

**JUDD D. BOWMAN**  
**CURRICULUM VITAE**

Professor  
Arizona State University  
School of Earth and Space Exploration  
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## EDUCATION

2007            Massachusetts Institute of Technology, Ph.D. Physics  
1998            Washington University in St. Louis, B.S. Physics  
1998            Washington University in St. Louis, B.S. Electrical Engineering

## PROFESSIONAL EXPERIENCE

2019-present    Professor, School of Earth and Space Exploration, Arizona State University  
2014-2019      Associate Professor, School of Earth and Space Exploration, Arizona State University  
2014-2020      Project Scientist, Hydrogen Epoch of Reionization Array (HERA)  
2010-2015      Project Scientist, Murchison Widefield Array (MWA)  
2010-2014      Assistant Professor, School of Earth and Space Exploration, Arizona State University  
2007-2010      Hubble Fellow, California Institute of Technology  
2002-2007      Research Assistant, Massachusetts Institute of Technology  
2001-2002      Task Lead, 3D Visualization and Surface Reconstruction, QSS Group, Inc.  
2000-2002      Computer Scientist III, QSS Group, Inc. (NASA Ames Research Center)  
1998-2000      Systems Analyst, Earth & Planetary Sciences, Washington University in St. Louis

## HONORS AND AWARDS

2018            Top 10 Breakthroughs of the Year, Physics World  
2018            Top 100 Papers of the Year, Altmetric (Bowman et al. 2018)  
2014            Top 10 Most Influential Papers of *Advances in Space Research* (Burns et al. 2012)  
2014            Outstanding Faculty Nominee, College of Liberal Arts and Sciences Residential  
                    Life/University Housing, ASU  
2012            Nancy Grace Roman Early-Career Technology Fellowship, NASA  
2005            Software Release Award, NASA  
2004            Administrator's Award, Honor Award, Group Achievement Award, Software Release  
                    Award, NASA  
2003            Honor Award, NASA Ames Research Center

The following symbols are used to designate ASU students and postdocs in the sections below:

- \* denotes ASU undergraduate student
- \*\* denotes ASU graduate student
- † denotes ASU postdoc

**SELECTED SPONSORED RESEARCH AWARDS**

25. RUI: Collaborative Research: Commensal All-sky Imaging of Low-Frequency Transients with EPIC, NSF AST-2108115 (ATI), 2021-2024, PI
24. Monitoring the High-Energy Radiation Environment of Exoplanets around Low-mass Stars with SPARCS (Star-Planet Activity Research CubeSat), NASA 80NSSC21K2069 (APRA), 2021-2025, Co-I
23. Deployable Optical Receiver Aperture for Lunar Communications and Navigation NASA 80NSSC20M0086 (SSTP), 2020-2022, Co-I
22. MRI: Development of the OVRO-LWA - A Low Frequency Radio Interferometric All-Sky Telescope, NSF AST-1828784 (MRI), 2019-2022, Co-PI
21. Implementing an Interdisciplinary Space Physics Program at Arizona State University, NSF AGS-1936373 (FDSS), 2019-2024, Co-PI
20. Collaborative Research: EDGES-3: Validating and Refining Global 21cm, Measurements of Cosmic Dawn, NSF AST-1908933 (ATI), 2019-2022, PI
19. HERA: Unveiling the Cosmic Dawn, NSF AST-1836019 (MSIP), 2018-2022, Co-I
18. The Dawn of Hydrogen Cosmology: First Stars, Dark Matter, and the Thermal History of the Early Universe, NSF AST-1813850 (AAG), 2018-2021, PI
17. Monitoring the High-Energy Radiation Environment of Exoplanets around Low-Mass Stars with SPARCS (Star-Planet Activity Research CubeSat), NASA NNH16ZDA001N (APRA), 2017-2022, Co-I
16. Network for Exploration and Space Science (NESS), NASA 80ARC017M0006 (SSERVI), 2017-2022, Co-I
15. Precision Beam Mapping for 21cm Cosmology, NSF AST-1711179 (ATI), 2017-2021, Co-PI
14. Collaborative Research: First Deployment of a Novel Imaging Correlator for Radio Astronomy with the Long Wavelength Array, NSF AST-1710719 (ATI), 2017-2020, Co-PI
13. Hydrogen Epoch of Reionization Array (HERA), NSF AST-1440343 (MSIP), 2014-2016, Co-I
12. Collaborative Research: Observing the Epoch of Reionization with the Murchison Widefield Array, NSF AST-1410719 (AAG), 2014-2017, Co-PI
11. Facilitating Museum Evaluation with Real-Time Data Mining, NSF DGE-1438825 (PRIME), 2014-2017, PI
10. An External Calibrator for HI Observatories, NSF AST-1407646 (ATI), 2013-2015, PI
8. EDGES-2: Detecting First Light and Reionization through the Global 21 cm Signature, NSF AST-1207761 (ATI), 2012-2015, PI
7. An Ultra-Efficient Radio Correlator Architecture, NSF AST-1206552 (ATI), 2012-2015, Co-I
6. A Precision Wideband Radio Spectrometer to Explore Cosmic Dawn, NASA-NNX12AI17G (RTF), 2012-2013, PI
5. JPL Strategic University Research Partnership, 2012-2013, Co-PI
4. Collaborative Research: Optimal Statistics for Redshifted 21 cm Observations of the Reionization Epoch, NSF AST-1109257 (AAG), 2011-2014, PI
3. Collaborative Research: Observing Cosmic Dawn with the Long Wavelength Array, NSF AST-1109865 (AAG), 2011-2013, PI
2. Lunar University Node for Astrophysics Research (LUNAR): Exploring the Cosmos from the Moon NASA- NNA09DB30A (NLSI), 2010-2015, Co-I
1. EDGES: An Ultra-clean Spectrometer for Fundamental Measurements of Cosmological Reionization and the Dark Ages, NSF AST-0905990 (ATI), 2009-2012, PI

**OBSERVING TIME AWARDS**

22. Beardsley†, A. P., **Bowman, J. D.**, Jacobs, D. C., Trott C. M., Wayth, R. B., Kriele, M., Line, J. L. B., Lynch, C. R., *m-mode Observations with the MWA*, Murchison Widefield Array (MWA), 2018B, 50 hours
21. Oberoi, D.; Cairns, I.; Lonsdale, C.; Benkevitch, L.; **Bowman, J.**; Herne, D.; Kennewell, J.; McCauley, P.; Mondal, S.; Mohan, A.; Morgan, J.; Rahaman, M.; Tingay, S.; Tremblay, S., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2018B, 100 hours
20. Oberoi, D.; Cairns, I.; Lonsdale, C.; Benkevitch, L.; **Bowman, J.**; Herne, D.; Kennewell, J.; Morgan, J.; Tingay, S.; Tremblay, S., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2018A, 150 hours
19. McKinley, B.; Wayth, R.; Webster, R.; Briggs, F.; Bowman, J.; Bernardi, G.; Hurley-Walker, N.; Lenc, E.; Line, J.; Pindor, B.; Tingay, S.; Trott, C., *Using the Moon to detect the global EoR signal*, Murchison Widefield Array (MWA), 2017B, 88 hours
18. Oberoi, D.; Cairns, I.; Lonsdale, C.; Benkevitch, L.; **Bowman, J.**; Herne, D.; Kasper, J.; Kennewell, J.; Matthews, L.; Morgan, J.; Pankratius, V.; Roger, A.; Tingay, S.; Tremblay, S., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2017B, 100 hours
17. Cairns, I.; Oberoi, D.; Morgan, J.; Bastian, T.; Bhatnagar, S.; Bisi, M.; Benkevitch, L.; **Bowman, J.**; Donea, A.; Giersch, O.; Jackson, B.; Chat, G. L.; Golub, L.; Hariharan, K.; Herne, D.; Kasper, J.; Kennewell, J.; Lonsdale, C.; Lobzin, V.; Matthews, L.; Mohan, A.; Padmanabhan, J.; Pankratius, V.; Pick, M.; Subramanian, P.; Ramesh, R.; Raymond, J.; Reeves, K.; Rogers, A.; Sharma, R.; Tingay, S.; Tremblay, S.; Tripathi, D.; Webb, D.; White, S.; Abidin, Z. B. Z., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2017A, 100 hours
16. Barry, N.; Beardsley†, A., **Bowman, J.**; Briggs, F.; Byrne, R.; Carroll, P.; Hazelton, B.; Jacobs†, D.; Jordan, C.; Kittiwisit, P.; Lanman, A.; Lenc, E.; Li, W.; Line, J.; McKinley, B.; Mitchell, D.; Morales, M.; Murray, S.; Paul, S.; Pindor, B.; Pober, J.; Rahimi, M.; Riding, J.; Sethi, S.; Shankar, U.; Subrahmanyam, R.; Sullivan, I.; Takahashi, K.; Thyagarajan†, N.; Tingay, S.; Trott, C.; Wayth, R.; Webster, R.; Wyithe, S., *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2017A
15. Barry, N.; Beardsley†, A., **Bowman, J.**; Briggs, F.; Byrne, R.; Carroll, P.; Hazelton, B.; Jacobs†, D.; Jordan, C.; Kittiwisit, P.; Lanman, A.; Lenc, E.; Li, W.; Line, J.; McKinley, B.; Mitchell, D.; Morales, M.; Murray, S.; Paul, S.; Pindor, B.; Pober, J.; Rahimi, M.; Riding, J.; Sethi, S.; Shankar, U.; Subrahmanyam, R.; Sullivan, I.; Takahashi, K.; Thyagarajan†, N.; Tingay, S.; Trott, C.; Wayth, R.; Webster, R.; Wyithe, S., *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2016B, 730 hours
14. Cairns, I.; Oberoi, D.; Morgan, J.; Bastian, T.; Bhatnagar, S.; Bisi, M.; Benkevitch, L.; **Bowman, J.**; Donea, A.; Giersch, O.; Jackson, B.; Chat, G. L.; Golub, L.; Hariharan, K.; Herne, D.; Kasper, J.; Kennewell, J.; Lonsdale, C.; Lobzin, V.; Matthews, L.; Mohan, A.; Padmanabhan, J.; Pankratius, V.; Pick, M.; Subramanian, P.; Ramesh, R.; Raymond, J.; Reeves, K.; Rogers, A.; Sharma, R.; Tingay, S.; Tremblay, S.; Tripathi, D.; Webb, D.; White, S.; Abidin, Z. B. Z., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2016A, 100 hours awarded
13. Nicole Barry, Adam Beardsley†, **Judd D. Bowman**, Frank Briggs, Patti Carroll, Josh Dillon, Aaron Ewall-Wice, Lu Feng, Steve Furlanetto, Bryan Gaensler, Robert Goeke, Lincoln Greenhill, Bryna Hazelton, Lars Herquist, Jackie Hewitt, Daniel C. Jacobs†, Chris Jordan, Emil Lenc, Al Levine, Adrian Liu, Avi Loeb, Ben McKinley, Daniel Mitchell, Miguel Morales, Ed Morgan, Abraham Neben, Sourabh Paul, Bart Pindor, Pietro Procopio, Mahsa Rahimi, Ron Remillard, Jenny Riding, Shiv Sethi, Udaya Shankar, Ravi Subrahmanyam, Ian Sullivan, Max Tegmark, Nithyanandan Thyagarajan†, Steven Tingay, Cath Trott, Randall Wayth, Rachel Webster, Stuart Wyithe, *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2016A, 350 hours
12. Monkiewicz\*\*, J., **Bowman, J. D.**, & Scannapieco, E., *The Radio/Star-Forming Relation in Ultra-Low-Metallicity Galaxies*, Jansky Very Large Array, 2015B

