

V&V Reference Report

L2 ASCDS Version : 10.9.2

Observation 6112 - L2 Version 6
Chandra X-Ray Center

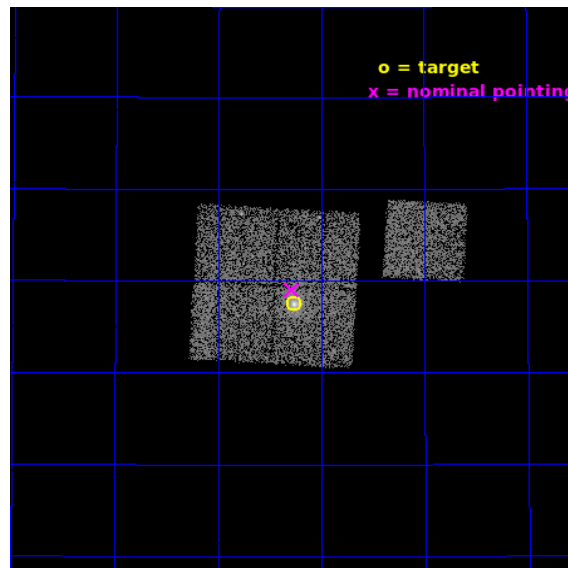
L2 Processing Date : Oct 15 2020

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
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
A	Summary	17
A.1	Status	17
A.2	Comments	17

1 Front

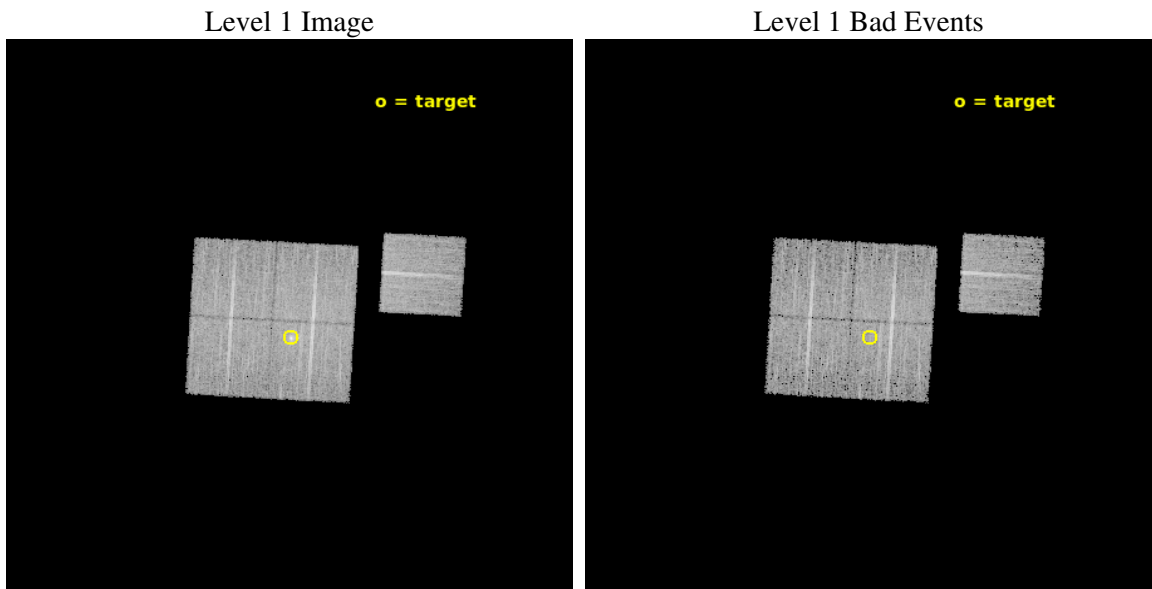
seq_num	800560	Sequence number
obs_id	6112	Observation id
title	Probing dark energy using the X-ray gas mass fraction in dynamically relaxed galaxy clusters	Proposal title
observer	Steve Allen	Principal investigator
object	MACS1427.2+4407	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	216.817083	Observer's specified target RA [deg]
dec_targ	44.125278	Observer's specified target Dec [deg]
ra_nom	216.8215987303	Nominal RA [deg]
dec_nom	44.150899624224	Nominal Dec [deg]
roll_nom	93.258242523168	Nominal Roll [deg]
revision	6	Processing version of data
ontime	9509.4097808897	Sum of GTIs [s]
livetime	9385.1623413768	Livetime [s]
ontime0	9509.2866608799	Sum of GTIs [s]
ontime1	9509.3277008832	Sum of GTIs [s]
ontime2	9509.3687408864	Sum of GTIs [s]
ontime3	9509.4097808897	Sum of GTIs [s]
ontime6	9506.1046306193	Sum of GTIs [s]
l2events	26421	Number of level 2 events



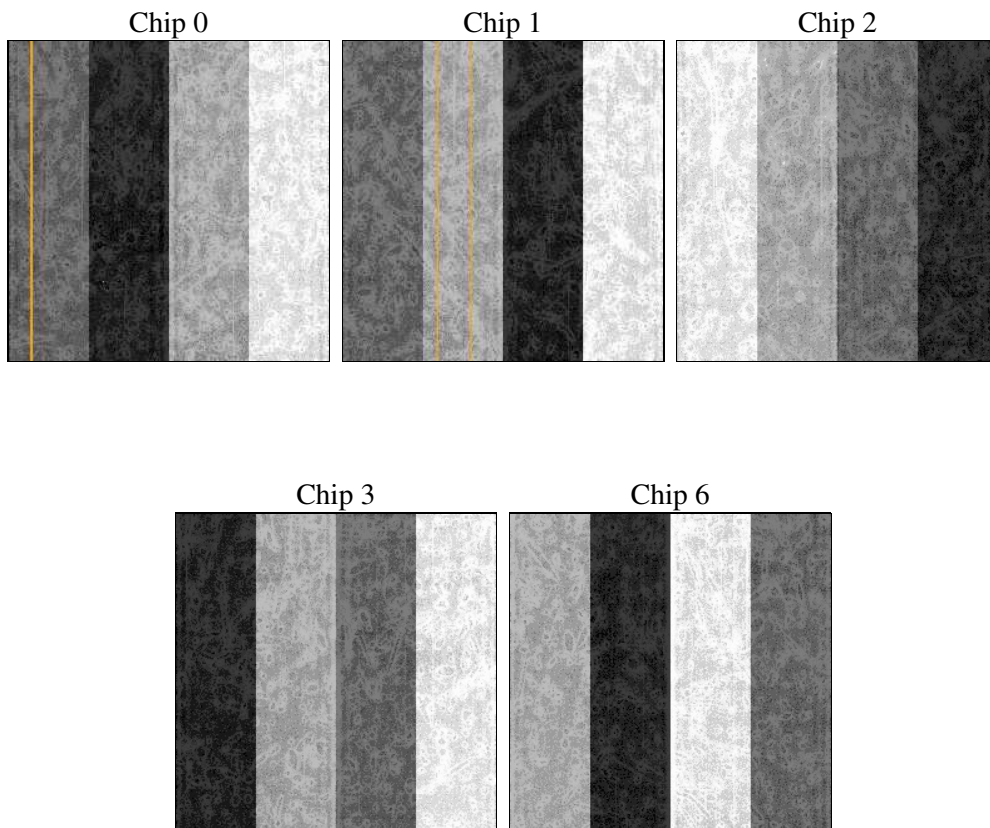
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	9455.116000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	9509.4097808897	Sum of GTIs [s]
caldsver	4.9.3	 	ontime0	9509.2866608799	Sum of GTIs [s]
date	2020-10-15T14:14:38	Date and time of file creation	ontime1	9509.3277008832	Sum of GTIs [s]
revision	6	Processing version of data	ontime2	9509.3687408864	Sum of GTIs [s]
			ontime3	9509.4097808897	Sum of GTIs [s]
			ontime6	9506.1046306193	Sum of GTIs [s]
			l1events	284266	Number of level 1 events

