

---

# Curriculum Vitae

BRADLEY R. JOHNSON

ASSISTANT PROFESSOR  
UNIVERSITY OF VIRGINIA  
DEPARTMENT OF ASTRONOMY  
530 McCORMICK ROAD  
CHARLOTTESVILLE, VA 22904 USA

PHONE: 434-243-6848  
EMAIL: [bradley.johnson@virginia.edu](mailto:bradley.johnson@virginia.edu)  
WEB: <http://cosmology.astro.virginia.edu/bjohnson>

SATURDAY 28<sup>TH</sup> MAY, 2022

---

## PROFESSIONAL APPOINTMENTS:

- Assistant Professor, University of Virginia: 2020 to present
- Assistant Professor, Columbia University: 2011 to 2020
- Assistant Research Scientist, University of Maryland, NASA/GSFC: 2010 to 2011
- Postdoctoral Scholar, University of California, Berkeley: 2008 to 2010
- Postdoctoral Research Fellow, University of Oxford: 2006 to 2008
- Postdoctoral Research Fellow, Cardiff University: 2004 to 2005

## EDUCATION:

- Ph.D. in Physics, 2004, University of Minnesota, Minneapolis, MN, USA
- M.S. in Physics, 1998, University of Minnesota, Minneapolis, MN, USA
- B.S. in Physics, 1996, Bethel College, St. Paul, MN, USA

## RESEARCH GRANTS:

- Co-Investigator / Institutional PI:  
*“An Upgraded KID Camera for Long-Range Imaging Through Optical Obscurants.”*  
Office of Naval Research, subaward from Caltech, 2020 to 2023.  
\$238,287 (awarded to Johnson).
- Co-Investigator / Institutional PI:  
*“Readout of Single Photon Cryogenic Array Detectors via Energy Efficient Digital Means.”*  
Office of Naval Research, subaward from HYPRES, 2020.  
\$70,253 (awarded to Johnson).
- Co-Investigator / Institutional PI:  
*“Low-Power Broadband Superconducting Digitizer for Frequency-Multiplexed Cryogenic Imaging Array.”*  
Office of Naval Research, subaward from HYPRES, 2018 to 2020.  
\$87,471 (awarded to Johnson).
- Principal Investigator:  
*“Collaborative Research: Scalable Kilo-Pixel Detector Modules Based on Polarization Sensitive Multi-Chroic Aluminum Manganese MKIDs.”*  
NSF/ATI, 8/15/2017 to 8/14/2019.  
\$442,541 (awarded to Johnson), \$977,796 (project total).
- Principal Investigator:  
*“A Novel Spectrometer for Discovering Signals from the Beginning of the Universe.”*  
Research Initiatives for Science and Engineering (RISE) at Columbia, 2017 to 2019.  
\$160,000.

- Principal Investigator:  
*“On-Sky Demonstration of LEKIDs with the ABS Instrument.”*  
 Lenfest Junior Faculty Development Grant at Columbia, 2017.  
 \$15,000 in two awards, 1/17 and 7/17.
- Principal Investigator:  
*“Collaborative Research: Polarization Sensitive Multi-Chroic MKIDs.”*  
 NSF/ATI, 8/1/2015 to 7/31/2017.  
 \$298,114 (awarded to Johnson), \$813,732 (project total).
- Principal Investigator:  
*“Lumped-Element Kinetic Inductance Detectors for Cosmic Microwave Background Polarimetry.”*  
 NASA/NESSF graduate student fellowship for Heather McCarrick, 9/1/2015 to 8/31/2018.  
 \$105,000.
- Co-Investigator / Institutional PI:  
*“Superconducting Detector Arrays for Passive Millimeter-Wave Terrestrial Imaging.”*  
 Office of Naval Research, subaward from NASA/JPL, 2015 to 2019.  
 \$219,312 (awarded to Johnson), ~\$2.5M (project total).
- Principal Investigator:  
*“Development of a Superconducting Detector Array for Studying the Beginning of the Universe.”*  
 Research Initiatives for Science and Engineering (RISE) program at Columbia, 2013 to 2015.  
 \$160,000.

### COMPETITIVE FELLOWSHIPS:

- Particle Physics and Astronomy Research Council (PPARC) Postdoctoral Fellowship:  
*October 2004 to October 2007.*
- National Science Foundation (NSF) IRFP Postdoctoral Fellowship:  
*October 2004 to August 2006.*
- NASA Graduate Student Researchers Program (GSRP) Fellowship:  
*2001 to 2003.*

### AWARDS:

- Buchalter Cosmology Prize (Second Prize), 2014  
*Award shared with Brian Keating and Jon Kaufman at UCSD for cultivating “an inventive proposal to significantly enhance cosmic microwave background polarization measurement, enabling new potential tests of fundamental physics.”*
- Merit Award, Department of Astrophysics, University of Oxford, 2007  
*Awarded “in recognition of exceptional performance.”*
- Aneesur Rahman Prize, Department of Physics, University of Minnesota, 2003  
*“Awarded to advanced physics or astrophysics graduate students who have made significant scholarly contributions to their field of research.” (one award per year)*
- NASA Space Grant Consortium Scholarship, University of Minnesota, 1999

### HONORS:

- KIPAC Fellowship, Stanford University & SLAC:  
*February 2008. (Awarded, but I declined. I accepted a position at Berkeley instead.)*
- European Union Marie Curie Grant to give presentation at Rencontres de Moriond “Contents and Structures of the Universe” in La Thuile, Italy:  
*March 2006.*

- Visiting Scholar, Department of Physics, University of Oxford:  
*November 2004 to December 2005 & August 2008 to August 2009.*
- National Academies Postdoctoral Research Associateship:  
*February 2004. (Awarded, but I declined. I accepted the NSF & PPARC fellowships instead.)*
- Visiting Student, Department of Physics, Weizmann Institute of Science, Rehovot, Israel:  
*November to December 2002.*
- Visiting Student, Department of Physics, University of California, Berkeley:  
*July to September 1999 and March to April 2000.*

### TEACHING EXPERIENCE:

- Introduction to Astrophysics II (ASTR 2120)  
*Department of Astronomy, University of Virginia: Spring 2022*
- Introduction to Stars, Galaxies, and the Universe (ASTR 1220)  
*Department of Astronomy, University of Virginia: Fall 2020, 2021, Spring 2021*
- Electromagnetic Waves & Optics (Physics UN3008)  
*Department of Physics, Columbia University: Spring 2016, 2017*
- General Physics I (Physics UN1201)  
*Department of Physics, Columbia University: Spring 2013, 2014, 2015, 2018, Fall 2015, 2016, 2017*
- Physical Cosmology (Physics GR6010)  
*Department of Physics, Columbia University: Fall 2012, 2013, 2014*
- Graduate Student Seminar, Speaker (Physics GR6905)  
*Department of Physics, Columbia University: Spring 2012, Fall 2012, 2013, 2014*
- Supervised Individual Research (Physics V3900)  
*Department of Physics, Columbia University: Fall 2013, 2014, 2016*
- Seminar in Contemporary Physics & Astronomy, Speaker (Astrophysics V1900)  
*Columbia University: Spring 2014*
- MPhys Project Assessor  
*Department of Physics, University of Oxford: Trinity Term 2006*
- Teaching Assistant  
*School of Physics and Astronomy, University of Minnesota: 1996 to 1999*
- Teaching Assistant  
*Department of Mathematics, Bethel College: 1993 to 1996*

