

V&V Reference Report

L2 ASCDS Version : 10.9.2

Observation 21131 - L2 Version 3
Chandra X-Ray Center

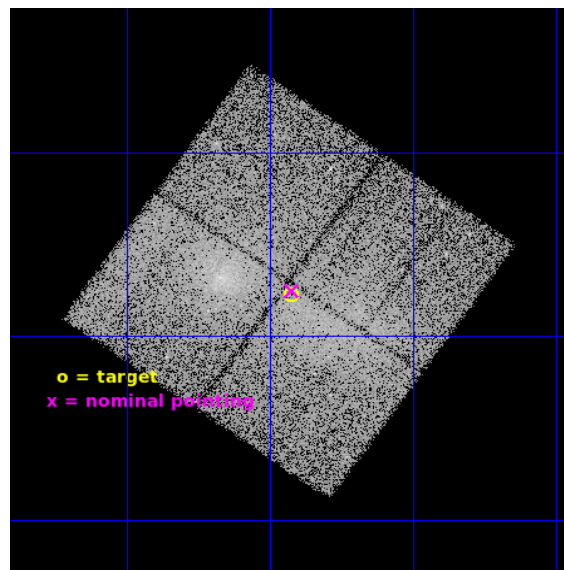
L2 Processing Date : Oct 26 2020

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1 Front

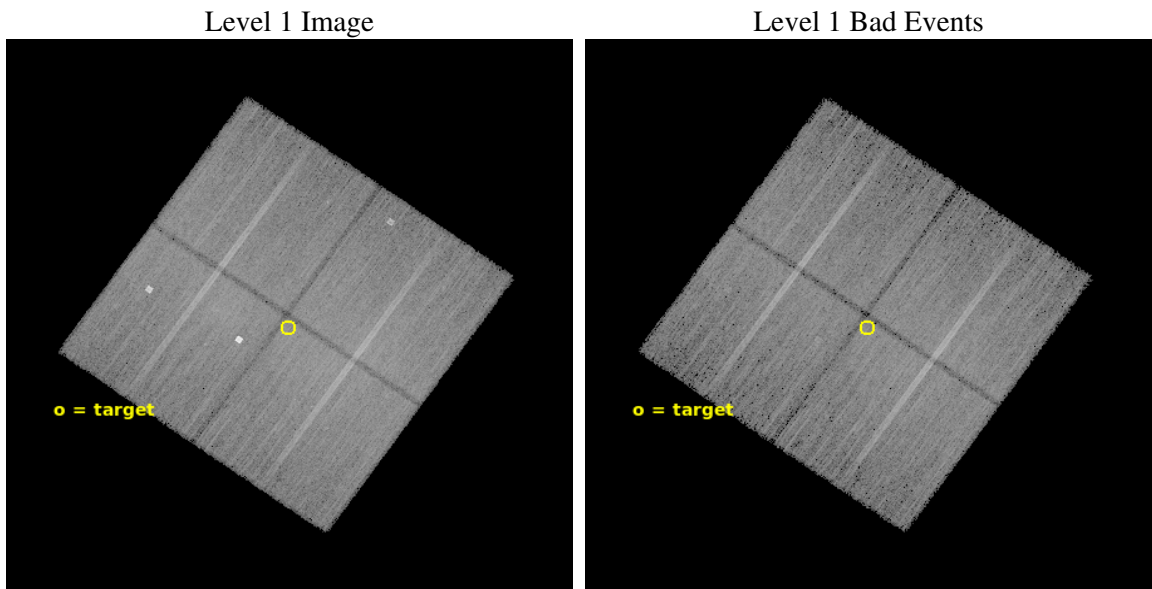
seq_num	801791	Sequence number
obs_id	21131	Observation id
title	1E 2216: THE FIRST SHOCK IN A CLUSTER COLLISION	Proposal title
observer	Jelle Kaastra	Principal investigator
object	1E 2216/1E 2215	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	334.605833	Observer's specified target RA [deg]
dec_targ	-3.795556	Observer's specified target Dec [deg]
ra_nom	334.60545866339	Nominal RA [deg]
dec_nom	-3.7922643936338	Nominal Dec [deg]
roll_nom	125.20540258101	Nominal Roll [deg]
revision	3	Processing version of data
ontime	32077.548816204	Sum of GTIs [s]
livetime	31658.432025772	Livetime [s]
ontime0	32080.566746473	Sum of GTIs [s]
ontime1	32074.32563591	Sum of GTIs [s]
ontime2	32077.507815957	Sum of GTIs [s]
ontime3	32077.548816204	Sum of GTIs [s]
l2events	114495	Number of level 2 events



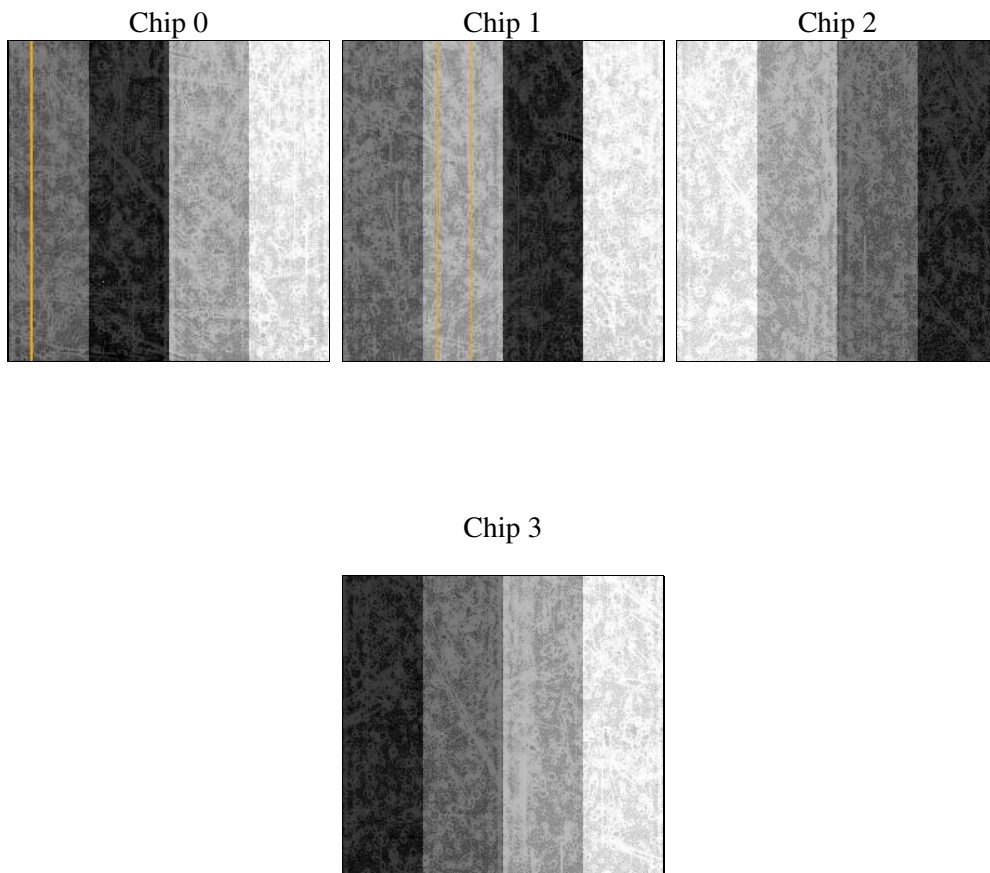
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	32000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	32077.548816204	Sum of GTIs [s]
caldsver	4.9.3	 	ontime0	32080.566746473	Sum of GTIs [s]
date	2020-10-27T01:21:05	Date and time of file creation	ontime1	32074.32563591	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	32077.507815957	Sum of GTIs [s]
			ontime3	32077.548816204	Sum of GTIs [s]
			l1events	968459	Number of level 1 events

