

# V&V Reference Report

## L2 ASCDS Version : 10.2.1

Observation 16590 - L2 Version 2  
Chandra X-Ray Center

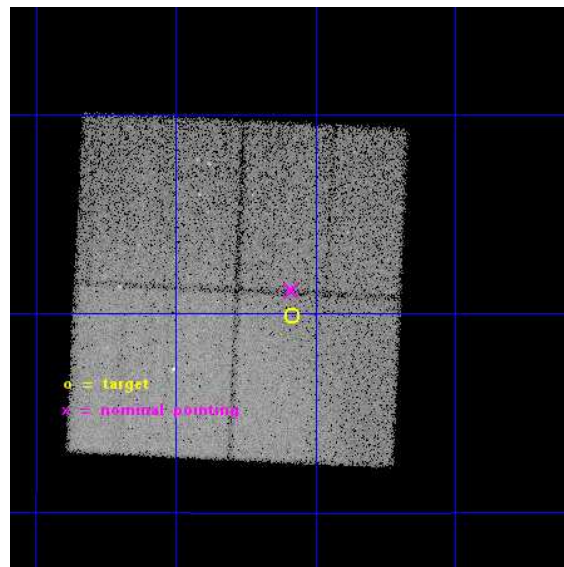
L2 Processing Date : Dec 10 2014

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# 1 Front

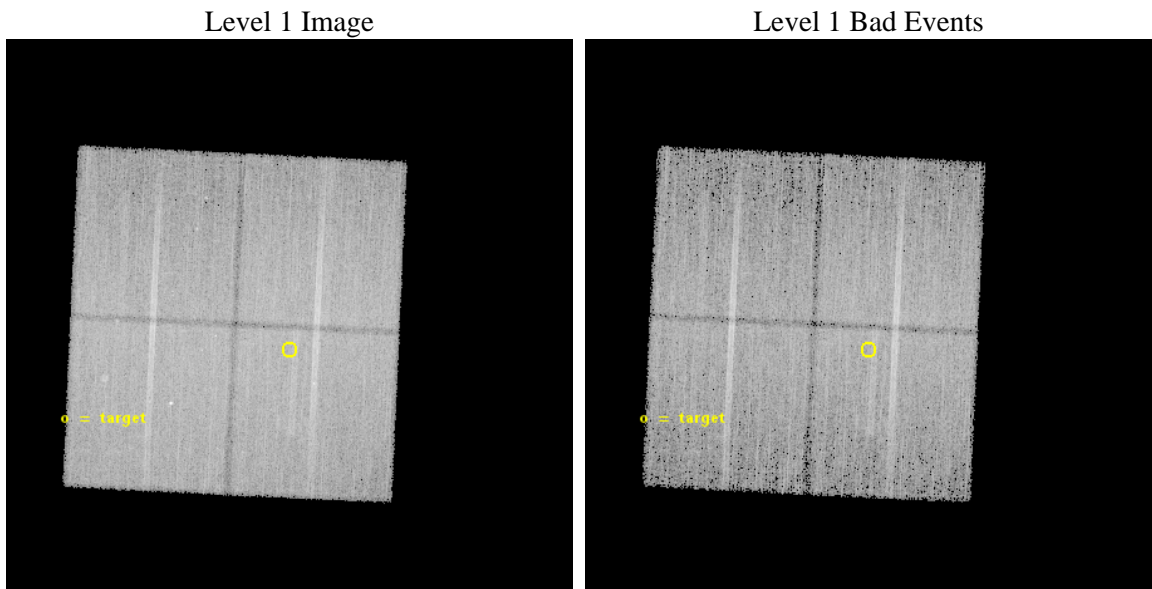
seq_num	801305	Sequence number
obs_id	16590	Observation id
title	Resolving the nearest cold front in the sky: the cleanest experimental tool to study detailed ICM physics	Proposal title
observer	Dr. Norbert Werner	Principal investigator
object	Virgo cold front	Source name
dtcycle	0	&#160
cycle	P	events 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	187.52150023018	Nominal RA [deg]
dec_nom	12.685895550583	Nominal Dec [deg]
roll_nom	92.708513644036	Nominal Roll [deg]
revision	2	Processing version of data
ontime	38086.559252679	Sum of GTIs [s]
livetime	37588.930317126	Livetime [s]
ontime0	38089.700292945	Sum of GTIs [s]
ontime1	38089.700292945	Sum of GTIs [s]
ontime2	38083.41825223	Sum of GTIs [s]
ontime3	38086.559252679	Sum of GTIs [s]
l2events	215396	Number of level 2 events



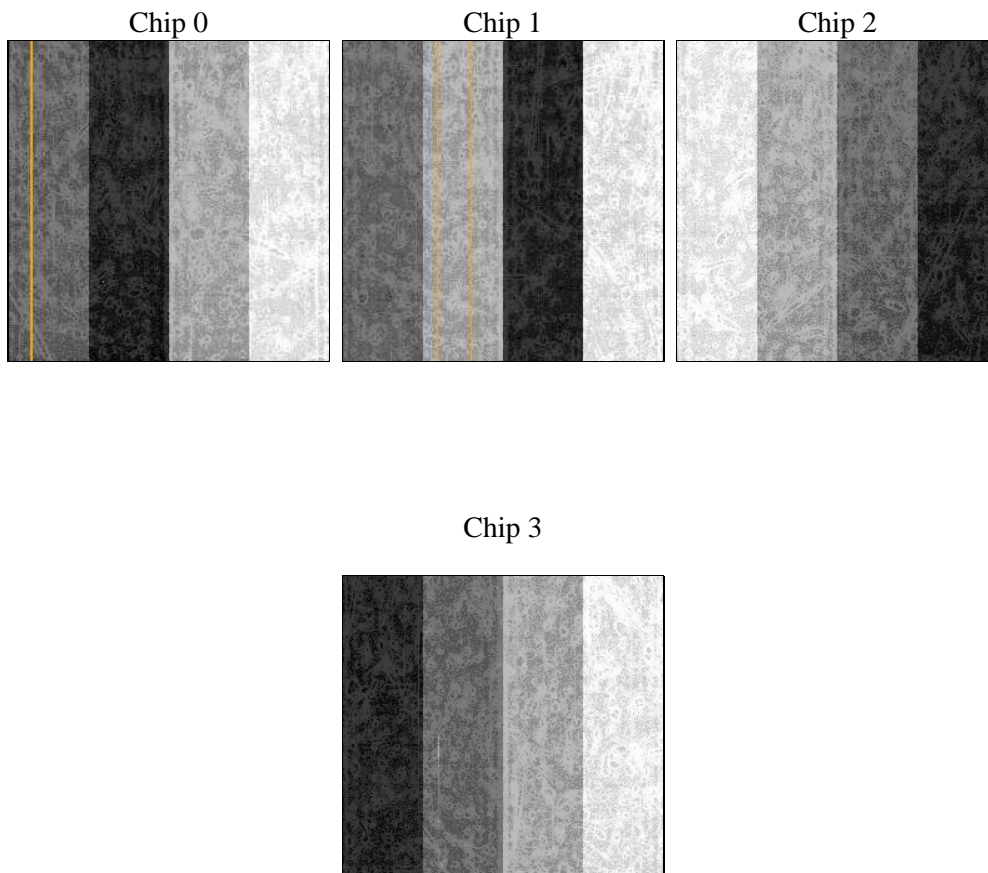
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	38000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	38086.559252679	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime0	38089.700292945	Sum of GTIs [s]
date	2014-12-10T13:55:19	Date and time of file creation	ontime1	38089.700292945	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	38083.41825223	Sum of GTIs [s]
			ontime3	38086.559252679	Sum of GTIs [s]
			l1events	961353	Number of level 1 events

