KATHRYN E. WEIL

Department of Physics and Astronomy
Purdue University, West Lafayette, IN 47907
keweil@purdue.edu

EDUCATION

PhD, Department of Physics and Astronomy, Dartmouth College — June 2020
B.S., Cum Laude, with Highest Honors in Physics, Brandeis University — May 2014

RESEARCH EXPERIENCE

Postdoctoral Research Associate, Purdue University — Sep. 2020–Present
Advisor: Dan Milisavljevic: Optical Analysis of Supernovae and Supernova Remnants

Research Assistant, Dartmouth College — 2014–2020
Thesis Advisor: Robert A. Fesen: Optical studies of young supernova remnants
Advisor: John R. Thorstensen: Spectroscopic and photometric studies of cataclysmic variables

Predoctoral Fellow, Center for Astrophysics | Harvard & Smithsonian — June 2019–Nov. 2019
Advisor: Daniel J. Patnaude: Optical and X-ray abundance studies of Cas A

Undergraduate Research Assistant, Brandeis University — 2011–2014
Advisor: David H. Roberts: Radio and optical studies of restarting-radio galaxies, AGN, & microquasars

REU Intern VLA, National Radio Astronomy Observatory — Summer 2012
Advisors: VLA Data Reduction Group: Developed a data reduction pipeline for VLA calibrators.

OBSERVING AND TECHNICAL EXPERIENCE

Telescope Experience

- **Magellan 6.5-m**, Baade, Las Campanas Observatory, Chile: 3 nights
  IMACS: optical imaging and spectroscopy
- **MMT 6.5-m**, Mt. Hopkins, AZ: 1.4 nights
  Binospec: optical spectra
- **Hiltner 2.4-m**, MDM Observatory, Kitt Peak, AZ: 14 Observing Runs, 3–11 nights each
  OSMOS: low dispersion spectra and imaging; Modspec: low dispersion spectra;
  Mk III: low dispersion spectra; Direct CCD Imaging
- **McGraw-Hill 1.3-m**, MDM Observatory: 11 Observing Runs, 2–6 nights each
  Modspec: low dispersion spectra; CCDS: medium resolution spectra; Direct CCD Imaging
- **1.9-m Telescope**, SAAO Observatory, Sutherland, South Africa: 7 nights
  SpUpNICO: optical spectra
- **1.0-m Telescope**, SAAO Observatory, Sutherland, South Africa: 7 nights
  SHOC: optical imaging

Technical Expertise

- Astronomical Data Processing Packages: Astropy, PYRAF
- Programming Languages: IDL, Latex, Mathematica, MATLAB, Python
- Computer Platforms: Mac OS, Microsoft Windows, Unix

TEACHING EXPERIENCE

Teaching Assistant, Dartmouth College — 2015–2020
- Thirteen courses total, including one term abroad where duties also included residential life supervisor.

Undergraduate Teaching Assistant, Brandeis University — Fall 2012, 2013 & Spring 2014

OUTREACH

Letters to a Pre-Scientist Fall 2018–Present
· Pen-pal scientist for an 8th grader to help teach them about science and science careers

Big Brother/Big Sister Mentorship Program, Dartmouth College Fall 2018–Spring 2020
· Designed and implemented a mentorship program for incoming graduate students

Graduate Student Liaison, Dartmouth College Fall 2018–Spring 2020
· Graduate student liaison to the Physics and Astronomy Department

MDM Observatory Undergraduate Trip, Dartmouth College Dec. 2018, 2019
· Designed and facilitated a 5-day seminar for undergraduate students at MDM Observatory

Public Observing, Dartmouth College Spring 2016–Spring 2020

Montshire Museum of Science: Astronomy Day, Norwich VT Jan. 2015, 2016, 2018, 2019, 2020

Visiting Astronomer, Langa High School, Cape Town, South Africa Winter 2017

Mercury Transit Event, Dartmouth College May 2016

Undergraduate Department Representative (UDR), Brandeis University Spring 2012–Spring 2014
· Liaison to the Physics Faculty on behalf of undergraduate students

