

SUSAN E. CLARK

Curriculum Vitae

Physics Department
382 Via Pueblo Mall
Stanford, CA 94305

seclark1@stanford.edu
clarkgroup.stanford.edu
github: seclark

APPOINTMENTS

Stanford University

Assistant Professor, Department of Physics
Co-Director, Center for Decoding the Universe @ Stanford

2021 – present
2024 – present

Institute for Advanced Study

NASA Hubble Fellow, Member

2017 – 2021

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

David Huntington Dean's Faculty Scholar 2025 – 2028
Dean's Award for Distinguished Teaching, Stanford School of Humanities and Sciences 2024 – 2025
Inspiring Early Academic Career Award, Stanford Faculty Women's Forum 2025
Helen B. Warner Prize, American Astronomical Society 2025
Chambers Fellow, Stanford University 2024 – 2027
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 = as a member of the Clark group]

Refereed journal articles

79. R.A. Booth, A. Ordog, J.A. Brown, T.L. Landecker, A.S. Hill, J.L. West, M. Lei, **S.E. Clark**, A. Bracco, J.M. Dickey, E. Carretti. *A three-dimensional model for the reversal in the local large-scale interstellar magnetic field.* 2025, [accepted to ApJ](#).
78. J. Kim, A.K. Leroy, K. Sandstrom, S.E. Meidt, Y.-H. Teng, M. Querejeta, E. Schinnerer, **S.E. Clark**, R. Chown, S.C.O. Glover, D.A. Dale, D. Baron, J. Sutter, A.T. Barnes, J. den Brok, R. Chandar, I.-D. Chiang, O.V. Egorov, K. Grasha, R.S. Klessen, K. Kreckel, E.W. Koch, H. Koziol, L. Neumann, H.-A. Pan, S.K. Stuber, T.D. Weinbeck, T.G. Williams. *Localized Deviations from the CO-PAH Relation in PHANGS-JWST Galaxies: Faint PAH Emission or Elevated CO Emissivity?* 2025, [submitted](#).
77. M.E. Putman, D.A. Kim, **S.E. Clark**, L. Li, C. Holm-Hansen, J.E.G. Peek. *A Catalog of Galactic Atomic Hydrogen Position-Position-Velocity Filaments.* 2025, [accepted to AJ](#)
76. M. Nowotka*, **S.E. Clark**, B. Burkhart, L. Fissel, T.-C. Ching, T. Robishaw, C. Heiles. *Joint Analysis of HI Absorption Zeeman Measurements and the Morphology of Filamentary HI Emission.* 2025, [ApJ 992, 129](#).
75. Y. Liu, S. Azzoni, **S.E. Clark**, B.S. Hensley, L. Vacher, D. Alonso, C. Baccigalupi, M.L. Brown, A. Carones, J. Chluba, J. Dunkley, C. Hervías-Caimapo, B.R. Johnson, N. Krachmalnicoff, G. Puglisi, M. Remazeilles, K. Wolz. *The Simons Observatory: Assessing the Impact of Dust Complexity on the Recovery of Primordial B-modes.* 2025, [JCAP 11, 24](#).
74. M. Lei*, **S.E. Clark**, R. Morel, E. Ally, I.S. Butsky, C. Redshaw, D. Fielding. *Neutral gas phase distribution from HI morphology: phase separation with scattering spectra and variational autoencoders.* 2025, [ApJ 993, 4](#).
73. E. Calabrese, J.C. Hill, H. Jense, A. La Posta, et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR6 Constraints on Extended Cosmological Models.* 2025, [JCAP 11, 63](#).
72. T. Louis, A. La Posta, Z. Atkins, H. Jense, et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR6 Power Spectra, Likelihoods and Λ CDM Parameters.* 2025, [JCAP 11, 62](#).
71. S. Naess, Y. Guan, A. Duivenvoorden, M. Hasselfield, Y. Wang, et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR6 Maps.* 2025, [JCAP 11, 61](#).
70. The Pan-Experiment Galactic Science Group: J. Borrill, **S.E. Clark**, J. Delabrouille, A.V. Frolov, S. Ghosh, B.S. Hensley, M.D. Hicks, N. Krachmalnicoff, K. Lau, M.M. Norton, C. Pryke, G. Puglisi, M. Remazeilles, E. Russier, B. Thorne, J. Yao, A. Zonca. *Full-sky Models of Galactic Microwave Emission and Polarization at Sub-arcminute Scales for the Python Sky Model.* 2025, [ApJ 991, 23](#).
- Leads: **S.E. Clark** and B.S. Hensley. [Author contribution statement](#).
69. Simons Observatory Collaboration et al. *The Simons Observatory: Science Goals and Forecasts for the Enhanced Large Aperture Telescope.* 2025, [submitted to JCAP](#).
- Leads: **S.E. Clark** and J. Colin Hill. [Author contribution statement](#).
68. H. Chen, S. Stanimirović, N. Pingel, J. Dempsey, F. Buckland-Willis, **S.E. Clark**, D. Leahy, M.-Y. Lee, C. Lynn, C.E. Murray, H. Nguyen, L. Uscanga, J. van Loon, E. Vázquez-Semadeni. *A neutral hydrogen absorption study of cold gas in the outskirts of the Magellanic Clouds using the GASKAP-HI survey.* 2025, submitted.
67. A. Hacar, R. Konietzka, D. Seifried, **S.E. Clark**, A. Soccia, F. Bonanomi, A. Burkert, E. Schisano, J. Kainulainen, R. Smith. *Emergence of high-mass stars in complex fiber networks (EMERGE) V. From filaments to spheroids: the origin of the hub-filament systems.* 2024, [A&A 694, A69](#).
66. H. Nguyen, N.M. McClure-Griffiths, J. Dempsey, J.M. Dickey, M.-Y. Lee, C. Lynn, C.E. Murray, S. Stanimirović, M. Busch, **S.E. Clark**, J. Dawson, H. Dénes, S. Gibson, K. Jameson, G. Joncas,

