

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

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|---|-----------|
| • LSSTC (Co-I; PI: Richards), \$ 12,500
<i>2020 LSSTC Enabling Science Proposal: AGN Data Challenge</i> | 2020-2021 |
| • XSEDE (Co-I; PI: Richards), 500k CPU hours
<i>Investigating the Effects of Non-Uniform Cadences on AGN selection in LSST</i> | 2019-2020 |

Publications

Refereed:

- **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* (accepted)
- 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):

- **Yu W.**, Richards G. T., 2021, “LSST AGN SC Cadence Note: Differential Chromatic Refraction”, [PDF](#)
- **Yu W.**, Richards G. T., 2021, “LSST AGN SC Cadence Note: Non-Parametric Structure Function Metric”, [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
- Richards G. T., **Yu W.**, Brandt, W. N., et al. 2018, “LSST Cadence White Paper: Testing of LSST AGN Selection Using Rolling Cadences”, [PDF](#)

Conference Presentations

- “Building A Comprehensive Dataset in Preparation for LSST AGN Science: AGN Data Challenge and the Next”, LSST AGN SC Meeting, July 2022 (**invited talk**)
- “Examining AGN UV/optical Variability Beyond the Simple Damped Random Walk”, AAS Meeting #240, June 2022 (contributed talk)
- “AGN Data Challenge: A Preview of the LSST Data Releases in the Context of AGN Science”, LSST AGN SC Meeting, July 2021 (contributed talk)
- “Direct Modeling of AGN Variability Using Continuous-Time ARMA Processes”, **MiM:Supermassive Black Hole Studies**, AAS Meeting #236, June 2020 (contributed talk)
- “Vizic: A Jupyter-based Interactive Visualization Tool for Astronomical Catalogs”, SciPy 2017 Conference, July 2017 (**invited talk**)

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

Courses Taught:

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

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| • LSST AGN Science Collaboration (Full Member) | 2020 - Present |
| • LSST Dark Energy Science Collaboration (Associate Member) | 2019 - Present |
| • American Astronomical Society | 2017 - Present |