11. Oberoi, D.; Cairns, I.; Morgan, J.; Bastian, T.; Bhatnagar, S.; Bisi, M.; Benkevitch, L.; **Bowman, J.**; Donea, A.; Giersch, O.; Jackson, B.; Chat, G. L.; Golub, L.; Herne, D.; Kasper, J.; Kennewell, J.; Lonsdale, C.; Lobzin, V.; Matthews, L.; Padmanabhan, J.; Pankratius, V.; Pick, M.; Subramanian, P.; Ramesh, R.; Raymond, J.; Reeves, K.; Rogers, A.; Sharma, R.; Tingay, S.; Tremblay, S.; Tripathi, D.; Webb, D.; White, S.; Abidin, Z. B. Z., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2015A, 100 hours
10. Webster, R.; Adam Beardsley, Gianni Bernardi, **Judd D. Bowman**, Frank Briggs, Josh Dillon, Aaron Ewall-Wice, Lu Feng, Steve Furlanetto, Bryan Gaensler, Robert Goeke, Lincoln Greenhill, Bryna Hazelton, Lars Herquist, Jackie Hewitt, Daniel C. Jacobs†, Emil Lenc, Al Levine, Adrian Liu, Avi Loeb, Colin Lonsdale, Ben McKinley, Daniel Mitchell, Miguel Morales, Ed Morgan, Abraham Neben, André Offringa, Sourabh Paul, Bart Pindor, Pietro Procopio, Ron Remillard, Jenny Riding, Shiv Sethi, Udaya Shankar, Ravi Subrahmanyam, Ian Sullivan, Max Tegmark, Nithyanandan Thyagarajan†, Steven Tingay, Cath Trott, Randall Wayth, Chris Williams, Stuart Wyithe, *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2015A, 180 hours
9. Oberoi, D.; Cairns, I.; Morgan, J.; Sharma, R.; Bastian, T.; Bhatnagar, S.; Bisi, M.; Benkevitch, L.; **Bowman, J.**; Donea, A.; Giersch, O.; Jackson, B.; Chat, G. L.; Golub, L.; Herne, D.; Kasper, J.; Kennewell, J.; Lonsdale, C.; Lobzin, V.; Matthews, L.; Padmanabhan, J.; Subramanian, P.; Ramesh, R.; Raymond, J.; Reeves, K.; Rogers, A.; Tingay, S.; Tremblay, S.; Tripathi, D.; Webb, D.; White, S.; Abidin, Z. B. Z., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2014B, 70 hours
8. Webster, R.; Adam Beardsley, Gianni Bernardi, **Judd D. Bowman**, Frank Briggs, Josh Dillon, Aaron Ewall-Wice, Lu Feng, Steve Furlanetto, Bryan Gaensler, Robert Goeke, Lincoln Greenhill, Bryna Hazelton, Lars Herquist, Jackie Hewitt, Daniel C. Jacobs†, Emil Lenc, Al Levine, Adrian Liu, Avi Loeb, Colin Lonsdale, Ben McKinley, Daniel Mitchell, Miguel Morales, Ed Morgan, Abraham Neben, André Offringa, Sourabh Paul, Bart Pindor, Pietro Procopio, Ron Remillard, Jenny Riding, Shiv Sethi, Udaya Shankar, Ravi Subrahmanyam, Ian Sullivan, Max Tegmark, Nithyanandan Thyagarajan†, Steven Tingay, Cath Trott, Randall Wayth, Chris Williams, Stuart Wyithe, *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2014B, 989 hours
7. Kittiwisit\*\*, Piyanat; Jacobs†, Daniel C.; **Bowman, Judd D.**; *Foreground Spectra for 21 cm Epoch of Reionization Observation*, Very Large Array, 2014B, 10 hours
6. Oberoi, D.; Cairns, I.; Morgan, J.; Bastian, T.; Bhatnagar, S.; Bisi, M.; Benkevitch, L.; **Bowman, J.**; Donea, A.; Giersch, O.; Jackson, B.; Chat, G. L.; Golub, L.; Kasper, J.; Kennewell, J.; Lonsdale, C.; Lobzin, V.; Matthews, L.; Padmanabhan, J.; Subramanian, P.; Ramesh, R.; Raymond, J.; Reeves, K.; Rogers, A.; Tingay, S.; Tremblay, S.; Tripathi, D.; Webb, D.; White, S.; Abidin, Z. B. Z., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2014A, 30 hours
5. Webster, R.; Adam Beardsley, Gianni Bernardi, **Judd D. Bowman**, Frank Briggs, Josh Dillon, Aaron Ewall-Wice, Lu Feng, Steve Furlanetto, Bryan Gaensler, Robert Goeke, Lincoln Greenhill, Bryna Hazelton, Lars Herquist, Jackie Hewitt, Daniel C. Jacobs†, Emil Lenc, Al Levine, Adrian Liu, Avi Loeb, Colin Lonsdale, Ben McKinley, Daniel Mitchell, Miguel Morales, Ed Morgan, Abraham Neben, André Offringa, Sourabh Paul, Bart Pindor, Pietro Procopio, Ron Remillard, Jenny Riding, Shiv Sethi, Udaya Shankar, Ravi Subrahmanyam, Ian Sullivan, Max Tegmark, Nithyanandan Thyagarajan†, Steven Tingay, Cath Trott, Randall Wayth, Chris Williams, Stuart Wyithe, *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2014A, 350 hours
4. Cairns, I.; Oberoi, D.; Bastian, T.; Benkevitch, L.; **Bowman, J.**; Donea, A.; Giersch, O.; Jackson, B.; Chat, G. L.; Golub, L.; Kasper, J.; Kennewell, J.; Lonsdale, C.; Lobzin, V.; Matthews, L.; Morgan, J.; Padmanabhan, J.; Subramanian, P.; Ramesh, R.; Raymond, J.; Reeves, K.; Rogers, A.; Tingay, S.; Tremblay, S.; Tripathi, D.; Webb, D.; White, S., *MWA Observations of Solar Radio Bursts and the Quiet Sun*, Murchison Widefield Array (MWA), 2013B, 30 hours

3. Webster, R.; Adam Beardsley, Gianni Bernardi, **Judd D. Bowman**, Frank Briggs, Josh Dillon, Aaron Ewall-Wice, Lu Feng, Steve Furlanetto, Bryan Gaensler, Robert Goetze, Lincoln Greenhill, Bryna Hazelton, Lars Herquist, Jackie Hewitt, Daniel C. Jacobs†, Emil Lenc, Al Levine, Adrian Liu, Avi Loeb, Colin Lonsdale, Ben McKinley, Daniel Mitchell, Miguel Morales, Ed Morgan, Abraham Neben, André Offringa, Sourabh Paul, Bart Pindor (Melbourne), Pietro Procopio, Ron Remillard, Jenny Riding, Shiv Sethi, Udaya Shankar, Ravi Subrahmanyam, Ian Sullivan, Max Tegmark, Steven Tingay, Cath Trott, Randall Wayth, Chris Williams, Stuart Wyithe, *Epoch of Reionisation*, Murchison Widefield Array (MWA), 2013B, 353 hours
2. Monkiewicz\*\*, Jacqueline, *The outflowing wind of the ultra-low metallicity dwarf galaxy Sextans A*, Very Large Array, 2013A, 7.0 hours
1. Boyce, E.; **Bowman, J. D.**; Bolton, A.; Hewitt, J. N.; Burles, S.; *Galaxy-Galaxy Gravitational Lenses from the Sloan Digital Sky Survey*, Very Large Array, 2004, 8.5 hours

