

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 21014 - L2 Version 2  
Chandra X-Ray Center

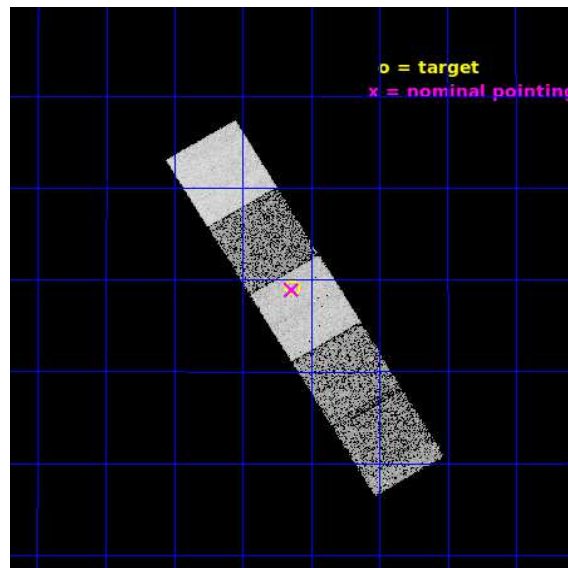
L2 Processing Date : Oct 28 2020

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# 1 Front

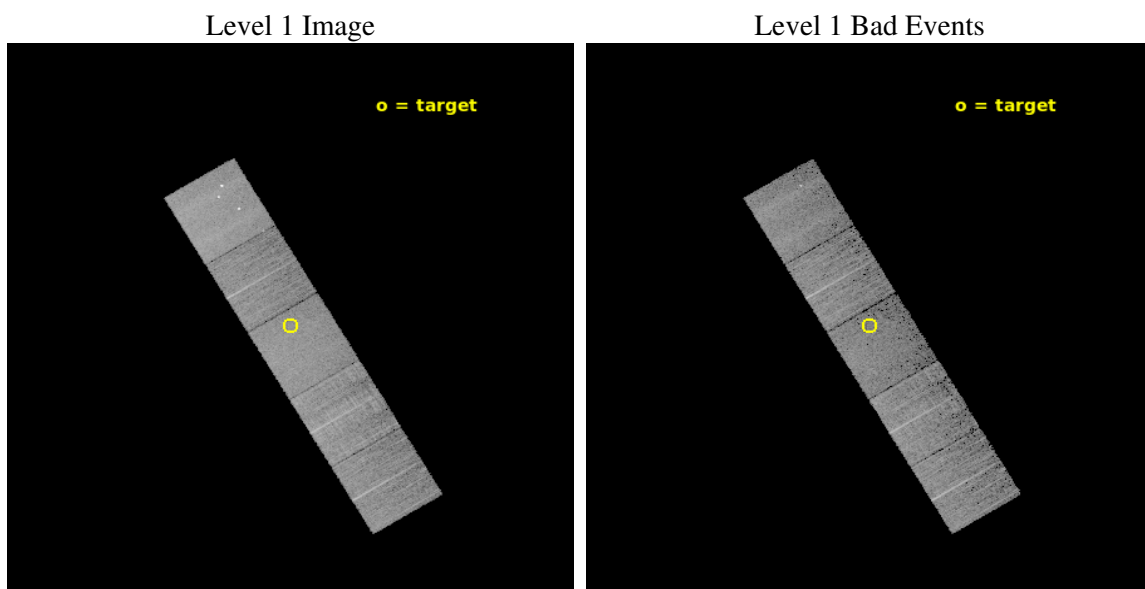
seq_num	703655	Sequence number
obs_id	21014	Observation id
title	LOW SURFACE BRIGHTNESS GALAXIES AND THE BLACK HOLE OCCUPATION FRACTION	Proposal title
observer	Elena Gallo	Principal investigator
object	LSBC F570-06	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	169.409167	Observer's specified target RA [deg]
dec_targ	17.818083	Observer's specified target Dec [deg]
ra_nom	169.40978710278	Nominal RA [deg]
dec_nom	17.815468092873	Nominal Dec [deg]
roll_nom	59.152541718842	Nominal Roll [deg]
revision	2	Processing version of data
ontime	6742.5000519753	Sum of GTIs [s]
livetime	6654.4043250399	Livetime [s]
ontime5	6742.5000519753	Sum of GTIs [s]
ontime6	6742.5000519753	Sum of GTIs [s]
ontime7	6742.5000519753	Sum of GTIs [s]
ontime8	6742.5000519753	Sum of GTIs [s]
ontime9	6742.5000519753	Sum of GTIs [s]
l2events	81257	Number of level 2 events



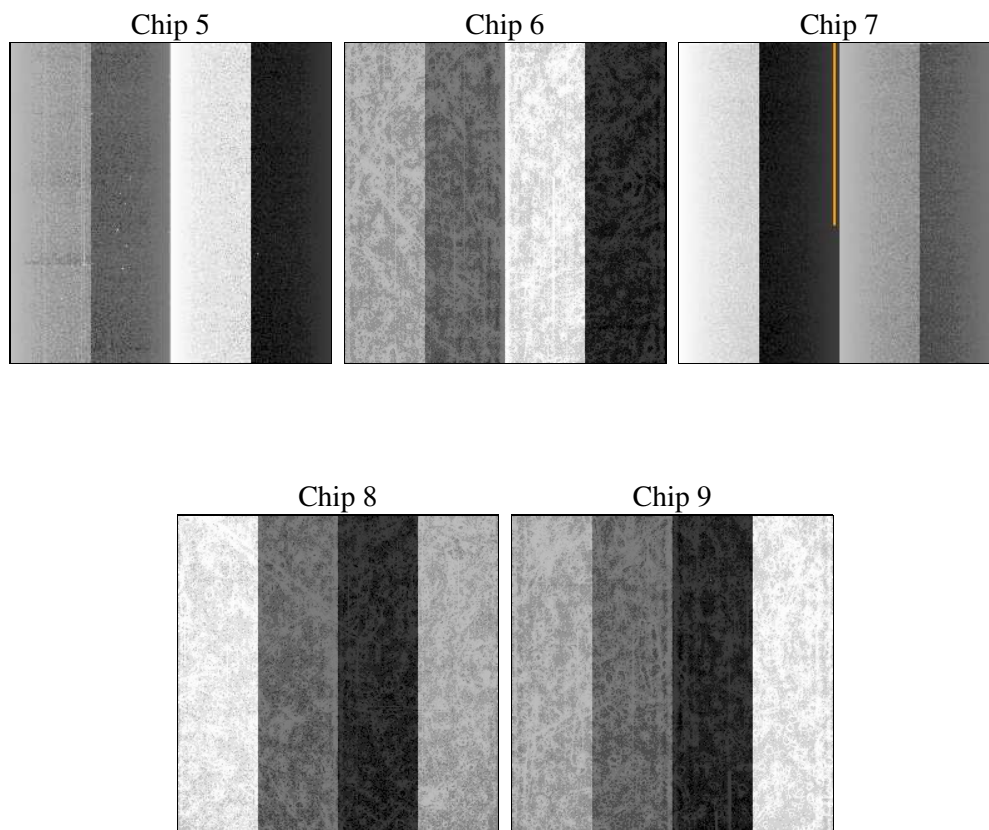
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	6700.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	6742.5000519753	Sum of GTIs [s]
caldsver	4.9.3	&#160	ontime5	6742.5000519753	Sum of GTIs [s]
date	2020-10-28T06:59:57	Date and time of file creation	ontime6	6742.5000519753	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	6742.5000519753	Sum of GTIs [s]
			ontime8	6742.5000519753	Sum of GTIs [s]
			ontime9	6742.5000519753	Sum of GTIs [s]
			l1events	330936	Number of level 1 events

### 2.1.4 Events

	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	86247	54787	66667	68691	54544
rejected events	44690	48915	38210	51679	48328
rejected %	51%	89%	57%	75%	88%

