Philippe Landry

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RESEARCH INTERESTS

Gravitational waves • Neutron stars • Compact object populations • General relativity • Ultra-dense matter • Relativistic tides • Post-Newtonian theory • Perturbation theory

EDUCATION

PHD, PHYSICS

University of Guelph • 2017

Advisor: Eric Poisson

Thesis: Tidal response of a rotating neutron star in general relativity

MSC, PHYSICS

University of Guelph • 2014

Advisor: Eric Poisson

Thesis: Tidal deformations of compact bodies in general relativity

BSC (HONS.), PHYSICS

Queen's University • 2012

Advisor: Kayll Lake

Thesis: McVittie solution with a negative cosmological constant

RESEARCH EXPERIENCE

POSTDOCTORAL FELLOW • University of Toronto

Sep 2021 - Oct 2024

Postdoctoral fellow at the **Canadian Institute for Theoretical Astrophysics**; member of the **LIGO Scientific Collaboration** and **Cosmic Explorer**

POSTDOCTORAL ASSOCIATE • California State University, Fullerton

Sep 2019 - Aug 2021

Postdoctoral research associate at the **Nicholas & Lee Begovich Center for Gravitational Wave Physics & Astronomy**; co-authored the NSF-mandated horizon study for **Cosmic Explorer**

POSTDOCTORAL SCHOLAR • University of Chicago

Sep 2017 - Aug 2019

Postdoctoral scholar at the **Enrico Fermi Institute** and associate fellow at the **Kavli Institute for Cosmological Physics**; worked in gravitational wave astronomy within the **LIGO Scientific Collaboration**

GRADUATE RESEARCH ASSISTANT • University of Guelph

Sep 2012 - Aug 2017

Contributed to the development of the theory of relativistic tides in compact binary systems, including gravitomagnetic and spin effects

UNDERGRADUATE RESEARCHER • Queen's University

Sep 2011 - Apr 2012

Studied the global structure of an exact solution in general relativity for an undergraduate thesis

UNDERGRADUATE RESEARCHER • Royal Military College of Canada

May - Aug 2011

Worked on an observational space science project about derelict satellites for **Defence Research & Development Canada** as part of an NSERC undergraduate student research award

RESEARCH GRANTS

NSF RUI AWARD • National Science Foundation — Jul 2021 - Jun 2024

Co-PI of the NSF Research in Undergraduate Institutions grant PHY-2110441, "RUI: Neutron-Star Matter in the LIGO A+ Era and Beyond," developed with PI Jocelyn Read and funded at $225k over three years to support research at Cal State Fullerton

FELLOWSHIPS & AWARDS

NSERC POSTDOCTORAL FELLOWSHIP • NSERC — Sep 2017 - Aug 2019

Fellowship awarded by the Natural Sciences & Engineering Research Council of Canada for research potential and academic achievement; held at the University of Chicago

DTP/WITP THESIS PRIZE • Canadian Association of Physicists — Jun 2018

Award for best PhD thesis by a graduate of a Canadian university in the field of theoretical physics

ALEXANDER GRAHAM BELL CANADA GRADUATE SCHOLARSHIP • NSERC — May '16 - Aug '17

Scholarship awarded for research potential and academic achievement; held at the University of Guelph

DEAN'S SCHOLARSHIP • University of Guelph — Sep 2012 - Aug 2017

Scholarship for academic achievement

HARTLE AWARD • GR21 — Jul 2016

Award for best student talk in section of GR21 gravity conference at Columbia University

ONTARIO GRADUATE SCHOLARSHIP • Province of Ontario — May 2015 - Apr 2016

Scholarship for academic achievement held at the University of Guelph

BEST STUDENT TALK • 17th Eastern Gravity Meeting — Jun 2014

Award for best student talk at gravity conference at West Virginia University

UNDERGRADUATE STUDENT RESEARCH AWARD • NSERC — May - Aug 2011

Research fellowship held at the Royal Military College of Canada

TEACHING, SERVICE & OUTREACH

EDITORIAL TEAM CHAIR • LVK O4 Multimessenger Discovery Paper — Jul 2023 - Oct 2024

