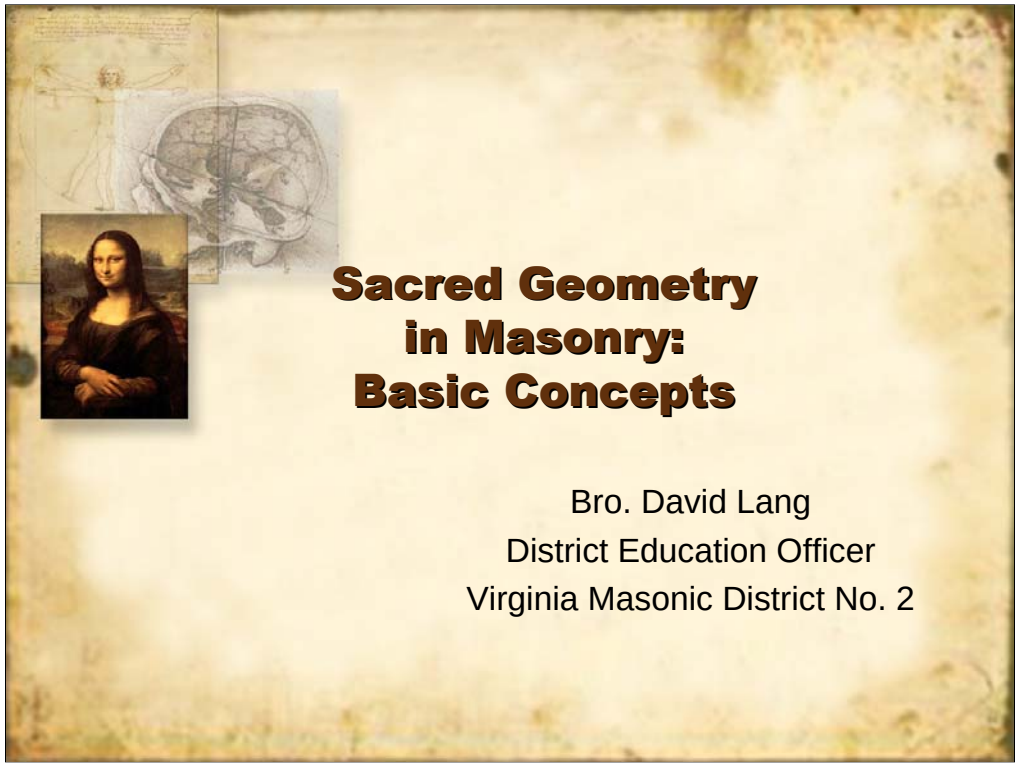
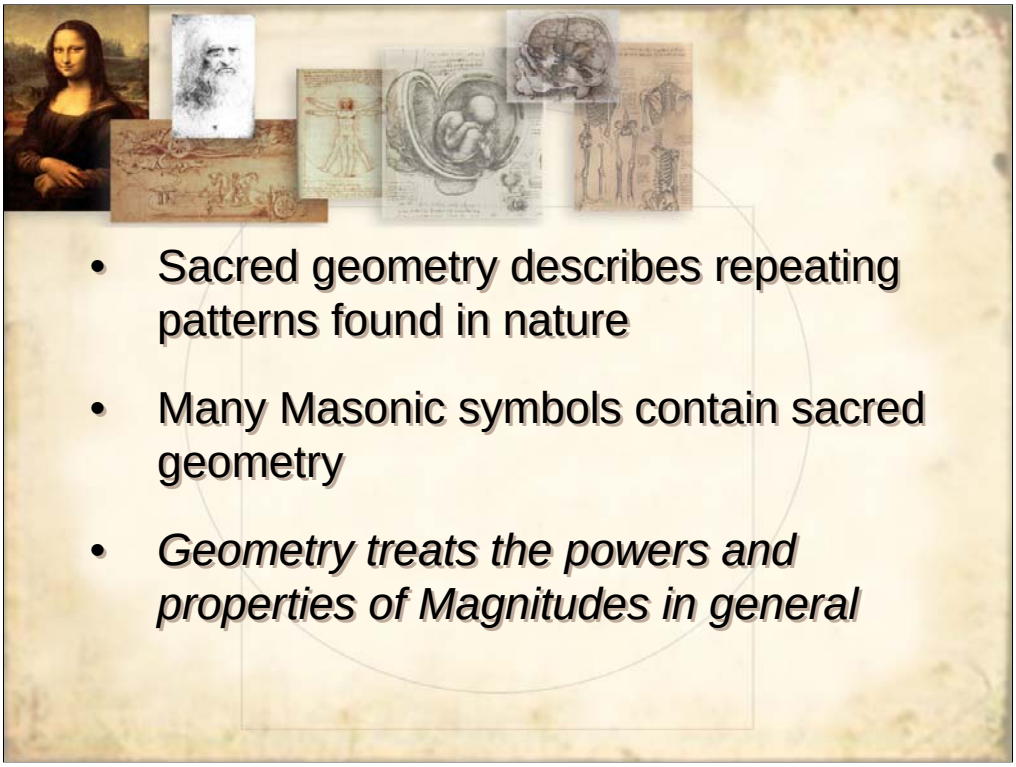
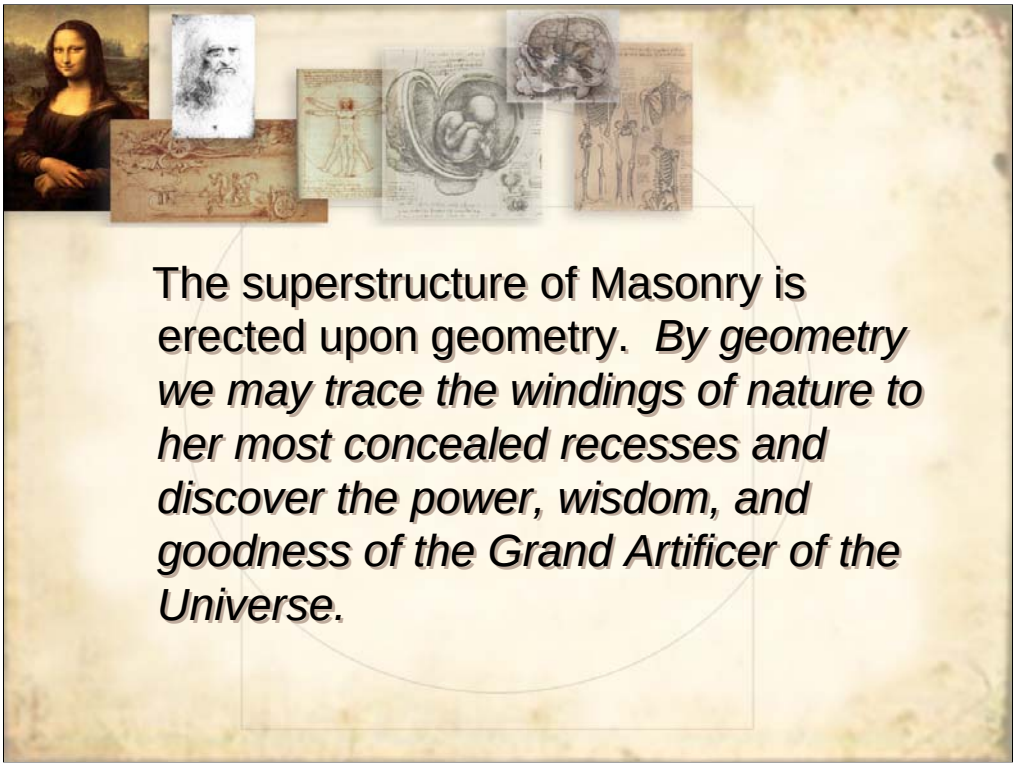

