# MATTHEW SIEBERT - CURRICULUM VITAE

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## APPOINTMENTS

**Affiliation: Space Telescope Science Institute**

STScI Postdoctoral Fellowship *2022-present*
(50% independent science + 50% work for the HST STIS instrument team)

NSF Graduate Fellow / Graduate Research Assistant - UC Santa Cruz *2016-2022*

REU Intern - MIT Haystack Observatory *2015*

## PHD INFORMATION

PhD Topic: Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data

PhD Advisor: Ryan J. Foley

## EDUCATION

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

STScI Achievement Award - STIS Flux Recalibration Team *2024*

UC Santa Cruz Dissertation Fellowship *2021*

UC Santa Cruz Department of Astronomy Whitford Prize *2018*

## PUBLICATIONS

**First author: 7 (131 citations), total papers: 85 (6349 citations), h-index: 33 [ADS]**

**First Author and Highlighted Publications**

1. *Discovery of a Relativistic Stripped Envelope Type Ic-BL Supernova at z = 2.83 with JWST*
**Siebert, M. R.**; C. Decoursey; D. A. Coulter; M. Engesser; J. D. R. Pierel; A. Rest; E. Egami; (22 authors)
ApJL Volume 972, Issue 1, id.L13, 13 pp. 2024 [arXiv:2406.05076]

2. *Ground-based and JWST Observations of SN 2022pul. I. Unusual Signatures of Carbon, Oxygen, and Circumstellar Interaction in a Peculiar Type Ia Supernova*
**Siebert, M. R.**; Kwok, L. A.; Johansson, J, ; Jha, S. W.; Blondin, S; Dessart, L.; Foley, R. J.; Hillier, D. J.; Larison, C.; Pakmor, R.; Temim, T. (82 authors)
ApJ, Volume 960, Issue 1, id.88, 19 pp. 2023. [arXiv:2308.12449]

3. *Ground-based and JWST Observations of SN 2022pul: II. Evidence from Nebular Spectroscopy for a Violent Merger in a Peculiar Type-Ia Supernova*
Kwok, L. A.; **Siebert, M. R.**; Johansson, J, ; Jha, S. W.; Blondin, S; Dessart, L.; Foley, R. J.; Hillier, D. J.; Larison, C.; Pakmor, R.; Temim, T. (82 authors)
Accepted in ApJ, Volume 960, Issue 1, id.88, 19 pp. 2023. [arXiv:2308.12450]

4. *An Asymmetric Double-degenerate Type Ia Supernova Explosion with a Surviving Companion Star*
**Siebert, M. R.**; Foley, R. J.; Zenati, Y.; Dimitriadis, G.; Schmidt, E; Yang, G; Davis, K. W.; Taggart, K.; Rojas-Bravo, C.
ApJ, Volume 958, Issue 2, id.173, 14 pp. 2023. [arXiv:2306.11788]

5. *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]

6. *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]

7. *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]

8. *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.; Murguia-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**

9. *Spectroscopic analysis of the strongly lensed SN Encore: constraints on cosmic evolution of Type Ia supernovae*
Dhawan, S.; Pierel, J. D. R.; Gu, M.; Newman, A. B.; Larison, C.; **Siebert, M. R.** et al. (19 authors)
Monthly Notices of the Royal Astronomical Society, Volume 535, Issue 4, pp.2939-2947. 2024. [arXiv:2407.16492]

10. *Double "acct": A Distinct Double-peaked Supernova Matching Pulsational Pair Instability Models*
Angus, C. R. et al. (38 authors incl. **Siebert, M. R.**)
ApJL, Volume 977, Issue 2, id.L41, 28 pp. 2024. [arXiv:2409.02174]

11. *SN 2021foa: The "Flip-flop" Type IIn/Ibn Supernova*
Farias, D. et al. (32 authors incl. **Siebert, M. R.**)
ApJ, Volume 977, Issue 2, id.152, 27 pp. 2024. [arXiv:2409.01359]

12. *Testing for Intrinsic Type Ia Supernova Luminosity Evolution at z¿2 with JWST*
Pierel, J. D. R.; Coulter, D. A.; **Siebert, M. R.** et al. (41 authors)
Submitted to ApJL. 2024. [arXiv:2411.11953]

13. *The Type I superluminous supernova catalogue I: light-curve properties, models, and catalogue description*
Gomez, S. et al. (28 authors incl. **Siebert, M. R.**)