- I. Kemp, D. Leahy, Y.K. Ma, A. Marchal, M.-A. Miville-Deschénes. *Local HI Absorption towards the Magellanic Cloud foreground using ASKAP*. 2024, [MNRAS 534, 3478](#).
65. T. Dacunha*, S. Martin-Alvarez, **S.E. Clark**, E. Lopez-Rodriguez. *The fallibility of equipartition magnetic field strengths from synchrotron emission using synthetically observed galaxies*. 2024, [ApJ 980, 197](#).
64. E. Biermann, Y. Li, S. Naess, S. Choi, **S.E. Clark**, M. Devlin, J. Dunkley, P. Gallardo, Y. Guan, A. Foster, M. Hasselfield, C. Hervías-Caimapo, M. Hilton, A. Hincks, A.Y.Q. Ho, J. Hood, K. Huffenberger, A. Kosowsky, M. Niemack, J. Orlowski-Scherer, L. Page, B. Partridge, M. Salatino, C. Sifón, S. Staggs, C. Vargas, E. Wollack. *The Atacama Cosmology Telescope: Systematic Transient Search of Single Observation Maps*. 2024, [ApJ 986, 7](#).
63. G. Halal*, **S.E. Clark**, M. Tahani. *Imprints of the Local Bubble and Dust Complexity on Polarized Dust Emission*. 2024, [ApJ 973, 54](#).
62. M. Lei*, **S.E. Clark**. *A New Constraint on the Relative Disorder of Magnetic Fields between Neutral ISM Phases*. 2024, [ApJ 972, 66](#).
61. C. Hervías-Caimapo, A. Cukierman, P. Diego-Palazuelos, K. Huffenberger, **S.E. Clark**. *Modeling parity-violating spectra in Galactic dust polarization with filaments and its applications to cosmic birefringence searches*. 2024, [PRD 111, 083532](#).
60. N. Raycheva, M. Haverkorn, S. Ideguchi, J.M. Stil, X. Sun, J.L. Han, E. Carretti, X.Y. Gao, A. Bracco, **S.E. Clark**, J.M. Dickey, B.M. Gaensler, A. Hill, T. Landecker, A. Ordog, A. Seta, M. Tahani, M. Wolleben. *Faraday moments of the Southern Twenty-centimeter All-sky Polarization Survey (STAPS)*. 2024, [A&A 695, 101](#).
59. G.V. Panopoulou, C. Zucker, D. Clemens, V. Pelgrims, J.D. Soler, **S.E. Clark**, J. Alves, A. Goodman, J. Becker Tjus. *The magnetic field of the Radcliffe Wave: starlight polarization at nearest approach to the Sun*. 2024, [A&A 694, 97](#).
58. 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*. 2024, [ApJ 966, 43](#).
57. 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. Gjerløw, 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](#).
56. 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](#).
55. 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](#).
54. 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](#).

