

# V&V Reference Report

## L2 ASCDS Version : 10.0.1

Observation 16475 - L2 Version 2  
Chandra X-Ray Center

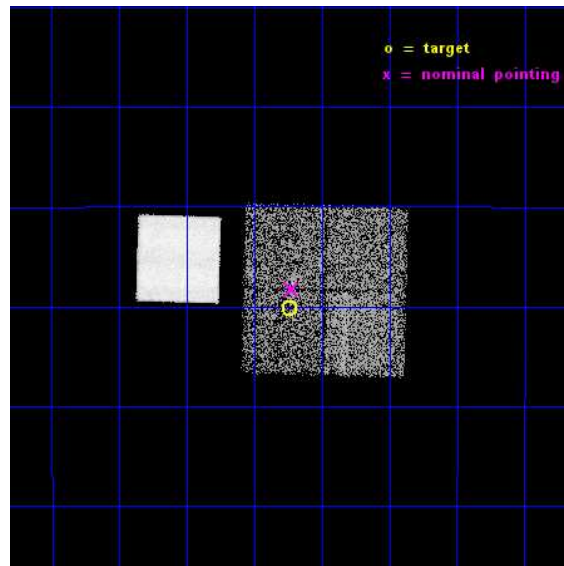
L2 Processing Date : Dec 6 2014

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>A</b>	<b>Summary</b>	<b>17</b>
A.1	Status . . . . .	17
A.2	Comments . . . . .	17

# 1 Front

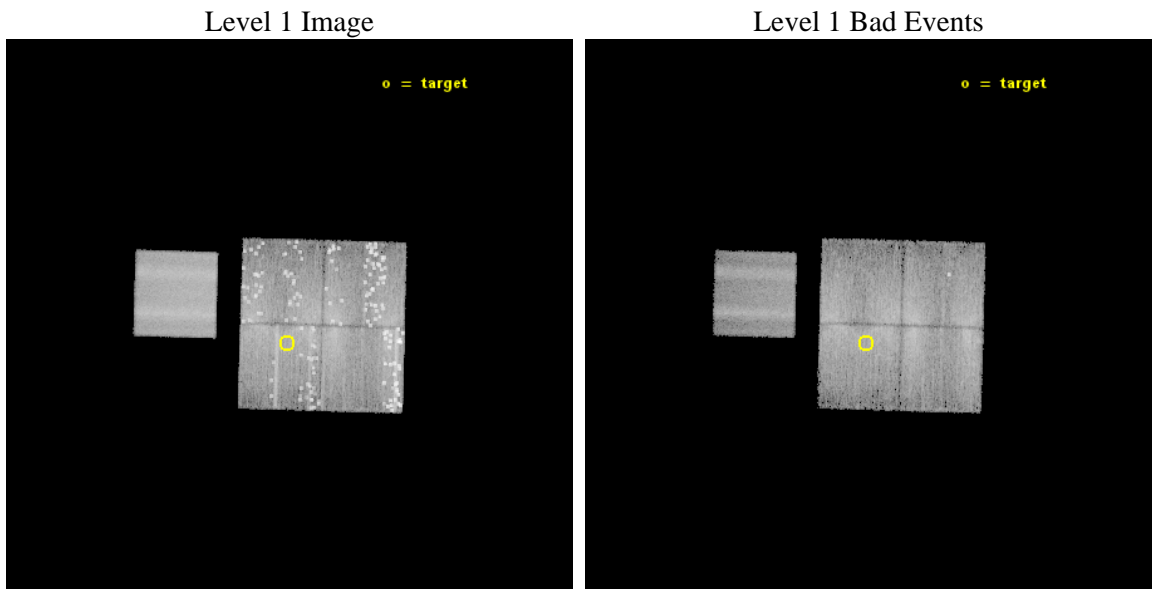
seq_num	501948	Sequence number
obs_id	16475	Observation id
title	HESS J1809-193 and PSR J1809-1917: TeV - X-ray Connection	Proposal
observer	Dr. George Pavlov	Principal investigator
object	HESS J1809-193	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	272.434167	Observer's specified target RA [deg]
dec_targ	-19.335444	Observer's specified target Dec [deg]
ra_nom	272.43152261632	Nominal RA [deg]
dec_nom	-19.304842161245	Nominal Dec [deg]
roll_nom	271.60780292423	Nominal Roll [deg]
revision	2	Processing version of data
ontime	2411.062828064	Sum of GTIs [s]
liveltime	2379.5605172167	Livetime [s]
ontime0	4783.8033896089	Sum of GTIs [s]
ontime1	3331.3465931416	Sum of GTIs [s]
ontime2	2411.062828064	Sum of GTIs [s]
ontime3	2585.0761607289	Sum of GTIs [s]
ontime7	11209.161017716	Sum of GTIs [s]
l2events	111559	Number of level 2 events



