

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 7225 - L2 Version 3  
Chandra X-Ray Center

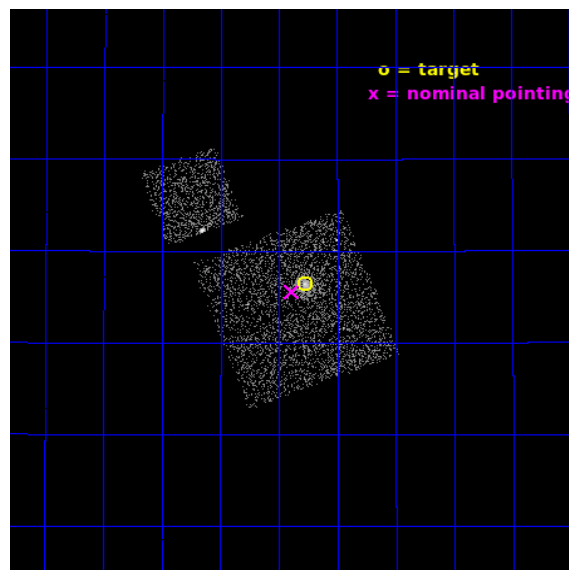
L2 Processing Date : Oct 11 2020

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# 1 Front

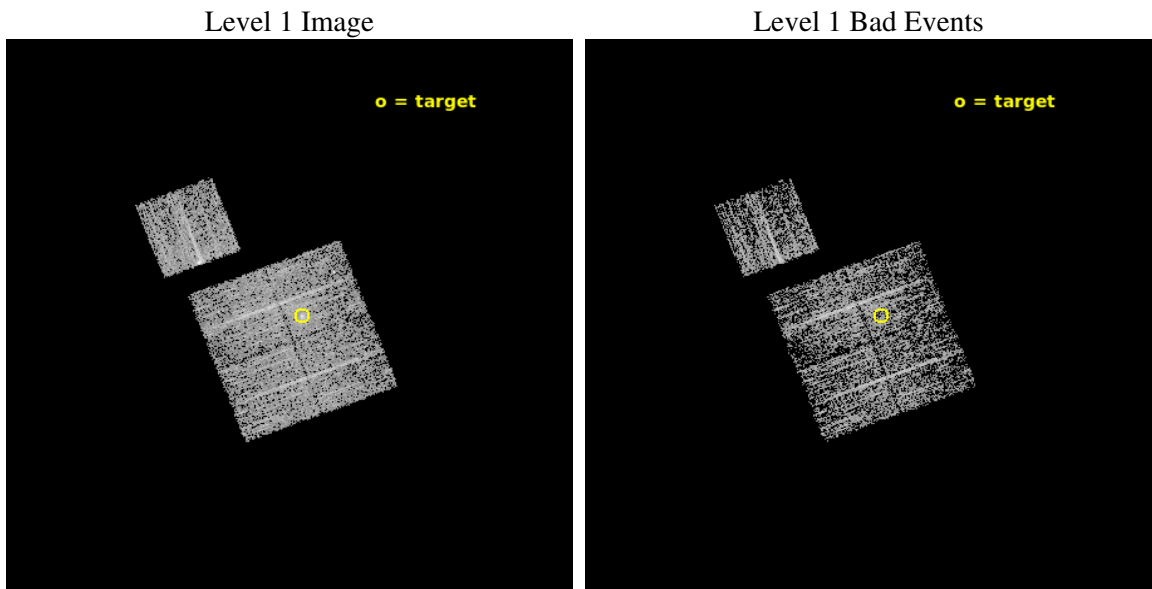
seq_num	800555	Sequence number
obs_id	7225	Observation id
title	Probing dark energy using the X-ray gas mass fraction in dynamically relaxed galaxy clusters	Proposal title
observer	Steve Allen	Principal investigator
object	MACS1720.3+3536	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	260.069583	Observer's specified target RA [deg]
dec_targ	35.607222	Observer's specified target Dec [deg]
ra_nom	260.09701750494	Nominal RA [deg]
dec_nom	35.592948346204	Nominal Dec [deg]
roll_nom	339.18700606334	Nominal Roll [deg]
revision	3	Processing version of data
ontime	2045.6513597667	Sum of GTIs [s]
livetime	2018.9234187647	Livetime [s]
ontime0	2048.6692100465	Sum of GTIs [s]
ontime1	2048.7102500498	Sum of GTIs [s]
ontime2	2048.7512900531	Sum of GTIs [s]
ontime3	2045.6513597667	Sum of GTIs [s]
ontime6	2048.6281700432	Sum of GTIs [s]
l2events	6996	Number of level 2 events



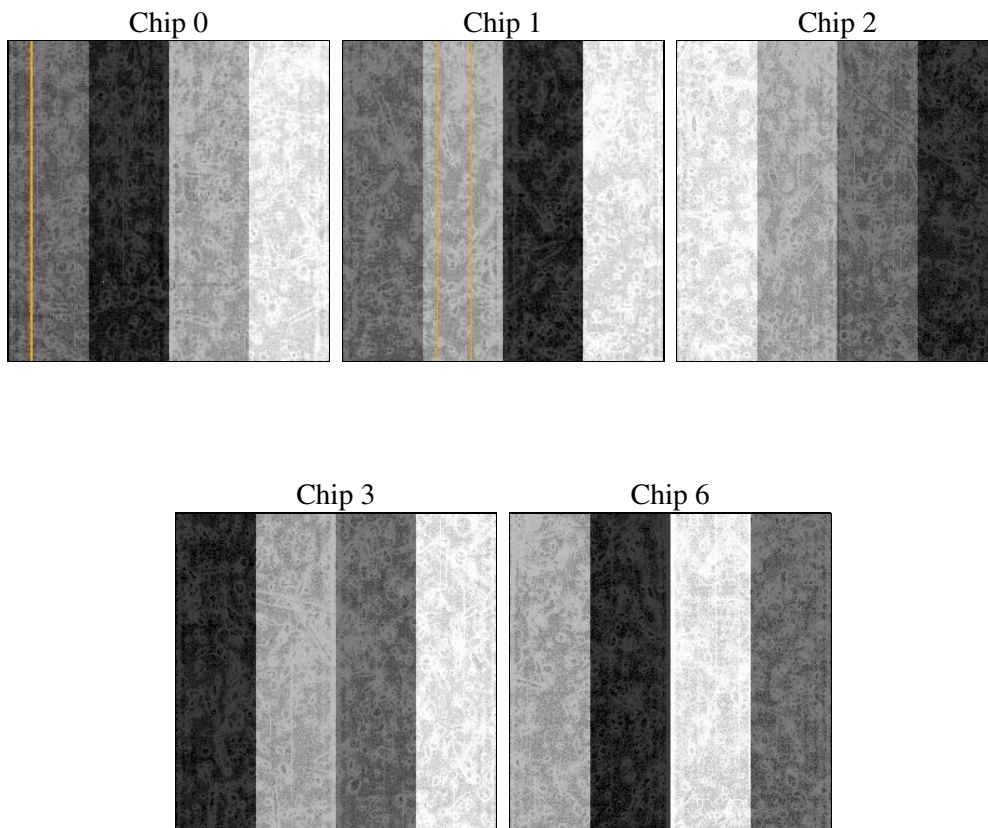
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	2000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	2045.6513597667	Sum of GTIs [s]
caldbver	4.9.2	&#160	ontime0	2048.6692100465	Sum of GTIs [s]
date	2020-10-11T16:47:20	Date and time of file creation	ontime1	2048.7102500498	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	2048.7512900531	Sum of GTIs [s]
			ontime3	2045.6513597667	Sum of GTIs [s]
			ontime6	2048.6281700432	Sum of GTIs [s]
			l1events	68634	Number of level 1 events

