# Susan E. Clark

*Curriculum Vitae*

Physics Department
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## APPOINTMENTS

| | |
|---|---|
| Assistant Professor, Stanford University Department of Physics | 2021 – present |
| Member, Institute for Advanced Study | 2017 – 2021 |
| NASA Hubble Fellow, Institute for Advanced Study | 2017 – 2020 |

## EDUCATION

**Columbia University**

Ph.D., Astrophysics 2017

Dissertation: *Magnetic Fields in the Interstellar Medium*

M.A., M.Phil, Astrophysics 2014

**The University of North Carolina at Chapel Hill**

B.S., Physics 2012

## HONORS & AWARDS

| | |
|---|---|
| Sloan Research Fellowship | 2024 |
| Terman Faculty Fellowship | 2021 |
| Hubble Fellowship | 2017 - 2020 |
| Institute for Advanced Study School of Natural Sciences Fellowship | 2020 - 2022 |
| Unsung Hero Award, Princeton Prison Teaching Initiative | 2019 |
| ASNY Graduate Student Paper Prize | 2016 |
| CCAPP Price Prize in Cosmology and AstroParticle Physics | 2016 |
| PRL Editors' Recommendation Paper | 2015 |
| NSF Graduate Research Fellowship | 2012 – 2017 |
| Columbia Dean's Fellowship | 2012 – 2017 |
| Morehead-Cain Scholarship | 2008 – 2012 |

Full scholarship to UNC-Chapel Hill

## PUBLICATIONS

Complete ADS record. [* = mentored student lead, underline = Clark group member]

Refereed journal articles

58. V. Pelgrims, N. Mandarakas, R. Skalidis, K. Tassis, G.V. Panopoulou, V. Pavlidou, D. Blinov, S. Kiehlmann, **S.E. Clark**, B.S. Hensley, S. Romanopoulos, A. Basyrov, H.K. Eriksen, M. Falalaki, T. Ghosh, E. Gjerlw, J.A. Kypriotakis, S. Maharana, A. Papadaki, T.J. Pearson, S.B. Potter, A.N. Ramaprakash, A.C.S. Readhead, I.K. Wehus. *The first degree-scale starlight-polarization-based tomography map of the magnetized interstellar medium.* 2024, A&A 684, A162.

57. M. Lei*, **S.E. Clark**. *A New Constraint on the Relative Disorder of Magnetic Fields between Neutral ISM Phases.* 2024, submitted to ApJ. arXiv:2312.03846

56. J. Feng, R.J. Smith, A. Hacar, **S.E. Clark**, D. Seifried. *On the evolution of the observed Mass-to-Length relationship for star-forming filaments.* 2024, MNRAS 528, 6370. arXiv:2402.05186

55. G. Coppi, S. Dicker, J. Aguirre, J. Austermann, J. Beall, **S.E. Clark**, E. Cox, M. Devlin, L. Fissel, N. Galitzki, B.S. Hensley, J. Hubmayr, S. Molinari, F. Nati, G. Novak, E. Schisano, J.D. Soler, C. Tucker, J. Ullom, A. Vaskuri, M. Vissers, J. Wheeler, M. Zannoni. *The BLAST Observatory: A Sensitivity Study for Far-IR Balloon-borne Polarimeters.* 2024, PASP 136, 035003. arXiv:2401.14370

54. N. Mandarakas, G. Panopoulou, V. Pelgrims, S. Potter, V. Pavlidou, A. Ramaprakash, K. Tassis, D. Blinov, S. Kiehlmann, E. Koutsiona, S. Maharana, S. Romanopoulos, R. Skalidis, A. Vervelaki, **S.E. Clark**, J. Kypriotakis, A. Readhead. *Zero-polarization candidate regions for calibration of wide-field optical polarimeters.* 2024, A&A 684, 132. arXiv:2312.06435

53. S. Martin-Alvarez, E. Lopez-Rodriguez, T. Dacunha*, **S.E. Clark**, A. Borlaff, R. Beck, F. Rodríguez Montero, S.L. Jung, J. Devriendt, A. Slyz, J. Roman-Duval, E. Ntormousi, M. Tahani, K. Subramanian, D. Dale, P. Marcum, K. Tassis, I. del Moral-Castro, L.N. Tram, M. Jarvis. *Extragalactic Magnetism with SOFIA (SALSA Legacy Program). VII. A tomographic view of far infrared and radio polarimetric observations through MHD simulations of galaxies.* 2023, submitted to ApJ. arXiv:2311.06356

52. G. Halal*, **S.E. Clark**, A. Cukierman, D. Beck, C.-L. Kuo. *Filamentary Dust Polarization and the Morphology of Neutral Hydrogen Structures.* 2024, ApJ 961, 29. arXiv:2306.10107

