

Rebecca Kyer

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Education

MICHIGAN STATE UNIVERSITY

Ph.D. Candidate; thesis advisor: Jay Strader

M.S., Astrophysics and Astronomy

East Lansing, MI

Anticipated May 2027

Aug 2022 – Nov 2024

UNIVERSITY OF WASHINGTON

B.S., Physics and Astronomy

Astronomy Departmental Honors

Seattle, WA

Jun 2021

Past Research Appointments

GREEN BANK OBSERVATORY

Graduate Student in Residence

Green Bank, WV

May 2026

Publications

Refereed.....

7. “The First Census of Optical Emission Lines in the Spectra of Disk-State Transitional Millisecond Pulsars” **Kyer, R.**, Strader, J., Craig, P. et al. in prep for submission to MNRAS
6. “Three New Likely Spider Millisecond Pulsar Binaries and Optical Kinematic Tracers of Intrabinary Shocks” Strader, J., **Kyer, R.**, Chomiuk, L. et al. submitted to MNRAS
5. “Investigating Four New Candidate Redback Pulsars Discovered in the Image Plane.” Petrou, F., Hurley-Walker, N., McSweeney, S. et al. (incl. **Kyer, R.**) 2025, PASA, 42, 139
4. “Multiwavelength Evidence for Two New Candidate Transitional Millisecond Pulsars in the Subluminous Disk State: 4FGL J0639.1–8009 and 4FGL J1824.2+1231.” **Kyer, R.**, Roy, S., Strader, J. et al. 2025, ApJ, 983, 112
3. “A Survey for Radio Emission from White Dwarfs in the VLA Sky Survey.” Pelisoli, I., Chomiuk, L., Strader, J. et al. (incl. **Kyer, R.**) 2024, MNRAS, 531, 1805
2. “Monitoring the X-ray Variability of Bright X-ray Sources in M33.” **Kyer, R.**, Albrecht, S., Williams, B. F. et al. 2024, ApJ, 961, 168
1. “Revisiting the Classics: On the Evolutionary Origin of the ‘Fe II’ and ‘He/N’ Spectral Classes of Novae.” Aydi, E., Chomiuk, L., Strader, J. et al. (incl. **Kyer, R.**) 2024, MNRAS, 527, 9303

Non-refereed.....

“The Advanced X-ray Imaging Satellite Community Science Book.” Koss, M., Aftab, N., Allen, S. et al (incl. **Kyer, R.**) 2025, arXiv:2511.00253

“Unlocking the Rapid X-ray Variability of Transitional Millisecond Pulsars.” **Kyer, R.**, Ng, M., Coti Zelati, F. et al.

“Catching Spiders with AXIS.” Coti Zelati, F., An, H., Baglio, M. C. et al. (incl. **Kyer, R.**)
Transient Name Server Classification Report No. 2024-2571, classification of SN 2024pxg as a

SN II. Bostroem, K. A., **Kyer, R.**, Strader, J. et al. 2024
 Classification reports in The Astronomer's Telegram (No. 16583, 16440, 16294, 17878)

Telescope Time

Principal Investigator	
<i>Green Bank Telescope</i> GBT26A-226, 15 hr awarded (Priority B)/4.5 hr observed	2026A
<i>XMM-Newton</i> AO-25 ID 098076, 35 ksec awarded (Priority C), Scientific PI	2025
<i>Gemini-North</i> Fast Turnaround ID GN-2025B-FT-202, 0.38 hr	Aug 2025
<i>XMM-Newton</i> AO-24 ID 096163, 57 ksec awarded (Priority C), Scientific PI	2024
<i>Swift</i> Target of Opportunity ID 21032, 8.5 ksec	Aug 2024
<i>Swift</i> Target of Opportunity ID 20572, 3.8 ksec	June 2024
Co-Investigator/Observer	
<i>Green Bank Telescope</i> 2025B Legacy ID QS402, 15 hr	2025
200+ hours remote observing with the 4.1-m SOAR telescope	2023–present

