

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 6121 - L2 Version 4
Chandra X-Ray Center

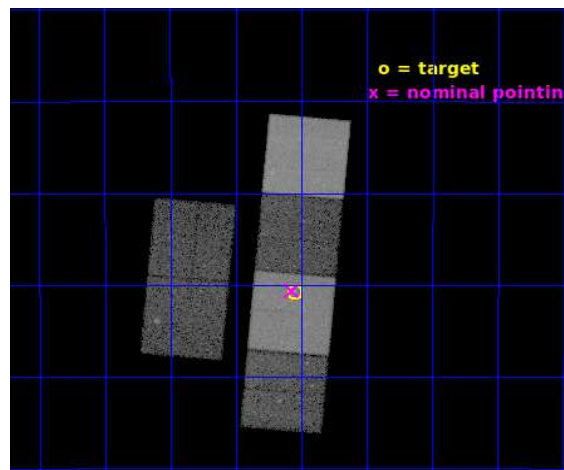
L2 Processing Date : Oct 8 2020

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1 Front

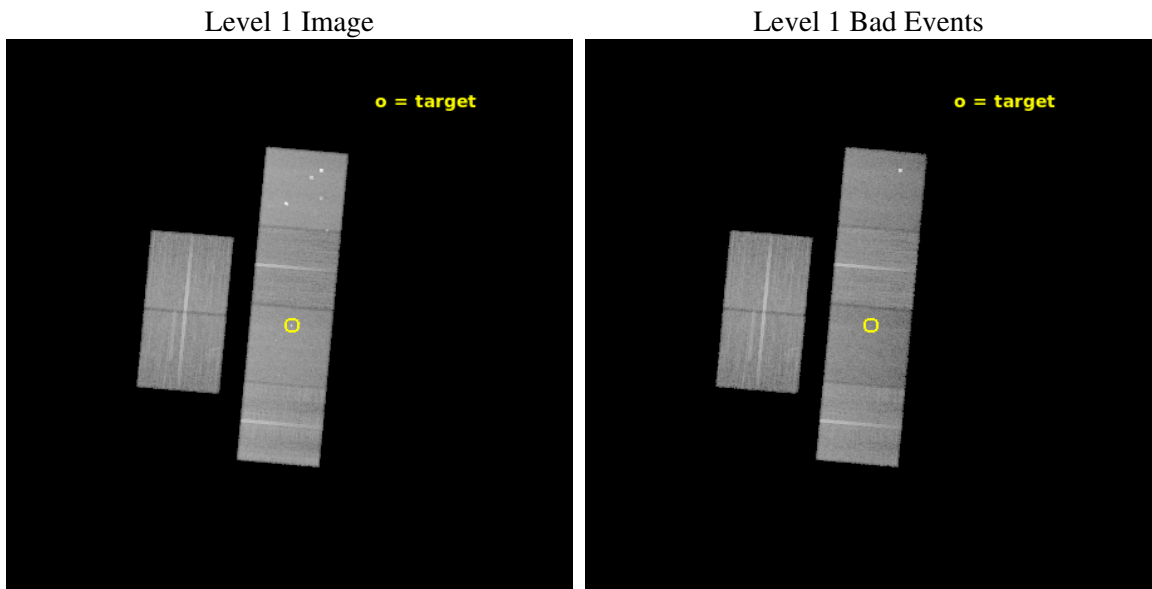
seq_num	200368	Sequence number
obs_id	6121	Observation id
title	Planet-Induced Activity Enhancements in the HD 179949 System	Propo
observer	Steven Saar	Principal investigator
object	HD 179949	Source name
dtycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	288.888333	Observer's specified target RA [deg]
dec_targ	-24.179361	Observer's specified target Dec [deg]
ra_nom	288.89320947481	Nominal RA [deg]
dec_nom	-24.177109309871	Nominal Dec [deg]
roll_nom	95.119084869819	Nominal Roll [deg]
revision	4	Processing version of data
ontime	30022.358907878	Sum of GTIs [s]
livetime	29642.197722093	Livetime [s]
ontime2	30025.599888146	Sum of GTIs [s]
ontime3	30019.117937505	Sum of GTIs [s]
ontime5	30022.358907878	Sum of GTIs [s]
ontime6	30025.599888146	Sum of GTIs [s]
ontime7	30022.358907878	Sum of GTIs [s]
ontime8	30022.358917773	Sum of GTIs [s]
l2events	271152	Number of level 2 events



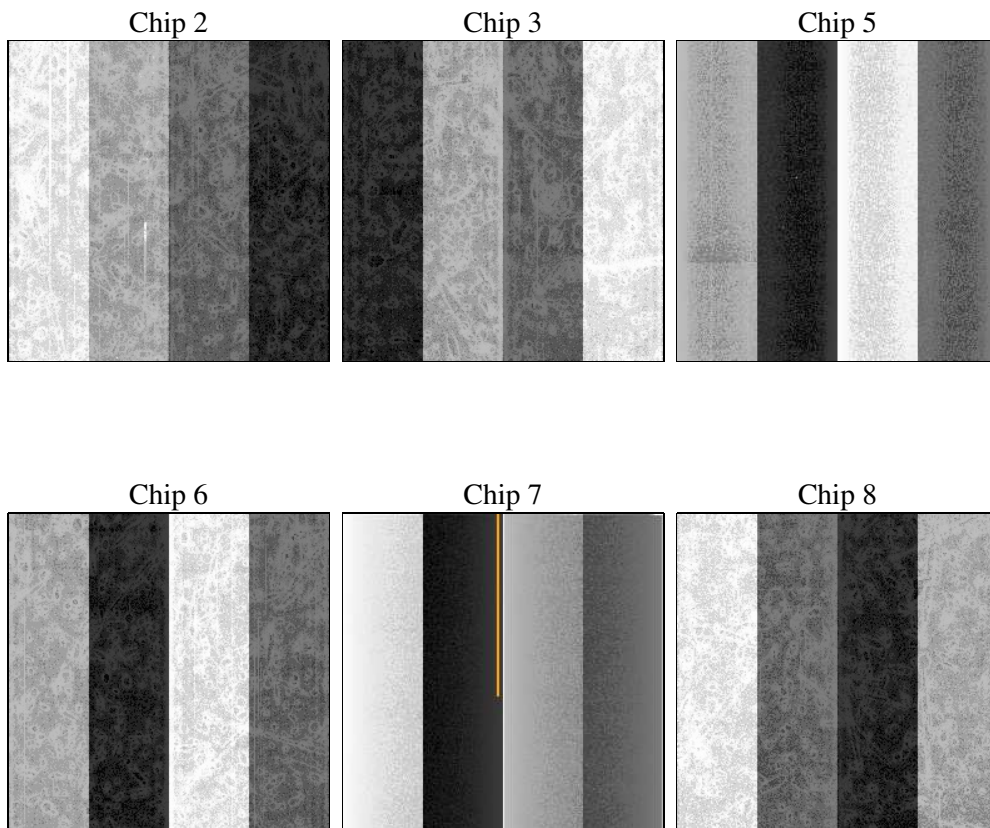
2 OBI

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	30022.358907878	Sum of GTIs [s]
caldbver	4.9.2	 	ontime2	30025.599888146	Sum of GTIs [s]
date	2020-10-08T14:03:51	Date and time of file creation	ontime3	30019.117937505	Sum of GTIs [s]
revision	4	Processing version of data	ontime5	30022.358907878	Sum of GTIs [s]
			ontime6	30025.599888146	Sum of GTIs [s]
			ontime7	30022.358907878	Sum of GTIs [s]
			ontime8	30022.358917773	Sum of GTIs [s]
			l1events	1222071	Number of level 1 events

