Stanley P. Davis

Research Areas:

- Laboratory Astrophysics: High Energy Astrophysics / Density Physics
- Laser-Driven Inertial Fusion Energy
- Multi-wavelength Astrophysics: High Energy Astrophysical Transients, e.g., gamma-ray bursts (GRBs)
- Plasma Physics; Relativistic Beaming, Plasma Instabilities
- Laser Physics / Optics
- Nano-physics
- Medical Applications of Laser Plasma Interactions

Refereed Publications:

1. "Ion Beam Weibel Instability Simulations of Energy Transfer in Gamma-ray Bursts via Laser Irradiation on Foil", Davis, S P., Tikhonchuk V., d'Humières, E., Bochkarev, S
2. "Weibel Instability Simulations for Gamma-ray Bursts as an Application of Laboratory Astrophysics" Davis, S P., Tikhonchuk V., d'Humières, E., Weber S, Inertial Fusion Sciences with Applications 2009 (IFSA 2009), San Francisco, USA, 2009
3. "Gamma-ray Burst Simulations via Collisionless-Shock Driven Proton Weibel Instability", Davis S P, Tikhonchuk V, d'Humières E, Weber S, in preparation
4. "Extracted Dispersion from Spectrally Dispersed Young's Double Slit for the National Ignition Facility Coherent Addition of Pulses for Energy", Stanley Davis, Michael Rushford, Antonio Lucianetti, Igor Jovanovic, Lawrence Livermore National Laboratory / National Ignition Facility, written, to be published
5. "Coherent Addition of Pulse for Energy (CAPE) Instrument and Data Fitting Model Study", UCRL-ABS-225307, Michael C. Rushford, Stanley Davis, Antonio Lucianetti, et. al., Lawrence Livermore National Laboratory
6. "Model for the Redshift and Luminosity Distributions of Gamma-Ray Blazars", C. Dermer and S. P. Davis, 5th Compton Symposium Proceedings, 1999, AIP
7. "Pulse-Width, Pulse-Interval Distributions and Total Counts as Indicators of Time Dilation in Gamma-Ray Bursts", Davis, S. P. RIKEN Review, 1997
8. "Measurements of Time Dilation in Gamma-Ray Bursts by Analysis of Temporal Structure", Davis, S. P., 1995 9. "Measurement of Time Dilation in Pulse Widths and Intervals Between Pulses", Davis, S. P. 1994, BAAS, 26,
9. "Consistency of Time Dilation in Temporal Profiles and Spectra of Gamma-ray Bursts", Norris, J.P., Nemiroff, R.J., Bonnell, J.T., Scargle, J.D., Davis, S.P., et al. 1995, Adv. Space Res., Vol 15, No. 5, pp. (5)135-(5)138, COSPAR
10. "Exploration of Bi-Modality in Gamma-Ray Burst Duration and Hardness Distributions", Norris, J.P., Nemiroff, R.J., Davis, S.P., et al.: AIP Conference Proceedings 307, Huntsville Gamma-Ray Burst Workshop, 1994
11. "Pulse Width Distributions and Total Counts as Indicators of Cosmological Time Dilation in Gamma-Ray Bursts", Davis, S.P., et al.: AIP Conference Proceedings 307, Huntsville Gamma-Ray Burst Workshop, 1994
12. "Measurement of Signature Consistent with Cosmological Time Dilation in Gamma-Ray Bursts", Norris, J.P., Davis, S.P., et al.: 23rd International Cosmic Ray Conference, 1993, Vol. 1, p.89; (http://adsabs.harvard.edu/abs/1993ICRC....1...89N)
13. "Calibration of an Algorithm for Overlapping Pulses in Gamma-Ray Bursts", Davis, S.P., Norris, J.P., et al.: AIP Conference Proceedings 280, eds: M. Friedlander, N. Gehrels, Daryl J. Macomb, 1992, p.964
14. "Deconvolution of Pulses in Bright Gamma-Ray Bursts", Norris, J.P., Davis, S.P., et al.: AIP Conference Proceeding 280, eds: M. Friedlander, N. Gehrels, Daryl J. Macomb, 1992, p.959
15. "Deconvolution of Pulse Structures in Gamma-Ray Bursts Observed by BATSE", Davis, S. P., Norris, J.P., et al.: Bull. AAS. 23, 1323 (1992)

INTERNET PUBLICATION: On line Astrophysics: A Century of Great Discoveries: http://heseweb.nrl.navy.mil/gamma/dap-aps/astro/index.htm;

Presentations At Professional Meetings And Colloquia:

1. S. P. Davis, Simulations of Energy Transfer in Gamma-ray Bursts via Laser Irradiation on CH–H^+ Foil, Invited Speaker, International Center for Relativistic Astrophysics Network, Pescara, Italy, June 28, 2010
2. S. P. Davis Proton Beam Instability Simulations of Energy Transfer in Gamma-ray Bursts via Laser Irradiation on CH–H^+ Foil, GDRE Gamma-ray Burst School, Carghese, Corsica, France, May 17-22, 2010