

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 21016 - L2 Version 2  
Chandra X-Ray Center

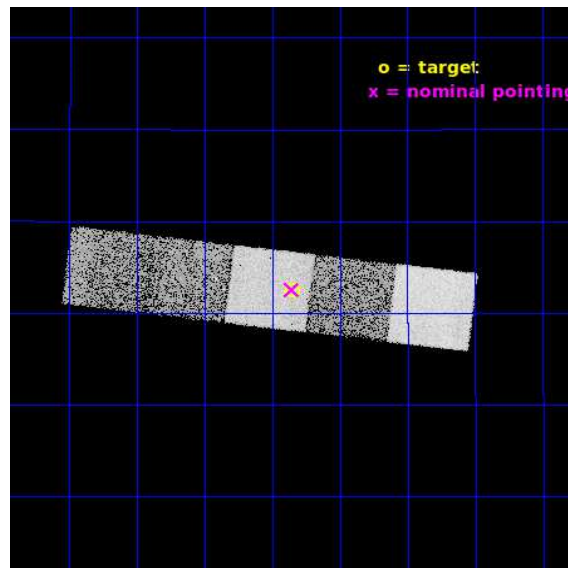
L2 Processing Date : Oct 25 2020

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
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
<b>A</b>	<b>Summary</b>	<b>17</b>
A.1	Status . . . . .	17
A.2	Comments . . . . .	17

# 1 Front

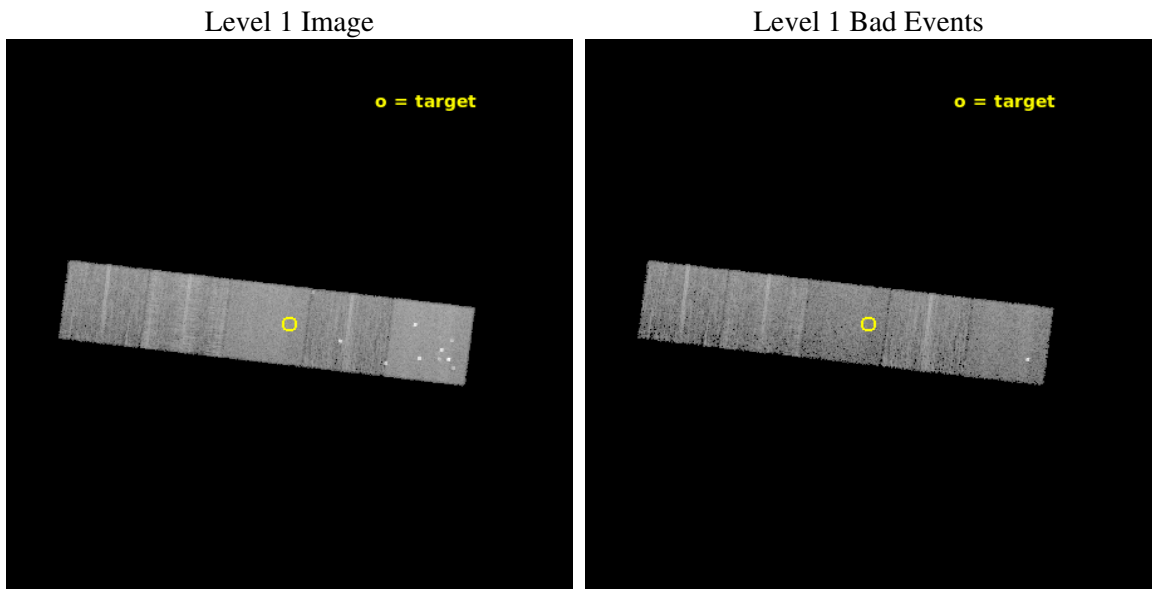
seq_num	703657	Sequence number
obs_id	21016	Observation id
title	LOW SURFACE BRIGHTNESS GALAXIES AND THE BLACK HOLE OCCUPATION FRACTION	Proposal title
observer	Elena Gallo	Principal investigator
object	IC 3605	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	189.5875	Observer's specified target RA [deg]
dec_targ	19.541333	Observer's specified target Dec [deg]
ra_nom	189.58846078847	Nominal RA [deg]
dec_nom	19.542720759278	Nominal Dec [deg]
roll_nom	186.92994457366	Nominal Roll [deg]
revision	2	Processing version of data
ontime	7449.3000574112	Sum of GTIs [s]
livetime	7351.9694680662	Livetime [s]
ontime5	7449.3000574112	Sum of GTIs [s]
ontime6	7449.3000574112	Sum of GTIs [s]
ontime7	7449.3000574112	Sum of GTIs [s]
ontime8	7449.3000574112	Sum of GTIs [s]
ontime9	7449.3000574112	Sum of GTIs [s]
l2events	86615	Number of level 2 events



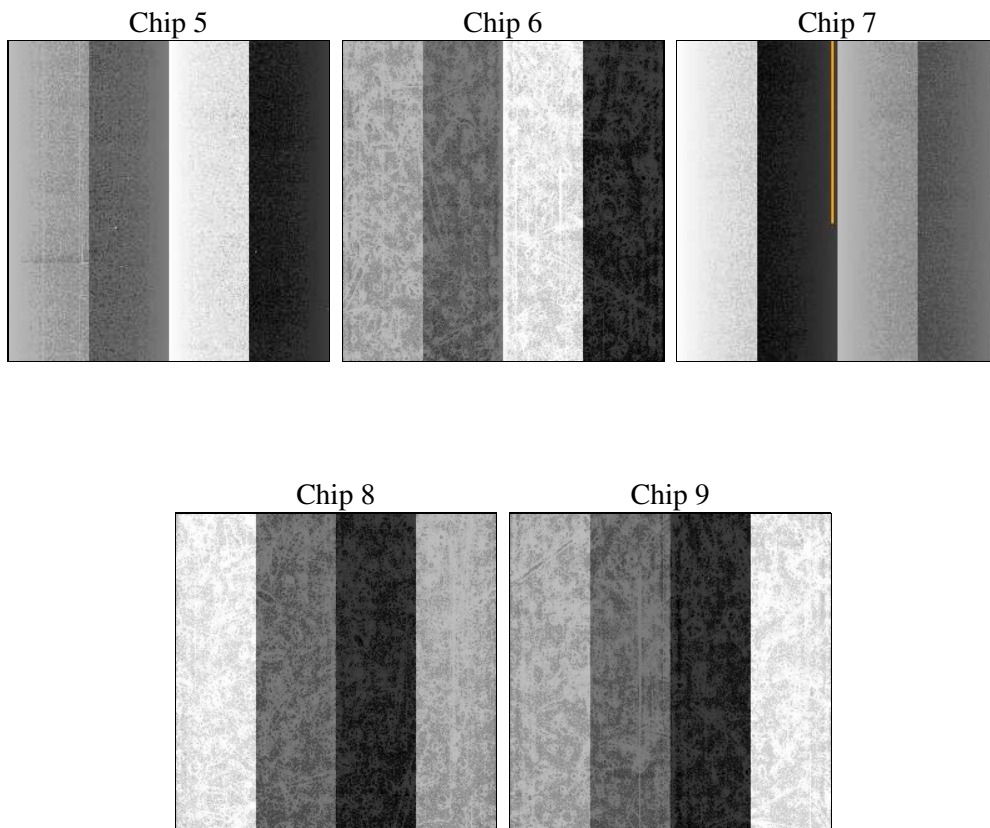
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	7400.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	7449.3000574112	Sum of GTIs [s]
caldsver	4.9.3	&#160	ontime5	7449.3000574112	Sum of GTIs [s]
date	2020-10-25T10:23:14	Date and time of file creation	ontime6	7449.3000574112	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	7449.3000574112	Sum of GTIs [s]
			ontime8	7449.3000574112	Sum of GTIs [s]
			ontime9	7449.3000574112	Sum of GTIs [s]
			l1events	356942	Number of level 1 events

### 2.1.4 Events

	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	99702	58673	71159	72718	54690
rejected events	47672	50846	40649	54547	48047
rejected %	47%	86%	57%	75%	87%

