

Astronomy, general relativity and the universe: the first 100 years

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Abstract

First published in May 1916, the general theory of relativity replaced Newtonian mechanics with a view of nature in which space, time and gravitation are interdependent. Astronomy provided some early empirical support for the theory, from measurements of the perihelion of Mercury to observations of the bending of distant starlight by the sun. However, general relativity endured a ‘low watermark’ period in the ensuing decades, due to an inability to connect with experiment. This presentation will review how modern astronomical measurements provided new support for the theory, from the observation of the expansion of the universe to the discovery of the cosmic microwave background, from the observation of indirect evidence for black holes to the recent detection of gravitational waves from black hole mergers.
