



Karl Herzfeld Memorial Lecture

Department of Physics

THE CATHOLIC UNIVERSITY OF AMERICA

Einstein's Biggest Blunder? The Case for Cosmic "Antigravity"

presented by:

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Recently, observations of very distant exploding stars have provided evidence that the expansion of the Universe is accelerating, rather than decelerating as expected. This discovery, resurrects the idea of a repulsive vacuum energy "cosmological constant" first proposed by Albert Einstein and later renounced as his "biggest blunder." We derive a current dynamical age of 14 ± 2 billion years for the Universe, consistent with the ages of globular star clusters. Moreover, combining our results with existing measurements of the cosmic microwave background radiation, we find a best fit for the normalized matter density and vacuum energy density in the Universe of about 0.3 and 0.7, respectively. With a sum close to unity, this agrees with the value predicted by most inflationary models for the evolution of the Universe; the Universe is flat (Euclidean geometry) on large scales.

Thursday, April 4, 2002
in the Herzfeld Auditorium of Hannan Hall
4 p.m.

Reception immediately following lecture
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