Sacred Geometry
in Masonry:
Basic Concepts
Bro. David Lang
District Education Officer
Virginia Masonic District No. 2

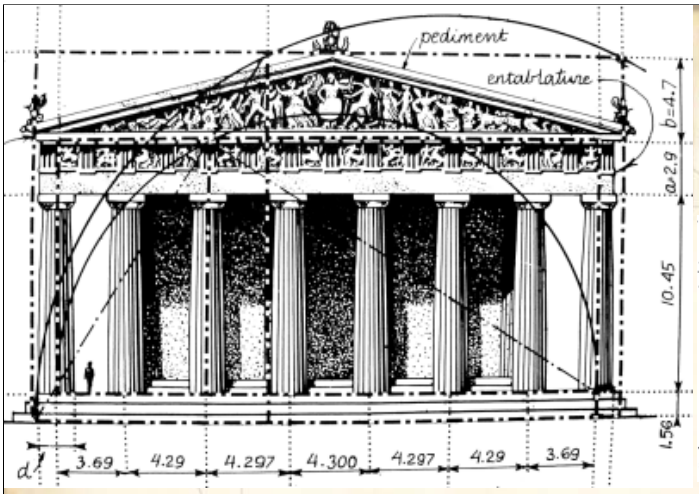


Sacred geometry is a term used to describe repeating patterns found in the natural world from the subatomic to the galactic and beyond. These patterns have been recognized since the earliest days of recorded history and duplicated in art, architecture, and philosophy. Sacred geometry is also incorporated into Masonic ritual and teaching and forms the basis for many common Masonic symbols. This is emphasized to us as new Fellowcrafts when we are introduced to the Seven Liberal Arts and Sciences, arrested by the fifth science, or Geometry, and reminded that this science treats the powers and properties of magnitudes in general. It is noteworthy that the word *magnitudes* is capitalized in the Manual of Work thus hinting at the significance of the concept. We are then informed that the superstructure of Masonry is erected upon geometry and that by geometry we may trace the windings of nature to her most concealed recesses and discover the power, wisdom, and goodness of the Grand Artificer of the Universe.

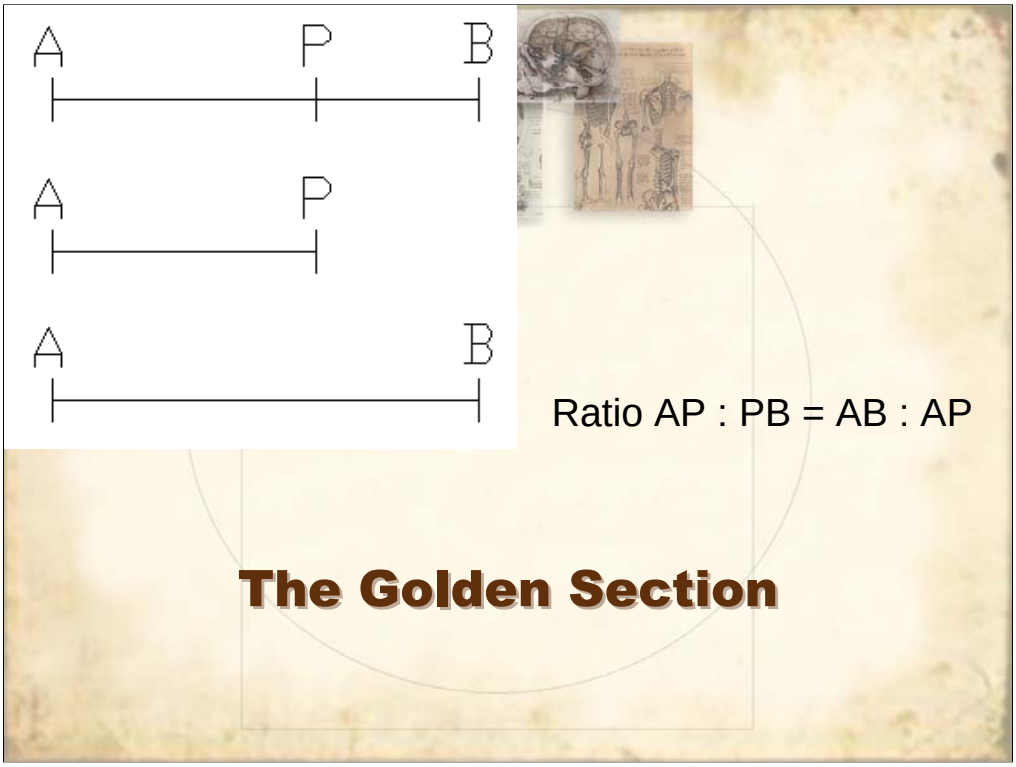


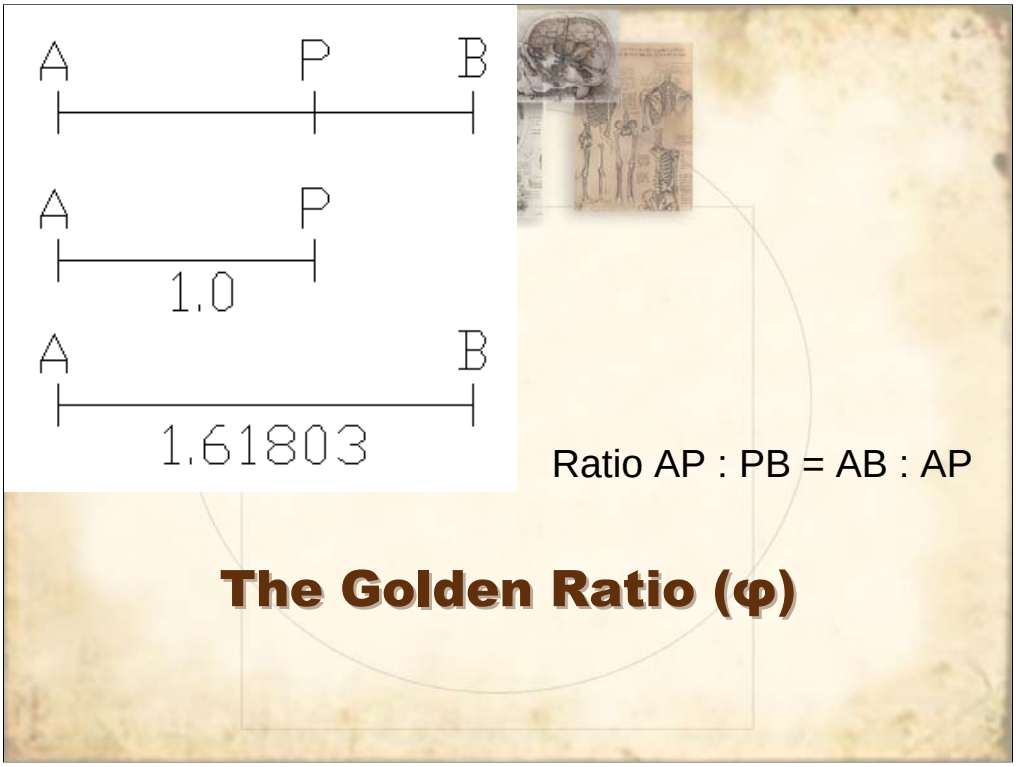
From the Fellowcraft lecture.

