

V&V Reference Report

L2 ASCDS Version : 10.9.2

Observation 20521 - L2 Version 3
Chandra X-Ray Center

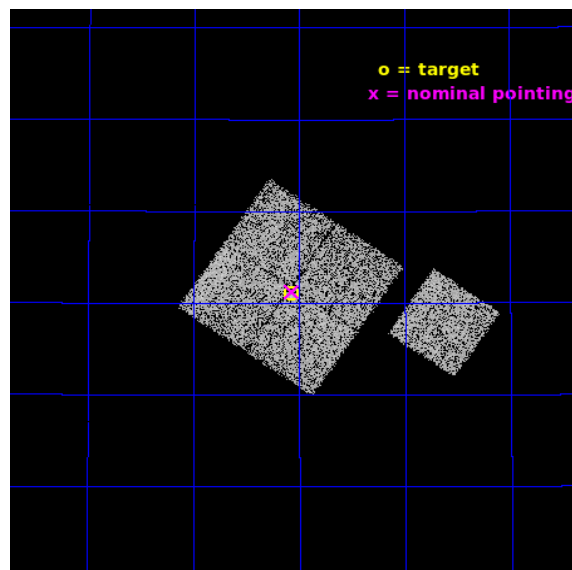
L2 Processing Date : Oct 27 2020

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1 Front

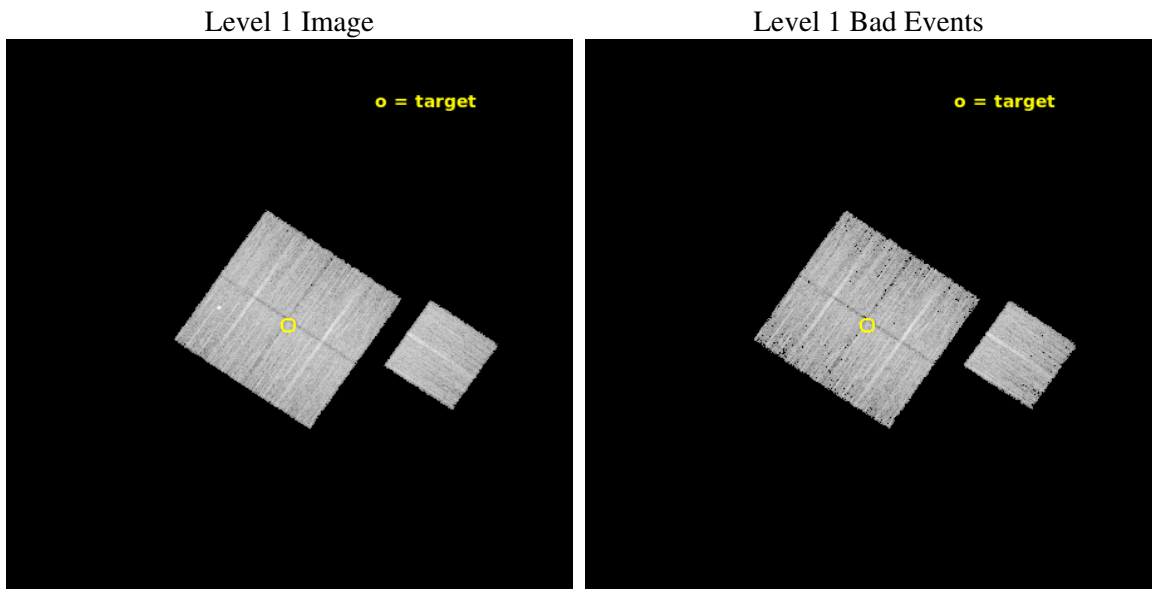
seq_num	801735	Sequence number
obs_id	20521	Observation id
title	Unravelling gas clumping in the outskirts of the Perseus cluster	P
observer	Stephen Walker	Principal investigator
object	Perseus r200 NW	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	49.018333	Observer's specified target RA [deg]
dec_targ	42.683861	Observer's specified target Dec [deg]
ra_nom	49.017740459482	Nominal RA [deg]
dec_nom	42.687503511012	Nominal Dec [deg]
roll_nom	124.34004945259	Nominal Roll [deg]
revision	3	Processing version of data
ontime	8069.3000621796	Sum of GTIs [s]
livetime	7963.8687163349	Livetime [s]
ontime0	8069.3000621796	Sum of GTIs [s]
ontime1	8069.3000621796	Sum of GTIs [s]
ontime2	8069.3000621796	Sum of GTIs [s]
ontime3	8069.3000621796	Sum of GTIs [s]
ontime6	8069.3000621796	Sum of GTIs [s]
l2events	28781	Number of level 2 events



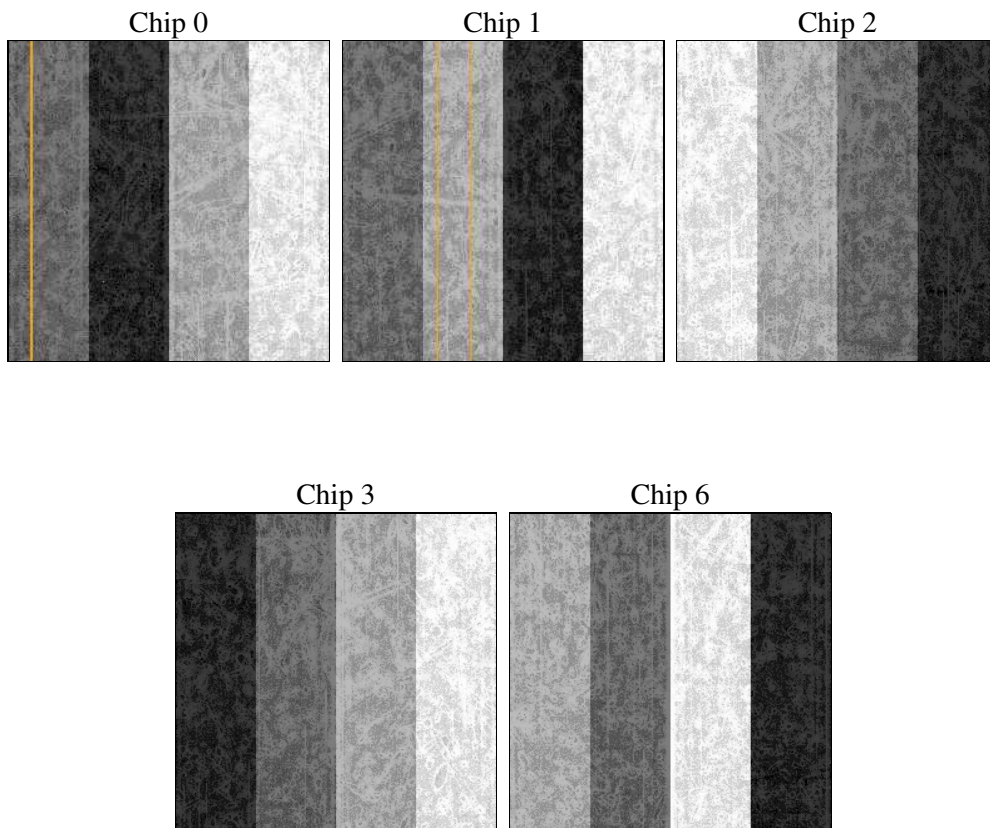
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	8000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	8069.3000621796	Sum of GTIs [s]
caldsver	4.9.3	 	ontime0	8069.3000621796	Sum of GTIs [s]
date	2020-10-28T00:29:19	Date and time of file creation	ontime1	8069.3000621796	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	8069.3000621796	Sum of GTIs [s]
			ontime3	8069.3000621796	Sum of GTIs [s]
			ontime6	8069.3000621796	Sum of GTIs [s]
			l1events	300998	Number of level 1 events

