

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 21018 - L2 Version 3  
Chandra X-Ray Center

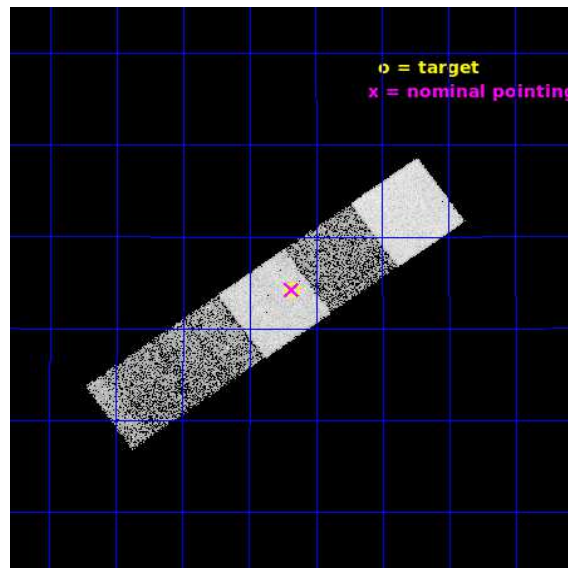
L2 Processing Date : Oct 25 2020

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# 1 Front

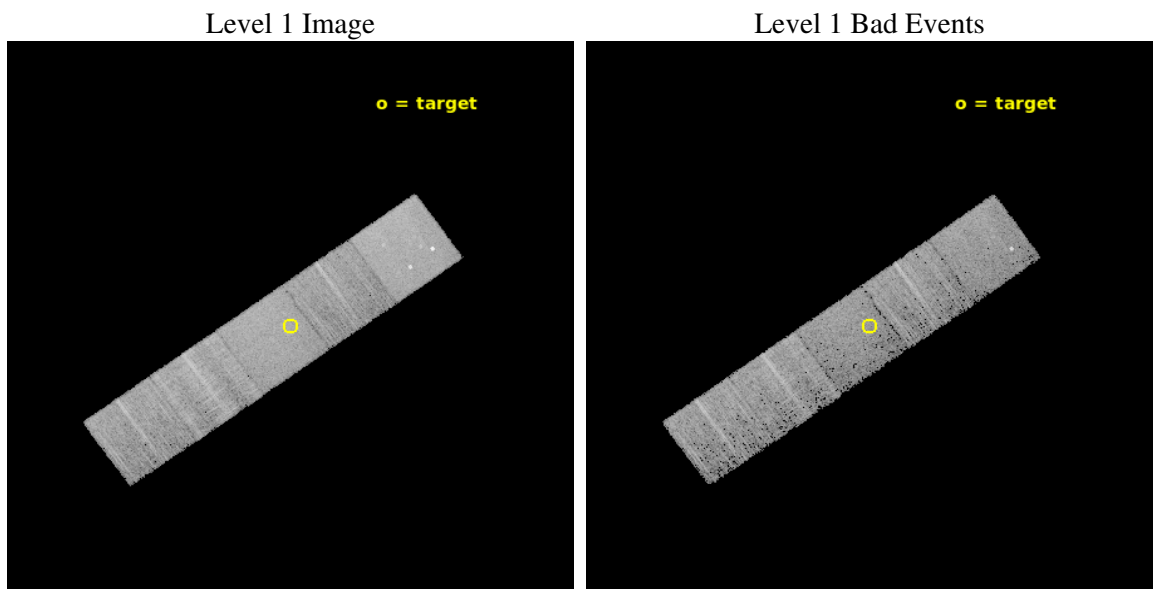
seq_num	703659	Sequence number
obs_id	21018	Observation id
title	LOW SURFACE BRIGHTNESS GALAXIES AND THE BLACK HOLE OCCUPATION FRACTION	Proposal title
observer	Elena Gallo	Principal investigator
object	UGC 09024	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	211.66875	Observer's specified target RA [deg]
dec_targ	22.070111	Observer's specified target Dec [deg]
ra_nom	211.66992823192	Nominal RA [deg]
dec_nom	22.070764877164	Nominal Dec [deg]
roll_nom	144.3553937364	Nominal Roll [deg]
revision	3	Processing version of data
ontime	6451.1000497341	Sum of GTIs [s]
livetime	6366.8116783536	Livetime [s]
ontime5	6451.1000497341	Sum of GTIs [s]
ontime6	6451.1000497341	Sum of GTIs [s]
ontime7	6451.1000497341	Sum of GTIs [s]
ontime8	6451.1000497341	Sum of GTIs [s]
ontime9	6451.1000497341	Sum of GTIs [s]
l2events	75596	Number of level 2 events



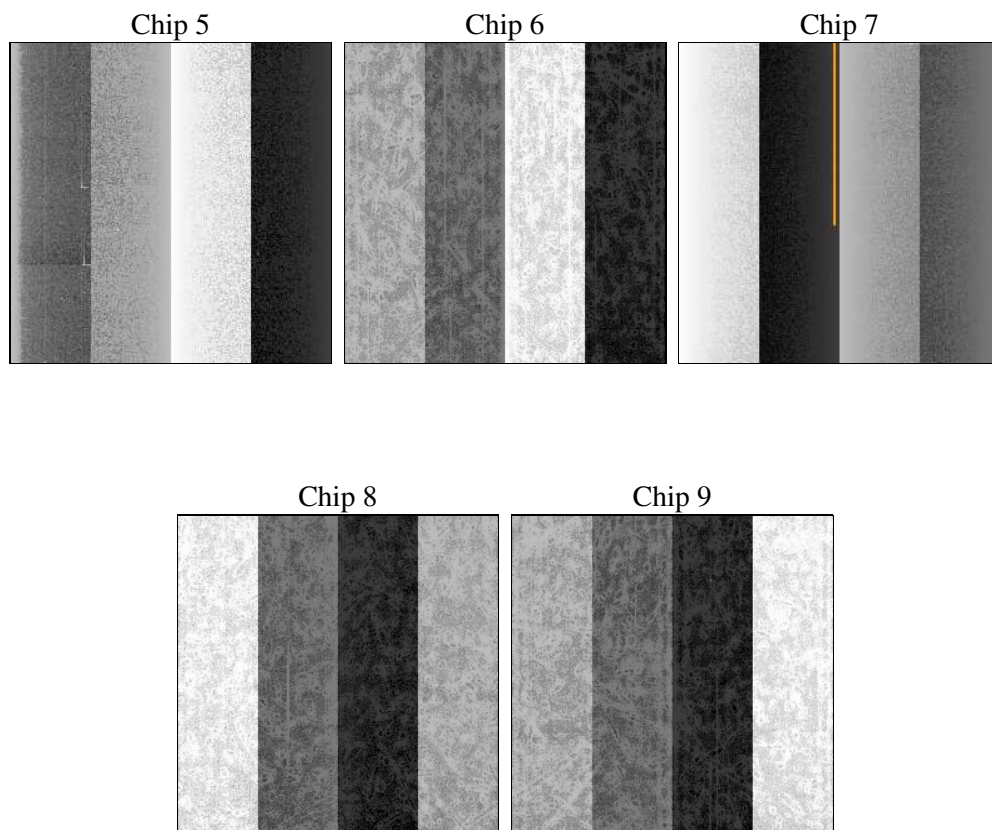
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	6400.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	6451.1000497341	Sum of GTIs [s]
caldsver	4.9.3	&#160	ontime5	6451.1000497341	Sum of GTIs [s]
date	2020-10-25T10:21:35	Date and time of file creation	ontime6	6451.1000497341	Sum of GTIs [s]
revision	3	Processing version of data	ontime7	6451.1000497341	Sum of GTIs [s]
			ontime8	6451.1000497341	Sum of GTIs [s]
			ontime9	6451.1000497341	Sum of GTIs [s]
			l1events	295597	Number of level 1 events

