Adkins System Design Report Observatory Interface Requirements Observatory Requirements Rev 2 Traceability Matrix Rev 2 Instrument Balance TS Science Instrument Re-use Cost/Benefit TS (m3) Science Instrument Function Allocation Ver 1 Science Instruments Function Allocation Ver 2 OSIRIS Interferometer OHANA Near-IR Imager Visible Imager Visible IPU Deployable Near-IR IFU Thermal Near-IR Imager Cost Estimation Adkins(IPM) SD Phase Contracts Generated Identify Reviewers Review Package Distributed Reviewer Comments Addressed System Design Review Support Response to Reviewer Report & Distribution Armmons Anchor to LAO Lab Experiments Bauman Team Meeting #1 (mgmt, science & technical - Irvine) Team Wedecoon #3 Team Meeting #4 (Keck) Team Videcoon #5 Team Meeting #6 (UCSC) Team Videcoon #1 Team Meeting #6 (UCSC) Team Videcoon #1 Team Meeting #10 (CIT) Team Widecoon #1 Team Meeting #10 (CIT) Team Widecoon #1 Team Meeting #12 (Keck) Team Videcoon #1 Team Meeting #12 (Keck) Team Videcoon #1 Team Meeting #12 (Keck) Team Videcoon #1 Team Meeting #10 (CIT) Team Widecoon #1 Team Meeting #10 (CIT) Team Widecoon #1 Team Meeting #11 (North Toption TS (m5) Optical Relay TS (m6) Optical Relay TS (m6) Optical Relay TS (m6) Optical Relay TS (m6)		Oct '07 10.7 hrs 8 hrs 2.7 hrs 2.7 hrs 2.6 hrs 3 6 22 hrs	7 hrs 28 hrs 3.15 hrs	3 hrs 3 hrs 12 hrs 5.03 hrs 2.58 hrs 3.48 hrs	5.33 hrs 5.52 hrs 2.83 hrs 3.8 hrs	eb '07 M 37.87 hrs 4.67 hrs 8 hrs 4.8 hrs 2.47 hrs 3.2 hrs 3.32 hrs	23.08 hrs 23.08 hrs 0.63 hrs 2.7 hrs 3.52 hrs 3.63 hrs	13.33 hrs 1.28 hrs 3.48 hrs	May '07
System Design Report Observatory Interface Requirements Observatory Requirements Rev 2 Traceability Matrix Rev 2 Instrument Balance TS Science Instrument Re-use Cost/Benefit TS (m3) Science Instruments Function Allocation Ver 1 Science Instruments Function Allocation Ver 2 OSIRIS Interferometer OHANA Near-IR Imager Visible IFU Deployable Near-IR IFU Thermal Near-IR Imager Cost Estimation Adkins(IPM) SD Phase Contracts Generated Identify Reviewers Review Package Distributed Reviewer Comments Addressed System Design Review Support Response to Reviewer Report & Distribution Ammons Anchor to LAO Lab Experiments Bauman Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Weeting #6 (UCSC) Team Videocon #7 Team Review ge Review Support Team Weeting #6 (UCSC) Team Videocon #9 Team Weeting #1 (CIT) Team Videocon #9 Team Weeting #1 (CIT) Team Videocon #1 Team Weeting #10 (CIT) Team Videocon #1 Team Videocon #1 Team Weeting #10 (CIT) Team Videocon #1	4	2.7 hrs 2.7 hrs 2.8 hrs 2.9 hrs 2.9 hrs 2.9 hrs	7 hrs 28 hrs 2.7 hrs	3 hrs 12 hrs 5.03 hrs 2.58 hrs	5.33 hrs 5.52 hrs 2.83 hrs	4.67 hrs 8 hrs 4.8 hrs 2.47 hrs 3.2 hrs 3.32 hrs	0.63 hrs 2.7 hrs 3.52 hrs 3.63 hrs	13.33 hrs 1.28 hrs 3.48 hrs	
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Optical Relay TS (m6)									
							24 hrs		
Field Potation Strategy TS (m6)					8.92 hrs	8.1 hrs	8.92 hrs	4.05 hrs	
Field Rotation Strategy TS (m6)					17.83 hrs	16.22 hrs	17.83 hrs	8.1 hrs	
Stand-alone vs DM on T/T Stage TS (m3)		4 hrs	44 hrs	12 hrs					
Correcting Fast T/T with DM TS		1.33 hrs	14.67 hrs	4 hrs					
AO System Functional Requirements Ver 1								11.6 hrs	
AO System Functional Requirements Ver 2									
AO System Architecture								7.12 hrs	
Field Rotation								4 hrs	
Optical Relay								5 hrs	
Optical Switchyard								5 hrs	
Optical Support Structure									
Tip/Tilt Corrector									
Deformable Mirror								19.77 hrs	
Cost Estimation									
Bell									
Bouchez		rs 37.95 hrs	36.12 hrs	27.78 hrs	17.08 hrs	44.1 hrs	16.92 hrs	8.05 hrs	
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Team Videocon #3				4 hrs					
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Team Videocon #7	İ								
Team Retreat #8 (UCSC)	1								
Team Videocon #9									
Team Meeting #10 (CIT)							+	+	
Team Videocon #11					l I	l I			

	Jun '06	Jul '06 Au	g '06	Sep '06	Oct '07	Nov '07	Dec '07	lan '07	Feb '07	Mar '07	Apr '07 May '07
Team Meeting #12 (Keck)	3011 00	301 00 Au	g 00	Gep 00	Oct 01	1407 07	Dec or	all 07	i eb or	iviai 07	Apr 01 Iviay 01
Team Videocon #13											
System Design Review Support				İ				İ			
Science Operations Requirements					8.8 hrs	7.2 hrs					
Throughput					10.83 hrs	10.83 hrs	10.33 hrs				
Document Proposal Analysis					10 hrs						
Develop Background Performance Budget					8.32 hrs	14.08 hrs	13.43 hrs	4.17 hrs			
Point Source Sensitivities											
K & L-band Science TS (m5)									36 hrs	4 hrs	
AO Enclosure Temperature TS (m6)								8.92 hrs	8.1 hrs	8.92 hrs	4.05 hrs
NGS Acquisition Camera											
LGS Acquisition Camera Britton				4 hrs	19.2 hrs	58.47 hrs	60.52 hrs	61.82 hrs		4 hrs	8 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)				4 hrs	19.2 1115	30.47 1115	00.52 1115	01.021115		41115	81118
Team Meeting #2 (CIT)				71113		8 hrs					
Team Videocon #3						00	4 hrs				
Team Meeting #4 (Keck)								8 hrs			
Team Videocon #5										4 hrs	
Team Meeting #6 (UCSC)											8 hrs
Team Videocon #7											
Team Retreat #8 (UCSC)											
Team Videocon #9											
Team Meeting #10 (CIT)											
Team Videocon #11											
Team Meeting #12 (Keck)					·	· · · · · · · · · · · · · · · · · · ·					
Team Videocon #13											
Photometric Accuracy					19.2 hrs	35.2 hrs	33.6 hrs	32 hrs			
Astrometric Accuracy						15.27 hrs	22.92 hrs	21.82 hrs			
Cameron						15.27 hrs	22.92 hrs	25.08 hrs	21.82 hrs	24 hrs	22.92 hrs
Astrometric Accuracy						15.27 hrs	22.92 hrs	25.08 hrs	21.82 hrs	24 hrs	22.92 hrs
Chin								5.33 hrs	4.67 hrs		72.48 hrs
System Design Review Support								5 00 h	4 C7 h		
Observatory Requirements Rev 2								5.33 hrs	4.67 hrs		
Observing Uptime AO System Functional Requirements Ver 1											11.6 hrs
AO System Functional Requirements Ver 2											11.01115
Laser System Functional Requirements Ver 1											22 hrs
Laser System Functional Requirements Ver 2											22 1110
Non-RTC Electronics											
Laser Beam Transport											2 hrs
Laser Pointing & Diagnostics											8 hrs
Laser Launch Telescope											14.22 hrs
Personnel and Equipment Safety Systems											
Aircraft, Satellite & Laser Traffic Control Safety Systems											
Laser System Electronics											
AO-Instrument Maintenance Plan											
AO-Instrument Environment Monitoring											14.67 hrs
Cost Estimation											
Configuration Management Plan	1				40.01	201					
Clare	1				12.8 hrs	3.2 hrs					
Agreement between Sky Coverage Codes Dekany	1.55 hrs	4.05 hrs	4.43 hrs	29.05 hrs	12.8 nrs 57.77 hrs	3.2 hrs 65.97 hrs	21 hrs	62.23 hrs	51.72 hrs	53.5 hrs	57.45 hrs
SD Phase System Engineering Management Plan	1.55 1115	4.05 1118	4.43 1115	29.05 hrs	57.77 1115	05.97 1118	211115	02.23 1115	31.721118	55.51118	57.45 1115
SD Phase Contracts Generated				2 hrs	13 hrs						
Mid-year Replan	+			21113	101115					8 hrs	
FY08 Replan				+				+		00	
Executive Committee Telecons	1.55 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.23 hrs	4.23 hrs	4.05 hrs	4.43 hrs	3.85 hrs	4.23 hrs	4.05 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)				8 hrs							
Team Meeting #2 (CIT)						8 hrs					
Team Videocon #3							4 hrs				
Team Meeting #4 (Keck)								8 hrs			
Team Videocon #5										4 hrs	
Team Meeting #6 (UCSC)											8 hrs
Team Videocon #7											
Team Retreat #8 (UCSC)											
Team Videocon #9											
Team Meeting #10 (CIT)											
Team Videocon #11 Team Meeting #12 (Keck)											
							1				
Team Videocon #13											

	Jun '06	Jul '06 Aug	'ne I	Sep '06	Oct '07	Nov '07	Dec '07 Ja	an '07 F	eb '07	Mar '07	Apr '07 May '07
Report Preparation/Presentation	Jun 06	Jul 06 Aug	06	Sep 06 (3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	0.92 hrs	war u/	Apr 07 IMay 07
Support Advancement Office											
System Design Report											
Identify Reviewers											
Reviewer Comments Addressed						İ				İ	
System Design Review Support											
Response to Reviewer Report & Distribution											
Agreement between Sky Coverage Codes					9.6 hrs	2.4 hrs					
Document WFE Budget Rev 1					17.6 hrs	17.6 hrs	4.8 hrs				
Document WFE Budget Rev 2							4.8 hrs	35.2 hrs			
Encircled Energy vs Sky Coverage					9.8 hrs	30.2 hrs					
Performance Budgets Summary Ver 1								2 hrs	38 hrs		
Performance Budgets Summary Ver 2											
Optical Relay TS (m6)								8.92 hrs	8.1 hrs	8.92 hrs	4.05 hrs
System Architecture Ver 1									0.83 hrs	18.33 hrs	10.83 hrs
System Architecture Ver 2											
AO System Architecture											3.55 hrs
Optical Relay											1.77 hrs
Deformable Mirror											25.2 hrs
System Design Manual											
WBS and Task Definition	ļ										
Cost Estimation											
Major Project Milestones	1										
Develop Full Schedule (MS Project Plan)	ļ										
Risk Assessment & Management Plan	ļ									401	
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning)	1									10 hrs	
Preliminary Design Phase Plan Version 2	1										
Preliminary Design Phase Plan Final Version											
Project Management Plan SEMP Document											
			00.00 h	25 C2 h	05 00 h	420 OF h	440 O b ==	70 05 h	50 40 has	400 00 b	100.13 hrs
Flicker			29.33 hrs	35.62 hrs	65.23 hrs	130.25 hrs	118.2 hrs	78.35 hrs	59.42 hrs	122.93 hrs	100.13 nrs
Team Meeting #1 (mgmt, science & technical - Irvine)				8 hrs		0.5					
Team Meeting #2 (CIT)						8 hrs	4 5				
Team Videocon #3							4 hrs	8 hrs			
Team Meeting #4 (Keck) Team Videocon #5								01115		4 hrs	
										41115	8 hrs
Team Meeting #6 (UCSC) Team Videocon #7											8 IIIS
Team Retreat #8 (UCSC)								-			
Team Videocon #9											
Team Meeting #10 (CIT)											
Team Videocon #11											
Team Meeting #12 (Keck)											
Team Videocon #13											
System Design Review Support											
Traceability Matrix Rev 2									24 hrs		
Tools in place & 1st release			23.33 hrs	16.67 hrs					241113		
Release updated data (every two months)	1		22.233	1.95 hrs	4.3 hrs	4.3 hrs	4.1 hrs	4.48 hrs	3.9 hrs	4.3 hrs	4.1 hrs
Telescope dynamic performance data	1				30 hrs	30 hrs					-
Agreement between Tomography Codes	1		6 hrs	9 hrs	2210	220					
Anchor to On-sky MGSU Experiments	1					10 hrs					
Anchor to LAO Lab Experiments	1					25.33 hrs	14.67 hrs				
Document WFE Budget Rev 2	İ						4.08 hrs	25.92 hrs			
Photometric Accuracy	Ì				9.6 hrs	17.6 hrs	16.8 hrs	16 hrs		İ	
Companion Sensitivity	İ					20.37 hrs	30.55 hrs	9.08 hrs			
All-In Science Simulations	İ										
Other	İ										
GLAO for non-NGAO Instruments TS (m5)									18 hrs	2 hrs	
Telescope Wavefront Errors TS	İ						40 hrs				
Deformable Mirror Stroke Requirement TS (m6)	1							14.87 hrs	13.52 hrs	14.87 hrs	6.75 hrs
Correcting Fast T/T with DM TS	1				1.33 hrs	14.67 hrs	4 hrs				
LGS Asterism Geometry & Size TS (m2)	1				20 hrs						
Tip/Tilt Corrector											
Deformable Mirror											12.92 hrs
Alignment, Calibration, Diagnostics, Metrology and Monitoring											9.7 hrs
RTC Architecture Analysis and Design Study										17.78 hrs	18.67 hrs
AO-Instrument Performance Prediction										40 hrs	20 hrs
AO-Instrument Real-Time Optimization										40 hrs	20 hrs
Gavel SD Phase System Engineering Management Plan	1.55 hrs	4.05 hrs	8.43 hrs	35.05 hrs	40.17 hrs	116.3 hrs	77.47 hrs	16.12 hrs	5.6 hrs	53.47 hrs	37.55 hrs