2.1.4 Events

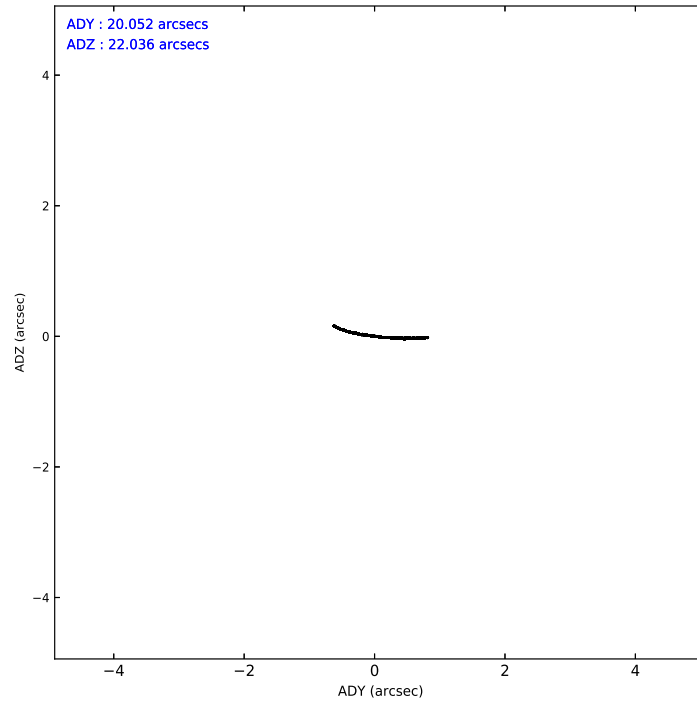
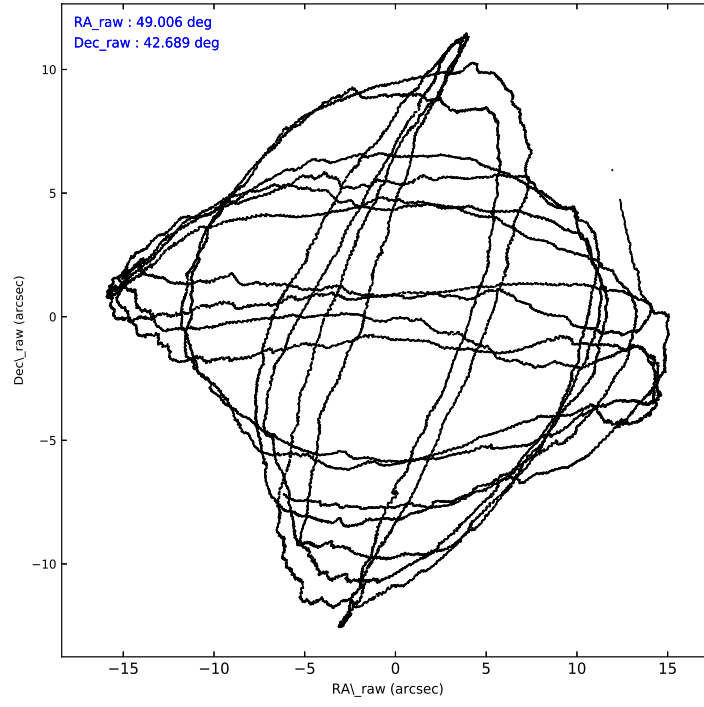
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	57696	57961	60746	61461	63134
rejected events	50813	49563	54194	55053	56217
rejected %	88%	85%	89%	89%	89%

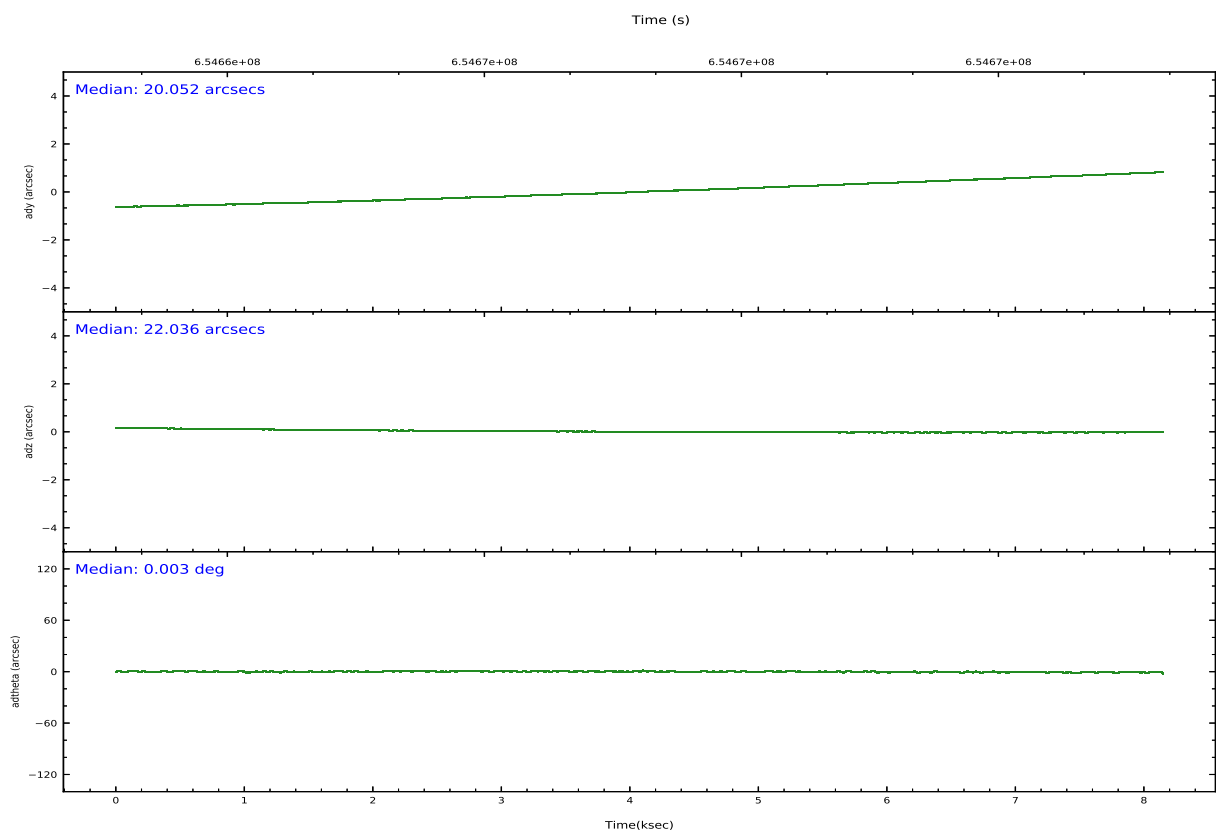
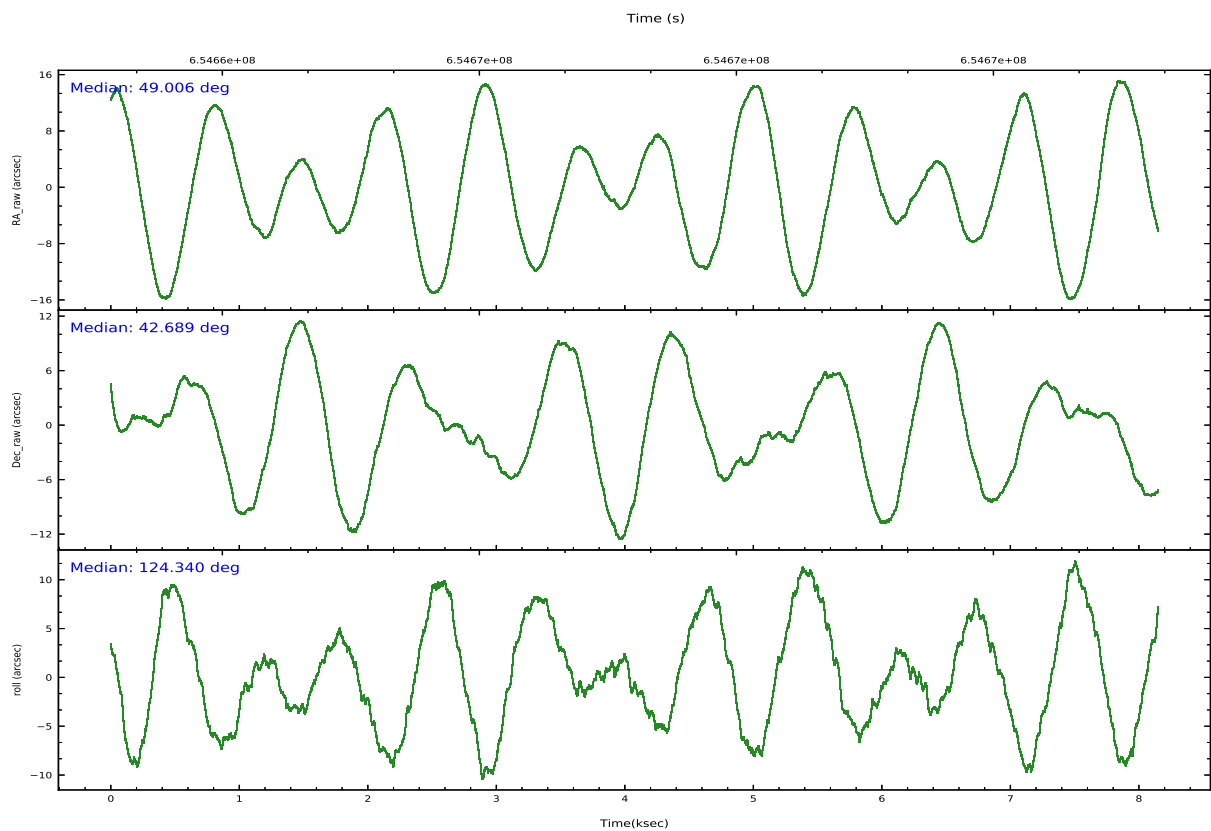
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	2332	3340	2297	2302	2306
	4%	5%	3%	3%	3%
grade 1 events	27	40	37	36	29
	0%	0%	0%	0%	0%
grade 2 events	1845	1989	1690	1362	1618
	3%	3%	2%	2%	2%
grade 3 events	672	692	653	674	700
	1%	1%	1%	1%	1%
grade 4 events	634	694	652	689	670
	1%	1%	1%	1%	1%
grade 5 events	2658	2774	2413	3013	2877
	4%	4%	3%	4%	4%
grade 6 events	1402	1688	1265	1386	1626
	2%	2%	2%	2%	2%
grade 7 events	48126	46744	51739	51999	53308
	83%	80%	85%	84%	84%

