

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 6120 - L2 Version 4
Chandra X-Ray Center

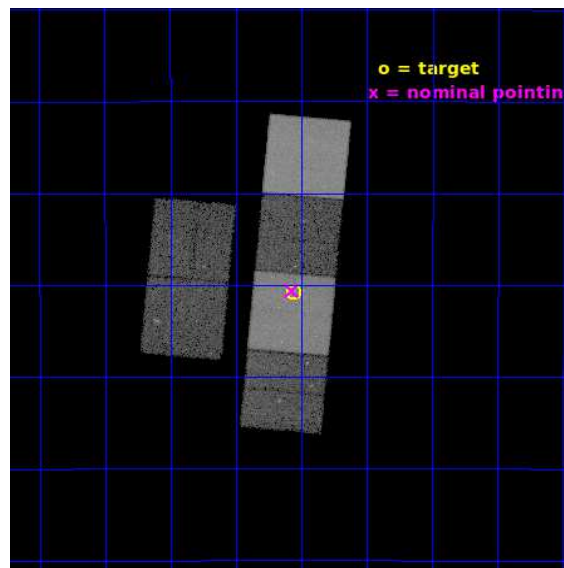
L2 Processing Date : Oct 8 2020

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.5	FID Slots	13
2.5.1	Slot 0	13
2.5.2	Slot 1	14
2.5.3	Slot 2	15
A	Summary	16
A.1	Status	16
A.2	Comments	16

1 Front

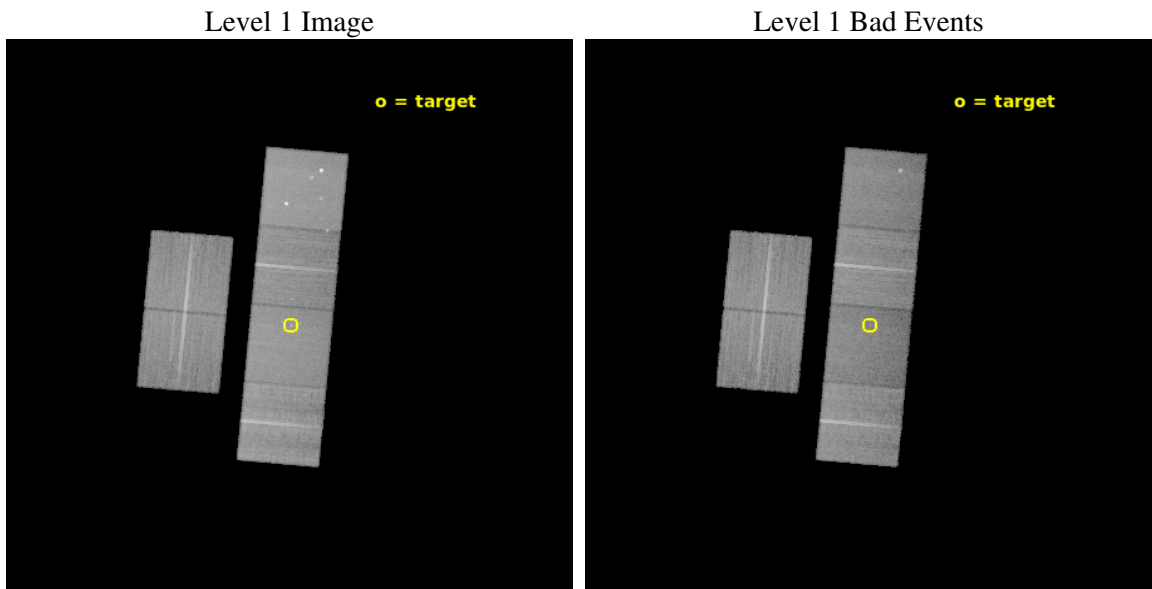
seq_num	200367	Sequence number
obs_id	6120	Observation id
title	Planet-Induced Activity Enhancements in the HD 179949 System	Propo
observer	Steven Saar	Principal investigator
object	HD 179949	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	288.888333	Observer's specified target RA [deg]
dec_targ	-24.179361	Observer's specified target Dec [deg]
ra_nom	288.89311878482	Nominal RA [deg]
dec_nom	-24.1769651931	Nominal Dec [deg]
roll_nom	95.208051235559	Nominal Roll [deg]
revision	4	Processing version of data
ontime	30025.599888146	Sum of GTIs [s]
livetime	29645.397663117	Livetime [s]
ontime2	30022.358917743	Sum of GTIs [s]
ontime3	30025.599888146	Sum of GTIs [s]
ontime5	30025.599888146	Sum of GTIs [s]
ontime6	30025.599888146	Sum of GTIs [s]
ontime7	30025.599888146	Sum of GTIs [s]
ontime8	30025.599888146	Sum of GTIs [s]
l2events	270663	Number of level 2 events



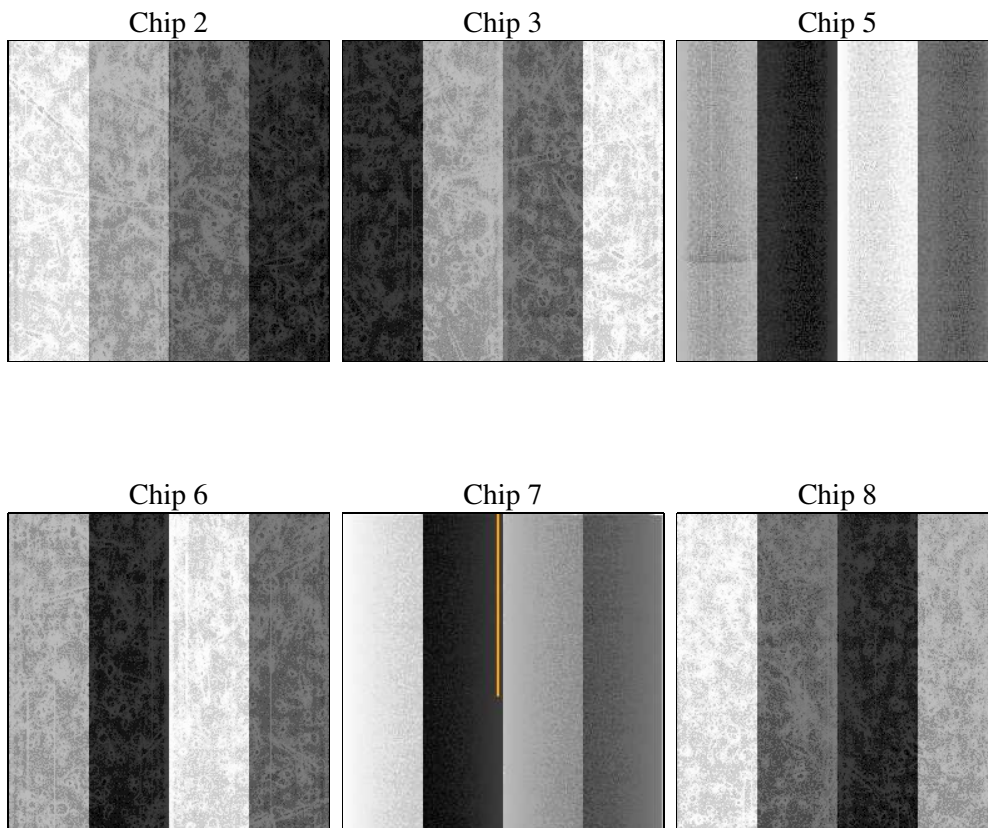
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	30025.599888146	Sum of GTIs [s]
caldbver	4.9.2	 	ontime2	30022.358917743	Sum of GTIs [s]
date	2020-10-08T14:02:40	Date and time of file creation	ontime3	30025.599888146	Sum of GTIs [s]
revision	4	Processing version of data	ontime5	30025.599888146	Sum of GTIs [s]
			ontime6	30025.599888146	Sum of GTIs [s]
			ontime7	30025.599888146	Sum of GTIs [s]
			ontime8	30025.599888146	Sum of GTIs [s]
			l1events	1224584	Number of level 1 events