	Jun '06	Jul '06 Au	ıg '06	Sep '06	Oct '07	Nov '07	Dec '07	Jan '07	Feb '07	Mar '07	Apr '07 May '07
SD Phase Contracts Generated	3011 00	Jui 00 At	<u>g</u> 00	2 hrs	13 hrs	NOV 07	Dec or	all 07	-eb 07 I	viai 07	Api 07 Iviay 07
Mid-year Replan										8 hrs	
FY08 Replan			-	-	-					-	
Executive Committee Telecons	1.55 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.23 hrs	4.23 hrs	4.05 hrs	4.43 hrs	3.85 hrs	4.23 hrs	4.05 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)				8 hrs							
Team Meeting #2 (CIT)						8 hrs					
Team Videocon #3							4 hrs				
Team Meeting #4 (Keck)								8 hrs			
Team Videocon #5										4 hrs	
Team Meeting #6 (UCSC)											8 hrs
Team Videocon #7											
Team Retreat #8 (UCSC)											
Team Videocon #9											
Team Meeting #10 (CIT) Team Videocon #11											
Team Meeting #12 (Keck)						—			+		
Team Videocon #13							 		\longrightarrow		
Report Preparation/Presentation					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	0.92 hrs		
Support Advancement Office					0.02 1110	0.02 1110	0.07 1110	0.001110	0.02 1110		
System Design Report											
Identify Reviewers					-				+		
Reviewer Comments Addressed	1				-		 		+	-	
System Design Review Support	1				-		 		+	-	
Response to Reviewer Report & Distribution											
Sodium return vs laser format						20 hrs					
Agreement between Tomography Codes			4 hrs	6 hrs							
Agreement between Sky Coverage Codes			-	-	9.6 hrs	2.4 hrs		-	-	-	
Anchor to LAO Lab Experiments						2.53 hrs	1.47 hrs				
Encircled Energy vs Sky Coverage			-	-	9.8 hrs	30.8 hrs	29.4 hrs	-	-	-	
MOAO & MCAO TS			-	-	-	44.8 hrs	35.2 hrs	-	-	-	
System Architecture Ver 1				-					0.83 hrs	18.33 hrs	10.83 hrs
System Architecture Ver 2											
Technology Drivers Summary											
Technical Risk Analysis Ver 1											
Technical Risk Analysis Ver 2											
AO System Architecture											5.33 hrs
RTC Architecture Analysis and Design Study										8.88 hrs	9.33 hrs
System Design Manual											
WBS and Task Definition											
Cost Estimation											
Develop Full Schedule (MS Project Plan)											
Risk Assessment & Management Plan											
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning)										10 hrs	
Preliminary Design Phase Plan Version 2											
Preliminary Design Phase Plan Final Version											
Project Management Plan											
SEMP Document									20 0 hro	11 2 hro	
Ireland Polarimetria Acquiracy						<u> </u>	 		28.8 hrs 28.8 hrs	11.2 hrs 11.2 hrs	
Polarimetric Accuracy Johansson	<u> </u>							5.33 hrs	28.8 nrs 4.67 hrs	11.2 nrs 28.02 hrs	47.13 hrs
System Design Review Support	1		\longrightarrow					0.001118	4.07 1118	20.02 1115	71.131113
Observatory Requirements Rev 2	1				-		 	5.33 hrs	4.67 hrs		
Observing Uptime Observing Uptime	1						 	5.551118	7.07 1115		
AO System Functional Requirements Ver 1	1						+		\longrightarrow		11.6 hrs
AO System Functional Requirements Ver 1	1						+				11.01110
AO System Architecture					-				+		7.12 hrs
Non-RTC Software					-				+		
RTC Architecture Analysis and Design Study	1				-		 		+	17.78 hrs	18.67 hrs
RTC Software Module Definition											
RTC Hardware Module Definition											
Laser System Software	1										
Instrument, AO & Telescope Observer Interfaces	1									10.23 hrs	9.77 hrs
AO-Instrument Health Monitoring & Automated Recovery										-	
AO-Instrument User Interfaces										-	
Cost Estimation										-	
Johnson											
Non-RTC Software										-	
14011 TO CONTWARC									+		
Configuration Management Plan							l				` <u></u>
					2.67 hrs	29.33 hrs	118 hrs	1.62 hrs	4.05 hrs	4.47 hrs	69.85 hrs

	I 100	Int Ioc Ia.	100	0 100	0-4 107	N107	D 107	107 Ir	IO7 IN	1107	A107 IM107
Rayleigh Rejection TS (m3)	Jun '06	Jul '06 Au	ıg '06	Sep '06	Oct '07 2.67 hrs	Nov '07 29.33 hrs	Dec '07 J 8 hrs	an '07 F	eb '07 N	lar '07	Apr '07 May '07
LOWFS Architecture TS					2.07 1113	29.551113	80 hrs				
Number & Type of LOWFS TS (m4)							30 hrs				
Centroid Anisoplanatism TS (m7)							001.10				9.6 hrs
Focus Compensation TS (m6)								1.62 hrs	4.05 hrs	4.47 hrs	4.25 hrs
Low Order NGS Wavefront Sensors								1.02 1113	4.00 1113	4.47 1110	4.201113
Calibration Wavefront Sensor											
Atmospheric Dispersion Correction											
											8 hrs
Laser Beam Transport											
Laser Pointing & Diagnostics											28 hrs
Laser Launch Telescope											20 hrs
Kupke						50.67 hrs	29.33 hrs				
Anchor to LAO Lab Experiments						50.67 hrs	29.33 hrs				
Le Mignant				4 hrs	17.6 hrs	43.28 hrs	41.33 hrs	66.98 hrs	27.13 hrs	17.3 hrs	22.4 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)				4 hrs							
Team Meeting #2 (CIT)						4 hrs					
Team Videocon #3							4 hrs				
Team Meeting #4 (Keck)								4 hrs			
Team Videocon #5										4 hrs	
Team Meeting #6 (UCSC)									<u> </u>		4 hrs
Team Videocon #7											
Team Retreat #8 (UCSC)									+		+
Team Videocon #9	+										
Team Meeting #10 (CIT)											+
Team Videocon #11			+			+		-	+		+
											+
Team Meeting #12 (Keck)											
Team Videocon #13											
System Design Review Support											
Science Operations Requirements					17.6 hrs	14.4 hrs					
Observatory Requirements Rev 2								8.53 hrs	7.47 hrs		
Observing Efficiency									12 hrs	8 hrs	
Observing Model TS						24.88 hrs	37.33 hrs	17.78 hrs			
Science Operations Functional Requirements Ver 1											13.33 hrs
Science Operations Functional Requirements Ver 2											
AO-Instrument Observing Modes								36.67 hrs	3.33 hrs		
AO-Instrument Operations Support									4.33 hrs	5.3 hrs	5.07 hrs
AO-Instrument Configuration & Setup											
AO-Instrument Nighttime Operation Modes											
Cost Estimation											
Lockwood			-								10 hrs
Field Rotation											2 hrs
Optical Relay											3 hrs
Optical Switchyard											5 hrs
Optical Support Structure											
Macintosh						33.93 hrs	50.92 hrs	15.15 hrs			
Companion Sensitivity						33.93 hrs	50.92 hrs	15.15 hrs			
Max	1.55 hrs	4.05 hrs	4.43 hrs	27.05 hrs	29.98 hrs	17.98 hrs	13.63 hrs	18.33 hrs	95 hrs	39.27 hrs	17.63 hrs
SD Phase System Engineering Management Plan				15 hrs							
Mid-year Replan										6 hrs	
FY08 Replan											1
Executive Committee Telecons	1.55 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.23 hrs	4.23 hrs	4.05 hrs	4.43 hrs	3.85 hrs	4.23 hrs	4.05 hrs
Science Advisory Committee Telecons					2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)				8 hrs	0		0				
Team Meeting #2 (CIT)				01113		8 hrs					+
Team Videocon #3			+			01118	4 hrs	-	+		+
							41115	0 hro			
Team Meeting #4 (Keck)								8 hrs			
Team Videocon #5										4 hrs	0.5
Team Meeting #6 (UCSC)											8 hrs
Team Videocon #7											
Team Retreat #8 (UCSC)											
Team Videocon #9											
Team Meeting #10 (CIT)		J									
Team Meeting #10 (CIT) Team Videocon #11											
Team Videocon #11											
Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	3.2 hrs	3.52 hrs	3.37 hrs
Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 Report Preparation/Presentation					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	3.2 hrs	3.52 hrs	3.37 hrs
Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 Report Preparation/Presentation Support Advancement Office					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	3.2 hrs	3.52 hrs	3.37 hrs
Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 Report Preparation/Presentation Support Advancement Office System Design Report					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	3.2 hrs	3.52 hrs	3.37 hrs
Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 Report Preparation/Presentation Support Advancement Office					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	3.2 hrs	3.52 hrs	3.37 hrs

