

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 6119 - L2 Version 4  
Chandra X-Ray Center

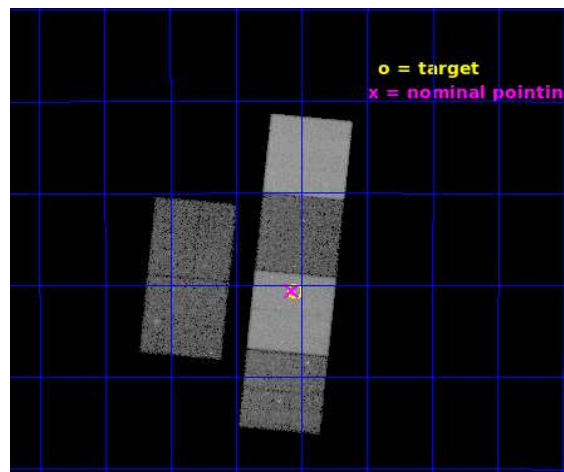
L2 Processing Date : Oct 8 2020

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# 1 Front

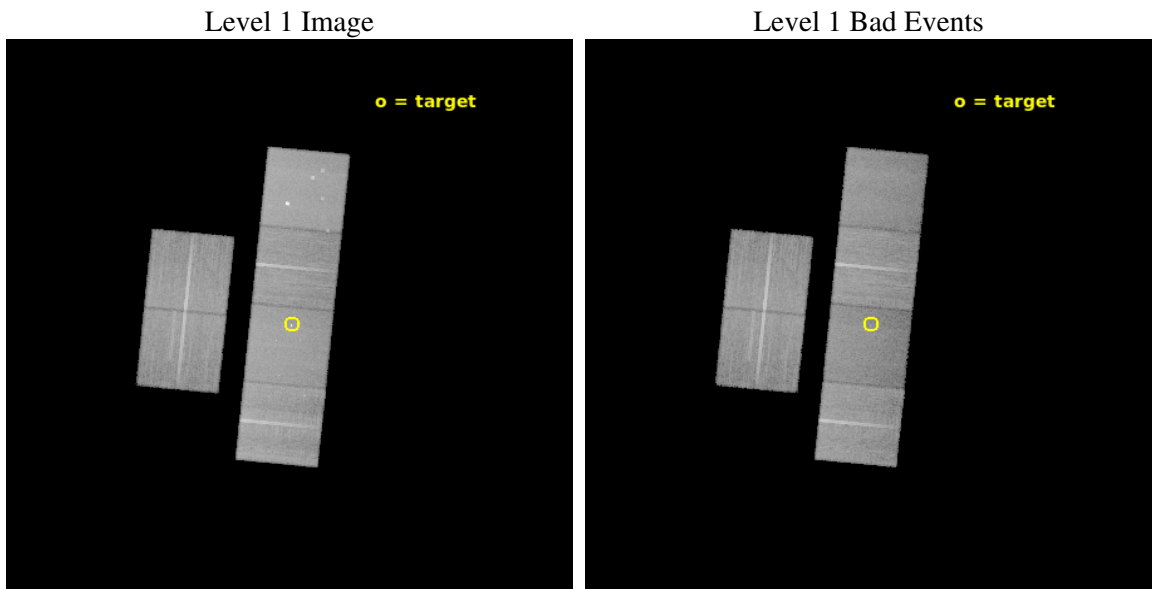
seq_num	200366	Sequence number
obs_id	6119	Observation id
title	Planet-Induced Activity Enhancements in the HD 179949 System	Propo
observer	Steven Saar	Principal investigator
object	HD 179949	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	288.888333	Observer's specified target RA [deg]
dec_targ	-24.179361	Observer's specified target Dec [deg]
ra_nom	288.89324613147	Nominal RA [deg]
dec_nom	-24.177250657846	Nominal Dec [deg]
roll_nom	95.658558887478	Nominal Roll [deg]
revision	4	Processing version of data
ontime	30025.599888146	Sum of GTIs [s]
livetime	29645.397663117	Livetime [s]
ontime2	30025.599888146	Sum of GTIs [s]
ontime3	30022.358887911	Sum of GTIs [s]
ontime5	30025.599888146	Sum of GTIs [s]
ontime6	30025.599888146	Sum of GTIs [s]
ontime7	30025.599888146	Sum of GTIs [s]
ontime8	30012.635897189	Sum of GTIs [s]
l2events	269868	Number of level 2 events



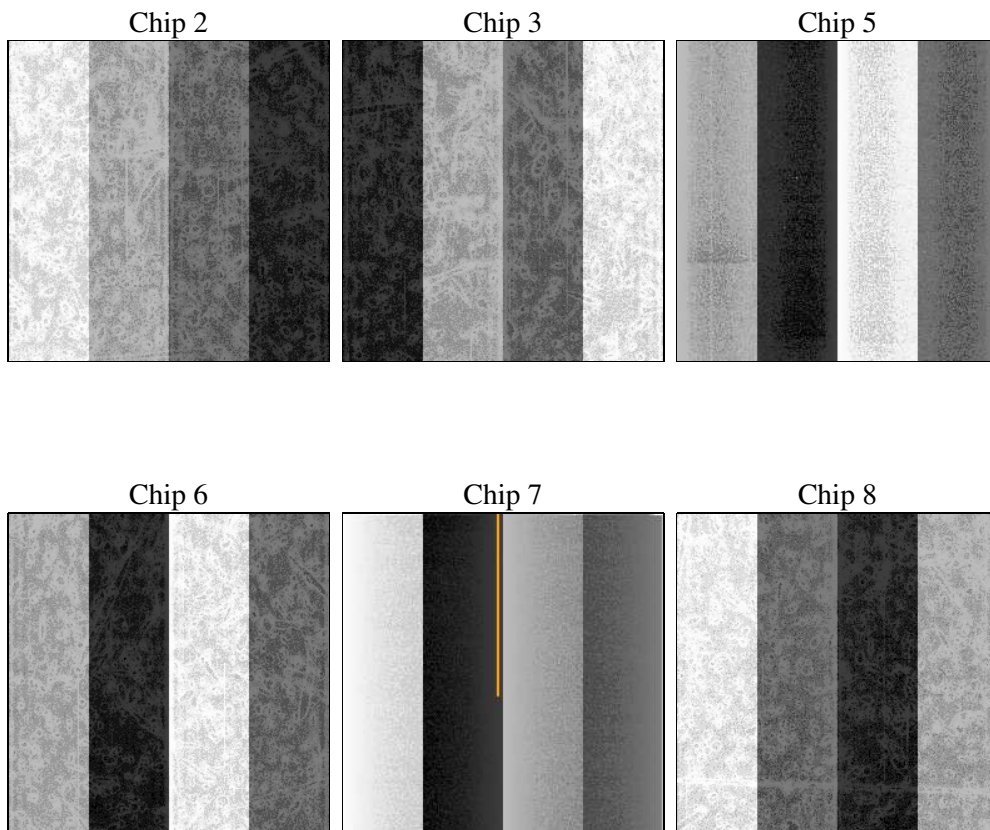
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	30025.599888146	Sum of GTIs [s]
caldbver	4.9.2	&#160	ontime2	30025.599888146	Sum of GTIs [s]
date	2020-10-08T12:07:36	Date and time of file creation	ontime3	30022.358887911	Sum of GTIs [s]
revision	4	Processing version of data	ontime5	30025.599888146	Sum of GTIs [s]
			ontime6	30025.599888146	Sum of GTIs [s]
			ontime7	30025.599888146	Sum of GTIs [s]
			ontime8	30012.635897189	Sum of GTIs [s]
			l1events	1266205	Number of level 1 events

