# 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
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.

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

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

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

## 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

## 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

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**

1. *Our Magnetic Universe* — Dec. 18, 2015
   Columbia Astronomy Outreach Lecture Series

## OUTREACH AND SERVICE

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|---|---|
| Instructor for Rooftop Variables, Curtis High School, Staten Island, New York | 2012 – present |
| Outreach volunteer, bi-weekly community stargazing, Columbia University | 2012 – present |
| Physics Tutor, Barnard Higher Education Opportunity Program | 2013 |
| 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