

## 2007 CfAO Spring Retreat Agenda

Friday, March 23, 2007

Time	Activity	Speaker	Location
9:00 AM	<i>Breakfast</i>		<i>CfAO</i>
10:00 AM	<b>Education - Theme 1</b> Electro-Optics Curriculum Development/Akamai		CfAO Conf. Room
12:00 PM	<i>Lunch</i>		<i>CfAO</i>
1:00 PM	Electro-Optics Curriculum Development/Akamai		
2:00 - 2:40 PM	<i>Coffee Break</i>		<i>CfAO</i>
2:40 - 4:00 PM	Electro-Optics Curriculum Development/Akamai		
	<i>Dinner</i>		<i>Off-Campus</i>

## 2007 CfAO Spring Retreat Agenda

Monday, March 26, 2007

Time	Activity	Speaker	Location
8:00 - 8:30 AM	<i>Breakfast</i>		<i>CfAO - Atrium</i>
<b>Parallel Sessions</b>			
9:00 - 10:30 AM	<b>Theme 2 - Laser Technology and Systems for Astronomy</b>		CfAO Conf. Room
	<b>Performance of LGS AO Systems</b>		
	• Palomar	Kibblewhite	
	• Gemini	d'Orgeville	
	• Keck	Wizinowich, Neyman	
	• Lick	Gavel	
	• General Discussion		
	<b>Theme 4 - AO for Visual Psychophysics</b>		<i>(at UC Berkeley)</i>
10:30 - 10:50 AM	<i>Coffee Break</i>		<i>CfAO</i>
10:50 - 12:00 PM	<b>Theme 2 - Laser Technology and Systems for Astronomy</b>		CfAO Conf. Room
	<b>Progress of Laser Projects</b>		
	• SOR	Denman, Hillman	
	• Lockheed-Martin Coherent	Tracy	
	• Lawrence Livermore	Pennington, Dawson	
	• ESO	Bonnacini	
	• General Discussion		
	<b>Theme 4 - AO for Visual Psychophysics</b>		<i>(at UC Berkeley)</i>
12:00 - 1:00 PM	<i>Lunch</i>		<i>CfAO</i>
	<i>Continued on the next page.</i>		

## 2007 CfAO Spring Retreat Agenda

Monday, March 26, 2007 *(Continued)*

Time	Activity	Speaker	Location
1:00 - 2:30 PM	<b>Theme 2 - Laser Technology and Systems for Astronomy</b>		CfAO Conf. Room
	• TMT	Ellerbroek	
	• Keck Next Generation AO	Wizinowich, Dekany, Gavel	
	• General Discussion		
	<b>Discussion of Specific Issues</b>		
	• Measuring of return signal		
	• Beam transport and projection		
	<b>Theme 4 - AO for Visual Psychophysics</b>		<i>(at UC Berkeley)</i>
	<b>Theme 2 - Quantitative Astronomical AO Science</b>		ISB 221
	<b>Introduction</b>	S. Wright	
	• OSIRIS Observations of High Redshift Galaxies: Technique and Preliminary Science Results	D. Law	
	• Investigating the central environments of nearby spiral galaxies with Lick LGS AO and HST	L. Raschke	
	• Super-resolving distant galaxies with gravitational telescopes: Keck-LGSAO and Hubble imaging of the lens system SDSSJ0757+3216	P. Marshall	
	• Group Discussion	S. Wright	
2:30 - 2:40 PM	<i>Coffee Break</i>		<i>CfAO</i>
2:40 - 5:00 PM	<b>Theme 2 - Laser Technology and Systems for Astronomy</b>		CfAO Conf. Room
	<b>Discussion of Specific Issues <i>(continued)</i></b>		
	• Pulse format		
	• Availability of technology		
	• Operations / Lessons learned		
	• CfAO proposals discussion		
	<b>Theme 4 - AO for Visual Psychophysics</b>		<i>(at UC Berkeley)</i>
	<b>Theme 2 - Quantitative Astronomical AO Science</b>		ISB 221
	• The kinematics of Einstein Rings	T. Treu	
	• PSF reconstruction for AO observations crowded field stellar photometry: Application to IC 10	J. Graham	
	• Estimation of the AO PSF using turbulence profile	M. Britton	
	• LAMP@Palomar: Lucky Adaptive Optics In the	N. Law	
	• Group Discussion	S. Wright	
6:00 PM	<i>Dinner</i>		<i>Off-Campus</i>

