

Curriculum Vitae

Amy E. Lowitz

Kavli Institute for Cosmological Physics
University of Chicago
5640 S. Ellis Ave
Chicago, IL 60637
lowitz@uchicago.edu

Education

PhD University of Wisconsin-Madison, 2016
Physics
Advisor: Prof. Peter Timbie

MS University of Wisconsin-Madison, 2012
Physics

ScB Brown University, 2009
Physics, with honors

Experience:

Kavli Institute for Cosmological Physics, University of Chicago Associate postdoctoral fellow	March 2017 - Present
South Pole Telescope, South Pole, Antarctica Winter mechanical & electrical engineer for 10 meter telescope	Jan - Nov 2016
Timbie Laboratory KIDs for Observations of the Cosmic Microwave Background	2011-2017
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:

Women and Gender Minorities in Physics, Founding Member, UW-Madison	2015-2017
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:** 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, A. Buzzelli, D. Cammilleri, F. Cavaliere, P. Chanial, C. Chapron, G. Coppi, A. Coppolecchia, F. Couchot, R. D'Agostino, G. D'Alessandro, P. De Bernardis, G. De Gasperis, M. De Petris, T. Decourcelle, F. Del Torto, L. Dumoulin, A. Etchegoyen, C. Franceschet, B. Garcia, A. Gault, D. Gayer, M. Gervasi, A. Ghribi, M. Giard, Y. Giraud-Héraud, M. Gradziel, L. Grandsire, J. Ch. Hamilton, D. Harari, V. Haynes, S. Henrot-Versillé, N. Holtzer, J. Kaplan, A. Korotkov, J. Lande, S. Loucatos, A. Lowitz, V. Lukovic, B. Maffei, S. Marnieros, J. Martino, S. Masi, M.C. Medina, M. McCulloch, A. May, S. Melhuish, A. Mennella, L. Montier, A. Murphy, D. Néel, M.W. Ng, C. O'Sullivan, F. Pajot, A. Passerini, A. Pelosi, C. Perbost, O. Perdereau, F. Piacentini, M. Piat, L. Piccirillo, G. Pisano, D. Prêle, R. Puddu, D. Rambaud, O. Rigaut, G.E. Romero, M. Salatino, A. Schillaci, S. Scully, M. Stolpovskiy, A. Tartari, P. Timbie, M. Tristram, G. Tucker, D. Viganò, N. Vittori, F. Voisin, B. Watson, M. Zannoni, A. Zullo. "**QUBIC Technological Design Report**". preprint arXiv:1609.04372 (2016)
- S Scully, D Burke, C O'Sullivan, D Gayer, M Gradziel, JA Murphy, M De Petris, D Buzi, M Zannoni, A Mennella, M Gervasi, A Tartari, B Maffei, J Aumont, S Banfi, P Battaglia, ES Battistelli, A Baù, B Bélier, D Bennet, L Bergé, J-Ph Bernard, M Bersanelli, M-A Bigot-Sazy, N Bleurvacq, G Bordier, J Brossard, EF Bunn, D Cammilleri, F Cavaliere, P Chanial, C Chapron, A Coppolecchia, F Couchot, G D'Alessandro, P De Bernardis, T Decourcelle, F Del Torto, L Dumoulin, C Franceschet, A Gault, A Ghribi, M Giard, Y Giraud-Héraud, L Grandsire, JC Hamilton, V Haynes, S Henrot-Versillé, N Holtzer, J Kaplan, A Korotkov, J Lande, A Lowitz, S Marnieros, J Martino, S Masi, Mark McCulloch, Simon Melhuish, L Montier, D Néel, MW Ng, F Pajot, A Passerini, C Perbost, O Perdereau, F Piacentini, M Piat, L Piccirillo, G Pisano, D Prêle, R Puddu, D Rambaud, O Rigaut, M Salatino, A Schillaci, M Stolpovskiy, P Timbie, M Tristram, G Tucker, D Viganò, F Voisin, B Watson. "**Optical design and modelling of the QUBIC instrument, a next-generation quasi-optical interferometer for cosmology**". *Proc. SPIE Astronomical Telescopes and Instrumentation*. (2016)
- 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*. (2016)
- 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. Perbost, 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.