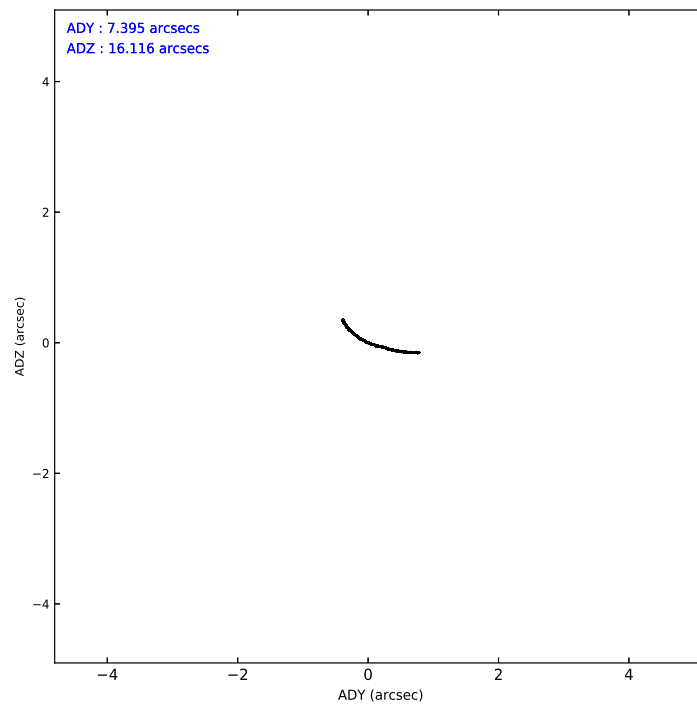
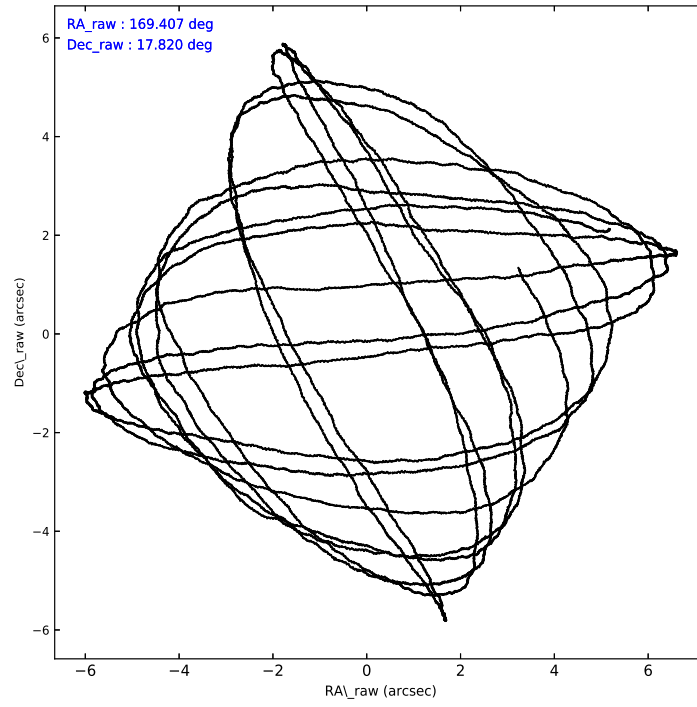
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	4640	1708	2384	4820	2018
	5%	3%	3%	7%	3%
grade 1 events	519	38	97	67	29
	0%	0%	0%	0%	0%
grade 2 events	12512	1569	5944	4111	1531
	14%	2%	8%	5%	2%
grade 3 events	1176	481	2142	1707	589
	1%	0%	3%	2%	1%
grade 4 events	1184	458	2142	1643	576
	1%	0%	3%	2%	1%
grade 5 events	5261	2109	6396	3513	2546
	6%	3%	9%	5%	4%
grade 6 events	22088	1659	15885	4737	1506
	25%	3%	23%	6%	2%
grade 7 events	38867	46765	31677	48093	45749
	45%	85%	47%	70%	83%

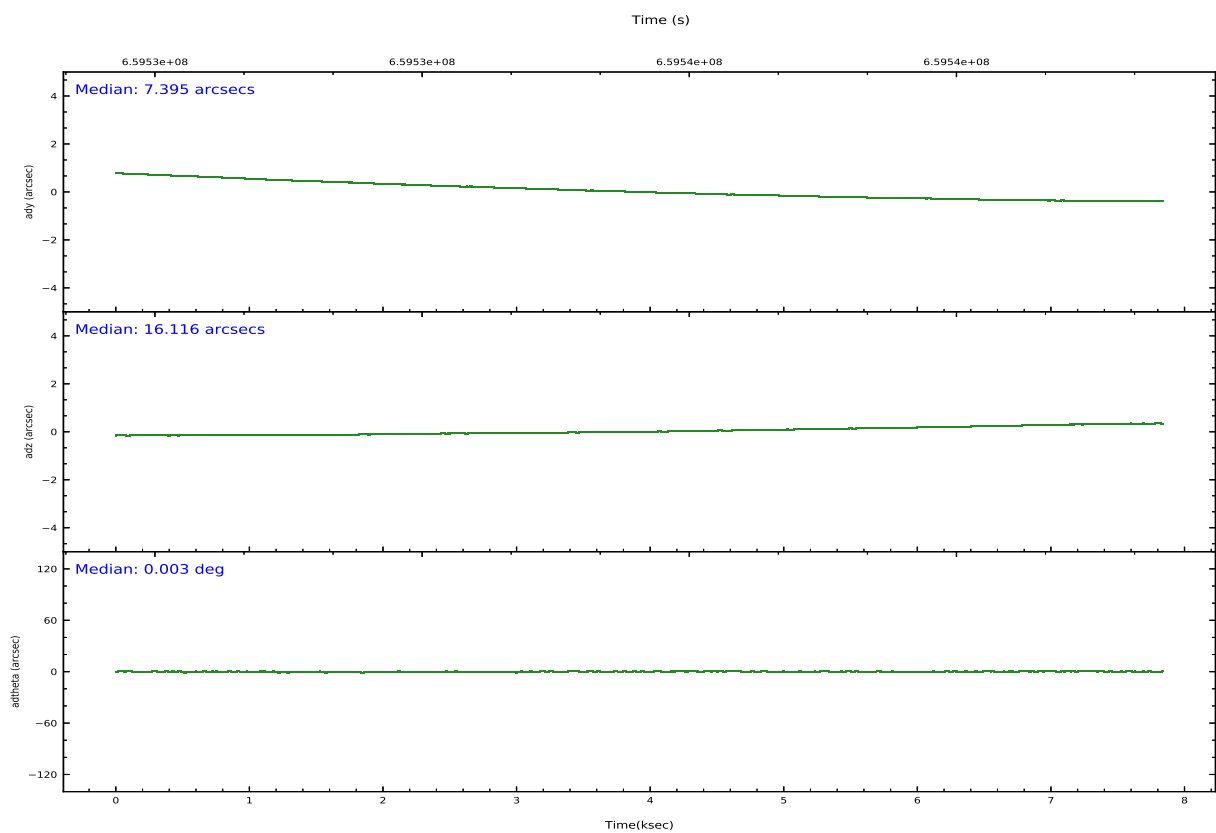
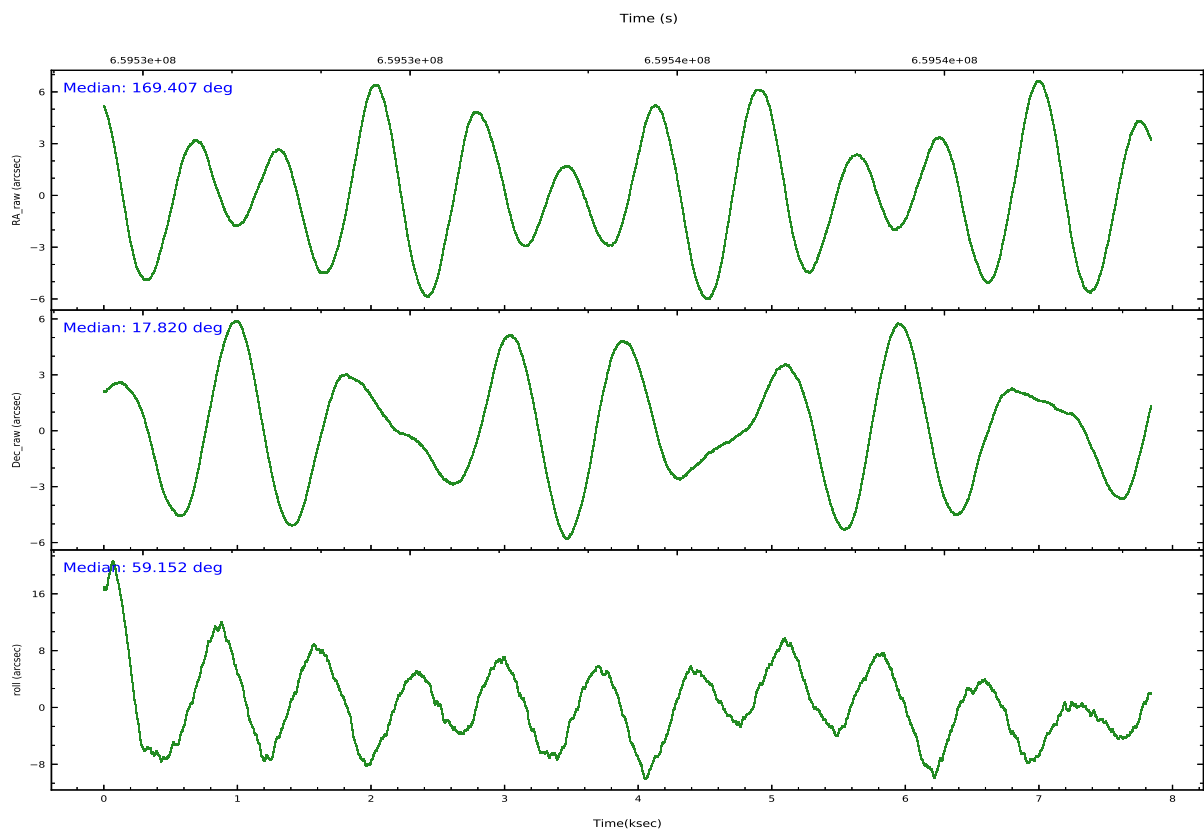


