

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 5014 - L2 Version 6  
Chandra X-Ray Center

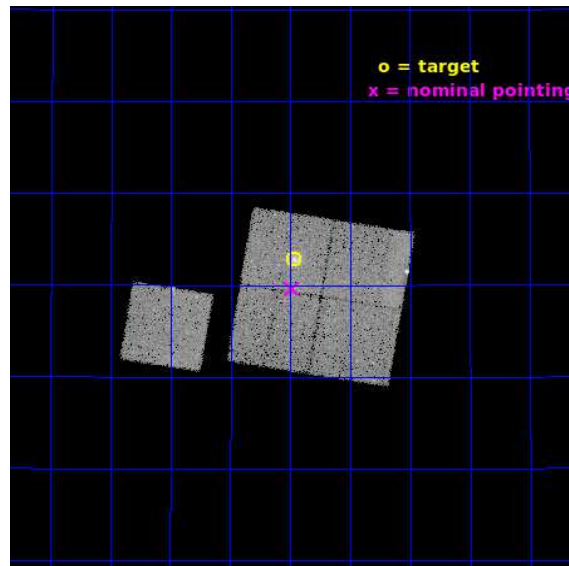
L2 Processing Date : Oct 7 2020

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# 1 Front

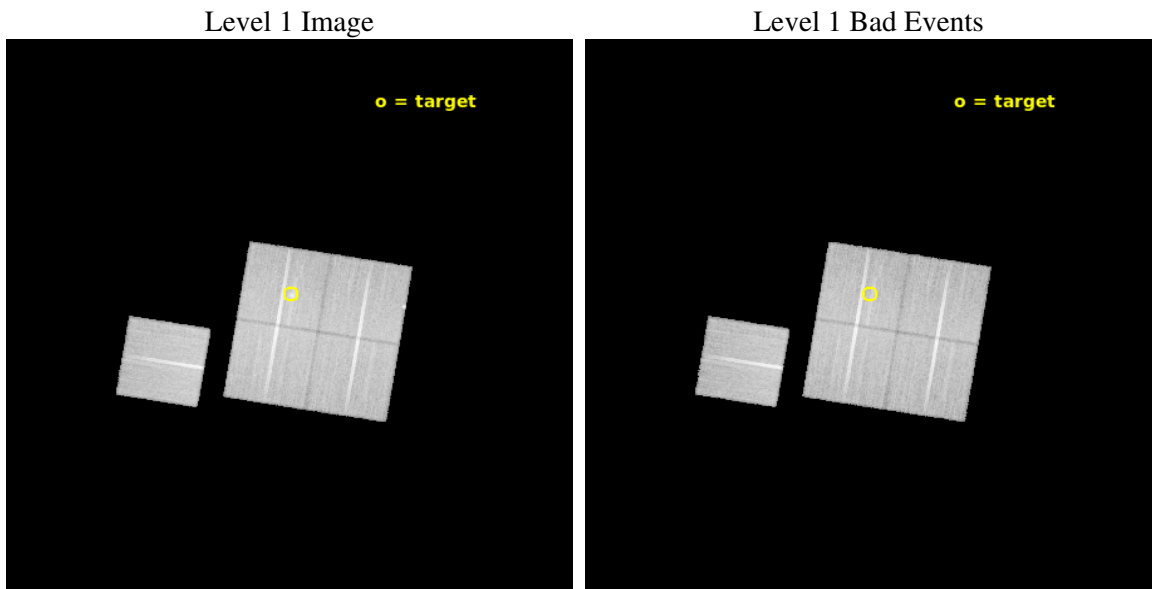
seq_num	800457	Sequence number
obs_id	5014	Observation id
title	Cluster studies: Determination of H0/q0	Proposal title
observer	DR. LEON VANSPEYBROECK	Principal investigator
object	CIG J1226+3332	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	186.7425	Observer's specified target RA [deg]
dec_targ	33.546667	Observer's specified target Dec [deg]
ra_nom	186.7468547862	Nominal RA [deg]
dec_nom	33.493856987714	Nominal Dec [deg]
roll_nom	279.30708063994	Nominal Roll [deg]
revision	6	Processing version of data
ontime	33145.158975989	Sum of GTIs [s]
livetime	32712.093072856	Livetime [s]
ontime0	33148.299936235	Sum of GTIs [s]
ontime1	33142.017995834	Sum of GTIs [s]
ontime2	33142.018005729	Sum of GTIs [s]
ontime3	33145.158975989	Sum of GTIs [s]
ontime6	33135.736055315	Sum of GTIs [s]
l2events	85046	Number of level 2 events



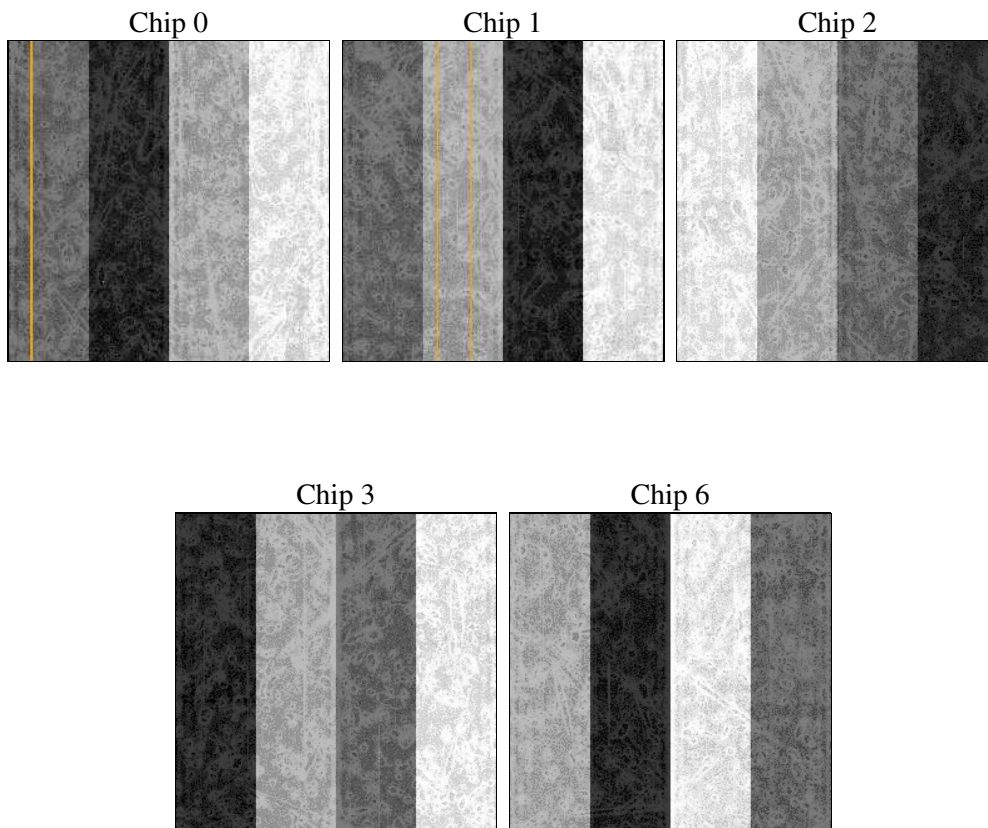
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	33000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	33145.158975989	Sum of GTIs [s]
caldbver	4.9.2	&#160	ontime0	33148.299936235	Sum of GTIs [s]
date	2020-10-07T18:05:00	Date and time of file creation	ontime1	33142.017995834	Sum of GTIs [s]
revision	6	Processing version of data	ontime2	33142.018005729	Sum of GTIs [s]
			ontime3	33145.158975989	Sum of GTIs [s]
			ontime6	33135.736055315	Sum of GTIs [s]
			l1events	988712	Number of level 1 events

