

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 19410 - L2 Version 2  
Chandra X-Ray Center

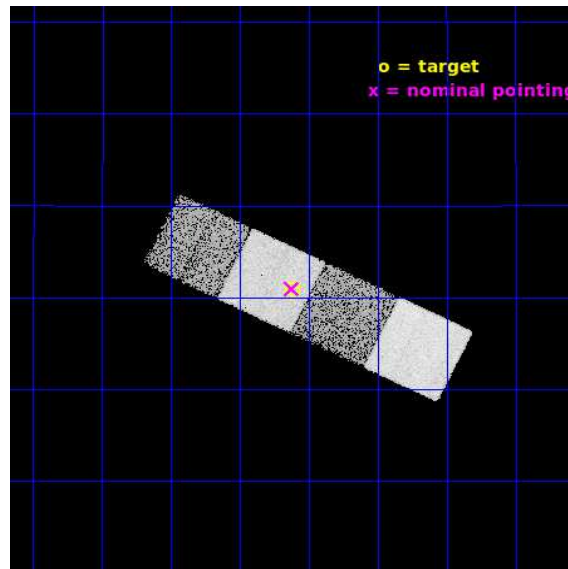
L2 Processing Date : Oct 25 2020

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# 1 Front

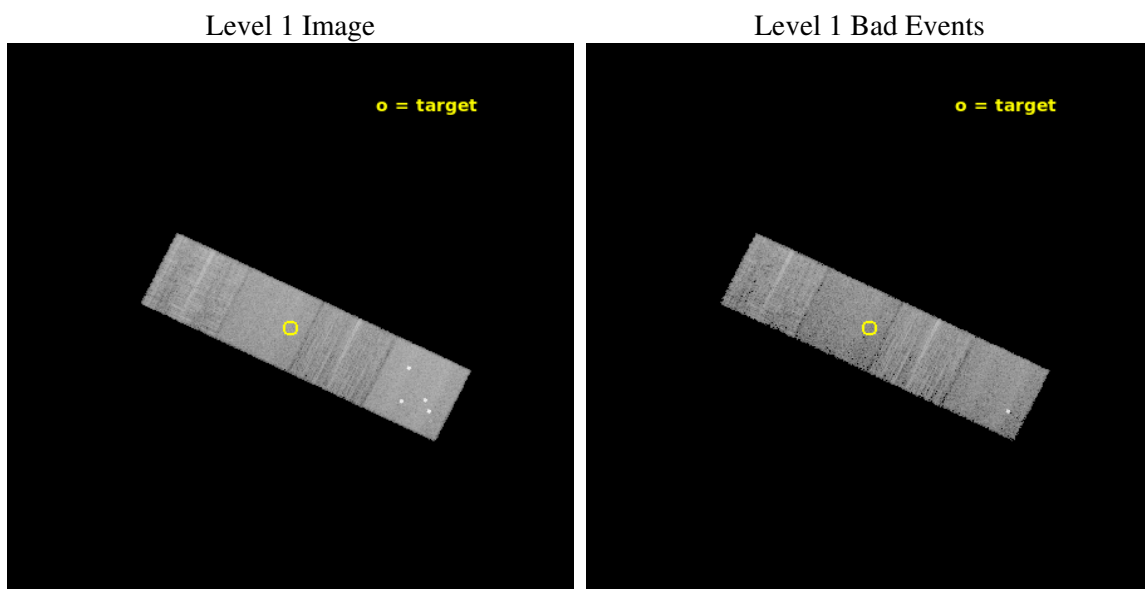
seq_num	601367	Sequence number
obs_id	19410	Observation id
title	Spiral galaxies of the Virgo cluster	Proposal title
observer	Roberto Soria	Principal investigator
object	NGC 4405	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	186.53	Observer's specified target RA [deg]
dec_targ	16.181	Observer's specified target Dec [deg]
ra_nom	186.53076188884	Nominal RA [deg]
dec_nom	16.18277733769	Nominal Dec [deg]
roll_nom	206.02735181781	Nominal Roll [deg]
revision	2	Processing version of data
ontime	8060.000062108	Sum of GTIs [s]
livetime	7954.6902276109	Livetime [s]
ontime5	8060.000062108	Sum of GTIs [s]
ontime6	8060.000062108	Sum of GTIs [s]
ontime7	8060.000062108	Sum of GTIs [s]
ontime8	8056.8590219021	Sum of GTIs [s]
l2events	87213	Number of level 2 events



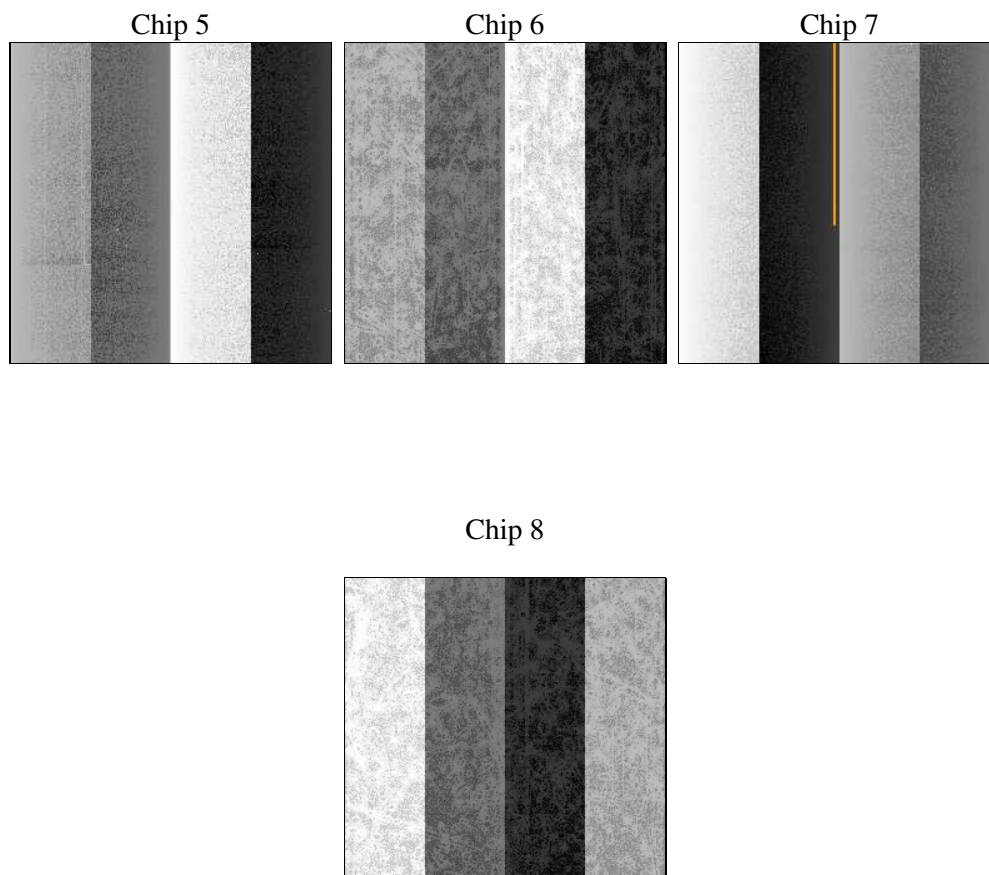
## 2 OBI

### 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	8060.000062108	Sum of GTIs [s]
caldsver	4.9.3	&#160	ontime5	8060.000062108	Sum of GTIs [s]
date	2020-10-25T11:31:09	Date and time of file creation	ontime6	8060.000062108	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	8060.000062108	Sum of GTIs [s]
			ontime8	8056.8590219021	Sum of GTIs [s]
			l1events	323175	Number of level 1 events

### 2.1.4 Events

	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	103016	62863	77174	80122
rejected events	51060	56057	44051	58654
rejected %	49%	89%	57%	73%

