

# Ilya Mandel

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## CONTACT INFORMATION

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*WWW:* <http://ilyamandel.github.io>

## EDUCATION

**California Institute of Technology**, Pasadena, CA USA

Ph.D. in Physics (conferred June 2008)

- Dissertation Title: “The Three Ss of Gravitational Wave Astronomy: Sources, Signals, Searches”
- Advisor: Kip S. Thorne

M.S. in Physics, 2003

**Stanford University**, Stanford, CA USA

M.S. in Computer Science (Theory specialization), 2001

B.S. in Physics, with Distinction and Departmental Honors, 2000

## ACADEMIC EXPERIENCE

**Monash University, Australia**

*Professor of Astrophysics*

**2019 - present**

**University of Birmingham, UK**

*Honorary Professor*

**2019 - 2022**

*Professor of Theoretical Astrophysics*

**2016 - 2019**

*Senior Lecturer*

**2014 - 2016**

*Lecturer*

**2011 - 2014**

**NSF Astronomy & Astrophysics Postdoctoral Fellow**

**2009 - 2011**

At Northwestern 9/2009-6/2010; at MIT 7/2010-8/2011.

**Northwestern University**, Evanston, IL USA

*Postdoctoral Scholar in Theoretical Astrophysics*

**2007 - 2009**

Mentor: Vicky Kalogera

**California Institute of Technology**, Pasadena, CA USA

*Research Assistant*

**2006 - 2007**

*Teaching Assistant*

**2001 - 2006**

**Stanford University**, Stanford, CA USA

*Research Assistant, Gravity Probe B*

**1996 - 2003**

*Research and Teaching Assistant, Computer Science*

**1999**

## AWARDS

Clarivate “1 in 1000” highly cited researchers, 2023

Australian Research Council Future Fellow, 2019-2023

Elected Patron of Birmingham AstroSoc student society, 2017

Breakthrough Prize in Fundamental Physics (part of LIGO team), May 2016

SAMSI (Statistical and Applied Mathematical Science Institute) Research Fellow, 2016–2017

College of Engineering and Physical Sciences paper of the month award, February 2016

Classical and Quantum Gravity highlights – most cited article in 2 years (“Predictions for the rates of compact binary coalescences observable by ground-based gravitational-wave detectors”), 2012

Head of School commendation letters for excellence in teaching (multiple years, 2013–2018)

Kevin Westfold Distinguished Visitor, Monash Center for Astrophysics, 2014  
NSF Astronomy and Astrophysics Postdoctoral Fellowship  
Dean's Award for Academic Achievement (excellence in research), Stanford University  
Tau Beta Pi (engineering honor society) Member  
National Merit Scholar, National Advanced Placement Scholar

## SERVICE

### *International/national leadership:*

Member, Australian Research Council College of Experts (2022 – current)  
Aspen Center for Physics board member (2016 – current)  
Gravitational-Wave International Committee 3G Science Case team member, Binaries working group co-chair (2017 – 2019)  
President, IAU Binary and Multiple Star Systems Commission (2024 – current); Vice President (2022 – 2024); Organising Committee Member (2018 – present)  
International Society on General Relativity & Gravitation, Nominating Committee member (2016 – current)  
Chair, steering committee of the Australian National Institute for Theoretical Astrophysics (ANITA; 2020 – 2024 [deputy chair, 2019-2020])  
Councillor, Astronomical Society of Australia (2019 – 2021)  
Council member, International Astrostatistics Association (2021 – 2023)  
International Statistics Institute (ISI) Astrostatistics Special Interest Group Management Committee (2022 – current)  
Science Meets Parliament representative, 2021

### *Journal editing and review, grant review:*

Scientific Editor, AAS (Astrophysical Journal, ApJ Letters) (2021 – current)  
Editor-in-Chief, Encyclopedia of Astrophysics (2023–2025)  
Editorial Board member, Nature Scientific Data (2018 – 2024)  
Reviewer for the Astrophysical Journal, Physical Review, Classical and Quantum Gravity, Monthly Notices of the Royal Astronomical Society, Philosophical Transactions of the Royal Society, Nature journals, Science (2008–current); Institute of Physics Trusted Reviewer (2020)  
ARC College of Experts member (2022–2024)  
Grant reviewer for NASA (USA; including as member of NASA Astrophysics Theory Grant Panel), NSF (USA), Hungarian Scientific Research Fund, STFC (UK), NWO (Netherlands Organisation for Scientific Research), European Research Council, CONICYT (Chile), ARC (Australia), CRC (Canada), Marsden grants (New Zealand) (2008–current)

### *Collaboration leadership/membership:*

LIGO Scientific Collaboration member (2005–2016), LSC Council member (2012 – 2016)  
LSC internal reviewer (2009 – 2016), intermediate mass black hole source group co-chair (2012 – 2016)  
LISA Consortium Member  
Mock LISA Data Challenge and Parameter Estimation Taskforce member  
Einstein Telescope Science Working Group member  
LOFT science team member  
Member of several electromagnetic transient surveys (e.g., ePESSTO) and multi-messenger consortia for following up gravitational-wave signals (e.g., ENGRAVE, where I co-chair the Populations theory group)

### *Meeting organisation:*

SOC member, inaugural South African GW workshop (2011)

Convener of relativistic astrophysics session, GR-20 (2013)  
 Co-organizer and SOC co-chair, “Science with the first gravitational-wave detections” (2013)  
 Lead organizer, Aspen Center for Physics Workshop on Ultra-compact Binaries as Laboratories for Fundamental Physics (2014)  
 Main organizer and SOC chair, Gravitational-wave Astrophysics meeting at COSPAR (2014)  
 Program Leader, SAMSI Program on Statistical, Mathematical and Computational Methods for Astronomy (2016-2017)  
 Main organizer and SOC chair, Massive Binary Evolution meeting at COSPAR (2016 [cancelled because of current events in Turkey])  
 Organizer, SAMSI workshop on Astrophysical Population Emulation and Uncertainty Quantification (2017)  
 SOC member, Alpine Cosmology Workshop (2017 – current)  
 Co-director, Kavli Summer Program in Astrophysics 2017: Astrophysics with gravitational wave detections (2017)  
 Co-organizer and SOC co-chair, Lorentz Center Workshop “And then there was light: Electromagnetic signatures of stellar mass binary black hole mergers” (2017)  
 Co-organizer, Munich Institute for Astro- and Particle Physics program “Precision gravity: from the LHC to LISA” (2019)  
 SOC Member, EAS Symposium “What have we learned from the observed population of gravitational wave sources?” (2020)  
 Astronomical Society of Australia 2020 (virtual) science meeting organizer  
 ANITA 2021 workshop (virtual) lead organiser  
 SOC co-chair, EAS session “Where are the BH-NS binaries?” (2021)  
 SOC member, GWPAW 2021  
 SOC member, Nuclear burning in massive stars: towards the formation of binary black holes (2021)  
 SOC member, Designing the Next-Generation EHT to Transform Black Hole Science (2021)  
 Lead organizer and SOC chair, Gravitational-Wave Physics and Astronomy Workshop, Melbourne (2022)  
 Lead organizer, Aspen Center for Physics Workshop on Transients and Interacting Binaries (2023)  
 SOC member, IAU Symposium 389: Gravitational Wave Astronomy, Cape Town, South Africa (2024)  
 SOC member, GWPAW 2024  
 SOC co-chair, Gravitational-Wave Snowballs, Sexten, Italy (2025)

*Institutional contributions:*

University of Birmingham astrophysics seminar organizer (2012–2015)  
 University of Birmingham physics and astronomy colloquium organizer (2015–current)  
 University of Birmingham head of graduate admissions for astronomy (2012 – current)  
 University of Birmingham Faculty Senate representative elected for Engineering and Physical Sciences (2016 – current)  
 School and College Equality and Diversity Committee member, University of Birmingham (2014 – 2017)  
 Monash University astrophysics seminar and school colloquium co-organiser (2019)

MENTORING

*Postdoctoral associates:*

Trevor Sidery (2011 – 2013, co-mentored with Alberto Vecchio), gravitational-wave data analysis  
 Walter del Pozzo (2013 – 2016), tests of general relativity with compact binaries; now faculty at University of Pisa  
 Christopher Berry (2013 – 2017, co-mentored with Alberto Vecchio), astrostatistics; now faculty at University of Glasgow via research faculty at Northwestern  
 Dorottya Szécsi (2017 – 2018), stellar evolution; now faculty in Nicolaus Copernicus University via Humboldt fellowship in Cologne

Tyrone Woods (2018), stellar and binary evolution; now Plaskett Fellow at the NRC Herzberg Astronomy and Astrophysics, Victoria, Canada  
 Ryosuke Hirai (2019 – current), hydrodynamical modelling  
 Evgeni Grishin (2021 – current), dynamics  
 Isobel Romero-Shaw (2021 – 2022), X-ray binary population modelling; now Herchel Smith Fellow at the University of Cambridge  
 Jin-Ping Zhu (2023 – current), kilonovae and gamma-ray bursts  
 Jeff Riley (2023 – current), rapid binary population synthesis and machine learning  
*Post-graduate students:*  
 Vivien Raymond (2007 – 2012, co-advised with Vicky Kalogera), parameter estimation on spinning binaries; now faculty at Cardiff University via Albert Einstein Institute postdoc and Caltech postdoctoral prize fellowship  
 Ben Farr (2009 – 2014, co-advised with V. Kalogera), MCMC techniques in LIGO data analysis; now faculty at University of Oregon via McCormick postdoctoral fellow at U. Chicago  
 Carl Rodriguez (2010 – 2013, co-advised with V. Kalogera, then F. Rasio), signatures of deviations from Kerr spacetime; now faculty at Carnegie Mellon University via Pappalardo prize postdoc at MIT  
 Rory Smith (2011 – 2013), intermediate-mass-ratio waveforms and rapid parameter estimation; now OzGrav postdoc at Monash via postdoc at Caltech  
 Will Vousden (2011 – 2015), astrophysics with multi-messenger gravitational-wave detections, now at Oxford Asset Management  
 Carl-Johan Haster (2012 – 2016), topics in gravitational-wave data analysis; now postdoc at MIT via CITA national fellowship, winner of Springer PhD thesis award  
 Simon Stevenson (2013 – 2017), population synthesis of compact binaries; now OzGrav postdoc at Swinburne University  
 Ben Bradnick (2015 – 2017, co-advised with W. Farr), galactic center dynamics; now at Tesella  
 Serena Vinciguerra (2014 – 2018), advanced techniques for efficient parameter estimation; now postdoc at University of Amsterdam  
 Jim Barrett (2015 – 2018, co-advised with W. Farr), emulators and machine learning; now in private-sector big data in Sweden  
 Alejandro Vigna Gomez (2015 – 2019), mass transfer in stellar binaries; now postdoc at DARK, Copenhagen  
 Coenraad Neijssel (2016 – 2022), formation of binary black holes across cosmic history  
 Lucy McNeill (2019 – 2021, co-advised with B. Mueller), angular momentum transport in evolved stars  
 Reinhold Willcox (2019 – 2022), neutron star kicks and dynamics  
 Jeff Riley (2019 – 2023), massive stellar binary population synthesis  
 Mike Lau (2019 – 2023), hydrodynamics modelling of common envelopes and planetary engulfment  
 Tanner Wilson (2019 – 2023, co-advised with A. Casey), asteroseismology and differential rotation  
 Fitz Hu (2023 – current, co-advised with D. Price), hydrodynamical modelling of tidal disruption events  
 Adam Brcek (2024 – current), population synthesis modelling  
 Seyed Tabasi (2024 – current), tidal disruption events

*Undergraduate and masters students:*

Matthew Dodelson (2009) and Daniel Douglas (2010) testing GR with EMRIs  
 Frederick Robinson (2009 – 2010), Fisher matrix analysis  
 Luke Kelley (2010 – 2011, co-advised with Enrico Ramirez-Ruiz), electromagnetic counterparts to LIGO searches  
 Alex Mellus and Benjamin Hubbert (2012), investigation of numerical waveform accuracy and parameter estimation tests of convergence  
 Jason Tye (2012 – 2013), animations of gravitational waves, gravitational lensing of gravitational waves  
 Ben Bradnick and Hannah Middleton (2012 – 2013), progenitors of short gamma ray bursts; shared

the Tesella Prize for best computational year 4 project, 2013  
 Zachary Hafen and Jenna Klemkowsky (2013), waveform accuracy requirements on hybrid waveforms and gravitational-wave event rate calculator  
 Kirsty Stroud and Chris Aldridge (2013 – 2014, co-advised with Will Farr), exoplanet properties in Kepler data  
 George King and Hasini Janapriya (2014 – 2015, co-advised with Will Farr), searching for exoplanets around red giants  
 Tom Riley, Ben Giblin (2014 – 2015, co-advised with Will Farr), short gamma ray bursts and time delays in binary mergers; Tom Riley earned prize for top 4th year project  
 Rajath Sathyaprakash and Morgan Brown (2015 – 2016), massive stellar evolution modeling  
 Andrea Colonna (2015 – 2016), clustering and inference, jointly with Computer Science  
 Kit Boyer and Fabian Gittins (2016 – 2017), modelling X-ray binaries  
 Gareth Thomas (2014 – 2017), searching for intermediate-mass-ratio inspirals  
 Dave Perkins (2016), analysis of population synthesis predictions  
 George Howitt (2017), visiting PhD student from Australia, luminous red novae  
 Kaila Nathaniel (2017), IREU student, chemically homogeneous evolution  
 Isobel Romero-Shaw (2017), impact of single stellar evolution on binary evolution  
 Luke Nugent (2017), mathematical modeling masters student, efficient population synthesis sampling  
 Alice Perry and Samuel Kingdon (2017– 2018), Be X-ray binaries as probes of supernovae and binary evolution  
 Nicholas Bennett and Samuel Ratcliff (2017– 2018, co-advised with Dorottya Szécsi), lithium abundances in globular clusters  
 Spencer Shortt and Ellen Butler (2018), chemically homogeneous evolution  
 Mike Lau (2018), compact binary observations with LISA  
 Floor Broekgaarden (2019, co-advised with Stephen Justham, Selma de Mink), adaptive importance sampling for population synthesis  
 Michelle Wassink (2019–2020, co-advised with Gijs Nelemans), expansion of stars after the helium main sequence  
 Joanna Shepherd (2020, co-advised with Daniel Price), extracting light curves from hydrodynamical simulations of tidal disruption events  
 Thillai Saravanan (2020–2022), the impact of initial conditions on binary evolution  
 Tushar Nagar (2021, co-advised with Eric Thrane), gravitational-wave source catalog population inference  
 Amir Kashapov (2021, co-advised with Ryo Hirai), late-time expansion of naked helium stars  
 Bayley Tranter (2021, co-advised with Ryo Hirai), few-body scattering experiments  
 Abhi Mangipudi (2021–2022, co-advised with Evgeni Grishin), non-orbit-averaged behaviour in hierarchical triples  
 Max Tory (2022, co-advised with Evgeni Grishin), stability of hierarchical triples  
 Andrew Atta (2022, co-advised with Ryo Hirai and Bernhard Müller), stripped red supergiants  
 Lewis Picker (2022–2023, co-advised with Ryo Hirai), two-stage common envelopes  
 Aadarsh Madhavan (2022), detectability of luminous red nova progenitors with LSST  
 Alvaro Jose Herrera (2022, co-advised with Ryo Hirai), IREU student, detached black-hole binaries in Gaia data  
 Lucas Confalonieri (2023, co-supervised with Evgeni Grishin), magnetic braking