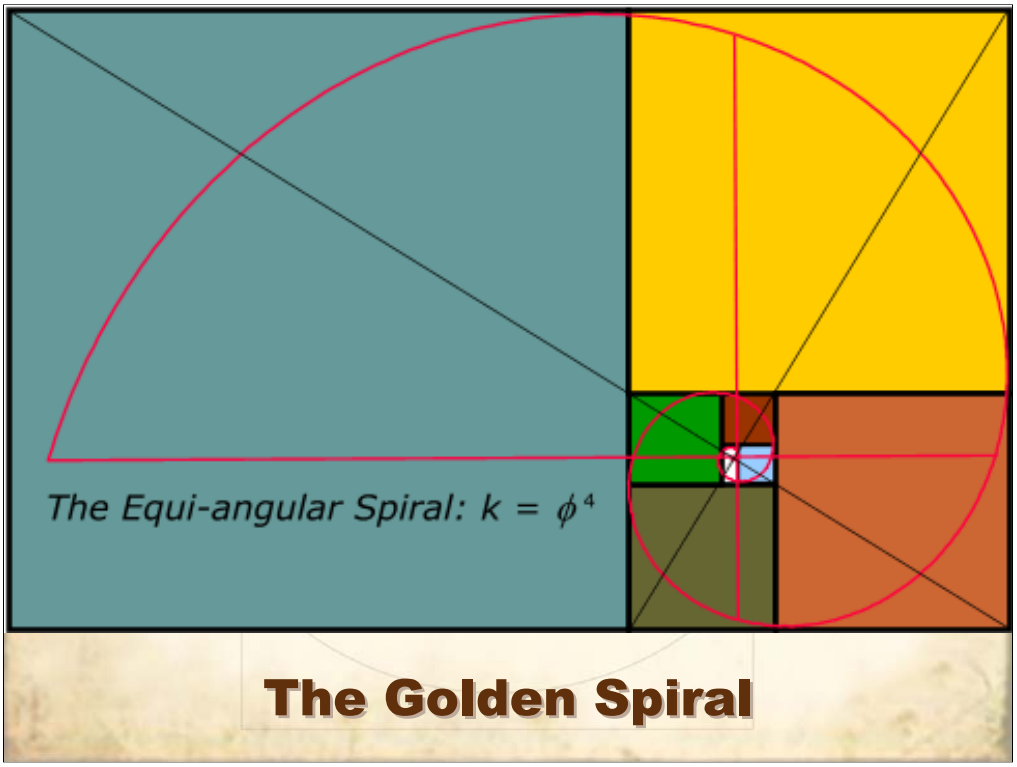
One of the basic concepts of sacred geometry is the Golden Rectangle, Golden Section, Golden Ratio, or Divine Proportion. Based upon the irrational number Phi (φ) or 1.618033…, the Golden Rectangle (or oblong square as it is known in Masonry) describes many proportions in nature and is frequently replicated in architecture, art, and music as a representation of perfect beauty. More importantly, the existence of the Golden Rectangle in everything from the path of elementary particles to the structure of the known universe provides compelling evidence for the idea of *intelligent design* or the presence of the divine in everything around us. In Masonry we allude to this relationship by saying the "G" within our Square and Compasses can represent either Geometry or God. The ratio of the Golden Rectangle can be described by a sequence of numbers known as the Fibonacci series. This endless series of numbers is created by starting at zero and adding each subsequent number to the number before it to create the next number in the series: 0,1,1,2,3,5,8,13, etc.



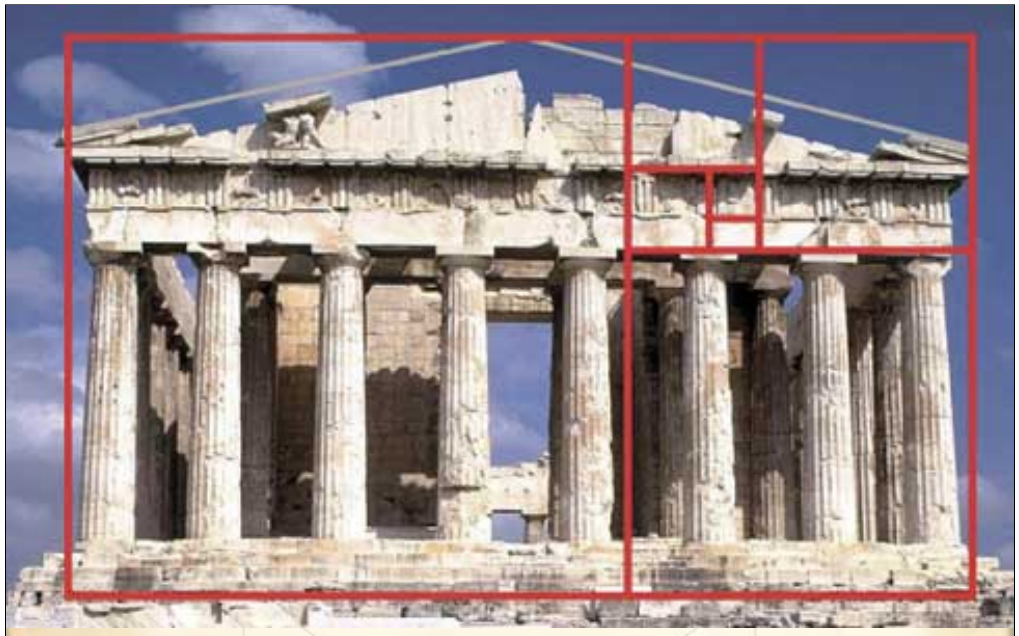
The Golden Rectangle in Architecture


A
P
B
A
P
A
B
Ratio AP : PB = AB : AP
The Golden Section

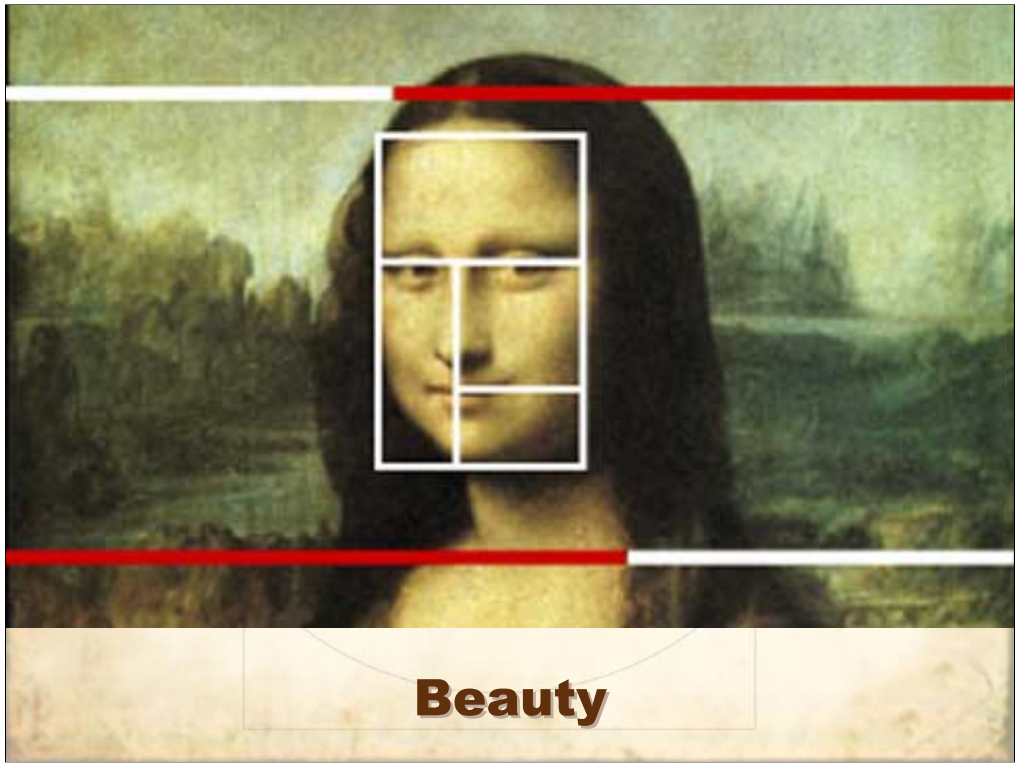

A
P
B
A
P
1.0
A
B
1.61803
Ratio AP : PB = AB : AP
The Golden Ratio (φ)



