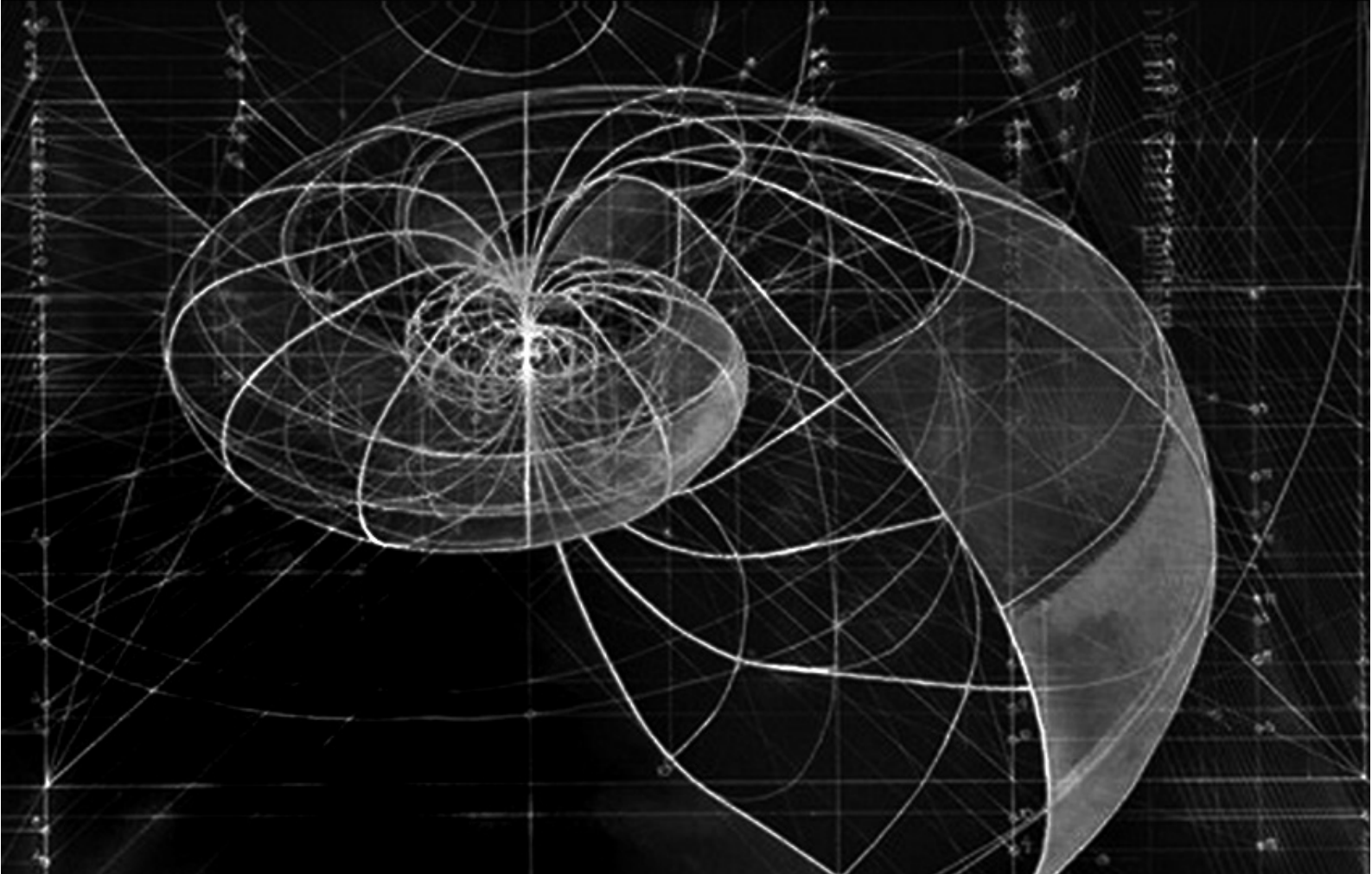


NAUTILUS - LOGARITHMIC SPIRAL

SPIRA MIRABILIS - MARVELOUS SPIRAL

EQUIANGULAR SPIRAL - GROWTH SPIRAL

GOLDEN RATIO SPIRAL - TIME SPIRAL



The shell of the Nautilus snail has inspired important  
scientists, Artists and philosophers through the millennia

among them

Albrecht Dürer (1471 - 1528)

Evangelista Torricelli (1608 - 1647)

Isaak Newton (1642 - 1726)

Jacob Bernoulli (1655 - 1705)

René Descartes (1596 - 1650)

D'Arcy Wentworth Thompson (1860 - 1948)

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and

Fibonacci Leonardo Bonacci (1170 - 1240)

One of the most famous mathematicians in the Middle Ages.

