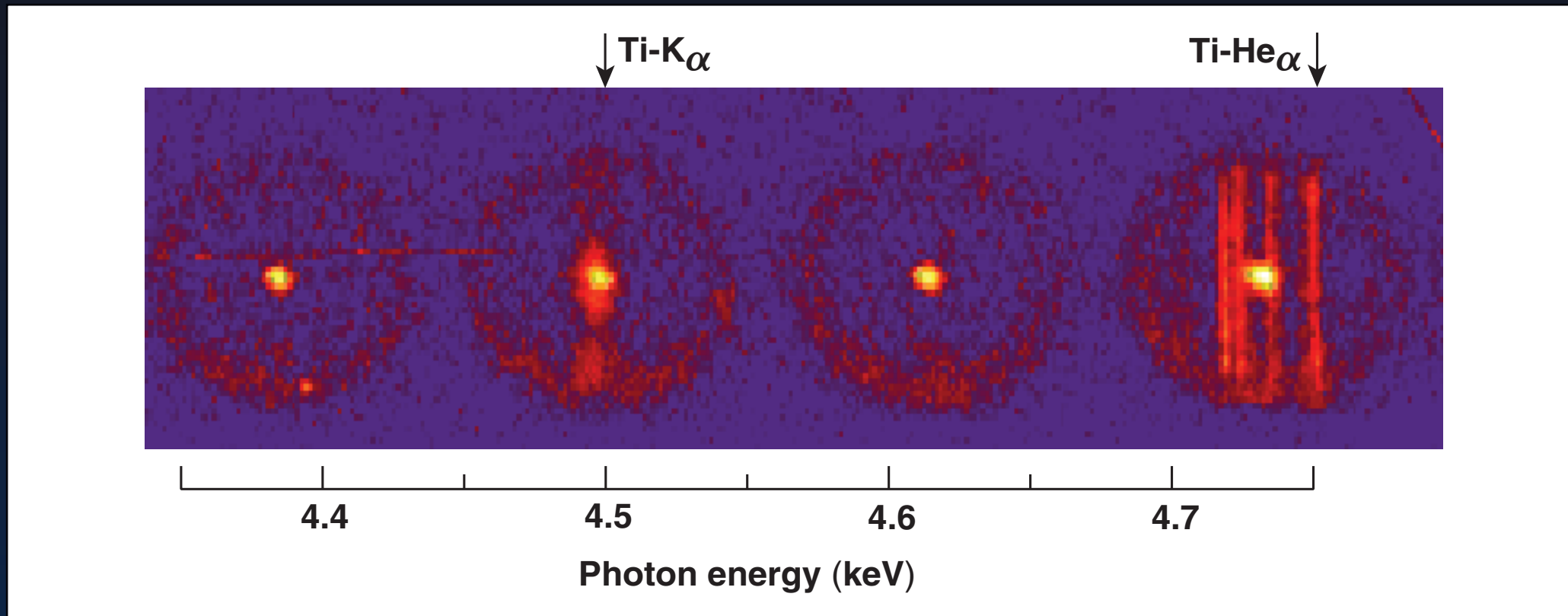


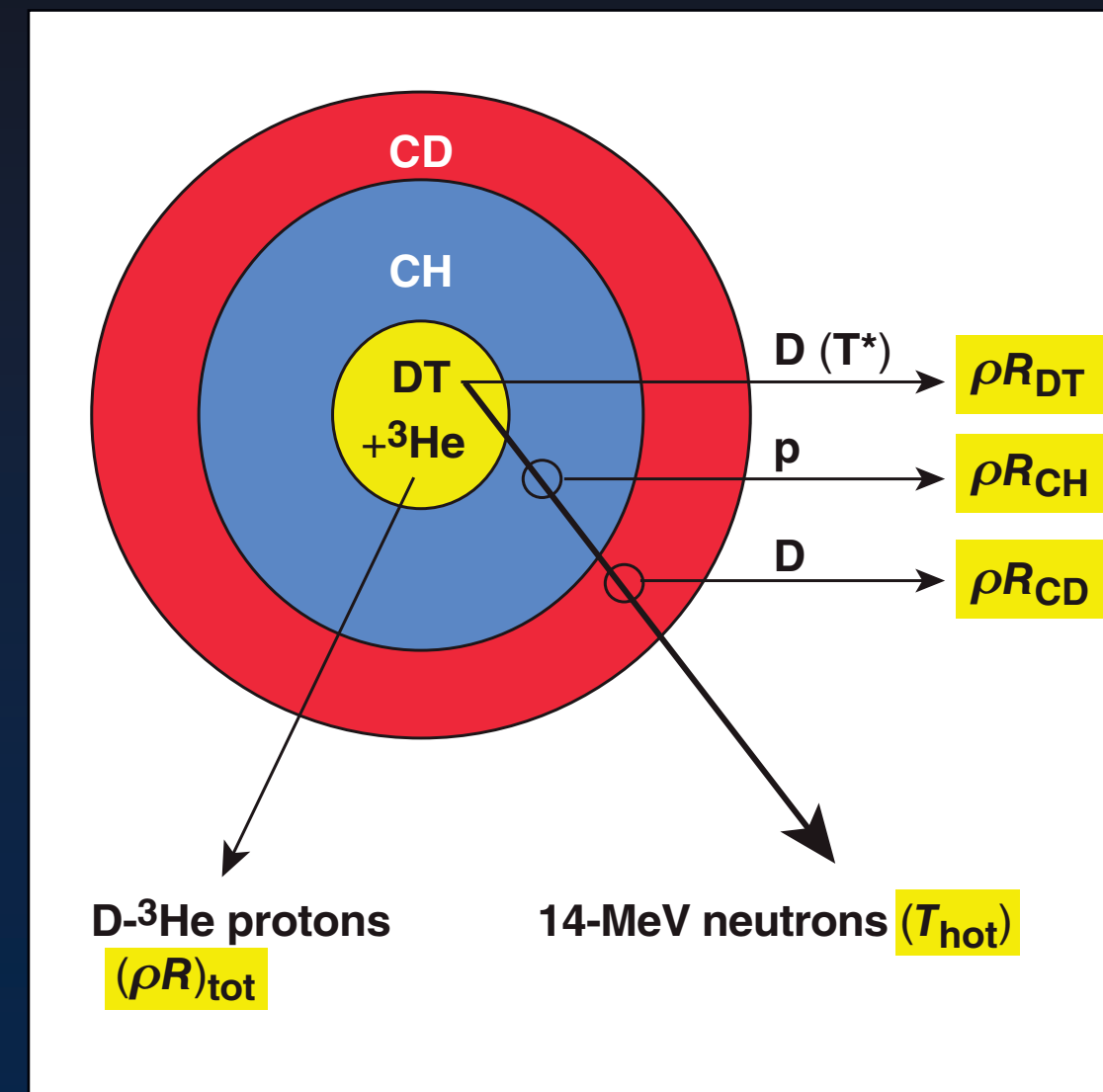
## High-Density X-Ray Diagnostics



Array of x-ray images obtained on an imploding shell containing a Ti-doped layer

New high-density x-ray diagnostics were implemented, giving the ability to measure cold, compressed shells without backlighting