Lead the paper-writing team responsible for reporting the discovery of a neutron star merger with an electromagnetic counterpart during the fourth LIGO-Virgo-KAGRA observing run

CO-CHAIR • LVK Extreme Matter R&D Group — Jul 2022 - Oct 2024

Lead the LIGO-Virgo-KAGRA Collaboration's working group on neutron stars; manage related collaboration analyses, code review and papers, chair biweekly group meetings

GROUP LEADER • CITA Focus Group on Gravitational Waves — Sep 2021 - Oct 2024

Founded gravitational-wave astronomy discussion group for researchers at CITA and national affiliates; coordinate and lead biweekly group meetings

REFEREE • AAS, Physical Review, Nature, Science — Sep 2017 - Oct 2024

Referee scientific articles for The Astrophysical Journal, The Astrophysical Journal Letters, Physical Review D, Physical Review Letters, Nature and Science

COMMITTEE MEMBER • CITA Visitor Committee — Sep 2022 - Jan 2024

Nominated, invited and coordinated visits for CITA seminar speakers

CO-ORGANIZER • INT Workshop — Jul 2022 - Aug 2024

Serve as one of the main organizers for the Institute for Nuclear Theory workshop "EOS measurements with next-generation gravitational-wave detectors" scheduled for Aug 2024

SCIENTIFIC ORGANIZING COMMITTEE MEMBER • PAX VIII — Feb - Aug 2022

Served on the scientific organizing committee for the 8th Physics & Astrophysics at the Extreme (PAX) workshop at MIT; organized and chaired a panel on the neutron star equation of state

UNDERGRADUATE RESEARCH ADVISOR • University of Toronto — Sep 2021 - Aug 2022

Supervised a summer undergraduate research fellowship project, and two undergraduate research theses in neutron star astrophysics for the Astronomy & Astrophysics Department's AST425 course

LECTURER • Lifelong Learning Lectures — Sep 2018 - Dec 2020

Participated in lifelong learning programs, giving public outreach talks on the topic of tides in Chicago and on the topic of gravitational waves in Fullerton

CO-EDITOR • Humans of LIGO Blog — Jul 2018 - Dec 2020

Conducted interviews and curated posts for public outreach blog profiling individual LIGO scientists

SPACE VISUALIZATION LAB PRESENTER • Adler Planetarium — Jan 2018 - Aug 2019

Regularly volunteered as science presenter for Astronomy Conversations public outreach program

LECTURER • Undergraduate Physics Reading Seminar — Oct - Dec 2018

Helped design an interest-based non-credit course on computational methods in gravitational wave astrophysics for advanced undergraduates; delivered two lectures and devised a final assignment

COMMITTEE MEMBER • Guelph/Perimeter Institute Faculty Search — Jan 2016 - Apr 2017

Student representative on the joint University of Guelph/Perimeter Institute search committee for two faculty positions in theoretical physics

SEMINAR SERIES ORGANIZER • University of Guelph — Sep 2014 – Apr 2017

Co-founded, coordinated and secured funding for a series of outreach talks delivered by graduate students and aimed at physics undergraduates; also personally delivered several talks

COMMITTEE MEMBER • GWPI Coordinating Committee — Sep 2014 - Apr 2017

Student representative on the graduate program committee for the Guelph-Waterloo Physics Institute and member of the 2016 institute director search committee

TEACHING ASSISTANT • University of Guelph — Sep 2012 - Apr 2017

Served as a teaching assistant for undergraduate courses in introductory physics, mechanics and electromagnetism, leading tutorials, supervising laboratories, grading assignments and exams, and occasionally delivering lectures