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	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	49.040082	49.017740459482	CCD I2 on	Y	Y
[deg] Pointing Dec	42.676842	42.687503511012	CCD I3 on	Y	Y
[deg] Pointing Roll	124.115362	124.34004945259	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	N	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	654663281.184000	654661583.66682	CCD S5 on	N	N
Observation start date	2018-09-30T02:53:32	2018-09-30T02:26:23	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	654671281.184000	654672279.02995	On-chip summing requested	N	N
Observation end date	2018-09-30T05:06:52	2018-09-30T05:24:39	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



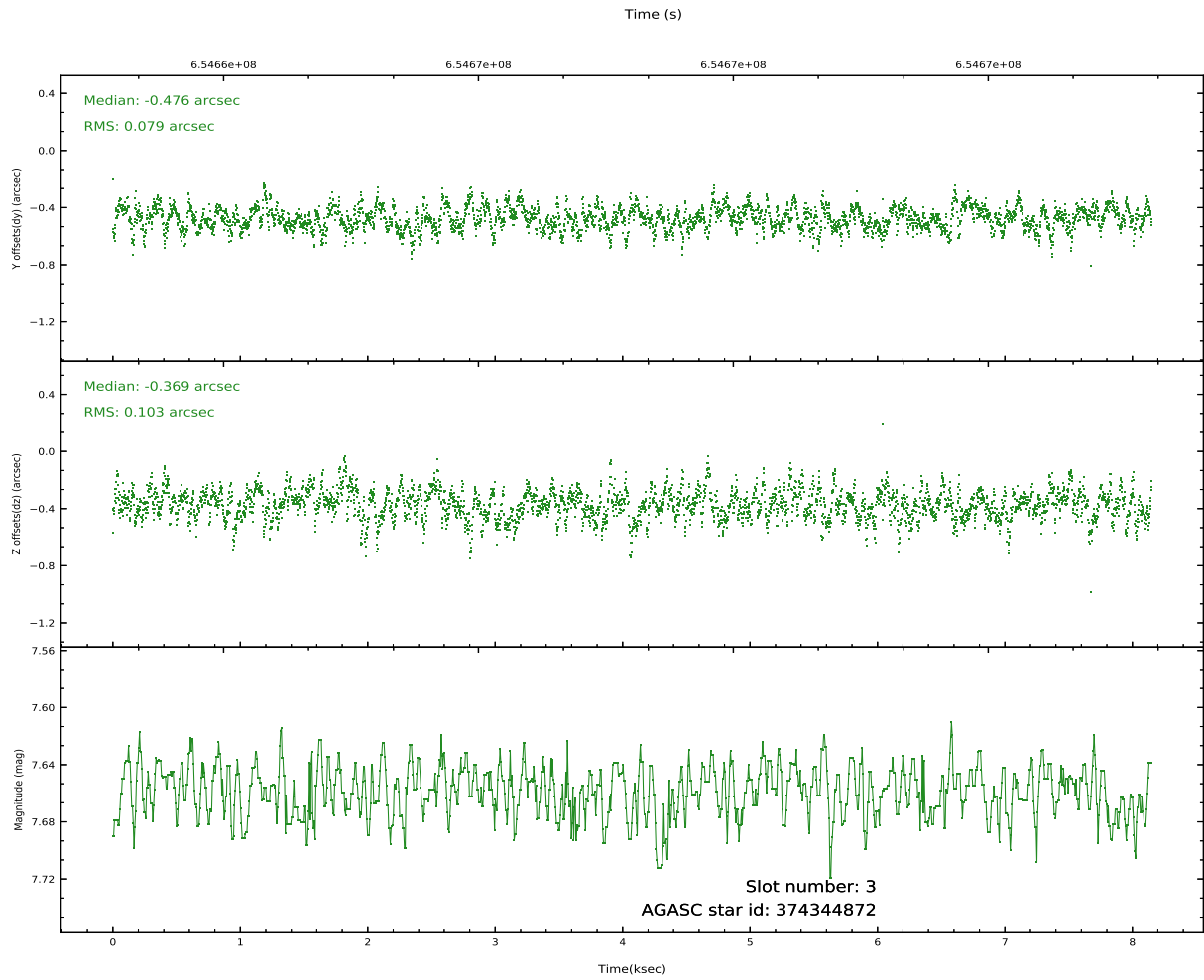
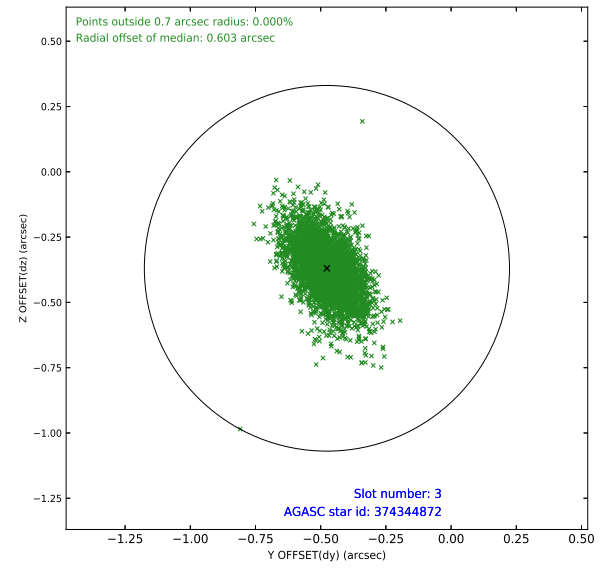
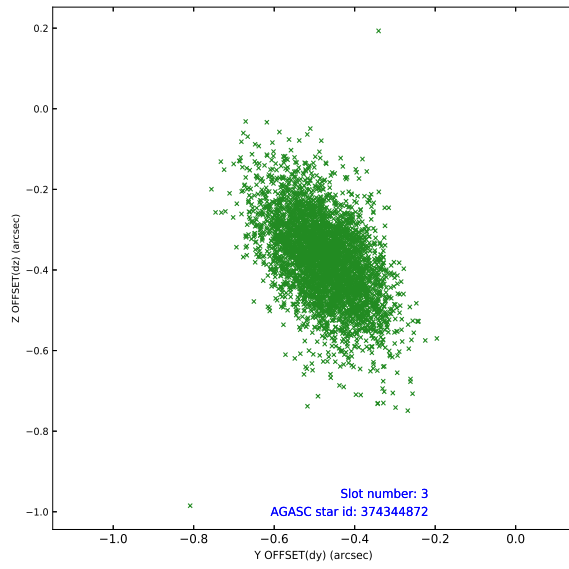