2.1.4 Events

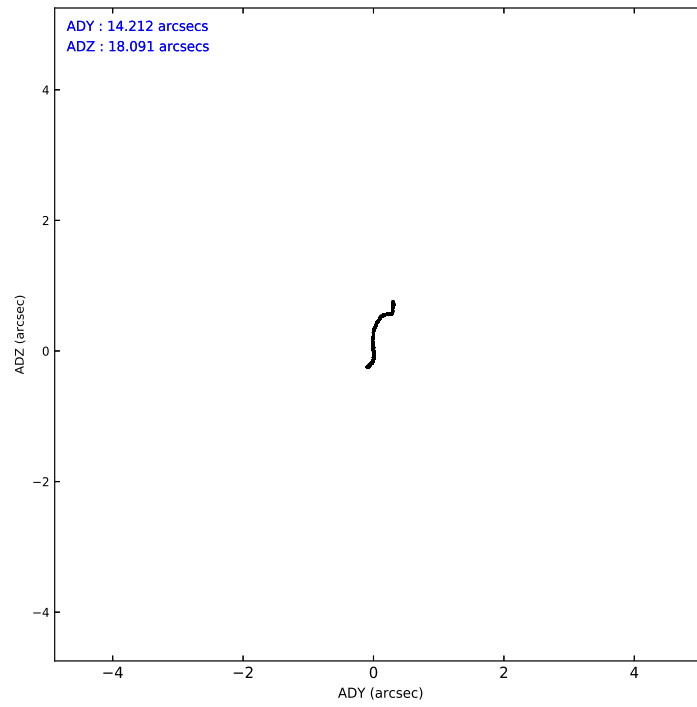
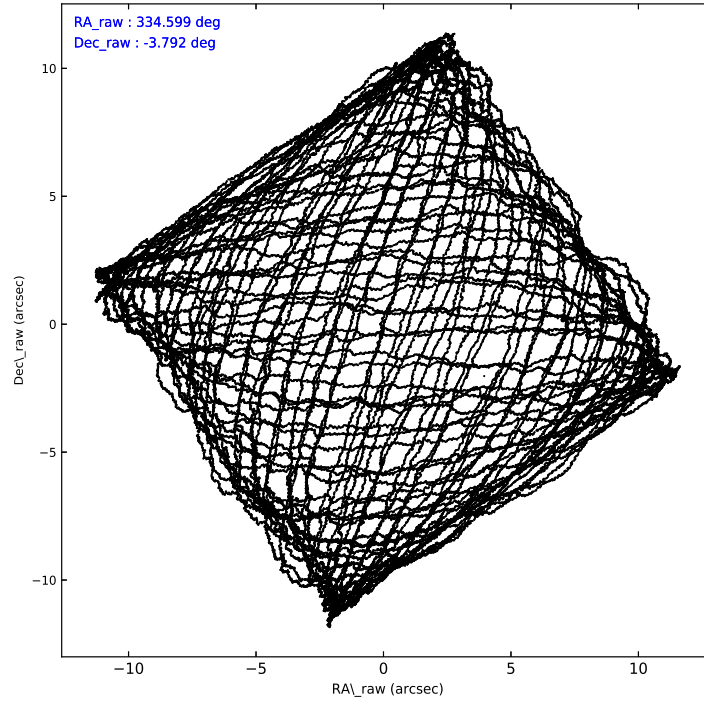
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	224255	250810	247345	246049
rejected events	194582	197526	213837	213745
rejected %	86%	78%	86%	86%

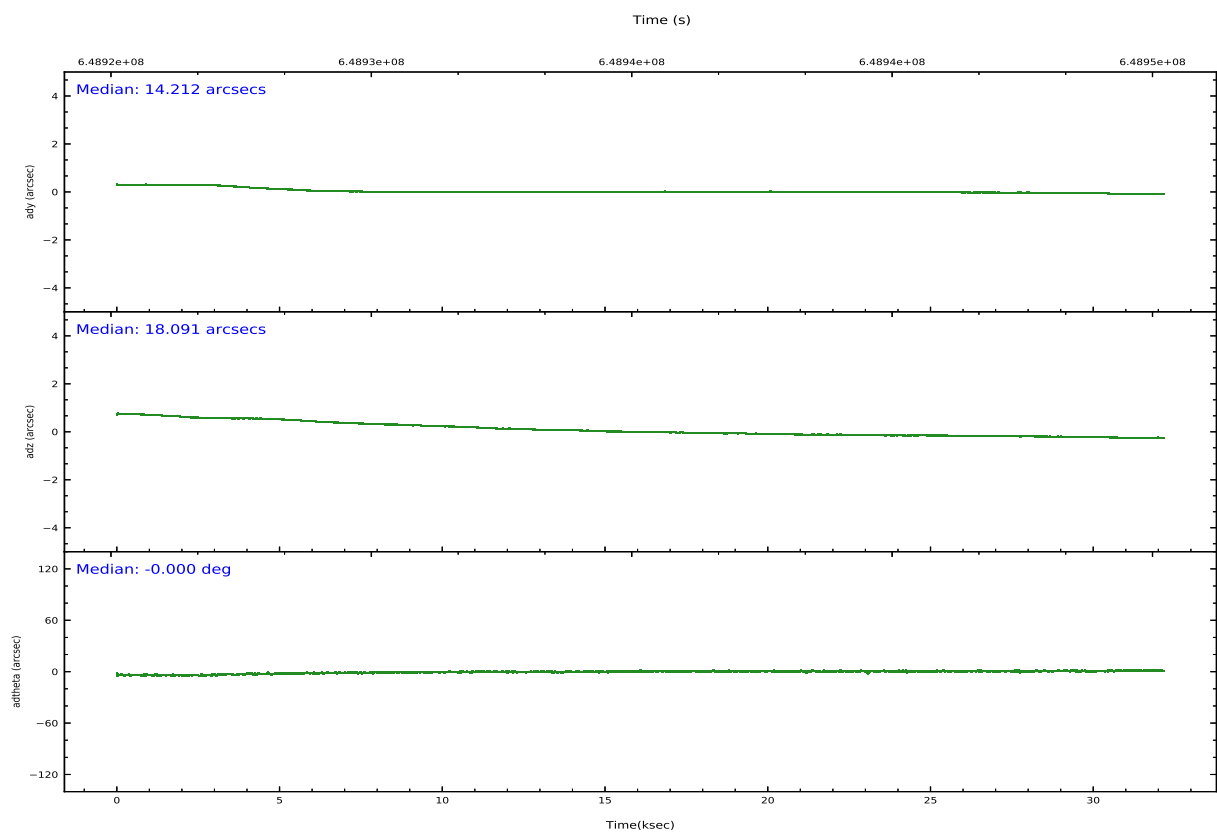
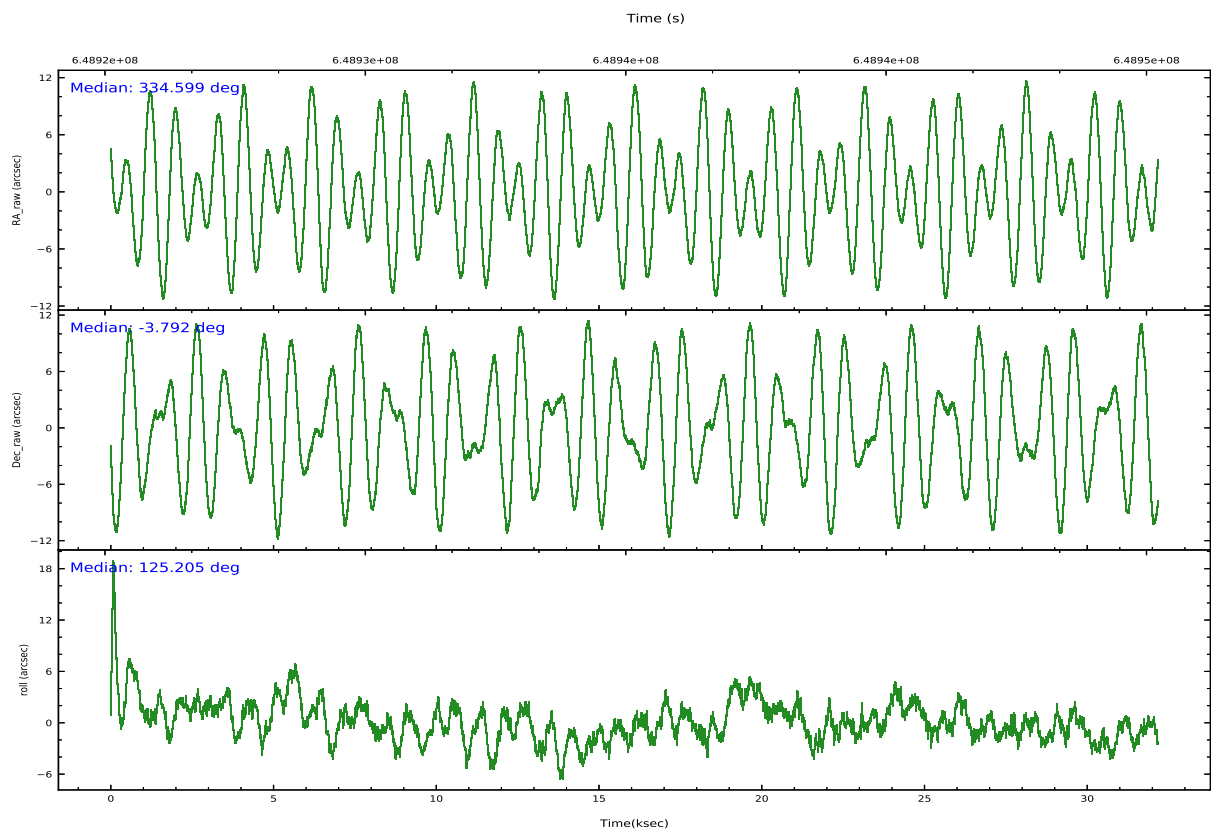
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	11174	21648	15429	14668
	4%	8%	6%	5%
grade 1 events	134	175	210	181
	0%	0%	0%	0%
grade 2 events	7152	18314	7061	6275
	3%	7%	2%	2%
grade 3 events	2812	3067	2760	2902
	1%	1%	1%	1%
grade 4 events	2619	3065	2848	2880
	1%	1%	1%	1%
grade 5 events	10473	10855	9640	11515
	4%	4%	3%	4%
grade 6 events	5919	7200	5415	5583
	2%	2%	2%	2%
grade 7 events	183972	186486	203982	202045
	82%	74%	82%	82%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-0123	ACIS-0123	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	334.623928	334.60545866339	CCD I2 on	Y	Y
[deg] Pointing Dec	-3.803388	-3.7922643936338	CCD I3 on	Y	Y
[deg] Pointing Roll	125.001197	125.20540258101	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	N	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O1	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	648920358.184000	648919568.17592	CCD S5 on	N	N
Observation start date	2018-07-25T15:38:09	2018-07-25T15:26:08	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	648952358.184000	648953377.80293	On-chip summing requested	N	N
Observation end date	2018-07-26T00:31:29	2018-07-26T00:49:37	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