### 2.1.4 Events

	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	76921	47645	61287	62275	47469
rejected events	39503	42081	34559	45247	41617
rejected %	51%	88%	56%	72%	87%

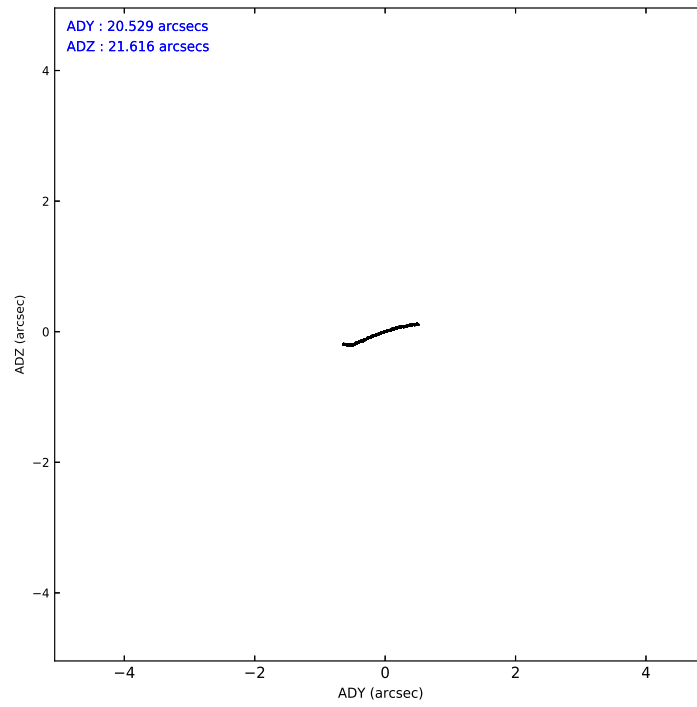
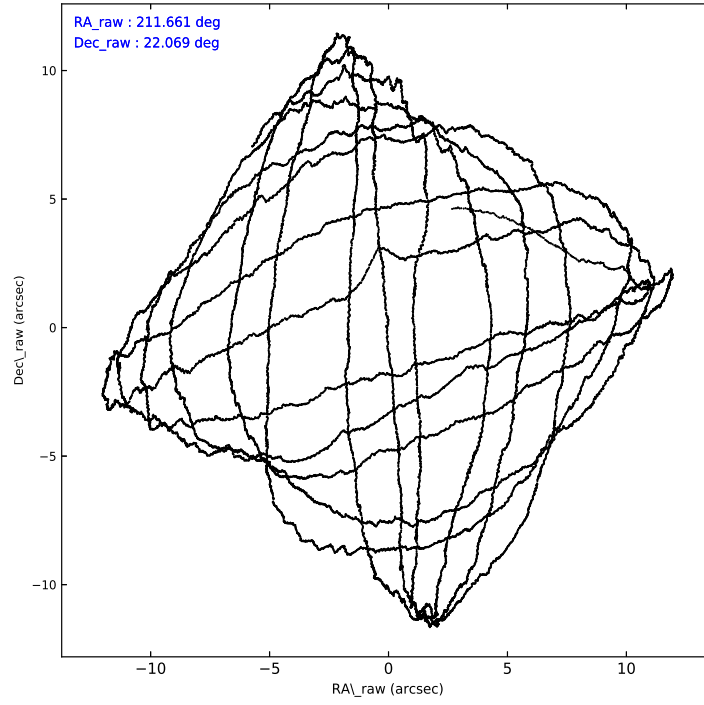
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	3338	1902	2277	4966	2072
	4%	3%	3%	7%	4%
grade 1 events	176	32	89	40	43
	0%	0%	0%	0%	0%
grade 2 events	11660	1330	5724	3964	1355
	15%	2%	9%	6%	2%
grade 3 events	1271	552	2105	1863	604
	1%	1%	3%	2%	1%
grade 4 events	1112	522	2173	1715	575
	1%	1%	3%	2%	1%
grade 5 events	5530	2189	6259	3457	2428
	7%	4%	10%	5%	5%
grade 6 events	20078	1266	14470	4549	1252
	26%	2%	23%	7%	2%
grade 7 events	33756	39852	28190	41721	39140
	43%	83%	45%	66%	82%

