of his people, is famed for the part he took in the tragedy of the fallen angels. Living during a time of great sins, around the flood, he had visited Heaven more than once. However, the time was ripe for a most significant trip. One night, two angels woke him up and commanded him to prepare for his journey. They took him on their wings, and showed him all the Heavens and their inhabitants, including a side trip to Paradise and to the place of punishment and torture of the sinners, which strangely enough was located not too far from paradise. He observed the activity of the sun and the moon, and made a visit of consolation to rebellious angels, the Grigori, succeeding in bringing them closer to God. After the tour, the great Angels Gabriel and Michael lead him straight to God's Throne.

Sitting next to God, Enoch was instructed in wisdom, and using his skills as a scribe, prepared three hundred and sixty-six books. When he learned everything, a most significant thing happened. God revealed to him great secrets – some of which are even kept secret from the angels! These included the secrets of Creation, the duration of time the world will survive, and what will happen after its demise. At the end of these discussions, Enoch returned to earth for a limited time, to instruct everyone, including his sons, in all he learned. After thirty days, the angels returned him to Heaven.

And then the divine transformation took place. Additional wisdom and spiritual qualities caused Enoch's height and breadth to become equal to the height and breadth of the earth. God attached thirty-six wings to his body, and gave him three hundred and sixty-five eyes, each as bright as the sun. His body turned into celestial fire – flesh, veins, bones, hair, all metamorphosed to glorious flame. Sparks emanated from him, and storms, whirlwind, and thunder encircled his form. The angels dressed him in magnificent garments, including a crown, and arranged his throne. A heavenly herald proclaimed that

from then on his name would no longer be Enoch, but Metatron, and that all angels must obey him, as second only to God.

Mímir - A primal god of Norse mythology who was renowned for his knowledge and wisdom. The god Odin journeyed to the land of the giants, Jötunheimr, to acquire Mímir's omniscient knowledge and wisdom for himself. He attained it by drinking from Mímir's magical well. As a price for drinking of it Odin was forced to pluck out one of his own eyes. The poem Gylfaginning states that as keeper of the well, Mímir himself imbibes from it using the Gjallarhorn, a drinking horn which shares its name with the sounding horn used by Heimdall to announce the onset of Ragnarök. Odin returned to Asgard with Mimir's head for oracular consultation according to some accounts. Other accounts state that Mímir's head was severed and sent to Odin during the war between the Æsir and the Vanir deities. Mímir was also Hœnir's chief advisor after he became a ruler of the Vanir.

Odin - Odin is the chief divinity of the Norse pantheon, the foremost of the Aesir (High Gods). Odin is a son of Bor and Bestla. He is called Alfadir, Allfather, for he is indeed father of the gods. He is also called Othinn, Wodan and Wotan. Some of the aliases he uses to travel icognito among mortals are Vak and Valtam. Wednesday is named after him (Wodan). With Frigga he is the father of Balder, Hod, and Hermod. He fathered Thor on the goddess Jord; and the giantess Grid became the mother of Vidar. Odin is a god of war and death, but also the god of poetry and wisdom. He hung for nine days, pierced by his own spear, on the world tree. Here he learned nine powerful songs, and eighteen runes. Odin can make the dead speak to question the wisest amongst them. His hall in Asgard is Valaskjalf ("shelf of the slain") where his throne Hlidskjalf is located. From this throne he observes all that happens in the nine worlds.

Odin's attributes are the spear Gungnir, which never misses its target, the ring Draupnir, from which every ninth night eight new rings appear, and his eight-footed steed Sleipnir. He is accompanied by the wolves Freki and Geri, to whom he gives his food for he himself consumes nothing but wine. Odin has only one eye, which blazes like the sun. His other eye he traded for a drink from the Well of Wisdom, and gained immense knowledge.

Amongst his gifts to us, his children, was the greatest of all: the gift of writing. To accomplish this Odin hung himself upside down upon the World Tree, [Tree of Life] the gigantic ash Yggdrasil (a compound meaning "terrible horse").

After nine days of fasting and agony, in which "he made of himself a sacrifice to himself", he "fell screaming" from the tree, having had revealed to him in a flash of insight the secret of the runes. Their initial manifestation took the form of eighteen powerful charms for protection, increase, success in battle and love-making, healing, and mastery over natural causes. This story illustrates an important dynamic of the Northern pantheon, which did not allow for omnipotence - even Odin must pay his due. At Mimir's well, which lay deep under the roots of Yggdrasil, the World Tree, the god had earlier chosen to undergo an important forfeit. Odin paid with one eye for a single drink of the enchanted water. His mouthful granted him wisdom and fore-sight. It is due to this sacrifice that Odin's face is depicted with a straight line indicating an empty eye, or alternately, in a wide-brimmed hat pulled down low over the missing orb.

His quest for knowledge was never-ending. Upon his shoulders perched two ravens, Hugin ("Thought"), and Munin ("Memory"). These circled the Earth each day, seeing all, and then at night reported to Odin what they had learnt. He cherished them both, but particularly Munin, which seems to underscore the importance he placed on rune writing, record keeping, and honouring the heroic deeds of the past.

Ogmios - A Gaulish deity, who Lucian records was depicted as a bald old man with a bow and club leading an apparently happy band of men with chains attached to their ears from his tongue. This is thought by some scholars to be a metaphor for eloquence, possibly related to bardic practices. Lucian records that the Gauls associated him with Hercules, but his appearance on two defixiones from Austria suggests that he was also associated with Hermes in Eastern Celtic tradition. He is likely related to the Irish god Ogma, and is one of the closest Gaulish parallels to Ogma's brother, the Dagda.

