



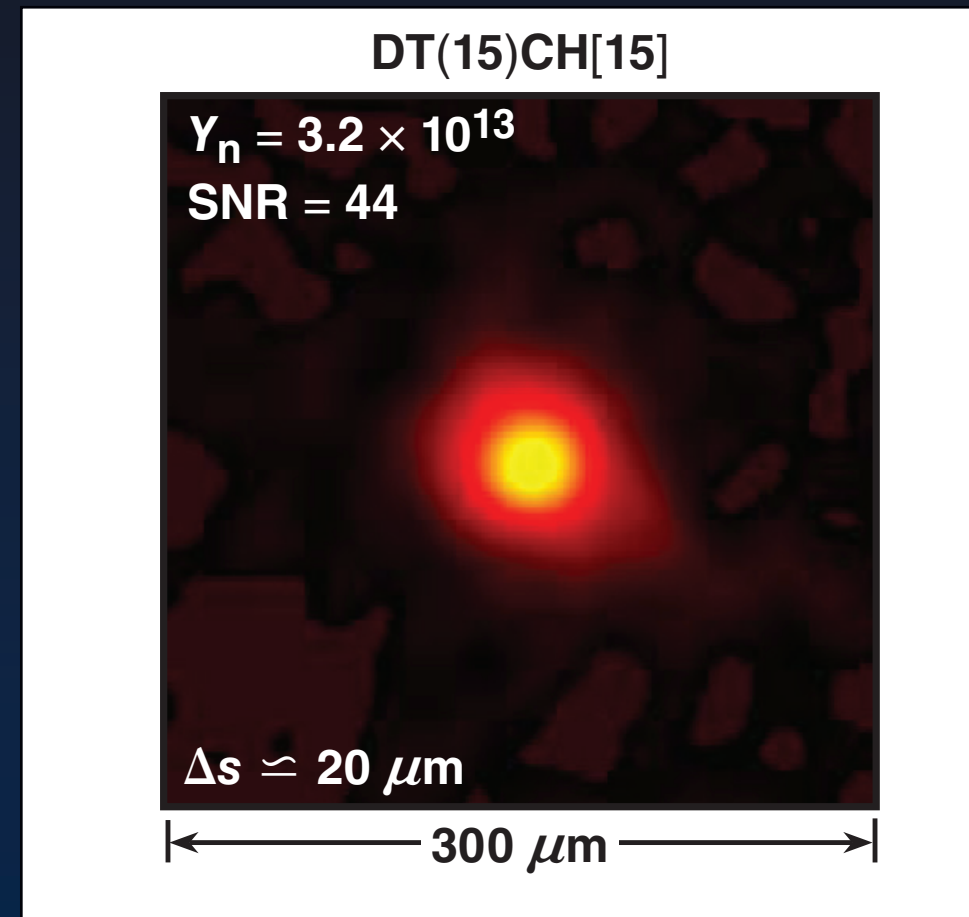
OMEGA EP Building Dedication



Dr. Robert L. Sproull in front of the Robert L. Sproull Center for Ultra High Intensity Laser Research

In May 2005, LLE dedicated the Robert L. Sproull Center for Ultra High Intensity Laser Research. This facility was named in honor of the University's seventh president and houses the OMEGA EP Laser System. The Laboratory for Laser Energetics became a leading center for laser research under Dr. Sproull's leadership. Dr. Sproull firmly believed that LLE would become a venue for training future generations of scientists and researchers, as well as the world-class facility that it is today.