COURSES TAUGHT	Classical Mechanics and Relativity (first-year, $\gtrsim 200$ students) Waves and Quantum Mechanics (first year, $\sim 200$ students) Inference on Scientific Data (fourth year, $\sim 75$ students) Introduction to General Relativity (third year, $\sim 60$ students) Relativistic Astrophysics and Black Holes (third- and fourth-year, $\sim 50$ students) Introduction to Astrophysics (first-year, $\sim 50$ students) Introduction to Particle Physics and Cosmology (first-year, $\sim 50$ students)
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General Physics [back-of-the-envelope physics] (third-year,  $\sim 150$  students)  
 Group studies [research project] (third-year, 16 students)  
 Observational Cosmology (third- and fourth-year,  $\sim 30$  students)  
 Gravitational-wave Astrophysics (graduate seminar,  $\sim 10$  students)  
 Advanced General Relativity (masters course)  
 Order-of-magnitude Astrophysics (honours and masters course)

## GRANTS

2024–2030	Australian Research Council Centre of Excellence for Gravitational-Wave Discovery OzGrav2 (total of AUD \$35M across OzGrav)
2022	Monash Faculty of Science Strategic Uplift Scheme (CI): <i>Advancing gravitational-wave astrophysics through machine learning</i> [AUD \$17k]
2022–2025	Australian Research Council LIEF grant for LSST support (Monash lead CI; total of AUD \$1.685M)
2019–2024	Australian Research Council Future Fellowship (PI): <i>Shining gravitational waves on binary astrophysics</i> [AUD \$936k from ARC, AUD \$996k in matching Monash funds]
2017–2023	Australian Research Council Centre of Excellence for Gravitational-Wave Discovery OzGrav (total of AUD \$31.3M across OzGrav)
2017–2020	NERC grant (Co-I): <i>Reducing Greenhouse Climate Proxy Uncertainty</i> [total value of grant £434k]
2016–2019	STFC Consolidated grant (Co-I): <i>Searching for intermediate mass ratio coalescences in Advanced LIGO/Virgo data</i> [total value of grant £1,834k]
2016–2019	STFC grant supporting UK Involvement in the Operation of Advanced LIGO (co-I) [£244k to Birmingham]
2016	RAS Undergraduate Bursary <i>Black holes in globular clusters</i> (PI) [£1200]
2015	Kevin Westfold Distinguished Visitor to Monash University, Melbourne, Australia [\$12k support]
2015	RAS Undergraduate Bursary <i>Studying black holes with gravitational waves</i> (PI) [£1200]
2014	South African National Institute of Theoretical Physics (NITheP) long-term visitor grant [\$2k]
2013–2017	FP7 Marie Curie Initial Training Network (Co-I): <i>GraWIToN</i> [total value to Birmingham £481k]
2013–2016	Leverhulme Trust Research Project Grant (PI): <i>Testing general relativity with ground-based gravitational-wave observations</i> [£162k]
2013–2016	STFC Consolidated grant (Co-I): <i>Gravitational wave observations of compact binary systems</i> [total value of grant £1,876k]
2013–2016	ASPERA grant (Co-I): <i>Networking and R&amp;D for the Einstein Telescope</i> [salary and travel support, €59K]
2009–2011	NSF Astronomy and Astrophysics Postdoctoral Fellowship grant (PI): <i>Gravitational-wave astronomy: a new window on the universe</i> [\$249k]
2009–2002	NASA ATP grant (Co-I) <i>Binary White Dwarfs: Gravitational Wave Astrophysics and Data Analysis</i> [\$399k]

## PROFESSIONAL SOCIETIES

Astronomical Society of Australia  
 International Society on General Relativity and Gravitation lifetime member  
 International Astrostatistics Association  
 International Astronomical Union

1. J. Zhu, L. Liu, Y. Yu, I. Mandel, R. Hirai, B. Zhang, A. Chen. 2024. Bumpy Superluminous Supernovae Powered by Magnetar-star Binary Engine. *ApJL*, accepted. arXiv:2405.01224
2. D. J. Price, D. Liptai, I. Mandel, J. Shepherd, G. Lodato, Y. Levin. 2024. Eddington envelopes: The fate of stars on parabolic orbits tidally disrupted by supermassive black holes. *ApJL*, accepted. arXiv:2404.09381
3. L. Picker, R. Hirai, I. Mandel. 2024. Fits for the convective envelope mass in massive stars. *ApJ* 969, 1. arXiv:2402.13180
4. M. Lau, R. Hirai, I. Mandel, C. Tout. 2024. Expansion of accreting main-sequence stars during rapid mass transfer. *ApJL* 966, L7. arXiv:2401.09570
5. A. Vigna-Gómez, R. Willcox, I. Tamborra, I. Mandel, M. Renzo, T. Wagg, H.-T. Janka, D. Kresse, J. Bodensteiner, T. Shenar. 2024. Observational evidence for neutrino natal kicks from black-hole binary VFTS 243. *Phys. Rev. Lett.* 132, 191403. arXiv:2310.01509
6. S. J. Miller, M. Isi, K. Chatziioannou, V. Varma, I. Mandel. 2023. GW190521: tracing imprints of spin-precession on the most massive black hole binary. *Phys. Rev. D* 109, 024024. arXiv:2310.01544
7. F. Hu, D. Price, I. Mandel. 2024. Optical Appearance of Eccentric Tidal Disruption Events. *ApJL* 963, L27. arXiv:2312.03210
8. A. Levan et al. 2023. JWST detection of heavy neutron capture elements in a compact object merger. *Nature* 7, 976. arXiv:2307.02098
9. R. Willcox, M. MacLeod, I. Mandel, R. Hirai. 2023. The Impact of Angular Momentum Loss on the Outcomes of Binary Mass Transfer. *ApJ* 958, 138. arXiv:2308.06666
10. O. S. Salafia, M. E. Ravasio, G. Ghirlanda, I. Mandel. 2023. The short gamma-ray burst population in a quasi-universal jet scenario. *A & A* 680, A45. arXiv:2306.15488
11. A. Heger, B. Mueller, I. Mandel. 2023. Black holes as the end state of stellar evolution: Theory and simulations. Invited contribution to the Encyclopedia of Black Holes. arXiv:2304.09350
12. I. Romero-Shaw, R. Hirai, A. Bahramian, R. Willcox, I. Mandel. 2023. Rapid population synthesis of black-hole high-mass X-ray binaries: implications for binary stellar evolution. *MNRAS* 524, 245. arXiv:2303.05375
13. J. Riley, I. Mandel. 2023. Surrogate forward models for population inference on compact binary mergers. *ApJ* 950, 80. arXiv:2303.00508
14. I. Agudo et al. 2023. Panning for gold, but finding helium: discovery of the ultra-stripped supernova SN2019wxt from gravitational-wave follow-up observations. *A&A*, 675, A201. arXiv:2208.09000.
15. P. Short et al. 2023. Delayed Appearance and Evolution of Coronal Lines in the TDE AT2019qiz. *MNRAS*, accepted. arXiv:2307.13674
16. A. Levan et al. 2023. A long-duration gamma-ray burst of dynamical origin from the nucleus of an ancient galaxy. *Nature Astronomy* 7, 976. arXiv:2303.12912
17. T. Wilson, A. Casey, I. Mandel, E. Bellinger, G. Davies. 2023. What can rotational splittings of low-luminosity subgiants actually tell us about the rotation profile? *MNRAS* 521, 4122. arXiv:2111.10953
18. T. N. O’Doherty, A. Bahramian, J. C. A. Miller-Jones, A. J. Goodwin, I. Mandel, R. Willcox, P. Atri, J. Strader. 2023. An Observational Kick Distribution for 145 Neutron Stars in Binaries. *MNRAS* 521, 2504. arXiv:2303.01059
19. C. Kobayashi, I. Mandel, K. Belczynski, S. Goriely, T. Janka, O. Just, A. Ruiter, D. Vanbeveren, M. Kruckow, M. Briel, J. Eldridge, E. Stanway. 2023. Can neutron star mergers alone explain the r-process enrichment of the Milky Way? *ApJL* 943, L12. arXiv:2211.04964
20. I. Mandel, A. P. Igoshev. 2023. The impact of spin-kick alignment on the inferred velocity distribution of isolated pulsars. *ApJ* 944, 153. arXiv:2210.12305

21. V. Kapil, I. Mandel, E. Berti, B. Mueller. 2022. Calibration of neutron star natal kick velocities to isolated pulsar observations. *MNRAS* 519, 5893. arXiv:2209.09252
22. M. Tory, E. Grishin, I. Mandel. 2022. Empirical Stability Boundary for Hierarchical Triples. *PASA*, accepted. arXiv:2208.14005
23. P. Amaro-Seoane et al. 2023. Astrophysics with the Laser Interferometer Space Antenna. *Living Reviews in Relativity* 26, 2. arXiv:2203.06016
24. R. Hirai, I. Mandel. 2022. A two-stage formalism for common-envelope phases of massive stars. *ApJL* 937, L42. arXiv:2209.05328
25. O. S. Salafia, A. Colombo, F. Gabrielli, I. Mandel. 2022. Constraints on the merging binary neutron star mass distribution and equation of state based on the fraction of jets. *A&A* 666, A174. arXiv:2202.01656
26. M. Lau, R. Hirai, D. Price, I. Mandel. 2022. Common envelopes in massive stars II: The distinct roles of hydrogen and helium recombination. *MNRAS* 516, 4669. arXiv:2206.06411
27. A. Mangipudi, E. Grishin, A. Trani, I. Mandel. 2022. Extreme eccentricities of triple systems: Analytic results. *ApJ* 934, 44. arXiv:2205.08703
28. F. Broekgaarden et al. 2022. Impact of Massive Binary Star and Cosmic Evolution on Gravitational Wave Observations II: Double Compact Object Rates and Properties. *MNRAS*, accepted. arXiv:2112.05763
29. L. A. C. van Son, S. E. de Mink, T. Callister, S. Justham, M. Renzo, T. Wagg, F. S. Broekgaarden, F. Kummer, R. Pakmor, I. Mandel. 2022. The redshift evolution of the binary black hole merger rate: a weighty matter. *ApJ* 931, 17. arXiv:2110.01634
30. Team COMPAS: J. Riley et al. 2022. COMPAS: A rapid binary population synthesis suite. *The Journal of Open Science Software*. <https://joss.theoj.org/papers/10.21105/joss.03838>
31. I. Mandel, A. Farmer. 2022. Merging stellar-mass binary black holes. *Physics Reports* 955, 1. arXiv:1806.05820
32. A. Vigna-Gómez, M. Wassink, J. Klencki, A. Istrate, G. Nelemans, I. Mandel. 2022. Stellar response after stripping as a model for common-envelope outcomes. *MNRAS* 511, 2326. arXiv:2107.14526
33. M. Y. M. Lau, R. Hirai, M. González-Bolívar, D. J. Price, O. De Marco, I. Mandel. 2022. Common envelopes in massive stars: towards the role of radiation pressure and recombination energy in ejecting red supergiant envelopes. *MNRAS* 512, 5462. arXiv:2111.00923
34. I. Mandel, F. S. Broekgaarden. 2022. Rates of compact binary coalescences. *Living Reviews of Relativity* 25, 1. arXiv:2107.14239
35. Team COMPAS: J. Riley et al. 2022. Rapid stellar and binary population synthesis with COMPAS. *ApJ Supplements* 258, 34. arXiv:2109.10352
36. I. Mandel, R. J. E. Smith. 2021. GW200115: A non-spinning black hole – neutron star merger. *ApJ Letters* 922, L14. arXiv:2109.14759
37. R. Hirai, I. Mandel. 2021. Conditions for accretion disc formation and observability of wind-accreting X-ray binaries. *PASA* 38, e056. arXiv:2108.03774
38. S. Galadage, C. Talbot, T. Nagar, D. Jain, E. Thrane, I. Mandel. 2021. Building better spin models for merging binary black holes: Evidence for non-spinning and rapidly spinning nearly aligned sub-populations. *ApJ Letters* 921, L15. arXiv:2109.02424
39. R. Willcox, I. Mandel, E. Thrane, A. Deller, S. Stevenson, A. Vigna-Gómez. 2021. Constraints on Weak Supernova Kicks from Observed Pulsar Velocities. *ApJ Letters* 930, L37. arXiv:2107.04251



