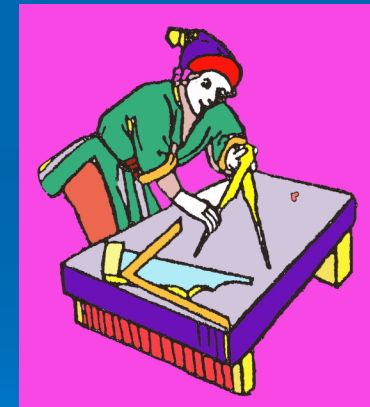
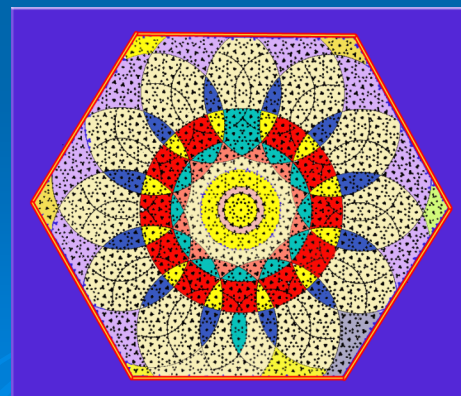
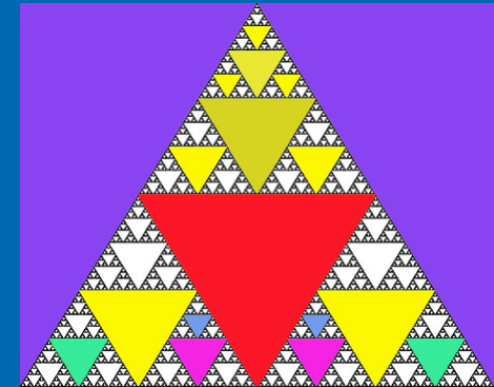
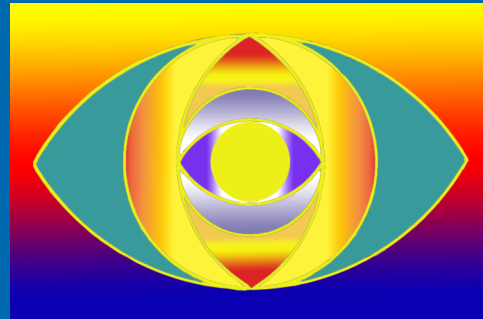


SG101.1a Introduction to Sacred Geometry: Universal Order & Beauty

Online Module SG 101



Presented by AYA
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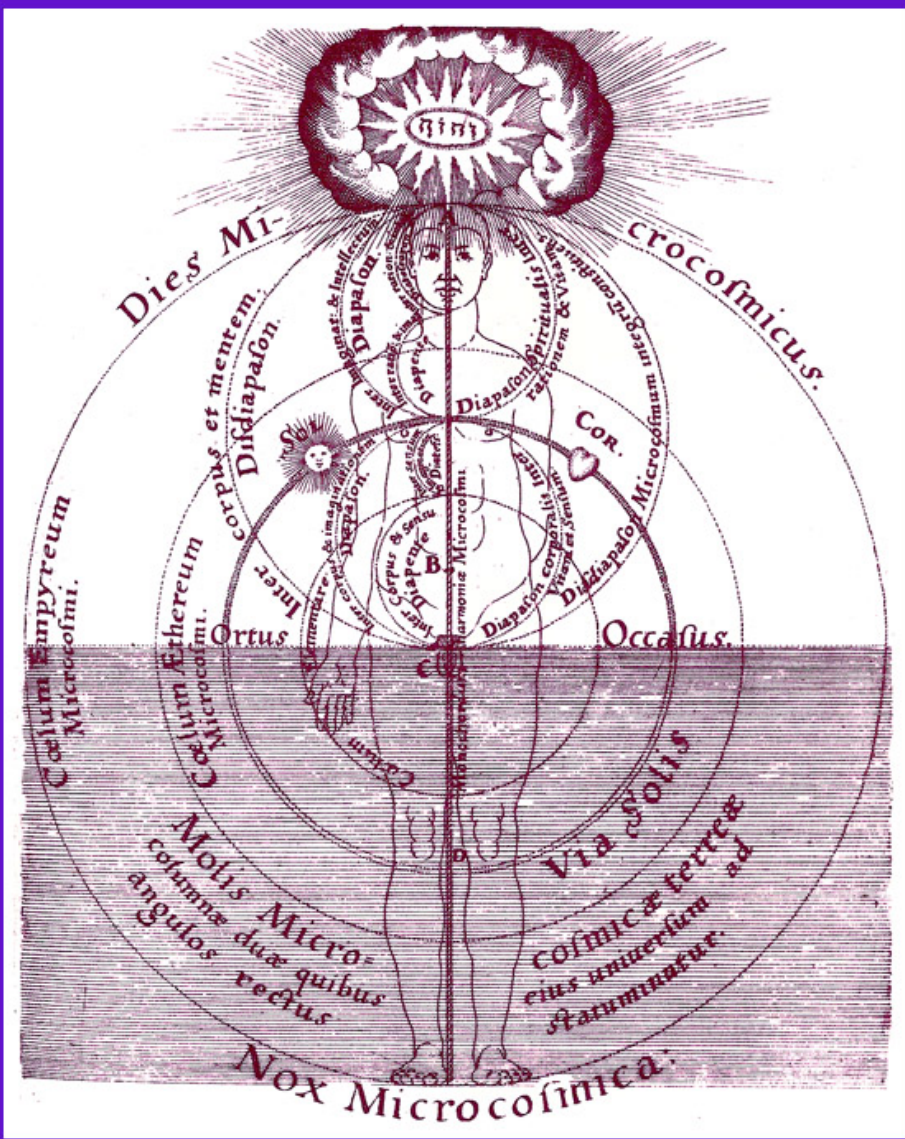
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SG101.Ic Intro to Sacred Geometry



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images, diagrams...)
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phi@schoolofsacredgeometry.org

Robert Fludd. 1621

SG101.Id Sacred Geometry: Universal Order & Beauty (1)

We are living at the extraordinary time of a global (planetary, galactic and even larger) macro-shift to a higher spiral of consciousness.

At the frontier of current science, the universe is now glimpsed as a holo-graphically linked, multi-dimensional, conscious organism (“*Cosmos*”) that is infused, beyond matter/space/time, by a primordial field of intelligent energy/information. This Cosmic Field is defined as coherently whole, all-inclusive, scale-invariant, self-similar, self-referential, and non-local.

Within this Field, we are progressively uncovering the unique power of PHI or the Golden Ratio. The fractal resonance/compression of PHI entrains all aspects of nature - from the microcosm to the macrocosm (even gravity), as well as the human body, psychology and consciousness (even bliss) - and all aspects of culture.

Throughout Cosmos, the Golden Ratio is a cascading template of optimal relationship between waves. With the PHI code, waves can both add and multiply without losing their identity. This property allows PHI to be the perfect mediator for growth & evolution.



Phi, the Golden Ratio

SG101.1e Sacred Geometry: Universal Order & Beauty (2)

PHI has the extraordinary power to unify the different parts of a whole, so that:

- each part retains its own identity
- and yet perfectly blends into the larger whole.

This ternary (musical) harmony & graceful dance between Small, Large and Whole is at the core of the universe.

We ourselves are, in turn, the small part, the large part and the whole.

Welcome to a global civilization on Earth where we tune in, embody and co-create Infinite Beauty, Love and Harmony.

Sacred Geometry is a *cosmo-gnosis* marrying again outer world and inner vision, cutting edge science and perennial spirit wisdom. The Sacred Geometry shapes are the optimal envelopes of evolutionary wave-fronts traveling inter-dimensionally.

This first module SG101 will take you through a variety of introductory steps: away from outdated and limiting beliefs and onwards to a new perception of life, nature, the universe and your own role as co-creator of this magnificent Cosmos.

Welcome to the re-enchantment power of Sacred Geometry!

And enjoy again a benevolent universe of Love, Harmony and Beauty!

SG101.If Navigating the Online Modules

*For students seeking accreditation, module SGIntroCert (101-108) offers homework practices, readings, additional links... Quizzes and a short essay will verify the level of understanding.
Only registered students can access the accreditation program online.*

The icon  means “Go There” for further information and cross-references. Example: [SG102.9.9]

The icon  points to an important link.

The icon  points to a suggested practice.

Tools you will need →
(the best way to learn Sacred Geometry is to redo for yourself some of the drawings).

A compass (a good one that can hold a radius - thumbscrew or circle-master)
A ruler (inches and centimeters). A pencil + eraser. A calculator.
Grid paper pad (10 divisions to the inch). Tracing paper.
Color pencils and/or markers. Optional: Color papers + scissors.
Templates with modular shapes (polygons, circles). Regular protractor. Triangle.

- Start a Sacred Geometry Journal or Notebook. Record in it personal notes, observations and practices. Paste pictures you find attractive, quotes, symbols you like or find mysterious. Write down questions coming up. Record events, thoughts or feelings that strike you as meaningful (“*synchronicities*”). Make note of: dreamtime associations & scribbles; directions of enquiry and further research; potential applications of Sacred Geometry to your daily life, business ventures, special numbers/symbols/shapes popping up...
- If you are studying for accreditation, spend time to do the homework etc... Get ready for quizzes...
- Allow time for meditation or contemplation, bringing peace to your heart & mind and focusing on “*nothing*”, or just a simple dot or circle on your altar or your mind’s eye. Explore simple vowel sounds and sacred mantra chants. Explore yoga, meaningful movements and dances... Celebrate the BEAUTY of Life!
- Share enquiries & discoveries: phi@schoolofsacredgeometry.org. A Newsletter will be available.

StarWheel #50 "Dove Buddha"



SG101.1 Chapter 1. Sacred Geometry: A Mystical Path

SG101.1.1 A few words from Aya, the Spirit Pilgrim

When, in someone's life, the desire to study Sacred Geometry arises, it is a spirit signal that time has come for a new vision quest, a deeper inner journey. Time has come for becoming a pilgrim on the next higher turns of the Spiral of Life.

Sacred Geometry IS a spiritual path and offers the corresponding challenges & rewards.



SG101.1.2.1 Sacred Geometry: Art of contemplation (1)



Portrait of Luca Pacioli by Jacopo de Barbari (1440-1515)

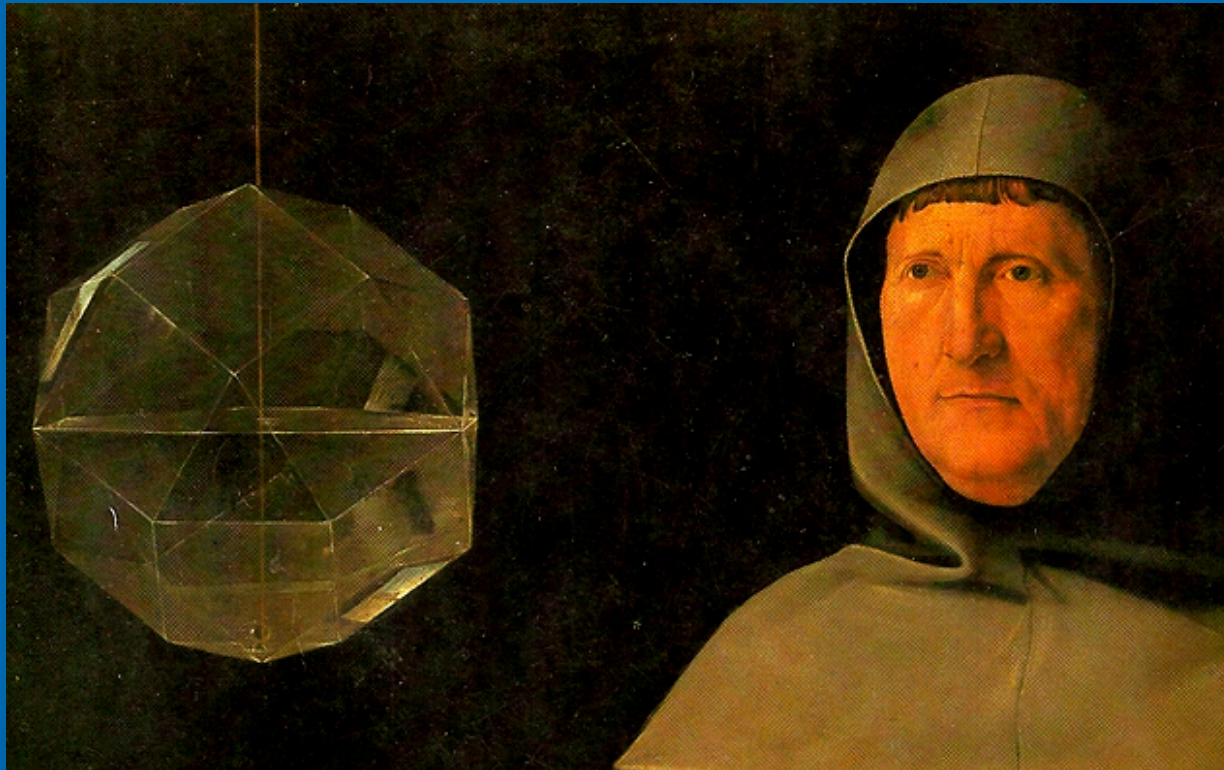
This yogic teaching was imparted by Luca Pacioli to many great artists of the Renaissance, such as Leonardo, Brunelleschi, Giorgi and Albrecht Dürer.

Note: Contrast the gaze of contemplation in Luca's eyes with the mundane look on the disciple's face.

In 1509, Luca Pacioli (1445 - 1515) published his treatise on the Golden Ratio: "*De Divina Proportione*", which was illustrated by his famous friend, Leonardo da Vinci.

Fra (from Latin "*frater*" = Brother) Luca Pacioli is captured in this painting while practicing the ancient Yoga of Sacred Geometry, the discipline called *corpo trasparente*. This art of inner vision consists of gazing with full attention to sacred geometric volumes constructed of transparent or crystalline material and oftentimes nested within one another. This inner gaze creates a reciprocal flow of perception: outward-looking (or projecting) and inward-looking (or absorbing) - a breathing of the eyes & of the inner sight.

SG101.1.2.2 Sacred Geometry: Art of contemplation (2)



Fra Luca Pacioli gazes at a *rhombicuboctahedron* (26 faces: 18 squares + 8 triangles). This is one of the 13 Archimedean Solids.

[◆SG107]

Suspended by a thread and half-filled with water, this transparent body symbolizes the purity & timelessness of Sacred Geometry.

Leonardo's drawing →



Note that the four elements are combined in this practice: water below, air above, the earth of the physical frame and the fire of the steady gaze. One could say that the 5th element (aetheric light) is symbolized by the thread descending from heaven.

The student's yogic contemplation of transparent geometric volumes is a spiritual yoga designed to assist in piercing the veil of appearances and seeing metaphysical realities.



SG101.1.2.2P Suggested Practice

In the ancient tradition of gazing at geometric structures, find or build some sacred geometric shape that particularly attracts you (◆SG107 offers fold-out blueprints to build the 5 Platonic solids out of cardboard), place it on your altar or suspend it from the ceiling and devote time to just GAZE at it, from time to time, without any reason, idea or desire to analyze or figure out...

This chosen geometry shape will somehow enter your consciousness, be part of your inner landscape and eventually become a friendly presence... Things will happen...



Another suggestion for you,
at the onset of this course, is to write down
what YOU expect from this online Sacred Geometry program.

How much do you want to commit
to take full advantage of the opportunities offered by this program?

You may want to write all of that down in your Sacred Geometry Notebook
and review these goals during and after the Introductory Level course.

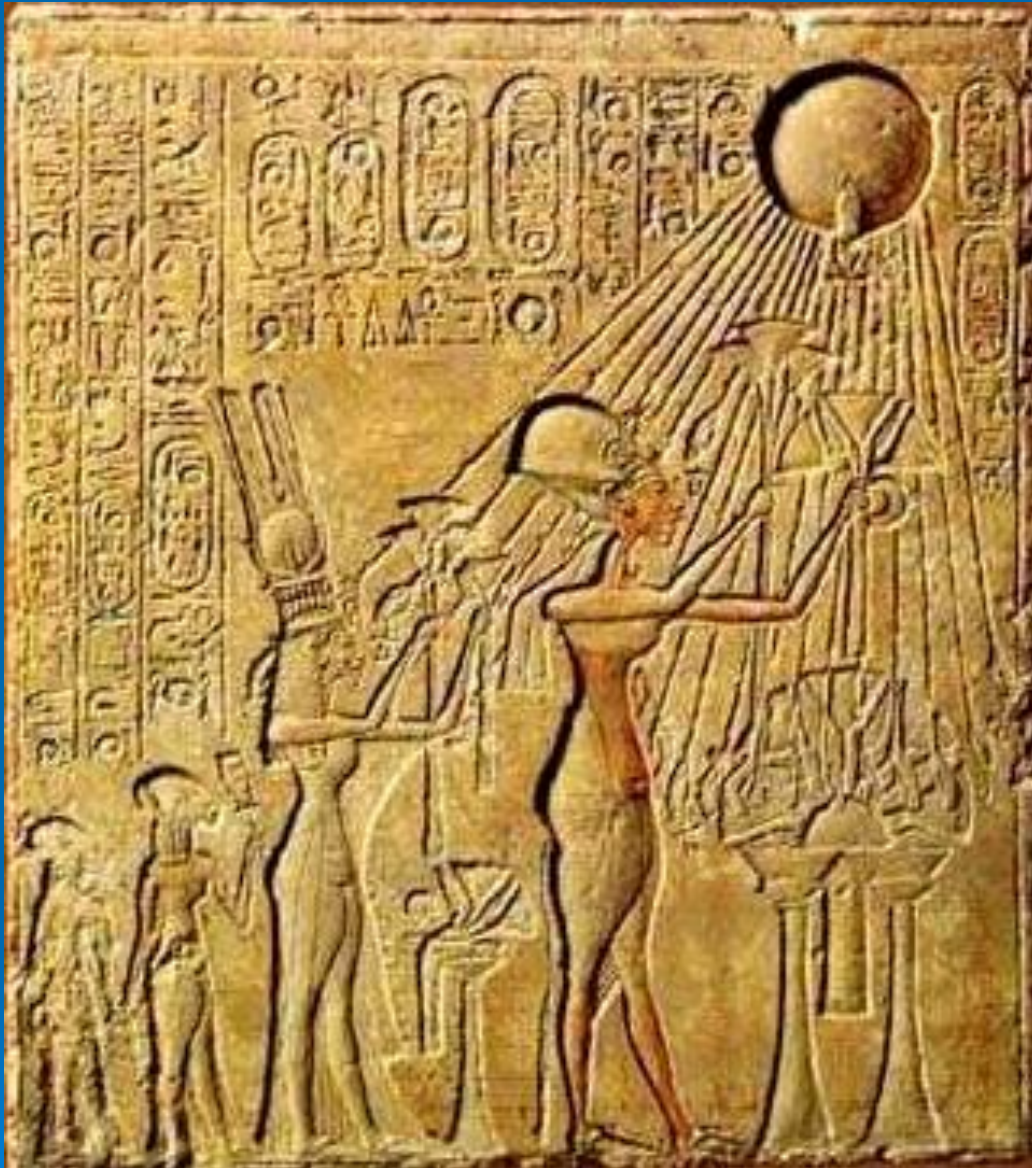
SG101.1.2.3 Art of Contemplation (3) The Vortex in the Eye



In the oriental tradition, the equivalent of contemplating Sacred Geometry volumes is Mandala Meditation: the students entering an ashram are given a personal visual aid (*yantra* or *mandala*) to meditate upon, along with a personal *mantra* (sacred sound).

The assignment is to daily gaze at that mandala design (perhaps for years) until the inner eye perception evolves and allows them to ENTER THE MANDALA and navigate it so that they can emerge out of it into another level of awareness/dimension.

When the perception shifts,
the flat geometries & colors become full higher-dimensional realities
with telepathic sounds, colors and layered meanings.
The Cosmic Field of Energy/Information is entered.



Pharaoh Akhenaton & family
celebrating the Aton, the Spirit-Sun-Source.

SG101.1.3 Source Wisdom

Throughout the study & practice of Sacred Geometry and Harmonics, we are retracing the many rays & waves of manifestation back to their unique Source.

The latest research & data in many fields point to the startling fact that we may globally be re-discovering and re-creating a lost unified knowledge that used to be the crown jewel of human consciousness.

In this online course, we will encounter many traditions and sacred cultures who have kept alive fragments of this knowledge, many new players & researchers who are uncovering, in nature, science and technology, its astounding examples and applications... as well as many beings with eyes of light and hearts of love who found this wisdom within their own self...

... all unique and beautiful faces
of the Source of All.

With gracious cosmic thanks!

SG101.1.4 Why Sacred Geometry NOW?

In these times of global uplifting of the human consciousness, the study, understanding & applications of Sacred Geometry offer a longed for, dearly needed and substantial GIFT:

To open again humanity's consciousness to the perception of a living, interconnected, intelligent and essentially benevolent Universe.

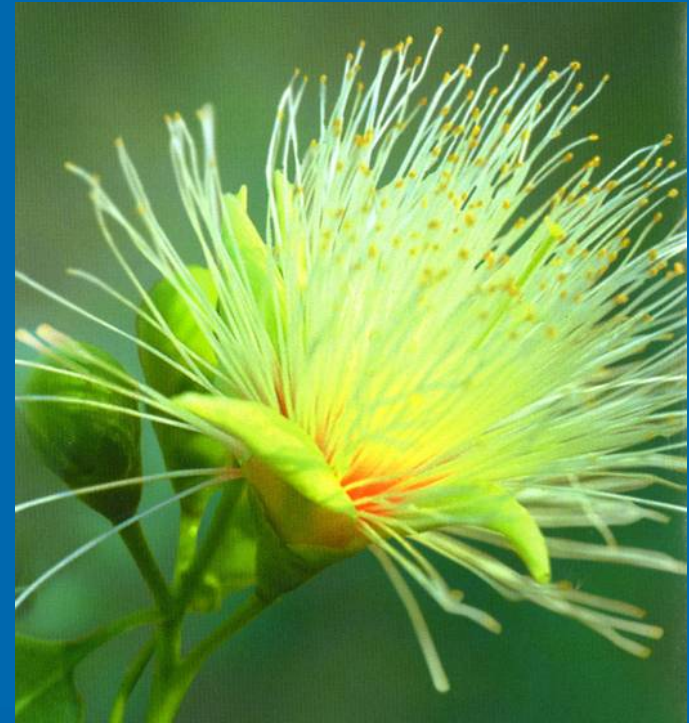


- Sacred Geometry is a Yoga of Perception aiming at helping us to break away from confused fragmentation and to re-learn how to weave the long-lost universal fabric of wholeness & love.
- Sacred Geometry is the collective re-appearance of our deeper innate wisdom: seeing again the all-encompassing Unity of Life and Consciousness.
- Sacred Geometry is an open invitation to dance anew the Cosmic Earth Mandala and walk Mother Earth as a bountiful Medicine Wheel Garden.

SG101.1.5.1 A few words from Aya, the Artist (1)

The artist in me is sharing here the Sacred Geometry that I became aware of, through my art practice of creating the [StarWheel Neo-Mandalas](#) and my quests amidst sacred gardens & sacred gardeners... Within these online class modules, I share some of the treasures & spirit seeds I have found and collected along the way. I have put them in my various “*medicine bags*” and now, after sorting them out, I am happy to offer them to you.

My wish is that you too might find here some treasures - whether you just want to admire & cherish a particular jewel or you enjoy stringing full necklaces together - or find here some seeds that you might decide to plant, water and tend until they, or you, bear fruit...



These online modules are the petals of a flower, a *mandala* with light color touches coming from many different angles and eventually forming a holographic impression...

The Sacred Geometry we understand now is a bare beginning:
it will lead to many more and glorious discoveries & realizations
until there will no longer be a need to separate “sacred” from “non-sacred”
and geometry or science from life & consciousness...

SG101.1.5.2 A few words from Aya, the Artist (2)

I find great contemplative joy when exposed to the **aesthetic beauty** of Sacred Geometry forms. They evoke a deep resonance within my body-mind-soul-spirit. I can spend hours communing with the simple design of a Golden Spiral or Ellipse... and enjoying the rivers of light flowing through them and me. These shapes are vibrational food: they feed me frequencies of perfection and joy. They bring me inner peace and rest.

I feel an immense gratitude for the **dynamics of nested interconnection and transformation** inherent in Sacred Geometry structures. These shapes form a live chain of transmission, thru the Golden Ratio. They radiate a universal magic of creation. These forms & shapes are connectors and conductors, taking us along some Golden Brick Road or Thread of cosmic origins. They link us again with the larger design of Life: codes of creation, DNA and languages of light. They carry a sparkling power that, mysteriously, calls us home, way beyond our rational mind's ability to explain causation or finality.

I am filled with music & dance when I experience the profound **harmonic effects** of Sacred Geometry shapes & proportions. I can see it within and around myself, in these current times and in history: applications of Sacred Geometry principles have endless beneficial & celebrative effects on people, societies, civilizations and galaxies... When cultures choose forms of art, architecture, ceremonies, music, laws & behaviors that are in tuned resonance with the universal nature of spirit... then the Earth's garden flowers again.

Collectively, we are now moving towards such a global culture, radiant with cosmic harmonics.

... and the sacred artist within me rejoices...

SG101.1.6.1 The Big Secret (1) Mystic Notes (1)

**The Big Secret is out:
we don't really have to apply ourselves to study Sacred Geometry
or anything 'sacred' or 'spiritual':**

**IT'S ALL HERE
IT IS BUILT-IN!**

It's built into our very bones, in our DNA, in the stars & the flowers, in our gardens, in all of true nature, in the sparkling eye & face & heart of all people... The more ultimate a knowledge, the more inward will it be found... Yes, this inner knowledge of Infinite Beauty has come, in the global cycling of human consciousness, to be buried under multiple layers of discordant & confusing programs of thought, emotions and action. But admit it: no matter what, Spirit Beauty pops up everywhere again & again and keeps smiling at us from within. Let us be deeply graced by our own Smile!

**This Online Course is but a friendly companion reminding us:
Look within! There is the Book of Life and the true Uni-Versity
Follow the Golden Spiral - You are the only School there is!
You are the most Sacred Geometry you will ever meet!**

Consciousness IS a fabulous experience, way beyond any magic or technology we can conjure up. It is the primordial music creating instant resonance with any aspect of this big event-play called the Universe. Sacred Geometry is the decision of remembering the cosmic music and the principles of harmonic resonance that are keeping, at this very moment, all and every part of us, the universal being, ALIVE and SPARKLING!

SG101.1.6.2 The Big Secret (2) Mystic Notes (2)

Sacred Geometers rely apparently on numbers & measures but they really use these tools in the larger context of being active co-creators within a living wholistic universe. The approach of Sacred Geometry include a qualitative, reverential and oftentimes mystical re-discovery of the universe as a mirror of one's own Spirit-Consciousness. Sacred Geometry stems from a world-view that is more encompassing than the approach of modern science. Whereas the current scientific paradigm apprehends the functioning of the parts through quantitative methods only, Sacred Geometry traditions focus on the symbolic, symbiotic and harmonic resonant effects of the whole multi-dimensional cosmos, apprehended both by mathematics AND metaphysics.

That Cosmos is Who We Are. Not an external object to study, control and exploit but an infinitely sensitive, intelligent & loving mirror. Do we know where “our” consciousness stops and where “universal” consciousness starts? Even a temporary body is too flimsy a veil to cover up the Big Secret.

Looking at numbers, the Sacred Geometer sees them as Principles of creation - archetypal prime movers underlying all cosmological moves. He/She dances with these primordial numbers perceived as harmonizing forces/entities who weave a spirit-filled and consciousness-resonant universe. Looking at shapes and proportions, the Sacred Geometer enacts them in his/her very life, thus co-creating a multi-dimensional cosmic-size hologram. Sacred Geometry IS a mystical path.

There is really nothing to study OUT there...
As conscious beings, we are Home!

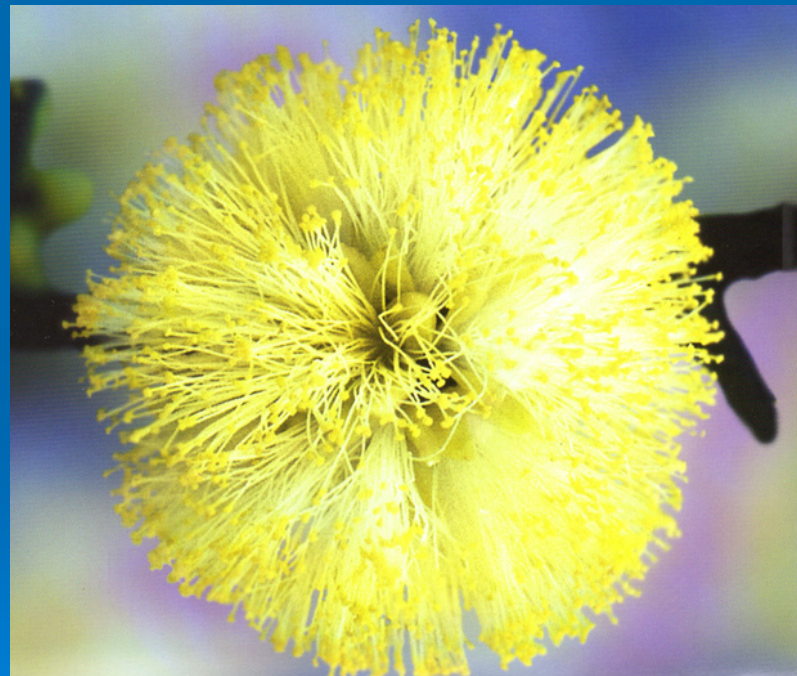
What we can do though, while celebrating this human experience, is keep ourselves balanced, clear and keen enough so we can joyfully jump into the on-going dance of universal harmony: the tiny dances below, the huge dances above and the unique human dances in between...

SG101.1.6.2 The Big Secret (3)

Ramana Maharshi (1879-1950),
the great Indian sage,
kept asking a simple question:

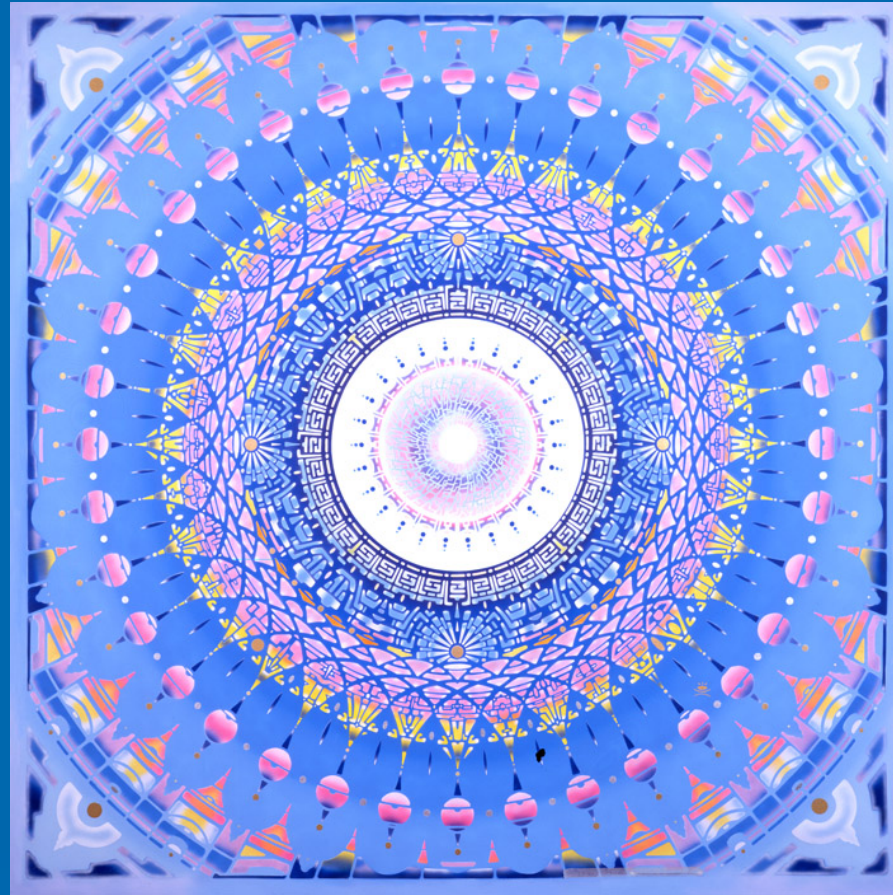


WHO ARE YOU (really)?



This is the question
Sacred Geometry mirrors back to you

**SG101.1.7.1 A Golden
Cosmos of Light (1)**



SW#24 "Pagoda Heaven"
www.starwheels.com

2500 years ago, the Buddha described the Cosmos as Radiant Light:

**A Web of Golden Threads Joining Myriad Many-Faceted Jewels,
Each Reflecting the Multihued Light of the Others.**

This perception is the level of consciousness & knowledge we are now re-entering,
as re-discovered by leading-edge quantum fractal science
and new-frontier explorations in consciousness expansion.

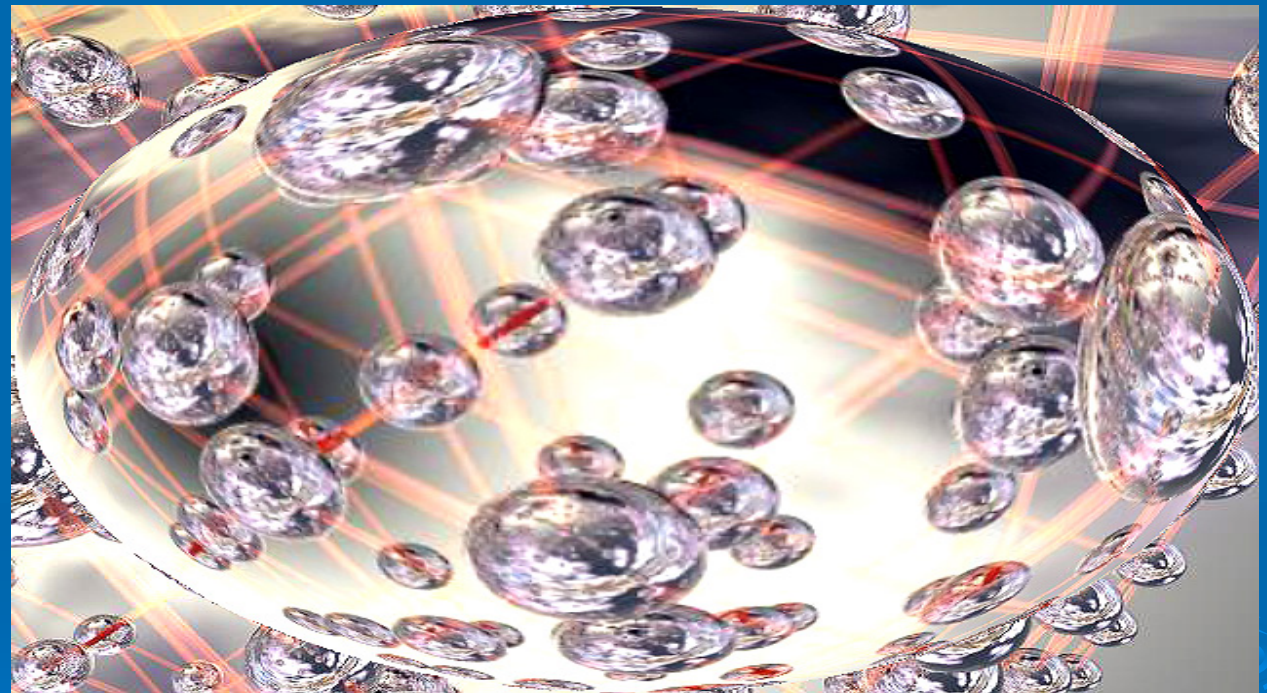
SG101.1.7.2 A Golden Cosmos of Light (2) Indra's Net

Indra's Net (also called *Indra's Jewels*) is an ancient metaphor for the structure of the universe. It has been used by the *Mahayana School of Buddhism* (3rd century) and the *Chinese Hua Yan School* (6th century) to illustrate the concepts of interpenetration, dependent origination and emptiness.

