

Abstract Submitted
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Enhanced Quantum Diamond Microscope RAISA TRUBKO, ROGER FU, Harvard University, RONALD WALSWORTH, University of Maryland — We present an enhanced 'Quantum Diamond Microscope' (QDM) that uses ensembles of nitrogen-vacancy (NV) defects in diamond for imaging magnetic fields of rock samples with micron-scale spatial resolution and mm-scale field-of-view. Hardware improvements of the laser beam profile, microwave delivery, and light collection increase the sensitivity and decrease the noise floor of the QDM. Additionally, new data analysis methods utilizing machine learning extend the range of rock samples that can be quantitatively studied.

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