Jonathan Charles Pober

Curriculum Vitae

Brown University
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Education

2013	*University of California, Berkeley*
	Ph.D. (Astronomy)
	Dissertation Title: "Overcoming the Challenges of 21cm Cosmology"
2010	*University of California, Berkeley*
	M.A. (Astronomy)
2008	*University of Cambridge*
	M.Phil. (Physics)
2007	*Haverford College*
	B.S. (Physics, Astronomy and Philosophy) with high honors in Physics and Astronomy, honors in Philosophy, magna cum laude

Professional Appointments

2024 – present	*Brown University*
	Associate Professor of Physics
2016 – 2024	*Brown University*
	Assistant Professor of Physics
2013 – 2015	*University of Washington & Brown University*
	NSF Astronomy and Astrophysics Postdoctoral Fellow

Publications [10184 citations, *h*-index of 51 (Google Scholar, 5/1/2026)]
The following are papers in which I was a lead or major contributing author, meaning I was: advisor to the principal author, contributor of key results, algorithms, or code, and/or the author of significant parts of the text. My name is in **bold***, students and postdocs from my group are* <u>*underlined*</u>*.*

(63) *Exploring the Model Dependence of MCMC-Based 21 cm Power Spectrum Parameter Constraints*
<u>Berklas, A.</u>, & **Pober, J. C.**
2026, ApJ, 1001, 215

(62) *The Impact of Foregrounds on Dark Ages Measurements with the Highly Redshifted 21 cm Line*
Pober, J. C., & Smith, W.
2025, ApJ, 990, 34

(61) *pyuvdata v3: an interface for astronomical interferometric data sets in Python*
Keating, G., Hazelton, B., Kolopanis, M., Murray, S., Beardsley, A., Jacobs, D., Kern, N., Lanman, A., La Plante, P., **Pober, J.**, & Star, P.
2025, JOSS, 10, 7482

(60) *Detecting the 21 cm Signal from the Cosmic Dark Ages*
Smith, W., & **Pober, J. C.**
2025, ApJ, 984, 116

(59) *Altitude Estimation of Radio Frequency Interference Sources via Interferometric Near Field Corrections*
Ducharme, J., & **Pober, J. C.**
2025, PASA, 42, e010

(58) *χ^2 from redundant calibration as a tool in the detection of faint radio-frequency interference*
Kunicki, T., & **Pober, J. C.**
2024, PASA, 41, e097

(57) *BayesEoR: Bayesian 21-cm Power Spectrum Estimation from Interferometric Visibilities*
Peter H. Sims, Jacob Burba, **Jonathan C. Pober**
2024, JOSS, 9, 6667

(56) *FarView: An in-situ manufactured lunar far side radio array concept for 21-cm Dark Ages cosmology*
Polidan, R. S., Burns, J. O., Ignatiev, A., Hegedus, A., **Pober, J.**, Mahesh, N., Chang, T.-C., Hallinan, G., **Ning, Y.**, & Bowman, J.
2024, AdSpR, 74, 528

(55) *pyradiosky: A Python package for Radio Sky Models*
Hazelton, B., Kolopanis, M., Lanman, A., & **Pober, J.**
2024, JOSS, 9, 6503

(54) *21cmSense v2: A modular, open-source 21 cm sensitivity calculator*
Murray S., **Pober, J.**, & Kolopanis, M.
2024, JOSS, 9, 6501

(53) *Evidence of Ultra-faint Radio Frequency Interference in Deep 21 cm Epoch of Reionization Power Spectra with the Murchison Widefield Array*
Michael J. Wilensky, Miguel F. Morales, Bryna J. Hazelton, Pyxie L. Star, Nichole Barry, Ruby Byrne, C. H. Jordan, Daniel C. Jacobs, **Jonathan C.**

Pober, and C. M. Trott
2023, ApJ, 957, 78

(52) *The statistics of negative power spectrum systematics in some 21 cm analyses* Morales, M. F., **Pober, J.**, & Hazelton, B. J.
2023, MNRAS, 525, 2834

(51) *New EoR Power Spectrum Limits From MWA Phase II Using the Delay Spectrum Method and Novel Systematic Rejection*
Kolopanis, M., **Pober, J.**, Jacobs, D. C., & McGraw, S.
2023, MNRAS, 521, 5120

(50) *All Sky Modelling Requirements for Bayesian 21 cm Power Spectrum Estimation with BayesEoR*
Burba, Jacob; Sims, Peter; **Pober, Jonathan C.**
2023, MNRAS, 520, 4443

(49) *A Bayesian approach to high fidelity interferometric calibration II: demonstration with simulated data*
Sims, P. H., **Pober, J. C.**, & Sievers, J. L.
2022, MNRAS, 517, 935

(48) *A Bayesian approach to high fidelity interferometric calibration I: mathematical formalism*
Sims, P. H., **Pober, J. C.**, & Sievers, J. L.
2022, MNRAS, 517, 910

(47) *The Optical Depth of Foregrounds for the Highest Redshift 21 cm Signals*
Seitova, Daniya; **Pober, Jonathan**
2022, MNRAS, 513, 5125

(46) *First Results from HERA Phase I: Upper Limits on the Epoch of Reionization 21 cm Power Spectrum*
The HERA Collaboration: Abdurashidova, Z., Aguirre, J. E., Alexander, P., Ali, Z. S., Balfour, Y., Beardsley, A. P., 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., Dibblee-Barkman, T., Dillon, J. S., 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., Kern, N. S., Kerrigan, J., Kittiwisit, P., Kohn, S. A., Kolopanis, M., Lanman, A., La Plante, P., 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. G., Neben, A. R., Nikolic, B., Nunhokee, C. D., Parsons, A. R., Patra, N., Pascua, R., Pieterse, S., **Pober, J. C.**, Razavi-Ghods, N., Ringuette, J., Robnett, J., Rosie, K., Sims, P., Singh, S., Smith, C., Syce, A., Thyagarajan, N., Williams, P. K. G., & Zheng, H.
2022, ApJ, 925, 221

(45) *The Impact of Tandem Redundant/Sky-Based Calibration in MWA Phase II Data Analysis*
Zhang, Zheng; **Pober, Jonathan C.**; Li, Wenyang; Hazelton, Bryna J.; Morales, Miguel F.; Trott, Cathryn M.; Jordan, Christopher H.; Joseph, Ronniy C.; Beardsley, Adam; Barry, Nichole; Byrne, Ruby; Tingay, Steven J.; Chokshi, Aman; Hasegawa, Kenji; Jacobs, Daniel C.; Lanman, Adam; Line, Jack L. B.; Lynch, Christene; McKinley, Benjamin; Mitchell, Daniel A. Murray, Steven; Pindor, Bart; Rahimi, Mahsa; Takahashi, Keitaro; Wayth, Randall B.; Webster, Rachel L.; Wilensky, Michael; Yoshiura, Shintaro; Zheng, Qian
2020, PASA, 37, e045

(44) *Measuring HERA's Primary Beam in Situ: Methodology and First Results*
Nunhokee, Chuneeta D.; Parsons, Aaron R.; Kern, Nicholas S.; Nikolic, Bojan; **Pober, Jonathan C.**; Bernardi, Gianni; Carilli, Chris L.; Abdurashidova, Zara; Aguirre, James E.; Alexander, Paul; Ali, Zaki S.; Balfour, Yanga; Beardsley, Adam P.; Billings, Tashalee S.; Bowman, Judd D.; Bradley, Richard F.; Burba, Jacob; Cheng, Carina; DeBoer, David R.; Dexter, Matt de Lera Acedo, Eloy; Dillon, Joshua S.; 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.; Jacobs, Daniel C.; Julius, Austin; Kerrigan, Joshua; Kittiwisit, Piyanat; Kohn, Saul A.; Kolopanis, Matthew; Lanman, Adam; L Plante, Paul; Lekalake, Telalo; Liu, Adrian; MacMahon, David; Malan, Lourence; Malgas, Cresshim; Maree, Matthys; Martinot, Zachary E.; Matsetela, Eunice; Mesinger, Andrei; Molewa, Mathakane; Morales, Miguel F.; Mosiane, Tshegofalang; Neben, Abraham R.; Patra, Nipanjana; Pieterse, Samantha; Razavi-Ghods, Nima; Ringuette, Jon; Robnett, James; Rosie, Kathryn; Sims, Peter; Smith, Craig; Syce, Angelo; Thyagarajan, Nithyanandan; Williams, Peter K. G.; Zheng, Haoxuan
2020, ApJ, 897, 5

(43) *Quantifying EoR delay spectrum contamination from diffuse radio emission*
Lanman, Adam E.; **Pober, Jonathan C.**; Kern, Nicholas S.; de Lera Acedo, Eloy; DeBoer, David R.; Fagnoni, Nicolas
2020, MNRAS, 494, 3712

(42) *Testing for calibration systematics in the EDGES low-band data using Bayesian model selection*
Sims, Peter H.; **Pober, Jonathan C.**
2020, MNRAS, 492, 22

(41) *First Season MWA Phase II EoR Power Spectrum Results at Redshift 7*
Li, W.; **Pober, J. C.**; Barry, N.; Hazelton, B. J.; Morales, M. F.; Trott, C. M.; Lanman, A.; Wilensky, M.; Sullivan, I.; Beardsley, A. P.; Booler, T.; Bowman, J. D.; Byrne, R.; Crosse, B.; Emrich, D.; Franzen, T. M. O.; Hasegawa, K.; Horsley, L.; Johnston-Hollitt, M.; Jacobs, D. C. Jordan, C. H.; Joseph, R. C.;

Kaneuji, T.; Kaplan, D. L.; Kenney, D.; Kubota, K.; Line, J.; Lynch, C.; McKinley, B.; Mitchell, D. A.; Murray, S.; Pallot, D.; Pindor, B.; Rahimi, M.; Riding, J.; Sleap, G.; Steele, K.; Takahashi, K.; Tingay, S. J.; Walker, M.; Wayth, R. B.; Webster, R. L.; Williams, A.; Wu, C.; Wyithe, J. S. B.; Yoshiura, S.; Zheng, Q.
2019, ApJ, 887, 141

(40) *Science with the Murchison Widefield Array: Phase I Results and Phase II Opportunities*
Beardsley, A. P.; Johnston-Hollitt, M.; Trott, C. M.; **Pober, J. C.**; Morgan, J.; Oberoi, D.; Kaplan, D. L.; Lynch, C. R.; Anderson, G. E.; McCauley, P. I.; Croft, S.; James, C. W.; Wong, O. I.; Tremblay, C. D.; Norris, R. P.; Cairns, I. H.; Lonsdale, C. J.; Hancock, P. J.; Gaensler, B. M.; Bhat, N. D. R. Li, W.; Hurley-Walker, N.; Callingham, J. R.; Seymour, N.; Yoshiura, S.; Joseph, R. C.; Takahashi, K.; Sokolowski, M.; Miller-Jones, J. C. A.; Chauhan, J. V.; Bojičić, I.; Filipović, M. D.; Leahy, D.; Su, H.; Tian, W. W.; McSweeney, S. J.; Meyers, B. W.; Kitaeff, S.; Vernstrom, T.; Gürkan, G.; Heald, G.; Xue, M.; Riseley, C. J.; Duchesne, S. W.; Bowman, J. D.; Jacobs, D. C.; Crosse, B.; Emrich, D.; Franzen, T. M. O.; Horsley, L.; Kenney, D.; Morales, M. F.; Pallot, D.; Steele, K.; Tingay, S. J.; Walker, M.; Wayth, R. B.; Williams, A.; Wu, C.
2019, PASA, 36, 50

