

# V&V Reference Report

## L2 ASCDS Version : 10.2.1

Observation 16587 - L2 Version 2  
Chandra X-Ray Center

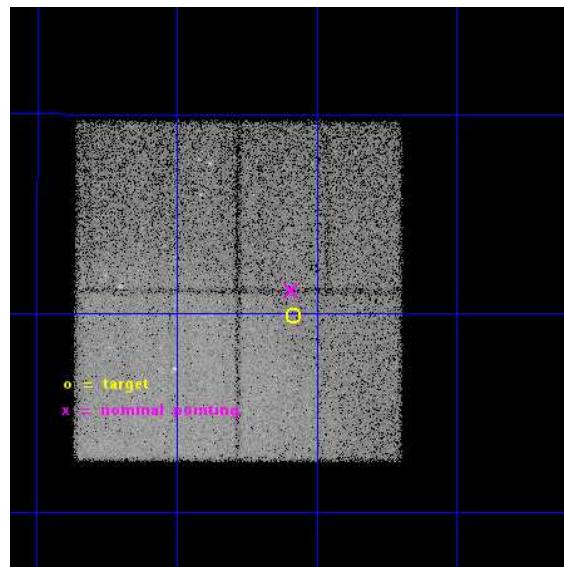
L2 Processing Date : Dec 10 2014

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# 1 Front

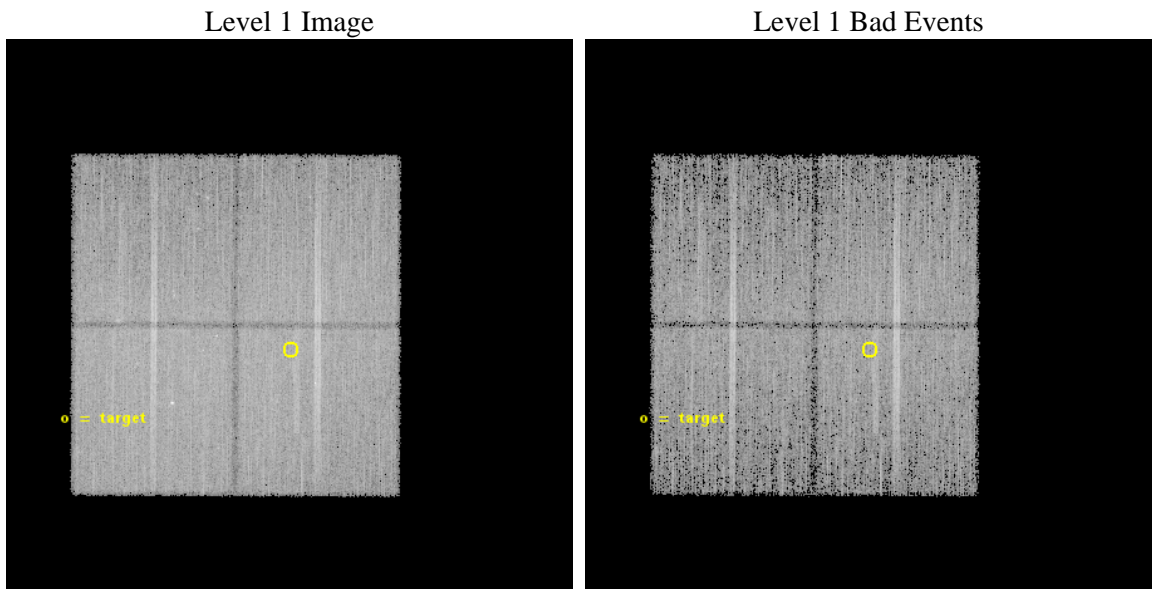
seq_num	801305	Sequence number
obs_id	16587	Observation id
title	Resolving the nearest cold front in the sky: the cleanest experimental tool to study detailed ICM physics	Proposal title
observer	Dr. Norbert Werner	Principal investigator
object	Virgo cold front	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.52067	Observer's specified target RA [deg]
dec_targ	12.664798	Observer's specified target Dec [deg]
ra_nom	187.52244817376	Nominal RA [deg]
dec_nom	12.685834799692	Nominal Dec [deg]
roll_nom	90.208300800941	Nominal Roll [deg]
revision	2	Processing version of data
ontime	37844.045872152	Sum of GTIs [s]
livetime	37349.585552451	Livetime [s]
ontime0	37840.781711817	Sum of GTIs [s]
ontime1	37837.681751668	Sum of GTIs [s]
ontime2	37844.004832149	Sum of GTIs [s]
ontime3	37844.045872152	Sum of GTIs [s]
l2events	194514	Number of level 2 events



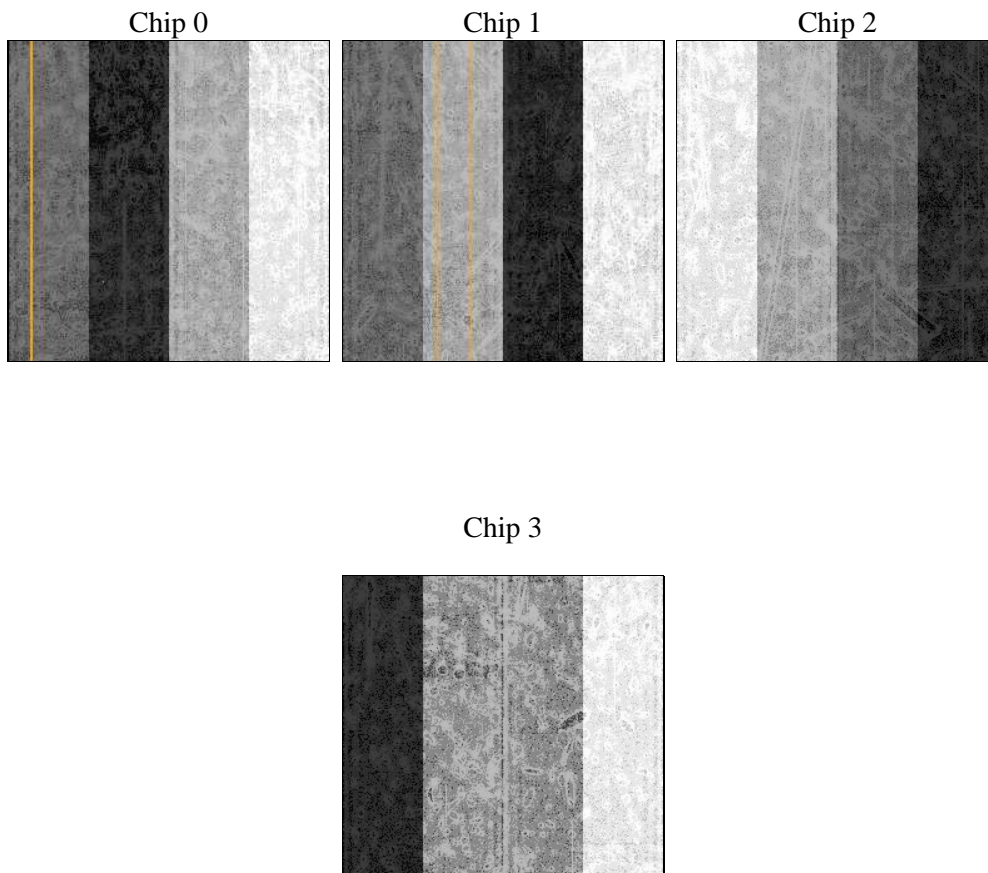
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37750.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	37844.045872152	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	37840.781711817	Sum of GTIs [s]
date	2014-12-10T13:10:39	Date and time of file creation	ontime1	37837.681751668	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	37844.004832149	Sum of GTIs [s]
			ontime3	37844.045872152	Sum of GTIs [s]
			l1events	753776	Number of level 1 events

