

# V&V Reference Report

## L2 ASCDS Version : 10.5.4

Observation 20079 - L2 Version 1  
Chandra X-Ray Center

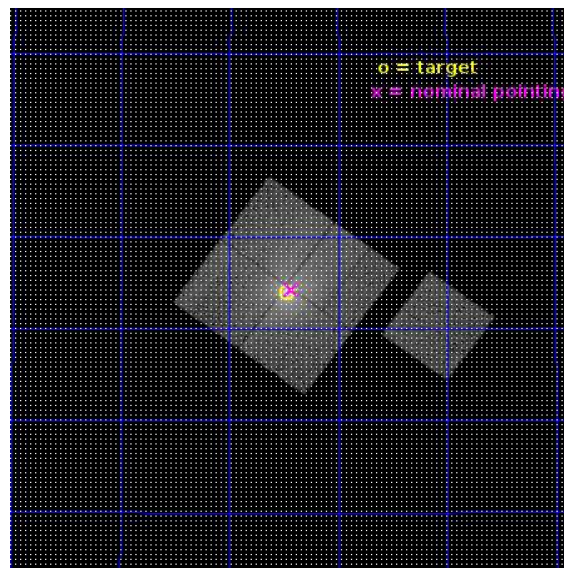
L2 Processing Date : May 22 2017

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# 1 Front

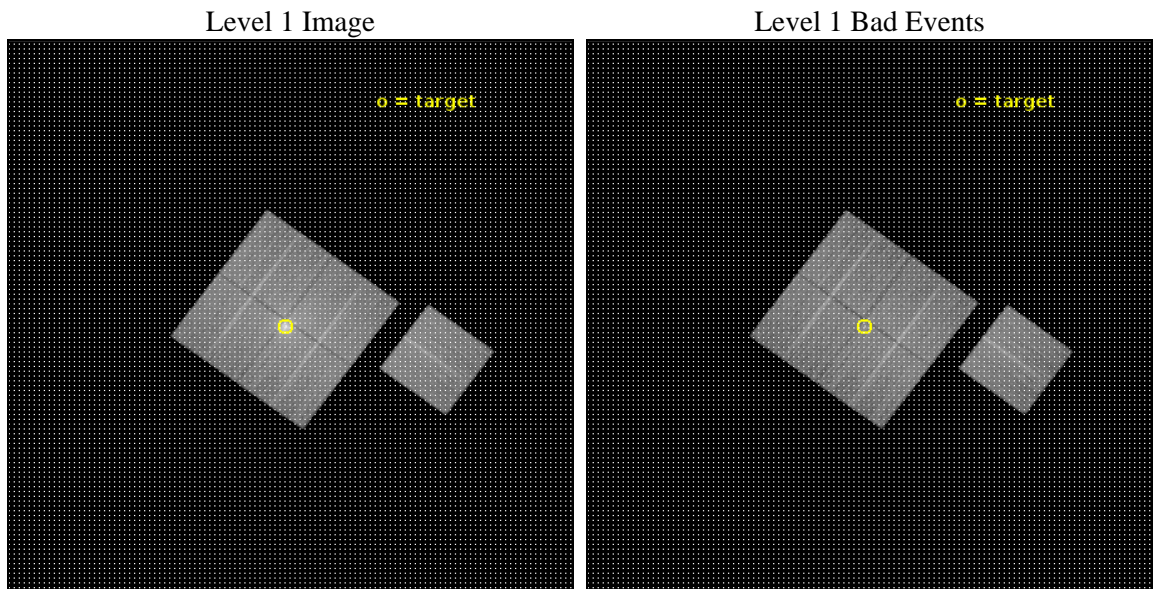
seq_num	703131	Sequence number
obs_id	20079	Observation id
title	The Rise to Power: Half a Billion Years of Intense AGN Activity in the Merging Cluster Cygnus A	Proposal title
observer	Dr. Michael Wise	Principal investigator
object	Cygnus A - Nucleus	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	299.867917	Observer's specified target RA [deg]
dec_targ	40.733889	Observer's specified target Dec [deg]
ra_nom	299.85754723036	Nominal RA [deg]
dec_nom	40.73825723257	Nominal Dec [deg]
roll_nom	126.21543309017	Nominal Roll [deg]
revision	1	Processing version of data
ontime	24070.480121374	Sum of GTIs [s]
livetime	23755.981578159	Livetime [s]
ontime0	24070.357001424	Sum of GTIs [s]
ontime1	24070.398041368	Sum of GTIs [s]
ontime2	24067.298041344	Sum of GTIs [s]
ontime3	24070.480121374	Sum of GTIs [s]
ontime6	24070.315961361	Sum of GTIs [s]
l2events	193720	Number of level 2 events



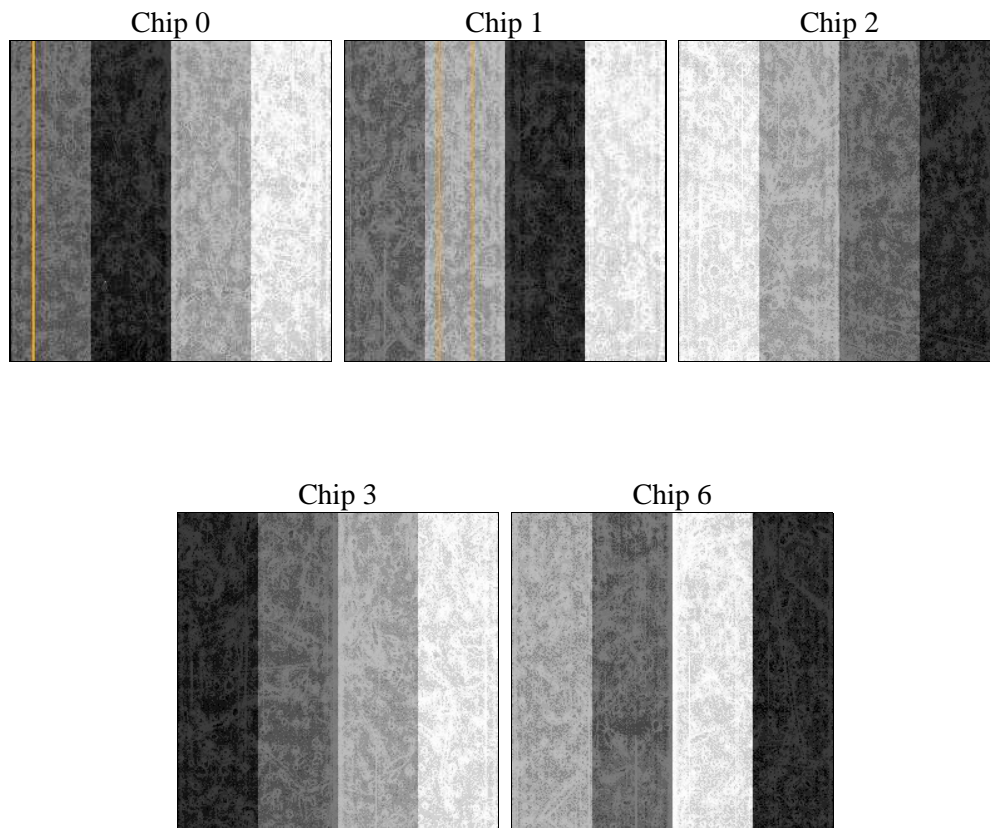
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	24000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.4	Processing system revision	ontime	24070.480121374	Sum of GTIs [s]
caldsver	4.7.4	&#160	ontime0	24070.357001424	Sum of GTIs [s]
date	2017-05-22T04:22:02	Date and time of file creation	ontime1	24070.398041368	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	24067.298041344	Sum of GTIs [s]
			ontime3	24070.480121374	Sum of GTIs [s]
			ontime6	24070.315961361	Sum of GTIs [s]
			l1events	972024	Number of level 1 events