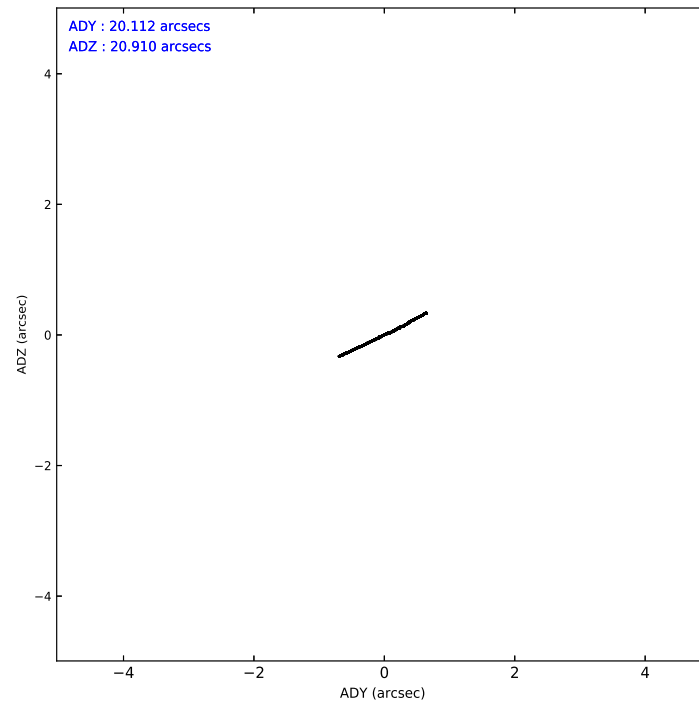
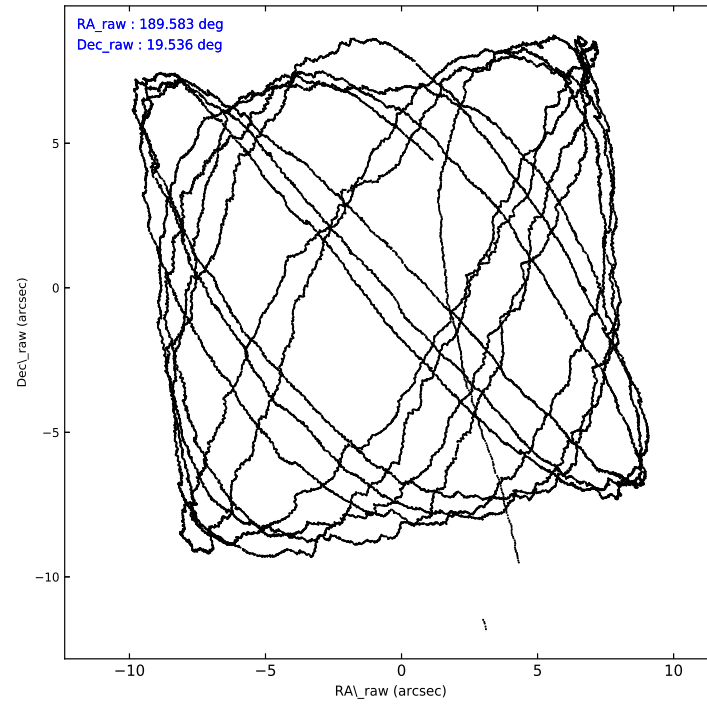
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	10669	3333	2528	5136	2304
	10%	5%	3%	7%	4%
grade 1 events	262	43	95	54	37
	0%	0%	0%	0%	0%
grade 2 events	14841	1811	6418	4447	1490
	14%	3%	9%	6%	2%
grade 3 events	1606	607	2351	1891	703
	1%	1%	3%	2%	1%
grade 4 events	1490	570	2376	1675	659
	1%	0%	3%	2%	1%
grade 5 events	5854	2499	7024	3954	2895
	5%	4%	9%	5%	5%
grade 6 events	23448	1509	16860	5025	1493
	23%	2%	23%	6%	2%
grade 7 events	41532	48301	33507	50536	45109
	41%	82%	47%	69%	82%

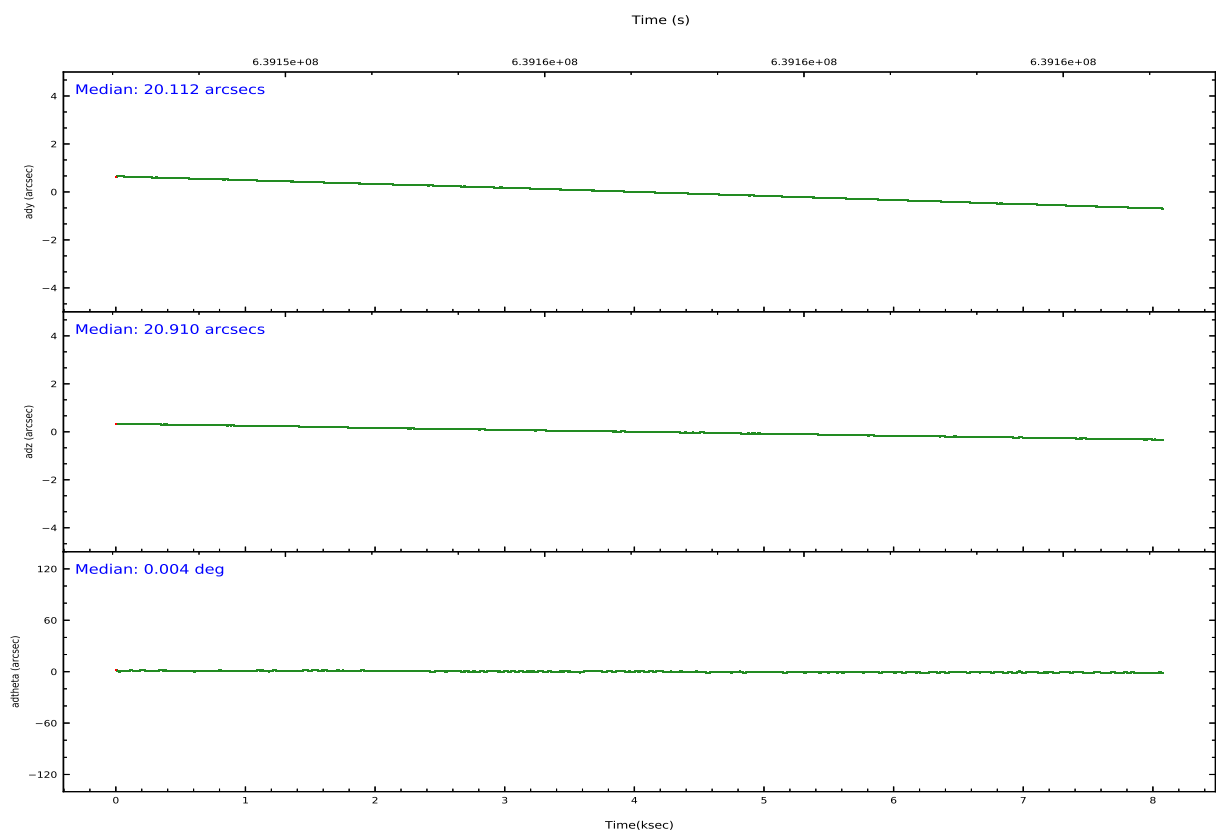
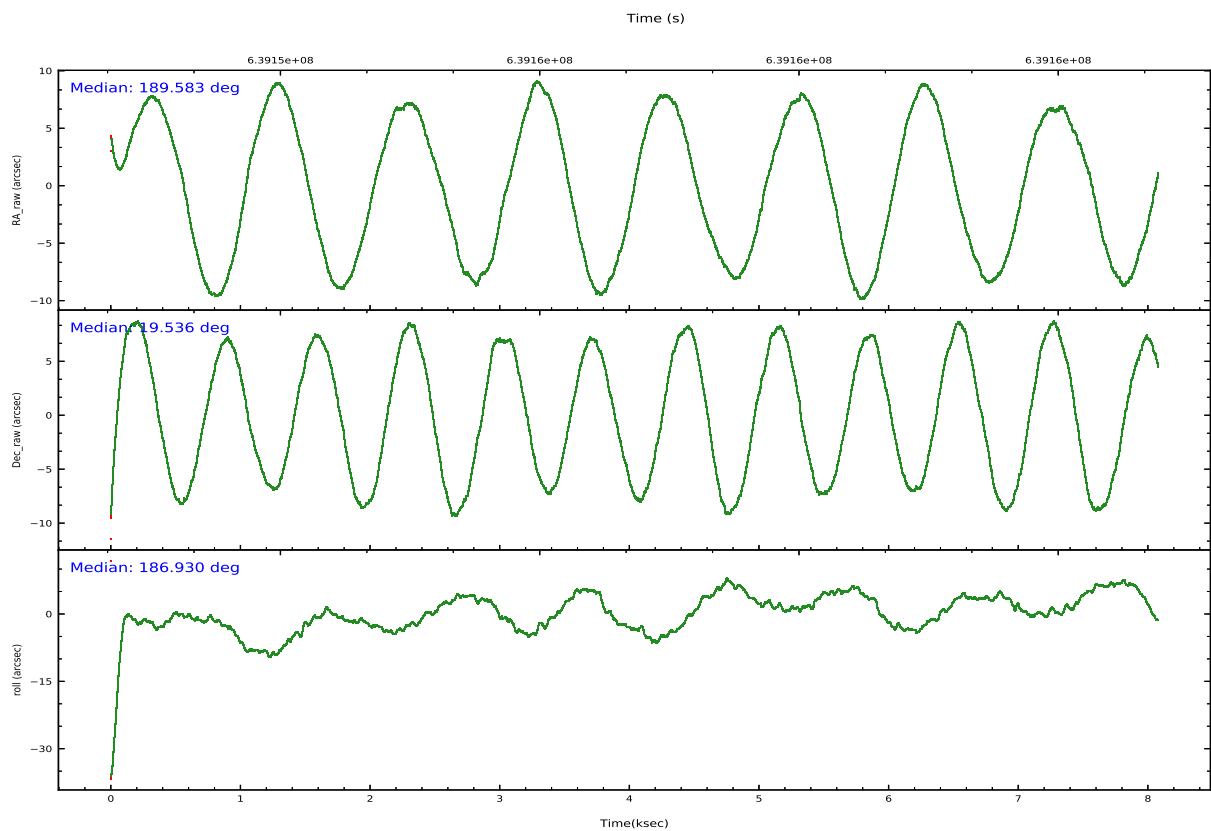


