

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 6122 - L2 Version 4
Chandra X-Ray Center

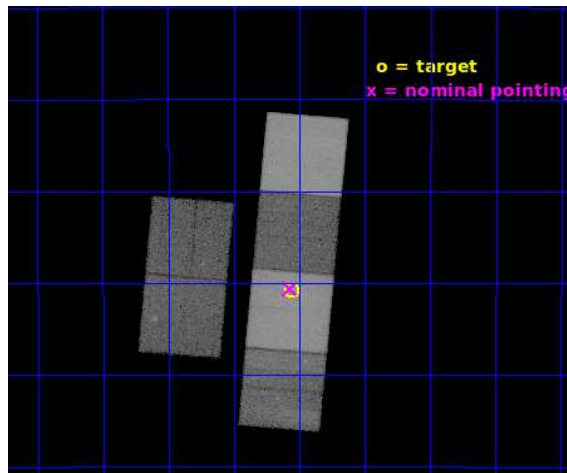
L2 Processing Date : Oct 8 2020

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1 Front

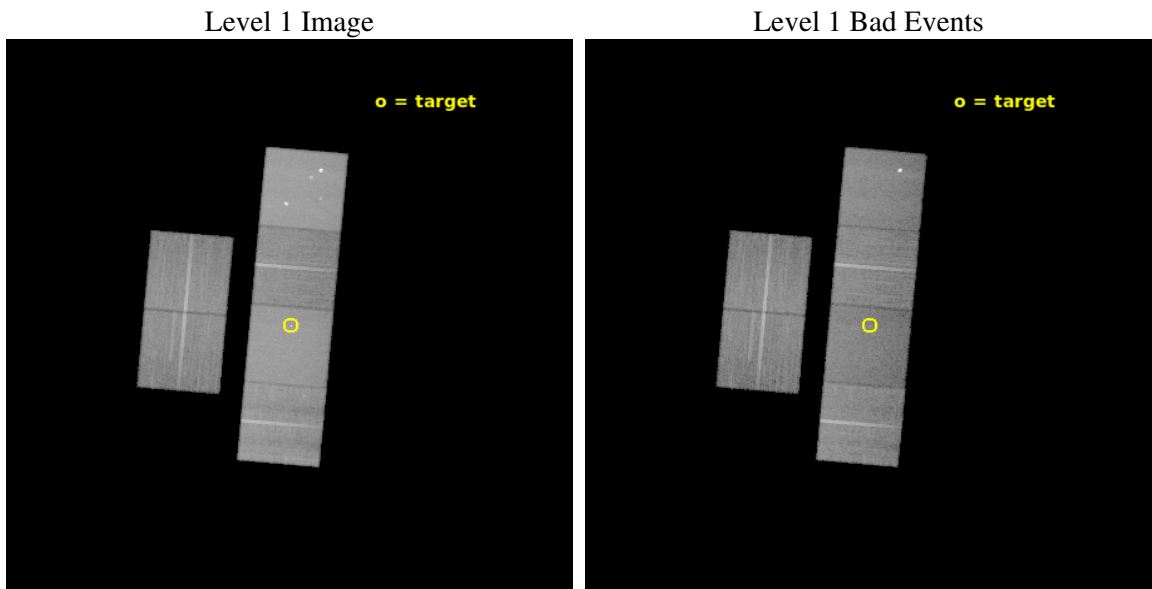
seq_num	200369	Sequence number
obs_id	6122	Observation id
title	Planet-Induced Activity Enhancements in the HD 179949 System	Propo
observer	Steven Saar	Principal investigator
object	HD 179949	Source name
dtycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	288.888333	Observer's specified target RA [deg]
dec_targ	-24.179361	Observer's specified target Dec [deg]
ra_nom	288.89299333326	Nominal RA [deg]
dec_nom	-24.176889090593	Nominal Dec [deg]
roll_nom	95.046499868106	Nominal Roll [deg]
revision	4	Processing version of data
ontime	32165.375182241	Sum of GTIs [s]
livetime	31758.07783402	Livetime [s]
ontime2	29950.634359032	Sum of GTIs [s]
ontime3	30142.992857367	Sum of GTIs [s]
ontime5	32204.267075777	Sum of GTIs [s]
ontime6	30130.028807044	Sum of GTIs [s]
ontime7	32165.375182241	Sum of GTIs [s]
ontime8	30311.525346845	Sum of GTIs [s]
l2events	497000	Number of level 2 events



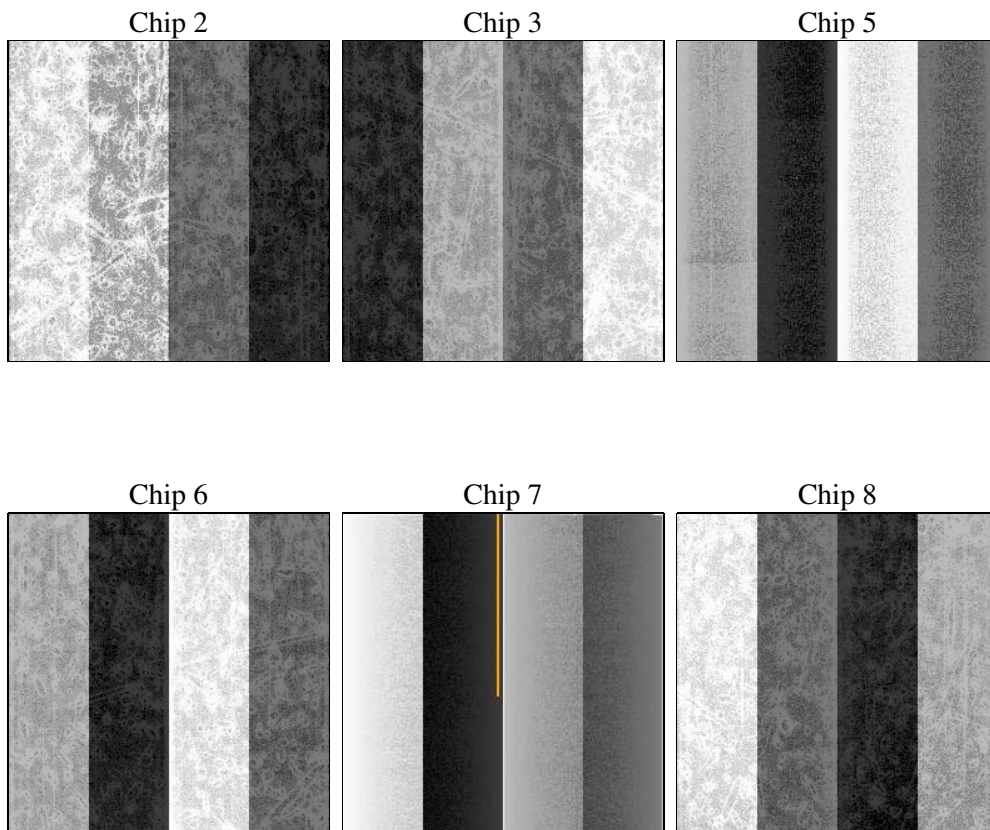
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	32225.326000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	32165.375182241	Sum of GTIs [s]
caldbver	4.9.2	 	ontime2	29950.634359032	Sum of GTIs [s]
date	2020-10-08T14:19:17	Date and time of file creation	ontime3	30142.992857367	Sum of GTIs [s]
revision	4	Processing version of data	ontime5	32204.267075777	Sum of GTIs [s]
			ontime6	30130.028807044	Sum of GTIs [s]
			ontime7	32165.375182241	Sum of GTIs [s]
			ontime8	30311.525346845	Sum of GTIs [s]
			l1events	1515594	Number of level 1 events