### 2.1.4 Events

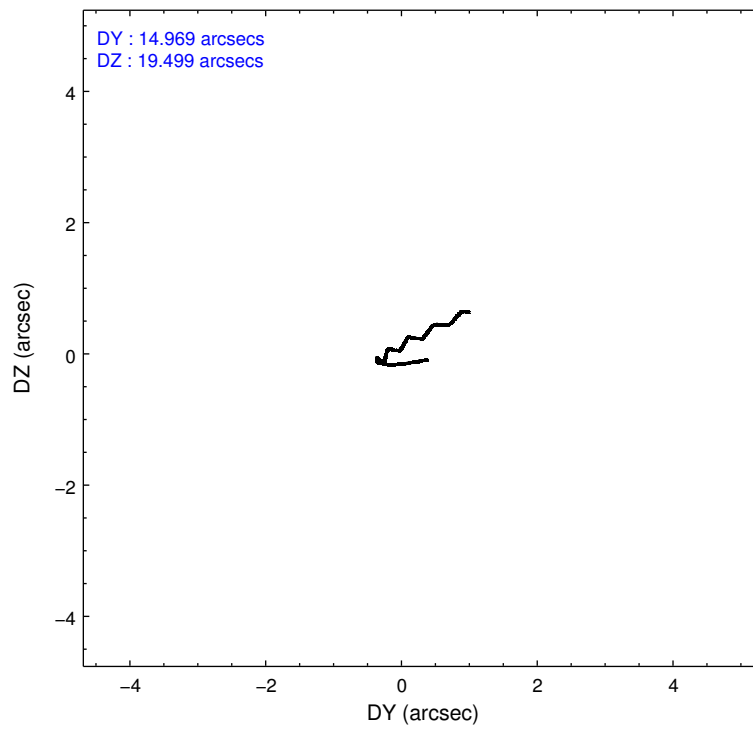
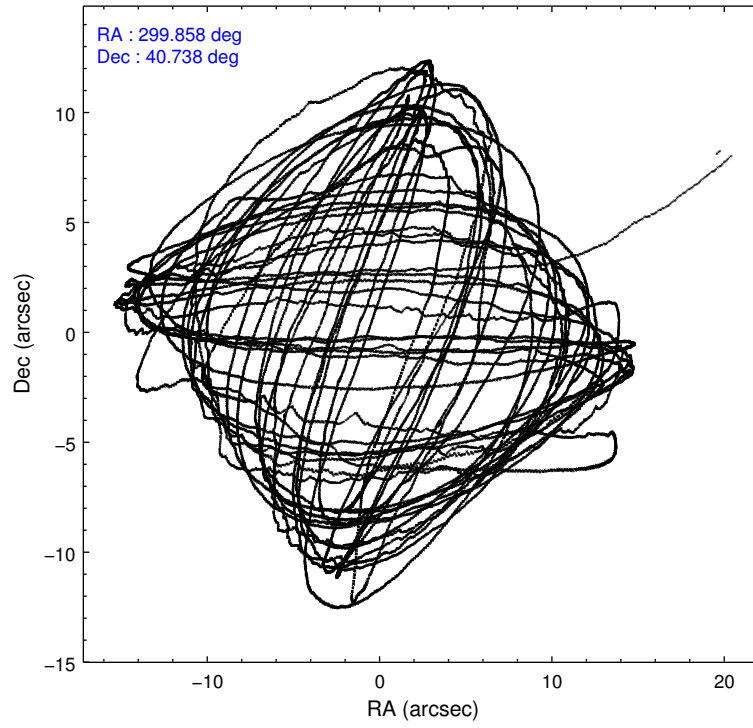
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	183228	181045	200936	232365	174450
rejected events	145617	142699	156867	158901	154332
rejected %	79%	78%	78%	68%	88%

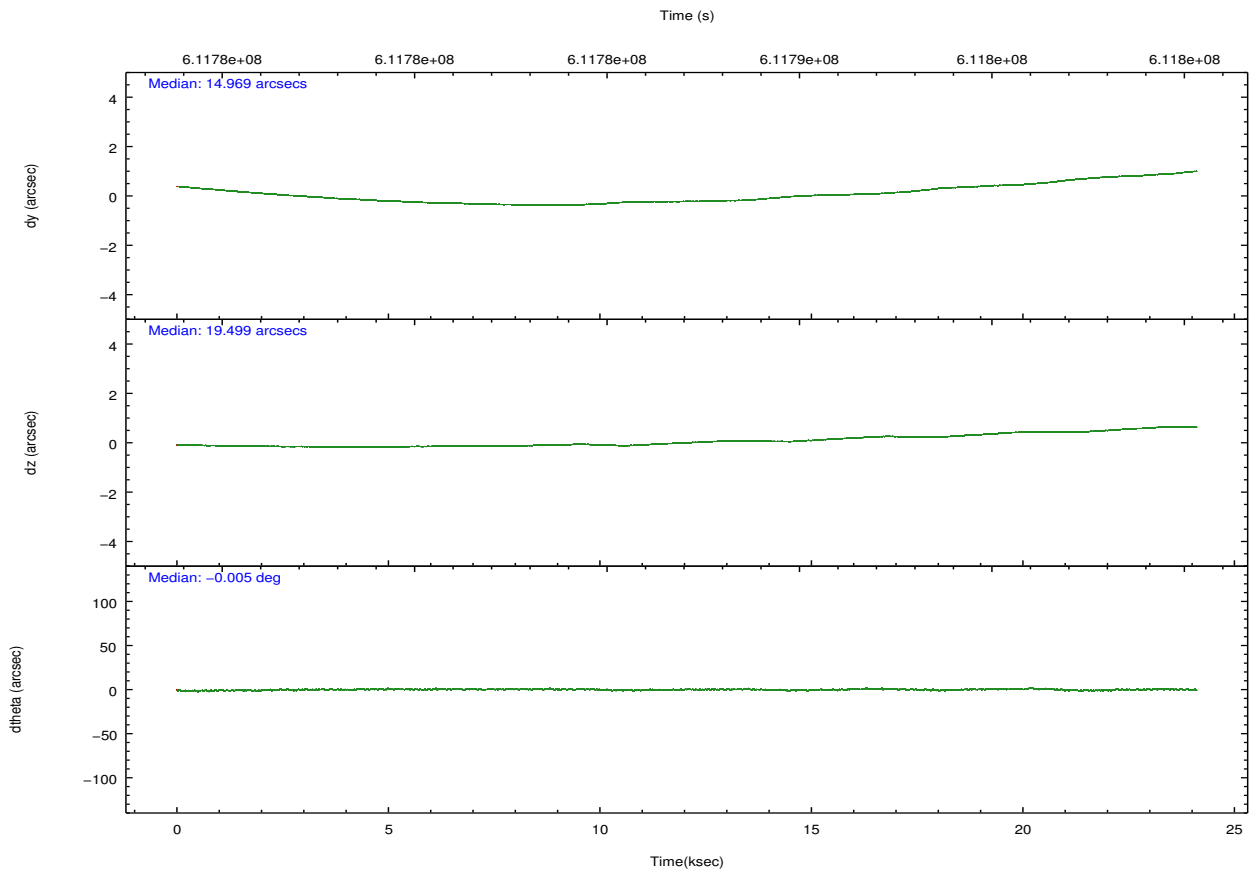
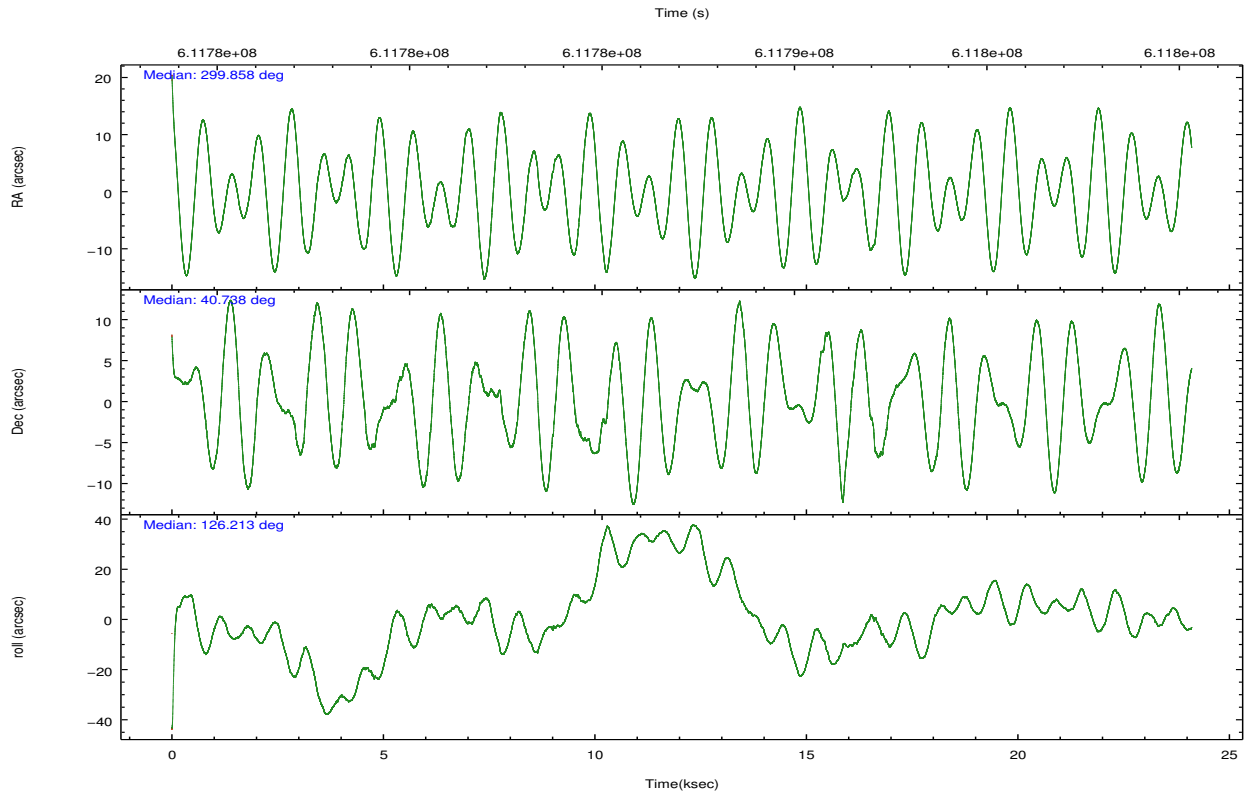
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	20897	19609	26564	49330	7131
	11%	10%	13%	21%	4%
grade 1 events	156	137	210	614	61
	0%	0%	0%	0%	0%
grade 2 events	7146	8232	7353	9994	4630
	3%	4%	3%	4%	2%
grade 3 events	2527	2561	2787	3884	2001
	1%	1%	1%	1%	1%
grade 4 events	2480	2433	2783	3814	1814
	1%	1%	1%	1%	1%
grade 5 events	7331	7472	6553	8797	7864
	4%	4%	3%	3%	4%
grade 6 events	4575	5523	4595	6460	4545
	2%	3%	2%	2%	2%
grade 7 events	138116	135078	150091	149472	146404
	75%	74%	74%	64%	83%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-01236	ACIS-01236	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	299.890912	299.8575472303552	CCD I2 on	Y	Y
[deg] Pointing Dec	40.727206	40.73825723257045	CCD I3 on	Y	Y
[deg] Pointing Roll	125.984997	126.2154330901736	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	N	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	611775127.184000	611773978.5561399	CCD S5 on	N	N
Observation start date	2017-05-21T17:30:58	2017-05-21T17:12:58	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	611799127.184000	611799785.49514	On-chip summing requested	N	N
Observation end date	2017-05-22T00:10:58	2017-05-22T00:23:05	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