## 2.2 Compared Parameters

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	169.406850	169.40978710278	CCD I2 on	N	N
[deg] Pointing Dec	17.792471	17.815468092873	CCD I3 on	N	N
[deg] Pointing Roll	59.000712	59.152541718842	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)	659532848.184000	659531525.08647	CCD S5 on	O2	Y
Observation start date	2018-11-25T11:32:59	2018-11-25T11:12:05	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	659539548.184000	659539682.03696	On-chip summing requested	N	N
Observation end date	2018-11-25T13:24:39	2018-11-25T13:28:02	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



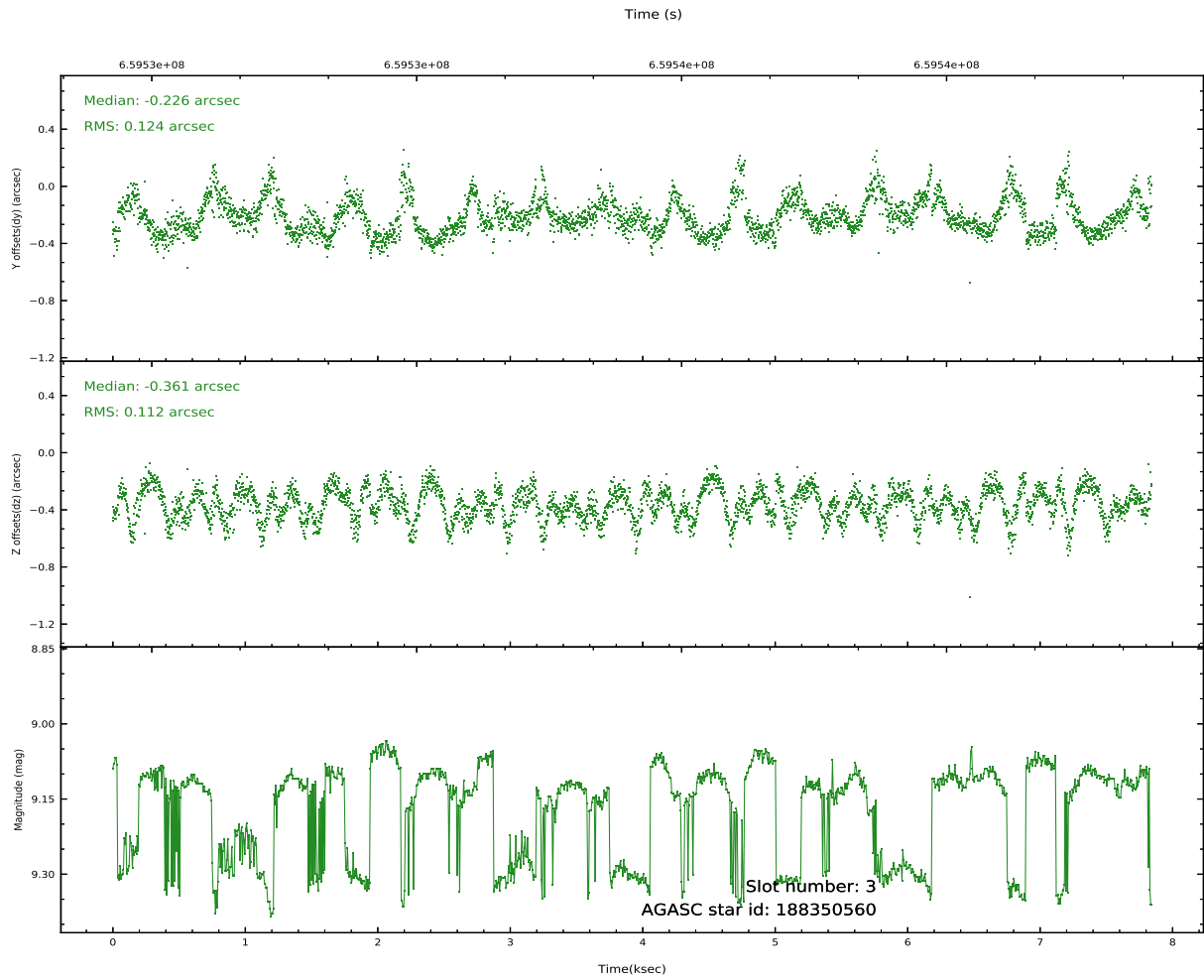
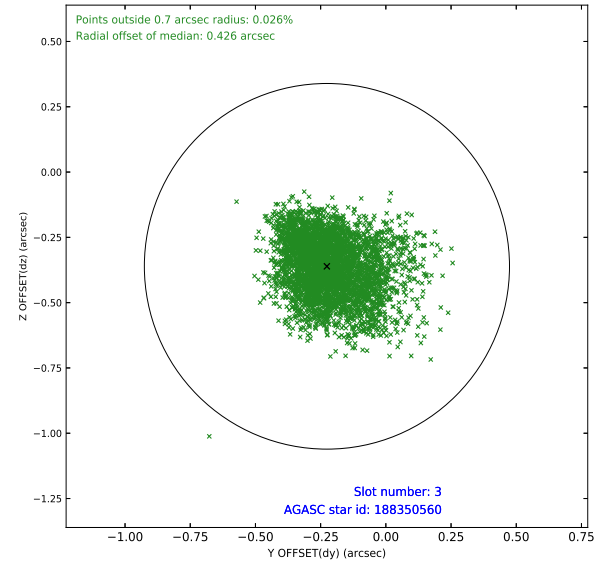
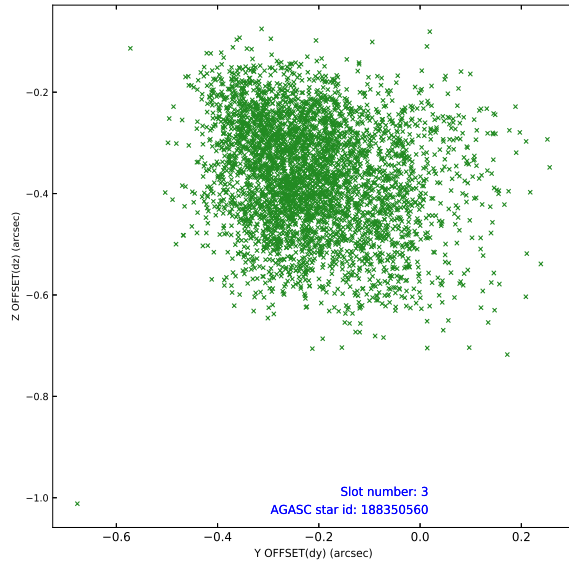


