

# SUSAN E. CLARK

## *Curriculum Vitae*

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### APPOINTMENTS

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#### **Stanford University**

Assistant Professor, Department of Physics

2021 – present

Co-Director, Center for Decoding the Universe @ Stanford

2024 – present

#### **Institute for Advanced Study**

NASA Hubble Fellow, Member

2017 – 2021

### EDUCATION

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#### **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

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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

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

Refereed journal articles

68. B. Shane, B. Burkhart, L Fissel, **S.E. Clark**, P. Mocz, M.M. Foley. *Tracing 3-D Magnetic Field Structure Using Dust Polarization and the Zeeman Effect*. 2024, [submitted to ApJ](#).

67. A. Hacar, R. Konietzka, D. Seifried, **S.E. Clark**, A. Socci, 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, [accepted to A&A](#).
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-Deschênes. *Local HI Absorption towards the Magellanic Cloud foreground using ASKAP*. 2024, [accepted to MNRAS](#).
65. T. Dacunha\*, S. Martin-Alvarez, **S.E. Clark**, E. Lopez-Rodriguez. *The overestimation of equipartition magnetic field strengths from synchrotron emission using synthetically observed galaxies*. 2024, [submitted to ApJ](#).
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. Hufenberger, A. Kosowsky, M. Niemack, J. Orłowski-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, [submitted to ApJ](#).
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. Hufenberger, **S.E. Clark**. *Modeling parity-violating spectra in Galactic dust polarization with filaments and its applications to cosmic birefringence searches*. 2024, [submitted to PRD](#).
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, [submitted to A&A](#).
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, [submitted to A&A](#).
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. Visser, 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. 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](#).
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. Proudfit. *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. 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](#).
  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-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](#).
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. Díaz-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. 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](#).
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-Deschênes. *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](#)
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.
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 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](#)

## SCIENTIFIC PRESENTATIONS

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Significant presentations since 2019. Career total: 113 presentations, including 84 invited talks/colloquia

### Invited Conference Talks

- |  |            |
|--|------------|
| 60. The Diffuse Gas in Galaxies: AAS Meeting-in-Meeting, Madison, Wisconsin                                      | June 2024  |
| 59. Arthur M. Wolfe Symposium in Astrophysics, Scripps Institute for Oceanography, California                    | March 2024 |
| 58. Turbulence in the Universe, KITP, Santa Barbara, California  | Feb. 2024  |
| 57. Scintillometry 2023, Taipei, Taiwan  | Nov. 2023  |
| 56. From the Galaxy to the Big Bang, Banyuls-sur-Mer, France   | June 2023  |
| 55. The Interstellar Institute: With Two Eyes, Orsay, France   | July 2022  |
| 54. COSPAR 44th Scientific Assembly: Origins of Cosmic Rays, Athens, Greece                                      | July 2022  |
| 53. Our Galactic Ecosystem: Opportunities and Diagnostics in the Infrared and Beyond, Lake Arrowhead, California | Feb. 2022  |
| 52. The Grand Cascade: The Evolution of Baryons Across Scales ( <i>virtual</i> )                                 | July 2021  |

51. CMB-S4 Collaboration Meeting ( <i>virtual</i> )	March 2021
50. Arecibo Observatory Open House, AAS, Honolulu, Hawaii	Jan. 2020
49. <i>B</i> -Modes from Space, Garching, Germany	Dec. 2019
48. IEEE Workshop on Hyperspectral Image and Signal Processing, Amsterdam, The Netherlands	Sept. 2019
47. The Self-Organized Star Formation Process, Orsay, France	Sept. 2019
46. Pathways to the Future of Arecibo Observatory, San Juan, Puerto Rico	Feb. 2019

### Invited Colloquia and Seminars

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
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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), Fall 2024 (42 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

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### Graduate Students

*Stanford Primary Ph.D. advisees*

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

Kaitlyn Karpovich

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

Iñigo Valenzuela Lombera, Applied Physics coterm

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 (incl. CalBridge Summer and Leadership Alliance)*

### 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, 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 – 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**

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: <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
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

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KITP Chalk Talk, Public Lecture, Kavli Institute for Theoretical Physics	2024
<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, Identity, and Equity</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