“In the heavenly abode of the great god Indra, there is a wonderful net. This net has a multifaceted pearl-jewel at each of its eyes (nodes).”

Each pearl-jewel is reflected in all the other jewels and, in turn, in each reflected jewel, there is the light radiance of all the existing and non-existing jewels.”

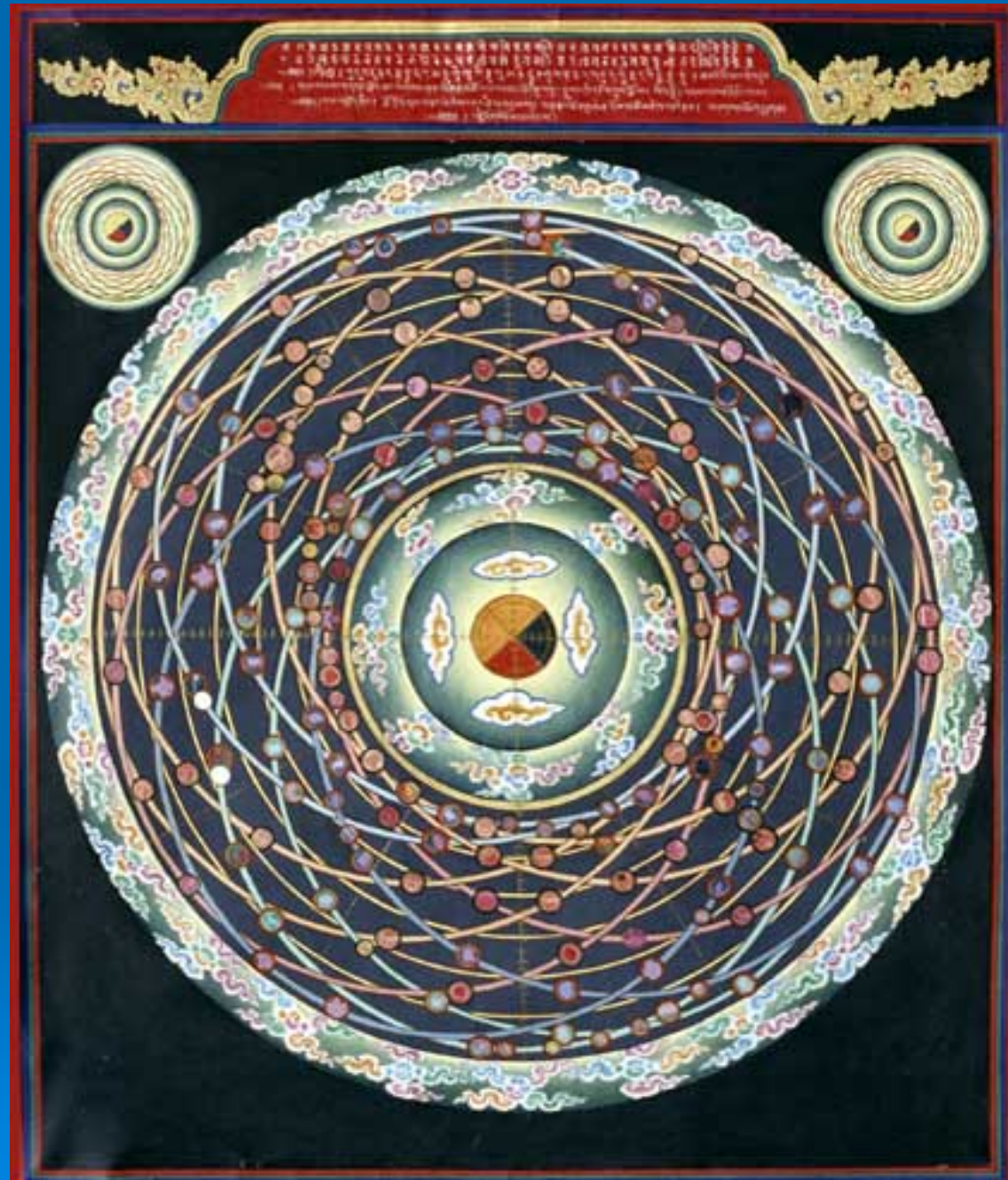
*After the Avatamsaka Sutra
(The Flower Garland Sutra)*



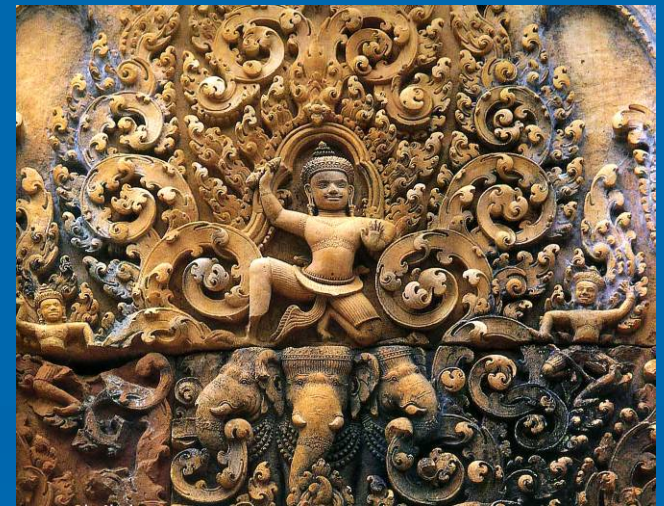
*“In every particle of dust,
there are innumerable
Buddhas”*

The metaphor of Indra's Net is perfectly illustrating the new understanding of the holographic nature of the universe, the continuity of the Web of Life, the quantum non-local inter-connectedness, the mirror-like nature of spirit, and the wisdom teachings of non-duality and not-self.

This is the Cosmos of Sacred Geometry.



SG101.1.7.3 A Golden Cosmos of Light (3) Indra's Net



In Vedic times, Indra was the supreme ruler of the gods.

← A Tibetan tangka rendition of Indra's Net (the interconnectedness of the Cosmos)

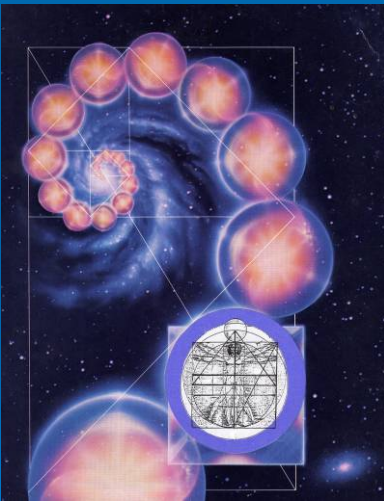
SG101.2 Chapter 2. Sacred Geometry: Key to A New Paradigm



SG101.2.1.1 The new Global Paradigm of Universal Wholeness (1)



Ask the average western culture person what are their feelings about the universe and the “cosmos”... The answer is likely to reflect the current mechanistic and fear-based mind set: the cosmos is a frightfully vast and violent place, essentially chaotic and quite hostile to humans. The media-reinforced feeling is that the universe is filled with *black* holes, *dark* matter, sudden and gigantic explosions... in brief some sort of runaway battlefield... This reductive view of the universe extends to the way we perceive life, consciousness and spirit: human life is but a singular, timed, brief event leading to oblivion within a mindless, spiritless cosmos. This is the inheritance we offer our children...



In counterpoint, all sacred spirited cultures hold the universe to be an orderly and beautiful garden tended by a Supreme Gardener. The heavens were understood as spiritual realms preceding and continuing life on Earth. Harmonic chords were played by celestial bodies choreographing graceful time-space dances. The “Big Bang” was heard as the Primordial Sound of the universe. Each star was a large benevolent being smiling down to each flower. And the human family was holding hands with all of creation...

In the Greek language, “COSMOS” means order and beauty and refers to a universe perceived as a “divine ornament”.

Sacred Geometry is a key to regain our original wholeness & oneness and our birthright to live happy, spirited, creative and interconnected lives within a conscious universe.



SG101.2.1.1P Suggested Practice

Gently ask yourself:

What is my deep-seated, childhood-anchored conception of the universe?

A chaos or a Cosmos?

Am I afraid of the universe or am I letting the universe embrace me with love?

**Draw a *Mandala* (any circular design) to express your conception of the universe,
with you at the hub.**

Before starting to draw, affirm: “*This Mandala will express how I feel about the universe!*”

Keep your Universe Mandala in your Notebook, for later reference at the end of the course (<Smile>).

What are your own present time feelings & beliefs re: the universe?

- **Can you trace them back to some personal experience (outer or inner) that guided you towards one particular set of beliefs?**
- **Do you believe that the universe is meaningless or that there is some grand plan of creation?**
- **Can you validate either way?**

SG101.2.1.2 Universal Wholeness (2) Chaos & Cosmos

Chaos - Greek kaos - from the verb kaino = to be wide open

Cosmos - Greek kosmos = order, universe, ornament

The Greek creation stories describe Chaos as the womb out of which everything emerged - a primordial space in existence before the formation of the universe.

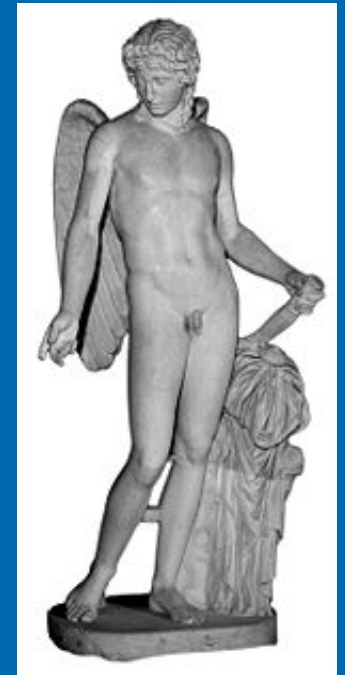
[Note that 'chaos' does not originally mean 'disorder' but undifferentiated potentiality.]

In some mythological retellings (Aristophanes, *The Birds*), Chaos, a universal Mother Goddess, eventually mates with graceful & winged Eros, the power of cosmic love. Together they bring forth the hierarchy of the gods & goddesses and all of creation.

Thus, on an archetypal level, Chaos unified with Eros created Cosmos. One could also say that the Principle of Love-Desire (Eros) co-created all parts of creation (Cosmos) through a procreative "golden" involvement with the Principle of the Void (Chaos).

Just like in the Golden Ratio, we have here a 3-term relationship - a transmission of intelligence, harmony and beauty between 3 parts: the Large Whole (Chaos), the Middle Whole (Eros) and the Small Whole (Cosmos).

Cosmogony IS Theogony and both are Love in Action.



Eros - personified representation of cosmogonic LOVE

In contemporary parlance, Chaos is the all-pervasive *Quantum Vacuum* (recently renamed *Quantum Plenum*) seething with immense energy - the ground state of the universal unified field. This Plenum is described by physicists as a 'foam' and a 'super-fluid' (yes, good old *Akasha* is back), thus reminding us of the Vedic account of the churning (love-making) of the Milky Ocean. The Quantum Plenum (Chaos) is now understood as an underlying field of pure harmonic information enabling the patterns of love-order (Eros) to co-evolve physical reality (Cosmos) towards ever higher intelligence.

SG101.2.1.3 Universal Wholeness (3) Cosmic Order in Egypt

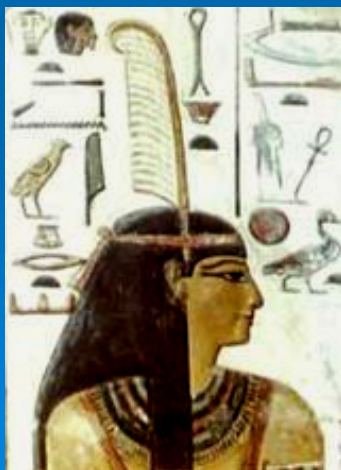
MAAT: The Goddess of Harmony

The Greek conception of Chaos and Cosmos is derived from Egypt.

For millennia, the ancient Egyptians perceived the universe as a creation dance between a primordial, undifferentiated, uncreated, groundstate ('Chaos') they called Nu/Nun and the principle of *Fundamental Cosmic Order* personified by the Mother Netert Maat. The *Neteru* (plural form of *Neter*, masculine, and *Netert*, feminine) were the cosmic principles manifested as gods & goddesses.

MAAT, the celestial Empress of Cosmic Order, embodies and manifests Harmony and Balance between the various cosmic forces. She is prior to all other principles and gives them existence and function. Maat is the '*Mistress of the Neteru*'. Without Maat the universe would revert to primal chaos.

Maat is also directly connected with music and the playing of the harp. The Egyptians knew of the musical overtones & ratios [◆SG203] and used them to illustrate the proportional fractal unfolding of the cosmos as well as the harmonious benefits created by the Sacred Geometry of forms.



← As ideographs, this glyph of Maat reads: "*The truth & order of the celestial sphere hatching the egg of creation*" (Aya's rendition)

← The feather, the attribute of Maat, is symbolic of lightness & flying, softness & light, and truth.



↑ Maat fluffing her wings of Truth



↑ This shows (in blue) the "glyph of Maat": the sign for 1/2. Note the asymmetric halving, like in the Golden Ratio.

SG101.2.2.1 What Is There For You?

What can YOU expect from studying Sacred Geometry?



YOU will progressively perceive the harmonies and synchronicities hidden within the appearance of daily life.

- You will learn to see the magnificent order orchestrating the universe, from personal to global. And you will come to co-create it.
- You will re-learn how to understand the Golden Proportion as the pulse & power of the cosmos.
- You will realize that the Web of Life is based on Oneness and Wholeness, as you start to recognize the harmonic nesting of all levels of life, as fractal mandalas. From being alone, you will see yourself being “all one”.

Above all, you will find new meaning to many fragmented pieces of knowledge, experience and insight dancing within you.

It will “make sense” again and benefit you in terms of increasing your human energy or life force and the spirit joy of finding a home again, to re-source and rest.

SG101.2.2.2 Aya's Goals for You

1. To expose you to many different aspects of Sacred Geometry so that:
 - you can interconnect areas of knowledge that were previously unrelated in your awareness.
 - at least one aspect gets you excited about a new line of research, hobby or business...
 - you realize the scope of Sacred Geometry as a central hub of universal knowledge.
2. To build enough of a foundation of Sacred Geometry within your Emotional Intelligence so that:
 - you can internalize a sense of Harmony and Harmonic Proportion and thus re-awaken your innate sense of Sacred Geometry, before using the mind and its tape-measures.
 - you can open up to a new level of perceiving reality: seeing Beauty & Harmony, recognizing hidden patterns & cycles of balance, rediscover and prioritize harmonious relationships that expand the joy of life.
3. To suggest that Sacred Geometry is a philosophical, spiritual, mystical path that makes powerful statements about the cosmic order, the benevolence of life, the oneness of the web of life and the laws of Harmony.
4. To help you create a personal Sacred Geometry alphabet kit, your own vibrational language set of colors, shapes, symbols, sounds, gestures... that have meaning for YOU, so that:
 - you can have more conscious communications in daily life and dreamtime life.
 - you can open up to empathic / telepathic / heart conversations, regardless of distance.
 - you notice more of the rich and meaningful synchronicities within the web of life.
5. To help you and all of us co-create a more positive global future by embodying a Harmonic vision of Life on Earth.

SG101.2.3 The Evidence for Sacred Geometry

Sacred Geometry expresses a conscious recognition of the *Harmonic* nature of the universe.
It is, openly, a philosophical statement about the Beauty, Unity, Order
and the ultimate Benevolence of Life & Consciousness.

The '*evidence*' for Sacred Geometry comes from many different (if not estranged) disciplines or approaches...
But the amount of "*pointers*" is massive indeed.

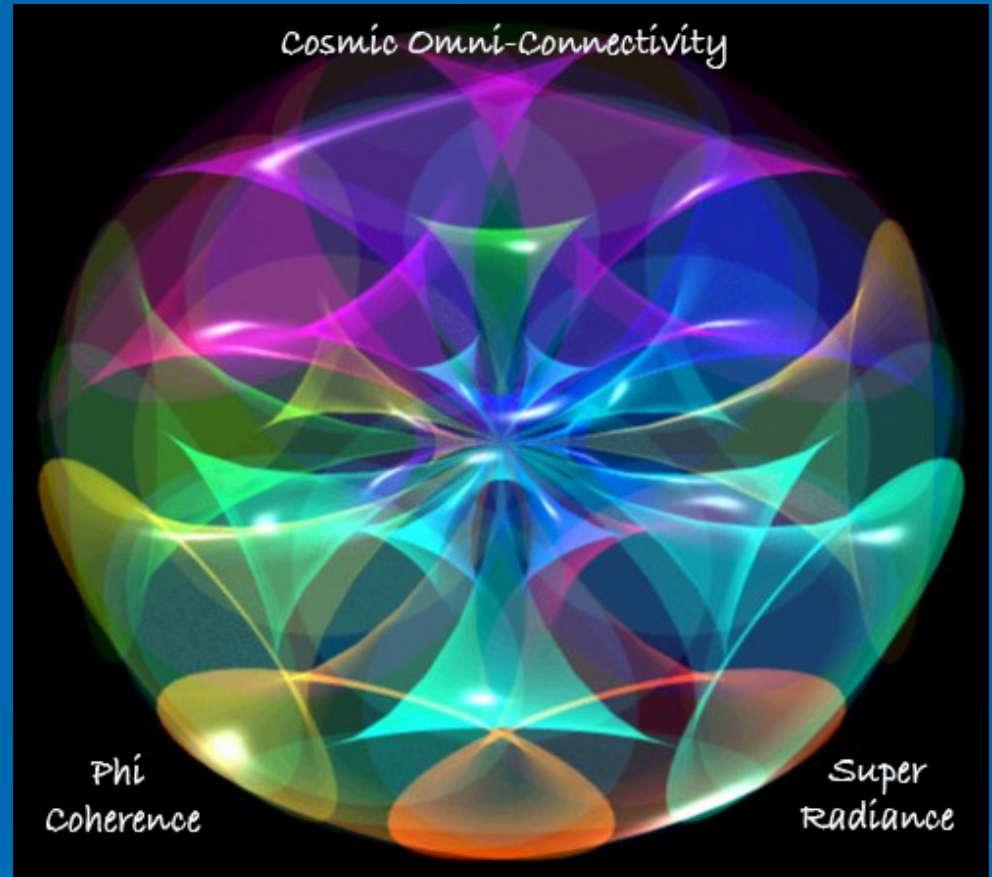
Here are some of the multi-colored strands weaving in space-time the fabric of Sacred Geometry:

- The inner knowledge of consciousness, spiritual realities, subtle & psychic realms & energy systems... Meditation, prayer, ceremonials, contemplation, revelation...
- The ancient and pervasive traditions and sacred writings/teachings about a universal canon of numbers & proportions for cosmic & human genesis.
- The existence of many sacred sites embodying sacred geometries & measures.
- The historic development of Sacred Geometry as a full-fledged discipline, endeavor and vision of the world.
- The simple but keen observation of Nature's bountiful creativity in patterns, cycles & forms, on all levels (matter, biology, mind and subtle realms) and at all scales (microcosmic to human to macrocosmic).
- The rational & scientific study of mathematical structures and laws in geometry, number theory, quantum physics, cosmology, crystallography, botany etc... This led to the re-discovery of the unexpected & ubiquitous nature of the Golden Ratio and Fibonacci Series, from phyllotaxis to the shape of the galaxies and from the structure of the atomic nucleus to quasi-crystals.
- Research into the nature of consciousness and perception: brain, mind-body, vibrational & frequency healing, chakra system energetics, holography etc...
- The cross-cultural study of human history: art, artifacts, architecture, mythologies... showing correlations, resonant patterns and a potential new synthesis of "code" and "revealed" knowledge.
- The personal practice of music, dance, mandalas and other creative arts... as embodiment of Beauty.

SG101.2.4.1 Current Scientific Faces of Sacred Geometry (1)

Here are some examples of current scientific terminology directly involving Sacred Geometry:

Design Science
Scale-Invariance Physics
Implosion Physics
Quantum Geometry
Bio Geometry
Phi Coherence
Self-Similarity
Hyper Symmetry
Quasi-Crystals
Tetrahedral Physics
Resonance Harmonics
Fractals & Fractal Compression
Golden Recursiveness
Super Radiance
Omni Connectivity



At the cutting-edge of science, new concepts are emerging that challenge e-v-e-r-y-t-h-I-n-g we were led to believe:

WHO we are & ***HOW*** the universe functions

SG101.2.4.2 Current Scientific Faces of Sacred Geometry (2)

In the course of this online program, we will cover scientific breakthroughs involving the Golden Ratio and its genesis through the Fibonacci Series: SG205 (Nature), SG203 (Science), SG204 (Biology), and SG206 (Celestial Harmonics).

Below are some highlights of the new scientific discoveries validating Sacred Geometry.

- DNA Super-Resonance to Phi - Jean-Claude Perez
- Penta-Symmetry of Quasi-Crystals - Dan Schachtman
- PHI-based Growth Angle in Phyllotaxy - Current botany
- Platonic Solids Preference in Bio-chemistry and Atomic Physics
- “Penrose” Tiling - Roger Penrose
- Icosa-dodeca Grid Tectonics of Planetary Bodies - Becker / Hagens
- Phi-Musical Harmonics in Astronomy and Cosmology - Harris / Martineau / Heath
- Golden Ratio Template of the Human Body - DNA and Heart/Brain Harmonics
- Implosion Physics: fractal Phi compression of charge as Gravity - Dan Winter

SG101.2.5 Sacred Geometry on the Web

(You are definitely -and increasingly- not alone)

Entering keywords related to Sacred Geometry in Google yields interesting results. Try the following keywords (and don't forget to go to the "images" and "videos"). Also, check the YouTube resources...

Phi / Phi Section / Phi Ratio / Phi Fractality

Golden Number / Golden Ratio / Golden Cut / Golden Quantum Field

Golden Rectangle / Golden Spiral / Golden Triangle

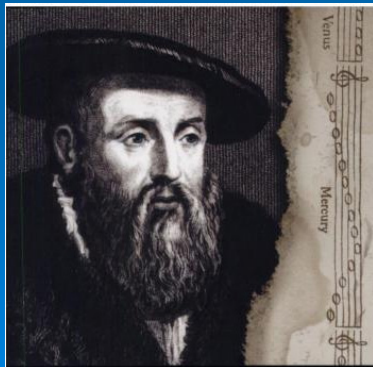
Pentagram / Pentagon / Platonic Solids / Dodecahedron / Polyhedra

Fibonacci / Fibonacci Numbers / Fibonacci & Lucas Series / Phyllotaxis

Design Science / Penta-symmetry / Harmonics / Self-similarity

Sacred Geometry / Pythagoras / Labyrinth / Mandala / Global Scaling

Flower of Life / Fractals / Mandelbrot Set / Quasicrystals / Penrose Tiling



*“Geometry has two great treasures:
one is the Theorem of Pythagoras;
the other, the division of a line into extreme & mean ratio.
The first we may compare to a measure of gold;
the second we may name a precious jewel”.*

Johannes Kepler (1571-1630)

SG101.2.6.1 Clearing misconceptions about Sacred Geometry (1)

◇ Sacred Geometry (SG) does not involve heavy mathematics!

SG is very simple indeed. So simple, obvious and close to home that we don't even see it... Really, it's just a matter of re-learning to perceive the world in a natural, holistic way... and find your meaningful place in it...

SG does not require any serious college-level or even high school know-how of math or geometry. Kindly bypass all residual anxiety from your school days about hating math, being bored by it or never getting decent math grades... In fact, being allergic to 'school math' is a sign that your creative spirit / right brain had a hard time fitting into a collection of often disparate & increasingly specialized techniques that were perceived as disconnected from the world or from life.

Mathematics, originally, was a synthetic science, (Greek *mathema* = science, *manthanein* = to learn), and, in its noblest sense and for its most eminent representatives, a beautiful, elegant and soul-nurturing study. However, nowadays, in most school curricula, mathematics stops short of even imparting interest in the 'larger picture' or the glimpse of a universal knowledge.

Traditional Sacred Geometry, on the opposite, will start right there: with the whole picture, the inherent holographic nature and harmonic resonance of the universe. And so it came to be that, in the course of history, SG has picked up the wholistic aspect of mathematics that contemporary science has lost.

In studying SG, all you need to know is:

- How to count and do basic arithmetic.
- How to recognize, measure and compare basic shapes.
- How to use a pair of compasses + a ruler and how to draw basic figures (on paper, in your mind, on the beach, in the air or in your dance of life)

SG101.2.6.2 Clearing misconceptions about Sacred Geometry (2)

◇ Sacred Geometry (SG) is not an esoteric knowledge only transmitted by mystery schools!

SG is closer to you than you might think or have been taught: it is literally inherent in the very fabric of the universe, embedded all over the kingdoms (and queendoms) of nature - from macro to micro-cosm -, and built into the human body, DNA, and mind.

While it is true, historically, that certain aspects of SG have been appropriated by groups vying for power & control, true SG is universal knowledge available to anyone with a clear sight & heart.

◇ Sacred Geometry (SG) is not a religion, faith or ritual belief!

Religion, holiness and sacredness have been distorted in the western cultures to the point of instilling into people a fabricated sense of separation from the Divine, only bridgeable if one goes through (and tip) the appropriate priesthoods or dogma-keepers.

In fact, originally and etymologically, *sacredness*, *religion* and *holiness* simply mean to enter into instant communion, to directly re-create Oneness with the Divine.

Religion (Latin *re-ligare* = to reconnect)

Sacred (OF and ME *sacren* = to consecrate)

Holy (OE *halig* = to make whole)

SG is not something separate from life, set in an alien realm and only accessible through special rituals & belief systems. It is the very stuff of life but explored and understood in its qualities of interconnectivity, holographic oneness and power of unification. Call it Quantum Geometry... SG studies the common denominators to all facets of life and finds them in certain recurring numbers and frequencies, key proportions displaying optimum harmony and dynamic shapes endowed with genesis power. Call it Cosmic Harmonics...



SG101.2.6.2P Suggested Practice

After reviewing the pages about Misconceptions re: Sacred Geometry,
is there any old fear or belief you want to let go of?

- Some childhood or teenage school emotion about math class?
 - Some difficulty to relate to a math or science teacher?
- Some limiting idea or concept preventing you to embrace Sacred Geometry in its fullness and wholeness?



Can you remember the happy moments, in your past,
when you experienced wonder & awe communing with nature?
a bird, a flower, a butterfly, the river...
and your sudden sense of fullness and harmony then.

This is Sacred Geometry.

SG101.2.7 Knowledge & Mystery

The new global paradigm is more than just another series of fresh understandings, new updated & expanded data or experiences. It is more than another system of knowledge.

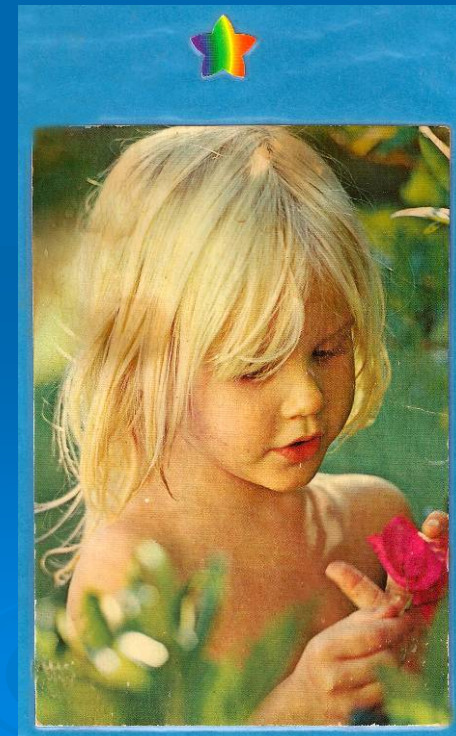
It is altogether the letting go of all knowledge as any ultimate.

The wise souls use the efficiency and power of knowledge with intelligence & gratitude and they continue to contribute to its evolutionary increase. But they rise above knowledge to ultimately soar into infinity.

In the same way, this online Sacred Geometry course is less intended to increase your knowledge than it is intended to expand your sense of Mystery, Awe and Wonder for and as this magnificent universe.

*“The most beautiful thing we can experience
is the mysterious.
It is the true source
of all art and science.”*

Albert Einstein.



SG101.2.8 Welcome!

**IF you sing
Hum
And play music**

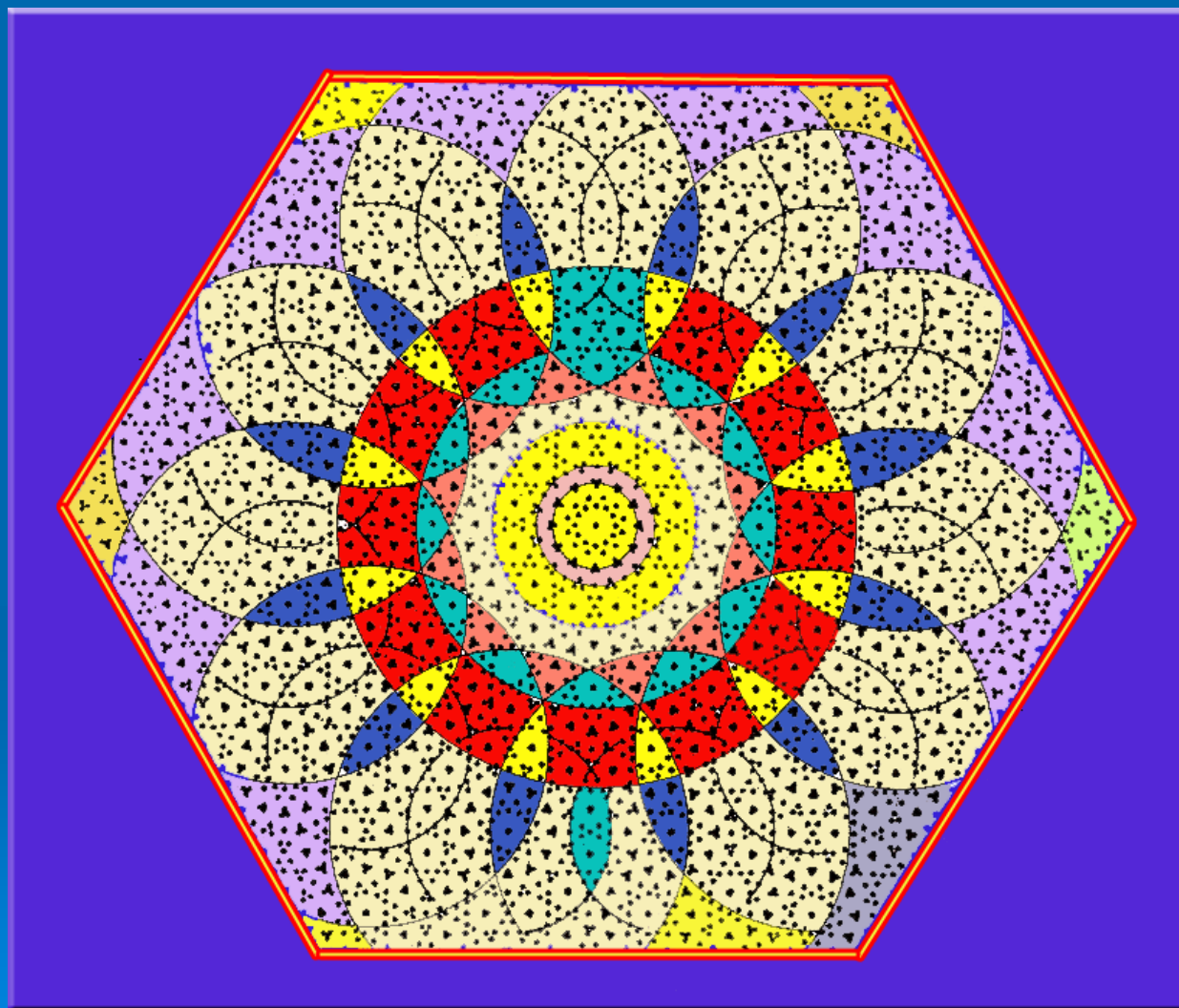
**If you like to collect shells
And flowers
And smiles**

**IF you dance with inner joy
The beauty of all life...**

**YOU already encountered Sacred Geometry
YOU have found your way to Sacred Geometry**

WELCOME!

SG101.3 Chapter 3. Sacred Geometry: A Perennial Wisdom



SG101.3.1.1 Sacred Geometry: Definitions (1)

Geometry (Greek *ge* = Earth + *metria* = measurement)

“The branch of mathematics that deals with points, lines, planes, and solids, and examines their properties, measurement and mutual relations in space”.

Sacred (Latin *sacer* = holy)

“Regarded with the same respect and reverence accorded to holy things”.



Egyptian rope stretchers in action. Tomb of Menna at Luxor. C. 1200 BCE

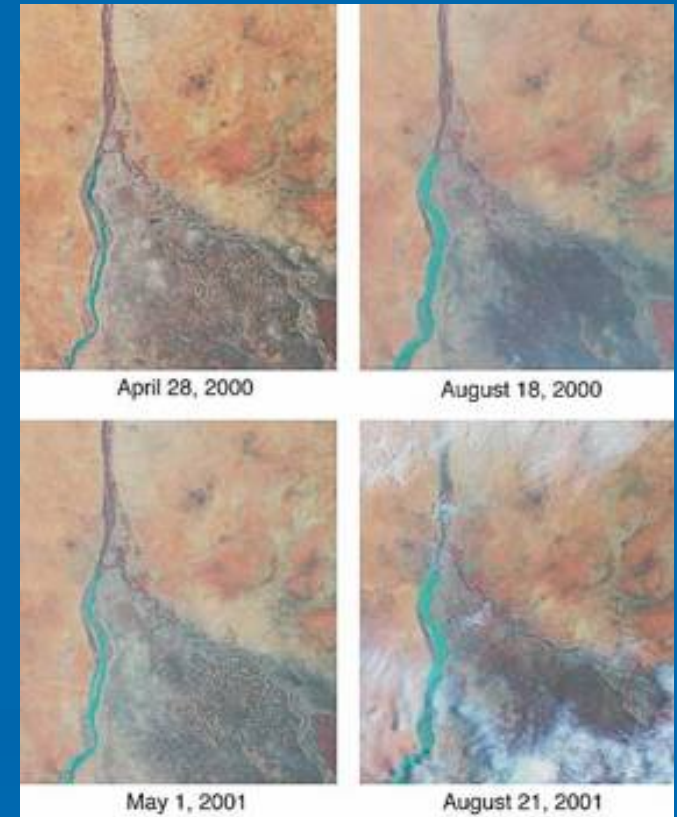
Generic Definition: “The ancient sacred art-science dedicated to the study & applications of the harmonic power of the Golden Ratio Phi, its creative expression the Fibonacci Cascade and the symbolic shapes & numbers that constitute the universal language of nature and consciousness”.