### 2.1.4 Events

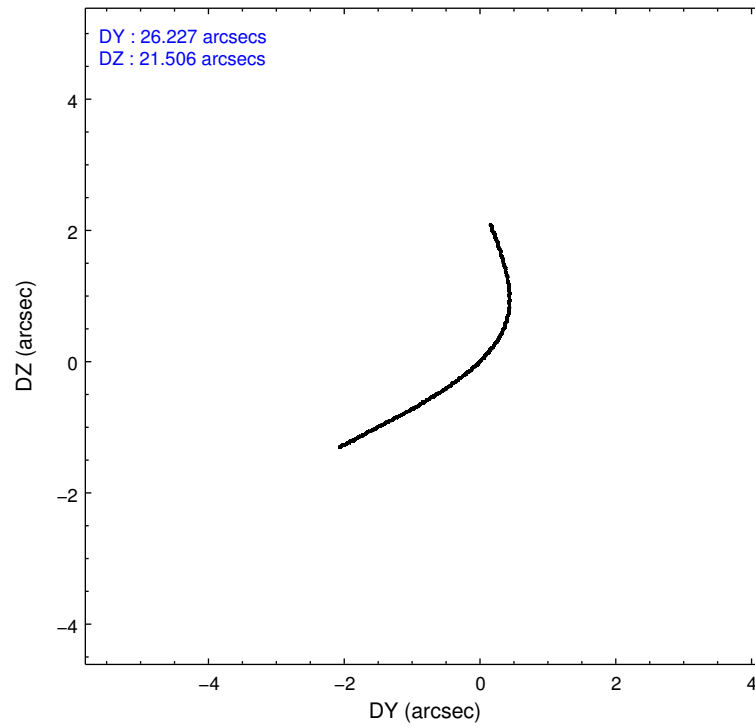
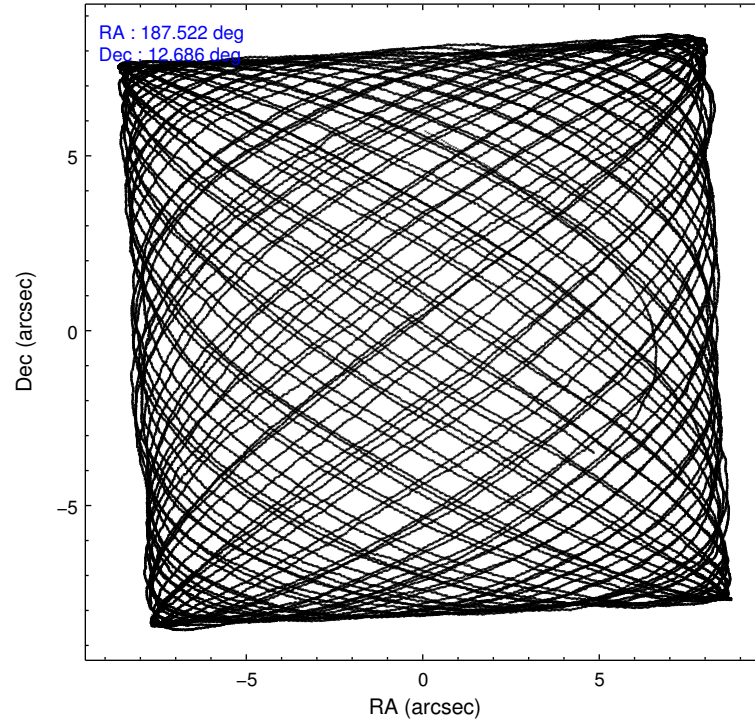
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	212267	263043	238801	247242
rejected events	166816	172251	194967	184681
rejected %	78%	65%	81%	74%

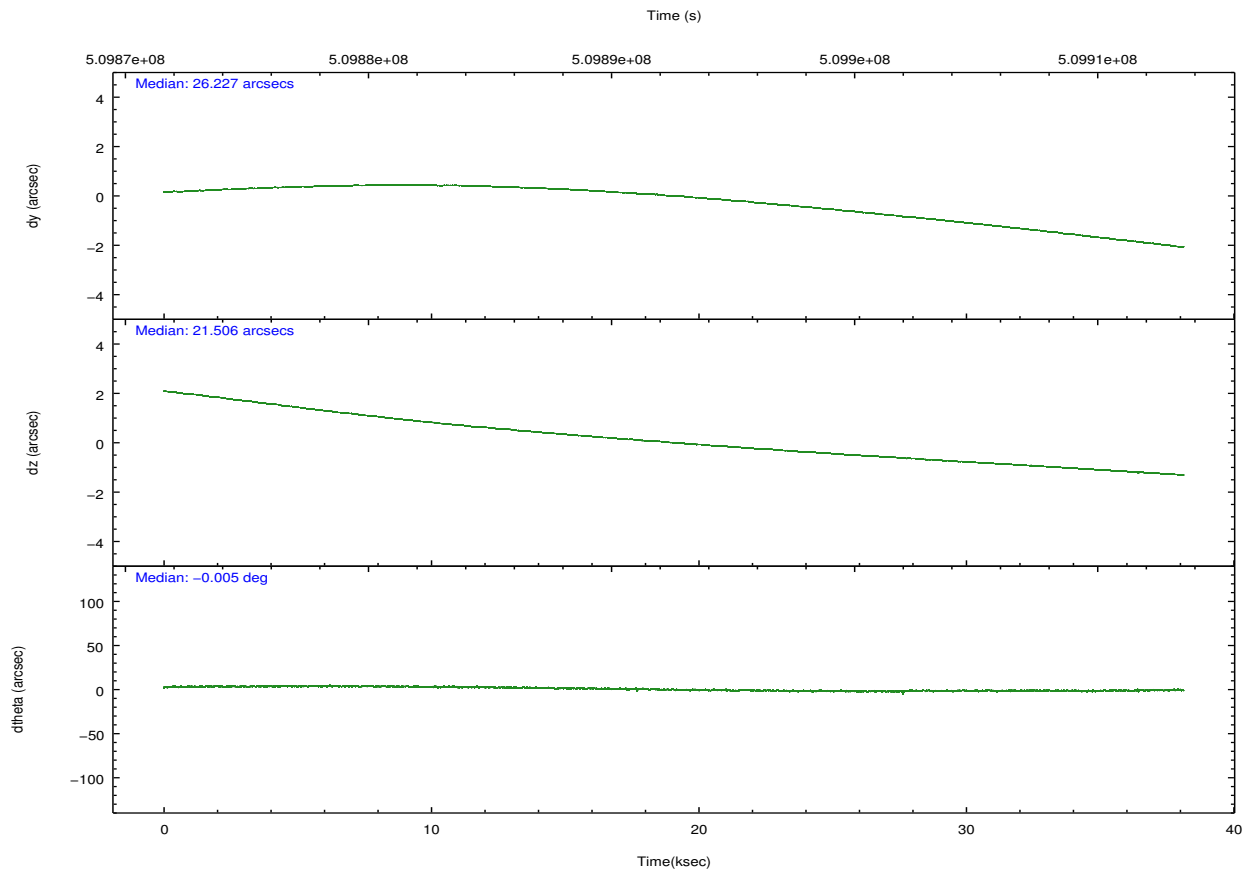
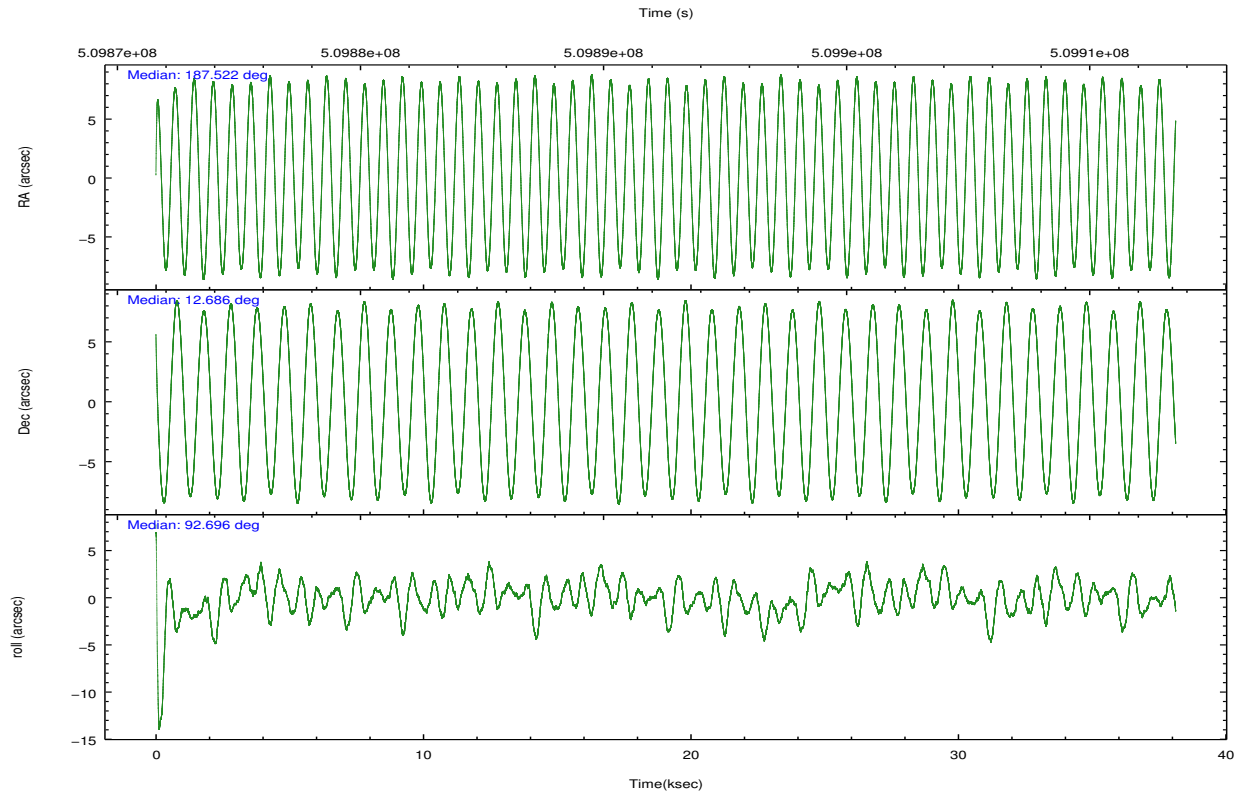
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	25376	61834	24294	40771
	11%	23%	10%	16%
grade 1 events	178	281	172	231
	0%	0%	0%	0%
grade 2 events	8589	13087	8101	9098
	4%	4%	3%	3%
grade 3 events	3000	4379	3026	3490
	1%	1%	1%	1%
grade 4 events	3044	4378	3087	3584
	1%	1%	1%	1%
grade 5 events	8722	9121	8378	9780
	4%	3%	3%	3%
grade 6 events	5443	7119	5334	5623
	2%	2%	2%	2%
grade 7 events	157915	162844	186409	174665
	74%	61%	78%	70%

