

Curriculum Vitae

Amy E. Lowitz

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Education

- PhD** **University of Wisconsin-Madison** (Candidate, expected defense early 2016)
Physics
Advisor: Prof. Peter Timbie
- MS** **University of Wisconsin-Madison, 2012**
Physics
Advisor: Prof. Peter Timbie
- ScB** **Brown University, 2009**
Physics, with honors

Experience:

- Timbie Laboratory** 2011-present
KIDs for Observations of the Cosmic Microwave Background
- MIT Lincoln Laboratory** 2009-2010
Classification algorithm development
Statistical validation of missile tracking models
- Dell'Antonio Laboratory, Brown University** 2008-2009
Honors thesis: "Photometric Redshifts for Galaxies in a Lensing Survey"
- Page Laboratory, Princeton University** Summers 2007 - 2008
Recombination spectrum distortion detection, Dewar construction
Cryogenic system repair for the ABS telescope
- Tucker Laboratory, Brown University** 2008
Pointing system rebuild for the BLAST telescope
- Valles Laboratory, Brown University** 2006-2007
Paramecium behavior in altered-gravity environments

Service:

- IEEE
- Member 2013-present
Chairperson, CSC Student and Recent Graduate Outreach Committee 2013-2014
Wonders of Physics/Physics Fair: science outreach event, UW-Madison 2011-2015
Expand Your Horizons: Girls' Science Day, UW-Madison 2010-2013
Commencement Orator Selection Committee, Brown University 2009
Women in Science and Engineering (WiSE), Brown University
- Member 2005-2009
Peer-mentor 2007-2009
Founder of physicsWiSE 2007
Chairperson of physicsWiSE 2007-2009

Teaching:

- Introductory Physics, private tutor, Madison, WI 2011-present
General Physics, Teaching Assistant, UW Madison Spring 2011
Physics in the Arts, Teaching Assistant, UW Madison Fall 2010
MATCH School AP Calculus volunteer tutor, Boston, MA 2009-2010
Introductory calculus tutor, Brown University 2007-2009
Introductory physics tutor, Brown University 2007-2009
Sophia Academy volunteer tutoring, Providence, RI 2007-2008

Honors:

- NASA Space Technology Research Fellow 2012-present
IEEE Council on Superconductivity Fellow 2012
Wisconsin Space Grant Fellow 2011-2012
Van Vleck Fellow, University of Wisconsin-Madison 2010
Brown University Bachelor of Science degree with Honors 2009

Languages: English, American Sign Language, French
MATLAB, Python, HTML, Java

Publications: A. E. Lowitz, A. D. Brown, and T. R. Stevenson, P. T. Timbie, and E. J. Wollack, "Design, fabrication, and testing of a TiN/Ti/TiN trilayer KID array for 3 mm CMB observations." *Proceedings of the 16th International Workshop on Low Temperature Detectors*, Grenoble, FR, July 2015. To be published in a special issue of *JLTP*. (in preparation)

A. E. Lowitz, A. D. Brown, and T. R. Stevenson, P. T. Timbie, and E. J. Wollack, "Design, fabrication, and testing of lumped element kinetic inductance detectors for 3 mm CMB Observations," *Proc. SPIE 9153, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VII*, 91532R (July 23, 2014); doi:10.1117/12.2057102.

A. E. Lowitz, E. M. Barrentine, S. R. Golwala, and P. T. Timbie, "A Comparison of Fundamental Noise in Kinetic Inductance Detectors and Transition Edge Sensors for Millimeter-wave Applications," *Proceedings of the 15th International Workshop on Low Temperature Detectors*, Pasadena, CA, June 2013. To be published in a special issue of *JLTP* (2014). DOI 10.1007/s10909-014-1133-5. arXiv1403.3601.

A. Ghribi, J. Aumont, E. S. Battistelli, A. Bau, L. Bergé, J-Ph. Bernard, M. Bersanelli, M-A. Bigot-Sazy, G. Bordier, E. T. Bunn, F. Cavaliere, P. Chanial, A. Coppolecchia, T. Decourcelle, P. De Bernardis, M. De Petris, A-A. Drilien, L. Dumoulin, M. C. Falvella, A. Gault, M. Gervasi, M. Giard, M. Gradziel, L. Grandsire, D. Gayer, J-Ch. Hamilton, V. Haynes, Y. Giraud-Héraud, N. Holtzer, J. Kaplan, A. Korotkov, J. Lande, A. Lowitz, B. Maffei, S. Marnieros, J. Martino, S. Masi, A. Mennella, L. Montier, A. Murphy, M. W. Ng, E. Olivieri, F. Pajot, A. Passerini, F. Piacentini, M. Piat, L. Piccirillo, G. Pisano, D. Prêle, D. Rambaud, O. Rigaut, C. Rosset, M. Salatino, A. Schillaci, S. Scully, C. O'Sullivan, A. Tartari, P. Timbie, G. Tucker, L. Vibert, F. Voisin, B. Watson, M. Zannoni, "Latest Progress on the QUBIC Instrument," *Proceedings of the 15th International Workshop on Low Temperature Detectors*, Pasadena, CA, June 2013. To be published in a special issue of *JLTP* (2014). arXiv1307.5701

A.E. Lowitz and S.Z. Qiu, "New Features for Radar Missile Classification." MIT Lincoln Laboratory, Technical Memos (2010). (limited access)

A.E. Lowitz, "Photometric Redshifts for Galaxies in a Lensing Survey." Brown University Senior Honors Thesis (2009).

Presentations: "Design, fabrication, and testing of a TiN/Ti/TiN trilayer KID array for 3 mm CMB observations." Poster presentation. 16th International Workshop on Low Temperature Detectors. Grenoble, FR. 21 July 2015.

"Detectors and the cosmic microwave background." Science Cafe (public outreach event). Madison, WI. 16 Apr 2015.

"Detectors for the Cosmic Microwave Background." Public Lecture. Madison Astronomical Society. Madison, WI. 21 February 2015.

"Design, fabrication, and testing of lumped element kinetic inductance detectors for 3 mm CMB Observations." Poster presentation. Workshop on Cosmology with the CMB and its Polarization. Minneapolis, MN. 14-16 January 2015.

"Design, fabrication, and testing of lumped element kinetic inductance detectors for 3 mm CMB Observations." Poster presentation. SPIE Astronomical Telescopes and Instrumentation conference. Montreal, QC, Canada. 25 June 2014.

"The Cosmic Microwave Background." Public Lecture. Madison Astronomical Society. Madison, WI. 10 Jan 2013.

"A Comparison of Fundamental Noise in Kinetic Inductance Detectors and Transition Edge Sensors for Millimeter-wave Applications." Poster presentation. 15th International Workshop on Low Temperature Detectors. Pasadena, CA. 25 June 2013.

"A Comparison of Fundamental Noise Limits in TESs and MKIDs." Oral presentation. Keck Institute for Space Studies Superconducting Nitride Detector Workshop. Pasadena, CA. 21 February 2012.