Cover Photos

Upper Left: A variety of targets were fielded on the OMEGA laser system in FY00. The photograph shows one of the target shots during an NLUF laboratory astrophysics campaign to produce and diagnose a radiative precursor shock. The experiment, led by the University of Michigan, was a collaboration of 22 co-principal investigators from 11 institutions.

Lower Left: Mark Romanofsky, senior manufacturing engineer, Thomas Lewis, senior technical associate, and Frederick Rister, senior manufacturing engineer, install a new ten-inch manipulator (TIM). The TIM is a diagnostic shuttle system that is used to position a variety of diagnostics in the OMEGA target chamber. There are six TIM's on OMEGA. Upper Right: This photograph was taken during the first cryogenic capsule implosion using the new OMEGA Cryogenic Target Handling System (CTHS). The primary purpose of this shot was to test the integrated CTHS subsystems using a deuterium-filled capsule.

Center: To minimize the support structure mass and provide a relatively stiff support for cryogenic targets, the capsule is suspended by three $0.5-\mu$ m-thick spider silk strands in the "C"-shaped mount shown in this photograph.

Lower Right: Charles Kellogg, senior laboratory engineer, adjusts the alignment of the new beam diagnostics station installed in the OMEGA Target Bay.

Prepared for U.S. Department of Energy San Francisco Operations Office DOE/SF/19460-332

Distribution Category UC712 October 1999–September 2000

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 A11 Microfiche A01 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 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 Laboratory for Laser Energetics, 250 East River Road, Rochester, NY 14623-1299, (716) 275-5286. Worldwide-Web Home Page: http://www.lle.rochester.edu/