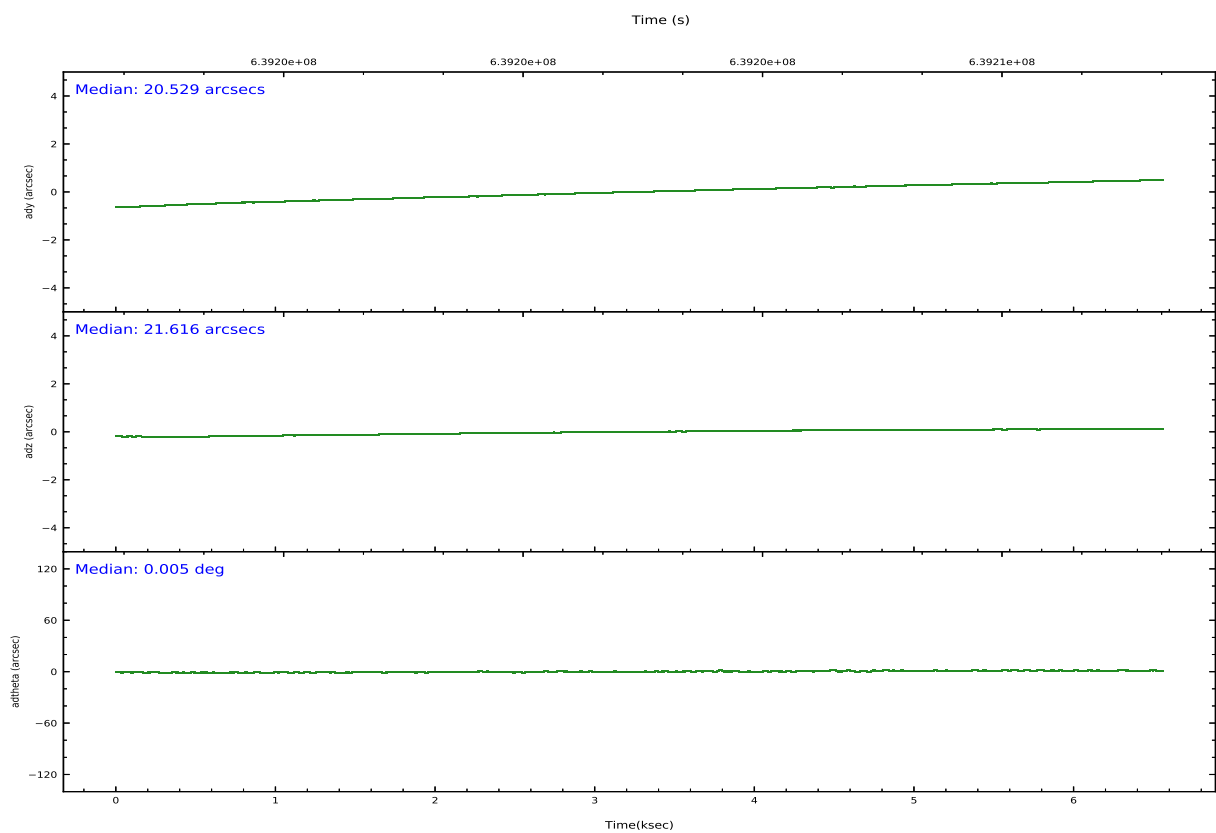
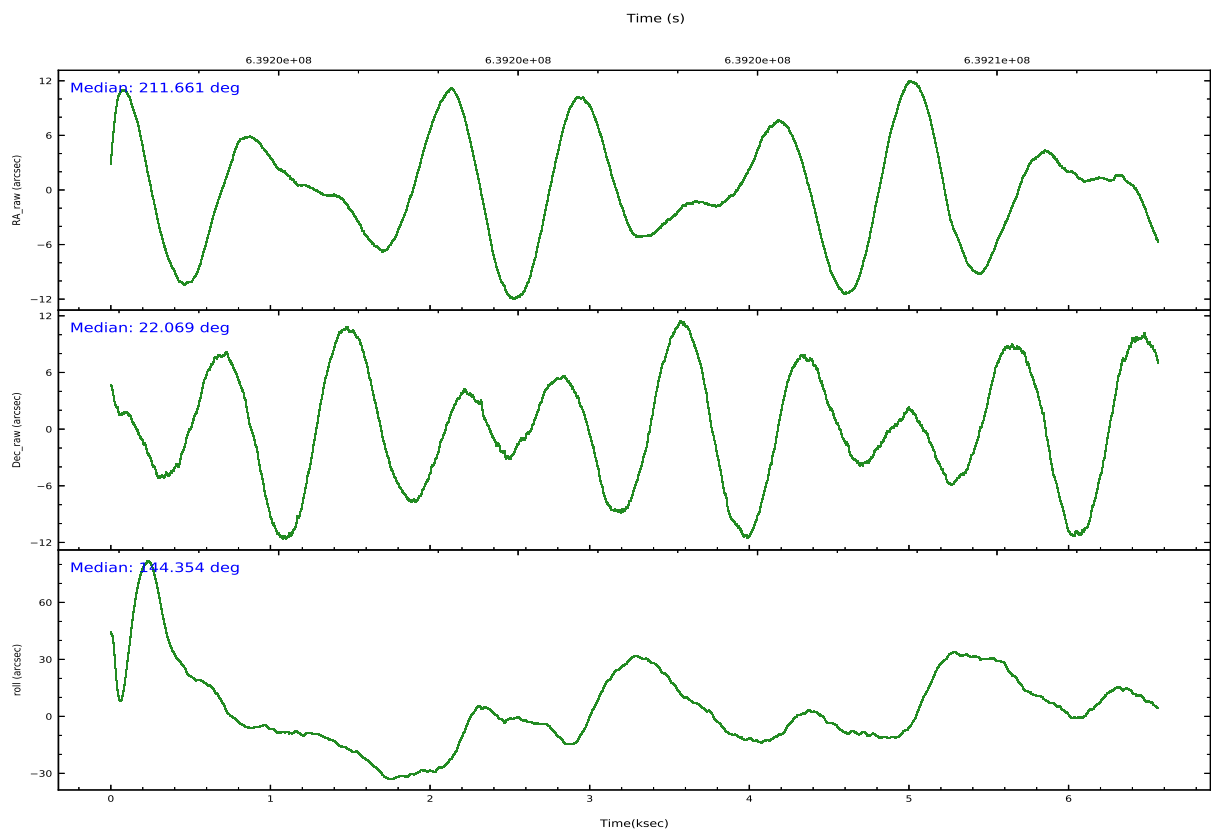


## 2.2 Compared Parameters

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	211.690493	211.66992823192	CCD I2 on	N	N
[deg] Pointing Dec	22.066725	22.070764877164	CCD I3 on	N	N
[deg] Pointing Roll	144.211766	144.3553937364	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)	639201110.184000	639199935.40117	CCD S5 on	O2	Y
Observation start date	2018-04-04T03:50:41	2018-04-04T03:32:15	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	639207510.184000	639208167.68915	On-chip summing requested	N	N
Observation end date	2018-04-04T05:37:21	2018-04-04T05:49:27	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