### 2.1.4 Events

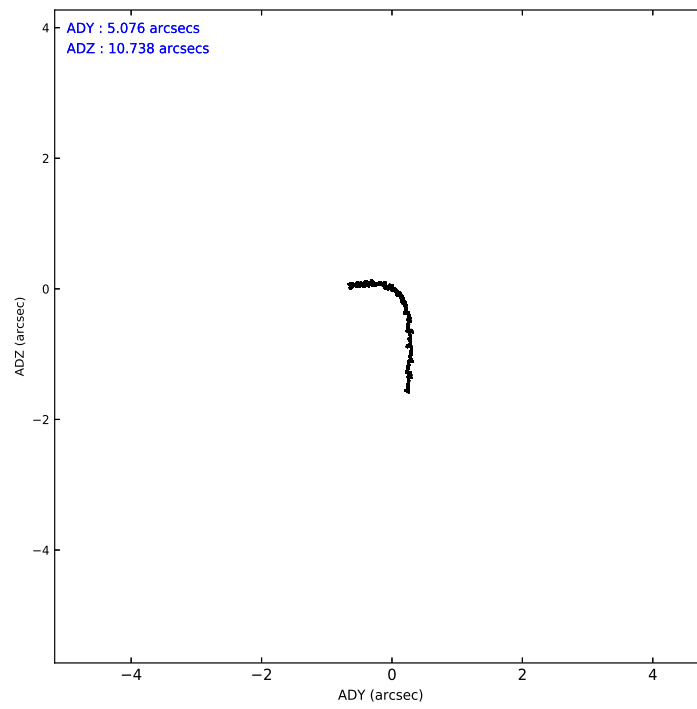
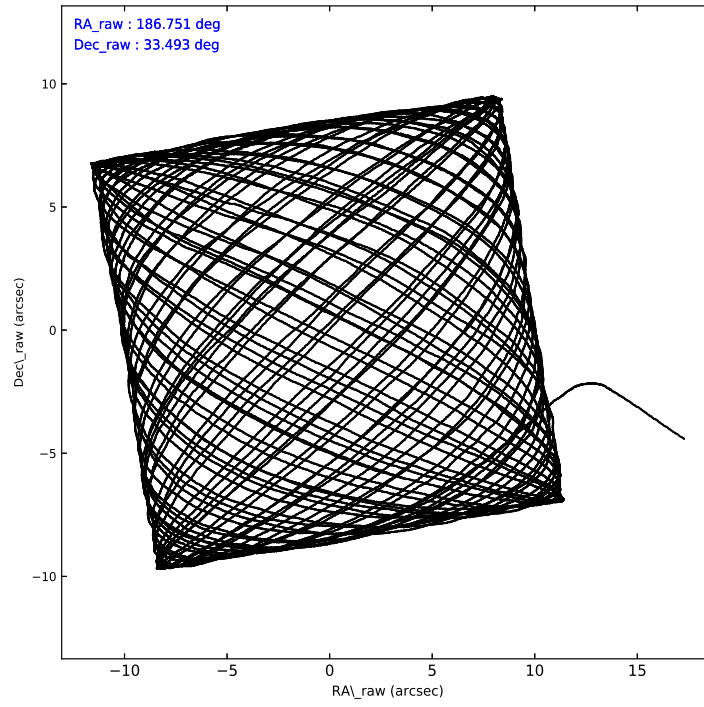
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	189186	189295	209304	200440	200487
rejected events	169802	166592	190041	179164	180233
rejected %	89%	88%	90%	89%	89%

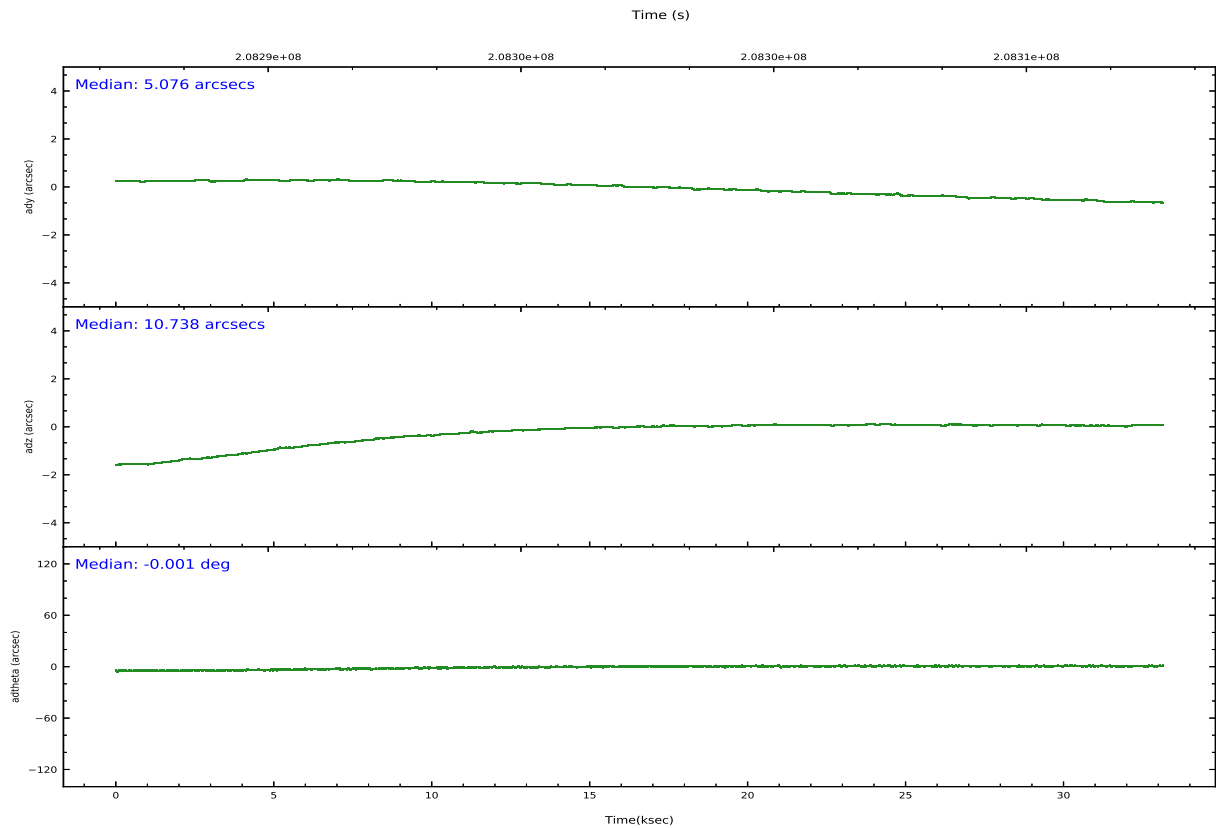
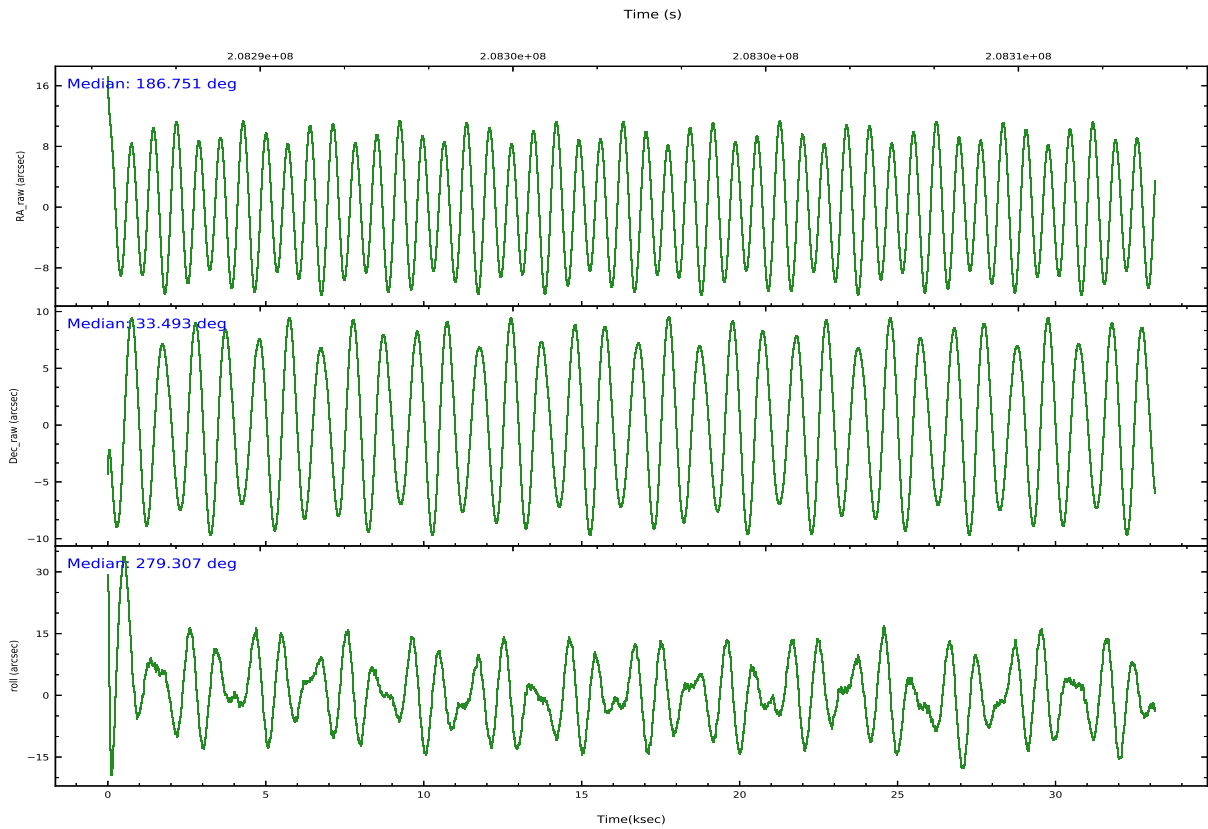
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	6636	8644	7033	8917	7021
	3%	4%	3%	4%	3%
grade 1 events	95	99	94	107	86
	0%	0%	0%	0%	0%
grade 2 events	4568	4776	4557	4260	4422
	2%	2%	2%	2%	2%
grade 3 events	2310	2581	2146	2254	2341
	1%	1%	1%	1%	1%
grade 4 events	2211	2476	2172	2261	2244
	1%	1%	1%	1%	1%
grade 5 events	7019	7318	6719	7882	7908
	3%	3%	3%	3%	3%
grade 6 events	3855	4440	3548	3774	4388
	2%	2%	1%	1%	2%
grade 7 events	162492	158961	183035	170985	172077
	85%	83%	87%	85%	85%