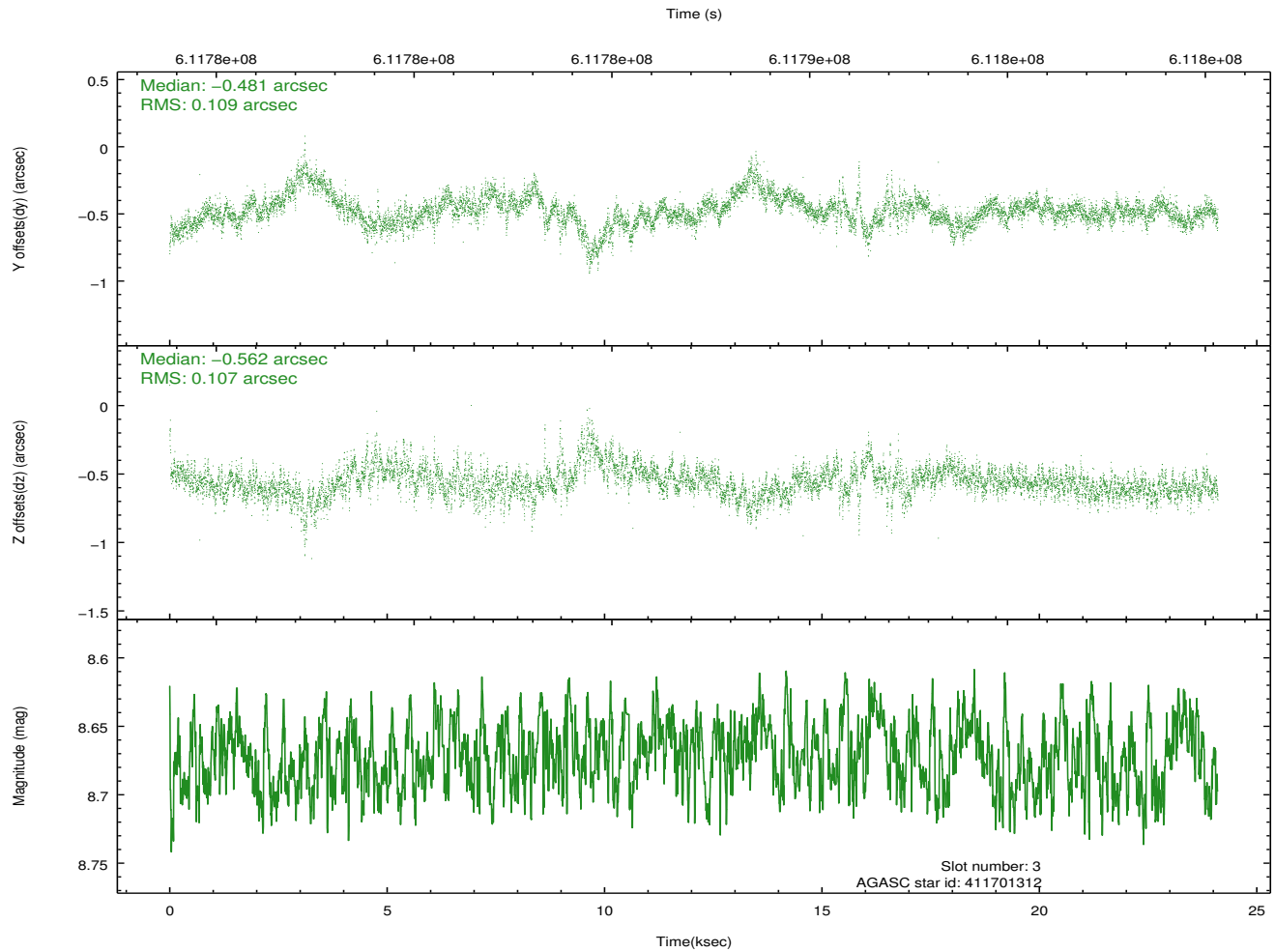
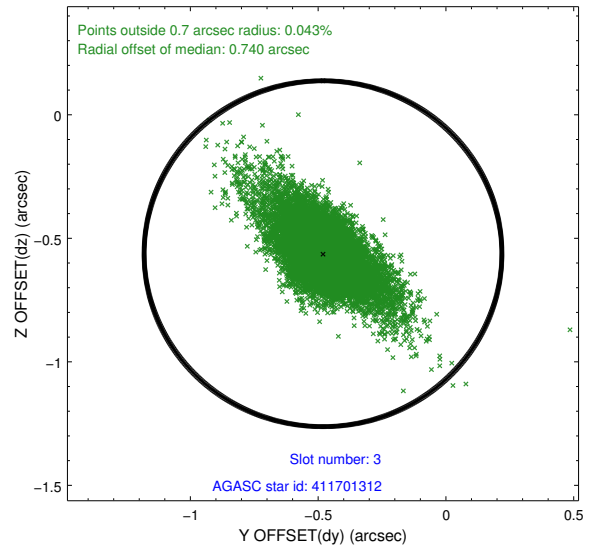
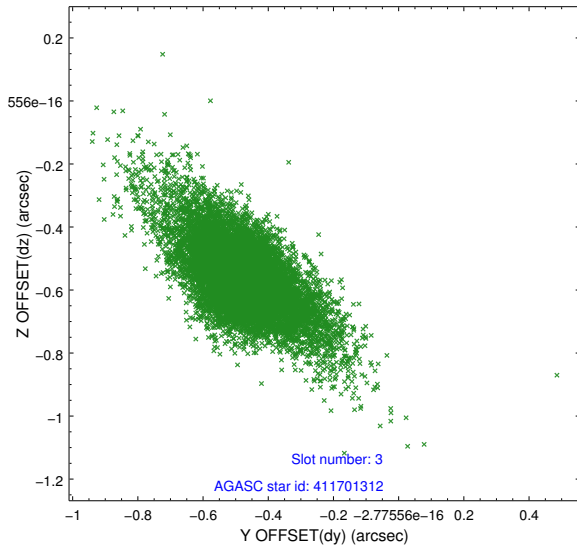
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.19	5881	0.058	-0.028	0.014	0.025	0.000000	0.000000	924.51	-843.29
1	FID		ACIS-I-5	7.19	5881	-0.357	0.019	0.008	0.012	0.000000	0.000000	-1824.05	1054.03
2	FID		ACIS-I-6	7.19	5881	0.207	0.080	0.013	0.021	0.000000	0.000000	389.92	1698.86
3	GUIDE	used	411701312	8.67	11753	-0.481	-0.562	0.139	0.299	298.889956	40.820220	1885.59	2000.17
4	GUIDE	used	411701808	8.80	11753	-0.358	-0.305	0.119	0.218	299.419536	40.880184	1202.29	712.73
5	GUIDE	used	413405352	8.33	11758	-0.025	0.103	0.134	0.221	300.290830	41.091941	427.15	-1650.55
6	GUIDE	used	413418680	9.22	11737	0.570	0.398	0.194	0.319	300.860298	40.740057	-1503.72	-2173.84
7	GUIDE	used	413421016	8.67	11750	0.292	0.371	0.134	0.244	300.612426	40.446254	-1972.99	-1009.41