## REFEREED JOURNAL ARTICLES

148. Rahimi, M.; Pindor, B.; Line, J. L. B.; Barry, N.; Trott, C. M.; Webster, R. L.; Jordan, C. H.; Wilensky, M.; Yoshiura, S.; Beardsley, A.; **Bowman, J.**; Byrne, R.; Chokshi, A.; Hazelton, B. J.; Hasegawa, K.; Howard, E.; Greig, B.; Jacobs, D.; Joseph, R.; Kolopanis†, M.; Lynch, C.; McKinley, B.; Mitchell, D. A.; Murray†, S.; Morales, M. F.; Pober, J. C.; Takahashi, K.; Tingay, S. J.; Wayth, R. B.; Wyithe, J. S. B.; Zheng, Q., *Epoch of reionization power spectrum limits from Murchison Widefield Array data targeted at EoR1 field*, Monthly Notices of the Royal Astronomical Society, 508, 4, 5954-5971
147. Trott, C. M.; Jordan, C. H.; Line, J. L. B.; Lynch, C. R.; Yoshiura, S.; McKinley, B.; Dayal, P.; Pindor, B.; Hutter, A.; Takahashi, K.; Wayth, R. B.; Barry, N.; Beardsley, A.; **Bowman, J.**; Byrne, R.; Chokshi, A.; Greig, B.; Hasegawa, K.; Hazelton, B. J.; Howard, E.; Jacobs, D.; Kolopanis†, M.; Mitchell, D. A.; Morales, M. F.; Murray†, S.; Pober, J. C.; Rahimi, M.; Tingay, S. J.; Webster, R. L.; Wilensky, M.; Wyithe, J. S. B.; Zheng, Q., *Constraining the 21 cm brightness temperature of the IGM at  $z = 6.6$  around LAEs with the Murchison Widefield Array*, Monthly Notices of the Royal Astronomical Society, 507, 1, 772-780, 2021
146. Gehlot†, Bharat K.; Jacobs, Daniel C.; **Bowman, Judd D.**; Mahesh\*\*, Nivedita; Murray†, Steven G.; Kolopanis†, Matthew; Beardsley, Adam P.; Abdurashidova, Zara; Aguirre, James E.; Alexander, Paul; Ali, Zaki S.; Balfour, Yanga; Bernardi, Gianni; Billings, Tashalee S.; Bradley, Richard F.; Bull, Phil; Burba, Jacob; Carey, Steve; Carilli, Chris L.; Cheng, Carina; DeBoer, David R.; Dexter, Matt; de Lera Acedo, Eloy; Dillon, Joshua S.; Ely, John; Ewall-Wice, Aaron; Fagnoni, Nicolas; Fritz, Randall; Furlanetto, Steven R.; Gale-Sides, Kingsley; Glendenning, Brian; Gorthi, Deepthi; Greig, Bradley; Grobbelaar, Jasper; Halday, Ziyaad; Hazelton, Bryna J.; Hewitt, Jacqueline N.; Hickish, Jack; Julius, Austin; Kern, Nicholas S.; Kerrigan, Joshua; Kittiwisit, Piyanat; Kohn, Saul A.; Lanman, Adam; La Plante, Paul; Lekalake, Telalo; Lewis, David; Liu, Adrian; Ma, Yin-Zhe; MacMahon, David; Malan, Lourence; Malgas, Cresshim; Maree, Matthys; Martinot, Zachary E.; Matsetela, Eunice; Mesinger, Andrei; Molewa, Mathakane; Monsalve, Raul A.; Morales, Miguel F.; Mosiane, Tshegofalang; Neben, Abraham R.; Nikolic, Bojan; Parsons, Aaron R.; Pascua, Robert; Patra, Nipanjana; Pieterse, Samantha; Pober, Jonathan C.; Razavi-Ghods, Nima; Ringuette, Jon; Robnett, James; Rosie, Kathryn; Santos, Mario G.; Sims, Peter; Smith, Craig; Syce, Angelo; Tegmark, Max; Thyagarajan, Nithyanandan; Williams, Peter K. G.; Zheng, Haoxuan, *Effects of model incompleteness on the drift-scan calibration of radio telescopes*, Monthly Notices of the Royal Astronomical Society, 506, 3, 4578-4592, 2021
145. Tan, Jianrong; Liu, Adrian; Kern, Nicholas S.; Abdurashidova, Zara; Aguirre, James E.; Alexander, Paul; Ali, Zaki S.; Balfour, Yanga; Beardsley, Adam P.; Bernardi, Gianni; Billings, Tashalee S.;

- Bowman, Judd D.;** Bradley, Richard F.; Bull, Philip; Burba, Jacob; Carey, Steven; Carilli, Christopher L.; Cheng, Carina; DeBoer, David R.; Dexter, Matt; de Lera Acedo, Eloy; Dillon, Joshua S.; Ely, John; Ewall-Wice, Aaron; Fagnoni, Nicolas; Fritz, Randall; Furlanetto, Steve R.; Gale-Sides, Kingsley; Glendenning, Brian; Gorthi, Deepthi; Greig, Bradley; Grobbelaar, Jasper; Halday, Ziyaad; Hazelton, Bryna J.; Hewitt, Jacqueline N.; Hickish, Jack; Jacobs, Daniel C.; Julius, Austin; Kerrigan, Joshua; Kittiwisit, Piyanat; Kohn, Saul A.; Kolopanis†, Matthew; Lanman, Adam; La Plante, Paul; Lekalake, Telalo; MacMahon, David; Malan, Lourence; Malgas, Cresshim; Maree, Matthys; Martinot, Zachary E.; Matsetela, Eunice; Mesinger, Andrei; Molewa, Mathakane; Morales, Miguel F.; Mosiane, Tshegofalang; Murray†, Steven G.; Neben, Abraham R.; Nikolic, Bojan; Nunhokee, Chuneeta D.; Parsons, Aaron R.; Patra, Nipanjana; Pieterse, Samantha; Pober, Jonathan C.; Razavi-Ghods, Nima; Ringuette, Jon; Robnett, James; Rosie, Kathryn; Sims, Peter; Singh, Saurabh; Smith, Craig; Syce, Angelo; Thyagarajan, Nithyanandan; Williams, Peter K. G.; Zheng, Haoxuan, *Methods of Error Estimation for Delay Power Spectra in 21 cm Cosmology*, The Astrophysical Journal Supplement, 255, 2, 26, 2021
144. Mahesh\*\*, Nivedita; **Bowman, Judd D.**; Mozdzen, Thomas J.; Rogers, Alan E. E.; Monsalve, Raul A.; Murray†, Steven G.; Lewis, David, *Validation of the EDGES Low-band Antenna Beam Model*, The Astronomical Journal, 162, 2, 38, 2021
143. Yoshiura, S.; Pindor, B.; Line, J. L. B.; Barry, N.; Trott, C. M.; Beardsley, A.; **Bowman, J.**; Byrne, R.; Chokshi, A.; Hazelton, B. J.; Hasegawa, K.; Howard, E.; Greig, B.; Jacobs, D.; Jordan, C. H.; Joseph, R.; Kolopanis†, M.; Lynch, C.; McKinley, B.; Mitchell, D. A.; Morales, M. F.; Murray†, S. G.; Pober, J. C.; Rahimi, M.; Takahashi, K.; Tingay, S. J.; Wayth, R. B.; Webster, R. L.; Wilensky, M.; Wyithe, J. S. B.; Zhang, Z.; Zheng, Q., *A new MWA limit on the 21 cm power spectrum at redshifts 13-17*, Monthly Notices of the Royal Astronomical Society, 505, 4, 4775-4790, 2021
142. La Plante, P.; Williams, P. K. G.; Kolopanis†, M.; Dillon, J. S.; Beardsley, A. P.; Kern, N. S.; Wilensky, M.; Ali, Z. S.; Abdurashidova, Z.; Aguirre, J. E.; Alexander, P.; Balfour, Y.; Bernardi, G.; Billings, T. S.; **Bowman, J. D.**; Bradley, R. F.; Bull, P.; Burba, J.; Carey, S.; Carilli, C. L.; Cheng, C.; DeBoer, D. R.; Dexter, M.; de Lera Acedo, E.; Ely, J.; Ewall-Wice, A.; Fagnoni, N.; Fritz, R.; Furlanetto, S. R.; Gale-Sides, K.; Glendenning, B.; Gorthi, D.; Greig, B.; Grobbelaar, J.; Halday, Z.; Hazelton, B. J.; Hewitt, J. N.; Hickish, J.; Jacobs, D. C.; Julius, A.; Kerrigan, J.; Kittiwisit, P.; Kohn, S. A.; Lanman, A.; Lekalake, T.; Lewis, D.; Liu, A.; MacMahon, D.; Malan, L.; Malgas, C.; Maree, M.; Martinot, Z. E.; Matsetela, E.; Mesinger, A.; Molewa, M.; Morales, M. F.; Mosiane, T.; Murray, S.; Neben, A. R.; Nikolic, B.; Parsons, A. R.; Pascua, R.; Patra, N.; Pieterse, S.; Pober, J. C.; Razavi-Ghods, N.; Ringuette, J.; Robnett, J.; Rosie, K.; Santos, M. G.; Sims, P.; Smith, C.; Syce, A.; Thyagarajan, N.; Zheng, H., *A Real Time Processing system for big data in astronomy: Applications to HERA*, Astronomy and Computing, 36, 100489, 2021
141. Koopmans, Leon V. E.; Barkana, Rennan; Bentum, Mark; Bernardi, Gianni; Boonstra, Albert-Jan; **Bowman, Judd**; Burns, Jack; Chen, Xuelei; Datta, Abhirup; Falcke, Heino; Fialkov, Anastasia; Gehlot, Bharat; Gurvits, Leonid; Jeli'c, Vibor; Klein-Wolt, Marc; Lazio, Joseph; Meerburg, Daan; Mellema, Garrelt; Mertens, Florent; Mesinger, Andrei; Offringa, Andre; Pritchard, Jonathan; Semelin, Benoit; Subrahmanyam, Ravi; Silk, Joseph; Trott, Cathryn; Vedantham, Harish; Verde, Licia; Zaroubi, Saleem; Zarka, Philippe, *Peering into the dark (ages) with low-frequency space interferometers*, Experimental Astronomy, 51, 3, 1641-1676, 2021
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52. Busch\*, Michael P.; **Bowman, Judd D.**; Kittiwisit\*\*, Piyanat; Jacobs†, Danny, *Foreground Characterization for the Murchison Widefield Array Using the Jansky Very Large Array*, American Astronomical Society, AAS Meeting #227, January 2016
51. Daniel C. Jacobs†, Jacob Burba\*, Lauren Turner\*, Abraham Neben, Benjamin Stinnett\*, Marc Leatham\*, Micheal Busch\*, and **Judd Bowman**, *An External Calibrator for Hydrogen Observatories (ECHO)*, URSI 2016
50. Adam P. Beardsley†, Nithyanandan Thyagarajan†, Miguel F. Morales, **Judd D. Bowman**, *Calibrating Radio Arrays without Visibilities Using the E-field Parallel Imaging Calibration (EPICal)*, URSI 2016
49. Nithyanandan Thyagarajan†, Adam P. Beardsley†, **Judd D. Bowman**, Miguel F. Morales, *A Generic and Efficient "E-Field Parallel Imaging Correlator" Software for Next-Generation Radio Telescopes*, URSI 2016
48. Raul A. Monsalve†, **Judd D. Bowman**, Alan E. E. Rogers, and Thomas J. Mozdzen\*\*, *Preliminary Measurements with the EDGES Low-Band Instrument*, URSI 2016
47. Thomas J. Mozdzen\*\*, Raul A. Monsalve†, Alan E.E. Rogers, and **Judd D. Bowman**, *Sky Noise Spectral Index and Ionospheric Variability From 50-190 MHz with EDGES Data*, URSI 2016
46. Monsalve†, Raul Alberto; **Bowman, Judd**; Mozdzen\*\*, Thomas; Rogers, Alan, *Constraining the Epoch of Reionization through Global Observations of the 21-cm Line with EDGES*, International Astrophysical Union General Meeting #29, August, 2015
45. Jack Burns, Joseph Lazio, **Judd Bowman**, Richard Bradley, Abhirup Datta, Steven Furlanetto, Dayton Jones, Justin Kasper, & Abraham Loeb, *Investigations of the First Objects to Light Up the Universe: The Dark Ages Radio Explorer (DARE) Mission*, International Astrophysical Union General Meeting #29, August, 2015
44. Jack Burns, Joseph Lazio, **Judd Bowman**, Richard Bradley, Abhirup Datta, Steven Furlanetto, Dayton Jones, Justin Kasper, Abraham Loeb, Jordan Mirocha, & Geraint Harker, *Cosmology from the Moon: The Dark Ages Radio Explorer (DARE) Mission Concept*, NASA Exploration Science Forum, 2015
43. Thomas J. Mozdzen\*\*, **Judd D. Bowman**, Alan E.E. Rogers, and Raul A. Monsalve†, *Evaluation of Terrestrial Sites for Global EOR Signal Detection via the RMS Error Metric of a Sky-Beam Convolution Polynomial Fit*, 2015 USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), Vancouver, BC, July 2015
42. Raul A. Monsalve†, **Judd D. Bowman**, Alan E.E. Rogers, and Thomas J. Mozdzen\*\*, *Characterization of the EDGES Receiver and its Capability for Constraining the EoR*, 2015 USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), Vancouver, BC, July 2015