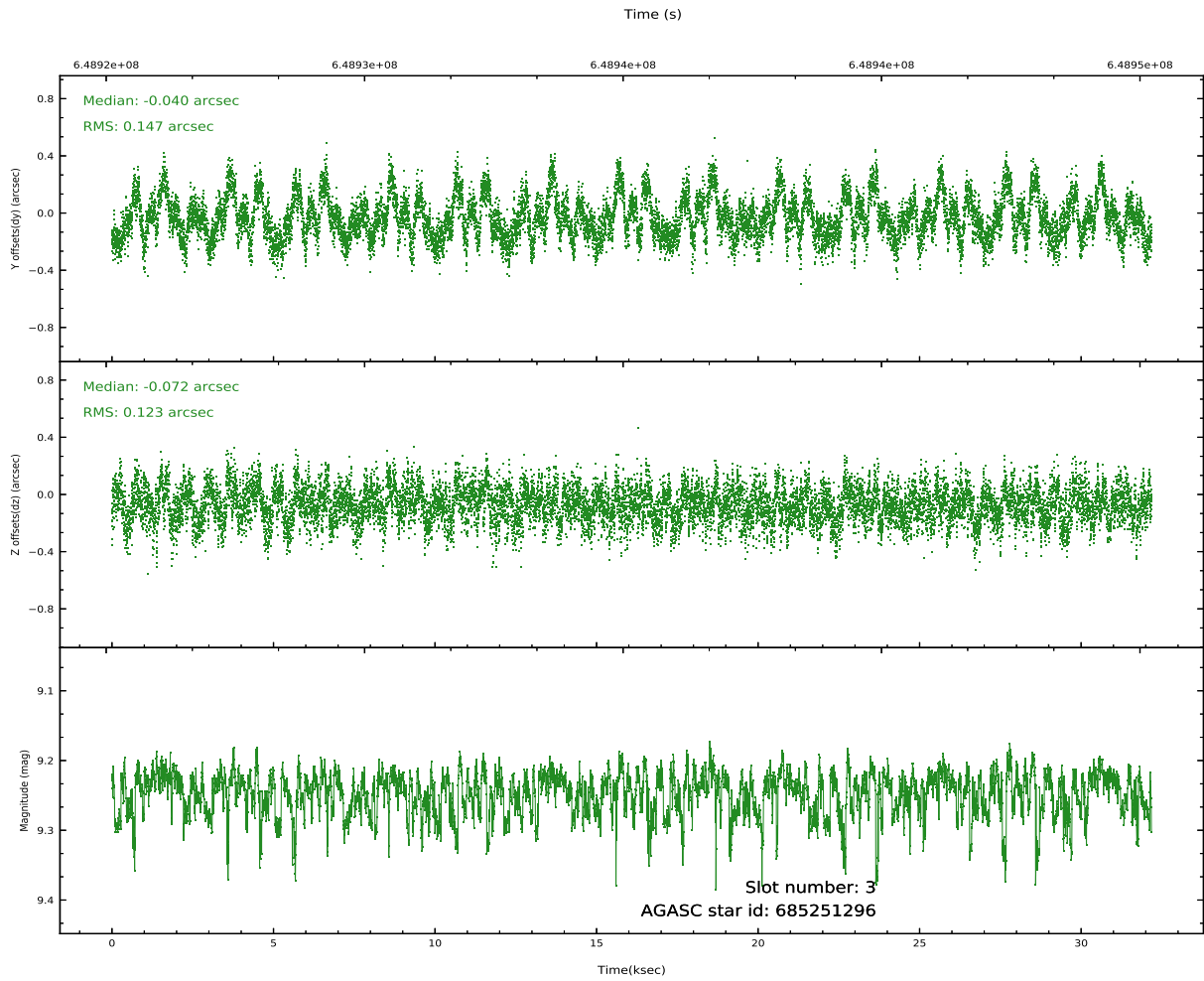
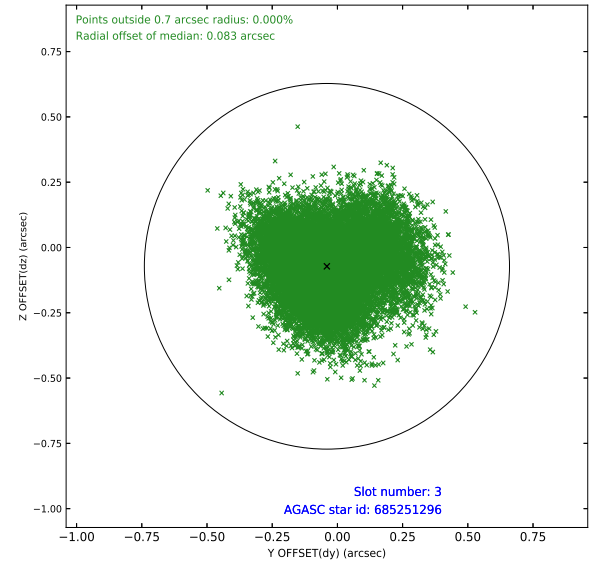
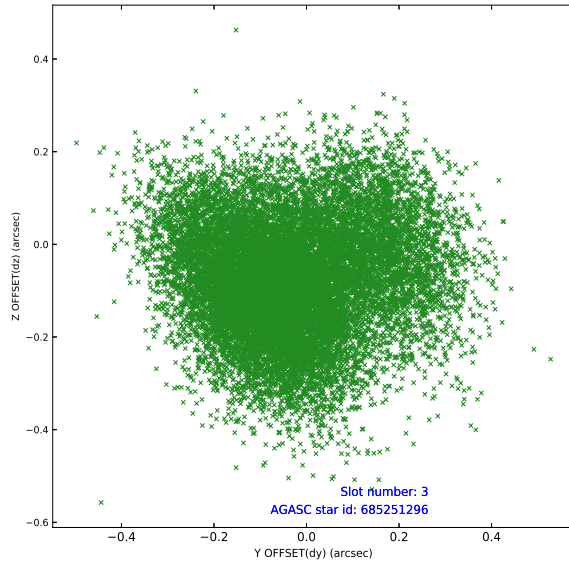


