Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Low-Aberration Diffraction Mirror to Focus X-Rays ACHIM SEIFTER, DAMIAN SWIFT, Los Alamos National Laboratory, JAMES HAWRELIAK, Lawrence Livermore National Laboratory — Radiography of laser-driven implosions is important for the development of inertial confinement fusion, and it is challenging to obtain adequate diagnostic radiographs of the compression of the fuel capsule. X-ray imaging, through the use of x-ray mirrors, can potentially increase the resolution and accuracy of radiographs, for instance by allowing radiography at locally normal incidence through an imploding spherical capsule. Mirrors for kilovolt x-rays usually work through crystal diffraction. Focusing mirrors have been demonstrated using planar crystals, bent to form a toroidal or spherical surface. We show that the correct profile for a focusing diffraction mirror requires the diffracting planes to change orientation with respect to the surface of the mirror, and suggest how such a bent crystal could be formed.

Damian Swift
Los Alamos National Laboratory

Date submitted: 22 Aug 2007 Electronic form version 1.4