41. David R. DeBoer; James Aguirre; **Judd Bowman**; Richard Bradley; Chris Carilli; Steve Furlanetto; Jacqueline Hewitt, Daniel Jacobs†, Adrian Liu, Miguel Morales, Aaron Parsons, Jonathan Pober, Max Tegmark, Dan Werthimer, *The Hydrogen Epoch of Reionization Array (HERA)*, 2015 USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), July 2015
40. Nithyanandan Thyagarajan†; Danny Jacobs†; **Judd Bowman**, *Comparison of Observed and Simulated Reionization Foregrounds from the Murchison Widefield Array*, Abstract #301.07, 225th Annual Meeting of the American Astronomical Society, January 5-8, 2015, Seattle, WA
39. Jack Burns; Joseph Lazio; **Judd Bowman**; Richard Bradley; Abhirup Datta; Steven Furlanetto; Dayton Jones; Justin Kasper; Abraham Loeb; Geraint Harker, *From Darkness to Light: Observing the First Stars and Galaxies with the Redshifted 21-cm Line using the Dark Ages Radio Explorer*, Abstract #318.07, 225<sup>th</sup> Annual Meeting of the American Astronomical Society, January 5-8, 2015, Seattle, WA
38. David R. DeBoer; James Aguirre; **Judd Bowman**; Richard Bradley; Chris Carilli; Josh Dillon; Steve Furlanetto, Jacqueline Hewitt, Daniel Jacobs†, Adrian Liu, Miguel Morales, Aaron Parsons, Jonathan Pober, Max Tegmark, Dan Werthimer, *HERA: Illuminating our early universe*, 2014 XXXIth URSI General Assembly and Scientific Symposium (URSI GASS), August 2014
37. DeBoer, David; **Bowman, J. D.**; Jacobs†, D.; Parsons, A.; Liu, A.; Werthimer, D.; Ali, Z.; Carilli, C. L.; Chiang, C.; Sievers, J. L.; Furlanetto, S. R.; Hewitt, J. N.; Tegmark, M.; Dillon, J. S.; Bradley, R. F.; Moore, D.; Aguirre, J. E.; Bernardi, G.; Walbrugh, W.; Morales, M. F.; Pober, J., *HERA: Chasing Our Cosmic Dawn*, Exascale Radio Astronomy, AAS Topical Conference Series Vol. 2. Proceedings of the conference, Monterey, California. Bulletin of the American Astronomical Society, Vol. 46, #3, #103.04, April, 2014
36. David R. DeBoer; James Aguirre; **Judd Bowman**; Richard Bradley; Chris Carilli; Josh Dillon; Steve Furlanetto, Jacqueline Hewitt, Daniel†, Jacobs, Adrian, Liu, Miguel Morales, Aaron Parsons; Jonathan Pober, Max Tegmark, Dan Werthimer, *HERA: Illuminating our early universe*, 2014 United States National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM), January 2014
35. Daniel C. Jacob†s; **Judd D. Bowman**; Joseph Lazio; Robert Jarnot; Paul Scowen; Christopher Groppi; Richard Bradley, Ricky Astrain\*, Jordan Bridgeman\*, Owen Ma\*, Alex Cannady\*, *LoCoI: Pathfinding space based low frequency cosmology*, 2014 United States National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM), January 2014
34. Daniel C. Jacobs; **Judd D. Bowman**, *Shedding light on foregrounds with new MWA and PAPER data*, 2014 United States National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM), January 2014
33. Monsalve†, R.; **Bowman J. D.**; Mani\*, H., *Advances on the calibration of a differential front-end for the Dark Ages Radio Explorer (DARE)*, Virtual Lunar Science Forum, July 2013
32. Lazio, J.; Furlanetto, S.; Burns, J. O.; **Bowman, J. D.**, *Probing the Dark Ages and Cosmic Dawn - A Roadmap for NASA Astrophysics*, Virtual Lunar Science Forum, July 2013
31. Datta, A.; Bradley, R.; Burns, J. O.; **Bowman, J. D.**; Lazio, J.; Bauman, J.; Barbetty, M. S.; O'Dwyer, I. J., *The Dark Ages Radio Explorer (DARE) from the Moon: An Update on the Instrument Verification Program*, Virtual Lunar Science Forum, July 2013
30. Monkiewicz\*\*, J. A.; **Bowman, J. D.**; Hartman, J.; Taylor, G. B., *Observing Cosmic Dawn with the Long Wavelength Array: Custom Beamforming Techniques*, American Astronomical Society, AAS Meeting #221, #341.10, January 2013, Long Beach, CA
29. Jacobs†, D. C.; **Bowman, J. D.**; Aguirre, J. E., *The Precision and Accuracy of Early Epoch of Reionization Foreground Models: Comparing MWA and PAPER 32-Antenna Source Catalogs*, American Astronomical Society, AAS Meeting #221, #108.08, January 2013, Long Beach, CA
28. Mani\*, H., Easterbook\*, S. R., **Bowman, J. D.**, *Deployment of DARE Prototype Instrument to Western Australia*, Lunar Science Forum, July 2012, Moffett Field, CA