## 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	187.536834	187.5215002301832	CCD I2 on	Y	Y
[deg] Pointing Dec	12.662822	12.68589555058265	CCD I3 on	Y	Y
[deg] Pointing Roll	92.496454	92.70851364403607	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	-227.5958210972112	CCD S3 on	O1	N
[mm] SIM translation stage offset	-6	-5.996631905718488	CCD S4 on	N	N
[s] Observation start time (MET)	509873625.184000	509872501.8538	CCD S5 on	N	N
Observation start date	2014-02-27T07:32:38	2014-02-27T07:15:01	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	509911625.184000	509912600.881	On-chip summing requested	N	N
Observation end date	2014-02-27T18:05:58	2014-02-27T18:23:20	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





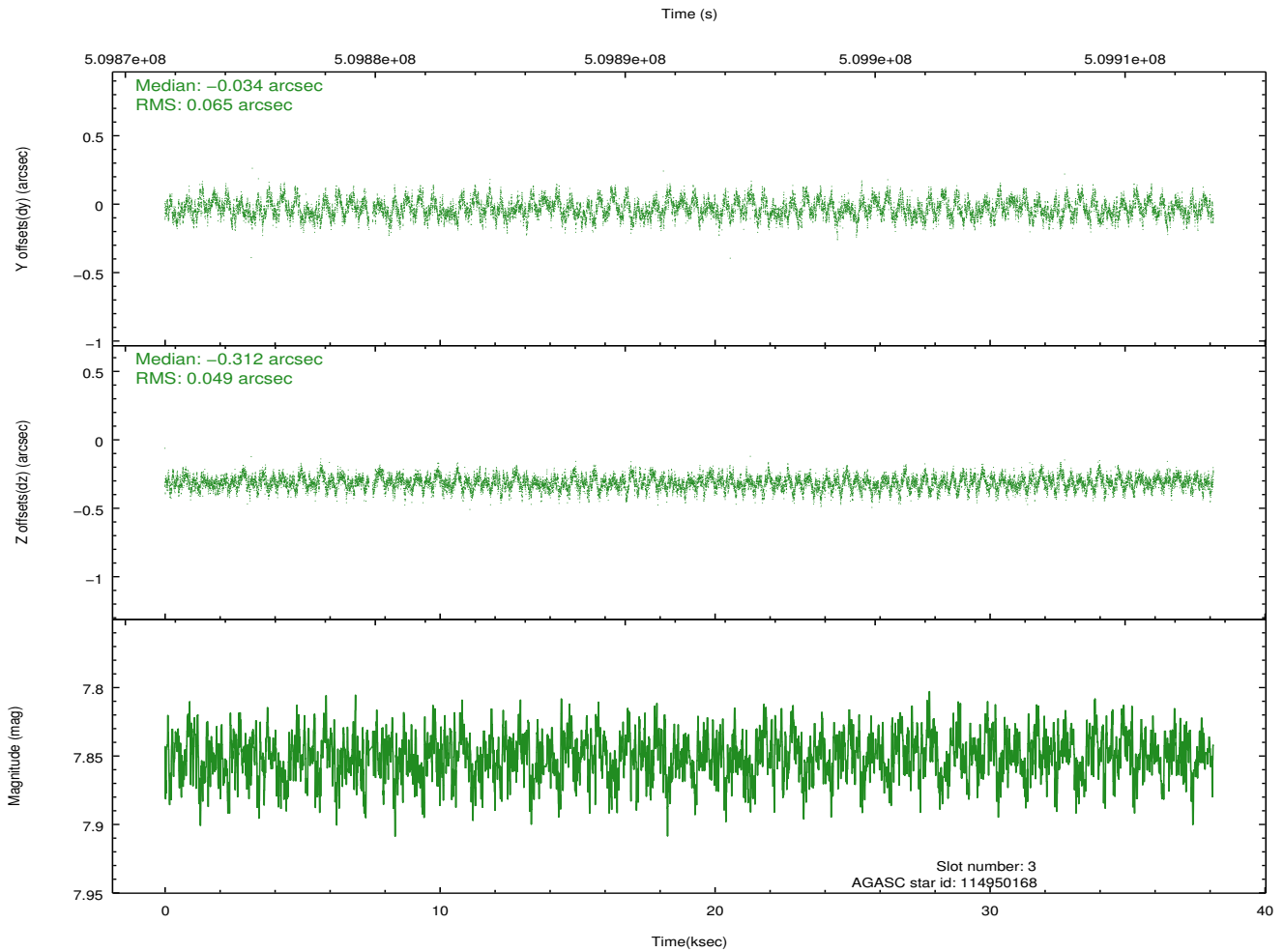
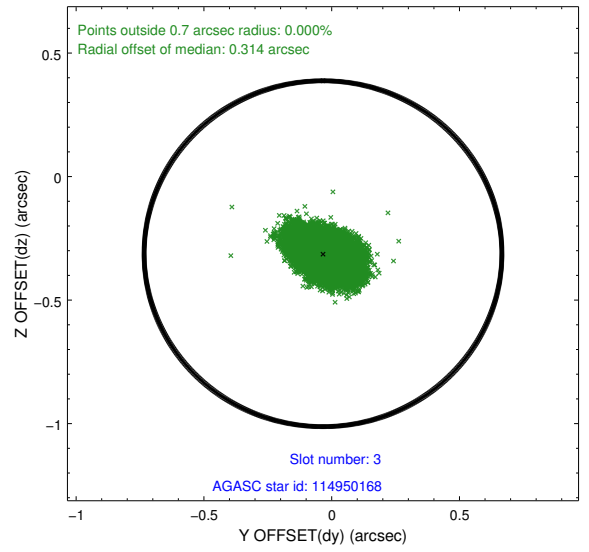
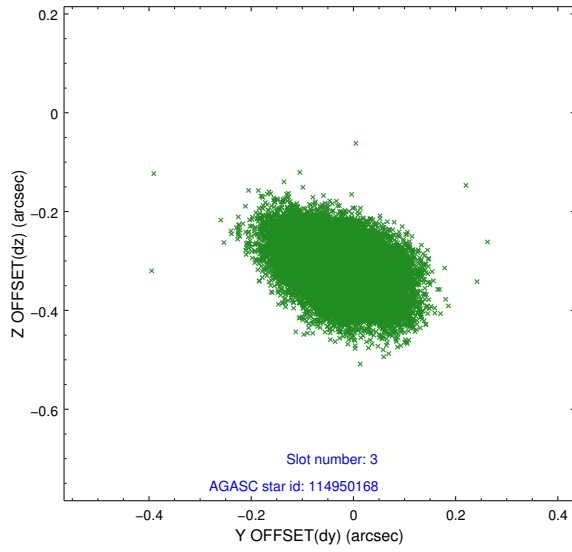
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.12	9300	0.090	-0.068	0.028	0.048	0.000000	0.000000	913.29	-968.51
1	FID		ACIS-I-5	7.11	9300	-0.339	0.049	0.015	0.022	0.000000	0.000000	-1835.33	928.93
2	FID		ACIS-I-6	7.13	9300	0.156	0.088	0.022	0.035	0.000000	0.000000	378.74	1573.61
3	GUIDE	used	114950168	7.85	18529	-0.034	-0.312	0.086	0.143	187.143398	12.117441	-1900.58	1468.78
4	GUIDE	used	114952824	8.57	18594	-0.043	0.114	0.083	0.129	187.703904	12.486727	-658.58	-557.97
5	GUIDE	used	114954440	9.17	18580	-0.017	-0.471	0.123	0.209	186.915066	12.219118	-1498.70	2253.47
6	GUIDE	used	114955056	8.32	18595	0.074	1.082	0.099	0.153	187.914001	12.127854	-1980.43	-1240.99
7	GUIDE	used	114957008	8.24	18589	0.022	-0.414	0.076	0.131	186.894794	12.099160	-1926.63	2346.71