### 2.1.4 Events

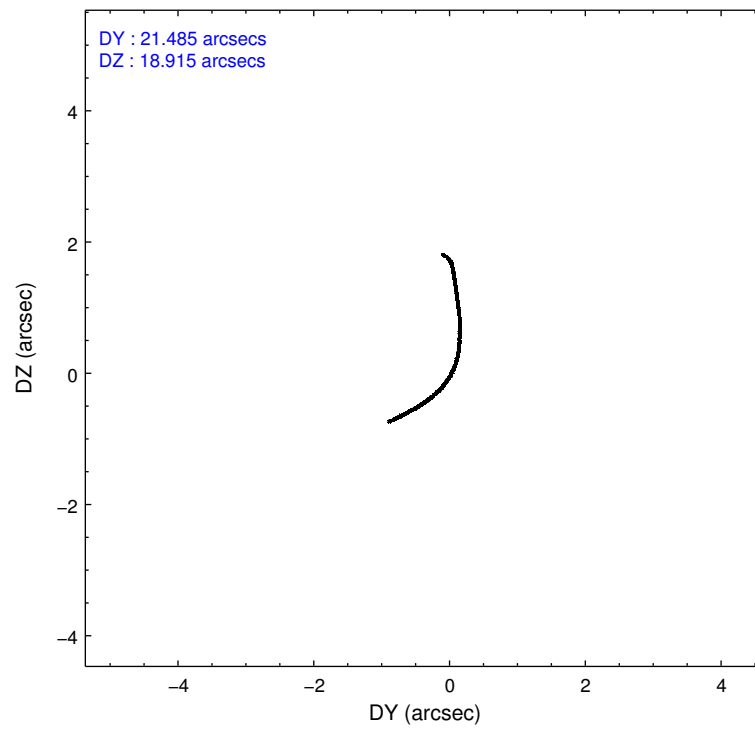
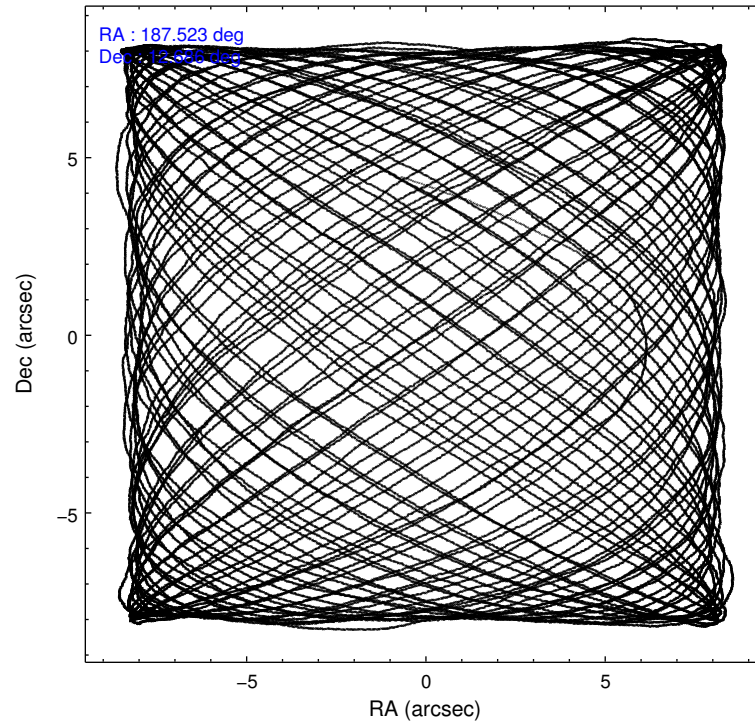
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	164941	214695	177428	196712
rejected events	126091	130052	142137	140997
rejected %	76%	60%	80%	71%

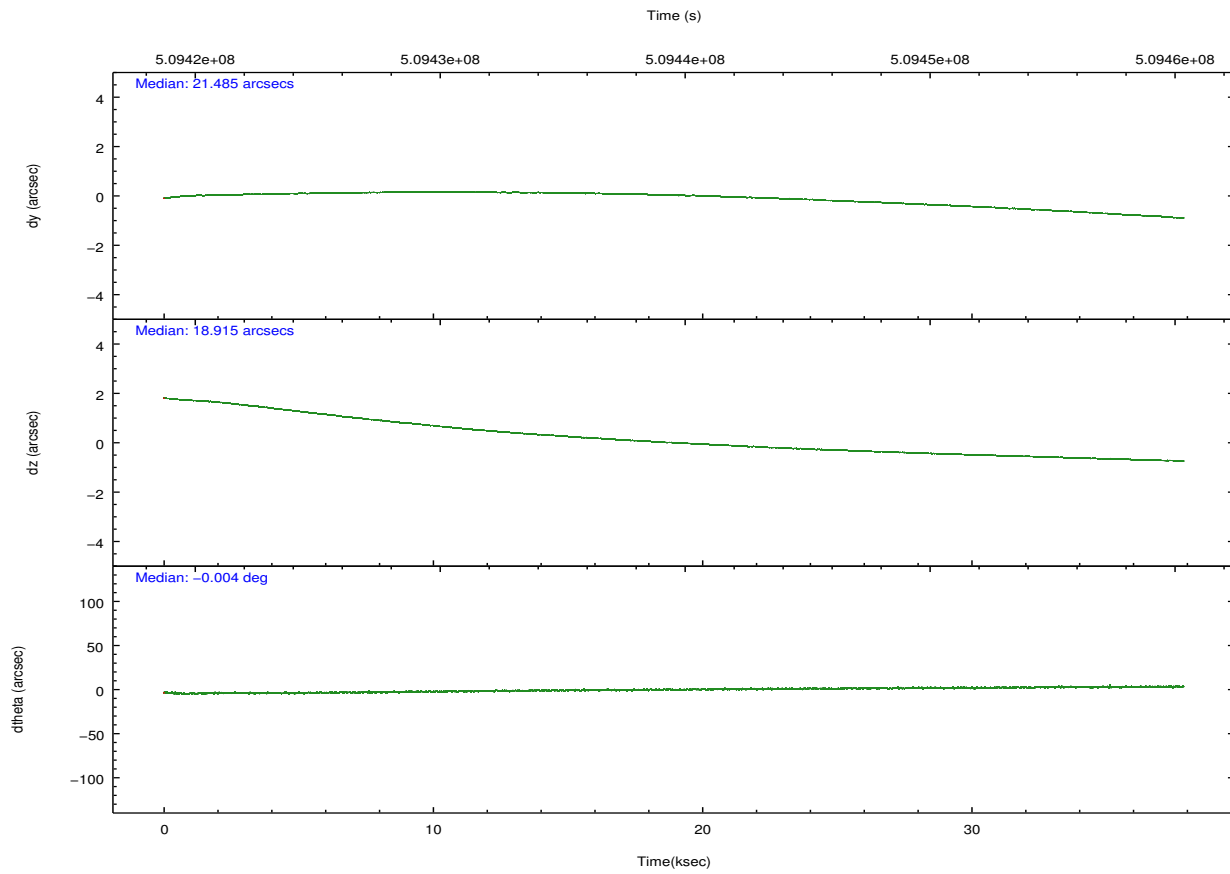
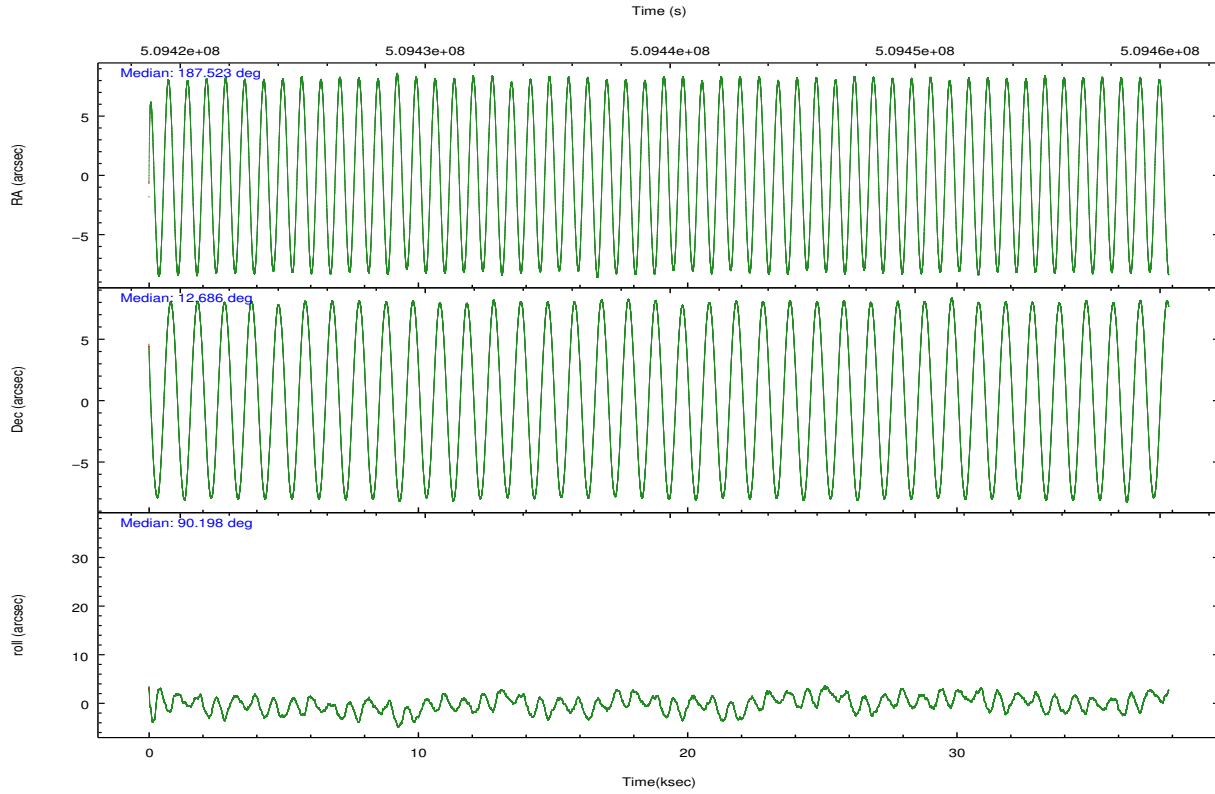
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	22266	59045	19940	37349
	13%	27%	11%	18%
grade 1 events	113	210	135	205
	0%	0%	0%	0%
grade 2 events	6807	11750	6206	7732
	4%	5%	3%	3%
grade 3 events	2686	3990	2437	2989
	1%	1%	1%	1%
grade 4 events	2469	3873	2508	3004
	1%	1%	1%	1%
grade 5 events	7903	8467	7484	8858
	4%	3%	4%	4%
grade 6 events	4632	6002	4202	4647
	2%	2%	2%	2%
grade 7 events	118065	121358	134516	131928
	71%	56%	75%	67%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-0123	ACIS-0123	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	187.536731	187.5224481737626	CCD I2 on	Y	Y
[deg] Pointing Dec	12.662128	12.6858347996921	CCD I3 on	Y	Y
[deg] Pointing Roll	89.996480	90.20830080094075	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	N	N
[mm] SIM translation stage pos	-227.592463	-227.5933067819097	CCD S3 on	O1	N
[mm] SIM translation stage offset	-6	-5.999146221020027	CCD S4 on	N	N
[s] Observation start time (MET)	509420719.184000	509419555.35385	CCD S5 on	N	N
Observation start date	2014-02-22T01:44:12	2014-02-22T01:25:55	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	509458469.184000	509459419.14354	On-chip summing requested	N	N
Observation end date	2014-02-22T12:13:22	2014-02-22T12:30:19	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





