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

Recent & Upcoming Presentations

Colloquia and 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) "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.

Successful Proposals:

Telescopes

- 300-m Arecibo Observatory: 1000+ hours as PI (e.g., P2945, P3183, P3228)
- 100-m Green Bank Telescope: 40+ hours as PI (e.g., 18B-280, 19A-411, 21B-259)
- Karl G. Jansky Very Large Array: 3.5 hours as PI (20A-474)

Membership

- International Pulsar Timing Array (IPTA) 2012 - present
- N. A. Nanohertz Observatory for Gravitational Waves (NANOGrav) 2012 - present
- Canadian Astronomical Society (CASCA) 2011 - present
- Canadian Hydrogen Intensity Mapping Experiment (CHIME) 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:

- Science Proposal Review Panel, Chandra X-ray Observatory 2022
- Science Proposal Review Panel, NRAO 2021 - present
- IPTA Diversity Committee 2016 - 2019
- hiring committee for staff scientists at the Arecibo Observatory 2018

Publication Referee:

- 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)

Publication List for E. Fonseca

Academic, Peer Reviewed (h-index = 51, total citations = 12,393)[1]

130. 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.

129. 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.

128. 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.

127. 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.

126. 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.

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

124. 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.

123. 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.

122. The International Pulsar Timing Array: Agazie, G., Antoniadis, J., Anumarlapudi, A., et al. "Comparing recent PTA results on the nanohertz stochastic gravitational wave background." *Submitted to the Astrophysical Journal.* September 2023. arχiv:2309.00693.

121. 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.

[1]These statistics are accurate as of 10 October 2023 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.

120. 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.

119. Rafiei-Ravandi, M., Smith, K. M., Michilli, D., et al. "Statistical association between the candidate repeating FRB 20200320A and a galaxy group." *Submitted to the Astrophysical Journal.* August 2023. arχiv:2308.09608.

118. 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.

117. Agazie, G., Arzoumanian, Z., Baker, P. T., et al. "The NANOGrav 12.5-year Data Set: Search for Gravitational Wave Memory." *Submitted to the Astrophysical Journal.* July 2023. arχiv:2307.13797.

116. Valentina Sosa Fiscella, S., Lam, M. T., Arzoumanian, Z., et al. "The NANOGrav 12.5-Year Data Set: Dispersion Measure Mis-Estimation with Varying Bandwidths." *Submitted to the Astrophysical Journal.* July 2023. arχiv:2307.13248.

115. 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.

114. 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.

113. 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.

112. 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.

111. 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.

110. 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.

109. 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.

108. 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.

107. 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.

106. 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.

105. 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.

104. 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.

103. 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.

102. 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.

101. 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.

100. 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.

99. 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.

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

97. 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.

96. 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.

95. 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.

94. 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.

93. 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.

92. 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.

91. 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." *Submitted to the Astrophysical Journal.* October 2022. arχiv:2210.12266.

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.

56. The NANOGrav Collaboration: Alam, M. F., Arzoumanian, Z., Baker, P. T., et al. "The NANOGrav 12.5-year Data Set: Observations and Narrowband Timing of 47 Millisecond Pulsars." *The Astrophysical Journal Supplements*, 252, 4. January 2021.

55. Arzoumanian, Z., Baker, P. T., Blumer, H., et al. "The NANOGrav 12.5 yr Data Set: Search for an Isotropic Stochastic Gravitational-wave Background." *The Astrophysical Journal Letters*, 905, L34. December 2020.

54. Parent, É., Chawla, P., Kaspi, V. M., et al. "First Discovery of a Fast Radio Burst at 350 MHz by the GBNCC Survey." *The Astrophysical Journal*, 904, 92. December 2020.

53. Ng, C., Wu, B., Ma, M. et al. "The Discovery of Nulling and Mode Switching Pulsars with CHIME/Pulsar." *The Astrophysical Journal*, 903, 81 November 2020.