### ADVISING EXPERIENCE:

#### Doctoral Students

- advisor of Madeleine Edenton, University of Virginia:  
*starting August 2022. NSF/GRFP Fellow.*
- advisor of Liam Walters, University of Virginia:  
*starting August 2022.*
- advisor of Jordan Shroyer, University of Virginia:  
*June 2020 to present. Lawrence W. Fredrick Award 2021.*
- short-term advisor of Dr. Fabio Columbro, University of Rome La Sapienza, Italy:  
*visiting graduate student, Columbia University, summer 2015.*  
*Research program supported by competitive Agenzia Spaziale Italiana (ASI) scholarship.*

- advisor of Dr. Heather McCarrick, Columbia University:  
*September 2014 to October 2018. NASA/NESSF Fellow.*  
*Dissertation: Design and performance of kinetic inductance detectors for cosmic microwave background polarimetry* (on to postdoc at Princeton)
- advisor of Dr. Maximilian Abitbol, Columbia University:  
*January 2014 to September 2018.*  
*Dissertation: Studying the Effects of Galactic and Extragalactic Foregrounds on Cosmic Microwave Background Observations* (on to postdoc at Oxford)
- co-advisor of Dr. Derek Araujo, Columbia University:  
*2011 to June 2017.* (on to Data Scientist at Schireson Associates)
- co-advisor of Dr. Joy Didier, Columbia University:  
*2011 to July 2016.* (on to postdoc at USC)
- advisor of Dr. Daniel Flanigan, Columbia University:  
*September 2011 to January 2018. Allen M. Sachs Teaching Award 2013.*  
*Dissertation: Kinetic inductance detectors for measuring the polarization of the cosmic microwave background* (on to postdoc in Quantronics Group at CEA Saclay)
- short-term advisor of Dr. Clement Vourch, University of Glasgow, Scotland:  
*visiting graduate student, Columbia University, summer 2013.*
- co-advisor of Dr. Justin Lazear, JHU student at NASA/GSFC:  
*August 2010 to November 2011.* (on to Senior Systems Engineer at Northrop Grumman)
- co-advisor of Dr. Benjamin Westbrook, University of California, Berkeley:  
*August 2008 to August 2010.* (on to postdoc at Berkeley)
- co-supervisor of Dr. Chris North, University of Oxford:  
*September 2006 to August 2008.* (on to Lecturer at Cardiff University)
- co-supervisor of Dr. David Sutton, University of Oxford:  
*September 2006 to August 2008.* (on to postdoc at Cambridge)

### Bridge-to-Ph.D. Students

- Prakamya Agrawal, University of Virginia (2020 to 2022) – *M.S.*
- Jesse Davis, University of Virginia (2020 to 2022) – *M.S.*

### Bachelor's and Master's Degree Students

- Nicholas Lu, University of Virginia (2022) – *Senior Thesis*
- Tryston Raecke, University of Virginia (2021) – *Senior Thesis*
- Liam Walters, University of Virginia (2020-2021) – *Senior Thesis*
- Madeline Gyllenhoff, University of Virginia (2020)
- Tanay Bhandarkar, Columbia University (2016) – *Independent Research, Astronomy UN3998*
- David Colavita, Columbia University (2015)
- Mark Greenan, Columbia University (2015)
- Sanket Gupta, Columbia University (2014-2015) – *M.S. in EE*
- Jiyu Liu, Columbia University (2014) – *Supervised Individual Research, Physics UN3900*
- Bjorn Kjellstrand, Columbia University (2013)
- Thuy Vy Thi Luu, Columbia University (2013) – *Supervised Individual Research, Physics UN3900*
- Brian Smiley, Columbia University (2012-2016)

- Joshua Sobrin, Columbia University (2012-2014) – *M.A. in Philosophical Foundations of Physics*
- Viktor Roytman, Columbia University (2012)

### Research Staff

- supervisor of Post-Bac Research Staff Assistant, Liam Walters, University of Virginia: *June 2021 to August 2022.* (on to graduate student at University of Virginia)
- supervisor of Post-Bac Research Staff Assistant, Tanay Bhandarkar, Columbia University: *September 2017 to August 2018.* (on to graduate student at University of Pennsylvania)
- supervisor of Post-Bac Research Staff Assistant, Bjorn Kjellstrand, Columbia University: *February 2014 to August 2014.* (on to graduate student at Columbia)
- co-supervisor of Associate Research Scientist, Dr. Glenn Jones, Columbia University: *September 2012 to 2017.* (on to Senior Digital Design Engineer at Rigetti Computing)
- supervisor of Post-Bac Research Staff Assistant, Heather McCarrick, Columbia University: *June 2012 to August 2014.* (on to graduate student at Columbia)
- supervisor of Post-Bac Research Staff Assistant, Kristi Bradford, Columbia University: *September 2012 to August 2013.* (on to graduate student at ASU (M.S.); Forbes Magazine 30 Under 30 in Science for 2018)

### PROFESSIONAL SERVICE:

- Reviewer for *The Open Journal of Astrophysics*
- Proposal Reviewer for NSF (multiple programs)
- Reviewer for *Journal of Cosmology and Astroparticle Physics*
- External Reviewer for *Simons Observatory*
- Reviewer for *Review of Scientific Instruments*
- Proposal Reviewer for DOE
- Proposal Reviewer and Panel Chair for NASA (multiple programs)
- Reviewer for CRC Press (multiple books)
- Reviewer for *Journal of Instrumentation*
- Reviewer for *Journal of Low-Temperature Physics*
- External Reviewer for *CLASS*
- Reviewer for *Astrophysical Journal*
- Reviewer for *Astronomy & Astrophysics*
- Reviewer for *New Astronomy*

### UNIVERSITY SERVICE:

- Research Staff, Support Staff and Space Committee  
*University of Virginia, Department of Astronomy: 2021/2022 (chair) academic year*
- Bridge to Ph.D. Committee  
*University of Virginia, Department of Astronomy: 2020/2021, 2021/2022 academic years*
- Undergraduate and Graduate Student Prizes Committee  
*University of Virginia, Department of Astronomy: 2020/2021 (chair), 2021/2022 (chair) academic years*