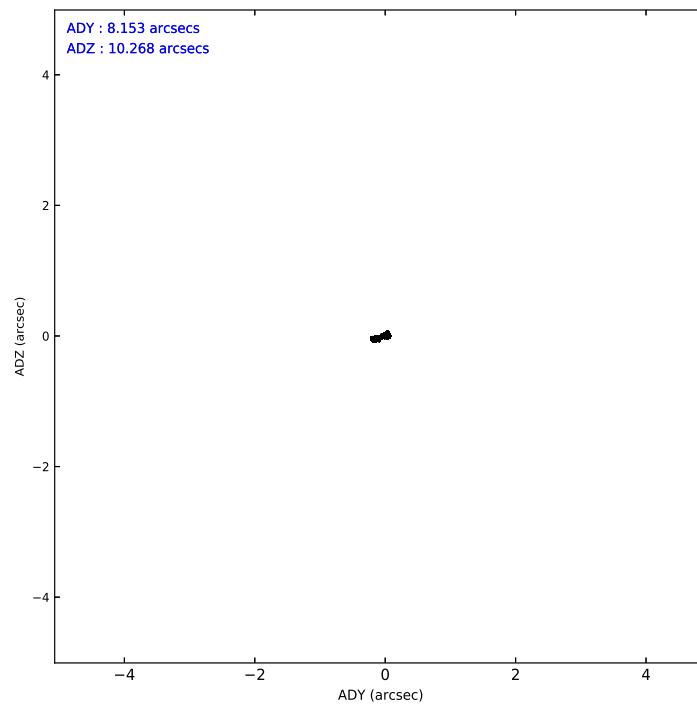
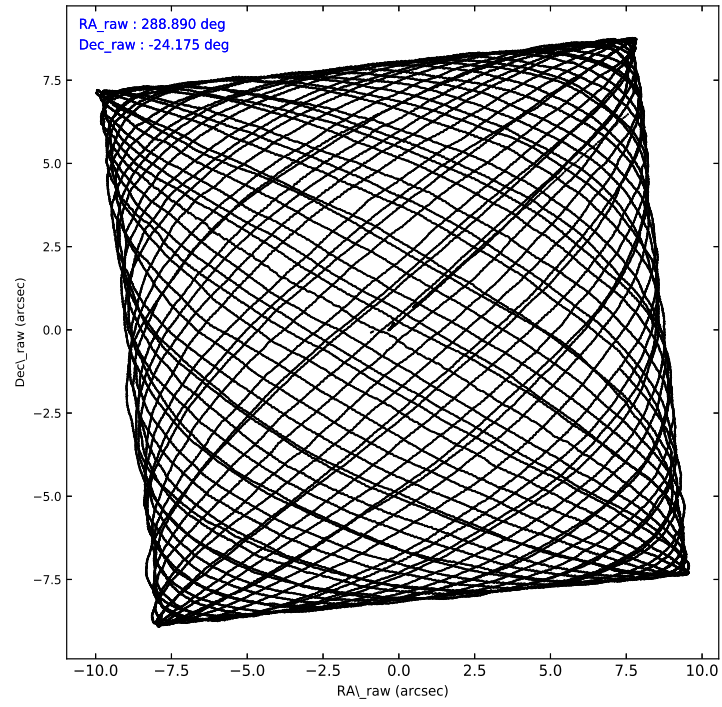
### 2.1.4 Events

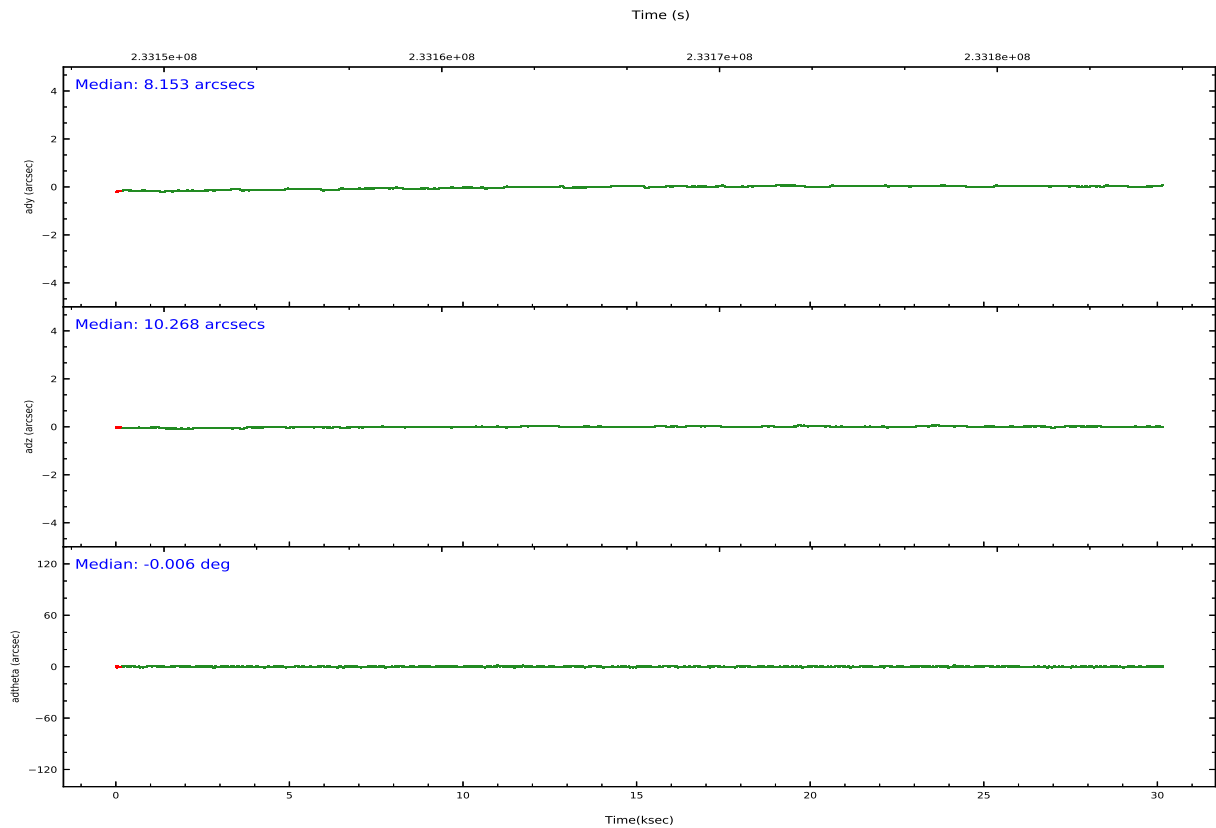
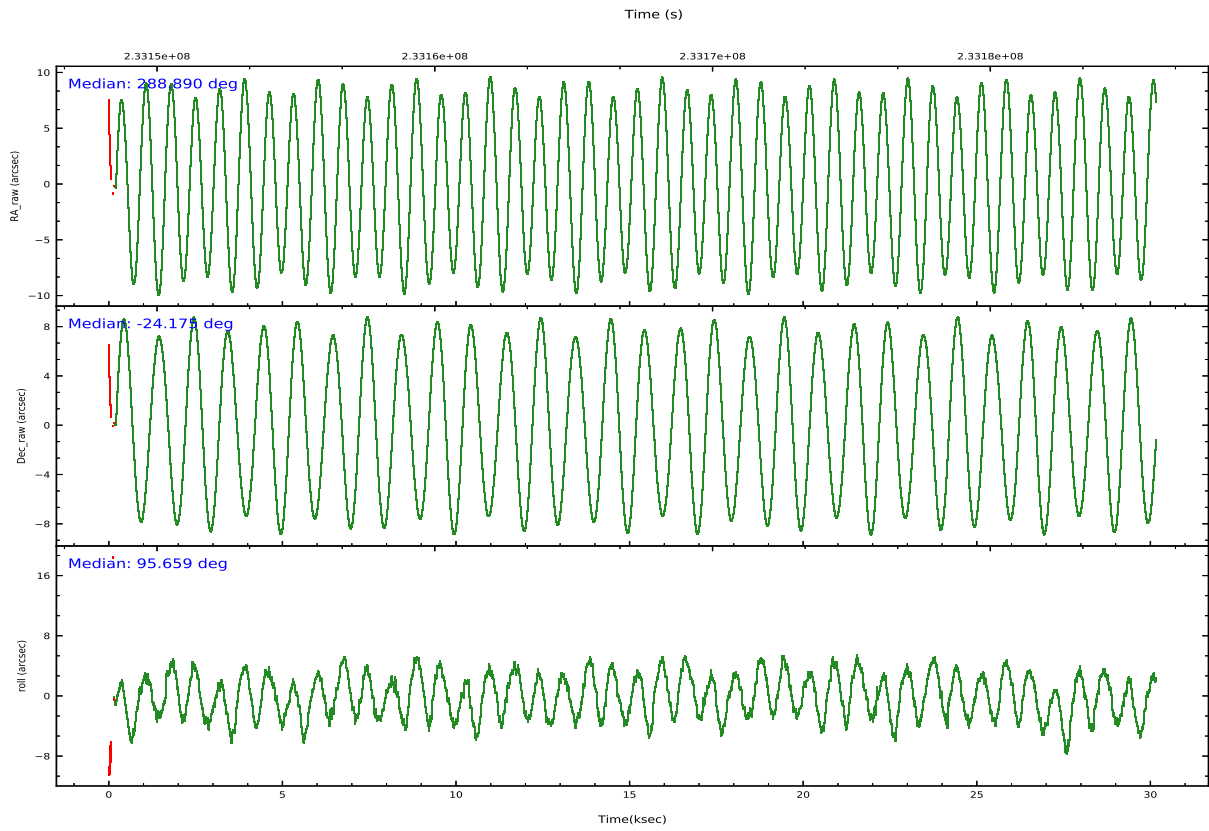
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	192944	180163	258756	190715	212249	231378	grade 0 events	6772	6954	17805	8202	10124	17308
rejected events	175148	162791	134359	171435	118137	179858		3%	3%	6%	4%	4%	7%
rejected %	90%	90%	51%	89%	55%	77%	grade 1 events	100	115	419	163	240	185
								0%	0%	0%	0%	0%	0%
							grade 2 events	4223	3767	37006	4114	20088	12191
								2%	2%	14%	2%	9%	5%
							grade 3 events	2075	1980	5541	2269	9445	5798
								1%	1%	2%	1%	4%	2%
							grade 4 events	2117	1977	5277	2120	9360	5400
								1%	1%	2%	1%	4%	2%
							grade 5 events	6315	7294	20166	7798	22153	10558
								3%	4%	7%	4%	10%	4%
							grade 6 events	3366	3458	65370	4172	49548	14244
								1%	1%	25%	2%	23%	6%
							grade 7 events	167976	154618	107172	161877	91291	165694
								87%	85%	41%	84%	43%	71%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-235678	ACIS-235678	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	288.907458	288.89324613147	Subarray requested	NONE	NONE
[deg] Pointing Dec	-24.197101	-24.177250657846	Alternating exposures requested	N	N
[deg] Pointing Roll	95.507835	95.65855888747799	[s] Primary exposure time	0.000000	3.2
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
Phase constraints	Y	Y			
[d] Phase period	3.092455	3.092455			
[d] Phase epoch (MJD)	52891.020000	52891.020000			
Phase start	0.940000	0.940000			
Phase end	0.060000	0.060000			
Phase start error	0.030000	0.030000			
Phase end error	0.030000	0.030000			
[s] Observation start time (MET)	233150777.184000	233149118.75365			
Observation start date	2005-05-22T12:05:13	2005-05-22T11:38:38			
[s] Observation end time (MET)	233180777.184000	233181519.51762			
Observation end date	2005-05-22T20:25:13	2005-05-22T20:38:39			
Read mode	TIMED	TIMED			

