

The Design of the SRICF Jewel: A Geometric Construction
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How is the design of the SRICF Jewel or logo created?

It is shaped like a regular and two-fold symmetric 4-sided rhombus enclosing a regular and symmetric four-sided cross. How is it uniquely designed from a geometric point-of-view?

A few hints are included in the recent paper “The Jewel of the Society, An Esoteric Analysis” by P.D. Newman, as presented on pages 7-12 in the 2012 Ad Lucem. In that paper, he shows that the rhombus design is made up of 4 golden rectangles, each divided on a diagonal, to make the surface of the Jewel. As you recall, a golden rectangle has the ratio of its dimensions 1:phi, where $\phi = 1.618\dots$, and is mathematically equal to $[1+\sqrt{5}]/2$. Phi is the Golden Ratio, as found primarily in the regular 5-pointed star: the pentagram. The top (and bottom) of the Jewel then has the proportions of 2:phi, which is exactly the same proportions of each (original stone) face of the Great Pyramid on Giza Plateau. Further explanations of the powers of phi and the Golden Rectangle can be found in another paper previously published in Ad Lucem: “A View of Masonic Geometry”, 2007 Ad Lucem, pages 53-74, now available with a few additions on the internet at: http://www.padrak.com/gscsricf/bailey_082204_rev_1.pdf .

The Jewel itself then defines an outermost Golden Rectangle. Then, how do we design the inner four-sided cross? Various methods to uniquely define both the width and the length of the arms of the cross are discussed. How can we determine which is the correct method? Only one method gives a result that closely resembles the Jewel as printed on the cover of each Ad Lucem publication...

Of further note, the paper by Newman says that all of the arms of the cross are said to be broken up into 72 equal pieces. This would make each arm have 18 equal pieces, from the center of the inner square to the outside length of the arm. By looking at the design on the cover of the Ad Lucem, we can estimate that the ratio of the diameter of the inner square to the length of the arm extending outside of the square is about 2.5. So, a little math proves that the square diameter could be 3 units, and the arm length could be 15 units. But, units of what? This fails to define the units in terms of the size of the rhombus. Actually, given any arm length, we can always divide that into 18 units of some decimal fraction.

Using arbitrary units, we can define the dimensions of our design, where the rhombus has dimensions from -1 to +1 in the x direction, and from $-\phi$ to $+\phi$ in the y direction. The arms of the cross will then centered at the center point, (0,0). We shall define the arm length from the

center as L , and the radius of the arm width (one-half of the arm thickness) as R . The problem is now how to determine the values of L and R in these (x,y) coordinates.

