Susan E. Clark

Curriculum Vitae

Physics Department
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APPOINTMENTS

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

Columbia University
Ph.D., Astrophysics — 2017
Dissertation: *Magnetic Fields in the Interstellar Medium*
M.A., M.Phil, Astrophysics — 2014

The University of North Carolina at Chapel Hill
B.S., Physics — 2012

HONORS & AWARDS

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

PUBLICATIONS

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

Refereed journal articles

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. 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, 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. Huffenberger, **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. Gjerlw, J.A. Kypriotakis, S. Maharana, A. Papadaki, T.J. Pearson, S.B. Potter, A.N. Ramaprakash, A.C.S. Readhead, I.K. Wehus. *The first degree-scale starlight-polarization-based tomography map of the magnetized interstellar medium.* 2024, A&A 684, A162.

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. 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. 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. 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.

27. 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.

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

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

Invited Conference Talks

59. The Diffuse Gas in Galaxies: AAS Meeting-in-Meeting, Madison, Wisconsin — June 2024
58. Arthur M. Wolfe Symposium in Astrophysics, Scripps Institute for Oceanography, California — March 2024
57. Turbulence in the Universe, KITP, Santa Barbara, California — Feb. 2024
56. Scintillometry 2023, Taipei, Taiwan — Nov. 2023
55. From the Galaxy to the Big Bang, Banyuls-sur-Mer, France — June 2023
54. The Interstellar Institute: With Two Eyes, Orsay, France — July 2022
53. COSPAR 44th Scientific Assembly: Origins of Cosmic Rays, Athens, Greece — July 2022
52. Our Galactic Ecosystem: Opportunities and Diagnostics in the Infrared and Beyond, Lake Arrowhead, California — Feb. 2022
51. The Grand Cascade: The Evolution of Baryons Across Scales (*virtual*) — July 2021
50. CMB-S4 Collaboration Meeting (*virtual*) — March 2021
49. Arecibo Observatory Open House, AAS, Honolulu, Hawaii — Jan. 2020
48. *B*-Modes from Space, Garching, Germany — Dec. 2019
47. IEEE Workshop on Hyperspectral Image and Signal Processing, Amsterdam, The Netherlands — Sept. 2019
46. The Self-Organized Star Formation Process, Orsay, France — Sept. 2019
45. Pathways to the Future of Arecibo Observatory, San Juan, Puerto Rico — Feb. 2019

Invited Colloquia and Seminars

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

Contributed Talks

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

1. Big Apple Magnetic Fields, New York, New York Jan. 2019

COURSES TAUGHT

Stanford

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

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

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

Collaboration leadership roles

Project Scientist, Advanced Simons Observatory	2023 – present
Co-lead, Simons Observatory Galactic Science Working Group	2019–present
Founder and co-lead, Pan-Experiment Galactic Science Group	2020–present
Co-lead, Atacama Cosmology Telescope Galactic Science Working Group	2019–present
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, *Our Magnetic Universe*, Columbia Astronomy Outreach Lecture Series	2015
Founder, President, Carolina Women in Physics	2010 – 2012

OTHER PUBLISHED WRITING

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