## 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	186.729773	186.7468547862	Subarray requested	NONE	NONE
[deg] Pointing Dec	33.513900	33.493856987714	Alternating exposures requested	N	N
[deg] Pointing Roll	279.121048	279.30708063994	[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	-225.840463	-225.8433433320239			
[mm] SIM translation stage offset	-7.752	-7.749109670905796			
[s] Observation start time (MET)	208283329.184000	208282051.83349			
Observation start date	2004-08-07T16:27:45	2004-08-07T16:07:31			
[s] Observation end time (MET)	208316329.184000	208317401.01006			
Observation end date	2004-08-08T01:37:45	2004-08-08T01:56:41			
Read mode	TIMED	TIMED			

## 2.3 Aspect





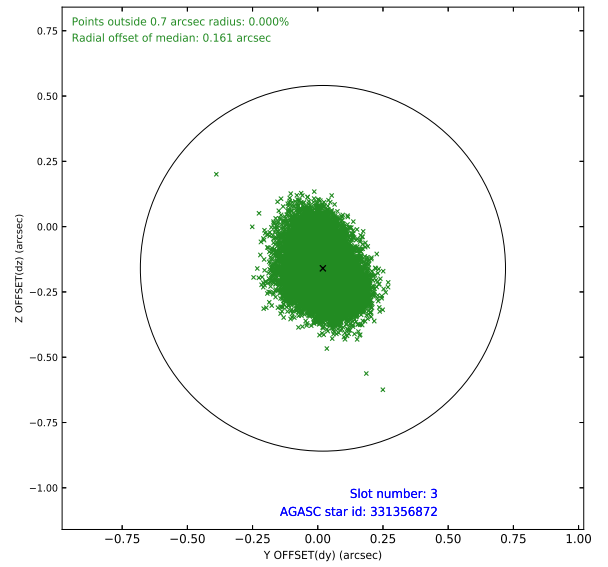
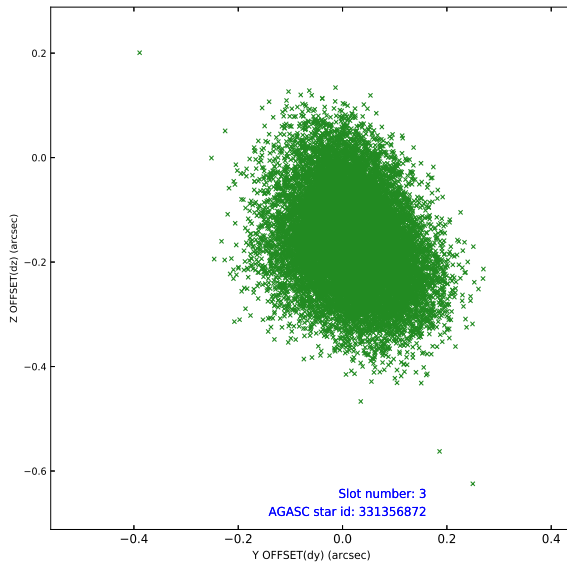
### Slot Statistics

pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.23	8087	1.000	0.120	-0.112	0.012	0.029	0.000000	0.000000	934.69	-993
1	FID		ACIS-I-5	7.22	8087	1.000	-0.291	0.089	0.011	0.022	0.000000	0.000000	-1813.79	904
2	FID		ACIS-I-6	7.25	8087	1.000	0.079	0.096	0.010	0.024	0.000000	0.000000	400.16	1549
3	GUIDE	used	331356872	9.47	16167	1.000	0.020	-0.160	0.122	0.197	186.232000	33.528992	-293.09	-1466
4	GUIDE	used	331359472	9.33	16136	1.000	0.129	0.029	0.086	0.136	187.224794	33.172746	1446.09	1278
5	GUIDE	used	331359840	9.63	16161	1.000	-0.036	0.116	0.110	0.177	187.405317	33.549371	188.89	2022
6	GUIDE	used	331625408	10.77	16081	1.000	-0.149	-0.050	0.230	0.366	186.109257	33.951847	-1855.00	-1579
7	GUIDE	used	331362384	8.81	16165	1.000	0.030	0.054	0.075	0.120	187.227369	32.923477	2333.97	1148

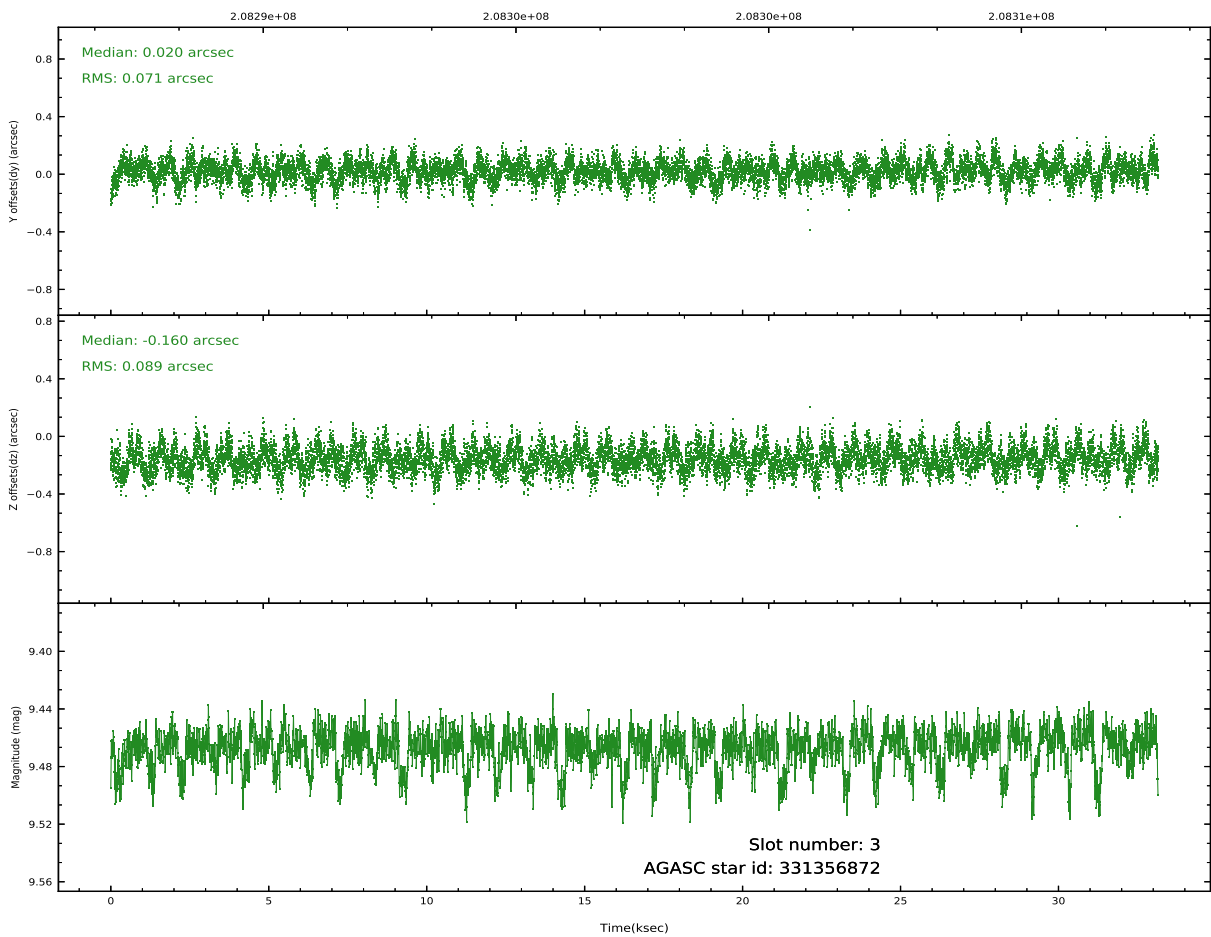
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## 2.4 Star Slots

