Eric J. Lerner

Education:

High School: Phillips Exeter Academy,1964

University: Columbia, BA, Physics 1968

Graduate: University of Maryland, 1969-1970, course work for PhD, physics, no dissertation

Employment:

1994-Present: President and Chief Scientist, LPPFusion, Inc., Formerly Lawrenceville Plasma Physics, Inc.

1970-2003: Free-lance writing and editing on high technology, Over 600 articles published as a science writer in IEEE Spectrum, Aerospace America, Laser Focus World, Discover, IBM Research and many others

Research

Development of fusion energy and X-ray sources based on the dense plasma focus

Originated plasma-based theories of quasars, large-scale structure and other phenomena of the Universe

Author of "The Big Bang Never Happened"

Development of Atomizing Desalination Process

1995-Present

Designed experiment to test hypothesis that the dense plasma focus could achieve temperatures needed for proton-boron fusion. Developed theoretical model, designed electrodes, designed diagnostic equipment, including X-ray detector and filters, and Rogowski coil. Actively participated in experiment including selection of experimental parameters and construction of heating apparatus for decaborane functioning. Analyzed resulting data. Demonstrated achievement of 200 keV energies. Developed theory of magnetic field effect that shows feasibility of proton-boron fusion. Worked to develop intense X-ray source for infrastructure inspection. Continued development of plasma cosmology theories.

1992-1995

Designed experiment to test theory of heating in the dense plasma focus (DPF). Designed electrodes, experimental plan, participated in carrying out experiment, and analyzed data.

1986- 1991

Developed an original theory of quasars based on extrapolation from laboratory-scale plasma instabilities in the DPF. Developed detailed theory of functioning of DPF. Proposed a theory of the origin of the large scale structure of the universe, also from plasma instability theory and the role of force-free filaments. This theory led to the prediction of supercluster complexes, shortly before their discovery by R. Brent Tully. Developed an original theory of the microwave background and the origin of light elements, accounting for both without need for a Big Bang. The microwave theory led to the prediction that there is absorption of RF radiation by the intergalactic medium, a prediction confirmed by observation in 1990.

BOOK

The Big Bang Never Happened, Random House/Times Books, 1991

SCIENTIFIC PAPERS

- Observations contradict galaxy size and surface brightness predictions that are based on the expanding universe hypothesis, Eric J Lerner , Monthly Notices of the Royal Astronomical Society, 477, 3185, 2018
- Confined ion energy >200 keV and increased fusion yield in a DPF with monolithic tungsten electrodes and pre-ionization, Eric J. Lerner, Syed M. Hassan, Ivana Karamitsos, and Fred Von Roessel, Physics of Plasmas 24, 102708 (2017)
- Runaway electrons as a source of impurity and reduced fusion yield in the dense plasma focus, Eric J. Lerner and Hamid R. Yousefi, Physics of Plasmas 21, 102706 (2014)
- Increasing plasmoid ion density in a MA plasma focus device, E. J. Lerner, D. Shannon, F. Van Roessel, I. Karamitsos and A. Blake, 31st ICPIG, July 14-19, 2013, Granada, Spain, 17
- Fusion reactions from >150 keV ions in a dense plasma focus plasmoid, E. J. Lerner, S. K. Murali, D. M. Shannon, A. M. Blake, and F. Van Roessel, Phys. Plasmas 19, 032704 (2012)
- Fusion reaction scaling in a mega-amp dense plasma focus E. J. Lerner, S. Krupakar Murali, A. M. Blake, D. M. Shannon, F. J. van Roessel, Nuleonika,57, 211 (2012)
- Theory and Experimental Program for p-B^{11} Fusion with the Dense Plasma Focus. Eric J. Lerner, S. Krupakar Murali and A. Haboub, Journal of Fusion Energy, 30, Number 5, 367 (2012)
- Tolman Test from z = 0.1 to z = 5.5: Preliminary Results Challenge the Expanding Universe Model. Lerner, E. J., 2nd Crisis in Cosmology Conference, CCC-2. ASP Conference Series, Vol. 413, Proceedings of the conference held 7-11 September 2008, at Port Angeles, Washington, USA. Edited by Frank Potter. San Francisco, Astronomical Society of the Pacific,p.12 (2009)
- Evidence for a Non-Expanding Universe: Surface Brightness Data From HUDF Authors: Lerner, Eric J. 1st, CCC-1. Crisis in Cosmology Conference, CCC-1, AIP Conference Proceedings, Volume 822, pp. 60-74 (2006).
- Theory of electron current filamentation instability and ion density filamentation in the early development of a DPF discharge. Guillory, J.; Rose, D. V.; Lerner, E. J. DENSE

Z-PINCHES: Proceedings of the 7th International Conference on Dense Z-Pinches. AIP Conference Proceedings, 1088, 203 (2009).

