Stephen R. Taylor | Curriculum Vitae

Department of Physics & Astronomy, Vanderbilt University
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stevertaylor • stephen-taylor • h-index: 31, i10-index: 50

Professional Experience

Vanderbilt University **Nashville, USA**
- *Assistant Professor of Physics & Astronomy* *Aug 2019–*
- *Dean's Faculty Fellow, College of Arts & Science*
- *Faculty Affiliate, Vanderbilt Data Science Institute*

California Institute of Technology **Pasadena, USA**
- *NANOGrav PFC Senior Postdoctoral Fellow* *2017–2019*
- *Caltech Senior Postdoctoral Scholar (TAPIR group)*

NASA Jet Propulsion Laboratory **Pasadena, USA**
- *Caltech Postdoctoral Scholar at JPL* *2016–2017*
- *NASA Postdoctoral Fellow* *2014–2016*

University of Cambridge **Cambridge, UK**
- *PhD researcher* *2010–2014*

University of Oxford **Oxford, UK**
- *Master's researcher* *2010*

Education

University of Cambridge **Cambridge, UK**
PhD in Astronomy *2010–2014*

Advisor: Dr. Jonathan R. Gair; **Thesis Title:** *Exploring The Cosmos With Gravitational Waves*
Resulted in* 7 *publications, and listed for GWIC Thesis Prize "Honorable Mention"

University of Oxford **Oxford, UK**
MPhys ($1^{\rm st}$ Class), Physics [ranked $1^{\rm st}$ in Jesus College, $4^{\rm th}$ across University] *2006–2010*

Advisor: Prof. Steven Rawlings; **Thesis Title:** *The Cosmic Evolution Of Black-hole Accretion*

Grants, Funding & Awards

Total current active funding $> \$1.3$M

Proposal (Co-PI): "Establishing Multimessenger Astronomy Inclusive Training" *2021-2026*
- National Science Foundation DGE; Award #2125764.
- Total award: $\$3$M

Proposal (Institutional PI): "The NANOGrav Physics Frontier Center" *2021-2026*
- National Science Foundation PHY & AST; PFC & MSIP programs. Award #2020265.
- Institutional sub-award: $\$758,139$ (total award: $\$17$M)

Proposal (PI): "Multi-messenger Titans: Probing The Dynamics & Environments Of Supermassive Binary Black Holes" *2020-2023*
- National Science Foundation AST, Award #2007993; Windows on the Universe program.
- Total award: $\$523,920$

Dean's Faculty Fellowship, Vanderbilt College of Arts & Science *2019-2021*
- Two-year fellowship awarded in support of untenured faculty in their research and scholarship.
- Total award: $\$30,000$

Proposal (Co-I): "Pulsar Timing Array GW Signal Analysis Using Big Data Techniques" *2019*
- PI Jeffrey Hazboun, a submission to Amazon Web Services Machine Learning Research Awards.
- Total award: $\$50,000$ in AWS Promotional Credits.

Proposal (PI): "Next Generation Methods For Gravitational Wave Searches" *2019*
- PI Stephen Taylor, a submission to the American Physical Society Gordon & Betty Moore Foundation Fundamental Physics Innovation Award.
- Total award: $\$5,000$.

Proposal (Co-author): "Next Generation Methods for LISA Data Analysis" *2018*
- PI Curt Cutler, a submission to NASA ROSES LISA Preparatory Science.
- Total budget of $\$567,128$ (12/1/2018-11/30/2021), to be revised down to $\sim 80\%$.

Marie Skłodowska-Curie Incoming Fellowship, University of Birmingham *2017*
- [Declined] Proposal "GravPANTHER". Grant exceeds €150k.

OzGrav ARC Centre of Excellence, Level B Fellowship, Swinburne & Monash *2017*
- [Declined] 7-year senior research fellowship at Australian lecturer-level salary

Proposal (Co-I): **"Exploring the frontiers of the nHz GW spectrum with PTAs"** *2017*
- Awarded 1M CPU hours ($\$600$k grant) on the Blue Waters supercomputer at NCSA, University of Illinois at Urbana Champaign.

Proposal (PI): **"New Directions and New Opportunities for NANOGrav Astrophysics"** *2016*
- Awarded $\$11$k by the NANOGrav Physics Frontier Center for a proposal on behalf of the collaboration's Astrophysics Working Group.

International Pulsar Timing Array Steering Committee Prize — "Honorable Mention" *2016*

Gravitational Wave International Committee Thesis Prize — "Honorable Mention" *2016*

NASA Postdoctoral Fellowship at Jet Propulsion Laboratory *2014*

Science and Technology Facilities Council (STFC) — full PhD studentship award *2010*

Publications

Counts: **55** papers published in major peer-reviewed journals
(out of which **12** are first-authored papers, and **4** papers were covered by press releases).

- **Total number of citations:** 4132 (using Google Scholar), **h-index:** 31, **i10-index:** 50
- **Metrics** available at Google Scholar: http://bit.ly/2hgVCzb.
- **Full list of publications** can be found later starting at Page 7, and at http://bit.ly/2fF3yGI.

5 significant scientific publications as lead

- "*The NANOGrav 11-year Data Set: Pulsar-timing Constraints On The Stochastic Gravitational-wave Background*". Z. Arzoumanian, P. T. Baker, A. Brazier, [and 57 others. **Corresponding author: *S. R. Taylor***]. Astrophys. J., **859**, 1 (2018). • 246 citations. Led on behalf of full collaboration.
- "*Are we there yet? Time to detection of nanohertz gravitational waves based on pulsar-timing array limits*". ***S. R. Taylor***, M. Vallisneri, J. A. Ellis, C. M. F. Mingarelli, T. J. W. Lazio, and R. van Haasteren. Astrophys. J. Lett, **819**, 1, L6 (2016). • 77 citations. Press release, media coverage, and cited in popular-science book.
- "*Searching for anisotropic gravitational-wave backgrounds using pulsar timing arrays*". ***S. R. Taylor*** and J. R. Gair. Phys. Rev. D, **(88)**, 084001 (2013). • 55 citations.
- "*Cosmology with the lights off: Standard sirens in the Einstein Telescope era*". ***S. R. Taylor*** and J. R. Gair. Phys. Rev. D, **86**, 023502 (2012). • 102 citations.
- "*Cosmology using advanced gravitational-wave detectors alone*". ***S. R. Taylor***, J. R. Gair, and I. Mandel. Phys. Rev. D, **85**, 023535 (2012). • 96 citations.

Visiting Positions

Visiting Astronomer, l'Observatoire de Paris *Dec 2019*

- Month-long guest position at Paris Observatory, mentoring students on gravitational-wave searches, collaborating with local colleagues, and delivering a seminar on International Pulsar Timing Array science.

Observing Proposals

Co-I: **"High impact MSPs for the International Pulsar Timing Array"** *Nov 2016*

- Green Bank Telescope, proposal GBT17A-353
- Status: awarded 21.0 hours

Co-I: **"High impact MSPs for the International Pulsar Timing Array"** *Sep 2016*

- Arecibo Radio Telescope, proposal P3133
- Status: awarded 32.5 hours

Presentations

- 91 **oral presentations (of which** 54 **were invited), with** 15 **conference leadership roles.**
- **Full list of presentations** can be found later starting at Page 13, and at http://bit.ly/2fqo9BA.