## 2.3 Aspect





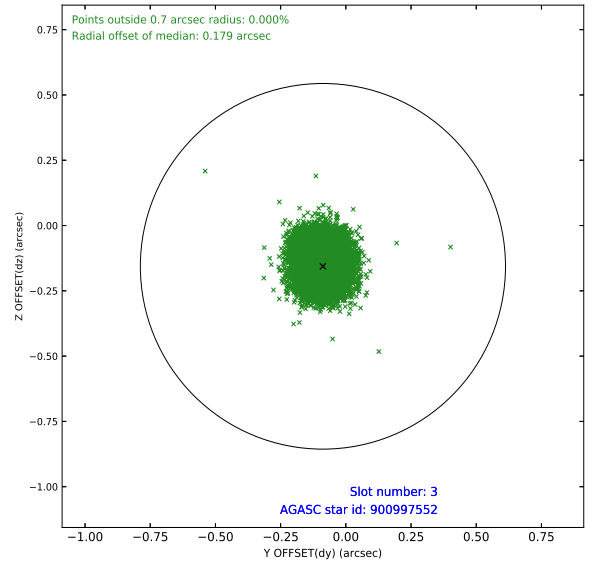
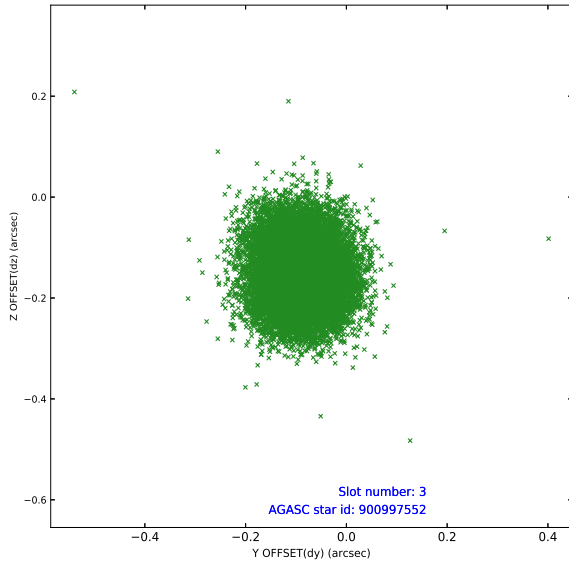
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.10	7343	1.000	-0.072	-0.060	0.007	0.012	0.000000	0.000000	-760.91	-1731
1	FID		ACIS-S-4	7.20	7344	1.000	0.187	0.051	0.007	0.013	0.000000	0.000000	2152.52	177
2	FID		ACIS-S-5	7.23	7343	1.000	-0.146	0.018	0.007	0.012	0.000000	0.000000	-1813.81	170
3	GUIDE	used	900997552	9.13	14679	1.000	-0.088	-0.156	0.083	0.134	288.312519	-24.029579	783.90	1889
4	GUIDE	used	901144560	8.68	14684	1.000	-0.110	0.177	0.068	0.108	289.333664	-23.842375	1134.61	-1518
5	GUIDE	used	901514880	8.92	14620	1.000	0.109	-0.147	0.063	0.104	288.396412	-24.524459	-1015.34	1779
6	GUIDE	used	901647096	9.15	14680	1.000	0.090	0.129	0.087	0.138	289.707413	-24.700499	-2062.18	-2429
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