Slot Statistics

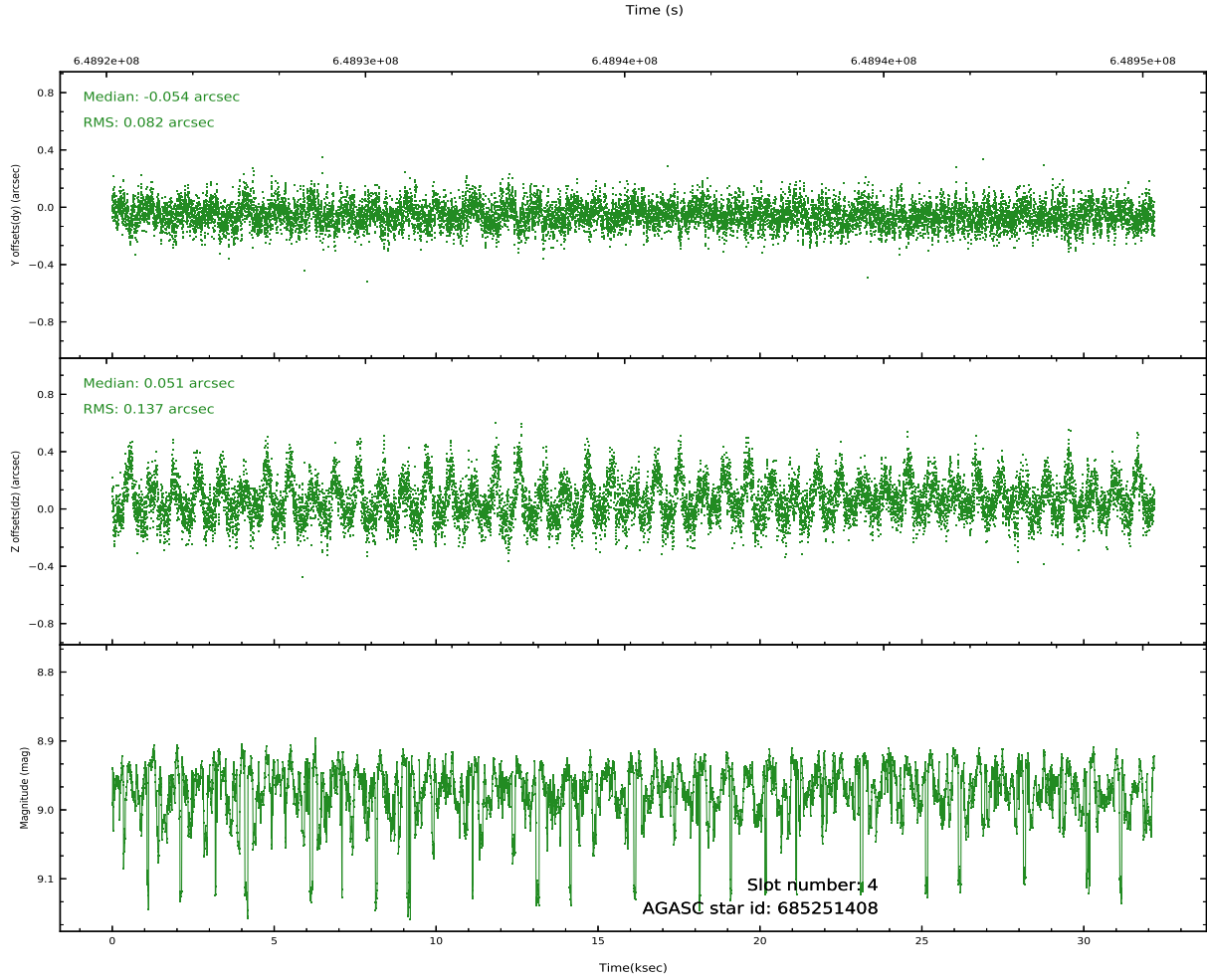
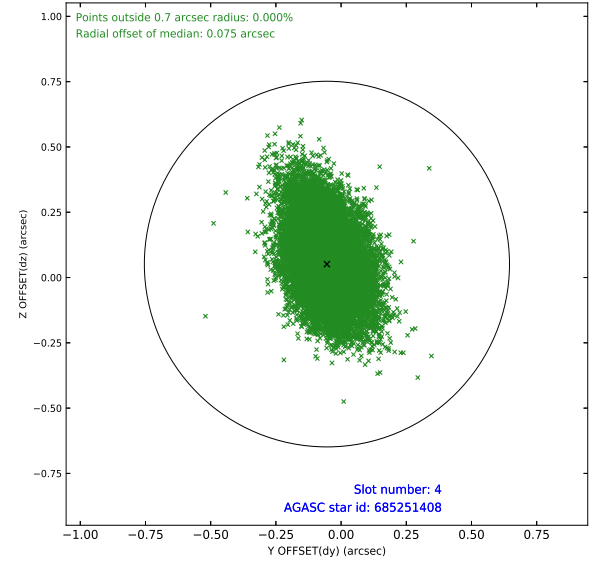
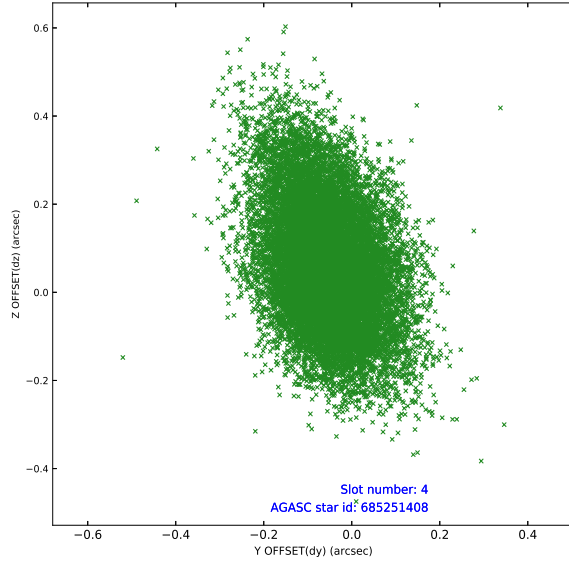
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.14	7848	1.000	0.154	-0.118	0.008	0.013	0.000000	0.000000	925.36	-842
1	FID		ACIS-I-2	7.05	7847	1.000	-0.005	0.014	0.011	0.018	0.000000	0.000000	-768.85	-848
2	FID		ACIS-I-5	7.13	7849	1.000	-0.242	0.176	0.010	0.016	0.000000	0.000000	-1823.28	1055
3	GUIDE	used	685251296	9.24	15675	1.000	-0.040	-0.072	0.207	0.329	334.433018	-3.343248	1750.62	-387
4	GUIDE	used	685251408	8.97	15689	1.000	-0.054	0.051	0.165	0.288	334.512424	-3.172976	2089.19	-972
5	GUIDE	used	685254528	8.07	15695	1.000	0.042	0.068	0.131	0.222	334.954282	-4.066255	-1455.33	-427
6	GUIDE	used	685257144	9.12	15677	1.000	-0.093	-0.186	0.166	0.267	334.457122	-4.250644	-975.44	1414
7	GUIDE	used	685388192	8.78	15686	1.000	0.131	0.133	0.137	0.222	335.135532	-4.161413	-2109.94	-764