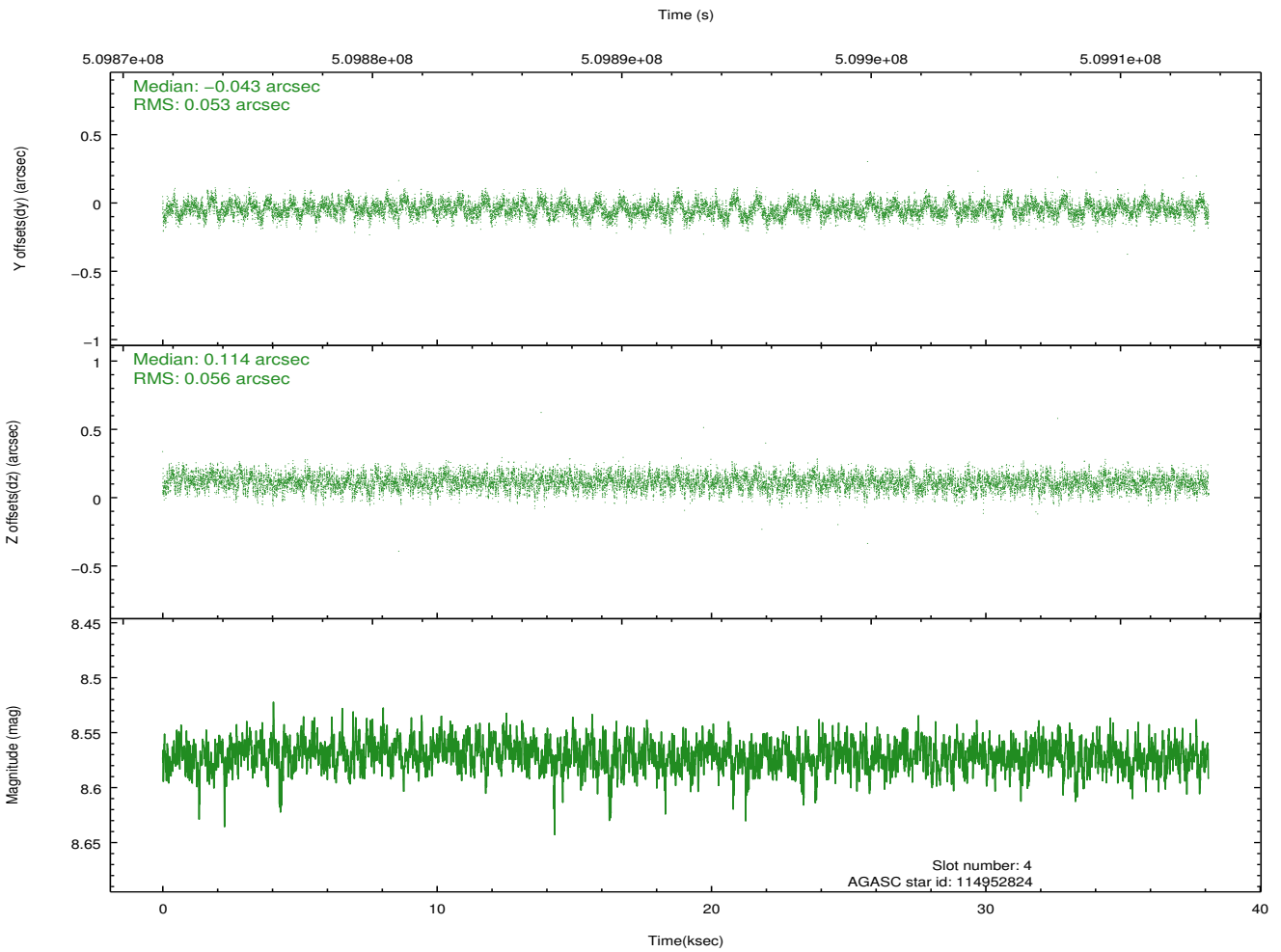
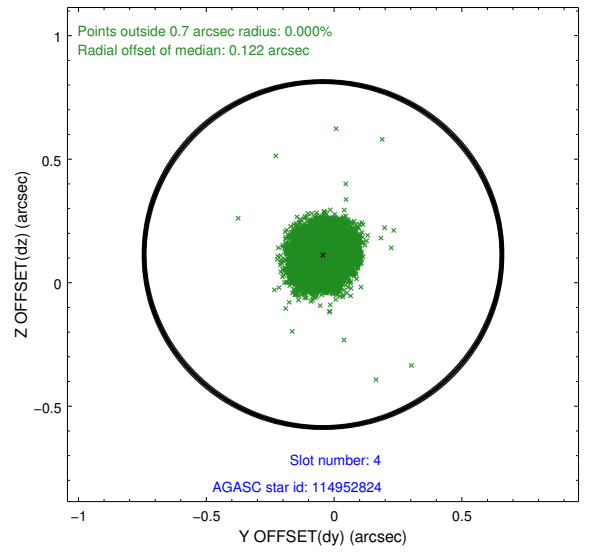
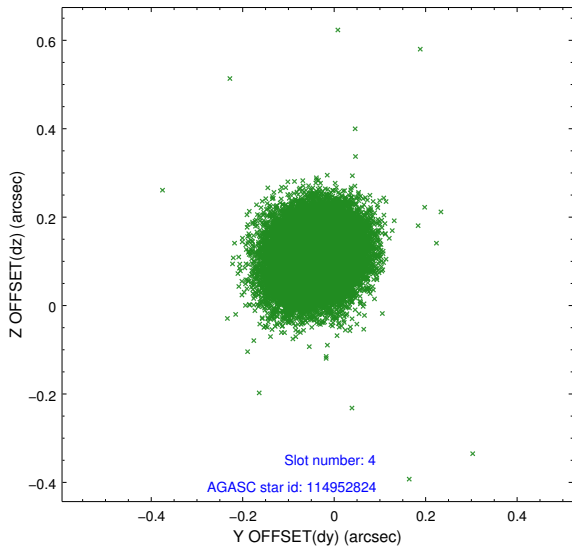
∞

