Emmanuel Fonseca (he/him/his)

Assistant professor (tenure-track)
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Research Areas

Radio pulsars: high-precision pulsar timing; orbital dynamics; neutron-star mass measurements; gravitational radiation and pulsar timing arrays; pulsar instruments for next-generation telescopes.

Fast radio bursts: algorithm and hardware development for detection, characterization and localization; modeling of burst morphology.

Education

Ph.D. in Astronomy, the University of British Columbia (UBC) — 2012 - 2016
Advisor: Ingrid H. Stairs
Thesis: *Mass and Geometric Measurements of Binary Radio Pulsars*

M. Sc. in Astronomy, UBC — 2010 - 2012
Advisor: Ingrid H. Stairs
Thesis: *Experimental Gravity with PSR B1534+12*

B. Sc in Physics, Astronomy, the Pennsylvania State University (PSU) — 2006 - 2010
Minor: Mathematics
Advisors: Stephen Holland, Scott Koch, Erik Hoversten

Employment

Assistant professor (West Virginia University; WVU)	2021 - present
Postdoctoral researcher (McGill)	2016 - 2021
Graduate research assistant (UBC)	2010 - 2016
Summer research intern (NASA Goddard Space Flight Center)	2009, 2010
Undergraduate research assistant (PSU)	2008 - 2010

Teaching/Outreach Positions

Assistant professor (WVU)	2021 - present
Public outreach assistant (PSU, UBC, McGill)	2009 - present
Laboratory Instructor, Science Creative Literacy Symposium (UBC)	2014 - 2016
Graduate teaching assistant (UBC)	2010 - 2016

Funding

National Science Foundation (NSF)

- Astronomy & Astrophysics Grant (AAG) #2407399: **$416k USD** (PI) 2024 - 2027

Successful Telescope Programs

300-m Arecibo Observatory (1000+ hours); 100-m Green Bank Observatory (50+ hours); Karl G. Jansky Very Large Array (5 hours).

Membership

- International Pulsar Timing Array (IPTA) 2012 - present
- N. A. Nanohertz Observatory for Gravitational Waves (NANOGrav) 2012 - present
- Canadian Hydrogen Intensity Mapping Experiment (CHIME) 2016 - present
- American Astronomical Society 2016 - present

Professional Activities & Service

Conference Organization:

- CASCA 2019: member of local organizing committee; designer of conference website.
- NANOGrav spring 2017 meeting: member of science organizing committee (SOC)
- NANOGrav spring 2015 meeting: member of the science-meeting SOC.
- CASCA 2013: co-organizer of grad-student workshop, general conference assistant.

Review Panels and Committees:

- NSF-AAG review panel 2023
- Science Proposal Review Panel, Chandra X-ray Observatory 2022
- Science Proposal Review Panel, NRAO 2021 - present
- IPTA Diversity Committee 2016 - 2019

Publication Referee:

- Science Magazine
- the Astronomical Journal
- the Astrophysical Journal (main and "Letters")
- the Monthly Notices of the Royal Astronomical Society

Press Coverage

The Conversation:
invitation to write article(s) on CHIME/FRB backends

Scientific American:
article on first CHIME/FRB detection (13 August 2018)

CBC Radio Canada:
recorded telephone interview on first CHIME/FRB detection, in spanish (8 August 2018)

