Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

**Dynamics of Laser-Driven Shock Waves in Solid Targets**[1] Y. AGLITSKIY, M. KARASIK, SAIC, A.L. VELIKOVICH, V. SERLIN, J. WEAVER, A.J. SCHMITT, S.P. OBENSCHAIN, J. GRUN, Plasma Physics Division, NRL, N. METZLER, Artep, Inc., S.T. ZALESAK, J.H. GARDNER, Berkeley Research Associates, J. OH, RSI, E.C. HARDING, University of Michigan — Accurate shock timing is a key issue of both indirect- and direct-drive laser fusions. The experiments on the Nike laser at NRL presented here were made possible by improvements in the imaging capability of our monochromatic x-ray diagnostics based on Bragg reflection from spherically curved crystals. Side-on imaging implemented on Nike makes it possible to observe dynamics of the shock wave and ablation front in laser-driven solid targets. We can choose to observe a sequence of 2D images or a continuous time evolution of an image resolved in one spatial dimension. A sequence of 300 ps snapshots taken using vanadium backlighter at 5.2 keV reveals propagation of a shock wave in a solid plastic target. The shape of the shock wave reflects the intensity distribution in the Nike beam. The streak records with continuous time resolution show the $x - t$ trajectory of a laser-driven shock wave in a 10% solid density DVB foam.

[1]Work supported by DoE, Defense Programs.

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Date submitted: 18 Jul 2009 Electronic form version 1.4