

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 5427 - L2 Version 4
Chandra X-Ray Center

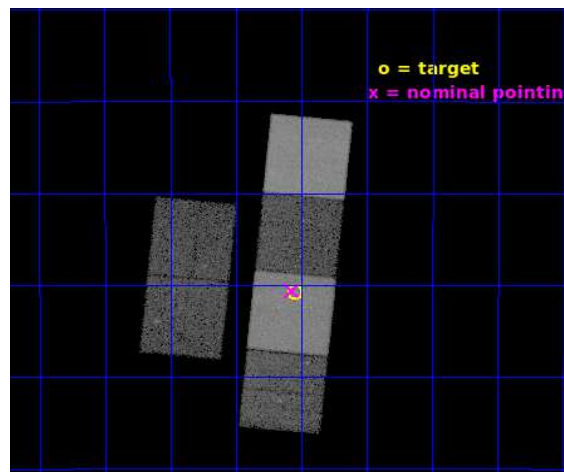
L2 Processing Date : Oct 8 2020

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1 Front

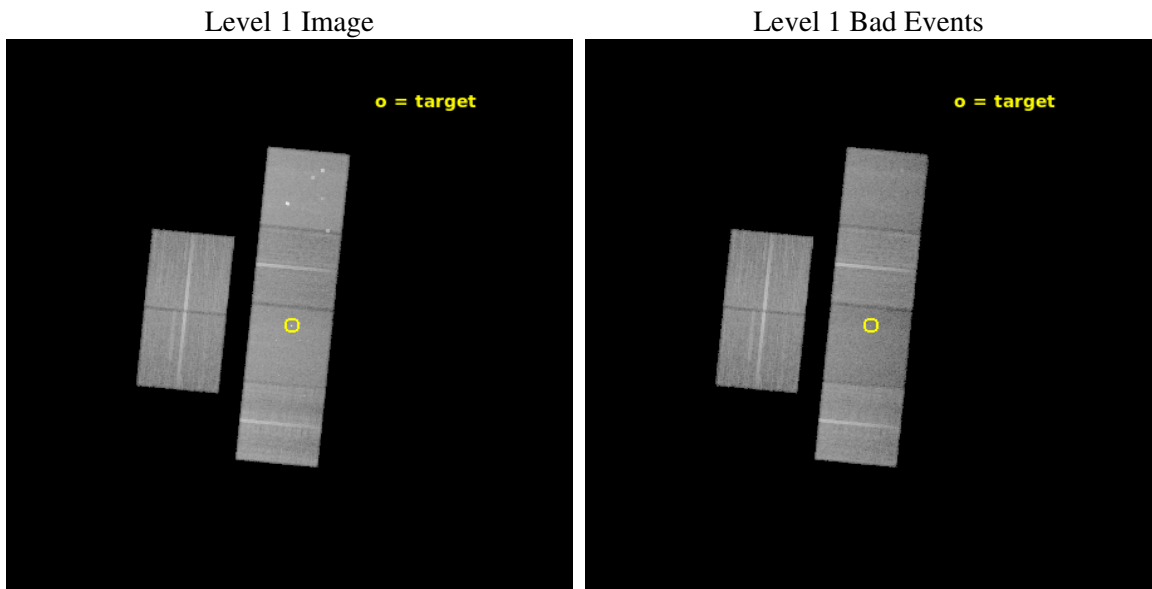
seq_num	200360	Sequence number
obs_id	5427	Observation id
title	Planet-Induced Activity Enhancements in the HD 179949 System	Propo
observer	Steven Saar	Principal investigator
object	HD 179949	Source name
dtycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	288.888333	Observer's specified target RA [deg]
dec_targ	-24.179361	Observer's specified target Dec [deg]
ra_nom	288.89324124453	Nominal RA [deg]
dec_nom	-24.177063788515	Nominal Dec [deg]
roll_nom	95.658112706873	Nominal Roll [deg]
revision	4	Processing version of data
ontime	29958.399888396	Sum of GTIs [s]
livetime	29579.048590227	Livetime [s]
ontime2	29945.435937285	Sum of GTIs [s]
ontime3	29948.572558582	Sum of GTIs [s]
ontime5	29958.377549618	Sum of GTIs [s]
ontime6	29958.336509615	Sum of GTIs [s]
ontime7	29958.399888396	Sum of GTIs [s]
ontime8	29958.254429638	Sum of GTIs [s]
l2events	269561	Number of level 2 events



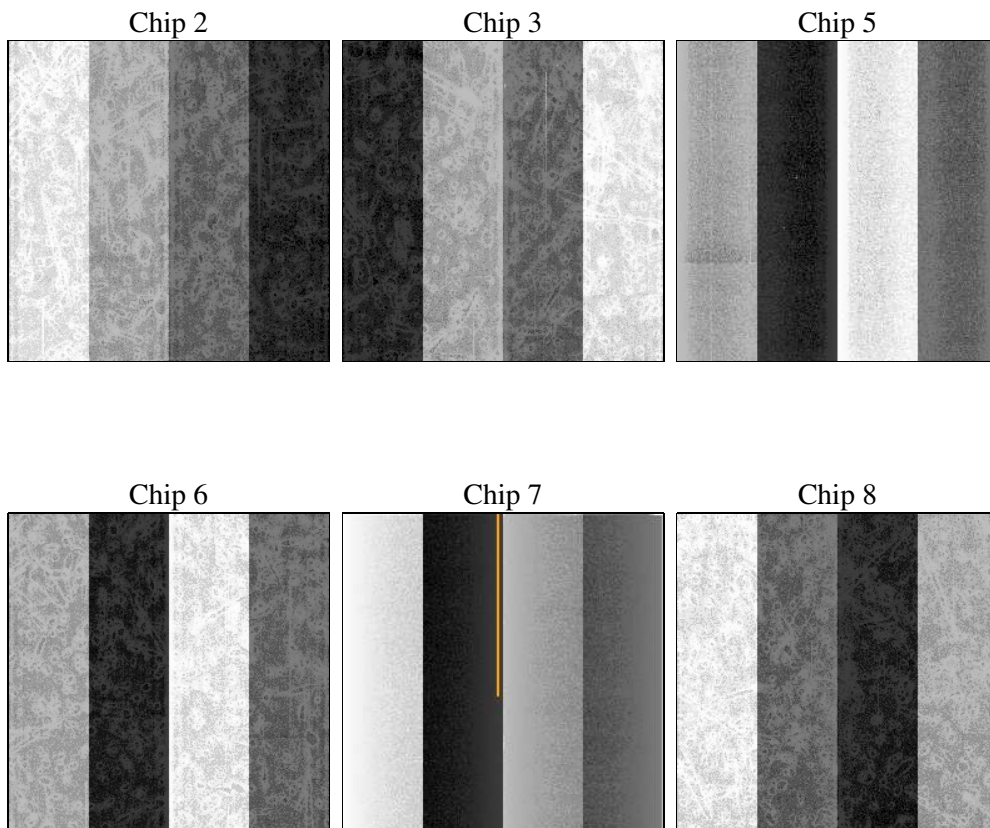
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	29958.399888396	Sum of GTIs [s]
caldbver	4.9.2	 	ontime2	29945.435937285	Sum of GTIs [s]
date	2020-10-08T12:00:01	Date and time of file creation	ontime3	29948.572558582	Sum of GTIs [s]
revision	4	Processing version of data	ontime5	29958.377549618	Sum of GTIs [s]
			ontime6	29958.336509615	Sum of GTIs [s]
			ontime7	29958.399888396	Sum of GTIs [s]
			ontime8	29958.254429638	Sum of GTIs [s]
			l1events	1198536	Number of level 1 events