Recent & Upcoming Presentations

Colloquia, Workshop, & Conference Talks

- (Invited talk) "A Current Census of Observables for Black Holes and Neutron Stars." Princeton University, for the "Forging a New Synthesis Between Supernova Theory and Observation" workshop. 4-6 December 2023.
- (Invited talk) "Probing the Extreme Interiors of Neutron Stars with NANOGrav." University of Pittsburgh, for the "Unravelling the Universe with Pulsar Timing Arrays" workshop. 30 November - 2 December 2023.
- (Invited talk) "Seeing Gravity and the (Invisible) Universe with Pulsar Timing Arrays." Panel in the National Diversity in STEM Conference by the Society for Advancement of Chicanos/Hispanics & Native Americans in Science. 26-28 October 2023.
- (Invited talk) "Observing Gravity and the (Invisible) Universe with Pulsar Timing Arrays." Ohio State University, for the "Phenomenology in Indiana, Kentucky, Illinois, Michigan and Ohio" Meeting. 29 April 2023.
- (Invited talk) "FRB Morphology as a (Possible) Indicator of Multiple Populations." The 2022 FRB Workshop at Cornell University, "There is Plenty of Room at the Bottom (FRBs)." 8-10 October 2022.
- (Invited talk) "High-Cadence Timing of Radio Pulsars with CHIME." The April 2021 Meeting of the American Physical Society. Remote presentation. 17-20 April 2021.
- (Invited colloquium) "FRB Astrophysics in the Era of CHIME." The Kavli Institute for Cosmological Physics at the University of Chicago. 6 December 2019.
- (Invited colloquium) "Pulsar & FRB Astrophysics in the Era of CHIME." Northwestern University. 3 December 2019.
- "A GPU-enabled, Pulsar-Timing Backend for the Canadian Hydrogen Intensity Mapping Experiment." Invited talk at the Dominion Radio Astrophysical Observatory in Kaleden, British Columbia (Canada), 4 June 2019.
- (Invited talk) "FRB Detection & Characterization at the Dawn of the CHIME Era." Invited talk for the URSI National meeting in Boulder, Colorado (USA), 9-12 January 2019.

Public Outreach Talks

- "Monsters in the Darkroom: Imaging the Event Horizons of Black Holes." Talk for Astronomy on Tap in Montreal, QC, 27 March 2018.
- "The Warped Road of Einstein's General Relativity." Talk for the Public Astro Night at McGill University, 14 December 2017.
- "Seeing Gravity and the (Invisible) Universe." TEDx talk for Terry Project, UBC, 2 November 2013.

Publication List for E. Fonseca

Academic, Peer Reviewed (h-index = 56; total citations = 15,562)[1]

149. Dong, F. A., Clarke, T., Curtin, A. P., et al. "The discovery of a nearby 421 s transient with CHIME/FRB/Pulsar." *Submitted to Nature Astronomy.* July 2024. arχiv:2407.07480.

148. Donlon, T. II., Chakrabarti, S., Lam, M. T., et al. "The Anomalous Acceleration of PSR J2043+1711: Long-Period Orbital Companion or Stellar Flyby?" *Submitted to the Astrophysical Journal.* July 2024. arχiv:2407.06482.

147. Dey, L., McLaughlin, M. A., Wahl, H. M., et al. "Exploring pulsar timing precision: A comparative study of polarization calibration methods for NANOGrav data from the Green Bank Telescope." *Submitted to the Astrophysical Journal.* June 2024. arχiv:2406.13463.

146. Nimmo, K., Pleunis, Z., Beniamini, P., et al. "Magnetospheric origin of a fast radio burst constrained using scintillation." *Submitted to Nature.* June 2024. arχiv:2406.11053.

145. Dong, F. A., Herrera-Martin, A., Stairs, I. H., et al. "Constraining the selection corrected luminosity function and total pulse count for radio transients." *Submitted to the Astrophysical Journal.* June 2024. arχiv:2406.04597.

144. Larsen, B., Mingarelli, C. M. F., Hazboun, J. S., et al. "The NANOGrav 15 yr Data Set: Chromatic Gaussian Process Noise Models for Six Pulsars." *Submitted to the Astrophysical Journal.* May 2024. arχiv:2405.14941.

143. The International Pulsar Timing Array: Agazie, G., Antoniadis, J., Anumarlapudi, A., et al. "Comparing Recent PTA Results on the Nanohertz Stochastic Gravitational-wave Background." *The Astrophysical Journal*, 966, 105. May 2024.

142. Sosa Fiscella, S. V., Lam, M. T., Arzoumanian, Z., et al. "The NANOGrav 12.5-Year Data Set: Dispersion Measure Mis-Estimation with Varying Bandwidths." *The Astrophysical Journal*, 966, 95. May 2024.

141. Tan, C. M., **Fonseca, E.**, Crowter, K., et al. "High-cadence Timing of Binary Pulsars with CHIME." *The Astrophysical Journal*, 966, 26. May 2024.

140. Agazie, G., Baker, P. T., Bécsy, B., et al. "The NANOGrav 15 yr Data Set: Looking for Signs of Discreteness in the Gravitational-wave Background." *Submitted to the Astrophysical Journal Letters.* April 2024. arχiv:2404.07020.