51. R. Córdova Rosado*, B. Hensley, **S.E. Clark**, A. Duivenvoorden, Z. Atkins, E. Battistelli, S.K. Choi, J. Dunkley, C. Hervías-Caimapo, Z. Li, T. Louis, S. Næss, L. Page, B. Partridge, C. Sifón, S.T. Staggs, C. Vargas, E.J. Wollack. *The Atacama Cosmology Telescope: Galactic Dust Structure and the Cosmic PAH Background in Cross-correlation with WISE.* 2024, ApJ 960, 96. arXiv:2307.06352

50. W.R. Coulton, M. Madhavacheril, A. Duivenvoorden, J.C. Hill, et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: High-resolution component-separated maps across one-third of the sky.* 2024, Physical Review D, 109, 063530. arXiv:2307.01258

49. F. Qu, B. Sherwin, M. Madhavacheril, D. Han, K. Crowley et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: A Measurement of the DR6 CMB Lensing Power Spectrum and its Implications for Structure Growth.* 2024, ApJ 962, 112. arXiv:2304.05202

48. M. Madhavacheril, F. Qu, B. Sherwin, N. MacCrann, Y. Li et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR6 Gravitational Lensing Map and Cosmological Parameters.* 2024, ApJ 962, 113. arXiv:2304.05203

47. I. Gerrard, C. Federrath, N. Pingel, N. McClure-Griffiths, A. Marchal, G. Joncas, **S.E. Clark**, S. Stanimirović, M.-Y. Lee, J. Th. van Loon, J. Dickey, H. Dénes, Y.K. Ma, J. Dempsey, C. Lynn. *A new method for spatially resolving the turbulence driving mixture in the ISM with application to the Small Magellanic Cloud.* 2023, MNRAS 526, 982.

46. W. Surgent*, E. Lopez-Rodriguez, **S.E. Clark**. *The structure of magnetic fields in spiral galaxies: a radio and far-infrared polarimetric analysis.* 2023, ApJ 954, 53. arXiv:2302.07278

45. A. Borlaff, E. Lopez-Rodriguez, R. Beck, **S.E. Clark**, E. Ntormousi, K. Tassis, S. Martin-Alvarez, M. Tahani, D. Dale, I. del Moral Castro, J. Roman-Duval, P. Marcum, J. Beckman, K. Subramanian, S. Eftekharzadeh, L. Proudfit. *Extragalactic magnetism with SOFIA (SALSA Legacy Program) – V: First results on the magnetic field orientation of galaxies.* 2023, ApJ 952, 4. arXiv:2303.13586

44. M. Lei* & **S.E. Clark**. *Probing the cold neutral medium through HI emission morphology with the scattering transform.* 2023, ApJ 947, 74. arXiv:2212.06182

43. J. Clancy, G. Puglisi, **S.E. Clark**, G. Coppi, G. Fabbian, C. Hervías-Caimapo, J.C. Hill, F. Nati, C.L. Reichardt. *Polarization fraction of Planck Galactic cold clumps and forecasts for the Simons Observatory.* 2023, MNRAS 524, 3712. arXiv:2303.02788

42. U. Fuskeland et al. incl. **S.E. Clark**. *Tensor-to-scalar ratio forecasts for extended LiteBIRD frequency configurations.* 2023, A&A 676, A42. arXiv:2302.05228

41. Y.K. Ma, N. McClure-Griffiths, **S.E. Clark**, S.J. Gibson, J. Th. van Loon, J. D. Soler, M. E. Putman, J. M. Dickey, M. -Y. Lee, K. E. Jameson, L. Uscanga, J. Dempsey, H. Dénes, C. Lynn, N. M. Pingel. *H I filaments as potential compass needles? Comparing the magnetic field structure of the Small Magellanic Cloud to the orientation of GASKAP-H I filaments.* 2023, MNRAS 521, 60. arXiv:2302.04880

40. BICEP/Keck Collaboration* incl. **S.E. Clark**. *BICEP / Keck XVI: Characterizing Dust Polarization Through Correlations with Neutral Hydrogen.* 2023, ApJ 945, 72. arXiv:2210.05684 *Led by George Halal*.*

39. A. Kim*, **S.E. Clark**, M. Putman, L. Li. *The Kinematic Structure of Magnetically Aligned HI Filaments.* 2023, MNRAS 526, 4345. arXiv:2309.10777

38. E. Lopez-Rodriguez, A.S. Borlaff, R. Beck, W. Reach, S.A. Mao, E. Ntormousi, K. Tassis, S. Martin-Alvarez, **S.E. Clark**, D. Dale, I. del Moral-Castro. *Extragalactic magnetism with SOFIA (SALSA Legacy Program). VI. The magnetic fields in the multi-phase interstellar medium of the Antennae galaxies.* 2022, ApJ Letters, 942, 13. arXiv:2211.00012