## 2.4 Star Slots

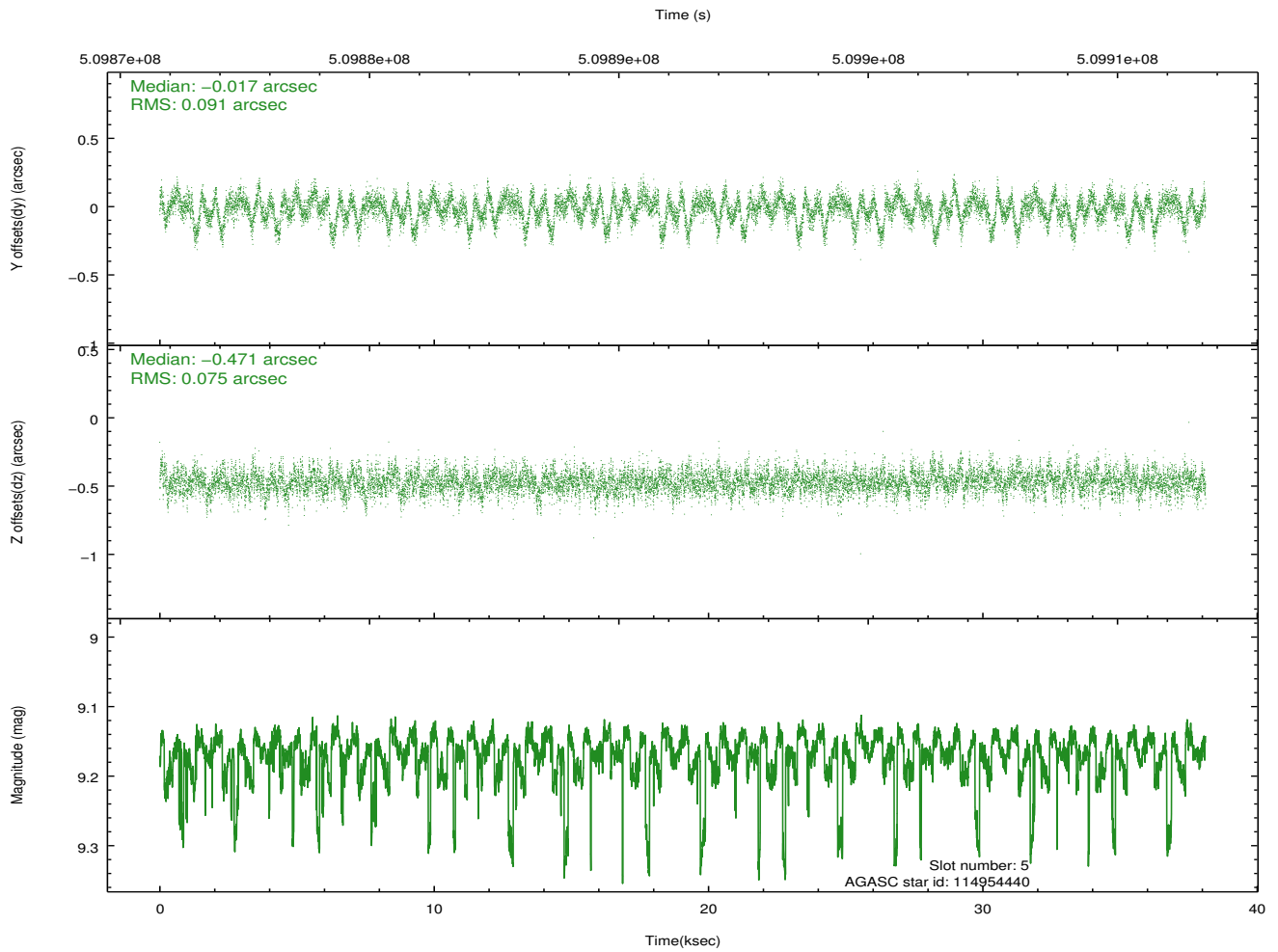
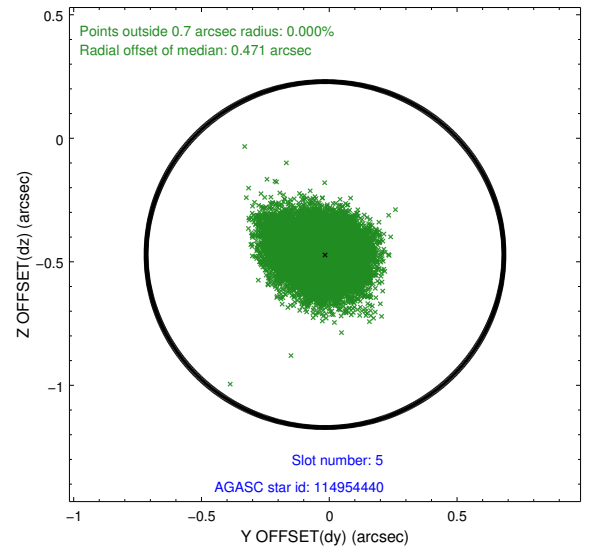
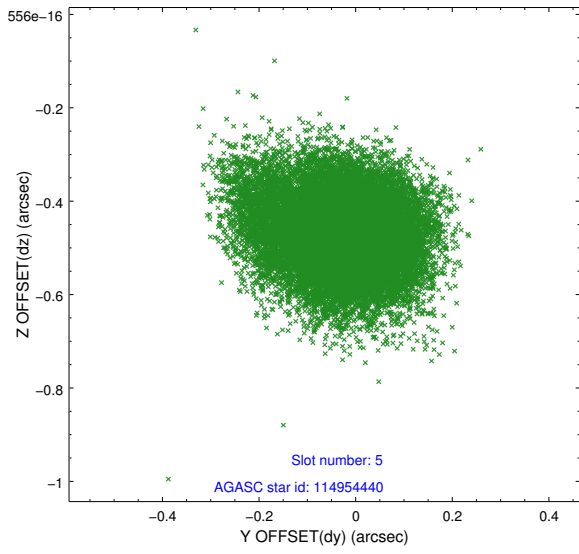
### 2.4.1 Slot 3



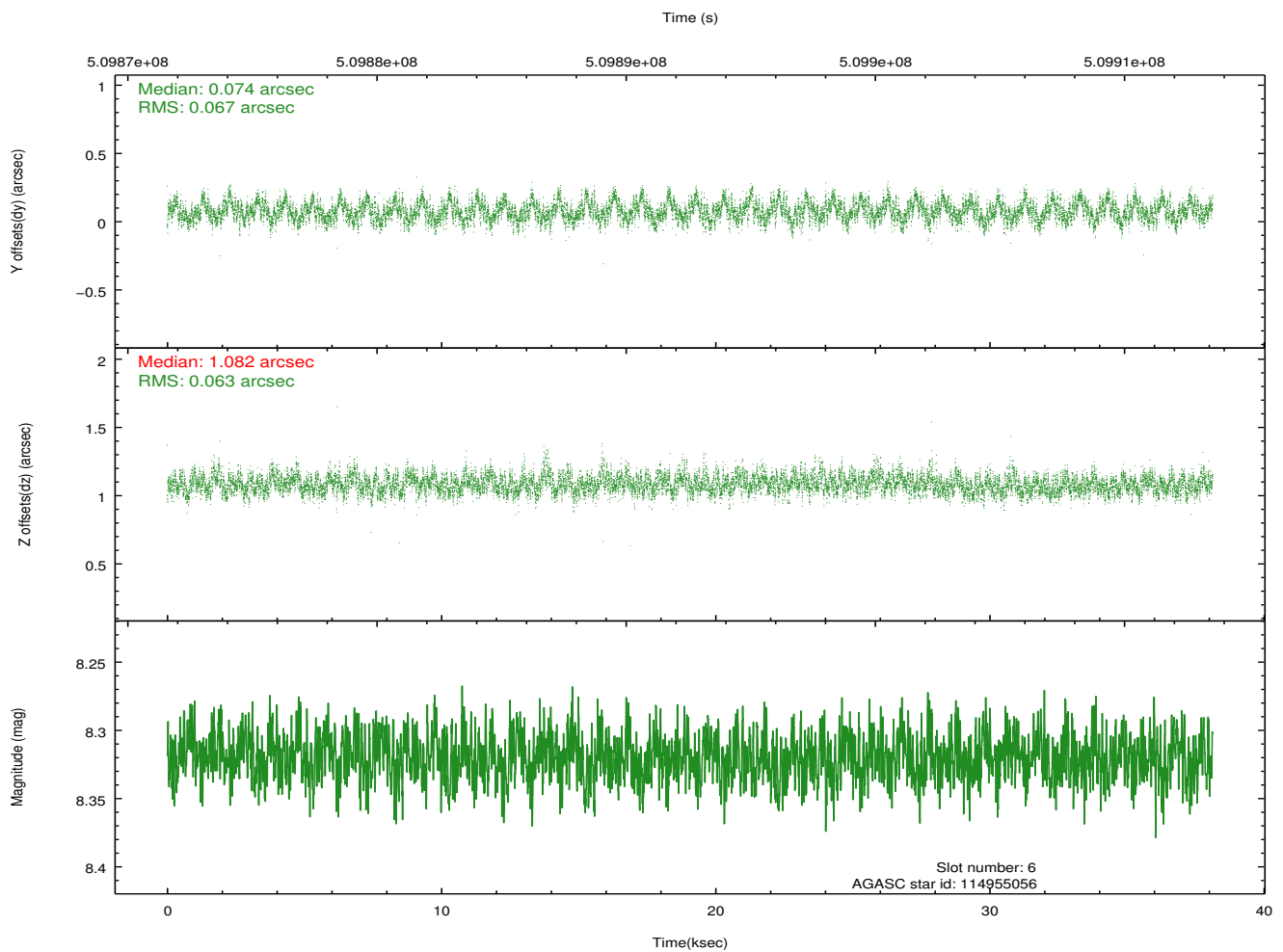
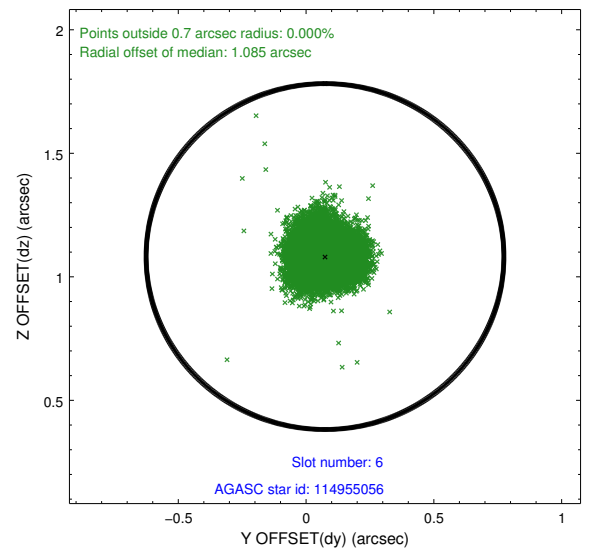
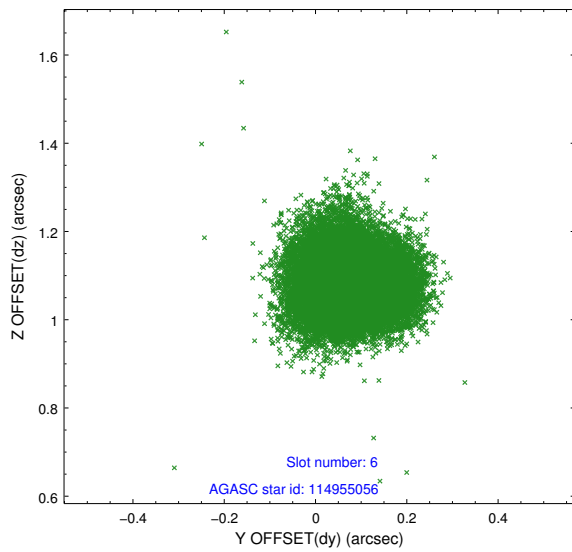
### 2.4.2 Slot 4