Omoikane - A Shinto god of knowledge. His name means "serving one's thoughts."

Orpheus - Orpheus was believed to be one of the chief poets and musicians of antiquity, and the inventor or perfector of the lyre. With his music and singing, he could charm wild beasts, coax the trees and rocks into dance and even divert the course of rivers. As one of the pioneers of civilization, he is said to have taught humanity the arts of medicine, writing and agriculture. Closely connected with religious life, Orpheus was an augur and seer; practised magical arts, especially astrology; founded or rendered accessible many important cults, such as those of Apollo and the Thracian god Dionysus; instituted mystic rites both public and private; and prescribed initiatory and purificatory rituals. In addition, Pindar describes Orpheus as the harpist and companion of Jason and the Argonauts.

Osirus - The ancient Egyptians used regular polygons in their construction, but discovered that these polygons could be increased while keeping the ratio of their sides by the addition of a strictly constructed area. This was named the "gnomon" by the Greeks. The god Osiris was given the recognition for the concept of the ratio-retaining expansion of a rectangular area. Egyptians also used the square as a symbol of kingship.

Saraswati - In Hinduism, she is one of the goddesses, the other two being Lakshmi and Durga, that form the female counterpart of the Trimurti. Saraswati has been regarded as a river goddess and in recent times a goddess of knowledge, music and the arts. She is the consort of Brahma, the Hindu god of creation. Goddess Saraswati is often depicted as a beautiful, yellow-skinned woman dressed in pure white often seated on a white Nelumbo nucifera lotus (although Her actual animal association is believed to be a swan), which symbolizes that she is founded in the experience of the Absolute Truth. Thus, she not only has the knowledge but also the experience of the Highest Reality. She is mainly associated with the color white, which signifies the purity of true knowledge. Occasionally, however, she is also associated with the colour yellow, the

colour of the flowers of the mustard plant that bloom at the time of her festival in the spring. She is not adorned heavily with jewels and gold, unlike the goddess Lakshmi, but is dressed modestly--perhaps representing her preference of knowledge over worldly material things. She is generally shown to have four arms, which represent the four aspects of human personality in learning: mind, intellect, alertness, and ego. Alternatively, these four arms also represent the 4 vedas, the primary sacred books for hindus. The vedas, in turn, represent the 3 forms of literature :- Poetry (Rigveda contains hyms- representing poetry) , Prose (Yajurveda contains prose), Music (Samaveda represents music). The four hands also depict this thusly - prose is represented by the book in one hand , poetry by the garland of crystal, music by the veena. The pot of sacred water represents purity in all of these three, or their power to purify human thought. She is shown to hold the following in her hands: A book, which is the sacred Vedas, representing the universal, divine, eternal, and true knowledge as well as her perfection of the sciences and the scriptures, A mala of crystals, representing the power of meditation and spirituality, A pot of sacred water, representing creative and purificatory powers, The veena, a musical instrument that represents her perfection of all arts and sciences.

Saraswati is also associated with anuruga, the love for and rhythm of music which represents all emotions and feelings expressed in speech or music. It is believed that children born with that name will prove to be very lucky in their studies. She is usually depicted near a flowing river, which may be related to her early history as a water goddess. The swan and her association with the lotus flower also point to her ancient origin. Sometimes a peacock is shown beside the goddess. The peacock represents arrogance and pride over its beauty, and by having a peacock as her mount, the Goddess teaches Hindus not to be concerned with external appearance and to be wise regarding the eternal truth.

Thoth - Thoth was portrayed by the ancient Egyptians in various ways. Thoth sometimes assumed the shape of a baboon. For domestic use, effigies of Thoth as a baboon were made. There is an ode to Thoth where the god is addressed as a statuette studded with precious stones representing the god as a baboon. But whenever Thoth took action or made pronouncements, he appeared in human form with the head of an ibis. In hieroglyphic script and among the emblems carried in temple processions, he was immediately recognizable whenever the ibis occurred. The ibis apparently expressed the essence of Thoth better than the baboon.

The ibis occurs on the standard of the 15th nome of Lower Egypt, whose capital was called Hermopolis parva in later days. The name indicated Thoth was venerated in that nome. Thoth was also worshipped in other delta towns. Thoth is said to have been identified with an ibis-god in Hermopolis parva (Boylan, 1922, p. 75). Thoth became the dominant god in Upper Egypt's Hermopolis magna, or 'town of Eight.'

Plutarch's statement about the ibis attracted attention. The ibis destroyed noxious reptiles and set a standard for cleanliness. The ibis taught the priests the art of purgation, and it only drank from clean water sources. So the ibis was a typical combatant of hostel beings. Plutarch wrote (Isis and Osiris, 75), "The ibis, which kills the deadly creeping things, was the first to teach men the use of medicinal purgations when they observed her employing clysters and being purged by herself. The most strict of the priests take this lustral water for purification from a place where the ibis has drunk."

