Section 5
NATIONAL LASER USERS FACILITY NEWS

This report covers the activities of the National Laser Users Facility (NLUF) for the quarter 1 July to 30 September 1985. During this period five users conducted experiments on LLE facilities: one on GDL and four on OMEGA. In addition, the Department of Energy concurred with the steering committee recommendations.

For the user experiment on the GDL system, 527-nm light was focused onto thin-foil targets to study the Raman spectra and hot-electron emission spectra. (The GDL system was recently upgraded with active-mirror amplifiers to produce a doubler output of 250 J.) The participating individuals in this experiment were

- **Chan Joshi, Humberto Figueroa, Chris Clayton**, and **Ken Marsh** (University of California, Los Angeles): "Studies of the Two-Plasmon Decay and Stimulated-Raman-Scattering Instabilities in Long-Scale-Length Plasmas"

The user experiments on the OMEGA system were for a variety of applications, all utilizing the full 24 beams of 351-nm light focused onto spherical targets.

- **Burton L. Henke** and **Paul A. Jaanimagi** (University of Hawaii at Manoa): "Evaluation and Application of a Streak Camera and Photographic Camera Coupled Elliptical-Analyzer Spectrograph System for the Diagnostics of Laser-Produced X-Ray Sources (100–10,000-eV region)"

- **Hans R. Griem, Samuel Goldsmith**, and **Aaron Krumbein** (University of Maryland): "A Proposal for Thermal Transport Studies Using Extreme Ultraviolet Spectroscopy"
- **Carl B. Collins** and **Suhas S. Wagal** (University of Texas at Dallas): "Continuation of the Study of Nuclear Fluorescence Excited by Laser Plasma X Rays"
- **C. F. Hooper, Jr.** (University of Florida): "A Study of Plasma-Induced Continuum Lowering and Spectral Line Alterations: A Proposal to NLUF"
- **Allan Hauer, James Cobble, William Mead**, and **Phil Goldstone** (Los Alamos National Laboratory): "Diagnostics of High-Density Laser-Driven Compressions with Novel X-Ray Spectroscopic Techniques"

Additional information on these experiments can be obtained from the scientists associated with the experiment.

Also in this quarter, the Department of Energy informed us that they concur with the steering committee's technical recommendation for proposals reviewed at the meeting of 4 March 1985.

Ten of the proposals were approved for facility time. Individual funding levels for these experiments were recommended to DOE for their consideration. The committee noted the continued excellence of user experiments.

The new approved proposals are listed below in alphabetical order.

- **John Apruzese** (Naval Research Laboratory): "Demonstration of Gain in Neon-Like Tin Using Collisional Pumping by Suprathermal Electrons"
- **Carl B. Collins** (The University of Texas at Dallas): "Continuation of the Study of Nuclear Fluorescence Excited by Laser Plasma X Rays"
- **Dwight Duston** (Naval Research Laboratory): "Studies of Dielectronic Satellite Emission in Ultra-Dense Plasmas"
- **Uri Feldman** (Naval Research Laboratory): "A Proposal for Spectroscopic Studies Relevant to X-Ray Lasers Using the OMEGA Laser"
- **T. R. Fisher** (Lockheed Applied Physics Laboratory): "Measurement of the Time-Dependent Distribution of Ionization States in an Argon Plasma from a Mach-10 Jet"
- **Hans R. Griem** (University of Maryland): "Thermal Transport Studies Using Extreme Ultraviolet Spectroscopy"
- **Burton L. Henke** (Lawrence Berkeley Laboratory): "Continued Development, Evaluation, and Application of a Streak Camera/Photographic Camera Elliptical-Analyzer X-Ray Spectrograph System (SPEAXS) for the Diagnostics of Laser-Produced X-Ray Sources (100–10,000-eV region)"

- **C. F. Hooper, Jr.** (University of Florida): "X-Ray Framing Cameras and the Spectroscopic Analysis of Laser-Produced Implosions"
- **J. Garrett Jernigan** (University of California, Berkeley): "X-Ray Imaging of Laser-Fusion Targets Utilizing PIN Diode Arrays"
- **Chan Joshi** (University of California, Los Angeles): "Studies of Self Focusing and Filamentation Instabilities in Short-Wavelength Laser Fusion"

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