

MATTHEW SIEBERT - CURRICULUM VITAE

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PHD INFORMATION

Affiliation: University of California Santa Cruz

PhD Topic: Spectroscopy of Type Ia Supernovae and their Host Galaxies

PhD Advisor: Ryan Foley

EDUCATION

University of California Santa Cruz, Santa Cruz, CA *2022, expected*

PhD: Astronomy and Astrophysics

University of California Santa Cruz, Santa Cruz, CA *December 2018*

MS: Astronomy and Astrophysics

Cornell University, Ithaca, NY *June 2016*

BS: Engineering Physics

AWARDS AND FELLOWSHIPS

UC Santa Cruz Dissertation Fellowship *2021*

UC Santa Cruz Department of Astronomy Whitford Prize *2018*

National Science Foundation Graduate Research Fellowship *2018*

PUBLICATIONS

First author: 4 (60 citations), total papers: 36 (4618 citations), h-index: 19 [ADS]

First Author Publications

- Strong Calcium Emission Indicates that the Ultraviolet-flashing SN Ia 2019yvq Was the Result of a Sub-Chandrasekhar-mass Double-detonation Explosion*
Siebert, M. R.; Dimitriadis, G.; Polin, A.; and Foley, R. J.
ApJL, Volume 900, Issue 2, article id.L27, 11 pp. 2020. [arXiv:2007.13793]
- A Possible Distance Bias for Type Ia Supernovae with Different Ejecta Velocities*
Siebert, M. R.; Foley, R. J.; Jones, D. O.; and Davis, K. W.
Monthly Notices of the Royal Astronomical Society, Volume 493, Issue 4, pp.5713-5725. 2020.
[arXiv:2002.09490]
- Investigating the Diversity of Type Ia Supernova Spectra with the Open-Source Relational Database Kaepora*
Siebert, M. R.; Foley, R. J.; Jones, D. O.; Angulo, R.; Davis, K. W.; Duarte, A.; Strasburger, E.; Conlon, M.; Kazmi, N.; Nishimoto, R.; Schubert, M.; Sun, L.; and Tippens, R.
Monthly Notices of the Royal Astronomical Society, Volume 486, Issue 4, p.5785-5808. 2019.
[arXiv:1905.02204]
- The Unprecedented Properties of the First Electromagnetic Counterpart to a Gravitational-wave Source*
Siebert, M. R.; Foley, R. J.; Drout, M. R.; Kilpatrick, C. D.; Shappee, B. J.; Coulter, D. A.; Kasen, D.; Madore, B. F.; Murguía-Berthier, A.; Pan, Y. -C.; Piro, A. L.; Prochaska, J. X.; Ramirez-Ruiz, E.; Rest, A.; Contreras, C.; Morrell, N.; Rojas-Bravo, C.; Simon, J. D.
ApJL, Volume 848, Issue 2, article id. L26, 6 pp. 2017. [arXiv:2102.06524]