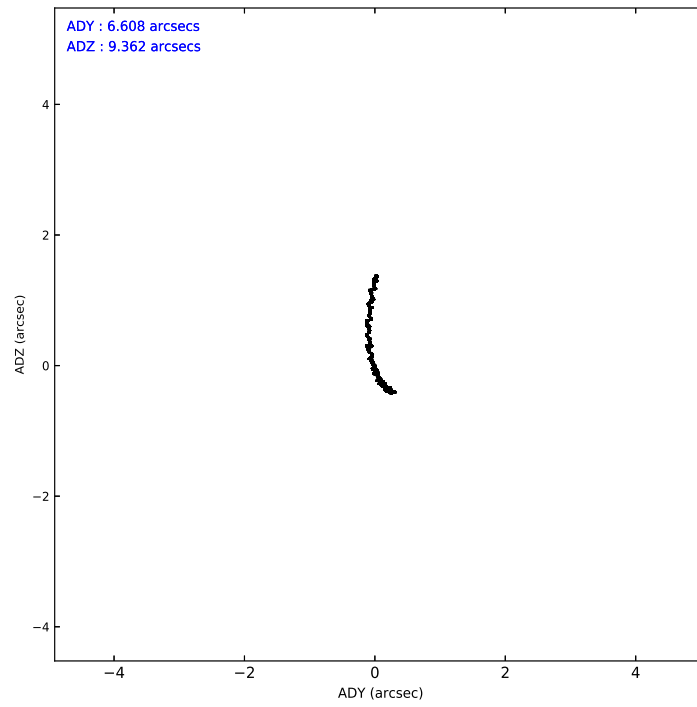
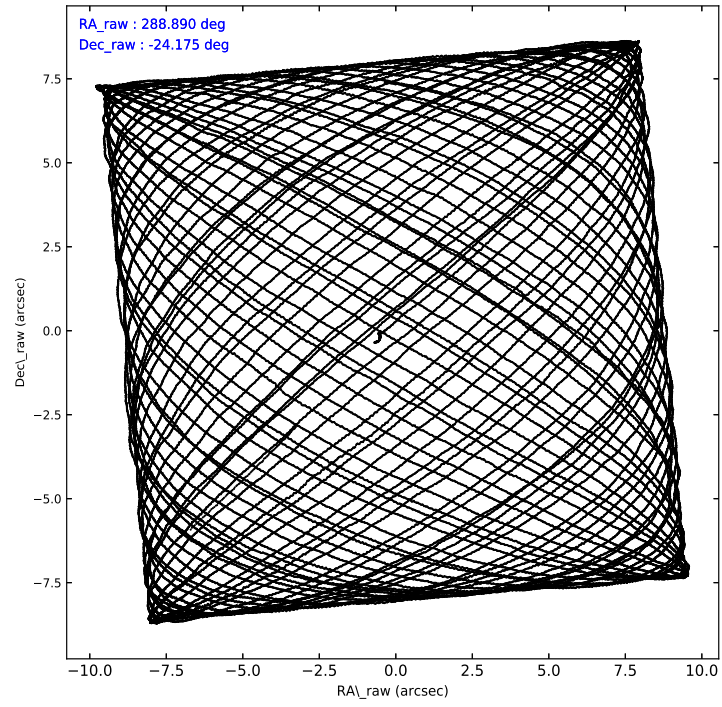
2.1.4 Events

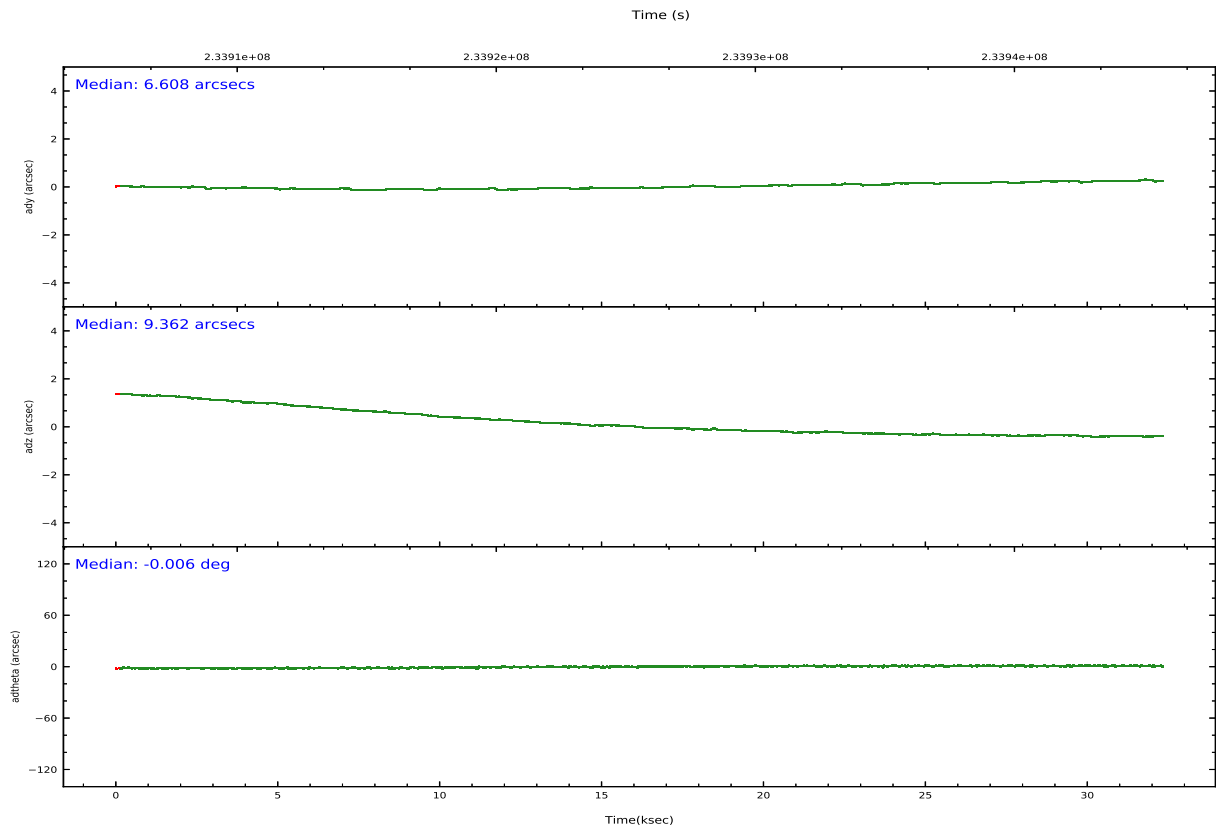
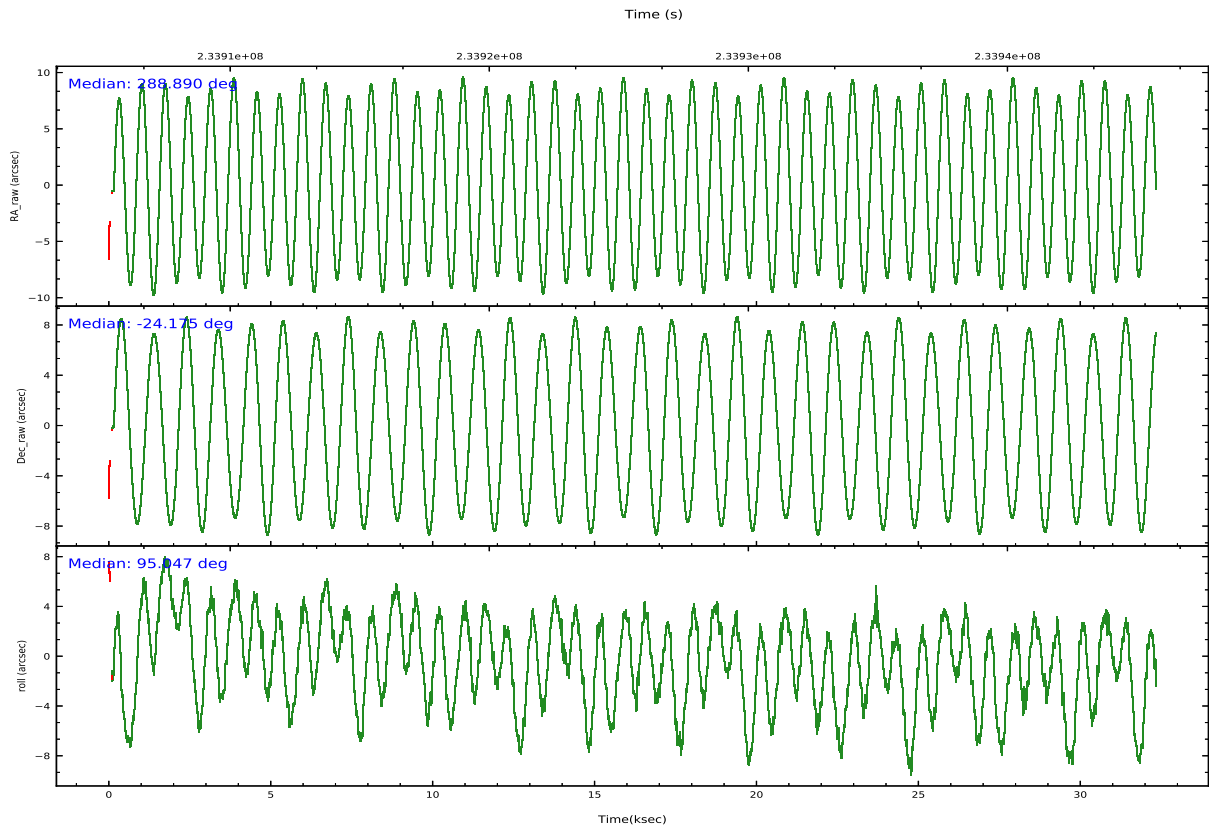
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	204162	192006	351370	202843	300758	264455	grade 0 events	16991	18026	25029	20517	19162	39920
rejected events	171287	157648	154603	163862	124700	179649		8%	9%	7%	10%	6%	15%
rejected %	83%	82%	44%	80%	41%	67%	grade 1 events	168	167	290	168	197	295
								0%	0%	0%	0%	0%	0%
							grade 2 events	6088	5822	59189	6430	33817	15532
								2%	3%	16%	3%	11%	5%
							grade 3 events	2629	2748	9184	2974	15143	7089
								1%	1%	2%	1%	5%	2%
							grade 4 events	2610	2817	9058	2863	14776	6611
								1%	1%	2%	1%	4%	2%
							grade 5 events	6396	7176	24049	7524	23977	10621
								3%	3%	6%	3%	7%	4%
							grade 6 events	4857	5223	96271	6499	94794	16516
								2%	2%	27%	3%	31%	6%
							grade 7 events	164423	150027	128300	155868	98892	167871
								80%	78%	36%	76%	32%	63%