(39) *Improving the Epoch of Reionization Power Spectrum Results from Murchison Widefield Array Season 1 Observations*
Barry, N.; Wilensky, M.; Trott, C. M.; Pindor, B.; Beardsley, A. P.; Hazelton, B. J.; Sullivan, I. S.; Morales, M. F.; **Pober, J. C.**; Line, J.; Greig, B.; Byrne, R.; Lanman, A.; Li, W.; Jordan, C. H.; Joseph, R. C.; McKinley, B.; Rahimi, M.; Yoshiura, S.; Bowman, J. D. Gaensler, B. M.; Hewitt, J. N.; Jacobs, D. C.; Mitchell, D. A.; Udaya Shankar, N.; Sethi, S. K.; Subrahmanyan, R.; Tingay, S. J.; Webster, R. L.; Wyithe, J. S. B.
2019, ApJ, 884, 1

(38) *A Simplified, Lossless Reanalysis of PAPER-64*
Kolopanis, Matthew; Jacobs, Daniel C.; Cheng, Carina; Parsons, Aaron R.; Kohn, Saul A.; **Pober, Jonathan C.**; Aguirre, James E.; Ali, Zaki S.; Bernardi, Gianni; Bradley, Richard F.; Carilli, Chris L.; DeBoer, David R.; Dexter, Matthew R.; Dillon, Joshua S.; Kerrigan, Joshua; Klima, Pat; Liu, Adrian; MacMahon, David H. E.; Moore, David F.; Thyagarajan, Nithyanandan Nunhokee, Chuneeta D.; Walbrugh, William P.; Walker, Andre
2019, ApJ, 883, 133

(37) *pyuvsim: A comprehensive simulation package for radio interferometers in python*
Lanman, Adam; Hazelton, Bryna; Jacobs, Daniel; Kolopanis, Matthew; **Pober, Jonathan**; Aguirre, James; Thyagarajan, Nithyanandan
2019, Journal of Open Source Software, 4, 1234

(36) *Fundamental Limitations on the Calibration of Redundant 21 cm Cosmology Instruments and Implications for HERA and the SKA*

Byrne, Ruby; Morales, Miguel F.; Hazelton, Bryna; Li, Wenyang; Barry, Nichole; Beardsley, Adam P.; Joseph, Ronniy; **Pober, Jonathan**; Sullivan, Ian; Trott, Cathryn
2019, ApJ, 875, 70

(35) *Joint estimation of the Epoch of Reionization power spectrum and foregrounds*
Sims, Peter H.; **Pober, Jonathan C.**
2019, MNRAS, 488, 2904

(34) *Optimizing Sparse RFI Prediction using Deep Learning*
Kerrigan, Joshua; La Plante, Paul; Kohn, Saul; **Pober, Jonathan C.**; Aguirre, James; Abdurashidova, Zara; Alexander, Paul; Ali, Zaki S.; Balfour, Yanga; Beardsley, Adam P.; Bernardi, Gianni; Bowman, Judd D.; Bradley, Richard F.; Burba, Jacob; Carilli, Chris L.; Cheng, Carina; DeBoer, David R.; Dexter, Matt; de Lera Acedo, Eloy; Dillon, Joshua S.; Estrada, Julia; Ewall-Wice, Aaron; Fagnoni, Nicolas; Fritz, Randall; Furlanetto, Steve R.; Glendenning, Brian; Greig, Bradley; Grobbelaar, Jasper; Gorthi, Deepthi; Halday, Ziyaad; Hazelton, Bryna J.; Hickish, Jack; Jacobs, Daniel C.; Julius, Austin; Kern, Nicholas; Kittiwisit, Piyanat; Kolopanis, Matthew; Lanman, Adam; Lekalake, Telalo; Liu, Adrian; MacMahon, David; Malan, Lourence; Malgas, Cresshim; Maree, Matthys; Martinot, Zachary E.; Matsetela, Eunice; Mesinger, Andrei; Molewa, Mathakane; Morales, Miguel F.; Mosiane, Tshegofalang; Neben, Abraham R.; Parsons, Aaron R.; Patra, Nipanjana; Pieterse, Samantha; Razavi-Ghods, Nima; Ringuette, Jon; Robnett, James; Rosie, Kathryn; Sims, Peter; Smith, Craig; Syce, Angelo; Thyagarajan, Nithyanandan; Williams, Peter K. G.; Zheng, Haoxuan
2019, MNRAS, 488, 2605

(33) *Fundamental uncertainty levels of 21 cm power spectra from a delay analysis* Lanman, Adam E.; **Pober, Jonathan C.**
2019, MNRAS, 487, 5840

(32) *Bayesian power spectrum estimation at the Epoch of Reionization*
Sims, Peter H.; Lentati, Lindley; **Pober, Jonathan C.**; Carilli, Chris; Hobson, Michael P.; Alexander, Paul; Sutter, Paul
2019, MNRAS, 484, 4152

(31) *The FHD/eppsilon Epoch of Reionization Power Spectrum Pipeline*
Barry, N.; Beardsley, A. P.; Byrne, R.; Hazelton, B.; Morales, M. F.; **Pober, J. C.**; Sullivan, I.
2019, PASA, 36, 26

(30) *Characterizing Signal Loss in the 21 cm Reionization Power Spectrum: A Revised Study of PAPER-64*
Cheng, Carina; Parsons, Aaron R.; Kolopanis, Matthew; Jacobs, Daniel C.; Liu, Adrian; Kohn, Saul A.; Aguirre, James E.; **Pober, Jonathan C.**; Ali, Zaki S.; Bernardi, Gianni; Bradley, Richard F.; Carilli, Chris L.; DeBoer, David R.; Dexter, Matthew R.; Dillon, Joshua S.; Klima, Pat; MacMahon, David H. E.;

Moore, David F.; Nunhokee, Chuneeta D.; Walbrugh, William P. Walker, Andre
2018, ApJ, 868 26

(29) *Understanding the Diversity of 21 cm Cosmology Analyses*
Morales, Miguel F.; Beardsley, Adam; **Pober, Jonathan**; Barry, Nichole; Hazelton, Bryna; Jacobs, Daniel; Sullivan, Ian
2018, MNRAS, 483, 2207

(28) *Improved 21 cm Epoch Of Reionization Power Spectrum Measurements with a Hybrid Foreground Subtraction and Avoidance Technique*
Kerrigan, Joshua; **Pober, Jonathan**; Ali, Zaki; Cheng, Carina; Beardsley, Adam; Parsons, Aaron; Aguirre, James; Barry, Nichole; Bradley, Richard; Bernardi, Gianni; Carilli, Chris; DeBoer, David; Dillon, Joshua; Jacobs, Daniel; Kohn, Saul; Kolopanis, Matthew; Lanman, Adam; Li, Wenyang; Liu, Adrian; Sullivan, Ian
2018, ApJ, 864, 2

(27) *Comparing Redundant and Sky Model Based Interferometric Calibration: A First Look with Phase II of the MWA*
Li, W.; **Pober, J.C.**, Hazelton, B. J.; Barry, N.; Morales, M. F.; Sullivan, I.; Parsons, A. R.; Ali, Z.; Dillon, J.; Beardsley, A. P.; Bowman, J. D.; Briggs, F.; Byrne, R.; Carroll, P.; Crosse, B.; Emrich, D.; Ewall-Wice, A.; Feng, L.; Franzen, T. M. O.; Hewitt, J. N.; Horsley, L.; Jacobs, D. C.; Johnston-Hollitt, M.; Jordan, C.; Joseph, R. C.; Kaplan, D. L.; Kenney, D.; Kim, H.; Kittiwisit, P.; Lanman, A.; Line, J.; McKinley, B.; Mitchell, D. A.; Murry, S.; Neben, A.; Offringa, A. R.; Pallot, D.; Paul, S.; Pindor, B.; Procopio, P.; Ramini, M.; Riding, J.; Sethi, S. K.; Udaya Shankar, N.; Steele, K.; Subrahmanian, R.; Tegmark, M.; Thyagarajan, N.; Tingay, S. J.; Trott, C.; Walker, M.; Wayth, R. B.; Webster, R. L.; Williams, A.; Wu, C.; Wyithe, S.
2018, ApJ, 863, 2

(26) *Polarized Redundant-Baseline Calibration for 21 cm Cosmology Without Adding Spectral Structure*
Dillon, Joshua S.; Kohn, Saul A.; Parsons, Aaron R.; Aguirre, James E.; Ali, Zaki S.; Bernardi, Gianni; Kern, Nicholas S.; Li, Wenyang; Liu, Adrian; Nunhokee, Chuneeta D.; **Pober, Jonathan C.**
2018, MNRAS, 477, 4

(25) *The Hydrogen Epoch of Reionization Array (HERA)*
DeBoer, David R.; Parsons, Aaron R.; Aguirre, James E.; Alexander, Paul; Ali, Zaki S.; Beardsley, Adam P.; Bernardi, Gianni; Bowman, Judd D.; Bradley, Richard F.; Carilli, Chris L.; Cheng, Carina; de Lera Acedo, Eloy; Dillon, Joshua S.; Ewall-Wice, Aaron; Fadana, Gcobisa; Fagnoni, Nicolas; Fritz, Randall; Furlanetto, Steve R.; Glendenning, Brian; Greig, Bradley; Grobbelaar, Jasper; Hazelton, Bryna J.; Hewitt, Jacqueline N.; Hickish, Jack; Jacobs, Daniel C.; Julius, Austin; Kariseb, MacCalvin; Kohn, Saul A.; Lekalake, Telalo; Liu, Adrian; Loots, Anita; MacMahon, David; Malan, Lourence; Malgas, Cresshim; Maree,

Matthys; Martinot, Zachary; Mathison, Nathan; Matsetela, Eunice; Mesinger, Andrei; Morales, Miguel F.; Neben, Abraham R.; Patra, Nipanjana; Pieterse, Samantha; **Pober, Jonathan C.**; Razavi-Ghods, Nima; Ringuette, Jon; Robnett, James; Rosie, Kathryn; Sell, Raddwine; Smith, Craig; Syce, Angelo; Tegmark, Max; Thyagarajan, Nithyanandan; Williams, Peter K. G.; Zheng, Haoxuan
2017, PASP, 129, 045001

(24) *pyuvdata: An Interface For Astronomical Interferometeric Datasets in Python*
Hazelton, Bryna. J.; Jacobs, Daniel C.; **Pober, Jonathan C.**; Beardsley, Adam P.
2017, Journal of Open Source Software, 2, 140