- Do Local Analogs of Lyman Break Galaxies Exist? Scarpa, R.; Falomo, R.; Lerner, E. The Astrophysical Journal, 668, 74 (2007)
- Advances Toward PB11 Fusion with the Dense Plasma Focus, E.J. Lerner, R.E. Terry, arXiv:0710.3149 Current Trends in International Fusion Research—Proceedings of the Sixth Symposium(2005), National Research Council of Canada, 2009, pp11-22.
- Prospects for pB11 fusion with the Dense Plasma Focus: New Results Prospects for pB11 fusion with the Dense Plasma Focus: New Results E.J. Lerner, arXiv: physics/0401126 Current Trends in International Fusion Research—Proceedings of the Fifth Symposium (2003), Edited by E. Panarella, NRC Research Press, National Research Council of Canada, Ottawa, ON K1A 0R6 Canada, (2007)
- Final Report, Jet Propulsion Laboratory Lerner, E.J., Peratt, A.L., contract 959962, (1995)
- Two world systems revisited: A comparison of plasma cosmology and the big bang, E.J. Lerner, IEEE transactions on plasma science 31, 1268 (2003):
- Intergalactic Radio Absorption and the COBE Data, Astrophysics and Space Science, , E.J. Lerner 227, 61 (1995)
- On the Problem of Big Bang Nucleosynthesis, Astrophysics and Space Science, , E.J. Lerner 227, 145 (1995)
- The Case Against the Big Bang in Progress, , E.J. Lerner in New Cosmologies, Halton C. Arp et al, eds., Plenum Press (New York), 1993
- Confirmation of Radio Absorption by the Intergalactic Medium, , E.J. Lerner, Astrophysics and Space Science, 207, 17 (1993)
- Force-Free Magnetic Filaments and the Cosmic Background Radiation, , E.J. Lerner IEEE Transactions on Plasma Science, 20, 935 (1992)
- Radio Absorption by the Intergalactic Medium, E.J. Lerner The Astrophysical Journal, 361, 63 (1990)
- Prediction of the Submillimeter Spectrum of the Cosmic Background Radiation by a Plasma Model, , E.J. Lerner IEEE Transactions on Plasma Science, 18, 43 (1990)
- Galactic Model of Element Formation, IEEE Transactions on Plasma Science, 17, 259 (1989)
- Plasma Model of the Microwave Background, , E.J. Lerner Laser and Particle Beams, 6, 456 (1988)
- Magnetic Vortex Filaments, Universal Invariants and the Fundamental Constants, , E.J. Lerner IEEE Transactions on Plasma Science, Special Issue on Cosmic Plasma, PS-14, 690 (1986)
- Magnetic Self-Compression in Laboratory Plasma, Quasars and Radio Galaxies, Part 1, Part 2. , E.J. Lerner, Laser and Particle Beams, 4, 193 (1986)

PATENTS

Atomizing Desalination Process (U.S. Patent #5,207,928)

Focus Fusion Generator (US. Pat #7,482,607)

AWARDS

Aviation Space Writers Association 1993 Award of Excellence in Journalism: Trade Magazines/Space for "GOES NEXT Goes Astray" Aerospace America, May 1992

Society for Technical Communication 1992 Award of Distinction: "Technology is Teaming", Bellcore Insight, Summer, 1991

Aviation Space Writers Association 1990 Award of Excellence in Journalism: Special Interest/Trade Magazine Category for "Lessons of Flight 665," Aerospace America, April, 1989

Aviation Space Writers Association 1990 Journalism Award, North East Region: Special Interest/Space Magazine Category for "Galileo's Tortuous Journey to Jupiter," Aerospace America, August, 1989

Aviation Space Writers Association 1988 National Journalism Award: Special Interest/Space Magazine Category for "FAA: An Agency Besieged", Aerospace America, February-April, 1987

Aviation Space Writers Association 1985 Journalism Award, North East Region: Special Interest/Space Magazine Category for "SDI Series", Aerospace America, August-November, 1985

Aviation Space Writers Association 1984 Journalism Award Northeast Region: Special Interest/Space Magazine Category for "Mushrooming Vulnerability to EMP", Aerospace America, August 1984

PROFESSIONAL SOCIETIES

IEEE, the American Physical Society and American Astronomical Society