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	288.907257	288.89299333326	Subarray requested	NONE	NONE
[deg] Pointing Dec	-24.197286	-24.176889090593	Alternating exposures requested	N	N
[deg] Pointing Roll	94.898541	95.046499868106	[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	0.840000	0.840000			
Phase end	0.960000	0.960000			
Phase start error	0.030000	0.030000			
Phase end error	0.030000	0.030000			
[s] Observation start time (MET)	233908366.184000	233907153.9507			
Observation start date	2005-05-31T06:31:42	2005-05-31T06:12:33			
[s] Observation end time (MET)	233940591.184000	233940815.46474			
Observation end date	2005-05-31T15:28:47	2005-05-31T15:33:35			
Read mode	TIMED	TIMED			

2.3 Aspect





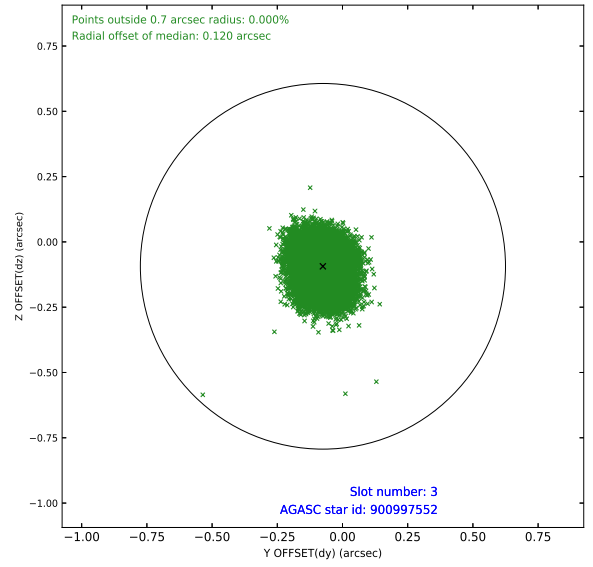
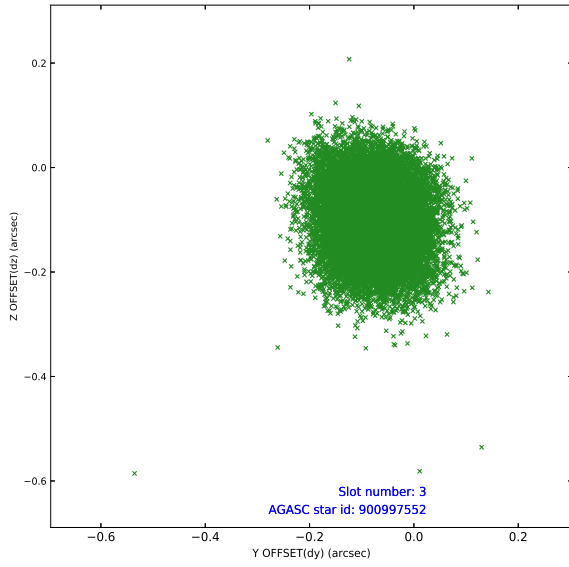
Slot Statistics

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	7873	1.000	-0.083	-0.077	0.017	0.026	0.000000	0.000000	-759.42	-1730
1	FID		ACIS-S-4	7.20	7873	1.000	0.148	0.060	0.007	0.014	0.000000	0.000000	2154.01	177
2	FID		ACIS-S-5	7.23	7872	1.000	-0.095	0.026	0.017	0.025	0.000000	0.000000	-1812.25	171
3	GUIDE	used	900997552	9.13	15673	1.000	-0.075	-0.093	0.096	0.152	288.312519	-24.029579	764.31	1897
4	GUIDE	used	901144560	8.68	15741	1.000	-0.080	0.133	0.068	0.110	289.333664	-23.842375	1151.36	-1507
5	GUIDE	used	901514880	8.92	15740	1.000	0.104	-0.125	0.073	0.116	288.396412	-24.524459	-1033.66	1767
6	GUIDE	used	901647096	9.15	15737	1.000	0.051	0.084	0.080	0.128	289.707413	-24.700499	-2035.60	-2452
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