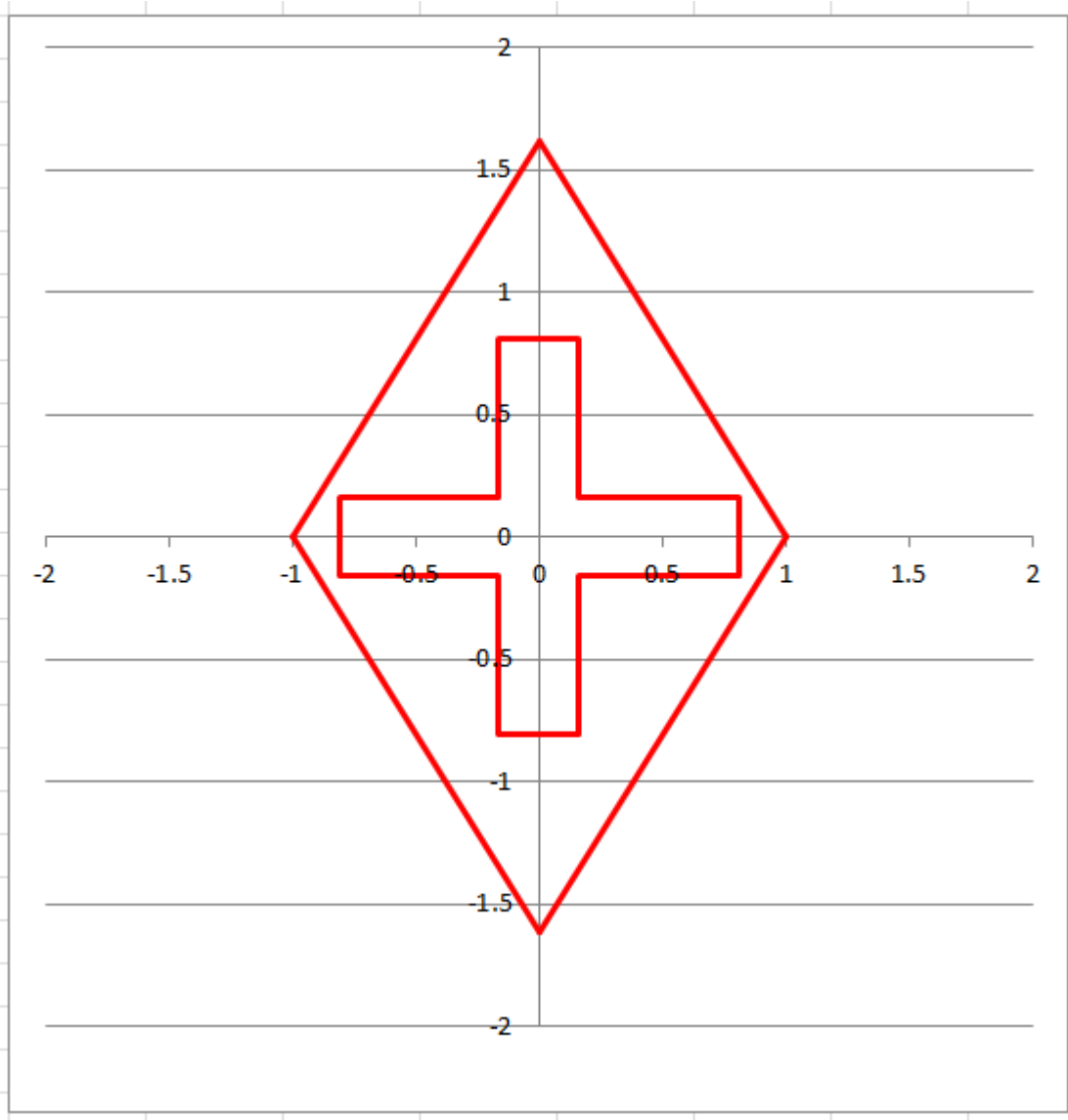
Many design approaches were considered. A summary of each is given below. For each approach, the corresponding picture of the Jewel was drawn and analyzed.

1. Set L and R independently. This produces the Jewel design with any values. However, there is no reason that R and L should be related...
2. From the top, swing an arc of length ϕ from $(0,0)$ out to the edge of the rhombus. Require that the upper rightmost end point of the cross falls on that arc. Given R , that would determine L .
3. Using method 2, also require that the distance from that end point going vertically to the rhombus is the same as R . That then divides a line drawn vertically at the end of the arm to be divided into three equal parts, as determined by R .
4. Use only the ratio ϕ . Note that the height of the rhombus form these methods have been pretty close to half way up the y axis. So, try setting $L = \phi/2$. This allows R to have any value.
5. Use methods 4 and 3 together, which determines R , and gives too fat a cross. We need a smaller value for R .
6. Look for a value for R that is related to ϕ in an easy manner. Since ϕ is uniquely defined in a 5 pointed star pentagram, try using $R = L/5$, which would be $\phi/10$. That works just great!

Using $L = \phi/2$ and $R = \phi/10$ gives our final design as shown below.

This also results in $L/R = \text{Exactly } 5$, and $(L-R)/R = \text{Exactly } 4$.

Also, the area of a circle drawn around the Jewel will be $\pi \cdot \phi$. The area of a circle drawn around the cross at $(0,L)$ will be $1/4$ of that; and the area of a circle drawn inside of the square in the center square will be $1/100^{\text{th}}$ of that. Interesting integer arithmetic!