2.4 Star Slots

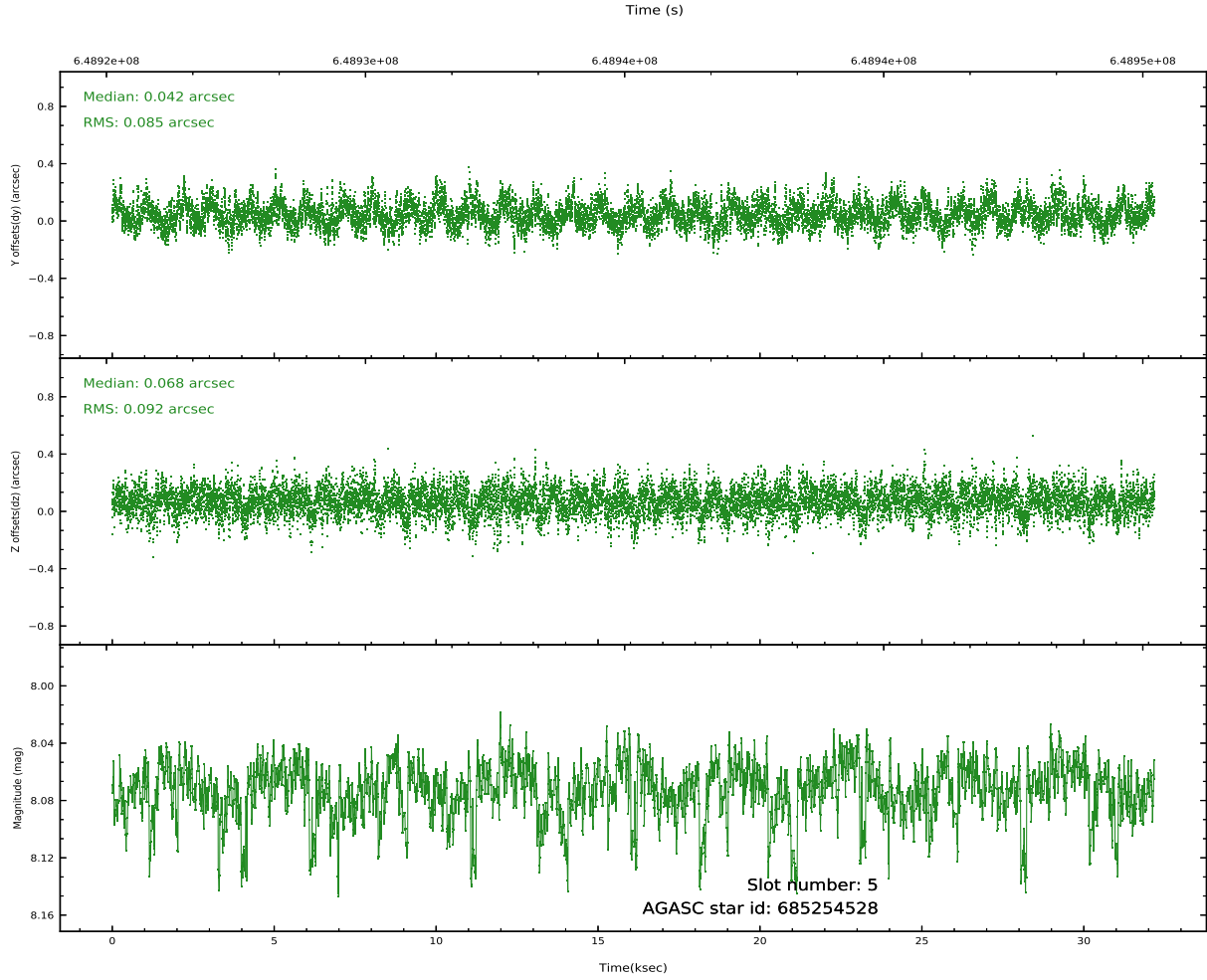
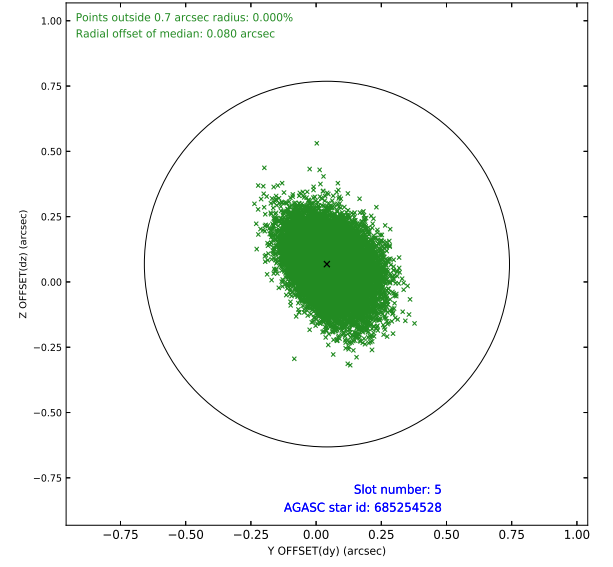
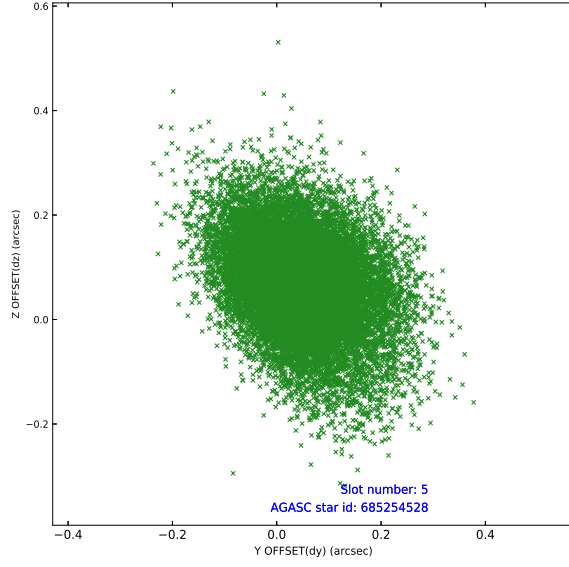
2.4.1 Slot 3



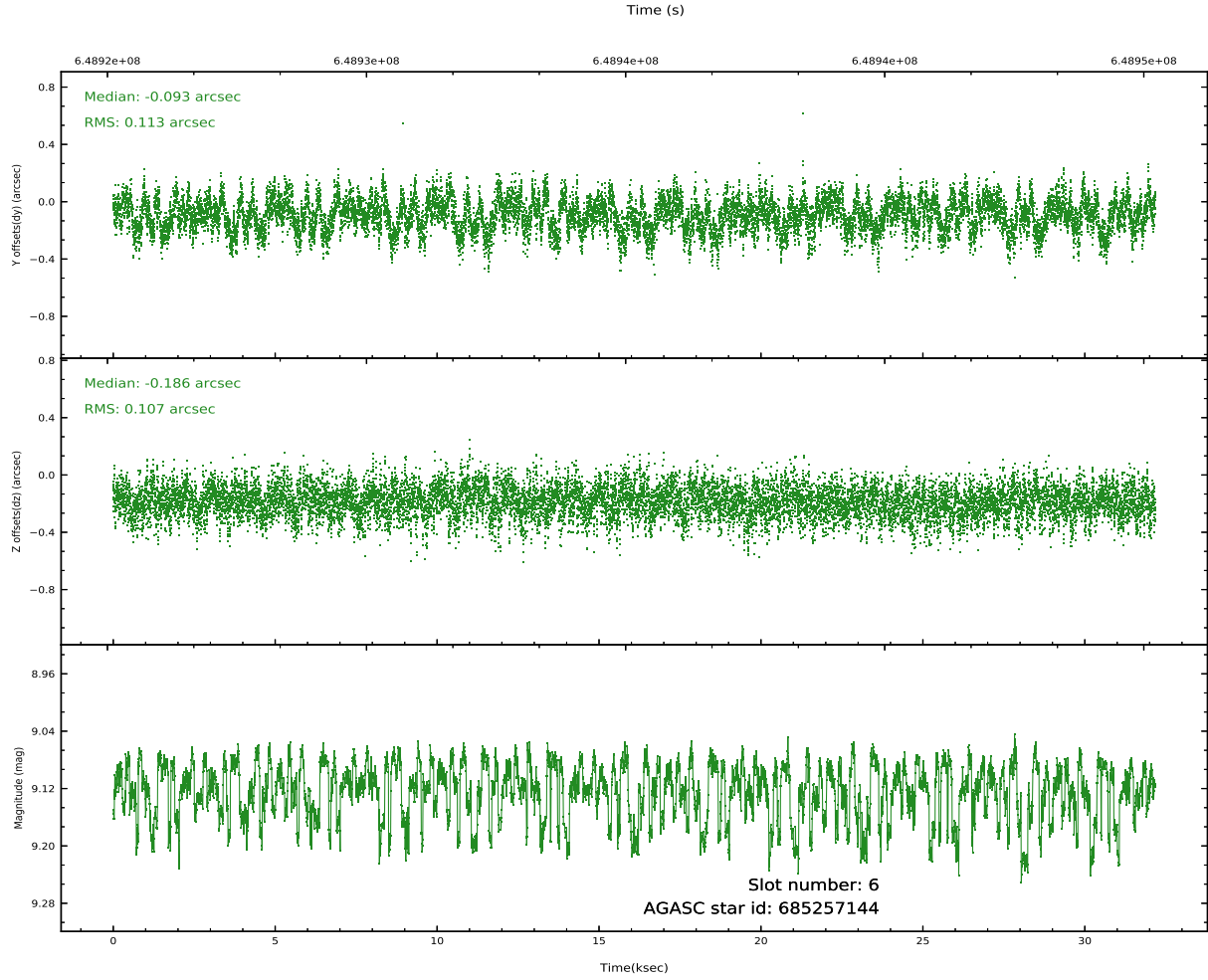
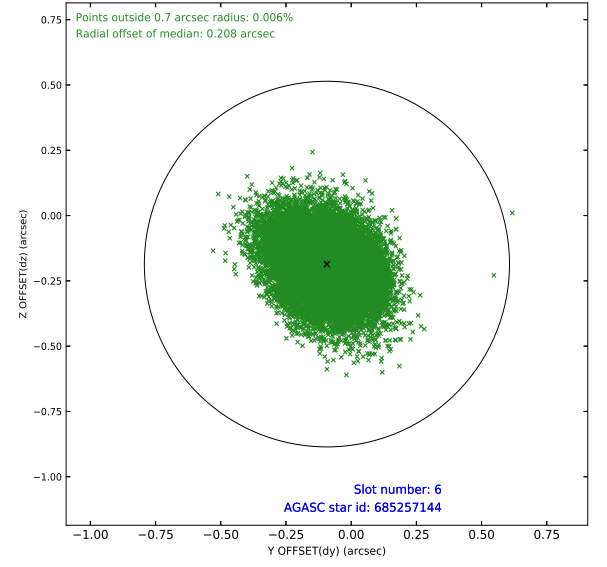
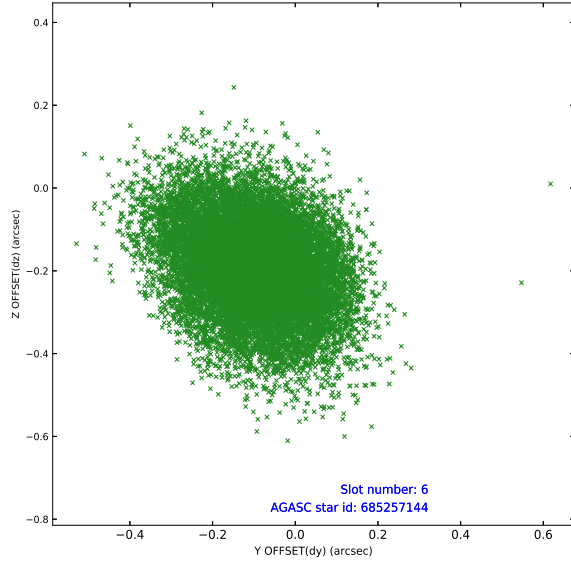
2.4.2 Slot 4