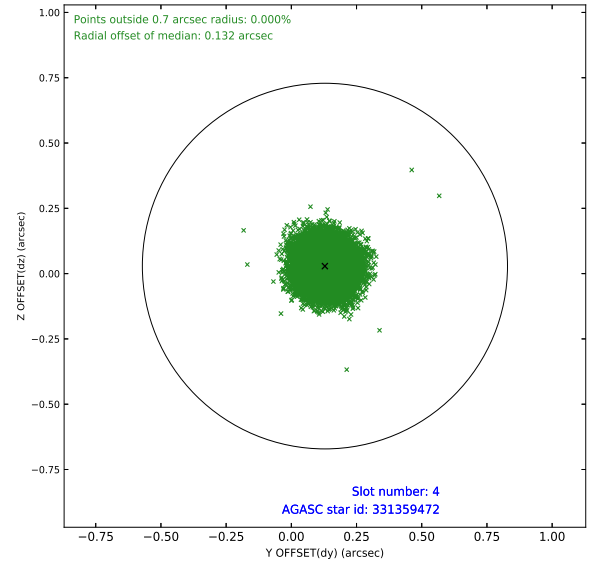
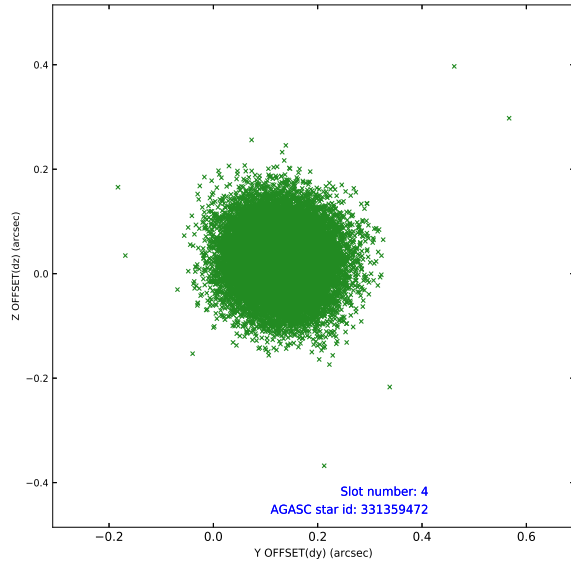
### 2.4.1 Slot 3



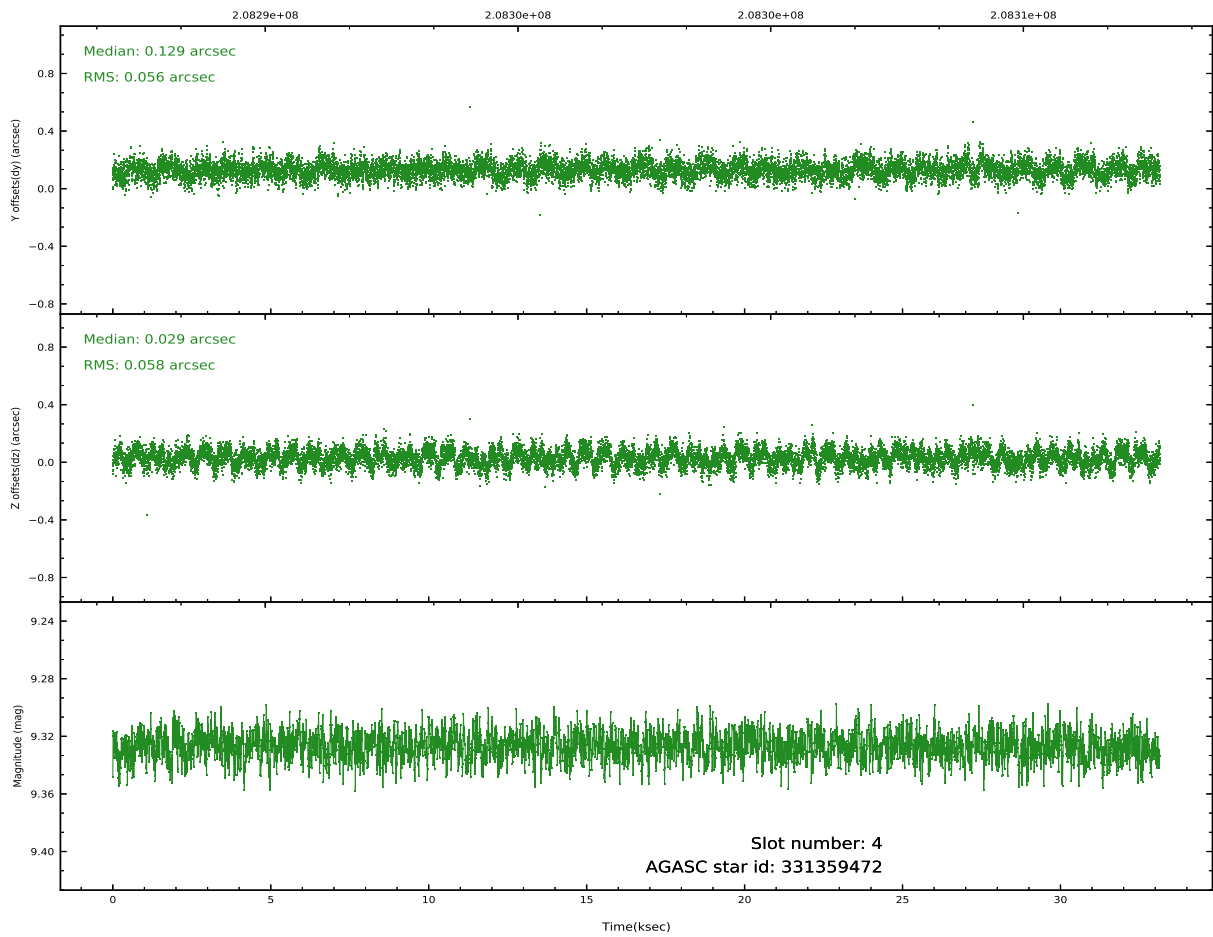
Time (s)



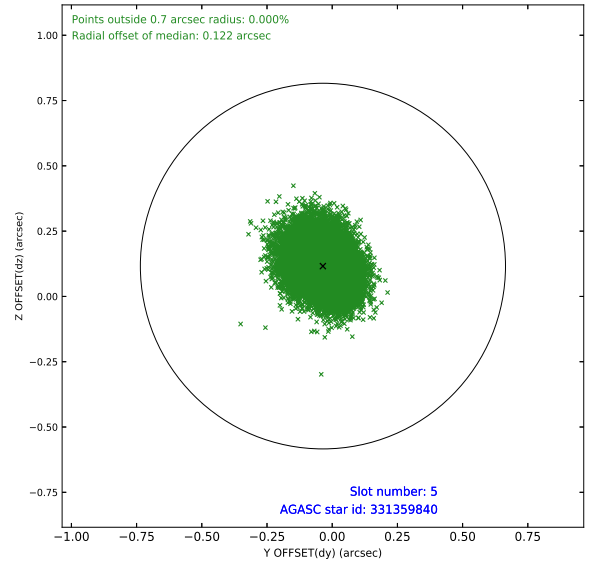
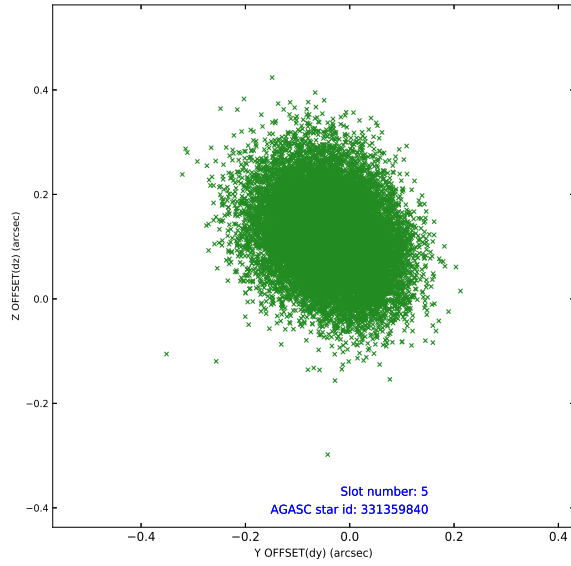
## 2.4.2 Slot 4