AFFILIATIONS

SCIENTIFIC COLLABORATIONS

LIGO Scientific Collaboration • Cosmic Explorer

PROFESSIONAL SOCIETIES

American Physical Society • American Astronomical Society • International Society on General Relativity & Gravitation • Canadian Association of Physicists

SKILLS

LANGUAGES

English • French • Italian

PROGRAMMING

Python • C • SQL

COMPUTER ALGEBRA

Mathematica • Maple • Matlab

MENTORING

GRADUATE STUDENTS

Diego Montalvo, **University of Toronto**	May 2023 - Oct 2024
Sunny Ng, **California State University, Fullerton**	May 2022 - Oct 2024
Marc Penuliar, **California State University, Fullerton**	Sep 2019 - April 2023
Mary Usufzy, **California State University, Fullerton**	Sep 2021 - April 2022
Bhaskar Biswas, **IUCAA**	Mar 2019 - Dec 2020
Bharat Kumar, **Institute of Physics, Bhubaneswar**	Sep 2017 - Dec 2018

UNDERGRADUATE STUDENTS

Kyle Wong, **University of Toronto**	May 2023 - Oct 2024
Emily Wuchner, **California State University, Fullerton**	Sep 2021 - Oct 2024
Utkarsh Mali, **University of Toronto**	May 2022 - Aug 2022
Katherine Karababas, **University of Toronto**	Sep 2021 - Apr 2022
Kunal Mehta, **University of Toronto**	Sep 2021 - Apr 2022
Abel Jesus Hernandez, **California State University, Fullerton**	Jan 2020 - Apr 2022
Jérémie Gagnon-Bischoff, **Perimeter Institute**	May - Aug 2017

TALKS

INVITED

[1] Cosmic collisions: neutron-star astrophysics with gravitational waves. **Strong Gravity Seminar**, Perimeter Institute (2024).

[2] A nonparametric tour of neutron-star matter with gravitational waves. **INT-N3AS Workshop 24-89W**, Institute for Nuclear Theory (2024).

[3] Neutron star science with gravitational waves. **Theory Canada 16**, University of Waterloo (2024).

[4] Cosmic collisions: nuclear astrophysics with gravitational waves. **CaNPAN Annual Meeting**, TRIUMF, online (2024).

[5] The densest stuff in the universe: probing neutron star matter with gravitational waves. **Canadian Association of Physicists Congress**, University of New Brunswick (2023).

[6] Dense-matter science with next-generation compact binary inspirals. **APS April Meeting**, Minneapolis MN, online (2023).

[7] Neutron star science with gravitational waves. **CGCA Seminar**, University of Wisconsin-Milwaukee (2023); **UBC Gravity Seminar**, University of British Columbia (2023); **LANL Astrophysics Seminar**, Los Alamos National Laboratory (2023).

[8] Cosmic Explorer and next-generation ground-based gravitational-wave astronomy. **Rencontres du Vietnam: Theory Meeting Experiment**, Quy Nhon, Vietnam (2023).

[9] Probing neutron stars with gravitational waves. **Department of Physics, Engineering Physics & Astronomy Seminar**, Queen's University (2022).

[10] Prospects and challenges for dense matter studies with gravitational waves. **ACFI Workshop: The Future of Neutron Rich Matter, From Neutron Skins to Neutron Stars**, University of Massachussets - Amherst (2022).

[11] Extreme matter in Cosmic Explorer. **GWPAC 10-Year Anniversary Meeting: Exploring Extreme Matter and Spacetimes with Gravitational Waves**, Cal State Fullerton (2022).

[12] Panel: Nuclear physics. **PAX VIII Workshop**, MIT (2022).

[13] Gravitational-wave constraints on neutron star matter from the third LIGO-Virgo observing run. **AAS 240**, Pasadena CA, online (2022).

[14] The high-density equation of state and maximum mass of neutron stars. **INT Workshop 20R-1b**, Institute for Nuclear Theory (2022).