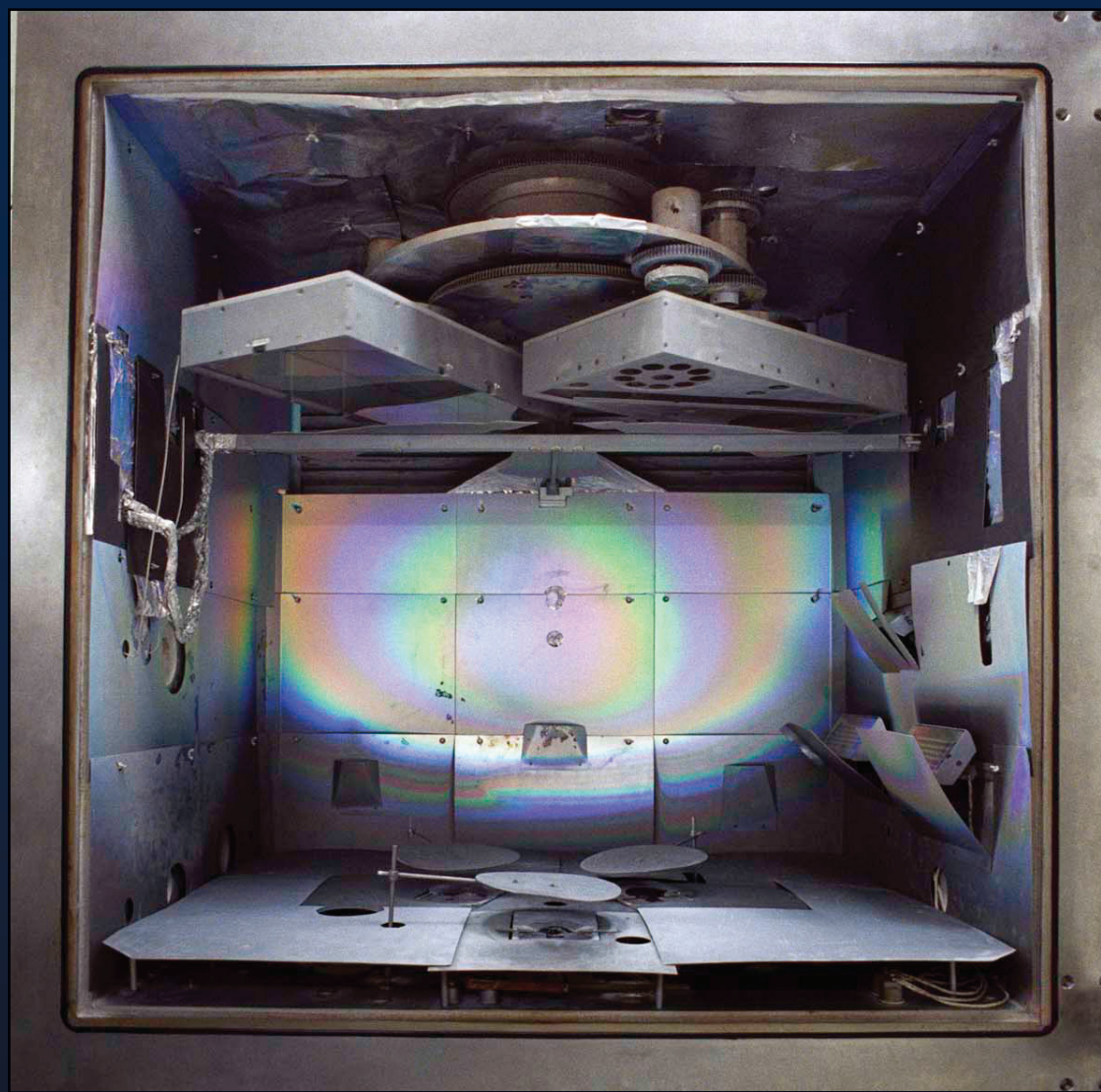
## High-Density Charged-Particle Diagnostics



A figure showing a novel technique for measuring  $\rho R$  simultaneously in three different regions of the compressed target

In collaboration with MIT's Plasma Science and Fusion Center (PSFC), LLE began the development of a charged-particle spectrometer to measure charged particles from high-density implosions on OMEGA.

