

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 16142 - L2 Version 2  
Chandra X-Ray Center

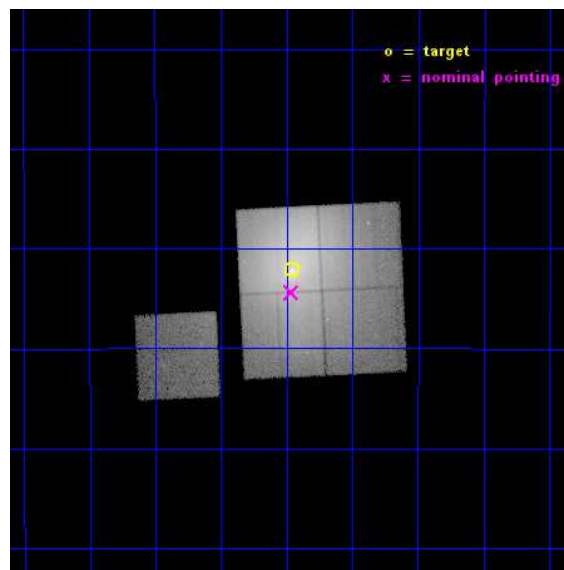
L2 Processing Date : Dec 12 2014

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# 1 Front

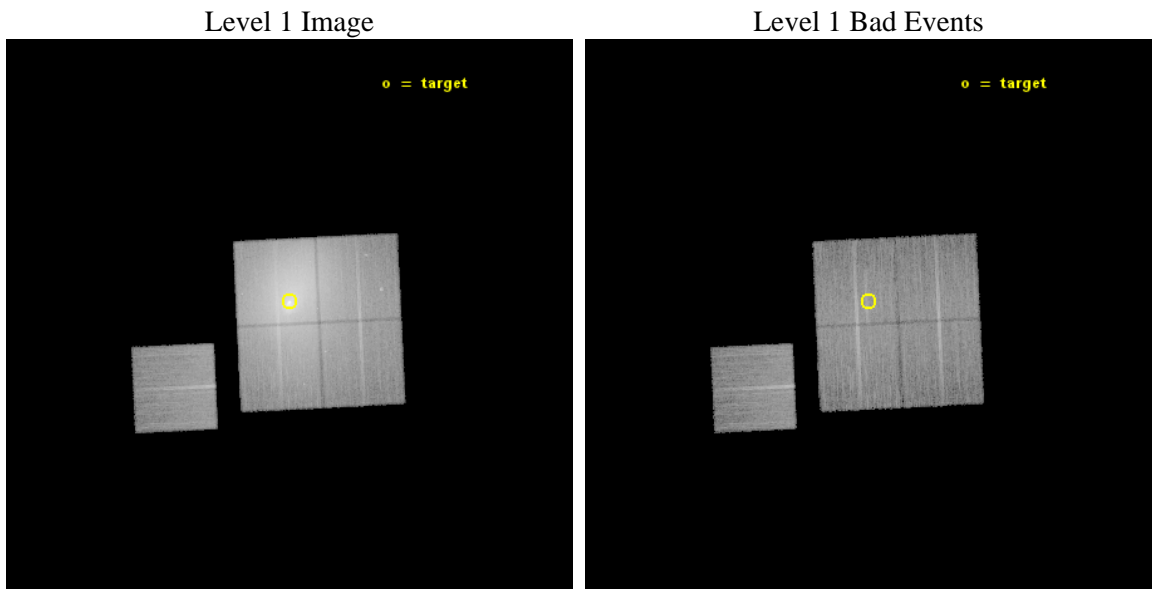
seq_num	801396	Sequence number
obs_id	16142	Observation id
title	A deep study of ram-pressure stripping, metal ridges, and AGN feedback in the Ophiuchus Cluster	Proposal title
observer	Steven Allen	Principal investigator
object	Ophiuchus Cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	258.115417	Observer's specified target RA [deg]
dec_targ	-23.368611	Observer's specified target Dec [deg]
ra_nom	258.11591554552	Nominal RA [deg]
dec_nom	-23.406406403833	Nominal Dec [deg]
roll_nom	267.20888744574	Nominal Roll [deg]
revision	2	Processing version of data
ontime	33086.300254464	Sum of GTIs [s]
livetime	32654.00338386	Livetime [s]
ontime0	33086.300254464	Sum of GTIs [s]
ontime1	33086.300254464	Sum of GTIs [s]
ontime2	33086.300254464	Sum of GTIs [s]
ontime3	33086.300254464	Sum of GTIs [s]
ontime6	33086.300254464	Sum of GTIs [s]
l2events	965203	Number of level 2 events



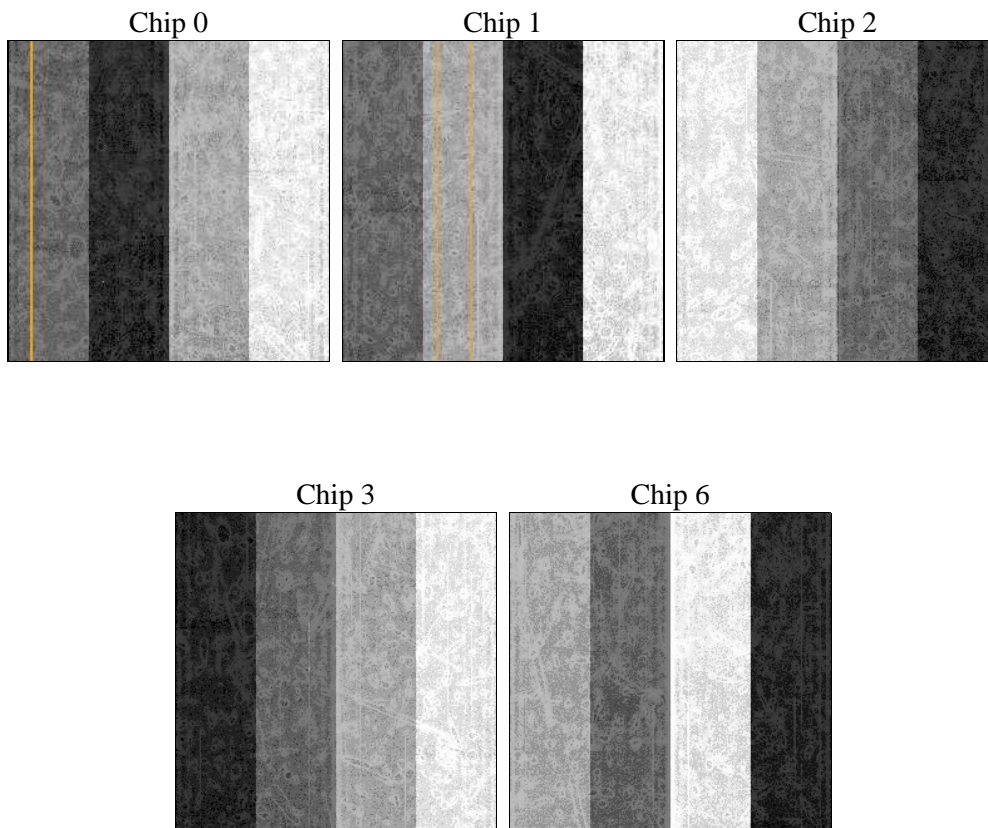
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	33000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	33086.300254464	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	33086.300254464	Sum of GTIs [s]
date	2014-12-12T06:48:23	Date and time of file creation	ontime1	33086.300254464	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	33086.300254464	Sum of GTIs [s]
			ontime3	33086.300254464	Sum of GTIs [s]
			ontime6	33086.300254464	Sum of GTIs [s]
			l1events	1675134	Number of level 1 events