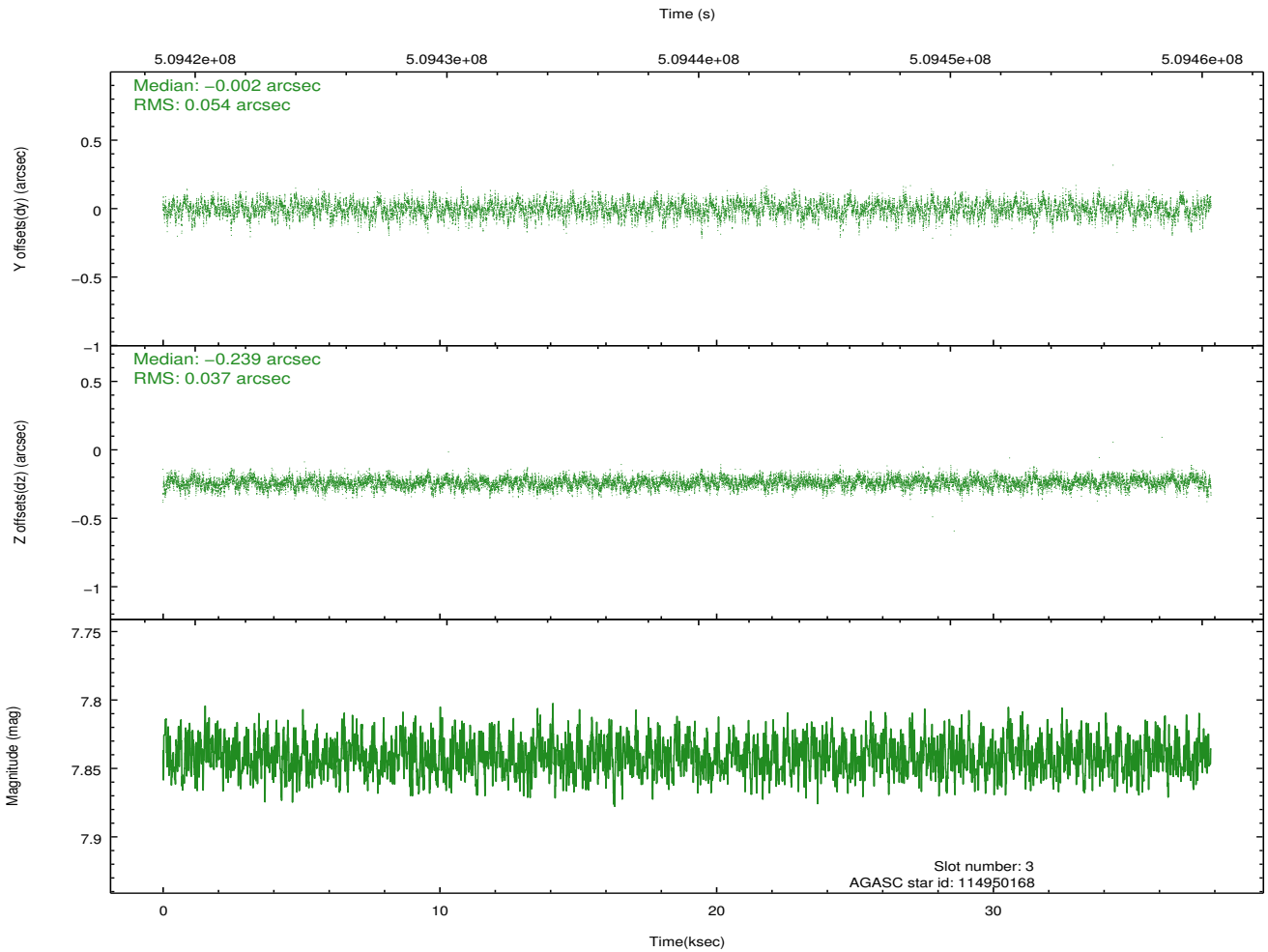
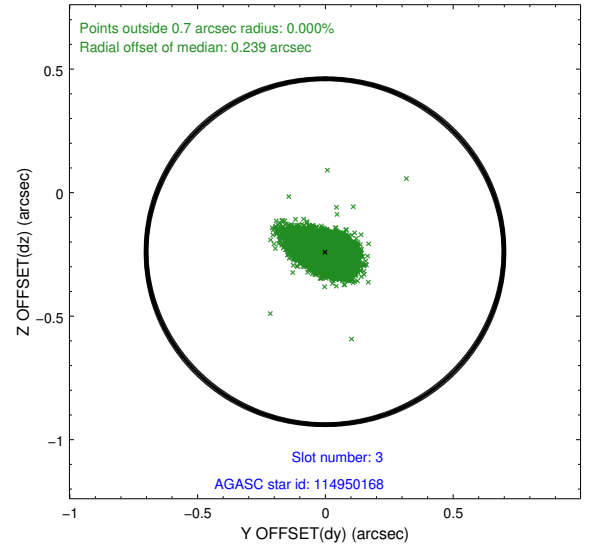
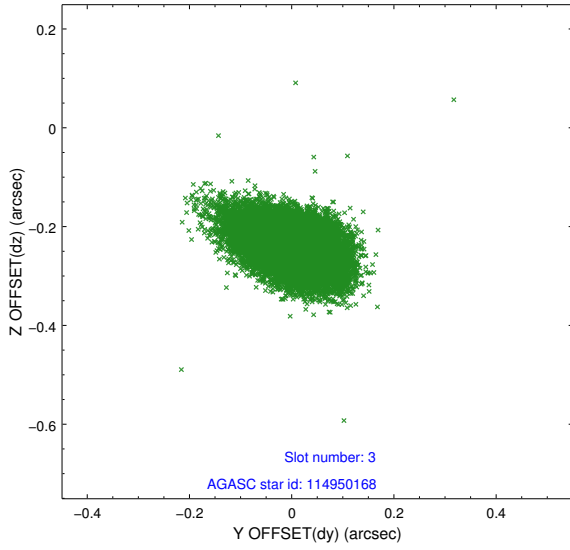
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.10	9235	0.096	-0.047	0.023	0.034	0.000000	0.000000	917.95	-965.97
1	FID		ACIS-I-5	7.09	9236	-0.289	0.077	0.015	0.028	0.000000	0.000000	-1830.59	931.52
2	FID		ACIS-I-6	7.11	9235	0.104	0.045	0.011	0.018	0.000000	0.000000	383.39	1576.10
3	GUIDE	used	114950168	7.84	18473	-0.002	-0.239	0.068	0.116	187.143398	12.117441	-1960.31	1384.20
4	GUIDE	used	114952824	8.57	18468	-0.130	0.117	0.087	0.138	187.703904	12.486727	-631.27	-586.55
5	GUIDE	used	114954440	9.18	18465	0.047	-0.536	0.097	0.163	186.915066	12.219118	-1593.00	2185.54
6	GUIDE	used	114955056	8.32	18468	0.095	1.022	0.070	0.111	187.914001	12.127854	-1921.94	-1326.60
7	GUIDE	used	114957008	8.24	18464	-0.012	-0.363	0.086	0.142	186.894794	12.099160	-2024.68	2260.15