### 2.1.4 Events

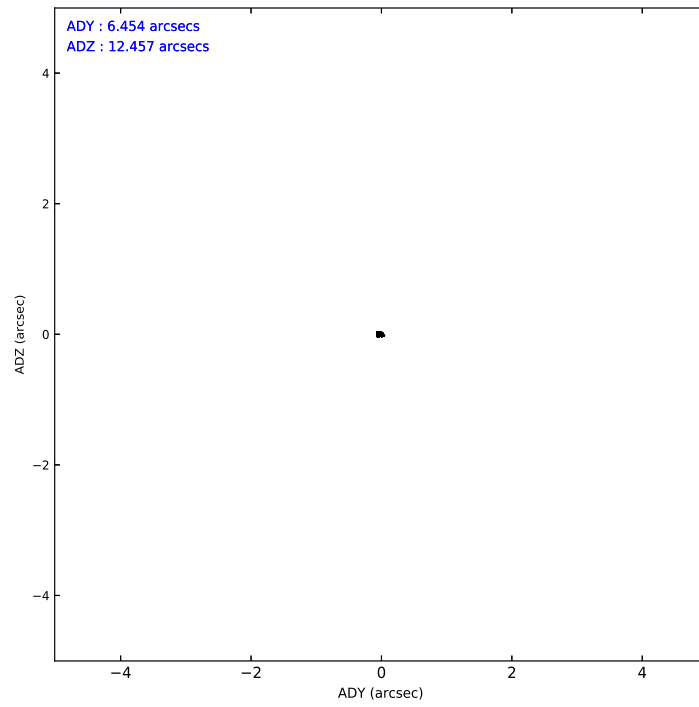
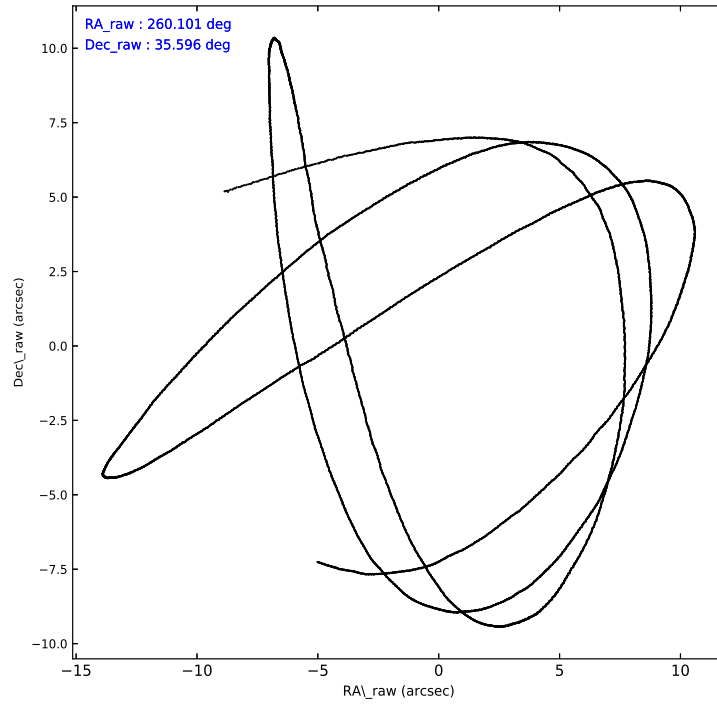
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	13945	12288	14072	13857	14472
rejected events	12576	10773	12780	11693	12655
rejected %	90%	87%	90%	84%	87%

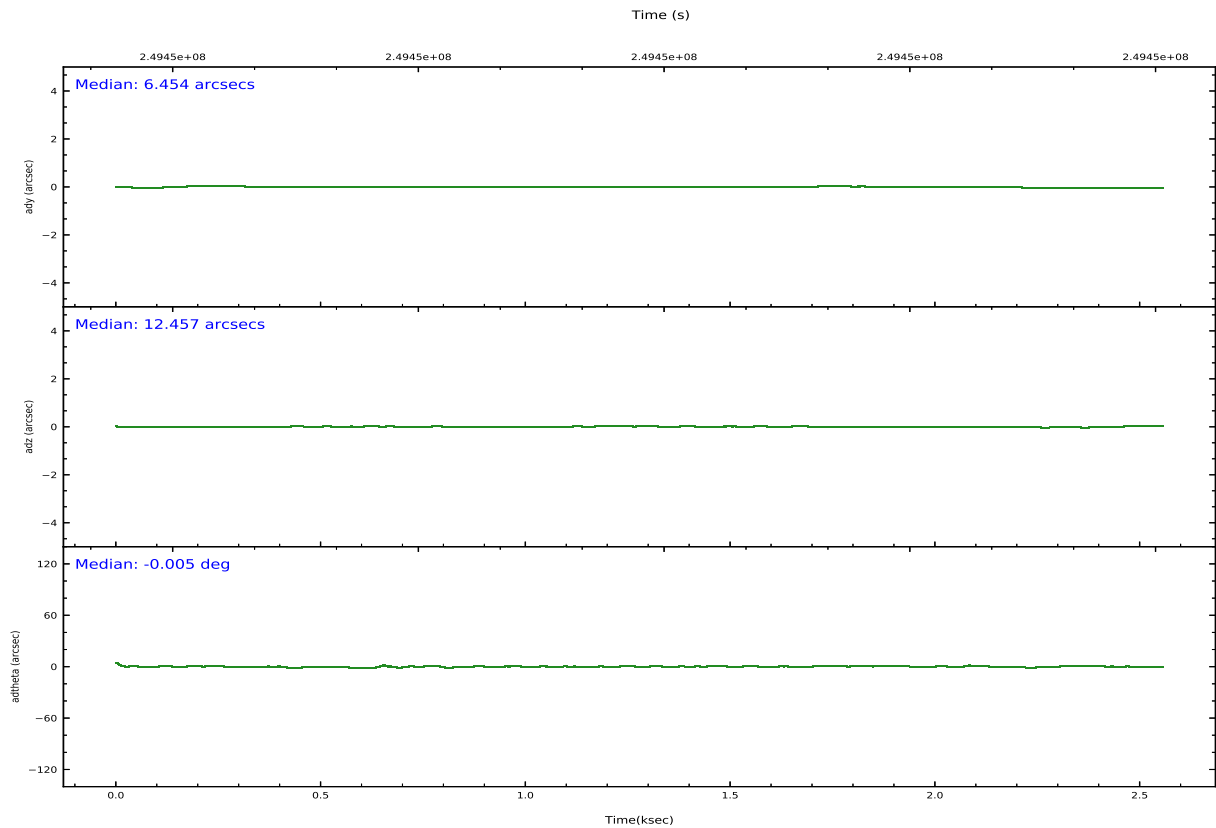
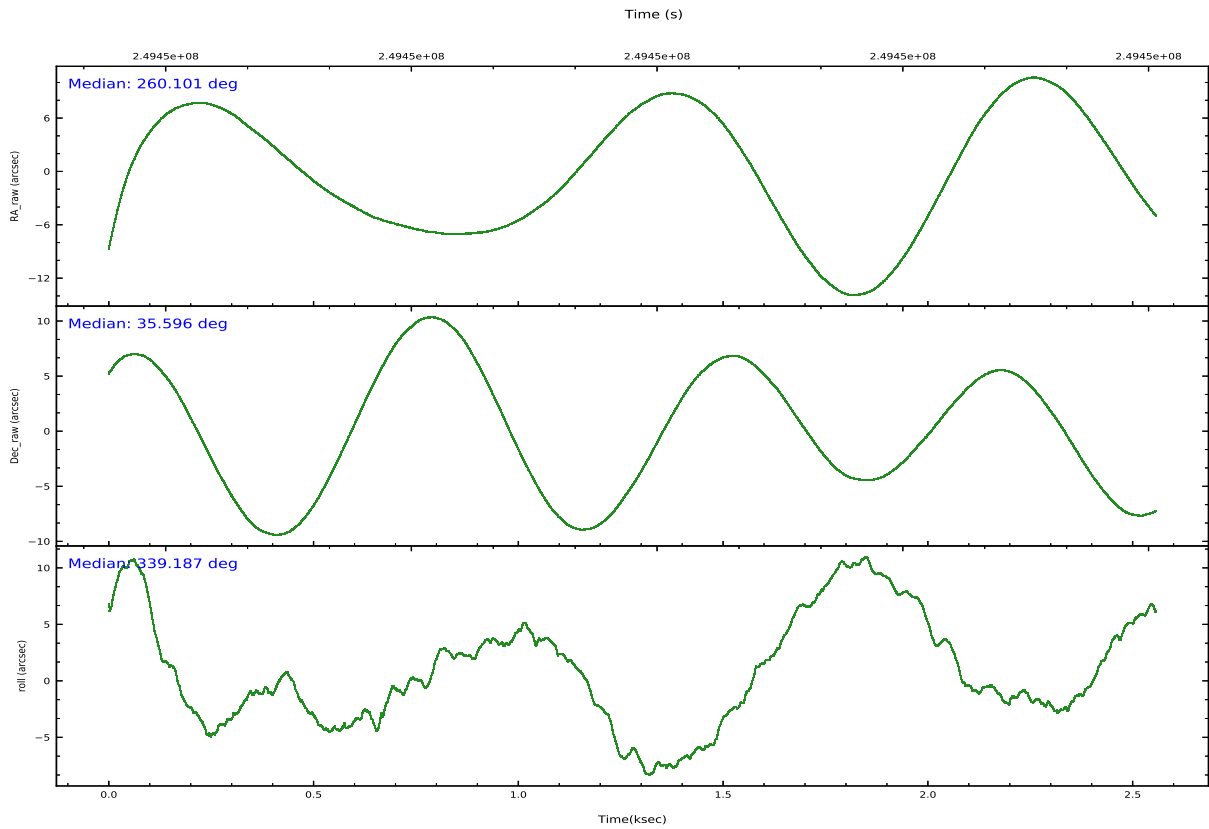
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	483	601	474	1167	830
	3%	4%	3%	8%	5%
grade 1 events	7	4	6	16	8
	0%	0%	0%	0%	0%
grade 2 events	329	334	306	344	361
	2%	2%	2%	2%	2%
grade 3 events	159	153	134	177	156
	1%	1%	0%	1%	1%
grade 4 events	142	164	152	185	161
	1%	1%	1%	1%	1%
grade 5 events	493	504	418	607	567
	3%	4%	2%	4%	3%
grade 6 events	260	270	228	295	312
	1%	2%	1%	2%	2%
grade 7 events	12072	10258	12354	11066	12077
	86%	83%	87%	79%	83%

