# DR. WEI CHIEH (MASON) NG

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## EDUCATION

**Massachusetts Institute of Technology (MIT)** Sep 2018 - May 2024
Ph.D. in Physics, Conferred May 30, 2024
Advisor: Professor Deepto Chakrabarty; GPA: 4.60/5.00
Thesis: Multifaceted Understanding of Accreting Neutron stars and their Environments

**The University of Auckland** Mar 2017 - Nov 2017
Bachelor of Science (Honours) in Physics
Advisor: Professor Richard Easther; GPA: 8.63/9.00
Thesis: Inflationary Model Selection ft. Dark Matter in the CMB

**The University of Auckland** Mar 2014 - Nov 2016
Bachelor of Science
Majors: Physics and Mathematics; GPA: 8.74/9.00

## RESEARCH EXPERIENCE

**McGill University + Trottier Space Institute at McGill** Sep 2024 - Present
*Postdoctoral Researcher (partially funded by FRQNT)*

Uncovering the emission mechanism and local magneto-ionic environments of fast radio bursts with radio polarimetry, multiwavelength counterparts to fast radio bursts, and follow-up of pulsar candidates from multiwavelength all-sky surveys

**MIT Kavli Institute for Astrophysics and Space Research** May 2024 - Aug 2024
*Postdoctoral Research Associate*

X-ray pulsation searches, timing, spectroscopic, and polarimetric analyses of pulsars (NICER/NuSTAR/Chandra/IXPE/XMM-Newton/Swift/RXTE/AstroSat data)

**Massachusetts Institute of Technology** Sep 2018 - May 2024
*Graduate Research Assistant, Advisor: Prof. Deepto Chakrabarty*

X-ray pulsation searches, timing, spectroscopic, and polarimetric analyses of pulsars (NICER/NuSTAR/Chandra/IXPE/XMM-Newton/Swift/RXTE/AstroSat data)

**Australian National University** Feb 2018 - Jul 2018
*Graduate Research Assistant, Advisor: Prof. Martin Asplund*

Modeling stellar atmospheres in 3D with different magnetic field configurations and strengths

**Swinburne University of Technology** Dec 2017 - Feb 2018
*Summer Vacation Scholar, Advisors: Dr. Nikki Nielsen and Assoc. Prof. Glenn Kacprzak*

Kinematics of the OVI Circumgalactic Medium: Halo Mass Dependence and Outflow Signatures

**The University of Auckland** Feb 2017 - Nov 2017
*BSc (Honours) Student, Advisor: Prof. Richard Easther*

Inflationary Model Selection ft. Dark Matter in the CMB

**Australian National University** Nov 2016 - Feb 2017
*Summer Scholar, Advisors: Assoc. Prof. Christian Wolf and Dr. Christopher Onken*

Diagnosing poor seeing of the SkyMapper telescope

**The University of Auckland** Dec 2015 - Feb 2016
*Summer Research Scholar, Advisor: Assoc. Prof. Jan Jamie Eldridge*

Modelling the emergent spectra of hot, massive stars to update the Binary Population and Spectral Synthesis (BPASS) code

## PROFESSIONAL SERVICE

**Proposal Reviewer** 2024 - Present
*NICER General Observer Cycle 7; Chandra Cycle 27; ESO Period 116; subject-matter expert reviewer in a NASA peer review (2025)*

**Science Team Member** 2024 - Present
*CHIME Collaboration (CHIME/FRB and CHIME/Pulsar)*

**Journal Referee** 2023 - Present
*Journals: ApJ, MNRAS, A&A, pyOpenSci, PASJ, JURA*

**Graduate Student Member → Science Team Member (after 06/2024)** 2021 - Present
*IXPE Collaboration [Working Groups: Science Analysis and Simulations, Magnetars, and the Accreting White Dwarfs and Neutron Stars]*

**Graduate Student Member → Science Team Member (after 06/2024)** 2019 - Present
*NICER Science Team [Working Groups: Searches and Multiwavelength Coordination (from 2019), Bursts and Accretion Physics (from 2020), and Magnetars & Magnetospheres (from 2021)]*

## PUBLICATIONS

Also part of over **50 Astronomer's Telegrams** and GCN Circulars (led 15 of them).

First-author

6) **Mason Ng**, et al. 2024. *NICER Discovery that SRGA J144459.2-604207 is an Accreting Millisecond X-ray Pulsar.* ApJ, 968L, 7. DOI: 10.3847/2041-8213/ad4edb

5) **Mason Ng**, et al. 2024. *X-ray and Radio Monitoring of the Neutron Star Low Mass X-ray Binary 1A 1744-361.* ApJ, 966, 232. DOI: 10.3847/1538-4357/ad35bd

4) **Mason Ng**, et al. 2022. *Spectral Evolution of Ultraluminous X-ray Pulsar NGC 300 ULX-1.* ApJ, 940, 138. DOI: 10.3847/1538-4357/ac9965

3) Herman L. Marshall, **Mason Ng**, et al. (IXPE Collaboration + Norbert S. Schulz, Deepto Chakrabarty) 2022. *Observations of 4U 1626-67 with the Imaging X-ray Polarimetry Explorer.* ApJ, 940, 70. DOI: 10.3847/1538-4357/ac98c2

2) **Mason Ng**, Paul S. Ray, Peter Bult, Deepto Chakrabarty, et al. 2021. *NICER Discovery of Millisecond Pulsations and an Ultracompact Orbit in IGR J17494–3030.* ApJ, 908L, 15. DOI: 10.3847/2041-8213/abe1b4

1) **M. Ng**, N.M. Nielsen, G.G. Kacprzak et al. 2019. *Kinematics of the OVI Circumgalactic Medium: Halo Mass Dependence and Outflow Signatures.* ApJ, 886, 66. DOI: 10.3847/1538-4357/ab48eb