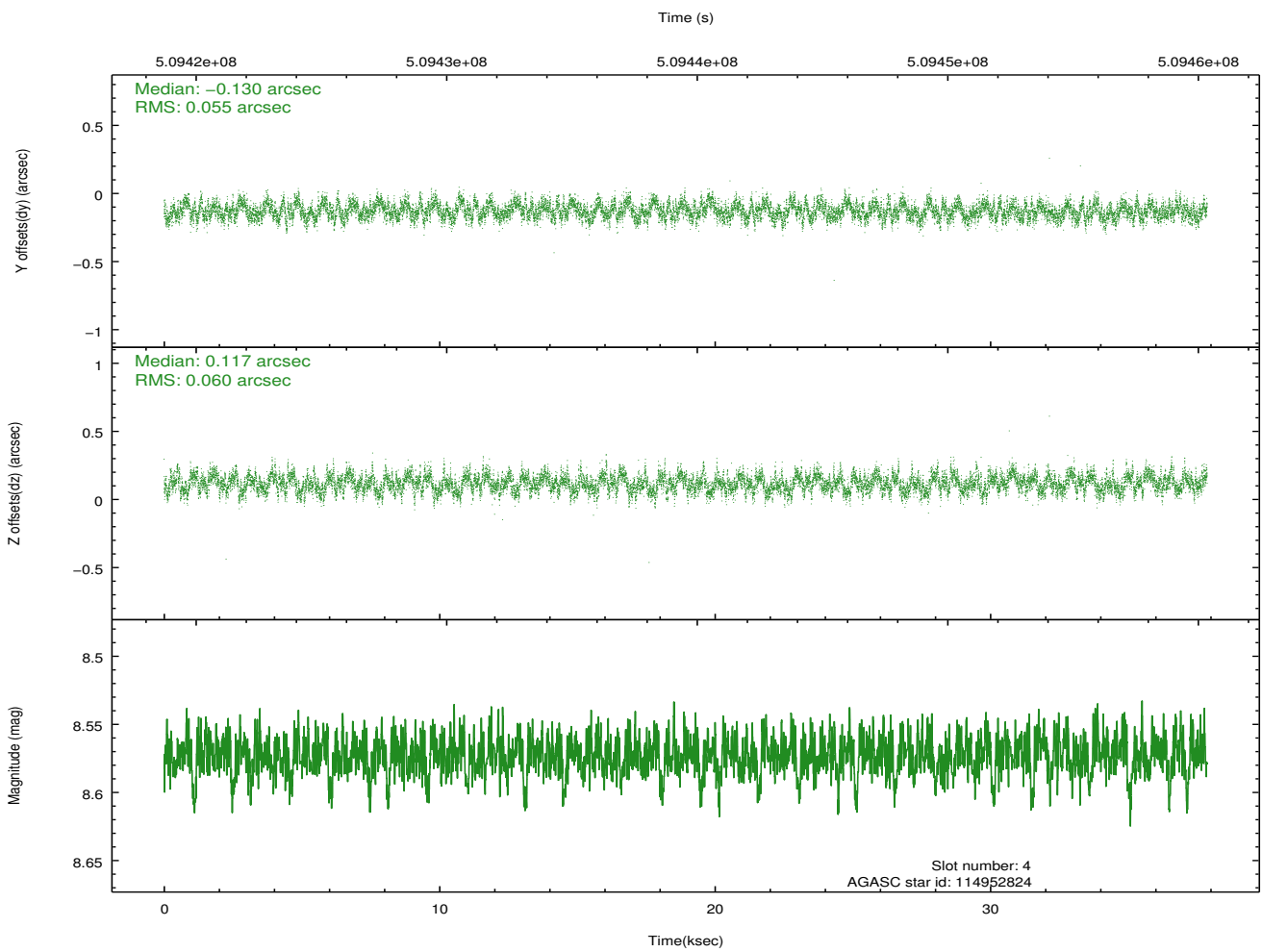
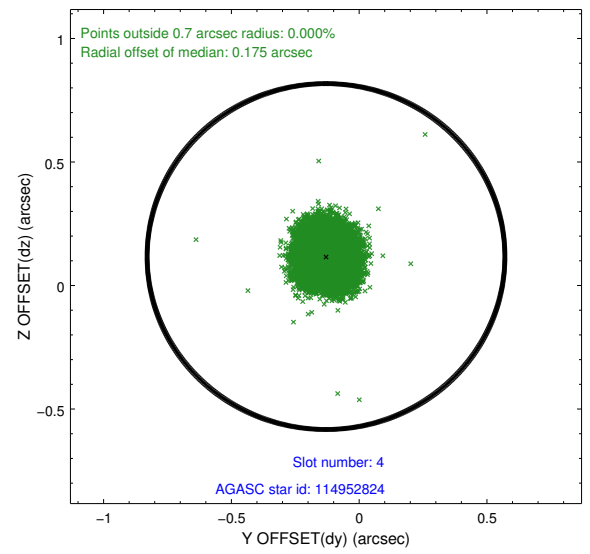
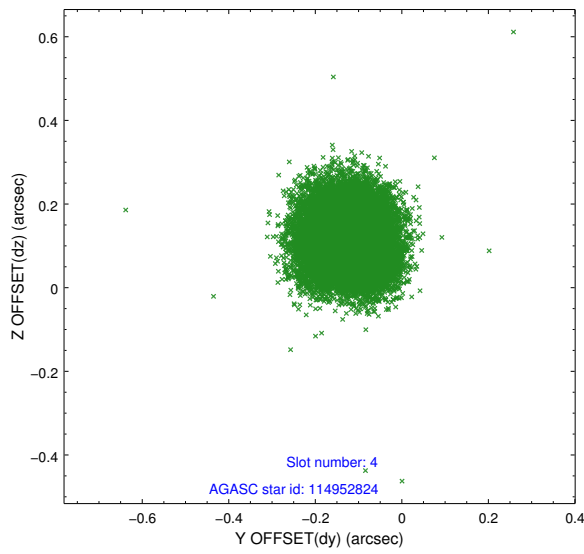
∞