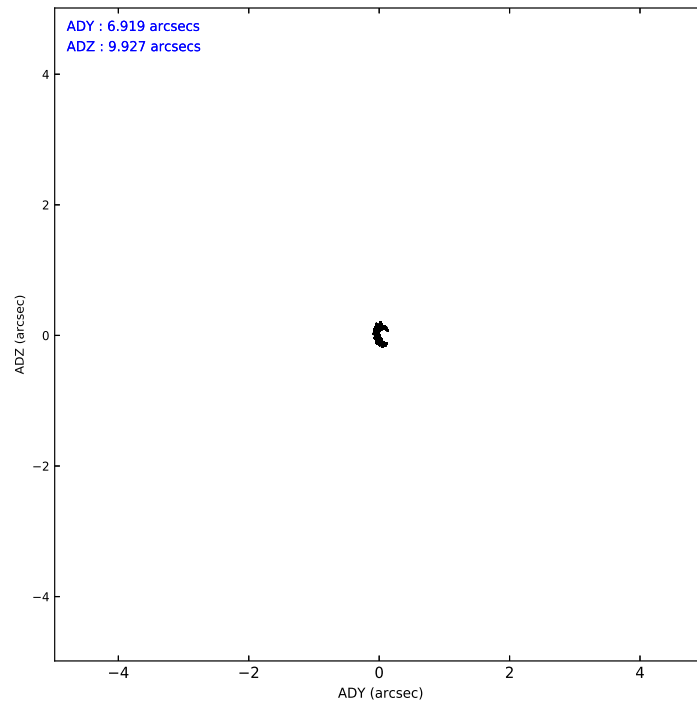
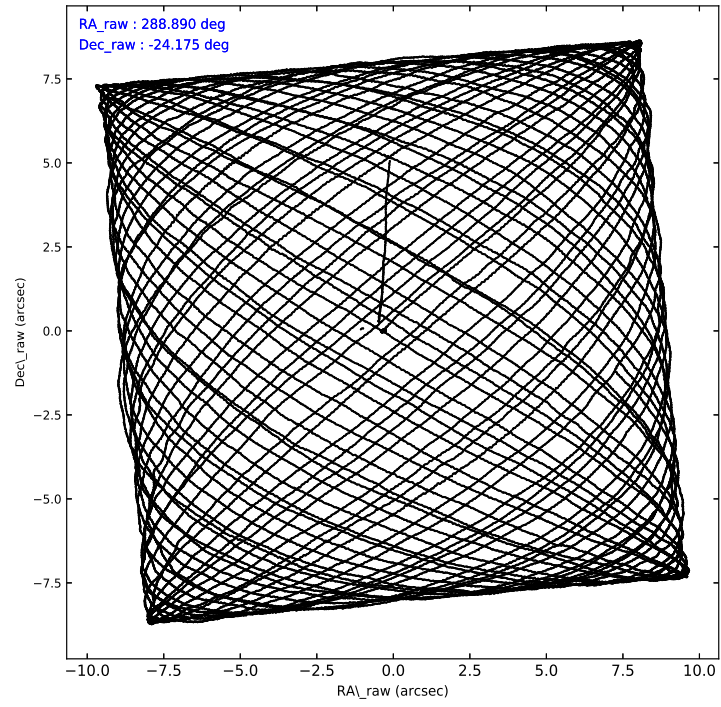
2.1.4 Events

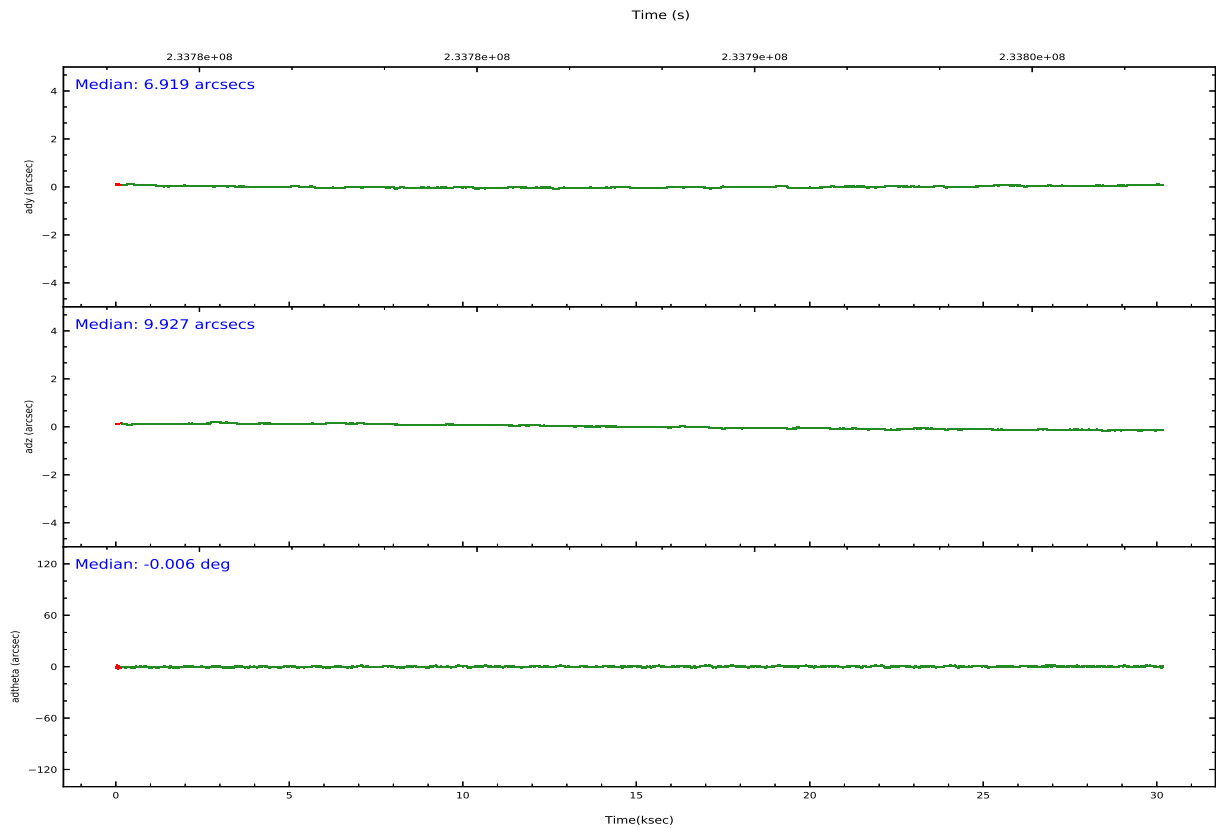
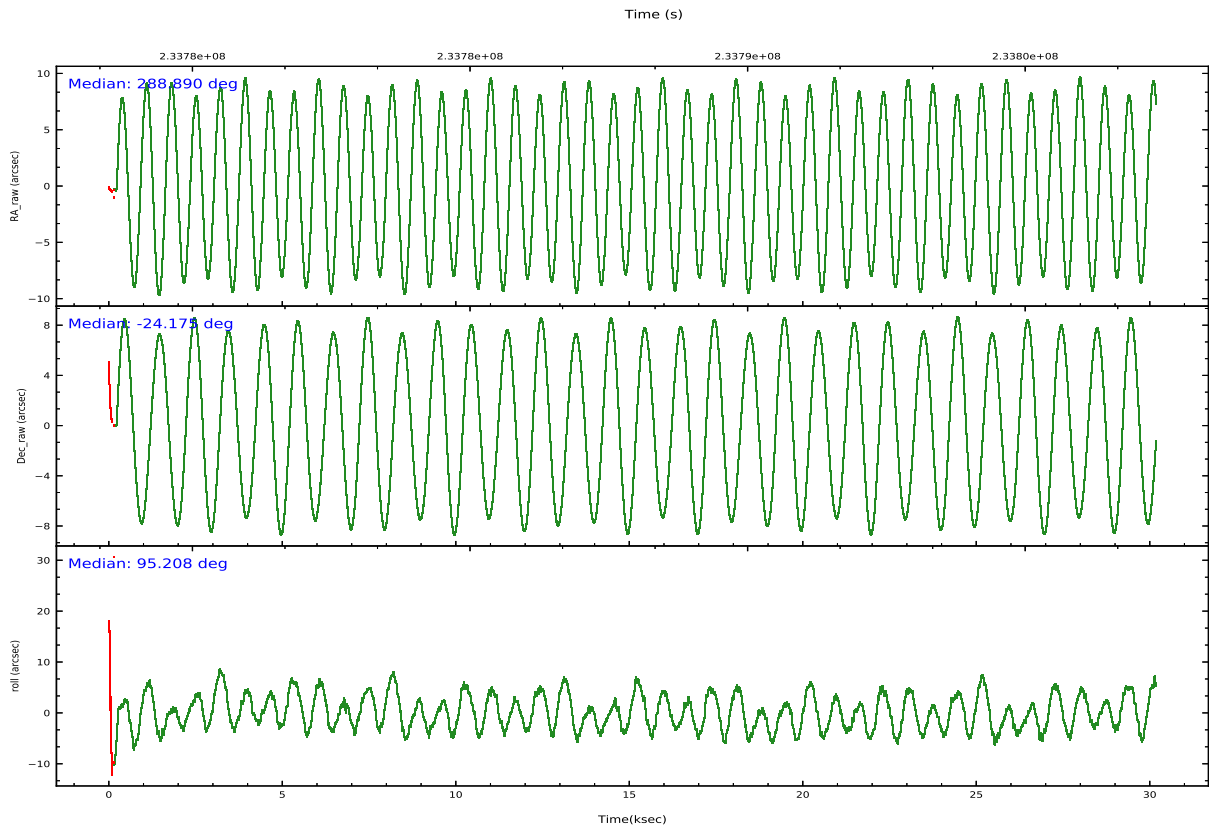
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	188435	173679	251847	181504	204271	224848	grade 0 events	6741	6708	19391	7561	9967	16318
rejected events	170289	156364	123323	161820	109259	172250		3%	3%	7%	4%	4%	7%
rejected %	90%	90%	48%	89%	53%	76%	grade 1 events	114	97	1406	88	197	174
								0%	0%	0%	0%	0%	0%
							grade 2 events	4244	3509	35939	4046	19618	11745
								2%	2%	14%	2%	9%	5%
							grade 3 events	2017	1975	5500	2054	9142	5649
								1%	1%	2%	1%	4%	2%
							grade 4 events	1885	1888	5374	2067	9030	5176
								1%	1%	2%	1%	4%	2%
							grade 5 events	6060	6951	19512	7435	21198	10394
								3%	4%	7%	4%	10%	4%
							grade 6 events	3323	3287	62755	4045	47626	13896
								1%	1%	24%	2%	23%	6%
							grade 7 events	164051	149264	101970	154208	87493	161496
								87%	85%	40%	84%	42%	71%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-235678	ACIS-235678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	288.907309	288.89311878482	Subarray requested	NONE	NONE
[deg] Pointing Dec	-24.197235	-24.1769651931	Alternating exposures requested	N	N
[deg] Pointing Roll	95.061100	95.208051235559	[s] Primary exposure time	0.000000	3.2
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
Phase constraints	Y	Y			
[d] Phase period	3.092455	3.092455			
[d] Phase epoch (MJD)	52891.020000	52891.020000			
Phase start	0.310000	0.310000			
Phase end	0.430000	0.430000			
Phase start error	0.030000	0.030000			
Phase end error	0.030000	0.030000			
[s] Observation start time (MET)	233773773.184000	233772726.73207			
Observation start date	2005-05-29T17:08:29	2005-05-29T16:52:06			
[s] Observation end time (MET)	233803773.184000	233805240.24605			
Observation end date	2005-05-30T01:28:29	2005-05-30T01:54:00			
Read mode	TIMED	TIMED			

