

Abstract Submitted  
for the DPP13 Meeting of  
The American Physical Society

**Material Release at High-Energy Densities** P.M. NILSON, R. BETTI, D.D. MEYERHOFER, Laboratory for Laser Energetics and Fusion Science Center, U. of Rochester, A. SHVYDKY, A.A. SOLODOV, P.A. JAANIMAGI, D.H. FROULA, Laboratory for Laser Energetics, U. of Rochester — High-energy-density matter releases after an inertial time, creating nonideal plasmas with unique thermodynamic properties. Picosecond-resolution x-ray radiography and flash (100-ps) x-ray penumbral imaging were used to measure the release of metal targets heated by a powerful flux of energetic electrons or protons generated by the OMEGA EP Laser System. The data show target decompression over a nanosecond period after the initial target-heating phase. The measured plasma density profiles and target-release speeds were used to infer the pressure-density release isentropes. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0001944.

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Date submitted: 12 Jul 2013

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