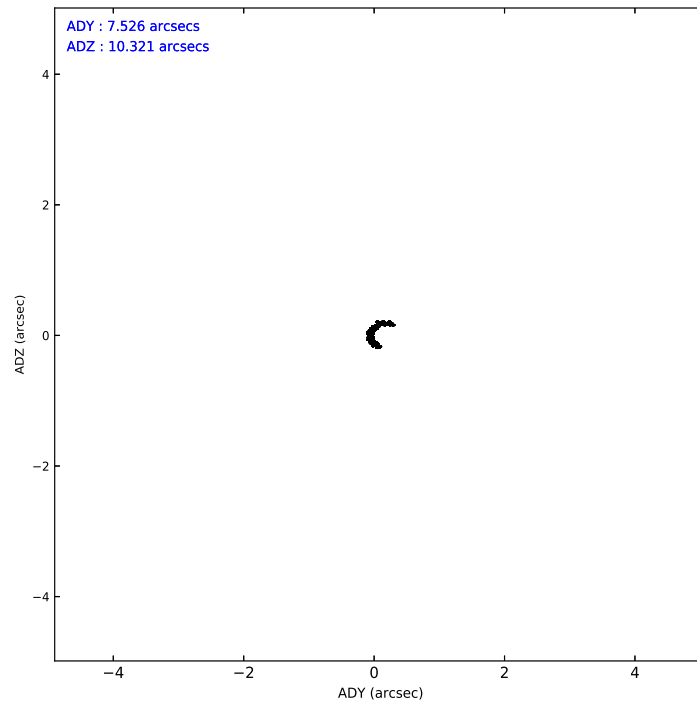
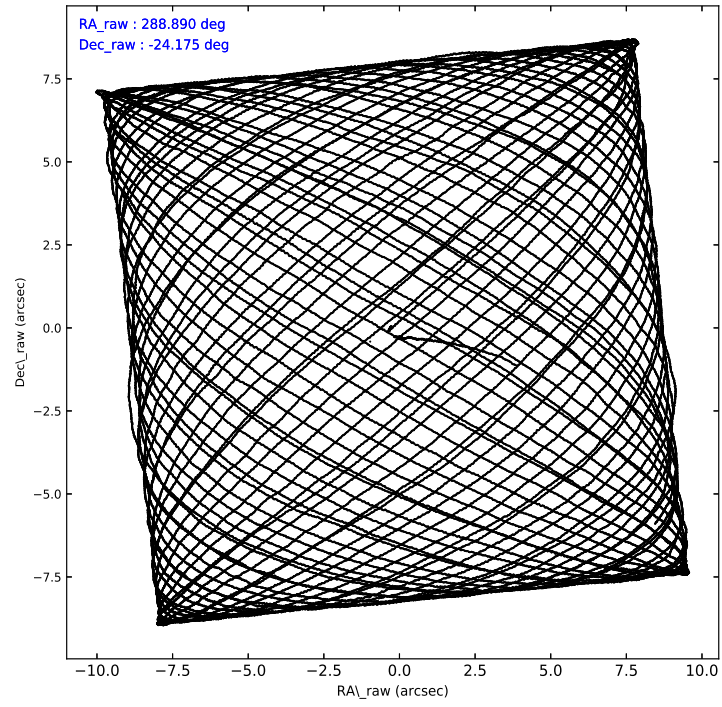
2.1.4 Events

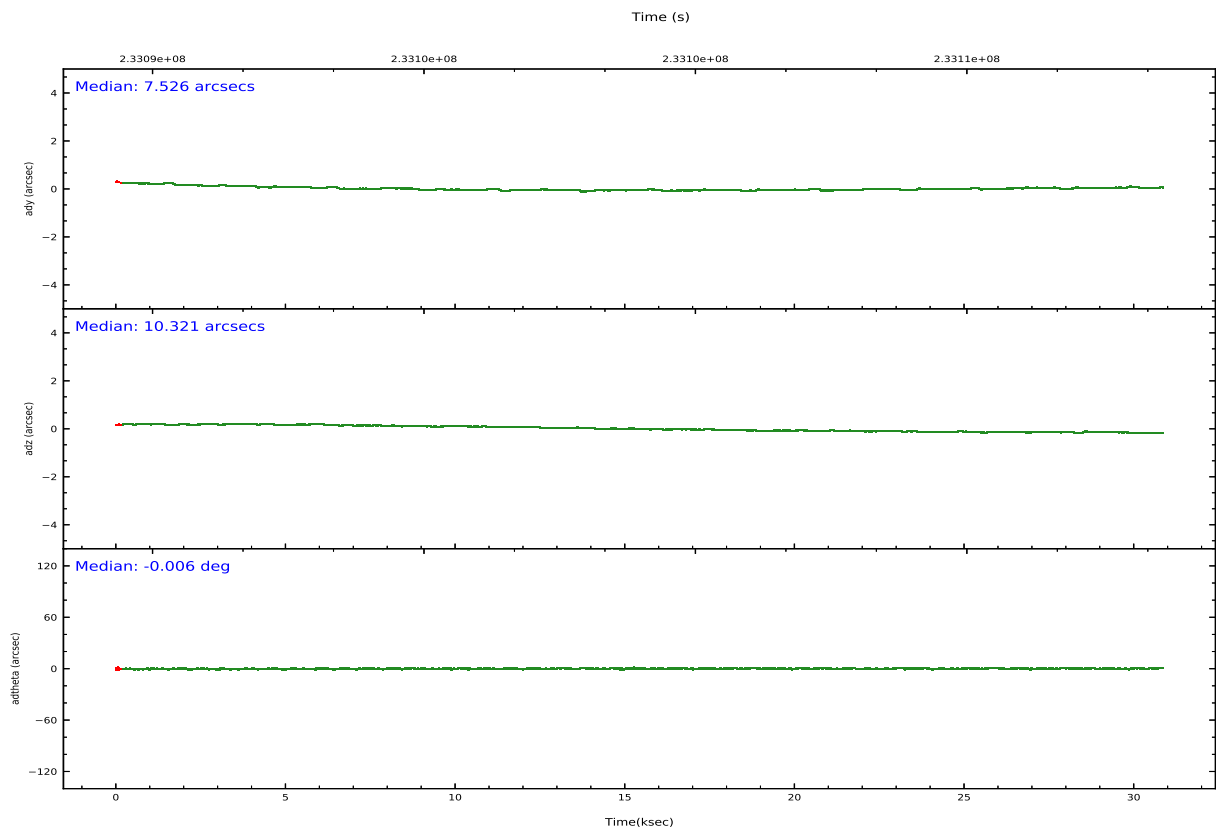
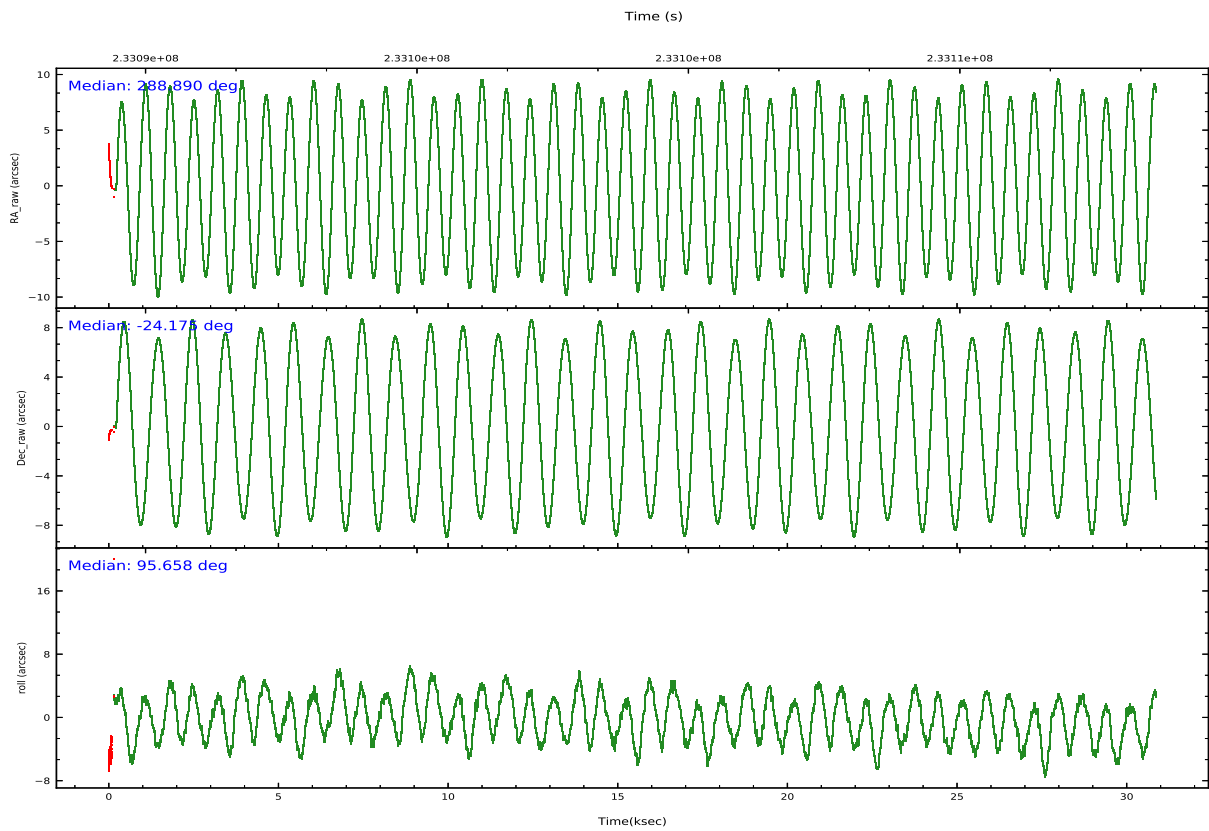
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	189787	166560	245913	172013	201436	222827	grade 0 events	6728	6612	17750	7357	9825	16890
rejected events	171854	149379	120689	152634	107274	169729		3%	3%	7%	4%	4%	7%
rejected %	90%	89%	49%	88%	53%	76%	grade 1 events	94	105	400	78	194	169
								0%	0%	0%	0%	0%	0%
							grade 2 events	4090	3584	35046	3910	19213	11563
								2%	2%	14%	2%	9%	5%
							grade 3 events	1906	1920	5548	2088	8777	5987
								1%	1%	2%	1%	4%	2%
							grade 4 events	1969	1836	5267	2043	8776	5538
								1%	1%	2%	1%	4%	2%
							grade 5 events	6067	7038	19346	7142	21127	10271
								3%	4%	7%	4%	10%	4%
							grade 6 events	3241	3231	61626	3983	47585	13127
								1%	1%	25%	2%	23%	5%
							grade 7 events	165692	142234	100930	145412	85939	159282
								87%	85%	41%	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	288.907458	288.89324124453	Subarray requested	NONE	NONE
[deg] Pointing Dec	-24.197101	-24.177063788515	Alternating exposures requested	N	N
[deg] Pointing Roll	95.507835	95.658112706873	[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	0.740000	0.740000			
Phase end	0.860000	0.860000			
Phase start error	0.030000	0.030000			
Phase end error	0.030000	0.030000			
[s] Observation start time (MET)	233087786.184000	233086425.13829			
Observation start date	2005-05-21T18:35:22	2005-05-21T18:13:45			
[s] Observation end time (MET)	233117786.184000	233119236.92729			
Observation end date	2005-05-22T02:55:22	2005-05-22T03:20:36			
Read mode	TIMED	TIMED			