53. 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](#).
52. 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](#).
51. 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](#).
50. 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](#).
49. 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](#).
48. A. Kim*, **S.E. Clark**, M. Putman, L. Li. *The Kinematic Structure of Magnetically Aligned HI Filaments.* 2023, [MNRAS 526, 4345](#).
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. 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](#).
45. 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](#).
44. U. Fuskeland et al. incl. **S.E. Clark**. *Tensor-to-scalar ratio forecasts for extended LiteBIRD frequency configurations.* 2023, [A&A 676, A42](#).
43. 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. Proudfoot. *Extragalactic magnetism with SOFIA (SALSA Legacy Program) – V: First results on the magnetic field orientation of galaxies.* 2023, [ApJ 952, 4](#).
42. 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, Edited by Shu-ichiro Inutsuka, Yuri Aikawa, Takayuki Muto, Kengo Tomida, and Motohide Tamura. San Francisco: [Astronomical Society of the Pacific](#), p.153
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](#).
40. LiteBIRD Collaboration et al. incl. **S.E. Clark**. *Probing Cosmic Inflation with the LiteBIRD Cosmic Microwave Background Polarization Survey.* 2023, [PTEP 2023, 042F01](#).

39. M. Lei* & S.E. Clark. *Probing the cold neutral medium through HI emission morphology with the scattering transform.* 2023, [ApJ 947, 74](#).
38. A. Cukierman, S.E. Clark, G. Halal. *Magnetic Misalignment of Interstellar Dust Filaments.* 2023, [ApJ 946, 106](#).
37. BICEP/Keck Collaboration* incl. S.E. Clark. *BICEP / Keck XVI: Characterizing Dust Polarization Through Correlations with Neutral Hydrogen.* 2023, [ApJ 945, 72](#). Led by George Halal*.
36. CCAT-Prime collaboration incl. S.E. Clark, CCAT-prime Collaboration: *Science Goals and Forecasts with Prime-Cam on the Fred Young Submillimeter Telescope.* 2023, [ApJ Supplements 264, 7](#).
35. 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.* 2023, [ApJ Letters, 942, 13](#).
34. J. Hubmayr et al. incl. S.E. Clark. *Optical Characterization of OMT-Coupled TES Bolometers for LiteBIRD.* 2022, [Journal of Low Temperature Physics 209, 396](#).
33. 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](#).
32. 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](#).
31. 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](#).
30. I. Lowe, B. Mason, T. Bhandarkar, S.E. Clark, M. Devlin, S. Dicker, S. Duff, R. Friesen, A. Hacar, B. Hensley, T. Mróczkowski, 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](#).
29. 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](#).
28. 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. Dénes, E. M. Di Teodoro, B.-Q. For, Tyler J. Foster, J. F. Gómez, 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](#).
27. J.M. Dickey, J.M. Dempsey, N.M. Pingel, N.M. McClure-Griffiths, K. Jameson, J.R. Dawson, H. Dénes, S.E. Clark, D. Leahy, M.-Y. Lee, M.-A. Miville-Deschénes, 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](#).

26. 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](#).
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 (Corrigendum).* 2022, [A&A 663, C1](#).
24. 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&A Letters 657, 13](#).
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. Diaz-Santos. *Extragalactic magnetism with SOFIA (Legacy Program) - II: A Magnetically Driven Flow in the Starburst Ring of NGC 1097.* 2021, [ApJ 923, 150](#).
22. 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](#).
21. A.S. Borlaff, E. Lopez-Rodriguez, R. Beck, R. Stepanov, E. Ntormousi, A. Hughes, K. Tassis, P. Marcum, L. Grosset, J. Beckman, L. Proudfoot, **S.E. Clark**, T. Diaz-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](#).
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](#).
19. **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](#).
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, [Journal of Open Source Software 6\(62\), 3079](#).
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](#).
16. Aiola et al. incl. **S.E. Clark**. *The Atacama Cosmology Telescope: DR4 Maps and Cosmological Parameters.* 2020, [JCAP 12, 47](#).
15. 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](#).
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](#).
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, [ApJ Letters 886, 1](#).
12. 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](#).