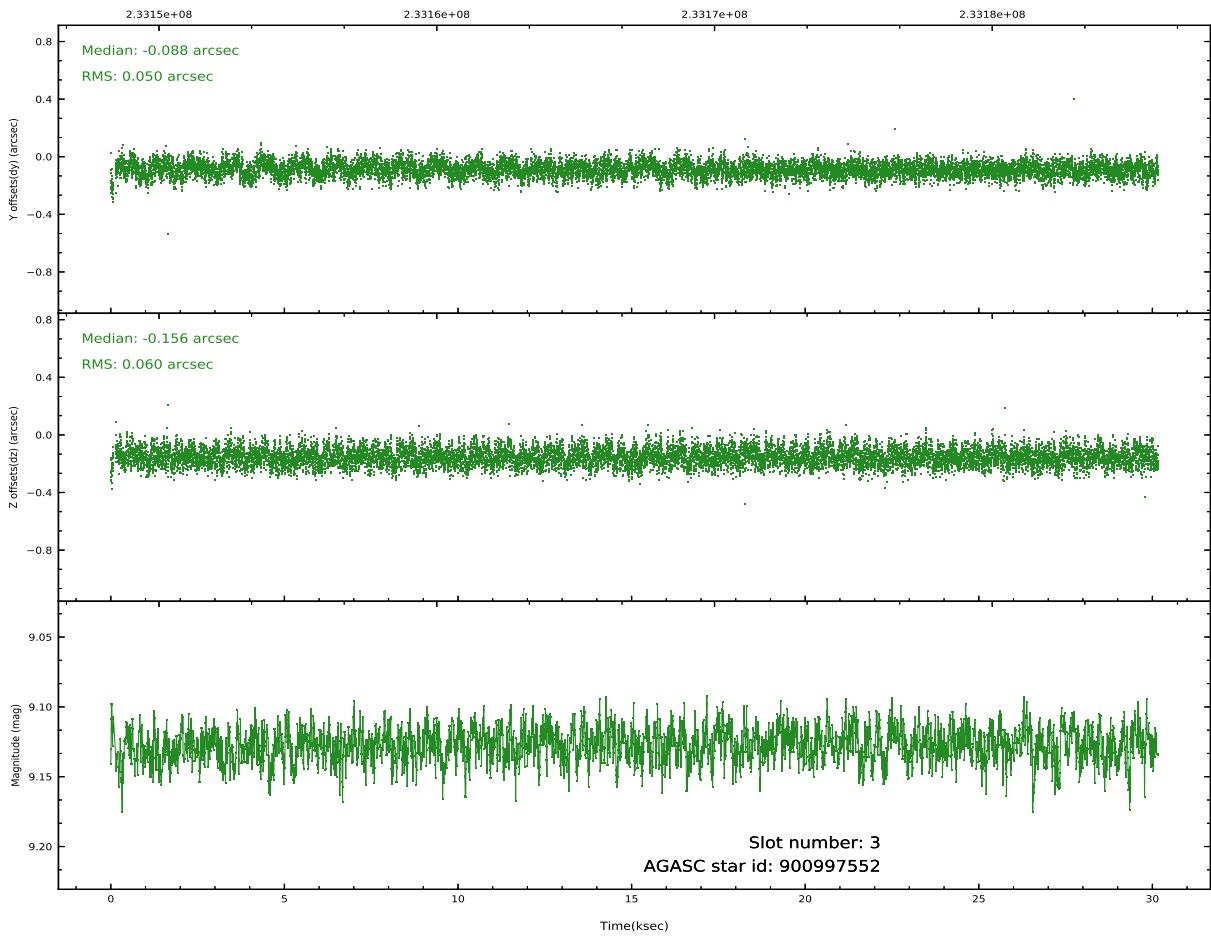
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## 2.4 Star Slots

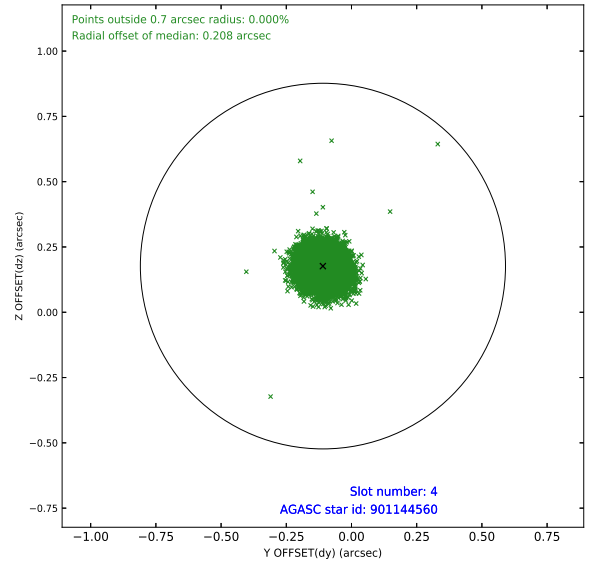
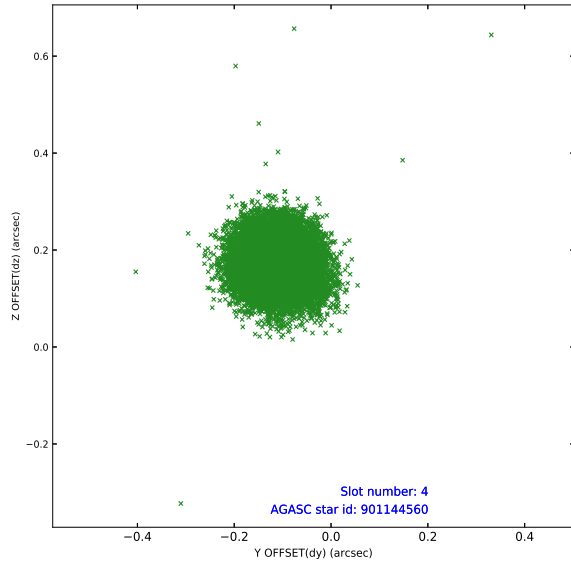
### 2.4.1 Slot 3



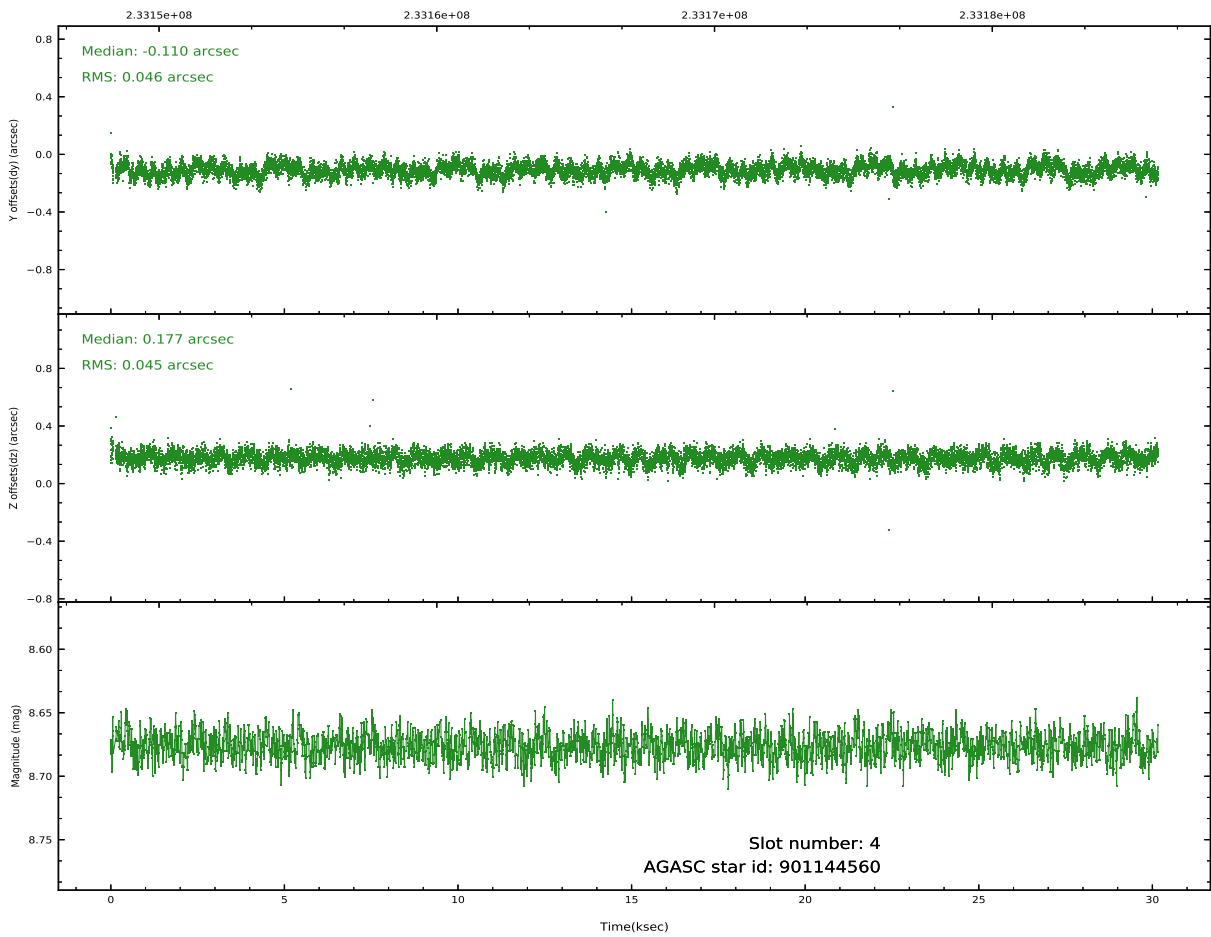
Time (s)



