



<http://kicp-workshops.uchicago.edu/FutureSurveys/>

WORKSHOP PROGRAM

On September 21-23, KICP will be holding a workshop on Future Cosmic Surveys. The workshop is intended to gather community input and support for five potential future projects, outlined in "Cosmic Visions Dark Energy: Science", produced by the DOE group. Related ideas were presented in the National Academies sponsored Elmegreen report; the recent NOAO/Kavli sponsored study; and the NRAO 2020 Futures Program.

The first day will be an overlap day with the CMB-S4 workshop preceding it; Thursday will be devoted to plenary talks about the five potential projects; Friday morning, we will break up into groups for each project and formulate a plan for developing the case for the projects; we come together Friday afternoon to hear and comment on the individual plans.

Organizing Committee

Lindsey Bleem
Argonne National Laboratory

Joshua Frieman
Fermilab/KICP

Klaus Honscheid
Ohio State University

Aaron Roodman
SLAC

Mark Trodden
University of Pennsylvania

Scott Dodelson
Fermilab/UC

Katrin Heitmann
Argonne National Lab

Alessandro Manzotti
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Uros Seljak
University of California at Berkeley

Brenna Flaugher
Fermilab

Christopher Hirata
Ohio State University

Jeffrey Newman
University of Pittsburgh / PITT PACC

Anze Slosar
Brookhaven National Lab

Wednesday - September 21, 2016

8:00 AM	Breakfast KPTC (5720 S. Ellis Avenue, 1st floor)
8:50 AM	Introduction and Goals <i>Scott Dodelson</i>
9:00 AM - 9:15 AM	Future Surveys Summary <i>Klaus Honscheid</i>
9:15 AM	CMB-S4 Summary <i>John Carlstrom</i>
9:30 AM	BREAKING PARAMETER DEGENERACIES S4+DESI/LSST: m_{nu} , w , n' , N_{eff} , f_{nl} ; systematic checks/complementarity Joel Meyers how much more can you do with 21 cm/spectroscopy Anze Slosar
10:15 AM	Break
10:30 AM	CROSS-CORRELATION OF FUTURE SURVEYS WITH CMB KAPPA <i>Moderator: Gil Holder</i> Science case for doing CMB lensing + LSS Blake Sherwin Additional calibration of shear Emanuel Schaan photo-z calibration Eric Baxter + Pat McDonald E_G and other cross-signals Anthony Pullen sampling variance cancellations Marcel Schmittfull
1:00 PM	Lunch (provided) ERC (5640 S. Ellis Avenue, room 401)
2:00 PM	CLUSTERS <i>Moderator: Brad Benson</i> kSZ Simone Ferraro + Kendrick Smith Cluster counts and mass calibration: photo-z for WL masses; CMB cluster lensing; velocity dispersion Adam Mantz + Jim Bartlett
4:00 PM	Break
4:30 PM	Creative Ideas; Consistency Tests: Challenges beyond getting the same parameters: identifying joint null tests, generalized B-modes, e.g. de-lensing, ISW maps TBD <i>Erminia Calabrese, Jo Dunkley, Cora Dvorkin, Dragan Huterer</i>
5:00 PM	Discussion

Thursday - September 22, 2016

8:00 AM	Breakfast KPTC (5720 S. Ellis Avenue, 1st floor)
9:00 AM - 9:15 AM	Introduction to Cosmic Visions <i>Katrin Heitmann</i>
9:15 AM - 9:30 AM	Introduction to NSF-Kavli <i>Jeff Newman</i>
9:30 AM - 10:00 AM	Theoretical Motivation: What science are we after? <i>Mark Trodden</i>
10:00 AM - 10:20 AM	Break
	DESI-2
10:20 AM - 11:00 AM	DESI-2 Science <i>Risa Wechsler, Shirley Ho</i>
11:00 AM - 11:15 AM	DESI-2 Programmatics <i>Lori Allen</i>
11:15 AM - 11:40 AM	Design considerations for beyond DESI <i>David Schlegel</i>
	SOUTHERN SPECTROSCOPIC SURVEY INITIATIVE
11:40 AM - 12:30 PM	SSSI Science <i>Lindsey Bleem, Elisabeth Krause, Jeff Newman</i>
12:30 PM - 1:30 PM	Lunch GCIS (929 E. 57th Street, 3rd floor Atrium)
1:30 PM - 1:50 PM	SSSI Science, Discussion
1:50 PM - 2:10 PM	SSSI Programmatics [including telescope] <i>Josh Frieman</i>
	LOW RESOLUTION SPECTROSCOPY
2:15 PM	Low-Res Science Reach <i>Enrique Gaztanaga</i>
2:45 PM - 3:15 PM	Low-Res Spectroscopy Technological Challenges <i>Juan Estrada</i>
3:15 PM	Coffee break
	21 CM
3:45 PM	21-cm at $z > 6$: science and programmatics <i>Jacqueline Hewitt</i>
4:15 PM	21-cm at $z < 6$: science and programmatics <i>Chris Carilli</i>
4:45 PM	21-cm technical challenges <i>Miguel Morales</i>

BILLION OBJECT APPARATUS

- 5:15 PM Galaxy Survey with Radio Observations
Phil Bull
- 5:35 PM Galaxy Survey with Optical Spectroscopy
Kyle Dawson
- 5:55 PM BOA science reach
Elisabeth Krause
- 6:30 PM Reception
GCIS (929 E. 57th Street, 3rd floor Atrium)

Friday - September 23, 2016

8:30 AM	Breakfast KPTC (5720 S. Ellis Avenue, 1st floor)
9:00 AM	Core Science Goals: Discussion <i>Uros Seljak</i>
9:30 AM	Structure of Science Book(s): Discussion <i>Scott Dodelson</i>
10:00 AM	Coffee Break
10:30 AM	BREAKOUT SESSIONS 21 cm: Room 106 DESI-2: Room 105 SSSI: Room 103 low-res: Room 213 BOA: Room 206
1:00 PM	Lunch GCIS (929 E. 57th Street, 3rd floor Atrium)
	GROUP REPORTS & DISCUSSION <i>Each group reports back on plans for science book</i>
2:00 PM	DESI-2
2:30 PM	SSSI
3:00 PM	21 cm
3:30 PM	Low Resolution Spectroscopy
4:00 PM	Billion Object Apparatus
6:30 PM	Special Screening of the movie "Starmen" Doc Films/Max Palevsky Cinema, Ida Noyes Hall, 1212 East 59th Street, Chicago