27. Datta, Abhirup; Bradley, R.; O'Dwyer, I. J.; **Bowman, J. D.**; Burns, J. O.; Lazio, J.; Bauman, J. J., *Dark Ages Radio Explorer - Field Tests of a Prototype Instrument*, Lunar Science Forum, July 2012, Moffett Field, CA
26. Datta, Abhirup; Bradley, R.; O'Dwyer, I. J.; **Bowman, J. D.**; Burns, J. O.; Lazio, J.; Bauman, J. J., *Dark Ages Radio Explorer - Field Tests of a Prototype Instrument*, 220<sup>th</sup> Annual Meeting of the American Astronomical Society, June 10-14, 2012, Anchorage, AK
25. Lazio, T. Joseph W.; **Bowman, J.**; Burns, J.; Farrell, W.; Jones, D.; Kasper, J.; Stewart, K.; Weiler, K., *From Ground to Space: A Roadmap with Robotic & Exploration Elements*, 220<sup>th</sup> Annual Meeting of the American Astronomical Society, June 10-14, 2012, Anchorage, AK
24. Harker, Geraint; Pritchard, J.; Burns, J.; **Bowman, J.**, *Signal Extraction for Sky-averaged 21-cm Experiments*, 218<sup>th</sup> Annual Meeting of the American Astronomical Society, January 8-12, 2012, Austin, TX
23. Alan E. E. Rogers; Eric Kratzenberg; Brian E. Corey; Colin J. Lonsdale; Christopher L. Williams; **Judd D. Bowman**, *Wideband low frequency antennas for radio astronomy arrays*, 2011 XXXth URSI General Assembly and Scientific Symposium, August 2011, Chicago, IL
22. Lazio, J., O'Dwyer, I., Bradley, R., **Bowman, J. D.**, Burns, J. O., *The Science Instrument for the Dark Ages Radio Explorer (DARE)*, Lunar Science Forum, July 2011, Moffett Field, CA
21. Furlanetto, S. R., Burns, J. O., Lazio, J., Harker, G., Loeb, A., Pritchard, J., **Bowman, J. D.**, *The Dark Ages Radio Explorer: Theoretical Motivation*, Lunar Science Forum, July 2011, Moffett Field, CA
20. **Bowman, J.D.**, Morales, M. F., Hewitt, J. N., & The MWA Collaboration, *The Murchison Widefield Array (MWA): Exploring the Epoch of Reionization with the 21 cm Line*, 218<sup>th</sup> Annual Meeting of the American Astronomical Society, May 23-25, 2011, Boston, MA
19. Whitney A., Booler T., **Bowman J. D.**, Emrich D, Goeke, B, & Remillard, R., *The Murchison Widefield Array (MWA): Current Status and Plans*, 218<sup>th</sup> Annual Meeting of the American Astronomical Society, May 23-25, 2011, Boston, MA
18. Lonsdale C. J., **Bowman J. D.**, Hewitt, J., Morales, M., & Moran, J., *The Murchison Widefield Array (MWA) and the Path to HERA*, 218<sup>th</sup> Annual Meeting of the American Astronomical Society, May 23-25, 2011, Boston, MA
17. Burns, J. O., Lazio, J., **Bowman J. D.**, Bradley, R., Carilli, C., Furlanetto, S., Harker, G., Loeb, A., & Pritchard, J., *Probing the First Stars and Black Holes with the Dark Ages Radio Explorer (DARE)*, 218<sup>th</sup> Annual Meeting of the American Astronomical Society, May 23-25, 2011, Boston, MA
16. Burns, J. O. Lazio, J., **Bowman, J.**, Bradley, R., Carilli, C., Furlanetto, S., Harker, G., Loeb, A., Pritchard, J., *The Dark Ages Radio Explorer (DARE)*, Abstract #107.09, Special Session on Hydrogen Epoch of Reionization Arrays (HERA), 217<sup>th</sup> Annual Meeting of the American Astronomical Society, January 9-14, 2011, Seattle, WA
15. Corey, B. E., **Bowman, J. D.**, Burns, S., Kratzenberg, E., Rogers, A. E. E., Wayth, R., Williams, C., *Antenna Tiles for the Murchison Widefield Array*, 213<sup>th</sup> Annual Meeting of the American Astronomical Society, January 4-8, 2009, Long Beach, CA
14. **Bowman, J. D.**, *Observing Neutral Hydrogen Above Redshift 6: The "Global" Perspective*, The Evolution of Galaxies through the Neutral Hydrogen Window, February 1-3, 2008, Arecibo, Puerto Rico
13. **Bowman, J. D.**, *Mapping Reionization: The Science and Technology of Redshifted 21 cm Tomography with Upcoming Low-Frequency Arrays*, Astrophysics in the Next Decade: JWST and Concurrent Facilities, September 24-27, 2007, Tucson, Arizona
12. **Bowman, J. D.**, Morales, M. F., Hewitt, J. N., *Revealing the Epoch of Reionization: The Effects of Foregrounds*, XXIII Texas Symposium on Relativistic Astrophysics, December 11-15, 2006, Melbourne, Australia
11. **Bowman, J. D.**, Morales, M. F., Hewitt, J. N., *Isolating the Background: The Effects of Foregrounds in EOR Observations*, October Astrophysics Conference in Maryland, Radiation Backgrounds from the First Stars, Galaxies and Black Holes, October 9-11, 2006, College Park, Maryland

10. **Bowman, J. D.**, Morales, M. F., Hewitt, J. N., *Probing the Epoch of Reionization with Power Spectrum Measurements by the First Generation of Low Frequency Radio Arrays*, 207<sup>th</sup> Annual Meeting of the American Astronomical Society, January 8-12, 2006, Washington, D. C., abstract 33.03
9. Morales, M. F., **Bowman, J. D.**, Hewitt, J. N., *Improving Foreground Subtraction in EOR Power Spectrum Observations*, 207<sup>th</sup> Annual Meeting of the American Astronomical Society, January 8-12, 2006, Washington, D. C., abstract 33.04
8. **Bowman, J. D.**, *Dynamically Updating Screen Savers Bring NASA Missions to the Desktop*, Building Community: The Emerging EPO Profession, Astronomical Society of the Pacific's 117th Annual Meeting, September 14-16, 2005, Tucson, Arizona, abstract PF15
7. Morales, M. F., **Bowman, J. D.**, Hewitt, J. N., *Statistical EOR Detection and Foreground Subtraction: Recent Results and the Implications for Array Design*, Reionizing the Universe, The Epoch of Reionization and the Physics of the IGM, June 27-July 1, 2005, Groningen, Neatherlands.
6. **Bowman, J. D.**, *Prospects for Observing Gravitational Lensing by Supermassive Black Holes in Galaxy Cores*, Joint New England Sections of the American Physical Society and the American Association of Physics Teachers Spring Meeting, April 1-2, 2005, Cambridge, Massachusetts
5. Seelos, F. P., IV, Guinness, E. A., **Bowman, J. D.**, Shepard, M. K., Snider, N. O., Arvidson, R. E., *Recovery and Analysis of Digital Elevation Data from Viking Lander Camera Observations*, 33rd Annual Lunar and Planetary Science Conference, March 11-15, 2002, Houston, Texas, abstract no. 1945
4. Arvidson, R. E., **Bowman, J. D.**, Dunham, C. D., Anderson, R. C., Backes, P., Baumgartner, E. T., Bell, J., Dworetzky, S. C., Klug, S., Peck, N., Sherman, D., Squyres, S. W., Tuttle, D., Waldron, A. M., *Student Participation in Mars Sample Return Rover Field Tests, Silver Lake, California*, 31st Annual Lunar and Planetary Science Conference, March 13-17, 2000, Houston, Texas, abstract no. 1049
3. Arvidson, R. E., Acton, C., Blaney, D., **Bowman, J.**, Kim, S., Klingelhofer, G., Marshall, J., Niebur, C. S., Plescia, J., Saunders, R. S., Ulmer, C. T., *Lessons Learned from Rocky 7 Rover Deployment and One-Kilometer Traverse over Basalt Flows, Playa, and Alluvial Fan Surface, Mojave Desert, CA*, 29th Annual Lunar and Planetary Science Conference, March 16-20, 1998, Houston, TX, abstract no. 1306.
2. Niebur, C. S., Arvidson, R. E., **Bowman, J. D.**, *A Mission Model for the 2001 Mars Rover/Athena Payload*, 29th Annual Lunar and Planetary Science Conference, March 16-20, 1998, Houston, TX, abstract no. 1304
1. Arvidson, R. E., **Bowman, J.**, Blaney, D., Farmer, J., Hayati, S., Klingelhofer, G., Niebur, C. S., Plescia, J., Saunders, R. S., *Rocky 7 Prototype Mars Rover: Field Experiments in the Mojave Desert, California*, 28th Annual Lunar and Planetary Science Conference, March 17-21, 1997, Houston, TX, p. 59

#### INVITED TALKS AND REVIEWS (ACCEPTED)

47. *Introduction, Special Session: Low Frequency Radio Astronomy for Cosmic Origins*, American Astronomical Society meeting #237, January 13, 2021
46. *Prospects for current and future 21cm EoR experiments*, Barefoot EoR, Fitzroy Island, July 2019
45. *New Measurements of the EDGES 21cm Profile*, MIT, Astrophysics Colloquium, February 5, 2019
44. *EDGES and the Development of Absolute Calibration for Wideband Radio Receivers for 21cm Cosmology*, American Astronomical Society, AAS Meeting #232, id.#310.01, June 2018
43. *Toward a Cosmic Dawn Mapper*, American Astronomical Society, AAS Meeting #232, id.#312.05, June 2018
42. *The Dawn of 21cm Cosmology with EDGES*, URSI AT-RASC Gran Canaria, May 28-June 1, 2018
41. *The Dawn of 21cm Cosmology with EDGES*, ASU, Physics Dept. Colloquium, April 26, 2018
40. *The Dawn of 21cm Cosmology with EDGES*, Caltech, Astronomy Dept. Colloquium, April 11, 2018