(23) *First Season MWA EoR Power Spectrum Results at Redshift 7*
Beardsley, A. P.; Hazelton, B. J.; Sullivan, I. S.; Carroll, P.; Barry, N.; Rahimi, M.; Pindor, B.; Trott, C. M.; Line, J.; Jacobs, Daniel C.; Morales, M. F.; **Pober, J. C.**; Bernardi, G.; Bowman, Judd D.; Busch, M. P.; Briggs, F.; Cappallo, R. J.; Corey, B. E.; de Oliveira-Costa, A.; Dillon, Joshua S.; Emrich, D.; Ewall-Wice, A.; Feng, L.; Gaensler, B. M.; Goeke, R.; Greenhill, L. J.; Hewitt, J. N.; Hurley-Walker, N.; Johnston-Hollitt, M.; Kaplan, D. L.; Kasper, J. C.; Kim, H. S.; Kratzenberg, E.; Lenc, E.; Loeb, A.; Lonsdale, C. J.; Lynch, M. J.; McKinley, B.; McWhirter, S. R.; Mitchell, D. A.; Morgan, E.; Neben, A. R.; Thyagarajan, Nithyanandan; Oberoi, D.; Offringa, A. R.; Ord, S. M.; Paul, S.; Prabu, T.; Procopio, P.; Riding, J.; Rogers, A. E. E.; Roshi, A.; Udaya Shankar, N.; Sethi, Shiv K.; Srivani, K. S.; Subrahmanyan, R.; Tegmark, M.; Tingay, S. J.; Waterson, M.; Wayth, R. B.; Webster, R. L.; Whitney, A. R.; Williams, A.; Williams, C. L.; Wu, C.; Wyithe, J. S. B.
2016, ApJ, 833, 102

(22) *Upper Limits on the 21 cm Power Spectrum at $z = 5.9$ from Quasar Absorption Line Spectroscopy*
Pober, Jonathan C.; Greig, Bradley; Mesinger, Andrei
2016, MNRAS, 463, 56

(21) *A high reliability survey of discrete Epoch of Reionization foreground sources in the MWA EoR0 field*
Carroll, P. A.; Line, J.; Morales, M. F.; Barry, N.; Beardsley, A. P.; Hazelton, B. J.; Jacobs, D. C.; **Pober, J. C.**; Sullivan, I. S.; Webster, R. L.; Bernardi, G.; Bowman, J. D.; Briggs, F.; Cappallo, R. J.; Corey, B. E.; de Oliveira-Costa, A.; Dillon, J. S.; Emrich, D.; Ewall-Wice, A.; Feng, L.; Gaensler, B. M.; Goeke, R.; Greenhill, L. J.; Hewitt, J. N.; Hurley-Walker, N.; Johnston-Hollitt, M.; Kaplan, D. L.; Kasper, J. C.; Kim, HS.; Kratzenberg, E.; Lenc, E.; Loeb, A.; Lonsdale, C. J.; Lynch, M. J.; McKinley, B.; McWhirter, S. R.; Mitchell, D. A.; Morgan, E.; Neben, A. R.; Oberoi, D.; Offringa, A. R.; Ord, S. M.; Paul, S.; Pindor, B.; Prabu, T.; Procopio, P.; Riding, J.; Rogers, A. E. E.; Roshi, A.; Shankar, N. Udaya; Sethi, S. K.; Srivani, K. S.; Subrahmanyan, R.; Tegmark, M.; Thyagarajan, Nithyanandan; Tingay, S. J.; Trott, C. M.; Waterson, M.; Wayth, R. B.; Whitney, A. R.; Williams, A.; Williams, C. L.; Wu, C.; Wyithe, J. S. B.
2016, MNRAS, 461, 4151

(20) *Calibration requirements for detecting the 21 cm epoch of reionization power spectrum and implications for the SKA*
Barry, N.; Hazelton, B.; Sullivan, I.; Morales, M. F.; **Pober, J. C.**
2016, MNRAS, 461, 3135

(19) *The Murchison Widefield Array 21 cm Power Spectrum Analysis Methodology*
Jacobs, Daniel C.; Hazelton, B. J.; Trott, C. M.; Dillon, Joshua S.; Pindor, B.; Sullivan, I. S.; **Pober, J. C.**; Barry, N.; Beardsley, A. P.; Bernardi, G.; Bowman, Judd D.; Briggs, F.; Cappallo, R. J.; Carroll, P.; Corey, B. E.; de Oliveira-Costa, A.; Emrich, D.; Ewall-Wice, A.; Feng, L.; Gaensler, B. M.; Goeke, R.; Greenhill, L. J.; Hewitt, J. N.; Hurley-Walker, N.; Johnston-Hollitt, M.; Kaplan, D. L.; Kasper, J. C.; Kim, HS; Kratzenberg, E.; Lenc, E.; Line, J.; Loeb, A.; Lonsdale, C. J.; Lynch, M. J.; McKinley, B.; McWhirter, S. R.; Mitchell, D. A.; Morales, M. F.; Morgan, E.; Neben, A. R.; Thyagarajan, N.; Oberoi, D.; Offringa, A. R.; Ord, S. M.; Paul, S.; Prabu, T.; Procopio, P.; Riding, J.; Rogers, A. E. E.; Roshi, A.; Udaya Shankar, N.; Sethi, Shiv K.; Srivani, K. S.; Subrahmanyan, R.; Tegmark, M.; Tingay, S. J.; Waterson, M.; Wayth, R. B.; Webster, R. L.; Whitney, A. R.; Williams, A.; Williams, C. L.; Wu, C.; Wyithe, J. S. B.
2016, ApJ, 825, 114

(18) *Constraining Polarized Foregrounds for EoR Experiments I: 2D Power Spectra from the PAPER-32 Imaging Array*
Kohn, S. A.; Aguirre, J. E.; Nunhokee, C. D.; Bernardi, G.; **Pober, J. C.**; Ali, Z. S.; Bradley, R. F.; Carilli, C. L.; DeBoer, D. R.; Gugliucci, N. E.; Jacobs, D. C.; Klima, P.; MacMahon, D. H. E.; Manley, J. R.; Moore, D. F.; Parsons, A. R.; Stefan, I. I.; Walbrugh, W. P.
2016, ApJ, 823, 88

(17) *Constraining High Redshift X-ray Sources with Next Generation 21 cm Power Spectrum Measurements*
Ewall-Wice, Aaron; Hewitt, Jacqueline; Mesinger, Andrei; Dillon, Joshua S.; Liu, Adrian; **Pober, Jonathan**
2016, MNRAS, 458, 2710

(16) *The Importance of Widefield Foreground Removal for 21 cm Cosmology: A Demonstration With Early MWA Epoch of Reionization Observations*
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2016, ApJ, 819, 8

(15) *Constraints on the temperature of the intergalactic medium at $z = 8.4$ with 21-cm observations*
Greig, Bradley; Mesinger, Andrei; **Pober, Jonathan C.**
2016, MNRAS, 455, 4295

(14) *PAPER-64 Constraints On Reionization II: The Temperature Of The $z=8.4$ Intergalactic Medium*
Pober, Jonathan C.; Ali, Zaki S.; Parsons, Aaron R.; McQuinn, Matthew; Aguirre, James E.; Bernardi, Gianni; Bradley, Richard F.; Carilli, Chris L.; Cheng, Carina; DeBoer, David R.; Dexter, Matthew R.; Furlanetto, Steven R.; Grobbelaar, Jasper; Horrell, Jasper; Jacobs, Daniel C.; Klima, Patricia J.; Kohn, Saul A.; Liu, Adrian; MacMahon, David H. E.; Maree, Matthys; Mesinger, Andrei; Moore, David F.; Razavi-Ghods, Nima; Stefan, Irina I.; Walbrugh, William P.; Walker, Andre; Zheng, Haoxuan
2015, ApJ, 809, 62

(13) *PAPER-64 Constraints on Reionization: The 21cm Power Spectrum at $z=8.4$*
Ali, Zaki S.; Parsons, Aaron R.; Zheng, Haoxuan; **Pober, Jonathan C.**; Liu, Adrian; Aguirre, James E.; Bradley, Richard F.; Bernardi, Gianni; Carilli, Chris L.; Cheng, Carina; DeBoer, David R.; Dexter, Matthew R.; Grobbelaar, Jasper; Horrell, Jasper; Jacobs, Daniel C.; Klima, Pat; MacMahon, David H. E.; Maree, Matthys; Moore, David F.; Razavi, Nima; Stefan, Irina I.; Walbrugh, William P.; Walker, Andre
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(12) *Multi-redshift limits on the 21cm power spectrum from PAPER*
Jacobs, Daniel C.; **Pober, Jonathan C.**; Parsons, Aaron R.; Aguirre, James E.; Ali, Zaki; Bowman, Judd; Bradley, Richard F.; Carilli, Chris L.; DeBoer, David R.; Dexter, Matthew R.; Gugliucci, Nicole E.; Klima, Pat; Liu, Adrian; MacMahon, Dave H. E.; Manley, Jason R.; Moore, David F.; Stefan, Irina I.; Walbrugh, William P.
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(11) *The Impact of Foregrounds on Redshift Space Distortion Measurements With the Highly Redshifted 21 cm Line*
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(10) *What Next-Generation 21 cm Power Spectrum Measurements Can Teach Us About the Epoch of Reionization*
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(9) *The Effects of Polarized Foregrounds on 21 cm Epoch of Reionization Power Spectrum Measurements*
Moore, David F.; Aguirre, James E.; Parsons, Aaron R.; Jacobs, Daniel C.; **Pober, Jonathan C.**
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(8) *Opening the 21 cm Epoch of Reionization Window: Measurements of Foreground Isolation with PAPER*
Pober, Jonathan C.; Parsons, Aaron R.; Aguirre, James E.; Ali, Zaki; Bradley, Richard F.; Carilli, Chris L.; DeBoer, Dave; Dexter, Matthew; Gugliucci, Nicole E.; Jacobs, Daniel C.; Klima, Patricia J.; MacMahon, Dave; Manley, Jason; Moore, David F.; Stefan, Irina I.; Walbrugh, William P.
2013, ApJ, 768L, 36

(7) *The Baryon Acoustic Oscillation Broadband and Broad-beam Array: Design Overview and Sensitivity Forecasts*
Pober, Jonathan C.; Parsons, Aaron R.; DeBoer, David R.; McDonald, Patrick; McQuinn, Matthew; Aguirre, James E.; Ali, Zaki; Bradley, Richard F.; Chang, Tzu-Ching; Morales, Miguel F.
2013, AJ, 145, 65

(6) *A Per-Baseline, Delay-Spectrum Technique for Accessing the 21cm Cosmic Reionization Signature*
Parsons, Aaron R.; **Pober, Jonathan C.**; Aguirre, James E.; Carilli, Christopher L.; Jacobs, Daniel C.; Moore, David F.
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(5) *A Sensitivity and Array-Configuration Study for Measuring the Power Spectrum of 21cm Emission from Reionization*
Parsons, Aaron; **Pober, Jonathan**; McQuinn, Matthew; Jacobs, Daniel; Aguirre, James
2012, ApJ, 753, 81