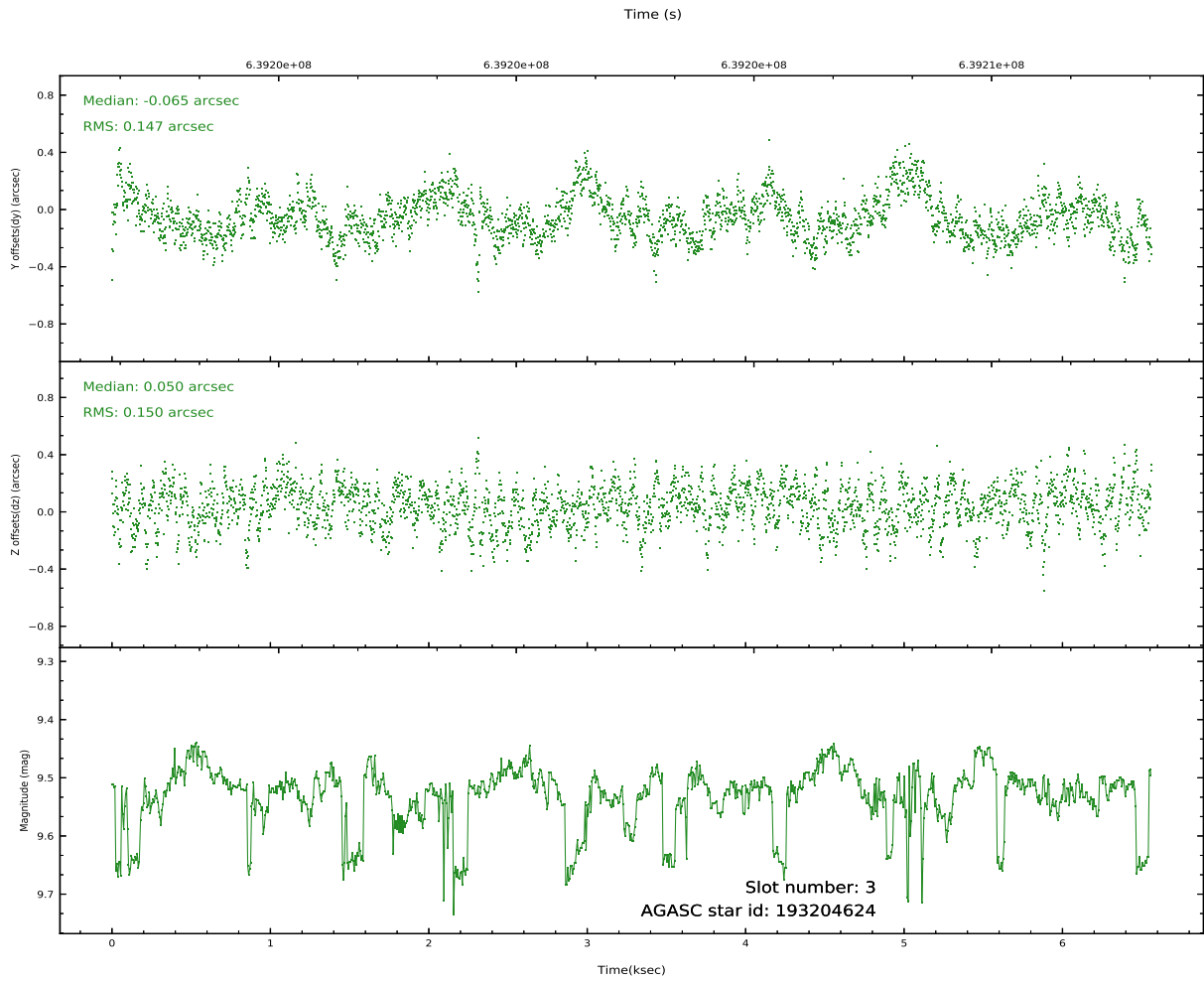
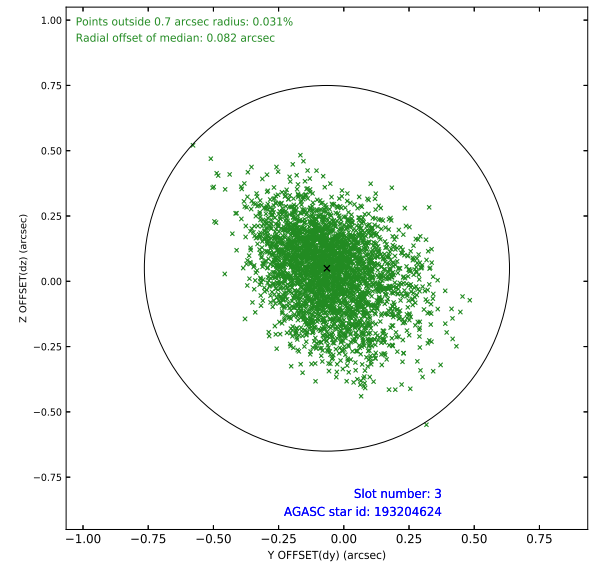
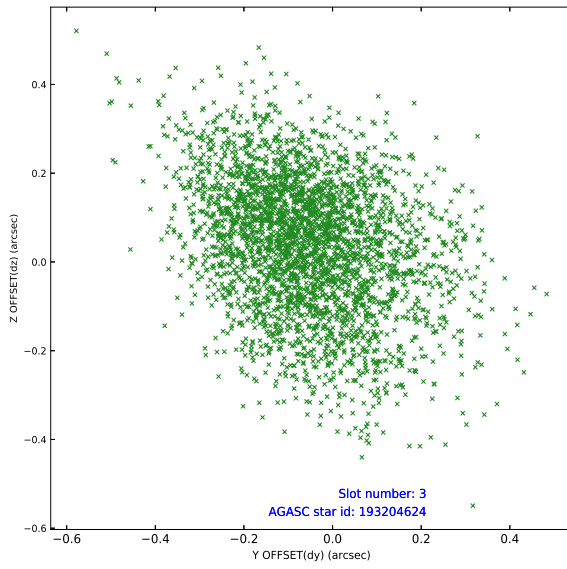