[15] Neutron star binaries: mergers, matter and modeling. **Storming the Gravitational-Wave Frontier**, Kavli Institute for Theoretical Physics (2022).

[16] Probing neutron star matter with gravitational waves. **CITA Seminar**, CITA, online (2021); **UVA Gravity Seminar**, University of Virginia, online (2021).

[17] Mapping the QCD phase diagram with LIGO's neutron star mergers. **Nuclear & Particle Physics Seminar**, Rice University, online (2021).

[18] Panel: Neutron stars and dense matter. **JINA Horizons Workshop**, Joint Institute for Nuclear Astrophysics, online (2020).

[19] Dense matter science with Cosmic Explorer. **1st CE Conference**, Penn State, online (2020).

[20] Compact binaries as probes of dense matter and dark matter. **Snowmass 2021 Community Planning Meeting**, online (2020).

[21] Panel: QCD matter in equilibrium. **From Heavy Ion Collisions to Neutron Stars**, University of Illinois at Urbana-Champaign, online (2020).

[22] GW190814: An unexpected compact binary coalescence from the mass gap. **DESY Astroparticle Seminar**, DESY Zeuthen, online (2020).

[23] GW190814: Gravitational waves from the coalescence of a 23 $M_\odot$ black hole with a 2.6 $M_\odot$ compact object. **LIGO-Virgo-Kagra Webinar**, online (2020).

[24] Insights on neutron-star matter from gravitational waves, hotspots and massive pulsars. **CaJAGWR Seminar**, Caltech (2020).

[25] Neutron star tides and quasi-universal relations. **Merging Visions**, Kavli Institute for Theoretical Physics (2019).

[26] New developments in gravitational-wave inference of the neutron star equation of state. **IUCAA Seminar**, Inter-University Center for Astronomy & Astrophysics (2019).

[27] Inferring the neutron star equation of state from gravitational waves: a nonparametric approach. **Center for Gravitation, Cosmology & Astrophysics Seminar**, University of Wisconsin - Milwaukee (2018).

[28] Tides in spinning neutron star binaries. **Theory Canada 13**, St Francis Xavier University (2018).

[29] Dynamical tidal response of a rotating neutron star. **Canadian Institute for Theoretical Astrophysics Seminar**, University of Toronto (2016).

[30] Photometry of derelict GEO and GPS satellites for rotation rate characterization. **Physics Department Colloquium**, Royal Military College (2011).

CONTRIBUTED

[31] Inference of multi-channel r-process element enrichment in the Milky Way using binary neutron star merger observations. **CASCA Annual General Meeting**, University of Toronto (2024).

[32] The mass distribution of neutron stars in gravitational-wave binaries. **APS April Meeting**, New York NY (2022).

[33] The Cosmic Explorer Horizon Study: Science, observatories, and community. **SACNAS National Diversity in STEM Digital Conference**, online (2021).

[34] Distinguishing the nature of the lighter compact object in the binary merger GW190814. **APS April Meeting**, online (2021).

[35] Constraints on the neutron-star equation of state with gravitational-wave and pulsar observations. **APS April Meeting**, online (2020).

[36] A nonparametric approach to gravitational-wave inference of the neutron star equation of state. **GR22 + Amaldi13**, University of Valencia (2019).

[37] Inferring neutron star properties from GW170817 with universal relations. **28th Midwest Relativity Meeting**, University of Wisconsin - Milwaukee (2018); **APS April Meeting**, Denver CO (2019).

[38] Rotational-tidal phasing of the binary neutron star waveform. **18th Atlantic General Relativity Meeting**, St Francis Xavier University (2018).

[39] Extended I-Love relations for slowly rotating neutron stars. **27th Midwest Relativity Meeting**, University of Michigan (2017); **APS April Meeting**, Columbus OH (2018).

[40] Dynamical tidal response of a rotating neutron star. **GR21**, Columbia University; **26th Midwest Relativity Meeting**, Perimeter Institute (2016); **APS April Meeting**, Washington DC (2017).

