

Tarraneh Eftekhari

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EDUCATION

HARVARD UNIVERSITY Ph.D. , Astronomy and Astrophysics	2015–
HARVARD UNIVERSITY A.M. , Astronomy and Astrophysics	2015–2017
UNIVERSITY OF NEW MEXICO B.S. Astrophysics, <i>Magna Cum Laude</i> Minor in Mathematics	2010–2014

EMPLOYMENT

HARVARD UNIVERSITY Graduate Research Assistant Advisor: Edo Berger	2015–
HARVARDX Content Developer <i>Science of the Physical Universe 30: Super-Earths and Life</i> <i>Fundamentals of Neuroscience Part 3: The Brain</i>	2017–
HARVARD UNIVERSITY Laboratory Assistant Advisor: Lincoln Greenhill <i>Development of a Low-Noise Amplifier for the Large Aperture Experiment to Detect the Dark Ages</i>	2015–2016
UNIVERSITY OF NEW MEXICO Undergraduate Research Assistant Advisor: Greg Taylor <i>A Low Frequency Survey of Giant Pulses from the Crab Pulsar</i>	2013–2015
LONG WAVELENGTH ARRAY RADIO TELESCOPE Telescope Operator	2013–2015
NETHERLANDS INSTITUTE FOR RADIO ASTRONOMY (ASTRON) Summer Research Assistant Advisor: Richard Fallows <i>Heliospheric Faraday Rotation from the Crab Pulsar</i>	2014

TEACHING

HARVARD UNIVERSITY	2018
Head Teaching Fellow	
<i>Science of the Physical Universe 22: From the Big Bang to the Brontosaurus and Beyond</i>	
 HARVARD UNIVERSITY	2017
Teaching Fellow	
<i>Science of the Physical Universe 22: From the Big Bang to the Brontosaurus and Beyond</i>	

AWARDS

NSF Graduate Research Fellowship Honorable Mention	2017
Bok Center Certificate of Distinction in Teaching, <i>Harvard University</i>	2017
New Mexico Space Grant Consortium Scholarship	2014
University of New Mexico Undergraduate Research Award	2013

SERVICE & OUTREACH

BEACON HILL SEMINARS, UNVEILING THE COSMOS	2018–
Seminar Coordinator	
 COMSciCON	2018
Local Organizing Committee	
 CAMBRIDGE EXPLORES THE UNIVERSE	2018
Volunteer with Chandra VR Table	
 NATIONAL COLLEGIATE RESEARCH CONFERENCE	2018
Poster Judge	
 HARVARD SCIENCE IN THE NEWS	2016–
Waves Team Blog Writer	
DayCon Lecture Series Chair	
 CHANDRA X-RAY OBSERVATORY	2017
Peer Review Facilitator	
 WELLESLEY COLLEGE	2017
Graduate Student Panel	
 SCIENCE CLUB FOR GIRLS	2016–2017
Leaders in STEM Mentor	
Tech Team Mentor	
 YOUTHASTRONET	2016–2017
Digital Mentor	

HARVARD UNIVERSITY WOMEN IN STEM
Mentor

2016–2017

UNM CAMPUS OBSERVATORY
Telescope Operator

2013–2015

TELESCOPE TIME ALLOCATIONS (AS PI)

VERY LARGE ARRAY	21 hr
CHANDRA	105 ks
ALMA	15 hr

TECHNICAL SKILLS

Computer Languages	PYTHON, L ^A T _E X, HTML, MATLAB
Astronomical Software	CASA, CIAO, XSPEC, DS9, Genesys RF & Microwave Design

PRESENTATIONS

T. Eftekhari, *Uncovering the Mystery of Fast Radio Bursts* [New Hampshire Astronomical Society]

T. Eftekhari et al., *Radio Monitoring of the Tidal Disruption Event Swift J164449.3+573451* [Jerusalem Winter School in Theoretical Physics, The Physics of Astronomical Transients]

T. Eftekhari & E. Berger, *On the Association of Fast Radio Bursts and Their Hosts* [Workshop on Fast Radio Bursts, McGill University, 2017]

T. Eftekhari, E. Berger, & B. A. Zauderer, *Longterm Multi-wavelength Monitoring of the Relativistic Tidal Disruption Event Swift J164449.3+573451*, [American Astronomical Society 229th Meeting 2017]

T. Eftekhari, *Tidal Disruption Events: A Multi-Wavelength Approach*, [Time-Domain Astrophysics: Incorporating Observations, Theory, and Computation in the American Northeast, 2016]