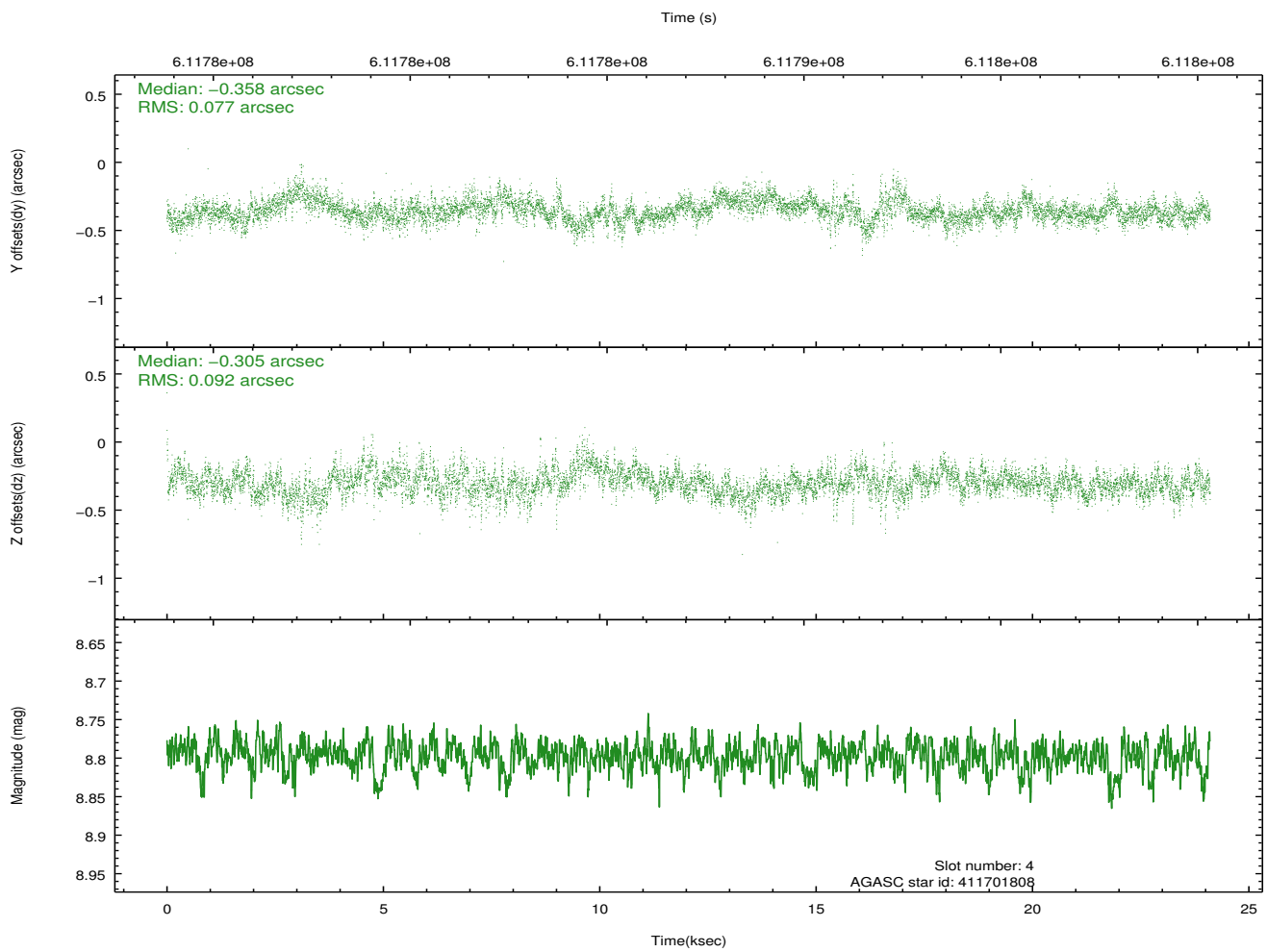
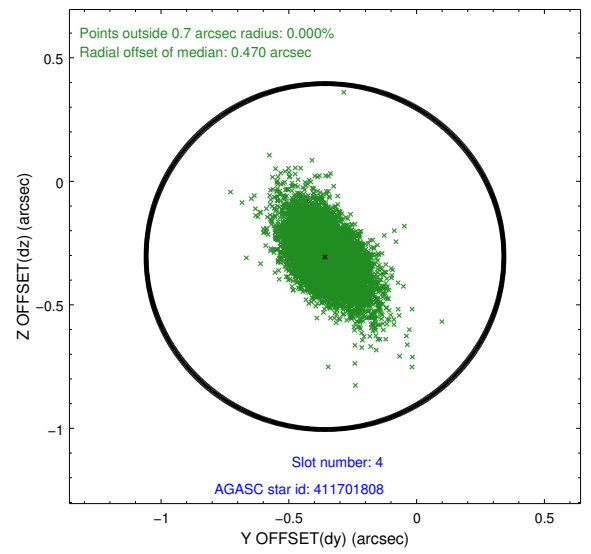
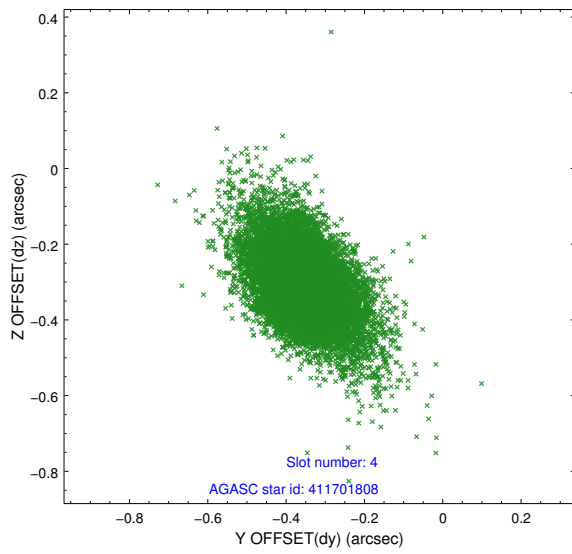
∞

