

## About the Cover:

Both experiment and theory indicate that shaped adiabats improve the hydrodynamic stability and the performance of directly driven inertial confinement fusion (ICF) capsules. Pickets preceding the main target drive pulse increase and shape the ablator adiabat. The front cover compares the x-ray images of two capsules at peak compression for a laser pulse with and without a picket. The corresponding hydrodynamic simulations for these two cases are provided in the inset. It is evident that targets compressed by pulses prefaced with a picket exhibit reduced ablation-interface Rayleigh-Taylor seed and growth rate. Additionally, these targets exhibit higher compression and larger fusion yields from fusion reactions compared to the case of a pulse without a picket.

This report was prepared as an account of work conducted by the Laboratory for Laser Energetics and sponsored by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy, and other agencies. Neither the above named sponsors, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, mark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by

Printed in the United States of America Available from National Technical Information Services U.S. Department of Commerce 5285 Port Royal Road Springfield, VA 22161

Price codes: Printed Copy A04 Microfiche A01 the United States Government or any agency thereof or any other sponsor. Results reported in the LLE Review should not be taken as necessarily final results as they represent active research. The views and opinions of authors expressed herein do not necessarily state or reflect those of any of the above sponsoring entities.

The work described in this volume includes current research at the Laboratory for Laser Energetics, which is supported by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC03-92SF19460, and other agencies.

For questions or comments, contact Walter T. Shmayda, *Editor*, Laboratory for Laser Energetics, 250 East River Road, Rochester, NY 14623-1299, (585) 275-5769.

Worldwide-Web Home Page: http://www.lle.rochester.edu/