2.3 Aspect





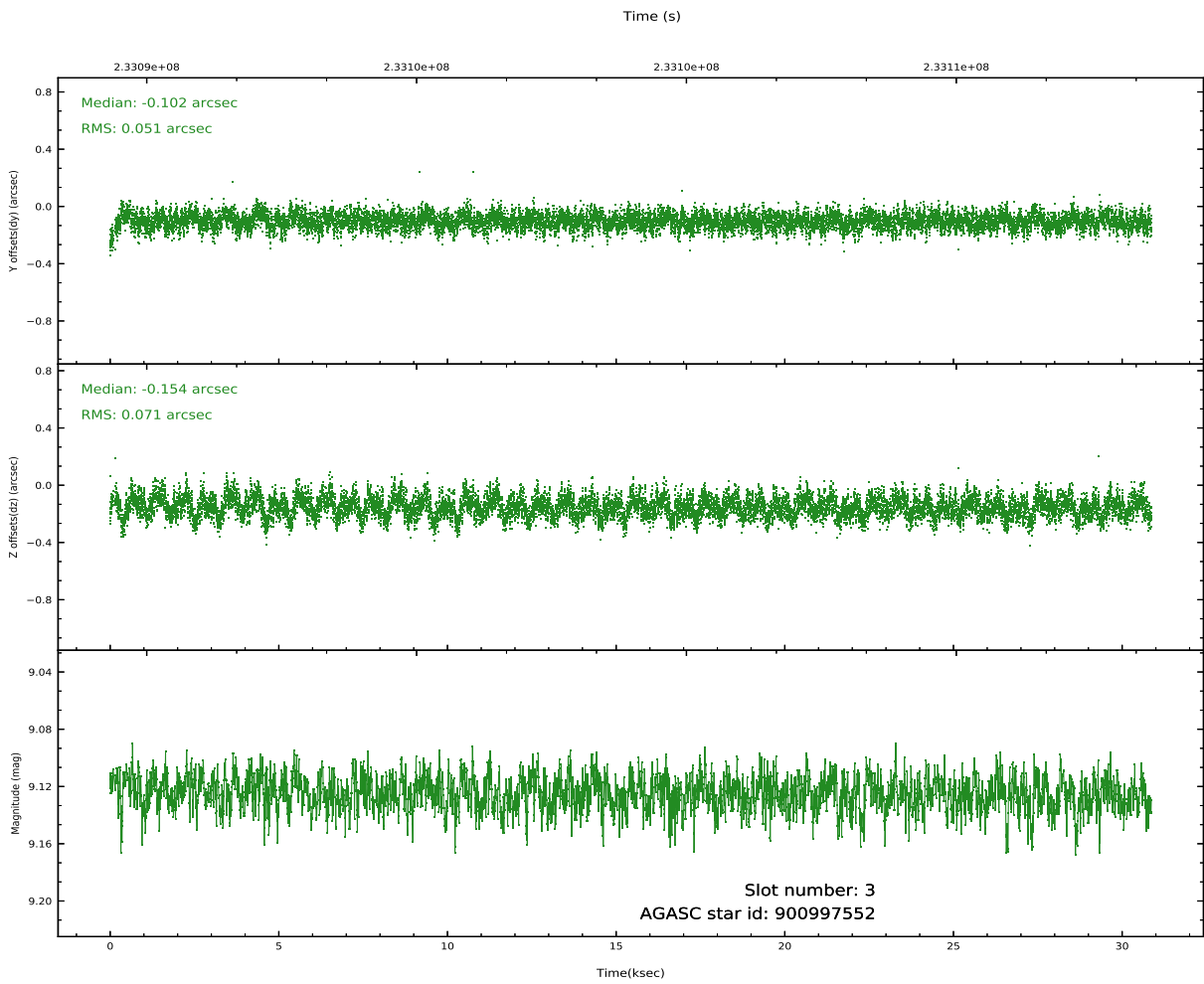
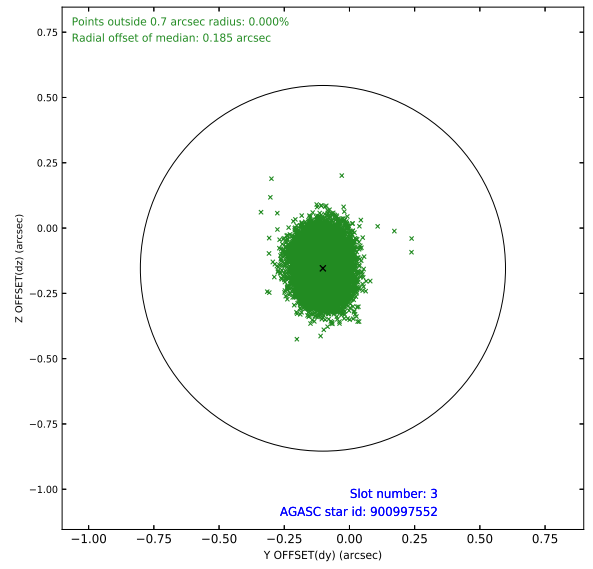
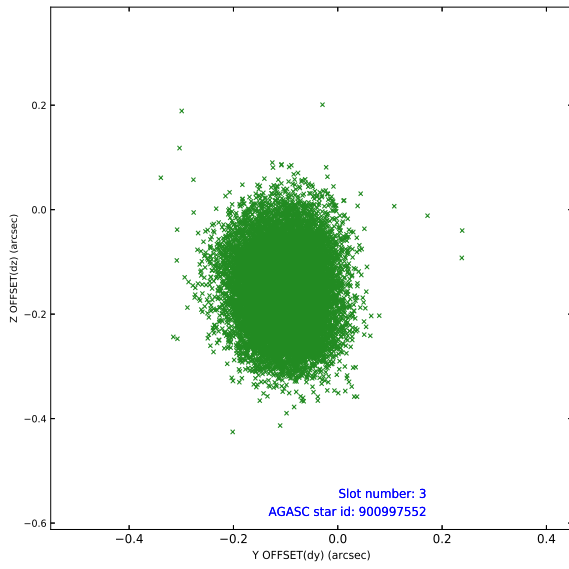
Slot Statistics