	Jun '06	Liuline Aug ine	Con 106	Oct '07	Nov '07	Dec '07	Jan '07	Feb '07	Mar '07	Apr '07 May '07
System Design Review Support	Jun 06	Jul '06 Aug '06	Sep '06	Oct 07	NOV U7	Dec '07	Jan u/	Feb U/	Mar U7	Apr '07 May '07
Response to Reviewer Report & Distribution										
Science Requirements Summary Rev 1				20 hrs						
Science Requirements Summary Rev 2					İ			85.72 hrs	14.28 hrs	
Science Requirements Summary Rev 3					İ					
Science Requirements Summary Final										
WBS and Task Definition										
Develop Full Schedule (MS Project Plan)										
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning)								5 hrs	
Preliminary Design Phase Plan Version 2										
Preliminary Design Phase Plan Final Version										
Project Management Plan										
SEMP Document										
Meguro							23.17 hrs	20.88 hrs	17.83 hrs	19.7 hrs
Observatory Requirements Rev 2							5.33 hrs	4.67 hrs		
AO Enclosure Temperature TS (m6)							11.9 hrs	10.82 hrs	11.9 hrs	5.4 hrs
Field Rotation Strategy TS (m6)							5.95 hrs	5.4 hrs	5.95 hrs	2.7 hrs
AO System Functional Requirements Ver 1										11.6 hrs
AO System Functional Requirements Ver 2										
AO Enclosure										
High Order LGS Wavefront Sensors										
High Order NGS Wavefront Sensor										
Low Order NGS Wavefront Sensors										
Laser Enclosure										
Cost Estimation										
Moore					79.07 hrs	49.48 hrs	27.92 hrs	50.95 hrs	56.03 hrs	103.87 hrs
System Design Review Support										
Science Instrument Re-use Cost/Benefit TS (m3)					56 hrs	24 hrs				
Science Instruments Function Allocation Ver 1										22.22 hrs
Science Instruments Function Allocation Ver 2										
Laser Pointing & Diagnostics										28.17 hrs
Near-IR Imager					23.07 hrs	25.48 hrs	27.92 hrs	24.28 hrs	26.7 hrs	25.48 hrs
Visible Imager										
Visible IFU										
Deployable Near-IR IFU								26.67 hrs	29.33 hrs	28 hrs
Thermal Near-IR Imager										
Neyman		6 hrs			162.72 hrs	145.78 hrs	68 hrs	262.22 hrs	81.62 hrs	115.32 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)			8 hrs							
Team Meeting #2 (CIT)					8 hrs					
Team Videocon #3						4 hrs				
Team Meeting #4 (Keck)							8 hrs			
Team Videocon #5									4 hrs	
Team Meeting #6 (UCSC)										8 hrs
Team Videocon #7										
Team Retreat #8 (UCSC)										
Team Videocon #9			1	1						
Team Meeting #10 (CIT)	+			-						
Team Videocon #11	_		1		ļ					
Team Meeting #12 (Keck)	+		1	1						
Team Videocon #13	+		1	1						
System Design Review Support	+		+	4.4.6	0.01					
Development Requirements	+		+	4.4 hrs						
Observatory Interface Requirements	+			8 hrs			40.01	44.01		
Observatory Requirements Rev 2	+		1	1			12.8 hrs	11.2 hrs		40.07 has
Observatory Requirements Rev 3	+		+	1						10.67 hrs
Observatory Requirements Rev 4			1	401						
Traceability Matrix Rev 1	+		+	10 hrs				04.5		
Traceability Matrix Rev 2	+		1	1				24 hrs		
Traceability Matrix Rev 3	+		+	1	1					
Traceability Matrix Rev 4	+		+	1	1				20	
SRD Rev 2	+		+	1					20 hrs	
SRD Rev 3	+		1	1	1					
SRD Final SD Phase Version	+		+	20 5	00 h					
Telescope dynamic performance data	+		+	30 hrs						
Telescope static wavefront errors	+		+	10 hrs	10 hrs					
Sodium return vs laser format	+		0.1	1	20 hrs					
Agreement between Tomography Codes	+	6 hrs	9 hrs							
Anchor to Keck II LGS AO PSFs	+		+	40 hrs		16.0	16			
Photometric Accuracy Companion Sensitivity	+		+	9.6 hrs	17.6 hrs 27.15 hrs	16.8 hrs 40.73 hrs	16 hrs 12.12 hrs			

	Jun '06	Jul '06 Aug '06	Sep '06	Oct '07	Nov '07	Dec '07	Jan '07 F	eb '07	Mar '07	Apr '07 May '07
Performance Budgets Summary Ver 1	Jun 06	Jul 06 Aug 06	Sep 06	Oct 07	NOV U7	Dec 07	3 hrs	57 hrs	war u/	Apr 07 IMay 07
Performance Budgets Summary Ver 2							0 10	07 10		
All-In Science Simulations										
PSF Uniformity & Stability										
NGAO versus Keck AO upgrades TS (meeting 5)								54 hrs	6 hrs	
Keck Interferometer Support TS (m5)				21.6 hrs	39.6 hrs	37.8 hrs	1 hr			
Telescope Wavefront Errors TS						40 hrs				
Free Space vs Fiber TS (m7)							8 hrs	80 hrs	12 hrs	
AO System Functional Requirements Ver 1										34.78 hrs
AO System Functional Requirements Ver 2										
Technology Drivers Summary										
Technical Risk Analysis Ver 1										
Technical Risk Analysis Ver 2										
AO System Architecture										8.88 hrs
Alignment, Calibration, Diagnostics, Metrology and Monitoring										9.7 hrs
Laser Beam Transport				0.77.1	0.771	0.471	7.001	0.451	0.771	14 hrs
Interferometer				6.77 hrs	6.77 hrs	6.47 hrs	7.08 hrs	6.15 hrs	6.77 hrs	1.001
OHANA Designation News ID ISIA								3.2 hrs 26.67 hrs	3.52 hrs	1.28 hrs 28 hrs
Deployable Near-IR IFU								26.67 NIS	29.33 hrs	28 nrs
AO System Test Plan Laser System Test Plan			1							
Science Operations Test Plan		+	+					-		
Science Instruments Test Plan		+	+					+		
System Integration & Test Plans	-		+					-		
Randolph	-		+					-		
Configuration Management Plan	+		+							
Reinig	+		+						35.55 hrs	37.33 hrs
Non-RTC Electronics									00.00 1113	07.00 1110
RTC Architecture Analysis and Design Study	+		+						35.55 hrs	37.33 hrs
RTC Software Module Definition									00.00 1.110	01.0010
RTC Hardware Module Definition										
Stomski										21.6 hrs
AO System Functional Requirements Ver 1										11.6 hrs
AO System Functional Requirements Ver 2										
Laser System Functional Requirements Ver 1										10 hrs
Laser System Functional Requirements Ver 2										
Non-RTC Software										
Laser System Software										
Summers										
AO-Instrument Laser Traffic Control										
Sweeney										
Velur			4 hrs	20 hrs	8 hrs	79.57 hrs	180.68 hrs	31.47 hrs	56.7 hrs	150.28 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)			4 hrs							
Team Meeting #2 (CIT)					8 hrs					
Team Videocon #3						4 hrs				
Team Meeting #4 (Keck)							8 hrs			
Team Videocon #5									4 hrs	
Team Meeting #6 (UCSC)										8 hrs
Team Videocon #7										
Team Retreat #8 (UCSC)			1							
Team Videocon #9			1							
Team Meeting #10 (CIT)			1							
Team Videocon #11			1							
Team Meeting #12 (Keck)			1							
Team Videocon #13			+							
System Design Review Support			+				47.00 ba	16.00	17.83 hrs	0.1 hrs
Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4)			1			17 15 hrs	17.83 hrs 12.85 hrs	16.22 hrs	17.83 nrs	8.1 hrs
LGS WFS Type TS (m4) LGS WFS number of subapertures TS (m4)			1			17.15 hrs 11.43 hrs	8.57 hrs			
Slow WFS TS (m7)			1			11.43 1118	0.07 1118			19.2 hrs
LOWFS Architecture TS	-		+			32 hrs	36.8 hrs	11.2 hrs		13.21115
Number & Type of LOWFS TS (m4)	-		+			32 IIIS 15 hrs	15 hrs	11.21113		
Focus Compensation TS (m6)	+		+			101118	1.62 hrs	4.05 hrs	4.47 hrs	4.25 hrs
Laser Pulse Format TS (m6)	+	+ + + + + + + + + + + + + + + + + + + +	+				80 hrs	7.00 1113	7.77 1115	7.201110
Variable vs fixed LGS Asterism Cost/Benefit TS (m2)	+		+	20 hrs			00 1113			
Laser System Functional Requirements Ver 1	+		+	201115						22 hrs
Laser System Functional Requirements Ver 2	+	+ + + + + + + + + + + + + + + + + + + +	+							
		1	1	l .						
										7.12 hrs
AO System Architecture										7.12 hrs
										7.12 hrs

	Jun '06	Jul '06 Au	ıq '06	Sep '06	Oct '07	Nov '07	Dec '07	Jan '07	Feb '07	Mar '07	Apr '07 May '07
Low Order NGS Wavefront Sensors	Juli 00	301 00 Au	ig oo	оер оо	OCI OI	1400 07	Dec or	Jan 07	1 65 07	iviai 07	Apr 07 IMay 07
Laser System Architecture										30.4 hrs	33.6 hrs
Laser											
Laser Pointing & Diagnostics											28 hrs
Laser Launch Telescope											20 hrs
Cost Estimation van Dam										26.67 hrs	13.33 hrs
AO-Instrument Calibrations										20.07 1115	13.33 1115
AO-Instrument Calibrations AO-Instrument Performance Prediction										13.33 hrs	6.67 hrs
AO-Instrument Real-Time Optimization										13.33 hrs	6.67 hrs
Wizinowich	1.55 hrs	4.05 hrs	4.43 hrs	47.05 hrs	53.05 hrs	40.65 hrs	29.22 hrs	22.48 hrs	90.28 hrs	81.93 hrs	26.18 hrs
SD Phase System Engineering Management Plan				35 hrs							
Mid-year Replan										18 hrs	
FY08 Replan											
Executive Committee Telecons	1.55 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.23 hrs	4.23 hrs	4.05 hrs	4.43 hrs	3.85 hrs	4.23 hrs	4.05 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)				8 hrs							
Team Meeting #2 (CIT)						8 hrs	41				
Team Videocon #3							4 hrs	0 hro			
Team Meeting #4 (Keck) Team Videocon #5								8 hrs		4 hrs	
Team Meeting #6 (UCSC)	1									41115	8 hrs
Team Videocon #7	 										00
Team Retreat #8 (UCSC)	<u> </u>										
Team Videocon #9											
Team Meeting #10 (CIT)											
Team Videocon #11											
Team Meeting #12 (Keck)											
Team Videocon #13											
Report Preparation/Presentation					3.52 hrs	3.52 hrs	3.37 hrs	3.68 hrs	3.2 hrs	3.52 hrs	3.37 hrs
Support Advancement Office											
System Design Report											
Identify Reviewers											
Reviewer Comments Addressed System Design Review Support											
Response to Reviewer Report & Distribution											
Science Requirements Summary Rev 1					20 hrs						
Science Requirements Summary Rev 2									17.15 hrs	2.85 hrs	
Science Requirements Summary Rev 3											
Science Requirements Summary Final											
Development Requirements					4.4 hrs	3.6 hrs					
Observatory Interface Requirements					8 hrs						
Science Operations Requirements					8.8 hrs	7.2 hrs					
Traceability Matrix Rev 2							10.1		24 hrs		
SRD Rev 1						8 hrs	12 hrs		20 h	4 5	
NGAO versus Keck AO upgrades TS (meeting 5) Adaptive Secondary Mirror option TS (m5)									36 hrs	4 hrs 16 hrs	
Keck Interferometer Support TS (m5)					2.4 hrs	4.4 hrs	4.2 hrs	4.6 hrs	4 hrs	0.4 hrs	
System Architecture Ver 1	 				2.71113	7.7115	7.2 1113	7.01115	0.55 hrs	12.22 hrs	7.22 hrs
System Architecture Ver 2	 								2.000		
AO System Architecture											3.55 hrs
Interferometer					1.7 hrs	1.7 hrs	1.62 hrs	1.77 hrs	1.53 hrs	1.7 hrs	
System Design Manual											
WBS and Task Definition					· · · · · · · · · · · · · · · · · · ·			·		· · · · · · · · · · · · · · · · · · ·	
Cost Estimation											
Major Project Milestones											
Develop Full Schedule (MS Project Plan)											
Risk Assessment & Management Plan	1									1E h	
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning) Preliminary Design Phase Plan Version 2	 									15 hrs	
Preliminary Design Phase Plan Final Version	1										
Project Management Plan	 										
SEMP Document	<u> </u>										
Woillez	1								9.6 hrs	10.57 hrs	3.83 hrs
OHANA									9.6 hrs	10.57 hrs	3.83 hrs
Postdoc					165 hrs	165 hrs	251.25 hrs	237.92 hrs	110.83 hrs	80.47 hrs	69.53 hrs
Performance Requirements					91.67 hrs	91.67 hrs					
	<u> </u>										
Observing Scenarios							9.38 hrs	14.38 hrs	1.25 hrs		
Observing Scenarios Science Instrument Requirements							9.38 hrs	14.38 hrs 14.38 hrs	1.25 hrs 1.25 hrs		
Observing Scenarios					73.33 hrs	73.33 hrs			1.25 hrs		