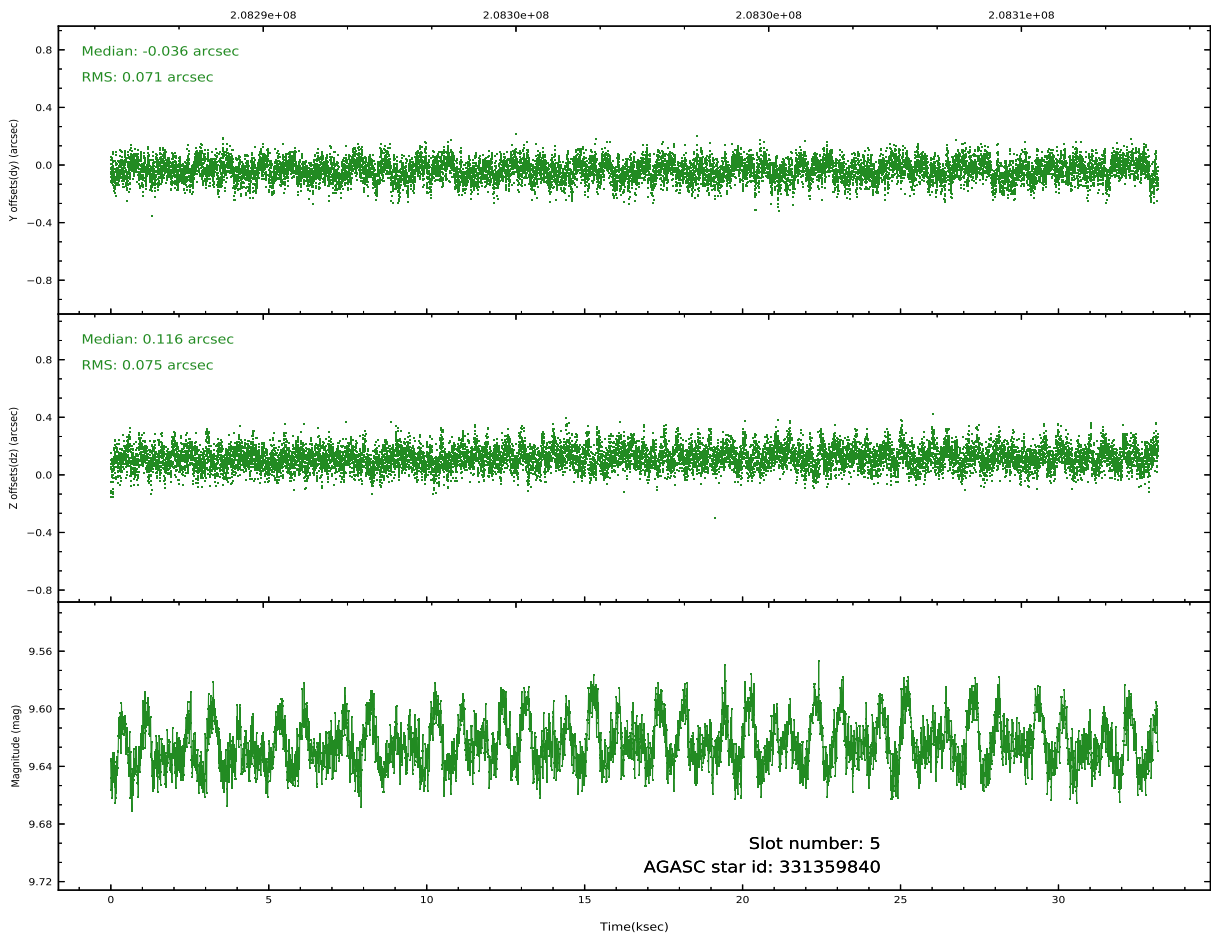
Time (s)



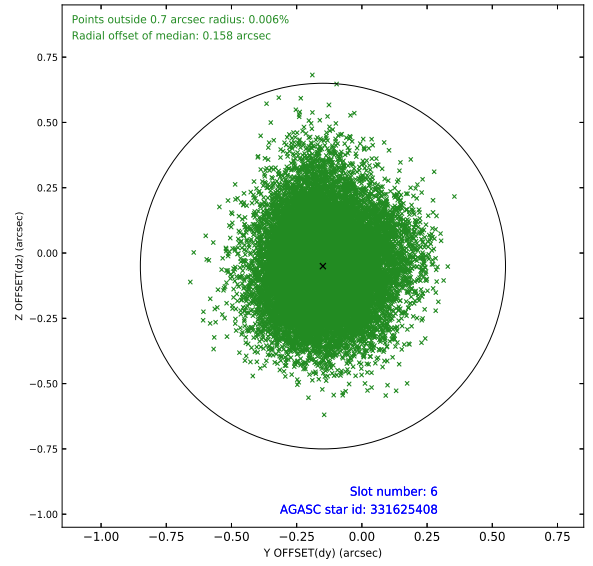
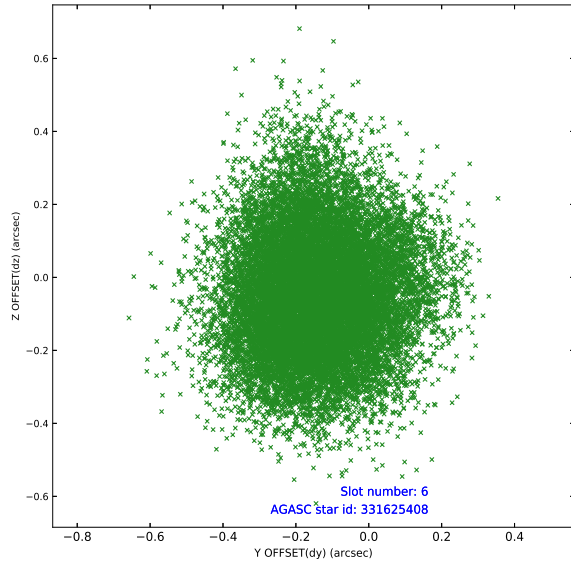
### 2.4.3 Slot 5



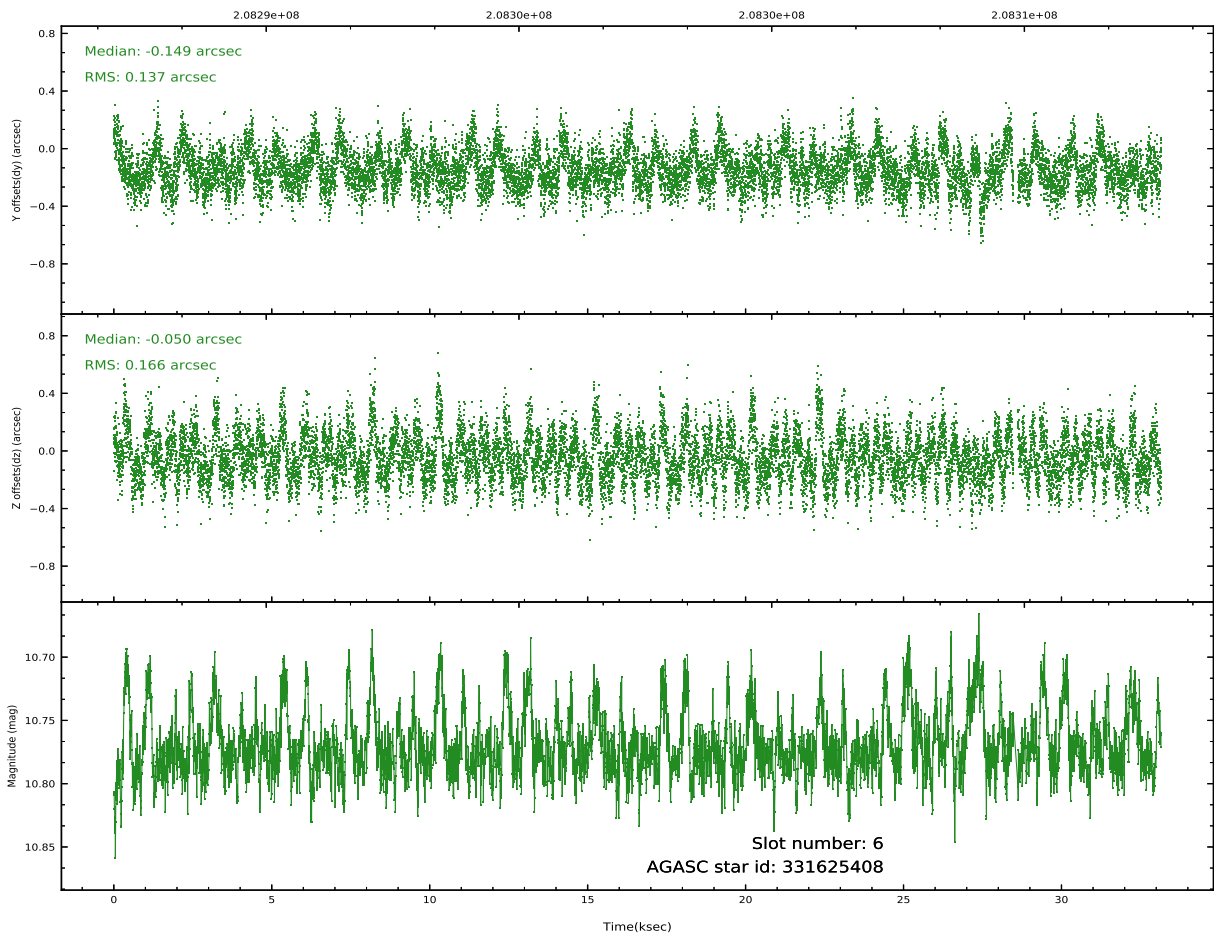
Time (s)