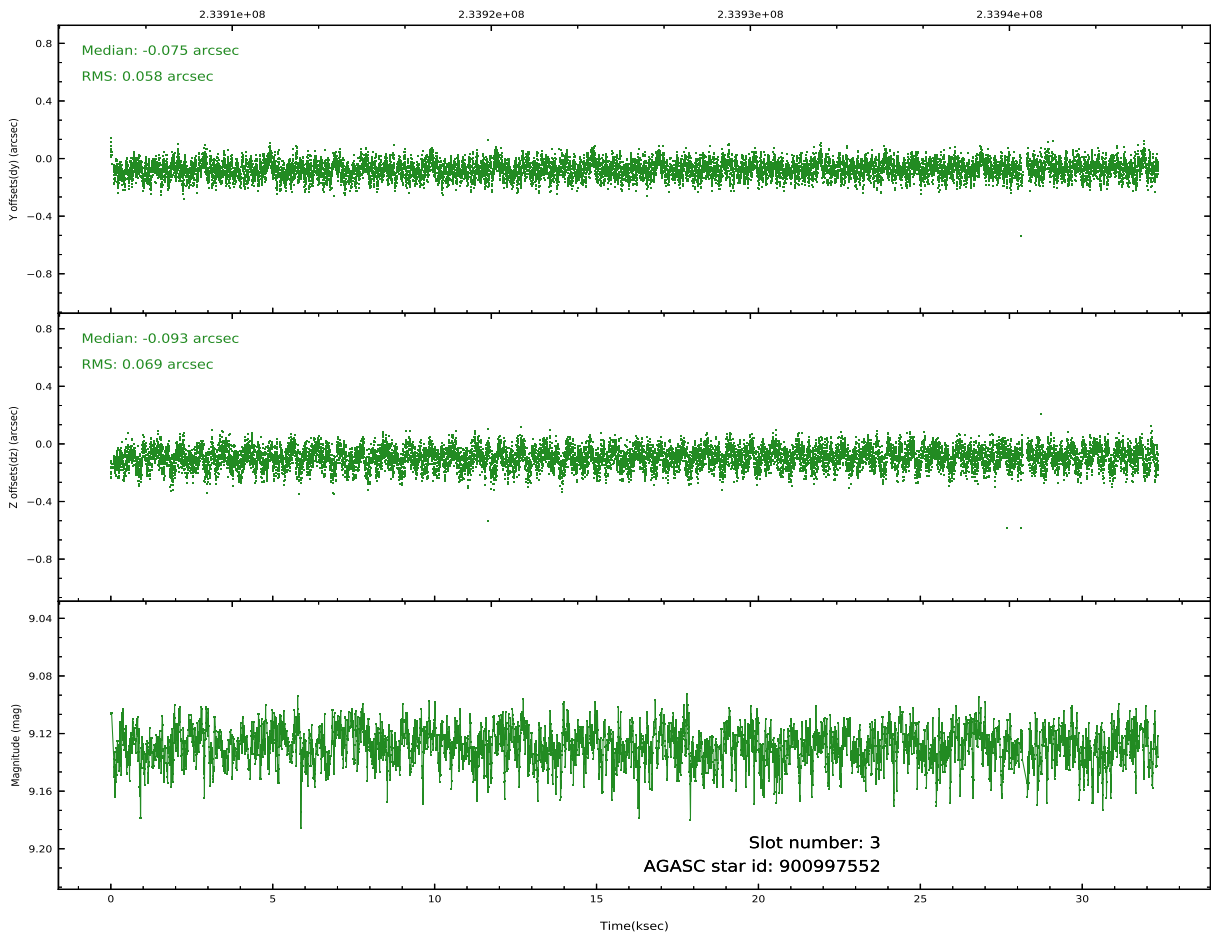
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2.4 Star Slots

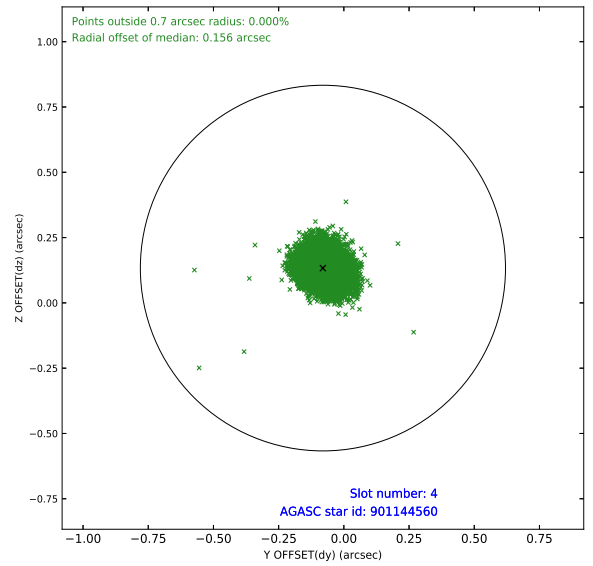
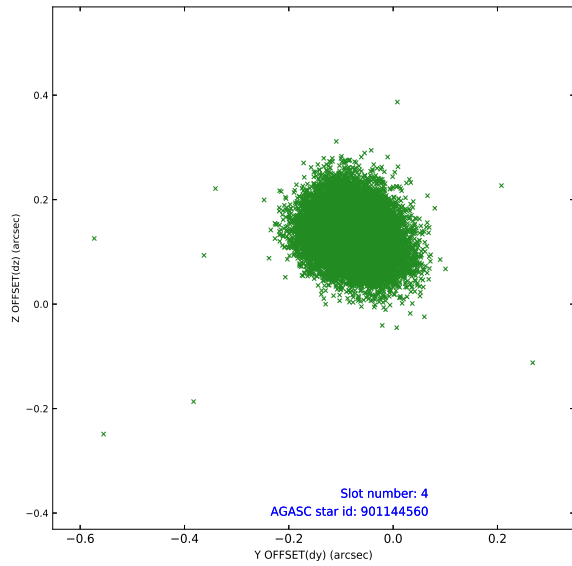
2.4.1 Slot 3



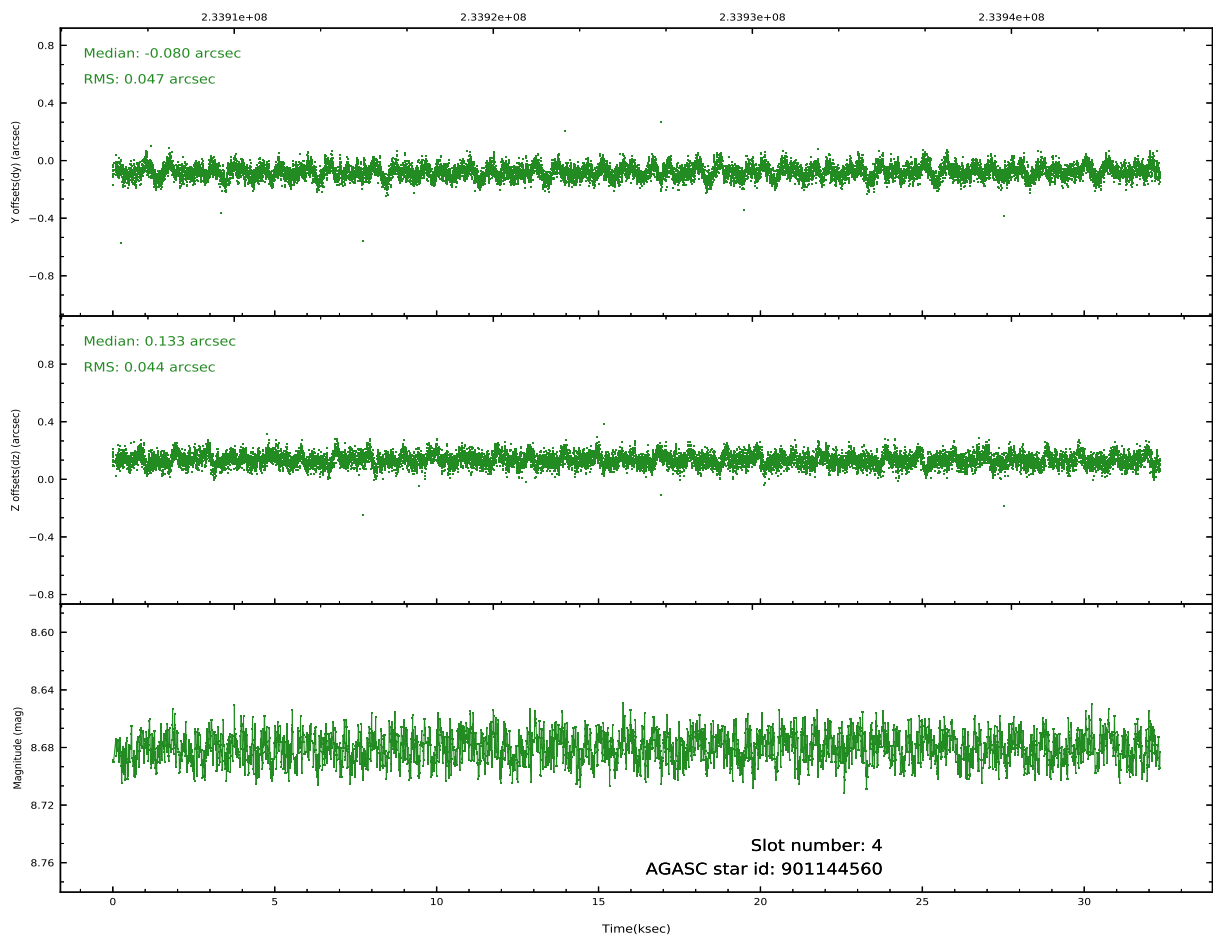
Time (s)



