

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

FELLOWSHIPS, HONORS AND AWARDS

PRL Editor's Recommendation Paper 2015

NSF Graduate Fellowship 2012 – present

Columbia Dean's Fellowship 2012 – present

Morehead-Cain Scholarship 2008 – 2012

Full scholarship to UNC-Chapel Hill

REFEREED PUBLICATIONS

6 journal articles, 2 first author

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, Accepted to MNRAS Letters. [arXiv:1606.06689](https://arxiv.org/abs/1606.06689).
5. J. Malinen, L. Montier, J. Montillaud, M. Juvela, I. Ristorcelli, **S.E. Clark**, O. Berné, J.-Ph. Bernard, V.-M. Pelkonen, D.C. Collins. *Matching dust emission structures and magnetic field in high-latitude cloud L1642: comparing Herschel and Planck maps*. 2016, MNRAS 460, 1934. [arXiv:1512.03775](https://arxiv.org/abs/1512.03775).
4. **S.E. Clark**, J. Colin Hill, J.E.G. Peek, M.E. Putman, B.L. Babler. *Neutral hydrogen structures trace dust polarization angle: Implications for cosmic microwave background foregrounds*. 2015, PRL 115, 241302. Selected as PRL Editor's Recommendation. [arXiv:1508.07705](https://arxiv.org/abs/1508.07705).
3. N.M. McClure-Griffiths, S. Stanimirović, [5 authors], **S.E. Clark**, [3 authors]. *Galactic and Magellanic Evolution with the SKA*. 2015, from “Advancing Astrophysics with the Square Kilometre Array”, PoS. [arXiv:1501.01130](https://arxiv.org/abs/1501.01130)
2. **S.E. Clark**, J.E.G. Peek, M.E. Putman. *Magnetically Aligned HI Fibers and the Rolling Hough Transform*. 2014, ApJ, 789, 82. [arXiv:1312.1338](https://arxiv.org/abs/1312.1338)

1. W.-H. Hsu, M.E. Putman, F. Heitsch, S. Stanimirović, J.E.G. Peek, **S.E. Clark**. *Physical Properties of Complex C Halo Clouds*. 2010, AJ, 141, 57 [arXiv:1011.0011](https://arxiv.org/abs/1011.0011)

TEACHING EXPERIENCE

Head Teaching Assistant, Columbia Department of Astronomy	Fall 2015 – present
Grader, Columbia University, Life in the Universe	Fall 2014
Instructor, Columbia University, Observational Astronomy Lab	Spring 2014
Instructor, Columbia University, Earth, Moon, & Planets Lab	Fall 2013
Grader, Columbia University, Life in the Universe	Fall 2013
Teaching Assistant, Columbia University, Galaxies & Cosmology	Spring 2013
Teaching Assistant, Columbia University, Stars & Atoms	Fall 2012
Student Instructor, UNC-Chapel Hill, Physics Help Center	2011 – 2012
Teaching Assistant, UNC-Chapel Hill, Calculus-Based Newtonian Mechanics	Fall 2011

STUDENTS ADVISED

Lowell Schudel, Columbia University, undergraduate research	Summer 2014, 2015
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SCIENTIFIC TALKS

23. Invited Talk, AMNH Colloquium, New York, New York	Jan. 2016
22. Invited Talk, Brown Astrophysics Seminar, Providence, Rhode Island	Nov. 2015
21. Invited Talk, IRAP ISM Seminar, Toulouse, France	Oct. 2015
20. Invited Talk, IAS, ENS, and CEA/Saclay Joint ISM Seminar, IAS, Orsay, France	Oct. 2015
19. Invited Talk, Princeton Plasma Physics Laboratory Theory Seminar, Princeton, New Jersey	Dec. 2014
18. Invited Talk, Non-Ideal MHD, Stability, and Dissipation in PPDs, Copenhagen, Denmark	Aug. 2014
17. Talk, Star Formation, Magnetic Fields, and Diffuse Matter in the Galaxy, Madison, Wisconsin	May 2016
16. Talk, JILA Seminar, Colorado University Boulder, Boulder, Colorado	Feb. 2016
15. <i>Measuring B-mode Polarization Foregrounds with Neutral Hydrogen</i> Talk, Magnetic Fields in the Universe V, Corsica, France	Oct. 2015
14. <i>HI Shape Traces Planck Dust Polarization: An Independent Determination of Polarized CMB Foregrounds</i> Talk, IAU Focus Meeting 5, The Legacy of Planck, Honolulu, Hawai'i	Oct. 2015
13. <i>Magnetically Aligned HI and Dust: Measuring the Physical Properties of HI Fibers</i> Poster, IAU Symposium 315, From Interstellar Clouds to Star-Forming Galaxies: Universal Processes?, Honolulu, Hawai'i	Oct. 2015
12. <i>HI structures trace dust polarization angle: Implications for CMB foregrounds</i> Talk, Experimental CMB Journal Club, Columbia University, New York, NY	Sept. 2015
11. <i>Measuring B-mode Polarization Foregrounds with Neutral Hydrogen</i> Talk, Pontificia Universidad Catolica, Santiago, Chile	May 2015

10. *Magnetically Aligned HI and Dust in the ISM* May 2015
Talk, Midwest Magnetic Fields Workshop, Madison, Wisconsin
9. *Magnetically Aligned HI Fibers* Oct. 2014
Poster, NSF Directorate for Mathematical & Physical Sciences, New York, New York
8. *Quantifying Linear Structure with the Rolling Hough Transform and the dRHT* Oct. 2014
Poster, Filamentary Structure in Molecular Clouds, NRAO, Charlottesville, Virginia
7. *Magnetically Aligned HI Fibers* May 2014
Poster, Galactic Science with the SKA and its Pathfinders, Leiden, Netherlands
6. *Magnetically Aligned HI Fibers* April 2014
Talk, Midwest Magnetic Fields Workshop, Madison, Wisconsin
5. *Magnetized HI Fibers and the Rolling Hough Transform* July 2013
Talk, Phases of the ISM Conference, Heidelberg, Germany
4. *The Disruption of High-Velocity Clouds in the Milky Way* April 2012
Talk, Senior Research Symposium, Chapel Hill, North Carolina
3. *Dust-to-Gas Comparisons with GALFA-HI* Jan. 2012
Poster, AAS Winter Meeting, Austin, Texas
2. *Gas/Dust Comparisons Using GALFA-HI Data* Aug. 2011
Talk, GALFA-HI Collaboration Meeting, Madison, Wisconsin
1. *Dust and Gas in the Interstellar Medium* Aug. 2011
Talk, REU Symposium, Arecibo Observatory, Puerto Rico

Public Talks and Guest Lectures

2. *The Dusty, Magnetized Interstellar Medium and CMB Polarization* March 30, 2016
Hunter College “Unsolved Problems in Astrophysics” course
1. *Our Magnetic Universe* Dec. 18, 2015
Columbia Astronomy Outreach Lecture Series

OUTREACH AND SERVICE

Instructor for Rooftop Variables , Curtis High School, Staten Island, New York	2012 – present
Outreach Volunteer, bi-weekly community stargazing, Columbia University	2012 – present
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