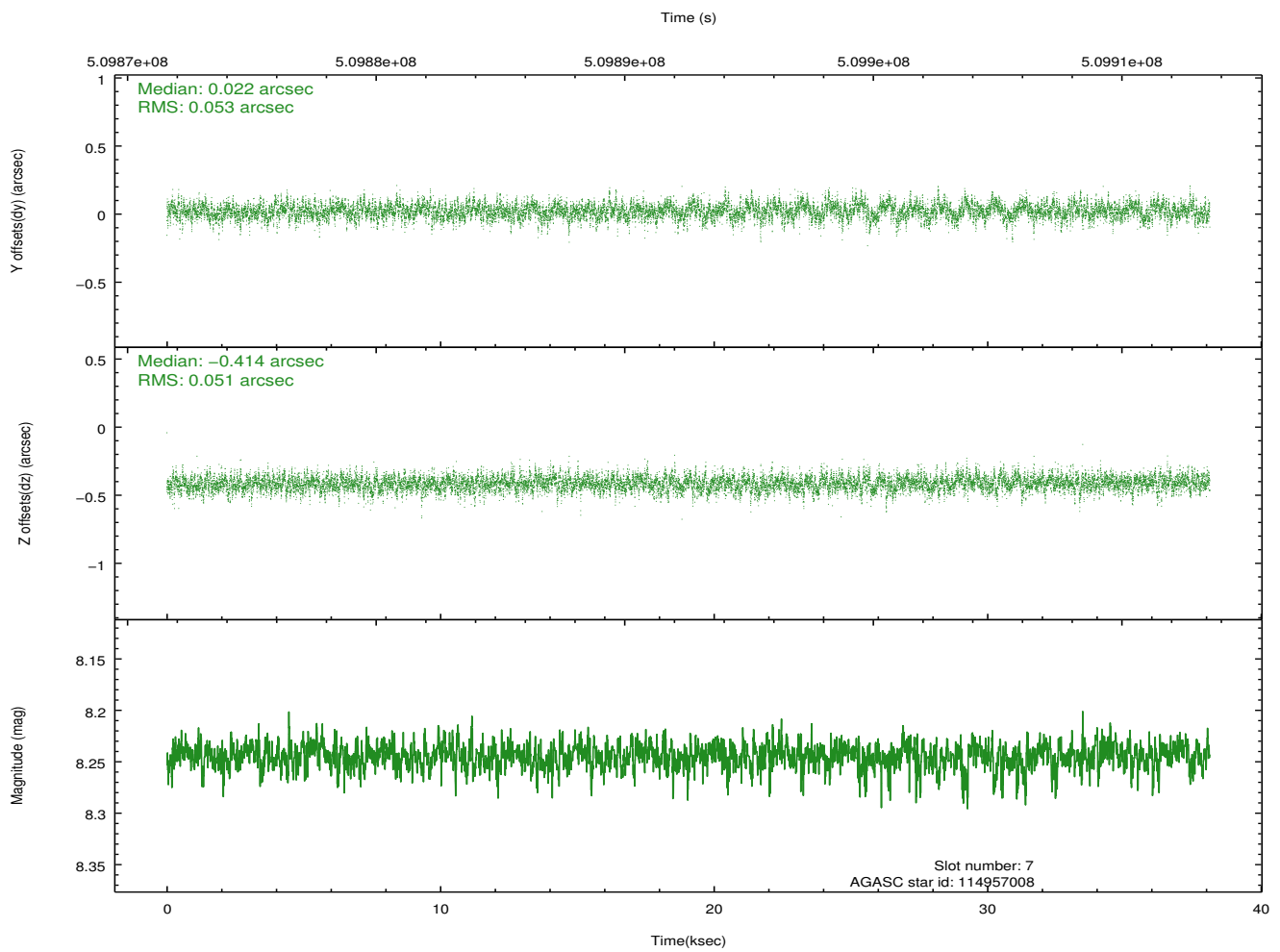
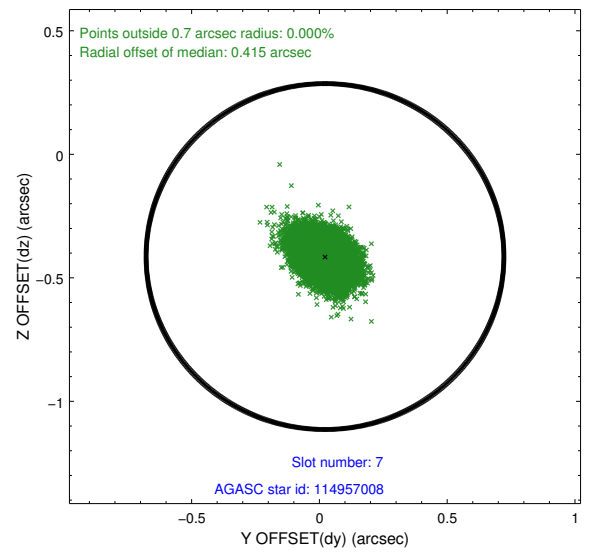
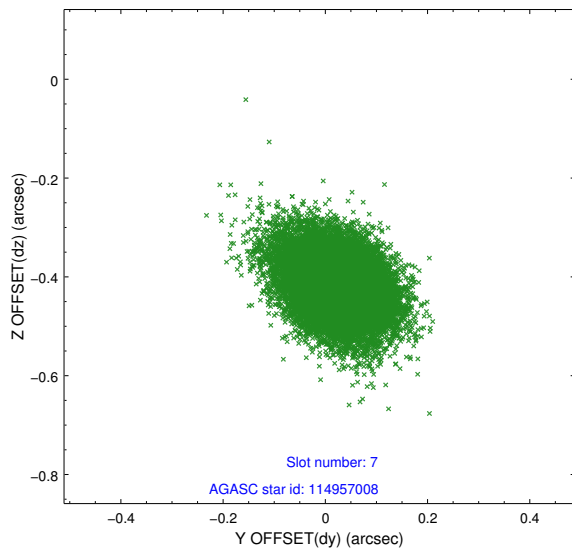
### 2.4.3 Slot 5



