

Publications and Conference Presentations

Publications

- M. Bailly-Grandvaux, D. Kawahito, C. McGuffey, J. Strehlow, B. Edghill, M. S. Wei, N. Alexander, A. Haid, C. Brabetz, V. Bagnoud, R. Hollinger, M. G. Capeluto, J. J. Rocca, and F. N. Beg, "Ion Acceleration from Microstructured Targets Irradiated by High-Intensity Picosecond Laser Pulses," *Phys. Rev. E* **102**, 021201(R) (2020).
- K. L. Baker, C. A. Thomas, D. T. Casey, M. Hohenberger, S. Khan, B. K. Spears, O. L. Landen, R. Nora, D. T. Woods, J. L. Milovich, R. L. Berger, D. Strozzi, C. Weber, D. Clark, O. A. Hurricane, D. A. Callahan, A. L. Kritcher, B. Bachmann, L. R. Benedetti, R. Bionta, P. M. Celliers, D. Fittinghoff, C. Goyon, R. Hatarik, N. Izumi, M. Gatu Johnson, G. Kyrala, T. Ma, K. Meaney, M. Millot, S. R. Nagel, P. K. Patel, D. Turnbull, P. L. Volegov, C. Yeaman, and C. Wilde, "Hotspot Parameter Scaling with Velocity and Yield for High-Adiabatic Layered Implosions at the National Ignition Facility," *Phys. Rev. E* **102**, 023210 (2020).
- D. H. Barnak, J. R. Davies, J. P. Knauer, and P. M. Kozlowski, "Soft X-Ray Spectrum Unfold of K-Edge Filtered X-Ray Diode Arrays Using Cubic Splines," *Rev. Sci. Instrum.* **91**, 073102 (2020).
- K. A. Bauer, M. Heimbueger, J. Kwiatkowski, S. Sampat, L. J. Waxer, E. C. Cost, J. H. Kelly, V. Kobilansky, S. F. B. Morse, D. Nelson, D. Weiner, G. Weselak, and J. Zou, "Optical Characterization of the On-Target OMEGA Focal Spot at High Energy Using the Full-Beam In-Tank Diagnostic," *Appl. Opt.* **59**, 7994 (2020).
- P. T. Campbell, C. A. Walsh, B. K. Russell, J. P. Chittenden, A. Crilly, G. Fiksel, P. M. Nilson, A. G. R. Thomas, K. Krushelnick, and L. Willingale, "Magnetic Signatures of Radiation-Driven Double Ablation Fronts," *Phys. Rev. Lett.* **125**, 145001 (2020).
- Y.-H. Chen, J. R. Peterson, L. A. Johnson, T. G. Jones, B. Hafizi, A. B. Stamm, A. C. Ting, J. P. Palastro, M. H. Helle, and D. Kaganovich, "Nonlinear Underwater Propagation of Picosecond Ultraviolet Laser Beams," *Opt. Lett.* **45**, 4344 (2020).
- W. A. Farmer, C. Bruulsema, G. F. Swadling, M. W. Sherlock, M. D. Rosen, W. Rozmus, D. H. Edgell, J. Katz, B. B. Pollock, and J. S. Ross, "Validation of Heat Transport Modeling Using Directly Driven Beryllium Spheres," *Phys. Plasmas* **27**, 082701 (2020).
- M. Gatu Johnson, B. M. Haines, P. J. Adrian, C. Forrest, J. A. Frenje, V. Yu. Glebov, W. Grimble, R. Janezic, J. P. Knauer, B. Lahmann, F. J. Marshall, T. Michel, F. H. Séguin, C. Stoeckl, and R. D. Petrasso "3D xRAGE Simulation of Inertial Confinement Fusion Implosion with Imposed Mode 2 Laser Drive Asymmetry," *High Energy Density Phys.* **36**, 100825 (2020).
- V. N. Goncharov, I. V. Igumenshchev, D. R. Harding, S. F. B. Morse, S. X. Hu, P. B. Radha, D. H. Froula, S. P. Regan, T. C. Sangster, and E. M. Campbell, "Novel Hot-Spot Ignition Designs for Inertial Confinement Fusion with Liquid-Deuterium-Tritium Spheres," *Phys. Rev. Lett.* **125**, 065001 (2020).
- J. Hinz, V. V. Karasiev, S. X. Hu, M. Zaghoo, D. Mejía-Rodríguez, S. B. Trickey, and L. Calderín, "Fully Consistent Density Functional Theory Determination of the Insulator-Metal Transition Boundary in Warm Dense Hydrogen," *Phys. Rev. Res.* **2**, 032065(R) (2020).
- B. N. Hoffman, A. A. Kozlov, N. Liu, H. Huang, J. B. Oliver, A. L. Rigatti, T. J. Kessler, A. A. Shestopalov, and S. G. Demos, "Mechanisms of Picosecond Laser-Induced Damage in Common Multilayer Dielectric Gratings," *Opt. Express* **28**, 24,928 (2020).
- A. L. Kritcher, D. C. Swift, T. Döppner, B. Bachmann, L. X. Benedict, G. W. Collins, J. L. DuBois, F. Elsner, G. Fontaine, J. A. Gaffney, S. Hamel, A. Lazicki, W. R. Johnson, N. Kostinski, D. Kraus, M. J. MacDonald, B. Maddox, M. E. Martin, P. Neumayer, A. Nikroo, J. Nilsen, B. A. Remington, D. Saumon, P. A. Sterne, W. Sweet, A. A. Correa, H. D. Whitley, R. W. Falcone, and S. H. Glenzer, "A Measurement of the Equation of State of Carbon Envelopes of White Dwarfs," *Nature* **584**, 51 (2020).