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-56789	ACIS-56789	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	189.606159	189.58846078847	CCD I2 on	N	N
[deg] Pointing Dec	19.552760	19.542720759278	CCD I3 on	N	N
[deg] Pointing Roll	186.774246	186.92994457366	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O1	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	639153371.184000	639152181.67335	CCD S5 on	O2	Y
Observation start date	2018-04-03T14:35:02	2018-04-03T14:16:21	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	639160771.184000	639161423.07389	On-chip summing requested	N	N
Observation end date	2018-04-03T16:38:22	2018-04-03T16:50:23	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



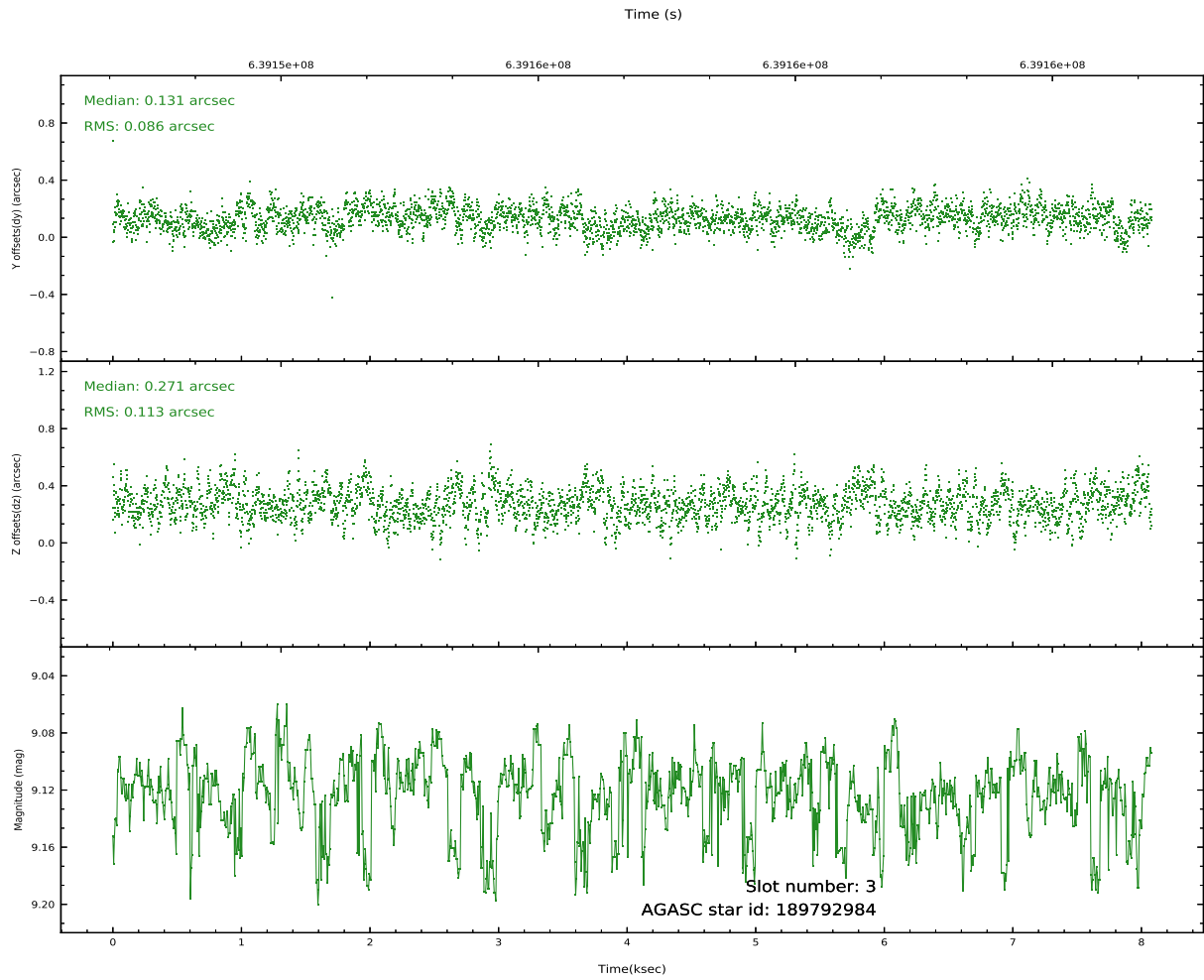
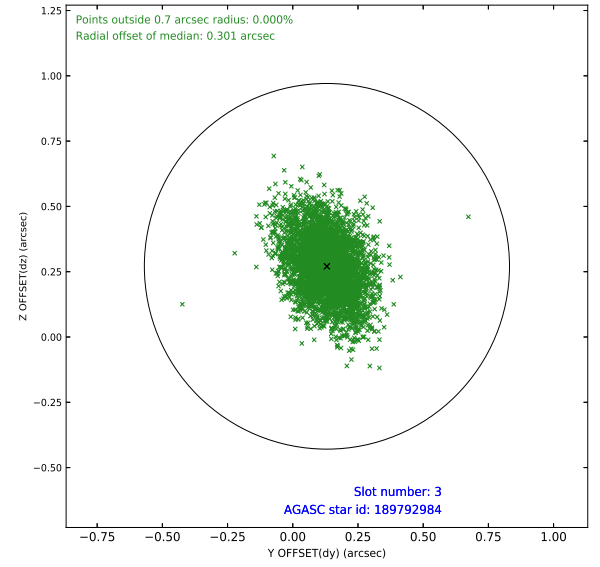
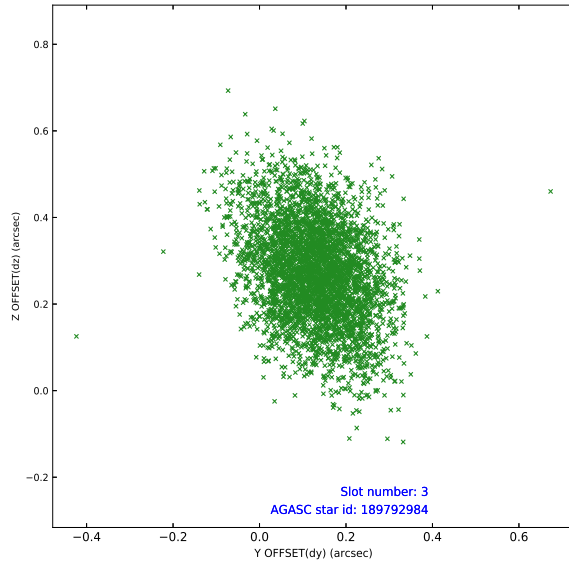


