

Propylaeum

by Kevin Halpin

Since the sixth century BC the Pythagorean Theorem has been the celebrity of mathematics and science. Its applications range from simple harmonic motion and electronics to the Theory of Relativity. What is amazing about this is that the theorem addresses the congruence of right triangles, and right triangles are not produced in nature. The theorem doesn't even work through cubic numbers. Yet, it saturates the fields of mathematics, physics and technology.

In *Propylaeum* the Pythagorean Theorem and the 3–4–5 triangle are examined with a view to raise our knowledge of them as far above the current level of knowledge as tuning, harmony and harmonics were in the previous works of *Euphony*, *Concordia* and *Harmonia*. The very model of information which was discovered in the previous works is applied to the theorem and it is found that the results are consistent with the model. From this, 5 proofs are presented of a new theorem which explains the congruence of the 3–4–5 triangle. 17 new proofs are presented of the Pythagorean Theorem, including 3 'proof of proofs' of the Theorem which explain for the first time why all right triangles conform to it. As with the previous works, the greatest discovery is the insight gained on the nature of information itself.