

Golden Connections

The Surprising Influence of the Golden Ratio

By Scott Onstott

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The Symbolism and Meaning of the Golden Ratio: The Divine Proportion

Introduction

The golden ratio, also known as the divine proportion or Phi (Φ), is a mathematical constant that has fascinated mathematicians, artists, and philosophers for centuries. With its unique properties and aesthetic appeal, the golden ratio can be found in various aspects of nature, art, and architecture. This essay delves into the symbolism and meaning of the golden ratio, examining its historical significance, mathematical properties, and representations in different disciplines.

Historical Significance

The golden ratio's roots can be traced back to ancient civilizations, including the Egyptians and Greeks. It is believed that the Egyptians incorporated the golden ratio into the design of the Great Pyramid of Giza, although this remains a subject of debate among scholars. The ancient Greeks, particularly the mathematician Euclid, recognized the golden ratio's unique properties and studied its geometric applications. Throughout history, the golden ratio has been associated with beauty, harmony, and divine wisdom. Renaissance artists and architects, such as Leonardo da Vinci and Filippo Brunelleschi, employed the golden ratio in their work, believing it represented a divine blueprint for aesthetic perfection.

Mathematical Properties

The golden ratio can be expressed as the irrational number $\Phi \approx 1.6180339887\dots$ It is derived from the proportion that occurs when a line segment is divided into two parts in such a way that the ratio of the whole segment to the larger part is equal to the ratio of the larger part to the smaller part. Mathematically, this can be represented as $(a+b)/a = a/b = \Phi$. One of the golden ratio's most fascinating characteristics is that it can be found in various mathematical constructs, such as the Fibonacci sequence. In this sequence, each number is the sum of the two preceding ones (0, 1, 1, 2, 3, 5, 8, 13...). As the sequence progresses, the ratio of consecutive numbers approaches the golden ratio, illustrating its interconnectedness with other mathematical principles.

Symbolism in Different Disciplines

Nature: The golden ratio appears in various natural phenomena, such as the arrangement of leaves on a stem, the spiral pattern of sunflower seeds, and the proportions of the human body. Many believe that this prevalence of the golden ratio in nature signifies a universal law of beauty and harmony.

Art: Artists throughout history have incorporated the golden ratio into their work to achieve a sense of balance and aesthetic appeal. Examples include Leonardo da Vinci's "The Last Supper" and "Mona Lisa," Michelangelo's "The Creation of Adam," and Salvador Dalí's "The Sacrament of the Last Supper." The golden ratio is believed to enhance the visual appeal of these masterpieces, elevating them to the status of timeless art.

Architecture: The golden ratio has also played a significant role in architecture, with famous examples such as the Parthenon in Athens, the Taj Mahal in India, and Le Corbusier's modernist designs. Architects often employ the golden ratio to create a sense of harmony, proportion, and balance in their buildings.

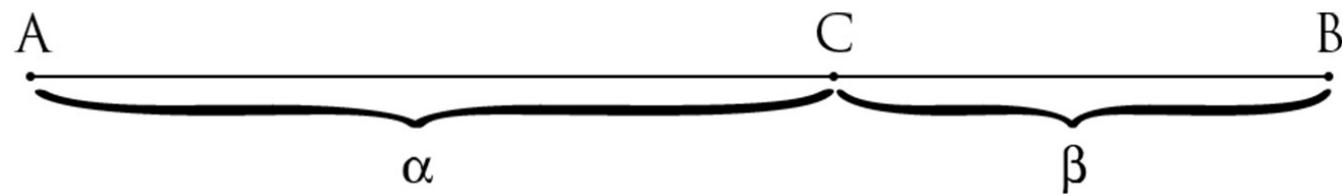
Philosophy and Spirituality: The golden ratio has been associated with divine wisdom and the underlying order of the universe. In the Platonic tradition, the golden ratio represents an ideal proportion that reflects the metaphysical world's perfection. Similarly, in various spiritual and esoteric traditions, the golden ratio symbolizes a cosmic blueprint that connects the material world with the divine.

Conclusion

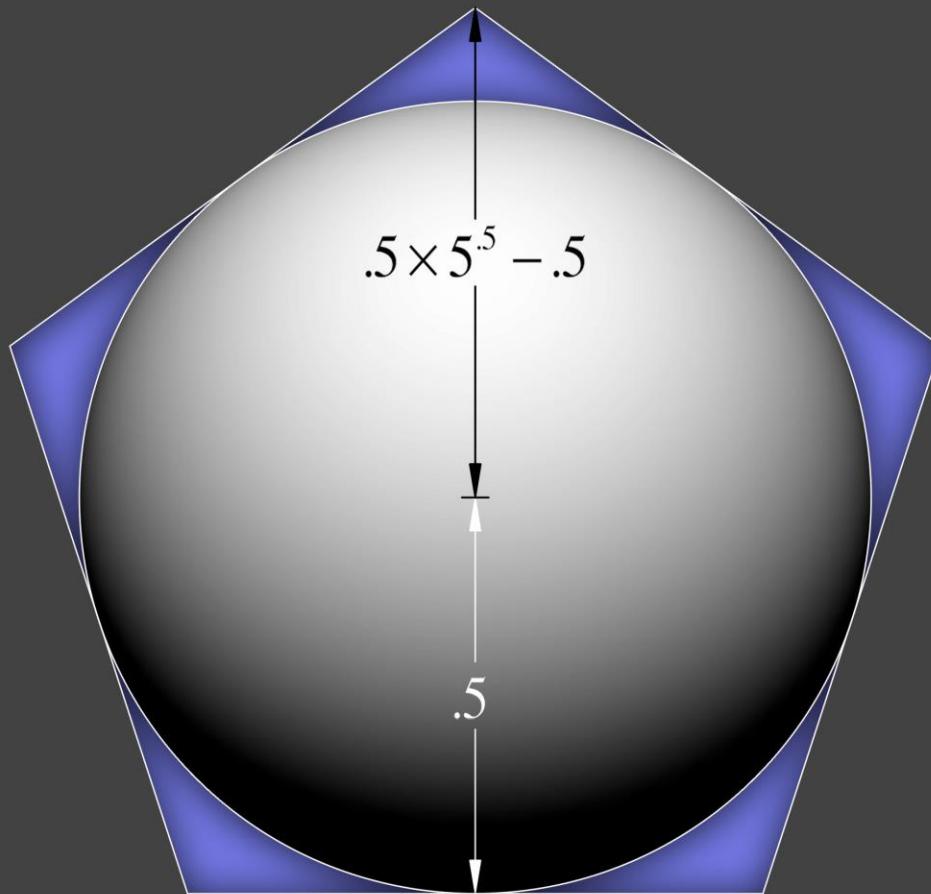
The golden ratio, with its unique mathematical properties and aesthetic allure, has captivated the minds of scholars, artists, and philosophers throughout history. Its presence in nature, art, and architecture serves as a testament to its enduring significance and symbolism. From ancient civilizations to modern times, the golden ratio has been associated with beauty, harmony, and divine wisdom, making it an essential subject of study for those interested in the interplay between mathematics, aesthetics, and human culture.

In various disciplines, the golden ratio continues to inspire new discoveries and interpretations. For scientists, it represents a natural phenomenon that reveals a deeper understanding of the world's inherent order. For artists and designers, it serves as a guiding principle in the pursuit of aesthetic perfection. And for philosophers and spiritual seekers, the golden ratio symbolizes a connection between the material world and the divine, offering a glimpse into the cosmos's underlying harmony.

In conclusion, the golden ratio's symbolism and meaning extend far beyond its numerical value, embodying a universal principle that transcends time and culture. Its presence in the natural world, human creations, and the realm of ideas showcases the golden ratio's unique ability to bridge the gap between the tangible and the abstract, offering insights into the nature of beauty, harmony, and the divine.



$$\frac{\alpha+\beta}{\alpha} = \frac{\alpha}{\beta} = \Phi \approx 1.618033989$$

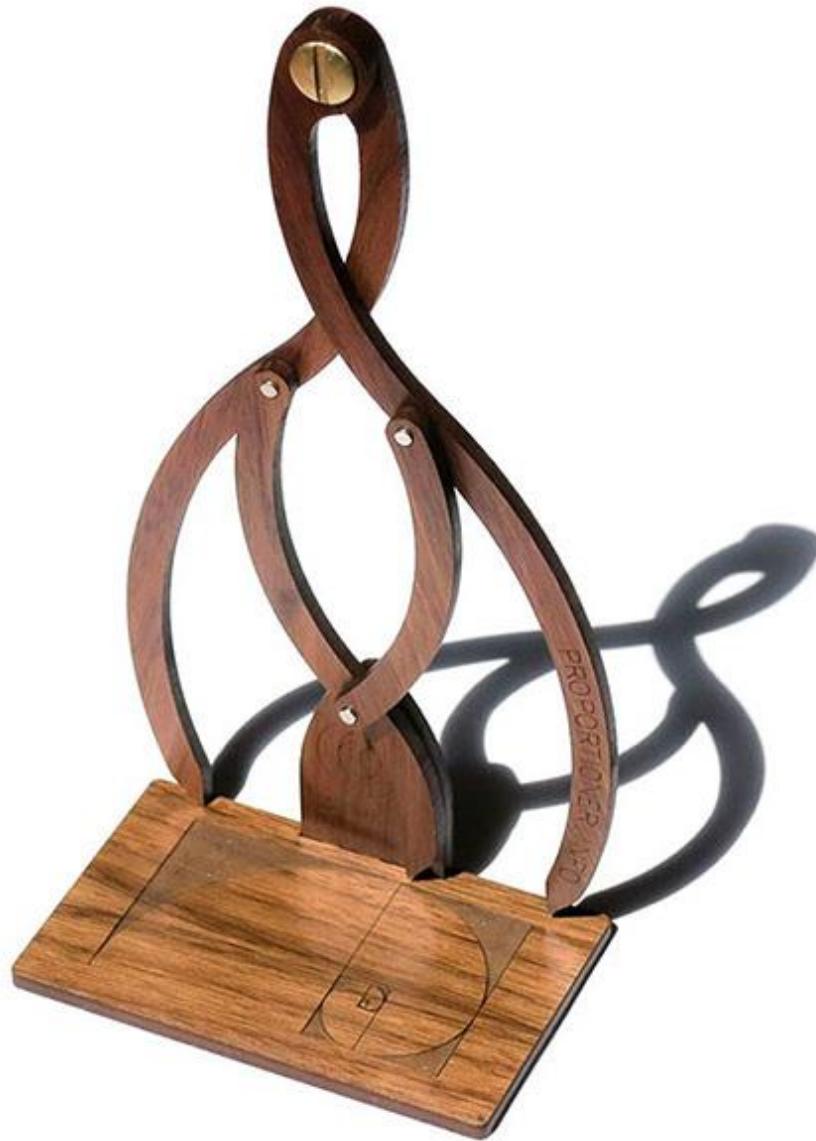


$$1/\Phi = .5 \times 5^5 - .5 \approx 0.618033989$$
$$\Phi = .5 \times 5^5 + .5 \approx 1.618033989$$

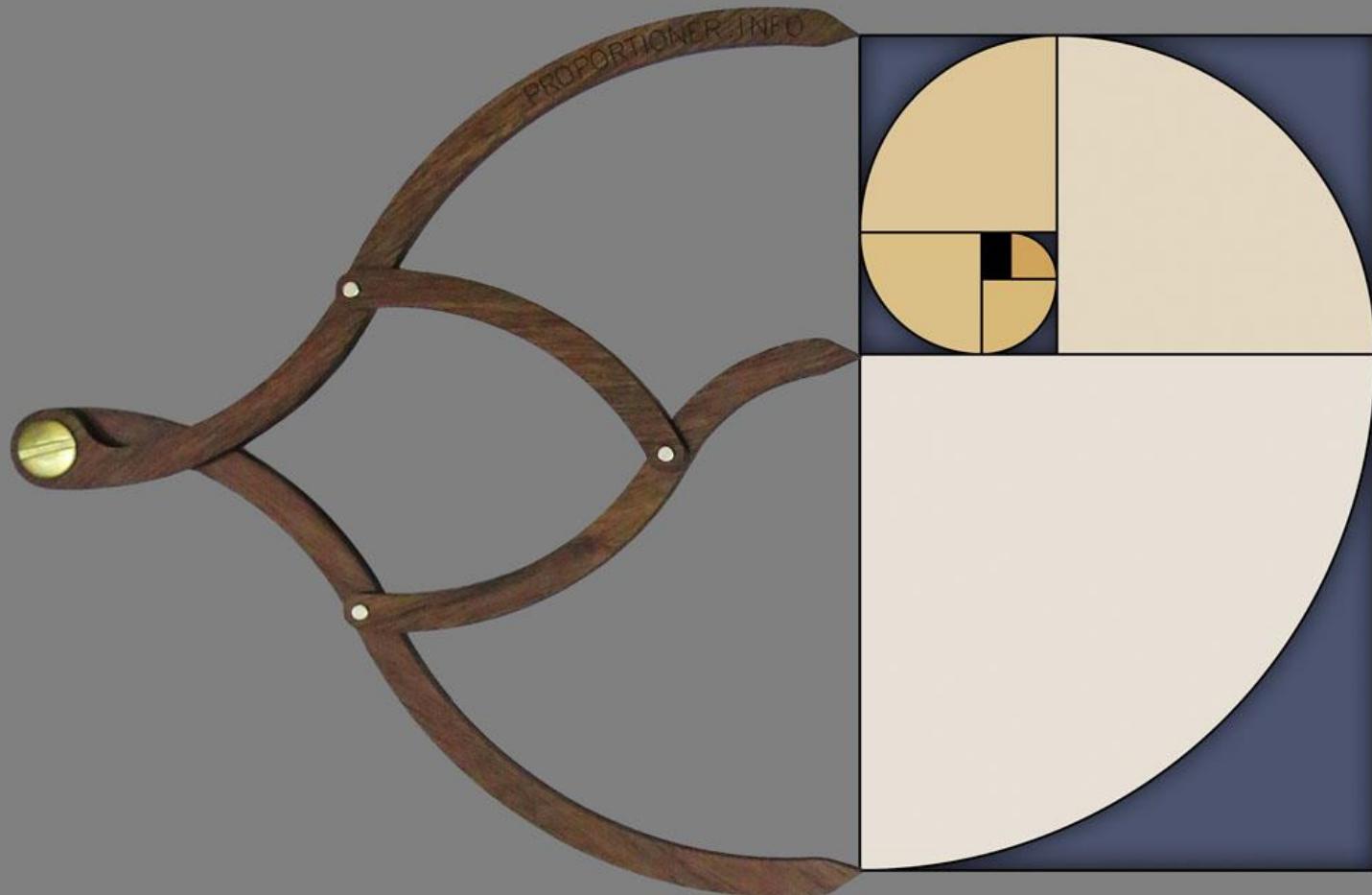
Φ

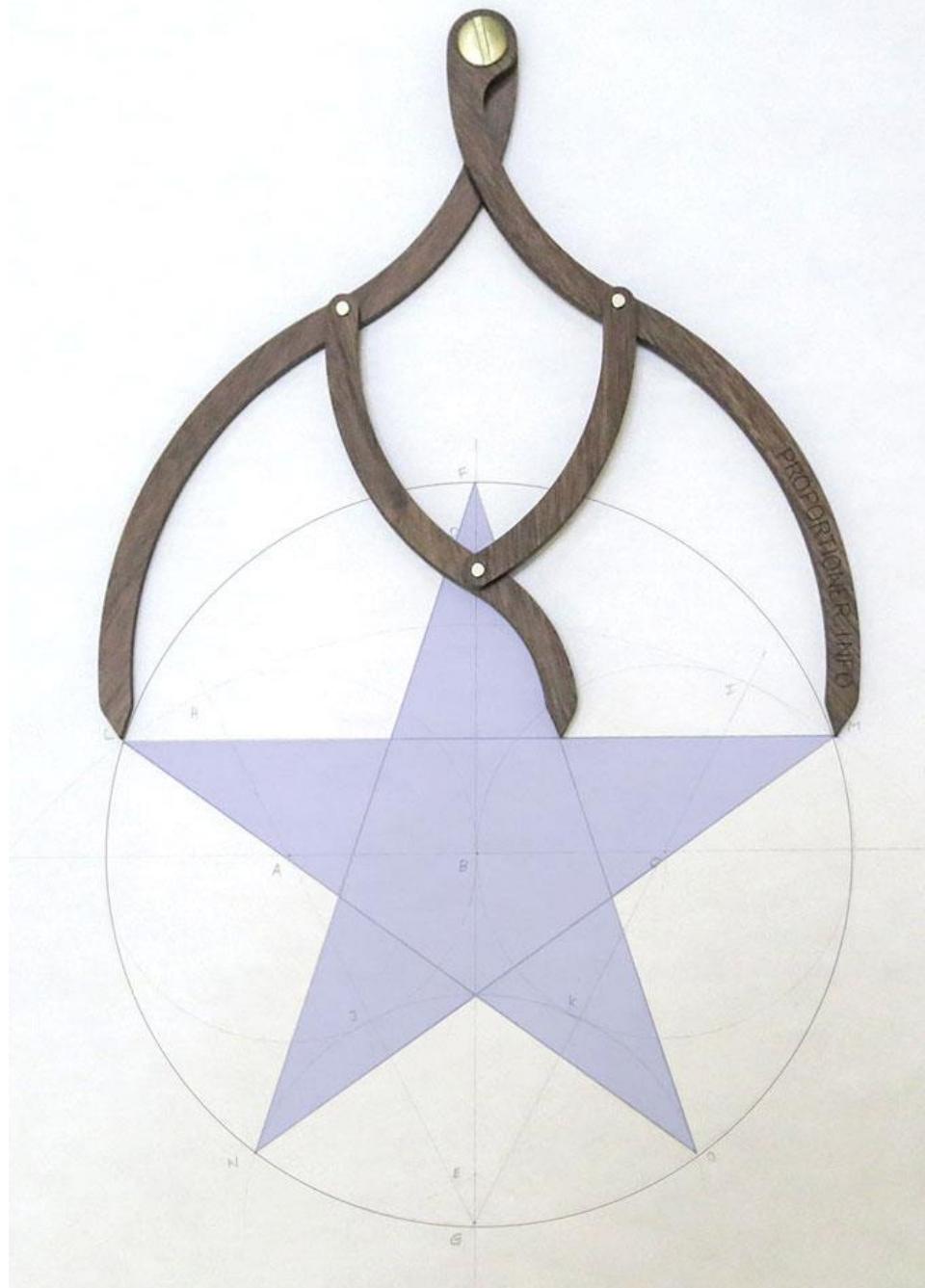
$$1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{\ddots}}}}}}}$$

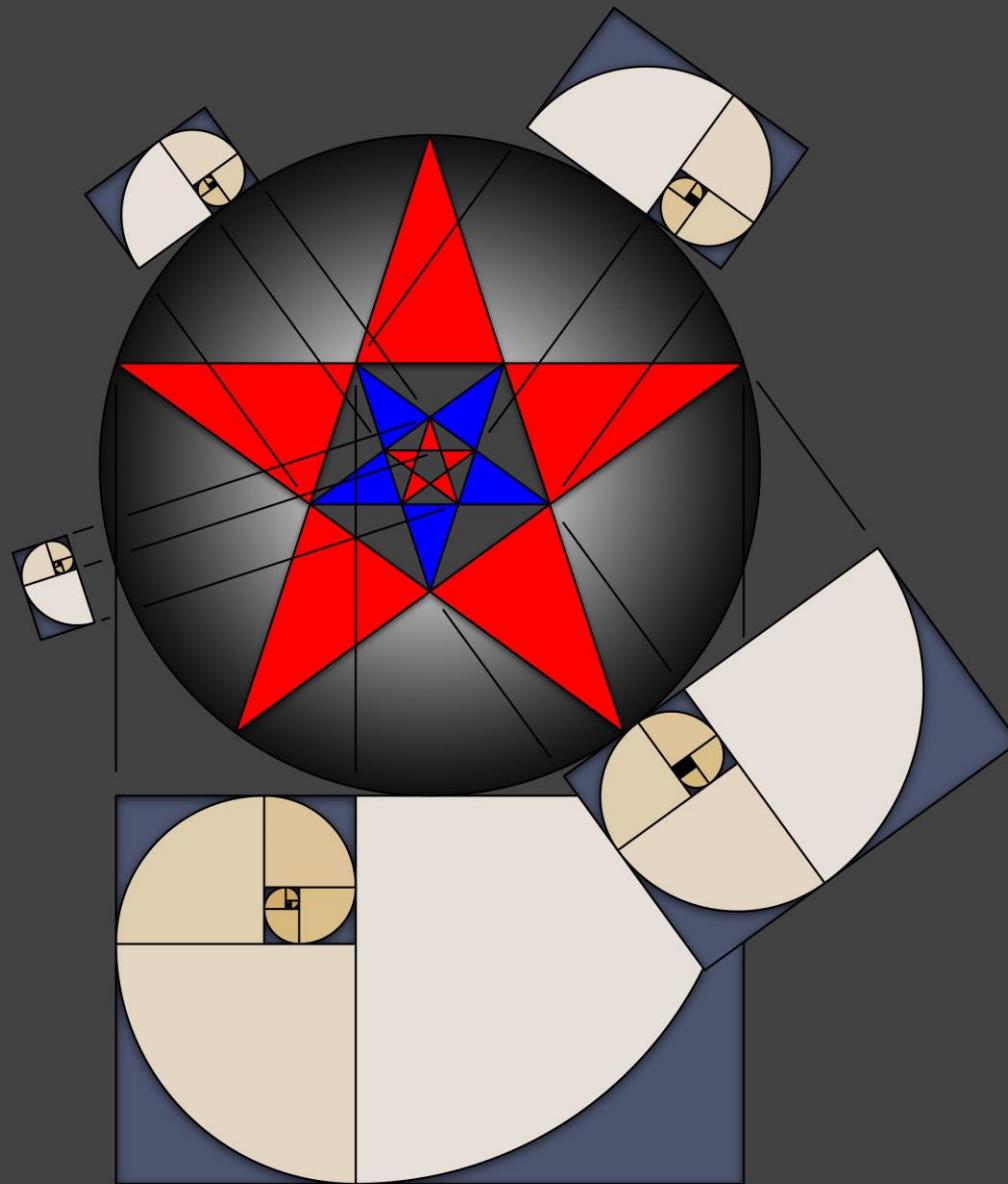
1.618033988...