139. **Fonseca, E.**, Pleunis, Z., Breitman, D., et al. "Modeling the Morphology of Fast Radio Bursts and Radio Pulsars with `fitburst`" *The Astrophysical Journal Supplements*, 271, 49. April 2024.

138. Jennings, R. J., Cordes, J. M., Chatterjee, S., et al. "An unusual pulse shape change event in PSR J1713+0747 observed with the Green Bank Telescope and CHIME." *The Astrophysical Journal*, 964, 179. April 2024.

[1]These statistics are accurate as of 10 July 2024 and are determined by the Astrophysics Data System (ADS). Click on the hyperlink on the CV section of my website (https://emmanuelfonseca.github.io/sections/cv.html) to visit the ADS page that lists all of my works.

137. Kilpatrick, C. D., Tejos, N., Prochaska, J. X., et al. "Limits on Optical Counterparts to the Repeating FRB 20180916B from High-speed Imaging with Gemini-N/'Alopeke." *The Astrophysical Journal*, 964, 121. April 2024.

136. Agazie, G., Anumarlapudi, A., Archibald, A. M., et al. "The NANOGrav 15-year data set: Search for Transverse Polarization Modes in the Gravitational-Wave Background." *The Astrophysical Journal Letters*, 964, L14. March 2024.

135. Agazie, G., Arzoumanian, Z., Baker, P. T., et al. "The NANOGrav 12.5 yr Data Set: A Computationally Efficient Eccentric Binary Search Pipeline and Constraints on an Eccentric Supermassive Binary Candidate in 3C 66B." *The Astrophysical Journal*, 963, 144. March 2024.

134. Agazie, G., Arzoumanian, Z., Baker, P. T., et al. "The NANOGrav 12.5-year Data Set: Search for Gravitational Wave Memory." *The Astrophysical Journal*, 963, 61. March 2024.

133. Mckinven, R., Bhardwaj, M., Eftekhari, T., et al. "A pulsar-like swing in the polarisation position angle of a nearby fast radio burst." *Submitted to Nature.* February 2024. arχiv:2402.09304.

132. McEwen, A. E., Swiggum, J. K., Kaplan, D. L., et al. "The Green Bank North Celestial Cap Survey IX: Timing Follow-up for 128 Pulsars." *The Astrophysical Journal*, 962, 167. February 2024.

131. Rafiei-Ravandi, M., Smith, K. M., Michilli, D., et al. "Statistical association between the candidate repeating FRB 20200320A and a Galaxy Group." *The Astrophysical Journal*, 961, 177. February 2024.

130. Kirichenko, A. Yu, Zharikov, S. V., Karpova, A. V., et al. "The black widow pulsar J1641+8049 in the optical, radio, and X-rays." *Monthly Notices of the Royal Astronomical Society*, 527, 4563. January 2024.

129. Miao, X. L., Zhu, W. W., Kramer, M., et al. "Variability, polarimetry, and timing properties of single pulses from PSR J2222-0137 using FAST." *Monthly Notices of the Royal Astronomical Society*, 526, 2156. October 2023.

128. Bécsy, B., Cornish, N. J., Meyers, P. M., et al. "How to Detect an Astrophysical Nanohertz Gravitational Wave Background." *The Astrophysical Journal*, 959, 9. December 2023.

127. The CHIME/FRB Collaboration: Amiri, M., Andersen, B. C., Andrew, S., et al. "Updating the first CHIME/FRB catalog of fast radio bursts with baseband data." *Submitted to the Astrophysical Journal.* October 2023. arχiv:2311.00111.

126. Giri, U., Andersen, B. C., Chawla, P., et al. "Comprehensive Bayesian analysis of FRB-like bursts from SGR 1935+2154 observed by CHIME/FRB." *Submitted to the Astrophysical Journal.* October 2023. arχiv:2310.16932.

125. Bhardwaj, M., Michilli, D., Kirichenko, A. Y., et al. "Host Galaxies for Four Nearby CHIME/FRB Sources and the Local Universe FRB Host Galaxy Population." *Submitted to the Astrophysical Journal.* October 2023. arχiv:2310.10018.