Slot Statistics

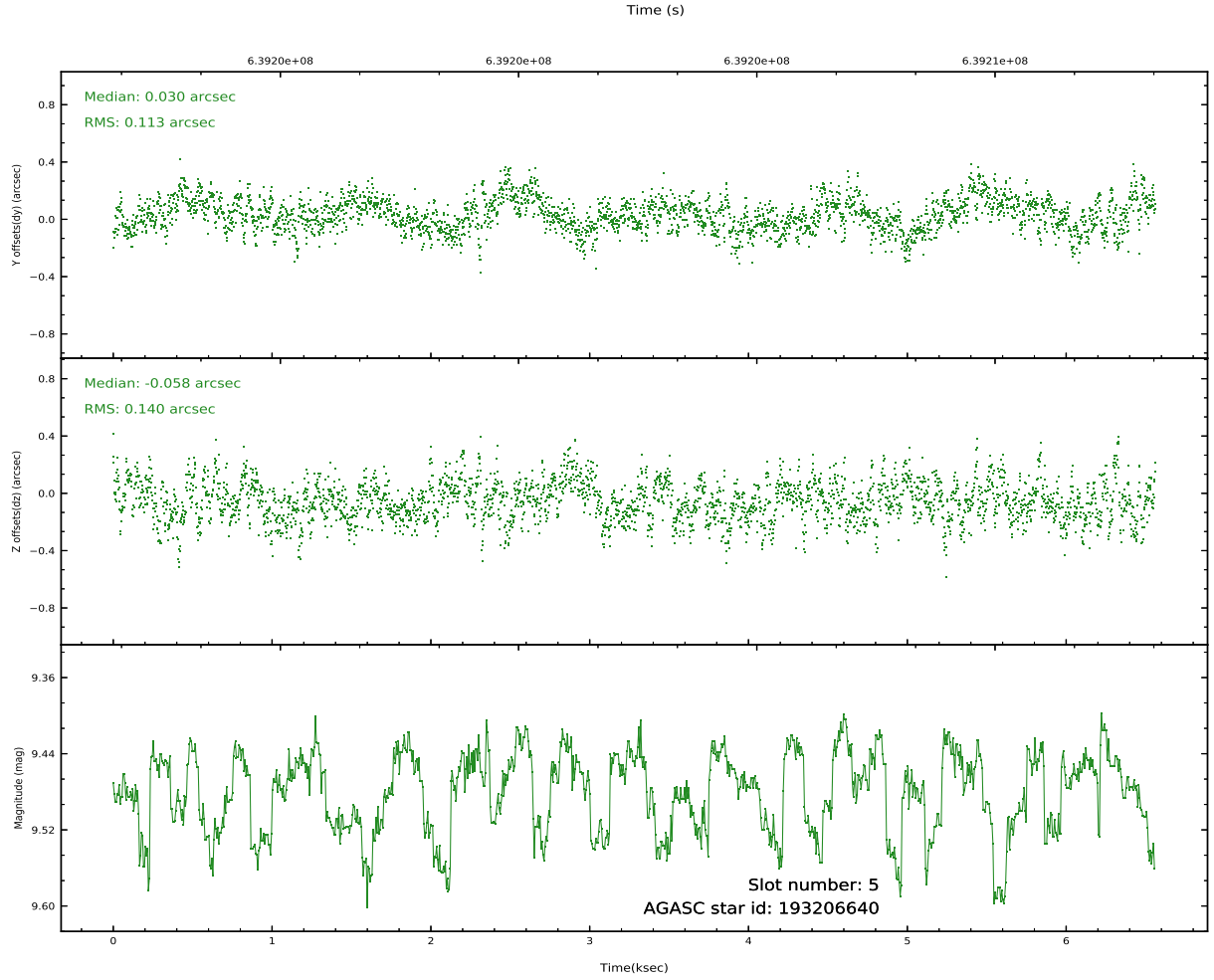
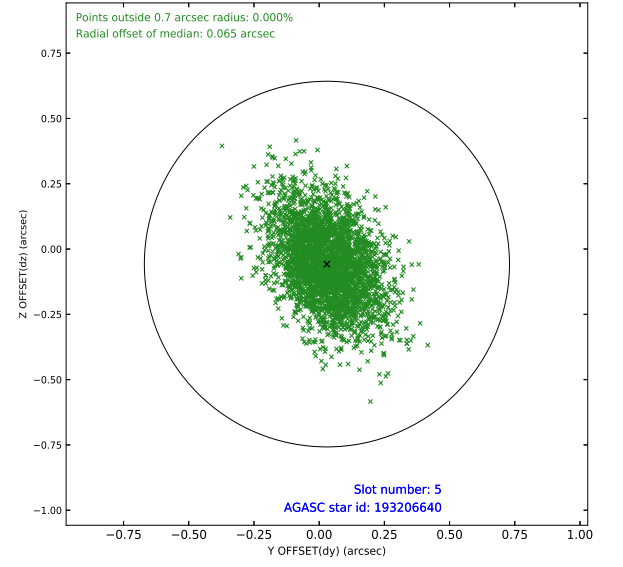
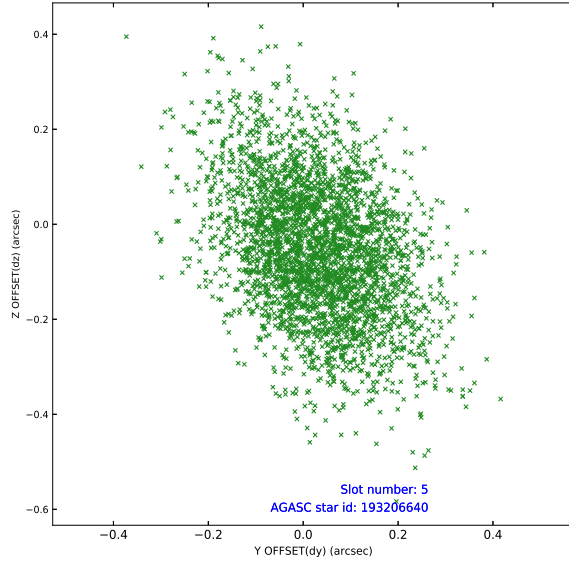
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.04	1601	1.000	0.128	-0.108	0.016	0.026	0.000000	0.000000	-773.77	-1743
1	FID		ACIS-S-4	7.16	1600	1.000	0.083	-0.032	0.018	0.034	0.000000	0.000000	2139.33	164
2	FID		ACIS-S-5	7.15	1601	1.000	-0.241	0.152	0.011	0.017	0.000000	0.000000	-1825.56	159
3	GUIDE	used	193204624	9.52	3194	1.000	-0.065	0.050	0.221	0.370	211.841887	22.462558	426.08	-1450
4	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
5	GUIDE	used	193206640	9.48	3199	1.000	0.030	-0.058	0.185	0.319	211.599348	21.586524	-764.44	1580
6	GUIDE	used	262935040	7.50	3202	1.000	0.027	0.018	0.156	0.269	211.422194	22.731013	2121.55	-1416
7	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

## 2.4 Star Slots

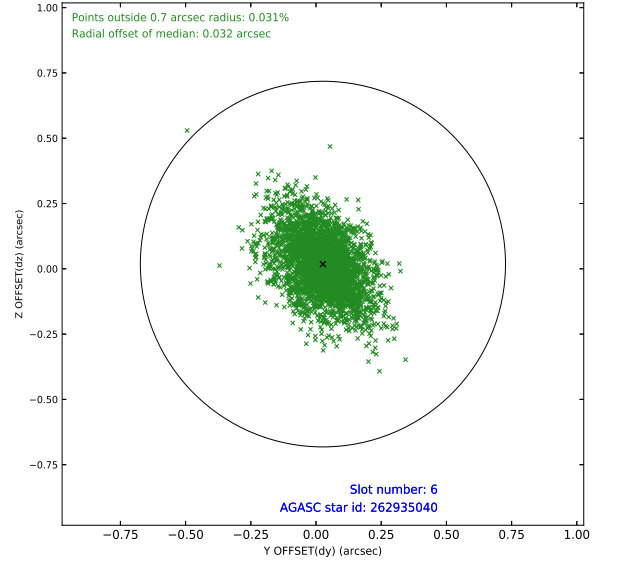
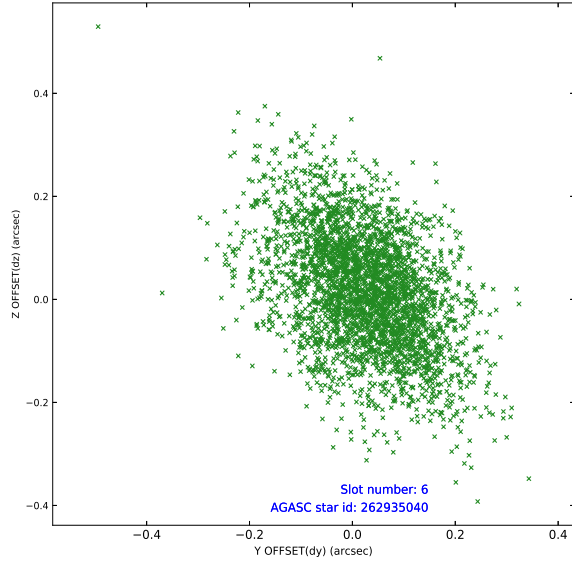
### 2.4.1 Slot 3