## 2.4 Star Slots

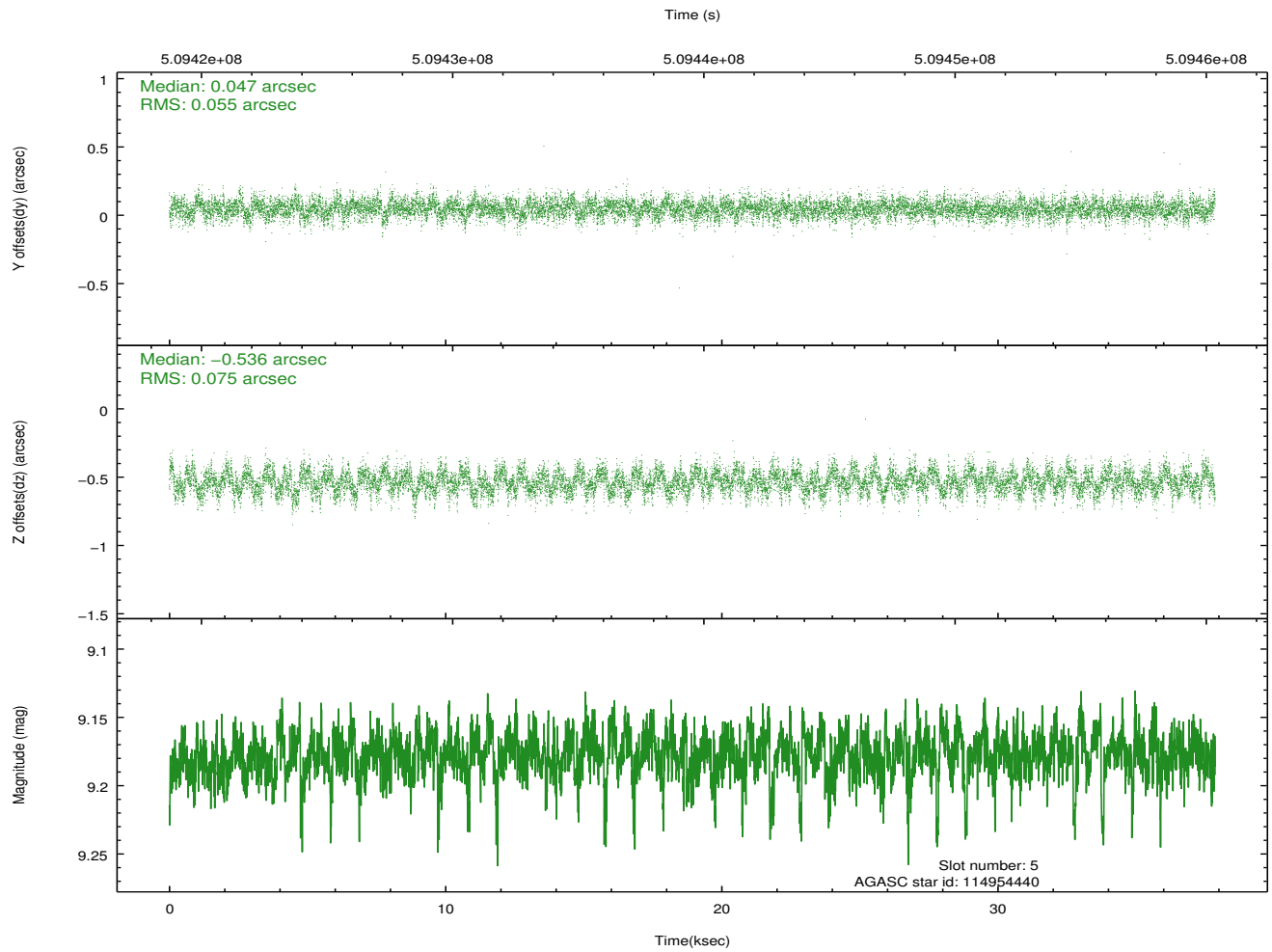
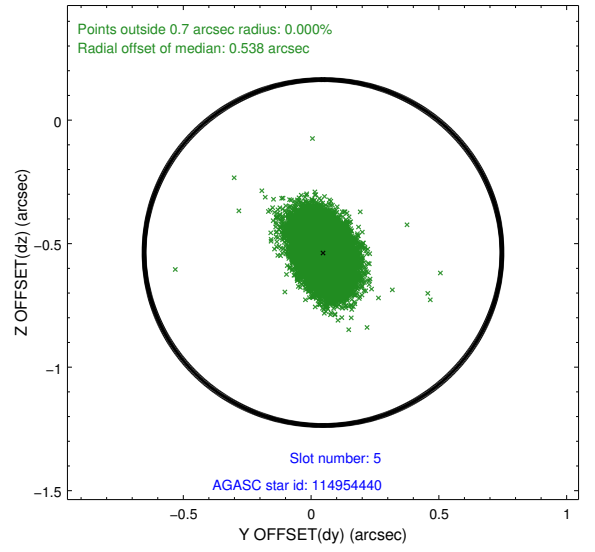
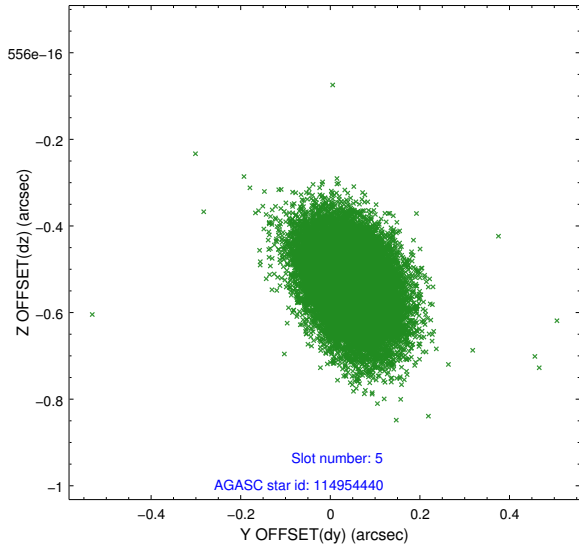
### 2.4.1 Slot 3



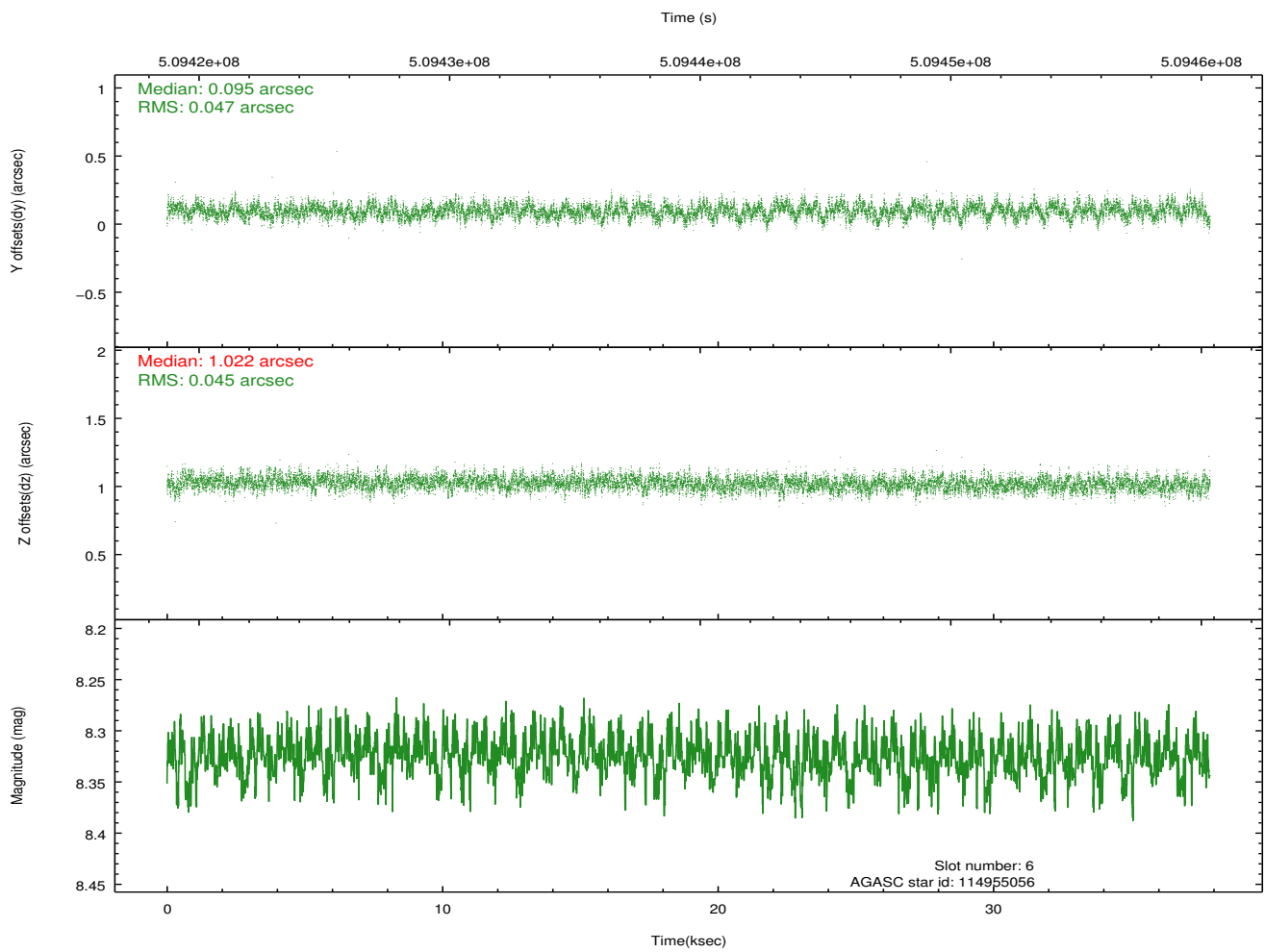
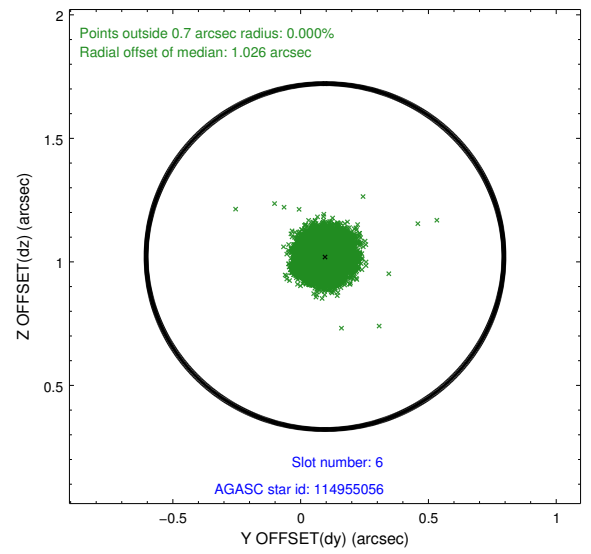
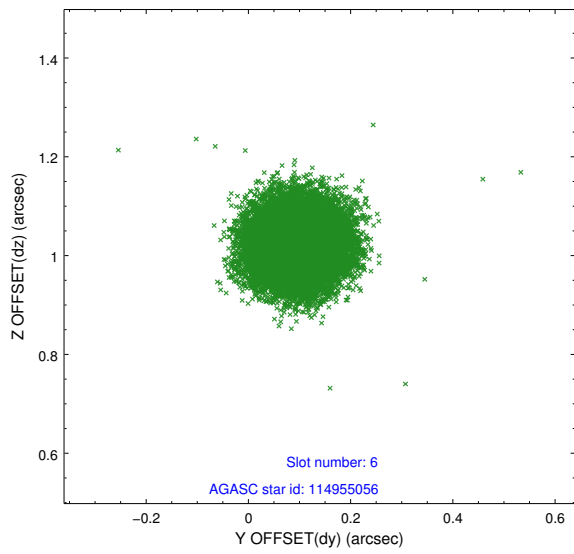
## 2.4.2 Slot 4



