

Princeton Center for Theoretical Science

The Princeton Center for Theoretical Science is dedicated to exploring the frontiers of theory in the natural sciences. Its purpose is to promote interaction among theorists and seed new directions in research, especially in areas cutting across traditional disciplinary boundaries.

The Center is home to a corps of Center Postdoctoral Fellows, chosen from nominations made by senior theoretical scientists around the world. A group of senior Faculty Fellows, chosen from science and engineering departments across the campus, are responsible for guiding the Center. Center activities include focused topical programs chosen from proposals by Princeton faculty across the natural sciences. The Center is located on the fourth floor of Jadwin Hall, in the heart of the campus “science neighborhood”. The Center hopes to become the focus for innovation and cross-fertilization in theoretical natural science at Princeton.

Faculty Fellows

Paul Steinhardt, Director (on leave 2012-2013)

Igor Klebanov, Acting Director

Adam Burrows, Acting Associate Director

Curtis Callan

Roberto Car

Garnet Chan

David Huse

Jeroen Tromp

Herman Verlinde

Center Postdoctoral Fellows

Daniel Harlow 2012-2015

Yoav Kallus 2011-2014

Samuel Lee 2012-2015

Mariangela Lisanti 2010-2013

Joseph Maciejko 2011-2014

Elisabetta Matsumoto 2011-2014

Timothy Merlis 2011-2014

Rahul Nandkishore 2012-2015

Marco Schiro' 2010-2013

Alexander Tchekhovskoy 2010-2013

Mosahito Yamazaki 2010-2013

To find out more about Center Postdoctoral Fellowships and Programs see:

<http://pcts.princeton.edu/pcts>



Cosmology in the *Planck Era*

June 6-7, 2013

Jadwin Hall, Room 407

Program Organizers

**William Jones, Princeton University
Aurelien Fraise, Princeton University**

Cosmology in the *Planck* Era

Thursday, 6 June 2013

9:00 Welcoming Remarks and Participant Introductions
W.C. Jones, Princeton University

9:20 CMB: a Status Report (30' + 10')
S.T. Staggs, Princeton University

Planck Implications for Inflation / the Early Universe

10:00 What have we learned from *Planck*? (15' talks)

- Inflation (**H.V. Peiris, University College London**)
- Non-Gaussianity (**K.M. Smith, Princeton University**)
- Challenges for Inflation (**A. Ijjas, Harvard University**)

Speakers Debate [15']
Moderator: Cora Dvorkin (Institute for Advanced Study)

11:00 Coffee Break

11:30 Discussion
Moderator: M. Kamionkowski, Johns Hopkins University
With 10' talks by:

- **V. Vennin, IAP, France**
Inflationary Models after *Planck*
- **P.D. Meerburg, Princeton University**
Primordial Power Spectrum Features

12:15 – 1:15 Lunch at PCTS

Planck Implications for SZ Physics

1:15 Review of *Planck* SZ Results (25' + 5')
J.G. Bartlett, APC, France and NASA JPL

1:45 Discussion
Moderator: N. Sehgal, Stony Brook University
With 10' talks by:

- **J.C. Hill, Princeton University**
Cosmology from tSZ Statistics
- **N. Battaglia, Carnegie Mellon University**
Astrophysics and Cosmology with tSZ Cross-Correlations

2:45 Coffee Break at PCTS Farewell Gathering for Pres. Tilghman (Frist South Lawn)

Planck and the LSS of the Universe

3:30 *Planck* Lensing Review (25' + 5')
D. Hanson, McGill University

Thursday, 6 June 2013 (continued)

Planck and the LSS of the Universe (continued)

4:00 Discussion
Moderator: M.A. Strauss, Princeton University
With 10' talks by:

- **K. Vanderlinde, University of Toronto: CHIME**
- **É. Aubourg, APC, France: Planck x BOSS**
- **S. Ferraro, Princeton University: Planck x WISE**

5:30 First Day Summary and Further Discussion
Moderator: D.N. Spergel, Princeton University

6:30 “Wine & Cheese” Reception at PCTS

Friday, 7 June 2013

CMB Polarization on Small and Large Scales

9:00 Current and Future CMB Polarization Observations (10' talks)

- POLARBeaR (**Z.D. Kermish, Princeton University**)
- ABS (**A. Kusaka, Princeton University**)
- SPIDER (**A.A. Fraisse, Princeton University**)
- CLASS (**T.A. Marriage, Johns Hopkins University**)
- PIPER (**D.T. Chuss, NASA GSFC**)
- PIXIE (**A.J. Kogut, NASA GSFC**)
- SPTpol (**H.C. Chiang, University of KwaZulu-Natal**)
- ACTpol (**M.J. Devlin, University of Pennsylvania**)

Discussion
Moderator: R. Hlozek, Princeton University

11:00 Coffee Break

11:30 Discussion
Moderator: S.T. Staggs, Princeton University
With 10' talks by:

- **J. Chluba, Johns Hopkins University**
Science with CMB Spectral Distortions
- **R. Hlozek, Princeton University**
Cleaning the *Planck* Power Spectra

12:30 – 1:30 Lunch at PCTS

1:30 Meeting Summary and Further Discussion
Moderator: L. Knox, UC Davis

3:00 Coffee Break (coffee ends at 3:30)