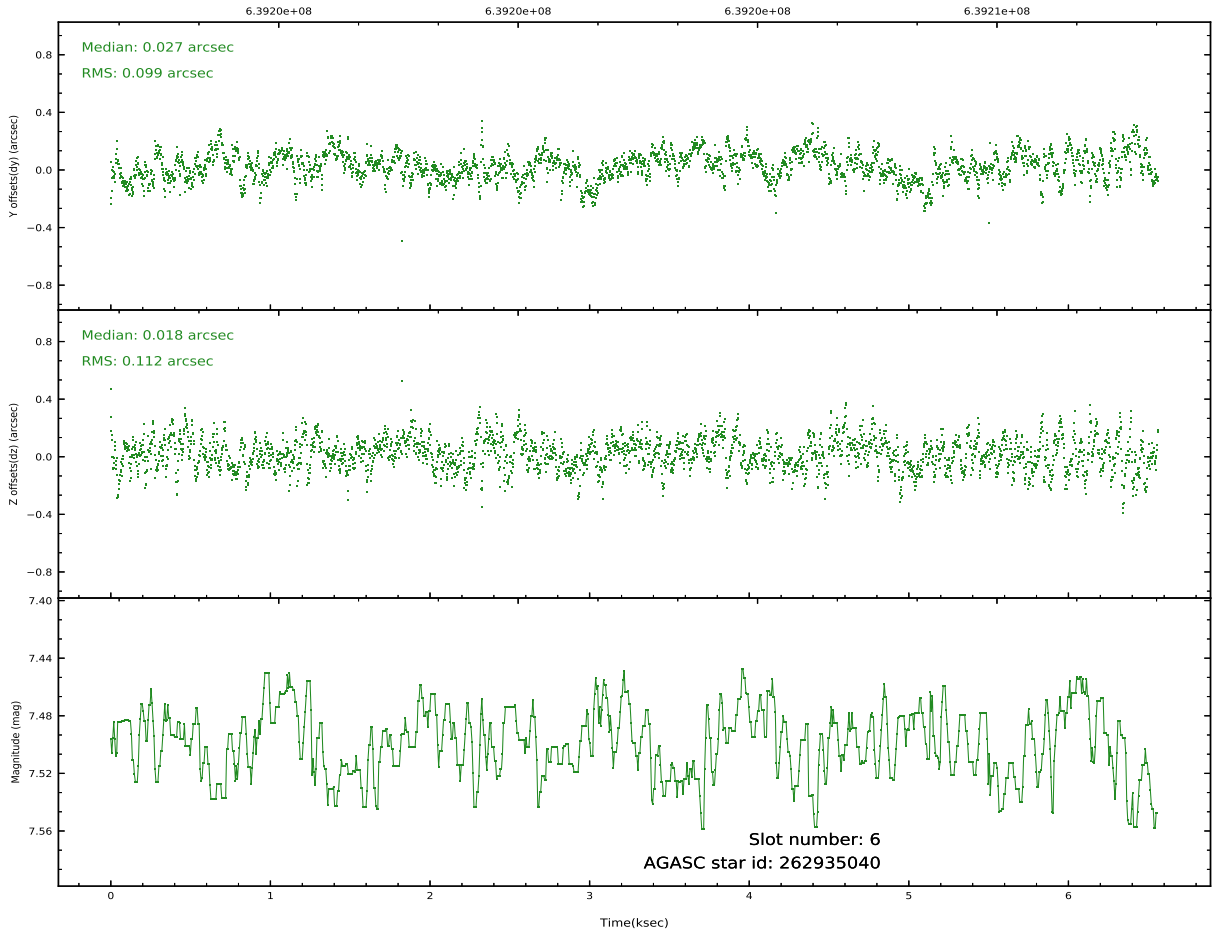
## 2.4.2 Slot 5



### 2.4.3 Slot 6

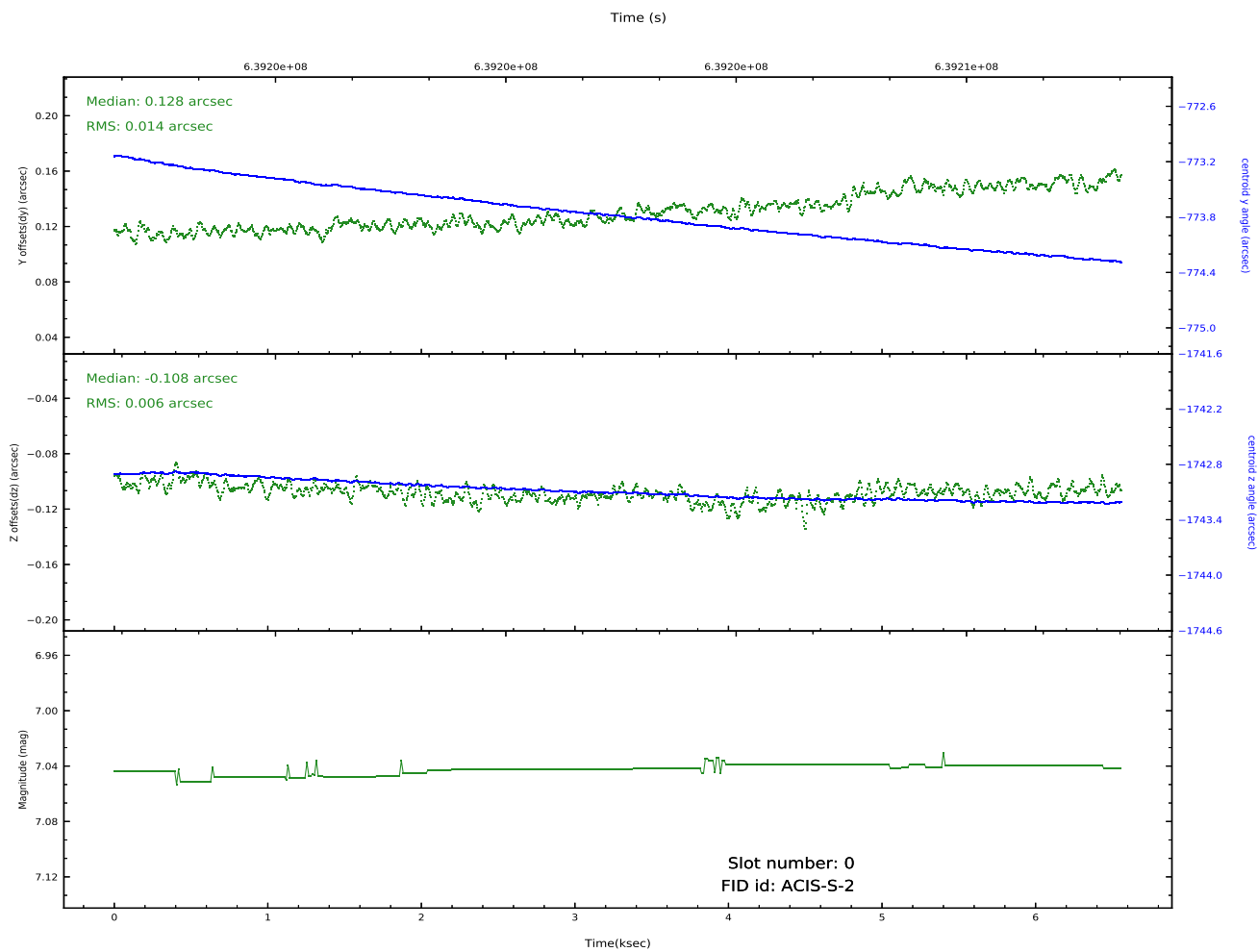
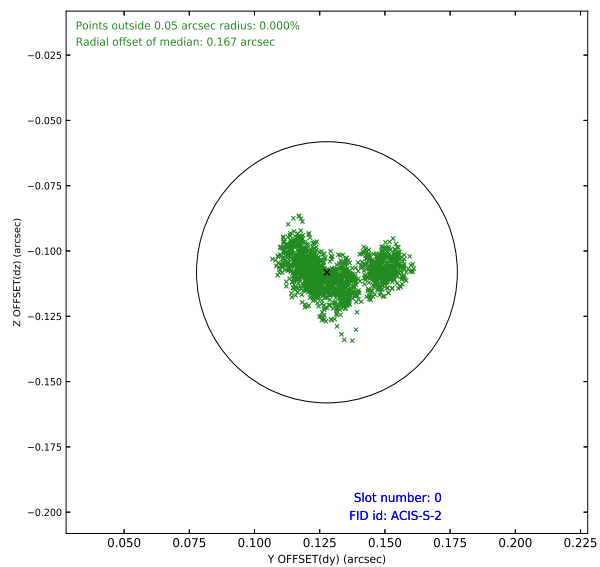
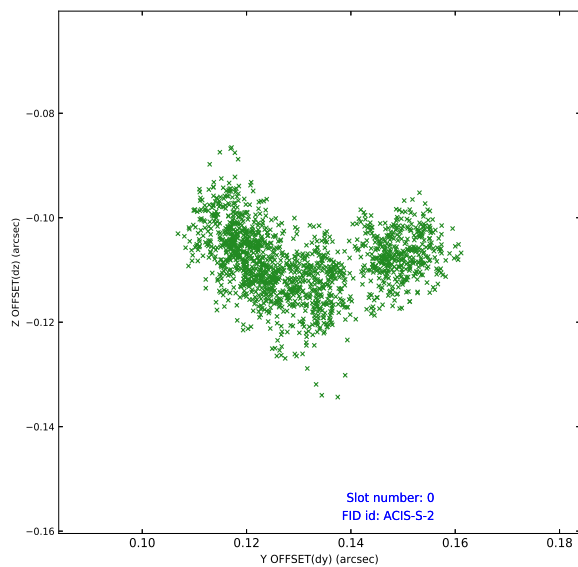


