

Abstract Submitted
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**High-Resolution X-Ray Imaging with Fresnel Zone Plates on the
University of Rochester's OMEGA and OMEGA EP Laser Systems¹**

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NATIONAL LABORATORY TEAM, LABORATORY FOR LASER ENERGET-
ICS TEAM — Experiments performed on the OMEGA and OMEGA EP Laser
Systems have utilized Fresnel zone plates (FZP's) to obtain x-ray images with a
spatial resolution of as small as $1.6 \mu\text{m}$, limited by the recording medium. Cur-
rently, single images are being obtained with either film, an x-ray charge-coupled
device, or a framing camera at energies ranging from 2 to 8 keV. A time resolution of
100 ps is obtained by using a short-pulse backlighter or 30-ps time resolution is ob-
tained using a framing camera with some compromise in spatial resolution. Example
subjects, which have been imaged with FZP's, include shock-compressed, modulated
surfaces that have undergone Rayleigh–Taylor unstable growth, self-emission from
Cu-doped shells imploded by OMEGA, and implosions on OMEGA backlit by x-ray
emission from Ti foils.

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