ORAL PRESENTATIONS

6. "Survey of Young Supernova Remnants in Nearby Galaxies," Jan. 2020, 235th American Astronomical Society Meeting, Honolulu, HI
5. "Optical Studies of Two Young Supernova Remnants: Cas A and SN 1941C" (Invited Talk), Nov. 2019, Collaborative Meeting on Supernova Remnants between Japan and USA, RIKEN Wako Campus and Kyoto University, Japan
4. "An Optical Study of the Red Supergiant Mass-Loss from the Progenitor of Cassiopeia A," June 2019, Supernova Remnants II: An Odyssey in Space After Stellar Death, Chania, Crete, Greece
3. "3C 219 - Optical Studies of a Restarting Radio Galaxy," May 2014, NERQUAM #24, Center for Astrophysics | Harvard & Smithsonian, Cambridge, MA
2. "3C 219 - Optical Studies of a Restarting Radio Galaxy" (Invited Talk), May 2014, Berko Symposium, Brandeis University, Waltham, MA
1. "Polarization Monitoring Using the EVLA," August 2012, NRAO Socorro Lunch Talk, Socorro, NM

HONORS AND AWARDS

· Dartmouth College West House Grad Award June 2020
· Dartmouth College Physics and Astronomy Graduate Research Award June 2019
· AAS Chambliss Astronomy Achievement Student Award Jan. 2019
· Dartmouth College Annual Graduate Student Poster Session, Winner April 2016
· AAS Chambliss Astronomy Achievement Student Award, Honorable Mention June 2014
· Brandeis University Berko Memorial Prize Recipient May 2014
· Brandeis University UDR Award Recipient May 2014
· Brandeis University Division of Science Fellowship Summer 2013
· University Athletic Association All-Academic Recognition Fall 2011

PROFESSIONAL MEMBERSHIPS

· American Astronomical Society, Member Spring 2013–Present
· SACNAS, Member Spring 2019–Present
· Society of Hispanic Professional Engineers, Member Spring 2019–Present

PROFESSIONAL DEVELOPMENT

- SciCoder 2019, W. M. Keck Observatory — Sep. 2019
- Communicating Science Workshop, Dartmouth College — April 2017
- Creating a Mentoring Network, Dartmouth College — Oct. 2015
- Conference for Undergraduate Women in Physics, Stony Brook University — Jan. 2014
- 13th NRAO Synthesis Imaging Workshop, Socorro, NM — May 2012
- Conference for Undergraduate Women in Physics, Yale University — Jan. 2012

EXTRACURRICULAR ACTIVITIES

- Dartmouth College Graduate Women in Science and Engineering (GWISE) — Fall 2014–Spring 2020
- Student Advisory Board (SAB) for the Guarini Institute for International Education at Dartmouth College — Winter 2017–Spring 2019
- Brandeis University Physics Club — 2010–2014
- Brandeis University Women's Varsity Soccer — 2010–2012

REFEREED PUBLICATIONS

12. Fesen, R. A., Drechsler, M., **Weil, K. E.**, et al., "Far UV and Optical Emissions from Three Apparent Supernova Remnants Located at Unusually High Galactic Latitudes," ApJ *accepted* (2021), arXiv:2102.12599
11. Banovetz, J., et al., including **Weil, K. E.** "The Center of Expansion and Age of the Oxygen-rich Supernova Remnant 1E 0102.2-7219" ApJ 912, 33 (2021)
10. Fesen, R. A., & **Weil, K. E.**, "The Nature of the Young Supernova Remnant S8 in the Dwarf Galaxy IC 1613," ApJ 902, 19 (2020)
9. Fesen, R. A., **Weil, K. E.**, Raymond, J. C., et al., "G107.0+9.0: A New Large Optically Bright Galactic Supernova Remnant in Cepheus," MNRAS, 498, 5194 (2020)
8. **Weil, K. E.**, Fesen, R. A., Patnaude, D. J., Milisavljevic, D., "Detection of Late-Time Circumstellar Interaction of SN 2017eaw in NGC 6946," ApJ, 900, 11 (2020)
7. **Weil, K. E.**, Fesen, R. A., Patnaude, D. J., Raymond, J. C., Chevalier, R. A., Milisavljevic, D., & Gerardy, C. L., "Detection of the Red Supergiant Wind from the Progenitor of Cassiopeia A," ApJ, 891, 116 (2020)
6. Fesen, R. A., & **Weil, K. E.**, "Detection of Late-Time Optical Emission from SN 1941C in NGC 4136," ApJ, 890, 15 (2020)
5. Raymond, J. C., Caldwell, N., Fesen, R. A., **Weil, K. E.**, Boumis, P., di Cicco, D., Mittelman, D., Walker S., "Rapid Post-Shock Cooling and Pressure-Driven Shell Phase Evolution of the Galactic Halo SNR G70.0-21.5," ApJ, 888, 90 (2020)
4. Fesen, R. A., **Weil, K. E.**, Cisneros, I. A., Blair, W. P., & Raymond, J. C., "The Cygnus Loop's Distance, Properties, and Environment Driven Morphology," MNRAS, 481, 1786 (2018)
3. **Weil, K. E.**, Thorstensen, J. R., & Haberl, F., "An Optical Study of Two VY Sculptoris-type Cataclysmic Binary Stars: V704 And and RX J2338+431," AJ, 156, 231 (2018)
2. Fesen, R. A., **Weil, K. E.**, Hamilton, A. J. S., & Höflich, P. A., "Optical and UV Spectra of the Remnant of SN 1885 (S And) in M31," ApJ, 848, 130 (2017)
1. Thorstensen, J. R., Alper, E. H., & **Weil, K. E.**, "A Trip to the Cataclysmic Binary Zoo: Detailed Follow-Up of 35 Recently Discovered Systems," AJ, 152, 226 (2016)