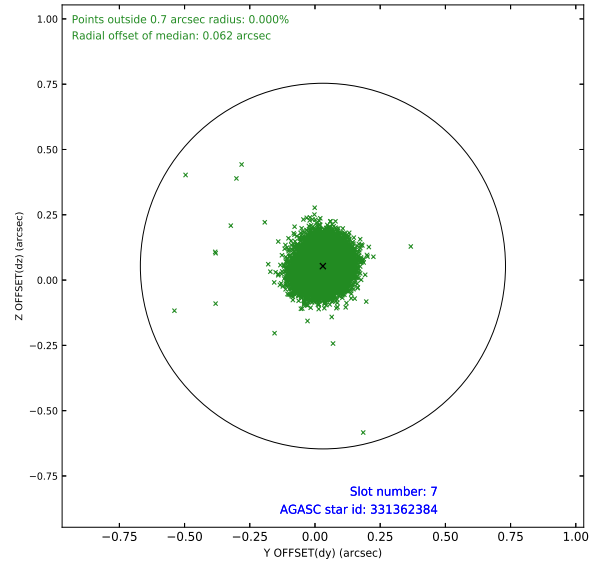
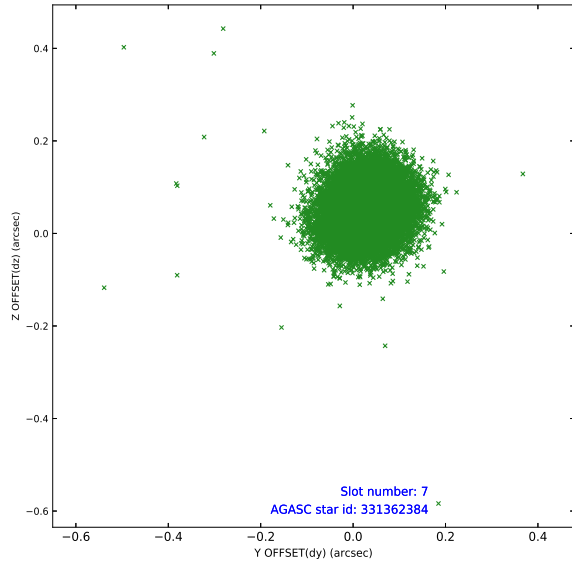
## 2.4.4 Slot 6



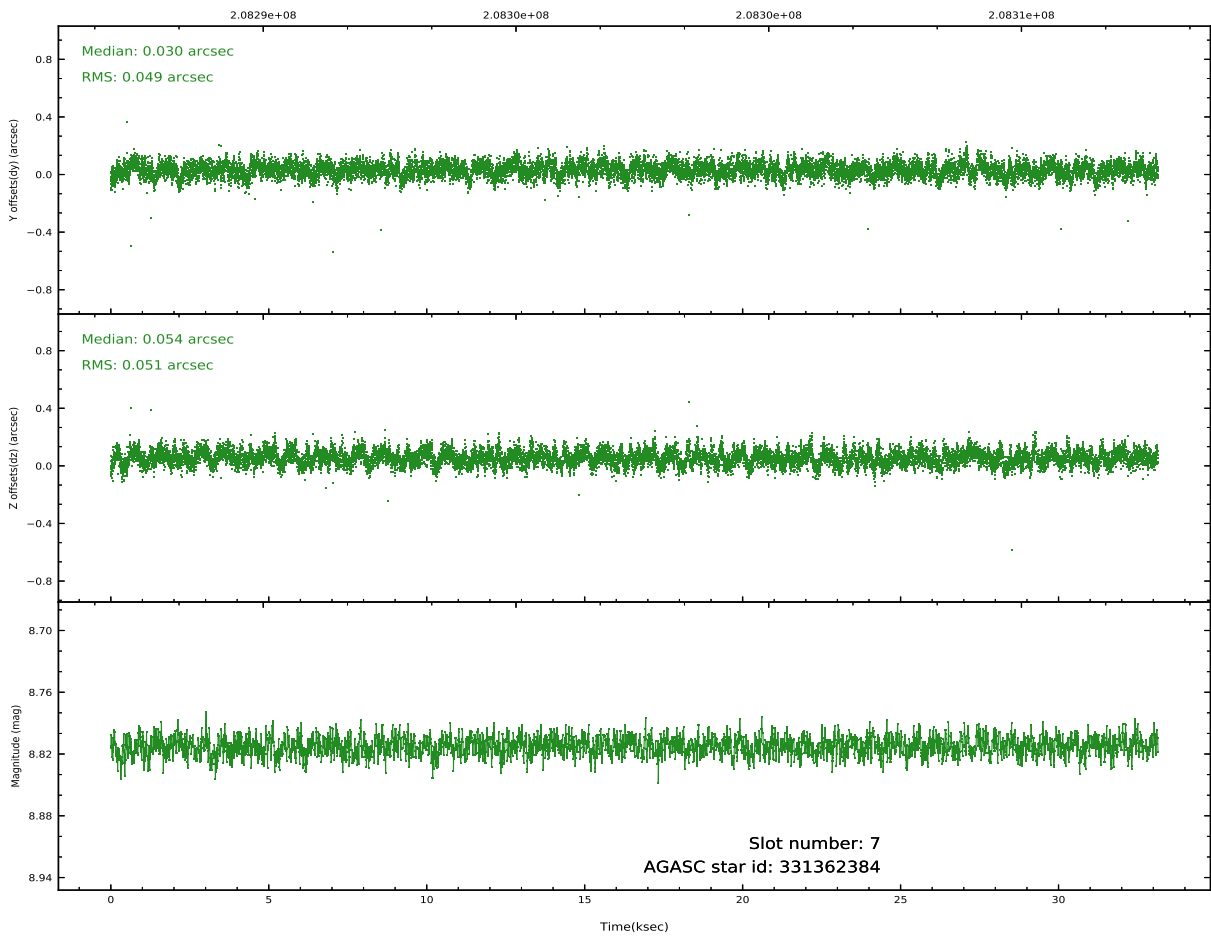
Time (s)