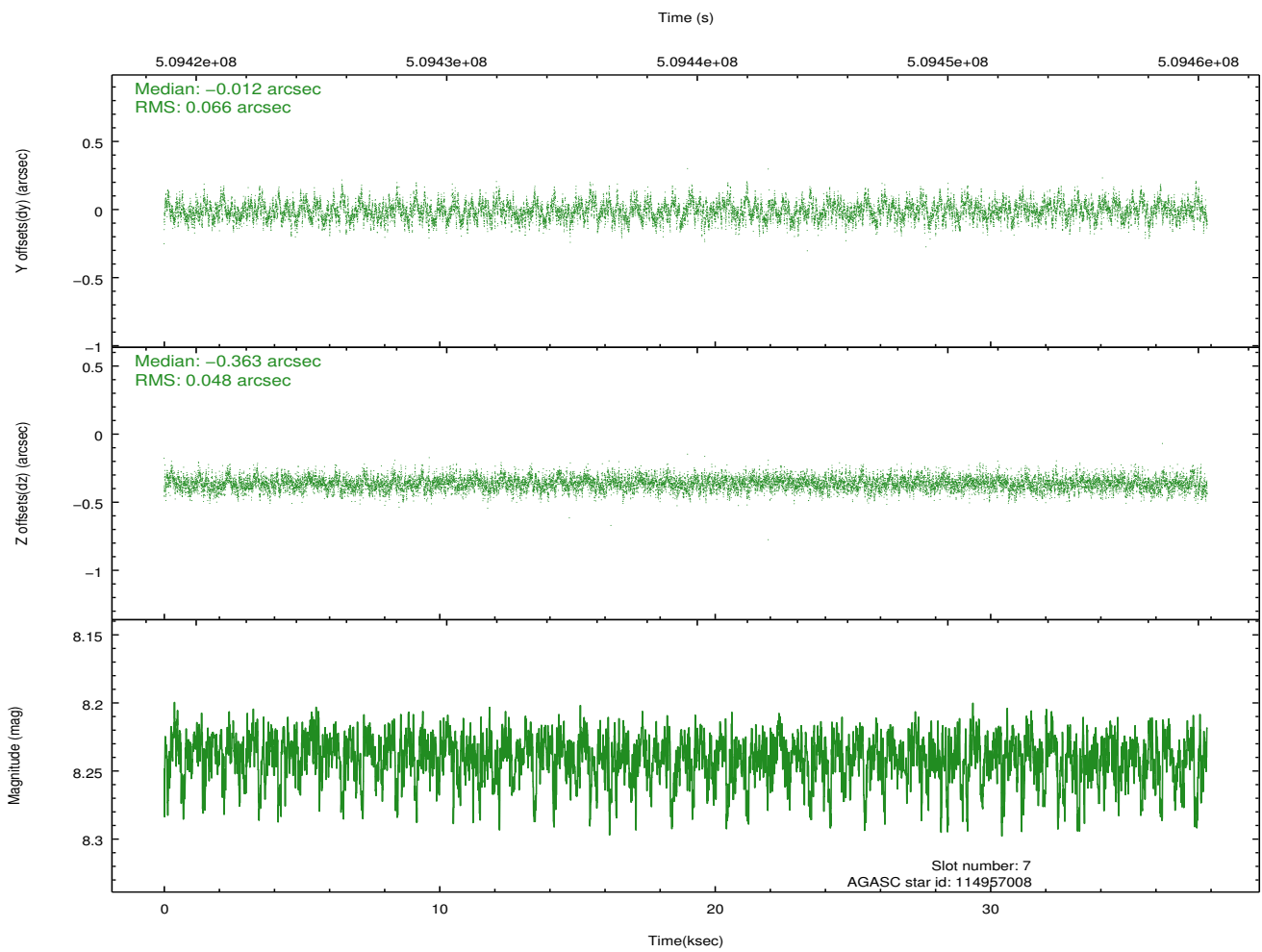
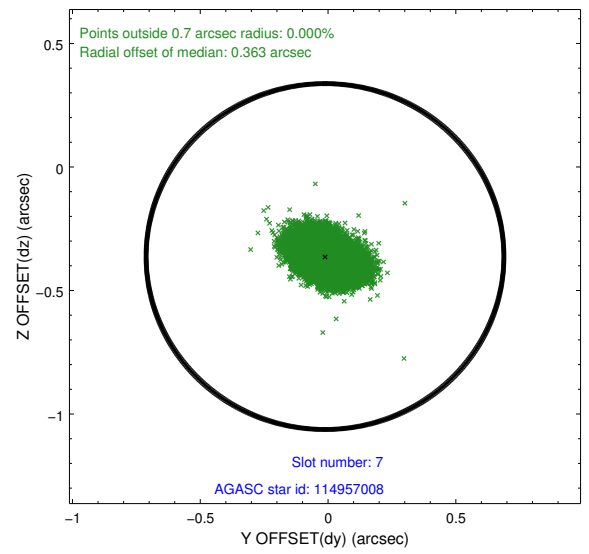
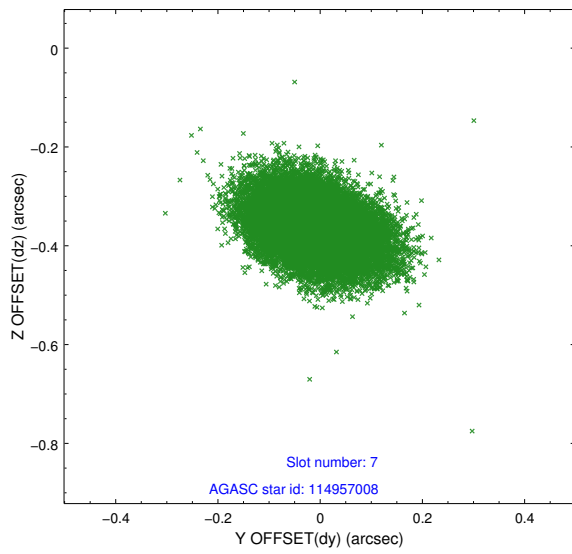
### 2.4.3 Slot 5