He initiated the spread of the Hindu–Arabic numeral system to Europe,  
in his book Liber Abaci (Book of Calculation), published in the year 1202.

This number system is based on 10 different glyphs or symbols,  
including a zero. It's the system we use today

## **Aristotle - Golden Ratio Spiral - Sacred Geometry**

**Aristotle**, writing in about 350 BCE, noticed that certain biological forms grow by adding units that are always the same shape, differing only in magnitude. Such shapes are called gnomons, and the study of "gnomonic growth" occupied a large part of Greek mathematics.

The spiral of the nautilus is not just any spiral. Measuring it reveals that it conforms to the shape of the Golden Ratio spiral, what is known as a "sacred geometry". It is considered sacred because it can be found in a wide variety of things in nature, such as the shape of our galaxy, of hurricanes, in the arrangements of sunflower seeds in the flower, in cauliflower, and pine cones. It is also sacred because it is based on the Golden Ratio, which is one of life's great mysteries because it can be found in all living things.

The Golden Ratio is based on the Fibonacci series, which is a series of numbers where the first two numbers add up to the succeeding number, like this: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, etc.

## **Fibonacci - Sacred Geometry and Mathematics**

Leonardo Pisano Bigollo (c. 1170 – c. 1250) – aka Leonardo of Pisa or sometimes just Fibonacci – was one of the most famous mathematicians in the Middle Ages. He initiated the spread of the Hindu–Arabic numeral system to Europe, in his book *Liber Abaci* (Book of Calculation), published in the year 1202.

This number system is based on 10 different *glyphs* or symbols, including a zero. It's the system we use every day: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

Fibonacci also laid the groundwork for our modern-day mathematical understanding of certain shapes in nature, including Nautilus shells. In his book, Fibonacci introduced what's now called the Fibonacci number or sequence, which can be described as follows.

## **Albrecht Dürer - Spira mirabilis" "the marvelous spiral"**

A logarithmic spiral, equiangular spiral, or growth spiral is a self-similar spiral curve that often appears in nature. The first to describe a logarithmic spiral was Albrecht Dürer (1525) who called it an "eternal line" ("ewige lini"). More than a century later, the curve was discussed by Descartes (1638), and later extensively investigated by Jacob Bernoulli, who called it Spira mirabilis, "the marvelous spiral". The logarithmic spiral can be distinguished from the Archimedean spiral by the fact that the distances between the turnings of a logarithmic spiral increase in geometric progression, while in an Archimedean spiral these distances are constant.

## **TIME SPIRAL TIMEPIECES a Tribute to ARISTOTLE, FIBONACCI and ALBRECHT DÜRER**

42 mm stainless steel case, sapphire crystal with a Nautilus pattern printed on the reverse.

The dial Luminous, white Lacquer, brushed steel with plack printing.

Self-winding movement, caliber ETA 2824/2836.

**5 pieces are available directly from the Angular Momentum Ateliers**

**Special Price CHF/USD 1'400.-**





### ARISTOTLE'S – GOLDEN RATIO SPIRAL

**Aristotle**, writing in about 350 BCE, noticed that certain biological forms grow by adding units that are always the same shape, differing only in magnitude. Such shapes are called gnomons, and the study of "gnomonic growth" occupied a large part of Greek mathematics.









### FIBONACCI'S – SACRED GEOMETRY SPIRAL & MATHEMATICS

**Fibonacci Leonardo Bonacci** (1170 - 1240) One of the most famous mathematicians in the Middle Ages. He initiated the spread of the Hindu–Arabic numeral system to Europe, in his book *Liber Abaci* (Book of Calculation), published in the year 1202. This number system is based on 10 different glyphs or symbols, including a zero. It's the system we use today









### **ALBRECHT DÜRER'S – SPIRA MIRABILIS «THE MARVELOUS SPIRAL»**

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