(4) *A Technique for Primary Beam Calibration of Drift-scanning, Wide-field Antenna Elements*
Pober, Jonathan C.; Parsons, Aaron R.; Jacobs, Daniel C.; Aguirre, James E.; Bradley, Richard F.; Carilli, Chris L.; Gugliucci, Nicole E.; Moore, David F.; Parashare, Chaitali R.
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(3) *New 145 MHz Source Measurements by PAPER in the Southern Sky*
Jacobs, Daniel C.; Aguirre, James E.; Parsons, Aaron R.; **Pober, Jonathan C.**; Bradley, Richard F.; Carilli, Chris L.; Gugliucci, Nicole E.; Manley, Jason R.; van

der Merwe, Carel; Moore, David F.; Parashare, Chaitali R.
2011, ApJ, 734L, 34

(2) *Spectral Energy Distribution of Radio Sources in Nearby Clusters of Galaxies: Implications for Sunyaev-Zel'Dovich Effect Surveys*
Lin, Yen-Ting; Partridge, Bruce; **Pober, J. C.**; Bouchefry, Khadija El; Burke, Sarah; Klein, Jonathan N.; Coish, Joseph W.; Huffenberger, Kevin M.
2009, ApJ, 694, 992

(1) *Evidence for Inverted-Spectrum 20 GHz Emission in the Galactic Plane*
Boughn, S. P.; **Pober, J. C.**
2007, ApJ, 66, 938

Collaboration Publications

The following are papers in which my authorship results from participation in a collaboration and/or membership on a builder's list where I was a major contributor to the instrument used to collect data analyzed in the paper. In all instances, I provided substantive feedback on drafts of the paper.

(44) *Improved Limits on the 21 cm Signal at z = 6.5–7.0 with the Murchison Widefield Array Using Gaussian Information*
Trott, C. M., Nunhokee, C. D., Null, D., Barry, N., Qin, Y., Wayth, R. B., Line, J. L. B., Jordan, C. H., Pindor, B., Cook, J. H., Bowman, J., Chokshi, A., Ducharme, J., Elder, K., Guo, Q., Hazelton, B. J., Hidayat, W., Ito, T., Jacobs, D., Jong, E., Kolopanis, M., Kunicki, T., Lilleskov, E., Morales, M. F., Pober, J., Selvaraj, A., Shi, R., Takahashi, K., Tingay, S. J., Webster, R. L., Yoshiura, S., & Zheng, Q.
2025, ApJ, 991, 211

(43) *Limits on the 21 cm Power Spectrum at z = 6.5–7.0 from Murchison Widefield Array Observations*
Nunhokee, C. D., Null, D., Trott, C. M., Barry, N., Qin, Y., Wayth, R. B., Line, J. L. B., Jordan, C. H., Pindor, B., Cook, J. H., Bowman, J., Chokshi, A., Ducharme, J., Elder, K., Guo, Q., Hazelton, B., Hidayat, W., Ito, T., Jacobs, D., Jong, E., Kolopanis, M., Kunicki, T., Lilleskov, E., Morales, M. F., Pober, J. C., Selvaraj, A., Shi, R., Takahashi, K., Tingay, S. J., Webster, R. L., Yoshiura, S., & Zheng, Q.
2025, ApJ, 989, 57

(42) *Search for the Epoch of Reionization with HERA: upper limits on the closure phase delay power spectrum*
Keller, P. M., Nikolic, B., Thyagarajan, N., Carilli, C. L., Bernardi, G., Charles, N., Bester, L., Smirnov, O. M., Kern, N. S., Dillon, J. S., Hazelton, B. J., Morales, M. F., Jacobs, D. C., Parsons, A. R., Abdurashidova, Z., Adams, T., Aguirre, J. E., Alexander, P., Ali, Z. S., Baartman, R., Balfour, Y., Beardsley, A. P., Billings, T. S., Bowman, J. D., Bradley, R. F., Bull, P., Burba, J., Carey, S., Cheng, C., DeBoer, D. R., de Lera Acedo, E., Dexter, M., Eksteen, N., Ely, J.,

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2023, MNRAS, 524, 583

(41) *Impact of instrument and data characteristics in the interferometric reconstruction of the 21cm power spectrum*
Gorce, A., Ganjam, S., Liu, A., Murray, S. G., Abdurashidova, Z., Adams, T., Aguirre, J. E., Alexander, P., Ali, Z. S., Baartman, R., Balfour, Y., Beardsley, A. P., 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., de Lera Acedo, E., Dexter, M., Dillon, J. S., Eksteen, N., 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., Kariseb, M., Kern, N. S., Kerrigan, J., Kittiwisit, P., Kohn, S. A., Kolopanis, M., Lanman, A., La Plante, P., Loots, A., MacMahon, D. H. E., Malan, L., Malgas, C., Malgas, K., Marero, B., Martinot, Z. E., Mesinger, A., Molewa, M., Morales, M. F., Mosiane, T., Neben, A. R., Nikolic, B., Nuwegeld, H., Parsons, A. R., Patra, N., Pieterse, S., **Pober, J. C.**, Razavi-Ghods, N., Robnett, J., Rosie, K., Sims, P., Smith, C., Swarts, H., Thyagarajan, N., van Wyngaarden, P., Williams, P. K. G., & Zheng, H.
2023, MNRAS, 520, 375

(40) *Direct Optimal Mapping for 21cm Cosmology: A Demonstration with the Hydrogen Epoch of Reionization Array*
Xu, Z., Hewitt, J. N., Chen, K.-F., Kim, H., Dillon, J. S., Kern, N. S., Morales, M. F., Hazelton, B. J., Byrne, R., Fagnoni, N., de Lera Acedo, E., Abdurashidova, Z., Adams, T., Aguirre, J. E., Alexander, P., Ali, Z. S., Baartman, R., Balfour, Y., Beardsley, A. P., 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., Eksteen, N., Ely, J., Ewall-Wice, A., Fritz, R., Furlanetto, S. R., Gale-Sides, K., Glendenning, B., Gorthi, D., Greig, B., Grobbelaar, J., Halday, Z., Hickish, J., Jacobs, D. C., Julius, A., Kariseb, M., Kerrigan, J., Kittiwisit, P., Kohn, S. A., Kolopanis, M., Lanman, A., La Plante, P., Liu, A., Loots, A., Ma, Y.-. zhe ., MacMahon, D. H. E., Malan, L., Malgas, C., Malgas, K., Marero, B., Martinot, Z. E., Mesinger, A., Molewa, M., Mosiane, T., Murray, S. G., Neben, A. R., Nikolic, B., Nuwegeld, H., Parsons, A. R., Patra, N., Pieterse, S., **Pober, J. C.**, Razavi-Ghods, N., Robnett, J., Rosie, K., Sims, P., Smith, C., Swarts, H., Thyagarajan, N., Van Van Wyngaarden, P.,

Williams, P. K. G., & Zheng, H.
2022, ApJ, 938, 128

(39) *The correlation calibration of PAPER-64 data*
Gogo, T. G., Ma, Y.-Z., Kittiwisit, P., Sievers, J. L., Parsons, A. R., **Pober, J. C.**, Jacobs, D. C., Cheng, C., Kolopanis, M., Liu, A., Kohn, S. A., Aguirre, J. E., Ali, Z. S., Bernardi, G., Bradley, R. F., DeBoer, D. R., Dexter, M. R., Dillon, J. S., Klima, P., MacMahon, D. H. E., Moore, D. F., Nunhokee, C. D., Walbrugh, W. P., & Walker, A.
2022, MNRAS, 510, 1680

(38) *Validation of the HERA Phase I Epoch of Reionization 21 cm Power Spectrum Software Pipeline*
Aguirre, J. E., Murray, S. G., Pascua, R., Martinot, Z. E., Burba, J., Dillon, J. S., Jacobs, D. C., Kern, N. S., Kittiwisit, P., Kolopanis, M., Lanman, A., Liu, A., Whitler, L., Abdurashidova, Z., Alexander, P., Ali, Z. S., Balfour, Y., Beardsley, A. P., Bernardi, G., Billings, T. S., Bowman, J. D., Bradley, R. F., Bull, P., 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., Julius, A., Kerrigan, J., Kohn, S. A., La Plante, P., Lekalake, T., Lewis, D., MacMahon, D., Malan, L., Malgas, C., Maree, M., Matsetela, E., Mesinger, A., Molewa, M., Morales, M. F., Mosiane, T., Neben, A. R., Nikolic, B., Parsons, A. R., Patra, N., Pieterse, S., **Pober, J. C.**, RazaviGhods, N., Ringuette, J., Robnett, J., Rosie, K., Santos, M. G., Sims, P., Singh, S., Smith, C., Syce, A., Thyagarajan, N., Williams, P. K. G., Zheng, H.
2022, ApJ, 924, 85

(37) *HERA Phase I Limits on the Cosmic 21-cm Signal: Constraints on Astrophysics and Cosmology During the Epoch of Reionization*
The HERA Collaboration: Abdurashidova, Z., Aguirre, J. E., Alexander, P., Ali, Z., Balfour, Y., Barkana, R., Beardsley, A., Bernardi, G., Billings, T., Bowman, J., Bradley, R., Bull, P., Burba, J., Carey, S., Carilli, C., Cheng, C., DeBoer, D., Dexter, M., de Lera Acedo, E., Dillon, J., Ely, J., Ewall-Wice, A., Fagnoni, N., Fialkov, A., Fritz, R., Furlanetto, S., Gale-Sides, K., Glendenning, B., Gorthi, D., Greig, B., Grobbelaar, J., Halday, Z., Hazelton, B., Heimersheim, S., Hewitt, J., Hickish, J., Jacobs, D., Julius, A., Kern, N., Kerrigan, J., Kittiwisit, P., Kohn, S., Kolopanis, M., Lanman, A., La Plante, P., Lekalake, T., Lewis, D., Liu, A., Ma, Y.-Z., MacMahon, D., Malan, L., Malgas, C., Maree, M., Martinot, Z., Matsetela, E., Mesinger, A., Mirocha, J., Molewa, M., Morales, M., Mosiane, T., Munoz, J., Murray, S., Neben, A., Nikolic, B., Devi Nunhokee, C., Parsons, A., Patra, N., Pieterse, S., **Pober, J.**, Qin, Y., Razavi-Ghods, N., Reis, I., Ringuette, J., Robnett, J., Rosie, K., Santos, M., Sikder, S., Sims, P., Smith, C., Syce, A., Thyagarajan, N., Williams, P., & Zheng, H.
2022, ApJ, 924, 51