Time (s)



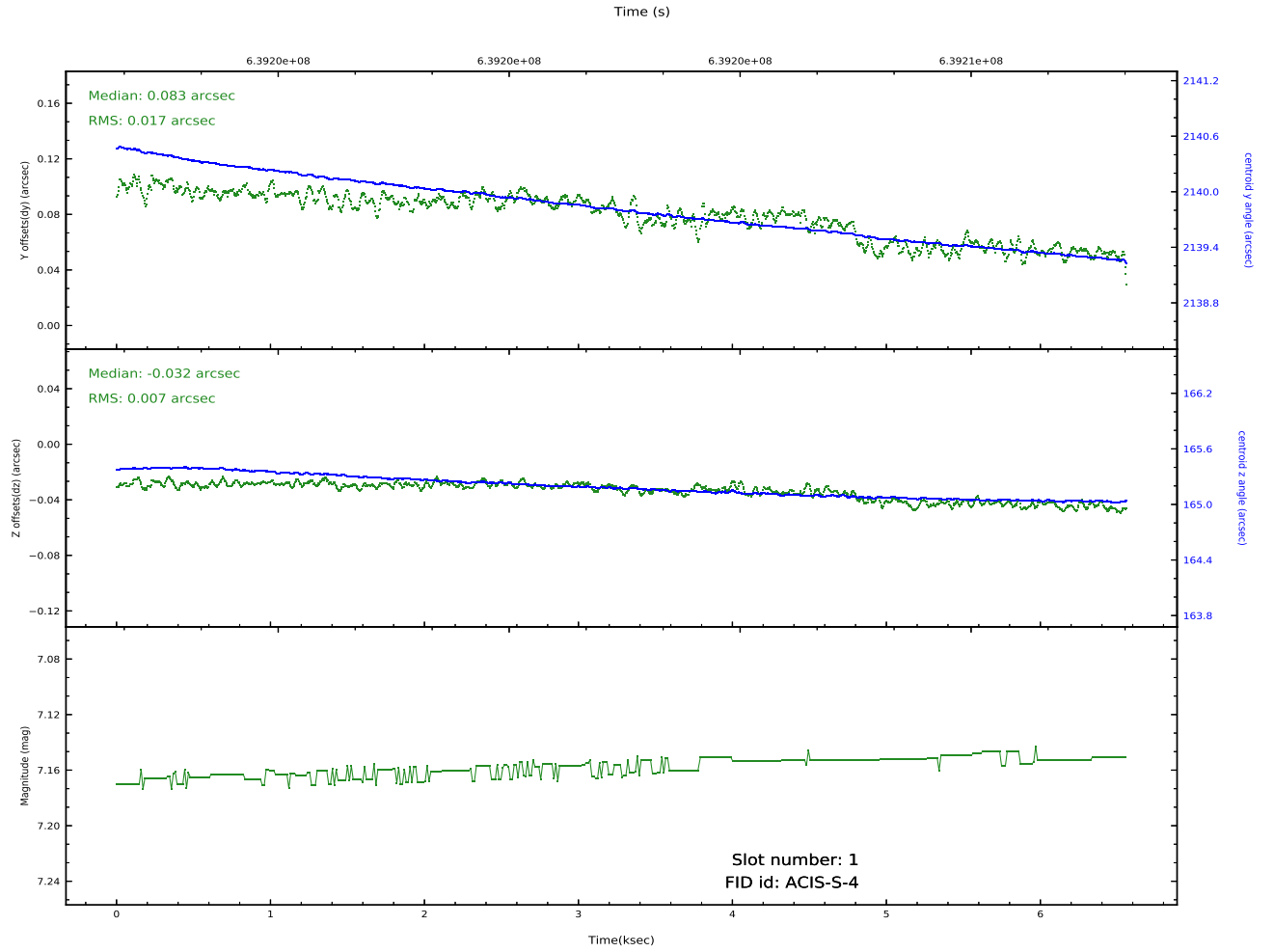
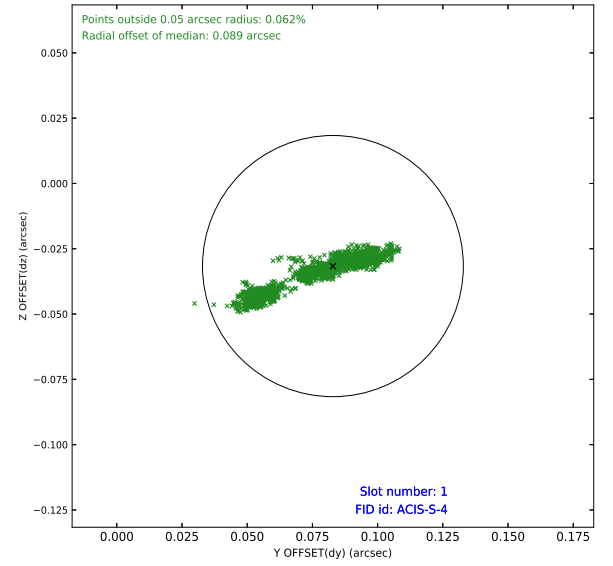
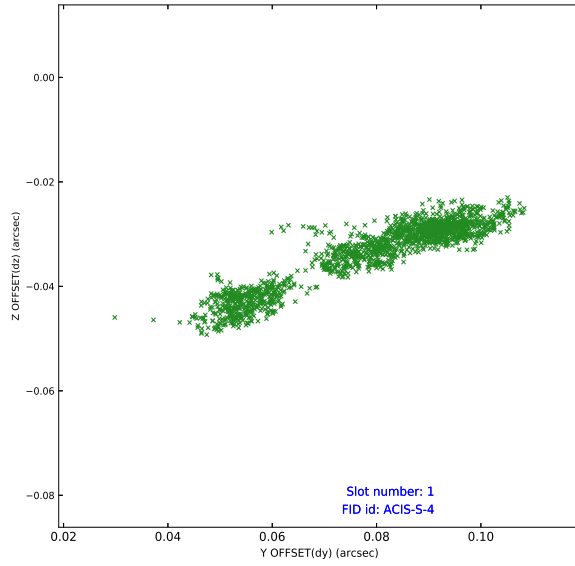
## 2.5 FID Slots