37. A. Cukierman, **S.E. Clark**, G. Halal. *Magnetic Misalignment of Interstellar Dust Filaments.* 2023, ApJ 946, 106. arXiv:2208.07382

36. A. Hacar, **S.E. Clark**, F. Heitsch, J. Kainulainen, G. Panopoulou, D. Seifried, R. Smith. *Initial Conditions for Star Formation: A Physical Description of the Filamentary ISM.* 2023, Protostars and Planets VII, ASP Conference Series, Vol. 534, Editors: Shu-ichiro Inutsuka, Yuri Aikawa, Takayuki Muto, Kengo Tomida, and Motohide Tamura. arXiv:2203.09562

35. LiteBIRD Collaboration et al. incl. **S.E. Clark**. *Probing Cosmic Inflation with the LiteBIRD Cosmic Microwave Background Polarization Survey.* 2023, PTEP 2023, 042F01. arXiv:2202.02773

34. E. Lopez-Rodriguez, S.A. Mao, R. Beck, A. Borlaff, E. Ntormousi, K. Tassis, D. Dale, J. Roman-Duval, K. Subramanian, S. Martin-Alvarez, P. Marcum, **S.E. Clark**, W. Reach, D. Harper, E. Zweibel. *Extragalactic magnetism with SOFIA (SALSA Legacy Program) – IV: Program overview and first results on the polarization fraction.* 2022, ApJ 936, 92. arXiv:2205.01105

33. E. Lopez-Rodriguez, M. Clarke, S. Shenoy, W. Vacca, S. Coude, R. Arneson, P. Ashton, S. Eftekharzadeh, R. Beck, J. Beckman, A. Borlaff, **S.E. Clark**, D. Dale, S. Martin-Alvarez, E. Ntormousi, W. Reach, J. Roman-Duval, K. Tassis, D. Harper, P. Marcum. *Extragalactic magnetism with SOFIA (SALSA Legacy Program) – III: First data release and on-the-fly polarization mapping characterization.* 2022, ApJ 936, 65. arXiv:2204.13611

32. B.S. Hensley, **S.E. Clark**, V. Fanfani, N. Krachmalnicoff, G. Fabbian, D. Poletti, G. Puglisi, G. Coppi, J. Nibauer, R. Gerasimov, N. Galitzki, S. Choi, P. Ashton, C. Baccigalupi, et al. *The Simons Observatory: Galactic Science Goals and Forecasts.* 2022, ApJ 929, 166. arXiv:2111.02425

31. I. Lowe, B. Mason, T. Bhandarkar, **S.E. Clark**, M. Devlin, S. Dicker, S. Duff, R. Friesen, A. Hacar, B. Hensley, T. Mroczkowski, S. Næss, C. Romero, S. Sadavoy, M. Salatino, C. Sarazin, J. Orlowski-Scherer, A. Schillaci, J. Sievers, T. Stanke, A. Stutz, Z. Xu. *A study of 90 GHz dust emissivity on molecular cloud and filament scales.* 2022, ApJ 929, 102. arXiv:2105.13432

30. J.L. Campbell*, **S.E. Clark**, B.M. Gaensler, A. Marchal, C.L. Van Eck, A.A. Deshpande, S.J. George, S.J. Gibson, R. Ricci, J.M. Stil, A.R. Taylor. *A Comparison of Multi-Phase Magnetic*

*Field Tracers in a High-Galactic Latitude Region of the Filamentary Interstellar Medium.* 2022, ApJ 927, 49. arXiv:2112.03247

29. N. M. Pingel, J. Dempsey, N. M. McClure-Griffiths, J. M. Dickey, K. E. Jameson, H. Arce, G. Anglada, J. Bland-Hawthorn, S. L. Breen, F. Buckland-Willis, **S. E. Clark**, J. R. Dawson, H. Dnes, E. M. Di Teodoro, B.-Q. For, Tyler J. Foster, J. F. Gmez, H. Imai, G. Joncas, C.-G. Kim, M.-Y. Lee, C. Lynn, D. Leahy, Y. K. Ma, A. Marchal, D. McConnell, et al. *GASKAP-HI Pilot Survey Science I: ASKAP Zoom Observations of HI Emission in the Small Magellanic Cloud.* 2022, PASA 39, 5. arXiv:2111.05339

28. J.M. Dickey, J.M. Dempsey, N.M. Pingel, N.M. McClure-Griffiths, K. Jameson, J.R. Dawson, H. Dnes, **S.E. Clark**, D. Leahy, M.-Y. Lee, M.-A. Miville-Deschênes, S. Stanimirović, C.D. Tremblay, J. Th. van Loon. *GASKAP Pilot Survey Science II: ASKAP Zoom Observations of Galactic 21-cm Absorption.* 2022, ApJ 926, 186. arXiv:2111.04545