## 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	260.067269	260.09701750494	Subarray requested	NONE	NONE
[deg] Pointing Dec	35.591168	35.592948346204	Alternating exposures requested	N	N
[deg] Pointing Roll	339.001347	339.18700606334	[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)	249448420.184000	249447156.60153			
Observation start date	2005-11-27T03:12:36	2005-11-27T02:52:36			
[s] Observation end time (MET)	249450420.184000	249451466.21423			
Observation end date	2005-11-27T03:45:56	2005-11-27T04:04:26			
Read mode	TIMED	TIMED			

## 2.3 Aspect





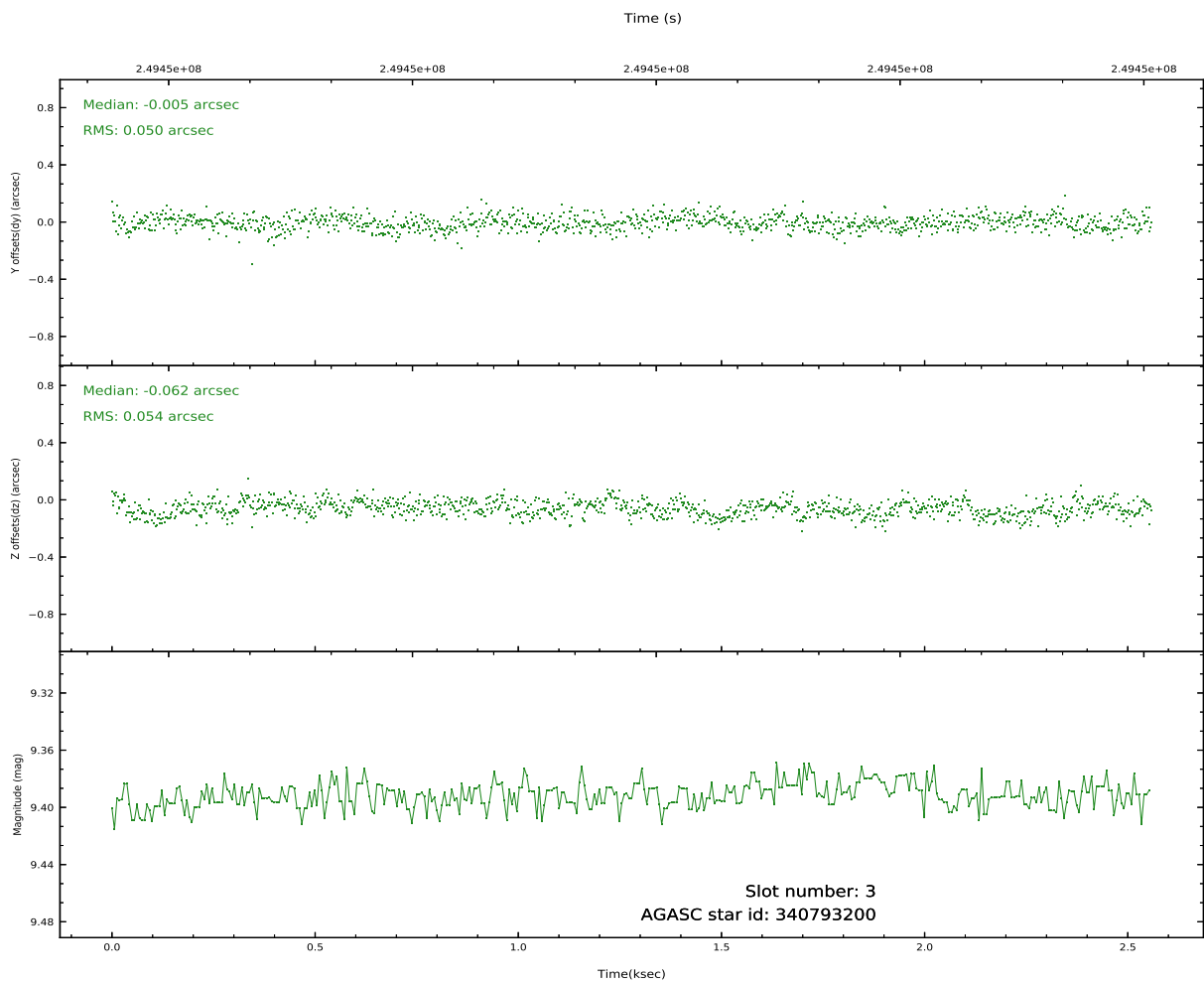
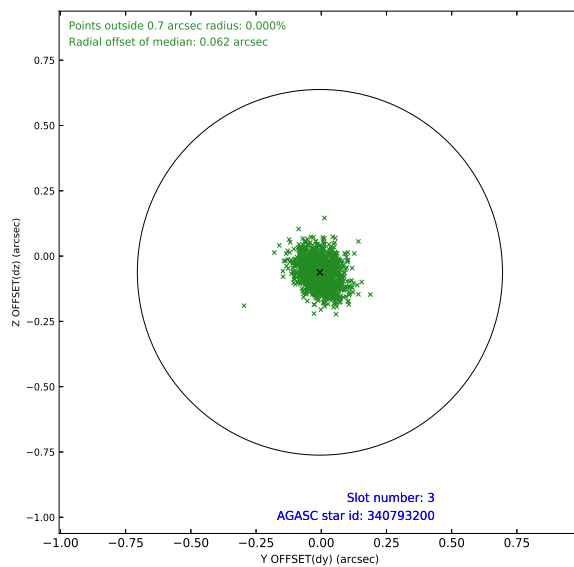
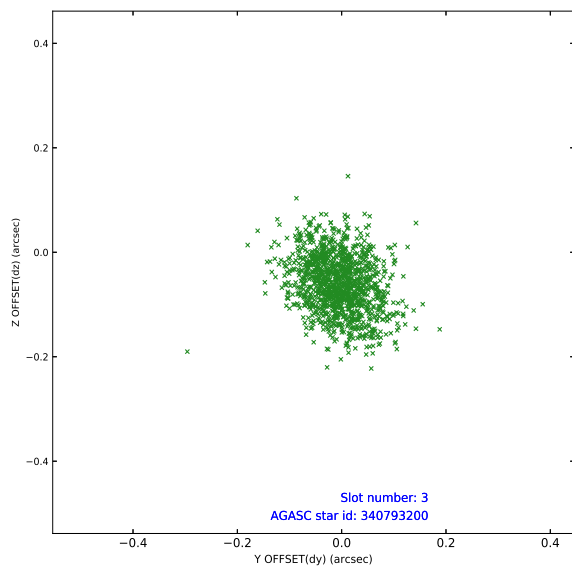
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-2	7.15	624	1.000	-0.105	-0.155	0.009	0.019	0.000000	0.000000	-761.29	-927
1	FID		ACIS-I-4	7.15	624	1.000	0.161	0.103	0.006	0.011	0.000000	0.000000	2151.79	978
2	FID		ACIS-I-5	7.22	624	1.000	-0.157	0.121	0.008	0.018	0.000000	0.000000	-1811.78	978
3	GUIDE	used	340793200	9.39	1249	1.000	-0.005	-0.062	0.077	0.126	260.300981	35.203623	1140.99	-1055
4	GUIDE	used	340795168	7.94	1249	1.000	-0.023	0.035	0.055	0.090	260.116328	35.370994	418.97	-689
5	GUIDE	used	341325128	8.48	1249	1.000	0.024	-0.053	0.056	0.089	260.031346	35.684277	-218.35	274
6	GUIDE	used	341325224	8.86	1242	1.000	-0.008	0.085	0.076	0.126	260.448683	35.800602	768.07	1105
7	GUIDE	used	341321368	9.27	1248	1.000	0.011	-0.003	0.077	0.126	260.000972	35.687029	-304.54	253