Slot Statistics

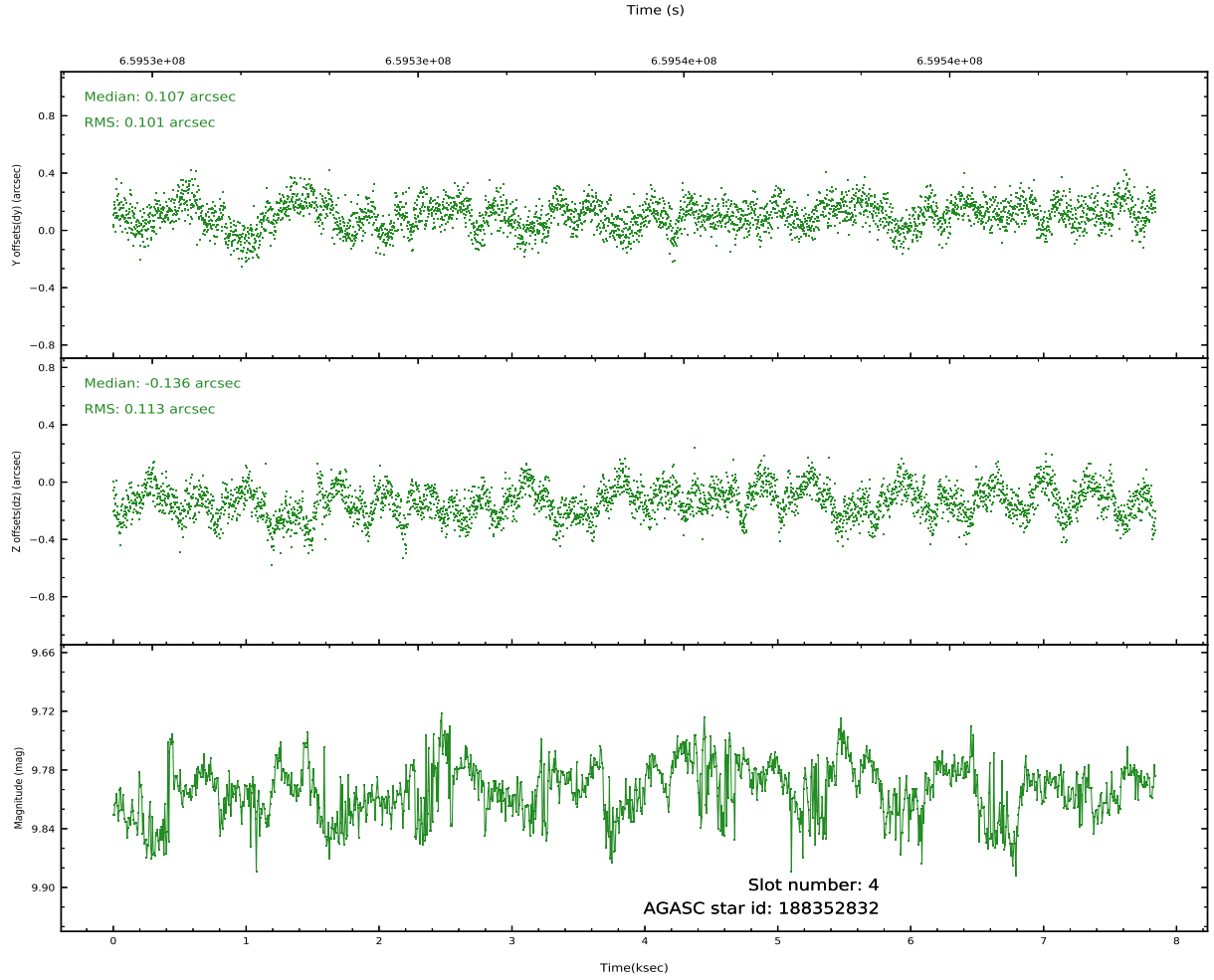
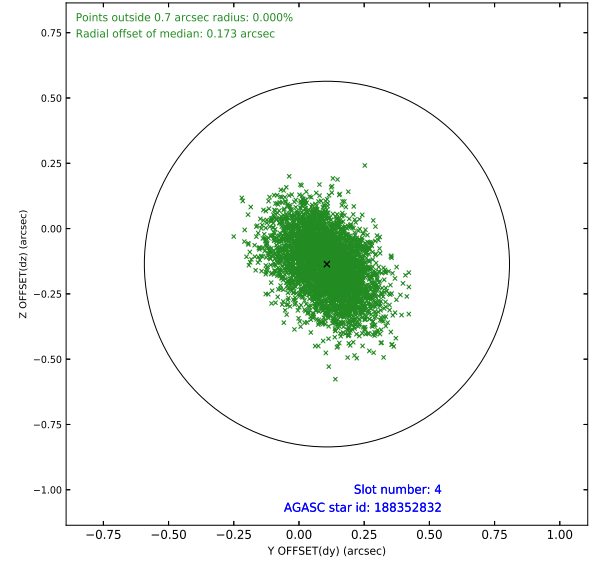
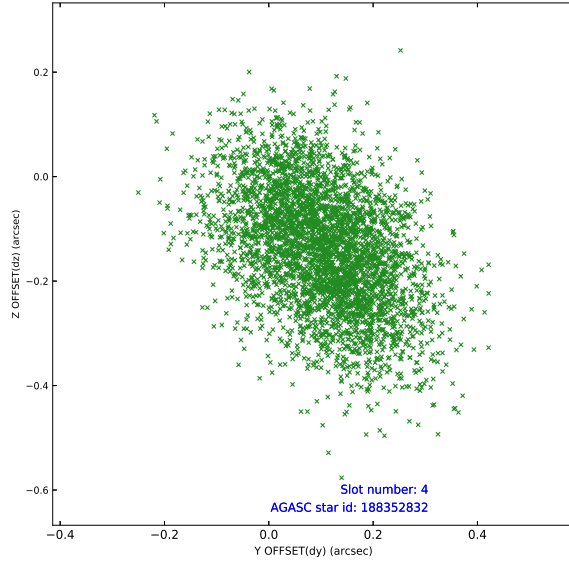
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.11	1913	1.000	0.108	-0.097	0.014	0.023	0.000000	0.000000	-760.34	-1737
1	FID		ACIS-S-4	7.25	1913	1.000	0.160	-0.027	0.013	0.024	0.000000	0.000000	2152.91	169
2	FID		ACIS-S-5	7.21	1913	1.000	-0.296	0.131	0.019	0.038	0.000000	0.000000	-1812.42	165
3	GUIDE	used	188350560	9.13	3820	1.000	-0.226	-0.361	0.174	0.289	169.125610	18.641654	2127.40	2397
4	GUIDE	used	188352832	9.80	3818	1.000	0.107	-0.136	0.160	0.266	169.850472	18.107090	1754.54	-715
5	GUIDE	used	188356304	8.86	3823	1.000	0.196	0.154	0.178	0.316	170.271350	17.871482	1776.69	-2388
6	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
7	GUIDE	used	188371152	9.96	3807	1.000	-0.101	0.345	0.247	0.441	169.317956	17.570920	-839.66	-149