- Undergraduate Advising  
*University of Virginia, Department of Astronomy: 2020/2021, 2021/2022 academic years*
- Ph.D. Thesis Defense Committee  
*Scott Hinton, University of Virginia, Department of Electrical Engineering (Ph.D. expected in 2022)*  
*Dr. Heather McCarrick, Columbia University, Department of Physics (September 2018)*  
*Dr. Maximilian Abitbol, Columbia University, Department of Physics (September 2018)*  
*Dr. Daniel Flanigan, Columbia University, Department of Physics (January 2018)*  
*Dr. Russell Smith, Columbia University, Department of Physics (February 2017)*  
*Dr. Joy Didier, Columbia University, Department of Physics (July 2016)*  
*Dr. Alexa Staley, Columbia University, Department of Physics (August 2015)*  
*Dr. Daniel Chapman, Columbia University, Department of Physics (December 2014)*  
*Dr. Maxim Factourovich, Columbia University, Department of Physics (October 2014)*  
*Dr. Seth Hillbrand, Columbia University, Department of Physics (August 2013)*  
*Dr. Dustin Urbaniec, Columbia University, Department of Physics (May 2013)*  
*Dr. Junpu Wang, Columbia University, Department of Physics (May 2013)*
- Faculty Retreat at Nevis Laboratories, Committee Member  
*Columbia University, Department of Physics: Fall 2017*
- Machine Shop Committee  
*Columbia University, Department of Physics: 2015/2016, 2016/2017, 2017/2018 academic years*
- Graduate Committee  
*Columbia University, Department of Physics: 2015/2016, 2016/2017 academic years*
- Undergraduate Committee  
*Columbia University, Department of Physics: 2014/2015 academic year*
- Colloquium Committee  
*Columbia University, Department of Physics: 2013/2014 academic year*
- Graduate School Admissions Committee  
*Columbia University, Department of Physics: Spring 2012, 2013 & 2014*
- Barry Goldwater Scholarship Nomination Committee  
*Columbia University: January 2013 & 2014*

## SOCIETY MEMBERSHIP:

- Royal Astronomical Society
- American Astronomical Society

## MAJOR RESEARCH PROJECTS:

### Ongoing

- Simons Observatory: *2020 to present*  
ongoing ground-based CMB experiment in the Atacama Desert, Chile
- Investigating AME in the S140 Region: *2017 to present*  
observations with the VEGAS Spectrometer on the Green Bank Telescope (GBT17A-259, GBT21B-241)
- Searching for Axion Dark Matter: *2022 to present*  
observations with the VEGAS Spectrometer on the Green Bank Telescope (GBT22A-067)
- CMB Stage 4 (CMB-S4): *2015 to present*  
next-generation ground-based CMB experiment under development

- Kinetic Inductance Detector Development for CMB Studies: *2011 to present*
- CubeSat for Calibrating Millimeter-Wave Polarimeters (CalSat): *2011 to present*  
satellite project under development

## Completed

- Probe of Inflation and Cosmic Origins (PICO): *2017 to 2019*  
NASA Probe mission study
- Superconducting Magnetic Bearing Development for CMB Polarimeters: *2012 to 2017*
- The Greenland LEKID Polarimeter (GLP): *2012 to 2015*  
ground-based CMB experiment (design study)
- Stratospheric Kinetic Inductance Polarimeter (SKIP): *2013 to 2014*  
balloon-borne CMB experiment (design study)
- The Primordial Inflation Polarization Explorer (PIPER): *2010 to 2012*  
balloon-borne CMB experiment
- Experimental Probe of Inflationary Cosmology - Intermediate Mission (EPIC-IM): *2009*  
NASA Einstein Inflation Probe mission study
- APEX-SZ Receiver on the APEX Telescope: *2008 to 2018*  
instrument for measuring the Sunyaev Zel'dovich effect  
observed for forty-seven nights at the APEX Telescope in the Atacama Desert, Chile
- The E and B Experiment (EBEX): *2002 to 2019*  
balloon-borne CMB experiment
- $C_\ell$ -Observer ( $C_\ell$ OVER): *2004 to 2009*  
ground-based CMB experiment
- MAXIPOL: *1999 to 2007*  
completed balloon-borne CMB experiment  
balloon launch campaign, NASA/CSBF, Ft. Sumner, NM, September 2002 to May 2003  
balloon launch campaign, NASA/CSBF, Ft. Sumner, NM, March to September 2002
- MAXIMA-2: *1999*  
completed balloon-borne CMB experiment  
balloon launch campaign, NASA/CSBF, Palestine, Texas, March to June 1999
- Global Microlensing Alert Network (GMAN): *1998*  
completed exoplanet search  
observed for fifty nights at 74-Inch Telescope, MSO, Canberra, Australia  
observed for four nights at the 40-Inch Telescope, SSO, Coonabarabran, Australia

## INVITED TALKS:

- University of Virginia, NRAO and Department of Astronomy Colloquium, March 2019.  
*"Looking Beyond the Horizon of Our Universe."*
- Flatiron Institute, Center for Computational Astrophysics, "The CMB in HD," December 2018.  
*"MKID Arrays for Ultra-Deep, High-Resolution CMB Surveys."*
- University of Arizona, Steward Observatory Colloquium, August 2018.  
*"Looking Beyond the Horizon of Our Universe."*
- University of Arizona, Research Seminar, August 2018.  
*"Novel Technologies for Next-Generation CMB Studies."*