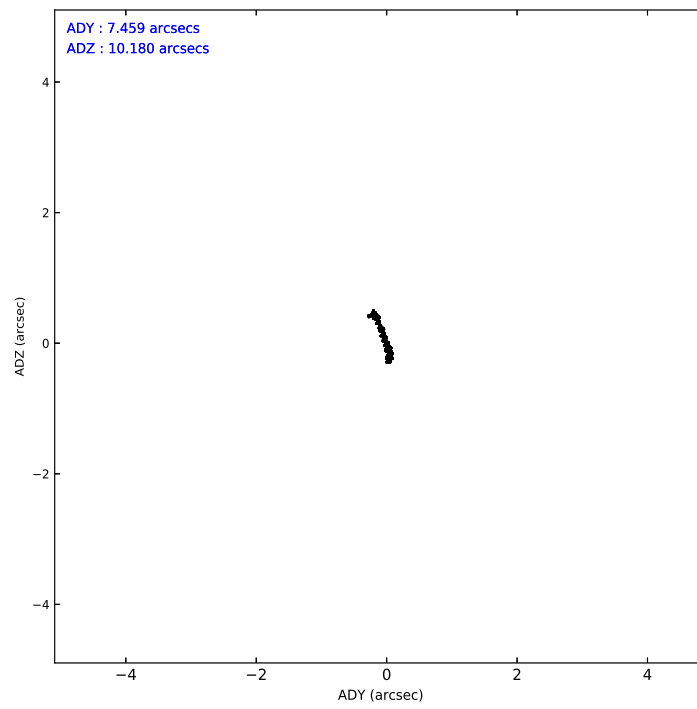
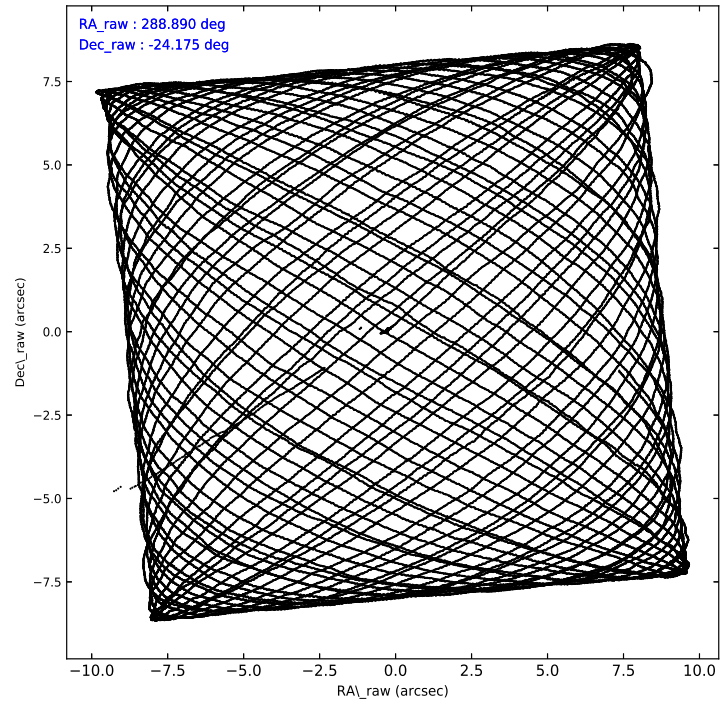
2.1.4 Events

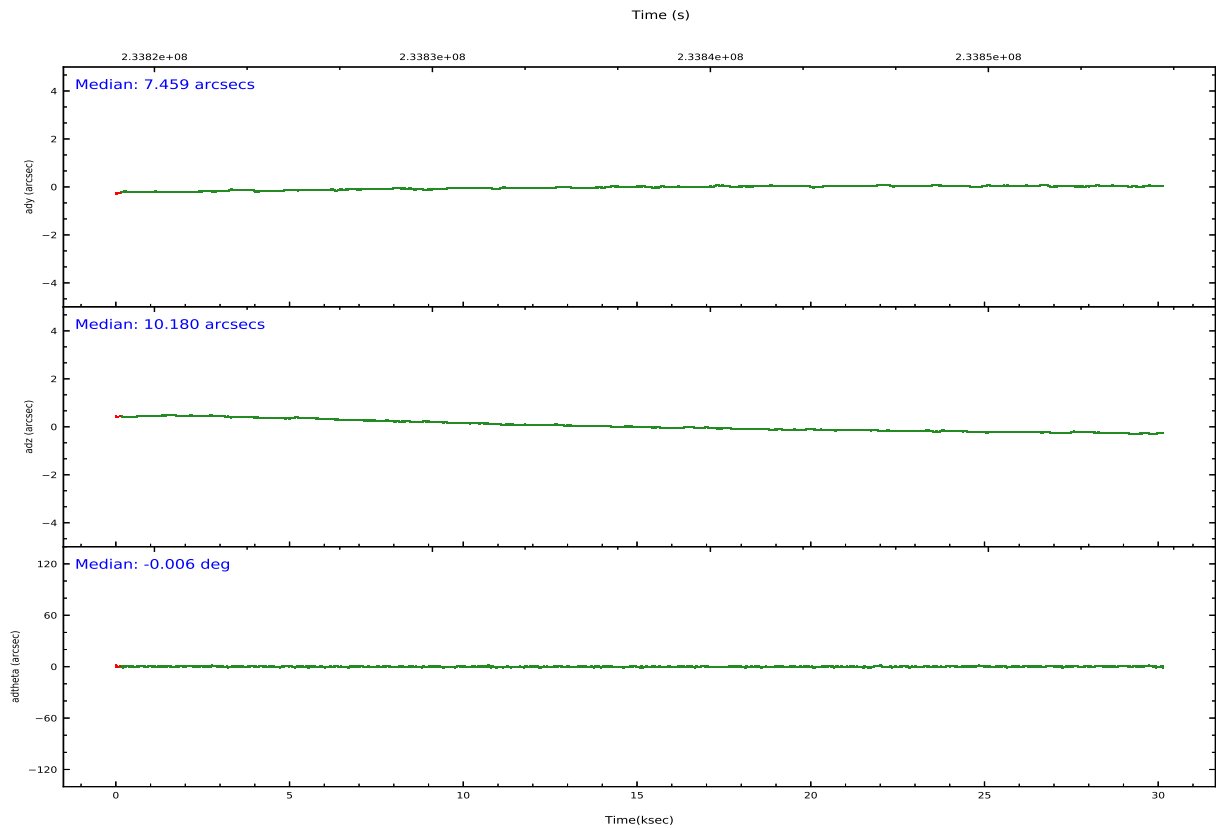
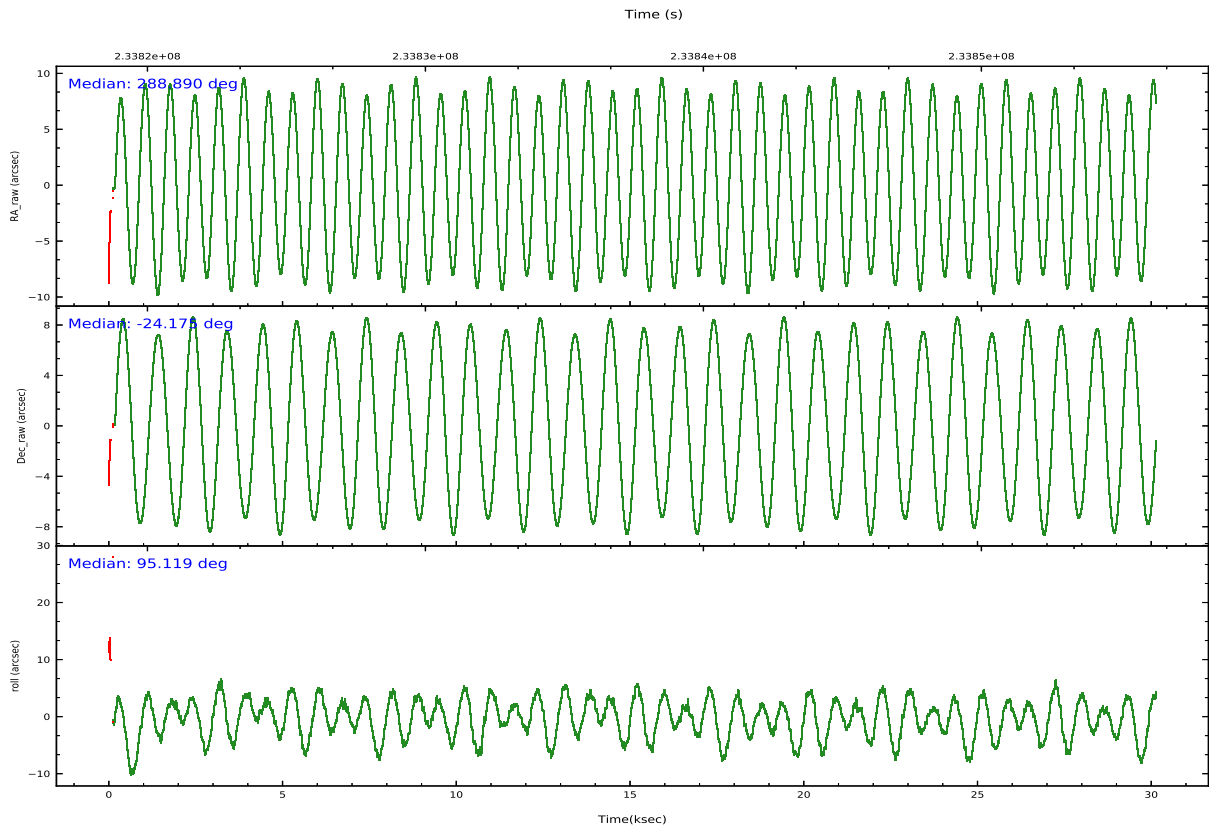
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	188588	171204	254761	178599	203693	225226	grade 0 events	6670	6735	16839	7347	9910	15980
rejected events	170494	153699	127353	159220	108707	172879		3%	3%	6%	4%	4%	7%
rejected %	90%	89%	49%	89%	53%	76%	grade 1 events	102	87	237	73	202	167
								0%	0%	0%	0%	0%	0%
							grade 2 events	4283	3631	37579	3939	19473	11790
								2%	2%	14%	2%	9%	5%
							grade 3 events	1940	1971	5450	2085	8973	5637
								1%	1%	2%	1%	4%	2%
							grade 4 events	1915	1916	5081	2032	8887	5295
								1%	1%	1%	1%	4%	2%
							grade 5 events	6301	6983	21680	7330	20982	10305
								3%	4%	8%	4%	10%	4%
							grade 6 events	3313	3270	62605	3999	47848	13732
								1%	1%	24%	2%	23%	6%
							grade 7 events	164064	146611	105290	151794	87418	162320
								86%	85%	41%	84%	42%	72%

