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The Observation of Gravitational Waves from a Binary Black Hole Merger

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On September 14, 2015 the the two detectors of the Laser Interferometer Gravitational-Wave Observatory (LIGO) simultaneously observed gravitational waves from a binary black hole merger. The gravitational waves observed match the waveform predicted by general relativity for the inspiral and merger of a pair of black holes and the ringdown of the resulting single black hole. This is the first direct detection of gravitational waves and the first observation of a binary black hole merger. I will discuss the discovery of this event, the properties of the source, and the future of the new field of gravitational-wave astronomy.