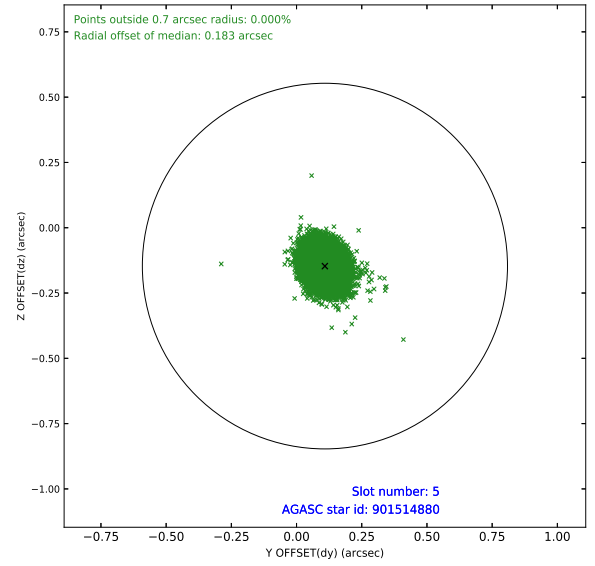
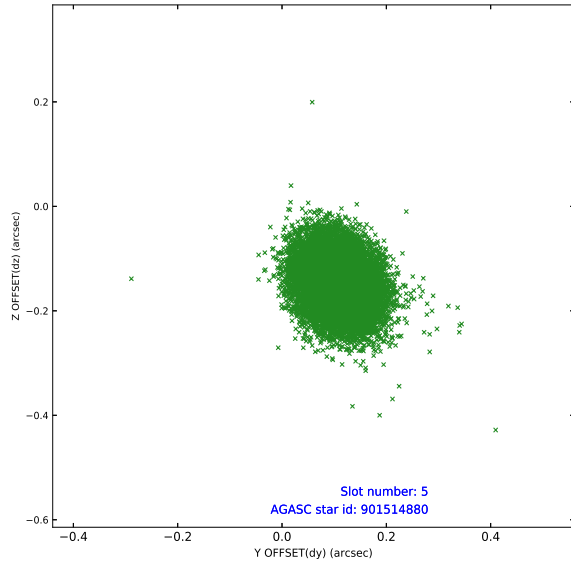
## 2.4.2 Slot 4



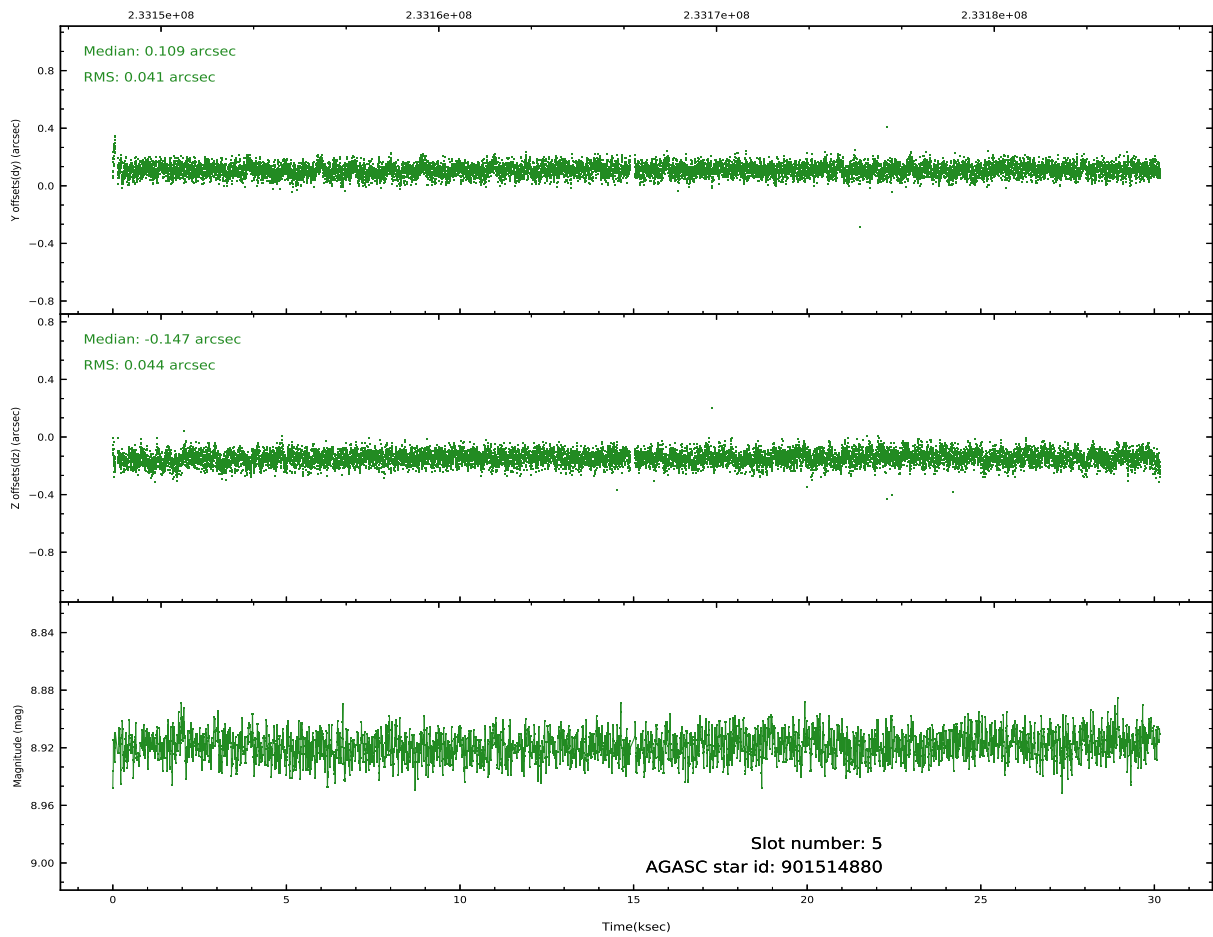
Time (s)



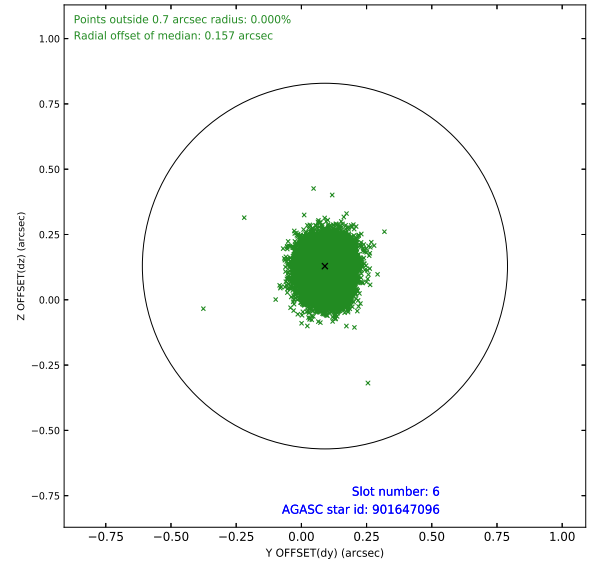
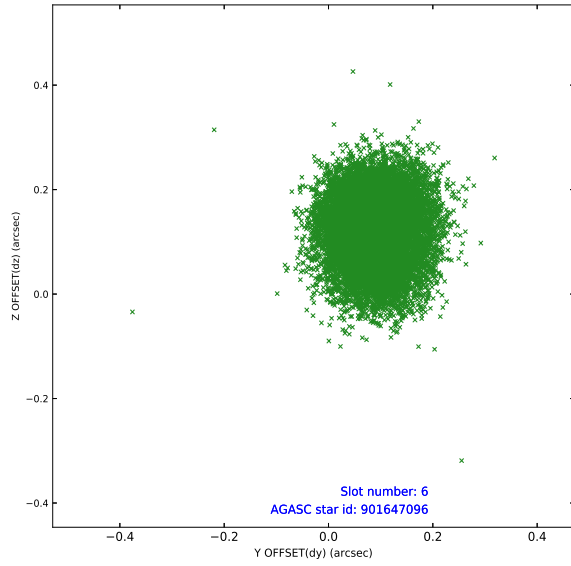
### 2.4.3 Slot 5