Co-authored Publications

5. *SN 2018agk: A prototypical Type Ia Supernova with a smooth power-law rise in Kepler (K2)*
Wang, Qinan ; Rest, Armin ; Zenati, Yossef ; Riddden-Harper, Ryan ; Dimitriadis, Georgios ; Narayan, Gautham ; Villar, V. Ashley ; Magee, Mark R. ; Foley, Ryan J.; ... **Siebert, M. R.** et al. (76 authors)
Submitted to ApJ. 2021. [arXiv:2108.13607]
6. *Discovery of a Fast Iron Low-ionization Outflow in the Early Evolution of the Nearby Tidal Disruption Event AT 2019qiz* November 2020.
Hung, Tiara; Foley, Ryan J.; Veilleux, S.; Cenko, S. B.; Dai, Jane L.; Auchettl, Katie; Brink, Thomas G.; Dimitriadis, Georgios; Filippenko, Alexei V.; Gezari, S.; Holoiien, Thomas W. -S.; Kilpatrick, Charles D.; Mockler, Brenna; Piro, Anthony L.; Ramirez-Ruiz, Enrico; Rojas-Bravo, Cesar; **Siebert, M. R.**; van Velzen, Sjoert; Zheng, WeiKang.
ApJ, Volume 917, Issue 1, id.9, 22 pp. 2021. [arXiv:2011.01593]
7. *The Gravity Collective: A Search for the Electromagnetic Counterpart to the Neutron Star-Black Hole Merger GW190814*
Kilpatrick, Charles D. ; Coulter, David A. ; Arcavi, Iair ; Brink, Thomas G. ; Dimitriadis, Georgios ; Filippenko, Alexei V. ; Foley, Ryan J. ; Howell, D. Andrew ; Jones, David O. ; Makler, Martin; ... **Siebert, M. R.** et al. (82 authors)
Accepted in ApJ. 2021. [arXiv:2106.06897]
8. *The Early Phases of Supernova 2020pni: Shock-Ionization of the Nitrogen-Enriched Circumstellar Material*
Terreran, G. ; Jacobson-Galan, W. V. ; Groh, J. H. ; Margutti, R. ; Coppejans, D. L. ; Dimitriadis, G. ; Kilpatrick, C. D. ; Matthews, D. J. ; **Siebert, M. R.** et al. (23 authors)
Submitted to ApJ. 2021. [arXiv:2105.12296]
9. *An Early-Time Optical and Ultraviolet Excess in the type-Ic SN 2020oi*
Gagliano, Alexander ; Izzo, Luca ; Kilpatrick, Charles D. ; Mockler, Brenna search by orcid ; Vincente Jacobson-Galn, Wynn ; Terreran, Giacomo ; Dimitriadis, Georgios ; Zenati, Yossef ; ...**Siebert, M. R.** et al. (33 authors)
Submitted to ApJ. 2021. [arXiv:2105.09963]
10. *SALT3: An Improved Type Ia Supernova Model for Measuring Cosmic Distances*
Kenworthy, W. D. ; Jones, D. O. ; Dai, M. ; Kessler, R. ; Scolnic, D. ; Brout, D. ; **Siebert, M. R.**; Pierel, J. D. R. ; Dettman, K. G. ; Dimitriadis, G. ; Foley, R. J. ; Jha, S. W. ; Pan, Y. -C. ; Riess, A. ; Rodney, S. ; Rojas-Bravo, C.
Submitted to ApJ. 2021. [arXiv:2104.07795]
11. *Understanding Type Ia Supernova Distance Biases by Simulating Spectral Variations*
Pierel, J. D. R.; Jones, D. O.; Dai, M.; Adams, D. Q.; Kessler, R.; Rodney, S.; **Siebert, M. R.**; Foley, R. J.; Kenworthy, W. D.; Scolnic, D.
ApJ, Volume 911, Issue 2, id.96, 13 pp. 2020. [arXiv:2012.07811]
12. *The Foundation Supernova Survey: Photospheric Velocity Correlations in Type Ia Supernovae*
Dettman, Kyle G.; Jha, Saurabh W.; Dai, Mi; Foley, Ryan J.; Rest, Armin; Scolnic, Daniel M.; **Siebert, M. R.**; Chambers, K. C.; Coulter, D. A.; Huber, M. E.; Johnson, E.; Jones, D. O.; Kilpatrick, C. D.; Kirshner, R. P.; Pan, Y. -C.; Riess, A. G.; Schultz, A. S. B.
Accepted in ApJ. 2021. [arXiv:1710.05440]
13. *SN 2019muj - a well-observed Type Iax supernova that bridges the luminosity gap of the class*
Barna, Barnabs; Szalai, Tams; Jha, Saurabh W.; Camacho-Neves, Yssavo; Kwok, Lindsey; Foley, Ryan J.; Kilpatrick, Charles D.; Coulter, David A.; Dimitriadis, Georgios; Rest, Armin; Rojas-Bravo, Cesar; **Siebert, M. R.** (41 authors)
Monthly Notices of the Royal Astronomical Society, Volume 501, Issue 1, pp.1078-1099. 2021.