## 2.4.5 Slot 7

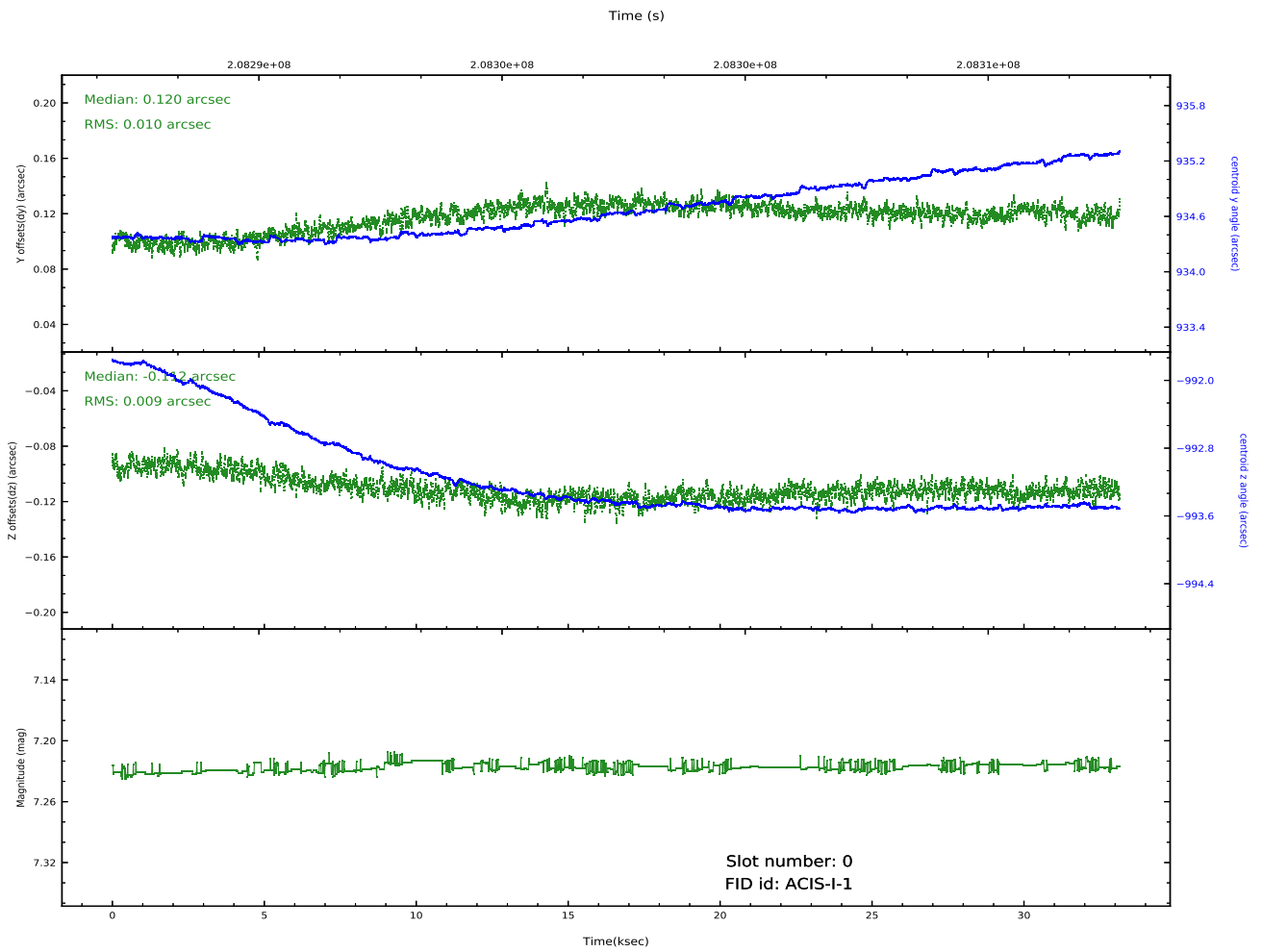
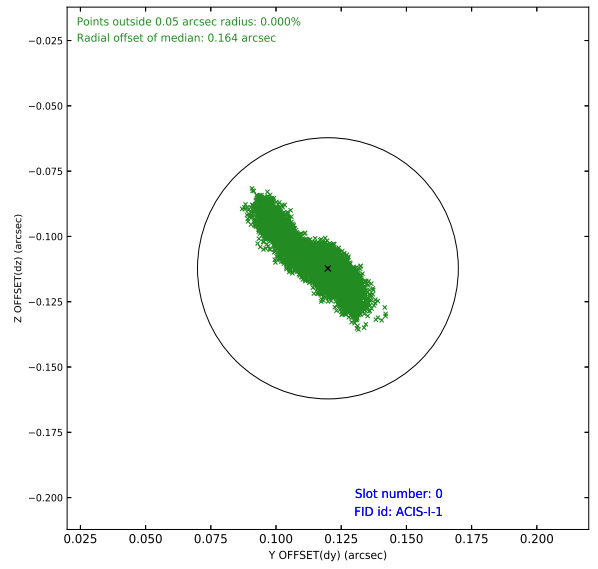
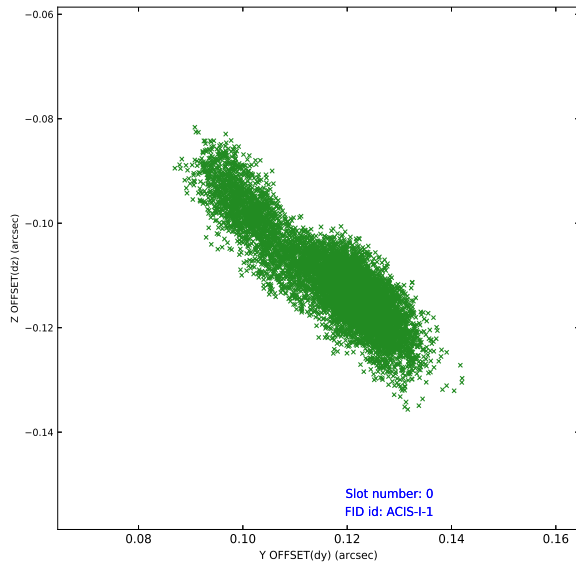


Time (s)

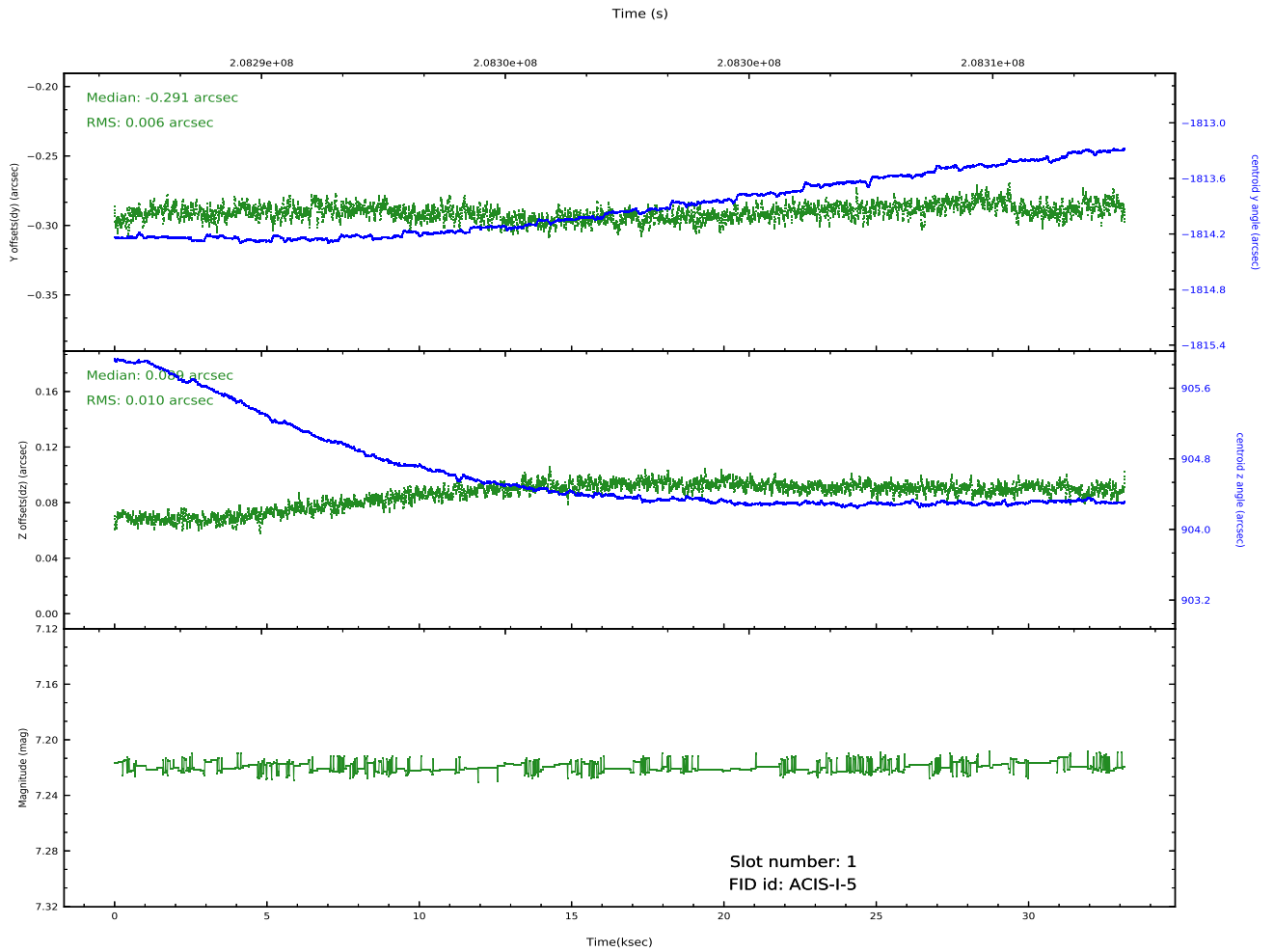
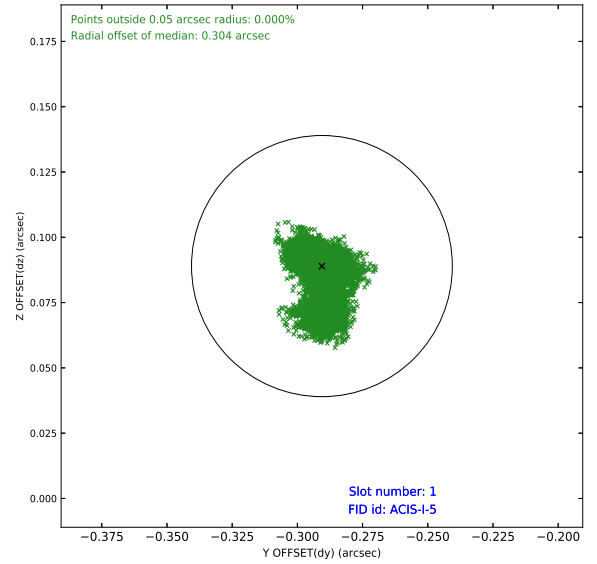
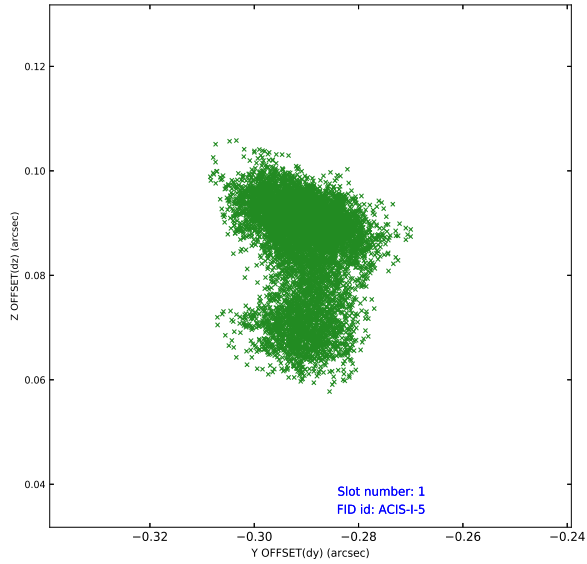