[41] Tidal deformation of a slowly rotating compact body. **International Conference on Black Holes**, University of Toronto; **General Relativity & Gravitation: A Centennial Perspective**, Penn State; **25th Midwest Relativity Meeting**, Northwestern University (2015).

[42] Tidal deformation of an irrotational fluid body. **18th Eastern Gravity Meeting**, Rochester Insitute of Technology; **Fields Institute Focus Program on General Relativity**, University of Toronto (2015).

[43] Relativistic theory of surficial Love numbers. **17th Eastern Gravity Meeting**, West Virginia University; **24th Midwest Relativity Meeting**, Oakland University (2014).

[44] Tides in higher-dimensional Newtonian gravity. **16th Eastern Gravity Meeting**, University of Toronto; **23rd Midwest Relativity Meeting**, University of Wisconsin - Milwaukee (2013).

PUBLIC

[45] Listening for black holes and neutron stars: LIGO's recent gravitational wave discoveries. **Osher Lifelong Learning Institute Lecture**, Cal State Fullerton (2020).

[46] Tides in the solar system and the universe. **Art of Science Lecture Series**, Agitator Art Gallery, Chicago (2019).

[47] Tides: from the seas to the stars. **Lifelong Learning Lecture Series**, Chicago Cultural Center (2018); Sulzer Regional Library, Chicago (2019).

[48] Neutron stars: dense, strange and not too bright. **Astronomy on Tap**, Marz Community Brewing, Chicago (2018).

[49] Gravitational waves and transient astronomy: a discussion of GW170817. **Public Lecture**, University of Chicago (2017).

PRESS

[1] C. Sasaki & A. Hody, Three CITA astrophysicists look forward to new gravitational wave discoveries. **UofT A&S News**, 18 Jul 2023.

[2] F. Nicot, L'étoile à neutrons, astre de tous les extrêmes. **Sciences et avenir**, 2 Oct 2021.

[3] M. Koren, An Event So Wild It Could Make Anyone Feel Cosmically Small. **The Atlantic**, 29 Jun 2021.

[4] D. Cano Ramos, Neutron Stars Swallowed by Black Holes in Rare Cosmic Collisions. **CSUF News Service**, 29 Jun 2021.

[5] C. Wood, Mystery Object Blurs Line between Neutron Stars and Black Holes. **Scientific American**, 30 Jun 2020.

[6] D. Cano Ramos, CSUF Scientists Unravel Mystery Merger in the Universe. **CSUF News Service**, 23 Jun 2020.

[7] C. Wood, Why are big neutron stars like Tootsie Pops? **Popular Science**, 5 Jun 2020.

PUBLICATIONS

52 papers total • 12 first-authored • 2 LVK editorial team • +16 with major contributions (⋆) • 35 in small author groups • 9 with LVK* • 8 with Cosmic Explorer or other large author groups

*NB: I am not on the LVK author list by default, so if I appear on an LVK paper it is because I contributed to analysis/writing and opted in to authorship.

PEER-REVIEWED

[1] S. R. Mohanty, U. Mali, H. C. Das, B. Kumar & **P. Landry**, Astrophysical constraints on neutron star f-modes with a nonparametric equation of state representation, **Phys. Rev. D 112**, 123043 (2025), **arXiv**:2410.16689. ⋆

[2] E. Finch, I. Legred, K. Chatziioannou, R. Essick, S. Han & **P. Landry**, Unified nonparametric equation-of-state inference from the neutron-star crust to perturbative-QCD densities, **Phys. Rev. D 112**, 103023 (2025), **arXiv**:2505.13691.

[3] R. Somasundaram *et al.* [incl. **P. Landry**], Inferring three-nucleon couplings from multi-messenger neutron-star observations, **Nat. Comm. 16**, 9819 (2025), **arXiv**:2410.00247.

