

PUBLICATIONS AND CONFERENCE PRESENTATIONS

Publications

T. Sizer, G. Mourou, and R. R. Rice, "Picosecond Dye Laser Pulses Using a CW Frequency Doubled Nd:YAG as the Pumping Source," *Opt. Comm.* **37**, 207-210 (1981).

W. Knox and G. Mourou, "A Simple Jitter-Free Picosecond Streak Camera," *Opt. Comm.* **37**, 203-206 (1981).

B. Yaakobi, S. Skupsky, R. L. McCrory, C. F. Hooper, H. Deckman, P. Bourke, and J. M. Soures, "X-Ray Spectroscopy of Laser Imploded Targets," *Phil. Trans. R. Soc. Lond. A* **300**, 623-630 (1981).

J. H. Kelly, D. C. Brown, J. A. Abate, and K. Teegarden, "Dynamic Pumping Model for Amplifier Performance Predictions," *Appl. Opt.* **20**, 1595-1605 (1981).

D. C. Brown, J. A. Abate, L. Lund, and J. Waldbillig, "Passively Switched Double-Pass Active Mirror System," *Appl. Opt.* **20**, 1588-1594 (1981).

Forthcoming Publications

W. Knox, W. Friedman, and G. Mourou, "A Simple Silicon Switch-Driven Psec Streak Camera," accepted for publication by *Applied Physics Letters*.

S. Skupsky and S. Kacenjar, "Measuring Fuel ρR for Inertial Fusion Experiments Using Neutron Elastic-Scattering Reactions," accepted for publication by the *Journal of Applied Physics*.

M. True, J. Albritton and E. Williams, "Fast Ion Production by Suprathermal Electrons in Laser Fusion Plasmas," accepted for publication by *Physics of Fluids*.

R. L. McCrory, L. Montierth, R. Morse and C. Verdon, "Taylor Instability in Fusion Targets," to be published in *Laser Interactions and Relative Plasma Phenomena*, vol. V., Plenum Press.

J. Soures, T. Bristow, H. Deckman, J. Delettrez, A. Entenberg, W. Friedman, J. Forsyth, Y. Gazit, G. Halpern, F. Kalk, R. McCrory, D. Peiffer, J. Rizzo, S. Skupsky, E. Thorsos, B. Yaakobi, and T. Yamanaka, "A Review of High Density Laser Driven, Implosion Experiments at the Laboratory for Laser Energetics," to be published in *Laser Interactions and Relative Plasma Phenomena*, vol. V., Plenum Press.

T. Nordland and W. Knox, "Lifetime of Fluorescence from Light-Harvesting Chlorophyll a/b Proteins: Excitation Intensity Dependence," submitted for publication to *Biophysical Journal*.

G. Mourou, "D.C. High Voltage Switching," submitted for publication to *Optics Communication*.

D. Shvarts, J. Delettrez, R. McCrory and C. Verdon, "Self-Consistent Reduction of the Spitzer-Harm Electron Thermal Heat Flux in Steep Temperature Gradients," submitted for publication to *Physical Review Letters*.

S. Kacenjar, L. Goldman and A. Entenberg, "Copper Activation Counter Calibration Using Solid State Track Detectors," accepted for publication by *Review of Scientific Instruments*.

L. Goldman and S. Sarraf, "Effects of Prepulse on Non-Thermal (>10 keV/Z) Ions in Laser Produced Plasma," submitted for publication to *Physical Review A*.

S. Sarraf, E. Williams and L. Goldman, "Ion-Ion Two-Stream Instability in Multispecies Stream Plasma," submitted for publication to *Physical Review Letters*.

R. W. Anderson and W. Knox, "Time-Resolved Fluorescence Decay Measurements in Phthalazine," submitted for publication to the *Journal of Luminescence*.

G. Albrecht and J. Bunkenburg, "Active-Passive Mode-Locked Oscillator Generating Nanosecond Pulses," accepted for publication by *Optics Communications*.