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	288.907277	288.89320947481	Subarray requested	NONE	NONE
[deg] Pointing Dec	-24.197268	-24.177109309871	Alternating exposures requested	N	N
[deg] Pointing Roll	94.971297	95.11908486981901	[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	0.510000	0.510000			
Phase end	0.630000	0.630000			
Phase start error	0.030000	0.030000			
Phase end error	0.030000	0.030000			
[s] Observation start time (MET)	233823028.184000	233822020.52182			
Observation start date	2005-05-30T06:49:24	2005-05-30T06:33:40			
[s] Observation end time (MET)	233853028.184000	233853962.08577			
Observation end date	2005-05-30T15:09:24	2005-05-30T15:26:02			
Read mode	TIMED	TIMED			

2.3 Aspect





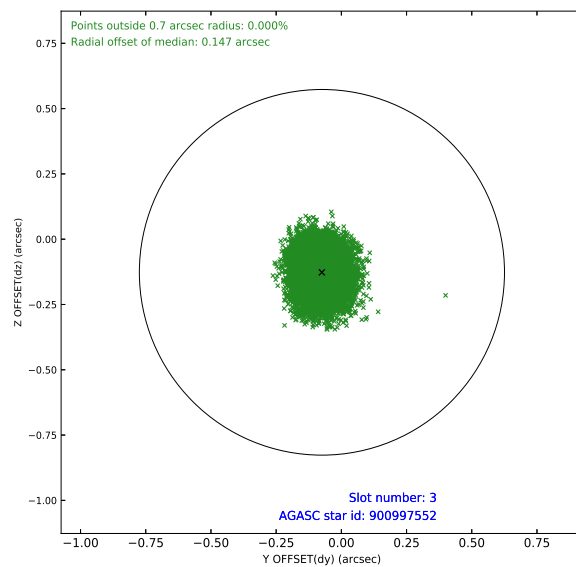
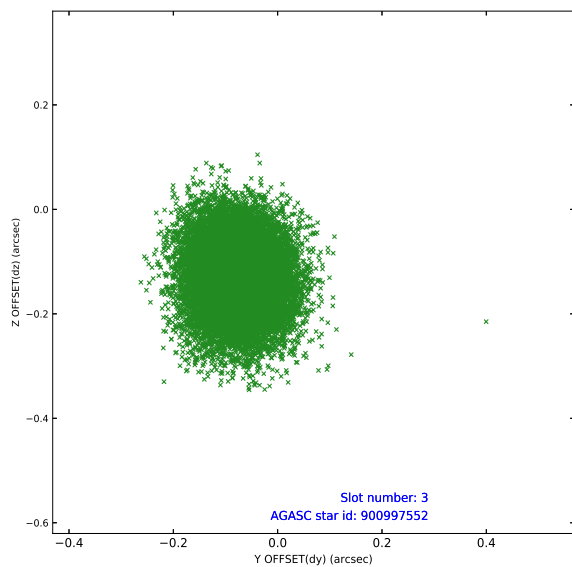
Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.11	7337	1.000	-0.082	-0.063	0.008	0.013	0.000000	0.000000	-760.20	-1731
1	FID		ACIS-S-4	7.21	7336	1.000	0.159	0.056	0.008	0.015	0.000000	0.000000	2153.21	177
2	FID		ACIS-S-5	7.23	7337	1.000	-0.109	0.016	0.008	0.013	0.000000	0.000000	-1813.05	170
3	GUIDE	used	900997552	9.13	14667	1.000	-0.075	-0.127	0.091	0.146	288.312519	-24.029579	766.67	1896
4	GUIDE	used	901144560	8.68	14671	1.000	-0.076	0.156	0.070	0.114	289.333664	-23.842375	1149.48	-1508
5	GUIDE	used	901514880	8.92	14670	1.000	0.089	-0.150	0.085	0.135	288.396412	-24.524459	-1031.45	1768
6	GUIDE	used	901647096	9.15	14665	1.000	0.059	0.126	0.077	0.127	289.707413	-24.700499	-2038.67	-2449
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

