

Joshua V. Shields

Department of Physics and Astronomy
3246 Biomedical and Physical Sciences
567 Wilson Rd, East Lansing, MI 48824
(202)-812-0638

Orcid: [0000-0002-1560-5286](https://orcid.org/0000-0002-1560-5286)
Email: shield90@msu.edu
Site: jvshields.github.io
Github: [@jvshields](https://github.com/jvshields)

Education

PhD Student — [Michigan State University](https://www.msu.edu), East Lansing, MI 2019 - Exp. 2024
Degree Seeking - Astronomy and Astrophysics
Tentative thesis title - Unraveling stellar binarity through surviving companion searches
Conducting systematic supernova remnant stellar populations to identify surviving companions of the exploded stars. Work involves astrometry and proper motion extraction, physical modeling of stellar observations, and extensive analysis of large astronomical survey datasets.

Additional Coursework — [The Ohio State University](https://www.ohio-state.edu), Columbus, OH 2017
Graduate Level Classes - Astronomy

Bachelors of Arts — [Vassar College](https://www.vassar.edu), Poughkeepsie, NY 2012-2016
Triple Major - Physics, Astronomy, and Russian Studies

Research Interests

Thermonuclear supernovae, surviving supernova companions searches, big data, archival data synthesis, core-collapse supernovae, time-domain surveys, variable stars

Professional Talks

2nd Meeting on progress in Astrophysics with Type-Ia Supernovae - Royal Astronomical Society
Contributed Talk Dec 2022

Supernova Remnants and their Progenitors - Center for Astrophysics, Harvard and Smithsonian
Contributed Talk Aug 2022

Astronomy On Tap - Public Outreach Event Speaker Sept 2022

Academic Leadership and Service

Michigan State Journal Club — Founder 2020-Present

[Stellar Mentorship Program](#) — Graduate Student Mentor 2021-Present

Open Public Observing Nights - Vassar Class of 1951 Observatory — Volunteer 2015-2016

Teaching

Outstanding Teaching Assistant Award 2020

Graduate Teaching Assistant - Introductory Astronomy Lab Class 2019-2021

Mentoring

Undergraduate Research Assistant - Sofia Biriouk - Cass A Stellar Population Investigation 2021 - Present

Undergraduate Research Assistant - Hayden Monk - Ia Remnant Population Visualization 2022 - Present

Summer REU - Morgan Sandler - Constructing a repository of all ADS publications 2020

Publications

Published(17 total, 2 first author)

1. *Searching for a Hypervelocity White Dwarf SN Ia Companion: A Proper-motion Survey of SN 1006*
Shields, J. V. et al. 2022, *ApJL*, 933, L31
2. *Survey of period variations of superhumps in SU UMa-type dwarf novae. X. The tenth year (2017)*
Kato, Taichi et al. 2020, *PASJ*, 72, 14K
3. *The ASAS-SN catalogue of variable stars - V. Variables in the Southern hemisphere*
Jayasinghe, T. et al. 2020, *MNRAS*, 491, 13J
4. *The ASAS-SN Catalog of Variable Stars IV: Periodic variables in the APOGEE survey*
Pawlak, Michal et al. 2019, *MNRAS*, 487, 5932P
5. *The ASAS-SN Catalog of Variable Stars III: Variables in the Southern TESS Continuous Viewing Zone*
Jayasinghe, T. et al. 2018, *MNRAS*, 485, 961J
6. *The ASAS-SN Bright Supernova Catalog - IV. 2017*
Holoien, T. W.-S., et al. 2019, *MNRAS*, 484, 1899H
7. *The ASAS-SN Catalog of Variable Stars II: Uniform Classification of 412,000 Known Variables*
Jayasinghe, T. et al. 2019, *MNRAS*, 486, 961J
8. *An All-Sky Search For R Coronae Borealis Stars in ASAS-SN*
Shields, J. V. et al. 2019, *MNRAS*, 483, 4470S
9. *K2 Observations of SN 2018oh Reveal a Two-Component Rising Light Curve for a Type Ia Supernova*
Dimitriadis, G. et al. 2019, *ApJ*, 870L, 1D
10. *Photometric and Spectroscopic Properties of Type Ia Supernova 2018oh with Early Excess Emission from the Kepler 2 Observations*
Li, W. et al. 2019, *ApJ*, 870, 12L
11. *Seeing Double: ASASSN-18bt Exhibits a Two-Component Rise in the Early-Time K2 Light Curve*
Shappee, B. J, et al. 2019, *ApJ*, 870, 13S
12. *ASASSN-18ey: The Rise of a New Black Hole X-Ray Binary*
Tucker, M. A. et al. 2018, *ApJ*, 867, L9
13. *The ASAS-SN catalogue of variable stars I: The Serendipitous Survey*
Jayasinghe, T. et al. 2018, *MNRAS*, 477, 3145
14. *ASASSN-18di: Discovery of a Powerful Flare on a Mid-M Dwarf*
Rodríguez, R. et al. 2018, *RNAAS*, 2b, 8
15. *The ASAS-SN bright supernova catalogue - III. 2016*
Holoien, T. W.-S. et al. 2017, *MNRAS*, 471, 4966
16. *Survey of period variations of superhumps in SU UMa-type dwarf novae. IX. The ninth year (2016-2017)*
Kato, Taichi et al. 2017, *PASP*, 69, 75K
17. *The All-Sky Automated Survey for Supernovae (ASAS-SN) Light Curve Server v1.0*
Kochanek, C. S. et al. 2017, *PASP*, 129, 104502

Circulars and Telegrams

Co-authored 330+ Astronomer's Telegrams and Transient Name Server reports
(12 First Author)

Computational Skills

Operating Systems - MacOS/OS X, UNIX/Linux, Windows
Computer Languages - Python, L^AT_EX, bash, SQL, R, html, Perl, Mathematica, Java
Software - git, emacs, VScode, topcat, DS9, IRAF, MESA

Advisors

Graduate Advisor — Michigan State University
Wolfgang Kerzendorf

Post-Baccalaureate Research Advisors — The Ohio State University
Krzysztof Stanek, Chris Kochanek