2.1.4 Events

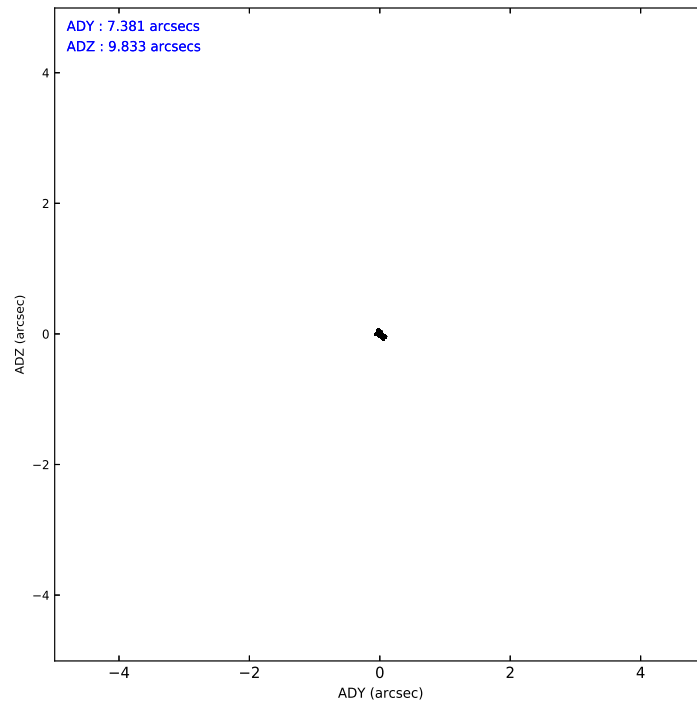
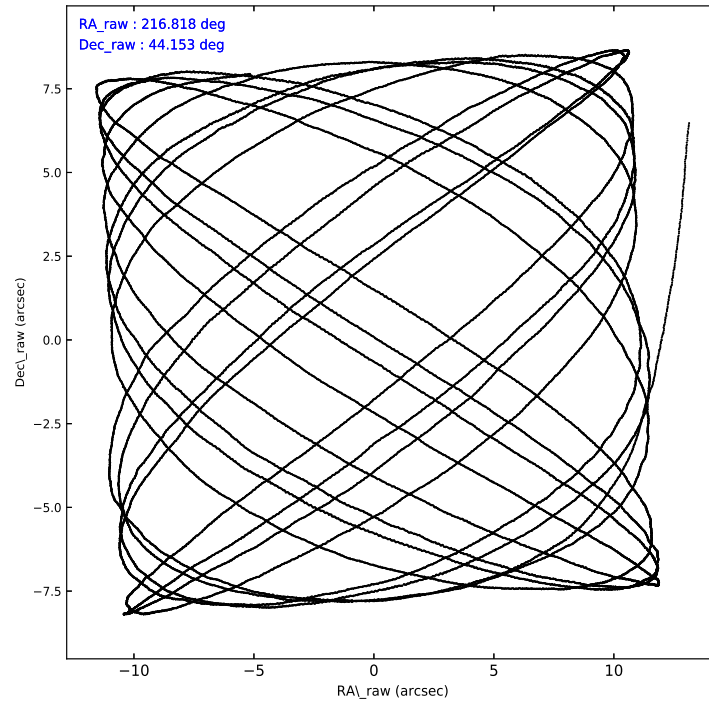
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	53898	53883	59845	59328	57312
rejected events	48196	47599	53908	51628	51536
rejected %	89%	88%	90%	87%	89%

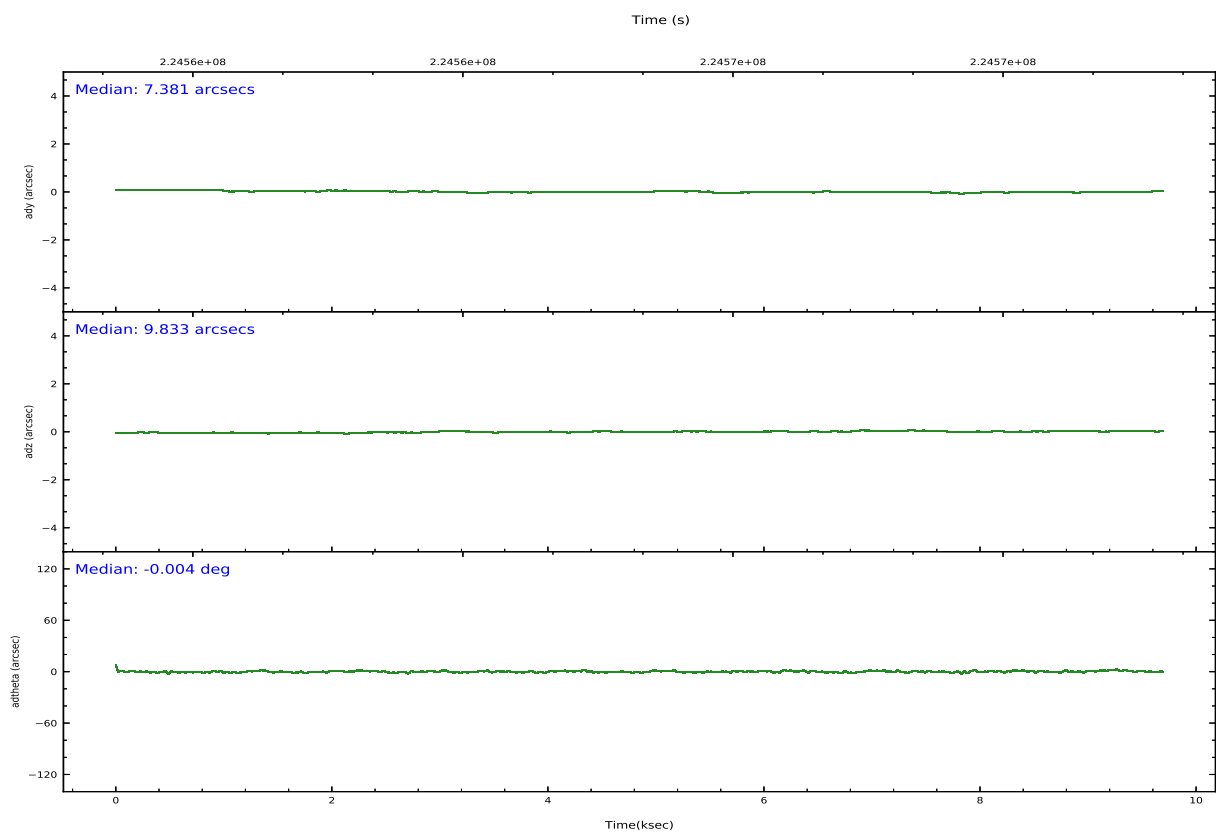
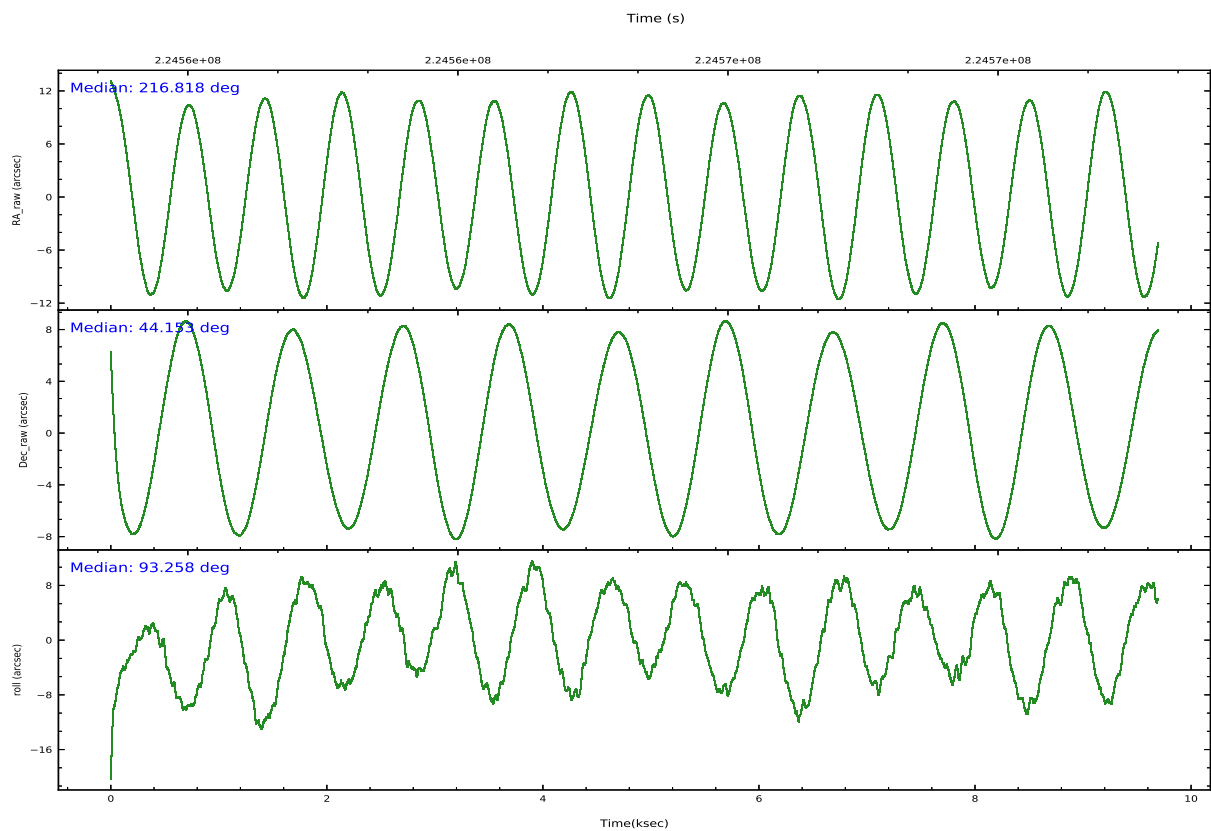
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	2025	2261	2272	3845	2028
	3%	4%	3%	6%	3%
grade 1 events	25	30	37	50	23
	0%	0%	0%	0%	0%
grade 2 events	1259	1288	1294	1373	1168
	2%	2%	2%	2%	2%
grade 3 events	688	673	670	666	643
	1%	1%	1%	1%	1%
grade 4 events	591	727	607	671	661
	1%	1%	1%	1%	1%
grade 5 events	2054	2161	1913	2227	2316
	3%	4%	3%	3%	4%
grade 6 events	1149	1338	1098	1157	1278
	2%	2%	1%	1%	2%
grade 7 events	46107	45405	51954	49339	49195
	85%	84%	86%	83%	85%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-01236	ACIS-01236	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	216.838585	216.8215987303	Subarray requested	NONE	NONE
[deg] Pointing Dec	44.130107	44.150899624224	Alternating exposures requested	N	N
[deg] Pointing Roll	93.033189	93.25824252316799	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-229.442463	-229.4438428438578			
[mm] SIM translation stage offset	-4.15	-4.148610159071865			
[s] Observation start time (MET)	224562027.184000	224561067.20117			
Observation start date	2005-02-12T02:19:23	2005-02-12T02:04:27			
[s] Observation end time (MET)	224571483.184000	224571719.51415			
Observation end date	2005-02-12T04:56:59	2005-02-12T05:01:59			
Read mode	TIMED	TIMED			

