

A steady-state model of the universe by Albert Einstein

Abstract

This seminar will present an overview of our recent discovery of an unpublished manuscript by Albert Einstein in which he attempted a 'steady-state' model of the universe, i.e., a model in which the mean density of matter in an expanding universe is maintained constant by the continuous formation of matter from empty space. This model is very different to previously known Einsteinian models of the cosmos (both static and dynamic), but anticipates a controversial theory that was later proposed by the Cambridge scientists Fred Hoyle, Hermann Bondi and Tommy Gold. We suggest that Einstein's steady-state theory was abandoned because it contained a fundamental flaw; we also suggest that he declined to explore more sophisticated steady-state models because he found such theories rather contrived. The manuscript is of historical interest because it reveals that Einstein debated between steady-state and evolving models of the cosmos decades before a similar debate took place in the cosmological community.