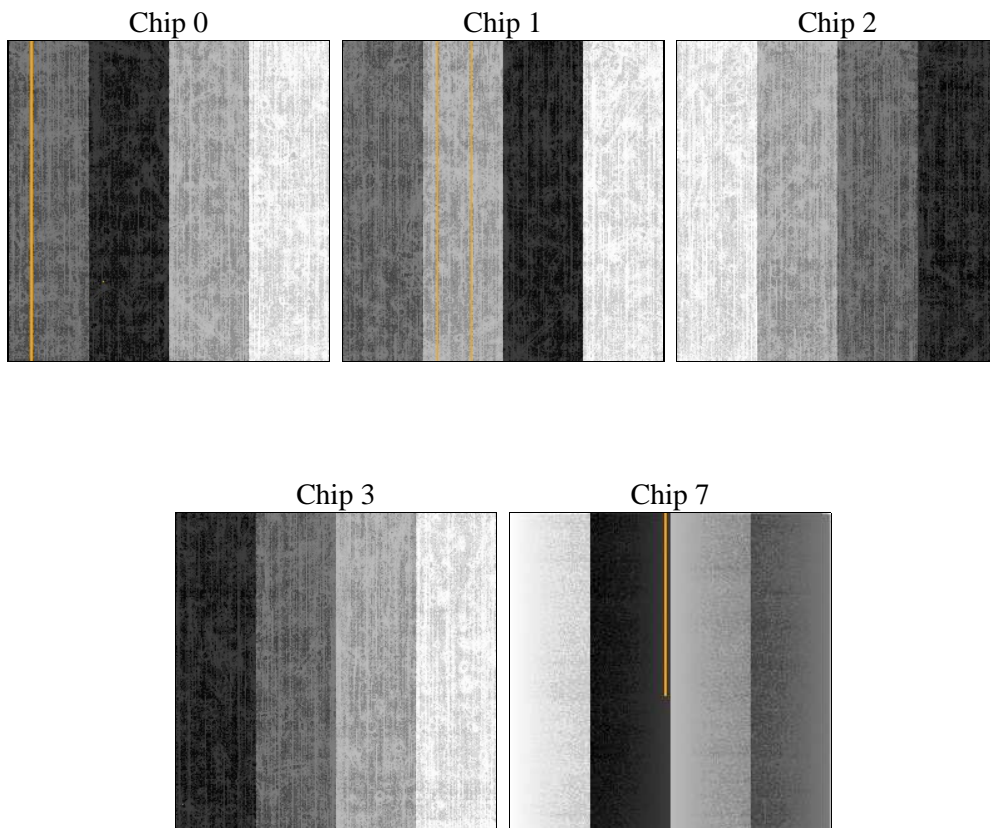
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	71777.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	2411.062828064	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	4783.8033896089	Sum of GTIs [s]
date	2014-12-07T00:38:26	Date and time of file creation	ontime1	3331.3465931416	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	2411.062828064	Sum of GTIs [s]
			ontime3	2585.0761607289	Sum of GTIs [s]
			ontime7	11209.161017716	Sum of GTIs [s]
			l1events	832302	Number of level 1 events

### 2.1.4 Events

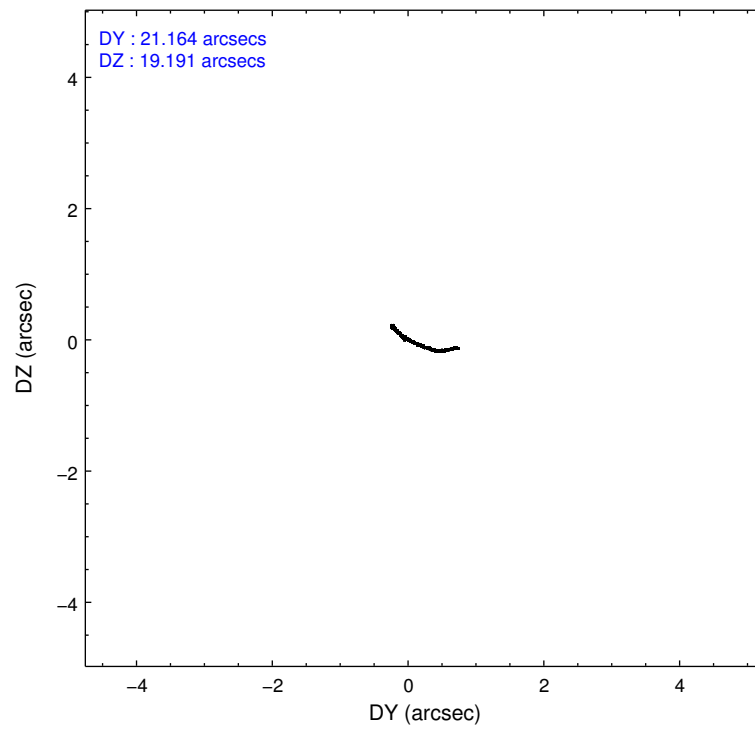
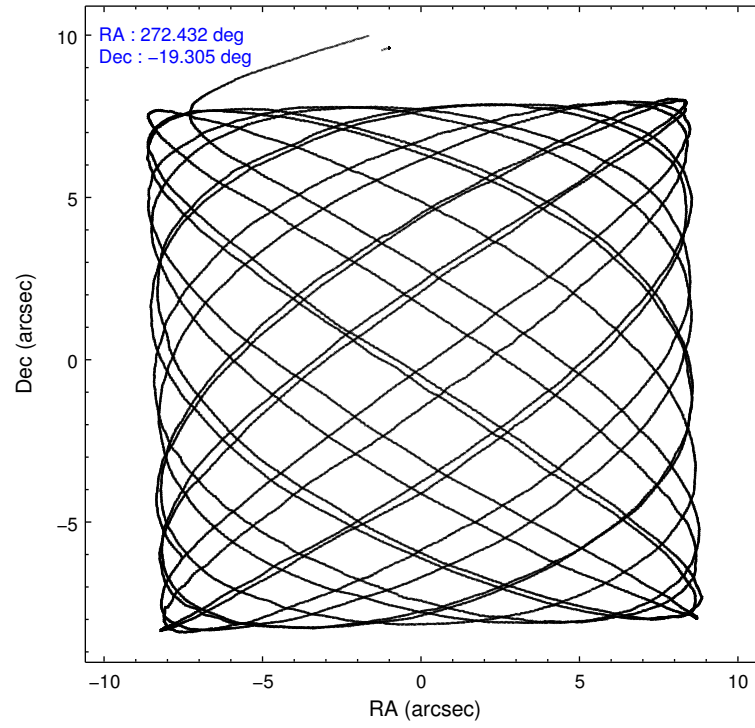
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 7
level 1 events	183394	170506	146425	143371	188606
rejected events	116683	110015	108671	106837	90128
rejected %	63%	64%	74%	74%	47%