### 2.1.4 Events

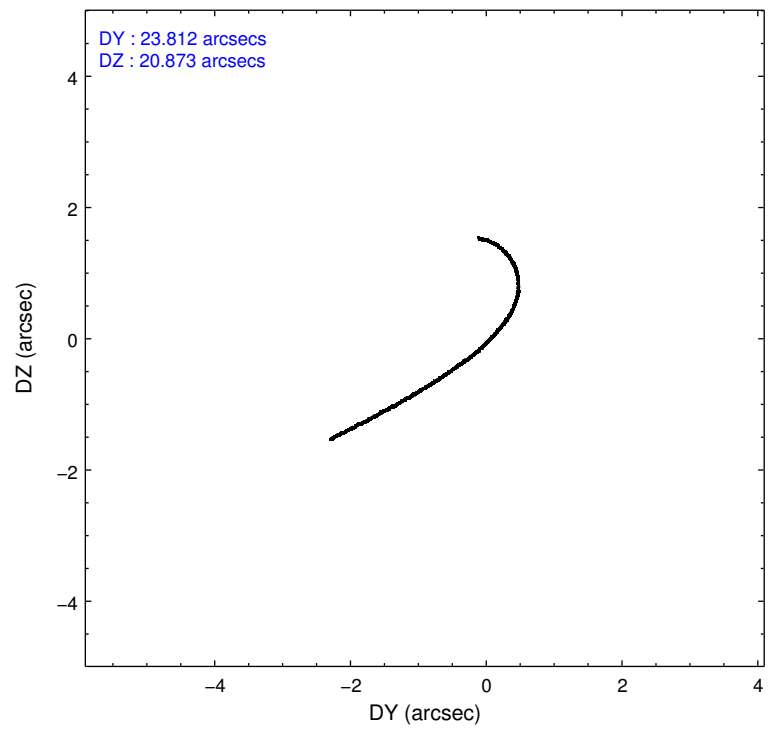
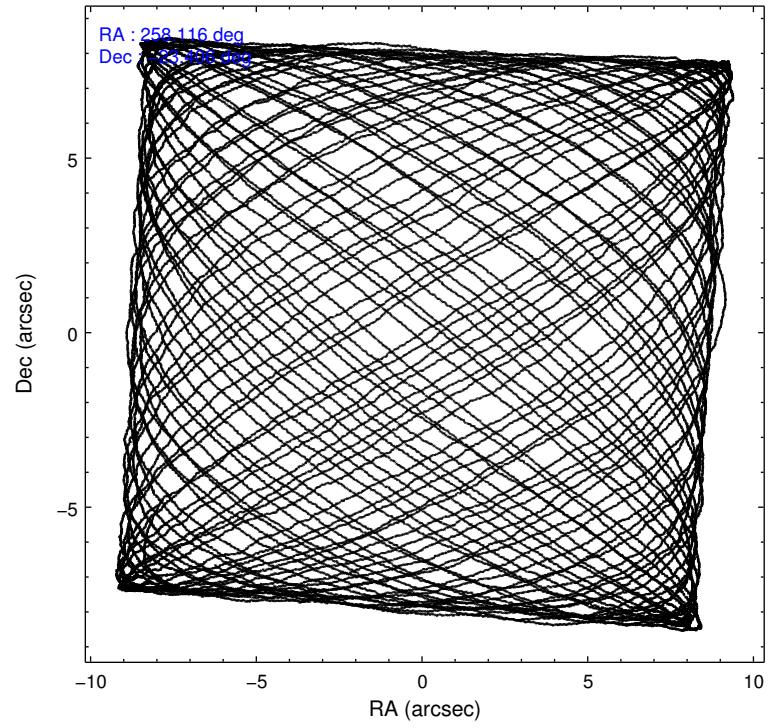
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	199818	304948	304433	694770	171165
rejected events	116723	127164	135809	140263	134867
rejected %	58%	41%	44%	20%	78%

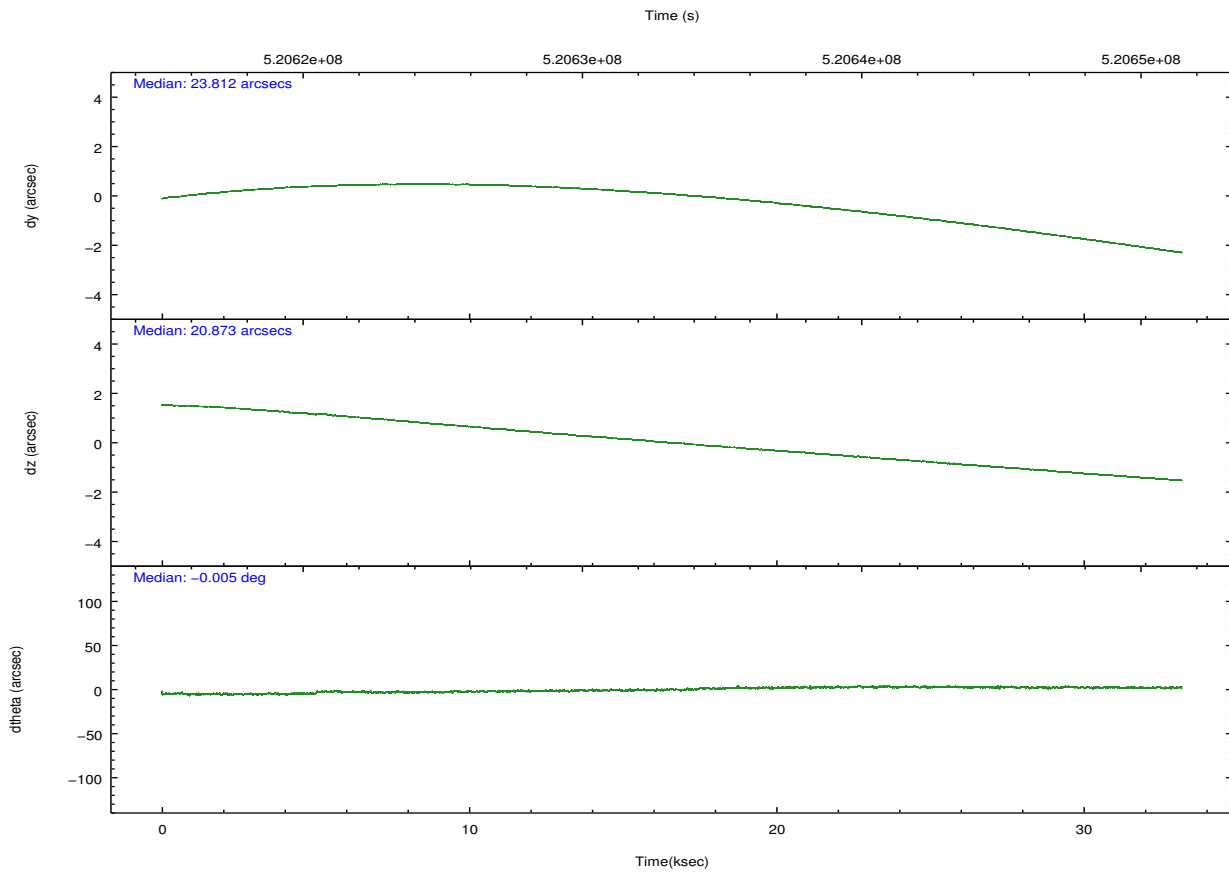
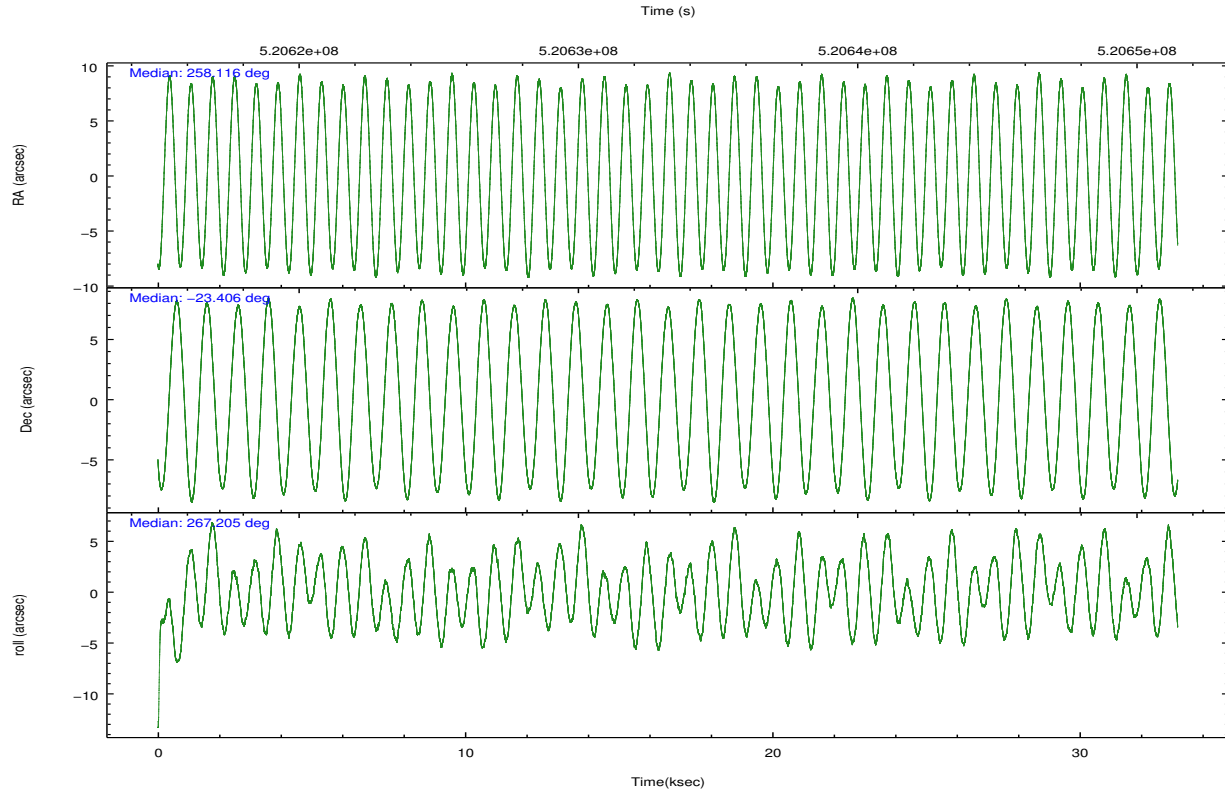
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	56641	128275	124803	425235	20251
	28%	42%	40%	61%	11%
grade 1 events	274	489	653	1791	111
	0%	0%	0%	0%	0%
grade 2 events	11933	23712	20685	63954	6115
	5%	7%	6%	9%	3%
grade 3 events	4268	7657	7152	21201	2603
	2%	2%	2%	3%	1%
grade 4 events	4094	7501	7186	21361	2477
	2%	2%	2%	3%	1%
grade 5 events	7659	8468	7516	9999	8034
	3%	2%	2%	1%	4%
grade 6 events	6167	10657	8816	22822	4853
	3%	3%	2%	3%	2%
grade 7 events	108782	118189	127622	128407	126721
	54%	38%	41%	18%	74%

