

Teviet David Creighton

DATE OF BIRTH 21 SEPTEMBER 1972
CITIZENSHIP CANADIAN

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DEGREES

- 2000 Doctor of Philosophy in theoretical physics
California Institute of Technology, Adviser: Kip S. Thorne
Thesis title: *From the Big Bang to Tumbleweeds: Analysis of signals from relic gravitons, neutron stars, and terrestrial gravitational noise in gravitational wave detectors*
- 1994 Bachelor of Science (with first class honours)
major in Physics and minor in Astrophysics
University of Calgary, Alberta

EMPLOYMENT

- 2001–2004 Postdoctoral Researcher
California Institute of Technology
- 1999–2001 Postdoctoral Researcher
University of Wisconsin – Milwaukee
- 1998–1999 Research Assistant
California Institute of Technology
(Supervisor: Kip S Thorne)
- 1994–1998 Teaching Assistant
California Institute of Technology
(Supervisors: Donald Skelton and Frank Porter)
- 1992–1994 Research Assistant
University of Calgary
(Supervisors: David Hobill and Sun Kwok)

AWARDS AND HONORS

- 1999 Jocelyn Bell Prize for best student presentation at 15th Pacific Coast Gravity Meeting
- 1997 Jocelyn Bell Prize for best student presentation at 13th Pacific Coast Gravity Meeting
- 1994–95 Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate Scholarship (awarded but not received due to studies in the US)
- 1994 Lieutenant Governor's Gold Medal for highest achievement in the Faculty of Science at University of Calgary
- 1994 The Department of Physics Venkatesan Silver Medallion for achievement of the highest proficiency in field of study
- 1992–94 NSERC Undergraduate Student Research Awards
- 1990–94 Canada Science Scholarships
- 1991–93 Louise McKinney Post-Secondary Scholarships
- 1990 Alexander Rutherford Scholarship for high school achievement
- 1990 University of Calgary Academic Scholarship for Freshmen
- 1990 University of Calgary Maths Extension Programme Prize
- 1990 The Chemical Institute of Canada High School Chemistry Exam, Special Merit Award, placed first in Alberta
- 1990 Sir Isaac Newton Physics Exam, University of Waterloo, placed 40th out of 5194
- 1990 Chem 13 News Research Assistantship Examination, placed 4th in Canada
- 1990 Euclid Mathematics Contest, placed 5th out of 10 000 in Canada

PROFESSIONAL ACTIVITIES

Refereeing Duties

New Journal of Physics
 Classical and Quantum Gravity
 The Astrophysical Journal
 Physical Review D
 US National Science Foundation

Invited Talks

- October 2004 “Gravitational Waves: Listening to the Universe”
 Chinese-American Frontiers of Science Symposium, Irvine, California
- March 2004 “Einstein@home: Massive distributed computing for gravitational-wave detection”
 World Year of Physics 2005 Second Preparatory Meeting, Montreal, Québec
- April 2003 “First LIGO/GEO Upper Limits on Pulsar Gravitational Emissions”
 Caltech-JPL Gravitational Wave Research Seminar, California Institute of Technology, Pasadena, California
- December 2002 “LIGO-II: Sources and Astrophysics”
 Gravitational Wave Data Analysis Workshop, Kyoto, Japan
- December 2002 “Gravitational Capture”
 Gravitational Wave Data Analysis Workshop, Kyoto, Japan
- October 2002 “Bothrodesy: The promise and challenges of extreme-mass-ratio inspirals”
 Gravitational Radiation Source Simulation and Data Analysis Focus Session, Pennsylvania State University, State College, Pennsylvania
- October 2002 “Extreme-mass-ratio inspirals: A data analysis problem for LISA”
 LIGO seminar, California Institute of Technology, Pasadena, California
- November 1999 “Sonic booms and tumbleweeds as detectable gravitational signals in LIGO”
 Gravity seminar, University of Wisconsin, Milwaukee

Contributed Talks

- March 2004 “Detectability of extreme-mass-ratio inspirals with LISA”
20th Pacific Coast Gravity Meeting, California Institute of Technology, Pasadena, California
- March 2003 “Zoom, Whirl, and Chirp: Listening for extreme-mass-ratio inspirals with LISA”
19th Pacific Coast Gravity Meeting, University of Utah, Salt Lake City, Utah
- February 1999 “Atmospheric gravity gradients: a low-frequency noise limit for LIGO”
15th Pacific Coast Gravity Meeting, Institute for Theoretical Physics, University of California, Santa Barbara
- March 1998 “Cosmological Gravitational Waves”
14th Pacific Coast Gravity Meeting, University of Oregon, Eugene, Oregon
- November 1997 “Analysis of Caltech 40 m interferometer data: Constructing the filter bank”
Second Gravitational Wave Data Analysis Workshop, Orsay, Essonne, France
- March 1997 “Search techniques for periodic gravitational waves”
13th Pacific Coast Gravity Meeting, Institute for Theoretical Physics, University of California, Santa Barbara
- March 1996 “Computational costs for continuous gravitational wave searches”
12th Pacific Coast Gravity Meeting, University of Utah, Salt Lake City, Utah