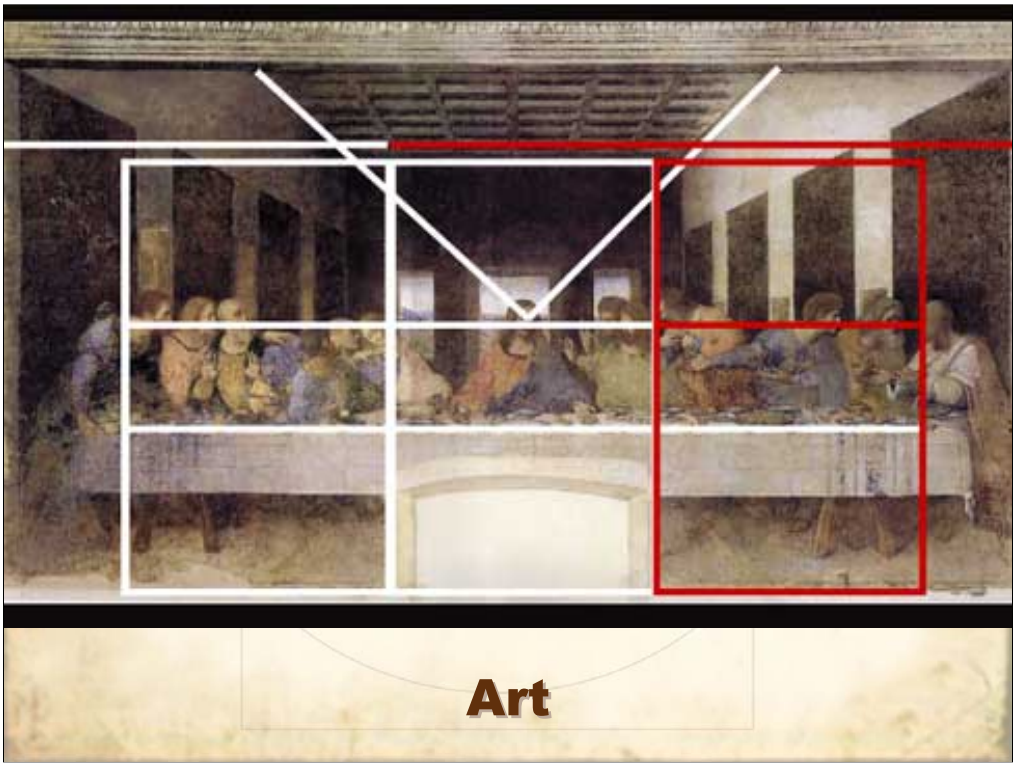
The Golden Spiral



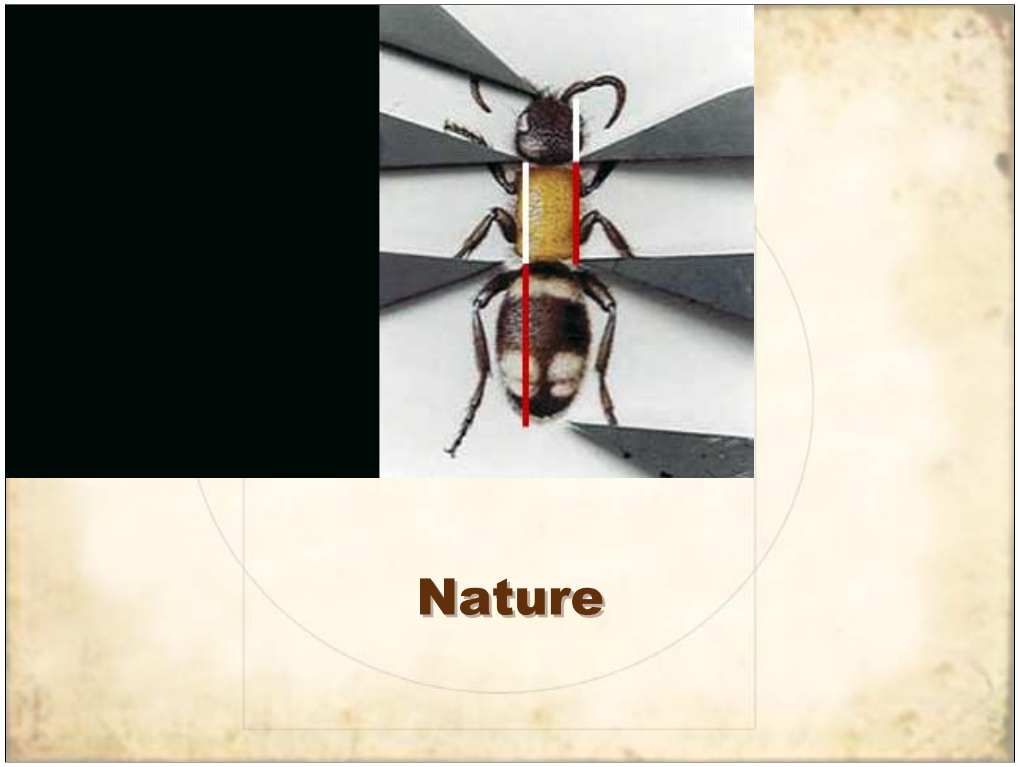
Architecture



Beauty

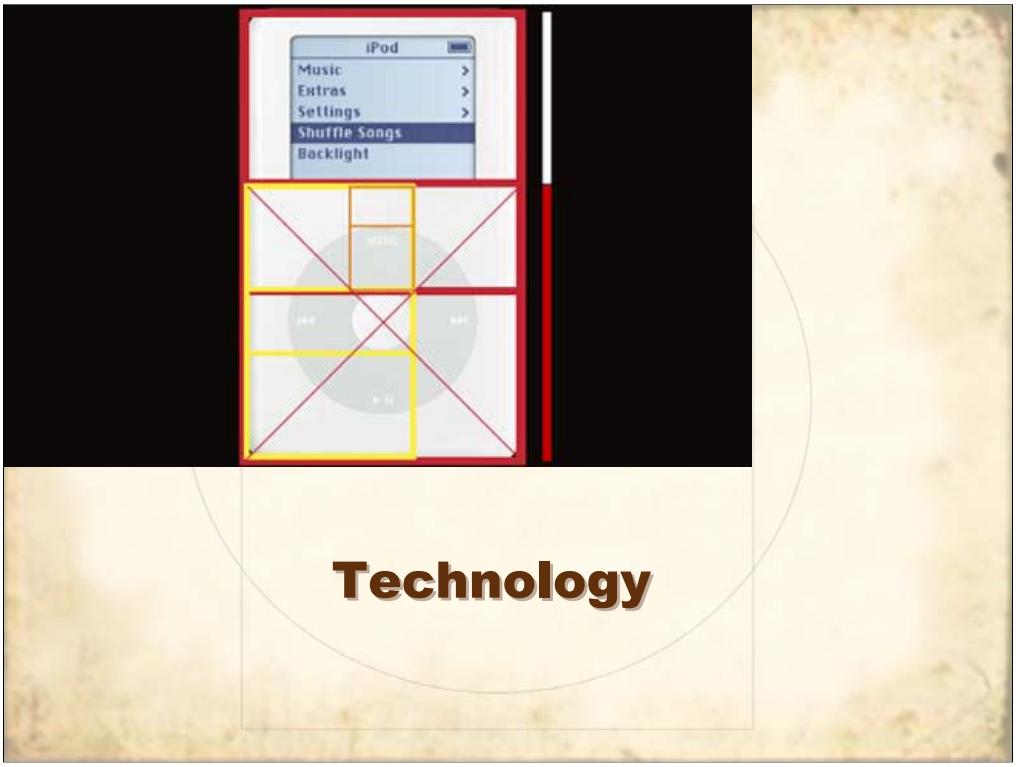


Art

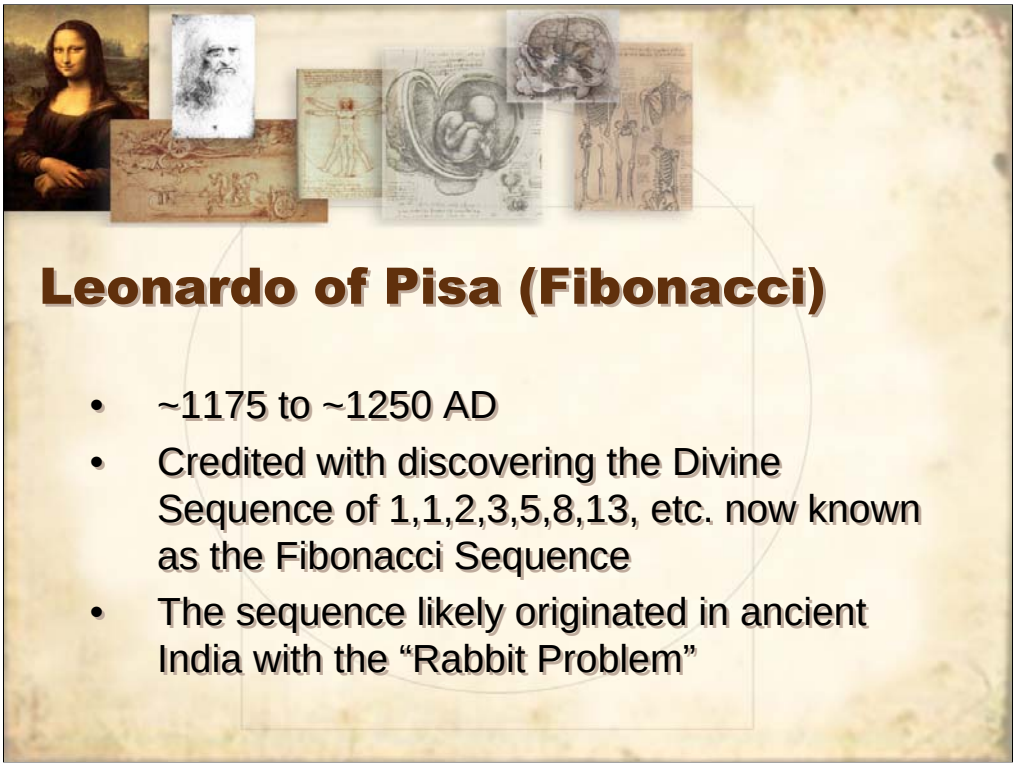