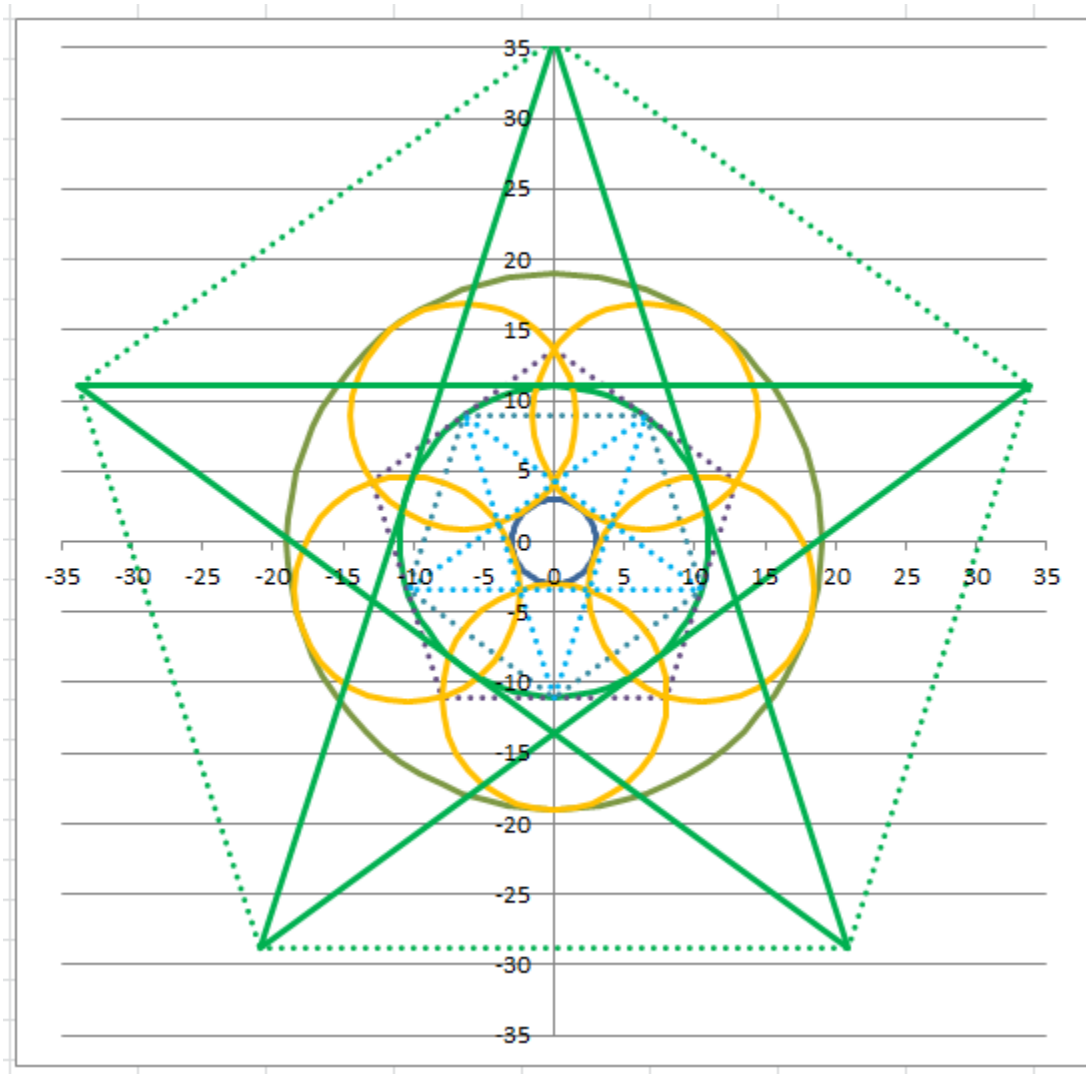


The Design of the SRICF Jewel Final Construction

Note:

The shape of each total triangular section (on the top or the bottom) is exactly in the same Phi proportion as the Great Pyramid on Giza Plateau (each triangle represents a face):

Base = 2, Distance from the Center of the Base to the Top = Phi, Height = Sqrt(Phi).



Perfect Pentagonal Geometry

Note:

If the radius of the central inner circle is 3,

Then the radius of each of the five outer circles is 8 (7.99197, to 0.1%) , and

The radius of the 2nd larger inner center circle is 11, and

The radius of the 3rd larger outer circle is 19 (Almost Exactly!).

The ratio of 11/3 is exactly the ratio of the avg. radius of the Earth to that of the Moon:

3960 miles to 1080 miles. $3960/1080 = 440/120 = 44/12 = 11/3$.

Which also leads to the definition of the “Mile” as:

Radius of the Earth plus the Moon = $7! = 7*6*5*4*3*2*1 = 5040$ Miles, and

Diameter of the Earth = $11! / 7! = 7920$ Miles.

The dimensions of a three-sided pyramid inscribed in that figure would be:

Base = 7920 and Height = 5040. In exact Phi scale of the Great Pyramid on Giza Plateau.