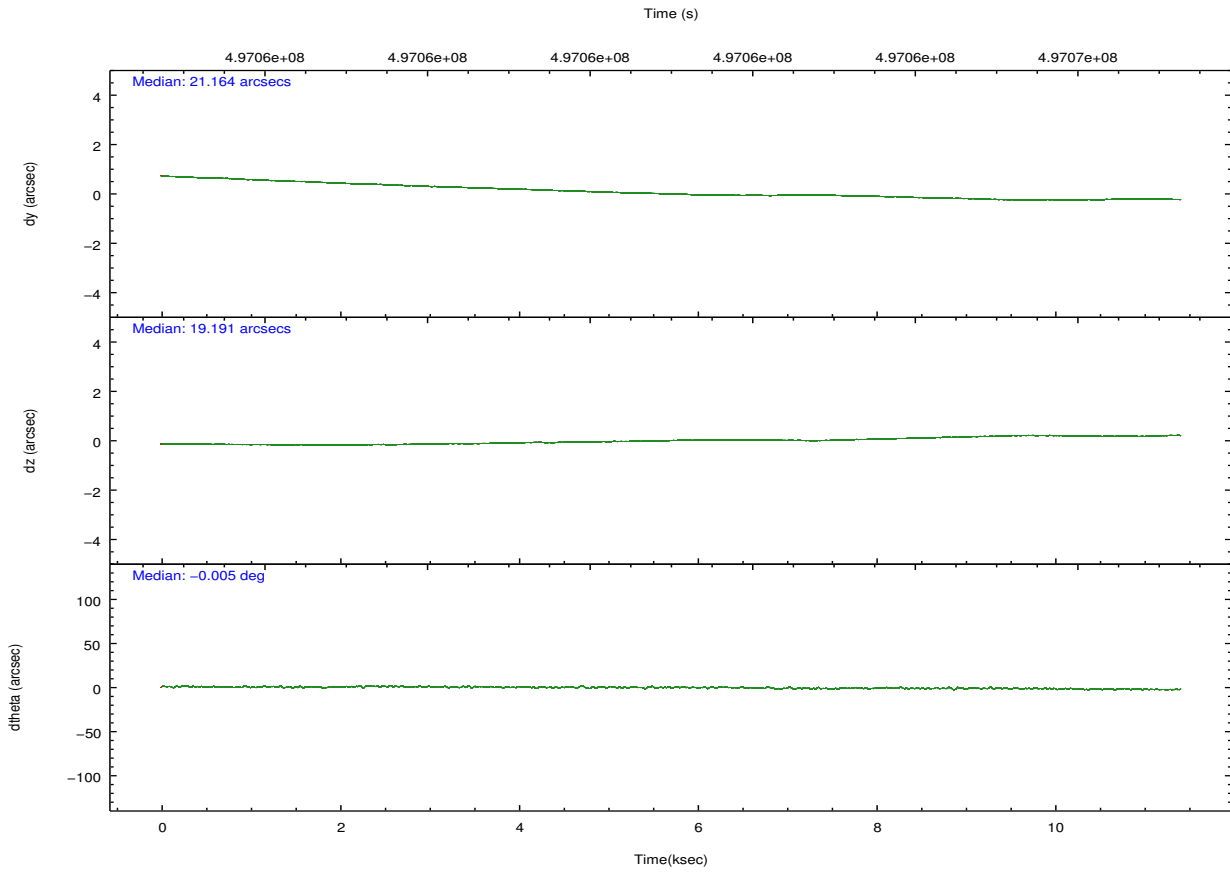
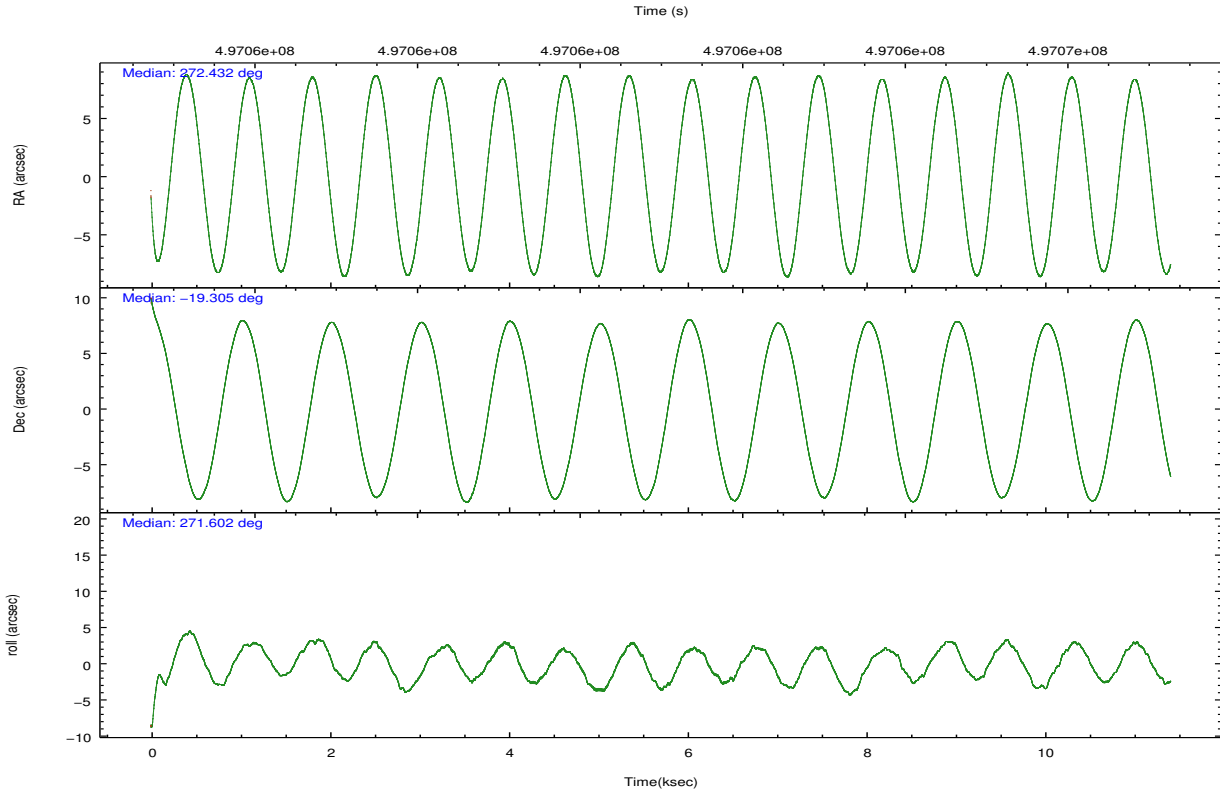
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 7
grade 0 events	43851	39210	21941	22677	14594
	23%	22%	14%	15%	7%
grade 1 events	571	1444	283	302	1233
	0%	0%	0%	0%	0%
grade 2 events	21380	20118	12598	13004	38812
	11%	11%	8%	9%	20%
grade 3 events	415	319	223	246	9657
	0%	0%	0%	0%	5%
grade 4 events	438	326	1697	251	9741
	0%	0%	1%	0%	5%
grade 5 events	1304	1040	745	768	13163
	0%	0%	0%	0%	6%
grade 6 events	920	755	1417	492	26288
	0%	0%	0%	0%	13%
grade 7 events	114515	107294	107521	105631	75118
	62%	62%	73%	73%	39%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-01237	ACIS-01237	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	272.416169	272.4315226163226	CCD I2 on	Y	Y
[deg] Pointing Dec	-19.281516	-19.30484216124501	CCD I3 on	Y	Y
[deg] Pointing Roll	271.394054	271.6078029242275	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	-225.695463	-225.7025416751365	CCD S3 on	O1	Y
[mm] SIM translation stage offset	-7.897	-7.889911327793158	CCD S4 on	N	N
[s] Observation start time (MET)	497055462.184000	497054402.6004	CCD S5 on	N	N
Observation start date	2013-10-01T22:56:35	2013-10-01T22:40:02	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	497127239.184000	497066693.88857	On-chip summing requested	N	N
Observation end date	2013-10-02T18:52:52	2013-10-02T02:04:53	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