Egyptians often understood the essence of their gods through the epithets associated with them Thoth was frequently called 'the son of Re.' A stunning pronouncement in the Pyramid Texts (§1271), it is said of Thoth, 'you have no mother.' Mysterious is the name of Thoth as '(son of) the stone (who came forth) from (the two eggshells)' (Allen, 1974, 219; Book of the Dead [BOD] Spell 134). This stone is the eggshell he split in two at his birth, which suggest the remnants of another creation account with Thoth as the creator god. Another strange announcement is Thoth emerged from the skull of Seth after Horus had impregnated him (in 'The Contendings of Horus and Seth'). Thoth is called 'the one who emerged from the skull.' In ancient Egyptian, the word 'skull' is reminiscent of the word 'judge', and Thoth often acted as a judge. Another strange statement about the birth of Thoth is contained in a late text from the temple of Esna. Re, embittered by the rebellion of mankind, sent Thoth out to crush the rebellion. The role is consistent with Thoth as a chastiser of evildoers. Thoth was also a peacemaker and it was said of him, 'he makes peace between the two combatants (Horus and Seth)... he dispels the sorrow of the older generation, he settles the discord of the younger generation, he catches the suffering of Isis [about the death of Osiris] as though in a net' (BOD Spell 110). The god who promotes the state of satisfaction in the cosmos is Thoth. In the Pyramid Texts (§1465), Thoth is called 'the one who signifies the peace of the gods.'

Thoth was considered one of the oldest gods. However he is not a part of the famous Heliopolitan Ennead. He was accounted as one of the ten members of the dynasty of gods who ruled earth before earthly kings (Turin Royal Canon). Thoth's primacy is suggested in the fascinating story told by Plutarch (Isis and Osiris) that Hermes (i.e. Thoth) won five extra days for the year by playing a game (senet?) with Selene (moon). These five extra days became the birthdays for the deities Osiris, Horus, Seth, Isis, and Nephthys.

Thoth was a benefit both to the gods and mankind. Thoth helped revive Osiris. He acted as Osiris' advocate during the trial. Thoth assisted Isis to rear Horus in the marshes. Thoth punished Seth and all evil doers. Thoth was a legislator, judge, and scribe. He restored order and brought harmony to the world. He assisted mankind as a protector of the weak and of those whose property was violated.

An important task in the cosmos was ascribed to Thoth in the Shabaka Text, or Memphite Theology, which is usually called a 'logos doctrine.' According to the text, creation took place because a thought arose in the heart of the deity and the tongue uttered that thought. The thought and the word were personified in the gods Horus and Thoth. That word is active in all living creatures: the gods, the people, the cattle, etc. The word brings forth all manner of food and nourishment. Thoth is therefore the safeguard and guardian of all the regulations of creation. Thoth makes justice triumphant in the world of man.

Thoth was the inventor of the sacred writings. He was patron of the scribe. Mention is made of 'the hieroglyphic writings, the books of Thoth.' The writers in the temple scriptoria were under the supervision of Thoth. Sacrificial rituals were said to be performed 'according to the writing that Thoth made for Osiris in the house of god's book.' The text containing the lament of Isis and Nephthys about their murdered brother states, 'Thoth recites thine (Osiris) hymns and invokes thee with his spells.' Thoth also played a role in the founding of temples. Mention is made of a temple 'which Ptah built with his fingers and which Thoth founded.'

Thoth's assistance to the deceased is well-known from his presence recording the result of judgment at the scales. Two spells in the BOD (95, 96) state a purpose for the deceased to be by the side of Thoth. The deceased even yearns to be identified with Thoth.

Thoth was the patron god of scribes, lord of the sacred writings, legislator, judge, recorder of decisions and pronouncements, arbiter of disputants, queller of noisy division, aid to those suffering injustice or sickness, founder of temples, personification of thought uttered, and restorer of order and harmony. He was a fitting god to be called twice greatest, thrice greatest and even Trismegistus by the Greeks. How much of the Corpus Hermeticum can be traced back to the Egyptians is unclear, but the roots or hermetic lore are certainly to be found in Ramesside Egypt starting with the Memphite Theology and on the walls of the Hibis temple.

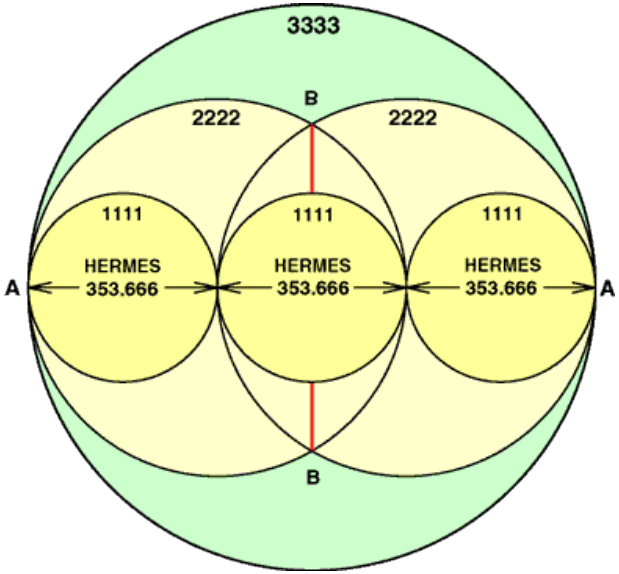
Tetragammon - Another name for Metatron. Also see <u>The Elements</u> section.

Zeus, Apollo, and Hermes - The Greek gods personified the mysteries of life and the cosmos in the form of a pantheon of gods who ruled from Mount Olympus. Zeus was the most powerful god who controlled the sky and weather.