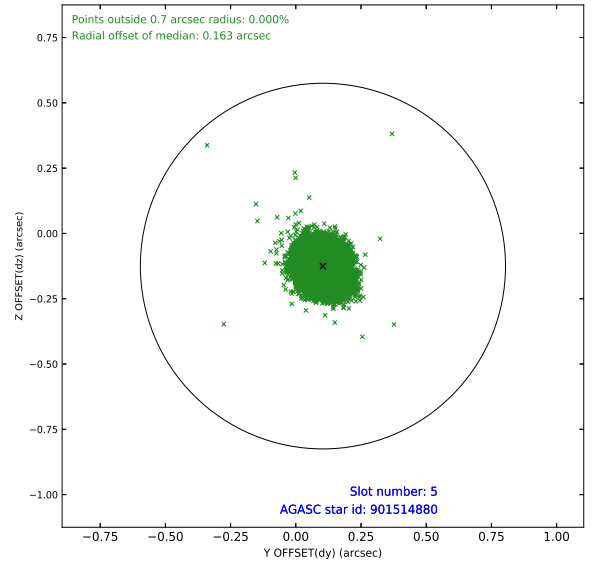
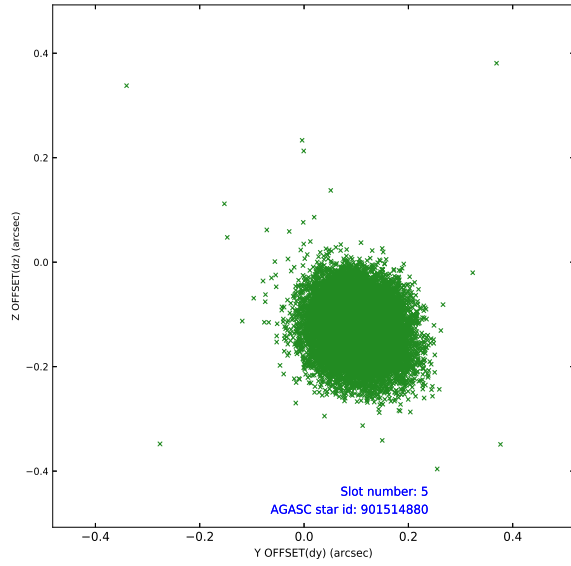
2.4.2 Slot 4



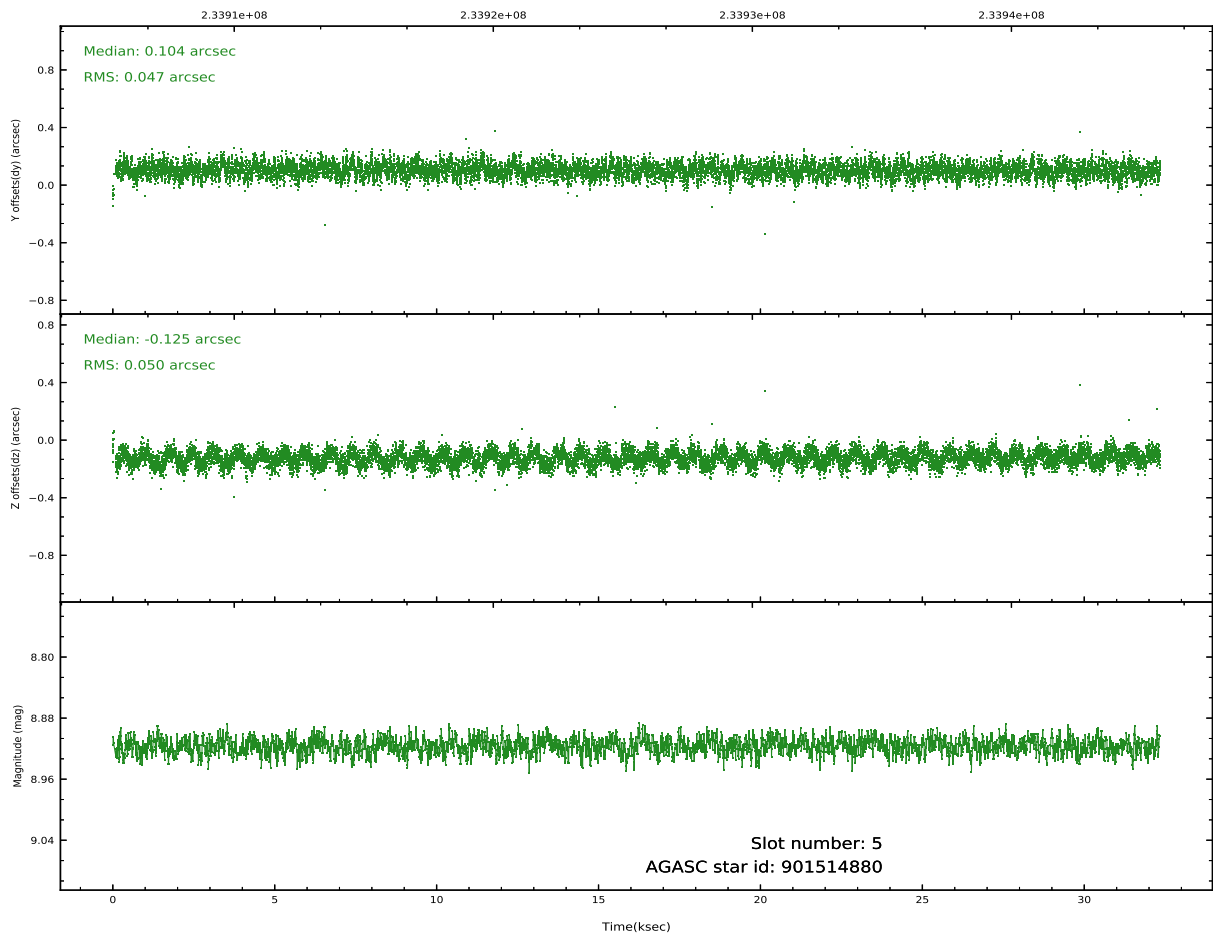
Time (s)