52. The CHIME/FRB Collaboration: Andersen, B. C. Bandura, K. M., Bhardwaj, M., et al. "A bright millisecond-duration radio burst from a Galactic magnetar." *Nature*, 587, 54-58. November 2020.

51. The NANOGrav Collaboration: Arzoumanian, Z., Baker, P. T., Brazier, A., et al. "Multi-Messenger Gravitational Wave Searches with Pulsar Timing Arrays: Application to 3C66B Using the NANOGrav 11-year Data Set." *The Astrophysical Journal*, 900, 102. September 2020.

50. The CHIME/FRB Collaboration: Amiri, M., Andersen, B. C., Bandura, K., et al. "Periodic Activity from a Fast Radio Burst Source." *Nature*, 582, 351-354. June 2020.

49. Ng, C., Pandhi, A., Naidu, A., et al. "Faraday rotation measures of northern-hemisphere pulsars using CHIME/Pulsar." *Monthly Notices of the Royal Astronomical Society*, 496, 2836. June 2020.

48. Chawla, P., Andersen, B. C., Bhardwaj, M., et al. "Detection of Repeating FRB 180916.J0158+65 Down to Frequencies of 300 MHz." *The Astrophysical Journal Letters*, 896, L41. June 2020.

47. Behrens, E. A., Ransom, S. M., Madison, D. R., et al. "The NANOGrav 11 yr Data Set: Constraints on Planetary Masses Around 45 Millisecond Pulsars." *The Astrophysical Journal Letters*, 893, L8. April 2020.

46. Vallisneri, M., Taylor, S. R., Simon, J., et al. "Modeling the Uncertainties of Solar System Ephemerides for Robust Gravitational-wave Searches with Pulsar-timing Arrays." *The Astrophysical Journal*, 893, 112. April 2020.

45. **Fonseca, E.**, Andersen, B. C., Bhardwaj, M., et al. "Nine New Repeating Fast Radio Burst Sources from CHIME/FRB." *The Astrophysical Journal Letters*, 891, L6. February 2020.

44. Kirichenko, A. Yu., Karpova, A. V., Zyuzin, D. A., et al. "Searching for optical companions to four binary millisecond pulsars with the Gran Telescopio Canarias." *Monthly Notices of the Royal Astronomical Society*, 492, 3032. February 2020.

43. Hazboun, J. S., Simon, J., Taylor, S. R., et al. "The NANOGrav 11 yr Data Set: Evolution of Gravitational-wave Background Statistics." *The Astrophysical Journal*, 890, 108. February 2020.

42. Marcote, B., Nimmo, K., Hessels, J. W. T., et al. "A repeating fast radio burst source localised to a nearby spiral galaxy." *Nature*, 577, 190. January 2020.

41. Cromartie, H. T., **Fonseca, E**, Ransom, S. M., et al. "A very massive neutron star: relativistic Shapiro delay measurements of PSR J0740+6620." *Nature Astronomy*, 4, 72. January 2020.

40. The NANOGrav Collaboration: Aggarwal, K., Arzoumanian, Z., Baker, P. T., et al., "The NANOGrav 11 yr Data Set: Limits on Gravitational Wave Memory." *The Astrophysical Journal*, 889, 38. January 2020.

39. Perera, B. B. P., DeCesar, M. E., Demorest, P. B., et al. "The International Pulsar Timing Array: second data release." *Monthly Notices of the Royal Astronomical Society*, 490, 4666. December 2019.

38. The CHIME/FRB Collaboration: Andersen, B., Bandura, K., Bhardwaj, M., et al. "CHIME /FRB Discovery of Eight Repeating Fast Radio Burst Sources" *Astrophysical Journal Letters*, 855, L24. September 2019. (Corresponding author: **Fonseca, E**.)

37. Josephy, A., Chawla, P., **Fonseca, E.**, et al. "CHIME/FRB Detection of the Original Repeating Fast Radio Burst Source FRB 121102." *The Astrophysical Journal Letters*, 882, L18. September 2019.

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