

Stephen Taylor | Curriculum Vitae

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Professional Experience

California Institute of Technology <i>Caltech Postdoctoral Scholar (TAPIR group)</i> <i>Visiting scholar (TAPIR group)</i>	Pasadena, USA 2016–Present 2014–2016
NASA Jet Propulsion Laboratory <i>NASA Postdoctoral Fellow</i>	Pasadena, USA 2014–2016
Institute of Astronomy, University of Cambridge <i>PhD candidate</i>	Cambridge, UK 2010–2014

Education

Institute of Astronomy, University of Cambridge <i>PhD (Astronomy)</i> Advisor: Dr. Jonathan R. Gair; Thesis Title: <i>Exploring the cosmos with gravitational waves</i> Description: A new Bayesian hierarchical modelling scheme is introduced to use compact-binary gravitational-wave standard sirens to infer the mass-distribution of the binary population, the progenitor star-formation rate, and cosmological parameters. Advanced pulsar-timing array techniques are developed to map the nanohertz gravitational-wave sky through a parametrized overlap-reduction function, and large accelerations to the Bayesian searches for single supermassive black-hole binaries are proposed.	Cambridge, UK 2010–2014
University of Oxford <i>MPhys (1st Class), [ranked 1st in Jesus College, 4th across University]</i> Advisor: Prof. Steven Rawlings; Thesis Title: <i>The Cosmic Evolution Of Black-hole Accretion</i>	Oxford, UK 2006–2010

Grants & Funding

“New Directions and New Opportunities for NANOGrav Astrophysics”: Awarded \$11k for a proposal on behalf of the Astrophysics Working Group of NANOGrav. Funding will ensure undergraduate/graduate students and outside experts can attend a sprint week in March 2017 to advance several key areas of interest, and to achieve rapid progress on collaboration projects.

Awards & Prizes

2015: International Pulsar Timing Array (IPTA) Steering Committee Prize — “Honourable Mention”
2015: Gravitational Wave International Committee (GWIC) Thesis Prize — “Honourable Mention”
2014: NASA Postdoctoral Fellowship (JPL)
2014: Royal Astronomical Society Travel Award — £750
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2012–2014: Christ’s College (Cambridge) Travel Grants [various; total exceeds £1k]
2010: Science and Technology Facilities Council (STFC) — full PhD studentship award
2008: Examiner’s Prize, Oxford Physics Speaking Competition
2007: Oxford Physics department prize for laboratory work
2007–2010: Undergraduate Scholar of Jesus College, Oxford
2006–2010: Regularly awarded Oxford undergraduate departmental and college examination prizes

Teaching Experience

Jun–Aug 2016: Co-supervisor of Caltech summer undergraduate student

May 2016: Lecturer for Caltech's TAPIR gravitational-wave class
Mar 2016: Co-organizer of student workshop at NANOGrav Spring meeting
Sep 2015: Lecturer for NANOGrav detection-group workshop at Caltech
Jun 2015: Lecturer at "CSI PTA" Aspen summer workshop
2011–2013: Supervisor for Cambridge Part II undergraduate students in RELATIVITY
2011: Prepared computing coursework for Cambridge Part II undergraduate students

Professional Service & Outreach

Reviewer for international journals.....

Monthly Notices of the Royal Astronomical Society (MNRAS), Physical Review D (PRD)

Conference organization.....

Oct 2016: Chair of SOC for NANOGrav Fall meeting at University of Illinois Urbana-Champaign

Mar 2016: SOC and LOC member for NANOGrav Spring meeting at Caltech

Mar 2016: Co-organizer of NANOGrav student workshop at Caltech

Mar 2014: SOC and LOC member for British Gravity meeting (BritGrav) at Cambridge, UK

Outreach.....

2016: Featured gravitational-wave expert at NASA's "Ticket to Explore JPL" event

2013: Presentation at Cambridge's Institute of Astronomy Open Day

2012–2014: Presentation to prospective students (Institute of Astronomy graduate interviews)

2012: Outreach talk at Institute of Astronomy public-observing evening

2011: Presentation at Cambridge's Institute of Astronomy Open Day

Professional Affiliations

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) [Member] • American Astronomical Society [Member] • Royal Astronomical Society [Fellow]

Publications

- 22 peer-reviewed publications (of which 8 are first-author) with 317 citations, h-index 10.

- Full list available at <https://scholar.google.com/citations?user=iN2dJBMAAAAJ&hl=en>.

- 5 key publications are listed below, with most recent first.

1: **S. R. Taylor**, M. Vallisneri, J. A. Ellis, C. M. F. Mingarelli, T. J. W. Lazio, and R. van Haasteren. "Are We There Yet? Time to Detection of Nanohertz Gravitational Waves Based on Pulsar-timing Array Limits". *Astrophys. J. Lett*, 819:L6 (2016). **[7 citations]**

2: L. Lentati, **S. R. Taylor**, [and 34 others]. "European Pulsar Timing Array limits on an isotropic stochastic gravitational-wave background". *MNRAS*, 453:2576–2598 (2015). **[56 citations]**

3: **S. R. Taylor**, C. M. F. Mingarelli, J. R. Gair, [and 32 others]. "Limits on Anisotropy in the Nanohertz Stochastic Gravitational Wave Background". *Phys. Rev. Lett*, 115(4):041101 (2015). **[13 citations]**

4: **S. R. Taylor** and J. R. Gair. "Searching for anisotropic gravitational-wave backgrounds using pulsar timing arrays". *Phys. Rev. D*, 88(8):084001 (2013). **[30 citations]**

5: **S. R. Taylor**, J. R. Gair, and I. Mandel. "Cosmology using advanced gravitational-wave detectors alone". *Phys. Rev. D*, 85(2):023535 (2012). **[34 citations]**

Presentations

- 29 oral presentations (of which 10 were invited), with 4 conference leadership roles.

- Recent presentations are available to view at <https://speakerdeck.com/stevertaylor>.

References

Available upon request.