

Abstract Submitted  
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**Measuring spatial distributions of nuclear burn in ICF implosions at OMEGA and the NIF using proton emission imaging**<sup>1</sup> FREDRICK SEGUIN, H.G. RINDERKNECHT, A. ZYLSTRA, H. SIO, J. FRENJE, C.K. LI, R. PETRASSO, MIT, M. ROSENBERG, F.J. MARSHALL, T.C. SANGSTER, P. MCKENTY, S. CRAXTON, LLE, J.R. RYGG, S. LE PAPE, V. SMALYUK, P.A. AMENDT, S.C. WILKS, A. MACKINNON, LLNL, N.M. HOFFMAN, LANL — Fusion reactions in ICF implosions of D<sup>3</sup>He-filled capsules produce 14.7-MeV D<sup>3</sup>He protons and 3-MeV DD protons. Spatial distributions of the D<sup>3</sup>He and DD reactions are studied with a penumbral imaging camera [1-2] that utilizes a CR-39-based imaging detector to detect the protons. Up to three orthogonal cameras have been used simultaneously at OMEGA to study the 3-D structure of asymmetric implosions, and two orthogonal cameras have now been used to study an exploding-pusher implosion at the NIF. Recent data from OMEGA and from the NIF will be shown.

[1] F. H. Séguin *et al.*, Rev. Sci. Instrum. **75**, 3520 (2004).

[2] F. H. Séguin *et al.*, Phys. Plasmas **13**, 082704 (2006).

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