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	7.10	7514	1.000	-0.077	-0.054	0.007	0.012	0.000000	0.000000	-760.31	-1731
1	FID		ACIS-S-4	7.21	7512	1.000	0.161	0.052	0.007	0.013	0.000000	0.000000	2153.09	176
2	FID		ACIS-S-5	7.23	7514	1.000	-0.115	0.011	0.008	0.014	0.000000	0.000000	-1813.18	170
3	GUIDE	used	900997552	9.12	15019	1.000	-0.102	-0.154	0.092	0.151	288.312519	-24.029579	783.81	1889
4	GUIDE	used	901144560	8.68	15024	1.000	-0.109	0.167	0.073	0.114	289.333664	-23.842375	1134.55	-1518
5	GUIDE	used	901514880	8.92	15027	1.000	0.114	-0.149	0.063	0.104	288.396412	-24.524459	-1015.39	1779
6	GUIDE	used	901647096	9.15	15023	1.000	0.098	0.141	0.088	0.140	289.707413	-24.700499	-2062.22	-2429
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

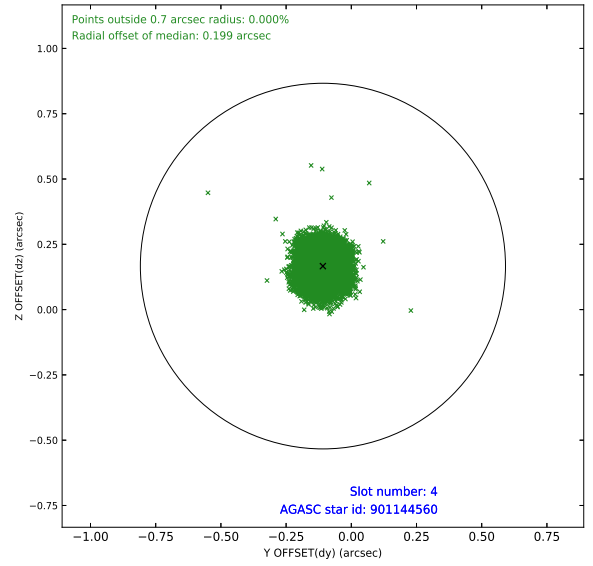
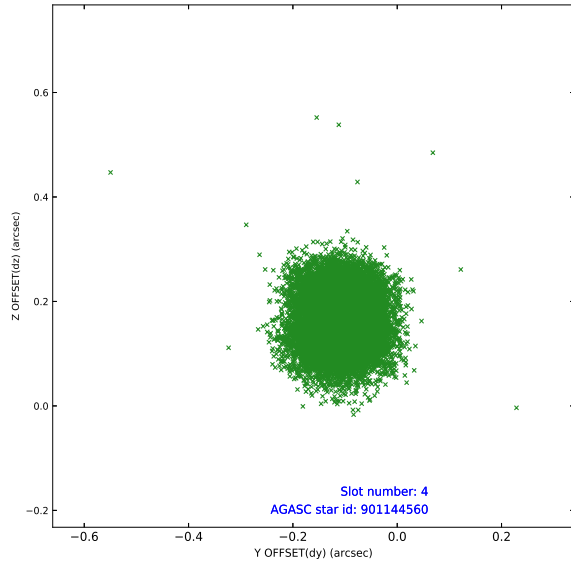
∞