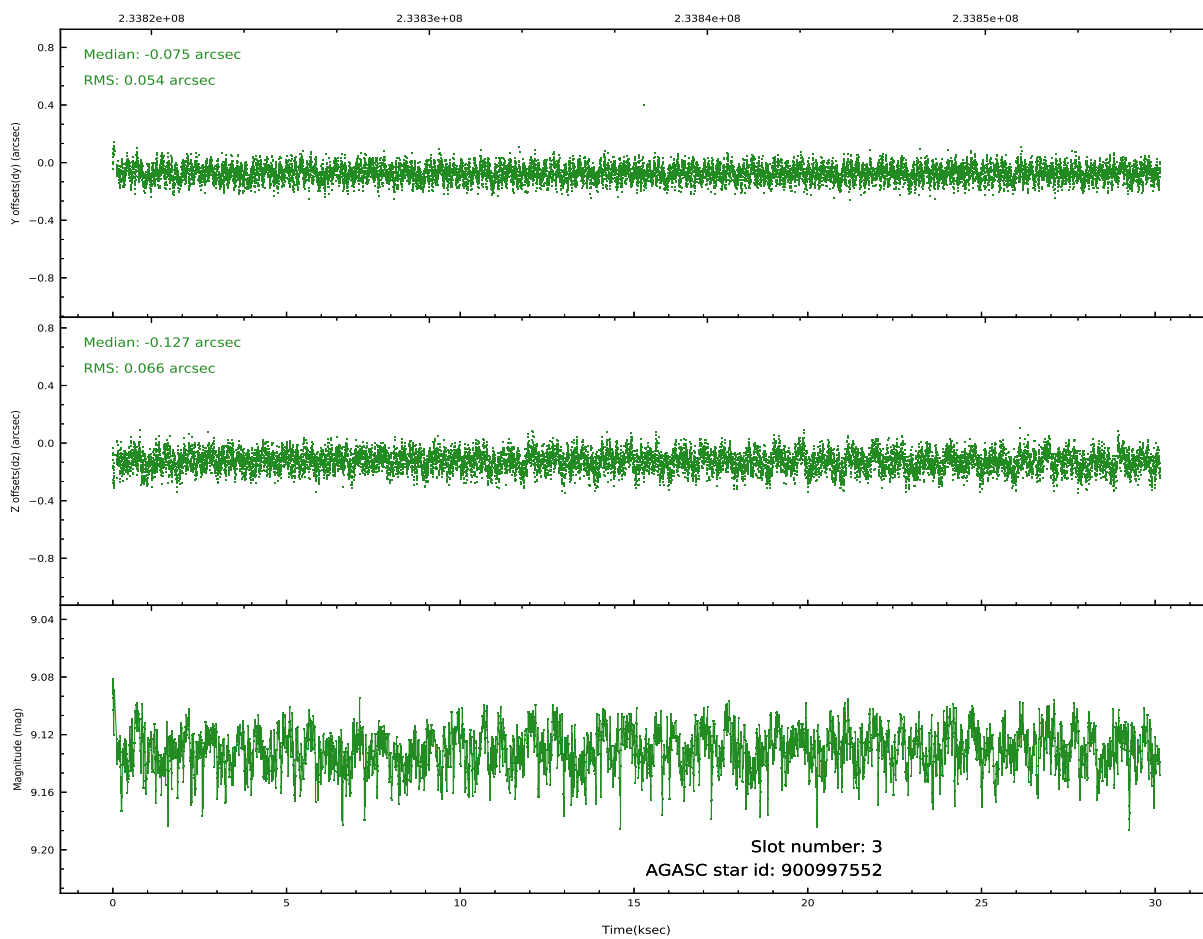
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2.4 Star Slots

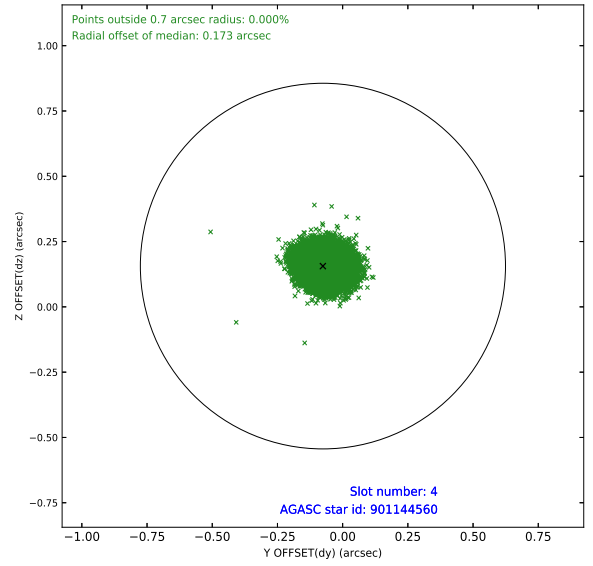
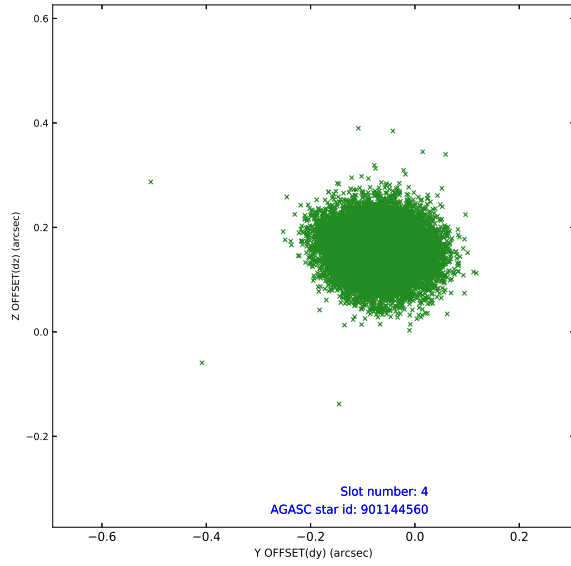
2.4.1 Slot 3



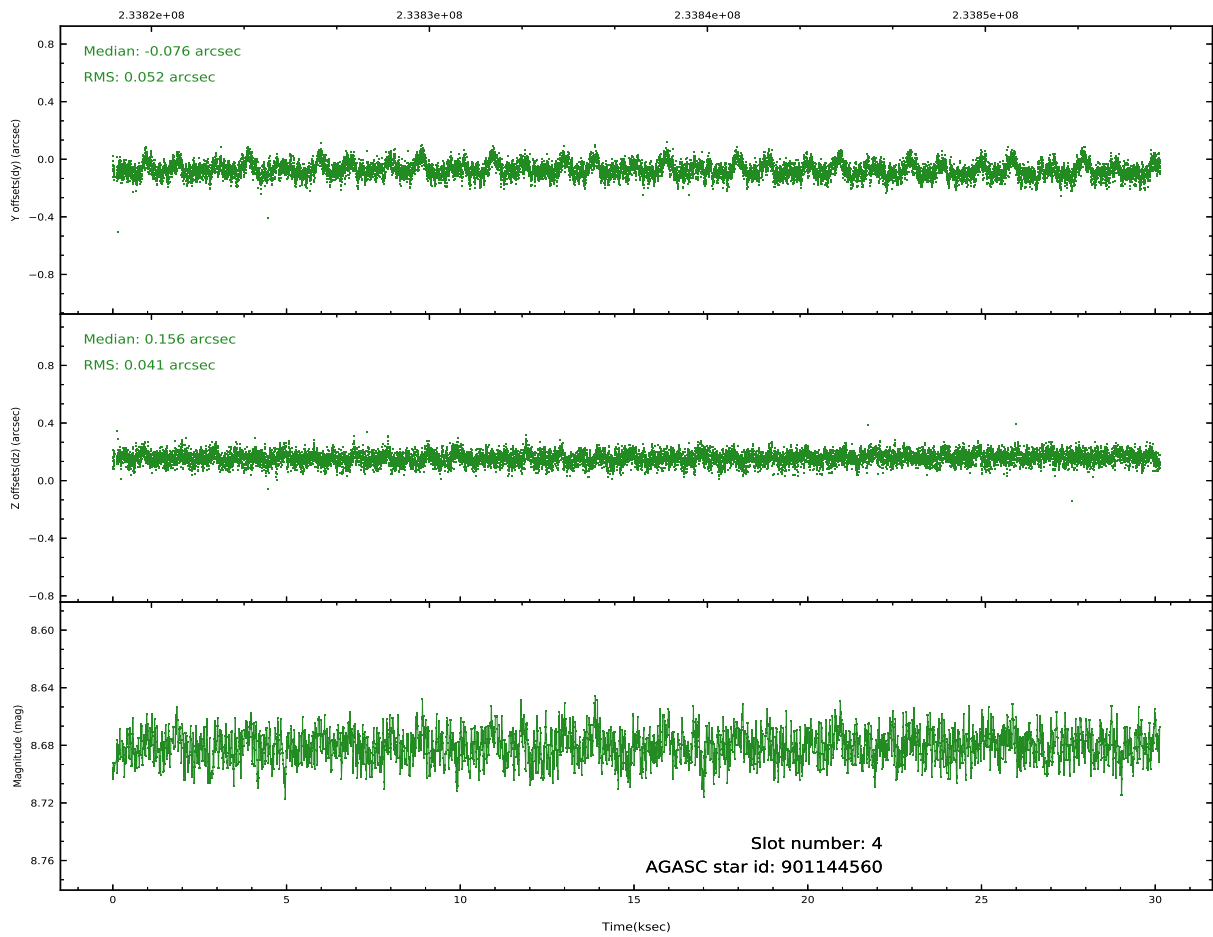
Time (s)



