Dr Gregory Ashton: publications December 2020

Listed below are the 32 articles for which I have made significant personal contributions in 5 years. Of these, I am the lead author on 16 articles, 13 of which are published in high-impact journals, including one published in Nature Astronomy. These publications have been cited over 800 times and have an h-index of 12. In addition, I have more than 120 additional publications as part of the LIGO Scientific Collaboration with an h-index for all articles of 55. I list below, along with a description of my role, only the collaboration papers to I have significantly contributed.

In addition to the publications listed below, I have a contract to write a book for CRC Press, Taylor and Francis titled "The Handbook of Gravitational Wave Inference". The author list is currently "Dr. Gregory Ashton and Professor Eric Thrane" and it is planned for publication in July 2022.

[32] Ashton, G., Lasky, P. D., Nathan, R., and Palfreyman, J. (2020). Flickering of the Vela pulsar during its 2016 glitch. *arXiv e-prints*, page arXiv:2011.07927 (submitted to Nature Astronomy)

[31] Sarin, N., Lasky, P. D., and **Ashton, G.** (2020b). Interpreting the X-ray afterglows of gamma-ray bursts with radiative losses and millisecond magnetars. *arXiv e-prints*, page arXiv:2008.05745 (accepted for publication in MNRAS)

[30] Zhu, X.-J. and **Ashton, G.** (2020). Characterizing Astrophysical Binary Neutron Stars with Gravitational Waves. *Astrophys. J. Lett.*, 902(1):L12 (2 citations)

[29] Romero-Shaw, I. M., Talbot, C., Biscoveanu, S., D'Emilio, V., **Ashton, G.**, et al. (2020). Bayesian inference for compact binary coalescences with BILBY: Validation and application to the first LIGO-Virgo gravitational-wave transient catalogue. *Mon. Notices Royal Astron. Soc.* (34 citations)

[28] **Ashton, G.**, Ackley, K., Magaña Hernand ez, I., and Piotrzkowski, B. (2020). Current observations are insufficient to confidently associate the binary black hole merger GW190521 with AGN J124942.3+344929. *arXiv e-prints*, page arXiv:2009.12346 (5 citations, under review by MNRAS)

[27] Smith, R., **Ashton, G.**, Vajpeyi, A., and Talbot, C. (2020). Massively parallel Bayesian inference for transient gravitational-wave astronomy. *Mon. Notices Royal Astron. Soc.*, 498(3):4492–4502 (25 citations)

[26] **Ashton, G.** and Thrane, E. (2020). The astrophysical odds of GW151216. *Mon. Notices Royal Astron. Soc.*, 498(2):1905–1910 (5 citations)

[25] **Ashton, G.** and Khan, S. (2020). Multiwaveform inference of gravitational waves. *Phys. Rev. D*, 101:064037 (8 citations)

[24] Sarin, N., Lasky, P. D., and **Ashton, G.** (2020a). Gravitational waves or deconfined quarks: What causes the premature collapse of neutron stars born in short gamma-ray bursts? *Phys. Rev. D*, 101(6):063021 (12 citations)

[23] You, Z.-Q., Zhu, X.-J., **Ashton, G.**, Thrane, E., and Zhu, Z.-H. (2020). Standard-siren cosmology using gravitational waves from binary black holes. *arXiv e-prints*, page arXiv:2004.00036 (1 citation, under review by ApJ)

[22] The LIGO Scientific Collaboration, the Virgo Collaboration, et al. (2020). GW190425: Observation of a Compact Binary Coalescence with Total Mass $\sim 3.4\ M_\odot$. *Astrophys. J. Lett.*, 892(1):L3 (Role: member of paper writing team and parameter estimation lead, 411 citations)

[21] Ackley, K. et al. (2020). Neutron Star Extreme Matter Observatory: A kilohertz-band gravitational-wave detector in the global network. *Publications of the Astronomical Society of Australia*, 37:e047 (4 citations)

[20] **Ashton, G.**, Thrane, E., and Smith, R. J. E. (2019c). Gravitational wave detection without boot straps: A Bayesian approach. *Phys. Rev. D*, 100(12):123018 (7 citation)

[19] **Ashton, G.**, Lasky, P. D., Graber, V., and Palfreyman, J. (2019b). Rotational evolution of the Vela pulsar during the 2016 glitch. *Nature Astronomy*, page 417 (24 citations)

[18] Lasky, P. D., Sarin, N., and **Ashton, G.** (2019). Neutron star merger remnants: Braking indices, gravitational waves, and the equation of state. In *American Institute of Physics Conference Series*, volume 2127 of *American Institute of Physics Conference Series*, page 020025 (1 citations)