NON-REFEREED PUBLICATIONS

9. **Weil, K. E.**, Milisavljevic, D., Andrews, M., et al. "REFITT classifications of optical transients using SOAR," Transient Name Server AstroNote, 30 (2021)
8. Milisavljevic, D., **Weil, K. E.**, Rupert, J., et al. "AT 2021pb is a Young Type IIb Supernova," The Astronomer's Telegram, 14320 (2021)
7. **Weil, K. E.**, Subrayan, B. M., Milisavljevic, D., et al. "REFITT classifications of optical transients using SOAR," Transient Name Server AstroNote, 266 (2020)
6. **Weil, K. E.**, Milisavljevic, D., Andrews, M., et al. "REFITT Discovery and Classification of SN2020abog (ZTF20acpgjac) using SOAR," Transient Name Server AstroNote, 243 (2020)
5. **Weil, K. E.**, Milisavljevic, D., Andrews, M., et al. "REFITT classifications of optical transients using SOAR," Transient Name Server AstroNote, 242 (2020)
4. **Weil, K. E.**, Milisavljevic, D., Andrews, M., et al. "REFITT classifications of optical transients using SOAR," Transient Name Server AstroNote, 232 (2020)
3. **Weil, K. E.**, Milisavljevic, D., Andrews, M., et al. "REFITT Discovery and Classification of SN 2020zct (ZTF20acezhcf) using SOAR," Transient Name Server AstroNote, 227 (2020)
2. **Weil, K. E.**, Milisavljevic, D., Andrews, M., et al. "REFITT classifications of optical transients using SOAR," Transient Name Server AstroNote, 225 (2020)
1. Thorstensen, J. R., Ringwald, F. A., Taylor, C. J., Sheets, H. A., Peters, C. S., Skinner, J. N., Alper, E. H. & **Weil, K. E.**, "New or Improved Orbital Periods of Cataclysmic Binaries," RNAAS, 1, 29 (2017)

CONFERENCE PROCEEDINGS

7. **Weil, K. E.** "Survey of Young Supernova Remnants in Nearby Galaxies," AAS Meeting Abstracts 235, 152.02 (2020)
6. **Weil, K. E.**, et al., "The Optically Inferred Circumstellar Environment of Cas A," Supernova Remnants: An Odyssey in Space After Stellar Death II, 10 (2019)
5. **Weil, K. E**, et al., "The Cygnus Loop's Distance, Properties & Environment Driven Morphology," Supernova Remnants: An Odyssey in Space After Stellar Death II, 63 (2019)
4. **Weil, K. E.**, et al., "The Cygnus Loop's Distance, Properties, & Environment Driven Morphology," AAS Meeting Abstracts 233, 150.03 (2019)
3. **Weil, K. E.**, et al., "STIS Spectra of the Remnant of SN 1885 in M31," AAS Meeting Abstracts 227, 238.11 (2016)
2. **Weil, K. E.**, & Roberts, D. H., "Optical Spectroscopy of the Restarting Radio Galaxy 3C 219," AAS Meeting Abstracts 224, 221.16 (2014)
1. **Weil, K. E.**, & Myers, S. T., "Polarization Monitoring Using the EVLA," AAS Meeting Abstracts 221, 240.04 (2013)