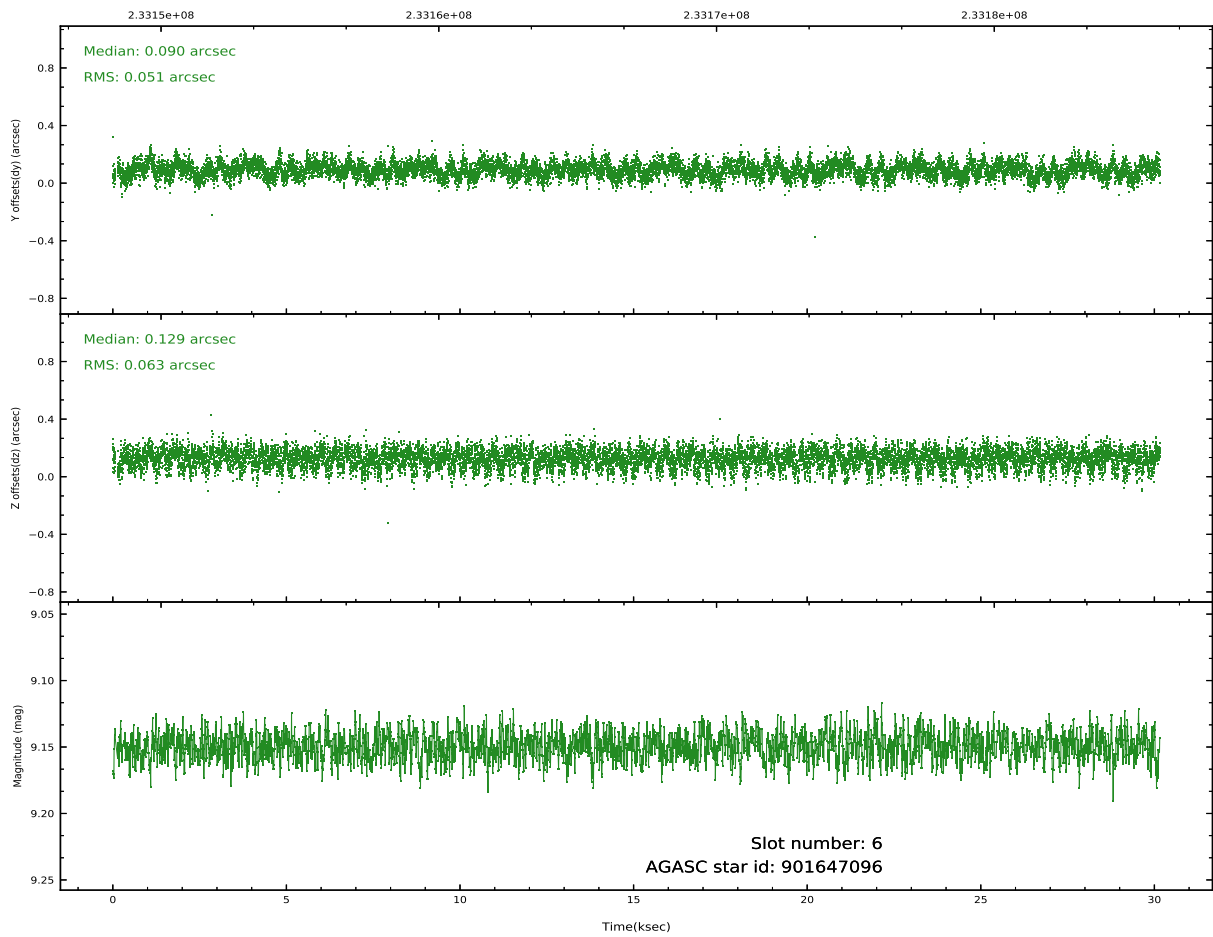
Time (s)



## 2.4.4 Slot 6

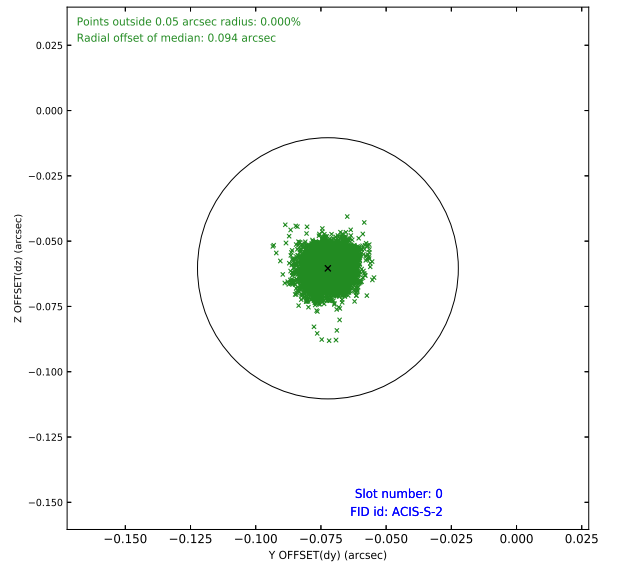
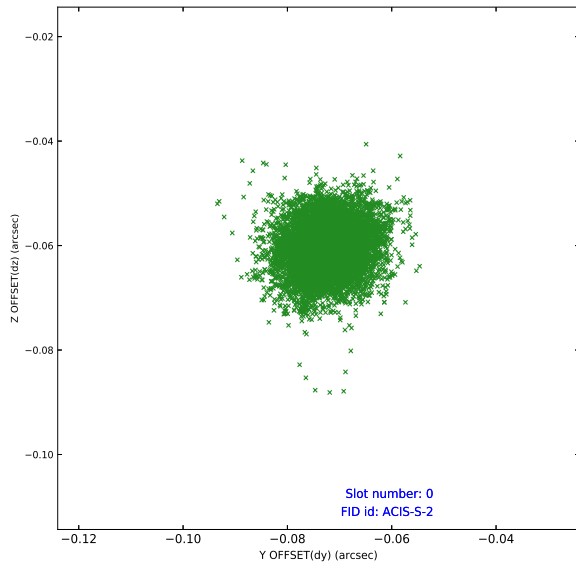


Time (s)