Select recent invited presentations (not including job talks)

- **Invited**: *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency GWs*, Tata Institute of Fundamental Research, India, Mar 2021
- **Invited**: *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency GWs*, Institute For Theoretical Physics Seminar, Stanford University, Stanford CA, USA, Oct 2020
- **Invited:** *Charting The Next Frontier Of Gravitational Wave Astronomy With PTAs*, Astrophysical and Cosmological Relativity Seminar, Albert Einstein Institute, Potsdam, Germany, Jul 2020
- **Invited**: *Pulsar Timing Arrays: The Next Frontier of Gravitational Wave Astronomy*, Astrophysics Division Seminar, NASA Goddard Space Flight Center, MD, USA, Nov 2019
- **Named Colloquium**: *Pulsar Timing Arrays: The Next Frontier of Gravitational Wave Astronomy*, The Josephine Lawrence Hopkins Foundation Colloquium, Cornell, Ithaca NY, USA, Oct 2019
- **Invited**: *Pulsar Timing Arrays: The Next Frontier of Gravitational Wave Astronomy*, Astrophysics Division Seminar, NASA Goddard Space Flight Center, MD, USA, Nov 2019
- **Plenary**: *Pulsar Timing Arrays: The Next Frontier Of Gravitational Wave Astronomy*, 22nd International Conference on General Relativity and Gravitation (GR22) & 13th Edoardo Amaldi Conference on Gravitational Waves (Amaldi13), Valencia, Spain, Jul 2019

Teaching & Mentoring

Courses

- ASTR 8070: Astro-statistics (Vanderbilt University) *Spring 2021–*
- ASTR 3900/8090: Gravitational Astrophysics (Vanderbilt University) *Spring 2020, Fall 2020–*

Guest lecturing

- Instructor at Niels Bohr International Academy Summer School on GW Astrophsyics *Aug 2021*
- Instructor at NANOGrav GW Detection workshop at Caltech *Mar 2017*
- Lecturer at NANOGrav Fall 2016 student workshop at UIUC *Oct 2016*
- Guest Lecturer for Caltech Ph237 class "Gravitational Waves" *May 2016*
- Lecturer and co-organizer at NANOGrav Spring 2016 student workshop at Caltech *Mar 2016*
- Instructor at NANOGrav GW Detection workshop at Caltech *Sep 2016*
- Lecturer at "CSI PTA" Aspen Center for Physics workshop *Jun 2015*

Postdoctoral scholar mentoring

2 postdoctoral scholars.

- *Dr. Maria Charisi*, Vanderbilt University *Oct 2020–*
  Vanderbilt Initiative in Data-intensive Astrophysics (VIDA) Fellow
- *Dr. Nihan Pol*, Vanderbilt University *Sep 2020–*
  Vanderbilt Initiative in Data-intensive Astrophysics (VIDA) Fellow

Graduate student mentoring

3 students.

- *Kyle Gersbach*, Vanderbilt University *Aug 2021–*
- *Polina Petrov*, Vanderbilt University *Aug 2021–*
- *William Lamb*, Vanderbilt University *Aug 2020–*

Undergraduate student mentoring

8 students, of which 3 performed honors research.

- *Brian Campe*, Vanderbilt University *Sep 2021–*
- *Levi Schult*, University of Virginia *Jun 2020–*
  Research & honors thesis advisor: *"Rapid data-combination techniques for IPTA GW searches"*.
- *Katherine Cella*, Vanderbilt University *Feb 2020–*
  Research & honors thesis advisor: *"Host-galaxy demographics of PTA-detectable binary black holes"*.
  Awarded a Vanderbilt Data Science Institute Summer Research Program (DSI-SRP) Fellowship to perform research in the Taylor group.
- *Qiaohong (Joanna) Wang*, Vanderbilt University *Jan 2020–*
  Research & honors thesis advisor: *"Controlling outliers in time-series analysis using Gibbs sampling"*.
  Awarded a Vanderbilt Data Science Institute Summer Research Program (DSI-SRP) Fellowship to perform research in the Taylor group.
- *Sophia Singh*, University of Southern California *Fall 2018–Summer 2019*
- *Haochen Wang*, University of Southern California *Summer 2018–Summer 2019*
  Advisor for research project: *"Advanced pulsar noise modeling and cross-validation"*.
  Resulted in a peer-reviewed publication in Monthly Notices of the Royal Astronomical Society.
- *Jacob Turner*, Oberlin College *Summer 2018, 2016*
- *Maya Fuller*, Caltech *2016–2017*

Teaching assistant

- University of Cambridge, Part II Relativity (3rd-year undergraduate class) *2011–2013*
  Set and graded homework problems, mentored students, led recitation classes.
- University of Cambridge, Part II Astronomy (computing coursework) *2011*
  Prepared materials for 3rd-year undergraduate class.

Leadership & Professional Service

Research leadership

- ***Member***, NANOGrav Management Team *Jan 2020–*
- ***Member***, International Pulsar Timing Array (IPTA) Steering Committee *Jan 2020–*
- ***Chair***, NANOGrav Gravitational Wave Detection Working Group *Jan 2018–*
- ***Co-chair***, IPTA Gravitational Wave Analysis Group *Mar 2018–Dec 2019*

Reviewer for international journals

- The Astrophysical Journal
- MNRAS
- Physical Review D
- Physical Review Letters
- Nature
- Science

Grant proposal reviewer

- NASA Graduate Fellowship Program (NESSF, FINESST)
- UK Science & Technology Facilities Council

Conference organization

- LOC Chair, NANOGrav Fall Meeting, Vanderbilt University *Oct 2021*
- AAS Special Session "The Next Decade Of nHz GW Astrophysics with PTAs" *Jan 2021*
- AAS Special Session "New Results from NANOGrav" in Honolulu HI *Jan 2020*
- SOC member for International Pulsar Timing Array meeting in Pune, India *June 2019*
- Organizer of NANOGrav Deep Learning workshop at Caltech *May 2019*
- Organizer of International Pulsar Timing Array workshop at Caltech *Feb 2019*
- Co-organizer of NANOGrav Detection workshop at Caltech *Feb 2018*
- SOC member for International Pulsar Timing Array meeting in Sèvres, France *Jul 2017*
- Organizer of NANOGrav Astrophysics sprint week at West Virginia University *Apr 2017*
- Co-organizer of NANOGrav Detection workshop at Caltech *Mar 2017*
- Co-organizer of NANOGrav Hackathon at NCSA *Oct 2017*
- Chair of SOC for NANOGrav Fall meeting at University of Illinois Urbana Champaign *Oct 2016*
- SOC and LOC member for NANOGrav Spring meeting at Caltech *Mar 2016*
- Co-organizer of NANOGrav student workshop at Caltech *Mar 2016*
- SOC and LOC member for British Gravity meeting (BritGrav) at Cambridge, UK *Mar 2014*

