University of Texas at San Antonio

Department of Physics & Astronomy

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Department of Physics and Astronomy

Trinity University

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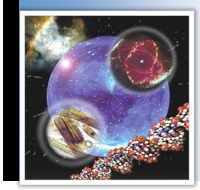
3:00 p.m.-4:00 p.m.

AET 1.102

Advanced LIGO: Expanding the Search for Gravitational Waves

The Laser Interferometer Gravitational-Wave Observatory (LIGO) is designed to measure gravitational waves -- infinitesimal strains in space created by the motion of massive astronomical bodies. Initial target sensitivity was achieved in 2005, followed by over one integrated year of triple-coincidence science running, concluding in September 2007. Incremental detector improvements led to a higher-sensitivity science run from June 2009 to October 2010, in cooperation with the VIRGO observatory. While no detections were made, the searches place meaningful constraints on the properties of individual objects, the populations of gravitational wave sources, and the energy density of gravitational waves in the universe. I will discuss the current state of data analysis, and progress towards the rapidly approaching advent of the next-generation Advanced LIGO experiment.



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