About the Cover:

The ultraviolet diagnostic table (UVDT) situated on top of the south end-mirror structure in the OMEGA Target Bay is shown in the foreground of the photograph. A full-aperture optical wedge in one of the 60 beams directs 4% of the laser light to the UVDT. Scientists Sean Regan (left foreground) and John Marozas (right foreground) use the ultraviolet equivalent-target-plane (UVETP) diagnostic stationed on the UVDT to investigate the performance of laser-beam smoothing on OMEGA with 1-THz-bandwidth, 2-D smoothing by spectral dispersion (2-D SSD) and polarization smoothing (PS) (see article featured on p. 49). Optomechanical technician Rich Dean (far right) is seen positioning a distributed phase plate (DPP) in front of an OMEGA lens on the UVDT. The UVETP diagnostic captures a magnified image of the OMEGA far field on a CCD camera, which is located inside the black enclosure on the left side of the photograph. The Optical Manufacturing (OMAN) Group can be seen in the background installing phase plates on the OMEGA target chamber.

In the OMEGA viewing gallery, scientists Sean Regan (left) and John Marozas (right) discuss the on-target laser irradiation nonuniformity levels. Direct-drive inertial confinement fusion strives to achieve uniform target irradiation using two-dimensional smoothing by spectral dispersion (2-D SSD), distributed phase plates (DPP's), polarization smoothing (PS) utilizing birefringent wedges, and multiple-beam overlap. The article featured on p. 49 shows that the theoretical predictions of laser beam smoothing with 1-THz-bandwidth, 2-D SSD and PS are in excellent agreement with the measured performance.

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