A. V. Maximov, J. G. Shaw, and J. P. Palastro, "Nonlinear Transmission of Laser Light Through Coronal Plasma Due to Self-Induced Incoherence," *Phys. Rev. E* **102**, 023205 (2020).

R. Paul, S. X. Hu, V. V. Karasiev, S. A. Bonev, and D. N. Polsin, "Thermal Effects on the Electronic Properties of Sodium Electride Under High Pressures," *Phys. Rev. B* **102**, 094103 (2020).

A. Pineau, B. Chimier, S. X. Hu, and G. Duchateau, "Modeling the Electron Collision Frequency During Solid-to-Plasma Transition of Polystyrene Ablator for Direct-Drive Inertial Confinement Fusion Applications," *Phys. Plasmas* **27**, 092703 (2020).

M. Sharpe, W. T. Shmayda, and K. Glance, "Measurement of Palladium Hydride and Palladium Deuteride Isotherms Between 130 K and 393 K," *Fusion Sci. Technol.* **76**, 642 (2002).

D. B. Sinars, M. A. Sweeney, C. S. Alexander, D. J. Ampleford, T. Ao, J. P. Apruzese, C. Aragon, D. J. Armstrong, K. N. Austin, T. J. Awe, A. D. Baczewski, J. E. Bailey, K. L. Baker, C. R. Ball, H. T. Barclay, S. Beatty, K. Beckwith, K. S. Bell, J. F. Benage, Jr., N. L. Bennett, K. Blaha, D. E. Bliss, J. J. Boerner, C. J. Bourdon, B. A. Branch, J. L. Brown, E. M. Campbell, R. B. Campbell, D. G. Chacon, G. A. Chandler, K. Chandler, P. J. Christenson, M. D. Christison, E. B. Christner, R. C. Clay III, K. R. Cochrane, A. P. Colombo, B. M. Cook, C. A. Coverdale, M. E. Cuneo, J. S. Custer, A. Dasgupta, J.-P. Davis, M. P. Desjarlais, D. H. Dolan III, J. D. Douglass, G. S. Dunham, S. Duwal, A. D. Edens, M. J. Edwards, E. G. Evstatiev, B. G. Farfan, J. R. Fein, E. S. Field, J. A. Fisher, T. M. Flanagan, D. G. Flicker, M. D. Furnish, B. R. Galloway, P. D. Gard, T. A. Gardiner, M. Geissel, J. L. Giuliani, M. E. Glinksy, M. R. Gomez, G. P. Grim, K. D. Hahn, T. A. Hail, N. D. Hamlin, J. H. Hammer, S. B. Hansen, H. L. Hanshaw, E. C. Harding, A. J. Harvey-Thompson, D. Headley, M. C. Herrmann, M. H. Hess, C. Highstrete, O. A. Hurricane, B. T. Hutsel, C. A. Jennings, O. M. Johns, D. Johnson, M. D. Johnston, B. M. Jones, M. C. Jones, P. A. Jones, P. E. Kalita, R. J. Kamm, J. W. Kellogg, M. L. Kiefer, M. W. Kimmel, P. F. Knapp, M. D. Knudson, A. Kreft, G. R. Laity, P. W. Lake, D. C. Lamppa,