Apollo was the son of Zeus and Leto and the twin of the goddess Artemis. He is sometimes personified as the sun driving a fiery chariot across the sky each day. He is associated with the tending of flocks and herds, love of beauty, balance, music, fine arts, poetry and medicine. He is the god of prophecy and is credited with the foundation of the oracle of Delphi. He is usually pictured as a young and handsome man holding the lyre, the bow and arrow, or seated on the omphalos next to the tripod, the twin symbols of Delphi.

Hermes, the little brother of Apollo, was personified as Mercury, the planet closest to the sun. The ancient Greek gods were very real to the common man in antiquity, but to the philosophers and to people who could think for themselves, the gods were recognized as metaphors for the powers of nature.

On a higher level, Zeus, Apollo, and Hermes were also mathematical metaphors. The diagram below illustrates how the Greek spelling of each god's name results in a gematria value that can be used to unite the gods in a single Sacred Geometry diagram.



Apollo = APOLLWN = 1+80+70+30+30+800+50 = 1061
Zeus = ZEUS = 7+5+400+200 = 612
Hermes = `ERMHS = 5+100+40+8+200 = 353

The length of the red line BB by computation is equal to the gematria value of Zeus (612). The diameter AA of the green circle is exactly equal to the gematria value of Apollo (1061). The diameter of each of the three bright yellow circles is equal to the gematria value of Hermes (353).

The .666 decimal remainder of the gematria value of Hermes brings out his solar nature through the sum of the numbers that form the magic square of the sun. The three Hermes circles also bring out Herme's title Trismegistos, meaning "thrice greatest." The diagram shown here is only one of the many ways these three Greek gods can be depicted as Sacred Geometry diagrams.

Societies Associated with Sacred Geometry:

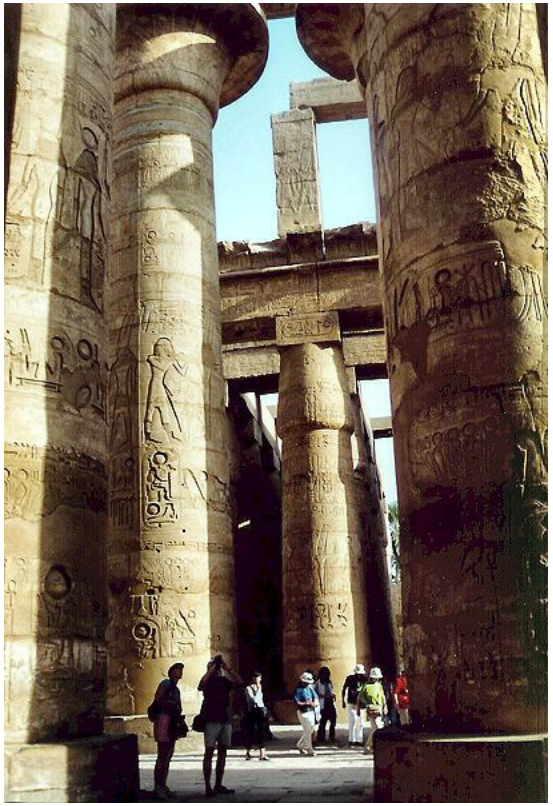
Egyptian Architects - The principles of sacred geometry are of Ancient Egyptian origin, which constituted the basis of harmonic proportions, as evident in their temples, buildings, theology, ...etc.

Herodotus, the father of history and a native Greek, stated in 500 BCE:

"Now, let me talk more of Egypt for it has a lot of admirable things and what one sees there is superior to any other country."

The Ancient Egyptian works, large or small, are admired by all, because they are proportionally harmonious and as such appeal to our inner as well as outer feelings. This harmonic design concept is popularly known as sacred geometry—where all figures could be drawn or created using a straight line (not even necessarily a ruler) and compass, i.e. without measurement (dependent on proportion only). The Ancient

Egyptian design followed these principles in well-detailed canons. Plato himself attested to the longevity of the Egyptian harmonic canon of proportion. The key to divine harmonic proportion (sacred geometry) is the relationship between progression of growth and proportion. Harmonic proportion and progression are the essence of the created universe. It is consistent with nature around us. Nature around us follows this harmonious relationship. The natural progression follows a series that is popularized in the West as the "Fibonacci Series". Since this Series was in existence before Fibonacci (born in 1179 CE), it should not bear his name. Fibonacci himself and his Western commentators, did not even claim that it was his "creation". Let us call it as it is—a Summation Series. It is a progressive series, where you start with the first two numbers in the Ancient Egyptian system, i.e. 2 and 3. Then you add their total to the preceding number, and on and on; any figure is the sum of the two preceding ones. The series would therefore be: 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, . . .This series is reflected throughout nature. The number of seeds in a sunflower, the petals of any flower, the arrangement of pine cones, the growth of a nautilus shell, etc...all follow the same pattern of these series.



The overwhelming evidence indicates that the Summation Series was known to the Ancient Egyptians. Many Ancient Egyptian plans of temples and tombs, throughout the history of Ancient Egypt, show along their longitudinal axis and transversely, dimensions in cubits of 1.72' (0.523 m), giving "in clear" consecutive terms of the Summation Series 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, . . .

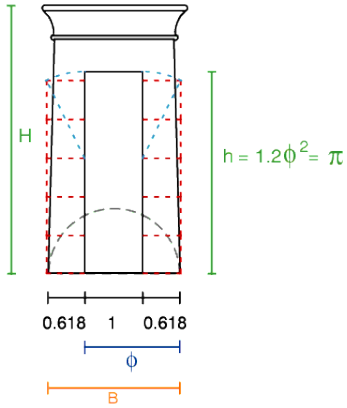
The Summation Series conforms perfectly with, and can be regarded as an expression of, Egyptian mathematics, which has been defined by everyone as an essentially additive procedure. The summation character of the series, and its use, would be in accord with the practical aspect of Egyptian science. This additivity is obvious in their reduction of multiplication and division to the same process by breaking up higher multiples into a sum of consecutive duplications.