Slot Statistics

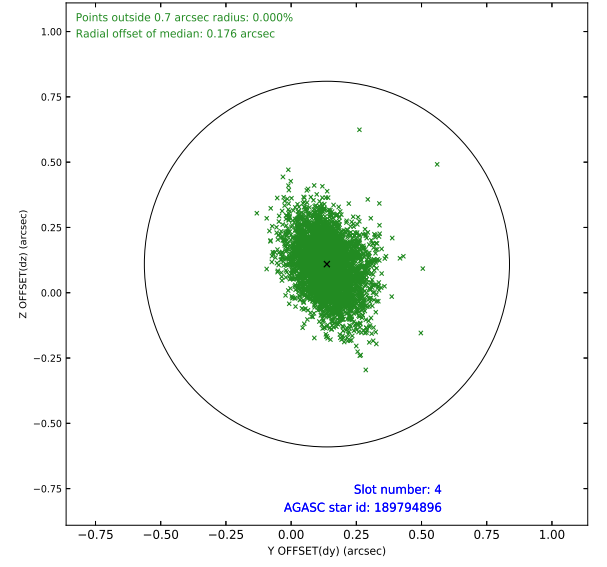
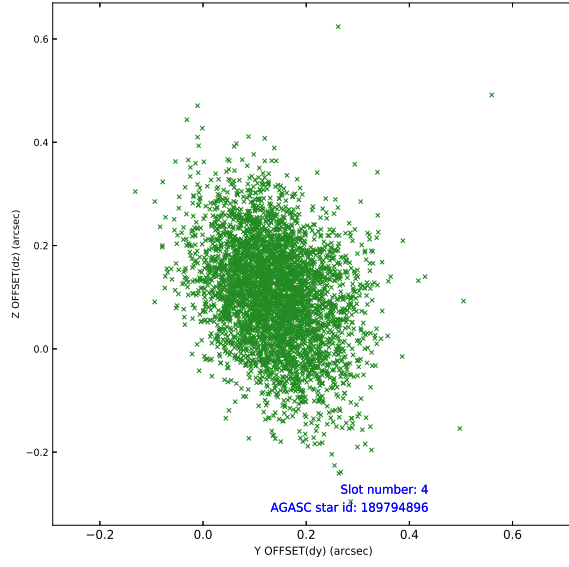
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.04	1971	1.000	0.097	-0.095	0.016	0.033	0.000000	0.000000	-773.36	-1742
1	FID		ACIS-S-4	7.16	1970	1.000	0.123	-0.020	0.024	0.044	0.000000	0.000000	2139.88	165
2	FID		ACIS-S-5	7.15	1971	1.000	-0.251	0.126	0.014	0.021	0.000000	0.000000	-1825.40	160
3	GUIDE	used	189792984	9.12	3936	1.000	0.131	0.271	0.148	0.249	190.107384	19.782386	-1782.18	-623
4	GUIDE	used	189794896	8.54	3939	1.000	0.137	0.110	0.133	0.222	189.904460	19.929724	-1160.88	-1227
5	GUIDE	used	189795048	9.49	3939	1.000	0.078	-0.281	0.260	0.422	189.176149	19.439954	1498.02	229
6	GUIDE	used	189795240	8.83	3938	1.000	-0.330	-0.038	0.177	0.287	189.463954	18.896885	759.71	2287
7	GUIDE	used	189795984	8.85	3938	1.000	-0.038	-0.055	0.141	0.248	189.982595	19.585310	-1281.12	33