Monthly Notices of the Royal Astronomical Society, Volume 535, Issue 1, pp.471-515 2024. [arXiv:2407.07946]

14. *AGN STORM 2. IX. Studying the Dynamics of the Ionized Obscurer in Mrk 817 with High-resolution X-Ray Spectroscopy*
Zaidouni, F. et al. (48 authors incl. **Siebert, M. R.**)
ApJ, Volume 974, Issue 1, id.91, 16 pp. 2024. [arXiv:2406.17061]

15. *AGN STORM 2. VIII. Investigating the Narrow Absorption Lines in Mrk 817 Using HST-COS Observations*
Dehghanian, M. et al. (42 authors incl. **Siebert, M. R.**)
ApJ, Volume 972, Issue 2, id.141, 13 pp. 2024. [arXiv:2407.04164]

16. *Discovery of an Apparent Red, High-velocity Type Ia Supernova at z = 2.9 with JWST*
Pierel, J. D. R.; Engesser, M.; Coulter, D. A.; DeCoursey, C.; **Siebert, M. R.** et al. (30 authors)
ApJ, Volume 971, Issue 2, id.L32, 11 pp. 2024. [arXiv:2406.05089]

17. *JWST Spectroscopy of SN H0pe: Classification and Time Delays of a Triply Imaged Type Ia Supernova at z = 1.78*
Chen, W. et al. (22 authors incl. **Siebert, M. R.**)
ApJ, Volume 970, Issue 2, id.102, 18 pp. 2024. [arXiv:2403.19029]

18. *The JADES Transient Survey: Discovery and Classification of Supernovae in the JADES Deep Field*
DeCoursey, C. et al. (35 authors incl. **Siebert, M. R.**)
Submitted to ApJ. 2024. [arXiv:2406.05060]

19. *Lensed Type Ia Supernova "Encore" at z = 2: The First Instance of Two Multiply Imaged Supernovae in the Same Host Galaxy*
Pierel, J. D. R. et al. (63 authors incl. **Siebert, M. R.**)
ApJL, Volume 967, Issue 2, id.L37, 9 pp. 2024. [arXiv:2404.02139]

20. *SN H0pe: The First Measurement of $H_0$ from a Multiply-Imaged Type Ia Supernova, Discovered by JWST*
Pascale, M. et al. (24 authors incl. **Siebert, M. R.**)
Accepted in ApJ. 2024. [arXiv:2403.18902]

21. *Serendipitous detection of the dusty Type IIL SN 1980K with JWST/MIRI*
Zsros, S. et al. (42 authors incl. **Siebert, M. R.**)
MNRAS. Volume 529, Issue 1, pp.155-168 2024. [arXiv:2310.03448]

22. *AGN STORM 2. V. Anomalous Behavior of the C IV Light Curve of Mrk 817*
Homayouni, Y. et al. (52 authors incl. **Siebert, M. R.**)
ApJ. Volume 963, Issue 2, id.123, 16 pp. 2024. [arXiv:2308.00742]

23. *Flight of the Bumblebee: the Early Excess Flux of Type Ia Supernova 2023bee Revealed by TESS, Swift, and Young Supernova Experiment Observations*
Wang, Qinan; Rest, Armin; Dimitriadis, Georgios; Ridden-Harper, Ryan; **Siebert, M. R.** et al. (44 authors)
ApJ. Volume 962, Issue 1, id.17, 18 pp. 2024. [arXiv:2305.03779]

24. *AGN STORM 2. VI. Mapping Temperature Fluctuations in the Accretion Disk of Mrk 817*
Neustadt, J. et al. (52 authors incl. **Siebert, M. R.**)
ApJ. Volume 961, Issue 2, id.219, 18 pp. 2024. [arXiv:2310.01497]

25. *Keck Infrared Transient Survey. I. Survey Description and Data Release 1*
Tinyanont, S. et al. (40 authors incl. **Siebert, M. R.**)
PASP. Volume 136, Issue 1, id.014201, 26 pp. 2024. [arXiv:2309.07102]

26. *Strong Carbon Features and a Red Early Color in the Underluminous Type Ia SN 2022xkq*
Pearson, J. et al. (88 authors incl. **Siebert, M. R.**)
ApJ. Volume 960, Issue 1, id.29, 28 pp. 2024. [arXiv:2309.10054]

