Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

The gold bubble feature seen in NIF ignition hohlraums and its 8-fold symmetry[1] M.B. SCHNEIDER, K. WIDMANN, S.A. MACLAREN, N. MEEZAN, J. HAMMER, B. YOXALL, P.M. BELL, R. BENEDETTI, D.K. BRADLEY, D.A. CALLAHAN, T. DOEPPNER, O. HURRICANE, M.L. KERVIN, B. MACGOWAN, P. MICHEL, J.M. MOODY, J.E. RALPH, D. STROZZI, E.A. WILLIAMS, LLNL, T. GUYMER, A.J. MOORE, AWE — At the National Ignition Facility (NIF), a fuel capsule is imploded by an x-ray drive created by 192 laser beams heating a gold hohlraum. The beams enter in openings at the ends of the hohlraum in four cone angles, the outer cones (50° and 44.5°) and the inner cones (30° and 23.5°). The region where the outer cones hit the hohlraum wall ablates wall material radially into the hohlraum, producing a gold "bubble". The region where the inner beams hit the hohlraum wall is prevented from ablating by material blowing off from the capsule. Recent "ViewFactor" experiments have used a truncated hohlraum (one side cut off at 40% of standard length) to study hohlraum performance. Hard x-ray (>3 keV) images taken from this open end show that the gold "bubble" has an 8 fold symmetry corresponding to the 50° beam geometry. This different behavior of the 50° and 44.5° beams is actually visible in the hard x-ray images of the standard hohlraum targets. These latter images are used to study variations in the bubble as a function of laser pulse shape, gas fill, hohlraum length, and energy transfer.

[1]This work performed under the auspices of the U. S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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Date submitted: 12 Jul 2013 Electronic form version 1.4