2.3 Aspect



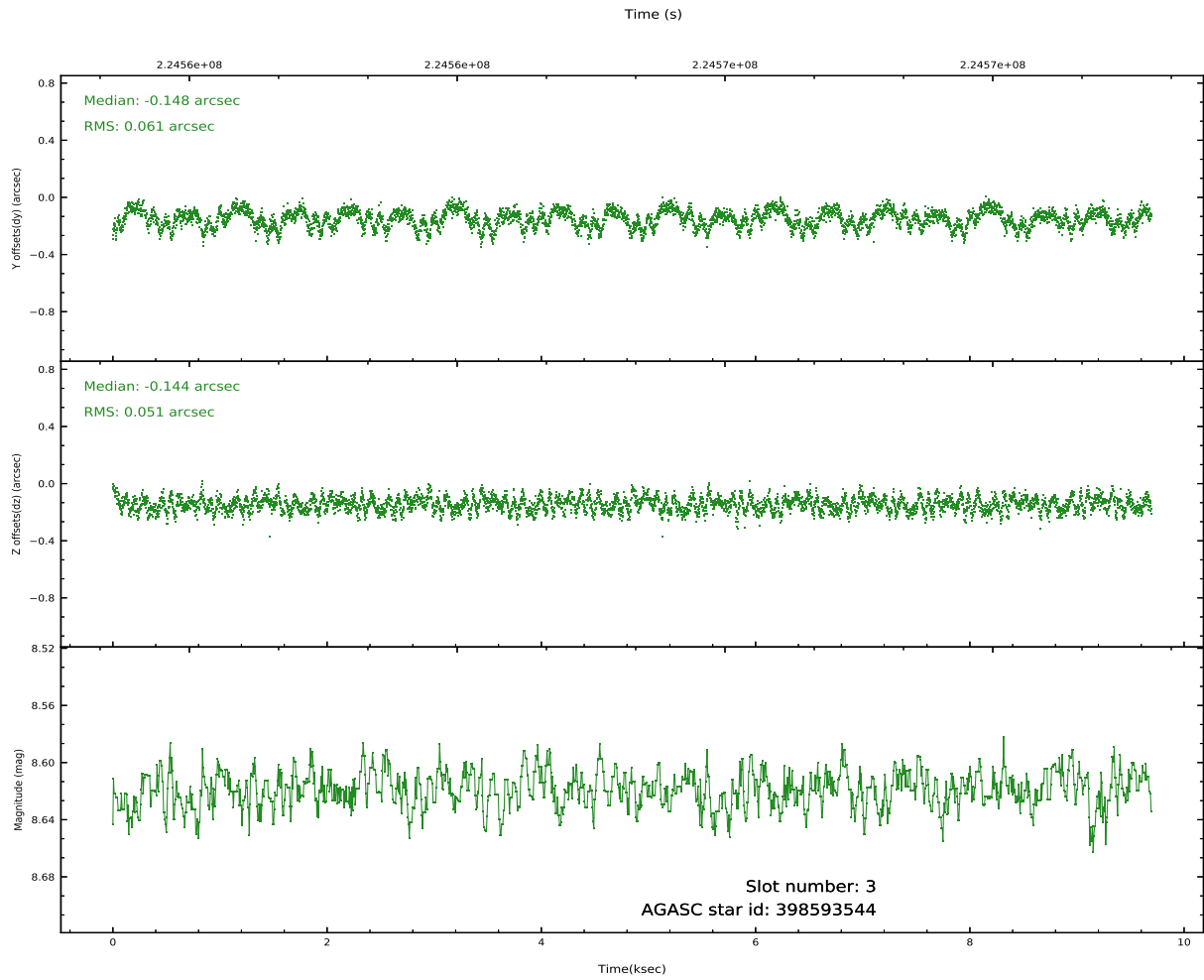
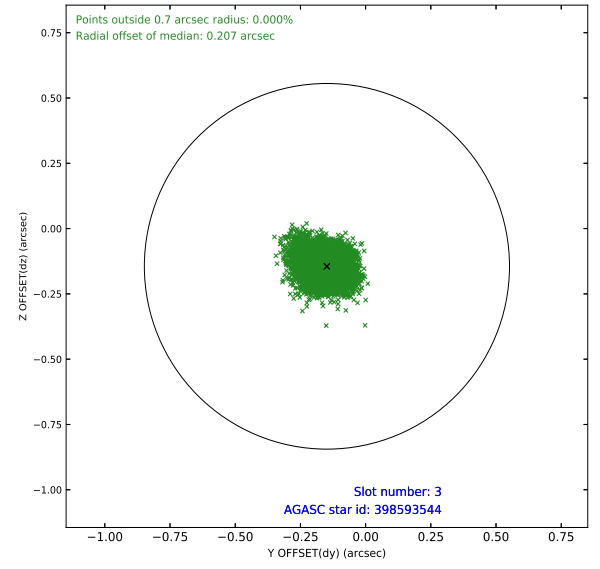
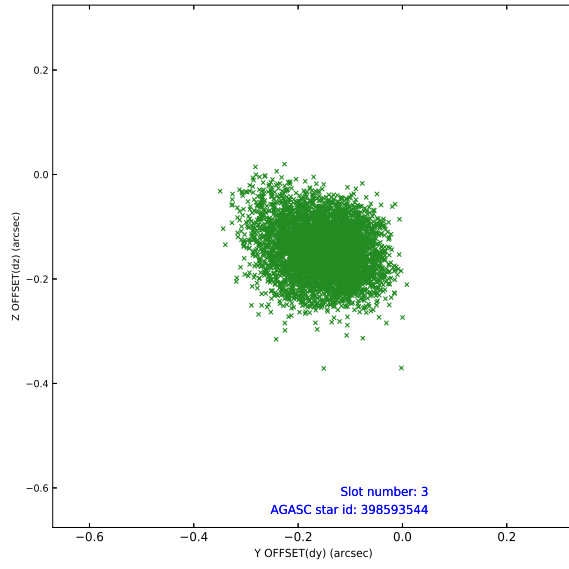


