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Effects of <sup>3</sup>He Addition on Implosion of DT Capsules on Omega H.W. HERRMANN, J.M. MACK, D.C. WILSON, J.R. LANGENBRUNNER, C.S. YOUNG, J.H. COOLEY, S.C. EVANS, T.J. SEDILLO, G.A. KYRALA, L. WELSER-SHERRILL, LANL, C.J. HORSFIELD, D.W. DREW, AWE, UK, E.K. MILLER, NSTec STL, V. YU GLEBOV, LLE, UR — Glass (SiGDP) capsules were imploded in direct drive on the Omega laser to look for anomalous degradation in yield (i.e., beyond what is predicted) with <sup>3</sup>He addition similar to the "factor of two" degradation previously reported by MIT at a 50% <sup>3</sup>He atom fraction (Rygg *et al.*. Phys. Plasmas 13, 2006). We did not see a significant anomalous degradation. The cause of the "Rygg" anomaly is as of yet unexplained, but differences in gas mixture  $(DT vs D_2)$  or shell parameters (glass vs plastic, diameter and wall thickness) may be responsible for the absence of this anomaly in the recent data. In addition, a short laser pulse (600 ps) was used to temporally separate shock and compression yield components in order to investigate mix. Previously, anomalously low compression yield had been observed when imploding glass targets containing 10 atm DT with 10 kJ of laser energy. This effect was not seen in the recent data with 5 atm DT and 15 kJ, and the resulting  $\gamma$  and n burn histories were in good qualitative agreement with predictions for <sup>3</sup>He addition. Work supported by US DOE/NNSA, performed by LANL, operated by LANS LLC under Contract DE-AC52-06NA25396.

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