- Flatiron Institute, Center for Computational Astrophysics, CMB Foreground Workshop, June 2018.  
“*Constraining the Anomalous Microwave Emission Mechanism in the S140 Star-Forming Region.*”
- IBM Thomas J Watson Research Center, Research Seminar, May 2018.  
“*Kinetic Inductance Detectors for Millimeter-Wave Cosmology.*”
- University of California, Berkeley, “B-Mode From Space Workshop,” December 2017.  
“*Development of KIDs for CMB Polarization Studies.*”
- Columbia University, Physics Department Faculty Retreat at Nevis Laboratories, December 2017.  
“*Discovering Signals from the Beginning of the Universe with Microwave and Millimeter-Wave Spectroscopy.*”
- Dublin Institute for Advanced Studies, Ireland, “MKIDs: The Next Generation,” September 2017.  
“*Development of Dual-Polarization Multi-Chroic MKIDs for CMB Studies.*”
- HYPRES, Inc., August 2017.  
“*Kinetic Inductance Detectors for Millimeter-Wave Imaging.*”
- University of Pennsylvania, Astro Seminar, March 2017.  
“*Kinetic Inductance Detectors for CMB Studies.*”
- Stanford University & SLAC National Accelerator Laboratory, “CMB-S4 Workshop,” February 2017.  
“*Update on KIDs for CMB.*”
- Special Session at 228th AAS Meeting, “The Polarization of the Cosmic Microwave Background: Current Status and Future Prospects,” June 2016.  
“*A CubeSat for Calibrating Ground-Based and Sub-Orbital Millimeter-Wave Polarimeters.*”
- University of California, Berkeley & Lawrence Berkeley National Lab, “Cosmology with CMB-S4 Collaboration Workshop,” March 2016.  
“*Kinetic Inductance Detectors for CMB Studies.*”
- Cornell University, Laboratory for Elementary Particle Physics Seminar, February 2016.  
“*Kinetic Inductance Detectors for CMB Studies.*”
- Columbia University, Physics Department Faculty Retreat at Nevis Laboratories, December 2015.  
“*Kinetic Inductance Detectors for CMB Studies.*”
- University of Minnesota, “Cosmology with the CMB and its Polarization” workshop, January 2015.  
“*MKIDs for CMB Studies.*”
- Columbia University, Astronomy Colloquium, April 2014.  
“*Discussion of the BICEP2 Result.*”
- Columbia University, Physics Department Faculty Retreat at Nevis Laboratories, November 2012.  
“*Instrumentation for Measuring the Beginning of the Universe.*”
- Columbia University, Physics Colloquium, February 2011.  
“*Measuring the Beginning of the Universe.*”
- University of Miami, Physics Colloquium, February 2008.  
“*Measuring the Beginning of the Universe with  $C_\ell$ OVER and EBEX.*”
- Yale University, YCAA Seminar, February 2008.  
“*Measuring the Beginning of the Universe with  $C_\ell$ OVER and EBEX.*”
- Aspen Center for Physics, January 2008.  
“*Measuring the Polarization of the CMB with  $C_\ell$ OVER.*”
- Princeton University, Gravity Group, May 2007.  
“*Measuring the Polarization of the CMB with  $C_\ell$ OVER.*”
- Imperial College, Cosmology Seminar, April 2007.  
“*Measuring the Polarization of the CMB with  $C_\ell$ OVER and EBEX.*”



- Balliol College, University of Oxford, March 2007.  
“How did the Universe begin?”
- University of Oxford, Cosmology Seminar, May 2006.  
“Measuring the Polarization of the CMB.”
- Imperial College, Cosmology Seminar, December 2004.  
“MAXIPOL: A Bolometric, Balloon-Borne Half-Wave Plate Polarimeter for Measuring the Polarization of the CMB.”
- Cardiff University, AIG Seminar, November 2004.  
“MAXIPOL: A Bolometric, Balloon-Borne Half-Wave Plate Polarimeter for Measuring the Polarization of the CMB.”
- Niels Bohr Institute, Copenhagen, 2003.  
“Balloon-Borne Experiments for Measuring the Anisotropy of the CMB.”
- University of Minnesota, Minneapolis. March 2003.  
“MAXIPOL: A Balloon-borne Experiment for Measuring the Polarization Anisotropy of the Cosmic Microwave Background Radiation.”
- University of Pennsylvania. December 2003.  
“Balloon-borne Experiments for Measuring the Polarization Anisotropy of the CMB.”
- University of California, Santa Barbara. August 2002.  
“MAXIPOL: Measuring the Polarization Anisotropy of the Cosmic Microwave Background Radiation.”

### SCIENTIFIC OUTREACH:

- AwesomeCon Dark Matter and Dark Energy Panel, June 2022.
- Big Ideas with Little Kids (episode host), June 2017.  
web-based video series produced by Inverse (<https://www.inverse.com>) and Facebook
- Westchester Amateur Astronomers (public lecture), June 2017.  
“Studying the Beginning of the Universe with the Cosmic Microwave Background.”
- Science-on-Hudson at Nevis Laboratories (public lecture), December 2016.  
“Nature’s Ultimate Time Machine: Photographing the Infant Universe.”
- Science & Engineering Expo at The School at Columbia University (exhibit presenter), January 2016.  
“Physics Frontiers: Levitating Superconducting Magnetic Bearing.”
- Society of Physics Students at Columbia University (lecture), April 2012.  
“Measuring the Beginning of the Universe .”
- “Runaway Universe” on NOVA (television documentary), 2000.  
Directed by Alan Ritsko and Thomas Lucas. (DVD release 2006).  
<http://www.pbs.org/wgbh/nova/universe/>.

### CONFERENCE PRESENTATIONS:

- SPIE Astronomical Telescopes + Instrumentation, Montreal, Canada, July 2022.  
“Laboratory measurements of horn-coupled and antenna-coupled microwave kinetic inductance detector (MKID) arrays.”  
poster presentation by graduate student J. Shroyer.
- SPIE Astronomical Telescopes + Instrumentation, Austin, TX, June 2018.  
“Design and measured performance of dual-polarization LEKIDs for CMB polarimetry.”  
oral presentation by graduate student H. McCarrick.