Slot Statistics

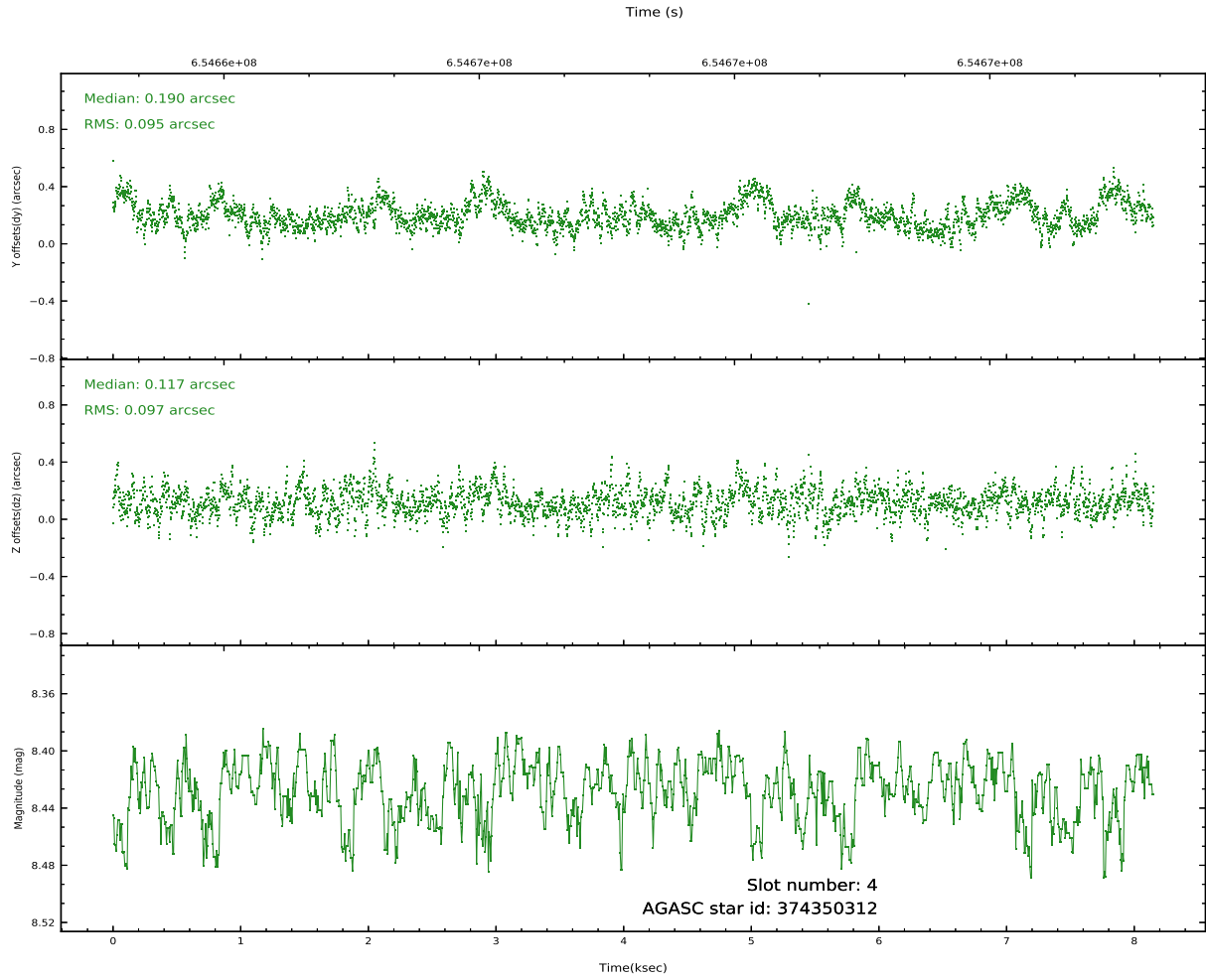
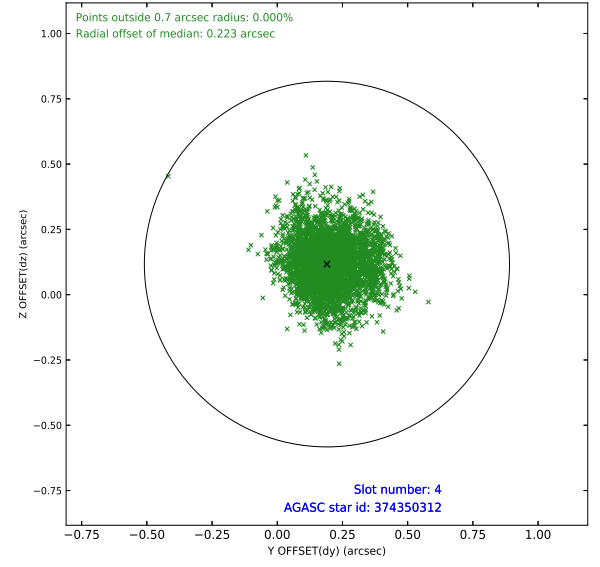
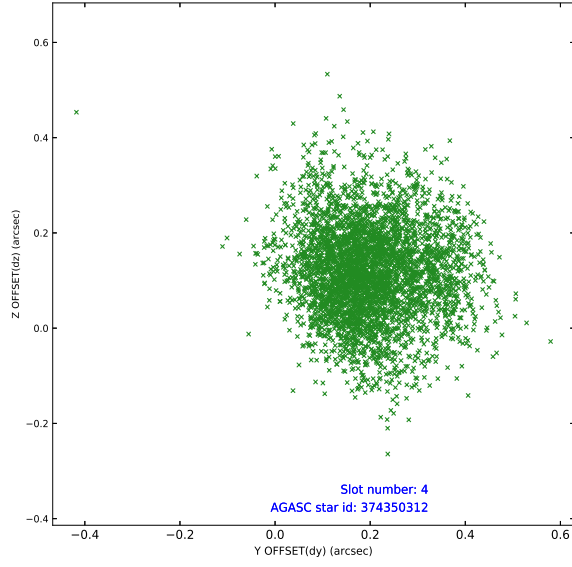
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.15	1988	1.000	0.208	-0.115	0.010	0.017	0.000000	0.000000	919.36	-846
1	FID		ACIS-I-5	7.13	1988	1.000	-0.278	0.193	0.010	0.017	0.000000	0.000000	-1828.69	1051
2	FID		ACIS-I-6	7.16	1988	1.000	-0.020	-0.008	0.007	0.013	0.000000	0.000000	384.15	1696
3	GUIDE	used	374344872	7.66	3977	1.000	-0.476	-0.369	0.132	0.234	48.414160	42.907808	1618.73	896
4	GUIDE	used	374350312	8.43	3974	1.000	0.190	0.117	0.144	0.236	49.824622	42.610331	-1355.06	-1591
5	GUIDE	used	374357368	7.78	3974	1.000	0.059	-0.038	0.151	0.247	49.396079	42.675115	-532.67	-778
6	GUIDE	used	374358688	9.24	3963	1.000	0.007	-0.063	0.197	0.312	49.259903	42.100043	-2047.88	677
7	GUIDE	used	376064600	9.16	3971	1.000	0.216	0.356	0.183	0.286	50.213209	42.582691	-2007.00	-2395