Slot Statistics

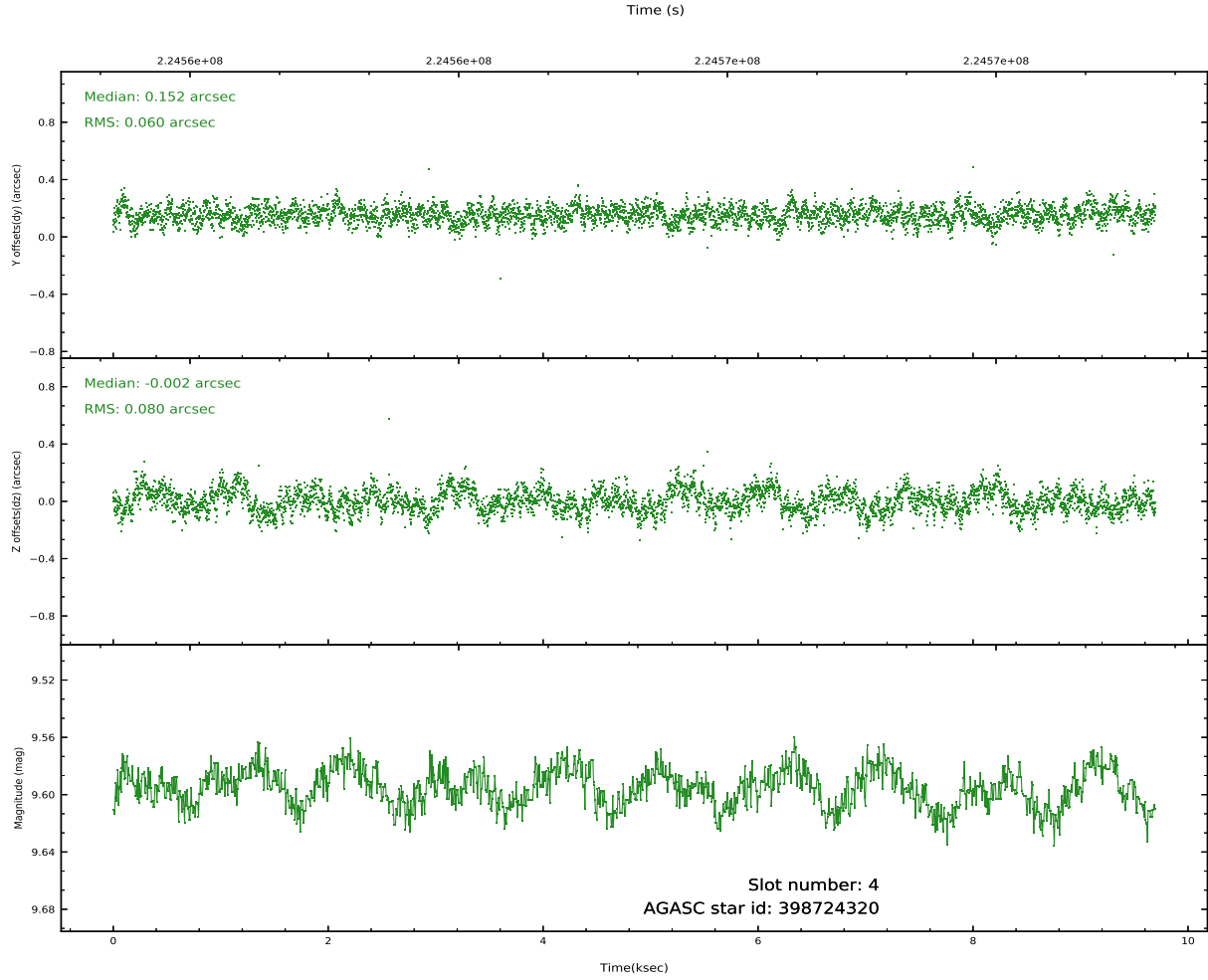
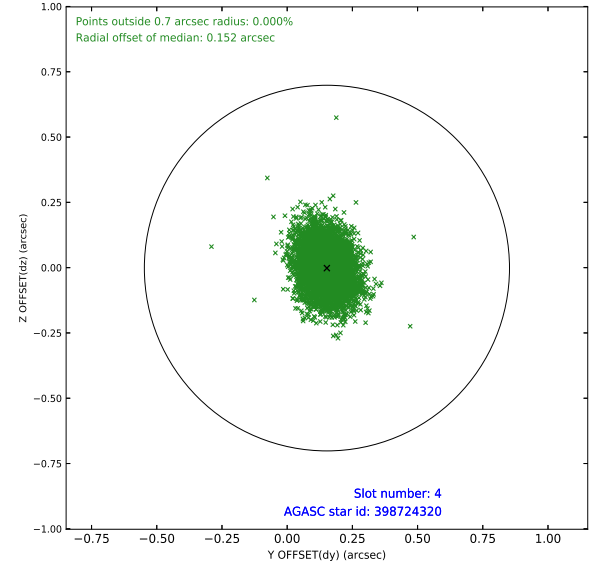
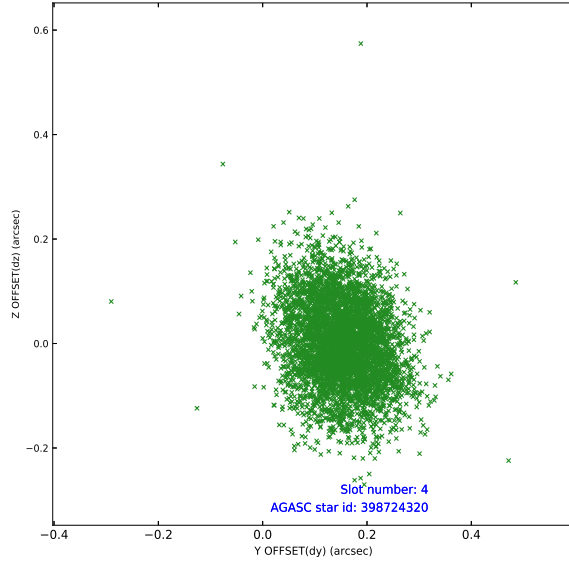
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-2	7.16	2364	1.000	-0.111	-0.129	0.019	0.037	0.000000	0.000000	-762.27	-924
1	FID		ACIS-I-4	7.15	2365	1.000	0.198	0.099	0.011	0.019	0.000000	0.000000	2151.78	981
2	FID		ACIS-I-5	7.22	2365	1.000	-0.188	0.099	0.016	0.028	0.000000	0.000000	-1815.30	979
3	GUIDE	used	398593544	8.62	4731	1.000	-0.148	-0.144	0.086	0.136	216.095119	44.392456	1053.07	1859
4	GUIDE	used	398724320	9.60	4729	1.000	0.152	-0.002	0.105	0.171	217.327713	43.656759	-1764.46	-1181
5	GUIDE	used	398726944	9.56	4726	1.000	0.058	0.092	0.106	0.176	216.859138	44.488148	1284.48	-121
6	GUIDE	used	398727024	9.59	4726	1.000	0.041	-0.073	0.096	0.160	217.158424	44.398345	924.33	-872
7	GUIDE	used	398723112	8.80	4727	1.000	-0.099	0.130	0.079	0.129	217.784921	43.791453	-1333.01	-2392