[4] S. Ng *et al.* [incl. **P. Landry**], Inferring the neutron star equation of state with nuclear-physics informed semiparametric models, **Class. Quantum Grav. 42**, 205008 (2025), **arXiv**:2507.03232.

[5] H. Y. Chen, **P. Landry**, J. S. Read and D. M. Siegel, Inference of Multichannel r-process Element Enrichment in the Milky Way Using Binary Neutron Star Merger Observations, **Astrophys. J. 985**, 154 (2025), **arXiv**:2402.03696. ⋆

[6] A. Toivonen *et al.* [incl. **P. Landry**], What to Expect: Kilonova Light Curve Predictions via Equation of State Marginalization, **Pub. Astron. Soc. Pacific 137**, 034506 (2025), **arXiv**:2410.10702.

[7] J. Golomb, I. Legred, K. Chatziioannou and **P. Landry**, Interplay of astrophysics and nuclear physics in determining the properties of neutron stars, **Phys. Rev. D 111**, 023029 (2025), **arXiv**:2410.14597.

[8] R. Kumar *et al.* [incl. **P. Landry**], Theoretical and experimental constraints for the equation of state of dense and hot matter, **Living Rev. Relativ. 27**, 3 (2024), **arXiv**:2303.17021.

[9] I. Gupta *et al.* [incl. **P. Landry**], Characterizing gravitational wave detector networks: from A♯ to Cosmic Explorer, **Class. Quantum Grav. 41**, 245001 (2024), **arXiv**:2307.10421.

[10] A.G. Abac *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration, Virgo Collaboration and KAGRA Collaboration), Observation of Gravitational Waves from the Coalescence of a 2.5–4.5 $M_\odot$ Compact Object and a Neutron Star, **Astrophys. J. Lett. 970**, L34 (2024), **arXiv**:2404.04248.

[11] R. Essick, I. Legred, K. Chatziioannou, S. Han & **P. Landry**, Phase Transition Phenomenology with Nonparametric Representations of the Neutron Star Equation of State, **Phys. Rev. D 108**, 043013 (2023), **arXiv**:2305.07411.

[12] R. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration, Virgo Collaboration and KAGRA Collaboration), Population of Merging Compact Binaries Inferred Using Gravitational Waves through GWTC-3, **Phys. Rev. X 13**, 011048 (2023), **arXiv**:2111.03634. ⋆

[13] S. Biscoveanu, **P. Landry** & S. Vitale, Population properties and multimessenger prospects of neutron star-black hole mergers following GWTC-3, **Mon. Not. R. Astron. Soc. 518**, 5298 (2022), **arXiv**:2207.01568. ⋆

[14] V. Srivastava *et al.* [incl. **P. Landry**], Science-driven Tunable Design of Cosmic Explorer Detectors, **Astrophys. J. 931**, 22 (2022), **arXiv**:2201.10668. ⋆

[15] I. Legred, K. Chatziioannou, R. Essick & **P. Landry**, Implicit correlations within phenomenological parametric models of the neutron star equation of state, **Phys. Rev. D 105**, 043016 (2022), **arXiv**:2201.06791. ⋆

[16] R. Essick, **P. Landry**, A. Schwenk & I. Tews, Detailed Examination of Astrophysical Constraints on the Symmetry Energy and the Neutron Skin of ^{208}Pb with Minimal Modeling Assumptions, **Phys. Rev. C 104**, 065804 (2021), **arXiv**:2107.05528.

[17] R. Essick, I. Tews, **P. Landry** & A. Schwenk, Astrophysical Constraints on the Symmetry Energy and the Neutron Skin of ^{208}Pb with Minimal Modeling Assumptions, **Phys. Rev. Lett. 127**, 192701 (2021), **arXiv**:2102.10074.

