

# Jamie Tolan

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## EDUCATION

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### Stanford University

September 2014

*Ph.D Physics*

GPA 3.78/4.00

Dissertation Title: "Testing Inflationary Cosmology with BICEP2 and The Keck Array."

Dissertation Advisor: Chao-Lin Kuo

### University of California, Berkeley

May 2006

*Double Major: Bachelor of Arts in Physics and Astrophysics*

GPA: 3.79/4.0(Overall), 3.896 (Physics only), 4.0 (Astrophysics), 3.5 (Math)

Distinction in General Scholarship

## EXPERIENCE

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### Postdoctoral Scholar, SLAC National Laboratory / Stanford University

October 2014 - May 2015

- Lead analysis and forecast modeling for BICEP3 experiment. Deployment to the South Pole in January 2015.

### Research Assistant, Stanford University

June 2008 - September 2014

- Designed and built the Keck Array, an array 150GHz polarization sensitive receivers with a goal of measuring a signal in the Cosmic Microwave Background (CMB) Radiation that would provide direct evidence for the epoch of Inflation during the first fraction of a second of the Universe. Experience with instrument design, fabrication and calibration, deployment to the South Pole (2010, 2011 & 2012), and subsequent data analysis with large data sets for BICEP2 and the Keck Array.

### Teaching Assistant, Stanford University

September 2007 - March 2013

- Led Discussion and Lab groups for Stanford Physics courses  
Physics 108: Low Temperature Lab, Physics 23: Electricity and Optics, Physics 22: Mechanics and Heat

## SELECTED PUBLICATIONS

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"BICEP2 / Keck Array VII: Matrix based E/B Separation applied to BICEP2 and the Keck Array" 2016. BICEP2/Keck Collaboration. arXiv:1603.05976

"A Joint Analysis of BICEP2/Keck Array and Planck Data" 2015. BICEP2/Keck and Planck Collaborations. Physical Review Letters 114, 101301.

"BICEP2 I: Detection of B-Mode Polarization at Degree Angular Scales by BICEP2" 2014. BICEP2 Collaboration. Physical Review Letters. 112, 241101.

"BICEP2 II: Experiment and Three-Year Data Set" 2014. BICEP2 Collaboration. The Astrophysical Journal. 792, 1, 62.

"Degree-scale CMB Polarization Measurements from three years of BICEP1 Data" 2013. Barkats et al. The Astrophysical Journal. 783, 3, 67.

"Measurement of CMB Polarization Power Spectra from Two Years of BICEP Data" 2010. Chiang et al. The Astrophysical Journal. 711, 2, 1123.

## SKILLS

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**Languages:** MATLAB, Python, HTML/Css, Javascript, IDL, LABVIEW, L<sup>A</sup>T<sub>E</sub>X, Perl, Bash

**Design:** Solidworks, Altium

**Operating Systems:** Mac OS X, Windows, Linux, UNIX

## LEADERSHIP ACTIVITIES

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**SCA High School Crewleader***Summer 2007 and Summer 2008*

Lead groups of high school students on multi-week backcountry trips focused on restoration and trail maintenance.

**RELEVANT COURSEWORK**

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**Stanford University***2007 - 2010*

Back of the Envelope Physics (216), Quantum Mechanics(230,231), Continuum Mechanics (211), Statistical Mechanics (211), Extragalactic Astrophysics and Cosmology (362), Quantum Field Theory (331), Physics of Astrophysics (360), Advanced Gravitation(364), Classical Electrodynamics (220, 221)

**University of California, Berkeley***2002 - 2006*

Calculus 1B, Multivariable Calculus(53), Linear Algebra and Differential Equations(54), Introduction to Astrophysics(7A,7B), Introduction to Physics for Scientists and Engineers(7A,7B,7C), Quantum Mechanics (137A,B), Electromagnetism and Optics(110A), Planetary Astrophysics(162), Stellar Physics(160), Analytic Mechanics(105), Mathematics Tools for the Physical Sciences(121A), Infrared Astronomy(122), Basic Semiconductor Circuits(111BSC), Advanced Physics(111ADV)