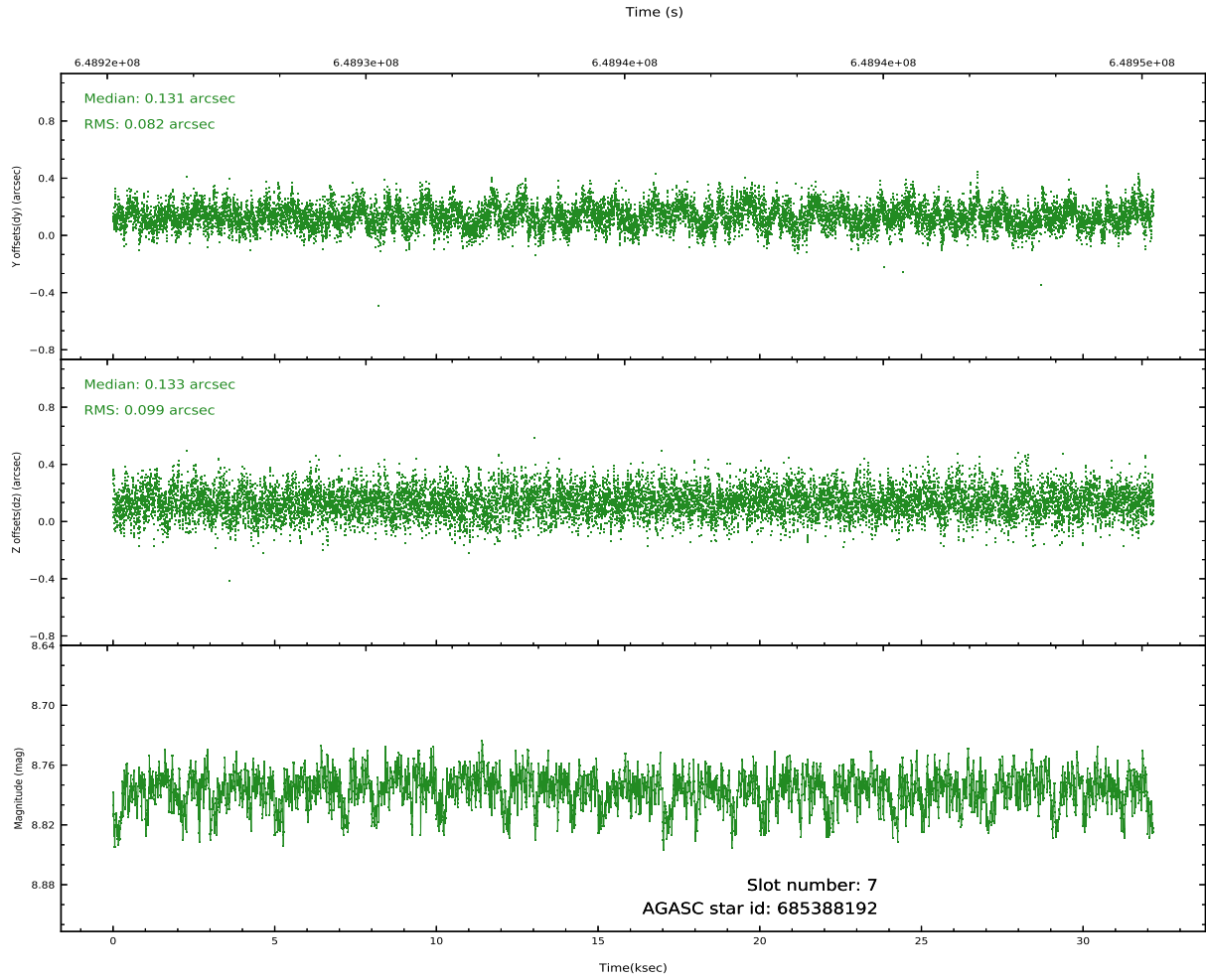
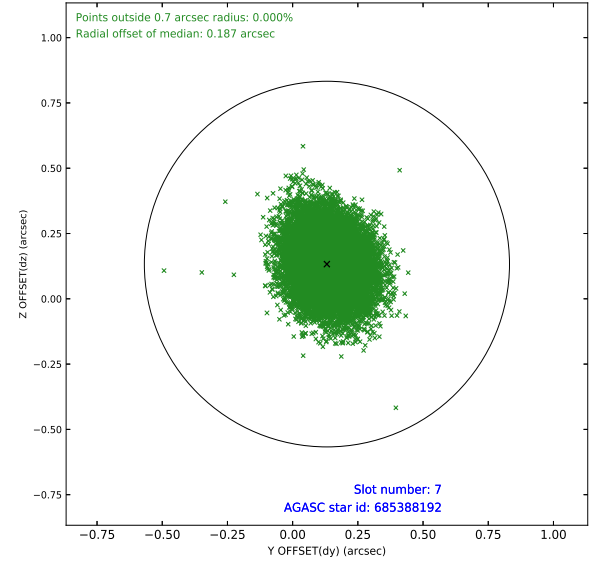
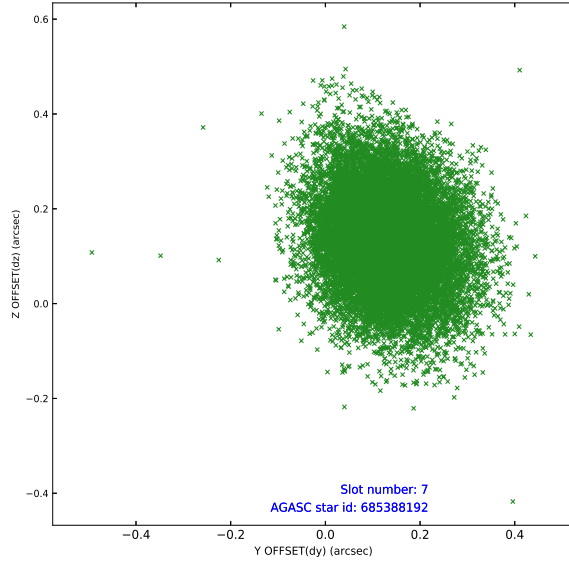
2.4.3 Slot 5