## 2.4.4 Slot 6

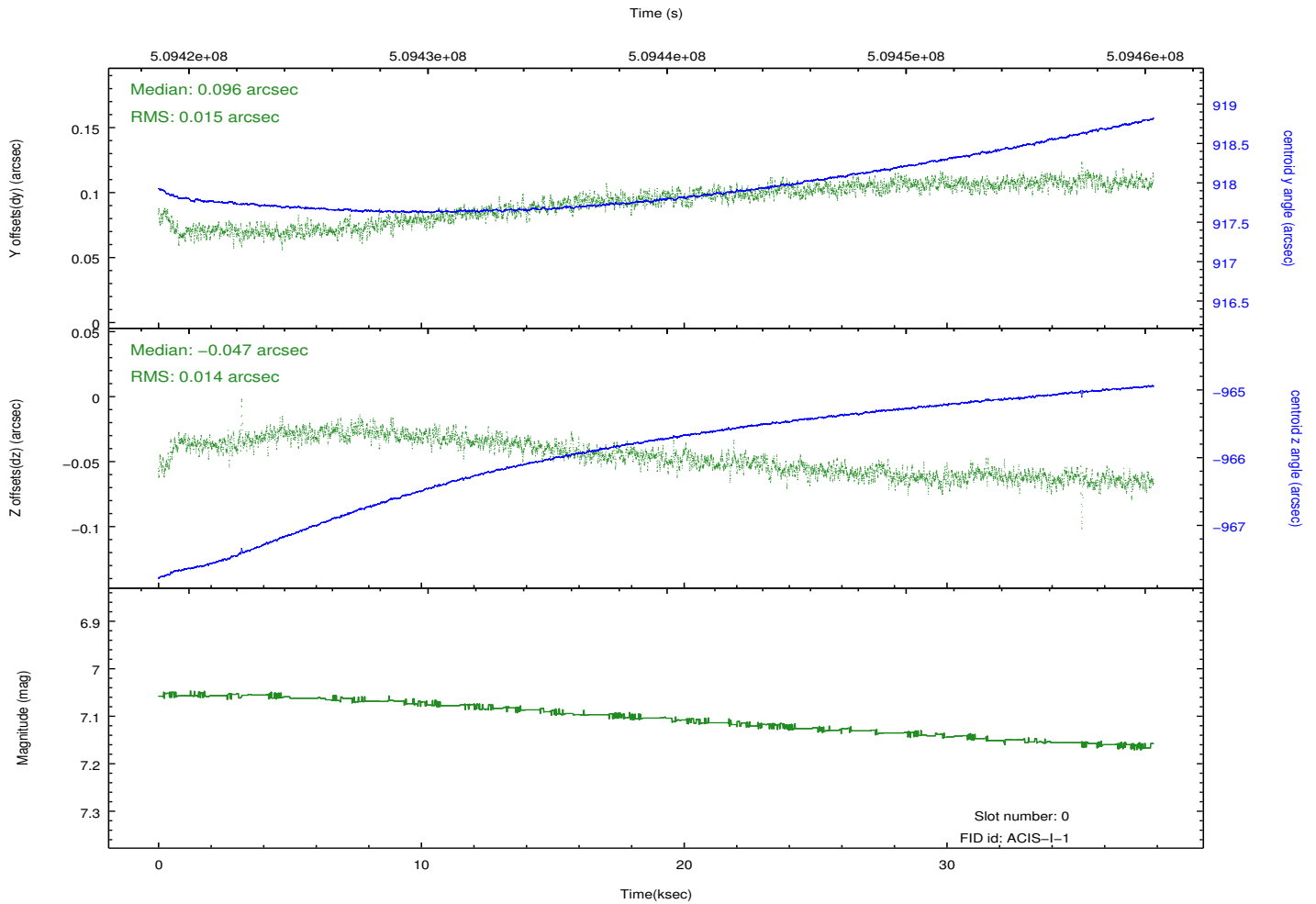
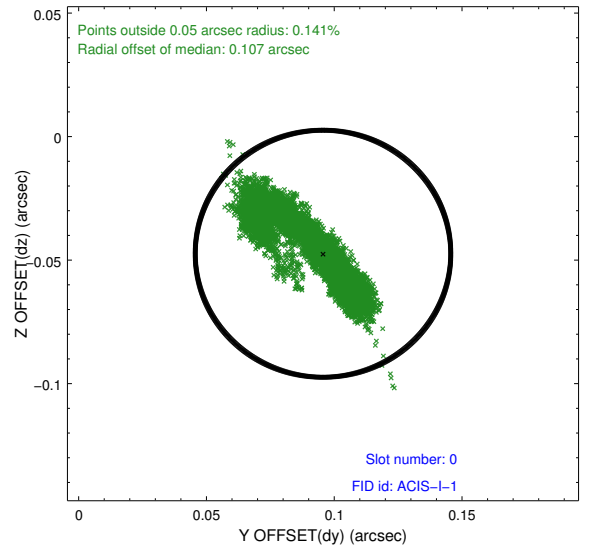
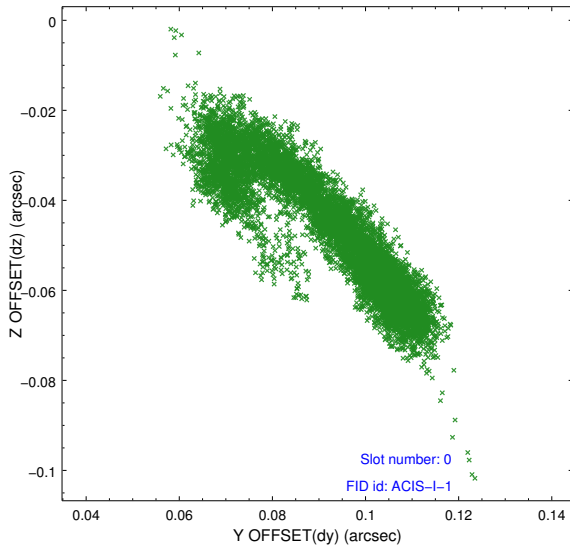


## 2.4.5 Slot 7

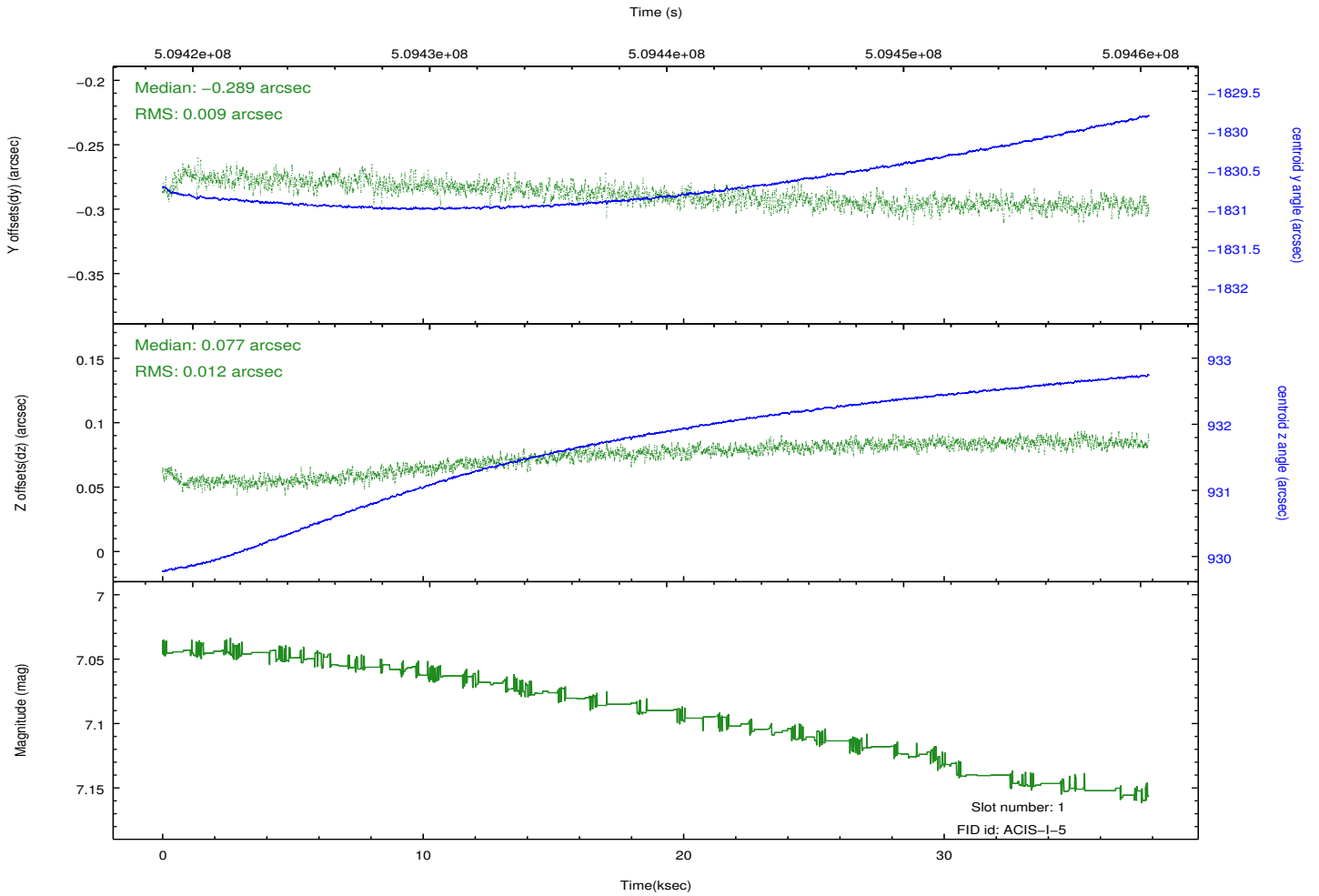
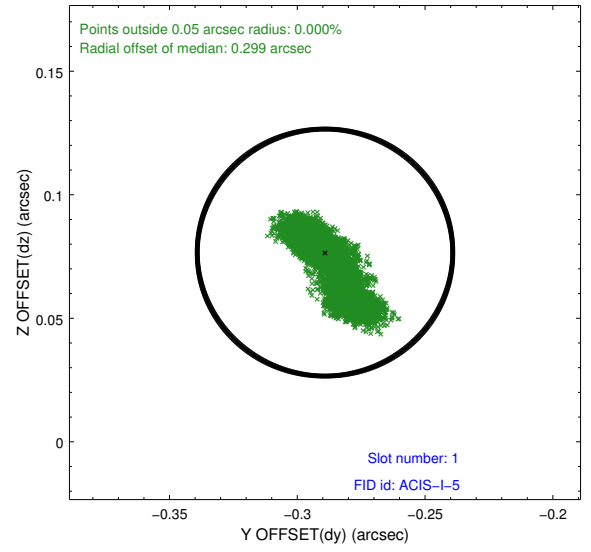
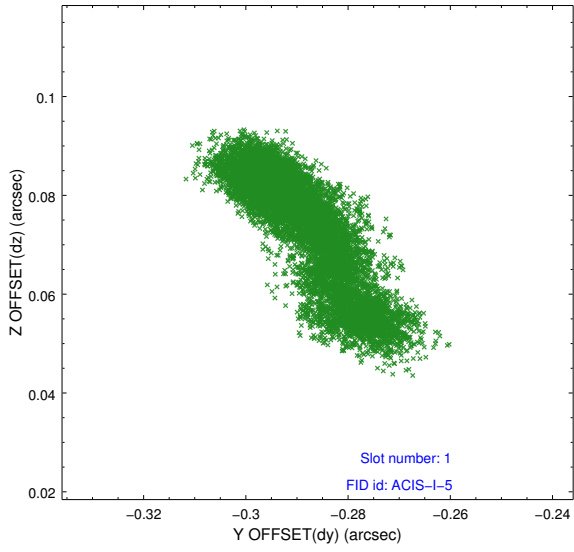


