

Abstract Submitted
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Nonequilibrium Conditions in a Shock Front D.E. FRATAN-
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P.M. CELLIERS, S. WILKS, LLNL, J.E. MILLER, Lockheed Martin — Recent
measurements¹ on shock waves propagating in Ta₂O₅ foams showed that the shock
temperature did not rise with rising pressure. An explanation is that the electrons
are not in equilibrium with the ions and their temperature rise lags behind the
rapidly moving shock front. Results of hydrodynamic simulations that predict such
behavior and provide calculations of optical transport that explain the observations
are presented. Experimental methods that could be used to further diagnose this
phenomenon will be discussed. This work was supported by U.S. Department of
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¹J. E. Miller *et al.*, “Equation-of-State Measurements in Ta₂O₅ Aerogel,” submitted
to the Proceedings of AIP.

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