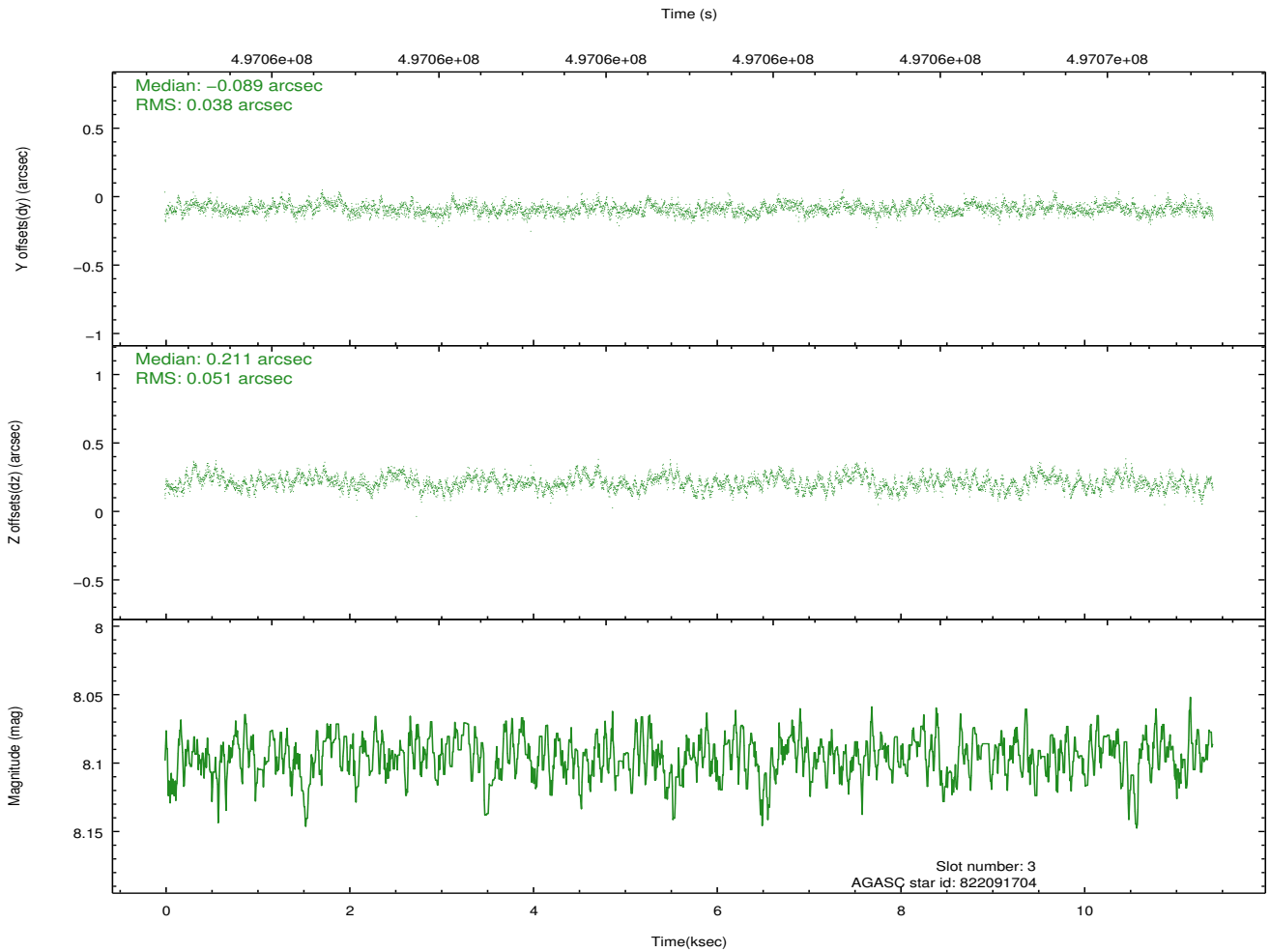
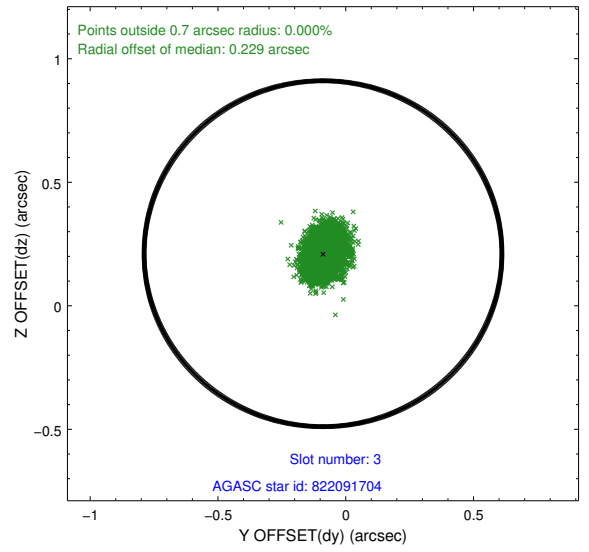
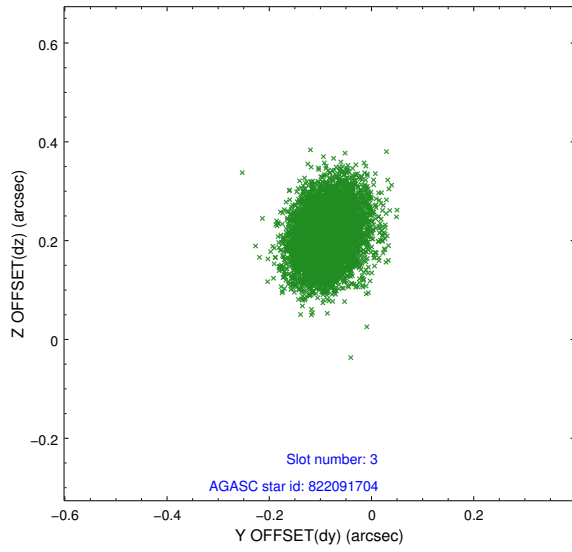
### Slot Statistics