There is evidence about the knowledge of the Summation Series, ever since the Pyramid (erroneously known as mortuary) Temple of Khafra (Chephren), at Giza, built in 2500 BCE, i.e. about 3700 years before Fibonacci.

The Summation Series was the origin of Ancient Egyptian harmonic design. The Golden Proportion can be obtained graphically in several ways, which were all common in the Egyptian buildings throughout its dynastic history.

The Circle Index is the functional representation of the circle. It is the ratio between the circumference of the circle to its diameter. It is popularized by Western academia by the Greek letter Pi and given a value of 3.1415927. The Egyptians manifested their knowledge of the circle properties and other curves, as early as their surviving records. A 3rd Dynasty (~2630 BCE) record shows the definition of the curve of a roof, in Sakkara, by a system of coordinates. This shows that their knowledge of the circle enabled them to calculate the coordinates along this vertical curve. Accordingly, the construction workers followed precise dimensions in their executed circular curves. Such application was evident in Egypt at least 2,000 years before Archimedes walked this earth.

In Ancient Egypt, doorways were built with or without a pylon on each side. A few examples from different periods show that the simple design of Egyptian doorways conforms to a harmonic analysis. The relationships between the openings and the doorjambs were harmonically proportioned. The height of the aperture and the full height, were also harmonically designed.



King Solomon's Temple is probably one of the most important symbols in freemasonry. One of the reasons for its importance is the reputed elements of sacred geometry, which permeated the temple. The geometric precision, which allowed the temple to permit only certain amounts of light in at certain times of the day, earned it a famed reputation. Though the existence of such a temple is debatable, once again it is more so the belief in its existence and power that concerns this discussion. It was believed by many that the Knights Templar were trying to emulate this very type of sacred geometry in the Christian structures reputedly (through legend) built by them. But many Enlightenment freemasons may have known that the Hebrew temple of King Solomon was not built by Hebrews according to the folklore. In fact it was attributed to none other than Phoenicians. And with the Phoenicians, we get a little closer to the puzzle. The Phoenician builder reputed to be in charge of the building of King Solomon's Temple is Hiram Abiff. Hiram Abiff's attention to sacred geometry, if he was even a real figure, would have come about as a result of Phoenician and not Hebrew deities and beliefs. And here is where we have an interesting link, for many a Phoenician deity can be traced back to Egypt. Following the expulsion of the Asiatic Hyksos invaders, Egypt becomes for the first time a type of Empire. And she conquers in the direction of the origin of her one-time invaders, towards Western Asia and Phoenicia. There are reports of Egyptian rulers capturing and bringing back Phoenician princes to indoctrinate them in Egyptian beliefs so as to make vassals of their kingdoms. The Phoenicians become very acquainted with a host of Egyptian gods who either blend in or at times even supplant their own. Pictured here is the Phoenician deity Baal. His demeanor and headdress are specifically Egyptian. Thus Hiram Abiff's deities and particular ceremonial rituals to sacred geometry and architecture would not have been Hebrew or truly Phoenician, but rather of Egyptian origin. Once again, Solomon's Temple and Hiram Abiff's existence cannot be proven historically. But folklore and mythos may tell us a great deal about certain other truths, particularly the linking of sacred geometry with Egypt.

The Great Civilization Artizans - Olmec, Aztec, Mayan, Central American Peoples, Vedic Cultures, Armenian, Chinese, Japanese, Sumarians, Akkadian, Greek and Romans all have exellent examples of temples, buildings and complete cities founded upon the concepts of sacred geometry.

The Freemasons - Freemasonry "evolved from the guilds of stonemasons and cathedral builders of the Middle Ages" [Encarta '99]. Yet Cotterell says that "developments that took place between AD 1150 and 1350" hold the key to Freemasonry in their "Sacred Geometry". Via this the architects and stonemasons concealed "secret knowledge". Those "in the know" could readily understand these "hidden messages". The level of knowledge you are privy to depends upon your degree in the Masons. Cotterell shows, by comparison of various rose windows how Medieval craftsmen "encoded their divine knowledge of the sun". Cathedrals were often designed and constructed according to the Golden Section [aka Golden Mean], to ensure "harmonious proportions" by following "obscure geometric relationships".

The origin of Freemasonry is said to lie in the building of the original Temple of Jerusalem by King Solomon in the tenth century BC. The "chessboard" floor of the courtyard [as a Masonic symbol] has connotations of light and dark/night and day and life and death. The symbol of the freemasons are the very tools used in the discovery of sacred geometry, the carpenters square and the compass with the G standing for God or Geometry depending on the source.