Non-refereed

1) **Mason Ng**, et al. 2024. *Tentative Blazar Candidate EP240709A Associated with 4FGL J0031.5-5648: NICER and Archival Multiwavelength Observations.* RNAAS, 8, 292. DOI: 10.3847/2515-5172/ad95ff

Co-author

*** indicates student advisee

81) Ryan Mckinven, et al. (31 co-authors including **Mason Ng**) 2026. *FRB 20210601A: Extreme Temporal Clustering in a Repeating Fast Radio Burst Source as Evidence for a Hidden Class of Episodic Repeaters.* Submitted to ApJ. arXiv:2610.31365

80) Kevin B. Burdge, et al. (20 co-authors including **Mason Ng**) 2026. *Discovery of over a thousand variable stars in Terzan 5 and Liller 1 with JWST.* Submitted to ApJ. arXiv:2609.35959

79) Malina M. Desai, et al. (10 co-authors including **Mason Ng**) 2026. *Discovery of the Infrared Counterpart of the Rapid Burster with JWST.* Submitted to ApJ. arXiv:2609.35956

78) Bas Dorsman, Tuomo Salmi, Anna L. Watts, **Mason Ng**, et al. (13 other co-authors) 2026. *Pulse profile modelling of the 2024 outburst of the accreting millisecond pulsar SRGA J144459.2−604207.* MNRAS, 551, 1340. DOI:10.1093/mnras/stag1340

***77) Wenke Xia, Robert Main, **Mason Ng**, et al. (11 other co-authors) 2026. *No Measurable Changes in Radio and X-ray Emission Surrounding Glitches in the Young Pulsar PSR J2229+6114.* ApJ, 1008, 100. DOI:10.3847/1538-4357/ae9758

76) Fengqiu Adam Dong, et al. (27 co-authors including **Mason Ng**) 2026. *Discovery of an Extremely Luminous Sporadic Radio Pulsar.* Submitted to ApJL. arXiv:2608.21940

75) Malu Sudha, et al. (4 co-authors including **Mason Ng**) 2026. *Evidence for Millihertz Oscillations in the bright atoll source GX 3+1.* ApJ, 1006, 155. DOI:10.3847/1538-4357/ae8251

74) Shania A. Nichols, et al. (33 co-authors including **Mason Ng**) 2026. *Mitigating the Timing Impact of Anomalous Pulse Profile Shape Variability in PSR J1713+0747 with Gaussian Component Modeling.* Submitted to ApJ. arXiv:2607.12038

73) Ben Jacobson-Bell, et al. (63 co-authors including **Mason Ng**) 2026. *The NANOGrav 15 yr and 20 yr Datasets: Timing Events and Pulse Shape Changes.* ApJ, 1005, 58. DOI:10.3847/1538-4357/ae6db6

72) Bikash Kharel, et al. (7 co-authors including **Mason Ng**) 2026. *Multimodal Transformer Based Generic Mixture Density Network for Scattering Timescale Estimation of Fast Radio Bursts.* Submitted to ApJ. arXiv:2606.03596

71) Amanda M. Cook, et al. (46 co-authors including **Mason Ng**) 2026. *Discovery of 30 Repeating Fast Radio Burst Sources and Uniform Population Statistics of 80 Repeating Sources from CHIME/FRB.* Submitted to ApJ. arXiv:2605.08410

70) Yash Bhargava, Thomas D. Russell, **Mason Ng** et al. (13 other co-authors) 2024. *X-ray and Radio Campaign of the Z-source GX 340+0. II. The X-Ray Polarization in the Normal Branch.* ApJ, 1003, 11. DOI:10.3847/1538-4357/ae5a27

69) María Alejandra Díaz Teodori, et al. (19 co-authors including **Mason Ng**) 2026. *X-Ray Polarization from the Atoll 4U 1735−44 Suggests a Low Inclination.* ApJ, 1002, 143. DOI: 10.3847/1538-4357/ae5a8e

68) Thomas C. Abbott, et al. (22 co-authors including **Mason Ng**) 2026. *Radio Monitoring Campaign of Active Repeater FRB 20220912A with CHIME.* Submitted to ApJ. arXiv:2604.09098

67) Ayush Pandhi, et al. (31 co-authors including **Mason Ng**) 2026. *A steadily declining dispersion measure for the repeating fast radio burst FRB 20220529A: Evidence for an FRB engine embedded in an expanding supernova remnant.* ApJ, 1000L, 53. DOI:10.3847/2041-8213/ae52f8

66) Swati Ravi, et al. (22 co-authors including **Mason Ng**) 2026. *Discovery of Strong Energy-Dependent X-ray Polarization in the Intermediate State of GS 1354−64.* In Review at ApJL. arXiv:2603.03463

65) CHIME/FRB Collaboration (73 co-authors including **Mason Ng**) 2026. *The Second CHIME/FRB Catalog of Fast Radio Bursts.* ApJ, 283, 34. DOI:10.3847/1538-4365/ae3828

64) Vishwangi Shah, et al. (27 co-authors including **Mason Ng**) 2026. *Probing the maximum energy of fast radio bursts using thousands of sources from the Second CHIME/FRB Catalog.* In Review at ApJ. arXiv:2602.19335

63) Alice Curtin, et al. (29 co-authors including **Mason Ng**) 2026. *CHIME/FRB Discovery and Localization of the Swift-observed FRB 20241228A.* ApJ, 998, 97. DOI: 10.3847/1538-4357/ae2ea0

62) Kaitlyn Shin, et al. (30 co-authors including **Mason Ng**) 2026. *The CHIME/FRB Discovery of the Extremely Active Fast Radio Burst Source FRB 20240114A.* ApJ, 997, 334. DOI:10.3847/1538-4357/ae2fc4