K. Tanaka, L. M. Goldman, W. Seka, M. C. Richardson, and J. M. Soures, "Stimulated Raman Scattering from UV Laser-Produced Plasmas," submitted for publication to *Physical Review Letters*.

B. Yaakobi, T. Boehly, P. Bourke, Y. Conturie, R. S. Craxton, J. Delettrez, J. M. Forsyth, R. D. Frankel, L. M. Goldman, R. L. McCrory, W. Seka, and J. M. Soures, "Characteristics of Target Interaction with High Power UV Laser Radiation," submitted for publication to *Optics Communication*.

G. M. Halpern, "An Improved Method for the Nondestructive Assay of the Tritium Content of Glass Microballoon Laser Fusion Targets," submitted for publication to *Journal of Fusion Energy*.

W. Seka, R. S. Craxton, J. Delettrez, L. M. Goldman, R. Keck, R. L. McCrory, D. Shvarts, J. M. Soures, and R. Boni, "Measurements and Interpretation of the Absorption of 0.35 μm Laser Radiation on Planar Targets," submitted for publication to *Physical Review Letters*.

D. C. Brown, J. H. Kelly and J. A. Abate, "Active Mirror Amplifiers: Progress and Prospects," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

G. Albrecht and G. Mourou, "A Long Pulse/Short Pulse Synchronization Scheme Using a Regenerative Amplifier and High Voltage Semiconductor Switching," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

R. S. Craxton, S. D. Jacobs, J. E. Rizzo, and R. Boni, "Basic Properties of KDP Related to the Frequency Conversion of 1 Micron Laser Radiation," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

R. S. Craxton, "High Efficiency Frequency Tripling Schemes for High Power Nd:Glass Lasers," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

J. Bunkenburg, W. Seka and J. M. Soures, "The OMEGA High Power Phosphate Glass System: Design and Performance," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

J. Boles, D. Pessel and L. Forsley, "OMEGA Automated Laser Control and Data Acquisition," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

W. Seka, J. M. Soures, S. D. Jacobs, L. Lund, R. S. Craxton, "GDL: A High Power 0.35 μm Laser Facility," submitted for publication to the *Journal of Quantum Electronics: Special Issue for Laser Fusion*.

Conference Presentations

K. K. Lee, R. Hopkins, and R. L. McCrory, "Uniformity of Illumination on Spherical Targets for the OMEGA System," presented at the Topical Conference on Symmetry Aspects of Inertial Fusion Implosions, May 1981.

C. P. Verdon, R. L. McCrory, and R. L. Morse, "Nonlinear Development and Effects of Multi-Frequency Hydrodynamic Instabilities in Ablatively Accelerated Thin Shells," presented at the Topical Conference on Symmetry Aspects of Inertial Fusion Implosions, May 1981.

R. Bingham, R. Short, E. Williams, D. Villeneuve and M. C. Richardson, "Filamentation at Short Wavelengths," presented at

the Topical Conference on Symmetry Aspects of Inertial Fusion Implosions, May 1981.

R. L. McCrory, C. P. Verdon, J. Delettrez and D. Shvarts, "Wavelength Scaling and Illumination Uniformity Requirements for Laser Fusion," presented at the Topical Conference on Symmetry Aspects of Inertial Fusion Implosions, May 1981.

R. Bingham, R. Short, E. Williams, D. Villeneuve, and M. C. Richardson, "Filamentation at Short Wavelengths," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

C. P. Verdon, R. L. McCrory and R. L. Morse, "Nonlinear Development of Multi-Frequency Rayleigh-Taylor Instability in Ablation Driven Thin Shells," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

J. Delettrez, R. L. McCrory, D. Shvarts, C. P. Verdon, and B. Yaakobi, "Analysis of Thermal Electron Transport, 'Inhibition' in Laser Plasma Interactions Under Various Laser and Target Conditions," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

R. S. Craxton, J. Delettrez, R. L. McCrory, D. Shvarts, R. Keck, and W. Seka, "Theoretical Interpretation of Short Wavelength Interaction Experiments," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Wave, June 1981.

