

TPC LSST Camera - May 2019

TPC - Large Synoptic Survey Telescope Camera Project May 2019 - Cost/Schedule Status Report								
Performance Data								
Control Account	Cumulative to Date					At Completion		
	Budgeted Cost		Actual Cost Work Performed	Variance		Budgeted	Estimate	Variance
	Work Scheduled	Work Performed		Schedule	Cost			
3.01.01 Project Management	7,748,945	7,748,945	7,759,170	0	-10,224	8,759,457	8,863,919	-104,462
3.01.02 Project Support	3,698,012	3,698,012	3,778,226	0	-80,215	3,989,536	4,088,453	-98,917
3.01.03 Performance Safety & Assurance	2,275,017	2,275,017	1,548,415	0	726,601	2,476,127	1,797,502	678,624
3.02.01 Systems Engineering	7,136,279	7,136,279	6,821,211	0	315,068	7,830,231	7,540,046	290,184
3.02.02 System Integration & Analysis	1,376,477	1,303,290	1,302,007	-73,187	1,283	1,477,380	1,486,152	-8,772
3.03.01 Science Sensors Integration & Management	2,413,812	2,413,812	2,281,647	0	132,165	2,419,375	2,294,390	124,985
3.03.02.01 Science Sensors Prototype & Development	2,867,081	2,867,081	2,950,199	0	-83,118	2,867,081	2,950,199	-83,118
3.03.02.02 Science Sensors Procurement	27,260,138	27,260,138	27,121,979	0	138,159	27,260,138	27,121,979	138,159
3.03.02.03 Science Sensors Acceptance	636,095	636,095	424,212	0	211,884	636,095	424,212	211,884
3.03.03 Science Sensors Test Stands	828,648	828,648	997,237	0	-168,589	828,648	997,237	-168,589
3.04.01.01 Science Raft System Integration & Management	4,650,247	4,650,247	4,539,723	0	110,525	4,698,433	4,615,913	82,520
3.04.01.02 Science Raft Tower Module (SRTM)	2,526,531	2,526,531	3,257,042	0	-730,512	2,526,531	3,257,042	-730,512
3.04.01.03 Science Raft Electronics	2,469,770	2,469,770	2,898,850	0	-429,080	2,469,770	2,910,244	-440,474
3.04.01.04 Science Raft Optimization And Readout (ROAR)	1,134,026	1,134,026	870,447	0	263,579	1,134,026	870,447	263,579
3.04.01.05 Science Raft Test Stands (Dev & Commissioning)	1,797,381	1,797,381	2,111,614	0	-314,233	1,797,381	2,111,614	-314,233
3.04.01.06 Science Raft Production Assembly and Test	4,027,747	3,973,974	2,426,793	-53,773	1,547,181	4,038,723	2,829,197	1,209,525
3.04.01.07 Assembly and Test Facility	842,375	842,375	900,604	0	-58,229	842,375	900,604	-58,229
3.04.02.01 Corner Raft System Integration and Management	1,183,459	1,183,459	1,227,527	0	-44,068	1,183,459	1,227,527	-44,068
3.04.02.02 Corner Raft Tower Module (CRTM)	1,360,339	1,320,572	1,400,922	-39,767	-80,349	1,360,339	1,450,259	-89,920
3.04.02.03 Corner Raft Sensor Assembly	2,954,427	2,932,676	2,706,212	-21,750	226,465	2,954,427	2,730,511	223,915
3.04.02.04 Corner Raft Electronics	1,443,325	1,443,325	1,412,898	0	30,427	1,443,325	1,412,898	30,427
3.04.02.05 Corner Raft Assembly and Test Station	122,573	122,573	127,103	0	-4,530	122,573	127,103	-4,530
3.05.01 Optics Integration & Management	2,146,712	2,146,712	2,030,860	0	115,852	2,308,419	2,259,726	48,693
3.05.02 Filters	5,279,072	4,607,838	4,727,299	-671,235	-119,461	6,717,533	6,864,753	-147,220
3.05.03 L1-L2 Assembly	15,699,651	14,632,442	13,953,502	-1,067,209	678,941	15,699,651	15,536,262	163,390
3.05.04 L3 Assembly	3,368,591	2,992,624	2,758,467	-375,966	234,157	3,368,591	3,417,134	-48,543
3.06.01.01 Camera Body Integration & Management	372,966	372,966	431,436	0	-58,469	372,966	442,961	-69,994
3.06.01.02 Camera Body Development	2,021,698	1,898,840	2,697,231	-122,857	-798,391	2,021,698	2,805,271	-783,573
3.06.02.01 Shutter Integration & Management	199,110	199,110	160,839	0	38,270	199,110	170,776	28,334
3.06.02.02 Shutter Development	2,830,551	2,522,698	3,421,153	-307,852	-898,455	2,830,551	3,635,424	-804,873
3.06.04.01 Cryostat Integration & Management	2,696,397	2,696,397	2,631,788	0	64,609	2,696,397	2,631,788	64,609
3.06.04.02 Cryostat Housing & Assembly	1,086,468	1,086,468	1,593,661	0	-507,193	1,086,468	1,593,661	-507,193
3.06.04.03 Cryo and Cold Plates	1,416,116	1,416,116	2,086,020	0	-669,904	1,416,116	2,086,020	-669,904
3.06.04.04 Grid Assembly	1,940,809	1,940,809	2,234,729	0	-293,920	1,940,809	2,234,729	-293,920
3.06.04.05 Cryostat Backend & Vacuum Systems	1,342,496	1,347,626	1,757,902	5,130	-410,275	1,348,475	1,758,751	-410,275
3.06.04.06 Refrigeration System	7,801,469	7,575,261	8,455,246	-226,208	-879,985	7,905,889	8,587,868	-681,979
3.06.05.01 Utility Trunk Integration & Management	193,897	193,897	163,155	0	30,742	193,897	163,155	30,742

