

Zubair Abdulla

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I am a recent PhD graduate in astrophysics from the University of Chicago with a wide-ranging background in lab work, radio astronomy, data reduction, data analysis, and imaging. My goal is to join an ambitious engineering or R&D project with a positive public impact where I can apply my unique experience from a broad research background and continue to learn as part of a collaboration.

Education

- **University of Chicago** **Chicago**
2009–2018
PhD/MA in Astronomy and Astrophysics, Advisor: John Carlstrom
Thesis: Constraining the Thermal Contents of X-ray Cavities in Galaxy Clusters with Sunyaev Zel'dovich Effect Observations
- **University of Illinois, Urbana-Champaign** **Urbana-Champaign**
2005–2009
B. Eng in Engineering Physics

Experience

Research Experience

- **Research Assistant** 2010–2018
University of Chicago, CARMA-SZ collaboration
Instrumentation: Lead a project involving the building of ten 30 GHz heterodyne radio receivers for integration with the Combined Array for Research in Millimeter Astronomy, an interferometric radio telescope in Cedar Flat, CA (mmarray.org). In 2012–2013, I spent ~ 3 months on-site installing, aligning, and debugging the instrument in preparation for commissioning observations in 2013.
Data Analysis: My PhD thesis project made use of the data acquired from the newly built 30 GHz CARMA instrument to study the nature of the most powerful outbursts in the universe. I worked with large sets of interferometric data from CARMA, which included noise analysis, calibration, imaging and deconvolution analysis, and modeling.

Other Experience

- **Teaching Assistant** 2009–2010
University of Chicago
Taught introductory astrophysics and cosmology and instructed lab sessions. I additionally maintained an undergraduate lab that used state-of-the-art technology to measure the Cosmic Microwave Background in following years (2010–2017)
- **Student Mentor** 2010–2016
University of Chicago
Mentored and supervised the work of a visiting graduate student and several undergraduates in both data analysis and lab work: Jonathan Florez (Fisk-Vanderbilt Master's to PhD Bridge Program) and Stephan Reyes, Mike Karfunkle, and Jack Orlowski Scherer (University of Chicago undergraduates). Jonathan, Jack, and Stephen have continued on to graduate programs.
- **Athletic Coach** 2010–2018
University of Chicago
Coached the men's ultimate frisbee team at the University of Chicago, teaching sport-specific skills, athleticism, and sportsmanship; Great Lakes Region quarterfinalists (2011, 2013, 2016), Semi-finalist (2014, 2018), and Finalist (2017)

Technical skills

- **Programming:** Python, Matlab, TeX; Also familiarity with: C++, IDL
- **Lab work:** soldering, cryogenics, basic machining, RF electronics
- **Data Analysis:** statistical analysis, modeling, astronomical imaging, Fourier analysis, interferometry

References

- **Dr. John E. Carlstrom**
University of Chicago
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- Additional references available upon request