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Education and Public Outreach Activities of the Laser Interferometer Gravitational-Wave Observatory

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Gravitational waves are produced by some of the most energetic and dramatic phenomena in the Universe: Black holes, neutron stars and supernovae. As powerful as they are at their sources, gravitational waves are incredibly elusive by the time they reach the Earth. Although gravitational waves were predicted almost a century ago (as a consequence of General Relativity), they still have not been directly detected. In the past few years, the Laser Interferometer Gravitational-wave Observatory (LIGO) and its international partners have been hunting for gravitational waves. The initial LIGO instruments were among the most sensitive scientific instruments on the planet. Their sensitivity will achieve further significant improvement with the current construction of Advanced LIGO. Direct detection of gravitational waves will allow scientists to explore the death throes of stars, the origin of dark energy and the nature of space-time in a way humans never have before. LIGO technology will push the frontiers of science and engineering in many areas, from lasers and materials science to high performance computing.

The nascent field of gravitational-wave astronomy and the LIGO project offer many opportunities for effective and inspirational astronomy and physics outreach, and provide a powerful showcase for the attractions and challenges of a career in science and engineering. In this talk we describe the extensive program of public outreach and education activities already undertaken by the LIGO Scientific Collaboration - from traveling exhibits, to student field trips, and more. We will also talk about a number of special events which are being planned for the next few years.

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