40. F. S. Broekgaarden, E. Berger, C. J. Neijssel, A. Vigna-Gómez, D. Chattopadhyay, S. Stevenson, M. Chruslinska, S. Justham, S. E. de Mink, I. Mandel. 2021. The Impact of Massive Binary Star and Cosmic Evolution on Gravitational Wave Observations I: Black Hole - Neutron Star Mergers. *MNRAS* 508, 502. arXiv:2103.02608
41. G. P. Lamb, D. A. Kann, J. J. Fernandez, I. Mandel, A. J. Levan, N. R. Tanvir. 2021. GRB jet structure and the jet break. *MNRAS* 506, 4163. arXiv:2104.11099
42. R. Smith, S. Borhanian, B. Sathyaprakash, F. Hernandez Vivanco, S. Field, P. Lasky, I. Mandel, S. Morisaki, D. Ottaway, B. Slagmolen, E. Thrane, D. Töyrä, S. Vitale. 2021. Bayesian inference for gravitational waves from binary neutron star mergers in third-generation observatories. *Phys. Rev. Letters* 127, 081102. arXiv:2103.12274
43. E. Grishin, A. Bobrick, R. Hirai, I. Mandel, H. Perets. 2021. Supernova explosions in active galactic nuclei discs. *MNRAS* 507, 156. arXiv:2105.09953
44. L. Lin, D. Bingham, F. Broekgaarden, I. Mandel. 2021. Uncertainty quantification of a computer model for binary black hole formation. *Annals of Applied Statistics* 15, 1604. arXiv:2106.01552
45. J. Riley, I. Mandel, P. Marchant, E. Butler, K. Nathaniel, C. Neijssel, S. Shortt, A. Vigna-Gómez. 2021. Chemically Homogeneous Evolution: A rapid population synthesis approach. *MNRAS* 505, 663. arXiv:2010.00002
46. J. C. A. Miller-Jones, A. Bahramian, J. A. Orosz, I. Mandel, L. Gou, T. J. Maccarone, C. J. Neijssel et al. 2021. Cygnus X-1 contains a 21-solar mass black hole – implications for massive star winds. *Science* 371, 1046. arXiv:2102.09091
47. C. J. Neijssel, S. Vinciguerra, A. Vigna-Gómez, R. Hirai, J. C. A. Miller-Jones, A. Bahramian, T. J. Maccarone, I. Mandel. 2021. Wind mass-loss rates of stripped stars inferred from Cygnus X-1. *ApJ* 908, 118. arXiv:2102.09092
48. E. M. Rossi, N. C. Stone, J. A. P. Law-Smith, M. MacLeod, G. Lodato, J. L. Dai, I. Mandel. 2021. The Process of Stellar Tidal Disruption by Supermassive Black Holes. The first pericenter passage. *Space Science Reviews* 217, 40. arXiv:2005.12528
49. D. Psaltis, C. Talbot, E. Payne, I. Mandel. 2021. Probing the black hole metric. I. Black hole shadows and binary black-hole inspirals. *Phys. Rev. D* 103, 104036. arXiv:2012.02117
50. C. Wang, J. A. Bendle, H. Yang, Y. Yang, A. Hardman, A. Yamoah, A. Thorpe, I. Mandel, S. E. Greene, J. Huang. 2021. Global calibration of novel 3-hydroxy fatty acid based temperature and pH proxies. *Geochimica et Cosmochimica Acta* 302, 101.
51. T. Dunkley Jones, Y. Eley, W. Thompson, S. Greene, I. Mandel, K. Edgar, J. Bendle. 2020. OPTiMAL: A new machine learning approach for GDGT-based palaeothermometry. *Climate of the Past* 16, 2599. <https://cp.copernicus.org/articles/16/2599/2020/cp-16-2599-2020.html>
52. A. Miglio et al. 2020. Age dissection of the Milky Way discs: red giants in the Kepler field. *A&A*, accepted. arXiv:2004.14806
53. I. Mandel, B. Müller, J. Riley, S. E. de Mink, A. Vigna-Gómez, D. Chattopadhyay. 2021. Binary population synthesis with probabilistic remnant mass and kick prescriptions. *MNRAS* 500, 1380. arXiv:2007.03890
54. L. du Buisson, P. Marchant, P. Podsiadlowski, C. Kobayashi, F. B. Abdalla, P. Taylor, I. Mandel, S. E. de Mink, T. J. Moriya, N. Langer. 2020. Cosmic Rates of Black Hole Mergers and Pair-Instability Supernovae from Chemically Homogeneous Binary Evolution. *MNRAS*, 499, 5941. arXiv:2002.11630
55. I. Mandel and B. Müller. 2020. Simple recipes for compact remnant masses and natal kicks. *MNRAS* 499, 3214. arXiv:2006.08360
56. K. Ackley et al. 2020. Neutron Star Extreme Matter Observatory: A kilohertz-band gravitational-wave detector in the global network. *PASA*, accepted. arXiv:2007.03128

57. R. Hirai, T. Sato, P. Podsiadlowski, A. Vigna-Gómez, I. Mandel. 2020. Formation pathway for lonely stripped-envelope supernova progenitors: implications for Cassiopeia A. *MNRAS* 499, 1154. arXiv:2008.05076
58. A. Murguia-Berthier, A. Batta, A. Janiuk, E. Ramirez-Ruiz, I. Mandel, S. C. Noble, R. W. Everson. 2020. On the maximum stellar rotation to form a black hole without an accompanying luminous transient. *ApJ Letters* 901, L24. arXiv:2005.10212
59. M. Nicholl et al. 2020. An outflow powers the optical rise of the nearby, fast-evolving tidal disruption event AT2019qiz. *MNRAS* 499, 482. arXiv:2006.02454
60. K. Ackley et al. 2020. Observational constraints on the optical and near-infrared emission from the neutron star-black hole binary merger S190814bv. *Astronomy & Astrophysics* 643, A113. arXiv:2002.01950
61. A. Vigna-Gómez, M. MacLeod, C. J. Neijssel, F. S. Broekgaarden, S. Justham, G. Howitt, S. E. de Mink and I. Mandel. 2020. Common-Envelope Episodes that lead to Double Neutron Star formation. *PASA* 37, e038. arXiv:2001.09829
62. S. Vinciguerra, C. J. Neijssel, A. Vigna-Gómez, I. Mandel, P. Podsiadlowski, T. J. Maccarone, M. Nicholl, S. Kingdon, A. Perry, F. Salemi. 2020. Be X-ray binaries in the SMC as (I) indicators of mass transfer efficiency. *MNRAS* 498, 4705. arXiv:2003.00195
63. V. Korol, I. Mandel, M. C. Miller, R. P. Church, M. B. Davies. 2020. Merger rates in primordial black hole clusters without initial binaries. *MNRAS* 496, 994. arXiv:1911.03483
64. S. De, M. MacLeod, R. W. Everson, A. Antoni, I. Mandel, E. Ramirez-Ruiz. 2020. Common Envelope Wind Tunnel: The Effects of Binary Mass Ratio and Implications for the Accretion-Driven Growth of LIGO Binary Black Holes. *ApJ* 897, 130. arXiv:1910.13333
65. S. L. Schroeder, M. MacLeod, A. Loeb, A. Vigna-Gómez, I. Mandel. 2020. Explosions Driven by the Coalescence of a Compact Object with the Core of a Massive-Star Companion Inside a Common Envelope: Circumstellar Properties, Light Curves, and Population Statistics. *ApJ* 892, 13. arXiv:1906.04189
66. I. Mandel, T. Fragos. 2020. An alternative interpretation of GW190412 as a binary black hole merger with a rapidly spinning secondary. *ApJ Letters* 895, L28. arXiv:2004.09288
67. S. S. Bavera, T. Fragos, Y. Qin, E. Zapartas, C. J. Neijssel, I. Mandel, A. Batta, S. M. Gaebel, C. Kimball, S. Stevenson. 2020. The origin of spin in binary black holes: Predicting the distributions of the main observables of Advanced LIGO. *Astronomy & Astrophysics* 635, A97. arXiv:1906.12257
68. M. Y. M. Lau, I. Mandel, A. Vigna-Gómez, C. J. Neijssel, S. Stevenson, A. Sesana. 2020. Detecting Double Neutron Stars with LISA. *MNRAS* 492, 3061. arXiv:1910.12422
69. G. Howitt, S. Stevenson, A. Vigna-Gómez, S. Justham, N. Ivanova, T. E. Woods, C. J. Neijssel, I. Mandel. 2020. Luminous Red Novae: population models and future prospects. *MNRAS* 492, 3229. arXiv:1912.07771
70. P. Marchant, K. Breivik, C. P. L. Berry, I. Mandel, S. L. Larson. 2020. Eclipses of continuous gravitational waves as a probe of stellar structure. *Physical Review D* 101, 024039. arXiv:1912.04268
71. L. Wyrzykowski, I. Mandel. 2020. Constraining the masses of microlensing black holes and the mass gap with Gaia DR2. *Astronomy & Astrophysics* 636, A20. arXiv:1904.07789
72. O. R. McBrien et al. 2019. SN2018kzr: a rapidly declining transient from the destruction of a white dwarf. *ApJ Letters* 885, L23. arXiv:1909.04545
73. G. Leloudas et al. 2019. The spectral evolution of AT 2018dyb and the presence of metal lines in tidal disruption events. *ApJ* 887, 218. arXiv:1903.03120

74. C. J. Neijssel, A. Vigna-Gómez, S. Stevenson, J. W. Barrett, S. M. Gaebel, F. Broekgaarden, S. E. de Mink, D. Szecsi, S. Vinciguerra, I. Mandel. 2019. The effect of the metallicity-specific star formation history on double compact object mergers. *MNRAS* 490, 3740. arXiv:1906.08136
75. F. S. Broekgaarden, S. Justham, S. E. de Mink, J. Gair, I. Mandel, S. Stevenson, J. W. Barrett, A. Vigna-Gómez, C. J. Neijssel. 2019. STROOPWAFEL: Simulating rare outcomes from astrophysical populations, with application to gravitational-wave sources. *MNRAS* 490, 5228. arXiv:1905.00910
76. R. X. Adhikari, P. Ajith, Y. Chen, J. A. Clark, V. Dergachev, N. V. Fotopoulos, S. E. Gossan, I. Mandel, M. Okounkova, V. Raymond, J. S. Read. 2019. Astrophysical science metrics for next-generation gravitational-wave detectors. *CQG* 36, 245010. arXiv:1905.02842
77. J. J. Andrews, I. Mandel. 2019. Double Neutron Star Populations and Formation Channels. 2019. *ApJ Letters* 880, L8. arXiv:1904.12745
78. J. Powell, S. Stevenson, I. Mandel, P. Tino. 2019. Unmodelled Clustering Methods for Gravitational Wave Populations of Compact Binary Mergers. *MNRAS* 488, 3810. arXiv:1905.04825
79. S. Stevenson, M. Sampson, J. Powell, A. Vigna-Gómez, C. J. Neijssel, D. Szécsi, I. Mandel. 2019. The impact of pair-instability mass loss on the binary black hole mass distribution. *ApJ* 882, 121. arXiv:1904.02821
80. A. Vigna-Gómez, S. Justham, I. Mandel, S. E. de Mink, P. Podsiadlowski. 2019. Massive Stellar Mergers as Precursors of Hydrogen-rich Pulsational Pair Instability Supernovae. *ApJ Letters* 876, L29. arXiv:1903.02135
81. I. Mandel, W. M. Farr, J. R. Gair. 2019. Extracting distribution parameters from multiple uncertain observations with selection biases. *MNRAS* 486, 1086. arXiv:1809.02063
82. G. P. Lamb et al. 2019. The optical afterglow of GW170817 at one year post-merger. *ApJ Letters* 870, L15. arXiv:1811.11491
83. S. Vinciguerra, M. Branchesi, R. Ciolfi, I. Mandel, C. Neijssel, G. Stratta. 2019. saprEMo: a simplified algorithm for predicting detections of electromagnetic transients in surveys. *MNRAS* 484, 332. arXiv:1809.08641
84. G. P. Lamb, I. Mandel, L. Resmi. 2018. Late-time Evolution of Afterglows from Off-Axis Neutron-Star Mergers. *MNRAS* 481, 2581. arXiv:1806.03843
85. A. Vigna-Gómez, C.-J. Neijssel, S. Stevenson, J. W. Barrett, K. Belczynski, S. Justham, S.E. de Mink, B. Müller, P. Podsiadlowski, M. Renzo, D. Szécsi, I. Mandel. 2018. On the formation history of Galactic double neutron stars. *MNRAS* 481, 4009. arXiv:1805.07974
86. W. M. Farr, I. Mandel. 2018. Comment on “An excess of massive stars in the local 30 Doradus starburst”. *Science* 361, 6400. arXiv:1807.09772
87. J. D. Lyman, G. P. Lamb, A. J. Levan, I. Mandel, N. R. Tanvir et al. 2018. The optical afterglow of the short gamma-ray burst associated with GW170817. *Nature Astronomy*. arXiv:1801.02669
88. J. W. Barrett, S. M. Gaebel, C. J. Neijssel, A. Vigna-Gómez, S. Stevenson, C. P. L. Berry, W. M. Farr, I. Mandel. 2018. Accuracy of inference on the physics of binary evolution from gravitational-wave observations. *MNRAS* 477, 4685. arXiv:1711.06287
89. M. Cantiello et al. 2018. A precise distance to the host galaxy of the binary neutron star merger GW170817 using surface brightness fluctuations. *ApJL* 854, L31. arXiv:1801.06080
90. I. Mandel. 2018. The orbit of GW170817 was inclined by less than 28 degrees to the line of sight. *ApJL* 853, L1. arXiv:1712.03958
91. I. Mandel, A. Sesana, A. Vecchio. 2018. The astrophysical science case for a decihertz gravitational-wave detector. *Classical and Quantum Gravity* 35, 054004. arXiv:1710.11187

