

The dawning of Lemaître's cosmology

Exactly one hundred years ago, Georges Lemaître published his first cosmological work, '*Note on de Sitter's Universe*'. In this short article, the young cleric brought clarity to a complex debate concerning relativistic models of the universe between two of the world's most respected physicists, Albert Einstein and Willem de Sitter. Using his formidable knowledge of mathematics, Lemaître showed that the de Sitter model, as originally formulated, contained a fatal flaw. He also showed that the model, when correctly formulated, predicted a universe that was not static but dynamic, a prediction he suggested might be linked to astronomical observations of the redshifts of the nebulae.

In this presentation, we will recall how Lemaitre's first cosmological work simultaneously clarified a well-known debate and set the stage for his famous 1927 paper on the expanding universe, a work that continues to lie at the heart of modern cosmology. We will also consider how the path to modern cosmology was facilitated by progress in the understanding of deep mathematics.