SG101.3.1.2 Sacred Geometry: Definitions (2) Surveying the Land

The first known application of “*measuring the earth*” (geo-metry) was surveying the land, in Egypt. There, the Nile’s annual flooding was -and still is- blurring the boundaries between fields.



↑ In Egypt, practical geometry would allow to accurately re-divide the land after the annual floods.



↑ The rising and falling waters of the Nile drastically affect life along the banks.

In 2001, many people in Sudan lost their homes to the worst flood in twenty years.

SG101.3.1.3 Sacred Geometry: Definitions (3)

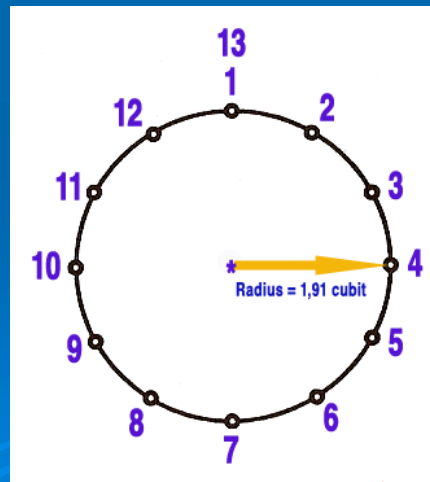
The Harpedonaptae & the Egyptian Cubit

In ancient Egypt, aside from practical land surveying, there was a sacred aspect to geometry: the laying out of temples and sacred buildings. It was all performed by experts known by the Greek name of *harpedonaptae* (or harpedonapts). These surveyors strictly adhered to the principles of Sacred Geometry, using only a compass and a straight line in the form of the 13-knots cord with 12 intervals of one Egyptian royal cubit each. The rope was used for various configurations and especially for the Pythagorean (or 'Egyptian') Triangle 3-4-5. [◆SG101.5]

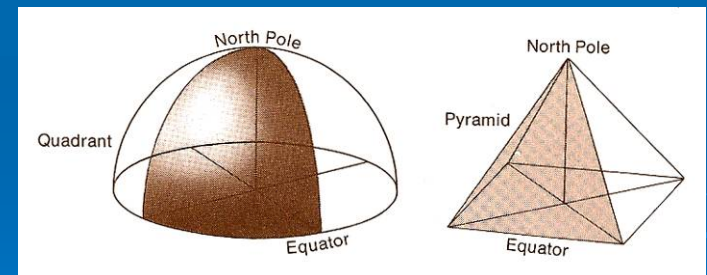
The Egyptian cubit = 1.72 foot or .5236 meter. When turned into a circle, the 13-knots rope has a radius of 1.91 cubits or one meter ($.5236 \times 1.91 = 1$). Since 1 meter = 1/100,000th part of a quarter of the earth's meridian, this means that the Egyptian cubit and the 13-knots rope are based on the measurement of the earth's circumference. When we realize that the Great Pyramid is a reduced model of the earth's dimensions by a factor of 43,200 (which is half the number of seconds in a day), we can better appreciate the level of knowledge applied by the pharaoh's *harpedonaptae*.

Interestingly enough, Napoleon Bonaparte established the metric standard after his scientific expedition returned from the Egyptian campaign, having extensively studied the metrology of ancient Egyptian monuments.

Apparently, Napoleon used the sacred radius measure of the ancient Egyptian royal cubit circle for his length standard, many thousands of years later.

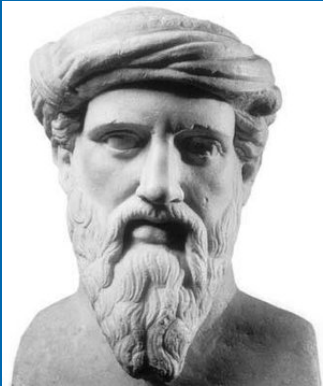


↑ The 12 cubits rope has a radius of 1 meter



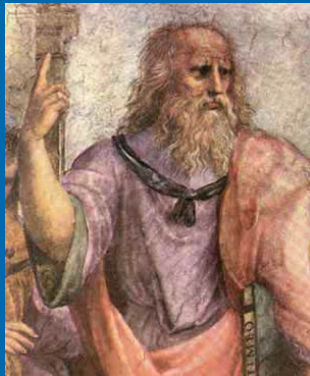
↑ The Great Pyramid is a mini-scale model of the earth. (1/43,200)

SG101.3.2 Sacred Geometry: Quotes (1)



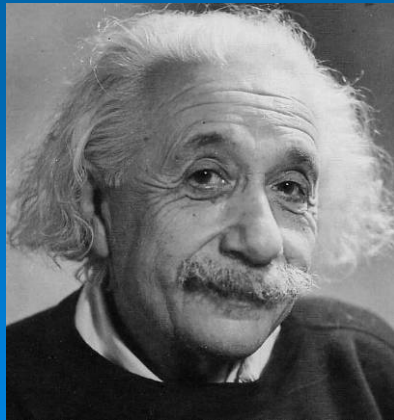
*“All is arranged
according
to Number”*

← Pythagoras



*“Let no one
ignorant
of geometry
enter here”*
(On the door of Plato’s
Academy, Athens)

← Plato



*“God does not
play dice
with the universe”*

← Einstein



*“Like God, the Divine
Proportion is always
similar to itself”*

Luca Pacioli →

*“Before the origins
of things,
Geometry was co-eternal
with the
Divine Mind“*

Kepler →





SG101.3.2 Sacred Geometry: Quotes (2)

“Geometry has two great treasures: one is the Theorem of Pythagoras; the other, the division of the line into extreme and mean ratio.

The first we may compare to a measure of gold; the second we may name a precious jewel”.

Johannes Kepler (1571-1630)

Note: the “*division of the line*” Kepler refers to IS the Golden Ratio.

SG101.3.3.1 An Ancient Canon of Harmonic Order (1)



According to traditions reported by writers of old, ancient civilizations codified their knowledge of the world in a *Universal Canon of Proportion & Measures*.

This Canon was underlying the sacred geometry of their temples, their music, their art, languages, calendars and cosmologies and was a common denominator for universal peace.

John Michell, the father of the Sacred Geometry revival in the West, has been a tireless and eloquent speaker of this ancient Canon and of the urgent need to quest for it again.

In his *Dimensions of Paradise*, he says:

“At some very early period, certain groups of numbers were brought together and codified. Thus was created that numerical standard, or canon of proportion which was at the root of all ancient cultures and was everywhere attributed to some form of miraculous revelation...”

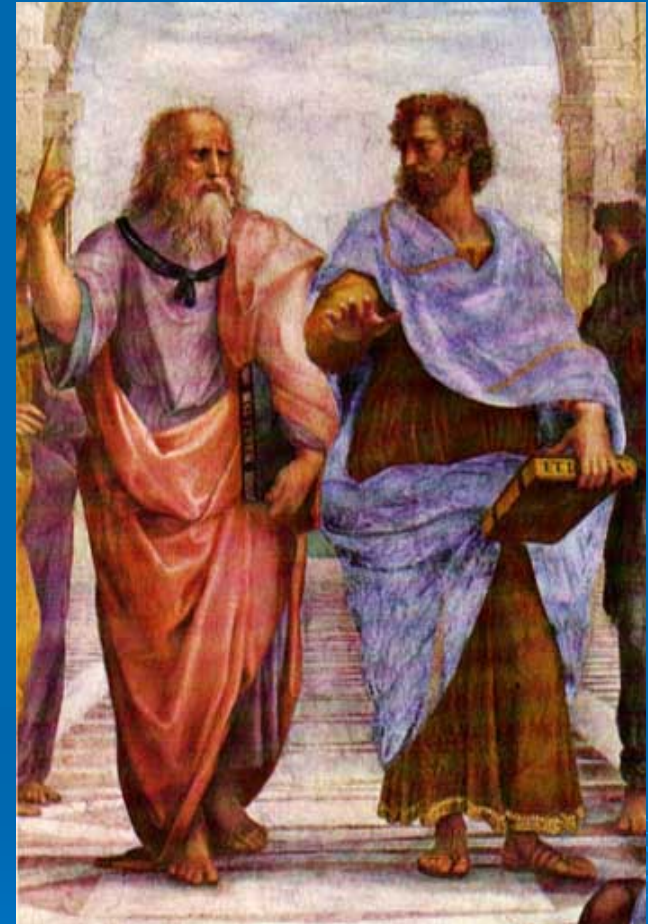
In the known civilizations of antiquity, the Canon of numbers was venerated as the source of knowledge and a guide for right conduct. Its influence extended from art and music to affairs of state.”

SG101.3.3.2 An Ancient Canon of Harmonic Order (2)

One of our main sources about this Ancient Canon is Plato. In his *Laws*, Plato explains that the Egyptian priesthood was in possession of a set of proportions & harmonic numbers that had upheld the high standards of their civilization for millennia. In his plans for an ideal city, his allegories, geometrical & musical demonstrations as well as his cosmological statements, Plato applied the same self-referenced set of harmonic numbers & harmonic laws.

John Michell explains again:

“Plato’s symbolic arithmetic was not a contemporary discovery but an heritage from the distant past. The ground plan of his imaginary city consists of the same combined shapes & numbers as the Stonehenge plan, laid down some 1500 years earlier. Their common units of measure were derived from the same archetype, the numerical image of the cosmos... Ancient units are reflected in the actual dimensions of the earth and the solar system... The numbers which express ancient units of length are the same as those which denote the scales of traditional music. The forms of music and measure known to Plato were defined and codified thousand of years before his time.”



Plato & Aristotle
by Raphael.

“Geometry is the knowledge of the eternally existent”. Plato.

SG101.3.3.3 An Ancient Canon of Harmonic Order (3)



↑ Borobudur, East Java, Indonesia.

Current Sacred Geometry research is updating the Ancient Canon.

The bits & pieces of ancient knowledge progressively recovered do indeed match similar number patterns, proportions & structures that recent research has observed in a vast range of natural & cultural phenomena. There is a standing call to keep dusting off, updating and implementing this archetypal canon as a proven instrument of global peace & harmony.

The numbers and geometries referenced by ancient philosophers were not isolated events: they formed the harmonic rungs of a living ladder to higher consciousness. The key essential numbers & ratios are those that occur simultaneously in various, apparently unrelated, domains and thus point to a *supra-matrix* encoding the realms of material manifestation. In fact, wherever one turns, and whatever the instrumentation or lack of it, the same universal constants have been repeatedly found by successive waves of sacred art-scientists: astronomers found them in the dance of celestial bodies, musicians in some exquisite melodies, architects in the majestic outlays of the cosmic temples of their times, mathematicians in some elegant equation...

Even the current corporate-style culture, so remote from mystical concerns, is replete with spontaneously appearing numbers, ratios & symbolic events that literally ooze through its walls and offer glimpses of and signposts to deeper & higher cosmic-level realities.

Sacred Geometry is an on-going quest to retrieve the ancient Canon of knowledge from artifacts & clues of the past, from new discoveries & research and, above all, from the luminous vistas offered by inner consciousness.

SG101.3.4.1 Harmony (1) Definitions

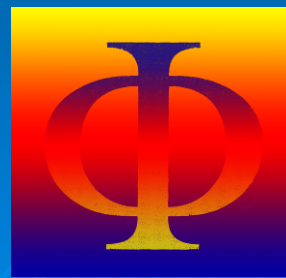
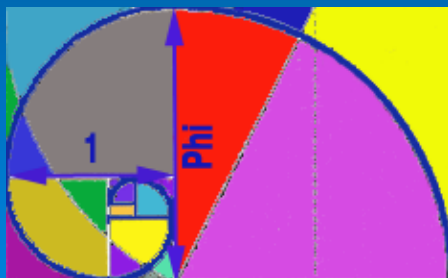
HARMONY

[From the Greek *harmonía* = "agreement, concord"
and *harmono* = "to fit together, to join"]

1. A combination of parts into a proportionate or orderly whole.
2. Agreement in feeling, action, ideas, interests... Peaceable or friendly relations.
3. Agreement or proportionate arrangement of color, size, shape... that is pleasing to the eye.
4. The pleasing combination of 2 or more tones in a chord.
5. Vertical musical structure in terms of the arrangement, progression, modulation... of chords.
6. Study of this musical structure.

HARMONIC

1. Harmonious in feeling or effect.
2. Mathematics: a series of numbers whose reciprocals are in arithmetical progression.
3. Harmonic Mean: one of the three Pythagorean means or averages. [◆SG103.2]
4. Producing a combination of sounds that is pleasing to the ear.
5. A tone/ voltage whose frequency is a precise multiple (or sub-multiple) of a fundamental.
6. An overtone produced by lightly stopping a vibrating string at some specific point.
7. Astrology: series of geometric number-aspects of a birth chart.



*“The hidden harmony
Is mightier than what is revealed”*

Heraclitus, 6th c. BCE

↑ The Golden Harmony “Phi”



ARES

Ares. Villa Adriana, Tivoli, Italy.

SG101.3.4.2 Harmony (2) Harmonia



HARMONIA

Harmonia. Evelyn de Morgan (1855-1919)



APHRODITE

The Birth of Venus. Sandro Botticelli (1444-1510)

In his *Theogony*, the Greek poet Hesiod (8th c. BCE) presents *Harmonia* as the daughter of *Aphrodite* (Roman Venus), Goddess of Love, and *Ares* (Roman Mars), the God of War. Thus Harmonia represents the happy union of opposite polarities and, as such, she presides over concord and pleasant action in both marital and political affairs. [◆SG102] Later Greek writers portrayed Harmonia as the Goddess presiding over Cosmic Harmony, the orderly unfolding of the universe.

*“What is opposed brings together:
the finest harmony is composed of things in variance”* Heraclitus.

SG101.3.5.1 The Universe as Music (1)

Many sacred traditions picture the universe as a giant orchestra, an ocean of musical vibrations where we bathe in chants & melodies.

From the conception of the “*Music of the Spheres*” dear to the Pythagorean School and taken up again by Johannes Kepler to the Hindu “*Nada Brahma*” (“*The Universe is Sound*”) or the primordial hum expressed by the sacred OM, the music analogy for the cosmos is pervading the history and consciousness of humankind.

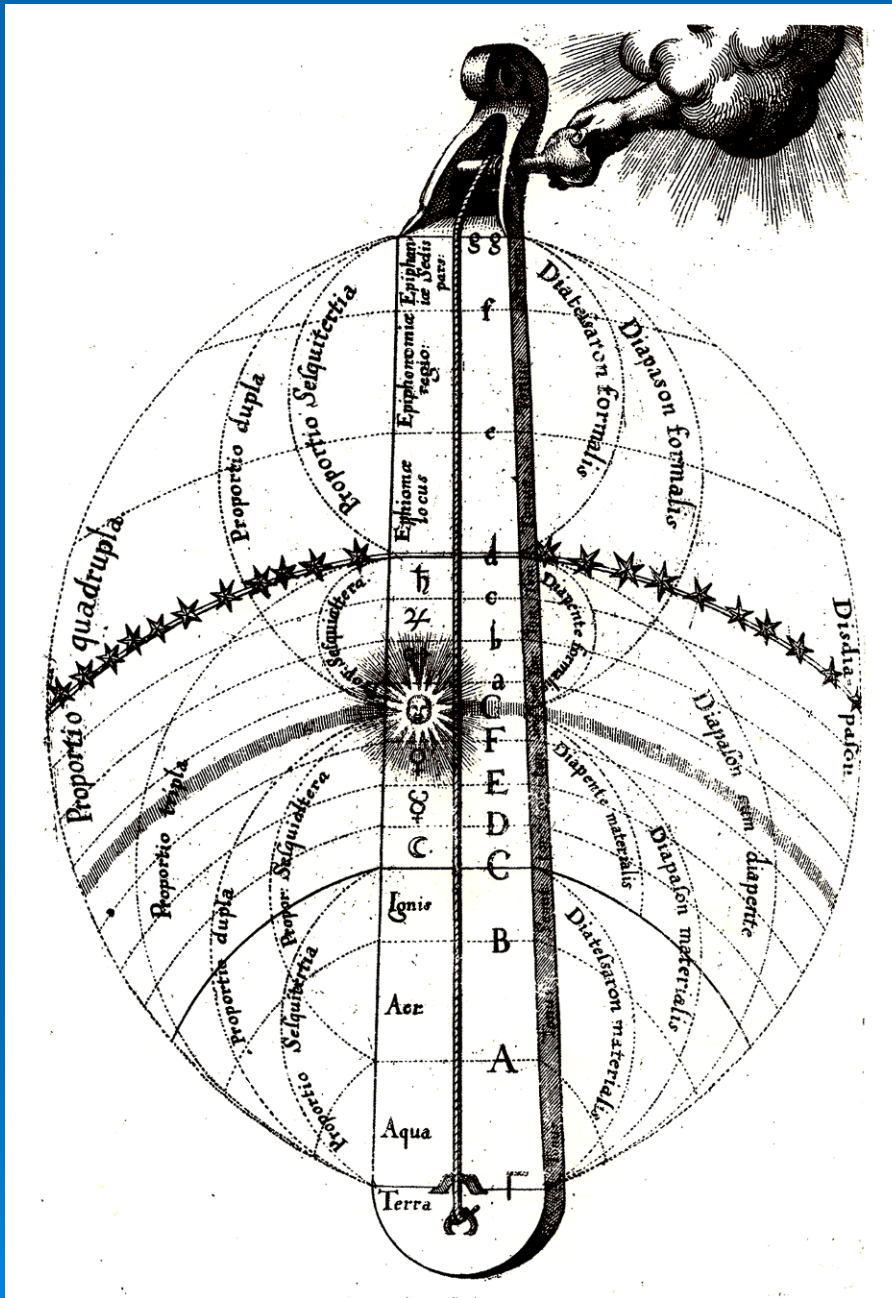


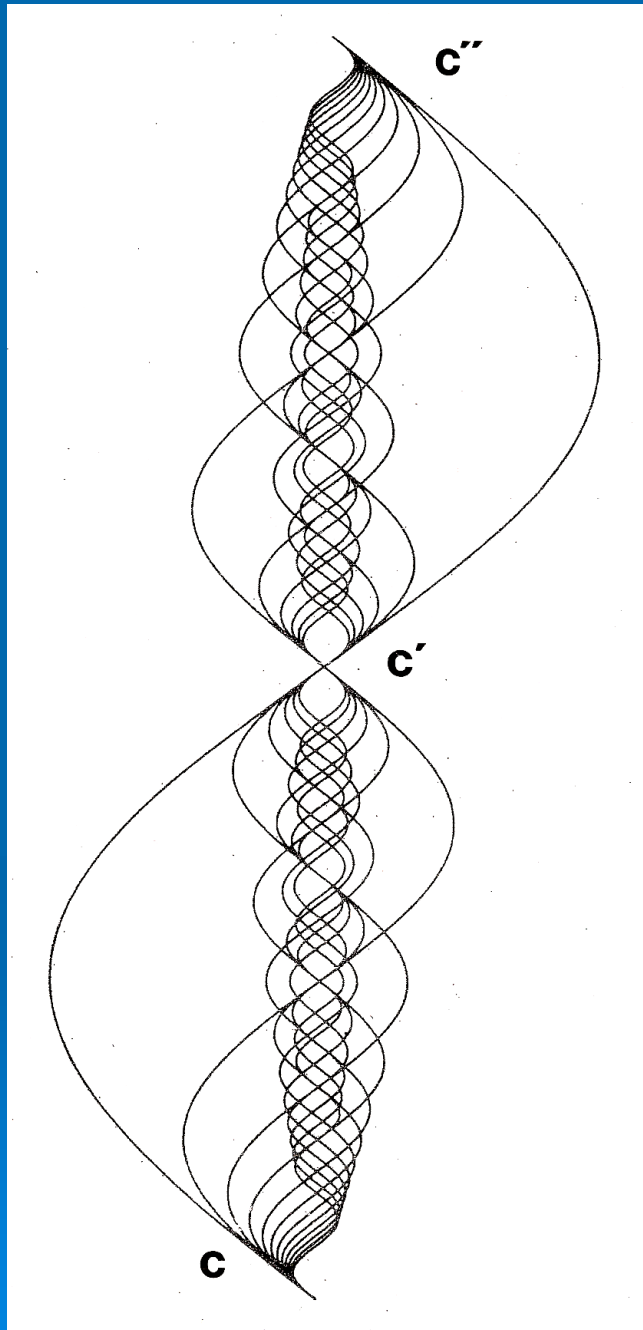
↑ OM

← The “*Divine Monochord*” by Robert Fludd (1574-1637).
From *Utriusque Cosmi Majoris*.

This cosmological diagram of the ‘*Monochord of the World*’ displays two octaves stretching from the Earth to the highest heaven, with the Sun at the balance point. Note that certain elements, planets and celestial spheres have a relationship of harmonic musical ratios: *diapente* (fifth) and *diatessaron* (fourth).

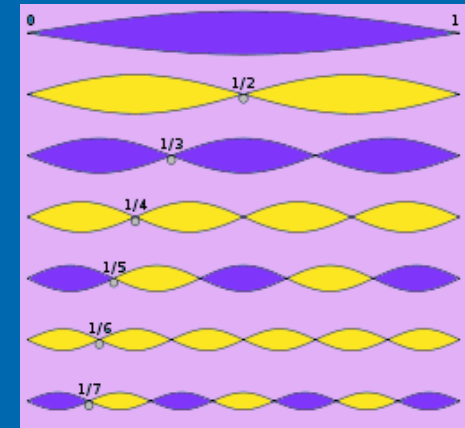
[Note: the monochord will be introduced in ◆SG201]





↑ Harp player. Egypt.

SG101.3.5.2 The Universe as Music (2)



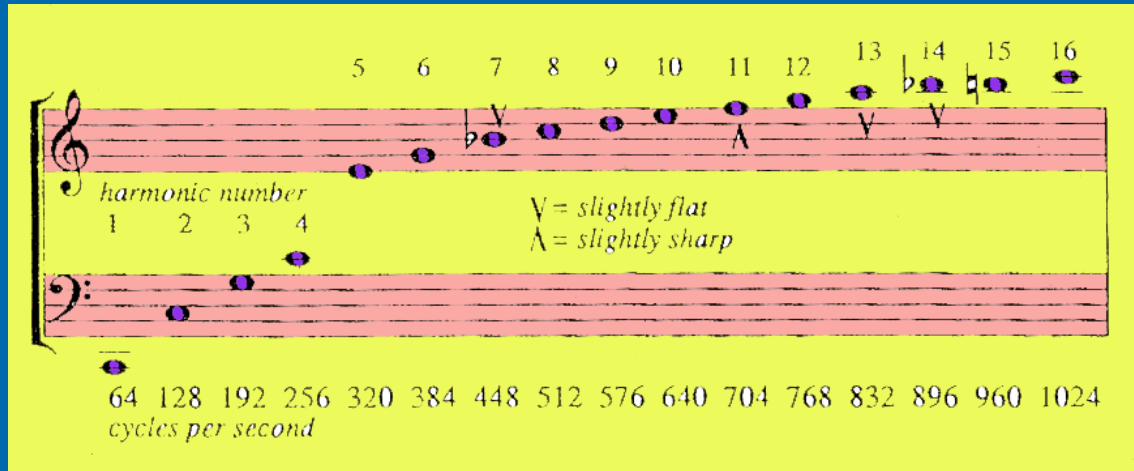
↑ The 7 first overtones

← The Scale of Harmonic Overtones

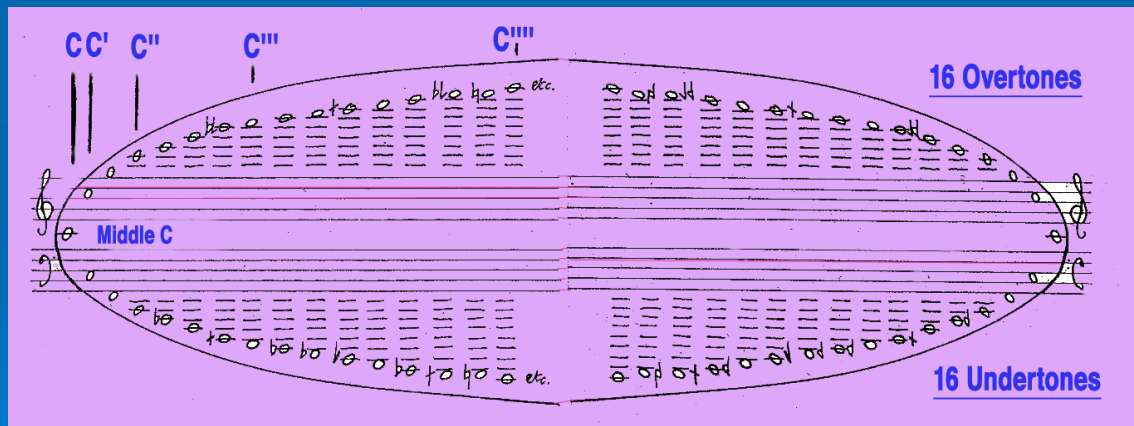
Plucking a string on a harp, a guitar or a sitar not only produces the fundamental tone but also a series of higher-frequency tones or *overtones* which are whole number multiples of the basic frequency. These shorter-wavelength, higher-frequency sound waves give each instrument its characteristic tone quality or *color* or *timbre*. Harmonic overtones provide the multi-layered richness of life.

The harmonic series of overtones (and undertones) is a natural, physical phenomenon expressing the vibration of a musically resonant body. The untrained human ear is usually able to hear only the first few harmonics: octave, fifth, fourth...

SG101.3.5.3 The Universe as Music (3)

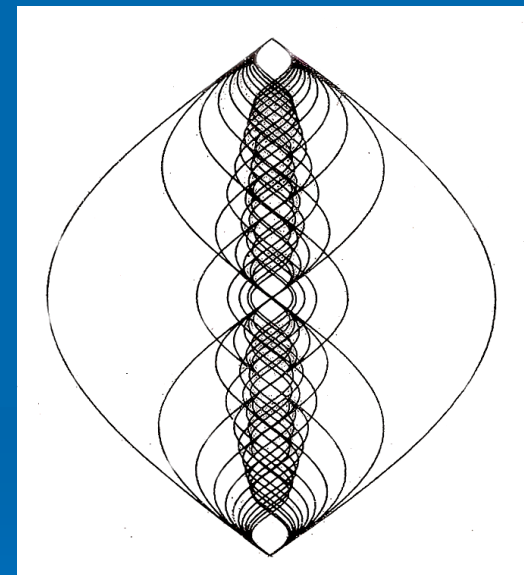


↑ The 16 first overtones



↑ The 16 Overtones and 16 Undertones in mirror symmetry

The visual beauty of the Harmonic scale of Overtones, with its geometric ratios and its symbolism is inexhaustible and multifaceted.



↑ Design for [StarWheel #108](#) "Creation Ovum".

The design was created by refolding the scale of overtones unto itself to form an egg-shape.

SG101.3.5.4 Mandala Interlude



StarWheel #108. Creation Ovum.

SG101.3.6.1 Mathematics: Universal or not? (1)

The question may arise for western-educated minds: are these patterns of numbers, forms & frequencies actually inherent in the very structure of mathematics, of the universe and consciousness itself? In other words, is mathematics re-discovering a natural cosmic order or is it an invention of the human mind?

The scientist thesis (known as “*inventionist*”) holds that number & geometry patterns have no existence outside of the human brain. In the words of Mario Livio (*The Golden Ratio*, 2002): “*The Golden Ratio is a product of humanly invented geometry*”.

This reductionist view holds that the math & geometry we know and use are just a local habit that we parochially assume to be universal, and therefore Sacred Geometry does not exist per se.

In golden counterpoint, explorers & researchers of Sacred Geometry stand for a neo-traditionalist view that is re-discovering mathematics as the universal & timeless language of cosmic creation. Sacred Geometry then is the grammar of this language and reveals the archetypal laws of nature (much like Michelangelo was uncovering the sculpture inherent within the block of marble).

As this Online Course shows, examples & applications of the Golden Ratio and its relative the Fibonacci Sequence are acting as Universal Codes of Harmony. Not only are they abundant in the products of human activity (culture, the arts & science), but they also and primarily abound - and keep popping up - in all scales & kingdoms of nature, including the human body and DNA.



SG101.3.6.2 Mathematics: Universal or not? (2)

The Sacred Geometry facts of nature are now well established. Actually they didn't wait to be noticed by humans in order to exist and do their job: they were at work (and play) way before the Greeks coined the word 'mathematics' or Fibonacci was born. No mathematician or molecular biologist invented them. Rather, a long ancestry line of lovers of nature, poets, artists, mystics, Renaissance scientists & philosophers realized Nature's inherent Harmony and they uncovered the facts & principles of *Perfect Mediation* by keen observation, deduction & intuition. Thus, progressively, the various facets of a larger cosmic puzzle-dance were put together by the human mind and given cultural expressions in monuments, words, music or formulas.



This Online Course is an introduction to the ancient lineage of Cosmic Harmonics, traditionally called Sacred Geometry.

This Neo-traditionalist view holds that:

- There is a common master plan to Life, Nature, the Universe and Consciousness.
- An overriding Canon of vibrational frequencies (numbers) and multi-dimensional geometries is at the heart of the universe.
- Cosmic principles & laws (scientific-spiritual knowledge or wisdom) of harmonized creation-regeneration-transformation are to be found and applied, with great benefits, to the human experience.

SG101.3.6.3 Mathematics: Universal or not? (3)

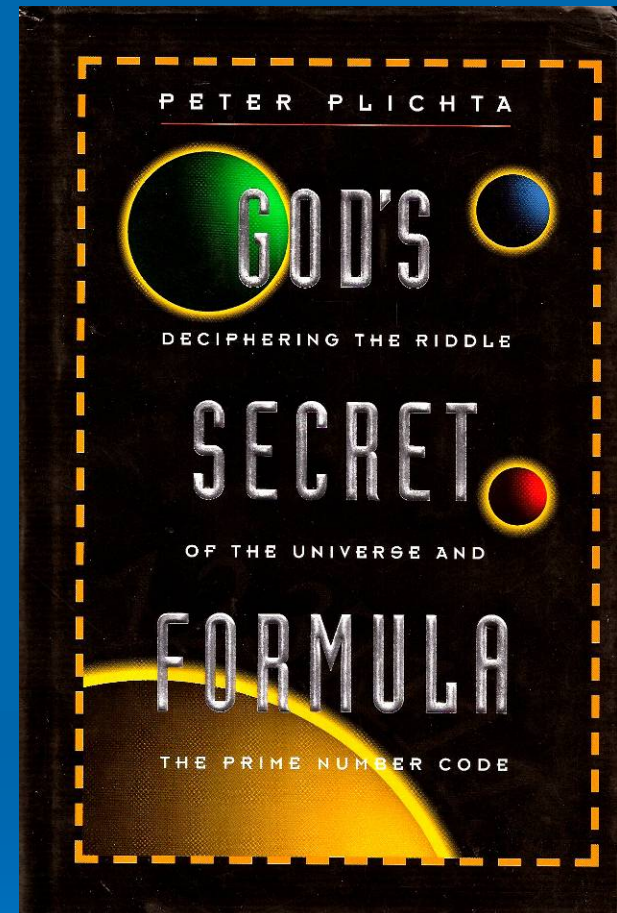
Peter Plichta is the German scientist responsible for the discovery of the cyclical nature of the Prime Numbers and the Prime Number Cross. He states:

“The view of the universe fashionable today holds that numbers & math are nothing more than a human invention. On the other hand, some great thinkers of the past - Pythagoras, Plato, Cusanus, Kepler, Leibniz, Newton, Euler, Sommerfeld - prepared the groundwork for this new departure: all were convinced of the real existence of numbers & geometric forms as universal & independent concepts. This great tradition of western philosophy was then abandoned by the technocrats of our age because of philosophical arrogance”.

“The world was created according to a universal plan.”

“The notion that man & the human mind were created from an accidental process should perhaps be seen as a symptom of our desperation rather than the summit of our knowledge”.

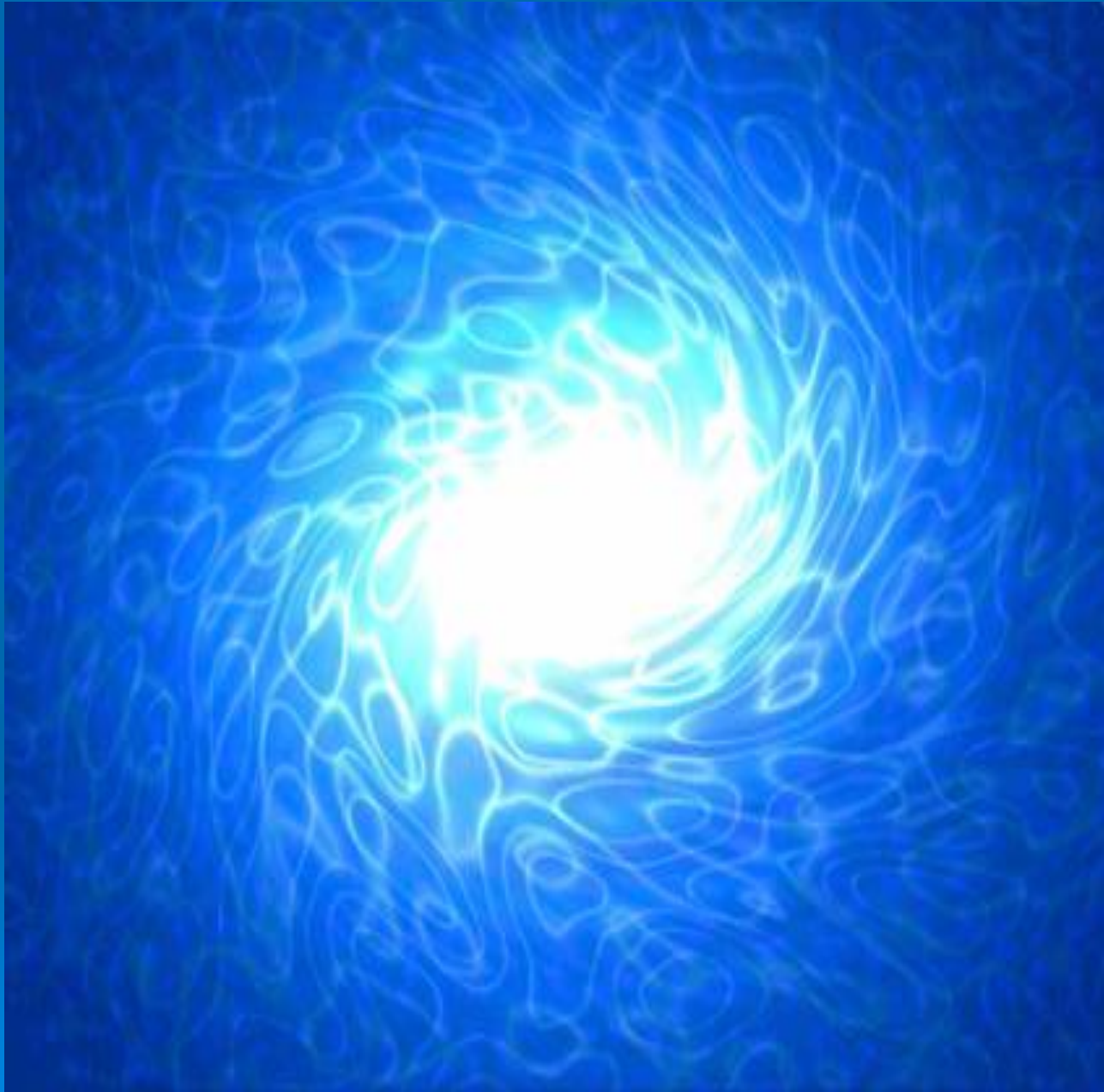
“The geometric structure of Prime Numbers is the framework on which the world was built. The world is irrefutably organized according to a construction plan which was neither forced onto it by a demiurge (God of Creation) nor arose by chance in the Big Bang. It existed solely & eternally in itself & from itself”.