11. **S.E. Clark**, J.E.G. Peek, M.-A. Miville-Deschénes. *The physical nature of neutral hydrogen intensity structure.* 2019, [ApJ 874, 171](#).
10. **S.E. Clark**. *A new probe of line-of-sight magnetic field tangling.* 2018, [ApJ Letters 857, L10](#).
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, [ApJ Supplements 234, 1](#).
8. **S.E. Clark** & J.S. Oishi. *The weakly nonlinear magnetorotational instability in a global, cylindrical Taylor-Couette flow.* 2017, [ApJ 841, 2](#).
7. **S.E. Clark** & J.S. Oishi. *The weakly nonlinear magnetorotational instability in a local geometry.* 2017, [ApJ 841, 1](#).
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](#).
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](#).
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.
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 130](#).
2. **S.E. Clark**, J.E.G. Peek, M.E. Putman. *Magnetically aligned HI fibers and the Rolling Hough Transform.* 2014, [ApJ 789, 82](#).
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](#).

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, Research Notes, and Astronomer's Telegrams

13. A. Nuñez*, M. Tahani, **S.E. Clark**, E. Lopez-Rodriguez, C.L. Van Eck. *Consolidated Rotation Measure Catalog Update.* [RNAAS 8, 144](#).
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](https://arxiv.org/abs/2203.08024)
10. C. Chang et al. incl **S.E. Clark**. *Snowmass2021 Cosmic Frontier: Cosmic Microwave Background Measurements White Paper*. [arXiv:2203.07638](https://arxiv.org/abs/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.
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](https://arxiv.org/abs/1908.07495)
6. The Simons Observatory Collaboration, incl. **S.E. Clark**. *The Simons Observatory: Astro2020 Decadal Project Whitepaper*. 2019. [arXiv:1907.08284](https://arxiv.org/abs/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 no. 193](#).
4. **S.E. Clark**, C. Heiles, T. Robishaw. *Magnetic Fields and Polarization in the Diffuse Interstellar Medium*. 2019, Astro2020 Science White Paper. [Bulletin of the American Astronomical Society](#), Vol. 51, Issue 3, id. 390.
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. [Bulletin of the American Astronomical Society](#), Vol. 51, Issue 3, id. 492.
2. B. Hensley et al. incl. **S.E. Clark**. *Determining the Composition of Interstellar Dust with Far-Infrared Polarimetry*. 2019, Astro2020 Science White Paper. [Bulletin of the American Astronomical Society](#), Vol. 51, Issue 3, id. 224.
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](https://arxiv.org/abs/1902.10541)

SCIENTIFIC PRESENTATIONS

Significant presentations since 2019. Career total: 116 presentations, including 87 invited talks/colloquia

Invited Conference Talks

- | | |
|------------------------------------------------------------------------------------------------------------------|------------|
| 63. Plenary talk, AAS 246, Anchorage, Alaska | June 2025 |
| 62. The Diffuse Gas in Galaxies: AAS Meeting-in-Meeting, Madison, Wisconsin | June 2024 |
| 61. Arthur M. Wolfe Symposium in Astrophysics, Scripps Institute for Oceanography, California | |
| March 2024 | |
| 60. Turbulence in the Universe, KITP, Santa Barbara, California | Feb. 2024 |
| 59. Scintillometry 2023, Taipei, Taiwan | Nov. 2023 |
| 58. From the Galaxy to the Big Bang, Banyuls-sur-Mer, France | June 2023 |
| 57. The Interstellar Institute: With Two Eyes, Orsay, France | July 2022 |
| 56. COSPAR 44th Scientific Assembly: Origins of Cosmic Rays, Athens, Greece | July 2022 |
| 55. Our Galactic Ecosystem: Opportunities and Diagnostics in the Infrared and Beyond, Lake Arrowhead, California | Feb. 2022 |
| 54. The Grand Cascade: The Evolution of Baryons Across Scales (<i>virtual</i>) | July 2021 |
| 53. CMB-S4 Collaboration Meeting (<i>virtual</i>) | March 2021 |
| 52. Arecibo Observatory Open House, AAS, Honolulu, Hawaii | Jan. 2020 |
| 51. <i>B</i> -Modes from Space, Garching, Germany | Dec. 2019 |

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|-----------------------------------------------------------------------------------------------|------------|
| 50. IEEE Workshop on Hyperspectral Image and Signal Processing,
Amsterdam, The Netherlands | Sept. 2019 |
| 49. The Self-Organized Star Formation Process, Orsay, France | Sept. 2019 |
| 48. Pathways to the Future of Arecibo Observatory, San Juan, Puerto Rico | Feb. 2019 |