27. *AGN STORM 2. IV. Swift X-Ray and Ultraviolet/Optical Monitoring of Mrk 817*
Cackett, E. et al. (51 authors incl. **Siebert, M. R.**)
ApJ. Volume 958, Issue 2, id.195, 16 pp. 2023. [arXiv:2306.17663]

28. *SpectAcLE: An Improved Method for Modeling Light Echo Spectra*
Partoush, R. et al. (20 authors incl. **Siebert, M. R.**)
Submitted to ApJ. 2023. [arXiv:2310.01501]

29. *Late-time Hubble Space Telescope Observations of AT 2018cow. I. Further Constraints on the Fading Prompt Emission and Thermal Properties 50-60 days Post-discovery*
Chen, Y.; Drout, M. R.; Piro, A. L.; Kilpatrick, C. D.; Foley, R. J.; Rojas-Bravo, C.; Taggart, K.; **Siebert, M. R.**; Magee, M. R.
ApJ. Volume 955, Issue 1, id.42, 17 pp. 2023. [arXiv:2303.03500]

30. *JWST observations of dust reservoirs in type IIP supernovae 2004et and 2017eaw*
Shahbandeh, M. et al. (40 authors incl. **Siebert, M. R.**)
MNRAS. Volume 523, Issue 4, pp.6048-6060. 2023. [arXiv:2301.10778]

31. *SN 2022ann: a Type Icn supernova from a dwarf galaxy that reveals helium in its circumstellar environment*
Davis, K. W. et al. (67 authors incl. **Siebert, M. R.**)
ApJ. Volume 951, Issue 1, id.34, 26 pp. 2023. [arXiv:2211.05134]

32. *Supernova 2020wnt: An Atypical Superluminous Supernova with a Hidden Central Engine*
Tinyanont, S. et al. (37 authors incl. **Siebert, M. R.**)
ApJ. Volume 951, Issue 1, id.34, 26 pp. 2023. [arXiv:2212.00177]

33. *A Spectroscopic Model of the Type Ia Supernova-Host-galaxy Mass Correlation from SALT3*
Jones, D. O.; Kenworthy, W. D.; Dai, M.; Foley, R. J.; Kessler, R.; Pierel, J. D. R.; **Siebert, M. R.**
ApJ. Volume 951, Issue 1, id.22, 14 pp. 2023. [arXiv:2209.05584]

34. *YSE-PZ: A Transient Survey Management Platform that Empowers the Human-in-the-loop*
Coulter, D. A. et al (21 authors incl. **Siebert, M. R.**)
PASP, Volume 135, Issue 1048, id.064501, 19 pp. 2023. [arXiv:2303.02154]

35. *Near-infrared and Optical Observations of Type Ic SN 2021krf: Luminous Late-time Emission and Dust Formation*
Ravi, A. P. et al. (32 authors incl. **Siebert, M. R.**)
ApJ. Volume 950, Issue 1, id.14, 23 pp. 2023. [arXiv:2211.00205]

36. *A Low-Mass Helium Star Progenitor Model for the Type Ibn SN 2020nxt*
Wang, Q. et al. (58 authors incl. **Siebert, M. R.**)
Accepted in MNRAS. 2023. [arXiv:2305.05015]

37. *The Young Supernova Experiment Data Release 1 (YSE DR1): Light Curves and Photometric Classification of 1975 Supernovae*
Aleo, P. D. et al. (88 authors incl. **Siebert, M. R.**)
ApJSS, Volume 266, Issue 1, id.9, 46 pp. 2023. [2211.07128]

38. *AGN STORM 2. II. Ultraviolet Observations of Mrk 817 with the Cosmic Origins Spectrograph on the Hubble Space Telescope*
Homayouni, Y. et al. (49 authors incl. **Siebert, M. R.**)
ApJ, Volume 948, Issue 2, id.85, 18 pp. 2023. [arXiv:2302.11587]

39. *AGN STORM 2. III. A NICER View of the Variable X-Ray Obscurer in Mrk 817*
Partington, E. R. et al. (49 authors incl. **Siebert, M. R.**)
ApJ, Volume 947, Issue 1, id.2, 15 pp. 2023. [arXiv:2302.12896]