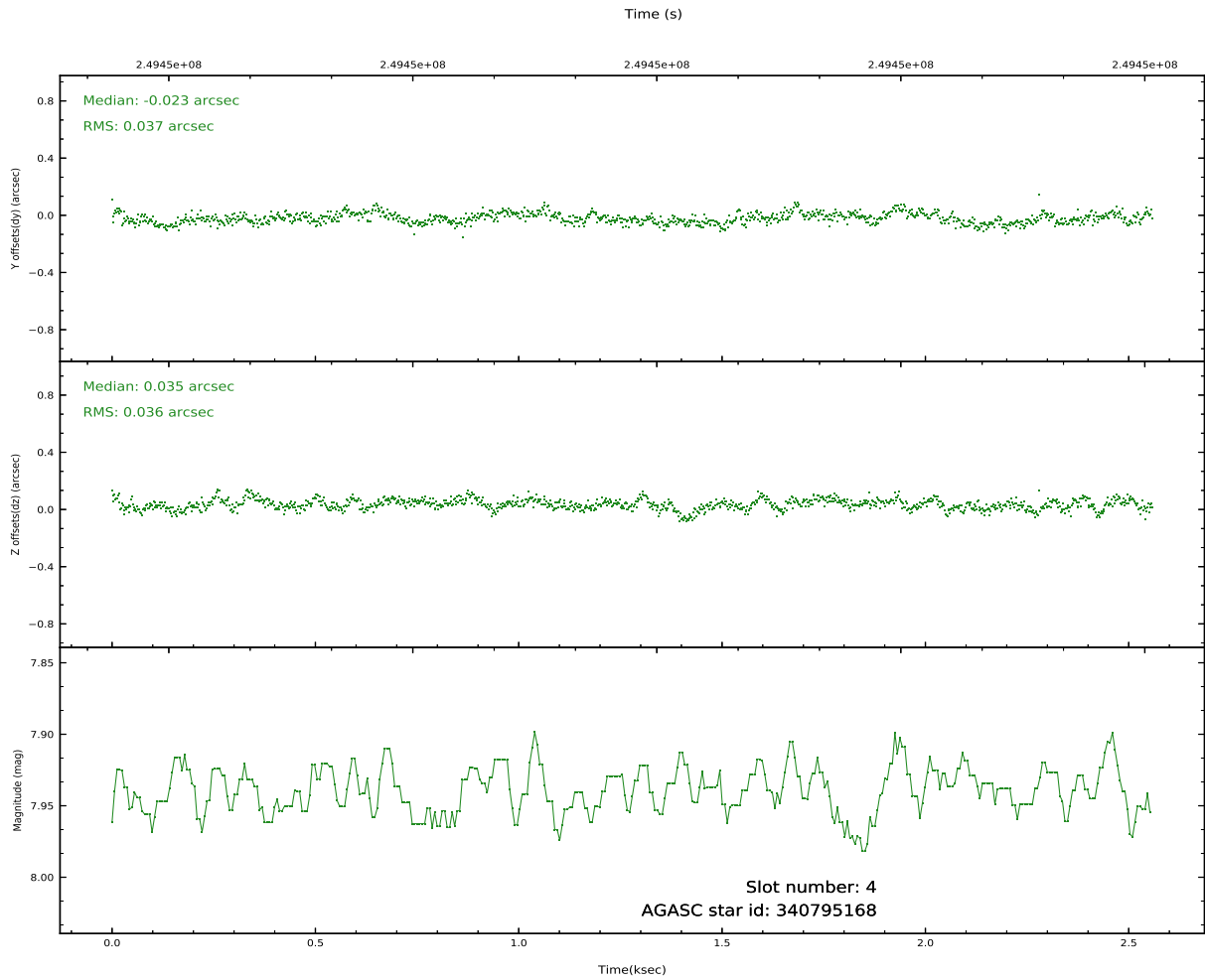
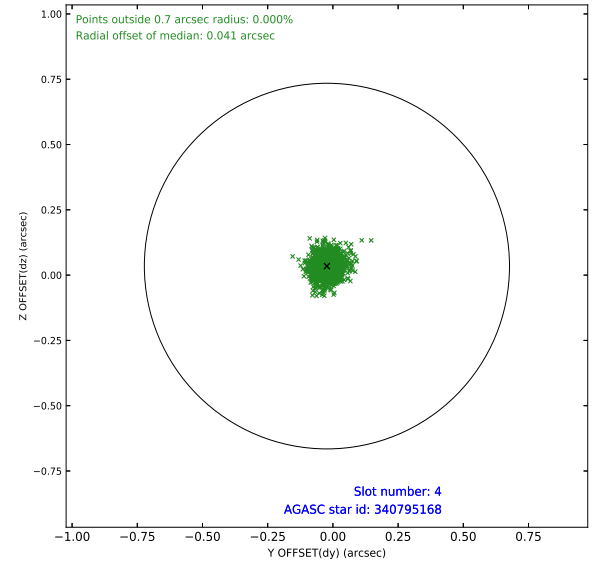
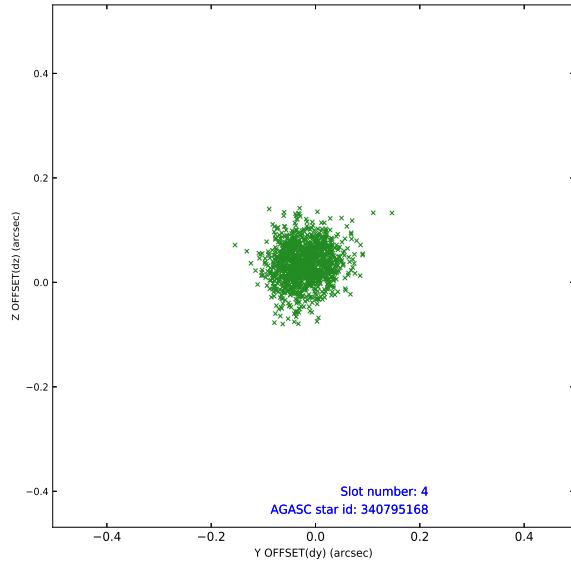
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## 2.4 Star Slots

