Weixiang Yu

32 S 32nd St, Philadelphia, PA 19104
(215) 895-2732 ⋄ wy73@drexel.edu ⋄ wx-yu.com

Education

Drexel University 2023 (expected)
Ph.D., Physics
Advisor: Prof. Gordon T. Richards

University of Illinois at Urbana-Champaign 2015
B.S., Physics

Research Interests

- AGN variability, accretion disk physics of super-massive black holes
- AGN/quasar selection in large astronomical surveys
- Astronomical Big Data, machine learning applications in astronomy

Research Grants

- NSF ACCESS (**PI**), 200k CPU hours 2023-2024
  Probing AGN Accretion Disk Physics via Stochastic Modeling of UV/Optical Light Curves
- LSSTC (**Co-I**; PI: Richards), $ 12,500 2020-2021
  2020 LSSTC Enabling Science Proposal: AGN Data Challenge
- NSF XSEDE (**Co-I**; PI: Richards; **Yu composed proposal**), 500k CPU hours 2019-2020
  Investigating the Effects of Non-Uniform Cadences on AGN selection in LSST

Selected Publications

Refereed:

- Savić, V. D., Jankov, I., **Yu, W.**, et al. 2022, "The LSST AGN Data Challenge: Selection methods" (submitted)
- **Yu, W.**, Richards, G.T., Vogeley, M.S., Moreno, J., Graham, J.M. 2022, "Examining AGN UV/optical Variability Beyond the Simple Damped Random Walk", *The Astrophysical Journal*, 936, 132
- Moreno, J., Vogeley, M.S., Richards, G.T., **Yu, W.** 2019, "Stochastic Modeling Handbook for Optical AGN Variability", *Publications of the Astronomical Society of the Pacific*, 131, 1000
- **Yu, W.**, Carrasco Kind, M., Brunner, R.J. 2017, "Vizic: A Jupyter-based Interactive Visualization Tool for Astronomical Catalogs", *Astronomy and Computing*, 20, 128-139

Non-refereed (including white papers):

- Breivik, K., Connolly, A. J., Ford, K. E. S., et al. **(incl. Yu, W.)** 2022, "From Data to Software to Science with the Rubin Observatory LSST", arXiv:2208.02781
- **Yu W.**, Richards G. T., 2021, "LSST AGN SC Cadence Note: Non-Parametric Structure Function Metric", PDF, LSST Observing Cadence Optimization Overview
- **Yu W.**, Richards G. T., 2021, "LSST AGN SC Cadence Note: Differential Chromatic Refraction", PDF

- **Yu W.**, Richards G. T., Yoachim P., Peters C., 2020, "Differential Chromatic Refraction in the Context of the Legacy Survey of Space and Time", RNAAS, 4, 252

Software & Data:

- **Yu, W.**, & Richards, G. T. 2022, "EzTao: Easier CARMA Modeling", ascl:2201.001
- **Yu, W.**, Richards, G., Buat, V., et al. 2022, "LSSTC AGN Data Challenge 2021", zenodo.6878414

Selected Professional Talks

- The Restless Nature of AGN: 10 Years Later, Naples, Italy, June 2023 (**invited**)
- AAS Meeting #241, **AGN II**, Seattle, WA, January 2023 (*dissertation talk*)
- iid2022: Statistical Methods for Event Data, Guntersville, AL, November 2022
- LSST AGN SC Summer Meeting, Virtual, July 2022 (**invited**)
- AAS Meeting #236, **MiM**:Supermassive Black Hole Studies, Virtual, June 2020

Awards & Honors

Drexel University Teck-Kah Lim Graduate Student Travel Award	2022, 2023
LSSTC Graduate Student Travel Award - *Project Community Workshop*	2022
LSSTC Workshop Travel Award - *Data Visualization and Exploration in the LSST Era*	2018
R.L. Edward Scholarship - Miami University	2012

Teaching & Mentoring Experience

Graduate Teaching Assistant:

PHYS 231: Introductory Astrophysics
PHYS 232: Observational Astrophysics
PHYS 532: Cosmology
PHYS 540: Big Data Physics

Students Mentored:

Matt Callaway – undergraduate student at Drexel University

Professional Skills

- Programming Language: Python, C/C++, Matlab, Java, JavaScript/HTML/CSS
- Data Analysis: SciPy, NumPy, Pandas, DS9
- Machine Learning: TensorFlow, JAX, scikit-learn
- Database: SQL, MongoDB
- Cloud Computing Platform: XSEDE-Jetstream, AWS, Google Cloud Platform
- Other: Docker, LaTeX, Shell, Web Development

Professional Memberships

- LSST AGN Science Collaboration (Full Member) 2020 - Present
- LSST Dark Energy Science Collaboration (Associate Member) 2019 - Present