DANIEL POLIN

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EDUCATION

University of California Davis *June 2017 - Present*
Master of Science in Physics *December 2018*

New York University *August 2013 - May 2017*
Bachelor of Arts in Physics with Minors in Astronomy and Mathematics

RESEARCH AND PROJECTS

Rubin Observatory LSST Camera Vera C. Rubin Observatory, UC Davis, SLAC - Advisor J. Anthony Tyson

Characterization of photometric and astrometric distortions of the camera's CCD detectors. The LSST camera is the largest digital camera yet constructed and is planned for use in a ten year survey of the entire southern sky. In my role as an instrumentalist I worked on construction of the camera rafts which form the focal plane. I was involved in the design and implementation of corrective camera raft hardware to meet operational specifications.

Dark Radio Experiment UC Davis - Advisor J. Anthony Tyson

A direct detection search for dark photon dark matter in the nano- to milli-eV mass range. We use novel spectrum analysis methods using a bicon antenna in an EM shielded chamber to scan for hidden-photons from 50-300MHz.

PAPERS AND PRESENTATIONS

Papers

- Tyson, J.A., et. al., "Mitigation of LEO Satellite Brightness and Trail Effects on the Rubin Observatory LSST," 2020. Accepted by the Astronomical Journal and Available on the arXiv at https://arxiv.org/abs/2006.12417.
- Drlica-Wagner, A, et. al., "Probing the Fundamental Nature of Dark Matter with the Large Synoptic Survey Telescope," 2019. Available at the arXiv at https://arxiv.org/abs/1902.01055.

Presentations

- Oral Technical Presentation, 2016 APS March Meeting, Baltimore, MD, *Ab-initio Density Functional Theory Studies of Electronic, Transport, and Bulk Properties of Sodium Oxide (Na_2O)*

TECHNOLOGICAL STRENGTHS

Programming	Python, Labview, MATLAB, Mathematica, HTML, C++
Software	Adobe Photoshop, Audacity, SolidWorks, COMSOL
Platforms	Linux (Ubuntu), Windows, Mac
Typesetting	LaTeX

TEACHING EXPERIENCE

University of California, Davis *Graduate Student Instructor*

Physics 122 - Advanced Lab	*Winter 2019, Spring 2019*
Physics 105A - Upper Level Mechanics	*Fall 2018*
Physics 157 - Advanced Astronomy Lab	*Spring 2018*
Physics 7C (Waves, Optics, and Quantum Mechanics)	*Fall 2017*
Lathe Techniques (Woodworking)	*Fall 2019, Winter 2020*

New York University *Adjunct Recitation Instructor*

General Physics I (Mechanics)	*Fall 2014, 2015, 2016*
General Physics II (Electricity & Magnetism)	*Fall 2015, 2016, 2017*

ORGANIZATIONS AND AWARDS

UC Davis Graduate Organization of Physics Students	*Founder/Council Member 2018 - Present*
UC Davis Graduate Physics Curriculum Committee	*Committee Member 2019 - 2020*
UC Davis Graduate Travel Grant Committee	*Committee Member 2019 - 2020*
UC Davis Diversity and Inclusion in Physics	*Member 2017 - Present*
Ray and Constance Chandler Fellow	*2017*

MANUFACTURING SKILLS

Machining	Milling Machine, Lathe, CNC, CAD Software
Soldering	
Welding	Oxyacetylene, MIG, TIG, Brazing
Woodworking	Joinery, Lathe, Hand Tools, Advanced Techniques

LANGUAGES

English	ILR 5: Native proficiency
Latin	ILR 3: Professional working proficiency
Spanish	ILR 2: Limited working proficiency