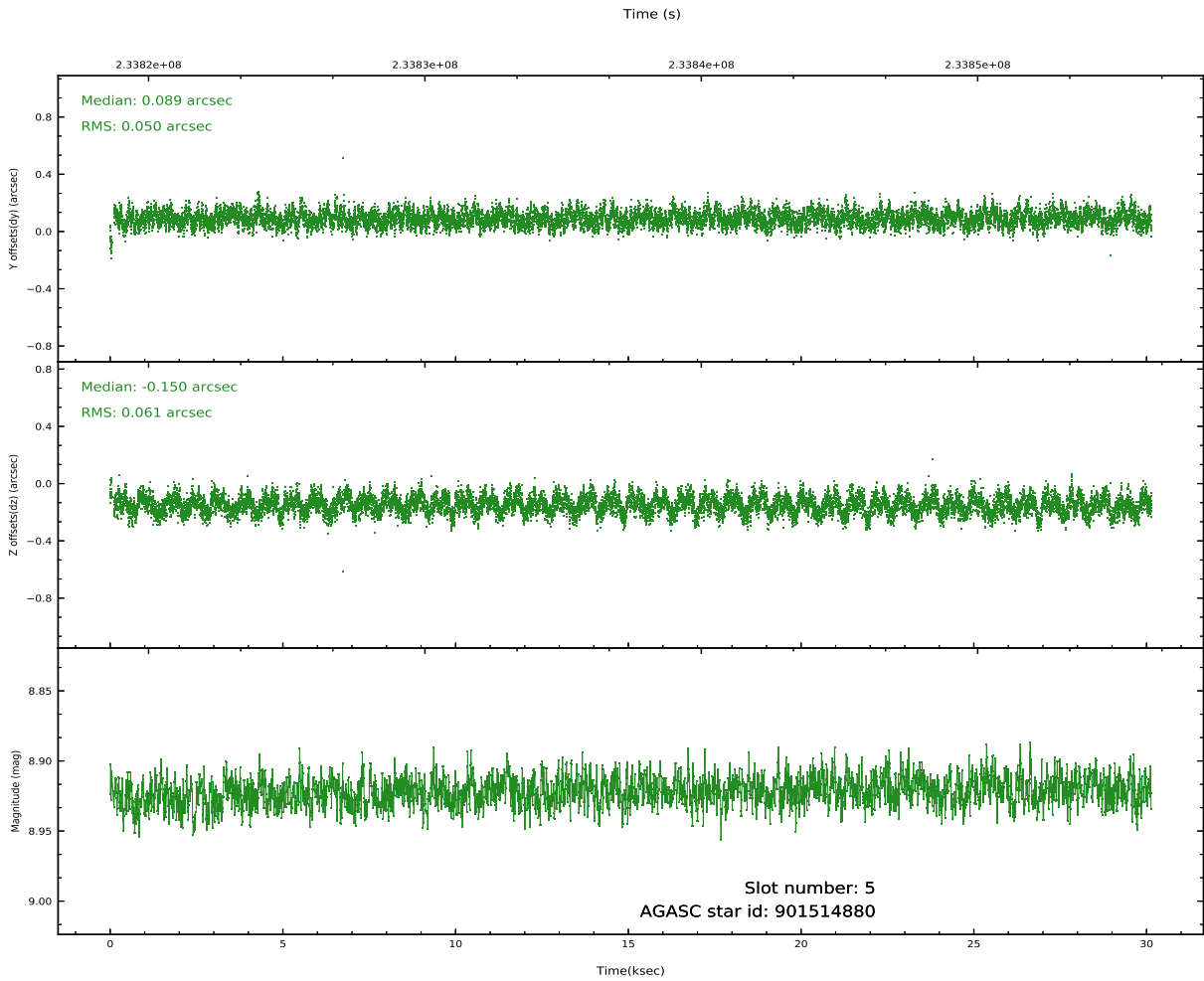
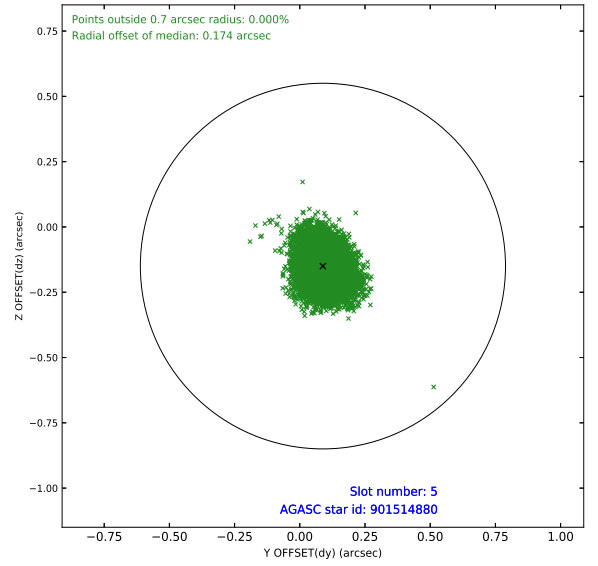
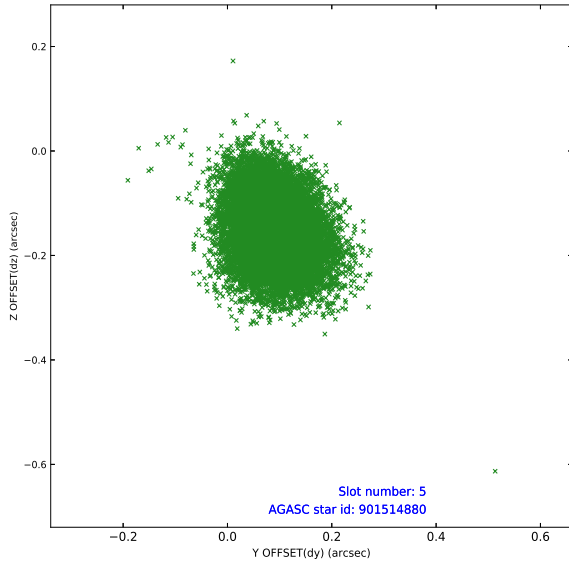
2.4.2 Slot 4