(36) *Automated Detection of Antenna Malfunctions in Large-N Interferometers: A Case Study with the Hydrogen Epoch of Reionization Array*
Storer, D., Dillon, J. S., Jacobs, D. C., Morales, M. F., Hazelton, B. J., Ewall-Wice, A., Abdurashidova, Z., Aguirre, J. E., Alexander, P., Ali, Z. S., Balfour, Y., Beardsley, A. P., 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., de Lera Acedo, E., Dexter, M., Dynes, S., Ely, J., Fagnoni, N., Fritz, R., Furlanetto, S. R., GaleSides, K., Glendenning, B., Gorthi, D., Greig, B., Grobbelaar, J., Halday, Z., Hewitt, J. N., Hickish, J., Huang, T., Josaitis, A., Julius, A., Kariseb, M., Kern, N. S., Kerrigan, J., Kittiwisit, P., Kohn, S. A., Kolopanis, M., Lanman, A., La Plante, P., Liu, A., Loots, A., MacMahon, D., Malan, L., Malgas, C., Martinot, Z. E., Mesinger, A., Molewa, M., Mosiane, T., Murray, S. G., Neben, A. R., Nikolic, B., Devi Nunhokee, C., Parsons, A. R., Pascua, R., Patra, N., Pieterse, S., **Pober, J. C.**, Razavi-Ghods, N., Riley, D., Robnett, J., Rosie, K., Santos, M. G., Sims, P., Singh, S., Smith, C., Tan, J., Thyagarajan, N., Williams, P. K. G., & Zheng, H.
2022, Radio Science 57, e2021RS007376

(35) *Epoch of reionization power spectrum limits from Murchison Widefield Array data targeted at EoR1 field*
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.
2021, MNRAS, 508, 5954

(34) *Constraining the 21 cm brightness temperature of the IGM at $z = 6.6$ around LAEs with the Murchison Widefield Array*
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.
2021, MNRAS, 507, 772

(33) *Effects of model incompleteness on the drift-scan calibration of radio telescopes*
Gehlot, B. K., Jacobs, D. C., Bowman, J. D., Mahesh, N., Murray, S. G., Kolopanis, M., Beardsley, A. P., Abdurashidova, Z., Aguirre, J. E., Alexander, P., Ali, Z. S., Balfour, Y., Bernardi, G., Billings, T. S., Bradley, R. F., Bull, P., Burba, J., Carey, S., Carilli, C. L., Cheng, C., DeBoer, D. R., Dexter, M., de Lera Acedo, E., Dillon, J. S., 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., Julius, A., Kern, N. S., Kerrigan, J., Kittiwisit, P., Kohn,

S. A., Lanman, A., La Plante, P., Lekalake, T., Lewis, D., Liu, A., Ma, Y.-Z., MacMahon, D., Malan, L., Malgas, C., Maree, M., Martinot, Z. E., Matsetela, E., Mesinger, A., Molewa, M., Monsalve, R. A., Morales, M. F., Mosiane, T., 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., Tegmark, M., Thyagarajan, N., Williams, P. K. G., & Zheng, H.
2021, MNRAS, 506, 4578

(32) *A new MWA limit on the 21 cm power spectrum at redshifts 13-17*
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.
2021, MNRAS, 505, 4775

(31) *A Real Time Processing system for big data in astronomy: Applications to HERA*
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.
2021, A&C, 36, 100489

(30) *Methods of Error Estimation for Delay Power Spectra in 21 cm Cosmology*
Tan, J., Liu, A., Kern, N. S., Abdurashidova, Z., Aguirre, J. E., Alexander, P., Ali, Z. S., Balfour, Y., Beardsley, A. P., 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., Dillon, J. S., 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., Kolopanis, M., Lanman, A., La Plante, P., Lekalake, T., MacMahon, D., Malan, L., Malgas, C., Maree, M., Martinot, Z. E., Matsetela, E., Mesinger, A., Molewa, M., Morales, M. F., Mosiane, T., Murray, S. G., Neben, A. R., Nikolic, B., Nunhokee, C. D., Parsons, A. R., Patra, N., Pieterse, S., **Pober, J. C.**,

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2016, ApJ, 818, 139

(9) *Confirmation of Wide-field Signatures in Redshifted 21 cm Power Spectra*
Thyagarajan, Nithyanandan; Jacobs, Daniel C.; Bowman, Judd D.; Barry, N.; Beardsley, A. P.; Bernardi, G.; Briggs, F.; Cappallo, R. J.; Carroll, P.; Deshpande, A. A.; de Oliveira-Costa, A.; Dillon, Joshua S.; Ewall-Wice, A.; Feng, L.; Greenhill, L. J.; Hazelton, B. J.; Hernquist, L.; Hewitt, J. N.; Hurley-Walker, N.; Johnston-Hollitt, M.; Kaplan, D. L.; Kim, Han-Seek; Kittiwisit, P.; Lenc, E.; Line, J.; Loeb, A.; Lonsdale, C. J.; McKinley, B.; McWhirter, S. R.; Mitchell, D. A.; Morales, M. F.; Morgan, E.; Neben, A. R.; Oberoi, D.; Offringa, A. R.; Ord, S. M.; Paul, Sourabh; Pindor, B.; **Pober, J. C.**; Prabu, T.; Procopio, P.; Riding, J.; Udaya Shankar, N.; Sethi, Shiv K.; Srivani, K. S.; Subrahmanyan, R.; Sullivan, I. S.; Tegmark, M.; Tingay, S. J.; Trott, C. M.; Wayth, R. B.; Webster, R. L.; Williams, A.; Williams, C. L.; Wyithe, J. S. B.
2015, ApJ, 807L, 28

(8) *Empirical covariance modeling for 21 cm power spectrum estimation: A method demonstration and new limits from early Murchison Widefield Array 128-tile data*
Dillon, Joshua S.; Neben, Abraham R.; Hewitt, Jacqueline N.; Tegmark, Max; Barry, N.; Beardsley, A. P.; Bowman, J. D.; Briggs, F.; Carroll, P.; de Oliveira-Costa, A.; Ewall-Wice, A.; Feng, L.; Greenhill, L. J.; Hazelton, B. J.; Hernquist, L.; Hurley-Walker, N.; Jacobs, D. C.; Kim, H. S.; Kittiwisit, P.; Lenc, E.; Line, J.; Loeb, A.; McKinley, B.; Mitchell, D. A.; Morales, M. F.; Offringa, A. R.; Paul, S.; Pindor, B.; **Pober, J. C.**; Procopio, P.; Riding, J.; Sethi, S.; Shankar, N. Udaya; Subrahmanyan, R.; Sullivan, I.; Thyagarajan, Nithyanandan; Tingay, S. J.; Trott, C.; Wayth, R. B.; Webster, R. L.; Wyithe, S.; Bernardi, G.; Cappallo, R. J.; Deshpande, A. A.; Johnston-Hollitt, M.; Kaplan, D. L.; Lonsdale, C. J.; McWhirter, S. R.; Morgan, E.; Oberoi, D.; Ord, S. M.; Prabu, T.; Srivani, K. S.; Williams, A.; Williams, C. L.
2015, PhRvD, 91, 12

(7) *Foregrounds in Wide-field Redshifted 21 cm Power Spectra*
Thyagarajan, Nithyanandan; Jacobs, Daniel C.; Bowman, Judd D.; Barry, N.; Beardsley, A. P.; Bernardi, G.; Briggs, F.; Cappallo, R. J.; Carroll, P.; Corey, B. E.; de Oliveira-Costa, A.; Dillon, Joshua S.; Emrich, D.; Ewall-Wice, A.; Feng, L.; Goeke, R.; Greenhill, L. J.; Hazelton, B. J.; Hewitt, J. N.; Hurley-Walker, N.; Johnston-Hollitt, M.; Kaplan, D. L.; Kasper, J. C.; Kim, Han-Seek; Kittiwisit, P.; Kratzenberg, E.; Lenc, E.; Line, J.; Loeb, A.; Lonsdale, C. J.; Lynch, M. J.; McKinley, B.; McWhirter, S. R.; Mitchell, D. A.; Morales, M. F.; Morgan, E.; Neben, A. R.; Oberoi, D.; Offringa, A. R.; Ord, S. M.; Paul, Sourabh; Pindor, B.; **Pober, J. C.**; Prabu, T.; Procopio, P.; Riding, J.; Rogers, A. E. E.; Roshi, A.; Udaya Shankar, N.; Sethi, Shiv K.; Srivani, K. S.; Subrahmanyan, R.; Sullivan, I. S.; Tegmark, M.; Tingay, S. J.; Trott, C. M.; Waterson, M.; Wayth, R. B.; Webster, R. L.; Whitney, A. R.; Williams, A.; Williams, C. L.; Wu, C.; Wyithe, J. S. B.
2015, ApJ, 804, 14

(6) *The Low-Frequency Environment of the Murchison Widefield Array: Radio-Frequency Interference Analysis and Mitigation*

Offringa, A. R.; Wayth, R. B.; Hurley-Walker, N.; Kaplan, D. L.; Barry, N.; Beardsley, A. P.; Bell, M. E.; Bernardi, G.; Bowman, J. D.; Briggs, F.; Callingham, J. R.; Cappallo, R. J.; Carroll, P.; Deshpande, A. A.; Dillon, J. S.; Dwarakanath, K. S.; Ewall-Wice, A.; Feng, L.; For, B.-Q.; Gaensler, B. M.; Greenhill, L. J.; Hancock, P.; Hazelton, B. J.; Hewitt, J. N.; Hindson, L.; Jacobs, D. C.; Johnston-Hollitt, M.; Kapińska, A. D.; Kim, H.-S.; Kittiwisit, P.; Lenc, E.; Line, J.; Loeb, A.; Lonsdale, C. J.; McKinley, B.; McWhirter, S. R.; Mitchell, D. A.; Morales, M. F.; Morgan, E.; Morgan, J.; Neben, A. R.; Oberoi, D.; Ord, S. M.; Paul, S.; Pindor, B.; **Pober, J. C.**; Prabu, T.; Procopio, P.; Riding, J.; Udaya Shankar, N.; Sethi, S.; Srivani, K. S.; Staveley-Smith, L.; Subrahmanyan, R.; Sullivan, I. S.; Tegmark, M.; Thyagarajan, N.; Tingay, S. J.; Trott, C. M.; Webster, R. L.; Williams, A.; Williams, C. L.; Wu, C.; Wyithe, J. S.; Zheng, Q.
2015, PASA, 32, 8

(5) *New Limits on 21cm EoR From PAPER-32 Consistent with an X-Ray Heated IGM at z=7.7*
Parsons, Aaron R.; Liu, Adrian; Aguirre, James E.; Ali, Zaki S.; Bradley, Richard F.; Carilli, Chris L.; DeBoer, David R.; Dexter, Matthew R.; Gugliucci, Nicole E.; Jacobs, Daniel C.; Klima, Pat; MacMahon, David H. E.; Manley, Jason R.; Moore, David F.; **Pober, Jonathan C.**; Stefan, Irina I.; Walbrugh, William P.
2014, ApJ, 788, 106