2.4 Star Slots

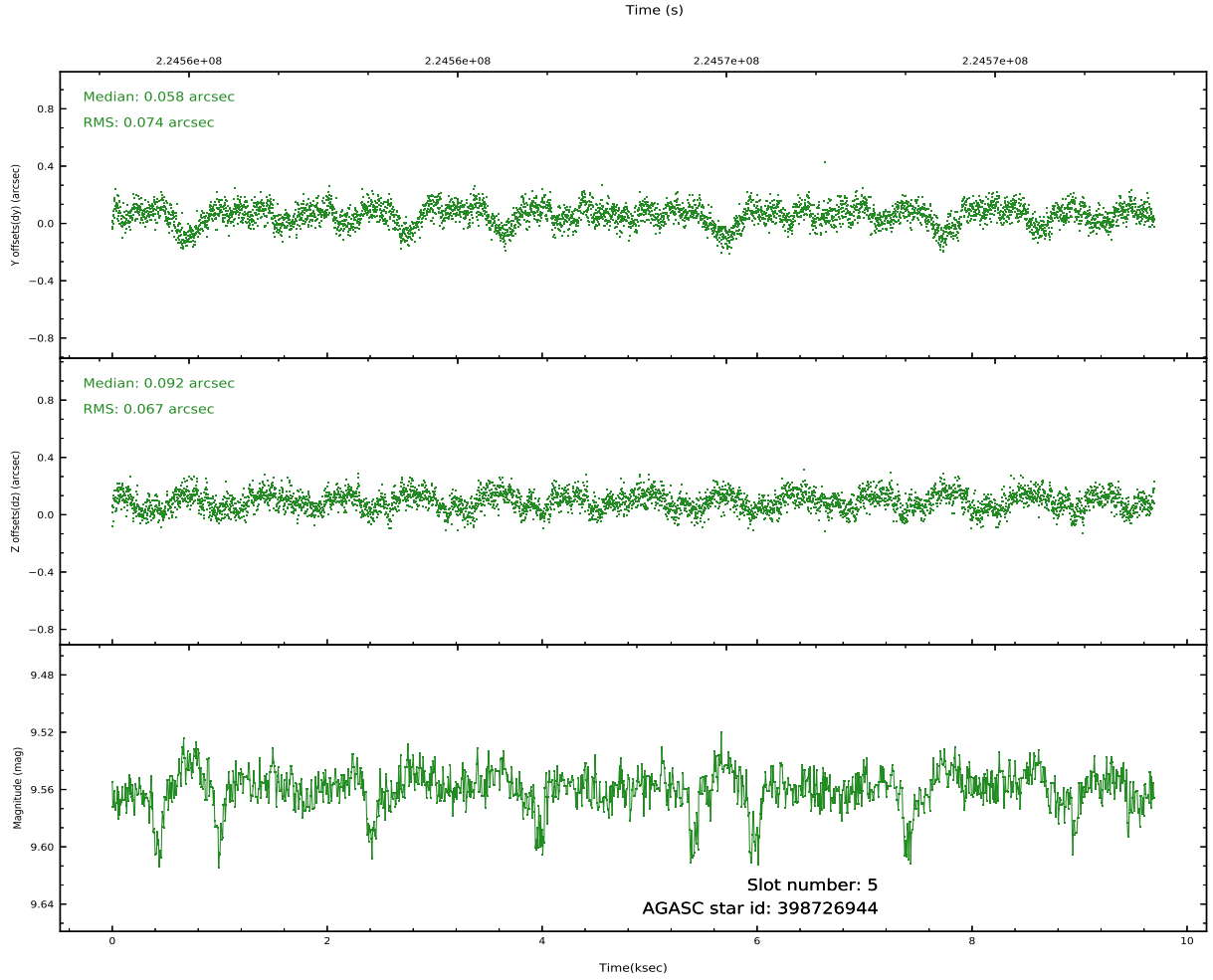
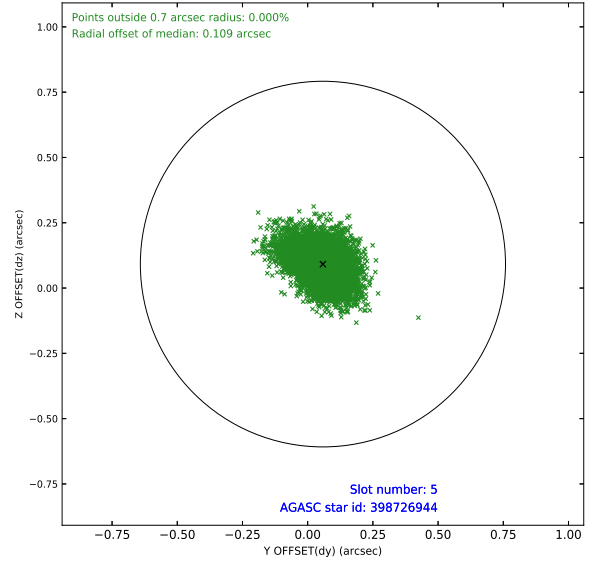
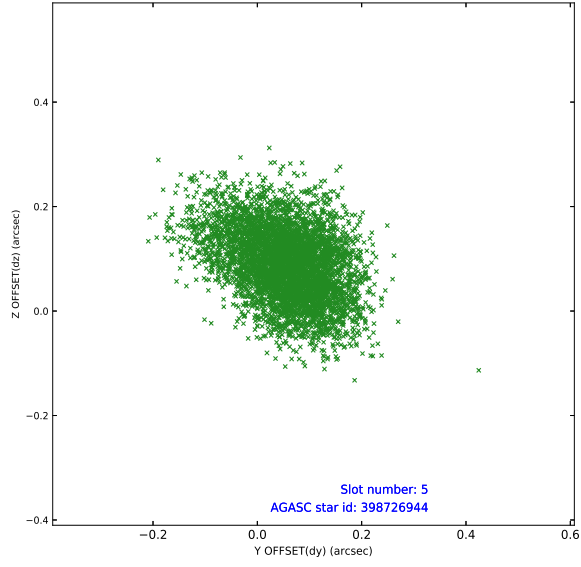
2.4.1 Slot 3



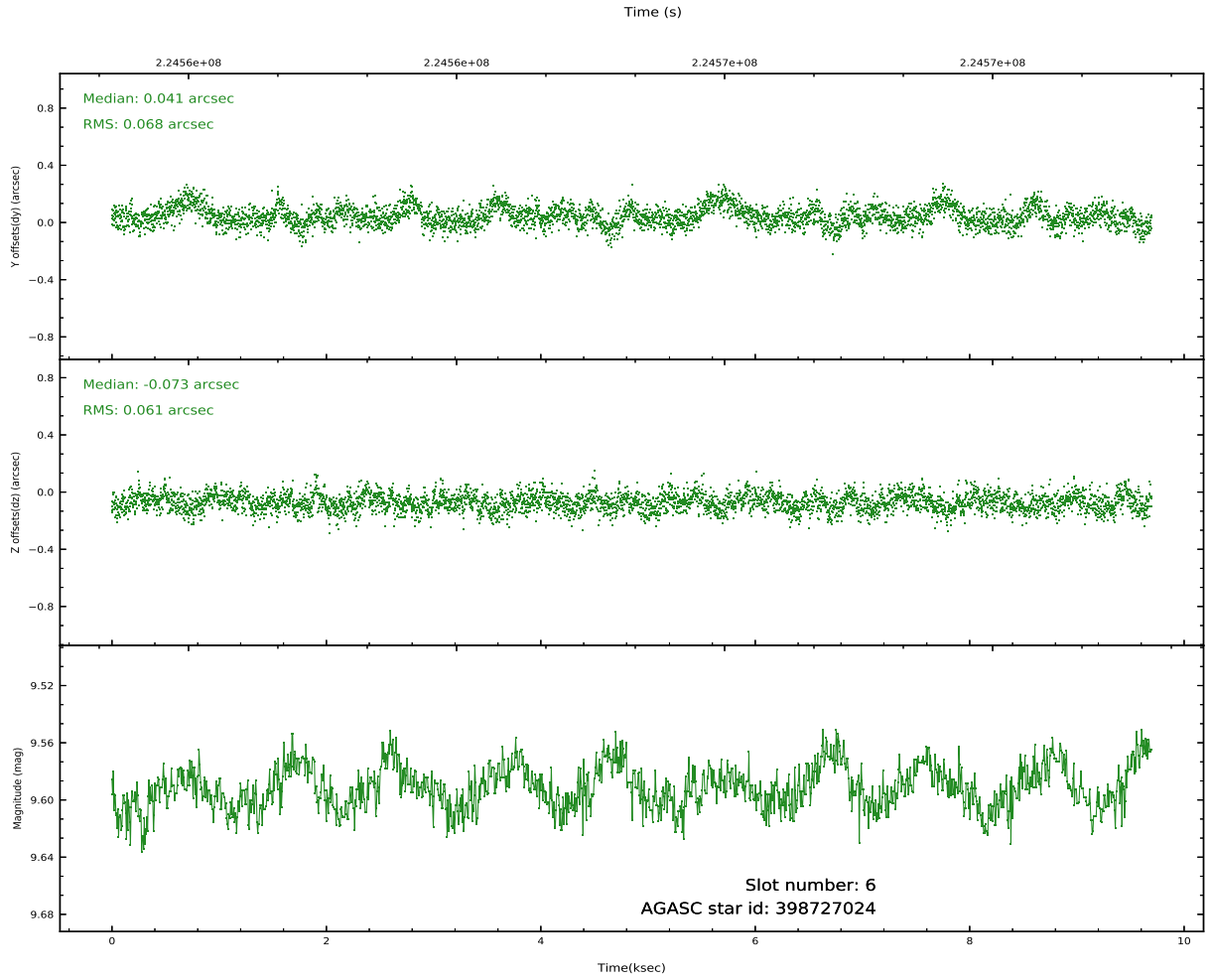
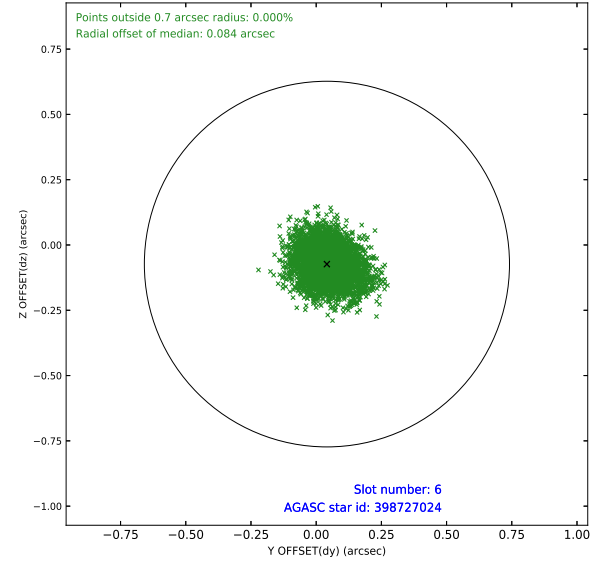
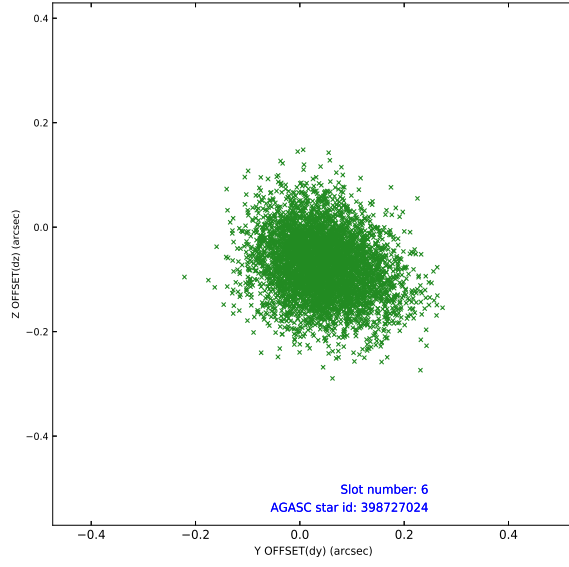
2.4.2 Slot 4