40. *Forbidden hugs in pandemic times. IV. Panchromatic evolution of three luminous red novae*
Pastorello, A. et al. (80 authors incl. **Siebert, M. R.**)
Astronomy & Astrophysics, Volume 671, id.A158, 33 pp. 2023. [arXiv:2208.02782]

41. *A fast-rising tidal disruption event from a candidate intermediate-mass black hole*
Angus, C. R. et al. (39 authors incl. **Siebert, M. R.**)
Nature Astronomy, Volume 6, p. 1452-1463. 2022. 2022. [arXiv:2209.00018]

42. *SALT3-NIR: Taking the Open-source Type Ia Supernova Model to Longer Wavelengths for Next-generation Cosmological Measurements*
Pierel, J. D. R. et al. (35 authors incl. **Siebert, M. R.**)
ApJ. Volume 939, Issue 1, id.11, 16 pp. 2022. [arXiv:2209.05594]

43. *The Pantheon+ Type Ia Supernova Sample: The Full Dataset and Light-Curve Release*
Scolnic, D. et al. (29 authors incl. **Siebert, M. R.**)
ApJL. Volume 938, Issue 2, id.113, 15 pp. 2022. [arXiv:2112.03863]

44. *The Pantheon+ Analysis: Cosmological Constraints*
Brout, D. et al. (48 authors incl. **Siebert, M. R.**)
ApJ. Volume 938, Issue 2, id.110, 24 pp. 2022. [arXiv:2202.04077]

45. *Updated Photometry of the Yellow Supergiant Progenitor and Late-time Observations of the Type IIb Supernova 2016gkg*
Kilpatrick, C. D.; Coulter, D. A.; Foley, R. J.; Piro, A. L. ; Rest, A.; Rojas-Bravo, C.; **Siebert, M. R.**
ApJL. Volume 936, Issue 2, id.111, 8 pp. 2022. [arXiv:2112.03308]

46. *The Circumstellar Environments of Double-peaked, Calcium-strong Transients 2021gno and 2021inl*
Jacobson-Galan, W. V. et al. (47 authors incl. **Siebert, M. R.**)
ApJ, Volume 932, Issue 1, id.58, 25 pp. 2022. [arXiv:2203.03785]

47. *Progenitor and Close-In Circumstellar Medium of Type II Supernova 2020fqv from High-Cadence Photometry and Ultra-Rapid UV Spectroscopy*
Tinyanont, S. et al. (38 authors incl. **Siebert, M. R.**)
MNRAS. Volume 512, Issue 2, pp.2777-2797. 2022. [arXiv:2110.10742]

48. *A Carbon/Oxygen-dominated Atmosphere Days After Explosion for the "Super-Chandrasekhar" Type Ia SN 2020esm*
Dimitriadis, G.; Foley, R. J.; Arendse, N.; Coulter, D. A.; Jacobson-Galan, W. V.; **Siebert, M. R.** et al. (20 authors)
ApJ. Volume 927, Issue 1, id.78, 16 pp. 2022. [arXiv:2112.09930]

49. *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)
ApJ. Volume 926, Issue 1, id.20, 22 pp. 2022. [arXiv:2105.12296]

50. *A WC/WO star exploding within an expanding carbon-oxygen-neon nebula*
Gal-Yam, A. et al. (49 authors incl. **Siebert, M. R.**)
Nature, Volume 601, Issue 7892, p.201-204. 2022. [arXiv:2111.12435]

51. *An Early-Time Optical and Ultraviolet Excess in the type-Ic SN 2020oi*
Gagliano, A. et al. (33 authors incl. **Siebert, M. R.**)

ApJ. Volume 924, Issue 1, id.15, 25 pp. 2022. [arXiv:2105.09963]

52. *Final Moments. I. Precursor Emission, Envelope Inflation, and Enhanced Mass Loss Preceding the Luminous Type II Supernova 2020tlf*
Jacobson-Galan, W. V. et al. (36 authors incl. **Siebert, M. R.**)
ApJ, Volume 924, Issue 1, id.15, 25 pp. 2022. [arXiv:2109.12136]

53. *The Foundation Supernova Survey: Photospheric Velocity Correlations in Type Ia Supernovae*
Dettman, K. G.; Jha, S. W.; Dai, M.; Foley, R. J.; Rest, A.; Scolnic, D. M.; **Siebert, M. R.** et al. (17 authors)
ApJ, Volume 923, Issue 2, id.267, 29 pp. 2021. [arXiv:2102.06524]