T. Eftekhari, G.B. Taylor, & K. Stovall, *A Low Frequency Survey of Giant Pulses from the Crab Pulsar*, [American Astronomical Society 225th Meeting 2015]

PUBLICATIONS

18. **T. Eftekhari**, E. Berger, B. A. Zauderer, et al., “*Radio Monitoring of the Tidal Disruption Event Swift J164449.3+573451. III. Late-time Jet Energetics and a Deviation from Equipartition*”, 2017, *Submitted to ApJ*
17. C. Guidorzi, R. Margutti, D. Brout, D. Scolnic, W. Fong, K. D. Alexander, P. S. Cowperthwaite, J. Annis, E. Berger, P. K. Blanchard, R. Chornock, D. L. Coppejans, **T. Eftekhari**, J. A. Frieman, D. Huterer, M. Nicholl, M. Soares-Santos, G. Terreran, V. A. Villar, P. K. G. Williams, 2017, “Improved Constraints on H0 from a combined analysis of gravitational-wave and electromagnetic emission from GW170817”, 2017, *Submitted to ApJL*
16. B. P. Abbott et al., “A gravitational-wave standard siren measurement of the Hubble constant”, 2017, *Nature*
15. P. S. Cowperthwaite, E. Berger, V. A. Villar, B. D. Metzger, M. Nicholl, R. Chornock, P. K. Blanchard, W. Fong, R. Margutti, M. Soares-Santos, K. D. Alexander, S. Allam, J. Annis, D. Brout, D. A. Brown, R. E. Butler, H.-Y. Chen, H. T. Diehl, Z. Doctor, M. R. Drout, **T. Eftekhari**, B. Farr, D. A. Finley, R. J. Foley, J. A. Frieman, C. L. Fryer, J. Garca-Bellido, M. S. S. Gill, J. Guillochon, K. Herner, D. E. Holz, D. Kasen, R. Kessler, J. Marriner, T. Matheson, E. H. Neilsen, Jr., E. Quataert, A. Palmese, A. Rest, M. Sako, D. M. Scolnic, N. Smith, D. L. Tucker, P. K. G. Williams, E. Balbinot, J. L. Carlin, E. R. Cook, F. Durret, T. S. Li, P. A. A. Lopes, A. C. C. Loureno, J. L. Marshall, G. E. Medina, J. Muir, R. R. Muoz, M. Sauseda, D. J. Schlegel, L. F. Secco, A. K. Vivas, et al., “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. II. UV, Optical, and Near-IR Light Curves and Comparison to Kilonova Models”, 2017, *ApJ*, 848, L17
14. M. Nicholl, E. Berger, D. Kasen, B. D. Metzger, J. Elias, C. Briceno, K. D. Alexander, P. K. Blanchard, R. Chornock, P. S. Cowperthwaite, **T. Eftekhari**, W. Fong, R. Margutti, V. A. Villar, P. K. G. Williams, W. Brown, J. Annis, A. Bahramian, D. Brout, D. A. Brown, H.-Y. Chen, J. C. Clemens, E. Dennyhy, B. Dunlap, D. E. Holz, E. Marchesini, F. Massaro, N. Moskowicz, I. Pelisoli, A. Rest, F. Ricci, M. Sako, M. Soares-Santos, J. Strader, “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. III. Optical and UV Spectra of a Blue Kilonova From Fast Polar Ejecta”, 2017, *ApJ*, 848, L18
13. R. Chornock, E. Berger, D. Kasen, P. S. Cowperthwaite, M. Nicholl, V. A. Villar, K. D. Alexander, P. K. Blanchard, **T. Eftekhari**, W. Fong, R. Margutti, P. K. G. Williams, J. Annis, D. Brout, D. A. Brown, H.-Y. Chen, M. R. Drout, R. J. Foley, J. A. Frieman, C. L. Fryer, D. E. Holz, T. Matheson, B. D. Metzger, E. Quataert, A. Rest, M. Sako, D. M. Scolnic, N. Smith, M. Soares-Santos, “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. IV. Detection of Near-infrared Signatures of r-process Nucleosynthesis with Gemini-South”, 2017, *ApJ*, 848, L19
12. Raffaella Margutti, E. Berger, W. Fong, C. Guidorzi, K. D. Alexander, B.D. Metzger, P. K. Blanchard, P. S. Cowperthwaite, R. Chornock, **T. Eftekhari**, M. Nicholl, V. A. Villar, P. K. G. Williams, J. Annis, D. A. Brown, H.Y. Chen, Z. Doctor, J. A. Frieman, D. E. Holz, M. Sako, M. Soares-Santos, “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. V. Rising X-ray Emission from an Off-Axis Jet”, 2017, *ApJ*, 848, L20
11. K. D. Alexander, E. Berger, W. Fong, P. K. G. Williams, C. Guidorzi, R. Margutti, B. D. Metzger, J. Annis, P. K. Blanchard, D. Brout, D. A. Brown, H.-Y. Chen, R. Chornock, P. S. Cowperthwaite, M. Drout, **T. Eftekhari**, J. Frieman, D. E. Holz, M. Nicholl, A. Rest, M. Sako, M. Soares-Santos, V. A. Villar, “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. VI. Radio Constraints on a Relativistic Jet and Predictions for Late-Time Emission from the Kilonova Ejecta”, 2017, *ApJ*, 848, L21
10. P. K. Blanchard (Harvard/CfA), E. Berger, W. Fong, M. Nicholl, J. Leja, C. Conroy, K. D. Alexander, R. Margutti, P. K. G. Williams, Z. Doctor, R. Chornock, V. A. Villar, P. S. Cowperthwaite,