39. *Latest Results from EDGES*, USNC–URSI National Radio Science Meeting, id.#J6-4, January 4-7, 2018, Boulder, CO
38. *Global Signal HI Experiments*, U.S. Radio/Millimeter/Submillimeter Science Futures III, August 2-4, 2017, Berkeley, CA
37. *Searching for the fingerprints of the first stars and black holes*, Feb. 27, 2017, Brown University
36. *Searching for the fingerprints of the first stars and black holes*, Feb. 10, 2017, U. New Mexico
35. *Murchison Widefield Array (MWA) – Status and Science Highlights*, SKA Splinter Session, 225th Annual Meeting of the American Astronomical Society, January 5-8, 2015, Seattle, WA
34. *Reionization and the Murchison Widefield Array*, University of Toronto, May 30, 2014
33. *Murchison Widefield Array (MWA)*, U.S. Low-frequency Meeting, Washington, D.C., August 27-28, 2013
32. *Reionization with the Murchison Widefield Array*, Reionization in the Red Centre, Uluru, Australia, July 15-18, 2013
31. *Reionization and Galactic Science with the Murchison Widefield Array*, STScI, April 3, 2013
30. *EDGES*, SKA1-Low Science Assessment Workshop, Manchester, U.K., March 26-28, 2013
29. *MWA Status and New Science*, The Path to SKA-low Workshop, Perth, Australia, Sept. 6-9, 2011 (session chair)
28. *Overview of 21m Observables*, Conference on Novel Telescopes for 21 cm Cosmology, Penticton, Canada, June 14, 2011 (invited review)
27. *EDGES*, Conference on Foregrounds for CMB and 21 cm, Zadar, Croatia, May 23-27, 2011 (session chair)
26. *Experiment to Detect the Global EoR Signature: Overview and Early Science*, Hydrogen Cosmology Workshop, Harvard, May 18-19, 2011 (session chair)
25. *Results from EDGES*, Abstract #107.08, Special Session on Hydrogen Epoch of Reionization Arrays (HERA), 217<sup>th</sup> Annual Meeting of the American Astronomical Society, January 9-14, 2011, Seattle, WA
24. *Hydrogen Epoch of Reionization Array (HERA)*, URSI-USNC, Special Session on Large-N Radio Arrays: Issues and Algorithms, Boulder, CO, January 5-8, 2011
23. *Data and Results! Redshifted 21 cm Cosmology has Begun*, Gravity group seminar, Princeton University, November 5, 2010
22. *The Dawn of 21 cm Cosmology*, Physics colloquium, Embry Riddle Aeronautical University, October 19, 2010
21. *Lessons from EDGES: Ground-based constraints on the global 21 cm signal and implications for lunar observations*, Robotic Science From the Moon Workshop, LUNAR, Boulder, CO, October 6, 2010 (invited)
20. *21 cm Experiments: MWA, EDGES, and more*, The First Galaxies Quasars and Gamma Ray Bursts, Pennsylvania State University, June 10, 2010 (invited)
19. *21 cm Cosmology*, School of Earth and Space Exploration colloquium, Arizona State University, February 26, 2010 (invited)
18. *21 cm Cosmology*, Physics Dept. colloquium, Carnegie Mellon University, February 23, 2010 (invited)
17. *The Dawn of 21 cm Cosmology*, LUNAR webinar, U. Colorado, February, 4, 2010 (invited)
16. *Are Radio Telescopes the Future of Dark Energy?*, Astro-HEP seminar, U. Michigan, December 14, 2009 (invited)
15. *The Dawn of 21cm Cosmology*, NRAO colloquium, Socorro, New Mexico, December 4, 2009 (invited)
14. *The Dawn of 21cm Cosmology*, SSL Seminar, UC Berkeley, October 23, 2009 (invited)
13. *The Dawn of 21cm Cosmology*, ACKS Seminar, Stanford University, October 22, 2009 (invited)
12. *Cosmological Acceleration and Radio Pulsar Experiment (CARPE) Concept*, Science with Fast Radio Telescopes, Fermilab, October 10, 2009 (invited)

11. *EDGES: On the Doorstep of Reionization*, Curtin University, Perth, Western Australia, Astronomy Colloquium, August 27, 2009 (invited)
10. *On the Doorstep of Reionization*, Carnegie Observatories, Pasadena, Friday Seminar, May 22, 2009 (invited)
9. *21 cm Cosmology and Astrophysics: The Road to Reionization*, Caltech, Astronomy Dept. Colloquium, April 1, 2009 (invited)
8. *21 cm Cosmology: The "Global" Perspective*, UCSB, Astronomy Dept. Friday Seminar, December 5, 2008 (invited)
7. *Foreground Subtraction and Off-line Processing*, Low-Frequency Software Workshop, The XXIX General Assembly of the International Union of Radio Science (URSI), Chicago, Illinois, August 7-16, 2008 (invited)
6. *Experiment to Detect the Global EOR Signature: Status Update*, Low-Frequency Software Workshop, The XXIX General Assembly of the International Union of Radio Science (URSI), Chicago, Illinois, August 7-16, 2008 (invited)
5. *Foregrounds and Redshifted 21 cm Observations*, CMB Component Separation and the Physics of Foregrounds, Pasadena, California, July 14 – 18, 2008 (invited review)
4. *Measuring the 21 cm Global (Mean) Brightness Temperature*, 21 cm Cosmology: The Fifth Harvard-Smithsonian Conference on Theoretical Astrophysics, Harvard University, May 12-15, 2008 (invited)
3. *"First Light" From New Probes of the Dark Ages and Reionization*, Institute of Geophysics and Physics, Lawrence Livermore National Laboratory, February 29, 2008, Lawrence, California (invited)
2. *"First Light" From New Probes of the Dark Ages and Reionization*, Astronomy Department Colloquium, UC Berkeley, February 28, 2008, Berkeley, California (invited)
1. *The Mileura Widefield Array (MWA)*, URSI CNC/USNC North American Radio Science Meeting, July 22-26, 2007, Ottawa, ON, Canada, abstract J2-13.URSI406 (invited)

## CONTRIBUTED TALKS

33. *Preparing for the Moon with EDGES*, Network for Exploration and Space Science (NESS), November 30, 2020
32. *EDGES Overview*, Second Global 21cm Workshop, McGill University, October 7, 2019
31. *EDGES Status Update*, NESS Team Meeting, September 24, 2019
30. *Lunar Farside Radio Array Pathfinder Enabled by the Deep Space Gateway*, Deep Space Gateway Concept Science Workshop, Denver, Colorado, LPI Contribution No. 2063, id.3129, February 27-March 1, 2018
29. *EDGES*, Cosmological Signals from Cosmic Dawn to the Present, Aspen Center for Physics, February, 2018
28. *Constraints on Reionization from EDGES High-Band*, IAU Symposium #333, Peering Towards Cosmic Dawn, October 2-6, 2017
27. *EDGES-2: Experiment to Detect the Global EoR Signature*, The Olympian Symposium 2015: Cosmology and the Epoch of Reionization, Paralia Katerini's, Mount Olympus, Greece, 18-22 May 2015
26. *Murchison Widefield Array (MWA) - 1st Year Science Results*, Abstract #301.07, 225th Annual Meeting of the American Astronomical Society, January 5-8, 2015, Seattle, WA
25. *VHF-Band RFI in Geographically Remote Areas*, RFI2010, Groningen, NL, March 31, 2010
24. *21 cm Cosmology with a micro-SKA*, SKA2010, Manchester, UK, March 25, 2010
23. *The Dawn of 21 cm Cosmology with EDGES*, Hubble Fellows Symposium, Space Telescope Science Institute, March 8, 2010
22. *Was Reionization Instantaneous? The First Redshifted 21 cm Science Results*, Aspen Winter Conference on The High Redshift Universe: A Multi-wavelength View, Aspen Center for Physics, February 12, 2010 (co-organizer)