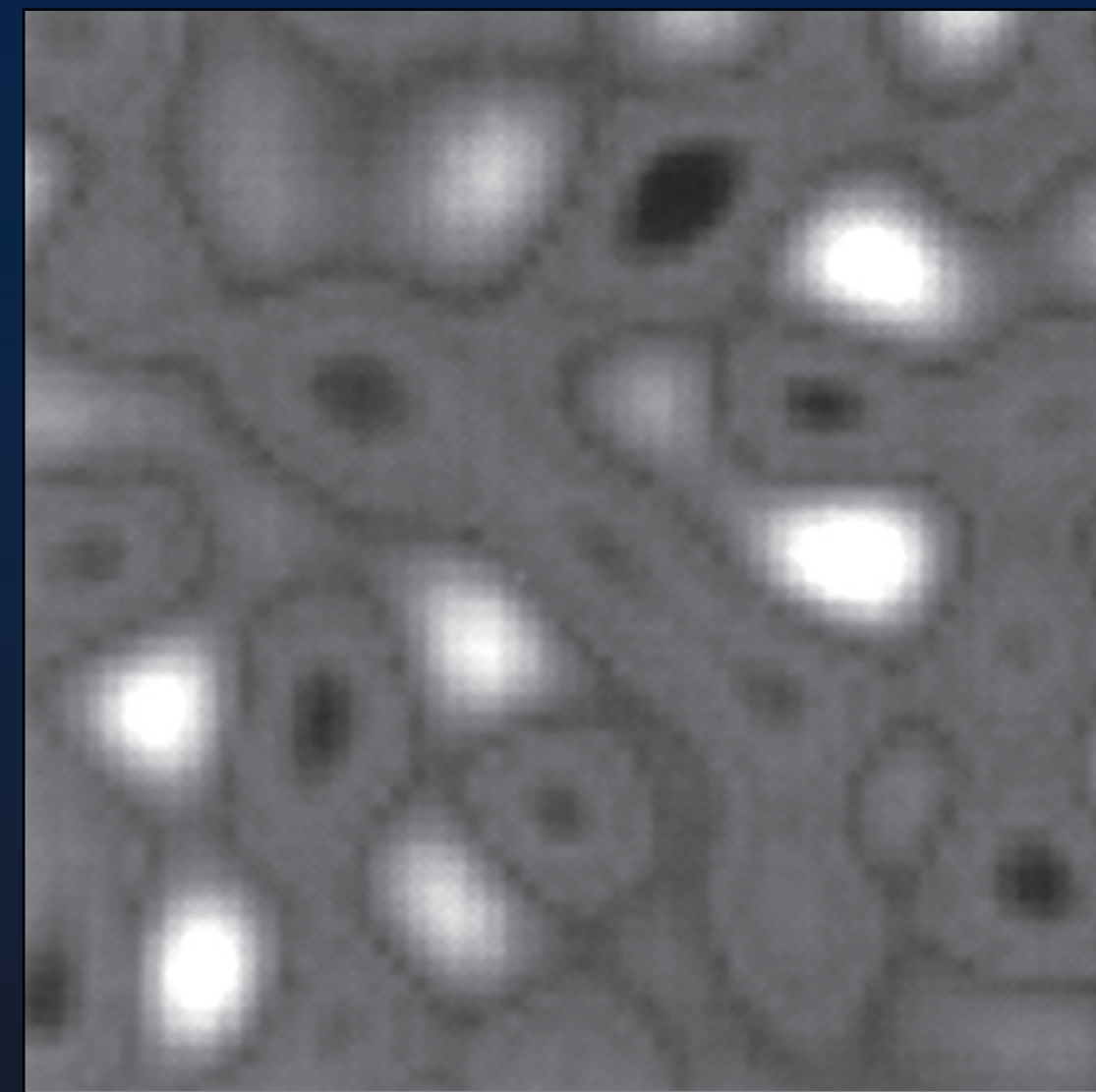
## NIF Optics



OMAN's large coater with a NIF polarizer

LLE's Optical Manufacturing Group (OMAN) developed and implemented an optical-coating process for the National Ignition Facility (NIF) optics. As a result, LLE began its support of coating NIF optics.

## High-Density Charged-Particle Diagnostics



Fully processed subimages of the target optical depth captured at 1.9 ns

A paper authored by V. A. Smalyuk *et al.* was published in Physical Review Letters. It showed for the first time that 3-D broadband imprinted features exhibit saturated growth at amplitudes consistent with theoretical models.

V. A. Smalyuk, T. R. Boehly, D. K. Bradley, V. N. Goncharov, J. A. Delettrez, J. P. Knauer, D. D. Meyerhofer, D. Oron, and D. Shvarts, "Saturation of the Rayleigh-Taylor Growth of Broad-Bandwidth Laser-Imposed Nonuniformities in Planar Targets," *Phys. Rev. Lett.* **81** (24), 5342-5345 (1998).