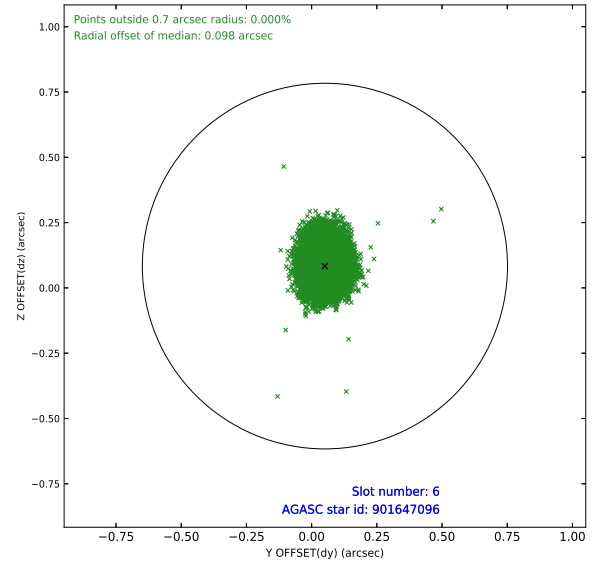
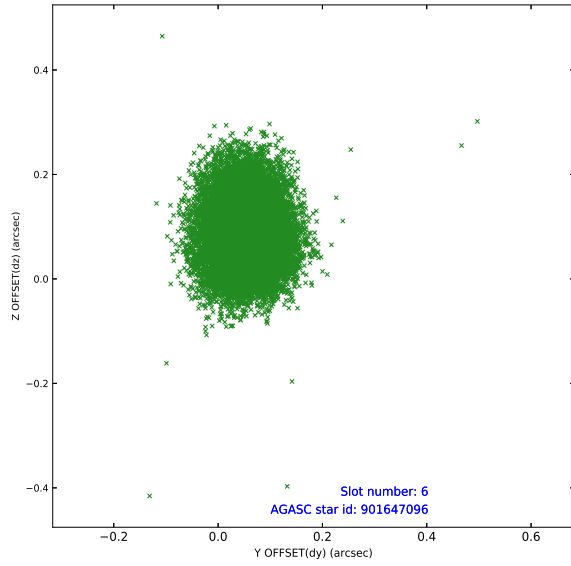
2.4.3 Slot 5



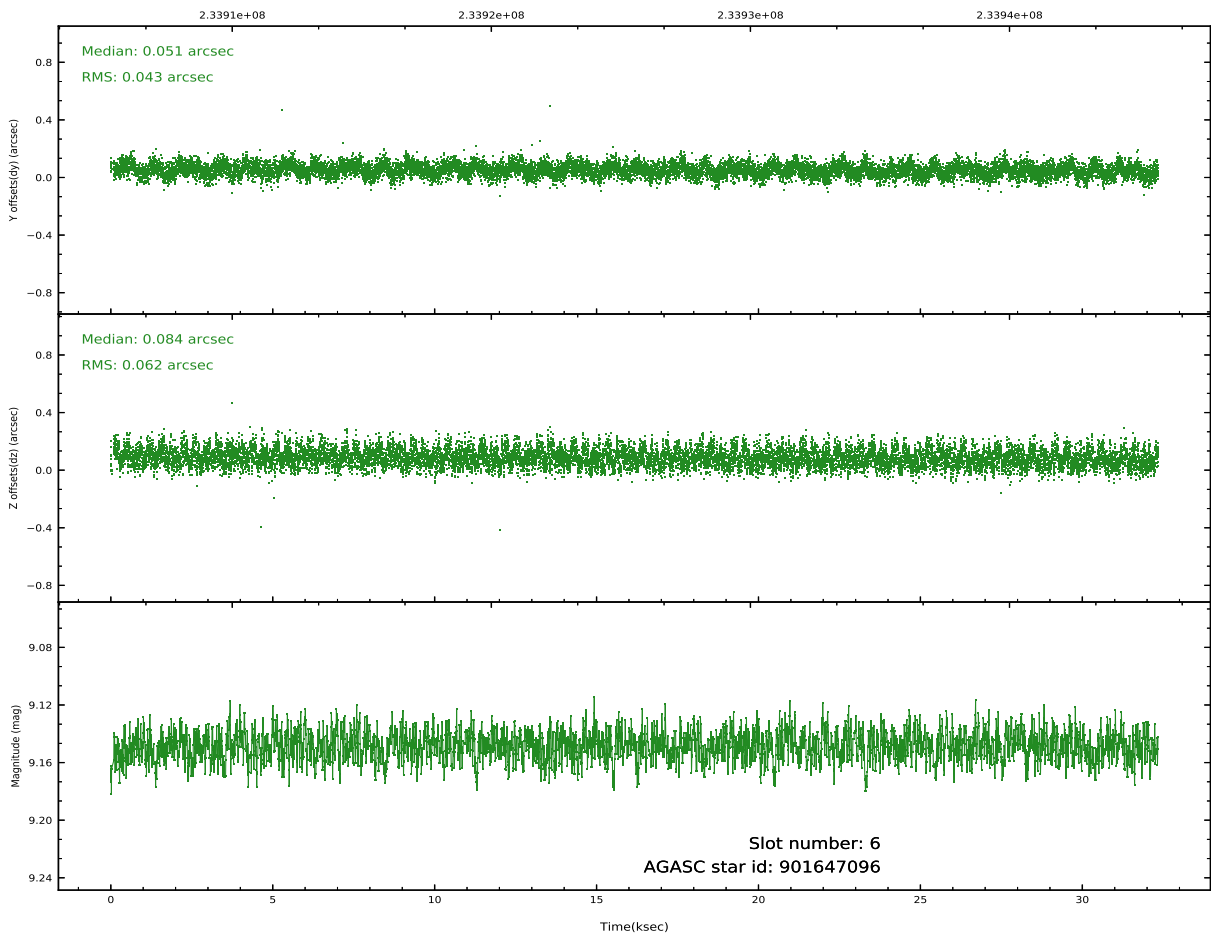
Time (s)