54. *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.**; et al. (16 authors)
ApJ, Volume 923, Issue 2, id.265, 20 pp. 2021. [arXiv:2104.07795]

55. *The Gravity Collective: A Search for the Electromagnetic Counterpart to the Neutron Star-Black Hole Merger GW190814*
Kilpatrick, C. D. et al. (82 authors incl. **Siebert, M. R.**)
ApJ, Volume 923, Issue 2, id.258, 26 pp. 2021. [arXiv:2106.06897]

56. *SN 2018agk: A prototypical Type Ia Supernova with a smooth power-law rise in Kepler (K2)*
Wang, Q. et al. (76 authors incl. **Siebert, M. R.**)
ApJ, Volume 923, Issue 2, id.167, 22 pp. 2021. [arXiv:2108.13607]

57. *Discovery of a Fast Iron Low-ionization Outflow in the Early Evolution of the Nearby Tidal Disruption Event AT 2019qiz* November 2020.
Hung, T. et al. (18 authors incl. **Siebert, M. R.**)
ApJ, Volume 917, Issue 1, id.9, 22 pp. 2021. [arXiv:2011.01593]

58. *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. 2021. [arXiv:2012.07811]

59. *SN 2019muj - a well-observed Type Iax supernova that bridges the luminosity gap of the class*
Barna, B. et al. (41 authors incl. **Siebert, M. R.**)
Monthly Notices of the Royal Astronomical Society, Volume 501, Issue 1, pp.1078-1099. 2021.

60. *The Young Supernova Experiment: Survey Goals, Overview, and Operations*
Jones, D. O. et al (71 authors incl. **Siebert, M. R.**)
ApJ, Volume 908, Issue 2, id.143, 24 pp. 2021. [arXiv:2010.09724]

61. *Discovery and follow-up of ASASSN-19dj: an X-ray and UV luminous TDE in an extreme post-starburst galaxy*
Hinkle, J. T. et al (31 authors incl. **Siebert, M. R.**)
Monthly Notices of the Royal Astronomical Society, Volume 500, Issue 2, pp.1673-1696. 2021. [arXiv:2006.06690]

62. *Double-peaked Balmer Emission Indicating Prompt Accretion Disk Formation in an X-Ray Faint Tidal Disruption Event*
Hung, T. et al. (16 authors incl. **Siebert, M. R.**)
ApJ, Volume 903, Issue 1, id.31, 17 pp. 2020. [arXiv:2003.09427]

63. *SN 2019ehk: A Double-peaked Ca-rich Transient with Luminous X-Ray Emission and Shock-ionized Spectral Features*

Jacobson-Galan, W. V. et al. (67 authors incl. **Siebert, M. R.**)
ApJ, Volume 898, Issue 2, id.166. 2020. [arXiv:2005.01782]

64. *The Rise and Fall of ASASSN-18pg: Following a TDE from Early to Late Times* August 2020.
Holoien, T. W. -S. et al. (33 authors incl. **Siebert, M. R.**) (33 authors)
ApJ, Volume 898, Issue 2, id.161. 2020. [arXiv:2003.13693]

65. *To TDE or not to TDE: the luminous transient ASASSN-18jd with TDE-like and AGN-like qualities*
Neustadt, J. M. M. et al. (29 authors incl. **Siebert, M. R.**)
Monthly Notices of the Royal Astronomical Society, Volume 494, Issue 2, pp.2538-2560. 2020. [arXiv:1910.01142]

66. *The Foundation Supernova Survey: Measuring Cosmological Parameters with Supernovae from a Single Telescope*
Jones, D. O. et al. (30 authors incl. **Siebert, M. R.**)
ApJ, Volume 881, Issue 1, article id. 19, 23 pp. 2019. [arXiv:1811.09286]

67. *Discovery of Highly Blueshifted Broad Balmer and Metastable Helium Absorption Lines in a Tidal Disruption Event*
Hung, T. et al. (28 authors incl. **Siebert, M. R.**)
ApJ, Volume 879, Issue 2, article id. 119, 17 pp. 2019. [arXiv:1903.05637]

68. *SN 2017ens: The Metamorphosis of a Luminous Broadlined Type Ic Supernova into an SN IIn*
Chen, T. -W. et al. (49 authors incl. **Siebert, M. R.**)
ApJL, Volume 867, Issue 2, article id. L31, 8 pp. 2018. [arXiv:1808.04382]