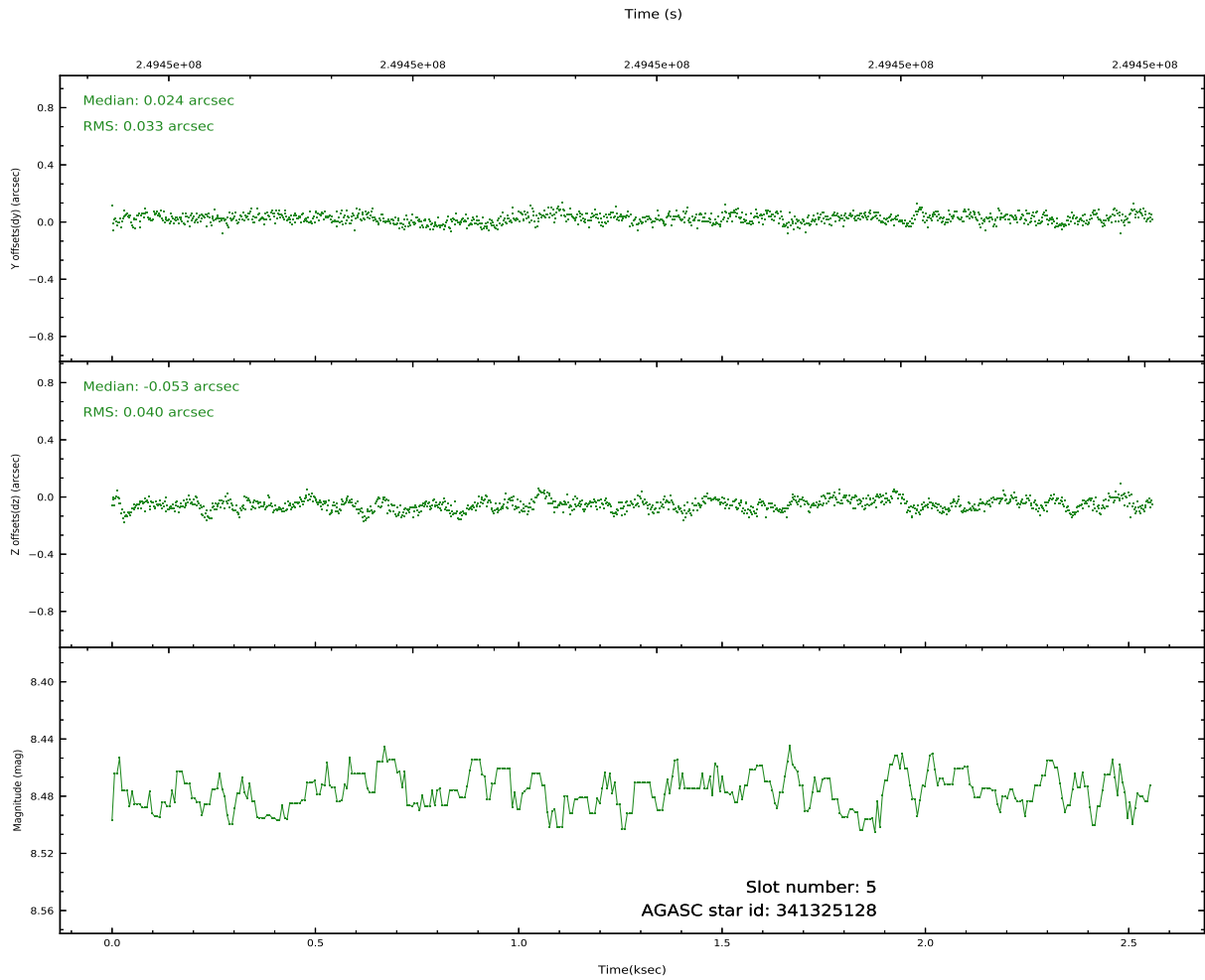
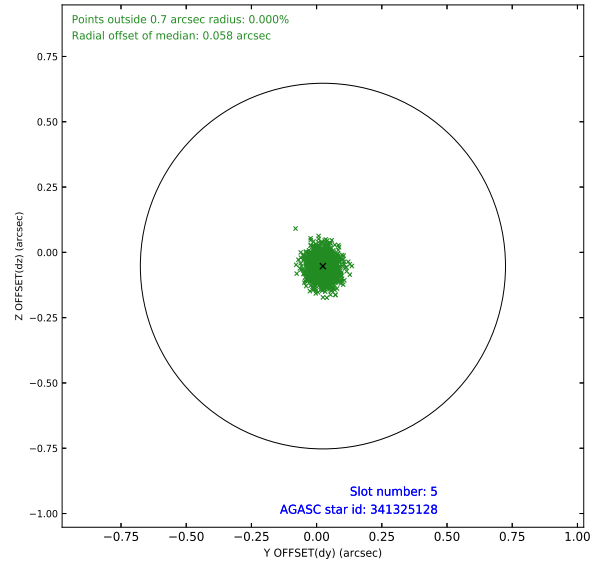
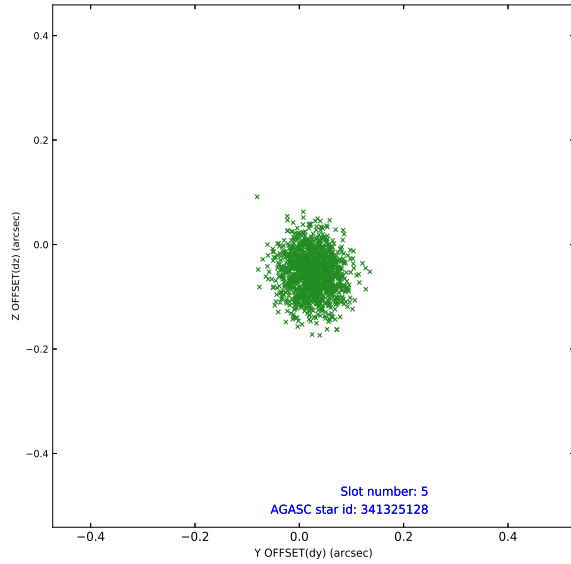
### 2.4.1 Slot 3



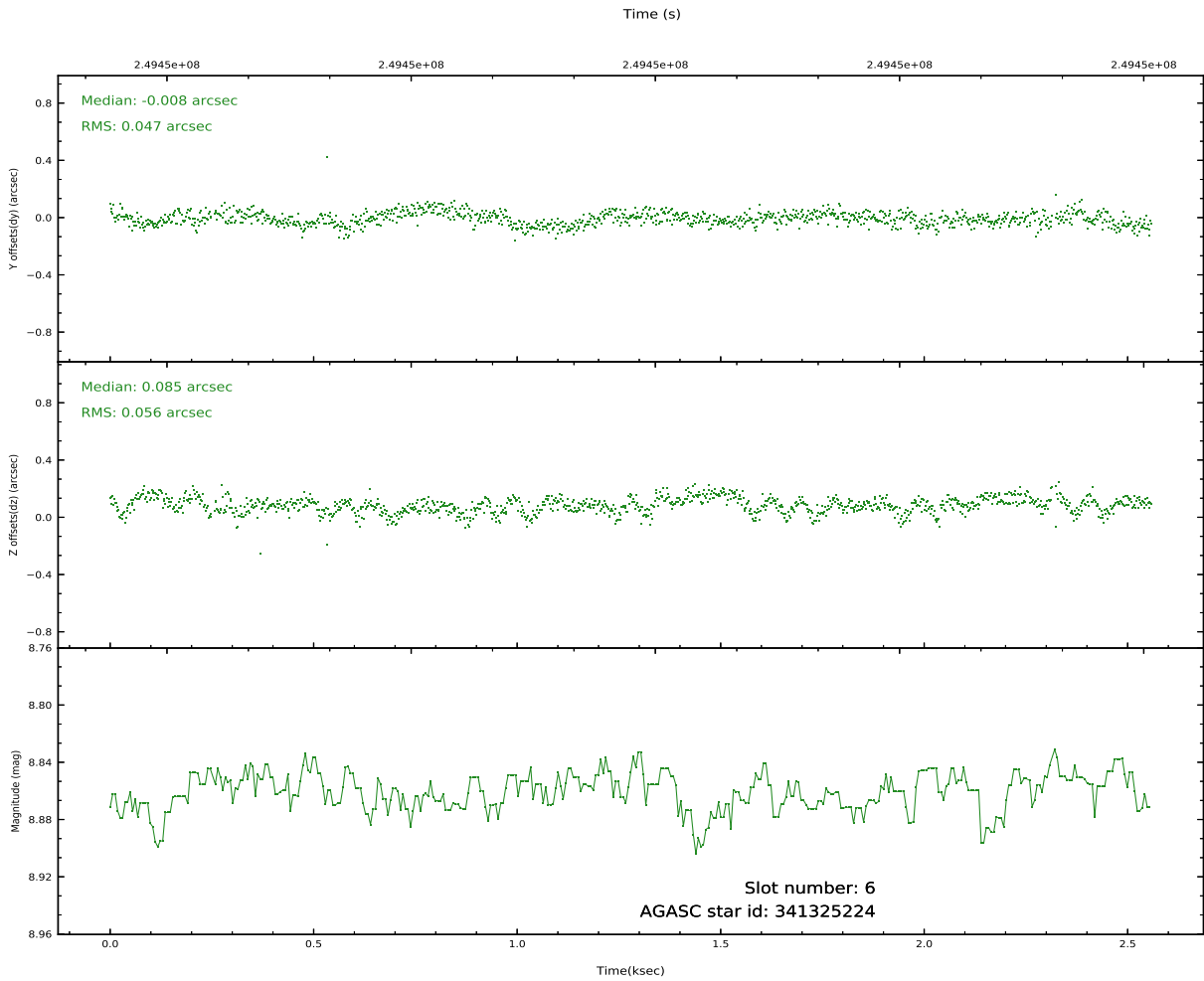
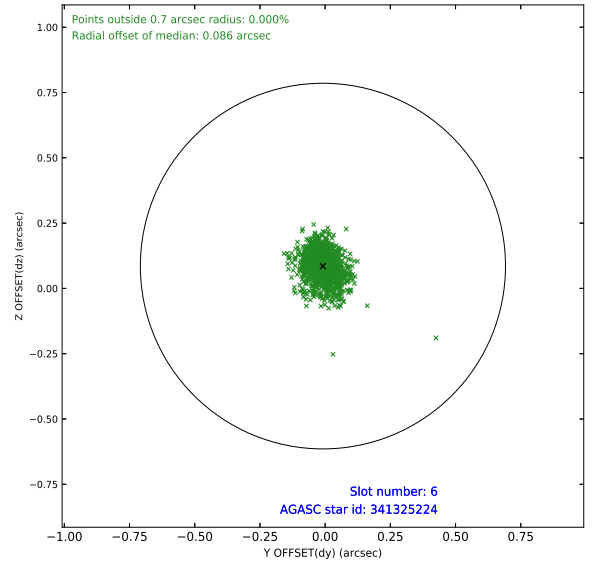
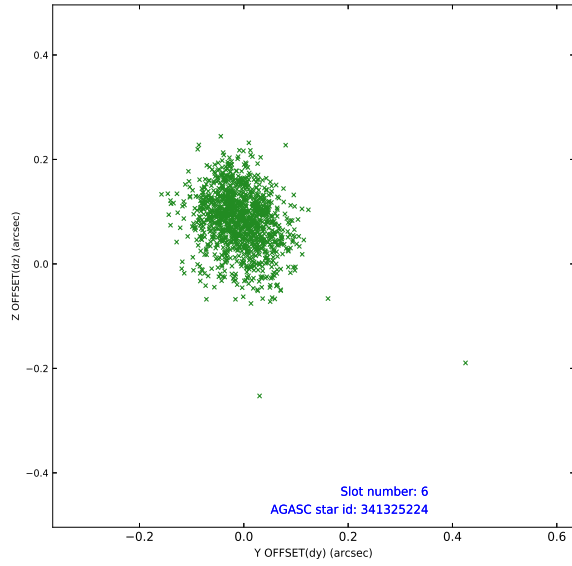
## 2.4.2 Slot 4