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3.06.05.02 Utility Trunk Thermo-Mechanical and Assembly	1,191,119	755,889	980,917	-435,230	-225,028	1,191,119	1,337,122	-146,002
3.07.01.01 CCS Integration & Management	982,807	982,807	931,471	0	51,336	1,083,374	1,105,359	-21,984
3.07.01.02 CCS Core	1,784,281	1,846,054	1,888,126	61,773	-42,072	2,127,699	2,015,296	112,403
3.07.01.03 CCS HCU	1,843,440	1,646,801	1,933,568	-196,639	-286,767	1,843,440	2,093,942	-250,502
3.07.02.01 DAQ Integration & Management	1,050,212	1,050,212	1,258,966	0	-208,754	1,079,615	1,275,095	-195,480
3.07.02.02 DAQ Hardware and Software	4,607,064	4,251,230	4,752,417	-355,834	-501,187	4,608,259	4,946,419	-338,160
3.07.03.01 Aux Elec Integration & Management	241,321	241,321	221,125	0	20,196	241,321	232,630	8,691
3.07.03.02 Aux Elec Components	2,057,155	2,048,114	2,916,380	-9,041	-868,266	2,057,155	3,003,434	-946,280
3.08.01 I&T Integration & Management	2,384,027	2,384,027	2,344,568	0	39,459	3,574,389	3,435,348	139,041
3.08.02 Verification Test Systems	2,886,693	2,775,731	2,927,147	-110,963	-151,417	2,886,693	3,020,318	-133,625
3.08.03 Cryostat I&T	2,050,296	1,738,235	1,997,347	-312,061	-259,112	2,709,958	3,082,244	-372,286
3.08.04 Camera I&T	1,555,972	1,246,434	1,741,001	-309,538	-494,567	2,107,359	2,285,843	-178,484
3.08.05 Transportation & Storage Equipment	12,920	12,920	0	0	12,920	12,920	0	12,920
3.08.06 Commissioning Camera	1,555,621	1,542,680	1,308,151	-12,941	234,529	1,555,621	1,364,139	191,483
Sub Total	153,351,635	148,716,486	153,168,509	-4,635,148	-4,452,022	160,300,922	165,392,916	-5,091,994
Contingency						7,699,078	2,607,084	5,091,994
Total	153,351,635	148,716,486	153,168,509	-4,635,148	-4,452,022	168,000,000	168,000,000	0

		Percent Complete	92.8%	
SPI	CPI	Contingency %	5%	2%
0.97	0.97	Contingency % Remaining	66%	21%
		Calculation Method	Contingency/ (BAC-BCWP)	Contingency/ (ETC)