Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

**Measurements of Asymmetric Magnetic Reconnection in Laser-Produced Plasmas** M. ROSENBERG, C. LI, F. SEGUIN, J. FRENJE, M. MANUEL, A. ZYLSTRA, R. PETRASSO, MIT, C. STOECKL, V. GLEBOV, LLE, W. FOX, UNH, A. NIKROO, GA — Magnetic topology changes due to reconnection of magnetic fields is of interest both in the context of basic plasma physics and in inertial confinement fusion (ICF), where laser-generated magnetic fields can affect energy transport in hohlraums and in ICF implosions. Face-on, monoenergetic proton radiography has been used to image and measure reconnection of ∼MG magnetic fields in colliding laser-produced plasma bubbles. The timing of the interaction beams with respect to each other and to the backlighter was varied to provide snapshots of both symmetric and asymmetric reconnection at different stages in the plasma bubble evolution and between bubbles of different size and magnetic field strength. While symmetric reconnection produces near complete cancellation of the interacting magnetic fields, the asymmetric case produces only partial field cancellation. The results are presented and compared to 2-D PIC simulations. This work was performed at the LLE NLUF and was supported in part by SNL, DOE, LLE and LLNL.

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Date submitted: 12 Jul 2012 Electronic form version 1.4