“Like God, the Divine Proportion is always similar to Itself”

Luca Pacioli, 1509.

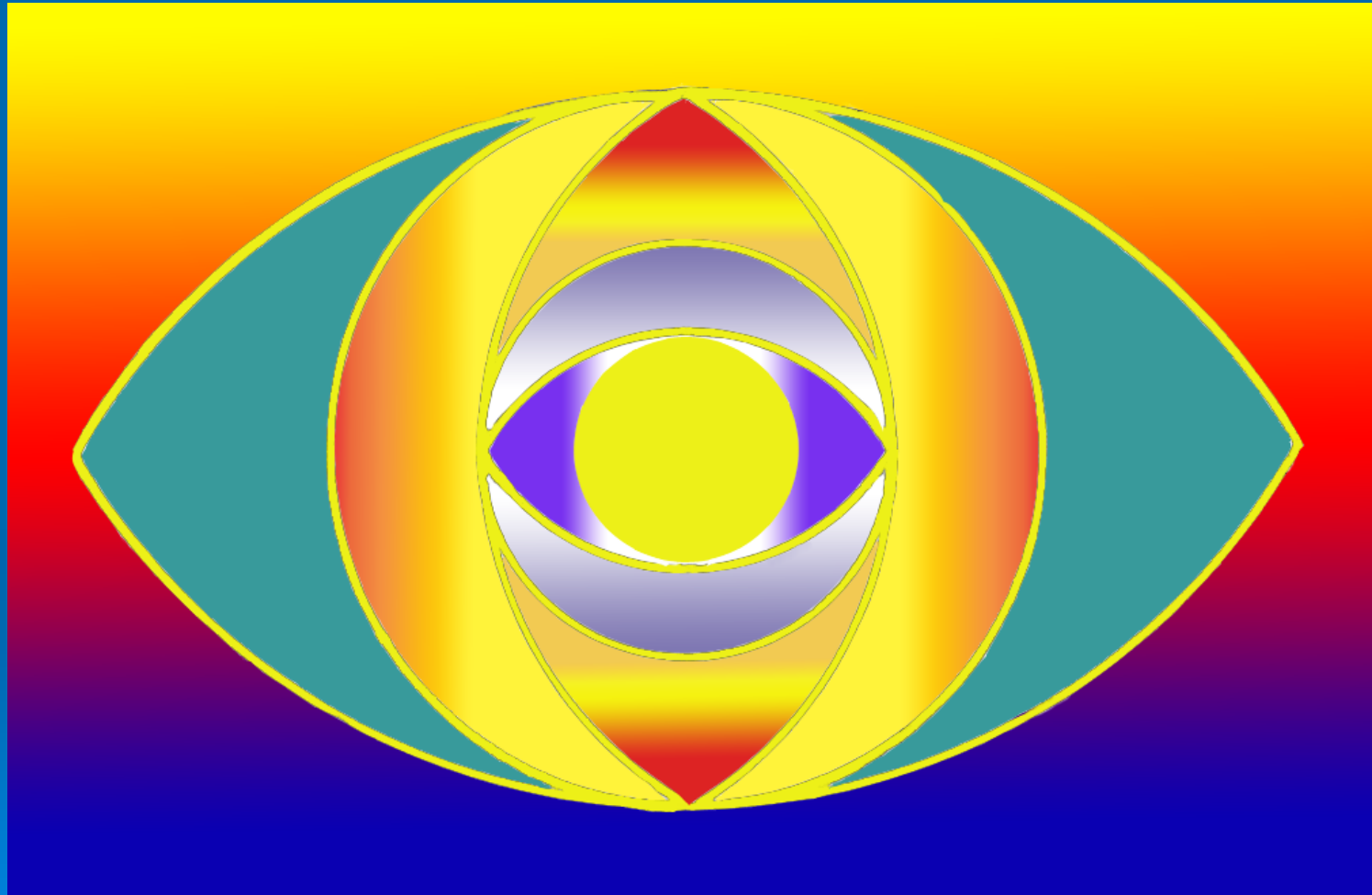
SG101.3.7 The infinite sphere



*“God is a sphere
whose center is
everywhere
and periphery
nowhere”*

(Pascal,
quoting Hermes
Trismegistus)

SG101.4 Chapter 4. Sacred Geometry: A Yoga of Perception



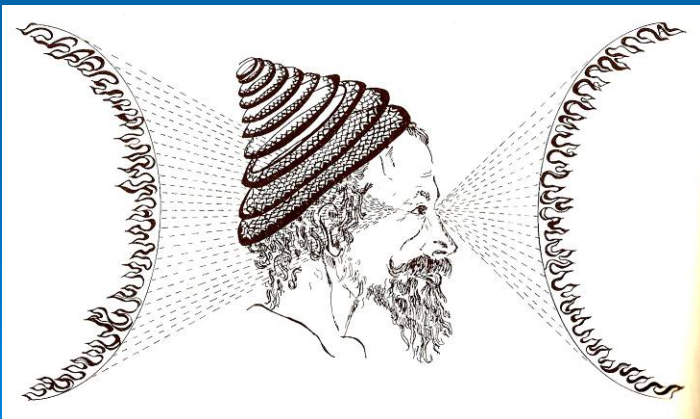
SG101.4.1.1 Vision, Perception & Reality (1)

Matter is an exquisite choreography of waves and sensory perception is the result of resonance and attunement to specific frequency signatures. Data received by the retinal cells (cones & rods) are transformed into electronic signals sent to the brain which then applies its cognitive & cultural filters.

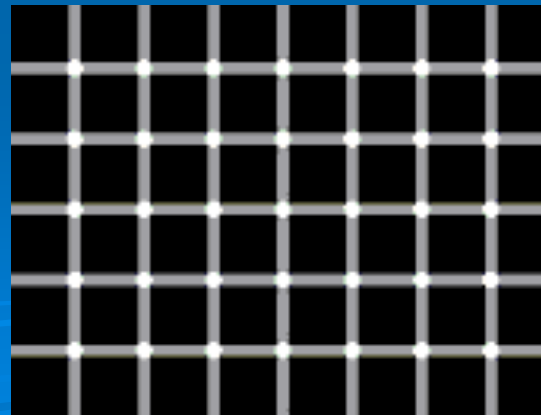
The human eye can only recognize one octave of chromatic frequencies (from red to violet) whereas the ear can distinguish about ten octaves, but vision functions 40 octaves above audition. These are only fragments of perception as human sensory channels are only tiny -and quite unreliable- windows into 'Reality'. Many animals can perceive below and beyond the human range while people with ESP have access to a wider spectrum of awareness. Yet we are the proverbial blind men groping around to describe the elephant -except that we want to describe and explain the universe.

In Sacred Geometry, lines, shapes and sounds are delicate membranes, boundaries between domains and fields of various frequencies. Geometries and ratios are unique combinations of waves (musical chords) creating specific states of consciousness. Vibrations that come from without can be resonated and continued within to create a conscious perception of 'reality' and to explore the vibrational art of co-creating the Cosmos.

The perennial teaching of "*As Above So Below*" is now resurrected in the understanding of the holographic fractal cascades of PHI pulses animating the universe. Human perception is immensely expandable and Sacred Geometry is a Yoga of Perception we are barely beginning to explore and apply again.

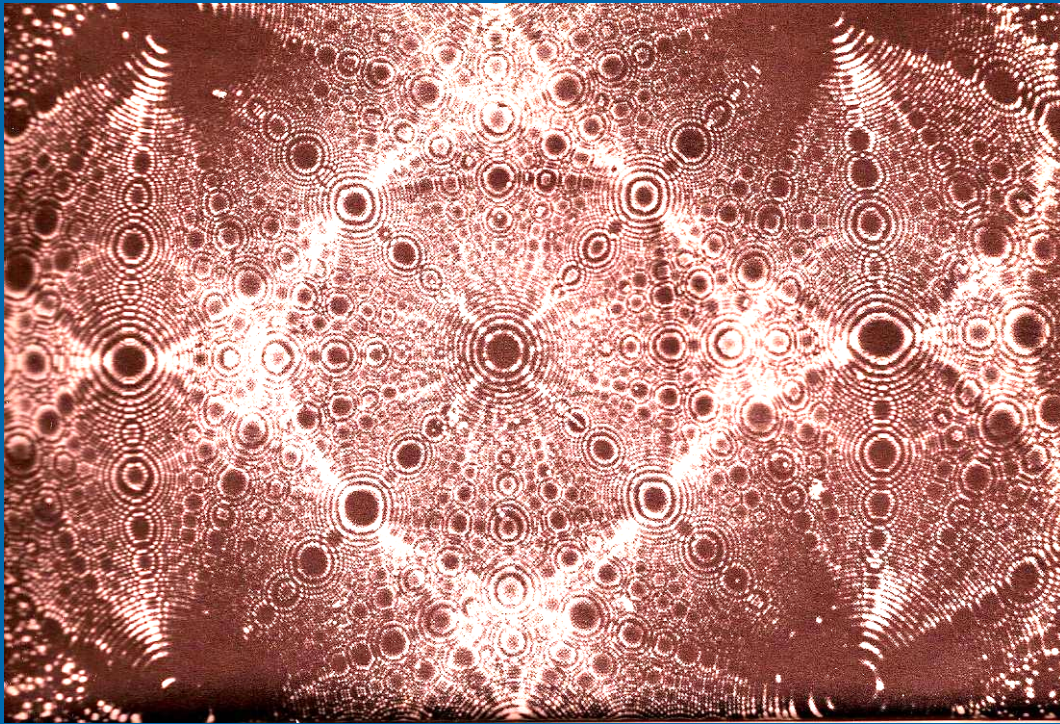


↑ How and what do we perceive?



← Count the black dots!

Answer: - You can't
because there are
no black dots!



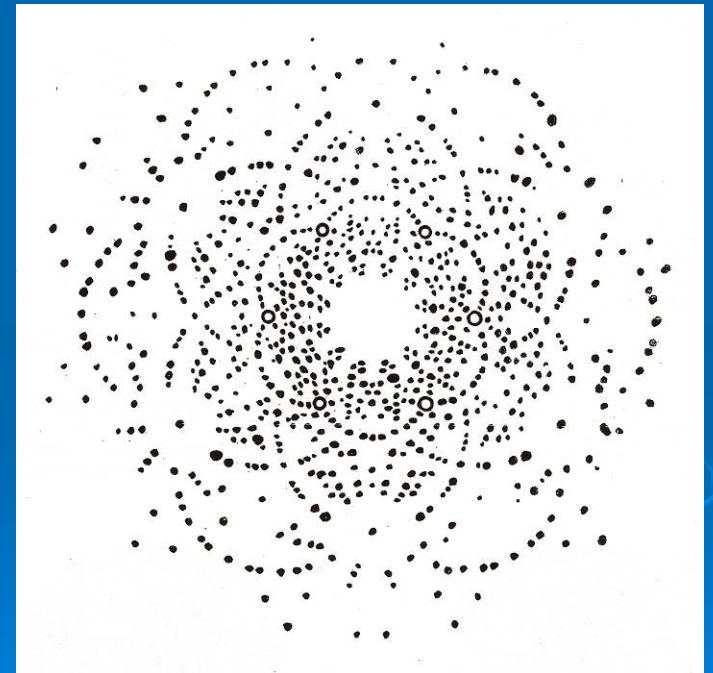
↑ Atomic patterns in a Platinum Crystal.
Magnified 750,000 times. (E. W. Mueller)

*“What we perceive
as various qualities of matter
are actually differences in periodicity”*

(Bertrand Russell)

SG101.4.1.2 Vision, Perception & Reality (2)

↓ X-ray diffraction pattern of Beryl



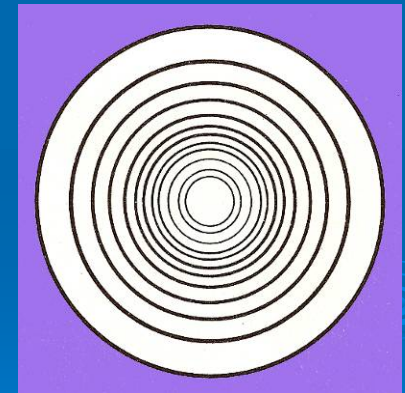
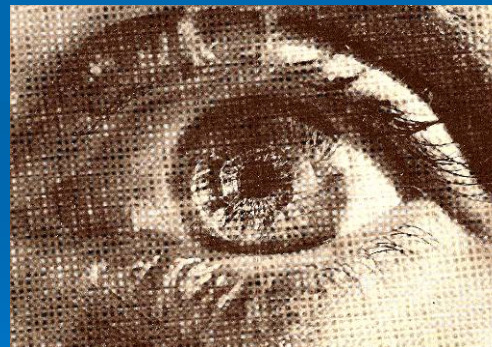
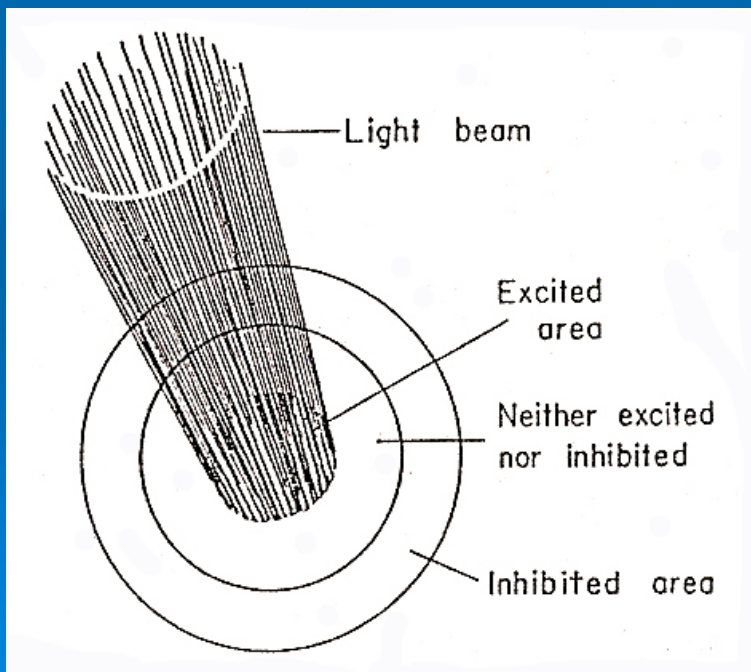
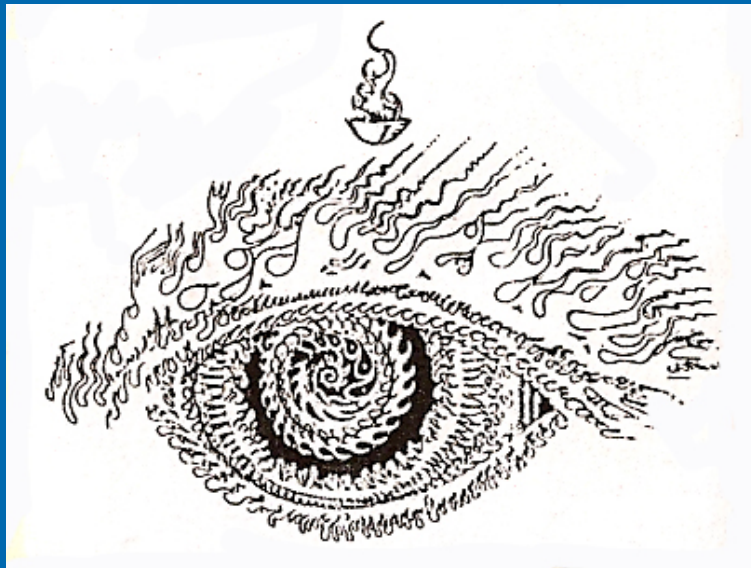
SG101.4.1.2 Vision, Perception & Reality (3)

The Mandala in the Eye

Mandalas correspond to the internal structure of visual cells: both retinal ganglion cells and lateral geniculate cells have a circular symmetry/geometry.

They respond well to circular patterns because their receptive field is circular.

They respond best to a circular spot of light of a particular size filling exactly the excitatory area. Hence the importance of sacred geometry ratios.

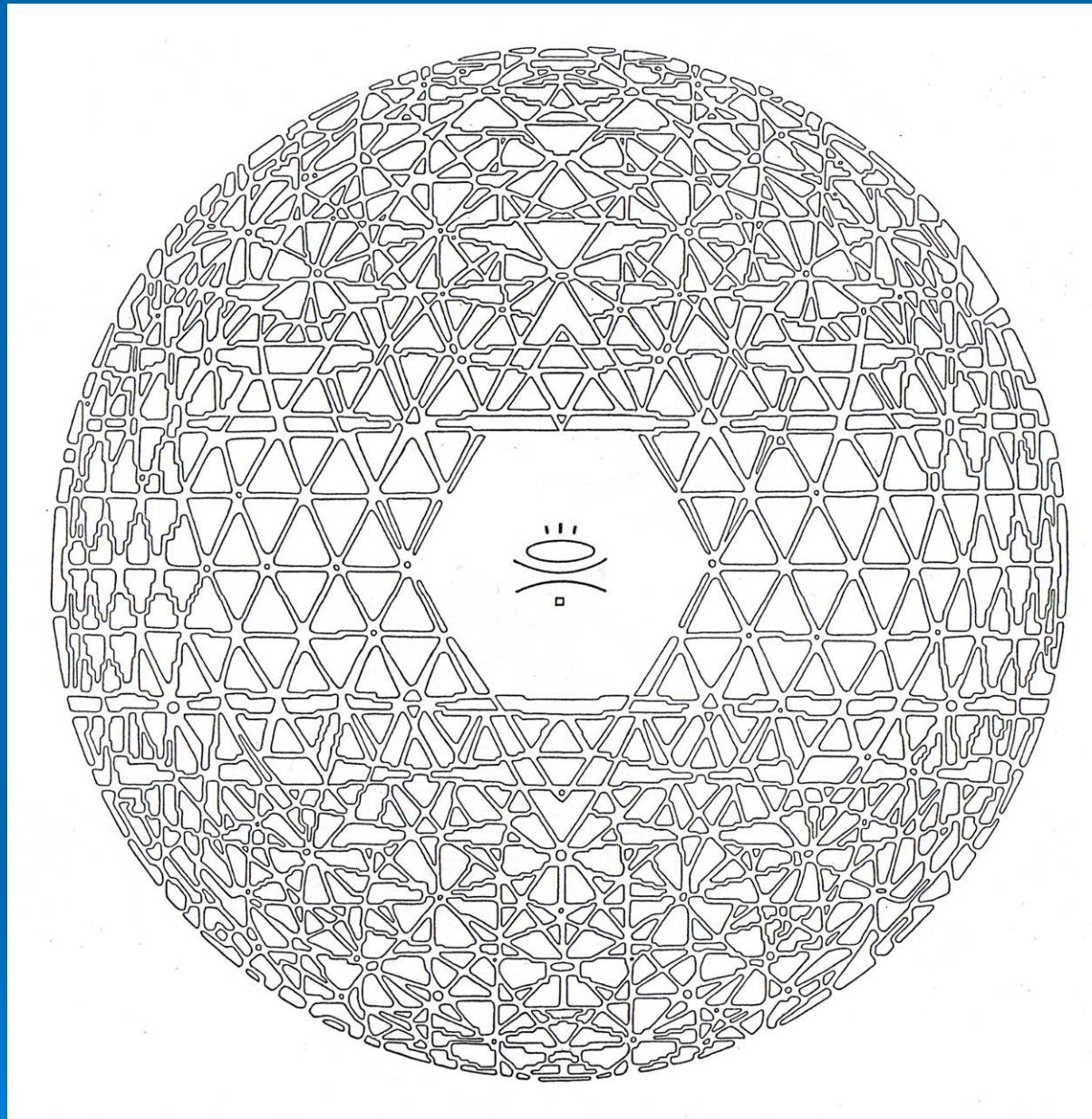


The center of the mandala corresponds to the foveal 'blind spot'. Just like the blind spot is the exit from the eye into the brain, the mandala is an instrument for transcending the world of visual phenomena and tracing perception back inwardly.

SG101.4.2.1 Background & Foreground (1)

In the course of designing and cutting stencils for the *StarWheel Mandalas*, I became keenly aware of the dynamics between background and foreground.

In order for a stencil to stay together in one piece (like a lace), one has to plan a right balance between 'void' and 'full', akin to shifting from background to foreground. The parts of the stencil that are cut off represent the 'background'.



Center design stencil for [StarWheel #29](#) "Starkind Entry"

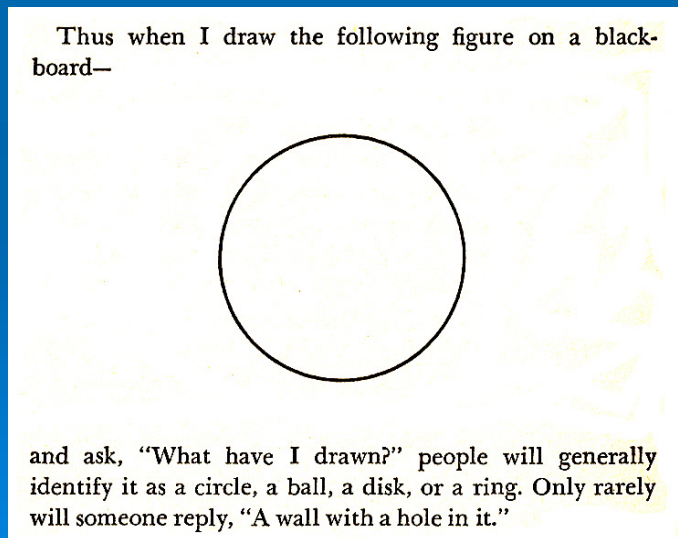
SG101.4.2.2 Background & Foreground (2)

Gestalt Psychology has shown that when we focus on something, there are items in the background we do not see. as we then exclude parts of the Whole. This is called '*foveal vision*' as opposed to the larger '*peripheral*' vision with accepts & looks for the 'positive' aspects of 'negative' space or empty/blanked out background.

Also, our mind will apply to the raw data of perception the interpretations/grids ('*subjective contours*') we already have programmed in our neuronal networks. This is called '*unconscious foregrounding*' as opposed to the flexible perception of freely going back & forth between background and foreground. To see one image, the other goes into the background or 'void'.

From this fact arises a full Yoga of Conscious Perception aiming at decoupling/disengaging the mind from foveal beliefs or emotions and learning to include more of the whole picture or perceptual context: looking around, on both sides, front & back... Basically, it is learning flexible perception & awareness by recognizing our hidden patterns of foregrounding & backgrounding and consciously re-owning them to maximize the resources (thoughts, beliefs, images, sounds, feelings...) that we want to prioritize as our life's goals. It is learning again to see the small, the large and the whole (the PHI Field) as One.

This is how Alan Watts puts it in his *The Book* (1966):



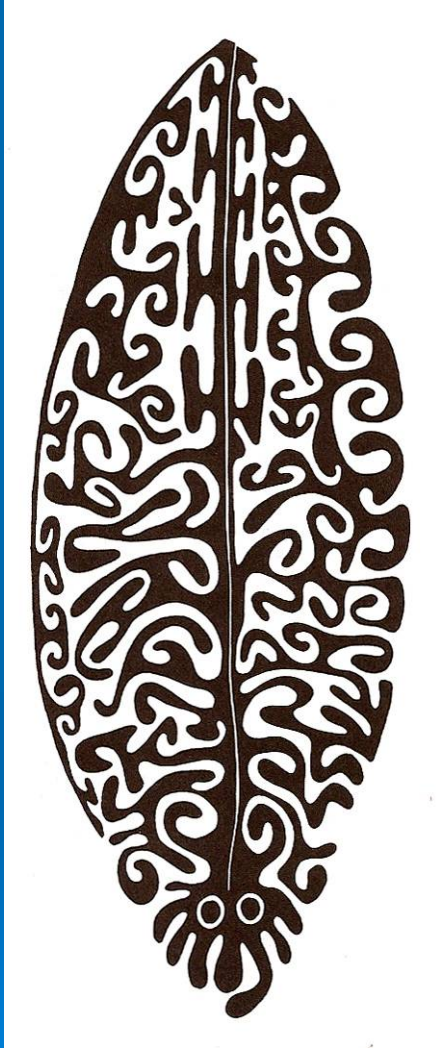
Alan Watts explains:

"We do not easily notice that all features of the world hold their boundaries in common with the areas that surround them - that the OUTLINE of a figure is also the INLINE of the background..."

The point is that the movement of any feature of the world cannot be ascribed to the outside alone or to the inside alone. Both move together."

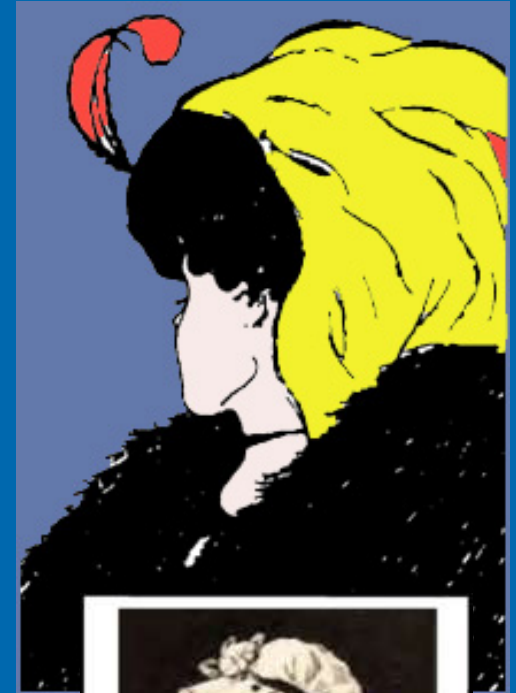
Background & Foreground are One.

SG101.4.2.3 Background & Foreground (3)



Mask from New Guinea

Test yourself and enter the dance
Background / Foreground.



*Old Woman...Or Young Girl?
hint: The old woman's nose is the
young girls
chin.*

SG101.4.3.1 Pattern Recognition (1)

Pattern Recognition is an essential function of consciousness, stemming from the right intuitive/feminine brain and speaking a mandalic-musical-choreographic language of multi-dimensional resonance, complementary to the linear logical/masculine left brain (and right hand).

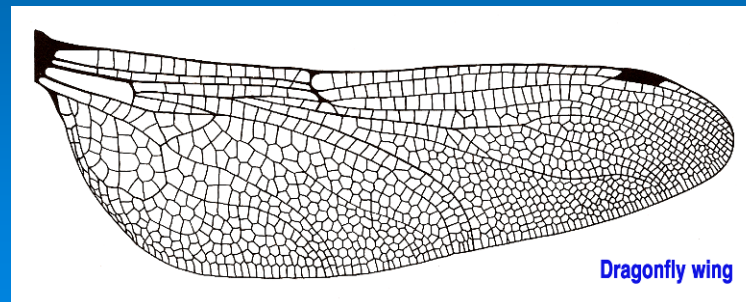
In education, Pattern Recognition is a wholistic mode of perception and awareness that should be encouraged and highly developed before more specific left-brain training takes place. Pattern Recognition starts with a *synaesthetic approach* to reality perception, where the boundaries between sensory channels are kept open and fluid - as opposed to being progressively stiffened and the perception being compartmentalized. An approach where...

... a form is a geometry is a color is a sound is a fragrance...

Visual, musical and body-enacted activities of Pattern Recognition are, in my experience, the primary educational ground that connects conscious awareness with the neuronal and genetic languages sustaining the body-mind systems and interfacing dimensions.

Pattern Recognition looks for unity in diversity, for the presence of cosmos in seeming chaos. The pattern sought is the common thread, the secret rhythm, the melodic line, the radius linking the periphery to the center hub, the geometric verb, the key ratio, the drum beat, the 3D pop, the universal constant... all signals that will reveal a deeper pulsing structure encoded under surface appearance. As quantum science understands it:

**There is no pure randomness (chaos),
only embedded levels of patterned order waiting to be uncovered.**

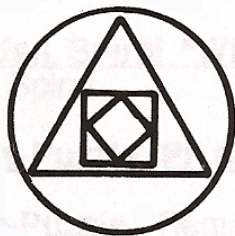
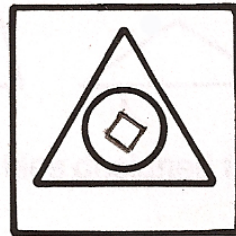
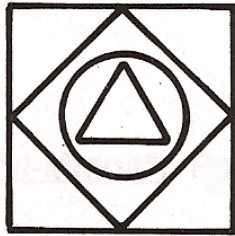


Dragonfly wing

SG101.4.3.1P Pattern Recognition Practice

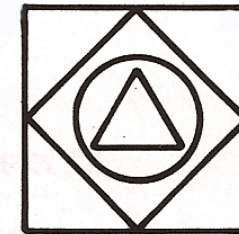
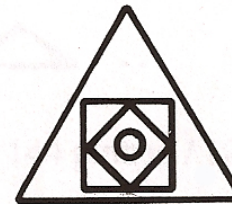
Find the pattern in each of the two sets of three figures below. Then draw the next two figures according to the pattern you found.

Hint: look for the sequence of shapes from the center out and continue it.

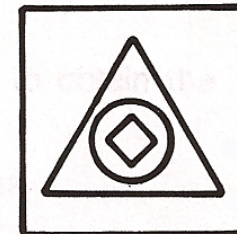
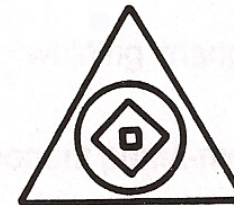


Set #1

Set #2

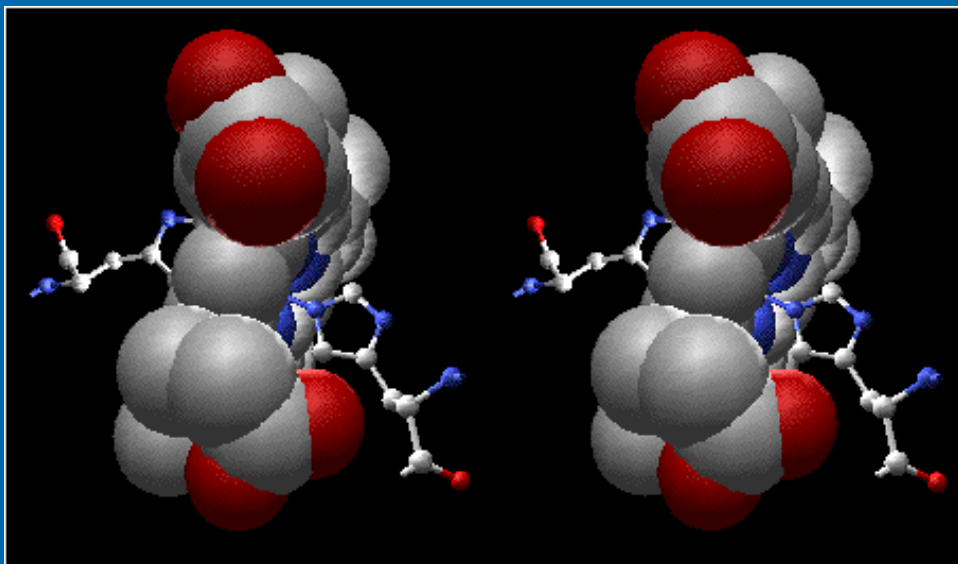


Solutions to Set #1



Solutions to Set #2

SG101.4.4.1 Stereo Viewing (1)



Molecular graphics programs nowadays all have *stereo viewing* options. The first biochemical stereos appeared in the late 1960's.

Stereo viewing is a skill all scientists have to learn. For instance, interpretation of electron-density maps from x-ray crystallography is practically impossible without stereo vision skills.

← Standard bio-chemistry Stereo Viewing exercise.

Instructions for Stereo Viewing (from [//spdbv.vital-it.ch/TheMolecularLevel/OHelp/StereoView.html](http://spdbv.vital-it.ch/TheMolecularLevel/OHelp/StereoView.html))

“Gaze at the stereo pair, keeping your eyes level (don't tilt your head left or right), and cross your eyes slightly. As you know, crossing your eyes makes you see double, so you will see four images. Try to cross your eyes slowly, so that the two images in the center come together. When they converge or fuse, you will see them as a single 3D image. The fused image will appear to lie between two flat images, which you should ignore. When you are viewing correctly, you see three images instead of four. The center image is three-dimensional. At first, the 3D image may be blurred. Keep trying to hold the stereo pair together while you focus. The longer you can hold it, the more time your eyes have to adjust their focus. Usually, even before you begin to get the hang of focusing, the two central images lock together, because your mind begins to interpret them as a single 3D object.”

SG101.4.4.2 Stereo Viewing (2)

A stereogram is an optical illusion of depth created from flat, two-dimensional image or images. Originally, stereogram referred to a pair of stereo images which could be viewed using stereoscope. Other types of stereograms include anaglyphs and autostereograms.

Stereograms were discovered by Charles Wheatstone in 1838. He found an explanation of binocular vision which led him to construct a stereoscope based on a combination of prisms and mirrors to allow a person to see 3D images from two 2D pictures.

Stereograms were re-popularized by the creation of autostereogram on computers, where a 3D image is hidden in a single 2D image, until the viewer focuses the eyes correctly. The Magic Eye series is a popular example of this. Magic Eye books refer to autostereograms as stereograms.