[18] **P. Landry** & J. S. Read, The Mass Distribution of Neutron Stars in Gravitational-wave Binaries, **Astrophys. J. Lett. 921**, L25 (2021), **arXiv**:2107.04559. ⋆

[19] I. Legred, K. Chatziioannou, R. Essick, S. Han & **P. Landry**, Impact of the PSR J0740+6620 radius constraint on the properties of high-density matter, **Phys. Rev. D 105**, 063003 (2021), **arXiv**:2106.05313. ⋆

[20] C. Stachie *et al.* [incl. **P. Landry**], Predicting electromagnetic counterparts using low-latency gravitational-wave data products, **Mon. Not. R. Astron. Soc. 505**, 4235 (2021), **arXiv**:2103.01733. ⋆

[21] R. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration, Virgo Collaboration and KAGRA Collaboration), Observation of Gravitational Waves from Two Neutron Star-Black Hole Coalescences, **Astrophys. J. 915**, L5 (2021), **arXiv**:2106.15163. ⋆

[22] R. Essick, I. Tews, **P. Landry**, S. Reddy & D. Holz, Direct astrophysical tests of chiral effective field theory at supranuclear densities [Editor's Suggestion], **Phys. Rev. C 102**, 055803 (2020), **arXiv**:2004.07744.

[23] R. Essick & **P. Landry**, Discriminating between Neutron Stars and Black Holes with Imperfect Knowledge of the Maximum Neutron Star Mass, **Astrophys. J. 904**, 80 (2020), **arXiv**:2007.01372. ⋆

[24] **P. Landry**, R. Essick & K. Chatziioannou, Nonparametric constraints on neutron star matter with existing and upcoming gravitational wave and pulsar observations, **Phys. Rev. D 101**, 123007 (2020), **arXiv**:2003.04880. ⋆

[25] R. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration and Virgo Collaboration), GW190814: Gravitational Waves from the Coalescence of a 23 Solar Mass Black Hole with a 2.6 Solar Mass Compact Object, **Astrophys. J. Lett. 896**, L44 (2020), **arXiv**:2006.12611. ⋆

[26] R. Essick, **P. Landry** & D. Holz, Nonparametric inference of neutron star composition, equation of state, and maximum mass with GW170817, **Phys. Rev. D 101**, 063007 (2020), **arXiv**:1910.09740. ⋆

[27] B. P. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration and Virgo Collaboration), GW190425: Observation of a Compact Binary Coalescence with Total Mass $\sim 3.4\ M_\odot$, **Astrophys. J. Lett. 892**, L3 (2020), **arXiv**:2001.01761. ⋆

[28] B. P. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration and Virgo Collaboration), Model comparison from LIGO-Virgo data on GW170817's binary components and consequences for the merger remnant, **Class. Quantum Grav. 37**, 045006 (2020), **arXiv**:1908.01012.

[29] B. Kumar & **P. Landry**, Inferring neutron star properties from GW170817 with universal relations, **Phys. Rev. D 99**, 123026 (2019), **arXiv**:1902.04557. ⋆

[30] **P. Landry** & R. Essick, Nonparametric inference of the neutron star equation of state from gravitational wave observations, **Phys. Rev. D 99**, 084049 (2019), **arXiv**:1811.12529. ⋆

[31] M. Lagos, M. Fishbach, **P. Landry** & D. Holz, Standard sirens with a running Planck mass, **Phys. Rev. D 99**, 083504 (2019), **arXiv**:1901.03321.

[32] B. P. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration and Virgo Collaboration), Properties of the binary neutron star merger GW170817, **Phys. Rev. X 9**, 011001 (2019), **arXiv**:1805.11579.