124. Dong, F. A., Crowter, K., Meyers, B. W., et al. "The second set of pulsar discoveries by CHIME/FRB/Pulsar: 14 Rotating Radio Transients and 7 pulsars." *Monthly Notices of the Royal Astronomical Society*, 524, 5132. October 2023.

123. G. Agazie, A. Anumarlapudi, A. M. Archibald et al. "The NANOGrav 15 yr Data Set: Search for Anisotropy in the Gravitational-Wave Background." *The Astrophysical Journal Letters*, 956, L3. July 2023.

122. Sand, K. R., Breitman, D., Michilli, D., et al. "A CHIME/FRB Study of Burst Rate and Morphological Evolution of the Periodically Repeating FRB 20180916B." *The Astrophysical Journal*, 956, 23. October 2023.

121. The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, et al. "Search for Gravitational Waves Associated with Fast Radio Bursts Detected by CHIME/FRB During the LIGO–Virgo Observing Run O3a." *The Astrophysical Journal*, 955, 155. October 2023.

120. Andersen, B. C., Patel, C., Brar, C., et al. "Flux Calibration of CHIME/FRB Intensity Data." *The Astronomical Journal*, 166, 138. October 2023.

119. Agazie, G., Arzoumanian, Z., Baker, P. T., et al. "The NANOGrav 12.5-year data set: Multi-messenger targeted search for gravitational waves from an eccentric supermassive binary in 3C 66B." *Submitted to the Astrophysical Journal.* September 2023. arχiv:2309.17438.

118. Bécsy, B., Cornish, N. J., Meyers, P. M., et al. "How to Detect an Astrophysical Nanohertz Gravitational-Wave Background." *Submitted to the Astrophysical Journal.* September 2023. arχiv:2309.04443.

117. Curtin, A. P., Tendulkar, S. P., Josephy, A., et al. "Limits on Fast Radio Burst-like Counterparts to Gamma-ray Bursts using CHIME/FRB." *The Astrophysical Journal*, 954, 154. September 2023.

116. Pearlman, A. B., Scholz, P., Bethapudi, S., et al., "Multiwavelength Constraints on the Origin of a Nearby Repeating Fast Radio Burst Source in a Globular Cluster." *Submitted to Nature Astronomy.* August 2023. arχiv:2308.10930.

115. G. Agazie, A. Anumarlapudi, A. M. Archibald et al. "The NANOGrav 15 yr Data Set: Constraints on Supermassive Black Hole Binaries from the Gravitational Wave Background." *The Astrophysical Journal Letters*, 952, L37. July 2023.

114. Cassanelli, T., Leung, C., Sanghavi, P., et al. "A fast radio burst localized at detection to a galactic disk using very long baseline interferometry." *Submitted to Nature Astronomy.* July 2023. arχiv:2307.09502.

113. Lin, H.-H., Scholz, P., Ng, C., et al. "Constraints on the Intergalactic and Local Dispersion Measure of Fast Radio Bursts with the CHIME/FRB far side-lobe events." *Submitted to the Astrophysical Journal.* July 2023. arχiv:2307.05262.

112. Lin, H.-H., Scholz, P., Ng, C., et al. "Do All Fast Radio Bursts Repeat? Constraints from CHIME/FRB Far Side-Lobe FRBs." *Submitted to the Astrophysical Journal.* July 2023. arχiv:2307.05261.

111. G. Agazie, A. Anumarlapudi, A. M. Archibald et al. "The NANOGrav 15 yr Data Set: Bayesian Limits on Gravitational Waves from Individual Supermassive Black Hole Binaries." *The Astrophysical Journal Letters*, 951, L50. July 2023.

110. The NANOGrav Collaboration: Arzoumanian, Z., Baker, P. T., Blecha, L., et al. "The NANOGrav 12.5-year Data Set: Bayesian Limits on Gravitational Waves from Individual Supermassive Black Hole Binaries." *The Astrophysical Journal Letters*, 951, L28. July 2023.

109. A. Afzal, G. Agazie, A. Anumarlapudi, et al. "The NANOGrav 15 yr Data Set: Search for Signals from New Physics." *The Astrophysical Journal Letters*, 951, L11. July 2023.

108. G. Agazie, A. Anumarlapudi, A. M. Archibald, et al. "The NANOGrav 15 yr Data Set: Detector Characterization and Noise Budget." *The Astrophysical Journal Letters*, 951, L10. July 2023.

