

# Tyson B. Littenberg

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## Education

B.S. Physics, State University of New York at Oswego, 2003.

MINOR: Mathematics.

HONORS: *Cum Laude*

M.S. Physics, Montana State University - Bozeman, MT 2005.

Ph.D. Physics, Montana State University - Bozeman, MT *expected* 2009.

DISSERTATION: *A Comprehensive Bayesian Approach to Gravitational Wave Astronomy*

ADVISOR: Neil J. Cornish

## Research Fields

Gravitational wave data analysis.

Forward modeling of gravitational wave detectors.

Applications of Bayesian parameter estimation and model selection.

## Research

### *Publications*

*Tests of Bayesian Model Selection Techniques for Gravitational Wave Astronomy*  
N.J. Cornish and T.B. Littenberg, Phys. Rev. D **76** 083006, 2007.

*A Bayesian Approach to the Detection Problem in Gravitational Wave Astronomy*  
T.B. Littenberg and N.J. Cornish, arXiv:0902.0368v1 [gr-qc], 2009.

### *Collaborative Publications*

*Report on the first round of the Mock LISA Data Challenges*  
K.A. Arnud et al. Class. Quant. Grav. **24** S529, 2007.

*Report on the Second Mock LISA Data Challenge*  
S. Babak et al. Class. Quant. Grav. **25** 114037, 2008.

*Search for Gravitational Waves from Low Mass Binary Coalescences in the First Year of LIGO's S5 Data*  
LIGO Scientific Collaboration, arXiv:0901.0302, 2009.

### *Scientific Software*

*MLDC Galactic Binary Generator*  
Neil Cornish and Tyson Littenberg

*MLDC 2 Galactic Binary Assessment*  
Neil Cornish, Jeff Crowder, and Tyson Littenberg

### *Conference Presentations*

*Automatic Model Selection for Low-Mass Binaries*

Pacific Coast Gravity Meeting 23. Pasadena, CA March 2007.

*Bayesian Model Selection for Gravitational Wave Sources*

American Astronomical Society Meeting. Honolulu, HI May 2007.

*A Model for Education/Public Outreach Success*

American Astronomical Society Meeting. Honolulu, HI May 2007.

*Resolving Model Selection Problems in Gravitational Wave Astronomy*

Gravitational Wave Data Analysis Workshop 13. Cambridge, MA December 2007.

*A Bayesian Solution to the Gravitational Wave Detection Problem*

Pacific Coast Gravity Meeting 25. Eugene, OR March 2009.

### *Professional Memberships*

Mock LISA Data Challenge Task Force

<http://astrogravs.nasa.gov/docs/mldc/>

LIGO Scientific Collaboration

<http://www.ligo.org/>

## **Academic Experience**

*State University of New York at Oswego, Department of Physics*

Teaching Assistant, Fall 2002 - Spring 2003

*Montana State University - Bozeman, Department of Physics*

Teaching Assistant, Fall 2003 - Spring 2004.

Research Assistant, Neil Cornish, Fall 2007 - Present.

*Montana Space Grant Consortium*

Manager, Space Public Outreach Team, Summer 2005–Summer 2008.

## **Teaching**

*Undergraduate Courses at Montana State University*

College Physics I, Summer 2004 & Summer 2005

Physics By Inquiry, Fall 2004, Spring 2005, Fall 2006.

## **Professional Activities**

*Service*

Science Olympiad Captain

*Experimental Design*

Montana State University, November 2004.

Exhibit Interpreter

*Cosmic Questions*

Museum of the Rockies, Summer 2005.

Peaks and Potential Instructor  
*Exploration of the Solar System*  
Montana State University, June 2006.

Stars Over Yellowstone Campfire Talk  
*Astronauts & Aliens*  
Yellowstone National Park, August 2006 & June 2007.

Graduate Student Representative  
Physics Department Graduate Committee  
Montana State University, Fall 2006–Spring 2009.

## Honors & Awards

### *Awards*

Dean's List  
State University of New York at Oswego, 2001–2003.

Outstanding Teaching Assistant Award  
Montana State University Physics Department, 2005.

Last updated: April 3, 2009

<http://www.physics.montana.edu/students/littenberg/Documents/cv.pdf>