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3D Rayleigh-Taylor Instability in Decelerating Interface Experiments C.C. KURANZ, R.P. DRAKE, M.J. GROSSKOPF, C. KRAULAND, D. MARION, T.L. DONAJKOWSKI, University of Michigan, H.F. ROBEY, J.F. HANSEN, B. BLUE, A.R. MILES, Lawerence Livermore National Laboratory, JIM KNAUER, University of Rochester, D ARNETT, C. MEAKIN, University of Arizona, T. PLEWA, N. HEARN, University of Chicago — Our goal is to experimentally confirm or disprove the hypothesis that the Rayleigh-Taylor instability could be responsible for the observed transport of heavy elements from the core of SN1897A into its outer layers. Our experiments bridge the gap between simulations and observations by using intense lasers to create an extremely large amount of energy in a small volume. Experiments performed at the Omega Laser facility use $\sim$ 5kJ of laser energy to create a blast wave similar to those in supernovae. The blast wave crosses a perturbed interface with a density drop and produces RT growth. By performing experiments with more complex initial conditions, we hope to observe the effect their complexity has on Rayleigh-Taylor instability. This research was sponsored by the National Nuclear Security Administration under the Stewardship Science Academic Alliance through DOEGrant DE-FG52-03NA00064, and DE FG53 2005 NA26014.

Carolyn Kuranz
Univerisity of Michigan

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