

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

NSF Graduate Fellowship 2012 – present

Columbia Dean’s Fellowship 2012 – present

Morehead-Cain Scholarship 2008 – 2012

Merit-based full scholarship to UNC-Chapel Hill

REFEREED PUBLICATIONS

4 journal articles, 2 first author

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

Invited Talks and Seminars

5. *Measuring B-Mode Polarization Foregrounds with Neutral Hydrogen* Nov. 2015
Brown Astrophysics Seminar, Providence, Rhode Island
4. *Measuring B-mode Polarization Foregrounds with Neutral Hydrogen* Oct. 2015
Institut de Recherche en Astrophysique et Planétologie ISM Journal Club, Toulouse, France
3. *Magnetically Aligned HI and Planck Polarized Dust* Oct. 2015
IAS, ENS, and CEA/Saclay Joint ISM Seminar, IAS, Orsay, France
2. *The Saturation of the Magnetorotational Instability via Weakly Nonlinear Analysis* Dec. 2014
Princeton Plasma Physics Laboratory Theory Seminar, Princeton, New Jersey
1. *Exploring MRI Saturation via Weakly Nonlinear Analysis* Aug. 2014
Conference: Non-Ideal MHD, Stability, and Dissipation in PPDs, Copenhagen, Denmark

Contributed Talks and Posters

15. *Measuring B-mode Polarization Foregrounds with Neutral Hydrogen* Oct. 2015
Talk, Magnetic Fields in the Universe V, Corsica, France
14. *HI Shape Traces Planck Dust Polarization: An Independent Determination of Polarized CMB Foregrounds* Oct. 2015
Talk, IAU Focus Meeting 5, The Legacy of Planck, Honolulu, Hawai'i
13. *Magnetically Aligned HI and Dust: Measuring the Physical Properties of HI Fibers* Oct. 2015
Poster, IAU Symposium 315, From Interstellar Clouds to Star-Forming Galaxies: Universal Processes?, Honolulu, Hawai'i
12. *HI structures trace dust polarization angle: Implications for CMB foregrounds* Sept. 2015
Talk, Experimental CMB Journal Club, Columbia University, New York, NY
11. *Measuring B-mode Polarization Foregrounds with Neutral Hydrogen* May 2015
Talk, Pontifica Universidad Catolica, Santiago, Chile
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

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| 6. <i>Magnetically Aligned HI Fibers</i>
Talk, Midwest Magnetic Fields Workshop, Madison, Wisconsin | April 2014 |
| 5. <i>Magnetized HI Fibers and the Rolling Hough Transform</i>
Talk, Phases of the ISM Conference, Heidelberg, Germany | July 2013 |
| 4. <i>The Disruption of High-Velocity Clouds in the Milky Way</i>
Talk, Senior Research Symposium, Chapel Hill, North Carolina | April 2012 |
| 3. <i>Dust-to-Gas Comparisons with GALFA-HI</i>
Poster, AAS Winter Meeting, Austin, Texas | Jan. 2012 |
| 2. <i>Gas/Dust Comparisons Using GALFA-HI Data</i>
Talk, GALFA-HI Collaboration Meeting, Madison, Wisconsin | Aug. 2011 |
| 1. <i>Dust and Gas in the Interstellar Medium</i>
Talk, REU Symposium, Arecibo Observatory, Puerto Rico | Aug. 2011 |

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

OTHER PUBLICATIONS

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