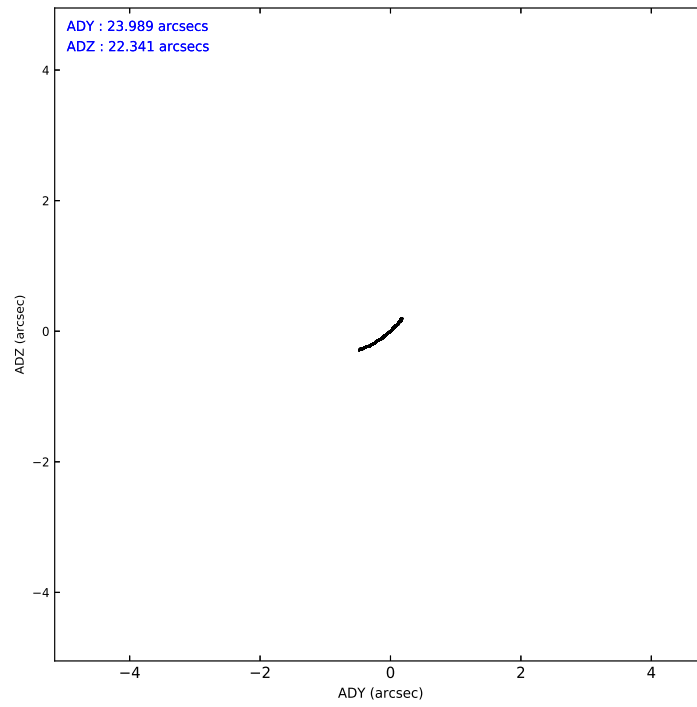
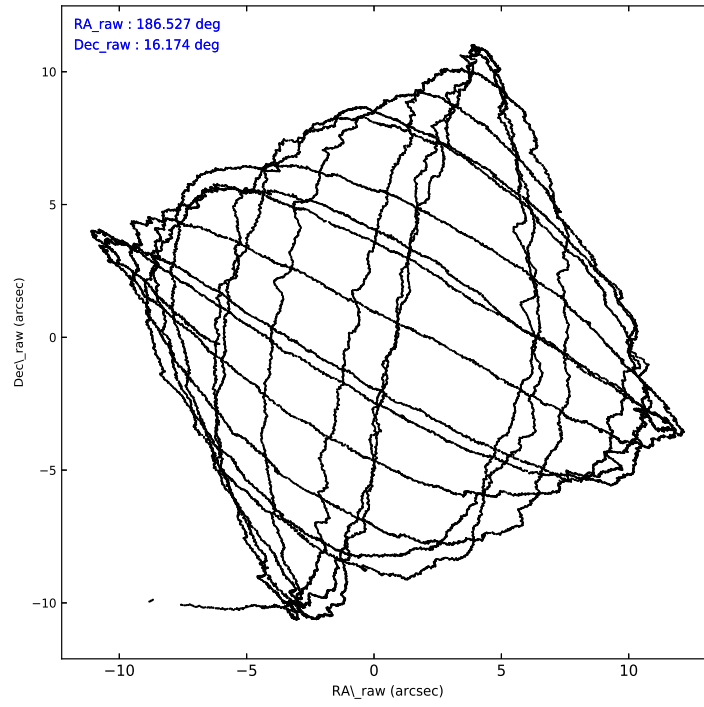
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	9246	2165	2799	5750
	8%	3%	3%	7%
grade 1 events	229	29	117	63
	0%	0%	0%	0%
grade 2 events	14908	1696	6863	5322
	14%	2%	8%	6%
grade 3 events	1269	648	2636	2150
	1%	1%	3%	2%
grade 4 events	1236	636	2648	1974
	1%	1%	3%	2%
grade 5 events	6314	2701	7854	4218
	6%	4%	10%	5%
grade 6 events	25345	1665	18203	6280
	24%	2%	23%	7%
grade 7 events	44469	53323	36054	54365
	43%	84%	46%	67%

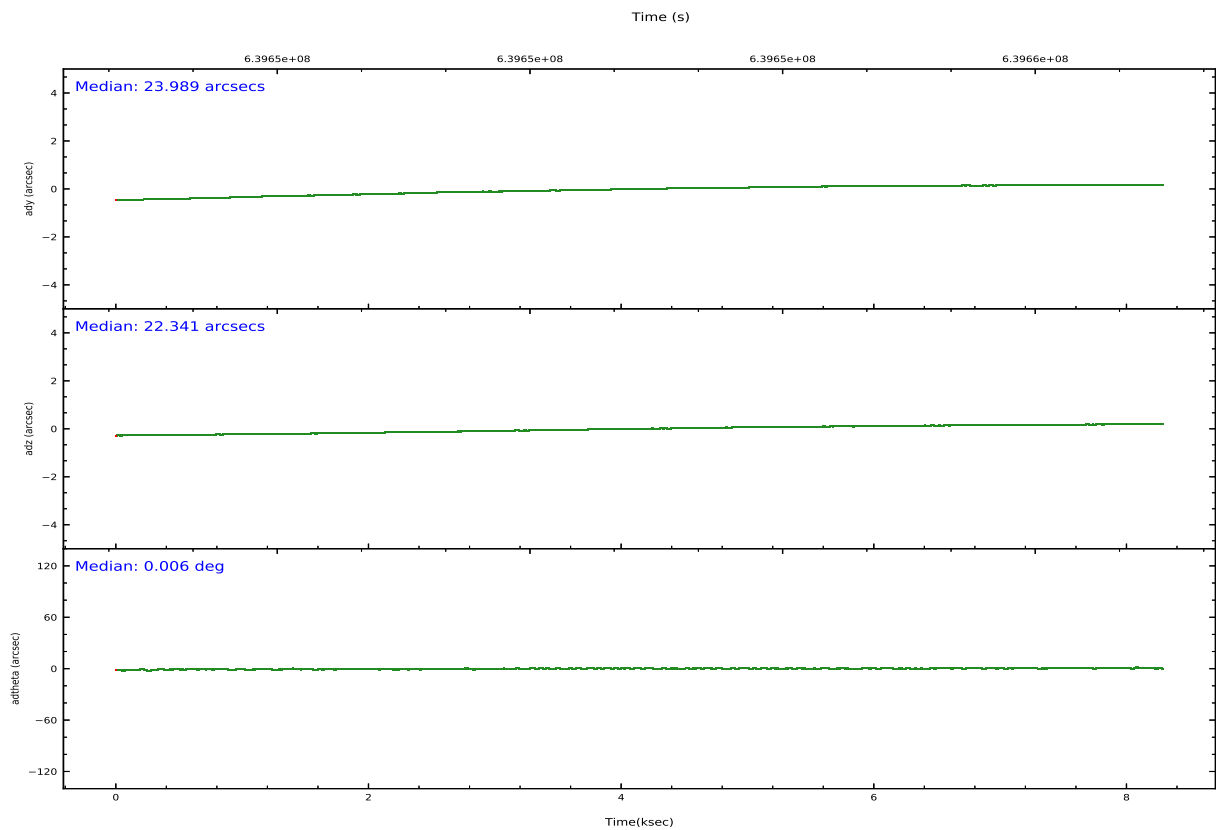
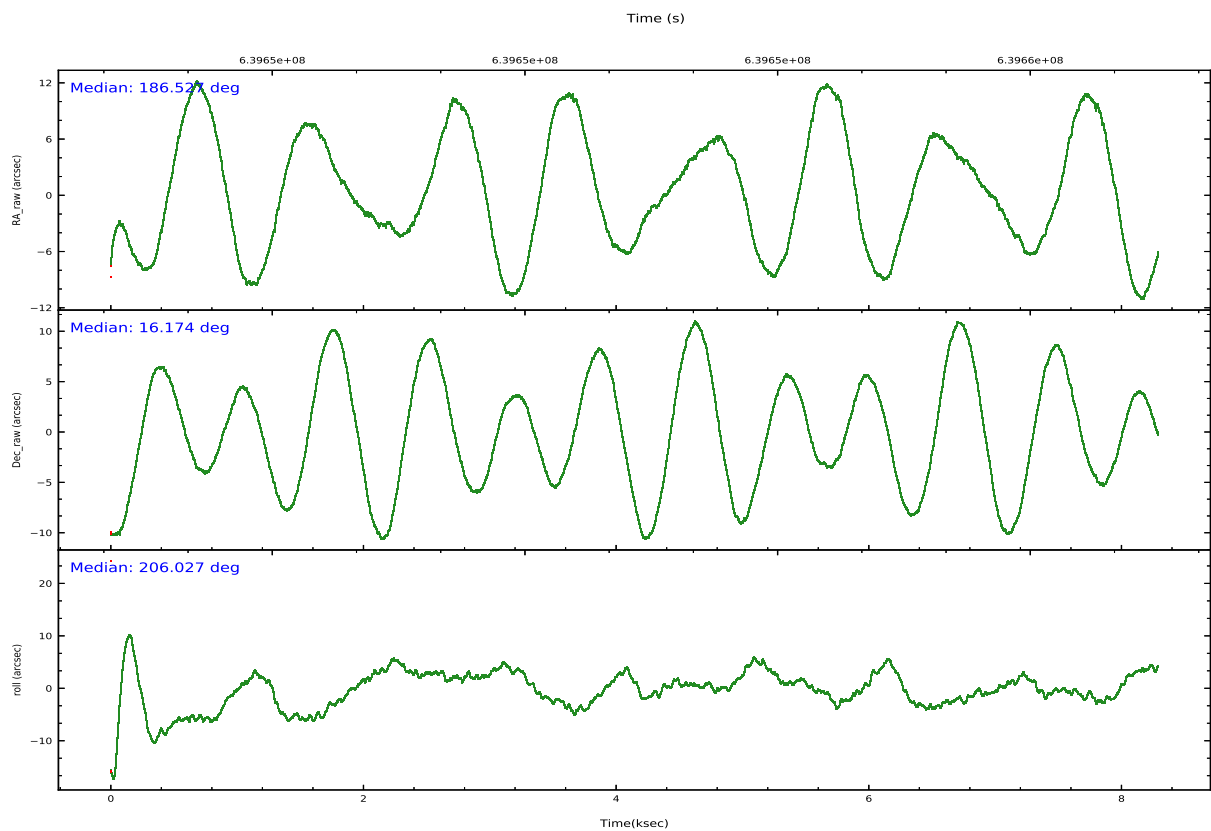


