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Hohlraum Energetics with a Plastic-Lined Laser Entrance Hole S.P. REGAN, T.C. SANGSTER, D.D. MEYERHOFER, W. SEKA, R.L. MC-CRORY, C. STOECKL, V.YU. GLEBOV, Laboratory for Laser Energetics, U. of Rochester, N.B. MEEZAN, L.J. SUTER, D.J. STROZZI, E.A. WILLIAMS, W.L. KRUER, O.S. JONES, D.A. CALLAHAN, M.D. ROSEN, O.L. LANDEN, S.H. GLENZER, C. SORCE, B.J. MACGOWAN, LLNL — The coupling of laser energy into x-ray drive, suprathermal electrons, stimulated Brillouin scattering (SBS), stimulated Raman scattering (SRS), and the two-plasmon-decay $(2\omega_{pe})$ instability was investigated on the OMEGA Laser System for a Au hohlraum having a plastic (CH) lined laser entrance hole (LEH). Forty beams smoothed with phase plates and arranged in three cones irradiated gas-filled targets with a 13.5-kJ shaped laser pulse (PS26). The observed increases in SRS, $3/2\omega$, and hard x-ray production ($h\nu > 20$ keV) at the end of the laser drive and the corresponding decrease in the peak T_r are attributed to local increases in the hohlraum n_e caused by the expansion of the CH LEH liner. Quantitative comparisons with hydrodynamic simulations will be presented. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

> Sean Regan Laboratory for Laser Energetics, U. of Rochester

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