2.3 Aspect





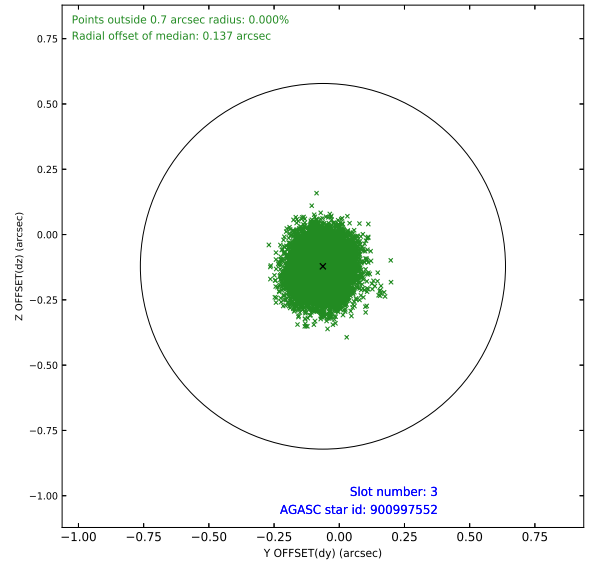
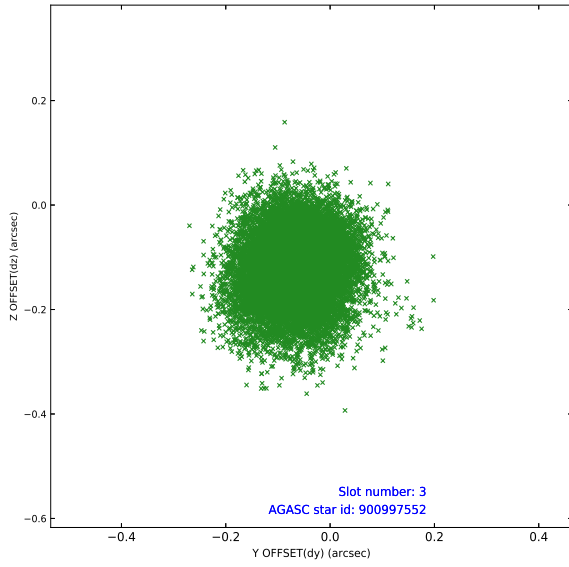
Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.10	7349	1.000	-0.088	-0.066	0.008	0.014	0.000000	0.000000	-759.69	-1731
1	FID		ACIS-S-4	7.20	7349	1.000	0.162	0.060	0.008	0.015	0.000000	0.000000	2153.73	177
2	FID		ACIS-S-5	7.24	7349	1.000	-0.105	0.015	0.008	0.013	0.000000	0.000000	-1812.53	170
3	GUIDE	used	900997552	9.13	14690	1.000	-0.063	-0.122	0.093	0.148	288.312519	-24.029579	769.54	1895
4	GUIDE	used	901144560	8.68	14690	1.000	-0.085	0.163	0.064	0.102	289.333664	-23.842375	1147.02	-1510
5	GUIDE	used	901514880	8.92	14692	1.000	0.096	-0.127	0.076	0.120	288.396412	-24.524459	-1028.78	1770
6	GUIDE	used	901647096	9.15	14688	1.000	0.054	0.089	0.077	0.125	289.707413	-24.700499	-2042.58	-2446
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