## 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	FAINT	FAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	258.102108	258.1159155455212	CCD I2 on	Y	Y
[deg] Pointing Dec	-23.381982	-23.40640640383297	CCD I3 on	Y	Y
[deg] Pointing Roll	266.994716	267.2088874457374	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	-226.742463	-226.7484968405855	CCD S3 on	N	N
[mm] SIM translation stage offset	-6.85	-6.843956162344199	CCD S4 on	N	N
[s] Observation start time (MET)	520616780.184000	520615593.55933	CCD S5 on	N	N
Observation start date	2014-07-01T15:45:13	2014-07-01T15:26:33	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	520649780.184000	520650726.46127	On-chip summing requested	N	N
Observation end date	2014-07-02T00:55:13	2014-07-02T01:12:06	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





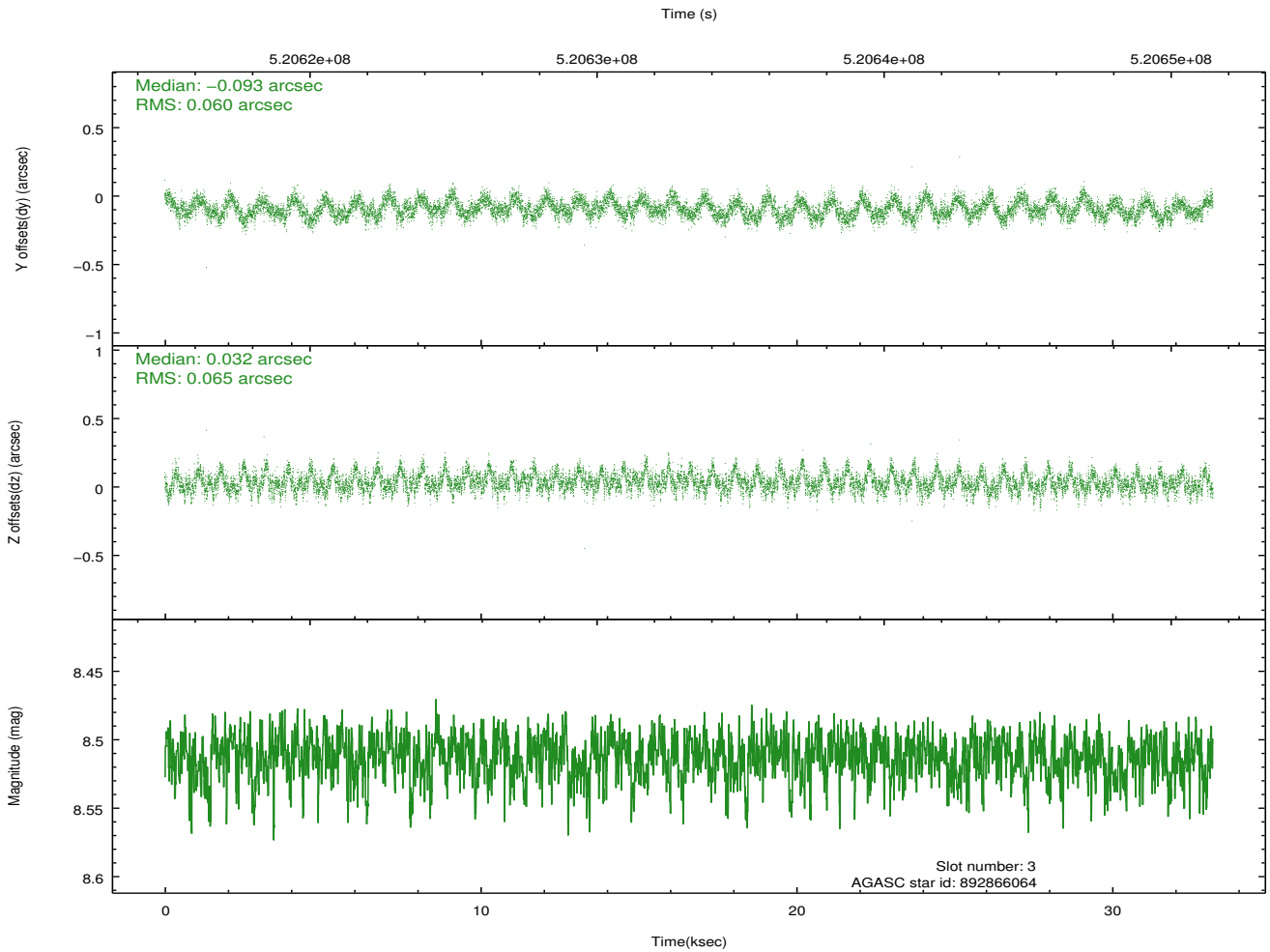
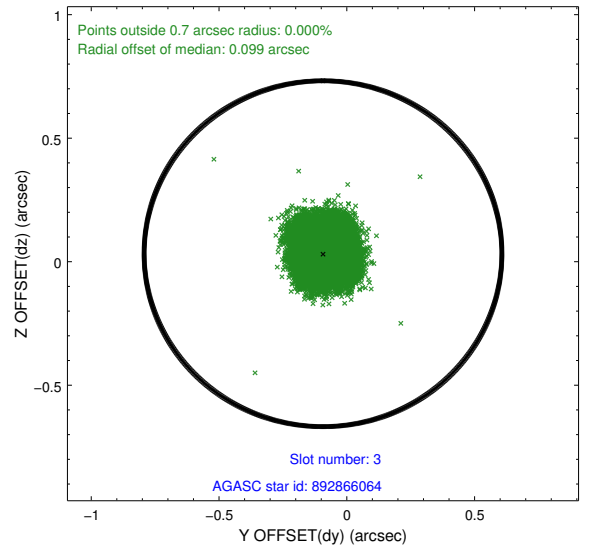
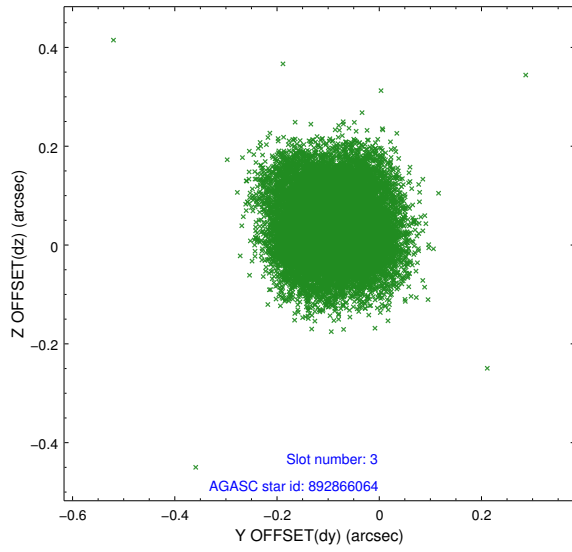
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.09	8095	0.094	-0.111	0.036	0.054	0.000000	0.000000	915.77	-985.19
1	FID		ACIS-I-4	7.00	8095	0.210	0.053	0.022	0.033	0.000000	0.000000	2135.48	915.64
2	FID		ACIS-I-5	7.08	8095	-0.402	0.124	0.025	0.036	0.000000	0.000000	-1832.75	912.58
3	GUIDE	used	892866064	8.51	16185	-0.093	0.032	0.095	0.151	258.346240	-23.232516	-578.70	778.41
4	GUIDE	used	892755168	9.27	16175	0.044	0.091	0.145	0.236	257.345207	-23.908184	2029.62	-2387.67
5	GUIDE	used	892865960	8.49	16186	-0.065	0.094	0.106	0.183	257.518652	-24.013697	2376.25	-1796.47
6	GUIDE	used	892867312	9.13	16178	0.357	-0.037	0.153	0.234	258.441623	-24.052318	2353.57	1241.37
7	GUIDE	used	892867776	8.49	16181	-0.240	-0.181	0.097	0.157	258.697515	-24.060278	2340.24	2083.07