## 2.4 Star Slots

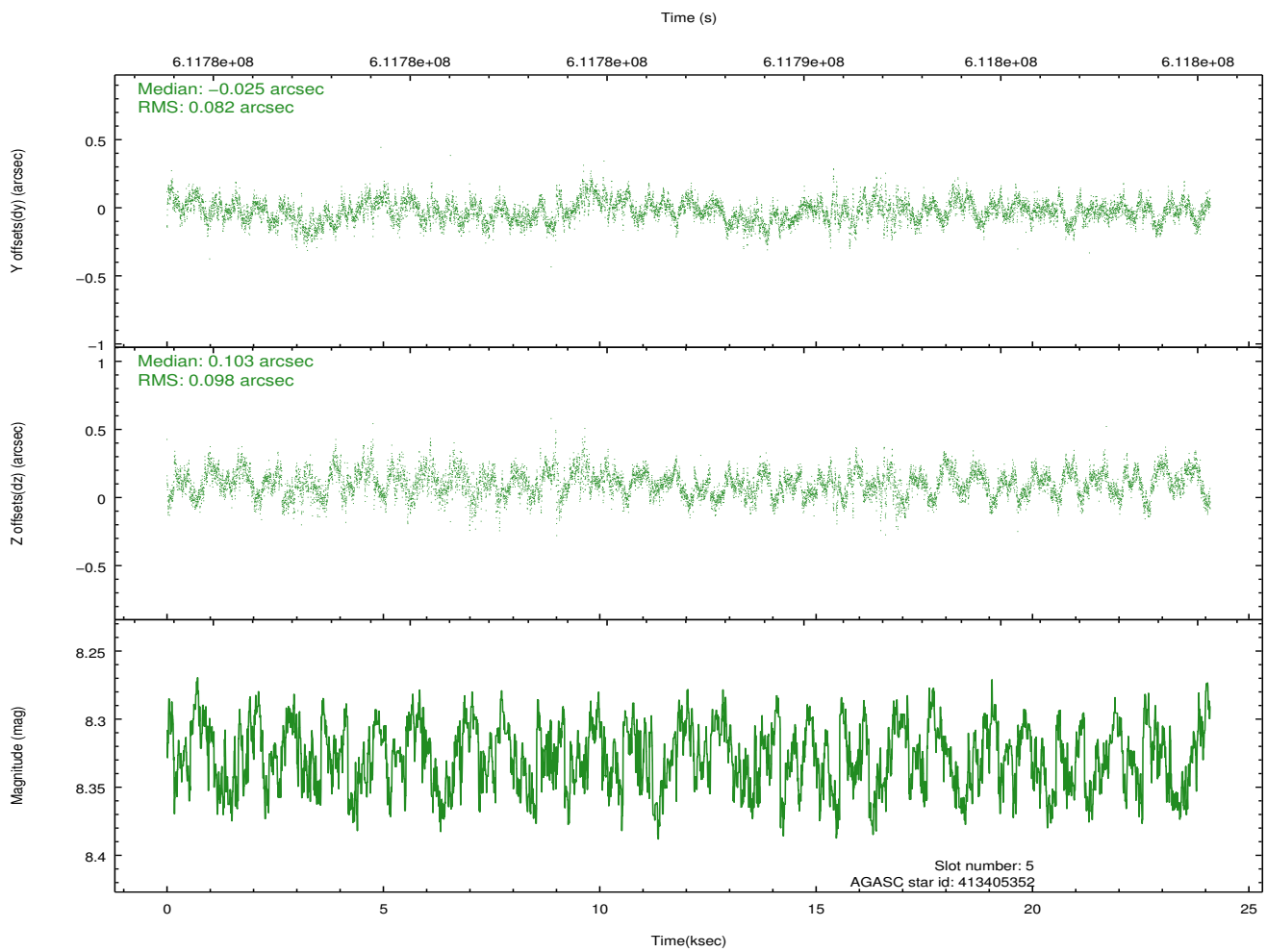
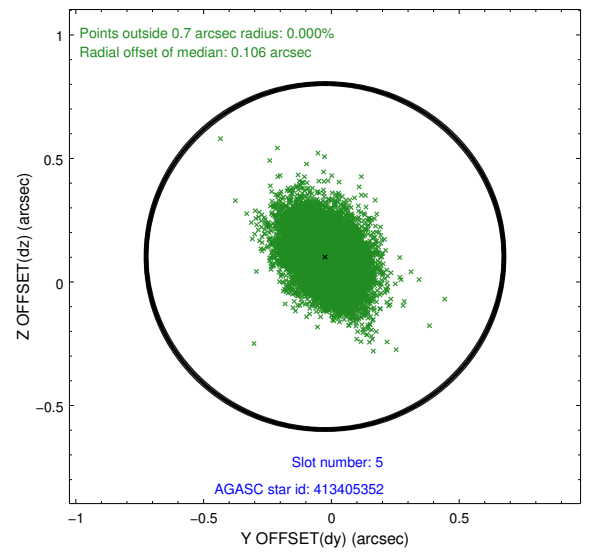
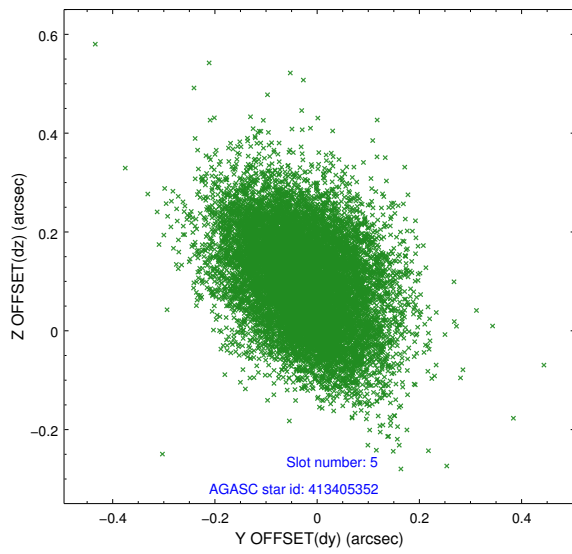
### 2.4.1 Slot 3



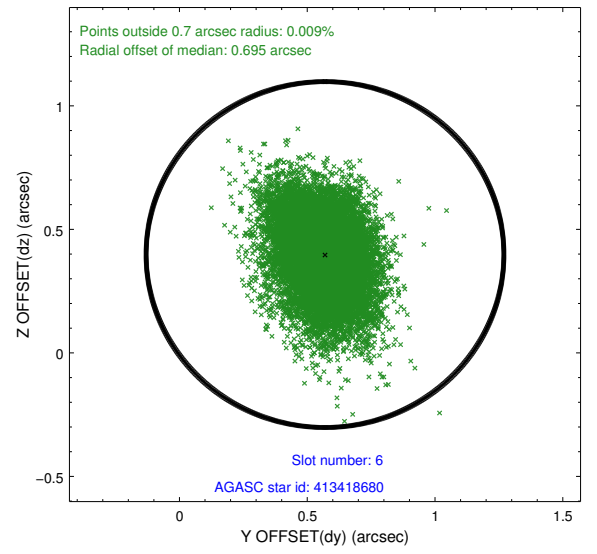
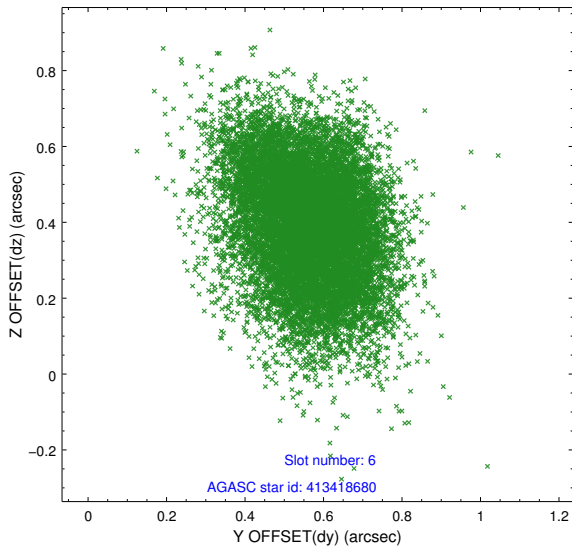
## 2.4.2 Slot 4