61) Andrea Gnarini, et al. (19 co-authors including **Mason Ng**) 2026. *Discovery of High X-Ray Polarization from the Neutron Star Low-Mass X-Ray Binary Cyg X-2 in the Horizontal Branch.* ApJ, 997, 299. DOI:10.3847/1538-4357/ae2ad0

60) Bas Dorsman, Tuomo Salmi, Anna L. Watts, **Mason Ng**, et al. (4 other co-authors) 2026. *Pulse profile modelling of the accretion-powered millisecond pulsar SAX J1808.4−3658 using NICER data from its 2019 and 2022 outbursts.* MNRAS, 545, 1983. DOI:10.1093/mnras/staf1983

59) Swarali Shivraj Patil, et al. (27 co-authors including **Mason Ng**) 2026. *A Spatial Gap in the Sky Distribution of Fast Radio Burst Detections Coinciding with Galactic Plasma Overdensities.* ApJ, 997, 5. DOI: 10.3847/2041-8213/ae2eb3

***58) Swati Ravi, **Mason Ng**, Herman L. Marshall, and Andrea Gnarini. 2026. *What's the Buzz About GX 13+1? Constraining Coronal Geometry with QUEEN-BEE: A Bayesian Nested Sampling Framework for X-ray Polarization Rotation Analysis.* ApJ, 997, 60. DOI: 10.3847/1538-4357/ae21bd

57) Unnati Kashyap, et al. (7 co-authors including **Mason Ng**) 2025. *First X-ray and radio polarimetry of the neutron star low-mass X-ray binary GX 17+2.* ApJ, 994, 221. DOI:10.3847/1538-4357/ae12f3

56) A. Sanna, et al. (14 co-authors including **M. Ng**) 2025. *The 2025 outburst of IGR J17511−3057: timing and spectral insights from NICER and NuSTAR.* A&A, 703, 171. DOI: 10.1051/0004-6361/202555734

55) Michael Koss, et al. (397 co-authors including **Mason Ng**) 2025. *The Advanced X-ray Imaging Satellite Community Science Book.* arXiv:2511.00253

54) Unnati Kashyap, et al. (5 co-authors including **Mason Ng**) 2025. *X-Ray and Radio Polarimetry of the Neutron Star Low-mass X-Ray Binary GX 13+1.* ApJ, 992, 66. DOI: 10.3847/1538-4357/adf968

53) Tuğba Boztepe, et al. (11 co-authors including **Mason Ng**) 2025. *The 2020 Superburst of 4U 1608−522 and its impact on the accretion disk.* MNRAS, 543, 1146. DOI: 10.1093/mnras/staf1502

52) CHIME/FRB Collaboration, et al. (including **Mason Ng**) 2025. *FRB 20250316A: A Brilliant and Nearby One-off Fast Radio Burst Localized to 13 pc Precision.* ApJ, 989L, 48. DOI: 10.3847/2041-8213/adf62f

51) George Younes, et al. (21 co-authors including **Mason Ng**) 2025. *Timing and Spectral Evolution of the Magnetar 1E 1841−045 in Outburst.* ApJ, 989, 89. DOI: 10.3847/1538-4357/ade716

50) Fengqiu Adam Dong, Kaitlyn Shin, Casey Law, **Mason Ng**, et al. (19 other co-authors) 2025. *CHIME/FRB Discovery of an Unusual Circularly Polarized Long-Period Radio Transient with an Accelerating Spin Period.* ApJ, 988L, 29. DOI: 10.3847/2041-8213/adeaab

49) Emma T. Chickles, et al. (38 co-authors including **Mason Ng**) 2024. *A Gravitational-wave-detectable Candidate Type Ia Supernova Progenitor.* ApJ, 987, 206. DOI: 10.3847/1538-4357/add34c

48) Unnati Kashyap, et al. (5 co-authors including **Mason Ng**) 2025. *X-ray polarization study of the neutron star low-mass X-ray binary GX 349+2.* ApJ, 986, 207. DOI: 10.3847/1538-4357/adda35

47) A. Tarana, et al. (16 co-authors including **M. Ng**) 2025. *X-ray spectro-polarimetry analysis of the weakly magnetized neutron star X-ray binary GX 9+1.* A&A, 698, 245. DOI: 10.1051/0004-6361/202554083

46) Unnati Kashyap, et al. (6 co-authors including **Mason Ng**) 2025. *X-ray and Radio Polarimetry of the Neutron Star Low-mass X-ray Binary 4U 1728−34.* ApJ, 985, 245. DOI: 10.3847/1538-4357/adceb9

45) Rachael Stewart, et al. (17 co-authors including **Mason Ng**) 2025. *X-ray Polarization of the Magnetar 1E 1841−045.* ApJ, 985L, 35. DOI: 10.3847/2041-8213/adbffa

44) Vladislav Loktev, et al. (14 co-authors including **Mason Ng**) 2025. *Exploring polarization and geometry in the X-ray pulsar 4U 1538−52.* A&A, 698, 22. DOI: 10.1051/0004-6361/202554151

43) Bas Dorsman, Tuomo Salmi, Anna L. Watts, **Mason Ng** et al. (9 other co-authors) 2025. *Parameter constraints for accreting millisecond pulsars with synthetic NICER data.* MNRAS, 538, 2853. DOI: 10.1093/mnras/staf438

42) María Alejandra Díaz Teodori, et al. (5 co-authors including **Mason Ng**) 2025. *NICER observations of type-I X-ray bursts from the ultra-compact X-ray binary M15 X-2.* A&A, 695, 44. DOI: 10.1051/0004-6361/202452243

41) A. Marino, et al. (34 co-authors including **M. Ng**) 2025. *Einstein Probe Discovery of EP J005245.1722843: A Rare Be-White Dwarf Binary in the Small Magellanic Cloud?* ApJ, 980L, 36. DOI: 10.3847/2041-8213/ad9580