- CMB-S4 Workshop, Argonne National Laboratory, March 2018.  
*“First optical tests of OMT-coupled, multi-chroic MKIDs.”*  
 poster presentation by graduate student H. McCarrick.
- CMB-S4 Workshop, Argonne National Laboratory, March 2018.  
*“Measured performance of horn-coupled, dual-polarization LEKIDs for CMB polarimetry.”*  
 poster presentation by graduate student H. McCarrick.
- CMB-S4 Workshop, Harvard University, August 2017.  
*“C-Band Observations of Anomalous Microwave Emission in the S140 Region Using the 100-Meter Green Bank Telescope.”*  
 poster presentation by graduate student M. Abitbol.
- CMB-S4 Workshop, Harvard University, August 2017.  
*“Dual-polarization LEKIDs for CMB Polarimetry.”*  
 poster presentation by graduate student H. McCarrick and M. Abitbol.
- 17th International Conference on Low Temperature Detectors, Kurume City, Japan, July 2017.  
*“Development of Multi-Chroic MKIDs for Next-Generation CMB Polarization Studies.”*  
 oral presentation by B. R. Johnson.
- 17th International Conference on Low Temperature Detectors, Kurume City, Japan, July 2017.  
*“Dual-polarization LEKIDs for CMB Polarimetry .”*  
 poster presentation by graduate student H. McCarrick.
- 17th International Conference on Low Temperature Detectors, Kurume City, Japan, July 2017.  
*“AlMn LEKIDs for millimeter-wave astronomy below 100 GHz.”*  
 poster presentation by collaborator and Staff Scientist at SLAC, H.-M. Cho.
- SPIE Astronomical Telescopes + Instrumentation, Edinburgh, Scotland, UK, June 2016.  
*“Polarization sensitive multichroic MKIDs for CMB studies”.*  
 oral presentation by B. R. Johnson.
- SPIE Astronomical Telescopes + Instrumentation, Edinburgh, Scotland, UK, June 2016.  
*“Dual polarization LEKIDs for millimeter wavelengths.”*  
 oral presentation by graduate student H. McCarrick.
- American Astronomical Society, Meeting 228, #403.01, San Diego, CA, 2016.  
*“Foreground-Induced Biases in CMB Polarimeter Self-Calibration.”*  
 oral presentation by graduate student M. Abitbol.
- 16th International Conference on Low Temperature Detectors, Grenoble, France, July 2015.  
*“Horn-Coupled LEKIDs for Millimeter Wavelengths.”*  
 oral presentation by graduate student H. McCarrick.
- 16th International Conference on Low Temperature Detectors, Grenoble France, July 2015.  
*“Characterizing horn-coupled, aluminum lumped-element kinetic inductance detectors using coherent and incoherent illumination from a millimeter-wave source.”*  
 poster presented by graduate student D. Flanigan.
- 26th International Symposium on Space Terahertz Technology, Cambridge, MA, 2015.  
*“A Cryogenic Millimeter Wavelength Test Facility.”*  
 poster presented by Associate Research Scientist G. Jones.
- 15th International Conference on Low Temperature Detectors, Pasadena, CA, June 2013.  
*“The Detector System for the Stratospheric Kinetic Inductance Polarimeter (SKIP).”*  
 poster presented by graduate student D. Flanigan.
- SPIE Astronomical Telescopes + Instrumentation, Montreal, Quebec, Canada, June 2014.  
*“Lumped element kinetic inductance detectors for CMB polarization studies.”*  
 oral presentation by graduate student D. Araujo.

- American Astronomical Society, Meeting 223, #127.06, Washington, DC, 2014.  
“*The Stratospheric Kinetic Inductance Polarimeter (SKIP)*.”  
poster presented by graduate student D. Flanigan.
- American Astronomical Society, Meeting 217, #313.05, Seattle, WA, 2011.  
“*Current Status of the PIPER Experiment*.”  
oral presentation by B. R. Johnson.
- Rencontres de Moriond, La Thuile, Italy, 2006.  
“*MAXIPOL: A Bolometric, Balloon-Borne Half-Wave Plate Polarimeter for Measuring the Polarization of the CMB*.”  
oral presentation by B. R. Johnson.
- American Physical Society, Vol. 46, No. 2, Washington, DC, 2001.  
“*CMB Observations with MAXIMA and MAXIPOL*.”  
oral presentation by B. R. Johnson.
- American Astronomical Society, Meeting 195, #14.05, Atlanta, GA, 2000.  
“*Preliminary Cosmic Microwave Background Anisotropy Results from the MAXIMA Balloon-Borne Experiment*.”  
oral presentation by B. R. Johnson.

## PUBLICATIONS:

### In Preparation

1. Shroyer, J., *et al.* (2022) “A Scalable LED Module for KID Array Addressing.” *Rev. Sci. Instrum.*, to be submitted.
2. Johnson, B. R., *et al.* (2022) “A physical optics study of instrument-induced systematic errors in millimeter-wave polarimeters.” *MNRAS*, in preparation.
3. Walters, L., *et al.* (2022) “Large-Diameter Lens for Millimeter-Wave Instruments Based on Composites.” *Rev. Sci. Instrum.*, in preparation.

### Submitted

4. Healy, E., *et al.* (2022) “The Simons Observatory 220 and 280 GHz Focal-Plane Module: Design and Initial Characterization.” *J. Low Temp. Phys.*, submitted. arXiv:2201.04507
5. McCarrick, H., *et al.* (2022) “The 90 and 150 GHz universal focal-plane modules for the Simons Observatory.” *J. Low Temp. Phys.*, submitted. arXiv:2112.01458
6. Huber, Z., *et al.* (2022) “The Simons Observatory: Magnetic Shielding Measurements for the Universal Multiplexing Module.” *J. Low Temp. Phys.*, submitted. arXiv:2111.11495
7. Wang, Y., *et al.* (2022) “Simons Observatory Focal-Plane Module: In-lab Testing and Characterization Program.” *J. Low Temp. Phys.*, submitted. arXiv:2111.11301

### Refereed Publications

8. Crowley, K. D., Dow, P., Shroyer, J. E., Johnson, B. R., *et al.* (2022) “The Simons Observatory: A large-diameter truss for a refracting telescope cooled to 1 K.” *Rev. Sci. Instrum.*, **93**, 055106.
9. Hensley, B. S., *et al.* (2022) “The Simons Observatory: Galactic Science Goals and Forecasts.” *ApJ*, **929**, 166.
10. The CMB-S4 Collaboration, *et al.* (2022) “CMB-S4: Forecasting Constraints on Primordial Gravitational Waves.” *ApJ*, **926**, 54.