27. S. Pearson, **S.E. Clark**, A.J. Demirjian, K.V. Johnston, M.K. Ness, T.K. Starkenburg, B.F. Williams, R.A. Ibata. *The Hough Stream Spotter: A new Method for Detecting Linear Structure in Resolved Stars and Application to the Stellar Halo of M31.* 2022, ApJ 926, 166. arXiv:2107.00017

26. G. Panopoulou, **S.E. Clark**, A. Hacar, F. Heitsch, J. Kainulainen, E. Ntormousi, D. Seifried, R. J. Smith. *The width of Herschel filaments varies with distance (Corrigendum).* 2022, A&A 663, C1. arXiv:2111.08125

25. G. Panopoulou, **S.E. Clark**, A. Hacar, F. Heitsch, J. Kainulainen, E. Ntormousi, D. Seifried, R. J. Smith. *The width of Herschel filaments varies with distance.* 2022, A&AL 657, 13. arXiv:2111.08125

24. CCAT-Prime collaboration incl. **S.E. Clark**, *CCAT-prime Collaboration: Science Goals and Forecasts with Prime-Cam on the Fred Young Submillimeter Telescope.* 2022, ApJ Supplements 264, 7. arXiv:2107.10364

23. E. Lopez-Rodriguez, R. Beck, **S.E. Clark**, A. Hughes, A. Borlaff, E. Ntormousi, L. Grosset, K. Tassis, J. Beckman, K. Subramanian, D. Dale, T. Díaz-Santos. *Extragalactic magnetism with SOFIA (Legacy Program) - II: The bimodal magnetic field in the starburst ring of NGC 1097.* 2021, ApJ 923, 150. arXiv:2107.09063

22. **S.E. Clark**, Chang-Goo Kim, J. Colin Hill, B.S. Hensley. *The Origin of Parity Violation in Polarized Dust Emission and Implications for Cosmic Birefringence.* 2021, ApJ 919, 53. arXiv:2105.00120

21. A.S. Borlaff, E. Lopez-Rodriguez, R. Beck, R. Stepanov, E. Ntormousi, A. Hughes, K. Tassis, P. Marcum, L. Grosset, J. Beckman, L. Proudfit, **S.E. Clark**, T. Díaz-Santos, S.A. Mao, W. Reach, J. Roman-Duval, K. Subramanian, L.N. Tram, E. Zweibel. *Extragalactic Magnetism with SOFIA (Legacy Program) – I: The magnetic field in the multi-phase interstellar medium of M51.* 2021, ApJ 921, 128. arXiv:2105.09315

20. Yilun Guan*, **S.E. Clark**, B.S. Hensley, P.A. Gallardo, S. Naess, C. Duell, et al. *The Atacama Cosmology Telescope: Microwave Intensity and Polarization Maps of the Galactic Center.* 2021, ApJ 920, 6. arXiv:2105.05267

19. A.J.M. Thomson, T.L. Landecker, N.M. McClure-Griffiths, J.M. Dickey, J.L. Campbell, E. Carretti, **S.E. Clark**, C. Federrath, B.M. Gaensler, J.L. Han, M. Haverkorn, A.S. Hill, S.A. Mao, A. Ordog, L. Pratley, W. Reich, C.L. Van Eck, J.L. West, M. Wolleben. *The Global Magneto-Ionic Medium Survey (GMIMS): The brightest polarized region in the Southern sky at 75 cm and its implications for Radio Loop II.* 2021, MNRAS 507, 3495. arXiv:2106.12595

18. J.S. Oishi, K.J. Burns, **S.E. Clark**, E.H. Anders, B.P. Brown, G.M. Vasil, D Lecoanet. *eigentools: A Python package for studying differential eigenvalue problems with an emphasis on robustness.* 2021, JOSS 6(62), 3079. JOSS

17. V. Pelgrims, **S.E. Clark**, B.S. Hensley, G. V. Panopoulou, V. Pavlidou, K. Tassis, H.K. Eriksen, I.K. Wehus. *Evidence for Line-of-Sight Frequency Decorrelation of Polarized Dust Emission in Planck Data*. 2021, A&A 647, A16. arXiv:2101.09291

16. Choi et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: A Measurement of the Cosmic Microwave Background Power Spectra at 98 and 150 GHz*. 2020, JCAP 12, 45. arXiv:2007.07289

15. Aiola et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR4 Maps and Cosmological Parameters*. 2020, JCAP 12, 47. arXiv:2007.07288

14. **S.E. Clark** & B.S. Hensley. *Mapping the Magnetic Interstellar Medium in Three Dimensions Over the Full Sky with Neutral Hydrogen*. 2019, ApJ 887, 2. arXiv:1909.11673