Other Activities

2005 Chinese-American Frontiers of Science organizing committee

REFERENCES

Kip S. Thorne

Theoretical Astrophysics, 130-33
California Institute of Technology
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PUBLICATIONS

Publications in or submitted to refereed journals

1. The LIGO Scientific Collaboration B Abbott et al., *Limits on gravitational wave emission from selected pulsars using LIGO data*, E-print archive gr-qc/0410007 (2004), Submitted to Physical Review D
2. Jonathan R Gair, Leor Barack, Teviet Creighton, Curt Cutler, Shane L Larson, E Sterl Phinney, and Michele Vallisneri, *Event rate estimates for LISA extreme mass ratio capture sources*, *Classical and Quantum Gravity* **21** S1595–S1606 (2004)
3. The LIGO Scientific Collaboration B Abbott et al., *Analysis of First LIGO Science Data for Stochastic Gravitational Waves*, *Physical Review D* **69** 122004 (2004)
4. The LIGO Scientific Collaboration B Abbott et al., *Analysis of LIGO data for gravitational waves from binary neutron stars*, *Physical Review D* **69** 122001 (2004)
5. The LIGO Scientific Collaboration B Abbott et al., *First upper limits from LIGO on gravitational wave bursts*, *Physical Review D* **69** 102001 (2004)
6. The LIGO Scientific Collaboration B Abbott et al., *Setting upper limits on the strength of periodic gravitational waves using the first science data from the GEO600 and LIGO detectors*, *Physical Review D* **69** 082004 (2004)
7. The LIGO Scientific Collaboration B Abbott et al., *Detector Description and Performance for the First Coincidence Observations Between LIGO and GEO*, *Nuclear Inst and Methods in Physics Research A* **517** 154–179 (2004)
8. Teviet Creighton, *Advanced LIGO: Sources and Astrophysics*, *Classical and Quantum Gravity* **20** S853–S869 (2003)
9. Teviet Creighton, *Tumbleweeds and airborne gravitational noise sources for LIGO*, E-print archive gr-qc/0007050 (2000), Submitted to Physical Review D
10. Patrick R Brady and Teviet Creighton, *Searching for periodic sources with LIGO. II: Hierarchical searches*, *Physical Review D* **61** 082001 (2000)
11. Teviet Creighton, *Gravitational waves and the cosmological equation of state*, E-print archive gr-qc/9907045 (1999), Submitted to Physical Review D
12. Bruce Allen et al, *Observational Limit on Gravitational Waves from Binary Neutron Stars in the Galaxy*, *Physical Review Letters* **83** 1498 (1999)
13. Patrick R Brady, Teviet Creighton, Curt Cutler, and Bernard F Schutz, *Searching for periodic sources with LIGO*, *Physical Review D* **57** 2101–2116 (1998)

Conference proceedings and other publications

1. L Barak et al., *Estimates of Detection Rates for LISA Capture Sources*, Technical report, LISA Science Team Working Group 1, URL <http://www.tapir.caltech.edu/listwg1/EMRI/LISTEMRIreport.pdf> (February 2004)
2. E S Phinney et al., *LISA Science Requirements*, Technical report, LISA Science Team Working Group 1, URL <http://www.its.caltech.edu/~esp/lisa/LISTwg1.req-pr.pdf> (December 2001)
3. E S Phinney et al., *Science Impact of the Low Frequency Performance of LISA*, Technical report, LISA Science Team Working Group 1, URL <http://www.tapir.caltech.edu/listwg1/LowFreq/LISTwg1.lowf.ps> (November 2001)
4. Teviet Creighton, *Package inject: routines for simulating gravitational waves and their effects on a detector*, in LAL: The LIGO Algorithm Library, (LIGO Scientific Collaboration, URL <http://www.lsc-group.phys.uwm.edu/lal>) (2001)
5. Teviet Creighton, *Package pulsar: routines for detecting quasiperiodic gravitational waves*, in LAL: The LIGO Algorithm Library, (LIGO Scientific Collaboration, URL <http://www.lsc-group.phys.uwm.edu/lal>) (2000)
6. Teviet Creighton, *Package tdfilters: routines for constructing and applying digital time-domain filters*, in LAL: The LIGO Algorithm Library, (LIGO Scientific Collaboration, URL <http://www.lsc-group.phys.uwm.edu/lal>) (2000)
7. Teviet Creighton, *GRASP Routines: Template Bank Generation and Searching*, in GRASP: a data analysis package for gravitational wave detection, by Bruce Allen, (LIGO project, URL <http://www.lsc-group.phys.uwm.edu/~ballen/grasp-distribution>) (1997)
8. Teviet D Creighton and David W Hobill, *Continuous Time Dynamics and Iterative Maps of Ellis-MacCallum-Wainwright Variables*, in *Deterministic Chaos in General Relativity*, pages 433–448. Plenum Press, New York (1994), Proceedings of a NATO Advanced Research Workshop on Deterministic Chaos in General Relativity, held July 25–30, 1993, in Kananaskis, Alberta, Canada.