14. *The Young Supernova Experiment: Survey Goals, Overview, and Operations*
 Jones, D. O.; Foley, R. J.; Narayan, G.; Hjorth, J.; Huber, M. E.; Aleo, P. D.; Alexander, K. D.; Angus, C. R.; Auchettl, K.; Baldassare, V. F.; Bruun, S. H.; Chambers, K. C.; Chatterjee, D.; Coppejans, D. L.; Coulter, D. A.; DeMarchi, L.; Dimitriadis, G.; Drout, M. R.; Engel, A.; French, K. D. Gagliano, A.; Gall, C.; Hung, T.; Izzo, L.; Jacobson-Galn, W. V.; Kilpatrick, C. D.; Korhonen, H.; Margutti, R.; Raimundo, S. I.; Ramirez-Ruiz, E.; Rest, A.; Rojas-Bravo, C.; **Siebert, M. R.** (71 authors)
 ApJ, Volume 908, Issue 2, id.143, 24 pp. 2021. [arXiv:2010.09724]
15. *Discovery and follow-up of ASASSN-19dj: an X-ray and UV luminous TDE in an extreme post-starburst galaxy*
 Hinkle, Jason T.; Holoien, T. W. -S.; Auchettl, K.; Shappee, B. J.; Neustadt, J. M. M.; Payne, A. V.; Brown, J. S.; Kochanek, C. S.; Stanek, K. Z.; Graham, M. J.; Tucker, M. A.; Do, A.; Anderson, J. P.; Bose, S.; Chen, P.; Coulter, D. A.; Dimitriadis, G.; Dong, Subo; Foley, R. J.; Huber, M. E. Hung, T.; Kilpatrick, C. D.; Pignata, G.; Piro, A. L.; Rojas-Bravo, C.; **Siebert, M. R.**; Stalder, B.; Thompson, Todd A.; Tonry, J. L.; Valley, P. J.; Wisniewski, J. P.
 Monthly Notices of the Royal Astronomical Society, Volume 500, Issue 2, pp.1673-1696. 2021. [arXiv:2006.06690]
16. *Double-peaked Balmer Emission Indicating Prompt Accretion Disk Formation in an X-Ray Faint Tidal Disruption Event*
 Hung, Tiara; Foley, Ryan J.; Ramirez-Ruiz, Enrico; Dai, Jane L.; Auchettl, Katie; Kilpatrick, Charles D.; Mockler, Brenna; Brown, Jonathan S.; Coulter, David A.; Dimitriadis, Georgios; Holoien, Thomas W. -S.; Law-Smith, Jamie A. P.; Piro, Anthony L.; Rest, Armin; Rojas-Bravo, Cesar; **Siebert, M. R.**
 ApJ, Volume 903, Issue 1, id.31, 17 pp. 2020. [arXiv:2003.09427]
17. *SN 2019ehk: A Double-peaked Ca-rich Transient with Luminous X-Ray Emission and Shock-ionized Spectral Features*