### 2.4.4 Slot 6

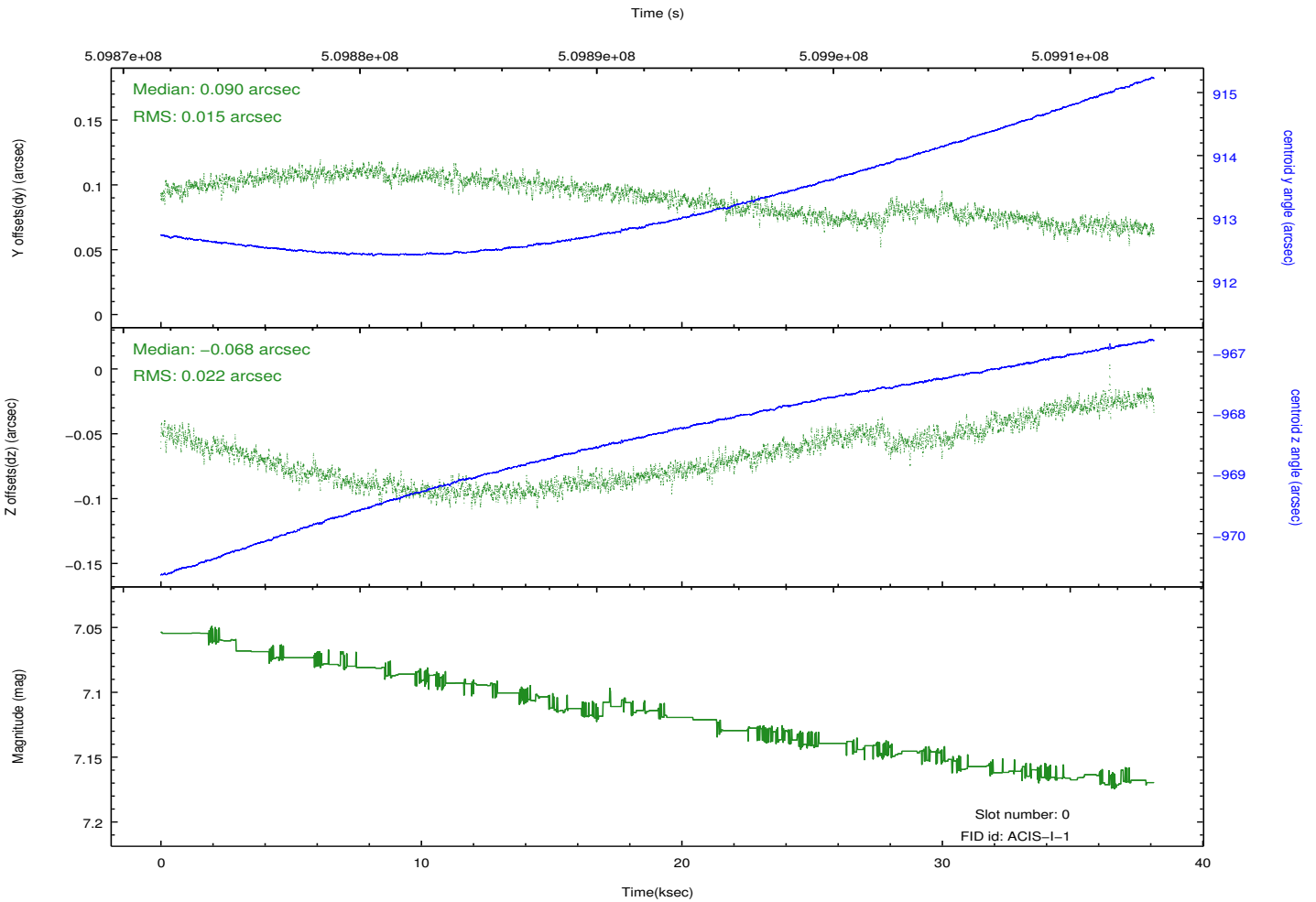
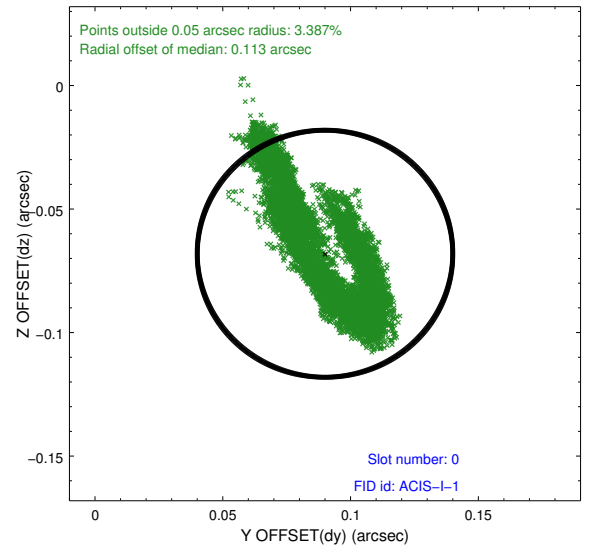
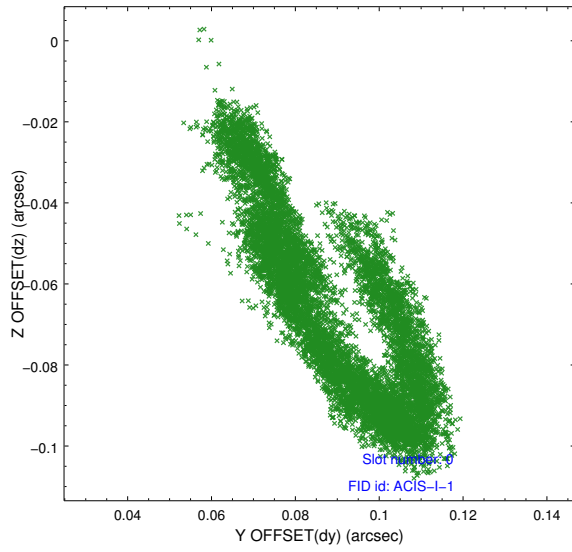


## 2.4.5 Slot 7

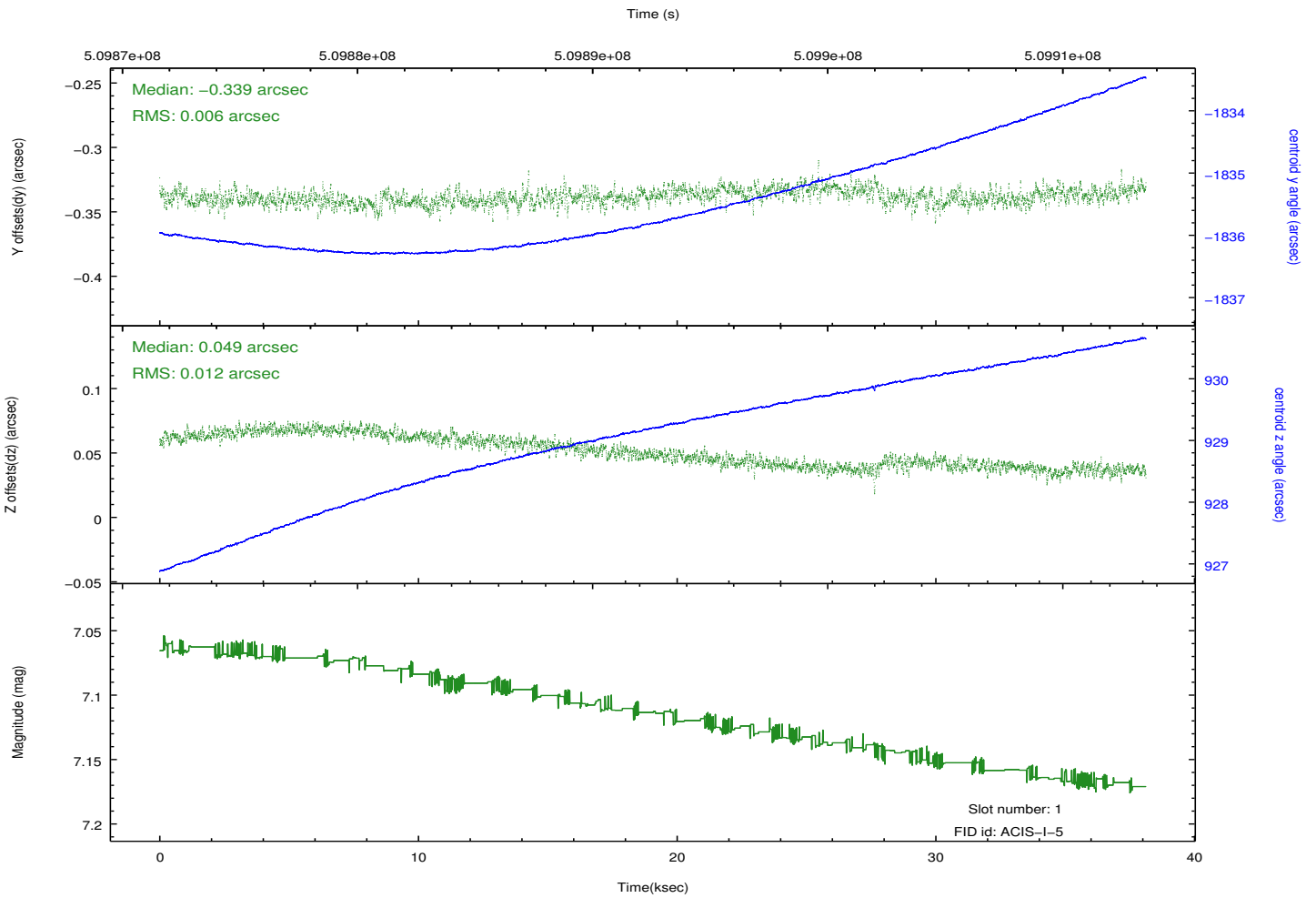
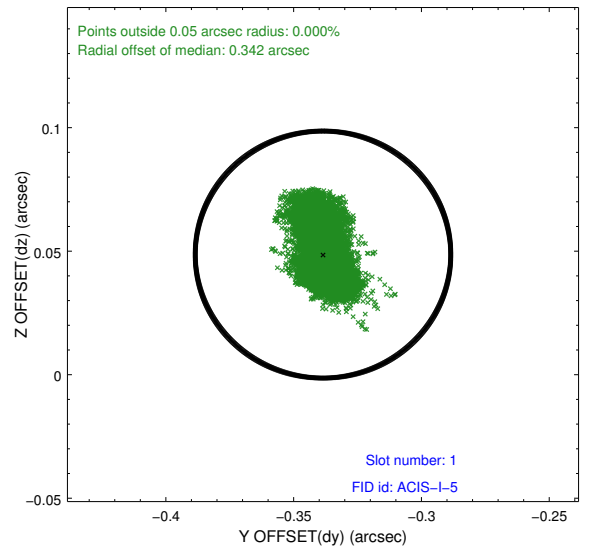
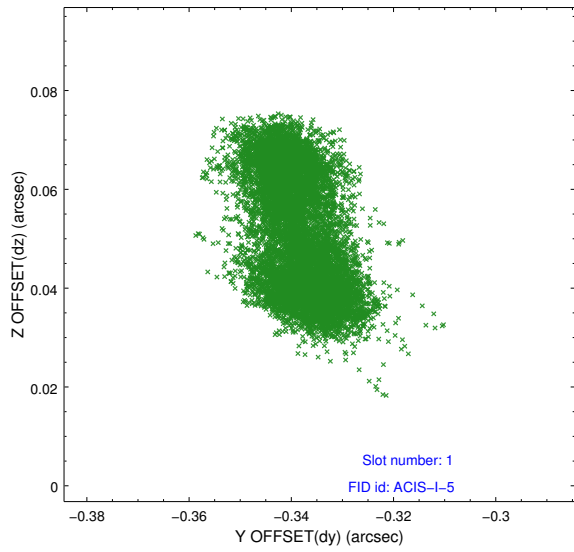