2.4 Star Slots

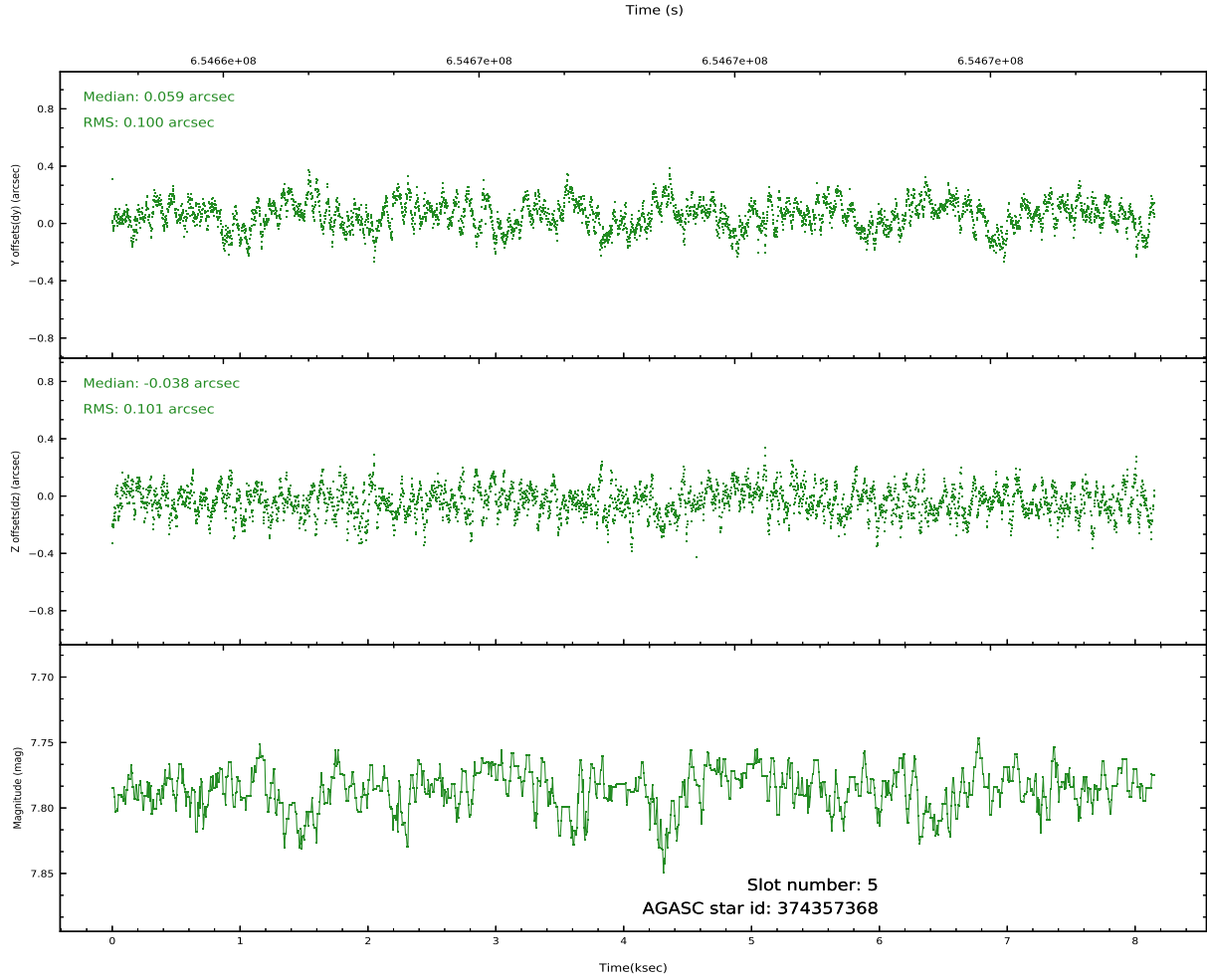
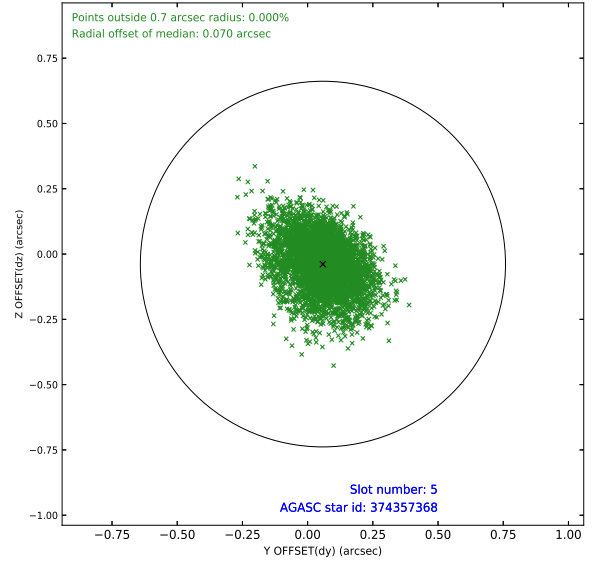
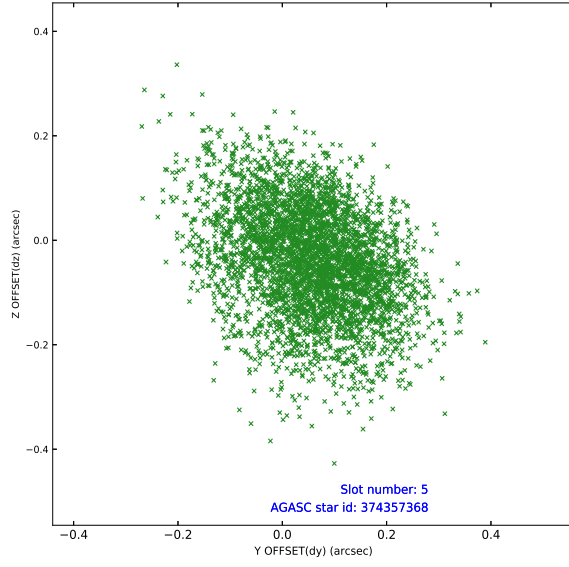
2.4.1 Slot 3



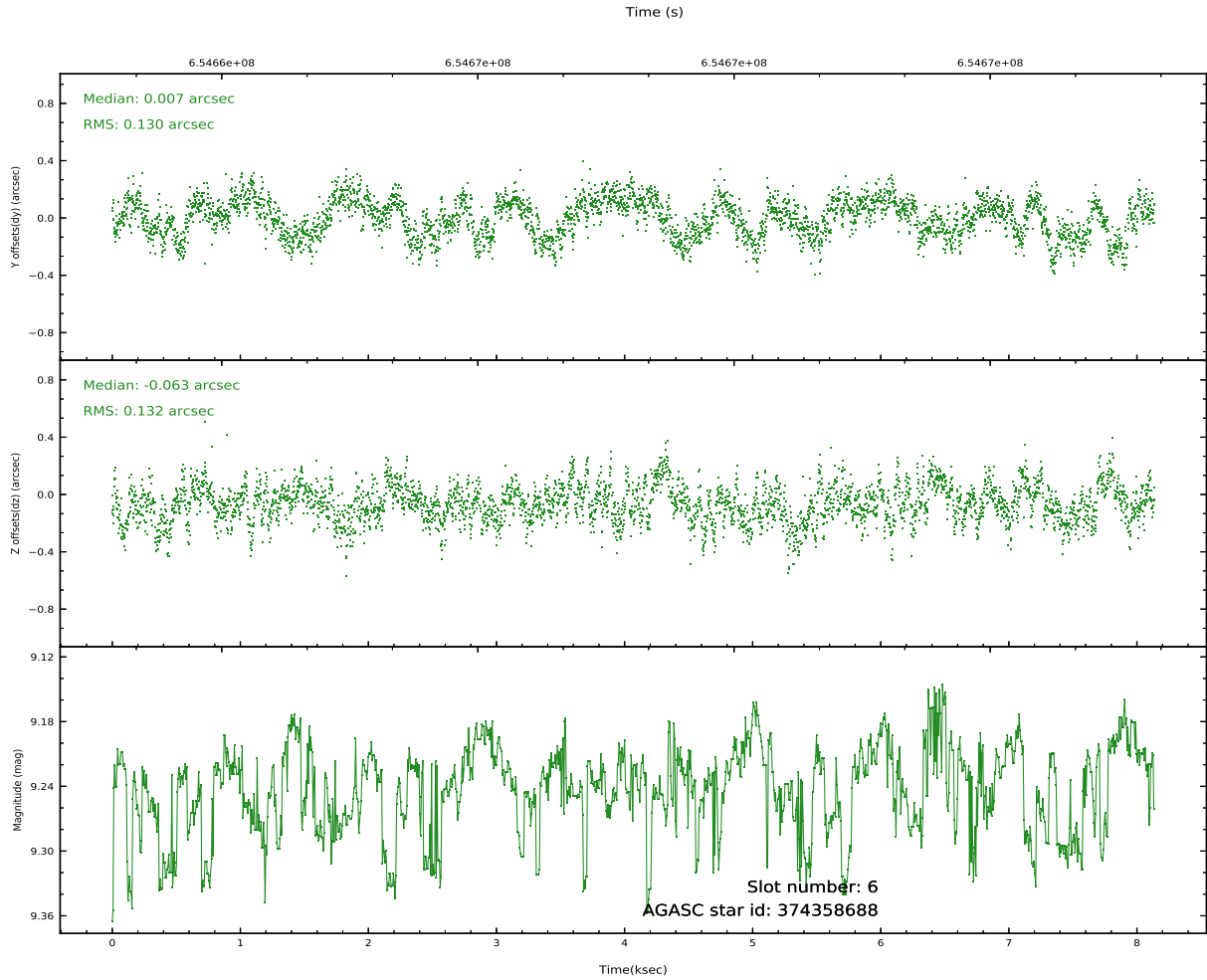
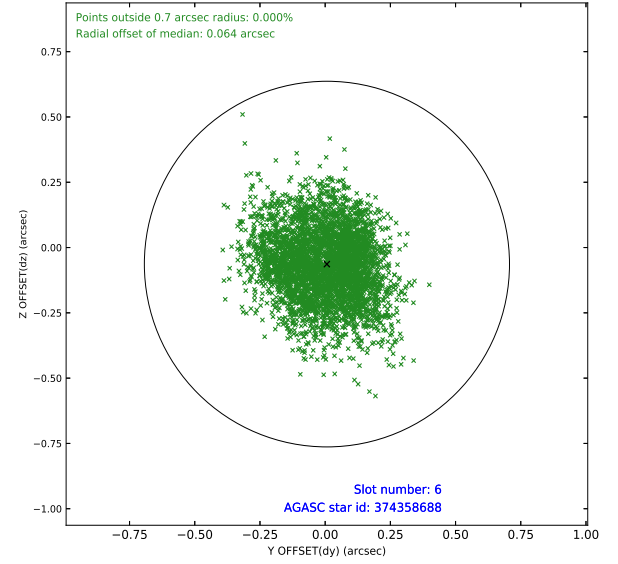
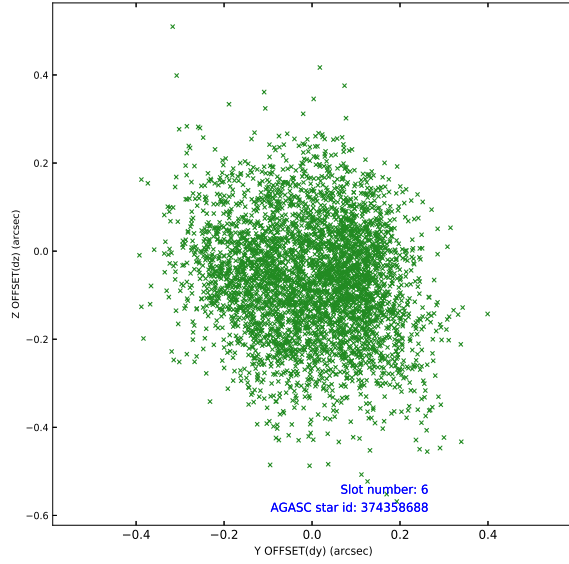
2.4.2 Slot 4