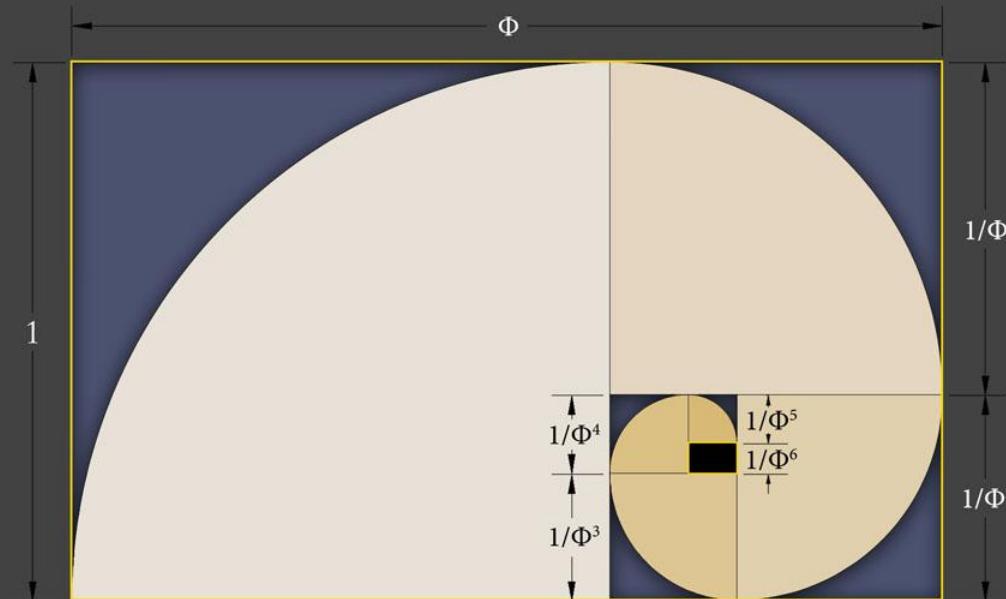


<https://www.kickstarter.com/projects/secretsinplainsight/the-proportioner-golden-ratio-calipers>

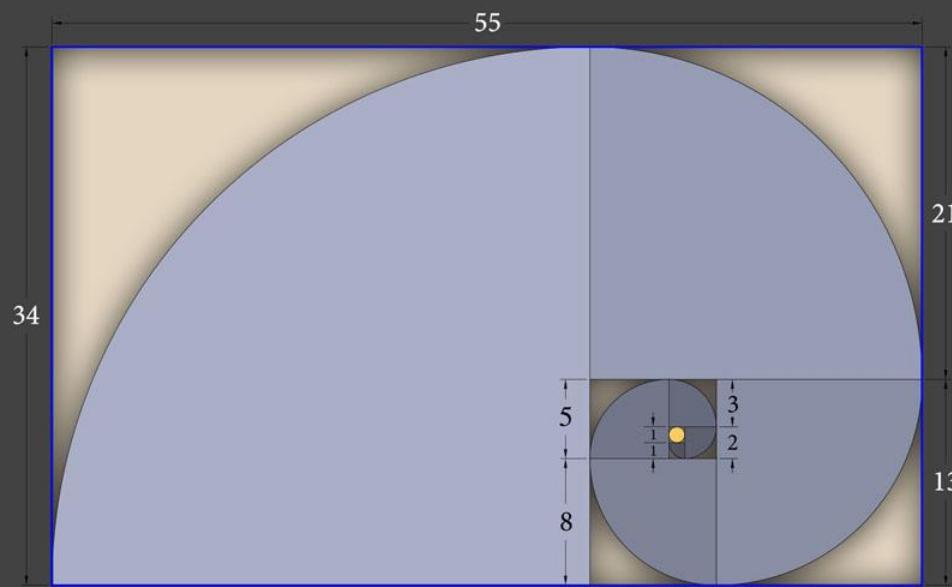




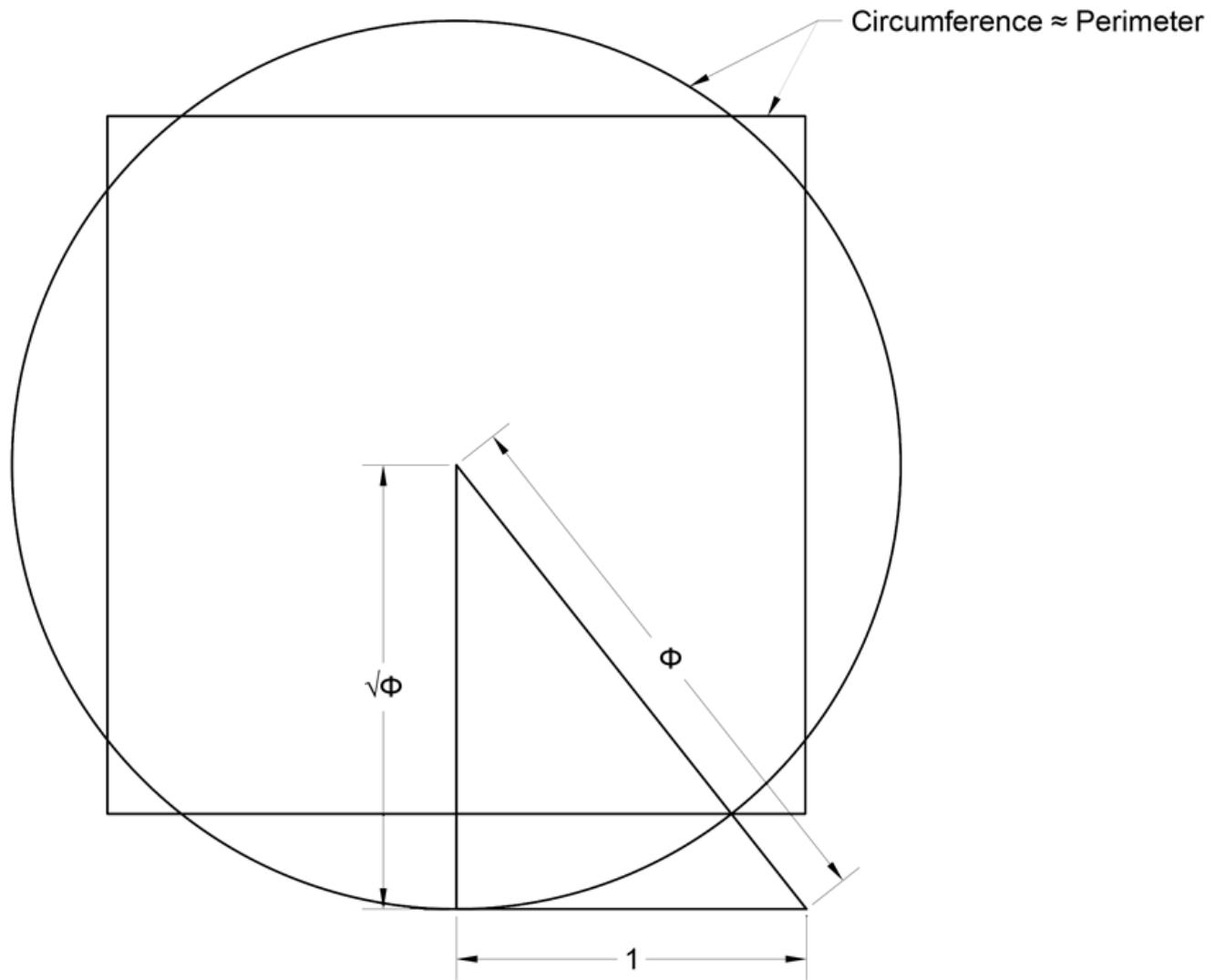




GOLDEN RECTANGLE



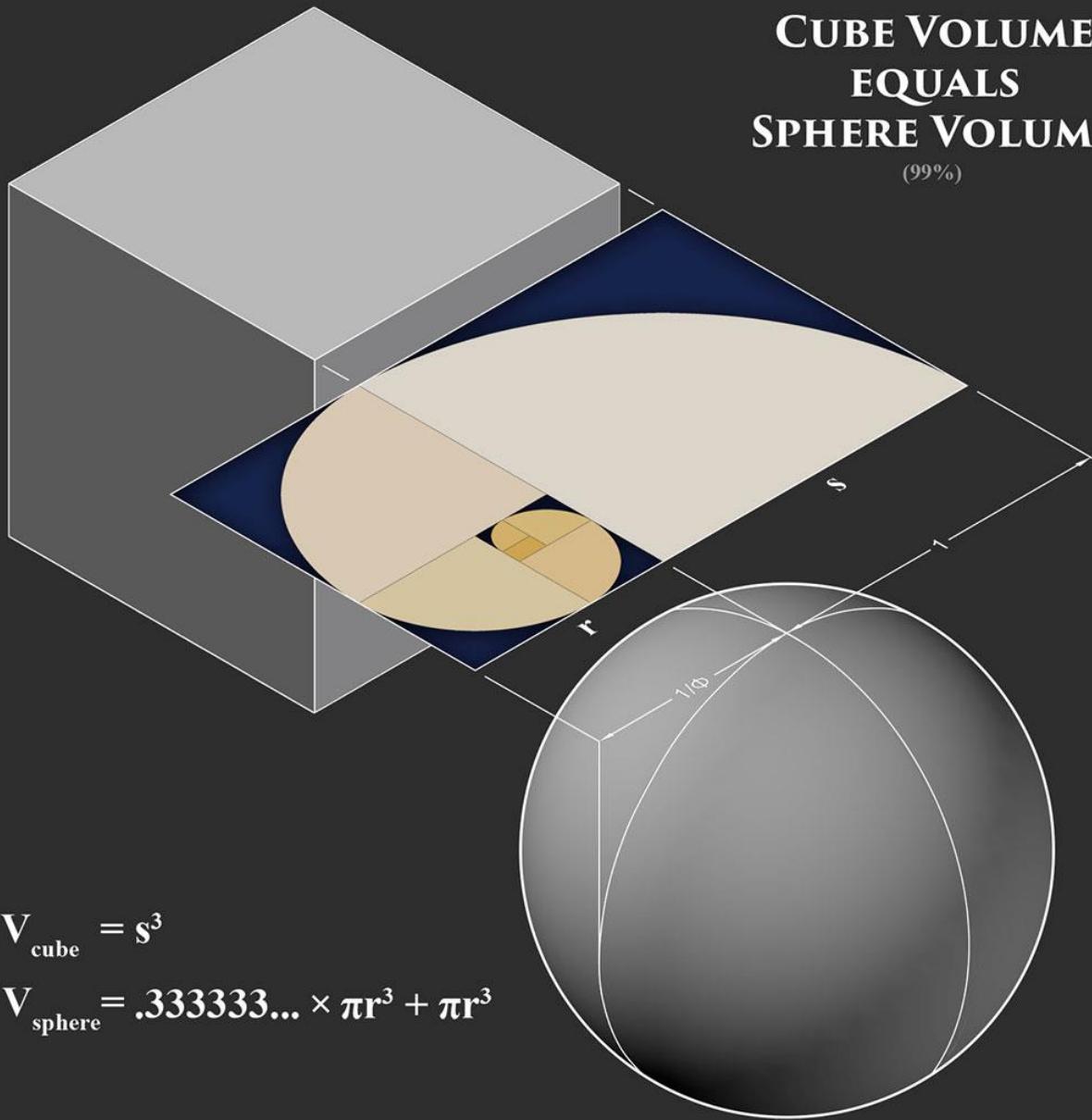
FIBONACCI RECTANGLE



Squaring the Circle

CUBE VOLUME EQUALS SPHERE VOLUME

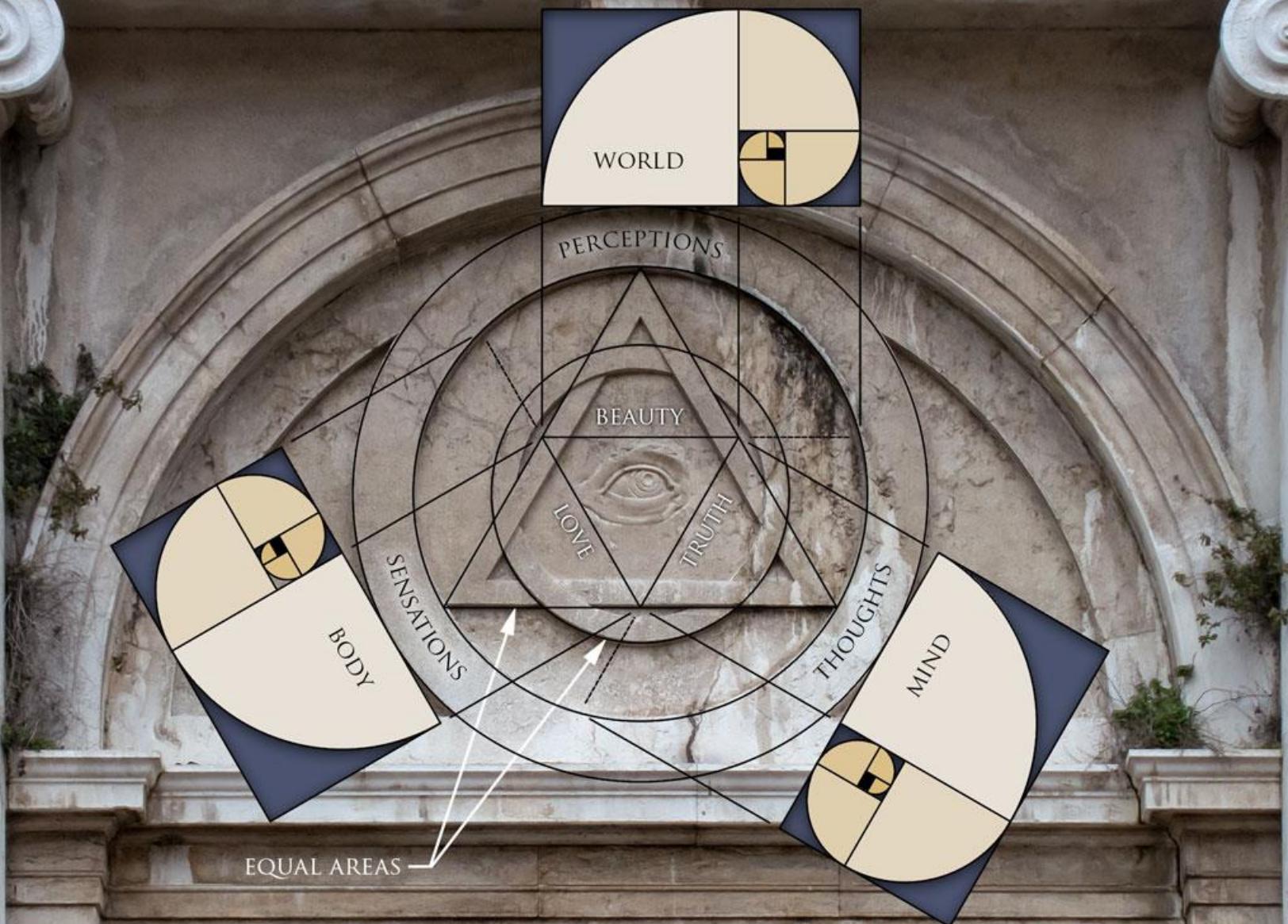
(99%)



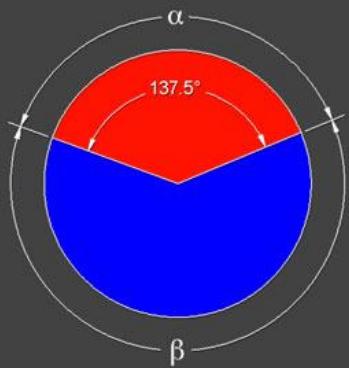
$$V_{\text{cube}} = s^3$$

$$V_{\text{sphere}} = .333333... \times \pi r^3 + \pi r^3$$

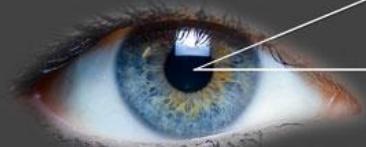
Cubing the Sphere



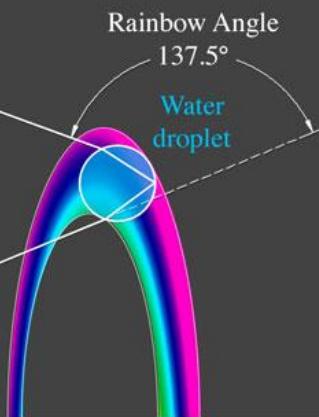
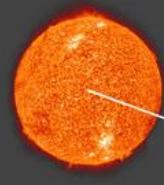
$$\frac{\alpha+\beta}{\beta} = \frac{\beta}{\alpha} = \Phi$$