Nature

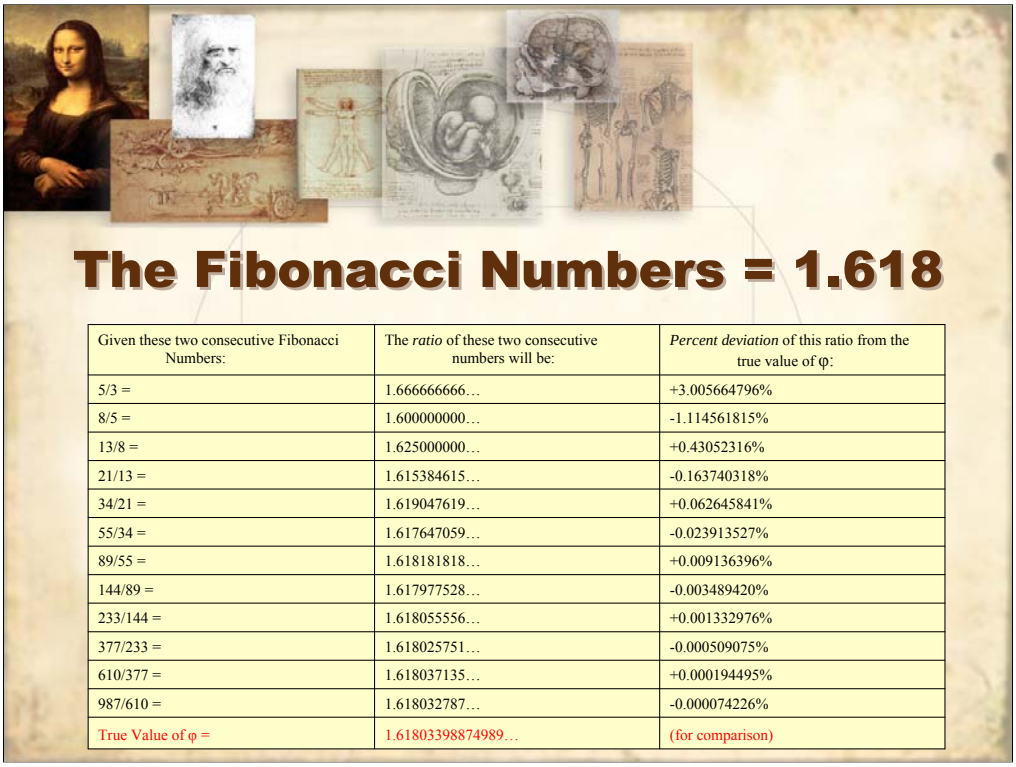
Commerce



Technology

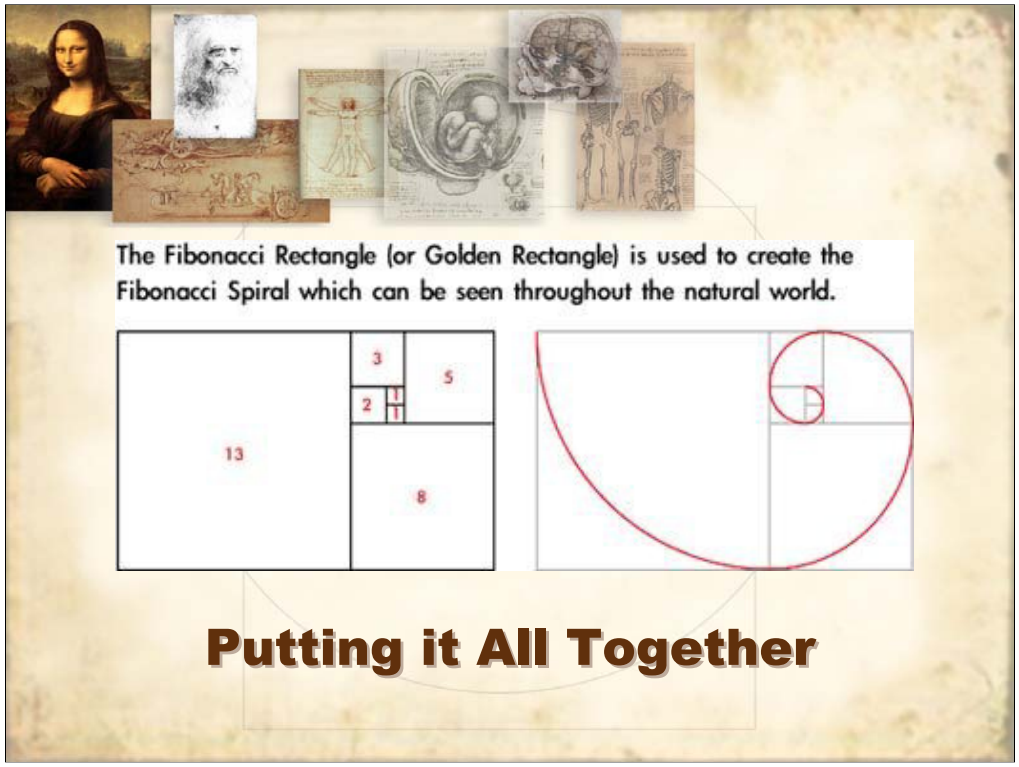


The Rabbit problem: How many rabbits will result from a single breeding pair in one year?



