

Abstract Submitted
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The Evolution of the Gold Bubble in NIF Ignition Gas-Filled Hohlräume¹ MARILYN SCHNEIDER, STEVE MACLAREN, KLAUS WIDMANN, NATHAN MEEZAN, JAMES HAMMER, PERRY BELL, ROBIN BENEDETTI, DAVID BRADLEY, DEBORAH CALLAHAN, EDUARD DEWALD, TILO DOEPPNER, DENISE HINKEL, OGGIE JONES, O.L. LANDEN, PIERRE MICHEL, JOSE MILOVICH, JOHN MOODY, ALASTAIR MOORE, Lawrence Livermore Natl Lab — At the National Ignition Facility (NIF), the energy from 192 laser beams is converted to an x-ray drive in a gas-filled gold hohlraum. The x-ray drive heats and implodes a fuel capsule. The ViewFactor platform uses a truncated hohlraum to measure the x-ray drive from the capsule point-of-view. This platform also affords excellent diagnostic views of the hohlraum interior, in particular, of the region in which the outer beams deposit their energy (the “gold bubble”) Time-resolved and time-integrated images in the hard x-ray range (>3 keV) reveal an 8-fold symmetry in the gold bubble. The Au plasma in the bubble from the eight 50 degree quads expands faster than that from the interleaved 44.5 degree quads. The variation in this structure with laser intensity, with pulse shape and cross beam energy transfer, and comparison to models, will be discussed.

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