Zachary Stone

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EDUCATION

Stony Brook University **08/2017 – 05/2021**

Bachelor of Science

Majors: Astronomy/Planetary Science, Physics

Minor: Mathematics

Cumulative GPA: 3.92

Related Coursework: Electricity and Magnetism I/II, Quantum Physics I/II, Stars and Radiation, Cosmology, Observational Techniques in Astronomy, Exoplanets, Thermodynamics/Statistical Mechanics, Classical Mechanics, Galaxies and the ISM, Linear Algebra, Electronics Lab, Applied Real Analysis, Applied Complex Analysis, Calculus I-IV, Waves and Optics, Linear Algebra

RELATED EXPERIENCE

Undergraduate Lab Courses

Practiced in operating and troubleshooting CCD/CMOS-based telescopes

Obtained data using the telescope at the Mt. Stony Brook Observatory

Experienced with handling and constructing electronic circuitry (transistors, op-amps, diodes)

Seasoned in operating computer software used to control telescopes and CCD cameras

Undergraduate Research **11/2019 - Present**

Faculty Member: Kenneth Lanzetta

Aided in the creation of a rapid-cadence, six telescope array, the distribution and analysis of its data, and the improvement of its accessibility to the scientific community

Retrieved, analyzed, and displayed weather information from the location of the telescope using SQL and Python

Aggregated images and incorporated them into a single video, showing one night of observations using Python and FFMPEG

Corroborated with the research group in the programming of a website, allowing the public to propose observations on the telescope, view the sky through the telescope, as well as display weather data from the location of the telescope using Python, HTML, and Java

Acquired information of objects in the sky, given a certain central coordinate on the sky, and created a simulated image through the telescope, using its noise characteristics via SQL and Python

Fitted for the PSF of a certain area of the sky, depending on the telescope used and the sky conditions on the night of observation, using Monte-Carlo simulations and chi-square fitting

Analyzed FITS images observed from the location of the telescope in order to measure the signal-to-noise ratio of an image as well as compute the uncertainty in the fitted PSF

Collaborated in the construction of the computer system to be connected to the telescope

AWARDS

Stony Brook University Presidential Scholarship	08/2017 - Present
Stony Brook University Dean's List	08/2017 - Present
NYS STEM Incentive Program Scholarship	08/2017 - Present

MEMBERSHIPS

National Physics Honor Society (Sigma Pi Sigma)

Stony Brook University Scholars

Key Club International

SKILLS & ABILITIES

Computational Skills

Accomplished in Python, TeX, Mathematica, C++, Fortran, HTML, Java, SQL, XML, CSS

Versed in sophisticated data analysis using packages in Python and Mathematica, as well as displaying results in TeX format

Experienced in performing maximum-likelihood data analysis using Monte-Carlo simulations and chi-square fitting, with simulated and actual data

Experienced in data analysis on data from various astronomical databases and missions (MAST, TESS, Gaia, HST)

Knowledgeable in using REBOUND

Proficient in utilizing Windows, Linux, and MacOS

Communication

Discussed and presented research findings to weekly research committee meetings

Presented research to the community at the annual URECA symposium at Stony Brook University

COMMUNITY & UNIVERSITY SERVICE

Active member of the Stony Brook Astronomy Club and Society of Physics Students

Active member of the Stony Brook Investment Club

Organized events, fundraisers, and budgets for Mendelsohn Quad Council

Engaged in multiple community service events for University Scholars, including the implementation of a community dialogue about immigration and assisting in fundraising for the Toys for Tots charity

LANGUAGES

English – native language

Spanish – competent in reading, writing, and speaking