E. A. Williams, R. Short, and R. Bingham, "Propagation Effects on Raman Spectra," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

R. W. Short, R. Bingham, and E. A. Williams, "Filamentation of Electromagnetic Radiation in Flowing Plasmas," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

D. Shvarts, J. Delettrez, R. L. McCrory, and C. P. Verdon, "A Self-Consistent Flux-Limited Extension of the Spitzer-Harm Thermal Conductivity in Steep-Temperature Gradients," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

L. Goldman, K. Tanaka, W. Seka, E. Williams, and R. Bingham, "Time-Resolved Measurements of Brillouin Backscatter from Plasmas Produced by 0.35 μm Laser," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June, 1981.

W. Seka, L. Goldman, M. Richardson, J. Soures, B. Yaakobi, T. Boehly, R. Keck, K. Tanaka, D. M. Villeneuve, R. Boni, R. Bingham, R. S. Craxton, J. Delettrez, R. L. McCrory and E. Williams, "0.35 μm Interaction Experiments at LLE," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

B. Yaakobi, T. Boehly, P. Bourke, J. Delettrez, L. M. Goldman, R. L. McCrory, W. Seka, and J. M. Soures, "Heat Transport, Ablation

Rate and Pressure Measurements in UV-Laser Target Interaction Experiments," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

J. H. McAdoo and L. M. Goldman, "100 keV X-Ray Continuum from Two-Plasma Decay," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

K. Tanaka, L. M. Goldman, M. Richardson and W. Seka, "Spectrally Resolved Measurements of Raman Backscatter from Plasmas Produced by 0.35 μm Laser," presented at the Eleventh Annual Conference on Anomalous Absorption of Electromagnetic Waves, June 1981.

S. D. Jacobs and J. A. Abate, "Compatibility of Transmissive Optical Materials with High Intensity 0.351 μm Laser Radiation," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

J. A. Abate, "Laser Damage Thresholds of Optical Coatings at 0.351 μm ," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

W. Seka, L. M. Goldman, M. C. Richardson, J. M. Soures, B. Yaakobi, T. Boehly, R. Keck, K. Tanaka, L. Forsley, R. Boni, R. S. Craxton, J. A. Delettrez, and R. L. McCrory, "0.35 μm Laser/Matter Interaction Experiments at the University of Rochester," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

K. Tanaka, L. Goldman, W. Seka, J. Soures, R. S. Craxton, "Backscatter Measurements in 0.35 μm Irradiation Experiments," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

B. Yaakobi, P. Bourke, Y. Conturie, L. M. Goldman, W. Seka, J. M. Soures, R. S. Craxton, J. Delettrez, R. L. McCrory, and S. Skupsky, "Heat Transport Measurements in the Irradiation of Flat Targets with a Frequency-Tripled ($\lambda = 0.35 \mu\text{m}$) Nd:Glass Laser," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

G. Albrecht and G. Mourou, "Regenerative Amplifier Development at the Laboratory for Laser Energetics," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

R. Sobolewski, C. V. Stancampiano and G. Mourou, "Transient Effects in Superconducting Thin Films Illuminated by a Picosecond-Pulse Laser," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

W. Knox, G. Mourou, A. Antonetti, G. Hamoniaux, G. Grillon, and R. Astier, "A Stable Single Shot Averaging Picosecond Streak Camera," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

S. Williamson, S. Letzring, and G. Mourou, "Picosecond Switching with Photoelectrons," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

R. Keck, W. Seka, L. M. Goldman, J. M. Soures, R. Boni, L. Forsley, R. S. Craxton, J. Delettrez, and R. L. McCrory, "Absorption of 0.35 μm Radiation in Laser/Matter Interaction Experiments," presented at the Annual Meeting of the Conference on Lasers and Electro-Optics, June 1981.

A. E. Rosenbluth and J. M. Forsyth, "Difference Equation Analysis of X-Ray Multilayer Reflectors," presented at the Topical X-Ray Conference, June 1981.

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