2.4 Star Slots

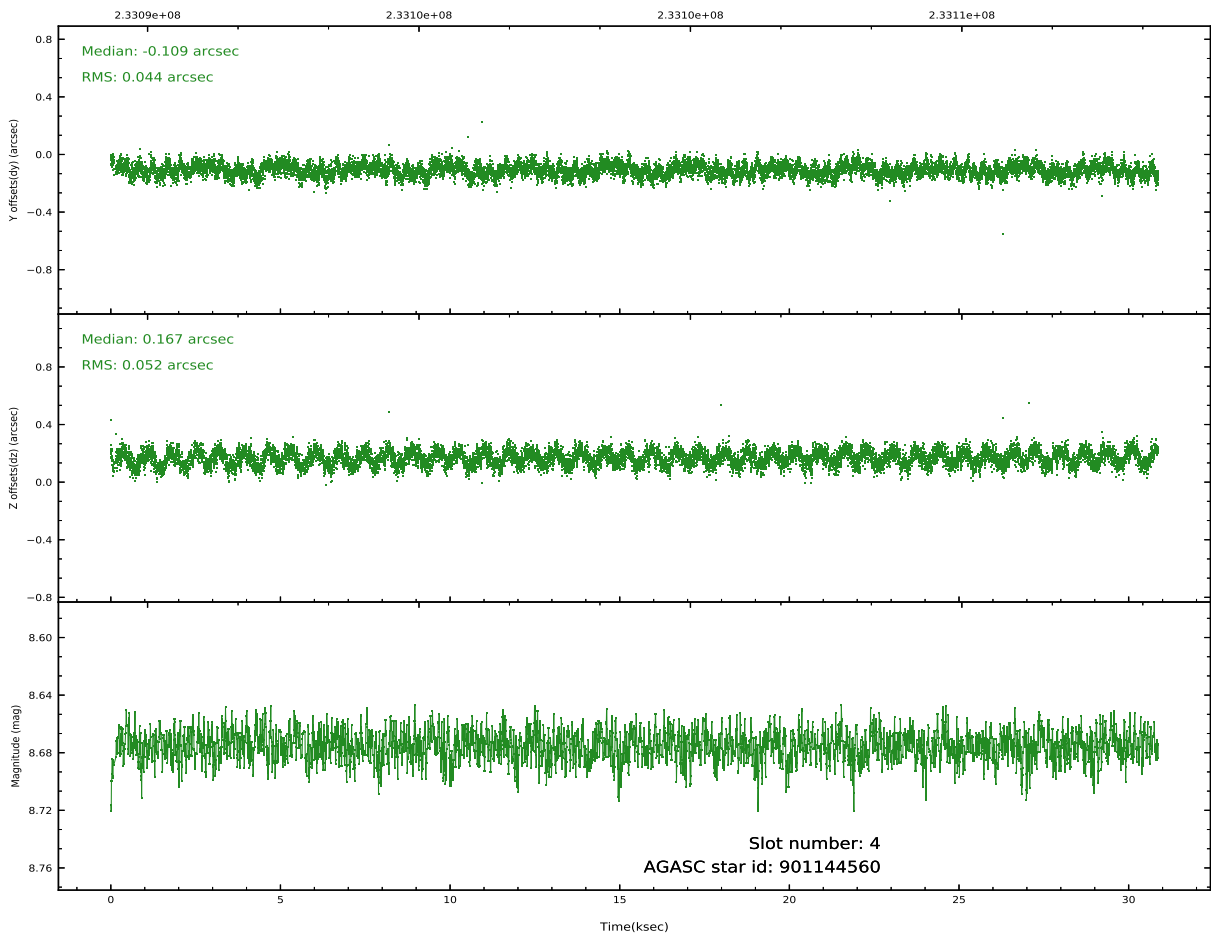
2.4.1 Slot 3



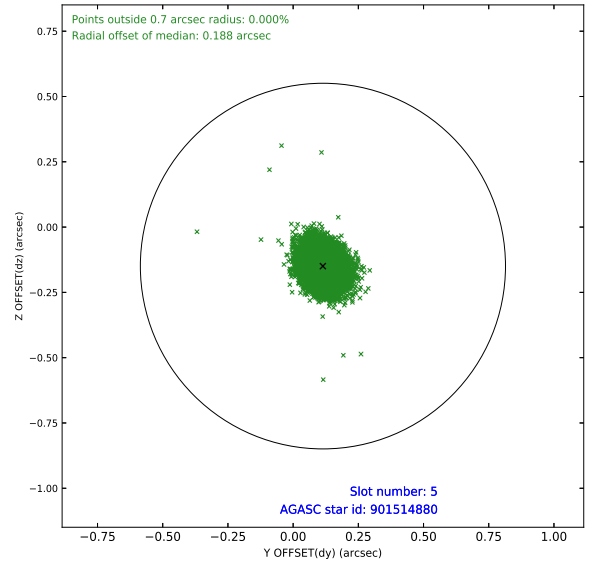
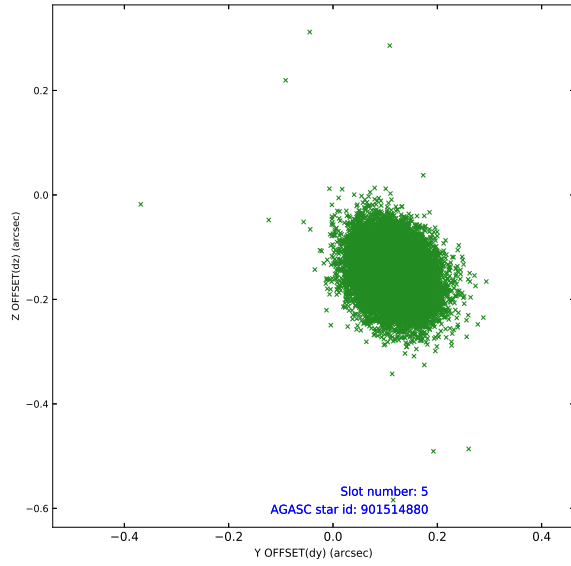
2.4.2 Slot 4



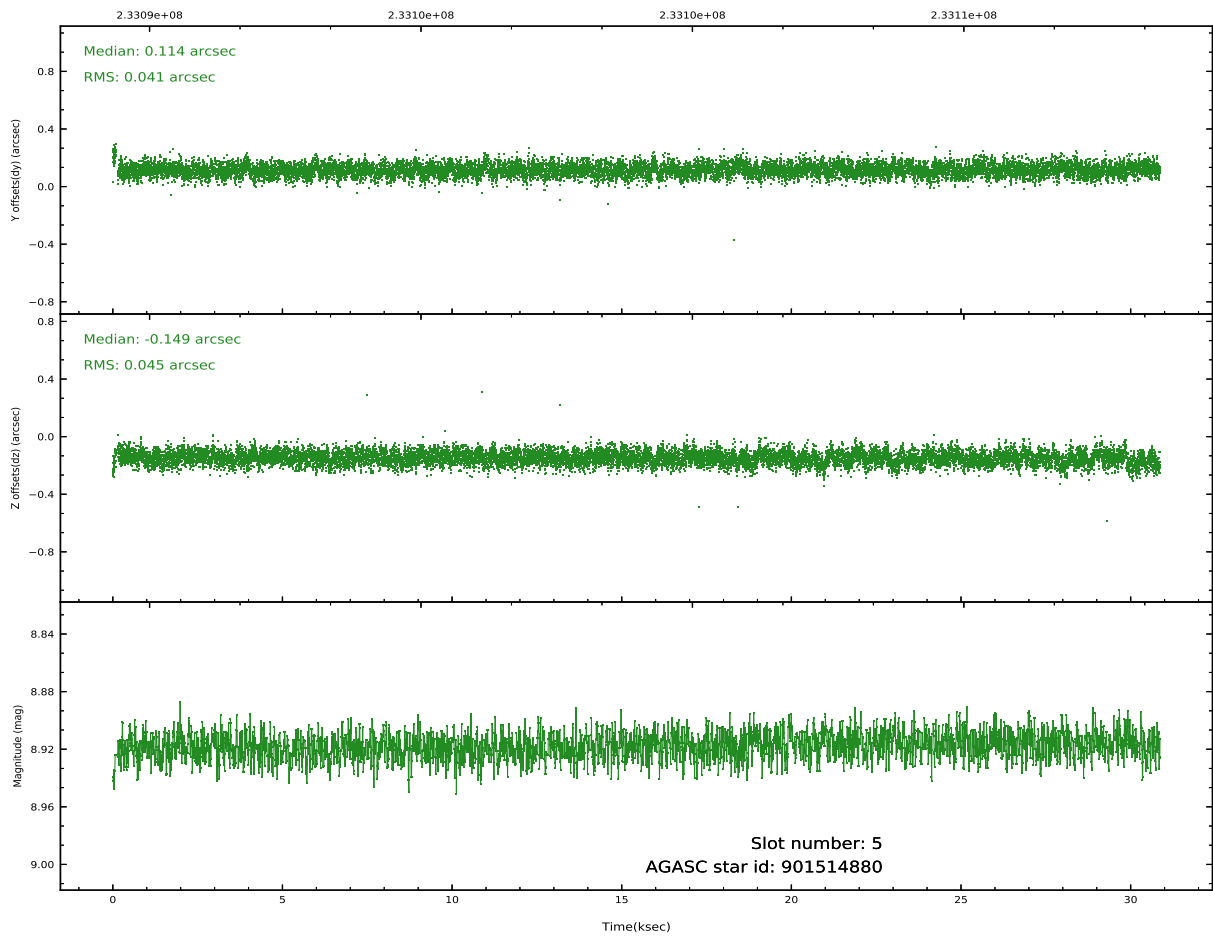
Time (s)