[33] **P. Landry** & B. Kumar, Constraints on the Moment of Inertia of PSR J0737-3039A from GW170817, **Astrophys. J. Lett. 868**, L22 (2018), **arXiv**:1807.04727. ⋆

[34] B. P. Abbott *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration and Virgo Collaboration), GW170817: Measurements of Neutron Star Radii and Equation of State, **Phys. Rev. Lett. 121**, 161101 (2018), **arXiv**:1805.11581. ⋆

[35] J. Gagnon-Bischoff, S. Green, **P. Landry** & N. Ortiz, Extended I-Love relations for slowly rotating neutron stars, **Phys. Rev. D 97**, 064042 (2018), **arXiv**:1711.05694. ⋆

[36] **P. Landry**, Tidal deformation of a slowly rotating material body: Interior metric and Love numbers, **Phys. Rev. D 95**, 124058 (2017), **arXiv**:1703.08168. ⋆

[37] **P. Landry** & E. Poisson, Dynamical response to a stationary tidal field, **Phys. Rev. D 92**, 124041 (2015), **arXiv**:1510.09170. ⋆

[38] **P. Landry** & E. Poisson, Gravitomagnetic response of an irrotational body to an applied tidal field, **Phys. Rev. D 91**, 104026 (2015), **arXiv**:1504.06606. ⋆

[39] **P. Landry** & E. Poisson, Tidal deformation of a slowly rotating material body: External metric, **Phys. Rev. D 91**, 104018 (2015), **arXiv**:1503.07366. ⋆

[40] **P. Landry** & E. Poisson, Relativistic theory of surficial Love numbers, **Phys. Rev. D 89**, 124011 (2014), **arXiv**:1404.6798. ⋆

[41] **P. Landry**, M. Abdelqader & K. Lake, McVittie solution with a negative cosmological constant, **Phys. Rev. D 86**, 084002 (2012), **arXiv**:1207.6350. ⋆

WHITE PAPERS & RESEARCH NOTES

[42] M. Evans *et al.* [incl. **P. Landry**], Cosmic Explorer: A Submission to the NSF MPSAC ngGW Subcommittee, **arXiv**:2306.13745 (2023).

[43] S. Biscoveanu, E. Burns, **P. Landry** & S. Vitale, An Observational Upper Limit on the Rate of Gamma-Ray Bursts with Neutron Star-Black Hole Merger Progenitors, **Res. Notes AAS 7**, 136 (2023), **arXiv**:2306.14974.

[44] A. Lovato *et al.* [incl. **P. Landry**], Long Range Plan: Dense matter theory for heavy-ion collisions and neutron stars, **arXiv**:2211.02224 (2022).

[45] S. Bogdanov *et al.* [incl. **P. Landry**], Snowmass 2021 Cosmic Frontier White Paper: The Dense Matter Equation of State and QCD Phase Transitions, **arXiv**:2209.07412 (2022). ⋆

[46] H. Schatz *et al.* [incl. **P. Landry**], Horizons: Nuclear Astrophysics in the 2020s and Beyond, **arXiv**:2205.07996 (2022).

[47] M. Evans *et al.* [incl. **P. Landry**], A Horizon Study for Cosmic Explorer: Science, Observatories, and Community, **arXiv**:2109.09882 (2021). ⋆

PREPRINTS

[48] A.G. Abac *et al.* [incl. **P. Landry**] (LIGO Scientific Collaboration, Virgo Collaboration and KAGRA Collaboration), GWTC-4.0: Population Properties of Merging Compact Binaries, **arXiv**:2508.18083 (2025).

[49] S. Muhammed *et al.* [incl. **P. Landry**], Mergers Fall Short: Non-merger Channels Required for Galactic Heavy Element Production, **arXiv**:2508.06020 (2025).

[50] A. Boudon *et al.* [incl. **P. Landry**], A Realistic Projection for Constraining Neutron Star Equation of State with the LIGO-Virgo-KAGRA Detector Network in the A+ Era, **arXiv**:2501.11585 (2025).

[51] **P. Landry** & K. Chakravarti, Prospects for constraining twin stars with next-generation gravitational-wave detectors, **arXiv**:2212.09733 (2022). ⋆

[52] **P. Landry**, Rotational-tidal phasing of the binary neutron star waveform, **arXiv**:1805.01882 (2018). ⋆