

About the Cover:

Inertial confinement fusion research at the OMEGA Laser Facility utilizes optical pulses delivered as 60 separate beams to compress target capsules and create the high temperatures and pressures necessary to initiate the reaction. Accurate measurement of the energy time history of each pulse is critical in adjusting the laser system to achieve maximum performance and to the interpretation of the results from each experimental target shot. LLE has recently completed development and installation of a suite of six multichannel streak cameras that are capable of making measurements over the wide energy range that is of interest with the necessary time resolution. Calibration features built into each camera coupled with extensive operation, data reduction, and maintenance software allow the suite to precisely diagnose each beam as a routine part of laser facility operations. On the cover, Dr. William Donaldson, Sr. Scientist, reviews calibrated images of 30 one-nanosecond beam pulses acquired by the bank of cameras shown here. A second identical bank supports the other 30 OMEGA beams. The article "A Self-Calibrating, Multi-channel Streak Camera for Inertial Confinement Fusion Applications" (p. 109) describes this system in detail.



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