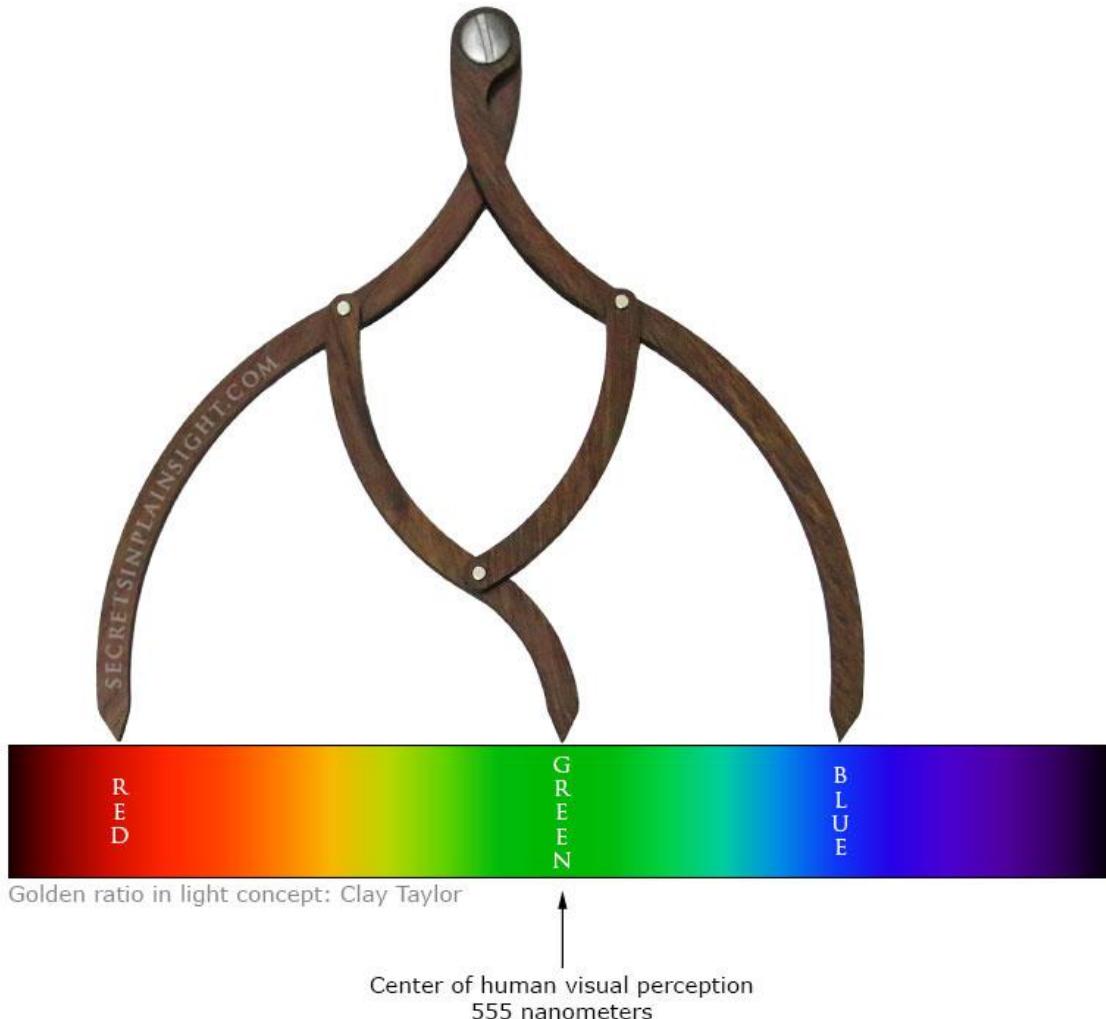
$$\Phi \approx 1.618$$



Eye photo Laiir Keiows CC BY-SA 3.0

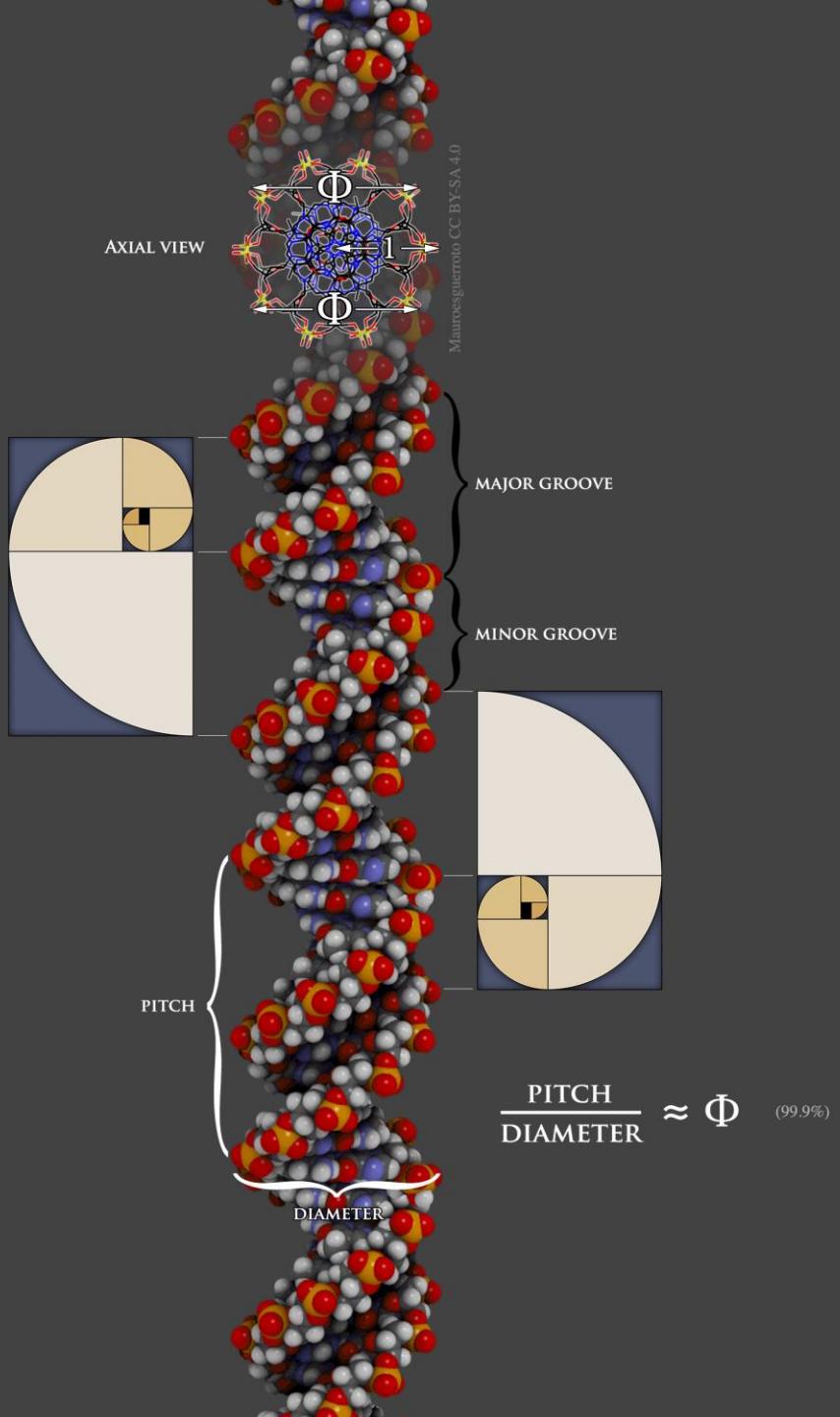


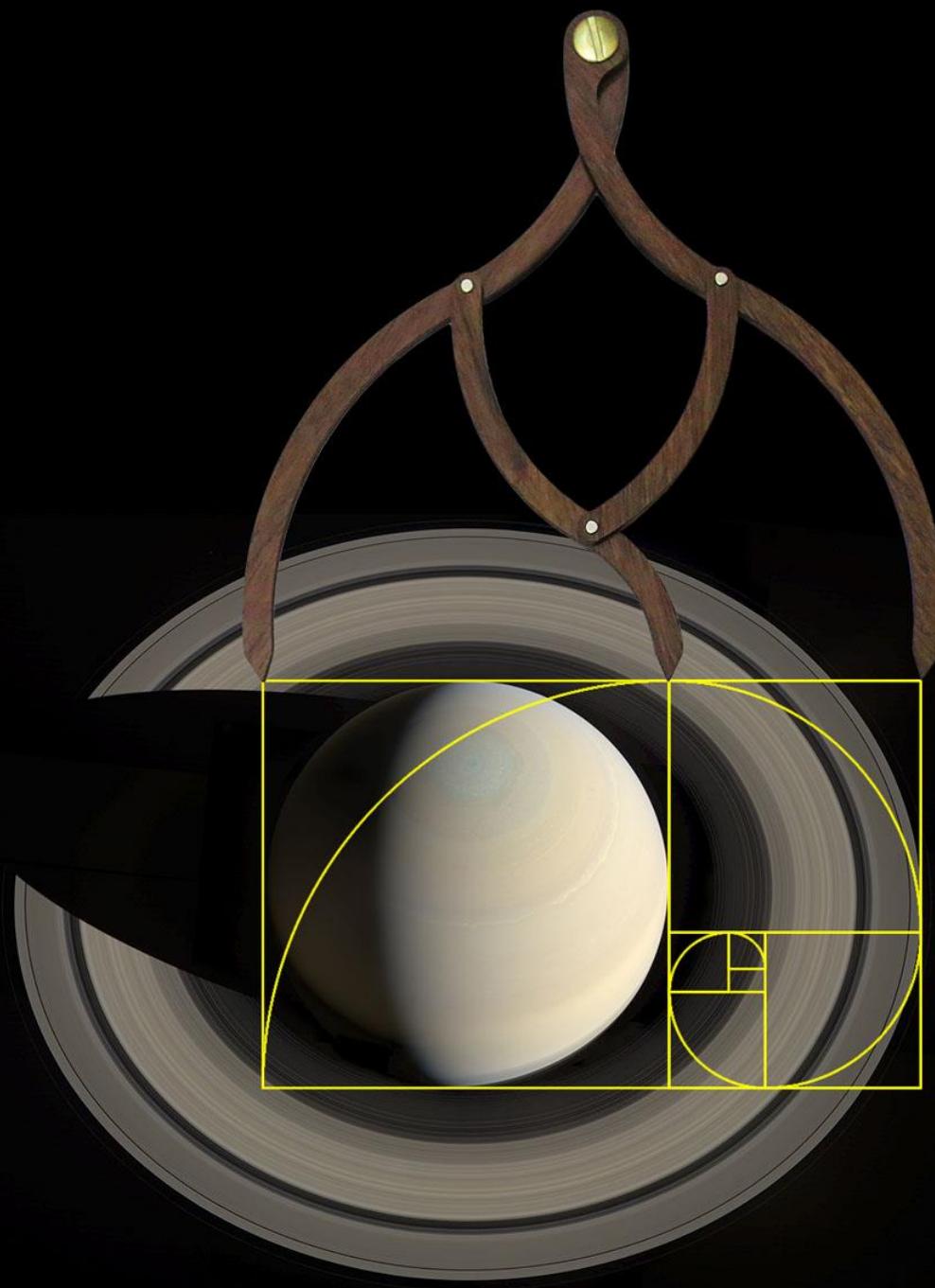
Spiral Phyllotaxis
Divergence Angle = 137.5°

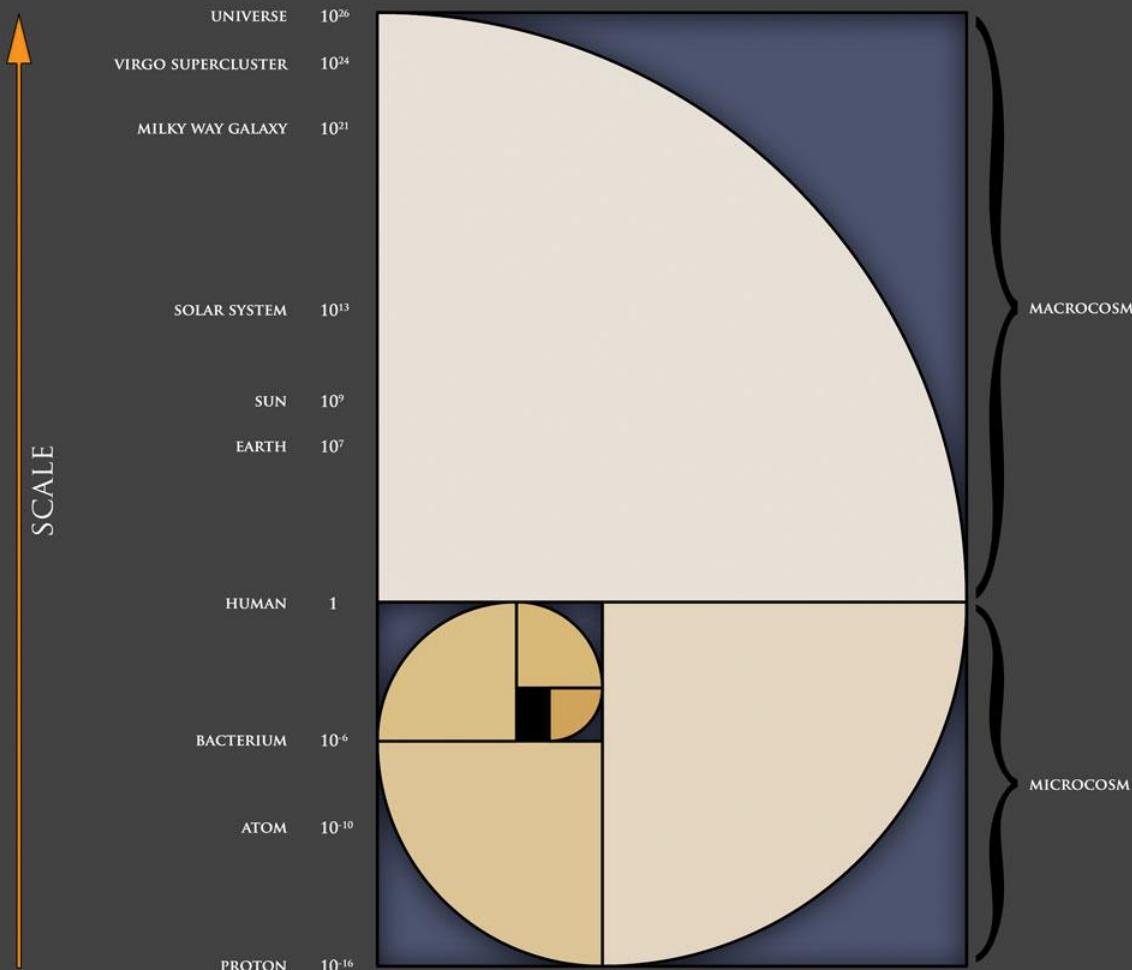


V I S I B L E L I G H T

DEOXYRIBONUCLEIC ACID

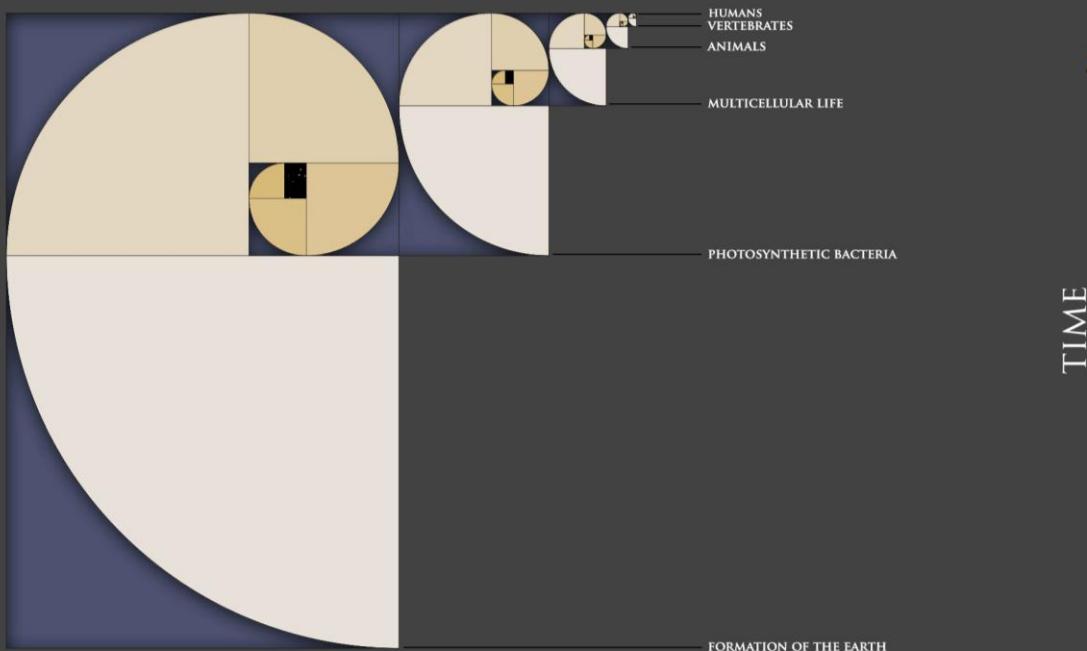
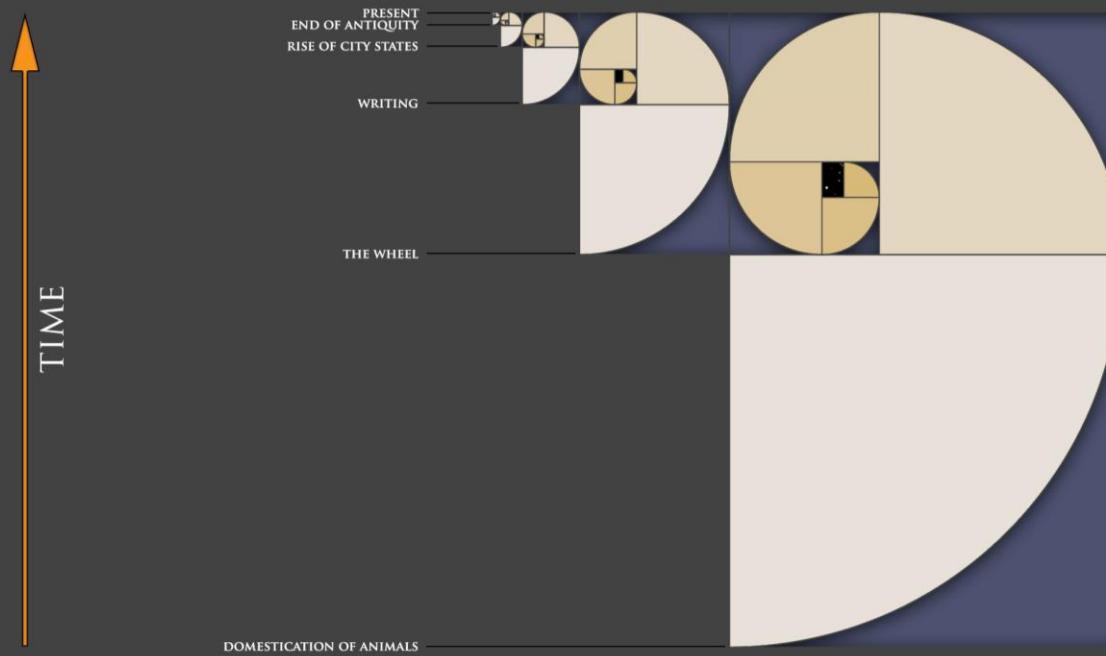