(4) *A Flux Scale for Southern Hemisphere 21 cm Epoch of Reionization Experiments*
Jacobs, Daniel C.; Parsons, Aaron R.; Aguirre, James E.; Ali, Zaki; Bowman, Judd; Bradley, Richard F.; Carilli, Chris L.; DeBoer, David R.; Dexter, Matthew R.; Gugliucci, Nicole E.; Klima, Pat; MacMahon, Dave H. E.; Manley, Jason R.; Moore, David F.; **Pober, Jonathan C.**; Stefan, Irina I.; Walbrugh, William
2013, ApJ, 776, 108

(3) *Imaging on PAPER: Centaurus A at 148 MHz*
Stefan, Irina I.; Carilli, Chris L.; Green, David A.; Ali, Zaki; Aguirre, James E.; Bradley, Richard F.; DeBoer, David; Dexter, Matthew; Gugliucci, Nicole E.; Harris, D. E.; Jacobs, Daniel C.; Klima, Pat; MacMahon, David; Manley, Jason; Moore, David F.; Parsons, Aaron R.; **Pober, Jonathan C.**; Walbrugh, William P.
2013, MNRAS, 432, 1285

(2) *A blind detection of a large, complex, Sunyaev-Zel'dovich structure*
AMI Consortium; Shimwell, T. W.; Barker, R. W.; Biddulph, P.; Bly, D.; Boysen, R. C.; Brown, A. R.; Brown, M. L.; Clementson, C.; Crofts, M.; Culverhouse, T. L.; Czeres, J.; Dace, R. J.; Davies, M. L.; D'Alessandro, R.; Doherty, P.; Duggan, K.; Ely, J. A.; Felvus, M.; Feroz, F.; Flynn, W.; Franzen, T. M. O.; Geisbüsch, J.; Génova-Santos, R.; Grainge, K. J. B.; Grainger, W. F.; Hammett, D.; Hobson, M. P.; Holler, C. M.; Hurley-Walker, N.; Jilley, R.; Kaneko, T.; Kneissl, R.; Lancaster, K.; Lasenby, A. N.; Marshall, P. J.; Newton, F.; Norris, O.; Northrop, I.; Odell, D. M.; Olamaie, M.; Perrott, Y. C.; **Pober, J. C**.; Pooley, G. G.; Pospieszalski, M. W.; Quy, V.; Rodríguez-Gonzálvez, C.;

Saunders, R. D. E.; Scaife, A. M. M.; Schammel, M. P.; Schofield, J.; Scott, P. F.; Shaw, C.; Smith, H.; Titterington, D. J.; Velic, M.; Waldram, E. M.; West, S.; Wood, B. A.; Yassin, G.; Zwart, J. T. L.
2012, MNRAS, 423, 1463

(1) *The Arcminute Microkelvin Imager*
Zwart, J. T. L.; Barker, R. W.; Biddulph, P.; Bly, D.; Boysen, R. C.; Brown, A. R.; Clementson, C.; Crofts, M.; Culverhouse, T. L.; Czeres, J.; Dace, R. J.; Davies, M. L.; D'Alessandro, R.; Doherty, P.; Duggan, K.; Ely, J. A.; Felvus, M.; Feroz, F.; Flynn, W.; Franzen, T. M. O.; Geisbüsch, J.; Génova-Santos, R.; Grainge, K. J. B.; Grainger, W. F.; Hammett, D.; Hills, R. E.; Hobson, M. P.; Holler, C. M.; Hurley-Walker, N.; Jilley, R.; Jones, M. E.; Kaneko, T.; Kneissl, R.; Lancaster, K.; Lasenby, A. N.; Marshall, P. J.; Newton, F.; Norris, O.; Northrop, I.; Odell, D. M.; Petencin, G.; **Pober, J. C.**; Pooley, G. G.; Pospieszalski, M. W.; Quy, V.; Rodríguez-Gonzálvez, C.; Saunders, R. D. E.; Scaife, A. M. M.; Schofield, J.; Scott, P. F.; Shaw, C.; Shimwell, T. W.; Smith, H.; Taylor, A. C.; Titterington, D. J.; Velic, M.; Waldram, E. M.; West, S.; Wood, B. A.; Yassin, G.; AMI Consortium
2008, MNRAS, 391, 1545

Non-Peer Reviewed Publications

Including book chapters, published conference contributions, and white papers where I was a significant contributing author (i.e. excluding white papers where my authorship indicates endorsement, not contribution).

- *Solar system-scale VLBI to dramatically improve cosmological distance measurements*
  Matthew McQuinn, Miguel Morales, Casey McGrath, Alyssa Alvarez, Katelyn Glasby, T Joseph W Lazio, Kiyoshi Masui, Lyujia Pan, **Jonathan Pober**, Huangyu Xiao
  2026, final report for a Phase I NASA Innovative Advanced Concepts (NIAC) design study, arXiv:2602.09141

- *The FarView Low Frequency Radio Array on the Moon's Far Side: Science and Array Architecture*
  Burns, J. O., Bowman, J., Chang, T.-C., Hallinan, G., Hegedus, A., Mahesh, N., Nhan, B., **Pober, J.**, Polidan, R., Smith, W., & Thyagarajan, N.
  2026, final report for a Phase II NASA Innovative Advanced Concepts (NIAC) design study, arXiv:2601.16170

- *FARSIDE: A Low Radio Frequency Interferometric Array on the Lunar Farside*
  Hallinan, G., Burns, J., Lux, J., Romero-Wolf, A., Teitelbaum, L., Chang, T.-C., Kocz, J., Bowman, J., MacDowall, R., Kasper, J., Bradley, R., Anderson, M., Rapetti, D., Zhan, Z., Wu, W., Keane, J. T., Panning, M., Klesh, A., Nesnas, I., **Pober, J.**, Furlanetto, S., & Austin, A.
  2021, white paper submitted to the Planetary Science and Astrobiology Decadal Survey

- *A Lunar Farside Low Radio Frequency Array for Dark Ages 21-cm Cosmology*
  Burns, Jack; Hallinan, Gregg; Chang, Tzu-Ching; Anderson, Marin; Bowman, Judd; Bradley, Richard; Furlanetto, Steven; Hegedus, Alex; Kasper, Justin; Kocz, Jonathan; Lazio, Joseph; Lux, Jim; MacDowall, Robert; Mirocha, Jordan; Nesnas, Issa; **Pober, Jonathan**; Polidan, Ronald; Rapetti, David; Romero-Wolf, Andres; Slosar, Anže; Stebbins, Albert; Teitelbaum, Lawrence; White, Martin
  2021, response to DOE request for information, arXiv: 2103.08623

- *The Status of 21cm Interferometric Experiments*
  Trott, Cathryn M.; **Pober, Jonathan C.**
  2020, in A. Mesinger (Ed.), "The Cosmic 21-cm Revolution: Charting the first billion years of our Universe." Bristol: IOP Publishing Ltd.

- *NASA Probe Study Report: Farside Array for Radio Science Investigations of the Dark ages and Exoplanets (FARSIDE)*
  Burns, Jack O.; Hallinan, Gregg; Lux, Jim; Teitelbaum, Lawrence; Kocz, Jonathon; MacDowall, Robert; Bradley, Richard; Rapetti, David; Wu, Wenbo; Furlanetto, Steven; Austin, Alex; Romero-Wolf, Andres; Chang, Tzu-Ching; Bowman, Judd; Kasper, Justin; Anderson, Marin; Zhen, Zhongwen; **Pober, Jonathan**; Mirocha, Jordan
  2019, NASA Probe final study report, arXiv:1911.08649

- *A Roadmap for Astrophysics and Cosmology with High-Redshift 21 cm Intensity Mapping*
  The Hydrogen Epoch of Reionization Array: Aguirre, James E.; Beardsley, Adam P.; Bernardi, Gianni; Bowman, Judd D.; Bull, Philip; Carilli, Chris L.; Dai, WeiMing; DeBoer, David R.; Dillon, Joshua S.; Ewall-Wice, Aaron; Furlanetto, Steve R.; Gehlot, Bharat K.; Gorthi, Deepthi; Greig, Bradley; Hazelton, Bryna J.; Hewitt, Jacqueline N.; Jacobs, Daniel C.; Kern, Nicholas S.; Kittiwisit, Piyanat Kolopanis, Matthew; La Plante, Paul; Liu, Adrian; Ma, Yin-Zhe; Mdlalose, Mthokozisi; Mirocha, Jordan; Murray, Steven G.; Nunhokee, Chuneeta D.; Parsons, Aaron; **Pober, Jonathan C.**; Sims, Peter H.; Thyagarajan, Nithyanandan
  2019, APC whitepaper submitted to the Astro2020 Decadal Survey

- *Fundamental Cosmology in the Dark Ages with 21-cm Line Fluctuations*
  Furlanetto, Steven; Bowman, Judd D.; Mirocha, Jordan; **Pober, Jonathan**; Burns, Jack; Carilli, Chris L.; Munoz, Julian; Aguirre, James; Ali-Haimoud, Yacine; Alvarez, Marcelo; Beardsley, Adam; Becker, George; Breysse, Patrick; Bromm, Volker; Bull, Philip; Chang, Tzu-Ching; Chen, Xuelei; Chiang, Hsin; Cohn, Joanne; Davies, Frederick DeBoer, David; Dillon, Joshua; Doré, Olivier; Dvorkin, Cora; Fialkov, Anastasia; Hazelton, Bryna; Jacobs, Daniel; Karkare, Kirit; Kohn, Saul; Koopmans, Leon; Kovetz, Ely; La Plante, Paul; Lidz, Adam; Liu, Adrian; Ma, Yin-Zhe; Mao, Yi; Masui, Kiyoshi; Mesinger, Andrew; Murray, Steven; Parsons, Aaron; Saliwanchik, Benjamin; Sievers, Jonathan; Switzer, Eric; Thyagarajan, Nithyanandan; Trac, Hy; Visbal, Eli; Zaldarriaga, Matias
  2019, Science whitepaper submitted to the Astro2020 Decadal Survey

- *First Stars and Black Holes at Cosmic Dawn with Redshifted 21-cm Observations*
  Mirocha, Jordan; Jacobs, Daniel; Dillon, Josh; Furlanetto, Steve; **Pober, Jonathan**; Liu, Adrian; Aguirre, James; Ali-Haïmoud, Yacine; Alvarez, Marcelo; Beardsley, Adam; Becker, George; Bowman, Judd; Breysse, Patrick; Bromm, Volker; Burns, Jack; Chen, Xuelei; Chang, Tzu-Ching; Chiang, Hsin; Cohn, Joanne; DeBoer, David Dvorkin, Cora; Fialkov, Anastasia; Gnedin, Nick; Hazelton, Bryna; Kiyoshi, Masui; Kohn, Saul; Koopmans, Leon; Kovetz, Ely; La Plante, Paul; Lidz, Adam; Ma, Yin-Zhe; Mao, Yi; Mesinger, Andrei; Muñoz, Julian; Murray, Steven; Parsons, Aaron; Pritchard, Jonathan; Sievers, Jonathan; Switzer, Eric; Thyagarajan, Nithyanandan; Visbal, Eli; Zaldarriaga, Matias
  2019, Science whitepaper submitted to the Astro2020 Decadal Survey

- *Dark Cosmology: Investigating Dark Matter & Exotic Physics in the Dark Ages using the Redshifted 21-cm Global Spectrum*
  Burns, Jack O.; Bale, S.; Bassett, N.; Bowman, J.; Bradley, R.; Fialkov, A.; Furlanetto, S.; Hecht, M.; Klein-Wolt, M.; Lonsdale, C.; MacDowall, R.; Mirocha, J.; Munoz, Julian B.; Nhan, B.; **Pober, J.**; Rapetti, D.; Rogers, A.; Tauscher, K.
  2019, Science whitepaper submitted to the Astro2020 Decadal Survey

- *Results From PAPER/HERA*
  Pober, Jonathan C.
  2017, Proceedings of the International Astronomical Union 12 (S333), 87-91

Papers Currently in Peer Review

Includes both papers where I was a major contributor and papers where my authorship results from collaboration membership and/or status on a builder's list.