The Knight's Templar - During the Middle Ages there arose a Christian order of warrior monks known as the Knights Templar. Much has been written of the Templars: their involvement in the Crusades, their supposed overwhelming power (real or imaginary, benevolent or malevolent), accusations of occultism and of the mystery of their disappearance. Whatever the actual truth concerning the Templars, a great deal of Enlightenment masons in Europe traced descent, either directly or indirectly, to the Knights Templar. Why? A great deal of it may have to do with geometry, or more aptly put, "sacred geometry." This is the notion that certain geometric properties hold sacred or divine qualities. Thus buildings may be built to a certain geometric precision, to face certain directions, etc. The Knights Templar were believed to be famous for this. Many cathedrals in Europe bearing such sacred geometry have been attributed to them. Whether the Templars actually built them is unknown and not the focus of this discussion; what is important is that Enlightenment masons of Europe believed so. Pictured above is a seal of the legendary and mysterious Knights Templar. But why would these Enlightenment figures connect the Templars with Egypt? That takes us even back before the Templars existed: to tales of Hebrew kings, temples and Phoenician architects.

The Kabbalist/ Qabbalist - The Tree of Life. Kabbalah is an interpretation of the Torah (Hebrew Bible), or the religious mystical system of Judaism claiming an insight into divine nature. The term "Kabbalah" was originally used in Talmudic texts, among the Geonim, and by early Rishonim as a reference to the full body of publicly available Jewish teaching. In this sense Kabbalah was used in referring to all of known Oral Law. Over time it became a reference to doctrines of esoteric knowledge concerning God, God's creation of the universe and the laws of nature, and the path by which adult religious Jews can learn these secrets.

Kabbalah, according to the more recent use of the word, stresses the esoteric reasons and understanding of the commandments in the Torah, and the occult cause of events described in the Torah. Kabbalah includes the understanding of the spiritual spheres of creation, and the ways by which God administers the existence of the universe.

According to Midrash, God created the universe with "Ten utterances" or "Ten qualities." When read by later generations of Kabbalists, the Torah's description of the creation in the Book of Genesis reveals mysteries about the godhead itself, the true nature of Adam and Eve, the Garden of Eden, the Tree of Knowledge of Good and Evil and the Tree of Life, as well as the interaction of these supernal entities with the Serpent which leads to disaster when they eat the forbidden fruit, as recorded in Genesis 2. The Bible provides ample additional material for mythic and mystical speculation. The prophet Ezekiel's visions in particular attracted much speculation, as did Isaiah's Temple vision (Chapter 6). Jacob's vision of the ladder to heaven is another text providing an example of a mystical experience. Moses' experience with the Burning bush and his encounters with God on Mount Sinai, are all evidence of mystical events in the Tanakh,

and form the origin of Jewish mystical beliefs.

Jewish mystical traditions always appeal to an argument of authority based on antiquity. As a result, virtually all works pseudepigraphically claim or are ascribed ancient authorship. For example, Sefer Raziel HaMalach, an astro-magical text partly based on a magical manual of late antiquity, Sefer ha-Razim, was, according to the kabbalists, transmitted to Adam (after being evicted) by the angel Raziel. Another famous work, the Sefer Yetzirah, supposedly dates back to the patriarch Abraham. According to Apocalyptic literature, esoteric knowledge, such as magic, divination, and astrology, was transmitted to humans in the mythic past by the two angels, Aza and Azaz'el (in other places, Azaz'el and Uzaz'el) who 'fell' from heaven (see Genesis 6:4).

This appeal to antiquity has also shaped modern theories of influence in reconstructing the history of Jewish mysticism. The oldest versions of the Jewish mysticism have been theorized to extend from Assyrian theology and mysticism. Dr. Simo Parpola, a researcher at the University of Helsinki, has made some suggestive findings on the matter, particularly concerning an analysis of the Sefirot. Noting the general similarity between the Sefirot of the Kabbalah and the Tree of Life of Assyria, he reconstructed what an Assyrian antecendent to the Sepiroth would look like. He matched the characteristics of En Sof on the nodes of the Sepiroth to the gods of Assyria, and was able to even find textual parallels between these Assyrian gods and the characteristics of god. The Assyrians assigned specific numbers to their gods, similar to how the Sepiroth assigns numbers to its nodes. However, the Assyrians use a sexagesimal number system, whereas the Sepiroth is decimal. With the Assyrian numbers, additional layers of meaning and mystical relevance appear in the Sepiroth. Normally, floating above the Assyrian Tree of Life was the god Assur, this corresponds to En Sof, which is also, via a series of transformations, derived from the Assyrian word Assur.

Instructive for the study of the development of Jewish mysticism is the Book of Jubilees written around the time of King John Hyrcanus. It refers to mysterious writings of Jared, Cain, and Noah, and presents Abraham as the renewer, and Levi as the permanent guardian, of these ancient writings. It offers a cosmogony based upon the twenty-two letters of the Hebrew alphabet, and connected with Jewish chronology and Messianology, while at the same time insisting upon the heptad (7) as the holy number rather than upon the decadic (10) system adopted by the later haggadists and the Sefer Yetzirah. The Pythagorean idea of the creative powers of numbers and letters was shared with Sefer Yetzirah and was known in the time of the Mishnah (before 200 CE).

Early elements of Jewish mysticism can be found in the non-Biblical texts of the Dead Sea Scrolls, such as the Song of the Sabbath Sacrifice. Some parts of the Talmud and the midrash also focus on the esoteric and mystical. Many esoteric texts, among them Hekalot Rabbati, Sefer HaBahir, Torat Hakana, Sefer P'liyah, Midrash Otiyot d'Rabbi Akiva, the Bahir, and the Zohar claim to be from the talmudic era, though it is clear now that some of these works, most notably the Bahir and Zohar, are actually medieval works pseudepigraphically ascribed to the ancient past.