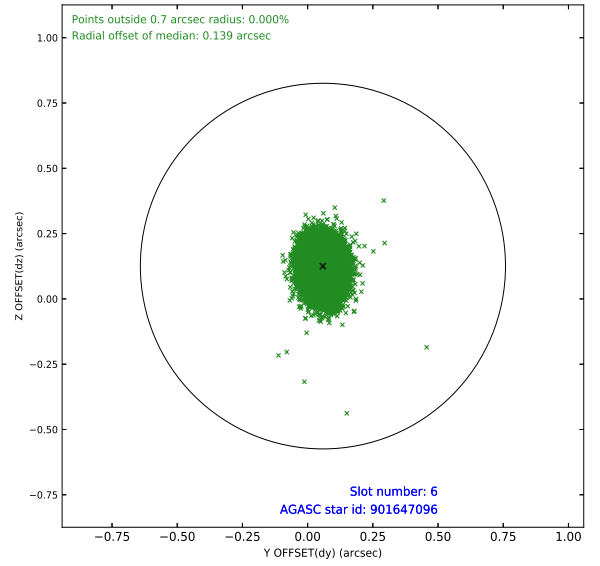
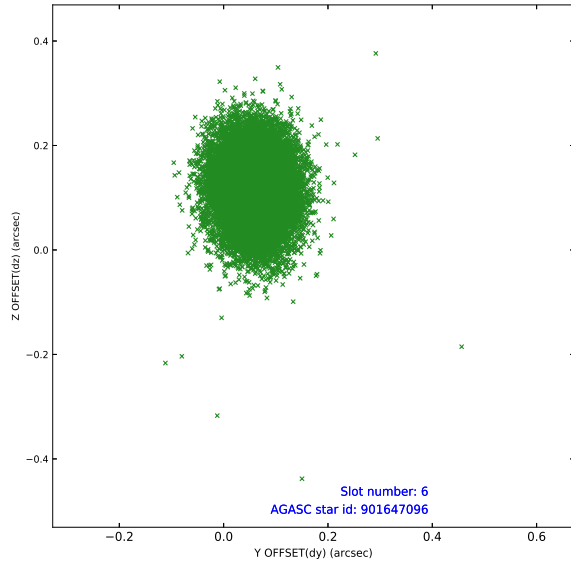
Time (s)