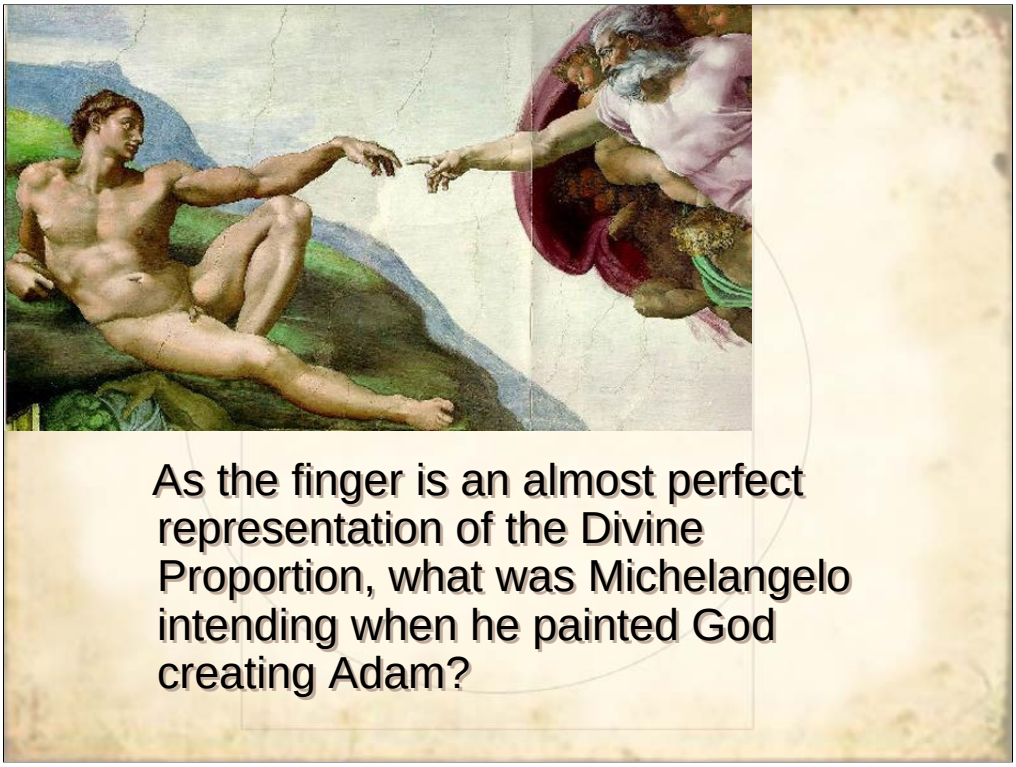
Given these two consecutive Fibonacci Numbers:	The *ratio* of these two consecutive numbers will be:	*Percent deviation* of this ratio from the true value of φ:
5/3 =	1.666666666…	+3.005664796%
8/5 =	1.600000000…	-1.114561815%
13/8 =	1.625000000…	+0.43052316%
21/13 =	1.615384615…	-0.163740318%
34/21 =	1.619047619…	+0.062645841%
55/34 =	1.617647059…	-0.023913527%
89/55 =	1.618181818…	+0.009136396%
144/89 =	1.617977528…	-0.003489420%
233/144 =	1.618055556…	+0.001332976%
377/233 =	1.618025751…	-0.000509075%
610/377 =	1.618037135…	+0.000194495%
987/610 =	1.618032787…	-0.000074226%
True Value of φ =	1.61803398874989…	(for comparison)

Although the Fibonacci sequence tends toward the Golden Ratio or perfect beauty as represented by Da Vinci's depiction of Vitruvius' perfect man, the common man is seldom perfect. Most men who take the time to do the math will find that their ratio of body parts tends to be closer to 1.7 than 1.618. From a Masonic point of view this seems to have some significance considering our Master's Square has a traditional proportion of 5x3. By examining a table of values for the Fibonacci sequence we can see that the 5/3 ratio from the Fibonacci sequence yields a ratio of 1.666 – about half way between perfect man and common man.

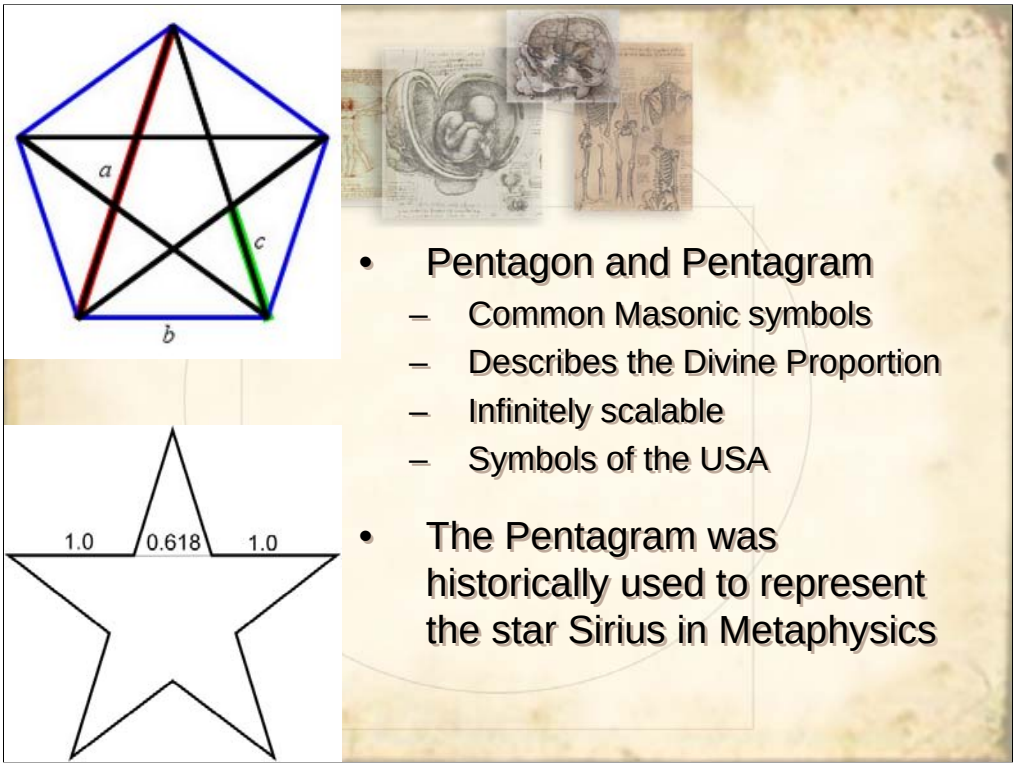

The Fibonacci Rectangle (or Golden Rectangle) is used to create the Fibonacci Spiral which can be seen throughout the natural world.
13
3
5
2
1
1
8
Putting it All Together