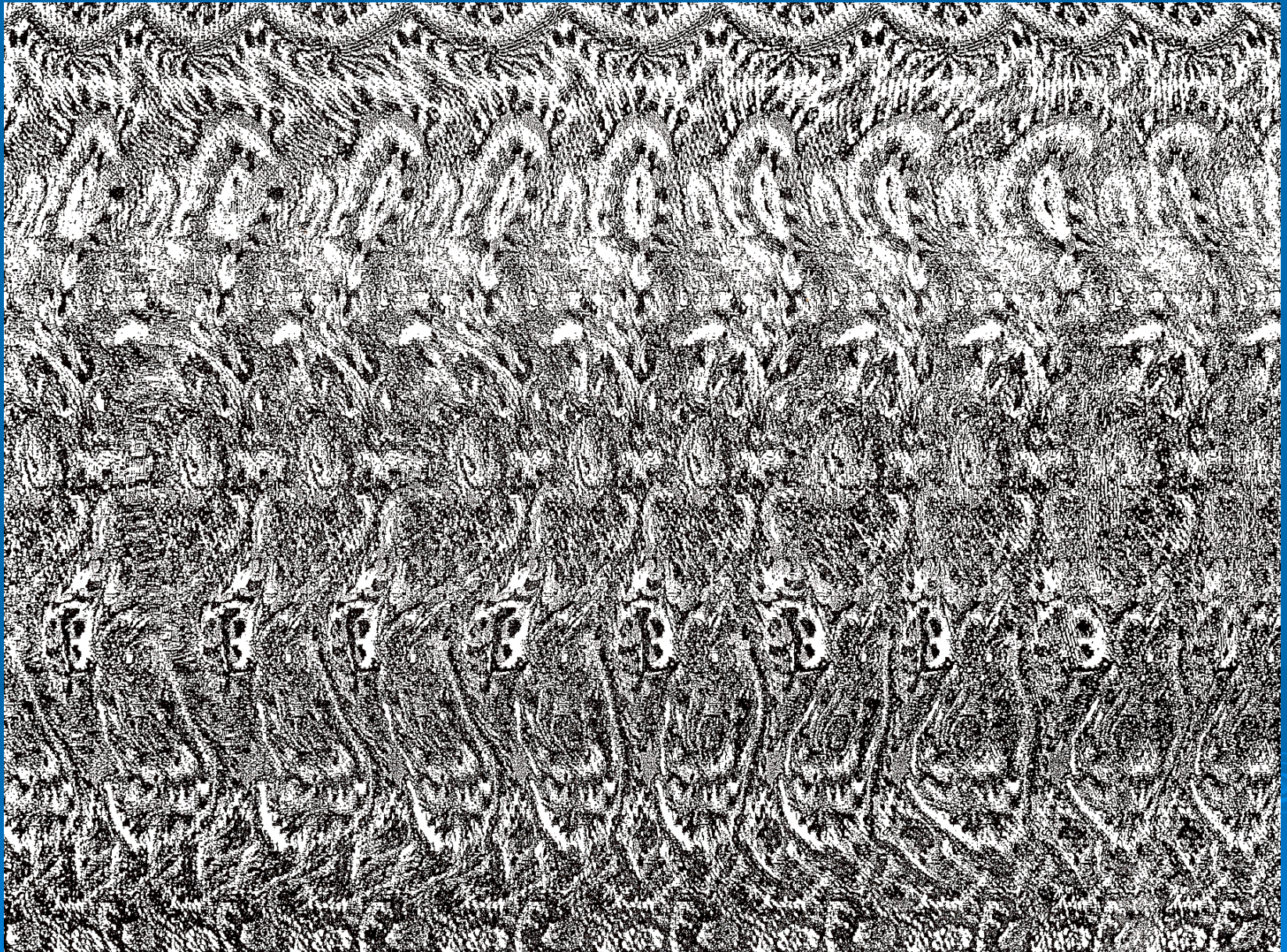
WIKIPEDIA

I like to state that *Stereo Viewing* is a western technology-based *Yoga of the Third Eye*: the goal is to “see through” the deceiving appearance and randomness of ‘Flatland’ reality and access the deeper realities hidden behind or within. The experience of seeing through and beyond conditioning is profound, almost *initiatic* in its significance. Indeed this ‘invisible’ reality was there all along but was ignored due to our flatland programming and realizing that goes a long way to convince us that there is a lot more to ‘Reality’ than our usual socially-accepted, standard model perception has been limiting itself to see.

Actually seeing physically (and being able to describe to others) invisible depths of hidden reality and meaning creates new brain-mind-awareness pathways and new horizons to expand into. Stereo Viewing is now used for vision improvement programs, accelerated learning, fast reading and concentration skills.

However, stereogram viewing still is a computer-based binocular trick. True Third Eye vision or clairvoyance takes place within, in the “pineal’s eye”, as the student-yogi works through clearing the energy channels and centers and learns to still the monkey mind to a point of inner communion with the pervading Akasha field of the Quantum Plenum (the Greek primordial Chaos).

SG101.4.4.3 Stereo Viewing (3)



↑ This is a geometric stereogram from *The Magic Eye* by N. E. Thing. Bring up the Pop Up!

Hint: there are 5 levels of pop-ups!

SG101.4.5.1 The Ajna Chakra (1)

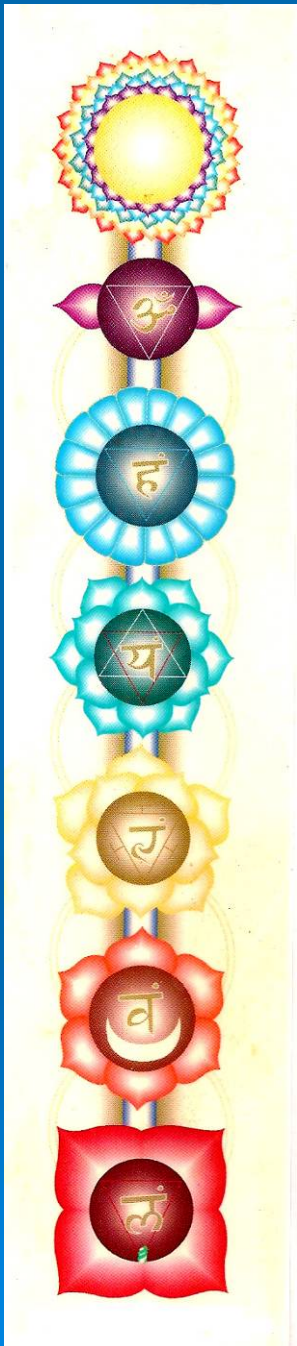
The Yoga of higher perception involves opening the Third Eye or Ajna Chakra. In the yogic tradition of the ancient Indian Rishis, lotus blossoms symbolized the 7 energy centers of the human body. Each *chakra*, defined by its specific letter-sounds (*mantra*), geometry (*yantra*) and deity is a station in the inner river of light energy (*kundalini*) ascending to the crown.

The symbol for chakra #6 (*Ajna*) is a circle with two petals on either side. The circle symbolizes the Void or Quantum Plenum. The 2 petals are the primal duality proceeding from the Unified State. The deity for the Ajna chakra is the highest form of Shiva: Ardhanarishvara, the half-male, half-female Shiva-Shakti who has transcended all duality. The 6-headed Shakti (kundalini energy aspect) is Hakini Shakti who imparts the awareness of non-duality.

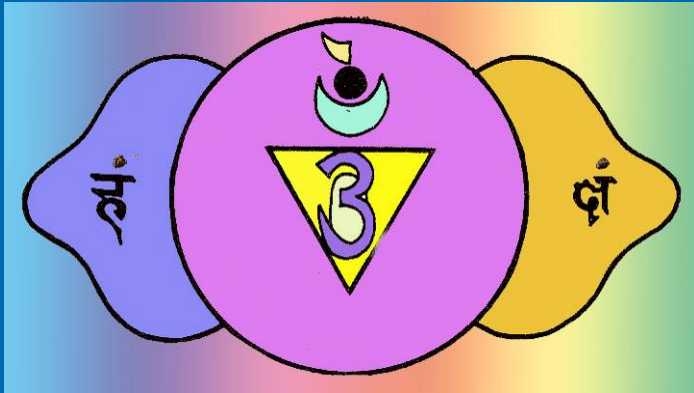
← The 7 chakras, from the base of the spine to the crown.

Symbol for the Ajna chakra →

← The yogic body of energy



SG101.4.5.2 The Ajna Chakra (2)



The Ajna chakra's symbol



Egyptian "Sun-Disk"
an image of freedom,
flight and liberation

Sun and Winged Disks are present in all ancient cultures, from South America to Sumer [◆SG305].

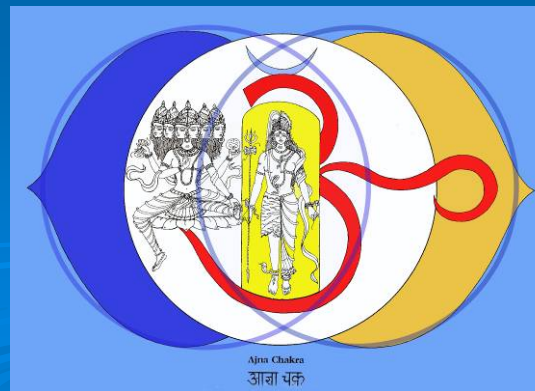
Note, in the Egyptian symbol, the presence of the two serpents on either side of the central sphere: they are reminiscent of *Ida* and *Pingala*, the two lateral energy channels on either side of the *Sushumna* or central *kundalini* channel, as experienced in the yogic tradition.

“Ajna”, in Sanskrit, means both to ‘perceive’ and to ‘command’.

The *Ajna chakra* relates to the pineal body, a pea-sized endocrine gland, and light-sensitive organ, tucked at the exact geometric center of the head and essential in the production of melatonin, a hormone affecting the wake/sleep patterns and photoperiodic functions. The opening of the Third Eye or Ajna Lotus is associated with clairvoyance and non-local higher perception and communication.

In terms of Sacred Geometry, the Ajna chakra points to the first and last acts of cosmo-genesis: the choreography of One and Two.

- First, the manifestation stage: when Unity is becoming Duality or the Monad expands into the Dyad, just like the Original Circle becomes the Two Circles giving birth to the Vesica Piscis. This is the appearance of the lower musical octave (1:2) where doubling the string's length creates the original sound, one octave lower.
- Last, the ascension stage: when Duality is merging back into Oneness as the male-female polarities reunite. This is the halving of the string's length (2:1) creating a higher octave tone.



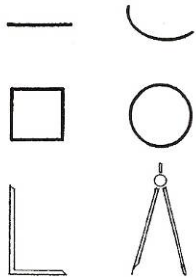
← Ajna chakra symbol
with overlay of the geometry
of the Vesica Piscis
[◆SG201]

SG101.5. Chapter 5. Sacred Geometry: Tools & Toys



The Square & the Compass

The Line & the Curve
The two Cosmic Polarities



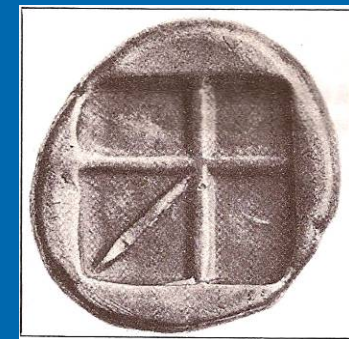
SG101.5.1 The Square and the Compass

In all traditional cultures, the Square & the Compasses are the cosmological representations, respectively, of Earth and Heaven.

The compasses give celestial inspiration and the dome shape of Heaven, whereas the Square gives the right terrestrial measure since it divides space into four quadrants and establishes the four primordial directions.

SQUARE. Like the cross that it contains, the square, being right-angled, creates a system of coordinates that allows laying an orderly structure over the seeming chaos. It is a symbol of probity, rectitude but also a sign of imposing rules. As a male / yang element of enclosure, it controls the stability and relative permanence of the material plane.

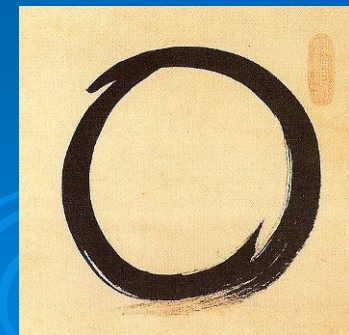
(Note the golden rectangle ratio on the Greek coin)



Greek coin ~375 BCE

CIRCLE. Having no beginning nor end, no direction nor orientation, the circle (or sphere) is the symbol of spiritual perfection. Shaped like the sun and moon, the circle represents the domed celestial sphere, the cosmological mandala. As a female / yin element of nurturing, the circle is the egg and the womb offering growth and love.

The ceremonial circle of power is honored by all sacred cultures and is always spinning in a harmonic spiral.



Enso, Zen Circle 73

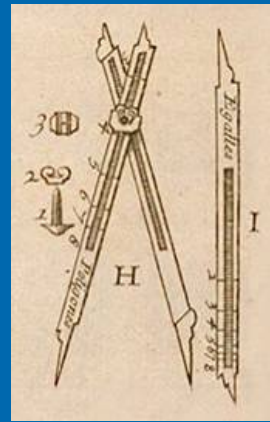
SG101.5.2.1 A Gallery of Compasses (1)



Thumbscrew compass



Pompeii, 1st c. BCE



Reduction compass



Compass with plumbing line



Left: beam compass
Right: school compass



3-legged compass



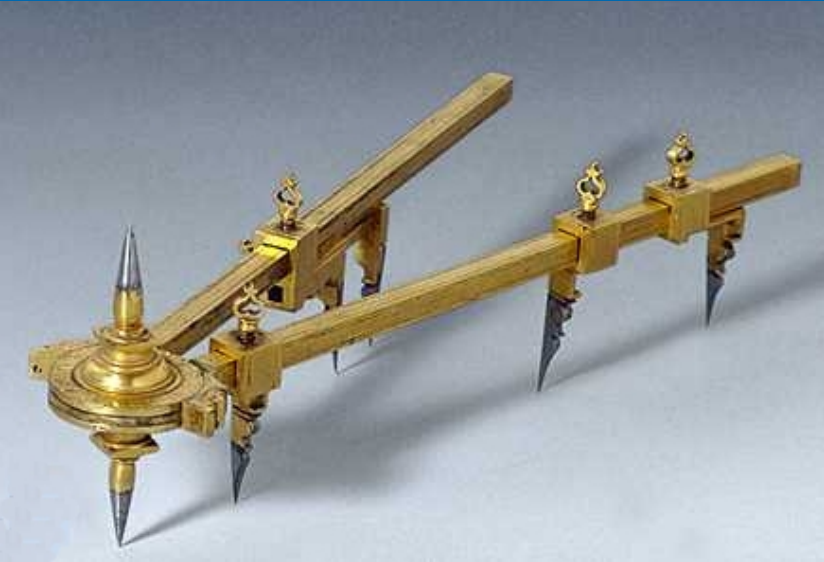
4-legged compass



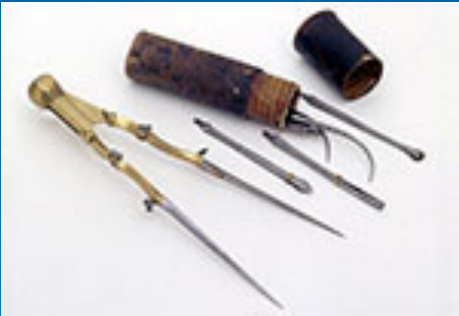
Gauge compass

SG101.5.2.2 A Gallery of Compasses (2)

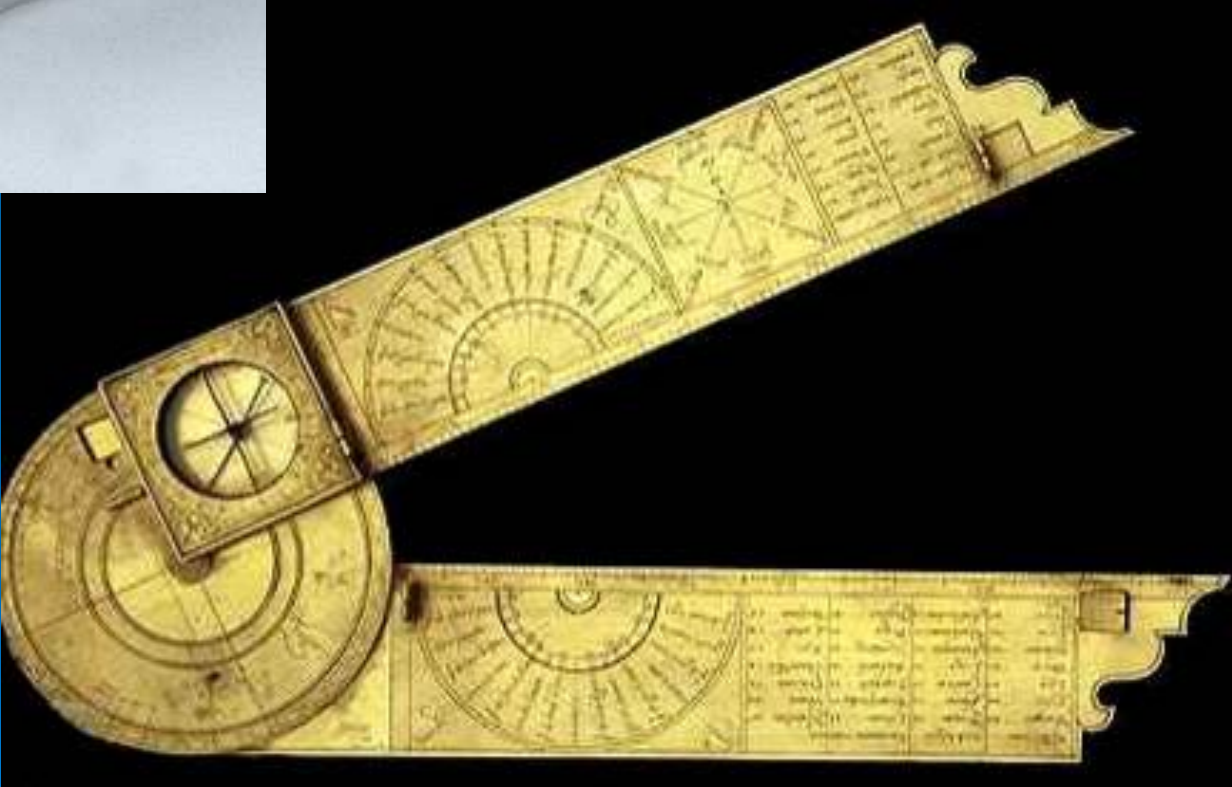
Famous Compasses



Galileo's compasses →



Michelangelo's compass



SG101.5.2.3 A Gallery of Compasses (3) PHI Compasses

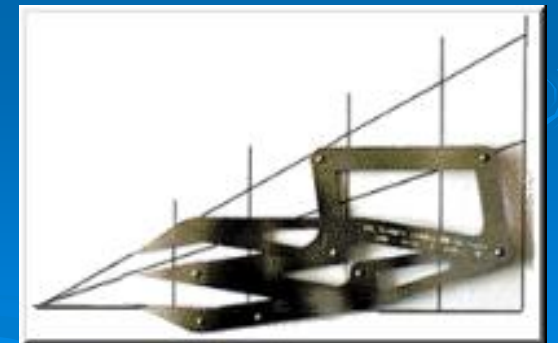
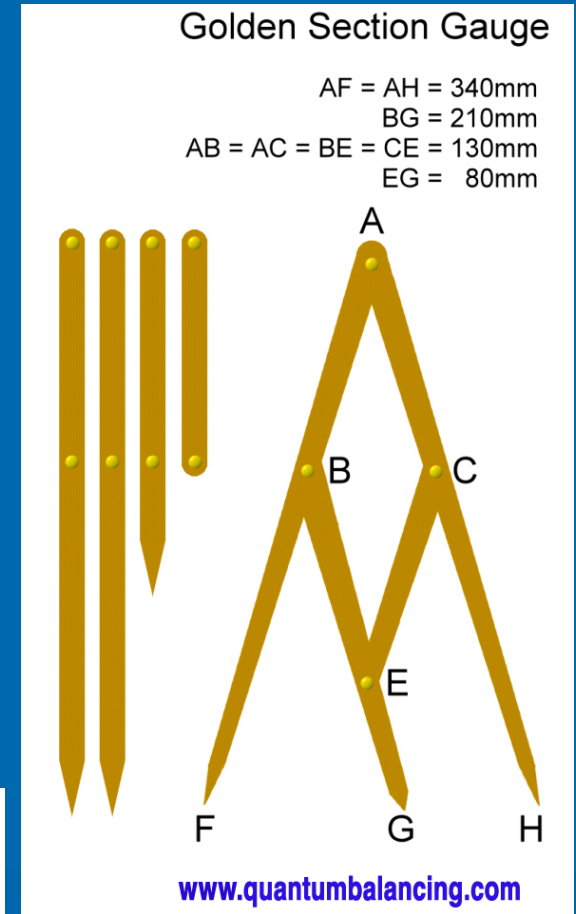
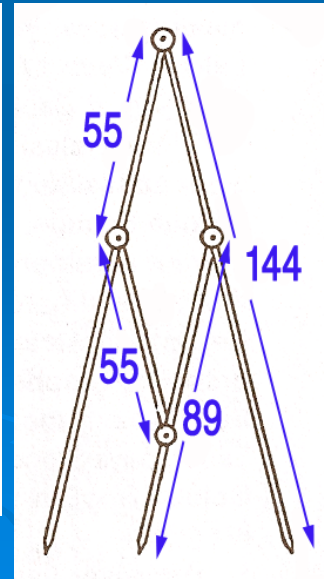
A traditional sacred tool, the Golden Compass allows for accurate Phi proportion designing. It is made out of an articulated pentagon which embodies the Golden Ratio in its two Penta-Modules (Golden Triangle and Golden Gnomon). [◆SG105]

If you deal with life (are you?), in whatever capacity (from financial analysis of stock markets to the beauty of a flower to the ratios of a human face)... the Golden Compass or Gauge/Caliper is a wonderful tool of co-creation and appreciation of the Beauty and Harmony of the universe around us. We will use it later to analyze shapes in nature & culture [◆SG108-205-207] and create harmonious art forms [◆SG208-305].

You can purchase one online or build it yourself from this template →

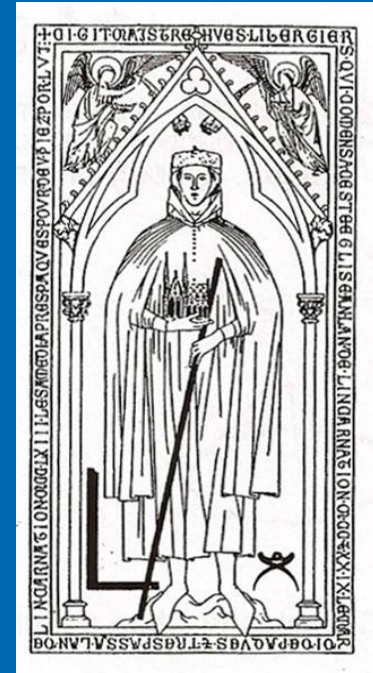
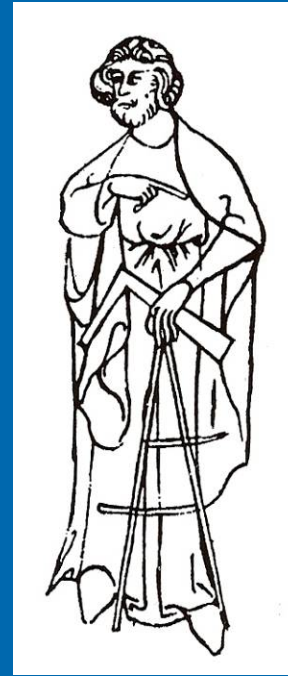


↑ Golden Mean Book and Caliper

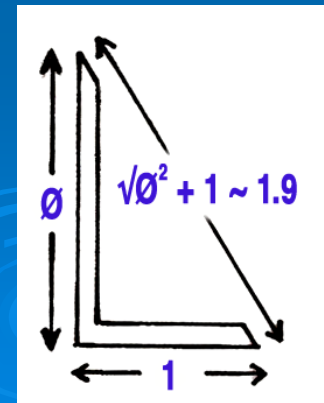
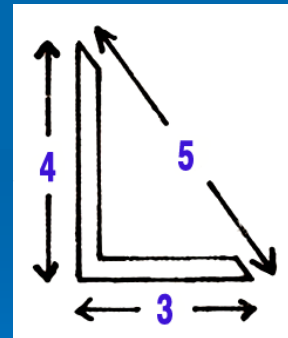


↑ Golden Mean Gauge

SG101.5.3.1 The Builder's Square (1)

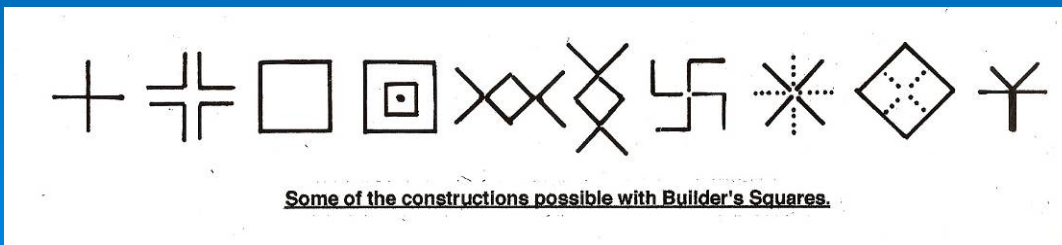


In Rheims cathedral, France, the tombstone of Hughes Libergier shows the Builder's Square, the compasses and the measuring rod ("toise").

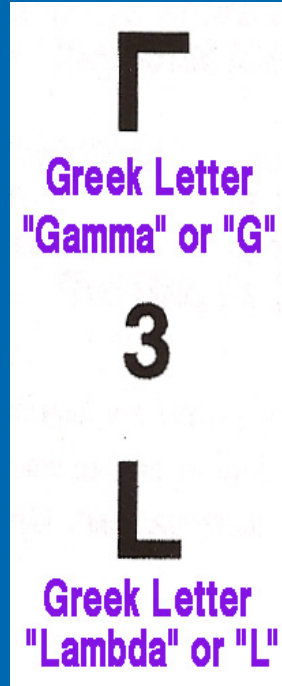
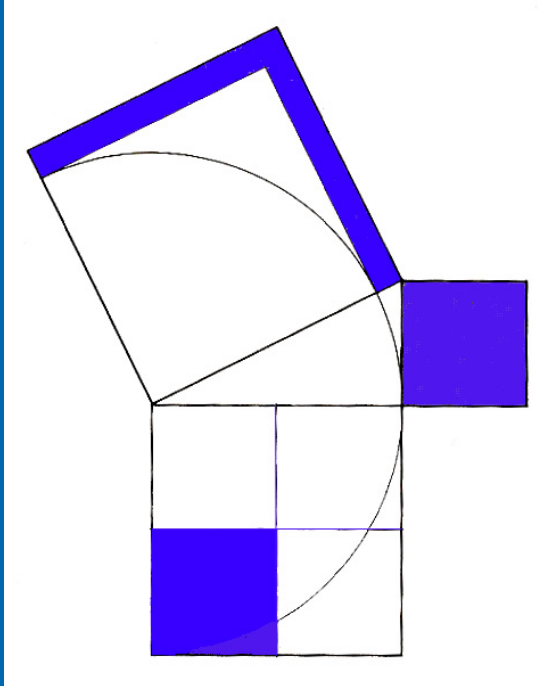


↑
3-4-5 Square to trace
Pythagorean Triangles

Phi Square →
to trace Golden Ratios



SG101.5.3.2 The Builder's Square (2)



← The capital form (Γ) of the Greek letter *Gamma* is shaped like a Builder's Square and carries a numerological value of 3.

It is also the first letter of *Geometria* / ΓΕΟΜΕΤΡΙΑ, the essential knowledge of the antique world. In ancient spelling it was *Gametria* / ΓΑΜΕΤΡΙΑ, variant of *Gematria* or alphanumeric system whereby each letters has a specific numerical value.

[◆SG303]

Gamma gave the name "*gammadion*" or Gamma-Cross (swastika).

Curiously, the 12th letter of the western Latin alphabet is "L" whose numerical value is also 3.

Both "Γ" and "L" are the same geometry of the square/cross quadrant or Builder's Square.



→ An ancient Builder's Square.

↑ The Greek word for Square was *gnomon*, defined by Hero of Alexandria as "*any figure which, when added to an original figure, leaves the resultant figure similar to the original*". This is called Gnomonic Expansion. [◆SG203A - Fractals]

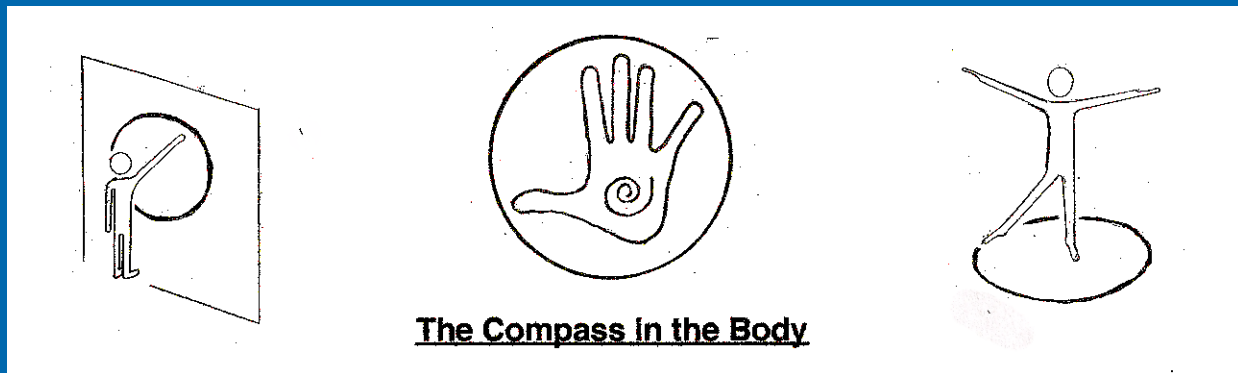
Shown above is the gnomonic increase from the square surface area of 4 to the square surface area of 5, where the gnomon of the larger square 5 is equal to the 1/4 of the initial square of 4 (in blue).

The Square symbolized the authority of the chief mason/architect whose square was the standard against which the other squares were checked for accuracy.

SG101.5.4.1 Sacred Geometry: An En-compass-ing Art (1)

Sacred Geometry has to be practiced in all possible (and impossible) ways:
hands-on (as a compass-and-ruler creative play),
eyes-on (as an awareness yoga of re-perception and re-creation of reality),
hearts-on (as a meditative contemplation on Oneness, Love and Beauty)... and much more...

*The most essential tool
of Sacred Geometry,
the COMPASS, exists
in the body in at least
3 locations*



- The thumb as the hub and any fingers as the span to draw a circle
- One shoulder as the center point and the entire arm to revolve a wheel circle
- One toe as the fixed point and the other toe as the whirling dancer

By practicing being the compass and moving within the golden ratio circles of life, we become the universe: we stretch from the unmovable Origin point to the myriad manifestations at the Periphery - the suburbs of the universe and of ourselves.

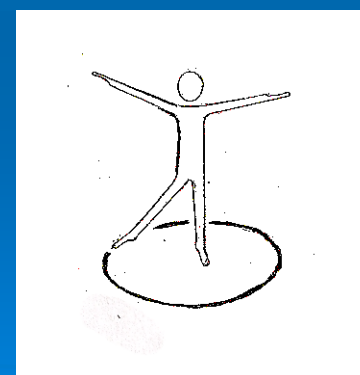
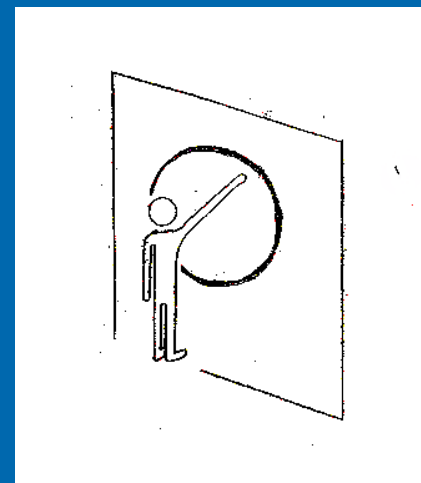
In between is the RADIUS, the direct journey to and from Center, the Gaze of Spirit, the Ray of Light. The Radius is the conscious awareness that Center and Periphery are One and the Same. In this light, enjoy using the word 'RADIANCE'.



SG101.5.4.1P Suggested Practices

Find an empty wall and tape a large piece of draft paper on it (at least 6 feet x 6 feet).

- Stand alongside the wall and practice tracing circles (with your finger and then with a pencil or chalk), using your arm as a compass.
- Switch sides and do it with your non-dominant arm.
 - You are doing Body-Enso(“Enso” is Japanese for *calligraphic circles*)
- Standing on one foot as the point of a compass, practice tracing circles with the other foot.
- Walk very slowly and imagine that each step you take creates a circle of energy rippling around *as if you were walking on water.*

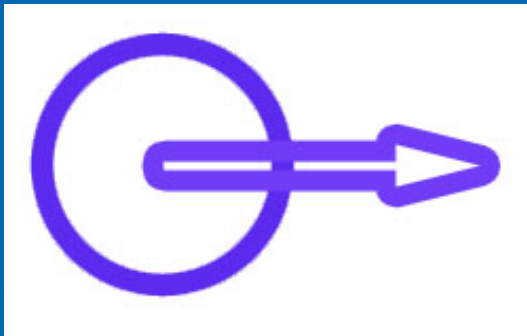


SG101.5.4.2 Sacred Geometry: An En-compass-ing Art (2)

Think about it:

Every time we walk and take a step,
we duplicate universal creation
as mini divine compasses.

We repeatedly plant the Axis of the World
and stretch a new radius of creative action.

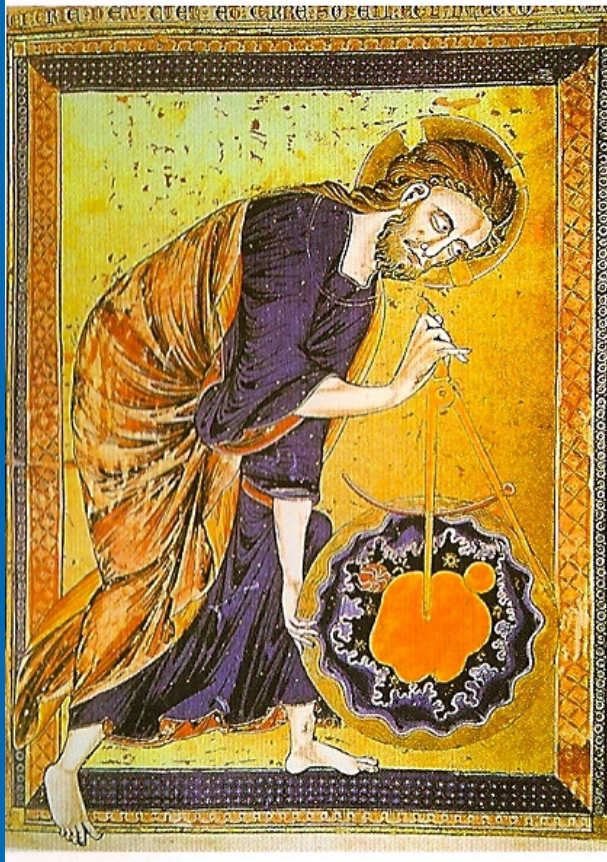


→ In this Indian miniature, Queen Maya, the mother of Buddha, shows the posture of the fertility goddess. She stands upon an open lotus flower representing the manifested universe. She claps a branch of the Asoka tree (the tree under which the Buddha was born) representing the Tree of the World and its columnar axis.