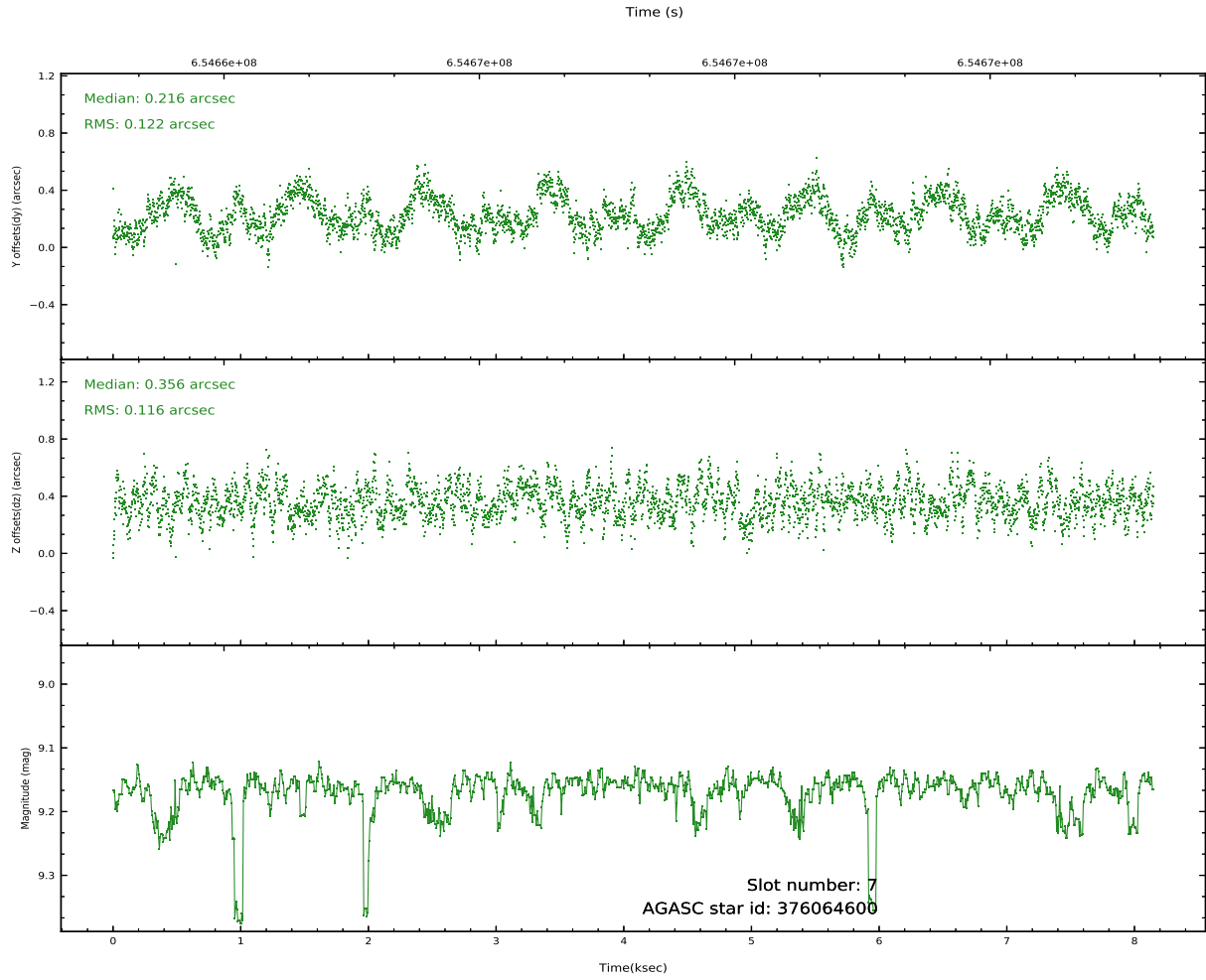
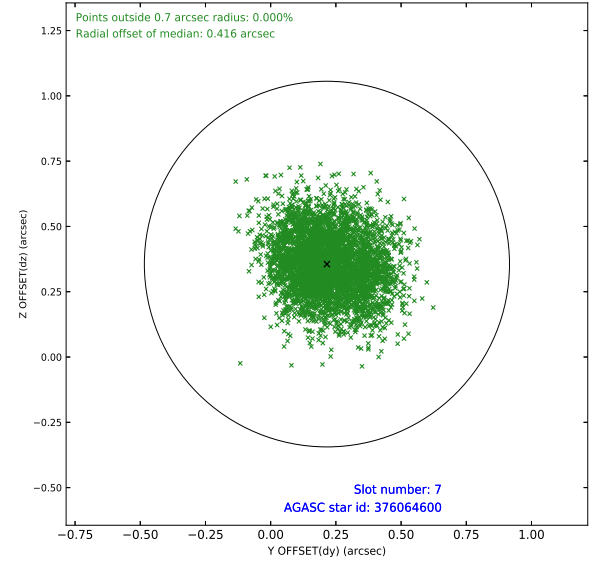
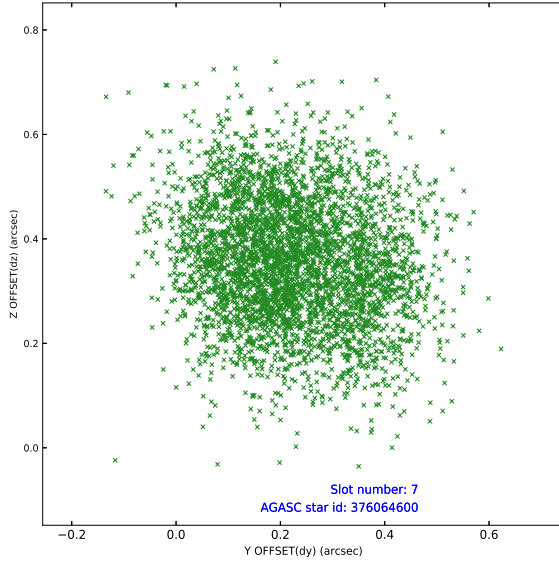
2.4.3 Slot 5