2.4.4 Slot 6

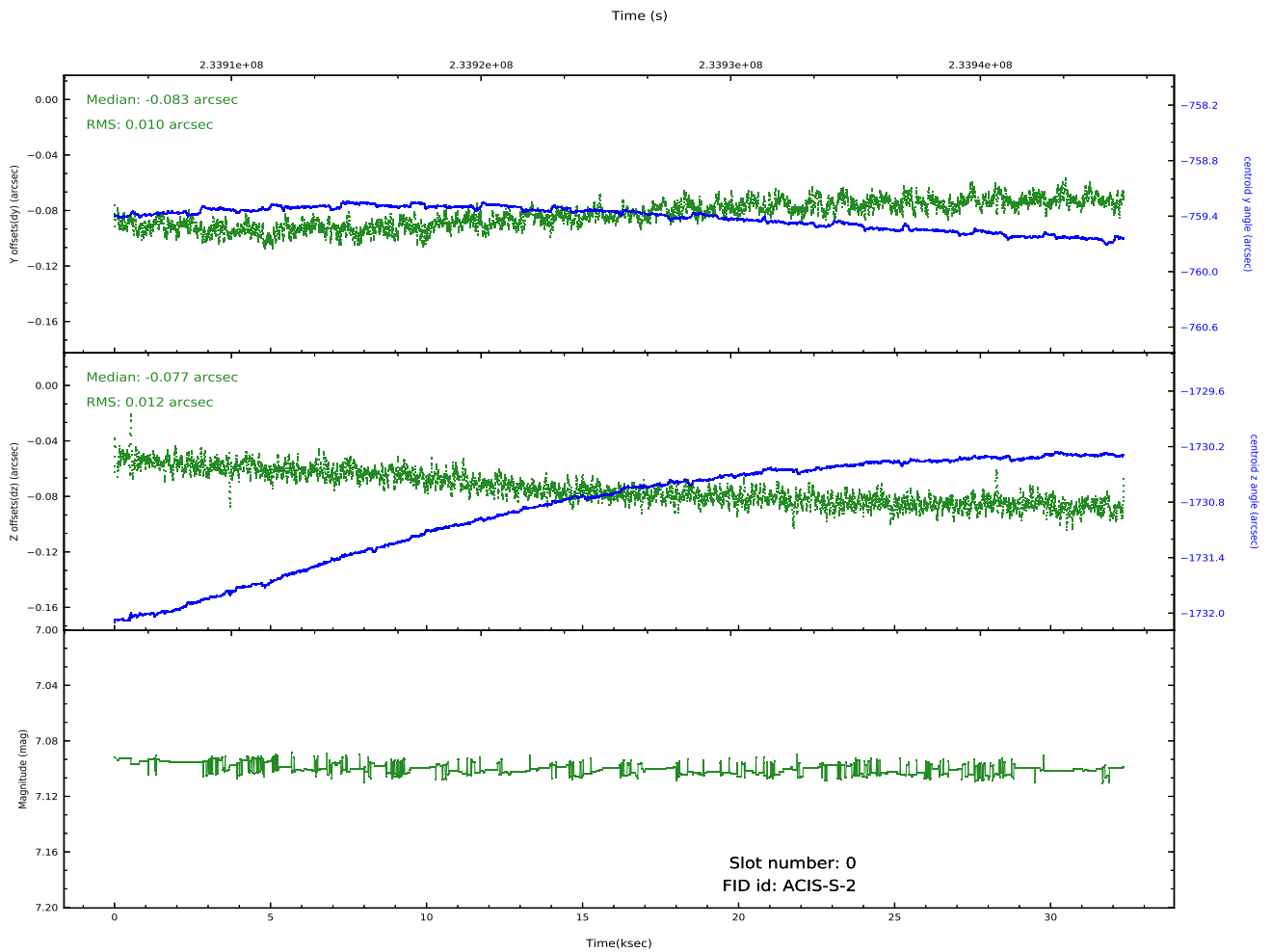
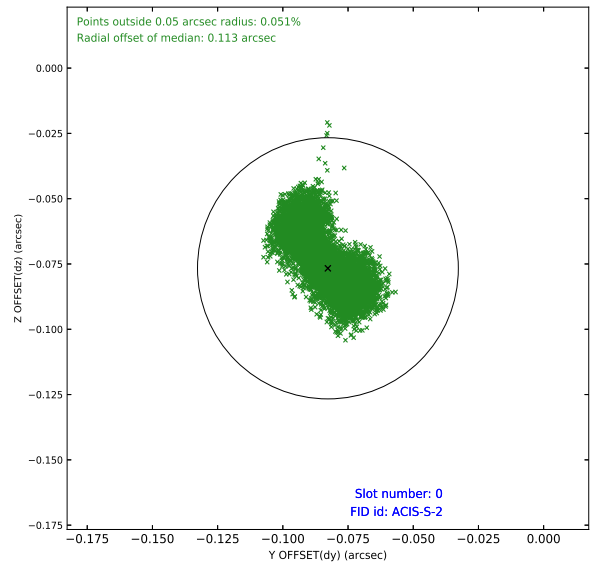
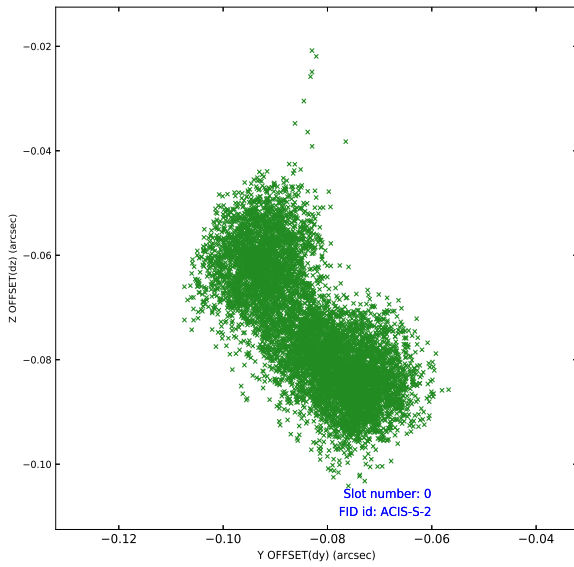


Time (s)

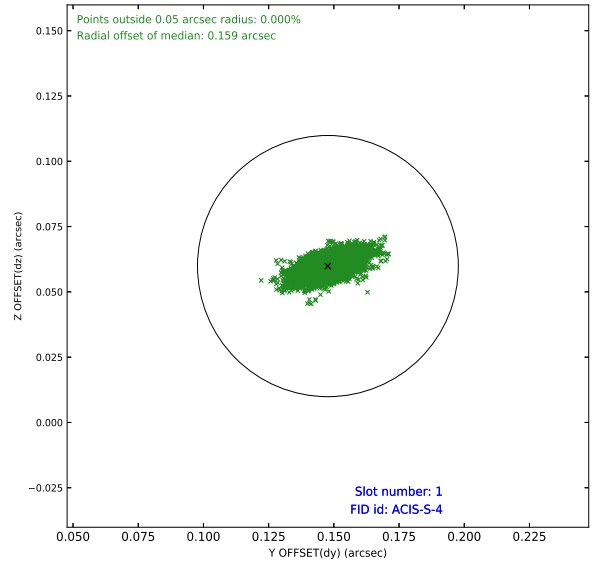
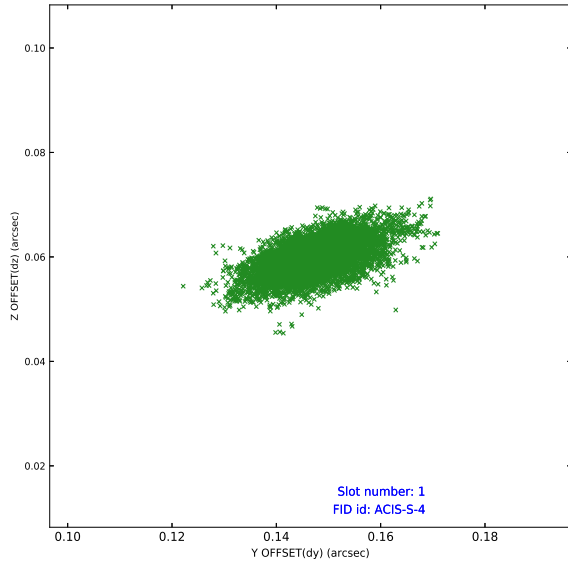