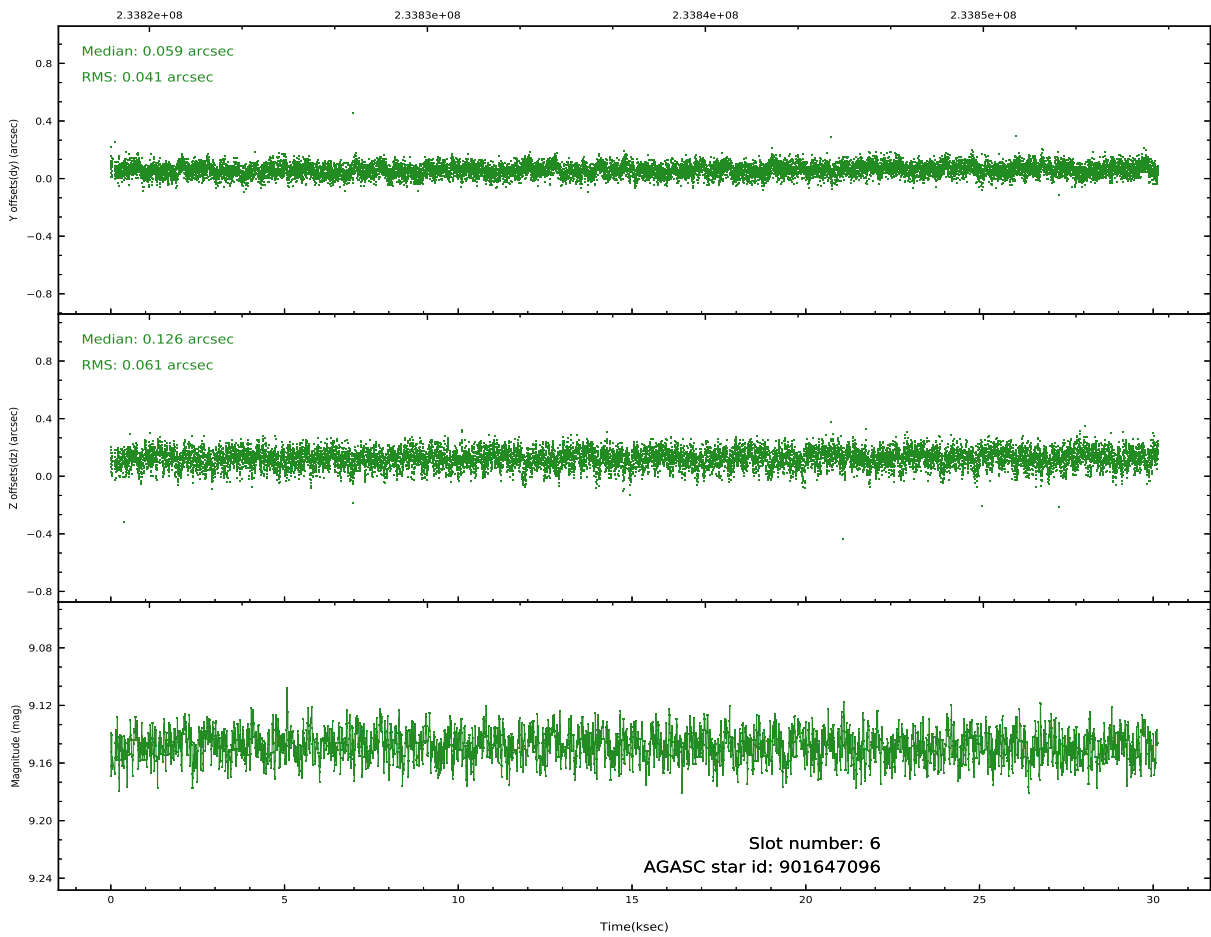
2.4.3 Slot 5



2.4.4 Slot 6

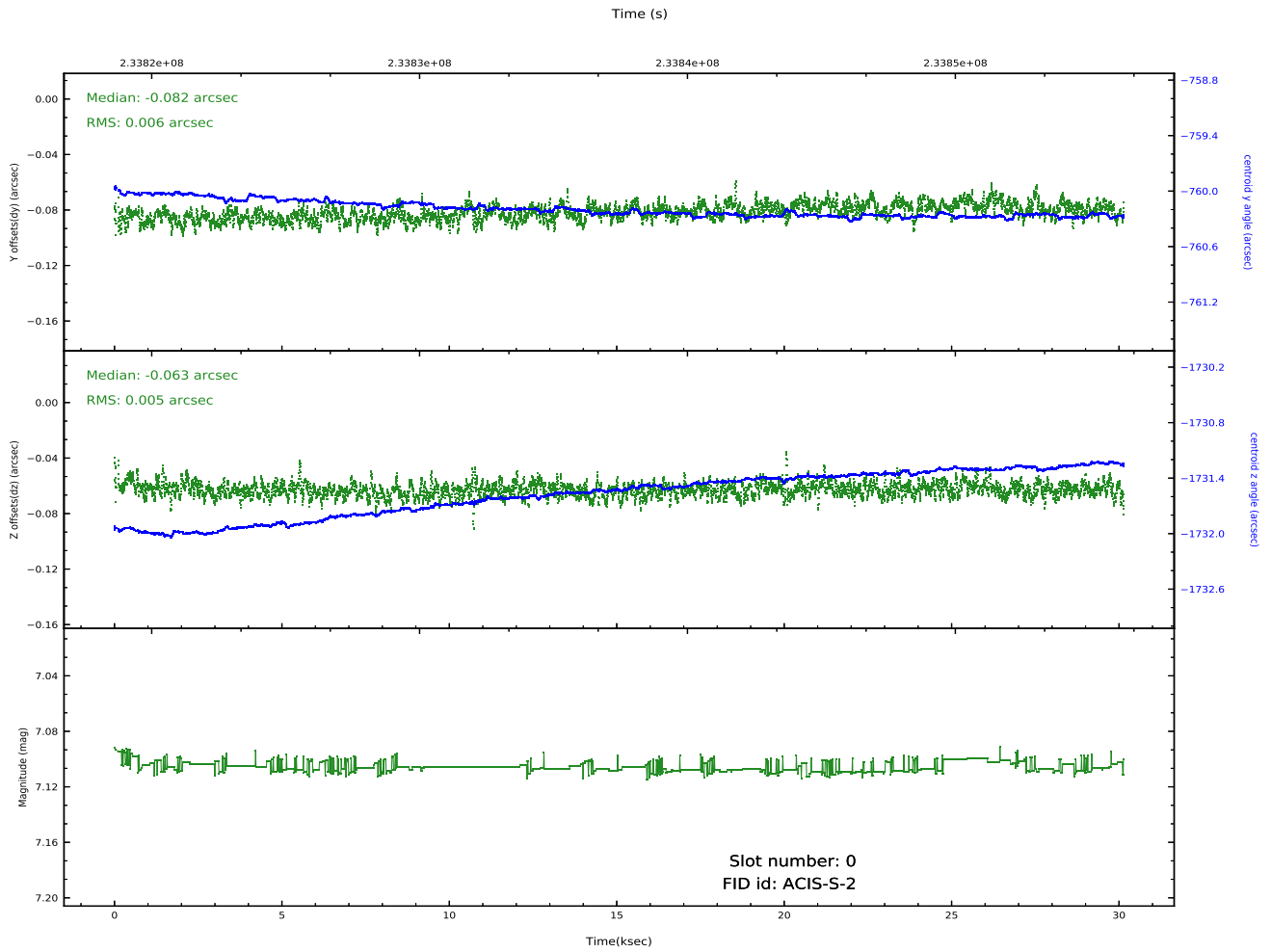
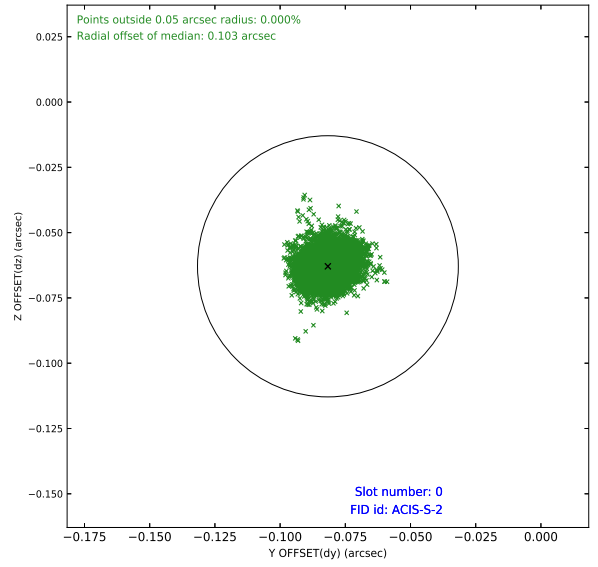
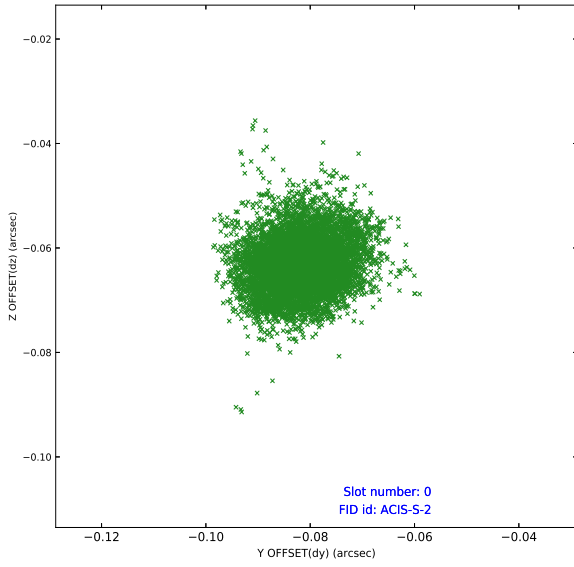


Time (s)

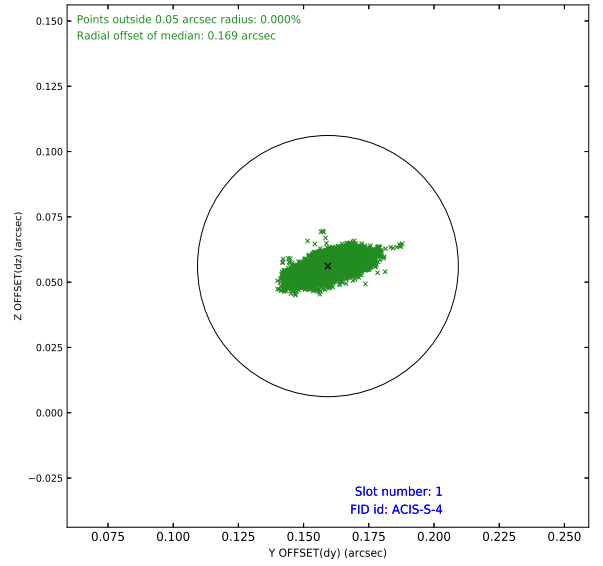
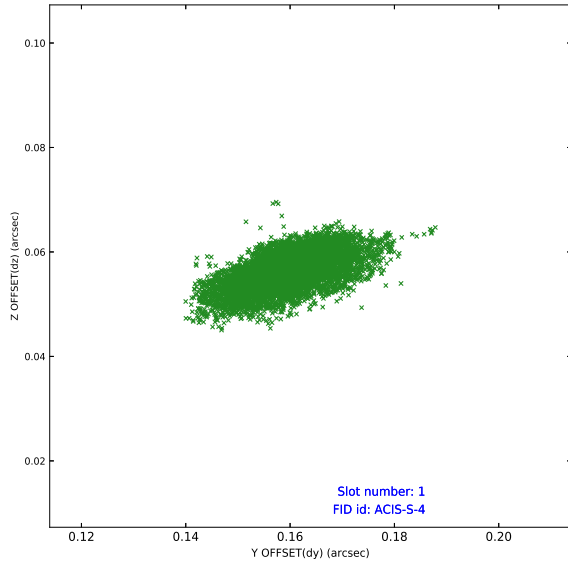