W. L. Langston, J. S. Lash, K. R. LeChien, J. J. Leckbee, R. J. Leeper, G. T. Leifeste, R. W. Lemke, W. Lewis, S. A. Lewis, G. P. Loisel, Q. M. Looker, A. J. Lopez, D. J. Lucero, S. A. MacLaren, R. J. Magyar, M. A. Mangan, M. R. Martin, T. R. Mattsson, M. K. Matzen, A. J. Maurer, M. G. Mazarakis, R. D. McBride, H. S. McLean, C. A. McCoy, G. R. McKee, J. L. McKenney, A. R. Miles, J. A. Mills, M. D. Mitchell, N. W. Moore, C. E. Myers, T. Nagayama, G. Natoni, A. C. Owen, S. Patel, K. J. Peterson, T. D. Pointon, J. L. Porter, A. J. Porwitzky, S. Radovich, K. S. Raman, P. K. Rambo, W. D. Reinhart, G. K. Robertson, G. A. Rochau, S. Root, D. V. Rose, D. C. Rovang, C. L. Ruiz, D. E. Ruiz, D. Sandoval, M. E. Savage, M. E. Sceiford, M. A. Schaeuble, P. F. Schmit, M. S. Schollmeier, J. Schwarz, C. T. Seagle, A. B. Sefkow, D. B. Seidel, G. A. Shipley, J. Shores, L. Shulenburg, S. C. Simpson, S. A. Slutz, I. C. Smith, C. S. Speas, P. E. Specht, M. J. Speir, D. C. Spencer, P. T. Springer, A. M. Steiner, B. S. Stolfus, W. A. Stygar, J. Ward Thornhill, J. A. Torres, J. P. Townsend, C. Tyler, R. A. Vesey, P. E. Wakeland, T. J. Webb, E. A. Weinbrecht, M. R. Weis, D. R. Welch, J. L. Wise, M. Wu, D. A. Yager-Elorriaga, A. Yu, and E. P. Yu, "Review of Pulsed Power-Driven High Energy Density Physics Research on Z at Sandia," *Phys. Plasmas* **27**, 070501 (2020).

S. Tochitsky, A. Pak, F. Fiuza, D. Haberberger, N. Lemos, A. Link, D. H. Froula, and C. Joshi, "Laser-Driven Collisionless Shock Acceleration of Ions from Near-Critical Plasmas," *Phys. Plasmas* **27**, 083102 (2020).

S. Zhang and S. X. Hu, "Species Separation and Hydrogen Streaming upon Shock Release from Polystyrene Under Inertial Confinement Fusion Conditions," *Phys. Rev. Lett.* **125**, 105001 (2020).

A. B. Zylstra, R. S. Craxton, J. R. Rygg, C.-K. Li, L. Carlson, M. J.-E. Manuel, E. L. Alfonso, M. Mauldin, L. Gonzalez, K. Youngblood, E. M. Garcia, L. T. Browning, S. Le Pape, N. Candeias Lemos, B. Lahmann, M. Gatu Johnson, H. Sio, and N. Kabadi, "Saturn-Ring Proton Backlighters for the National Ignition Facility," *Rev. Sci. Instrum.* **91**, 093505 (2020).