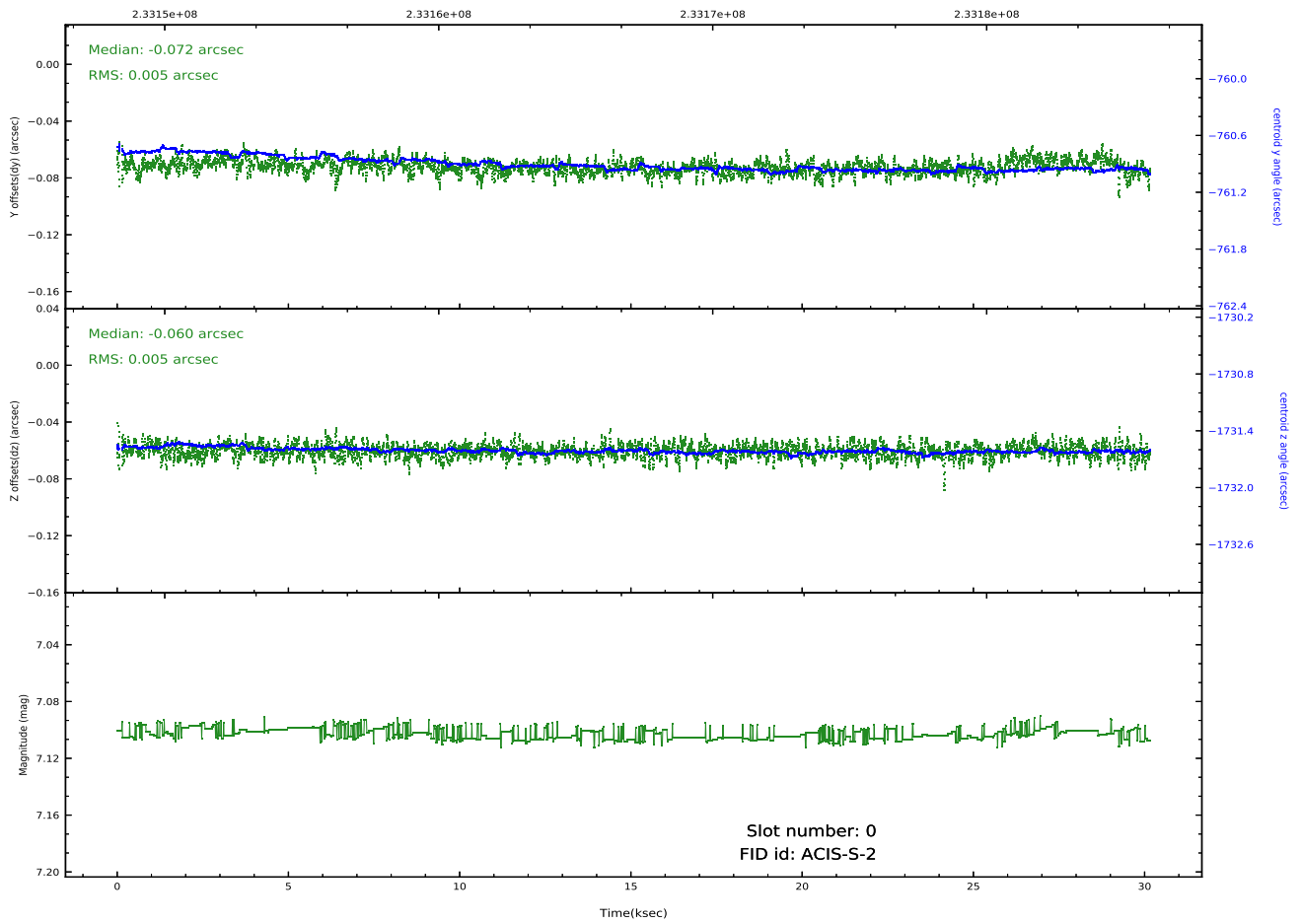


## 2.5 FID Slots

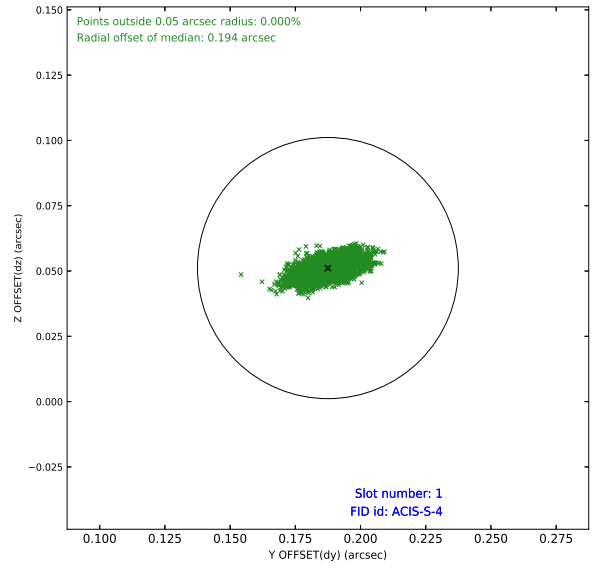
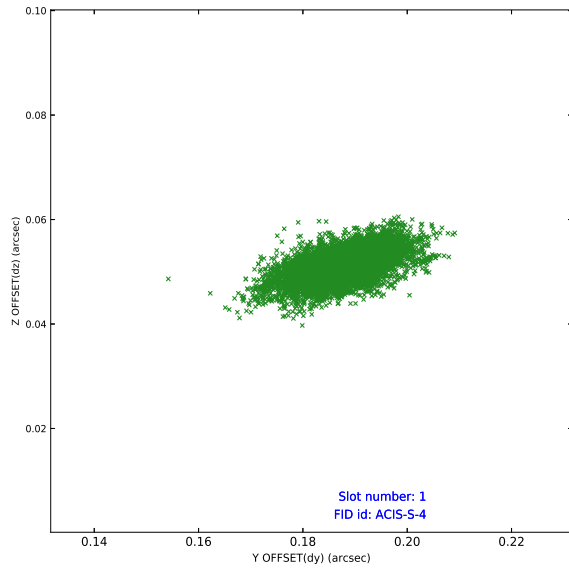
### 2.5.1 Slot 0



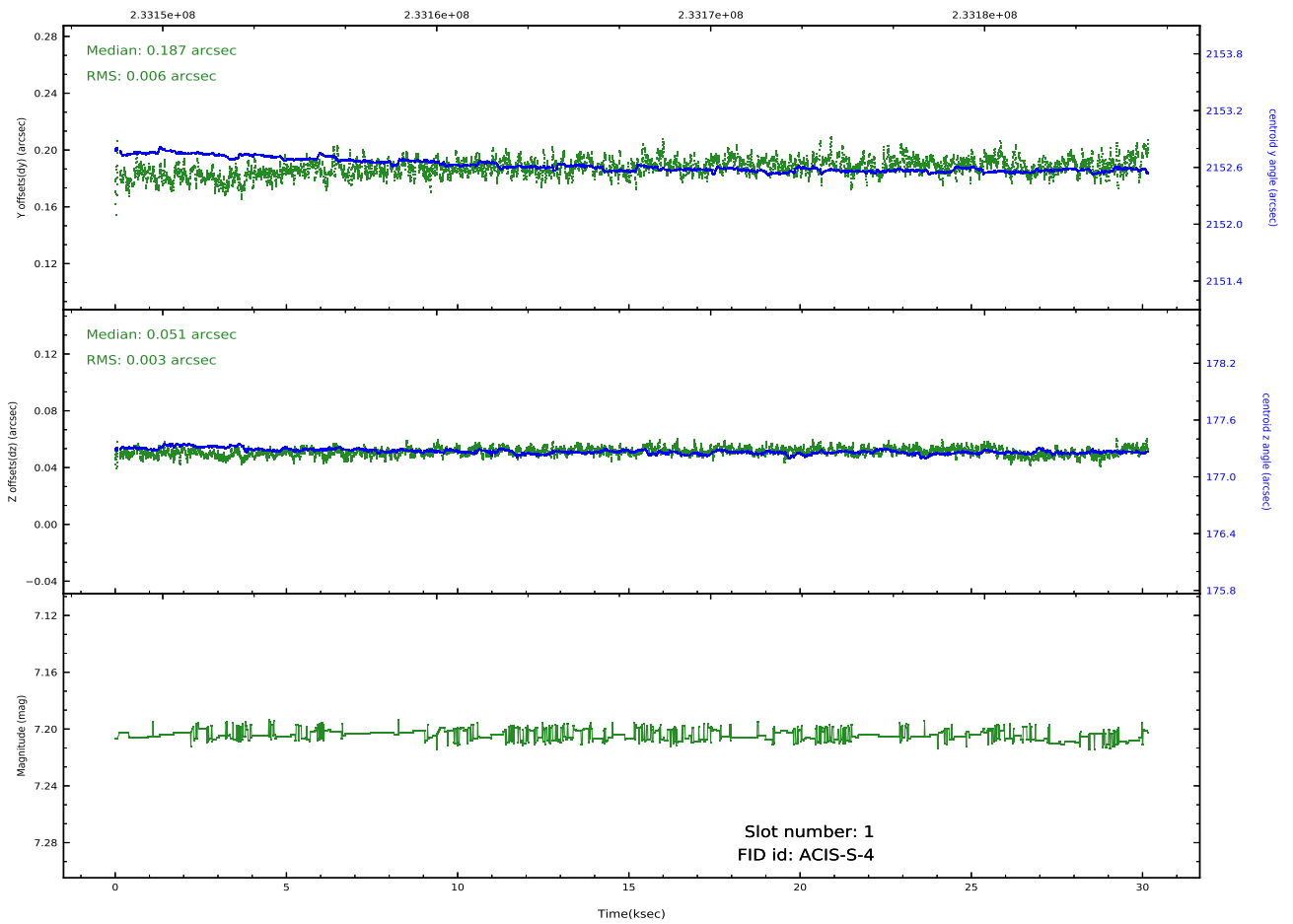
Time (s)