13. J.E.G. Peek & **S.E. Clark**. *Small-Scale HI Channel Map Structure is Cold: Evidence from Na* I *Absorption at High Galactic Latitudes*. 2019, ApJL 886, 1. arXiv:1909.09647

12. **S.E. Clark**, J.E.G. Peek, M.-A. Miville-Deschênes. *The physical nature of neutral hydrogen intensity structure*. 2019, ApJ 874, 171. arXiv:1902.01409

11. A.J.M. Thomson, T.L. Landecker, J.M. Dickey, N.M. McClure-Griffiths, M. Wolleben, E. Carretti, A. Fletcher, C. Federrath, A.S. Hill, S.A. Mao, B.M. Gaensler, M. Haverkorn, **S.E. Clark**, C.L. Van Eck, J.L. West. *Through thick or thin: Multiple components of the magneto-ionic medium towards the nearby* HII *region Sharpless 2-27 revealed by Faraday tomography*. 2019, MNRAS 487, 4751. arXiv:1905.09285

10. **S.E. Clark**. *A new probe of line-of-sight magnetic field tangling*. 2018, ApJL 857, L10. arXiv:1802.00011

9. J.E.G. Peek, B.L. Babler, Y. Zheng, **S.E. Clark**, K.A. Douglas, E.J. Korpela, M.E. Putman, S. Stanimirović, S.J. Gibson, C. Heiles. *The GALFA-HI Survey Data Release 2*. 2018, ApJS 234, 1. ADS

8. **S.E. Clark** & J.S. Oishi. *The weakly nonlinear magnetorotational instability in a global, cylindrical Taylor-Couette flow*. 2017, ApJ 841, 2. arXiv:1610.01603

7. **S.E. Clark** & J.S. Oishi. *The weakly nonlinear magnetorotational instability in a local geometry*. 2017, ApJ 841, 1. arXiv:1610.01616

6. F. Heitsch, B. Bartell, **S.E. Clark**, J.E.G. Peek, D. Cheng, M.E. Putman. *Three-dimensional orientation of compact high velocity clouds*. 2016, MNRAS Letters 462, L46. arXiv:1606.06689

5. J. Malinen, L. Montier, J. Montillaud, M. Juvela, I. Ristorcelli, **S.E. Clark**, O. Berné, J.-Ph. Bernard, V.-M. Pelkonen, D.C. Collins. *Matching dust emission structures and magnetic field in high-latitude cloud L1642: comparing Herschel and Planck maps*. 2016, MNRAS 460, 1934. arXiv:1512.03775

4. **S.E. Clark**, J. Colin Hill, J.E.G. Peek, M.E. Putman, B.L. Babler. *Neutral hydrogen structures trace dust polarization angle: Implications for cosmic microwave background foregrounds*. 2015, PRL 115, 241302. Selected as PRL Editors' Recommendation. arXiv:1508.07705

3. N.M. McClure-Griffiths, S. Stanimirović, [5 authors], **S.E. Clark**, [3 authors]. *Galactic and Magellanic evolution with the SKA*. 2015, from "Advancing Astrophysics with the Square Kilometre Array", PoS. arXiv:1501.01130

2. **S.E. Clark**, J.E.G. Peek, M.E. Putman. *Magnetically aligned* HI *fibers and the Rolling Hough Transform*. 2014, ApJ 789, 82. arXiv:1312.1338

1. W.-H. Hsu, M.E. Putman, F. Heitsch, S. Stanimirović, J.E.G. Peek, **S.E. Clark**. *Physical properties of Complex C halo clouds*. 2011, AJ 141, 57. arXiv:1011.0011

Conference proceedings

3. I. Lowe, G. Coppi, et al. incl. **S.E. Clark**. *The Balloon-borne Large Aperture Submillimeter Telescope Observatory.* 2020, in Proc. SPIE 11445, Ground-based and Airborne Telescopes VIII, 114457A. arXiv:2012.01376

2. **S.E. Clark**. *Galactic neutral hydrogen and the magnetic ISM foreground.* 2017, in Jelić & van der Hulst (Eds.) *Peering towards Cosmic Dawn*, Proceedings of the International Astronomical Union, Symposium No. 333, Dubrovnik, Croatia

1. **S.E. Clark**, J.E.G. Peek, J. Colin Hill, M.E. Putman. *Quantifying the magnetic alignment of* HI *and dust in the diffuse ISM.* 2016, in P. Jablonka, Ph. André, F. van der Tak (Eds.) *From Interstellar Clouds to Star-forming Galaxies: Universal Processes?* Proceedings of the International Astronomical Union Symposia and Colloquia, IAU 315, Honolulu, Hawaii

White papers, mission proposals, and Astronomer's Telegrams

12. J. J. Han et al. incl. **S.E. Clark**. *NANCY: Next-generation All-sky Near-infrared Community surveY.* arXiv:2306.11784

