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Hugoniot Measurements of Silicon Shock Compressed to 25 Mbar B. HENDERSON, D.N. POLSIN, T.R. BOEHLY, M.C. GREGOR, S.X. HU, G.W. COLLINS, Laboratory for Laser Energetics, U. of Rochester, J.R. RYGG, D.E. FRATANDUONO, P.M. CELLIERS, LLNL — We present results of laser-driven shock experiments that compressed silicon samples to 25 Mbar. Impedance matching to a quartz reference provided Hugoniot data. Since silicon is opaque, a quartz witness was placed adjacent to the silicon samples; this afforded the use of the unsteady wave correction¹ to increase the precision of the transit-time measurements of shock velocity. Results are compared both *SESAME* tables and to quantum molecular dynamics calculations. This material is based upon work supported by the Department Of Energy National Nuclear Security Administration under Award Number DENA0001944.

¹D. E. Fratanduono *et al.*, J. Appl. Phys. **116**, 033517 (2014).

B. Henderson Laboratory for Laser Energetics, U. of Rochester

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