Forthcoming Publications

- K. S. Anderson, C. J. Forrest, O. M. Mannion, F. J. Marshall, R. C. Shah, D. T. Michel, J. A. Marozas, P. B. Radha, D. Edgell, R. Epstein, V. N. Goncharov, J. P. Knauer, M. Gatun Johnson, and S. Laffite, “Effect of Cross-Beam Energy Transfer on Target-Offset Asymmetry in Direct-Drive Inertial Confinement Fusion Implosions,” to be published in *Physics of Plasmas*.
- D. H. Barnak, M. J. Bonino, P.-Y. Chang, J. R. Davies, E. C. Hansen, D. R. Harding, J. L. Peebles, and R. Betti, “Characterizing Laser Preheat for Laser-Driven Magnetized Liner Inertial Fusion Using Soft X-Ray Emission,” to be published in *Physics of Plasmas*.
- I. A. Begishev, G. Brent, S. Carey, R. Chapman, I. A. Kulagin, M. H. Romanofsky, M. J. Shoup III, J. D. Zuegel, and J. Bromage, “High-Efficiency, Fifth-Harmonic-Generation of a Joule-Level Neodymium Laser in a Large-Aperture Ammonium Dihydrogen Phosphate Crystal,” to be published in *Optics Express*.
- E. M. Campbell, T. C. Sangster, V. N. Goncharov, J. D. Zuegel, S. F. B. Morse, C. Sorce, G. W. Collins, M. S. Wei, R. Betti, S. P. Regan, D. H. Froula, C. Dorrer, D. R. Harding, V. Gopalaswamy, J. P. Knauer, R. Shah, O. M. Mannion, J. A. Marozas, P. B. Radha, M. J. Rosenberg, T. J. B. Collins, A. R. Christopherson, A. A. Solodov, D. Cao, J. P. Palastro, R. K. Follett, and M. Farrell, “Direct-Drive Laser Fusion: Status, Plans, and Future,” to be published in *Philosophical Transactions of the Royal Society A*.
- L. E. Crandall, J. R. Rygg, D. K. Spaulding, T. R. Boehly, S. Brygoo, P. M. Celliers, J. H. Eggert, D. E. Fratanduono, B. J. Henderson, M. F. Huff, R. Jeanloz, A. Lazicki, M. C. Marshall, D. N. Polsin, M. Zaghoo, M. Millot, and G. W. Collins, “Equation of State of CO₂ Shock Compressed to 1 TPa,” to be published in *Physical Review Letters*.
- B. M. Haines, R. C. Shah, J. M. Smidt, B. J. Albright, T. Cardenas, M. R. Douglas, C. Forrest, V. Yu. Glebov, M. A. Gunderson, C. Hamilton, K. Henderson, Y. Kim, M. N. Lee, T. J. Murphy, J. A. Oertel, R. E. Olson, B. M. Patterson, R. B. Randolph, and D. Schmidt, “The Rate of Development of Atomic Mixing and Temperature Equilibration in Inertial Confinement Fusion Implosions,” to be published in *Physics of Plasmas*.
- D. R. Harding, M. D. Wittman, N. P. Redden, D. H. Edgell, and J. Ulreich, “Comparison of Shadowgraphy and X-Ray Phase Contrast Methods for Characterizing a DT Ice Layer in an Inertial Confinement Fusion Target,” to be published in *Fusion Science and Technology*.
- A. J. Harvey-Thompson, M. R. Weis, D. E. Ruiz, M. S. Wei, A. B. Sefkow, T. Nagayama, E. M. Campbell, J. A. Fooks, M. E. Glinsky, and K. J. Peterson, “The Effect of Laser Entrance Hold Foil Thickness on MagLIF-Relevant Laser Preheat,” to be published in *Physics of Plasmas*.
- G. W. Jenkins, C. Feng, and J. Bromage, “Overcoming Gas Ionization Limitations with Divided-Pulse Nonlinear Compression,” to be published in *Optics Express*.
- K. R. P. Kafka, B. N. Hoffman, H. Huang, and S. G. Demos, “Mechanisms of Picosecond Laser-Induced Damage from Interaction with Model Contamination Particles on a High Reflector,” to be published in *Optical Engineering*.
- D. Kawahito, M. Bailly-Grandvaux, M. Dozières, C. McGuffey, P. Forestier-Colleoni, J. Peebles, J. J. Honrubia, B. Khair, S. Hansen, P. Tzeferacos, M. S. Wei, C. M. Krauland, P. Gourdain, J. R. Davies, K. Matsuo, S. Fujioka, E. M. Campbell, J. J. Santos, D. Batani, K. Bhutwala, S. Zhang, and F. N. Beg, “Fast Electron Transport Dynamics and Energy Deposition in Magnetized, Imploded Cylindrical Plasma,” to be published in *Philosophical Transactions of the Royal Society A*.
- T. Z. Kosc, H. Huang, T. J. Kessler, R. A. Negres, and S. G. Demos, “Determination of the Raman Polarizability Tensor in the Optically Anisotropic Crystal Potassium Dihydrogen Phosphate and Its Deuterated Analog,” to be published in *Scientific Reports*.
- C. A. McCoy, S. X. Hu, M. C. Marshall, D. N. Polsin, D. E. Fratanduono, Y. H. Ding, P. M. Celliers, T. R. Boehly, and D. D. Meyerhofer, “Measurement of the Sound Velocity and Grüneisen Parameter of Polystyrene at Inertial Confinement Fusion Conditions,” to be published in *Physical Review B*.
- B. Militzer, F. González-Cataldo, S. Zhang, H. D. Whitley, D. C. Swift, and M. Millot, “Nonideal Mixing Effects in Warm Dense Matter Studied with First-Principles Computer Simulations,” to be published in the *Journal of Chemical Physics*.
- D. Ramsey, P. Franke, T. T. Simpson, D. H. Froula, and J. P. Palastro, “Vacuum Acceleration of Electrons in a Dynamic Laser Pulse,” to be published in *Physical Review E*.