## 2.4 Star Slots

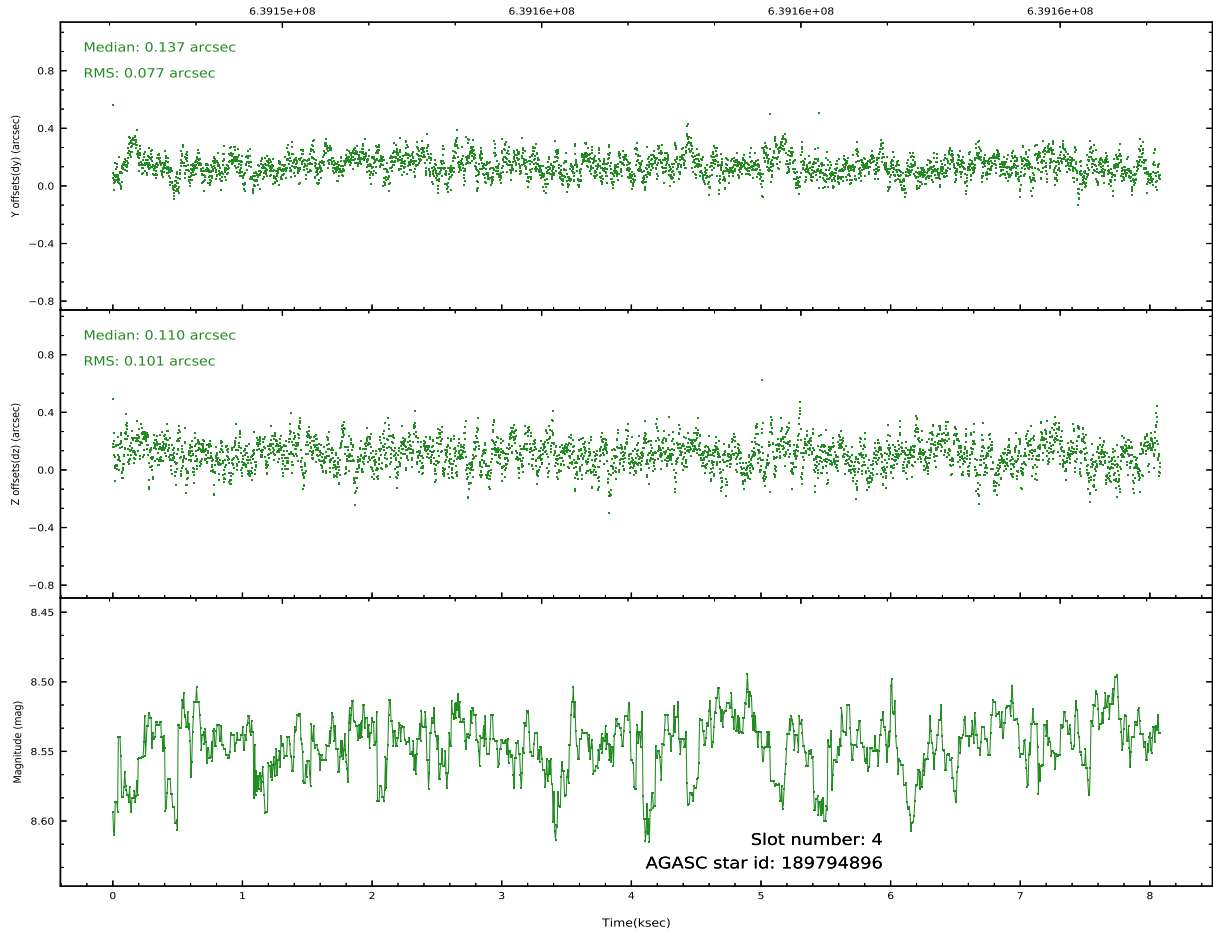
### 2.4.1 Slot 3



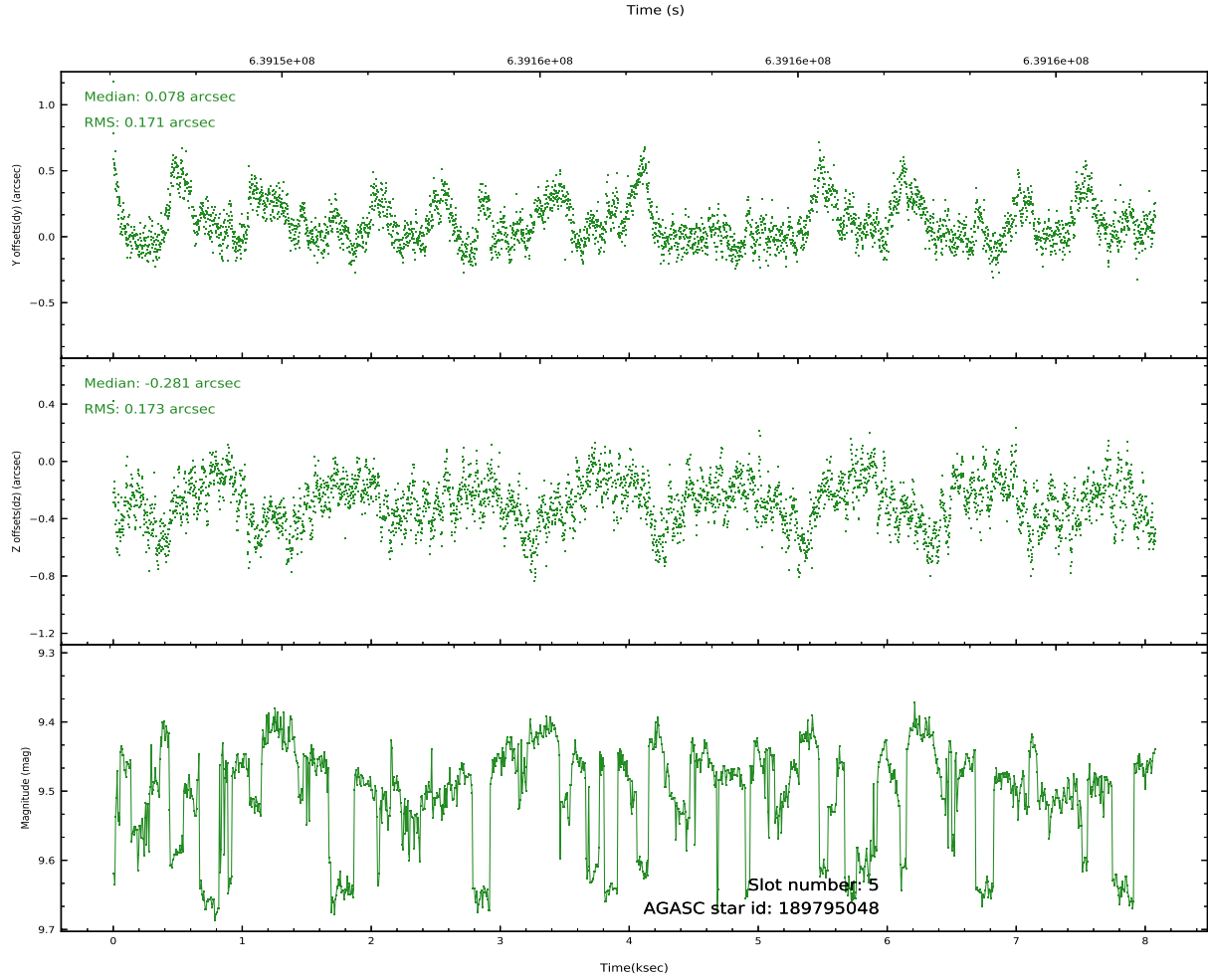
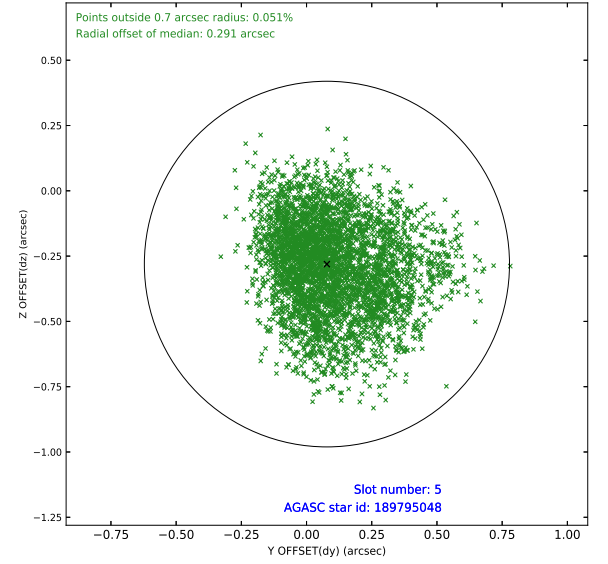
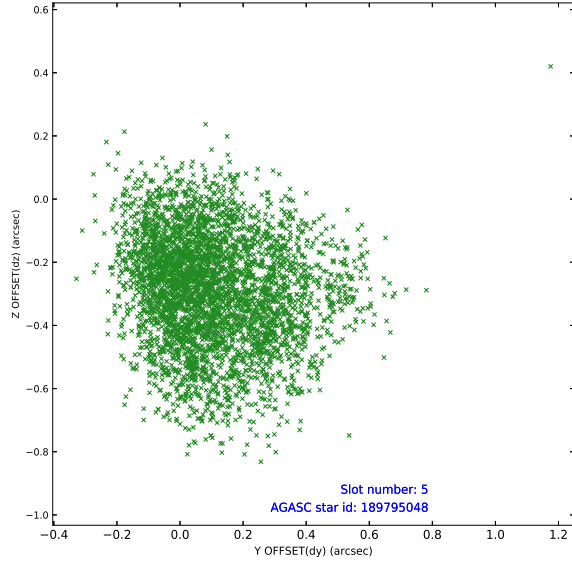
## 2.4.2 Slot 4



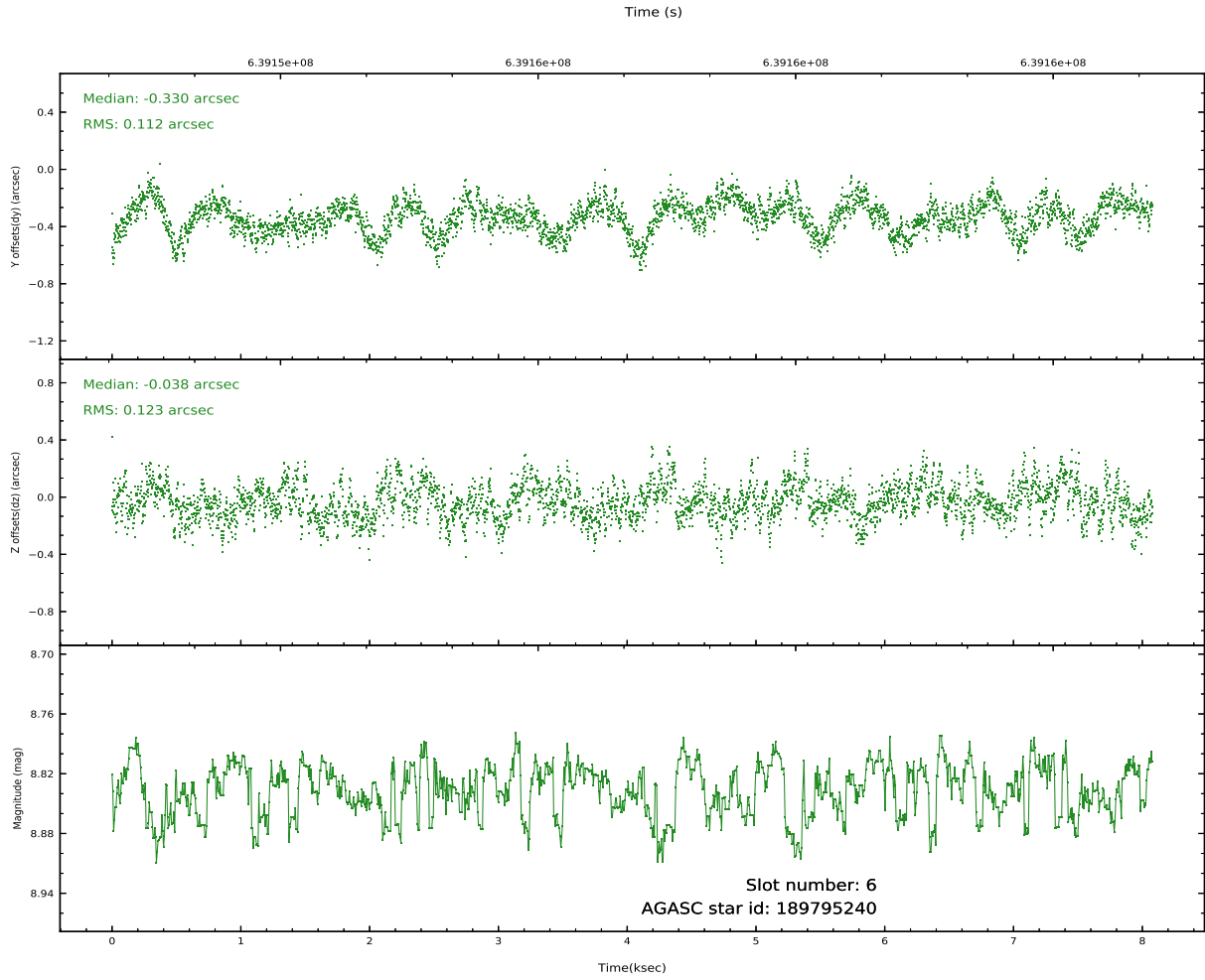
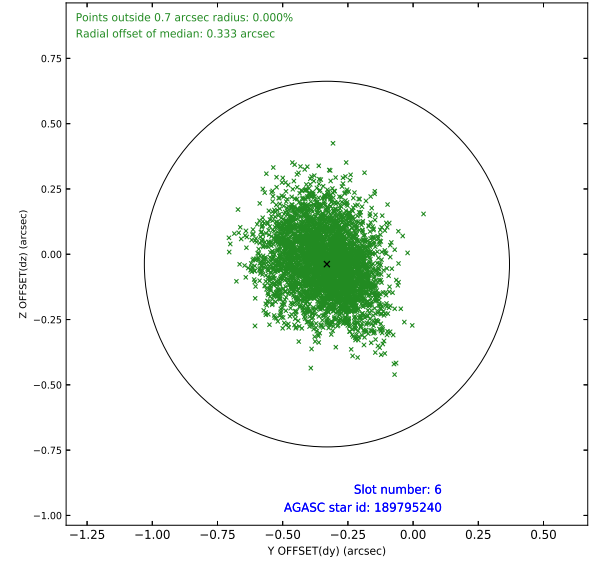
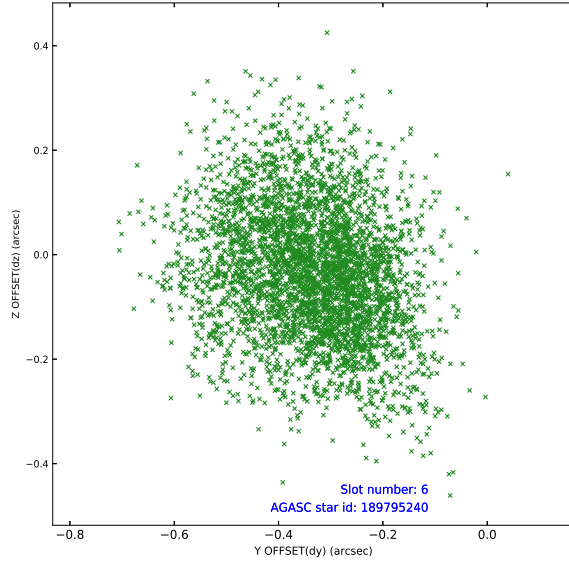
Time (s)



