

SUSAN E. CLARK

Curriculum Vitae

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EDUCATION

Columbia University

Ph.D. Candidate, Astrophysics 2017 (expected)

Thesis Project: *Magnetic Fields in the Interstellar Medium*

Thesis Advisors: Mary E. Putman, Joshua E.G. Peek

M.A., M.Phil, Astrophysics 2014

The University of North Carolina at Chapel Hill

B.S., Physics 2012

Thomas Jefferson High School for Science & Technology 2008

HONORS, AWARDS AND GRANTS

Hubble Fellowship 2017 - 2020

Institute for Advanced Study School of Natural Sciences Fellowship 2020 - 2022

Einstein Fellowship declined

NSF Graduate Research Fellowship 2012 – present

Columbia Dean's Fellowship 2012 – present

ASNY Graduate Student Paper Prize 2016

CCAPP Prize Prize in Cosmology and AstroParticle Physics 2016

PI, VLA Observing Proposal 16A-133, 8 hours 2016

PRL Editors' Recommendation Paper 2015

Morehead-Cain Scholarship 2008 – 2012

[Full scholarship](#) to UNC-Chapel Hill

PUBLICATIONS

First-author journal articles

4. **S.E. Clark** & J.S. Oishi. *The weakly nonlinear magnetorotational instability in a global, cylindrical Taylor-Couette flow*. 2017, accepted to ApJ. [arXiv:1610.01603](#)
3. **S.E. Clark** & J.S. Oishi. *The weakly nonlinear magnetorotational instability in a local geometry*. 2017, accepted to ApJ. [arXiv:1610.01616](#)
2. **S.E. Clark**, J. Colin Hill, J.E.G. Peek, M.E. Putman, B.L. Babler. *Neutral hydrogen structures trace dust polarization angle: Implications for cosmic microwave background foregrounds*. 2015, PRL 115, 241302. Selected as PRL Editors' Recommendation. [arXiv:1508.07705](#).
1. **S.E. Clark**, J.E.G. Peek, M.E. Putman. *Magnetically aligned HI fibers and the Rolling Hough Transform*. 2014, ApJ 789, 82. [arXiv:1312.1338](#)

Other journal articles

4. F. Heitsch, B. Bartell, **S.E. Clark**, J.E.G. Peek, D. Cheng, M.E. Putman. *Three-dimensional orientation of compact high velocity clouds*. 2016, MNRAS Letters 462, L46. [arXiv:1606.06689](#).
3. J. Malinen, L. Montier, J. Montillaud, M. Juvela, I. Ristorcelli, **S.E. Clark**, O. Berné, J.-Ph. Bernard, V.-M. Pelkonen, D.C. Collins. *Matching dust emission structures and magnetic field in high-latitude cloud L1642: comparing Herschel and Planck maps*. 2016, MNRAS 460, 1934. [arXiv:1512.03775](#).
2. N.M. McClure-Griffiths, S. Stanimirović, [5 authors], **S.E. Clark**, [3 authors]. *Galactic and Magellanic evolution with the SKA*. 2015, from “Advancing Astrophysics with the Square Kilometre Array”, PoS. [arXiv:1501.01130](#)
1. W.-H. Hsu, M.E. Putman, F. Heitsch, S. Stanimirović, J.E.G. Peek, **S.E. Clark**. *Physical properties of Complex C halo clouds*. 2011, AJ 141, 57 [arXiv:1011.0011](#)