 Jacobson-Galn, Wynn V.; Margutti, Raffaella; Kilpatrick, Charles D.; Hiramatsu, Daichi; Perets, Hagi; Khatami, David; Foley, Ryan J.; Raymond, John; Yoon, Sung-Chul; Bobrick, Alexey; Zenati, Yossef; Galbany, Llus; Andrews, Jennifer; Brown, Peter J.; Cartier, Rgis; Coppejans, Deanne L.; Dimitriadis, Georgios; Dobson, Matthew; Hajela, Aprajita; Howell, D. Andrew Kuncarayakti, Hanindyo; Milisavljevic, Danny; Rahman, Mohammed; Rojas-Bravo, Cesar; ... **Siebert, M. R.** (67 authors)
 ApJ, Volume 898, Issue 2, id.166. 2020. [arXiv:2005.01782]
18. *The Rise and Fall of ASASSN-18pg: Following a TDE from Early to Late Times August 2020.*
 Holoien, Thomas W. -S.; Auchettl, Katie; Tucker, Michael A.; Shappee, Benjamin J.; Patel, Shannon G.; Miller-Jones, James C. A.; Mockler, Brenna; Groenewald, Danil N.; Hinkle, Jason T.; Brown, Jonathan S.; Kochanek, Christopher S.; Stanek, K. Z.; Chen, Ping; Dong, Subo; Prieto, Jose L.; ...**Siebert, M. R.** (33 authors)
 ApJ, Volume 898, Issue 2, id.161. 2020. [arXiv:2003.13693]
19. *To TDE or not to TDE: the luminous transient ASASSN-18jd with TDE-like and AGN-like qualities*
 Neustadt, J. M. M.; Holoien, T. W. -S.; Kochanek, C. S.; Auchettl, K.; Brown, J. S.; Shappee, B. J.; Pogge, R. W.; Dong, Subo; Stanek, K. Z.; Tucker, M. A.; Bose, S.; Chen, Ping; Ricci, C.; Valley, P. J.; Prieto, J. L.; Thompson, T. A.; Coulter, D. A.; Drout, M. R.; Foley, R. J.; Kilpatrick, C. D. Piro, A. L.; Rojas-Bravo, C.; Buckley, D. A. H.; Gromadzki, M.; Dimitriadis, G.; **Siebert, M. R.**; Do, A.; Huber, M. E.; Payne, A. V. Monthly Notices of the Royal Astronomical Society, Volume 494, Issue 2, pp.2538-2560. 2020. [arXiv:1910.01142]
20. *The Foundation Supernova Survey: Measuring Cosmological Parameters with Supernovae from a Single Telescope*
 Jones, D. O.; Scolnic, D. M.; Foley, R. J.; Rest, A.; Kessler, R.; Challis, P. M.; Chambers, K. C.; Coulter, D. A.; Dettman, K. G.; Foley, M. M.; Huber, M. E.; Jha, S. W.; Johnson, E.; Kilpatrick, C. D.; Kirshner, R. P.; Manuel, J.; Narayan, G.; Pan, Y. -C.; **Siebert, M. R.** et al. (30 authors)
 ApJ, Volume 881, Issue 1, article id. 19, 23 pp. 2019. [arXiv:1811.09286]