107. G. Agazie, M. F. Alam, A. Anumarlapudi, et al. "The NANOGrav 15 yr Data Set: Observations and Timing of 68 Millisecond Pulsars." *The Astrophysical Journal Letters*, 951, L9. July 2023.

106. G. Agazie, A. Anumarlapudi, A. M. Archibald, et al. "The NANOGrav 15 yr Data Set: Evidence for a Gravitational-wave Background." *The Astrophysical Journal Letters*, 951, L8. July 2023.

105. Mckinven, R., Gaensler, B. M., Michilli, D., et al. "Revealing the Dynamic Magneto-ionic Environments of Repeating Fast Radio Burst Sources through Multi-year Polarimetric Monitoring with CHIME/FRB." *The Astrophysical Journal*, 951, 82. July 2023.

104. A. D. Johnson, P. M. Meyers, P. T. Baker et al. "The NANOGrav 15-year Gravitational-Wave Background Analysis Pipeline." *Submitted to the Astrophysical Journal Letters.* July 2023, arχiv:2306.16223.

103. G. Agazie, A. Anumarlapudi, A. M. Archibald et al. "The NANOGrav 15 yr Data Set: Bayesian Limits on Gravitational Waves from Individual Supermassive Black Hole Binaries." *Submitted to the Astrophysical Journal Letters.* July 2023. arχiv:2306.16222.

102. Yuan, M., Zhu, W. W., Kramer, M., et al. "High-altitude Magnetospheric Emissions from Two Pulsars." *Submitted to the Astrophysical Journal.* June 2023. arχiv:2306.04935.

101. Falxa, M., Babak, S., Baker, P. T., et al. "Searching for continuous Gravitational Waves in the second data release of the International Pulsar Timing Array." *Monthly Notices of the Royal Astronomical Society*, 521, 5077. June 2023.

100. Fiore, W., Levin, L., McLaughlin, M. A., et al. "The Green Bank North Celestial Cap Survey. VIII. 21 New Pulsar Timing Solutions." *Submitted to the Astrophysical Journal.* May 2023. arχiv:2305.13624.

99. The CHIME/FRB Collaboration: Andersen, B. C., Bandura, K., Bjardwaj, M., et al. "CHIME/FRB Discovery of 25 Repeating Fast Radio Burst Sources." *The Astrophysical Journal*, 947, 83. April 2023.

98. Cook, A. M., Bhardwaj, M., Gaensler, B. M., et al. "An FRB Sent Me a DM: Constraining the Electron Column of the Milky Way Halo with Fast Radio Burst Dispersion Measures from CHIME/FRB." *The Astrophysical Journal*, 946, 58. April 2023.

97. Merryfield, M., Tendulkar, S. P., Shin, K., et al. "An Injection System for the CHIME/FRB Experiment." *The Astronomical Journal*, 165, 152. May 2022.

96. Ding, H., Deller, A. T., Stappers, B. W., et al. "The MSPSRπ catalogue: VLBA astrometry of 18 millisecond pulsars." *Monthly Notices of the Royal Astronomical Society*, 519, 4982. March 2023.

95. Swiggum, J. K., Pleunis, Z., Parent, E., et al. "The Green Bank North Celestial Cap Survey. VII. 12 New Pulsar Timing Solutions." *The Astrophysical Journal*, 944, 154. February 2023.

94. Shin, K., Masui, K. M., Bhardwaj, M., et al. "Inferring the Energy and Distance Distributions of Fast Radio Bursts using the First CHIME/FRB Catalog." *The Astrophysical Journal*, 944, 105. February 2023.

93. Good, D. C., Chawla, P., **Fonseca, E.**, et al. "Non-detection of CHIME/FRB sources with the Arecibo Observatory." *The Astrophysical Journal*, 944, 70. February 2023.

92. Andersen, B. C., **Fonseca, E.**, McKee, J. W., et al. "CHIME Discovery of a Binary Pulsar with a Massive Non-Degenerate Companion." *The Astrophysical Journal*, 943, 57. January 2023.

91. Michilli, D., Bhardwaj, M., Brar, C., et al. "Sub-arcminute localization of 13 repeating fast radio bursts detected by CHIME/FRB." *Submitted to the Astrphysical Journal.* December 2022. arχiv:2212.11941.

