

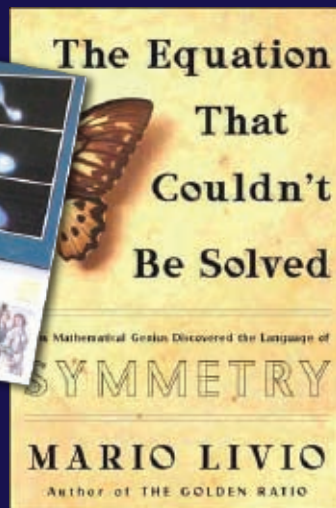
Mario Livio

“The Equation That Couldn't be Solved”

Mario Livio is a Senior Astrophysicist at the Hubble Space Telescope Science Institute and the previous head of the Institute's Science Division. He holds a Ph.D in theoretical astrophysics from Tel-Aviv University and was a Professor of Physics at the Technion-Israel Institute of Technology from 1981 to 1991. He is the author of a number of popular science books, including *The Golden Ratio*, which won the Peano Prize for 2003, and the International Pythagoras Prize for 2004 as best popular book in mathematics. His new book, *The Equation that Couldn't be Solved*, is a fascinating account of the origin of the mathematical language of symmetry.

For thousands of years, mathematicians solved progressively more difficult algebraic equations, from the simple quadratic to the more complex quartic equation, yielding important insights along the way. Then they were stumped by the quintic equation, which resisted solutions for three centuries, until two great prodigies independently proved that quintic equations cannot be solved by

simple formula. These geniuses, a young Norwegian named Niels Henrik Abel and an even younger Frenchman named Evariste Galois, both died tragically. Galois' work gave rise to group theory, the “language” that describes symmetry. Group theory explains much about the aesthetics of our world, from the choosing of mates to Rubik's cube, Bach's musical compositions, the physics of subatomic particles, and the popularity of Anna Kournikova. Some of the mysteries surrounding Galois' death, which have lingered for more than 170 years, are finally resolved in *The Equation that Couldn't be Solved*. Livio will discuss this first popular-level book to explore group theory, not through abstract formulas but in a dramatic account of the lives and work of some of the greatest mathematicians in history.



Wednesday, September 6, 2006

3:00 p.m.

Bldg. 402, APS Auditorium • Argonne National Laboratory

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