92. N. R. Tanvir, A. J. Levan, C. Gonzalez-Fernandez, O. Korobkin, I. Mandel et al. 2017. The Emergence of a Lanthanide-rich Kilonova Following the Merger of Two Neutron Stars. *ApJL* 848, L27. arXiv:1710.05455
93. A. J. Levan, J. D. Lyman, N. R. Tanvir, J. Hjorth, I. Mandel et al. 2017. The environment of the binary neutron star merger GW170817. *ApJL* 848, L28. arXiv:1710.05444
94. J. Hjorth et al. 2017. The Distance to NGC 4993: The Host Galaxy of the Gravitational-wave Event GW170817. *ApJL* 848, L31. arXiv:1710.05866
95. B. P. Abbott et al. 2017. A gravitational-wave standard siren measurement of the Hubble constant. *Nature* 551, 85. arXiv:1710.05835
96. B. P. Abbott et al. 2017. Multi-messenger observations of a binary neutron star merger. *ApJL* 848, L12. arXiv:1710.05833
97. I. Mandel, A. Farmer. 2017. Gravitational waves: Stellar palaeontology. *Nature* 547, 284
98. W. M. Farr, S. Stevenson, M. C. Miller, I. Mandel, B. Farr, A. Vecchio. Distinguishing Spin-Aligned and Isotropic Black Hole Populations With Gravitational Waves. 2017. *Nature*, 548, 426. arXiv:1706.01385
99. P. Marchant, N. Langer, P. Podsiadlowski, T. Tauris, S. de Mink, I. Mandel, T. Moriya. 2017. Ultra-luminous X-ray sources and neutron-star-black-hole mergers from very massive close binaries at low metallicity. *A&A* 604, A55. arXiv:1705.04734
100. S. Stevenson, A. Vigna-Gómez, I. Mandel, J. W. Barrett, C. J. Neijssel, D. Perkins, S. E. de Mink. 2017. Forming GW151226 and LVT151012 through isolated binary evolution. *Nature Communications*, 8, 14906. arXiv:1704.01352
101. S. Stevenson, C. P. L. Berry, I. Mandel. 2017. Hierarchical analysis of gravitational-wave measurements of binary black hole spin-orbit misalignments. *MNRAS* 471, 2801. arXiv:1703.06873
102. B. Bradnick, I. Mandel, Y. Levin. 2017. Stellar binaries in galactic nuclei: tidally stimulated mergers followed by tidal disruptions. *MNRAS* 469, 2042. arXiv:1703.05796
103. S. Vinciguerra, J. Veitch, I. Mandel. 2017. Accelerating gravitational wave parameter estimation with multi-band template interpolation. *CQG*, 34, 115006. arXiv:1703.02062
104. I. Mandel, W. M. Farr, A. Colonna, S. Stevenson, P. Tiño, J. Veitch. 2017. Model-independent inference on compact-binary observations. *MNRAS* 465, 3254. arXiv:1608.08223
105. C.-J. Haster, F. Antonini, V. Kalogera, I. Mandel. 2016. N-body dynamics of intermediate mass-ratio inspirals in globular clusters. *ApJ* 832, 192. arXiv:1606.07097
106. L. P. Singer et al. 2016. Going the Distance: Mapping Host Galaxies of LIGO Sources in Three Dimensions Using Local Cosmography and Targeted Follow-up. *ApJL*, 829, L15. arXiv:1603.07333. Supplementary material in *ApJS*, 226, 10, arXiv:1605.04242
107. S. J. Smartt et al. 2016. A search for an optical counterpart to the gravitational wave event GW151226. *ApJL*, 827, L40. arXiv:1606.04795
108. T. Callister, L. Sammut, E. Thrane, S. Qiu, I. Mandel. 2016. The limits of astrophysics with gravitational wave backgrounds. *Phys. Rev. X* 6, 031018. arXiv:1604.02513
109. S. E. de Mink, I. Mandel. 2016. The Chemically Homogeneous Evolutionary Channel for Binary Black Hole Mergers: Rates and Properties of Gravitational-Wave Events Detectable by Advanced LIGO. *MNRAS* 460, 3545. arXiv:1603.02291
110. I. Mandel, S. E. de Mink. 2016. Merging binary black holes formed through chemically homogeneous evolution in short-period stellar binaries. *MNRAS* 458, 2634. arXiv:1601.00007
111. P. A. Rosado, P. D. Lasky, E. Thrane, X. Zhu, I. Mandel, A. Sesana. 2016. The most distant observable massive objects. *Phys. Rev. Lett.* 116, 101102. arXiv:1512.04950
112. B. Farr et al. 2016. Parameter estimation on gravitational waves from neutron-star binaries with spinning components. *ApJ* 825, 116. arXiv:1508.05336

113. S. A. L. Otaibi, P. Tino, J. Cuevas-Tello, I. Mandel, S. Raychaudhury. 2016. Kernel regression estimates of time delays between gravitationally lensed fluxes. *MNRAS* 459, 573. arXiv:1508.03439
114. C. Haster, Z. Wang, C. Berry, S. Stevenson, J. Veitch, I. Mandel. 2016. Inference on gravitational waves from coalescences of stellar-mass compact objects and intermediate-mass black holes. *MNRAS* 457, 4499. arXiv:1511.01431
115. I. Mandel. 2016. Estimates of black-hole natal kick velocities from observations of low-mass X-ray binaries. *MNRAS*, 456, 578. arXiv:1510.03871
116. I. Mandel and Y. Levin. 2015. Double tidal disruptions in galactic nuclei. *ApJ Letters*, 805, L4. arXiv:1504.02787
117. J. Veitch, M. Pürrer, I. Mandel. 2015. Measuring intermediate mass black hole binaries with advanced gravitational wave detectors. *PRL*, 115, 141101. arXiv:1503.05953
118. I. Mandel, C.-J. Haster, M. Dominik, K. Belczynski. 2015. Distinguishing types of compact-object binaries using the gravitational-wave signatures of their mergers. *MNRAS Letters*, 450, L85. arXiv:1503.03172
119. C. W. F. Everitt et al. 2015. The Gravity Probe B test of general relativity. *Classical and Quantum Gravity*, 32 224001.
120. A. S. Silbergleit, J. W. Conklin, M. I. Heifetz, T. Holmes, J. Li, I. Mandel, et al. 2015. Gravity Probe B data analysis: II. Science data and their handling prior to the final analysis. *Classical and Quantum Gravity*, 32 224019.
121. C.-J. Haster, I. Mandel, W. M. Farr. 2015. Efficient method for measuring the parameters encoded in a gravitational-wave signal. *Classical and Quantum Gravity*, 32, 235017. arXiv:1502.05407
122. W. Vousden, W. M. Farr, I. Mandel. 2016. Dynamic temperature selection for parallel-tempering in Markov chain Monte Carlo simulations. *MNRAS* 455, 1919. arXiv:1501.05823
123. C. Berry, I. Mandel, et al. 2015. Parameter estimation for binary neutron-star coalescences with realistic noise during the Advanced LIGO era. *ApJ*, 804, 114. arXiv:1411.6934
124. J. Veitch et al. 2015. Robust parameter estimation for compact binaries with ground-based gravitational-wave observations using LALInference. *Phys. Rev. D* 91, 042003. arXiv:1409.7215
125. W. Del Pozzo, K. Grover, I. Mandel, A. Vecchio. 2014. Testing general relativity with compact coalescing binaries: comparing exact and predictive methods to compute the Bayes factor. *Class. Quantum Grav.* 31, 205006. arXiv:1408.2356
126. M. Dominik, E. Berti, R. O’Shaughnessy, I. Mandel, K. Belczynski, C. Fryer, D. Holz, T. Bulik, F. Pannarale. 2015. Double Compact Objects III: Gravitational Wave Detection Rates. *ApJ*, 806, 263. arXiv:1405.7016
127. L. Singer et al. 2014. The First Two Years of Electromagnetic Follow-Up with Advanced LIGO and Virgo. *ApJ*, 795, 105. arXiv:1404.5623
128. I. Mandel, C. P. L. Berry, F. Ohme, S. Fairhurst, W. Farr. 2014. Parameter estimation on compact binary coalescences with abruptly terminating gravitational waveforms. *Class. Quantum Grav.* 31 155005. arXiv:1404.2382
129. K. Belczynski, A. Buonanno, M. Cantiello, C. Fryer, D. Holz, I. Mandel, M. C. Miller, M. Waczak. 2014. The Formation and Gravitational-Wave Detection of Massive Stellar Black-Hole Binaries. *ApJ* 789, 120. arXiv:1403.0677
130. T. Sidery et al. 2014. Reconstructing the sky location of gravitational-wave detected compact binary systems: methodology for testing and comparison. *Phys. Rev. D* 89, 084060. arXiv:1312.6013

131. C. Hanna, I. Mandel, W. Voudsen. 2014. Utility of galaxy catalogs for following up gravitational waves from binary neutron star mergers with wide-field telescopes. *ApJ*, 784, 8. arXiv:1312.2077
132. K. Grover, S. Fairhurst, B. F. Farr, I. Mandel, C. Rodriguez, T. Sidery, A. Vecchio. 2014. Comparison of Gravitational Wave Detector Network Sky Localization Approximations. *Phys. Rev. D* 89, 042004. arXiv:1310.7454
133. M. Dominik, K. Belczynski, C. Fryer, D. Holz, E. Berti, T. Bulik, I. Mandel, R. O’Shaughnessy. 2013. Double Compact Objects II: Cosmological Merger Rates. *ApJ* 779, 72. arXiv:1308.1546
134. C. L. Rodriguez, B. Farr, W. M. Farr, I. Mandel. 2013. Inadequacies of the Fisher Information Matrix in gravitational-wave parameter estimation. *Phys. Rev. D* 88, 084013. arXiv:1308.1397
135. C. M. F. Mingarelli, T. Sidery, I. Mandel, A. Vecchio. 2013. Characterising gravitational wave stochastic background anisotropy with Pulsar Timing Arrays. *Phys. Rev. D* 88, 062005. arXiv:1306.5394
136. R. J. E. Smith, C. Hanna, I. Mandel, A. Vecchio. 2014. Rapidly evaluating the compact binary likelihood function via interpolation. *Phys. Rev. D* 90, 044074. arXiv:1305.3798
137. N. Andersson et al. 2013. The Transient Gravitational-Wave Sky. arXiv:1305.0816
138. R. J. E. Smith, I. Mandel, A. Vecchio. 2013. Studies of waveform requirements for intermediate mass-ratio coalescence searches with advanced detectors. *Phys. Rev. D* 88, 044010. arXiv:1302.6049
139. W. M. Farr, J. R. Gair, I. Mandel, C. Cutler. 2015. Counting And Confusion: Bayesian Rate Estimation With Multiple Populations. *Phys. Rev. D* 91, 023005. arXiv:1302.5341
140. R. J. E. Smith, K. Cannon, C. Hanna, D. Keppel, I. Mandel. 2013. Towards Rapid Parameter Estimation on Gravitational Waves from Compact Binaries using Interpolated Waveforms. *Phys. Rev. D* 87, 122002. arXiv:1211.1254
141. L. Z. Kelley, I. Mandel, E. Ramirez-Ruiz. 2013. Electromagnetic transients as triggers in searches for gravitational waves from compact binary mergers. *Phys. Rev. D* 87, 123004. arXiv:1209.3027
142. K. Belczynski, T. Bulik, I. Mandel, B. S. Sathyaprakash, A. Zdziarski, J. Mikolajewska. 2013. Cyg X-3: a Galactic double black hole or black hole-neutron star progenitor. *ApJ* 764 96. arXiv:1209.2658
143. J. Chennamangalam, D. R. Lorimer, I. Mandel, M. Bagchi. 2013. Constraining the luminosity function parameters and population size of radio pulsars in globular clusters. *MNRAS* 431, 874. arXiv:1207.5732, arXiv:1210.5472
144. M. Dominik, K. Belczynski, C. Fryer, D. Holz, E. Berti, T. Bulik, I. Mandel, R. O’Shaughnessy. 2012. Double Compact Objects I: The Significance Of The Common Envelope On Merger Rates. *ApJ* 759, 52. arXiv:1202.4901
145. J. Veitch, I. Mandel, B. Aylott, B. Farr, V. Raymond, C. Rodriguez, M. van der Sluys, V. Kalogera, A. Vecchio. 2012. Estimating parameters of coalescing compact binaries with proposed advanced detector networks. *Phys. Rev. D* 85, 104045. arXiv:1201.1195
146. C. L. Rodriguez, I. Mandel, J. R. Gair. 2012. Verifying the no-hair property of massive compact objects with intermediate-mass-ratio-inspirals in advanced gravitational-wave detectors. *Phys. Rev. D* 85, 062002. arXiv:1112.1404
147. S. Vitale, W. Del Pozzo, T. G. F. Li, C. Van Den Broeck, I. Mandel, B. Aylott, J. Veitch. 2011. Effect of calibration errors on Bayesian parameter estimation for gravitational wave signals from inspiral binary systems in the Advanced Detectors era. *Phys. Rev. D* 85, 064034. arXiv:1111.3044
148. S. R. Taylor, J. R. Gair, I. Mandel. 2012. Hubble without the Hubble: cosmology using advanced gravitational-wave detectors alone. *Phys. Rev. D* 85:023535. arXiv:1108.5161