40) Alessandro Papitto, et al. (24 co-authors including **M. Ng**) 2025. *Discovery of Polarized X-Ray Emission from the Accreting Millisecond Pulsar SRGA J144459.2−604207.* A&A, 694, 37. DOI: 10.1051/0004-6361/202451775

39) Brendan O'Connor, et al. (32 co-authors including **Mason Ng**) 2024. *Characterization of a Peculiar Einstein Probe Transient EP240408a: An Exotic Gamma-Ray Burst or an Abnormal Jetted Tidal Disruption Event?* ApJ, 979L, 30. DOI: 10.3847/2041-8213/ada7f5

38) Andrea Gnarini, et al. (13 co-authors including **Mason Ng**) 2024. *First spectropolarimetric observation of the neutron star low-mass X-ray binary GX 3+1.* A&A, 692, 123. DOI: 10.1051/0004-6361/202452642

37) Sofia V. Forsblom, et al. (15 Tier 1 co-authors including **Mason Ng**) 2024. *Probing the polarized emission from SMC X-1: the brightest X-ray pulsar observed by IXPE.* A&A, 691, 216. DOI: 10.1051/0004-6361/202450937

36) Robin H. D. Corbet, et al. (22 co-authors including **Mason Ng**) 2024. *Sharp Periodic Flares and Long-Term Variability in the High-Mass X-ray Binary XTE J1829−098 from RXTE PCA, Swift BAT and MAXI Observations.* ApJ, 976, 137. DOI: 10.3847/1538-4357/ad83b9

35) Gaurava K. Jaisawal, et al. (16 co-authors including **Mason Ng**) 2024. *A Comprehensive Study of Thermonuclear X-Ray Bursts from 4U 1820−30 with NICER: Accretion Disk Interactions and a Candidate Burst Oscillation.* ApJ, 975, 67. DOI: 10.3847/1538-4357/ad794e

34) F. Ursini, et al. (13 co-authors including **M. Ng**) 2024. *X-ray spectropolarimetry of the bright atoll Serpens X-1.* A&A, 690, 200. DOI: 10.1051/0004-6361/202451584

33) Anna Bobrikova, et al. (24 Tier 1 co-authors including **Mason Ng**) 2024. *Discovery of a strong rotation of the X-ray polarization angle in the galactic burster GX 13+1.* A&A, 688, 170. DOI: 10.1051/0004-6361/202449318

32) Yash Bhargava, **Mason Ng** et al. (13 other co-authors) 2024. *X-ray and Radio campaign of the Z-source GX 340+0: discovery of X-ray polarization and its implications.* In Review. arXiv:2405.19324

31) Birendra Chhotaray, et al. (6 co-authors including **Mason Ng**) 2024. *Long-term study of the first Galactic ultraluminous X-ray source Swift J0243.6+6124 using NICER.* ApJ, 963, 132. DOI: 10.3847/1538-4357/ad235d

30) Jeremy Heyl, et al. (10 Tier 1 co-authors including **Mason Ng**) 2024. *The detection of polarized x-ray emission from the magnetar 1E 2259+586.* MNRAS, 527, 12219. DOI: 10.1093/mnras/stad3680

29) Manoj Mandal, et al. (12 co-authors including **Mason Ng**) 2023. *Probing spectral and timing properties of the X-ray pulsar RX J0440.9+4431 in the giant outburst of 2022-2023.* MNRAS, 526, 771. DOI: 10.1093/mnras/stad2767

28) Roberto Turolla, et al. (15 Tier 1 co-authors including **Mason Ng**) 2023. *IXPE and XMM-Newton observations of the Soft Gamma Repeater SGR 1806−20.* ApJ, 954, 88. DOI: 10.3847/1538-4357/aced05

27) Christian Malacaria, et al. (19 Tier 1 co-authors including **Mason Ng**) 2023. *A polarimetric-oriented X-ray stare at the accreting pulsar EXO 2030+375.* A&A, 675, 29. DOI: 10.1051/0004-6361/202346581

26) A. C. Albayati, et al. (12 co-authors including **M. Ng**) 2023. *Thermonuclear Type-I X-ray Bursts and Burst Oscillations from the Eclipsing AMXP Swift J1749.4−2807.* MNRAS, 524, 2477. DOI: 10.1093/mnras/stad1892

25) Paul A. Draghis, et al. (9 co-authors including **Mason Ng**) 2023. *The Spin of a Newborn Black Hole: Swift J1728.9−3613.* ApJ, 947, 39. DOI: 10.3847/1538-4357/acc1c8

24) Mayura Balakrishnan, et al. (14 co-authors including **Mason Ng**) 2023. *The Black Hole Candidate Swift J1728.9−3613 and the Supernova Remnant G351.9−0.9.* ApJ, 947, 38. DOI: 10.3847/1538-4357/acc1c9

23) G. C. Mancuso, et al. (10 co-authors including **M. Ng**) 2023. *Detection of millihertz quasi-periodic oscillations in the low-mass X-ray binary 4U 1730˘22 with NICER.* MNRAS, 521, 5616. DOI: 10.1093/mnras/stad949

22) G. K. Jaisawal, et al. (9 co-authors including **M. Ng**) 2023. *On the cyclotron absorption line and evidence of the spectral transition in SMC X-2 during 2022 giant outburst.* MNRAS, 521, 3951. DOI: 10.1093/mnras/stad781

21) Silvia Zane, et al. (26 Tier 1 co-authors including **Mason Ng**) 2023. *A strong X-ray polarization signal from the magnetar 1RXS J170849.0−400910.* ApJ, 944L, 27. DOI: 10.3847/2041-8213/acb703

20) Giulia Illiano, et al. (21 co-authors including **Mason Ng**) 2022. *Timing analysis of the 2022 outburst of SAX J1808.4−3658: hints of an orbital shrinking.* ApJ, 942L, 40. DOI: 10.3847/2041-8213/acad81

