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Hugoniot Measurements of Silicon Shock Compressed to 25 Mbar BRIAN HENDERSON, DANAE POLSIN, TOM BOEHLY, MICHELLE GREGOR, SUXING HU, GILBERT COLLINS, RYAN RYGG, Laboratory for Laser Energetics, University of Rochester, DAYNE FRATANDUONO, PETER CELLIERS, Lawrence Livermore National Laboratory — 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 correction[?]to increase the precision of the transit-time measurements of shock velocity. Results are compared with both *SESAME* tables and quantum molecular dynamics calculations. This material is based upon work supported by the Department Of Energy National Nuclear Security Administration under Award Number DENA0001944. D. E. Fratanduono *et al.*, J. Appl. Phys. **116**, 033517 (2104).

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