### 2.4.3 Slot 5

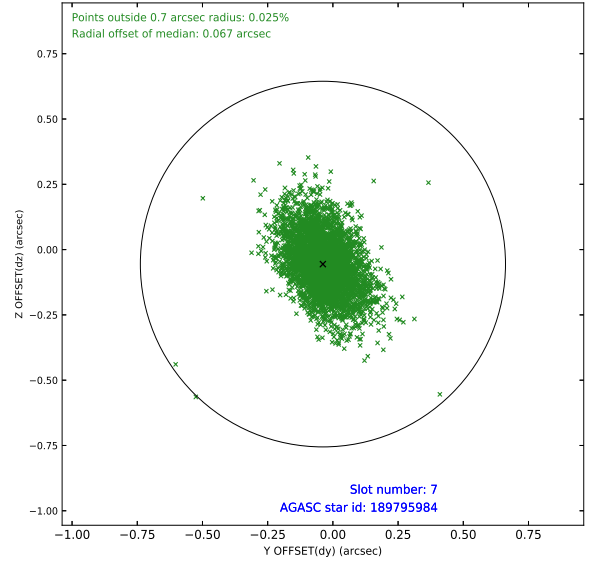
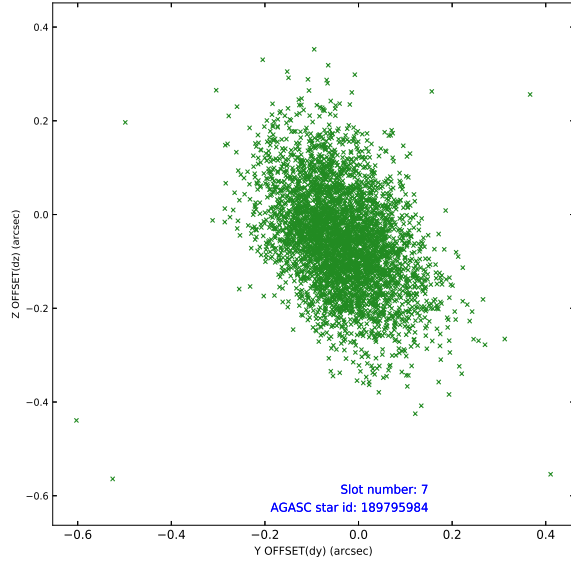