90. The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, et al. "Searches for Gravitational Waves from Known Pulsars at Two Harmonics in the Second and Third LIGO-Virgo Observing Runs." *The Astrophysical Journal*, 935, 1. August 2022.

89. The CHIME/FRB Collaboration: Andersen, B. C., Bandura, K., Bhardwaj, M., et al. "Sub-second periodicity in a fast radio burst." *Nature*, 607, 256. July 2022.

88. The LIGO Scientific Collaboration, the Virgo Collaboration, the KAGRA Collaboration, et al. "Narrowband searches for continuous and long-duration transient gravitational waves from known pulsars in the LIGO-Virgo third observing run." *The Astrophysical Journal*, 932, 133. June 2022.

87. Mckinven, R., Gaensler, B. M., Michilli, D., et al. "A Large Scale Magneto-ionic Fluctuation in the Local Environment of Periodic Fast Radio Burst Source, FRB 20180916B." *Submitted to the Astrophysical Journal.* May 2022. arχiv:2205.09221.

86. Hazboun, J. S., Simon, J., Madison, D. R., et al."Bayesian Solar Wind Modeling with Pulsar Timing Arrays." *The Astrophysical Journal*, 929, 39. April 2022.

85. Antoniadis, J., Arzoumanian, Z., Babak, S., et al. "The International Pulsar Timing Array second data release: Search for an isotropic Gravitational Wave Background." *The Monthly Notices of the Royal Astronomical Society*, 510, 4873. March 2022.

84. Lanman, A. E., Andersen, B. C., Chawla, P., et al. "A sudden period of high activity from repeating Fast Radio Burst 20201124A." *The Astrophysical Journal Letters*, 927, 59. March 2022.

83. Chawla, P., Kaspi, V. M., Ransom, S. M., et al. "Modeling Fast Radio Burst Dispersion and Scattering Properties in the First CHIME/FRB Catalog." *The Astrophysical Journal*, 927, 35. March 2022.

82. Kirsten, F., Marcote, B., Nimmo, K., et al. "A repeating fast radio burst source in a globular cluster." *Nature*, 602, 585. February 2022.

81. Nimmo, K., Hessels, J. W. T., Kirsten, F., et al. "Burst timescales and luminosities link young pulsars and fast radio bursts." *Nature Astronomy*. February 2022.

80. Wahl, H. M., McLaughlin, M. A., Gentile, P. A., et al., "The NANOGrav 12.5-Year Data Set: Polarimetry and Faraday Rotation Measures from Observations of Millisecond Pulsars with the Green Bank Telescope." *The Astrophysical Journal*, 926, 168. February 2022.

79. Cassanelli, T., Leung, C., Rahman, M., et al. "Localizing FRBs through VLBI with the Algonquin Radio Observatory 10-m Telescope." *The Astronomical Journal*, 163, 65. February 2022.

78. Parent, É., Sewalls, H., Freire, P. C. C., et al. "Discovery of 72 pulsars in the PALFA survey: Timing analysis, glitch activity, emission variability, and a pulsar in an eccentric binary." *The Astrophysical Journal*, 924, 135. January 2022.

77. The NANOGrav Collaboration: Arzoumanian, Z., Baker, P. T., Blumer, H., et al. "Searching For Gravitational Waves From Cosmological Phase Transitions With The NANOGrav 12.5-year dataset." *The Physical Review Letters*, 127, 251302. December 2021.

76. The CHIME/FRB Collaboration: Amiri, M., Andersen, B. C., Bandura, K., et al. "The First CHIME/FRB Fast Radio Burst Catalog." *The Astrophysical Journal Supplements*, 257, 59. December 2021.

75. The NANOGrav collaboration: Arzoumanian, Z., Baker, P. T., Blumer, H., et al. "The NANOGrav 12.5-year data set: Search for Non-Einsteinian Polarization Modes in the Gravitational-Wave Background." *The Astrophysical Journal Letters*, 923, L22. December 2021.

74. Josephy, A., Chawla, P., Curtin, A. P., et al. "No Evidence for Galactic Latitude Dependence of the Fast Radio Burst Sky Distribution." *The Astrophysical Journal*, 923, 2. June 2021.

