Raphael Baer-Way

Contact Information

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Research Interests

- **Graduate Researcher**: Multiwavelength studies of interacting supernovae

Education

University of California, Berkeley, Berkeley, CA 2018–2022

- B.A. in Astronomy and Physics, GPA: **3.89/4** – via 151 credits.
- Research Advisor: Prof. Alex Filippenko.

University of Virginia, Charlottesville, VA 2023-2028(expected)

- PhD in Astronomy, GPA: **4.00/4**
- Research Advisors: Prof. Maryam Modjaz, Dr. Poonam Chandra.

Technical Skills

- *Programming Languages*: Python,HTML.
- *Technical Softwares*: DS9, Iraf, Astropy, Pypeit.

Publications

1. **Baer-Way** *et al* "A Multiwavelength Autopsy of the Interacting IIn Supernova 2020ywx: Tracing its Progenitor Mass-Loss History for 100 Years before Death. *Accepted to Astrophysical Journal*, 2025.
2. **Baer-Way** *et al* "A Snapshot Survey of Nearby Supernovae with the Hubble Space Telescope. *ApJ,964:2*, April 2024.
3. **Van Dyk, deGraw, Baer-Way** *et al* "The Dissapearance of six supernova progenitors". *MNRAS 519,471-482*, December 2022.
4. **Yesmin, Modjaz, Pellegrino, Baer-Way** *et al,*. "Spectral dataset of young type Ib supernovae and their time evolution". *A&A, 693*, February 2025.
5. **Pellegrino**— *et al* incl. Baer-Way, R "The X-Ray Luminous Type Ibn SN 2022ablq: Estimates of Preexplosion Mass Loss and Constraints on Precursor Emission". *ApJ 977:2*, December 2024.
6. **Aryan** *et al,* incl. Baer-Way, R "Progenitor mass constraints for the type Ib intermediate-luminosity SN 2015ap and the highly extinguished SN 2016bau". *MNRAS 505, 2530-2547*, May 2021.
7. **Zheng** *et al,* incl. Baer-Way, R "The Lick Observatory Supernova Search follow-up program: photometry data release of 70 SESNe". *MNRAS 512, 3195-3214*, March 2022.

Posters

1. **A multi-wavelength autopsy of the Interacting Supernova 2020ywx** *Supernova Remnants III, Chania, Greece, 2024*
2. **A snapshot survey of nearby supernovae with the Hubble Space Telescope** *AAS Meeting 242, Seattle, WA*, 2023.

Competitively Obtained Observing Time

- **GMRT 2023mut/2019yvr proposals**
  - Principal Investigator of GMRT proposals that received three total epochs of GMRT time (9 hours) to observe the SN 2019yvr and 2023mut at low frequencies
- **VLA SN 2023mut proposal**
  - Principal Investigator of general VLA proposal which received one epoch of time (2 hours) to observe the full spectrum of highly radio-bright supernova 2023mut

- **VLA DDT 2023mut proposal**
  - Principal Investigator of DDT proposal which received two epochs of DDT time(5 hours) to observe the full spectrum of highly radio-bright supernova 2023mut
- **VLA DDT 2023fyq proposal**
  - Principal Investigator of DDT proposal which received one epochs of DDT time (1.5 hours) to observe the full spectrum of the first radio-bright type Ibn supernova 2023fyq
- **GMRT Interacting Supernovae survey**
  - Co-Investigator of GMRT proposal which received time to image multiple interacting SN (i.e. SN 2024iss and 2020ywx) at low frequencies.

Observing Experience

- **Nickel Telescope at Lick Observatory** 2019-2022
  Checked out Observer on Nickel Telescope at Lick Observatory, observed 15+ times.
- **Clay/Baade Telescopes at Las Campanas Observatory**
  3 full nights 2023-2025
  Observed SNe with optical IMACS and infrared FIRE instruments.
- **APO 3.5 m telescope** 2023
  Checked out Observer at Apache Point Observatory using 3.5 m telescope

Teaching/Outreach

- **Head TA (UVA Astronomy)** 2024-2025
  Organizing TA assignments and duties for academic year 2024-2025
- **Astro 3130 TA** Spring 2024, Spring 2025
  Teaching lab sessions and organizing observing sessions for advanced optical Astronomy course at UVA
- **Dark Skies, Bright Kids volunteer+Meeting Leader** 2023-present
  Helping lead bi-weekly sessions teaching astronomy and scientific learning to 3rd-5th graders
  Helped lead outreach sessions at elementary schools and community centers
  Helped organize and run meetings
- **Astron 10 TA/UGSI (UC Berkeley)** Fall 2022
  Taught 2 sections for Astron 10:Intro to General Astronomy at UC berkeley as well as helping with logistics for the course-Received GSI Teaching award
- **Astron 9 TA (UC Berkeley)** Summer 2022
  Co-taught Astron 9:Intro to Python for Astrophysicists, grading and leading lecture as well as supplemental discussions
- **Python Instructor (UC Berkeley)** 2020-2022
  Instructor for Python Decal(student-led) course for Astrophysicists for 4 semesters at UC Berkeley

Awards and Fellowship

- ***NSF GRFP fellow*** . 2025-2028
- ***Virginia Space Grant Consortium Graduate Fellowship*** . 2024-2025
- ***American Astronomical Society Travel Grant*** . 2024
- ***2022 Outstanding Graduate Student Instructor Award*** at UC Berkeley. 2022
- ***Shared Chambliss Astronomy Achievement Student Award*** from American Astronomical Society. 2021
- ***Dean's List*** at UC Berkeley. 2018
- ***Award for Innovation and Creativity in Science*** from Rochester Institute of Technology. 2017

References

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