

Fine Tuning ACP Dusk and Dawn Flats

ACP Dusk Flat ADU Acceleration Constant = 1.05
Start at Sun Elevation = -0.8 degrees

Ha	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	3	22:46:03	38459		
	2	3	22:46:15	37882	1	1.01523151
	3	3	22:45:27	38095	1	0.99440872
	4	3	22:46:36	37596	1	1.01327269
	5	3.02	22:46:46	37371	1.006667	1.00602071
	6	3.05	22:46:55	37247	1.009934	1.00332913
	7	3.1	22:47:08	37108	1.016393	1.00374582
	8	3.16	22:47:21	37072	1.019355	1.00097108
	9	3.22	22:47:30	37232	1.018987	0.99570262
	10	3.27	22:47:47	37361	1.015528	0.9965472
					Average	1.009652 1.00324772

Red	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	3.04	23:02:42	36438		
	2	3.15	23:02:54	35957	1.036184	1.01337709
	3	3.31	23:03:06	36388	1.050794	0.98815544
	4	3.44	23:03:16	36131	1.039275	1.00711301
	5	3.6	23:03:26	36146	1.046512	0.99958502
	6	3.76	23:03:36	36080	1.044444	1.00182927
	7	3.94	23:03:46	36134	1.047872	0.99850556
	8	4.12	23:03:56	36061	1.045685	1.00202435
	9	4.32	23:04:07	35958	1.048544	1.00286445
	10	4.54	23:04:21	35533	1.050926	1.01196071
					Average	1.045582 1.00282388

Green	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	5.52	23:04:42	35483		
	2	5.88	23:04:56	35708	1.065217	0.99369889
	3	6.22	23:05:08	35855	1.057823	0.99590015
	4	6.56	23:05:21	35771	1.054662	1.00234827
	5	6.93	23:05:35	35719	1.056402	1.00145581
	6	7.33	23:05:47	35742	1.05772	0.9993565
	7	7.75	23:06:00	35703	1.057299	1.00109235
	8	8.21	23:06:14	35676	1.059355	1.00075681
	9	8.7	23:06:33	35029	1.059683	1.01847041
	10	9.39	23:06:47	35381	1.07931	0.99005116
					Average	1.06083 1.00034782

Blue	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	8.36	23:07:40	35660		
	2	8.86	23:07:55	35451	1.059809	1.00589546
	3	9.45	23:08:11	35353	1.066591	1.00277204
	4	10	23:08:31	34523	1.058201	1.02404194
	5	10	23:08:47	32534	1	1.06113604
	6	10	23:09:04	30604	1	1.06306365
	7	Sky too Dark			1.061534	1.06209985
	8	Sun elevation now at -5.6 degrees			1.061817	
	9					
	10					

1/8/2011

ACP Dawn Flat ADU Acceleration Constant = 0.95
Starts at Elevation -5.3 Degrees

Blue	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	10	11:47:28	34279		
	2	9.98	11:47:44	36289		
	3	9.41	11:48:03	36500	0.998	1.058636
	4	8.82	11:48:24	37313	0.942886	1.005814 increasing ADU
	5	8.08	11:48:40	36553	0.937301	1.022274
	6	7.56	11:48:54	36342	0.9161	0.979632
	7	7.11	11:49:08	36242	0.935644	0.994228
	8	6.71	11:49:28	37048	0.940476	0.997248
	9	6.19	11:49:42	36297	0.943741	1.022239 reset/increasing ADU
	10	5.83	11:49:55	36040	0.922504	0.979729
					0.941842	0.99292
					0.942055	1.005858

Green	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	6.19	11:50:44	35120		
	2	6.03	11:50:58	35994	0.974152	1.024886
	3	5.73	11:51:10	36040	0.950249	1.001278 increasing ADU
	4	5.44	11:51:23	36173	0.949389	1.00369
	5	5.14	11:51:40	36656	0.944853	1.013353
	6	4.8	11:51:52	36189	0.933852	0.98726 reset/increasing ADU
	7	4.54	11:52:04	36037	0.945833	0.9958
	8	4.31	11:52:16	35990	0.949339	0.998696
	9	4.1	11:52:28	35982	0.951276	0.999778
	10	3.9	11:52:39	35957	0.95122	0.999305