19) C. Malacaria, et al. (13 co-authors including **M. Ng**) 2022. *The unaltered pulsar: GRO J1750−27, a super-critical X-ray neutron star that does not blink an eye.* A&A, 669, 38. DOI: 10.1051/0004-6361/202245123

18) Sergey S. Tsygankov, et al. (17 Tier 1 co-authors including **Mason Ng**) 2022. *The X-ray polarimetry view of the accreting pulsar Cen X-3.* ApJ, 941L, 14. DOI: 10.3847/2041-8213/aca486

17) Peter Bult, et al. (13 co-authors including **Mason Ng**) 2022. *The thermonuclear X-ray bursts of 4U 1730−22.* ApJ, 940, 81. DOI: 10.3847/1538-4357/ac9b26

16) Roberto Taverna, et al. (21 Tier 1 co-authors including **Mason Ng**) 2022. *Polarized x-rays from a magnetar.* Science, 378, 646. DOI: 10.1126/science.add0080

15) Tolga Guver, et al. (13 co-authors including **Mason Ng**) 2022. *Burst-Disk Interaction in 4U 1636−536 as observed by NICER.* ApJ, 935, 154. DOI: 10.3847/1538-4357/ac8106

14) Peter Bult, et al. (17 co-authors including **Mason Ng**) 2022. *The Discovery of the 528.6 Hz Accreting Millisecond X-Ray Pulsar MAXI J1816−195.* ApJ, 935L, 32. DOI: 10.3847/2041-8213/ac87f9

13) A. Sanna, et al. (14 co-authors including **M. Ng**) 2022. *MAXI J1957+032: a new accreting millisecond X-ray pulsar in an ultra-compact binary.* MNRAS, 516L, 76. DOI: 10.1093/mnrasl/slac093

12) Kishalay De, et al. (26 co-authors including **Mason Ng**) 2022. *SRGA J181414.6−225604: A New Galactic Symbiotic X-Ray Binary Outburst Triggered by an Intense Mass-loss Episode of a Heavily Obscured Mira Variable.* ApJ, 935, 36. DOI: 10.3847/1538-4357/ac7c6e

11) A. Marino, et al. (20 co-authors including **M. Ng**) 2022. *Outflows and spectral evolution in the eclipsing AMXP SWIFT J1749.4−2807 with NICER, XMM-Newton and NuSTAR.* MNRAS, 515, 3838. DOI: 10.1093/mnras/stac2038

10) A. Sanna, et al. (17 co-authors including **M. Ng**) 2022. *On the peculiar long-term orbital evolution of the eclipsing accreting millisecond X-ray pulsar SWIFT J1749.4−2807.* MNRAS, 514, 4385. DOI: 10.1093/mnras/stac1611

9) R. M. Ludlam, et al. (10 co-authors including **Mason Ng**) 2022. *Radius Constraints from Reflection Modeling of Cygnus X-2 with NuSTAR and NICER.* ApJ, 927, 112. DOI: 10.3847/1538-4357/ac5028

8) The LIGO Scientific Collaboration; the Virgo Collaboration; the KAGRA Collaboration (including **Mason Ng**) 2022. *Search for continuous gravitational waves from 20 accreting millisecond X-ray pulsars in O3 LIGO data.* Phys. Rev. D 105, 022002. DOI: 10.1103/PhysRevD.105.022002

7) Pasham, D.R., et al. (18 co-authors including **Mason Ng**) 2021. *Evidence for a compact object in the aftermath of the extragalactic transient AT2018cow.* Nat Astron., 6, 249. DOI: 10.1038/s41550-021-01524-8

6) Yuhan Yao, et al. (27 co-authors including **Mason Ng**) 2021. *A Comprehensive X-ray Report on AT2019wey.* ApJ, 920, 121. DOI: 10.3847/1538-4357/ac15f8

5) Teruaki Enoto, **Mason Ng**, et al. (24 other co-authors) 2021. *A Month of Monitoring the New Magnetar Swift J1555.2−5402 during an X-Ray Outburst..* ApJ, 920L, 4. DOI: 10.3847/2041-8213/ac2665

4) Peter Bult, et al. (4 co-authors including **Mason Ng**) 2021. *Long term coherent timing of the accreting millisecond pulsar IGR J17062−6143.* ApJ, 912, 120. DOI: 10.3847/1538-4357/abf13f

3) D. J. K. Buisson, et al. (26 co-authors including **Mason Ng**) 2021. *Dips and eclipses in the X-ray binary Swift J1858.6−0814 observed with NICER.* MNRAS, 503, 5600. DOI: 10.1093/mnras/stab863

2) Peter Bult, et al. (12 co-authors including **Mason Ng**) 2021. *The X-ray bursts of XTE J1739−285: a NICER sample.* ApJ, 907, 79. DOI: 10.3847/1538-4357/abd54b

1) J.J. Eldridge, E.R. Stanway, et al. (7 co-authors including **M. Ng**) 2017. *Binary Population and Spectral Synthesis Version 2.1: construction, observational verification and new results.* PASA, 34, 58. DOI: 10.1017/pasa.2017.51

## ACCEPTED OBSERVING PROPOSALS AS PI

**NuSTAR (GO Cycle 12)** 2026
*Target-Of-Opportunity NuSTAR Observations of High-B Radio Pulsars: Searching for Magnetar Metamorphoses (150 ks). Formal PI is Dr. Aaron Pearlman for funding reasons. ∼89k USD*

**Chandra (ToO)** 2025
*Rapid Chandra Follow-up of a Unique Bursting Long-Period Radio Transient (10 ks).*

**Chandra (GO Cycle 27)** 2025
*Target-Of-Opportunity Chandra Observations of High-B Radio Pulsars: Searching for Magnetar Metamorphoses (60 ks); ∼33k USD*