Seminar organization

- Vanderbilt Astrophysics Seminar Series *(committee)* *2020–*
- Caltech TAPIR Seminar Series *(executive committee)* *2019*
- Caltech/JPL Association for Gravitational-Wave Research *(executive committee)* *2017–2019*
- Caltech TAPIR and LIGO postdoctoral lunch seminar series *2015–2016*

Committees

- Climate Committee member, Department of Physics & Astronomy, Vanderbilt *Aug 2020–*
- Vanderbilt chapter of the APS Inclusion, Diversity, & Equity Alliance *Jul 2020–*
- Undergraduate Program Committee member (Physics; Vanderbilt University) *Fall 2019–*
- Graduate Program Committee member (Astrophysics; Vanderbilt University) *Fall 2019–*

Code & data sharing

- Code release for compact-binary population model interpolation *2018*
  https://github.com/stevertaylor/gw_catalog_mining
- Founding developer of open-source Python analysis package `enterprise_extensions` *2018–*
  https://github.com/nanograv/enterprise_extensions
- Developer of open-source Python GW analysis software `enterprise` *2017–*
  https://github.com/nanograv/enterprise
- Release of code and library of simulated stochastic gravitational-wave spectra *2017*
  https://github.com/stevertaylor/gw_pta_emulator
- Developer of python open-source GW analysis software NX01 *2015–*
  https://github.com/stevertaylor/NX01

Professional affiliations

- LISA Consortium, *Member*
- OzGrav ARC Centre of Excellence for Gravitational-wave Discovery, *Partner Investigator*
- North American Nanohertz Observatory for Gravitational-waves (NANOGrav), *Full member*
- European Pulsar Timing Array (EPTA), *Member*
- International Pulsar Timing Array (IPTA), *Member*
- American Physical Society (DGRAV, DAP), *Member*
- Royal Astronomical Society, *Fellow*

- American Astronomical Society, *Member*

Outreach, Diversity, & Media Engagement

Outreach

- APS Physics Viewpoint article regarding a LIGO-Virgo discovery: "A Lopsided Merger" *2020*
- Published research article in children's science journal "Frontiers For Young Minds" *2019*
- Featured gravitational-wave expert at NASA's "Ticket to Explore JPL" event *2019*
- Space Public Outreach Team talk at Hamilton Elementary School's SMART night event *2019*
- Featured gravitational-wave expert at NASA's "Ticket to Explore JPL" event *2018*
- Featured speaker at Los Angeles "Astronomy On Tap" evening *2018*
- Astronomy expert at Caltech's "Solar Eclipse Viewing Party" *2017*
- Featured speaker at West Virginia University's "Celebrating Einstein" public-lecture series *2017*
- Featured gravitational-wave expert at NASA's "Ticket to Explore JPL" event *2016*
- Presentation to prospective students (Institute of Astronomy graduate interviews) *2012–2014*
- Outreach talk at Institute of Astronomy public-observing evening: "The Space Race" *2012*
- Interactive presentation at Cambridge's Institute of Astronomy Open Day *2011, 2013*

Diversity & equity

- Led the successful Vanderbilt University proposal to join the APS IDEA network
- As an SOC member for the Spring 2016 NANOGrav meeting at Caltech, I coordinated with the Caltech Center for Diversity on a seminar to promote equity within the NANOGrav collaboration.

Press releases

- *"NSF renews funding to support detection of gravitational waves"* *Jun 2021*
- *"Astrophysicists prepare for age of multimessenger astronomy"* *Jun 2021*
  Lead-team research (Vanderbilt press release)
- *"Vanderbilt astronomers lead preparation for supermassive black hole analysis"* *May 2021*
  Lead-team research (Vanderbilt press release)
- *"Possible first hints of low-frequency gravitational waves permeating the cosmos"* *Jan 2021*
- *"To find giant black holes, start with Jupiter"* *Jun 2020*
  Lead-team research (Vanderbilt press release)
- *"To find giant black holes, start with Jupiter"* *Jun 2020*
  Lead-team research (Green Bank Observatory press release)
- *"Listening for Gravitational Waves Using Pulsars"* *Nov 2017*
  Short-author collaboration research (JPL press release)
- *"Gravitational Waves from Merging Supermassive Black Holes Will Be Spotted within 10 Years, New Study Predicts"* *Nov 2017*
  Short-author collaboration research (Simons Foundation press release)
- *"Gravitational Wave Search Provides Insights into Galaxy Evolution and Mergers"* *Apr 2016*
  Collaboration research (NRAO press release)
- *"Pulsar Web Could Detect Low-Frequency Gravitational Waves"* *Feb 2016*
  First-author research (JPL press release)

Media coverage

- Interviewed for *Guardian* article: "The New Wave Of Gravitational Waves" by Philip Ball.
- Research profiled in the popular-science book "Ripples in Spacetime: Einstein, Gravitational Waves, and the Future of Astronomy" by Govert Schilling, Harvard University Press (2017)
- Interviewed and quoted by *Science* magazine: "In Search of Spacetime Megawaves" by Daniel Clery.
- Quoted, with research featured in *SyFy* (article by Phil Plait), *Gizmodo*, *Engadget*, *Phys.org*, *Astronomy magazine*, *Universe Today*
- Collaboration research featured in *Science Daily*, *Astronomy Now* (online)

Full Publication List

Articles with significant student leadership (at time of publication) have student names underlined.

Submitted

3. "*Quasars with Periodic Variability: Capabilities and Limitations of Bayesian Searches for Supermassive Black Hole Binaries in Time-Domain Surveys*"
C. A. Witt, M. Charisi, ***S. R. Taylor***, S. Burke-Spolaor
arXiv:2110.07465

2. "*The NANOGrav 12.5-year data set: Search for Non-Einsteinian Polarization Modes in the Gravitational-Wave Background*"
Z. Arzoumanian, P. T. Baker, H. Blumer [and 62 others, including ***S. R. Taylor*** in core analysis team]
arXiv:2109.14706

1. "*Searching For Gravitational Waves From Cosmological Phase Transitions With The NANOGrav 12.5-year dataset*"
Z. Arzoumanian, P. T. Baker, H. Blumer [and 62 others, including ***S. R. Taylor*** in core analysis team]
arXiv:2104.13930
- 13 citations.

Publications in major peer-reviewed journals

55. "*Mapping the Gravitational-wave Sky with LISA: A Bayesian Spherical Harmonic Approach*"
S. Banagiri, A. Criswell, T. Kuan, V. Mandic, J. D. Romano, ***S. R. Taylor***
Monthly Notices of the Royal Astronomical Society, **507**, 4 (2021)

54. "*Discriminating between different scenarios for the formation and evolution of massive black holes with LISA*"
A. Toubiana, K. W. K. Wong, S. Babak, E. Barausse, E. Berti, J. R. Gair, S. Marsat, ***S. R. Taylor***
Physical Review D, **104**, 083027 (2021)

53. "*Bayesian Forecasts for Dark Matter Substructure Searches with Mock Pulsar Timing Data*"
V. S. H. Lee, ***S. R. Taylor***, T. Trickle, K. M. Zurek
Journal of Cosmology and Astroparticle Physics, **Vol. 2021** (2021)
- 4 citations.