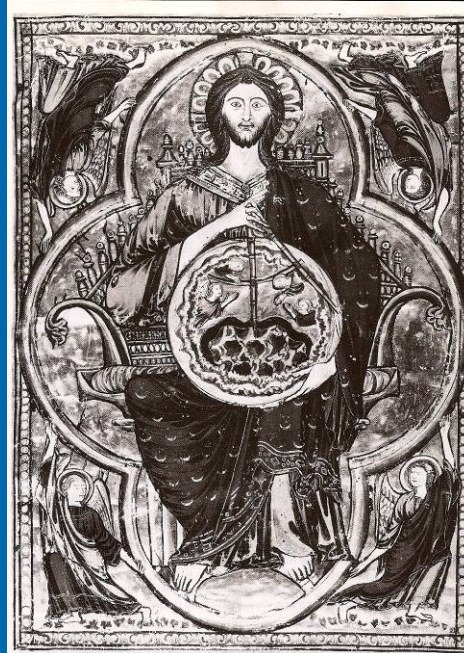
Queen Maya is ready to step forward and *en-compass* the universe in a circular cosmic dance step.



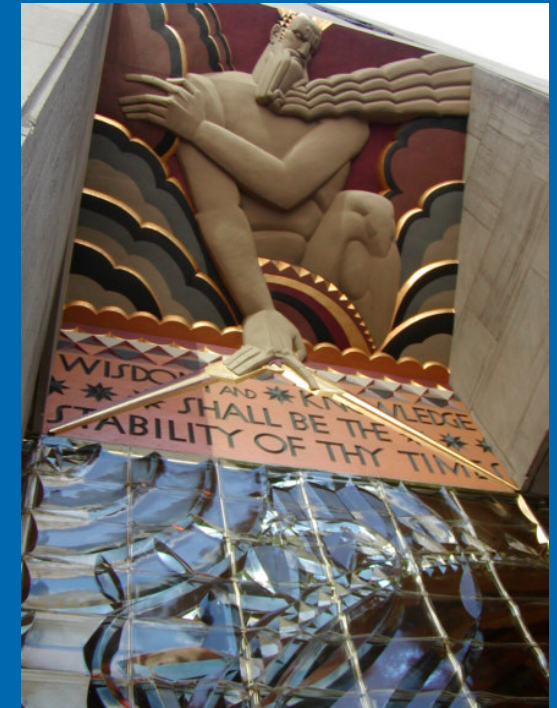
SG101.5.5.1 The Geometric Act of Creation (1) Western (Male Creators)



↑ *Bible of Vienne*. 13th century.
The compass is extending the inner vision.



↑ In this medieval image, Christ is holding the compass over his heart chakra.
From this center of love & harmony, Christ organizes the vital energies of the lower chakras.



↑ *“Genius, Which Interprets to the Human Race the Laws and Cycles of the Cosmic Forces of the Universe”.*

The compass is held below the base chakra.

Sculpture by Lee Lawrie.
Rockefeller Center, New York.

Holding a compass is like projecting a *cone of higher light* through the eye and radiating Spirit Harmony onto the world.

The compass is a symbol for the Eye of God:
the legs are rays of light emanating from the sun-source.

SG101.5.5.2 The Geometric Act of Creation (2) (Western)

*“In his hand
He took the golden compasses,
Prepar’d in God’s
Eternal store,
To circumscribe
This universe...”*

(Milton, *Paradise Lost*, Book VII)



William Blake.
Frontispiece of *Europe, A Prophecy*. 1794.

SG101.5.5.3 The Geometric Act of Creation (3) (Eastern style)

In the oriental cultures, the male and female principles create a dancing balance.

Fu Xi was the first of the mythical *Three Sovereigns* of ancient China. He is reputed to be the inventor of writing and to have found the 8 Trigrams, the basis of the *I Ching*, on the back of a dragon-horse.

According to legend, the land was swept by a great flood and only *Fu Xi* and his sister/wife *Nu Wa* survived to continue the human race.

It is said that *Fu Xi* and *Nu Wa* found a way to use clay to create human figures and, with divine power entrusted to them, made the clay figures come alive.

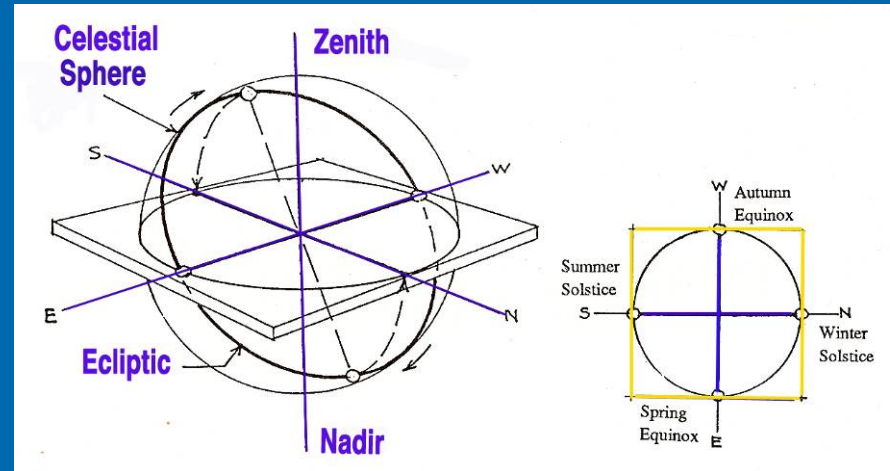
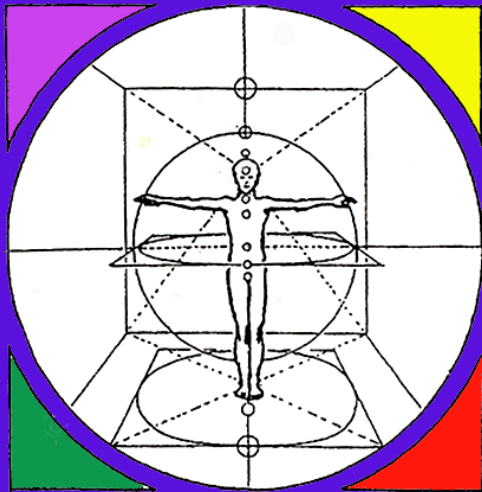


↑ In ancient Chinese creation mythology, *Fu Xi* (right) holds in his left hand the Square while *Nu Wa* holds in her right hand the cosmic compass.



SG101.5.6.1 The Union of Square & Circle

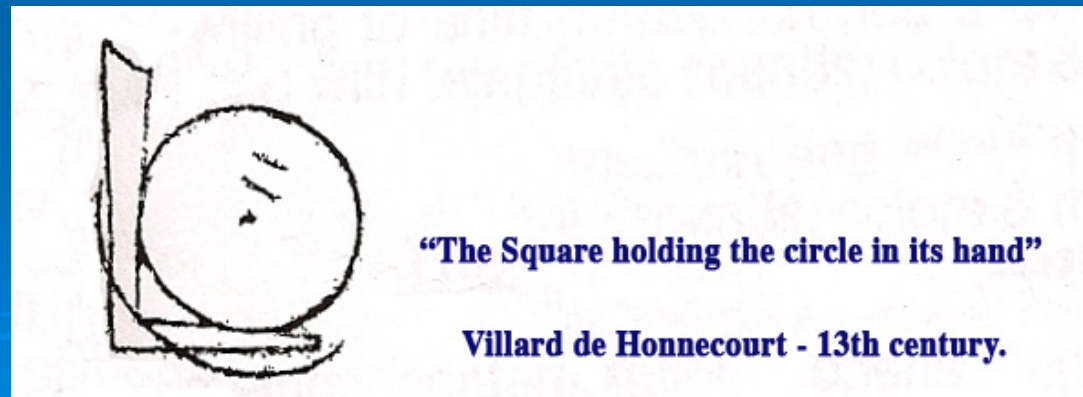
Standing “*between square and compasses*”, the geometer or master architect is the holy intermediary between Heaven & Earth, the channel and locus of the Sacred Wedding between Yin & Yang. He/She is embodying Sacred Geometry while laying out the harmonic proportions of the Temple. [◆SG207]



The Heavenly Sphere and the 3D cross of the 6 directions

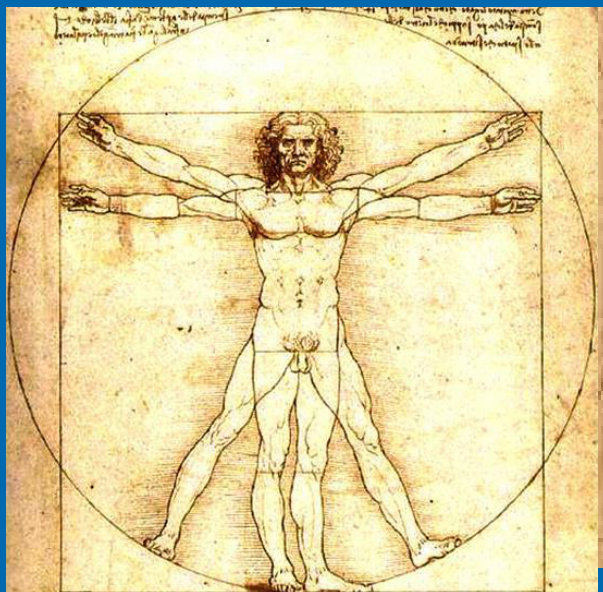


The symbols of masonry





SG101.5.6.1P Suggested Practice



Later, we will study the now-famous “*Vitruvian Man*” drawing by Leonardo Da Vinci.

The practice here is to stand up and hold the two body positions illustrated in this drawing:

- Feet together and arms spread horizontally, your body forms a ‘T’ and is inscribed in a SQUARE.
- Feet apart and arms raised above your head, your body forms an ‘X’ and is inscribed in a CIRCLE.
 - Go back & forth between the two positions: experience how each one feels and what it activates in you.

And realize that you are embodying within this perfect human body sacred tool the union of Heaven and Earth!

SG101.5.6.2 Squaring the Circle (1)

“Squaring the Circle” is one of the 3 great quests of Sacred Geometry, along with *doubling the cube* and *trisecting the angle*.

It is a metaphysical discipline that unite in a Sacred Marriage the infinite, causal realms of Spirit (Circle) with the finite manifestation of the material world (Square). [◆SG202]

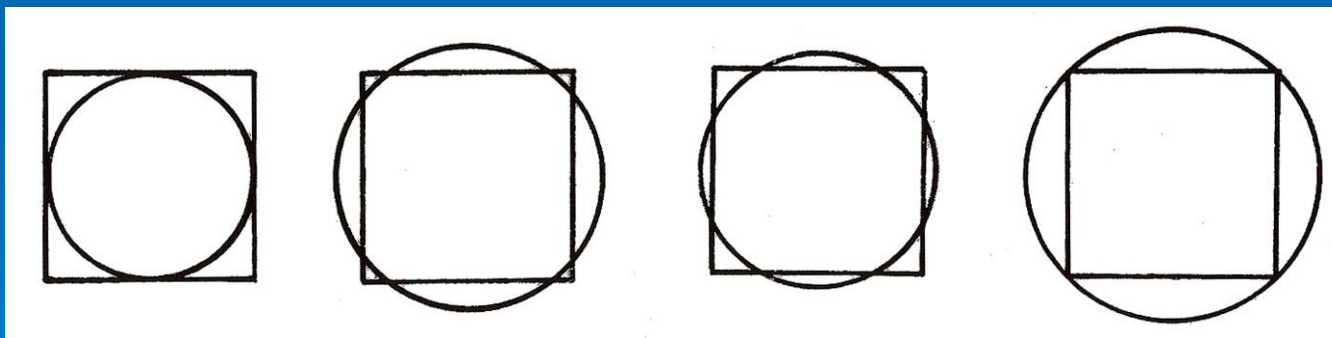
The goal is twofold:

1. To construct a square & circle with equal perimeters.
2. To construct a square & circle with equal areas.

The circle being based on the irrational constant π , it is impossible to draw with perfect accuracy a square equal in perimeter or area to a circle. But Sacred Geometry, while dealing with the known rational aspects of mathematics, is also teaching the symbolic & transcendental qualities of numbers & shapes.



↑ This medieval squaring of the circle through the pentagonal geometry symbolizes the union of the Infinite (circle) with human reason (square) through the laws of harmony (Golden Ratio pentagram). (R. Lawlor. *Sacred Geometry*) [◆SG105]

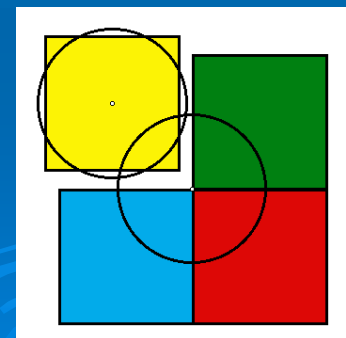


Square containing circle

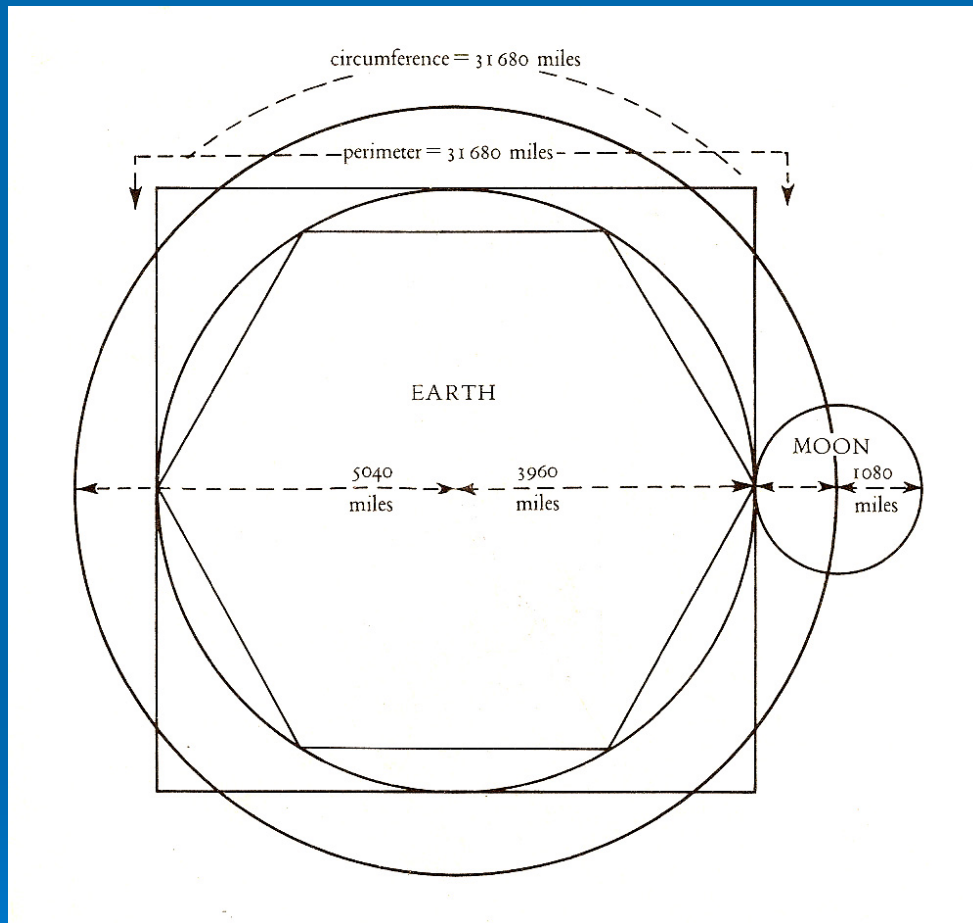
Square & circle with equal perimeters

Square & circle with equal areas

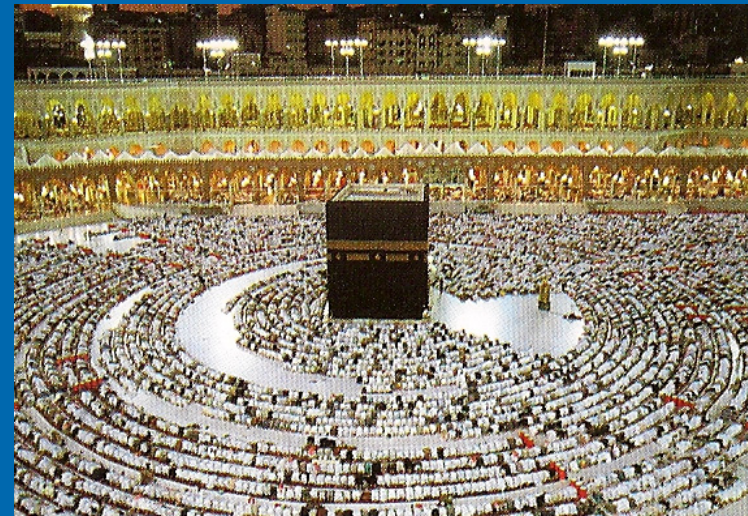
Square contained in circle



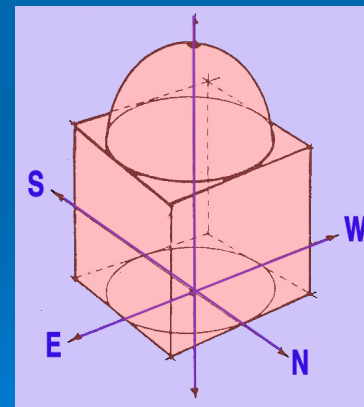
SG101.5.6.3 Squaring the Circle (2) and Cubing the Sphere



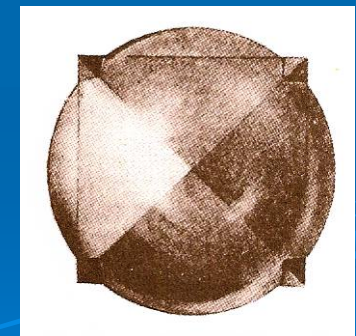
The *squared circle* demonstrated by nature in the relative dimensions of the earth and moon. "New Jerusalem" diagram by John Michell. [◆SG206]



↑ The circumambulation of the cubic Kaaba at Mecca is a symbolic re-enactment of the metaphysical quest for Squaring the Circle. Pilgrims at Mecca walk counterclockwise, imitating the polar wheel of the stars.



↑ The cube and the hemisphere or dome, in architecture

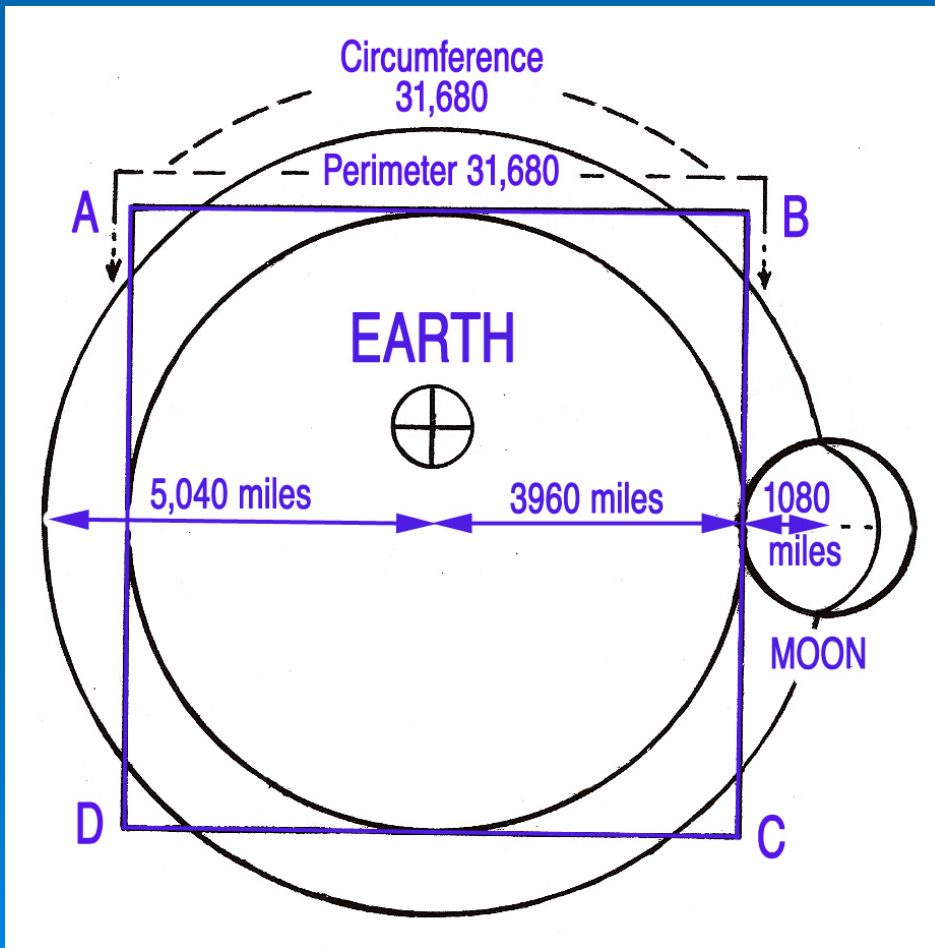


↑ The Great Pyramid within a sphere

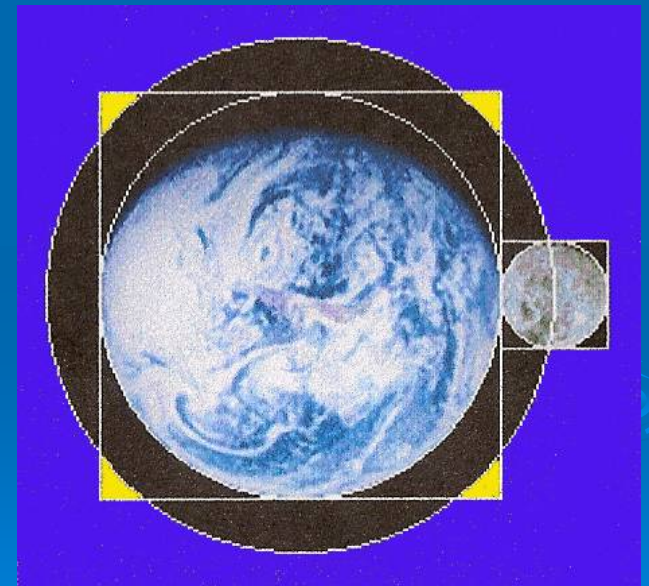
An extraordinary geometric harmony unites the Earth, the Moon,
Squaring the Circle and the Pythagorean Triangle (not mentioning the Great Pyramid!).

Right now, to get you acquainted with this diagram, rediscovered by John Michell,
take your graph (or tracing) paper
and reproduce to the best of your ability the line drawing below.

It contains many keys of knowledge.

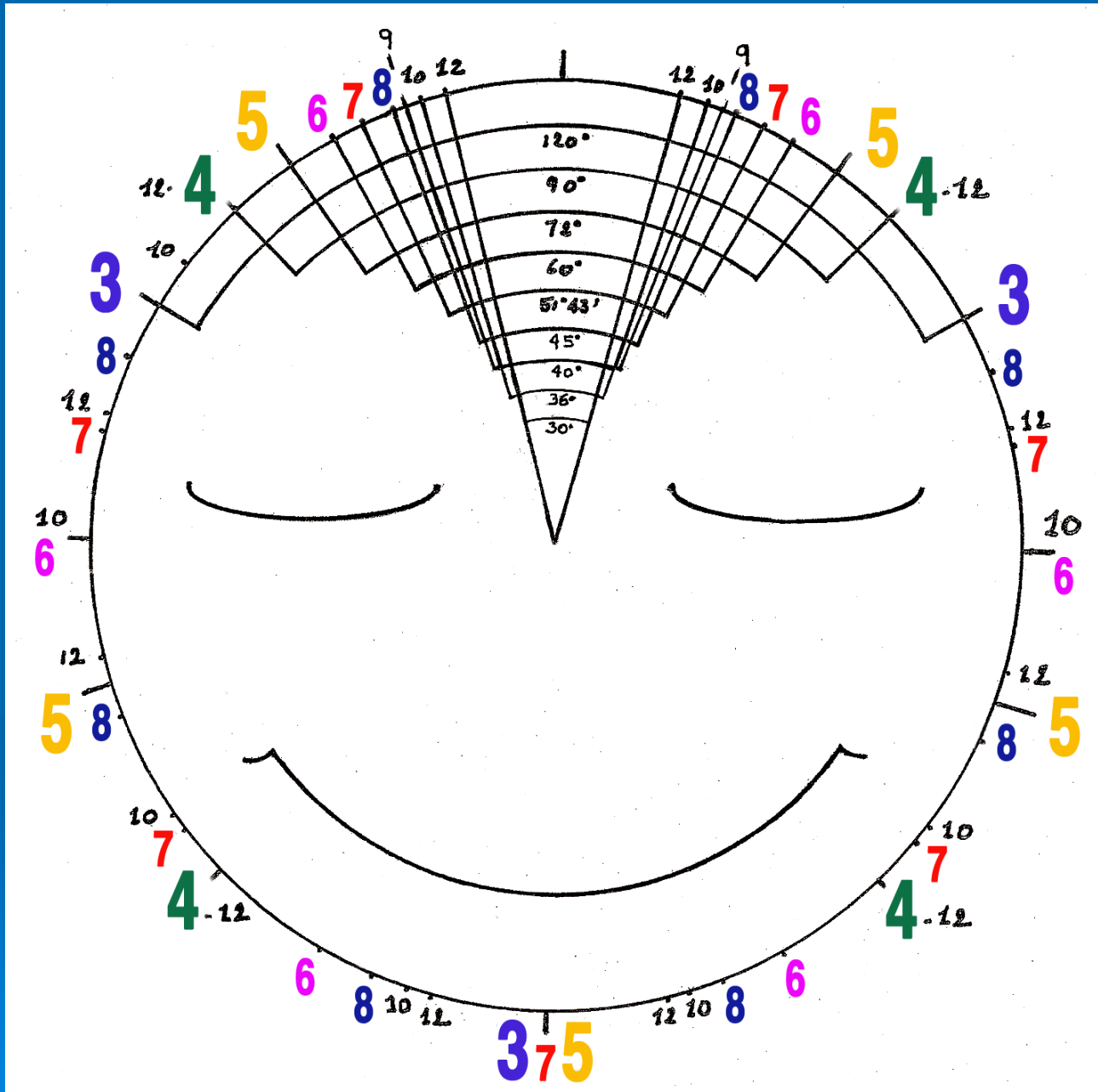


↓ We will study this diagram
in detail later
[◆SG202, 207 and 301]

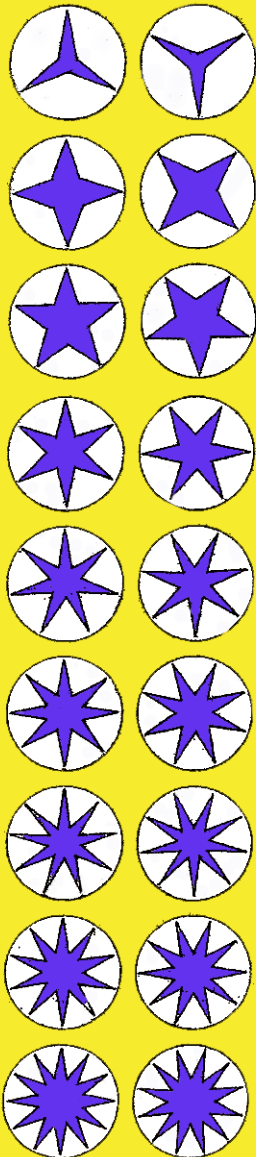


SG101.5.6.3P Suggested Practice

SG101.5.7.1 Measuring Tools #1: SG Protractor (1)



Stars

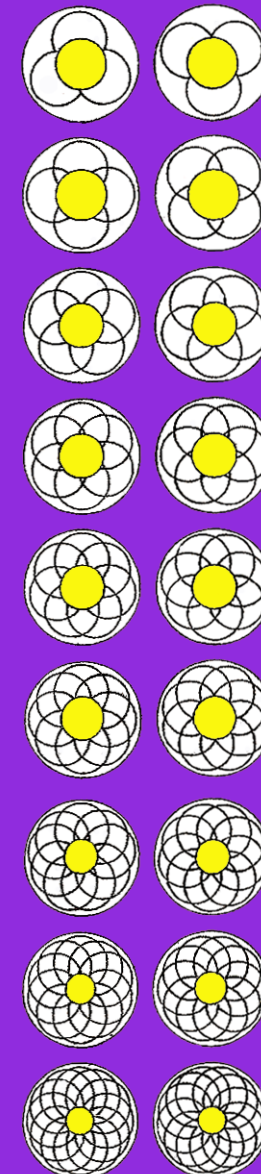


How to use the Sacred Geometry Protractor:

1. Place a copy of the SG Protractor (preferably a transparency copy on acrylic) over your art/grid paper.
2. With the tip of your compass, lightly punch through the desired geometric marks. Example: if you want to draw out an equilateral triangle, locate the three “3” (at 120° intervals); if you want a pentagon, locate the five “5” etc... and punch through.
3. Remove the SG Protractor, locate the tiny holes on your paper and connect them to trace out the basic geometric polygons (triangle to dodecagon).
4. If you want *stars*, draw out acute angles from the geometric points/summits through the center. For the pentagram, heptagram and dodecagram, you can connect each summit with two opposite ones.
5. If you want *flowers*, just trace radius circles through each summit and the center.

Dividing the Unity-Circle into
← Stars & Flowers →

Flowers

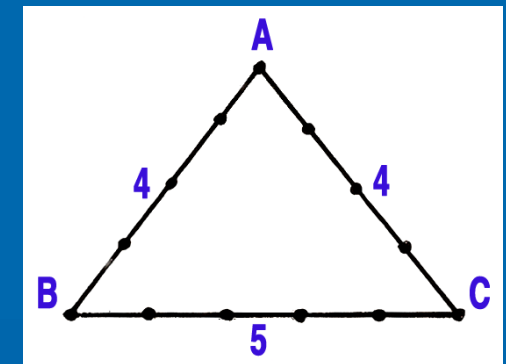
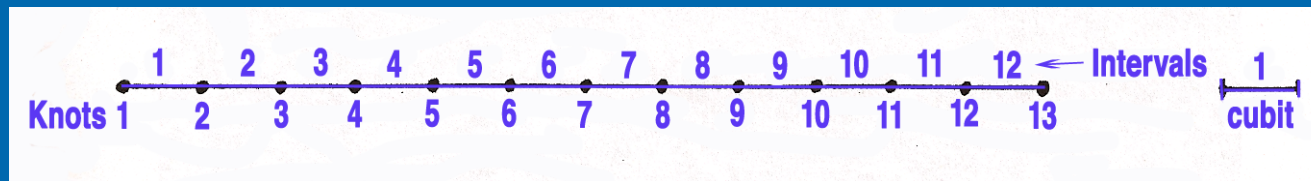


SG101.5.8.1 Measuring Tools #2: 13-Knots Cord (1)

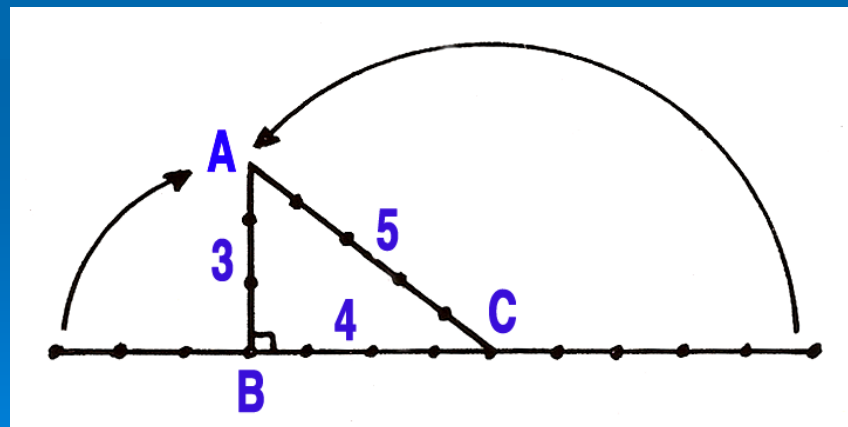
The medieval contractor (*Maitre d'oeuvre*), following the Egyptian *harpedonaptae* [◆SG101.3], was using the 13-knots measuring rope or Sacred Cord, also called the “*Druid’s Rope*”. To be precise, the 12-knots rope actually has 13 knots and 12 intervals. It is a very simple & versatile tool for geometric layouts: right angles & perpendiculars, arcs & circles, various triangles, phi shapes... It has been and is still used all over the world.

In India, the four *Sulba Sutras* (a section of the *Vedangas*, itself one of the 40 parts of the Vedic literature) give geometrical & arithmetical constructions used to build sacred altars and ceremonial platforms (*citīs*). The measurements are made with the sacred rope (*Sulba*).

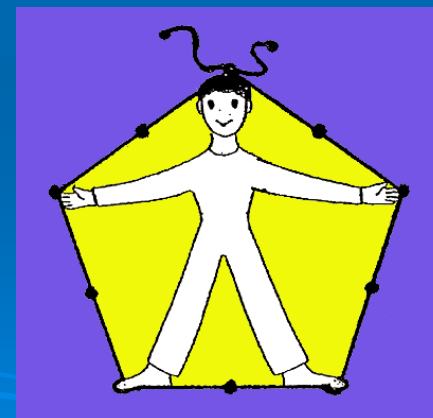
Symbolically, the rope represents the world/cosmic axis unifying Heaven & Earth. The knots correspond to the rungs of the sky ladder or the initiatic degrees in the spirit journey of ascension. The centers (chakras) of the energy body are also described as ‘knots’ (neural nexus).



