

Lee Phillips

- Education** Ph.D., Dartmouth College, Hanover, NH, 1987: theoretical physics.
B.A., Hampshire College, Amherst, MA, 1980: physics, mathematics, music.
Diploma, Stuyvesant High School, New York, NY, 1976.
- Employment** Freelance writer and consultant, 2011 – present.
Research Physicist, 1989 – 2011, Naval Research Laboratory, Washington, DC.
Postdoctoral Research Associate, 1987 – 1989, Dartmouth College (under Prof. David Montgomery).
Teaching Assistant (Physics), Dartmouth College, 1982 – 1987.
Teaching Assistant (Math), Hampshire College, 1977 – 1980.
Short-term (summer, etc.) jobs, 1970 – 1981: guard, proofreader, bicycle messenger, copy editor, bookkeeper, dishwasher, high school math teacher, community college math teacher.
- Experience, Skills, & Awards** Large-scale, parallel simulation of plasmas, fluids, and molecular dynamics.
Fluid and MHD theory.
Major contributor to multiple grant proposals resulting in funding of large, multi-year physics projects.
Analysis and visualization of massive datasets from simulations using Fortran and Scientific Python.
Development of novel analytical techniques for studying fluids, magnetohydrodynamics, object tracking, and shocks and detonations in crystals.
Linux workstation and server administration.
Website programming using Python, Django, and PostgreSQL.
Numerous Research Publication Awards and Merit Awards from NRL.
Regular presenter at international conferences.
Fortran and C on massively parallel supercomputers.
Dartmouth Graduate Fellowship.
Dartmouth Postdoctoral Research Fellowship.
- Service** Member of the Board of Directors of the Friends of Arlington’s Planetarium.
Frequent reviewer of submissions to physics journals.
Mentor to high school scientists in NRL’s Science and Engineering Apprentice Program.
Judge for the Sigma Xi Pure Science Award.
Create and host dynamic websites for nonprofit organizations.
- Selected Publications** Phillips L, “Solar Energy” in T Letcher (ed), *Managing Global Warming* (In press, Elsevier 2018).
– “JupyterLab: Ready for Users” [2018] LWN (<https://lwn.net/Articles/748937/>).
– “Let’s Cut Our Losses on Fusion Energy” [2018] The Progressive (Syndicated op-ed carried in multiple newspapers.) (<http://progressive.org/op-eds/let-cut-our-losses-on-fusion-energy-180313/>).
– “Technical Writing with Pandoc and Panflute” [2017] Linux Journal (<https://lee-phillips.org/panflute-gnuplot/>).
– “LuaTeX Comes of Age” [2017] LWN (<https://lwn.net/Articles/731581/>).

- Phillips L, “A brief history of quantum alternatives” [2017] Ars Technica (<https://arstechnica.com/science/2017/07/a-brief-history-of-quantum-alternatives/>).
- “Symbolic Mathmematics on Linux” [2017] LWN (<https://lwn.net/Articles/710537/>).
 - “General relativity: 100 years of the most beautiful theory ever created” [2015] Ars Technica (<http://arstechnica.com/science/2015/12/general-relativity-100-years-of-the-most-beautiful-theory-ever-created/>).
 - “The leap second: Because our clocks are more accurate than the Earth” [2016] Ars Technica (<http://arstechnica.com/science/2016/04/the-leap-second-because-our-clocks-are-more-accurate-than-the-earth/>).
 - “Meet the largest science project in US government history—the James Webb Telescope” [2016] Ars Technica (<http://arstechnica.com/science/2016/03/meet-the-largest-science-project-in-us-government-history-the-james-webb-telescope/>).
 - “Initiation of Detonations in Three-Dimensional Crystals with Defects” (1995) 7 J. Phys.: Cond. Matter 7813.
 - “A Dozen Science Destinations” (2015) 10 Northern Virginia Magazine 50 (<http://www.northernvirginiamag.com>).
 - “The female mathematician who changed the course of physics — but couldn’t get a job” [2015] Ars Technica (<http://arstechnica.com/science/2015/05/the-female-mathematician-who-changed-the-course-of-physics-but-couldnt-get-a-job/>).
 - “Scientific computing’s future” [2014] Ars Technica (<http://arstechnica.com/science/2014/05/scientific-computings-future-can-any-coding-language-top-a-1950s-behemoth/>).
 - *gnuplot Cookbook* (Packt Publishing February 2012) (<http://www.amazon.com/gp/product/184951724X>).
 - *Gnuplot 5* (Alogus Publishing January 2018) (<https://alogus.com/publishing/gnuplot5/>).
 - “Annie Jump Cannon’s Birthday” [2014] Friends of Arlington’s Planetarium (<http://friendsoftheplanetarium.org/post/45/>).
 - “Have a scientific problem? Steal an answer from nature” [2015] Ars Technica (<http://arstechnica.com/science/2015/01/have-a-scientific-problem-steal-an-answer-from-nature/>).
 - “The never-ending conundrums of classical physics” [2014] Ars Technica (<http://arstechnica.com/science/2014/08/the-never-ending-conundrums-of-classical-physics/>).
- Velikovich AL and others, “Richtmyer-Meshkov-like instabilities and early-time perturbation growth in laser targets and Z-pinch loads” (2000) 7 Phys. Plasmas 1662.
- Phillips L and others, “New Target Designs for Direct-Drive ICF” (1999) 17 Laser and Particle Beams 225.
- Weaver JL and others, “Observation of Parametric Instabilities in the Quarter Critical Density Region Driven by the Nike KrF Laser” (2013) 20 Phys. Plasmas.
- Montgomery D and Phillips L, “Minimum Dissipation Rates in Magnetohydrodynamics” (1988) 38 Phys. Rev. A 2953.

Recent Interviews

About solar energy on the Matt Townsend Show, Sirius XM Radio Ch. 143, May 16, 2017.

“Science 2.0” on G-Town Radio (Philadelphia), June 28, 2014.

How A Crappy User Interface Can Create A Privacy Nightmare, *Fast Company*, January 2014.