Keyi Ding

3400 N Charles Street
Baltimore, Maryland 21218

(667)-910-4739
kding5@jhu.edu

Education

Johns Hopkins University, Baltimore, Maryland 2024

  B.S., Physics and Computer Science, minor in Applied Mathematics and Statistics and Pure Mathematics
  Cumulative GPA: 3.91/4
  Activities: AstroJays Rocketry Club, Society of Physics Students

Publication

1. Schmidt, S. P., Schlaufman, K. C., **Ding, K.**, et al. 2023, "Verification of Gaia DR3 Single-lined Spectroscopic Binary Solutions With Three Transiting Low-mass Secondaries", *AAS Journals*, submitted

Professional Appointments

Undergraduate Research Assistant 2022 - Present

Department of Physics & Astronomy, Johns Hopkins University / Subaru Telescope Prime Focus Spectrograph (PFS) Galactic Archaeology Group Baltimore, MD.

Advised by Prof. Rosemary F.G. Wyse, Carrie Filion

- Develop a photometry-based machine learning pipeline to distinguish target M-giant stars in galaxy M31 from foreground Milky Way M-dwarf stars, for the target selection of the Subaru Telescope Prime Focus Spectrograph M31 survey.
- Use theoretical models of galaxies to simulate observational data of the Milky Way galaxy in M31 fields.
- Model the HSC narrow-band NB515 filter's sensitivity to stellar parameters and abundances with synthetic photometry from the MaStar Spectra Library.

Undergraduate Astrophysics Researcher 2021 - Present

Department of Physics & Astronomy, Johns Hopkins University Baltimore, MD.

Advised by Prof. Kevin C. Schlaufman, Dr. David Nataf, Dr. Henrique Reggiani

- Implement Python script to fit multi-band photometry, astrometry and dustmap to theoretical isochrones on a large scale (10k+ stars), determining stellar parameters through a Bayesian inference approach.
- Collect and clean photometric data from multiple astronomy databases with ADQL query language.
- Develop parallel computing tool to improve computation efficiency on advanced computing server.
- Examine, visualize, and optimize inference results in comparison with spectroscopic surveys.

Instrument Support Intern 2022 - 2023

Space Telescope Science Institute Baltimore, MD.

Advised by Dr. Louis-Gregory Strolger, Dr. Amy Jones, Sean Lockwood

- Develop tutorial Jupyter Notebooks for the Hubble Space Telescope Imaging Spectrograph (STIS) data user community.
- Implement Python scripts to answer help desk questions and for quick calculations.
- Standardize coding format of sample notebooks and edited documentations for publication.

Honors and Awards

Provost's Undergraduate Research Award (with a $6000 research grant)	2023
IDIES Summer Student Research Fellowship (with a $6000 research grant)	2022
HopHacks, Second Place	2022
Dean's List (GPA above 3.5/4 for 6/6 semesters)	2020 - 2022

Conferences and Talks

Rubin Project and Community Workshop (PCW), LSST Cooperation   August 2023
> *Accurate and Precise Photospheric Stellar Parameters from Rubin ugriz Photometry*

The Telescope and Instruments Performance Summary (TIPS), Space Telescope Science Institute   April 2023
> *Updates on the STIS Jupyter Notebooks Repository*

241st AAS Meeting, American Astronomical Society (AAS)   January 2023
> *STIS Jupyter Notebooks* (oral)

IDIES Annual Symposium, Institute for Data Intensive Engineering and Science (IDIES)   October 2022
> *Laying the Foundation for Large Scale Precision Stellar Parameter Inference in the Field of Exoplanets*

CARE Undergraduate Research Talks, JHU Center for Astrophysics Research Experience   August 2022
> *Determining Stellar Parameters of Stars in Open Clusters using Isochrones Inference*

Teaching Experience

AS.171.107 General Physics for Physical Science Majors (AL) I   Fall 2023
> Learning Assistant, with Prof. Rosemary Wyse

AS.171.108 General Physics for Physical Science Majors (AL) II   Spring 2023
> Learning Assistant, with Prof. Petar Maksimovic

AS.171.101 General Physics: Physical Science Major I   Fall 2022
> Learning Assistant, with Prof. Nadia Zakamska

Reference

Rosemary F.G. Wyse
> Alumni Centennial Professor, Department of Physics and Astronomy, Johns Hopkins University
> wyse@jhu.edu

Kevin C. Schlaufman
> Assistant Professor, Department of Physics and Astronomy, Johns Hopkins University

kschlaufman@jhu.edu

Louis-Gregory Strolger

Deputy Head, Instruments Division, Space Telescope Science Institute

strolger@stsci.edu