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-5678	ACIS-5678	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	186.542918	186.53076188884	Subarray requested	NONE	NONE
[deg] Pointing Dec	16.196959	16.18277733769	Alternating exposures requested	N	N
[deg] Pointing Roll	205.878101	206.02735181781	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1425803651734			
[mm] SIM translation stage offset	0	0.01005778216563158			
[s] Observation start time (MET)	639649012.184000	639648057.22761			
Observation start date	2018-04-09T08:15:43	2018-04-09T08:00:57			
[s] Observation end time (MET)	639657012.184000	639657239.69065			
Observation end date	2018-04-09T10:29:03	2018-04-09T10:33:59			
Read mode	TIMED	TIMED			

## 2.3 Aspect



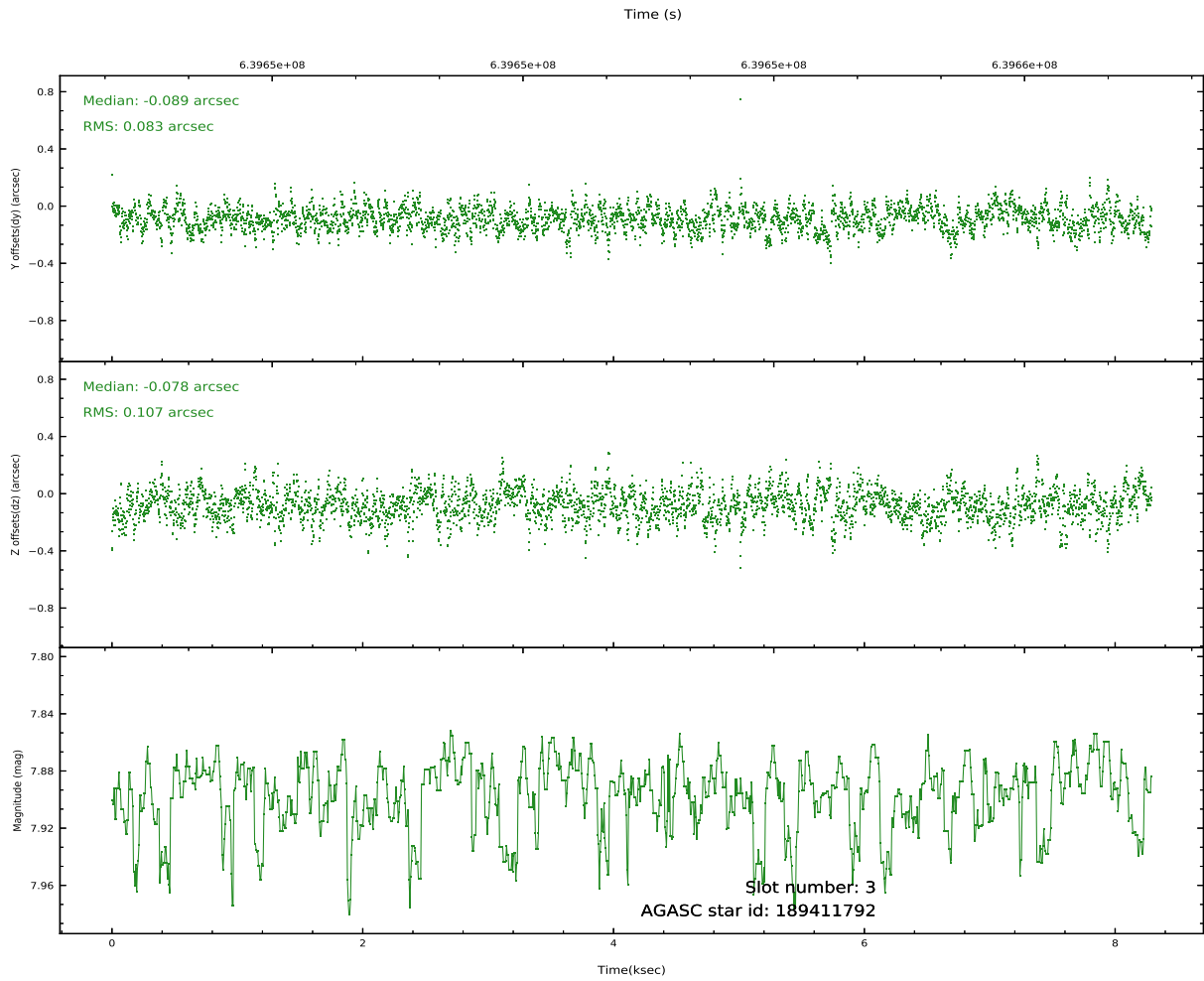
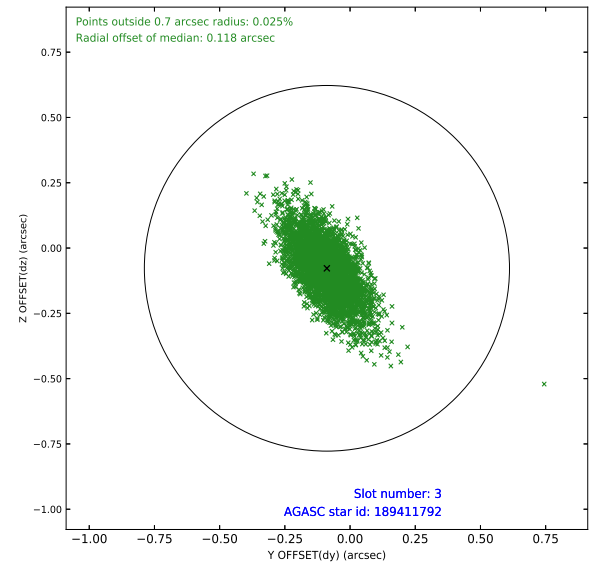
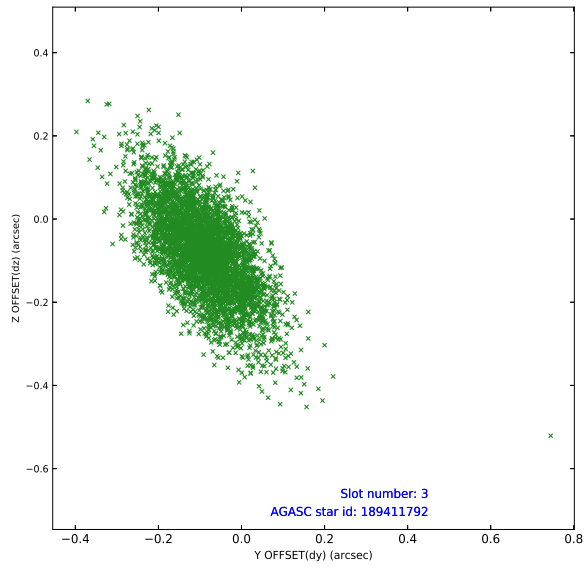