2.4.4 Slot 6

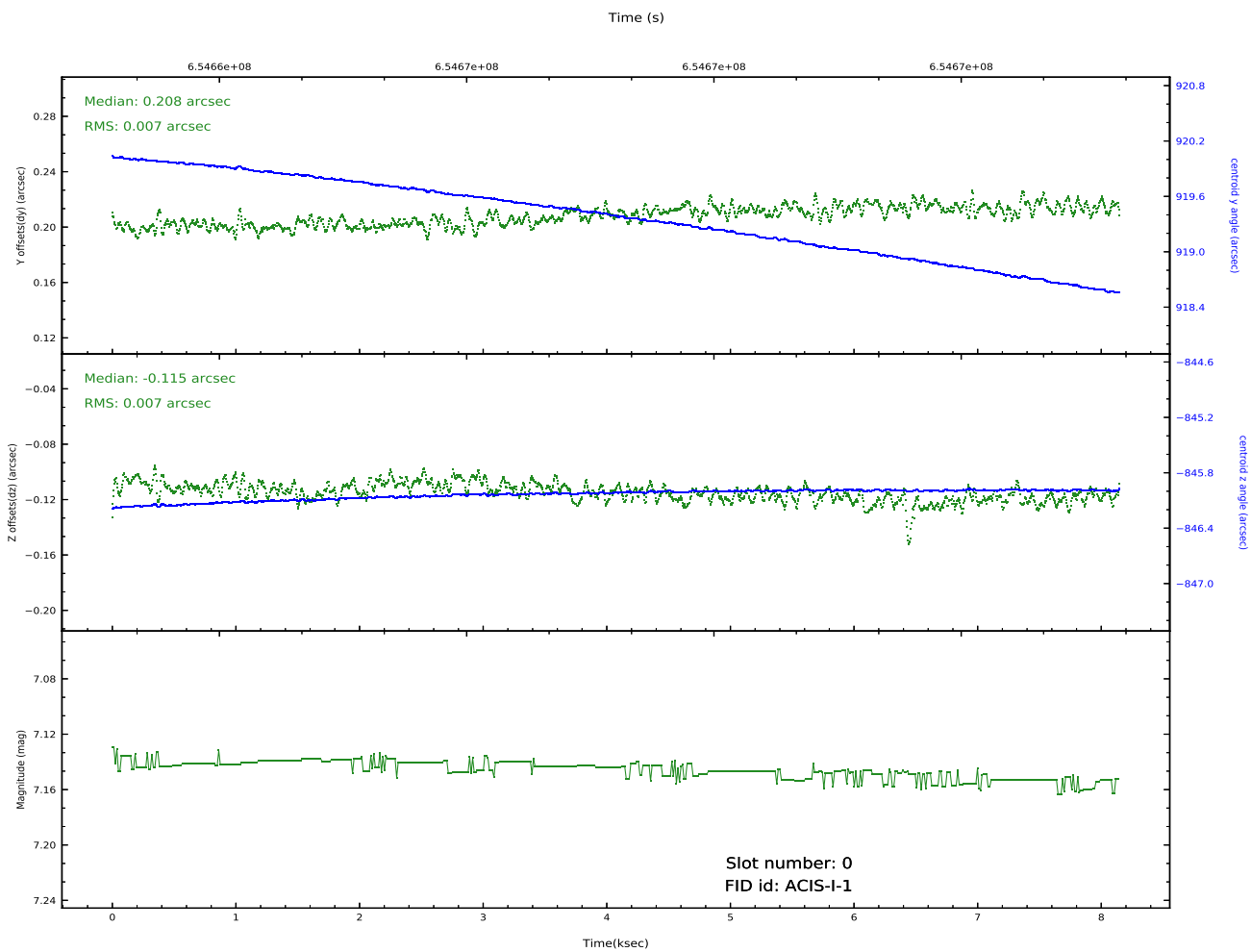
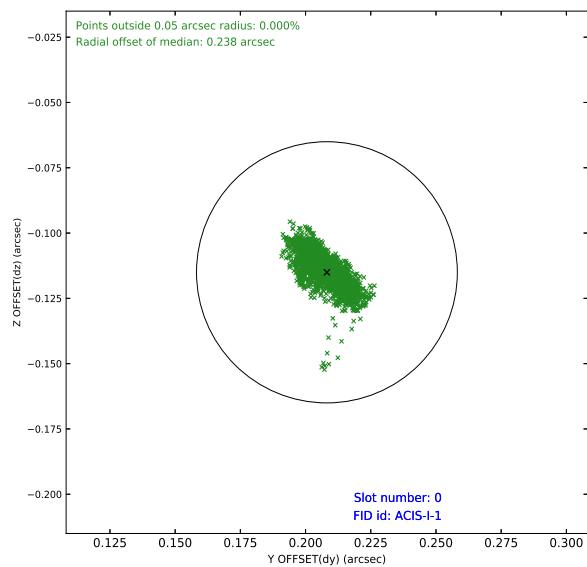
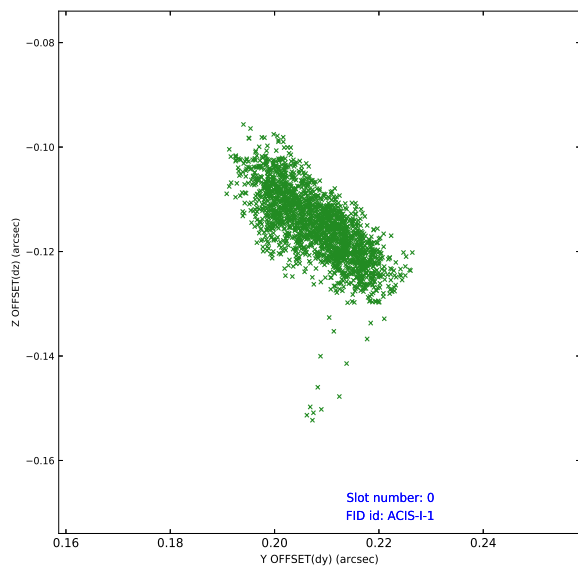


2.4.5 Slot 7

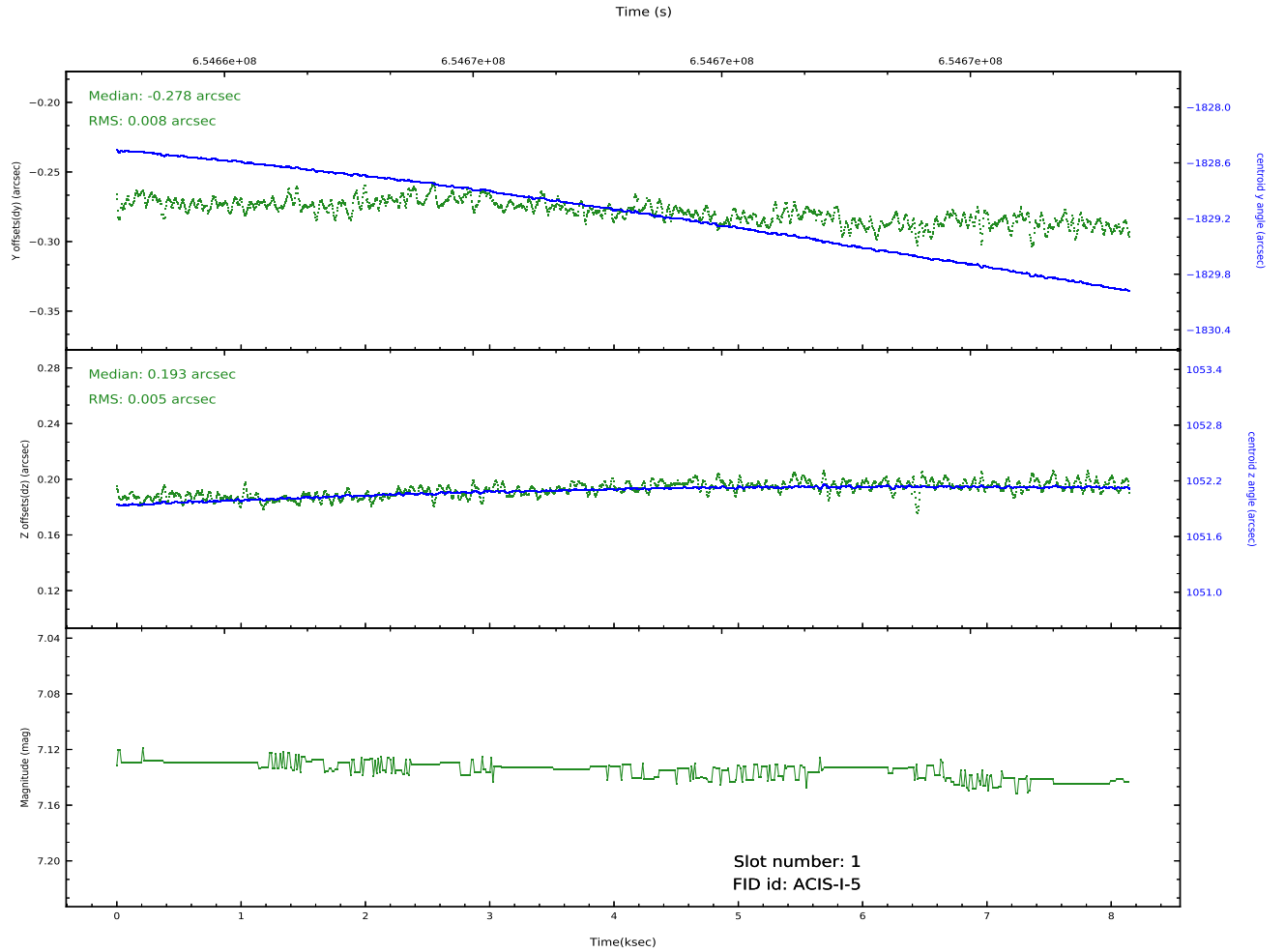
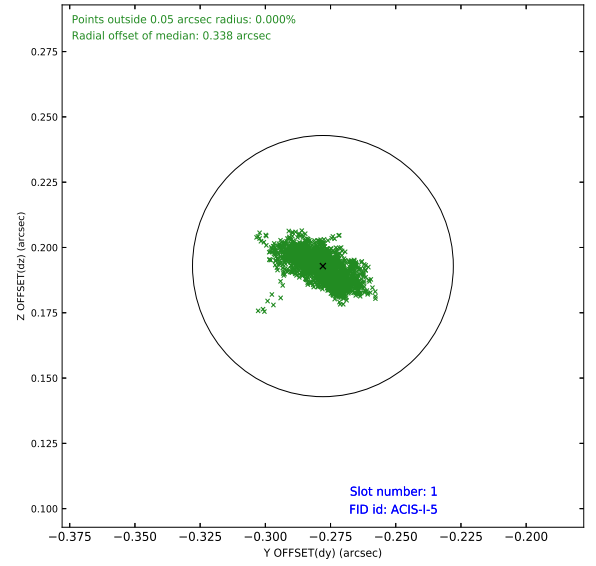
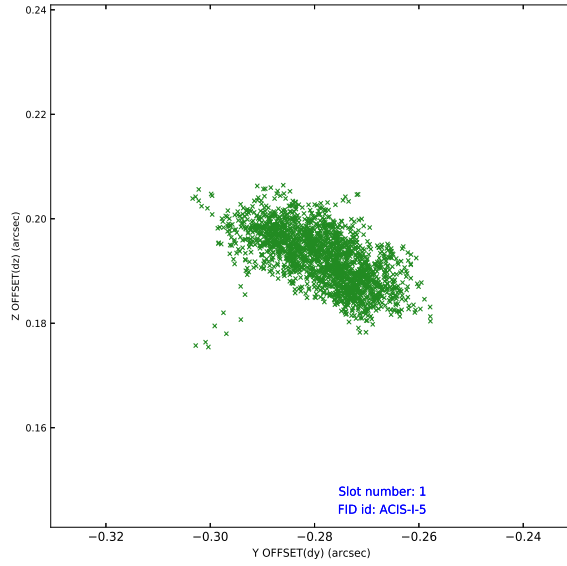


