

Abstract Submitted  
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**Noise Performance of the Advanced LIGO Detectors<sup>1</sup>** EVAN HALL, California Institute of Technology, LIGO SCIENTIFIC COLLABORATION — Advanced LIGO has completed a four-month search for gravitational wave events using two 4-km laser interferometers separated by a 3000 km baseline. These instruments can sense spacetime strain to better than  $10^{-23}/\text{Hz}^{1/2}$  in their most sensitive frequency band (80 Hz to 400 Hz). The interferometers' sensitivity is limited by a variety of noise sources, including thermal fluctuations of the test masses and their suspensions, quantum and classical fluctuations of the laser light used to interrogate the test masses, residual environmental disturbances, and noises arising from the sensing and control of the interferometers' length and angular degrees of freedom. We present a budget of these noise sources as they appeared during the first observing run, and discuss ongoing improvements as we look forward to Advanced LIGO achieving full design sensitivity.

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