**NuSTAR (GO Cycle 11)** 2025
*Target-Of-Opportunity NuSTAR Observations of High-B Radio Pulsars: Searching for Magnetar Metamorphoses (150 ks).*

**IXPE (AO2)** 2024
*X-ray Polarimetric Observations of Type I X-ray Bursts from the Clocked Burster (630 ks).*

**NuSTAR (DDT)** 2024
*Simultaneous NuSTAR/IXPE Observations of the Neutron Star Low-Mass X-ray Binary GX 17+2 (20 ks).*

**NuSTAR (DDT)** 2024
*Simultaneous NuSTAR/IXPE Observations of the Neutron Star Low-Mass X-ray Binary GX 340+0 (40 ks).*

**HST Cycle 32 (co-PI)** 2024
*An ultraviolet time-domain survey of the compact binary population in 47 Tucanae;* $\sim 150k$ *USD.*

**Chandra (DDT)** 2023
*Tracking the Ne X Accretion Disk Line Emission of Ultracompact X-ray Binary 4U 1626−67 Across a Torque Reversal (60 ks).*

**NuSTAR (DDT)** 2023
*Monitoring the Pulse Profile and Spectroscopic Evolution Across the Latest Torque Reversal of 4U 1626−67 (90 ks).*

**NICER (AO5)** 2023
*Detecting Millisecond X-ray Pulsations and Confirming the Ultracompact Nature of the Low Mass X-ray Binary 4U 1850−087 (20 ks);* $\sim 43k$ *USD.*

**NICER (AO4)** 2022
*Time-Resolved Spectroscopic and Polarimetric Studies of 4U 1626−67 with NICER and IXPE (40 ks);* $\sim 44k$ *USD.*

**Swift ToO Observations** 2022 - Present
*Total of 26.6 ks over 4 sources*

**NICER ToO Observations** 2021 - 2025
*Total of 532 ks over 20 sources*

## PRESENTATIONS

* = Virtual

**Invited Seminar - KAIST (Group Meeting of Prof. Junhan Kim)** Oct 2026
*The Radio Transient Sky as Seen by CHIME*

**Invited Seminar - Ulsan National Institute of Science and Technology (UNIST)** Oct 2026
*Millisecond Flashes from Across the Universe: Fast Radio Bursts with CHIME*

**Invited Seminar - Chungbuk National University** Oct 2026
*Millisecond Flashes from Across the Universe: Fast Radio Bursts with CHIME*

**Contributed Talk - SPARCS XIV 2026 - Seoul, South Korea** Oct 2026
*CHIME/FRB Baseband Catalog 2: Polarimetry, Sightlines, SKA*

**Contributed Talk - Dynamic Radio Sky 2026 - Montréal, Canada** Aug 2026
*Insights from the Largest Radio Polarization Catalog of Fast Radio Bursts from CHIME*

**Contributed Talk - FRB 2026 - Guiyang, China** Jul 2026
*Further Analysis of the Radio Polarization Catalog of FRBs from CHIME Baseband Catalog 2*

**Poster - Canadian Astronomical Society's Annual General Meeting** Jun 2026
*Insights from the Largest Radio Polarization Catalog of Fast Radio Bursts from CHIME*

**Invited Seminar - University of Hong Kong - Hong Kong** Nov 2025
*Radio Polarization Properties of Fast Radio Bursts (FRBs) from CHIME*

**Flash Presentation - Hong Kong Laureate Forum 2025 - Hong Kong** Nov 2025
*Fast Radio Bursts - What are they, really?*

***Invited Talk - CHORD Baseband Development Team** Sep 2025
*Operation of the Baseband Pipeline in CHIME*

**Contributed Talk - FRB 2025 - Montréal, Canada** Jul 2025
*Polarization Properties of Fast Radio Bursts from CHIME Baseband Catalog 2*

**Invited Talk - Joint NICER/IXPE Workshop 2024** Jul 2024
*IXPE Data Analysis with ixpeobssim*

**Invited Seminar - Chungbuk National University** Jul 2024
*Multifaceted Understanding of Accreting Neutron stars and their Environments*

**Invited Seminar - Chungnam National University** Jul 2024
*Exploring the Frontier of Physics with Neutron Stars*

**Contributed Talk - COSPAR - Busan, South Korea** Jul 2024
*Understanding Polarization Angle Variations in Neutron Stars*

**Contributed Talk (Substitution) - COSPAR - Busan, South Korea** Jul 2024
*Magnetar X-ray Polarization Results and Implications*

**Seminar - INAF-OAR** Jun 2024
*Probing the Atoll/Z Continuum with Neutron Star Low Mass X-ray Binary 1A 1744−361*

**Invited Seminar - INAF-IAPS** Jun 2024
*Probing the Atoll/Z Continuum with Neutron Star Low Mass X-ray Binary 1A 1744−361*

**Poster - XMM-Newton 2024 Science Workshop: The X-ray Mysteries of Neutron Stars and White Dwarfs** Jun 2024
*Probing the Atoll/Z Continuum with Neutron Star Low Mass X-ray Binary 1A 1744−361*

**Contributed Talk - 21st Divisional Meeting of the High Energy Astro. Division** Apr 2024
*Probing the Atoll/Z Continuum with Neutron Star Low Mass X-ray Binary 1A 1744−361*

**Dissertation Talk - 243rd Meeting of the American Astronomical Society** Jan 2024
*X-ray and Radio Monitoring of the Neutron Star Low Mass X-ray Binary 1A 1744−361: Quasi Periodic Oscillations, Transient Ejections, and a Disk Atmosphere*

***Invited Talk - Washington University in St. Louis** Dec 2023
*Multifaceted Understanding of Accreting Neutron stars and their Environments: An X-ray Polarimetric Focus*