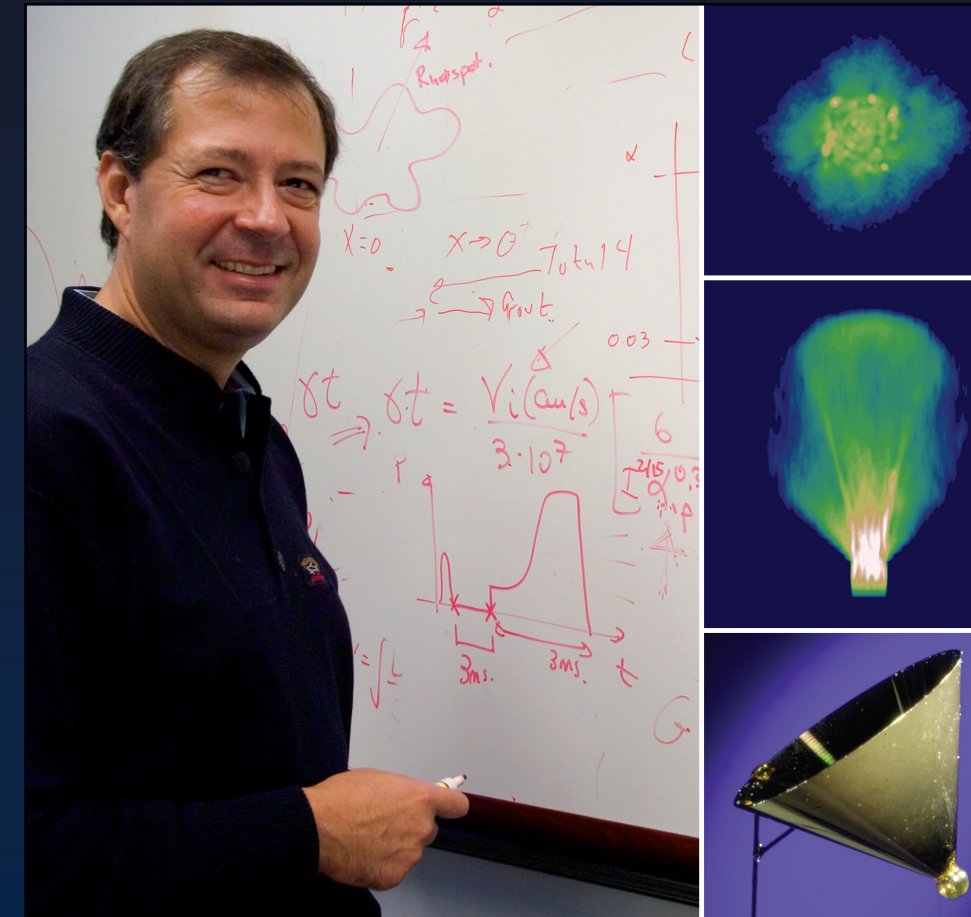
Neutron Imaging of Cryogenic D₂ Capsules



CEA developed penumbral- and ring-aperture neutron imaging on OMEGA

Neutron images of cryogenic D₂-filled imploded capsules were obtained on OMEGA for the first time in a collaborative experiment with scientists from the Commissariat à l'Énergie Atomique (CEA) of France.

University Hosts Department of Energy Fusion Science Center



*Dr. Riccardo Betti
Director, University of Rochester Fusion Science Center*

The U.S. Department of Energy chose the University of Rochester to host one of two Fusion Science Centers (FSC's). The FSC for Extreme States of Matter will develop an understanding of the physics of creating extreme states of matter using a combination of high-energy drivers (compression) and high-intensity lasers (heating). The work will culminate in integrated experiments using both aspects. These experiments will be conducted at the major national high-energy-density (HED) science facilities (OMEGA EP, NIF, and Z Facility) in a synergistic relationship with a National Nuclear Security Administration (NNSA) initiative for short-pulse HED science. The Center will bring academic scientists from around the country into a collaboration that will foster rapid progress in this exciting field. It will also provide support for graduate students and post-doctoral research associates as well as organize workshops and a summer school in high-energy-density physics. A major long-term goal is to study fast ignition as a potential future energy source.

The ROSS Streak Camera



ROSS cameras

LLE licensed the Rochester Optical Streak System (ROSS) technology to Sydor Instruments, LLC, a Rochester-based business, to commercialize the technology for use in research around the world. Sydor Instruments was founded in 2004 to commercialize such high-precision instruments by transferring technology from laser research programs that develop new instrument technology to other laser research programs in need of measuring new levels of performance. Sydor hailed the ROSS as the "streak camera for the next 30 years."

The ROSS was developed by LLE to meet the high-speed data collection needs of the Laboratory's laser-fusion experiments program on the OMEGA laser. The ROSS camera can record transient events with a time resolution better than 5 ps. The ROSS system employs a patented automatic self-calibration technique that achieves 1% measurement accuracy. Eight prototype ROSS systems have operated on OMEGA experiments for more than five years, accumulating more than a half million streak measurements with better than 99.9% reliability.