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	2784	0.095	-0.172	0.010	0.019	0.000000	0.000000	918.02	-1005.00
1	FID		ACIS-I-4	7.02	2784	0.185	0.099	0.018	0.037	0.000000	0.000000	2137.87	895.84
2	FID		ACIS-I-5	7.10	2783	-0.380	0.145	0.015	0.026	0.000000	0.000000	-1829.97	893.07
3	GUIDE	used	822091704	8.10	5567	-0.089	0.211	0.068	0.112	272.220028	-18.943658	-1231.31	-637.86
4	GUIDE	used	822096760	8.04	5566	-0.210	-0.105	0.073	0.117	272.830526	-19.438690	601.52	1392.42
5	GUIDE	used	822100176	8.52	5565	0.170	-0.111	0.096	0.150	272.112888	-19.868886	2090.76	-1077.55
6	GUIDE	used	822098736	8.51	5542	0.342	-0.079	0.092	0.143	272.269355	-19.875225	2126.13	-548.87
7	GUIDE	used	822088160	6.43	5566	-0.216	0.087	0.052	0.088	272.729284	-18.869551	-1455.16	1102.39

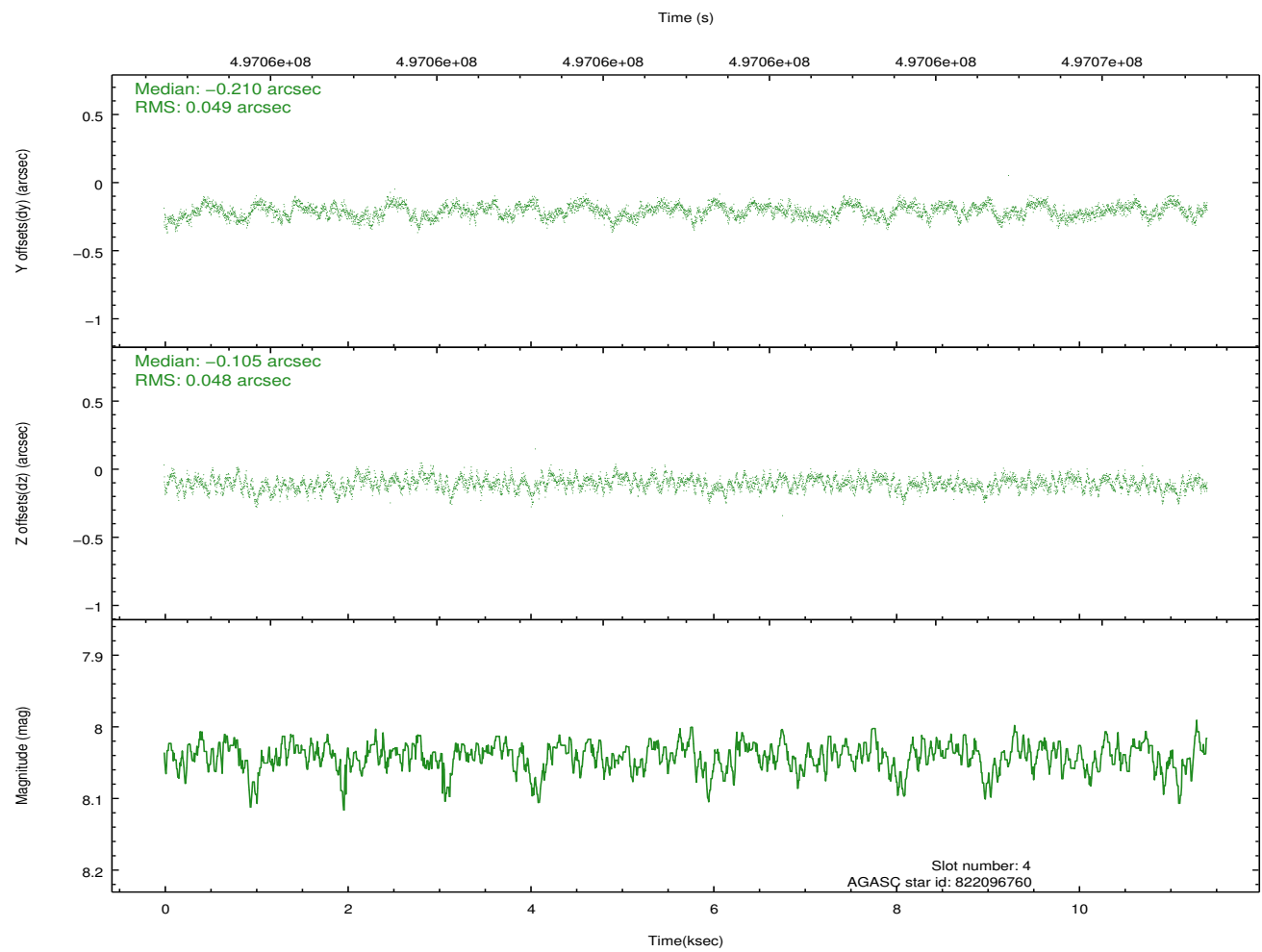
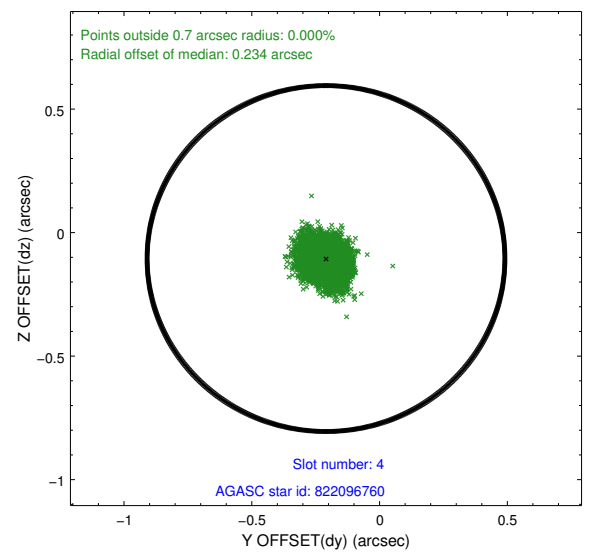
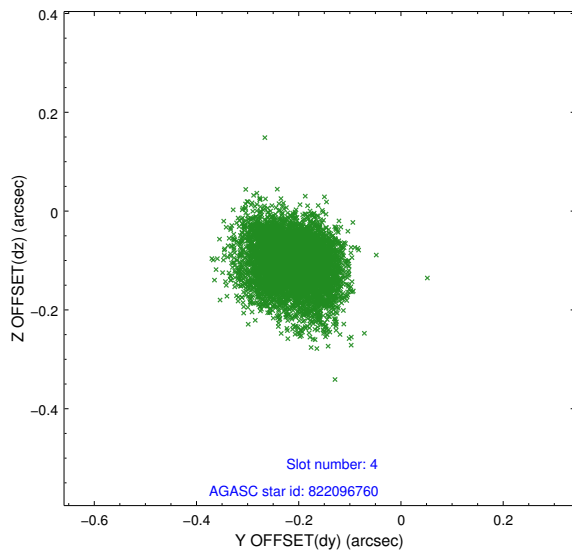
∞