Conference proceedings

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

SCIENTIFIC TALKS

35 presentations, 18 invited talks/colloquia

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| 35. Invited Talk, Rutgers Astrophysics Seminar, New Brunswick, New Jersey | Mar. 2017 |
| 34. Invited Talk, Bates College Colloquium, Lewiston, Maine | Feb. 2017 |
| 33. Invited Talk, AAS Special Session: New, Fundamental, Cutting-Edge Science from Arecibo Observatory, Grapevine, Texas | Jan. 2017 |
| 32. Talk, AAS dissertation talk, Dust and Magnetic Fields, Grapevine, Texas | Jan. 2017 |
| 31. Invited Talk, Cosmic Rays, Astrophysical Turbulence and Magnetic Reconnection, Natal, Brazil | Dec. 2016 |
| 30. Invited Talk, NRAO/UVA Seminar, Charlottesville, Virginia | Nov. 2016 |
| 29. Invited Talk, ASNY Prize Talk, Siena College, Albany, New York | Nov. 2016 |
| 28. Invited Talk, Star Formation/ISM Rendezvous Seminar, Princeton, New Jersey | Nov. 2016 |
| 27. Invited Talk, Simons Observatory Meeting, Princeton, New Jersey | Nov. 2016 |
| 26. Invited Talk, OSU CCAPP Price Prize Seminar, Columbus, Ohio | Sept. 2016 |
| 25. Invited Talk, Harvard-Smithsonian CfA Galaxies & Cosmology Seminar, Cambridge, Massachusetts | Sept. 2016 |
| 24. Invited Talk, CITA Seminar, Toronto, Canada | Aug. 2016 |
| 23. Talk, Star Formation, Magnetic Fields, and Diffuse Matter in the Galaxy, Madison, Wisconsin | May 2016 |
| 22. Invited Talk, JILA Seminar, Colorado University Boulder, Boulder, Colorado | Feb. 2016 |
| 21. Invited Talk, AMNH Colloquium, New York, New York | Jan. 2016 |
| 20. Invited Talk, Brown Astrophysics Seminar, Providence, Rhode Island | Nov. 2015 |
| 19. Invited Talk, IRAP ISM Seminar, Toulouse, France | Oct. 2015 |
| 18. Talk, Magnetic Fields in the Universe V, Corsica, France | Oct. 2015 |
| 17. Invited Talk, IAS, ENS, and CEA/Saclay Joint ISM Seminar, IAS, Orsay, France | Oct. 2015 |
| 16. Talk, Experimental CMB Journal Club, Columbia University, New York, NY | Sept. 2015 |
| 15. Talk, IAU Focus Meeting 5, The Legacy of Planck, Honolulu, Hawaii | Aug. 2015 |
| 14. Poster, IAU Symposium, From Interstellar Clouds to Star-Forming Galaxies: Universal Processes?, Honolulu, Hawaii | Aug. 2015 |

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| 13. Talk, Pontifica Universidad Católica, Santiago, Chile | May 2015 |
| 12. Talk, Midwest Magnetic Fields Workshop, Madison, Wisconsin | May 2015 |
| 11. Invited Talk, PPPL Theory Seminar, Princeton, New Jersey | Dec. 2014 |
| 10. Poster, NSF Directorate for Mathematical & Physical Sciences, New York, New York | Oct. 2014 |
| 9. Poster, Filamentary Structure in Molecular Clouds, NRAO, Charlottesville, Virginia | Oct. 2014 |
| 8. Invited Talk, Non-Ideal MHD, Stability, and Dissipation in PPDs, Copenhagen, Denmark | Aug. 2014 |
| 7. Poster, Galactic Science with the SKA and its Pathfinders, Leiden, Netherlands | May 2014 |
| 6. Talk, Midwest Magnetic Fields Workshop, Madison, Wisconsin | April 2014 |
| 5. Talk, Phases of the ISM Conference, Heidelberg, Germany | July 2013 |
| 4. Talk, Senior Research Symposium, Chapel Hill, North Carolina | April 2012 |
| 3. Poster, AAS Winter Meeting, Austin, Texas | Jan. 2012 |
| 2. Talk, GALFA-HI Collaboration Meeting, Madison, Wisconsin | Aug. 2011 |
| 1. Talk, REU Symposium, Arecibo Observatory, Puerto Rico | Aug. 2011 |

TEACHING EXPERIENCE

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| Head Teaching Assistant, Columbia Department of Astronomy | 2015 – 2016 |
| Guest Lecturer, Hunter College Unsolved Problems in Astrophysics course | 2016 |
| Grader, Columbia University, Life in the Universe | 2014 |
| Instructor, Columbia University, Observational Astronomy Lab | 2014 |
| Instructor, Columbia University, Earth, Moon, & Planets Lab | 2013 |
| Grader, Columbia University, Life in the Universe | 2013 |
| Teaching Assistant, Columbia University, Galaxies & Cosmology | 2013 |
| Teaching Assistant, Columbia University, Stars & Atoms | 2012 |
| Instructor, UNC-Chapel Hill, Physics Help Center | 2011 – 2012 |
| Teaching Assistant, UNC-Chapel Hill, Calculus-Based Newtonian Mechanics | 2011 |

STUDENTS ADVISED

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| Larry Li, Columbia University, undergraduate research | 2016 – present |
| Garrison Grogan, Columbia University, undergraduate research | 2016 – present |
| Lowell Schudel, Columbia University, undergraduate research | 2014 – 2015 |

SELECTED OUTREACH AND SERVICE

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| Referee, <i>Astronomy & Astrophysics</i> | 2016 – present |
| Volunteer, Reading Team Math Program , Harlem, New York | 2016 – present |
| Organizer, Weekly Astro-ph Discussion | 2016 – present |
| Instructor for 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, UNC-Chapel Hill Women in Physics | 2010 – 2012 |
| Member, Social Chair, UNC-Chapel Hill Society of Physics Students | 2010 – 2012 |
| Chapter Director, Mentor, UNC-Chapel Hill Strive For College | 2009 – 2012 |

OTHER PUBLICATIONS

Closing My Eyes, **S. E. Clark**, personal essay, The Washington Post Magazine, May 2009