

Abstract Submitted  
for the DAMOP14 Meeting of  
The American Physical Society

**Techniques to Improve Magnetometry Using NV Centers in Diamond** DAVID LE SAGE, Harvard University, CHINMAY BELTHANGADY, LINH PHAM, DAVID GLENN, RONALD WALSWORTH, Harvard-Smithsonian Center for Astrophysics — Nitrogen-vacancy (NV) color centers in diamond can be used to optically measure magnetic fields with nanoscale spatial resolution and excellent sensitivity. We will report on ongoing progress to improve the sensitivity and bandwidth of such NV-diamond magnetometers. Significant improvements to NV spin coherence properties have been made by controlling interactions between NV centers and other spins in the diamond, and techniques have been implemented to increase the fraction of NV fluorescence detected. We will present the latest results from an optimized magnetometer employing a large ensemble of NV centers, and discuss some potential applications of this emerging technology.

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Date submitted: 31 Jan 2014

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