11. Chesmore, G., *et al.* (2021) “Simons Observatory HoloSim-ML: machine learning applied to the efficient analysis of radio holography measurements of complex optical systems.” *Appl. Opt.*, **60(29)**, 9029–9035.
12. McCarrick, H., *et al.* (2021) “The Simons Observatory microwave SQUID multiplexing detector module design.” *ApJ*, **922**, 38.
13. Zhu, N., *et al.* (2021) “The Simons Observatory Large Aperture Telescope Receiver.” *ApJS*, **256**, 23.
14. Abitbol, M., *et al.* (2021) “The Simons Observatory: Bandpass and polarization-angle calibration requirements for B-mode searches.” *J. Cosmol. Astropart. Phys.*, **5**, 032.
15. Meinke, J., *et al.* (2020) “Planar Self-similar Antennas for Broadband Millimeter-Wave Measurements.” *J. Low Temp. Phys.*, **199**, 281.
16. Didier, J., *et al.* (2019) “Intensity-coupled Polarization in Instruments with a Continuously Rotating Half-Wave Plate.” *ApJ*, **876**, 54.
17. The EBEX Collaboration, *et al.* (2018) “The EBEX Balloon-borne Experiment - Optics, Receiver, and Polarimetry.” *ApJS*, **239**, 7.
18. The EBEX Collaboration, *et al.* (2018) “The EBEX Balloon Borne Experiment - Detectors and Readout.” *ApJS*, **239**, 8.
19. The EBEX Collaboration, *et al.* (2018) “The EBEX Balloon-Borne Experiment - Gondola, Attitude Control, and Control Software.” *ApJS*, **239**, 9.
20. Johnson, B. R., Flanigan, D., *et al.* (2018) “Development of Dual-Polarization Multi-Chroic MKIDs for CMB Studies.” *J. Low Temp. Phys.*, **193**, 103.
21. Abitbol, M. H., Johnson, B. R., *et al.* (2018) “Constraining the Anomalous Microwave Emission Mechanism in the S140 Star Forming Region with Spectroscopic Observations Between 4 and 8 GHz at the Green Bank Telescope.” *ApJ*, **864**, 97.
22. Nagarajan, A., *et al.* (2018) “Weak-lensing mass calibration of the Sunyaev–Zel’dovich effect using APEX-SZ galaxy clusters.” *MNRAS*, **488(2)**, 1728–1759.
23. Aubin, F., Hanany, S., Johnson, B. R., Lee, A., Suzuki, A., Westbrook, B., and Young, K. (2018) “Developments of highly-multiplexed, multi-chroic pixels for Balloon-Borne Platforms.” *J. Low Temp. Phys.*, **193**, 298.
24. McCarrick, H., Jones, G., Johnson, B. R., *et al.* (2018) “Design and performance of dual-polarization lumped-element kinetic inductance detectors for millimeter-wave polarimetry.” *A&A*, **610**, A45.
25. Johnson, B. R., Columbro, F., Araujo, D., *et al.* (2017) “A Large-Diameter Hollow-Shaft Cryogenic Motor Based on a Superconducting Magnetic Bearing for Millimeter-Wave Polarimetry.” *Rev. Sci. Instrum.*, **88**, 105102.
26. Abitbol, M. H., *et al.* (2017) “Prospects for Measuring Cosmic Microwave Background Spectral Distortions in the Presence of Foregrounds.” *MNRAS*, **471(1)**, 1126–1140.
27. Jones, G., Johnson, B. R., *et al.* (2017) “High quality factor manganese-doped aluminum lumped-element kinetic inductance detectors sensitive to frequencies below 100 GHz.” *Appl. Phys. Lett.*, **110**, 222601. *Article was featured on the cover of the journal.*
28. Nati, F., Devlin, M. J., Gerbino, M., Johnson, B. R., Keating, B., Pagano, L., Teply, G. (2017) “POLOCALC: a Novel Method to Measure the Absolute Polarization Orientation of the Cosmic Microwave Background.” *J. Astron. Instrum.*, **6(2)**, 1740008.
29. Flanigan, D., Johnson, B. R., *et al.* (2016) “Magnetic field dependence of the internal quality factor and noise performance of lumped-element kinetic inductance detectors.” *Appl. Phys. Lett.*, **109**, 143503.

30. Bender, A. N., *et al.* (2016) “Galaxy Cluster Scaling Relations Measured with APEX-SZ.” *MNRAS*, **460**(4), 3432–3446.
31. Flanigan, D., McCarrick, H., Jones, G., Johnson, B. R., *et al.* (2016) “Photon noise from chaotic and coherent millimeter-wave sources measured with horn-coupled, aluminum lumped-element kinetic inductance detectors.” *Appl. Phys. Lett.*, **108**, 083504.
32. Abitbol, M., Hill, C., and Johnson, B. R. (2016) “Foreground-induced biases in CMB polarimeter self-calibration.” *MNRAS*, **457**(2), 1796–1803.
33. Kaufman, J., Keating, B., and Johnson, B. R. (2016) “Precision Tests of Parity Violation Over Cosmological Distances.” *MNRAS*, **455**(2), 1981–1988. *Buchalter Cosmology Prize (Second Prize) paper.*
34. McCarrick, H., Flanigan, D., Jones, G., Johnson, B. R., *et al.* (2016) “A Titanium Nitride Absorber for Reducing Optical Cross-Talk in Horn-Coupled Aluminum LEKIDs for Millimeter Wavelengths.” *J. Low Temp. Phys.*, **184**, 154.
35. Bryan, S., *et al.* (2016) “WSPEC: A waveguide filter-bank focal plane array spectrometer for millimeter wave astronomy and cosmology.” *J. Low Temp. Phys.*, **184**, 114.
36. Johnson, B. R., *et al.* (2015) “A CubeSat for Calibrating Ground-Based and Sub-Orbital Millimeter-Wave Polarimeters (CalSat).” *J. Astron. Instrum.*, **4**(2), 1550007.
37. McCarrick, H., Flanigan, D., Jones, G., Johnson, B. R., *et al.* (2014) “Horn-Coupled, Commercially-Fabricated Aluminum Lumped-Element Kinetic Inductance Detectors for Millimeter Wavelengths.” *Rev. Sci. Instrum.*, **85**, 123117.
38. Johnson, B. R., *et al.* (2014) “The Detector System for the Stratospheric Kinetic Inductance Polarimeter (SKIP).” *J. Low Temp. Phys.*, **176**, 741.
39. Dobbs, M., *et al.* (2012) “Frequency multiplexed superconducting quantum interference device readout of large bolometer arrays for cosmic microwave background measurements.” *Rev. Sci. Instrum.*, **83**, 073113.
40. Bao, C., *et al.* (2012) “The Impact of the Spectral Response of an Achromatic Half-Wave Plate on the Measurement of the Cosmic Microwave Background Polarization.” *ApJ*, **747**, 97.
41. Schwan, D., *et al.* (2011) “Invited Article: Millimeter-wave bolometer array receiver for the Atacama pathfinder experiment Sunyaev-Zel’dovich (APEX-SZ) instrument.” *Rev. Sci. Instrum.*, **82**, 091301. *Article was featured on the cover of the journal.*
42. Sutton, D., Zuntz, J. A., Ferreira, P. G., Brown, M. L., Eriksen, H. K., Johnson, B. R., Kusaka, A., Naess, S. K., Wehus, I. K. (2010) “Fast and precise map-making for massively multi-detector CMB experiments.” *MNRAS*, **407**(3), 1387–1402.
43. Basu, K., *et al.* (2010) “Non-Parametric Modeling of the Intra-Cluster Gas Using APEX-SZ Bolometer Imaging Data.” *A&A*, **519**, A29.
44. Brown, M. L., Challinor, A., North, C. E., Johnson, B. R., O’Dea, D., Sutton, D. (2009) “Impact of modulation on CMB B-mode polarization experiments.” *MNRAS*, **397**(2), 634–656.
45. Matsumura, T., Hanany, S., Ade, P. A. R., Johnson, B. R., Jones, T. J., Jonnalagadda, P., Savini, G. (2009) “Performance of Three- and Five-Stack Achromatic Half-Wave Plates at Millimeter Wavelengths.” *Appl. Opt.*, **48**(19), 3614–3625.
46. Reichardt, C. L., *et al.* (2009) “Constraints on the High-l Power Spectrum of Millimeter-wave Anisotropies from APEX-SZ.” *ApJ*, **701**, 1958–1964.
47. Sutton, D., Johnson, B. R. *et al.* (2009) “Map making in small field modulated CMB polarization experiments: approximating the maximum likelihood method.” *MNRAS*, **393**(3), 894–910.
48. O’Dea, D., Challinor, A., & Johnson, B. R. (2007) “Systematic errors in cosmic microwave background polarization measurements.” *MNRAS*, **376**(4), 1767–1783.