Now that we have the basics,
let's see where they take us…

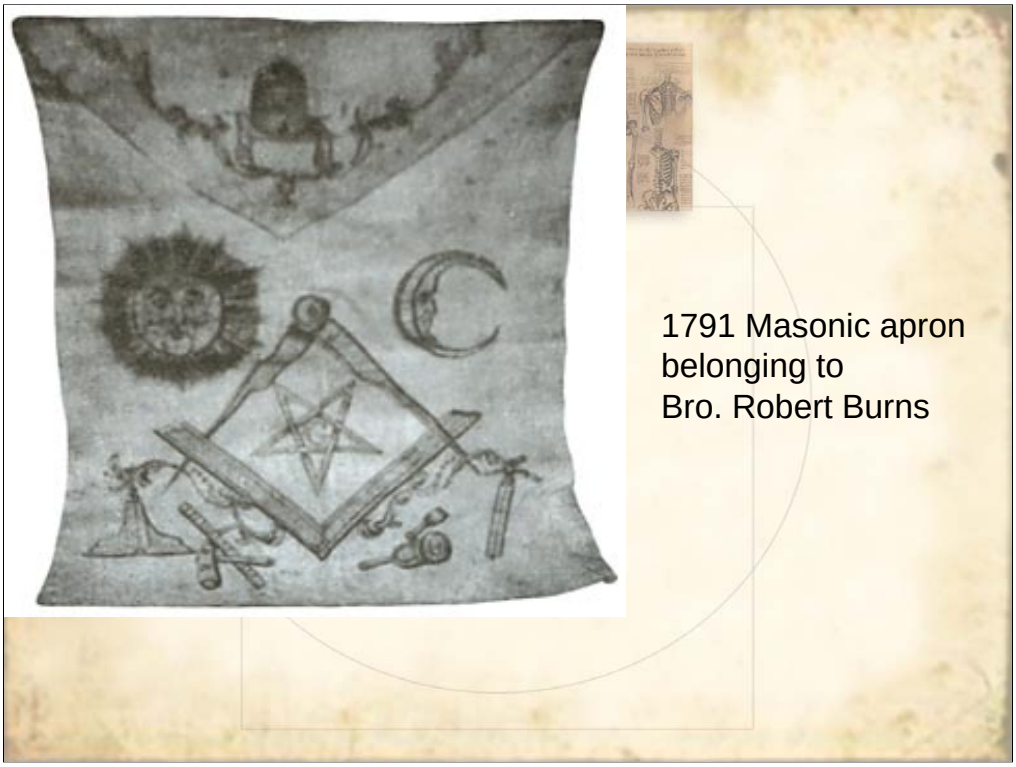
Man is designed to resonate with the energy of the divine. Masonry is tuned to that resonance.



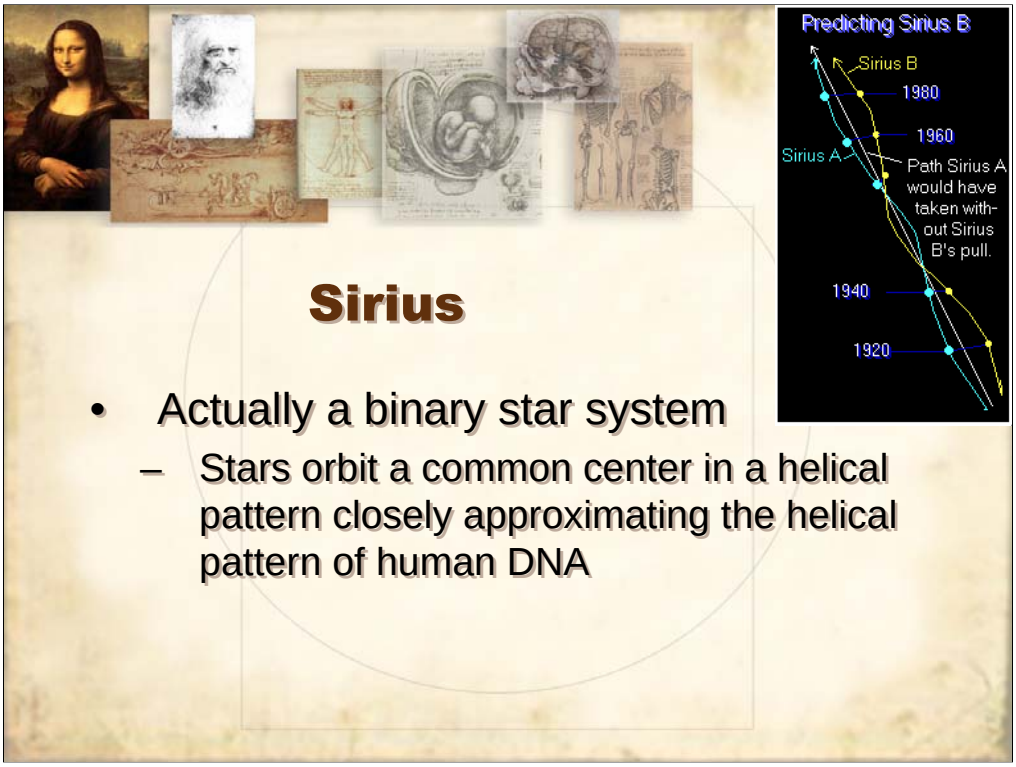
The Golden Ratio runs throughout nature and the human body is no exception. Although the ratio can be seen in everything from DNA to the overall proportions of the body, the human finger is perhaps the most striking example. Often seen in Masonic and occult symbolism as simply a pointing finger, the significance may be not in the direction indicated but the structure therein. In examining the finger we find that it is an almost perfect representation of the Fibonacci sequence in the proportions 2, 3, 5, 8. Perhaps that was Michelangelo's message when he painted his famous depiction of the finger of God reaching out to create Adam.



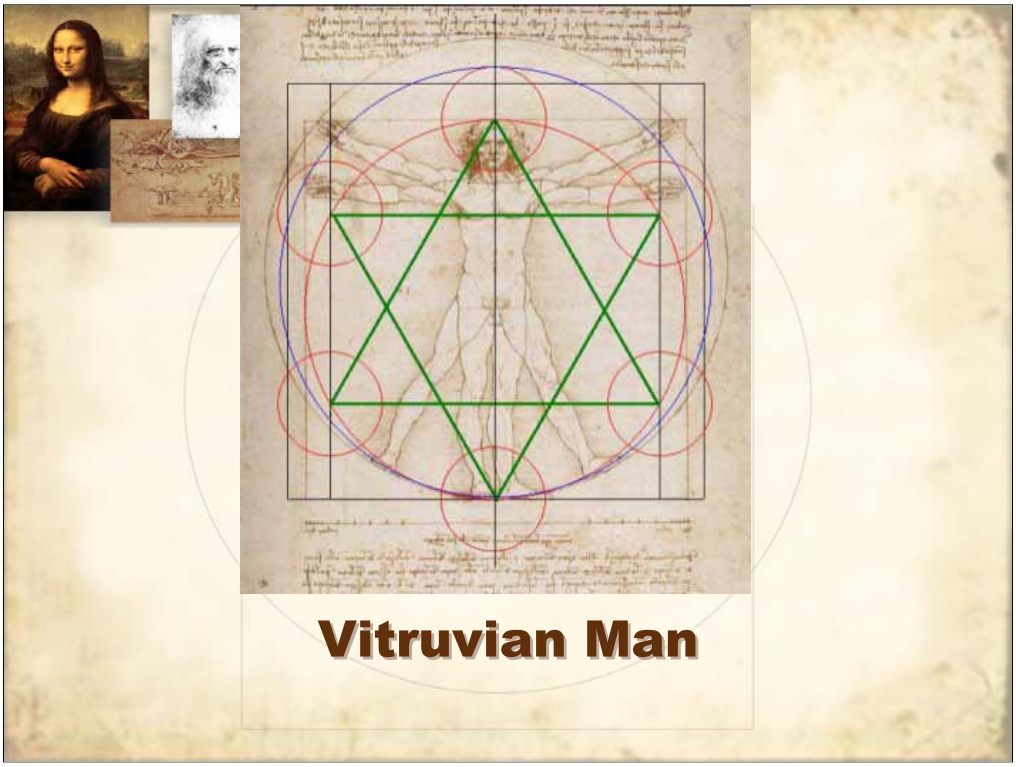
Another ancient symbol of Freemasonry is the five pointed star. Often said to represent Sirius, the brightest star in the heavens, the Masonic pentagram is also closely tied to the Golden Ratio. Although not readily apparent at first glance, the pentagram describes the Golden Ratio in its form. By encasing a pentagram in a pentagon we can clearly see the Divine Proportion in the relationship a > b > c. In addition, if we were to inscribe another pentagram within the center of this form it would also possess the Divine Proportion – a reminder of the "powers and properties of magnitudes in general." With this knowledge it becomes clear that the founding fathers had good and specific reasons for selecting the five pointed star to represent the United States of America, binding us to the basic ratio of nature and inculcating our connection to the Divine into our very culture.