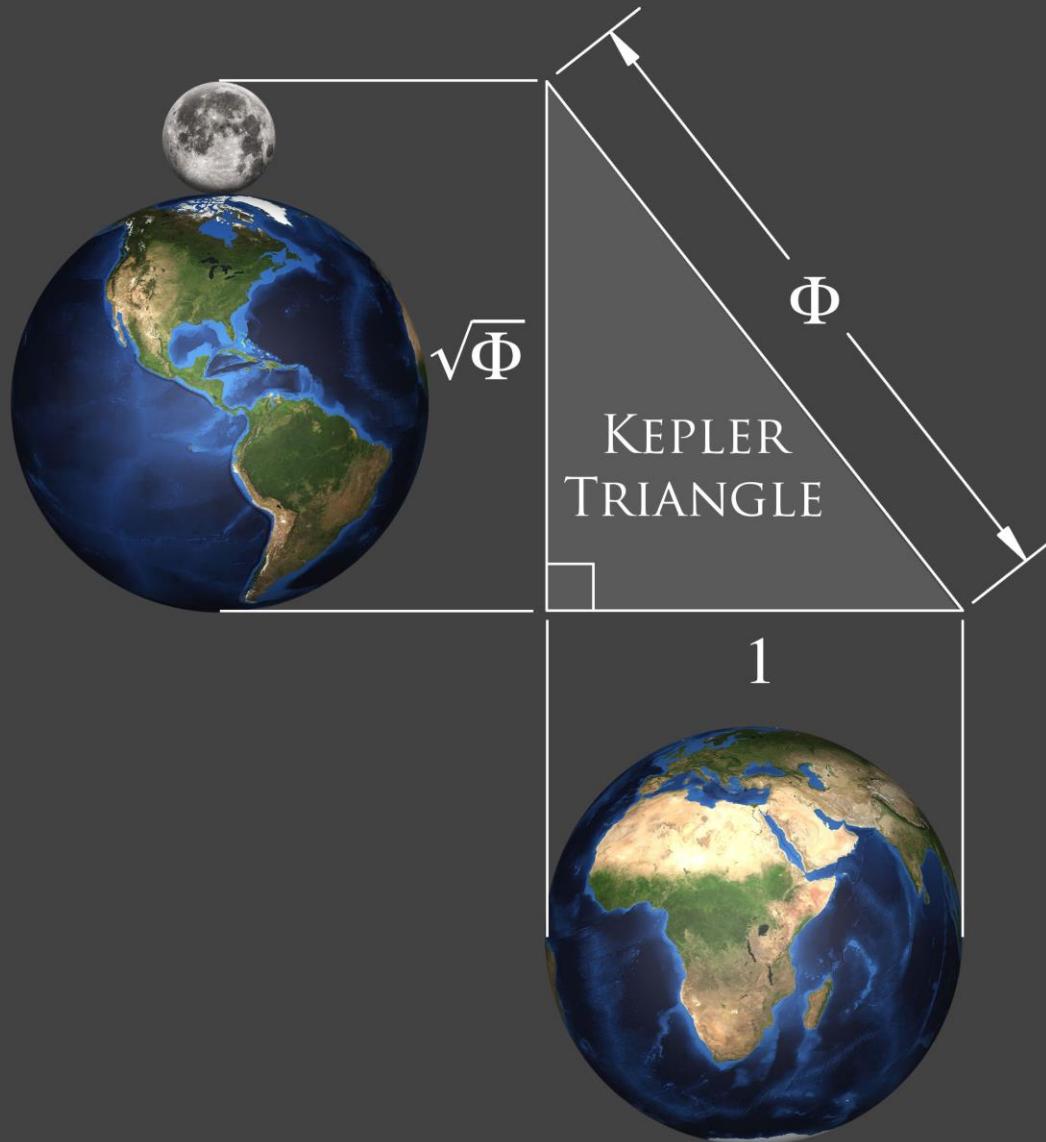


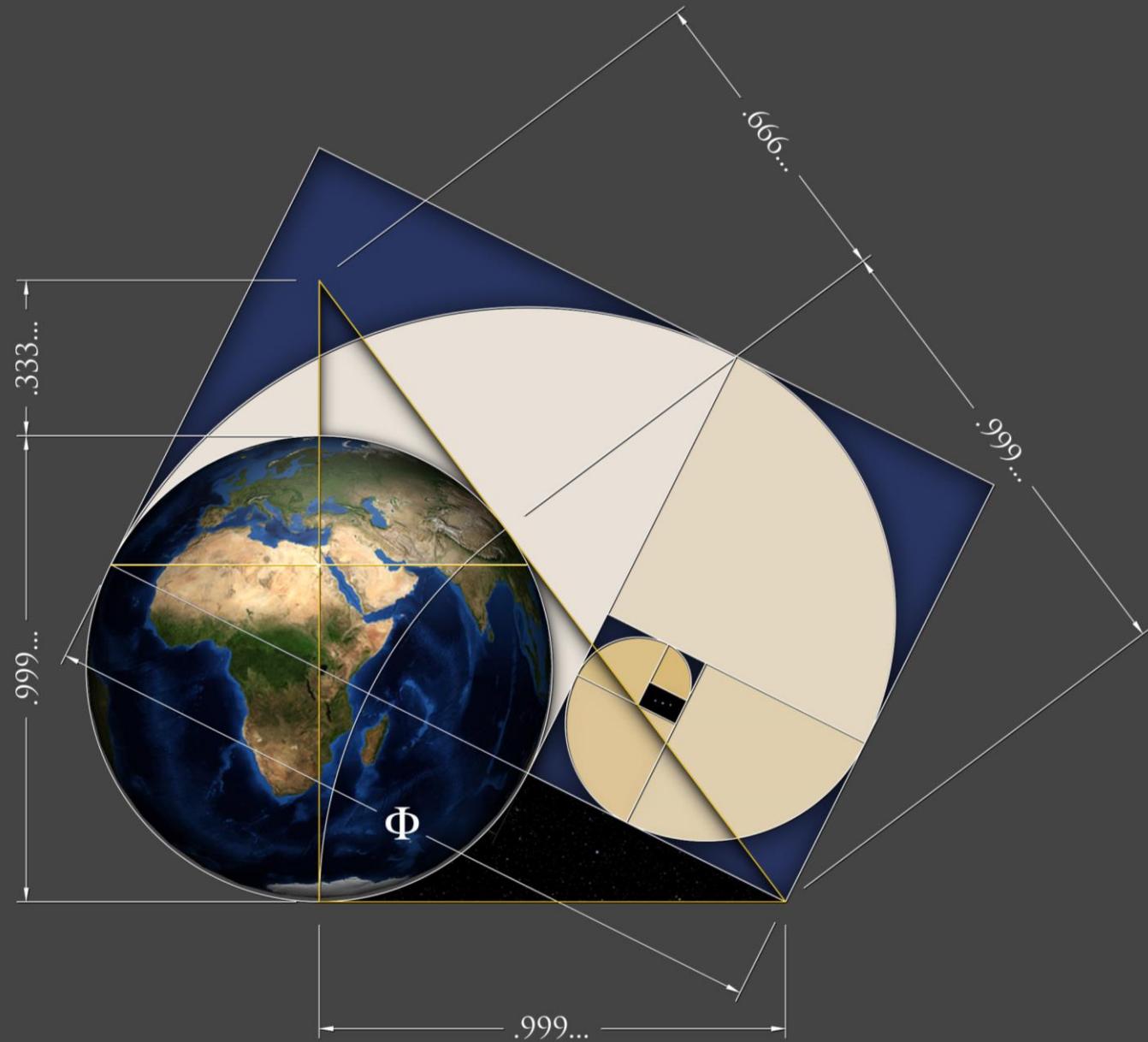


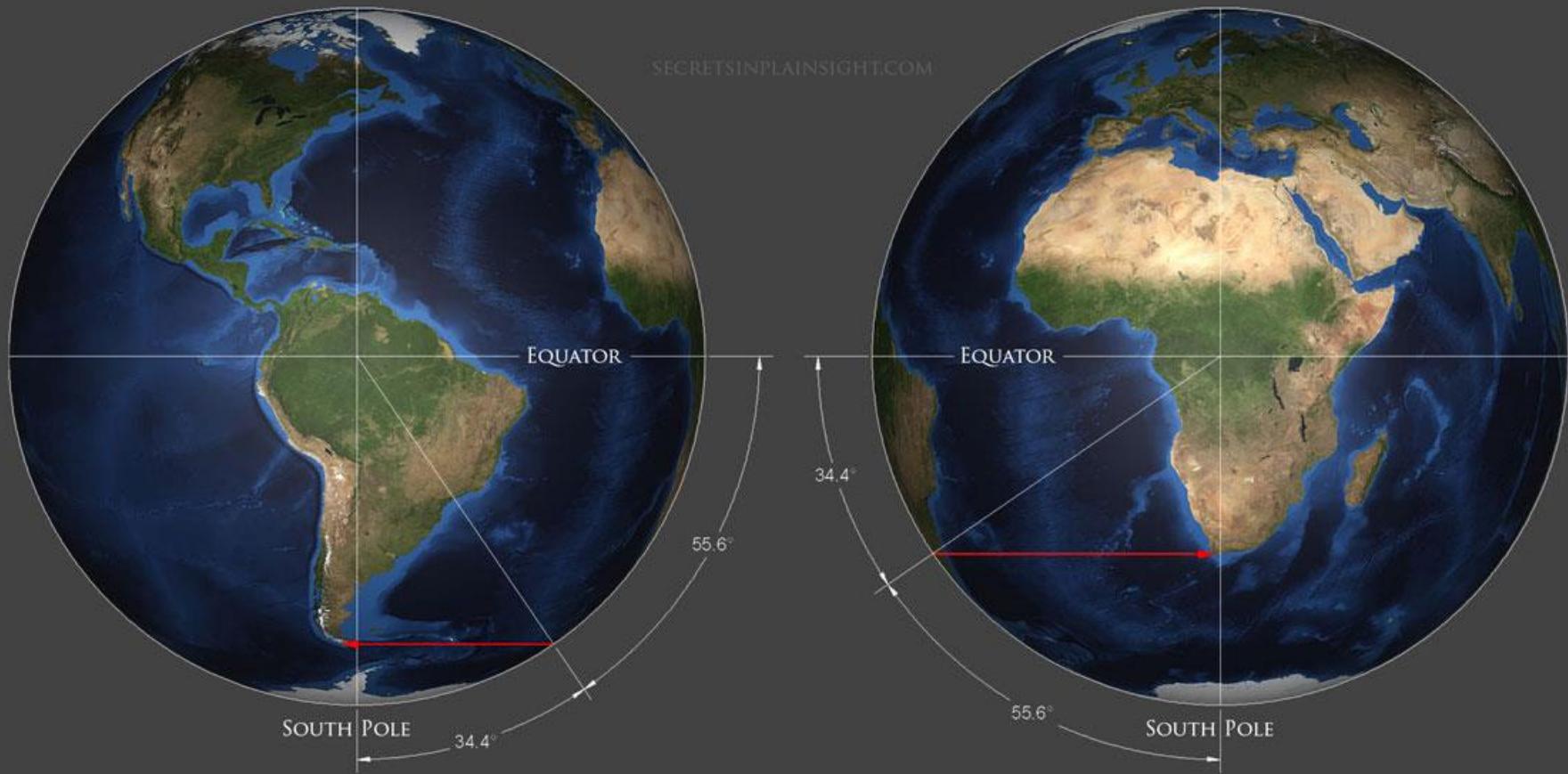
THE GRAND SCALE OF ALL THINGS

PLATE 28







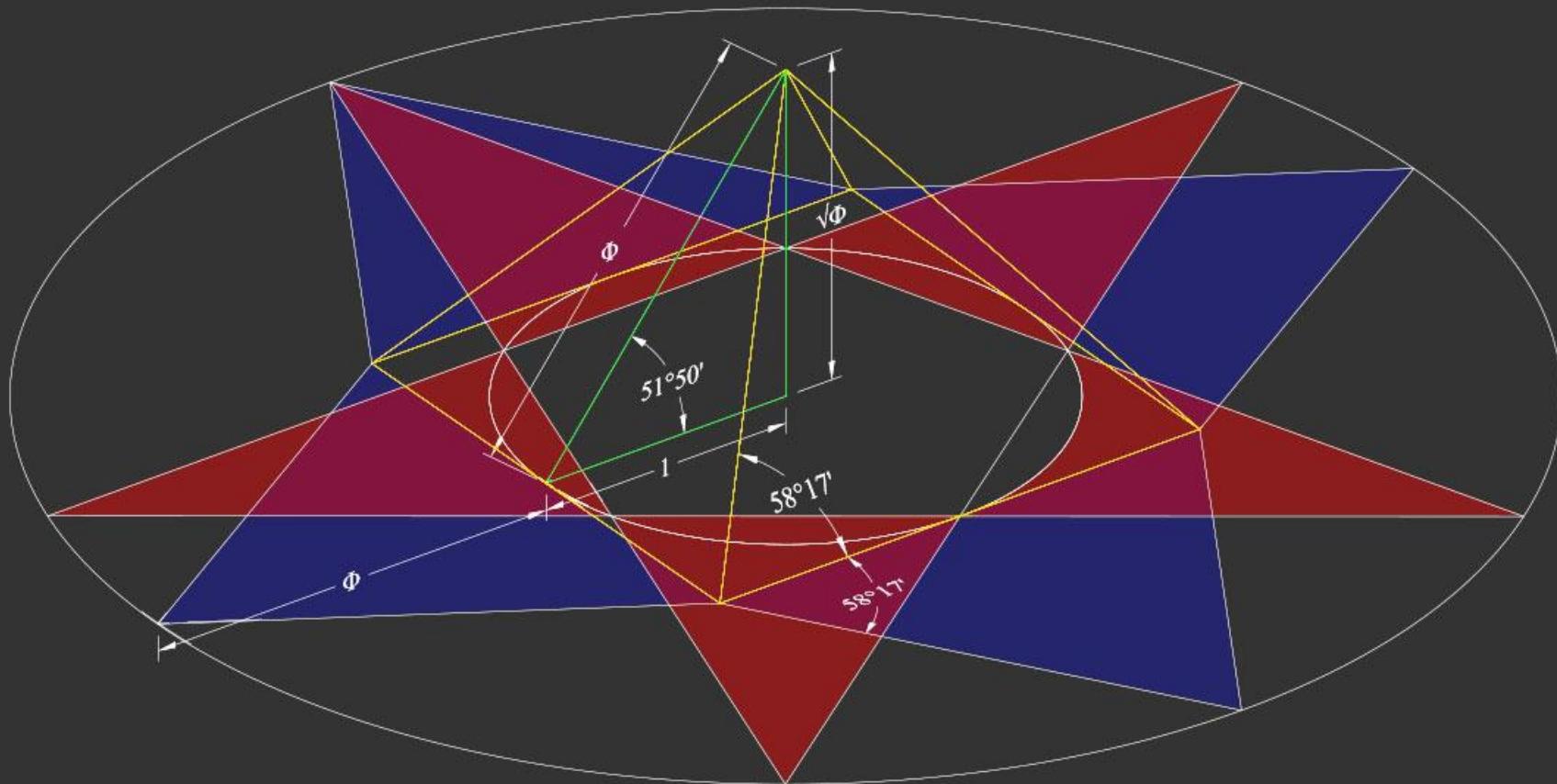


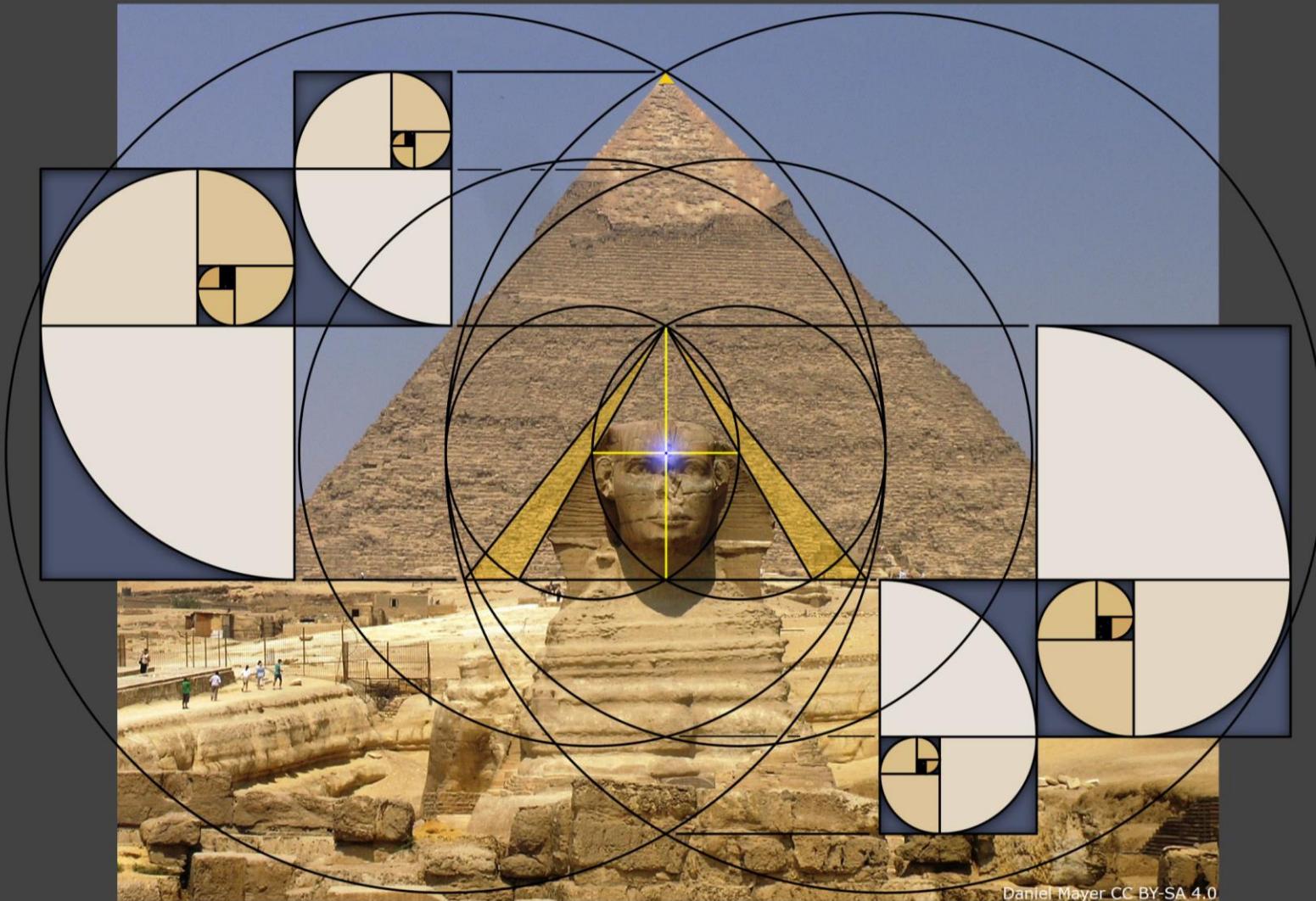
$$\frac{34.4^\circ + 55.6^\circ}{55.6^\circ} \approx \frac{55.6^\circ}{34.4^\circ} \approx \Phi \quad (99.9\%)$$

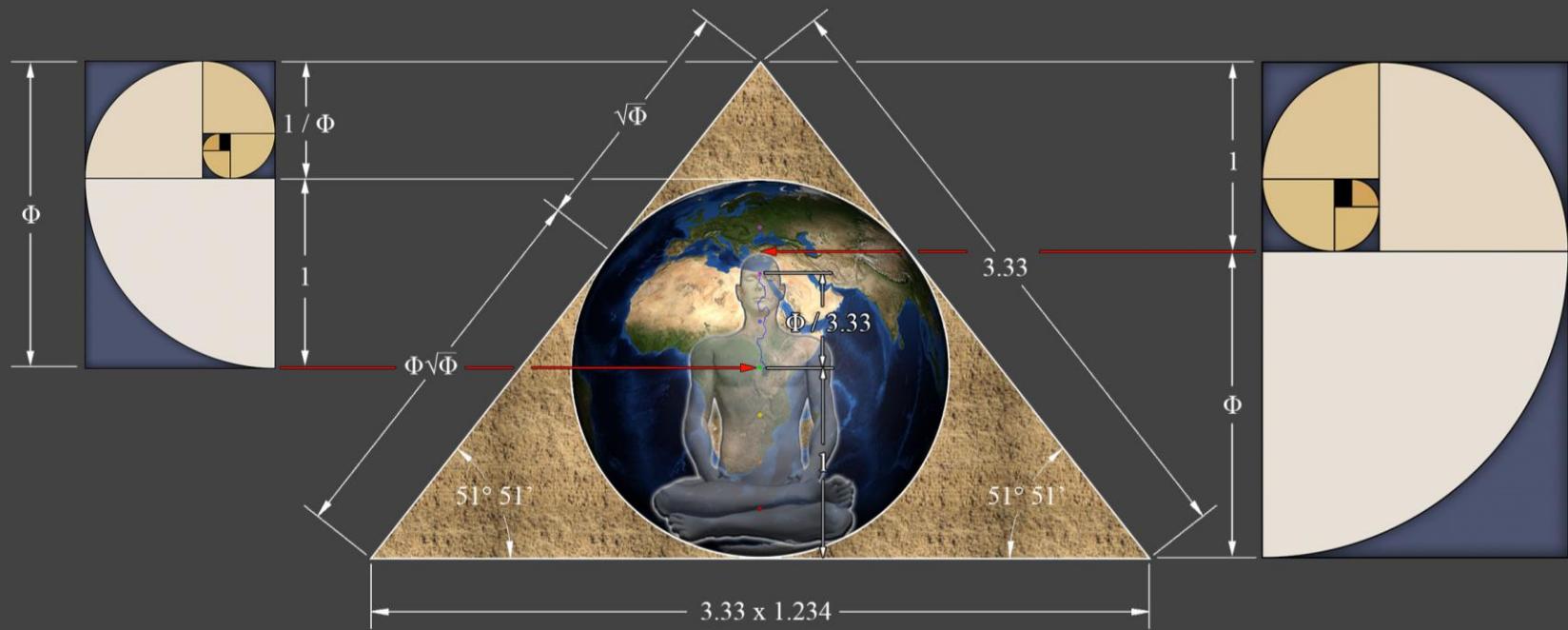
Longest Distance on Land



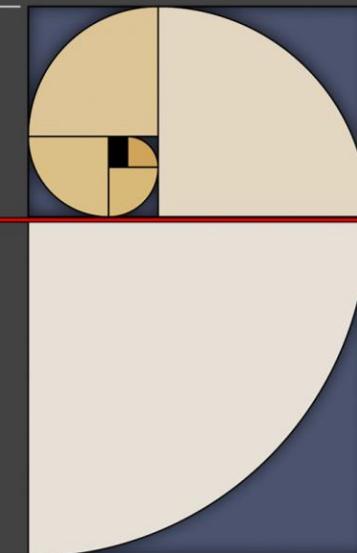
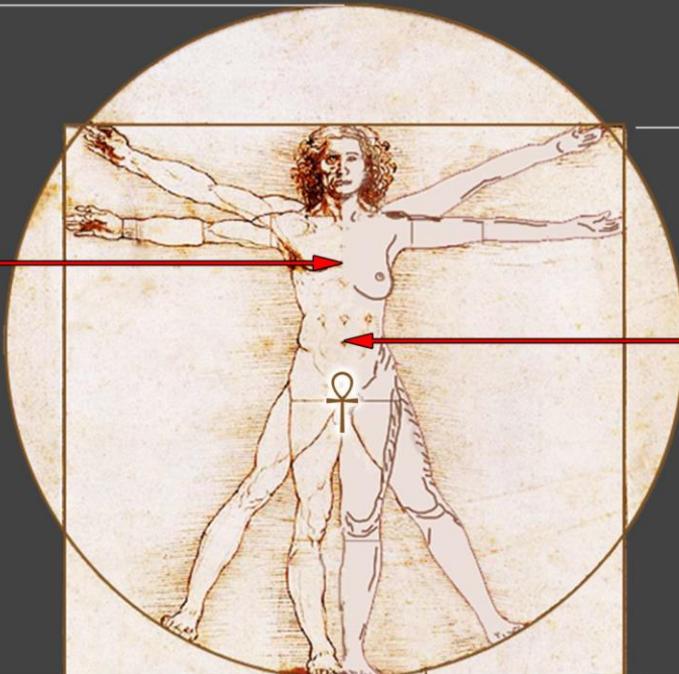
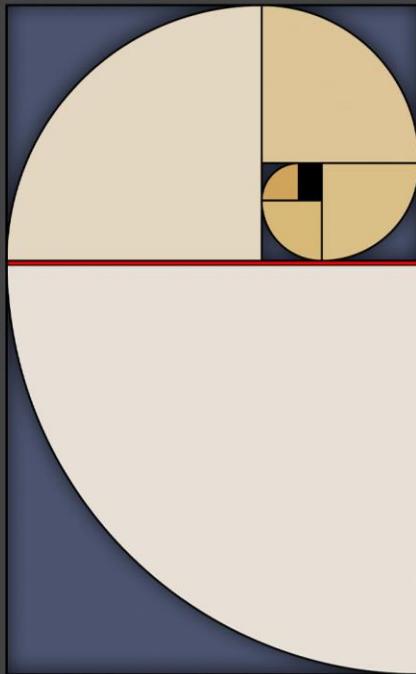
$$\frac{8468 \text{ MILES}}{5222 \text{ MILES}} \approx \frac{5222 \text{ MILES}}{3246 \text{ MILES}} \approx \Phi_{(99.9\%)}$$

