

Abstract Submitted
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The gravitational wave decade JOHN CONKLIN, Univ of Florida - Gainesville — With the expected direct detection of gravitational waves by Advanced LIGO and pulsar timing arrays in the near future, and with the recent launch of LISA Pathfinder this can arguably be called the decade of gravitational waves. Low frequency gravitational waves in the mHz range, which can only be observed from space, provide the richest science and complement high frequency observatories on the ground. A space-based observatory will improve our understanding of the formation and growth of massive black holes, create a census of compact binary systems in the Milky Way, test general relativity in extreme conditions, and enable searches for new physics. LISA, by far the most mature concept for detecting gravitational waves from space, has consistently ranked among the nation's top priority large science missions. In 2013, ESA selected the science theme “The Gravitational Universe” for its third large mission, L3, under the Cosmic Visions Program, with a planned launch date of 2034. NASA has decided to join with ESA on the L3 mission as a junior partner and has recently assembled a study team to provide advice on how NASA might contribute to the European-led mission. This talk will describe these efforts and the activities of the Gravitational Wave Science Interest Group and the L3 Study Team, which will lead to the first space-based gravitational wave observatory.

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