21. *The End of the Beginning: The Dawn of 21cm Cosmology with EDGES*, 215<sup>th</sup> Meeting of the American Astronomical Society, January 4-7, 2010, Washington, D.C., abstract 325.01
20. *Hydrogen Epoch of Reionization Arrays (HERA)*, US SKA Consortium Meeting, Caltech, October 15, 2009
19. *EDGES: On the Doorstep of Reionization*, Arizona State University, September 29, 2009
18. *21 cm Cosmology, The global signal: Earth-based constraints and implications for lunar observations*, National Lunar Science Institute, NASA Ames Research Center, July 22, 2009
17. *On the Doorstep of Reionization*, Hubble Fellows Symposium, Space Telescope Science Institute, March 9-11, 2009, Baltimore, Maryland
16. *“First Light” From New 21 cm Probes of the Dark Ages and Reionization*, Astronomy Tea Talk, California Institute of Technology, April 21, 2008
15. *Revealing Reionization through 21 cm Emission*, Pasadena Postdoc Retreat, April 14-16, 2008, Lake Arrowhead, California
14. *21 cm Cosmology*, Observational Cosmology Seminar Series hosted by Andrew Lange, California Institute of Technology, February 14, 2008
13. *HI and Cosmology: What We Need to Know*, The Evolution of Galaxies through the Neutral Hydrogen Window, February 1-3, 2008, Arecibo, Puerto Rico
12. *First Constraints on the Global Redshifted 21 cm Background During the Epoch of Reionization*, 211<sup>th</sup> Annual Meeting of the American Astronomical Society, January 7-11, 2008, Austin, Texas, abstract 119.06
11. *EDGES*, TAPIR Tuesday Journal Club hosted by Marc Kamionkowski, California Institute of Technology, November 27, 2007
10. *Measuring the Redshifted 21 cm Background*, Observational Cosmology Seminar Series hosted by Andrew Lange, California Institute of Technology, November 1, 2007
9. *Low Frequency Radio Arrays: Back to the Future*, Microwave Seminar Series hosted by Sandy Weinreb, California Institute of Technology, October 24, 2007
8. *“First Light” From New Probes of the Dark Ages and Reionization*, Hubble Fellows Symposium, Space Telescope Science Institute, March 10-12, 2008, Baltimore, Maryland
7. *Observing the Epoch of Reionization*, Cosmology Group Seminar Series, Jet Propulsion Laboratory, January 23, 2007
6. *Revealing the Epoch of Reionization with Redshifted 21 cm Measurements*, 209<sup>th</sup> Annual Meeting of the American Astronomical Society, January 5-10, 2007, Seattle, Washington, abstract 224.02D
5. *Revealing the Epoch of Reionization: The Effects of Foregrounds*, XXIII Texas Symposium on Relativistic Astrophysics, Melbourne, Australia, December 11-15, 2006
4. *Observing the Epoch of Reionization*, Visiting Committee, MIT Haystack Observatory, June 16, 2006
3. *Prospects for Observing Gravitational Lensing by Supermassive Black Holes in Galaxy Cores*, MIT Haystack Observatory, 2005
2. *Viz: Design and Implementation*, NASA Ames Research Center, Code IC, 2002
1. *Field Trials of Prototype Mars Rover in Mojave Desert*, Geological Society of America, Fall Meeting, Salt Lake City, UT, abstract no. 50104, 1997

## PRESS AND OUTREACH

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| 2019 | <i>Mini-spacecraft built by ASU students will study urban heat island effect</i> , ASU, August 27; and associated local media coverage of launch of spacecraft in November |
| 2018 | <i>Spirit of the Senses Science Salon</i> (informal question and answer session, 30 participants), Tempe, AZ, April 24   |
| 2018 | <i>The Dawn of a New Era in Cosmology</i> , New Discovery Lecture Series, ASU, March 22  |
| 2018 | National and international media coverage of publication of EDGES detection of 21cm absorption profile (top 1% of all research outputs ever tracked by Altmetric)          |
| 2018 | <i>ASU astronomers to build space telescope to explore nearby stars</i> , ASU, January 10  |

- 2016 *ASU astronomers to explore the ‘cosmic dawn’ of the universe*, ASU, September 15
- 2016 *Move over, Pokemon Go*, ASU, July 14
- 2016 *Our Research Impact – Ask Dr. Discovery*, ASU CLAS Magazine, Vol. 5, No. 1, Spring/Summer
- 2016 *Arizona State University students to explore local effects on climate*, KTAR, May 11
- 2016 *NASA selects ASU undergraduate “CubeSat” project to measure Phoenix urban heat islands*, ASU, May 6, 2016
- 2015 *ASU-developed app gives museum visitors an astronaut in the palm of their hands*, ASU, April 14, 2015
- 2014 *ASU joins pathbreaking radio telescope project to study early universe*, ASU, November 24, 2014
- 2014 *A Glimpse of Cosmic Dawn*, Science, Nov. 7
- 2014 *Early universe heated slower than thought*, ABC Science Online, Feb. 6
- 2014 *Our universe was slower to warm up than previously thought, say scientists*, Space.com and Christian Science Monitor, Feb. 5/6
- 2013 *Writing the history of the Cosmic Dark Ages*, Research Matters, ASU, August 29
- 2013 *ASU cosmologist awarded a NASA fellowship in astrophysics*, Research Matters, ASU, March 15
- 2012 *Far side of the moon offers quiet place for telescopes*, New Scientist, July 3
- 2012 Mars Curiosity Rover Screen Saver
- 2012 *Max Goes to the Moon* (presentation of children’s video, 55 participants), ISTB4 Marston Exploration Theater, ASU, Tempe, AZ, with Prof. Jack Burns (U. Colorado), October 2
- 2012 Spirit of the Senses Science Salon (informal question and answer session, 25 participants), Tempe, AZ, July 28
- 2012 *A One Night Stand* (informal question and answer session with public, 20 participants), Tempe, AZ, April 18
- 2011 Recorded television interview at Murchison Radio Astronomy Observatory, *Landlines*, Australian Broadcasting Corporation
- 2010 10+ popular press pieces on EDGES experiment, including US News, New Scientist, Space.com; MIT and ASU press releases; and ASU homepage feature
- 2010 *Cosmology: Hydrogen was not ionized abruptly*, Pritchard, J. & Loeb, A., News and Views, Nature, 468, 7325, pp. 772-773, 2010
- 2010 Physics café (informal question and answer session with public, 50 participants), Wheeler Opera House, Aspen, CO, with Prof. Rennan Barkana, February 10
- 2009 *Exotic Telescopes Prepare to Probe Era of First Stars and Galaxies*, Science Magazine
- 2009 *Mystery Cosmic Static May Cast Light on Formation of First Stars*, Scientific American
- 2008 Mars Phoenix Lander Screen Saver, distributed by University of Arizona
- 2008 Outreach talk (Washington University Pathfinder program at Cal State Desert Studies Center in Mojave National Preserve), *Astrophysics and the Night Sky*
- 2006 Mars Reconnaissance Orbiter Screen Saver, distributed by NASA
- 2006 *How the Stars Were Born*, Time Magazine
- 2006 *Flat telescope to offer view to stars’ origins*, ABC News Online
- 2005-present Hundreds of popular press pieces on the MWA telescope
- 2005 Cassini-Huygens Photojournal Screen Saver, distributed by NASA
- 2004 Mars Exploration Rovers Screen Saver (over 100,000 downloads), distributed by NASA
- 2002 Outreach talk (Robotics Education Project), 3D Visualization and the Mars Exploration Rovers
- 1999 Outreach talk (Boeing), Prototype Mars Rover Development
- 1999 Live television interview (Good Morning St. Louis), Washington University Hosts Mission Control for Solo Spirit Balloon Flight

- 1998 Outreach talk (elementary school), Rocky 7 and the Science of Mars  
 1998 Outreach talk (St. Louis Astronomical Society), Solo Spirit Balloon Flight: Test of the Aerobot Mission Concept

### PROFESSIONAL SERVICE

- 2021 Science Organizing Committee, *4th Global 21-cm Workshop*, online, October 2021  
 2021 Co-organizer, AAS Special Session, *Low frequency radio astronomy for cosmic origins*, 237<sup>th</sup> AAS Meeting, January 2021  
 2020 Invited panelist, *3rd Global 21-cm Workshop*, online, October 2020  
 2020 Science Organizing Committee, *NASA Exploration Science Forum 2020*, online, July 2020  
 2019 Panel reviewer, NSF Major Research Instrumentation (MRI)  
 2019 Organizer, Science at Low-frequencies (SALF) 2019, Tempe, Arizona, December 9-11  
 2019 Co-chair, Special Session on *Cosmology and Astrophysics at Low Frequencies*, USNC-URSI CFP National Radio Science Meeting, Boulder, Colorado, January 9-12  
 2018 Science organizing committee, *Science at Low Frequencies (SALF) V*, December 4-6, Nagoya, Japan  
 2018 Local Organizing Committee, *Walking the Line*, March 14-16, Tempe, AZ  
 2018 Co-organizer, *Low Radio Frequency Observations from Space*, Meeting-in-a-meeting, 232<sup>nd</sup> AAS Meeting, June 3-7, Denver, Colorado  
 2018 Co-organizer, 2018 Winter Conference, Aspen Center for Physics, “*Cosmological Signals from Cosmic Dawn to the Present*”  
 2017 Science Organizing Committee, *Peering towards Cosmic Dawn*, IAU Symposium 333, 2nd-6th October 2017, Dubrovnik, Croatia  
 2016 Session co-chair, *Cosmic Dawn and the Epoch of Reionization*, Science at Low Frequencies III, Pasadena, CA, December 7-9  
 2015-2017 Executive Board, Murchison Widefield Array (MWA)  
 2015-present Executive Board, Hydrogen Epoch of Reionization Array (HERA)  
 2014 Organizer, Tempe2014: Early Science from Low-frequency Radio Telescopes, Tempe, AZ (100 international participants, co-hosted with MWA collaboration)  
 2014-2020 Project Scientist, Hydrogen Epoch of Reionization Array (HERA)  
 2014 Co-chair, Special Session on *Radio Astronomy in Space*, USNC-URSI National Radio Science Meeting, Boulder, Colorado  
 2013 Chair, Science Organizing Committee, MWA Science Meeting, Wellington, NZ  
 2013 Organizer, Special Session on *Early Results from Hydrogen Epoch of Reionization Arrays (HERA)*, 221<sup>st</sup> Annual Meeting of the AAS, Long Beach, CA  
 2012 Co-chair, Special Session on *EoR and the Dark Ages*, USNC-URSI National Radio Science Meeting, Boulder, Colorado  
 2011-2015 Executive Steering Committee, Lunar University Network for Astrophysics Research (LUNAR)  
 2011 Science Organizing Committee, Path to the SKA-low Workshop, Perth, Australia  
 2011 Science Organizing Committee, Foregrounds for CMB and 21 cm, Zadar, Croatia  
 2011-2017 Editorial Board, *Scientific Reports*, Nature Publishing Group (1 in 2015, 4 in 2014, 5 in 2013, 3 in 2012, 1 in 2011)  
 2010-2015 Project Scientist, Murchison Widefield Array (MWA)  
 2010-2015 HERA Coordination Group (<http://reionization.org>)  
 2010 Local organizer, MWA Project Meeting, Tempe, AZ  
 2010 U.S. SKA Strategic Redefinition Working Group  
 2010-2011 Lead organizer, Keck Institute for Space Studies (KISS) Study Program, Caltech, “*The First Billion Years*”