## 2.5 FID Slots

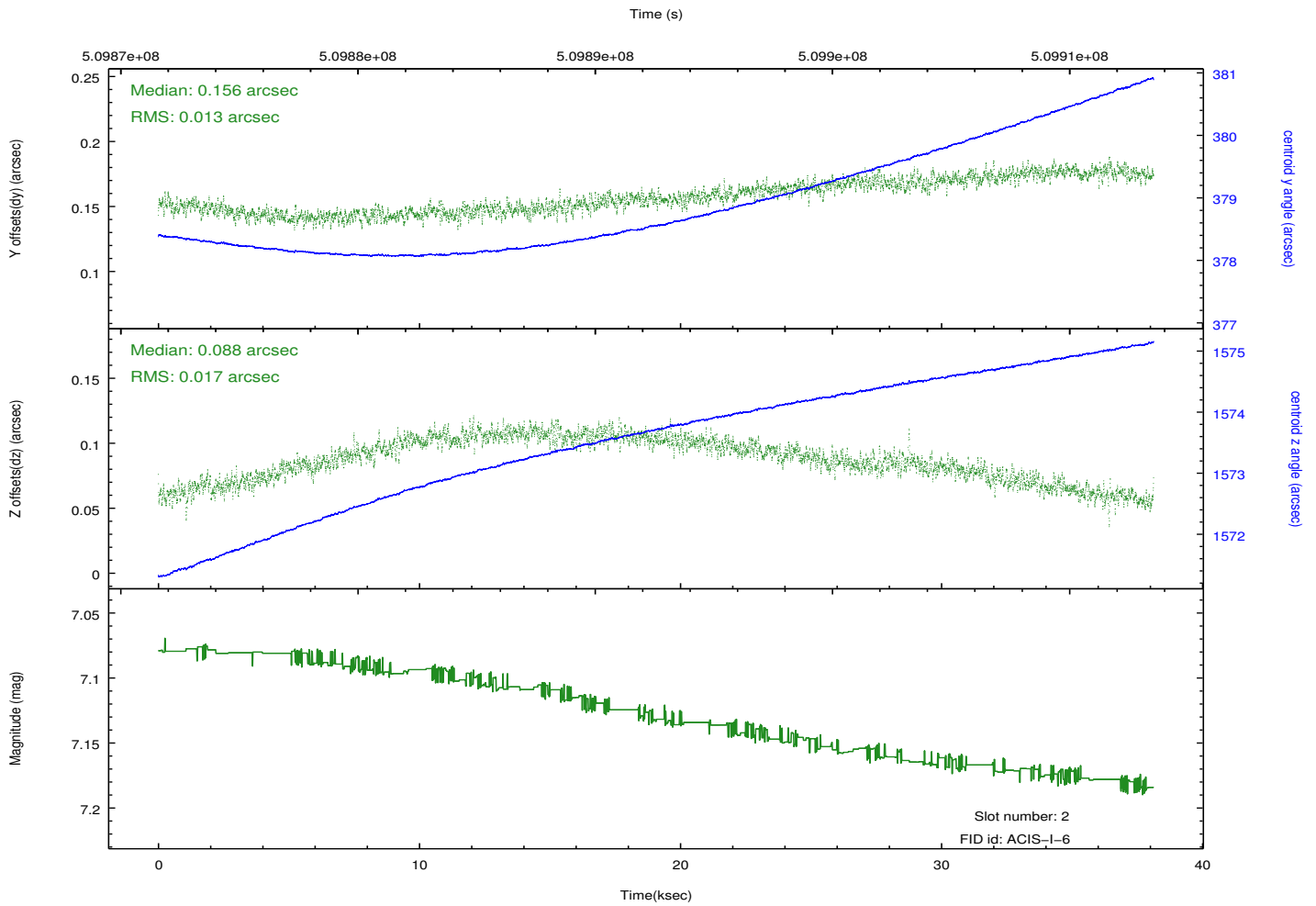
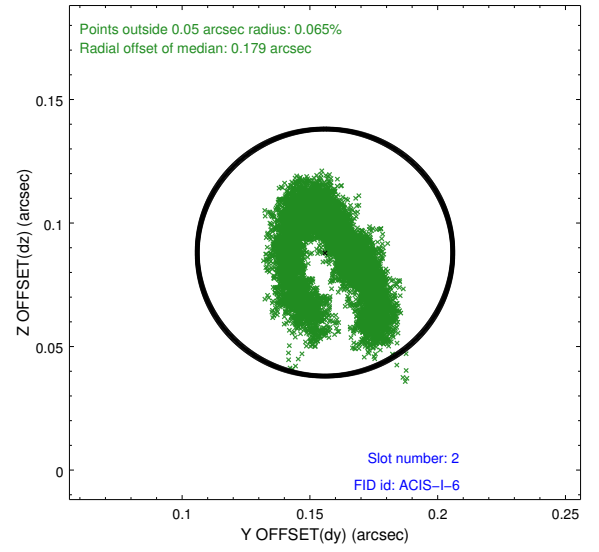
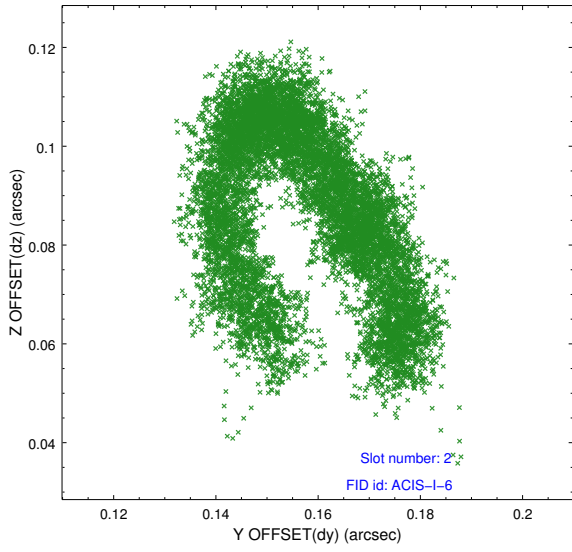
### 2.5.1 Slot 0



## 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	38.086559252679

## 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.