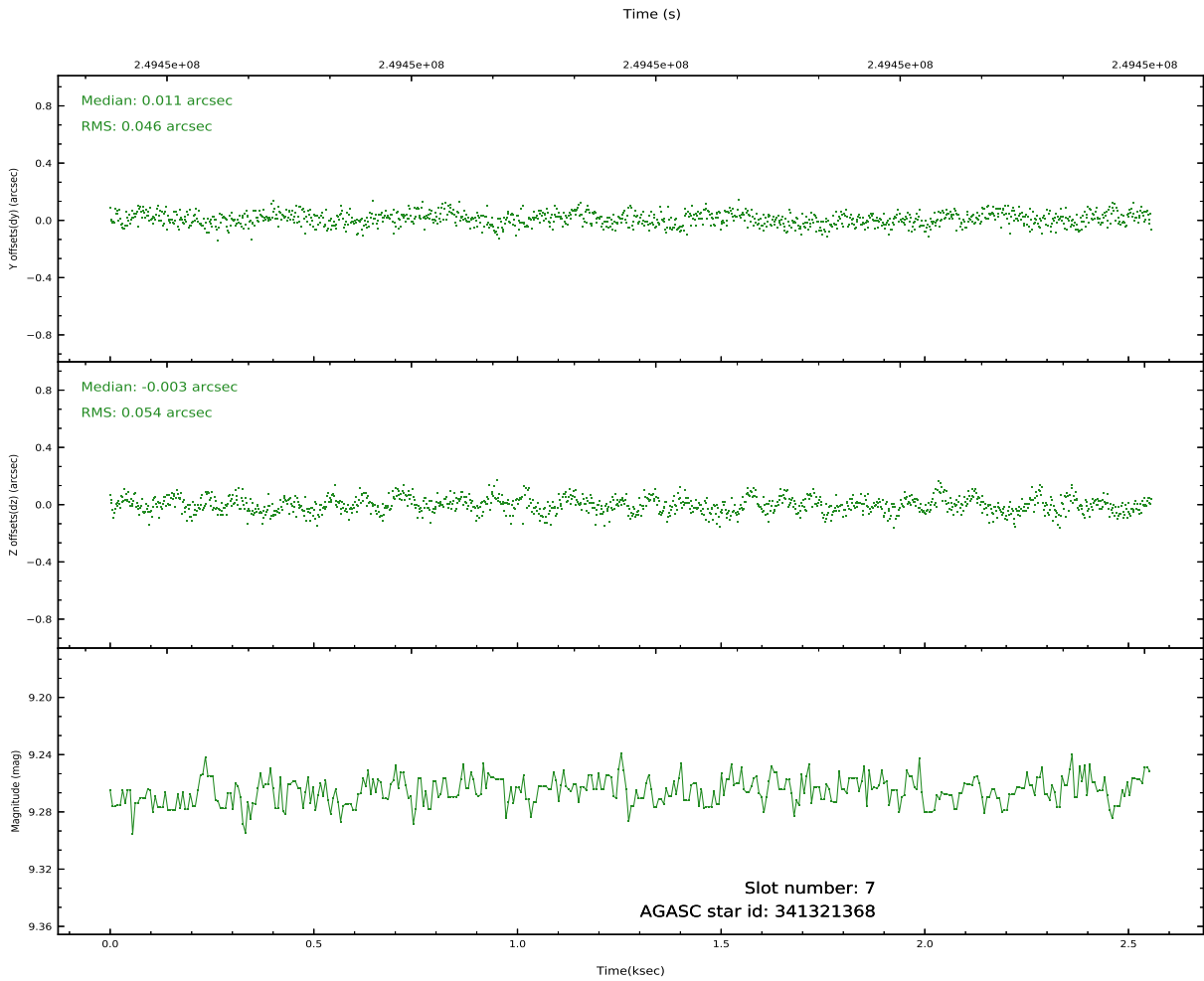
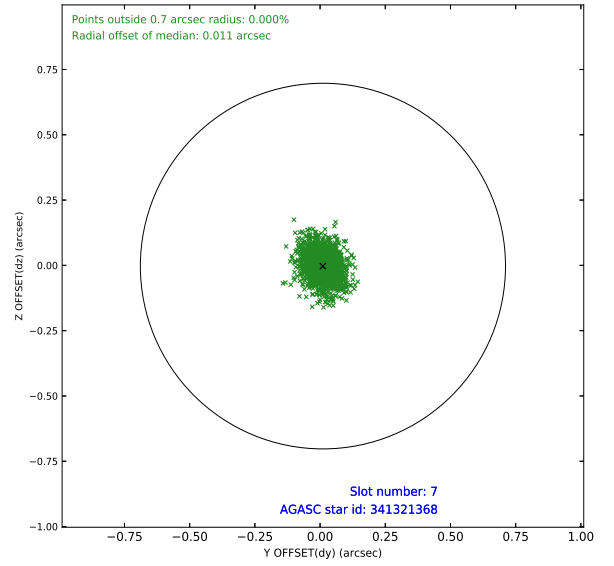
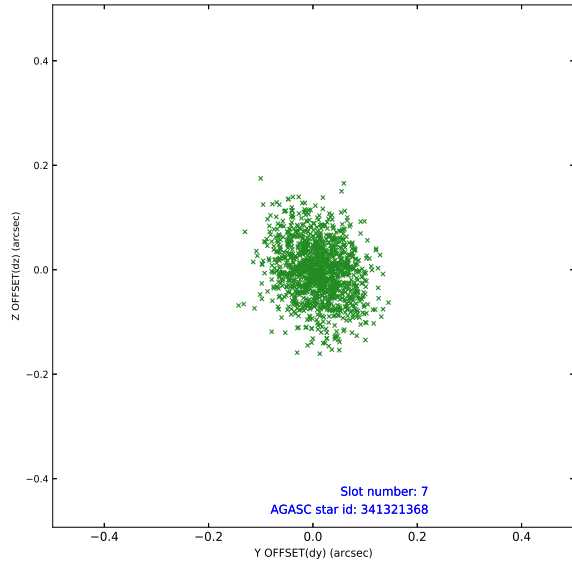
### 2.4.3 Slot 5



