

Abstract Submitted
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Mission and Instrument Design Trades for a Space-based Gravitational Wave Observatory to Maximize Science Return JEFFREY LIVAS, JOHN BAKER, ROBIN STEBBINS, JAMES THORPE, NASA/GSFC, SHANE LARSON, Northwestern University and Adler Planetarium, ALBERTO SESANA, School of Physics and Astronomy, The Univ of Birmingham — A space-based gravitational wave observatory is required to access the rich array of astrophysical sources expected at frequencies between 0.0001 and 0.1 Hz. The European Space Agency (ESA) chose the Gravitational Universe as the science theme of its L3 launch opportunity. A call for mission proposals will be released soon after the completion of the LISA Pathfinder (LPF) mission. LPF is scheduled to start science operations in March 2016, and finish by the end of the year, so an optimized mission concept is needed now. There are a number of possible design choices for both the instrument and the mission. One of the goals for a good mission design is to maximize the science return while minimizing risk and keeping costs low. This presentation will review some of the main design choices for a LISA-like laser interferometry mission and the impact of these choices on cost, risk, and science return.

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