149. W. Farr, I. Mandel, D. Stevens. 2015. An Efficient Interpolation Technique for Jump Proposals in Reversible-Jump Markov Chain Monte Carlo Calculations. *Royal Society Open Science*, 2, 150030. arXiv:1104.0984
150. W. Farr, N. Sravan, A. Cantrell, L. Kreidberg, C. D. Bailyn, I. Mandel, V. Kalogera. 2011. The Mass Distribution of Stellar-Mass Black Holes. *ApJ* 741, 103. arXiv:1011.1459
151. L. Z. Kelley, E. Ramirez-Ruiz, M. Zemp, J. Diemand, I. Mandel. 2010. The Distribution of Coalescing Compact Binaries in the Local Universe: Prospects for Gravitational-Wave Observations. *ApJL* 725, L91. arXiv:1011.1256
152. M. Punturo et al. 2010. Third generation of gravitational wave observatories and their science reach. *Class. Quantum Grav.* 27, 084007.
153. I. Mandel. 2010. Parameter estimation on gravitational waves from multiple coalescing binaries. *Phys. Rev. D* 81, 084029. arXiv: 0912.5531
154. V. Raymond, M. V. van der Sluys, I. Mandel, V. Kalogera, C. Roever, N. Christensen. 2010. The effects of LIGO detector noise on a 15-dimensional Markov-chain Monte-Carlo analysis of gravitational-wave signals. *Class. Quantum Grav.* 27, 114009. arXiv:0912.3746
155. I. Mandel and R. O'Shaughnessy. 2010. Compact Binary Coalescences in the Band of Ground-based Gravitational-Wave Detectors. *Class. Quantum Grav.* 27, 114007. arXiv:0912.1074
156. S. Babak et al. (Mock LISA Data Challenge Team). 2010. The Mock LISA Data Challenges: from Challenge 3 to Challenge 4 *Class. Quantum Grav.* 27, 084009. arXiv:0912.0548
157. J. Gair, I. Mandel, M. C. Miller, M. Volonteri. 2011. Exploring intermediate and massive black-hole binaries with the Einstein Telescope. *General Relativity and Gravitation*, 43, 485-518. arXiv:0907.5450
158. J. Gair, I. Mandel, A. Sesana, A. Vecchio. 2009. Probing seed black holes using the next generation of gravitational-wave detectors. *Class. Quant. Grav.* 26, 204009. arXiv:0907.3292
159. L. Cadonati et al. (NINJA collaboration). 2009. Status of NINJA: the numerical INjection Analysis project. *Class. Quant. Grav.* 26, 114008. arXiv:0905.4227
160. M. van der Sluys, I. Mandel, V. Raymond, V. Kalogera, C. Roever, N. Christensen. 2009. Parameter estimation for signals from compact binary inspirals injected into LIGO data. *Class. Quant. Grav.* 26, 204010. arXiv:0905.1323
161. A. Sesana, J. Gair, I. Mandel, A. Vecchio. 2009. Observing gravitational waves from the first generation of black holes. *ApJL* 698, L129. arXiv:0903.4177
162. B. Aylott et al. (NINJA collaboration). 2009. Testing gravitational-wave searches with numerical relativity waveforms: Results from the first Numerical INjection Analysis (NINJA) project. *Class. Quant. Grav.* 26, 165008. arXiv:0901.4399
163. V. Raymond, M. van der Sluys, I. Mandel, V. Kalogera, C. Roever, N. Christensen. 2009. Degeneracies in Sky Localisation Determination from a Spinning Coalescing Binary through Gravitational Wave Observations: a Markov-Chain Monte-Carlo Analysis for two Detectors. *Class. Quant. Grav.* 26, 114007. arXiv:0812.4302
164. K. G. Arun et al. (LISA PE taskforce). 2009. Massive Black Hole Binary Inspirals: Results from the LISA Parameter Estimation Taskforce. *Class. Quant. Grav.* 26, 094027. arXiv: 0811.1011
165. I. Mandel, J. R. Gair. 2009. Can we Detect Intermediate Mass Ratio Inspirals? *Class. Quant. Grav.* 26, 094036. arXiv:0811.0138
166. M. van der Sluys, C. Roever, A. Stroeer, V. Raymond, I. Mandel, N. Christensen, V. Kalogera, R. Meyer, A. Vecchio. 2008. Gravitational-Wave Astronomy with Inspiral Signals of Spinning Compact-Object Binaries. *ApJL* 688, L61. arXiv:0710.1897
167. S. Babak et al. (Mock LISA Data Challenge Team). 2008. The Mock LISA Data Challenges: from Challenge 1B to Challenge 3. *Class. Quant. Grav.* 25, 184026. arXiv:0806.2110

168. M. van der Sluys, V. Raymond, I. Mandel, C. Roever, N. Christensen, V. Kalogera, R. Meyer, A. Vecchio. 2008. Parameter Estimation of Spinning Binary Inspirals Using Markov-Chain Monte Carlo. *Class. Quant. Grav.* 25, 184011. arXiv:0805.1689
169. J. R. Gair, I. Mandel, L. Wen. 2008. Improved Time-Frequency Analysis of Extreme-Mass-Ratio Inspiral Signals in Mock LISA Data. *Class. Quant. Grav.* 25, 184031. arXiv:0804.1084
170. S. Babak et al. (Mock LISA Data Challenge Team). 2008. Report on the Second Mock LISA Data Challenge. *Class. Quant. Grav.* 25, 114037. arXiv:0711.2667
171. J. R. Gair, C. Li, I. Mandel. 2008. Observable Properties of Orbits in Exact Bumpy Spacetimes. *Phys. Rev. D* 77 024035. arXiv:0708.0628
172. I. Mandel, D. A. Brown, J. R. Gair, M. C. Miller. 2008. Rates and Characteristics of Intermediate-Mass-Ratio Inspirals Detectable by Advanced LIGO. *ApJ* 681 1431-1447. arXiv:0705.0285
173. D. A. Brown, J. Crowder, C. Cutler, I. Mandel, M. Vallisneri. 2007. A Three-Stage Search for Supermassive Black Hole Binaries in LISA data. *Class. Quant. Grav.* 24, S595-S605. arXiv:0704.2447
174. P. Amaro-Seoane, J. R. Gair, M. Freitag, M. C. Miller, I. Mandel, C. Cutler, S. Babak. 2007. Intermediate and Extreme Mass-Ratio Inspirals – Astrophysics, Science Applications and Detection using LISA. *Class. Quant. Grav.* 24 R113-R170. arXiv:astro-ph/0703495
175. K. Arnaud et al. (Mock LISA Data Challenge Team). 2007. Report on the First Round of the Mock LISA Data Challenges. *Class. Quant. Grav.* 24, S529-S539. arXiv:gr-qc/0701139
176. D. A. Brown, J. Brink, H. Fang, J. R. Gair, C. Li, G. Lovelace, I. Mandel, K. S. Thorne. 2007. Gravitational Waves from Intermediate-Mass-Ratio Inspirals for Ground-based Detectors. *Phys. Rev. Lett.* 99, 201102. arXiv:gr-qc/0612060
177. I. Mandel. 2005. The Geometry of a Naked Singularity Created by Standing Waves Near a Schwarzschild Horizon, and Its Application to the Binary Black Hole Problem. *Phys. Rev. D* 72 084025. arXiv:gr-qc/0505149
178. A. Silbergleit, I. Mandel, I. Nemenman. 2003. Potential and Field Singularity at a Surface Point Charge. *J. Math. Phys.* 44 (10) 4460-4466. arXiv:math-ph/0306039

**Publications with the LIGO Scientific Collaboration (LSC) [member 2005–2016]:**

179. Abbott, B. et al. 2016. GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence. *Phys. Rev. Letters* 116, 241103. arXiv:1606.04855
180. Abbott, B. et al. 2016. Binary Black Hole Mergers in the first Advanced LIGO Observing Run. *Phys. Rev. X* 6, 041015. arXiv:1606.04856
181. Abbott, B. et al. 2016. Observation of Gravitational Waves from a Binary Black Hole Merger. *Phys. Rev. Letters* 116, 061102. arXiv:1602.03837
182. Abbott, B. et al. 2016. Astrophysical Implications of the Binary Black-hole Merger GW150914. *ApJL* 818, L22. arXiv:1602.03846
183. Abbott, B. et al. 2016. Tests of general relativity with GW150914. *Phys. Rev. Letters* 116, 221101. arXiv:1602.03841
184. Abbott, B. et al. 2016. (*as internal reviewer*) GW150914: Implications for the stochastic gravitational wave background from binary black holes. *Phys. Rev. Letters* 116, 131102. arXiv:1602.03847
185. Abbott, B. et al. 2016. GW150914: The Advanced LIGO Detectors in the Era of First Discoveries. *Phys. Rev. Letters* 116, 131103. arXiv:1602.03838
186. Abbott, B. et al. 2016. Properties of the binary black hole merger GW150914. *Phys. Rev. Letters*, 116, 241102. arXiv:1602.03840



187. Abbott, B. et al. 2016. GW150914: First results from the search for binary black hole coalescence with Advanced LIGO. *Phys. Rev. D* 93, 122003. arXiv:1602.03839
188. Abbott, B. et al. 2017. Calibration of the Advanced LIGO detectors for the discovery of the binary black-hole merger GW150914. *Phys. Rev. D* 95, 062003. arXiv:1602.03845
189. Abbott, B. et al. 2016. Localization and broadband follow-up of the gravitational-wave transient GW150914. *ApJL* 825, L13. arXiv:1602.08492
190. Abbott, B. et al. 2016. Observing gravitational-wave transient GW150914 with minimal assumptions. *Phys. Rev. D* 93, 122004. arXiv:1602.03843
191. Abbott, B. et al. 2016. The Rate of Binary Black Hole Mergers Inferred from Advanced LIGO Observations Surrounding GW150914. *ApJL* 833, L1. arXiv:1602.03842 [Supplement in *ApJS* 227, 2, 14. arXiv:1606.03939]
192. Abbott, B. et al. 2016. High-energy Neutrino follow-up search of Gravitational Wave Event GW150914 with ANTARES and IceCube. *Phys. Rev. D* 93, 122010. arXiv:1602.05411
193. Abbott, B. et al. 2016. Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914. *CQG* 33, 134001. arXiv:1602.03844
194. Aasi, J. et al. 2015. A directed search for gravitational waves from Scorpius X-1 with initial LIGO. *Phys. Rev. D* 91, 062008
195. Aasi, J. et al. 2015. Narrow-band search of continuous gravitational-wave signals from Crab and Vela pulsars in Virgo VSR4 data. *Phys. Rev. D* 91, 022004
196. Aasi, J. et al. 2015. Characterization of the LIGO detectors during their sixth science run. *Class. Quantum Grav.* 32, 105012.
197. Aasi, J. et al. 2015. Advanced LIGO. *Classical and Quantum Gravity* 32(7), 074001.
198. Aasi, J. et al. 2015. Searching for stochastic gravitational waves using data from the two colocated LIGO Hanford detectors. *Physical Review Letters* 91, 022003.
199. Aasi, J. et al. 2014. Improved upper limits on the stochastic gravitational-wave background from 2009-2010 LIGO and Virgo data. *Physical Review Letters* 113(23), 231101.
200. Aartsen, M. et al. 2014. Multimessenger search for sources of gravitational waves and high-energy neutrinos: Initial results for LIGO-Virgo and IceCube. *Physical Review D* 90(10), 102002.
201. Aasi, J. et al. 2014. First all-sky search for continuous gravitational waves from unknown sources in binary systems. *Physical Review D* 90(6), 062010.
202. Aasi, J. et al. 2014. Search for gravitational waves associated with gamma-ray bursts detected by the interplanetary network. *Physical Review Letters* 113(1), 011102.
203. Aasi, J. et al. 2014. The NINJA-2 project: detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations. *Classical and Quantum Gravity* 31(11), 115004. arXiv:1401.0939
204. Aasi, J. et al. 2014. Constraints on cosmic strings from the LIGO-Virgo gravitational-wave detectors. *Physical Review Letters* 112(13), 131101.
205. Aasi, J. et al. 2014. Application of a Hough search for continuous gravitational waves on data from the fifth LIGO science run. *Classical and Quantum Gravity* 31(8), 085014.
206. Aasi, J. et al. 2014. First searches for optical counterparts to gravitational-wave candidate events. *Astrophysical Journal Supplement Series* 211(1), 7.
207. Aasi, J. et al. 2014. (*as internal reviewer*) Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run. *Physical Review Letters* 89, 122003. arXiv:1404.2199
208. Aasi, J. et al. 2014. Implementation of an  $F$ -statistic all-sky search for continuous gravitational waves in Virgo VSR1 data. *Classical and Quantum Gravity* 31(16), 165014.