Slot Statistics

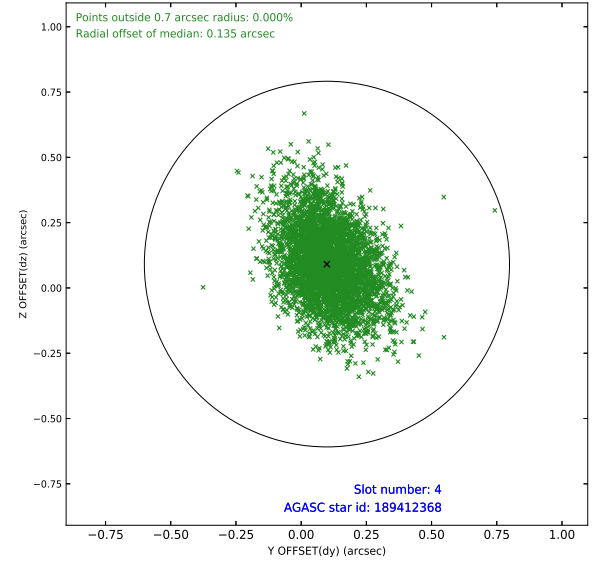
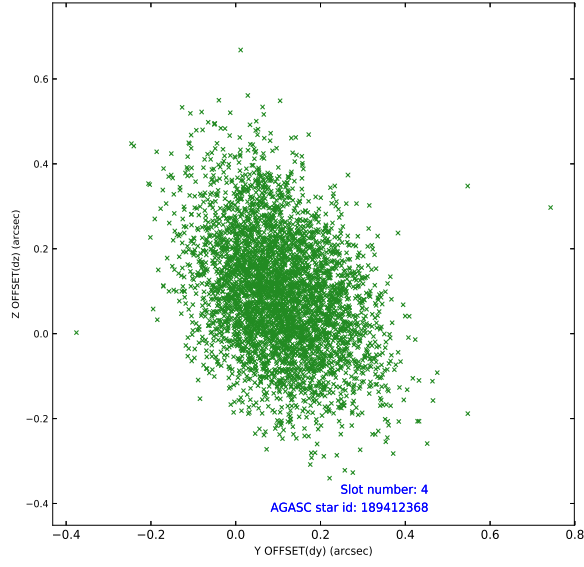
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.09	2023	1.000	0.160	-0.117	0.009	0.016	0.000000	0.000000	-777.30	-1743
1	FID		ACIS-S-4	7.20	2023	1.000	0.114	-0.046	0.009	0.018	0.000000	0.000000	2135.95	163
2	FID		ACIS-S-5	7.21	2022	1.000	-0.306	0.172	0.007	0.012	0.000000	0.000000	-1829.42	158
3	GUIDE	used	189411792	7.89	4040	1.000	-0.089	-0.078	0.135	0.245	186.226855	16.194788	986.74	-470
4	GUIDE	used	189412368	9.05	4039	1.000	0.099	0.091	0.184	0.310	186.600821	16.354974	-427.10	-424
5	GUIDE	used	189412616	8.84	4043	1.000	0.039	-0.060	0.166	0.274	185.986854	16.417322	1383.42	-1550
6	GUIDE	used	189413016	8.11	4042	1.000	-0.163	0.052	0.154	0.267	186.364497	16.171398	595.68	-186
7	GUIDE	used	189410648	8.13	4044	1.000	0.113	-0.005	0.175	0.281	185.747145	16.243433	2399.80	-1354