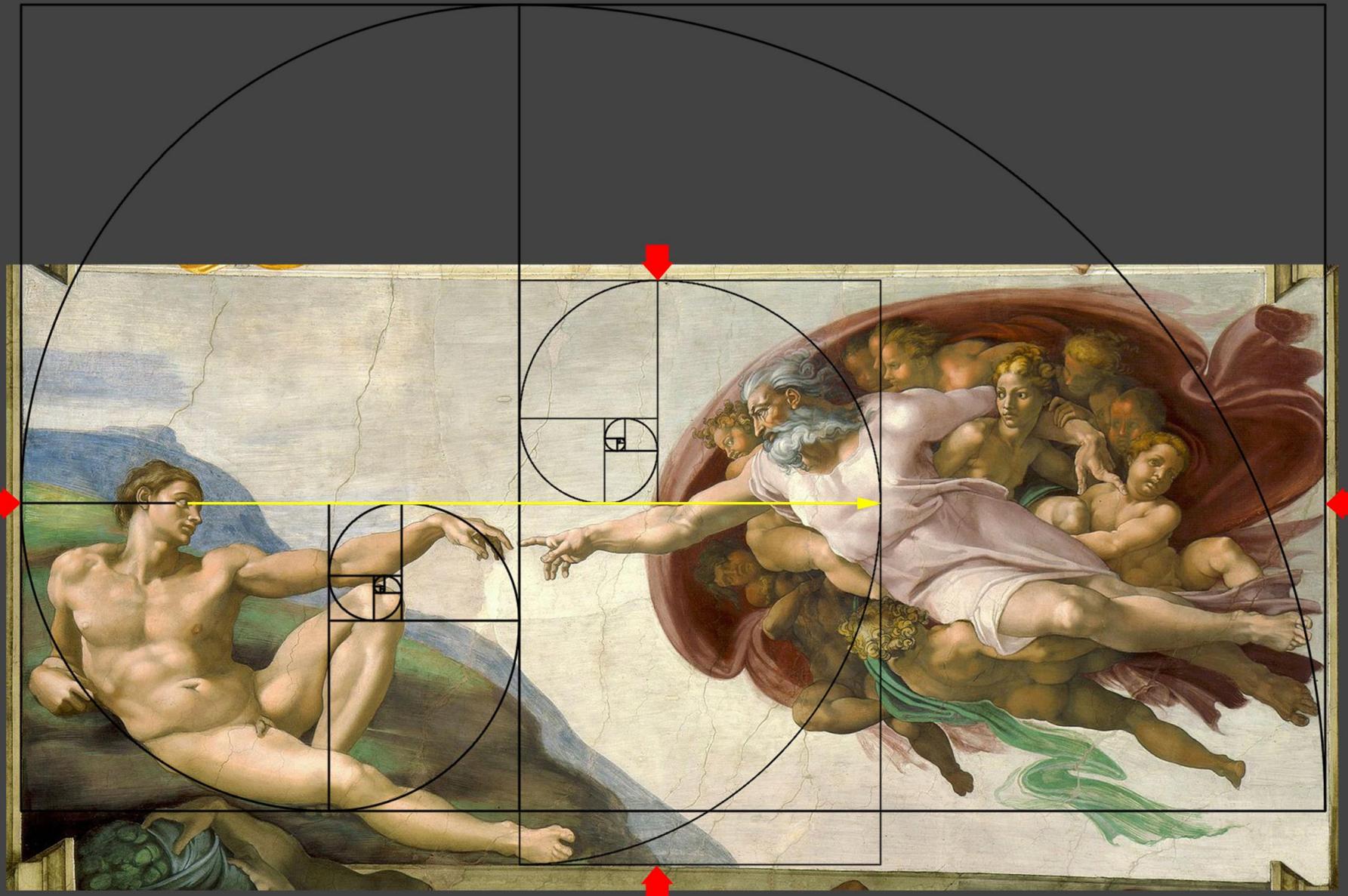


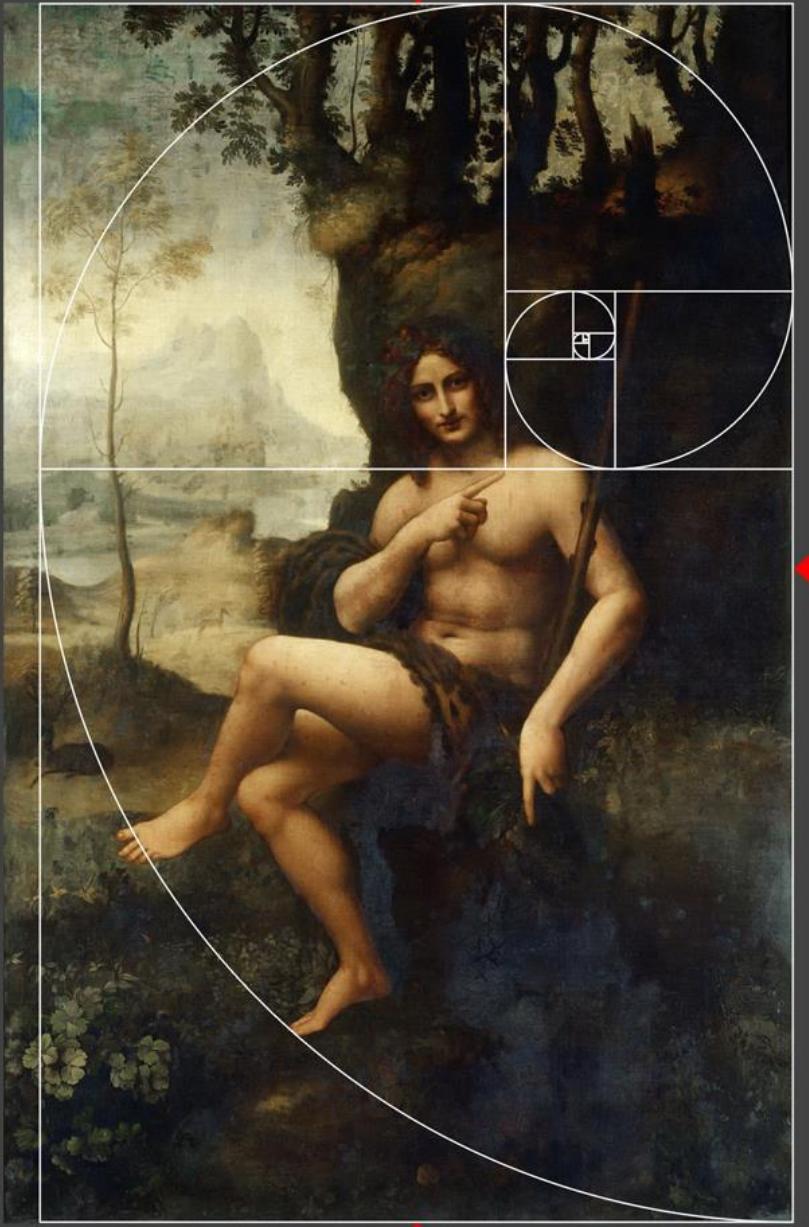










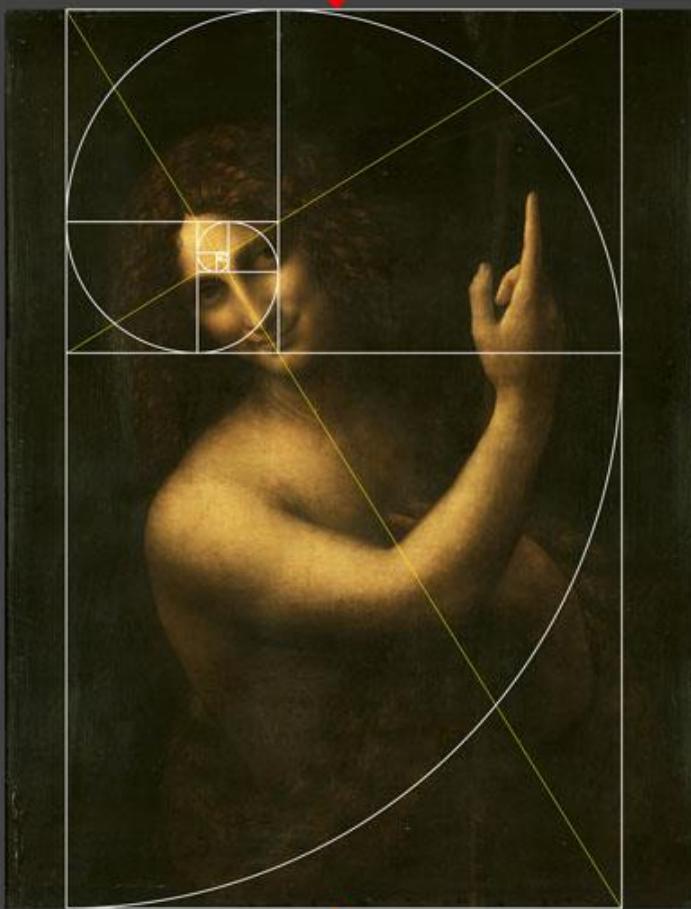


SECRETS IN PLAIN SIGHT
LEONARDO DA VINCI



SCOTT ONSTOTT

ST. JOHN THE BAPTIST (AKA BACCHUS) C.1515
MUSÉE DU LOUVRE, PARIS



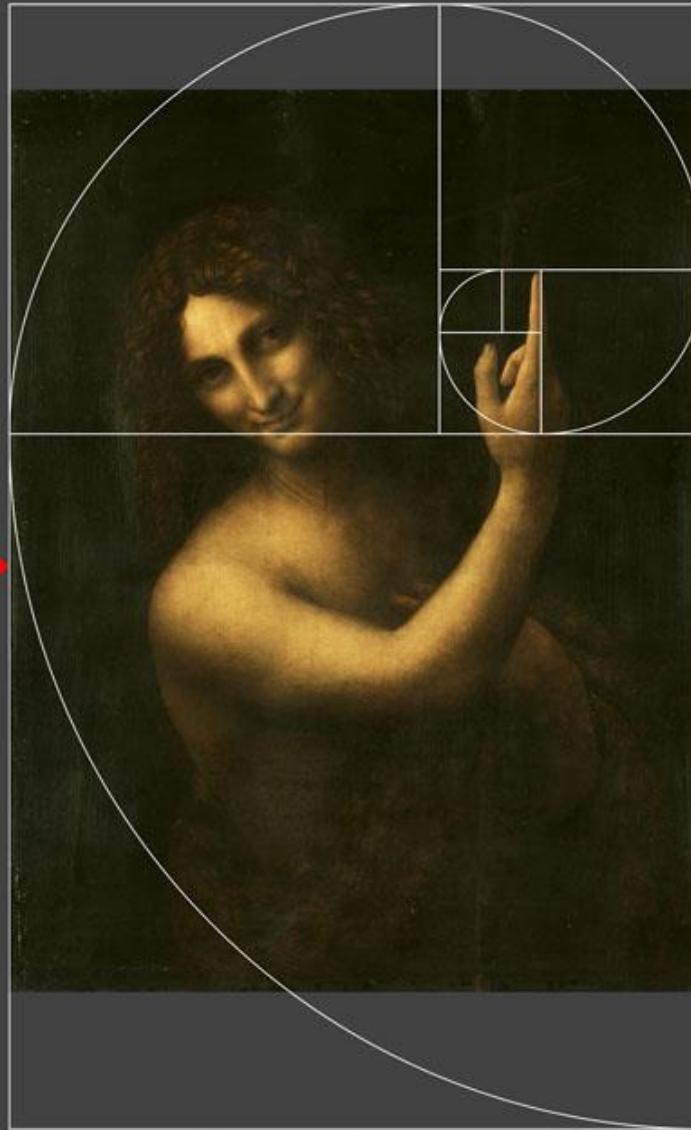
SECRETS IN PLAIN SIGHT
LEONARDO DA VINCI



ST. JOHN THE BAPTIST C.1513
MUSÉE DU LOUVRE, PARIS

PLATE 21

SECRETS IN PLAIN SIGHT
LEONARDO DA VINCI

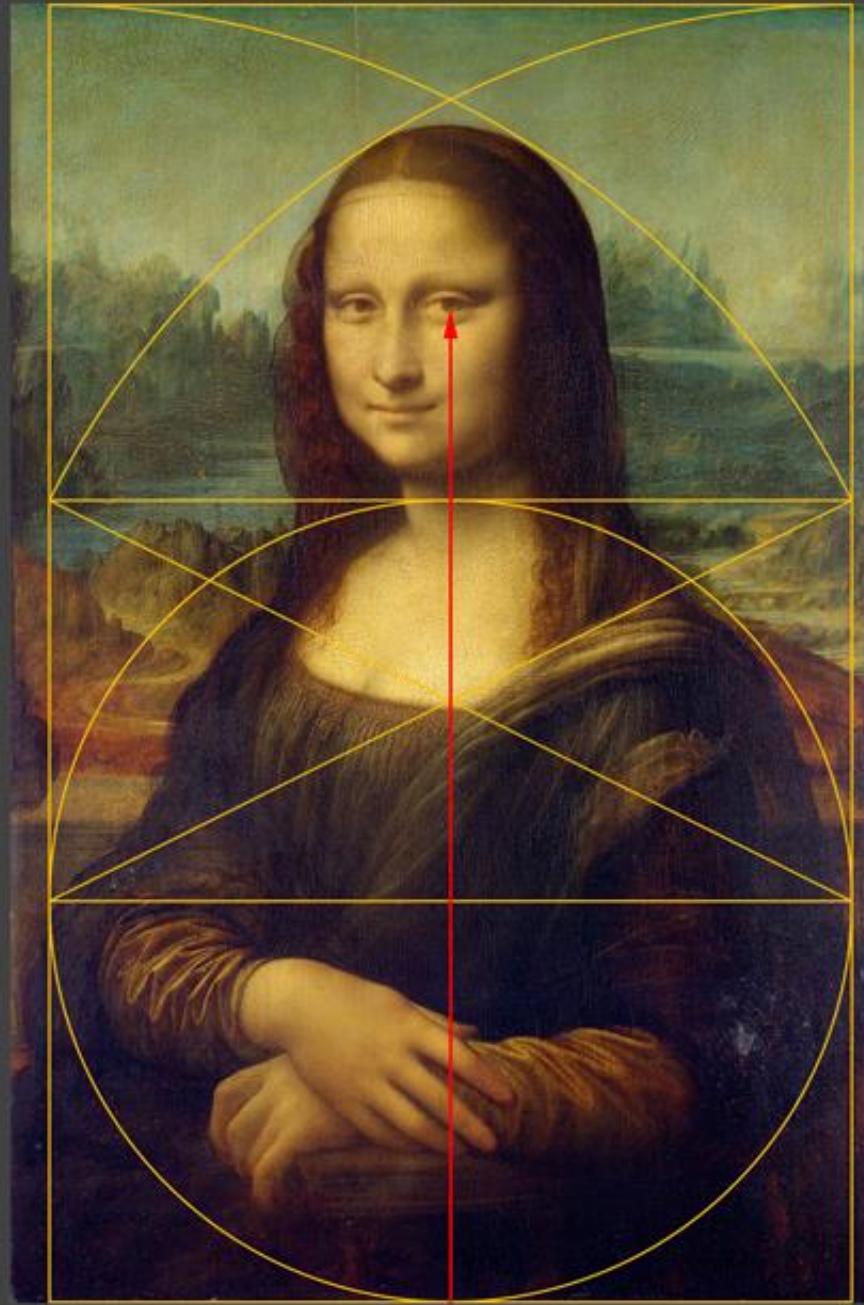


ST. JOHN THE BAPTIST C.1513
MUSÉE DU LOUVRE, PARIS

PLATE 22

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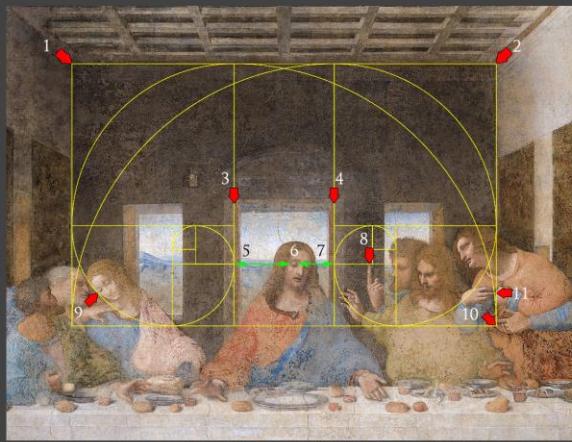
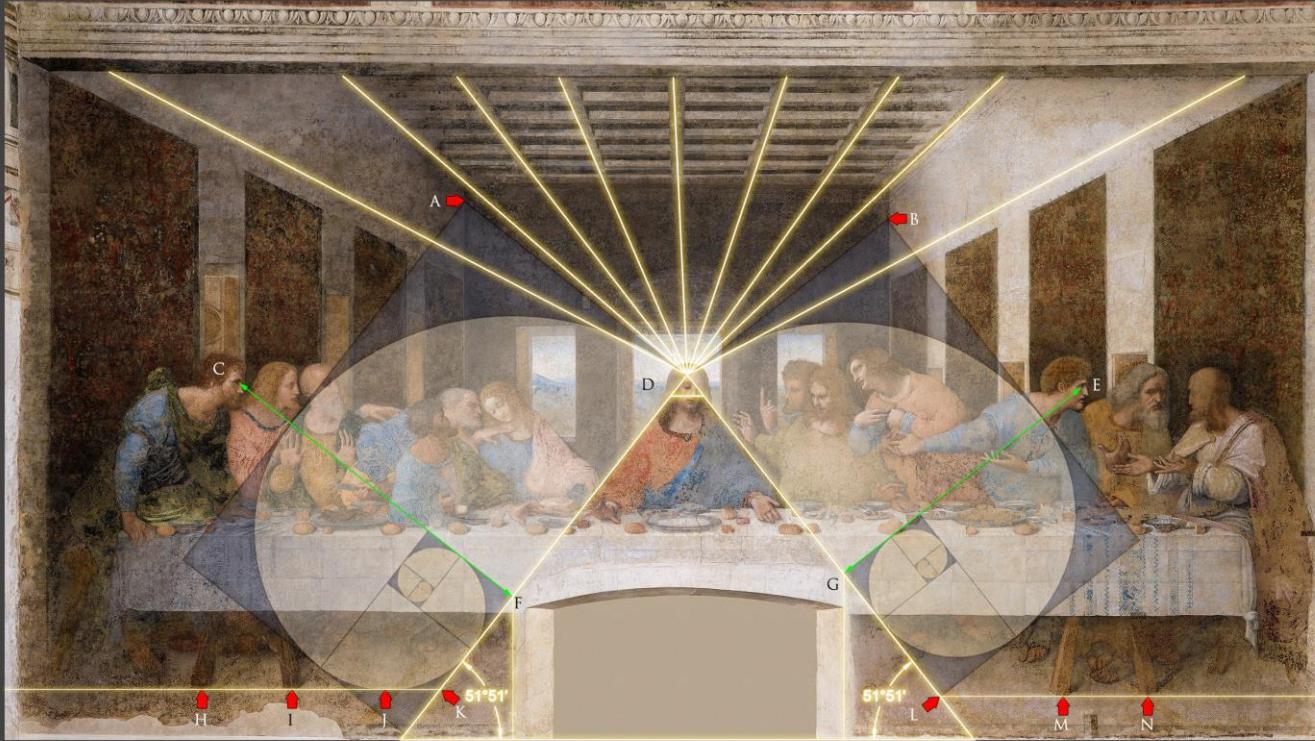


