

Abstract Submitted  
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**A Torsion-Balance Search for Axion-Like Particles** FRANK FLEISCHER, SETH HOEDL, ERIC ADELBERGER, BLAYNE HECKEL, University of Washington, C.D. HOYLE, DAVID SHOOK, Humboldt State University, ERIK SWANSON, University of Washington — Axion-like particles can mediate macroscopic parity and time-reversal symmetry violating forces. We will present a search for such a force between polarized electrons and unpolarized atoms using a novel torsion pendulum operating in the unshielded magnetic field of an electromagnet. Laboratory bounds on this force were improved by more than 10 orders of magnitude for pseudoscalars heavier than 1 meV, and constraints on this force were established over a broad range of astrophysically interesting masses from  $10\ \mu\text{eV}$  to 10 meV. Plans for a next generation of this experiment will be discussed.

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