In the medieval era Jewish mysticism developed under the influence of the word-number esoteric text Sefer Yetzirah. Jewish sources attribute the book to the biblical patriarch Abraham, though the text itself offers no claim as to authorship. This book, and especially its embryonic concept of the "sefirot," became the object of systematic study of several mystical brotherhoods which eventually came to be called baale ha-kabbalah - possessors or masters of the Kabbalah".

The Western Esoteric (or Hermetic) Tradition, a precursor to both the neo-Pagan and New Age movements, differs from the Jewish form in being a more admittedly syncretistic system. However it shares many concepts with Jewish Kabbalah. Hermetic Kabbalah probably reached its peak in the Hermetic Order of the Golden Dawn, a 19th-century organization that was arguably the pinnacle of ceremonial magic (or, depending upon one's position, its ultimate descent into decadence). Within the Golden Dawn, Kabbalistic principles such as the ten Sephiroth were fused with Greek and Egyptian deities, the Enochian system of angelic magic of John Dee, and certain Eastern (particularly Hindu and Buddhist) concepts within the structure of a Masonic- or Rosicrucian-style esoteric order. Many of the Golden Dawn's rituals were published by the legendary occultist Aleister Crowley and were eventually compiled into book form by Israel Regardie, an author of some note. The credibility of Crowley is inconsistent at best, though, as many of the rituals published were actually manipulated versions.

Crowley made his mark on the use of Kabbalah with several of his writings; of these, perhaps the most illustrative is Liber 777. This book is quite simply a set of tables relating various parts of ceremonial magic and Eastern and Western religion to thirty-two numbers representing the ten spheres and twenty-two paths of the Kabbalistic Tree of Life. Dion Fortune, a fellow initiate of the Golden Dawn, disagreed with Crowley. Samael Aun Weor has many significant works that discuss Kabbalah within many religions, such as the Egyptian, Pagan, and Central American religions, which is summarized in his work The Initiatic Path in the Arcana of Tarot and Kabbalah.

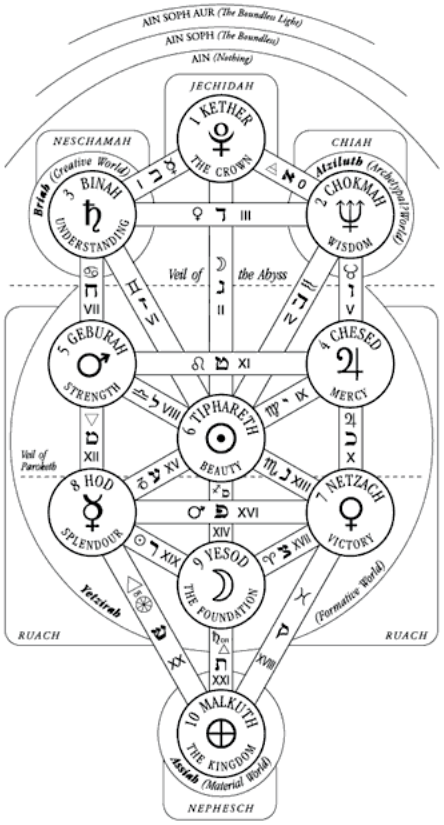
The Kabala is presented, symbolically in the form of The Tree of Life.

The Tree contains ten centers called sephiroth. In a numerological sense, the Tree of Sephiroth has significance. Between the 10 Sephiroth run 22 channels or paths which connect them, a number which can be associated with the 22 letters of the Hebrew alphabet.

In addition to each of this channels being assigned a letter of this alphabet, each path is also identified with one of the major trumps of the Tarot deck of symbolic cards. When combined with the 10 Sephiroth, these 22 paths make the number 32 which makes reference to the 32 Qabbalistic Paths of Wisdom and also the 32 degrees of Freemasonry.

To envision the tree, consider each of these ten spheres as being concentric circles with Malkuth being the innermost and all others encompassed by the latter. None of these are separate from the other, and all simply help to form a more complete view of the perfected whole.

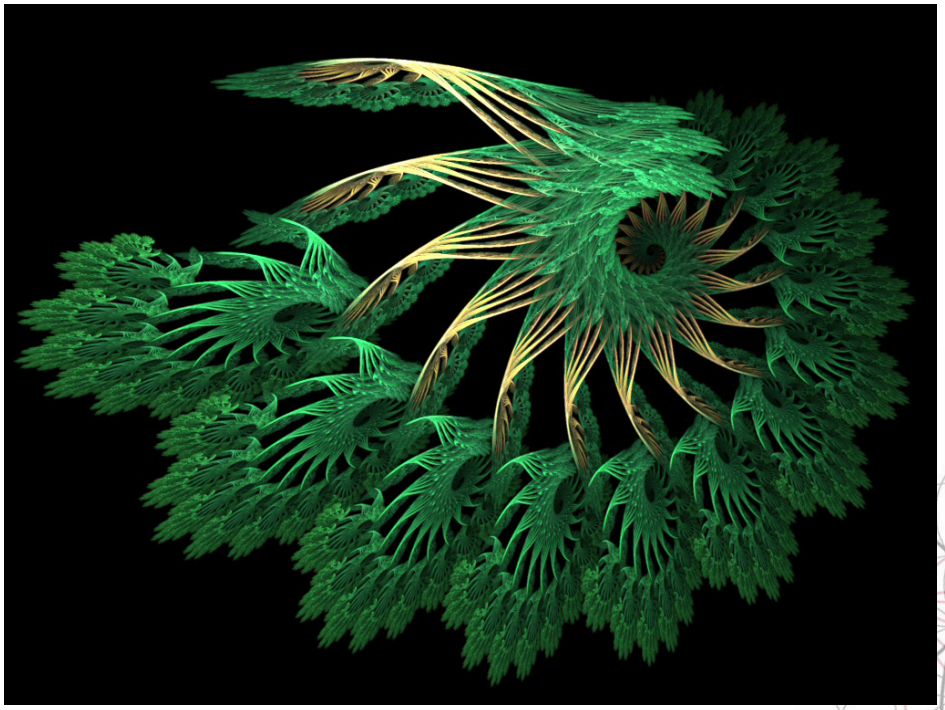
To speak simply, Malcuth is the Kingdom which is the physical world upon which we live and exist, while Kether, also