49. Pisano, G., *et al.* (2007) “A Broadband WR10 Turnstile Junction Orthomode Transducer.” *IEEE Microw. Compon. Lett.*, **17(4)**, 286.
50. Johnson, B. R., *et al.* (2007) “MAXIPOL: Cosmic Microwave Background Radiation Polarimetry Using a Half-Wave Plate.” *ApJ*, **665**, 42.
51. Wu, J. H. P., *et al.* (2007) “MAXIPOL: Data Analysis and Results.” *ApJ*, **665**, 55.
52. Pisano, G., *et al.* (2006) “A 90 GHz Waveguide Variable Phase Shifter.” *IEEE Microw. Compon. Lett.*, **17(3)**, 208.
53. Rabii, B., *et al.* (2006) “MAXIMA: A Balloon-Borne Cosmic Microwave Background Anisotropy Experiment.” *Rev. Sci. Instrum.*, **77**, 071101.
54. Matsumura, T., *et al.* (2005) “Magnetic Field Inhomogeneity and Torque in High Temperature Superconducting Magnetic Bearings.” *IEEE Trans. Appl. Supercond.*, **15(2)**, 2316.
55. Matsumura, T., *et al.* (2005) “Development of a cryogenic induction motor for use with a superconducting magnetic bearing.” *Phys. C*, **426–431**, P1, 746–751.
56. Hanany, S., *et al.* (2005) “A Millimeter-Wave Achromatic Half Wave Plate.” *Appl. Opt.*, **44(22)**, 4666–4670.
57. Hull, J. R., *et al.* (2005) “Characterization of a high-temperature superconducting bearing for use in a cosmic microwave background polarimeter.” *Supercond. Sci. Technol.*, **18**, S1–S5.
58. Hanany, S., *et al.* (2003) “A Cosmic Microwave Background Radiation Polarimeter Using Superconducting Bearings.” *IEEE Trans. Appl. Supercond.*, **13(2)**, 2128.
59. Stompor, R., Hanany, S., *et al.* (2003) “The MAXIMA Experiment: Latest Results and Consistency Tests.” *C R Phys.*, **4(8)**, 841.
60. Abroe, M. E., *et al.* (2003) “Correlations Between the WMAP and MAXIMA Cosmic Microwave Background Anisotropy Maps.” *ApJ*, **605**, 607.
61. Bennett, D.P., *et al.* (2002) “The Microlensing Event MACHO-99-BLG-22/OGLE-1999-BUL-32: An Intermediate Mass Black Hole, or a Lens in the Bulge.” astro-ph/0207006
62. Bennett, D.P., *et al.* (2002) “Gravitational Microlensing Events Due To Stellar-Mass Black Holes.” *ApJ*, **579**, 639.
63. Alcock, C., *et al.* (2000) “Binary Microlensing Events from the MACHO Project.” *ApJ*, **541**, 270.
64. Rhie, S.H., *et al.* (2000) “On Planetary Companions to the MACHO 98-BLG-35 Microlens Star.” *ApJ*, **533**, 378.
65. Afonso, C., *et al.* (2000) “Combined Analysis of the Binary Lens Caustic-Crossing Event MACHO 98-SMC-1.” *ApJ*, **532**, 340.
66. Rhie, S.H., *et al.* (1999) “Observations of the Binary Microlens Event MACHO 98-SMC-1 by the Microlensing Planet Search Collaboration.” *ApJ*, **522**, 1037.

## Conference Proceedings

67. Kiuchi, K., *et al.* (2020) “Simons Observatory Small Aperture Telescope overview.” *Proc. SPIE*, **11445**, 114457L.
68. Healy, E., *et al.* (2020) “Assembly development for the Simons Observatory focal plane readout module.” *Proc. SPIE*, **11453**, 1145317.
69. Sayers, J., *et al.* (2020) “A millimeter-wave kinetic inductance detector camera for long-range imaging through optical obscurants.” *Proc. SPIE*, **11411**, 114110H.
70. Young, K., *et al.* (2018) “Optical design of PICO: a concept for a space mission to probe inflation and cosmic origins.” *Proc. SPIE*, **10698**, 1069846.

71. Sutin, B., *et al.* (2018) “PICO - the probe of inflation and cosmic origins.” *Proc. SPIE*, **10698**, 106984F.
72. Johnson, B. R., Flanigan, D., *et al.* (2016) “Polarization sensitive Multi-Chroic MKIDs.” *Proc. SPIE*, **9914**, 99140X.
73. McCarrick, H., *et al.* (2016) “Development of dual-polarization LEKIDs for CMB observations.” *Proc. SPIE*, **9914**, 991400.
74. Jones, G., *et al.* (2015) “A Cryogenic Millimeter Wavelength Test Facility.” *Proceedings of the 26th International Symposium on Space Terahertz Technology*, P–16.
75. Che, G., *et al.* (2015) “WSPEC: A Waveguide Filter Bank Spectrometer .” *Proceedings of the 26th International Symposium on Space Terahertz Technology*, M4–2. arXiv:1503.06528
76. Bryan, S., *et al.* (2015) “Design of Dual-Polarization Horn-Coupled Kinetic Inductance Detectors for Cosmic Microwave Background Polarimetry.” *Proceedings of the 26th International Symposium on Space Terahertz Technology*, T3–4. arXiv:1503.04684
77. Araujo, D. C., *et al.* (2014) “A LEKID-based CMB instrument design for large-scale observations in Greenland.” *Proc. SPIE*, **9153**, 91530W. arXiv:1407.6249
78. Lazear, J., *et al.* (2014) “The Primordial Inflation Polarization Explorer (PIPER).” *Proc. SPIE*, **9153**, 91531L.
79. MacDermid, K., *et al.* (2014) “The performance of the bolometer array and readout system during the 2012/2013 flight of the E and B experiment (EBEX).” *Proc. SPIE*, **9153**, 915311.
80. Kogut, A., *et al.* (2012) “The Primordial Inflation Polarization Explorer (PIPER).” *Proc. SPIE*, **8452**, 84521J.
81. Klein, J., *et al.* (2011) “A cryogenic half-wave plate polarimeter using a superconducting magnetic bearing.” *Proc. SPIE*, **8150**, 815004.
82. Huan, T., Johnson, B. R., Dragovan, M., *et al.* (2010) “Optical design of the EPIC-IM crossed Dragone telescope.” *Proc. SPIE*, **7731**, 77311R.
83. Reichborn-Kjennerud, B., *et al.* (2010) “EBEX: A balloon-borne CMB polarization experiment.” *Proc. SPIE*, **7741**, 77411C.
84. Aubin, F., *et al.* (2010) “First Implementation of TES Bolometer Arrays with SQUID-based Multiplexed Readout on a Balloon-Borne Platform.” *Proc. SPIE*, **7741**, 77411T.
85. Milligan, M., *et al.* (2010) “Software systems for operation, control, and monitoring of the EBEX instrument.” *Proc. SPIE*, **7740**, 774007.
86. Sagiv, I., *et al.* (2010) “The EBEX Cryostat and Supporting Electronics.” *Proceedings of the 12th Marcel Grossman Conference*. arXiv:1005.3339
87. Westbrook, B., Johnson, B. R., *et al.* (2009) “Optimization of the APEX-SZ TES Bolometer Array.” *AIP Conf. Proc.*, **1185**, 363.
88. Grimes, P. K., *et al.* (2009) “CLOVER - Measuring the Cosmic Microwave Background B-mode Polarization.” *Proceedings of the 20th International Symposium on Space Terahertz Technology*, T3C, p. 97–106.
89. North, C. E., *et al.* (2008) “Dielectric constant reduction using porous substrates in finline millimetre and submillimetre detectors.” *Proc. SPIE*, **7020**, 70202G.
90. Piccirillo, L., *et al.* (2008) “The CLOVER experiment.” *Proc. SPIE*, **7020**, 70201E.
91. North, C. E., Johnson, B. R., *et al.* (2008) “Detecting the B-mode Polarisation of the CMB with C<sub>ℓ</sub>OVER.” *Proceedings of the 43rd Rencontres de Morionds, “Cosmology.”* arXiv:0805.3690
92. Grainger, W., *et al.* (2008) “EBEX - The E and B Experiment.” *Proc. SPIE*, **7020**, 70202N.