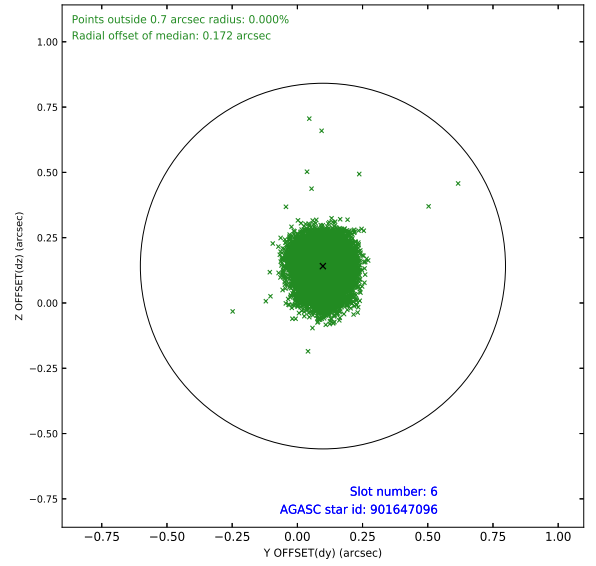
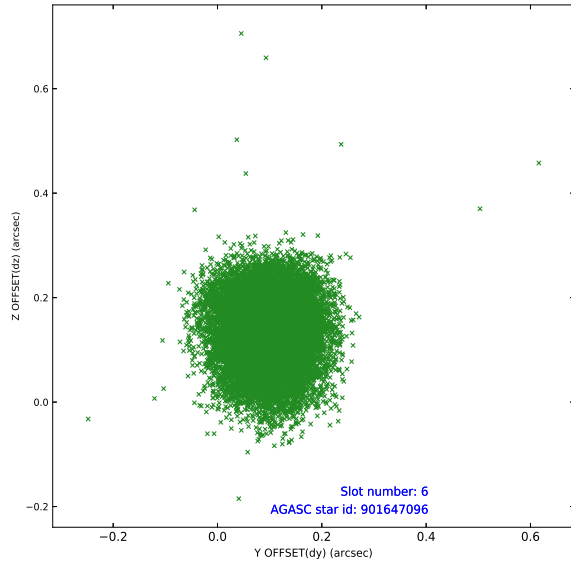
2.4.3 Slot 5



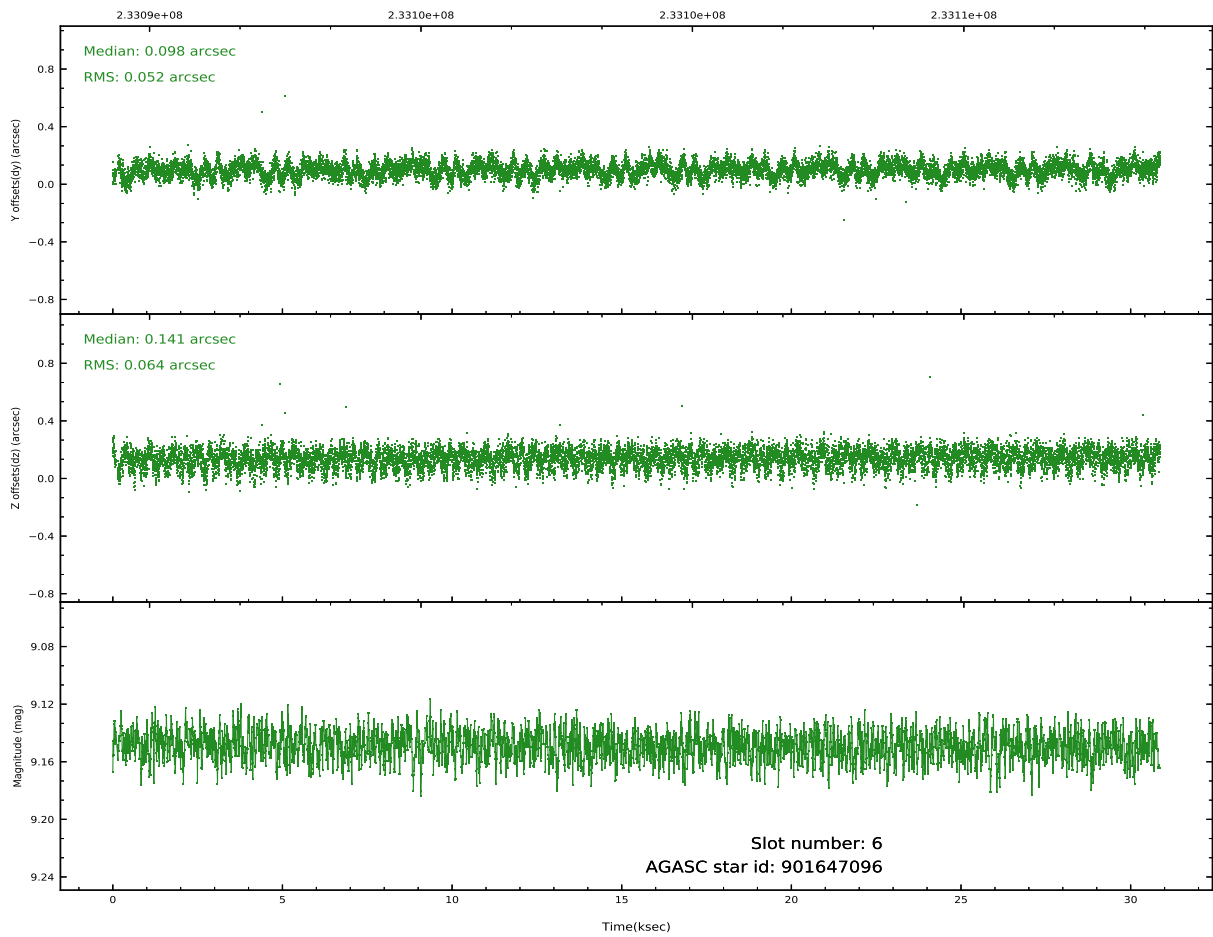
Time (s)



