

Abstract Submitted  
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**Micron-Scale Magnetic Imaging of Meteorites and Early-Earth Rocks with NV Centers in Diamond** DAVID GLENN, DAVID LESAGE, Harvard-Smithsonian Center for Astrophysics, ROGER FU, BENJAMIN WEISS, MIT Department of Earth, Atmospheric and Planetary Sciences, RONALD WALSWORTH, Harvard-Smithsonian Center for Astrophysics — We use nitrogen vacancy (NV) centers in diamond to perform micron-scale imaging of magnetic fields produced by rocks of meteoric and terrestrial origin. The combination of spatial resolution and magnetic sensitivity of the NV magnetic imager permits magnetic analyses of previously inaccessible geological samples. We employ this technique to map magnetic fields in chondrules from the Semarkona meteorite, helping to constrain the magnitudes of nebular magnetic fields which likely played a key role in accretion disk dynamics during the formation of the solar system. We also apply NV magnetic imaging to the study of early-Earth rocks.

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