- 2010 Co-organizer, 2010 Winter Conference, Aspen Center for Physics, “*The High Redshift Universe: A Multi-wavelength View*”
- 2009-2012 Judge, Chambliss Student Award, AAS Annual Meetings
- 2009-present MRO Coordination Committee (MROCC)
- 2009-2010 Executive representative (Caltech), U.S. SKA Consortium
- 2009-2010 Elected representative, MWA Science Council
- 2009-2010 Co-organizer, 2010 Summer Workshop, Aspen Center for Physics, “*Astrophysics and Cosmology with the 21-cm Background*”
- 2008-present Proposal reviewer (panel and ad hoc): U.S. National Science Foundation, Canada Foundation for Innovation, Canada Council for the Arts, European Research Council, Neatherlands Organisation for Scientific Research, South Africa National Research Foundation
- 2007-present Journal referee: AA, AJ, ApJ, ApJL, TAP, JOAA, MNRAS, Nature, Radio Science
- 2006-2008 Admission committee, NASA Robotics Academy

## UNIVERSITY SERVICE

- 2021 Dean of Natural Sciences hiring committee, CLAS, ASU
- 2020-present College Senator, College of Liberal Arts and Sciences (CLAS), ASU
- 2019-2020 Chair, Space Physics faculty search committee, SESE
- 2018-present Director, ASU RadSpace Initiative
- 2018-2019 Faculty hiring committee, Astrophysics, SESE
- 2017-2018 Astronomy online degree committee, SESE
- 2017-2020 Annual performance evaluation committee, SESE (Chair, 2019-2020)
- 2016-2017 Curriculum committee, SESE
- 2015-2020 Faculty advisor, Phoenix Cubesat undergraduate team (~100 students)
- 2014-2017 Representative, Murchison Widefield Array (MWA) U.S. Consortium
- 2014-2015 First Year Forward, CLAS, ASU
- 2014-2019 Chair, Exploration postdoctoral fellowship committee, SESE
- 2014-2017 Undergraduate education committee, SESE
- 2013-present Faculty co-advisor, Earth and Space Open House, SESE (student organization)
- 2013 Informatics Ph.D. degree definition committee, CIDSE
- 2012-2014 Exploration postdoctoral fellowship committee, SESE
- 2011-2014 Graduate oversight committee, SESE
- 2010-present Co-Director, ASU Cosmology Initiative (minimal duties)
- 2010-2011 Faculty hiring committee, Experimental cosmology, SESE
- 2010-2011 Faculty hiring committee, Observational cosmology, SESE
- 2006 Research supervisor, Research Science Institute, MIT
- 2004-2006 Graduate coordinator, MKI/Astrophysics Colloquia, MIT
- 2004-2005 Graduate Student Council, MIT

## TEACHING

- 2021 Fall AST 422: Astrophysics II
- 2021 Spring SES 106 online: Habitable Worlds
- 2020 Fall AST 422: Astrophysics II
- 2020 Spring SES 106 online: Habitable Worlds
- 2019 Fall AST 531: Galaxies and Cosmology I
- 2019 Spring SES 106 online: Habitable Worlds  
HON 498: Honors Independent Study  
AST 494: Senior Thesis

2018 Fall	AST 422: Astrophysics II SES 191: Exploring SESE (Co-Instructor)
2018 Spring	SES 494: Cubesat Lab SES 494: Dr. Discovery Data Analysis SES 493: Honors thesis AST 494: Senior thesis Course Development, BS Astronomy online degree
2017 Fall	SES 191: Exploring SESE (Co-Instructor) SES 492: Honors directed study SES 499: Individualized instruction Course Development: BS Astronomy online degree
2016 Spring:	AST 322, Introduction to Extragalactic Astrophysics
2015 Fall:	AST 111 online: Introduction to Astronomy: The Solar System AST 113 online: Astronomy Laboratory I
2014 Fall:	AST 111 online: Introduction to Astronomy: The Solar System AST 113 online: Astronomy Laboratory I
2014 Spring:	AST 322: Introduction to Extragalactic Astrophysics AST 499/590 Individualized Instruction–LOFAR seminar AST 493: Honors Thesis
2013 Fall:	AST 531: Galaxies and Cosmology I AST 493: Honors Thesis
2013 Spring:	AST 322: Introduction to Extragalactic Astrophysics
2012 Fall:	AST 111: Introduction to Astronomy: The Solar System
2012 Spring:	AST 322: Introduction to Extragalactic Astrophysics
2011 Fall:	GLG 591: Faculty Research Seminar
2011 Fall:	AST 494/591: Astrophysics Journal Club

## ADVISING AND MENTORING

### *Postdoctoral Scholars:*

2019-present	Dr. Harihanan Krishnan, Ph.D. in 2017 from Indian Institute of Astrophysics (IIA) & University of Calcutta
2019-2021	Dr. Bharat Gehlot, Ph.D. in 2019 from Groningen University (co-advised with D. Jacobs)
2018-present	Dr. Steven Murray, Ph.D. in 2015 from U. Western Australia (co-advised with D. Jacobs)
2018	Dr. Thomas Mozdzen, Ph.D. in 2017 from ASU (co-advised with C. Groppi, P. Mauskopf)
2015-2020	Dr. Adam Beardsley, Ph.D. in 2015 from Univ. of Washington, <i>2017-2020 NSF Astronomy &amp; Astrophysics Postdoctoral Fellowship at ASU</i> (2020 Assistant Professor, Winona State University)
2013-2017	Dr. Nithyanandan Thyagarajan, Ph.D. in 2011 from Columbia University (2017 Jansky Fellowship at NRAO Socorro)
2012-2016	Dr. Raul Monsalve, Ph.D. in 2012 from Univ. of Miami (FL)
2011-2017	Dr. Daniel C. Jacobs, Ph.D. in 2011 from Univ. of Pennsylvania, <i>2014-2017 NSF Astronomy &amp; Astrophysics Postdoctoral Fellowship at ASU, 2017 SESE Assistant Professor</i>

### *Graduate Students – Ph.D. Thesis Advisor:*

2020-present	Akshatha Vydula (expected Ph.D. 2025)
2016-present	Nivedita Mahesh (expected Ph.D. 2022)
2016-2018	Matthew Kolopanis (Ph.D. 2018; co-advised), <i>Techniques for the Analysis and Understanding of Cosmic Evolution</i>

- 2011-2019 Jacqueline Monkiewicz (Ph.D. 2019), *Dwarf Galaxies as Laboratories of Protogalaxy Physics: Canonical Star Formation Laws at Low Metallicity*
- 2011-2019 Piyanat “Boom” Kittiwisit (Ph.D. 2019), *Toward Characterization of the Epoch of Reionization with Redshifted 21 cm One-point Statistics*
- 2011-2017 Thomas Mozdzen (Ph.D. 2017), *Antenna Design and Foreground Characterization for Improved Detection of the Redshifted 21 cm Global Signature During the Epoch of Reionization*

*Undergraduate and Masters Student Research Assistants: 45 students advised since 2010*

*Undergraduate Students – Barrett Honors Thesis Advisor:*

- 2018-2019 Shane Bechtel (astrophysics), *Characterizing Low Frequency Delay Mode Contamination of the Hydrogen Epoch of Reionization Array*
- 2017-2018 Justin Wofford (mechanical engineering), *Modeling and Verification of a Cubesat Attitude Determination and Control System*
- 2016 Mr. Ivan Fernandez (biology), *An Analysis of Museum Visitor Feedback via the Ask Dr. Discovery Project*
- 2013-2014 Eric Tolley (mechanical engineering), *Versatile Small Radio Telescope*

*Undergraduate Students – Senior Thesis Advisor:*

- 2017-2019 Kelsie Crawford (SESE), *Detection of Carbon Radio Recombination Lines*
- 2017-2018 Kevin McNulty Millsap (SESE), *Early Imaging & Beam Analysis with the Hydrogen Epoch of Reionization Array (HERA)*
- 2015-2016 Michael Busch (SESE), *Enabling a New Window on the Earliest Astrophysical Structures from the Dark Ages, First Light, and Reionization*

## **PROFESSIONAL MEMBERSHIPS**

- 2014-2019 Member, Institute of Electrical and Electronics Engineers (IEEE)
- 2012-present Member, International Union of Radio Science (URSI)
- 2009-present Member, American Association for the Advancement of Science (AAAS)
- 2005-present Member, American Astronomical Society (AAS)