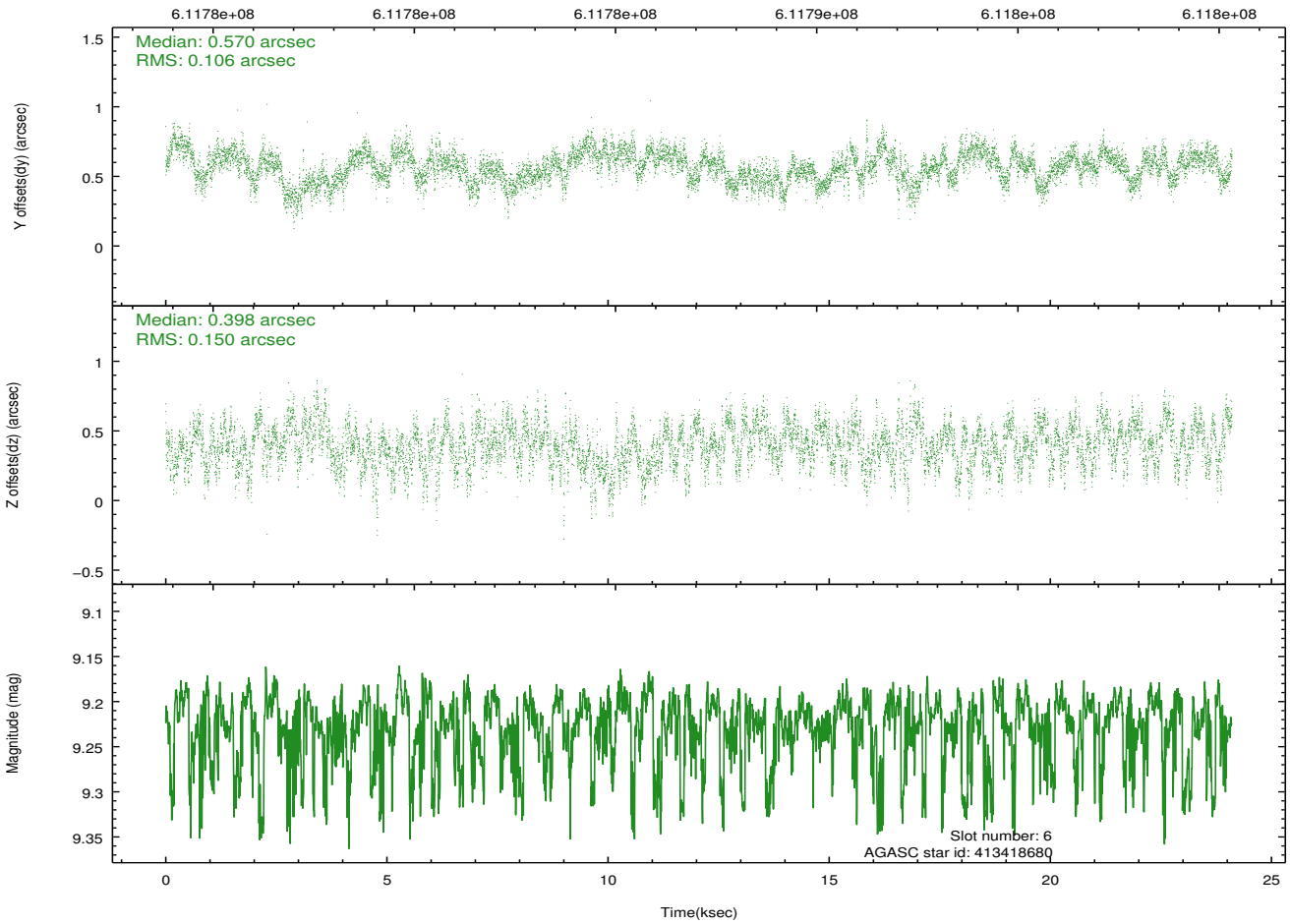
### 2.4.3 Slot 5



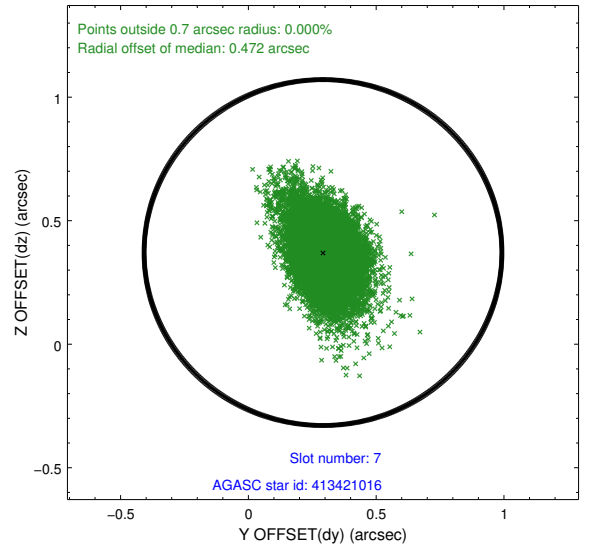
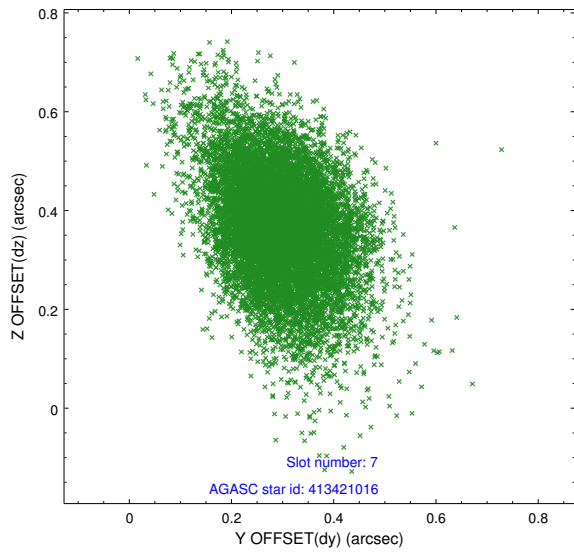
### 2.4.4 Slot 6



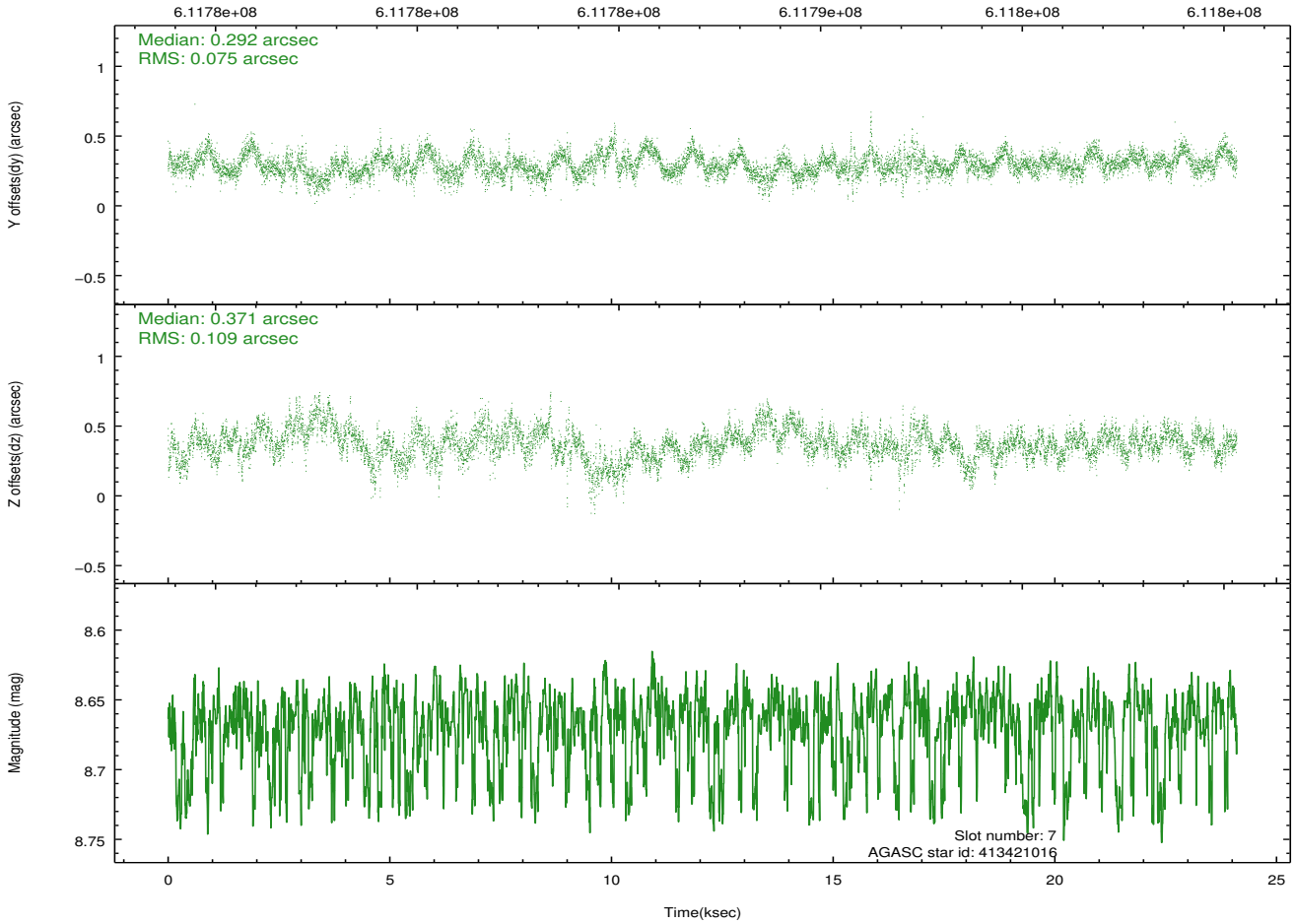
Time (s)