## 2.5 FID Slots

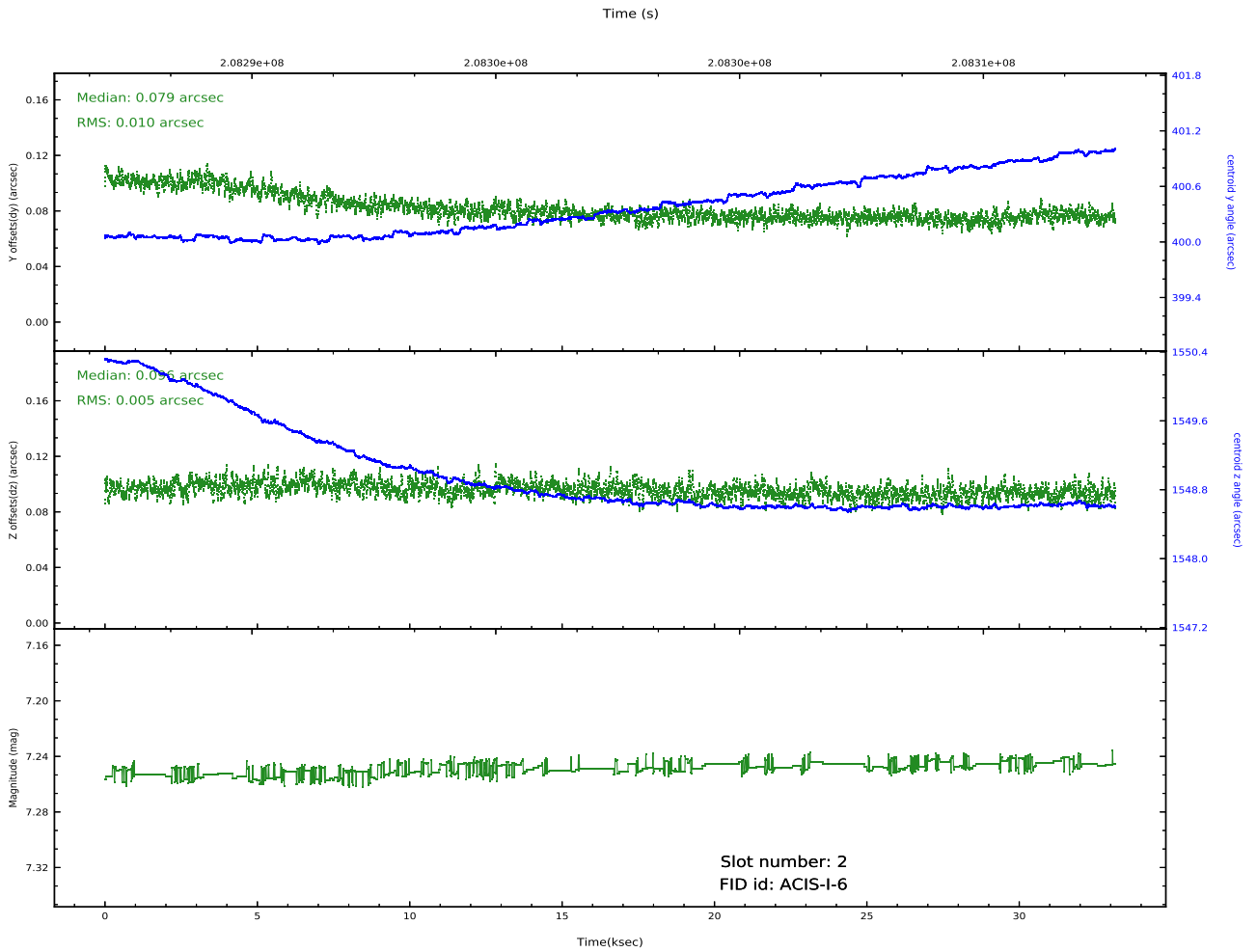
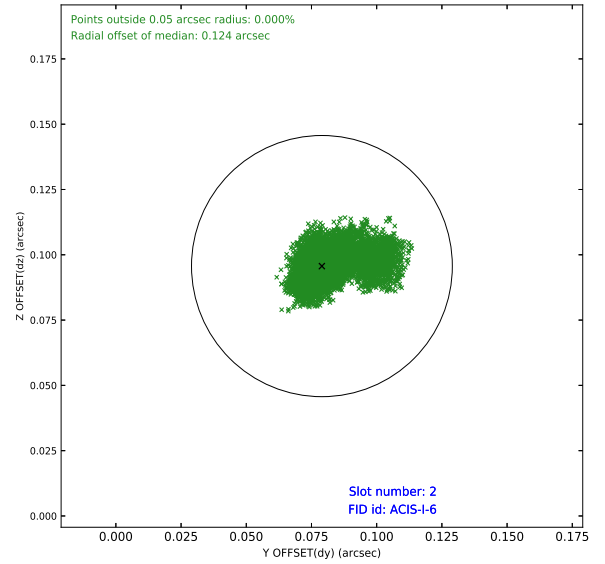
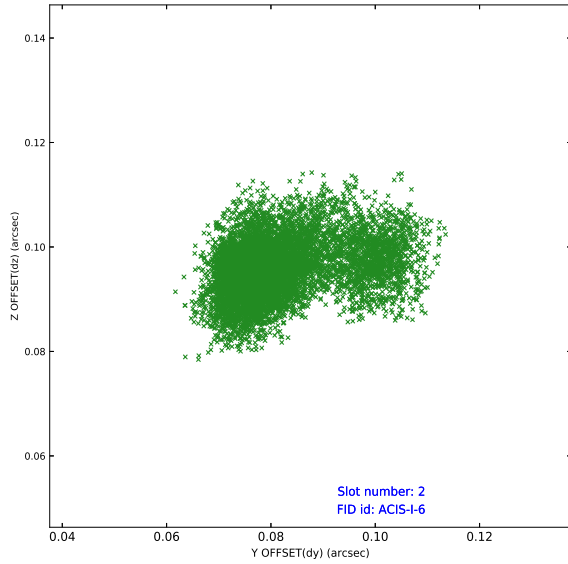
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	33.145

## A.2 Comments

A spatial region of the original bias map for CCD = 0 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small ( $\sim 20$  eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 0 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (186.69075, 33.33754), (186.70299, 33.33919), (186.69174, 33.39637), (186.68045, 33.38987).