## 2.4 Star Slots

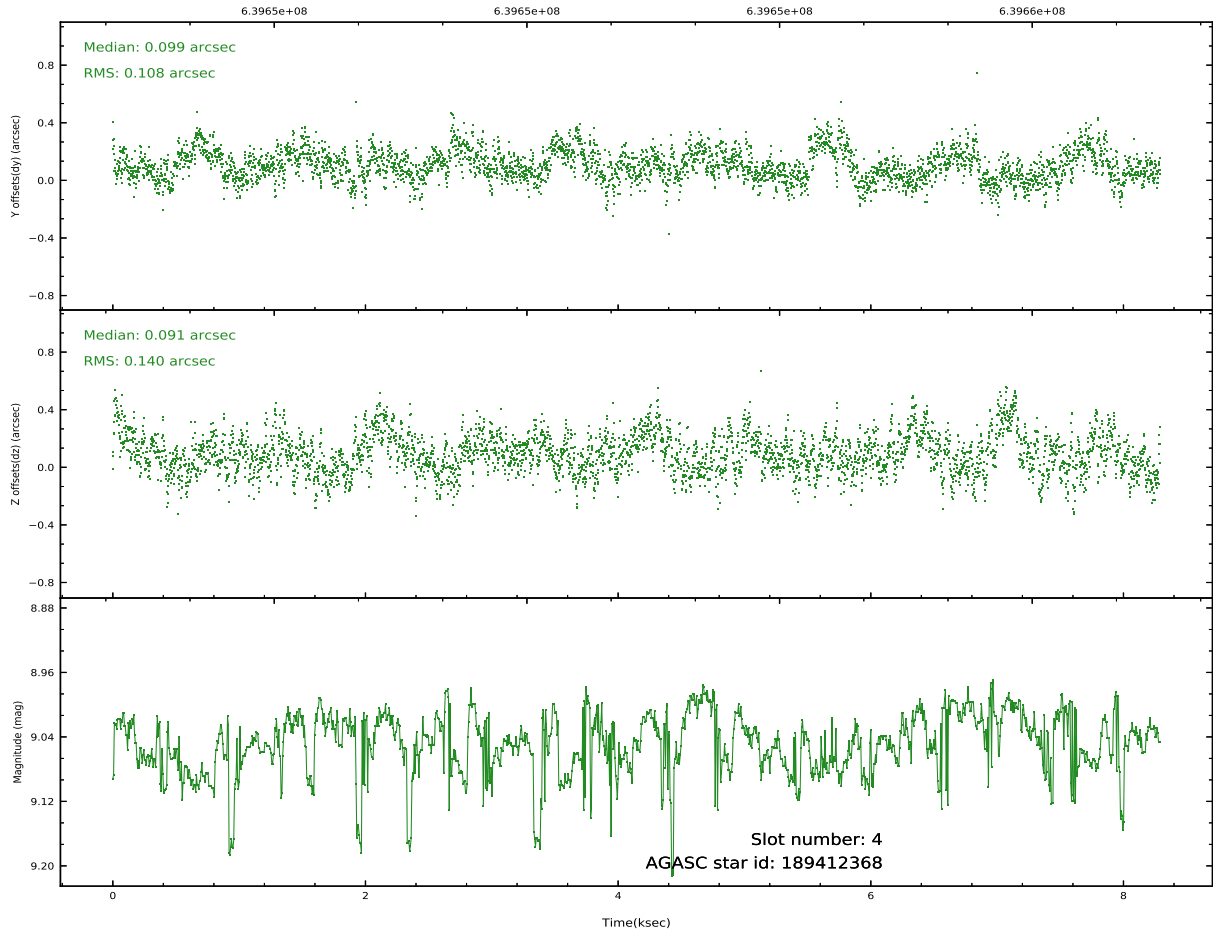
### 2.4.1 Slot 3



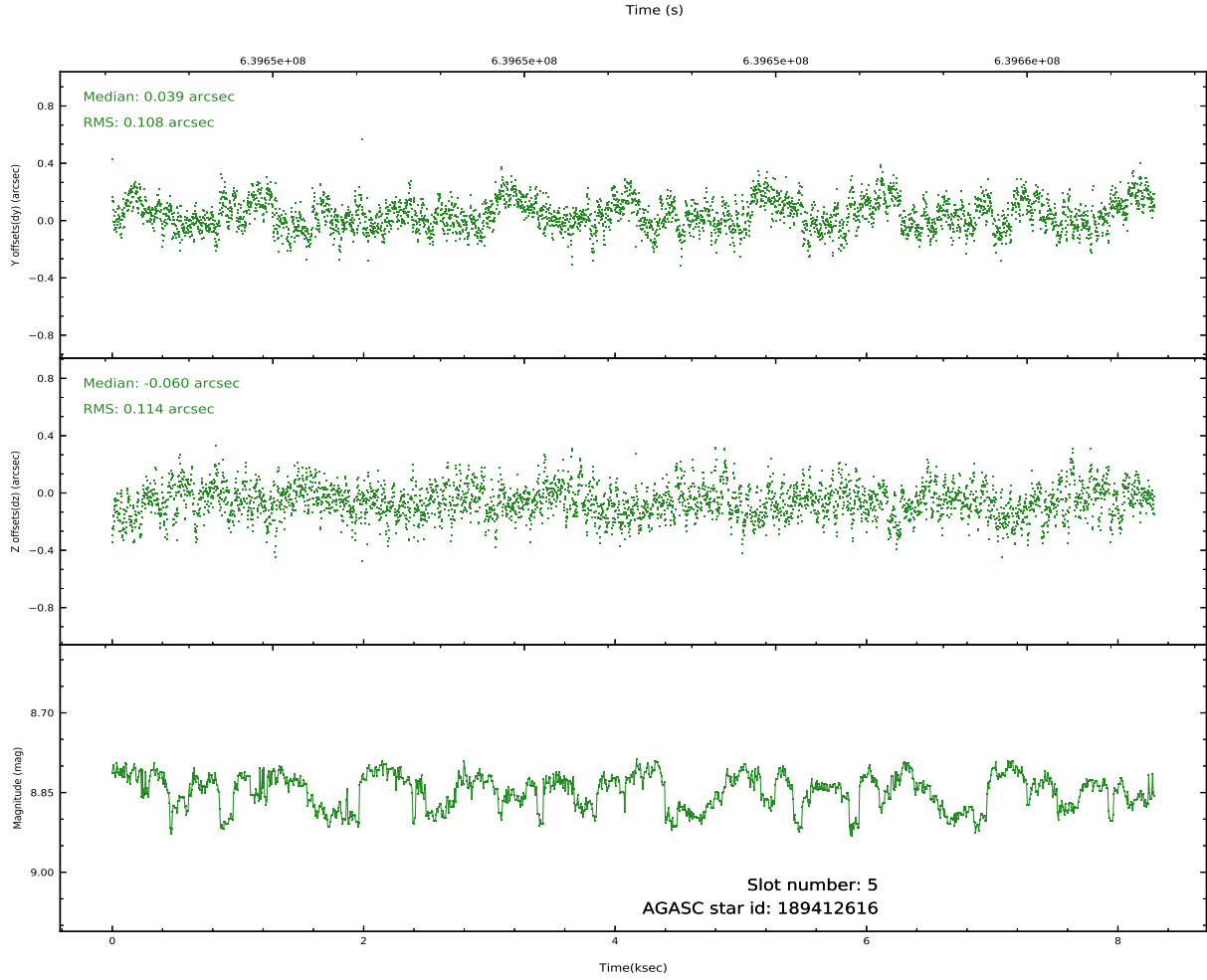
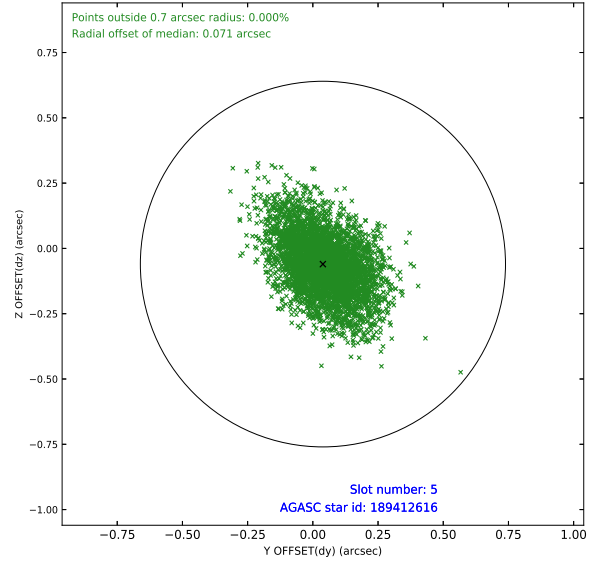
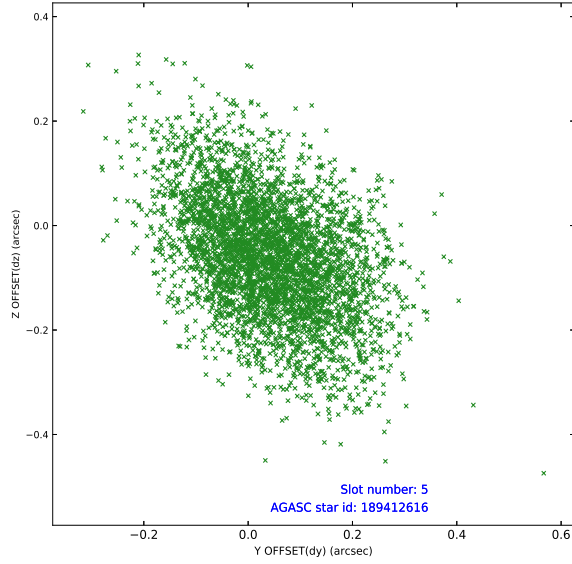
## 2.4.2 Slot 4



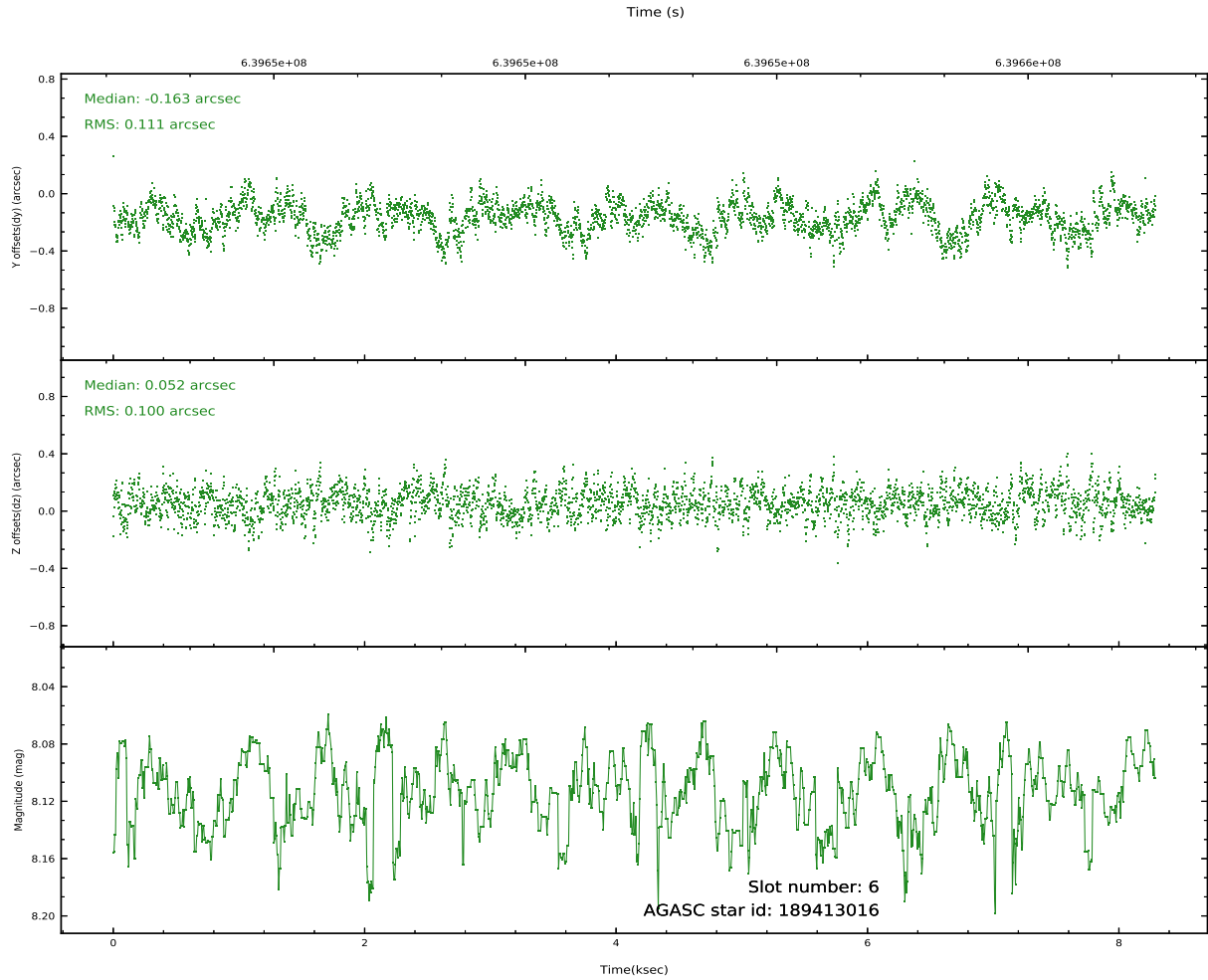
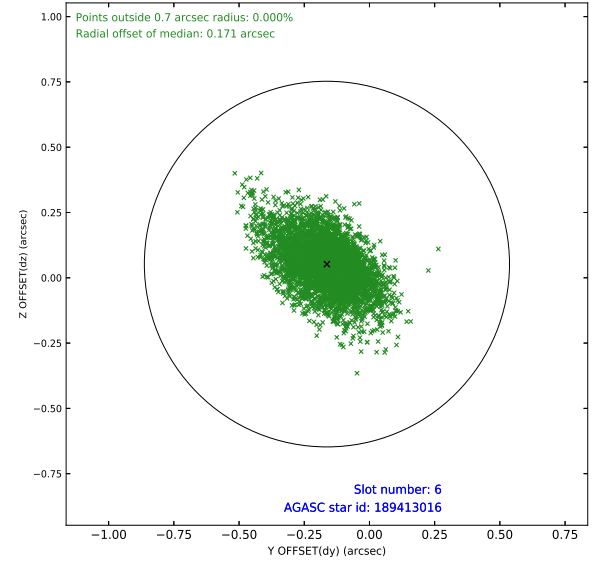
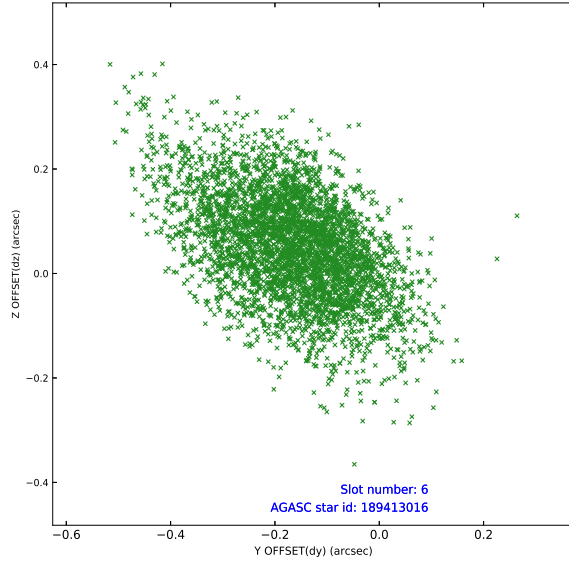
Time (s)