## 2.4 Star Slots

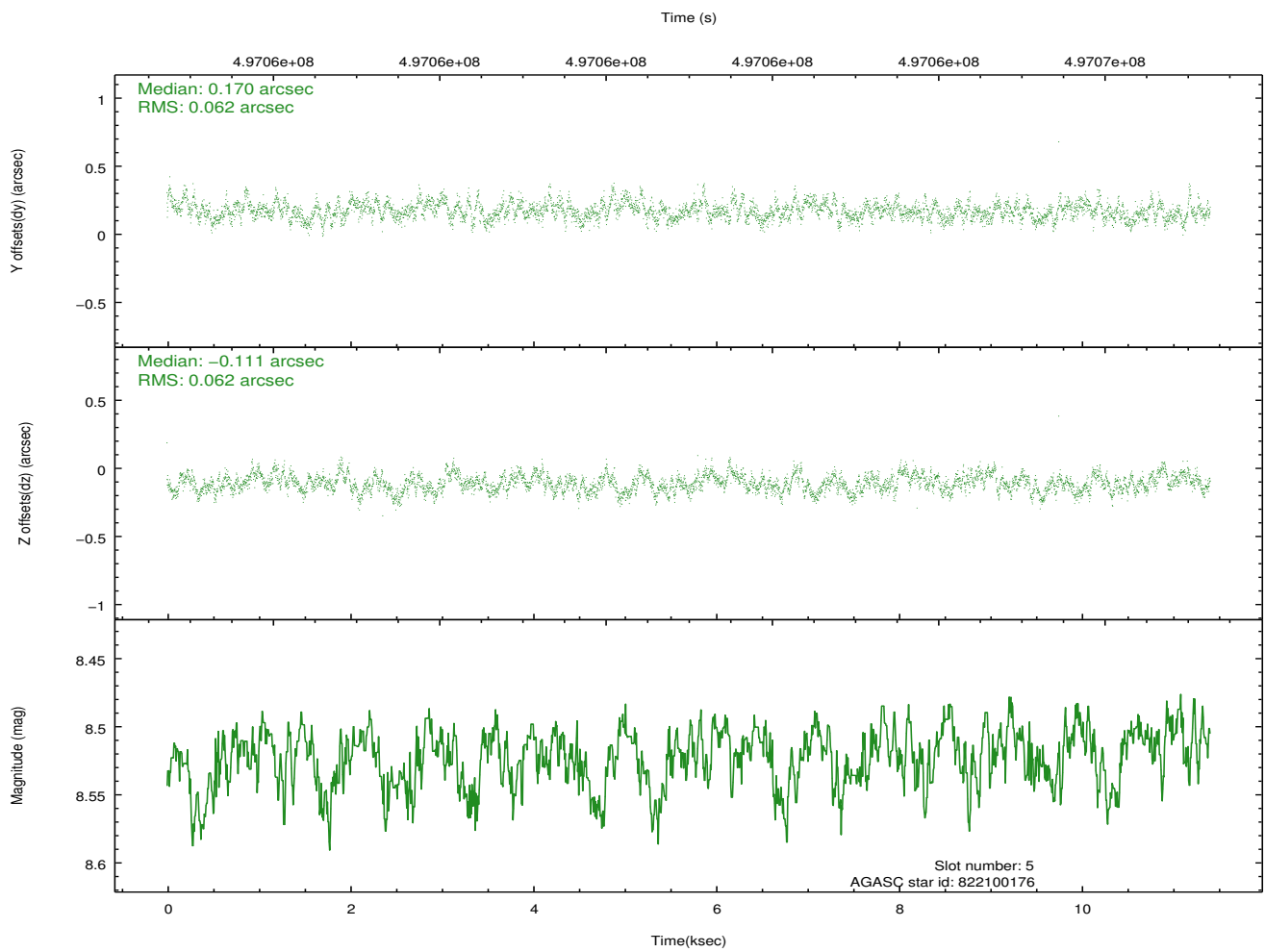
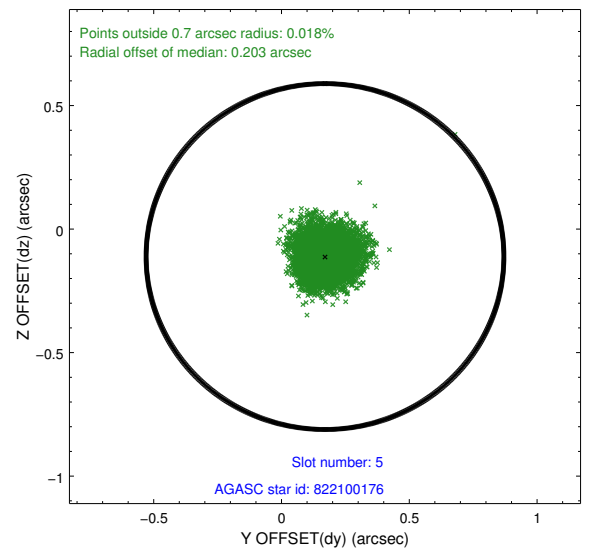
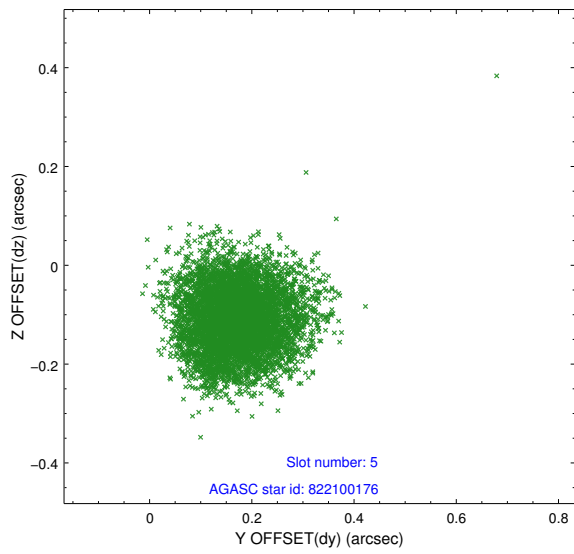
### 2.4.1 Slot 3