209. Aasi, J. et al. 2013. Search for long-lived gravitational-wave transients coincident with long gamma-ray bursts. *Physical Review D* 88(12), 122004.
210. Aasi, J. et al. 2013. Directed search for continuous gravitational waves from the Galactic center. *Physical Review D* 88(10), 102002.
211. Aasi, J. et al. 2013. Parameter estimation for compact binary coalescence signals with the first generation gravitational-wave detector network. *Physical Review D* 88(6), 062001. arXiv:1304.1775
212. Adrián-Martínez, S. et al. 2013. A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007. *Journal of Cosmology and Astroparticle Physics* 2013(6), 008.
213. Aasi, J. et al. 2013. Einstein@Home all-sky search for periodic gravitational waves in LIGO S5 data. *Physical Review D* 87(4), 042001.
214. Aasi, J. et al. 2013. Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light. *Nature Photonics* 7(8), 613-619.
215. Aasi, J. et al. 2013. Search for gravitational waves from binary black hole inspiral, merger, and ringdown in LIGO-Virgo data from 2009-2010. *Physical Review D* 87(2), 022002.
216. Abadie, J. et al. 2012. Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600-1000 Hz. *Physical Review D* 85(12), 122001.
217. Abadie, J. et al. 2012. All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run. *Physical Review D* 85(12), 122007.
218. Abadie, J. et al. 2012. First low-latency LIGO+Virgo search for binary inspirals and their electromagnetic counterparts. *Astronomy & Astrophysics* 541, A155.
219. Abadie, J. et al. 2012. Search for gravitational waves from intermediate mass binary black holes. *Physical Review D*, 85(10), 102004.
220. Abadie, J. et al. 2012. Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts. *Astronomy & Astrophysics* 539, A124.
221. Abadie, J. et al. 2012. All-sky search for periodic gravitational waves in the full S5 LIGO data. *Physical Review D* 85(2), 022001.
222. Abadie, J. et al. 2012. Implications for the origin of GRB 051103 from LIGO observations. *Astrophysical Journal* 755(1), 2.
223. Abadie, J. et al. 2012. Search for gravitational waves from low mass compact binary coalescence in LIGO's sixth science run and Virgo's science runs 2 and 3. *Physical Review D* 85(8), 082002.
224. Aasi, J. et al. 2012. The characterization of Virgo data and its impact on gravitational-wave searches. *Classical and Quantum Gravity* 29(15), 155002.
225. Evans, P. et al. 2012. SWIFT follow up observations of candidate gravitational-wave transient events. *The Astrophysical Journal Supplement Series* 203(2), 28.
226. Abadie, J. et al. 2012. Search for gravitational waves associated with gamma-ray bursts during LIGO science run 6 and Virgo science runs 2 and 3. *Astrophysical Journal* 760(1), 12.
227. Abadie, J. et al. 2011. Directional limits on persistent gravitational waves using LIGO S5 science data. *Physical Review Letters* 107(27), 271102.
228. Abadie, J. et al. 2011. (*as internal reviewer*) Search for gravitational waves from binary black hole inspiral, merger and ringdown. *Phys. Rev. D* 83:122005. arXiv:1102.3781
229. Abadie, J. et al. 2011. Search for gravitational waves associated with the August 2006 timing glitch of the Vela pulsar. *Physical Review D* 83(4), 042001.
230. Abadie, J. et al. 2011. Search for gravitational wave bursts from six magnetars. *The Astrophysical Journal* 734(2), L35.

231. Abadie, J. et al. 2011. Beating the spin-down limit on gravitational wave emission from the Vela pulsar. *Astrophysical Journal* 737(2), 93.
232. Abadie, J. et al. 2010. (*as lead author*) Predictions for the Rates of Compact Binary Coalescences Observable by Ground-based Gravitational-wave Detectors. *Class. Quant. Grav.* 27, 173001. arXiv:1003.2480
233. Abbott, B. et al. 2010. Search for gravitational-wave bursts associated with gamma-ray bursts using data from LIGO science run 5 and Virgo science run 1. *Astrophysical Journal* 715(2), 1438-1452.
234. Abbott, B. et al. 2010. Searches for gravitational waves from known pulsars with science run 5 LIGO data. *Astrophysical Journal* 713(1), 671-685.
235. Abadie, J. et al. 2010. All-sky search for gravitational-wave bursts in the first joint LIGO-GEO-Virgo run. *Physical Review D* 81(10), 102001.
236. Abadie, J. et al. 2010. First search for gravitational waves from the youngest known neutron star. *Astrophysical Journal* 722(2), 1504-1513.
237. Abadie, J. et al. 2010. Calibration of the LIGO gravitational wave detectors in the fifth science run. *Nuclear Instruments and Methods in Physics Research Section A*, 624(1), 223-240.
238. Abadie, J. et al. 2010. Search for gravitational waves from compact binary coalescence in LIGO and Virgo data from S5 and VSR1. *Physical Review D* 82(10), 102001.
239. Abadie, J. et al. 2010. Search for gravitational-wave inspiral signals associated with short gamma-ray bursts during LIGO's fifth and Virgo's first science run. *The Astrophysical Journal* 715(2), 1453-1461.
240. Abbott, B. et al. 2009. Search for gravitational wave ringdowns from perturbed black holes in LIGO S4 data. *Physical Review D* 80(6), 062001.
241. Abbott, B. et al. 2009. First LIGO search for gravitational wave bursts from cosmic (super)strings. *Physical Review D* 80(6), 062002.
242. Abbott, B. et al. 2009. LIGO: the laser interferometer gravitational-wave observatory. *Reports on Progress in Physics* 72(7), 076901.
243. Abbott, B. et al. 2009. Einstein@Home search for periodic gravitational waves in early S5 LIGO data. *Physical Review D* 80(4), 042003.
244. Abbott, B. et al. 2009. Search for gravitational waves from low mass binary coalescences in the first year of LIGO's S5 data. *Physical Review D* 79(12), 122001.
245. Abbott, B. et al. 2009. Stacked Search for Gravitational Waves from the 2006 SGR 1900+14 Storm. *Astrophysical Journal* 701(2), L68-L74.
246. Abbott, B. et al. 2009. Search for high frequency gravitational-wave bursts in the first calendar year of LIGO's fifth science run. *Physical Review D* 80(10), 102002.
247. Abbott, B. et al. 2009. All-Sky LIGO Search for Periodic Gravitational Waves in the Early Fifth-Science-Run Data. *Physical Review Letters* 102(11), 111102.
248. Abbott, B. et al. 2009. An upper limit on the stochastic gravitational-wave background of cosmological origin. *Nature* 460(7258), 990-994.
249. Abbott, B. et al. 2009. Search for gravitational-wave bursts in the first year of the fifth LIGO science run. *Physical Review D* 80(10), 102001.
250. Abbott, B. et al. 2009. Observation of a kilogram-scale oscillator near its quantum ground state. *New Journal of Physics* 11(7), 073032.
251. Abbott, B. et al. 2009. Search for gravitational waves from low mass compact binary coalescence in 186 days of LIGO's fifth science run. *Physical Review D* 80(4), 047101.

1. C. Hoy, S. Fairhurst, I. Mandel. 2024. Precession and higher order multipoles in binary black holes (and lack thereof). arXiv:2408.03410
2. T. Shenar et al. 2024. Binarity at LOW Metallicity (BLOeM): I. a spectroscopic VLT monitoring survey of massive stars in the SMC. arXiv:2407.14593
3. Z. Xing et al. 2024. Formation of Wind-Fed Black Hole High-mass X-ray Binaries: The Role of Roche-lobe-Overflow Post Black-Hole Formation. arXiv:2407.00200
4. C. Adamcewicz, P. D. Lasky, E. Thrane, I. Mandel. 2024. No evidence for a dip in the binary black hole mass spectrum. arXiv:2406.11111
5. R. Valli, L. Graziani and the LISA Synthetic UCB Catalogue Group. 2023. BinCodex: a common output format for binary population synthesis. arXiv:2311.03431
6. LISA Consortium Waveform Working Group: Afshordi, N. et al. 2023. Waveform Modelling for the Laser Interferometer Space Antenna. arXiv:2311.01300
7. P. Marchant, P. Podsiadlowski, I. Mandel. 2023. An upper limit on the spins of merging binary black holes formed through binary evolution. arXiv:2311.14041
8. M. Lau, M. Cantiello, A. Jermyn, M. MacLeod, I. Mandel, D. Price. 2022. Hot Jupiter engulfment by a red giant in 3D hydrodynamics. arXiv:2210.15848
9. V. Kalogera et al. 2021. The Next Generation Global Gravitational Wave Observatory: The Science Book. arXiv:2111.06990
10. I. Mandel. 2021. An accurate analytical fit to the gravitational-wave inspiral duration for eccentric binaries. RNAAS 5, 223. arXiv:2110.09254
11. L. Urias, T. J. Maccarone, V. Antoniou, I. Mandel, S. Vinciguerra. 2021. Candidate Type II Be X-Ray Binary Outbursts in NGC 6744. Res. Notes AAS 5, 209.
12. A. Casey, I. Mandel, P. Ray. 2021. The impact of the COVID-19 pandemic on academic productivity. arXiv:2109.06591
13. S. L. Schröder, M. MacLeod, E. Ramirez-Ruiz, I. Mandel, T. Fragos, A. Loeb, R. W. Everson. 2021. The Evolution of Binaries under the Influence of Radiation-Driven Winds from a Stellar Companion. arXiv:2107.09675
14. “I ‘heart’ Pluto” – we ‘heart’ it, mostly” (book review). I. Mandel. 2020. Crystallography Reviews
15. M. Bailes et al. 2019. Ground-Based Gravitational-Wave Astronomy in Australia: 2019 White Paper. arXiv:1912.06305
16. D. Liptai, D. J. Price, I. Mandel, G. Lodato. 2019. Disc formation from tidal disruption of stars on eccentric orbits by Kerr black holes using GRSPH. arXiv:1910.10154
17. P. F. Michelson, R. L. Byer, S. Buchman, I. Mandel, J. Lipa, S. Saraf. 2019. MFB: A Mid-Frequency-Band Space Gravitational Wave Observer for the 2020 Decade (Decadal Instrument White Paper). arXiv:1908.02861
18. V. Kalogera, C. P. L. Berry, M. Colpi, S. Fairhurst, S. Justham, I. Mandel, A. Mangiagli, M. Mapelli, C. Mills, B. S. Sathyaprakash, R. Schneider, T. Tauris, R. Valiante. 2019. Deeper, Wider, Sharper: Next-Generation Ground-Based Gravitational-Wave Observations of Binary Black Holes (Decadal White Paper). arXiv:1903.09220
19. J. W. Barrett, I. Mandel, C. J. Neijssel, S. Stevenson, A. Vigna-Gómez. 2017. Exploring the Parameter Space of Compact Binary Population Synthesis. IAU Symposium 325, 46. arXiv:1704.03781
20. I. Mandel. 2017. The astrophysics of LIGO gravitational-wave observations, in *11th INTEGRAL conference proceedings*, edited by Ed van den Heuvel, <https://pos.sissa.it/285/002>
21. C. P. L. Berry et al. 2016. Early Advanced LIGO binary neutron-star sky localization and parameter estimation. Journal of Physics: Conference Series; 76(1):012031(4). arXiv:1606.01095

22. W. M. Farr, I. Mandel, C. Aldridge, K. Stroud. 2015. The Occurrence of Earth-Like Planets Around Other Stars. arXiv:1412.4849
23. M. Hendry et al. 2014. Education and public outreach on gravitational-wave astronomy. *General Relativity and Gravitation*, 46:1764.
24. R. M. Shannon et al. 2014. Summary of session C1: pulsar timing arrays. *General Relativity and Gravitation*, 46:1765.
25. M. Branchesi et al. 2014. C7 multi-messenger astronomy of GW sources. *General Relativity and Gravitation*, 46:1771.
26. I. Mandel et al. 2014. Relativistic astrophysics at GR20. *General Relativity and Gravitation*, 46:1688.
27. D. Buskulic and I. Mandel. 2013. LIGO and Virgo Gravitational-wave Detectors and Their Science Reach. *Acta Physica Polonica B* 44, 12, 2413.
28. I. Mandel, L. Z. Kelley, E. Ramirez-Ruiz. 2011. Towards improving the prospects for coordinated gravitational-wave and electromagnetic observations. arXiv:1111.0005
29. I. Mandel, R. O'Shaughnessy, V. Kalogera. 2010. Unravelling Binary Evolution from Gravitational-Wave Signals and Source Statistics. arXiv:1001.2583
30. I. Mandel, J. R. Gair, M. C. Miller. 2010. Detecting coalescences of intermediate-mass black holes in globular clusters with the Einstein Telescope. arXiv:0912.4925
31. J. R. Gair, I. Mandel, L. Wen. 2008. Time-Frequency Analysis of Extreme-Mass-Ratio Inspiral Signals in Mock LISA Data. *J. Phys.: Conf. Ser.* 122 012037. arXiv:0710.5250
32. I. Mandel. 2007. Spin Distribution Following Minor Mergers and the Effect of Spin on the Detection Range for Low-Mass-Ratio Inspirals. arXiv:0707.0711
33. A. Silbergleit, I. Nemenman, I. Mandel. 2003. On the Interaction of Point Charges in an Arbitrary Domain. *J. Tech. Phys.* 48 (2), 146-151. arXiv:physics/0105052

SELECTED  
PRESENTATIONS

9/2006 Talk at LISA Astro-GR@AEI, Golm, Germany. “Using EMRIs to probe bumpy black-hole spacetimes”

1/2007 Seminar at Leyden, Netherlands. “Gravitational waves from intermediate-mass-ratio inspirals in ground-based detectors”

4/2007 Talk at APS, Jacksonville, FL. “Intermediate-mass-ratio inspirals into intermediate-mass black holes”

7/2007 Talk at Amaldi 7, Sydney, Australia. “Time-Frequency Analysis of Extreme-Mass-Ratio Inspirational Signals: Mock LISA Data Challenge, Round 2”

10/2007 Astrophysics Seminar at Northwestern University, Evanston, IL. “Testing the No-Hair Theorem with Gravitational-Wave Observations”

11/2007 Talk at 17th Midwest Relativity Meeting, St Louis, MO. “Black-Hole Spins Following Minor Mergers”

12/2007 Talk at GWDAAW-12, Boston, MA. “Extracting Extreme Mass Ratio Inspirational Parameters via Time-Frequency Methods”

2/2008 Seminar at Center for Gravitation and Cosmology, University of Wisconsin-Milwaukee. “Ground-based detection of gravitational waves from intermediate-mass-ratio inspirals”

3/2008 Talk at 24th Pacific-Coast Gravity Meeting, Santa Barbara, CA. “Extracting Extreme Mass Ratio Inspirational Parameters via Time-Frequency Methods”

6/2008 Talk at 7th LISA Symposium, Barcelona, Spain. “Can we detect IMRIs?”

