

## Section 4

# NATIONAL LASER USERS FACILITY NEWS

This report covers the activities of the National Laser Users Facility (NLUF) during the quarter July to September 1981. During this period two users were on the facility. Larry Knight (Brigham Young University) completed the data collection portion of his user experiment, and Ray Stringfield (Physics International Co.) spent two weeks testing the operation of a particle spectrometer on OMEGA. An additional user, George Miley (University of Illinois), visited the facility to discuss the planning of his experiment.

Larry Knight and David Gaines (Brigham Young University) conducted two weeks of shots on the Glass Development Laser (GDL) to examine the x-ray spectra from laser irradiated targets using "multi-layer" crystals. A total of 22 shots were taken on the GDL for their experiment. Their experiment examined the x-ray spectra from different target materials including both flat and curved crystal configurations for the elements of fluorine, titanium, and aluminum. They will now analyze the observed spectra and crystal parameters, examining both resolution, reflectance, and plasma parameters.

Ray Stringfield (Physics International Co.) spent two weeks on OMEGA, testing a spectrometer which measures alpha particles and protons from the fusion reaction. The purpose of their experiments is to measure the electrostatic potential caused by the escaping fast electrons. A total of 16 shots were taken with exploding pusher targets for these tests. The next phase will be to use the spectrometer for detailed electrostatic potential measurement during January 1982.

George Miley (University of Illinois) will have a time-of-flight spectrometer installed on the OMEGA target chamber. The purpose of this experiment is to measure the energy loss of fusion products (alpha particles, protons, and tritons) through the hot outer regions of the target. The experiment is expected to be run in early 1982. Barukh Yaakobi's (University of Rochester) curved crystal spectrometer is under construction and his user experiment is expected to begin target shots in late 1981.

The experiments described above represent the first set of users at the National Laser Users Facility. All of these are supported by contracts with the U.S. Department of Energy.

The next set of users includes Francis F. Chen and Chan Joshi (UCLA) and Nizarali A. Ebrahim (Yale University); Uri Feldman and George Doschek (Naval Research Laboratory); Hans Griem and J. Adcock (University of Maryland); and C. F. Hooper (University of Florida). These user contracts have been funded by the U.S. Department of Energy and will begin in 1982. Additional information on these user experiments can be found in the last issue of the LLE Review.

The NLUF will be represented at the 3rd American Physical Society Plasma/Fusion Show in New York City (October 13-15), and at the 9th Symposium on Engineering Problems of Fusion Research in Chicago (October 25-27).

Further information on the NLUF is available from:

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