

# Kyle McGregor

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## EDUCATION

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### Wesleyan University

*Bachelor of Arts*

- Double Major in Astronomy and Physics, graduated with High Honors in Astronomy
- GPA: 3.77

Middletown, CT

May 2024

### McGill University

*Master of Science*

- Co-advised by Vicky Kaspi and Jason Hessels

Montreal, QC

Expected May 2026

## EXPERIENCE

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### Graduate Student

*McGill University*

- Co-advised by Dr. Vicky Kaspi and Dr. Jason Hessels
- Member of the CHIME/FRB Collaboration

August 2024 - Present

Montreal, QC

### NSF Research Experiences for Undergraduates (REU) Student

*West Virginia University*

- Worked under mentor Dr. Duncan Lorimer on population synthesis of repeating Fast Radio Bursts (FRBs). Developed a publication in the *Astrophysical Journal* (McGregor and Lorimer 2024).
- Assisted in weekly public outreach program at WVU Observatory and Planetarium, including running a planetarium show at the end of the program.

May 2023 - August 2023

Morgantown, WV

### Undergraduate Researcher

*Wesleyan University Department of Astronomy and Van Vleck Observatory*

- Member of Prof. Seth Redfield's Exoplanets and ISM research group, focusing on modeling populations of exoplanet systems containing multiple planets near mean-motion resonance.
- Completed undergraduate thesis project—*A New Metric Revealing an Overabundance of Multiple Planet Systems Near Mean-Motion Resonance*

February 2021 – May 2024

Middletown, CT

### Principal Observer, VVO 24-Inch Automated Telescope

*Wesleyan University Department of Astronomy and Van Vleck Observatory*

- Leading undergraduate of Wesleyan's 24-inch Planewave CDK reflector commissioning team. Leading student worker for research, outreach, and teaching work with the telescope. My work directly brought about full automation of the instrument in Summer 2022.
- Implemented observing campaigns for transiting exoplanets, occultations of Trans-Neptunian objects, exoplanet host stars, optical transient monitoring.
- Addressed technical problems associated with implementing a remote observatory system, led weekly commissioning meetings with students and faculty, ran regular training sessions for new system.

April 2021 – May 2024

Middletown, CT

## REFEREED PUBLICATIONS

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*Modeling Current and Future High-Cadence Surveys of Repeating FRBs*

- **K. McGregor**, D. R. Lorimer, *Astrophysical Journal*, 961, 10, (arXiv:2309.11522)

*A study of centaur (54598) Bienor from multiple stellar occultations and rotational light curves*

- J. L. Rivos, E. Fernández-Valenzuela, J. L. Ortiz, F. L. Rommel, B. Sicardy, [...], **K. McGregor**, [...], *Astronomy and Astrophysics*, 689, A82 (arXiv:2405.17235)

*The Two Rings of (50000) Quaoar*

- C. L. Pereira, B. Sicardy, B. E. Morgado, F. Braga-Ribas, E. Fernández-Valenzuela, [...], **K. McGregor**, [...], *Astronomy and Astrophysics*, 673, L4 (arXiv:2304.09237)

## CONFERENCE CONTRIBUTIONS

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- 243rd Meeting of the American Astronomical Society** January 2024
- *Predictions for Current and Future High-Cadence Observations of the Repeating Fast Radio Burst Population* (iposter)
- 2023 WVU Summer Undergraduate Research Symposium** July 2023
- *Simulating the CHIME/FRB Repeating Fast Radio Burst Population* (poster)
- 2022 KNAC Undergraduate Student Research Symposium** October 2022
- *Considering Resonant Chains of Exoplanets by their Offsets from Pure Commensurability Chains* (talk)
- 2022 Wesleyan Summer Research Poster Session** July 2022
- *Commensurability Offsets as a Tool for Comparative Characterization of Resonant Exoplanet Chains* (poster)
- 2022 Northeast Star and Planet Formation Meeting** July 2022
- *Commensurability Offsets as a Tool for Comparative Characterization of Resonant Exoplanet Chains* (talk)
- 2021 KNAC Undergraduate Student Research Symposium** October 2021
- *Building a Predictive Model for the Detection of Possible Outer Planets in Known 2-body Resonant Systems* (talk)
- 2021 Wesleyan Summer Research Poster Session** July 2021
- *Building a Predictive Model for the Detection of Possible Outer Planets in Known 2-body Resonant Systems* (virtual poster)

## OUTREACH WORK

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- Judge and Mentor, 2024 McGill Physics Hackathon** November 2024  
*McGill University Department of Physics* Montreal, QC
- Weekly rain-or-shine public outreach program including a half-hour public talk and telescope observing or astronomy activity.
- Volunteer at WVU Planetarium and Observatory** May 2023 – July 2023  
*West Virginia University* Morgantown, WV
- Helped organize and lead free weekly planetarium shows for the greater Morgantown community. Mentored by WVU graduate students to learn planetarium software and presentation skills.
  - Delivered an hour-long sold-out public show at the end of the REU program.
- Space/Kids Nights at the Van Vleck Observatory** September 2023 - May 2024  
*Wesleyan University Department of Astronomy and Van Vleck Observatory* Middletown, CT
- Weekly rain-or-shine public outreach program including a half-hour public talk and telescope observing or astronomy activity.
- Public Observing at the Van Vleck Observatory** September 2021 - September 2023  
*Wesleyan University Department of Astronomy and Van Vleck Observatory* Middletown, CT
- Organized and led weekly hour-long telescope viewing sessions for the local Wesleyan community. Operated in compliance with ongoing COVID-19 restrictions.
  - One of three student co-leaders for more than 25 weekly events over the course of my Sophomore and Junior year.