2.4.4 Slot 6

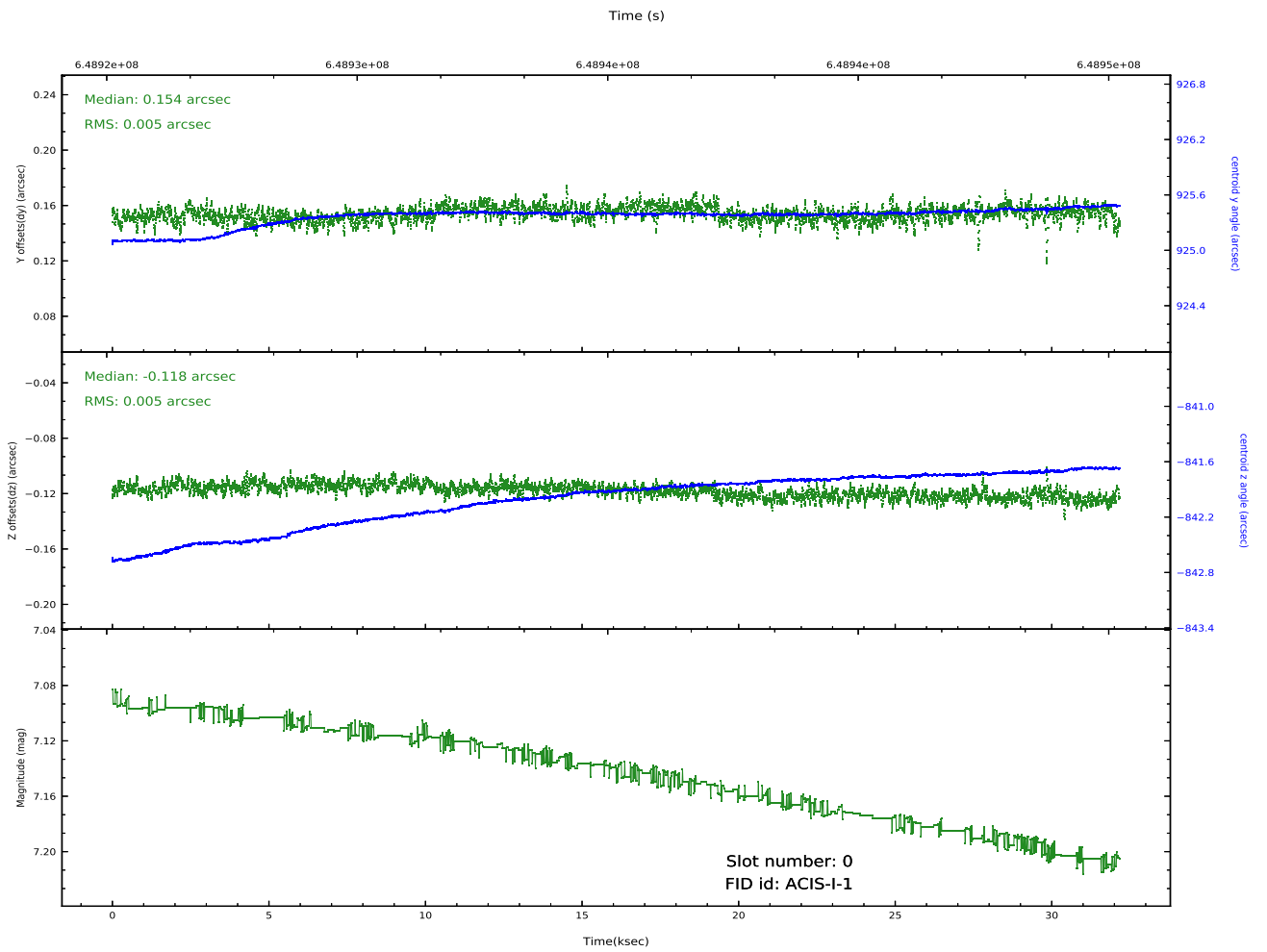
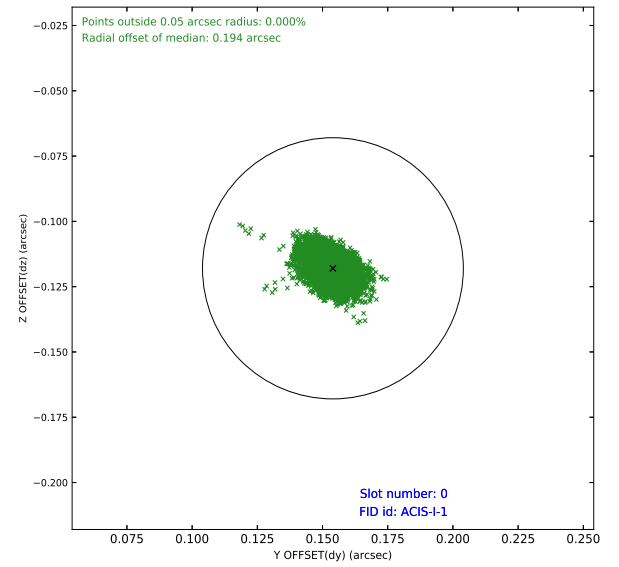
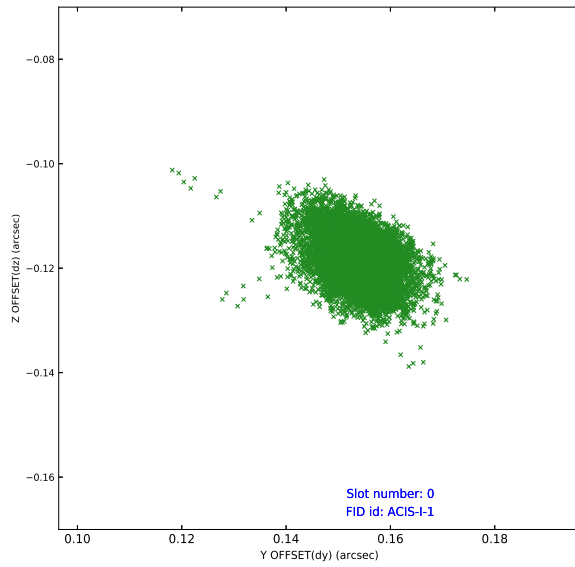


2.4.5 Slot 7

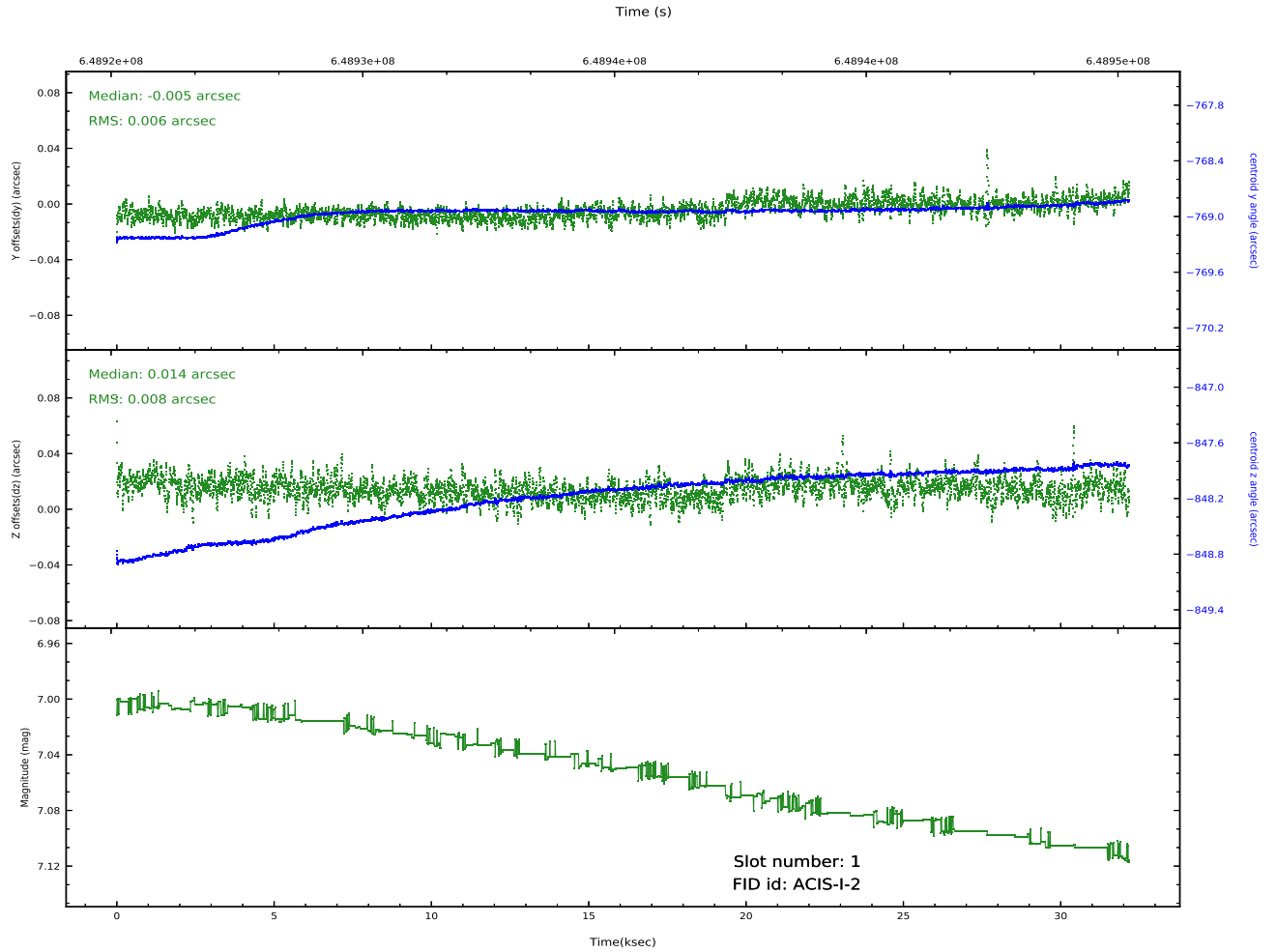
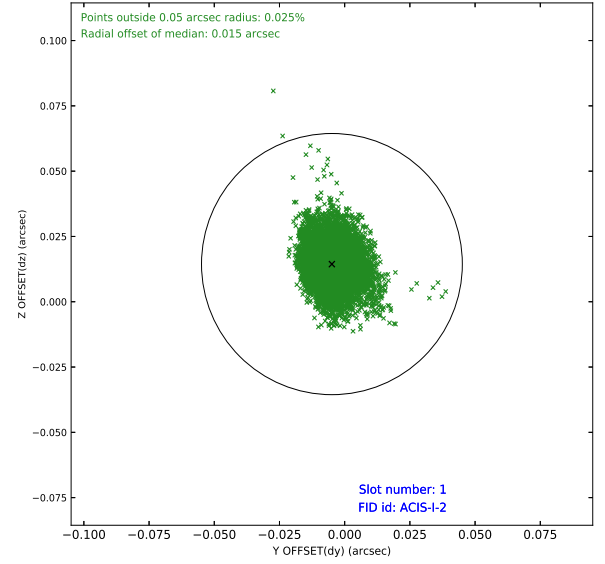
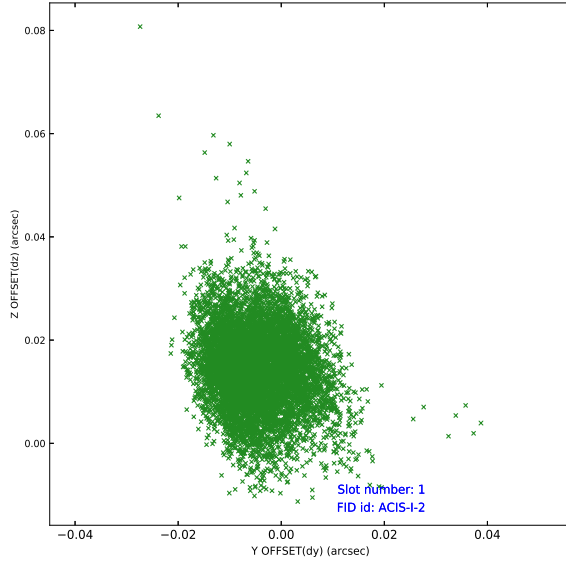