- *Mitigating Simulator Dependence in AI Parameter Inference for the Epoch of Reionization: The Importance of Simulation Diversity*
  Solt, J., **Pober, J. C.**, & Bach, S. H.
  2026, arXiv, arXiv:2601.05229

- *Detecting Towards a Robust Machine-Learning Pipeline for 21-cm Cosmology Data Analysis I: A Roadmap for Development and Demonstration of Robustness Against PSF Modeling Errors*
  Choudhury, M., & **Pober, J. C.**
  2025, arXiv, arXiv:2509.16280

Seminars, Colloquia & Non-Conference Presentations

2026 Seminar: Astrophysics Seminar Series, Center for Particle Cosmology, University of Pennsylvania
Seminar: MIT Haystack Observatory
Lecturer: The Simons Puerto Rico Winter School in Computational Physics

2025 Panel Participant: Scale Across the Disciplines, Models-Scale-Context: AI and the Humanities, Cogut Center, Brown University
Public Talk: Skyscrapers, Inc. (Amateur Astronomical Society of Rhode Island)
Public Talk: EcoTarium, Worcester, MA
Seminar: Beus Center for Cosmic Foundations, Arizona State University

2024 Seminar: IDEA Seminar, Brown Center for Theoretical Physics, Brown University
Public Talk: Astronomy on Tap, Providence, RI
Colloquium: School of Physics and Astronomy, Rochester Institute of Technology

2022 Seminar: Data Matters Seminar, Data Science Initiative, Brown University
Public Talk: AstroAssembly 2022, Seagrave Memorial Observatory

2021 Seminar: Department of Physics, Brown University, Career Development Talk (Virtual)
Seminar: Space Science at Drop Tower Seminar at ZARM, University of Bremen (Virtual)
Colloquium: Kavli Institute for Particle Astrophysics and Cosmology, Stanford University (Virtual)

2020 Webinar: Data Science Initiative Faculty for Faculty Research Talks, Brown University
Seminar: Nuclear, Particle, and Astrophysics Seminar, Yale University
Webinar: Packed Ultra-wideband Mapping Array (PUMA) Collaboration

2019 Colloquium: Astronomy Centre, University of Sussex
Seminar: Cavendish Astrophysics, University of Cambridge
Seminar: Jodrell Bank Centre for Astrophysics, University of Manchester

2018 Seminar: McGill Space Institute, McGill University Colloquium: Department of Physics, Brown University
Seminar: Department of Physics, Brown University
Public Talk: Skyscrapers, Inc. (Amateur Astronomical Society of Rhode Island)
Seminar: Institute for Theory and Computation, Harvard University

2016 Colloquium: Department of Astronomy, Wesleyan University
Seminar: Center for Particle Astrophysics, Fermilab
Colloquium: Department of Astronomy & Astrophysics, University of Toronto & Dunlap Institute
Seminar: Department of Physics & Astronomy, University of California, Riverside

Seminar: Kavli Institute for Cosmological Physics, University of Chicago

2015 Seminar: National Science Foundation Division of Astronomical Sciences (with Daniel Jacobs and Bryna Hazelton)
Seminar: Department of Physics, Brown University
Colloquium: Department of Physics, Bryn Mawr College

2014 Seminar: Dark Universe Science Center, University of Washington

2013 Seminar: CENPA, University of Washington
Public Talk: Peninsula Astronomical Society

2012 Seminar: Department of Physics, University of Washington
Seminar: Center for Astrophysics, Harvard University
Seminar: Department of Physics, MIT

2009 Public Talk: East Bay Astronomical Society

2008 Seminar: Radio Astronomy Laboratory, University of California, Berkeley

Conference Contributions

(37) *Training Simulations to Predict the First Stars and Their Effect*
Invited Contribution
AI Winter School, 2026, Center for the Fundamental Physics of the Universe, Brown University, Online

(36) *Science Cases for a Lunar Far Side Radio Array*
Invited Talk (Virtual)
Meeting of the "Committee on Key Non-Polar Destinations Across the Moon to Address Decadal-Level Science Objectives with Human Explorers: Panel on Heliophysics, Physics, and Physical Science," Space Studies Board of the National Academies, Beckman Center of the National Academies in Irvine, CA

(35) *RFI excision, spectrum evolution, and gap in-filling*
Invited Contribution
21cm Working Group Calibration Workshop, 2024, McGill University

(34) *Training Simulations to Predict the First Stars and Their Effect*
Invited Contribution
AI Winter Workshop, 2024, Center for the Fundamental Physics of the Universe, Brown University, Online

(33) *Radio Astrophysics from the Moon: A Software Suite for Lunar Radio Interferometry*
iPoster

American Astronomical Society Meeting #241, 2023, Seattle, WA

(32) *Fundamental Cosmology from the Cosmic Dark Ages: The Case for a Very-Low Frequency Lunar Radio Array*
Invited Contribution
Sixteenth Marcel Grossmann Meeting on Relativity, 2021, Online

(31) *Detecting the 21 cm Signal From the Epoch of Reionization*
Invited Review
Science at Low Frequencies VII, 2020, Online

(30) *The Impact of Calibration Errors on 21 cm Global Experiments: A Bayesian Case Study with EDGES*
Contributed Talk
Science at Low Frequencies VI, 2019, Arizona State University, Tempe, AZ

(29) *pyuvsim*
Contributed Talk
MWA Project Meeting, 2019, Brown University, Providence, RI

(28) *The Limitations of Redundant Calibration for Radio Interferometry and 21 cm Cosmology*
Contributed Talk
American Astronomical Society Meeting #234, 2019, St. Louis, MO

(27) *The Radio Astronomy Software Group*
Contributed Talk
American Astronomical Society Meeting #233, 2019, Seattle, WA

(26) *Advances in Data Analysis and Foreground Removal*
Invited Talk
Tremendous Radio Arrays, 2018, Brookhaven National Laboratory, Upton, NY

(25) *Design Optimization for Interferometric Space-Based 21-cm Power Spectrum Measurements*
Invited Talk
Low Radio Frequency Observations from Space, Meeting-in-a-Meeting,
American Astronomical Society Meeting #232, 2018, Denver, CO

(24) *What do 21 cm Experiments at the High-z Frontier Need from Simulations (in the near term)?*
Invited Talk
Modeling the Extragalactic Sky, 2018, Berkeley Center for Cosmological Physics, Berkeley, CA

(23) *Cross-Pollination Between 21 cm EoR Experiments*
Contributed Talk

Science at Low Frequencies IV, 2017, Sydney, Australia

(22) *Results from PAPER/HERA*
Invited Talk
IAU Symposium 333: Peering Towards Cosmic Dawn, 2017, Dubrovnik, Croatia

(21) *Calibration for 21 cm EoR*
Invited Talk
Realising SKA-Low, 2017, International Centre for Radio Astronomy Research, Curtin University, Perth, Australia

(20) *Lessons From PAPER and HERA*
Invited Talk (for Danny Jacobs)
Realising SKA-Low, 2017, International Centre for Radio Astronomy Research, Curtin University, Perth, Australia

(19) *What Can 21 cm EoR Teach Us About Observations at Lower z?*
Invited Talk
Cosmology with Neutral Hydrogen, 2017, Berkeley Center for Cosmological Physics, Berkeley, CA

(18) *Data Simulation for 21 cm Cosmology Experiments*
Contributed Talk
American Astronomical Society Meeting #229, 2017, Grapevine, TX

(17) *Connecting 21-cm Observations to Theoretical Models*
Invited Talk
Preparing for the 21-cm Cosmology Revolution, 2015, University of California, Irvine, CA

(16) *A Lower Limit on the $z = 8.4$ IGM Temperature From 21 cm Power Spectrum Observations*
Contributed Talk
The Olympian Symposium 2015: Cosmology and the Epoch of Reionization, 2015, Paralia Katerini's, Mount Olympus, Greece

(15) *A Lower Limit on the $z = 8.4$ IGM Temperature From 21 cm Power Spectrum Observations*
Contributed Talk
South By High Redshift, 2015, University of Texas, Austin, TX

(14) *New 21 cm Power Spectrum Upper Limits From PAPER II: Constraints on IGM Properties at $z = 7.7$*
Contributed Talk

American Astronomical Society Meeting #225, 2015, Seattle, WA

(13) *Bridging the 21 cm Gap*
Contributed Talk
NSF AAPF Symposium, 2015, Seattle, WA

(12) *Recent 21 cm Epoch of Reionization Power Spectrum Measurements from PAPER*
Invited Talk
Tempe 2014: Early Science from Low-Frequency Radio Telescopes, 2014, Arizona State University, Phoenix, AZ

(11) *What Will the Next Generation of 21 cm Experiments Teach Us About the Epoch of Reionization?*
Invited Talk
National Radio Science Meeting, 2014, Boulder, CO

(10) *Recent Results on Cosmic Reionization from PAPER*
Contributed Talk
The Radio Universe at Ger's (wave)-length, 2013, University of Groningen, Groningen, The Netherlands

(9) *Recent Results on Cosmic Reionization from PAPER*
Invited Talk
Reionization in the Red Centre: New Windows on the High Redshift Universe, 2013, Ayers Rock Resort, Yulara, NT, Australia

(8) *The BAO Broadband and Broad-beam (BAOBAB) Array*
Contributed Talk
American Astronomical Society Meeting #221, 2013, Long Beach, CA

(7) *Recent Results from the Precision Array for Probing the Epoch of Reionization [PAPER]*
Invited Talk
New Horizons for Science From the Moon, Meeting-in-a-Meeting, American Astronomical Society Meeting #220, 2012, Anchorage, AK

(6) *A New Technique for Primary Beam Calibration of Wide-Field, Drift-Scanning Antenna Elements*
Contributed Talk
National Radio Science Meeting, 2012, Boulder, CO

(5) *Recent Results from the Precision Array for Probing the Epoch of Reionization [PAPER]*
Contributed Talk
New Horizons for High Redshifts, 2011, Institute of Astronomy, Cambridge, UK

