

Weixiang Yu

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Education

Drexel University Ph.D., Physics Advisor: Prof. Gordon T. Richards	2017 - 2023 (expected)
University of Illinois at Urbana-Champaign B.S., Physics	2013 - 2015
Miami University Major in Physics	2011 - 2013

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

- LSSTC (Co-I; PI: Richards), \$ 12,500 2020-2021
2020 LSSTC Enabling Science Proposal: AGN Data Challenge
- 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

- AAS Meeting #241, 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 #240, Pasadena, CA, June 2022
- AAS Meeting #236, **MiM**: Supermassive Black Hole Studies, Virtual, June 2020

Awards & Honors

LSSTC Graduate Student Travel Award - <i>Project Community Workshop</i>	2022
Drexel University Teck-Kah Lim Graduate Student Travel Award	2022
LSSTC Workshop Travel Award - <i>From Data to Software to Science</i>	2022
LSSTC Workshop Travel Award - <i>Data Visualization and Exploration in the LSST Era</i>	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