Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Measurements of the energy flow and plasma dynamics in a laboratory analogue of N-waves in the solar atmosphere M. TAYLOR, J. FOSTER, P. GRAHAM, A. MOORE, AWE Aldermaston, UK, S. MACLAREN, P. YOUNG, G. GLENDINNING, A. REIGHARD, C. SORCE, LLNL Livermore, USA, C. BACK, J. HUND, B. BLUE, GA, San Diego, USA — Density perturbations in the solar atmosphere are coupled to the X-ray radiation field and so their evolution is difficult to simulate. To assess the fidelity of our current modeling capabilities, a series of experiments have been performed on the LLE OMEGA laser. These used a hohlraum to drive X-rays through a tantalum aerogel disk containing a machined slot. The dynamic evolution of this system is diagnosed with several complementary methods. The energy flow was measured using both direct flux and hohlraum calorimetry, which are compared to assess the best technique. 2D X-ray self-emission images of the data reveal structure in the radiation front seeded from localized spatial perturbations in the foam areal density. Point projection radiography down the axis of the hohlraum was utilized to determine the associated density structures, including complex irregular flows.

M. Taylor
AWE Aldermaston, UK

Date submitted: 22 Jul 2007 Electronic form version 1.4