J. J. Ruby, J. R. Rygg, D. A. Chin, J. A. Gaffney, P. J. Adrian, D. Bishel, C. J. Forrest, V. Yu. Glebov, N. V. Kabadi, P. M. Nilson, Y. Ping, C. Stoeckl, and G. W. Collins, “Constraining Physical Models at Gigabar Pressures,” to be published in *Physical Review E*.

J. J. Ruby, J. R. Rygg, D. A. Chin, J. A. Gaffney, P. J. Adrian, C. J. Forrest, V. Yu. Glebov, N. V. Kabadi, P. M. Nilson, Y. Ping, C. Stoeckl, and G. W. Collins, “Energy Flow in Thin Shell Implosions and Explosions,” to be published in *Physical Review Letters*.

T. T. Simpson, D. Ramsey, P. Franke, N. Vafaei-Najafabadi, D. Turnbull, D. H. Froula, and J. P. Palastro, “Nonlinear Spatiotemporal Control of Laser Intensity,” to be published in *Optics Letters*.

R. Sobolewski, “Optical Detectors and Sensors,” to be published in the *Handbook of Superconducting Materials*.

C. A. Thomas, E. M. Campbell, K. L. Baker, D. T. Casey, M. Hohenberger, A. L. Kritcher, B. K. Spears, S. F. Khan, R. Nora, D. T. Woods, J. L. Milovich, R. L. Berger, D. Strozzi, D. D. Ho, D. Clark, B. Bachmann, L. R. Benedetti, R. Bionta, P. M. Celliers, D. Fittinghoff, G. Grim, R. Hatarik, N. Izumi, G. Kyrala, T. Ma, M. Millot, S. R. Nagel, P. K. Patel, C. Yeamans, A. Nikroo, M. Tabak, M. Gatu Johnson, P. L. Volegov, and S. M. Finnegan, “Deficiencies in Compression and Yield in X-Ray-Driven Implosions,” to be published in *Physics of Plasmas*.

C. A. Thomas, E. M. Campbell, K. L. Baker, D. T. Casey, M. Hohenberger, A. L. Kritcher, B. K. Spears, S. F. Khan, R. Nora, D. T. Woods, J. L. Milovich, R. L. Berger, D. Strozzi, D. D. Ho, D. Clark, B. Bachmann, L. R. Benedetti, R. Bionta, P. M. Celliers, D. N. Fittinghoff, G. Grim, R. Hatarik, N. Izumi, G. Kyrala, T. Ma, M. Millot, S. R. Nagel, P. K. Patel, C. Yeamans, A. Nikroo, M. Tabak, M. Gatu Johnson,

P. Volegov, and S. M. Finnegan, “Experiments to Explore the Influence of Pulse Shaping at the National Ignition Facility,” to be published in *Physics of Plasmas*.

C. A. Thomas, E. M. Campbell, K. L. Baker, D. T. Casey, M. Hohenberger, A. L. Kritcher, B. K. Spears, S. F. Khan, R. Nora, D. T. Woods, J. L. Milovich, R. L. Berger, D. Strozzi, D. D. Ho, D. Clark, B. Bachmann, R. Benedetti, R. Bionta, P. M. Celliers, D. Fittinghoff, G. Grim, R. Hatarik, N. Izumi, G. Kyrala, T. Ma, M. Millot, S. R. Nagel, P. K. Patel, C. Yeamans, A. Nikroo, M. Tabak, M. Gatu Johnson, P. Volegov, and S. M. Finnegan, “Principal Factors in Performance in Indirect-Drive Laser Fusion Experiments,” to be published in *Physics of Plasmas*.

D. Turnbull, A. V. Maximov, D. Cao, A. R. Christopherson, D. H. Edgell, R. K. Follett, V. Gopalaswamy, J. P. Knauer, J. P. Palastro, A. Shvydkiy, C. Stoeckl, H. Wen, and D. H. Froula, “Impact of Spatiotemporal Smoothing on the Two-Plasmon–Decay Instability,” to be published in *Physics of Plasmas*.

