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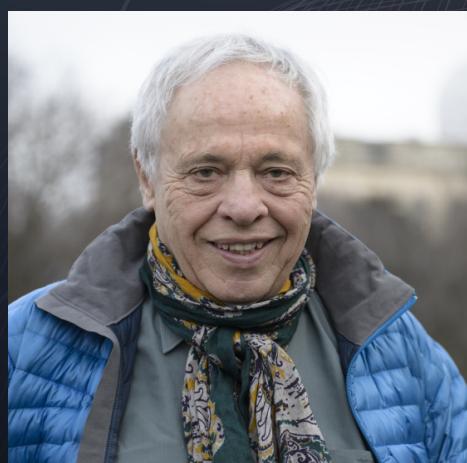
CHANDRASEKHAR LECTURE

CURRENT AND FUTURE PROSPECTS FOR THE CMB

PROFESSOR JOSEPH SILK
INSTITUT D' ASTROPHYSIQUE DE PARIS, FRANCE

The cosmic microwave background provides a unique view of the beginning of the Universe, some 380,000 years after the Big Bang. I will review the successive improvements in studies of the tiny fluctuations that trace the seeds of structure, and how they have led to the emergent field of precision cosmology. The next decades are likely to lead to a transformative period in our pursuit of the frontiers of cosmology and the CMB will play a key role in this challenging future.

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Professor Joseph Silk is Homewood Professor of Physics and Astronomy at The Johns Hopkins University, Baltimore, and emeritus researcher at the Institut d'Astrophysique, CNRS and Sorbonne University, Paris. He was Savilian Professor of Astronomy at the University of Oxford from 1999 to 2011, where he currently is a Senior Fellow at the Beecroft Institute for Particle Astrophysics and Cosmology. He previously was Professor of Astronomy and Physics at the University of California at Berkeley. Most of his scientific research is related to cosmology and particle astrophysics, including the cosmic microwave background radiation, galaxy formation and dark matter. He is the author or coauthor of more than 800 papers in refereed journals, seven popular books, including *The Big Bang* (2001) and *Back to the Moon* (2025). He has supervised more than 35 PhD students, and more than 90 postdoctoral researchers. Silk is a Fellow of the Royal Society, the American Academy of Arts and Sciences, and the National Academy of Sciences. He has received various awards including the Gold Medal of the Royal Astronomical Society, the Bakerian Lectureship of the Royal Society, the International Balzan Prize, the Henry Norris Russell Lectureship of the American Astronomical Society, the Gruber Prize in Cosmology, and the Amaldi Award of the Italian Society for General Relativity and Gravitation Physics. He is a Fellow of the American Physical Society, the Institute of Physics, the Royal Astronomical Society, and an honorary member of the French Physical Society.



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