↑ The 5-4-4 triangle
(7th part of circle)



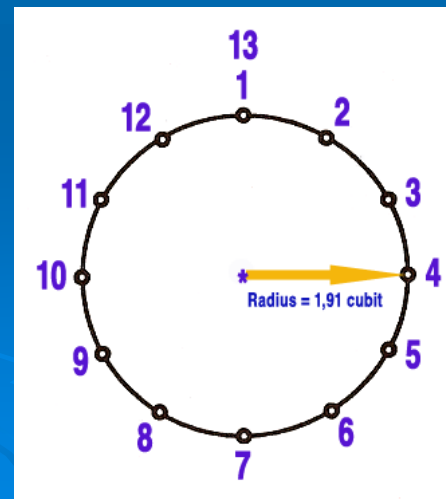
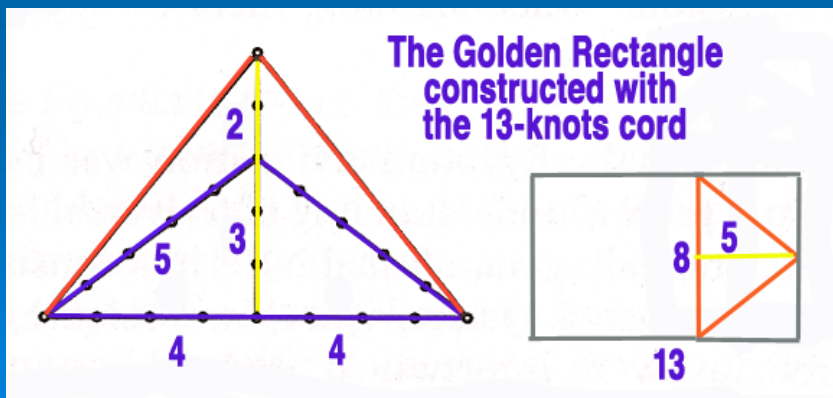
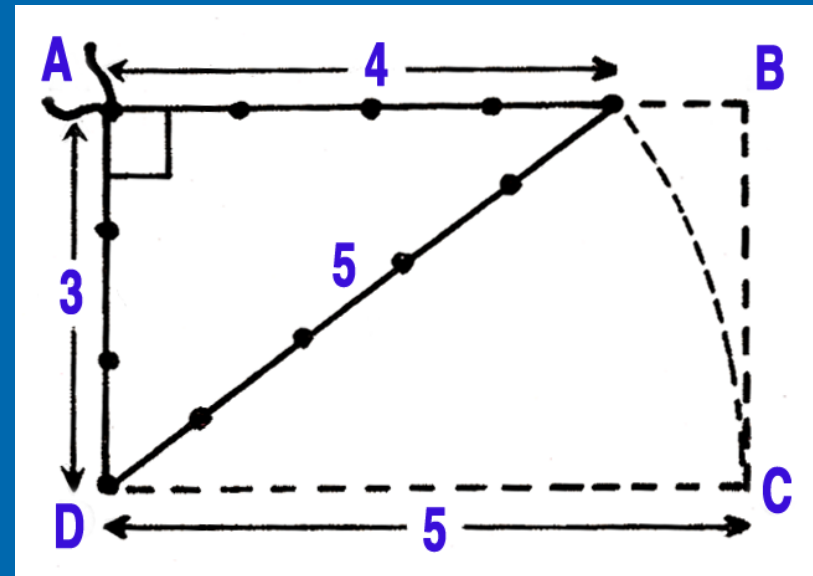
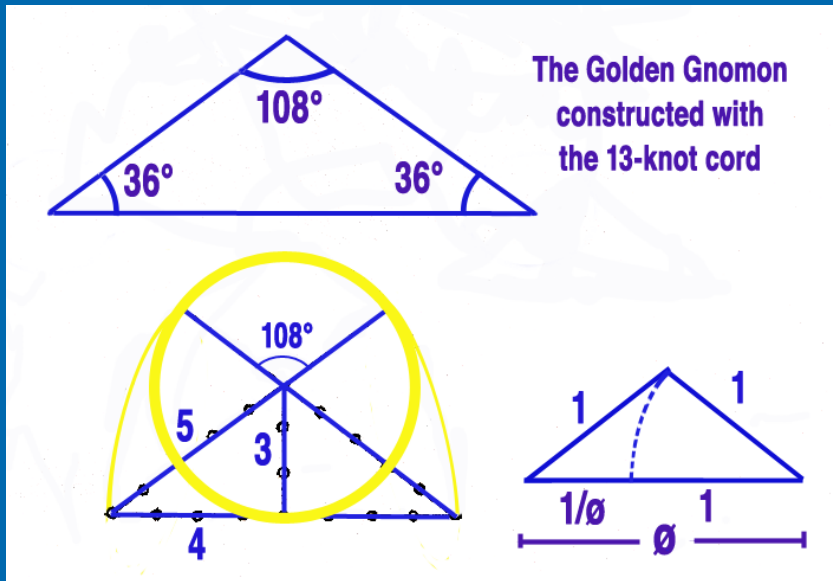
↑ Tracing the 3-4-5 Pythagorean triangle



↑ The Penta-Man

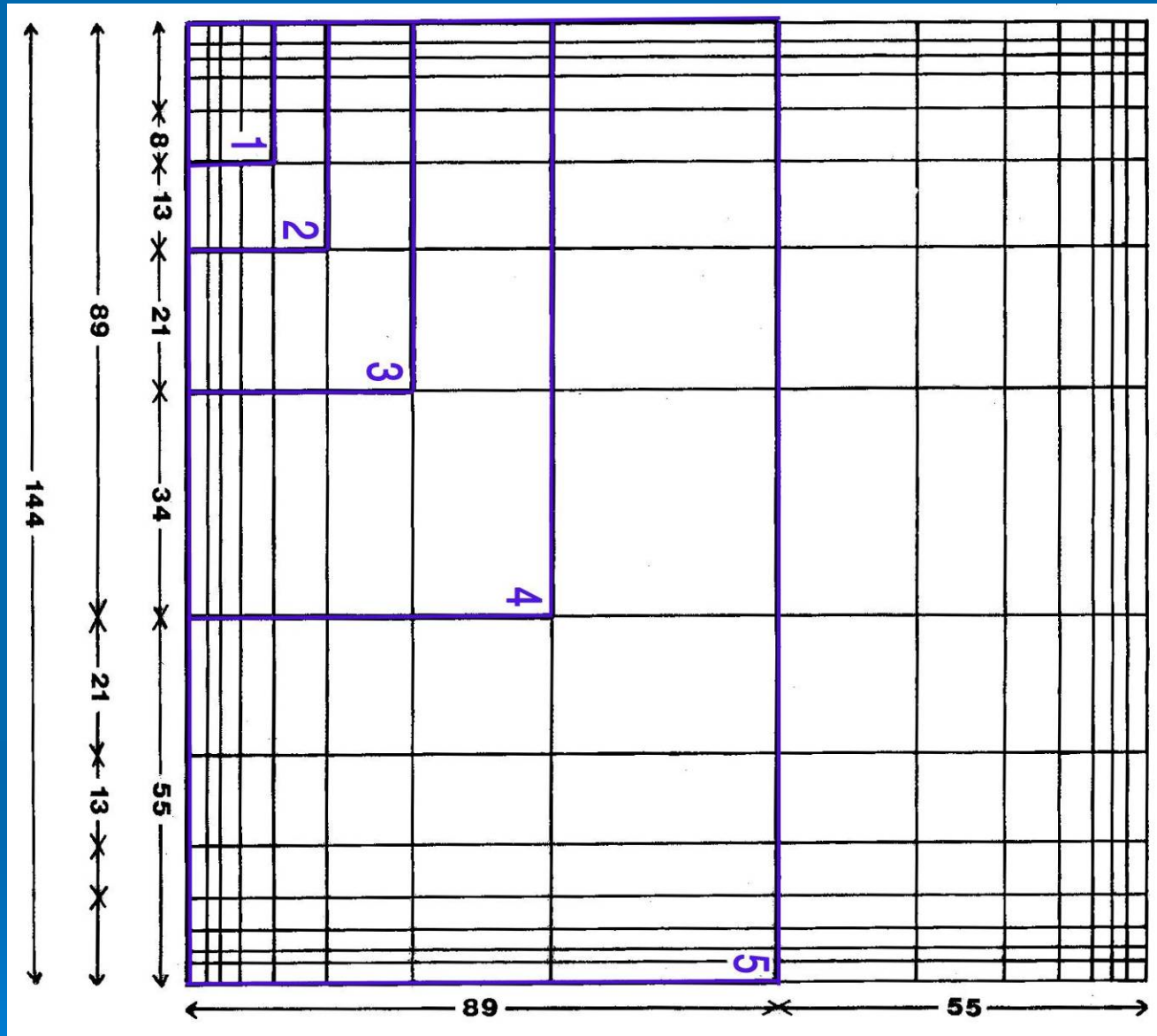
1 cubit = 1.72 foot
= .5236 meter

SG101.5.8.2 13-Knots Cord (2) Golden Proportions



← When the Sacred Cord is looped around a circle (knot 13 overlaps knot 1), the radius = 1.91 cubit.
 $1.91 \times .5236 = 1$ (meter)

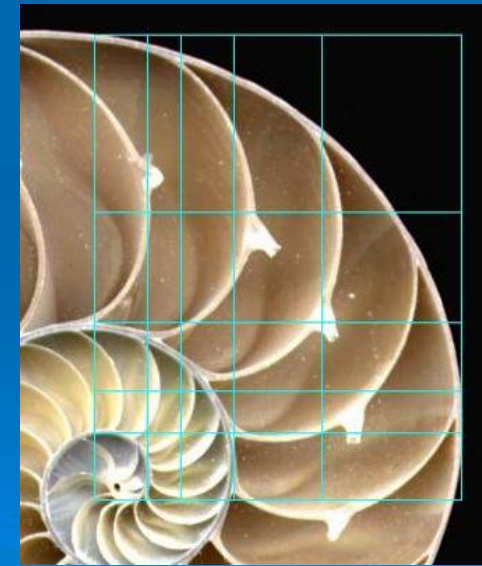
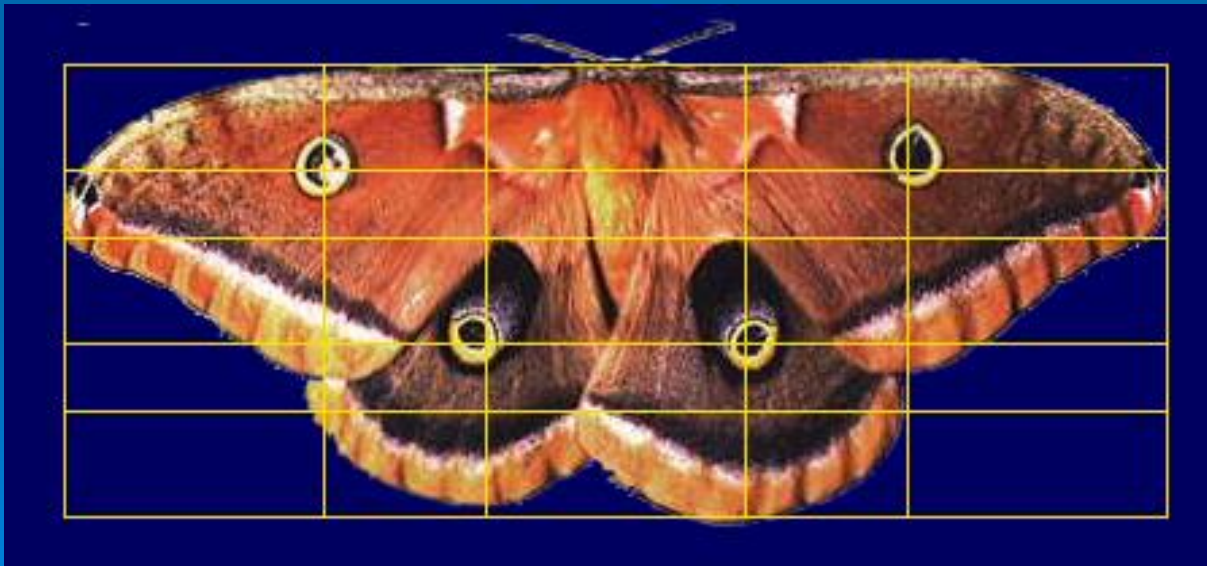
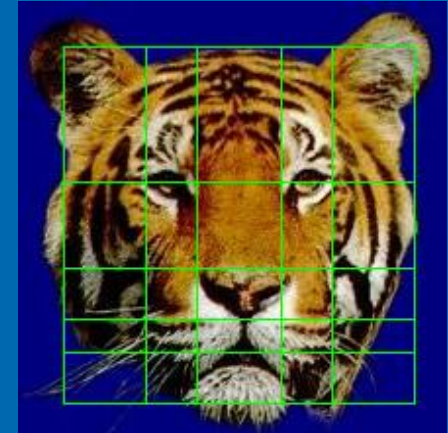
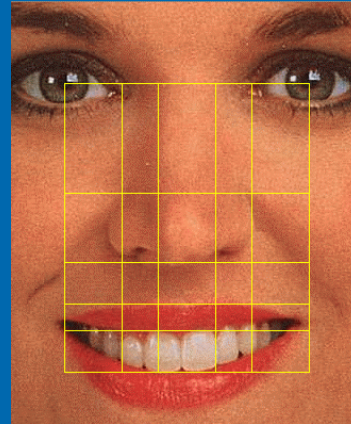
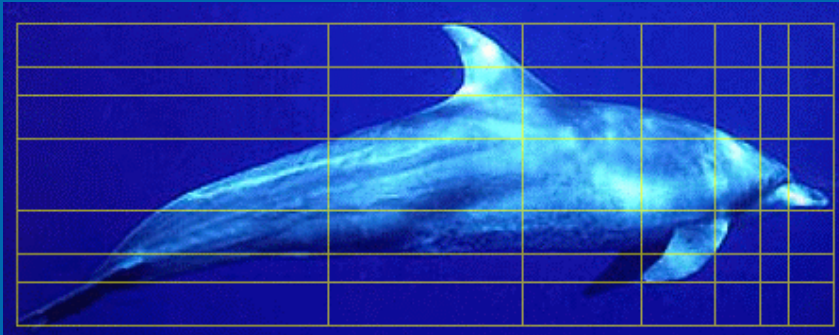
SG101.5.9.1 Measuring Tools #3: PHI Grids (1)



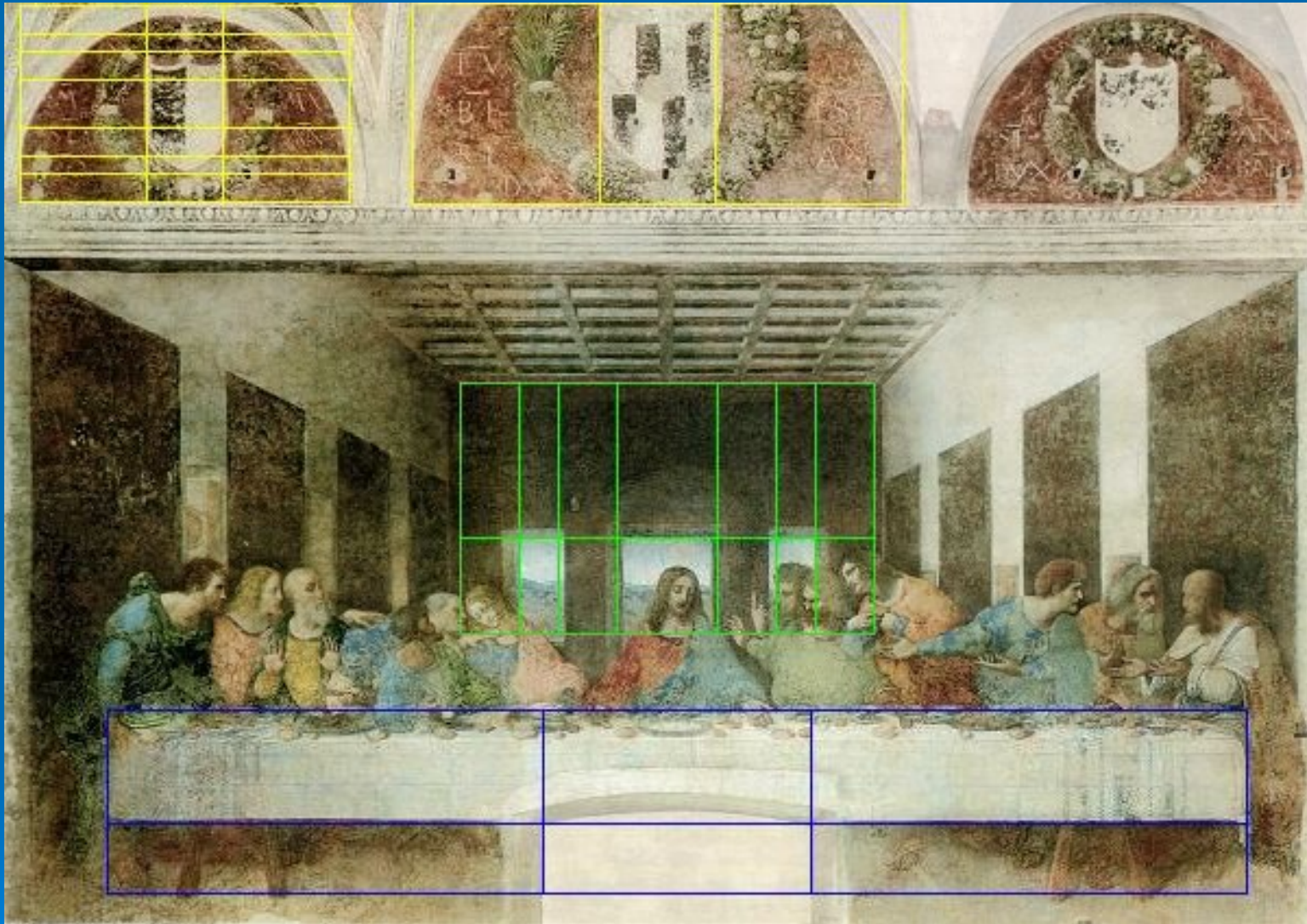
Example of a PHI Ratio Grid: gnomonic expansion of PHI/Golden Rectangles. Printed on acrylic transparency it allows for PHI harmonic analysis of any image.

SG101.5.9.2 Phi Grids (2) Software

A wonderful software PHI Grid is available on <http://www.phimatrix.com>: you can download the program free for two weeks and then purchase it for a small fee. Below are examples of the possibilities.

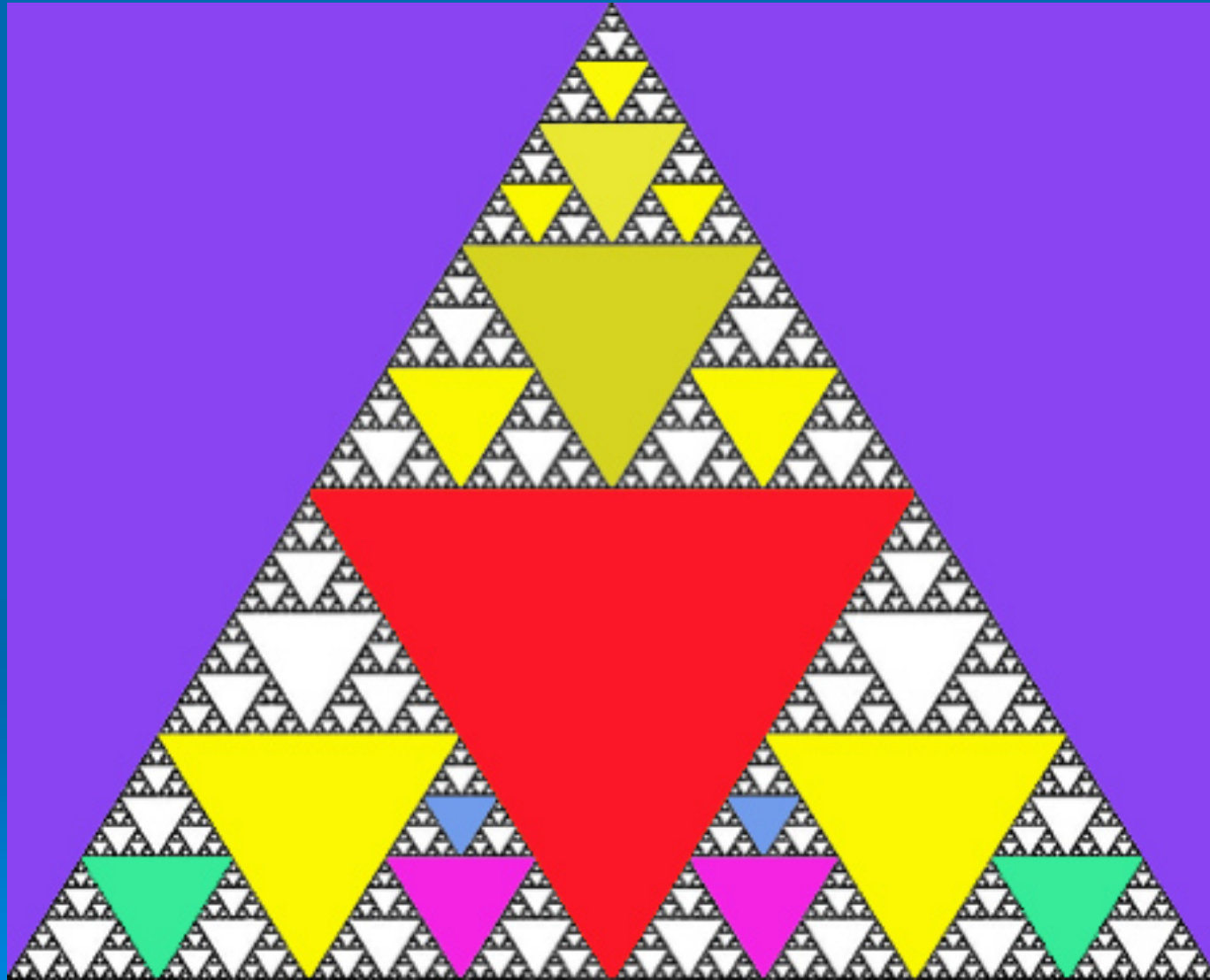


SG101.5.9.3 Phi Grids (3) Software



The Last Supper by Da Vinci, as harmonically analyzed with *PhiMatrix*.

SG101.6. Chapter 6. Basic Geometry

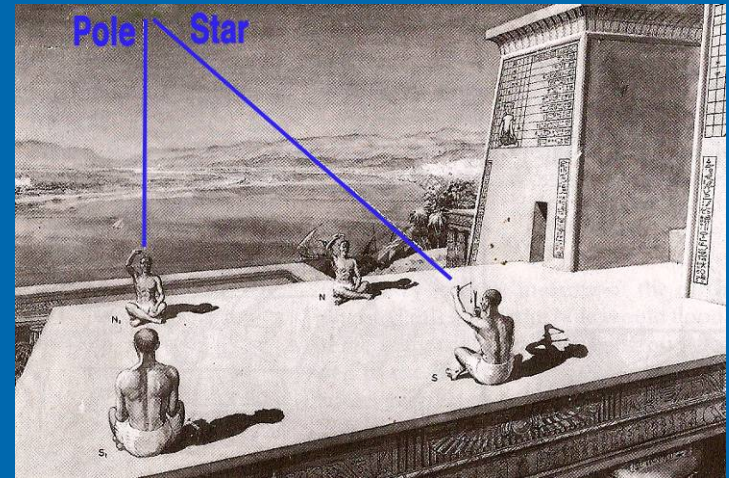


SG101.6.1.1 Angles & Polygons (1)

Angle: Latin *angulus*, Greek *angulos* = bent or curved.
Indo-Proto-European *ank-* = to bend, to bow.

An ANGLE is the figure formed by two rays sharing a common endpoint called the vertex of the angle. In ancient geometry, it is a quality of relationship between two entities:

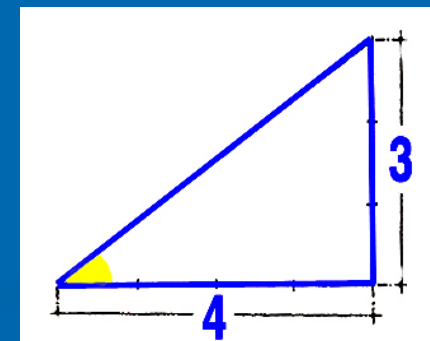
- Each angle bends light & energy in specific ways.
- Each substance refracts light at its own angle.
- Bonding angles determine molecular properties.
- Triangulation allows for surveying.
- Planetary angles (aspects) are essential in astrology.
- Primacy of the Golden Growth angle in botany ($137^\circ 50'$)
- Angles create ratios (architectural or musical)
- Ancient wisdom holds that cosmic energies are accessed through the effects of angulation and geometric grid systems



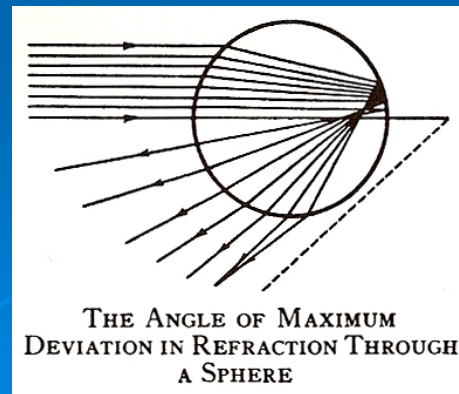
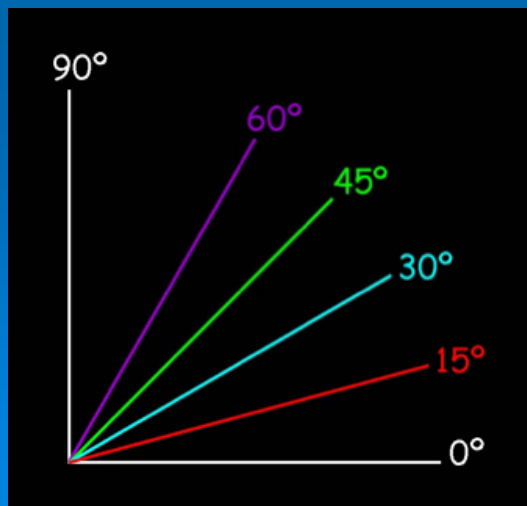
↑ Star triangulation in ancient Egypt



The angle symbol



↑ In ancient trigonometry, an angle is a relationship between two whole numbers. The yellow angle above is an expression of the ratio 3 to 4. Spatial coordinates can thus easily be put into relationship with sounds frequencies, such as the musical fourth.



SG101.6.1.2 Angles & Polygons (2) A Little Greek



In Sacred Geometry, it is useful to understand some Greek etymological roots:

Poly- = many (Greek *polus* = lots of.). Polygon = many angled figure.

Phi = 21st letter of the Greek alphabet. Symbol for the Golden Ratio.

-gon = side, angle (Greek *gonon* = angle, knee). Pentagon = 5-sided 2D figure.

-hedron = face (Greek *hedron* = face, seat). Octahedron = 8-sided 3D volume.

Greek numerals: En - Do - Tri - Tetra - Penta - Hexa - Hepta - Octa - Ennea - Deca

1 2 3 4 5 6 7 8 9 10

Name	n	a = arc-angle (360/n)	Polygon (n-sided)	Polystar (n-pointed)	A = inner angle (180 - a)	Sum (n x A)
Monad	1	360	Circle			
Dyad	2	180	Semi-circle			
Triad	3	120	Triangle	Trigram	60	180
Tetrad	4	90	Square	Cross	90	360
Pentad	5	72	Pentagon	Pentagram	108	540
Hexad	6	60	Hexagon	Hexagram	120	720
Heptad	7	~51.43	Heptagon	Heptagram	~128.57	900
Octad	8	45	Octagon	Octagram	135	1080
Ennead	9	40	Enneagon	Enneagram	140	1260
Decad	10	36	Decagon	Decagram	144	1440
Endecad	11	~32.72	Endecagon	Endecagram	~147.28	1620
Dodecad	12	30	Dodecagon	Dodecagram	150	1800
Tridecad	13	~27.69	Tridecagon	Tridecagram	~152.31	1980
Icosad	20	18	Icosagon	Icosagram	162	3240

A	α	Alpha
B	β	Beta
Γ	γ	Gamma
Δ	δ	Delta
E	ε	Epsilon
Z	ζ	Zeta
H	η	Eta
Θ	θ	Theta
I	ι	Iota
K	κ	Kappa
Λ	λ	Lambda
M	μ	Mu
N	ν	Nu
Ξ	ξ	Xi
O	ο	Omicron
Π	π	Pi
P	ρ, ϑ	Rho
Σ	σ, ς	Sigma
T	τ	Tau
Υ	υ	Upsilon
Φ	φ, ϕ	Phi
X	χ	Chi
Ψ	ψ	Psi
Ω	ω, ω	Omega

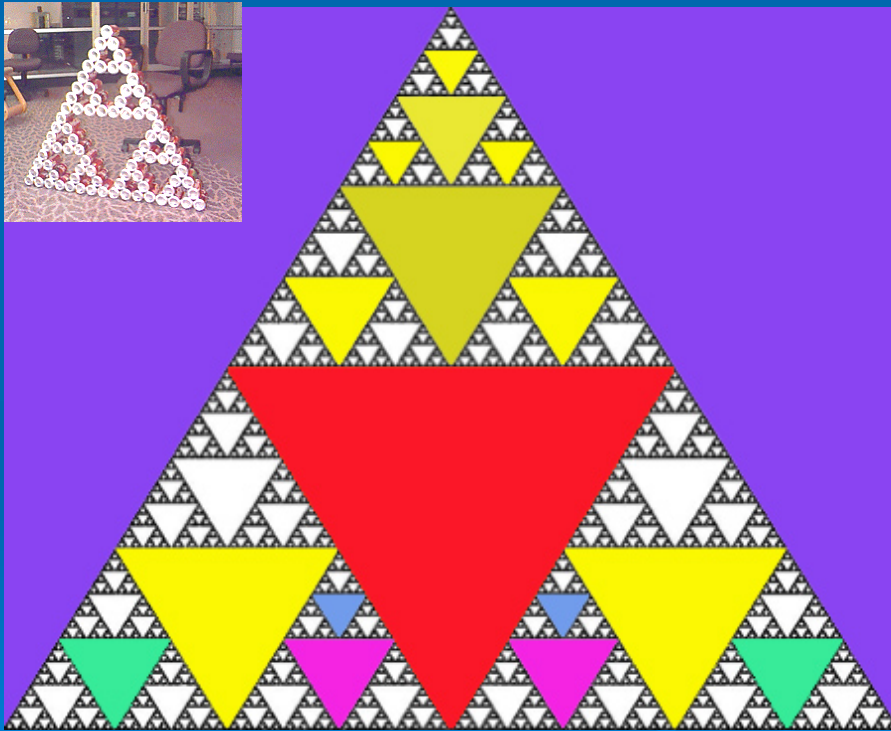
↑ Angle Geometries for Numbers 1 through 13 + 20 (n = sides)

SG101.6.2.1 Basic Geometry: Triangles

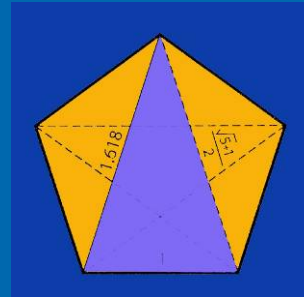
A Triangle is a polygon with 3 sides intersecting at a vertex (summit).
Below are sacred geometry triangles and triangle-related terms.

\triangle is the symbol for "Triangle". $\triangle ABC$ means "Triangle ABC".

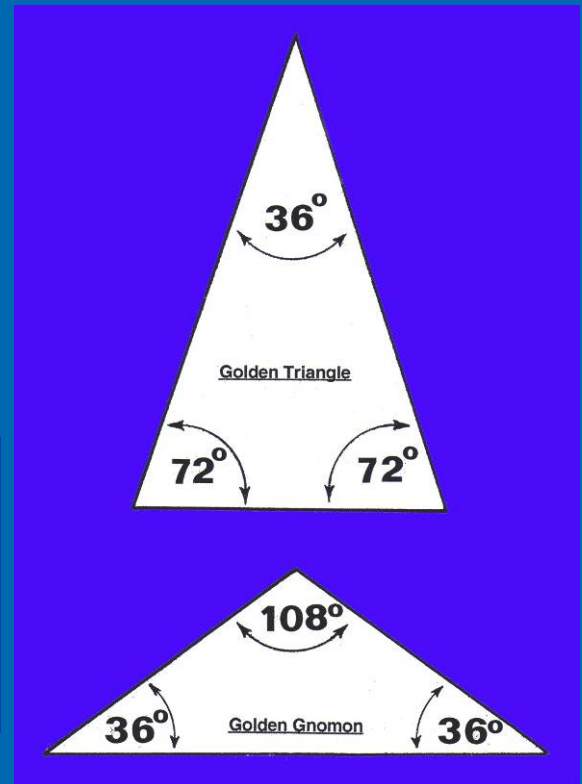
This symbol reads as "*delta*" in Greek and is the equilateral triangle.



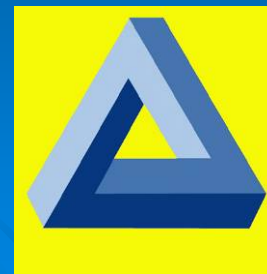
↑ The Sierpinsky (fractal) triangle is an equilateral triangle



↑ The Penta-Modules are the two triangular components of the Pentagon.