SECRETS IN PLAIN SIGHT
LEONARDO DA VINCI



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SECRETS IN PLAIN SIGHT
LEONARDO DA VINCI

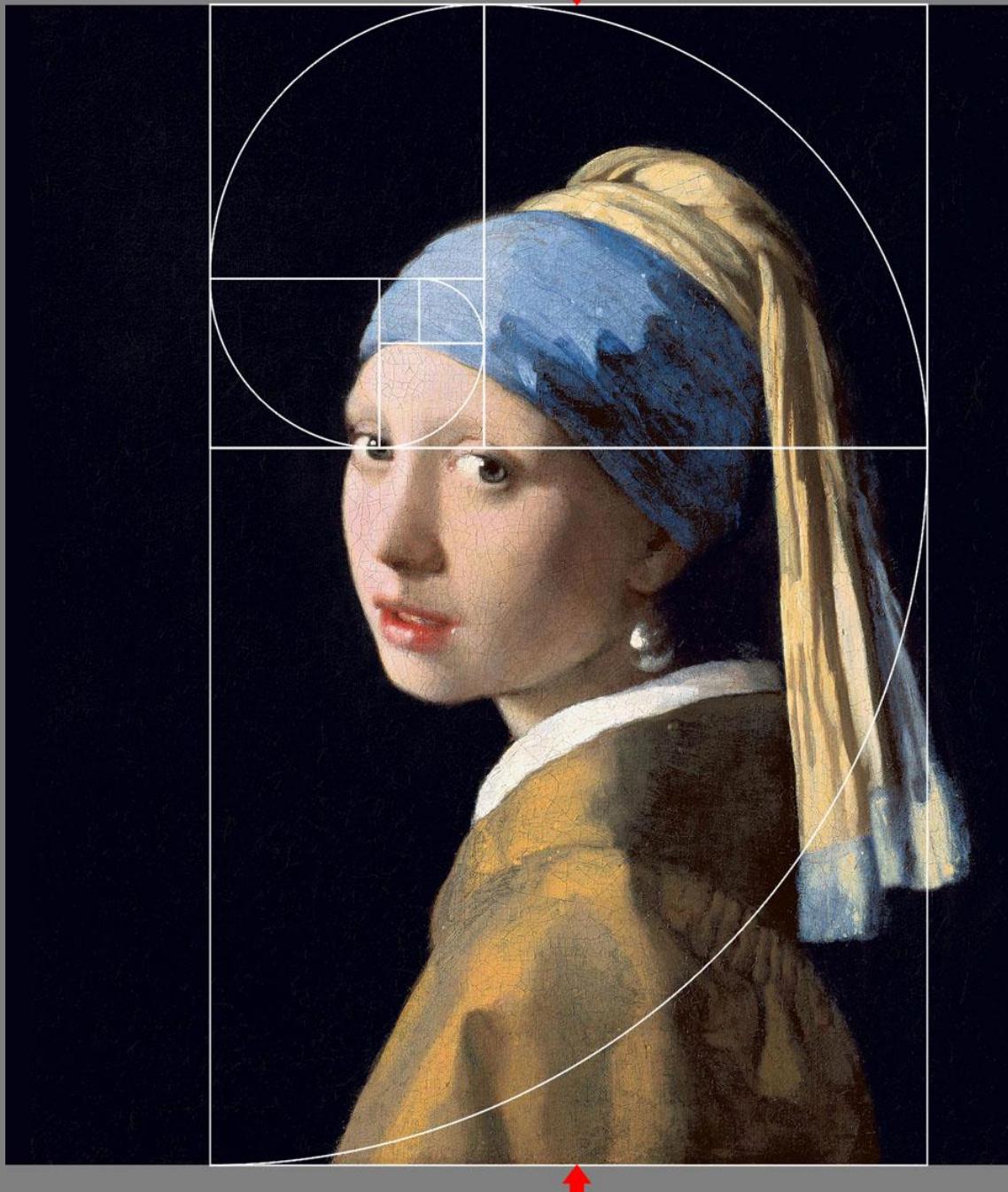


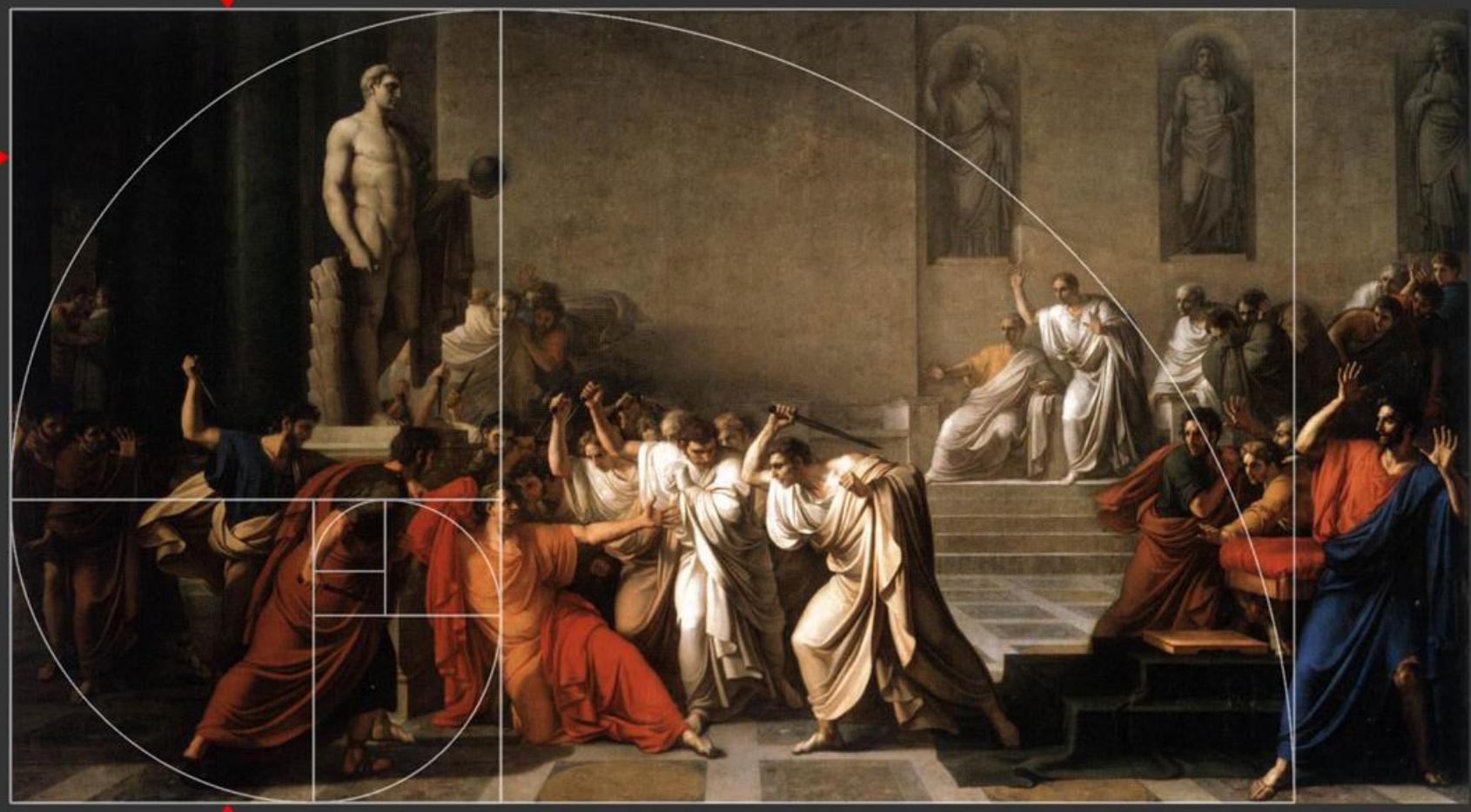
SCOTT ONSTOTT

©Scott Onstott

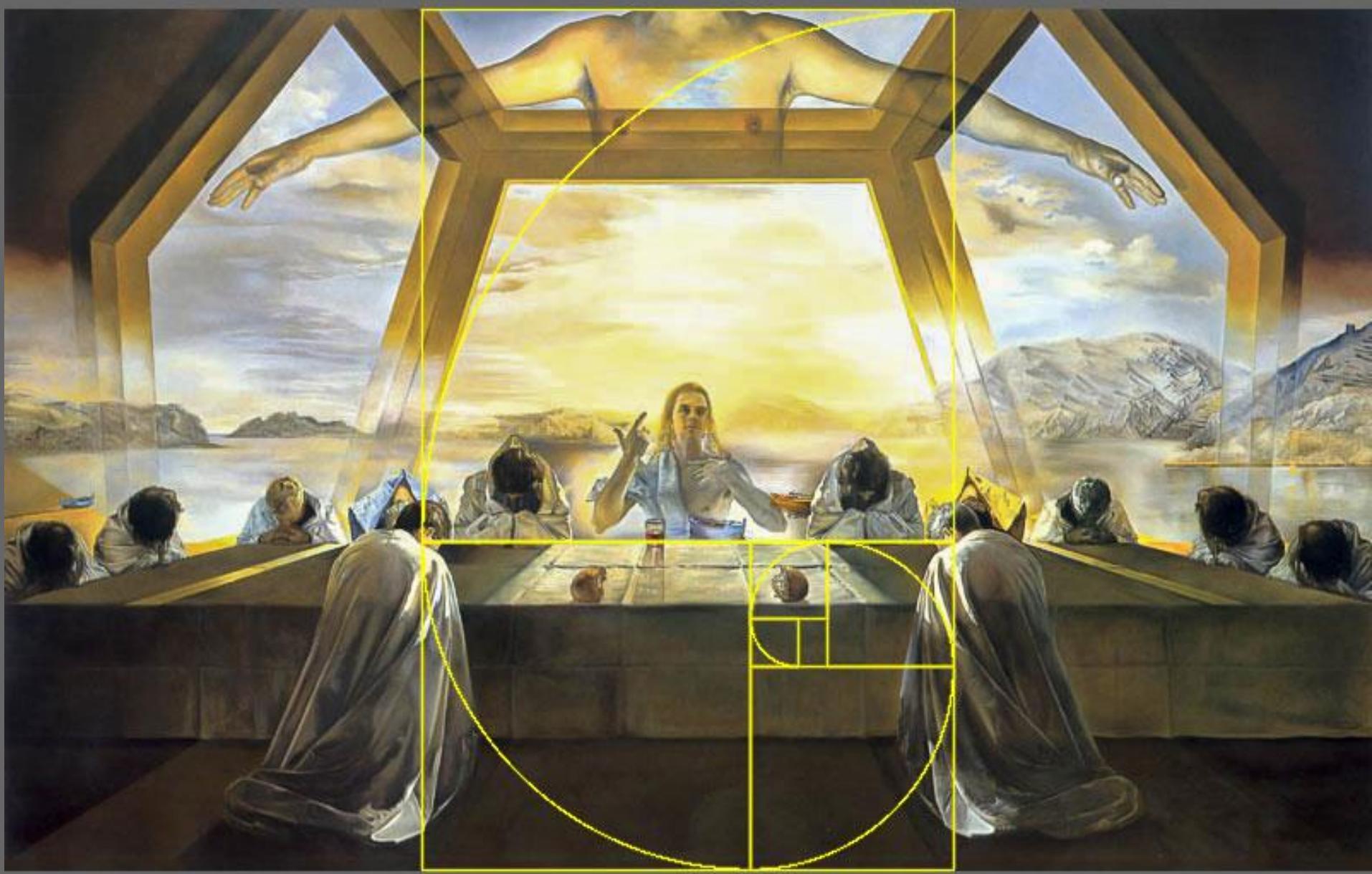


THE GEOGRAPHER BY JOHANNES VERMEER (1668)

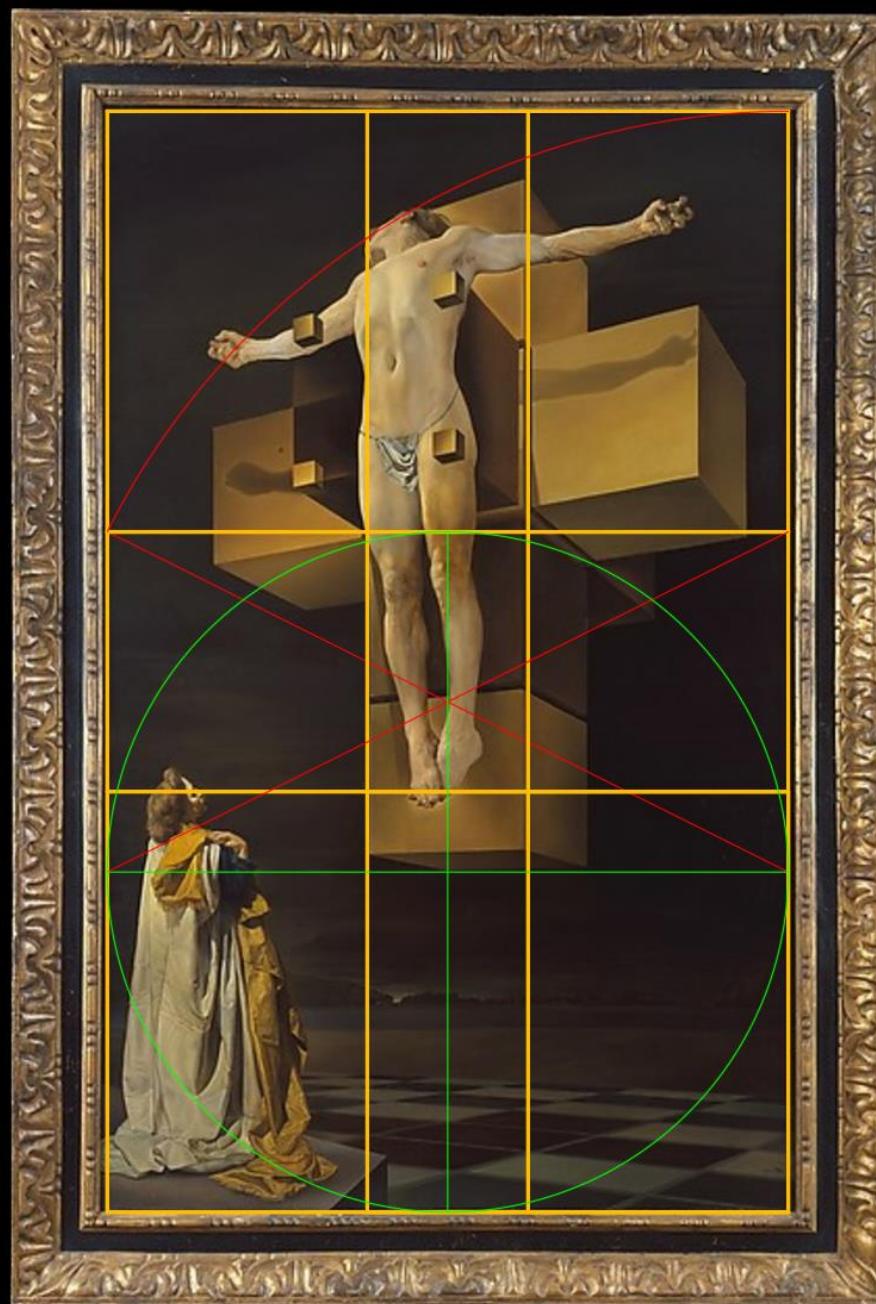




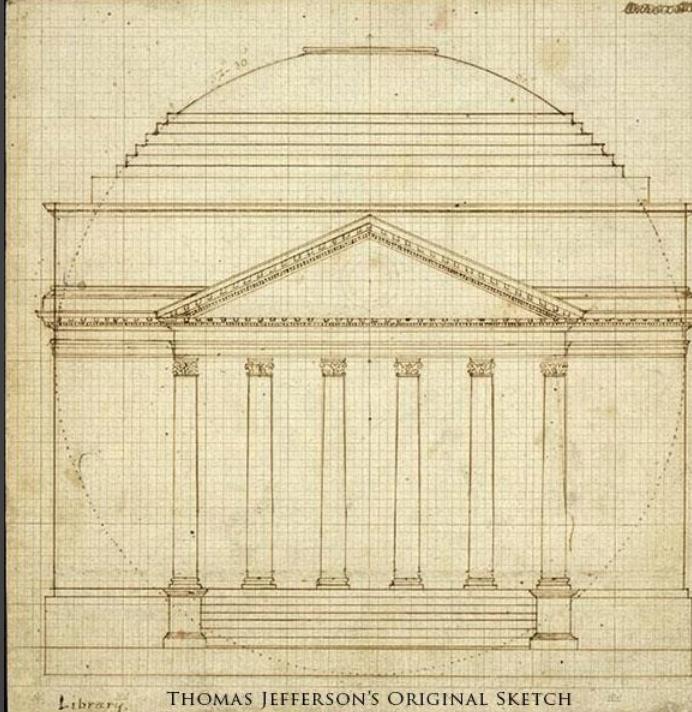
THE DEATH OF CAESAR BY VINCENZO CAMUCCINI (1798)



THE SACRAMENT OF THE LAST SUPPER (1955) BY SALVADOR DALÍ

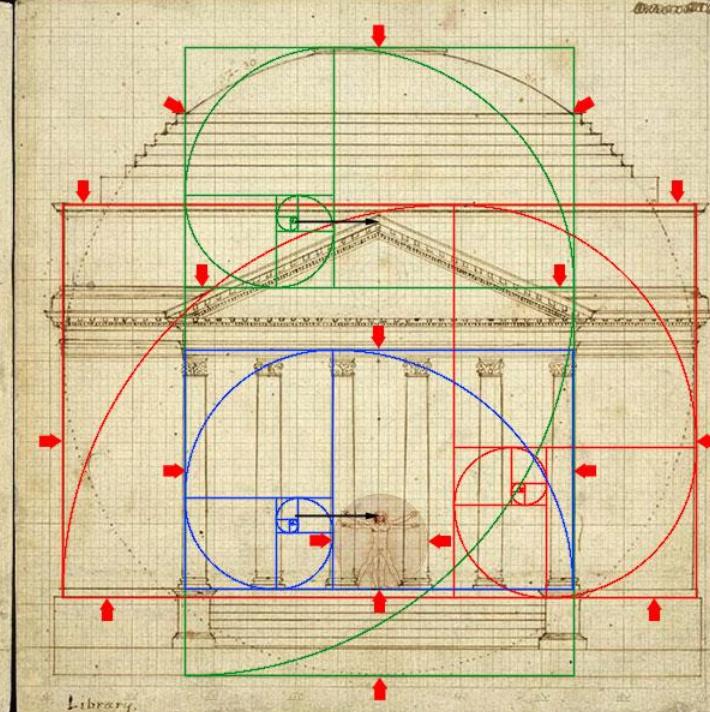


Corpus Hypercubus by Salvador Dalí (1954)



Library.