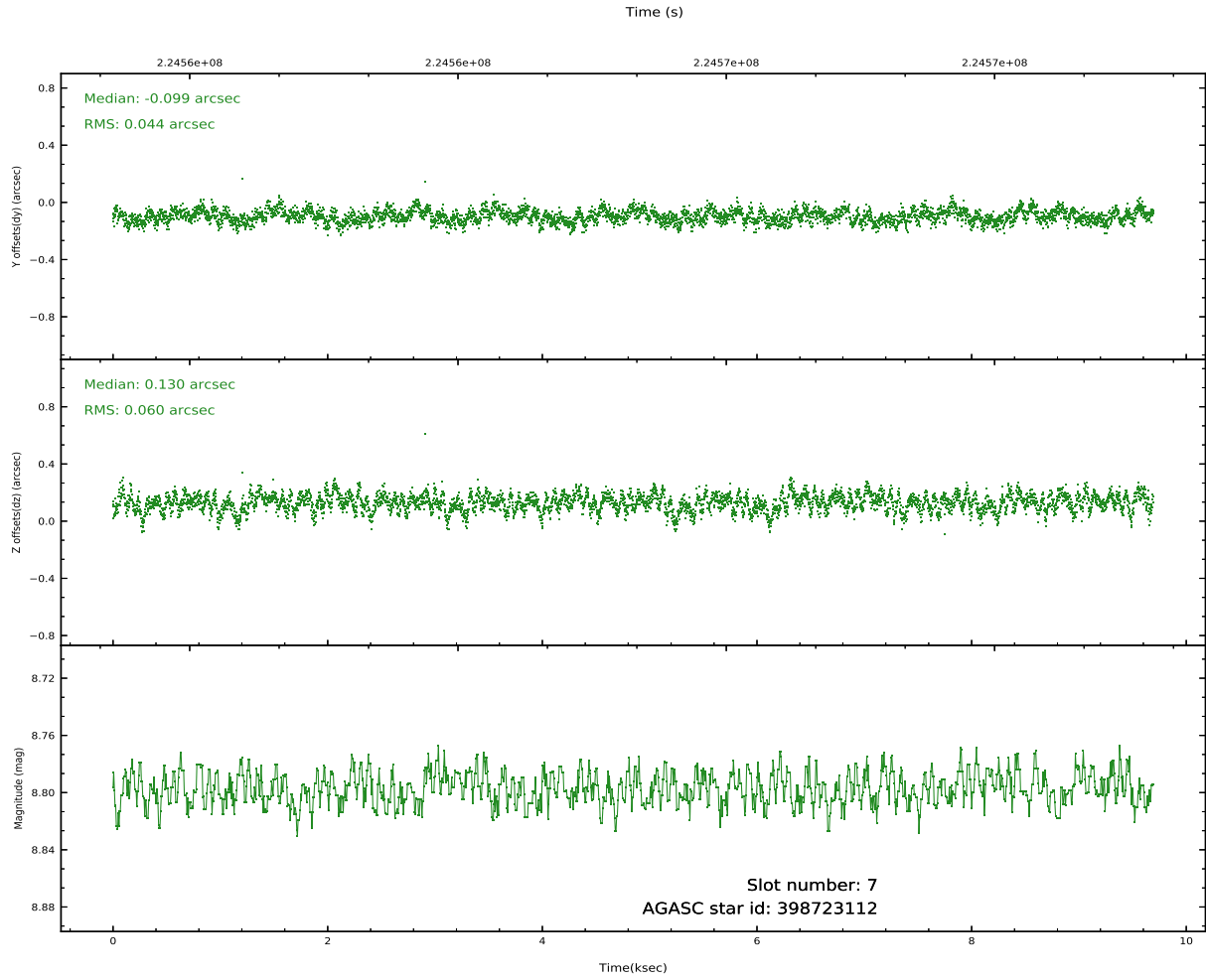
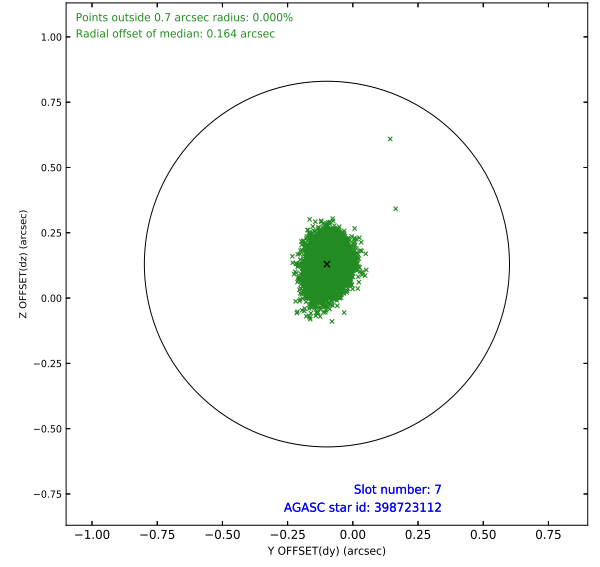
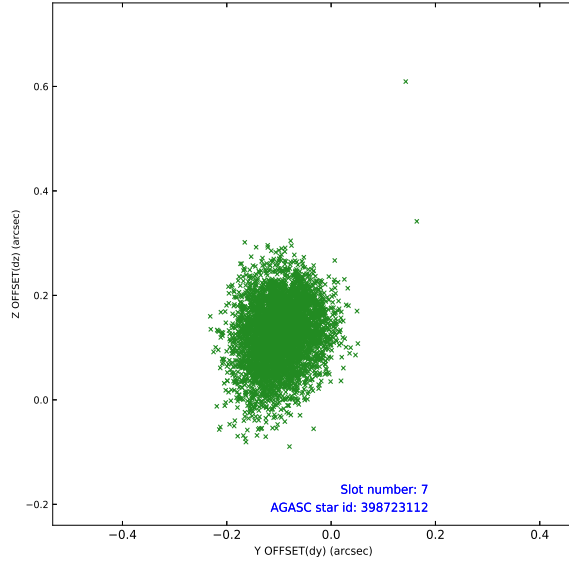
2.4.3 Slot 5