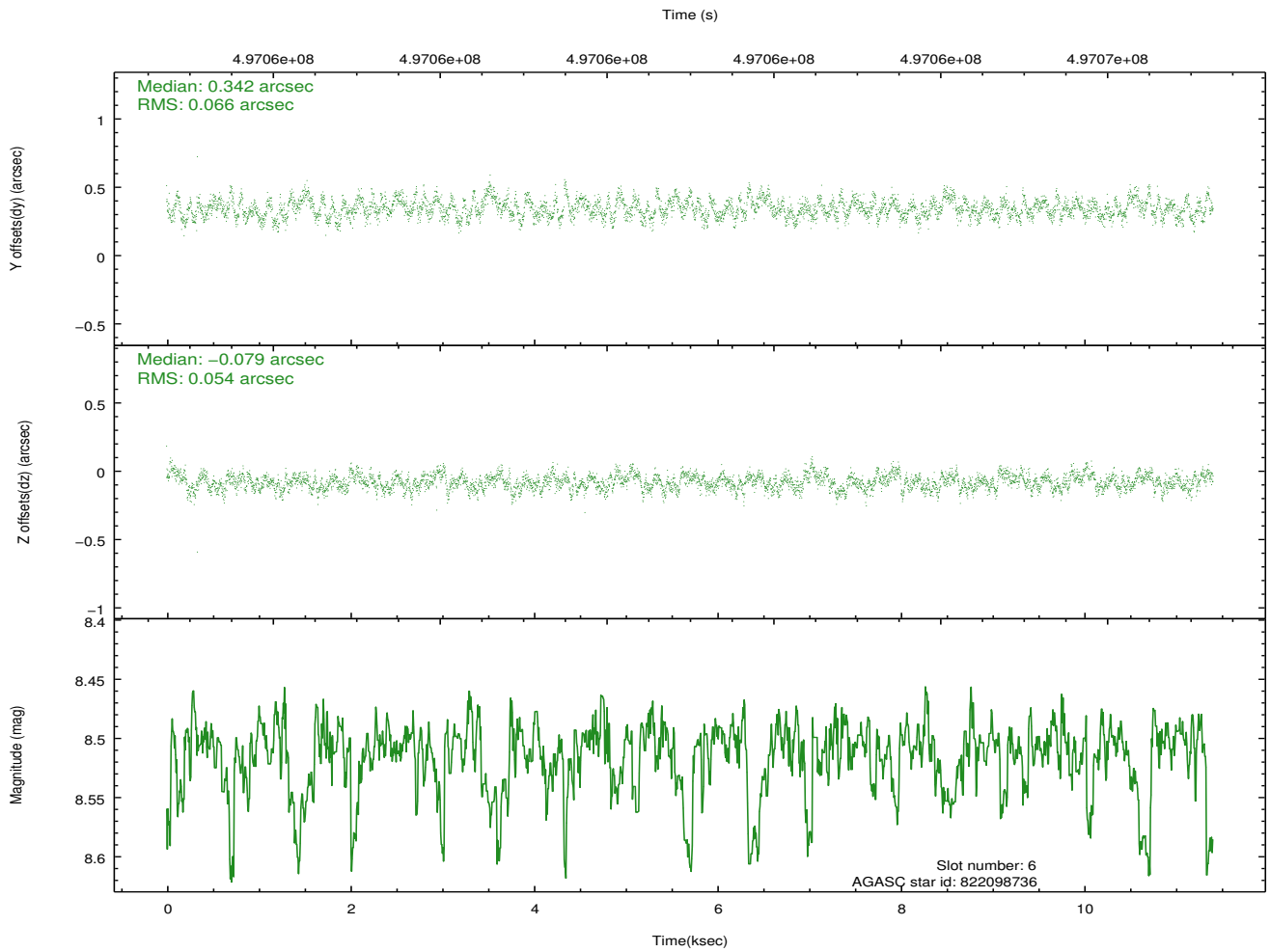
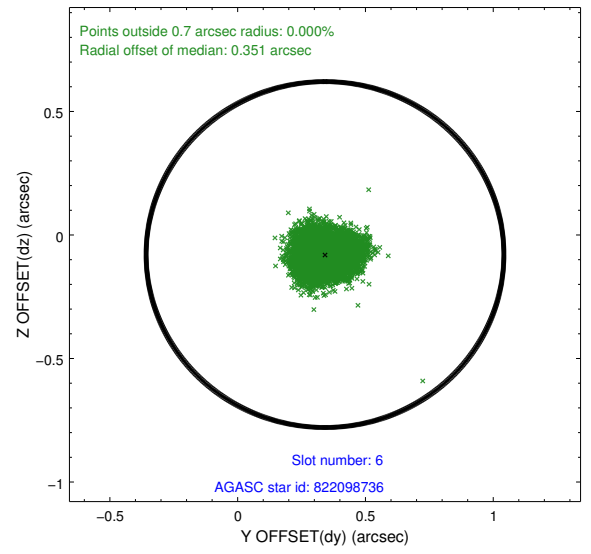
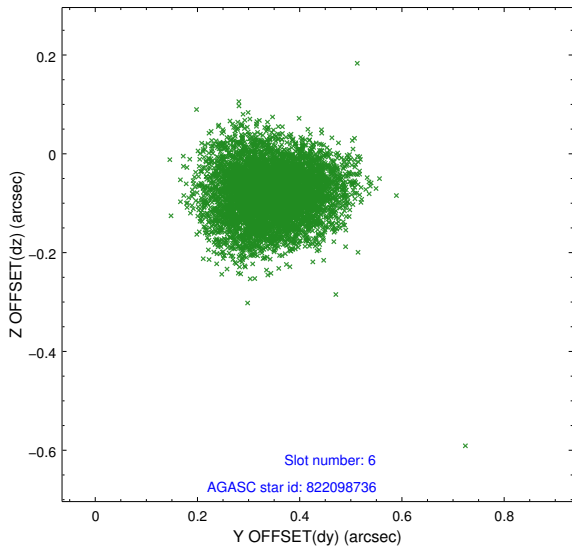
## 2.4.2 Slot 4