52. "*The NANOGrav 11 yr Data Set: Limits on Supermassive Black Hole Binaries in Galaxies within 500 Mpc*"
Z. Arzoumanian, P. T. Baker, A. Brazier [and 53 others, including ***S. R. Taylor***]
The Astrophysical Journal, **914**, 2 (2021)
- 6 citations.

51. "*Astrophysics Milestones for Pulsar Timing Array Gravitational-wave Detection*"
N. Pol, ***S. R. Taylor***, L. Z. Kelley, [and 49 others]
The Astrophysical Journal Letters, **911**, 2 (2021)
- 18 citations.

50. "*The NANOGrav 12.5-year Data Set: Wideband Timing of 47 Millisecond Pulsars*"
Md F. Alam, Z. Arzoumanian, P. T. Baker, [and 67 others, including ***S. R. Taylor***]
The Astrophysical Journal Supplement Series, **252**, 1 (2021)
- 34 citations.

49. "*The NANOGrav 12.5-year Data Set: Observations and Narrowband Timing of 47 Millisecond Pulsars*"
Md F. Alam, Z. Arzoumanian, P. T. Baker, [and 67 others, including ***S. R. Taylor***]
The Astrophysical Journal Supplement Series, **252**, 1 (2021)
- 30 citations.

48. "*The NANOGrav 12.5-year Data Set: Search For An Isotropic Stochastic Gravitational-Wave Background*"
Z. Arzoumanian, P. T. Baker, H. Blumer, [and 58 others, including ***S. R. Taylor***]
The Astrophysical Journal Letters, **905**, 2 (2020)
- 216 citations.

47. "*From Bright Binaries To Bumpy Backgrounds: Mapping Realistic Gravitational Wave Skies With Pulsar-Timing Arrays*"

S. R. Taylor, R. van Haasteren, A. Sesana
Physical Review D, **102**, 8 (2020)
• 12 citations.

46. "*Pulsar Timing Array Constraints on the Merger Timescale of Subparsec Supermassive Black Hole Binary Candidates*"
K. Nguyen, T. Bogdanovic, J. C. Runnoe, ***S. R. Taylor***, A. Sesana, M. Eracleous, S. Sigurdsson
The Astrophysical Journal Letters, **900**, 2 (2020)
• 4 citations.

45. "*Multi-Messenger Gravitational Wave Searches with Pulsar Timing Arrays: Application to 3C66B Using the NANOGrav 11-year Data Set*"
Z. Arzoumanian, P. T. Baker, A. Brazier, [and 52 others, including ***S. R. Taylor***]
The Astrophysical Journal, **900**, 2 (2020)
• 12 citation.

44. "*Modeling the Uncertainties of Solar System Ephemerides for Robust Gravitational-wave Searches with Pulsar-timing Arrays*"
M. Vallisneri, ***S. R. Taylor***, J. Simon, [and 61 others]
The Astrophysical Journal, **893**, 2 (2020)
• 14 citations.

43. "*Pulsar timing array signals induced by black hole binaries in relativistic eccentric orbits*"
A. Susobhanan, A. Gopakumar, G. Hobbs, ***S. R. Taylor***
Physical Review D, **101**, 4 (2020)
• 3 citations.

42. "*A pulsar-based time-scale from the International Pulsar Timing Array*"
G. Hobbs, L. Guo, R. N. Caballero, [and 56 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **491**, 4 (2020)
• 17 citations.

41. "*The NANOGrav 11 yr Data Set: Evolution of Gravitational-wave Background Statistics*"
J. S. Hazboun, J. Simon, ***S. R. Taylor***, [and 60 others]
The Astrophysical Journal, **890**, 2 (2020)
• 12 citations.

40. "*The NANOGrav 11 yr Data Set: Limits on Gravitational Wave Memory*"
K. Aggarwal, Z. Arzoumanian, P. T. Baker, [and 58 others, including ***S. R. Taylor***]
The Astrophysical Journal, **889**, 1 (2020)
• 23 citations.

39. "*The International Pulsar Timing Array: second data release*"
B. B. Perera, M. E. DeCesar, P. B. Demorest, [and 72 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **490**, 4 (2019)
• 98 citations.

38. "*Bayesian cross validation for gravitational-wave searches in pulsar-timing array data*"
H. Wang, ***S. R. Taylor***, M. Vallisneri
Monthly Notices of the Royal Astronomical Society, **487**, 3 (2019)
• 2 citations.

37. "*The NANOGrav 11-Year Data Set: Limits on Gravitational Waves from Individual Supermassive Black Hole Binaries*"
K. Aggarwal, Z. Arzoumanian, P. T. Baker, [and 60 others, including ***S. R. Taylor***]
The Astrophysical Journal, **880**, 1 (2019)
• 71 citations.

36. "*Constraining alternative polarization states of gravitational waves from individual black hole binaries using pulsar timing arrays*"
L. O'Beirne, N. J.Cornish, S. J. Vigeland, ***S. R. Taylor***
Physical Review D, **99**, 124039 (2019)
• 7 citations.

35. "*Catching Gravitational Waves With A Galaxy-sized Net Of Pulsars*"
S. R. Taylor

Frontiers For Young Minds, **7**:80 (2019)
• 1 citation. Pedagogical article aimed at K-12 audience.

34. "*The Astrophysics Of Nanohertz Gravitational Waves*"
S. Burke-Spolaor, ***S. R. Taylor***, [and 13 others]
The Astronomy and Astrophysics Review (A&ARv), **27**, 1 (2019)
• 81 citations. Comprehensive field review.

33. "*Mining Gravitational-wave Catalogs To Understand Binary Stellar Evolution: A New Hierarchical Bayesian Framework*"
S. R. Taylor and D. Gerosa
Physical Review D, **98**, 083017 (2018)
• 43 citations. Featured in PRD's Kaleidoscope review of October 2018.

32. "*Studying the solar system with the International Pulsar Timing Array*"
R. N. Caballero, Y. J. Guo, K. J. Lee, [and 77 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **481**, 4 (2018)
• 15 citations.

31. "*The noise-marginalized optimal statistic: A robust hybrid frequentist-Bayesian statistic for the stochastic gravitational-wave background in pulsar timing arrays*"
S. J. Vigeland, K. P. Islo, ***S. R. Taylor***, J. A. Ellis
Physical Review D, **98**, 044003 (2018)
• 7 citations.

30. "*Improving timing sensitivity in the microhertz frequency regime: limits from PSR J1713+0747 on gravitational waves produced by super-massive black-hole binaries*"
B. B. P. Perera, B. W. Stappers, S. Babak, [and 25 others. including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **478**, 1 (2018)
• 8 citations.

29. "*The NANOGrav 11-year Data Set: Pulsar-timing Constraints On The Stochastic Gravitational-wave Background*"
Z. Arzoumanian, P. T. Baker, A. Brazier, [and 57 others. **Corresponding author: *S. R. Taylor***]
The Astrophysical Journal, **859**, 1 (2018)
• 246 citations.

