

Drew Weisserman

Early-Career Astronomer

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Education

- 2023 — **MSc in Physics and Astronomy**, *McMaster University*, Hamilton, ON, CA
Present GPA: ~ 4.00 (4.0 scale)
- 2019–2023 **BSc in Interdisciplinary Astronomy (with Highest Honors), Data Science, Interdisciplinary Physics**, *University of Michigan*, Ann Arbor, MI
GPA: $3.73/4.00$ (4.0 scale)

Research Experience

- January 2022 **Undergraduate Researcher**, *University of Michigan*, Ann Arbor, MI
– Present Worked under mentorship of Dr. John Monnier to analyze photometry of images from the Rapid Eye Mount (REM) telescope and obtain magnitude estimates for variable young stellar objects (YSOs). Developed pipeline to perform photometry on saturated images as well as correct astrometry in FITS files in the process.
- April 2021 – **Undergraduate Researcher**, *University of Michigan*, Ann Arbor, MI
May 2022 Worked under mentorship of Dr. Sally Oey to estimate orbital parameters of pairs of eclipsing binary Oe/Be stars in the Small Magellanic Cloud. Used photometric data from the TESS satellite to survey and identify eclipsing binary candidates to better understand binary supermassive star formation pathways.
- September 2019 – **Undergraduate Researcher**, *University of Michigan*, Ann Arbor, MI
November 2022 Worked under mentorship of Dr. Juliette Becker to analyze Kepler-80 planetary system, a system of six tightly packed inner planets in resonance. Analyzed the effect of a newly discovered planet on the long-term stability of the star system to understand more about how tightly-packed planetary systems form, and published a publication, *Kepler-80 revisited: assessing the participation of a newly discovered planet in the resonant chain*, summarizing results of project.
In addition, contributed as a coauthor to published paper *HD 219134 revisited: planet d transit upper limit and planet f transit non-detection with ASTERIA and TESS*. Helped respond to referee questions by conducting a study of transit timing variations (TTVs) and evaluating the range of transit times of two planets in the HD 219134 planetary system using first-order analytic formulae to confirm nondetection of the planets.
- January 2016 **Early-Career Researcher**, *California Institute of Technology*, Pasadena, CA
– January 2017 Worked on a team that analyzed data in the X-ray, optical, and IR spectrums in order to identify young stellar objects (YSOs) in the nebula Cepheus OB3. Studied and developed over 27,000 spectral energy distributions and color-magnitude diagrams; identified 246 YSOs in order to learn more about the star formation in the region.

Publications

Drew Weisserman, Juliette Becker, and Andrew Vanderburg. Kepler-80 revisited: Assessing the participation of a newly discovered planet in the resonant chain. *The Astronomical Journal*, 165(3):89, Feb 2023.

Sara Seager and Mary Knapp et al., including **Drew Weisserman**. HD 219134 revisited: Planet d transit upper limit and planet f transit nondetection with ASTERIA and TESS. *The Astronomical Journal*, 161(3):117, Feb 2021.

Poster Presentations and Colloquia

- May 2023 **54th meeting of the Division of Dynamical Astronomy**, East Lansing, MI, Poster
"Kepler-80 Revisited: Assessing the Participation of a Newly Discovered Planet in the Resonant Chain"

- April 2023 **Michigan Astronomy Undergraduate Research Symposium**, Ann Arbor, MI, Poster
"Visible and Near-Infrared Monitoring of Variable Young Stars"
- August 2022 **7th Emerging Researchers in Exoplanet Science Conference**, State College, PA, Talk
"Kepler-80 Revisited: How a Newly Discovered Planet Changes the Dynamical Character of the System"
- April 2022 **Michigan Astronomy Undergraduate Research Symposium**, Ann Arbor, MI, Poster
"Massive Photometric Variable Stars in the Small Magellanic Cloud"
- November 2021 **Great Lakes Exoplanet Area Meeting**, Ann Arbor, MI, Talk
"Kepler-80 Revisited: How a Newly Discovered Planet Changes the Dynamical Character of the System"
- May 2021 **52nd meeting of the Division of Dynamical Astronomy**, Virtual, Talk
"A Dynamical Analysis of the Kepler-80 System of Six Transiting Planets"
- April 2020 **Undergraduate Research Opportunities Program symposium**, Virtual, Poster
"A Dynamical Analysis of the Kepler-80 System of Six Transiting Planets"
- January 2017 **229th AAS Meeting**, Grapevine, TX, Poster
"Finding High Quality Young Star Candidates in Ceph C Using X-ray, Optical and IR Data"

Grants, Scholarships, and Fellowships

- April 2023 **McMaster University Entrance Scholarship**, \$2,000 CAD
- April 2023 **McMaster University Graduate Scholarship**, \$5,000 CAD

Honors and Awards

- April 2023 **Astronomy Education & Community Outreach Award**, *University of Michigan, Department of Astronomy*, \$250 USD
For significant educational achievement and major contributions to the public awareness and education of all things astronomy
- April 2023 **Astronomy Department Graduation Commencement Speech**, *University of Michigan, Department of Astronomy*
Invited to give a speech representing the graduating class at the department's graduation commencement
- 2019-2023 **7x University Honors Designation**, *University of Michigan*
For students who earned a 3.5 grade point average or higher during a term

Teaching and Outreach Experience

- June 2023 – Present **Course Mentor**, *Virtual*
Served as a course mentor for Intro2Astro, a summer course aimed at teaching aspiring high school and undergraduate students the basic skills needed for formal entry into a research project. Gave lectures and wrote demos and assignments aimed at teaching these students the basics of model fitting using `emcee`, and assisted students on all course topics through office hours and virtual chat servers.
- September 2021 – April 2023 **Telescope Operator**, *University of Michigan, Ann Arbor, MI*
Became trained on the Angell Hall Observatory at the University of Michigan, and became familiar with the operation and use of its 0.4m Cassegrain telescope. Ran observatory for introductory astronomy laboratory classes at University of Michigan every week, helping teach students about structure of planets and stars. Additionally ran observatory for many open houses for the University of Michigan's Student Astronomical Society, as well as other public outreach events.

January 2020 **Study Group Facilitator**, *University of Michigan*, Ann Arbor, MI
– April 2023 Worked at the University of Michigan’s Science Learning Center to run study groups for introductory physics courses.
From May 2021 onwards, additionally worked as Content Manager for these courses, developing and assigning worksheets and practice exams for students to use.
From August 2022 onwards, became Course Leader, leading and training all study group facilitators for introductory physics courses, as well as developing workshops to assist new facilitators.

Skills

Programming	Python, R	<i>Experienced</i>
Programming	C++	<i>Intermediate</i>
	SQL	<i>Beginner</i>
Software	Conda, Excel, emcee	
Language	English – First Language, Hebrew – Conversational	
Other	Adaptability, Conflict Management, Science Communication, Telescope Operation	