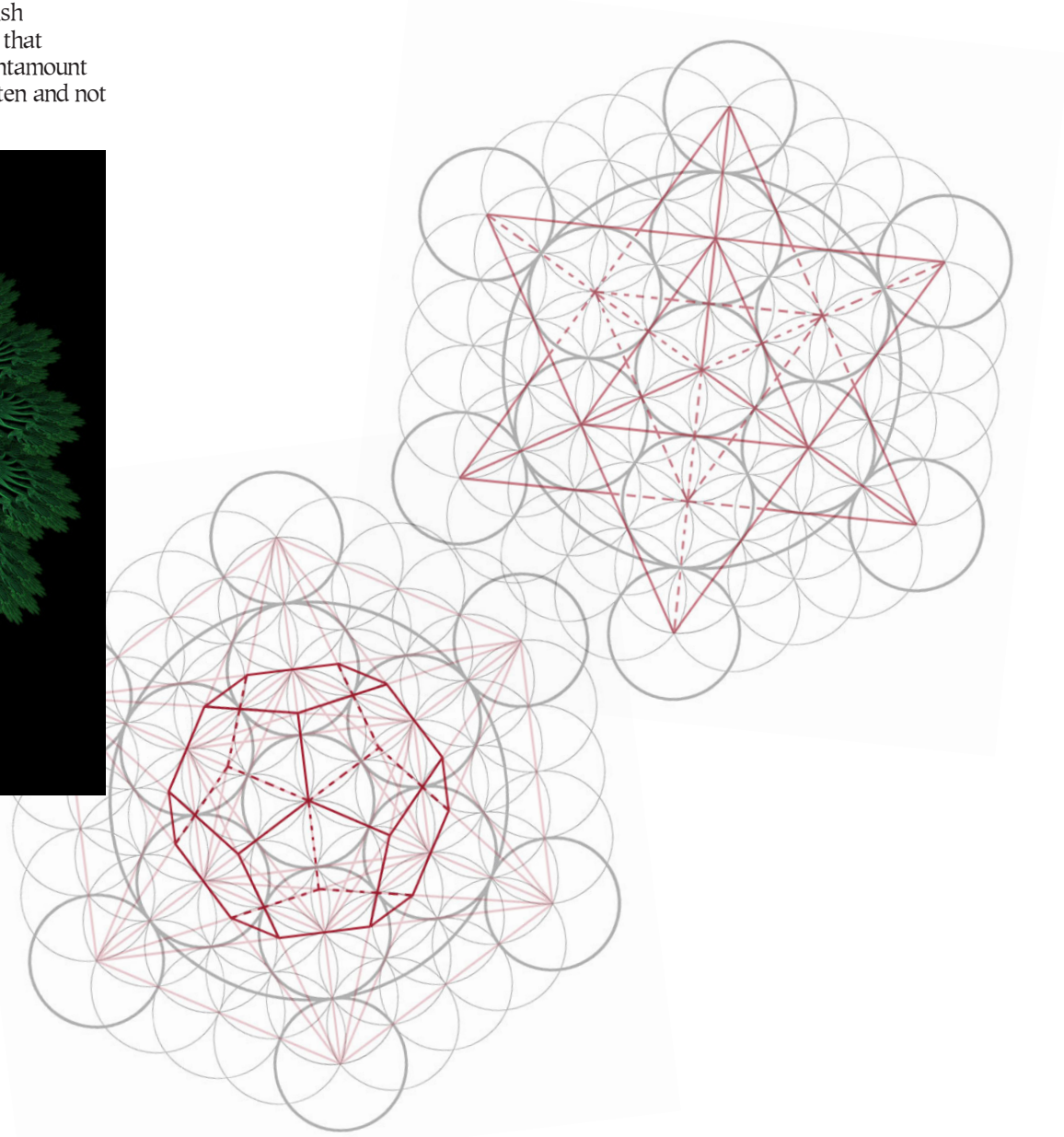
call Kaether and Kaether Elyson is the Crown of this universe, representing the highest attainable understanding of God that men can understand.

Hypothetically there also exists an Eleventh Sephirah called Daath. According to Karen Chapdelaine, its meaning is the Abyss and its universal element is Neptune which makes it an important element of the Tree of Sephiroth.

It should be noted, however, that the first Qabbalists did not include any such sphere, making Daath a contested point of philosophical discussion. The Jewish Kabbalists that do accept this entity state that it is not a Sephirah, but rather that absence of one. In the Jewish tradition, the idea of an eleventh Sephirah is tantamount to blasphemy, as stated in the Sefer Yetzirah: "Ten Sephirot of Nothingness, ten and not nine, ten and not eleven.[2]



Green Phi Fractal Spiral



The Genesis of Sacred Geometry Forms