

NICHOLAS FREEMAN MEHRLE

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EDUCATION

Johns Hopkins University **Baltimore, MD**
M.A. Physics and Astronomy 5/2016
B.S. Physics 5/2016
– **Additional Majors:** Mathematics & Applied Mathematics and Statistics
– **GPA:** 3.91/4.0
– Departmental and general honors
– Dean's list award every semester

MISCELLANEOUS

Computer Skills: Python, Java, JavaScript, C, C++, Matlab, Mathematica, R, HTML, CSS, L^AT_EX, SolidWorks, VBA
Organizations: Phi Beta Kappa, Sigma Pi Sigma, Johns Hopkins Mock Trial, Wading Team
Testing: Physics GRE - 960/990 (92nd percentile)
General GRE - V: 165/170 (95th), Q: 169/170 (97th), W: 5.5/6 (98th)

EMPLOYMENT & RESEARCH

University of Maryland **College Park, MD**
Faculty Assistant - Department of Astronomy 12/2016 - Present
– Developer for the Astronomy Workshop Extragalactic project
– Design online educational tools to illustrate astronomy concepts
astronomy concepts

Optiver US LLC **Chicago, IL**
Derivatives Trader 7/2016 - 9/2016
– Worked as high frequency options market maker including options pricing
– Implemented machine-learning techniques to develop trading strategies
– Performed time series analysis of market data

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
– Wrote master's thesis on telescope design and physics of Cosmic Microwave Background
– Developed analog-to-digital sensor system

CERN **Geneva, CH**
Research Assistant - CMS Experiment 1/2015 - 5/2015
– University of Michigan Semester at CERN program scholar
– Performed statistical analysis to discriminate production methods of Higgs boson
– Contributed to statistical software package used on the CMS experiment

Johns Hopkins University Applied Physics Lab **Laurel, MD**
Technical Intern - Applied Concepts and Technology Group 5/2014 - 8/2014
– Developed and tested of feature estimation algorithms
– Improved graphical UI of large scale simulation environment
– integrated radar model into simulation environment

Johns Hopkins University
Teaching Assistant - Department of Mathematics
– Taught recitation section for Differential Equations
– Rated 4.5/5 by students

Baltimore, MD
9/2015 - 12/2015

Johns Hopkins University
Tutor - Learning Den
– Tutored group of students in mechanics and electricity & magnetism

Baltimore, MD
8/2013 - 5/2014

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
- *Design of the Cosmology Large Angular Scale Surveyor (CLASS) Polarization Modulators*. Master's thesis. Advisor: Tobias Marriage.