	Jun '06	Jul '06 Au	g '06	Sep '06	Oct '07	Nov '07	Dec '07 J	an '07	Feb '07 N	Mar '07	Apr '07 May '07
Science Instrument Requirements	oun oo	our oo na	9 00	00p 00	00.07	1404 07	18.75 hrs	28.75 hrs	2.5 hrs	viai or	Typi or
Encircled Energy & PSF Performance Requirements							37.5 hrs	57.5 hrs	50 hrs	5 hrs	
Observing Scenarios							0.10.110			12.5 hrs	12.5 hrs
Science Instrument Requirements										12.5 hrs	12.5 hrs
Encircled Energy & PSF Performance Requirements							37.5 hrs	57.5 hrs	50 hrs	5 hrs	12.01.10
Observing Scenarios							07.01110	07.01110	001110	12.5 hrs	12.5 hrs
Science Instrument Requirements										12.5 hrs	12.5 hrs
AO Guide Star Interface										12.01110	12.01110
Science Observations Simulation Tools	+										
Acquisition										10.23 hrs	9.77 hrs
Observing Sequences	+									10.23 hrs	9.77 hrs
Science Data Quality Monitoring	+									10.201110	3.77 1113
Generic Data Products	+										
Science Data Quality Assessment Science Data Archiving											
<u> </u>								26 67 hrs	2 22 hra		
AO-Instrument Observing Modes								36.67 hrs	3.33 hrs		
AO-Instrument Science Acquisition & Control					07.70.1	07.701	07.701	05.071	100.001	07.07.1	101
Student1					97.78 hrs	97.78 hrs	87.78 hrs	95.67 hrs	193.33 hrs	67.67 hrs	10 hrs
Point Source Companion Sensitivity Requirements					48.88 hrs	48.88 hrs	2.22 hrs				
Spectral Sensitivity & Spectral Resolution Requirements					48.88 hrs	48.88 hrs	2.22 hrs	0.001			
Observing Scenarios							16.67 hrs	8.33 hrs			
Science Instrument Requirements							16.67 hrs	8.33 hrs			
Performance Requirements							50 hrs	50 hrs			
Observing Scenarios								2.5 hrs	16.67 hrs	5.83 hrs	
Science Instrument Requirements								2.5 hrs	16.67 hrs	5.83 hrs	
Spatial Resolution Requirements								12 hrs	80 hrs	8 hrs	
Spectral Sensitivity & Spectral Resolution Requirements								12 hrs	80 hrs	8 hrs	
Observing Scenarios										20 hrs	5 hrs
Science Instrument Requirements										20 hrs	5 hrs
Student2					132 hrs	170.1 hrs	236 hrs	207.9 hrs	306.67 hrs	127.33 hrs	20 hrs
Astrometry requirements					66 hrs	66 hrs	18 hrs				
Observing Scenarios						2.85 hrs	15 hrs	7.15 hrs			
Science Instrument Requirements						2.85 hrs	15 hrs	7.15 hrs			
Performance Requirements						13.33 hrs	70 hrs	66.67 hrs			
Observing Scenarios								2.5 hrs	16.67 hrs	5.83 hrs	
Science Instrument Requirements								2.5 hrs	16.67 hrs	5.83 hrs	
Performance Requirements								18 hrs	120 hrs	12 hrs	
Observing Scenarios										20 hrs	5 hrs
Science Instrument Requirements										20 hrs	5 hrs
Companion Sensitivity Performance Requirements					66 hrs	66 hrs	18 hrs				
Observing Scenarios						2.85 hrs	15 hrs	7.15 hrs			
Science Instrument Requirements						2.85 hrs	15 hrs	7.15 hrs			
Contrast Performance Requirements								18 hrs	120 hrs	12 hrs	
Observing Scenarios										20 hrs	5 hrs
Science Instrument Requirements										20 hrs	5 hrs
Polarimetry Performance Requirements						13.33 hrs	70 hrs	66.67 hrs			
Observing Scenarios						10.001113	701/13	2.5 hrs	16.67 hrs	5.83 hrs	
Science Instrument Requirements							+	2.5 hrs	16.67 hrs	5.83 hrs	
Other					5.75 hrs	5.75 hrs	31.95 hrs	35 hrs	108.9 hrs	74.63 hrs	52 hrs
Observing Efficiency					5.75 1115	3.73 1115	01.001110	55 1115	48 hrs	32 hrs	021110
Science Operations Functional Requirements Ver 1									+01115	32 1118	20 hrs
Science Operations Functional Requirements Ver 1 Science Operations Functional Requirements Ver 2									-		201113
OSIRIS Science Operations Functional Requirements Ver 2							26.47 hrs	28.98 hrs	25.2 hrs	3.37 hrs	
					E 7F L	F 7F L			25.2 hrs		
Interferometer					5.75 hrs	5.75 hrs	5.5 hrs	6.02 hrs	5.23 hrs	5.75 hrs	22 hrs
Deployable Near-IR IFU		10 - :					. === :		30.48 hrs	33.52 hrs	32 hrs
Total	6.2 hrs	16.2 hrs	57.07 hrs	214.82 hrs	939.35 hrs	1,488.02 hrs	1,567.57 hrs	1,324.4 hrs	1,594.28 hrs	1,169.9 hrs	1,219.3 hrs

	Jun '07	lul '07	Aug '07 S	Sep '07 (Oct '08	Nov '08 De	ec '08	lan '08 Feb '08	Mar '08 Ar	or '08	Total
Adkins	14.73 hrs	9.02 hrs	9.87 hrs	8.58 hrs	17.85 hrs	36.23 hrs	50 00	4.8 hrs	0.2 hrs	1 00	322.98 hrs
System Design Report								4.8 hrs	0.2 hrs		5 hrs
Observatory Interface Requirements											8 hrs
Observatory Requirements Rev 2											10 hrs
Traceability Matrix Rev 2											8 hrs
Instrument Balance TS											10 hrs
Science Instrument Re-use Cost/Benefit TS (m3)											40 hrs
Science Instruments Function Allocation Ver 1											30 hrs
Science Instruments Function Allocation Ver 2					4.8 hrs	15.2 hrs					20 hrs
OSIRIS											15.98 hrs
Interferometer											15.98 hrs
OHANA											8 hrs
Near-IR Imager											24.02 hrs
Visible Imager	3.88 hrs	4.07 hrs	4.25 hrs	3.7 hrs	4.25 hrs	1.3 hrs					24.03 hrs
Visible IFU		3.52 hrs	3.68 hrs	3.2 hrs	3.68 hrs	1.92 hrs					16 hrs
Deployable Near-IR IFU	10.85 hrs										60 hrs
Thermal Near-IR Imager		1.43 hrs	1.93 hrs	1.68 hrs	1.93 hrs	1.02 hrs					8 hrs
Cost Estimation					3.18 hrs	16.82 hrs					20 hrs
Adkins(IPM)					4.18 hrs	4 hrs	1.82 hrs		40 hrs	4 hrs	84 hrs
SD Phase Contracts Generated											30 hrs
Identify Reviewers					4.18 hrs	4 hrs	1.82 hrs				10 hrs
Review Package Distributed									8 hrs		8 hrs
Reviewer Comments Addressed									16 hrs		16 hrs
System Design Review Support					ĺ				16 hrs		16 hrs
Response to Reviewer Report & Distribution										4 hrs	4 hrs
Ammons											80 hrs
Anchor to LAO Lab Experiments											80 hrs
Bauman	47.77 hrs	38 hrs	11 hrs	8 hrs	21.55 hrs	52.45 hrs	8 hrs	4 hrs	12 hrs		573.98 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)											4 hrs
Team Meeting #2 (CIT)											8 hrs
Team Videocon #3											4 hrs
Team Meeting #4 (Keck)											8 hrs
Team Videocon #5											4 hrs
Team Meeting #6 (UCSC)											8 hrs
Team Videocon #7											4 hrs
Team Retreat #8 (UCSC)		20 hrs									20 hrs
Team Videocon #9			4 hrs								4 hrs
Team Meeting #10 (CIT)				8 hrs							8 hrs
Team Videocon #11						4 hrs					4 hrs
Team Meeting #12 (Keck)							8 hrs				8 hrs
Team Videocon #13								4 hrs			4 hrs
System Design Review Support									12 hrs		12 hrs
Adaptive Secondary Mirror option TS (m5)											24 hrs
Optical Relay TS (m6)											29.98 hrs
Field Rotation Strategy TS (m6)											59.98 hrs
Stand-alone vs DM on T/T Stage TS (m3)											60 hrs
Correcting Fast T/T with DM TS											20 hrs
AO System Functional Requirements Ver 1											25 hrs
AO System Functional Requirements Ver 2					1.8 hrs	13.2 hrs					15 hrs
AO System Architecture	12.45 hrs										40.02 hrs
Field Rotation	7.63 hrs	8 hrs	2 hrs								30 hrs
Optical Relay	9.55 hrs	10 hrs	5 hrs								40 hrs
Optical Switchyard	9.55 hrs				İ						25 hrs
Optical Support Structure					9.85 hrs	5.15 hrs					15 hrs
Tip/Tilt Corrector				+	5.12 hrs	4.88 hrs	+	+			10 hrs
Deformable Mirror	8.58 hrs			+	21.12.1.10	50 10	+	+			50 hrs
Cost Estimation				+	4.78 hrs	25.22 hrs	+	+			30 hrs
Bell					0 0			+			555
Bouchez		20 hrs	20 hrs	18 hrs	40 hrs	4 hrs	4 hrs	4 hrs	4 hrs		310 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)								-			4 hrs
Team Meeting #2 (CIT)				+	+	+	+	+			4 hrs
Team Videocon #3								+			4 hrs
Team Meeting #4 (Keck)	+				+						4 hrs
Team Videocon #5	+				+			<u> </u>			4 hrs
Team Meeting #6 (UCSC)	+				+			<u> </u>			4 hrs
Team Videocon #7					+			+			4 hrs
Team Retreat #8 (UCSC)		20 hrs			+			+			20 hrs
Team Videocon #9		20 1115	4 hrs					+			4 hrs
Team Meeting #10 (CIT)			71113	4 hrs	+			+			4 hrs
Team Videocon #11				71113		4 hrs		+			4 hrs
ream videocom#11						4 1115					4 H/S