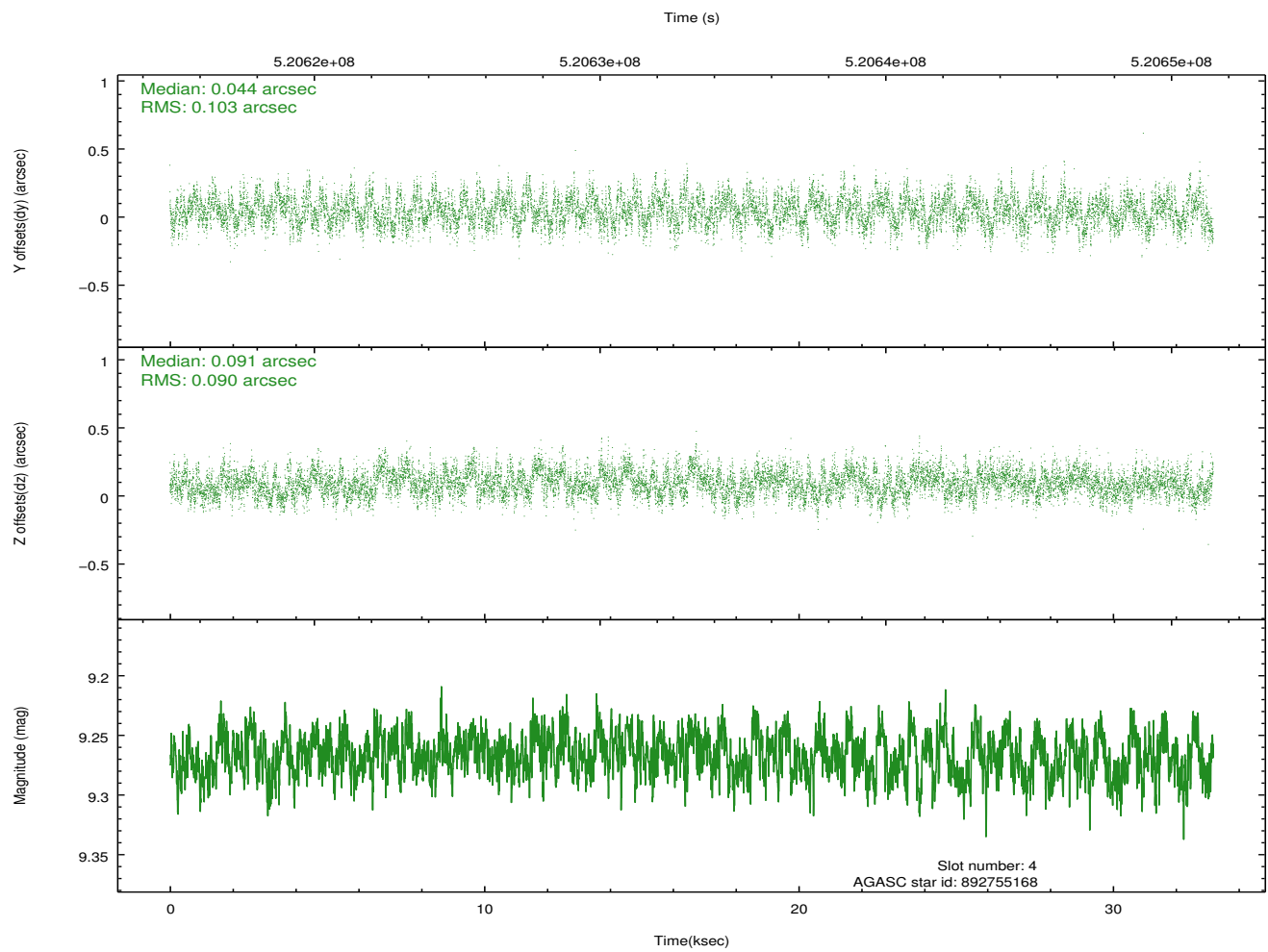
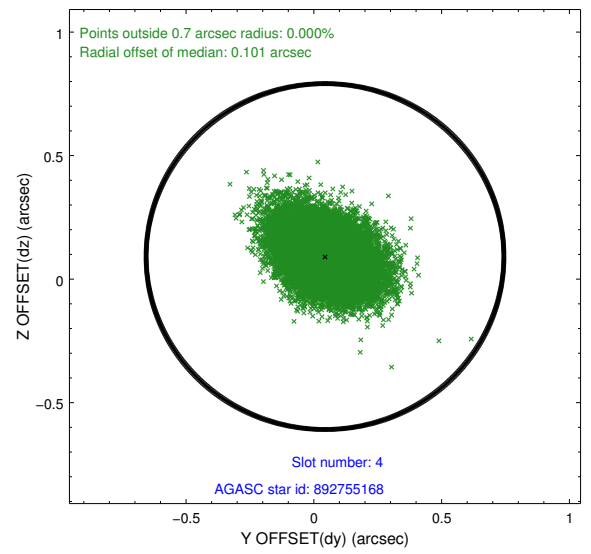
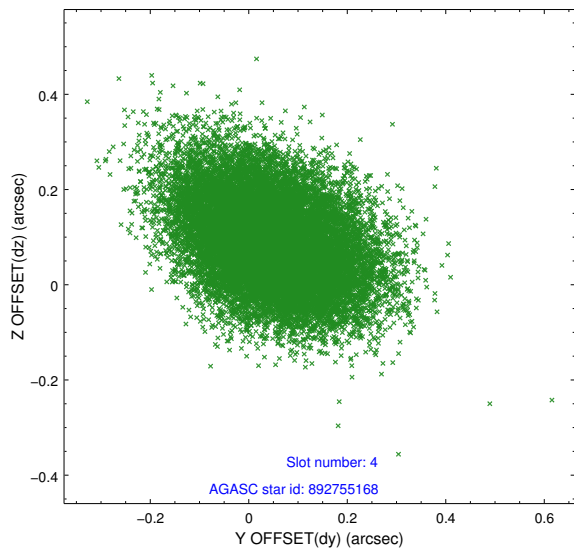
∞

## 2.4 Star Slots

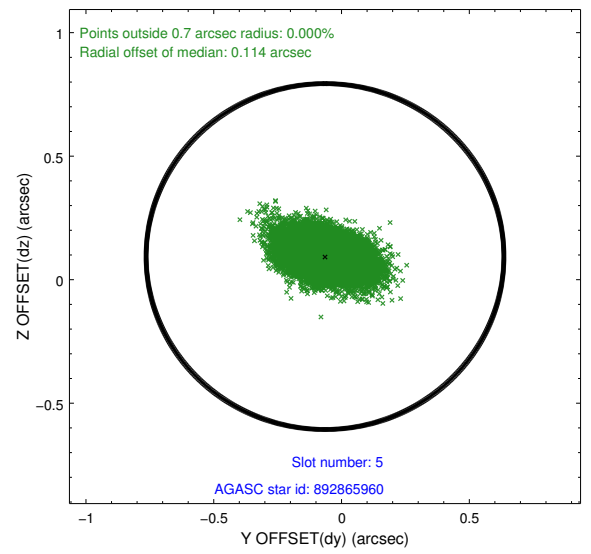
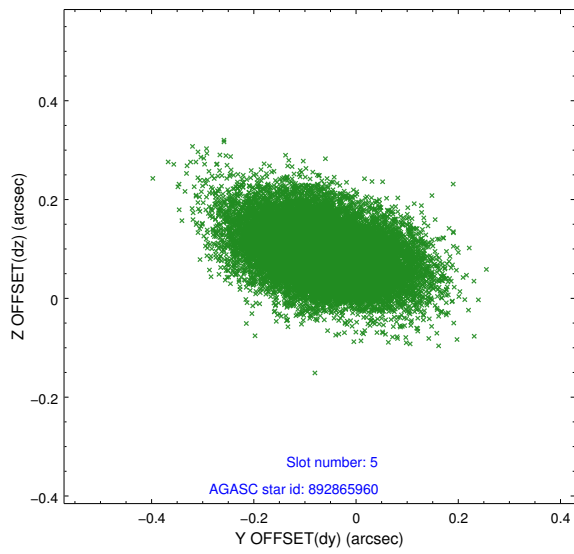
### 2.4.1 Slot 3