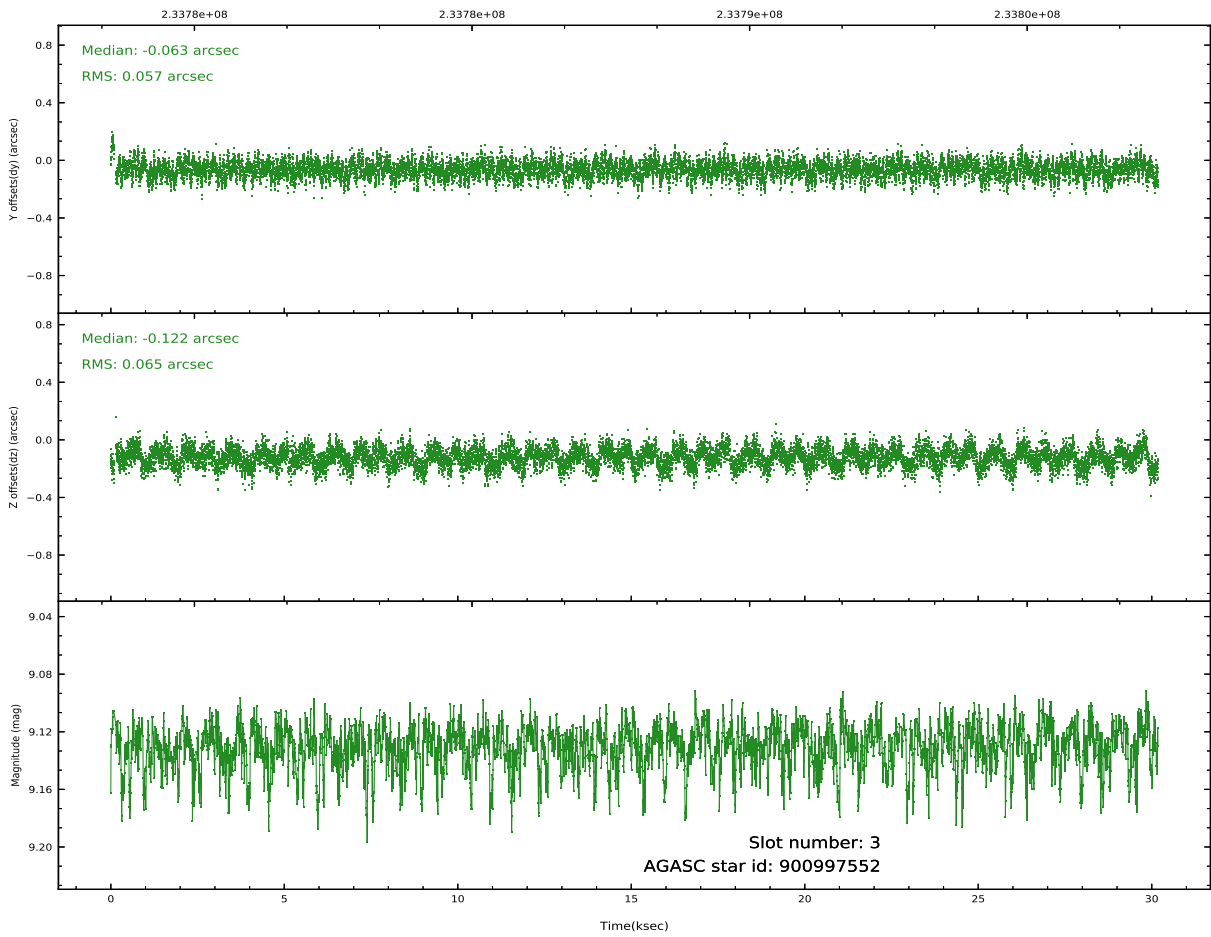
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2.4 Star Slots

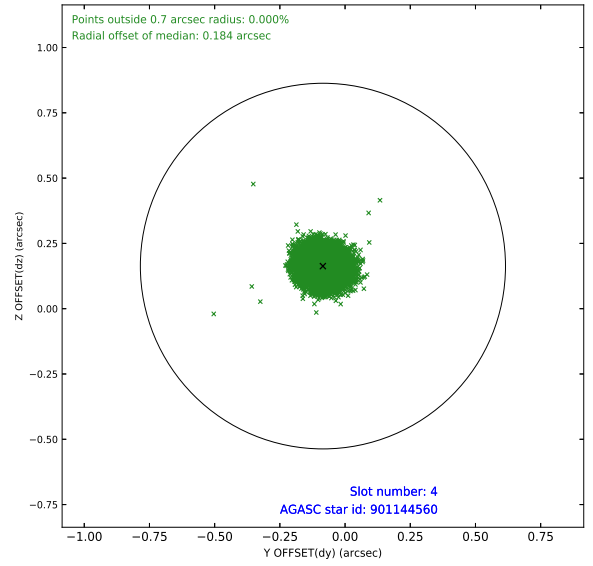
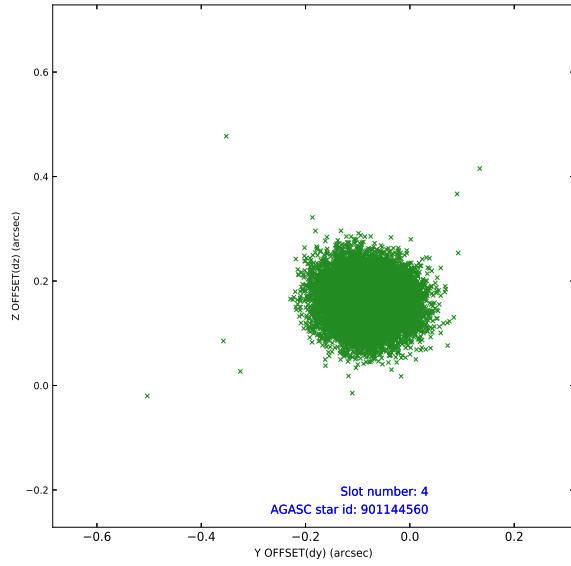
2.4.1 Slot 3



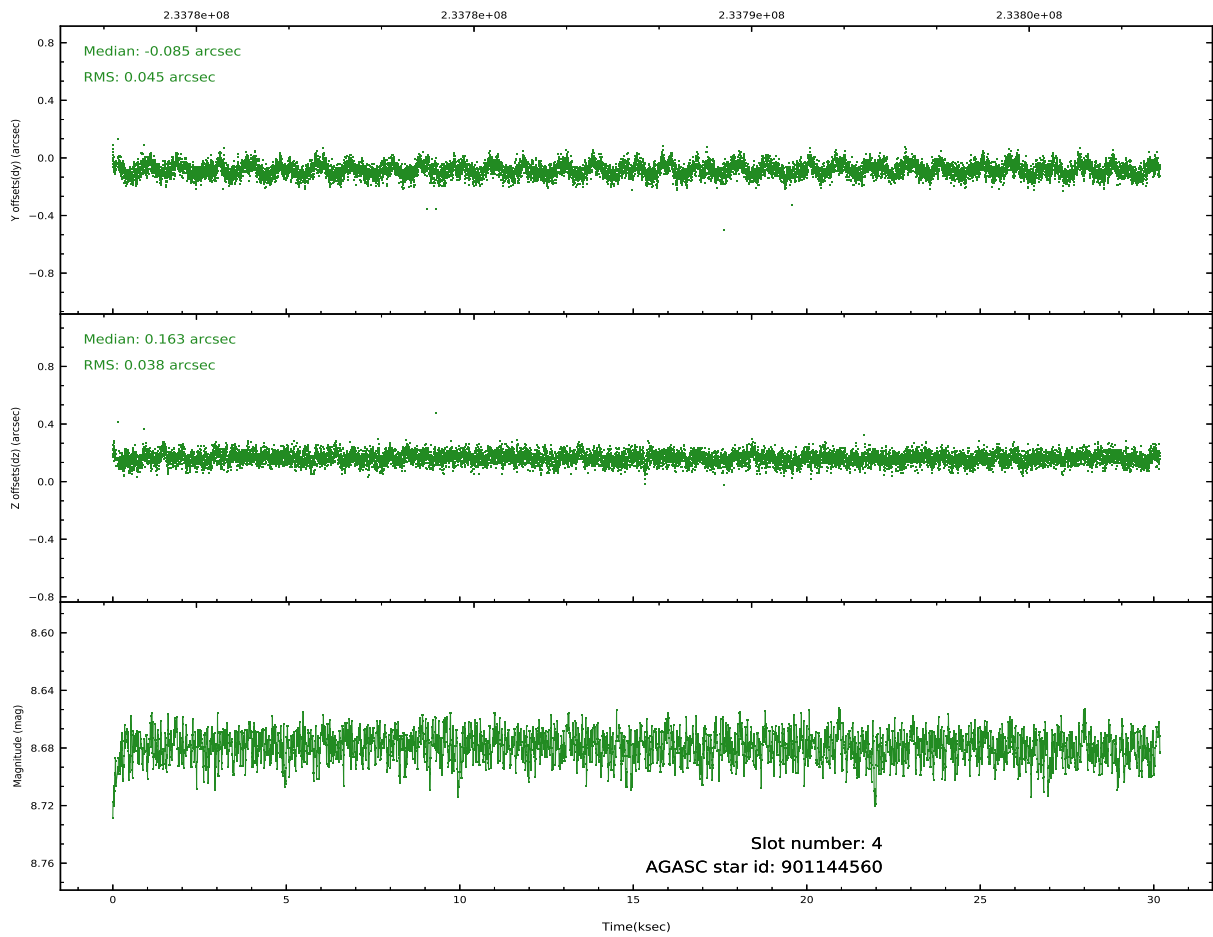
Time (s)



