

# Dark Energy and the Runaway Universe

Observations of very distant exploding stars (supernovae) show that the expansion of the universe is now speeding up, rather than slowing down due to gravity as expected. Other, completely independent data strongly support this amazing conclusion. Over the largest distances, our Universe seems to be dominated by a repulsive "dark energy"—an idea Einstein had suggested in 1917, but renounced in 1929, anecdotally as his "biggest blunder." Dark energy stretches the very fabric of space itself faster and faster with time. But the physical origin of dark energy is unknown, and is often considered to be the most important unsolved problem in physics; it probably provides clues to a unified quantum theory of gravity.



## DR. ALEX FILIPPENKO

Alex Filippenko received his Ph.D. in astronomy from the California Institute of Technology in 1984 and joined the University of California Berkeley faculty in 1986. Elected to the National Academy of Sciences and one of the world's most highly cited astronomers, he has coauthored about 600 scientific publications and is the recipient of numerous prizes for his research. He has won the top teaching awards at UC Berkeley, and students have voted him the "Best Professor" on campus six times. In 2006, he was named the Carnegie/CASE National Professor of the Year among doctoral institutions. He has appeared in numerous television documentaries, produced several introductory astronomy video courses with The Teaching Company, and coauthored an award-winning textbook.

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