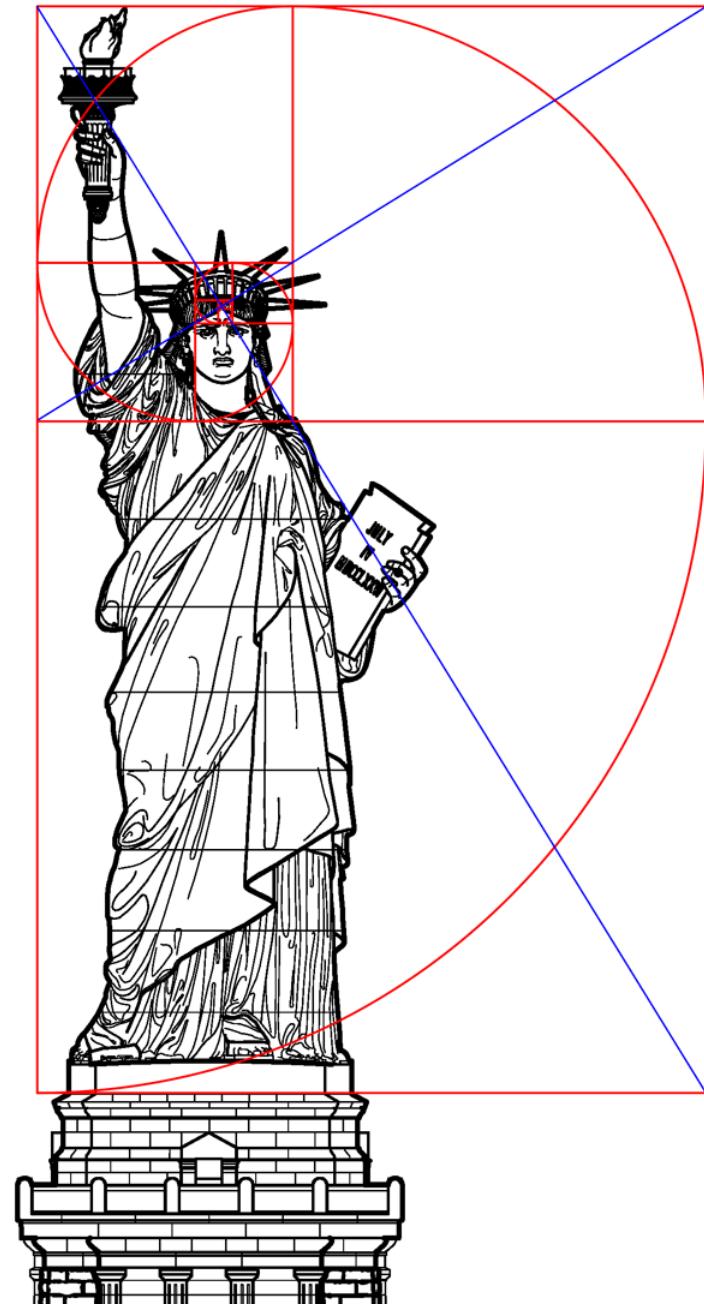
THOMAS JEFFERSON'S ORIGINAL SKETCH

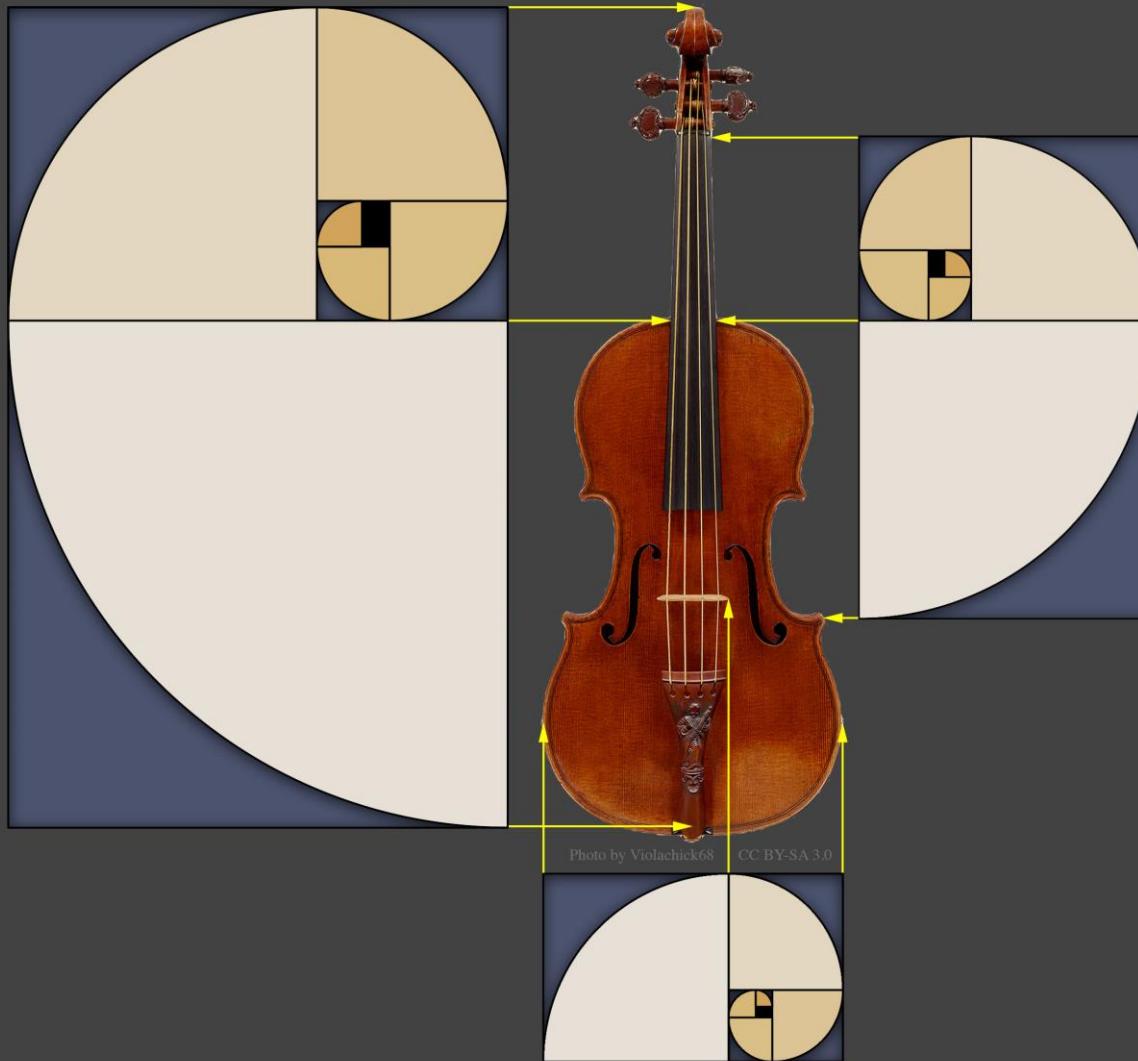


Library.



THE ROTUNDA AT THE UNIVERSITY OF VIRGINIA







Discovered by Harry Webley

Scott Detwiler CC BY-SA 3.0

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33 $\frac{1}{3}$ RPM

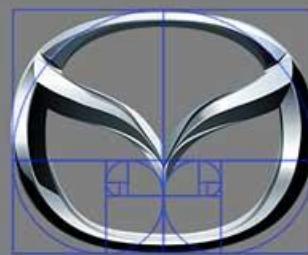
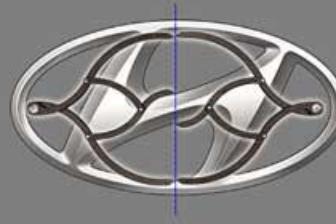