21. *Discovery of Highly Blueshifted Broad Balmer and Metastable Helium Absorption Lines in a Tidal Disruption Event*
Hung, T.; Cenko, S. B.; Roth, Nathaniel; Gezari, S.; Veilleux, S.; van Velzen, Sjoert; Gaskell, C. Martin; Foley, Ryan J.; Blagorodnova, N.; Yan, Lin; Graham, M. J.; Brown, J. S.; **Siebert, M. R.** et al. (28 authors)
ApJ, Volume 879, Issue 2, article id. 119, 17 pp. 2019. [arXiv:1903.05637]
22. *SN 2017ens: The Metamorphosis of a Luminous Broadlined Type Ic Supernova into an SN II_n*
Chen, T. -W.; Inserra, C.; Fraser, M.; Moriya, T. J.; Schady, P.; Schweyer, T.; Filippenko, A. V.; Perley, D. A.; Ruiter, A. J.; Seitenzahl, I.; Sollerman, J.; Taddia, F.; Anderson, J. P.; Foley, R. J.; ... **Siebert, M. R.** et al. (49 authors)
ApJL, Volume 867, Issue 2, article id. L31, 8 pp. 2018. [arXiv:1808.04382]
23. *Should Type Ia Supernova Distances Be Corrected for Their Local Environments?*
Jones, D. O.; Riess, A. G.; Scolnic, D. M.; Pan, Y. -C.; Johnson, E.; Coulter, D. A.; Dettman, K. G.; Foley, M. M.; Foley, R. J.; Huber, M. E.; Jha, S. W.; Kilpatrick, C. D.; Kirshner, R. P.; Rest, A.; Schultz, A. S. B.; **Siebert, M. R.**
ApJ, Volume 867, Issue 2, article id. 108, 14 pp. 2018. [arXiv:1805.05911]
24. *Three Hypervelocity White Dwarfs in Gaia DR2: Evidence for Dynamically Driven Double degenerate Double-detonation Type Ia Supernovae*
Shen, Ken J.; Boubert, Douglas; Gnsicke, Boris T.; Jha, Saurabh W.; Andrews, Jennifer E.; Chomiuk, Laura; Foley, Ryan J.; Fraser, Morgan; Gromadzki, Mariusz; Guillochon, James; Kotze, Marissa M.; Maguire, Kate; **Siebert, M. R.** et al. (26 authors)
ApJ, Volume 865, Issue 1, article id. 15, 14 pp. 2018. [arXiv:1804.11163]
25. *SN 2016esw: a luminous Type II supernova observed within the first day after the explosion*
de Jaeger, Thomas; Galbany, Llus; Gutierrez, Claudia P.; Filippenko, Alexei V.; Zheng, WeiKang; Brink, Thomas G.; Foley, Ryan J.; Sanchez, Sebastian F.; Channa, Sanyum; de Kouchkovsky, Maxime; Halevi, Goni; Kilpatrick, Charles D.; Kumar, Sahana; Molloy, Jeffrey; Pan, Yen-Chen; Ross, Timothy W.; Shivvers, Isaac; **Siebert, M. R.** et al. (21 authors)
Monthly Notices of the Royal Astronomical Society, Volume 478, Issue 3, p.3776-3792. 2018.
[arXiv:1905.02204]
26. *The Foundation Supernova Survey: motivation, design, implementation, and first data release*
Foley, Ryan J.; Scolnic, Daniel; Rest, Armin; Jha, S. W.; Pan, Y. -C.; Riess, A. G.; Challis, P.; Chambers, K. C.; Coulter, D. A.; Dettman, K. G.; Foley, M. M.; Fox, O. D.; Huber, M. E.; Jones, D. O.; Kilpatrick, C. D.; Kirshner, R. P.; Schultz, A. S. B.; **Siebert, M. R.** et al. (28 authors)
Monthly Notices of the Royal Astronomical Society, Volume 475, Issue 1, p.193-219. 2018.
[arXiv:1711.02474]
27. *Electromagnetic evidence that SSS17a is the result of a binary neutron star merger*
Kilpatrick, C. D.; Foley, R. J.; Kasen, D.; Murguia-Berthier, A.; Ramirez-Ruiz, E.; Coulter, D. A.; Drout, M. R.; Piro, A. L.; Shappee, B. J.; Boutsia, K.; Contreras, C.; Di Mille, F.; Madore, B. F.; Morrell, N.; Pan, Y. -C.; Prochaska, J. X.; Rest, A.; Rojas-Bravo, C.; **Siebert, M. R.**; Simon, J. D. Ulloa, N.
Science, Volume 358, Issue 6370, pp. 1583-1587. 2017. [arXiv:1710.05434]
28. *Early spectra of the gravitational wave source GW170817: Evolution of a neutron star merger*
Shappee, B. J.; Simon, J. D.; Drout, M. R.; Piro, A. L.; Morrell, N.; Prieto, J. L.; Kasen, D.; Holoien, T. W. -S.; Kollmeier, J. A.; Kelson, D. D.; Coulter, D. A.; Foley, R. J.; Kilpatrick, C. D.; **Siebert, M. R.** et al. (36 authors)
Science, Volume 358, Issue 6370, pp. 1574-1578. 2017. [arXiv:1710.05432]