2.5 FID Slots

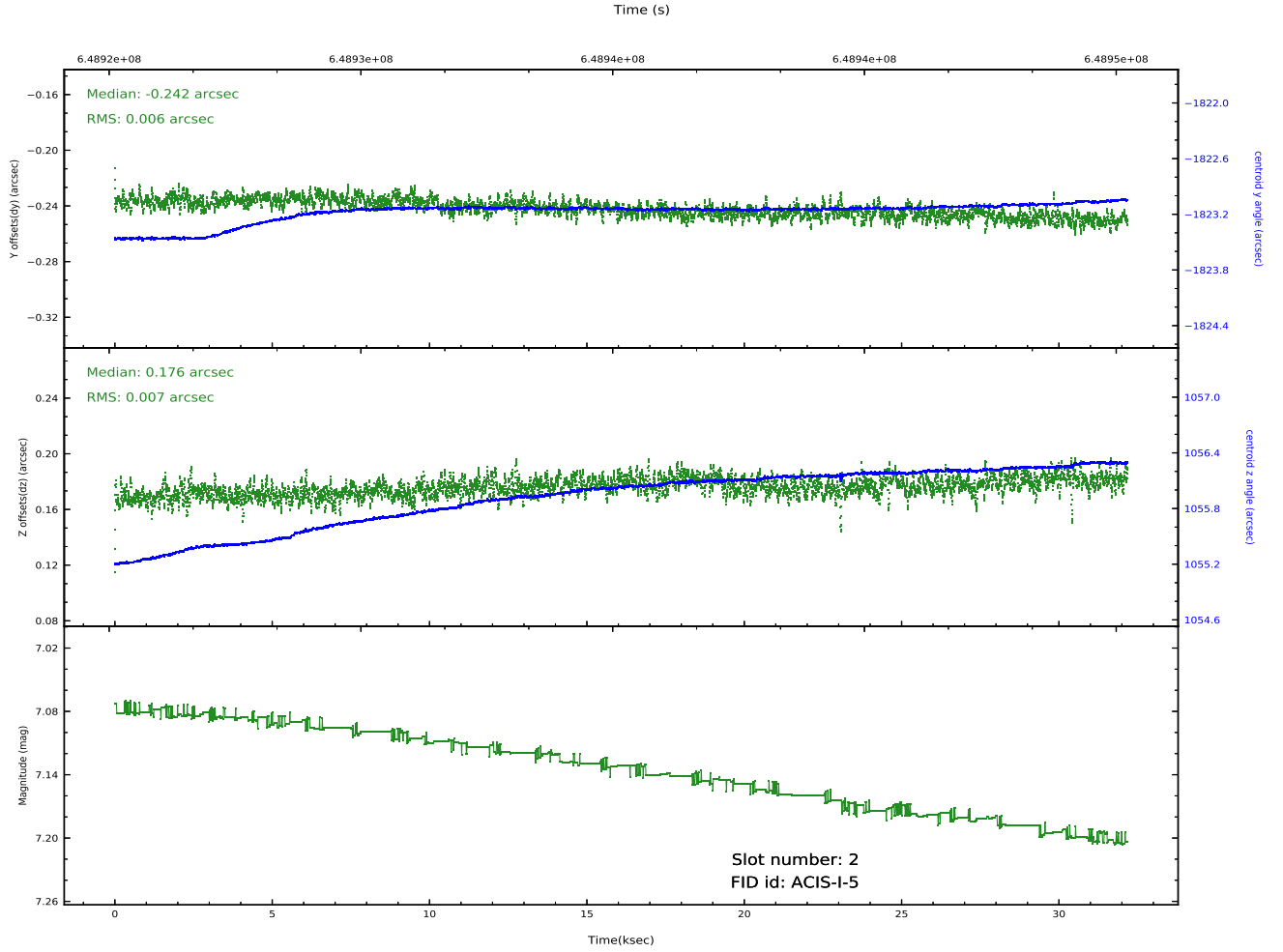
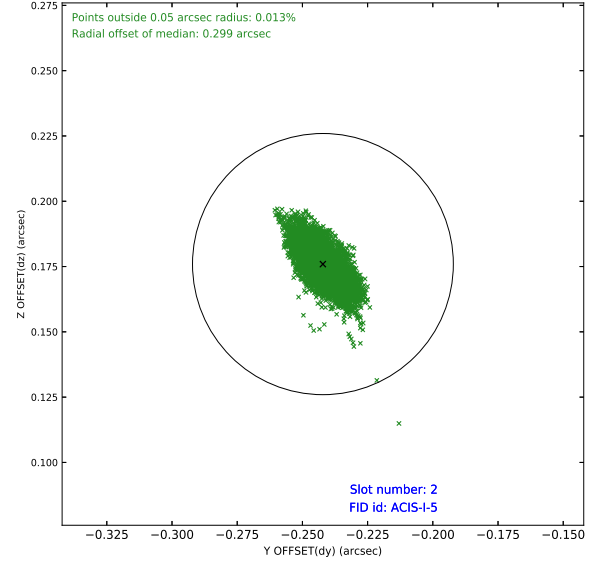
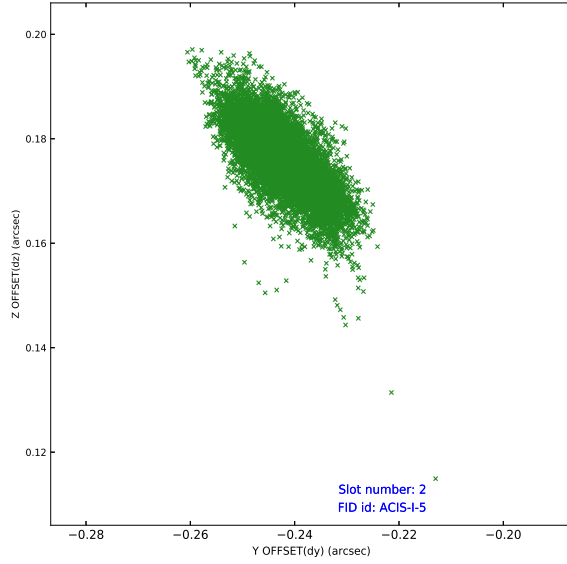
2.5.1 Slot 0



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)	2020.10.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	32.077548824668

A.2 Comments

One optional chip was dropped.

===

Two spatial regions 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 anomaly. The bias map for CCD = 1 has been reconstructed for this processing to remove the anomaly using scaled data from a comparable bias map from another observation.

===

The first region affected by the anomaly is bounded by sky coords:
(334.73593,-3.82106), (334.73816,-3.81948), (334.72633,-3.80278),
(334.72379,-3.80391).

===

The other affected region is bounded by sky coords:
(334.78800,-3.82916), (334.80483,-3.81724), (334.78520,-3.78951),
(334.77247,-3.80722).