September Property		Jun '07	Jul '07	Aug '07	Sep '07	Oct '08	Nov '08 D	ec '08	lan '08 F	eb '08 N	Mar '08 A	pr '08	Total
Spain Disposit Roces Success	Team Meeting #12 (Keck)												4 hrs
Second Registrations									4 hrs				4 hrs
Thought at the control of the contro											4 hrs		4 hrs
December Propose Anglese													16 hrs
Double And Sequent Profession Sequent 15 ms 15 m													
Part Service Services													
A Control Science 15 (1990) A Control Science 15 (1990) A Control Science 17 (1990) A Co				16 hre	1/1 hre								
A				101113	141113								
985 Acceptance Comment 100 Sequellation Comment 100 Sequellation Comment 101 Sequellation Comment 102 Acceptance Comment 103 Acceptance Comment 103 Acceptance Comment 104 Acceptance Comment 105 Acceptance Comment													
1985 1985						20 hrs							20 hrs
### APPS APPS													20 hrs
Tear Note Tear Te			20 hrs	4 hrs	8 hrs		4 hrs	8 hrs	4 hrs				268 hrs
Sear Microscope	Team Meeting #1 (mgmt, science & technical - Irvine)												4 hrs
Topin Marketing of (Pocks)	Team Meeting #2 (CIT)												8 hrs
Team Manager Miles													4 hrs
Team Network (1908)													8 hrs
Total Record Ref (LCSC)													4 hrs
Section Sect													8 hrs
Sean Microscope													4 hrs
Town Meeting #10 (CPT)			20 hrs	4 6									20 hrs
Team Microscop #1				4 nrs	O hr-								
Team Makening #12 (Mode)		+			ช การ		1 hre	-	+		+		8 nrs 4 hrs
February Company Com							41115	8 hre	+		+		8 hrs
Photomatic Accuracy								01113	4 hrs				4 hrs
Astronotic Accuracy 2 292 ftms 2 292 ftm									41110				120 hrs
Cameron	·												60 hrs
Display Display Review Support Display R		22.92 hrs											180 hrs
System Disagn Review Support	Astrometric Accuracy	22.92 hrs											180 hrs
Cheservidary Requirements Rev 2	Chin	0.63 hrs	7.78 hrs	25.55 hrs	22.22 hrs	120.43 hrs	139.85 hrs	24.15 hrs			8 hrs		503 hrs
Dispersing Uptime	System Design Review Support										8 hrs		8 hrs
AO System Functional Requirements Ver 2	Observatory Requirements Rev 2												10 hrs
AD System Functional Requirements Ver 2							28.57 hrs	11.43 hrs					40 hrs
Laser System Functional Requirements Ver 1 2 55 hrs 22 hrs 25 hrs 25 hrs													25 hrs
Laser System Functional Requirements Ver 2						1.8 hrs	13.2 hrs						15 hrs
Non-RYC Electronics													
Liser Pointing & Diagnosities 0.5 hrs			7.701	05.551	00.00.1								
Laser Pointing & Diagnosities		0.40 h	7.78 nrs	25.55 nrs	22.22 nrs	25.55 nrs	18.88 nrs						
Laser Launch Telescope	·												
Personnel and Equipment Safety Systems		0.5 1118											
Aircraft, Satellite & Laser Traffic Control Sately Systems						18 hrs	2 hrs						
Lase System Electronics													20 hrs
AO-Instrument Maintenance Plan AO-Instrument Environment Monitoring Cost Estimation 3.18 hrs 16.82 hrs 20 h Configuration Management Plan Citare Agreement between Sky Coverage Codes Agreement betw								12.73 hrs					70 hrs
AD-instrument Monitoring Cost Estimation Cost Estimation Clare Cost Estimation Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Clare Cost Estimation Cost Estimation Clare Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Estimation Cost Esti													20 hrs
Configuration Management Plan Clare Agreement between Sky Coverage Codes Agreement between Sky Coverage Codes 13.63 hrs 52.43 hrs 19.95 hrs 95.75 hrs 65.37 hrs 39.42 hrs 58.5 hrs 24.85 hrs 52.25 hrs 858.0 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 888.02 hrs 50.25 hrs 50.25 hrs 50.25 hrs 50.25 hrs 888.02 hrs 50.25 hrs 50.													20 hrs
Clare	Cost Estimation					3.18 hrs	16.82 hrs						20 hrs
Agreement between Sky Coverage Codes 13.63 hrs 52.43 hrs 19.95 hrs 95.75 hrs 65.37 hrs 39.42 hrs 58.5 hrs 24.85 hrs 52.25 hrs 8.58 hrs 88.02 hrs SD Phase System Engineering Management Plan SD Phase System Engineering Management Plan SD Phase Contracts Generated Mid-year Replan FY08 Replan FY08 Replan August Engineering Management Plan Executive Committee Telecons 4.05 hrs 4.23 hrs 4.43 hrs 3.85 hrs 4.43 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.23 hrs 4.25 h	Configuration Management Plan					1.63 hrs	8.37 hrs						10 hrs
Dekany 13.63 hrs 52.43 hrs 21.43 hrs 19.95 hrs 95.75 hrs 65.37 hrs 39.42 hrs 58.5 hrs 24.85 hrs 52.25 hrs 8.88 hrs 888.02 hrs SD Phase System Engineering Management Plan 5.07 hrs 5.93 hrs													16 hrs
SD Phase System Engineering Management Plan													16 hrs
SD Phase Contracts Generated 15h 15h 15h 16h		13.63 hrs	52.43 hrs	21.43 hrs	19.95 hrs	95.75 hrs	65.37 hrs	39.42 hrs	58.5 hrs	24.85 hrs	52.25 hrs	8.58 hrs	888.02 hrs
Mid-year Replan FY08 Replan	, , , ,												15 hrs
FY08 Replan Executive Committee Telecons 4.05 hrs 4.23 hrs 4.43 hrs 4.35 hrs 4.43 hrs 4.43 hrs 4.43 hrs 4.43 hrs 4.43 hrs 4.43 hrs 4.43 hrs 4.45 hrs 4.4													15 hrs
Executive Committee Telecons						4.07.1	5.001						8 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)		4.05 h	4.00 5-	4.40 5	2.05.5-			4.05 5	4 40 5	4.05 5	4.05 5	0.50.5	10 hrs
Team Meeting #2 (CIT) 8 h Team Videocon #3 4 h Team Meeting #4 (Keck) 8 h Team Videocon #5 8 h Team Weeting #6 (UCSC) 8 h Team Videocon #7 4 h Team Retreat #6 (UCSC) 20 hrs Team Videocon #9 4 hrs Team Meeting #10 (CIT) 8 hrs Team Wideocon #11 4 hrs Team Meeting #12 (Keck) 8 hrs		4.05 nrs	4.23 nrs	4.43 nrs	3.85 nrs	4.43 nrs	4.23 nrs	4.05 nrs	4.43 nrs	4.05 nrs	4.U5 nrs	U.SS Nrs	
Team Videocon #3 4 h Team Meeting #4 (Keck) 8 h Team Videocon #5 8 h Team Meeting #6 (UCSC) 4 h Team Videocon #7 8 h Team Retreat #8 (UCSC) 20 hrs Team Videocon #9 4 hrs Team Meeting #10 (CIT) 8 hrs Team Wideocon #11 4 hrs Team Meeting #12 (Keck) 8 hrs													
Team Meeting #4 (Keck) 8 h Team Videocon #5 9 h Team Meeting #6 (UCSC) 8 h Team Videocon #7 9 h Team Retreat #8 (UCSC) 20 hrs Team Videocon #9 4 hrs Team Weeting #10 (CIT) 8 hrs Team Videocon #11 4 hrs Team Meeting #12 (Keck) 8 hrs	•												4 hrs
Team Videocon #5 4h Team Meeting #6 (UCSC) 8h Team Videocon #7 9h Team Retreat #8 (UCSC) 20 hrs Team Videocon #9 4hrs Team Meeting #10 (CIT) 8hrs Team Wideocon #11 4 hrs Team Meeting #12 (Keck) 8 hrs		+											8 hrs
Team Meeting #6 (UCSC) 8 h Team Videocon #7 4 h Team Retreat #8 (UCSC) 20 hrs Team Videocon #9 4 hrs Team Meeting #10 (CIT) 8 hrs Team Videocon #11 4 hrs Team Meeting #12 (Keck) 8 hrs	, ,												4 hrs
Team Videocon #7 20 hrs 4 h Team Retreat #8 (UCSC) 20 hrs 20 hr Team Videocon #9 4 hrs 4 hrs Team Meeting #10 (CIT) 8 hrs 8 hrs Team Wideocon #11 4 hrs 4 hrs Team Meeting #12 (Keck) 8 hrs 8 hrs							+		+		+		8 hrs
Team Retreat #8 (UCSC) 20 hrs 20 hr Team Videocon #9 4 hrs 5 4 hrs Team Meeting #10 (CIT) 8 hrs 8 hrs Team Videocon #11 4 hrs 4 hrs Team Meeting #12 (Keck) 8 hrs 8 hrs													4 hrs
Team Videocon #9 4 hrs 4 hr Team Meeting #10 (CIT) 8 hrs 8 hr Team Videocon #11 4 hrs 4 hrs Team Meeting #12 (Keck) 8 hrs 8 hrs			20 hrs										20 hrs
Team Meeting #10 (CIT) 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs 8 hrs				4 hrs									4 hrs
Team Videocon #11 4 hrs 4 hr Team Meeting #12 (Keck) 8 hrs 8 hr					8 hrs								8 hrs
	Team Videocon #11						4 hrs						4 hrs
Team Videocon #13 4 hrs 4 hrs	0 ()							8 hrs					8 hrs
	Team Videocon #13								4 hrs				4 hrs

	Jun '07	Jul '07 Au	ıg '07	Sep '07	Oct '08	Nov '08	Dec '08	Jan '08	Feb '08	Mar '08 Ap	r '08	Total
Report Preparation/Presentation	Juli 07	Jul 07 Au	ig 07	Sep 07	JCI 08	1100 08	Dec 08	Jan 00	- eb 08	iviai 00 jAp	00	15 hrs
Support Advancement Office												
System Design Report									4.8 hrs	0.2 hrs		5 hrs
Identify Reviewers					0.42 hrs	0.4 hrs	0.18 hrs					1 hr
Reviewer Comments Addressed										24 hrs		24 hrs
System Design Review Support										24 hrs		24 hrs
Response to Reviewer Report & Distribution											8 hrs	8 hrs
Agreement between Sky Coverage Codes												12 hrs
Document WFE Budget Rev 1												40 hrs
Document WFE Budget Rev 2												40 hrs
Encircled Energy vs Sky Coverage												40 hrs
Performance Budgets Summary Ver 1												40 hrs
Performance Budgets Summary Ver 2		20 hrs										20 hrs
Optical Relay TS (m6)												29.98 hrs
System Architecture Ver 1												30 hrs
System Architecture Ver 2		7 hrs	13 hrs									20 hrs
AO System Architecture	6.22 hrs											19.98 hrs
Optical Relay	3.37 hrs	1.2 hrs										10.02 hrs
Deformable Mirror												30 hrs
System Design Manual	ļ							20 hrs				20 hrs
WBS and Task Definition				7 hrs	53 hrs	05.001						60 hrs
Cost Estimation	ļ				4.78 hrs	25.22 hrs						30 hrs
Major Project Milestones	1				12.38 hrs	7.62 hrs	10.07					20 hrs
Develop Full Schedule (MS Project Plan)	ļ			4.4.1	40.451	0.73 hrs	19.27 hrs					20 hrs
Risk Assessment & Management Plan				1.1 hrs	10.15 hrs	3.75 hrs						15 hrs
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning)					0.50.5	40.40 h						10 hrs
Preliminary Design Phase Plan Version 2					6.52 hrs	13.48 hrs		40 5				20 hrs
Preliminary Design Phase Plan Final Version Project Management Plan							7.00 h	18 hrs 12.07 hrs				18 hrs
SEMP Document							7.93 hrs	12.07 nrs	16 hrs			20 hrs 16 hrs
Flicker	26 72 hrs	48 hrs	56 hrs	8 hrs	0E 10 hro	8.88 hrs	8 hrs	4 hrs	101115	16 hrs		1,037 hrs
	26.72 hrs	40 1115	20 1118	01115	85.12 hrs	0.00 1115	01115	4 1115		101115		8 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)												
Team Meeting #2 (CIT) Team Videocon #3												8 hrs 4 hrs
Team Meeting #4 (Keck)												8 hrs
Team Videocon #5												4 hrs
Team Meeting #6 (UCSC)												8 hrs
Team Videocon #7												4 hrs
Team Retreat #8 (UCSC)		20 hrs										20 hrs
Team Videocon #9		201110	4 hrs									4 hrs
Team Meeting #10 (CIT)			11110	8 hrs								8 hrs
Team Videocon #11				00		4 hrs						4 hrs
Team Meeting #12 (Keck)							8 hrs					8 hrs
Team Videocon #13								4 hrs				4 hrs
System Design Review Support										16 hrs		16 hrs
Traceability Matrix Rev 2												24 hrs
Tools in place & 1st release												40 hrs
Release updated data (every two months)	4.1 hrs											40.02 hrs
Telescope dynamic performance data												60 hrs
Agreement between Tomography Codes												15 hrs
Anchor to On-sky MGSU Experiments												10 hrs
Anchor to LAO Lab Experiments												40 hrs
Document WFE Budget Rev 2												30 hrs
Photometric Accuracy												60 hrs
Companion Sensitivity												60 hrs
All-In Science Simulations		28 hrs	52 hrs									80 hrs
Other					80 hrs							80 hrs
GLAO for non-NGAO Instruments TS (m5)												20 hrs
Telescope Wavefront Errors TS					· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·						40 hrs
Deformable Mirror Stroke Requirement TS (m6)												50 hrs
Correcting Fast T/T with DM TS					-							20 hrs
LGS Asterism Geometry & Size TS (m2)												20 hrs
Tip/Tilt Corrector					5.12 hrs	4.88 hrs						10 hrs
Deformable Mirror	12.92 hrs											39.98 hrs
Alignment, Calibration, Diagnostics, Metrology and Monitoring	9.7 hrs											30.02 hrs
RTC Architecture Analysis and Design Study	1											40 hrs
AO-Instrument Performance Prediction												60 hrs
AO-Instrument Real-Time Optimization	46.00	40.50	05.66	40.00	00.07		55 101	FC - :	04.55	50.65	0.50	60 hrs
Gavel	13.38 hrs	49.58 hrs	35.08 hrs	19.95 hrs	83.37 hrs	57.77 hrs	55.42 hrs	58.5 hrs	24.85 hrs	52.25 hrs	8.58 hrs	880.03 hrs
SD Phase System Engineering Management Plan												15 hrs

