

Abstract Submitted
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Thermal Stabilization in a High Vacuum Cryogenic Optical System¹ ROSA WALLACE, Univ of Colorado - Denver, JONATHAN CRIPE, THOMAS CORBITT, Louisiana State University — The existing technology for gravitational wave detection is limited in part by quantum noise. In our table-top experiments, we are attempting to lower the noise floor to the quantum limit through the use of a seismically isolated cryogenic high vacuum environment, with the intention of exploring different methods to reduce quantum noise. In the development phase of this environment, we have implemented a customized strategy of ultraviolet irradiation combined with cryogenically cooled radiation shielding to reduce the impact of water vapor and blackbody radiation on the thermal stability of the cryogenic micro-components.

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