### 2.5.1 Slot 0

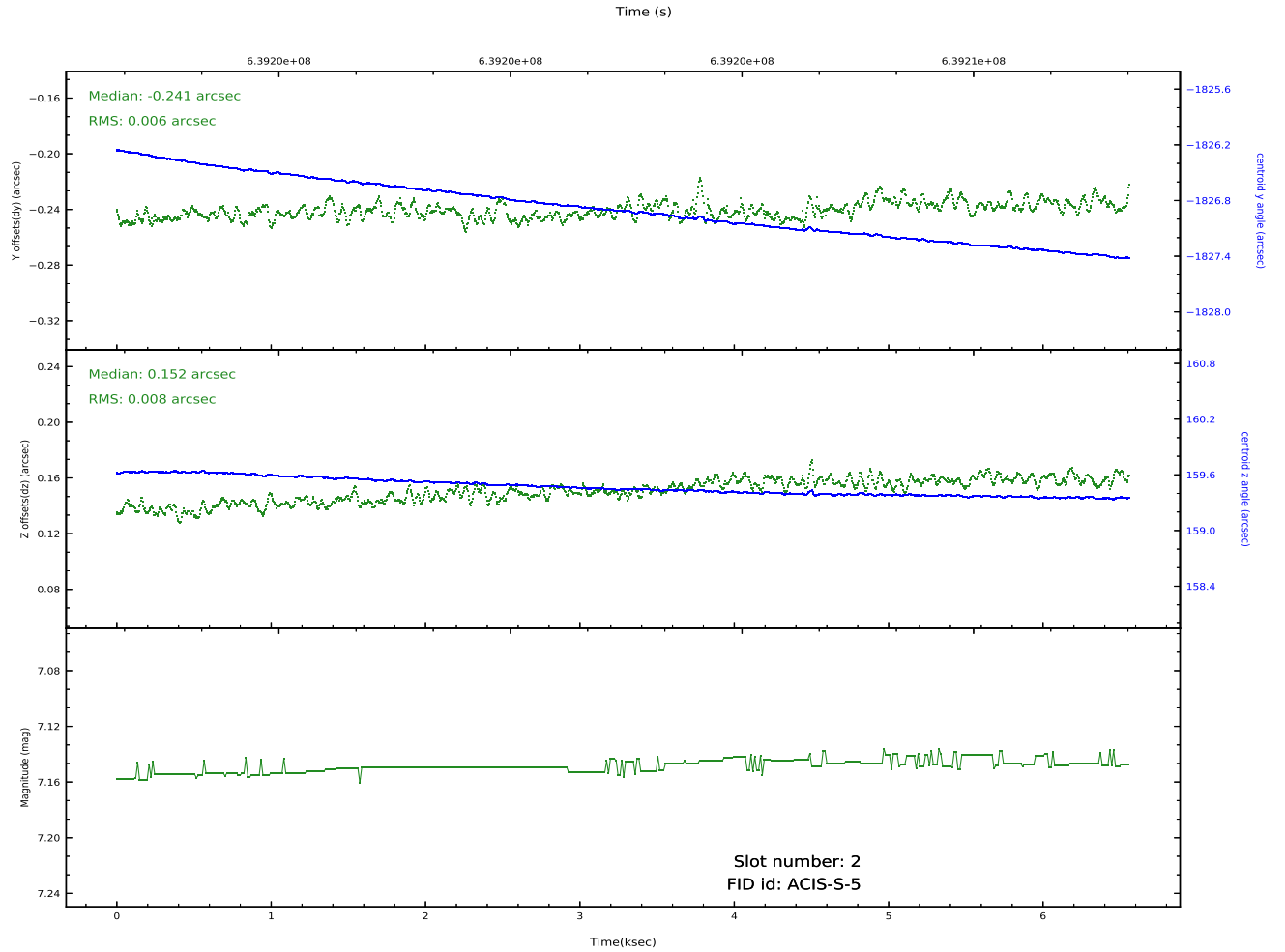
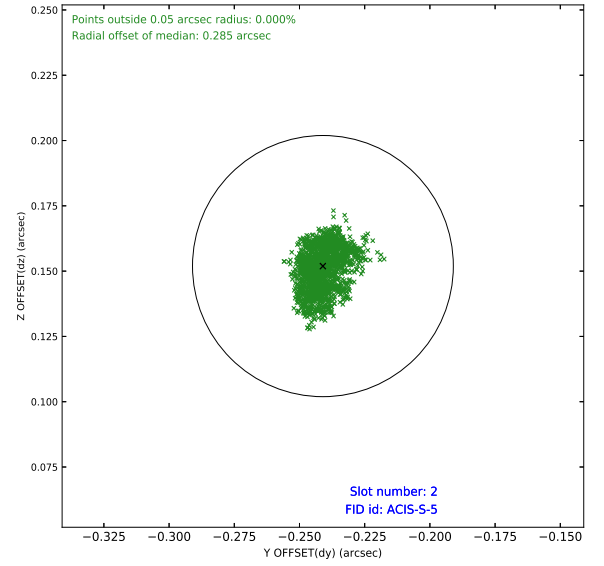
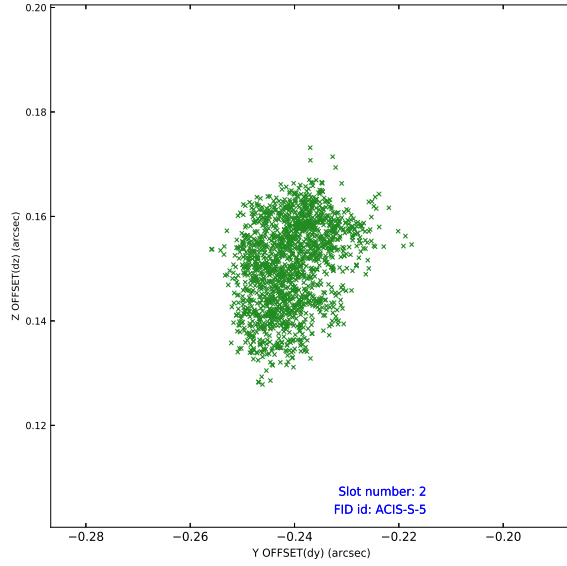




## 2.5.2 Slot 1



## 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	6.4511000497341

## A.2 Comments

The guide stars in slots 4 and 7 were removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of these guide stars from the solution.