## 2.4.4 Slot 6

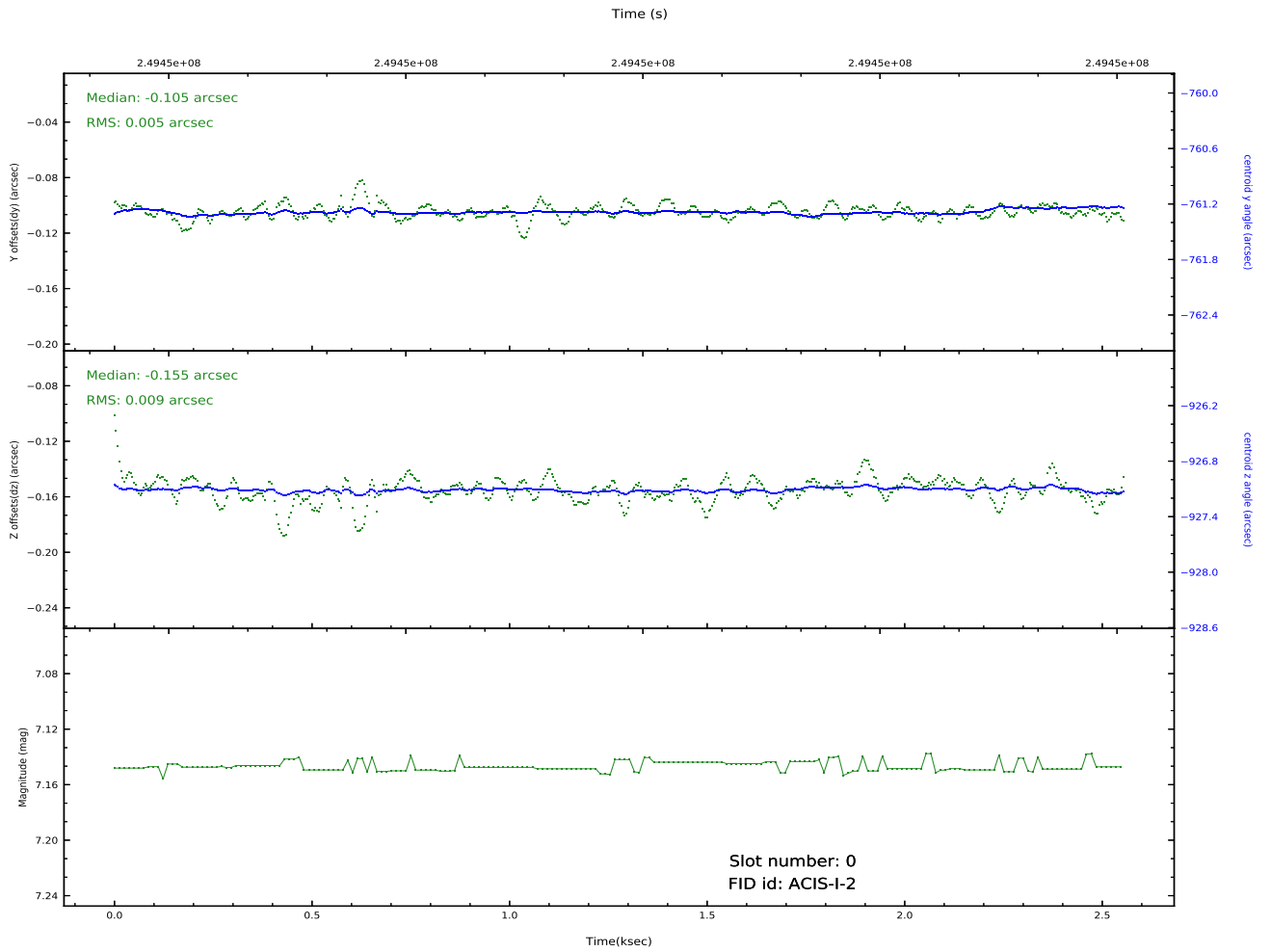
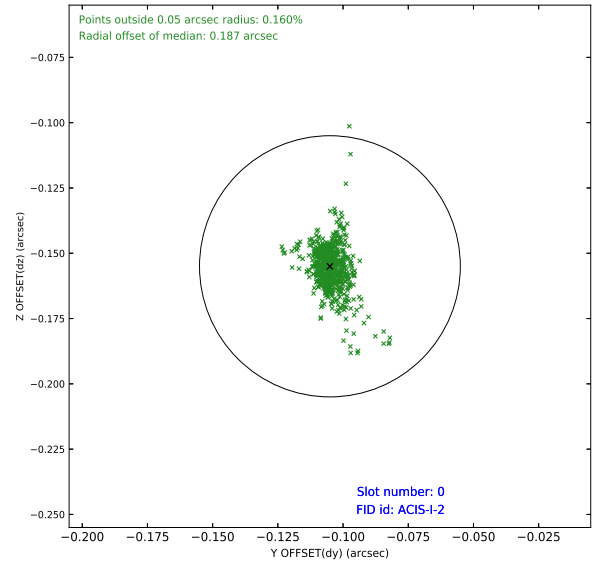
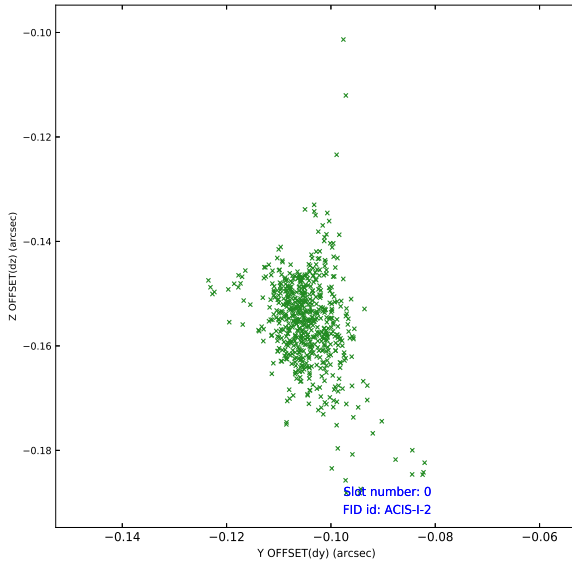


## 2.4.5 Slot 7

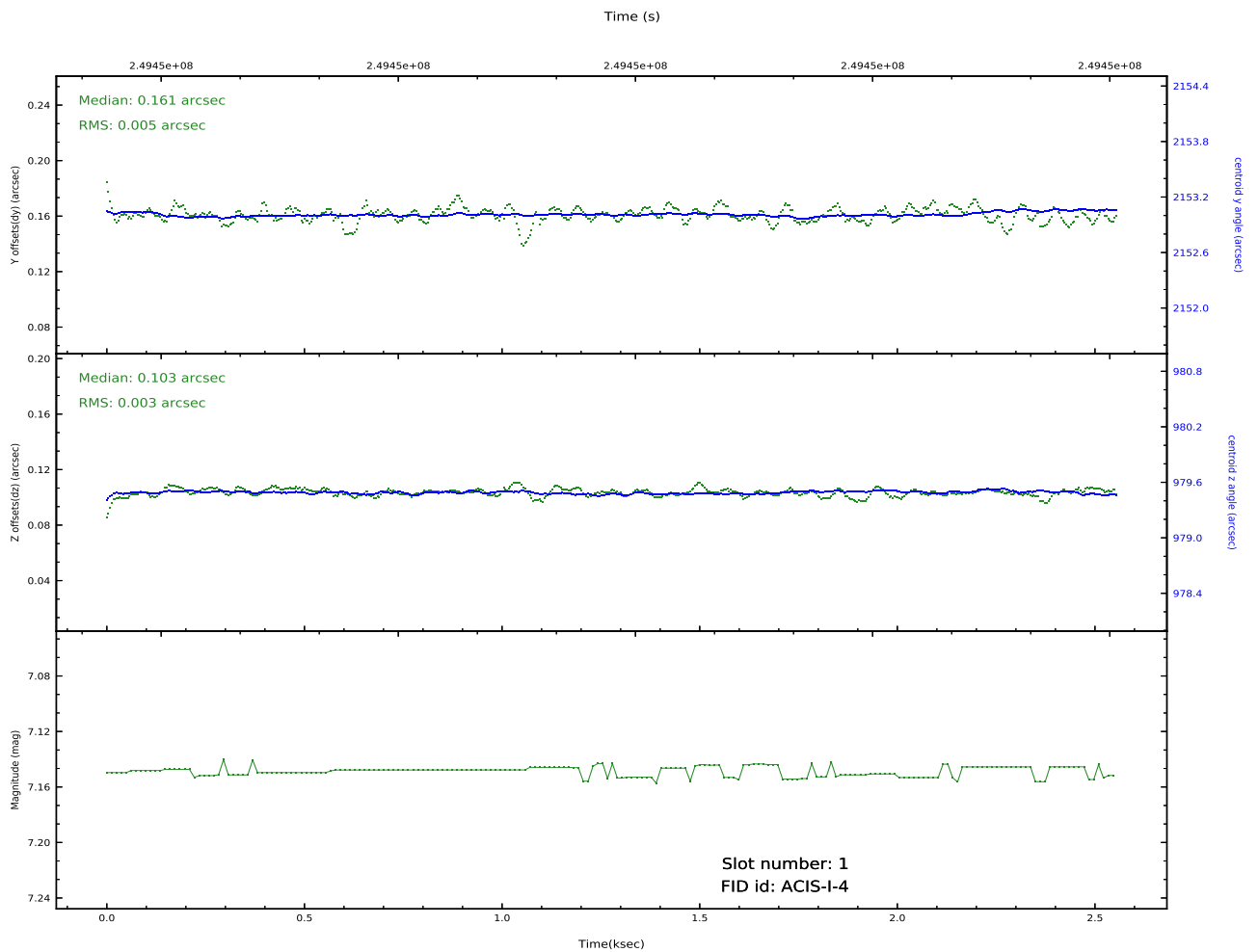
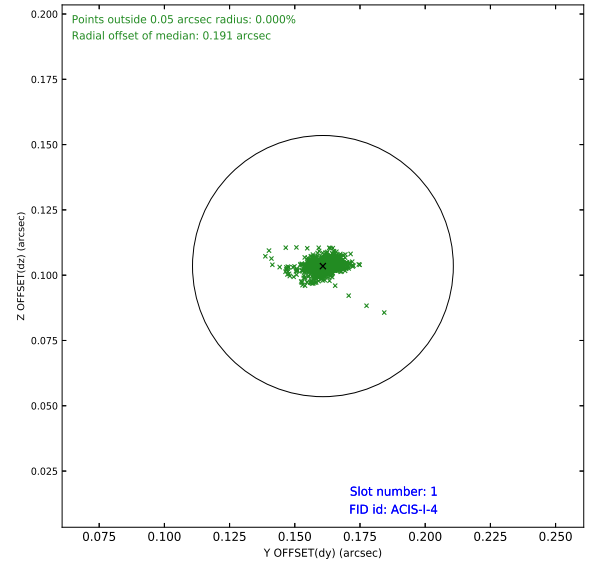
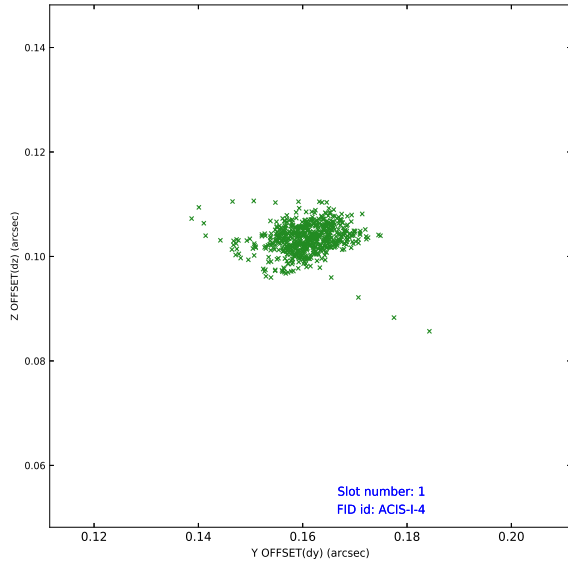


