

Plenary Talk

## THE NEW ERA OF GRAVITATIONAL-WAVE ASTRONOMY

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The detection by LIGO of gravitational waves from binary black-hole mergers, GW150914 and GW151226, has marked the beginning of a new era in physics and astrophysics. I will review theoretical work that paved the way to observe such gravitational-wave signals, and discuss the results and implications of the discovery focusing on its astrophysical and fundamental physics aspects.