2.5 FID Slots

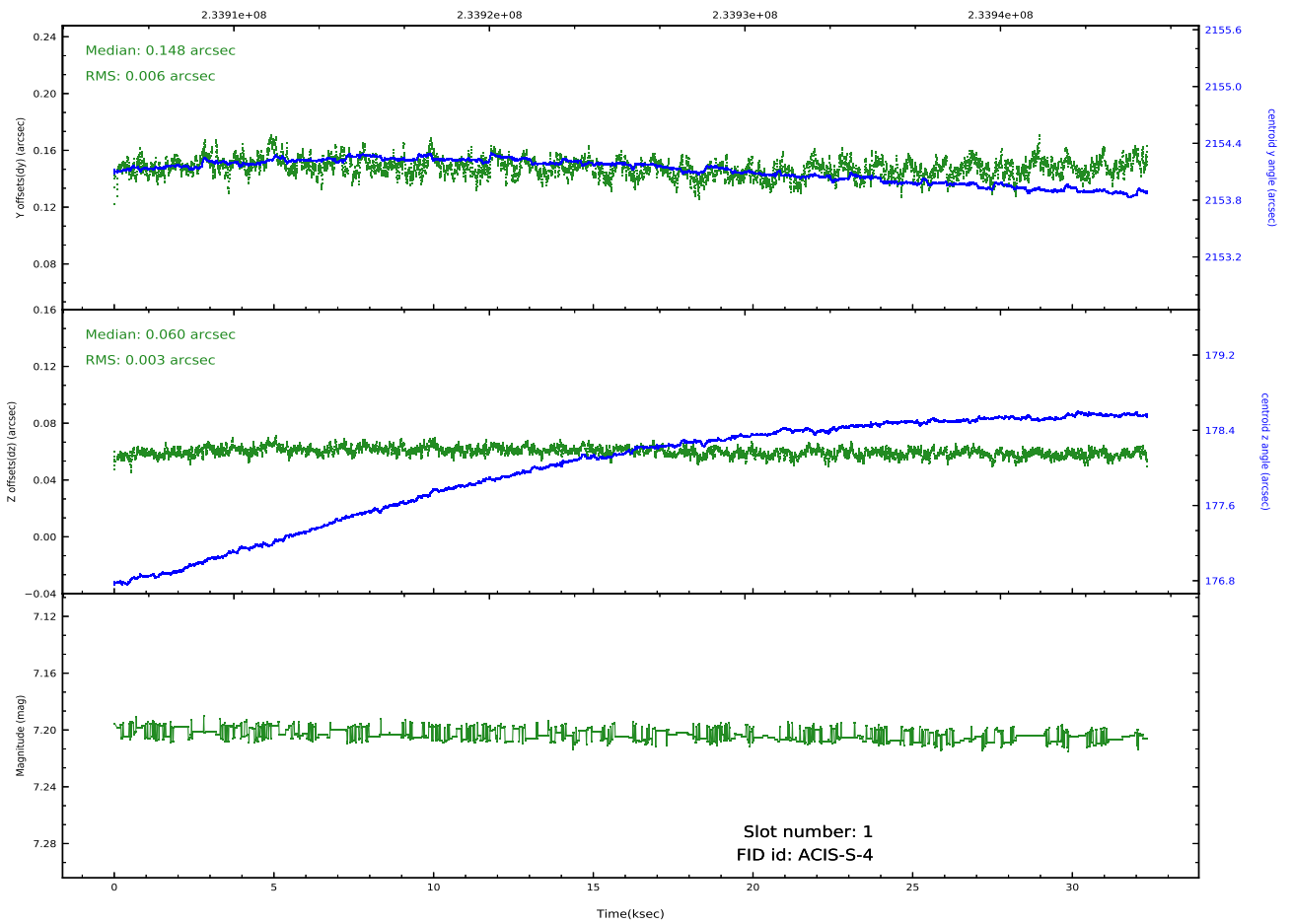
2.5.1 Slot 0



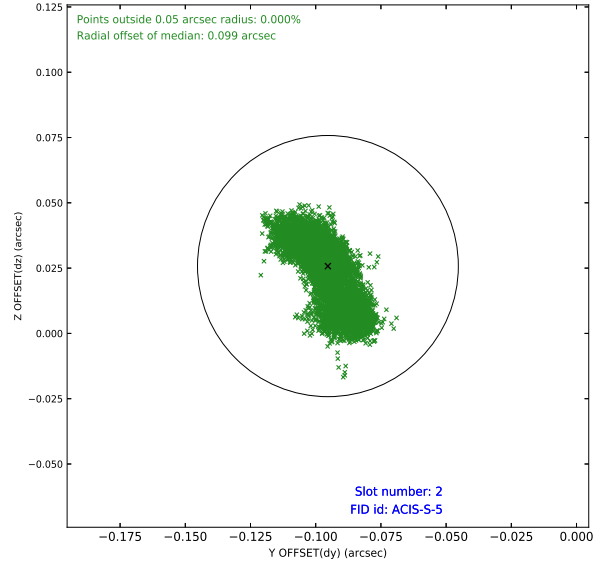
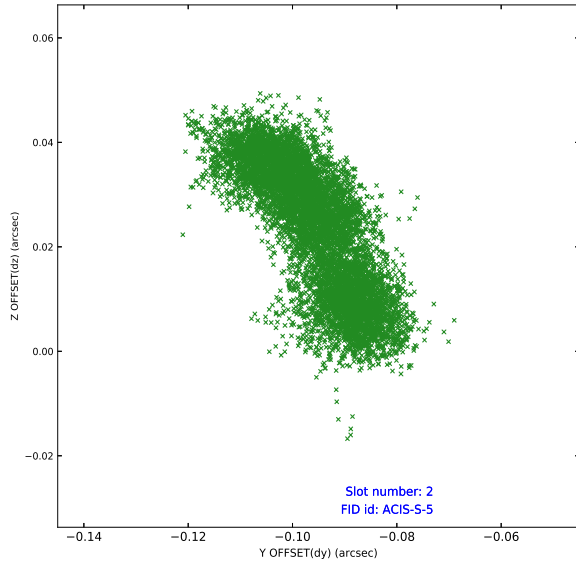
2.5.2 Slot 1



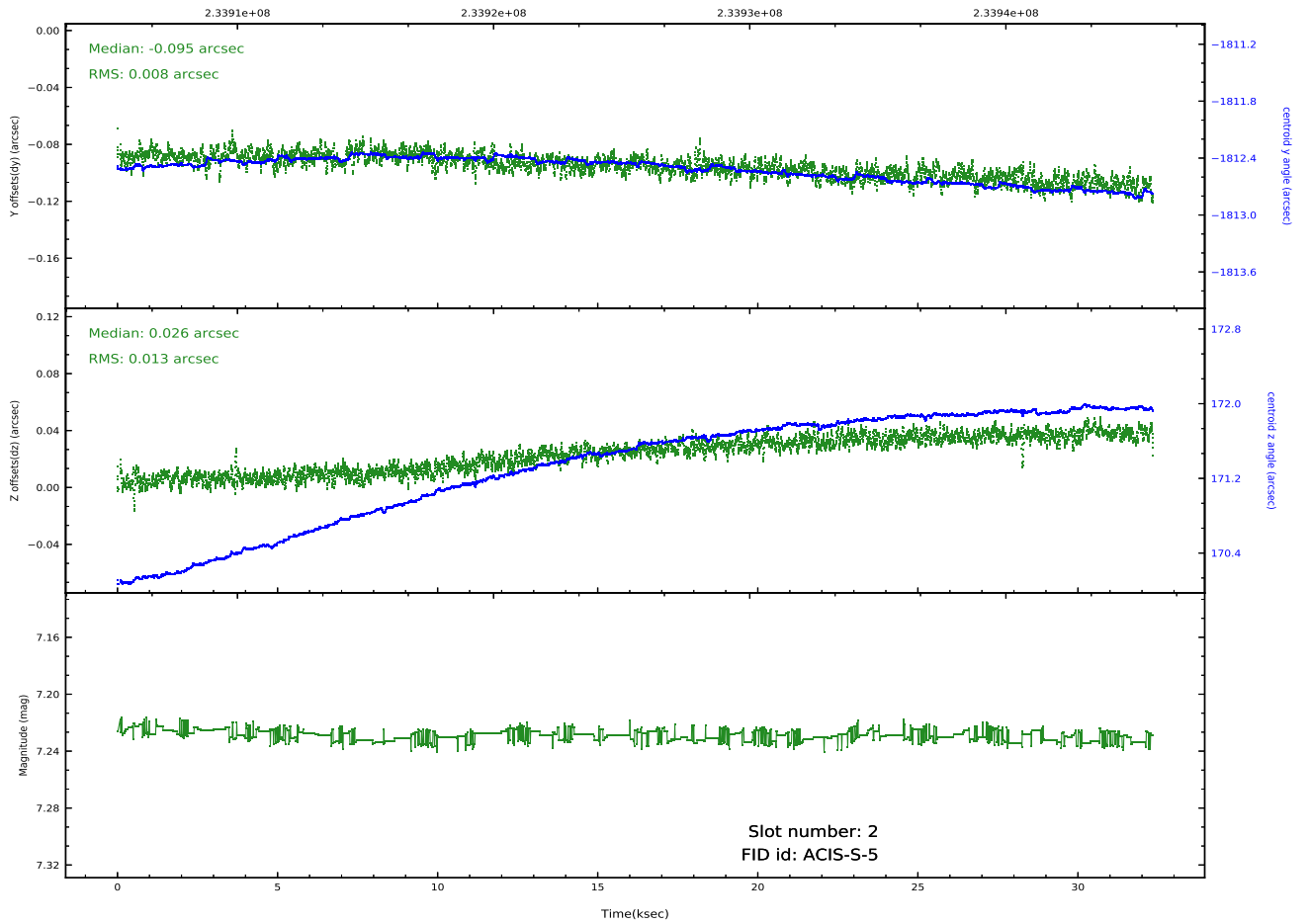
Time (s)



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	32.16537

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.