

Exploding Stars, Dark Energy and the Accelerating Cosmos

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Robert Kirshner leads the science program at the Gordon and Betty Moore Foundation, which makes over \$100 million in grants for basic science each year. An astronomer, he served on the faculty at Harvard for 30 years before moving to the Moore

Foundation in 2015. His work using supernovae to trace cosmic expansion was a fundamental contribution to the discovery of cosmic acceleration in 1998. A member of the National Academy of Sciences and the American Philosophical Society, Kirshner was awarded the National Academy's 2014 Watson Medal and the 2015 Wolf Prize in Physics.

Abstract: Exploding stars halfway across the universe provide a method to trace the history of its expansion. Twenty years ago, astronomers were astonished to learn from these violent events that cosmic expansion is speeding up. We attribute this to a mysterious “dark energy” that pervades the universe and makes up 70 percent of it. Scientists are working in many ways to learn more about the nature of dark energy, but our ignorance is deep. This talk will summarize the present state of knowledge and look ahead to new ways to improve our grip on dark energy.

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