28. "*The NANOGrav 11-year Data Set: High-precision timing of 45 Millisecond Pulsars*"
Z. Arzoumanian, A. Brazier, S. Burke-Spolaor, [and 53 others, including ***S. R. Taylor***]
The Astrophysical Journal Supplement Series, **235**, 2 (2018)
• 281 citations.

27. "*Constraining alternative theories of gravity using pulsar timing arrays*"
N. J. Cornish, L. O'Beirne, ***S. R. Taylor***, N. Yunes
Physical Review Letters, **120**, 181101 (2018)
• 20 citations.

26. "*Single Sources in the Low-Frequency Gravitational Wave Sky: properties and time to detection by pulsar timing arrays*"
L. Z. Kelley, L. Blecha, L. Hernquist, A. Sesana, ***S. R. Taylor***
Monthly Notices of the Royal Astronomical Society, **477**, 1 (2018)
• 36 citations.

25. "*The Local Nanohertz Gravitational-Wave Landscape From Supermassive Black Hole Binaries*"
C. Mingarelli, J. Lazio, A. Sesana, J. E. Greene, J. A. Ellis, C. P. Ma, S. Croft, S. Burke-Spolaor, ***S. R. Taylor***
Nature Astronomy, **Vol. 1**, p. 886-892 (2017)
• 69 citations. Press release.

24. "*The gravitational wave background from massive black hole binaries in Illustris: spectral features and time to detection with pulsar timing arrays*"
L. Z. Kelley, L. Blecha, L. Hernquist, A. Sesana, ***S. R. Taylor***
Monthly Notices of the Royal Astronomical Society, **471**, 4 (2017)
• 62 citations.

23. "*Constraints on the dynamical environments of supermassive black-hole binaries using pulsar-timing arrays*"
S. R. Taylor, J. Simon, L. Sampson.
Physical Review Letters, **118**, 181102 (2017)

• 29 citations.

22. "*All correlations must die: assessing the significance of a stochastic gravitational-wave background in pulsar timing arrays*"
S. R. Taylor, L. Lentati, S. Babak, S, P. Brem, J. .R. Gair, A. Sesana, A. Vecchio
Physical Review D, **95**, 042002 (2017)
• 25 citations.

21. "*High-precision timing of 42 millisecond pulsars with the European Pulsar Timing Array*"
G. Desvignes, R. N. Caballero, L. Lentati, [and 40 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **458**, 3 (2016)
• 179 citations.

20. "*From spin noise to systematics: stochastic processes in the first International Pulsar Timing Array data release*"
L. Lentati, R. M. Shannon, W. A. Coles, [and 80 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **458**, 2 (2016)
• 58 citations.

19. "*The International Pulsar Timing Array: first data release*"
J. P. W. Verbiest, L. Lentati, G. Hobbs, [and 89 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **458**, 2 (2016)
• 238 citations.

18. "*The NANOGrav nine-year data set: limits on the isotropic stochastic gravitational wave background*"
Z. Arzoumanian, A. Brazier, S. Burke-Spolaor, [and 48 others, including ***S. R. Taylor***]
The Astrophysical Journal, **821**, 1 (2016)
• 210 citations. Press release.

17. "*The noise properties of 42 millisecond pulsars from the European Pulsar Timing Array and their impact on gravitational-wave searches*"
R. N. Caballero, K. J. Lee, L. Lentati, [and 36 others, including ***S. R. Taylor***]
Monthly Notices of the Royal Astronomical Society, **457**, 4 (2016)
• 37 citations.

16. "*Are we there yet? Time to detection of nanohertz gravitational waves based on pulsar-timing array limits*"
S. R. Taylor, M. Vallisneri, J. A. Ellis, C. M. F. Mingarelli, T. J. W. Lazio, and R. van Haasteren
The Astrophysical Journal Letters, **819**, 1 (2016)
• 77 citations. Press release, and cited in popular-science book.

15. "*Detecting eccentric supermassive black hole binaries with pulsar timing arrays: resolvable source strategies*"
S. R. Taylor, E. A. Huerta, J. R. Gair, and S. T. McWilliams
The Astrophysical Journal, **817**, 1 (2016)
• 22 citations.

14. "*European Pulsar Timing Array limits on continuous gravitational waves from individual supermassive black hole binaries*"
S. Babak, A. Petiteau, A. Sesana, P. Brem, P. A. Rosado, ***S. R. Taylor***, [and 30 others]
Monthly Notices of the Royal Astronomical Society, **455**, 2 (2016)
• 120 citations.

13. "*Mapping gravitational-wave backgrounds of arbitrary polarisation using pulsar timing arrays*"
J. R. Gair, J. D. Romano, and ***S. R. Taylor***
Physical Review D, **92**, 102003 (2015)
• 25 citations.

12. "*European Pulsar Timing Array limits on an isotropic stochastic gravitational-wave background*"
L. Lentati, ***S. R. Taylor***, C. M. F. Mingarelli, [and 33 others]
Monthly Notices of the Royal Astronomical Society, **453**, 3 (2015)
• 304 citations.

11. "*Detection of eccentric supermassive black hole binaries with pulsar timing arrays: signal-to-noise ratio calculations*"
E. A. Huerta, S. T. McWilliams, J. R. Gair, and ***S. R. Taylor***
Physical Review D, **92**, 063010 (2015)
• 37 citations.

10. "*Phase-coherent mapping of gravitational-wave backgrounds using ground-based laser interferometers*"

J. D. Romano, ***S. R. Taylor***, N. J. Cornish, J. Gair, C. M. F. Mingarelli, and R. van Haasteren
Physical Review D, **92**, 042003 (2015)
• 18 citations.

9. "*Limits on anisotropy in the nanohertz stochastic gravitational wave background*"
S. R. Taylor, C. M. F. Mingarelli, J. R. Gair, [and 32 others]
Physical Review Letters, **115**, 041101 (2015)
• 45 citations.

8. "*Estimating the sensitivity of pulsar timing arrays*"
C. J. Moore, ***S. R. Taylor***, and J. R. Gair
Classical and Quantum Gravity, **32**, 5 (2015)
• 37 citations.

7. "*Accelerated Bayesian model-selection and parameter-estimation in continuous gravitational-wave searches with pulsar-timing arrays*"
S. R. Taylor, J. A. Ellis, and J. R. Gair
Physical Review D, **90**, 104028 (2014)
• 27 citations.

6. "*Mapping gravitational-wave backgrounds using methods from CMB analysis: Application to pulsar timing arrays*"
J. R. Gair, J. D. Romano, ***S. R. Taylor***, and C. M. F. Mingarelli
Physical Review D, **90**, 082001 (2014)
• 56 citations. PRD Editors' Suggestion.

5. "*Searching for anisotropic gravitational-wave backgrounds using pulsar timing arrays*"
S. R. Taylor and J. R. Gair
Physical Review D, **88**, 084001 (2013)
• 55 citations.

4. "*Hyper-efficient model-independent Bayesian method for the analysis of pulsar timing data*"
L. Lentati, P. Alexander, M. P. Hobson, ***S. R. Taylor***, J. Gair, S. T. Balan, and R. van Haasteren
Physical Review D, **87**, 104021 (2013)
• 61 citations.