69. *Should Type Ia Supernova Distances Be Corrected for Their Local Environments?*
Jones, D. O. et al. (16 authors incl. **Siebert, M. R.**)
ApJ, Volume 867, Issue 2, article id. 108, 14 pp. 2018. [arXiv:1805.05911]

70. *Three Hypervelocity White Dwarfs in Gaia DR2: Evidence for Dynamically Driven Double degenerate Double-detonation Type Ia Supernovae*
Shen, K. J. et al. (26 authors incl. **Siebert, M. R.**)
ApJ, Volume 865, Issue 1, article id. 15, 14 pp. 2018. [arXiv:1804.11163]

71. *SN 2016esw: a luminous Type II supernova observed within the first day after the explosion*
de Jaeger, T. et al. (21 authors incl. **Siebert, M. R.**)
Monthly Notices of the Royal Astronomical Society, Volume 478, Issue 3, p.3776-3792. 2018. [arXiv:1905.02204]

72. *The Foundation Supernova Survey: motivation, design, implementation, and first data release*
Foley, R. J. et al. (28 authors incl. **Siebert, M. R.**)
Monthly Notices of the Royal Astronomical Society, Volume 475, Issue 1, p.193-219. 2018. [arXiv:1711.02474]

73. *Electromagnetic evidence that SSS17a is the result of a binary neutron star merger*
Kilpatrick, C. D. et al. (21 authors incl. **Siebert, M. R.**)
Science, Volume 358, Issue 6370, pp. 1583-1587. 2017. [arXiv:1710.05434]

74. *Early spectra of the gravitational wave source GW170817: Evolution of a neutron star merger*
Shappee, B. J. et al. (36 authors incl. **Siebert, M. R.**)
Science, Volume 358, Issue 6370, pp. 1574-1578. 2017. [arXiv:1710.05432]

75. *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]

76. *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.** et al. (17 authors)
Science, Volume 358, Issue 6370, pp. 1556-1558. 2017. [arXiv:1710.05452]

77. *A gravitational-wave standard siren measurement of the Hubble constant*
Abbott, B. P. et al. (1313 authors incl. **Siebert, M. R.**)
Nature, Volume 551, Issue 7678, pp. 85-88. 2017. [arXiv:1710.05835]

78. *A Neutron Star Binary Merger Model for GW170817/GRB 170817A/SSS17a*
Murguia-Berthier, A. et al (17 authors incl. **Siebert, M. R.**)
ApJL, Volume 848, Issue 2, article id. L34, 8 pp. 2017. [arXiv:1710.05453]

79. *The Old Host-galaxy Environment of SSS17a, the First Electromagnetic Counterpart to a Gravitational-wave Source*
Pan, Y. -C. et al. (19 authors incl. **Siebert, M. R.**)
ApJL, Volume 848, Issue 2, article id. L30, 7 pp. 2017. [arXiv:1710.05439]

80. *Multi-messenger Observations of a Binary Neutron Star Merger*
Abbott, B. P. et al. (3677 authors incl. **Siebert, M. R.**)
ApJL, Volume 848, Issue 2, article id. L12, 59 pp. 2017. [arXiv:1710.05833]

81. *On the Progenitor of the Type IIb Supernova 2016gkg*
Kilpatrick, C. D. et al. (10 authors incl. **Siebert, M. R.**)
Monthly Notices of the Royal Astronomical Society, Volume 465, Issue 4, p.4650-4657. 2017. [arXiv:1610.04587]

**Unrefereed Publications**

82. *Rederivation of STIS Secondary Echelle Mode Traces*
**Siebert, M. R.**; Monroe, T.; Hernandez, S. ;
Instrument Science Report [STIS ISR 2024-03].

83. *Recalibration of Pre-SM4 STIS Echelle Throughputs*
**Siebert, M. R.**; Carlberg, J. K. ; Hernandez, S. ; Monroe, T.
Instrument Science Report [STIS ISR 2024-02].

84. *Safety Acquisitions: Redundancy for non-repeatable multi-orbit STIS visits*
Dallas, M. M.; **Siebert, M. R.**
Instrument Science Report [STIS ISR 2024-01].

