

Abstract Submitted
for the FWS15 Meeting of
The American Physical Society

Progress on the Global Network of Optical Magnetometers to search for Exotic physics (GNOME)¹ DOMINIC FUENTES, GARRETT DE-CAMP, CHRISTOPHER PALM, ISAAC VIEGAS, DEREK KIMBALL, CSU East Bay, DMITRY BUDKER, Helmholtz Institute Mainz, Johannes Gutenberg University and University of California, Berkeley, ARNE WICKENBROCK, SAMER AFACH, Helmholtz Institute Mainz, Johannes Gutenberg University, SZYMON PUSTELNY, Institute of Physics, Jagiellonian University, MAXIM POSPELOV, University of Victoria and Perimeter Institute for Theoretical Physics, GNOME COLLABORATION — We discuss progress on the design and construction of a network of geographically separated, timesynchronized ultrasensitive atomic comagnetometers to search for correlated transient signals heralding new physics. The Global Network of Optical Magnetometers to search for Exotic physics (GNOME) would be sensitive to nuclear and electron spin couplings to various exotic fields generated by astrophysical sources. To date, no such search has ever been carried out, making the GNOME a novel experimental window on new physics. A specific example of new physics detectable with the GNOME, presently unconstrained by astrophysical observations and laboratory experiments, is a network of domain walls of light pseudoscalar fields.

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Date submitted: 12 Oct 2015

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