

Tarraneh Eftekhari

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Education

- 2015 - Present **Ph.D. Astronomy & Astrophysics**, HARVARD UNIVERSITY.
2010–2014 **B.S. Astrophysics**, UNIVERSITY OF NEW MEXICO, GPA – 3.85.

Experience

- 2015 - Present **Research Assistant**, HARVARD UNIVERSITY, Cambridge.
- Modeled synchrotron emission from relativistic jets produced by tidal disruption events
 - Designed a low-noise amplifier for 21-cm cosmology observations at low frequencies
- 2012 - 2015 **Research Assistant**, UNIVERSITY OF NEW MEXICO, Albuquerque.
- Operated Long Wavelength Array (LWA) Telescope
 - Built electronics for Large-Aperture Experiment to Detect the Dark Ages (LEDA):
 - Built modified front end boards for LWA dipole antennas in New Mexico and at Owens Valley Radio Observatory in California
 - Observed and analyzed Crab Giant Pulses for seven months for departmental Honors thesis
 - Helped with the construction of the second LWA station
 - Tested analog receiver boards for second LWA station
- Summer 2014 **Summer Student**, ASTRON/JIVE, Netherlands.
- Developed code for automating first time ever simultaneous high-band and low-band observations
 - Observed Crab Pulsar and utilized rotation measure synthesis in order to determine magnetic field due to the solar wind

Outreach Activities

- 2016 **Mentor**, *Science Club for Girls*.
2016 **Digital Mentor**, *YouthAstroNet*.
2013 - 2015 **Telescope Operator**, *UNM Campus Observatory*, Friday Night Open Skies.

Extracurricular Activities

- 2014 **Treasurer**, SOCIETY OF PHYSICS STUDENTS, University of New Mexico.

Awards

- 2014 New Mexico Space Grant Consortium Scholarship
2013 University of New Mexico Undergraduate Research Award

Affiliations

- 2014 American Astronomical Society
2014 Sigma Pi Sigma
2014 Society of Physics Students

Publications

- 2016 *A Low Frequency Survey of Giant Pulses from the Crab Pulsar*, **T. Eftekhari**, G.B. Taylor, & K. Stovall – *Submitted to ApJ*
- 2016 *Bayesian Constraints on the Global 21-cm Signal from the Cosmic Dawn*, G. Bernardi, J.T.L. Zwart, D. Price, L.J. Greenhill, A. Mesinger, J. Dowell, **T. Eftekhari**, S.W. Ellingson, J. Kocz, F. Schinzel. arXiv: arXiv:1606.06006 – *MNRAS*
- 2014 *Digital Signal Processing using Stream High Performance Computing: A 512-input Broadband Correlator for Radio Astronomy*, J. Kocz, L.J. Greenhill, B.R. Barsdell, D. Price, G. Bernardi, S. Bourke, M.A. Clark, J. Craig, M. Dexter, J. Dowell, **T. Eftekhari**, S. Ellingson, G. Hallinan, J. Hartman, A. Jameson, D. MacMahon, G. Taylor, F. Schinzel, D. Werthimer. arXiv:1411.3751 – *JAI*
- 2014 *Pulsar Observations Using the First Station of the Long Wavelength Array and the LWA Pulsar Data Archive*, K. Stovall, P. S. Ray, J. Blythe, J. Dowell, **T. Eftekhari**, A. Garcia, T. J. W. Lazio, M. McCrackan, F. K. Schinzel, G. B. Taylor. arXiv:1410.7422 – *ApJ*

Presentations

- 2016 *Observations of Heliospheric Faraday Rotation (FR) and Interplanetary Scintillation (IPS): Steps Towards Investigating Bz Propagation Between the Sun and the Earth*, M.M. Bisi, R.A. Fallows, C. Sobey, **T. Eftekhari**, E.A. Jensen, B.V. Jackson, H. Yu, P.P. Hick, D. Odstrcil, M. Tokumaru, M.T. Oyuki Chang
- 2015 *A Low Frequency Survey of Giant Pulses from the Crab Pulsar*, **T. Eftekhari**, G.B. Taylor, & K. Stovall – *American Astronomical Society 225th Meeting*
- 2015 *Observing Rats, Giants, and Ghosts below 100 MHz with the LWA*, G.B. Taylor, M.J. McCracken, **T. Eftekhari**, K. Obenberger, J. Dowell, K. Stovall – *American Astronomical Society 225th Meeting*
- 2014 *Faraday Rotation (FR) and Interplanetary Scintillation (IPS) Case Studies Using the Low Frequency Array (LOFAR)*, M.M. Bisi, B.V. Jackson, R.A. Fallows, **T. Eftekhari**, E.A. Jensen, D. Odstrcil, M. Tokumaru, P.T. Gallagher, D.F. Webb, P.K. Manoharan, A. Gonzalez-Esparza, C. Sobey, M.A. Hapgood, R.A. Harrison, J.A. Davies, and Hsiu-Shan Yu – *American Geophysical Union Fall Meeting*
- 2014 *Complementary Ground-Based Radio Observations to Space-Weather Science and Operations Missions Near to or Around L_5* , M.M. Bisi, R.A. Fallows, C. Sobey, **T. Eftekhari**, E.A. Jensen, B.V. Jackson, H.-S. Yu, D.J. Gershman, J.M. Raines and D. Odstrcil – *L5 Consortium Meeting*

Computer Skills

Intermediate	HTML, MATLAB, Genesys RF & Microwave Design
Advanced	PYTHON, L ^A T _E X, Linux, git, Microsoft Office
Astronomical Software	CASA, CIAO, XSPEC, DS9

Languages

Farsi **Intermediate**

Conversationally fluent