2.4.4 Slot 6

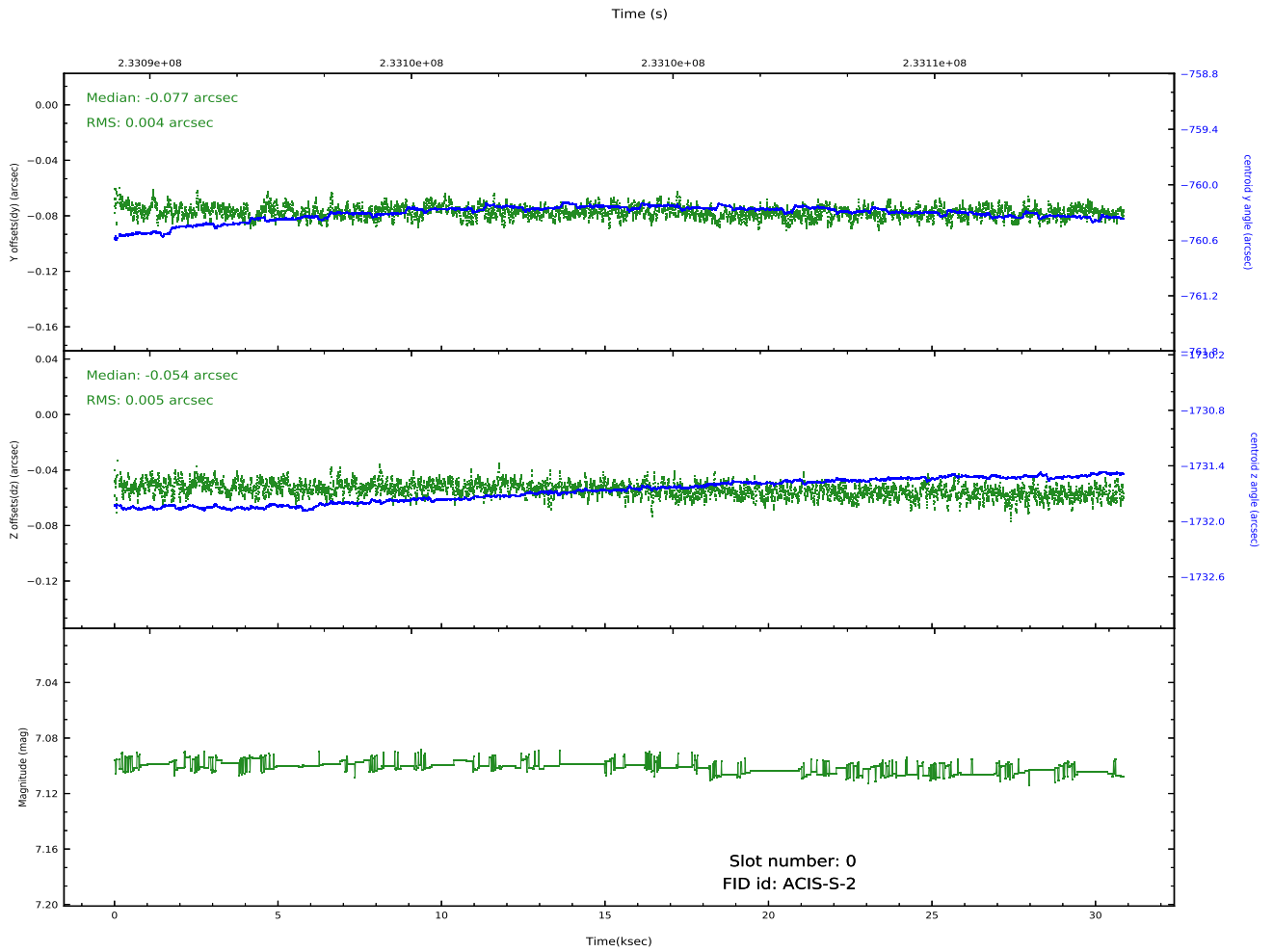
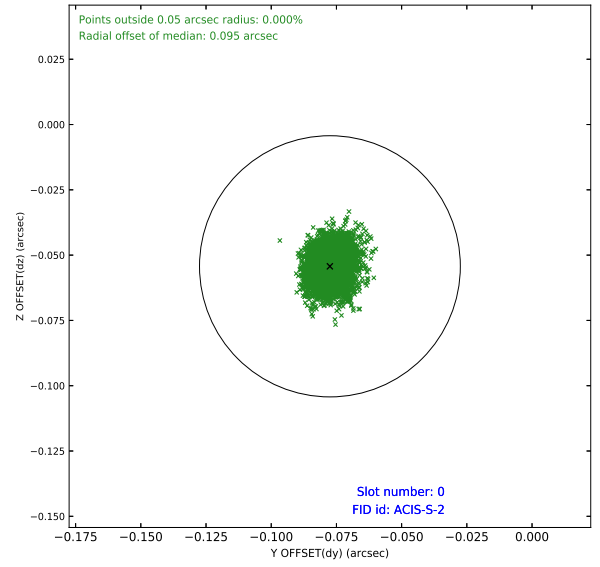
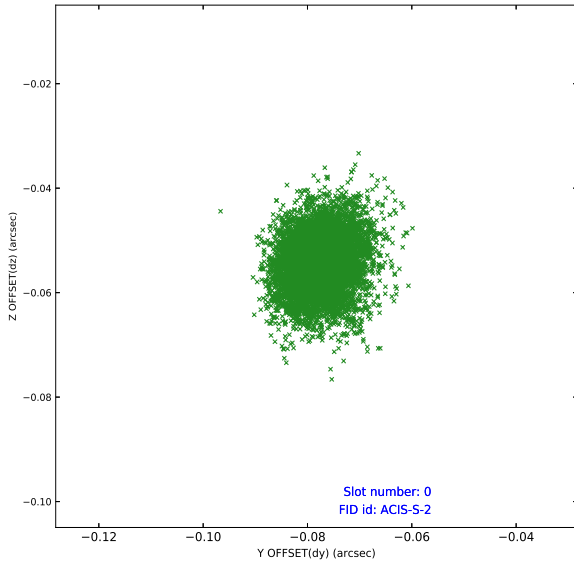


Time (s)

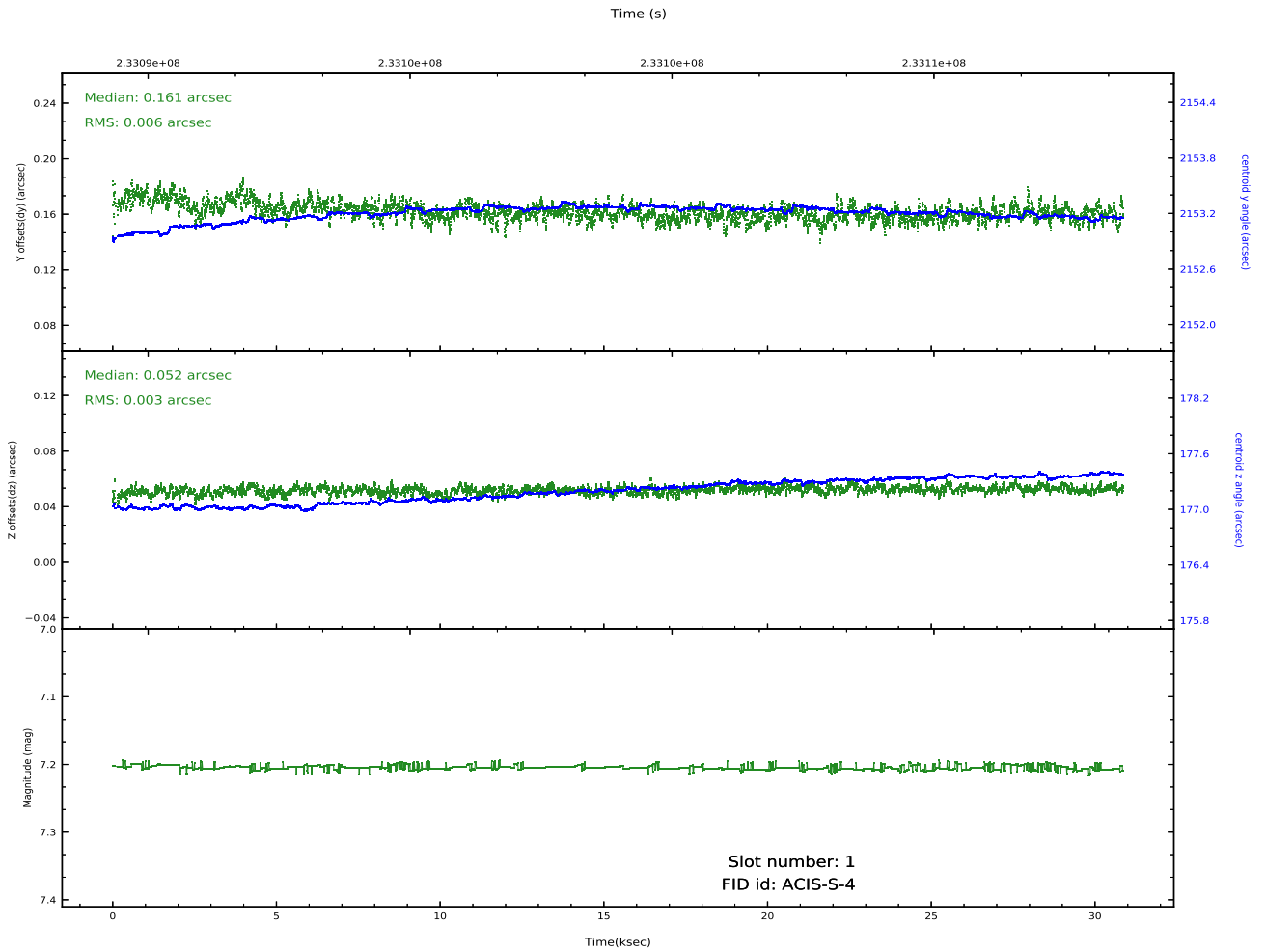
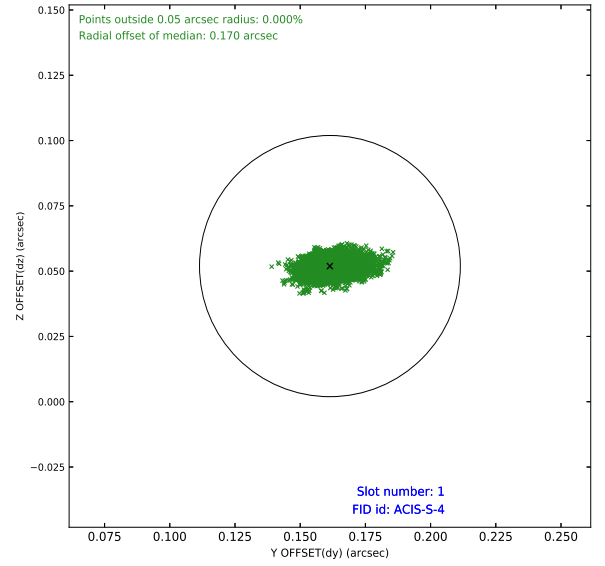
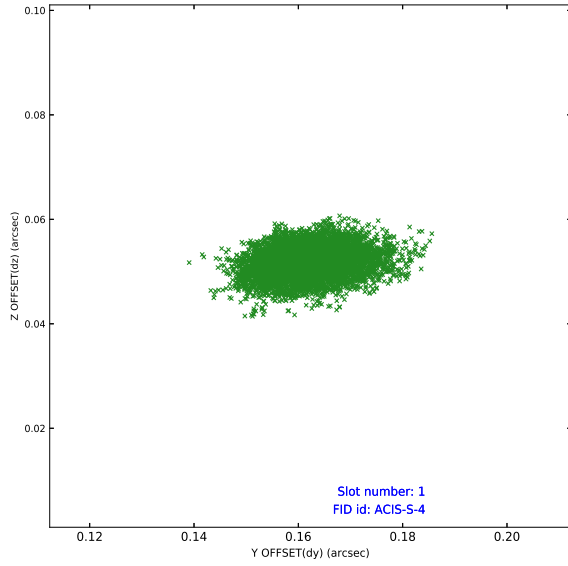