## 2.4 Star Slots

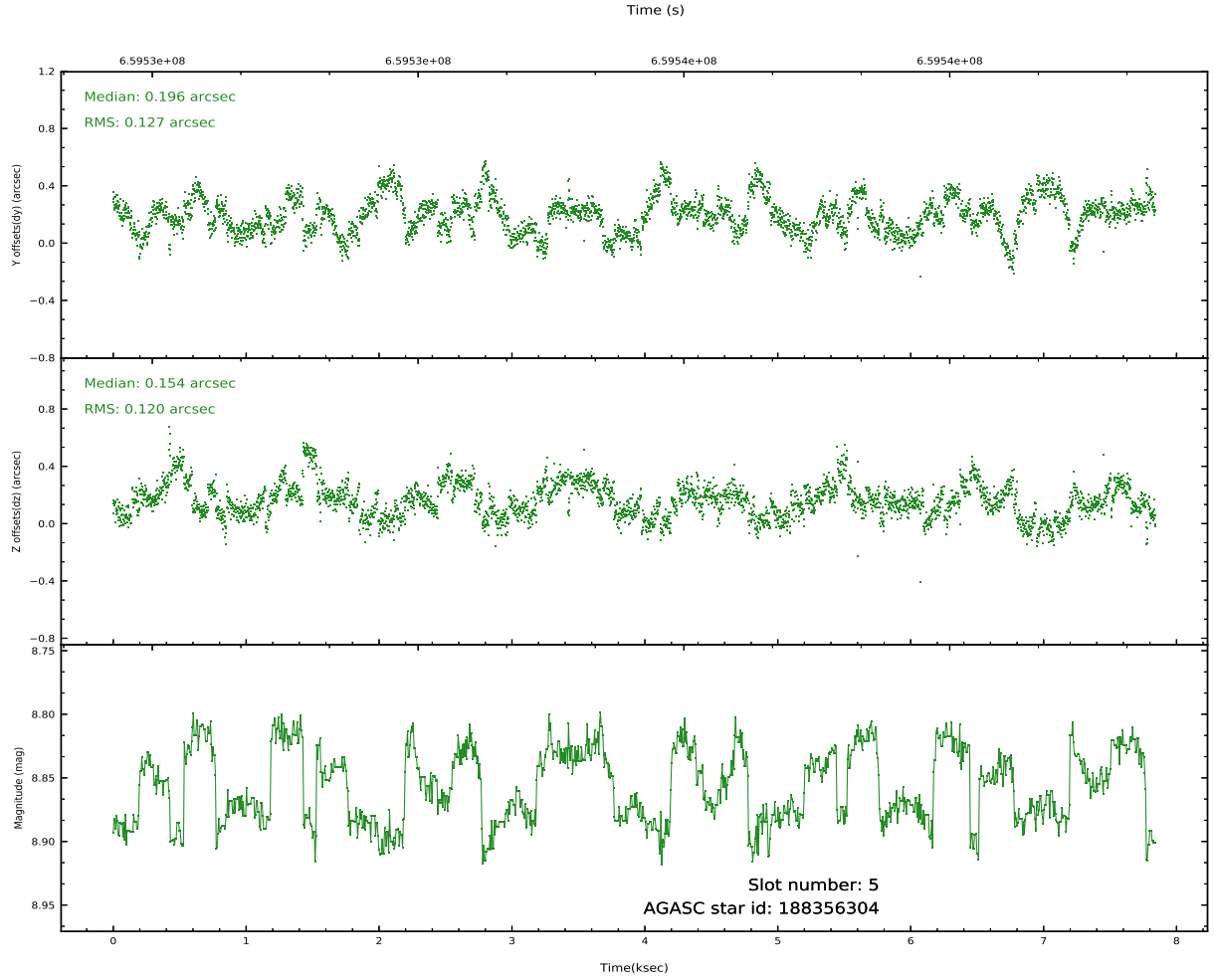
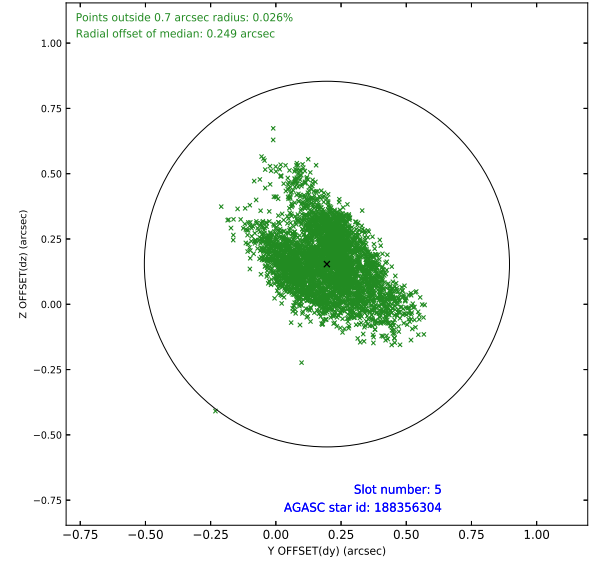
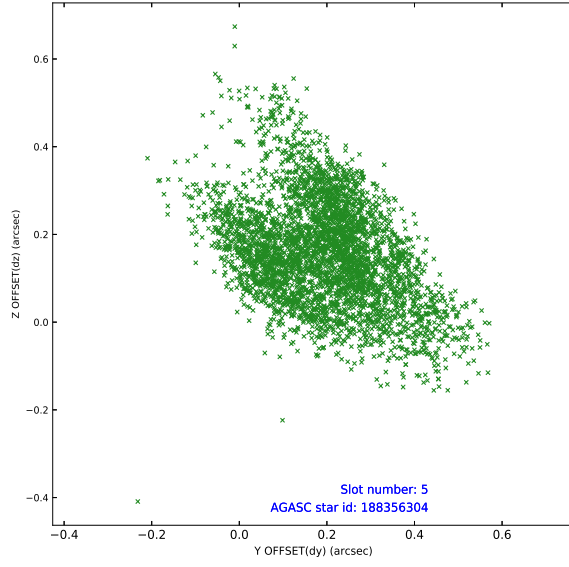
### 2.4.1 Slot 3