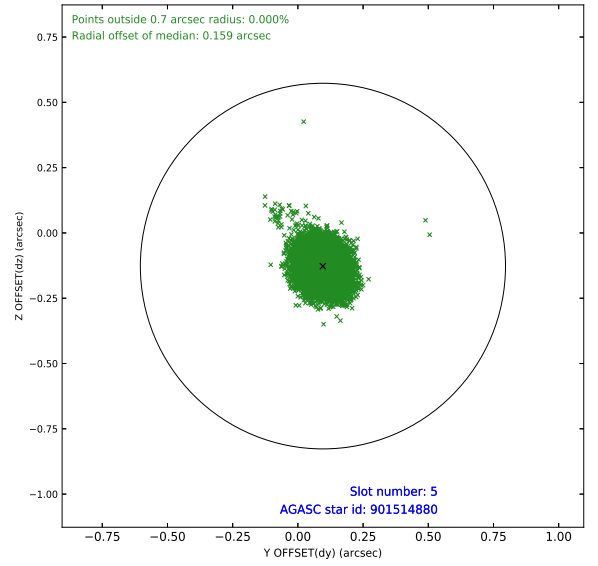
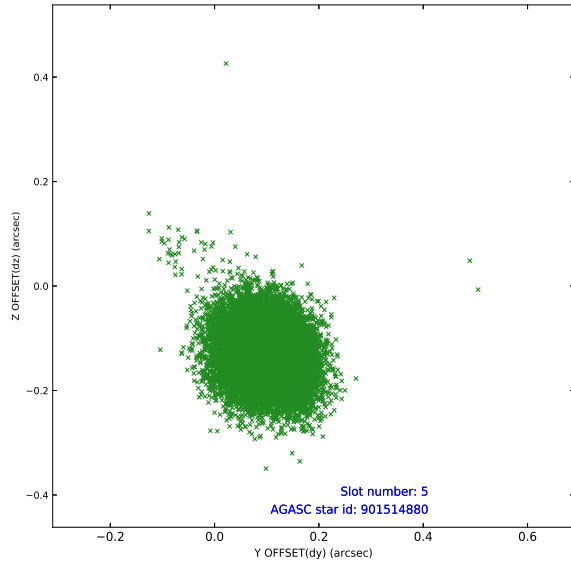
2.4.2 Slot 4



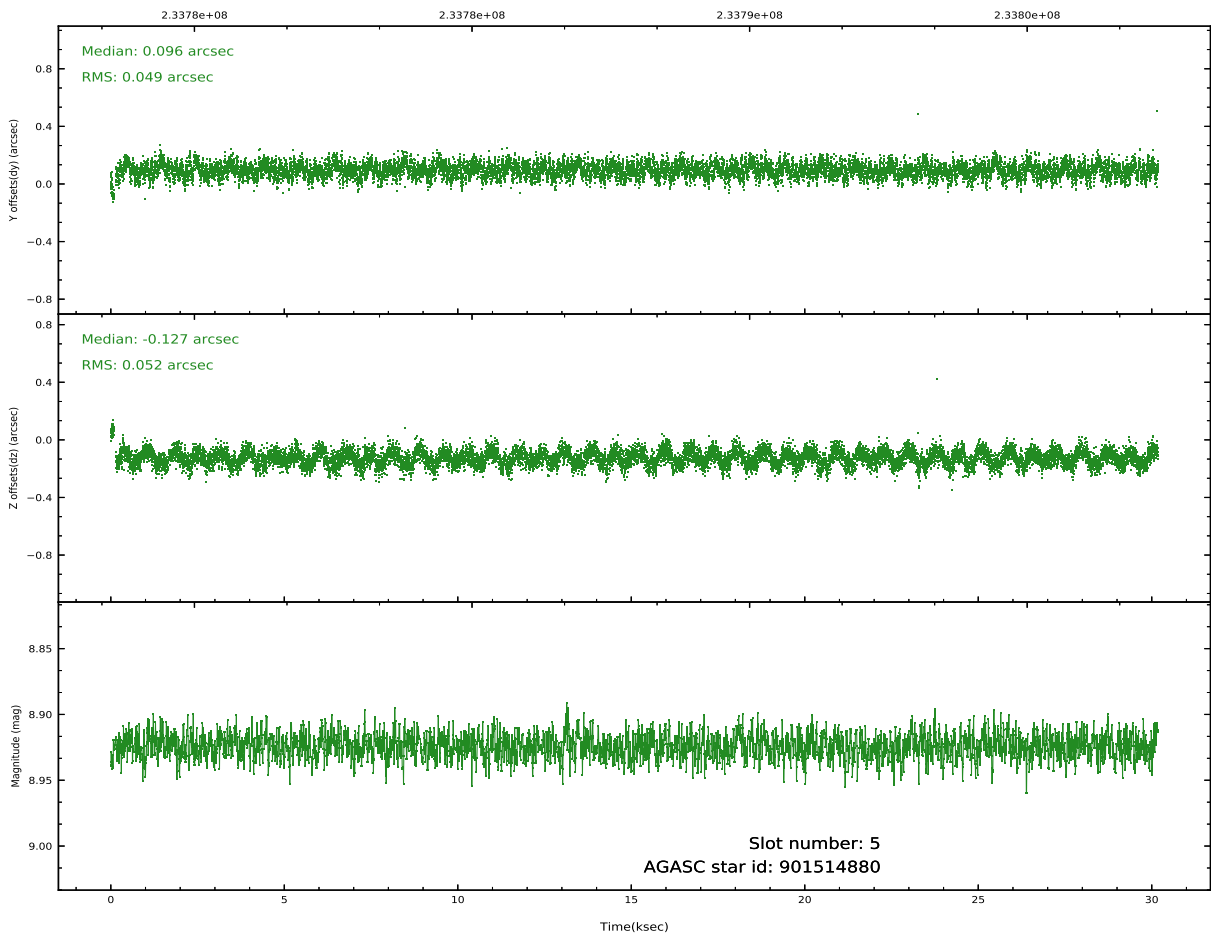
Time (s)



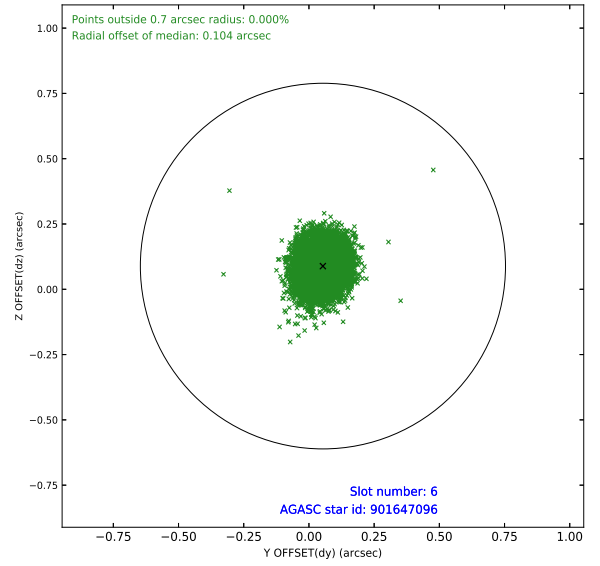
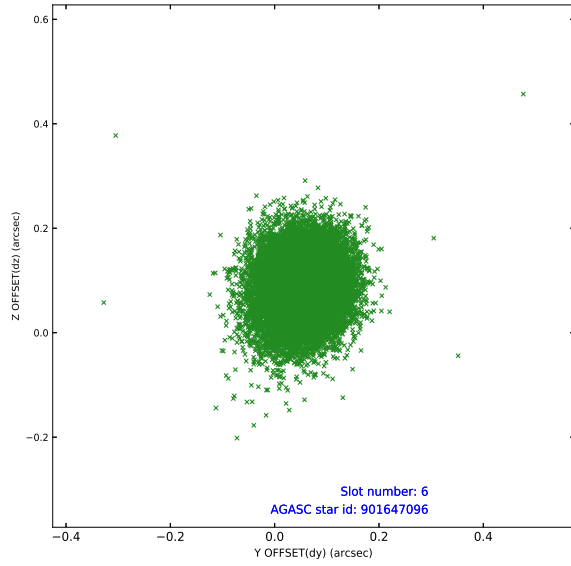
2.4.3 Slot 5