## 2.5 FID Slots

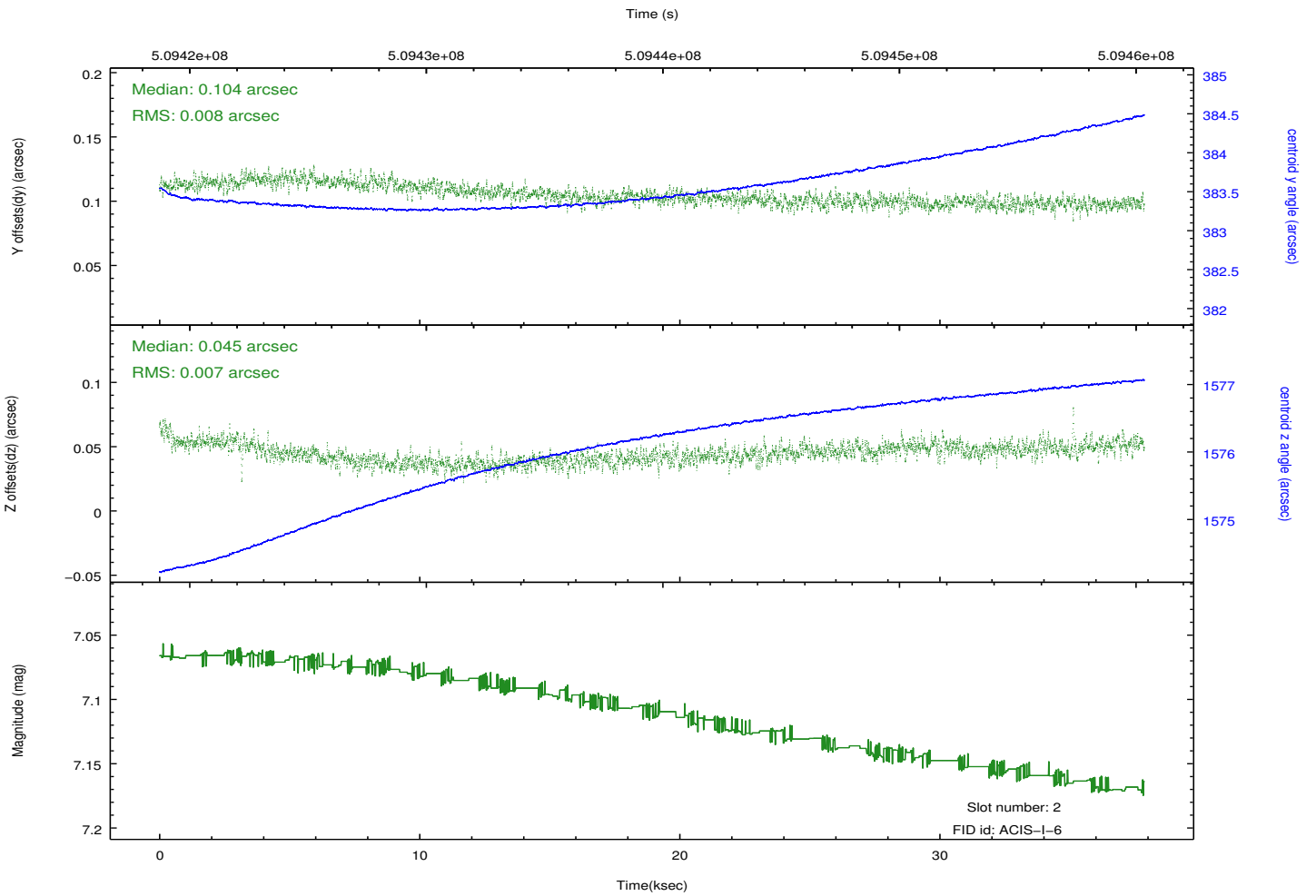
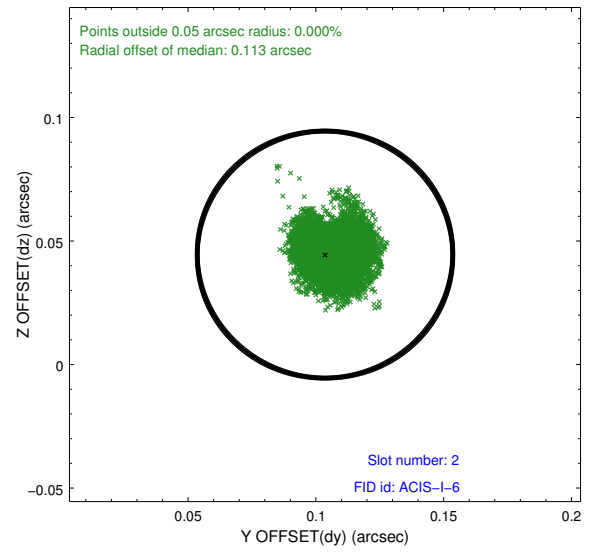
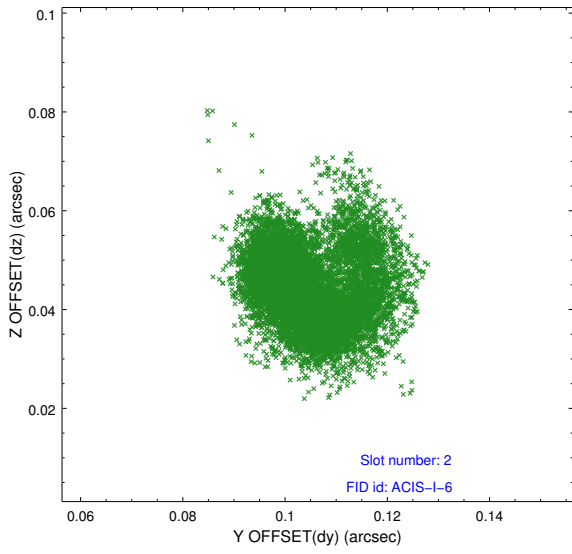
### 2.5.1 Slot 0



## 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)	2014.12.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.844045872152

## A.2 Comments

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.