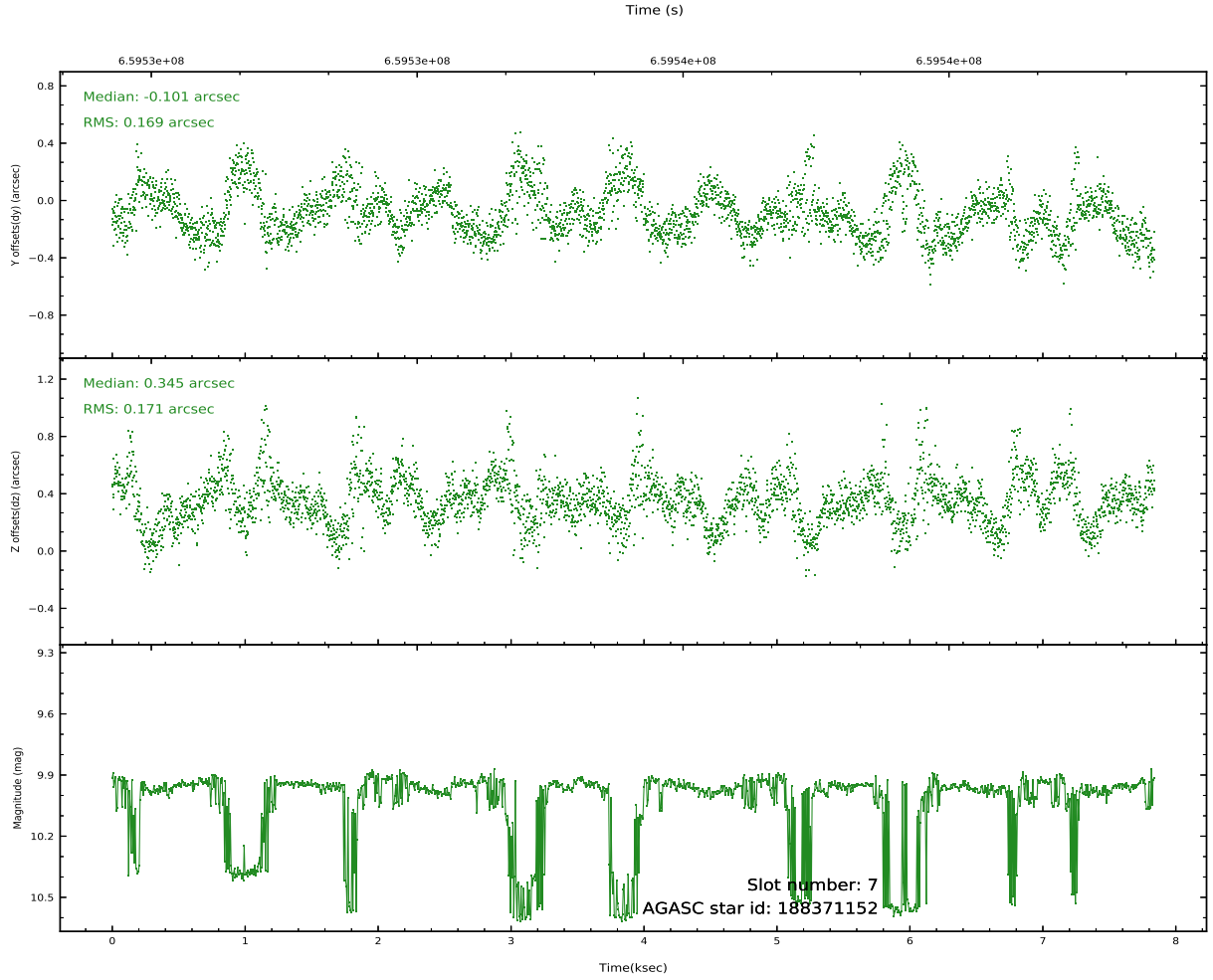
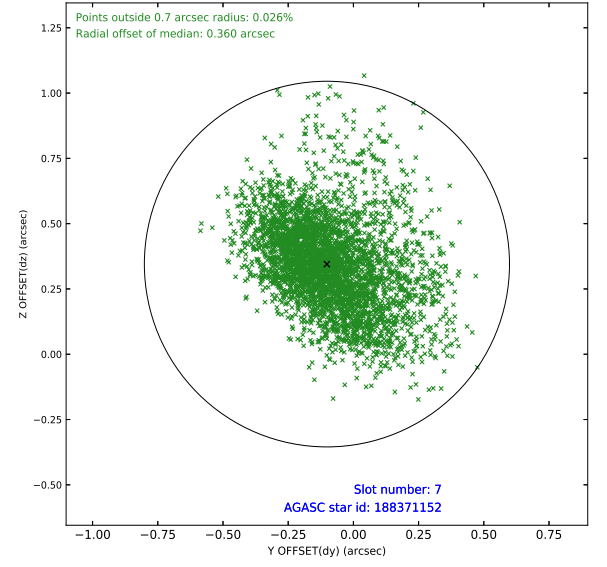
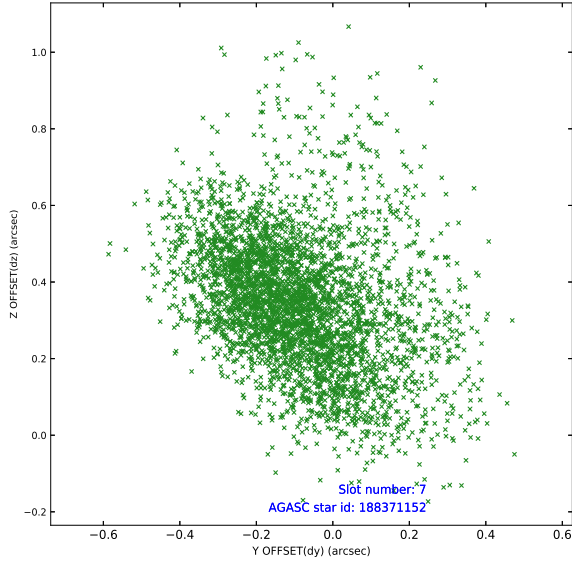
## 2.4.2 Slot 4