3. "*Weighing the evidence for a gravitational-wave background in the first International Pulsar Timing Array data challenge*"
S. R. Taylor, J. R. Gair, and L. Lentati
Physical Review D, **87**, 044035 (2013)
• 14 citations.

2. "*Cosmology with the lights off: standard sirens in the Einstein Telescope era*"
S. R. Taylor and J. R. Gair
Physical Review D, **86**, 023502 (2012)
• 102 citations.

1. "*Cosmology using advanced gravitational-wave detectors alone*"
S. R. Taylor, J. R. Gair, and I. Mandel
Physical Review D, **85**, 023535 (2012)
• 96 citations.

Books, book chapters, conference proceedings, white papers, and online articles

11. "*The Nanohertz Gravitational Wave Astronomer*"
S. R. Taylor
Technical book to be published by Taylor & Francis, arXiv:2105.13270

10. "*Inferring the properties of a population of compact binaries in presence of selection effects*"
S. Vitale, D. Gerosa, W. M. Farr, ***S. R. Taylor***
Chapter of "Handbook of Gravitational Wave Astronomy" [Eds. C. Bambi, S. Katsanevas, K. Kokkotas; Springer Singapore, (2021)], arXiv:2007.05579

9. "*Fundamental Physics with Pulsar Timing Arrays*"
X. Siemens, J. Hazboun, P. T. Baker, S. Burke-Spolaor, T. Dolch, E. Howard, D. R. Madison, C. Mingarelli, J. Simon, T. Smith, ***S. R. Taylor***; for the NANOGrav Collaboration

Submitted to the Particle Physics Community Planning Exercise (a.k.a "SnowMass") 2021 LOI call

8. "*NANOGrav Education and Outreach: Growing a Diverse and Inclusive Collaboration for Low-Frequency Gravitational Wave Astronomy*"
The NANOGrav Collaboration; P. T. Baker, H. Blumer, A. Brazier, S. Chatterjee, B. Christy, F. Crawford, M. E. DeCesar, T. Dolch, N. E. Garver-Daniels, J. S. Hazboun, K. Holley-Bockelmann, D. L. Kaplan, J. S. Key, T. C. Klein, M. T. Lam, N. Lewandowska, D. R. Lorimer, R. S. Lynch, M. A. McLaughlin, N. McMann, J. Page, N. T. Palliyaguru, J. D. Romano, X. Siemens, J. K. Swiggum, ***S. R. Taylor***, K. Williamson
Submitted to the Astronomy & Astrophysics 2020 Decadal Survey (2019), arXiv:1907.07348

7. "*The NANOGrav Program for Gravitational Waves and Fundamental Physics*"
A. Brazier, S. Chatterjee, T. Cohen, J. M. Cordes, M. E. DeCesar, P. B. Demorest, J. S. Hazboun, M. T. Lam, R. S. Lynch, M. A. McLaughlin, S. M. Ransom, X. Siemens, ***S. R. Taylor***, S. J. Vigeland
Submitted to the Astronomy & Astrophysics 2020 Decadal Survey (2019), arXiv:1908.05356

6. "*Supermassive Black-hole Demographics & Environments With Pulsar Timing Arrays*"
S. R. Taylor, S. Burke-Spolaor, P. T. Baker, M. Charisi, K. Islo, L. Z. Kelley, D. R. Madison, J. Simon, S. Vigeland
Submitted to the Astronomy & Astrophysics 2020 Decadal Survey (2019), arXiv:1903.08183

5. "*Astro2020 Science White Paper: The Next Decade of Astroinformatics and Astrostatistics*"
A. Siemiginowska, G. Eadie, I. Czekala, [and 49 others, including ***S. R. Taylor***]
Submitted to the Astronomy & Astrophysics 2020 Decadal Survey (2019), arXiv:1903.06796

4. "*From Megaparsecs To Milliparsecs: Galaxy Evolution & Supermassive Black Holes with NANOGrav and the ngVLA*"
S. R. Taylor and J. Simon
Science With A Next-Generation Very Large Array [ngVLA science book] (2018)

3. "*Solar System Ephemerides, Pulsar Timing, Gravitational Waves, & Navigation*"
T. J. W. Lazio, S. Bhaskaran, C. Cutler, W. M. Folkner, R. S. Park, J. A. Ellis, T. Ely, ***S. R. Taylor***, M. Vallisneri
Pulsar Astrophysics the Next Fifty Years, Proceedings of the International Astronomical Union, IAU Symposium, Volume 337, pp. 150-153 (2018)

2. "*Summary of Session C1: pulsar timing arrays*"
R. M. Shannon, S. Chamberlin, N. J. Cornish, J. A. Ellis, C. M. F. Mingarelli, D. Perrodin, P. Rosado, A. Sesana, ***S. R. Taylor***, [and 14 others]
General Relativity and Gravitation, **46**:1765 (2014)

1. "*Using Swarm Intelligence To Accelerate Pulsar Timing Analysis*"
S. R. Taylor, J. R. Gair, L. Lentati
arXiv:1210.3489 (2012)

Full Presentation List

Invited talks

54. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
Joint DAA-DTP-InPTA Seminar (via Zoom), Tata Institute of Fundamental Research, **Mar 2021**

53. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
Theoretical Astrophysics Seminar (via Zoom), University of Florida, **Mar 2021**

52. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
Department of Physics & Astronomy Colloquium (via Zoom), Western Kentucky University, **Feb 2021**

51. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
Department of Physics Seminar (via Zoom), Southern Methodist University, **Nov 2020**

50. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
Bahcall Lunch (via Zoom), Princeton University, **Oct 2020**

49. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
SITP Seminar (via Zoom), Stanford University, **Oct 2020**

48. *New Results From The Pulsar Timing Array Hunt For Nanohertz-frequency Gravitational Waves*
Birmingham Astrophysics Seminar (via Zoom), University of Birmingham, Birmingham, UK, **Oct 2020**

47. *Charting The Next Frontier Of Gravitational Wave Astronomy With Pulsar Timing Arrays*
CIERA Astrophysics Seminar (via Zoom), CIERA, Northwestern University, **Sep 2020**

46. *Charting The Next Frontier Of Gravitational Wave Astronomy With Pulsar Timing Arrays*
Astrophysical and Cosmological Relativity Seminar (via Zoom), Albert Einstein Institute, Potsdam, Germany, **Jul 2020**

45. *Pulsar Timing Arrays: The Next Winow On The Warped Universe*
NSF QuarkNet Seminar (via Zoom), Vanderbilt University, Nashville TN, USA, **Jun 2020**

44. *Charting The Next Frontier Of Gravitational Wave Astronomy With Pulsar Timing Arrays*
Deutsche Forschungsgemeinshaft Research Training Group "Models Of Gravity" Colloquium (via Zoom), University of Bielefeld, Bielefeld, Germany, **Jun 2020**

43. *Charting The Next Frontier Of Nanohertz Gravitational Wave Astronomy With The International Pulsar Timing Array*
Invited seminar, l'Observatoire de Paris, Paris, France, **Dec 2019**