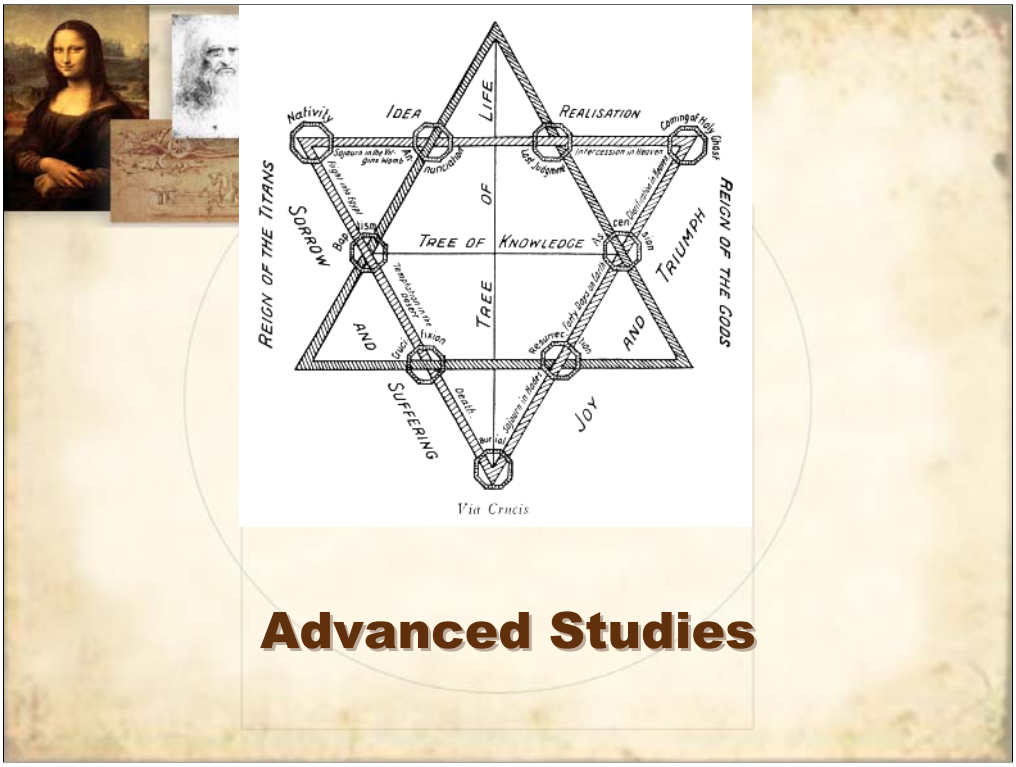
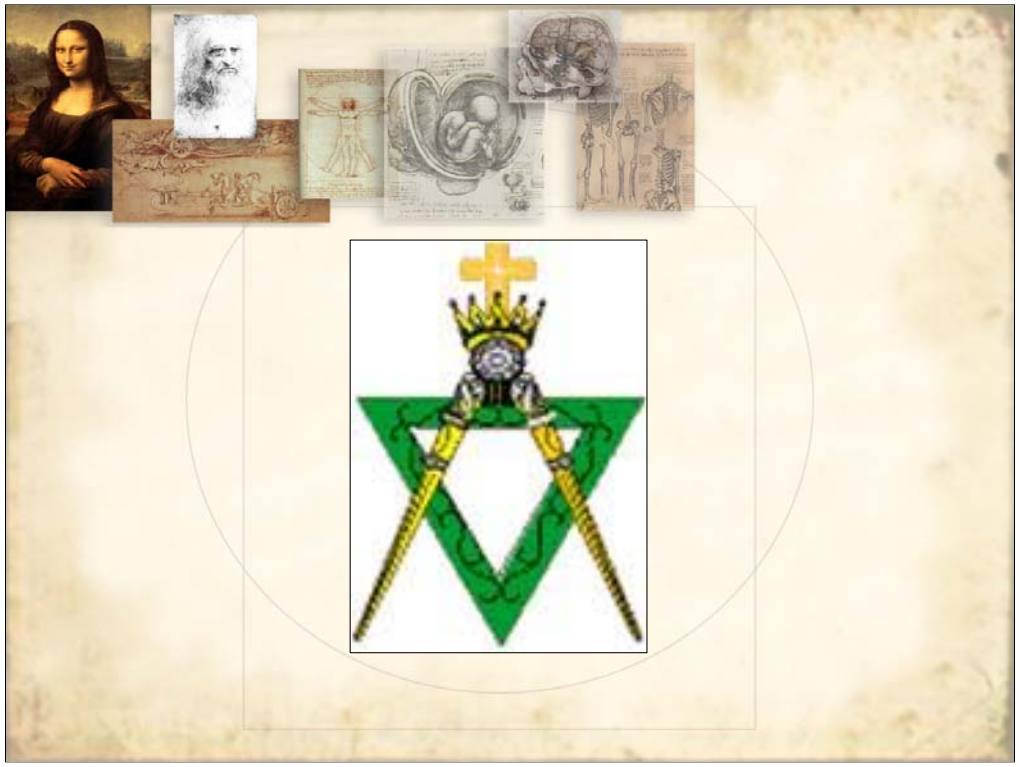
In the 19th Century it was quite common to see the five pointed star on Masonic aprons in the position where we, in the U.S. now commonly place the letter “G.” One clear example of this mystic tie to the Divine Proportion appears on the 1791 Masonic apron of Bro. Robert Burns where the “G” is surrounded by a pentagram (image courtesy of the Grand Lodge of British Columbia and Yukon A.F. & A.M.). However, if we assume the Masonic pentagram represents the star Sirius, a star of mystical significance since the beginning of recorded history, even more can be discovered about the Golden Ratio.



Sirius, the Dog Star, is actually a binary star system. The Sirius star pair is composed of main sequence white star, Sirius *a*, and a faint white dwarf, Sirius *b*. At a distance of about 8.6 light years, Sirius *a* is one of the closest stars to earth. However, it is the sacred geometry of the Sirius star system that should bring it to the attention of Masons. Because Sirius *b* is both smaller and more massive than Sirius *a*, the path of the two stars weave back and forth around a common midpoint thereby describing a helical path very similar to the pattern seen in human DNA.



Although much has been written about Da Vinci's depiction of the Vitruvian man, few people understand the true significance of the work as a key to sacred geometry. Not only did Da Vinci incorporate the square and circle into his expression of perfect proportion, he also described the triangle, several Golden Rectangles, and the hexagram or Seal of Solomon. The hexagram has many meanings in sacred geometry depending upon its use. When seen as two overlaid triangles it is said to represent the concept of "as above, so below." When used as interlinked triangles is it normally known as the Seal of Solomon or a representation of the intersection of the Tree of Life and the Tree of Knowledge. An alternative interpretation of this design relates the intersections and interconnections of the hexagram to the interactions of negative and positive or Light and darkness.



The Tree of Life is another geometric shape that derives its proportions from the Golden Ratio and serves as the basis for many teachings of the Kabala (also Cabala or Qabala). Although the study of Kabala is beyond the scope of this short paper, a review of the structure of the Tree of Life on the following page clearly shows the presence of the Golden Rectangle and Golden Ratio. Kabbalists developed the Tree of Life for no less purpose than to model all of reality and provide a map of creation.