## 2.4.4 Slot 6

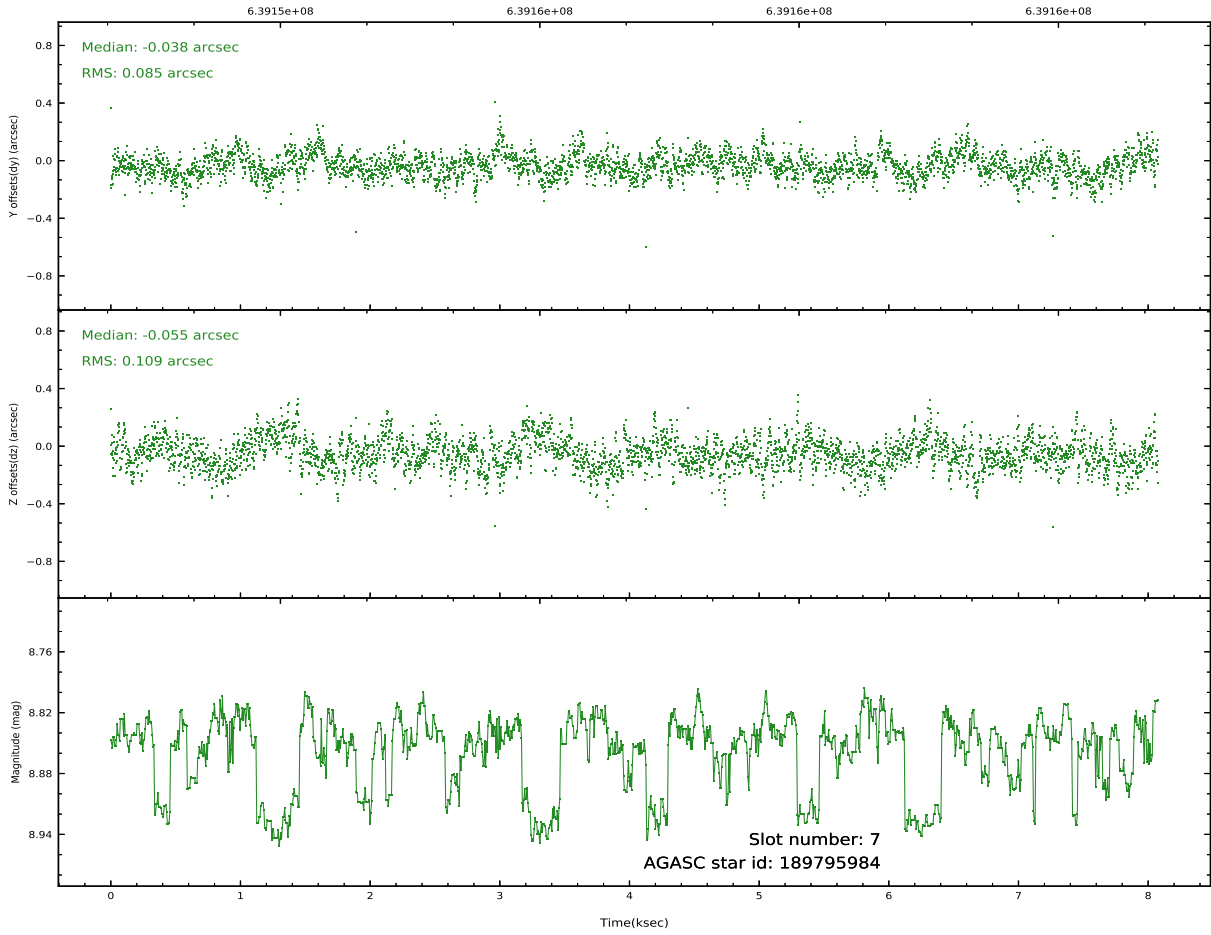




## 2.4.5 Slot 7

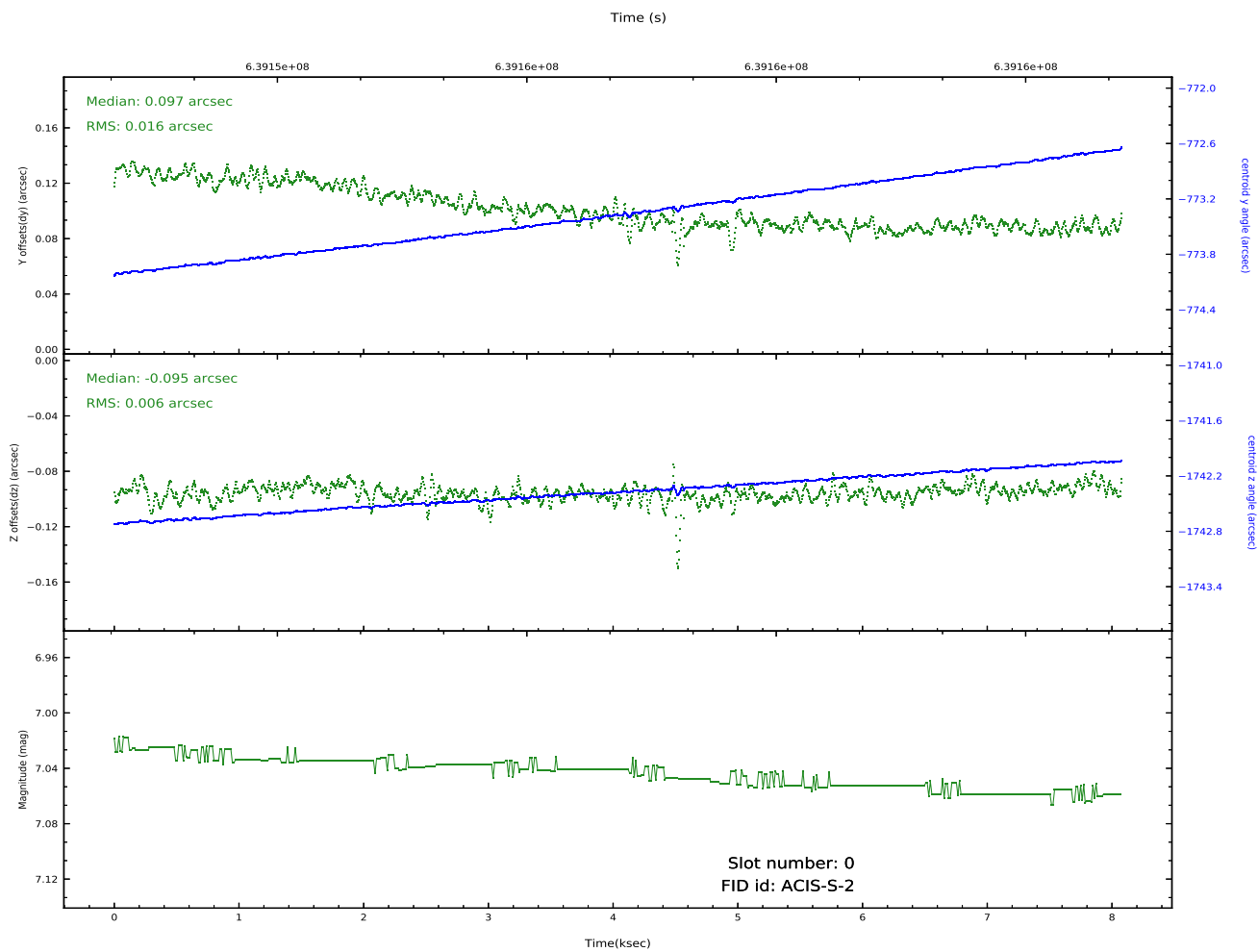
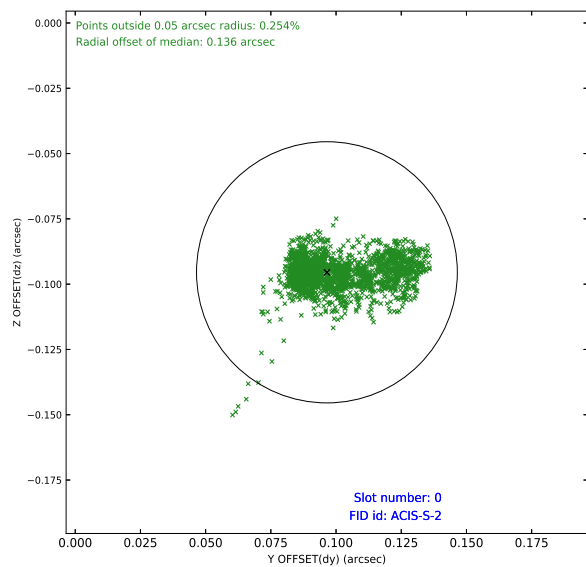
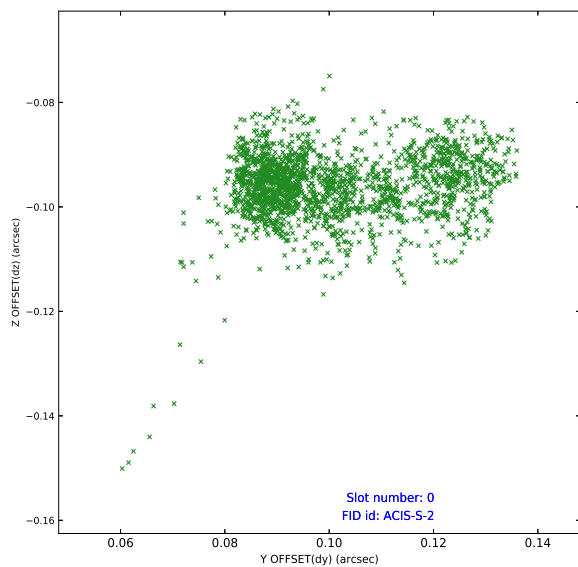


Time (s)

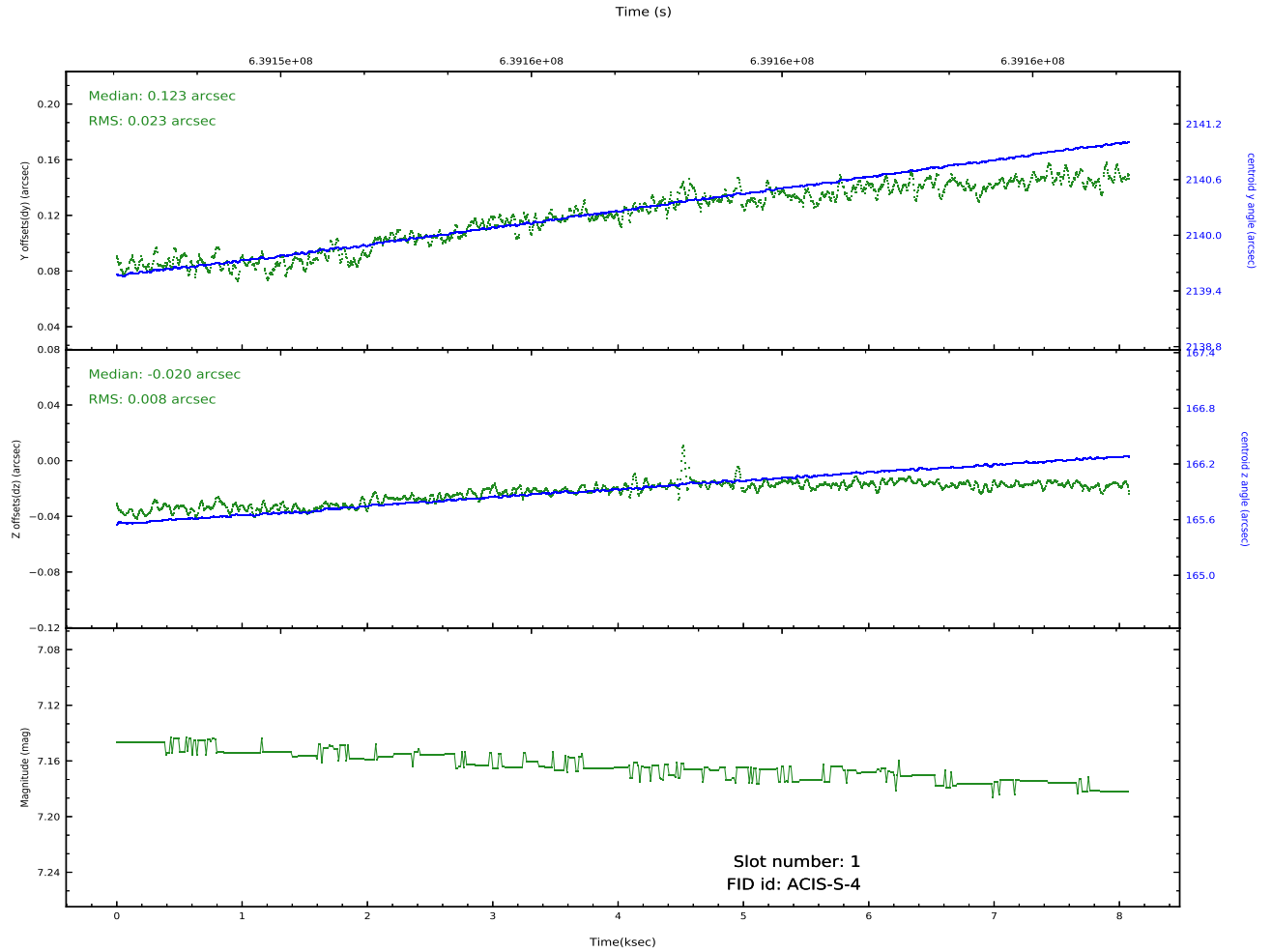
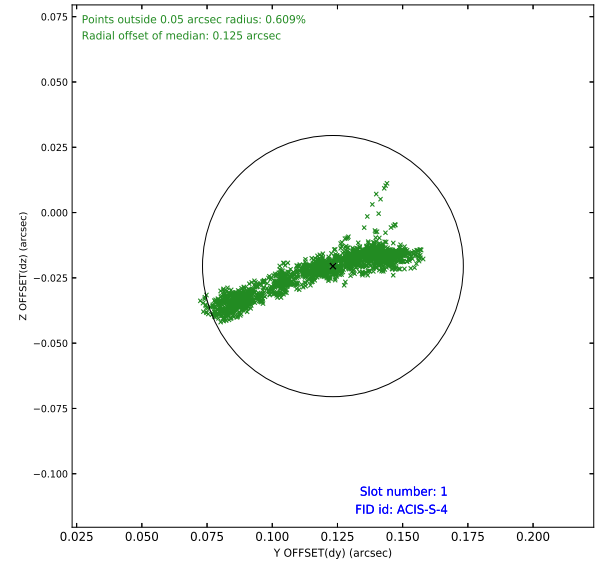
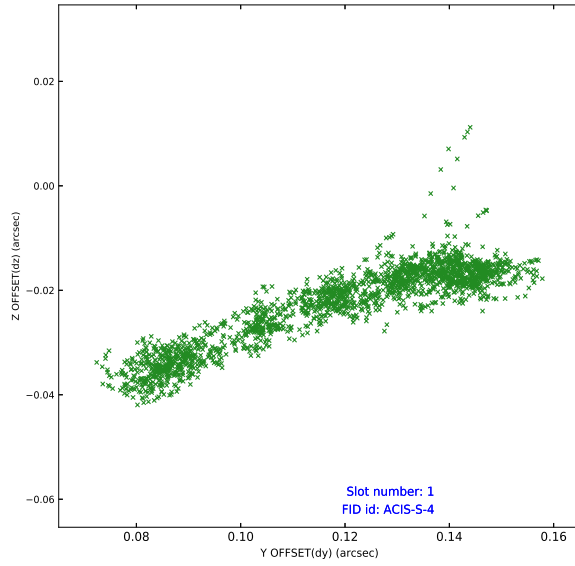


