

Cover Photos

Top left: LLE and LANL collaborated on the development of a new gas Cherenkov detector (GCD-3) for gamma-ray spectroscopy on OMEGA. OMEGA Experimental System Technician (EST) Dan Neyland is shown with the GCD-3 (nearest Dan) and an earlier instrument (GCD-2) on the OMEGA target chamber platform.

Middle left: Photograph of the inside of the OMEGA target chamber during a cryogenic target implosion experiment. OMEGA logged its 25,000th target shot in FY14 since it's activation as a 60-beam UV laser in 1995.

Bottom left: An equivalent-target-plane diagnostic is shown being used to evaluate a new distributed phase plate (DPP) for the OMEGA Laser System. The diagnostic is situated on the same optical table that is used for ultraviolet holographic recording. An off-axis parabola (OAP) is used to expand a laser beam to the required clear aperture, while a second OAP and a series of interchangeable optics are used to form a magnified

focal spot. An R_{80} DPP (left), is being characterized within this test facility by Charles Kellogg, a member of the Optical and Imaging Sciences Group. The mirror in the background is used to direct the expanded beam through the test optic.

Top right: Leva McIntire (Optics Ph.D. student) aligns a programmable spatial light modulator system that will shape the intensity and wavefront of laser beams used to pump optical parametric chirped-pulse amplifiers.

Bottom right: LLE scientist Matthias Hohenberger discussing a just-completed NIF (National Ignition Facility) polar-drive implosion. Matthias is stationed at Lawrence Livermore National Laboratory and is the Principal Investigator for the LLE polar-drive campaign on the NIF. The data is being used to validate modeling of ignition-scale, direct-drive implosions in anticipation of a polar-drive-ignition campaign by the end of the decade.

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