## 2007 CfAO Spring Retreat Agenda

Tuesday, March 27, 2007

Time	Activity	Speaker	Location
8:15 - 8:45	<i>Breakfast</i>		<i>CfAO Atrium</i>
<b>Parallel Sessions</b>			
9:00 - 10:30 AM	<b>Theme 1 - Educational Research on CfAO Internships</b>	Tamara Ball	CfAO Conf. Room
	<b>Theme 2 - Quantitative Astronomical AO Science</b>		ISB 221
	• Introduction	M. Fitzgerald	
	• Multiple Asteroids Studied with AOs	F. Marchis	
	• Titan science: Gleaming the OSIRIS cube	M. Adamkovics	
	• OSIRIS DRP: from observations of Nova Cas 1995 to science	J. Lyke	
	• Light curve timing analysis and spectral slope analysis of Sgr A *	T. Do	
	• Group Discussion	M. Fitzgerald	
	<b>Theme 4 - AO for Visual Psychophysics</b>		<i>(at UC Berkeley)</i>
10:30 - 10:50	<i>Coffee Break</i>		<i>CfAO</i>
10:50 - 12:00	<b>Theme 2 - Quantitative Astronomical AO Science</b>		ISB 221
	• The Dominant Population in the Central Parsec of the Galaxy: Intermediate-Age or Metal-Poor?	H. Maness	
	• Keck/NIRC2 Astrometry in Crowded Stellar Fields	J. Lu	
	• Astrometry of Magnetars and Microquasars with Keck/NIRC2	B. Cameron	
	• Group Discussion	M. Fitzgerald	
	<b>Theme 4 - AO for Visual Psychophysics</b>		<i>(at UC Berkeley)</i>
12:00 - 1:00 PM	<i>Lunch</i>		<i>CfAO</i>
<b>Plenary Sessions</b>			
1:00 - 2:45	<b>Plenary Session - CfAO Status and Plans</b>		EMS B206
		Claire Max	
	• <i>CfAO EHR: Past, Present &amp; Future</i>	Lisa Hunter	
		Don Gavel	
		Bruce Macintosh	
		Austin Roorda	
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## 2007 CfAO Spring Retreat Agenda

Tuesday, March 27, 2007 *(Continued)*

Time	Activity	Speaker	Location
<b>Plenary Sessions <i>(continued)</i></b>			
2:45 - 3:15 PM	<i>Coffee Break</i>		<i>CfAO</i>
3:15 - 5:30 PM	<b>Plenary Session - Science Highlights</b>		EMS B206
	<ul style="list-style-type: none"> <li>• Imaging the effects of mutations on the organization of the human cone mosaic</li> </ul>	Joe Carroll	
	<ul style="list-style-type: none"> <li>• Viewing the Center of Our Galaxy with Laser Guide Star Adaptive Optics</li> </ul>	Andrea Ghez	
	<ul style="list-style-type: none"> <li>• Probing the Dark Past of the Universe with the Vision of CATS</li> </ul>	David Koo	
<b>Wine Tasting Reception &amp; Dinner</b>			
5:45 - 6:30 PM	Wine Tasting Reception		EMS Lobby
	Wine Tasting Speaker - Professor Joseph Miller "Think Globally, Drink Locally - The Wines of Santa Cruz County and Environs"		
6:30 - 7:30 PM	<i>Banquet</i>		<i>EMS Lobby</i>