9/2008 Short seminar at Institute of Astronomy, Cambridge, UK. “Ground-based detection of gravitational waves from intermediate-mass-ratio inspirals”

10/2008 Talk at 18th Midwest Relativity Meeting, Notre Dame, IN. “Can we detect intermediate-mass-ratio inspirals?”

12/2008 Seminar at HEP/Astrophysics Seminar, Purdue, West Lafayette, IN. “Prospects in Gravitational-Wave Astronomy”

2/2009 Seminar Southampton, UK “Compact binaries as sources for ground-based gravitational-wave detectors”

3/2009 Seminar KITP, UC Santa Barbara “Compact Binaries, Intermediate-Mass-Ratio Inspirals, and Other Prospects in Gravitational-Wave Astronomy”

4/2009 Talk at IMBH Workshop, UC Irvine. “Gravitational Waves from Binary Systems Containing Intermediate-Mass Black Holes”

6/2009 Talk at Amaldi-8 conference, Columbia University. “Compact binaries as sources for ground-based gravitational-wave detectors”

7/2009 Invited Talk at NRDA-2 at AEI, Golm, Germany. “Predictions for Detectable Coalescences of Compact Binaries Including Black Holes”

7/2009 Talk at Marcel Grossmann 12 in Paris, France. “Probing Light Seeds of Massive Black Holes

with Gravitational Waves”

7/2009 Invited talk at MG-12, Paris. “Unravelling Binary Evolution from Gravitational-Wave Signals and Source Statistics”

10/2009 Invited talk at the CfA, Cambridge, MA. “Gravitational Waves from Binaries”

1/2010 Talk at NSF Fellows’ Symposium, AAS, Washington, DC. “Prospects in Gravitational-Wave Astronomy”

1/2010 Poster at GWDAA, Rome. “Parameter estimation on gravitational waves from multiple coalescing binaries”

2/2010 Talk at Aspen Winter School on Formation and Evolution of Black Holes, Aspen, CO. “Extracting the distribution of black-hole parameters from gravitational-wave observations”

3/2010 Seminar, University of California, Santa Cruz. “Prospects in Gravitational-Wave Astronomy”

5/2010 Seminar, Northwestern University. “Prospects in Gravitational-Wave Astronomy”

5/2010 Seminar, Rochester Institute of Technology. “Prospects in Gravitational-Wave Astronomy”

6/2010 Talk at NRDA at the Perimeter Institute, Waterloo, Canada. “Bayesian Inference on Numerical Injections”

6/2010 Poster at LISA Symposium, Stanford, CA. “Extracting the distribution of black-hole parameters from gravitational-wave observations”

7/2010 Invited talk at GR-19, Mexico City. “The Mock LISA Data Challenges”

7/2010 Seminar, University of Birmingham, UK. “GWastrophysics”

7/2010 Talk, COSPAR-2010, Bremen. “Testing General Relativity with Gravitational Waves from Extreme Mass Ratio Inspirals”

1/2011 Talk at NSF Fellows Symposium, Seattle. “Gravitational waves from compact binaries: Status and prospects”

1/2011 Talk at AAS, Seattle. “Searching For Gravitational-wave Signals From Compact Binaries With LIGO And Virgo”

1/2011 Talk at GWPAAW, Milwaukee, WI. “The Distribution of Coalescing Compact Binaries in the Local Universe: Prospects for Gravitational-Wave Observations”

2/2011 Seminar, West Virginia University, Morgantown, WV. “Markov Chain Monte Carlo techniques for parameter estimation”

2/2011 Seminar, University of Florida, Gainesville, FL. “GWastrophysics with compact binaries”

3/2011 Talk at Evolution of Compact Binaries, Valparaiso, Chile. “Compact Binary Coalescences: Connections to Gravitational-Wave Astronomy”

4/2011 Talk at MKI Postdoc Symposium, MIT. “Gravitational-wave Astrophysics with Compact

Binaries”

5/2011 Seminar at Princeton University. “GWastrophysics”

5/2011 Seminar at University of Maryland, College Park. “GW astrophysics with compact binaries”

5/2011 Talk at Aspen Center for Physics. “Why compact binaries are not boring”

9/2011 Poster at New Horizons in Time Domain Astronomy, Oxford, UK. “Electromagnetic transients as triggers in searches for gravitational waves from compact binary inspirals”

10/2011 Invited talk at LOFT Science Meeting, Amsterdam. “Gravitational wave observatories and LOFT”

11/2011 Seminar at Warsaw University, Poland. “Gravitational-wave Astrophysics of Compact Binaries”

12/2011 Seminar at Cardiff University. “GWastrophysics of Compact Binaries”

12/2011 Invited talk at LOFT and the Variable X-ray Sky, RAS, London. “LOFT and the EM counterparts to gravitational wave sources”

12/2011 Talk at Gravitation, Astrophysics and Cosmology conference, Quy Nhon, Vietnam. “Astrophysics, Cosmology and Fundamental Physics with ground-based gravitational-wave detectors”

3/2012 Invited talk at April APS Meeting, Atlanta, GA. “Intermediate-mass black holes: A theoretical perspective”

4/2012 Talk at April APS Meeting, Atlanta, GA. “What Waveforms do Data Analysts Want?, or the dangers of systematic errors in parameter estimation”

5/2012 Invited talk at Sackler conference: testing GR with astrophysical systems, Cambridge, MA. “Testing GR with Binary Coalescence Events”

6/2012 Talk at GWPAW, Hannover. “What Waveforms do Data Analysts Want?, or the dangers of systematic errors in parameter estimation”

6/2012 Invited talk at Exploring New Horizons with Gravitational Waves, Hannover. “Astrophysical Sources and Parameter Estimation”

7/2012 Invited course at Nijmegen Astroparticle summer school. “Gravitational Wave Astrophysics”

9/2012 Led discussion on parameter estimation for advanced detectors at KITP workshop, Santa Barbara

10/2012 Seminar at University of Nottingham. “GWastrophysics of Compact Binaries”

10/2012 Invited talk at Russian Young Scientists Conference on Physics and Astronomy, Saint Petersburg (in Russian)

12/2012 Talk at Einstein Telescope Meeting, Hannover. “Challenges for source parameter estimation with the Einstein Telescope”

1/2013 Invited lectures on gravitational-wave astrophysics and parameter estimation at the Chris



Engelbrecht Gravitational-Wave Summer School, South Africa

2/2013 Seminars at Cambridge University and University of Warwick. “GWastrophysics of Compact Binaries”

2/2013 Invited overview talk at UK-India LIGO meeting. “Science Exploitation of advanced GW detectors: a provocation”

3/2013 Invited LIGO Academic Advisory Council lecture on “Astrophysics of binary black holes”

4/2013 Seminar at Hebrew University of Jerusalem. “GWastrophysics with Compact Binaries”

6/2013 Seminars at Guelph University and Perimeter Institute. “Exploring (astro)physics with gravitational waves”

6/2013 Invited talk at First UK LOFT Science meeting, London. “Gravitational Waves and LOFT”

7/2013 Invited lecture on LIGO and compact-binary astrophysics, Cracow School of Theoretical Physics, Zakopane, Poland

7/2013 Talk at GR-20, Warsaw. “BiG Waves: a different kind of gravitational-wave summer school”

8/2013 Invited lectures on gravitational-wave astrophysics at Beijing Normal University gravitational-wave summer school

9/2013 Talk at Numerical Relativity and Data Analysis workshop, Mallorca. “Waveform accuracy requirements for parameter estimation”

10/2013 Seminar at Imperial College, London. “LIGO and GWastrophysics of compact binaries”

12/2013 Talk at Gravitational-Wave Physics and Astronomy Workshop (GWPAW), Pune, India. “Parameter estimation, Fisher matrices, and abruptly terminating waveforms”. Invited panelist for discussion of multi-messenger astronomy

1,2/2014 Seminars at University of Kwa-Zulu Natal, University of Western Cape, and Stellenbosch University, South Africa, as part of a long-term National Institute of Theoretical Physics fellowship

3/2014 Seminars at Newcastle University, Florida Atlantic University

3/2014 Talk at “Stellar Tango in the Rockies” workshop, Lake Louise, Canada. “What can gravitational waves teach us about compact binary evolution?”

7/2014 Solicited talk at University of Washington INT workshop on “Binary Neutron Star Coalescence as a Fundamental Physics Laboratory”

8/2014 Seminar at University of California, San Diego. “Gravitational-wave astrophysics of compact binaries”

10/2014 Seminar at University of Southampton. “Adventures in Astrostatistics”

10/2014 Seminar (“Adventures in Astrostatistics”) and Tutorial (“All you wanted to know about Gravitational Wave Astrophysics and were afraid to ask”) at University of Amsterdam.

2/2015 Astronomy seminars at Melbourne and Monash Universities

4/2015 Physics colloquium at Monash University; astronomy seminar at Swinburne University: “Beautiful Binaries”

5/2015 Invited talk at Cardiff Black Hole Workshop: “Black-hole mass measurements”

6/2015 Invited talk at “GRG: A centennial perspective”, Penn State: “Overview of compact-binary merger rate predictions”

7/2015 Invited talks at Marcel Grossmann 14, Rome: “Intermediate-mass black holes: A theoretical perspective” and “Prospects for BNS Observations with Advanced GW Detectors”

7/2015 Talk at Alpine Cosmology Workshop: “Cosmology with gravitational waves”

11/2015 Invited talk, Jerusalem Tidal Disruption Workshop

2/2016 Invited talk, Aspen conference on Dynamics and accretion at the Galactic Center: “Tidal Disruptions of Binary Stars”

2/2016 Physics department colloquium, University of Florida; Astronomy seminar, Durham University: “Gravitational-wave astrophysics: the future is now”

3/2016 Invited talk at Workshop on Sampling in higher dimensions, Edinburgh: “Enhancing sampling efficiency: Inference on binary black holes with gravitational waves”

5/2016 Invited talk at The First Observations of a Binary Black Hole Merger, Hannover: “GW150914: Astrophysical implications of the discovery”

7/2016 Talk, Binary Stars in Cambridge, Cambridge, UK: “Massive Binary Paleontology with Gravitational Waves”

8/2016 Talk, GRavitational-wave Astronomy Meeting in Paris (GRAMPA): “Gravitational-wave Palaeontology”

9/2016 Colloquia, Leiden University and Center for Astrophysics, Harvard University: “Gravitational-wave astrophysics: The future is now” <https://www.youtube.com/watch?v=xXH-NBdhzk0>

10/2016 Invited talk at INTEGRAL conference, Amsterdam: “The astrophysics of LIGO gravitational-wave observations”

10/2016 Invited talk at Gravitational Waves & Cosmology meeting, DESY, Hamburg: “Astrophysical consequences of the LIGO discovery”

10/2016 Invited lectures at Marie Curie GraWIToN school, Rome

11/2016 Colloquium at the Geneva Observatory; Informal seminar at the Copernicus Center, Warsaw

12/2016 Colloquium at University of Nottingham

1/2017 Colloquium at Cardiff University

2/2017 Invited conference summary lecture, Aspen Center for Physics winter conference on “The Dawning Era of Gravitational-Wave Astrophysics”

2/2017 Colloquium at Lund University, Sweden

5/2017 Colloquium at Albert Einstein Institute (Max Planck Institute), Golm bei Potsdam

6/2017 Colloquium at University of Manchester

9/2017 Workshop summary talk at Lorentz Center, Leiden: “And then there was light: electromagnetic counterparts of binary black hole mergers”

9/2017 Invited talk at “Piercing the Sphere of Influence” conference, Cambridge: “Stellar binaries: tidal separations, mergers, and disruptions”

9/2017 Plenary talk at DESY theory workshop “Fundamental physics in the cosmos”, Hamburg: “Astrophysical sources of GWs and future prospects for their detection”

10/2017 Seminar at Oxford University

11/2017 Invited discussion lead at Center for Computational Astrophysics (New York) special workshop on binary neutron stars

12/2017 Seminar at Keele University

2/2018 Seminars at University of California, Berkeley, and University of California, Santa Cruz, “The future of gravitational-wave astronomy”

4/2018 Seminar at St Petersburg Academic University (in Russian)

4/2018 Invited talk at “UQ for inverse problems in complex systems”, Isaac Newton Institute, Cambridge: “Studying black holes with gravitational waves: Why GW astronomy needs you!”