29. *Light curves of the neutron star merger GW170817/SSS17a: Implications for r-process nucleosynthesis*
Drout, M. R.; Piro, A. L.; Shappee, B. J.; Kilpatrick, C. D.; Simon, J. D.; Contreras, C.; Coulter, D. A.; Foley, R. J.; **Siebert, M. R.** et al. (44 authors)
Science, Volume 358, Issue 6370, pp. 1570-1574. Page 3. 2017. [arXiv:1710.05443]
30. *Swope Supernova Survey 2017a (SSS17a), the optical counterpart to a gravitational wave source*
Coulter, D. A.; Foley, R. J.; Kilpatrick, C. D.; Drout, M. R.; Piro, A. L.; Shappee, B. J.; **Siebert, M. R.**;
Simon, J. D.; Ulloa, N.; Kasen, D.; Madore, B. F.; Murguia-Berthier, A.; Pan, Y. -C.; Prochaska, J. X.;
Ramirez-Ruiz, E.; Rest, A.; Rojas-Bravo, C.
Science, Volume 358, Issue 6370, pp. 1556-1558. 2017. [arXiv:1710.05452]
31. *A gravitational-wave standard siren measurement of the Hubble constant*
Abbott, B. P.; ... **Siebert, M. R.** et al. (1313 authors)
Nature, Volume 551, Issue 7678, pp. 85-88. 2017. [arXiv:1710.05835]
32. *A Neutron Star Binary Merger Model for GW170817/GRB 170817A/SSS17a*
Murguia-Berthier, A.; Ramirez-Ruiz, E.; Kilpatrick, C. D.; Foley, R. J.; Kasen, D.; Lee, W. H.; Piro, A. L.;
Coulter, D. A.; Drout, M. R.; Madore, B. F.; Shappee, B. J.; Pan, Y. -C.; Prochaska, J. X.; Rest, A.;
Rojas-Bravo, C.; **Siebert, M. R.**; Simon, J. D.
ApJL, Volume 848, Issue 2, article id. L34, 8 pp. 2017. [arXiv:1710.05453]
33. *The Old Host-galaxy Environment of SSS17a, the First Electromagnetic Counterpart to a Gravitational-wave Source*
Pan, Y. -C.; Kilpatrick, C. D.; Simon, J. D.; Xhakaj, E.; Boutsia, K.; Coulter, D. A.; Drout, M. R.;
Foley, R. J.; Kasen, D.; Morrell, N.; Murguia-Berthier, A.; Osip, D.; Piro, A. L.; Prochaska, J. X.;
Ramirez-Ruiz, E.; Rest, A.; Rojas-Bravo, C.; Shappee, B. J.; **Siebert, M. R.**
ApJL, Volume 848, Issue 2, article id. L30, 7 pp. 2017. [arXiv:1710.05439]
34. *Multi-messenger Observations of a Binary Neutron Star Merger*
Abbott, B. P.; ... **Siebert, M. R.** et al. (3677 authors)
ApJL, Volume 848, Issue 2, article id. L12, 59 pp. 2017. [arXiv:1710.05833]
35. *On the Progenitor of the Type IIb Supernova 2016gkg*
Kilpatrick, Charles D.; Foley, Ryan J.; Abramson, Louis E.; Pan, Yen-Chen; Lu, Cicero-Xinyu;
Williams, Peter; Treu, Tommaso; **Siebert, M. R.**; Fassnacht, Christopher D.; Max, Claire E.
Monthly Notices of the Royal Astronomical Society, Volume 465, Issue 4, p.4650-4657. 2017.
[arXiv:1610.04587]

