

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Three-Dimensional Distributions of Scattered Light in NIF “Exploding-Pusher” Polar-Drive Experiments R.S. CRAXTON, P.W. MCKENTY, Laboratory for Laser Energetics, U. of Rochester, E.J. BOND, S. LE PAPE, A.J. MACKINNON, P.A. MICHEL, J.D. MOODY, LLNL — Backscattered-light distributions recorded on the NIF near-backscatter-imager (NBI) diagnostic, obtained during “exploding-pusher” polar-drive experiments¹ used for diagnostics commissioning, are presented together with simulations using the hydrodynamics code *SAGE*.² The simulations include the exact beam directions of all NIF beams. The scattered light is predicted to be strongly peaked in the polar direction, predominantly in the angular range covered by the NBI diagnostics, and subject to 2:1 modulations (peak to valley) in the azimuthal direction. Detailed structures seen in the NBI images are reproduced in the simulations, allowing one to identify the individual beams responsible. Comparisons with such simulations can potentially enable the absorption in polar-drive experiments to be diagnosed. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

¹A. M. Cok, R. S. Craxton, and P. W. McKenty, *Phys. Plasmas* **15**, 082705 (2008).

²R. S. Craxton and R. L. McCrory, *J. Appl. Phys.* **56**, 108 (1984).

R.S. Craxton
Laboratory for Laser Energetics, U. of Rochester

Date submitted: 12 Jul 2011

Electronic form version 1.4