### 2.4.3 Slot 5



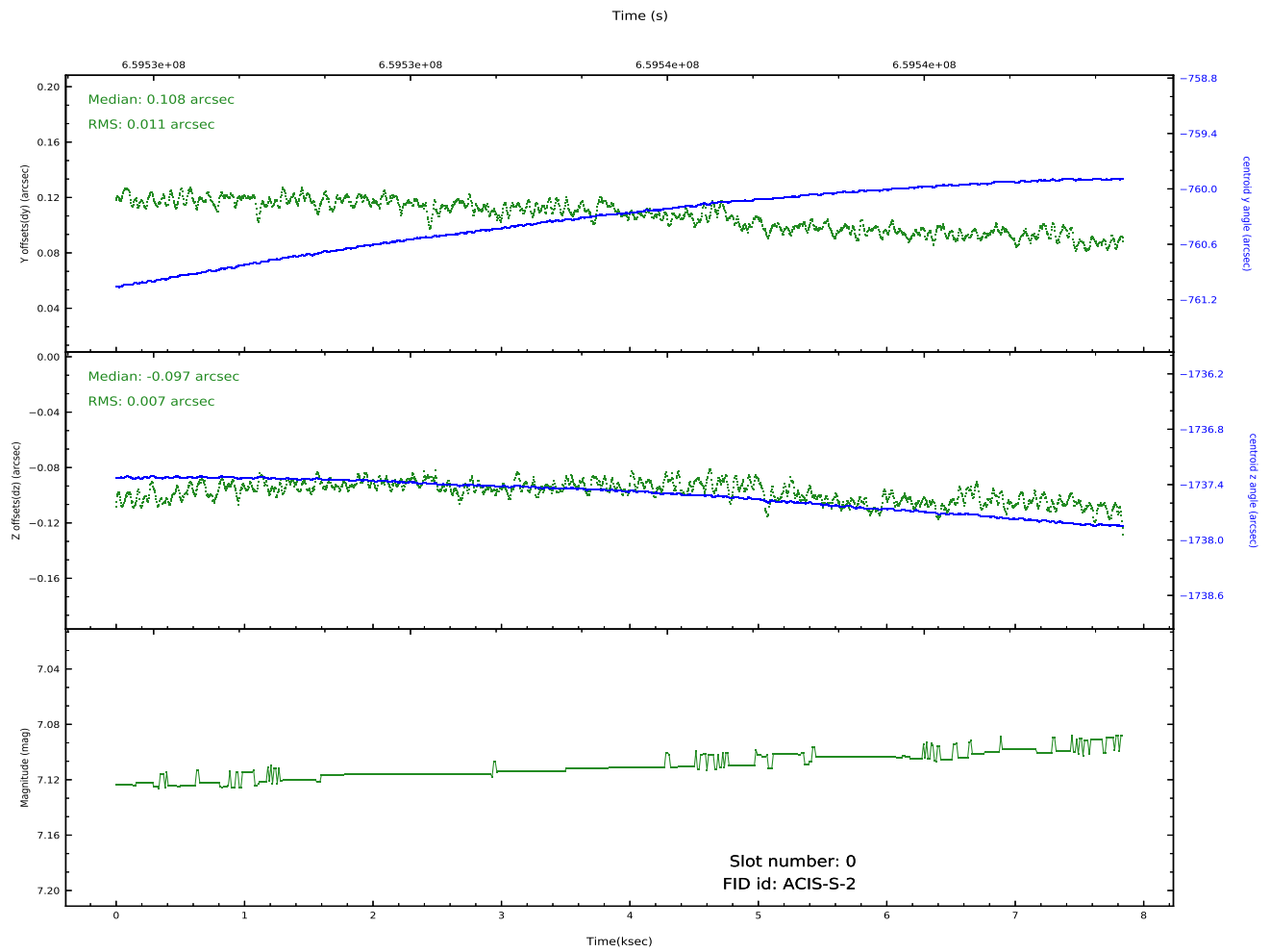
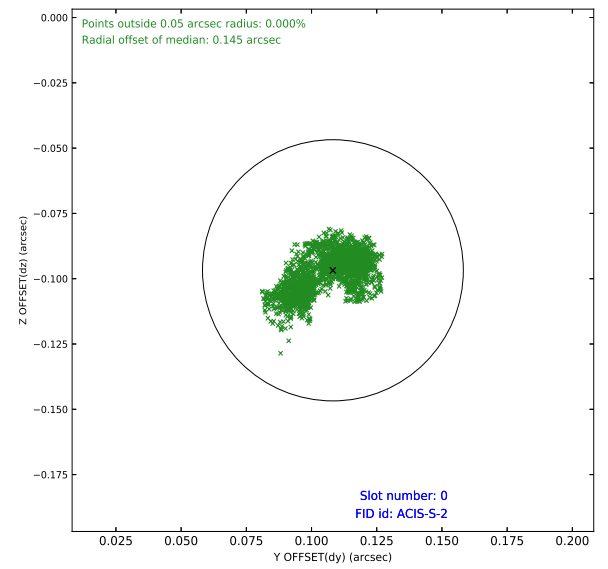
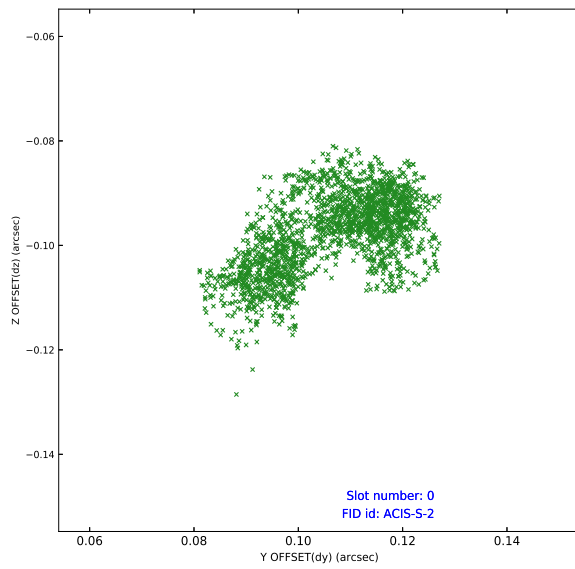
## 2.4.4 Slot 7



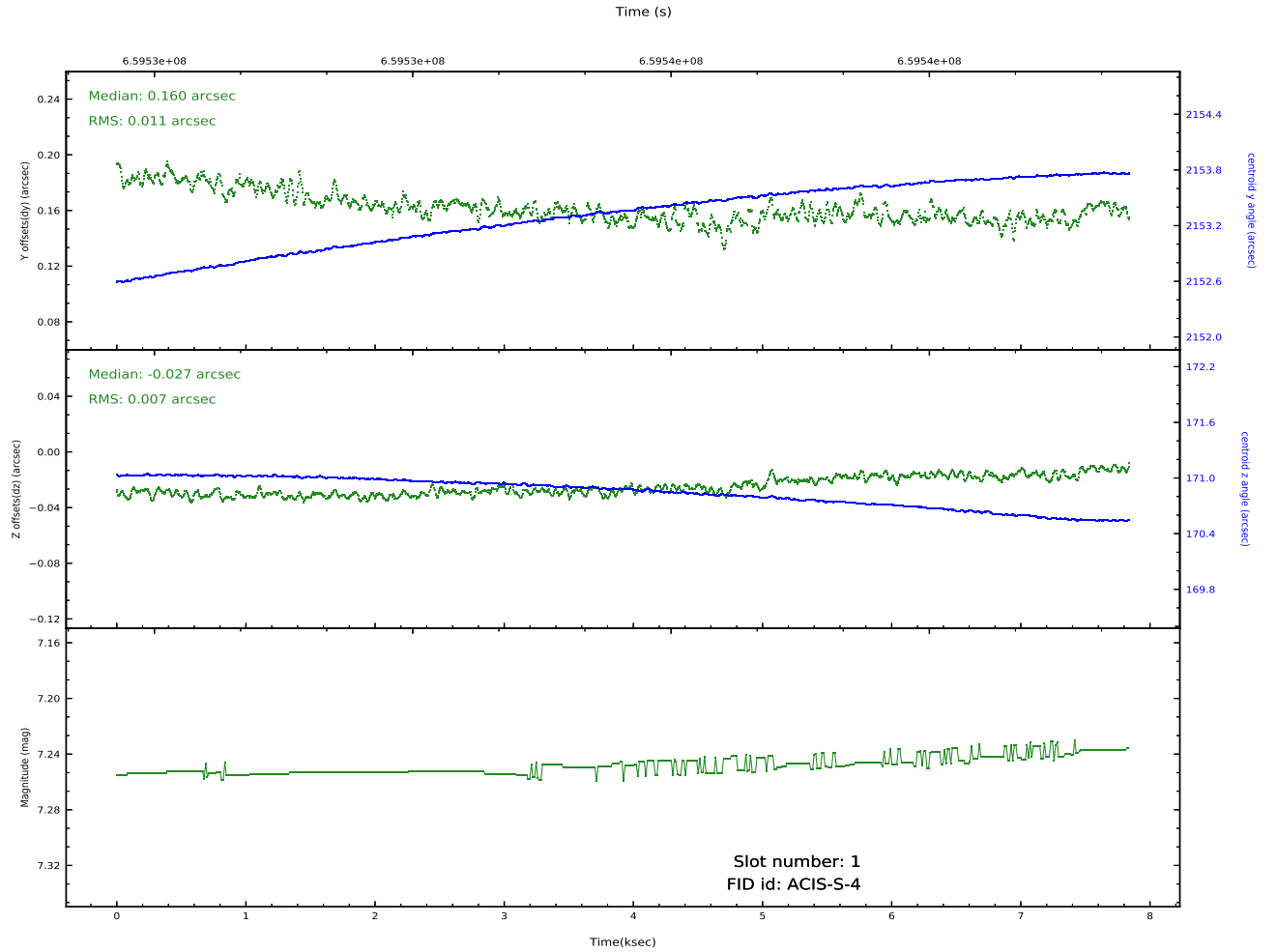
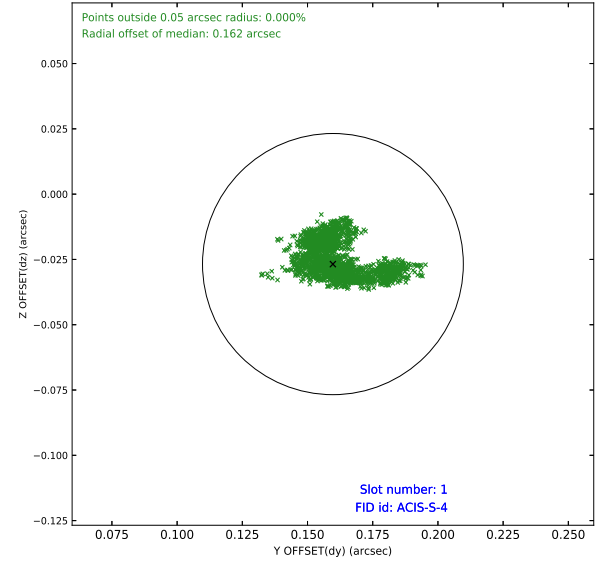
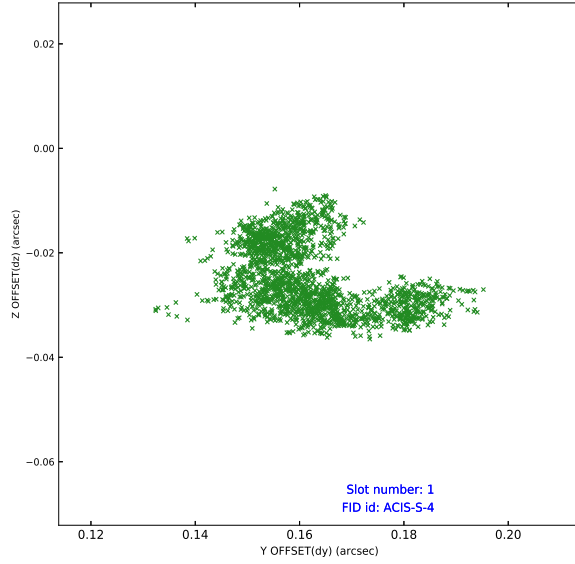