### 2.4.3 Slot 5

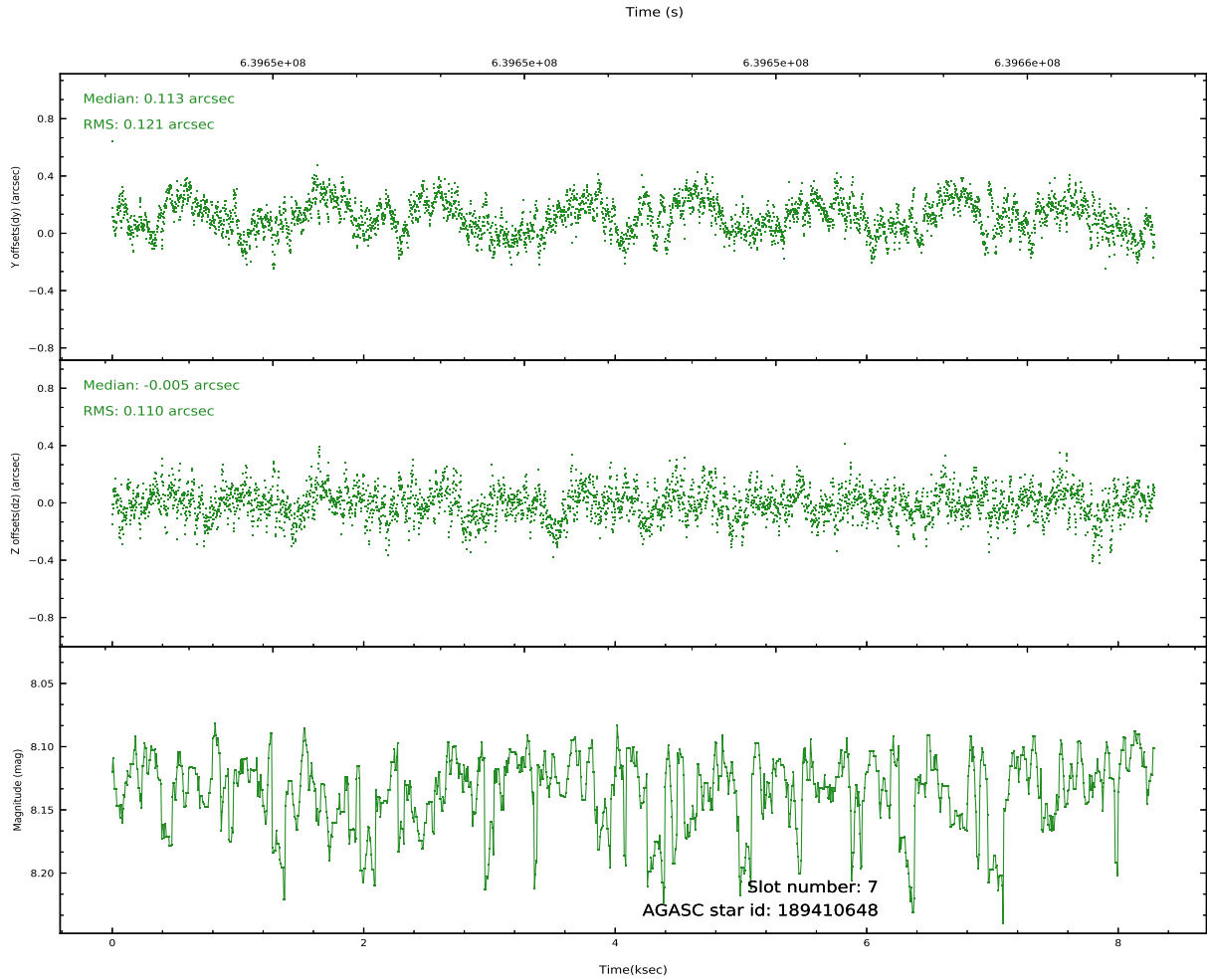
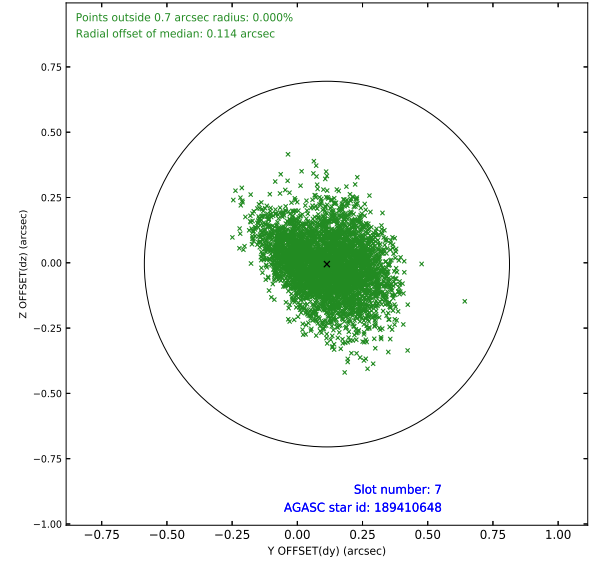
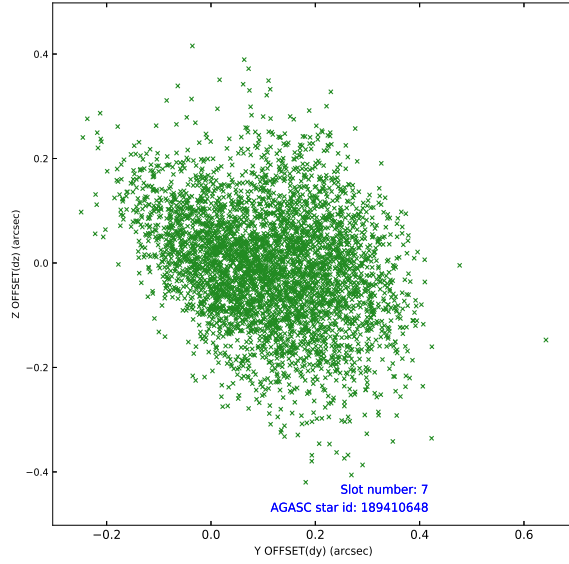


