

# SUSAN E. CLARK

## *Curriculum Vitae*

Physics Department  
382 Via Pueblo Mall  
Stanford, CA 94305

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### APPOINTMENTS

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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

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<b>Columbia University</b>	
Ph.D., Astrophysics	2017
Dissertation: <i>Magnetic Fields in the Interstellar Medium</i>	
M.A., M.Phil, Astrophysics	2014
<b>The University of North Carolina at Chapel Hill</b>	
B.S., Physics	2012

### HONORS & AWARDS

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Terman Faculty Fellowship, Stanford University	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 Prize 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
<a href="#">Full scholarship</a> to UNC-Chapel Hill	

### PUBLICATIONS

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

Refereed journal articles

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 in press. [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, submitted to PASP. [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, submitted to A&A. [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. Naess, 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. 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.
49. 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*. 2023, submitted. [arXiv:2307.01258](#)
48. F. Qu 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*. 2023, submitted to ApJ. [arXiv:2304.05202](#)
47. M. Madhavacheril et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR6 Gravitational Lensing Map and Cosmological Parameters*. 2023, submitted to ApJ. [arXiv:2304.05203](#)
46. 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](#)
45. W. Sargent\*, 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](#)
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, submitted to A&A. [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. Naess, C. Romero, S. Sadavoy, M. Salatino, C. Sarazin, J. Orłowski-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: 109 presentations, including 80 invited talks/colloquia

### Invited Conference Talks

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| 55. Scintillometry 2023, Taipei, Taiwan  | Nov. 2023  |
| 54. From the Galaxy to the Big Bang, Banyuls-sur-Mer, France   | June 2023  |
| 53. The Interstellar Institute: With Two Eyes, Orsay, France   | July 2022  |
| 52. COSPAR 44th Scientific Assembly: Origins of Cosmic Rays, Athens, Greece                                      | July 2022  |
| 51. Our Galactic Ecosystem: Opportunities and Diagnostics in the Infrared and Beyond, Lake Arrowhead, California | Feb. 2022  |
| 50. The Grand Cascade: The Evolution of Baryons Across Scales ( <i>virtual</i> )                                 | July 2021  |
| 49. CMB-S4 Collaboration Meeting ( <i>virtual</i> )  | March 2021 |
| 48. Arecibo Observatory Open House, AAS, Honolulu, Hawaii  | Jan. 2020  |
| 47. <i>B</i> -Modes from Space, Garching, Germany  | Dec. 2019  |

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| 46. IEEE Workshop on Hyperspectral Image and Signal Processing,<br>Amsterdam, The Netherlands | Sept. 2019 |
| 45. The Self-Organized Star Formation Process, Orsay, France                                  | Sept. 2019 |
| 44. Pathways to the Future of Arecibo Observatory, San Juan, Puerto Rico                      | Feb. 2019  |

### Invited Colloquia and Seminars

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| 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 ( <i>virtual</i> )  | Dec. 2022  |
| 36. IAPS Seminar, Istituto Nazionale di Astrofisica, Rome ( <i>virtual</i> )        | Oct. 2022  |
| 35. Colloquium, University of Nevada Las Vegas ( <i>virtual</i> )                   | April 2022 |
| 34. Seminar, DESY Zeuthen ( <i>virtual</i> )  | April 2022 |
| 33. Colloquium, University of Southern California ( <i>virtual</i> )                | Dec. 2021  |
| 32. Colloquium, SOFIA Observatory ( <i>virtual</i> )                                | Nov. 2021  |
| 31. Colloquium, SLAC National Lab ( <i>virtual</i> )                                | Nov. 2021  |
| 30. Colloquium, Oskar Klein Center, Stockholm University ( <i>virtual</i> )         | June 2021  |
| 29. Colloquium, Munich Joint Astronomy Colloquium ( <i>virtual</i> )                | April 2021 |
| 28. Colloquium, Johns Hopkins University ( <i>virtual</i> )                         | April 2021 |
| 27. Colloquium, University of British Columbia ( <i>virtual</i> )                   | March 2021 |
| 26. Tuesday Astrophysics Seminar, University of Chicago ( <i>virtual</i> )          | March 2021 |
| 25. Colloquium, Columbia University ( <i>virtual</i> )                              | Feb. 2021  |
| 24. Colloquium, Stanford Physics & Applied Physics ( <i>virtual</i> )               | 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

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| 10. Scientific Frontiers for the DSA-2000 Radio Camera, Caltech, California  | March 2023 |
| 9. CCAT-prime collaboration meeting ( <i>virtual</i> )                       | April 2022 |
| 8. Modeling the Galactic Magnetic Field Conference ( <i>virtual</i> )        | Oct. 2021  |
| 7. IBEX Group Meeting ( <i>virtual</i> )                                     | 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

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### Stanford

Physics 15: Stars and Planets in a Habitable Universe

Winter 2023 (47 students), Fall 2023 (43 students)

Physics 367: Physics of the Interstellar and Intergalactic Medium

Spring 2022 (10 students)

### Prison Teaching Initiative

Introduction to Astrophysics, Wagner Youth Correctional Facility 2019

Introduction to Astrophysics, East Jersey State Prison 2018

## STUDENTS ADVISED

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### Graduate Students

*Stanford Primary PhD advisees*

Minjie Lei 2022 – present

Marta Nowotka 2021 – present

George Halal 2020 – present

*Stanford PhD rotation students*

Ben Dodge 2023 – present

Jay Baptista 2023 – present

Sean Liu 2023 – present

Tara Dacunha 2022 – present

Viraj Manwadkar 2022

Jack Dinsmore 2022

Charles Yang 2022

*Stanford coterminial Master's students*

Iñigo Valenzuela Lombera, Applied Physics cotermin 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

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### 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 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

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: <i>Galactic Science &amp; CMB Foregrounds</i> , Tenerife, Spain (2022); <i>Interstellar Institute 6</i> , Orsay, France (2023); <i>Cosmology with CMB-S4</i> , SLAC (2023)	
CMB-S4 Collaboration Mentor	2021 – 2022
Board of Trustees, Association of Members of the Institute for Advanced Study	2020 – present
Referee, <i>ApJ</i> , <i>ApJL</i> , <i>A&amp;A</i> , <i>Nature</i> , <i>Nature Astronomy</i>	
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

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<a href="#">Benjamin Dean Astronomy Lecture</a> , California Academy of Sciences	2023
KIPAC Public Lecture (live-streamed on <a href="#">YouTube</a> )	2022
Organizer, Speaker, Stanford <a href="#">Physics, Equity, and Identity</a> Program	2021–2023
Professional Development Coordinator, SO-NSBP Summer Research Program	2020

Team Leader, Instructor, <a href="#">Prison Teaching Initiative</a>	2018 – 2019
Public Talk, Astronomy on Tap, Trenton, New Jersey	2019
Invited Panelist, Conference for Undergraduate Women in Physics	2018
Volunteer, <a href="#">Reading Team Math Program</a> , Harlem, New York	2016 – 2017
Instructor, <a href="#">Rooftop Variables</a> , Curtis High School, Staten Island, New York	2012 – 2017
Outreach Volunteer, bi-weekly community stargazing, Columbia University	2012 – 2017
Public Lecture, <i>Our Magnetic Universe</i> , Columbia Astronomy Outreach Lecture Series	2015
Founder, President, Carolina Women in Physics	2010 – 2012

## OTHER PUBLISHED WRITING

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*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