## 2.5 FID Slots

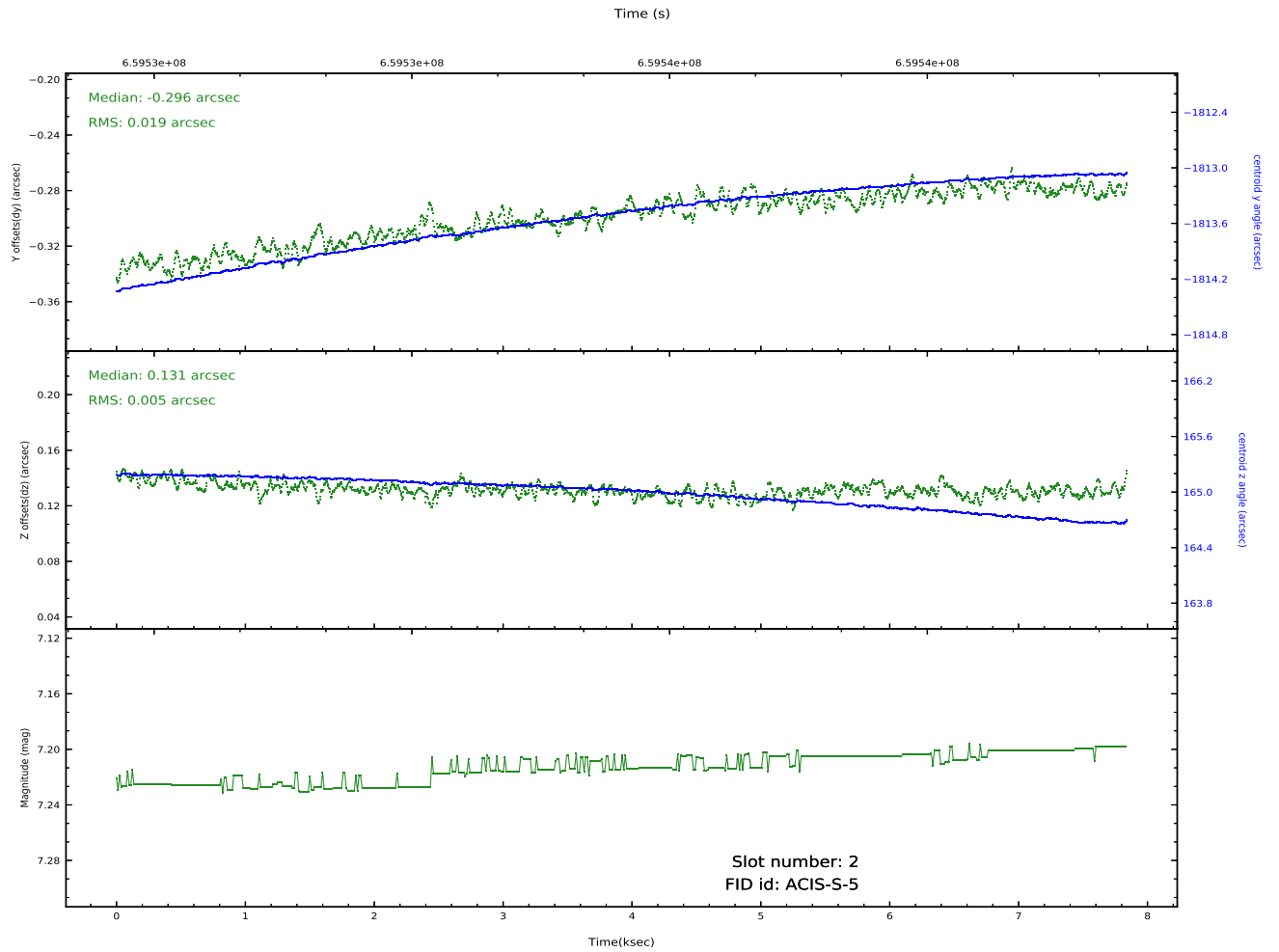
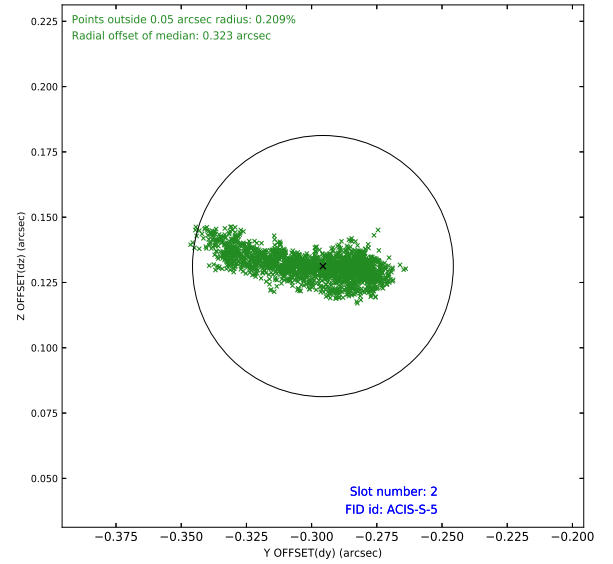
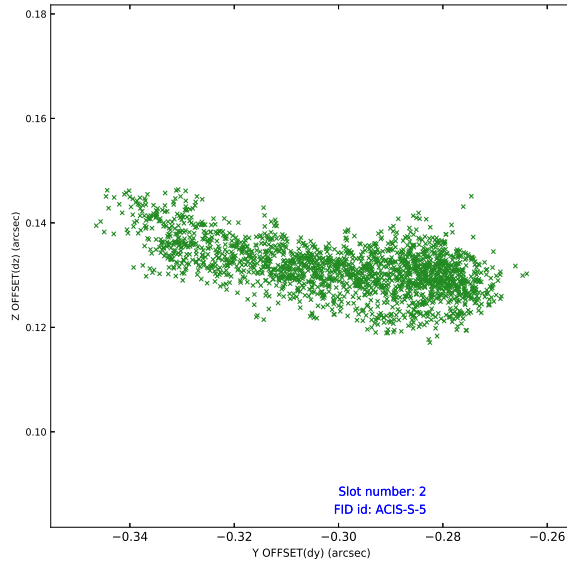
### 2.5.1 Slot 0



## 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)	2020.10.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	6.7425000519753

### A.2 Comments

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.