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The LISA Observatory: Preparing for a bountiful harvest.[1]

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The Laser Interferometer Space Antenna (LISA) will simultaneously detect many thousands of low frequency gravitational wave signals at high signal to noise. The science potential associated with this haul is tremendous, ranging from the exploration of galaxy formation through the observation of coalescing supermassive black hole binaries, through constraints on population synthesis models derived from a census of galactic binaries, to tests of fundamental physics using extreme mass ratio inspirals and optically resolved galactic binaries. Extracting all of this information from one or two time series poses a challenge that is very different to the one encountered with high frequency gravitational wave observations. I will describe recent progress in addressing the LISA data analysis problem, and our plans for a community wide effort to develop a full data analysis pipeline.

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