Biographical Sketch: Aaron Parsons

Education/Professional Preparation

(2009–2011) U. of California, Berkeley (UCB). NSF Astronomy and Astrophysics Postdoctoral Fellow
(2009–2011) UCB Space Sciences Laboratory (SSL). Honorary Townes Postdoctoral Fellow
(2004–2009) UCB. Ph.D. Astrophysics
(1998–2002) Harvard U. Double B.A. Physics and Mathematics

Appointments

(2011–) Assistant Professor, UCB
(2009–2011) NSF Astronomy and Astrophysics Postdoctoral Fellowship, UCB
(2009–2011) Honorary Townes Postdoctoral Fellowship, SSL
(2007–2009) NAIC Pre-Doctoral Researcher, Arecibo Observatory, PR
(2005–2009) Graduate Student Researcher, UCB
(2002–2004) Junior Development Engineer, SSL

Products Most Closely Related to Project

A. Parsons, A. Liu, J. Aguirre, Z. Ali, R. Bradley, C. Carilli, D. DeBoer, M. Dexter, N. Gugliucci, D. Jacobs, P. Klima, D. MacMahon, J. Manley, D. Moore, J. Pober, I. Stefan, W. Walbrugh, "New Limits on 21cm EoR From PAPER-32 Consistent with an X-Ray Heated IGM at z=7.7," *ArXiv:1304.4991*, Submitted to *Astrophysical Journal*. April 2013.

Pober, J., A. Parsons, D. DeBoer, P. McDonald, M. McQuinn, J. Aguirre, Z. Ali, R. Bradley, T.-C. Chang, and M. Morales, "The Baryon Acoustic Oscillation Broadband and Broad-beam Array: Design Overview and Sensitivity Forecasts," *Astronomical Journal*. 145, 65, January 2013.

Parsons, A., J. Pober, J. Aguirre, C. Carilli, D. Jacobs, D. Moore, "A Per-Baseline, Delay-Spectrum Technique for Accessing the 21cm Cosmic Reionization Signature," *Astrophysical Journal*. 756. 165P, September 2012.

Parsons, A., J. Pober, M. McQuinn, D. Jacobs, J. Aguirre, "A Sensitivity and Array-Configuration Study for Measuring the Power Spectrum of 21cm Emission from Reionization," *Astrophysical Journal*. 753, 81P, July 2012.

Parsons, A., D. Backer, H. Chen, P. Droz, T. Filiba, D. MacMahon, J. Manley, P. McMahon, A. Parsa, A. Siemion, D. Werthimer, M. Wright. "A Scalable Correlator Architecture Based on Modular FPGA Hardware, Reusable Gateware, and Data Packetization," *PASP*, 120, 873, 1207-1221. Nov. 2008.

Other Significant Products

Pober, J., A. Parsons, J. Aguirre, Z. Ali, R. Bradley, C. Carilli, D. DeBoer, M. Dexter, N. Gugliucci, D. Jacobs, D. MacMahon, J. Manley, D. Moore, I. Stefan, W. Walbrugh, "Opening the 21cm EoR Window: Measurements of Foreground Isolation with PAPER," *Astrophysical Journal Letters*, 768 (2), L36. May 2013.

Parsons, A., D. Backer, R. Bradley, J. Aguirre, E. Benoit, C. Carilli, G. Foster, N. Gugliucci, D. Herne, D. Jacobs, M. Lynch, J. Manley, C. Parashare, D. Werthimer, M. Wright. "The Precision Array for Probing the Epoch of Re-ionization: Eight Station Results," *AJ*, 139, 1468-1480, Apr. 2010.

Parsons, A., D. Backer. "Calibration of Low-Frequency, Wide-Field Radio Interferometers Using Delay/Delay-Rate Filtering" $\widehat{\text{A}}$J, 138, 1, 219-226. July 2009.

Backer, D., J. Aguirre, J. Bowman, R. Bradley, F. Briggs, C. Carilli, S. Furlanetto, L. Greenhill, J. Hewitt, C. Lonsdale, M. Morales, A. Parsons, S. Tingay, A. Whitney. "HERA Hydrogen Epoch of Reionization Arrays," *Astro2010 Decadal Survey White Paper in RMS: Radio and Millimeter/Submillimeter Facilites*, Apr. 2009.

Parsons, A., D. Backer, C. Chang, D. Chapman, H. Chen, P. Crescini, C. de Jesus, C. Dick, P. Droz, D. MacMahon, K. Meder, J. Mock, V. Nagpal, B. Nikolic, A. Parsa, B. Richards, A. Siemion, J. Wawrzynek, D. Werthimer, M. Wright. "PetaOp/Second FPGA Signal Processing for SETI and Radio Astronomy (Invited Paper)," *Proc. Asilomar Conf. on Signals and Systems, Pacific Grove, CA*. Nov. 2006.

Synergistic Activities

Developer of a cross-disciplinary undergraduate lab class focusing on the principles of radios, signal processing, and wireless communications.

Co-founder and advisory board member for the Collaboration for Astronomy Signal Processing and Electronics Research (CASPER), which organizes the development of open-source hardware and signal-processing libraries for community use.

Author of the open-source software toolkit "Astronomical Interferometry in PYthon" (AIPY), with documentation and tutorials, providing a flexible environment for interferometric data analysis.

Creator and maintainer of "AstroBaki," an online repository for public-domain pedagogical materials such as lecture notes, instructional videos, laboratory exercises, and homework problems. Contributor of the foundational set of lecture notes for introductory graduate astrophysics classes.

Collaborators and Other Associations

James Aguirre [*U. Penn*], Zaki Ali [*UCB*], Richard Bradley [*U. Virginia (UVa); National Radio Astronomy Obs. (NRAO), Charlottesville*], Chris Carilli [*NRAO, Socorro*], Tzu-Ching Chang [*ASIAA, Taiwan*], David DeBoer [*UCB*], Terry Filiba [*UCB*], Griffin Foster [*Oxford*], Nicole Gugliucci [*UVa*], Daniel Jacobs [*Ariz. State U.*], Adrian Liu [*UCB*], David MacMahon [*UCB*], Jason Manley [*SKA-SA*], Patrick McDonald [*LBNL*], Matthew McQuinn [*UCB*], David Moore [*U. Penn*], Miguel Morales [*UW*], Chaitali Parashare [*UVa*], Jonathan Pober [*UCB*], Chris Salter [*Arecibo Obs.*], Irina Stefan [*U. Cambridge*], Daniel Werthimer [*UCB*], Melvyn Wright [*UCB*]

Advisors and Post-Doctoral Sponsors

Donald Backer [*UCB*], Daniel Werthimer [*UCB*], Chris Salter [*Arecibo Obs.*]