Abstract Submitted
for the SHOCK19 Meeting of
The American Physical Society

Commissioning of a Fiber-Coupled Equation-of-State Diagnostics Package in the UC Davis Shock Compression Lab MERAL BASIT, DYLAN SPAULDING, ERIK DAVIES, SARAH STEWART, Department of Earth and Planetary Science, University of California, Davis — Impact surface area in light gas gun experiments is constrained, particularly at high velocities where low-mass, small-diameter projectiles are required. Here, we present recent developments for equation-of-state (EOS) experiments using all fiber-coupled diagnostics on the UC Davis two-stage light gas gun. We have recently commissioned a compact commercial Photon Doppler Velocimeter (PDV), a streaked optical spectrometer (350-850 nm) and have modified a visible/NIR 6-channel pyrometer (650-5000 nm) for flexible simultaneous velocimetry and broadband temperature measurements. All diagnostics are fiber-coupled, allowing for flexible configuration and multi-point measurement in a compact target design and simultaneous pressure/temperature observations for complete EOS studies.

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Date submitted: 05 Feb 2019 Electronic form version 1.4