2.4.4 Slot 6

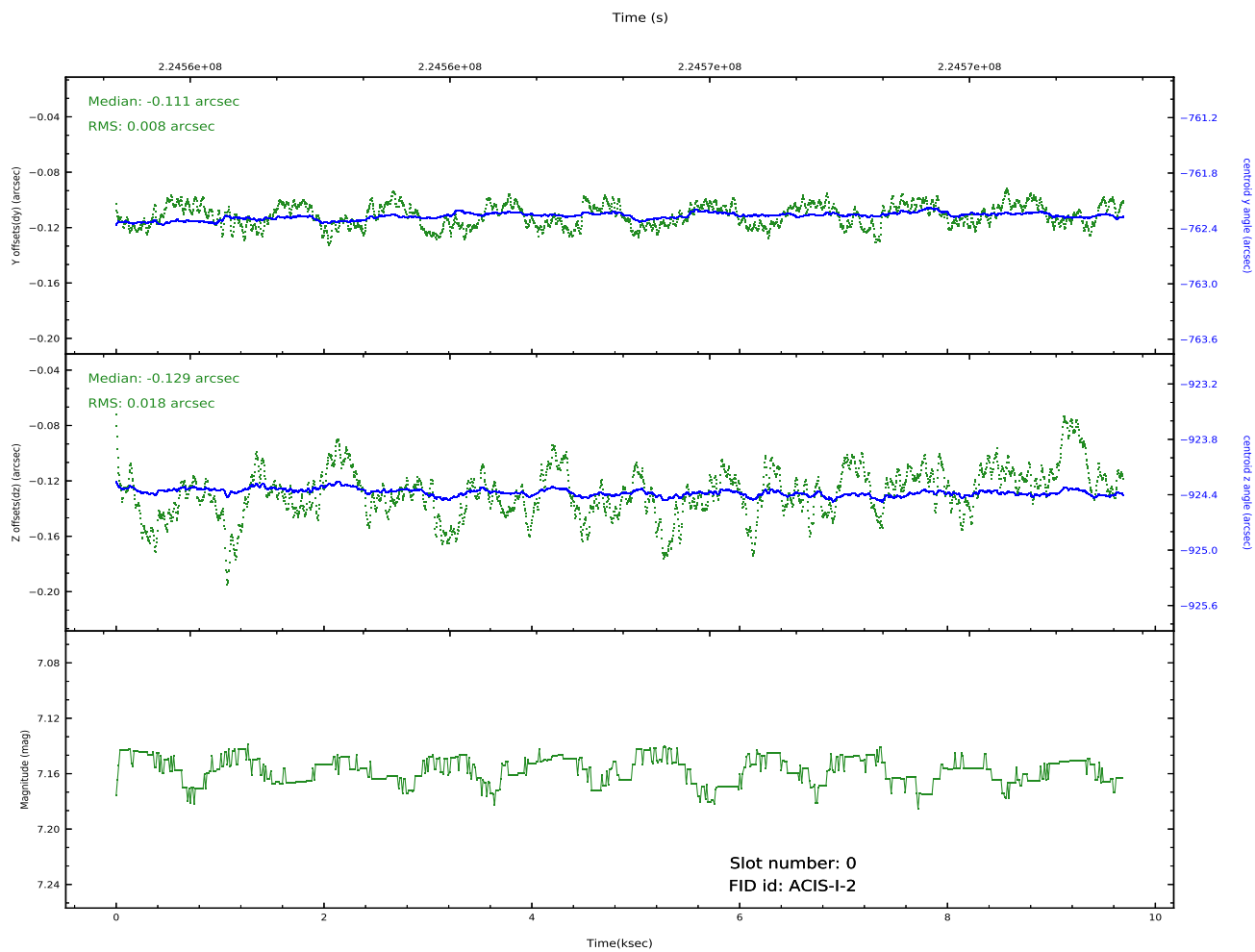
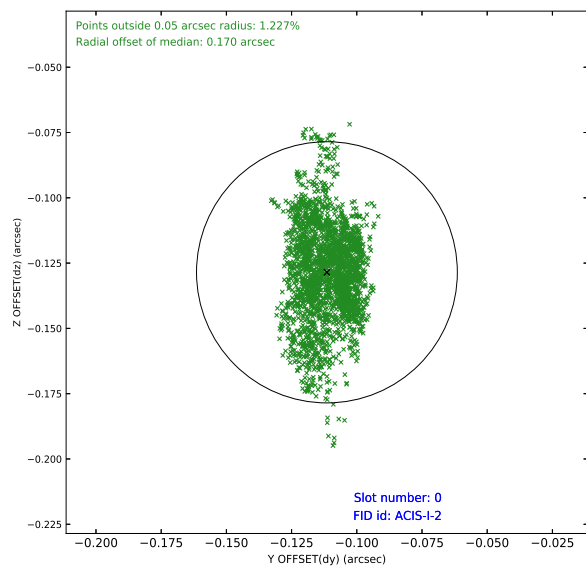
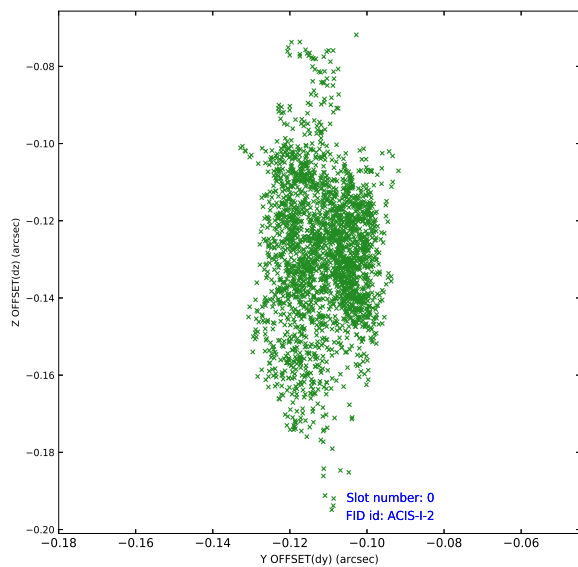


2.4.5 Slot 7

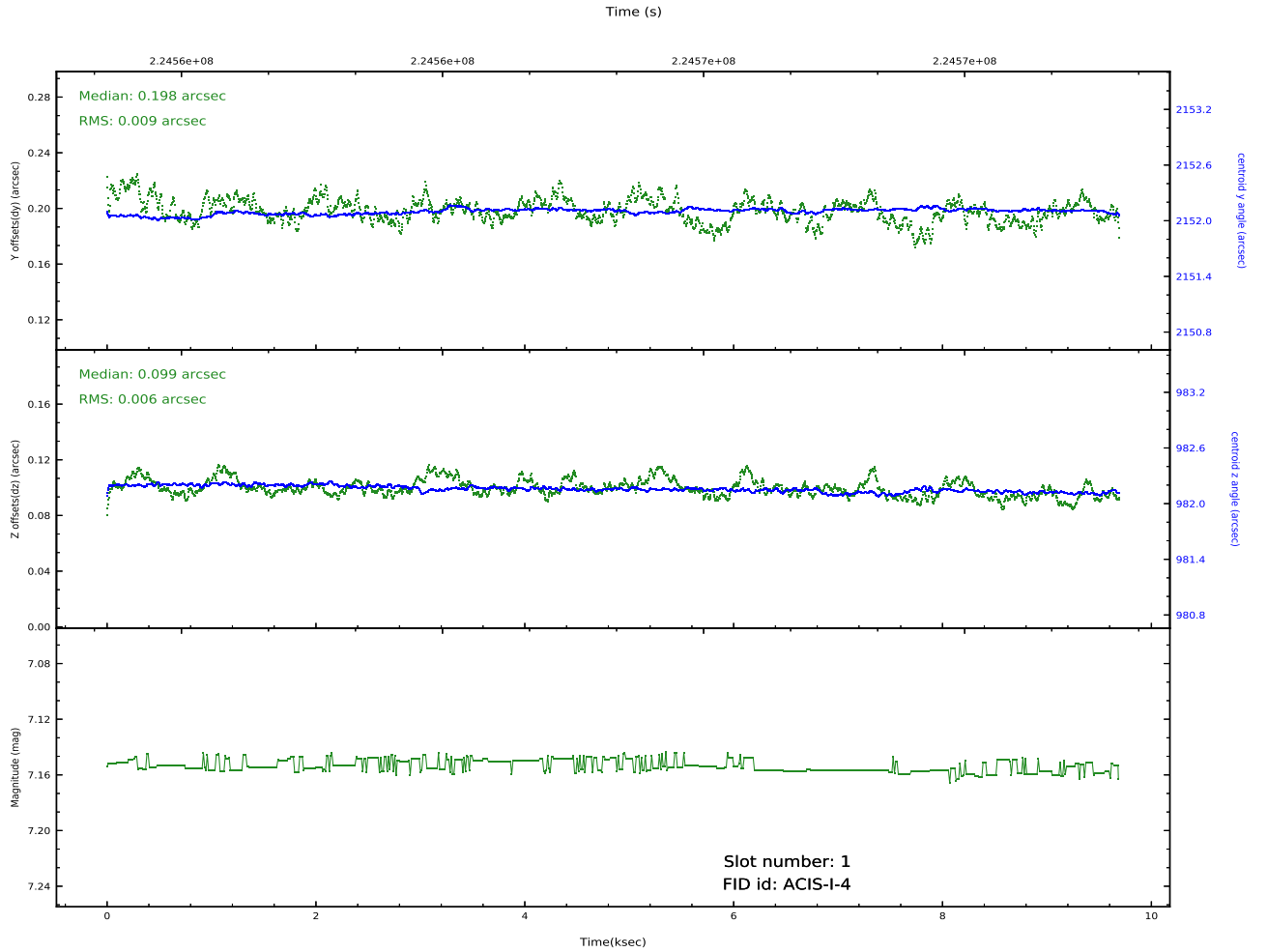
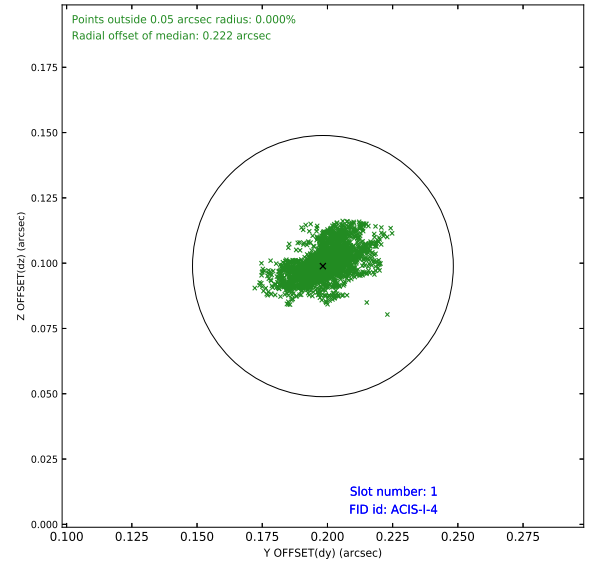
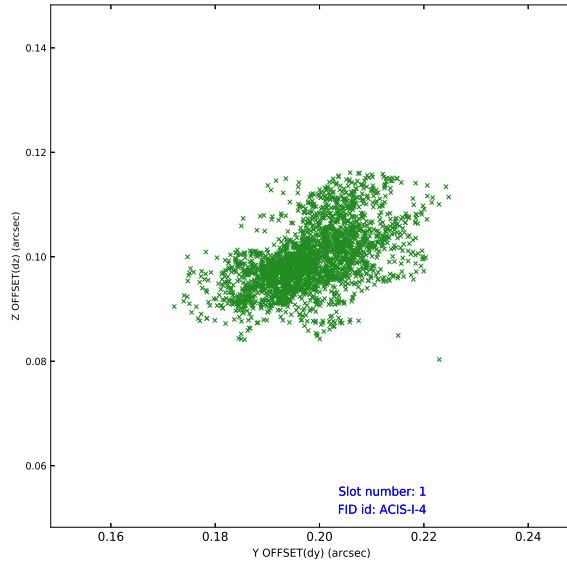