85. *Gravity and Light: Combining Gravitational Wave and Electromagnetic Observations in the 2020s*
Foley, R. J. et al. (113 authors incl. **Siebert, M. R.**)
White Paper. 2019. [arXiv:1903.04553]

Astronomer's Telegrams (38 first authored, 43 co-authored)

## OBSERVING PROGRAMS (AS PRINCIPAL INVESTIGATOR)

**Hubble Space Telescope**: 8 orbits with STIS *2022-2023*
Measuring the Effect of Progenitor Metallicity on Type Ia Supernova Distance Estimates (GO-17170)

**Gemini South**: 4.0 hrs with GMOS *2021-2022*
Host-Galaxy Spectroscopy of Type Ia Supernovae (GS-2021B-Q-243)

**Gemini South**: 5.8 hrs with GMOS *2020-2021*
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)

## SERVICE, TEACHING, AND OUTREACH

### Service

STIS User Support Lead *2024-present*

STIS Flux Recalibration Working Group Lead *2023-present*

HST Cycle 32 SPG Manager *2024*

HST Cycle 31 TAC Leveler *2023*

### Undergraduate Student Advisor

Xander Jenkin: *A Comprehensive SED Library of Type Ia Supernovae for the STIS ETC* *2024*
(SASP mentee)

Eva Schmidt: *Strange Double-Peaked Calcium Emission in the Type Ia SN 2020hvf* *2021-2022*
(Ron Ruby Scholarship)

Erika Strasburger: *Constraining the Asymmetry of Type Ia Supernovae (Kaepora)* *2019-2021*
(NSF Graduate Research Fellowship, Dean's Thesis Award (UCSC), attending UC Berkeley graduate program)

Rodrigo Angulo: *Unburned carbon in the Outer Layers of Type Ia Supernova Ejecta (Kaepora)* *2018-2021*
(Davidsen Fellowship (JHU), Dean's Thesis Award (UCSC), attending JHU graduate program)

Kyle Davis: *A Comprehensive Study of SN Ia Ejecta Velocities (Kaepora)* *2018-2021*
(attending UCSC graduate program)

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

Space Astronomy Summer Program (SASP) Mentor *2024*

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

AAS 245, National Harbor, MD. *Discovery of a Relativistic Stripped-envelope Type Ic-BL Supernova at z = 2.83 with JWST.* January 2025.

COSMOS Meeting, Tokyo, Japan. *Discovery of a Relativistic Stripped-envelope Type Ic-BL Supernova at z = 2.83 with JWST.* July 2024.

AAS 243, New Orleans, LA.*An Asymmetric Double-degenerate Type Ia Supernova Explosion with a Surviving Companion Star.* January 2024.

SuperVirtual 2023. *Asymmetric Ejecta and Dust Emission in "Super-Chandrasekhar" Mass Type Ia Supernovae.* November 2023.

2023 MIAPbP Program "The Extragalactic Distance Scale and Cosmic Expansion in the Era of Large Surveys and the James Webb Telescope", Garching, Germany. *An Asymmetric Double-degenerate Type Ia Supernova Explosion with a Surviving Companion Star.* July 2023.

The Transient and Variable Universe Conference, UIUC. *An Asymmetric Double-degenerate Type Ia Supernova Explosion with a Surviving Companion Star.* June 2023.

Time Domain Astronomy Seminar, Department of Astronomy, Caltech. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* November 2021.

Roman Science Team Community Briefing, Goddard Space Flight Center, NASA. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* November 2021.

Science Happy Hour, CIERA, Northwestern University. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* November 2021.

CAPS Seminar, Center for Astrophysical Surveys, University of Illinois Urbana-Champaign. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* October 2021.

Friday Scientific Lunch Talk, NOIRLab-Tucson, NOAO. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* October 2021.

Cosmology and Astronomy Seminar, Department of Physic and Astronomy, UC Davis. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* October 2021.

Astronomy Short Talk, Department of Astronomy, UC Berkeley. *Improving Cosmological Utility of Type Ia Supernovae through Physics and Big Data.* October 2021.

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**

Accurate Flux Calibration in the Era of Space Astronomy and All-Surveys. Baltimore, MD. *"How can we Further Improve Flux Calibration of the STIS Echelle Modes"*. October 2024.

First Year of Science with JWST Conference. Baltimore, MD. *"JWST reveals dust emission in a Super-Chandrasekhar-mass SN Ia"*. September 2023.

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.

## REFERENCES

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