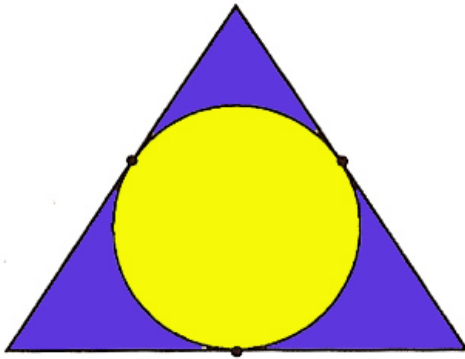


↑ The 2 Penta-Modules are isosceles triangles: they have equal sides.
Golden Triangle (above)
Golden Gnomon (below)

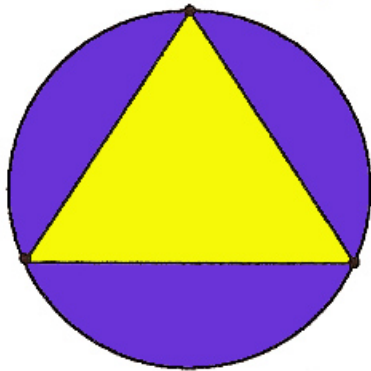


← The Penrose Triangle
(not to be confused with the Penrose Tiles. [♦SG105 / 203A])

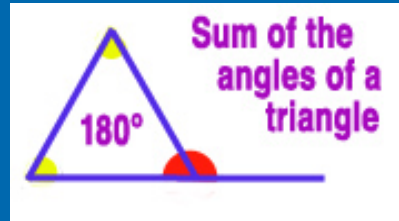
SG101.6.2.2 Basic Geometry: Triangles & Circles



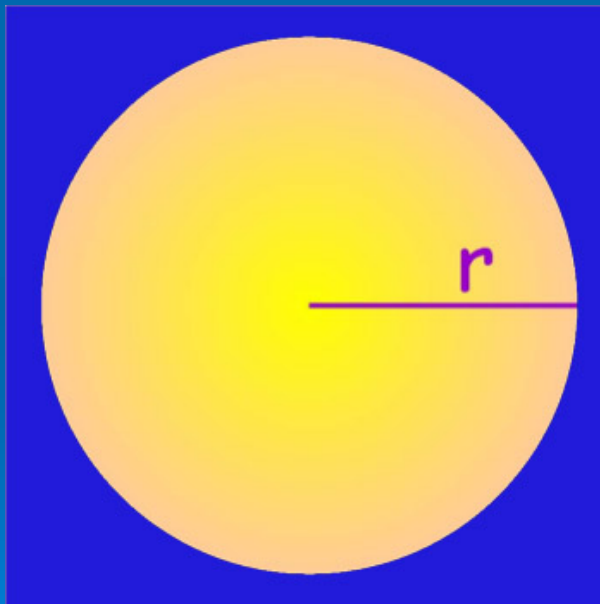
**Inscribed Circle
(Circumscribed Triangle)**



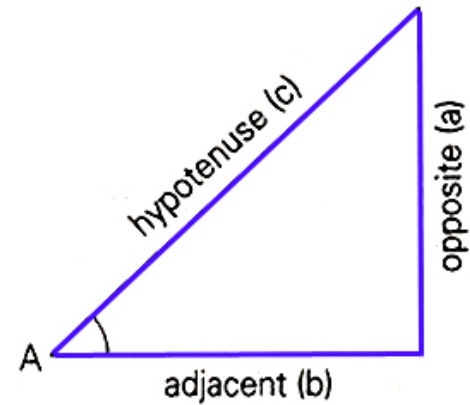
**Circumscribed Circle
(Inscribed Triangle)**



The sum of the angles of any triangle = 180° (straight angle)



Circumference Circle: $2\pi r$
Area Circle: πr^2



$$\text{sine } A = \frac{a}{c} = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\text{cosine } A = \frac{b}{c} = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\text{tangent } A = \frac{a}{b} = \frac{\text{opposite}}{\text{adjacent}}$$

SOH-CAH-TOA

Trigonometric Ratios



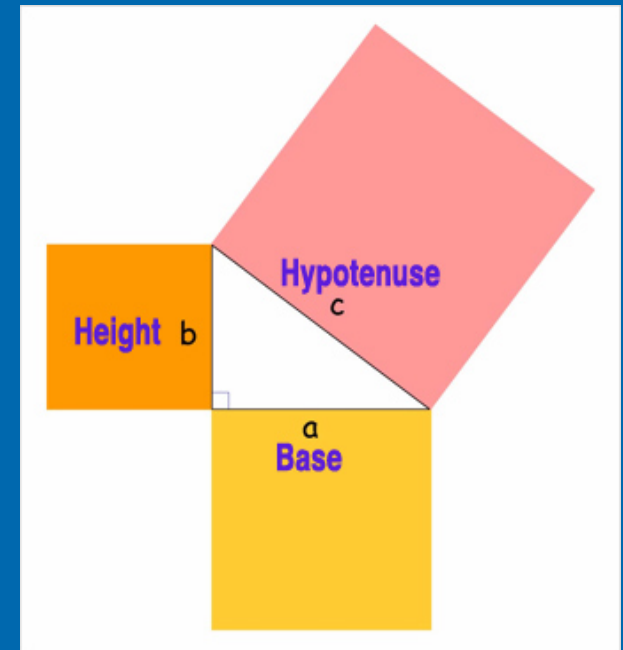
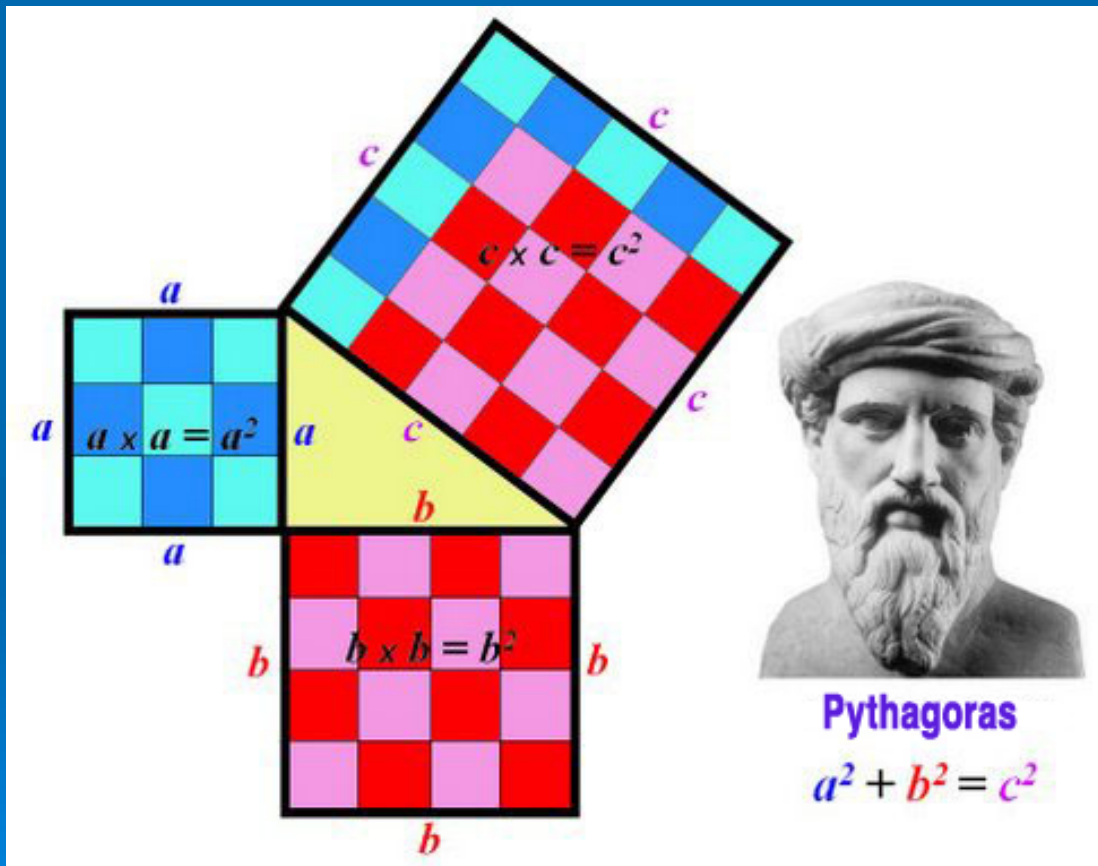
Farningham
Crop circle

SG101.6.2.3 The Pythagorean Triangle

One of the most useful tools in plane geometry is the “Pythagorean” theorem: if a right triangle has lengths a , b and c , then the lengths are related by

$$c^2 = a^2 + b^2$$

*“The square of the hypotenuse
= the sum of the squares of the two other sides.”*



The Pythagorean Triples:

Right triangles with sides of whole numbers satisfying the Pythagorean theorem are called Pythagorean Triples.

The most famous is the 3-4-5 triangle.

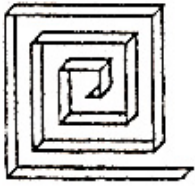
Others are: 5-12-13 or 7-24-25

The Babylonians had clay tablets with lists of such Pythagorean Triples (c. 1800 BCE).

Note: Pythagoras didn't invent the “Pythagorean” Theorem [◆SG102]

SG101.6.3.1 About Spirals (1) Archimedean Spiral

There are two kinds of spirals: Archimedean and Logarithmic. Sacred Geometry is mostly concerned with the Logarithmic or Growth Spiral and its special case: the Golden Ratio Spiral based on PHI.



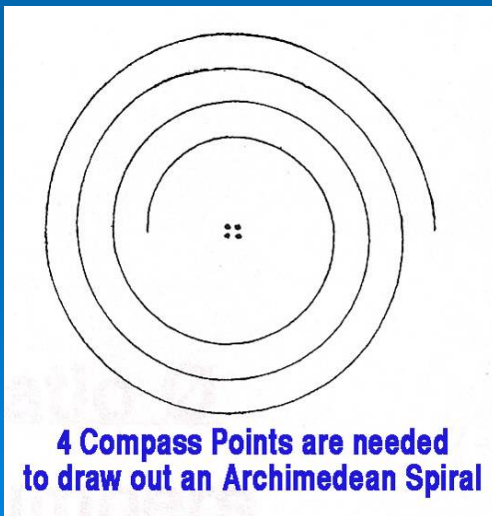
Archimedean Spiral:
the distance between coils remains constant



Archimedean Spiral

This spiral was studied by Archimedes (c. 287-212 BCE) who wrote a treatise *On Spirals*.

In polar coordinates, the Archimedean Spiral is described as: $r = a + b(\theta)$, where a will turn the spiral and b controls the distance between successive turnings.



4 Compass Points are needed to draw out an Archimedean Spiral

← To trace an Archimedean spiral, the basic technique is to use 4 compass points on the diagonals and then draw 90° arcs in the quadrants adjacent to the compass points.

- Close compass points will create a tighter spiral
- More distance between points will create a more open spiral

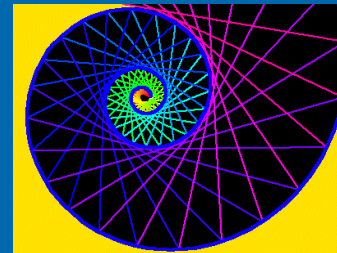
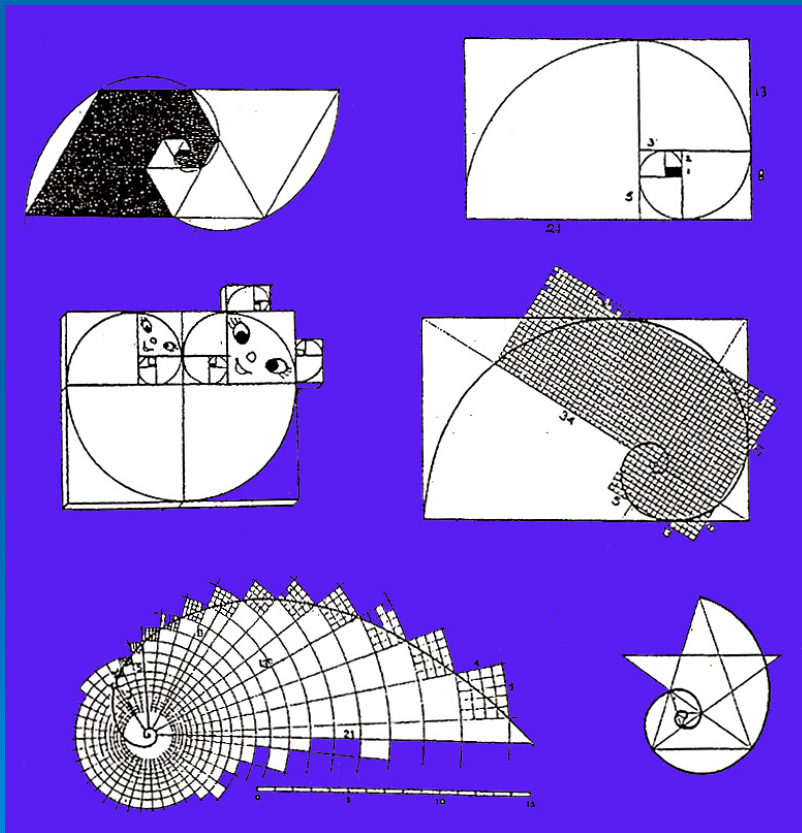
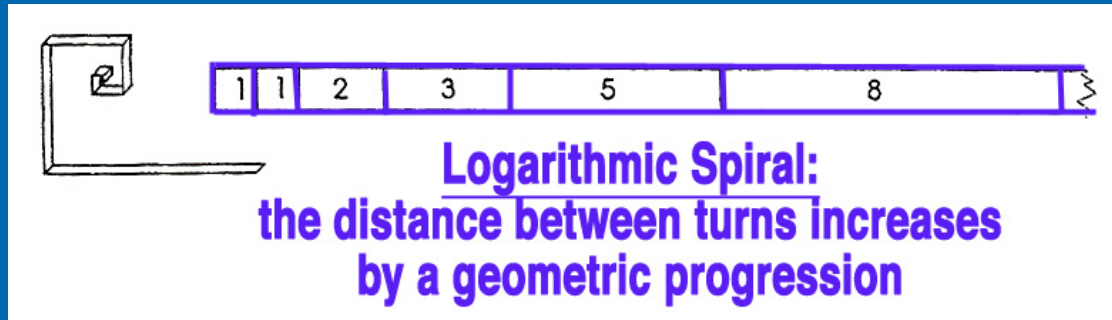


↑ Coil of rope



Record Grooves ↑

SG101.6.3.2 About Spirals (2) Logarithmic Spiral



← The Logarithmic Spiral is also called the Growth Spiral, the Golden Spiral, Spira Mirabilis [◆SG105] and the Equiangular Spiral (as the same angle repeats throughout)

Nature loves the Golden Spiral. And so do we.
In later modules, we will encounter many more examples of the Golden Spiral in nature and culture. And, as co-creators of the Cosmos, we will learn how to construct it and play with it.



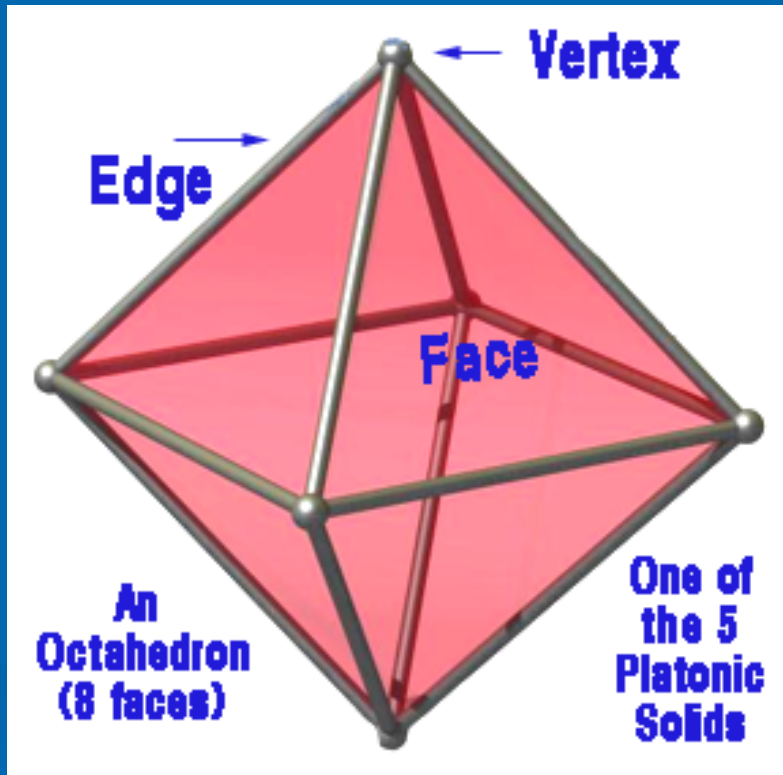
Romanesco Broccoli



The Whirlpool
Galaxy M-51

SG101.6.4 3D Geometries

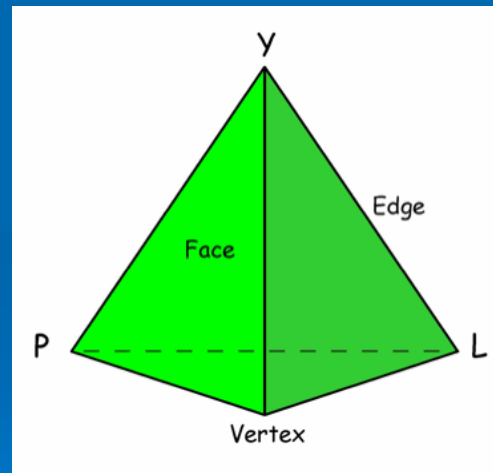
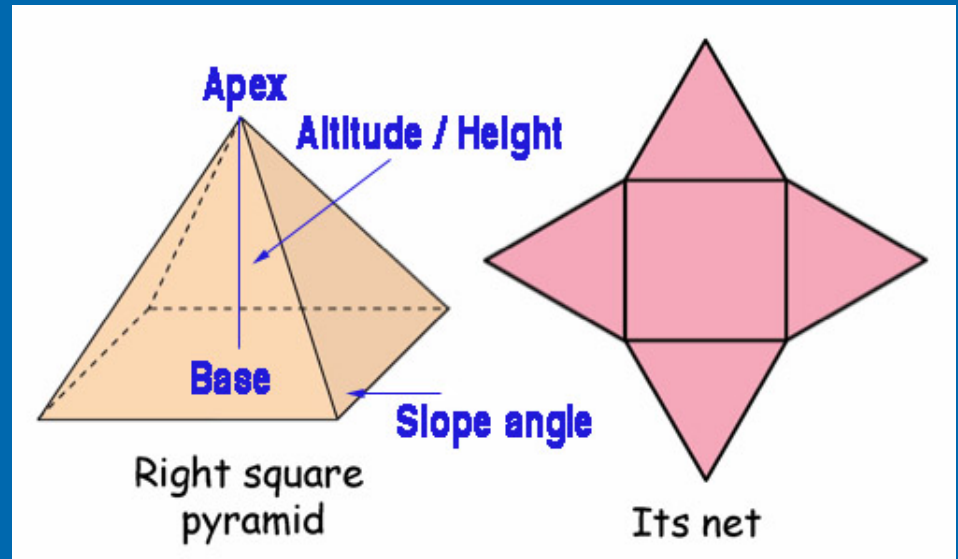
Here are some useful terms we will encounter.



Just like 2D polygons are classified by their sides, *polyhedra* are classified by their faces.

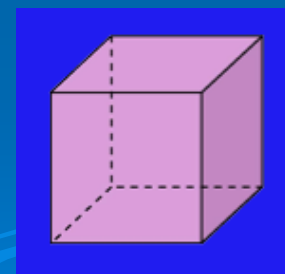
The side of a polyhedron is an *edge*.

A *vertex* is the point where 3 or more edges meet.



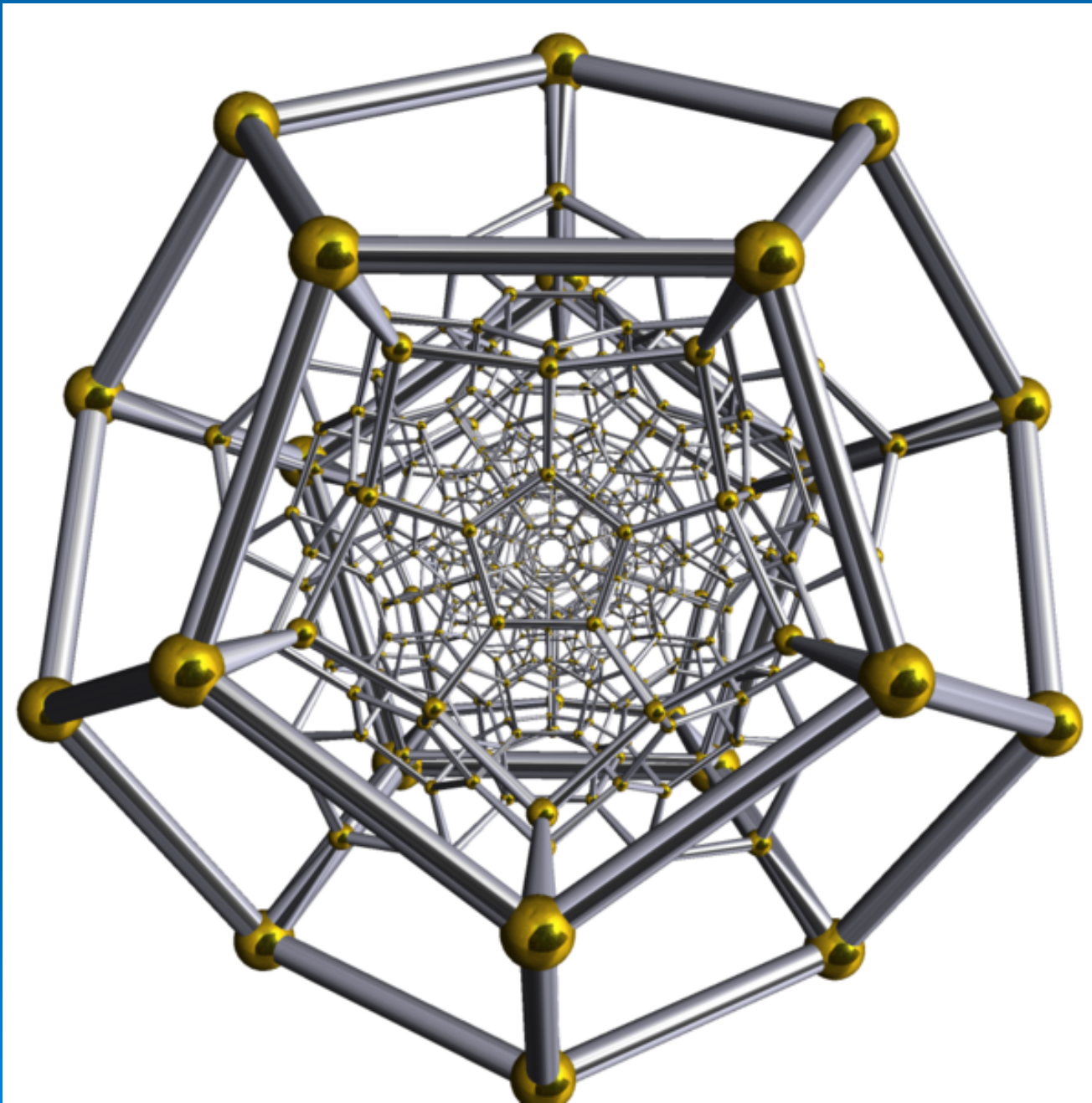
↑ A *polyhedron* is a 3D volume whose faces are polygons

↑ A “*net*” is the 2D fold-out of a 3D volume. We will be building the 5 Platonic Solids and some Archimedean Solids out of their “nets”.



↑ A Cube or Hexahedron (6-sided polyhedron)

SG101.6.5 Higher-D Geometries



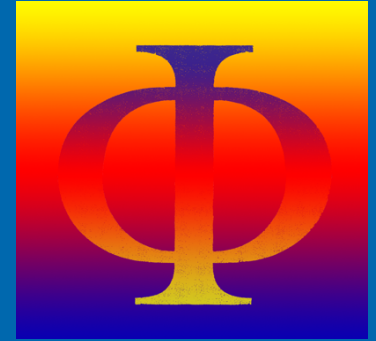
← 120-cell
polytope

SG101.ca **We are Universe**



SG101.Cb Conclusion to Intro Module SG101

In this 21st century, upon beloved Mother Earth, the welcome evidence of a coherent, purposeful, benevolent and harmonic universe is now revealed anew to the westernized culture. After a long journey of reductionist disenchantment of the world and separation from the Whole, Cosmos is entering again human consciousness as a wonderful partner of life and there is a growing respect for the ancient cultures who applied this wisdom and for the current cultures who are keeping it alive.



This new flower of global awareness is blossoming and displays many petals:

- The understanding and integration of the holographic, quantum, non-local inter-connectivity of the universe, at micro as well as macro scales. And the consequent abandonment of obsolete limitations on all levels.
- The renewed knowledge of Sacred Geometry regarding the archetypal cosmic mathematics coding and dynamic geometric power of the Phi Ratio & Fibonacci-related sequences.
- The dawning realization of an ultimate Convergence of Cosmos to a unique point of Source-Oneness.
- The Tri-unity (unity-in-respect-of-mutual-diversity) relationship of Perfect Balance & Love Dance of the cosmic players called Small-Large-Whole / Mother-Father-Child / Yin-Yang-Tao... And how each one of us is taking turn to co-create reality as interchangeable member of this Cosmic Primal Family.
- The Phi Resonance pulsing & cascading through the DNA genetic programs and all fractal natural forms, bodies and dimensions, vortexing its evolutionary river to an Ocean of Origin.
- The Perennial Wisdom of sacred knowledge -as cosmic science- applied to the enhancement of life force and the quality of life experience through new architecture, art, cultural environments and expanded consciousness.

SG101.Cc Conclusion to SG 101 - Uses and Applications of SG

**As we navigate the various modules of this online course,
we'll discover Sacred Geometry popping up everywhere:
the Phi Ratio and the Fibonacci Series appear increasingly ubiquitous.**

Below is a preview of the many areas in which we will encounter Sacred Geometry LIVE.

- **Nature: at all scales, and in all realms and kingdoms**
- **Education, Learning & Consciousness Expansion: Sacred Geometry proves to be a wonderful tool of information gathering, cross-disciplinary synthesis, Self-integration and life coaching**
- **Visualization of Sacred Geometry shapes: yogas & techniques of perception and co-creation**
New developments in abstract and applied Mathematics involving the Fibonacci Series, the Phi Ratio and the Platonic/Archimedean Solids
- **Scientific Breakthroughs in Nuclear Physics, Quantum Physics, Cosmology, Bio-chemistry, Botany, DNA Research...**
- **History of civilizations, Anthropology, Astro-Archeology and the study of Sacred Sites & Cultures: a grand re-evaluation is occurring**
- **Art, Design, Bio-Architecture, Geomancy, Harmonic Environments, Ecology & Life-Styles...**
- **Medicine and Alternative Healing modalities, both traditional and contemporary**
- **Sacred Wisdom Traditions from around the world**
- **Business, Economics and Stock Market strategies and management**
- **Social Systems and Psychology: trends, cycles and forecasts**
- **Attunement ceremonies, rituals and celebrations**
- **Spiritual Inspiration on the Path of Beauty**

SG101.Cd Wisdom Word



*'Destroy arcs and lines, fling
away squares and compasses.
Those who cannot make
perfect without arc, line,
compass and square injure the
natural constitution of things.'*

Chuang Tzu

... the ultimate advice from a master of Sacredness,
as we internalize the arts of Harmony, Balance & Love-Beauty

SG101.Ce1 Online SG School Curriculum: Intro & Intermediate

Sacred Geometry Introductory Level: 8 Modules

SG 101	Intro I	Sacred Geometry: Universal Order & Beauty
SG 102	Intro II	History & Traditions of Sacred Geometry
SG 103	Intro III	Sacred Geometry: A Grand Tour
SG 104	Intro IV	PHI: the Golden Ratio & the Fibonacci Series
SG 105	Intro V	The Golden Rectangle & the Golden Spiral
SG 106	Intro VI	Pentagons, Pentagrams & the Penta-Modules
SG 107	Intro VII	The Five Platonic & 13 Archimedean Solids
SG 108	Intro VIII	The Vesica Piscis: Cosmic Womb of Creation

Sacred Geometry Intermediate Level: 8 modules

SG 201	Interm I	The Monochord, Music & Cymatics
SG 202	Interm II	The Power of Archetypal Numbers
SG 203A	Interm IIIA	Sacred Geometry Resurgence in Science - Part 1
SG 203B	Interm IIIB	Sacred Geometry Resurgence in Science - Part 2
SG 204	Interm IV	PHI in the Human Body, Biology & DNA
SG 205A	Interm VA	The SG of Nature - Part 1: Plants & Phyllotaxis
SG 205B	Interm VB	The SG of Nature - Part 2: Animals & Minerals
SG 207	Interm VII	SG in Architecture, Sacred Sites & Green Design

SG101.Ce2 Online SG School Curriculum: Advanced

Sacred Geometry Advanced Level: 8 modules

SG 301	Adv I	Golden Cosmos: Planets, Stars & Cosmology
SG 302	Adv II	SG in Art, Culture & Creativity
SG 303	Adv III	Universal Symbols: Primordial Knowledge
SG 304	Adv IV	Labyrinths: a Mini-Pilgrimage to Self
SG 305	Adv V	Mandalas & Yantras: Sacred Vortices
SG 306	Adv VI	Languages & Gematrias: Sacred Communication
SG 307	Adv VII	Sacred Geometry in the Healing Arts
SG 308	Adv VIII	Harmony on Earth: Science & Consciousness of Harmony

Upon completion of each level (Introductory, Intermediate & Advanced), a Certificate of Graduation from the Sedona School of Sacred Geometry will be presented to Certification Students.

Postgraduate seminars on current Sacred Geometry research, discoveries & updates will be organized in harmonic future.

Questions: phi@schoolofsacredgeometry.org

SG101.Cf Recommended Classbooks & Websites

Aya. Manual of Sacred Geometry. 4 volumes. Aya Productions, 2005. <http://www.starwheelmandalas.com>
<http://www.starwheelmandalas.com/index.php?p=books>

Aya. DVD: An Introduction to Sacred Geometry. Sedona Series, 2006.
<http://www.starwheelmandalas.com/index.php?p=dvds>

Classbook references:

1. Robert Lawlor. Sacred Geometry, Philosophy and Practice. Thames & Hudson, 1982/1989.
2. Gyorgy Doczi. The Powers of Limits, Proportional Harmonies in Nature, Art and Architecture. Shambala, 1981.
3. John Michell. The Dimensions of Paradise: The Proportions and Symbolic Numbers of Ancient Cosmology. Harper & Row, 1988.
4. Michael S. Schneider. A Beginner's Guide to Constructing the Universe: The Mathematical Archetypes of Nature, Art & Science. Harper, 1995.
5. Mario Livio. The Golden Ratio, the Story of Phi. Broadway, 2002.
6. Drunvalo Melchizedek. The Ancient Secret of the Flower of Life. 2 volumes. Light Technology, 1990.
7. Priya Hemenway. Divine Proportion, Phi in Art, Nature and Science. Sterling, 2005.
8. The Wooden Books series (Walker & Co., New York) has many titles about (or related to) SG.

Websites:

<http://www.goldennumber.net> The "*Phi Nest*". A great place to start from and come back to.

<http://www.wikipedia.org> Many cross-correlated articles to explore. Search SG keywords.

<http://www.floweroflife.org> The Flower of Life as taught by Drunvalo Melchizedek.

<http://www.goldenmean.info> The encyclopedic site of Dan Winter, Phi Scientist extraordinary.

<http://hanskayser.com> The science of Harmonics.

SG101.Cg Credits and References

Friendly Note: Some images in our picture files were not referenced.
Kindly contact us if you find an image or design that you would like to see referenced.
Thank you.



101.1.7.3 *Tibetan Tangka*: www.bremen.de. Dharampala Thangka Centre.

101.2 *Omni Vortex*: Dan Winter. www.goldenmean.info

101.3.1.1 *Egyptian image*: Frank Timmes. School of Art Institute, Chicago. PowerPoint #1.

101.3.7 *Infinite Sphere*: Picasa Web. Will's gallery. 101.4.1.1 *Eye Perception*: Jose & Miriam Arguelles. *Mandala*. Shambala, 1972.

“Black Dots”: <http://www.soulsofdistortion.nl>

101.4.5.1 *Chakra Set*: www.5040.com. *Ajna design*: Harish Johari. *Chakras*. Destiny Books, 1987.

101.4.5.2 *Sun Disk*: www.melodief.com

101.5.2.2 *Galileo Compass*: www.ursispaltenstein.ch

101.5.5.3 *Top Center image*: www1.chinaculture.org Bottom image: [//people.cohums.ohio-state.edu](http://people.cohums.ohio-state.edu)

101.5.6.2 *Medieval image*: Robert Lawlor. *Sacred Geometry*. Thames & Hudson, 1982/89.

101.6.2.2 *Crop Circle*: Farningham Crop Circler. www.medwaycropcircle.co.uk. Photo: Andrew King.

101.6.3.2 *Nautilus image*: <http://www.world-mysteries.com>

101.6.5 *120-cell Polytope*: [//gilkalai.wordpress.com/2008/04/29/hello-world/](http://gilkalai.wordpress.com/2008/04/29/hello-world/)

101.Cd *Chuang Tzu*: David Wade. *Crystal and Dragon*. Destiny Books, 1991.

SG101.Ch StarWheel Blessing



SW17. "Blossom Flower" . www.starwheels.com



SG101.Ci Contact Info

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www.schoolofsacredgeometry.org
phi@schoolofsacredgeometry.org
PO Box 3714, Sedona, AZ 86340

StarWheel Mandalas by Aya

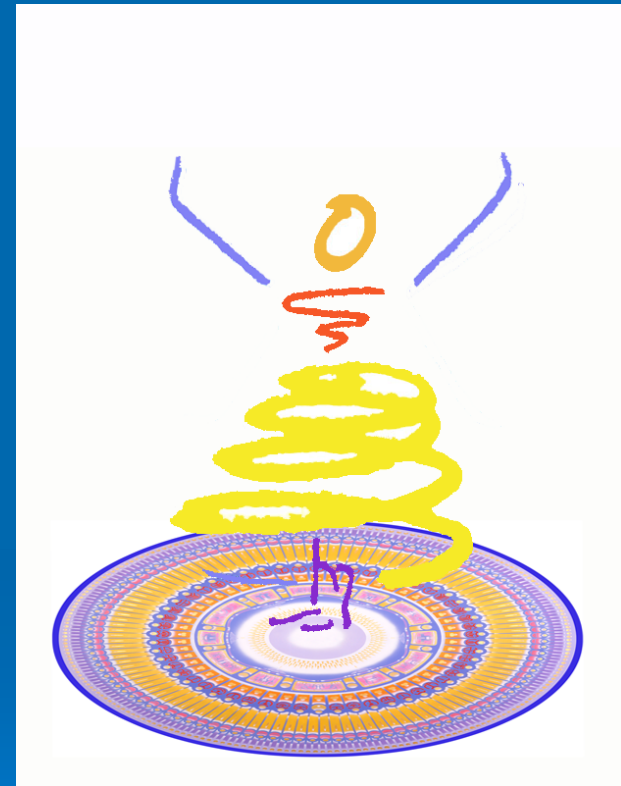
www.starwheels.com
www.starwheels.com/infopage.php?pagename=starwheelgallery
aya@starwheels.com

Our non-profit: www.starwheelfoundation.org

www.starwheelfoundation.org/index.php?p=globalecocampus
www.starwheelfoundation.org/index.php?p=acroyoga
www.starwheelfoundation.org/index.php?p=poona1hbooks
www.starwheelfoundation.org/index.php?p=treesponsorship

Our online store: www.starwheelmandalas.com

www.starwheelmandalas.com/index.php?p=originals
www.starwheelmandalas.com/index.php?p=wisdomcards
www.starwheelmandalas.com/index.php?p=deck1



Φ celebration



On Facebook: Aya Sheevaya
FB Group: Sedona School of Sacred Geometry



SG101.Cj About Aya

A native of France, Aya is a visionary artist and celebration yogi who has dedicated his life to serve humanity and to develop sacred arts education. In his late 20's, Aya realized that his professional life in the French diplomatic service was not fulfilling his heart's desires; he quit everything to go on an extended vision quest. His path took him around the world to visit a variety of sacred sites & cultures and to receive inspiration from many teachers.

In 1985, in Santa Monica, CA, Aya was gifted with a spiritual vision prompting him to create a series of 108 airbrushed neo-mandala paintings: the "StarWheels". The StarWheels, a happy family of vibratory flowers for the Earth, are looking for sacred spaces to be graced with their presence... (www.starwheels.com)

Moving to Sedona, Arizona, in 1997, Aya has been involved with sacred arts classes & events, mandala creation, Sedona guided tours, labyrinth making and Sacred Geometry teaching. Aya has presented several StarWheel art exhibits, has sponsored community awareness events at the Sedona Library, has developed, in collaboration with Gardens for Humanity, the Peace Garden arboretum at the Sedona Creative Life Center, was a speaker at the Sacred Geometry Conference (Sedona, 2004), co-designed several labyrinth sites (The Lodge at Sedona, Magos' Ranch...), and was on the management team of the Raw Spirit Festival in 2006 - 2008.

Realizing that Sedona was progressively becoming a global spiritual university for many seekers from around the world, Aya founded in 2005 the Sedona School of Sacred Geometry. The school is offering online access to Sacred Geometry PDF modules, with 17 modules completed so far. In the school's website, Aya states: *"We are living at the extraordinary and exciting times of a global transformation to a higher order of human consciousness... Sacred Geometry is the expression and resurrection of our deep innate wisdom, now awakening from a long sleep: seeing again the all-encompassing, fractal-holographic unity of nature, life and spirit... The keyword is HARMONY."* (www.schoolofsacredgeometry.org)

Aya's visionary dream, supported by his non-profit educational organization, the StarWheel Foundation, is the co-creation of an international eco-village "The School of Celebratory Arts" - a green, tropical environment encouraging young people of all nations to develop their creative consciousness and thus contribute to a new, spirited, life-respecting global civilization on Earth. (www.starwheelfoundation.org).

Since 2012, Aya is dancing the body divine, after his re-discovery of Yoga, Partner Yoga and AcroYoga. Aya is currently the AcroYoga.org Jam coordinator for Sedona and a teacher of yoga swing asanas.

Blessings in Anjali!