	Jun '07	Jul '07 Aı	ug '07	Sep '07	Oct '08	Nov '08	Dec '08 J	an '08 F	eb '08 M	lar '08 A	pr '08	Total
SD Phase Contracts Generated	3411 07	301 07 A	ag or	Зер <i>01</i>	JC1 00	1404 00	Dec 00 3	an oo n	eb oo iv	iai oo ia	pr 00	15 hrs
Mid-year Replan												8 hrs
FY08 Replan					4.07 hrs	5.93 hrs						10 hrs
Executive Committee Telecons	4.05 hrs	4.23 hrs	4.43 hrs	3.85 hrs	4.43 hrs	4.23 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.05 hrs	0.58 hrs	90 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)												8 hrs
Team Meeting #2 (CIT)												8 hrs
Team Videocon #3												4 hrs
Team Meeting #4 (Keck)												8 hrs 4 hrs
Team Videocon #5 Team Meeting #6 (UCSC)												4 nrs 8 hrs
Team Videocon #7												4 hrs
Team Retreat #8 (UCSC)		20 hrs										20 hrs
Team Videocon #9		201113	4 hrs								-	4 hrs
Team Meeting #10 (CIT)				8 hrs								8 hrs
Team Videocon #11						4 hrs						4 hrs
Team Meeting #12 (Keck)							8 hrs					8 hrs
Team Videocon #13								4 hrs				4 hrs
Report Preparation/Presentation												15 hrs
Support Advancement Office												
System Design Report									4.8 hrs	0.2 hrs		5 hrs
Identify Reviewers					0.42 hrs	0.4 hrs	0.18 hrs					1 hr
Reviewer Comments Addressed					· · · · · · · · · · · · · · · · · · ·					24 hrs		24 hrs
System Design Review Support		_	_	_	· · · · · ·					24 hrs		24 hrs
Response to Reviewer Report & Distribution											8 hrs	8 hrs
Sodium return vs laser format												20 hrs
Agreement between Tomography Codes												10 hrs
Agreement between Sky Coverage Codes												12 hrs
Anchor to LAO Lab Experiments												4 hrs
Encircled Energy vs Sky Coverage												70 hrs
MOAO & MCAO TS												80 hrs
System Architecture Ver 1		71	40.1									30 hrs
System Architecture Ver 2		7 hrs	13 hrs									20 hrs
Technology Drivers Summary		16 hrs	40.05 h									16 hrs
Technical Risk Analysis Ver 1		2.35 hrs	13.65 hrs				16 hro					16 hrs
Technical Risk Analysis Ver 2 AO System Architecture	9.33 hrs						16 hrs					16 hrs 30 hrs
RTC Architecture Analysis and Design Study	9.33 1115							-				20 hrs
System Design Manual								20 hrs				20 hrs
WBS and Task Definition				7 hrs	53 hrs			201110				60 hrs
Cost Estimation				7 10	4.78 hrs	25.22 hrs						30 hrs
Develop Full Schedule (MS Project Plan)						0.73 hrs	19.27 hrs					20 hrs
Risk Assessment & Management Plan				1.1 hrs	10.15 hrs	3.75 hrs						15 hrs
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning)												10 hrs
Preliminary Design Phase Plan Version 2					6.52 hrs	13.48 hrs						20 hrs
Preliminary Design Phase Plan Final Version								18 hrs				18 hrs
Project Management Plan							7.93 hrs	12.07 hrs				20 hrs
SEMP Document									16 hrs			16 hrs
Ireland												40 hrs
Polarimetric Accuracy												40 hrs
Johansson	49.13 hrs	66.77 hrs	48.32 hrs	4.82 hrs	62.43 hrs	74.58 hrs	18.7 hrs			16 hrs		486 hrs
System Design Review Support										16 hrs		16 hrs
Observatory Requirements Rev 2												10 hrs
Observing Uptime						28.57 hrs	11.43 hrs					40 hrs
AO System Functional Requirements Ver 1	ļ											25 hrs
AO System Functional Requirements Ver 2	10 :=:				1.8 hrs	13.2 hrs						15 hrs
AO System Architecture	12.45 hrs	25.21	20.01									40.02 hrs
Non-RTC Software	8 hrs	35.2 hrs	36.8 hrs									80 hrs
RTC Architecture Analysis and Design Study	10 0 hr-	10.7 hrs	4.48 hrs									40 hrs 60 hrs
RTC Software Module Definition RTC Hardware Module Definition	18.8 hrs 6.27 hrs	19.7 hrs 6.57 hrs	4.48 nrs 1.5 hrs									20 hrs
Laser System Software	0.21 HIS	0.37 1118	8111 G.1	-	16.73 hrs	16 hrs	7.27 hrs	+	+			40 hrs
Instrument, AO & Telescope Observer Interfaces	1				10.75 1115	101115	1.21 1115			+	+	20 hrs
AO-Instrument Health Monitoring & Automated Recovery	3.62 hrs	5.3 hrs	5.55 hrs	4.82 hrs	0.72 hrs					+	-	20 hrs
AO-Instrument User Interfaces	3.02 1115	3.3 1115	3.33 1115	4.02 1115	40 hrs						1	40 hrs
Cost Estimation	1				3.18 hrs	16.82 hrs					+	20 hrs
Johnson	4 hrs	17.6 hrs	18.4 hrs		3.25 hrs	17.6 hrs	16.8 hrs	12.35 hrs			-	90 hrs
Non-RTC Software	4 hrs	17.6 hrs	18.4 hrs		5.200		. 5.5 15	555			-	40 hrs
Configuration Management Plan	15		. 5		3.25 hrs	17.6 hrs	16.8 hrs	12.35 hrs	+		-	50 hrs
										0.1		
Kellner	12.93 hrs	11.72 hrs	14.62 hrs	15.37 hrs	17.67 hrs	16.9 hrs	6.62 hrs		1	8 hrs		412.98 hrs

	Jun '07	Jul '07 Au	ug '07	Sep '07	Oct '08	Nov '08	Dec '08	Ian '08	Feb '08	Mar '08 A	pr '08	Total
Rayleigh Rejection TS (m3)	Dail 07	our or	1g 01	OCP 07	001 00	1407 00	DCC 00	iun oo ji	CD 00	iviai oo ji	pr oo	40 hrs
LOWFS Architecture TS												80 hrs
Number & Type of LOWFS TS (m4)												30 hrs
Centroid Anisoplanatism TS (m7)												40 hrs
Focus Compensation TS (m6)												14.98 hrs
Low Order NGS Wavefront Sensors	5.32 hrs	5.57 hrs	5.82 hrs	5.07 hrs	5.82 hrs	5.57 hrs	2.03 hrs					40 hrs
Calibration Wavefront Sensor	5.87 hrs	6.15 hrs	6.43 hrs	5.6 hrs	6.43 hrs	6.15 hrs	2.23 hrs					39.98 hrs
Atmospheric Dispersion Correction			2.35 hrs	4.7 hrs	5.42 hrs	5.18 hrs	2.35 hrs					20 hrs
Laser Beam Transport	0.5 hrs											20 hrs
Laser Pointing & Diagnostics												30 hrs
Laser Launch Telescope	1.25 hrs											50 hrs
Kupke												80 hrs
Anchor to LAO Lab Experiments	4.00.1	00.401	45.00.1	40.451	44.001	47.01	41	41		401		80 hrs
Le Mignant	4.82 hrs	30.12 hrs	15.08 hrs	13.15 hrs	11.22 hrs	47.6 hrs	4 hrs	4 hrs		16 hrs		421.98 hrs
Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT)												4 hrs
3 ()												
Team Videocon #3 Team Meeting #4 (Keck)												4 hrs
Team Videocon #5												4 hrs
												4 hrs
Team Meeting #6 (UCSC) Team Videocon #7	+						+			+		4 hrs
Team Retreat #8 (UCSC)	1	20 hrs					+					20 hrs
Team Videocon #9	1	201113	4 hrs				+					4 hrs
Team Meeting #10 (CIT)	1		41115	4 hrs			+					4 hrs
Team Videocon #11	1			71115		4 hrs	+					4 hrs
Team Meeting #12 (Keck)	1					41115	4 hrs					4 hrs
Team Videocon #13	1						71115	4 hrs				4 hrs
System Design Review Support								71113		16 hrs		16 hrs
Science Operations Requirements										101113		32 hrs
Observatory Requirements Rev 2												16 hrs
Observing Efficiency												20 hrs
Observing Model TS												80 hrs
Science Operations Functional Requirements Ver 1												40 hrs
Science Operations Functional Requirements Ver 2					4.8 hrs	35.2 hrs						40 hrs
AO-Instrument Observing Modes												40 hrs
AO-Instrument Operations Support												20 hrs
AO-Instrument Configuration & Setup		4.82 hrs	5.55 hrs	4.82 hrs	4.82 hrs							20 hrs
AO-Instrument Nighttime Operation Modes	4.82 hrs	5.3 hrs	5.55 hrs	4.33 hrs								20 hrs
Cost Estimation					1.6 hrs	8.4 hrs						10 hrs
Lockwood	14.08 hrs	4 hrs	1 hr		19.72 hrs	10.28 hrs						80 hrs
Field Rotation	3.82 hrs	4 hrs	1 hr									15 hrs
Optical Relay	0.73 hrs											10 hrs
Optical Switchyard	9.55 hrs											25 hrs
Optical Support Structure					19.72 hrs	10.28 hrs						30 hrs
Macintosh												100 hrs
Companion Sensitivity												100 hrs
Max	29.63 hrs	29.98 hrs	14.33 hrs	26.85 hrs	45.48 hrs	21.67 hrs	32.02 hrs	34.73 hrs	27.07 hrs	56.37 hrs	10.58 hrs	611.97 hrs
SD Phase System Engineering Management Plan												15 hrs
Mid-year Replan												6 hrs
FY08 Replan					3.05 hrs	6.95 hrs						10 hrs
Executive Committee Telecons	4.05 hrs	4.23 hrs	4.43 hrs	3.85 hrs	4.43 hrs	4.23 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.05 hrs	0.58 hrs	90 hrs
Science Advisory Committee Telecons	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.23 hrs	2.12 hrs		40.08 hrs
Team Meeting #1 (mgmt, science & technical - Irvine)												8 hrs
Team Meeting #2 (CIT)												8 hrs
Team Videocon #3												4 hrs
Team Meeting #4 (Keck)												8 hrs
Team Videocon #5												4 hrs
Team Meeting #6 (UCSC)												8 hrs
Team Videocon #7	1											4 hrs
Team Retreat #8 (UCSC)		20 hrs										20 hrs
Team Videocon #9	1		4 hrs									4 hrs
Team Meeting #10 (CIT)				8 hrs								8 hrs
Team Videocon #11						4 hrs						4 hrs
Team Meeting #12 (Keck)							8 hrs					8 hrs
Team Videocon #13	0.071	2.52.1	0.001	4.01			1	4 hrs				4 hrs
Report Preparation/Presentation	3.37 hrs	3.52 hrs	3.68 hrs	1.6 hrs			1					40.02 hrs
Support Advancement Office	1								106	0.0 h		
System Design Report	1				0.40	0.4 hrs	0.10		4.8 hrs	0.2 hrs		5 hrs
Identify Reviewers	1				0.42 hrs	U.4 nrs	0.18 hrs			00 5		1 hr
Reviewer Comments Addressed	1									26 hrs		26 hrs