11. K. Abazajian et al. incl. **S.E. Clark**. *Snowmass 2021 CMB-S4 White Paper.* arXiv:2203.08024

10. C. Chang et al. incl **S.E. Clark**. *Snowmass2021 Cosmic Frontier: Cosmic Microwave Background Measurements White Paper.* arXiv:2203.07638

9. K. Alexander, N. Battalia, T. Bhandarkar, **S.E. Clark**. *GBT/MUSTANG-2 90 GHz Observations of AT2022cmc.* The Astronomer's Telegram, No. 15269. March 2022. ADS

8. A. Lee et al. incl. **S.E. Clark**. *The Simons Observatory.* 2019, Astro2020 Decadal APC White Paper. ADS

7. S. Hanany et al. incl. **S.E. Clark**. *PICO: Probe of Inflation and Cosmic Origins.* 2019, Astro2020 Decadal APC White Paper. arXiv:1908.07495

6. The Simons Observatory Collaboration, incl. **S.E. Clark**. *The Simons Observatory: Astro2020 Decadal Project Whitepaper.* 2019. arXiv:1907.08284

5. L. Fissel, C.L.H. Hull, **S.E. Clark**, D.T. Chuss et al. *Studying Magnetic Fields in Star Formation and the Turbulent Interstellar Medium.* 2019, Astro2020 Science White Paper. arXiv:1903.08757

4. **S.E. Clark**, C. Heiles, T. Robishaw. *Magnetic Fields and Polarization in the Diffuse Interstellar Medium.* 2019, Astro2020 Science White Paper. arXiv:1903.07671

3. D. Stinebring, S. Chatterjee, **S.E. Clark**., J.M. Cordes, T. Dolch, C. Heiles, [12 authors]. *Twelve Decades: Probing the ISM from kiloparsec to sub-AU scales.* 2019, Astro2020 Science White Paper. arXiv:1903.073701

2. B. Hensley et al. incl. **S.E. Clark**. *Determining the Composition of Interstellar Dust with Far-Infrared Polarimetry.* 2019, Astro2020 Science White Paper. ADS

1. S. Hanany et al. incl. **S.E. Clark**. *PICO: Probe of Inflation and Cosmic Origins.* 2019, Probe class mission study for NASA and 2020 Decadal Panel. arXiv:1902.10541

## SCIENTIFIC PRESENTATIONS

Significant presentations since 2019. Career total: 111 presentations, including 82 invited talks/colloquia

### Invited Conference Talks

57. Turbulence in the Universe, KITP, Santa Barbara, California — Feb. 2024
56. Scintillometry 2023, Taipei, Taiwan — Nov. 2023

55. From the Galaxy to the Big Bang, Banyuls-sur-Mer, France — June 2023
54. The Interstellar Institute: With Two Eyes, Orsay, France — July 2022
53. COSPAR 44th Scientific Assembly: Origins of Cosmic Rays, Athens, Greece — July 2022
52. Our Galactic Ecosystem: Opportunities and Diagnostics in the Infrared and Beyond, Lake Arrowhead, California — Feb. 2022
51. The Grand Cascade: The Evolution of Baryons Across Scales (*virtual*) — July 2021
50. CMB-S4 Collaboration Meeting (*virtual*) — March 2021
49. Arecibo Observatory Open House, AAS, Honolulu, Hawaii — Jan. 2020
48. *B*-Modes from Space, Garching, Germany — Dec. 2019
47. IEEE Workshop on Hyperspectral Image and Signal Processing, Amsterdam, The Netherlands — Sept. 2019
46. The Self-Organized Star Formation Process, Orsay, France — Sept. 2019
45. Pathways to the Future of Arecibo Observatory, San Juan, Puerto Rico — Feb. 2019