93. North, C. E., *et al.* (2007) “Clover - Measuring the CMB B-mode polarization.” *Proceedings of the 18th International Symposium on Space Terahertz Technology*, p. 238-243.
94. Taylor, A. C., *et al.* (2006) “Clover - A B-mode polarization experiment.” *New Astron.*, **50(11–12)**, 993–998.
95. Audley, M. D., *et al.* (2006) “Prototype finline-coupled TES bolometers for CLOVER.” *Proceedings of the 17th International Symposium on Space Terahertz Technology*, p. 127–130.
96. Audley, M. D., *et al.* (2006) “TES imaging array technology for CLOVER.” *Proc. SPIE*, **6275**, 627524.
97. Johnson, B. R., *et al.* (2006) “Half-Wave Plate Polarimetry with MAXIPOL.” *Proceedings of the 41st Rencontres de Moriond, “Contents and Structures of the Universe.”* ed. C. Magneville, *et al.* (Hanoi: The Gioi Publ.), VN-TG-7176-1.
98. Pisano, G., *et al.* (2004) “CLOVER Experiment: The Receiver Block.” *Proceedings of the Dome C Astronomy Meeting, Toulouse.*
99. Maffei, B., *et al.* (2004) “CLOVER: The CMB Polarization Observer.” *Proceedings of the Dome C Astronomy Meeting, Toulouse.*
100. Oxley, P., *et al.* (2004) “The EBEX Experiment.” *Proc. SPIE*, **5543**, 320.
101. Johnson, B. R., *et al.* (2003) “MAXIPOL: A Balloon-borne Experiment for Measuring the Polarization Anisotropy of the Cosmic Microwave Background Radiation.” *New Astron.*, **47(11–12)**, 1067–1075.
102. Jaffe, A. H., *et al.* (2003) “Recent Results from the MAXIMA Experiment.” *New Astron.*, **47(8–10)**, 727–732.
103. Richards, P. L., *et al.* (2002) “The MAXIMA and MAXIPOL experiments.” *AIP Conf. Proc.*, **616**, 12.
104. Winant, C., *et al.* (2001) “MAXIMA: Millimeter-wave Anisotropy Experiment Imaging Array.” *AIP Conf. Proc.*, **586**, 214.
105. Balbi, A., *et al.* (2001) “Maps of the CMB from the MAXIMA experiment.” *Mem. S. A. It.*, **72(4)**, 849–852.

## White Papers and Design Studies

106. Aiola, S., *et al.* (2022) “Snowmass 2021 CMB-HD White Paper.” arXiv:2203.05728
107. Abazajian, K., *et al.* (2022) “Snowmass 2021 CMB-S4 White Paper.” arXiv:2203.08024
108. Chang, C., *et al.* (2022) “Snowmass 2021 Cosmic Frontier: Cosmic Microwave Background Measurements White Paper.” arXiv:2203.07638
109. Dvorkin, C., *et al.* (2022) “Dark Matter Physics from the CMB-S4 Experiment.” arXiv:2203.07064
110. Elvis, M., *et al.* (2020) “The Case for Probe-class NASA Astrophysics Missions.” arXiv:2002.12739
111. Sehgal, N., *et al.* (2020) “Science from an Ultra-Deep, High-Resolution Millimeter-Wave Survey.” arXiv:1903.03263
112. Sehgal, N., *et al.* (2019) “CMB-HD: Astro2020 RFI Response.” arXiv:2002.12714
113. Hanany, S., *et al.* (2019) “PICO: Probe of Inflation and Cosmic Origins.” arXiv:1908.07495
114. Abazajian, K., *et al.* (2019) “CMB-S4 Decadal Survey APC White Paper.” arXiv:1908.01062
115. Abazajian, K., *et al.* (2019) “CMB-S4 Science Case, Reference Design, and Project Plan.” arXiv:1907.04473
116. Hanany, S., *et al.* (2018) “PICO: Probe of Inflation and Cosmic Origins.” *contributing author.* arXiv:1902.10541



117. Abitbol, M., *et al.* (2017) “CMB-S4 Technology Book, First Edition.” *contributing author.* arXiv:1706.02464
118. Abazajian, K. N., *et al.* (2016) “CMB-S4 Science Book, First Edition.” arXiv:1610.02743
119. Bock, J., *et al.* (2009) “Study of the Experimental Probe of Inflationary Cosmology (EPIC)-Intermediate Mission for NASA’s Einstein Inflation Probe.” *contributing author.* arXiv:0906.1188
120. Aguirre, J., *et al.* (2009) “Observing the Evolution of the Universe.” arXiv:0903.0902

### **Ph.D. Thesis**

121. “MAXIPOL: A Bolometric, Balloon-Borne Experiment for Measuring the Polarization Anisotropy of the Cosmic Microwave Background Radiation.” (2004) University of Minnesota.

### **REFERENCES:**

Available upon request.