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Preparing for LISA in the post-detection era JOHN CONKLIN, Univ of Florida - Gainesville — In 2016 we saw the first direct detections of gravitational waves by Advanced LIGO and the positive results from LISA Pathfinder. In this context, NASA has decided to partner with the ESA on their L3 gravitational wave observatory, whose science goals are outlined in the white paper, The Gravitational Universe. The current launch date for L3 is 2034, but with the success of Pathfinder and the increased scientific interest in gravitational waves caused by LIGO, ESA and its member states are exploring ways to move up the launch date. In the U.S., the National Academy's Astronomy Midterm Assessment has recommended that NASA restore support for a gravitational wave mission in this decade with the goal of realizing the full scientific capability of the mission envisioned in the 2020 decadal. NASA has appointed the L3 Study Team, charged with providing analysis of potential U.S. contributions to the European-led L3 mission and preparing for the next decadal survey. The LISA mission concept, proposed for L3, 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, provide predictions of black hole binary mergers in the LIGO frequency band, and enable searches for new physics.

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