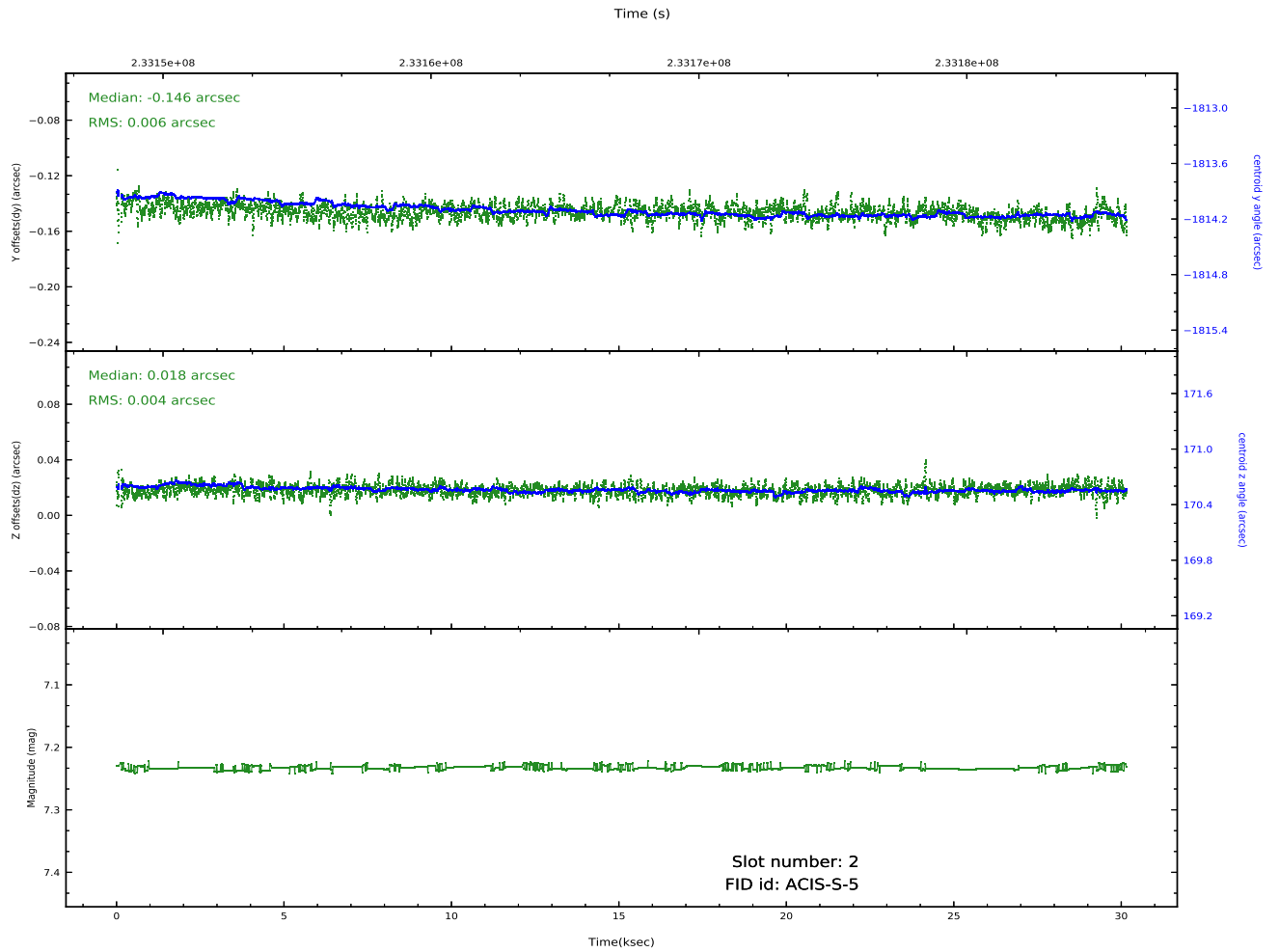
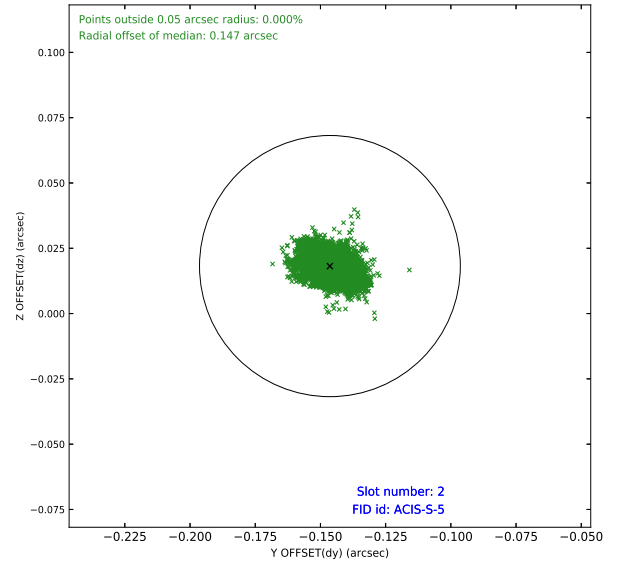
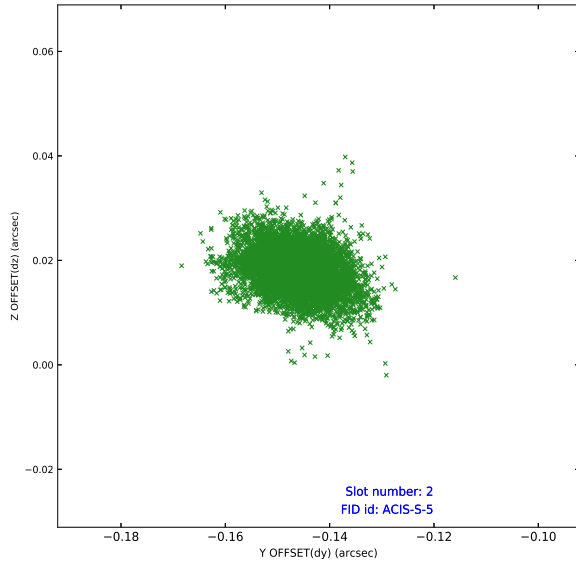
## 2.5.2 Slot 1



Time (s)



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2020.10.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.02559

## A.2 Comments

Joint Proposal: HST. Monitor constraint met.

=====

The ACA has the capability to devote one or more of the eight image slots to "monitor" particular sky locations. This allows simultaneous optical photometry of one or more targets in the ACA field of view. These optical sources can be slightly fainter than the ACA guide star limit of  $m_{ACA} = 10.2$  mag. The bright-end limit for monitor star photometry is  $m_{ACA}=6.2$  mag. However, since there are a fixed number of image slots, devoting a slot to photometry instead of tracking a guide star results in a degradation of the image reconstruction and celestial location accuracy (Section 5.4). Using one monitor slot represents a 15 - 25% increase in the aspect image reconstruction RMS diameter, depending on the particular guide star configuration. Two monitor slots would increase the diameter by about 50 - 60%, but this configuration is not operationally allowed under normal circumstances. The photometric accuracy which can be achieved depends primarily on the star magnitude, integration time, CCD dark current, CCD read noise, sky background, and the CCD dark current uncertainty.