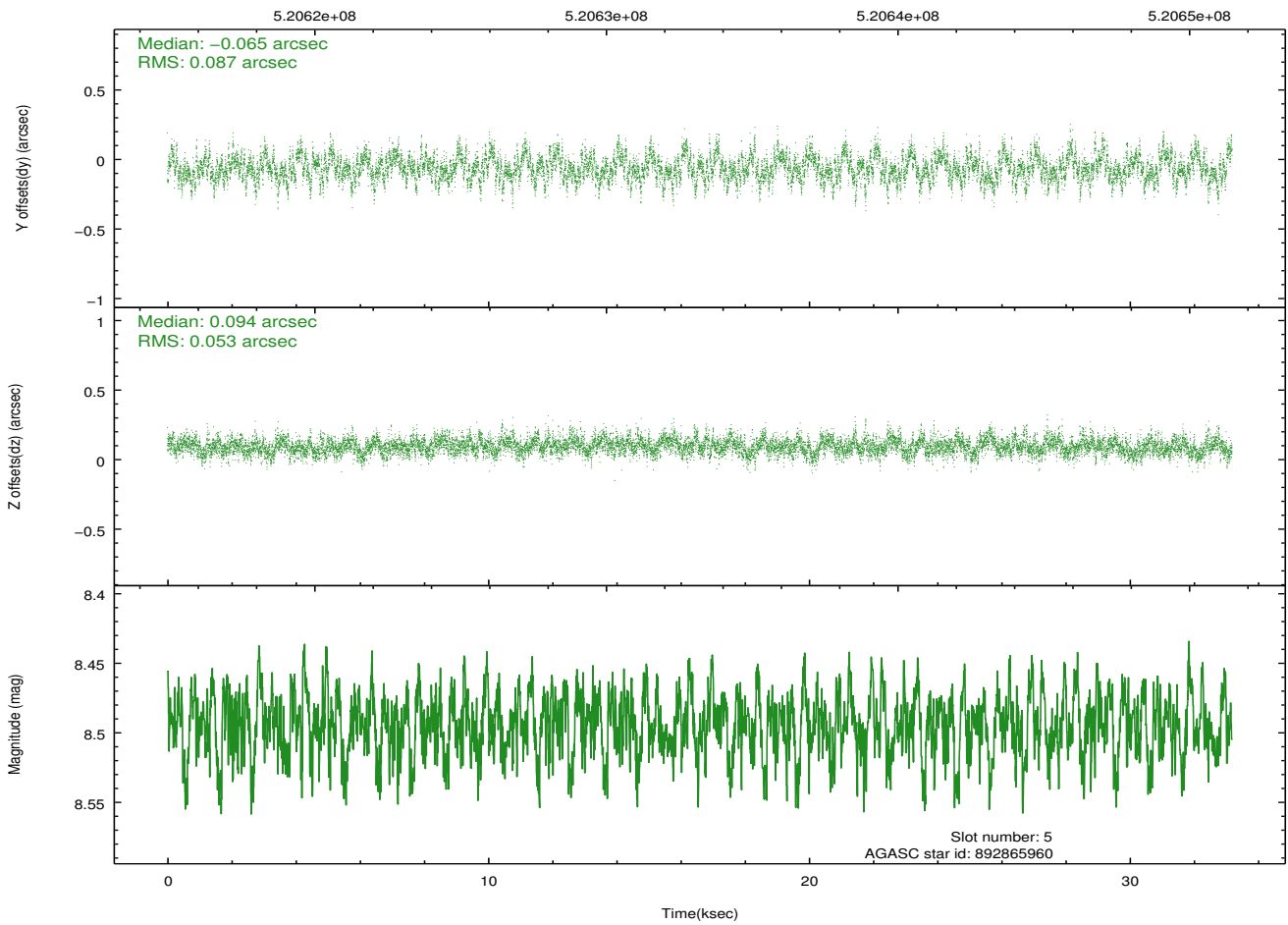
## 2.4.2 Slot 4



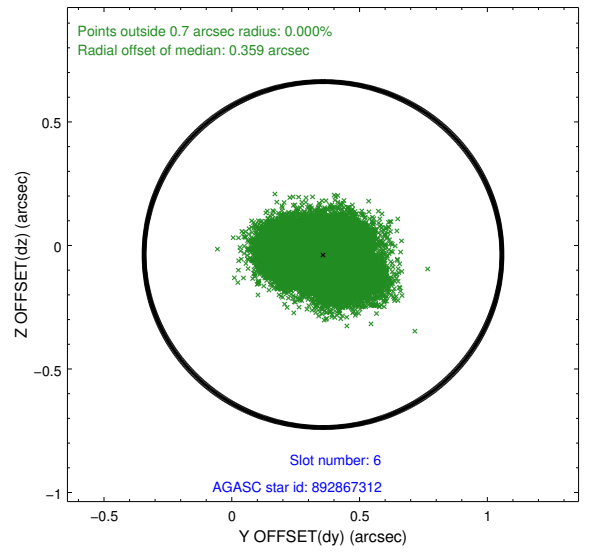
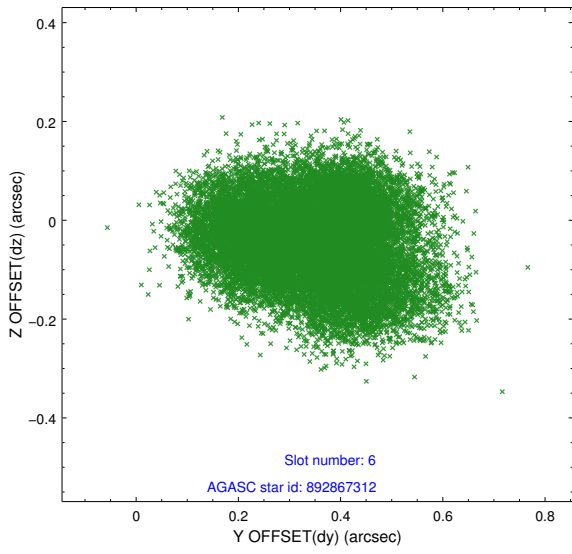
### 2.4.3 Slot 5



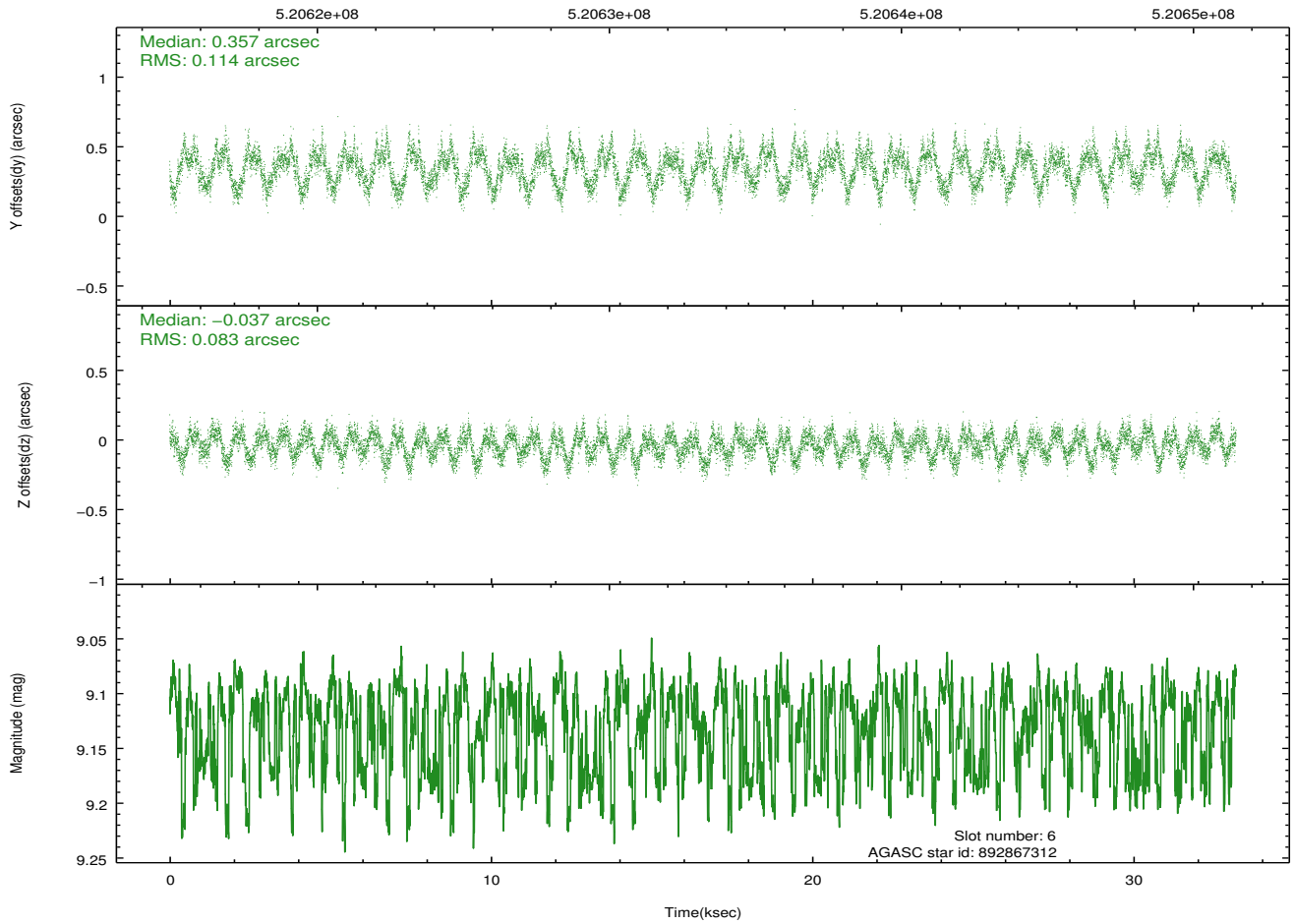
Time (s)



