

Abstract Submitted
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Fabrication of Astrophysically Relevant Targets for Use on Inertial Confinement Fusion Machines¹ B.E. BLUE, C.A. BACK, J.F. HUND, R. PAGUIO, D.G. SCHROEN, GA, J.M. FOSTER, P.A. ROSEN, R.J.R. WILLIAMS, AWE, B.H. WILDE, R.F. COKER, LANL, R. WALLACE, J.F. HANSEN, LLNL, R.M. STAMM, Schafer Corp, J. PALMER, R. CARVER, P. HARTIGAN, Rice U. — A series of experiments has been conducted on the Omega laser at the University of Rochester that scale to astrophysical jets. We have fielded experiments to study the hydrodynamic evolutions of high-Mach-number jets, jets deflecting from a high-density sphere that simulate astrophysical jets interacting with stellar clouds at different impact parameters, jets evolving into foams of varying cell size to understand the effect of medium inhomogeneity, and shocks impacting a dense sphere to simulate shocks interacting with gas clouds. This talk will present the target fabrication challenges related to these experiments. Such challenges include foam production, precisely embedding objects in foams, assembling the multiple components with tight tolerances, and the extensive metrology and characterization that is needed to accurately model, and derive results from, these experiments.

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Brent Blue
General Atomics

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