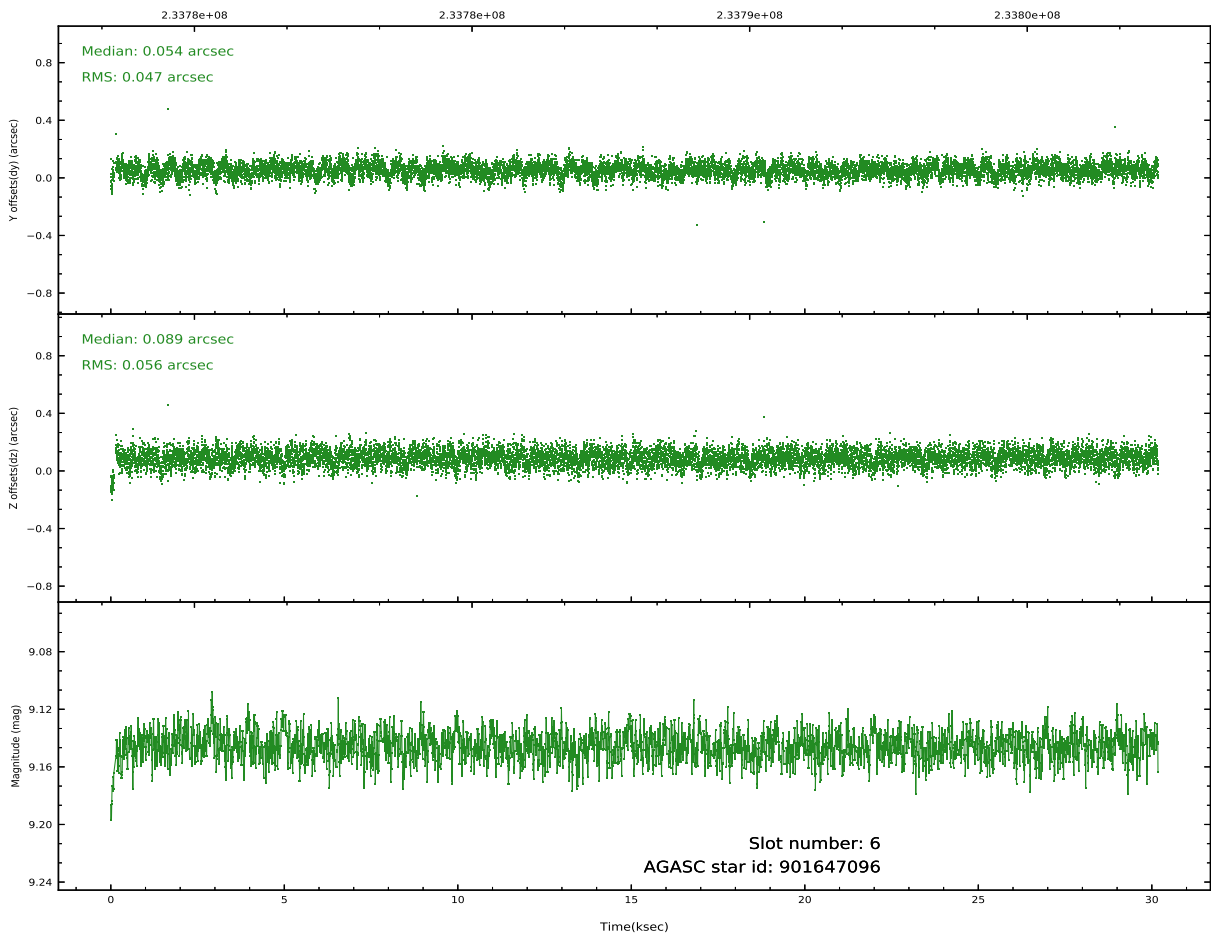
Time (s)



2.4.4 Slot 6

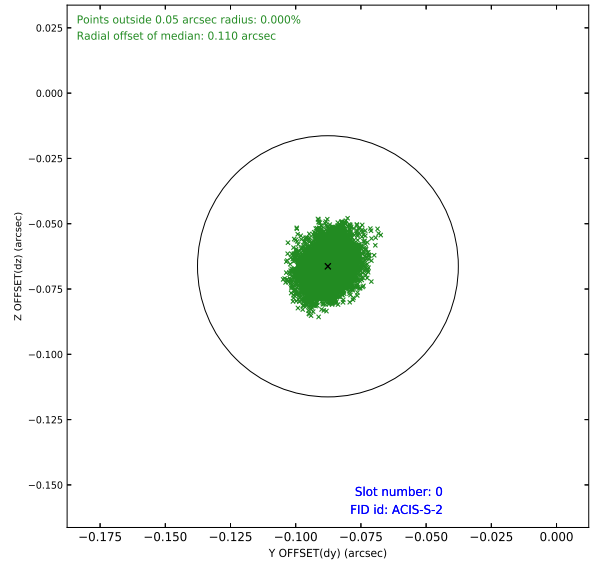
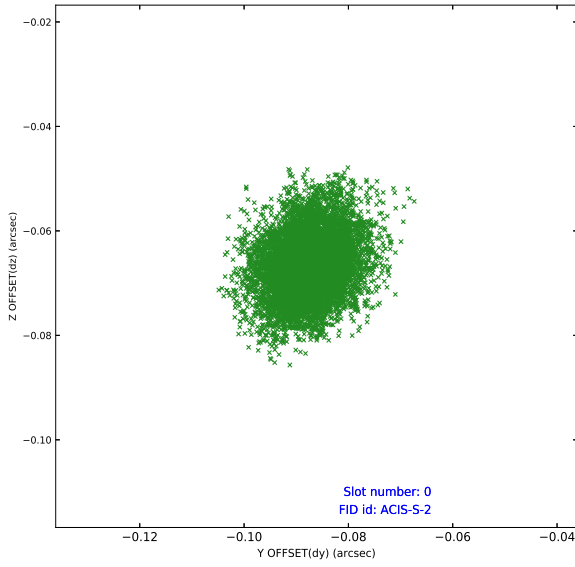


Time (s)