**Invited Special Astrophysics Seminar - McGill University** Dec 2023
*Multifaceted Understanding of Accreting Neutron stars and their Environments: An X-ray Polarimetric Focus*

**Invited Department Lunch Talk (Astronomy) - UC Berkeley** Nov 2023
*Multifaceted Understanding of Accreting Neutron stars and their Environments: An X-ray Polarimetric Focus*

**Invited Astronomy Tea Talk - Caltech** Nov 2023
*Multifaceted Understanding of Accreting Neutron stars and their Environments: An X-ray Polarimetric Focus*

**Invited KIPAC Tea Talk - Stanford University** Nov 2023
*Understanding Neutron Star Geometry through the Lens of X-ray Polarization*

**Invited Seminar - NASA Goddard Space Flight Center** Oct 2023
*Probing the Accretion Geometry of Neutron Stars with X-ray Polarization*

**Invited Seminar - U.S. Naval Research Laboratory** Oct 2023
*Probing the Accretion Geometry of Neutron Stars with X-ray Polarization*

**Invited Seminar - University of Michigan** Oct 2023
*Probing the Accretion Geometry of Neutron Stars with X-ray Polarization*

**Poster - 20th Divisional Meeting of the High Energy Astrophysics Division** Mar 2023
*Discovery of a 7.8 Hz QPO from the High-Intensity Outburst of Dipping NS LMXB 1A 1744−361*

**Poster - 20th Divisional Meeting of the High Energy Astrophysics Division** Mar 2023
*IXPE Observations of the Pulsar 4U 1626−67*

**Contributed Talk - 241st Meeting of the American Astronomical Society** Jan 2023
*IXPE Observations of the Pulsar 4U 1626−67*

**Invited Seminar - Nanyang Technological University** Dec 2022
*IXPE Observations of the Neutron Star Low-Mass X-ray Binary 4U 1626−67*

**Invited Seminar - JAXA/ISAS** Nov 2022
*IXPE Observations of the Neutron Star Low-Mass X-ray Binary 4U 1626−67*

**Invited Seminar - Kyoto University** Nov 2022
*IXPE Observations of the Neutron Star Low-Mass X-ray Binary 4U 1626−67*

***Contributed Talk - Astrophysical Polarimetry in the Time-Domain Era** Sep 2022
*IXPE Observations of the Pulsar 4U 1626−67*

**Contributed Talk - COSPAR - Athens, Greece** Jul 2022
*IXPE Observations of the Pulsar 4U 1626−67*

**Poster - 19th Divisional Meeting of the High Energy Astrophysics Division** Mar 2022
*NICER Pulsation Search and Spectroscopy of the Original Black Widow Pulsar, PSR B1957+20*

**Poster - Celebrating 20 Years of Chandra Science Symposium** Dec 2019
*Spectral Evolution of NGC 300 ULX-1*

**Invited Talk - Auckland Astronomical Society** Aug 2016
*Modelling the spectra of hot stars*

**Talk - Royal Astronomical Society of New Zealand Conference** Apr 2016
*Modelling the spectra of hot stars*

## TECHNICAL SKILLS

| | |
|---|---|
| **Programming** | Python, HTML/CSS, IDL, LaTeX |
| **High Performance Computing** | OpenMP, MPI, Slurm |
| **Languages** | English (native), Mandarin Chinese (intermediate), Korean (intermediate), French (basic) |

## HONORS & AWARDS

Young Scientist Participant for the Hong Kong Laureate Forum 2025 (1 of ∼200 selected globally) 2025

73rd Lindau Nobel Laureate Meeting (Physics) participant (1 of ∼650 selected globally) 2024

Fonds de Recherche du Québec - Nature et Technologies (FRQNT) Postdoctoral Fellowship 2024

Bruno Rossi Prize [shared], High Energy Astrophysics Division of the AAS, as a Member of the IXPE Science Team 2024

Bruno Rossi Prize [shared], High Energy Astrophysics Division of the AAS, as a Member of the NICER Science Team 2022

School of Science Service Fellowship (*Massachusetts Institute of Technology*) 2022

Graduate Service Award, Physics Department (*Massachusetts Institute of Technology*) 2021

Department of Physics Scholarship, 2017 (*The University of Auckland*) 2016

University of Auckland Postgraduate Honours/PG Diploma Scholarships 2016

Joyce Mary Clark Scholarship (*The University of Auckland*) 2016

First in Course Award (x6) (*The University of Auckland*) 2014 - 2017

Scholarship (*New Zealand Qualifications Authority*) 2014

The Trusts Charitable Foundation Scholarship (*The Trusts Charitable Foundation*) 2013

Dux Litterarum (*Lynfield College*) 2013

## RESEARCH SUPERVISION

**Vicky Bardon Soto** 2026
*Straetz International Research Scholar from the University of Chicago (co-supervised with Dr. Ryan Mckinven and Prof. Victoria Kaspi)*

**Amine Sahraoui** 2026
*McGill 4th Year Undergraduate (co-supervised with Prof. Andrew Cumming)*

**Nicole Mulyk** 2024 - 2025
*McGill PhD Student (co-supervised with Prof. Victoria Kaspi)*

**Daniel Amouyal** 2024 - 2025
*McGill Master's Student (co-supervised with Prof. Victoria Kaspi)*

**Ruth M. E. Kelly** 2024
*Visiting MIT Graduate Student from UCL (co-supervised with Dr. Herman Marshall)*

**Swati Ravi** 2023 - Present
*MIT PhD Student (co-supervised with Dr. Herman Marshall)*

**Claire McLellan-Cassivi** 2023
*MIT Undergraduate Research Student (co-supervised with Dr. Herman Marshall)*

## TEACHING EXPERIENCE

TA = Teaching Assistant

**Co-Lecturer for (Graduate) High Energy Astrophysics** Spring 2025
*Department of Physics, McGill University*

**TA for (Graduate) Astrophysics I** Spring 2021, Spring 2022
*Department of Physics, Massachusetts Institute of Technology*