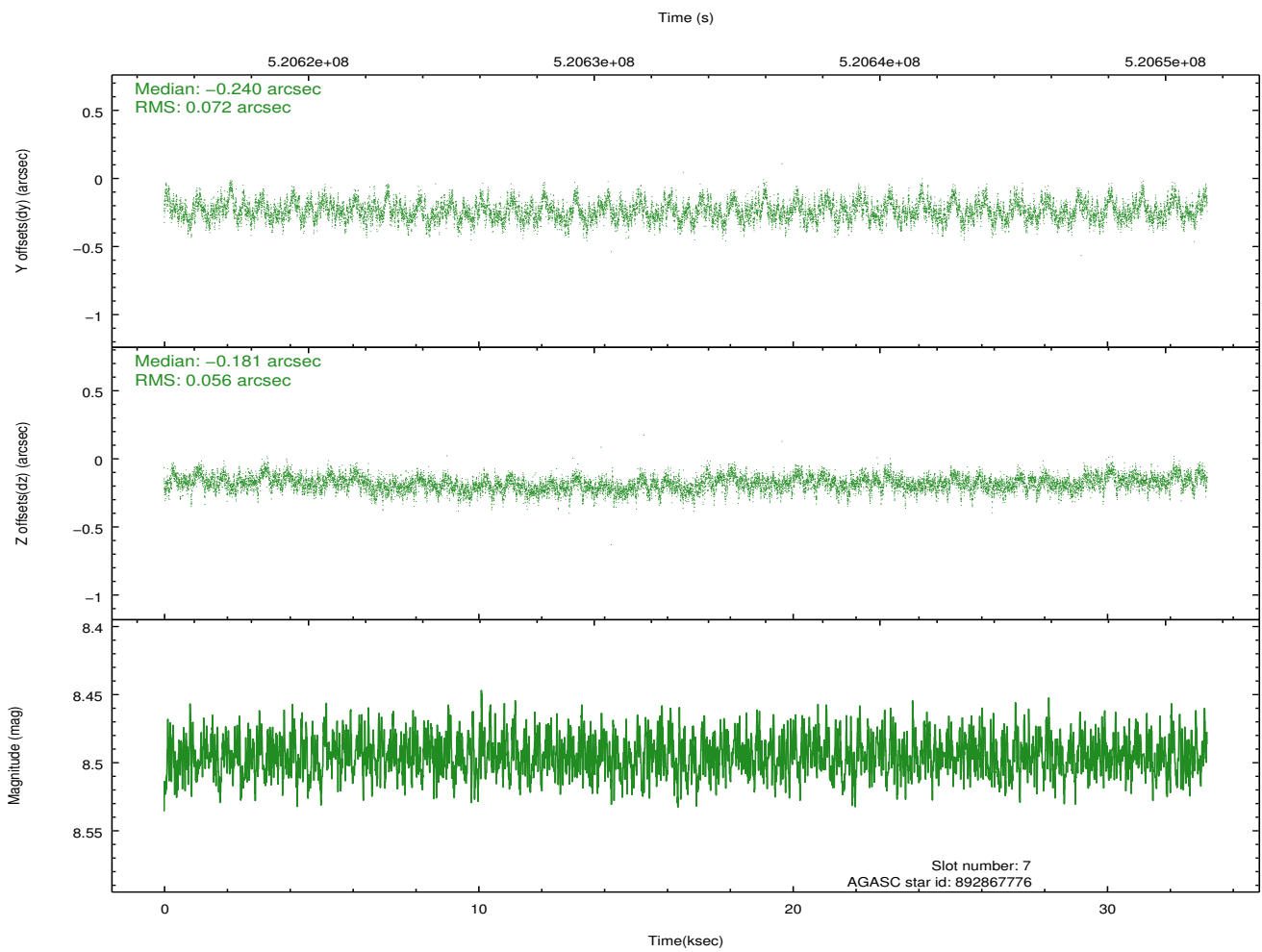
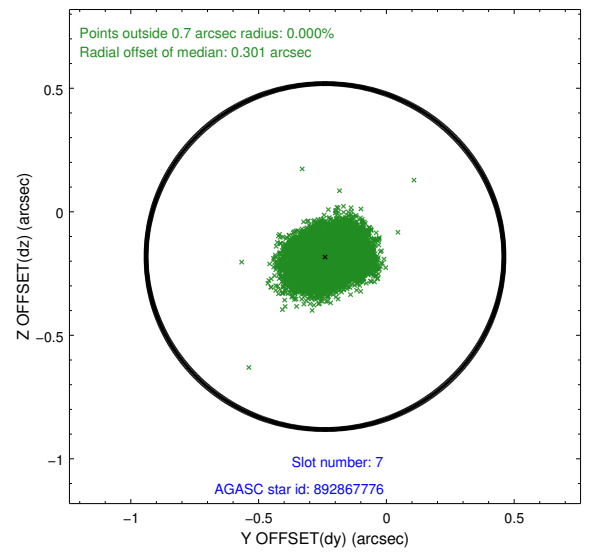
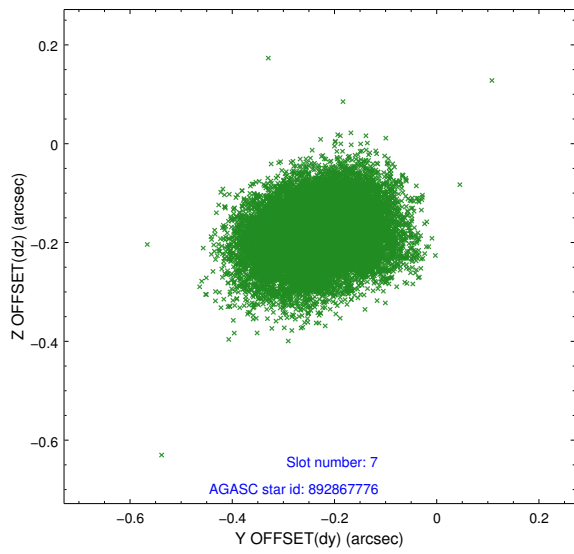
### 2.4.4 Slot 6



Time (s)

