The K-Dron, A New Geometrical Shape –
Its Nature, Properties, and Consequences

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In 1985 in New York I discovered a new geometrical shape, which I called K-Dron, and in 1987, I received a patent for some of its applications. A three-dimensional shape emerged suddenly from drawings about the nature of infinity that I made 6 years earlier during my study of the History of Philosophy in Warsaw, Poland

The K-Dron is both a remarkably simple and complex structure, but once discovered, it cannot be improved upon – just as a cube, it is a pure form. Its basic form has a square base, 11 multifaceted sides and a diamond-shaped face with a 45-degree angle of inclination. Viewed from above, it is a square within a square. The surface structure is both symmetrical and asymmetrical, concave and convex. You can also consider it as a bisection of a cube; but it is much more complicated. It took me 8 years to discover a natural placement of K-Drons in the universe.

In his 1991 book *Connection: The Geometric Bridge Between Art and Science* (McGraw-Hill) Jay Kappraff describes the K-Dron. Concerning "the striking optical properties that the K-Dron possesses" Kappraff asked the question, "Why do K-Dron structures exhibit such a strong relationship between form and function?" The answer to this question he saw in the close relation to the symmetry of a cube (orthoschemes).

Professor Stanislaw Kwapien (Texas A&M University, Department of Mathematics) formulated a simple equation for the surface of the K-Dron. He also noticed that the K-Dron surface represents a special solution to the one-dimensional wave equation (vibrating string) in a space-time coordinate system. The fact that the K-Dron surface can be related to both the symmetry of a cube and the solution to the wave equation gives a deeper meaning.

The K-Dron possess many other interesting properties. The interior of 8 stacked K-Drons maps out a rhombic dodecahedron. K-Drons can also be shown to be juxtapositions of pyramids seen from both the outside and inside reminiscent of Escher, and 8 K-Drons (4 white and 4 black) can generate 38,416 flat surface patterns.

A book, *K-Dron, Patented Infinity,* a complete study and description of K-Dron's incipience, nature and applications, was published by Science and Educational Publishing House in 1995. In the same year the K-Dron was used as a building material for the Alias Studio in Hollywood, CA. K-Dron shapes allowed for a new map projection of the Earth and Celestial sphere.

In October 1999 a K-Dron exhibition will take place in the Museum of Modern Art in Lodz, Poland, and a theatrical spectacle for children about K-Dron will be presented in the Actor and Puppet Theater in Katowice, Poland.