**TA for "Introduction to Astronomy" and "Modern Astrophysics"** Spring 2020
*Department of Physics, Massachusetts Institute of Technology*

**Marker (5 applied mathematics courses across all undergraduate levels)** 2015 - 2017
*Department of Mathematics, The University of Auckland*

**TA (Physics) for Planets, Stars and Galaxies** 2015 - 2017
*Department of Physics, The University of Auckland*

**TA for Advancing Physics I** 2015
*Department of Physics, The University of Auckland*

## LEADERSHIP & SERVICE

**TSI Seminar Committee Member** 2025 - Present
*Organizing the weekly TSI Seminar series, including inviting speakers.*

**Fast Radio Bursts 2025 Local Organizing Committee** 2024 - 2025
*Organizing group hotel bookings, audiovisual technology for the FRB 2025 conference, and served as a point of contact throughout the conference.*

**Committee Member** 2024 - 2025

*AAS Working Group for International Students and Researchers in Astronomy. Working group established to support members of the American Astronomical Society who are international scholars, and US citizens who plan to study/conduct research overseas.*

**Vice-Chair** 2023 - 2024

*Graduate Research and Development (GRAD) Coalition. Assisting the co-Chairs and members of the GRAD Caucus in the House of Representatives to present issues and concerns by graduate students and provide a platform to discuss possible legislative solutions. Successfully organized an in-person Congressional briefing in October 2023 on the topic of graduate advising/mentorship.*

**Graduate Student Member** 2020 - 2022

*Graduate Admissions Committee, Department of Physics, MIT. Worked with the Graduate Admissions Chair to review applications from applicants to the MIT Physics PhD program.*

**Co-Organizer** 2020 - 2022

*Physics Graduate Application Assistance Program, Department of Physics, MIT. Co-led the establishment of mentoring-based physics PhD application assistance programs as well as virtual webinars. Successfully co-developed a proposal for funding graduate student mentors.*

**MIT Graduate Student Council External Affairs Board** 2019 - 2023

*Vice-Chair (2022-2023), Development (2020-2022), Public Outreach (2019-2020). Led the groundwork for the annual MIT Research Slam (2020); led the writing and publishing of the monthly advocacy newsletter (2021-2023); led multiple in-person trips with 8 to 10-student teams to Washington D.C. to meet with Congressional offices to advocate for graduate student concerns. I have overseen the scheduling for over 100 Congressional offices and committees over two trips.*

**Committee Member (Graduate Student)** 2019 - 2024

*MIT Open Space Programming Advisory Committee. Advising the Open Space Programming team on activities and programming for the Kendall Square Open Space by providing graduate student input and acting as a liaison.*

**MITvote Graduate Liaison** 2018 - 2023

*MITvote. Developing and sending informational emails on voting in local, state, and federal elections during election seasons.*

**Volunteer Observer** 2018 - 2024

*MIT Sidewalk Astrogazers. Have participated in over a dozen pop-up public astrogazing events so far and trained other students in operating the telescopes.*

**Executive Member** 2017

*Science Students' Association. Introduced the annual Science Trivia, and worked with other executive members to obtain funding from the various departments for this new association.*

**President** 2015 - 2017

*The Physics Association of The University of Auckland (PAUA). Introduced the annual Physics Careers Panel Discussion, organized monthly social gatherings ("Fluid Dynamics"), introductory Python workshops, and research seminars for undergraduate students.*

## OUTREACH AND PANELS

**Graduate School Application Workshop** Jul 2026

*Panelist for a Q&A session ($>$ 40 attendees) for undergraduate students in the TSI Summer Research program at McGill*

**Graduate School Information Session** Sep 2025
*Panelist for a Q&A session (> 20 attendees) for undergraduates at McGill Physics*

**Physics Graduate Application/Admissions Information Session** Jul 2023
*Speaker for a virtual presentation and Q&A session (> 45 attendees) for undergraduates of IISER Bhopal*

**Physics Graduate Application/Admissions Information Session** Dec 2022
*Speaker for an in-person presentation and Q&A session (> 15 attendees) for undergraduates of the Nanyang Technological University in Singapore*

**Physics Graduate Applications Panel for Cenca Bridge** Apr 2022
*Panelist for a live virtual webinar (> 5 attendees) to talk about the graduate admissions process. This panel was particularly for the Central American-Caribbean Bridge in Astrophysics students*

**PhysGAAP Webinar for Prospective Applicants** Dec 2021
*Panelist for a live virtual webinar (> 90 attendees) to talk about the graduate admissions process*

**International Graduate School Panel** Nov 2021
*Panelist for a live virtual webinar (> 10 attendees) to talk about international opportunities for graduate school to current undergraduate students in New Zealand*

**PGSC Career Panel** Nov 2021
*In-person panelist on a career panel (> 20 attendees); spoke about physics graduate admissions*

**Site 4 Art Kits & Stargazing Program** Nov 2021
*In-person presentation to two dozen graduate students and their family from all backgrounds about neutron stars*

**Discord Panel for Physics/Astro Graduate School Applicants** Oct 2021
*Panelist for a live virtual panel (> 20 attendees); spoke about physics graduate admissions*

**PhysGAAP Webinar for Prospective Applicants** Sep 2021
*Panelist for a live virtual webinar (> 140 attendees) to talk about the graduate admissions process*

**Physics Information Session for MSRP Students** Jul 2021
*Panelist for a live virtual panel (> 20 attendees) to talk about graduate school in physics*

**Graduate Admissions Panel for MIT SPS** May 2021
*Panelist for a live virtual panel (> 20 attendees) to talk about the graduate admissions process*

**Graduate School Panel for UPRM** Sep 2020
*Panelist for a live virtual panel (> 20 attendees) to talk about the graduate admissions process*