- J. Annis, D. Brout, D. A. Brown, H.-Y. Chen, **T. Eftekhari**, J. A. Frieman, D. E. Holz, B. D. Metzger, A. Rest, M. Sako, M. Soares-Santos, “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. VII. Properties of the Host Galaxy and Constraints on the Merger Timescale”, 2017, *ApJ*, 848, L22
9. W. Fong (Hubble Fellow, Northwestern/CIERA), E. Berger, P. K. Blanchard, R. Margutti, P. S. Cowperthwaite, R. Chornock, K. D. Alexander, B. D. Metzger, V. A. Villar, M. Nicholl, **T. Eftekhari**, P. K. G. Williams, J. Annis, D. Brout, D. A. Brown, H.-Y. Chen, Z. Doctor, H. T. Diehl, D. E. Holz, A. Rest, M. Sako, M. Soares-Santos, “The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. VIII. A Comparison to Cosmological Short-duration Gamma-ray Bursts”, 2017, *ApJ*, 848, L23
8. D.C. Price, L.J. Greenhill, A. Fialkov, G. Bernardi, H. Garsden, B.R. Barsdell, J. Kocz, M.M. Anderson, S.A. Bourke, J. Craig, M.R. Dexter, J. Dowell, M.W. Eastwood, **T. Eftekhari**, S.W. Ellingson, G. Hallinan, J.M. Hartman, R. Kimberk, T.J.W. Lazio, S. Leiker, D. MacMahon, R. Monroe, F. Schinzel, G.B. Taylor, D. Werthimer, D.P. Woody, “Design and characterization of the Large-Aperture Experiment to Detect the Dark Age (LEDA) radiometer systems”, 2017, *Submitted to MNRAS*
7. M. D. Cranmer, B. R. Barsdell, D. C. Price, J. Dowell, H. Garsden, V. Dike, **T. Eftekhari**, A. M. Hegedus, J. Malins, K. S. Obenberger, F. Schinzel, K. Stovall, G. B. Taylor, L. J. Greenhill, “Bifrost: a Python/C++ Framework for High-Throughput Stream Processing in Astronomy”, 2017, *JAI*
6. **T. Eftekhari** E. Berger, “Associating Fast Radio Bursts with Their Host Galaxies”, 2017, *Accepted to ApJ*
5. M. Nicholl, P. K. G. Williams, E. Berger, V. A. Villar, K. D. Alexander, **T. Eftekhari**, B. D. Metzger, “*Empirical constraints on the origin of fast radio bursts: volumetric rates and host galaxy demographics as a test of millisecond magnetar connection*”, 2017, *ApJ*, 843, 84
4. **T. Eftekhari**, K. Stovall, J. Dowell, F. K. Schinzel, G. B. Taylor, “*A Low Frequency Survey of Giant Pulses from the Crab Pulsar*”, 2016, *ApJ*, 829, 62.
3. G. Bernardi, J.T.L. Zwart, D. Price, L.J. Greenhill, A. Mesinger, J. Dowell, **T. Eftekhari**, S.W. Ellingson, J. Kocz, F. Schinzel. “*Bayesian Constraints on the Global 21-cm Signal from the Cosmic Dawn*”, *MNRAS*, 461, 3.
2. 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. “*Digital Signal Processing using Stream High Performance Computing: A 512-input Broadband Correlator for Radio Astronomy*”, *JAI*, 4, 50003.
1. 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. “*Pulsar Observations Using the First Station of the Long Wavelength Array and the LWA Pulsar Data Archive*”, *ApJ*, 808, 156.