### 2.4.5 Slot 7

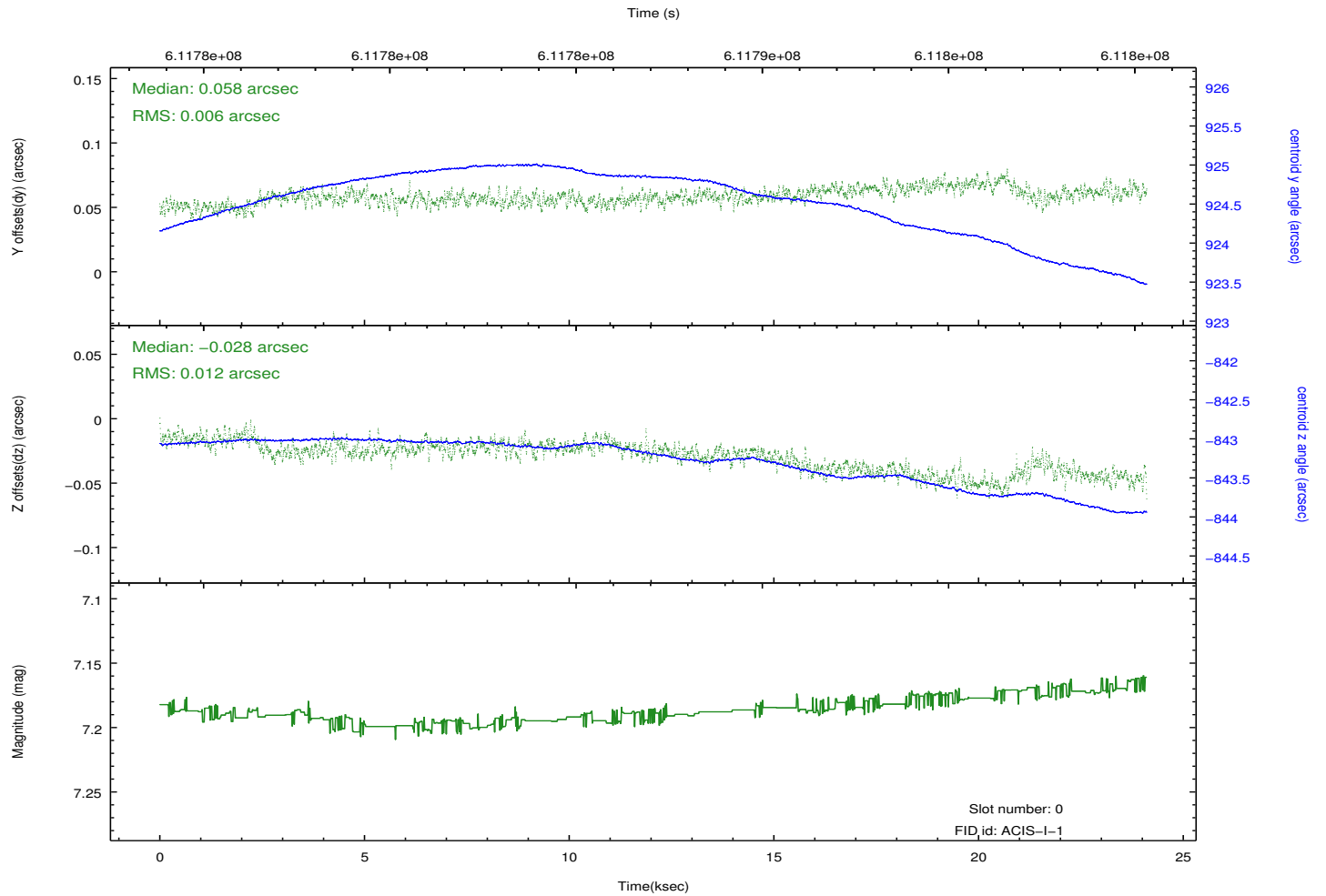
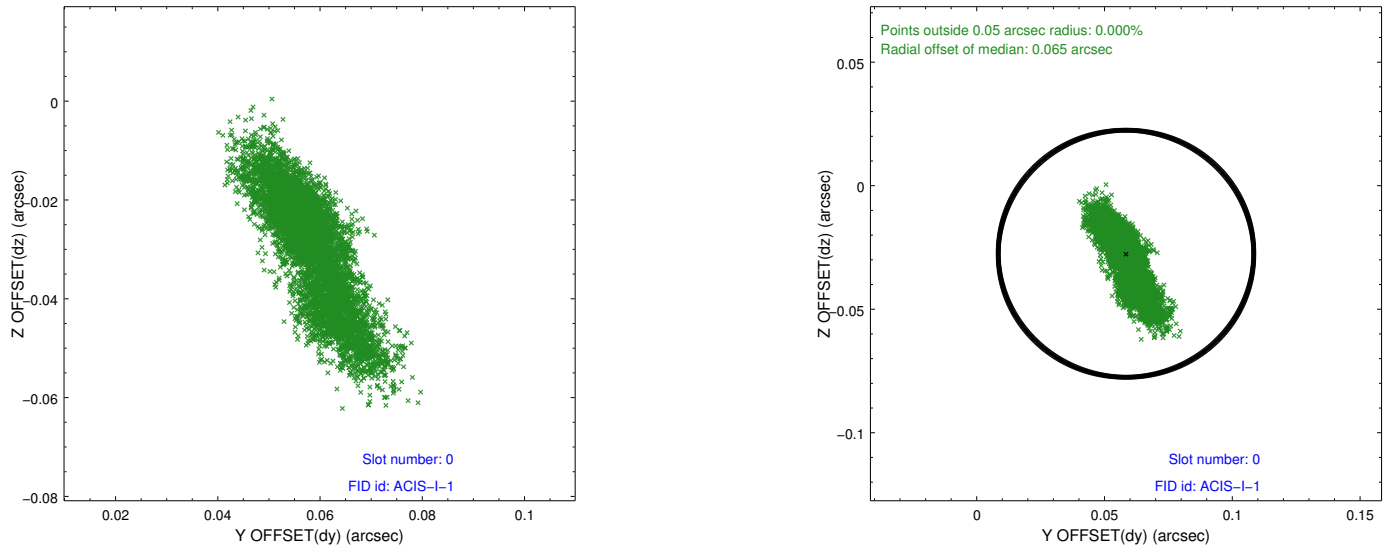


Time (s)

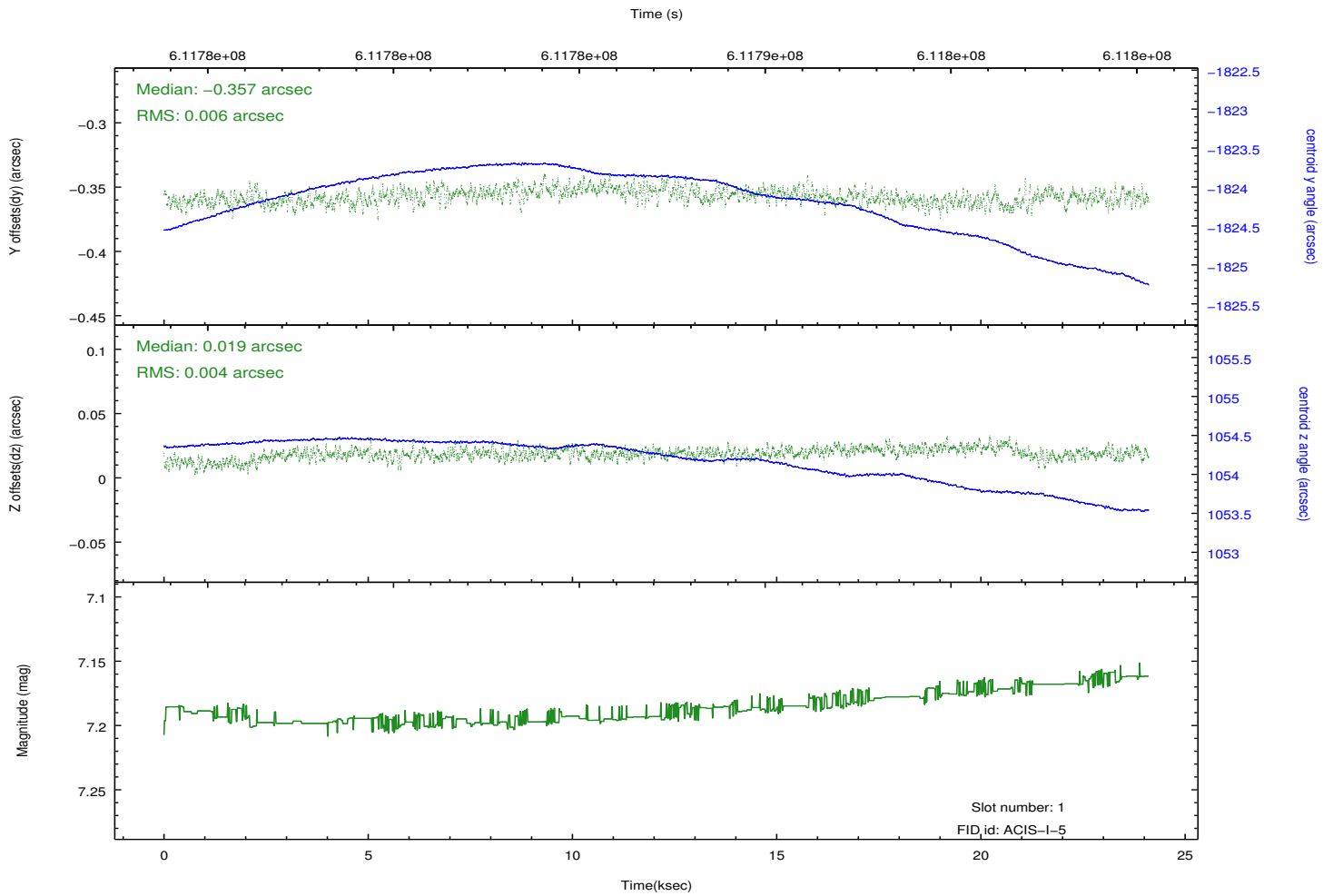
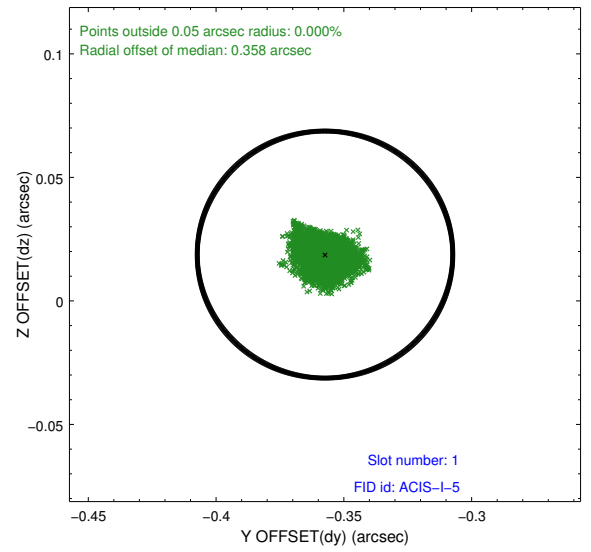
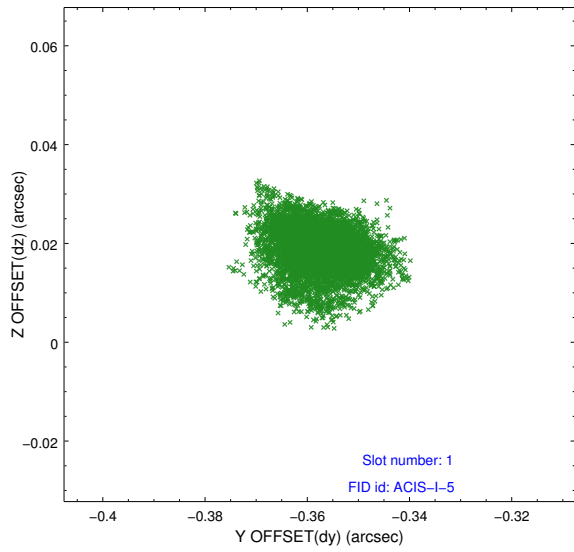