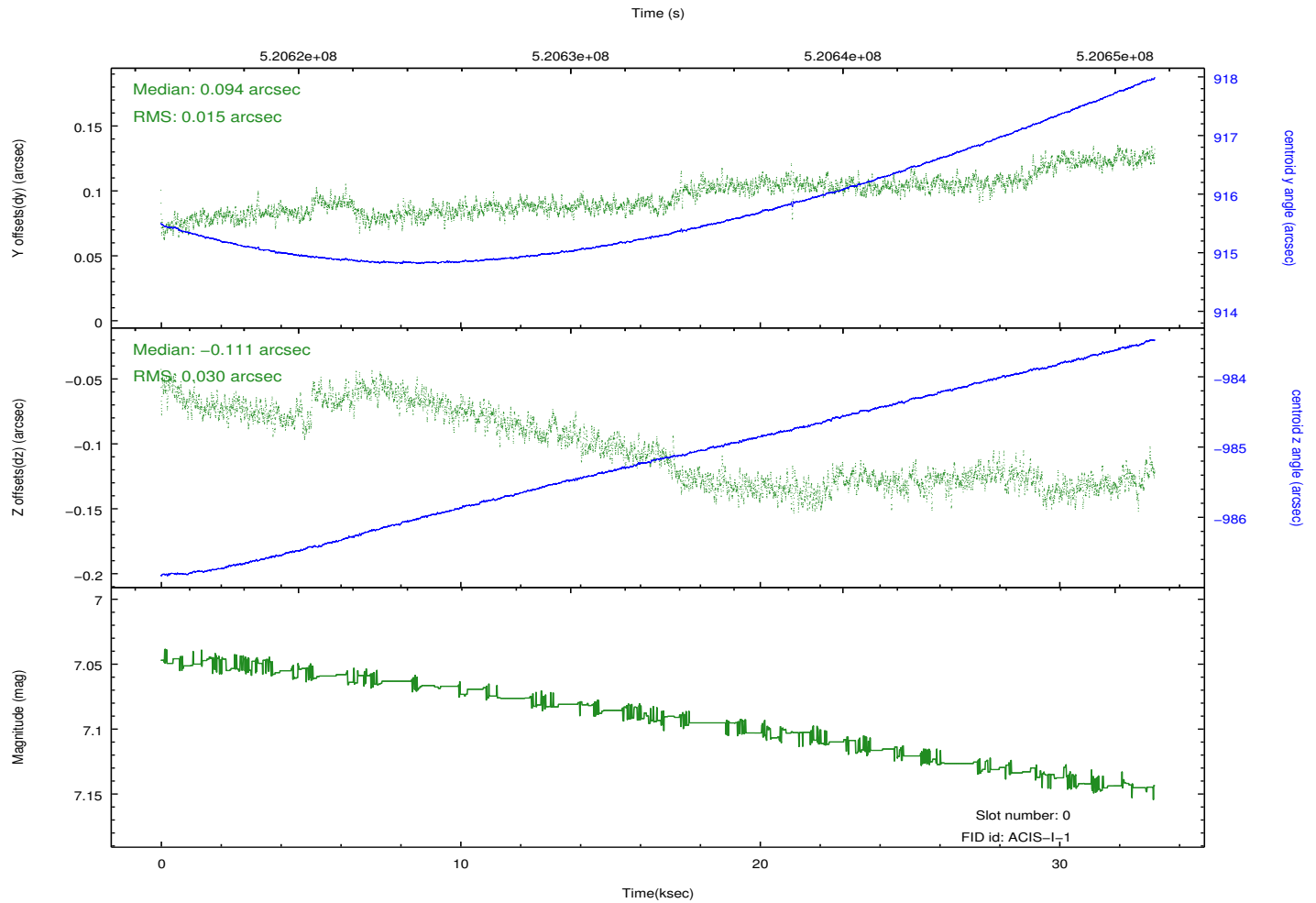
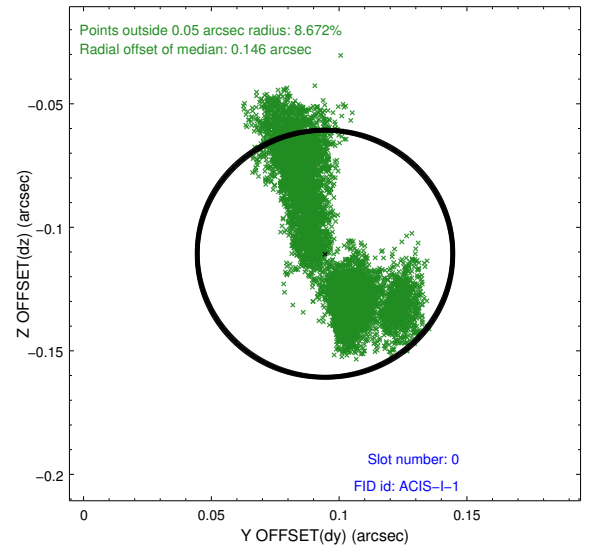
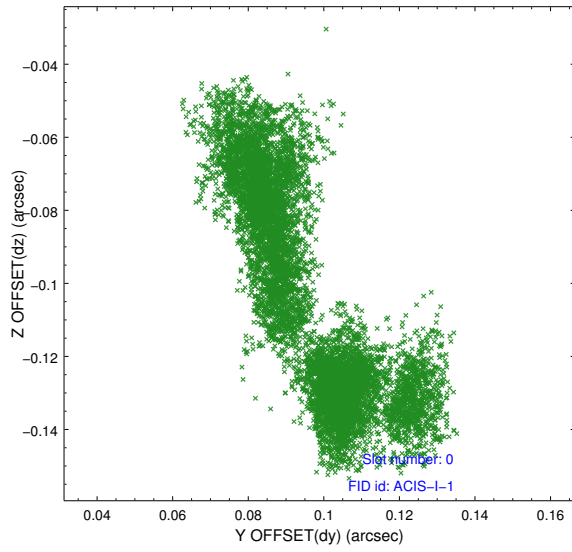


## 2.4.5 Slot 7

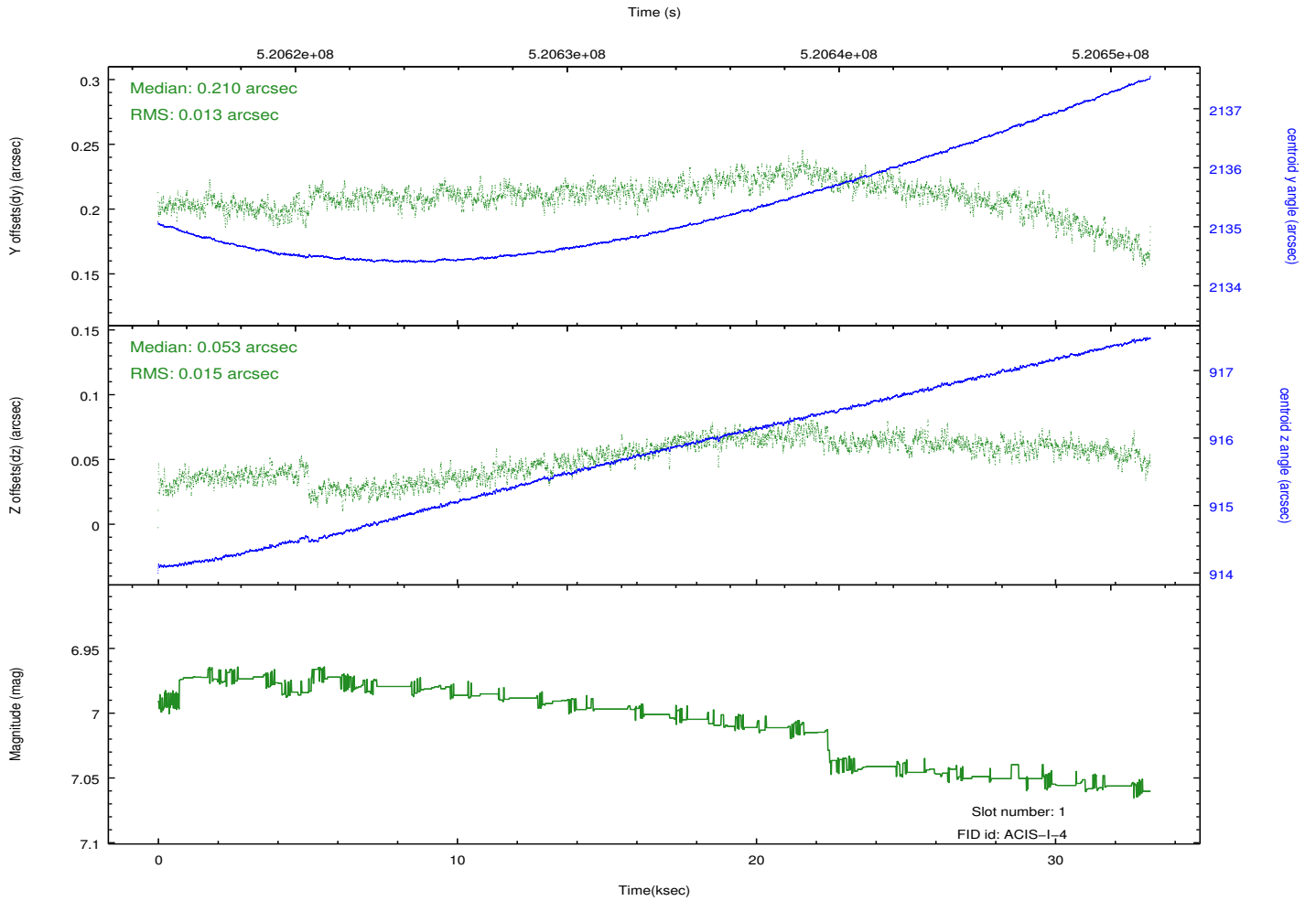
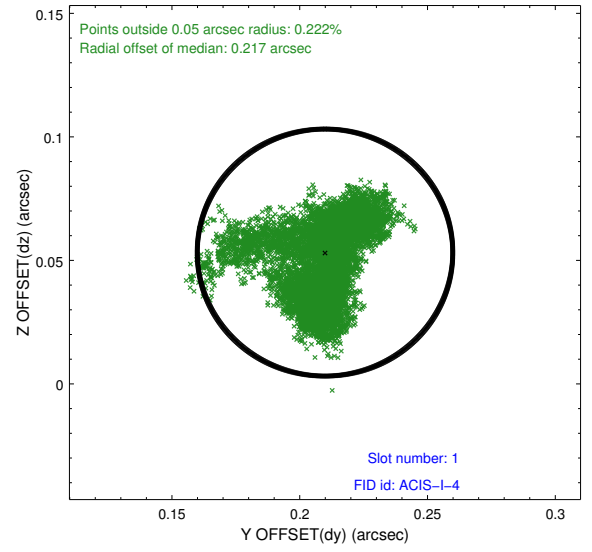
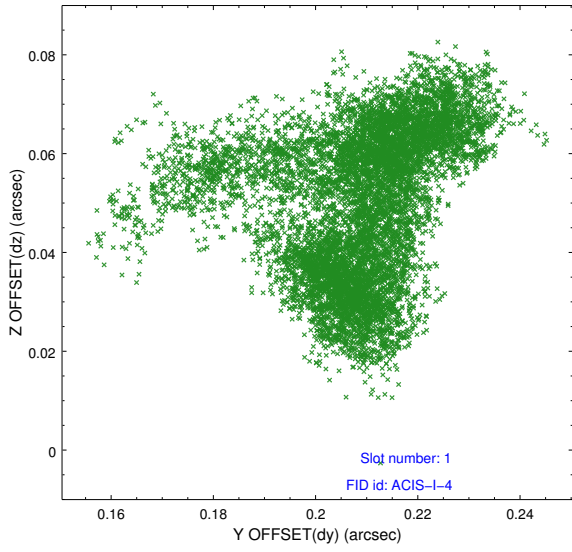