[17] **Ashton, G.**, Hübner, M., Lasky, P. D., Talbot, C., et al. (2019a). BILBY: A User-friendly Bayesian Inference Library for Gravitational-wave Astronomy. *Astrophys. J. Sup.*, 241(2):27 (122 citations)

[16] Sarin, N., Lasky, P. D., and **Ashton, G.** (2019). X-Ray Afterglows of Short Gamma-Ray Bursts: Magnetar or Fireball? *Astrophys. J.*, 872(1):114 (9 citations)

[15] Keitel, D. and **Ashton, G.** (2018). Faster search for long gravitational-wave transients: GPU implementation of the transient F-statistic. *Classical and Quantum Gravity*, 35(20):205003 (3 citations)

[14] **Ashton, G.**, Prix, R., and Jones, D. I. (2018c). A semicoherent glitch-robust continuous-gravitational-wave search method. *Phys. Rev. D*, 98(6):063011 (3 citations)

[13] Sarin, N., Lasky, P. D., Sammut, L., and **Ashton, G.** (2018). X-ray guided gravitational-wave search for binary neutron star merger remnants. *Phys. Rev. D*, 98(4):043011 (16 citations)

[12] **Ashton, G.**, Jones, D. I., and Prix, R. (2018b). Advances in our understanding of the free precession candidate PSR B1828-11. In Weltevrede, P., Perera, B. B. P., Preston, L. L., and Sanidas, S., editors, *Pulsar Astrophysics the Next Fifty Years*, volume 337 of *IAU Symposium*, pages 307–308

[11] **Ashton, G.**, Burns, E., Dal Canton, T., Dent, T., Eggenstein, H. B., Nielsen, A. B., Prix, R., Was, M., and Zhu, S. J. (2018a). Coincident Detection Significance in Multimessenger Astronomy. *Astrophys. J.*, 860(1):6 (13 citations)

[10] **Ashton, G.** and Prix, R. (2018). Hierarchical multistage MCMC follow-up of continuous gravitational wave candidates. *Phys. Rev. D*, 97(10):103020 (7 citations)

[9] LIGO Scientific Collaboration, Virgo Collaboration, et al. (2017). First low-frequency Einstein@Home all-sky search for continuous gravitational waves in Advanced LIGO data. *Phys. Rev. D*, 96(12):122004 (Role: Role: I helped prepare the candidate lists and performed follow-ups to veto non-astrophysical candidates, 45 citations)

[8] **Ashton, G.**, Prix, R., and Jones, D. I. (2017b). Statistical characterization of pulsar glitches and their potential impact on searches for continuous gravitational waves. *Phys. Rev. D*, 96(6):063004 (24 citations)

[7] Jones, D. I., **Ashton, G.**, and Prix, R. (2017). Implications of the Occurrence of Glitches in Pulsar Free Precession Candidates. *Phys. Rev. Lett.*, 118(26):261101 (8 citations)

[6] **Ashton, G.**, Jones, D. I., and Prix, R. (2017a). On the free-precession candidate PSR B1828-11: Evidence for increasing deformation. *Mon. Notices Royal Astron. Soc.*, 467(1):164–178 (12 citations)

[5] Baker, A., Beg, M., **Ashton, G.**, Albert, M., et al. (2017). Proposal of a micromagnetic standard problem for ferromagnetic resonance simulations. *Journal of Magnetism and Magnetic Materials*, 421:428–439 (15 citations)

[4] **Ashton, G.**, Birnholtz, O., Cabero, M., Capano, C., et al. (2016a). Comments on: "Echoes from the abyss: Evidence for Planck-scale structure at black hole horizons". *arXiv e-prints*, page arXiv:1612.05625 (unpublished comment, 68 citations)

[3] **Ashton, G.**, Jones, D. I., and Prix, R. (2016b). Comparing models of the periodic variations in spin-down and beamwidth for PSR B1828-11. *Mon. Notices Royal Astron. Soc.*, 458(1):881–899 (10 citations)

[2] **Ashton, G.**, Jones, D. I., and Prix, R. (2015). Effect of timing noise on targeted and narrow-band coherent searches for continuous gravitational waves from pulsars. *Phys. Rev. D*, 91(6):062009 (11 citations)

[1] LIGO Scientific Collaboration, Virgo Collaboration, et al. (2015). Narrow-band search of continuous gravitational-wave signals from Crab and Vela pulsars in Virgo VSR4 data. *Phys. Rev. D*, 91(2):022004 (Role: I helped define the search parameter space based on an astrophysical prior, 32 citations)