## 2.5 FID Slots

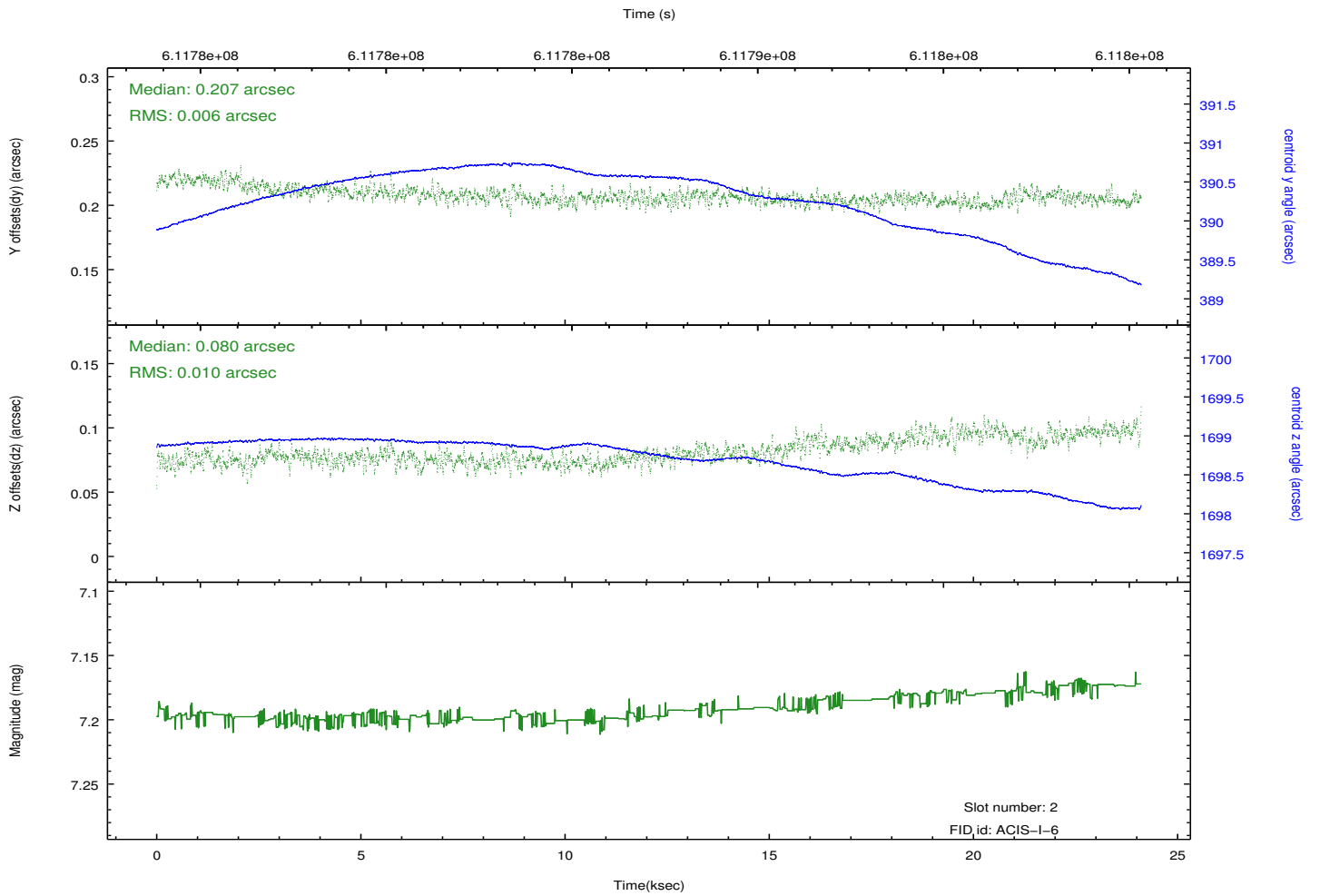
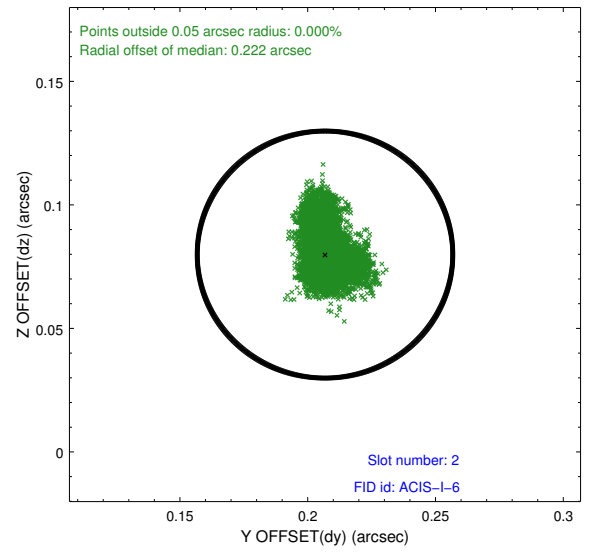
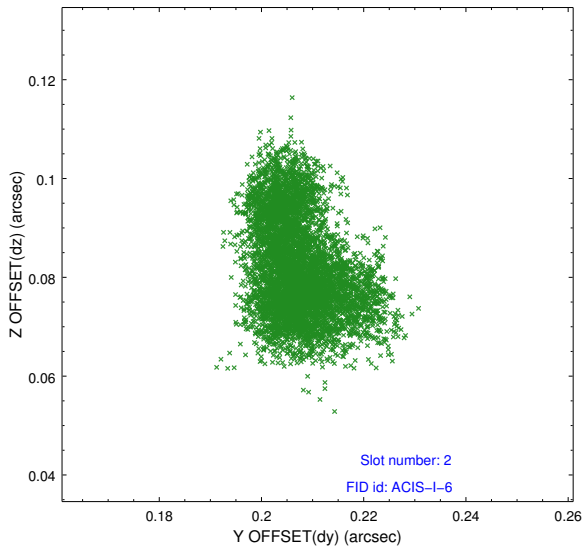
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2017.05.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	24.070480121374

### A.2 Comments