Unrefereed Publications

36. *Gravity and Light: Combining Gravitational Wave and Electromagnetic Observations in the 2020s*
Foley, R. J.; Alexander, K. D.; Andreoni, I.; Arcavi, I.; Auchetl, K.; Barnes, J.; Baym, G.; Bellm, E. C.;
Beloborodov, A. M.; Blagorodnova, N.; ... **Siebert, M. R.** et al. (113 authors)
White Paper. 2019. [arXiv:1903.04553]

Astronomer's Telegrams (37 first authored, 42 co-authored)

OBSERVING PROGRAMS (AS PRINCIPAL INVESTIGATOR)

Gemini South: 4.0 hrs with GMOS	<i>2021-2022</i>
Host-Galaxy Spectroscopy of Type Ia Supernovae (GS-2021B-Q-243)	
Gemini South: 5.8 hrs with GMOS	<i>2020-2021</i>
Host-Galaxy Spectroscopy of Type Ia Supernovae (GS-2020B-Q-325)	

SOFTWARE

Kaepora - An open-source relational database and suite of analysis tools for the study of SN Ia spectra (<https://github.com/msiebert1/kaepora>)

The UCSC Transients Spectral Reduction Pipeline - A reduction pipeline developed with supernova observations in mind for spectroscopic data from the LRIS and Kast spectrographs at Keck Observatory and Lick Observatory, respectively. (https://github.com/msiebert1/UCSC_spectral_pipeline)

TEACHING AND OUTREACH

Undergraduate Student Advisor

Eva Schmidt: *Strange Double-Peaked Calcium Emission in the Type Ia SN 2020hvf* (Ron Ruby Scholarship) 2021-present

Erika Strasburger: *Constraining the Asymmetry of Type Ia Supernovae (Kaepora)* (NSF Graduate Research Fellowship, Dean's Thesis Award (UCSC), attending UC Berkeley graduate program) 2019-present

Rodrigo Angulo: *Unburned carbon in the Outer Layers of Type Ia Supernova Ejecta (Kaepora)* (Davidsen Fellowship (JHU), Dean's Thesis Award (UCSC), attending JHU graduate program) 2018-present

Kyle Davis: *A Comprehensive Study of SN Ia Ejecta Velocities (Kaepora)* (attending UCSC graduate program) 2018-present

Audrey Do: *Association of SN Ia Spectra with their Detailed Light-Curve Properties (Kaepora)* 2018

Rey Cervantes: *Consistent Characterization of SN Ia Spectral Features (Kaepora)* 2018

Andres Duarte: *New Techniques for the Homogenization of SN Ia Spectral Data (Kaepora)* 2017-2018

Teaching Assistant

Introduction to Research in Physics and Astrophysics (ASTR9) 2018

Exploring the Universe with Astronomical Data (ASTR8) 2018

Physics of Stars (ASTR112) 2017

Outreach

Lamat Program mentor 2021

Science Internship Program (SIP) mentor 2021

Mathematics Engineering Science Achievement (MESA) volunteer 2017-2019

Astronomy Club Leader 2017-2019

OBSERVING EXPERIENCE

Keck - Optical Spectroscopy (LRIS, 31 nights) / Adaptive Optics Imaging (1 night)

Shane (Lick) - Optical Spectroscopy (Kast, 22 nights)

SOAR - Optical Spectroscopy (Goodman, 7 nights)

KPNO Mayall - Optical Spectroscopy (KOSMOS, 5 nights)

Nickel (Lick, 2 nights) - Direct Imaging

George H. Herbig Observational Astronomy Workshop. Lick Observatory, Mt. Hamilton, CA. Shane and Nickel.

PRESENTATIONS

Talks

Conference - Progenitors of Type Ia Supernovae, Lijiang, China. *Using a Relational Database to Investigate Spectral Diversity in a Cosmological Sample*. August 2019.

FLASH Talk, Department of Astronomy, University of Arizona. *Investigating the Diversity of Type Ia Supernova Observations with a Relational Database*. August 2018.

FLASH Talk, Department of Astronomy and Astrophysics, UC Santa Cruz. *Familiar and Exotic Events in the Current Transient Landscape*. April 2018.

Posters

Keck Science Meeting. San Diego, CA. *"The Keck Type Ia Supernova Galaxy Survey"*. September 2021.

F.O.E. Fifty-One Erg Supernova Conference. Corvallis, OR. *A Relational Database for Type Ia Supernova Observations*. June 2017.

OTHER RESEARCH EXPERIENCE

MIT Haystack Observatory

A New Software User Interface for the Upgraded Haystack 37-meter Radio Telescope. Summer 2015.

REFERENCES

Ryan Foley: foley@ucsc.edu (University of California Santa Cruz, 831-459-2835)

Robert Kirshner: rkirshner@cfa.harvard.edu (CfA, Harvard University, 617-495-3752)

Saurabh Jha: saurabh@physics.rutgers.edu (Rutgers University, 848-445-8962)