42. *Pulsar Timing Arrays: The Next Frontier of Gravitational Wave Astronomy*
Department of Physics Colloquium, Franklin & Marshall College, Lancaster PA, USA, **Nov 2019**

41. *Pulsar Timing Arrays: The Next Frontier of Gravitational Wave Astronomy*
Astrophysics Division Seminar, NASA Goddard Space Flight Center, MD, USA, **Nov 2019**

40. *Supermassive Black Hole Demographics In The Era Of Multimessenger Pulsar Timing Array Detection*
Invited talk, SESAPS 2019 (South Eastern Section of the APS), Wilmington NC, USA, **Nov 2019**

39. *Pulsar Timing Arrays: The Next Frontier of Gravitational Wave Astronomy*
The Josephine Lawrence Hopkins Foundation Colloquium, Cornell University, Ithaca NY, USA, **Oct 2019**

38. *Pulsar Timing Arrays: The Next Frontier Of Gravitational Wave Astronomy*
Plenary presentation, 22nd International Conference on General Relativity and Gravitation (GR22) & 13th Edoardo Amaldi Conference on Gravitational Waves (Amaldi13), Valencia, Spain, **Jul 2019**

37. *Solar System Ephemeris Noise*
OzGrav Pulsar Timing Workshop, Swinburne University of Technology, Melbourne, Australia, **May 2019**

36. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Department colloquium, Institute of Astronomy, University of Cambridge, Cambridge, UK, **Mar 2019**

35. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
CGCA Seminar, University of Wisconsin–Milwaukee, Milwaukee WI, USA, **Mar 2019**

34. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Invited seminar, Flatiron Center for Computational Astrophysics, New York NY, USA, **Feb 2019**

33. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Department of Physics & Astronomy colloquium, University of Mississippi, Oxford MS, USA, **Feb 2019**

32. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Department of Physics & Astronomy colloquium, Vanderbilt University, Nashville TN, USA, **Jan 2019**

31. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Department of Physics & Astronomy colloquium, Carnegie Mellon University, Pittsburgh PA, USA, **Jan 2019**

30. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Department of Physics & Astronomy colloquium, University of Minnesota, Minneapolis MN, USA, **Jan 2019**

29. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Department of Physics colloquium, University of Virginia, Charlottesville VA, USA, **Jan 2019**

28. *Supermassive Black-hole Demographics In The Era of Nanohertz Multi-messenger Astronomy*
American Astronomical Society, Seattle WA, USA, **Jan 2019**

27. *Compact Object Genealogy Across The Gravitational Wave Spectrum*
UVa+NRAO WUNA Lunch Talk, University of Virginia, Charlottesville VA, USA, **Oct 2018**

26. *Frontiers Of Pan-Spectral Gravitational-Wave Astrophysics*
Invited departmental seminar, Radboud University, Nijmegen, Netherlands, **Oct 2018**

25. *Compact Object Genealogy Across The Gravitational Wave Spectrum*
CGCA Seminar, University of Wisconsin–Milwaukee, Milwaukee WI, USA, **Sep 2018**

24. *Compact Object Genealogy Across The Gravitational Wave Spectrum*
USC Colloquium, University of Southern California, Los Angeles CA, USA, **Sep 2018**

23. *Compact Object Genealogy Across The Gravitational Wave Spectrum*
TAPIR Seminar, California Institute of Technology, Pasadena CA, USA, **Sep 2018**

22. *Nanohertz-frequency gravitational-wave astrophysics with pulsar-timing arrays*
COSPAR 2018, Pasadena CA, USA, **Jul 2018**

21. *Pulsar Timing Arrays: new advances toward detecting low-frequency gravitational waves*
American Physical Society, Columbus OH, USA, **Apr 2018**

20. *Beyond black holes with pulsar-timing arrays*
University of Virginia colloquium, Charlottesville VA, USA, **Mar 2018**

19. *Non-BH science with pulsar-timing arrays*
Black Holes Across The GW Spectrum, International Institute of Physics, Natal, Brazil, **Aug 2017**

18. *Bayesian inference for pulsar-timing arrays*
Black Holes Across The GW Spectrum, International Institute of Physics, Natal, Brazil, **Aug 2017**

17. *Supermassive black-hole binary astrophysics with pulsar-timing arrays*
Black Holes Across The GW Spectrum, International Institute of Physics, Natal, Brazil, **Aug 2017**

16. *Probing the nanohertz GW landscape with PTAs: a status report*
Gravitational Wave Physics & Astronomy Workshop (GWPAW), Annecy, France, **May 2017**

15. *GW constraints on disc migration via pulsar timing*
The disc migration issue (Kavli workshop), Institute of Astronomy, Cambridge, UK, **May 2017**

14. *Constraining the physics of the final parsec of supermassive black-hole binary evolution*
Astronomy Colloquium, Swinburne University of Technology, Melbourne, Australia, **Feb 2017**

13. *Astrophysical inference of supermassive black-hole binaries with pulsar-timing arrays*
Leonard E. Parker Center seminar, University of Wisconsin–Milwaukee, Milwaukee WI, USA, **Oct 2016**

12. *Astrophysical inference of supermassive black-hole binaries with pulsar-timing arrays*
CIERA seminar, Northwestern University, Evanston IL, USA, **Oct 2016**

11. *New data-analysis approaches for gravitational-wave searches with pulsar-timing arrays*
Montana State University seminar, Bozeman MT, USA, **Oct 2016**

10. *New horizons in gravitational-wave astronomy with pulsar-timing arrays*
Armagh Observatory seminar, Armagh, UK, **Jul 2016**

9. *Probing the final-parsec problem with pulsar-timing arrays*
Anton Pannekoek Institutt seminar, University of Amsterdam, Amsterdam, Netherlands, **Jul 2016**

8. *Probing the final-parsec problem with pulsar-timing arrays*
Radboud University astrophysics seminar, Radboud, Netherlands, **Jul 2016**

7. *Gravitational-wave data-analysis techniques for pulsar-timing arrays*
IPTA conference, Stellenbosch, South Africa, **Jun 2016**

6. *Sources of nanohertz gravitational-waves for pulsar-timing array searches*
NANOGrav student workshop, Caltech, Pasadena CA, USA, **Mar 2016**

5. *Prospects for near future detection and astrophysical inference with PTAs*
Gravitational-wave group seminar, University of Birmingham, UK, **Dec 2015**
4. *Prospects for near future detection and astrophysical inference with PTAs*
Statistics group seminar (School of Mathematics), University of Edinburgh, UK, **Dec 2015**
3. *Prospects for near future detection and astrophysical inference with PTAs*
CaJAGWR seminar, California Institute of Technology, Pasadena, USA, **Dec 2015**
2. *Searching For Anisotropic Gravitational-wave Backgrounds Using Pulsar Timing Arrays*
Albert Einstein Institute (AEI) GW seminar, Hanover, Germany, **May 2013**
1. *Weighing the evidence for a gravitational-wave background*
Gravitational-wave group seminar, University of Birmingham, UK, **Dec 2012**