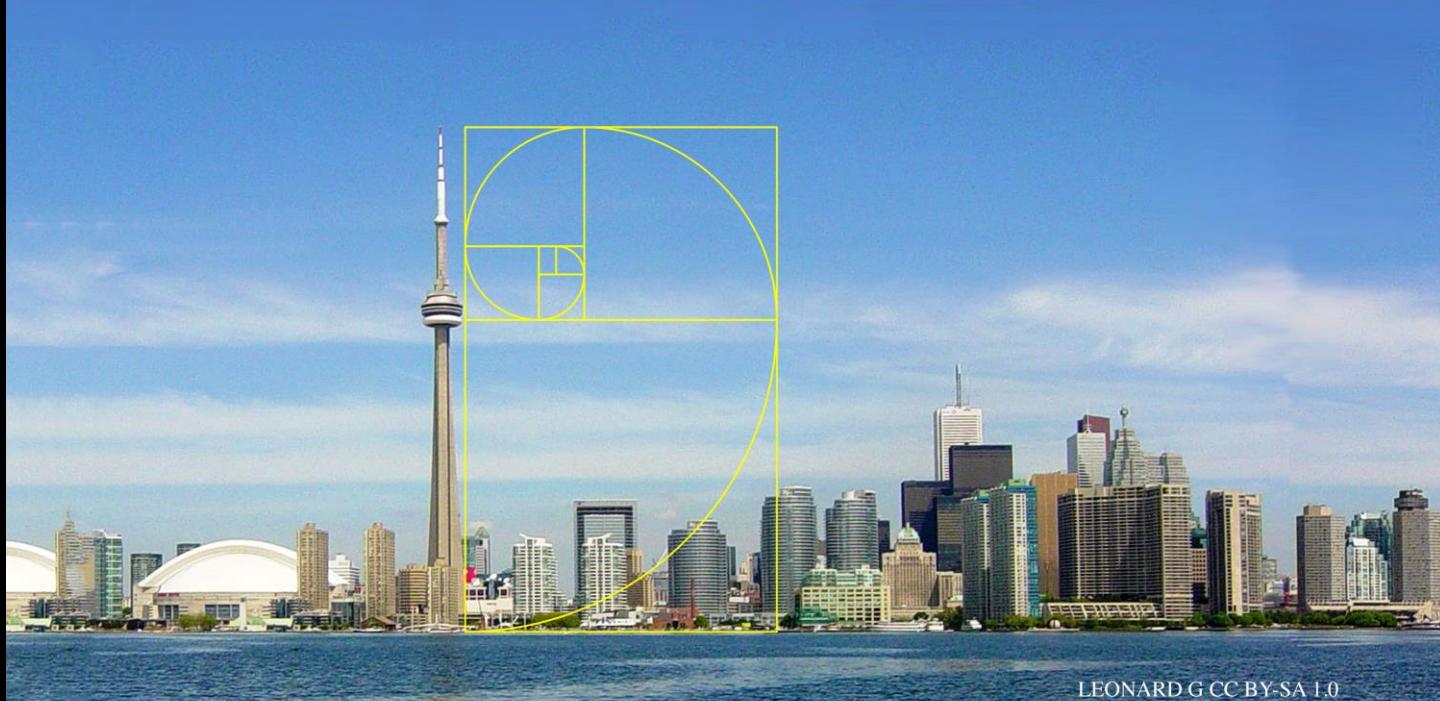
45 RPM

$$\Phi \approx 1.618033988749894$$

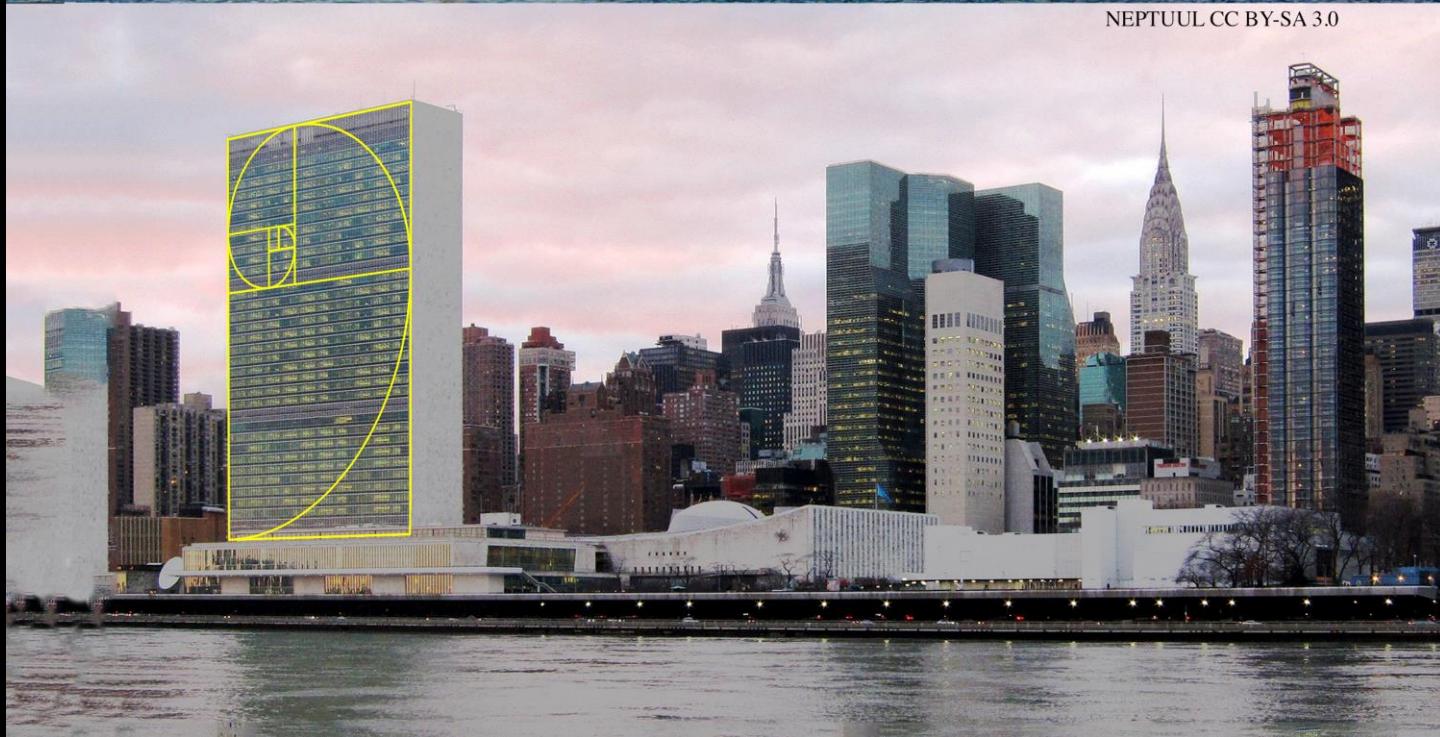




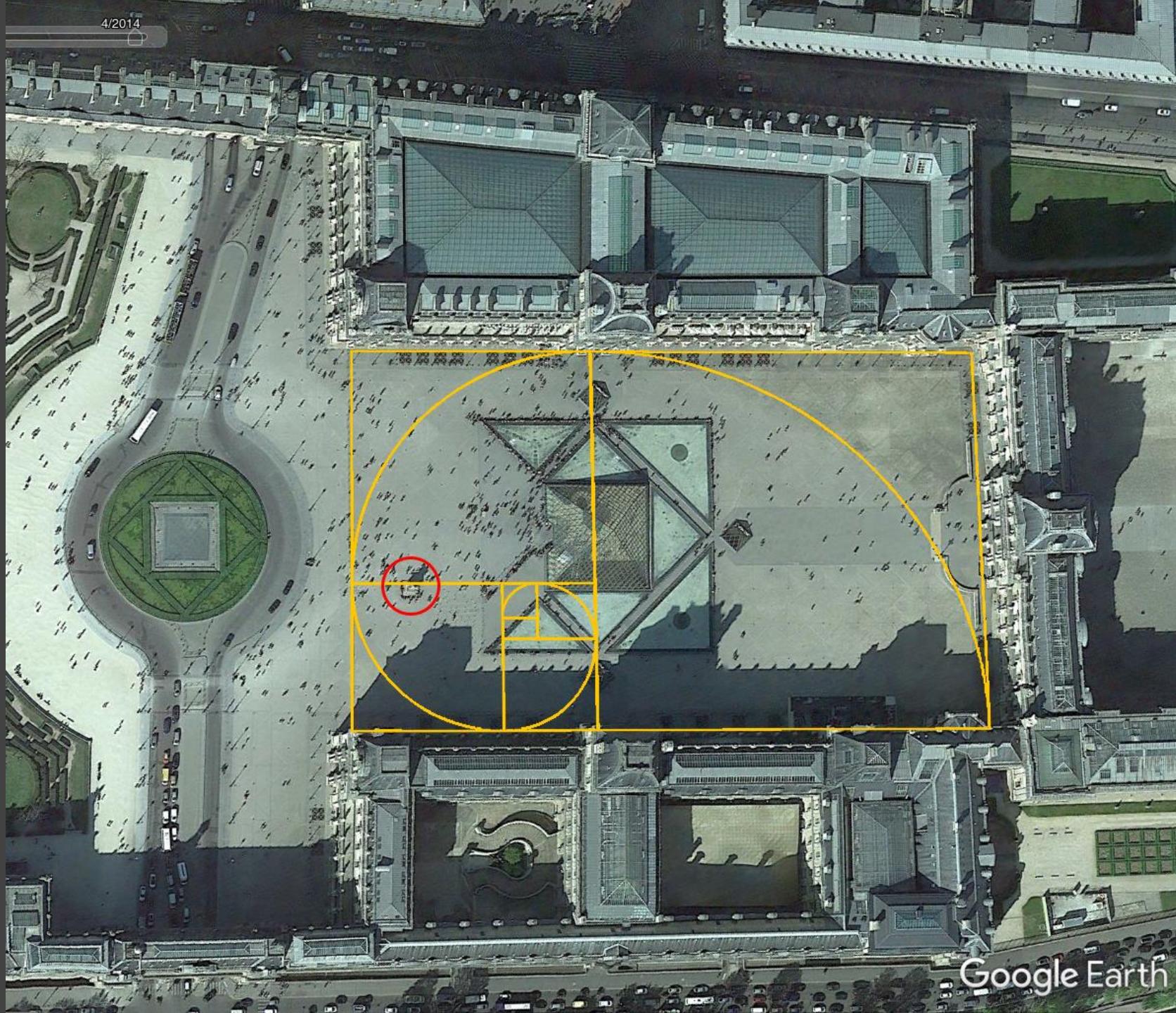




LEONARD G CC BY-SA 1.0
NEPTUUL CC BY-SA 3.0

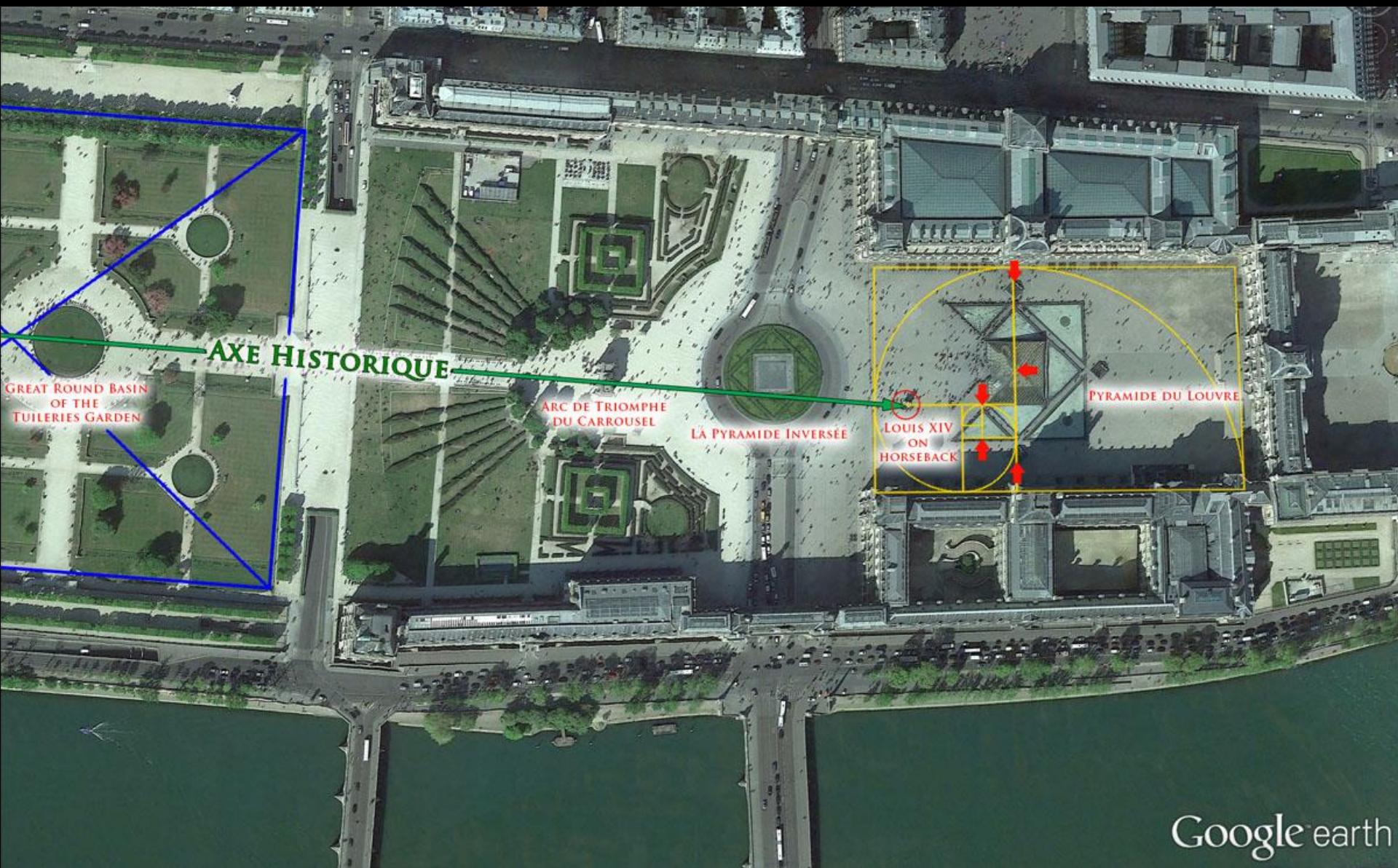


4/2014

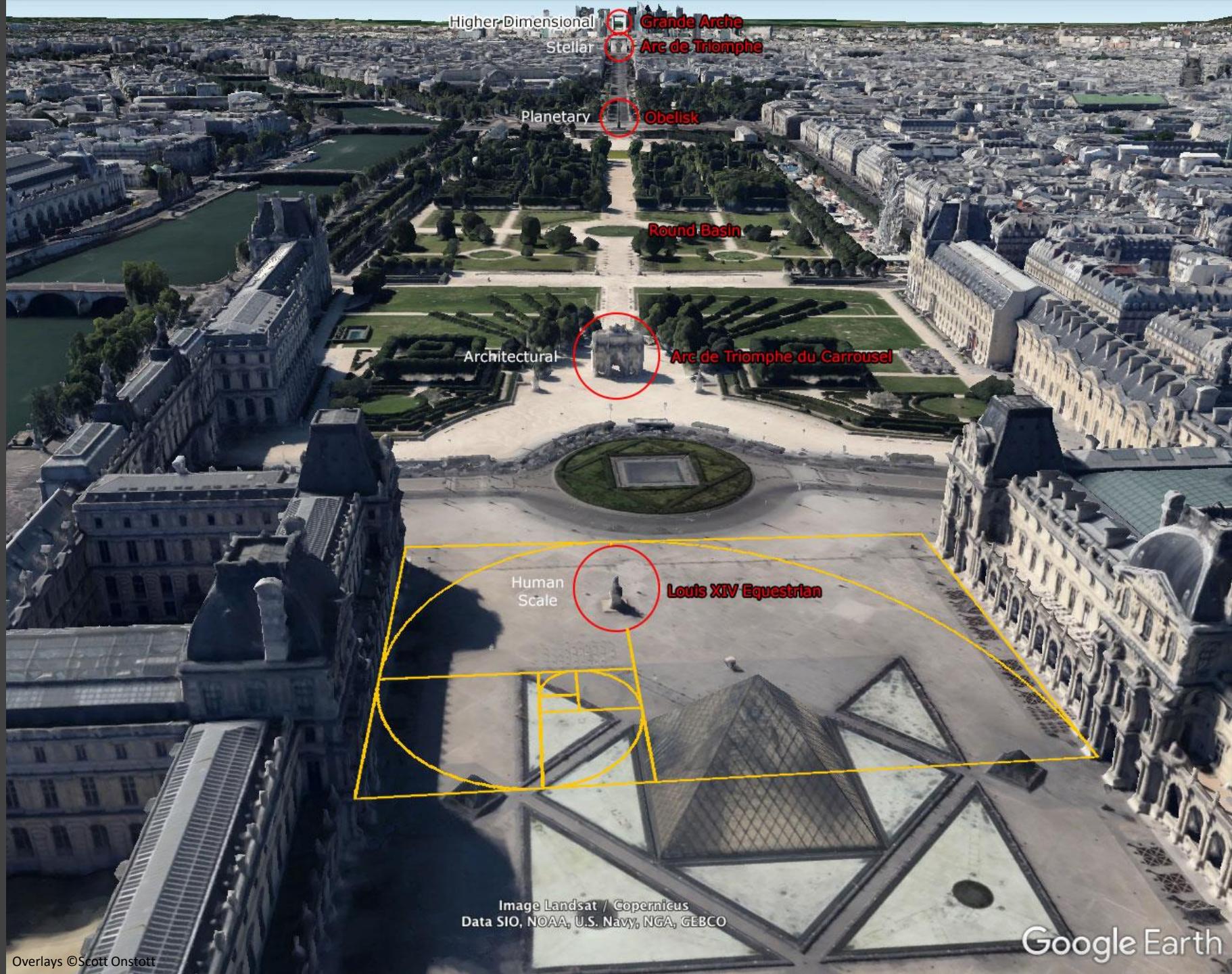


Google Earth

©Scott Onstott



Google earth



$1/\Phi \approx 0.618$

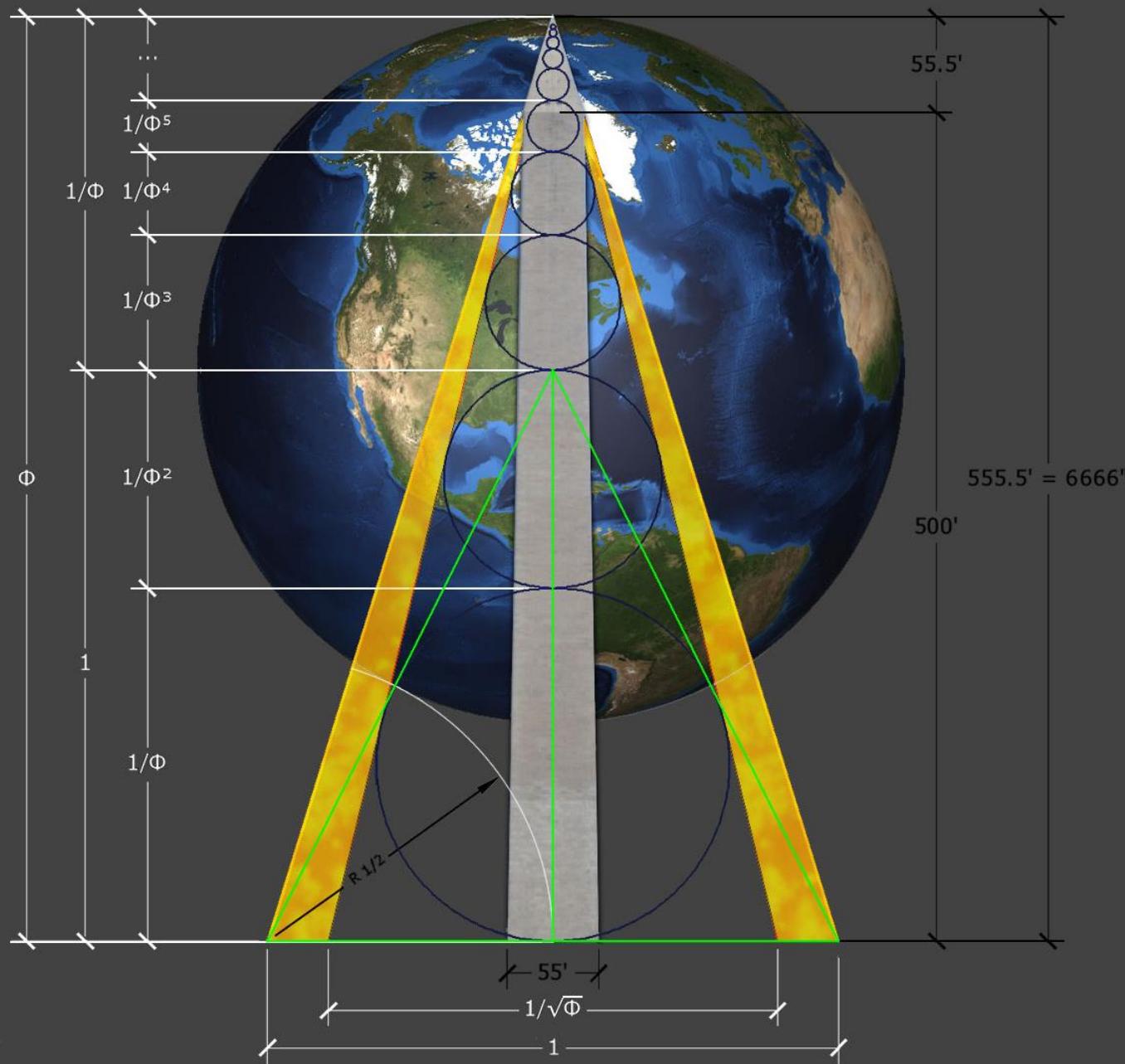
Palace of Peace & Reconciliation
in Nur-Sultan (formerly Astana),
the capital city of Kazakhstan

61.8 m

61.8 m

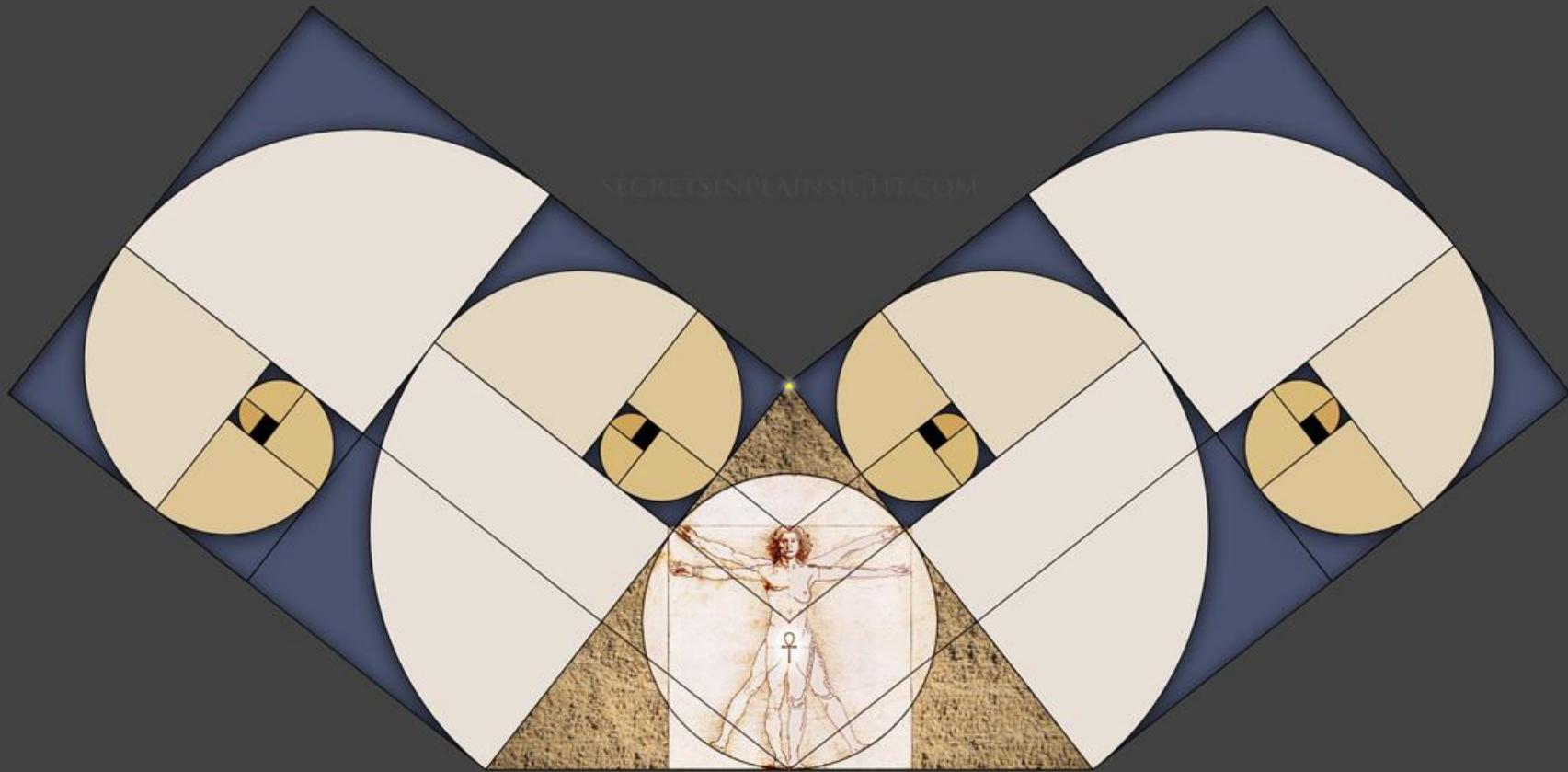
БЕЙБІТШІЛІК ЖӘНЕ КЕЛІСІМ САРАЙЫ



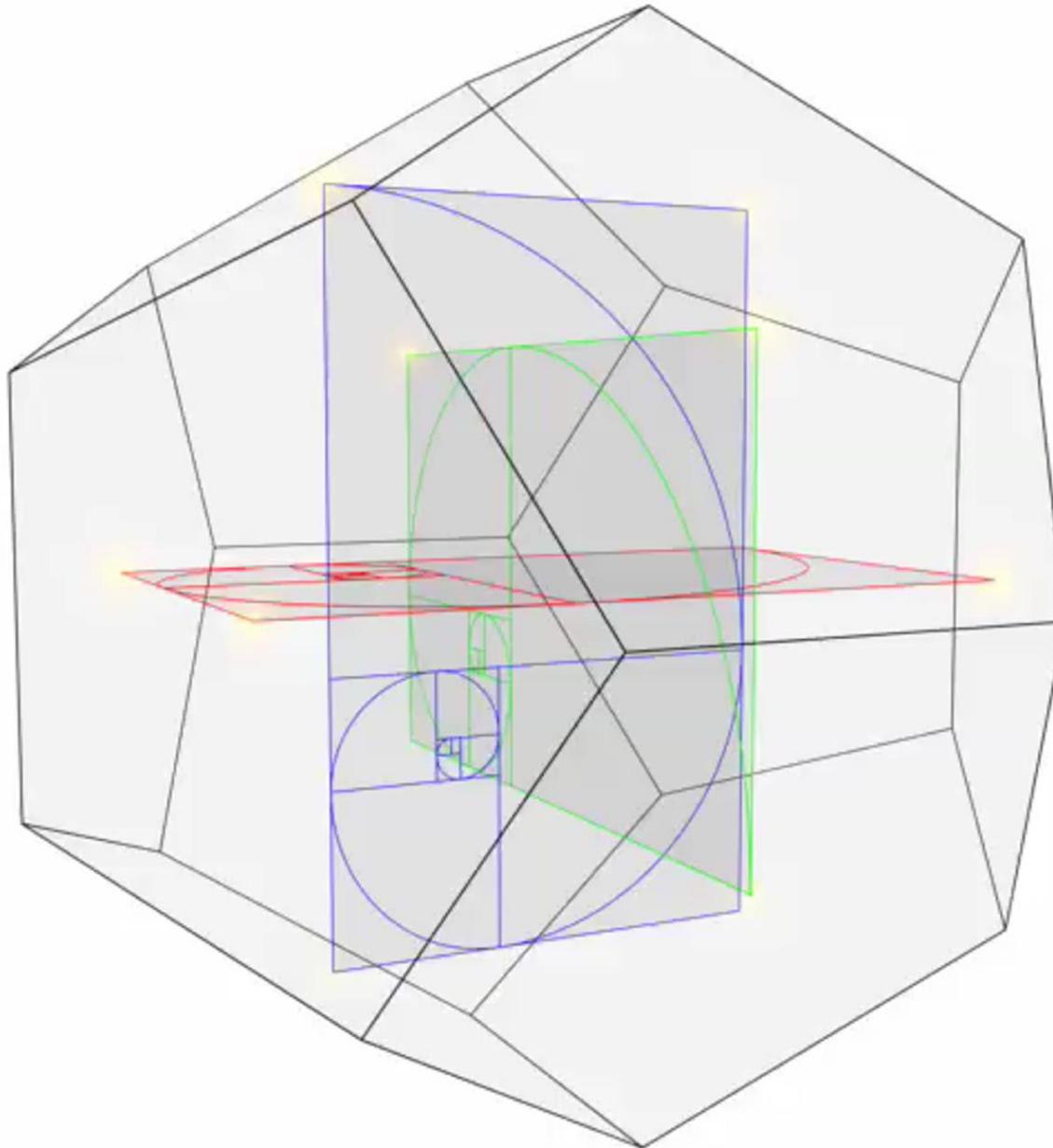


The Washington Monument

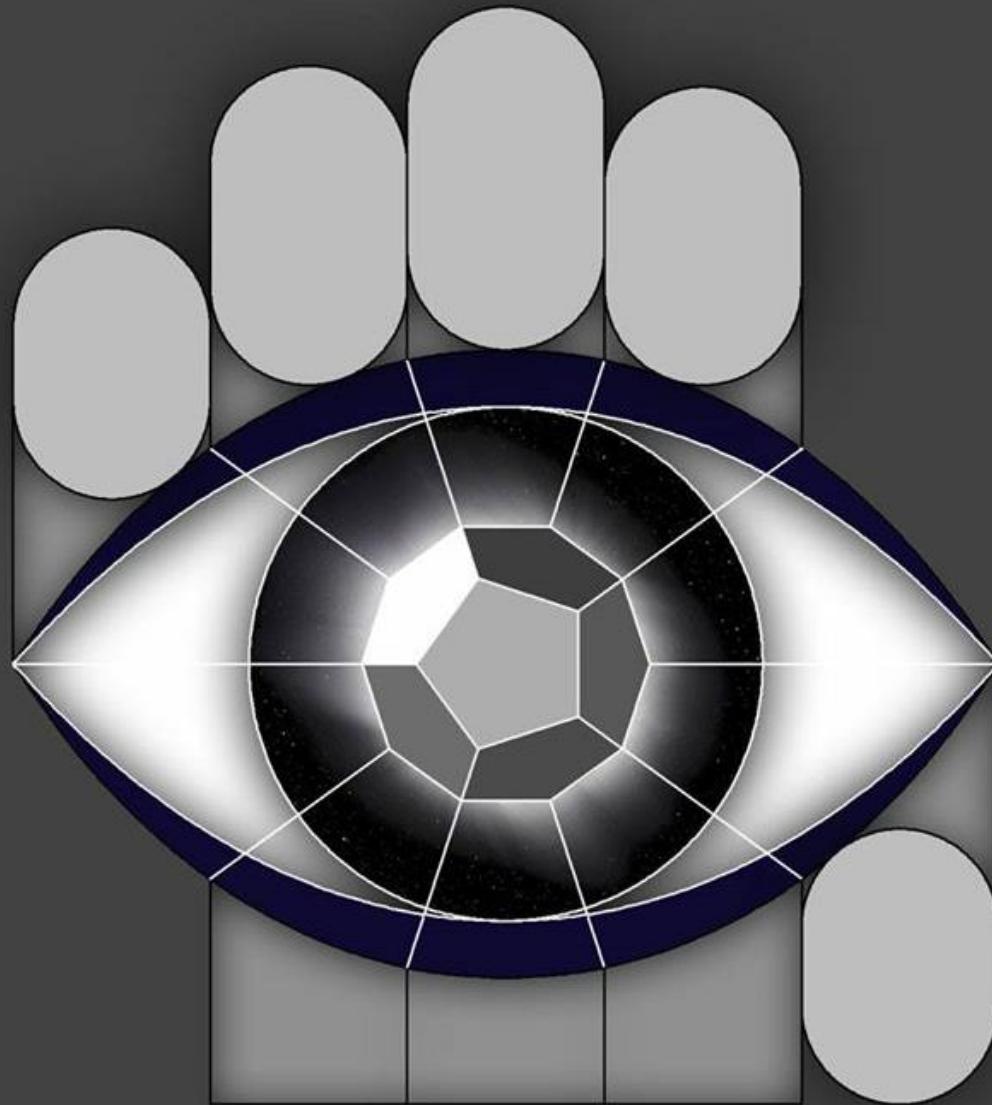
"The Golden Ratio, which the human mind has always recognized as being of a rare beauty, is indeed implanted in the very nature of things: it has been the eternal archetype of cosmic harmony, like a mysterious music heard in the vast space of the physical world." - Le Corbusier



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Three intersecting golden rectangles can be used to generate a dodecahedron.
Their corners are at the center of each of its pentagonal faces, which are also replete with golden ratios.



Thank you for exploring my Golden Connections! -Scott
<https://sacredgeometryacademy.com>