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Possible Space-based Gravitational Wave Observatory Mission Design for the L3 Cosmic Visions Opportunity JEFFREY LIVAS, NASA Goddard Space Flight Center, GRAVITATIONAL WAVE MISSION CONCEPT DEVELOPMENT TEAM — A rich spectrum of astrophysical gravitational-wave sources is expected at frequencies between 0.0001 and 0.1 Hz. A space-based observatory is required to access these sources to avoid large gravity gradient (Newtonian) noise at low frequencies, to take advantage of a benign thermal environment, and to allow the construction of large measurement baselines that are well matched to the wavelengths of the sources. The Laser Interferometer Space Antenna (LISA) has long been the reference mission to cover this science with an international partnership between NASA and ESA. Budget constraints have forced both agencies to search for revised mission concepts with a lower cost point. A possible mission design compatible with the cost constraints of the L3 Cosmic Visions Opportunity will be described based on the SGO-Mid concept developed for the 2012 Gravitational Wave Mission Concept Study.[1]

[1]http://pcos.gsfc.nasa.gov/studies/gravitational-wave-mission.php

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