S. Zhang, M. C. Marshall, L. H. Yang, P. A. Sterne, B. Militzer, M. Däne, J. A. Gaffney, A. Shamp, T. Ogitsu, K. Caspersen, A. E. Lazicki, D. Erskine, R. A. London, P. M. Celliers, J. Nilsen, and H. D. Whitley, “Benchmarking Boron Carbide Equation of State Using Computation and Experiment,” to be published in *Physical Review E*.

S. Zhang, H. D. Whitley, and T. Ogitsu, “Phase Transformation in Boron Under Shock Compression,” to be published in *Solid State Sciences*.

A. B. Zylstra, C. Yeamans, S. Le Pape, A. MacKinnon, M. Hohenberger, D. N. Fittinghoff, H. Herrmann, Y. Kim, P. B. Radha, P. W. McKenty, R. S. Craxton, and M. Hoppe, “Enhanced Direct-Drive Implosion Performance on NIF with Wavelength Separation,” to be published in *Physics of Plasmas*.

Conference Presentations

E. M. Campbell, “NIF: An Unexpected Journey and Lessons Learned to Secure ‘Projects of Scale,’” presented at the LLNL Seminar, virtual, 9 July 2020.

S.-W. Bahk, I. A. Begishev, R. G. Roides, D. H. Froula, J. Bromage, and J. D. Zuegel, “Application of Near-Field and Far-Field Beam Shaping Techniques for High-Power Lasers,” presented at Advanced Photonics Congress, virtual, 13–16 July 2020.

The following presentations were made at the BETHE Kickoff Workshop, virtual, 11–12 August 2020:

V. N. Goncharov, I. V. Igumenshchev, R. K. Follett, and T. J. B. Collins, “Advanced IFE Target Designs with Next-Generation Laser Technologies.”

P. Tzeferacos, A. B. Sefkow, C. Ren, R. Betti, J. R. Davies, and H. Wen, “A Simulation Resource Team for Innovative Fusion Concepts.”

K. L. Marshall, B. E. Ugur, and J. Travis, “Computational Modeling and Design of Liquid Crystal Materials for Applications in the Terahertz Regime” presented at SPIE Optics and Photonics, Liquid Crystals XXIV, virtual, 24–28 August 2020 (invited).

T. T. Simpson, D. Ramsey, P. Franke, N. Vafaei-Najafabadi, D. H. Froula, and J. P. Palastro, “The Self-Flying Focus: Nonlinear Spatiotemporal Control of Laser Intensity,” presented at ELI Summer School, virtual, 26–28 August 2020.

The following presentations were made at 9th EPS-QEOD Europhoton Conference, virtual, 30 August–4 September 2020:

G. W. Jenkins, C. Feng, and J. Bromage, “Overcoming Gas-Ionization Limits with Divided-Pulse Nonlinear Compression.”

B. Webb, S.-W. Bahk, I. A. Begishev, C. Dorrer, C. Feng, C. Jeon, M. Spilatro, R. Roides, J. D. Zuegel, and J. Bromage, “Full-Energy, Vacuum-Compatible, Single-Shot Pulse Characterization Method for Petawatt-Level Ultra-Broad Bandwidth Lasers Using Spatial Sampling.”

The following presentations were made at Laser Damage 2020, virtual, 13–16 September 2020:

E. M. Campbell, “A Vision of the Future for High-Power Lasers.”

V. Gruzdev and K. R. P. Kafka, “Multiphoton Absorption of Ultrashort Laser Pulses in Optical Materials of Multilayer Coatings at Near-Damage-Threshold Fluence.”

H. Huang, K. R. P. Kafka, and S. G. Demos, “Study of Electric-Field Enhancement Caused by Debris on Laser Optics.”

K. R. P. Kafka, B. N. Hoffman, A. A. Kozlov, and S. G. Demos, “Investigation of Excitation Dynamics in HfO₂ and SiO₂ Monolayers Using Subpicosecond Pump-and-Probe Damage Testing.”

M. S. Wei, “Omega Basic Science User Program Update,” Omega Laser Facility Users Group, virtual, 23–25 September 2020.

M. Zaghoo, H. Pantell, G. Tabak, L. Crandall, M. Huff, J. R. Rygg, G. W. Collins, S. X. Hu, V. V. Karasiev, D. N. Polsin, M. C. Marshall, R. Dias, E. Blackman, H. Aluie, P. M. Celliers, J. H. Eggert, D. E. Fratanduono, and S. Bonev, “Constraints from Mineral Physics on Thermal and Magnetic States of Exoplanets,” presented at Carnegie Earth and Planets Laboratory, virtual, 24 September 2020.