DR. WEI CHIEH (MASON) NG

McGill University + Trottier Space Institute at McGill
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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 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 2014 - 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 - now
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 - now
CHIME Collaboration (CHIME/FRB and CHIME/Pulsar)

Journal Referee 2023 - now
Journals: ApJ, MNRAS, A&A, pyOpenSci, PASJ

Graduate Student Member → Science Team Member (after 06/2024) 2021 - now
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 - now
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 13 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, 968, L7. 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, 908, L15. 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

51) 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+.* In review. arXiv:2505.00813

50) 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.* Accepted. arXiv:2504.14021

49) 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.* Submitted. arXiv:2504.08990

48) Bas Dorsman, et al. (12 co-authors including **Mason Ng**) 2025. *Parameter constraints for accreting millisecond pulsars with synthetic NICER data.* MNRAS, 538, 2853. DOI: 10.1093/mnras/staf438

47) Vladislav Loktev, et al. (14 co-authors including **Mason Ng**) 2025. *Exploring polarization and geometry in the X-ray pulsar 4U 1538−52.* Submitted. arXiv:2503.13720

46) 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

45) George Younes, et al. (21 co-authors including **Mason Ng**) 2025. *Timing and Spectral Evolution of the Magnetar 1E 1841−045 in Outburst.* Submitted. arXiv:2502.20079

44) 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

43) 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, 980, 36. DOI: 10.3847/2041-8213/ad9580

42) 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, 979, 30. DOI: 10.3847/2041-8213/ada7f5

41) 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

40) Rachael Stewart, et al. (17 co-authors including **Mason Ng**) 2024. *X-ray Polarization of the Magnetar 1E 1841045 in Outburst.* Accepted. arXiv:2412.16036.

39) Emma T. Chickles, et al. (38 co-authors including **Mason Ng**) 2024. *A gravitational wave detectable candidate Type Ia supernova progenitor.* Accepted. arXiv:2411.19916.

38) 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

37) 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

36) Yash Bhargava, Thomas D. Russell, **Mason Ng** et al. (13 co-authors) 2024. *X-ray and Radio Campaign of the Z-source GX 340+0 II: the X-ray polarization in the normal branch.* In Review. arXiv:2411.00350.

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) Yash Bhargava, **Mason Ng** et al. (13 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

32) 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

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) 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

26) 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

25) 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

24) 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

23) 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

22) 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

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.* ApJL, 944, 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.* ApJL, 942, 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.* ApJL, 941, 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) 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, 516, L76. DOI: 10.1093/mnrasl/slac093

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.* ApJL, 935, 32. DOI: 10.3847/2041-8213/ac87f9

13) 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

12) 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

11) 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

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) 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

7) The LIGO Scientific Collaboration; the Virgo Collaboration; the KAGRA Collaboration (including **Mason Ng**) 2021. *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

6) Yuhan Yao, et al. (27 co-authors including **Mason Ng**) 2020. *A Comprehensive X-ray Report on AT2019wey.* ApJ, 920, 121. DOI: 10.3847/1538-4357/ac15f8

5) Teruaki Enoto, **Mason Ng** et al. 2021. *A Month of Monitoring the New Magnetar Swift J1555.2−5402 during an X-Ray Outburst..* ApJ, 920, L4. DOI: 10.3847/2041-8213/ac2665

4) D. J. K. Buisson, et al. (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

3) Peter Bult, et al. (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

2) Peter Bult, et al. (12 co-authors including **Mason Ng**) 2020. *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

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.

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)

NICER (AO4) 2022
Time-Resolved Spectroscopic and Polarimetric Studies of 4U 1626-67 with NICER and IXPE (40 ks).

Swift ToO Observations 2022 - present
Total of 7 ks over 2 sources

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

PRESENTATIONS

* = Virtual

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

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

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.

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

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

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

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

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

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

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

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

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

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

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

HONORS & AWARDS

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

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

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

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

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

Claire McLellan-Cassivi Jun 2023 - Dec 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

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 prospective physics PhD applicants.

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

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 the graduate school

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

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