

Abstract Submitted
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Initial Results from ST7-Disturbance Reduction System on LISA Pathfinder¹ CHARLES DUNN, PHILLIP BARELA, CURT CUTLER, RICHARD DENZIN, GARTH FRANKLIN, JACB GORELIK, Jet Propulsion Laboratory, California Institute of Technology, OSCAR HSU, NASA Goddard Space Flight Center, SHAHRAM JAVIDNIA, IRENA LI, Jet Propulsion Laboratory, California Institute of Technology, PEIMAN MAGHAMI, NASA Goddard Space Flight Center, COLLEEN MARRESE-READING, JITENDRA MEHTA, JAMES O'DONNELL, ANDREW ROMERO-WOLF, Jet Propulsion Laboratory, California Institute of Technology, JACOB SLUTSKY, IRA THORPE, NASA Goddard Space Flight Center, S. HARPER UMFRESS, JOHN ZIEMER, Jet Propulsion Laboratory, California Institute of Technology — The European Space Agency LISA Pathfinder spacecraft was launched on December, 2, 2015 carrying the NASA contribution ST7-Disturbance Reduction System (ST7-DRS). The objective of ST7-DRS is to demonstrate drag-free control and noise reduction technologies for future missions, especially a future space-based gravitational wave observatory. The system consists of a pair of Colloid Micro-Newton Thruster clusters and a computer with control algorithms. Data from the host platform is used for inertial and attitude sensing. ST7-DRS was initially powered on in January 2016 for an on-orbit check out and was fully commissioned in late June and early July. This presentation will report results relative to the 0.1 micro-Newton/ rt Hertz thrust noise requirement and the 10 nanometer/rt Hertz position control requirement. Preliminary extended mission results will be discussed.

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