

Curriculum Vitae

Amy E. Lowitz

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Education

PhD **University of Wisconsin-Madison** (Candidate, expected defense late 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:

South Pole Telescope, South Pole, Antarctica
Winter mechanical & electrical engineer for 10 meter telescope
Jan 1, 2016-present
Timbie Laboratory
KIDs for Observations of the Cosmic Microwave Background
2011-present
MIT Lincoln Laboratory
Classification algorithm development
Statistical validation of missile tracking models
2009-2010
Dell'Antonio Laboratory, Brown University
Honors thesis: "Photometric Redshifts for Galaxies in a Lensing Survey"
2008-2009
Page Laboratory, Princeton University
Recombination spectrum distortion detection, Dewar construction
Cryogenic system repair for the ABS telescope
Summers 2007 - 2008
Tucker Laboratory, Brown University
Pointing system rebuild for the BLAST telescope
2008
Valles Laboratory, Brown University
Paramecium behavior in altered-gravity environments
2006-2007

Service:

IEEE
Member
2013-2015
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 2011-2016
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 2012-2015
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. *JLTP*. (in press)
- A. Tartari, J. Aumont, S. Banfi, P. Battaglia, E. S. Battistelli, A. Baù, B. Bélier, D. Bennett, L. Bergé, J. Ph. Bernard, M. Bersanelli, M. A. Bigot-Sazy, N. Bleurvacq, G. Bordier, J. Brossard, E. F. Bunn, D. Buzi, D. Cammilleri, F. Cavaliere, P. Chanial, C. Chapron, A. Coppolecchia, G. D'Alessandro, P. De Bernardis, T. Decourcelle, F. Del Torto, M. De Petris, L. Dumoulin, C. Franceschet, A. Gault, D. Gayer, M. Gervasi, A. Ghribi, M. Giard, Y. Giraud-Héraud, M. Gradziel, L. Grandsire, J. Ch. Hamilton, V. Haynes, N. Holtzer, J. Kaplan, A. Korotkov, J. Lande, A. Lowitz, B. Maffei, S. Marnieros, J. Martino, S. Masi, M. McCulloch, S. Melhuish, A. Mennella, L. Montier, A. Murphy, D. Néel, M. W. Ng, C. O'Sullivan, F. Pajot, A. Passerini, C. Perbot, F. Piacentini, M. Piat, L. Piccirillo, G. Pisano, D. Prêle, D. Rambaud, O. Rigaut, M. Salatino, A. Schillaci, S. Scully, M. M. Stolpovskiy, P. Timbie, G. Tucker, D. Viganò, F. Voisin, B. Watson, and M. Zannoni. "QUBIC: A Fizeau Interferometer Targeting Primordial B-Modes." *Proceedings of the 16th International Workshop on Low Temperature Detectors*, Grenoble, FR, July 2015. *JLTP* (2015)
- 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. *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. *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.