Invited Colloquia and Seminars

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|-------------------------------------------------------------------------------------|------------|
| 47. Colloquium, IAS/Princeton Joint Astrophysics Colloquium | Nov. 2025 |
| 46. Colloquium, Center for Astrophysics Harvard & Smithsonian | Nov. 2024 |
| 45. Texas A&M Mitchell Institute Seminar | Oct. 2024 |
| 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 (<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

- | | |
|-----------------------------------------------------------------------------|------------|
| 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

Stanford

Physics 15: Stars and Planets in a Habitable Universe

Winter 2023 (47 students), Fall 2023 (43 students), Fall 2024 (42 students), Fall 2025 (21 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 Ph.D. advisees

Kaitlyn Karpovich	2024 – present
Ben Dodge	2024 – present
Minjie Lei	2022 – present
Marta Nowotka	2021 – present
George Halal (Ph.D. 2024 → Member of the Technical Staff at Contextual AI)	2020 – 2024

Stanford Ph.D. rotation students (Physics, unless otherwise noted)

Katie Brown	2024
Ben Sherwin	2024
Annie Cheng	2024
Caleb Redshaw (Mech. Eng.)	2024
Jay Baptista	2023
Sean Liu	2023
Tara Dacunha	2022
Viraj Manwadkar	2022
Jack Dinsmore	2022
Charles Yang	2022

Stanford Master's students

Alejandro Dobles, Computer Science Master's student	2024
Íñigo Valenzuela Lombera, Applied Physics coterm	2020 – 2021

Substantial graduate mentorship outside Stanford

Rodrigo Córdova Rosado, Princeton University	2020 – 2024
Doyeon Avery Kim, Columbia University	2018 – 2023

Elizabeth Meador, Pittsburgh University	2021 – 2022
Jessica Campbell, University of Toronto	2017 – 2022

Undergraduate Students

Stanford or Summer Research Programs at Stanford (incl. CalBridge Summer and Leadership Alliance)

2025

Najem Abaakil, Sabine Mazzeo, Michelle Park

2024

Caio Gould, Emily Kim, Amber Yellow Horse, Jerry Yuan, Ziqian (Violet) Zhou, Carlos Rodriguez

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	2019
Larry Li, Columbia University	2016 – 2019
Garrison Grogan, Columbia University	2016 – 2017
Lowell Schudel, Columbia University	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 – 2024
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

CMB-S4 Governing Board (elected position)	2025 – present
DSA-2000 Science Advisory Committee	2022 – present
Simons Observatory Theory & Analysis Committee (elected position)	2022 – present
Simons Observatory Publication Panel (elected position)	2022 – 2025
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>Warm Ionized Medium in Galaxies</i> , Green Bank, West Virginia (2019); <i>Cosmology with CMB-S4</i> , virtual (2020); <i>Galactic Science & CMB Foregrounds</i> , Tenerife, Spain (2022); <i>Interstellar Institute 6</i> , Orsay, France (2023); <i>Cosmology with CMB-S4</i> , SLAC (2023); <i>Fields, Flows, & Filaments in the Magnetic ISM</i> , Stanford (2024); <i>Structure and polarization in the interstellar</i>	

<i>medium: A Conference in Honor of Prof. John Dickey</i> , Stanford (2025); <i>Data-Driven Discovery in the Rubin Era</i> , Stanford (2025); <i>Interstellar Institute 7</i> , Orsay, France (2025); <i>Rising Stars in Data Science</i> , Stanford (2025)	
CMB-S4 Collaboration Mentor	2021 – 2022
Board of Trustees, Association of Members of the Institute for Advanced Study	2020 – 2024
Referee, <i>ApJ</i> , <i>ApJL</i> , <i>A&A</i> , <i>Nature</i> , <i>Nature Astronomy</i>	
Reviewer/Panelist, NASA, NSF	

Collaboration leadership roles

Project Scientist, Advanced Simons Observatory	2023 – present
Advisor, Simons Observatory Galactic Science Working Group	2025 – present
Co-lead, Simons Observatory Galactic Science Working Group	2019 – 2025
Founder and co-lead, Pan-Experiment Galactic Science Group	2020 – present
Co-lead, Atacama Cosmology Telescope Galactic Science Working Group	2019 – present
Co-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 Observatory, CCAT-Prime, CMB-S4, Galactic Australian SKA Pathfinder (GASKAP), Global Magneto-Ionic Medium Survey (GMIMS), LiteBIRD, PASIPHAE, Simons Observatory (SO), Via

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, <i>Our Magnetic Universe</i> , 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