(4) *PAPER: Status and Recent Observations*
Contributed Talk (with Danny Jacobs)
Building on New Worlds, New Horizons: New Science from Sub-millimeter to Meter Wavelengths, 2011, Santa Fe, NM

(3) *The Precision Array for Probing the Epoch of Reionization*
Poster
American Astronomical Society Meeting #217, 2011, Seattle, WA

(2) *Results from 16 and 32 Antenna PAPER Deployments*
Invited Talk (for Aaron Parsons)
American Astronomical Society Meeting #217, 2011, Seattle, WA

(1) *Observing the Low-Frequency Sky with PAPER*
Contributed Talk
Cosmology in Northern California, 2010, Lawrence Berkeley National Labs, Berkeley, CA

Awards

Current:

2025 – 2028 *National Science Foundation*
"CDS&E: Finding the Physics that Matters: A New Framework for Interpretable and Robust Predictive Models for Astrophysics and Cosmology"
PI, Astronomy &Astrophysics Research Grant, Award #2509340, $582,954

2024 – 2027 *National Aeronautics and Space Administration*
"Building the Foundations for Huge-N Lunar Radio Interferometry"
PI, Roman Technology Fellowship, Award #80NSSC25K7366, $495,308

2022 – 2026 *National Science Foundation*
"Collaborative Research: SWIFT-SAT: RFI Detection Across Six Orders of Magnitude in Intensity: A Unifying Framework with Weakly Supervised Machine Learning"
Co-PI, Spectrum and Wireless Innovation enabled by Future Technologies, Award #2228989, $620,016 (includes $149,986 supplement from Spectrum Innovation Initiative)

Completed:

2024 – 2025 *National Aeronautics and Space Administration*
"Precision Radio Cosmology Data Analysis with Machine Learning"
PI, NASA RI EPSCoR Seed Award, $25,000

2023 – 2025 *National Aeronautics and Space Administration*
"FarView Observatory – A Large, In-Situ Manufactured, Lunar Far Side Radio Array" Co-PI, NASA Innovative Advanced Concepts, Phase II Study, Award #80NSSC23K0965, $51,615

2022 – 2025 *National Aeronautics and Space Administration*
"Foreground Removal for Space Based Neutral Hydrogen Cosmology"
PI, Astrophysics Research and Analysis, Award #80NSSC22K1745, $347,743

2021 – 2025 *National Science Foundation*
"Collaborative Research: 21 cm Reionization Science with the MWA"
PI, Astronomy & Astrophysics Research Grant, Award #2106510, $534,990 (includes $89,121 supplement from Advancing Discovery with AI-Powered Tools [ADAPT] in the Mathematical and Physical Sciences)

2021 – 2023 *Brown University*
"Finding the Physics that Matters in Astrophysical and Astro-Particle Analyses with Interpretable Machine Learning"
Co-PI, OVPR Seed Award, $67,000

2019 - 2023 *National Science Foundation*
"CDS&E: A Bayesian Approach to Detecting the Cosmological 21 cm Epoch of Reionization Signal"
PI, Astronomy & Astrophysics Research Grant, Award #1907777, $376,594 (includes $61,780 supplement from Spectrum Innovation Initiative)

2018 – 2022 *National Science Foundation*
"Collaborative Research: Elements: Software: Accelerating Discovery of the First Stars through a Robust Software Testing Infrastructure"
PI, Cyberinfrastructure for Sustained Scientific Innovation, Award #1835120, $250,933

2018 – 2021 *National Aeronautics and Space Administration*
"A Science-Driven Performance Specification Framework for Space-Based Neutral Hydrogen Cosmology Experiments"
PI, Astrophysics Research and Analysis, Award #80NSSC18K0389, $216,175

2019 *Brown University Data Science Initiative*
"Advancing Neural Network Analysis of Cosmological Data"
Co-PI, Data Science Grants @ Brown, $13,741

2016 – 2019 *National Science Foundation*
"Illuminating our Early Universe with HERA, the Hydrogen Epoch of Reionization Array"
Co-PI, Mid-Scale Innovations Program in Astronomical Sciences, Award #1636646, $471,666

2016 - 2019 *National Science Foundation*
"Collaborative Research: From 21 cm Observations to Precision Reionization Science"
PI, Astronomy & Astrophysics Research Grant, Award #1613040, $222,271

2013 – 2015 *National Science Foundation*
"First Science from the Epoch of Reionization with the 21cm Line"

PI, Astronomy and Astrophysics Postdoctoral Fellow, Award 1302774, $267,000

Other:

2023	*Brown University*
	Early Career Research Achievement Award, Physical Sciences
2022	*National Aeronautics and Space Administration*
	Nancy Grace Roman Technology Fellowship in Astrophysics
2019	*Brown University*
	Henry Merritt Wriston Fellowship
2018	*Brown University*
	Richard B. Salomon Faculty Research Award
2017	*The Country School*
	Distinguished Alumni Award
2013	*University of California, Berkeley*
	Mary Elizabeth Uhl Prize for Outstanding Scholarly Achievement
2012	*University of California, Berkeley*
	Robert A. Trumpler Graduate Student Excellence Award
2007 - 2008	*Cambridge Overseas Trusts*
	Cambridge Overseas Trust Scholarship
2007	*Haverford College*
	The Louis. B Green Prize in Astronomy
2007	*Haverford College*
	The Charles Schwartz Memorial Prize in Philosophy

Service

Department/University:

Current:

2024 – present	Exploratory Advisor

Previous:

2025	Department Comprehensive Exam Committee
2024 – 2025	Department Admissions Committee (Chair)
2023	Ad Hoc Department Comprehensive Exam Evaluation Committees
2022	Ad Hoc Department Task Force for Evaluating the Master's Program
2021 – 2025	Department Diversity and Inclusion Action Plan Committee
2021 – 2024	Standing Committee on the Academic Code
2020	Department Admissions Committee
2019 – 2020, 2021 – 2022,	

2023 – 2024	Department PhD Advisor
2018 – 2025	Research Computing Advisory Committee
2018 – 2020	Churchill Fellowship Review Committee
2018 – 2019	Ad Hoc Computational Physics Committee
2017 – 2019, 2022 – 2024	Department Masters Advisor
2017 – 2019, 2021	Goldwater Fellowship Review Committee
2016 – 2017, 2021 – 2023	Department Colloquium Committee
2016 – 2018	Curriculum Committee
2016 – 2017, 2018 – 2019	Qualifying Exam Committee

Professional:

Referee for ApJ, ApJL, MNRAS, MNRAS Letters, Experimental Astronomy, and PRL

Proposal reviewer for National Science Foundation (NSF, 4x); National Aeronautics and Space Administration (NASA); National Radio Astronomy Observatory (NRAO, 4x); Oak Ridge Associated Universities (NASA Postdoctoral Program, 2x); European Research Council; Natural Sciences and Engineering Research Council (Canada); Netherlands Organisation for Scientific Research (NWO); and National Science Centre (Poland, 2x)

Project reviewer for NASA Innovative Advanced Concepts (NIAC)

Textbook Reviewer for IOP and Cambridge University Press

"Red Team" Reviewer for DARE Satellite Mission

External Thesis Examiner/Dissertation Committee Member for McGill University, University of Groningen, University of Melbourne, & University of Rhodes

Organization:

Scientific Organizing Committee, Science at Low Frequencies IX, Amsterdam, The Netherlands, Dec. 11 – 15, 2023

Scientific Organizing Committee, MWA Project Meeting, Perth, Australia, Jul. 25 – 26, 2023

Organizer and Session Chair, Low Frequency Radio Astronomy for Cosmic Origins, Splinter Session at the 237th meeting of the American Astronomical Society, Online, Jan. 13, 2021

Scientific Organizing Committee, Hydrogen Epoch of Reionization Array Project Meeting, Cambridge, UK, Sep. 25 – 27, 2019

Scientific and Local Organizing Committee, Murchison Widefield Array Project Meeting, Providence, RI, Jun. 19 – 21, 2019

Local Organizing Committee, Identification of Dark Matter 2018, Providence, RI, Jul. 23 – 27, 2018

Scientific Organizing Committee, HI 21cm Cosmology Meeting, Cambridge, UK, Jun. 27 – Jul 1, 2016

Scientific Organizing Committee, National Science Foundation Astronomy & Astrophysics, Fellows' Symposium, Seattle, WA, Jan. 3 – 4, 2015

Membership

Research Collaboration:

MWA Collaboration (Deputy chair & US Representative to the Executive Board)

MWA EoR Collaboration (Senior member)

HERA Collaboration (Collaborator)

Teaching

Fall 2024 – 2025	Physics 0270, Astronomy and Astrophysics
Spring 2024	Physics 1250, Stellar Structure and the Interstellar Medium
Fall 2019, 2021 – 2023	Physics 0040, Basic Physics B
Spring 2018 – 2020, 2025	Physics 0220, Astronomy
Spring 2017, 2023	Physics 2280, Cosmology and Astrophysics
Fall 2016 – 2018	Physics 1510, Advanced Electromagnetic Theory

Advising

Undergraduate (24 students):

- Ye Won Byun ’21 (thesis student)
- Zoë Canaras ’18 (thesis student)
- Michelle Miller ’18 (thesis student)
- Samantha McGraw ’21 (thesis student)
- Daniel Quinter ’24 (thesis student)
- Halle Purdom ’20 (thesis student)
- Grant Rutherford ’21 (thesis student)
- Jasper Solt ’21 (thesis student)
- Dara Storer ’18 (thesis student)
- August Berklas (current student)
- Jack Butler ’18
- Carlos Gomez ’17
- Chloe Hequet ’17
- Shweta Majumder ’21
- Philip Mathieu ’17
- Katherine Vasquez ’20
- Julia Estrada (visiting summer student 2018)
- Hal France (visiting summer student 2021)
- Alexander Hawksley (visiting summer student 2022)
- Chad McDermott (visiting summer student 2018)
- Kyle Miller (visiting summer student 2022)
- Jack Paulson (visiting summer student 2021)
- Natalie Sanborn (visiting summer student 2021)

- Erika Sanchez (visiting summer student 2018)
- Sigfredo Saravia (visiting summer student 2022)

Master's (8 students):

- Stellan Bechtold '22
- Julian Cortes (current student)
- Xiaorui Lu '24
- Jared Nash (current student)
- Frank Ning '24
- Ruijie Shi '23
- Nathan Wolthuis '24
- Zheng Zhang '20

PhD (11 students):

- Jacob Burba '22
- Mitchell Burdorf (current student)
- Jade Ducharme (current student)
- Joshua Kerrigan '19
- Theodora Kunicki '24
- Aidan LaBella (current student in Computer Science; co-advisor with Prof. Stephen Bach)
- Adam Lanman '19.5
- Morgan Lee (current student)
- Wenyang Li '19
- Daniya Seitova '22
- Willow Smith (current student)
- Jasper Solt (current student)

Postdoctoral (3 fellows):

- Madhurima Choudhury
- Shawn Dubey
- Peter Sims