2.5 FID Slots

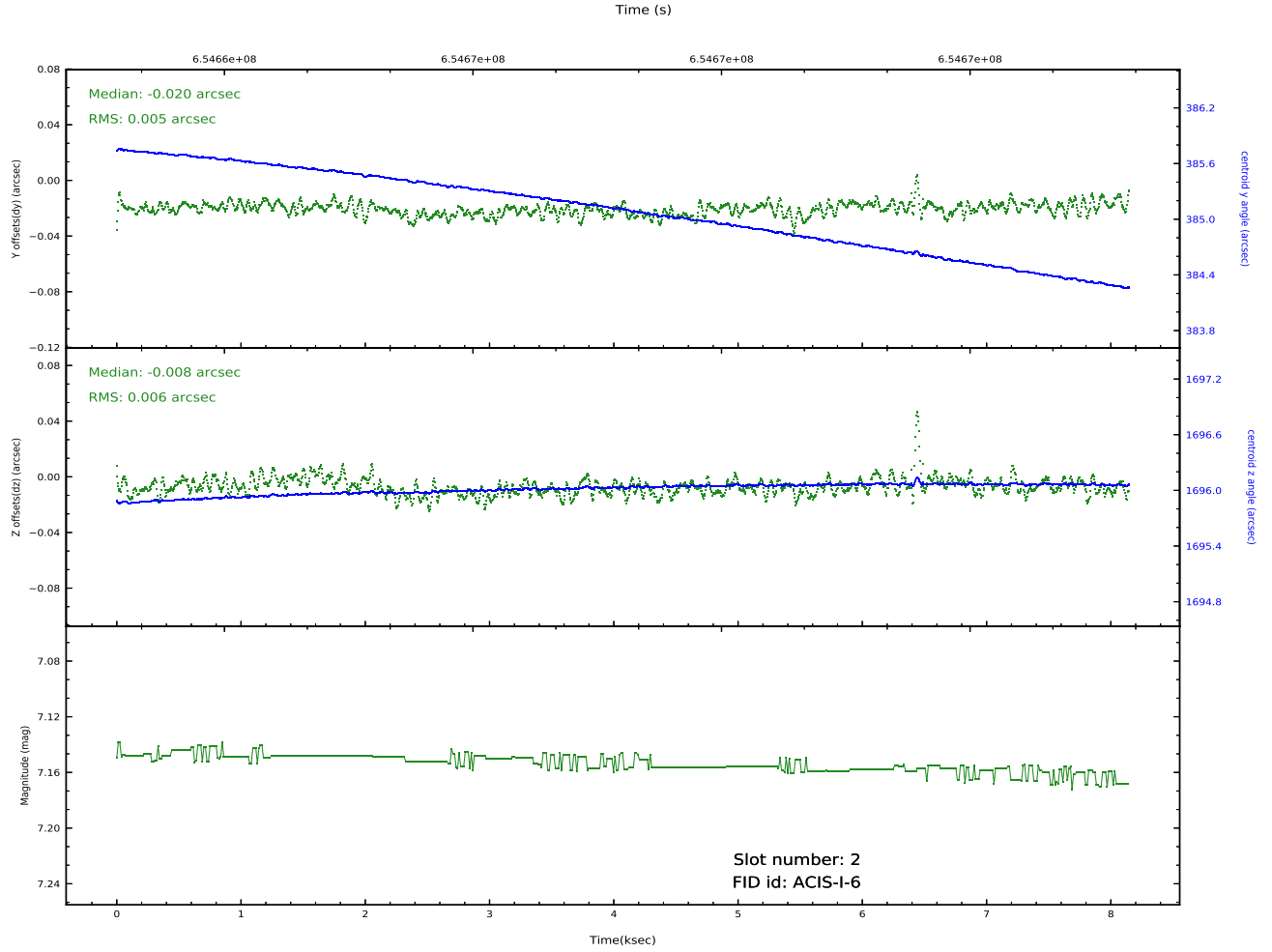
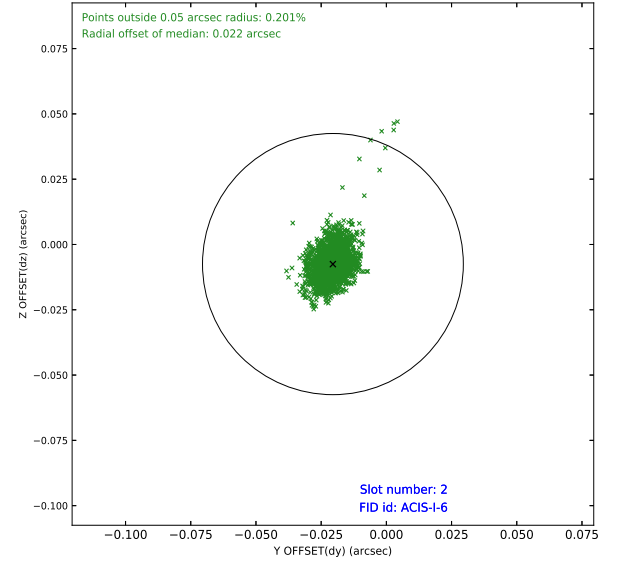
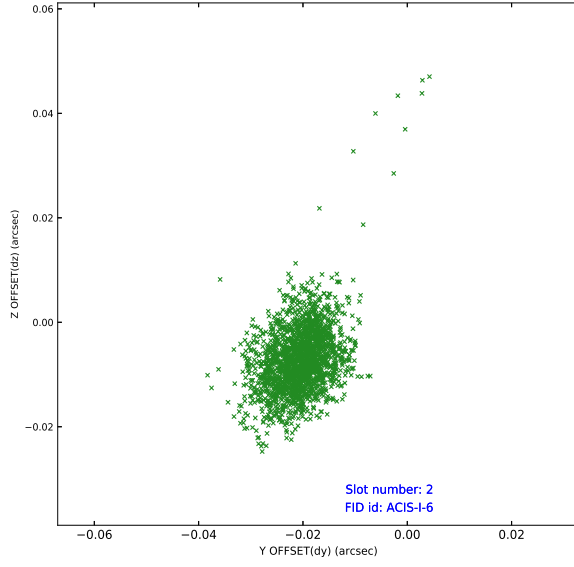
2.5.1 Slot 0



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)	2020.10.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	8.0693000621796

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: (49.27379,42.65221), (49.27747,42.65406), (49.22316,42.71281), (49.21948,42.71097).