MATTHEW JOSEPH HILL

Current Address
624 Orange Street
Apartment 1A
New Haven, CT 06511

Contact Information
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EDUCATION

Bachelor of Science, Physics (with second major in Mathematics) May 2014
Johns Hopkins University, Baltimore, MD
GPA 3.47 (with Honors in Physics)

High School Diploma May 2010
Mount Saint Joseph High School, Baltimore, MD
GPA 3.99 (Valedictorian)

RESEARCH EXPERIENCE

Graduate Student
Yale University August 2014 - present

- Assessed and applied stochastic models for variability of optical and X-ray quasar time series. Used machine learning techniques for the selection of quasars from massive time domain survey.

Research Assistant
Johns Hopkins University January 2012 - August 2014

- Studied the origin of excess molecular hydrogen emission in Ultraluminous Infrared Galaxies using *Spitzer Space Telescope* spectroscopic data. (See publication below)
- Studied the effect of non-axisymmetries in gravitational potential on the nuclear activity level of elliptical galaxies using *Hubble Space Telescope* images.

Materials Research Science and Engineering Centers Summer Intern
Johns Hopkins University June - July 2009

- Tested effectiveness of different types of magnetic nanoparticles for use in Polydimethylsiloxane (silicone based polymer) micro-post arrays for use in the study celluar mechanics.

OTHER WORK EXPERIENCE

Camp Counselor
Johns Hopkins University June 2011 - August 2011

- Supervised and organized activities for 8-11 year old boys at summer sports camp.

TEACHING EXPERIENCE

Teaching Assistant
Yale University

- ASTR 160 - Frontiers and Controversies in Astronomy Spring 2015

COMPUTING SKILLS

- Extremely experienced with the Python programming language including Object-Oriented features, GUI development with PyQt, scientific packages (NumPy, SciPy, Matplotlib), and building extension modules in Fortran, C/C++, and Cython.
- Experienced in preparing publication quality documents with LaTeX, as well as some experience in formatting with Markdown and HTML/CSS.
- Experienced with a variety of general purpose tools such as Bash, Git, Microsoft Office. Comfortable with a variety of Linux distributions, OS X, and Windows operating systems.

PUBLICATIONS

- Hill, M.J., Zakamska N.L., 2014, MNRAS (arXiv:1311.0311), "Warm molecular hydrogen in outflows from Ultraluminous Infrared Galaxies"

PRESENTATIONS

- Provost's Undergraduate Research Awards Poster Session May 2013
- Penn State Neighborhood Workshop in Astrophysics and Cosmology 10-minute Talk April 2013
- Johns Hopkins University Undgraduate Research Symposium 10-minute Talk April 2013
- American Astronomical Society Winter Meeting Poster Session January 2013

HONORS AND AWARDS

Provost's Undergraduate Research Award - funded undergraduate research, Spring 2012
Dean's Undergraduate Research Award - funded undergraduate research, Spring 2012
Bloomberg Scholarship - awarded for academic excellence, 2011
James L. Turrentine Scholarship - awarded for academic excellence, 2010
The John S. Connor Award - for Academic Excellence, 2010
The Doctor William L. Knell Award - for excellence in Science, 2010
The Brother Placidus Evans, CFX Award - for excellence in English, 2010
AP National Scholar, 2010

RESEARCH INTERESTS

Extragalactic Astronomy, Galaxy Evolution, Active Galactic Nuclei, Galaxy Mergers