2.5 FID Slots

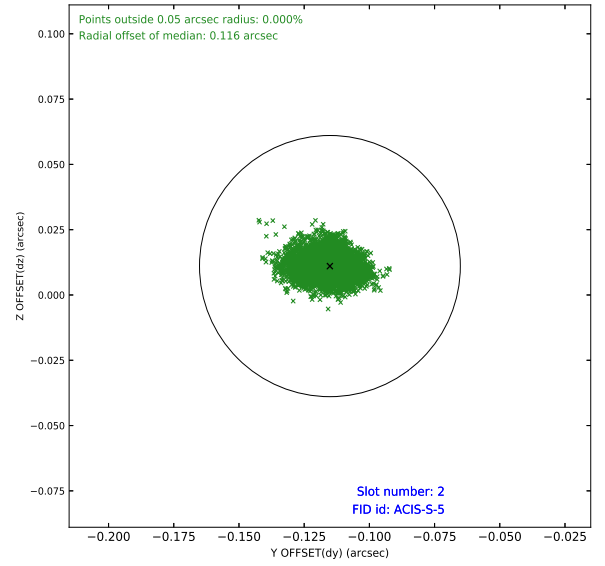
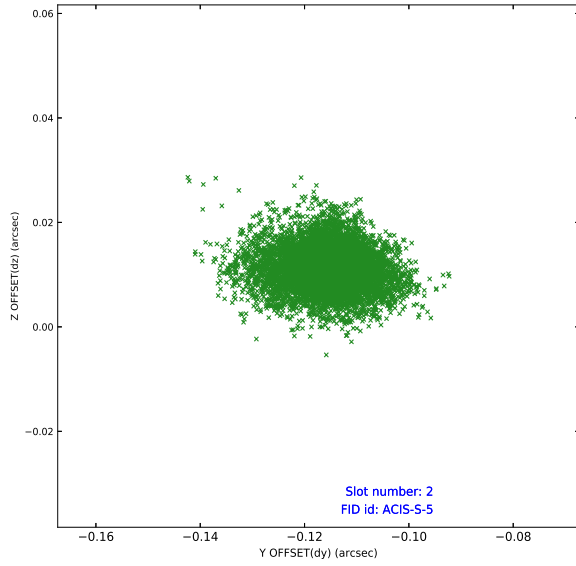
2.5.1 Slot 0



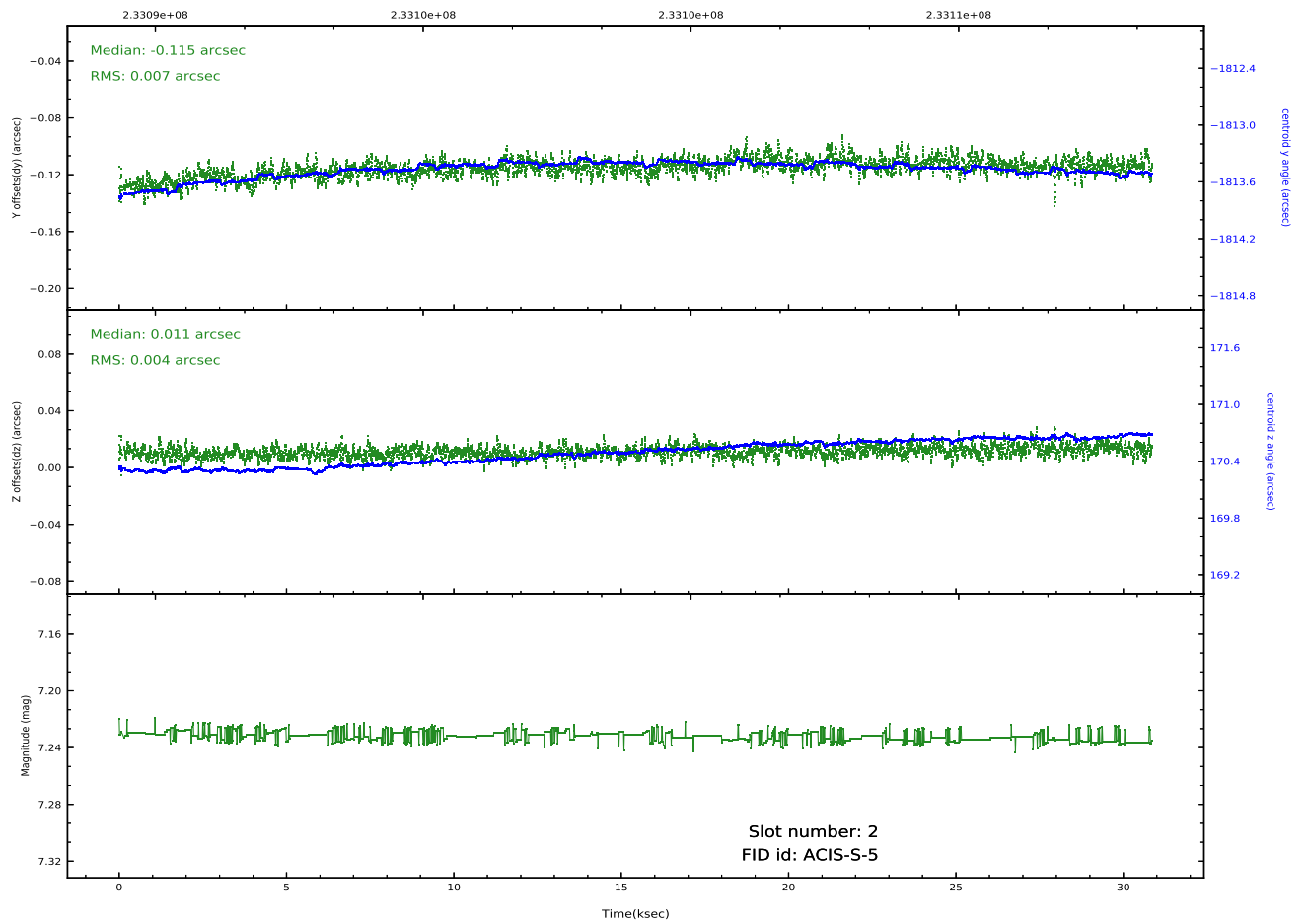
2.5.2 Slot 1



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	29.95839

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.