## 2.5 FID Slots

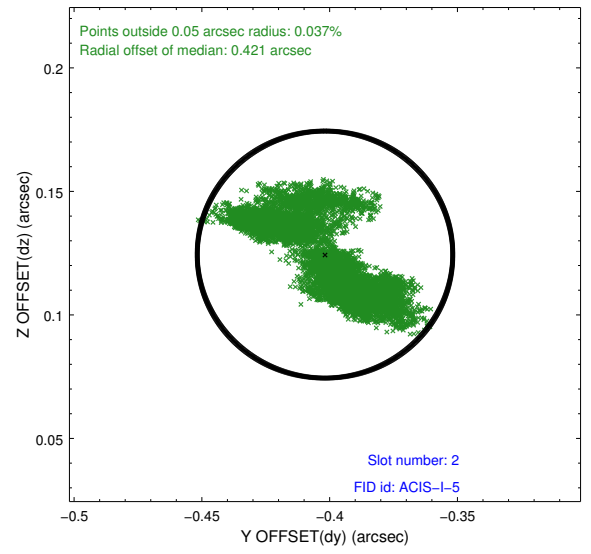
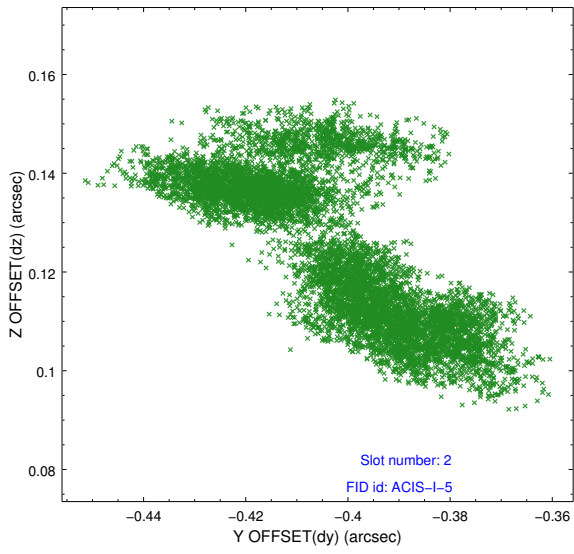
### 2.5.1 Slot 0



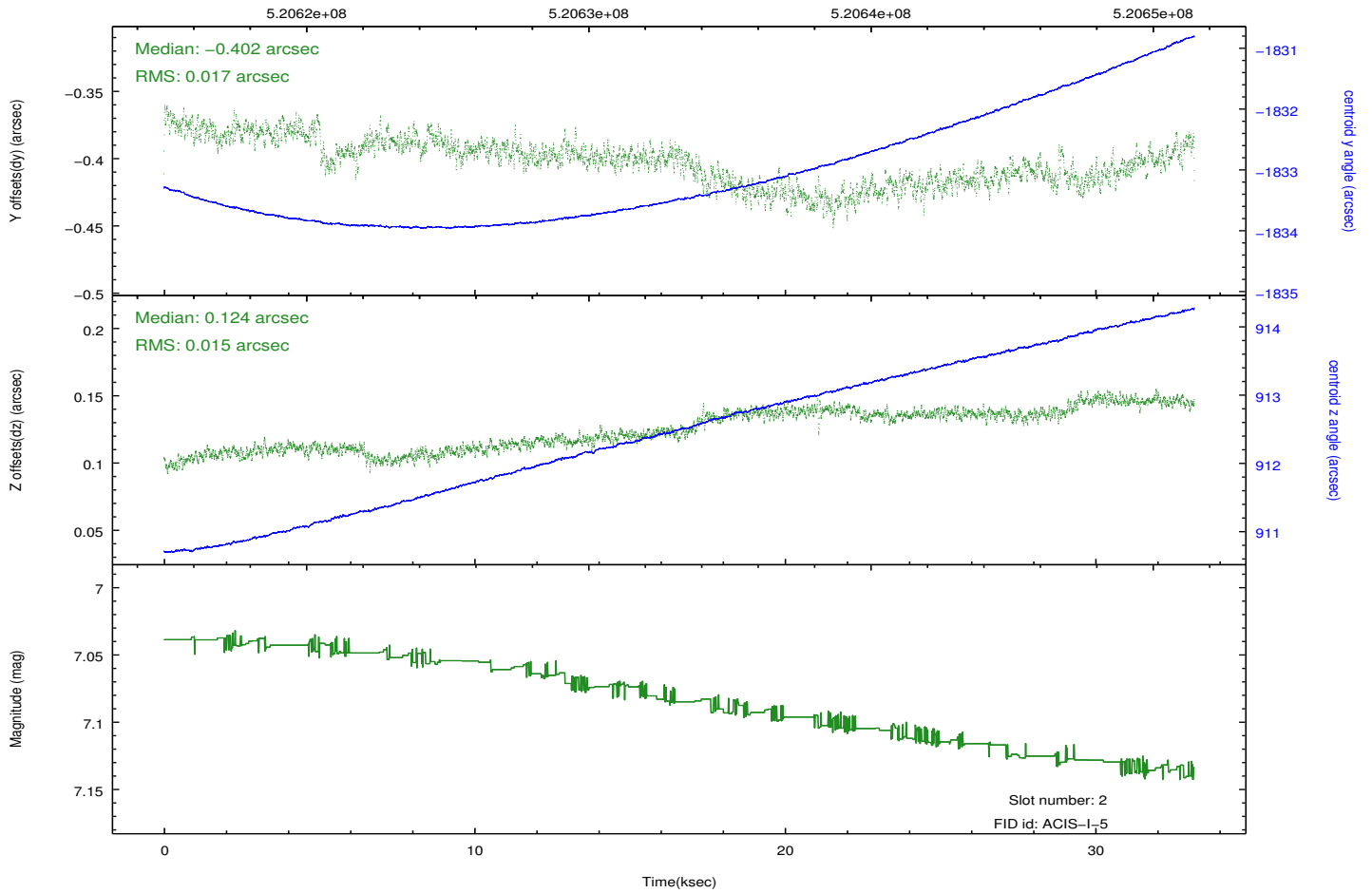
## 2.5.2 Slot 1



### 2.5.3 Slot 2



Time (s)



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	33.086300254464

## A.2 Comments

Joint proposal with NRAO.

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.