## 2.5 FID Slots

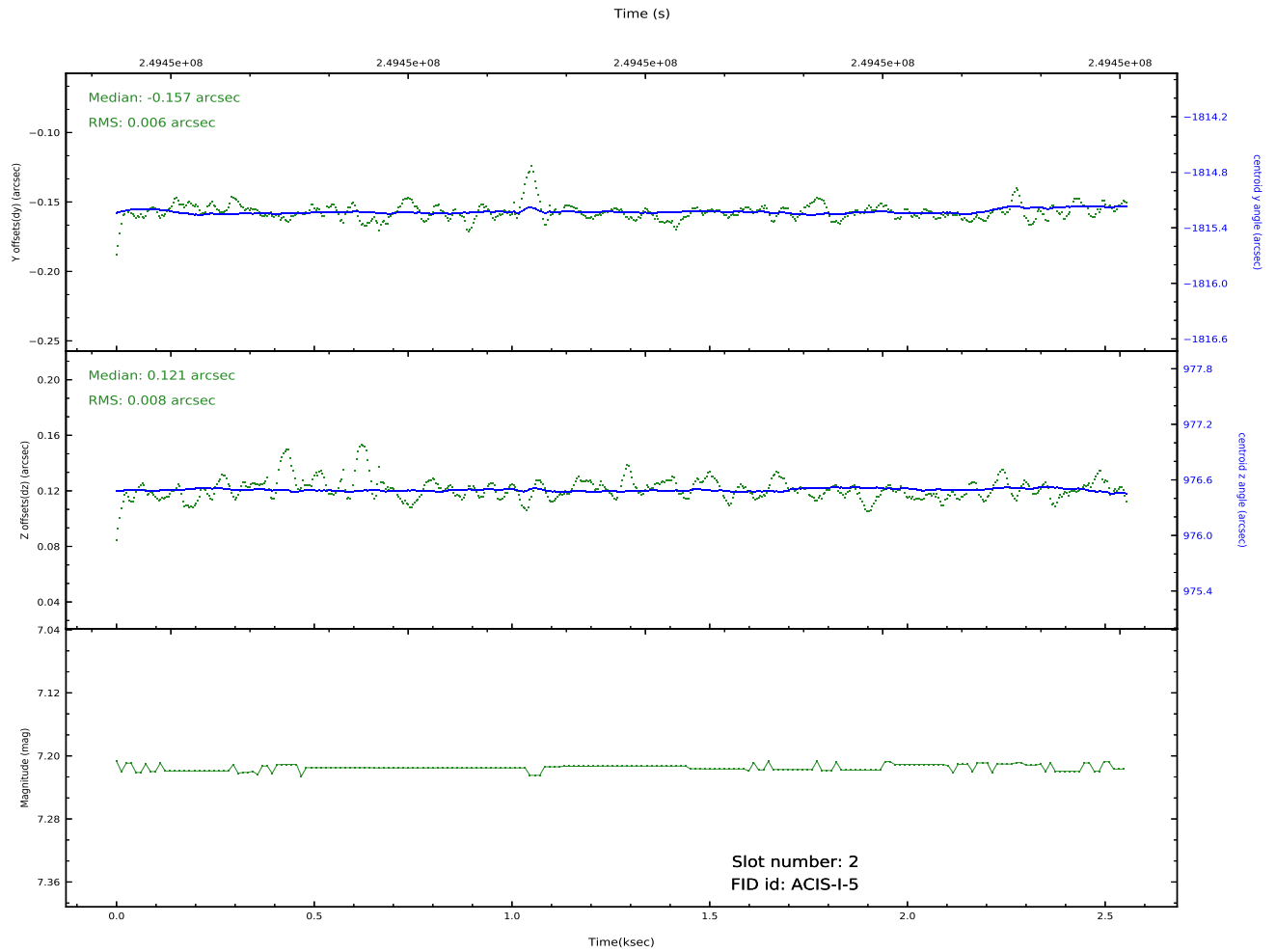
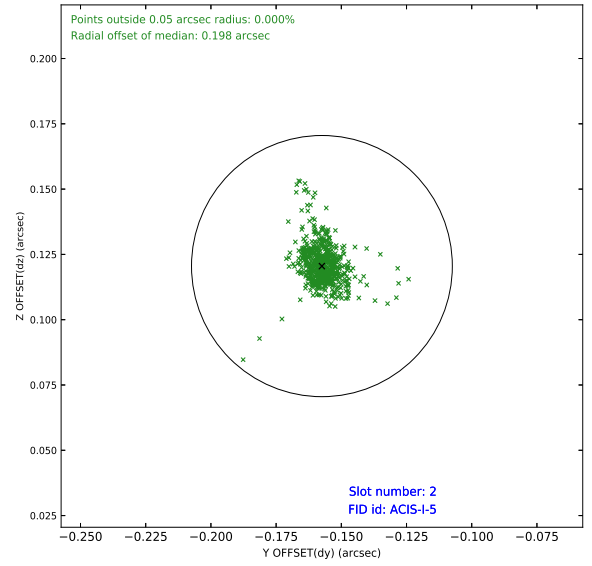
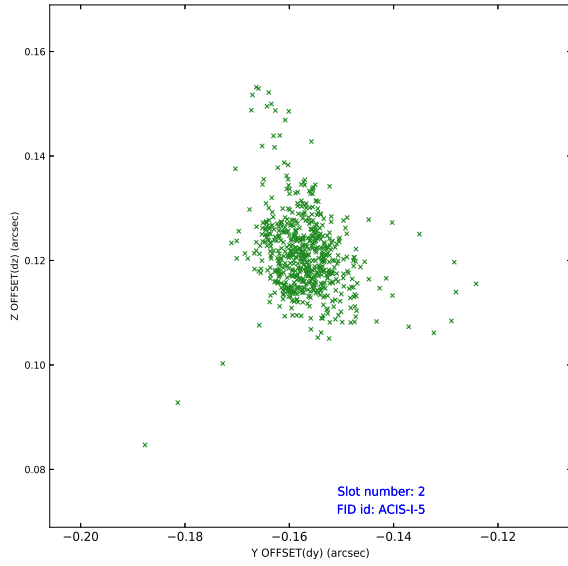
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2020.10.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.045959

## A.2 Comments