## 2.4.4 Slot 6



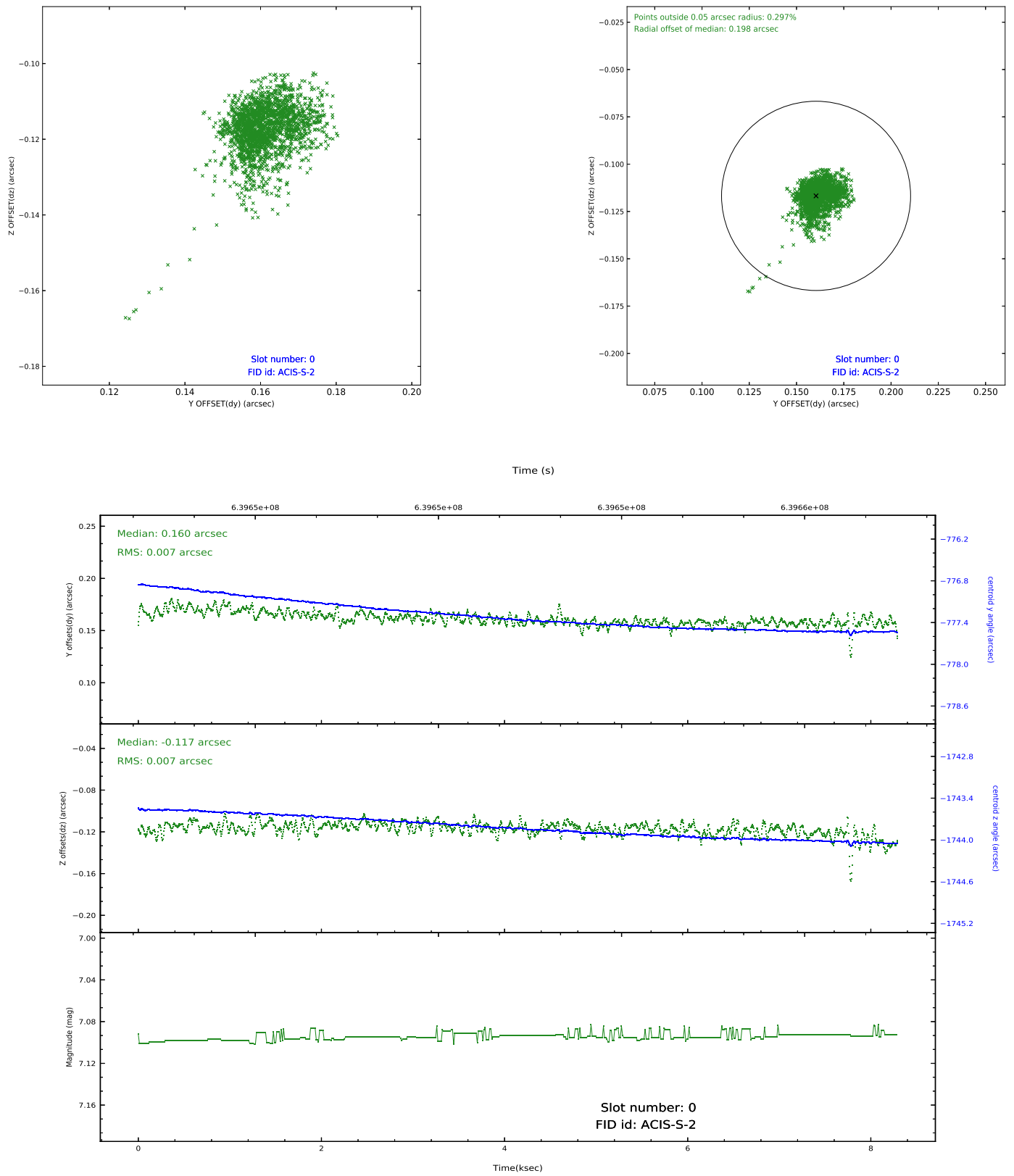


## 2.4.5 Slot 7

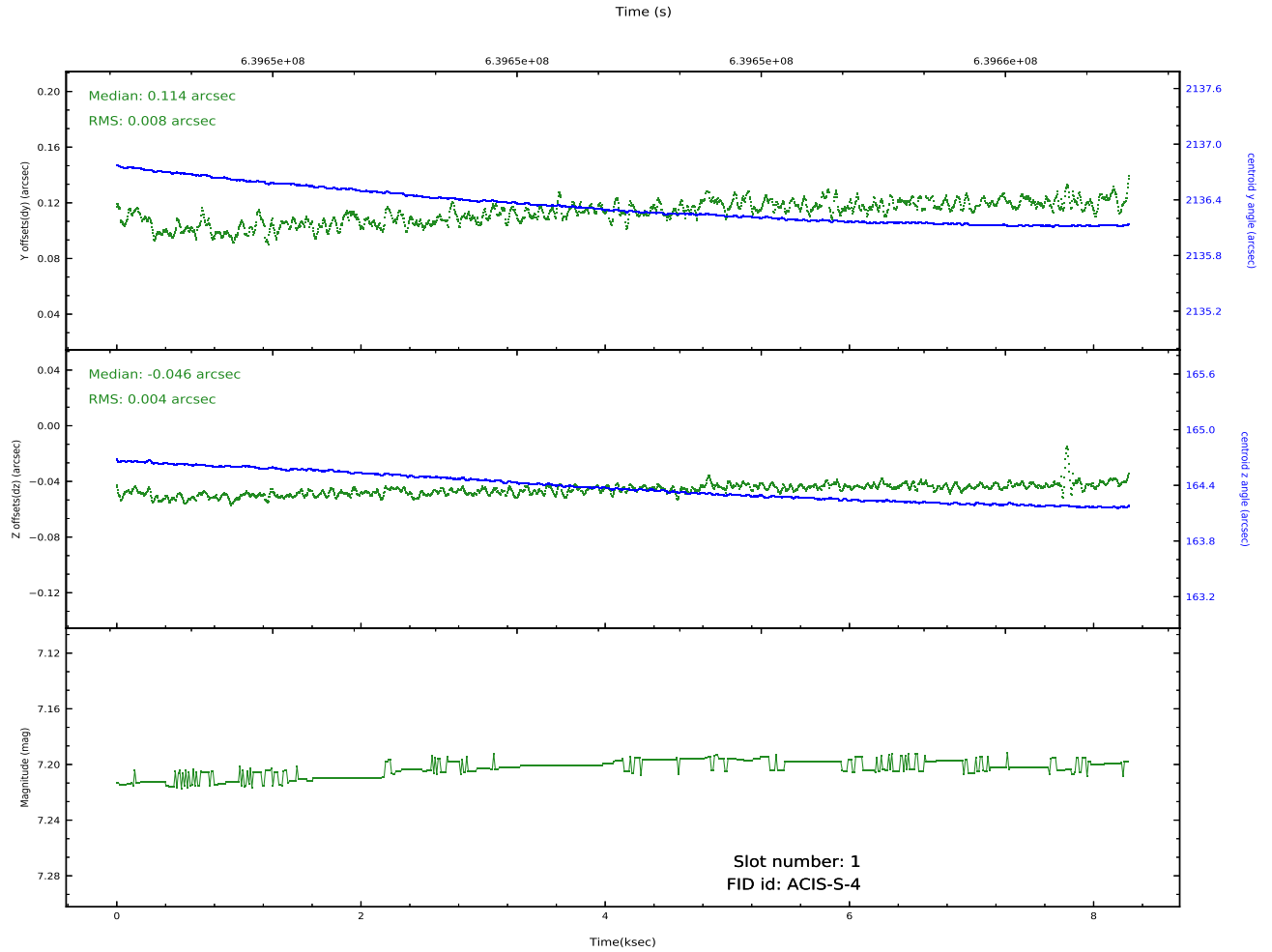
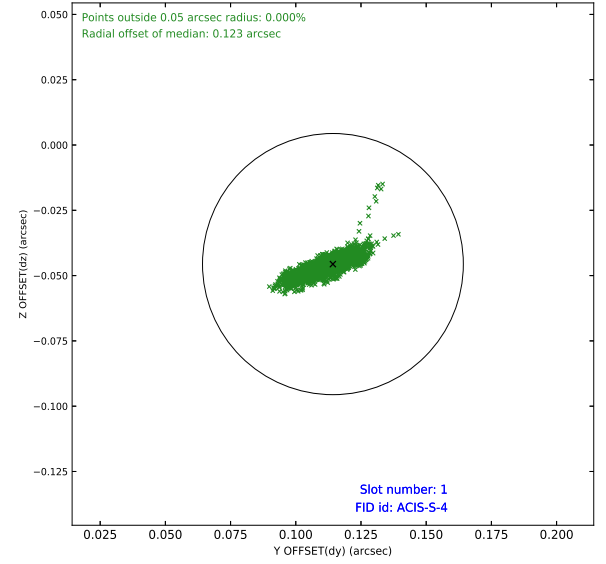
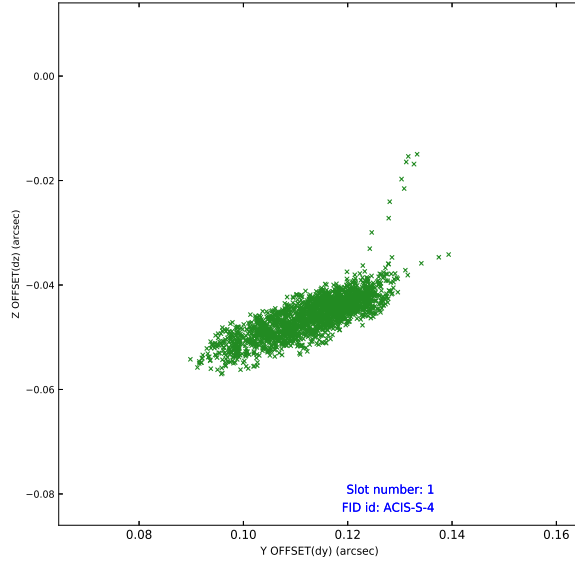


