

Abstract Submitted
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STROBE-X: X-ray Timing Spectroscopy on Dynamical Timescales from Microseconds to Years PAUL RAY, Naval Research Lab, COLLEEN WILSON-HODGE, NASA/MSFC, KEITH GENDREAU, NASA/GSFC, DEEPTO CHAKRABARTY, MIT, MARCO FEROCI, INAF-IASF/INFN, THOMAS MACCARONE, Texas Tech, ZAVEN ARZOUMANIAN, CRESST/GSFC, RON REMILLARD, MIT, KENT WOOD, Praxis/NRL, CHRIS GRIFFITH, NRC/NRL, STROBE-X COLLABORATION — We describe a proposed probe-class mission concept that will provide an unprecedented view of the X-ray sky, performing timing and spectroscopy over a broad band (0.2–30 keV) probing timescale from microseconds to years. The Spectroscopic Time-Resolving Observatory for Broadband Energy X-rays (STROBE-X) comprises two primary instruments, one based on technology developed for the NICER mission and the other based on the European LOFT mission. The broad coverage will enable thermal components, non-thermal components, iron lines, and reflection features to be studied simultaneously from a single platform for the first time in accreting black holes at all scales. The massive collecting area will enable studies of the dense matter equation of state using multiple techniques. A broad range of other revolutionary science, such as high quality spectroscopy of clusters of galaxies and unprecedented timing investigations of active galactic nuclei, would also be obtained. We describe the mission concept and the planned trade studies that will optimize the mission to maximize the science return. This mission is being developed in collaboration with members of the European LOFT team, and a hardware contribution from Europe is expected.

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