2.5 FID Slots

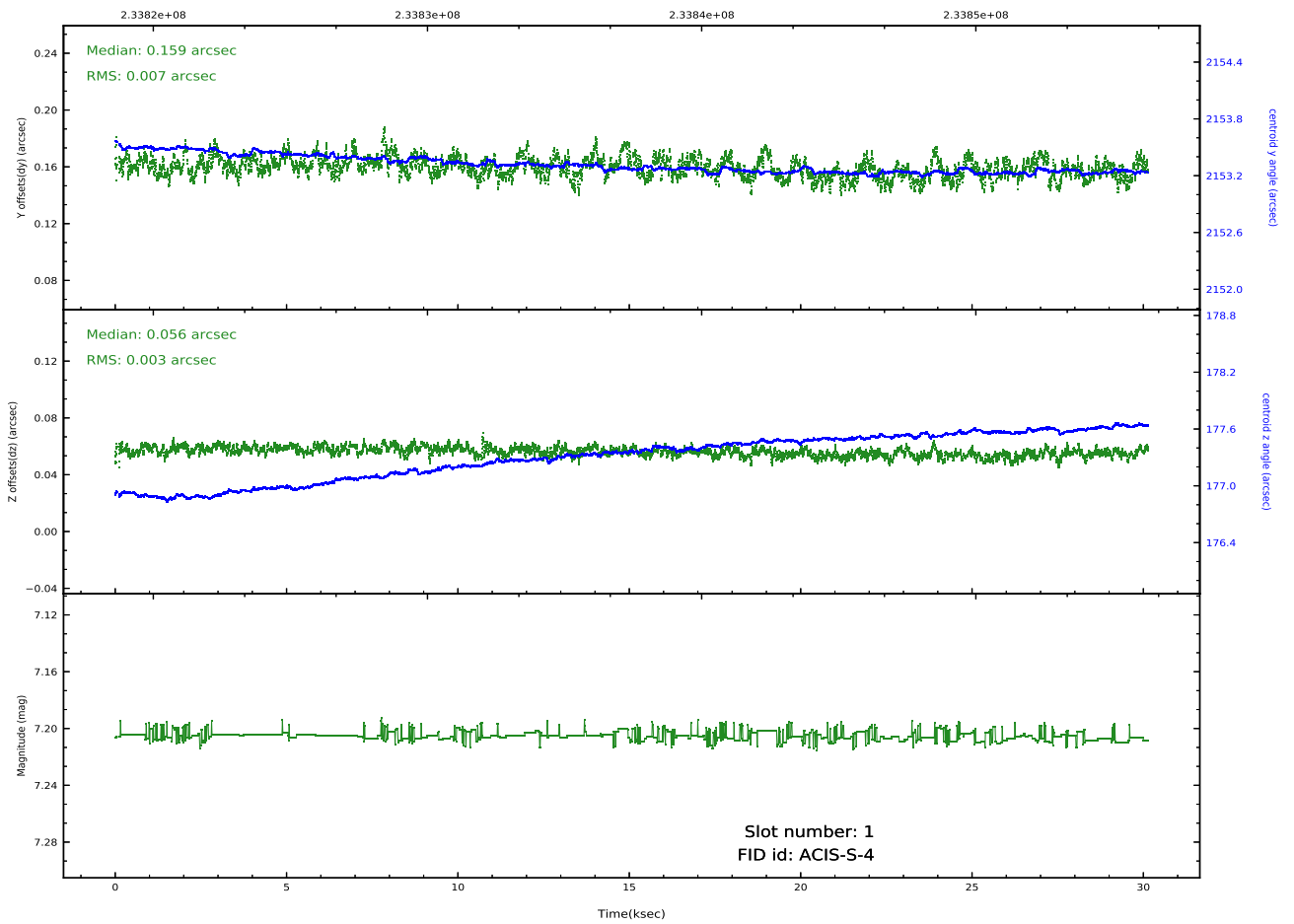
2.5.1 Slot 0



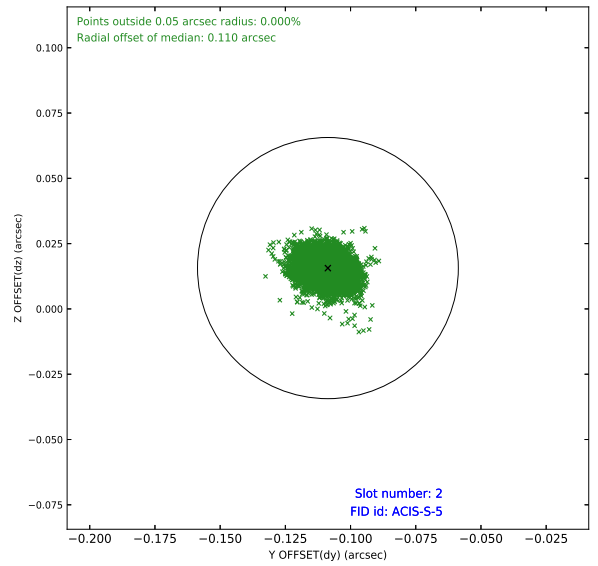
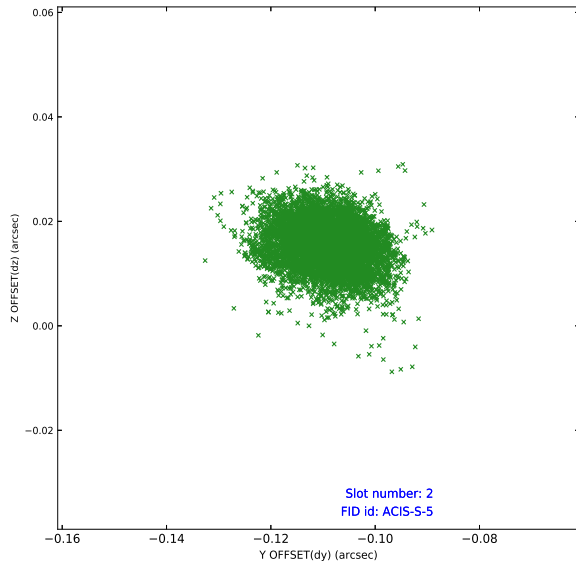
2.5.2 Slot 1



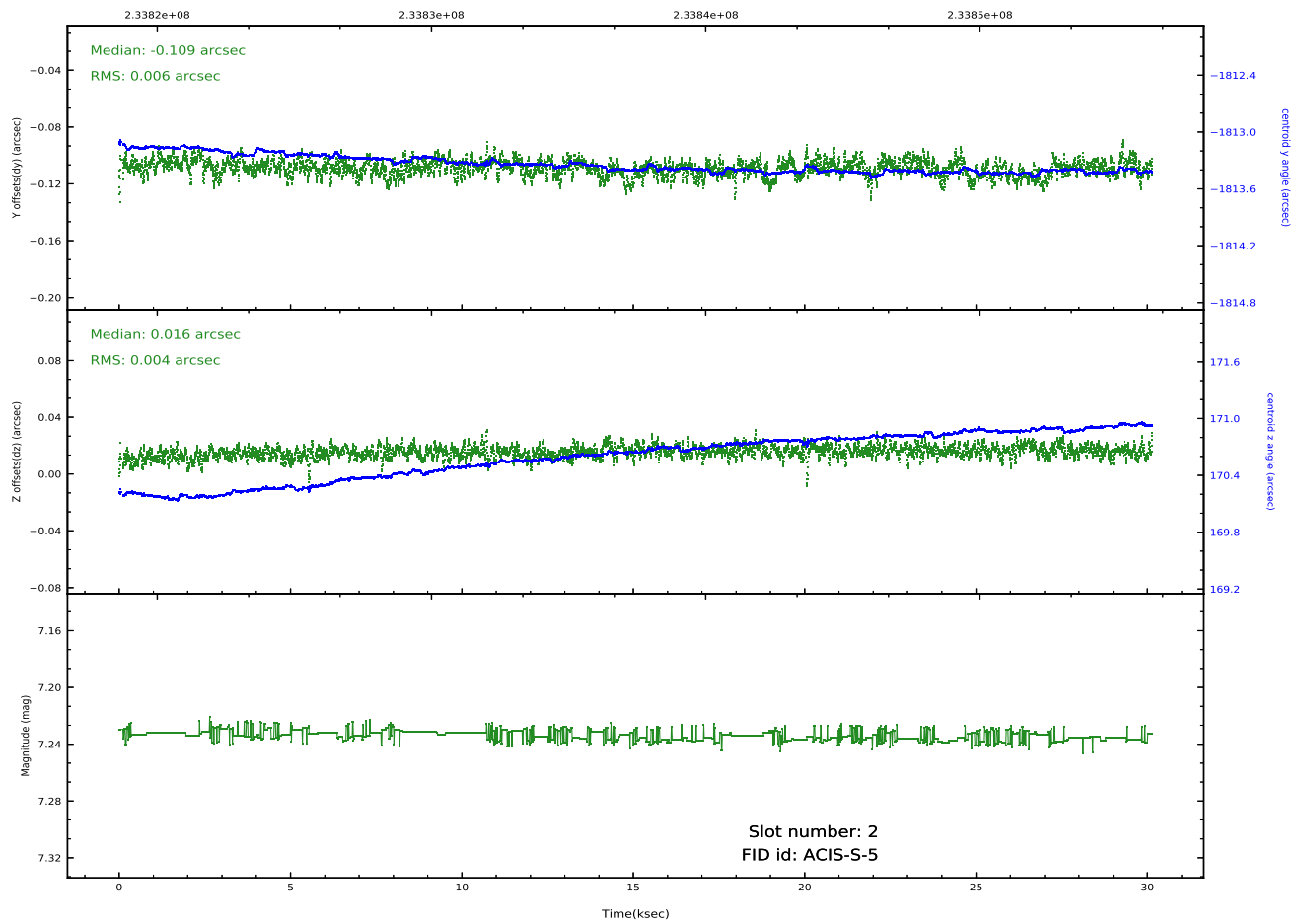
Time (s)



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	30.02235

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.