2.5 FID Slots

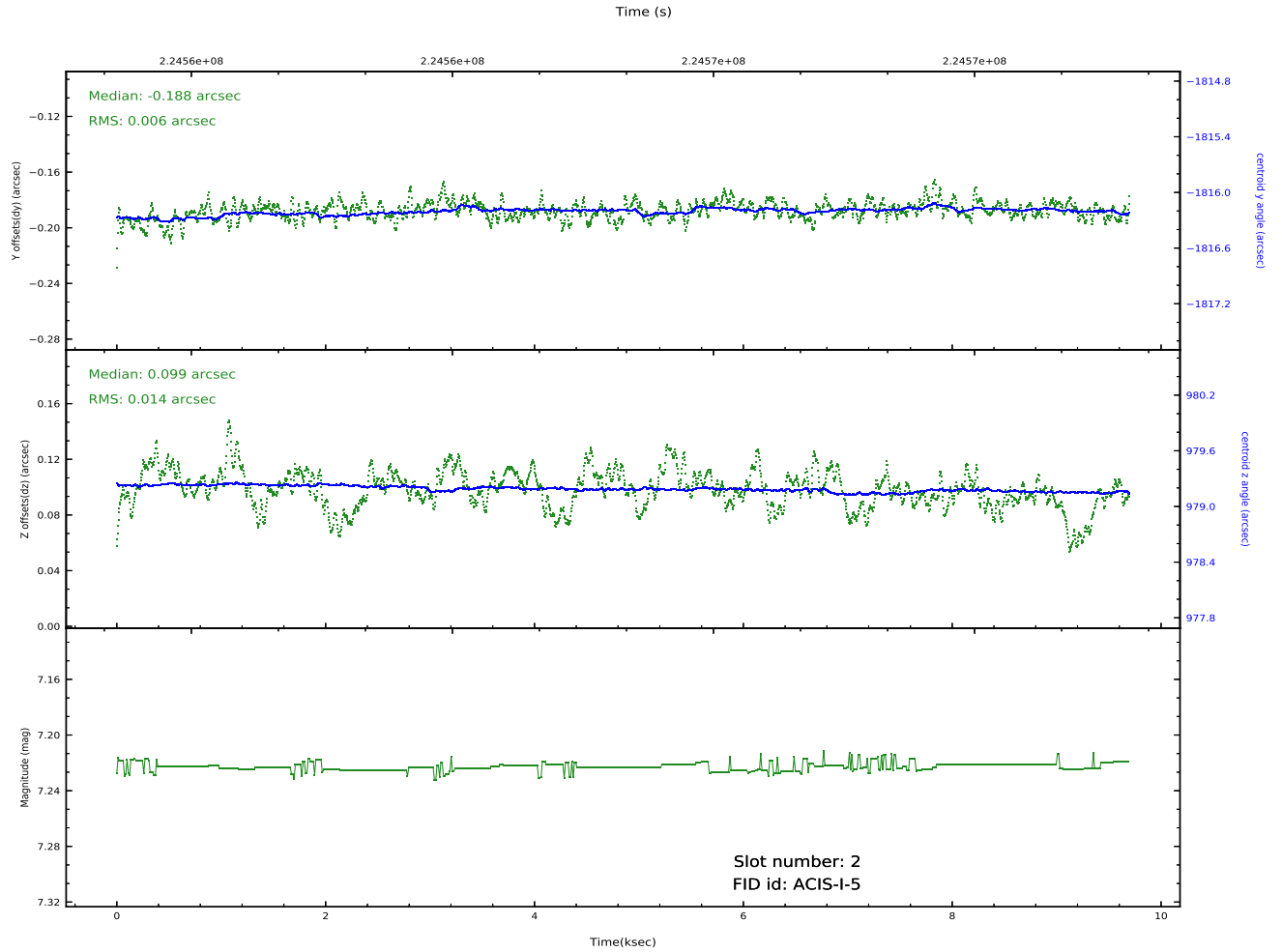
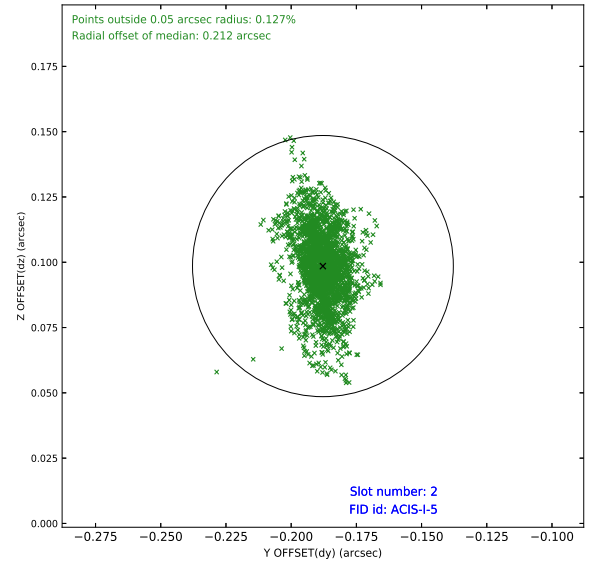
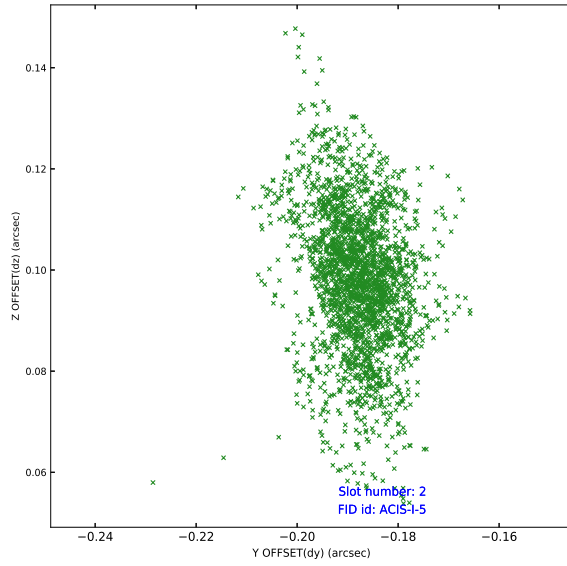
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.510799

A.2 Comments

A spatial region of the original bias map for CCD = 1 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~ 20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 1 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (217.02999,44.10761), (217.03511,44.10782), (217.03088,44.16350), (217.02576,44.16329).