**Invited Colloquia and Seminars**

44. Space and Cosmic Ray Physics Seminar, University of Maryland — April 2024
43. Colloquium, Yale University — Feb. 2024
42. Astrophysics Seminar, University of Pennsylvania — Jan. 2024
41. Theoretical Astrophysics Seminar, UC Berkeley — Dec. 2023
40. Colloquium, University of Arizona Theory Colloquium — April 2023
39. Canadian Institute for Theoretical Astrophysics (CITA) Seminar, Toronto, Canada — April 2023
38. Colloquium, Southern Methodist University — Dec. 2022
37. Cardiff Astro Seminar (*virtual*) — Dec. 2022
36. IAPS Seminar, Istituto Nazionale di Astrofisica, Rome (*virtual*) — Oct. 2022
35. Colloquium, University of Nevada Las Vegas (*virtual*) — April 2022
34. Seminar, DESY Zeuthen (*virtual*) — April 2022
33. Colloquium, University of Southern California (*virtual*) — Dec. 2021
32. Colloquium, SOFIA Observatory (*virtual*) — Nov. 2021
31. Colloquium, SLAC National Lab (*virtual*) — Nov. 2021
30. Colloquium, Oskar Klein Center, Stockholm University (*virtual*) — June 2021
29. Colloquium, Munich Joint Astronomy Colloquium (*virtual*) — April 2021
28. Colloquium, Johns Hopkins University (*virtual*) — April 2021
27. Colloquium, University of British Columbia (*virtual*) — March 2021
26. Tuesday Astrophysics Seminar, University of Chicago (*virtual*) — March 2021
25. Colloquium, Columbia University (*virtual*) — Feb. 2021
24. Colloquium, Stanford Physics & Applied Physics (*virtual*) — Oct. 2020
23. Colloquium, Caltech — March 2020
22. Colloquium, UC Santa Cruz — Feb. 2020
21. Colloquium, UC Berkeley — Feb. 2020
20. Colloquium, University of Toronto — Feb. 2020
19. Colloquium, UC Santa Barbara — Jan. 2020
18. Colloquium, Stanford University — Jan. 2020
17. Colloquium, University of Virginia/NRAO — Nov. 2019
16. Colloquium, Cornell University — Nov. 2019
15. McGill Space Institute Seminar, Montreal, Canada — Nov. 2019
14. Queen's University Seminar, Kingston, Canada — Nov. 2019
13. Colloquium, University of Maryland, College Park — Oct. 2019

12. CITA Seminar, Toronto, Canada — Oct. 2019
11. Princeton Gravity Group Seminar, Princeton, New Jersey — Feb. 2019

**Contributed Talks**

10. Scientific Frontiers for the DSA-2000 Radio Camera, Caltech, California — March 2023
9. CCAT-prime collaboration meeting *(virtual)* — April 2022
8. Modeling the Galactic Magnetic Field Conference *(virtual)* — Oct. 2021
7. IBEX Group Meeting *(virtual)* — Oct. 2021
6. Molecular Clouds, HII Regions, Interstellar Medium, AAS, Honolulu, Hawaii — Jan. 2020
5. Princeton/IAS Cosmology Lunch, Princeton, New Jersey — Oct. 2019
4. NASA Hubble Fellowship Program Symposium, Washington, D.C. — Oct. 2019
3. New Perspectives on Galactic Magnetism, Newcastle upon Tyne, England — June 2019
2. Hubble Fellows Symposium, Baltimore, Maryland — Mar. 2019
1. Big Apple Magnetic Fields, New York, New York — Jan. 2019

## COURSES TAUGHT

**Stanford**

Physics 15: Stars and Planets in a Habitable Universe
Winter 2023 (47 students), Fall 2023 (43 students)

Physics 113: Computational Physics
Spring 2024 (35 students)

Physics 367: Physics of the Interstellar and Intergalactic Medium
Spring 2022 (10 graduate students)

**Prison Teaching Initiative**

Introduction to Astrophysics, Wagner Youth Correctional Facility — 2019
Introduction to Astrophysics, East Jersey State Prison — 2018

## STUDENTS ADVISED

**Graduate Students**

*Stanford Primary PhD advisees*

Minjie Lei — 2022 – present
Marta Nowotka — 2021 – present
George Halal — 2020 – present

*Stanford PhD rotation students*

Annie Cheng — 2024
Caleb Redshaw — 2024
Ben Dodge — 2024
Jay Baptista — 2023
Sean Liu — 2023
Tara Dacunha — 2022
Viraj Manwadkar — 2022
Jack Dinsmore — 2022
Charles Yang — 2022

*Stanford coterminal Master's students*

Iñigo Valenzuela Lombera, Applied Physics coterm student project — 2020 – 2021

*Substantial graduate mentorship outside Stanford*

| | |
|---|---|
| Rodrigo Córdova Rosado, Princeton University, graduate student | 2020 – 2024 |
| Doyeon Avery Kim, Columbia University, graduate student | 2018 – 2023 |
| Jessica Campbell, University of Toronto, graduate student | 2017 – 2022 |

**Undergraduate Students**

*Stanford or Summer Research Programs at Stanford*

2023

Yujina Basnet, Khwaish Billore, Gisselle Jimenez, Diego Brandon Maglione, Anthony Nuñez, Will Surgent, Patrick Tupoumalohi, Mark Ting Hong Zhu

2022

Laywood Fayne, Francesca Fernandes, Eliza Gallagher, Monica Hicks, Israel Reyes, Abraar Saleem, Will Surgent, Gabriel Muñoz Zarazua, Kendall Zylstra

