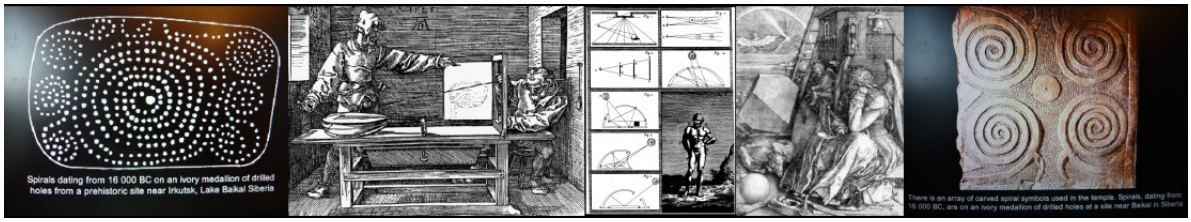
« Dans le discours que j'ai prononcé le premier février 1977 à l'occasion de la réception de la Médaille d'Or du CNRS, j'ai tenté de défendre la thèse selon laquelle les mathématiques relèveraient plutôt de l'art que de la philosophie. » Henri Cartan

The banner of our website shows the historic links maintained between Mathematics and particularly fine arts.



The latter, dedicated to engraving, shows, from both sides, the marks left on ivory by artists from 18 000 years ago. These representations are related to both observation of common phenomena in the physical world, and to the expression of a cosmic symbolism, present in various civilizations of the past. Note for example in the left solar engraving that the central spiral is associated with the number seven, while the right engraving evokes the four cardinal points.

These spiral curves are perhaps the most universal of decorative art. They are also among the most fundamental curves of the mathematical world. Their creation combines these two local basic movements which are rotation and linear expansion or dilation. One of these spirals, linked to the golden number, bears the name given to him by Jacques Bernoulli (1654-1705): *spira mirabilis*!

If each of the prints have symmetries, the right one starts one of forms of tiling of the plane, another universal decoration and whose mathematical theory is now well established.

Around the central engraving are two famous engravings by Dürer (1471-1528). That of left concludes his treatise published in 1525, *Underweysung der Messung,* translated as "*Geometry*". This treaty, which concerns among other things perspective, appears as a conclusion of the contribution of Renaissance artists to mathematics. Dürer explains the content of his engraving : "With the help of three threads you can throw in a plane and draw a picture of any object you can reach with these threads. Proceed as follows. "

The second etching, Melancolia I (1514), through its rich content, has many exegeses. It has two mathematical originalities: a magic square and a new polyhedron, now called "Dürer's polyhedron".

The central engraving is by the great Leonardo (1452-1519). It is on page 26 of Bolognese 1786 edtion of the Trattato delle Pittura. This treaty was not published during the lifetime of the author. His manuscripts were dispersed after his death. They were partially collected in a first edition published in Italian in Paris in 1651. The Bolognese edition based on the Paris edition. 8 The figures that we see illustrate the explanations Da Vinci gives on 16 pages to instruct the painter on the play of shadow and colored light. Mathematics and art are largely the daughters of the fairy light.