System S		Jun '07	Jul '07 A	ug '07	Sep '07	Oct '08	Nov '08	Dec '08	Jan '08	Feb '08	Mar '08 Apr '08	Total
Section Sequence Informs (No.1) Section Sequence (No.1) Section	System Design Review Support	Juli 07	301 07 A	ag or	Gep or	OCI 00	1407 00	Dec oo	Jan 00	1 60 00		
SECTION SECTION CONTROL SECTION												10 hrs
ACCOUNT ADMINISTRATION ACCOUNT	Science Requirements Summary Rev 1											20 hrs
Score Polyment Springer 19 10 10 10 10 10 10 10	Science Requirements Summary Rev 2											100 hrs
1909 of the Definition 1909 of the Definit		20 hrs										
Control of September 1970 Control of September 1970												
Postering Pauge Proton Reviewant Post Report Charactery FYOR Planting					7 hrs	13 hrs						
Personant Dough Pages Page Version Personant Page Page Version							0.37 hrs	9.63 hrs				
Printing Deep Place Pl												
Property Management Part						6.52 hrs	3.48 hrs		40 5			
SEMPLE POSITION SECTIO								7.00 5				
Magent M								7.93 nrs	12.07 nrs	16 hrc		
Districtor Sequience Rev 2		75 72 hrs	55 12 hrc	25 95 hrs	6 22 hrs	12 27 hrs	26 00 hrs	2.52 brc		101115		
AG Ciscolar Frequenting 15 (ed) Freq Retained Stanger 15 (ed)		75.721115	33.131115	23.03 1115	0.331115	12.27 1115	30.901115	2.55 1115				
First Recover Streety Y 610) A System Fund Requirement Ver 1 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 31 No. 31 A System Fund Requirement Ver 2 32 No. 3												
A D System Fractional Requirements Ver 2 STATES A D SYSTEM STATES A SYSTEM STA	. ,											
A D. Carbourner 200 mm 2												
ABO Forcioscus ABO Forcioscus						1.8 hrs	13.2 hrs					
High Code (LSS) Waveford Sensors	·	30 hrs	31.43 hrs	18.57 hrs								
High Color RGS Wavefront Stances					2.53 hrs	2.92 hrs	2.78 hrs	1.02 hrs				
Low Color NGS Weekford Sensors												
Laper Entisouse 3807 Ms 1678 Ms 1682 Ms 1682 Ms 1			2.78 hrs				2.78 hrs	1.02 hrs				20 hrs
Construction												
System Design Felvine Support	Cost Estimation					3.18 hrs	16.82 hrs					20 hrs
Science Instruments Function Allocation Ver	Moore	53.77 hrs	55.78 hrs	60.63 hrs	52.72 hrs						16 hrs	854.02 hrs
Solence Instruments Function Allocation Ver 2	System Design Review Support										16 hrs	16 hrs
Science Pentruparker Engineeric Allocation Ver 2	Science Instrument Re-use Cost/Benefit TS (m3)											80 hrs
Laser Politring & Disgrossics	Science Instruments Function Allocation Ver 1											
Naine Ri Ringier						14.4 hrs	45.6 hrs					
Visible Imager 28.43 hrs 29.78 hrs 31.13 hrs 27.08 hrs 31.13 hrs 27.08 hrs 19.22 hrs 10.08 hrs 10.02 hrs 54 hrs 10.02 hrs 10.08 hrs 10.00 hrs 54 hrs 10.00 hrs 54 hrs 10.00 hrs 54 hrs 10.00 hrs 54 hrs 10.00 hrs 54 hrs 10.00 hrs 54 hrs 10.00 hrs 54 hrs 10.00 hrs 55 hrs 55 hrs 54 hrs 10.00 hrs 55 hr	ů ů											
Visible (FU												
Deployable Near-IR FU		28.43 hrs										
Thermal Near-R Imager 7.52 hrs 10.17 hrs 8.85 hrs 10.17 hrs 8.85 hrs 10.17 hrs 8.85 hrs 10.17 hr			18.48 hrs	19.32 hrs	16.8 hrs	19.32 hrs	10.08 hrs					
Neyman 73.45 hrs 139.52 hrs 141.32 hrs 37.17 hrs 57.2 hrs 128.33 hrs 68.97 hrs 30.13 hrs 0.37 hrs 26 hrs 1,841.98 hrs Team Meeting # Z (CIT)		25.33 hrs										
Team Meeting #1 (mgm, science & technical - Invine)	•	70 45 has						CO 07 h	20.42 h	0.07 h	00 h	
Team Westing #2 (CIT)		73.45 nrs	139.52 NFS	141.32 nrs	37.17 nrs	57.2 NIS	128.33 NIS	68.97 NFS	30.13 nrs	0.37 nrs	26 nrs	
Team Videocon 45												
Team Westing #4 (Fkg);												
Team Wiseconn #5												
Team Meeting #6 (UCSC)												
Team Nideocon #7												
Team Retreat #8 (UCSC)												
Team Videocon #9			20 hrs									
Team Metering #10 (CIT)	1 .			4 hrs								
Team Meeting #12 (Keck)					8 hrs							
Team Videocon #13	Team Videocon #11						4 hrs					4 hrs
System Design Review Support 26 hrs 26 hrs 26 hrs Development Requirements								8 hrs				8 hrs
Development Requirements Shrs S	Team Videocon #13								4 hrs			
Observatory Interface Requirements											26 hrs	
Observatory Requirements Rev 2	·					·						
Observatory Requirements Rev 3				·		· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·		
Observatory Requirements Rev 4												
Traceability Matrix Rev 1												
Traceability Matrix Rev 2	, .		6 hrs	11.5 hrs	2.5 hrs							
Traceability Matrix Rev 3												
Traceability Matrix Rev 4 20 hrs		00.1										
SRD Rev 2 20 hrs SRD Rev 3 2 hrs 18 hrs 20 hrs SRD Final SD Phase Version 16 hrs 4 hrs 20 hrs Telescope dynamic performance data 60 hrs 60 hrs Telescope static wavefront errors 20 hrs 20 hrs Sodium return vs laser format 20 hrs 20 hrs Agreement between Tomography Codes 40 hrs 40 hrs Anchor to Keck II LGS AO PSFs 40 hrs 60 hrs Photometric Accuracy 60 hrs 60 hrs		20 nrs				00 5						
SRD Rev 3 2 hrs 18 hrs 20 hrs SRD Final SD Phase Version 16 hrs 4 hrs 20 hrs Telescope dynamic performance data 60 hrs 20 hrs Telescope static wavefront errors 50 hrs 20 hrs Sodium return vs laser format 20 hrs 20 hrs Agreement between Tomography Codes 50 hrs 50 hrs Anchor to Keck II LGS AO PSFs 50 hrs 50 hrs Photometric Accuracy 60 hrs 60 hrs						20 nrs						
SRD Final SD Phase Version 16 hrs 4 hrs 20 hrs Telescope dynamic performance data 60 hrs 60 hrs Telescope static wavefront errors 20 hrs 20 hrs Sodium return vs laser format 20 hrs 20 hrs Agreement between Tomography Codes 15 hrs 40 hrs Anchor to Keck II LGS AO PSFs 40 hrs 60 hrs Photometric Accuracy 60 hrs 60 hrs		O hr-	10 hrs									
Telescope dynamic performance data Telescope static wavefront errors Sodium return vs laser format Agreement between Tomography Codes Anchor to Keck II LGS AO PSFs Photometric Accuracy 60 hrs 60 hrs 60 hrs 61 hrs 62 hrs 63 hrs 64 hrs 65 hrs 66 hrs 66 hrs 66 hrs 66 hrs 67 hrs 68 hrs 69 hrs 60 hrs		∠ nrs	18 nrs			16 h	4 hrs					
Telescope static wavefront errors						Slitor	41115					
Sodium return vs laser format 20 hrs Agreement between Tomography Codes 15 hrs Anchor to Keck II LGS AO PSFs 40 hrs Photometric Accuracy 60 hrs												
Agreement between Tomography Codes 15 hrs Anchor to Keck II LGS AO PSFs 40 hrs Photometric Accuracy 60 hrs	·											
Anchor to Keck II LGS AO PSFs 40 hrs Photometric Accuracy 60 hrs												
Photometric Accuracy 60 hrs												
	•											

	Jun '07	Jul '07 A	ug '07	Sep '07 C	Oct '08	Nov '08	Dec '08 J	an '08 F	eb '08	Mar '08 Apr '0	8 Total
Performance Budgets Summary Ver 1	Juli 07	Jul 07	ug 07	зер 07	DCI 08	1100 00	Dec 08	all 00	eb 08	iviai 00 Api 0	60 hrs
Performance Budgets Summary Ver 2		40 hrs									40 hrs
All-In Science Simulations		28 hrs	52 hrs								80 hrs
PSF Uniformity & Stability			53.33 hrs	26.67 hrs							80 hrs
NGAO versus Keck AO upgrades TS (meeting 5)											60 hrs
Keck Interferometer Support TS (m5)											100 hrs
Telescope Wavefront Errors TS											40 hrs
Free Space vs Fiber TS (m7)											100 hrs
AO System Functional Requirements Ver 1											75 hrs
AO System Functional Requirements Ver 2					3 hrs	22 hrs					25 hrs
Technology Drivers Summary		24 hrs									24 hrs
Technical Risk Analysis Ver 1		3.52 hrs	20.48 hrs								24 hrs
Technical Risk Analysis Ver 2							24 hrs				24 hrs
AO System Architecture	15.55 hrs										49.98 hrs
Alignment, Calibration, Diagnostics, Metrology and Monitoring	9.7 hrs										30.02 hrs
Laser Beam Transport	0.88 hrs										35.02 hrs
Interferometer											40 hrs
OHANA Deployable Neer IR IELL	25.33 hrs										8 hrs 140 hrs
Deployable Near-IR IFU AO System Test Plan	25.55 1118				4.63 hrs	15.37 hrs					20 hrs
Laser System Test Plan	+				4.03 1118	9.63 hrs	10.37 hrs		-		20 hrs
Science Operations Test Plan						3.03 1118	13.48 hrs	6.52 hrs			20 hrs
Science Operations Test Plan							10.401113	19.63 hrs	0.37 hrs		20 hrs
System Integration & Test Plans					13.57 hrs	73.33 hrs	13.1 hrs	10.001115	0.37 1118		100 hrs
Randolph					3.25 hrs	16.75 hrs	10.11110				20 hrs
Configuration Management Plan					3.25 hrs	16.75 hrs					20 hrs
Reinig	25.07 hrs	34.05 hrs	31.53 hrs	22.22 hrs	25.55 hrs	18.88 hrs					259.98 hrs
Non-RTC Electronics		7.78 hrs	25.55 hrs	22.22 hrs	25.55 hrs	18.88 hrs					99.98 hrs
RTC Architecture Analysis and Design Study		7.1.0.1.10	20.00 1.10	ZZIZZ IIIO	20.00 10	10.0010					80 hrs
RTC Software Module Definition	6.27 hrs	6.57 hrs	1.5 hrs								20 hrs
RTC Hardware Module Definition	18.8 hrs	19.7 hrs	4.48 hrs								60 hrs
Stomski	8 hrs	35.2 hrs	36.8 hrs		20.33 hrs	42.4 hrs	7.27 hrs				200 hrs
AO System Functional Requirements Ver 1											25 hrs
AO System Functional Requirements Ver 2					1.8 hrs	13.2 hrs					15 hrs
Laser System Functional Requirements Ver 1											25 hrs
Laser System Functional Requirements Ver 2					1.8 hrs	13.2 hrs					15 hrs
Non-RTC Software	8 hrs	35.2 hrs	36.8 hrs								80 hrs
Laser System Software					16.73 hrs	16 hrs	7.27 hrs				40 hrs
Summers					10 hrs						10 hrs
AO Instrument Loggy Troffic Control											101115
AO-Instrument Laser Traffic Control					10 hrs						10 hrs
AO-instrument Laser Traffic Control Sweeney					10 hrs						
Sweeney Velur	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs	10 hrs 23.78 hrs	66.53 hrs	13.57 hrs	4 hrs		16 hrs	
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine)	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT)	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck)	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC)	88.32 hrs	38.17 hrs	20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 8 hrs 8 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7	88.32 hrs		20.02 hrs	21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs 4 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC)	88.32 hrs	38.17 hrs		21.92 hrs		66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 4 hrs 4 hrs 20 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9	88.32 hrs		20.02 hrs 4 hrs			66.53 hrs	13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #9	88.32 hrs			21.92 hrs			13.57 hrs	4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 2 hrs 4 hrs 8 hrs 4 hrs 8 hrs 7 hrs 8 hrs 8 hrs 8 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11	88.32 hrs					66.53 hrs		4 hrs		16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 4 hrs 7 hrs 7 hrs 7 hrs 8 hrs 7 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 8 hrs 7 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck)	88.32 hrs						13.57 hrs			16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 8 hrs 7 hrs 8 hrs 8 hrs 8 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #11	88.32 hrs							4 hrs			10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 20 hrs 4 hrs 4 hrs 5 hrs 4 hrs 5 hrs 4 hrs 5 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 8 hrs 7 hrs 8 hrs 8 hrs 7 hrs 8 hrs 8 hrs 8 hrs 8 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support	88.32 hrs									16 hrs	10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 20 hrs 4 hrs 3 hrs 4 hrs 4 hrs 5 hrs 4 hrs 7 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 8 hrs 16 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 50 hrs 4 hrs 50 hrs 6 hrs 7 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 7 hrs 8 hrs 7 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #1 Team Meeting #12 (Keck) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 16 hrs 8 hrs 3 hrs 3 hrs 3 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamspiliters TS (m6) LGS WFS Type TS (m4) LGS WFS number of subapertures TS (m4)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 6 hrs 4 hrs 16 hrs 8 hrs 20 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 9 hrs 9 hrs 9 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #1 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS number of subapertures TS (m4) Slow WFS TS (m7)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 16 hrs 59.98 hrs 20 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #1 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS Type TS (m7) LOWFS Architecture TS	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 5 hrs 7 hrs 7 hrs 8 hrs 7 hrs 8 hrs 9 hrs 9 hrs 9 hrs 9 hrs 16 hrs 59.98 hrs 20 hrs 80 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #1 Team Meeting #12 (Keck) Team Videocon #11 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS TS (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 50 hrs 4 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs 50 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS Ts (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Focus Compensation TS (m6)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 5 hrs 4 hrs 20 hrs 5 hrs 5 hrs 5 hrs 6 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 9 hrs 9 hrs 16 hrs 17 hrs 18 hrs 18 hrs 18 hrs 19 hrs 19 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS Ts (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Focus Compensation TS (m6) Laser Pulse Format TS (m6)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 5 hrs 4 hrs 20 hrs 6 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 7 hrs 8 hrs 9 hrs 9 hrs 16 hrs 16 hrs 16 hrs 17 hrs 18 hrs 18 hrs 19 hrs 19 hrs 10 hrs 11 hrs 11 hrs 12 hrs 13 hrs 14 hrs 15 hrs 16 hrs 16 hrs 17 hrs 18 hrs 18 hrs 18 hrs 18 hrs 18 hrs 18 hrs 18 hrs 18 hrs 18 hrs 18 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #1 Team Meeting #12 (Keck) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #11 Team Weeting #10 (CIT) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS Tymber of subapertures TS (m4) Slow WFS TS (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Focus Compensation TS (m6) Laser Pulse Format TS (m6) Variable vs fixed LGS Asterism Cost/Benefit TS (m2)	88.32 hrs										10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 7 hrs 9 hrs 16 hrs 8 hrs 9 hrs 16 hrs 16 hrs 59.98 hrs 20 hrs 80 hrs 14.98 hrs 14.98 hrs 14.98 hrs 14.98 hrs 16 hrs 15 hrs 16 hrs 17 hrs 18 hrs 19 hrs 19 hrs 19 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs 10 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #11 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS TS (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Focus Compensation TS (m6) Laser Pulse Format TS (m6) Variable vs fixed LGS Asterism Cost/Benefit TS (m2) Laser System Functional Requirements Ver 1	88.32 hrs				23.78 hrs	4 hrs					10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 20 hrs 4 hrs 8 hrs 4 hrs 30 hrs 30 hrs 80 hrs 30 hrs 31 4.98 hrs 32 hrs 330 hrs 55 hrs 55 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #1 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS Ts (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Focus Compensation TS (m6) Laser Pulse Format TS (m6) Variable vs fixed LGS Asterism Cost/Benefit TS (m2) Laser System Functional Requirements Ver 1 Laser System Functional Requirements Ver 2											10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 10 hrs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #11 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS TS (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Focus Compensation TS (m6) Laser Pulse Format TS (m6) Variable vs fixed LGS Asterism Cost/Benefit TS (m2) Laser System Functional Requirements Ver 1	12.45 hrs		4 hrs	8 hrs	23.78 hrs	4 hrs					10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 59.98 hrs 30 hrs 80 hrs 14.98 hrs 15.56 hrs 40 brs 40 brs 40 brs
Sweeney Velur Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT) Team Videocon #3 Team Meeting #4 (Keck) Team Videocon #5 Team Meeting #6 (UCSC) Team Videocon #7 Team Retreat #8 (UCSC) Team Videocon #9 Team Meeting #10 (CIT) Team Videocon #11 Team Meeting #12 (Keck) Team Videocon #13 System Design Review Support Dichroics & Beamsplitters TS (m6) LGS WFS Type TS (m4) LGS WFS TS (m7) LOWFS Architecture TS Number & Type of LOWFS TS (m4) Fous Compensation TS (m6) Laser Pulse Format TS (m6) Laser System Functional Requirements Ver 1 Laser System Functional Requirements Ver 2 AO System Architecture		20 hrs			23.78 hrs	4 hrs	8 hrs				10 hrs 1,048.97 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 8 hrs 4 hrs 20 hrs 4 hrs 8 hrs 4 hrs 16 hrs 20 hrs 30 hrs 30 hrs 20 hrs 30 hrs 20 hrs 55 hrs 25 hrs