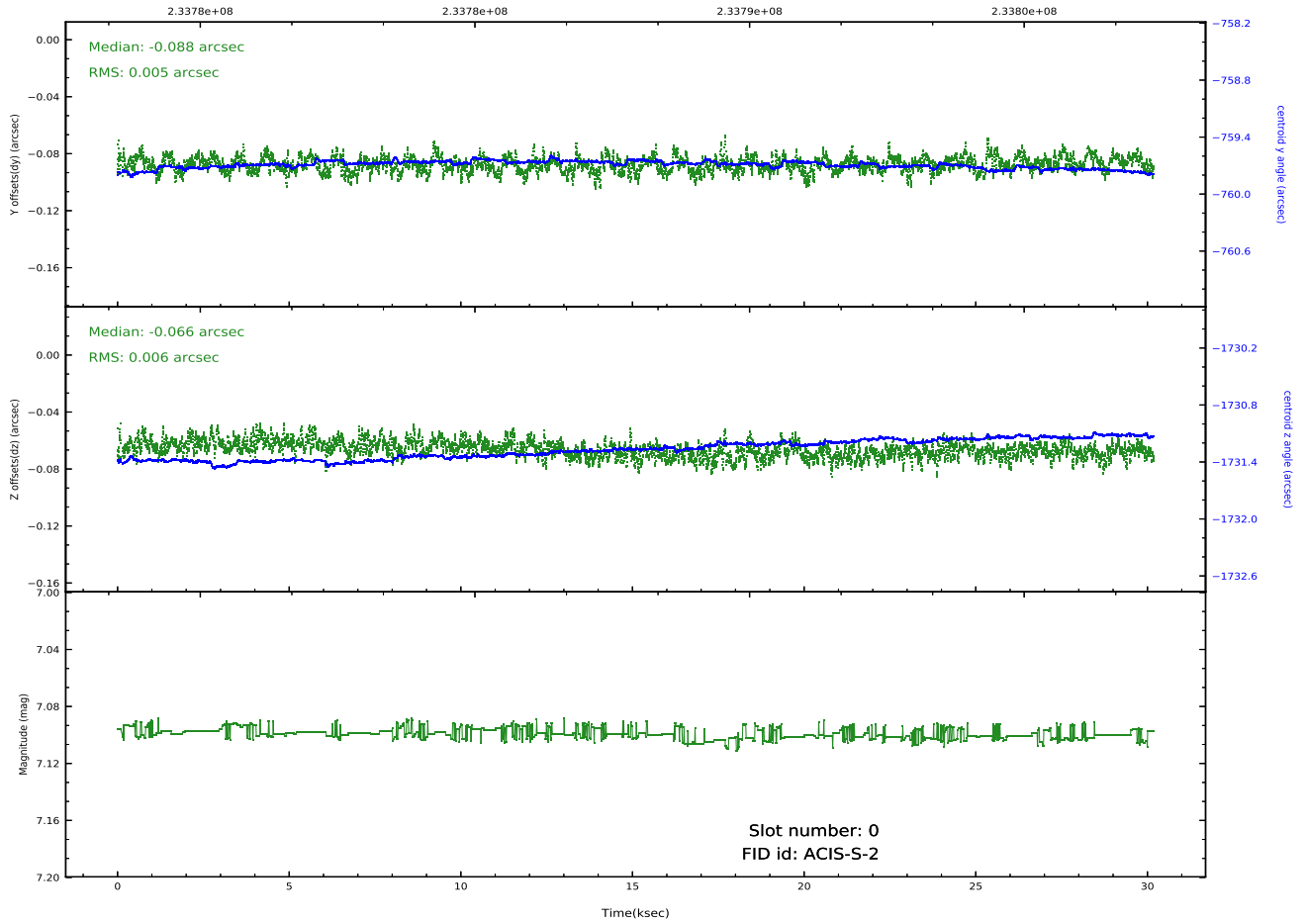


2.5 FID Slots

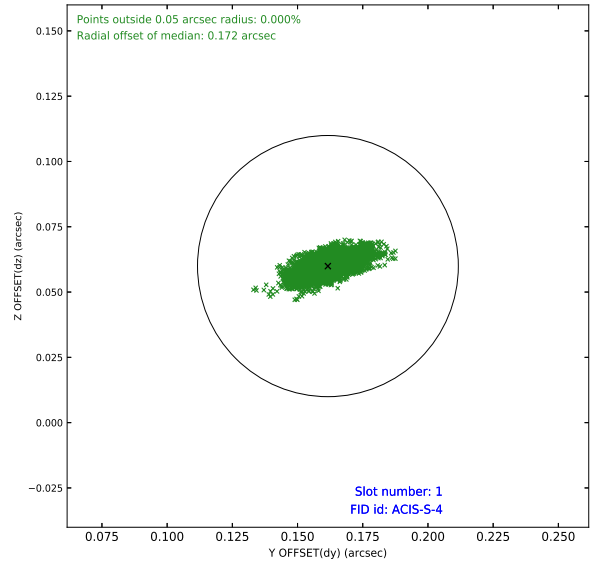
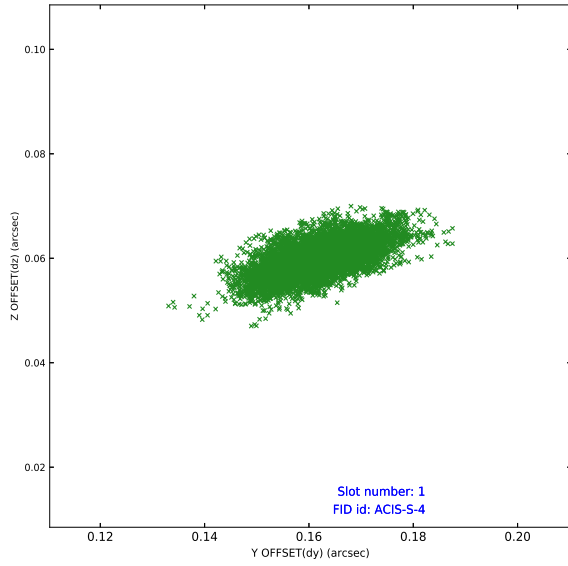
2.5.1 Slot 0



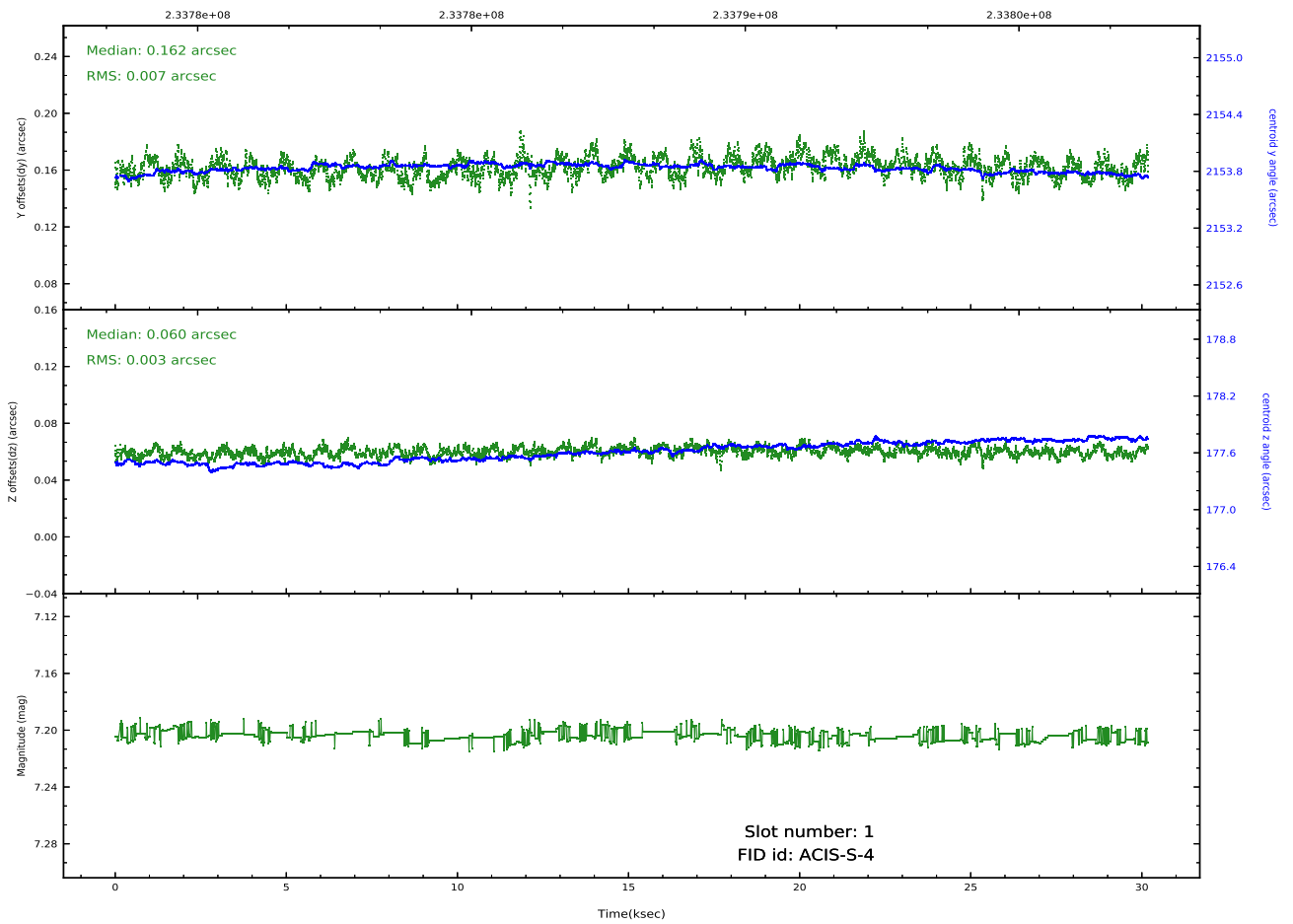
Time (s)