73. Pleunis, Z., Good, D. C., Kaspi, V. M., et al. "Fast radio burst morphology in the first CHIME/FRB catalog." *The Astrophysical Journal*, 923, 1. December 2021.

72. Good, D. C., Andersen, B. C., Chawla, P., et al. "First discovery of new pulsars and RRATs with CHIME/FRB." *The Astrophysical Journal*, 922, 43. November 2021.

71. Rafiei-Ravandi, M., Smith, K. M., Li, D., et al. "CHIME/FRB Catalog 1 results: statistical cross-correlations with large-scale structure." *The Astrophysical Journal*, 922, 42. November 2021.

70. Agazie, G., Mingyar, M., McLaughlin, M. A., et al. "The Green Bank Northern Celestial Cap Pulsar Survey. VI. Timing and Discovery of PSR J1759+5036: A Double Neutron Star Binary Pulsar." *The Astrophysical Journal*, 922, 35. November 2021.

69. Ding, H., Deller, A. T., **Fonseca, E.**, et al. "The orbital-decay test of general relativity to the 2% level with 6-year VLBA astrometry of the double neutron star J1537+1155." *The Astrophysical Journal Letters*, 921, L19. November 2021.

68. Bhardwaj, M., Kirichenko, A. Yu., Michilli, D., et al. "A Local Universe Host for the Repeating Fast Radio Burst FRB 20181030A." *The Astrophysical Journal Letters*, 919, L24. October 2021.

67. Miller, M. C., Lamb, F. K., Dittmann, A. J., et al. "The Radius of PSR J0740+6620 from NICER and XMM-Newton Data." *The Astrophysical Journal Letters*, 918, L28. April 2021.

66. Riley, T. E., Watts, A. L., Ray, P. S., et al. "A NICER View of the Massive Pulsar PSR J0740+6620 Informed by Radio Timing and XMM-Newton Spectroscopy." *The Astrophysical Journal Letters*, 918, L27. September 2021.

65. Turner, J. E., McLaughlin, M. A., Cordes, J. M., et al. "The NANOGrav 12.5 Year Data Set: Monitoring Interstellar Scattering Delays." *The Astrophysical Journal*, 917, 10. August 2021.

64. The CHIME/Pulsar Collaboration: Amiri, M., Bandura, K., Boyle, P. J., et al. "The CHIME Pulsar Project: System Overview." *The Astrophysical Journal Supplements*, 255, 5. August 2020.

63. **Fonseca, E.**, Cromartie, H. T., Pennucci, T. T., et al. "Refined Mass and Geometric Measurements of the High-Mass PSR J0740+6620." *The Astrophysical Journal Letters*, 915, L12. July 2021.

62. The NANOGrav Collaboration: Arzoumanian, Z., Baker, P. T., Brazier, A., et al. "The NANOGrav 11 yr Data Set: Limits on Supermassive Black Hole Binaries in Galaxies within 500 Mpc." *The Astrophysical Journal*, 914, 121. June 2021.

61. Pol, N. S., Taylor, S. R., Kelley, L. Z., et al. "Astrophysics Milestones For Pulsar Timing Array Gravitational Wave Detection." *The Astrophysical Journal Letters*, 911, L34. April 2021.

60. Pleunis, Z., Michilli, D., Bassa, C. G., et al. "LOFAR Detection of 110-188 MHz Emission and Frequency-dependent Activity from FRB 20180916B." *The Astrophysical Journal Letters*, 911, L3. April 2021.

59. Bhardwaj, M., Gaensler, B. M., Kaspi, V. M., et al. "A Nearby Repeating Fast Radio Burst in the Direction of M81." *The Astrophysical Journal Letters*, 910, L18. April 2021.

58. Tendulkar, S. P., Gil de Paz, A., Kirichenko, A. Yu., et al. "The 60-pc Environment of FRB 20180916B." *The Astrophysical Journal Letters*, 908, L12. February 2021.

57. The NANOGrav Collaboration: Alam, M. F., Arzoumanian, Z., Baker, P. T., et al. "The NANOGrav 12.5-year Data Set: Wideband Timing of 47 Millisecond Pulsars." *The Astrophysical Journal Supplements*, 252, 5. January 2021.

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