Contributed presentations

37. *Mapping The Ultra Low-Frequency Gravitational-Wave Sky With A Network Of Pulsars*
14th Amaldi Meeting (Virtual), **Jul 2021**
36. *Fast Bayesian GWB Amplitude Estimation Through Parallelized Methods*
IPTA Meeting (Virtual), **Jun 2021**
35. *Fast Bayesian GWB Amplitude Estimation Through Parallelized Methods*
NANOGrav Spring Meeting (Virtual), **May 2021**
34. *Mapping The Supermassive Binary Black-Hole Sky With Pulsar Timing Arrays*
AAS Winter Meeting (Virtual), **Jan 2021**
33. *Spatiotemporal Inference Strategies In The Quest For Gravitational Wave Detection With PTAs*
ICERM: Statistical Methods for the Detection, Classification, and Inference of Relativistic Objects (via Zoom), Brown University, **Nov 2020**
32. *The First 10 Years Of PTA Nanohertz GW Astronomy*
APS April Meeting (Virtual), **Apr 2020**
31. *Supermassive Black Hole Demographics In The Era Of Multimessenger Pulsar Timing Array Detection*
30th Texas Symposium on Relativistic Astrophysics, Portsmouth, UK, **Dec 2019**
30. *From Bright Binaries To Bumpy Backgrounds: Mapping Realistic Gravitational Wave Skies With PTAs*
NANOGrav Fall Meeting, **Oct 2019**
29. *Constraining the environments & progenitors of binary black holes across the gravitational-wave spectrum*
12th International LISA Symposium, Chicago IL, **Jul 2018**
28. *The first 10 years of nanohertz gravitational-wave astronomy*
International Pulsar Timing Array meeting, Albuquerque NM, **Jun 2018**
27. *Progress updates in the NANOGrav gravitational-wave detection working group*
NANOGrav Spring 2018 meeting, University of Virginia, Charlottesville VA, **Mar 2018**
26. *The First Bayesian Solar-System Ephemeris*
NANOGrav Fall 2017 meeting, Lafayette College, Easton PA, **Nov 2017**
25. *GW constraints in the presence of solar-system ephemeris uncertainties*
International Pulsar Timing Array meeting, Sèvres, France, **Jul 2017**
24. *Solar-system ephemeris uncertainties & GW constraints*
NANOGrav Spring meeting, West Virginia University, Morgantown WV, **Apr 2017**
23. *Modeling solar-system ephemeris uncertainties & the impact on GW constraints*
EPTA meeting, Amsterdam, Netherlands, **Apr 2017**
22. *Bayesian model emulation of GW spectra for probes of the final parsec problem with pulsar-timing arrays*
American Astronomical Society meeting, Grapevine TX, USA, **Jan 2017**
21. *Bayesian model emulation of GW spectra for probes of the final parsec problem with pulsar-timing arrays*
American Physical Society April meeting, Washington DC, USA, **Jan 2017**
20. *Optimized gravitational-wave sky mapping with pulsar-timing arrays*
NANOGrav Fall Meeting 2016, NCSA, Urbana-Champaign IL, USA, **Oct 2016**
19. *Carrying the physics of supermassive black-hole binary evolution into pulsar-timing array searches*
EPTA meeting, Bielefeld, Germany, **May 2016**
18. *Are we there yet? Time to detection of nanohertz gravitational waves*

American Physical Society meeting, Salt Lake City UT, USA, **Apr 2016**

17. *Carrying the physics of supermassive black-hole binary evolution into pulsar-timing array searches*
NANOGrav meeting, Caltech, Pasadena CA, USA, **Mar 2016**

16. *Are we there yet? Time to detection of nanohertz gravitational waves*
NANOGrav meeting, McGill University, Montreal, Canada, **Oct 2015**

15. *Eccentric supermassive black-hole binary signals in pulsar-timing data*
European Pulsar Timing Array meeting, Bonn, Germany, **Jun 2015**

14. *Eccentric supermassive black-hole binary signals in pulsar-timing data*
American Physical Society meeting, Baltimore MD, USA, **Apr 2015**

13. *Eccentric supermassive black-hole binary signals in pulsar-timing data*
NANOGrav meeting, Arecibo, Puerto Rico, **Feb 2015**

12. *Exploring the cosmos with gravitational waves*
American Astronomical Society meeting, Seattle WA, USA, **Jan 2015**

11. *EPTA constraints on gravitational-wave anisotropy*
European Pulsar Timing Array meeting, Cambridge, UK, **Nov 2014**

10. *EPTA and IPTA searches for gravitational-wave background anisotropy*
International Pulsar Timing Array meeting, Banff, Canada, **Jun 2014**

9. *EPTA limits on gravitational-wave anisotropy*
European Pulsar Timing Array meeting, Astron, Netherlands, **May 2014**

8. *The pulsar-term in PTA continuous-wave searches: a blessing and a curse*
European Pulsar Timing Array meeting, Pula, Sardinia, **Oct 2013**

7. *Probing anisotropy of the GW background with pulsar timing arrays*
20th International Conference on GR and Gravitation, 10th Amaldi Conference on GWs, Warsaw, **Jul 2013**

6. *The first PTA search pipeline for anisotropy in the GW background*
International Pulsar Timing Array meeting, Krabi, Thailand, **Jun 2013**

5. *Searching For Anisotropic Gravitational-wave Backgrounds Using Pulsar Timing Arrays*
European Pulsar Timing Array meeting, l'Observatoire de Paris, Paris, France, **Apr 2013**

4. *Weighing the evidence for a gravitational-wave background*
Institute of Astronomy seminar, University of Cambridge, UK, **Feb 2013**

3. *Weighing the evidence for a gravitational-wave background*
European Pulsar Timing Array meeting, Albert Einstein Institute (AEI), Potsdam, Germany, **Nov 2012**

2. *Milestones in Spacetime: Double Neutron-Star Binaries as Gravitational-Wave Standard Sirens*
Institute of Astronomy seminar, University of Cambridge, UK, **Jun 2012**

1. *Hubble without the Hubble: Cosmology using advanced gravitational-wave detectors alone*
Gravitational-Wave Meeting, Institut de Ciències de l'Espai, Barcelona, Spain, **Feb 2012**

Posters

5. *The NANOGrav 11-year Dataset: Pulsar Timing Constraints On The Stochastic GW Background*
American Astronomical Society Meeting, Seattle WA, **Jan 2019**

4. *The Black Hole Zoo: Populations, Pathways, & Origins*
Gravitational Wave Physics & Astronomy Meeting, Washington DC, **Dec 2018**

3. *Galactic environment effects on gravitational wave signals in pulsar timing arrays*
Postdoc Research Day, NASA Jet Propulsion Laboratory, **Aug 2015**

2. *Cosmology without EM counterparts: Standard sirens in the advanced era and beyond*
Rattle and Shine, KITP Santa Barbara, USA, **Aug 2012**

1. *Cosmology using advanced gravitational-wave detectors alone*
Graduate Student Conference 2011, Cavendish Laboratory, University of Cambridge, UK, **Dec 2011**