	Jun '07	Jul '07 Au	ıg '07	Sep '07	Oct '08	Nov '08	Dec '08	Jan '08	Feb '08	Mar '08	Apr '08	Total
Low Order NGS Wavefront Sensors	2.65 hrs		2.92 hrs	2.53 hrs	2.92 hrs	2.78 hrs	1.02 hrs	Jan 00	1 65 00	IVIAI OO	Арг 00	20 hrs
Laser System Architecture												80 hrs
Laser	60 hrs	2.85 hrs										100 hrs
Laser Pointing & Diagnostics												40 hrs
Laser Launch Telescope	1.25 hrs				4 70 hrs	25.22 hrs						50 hrs
Cost Estimation van Dam	4.82 hrs	5.3 hrs	5.55 hrs	4.33 hrs	4.78 hrs	25.22 1115						30 hrs 60 hrs
AO-Instrument Calibrations	4.82 hrs	5.3 hrs	5.55 hrs	4.33 hrs								20 hrs
AO-Instrument Performance Prediction	4.02 1110	0.0 1110	0.00 1113	4.001113								20 hrs
AO-Instrument Real-Time Optimization												20 hrs
Wizinowich	33.63 hrs	34.77 hrs	25.12 hrs	26.95 hrs	108.02 hrs	63.07 hrs	60.07 hrs	92.5 hrs	55.23 hrs	58.87 hrs	10.58 hrs	992.02 hrs
SD Phase System Engineering Management Plan												35 hrs
Mid-year Replan												18 hrs
FY08 Replan					9.17 hrs	10.83 hrs						20 hrs
Executive Committee Telecons	4.05 hrs	4.23 hrs	4.43 hrs	3.85 hrs	4.43 hrs	4.23 hrs	4.05 hrs	4.43 hrs	4.05 hrs	4.05 hrs	0.58 hrs	90 hrs
Team Meeting #1 (mgmt, science & technical - Irvine) Team Meeting #2 (CIT)												8 hrs
Team Videocon #3												4 hrs
Team Meeting #4 (Keck)												8 hrs
Team Videocon #5	<u> </u>											4 hrs
Team Meeting #6 (UCSC)												8 hrs
Team Videocon #7												4 hrs
Team Retreat #8 (UCSC)		20 hrs										20 hrs
Team Videocon #9			4 hrs									4 hrs
Team Meeting #10 (CIT)	ļ			8 hrs								8 hrs
Team Videocon #11						4 hrs	0.5					4 hrs
Team Meeting #12 (Keck) Team Videocon #13							8 hrs	4 hrs				8 hrs 4 hrs
Report Preparation/Presentation	3.37 hrs	3.52 hrs	3.68 hrs	3.2 hrs	3.68 hrs	3.52 hrs	1.2 hrs	4 1115				50.02 hrs
Support Advancement Office	3.37 1113	3.32 1113	3.00 1113	3.2 1113	3.001113	3.32 1113	1.21113					30.02 1113
System Design Report									19.18 hrs	0.82 hrs		20 hrs
Identify Reviewers					0.83 hrs	0.8 hrs	0.37 hrs					2 hrs
Reviewer Comments Addressed										30 hrs		30 hrs
System Design Review Support										24 hrs		24 hrs
Response to Reviewer Report & Distribution											10 hrs	10 hrs
Science Requirements Summary Rev 1												20 hrs
Science Requirements Summary Rev 2	001											20 hrs
Science Requirements Summary Rev 3 Science Requirements Summary Final	20 hrs			4.17 hrs	15.83 hrs							20 hrs 20 hrs
Development Requirements				4.17 1115	15.65 1118							8 hrs
Observatory Interface Requirements												8 hrs
Science Operations Requirements												16 hrs
Traceability Matrix Rev 2												24 hrs
SRD Rev 1												20 hrs
NGAO versus Keck AO upgrades TS (meeting 5)												40 hrs
Adaptive Secondary Mirror option TS (m5)												16 hrs
Keck Interferometer Support TS (m5)												20 hrs
System Architecture Ver 1		71	40.1									19.98 hrs
System Architecture Ver 2 AO System Architecture	6.22 hrs	7 hrs	13 hrs									20 hrs 19.98 hrs
Interferometer	0.ZZ 11FS											19.98 hrs
System Design Manual	+							40 hrs				40 hrs
WBS and Task Definition	1			7 hrs	53 hrs			.00				60 hrs
Cost Estimation					1.6 hrs	8.4 hrs						10 hrs
Major Project Milestones					6.2 hrs	3.8 hrs						10 hrs
Develop Full Schedule (MS Project Plan)						1.47 hrs	38.53 hrs					40 hrs
Risk Assessment & Management Plan				0.73 hrs	6.77 hrs	2.5 hrs						10 hrs
Preliminary Design Phase Plan Version 1 (to Support Observatory FY08 Planning)	1				0 = 2 :	00 101						15 hrs
Preliminary Design Phase Plan Version 2	1				6.52 hrs	23.48 hrs		00 h				30 hrs
Preliminary Design Phase Plan Final Version Project Management Plan	 						7.93 hrs	32 hrs 12.07 hrs				32 hrs 20 hrs
SEMP Document	-						7 .85 III S	12.07 11[S	32 hrs			32 hrs
Woillez	+								32 1113			24 hrs
OHANA	1											24 hrs
Postdoc	1	5.3 hrs	5.55 hrs	4.82 hrs	53.27 hrs	46.42 hrs	4.65 hrs					1,260 hrs
Performance Requirements					-							250 hrs
Observing Scenarios												25.02 hrs
Science Instrument Requirements												25.02 hrs
Encircled Energy (& d-IFU) Performance Requirements	1											200 hrs
Observing Scenarios	L											50 hrs

	Jun '07	Jul '07	Aua '07	Sep '07	Oct '08	Nov '08	Dec '08	Jan '08	Feb '08	Mar '08	Apr '08	Total
Science Instrument Requirements												50 hrs
Encircled Energy & PSF Performance Requirements												150 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Encircled Energy & PSF Performance Requirements												150 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
AO Guide Star Interface												20 hrs
Science Observations Simulation Tools												40 hrs
Acquisition												20 hrs
Observing Sequences					5.401	40.001	4.051					20 hrs
Science Data Quality Monitoring					5.12 hrs	10.23 hrs						20 hrs
Generic Data Products					10.95 hrs	9.05 hrs						20 hrs
Science Data Quality Assessment					10.95 hrs	9.05 hrs						20 hrs
Science Data Archiving					21.9 hrs	18.1 hrs						40 hrs
AO-Instrument Observing Modes												40 hrs
AO-Instrument Science Acquisition & Control		5.3 hrs	5.55 hrs	4.82 hrs	4.33 hrs							20 hrs
Student1												650.02 hrs
Point Source Companion Sensitivity Requirements												99.98 hrs
Spectral Sensitivity & Spectral Resolution Requirements												99.98 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Performance Requirements												100 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Spatial Resolution Requirements												100 hrs
Spectral Sensitivity & Spectral Resolution Requirements												100 hrs
Observing Scenarios												25 hrs
												25 hrs
Science Instrument Requirements Student2												1,200 hrs
Astrometry requirements												150 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Performance Requirements												150 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Performance Requirements												150 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Companion Sensitivity Performance Requirements												150 hrs
Observing Scenarios												25 hrs
Science Instrument Requirements												25 hrs
Contrast Performance Requirements										1		150 hrs
Observing Scenarios										1		25 hrs
Science Instrument Requirements	+											25 hrs
Polarimetry Performance Requirements												150 hrs
Observing Scenarios	+	-								+		25 hrs
Science Instrument Requirements			-							+	-	25 hrs
	28.95 hrs	1	1		705	E2 0	1		1	+	1	477.98 hrs
Other Observing Efficiency	∠8.95 nrs	1	1		7.2 hrs	52.8 hrs			1	+	1	
Observing Efficiency			ļ								ļ	80 hrs
Science Operations Functional Requirements Ver 1												60 hrs
Science Operations Functional Requirements Ver 2					7.2 hrs	52.8 hrs						60 hrs
OSIRIS												84.02 hrs
Interferometer												34 hrs
Deployable Near-IR IFU	28.95 hrs											160 hrs
Total	646.1 hrs	808.22 hrs	647.05 hrs	349.33 hrs	1,023.92 hrs	1,103.82 hrs	383.98 hrs	310.72 hrs	137.17 hrs	397.93 hrs	42.33 hrs	16,724.92 hrs