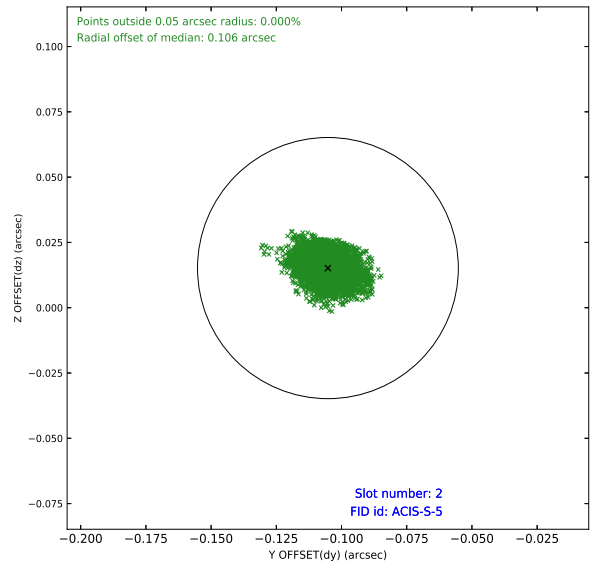
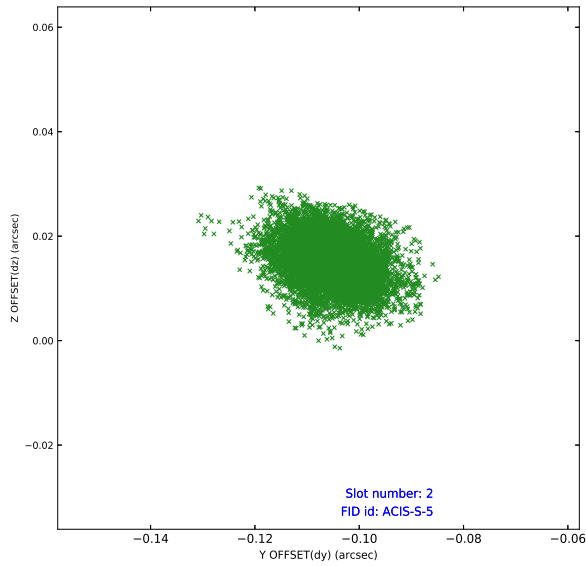
2.5.2 Slot 1



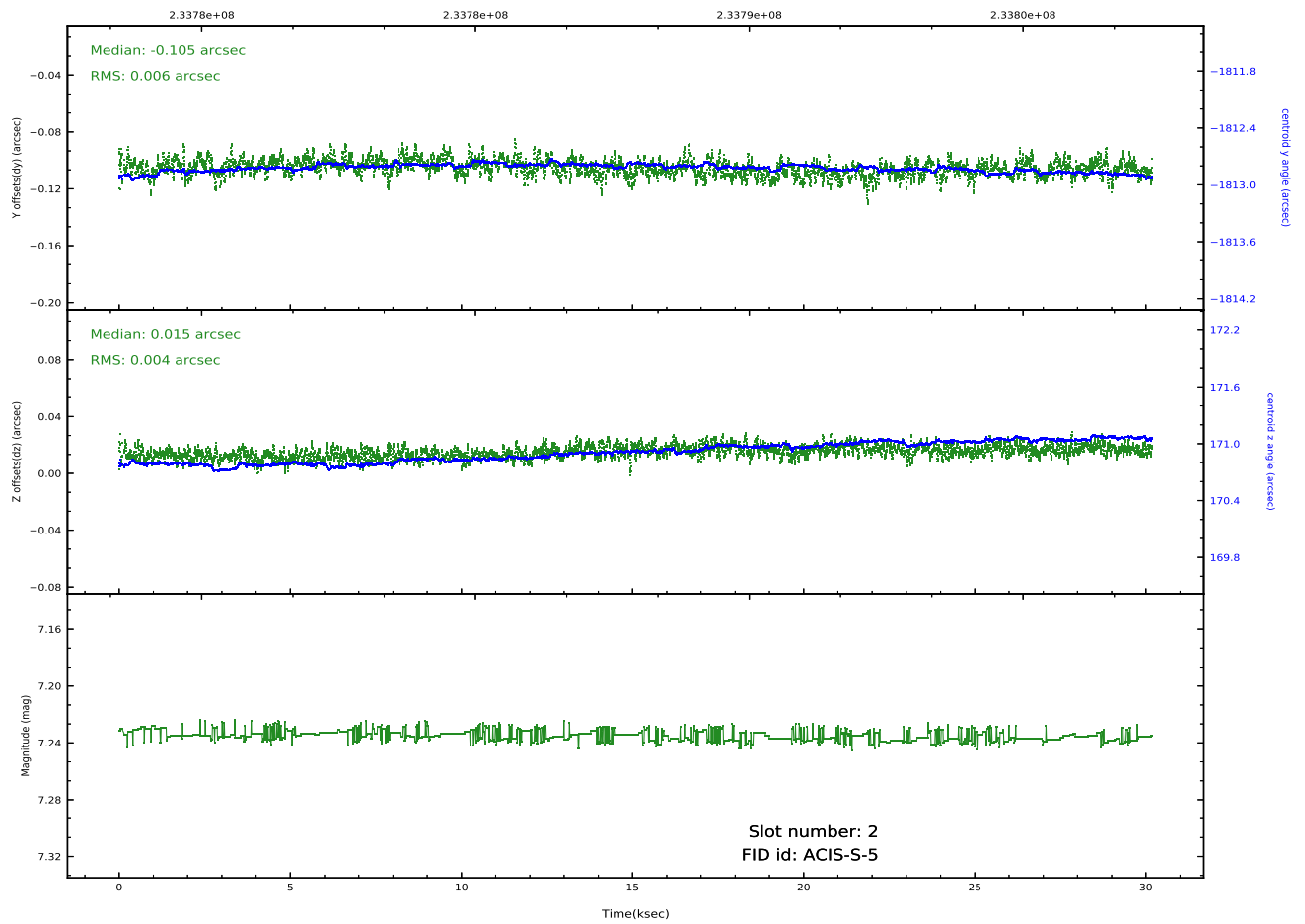
Time (s)



2.5.3 Slot 2



Time (s)



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.02559

A.2 Comments

Joint proposal with HST.

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The ACA has the capability to devote one or more of the eight image slots to "monitor" particular sky locations. This allows simultaneous optical photometry of one or more targets in the ACA field of view. These optical sources can be slightly fainter than the ACA guide star limit of $m_{ACA} = 10.2$ mag. The bright-end limit for monitor star photometry is $m_{ACA}=6.2$ mag. However, since there are a fixed number of image slots, devoting a slot to photometry instead of tracking a guide star results in a degradation of the image reconstruction and celestial location accuracy (Section 5.4). Using one monitor slot represents a 15 - 25% increase in the aspect image reconstruction RMS diameter, depending on the particular guide star configuration. Two monitor slots would increase the diameter by about 50 - 60%, but this configuration is not operationally allowed under normal circumstances. The photometric accuracy which can be achieved depends primarily on the star magnitude, integration time, CCD dark current, CCD read noise, sky background, and the CCD dark current uncertainty.