

NICHOLAS FREEMAN MEHRLE

114 Elm St, Apt 2, Cambridge MA, 02139

614-458-8160 | nmehrle@gmail.com | nicholasmehrle.com

EDUCATION

- Massachusetts Institute of Technology** **Cambridge, MA**
Ph.D. Student - Physics (Astrophysics) 9/2017 - Present
– **Advisor:** Professor Ian Crossfield
– **GPA:** 5.0/5.0
- Johns Hopkins University** **Baltimore, MD**
M.A. Physics and Astronomy 5/2016
– **Advisor:** Professor Tobias Marriage
– **Thesis:** Design of the Cosmology Large Angular Scale Surveyor (CLASS) Polarization Modulators
- Johns Hopkins University** **Baltimore, MD**
B.S. Physics with honors 5/2016
– **Additional Majors:** Mathematics, Applied Mathematics & Statistics
– **GPA:** 3.91/4.0

EXPERIENCE

- Massachusetts Institute of Technology** **Cambridge, MA**
Graduate Student 9/2017 - Present
– Characterizing atmospheres of extra-solar planets via high resolution ground based spectroscopy
- University of Maryland** **College Park, MD**
Web Developer - Department of Astronomy 12/2016 - 9/2017
– Designed and built online educational tools to illustrate astronomy concepts
- Optiver US LLC** **Chicago, IL**
Derivatives Trader - Agricultures Team 7/2016 - 10/2016
– High frequency commodities options market maker
– Priced options using time-series analysis and machine learning techniques
- Johns Hopkins University** **Baltimore, MD**
Research Assistant - Department of Physics and Astronomy 5/2013 - 5/2016
– Constructed variable delay polarization modulator for microwave band telescope
– Master's thesis on telescope design and physics of Cosmic Microwave Background
- CERN** **Geneva, CH**
Research Assistant - Compact Muon Solenoid 1/2015 - 5/2015
– University of Michigan Semester at CERN program scholar
– Performed statistical analysis to discriminate production methods of Higgs boson
- Johns Hopkins University Applied Physics Lab** **Laurel, MD**
Technical Intern - Applied Concepts and Technology Group 5/2014 - 8/2014
– Developed and tested feature estimation algorithms
– Integrated radar model into simulation environment

PAPERS

- Thomas Essinger-Hileman, et al. "CLASS: the Cosmology Large Angular Scale Surveyor ", *Proc. SPIE* 9153, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII, 91531I (July 23, 2014); doi:10.1117/12.2056701
- John W. Appel, et al. "The Cosmology Large Angular Scale Surveyor (CLASS): 38-GHz Detector Array of Bolometric Polarimeters ", *Proc. SPIE* 9153, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII, 91531J (July 23, 2014); doi:10.1117/12.2056530

TEACHING/MENTORING

- Grader, 8.21 Physics of Energy, MIT 1/2018 - 5/2018
- Creator/Instructor, "Rebuild", MIT IAP non-credit class 1/2018
- Creator/Instructor, "The Flat Earth and Debunking Conspiracy Theories" MIT SPLASH 11/2017
- Volunteer, "Adopt-a-Physicist" program, American Institute of Physics 10/2017
- TA, Differential Equations, Johns Hopkins University 9/2015 - 12/2015
- Tutor, Introductory Physics, Johns Hopkins University 9/2013 - 9/2014

MISCELLANEOUS

- Computer Skills:** Python, Java, JavaScript, C, C++, Matlab, Mathematica, R, HTML, CSS, L^AT_EX, SolidWorks, VBA
- Certifications:** Technician Class Ham Radio Operator
Student Pilot
- Activities:** MIT Students for the Exploration and Development of Space - Cofounder
MIT Sidewalk Astronomy
- Honors:** Phi Beta Kappa
Sigma Pi Sigma
Johns Hopkins Univ. Dean's List all semesters
- Testing:** Physics GRE - 960/990 (92nd percentile)
General GRE - V: 165/170 (95th), Q: 169/170 (97th), W: 5.5/6 (98th)