Red	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	3	11:53:12	36429		
	2	3	11:53:23	37997	1	1.043043 0.958734
	3	3	11:53:33	39340	1	1.035345 0.965862
	4	3	11:53:42	40789	1	1.036833 0.964476
	5	Sky is too Bright!				0.963024 Actual ADU Acceleration
	6					
	7					
	8					
	9					
	10					

Ha	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	10	11:58:58	34230		
	2	9.99	11:59:15	35776	0.999	1.045165
	3	9.55	11:59:33	35770	0.955956	0.999832
	4	9.13	11:59:56	36423	0.956021	1.018256
	5	8.57	12:00:12	35800	0.938664	0.982895
	6	8.19	12:00:27	35695	0.955659	0.997067
	7	7.85	12:00:44	35805	0.958486	1.003082
	8	7.5	12:00:59	35645	0.955414	0.995531
	9	7.2	12:01:13	35503	0.96	0.996016
	10	6.94	12:01:27	35483	0.963889	0.999437
					0.960343	1.004142

Finish Sun Elevation -2.3 degrees

1/8/2011

ACP Dusk Flat ADU Acceleration Constant = 1.05
Start at Sun Elevation = -0.8 degrees

Ha	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	3	22:46:49	38504		
	2	3		38128	1	1.009862
	3	3		38258	1	0.996602
	4	3		37912	1	1.009126
	5	3		37501	1	1.01096
	6	3.02		37170	1.006667	1.008905
	7	3.07		37166	1.016556	1.000108
	8	3.12		37243	1.016287	0.997932
	9	3.17		37242	1.016026	1.000027
	10	3.22	22:48:07	37230	1.015773	1.000322
					Average	1.014262 1.00376

Red	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	3	23:01:28	38126		
	2	3		37330	1	1.021323
	3	3.04		37204	1.013333	1.003387
	4	3.09		36960	1.016447	1.006602
	5	3.16		36829	1.022654	1.003557
	6	3.24		36996	1.025316	0.995486
	7	3.31		36700	1.021605	1.008065
	8	3.41		36940	1.030211	0.993503
	9	3.49		37273	1.02346	0.991066
	10	3.54	23:02:47	36755	1.014327	1.014093
					Average	1.018595 1.00412

Green	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	3.79	23:03:05	36212		
	2	3.96		36517	1.044855	0.991648
	3	4.1		36502	1.035354	1.000411
	4	4.25		36551	1.036585	0.998659
	5	4.4		36572	1.035294	0.999426
	6	4.55		36416	1.034091	1.004284
	7	4.72		36386	1.037363	1.000824
	8	4.9		36345	1.038136	1.001128
	9	5.1		36417	1.040816	0.998023
	10	5.29	23:04:31	36440	1.037255	0.999369
					Average	1.03775 0.999308

Blue	Count	Exp Time	Time	ADU	T2/T1	ADU1 / ADU2
	1	4.06	23:05:12	36388		
	2	4.22		36296	1.039409	1.002535
	3	4.39		36288	1.040284	1.00022
	4	4.57		36276	1.041002	1.000331
	5	4.76		36307	1.041575	0.999146
	6	4.96		36197	1.042017	1.003039
	7	5.18		36283	1.044355	0.99763
	8	5.4		36333	1.042471	0.998624
	9	5.62		36215	1.040741	1.003258
	10	5.87	23:06:44	36137	1.044484	1.002158
					1.041815	

End Elevation -5.0 degrees

Average ADU Acceleration for All filters = 1.04447

Use = 1.045

Average ADU Acceleration for All filters = 0.95416

Use = 0.955

Changes to Autoflatconfig.txt

Previously

Notes

TargetBackgroundADU	38000	36000	allows to start earlier for both Ha and Red
TargetADUTolerance	2000	4000	~5% tolerance, mostly well within
MinExposure	3	3	don't want to decrease prevent shutter vane pattern.
MaxExposure	15	10	allows to run later for dusk and start earlier for dawn.
TwilightSunLo	-9	-9	
TwilightSunHi	0	2	starts dusk flats closer to actual times.
ADUAcceleration_AM	0.955	0.95	
ADUAcceleration_PM	1.045	1.05	