## 2.5 FID Slots

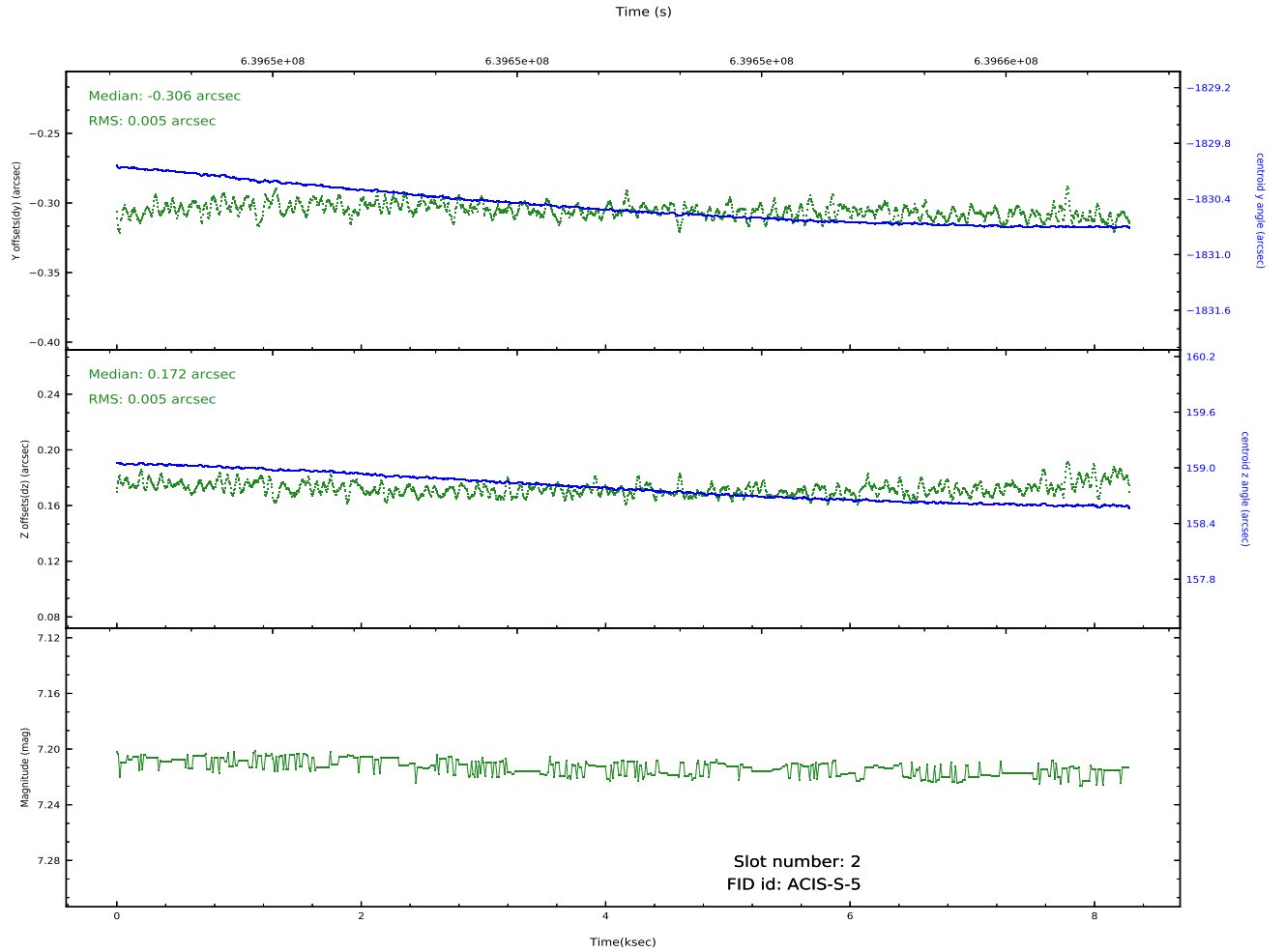
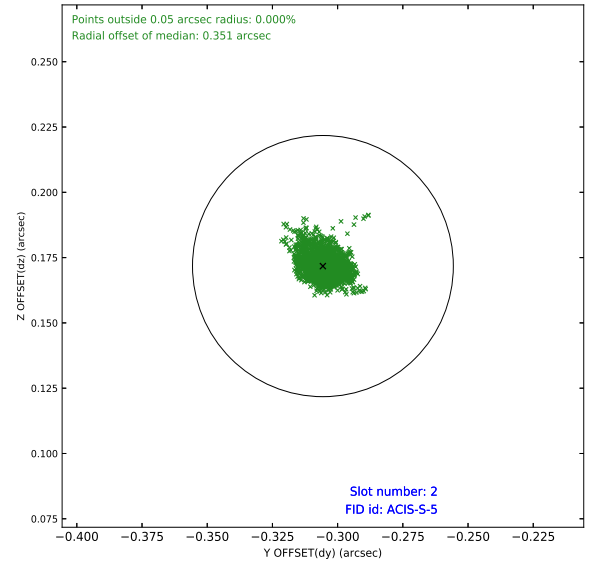
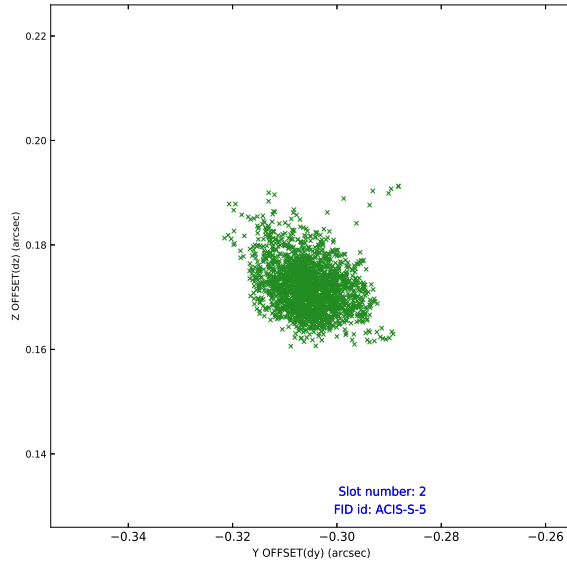
### 2.5.1 Slot 0



## 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)	2020.10.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	8.060000062108

### A.2 Comments