Research Advising Experience for MSU Undergraduate Students

Jadyn Elster	May 2026–present
Analyzing long-term monitoring optical spectra of an evolved massive star with a hidden compact object companion. Jadyn is co-author of a manuscript in preparation.	
Andrew Harms, co-advised with Ryan Urquhart	May 2025–present
Combined archival X-ray and radio data to constrain the prevalence of radio/optical nebulae associated with ultraluminous X-ray sources. Made an independent discovery of a new nebula and analyzed a follow-up optical spectrum I obtained with the Gemini Fast-Turnaround program. Andrew is preparing a manuscript for first-author publication.	
Subhroja Roy (now U. Notre Dame Nuclear Astrophysics Ph.D. student)	May 2024–May 2025
Combine archival γ -ray, X-ray and optical data to identify several potential spider MSPs and analyzed follow-up optical spectroscopy. Completed astronomy senior thesis presenting two new candidate binary MSPs, one of which has been published with Subhroja as second author and the other is to be included in an upcoming publication.	

Research Presentations

Rise Time at Purdue University poster (West Lafayette, IN)	Aug 2026
University of Tasmania Physics & Astronomy Journal Club talk (Hobart, Australia)	Aug 2026
HEAD HMXBs and Pulsar Phenomena talk (Pasadena, CA)	June 2026
AAS 248 Neutron Stars and Pulsar Physics dissertation talk (Pasadena, CA)	June 2026
AAS 248 Science of Stellar Remnants press conference (Pasadena, CA)	June 2026
Green Bank Observatory (GBO) Science Lunch talk (Green Bank, WV)	May 2026
GBO/NRAO Radio Astronomy Bootcamp science talk (Green Bank, WV)	May 2026
MSU Astronomy Seminar talk (East Lansing, MI)	Jan 2026

AAS 247 AXIS Special Session invited talk (Phoenix, AZ)	<i>Jan 2026</i>
AAS 247 Accretion and Evolution in X-ray Binary Systems talk (Phoenix, AZ)	<i>Jan 2026</i>
Compact Objects in Michigan and Ontario (COMO) talk (Flint, MI)	<i>Sept 2025</i>
Vasto Accretion Meeting talk (Vasto, Italy)	<i>June 2025</i>
AXIS Community Science Meeting talk (Annapolis, MD)	<i>May 2025</i>
Int'l Symposium of Science with the SOAR Telescope talk (East Lansing, MI)	<i>May 2025</i>
ESAC XMM-Newton Science Workshop poster (Madrid, Spain)	<i>June 2024</i>
COMO talk (Dearborn, MI)	<i>May 2024</i>

Outreach Activities

Letters to a Pre-Scientist Penpal	<i>2 penpals</i>
Astronomy on Tap Speaker (Lansing, MI)	<i>3 events</i>
Campus Observatory Public Night Volunteer (East Lansing, MI)	<i>Aug 2022–present</i>

Professional Service

COMO Conference Local Organizing Committee Chair	<i>2026</i>
ESA NewAthena Science Community Working Group Member	<i>Feb 2026–present</i>
AAS 247 Chambliss Poster Competition Judge	<i>Jan 2026</i>
NASA AXIS Probe Compact Objects Working Group Member	<i>Dec 2024–Mar 2026</i>
P-A Research Experiences for Drew Scholars Junior Director	<i>Apr 2024–present</i>
Faculty Search Committee Graduate Student Representative	<i>Feb 2024</i>
Stellar Mentorship Program Coordinator and Peer Mentor	<i>Aug 2023–Aug 2026</i>
Astro Coffee Journal Club Organizer	<i>Jun 2023–Aug 2026</i>

Teaching Experience

Teaching Assistant AST 208: Planets and Telescopes (30 students; MSU)	<i>Jan–May 2024</i>
Teaching Assistant ISP 205L: Visions of the Universe (400 students; MSU)	<i>Aug 2022–Dec 2023</i>
Instructor GEN ST 199: Astronomy First-year Interest Group (30 students; UW)	<i>Sep–Dec 2020</i>

Awards and Honors

Honorable Mention, NSF Graduate Research Fellowship	<i>Apr 2024</i>
Graduate Teaching Assistant Award, MSU Physics and Astronomy	<i>Apr 2024, Apr 2023</i>
Mervyn Mork Excellence in Teaching Award, MSU College of Natural Science	<i>Nov 2023</i>
Baer Prize for Excellence in Research, Academics and Outreach, UW Astronomy	<i>May 2021</i>