2021

Laywood Fayne, Sally Jiang

*Outside Stanford*

| | |
|---|---|
| Alexis Demirjian, Barnard College, undergraduate research | 2019 |
| Larry Li, Columbia University, undergraduate research | 2016 – 2019 |
| Garrison Grogan, Columbia University, undergraduate research | 2016 – 2017 |
| Lowell Schudel, Columbia University, undergraduate research | 2014 – 2015 |

## LEADERSHIP AND PROFESSIONAL SERVICE

**Selected recent service to Stanford/KIPAC**

| | |
|---|---|
| Chair, Physics Department Recruiting & Outreach Committee | 2022 – present |
| Physics Department Equity & Inclusion Committee | 2021 – present |
| Chair, KIPAC Postdoctoral Fellowship Selection Committee | 2023 – 2024 |
| Chair, KIPAC Colloquium Committee | 2021 – present |
| KIPAC Postbac Fellows Advisor | 2023 – present |
| KIPAC Tea Committee | 2021 – 2023 |
| Co-Chair, KIPAC Equity & Inclusion Committee | 2021 – present |
| Stanford Science Fellows Astrophysics Selection Committee | 2021, 2022, 2023 |
| Co-Chair, KIPAC Postdoctoral Fellowship Selection Committee | 2022 – 2023 |
| Physics Department Graduate Student Admissions Committee | 2021 – 2022 |
| IDEAL Pedagogy Physics team | 2021 |

**Selected recent service to the community**

| | |
|---|---|
| DSA-2000 Science Advisory Committee | 2022 – present |
| Simons Observatory Theory & Analysis Committee (elected position) | 2022 – present |
| Simons Observatory Publications Panel (elected position) | 2022 – present |
| CMB-S4 - LiteBIRD Memorandum of Understanding writing team | 2022 |
| Department of Energy Analysis of Alternatives for CMB-S4: served on Tiger Team | 2022 |

Scientific Organizing Committee: *Galactic Science & CMB Foregrounds*, Tenerife, Spain (2022); *Interstellar Institute 6*, Orsay, France (2023); *Cosmology with CMB-S4*, SLAC (2023)

| | |
|---|---|
| CMB-S4 Collaboration Mentor | 2021 – 2022 |
| Board of Trustees, Association of Members of the Institute for Advanced Study | 2020 – present |

Referee, *ApJ*, *ApJL*, *A&A*, *Nature*, *Nature Astronomy*

Reviewer/Panelist, NASA, NSF

**Collaboration leadership roles:**

| | |
|---|---|
| Project Scientist, Advanced Simons Observatory | 2023 – present |
| Co-lead, Simons Observatory Galactic Science Working Group | 2019–present |
| Founder and co-lead, Pan-Experiment Galactic Science Group | 2020–present |
| Co-lead, Atacama Cosmology Telescope Galactic Science Working Group | 2019–present |
| Deputy Lead, Magnetic Fields Science Working Group, CCAT-Prime collaboration | 2020–present |
| Lead, Filaments Working Group, Galactic Australian SKA Pathfinder (GASKAP) | 2020–2021 |

**Active collaboration member:**

Atacama Cosmology Telescope (ACT), BLAST, CCAT-Prime, CMB-S4, Galactic Australian SKA Pathfinder (GASKAP), Global Magneto-Ionic Medium Survey (GMIMS), LiteBIRD, PASIPHAE, Probe of Inflation and Cosmic Origins (PICO), Simons Observatory (SO)

## SELECTED PUBLIC OUTREACH AND SERVICE

| | |
|---|---|
| KITP Chalk Talk, Public Lecture, Kavli Institute for Theoretical Physics | 2024 |
| Benjamin Dean Astronomy Lecture, California Academy of Sciences | 2023 |
| KIPAC Public Lecture (live-streamed on YouTube) | 2022 |
| Organizer, Speaker, Stanford Physics, Identity, and Equity Program | 2021–2023 |
| Professional Development Coordinator, SO-NSBP Summer Research Program | 2020 |
| Team Leader, Instructor, Prison Teaching Initiative | 2018 – 2019 |
| Public Talk, Astronomy on Tap, Trenton, New Jersey | 2019 |
| Invited Panelist, Conference for Undergraduate Women in Physics | 2018 |
| Volunteer, Reading Team Math Program, Harlem, New York | 2016 – 2017 |
| Instructor, Rooftop Variables, Curtis High School, Staten Island, New York | 2012 – 2017 |
| Outreach Volunteer, bi-weekly community stargazing, Columbia University | 2012 – 2017 |
| Public Lecture, *Our Magnetic Universe*, Columbia Astronomy Outreach Lecture Series | 2015 |
| Founder, President, Carolina Women in Physics | 2010 – 2012 |

## OTHER PUBLISHED WRITING

*Interstellar Magnetism*, **S.E. Clark**, article, The Institute Letter, Spring 2019
*Closing My Eyes*, **S.E. Clark**, personal essay, The Washington Post Magazine, May 2009