## 2.5 FID Slots

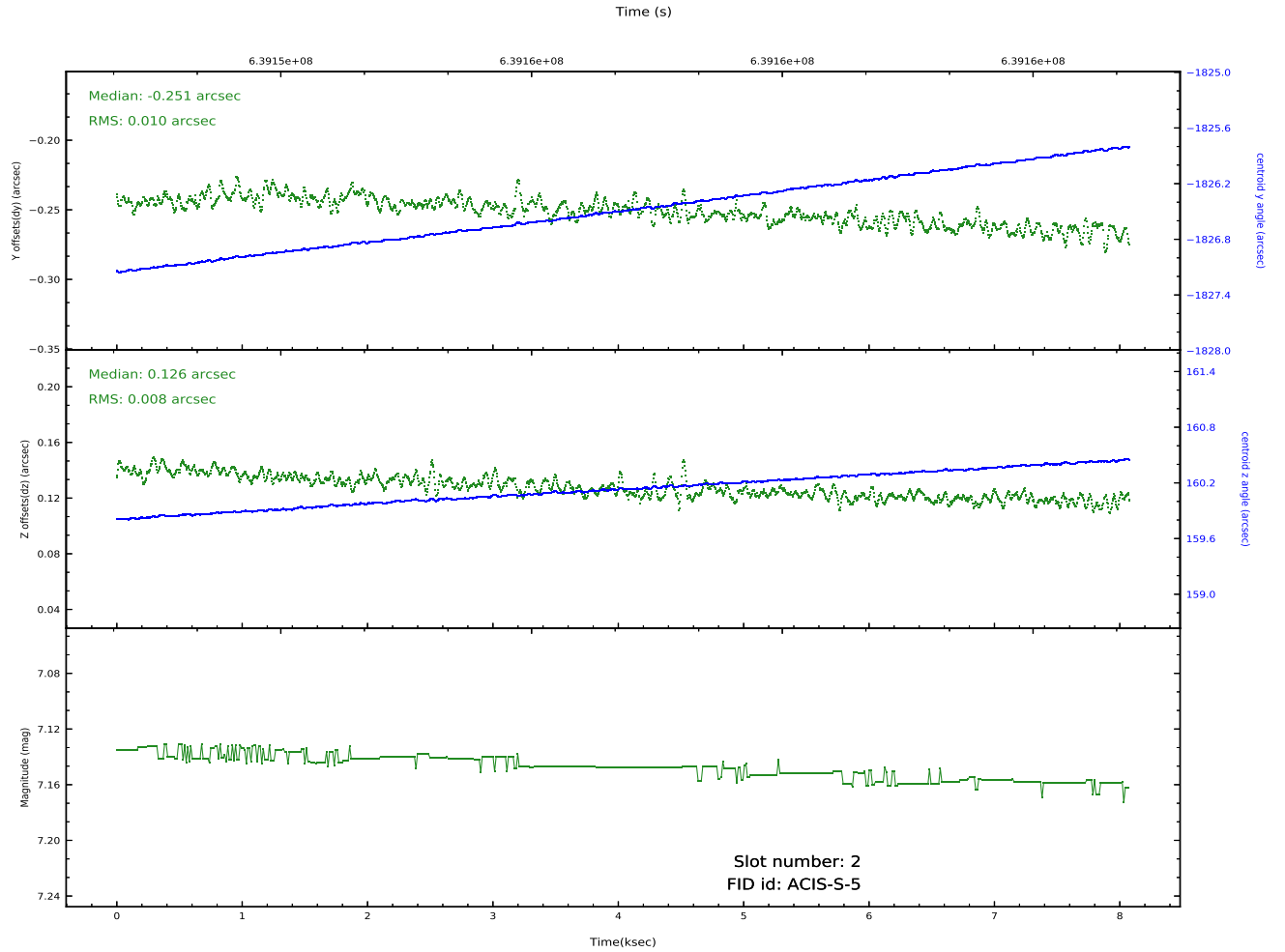
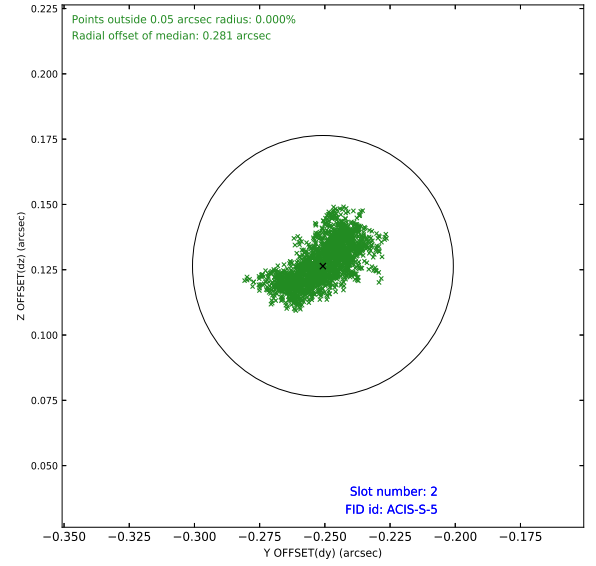
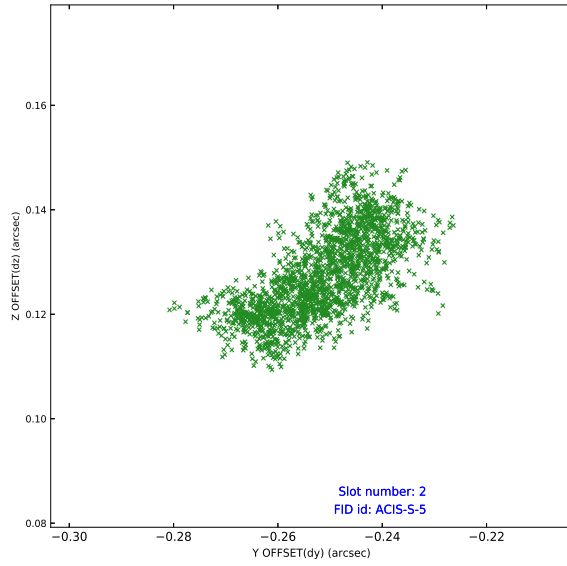
### 2.5.1 Slot 0



## 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)	2020.10.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	7.4493000574112

### A.2 Comments