

Abstract Submitted
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Hugoniot Measurements of Matter Compressed to 100 Mbar at the National Ignition Facility¹ MICHELLE GREGOR, A. LAZICKI, D. ERSKINE, R. LONDON, F. COPPARI, D. SWIFT, J. EGGERT, D. FRATANDUONO, P. CELLIERS, H. WHITLEY, J. NILSEN, Lawrence Livermore National Laboratory — The equations of state (EOS) of materials at pressures near 100 Mbar can now be explored using large-scale laser facilities. This pressure regime is important to understanding material behavior when the thermal excitation of bound electrons begins to occur. We report on experiments at the National Ignition Facility that shock compressed quartz, Mo, B₄C and BeO to 10-100 Mbar. Principal Hugoniot measurements of the samples were obtained using the impedance matching technique relative to a diamond standard. These new measurements can be used to constrain EOS models at previously inaccessible pressures.

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Michelle Gregor
Lawrence Livermore National Laboratory

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