5/2018 Invited talk at Sackler conference on Gravitational-wave Astrophysics: “Formation of merging black holes through isolated binary evolution via the common envelope phase” <https://www.youtube.com/watch?v=QhPd1WvWnIO>

7/2018 Les Houches lecture series on astrophysical sources of gravitational waves

8/2018 Plenary talk, IAU General Assembly in Vienna (X-ray binary session), “Gravitational-wave astrophysics”

8/2018 Lecture at STFC summer school, Belfast

9/2018 Invited presentation at ULX meeting, ISSI, Bern

10/2018 Invited presentation at third-generation gravitational-wave detector science case planning meeting, Golm

2/2019 Seminar at Melbourne University

7/2019 Talk at ASA meeting

8/2019 Invited presentation at International Statistical Institute World Congress (Kuala-Lumpur, Malaysia), “Adventures in astrostatistics: Black holes and beyond”

8/2019 Talk at Munich Institute for Astro- and Particle Physics program “Precision gravity: from the LHC to LISA”

10/2019 Seminar at University of Western Australia

1/2020 Invited talk at Max-Planck meeting at Schloss Ringberg, “The current astrophysical understanding of the progenitors of binary mergers seen by LIGO”

2/20 Talk at ANITA meeting, Canberra

5/20 Colloquium on “Gravitational-wave astronomy” at Macquarie University (Sydney, Australia, delivered via zoom)

9/20 Colloquium on “Gravitational-wave astronomy” at TIFR (Mumbai, India, delivered via zoom)

1/2021 Colloquium on “The promise of gravitational-wave astrophysics” at UCLA (delivered via zoom)

5/2021 Colloquium at the National Institute of Theoretical Physics, South Africa (delivered via zoom)

6/2021 Colloquium on “Some recent results in massive binary evolution” at the Hebrew University of Jerusalem (delivered via zoom)

6/2021 Invited talk on “Stochastic recipes for compact remnant masses, and natal kicks and their impact on gravitational wave sources”, Gravitational Wave Astrophysics Conference, Hefei, China (delivered via zoom)

6/2021 Talk on “Cygnus X-1 as a probe of massive stellar and binary evolution” at the European Astronomical Society meeting (delivered via zoom)

6/2021 Talk on “Black hole masses (of stellar-mass BHs)” at Aspen Center for Physics (delivered via zoom)

7/2021 Opening plenary talk, Amaldi 14 “Accelerating gravitational wave science”, Melbourne, Australia

9/2021 Colloquium at the Kavli Institute for Astronomy and Astrophysics (KIAA), Peking University (delivered via zoom)

10/2021 Astrophysics seminar at the National Centre for Nuclear Research, Warsaw, Poland (via zoom)

11/2021 International Astrostatistics Association and the Astrominformatics & Astrostatistics Commission of the International Astronomical Union invited seminar (delivered via zoom)

12/2021 LSST Australia workshop, talk on “Exploring common envelopes with LSST observations of luminous red novae”

1/2022 Lectures at the Saas Fee gravitational waves astrophysics school, Switzerland

3/2022 Colloquium at the University of Melbourne, “Accretion and drag in stellar binaries”

7/2022 Discussion lead, Aspen Center for Physics

9/2022 Colloquium at the University of Queensland

11/2022 Australian National University Colloquium

12/2022 Invited talk at “Supernovae in the Gravitational Wave Detection Era”, Melbourne, on “Supernovae and compact-object binaries”

2/2023 ANITA workshop talk, “The expanding toolkit of a theoretical astrophysicist”

2/2023 Phantom workshop invited talk, “A theorist’s challenges for smooth particle hydrodynamics simulations”

3/2023 Colloquium at the California Institute of Technology

5/2023 OzFink workshop invited talk, “Binaries and the Vera Rubin Observatory”

7/2023 ASA talk, “Common envelopes in massive stars”

9/2023 Astro3D colloquium, “Black holes in Binaries”

11/2023 Seminar at the Max Planck Institute for Astrophysics, Garching (Munich)

11/2023 Colloquium at University of Milano Bicocca

11/2023 Colloquium at KU Leuven, Belgium

12/2023 RAS special meeting invited talk “Astrophysics with black-hole binaries”, London

1/2024 Heidelberg Joint Astronomical Colloquium, “Black holes in binaries” (Germany)

2/2024 Talk at Transients Down Under conference “Short gamma ray bursts, the neutron star mass distribution, and the equation of state”, Melbourne

2/2024 Talk at ANITA workshop, “Improved models for mass transfer in binaries”

2/2024 Colloquium (virtual) at Bar Ilan University, Israel

6/2024 “Future of Astrophysics in Australia”, ASA hub invited talk, Melbourne

7/2024 Talk on “Common envelopes, their outflows, and their lightcurves”, StanFest, Leuven, Belgium

7/2024 Invited talk “Theoretical expectations for high-mass X-ray binaries, SN remnants, and their evolutionary paths”, Liege International Astronomical Colloquium: The eventful life of massive stellar multiples

SELECTED  
OUTREACH  
ACTIVITIES

- 11/2008 LIGO Scientific Collaboration booth at the Society of Physics Students congress at Fermilab
- 12/2008 Co-presented *The Wonders of the Night Sky: The Life and Death of Stars* at the Theodore Roosevelt Elementary School's science fair in Park Ridge, Illinois
- 4/2009 Special event at Dearborn Observatory as part of the *100 Years of Astronomy* celebration of the International Year of Astronomy
- 5/2009 Science Club at Roosevelt elementary school
- 5/2009 Judging Meaningful Science Consortium *Project Showcase* for Chicago public high school students
- 7/2009 LIGO traveling exhibit at Adler Planetarium.
- 12/2009 Co-presented *The Wonders of the Night Sky: The Life and Death of Stars* at the Theodore Roosevelt Elementary School's science fair in Park Ridge, Illinois
- 3/2010 Co-organized the presentation of *Einstein's Cosmic Messengers*, a multimedia concert by Andrea Centazzo and Michele Vallisneri, at Northwestern University.
- 2/2011 Taught elementary school children at Anova school in Melrose, MA.
- 3/2012 Gravitational-wave presentation at the Big Bang Fair, Birmingham National Exhibition Center
- 2012–2016 Founder and lead organizer of the Birmingham Gravitational-wave summer school (BiG Waves)
- 6/2012 Presented and led interactive sessions at Physics Experience Week for local high school students
- 6-8/2012 Supervised a summer student in creating animations of gravitational-wave sights and sounds for public demonstrations
- 10/2012 Popular physics lecture to Birmingham Humanist society
- 2012 Edited chapters for Birmingham e-book on gravitational waves, <http://www.gwoptics.org/ebook/>
- 3/2013 Popular article on “Black Holes in Advanced LIGO: The observational payoff” (with Ben Farr), <http://www.ligo.org/magazine/LIGO-magazine-issue-2.pdf>
- 3/2014 National Science and Engineering Competition judge
- 3/2014 Source for March 2014 cover page National Geographic article on black holes, see <http://ngm.nationalgeographic.com/2014/03/black-holes/finkel-text>
- 9/2014 British Science Festival gravitational-wave hands-on exhibit
- 11/2014 National Science and Engineering Competition online judge
- 10/2012 — now Member of University of Birmingham HiSPARC team <http://www.hisparc.nl/en/>; advisor on data analysis strategies

3/2015 Popular article on “Where should I apply for grad school?”, LIGO magazine,  
<http://www.ligo.org/magazine/LIGO-magazine-issue-6.pdf#page=24>

5/2015 Public talk for Walsall Astronomical Society

1/2016 Public talk for the Association for Science Education annual conference (describing current research to school science teachers)

1/2016 School talk at Malvern College

1/2016 School talk at University of Birmingham School

1/2016 Institute of Physics public lecture

1/2016 Public talk as part of the “Astronomy in the City” series

2/2016 Source for Nature magazine news article,  
<http://www.nature.com/news/einstein-s-gravitational-waves-found-at-last-1.19361>

2/2016 Interviewed by Aspen public radio

3/2016 Public talk for Liberal Arts and Sciences

5/2016 “Pint of Science: Night with the stars” public talk

6/2016 Source for National Geographic news article,  
<http://news.nationalgeographic.com/2016/06/gravitational-waves-stars-ripples-space-time-origins-astronomy>

7/2016 Aspen public physics lecture: “Singing Binaries: Listening to the Chirps of Black Holes”,  
<http://mc.grassrootstv.org/CablecastPublicSite/show/14164?channel=1>

7/2016 Source for news article  
<http://www.birmingham.ac.uk/university/colleges/eps/news/college/2016/7/Merging-binary-black.aspx>

9/2016 In the press for proposing the chemically homogeneous evolution channel with Selma de Mink  
<https://www.quantamagazine.org/colliding-black-holes-tell-new-story-of-stars-20160906/>

12/2016 Talk at Wolverhampton Astronomical Society

1/2017 Talk for school children at Year 9 Big Quiz

3/2017 Invited talk at physics teachers conference, Santa Barbara

4/2017 In the press for Nature Communications article on binary black hole formation: including The Register, Physics World  
<http://physicsworld.com/cws/article/news/2017/apr/20/computer-model-helps-explain-how-ligo-s>

7/2017 Talk at King Edward’s VI Camp Hill School

7/2017 Talk for school children at university residential summer school

7/2017 Lecture at the Worshipful Company of Scientific Instrument Makers, London

8/2017 Authored article “Gravitational waves are helping us crack the mystery of how pairs of black holes form” in The Conversation,  
<https://theconversation.com/gravitational-waves-are-helping-us-crack-the-mystery-of-how-pairs-of-black-holes-form>

9/2017 School talk at University of Birmingham School

3/2018 Radio interview on BBC West Midlands

4/2018 Source for Nature News Feature, <https://www.nature.com/articles/d41586-018-04157-6>

7/2018 Source for article in The Independent, <https://www.independent.co.uk/life-style/blood-moon-lunar-eclipse-mood-astronomy-astrology-sun-earth-a8464681.html>  
<https://www.birmingham.ac.uk/schools/physics/news/2018/birmingham-professor-counters-myths-sun.html>

4/2019 Source for Nature News Feature, <https://www.nature.com/articles/d41586-019-01064-2>

8/2019 School talk at LIDER Russian School, Melbourne

8/2019 Source for Quantum Magazine Article, <https://www.quantamagazine.org/to-make-two-black-holes-one>

2/2020 Lecture at Mornington Peninsula Astronomical Society: <https://www.youtube.com/watch?v=KY4JduZC4UQ>

2/2020 Co-author (with Leslie Atkins Elliot) of Cosmos Magazine article “Teaching Physics to Monks”

3/2020 Source for SpaceAustralia Article, [http://spaceaustralia.com/news/modelling-evolution-double-black-holes-fbclid=IwAR1fnPhS5Wmsh8xe1y\\_c5QOGMBG23VgF\\_36U13CzC12of9Gk3FTk8hPj-Bg](http://spaceaustralia.com/news/modelling-evolution-double-black-holes-fbclid=IwAR1fnPhS5Wmsh8xe1y_c5QOGMBG23VgF_36U13CzC12of9Gk3FTk8hPj-Bg)

4/2020 Source for phys.org article <https://phys.org/news/2020-03-unravelling-mystery-black-holes-science.html>

5/2020 Source for Herald Sun article

5/2020 Live public talk zoom talk “Singing binaries: listening to the chirps of black holes” [https://www.youtube.com/watch?v=EbdSdWfr\\_jk](https://www.youtube.com/watch?v=EbdSdWfr_jk)

9/2020 Wrote article “Gravitational waves: astronomers spot a black hole so massive they weren’t sure it could exist” for The Conversation: <https://theconversation.com/gravitational-waves-astronomers-spot-a-black-hole-so-massive-they-werent-sure-it-could-exist>  
(in top 5 most read Conversation articles of the month)

9/2020 Source for Nature article <https://www.nature.com/articles/d41586-020-02524-w>; see also <https://www.quantamagazine.org/possible-detection-of-a-black-hole-so-big-it-should-not-exist>

9/2020 Interview, South African radio

10/2020 Source for Science article <https://www.sciencemag.org/news/2020/10/famous-shadow-black-hole>

12/2020 Australian Institute of Physics Victoria Nobel Lecture

1/2021 Source for “The Ripple Effect” article in The Mercury

1/2021 Subject of “Using 100-million-year-old fossils and gravitational-wave science to predict Earth’s



future climate”, e.g., <https://phys.org/news/2021-01-million-year-old-fossils-gravitational-wave.html>

1/2021 Subject of “Past (more) perfect”, Cosmos magazine, <https://cosmosmagazine.com/history/palaeontology/past-more-perfect>

2/2021 Public lecture for the Astronomical Society of Victoria (over zoom)

2/2021 Co-wrote article “21 times the Sun’s mass: heaviest stellar black hole in the Milky Way is more massive than we thought” for The Conversation: [https://theconversation.com/21-times-the-suns-m](https://theconversation.com/21-times-the-suns-mass)

2/2021 Source for or mentioned in multiple other articles related to Cygnus X-1 observations, e.g., New York Times: <https://www.nytimes.com/2021/02/18/science/cygnus-black-hole-astronomy.html>

9/2021 Public lecture “New windows on the universe: The discovery of gravitational waves”: <https://www.youtube.com/watch?v=Zhr5bJlfp54>

1/2022 Keynote presentation for the National Youth Science Forum

1/2022 Article in “All about space” magazine

2/2022 Source for Nature article <https://www.nature.com/articles/d41586-022-00346-6>

2/2022 Astronomical Society of Australia Early Career Researcher workshop keynote presentation “How to apply for an academic job”

5/2022 Source for Daily Express article on Event Horizon Telescope imaging of Sgr A\* [https://www.express.co.uk/news/science/1609298/black-hole-pictured-milky-way-event-horizon-telescope-sag](https://www.express.co.uk/news/science/1609298/black-hole-pictured-milky-way-event-horizon-telescope-sagittarius-a-star)

5/2022 Talk for students at Melbourne High School

8/2023 Talk for U3A (University of the Third Age)