## 2007 CfAO Spring Retreat Agenda

Wednesday, March 28, 2007

Time	Activity	Speaker	Location
8:15 - 8:45 AM	<i>Breakfast</i>		<i>CfAO Atrium</i>
<b>Parallel Sessions</b>			
9:00 - 10:30 AM	<b>Theme 1 - CfAO Internship Short Course Planning</b>		CfAO Conf. Room
	<b>The Science Cases for Next Generation AO at Keck</b>		ISB 221
9:00	<ul style="list-style-type: none"> <li>• Overview of Goals of Workshop</li> </ul>	Claire Max	
9:30	<ul style="list-style-type: none"> <li>• NGAO system design status and plans</li> </ul>	Peter Wizinowich	
10:00	<ul style="list-style-type: none"> <li>• Discuss and refine existing science cases: Asteroid shape and multiplicity</li> </ul>	Franck Marchis	
10:30	<i>Coffee Break</i>		<i>CfAO</i>
10:50	<b>Theme 1 - CfAO Internship Short Course Planning</b>		CfAO Conf. Room
	<b>The Science Cases for Next Generation AO at Keck</b>		ISB 221
	Continuation of discussion of existing science cases:		
10:50	<ul style="list-style-type: none"> <li>• Planets around low- mass stars</li> </ul>	Mike Liu	
11:10	<ul style="list-style-type: none"> <li>• Galactic Center</li> </ul>	Andrea Ghez	
11:30	<ul style="list-style-type: none"> <li>• High-redshift galaxies</li> </ul>	David Law	
12:00 - 1:00 PM	<i>Lunch</i>		<i>CfAO</i>
1:00 - 3:30	<b>Theme 1 - CfAO Internship Short Course Planning</b>		CfAO Conf. Room
	<b>The Science Cases for Next Generation AO at Keck</b>		ISB 221
1:00	<ul style="list-style-type: none"> <li>• Observing scenarios IO, Asteroids</li> </ul>	David Le Mignant	
1:45	<ul style="list-style-type: none"> <li>• Instrument requirements</li> </ul>	Sean Adkins, Claire Max, Anna Moore	
2:30	Kick-off discussions for new science cases	Parallel Sessions	
	Goals:		
	<ul style="list-style-type: none"> <li>• Lay out the main issues</li> <li>• Identify questions that will need to be addressed</li> <li>• Plan follow-up</li> </ul>		
	Solar System: Titan, Io, Jovian planet icy moons		
	Galactic astronomy: Protostellar objects, Debris disks		
	Extragalactic astronomy: Strong lensing, AGNs, QSO host galaxies		
3:30 - 3:50	<i>Coffee Break</i>		<i>CfAO</i>
	<i>(Continued on the next page)</i>		

## 2007 CfAO Spring Retreat Agenda

Wednesday, March 28, 2007 *(Continued)*

Time	Activity	Speaker	Location
3:50 - 5:30	<b>Theme 1</b> - CfAO Internship Short Course Planning		CfAO Conf. Room
	The Science Cases for Next Generation AO at Keck		ISB 221
3:50	Continuation of Parallel Sessions:		
	Kick-off discussions for new science cases		
4:50	Report-back by the above groups		
5:15	Tentative summary of new AO and instrument requirements		
	Compilation of future work that needs to be done		
6:00 PM	<i>Dinner</i>		<i>CfAO</i>

## 2007 CfAO Spring Retreat Agenda

Thursday, March 29, 2007

Time	Activity	Speaker	Room
8:15 - 8:45 AM	<i>Breakfast</i>		<i>CfAO Atrium</i>
<b>Parallel Sessions</b>			
9:00 - 10:30	<b>Theme 1</b> - Professional Development Program Staff Debrief		CfAO Conf. Room
	<b>Theme 3</b> - Point Spread Functions for High-Contrast AO		ISB 221
9:15 - 9:30	• Introduction		
9:30 - 10:00	• Point spread function 101: basic overview	Sivaramakrishnan	
10:00 - 10:30	• Point spread function 102: coronagraphs, speckles, and contrast	Macintosh	
10:30 - 10:50	<i>Coffee Break</i>		<i>CfAO</i>
10:50 - 12:00	<b>Theme 1</b> - Professional Development Program Staff Debrief		CfAO Conf. Room
	<b>Theme 3</b> - Point Spread Functions for High-Contrast AO		ISB 221
10:50 - 11:20	• Point spread function 201: Speckle statistics and properties	Soummer	
11:20 - 11:50	• Point spread function 202: Speckle suppression and the detection of exoplanets	Marois	
12:00 - 1:00 PM	<i>Lunch</i>		<i>CfAO</i>
1:00 - 3:30	<b>Theme 1</b> - Professional Development Program Staff Debrief		CfAO Conf. Room
	<b>Theme 3</b> - Point Spread Functions for High-Contrast AO		ISB 221
1:00 - 1:30	• PSF estimation: structure functions vs. power spectra	Veran	
1:30 - 2:00	• PSF observations at Lyot/AEOS	Hinkley	
2:00 - 2:30	• Fresnel modeling of MEMS PSF effects	Shao	
2:30 - 3:00	• UCSC LAO MEMS amplitude effects	Evans, Thomas	
3:00 - 3:30	• Discussion: amplitude, PSFs, and the limits of Fraunhofer	All	
3:30 - 3:50	<i>Coffee Break</i>		<i>CfAO</i>
3:50 - 5:00 PM	<b>Theme 1</b> - Professional Development Program Staff Debrief		CfAO Conf. Room
	<b>Theme 3</b> - Point Spread Functions for High-Contrast AO		ISB 221
3:50 - 5:00	• Continued discussion / contributed talks	All	