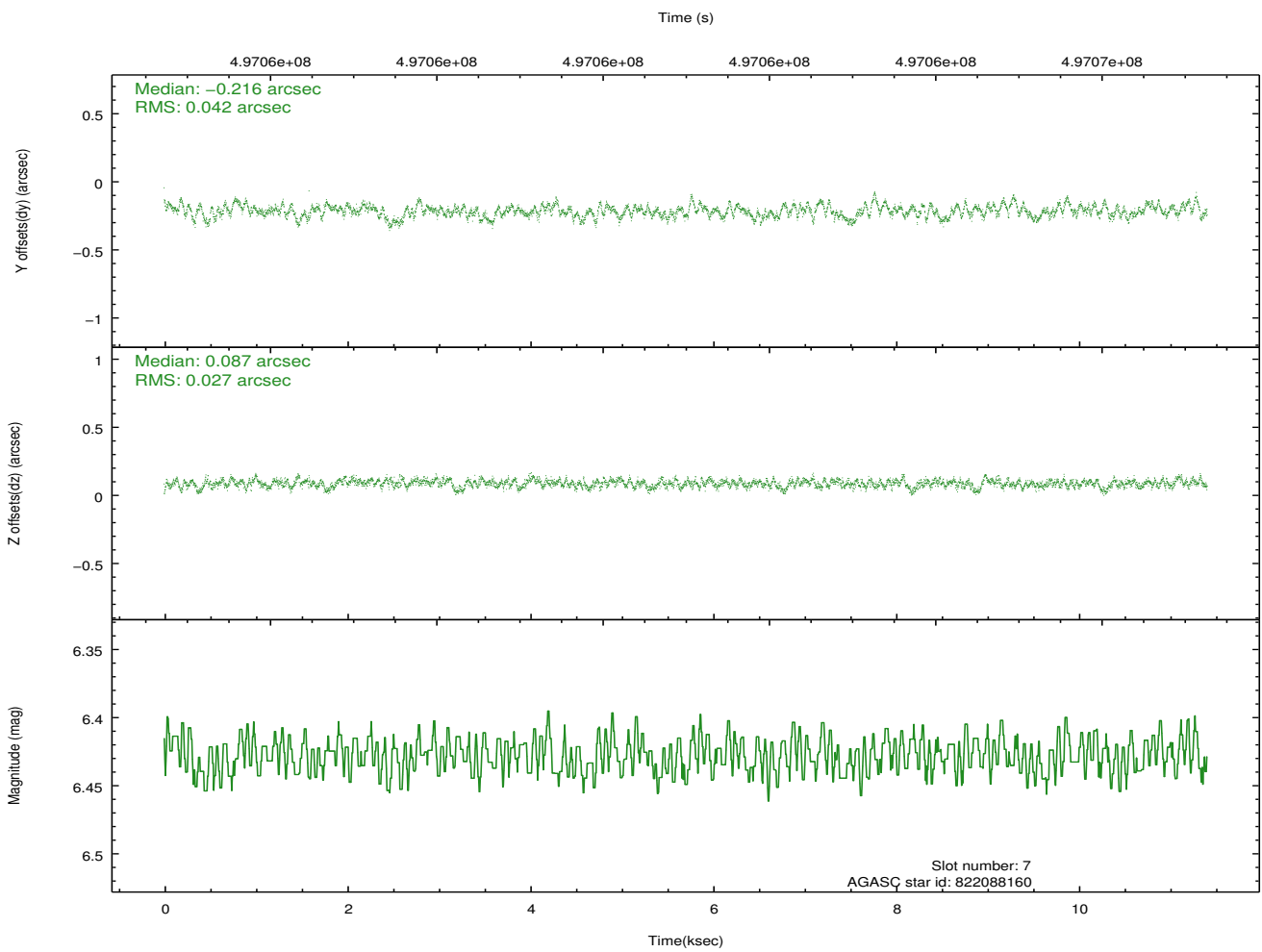
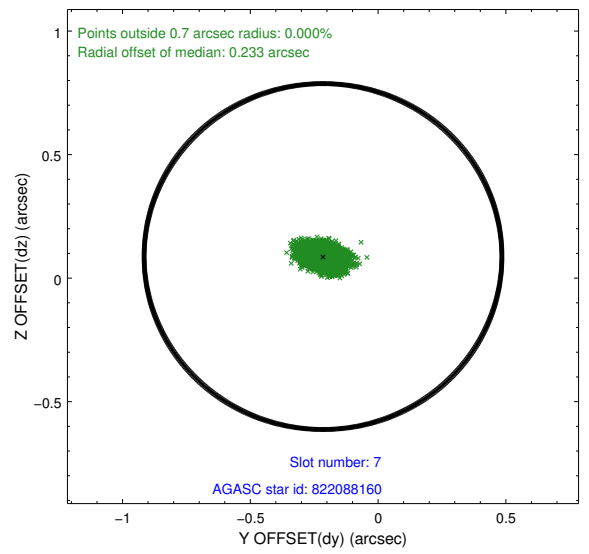
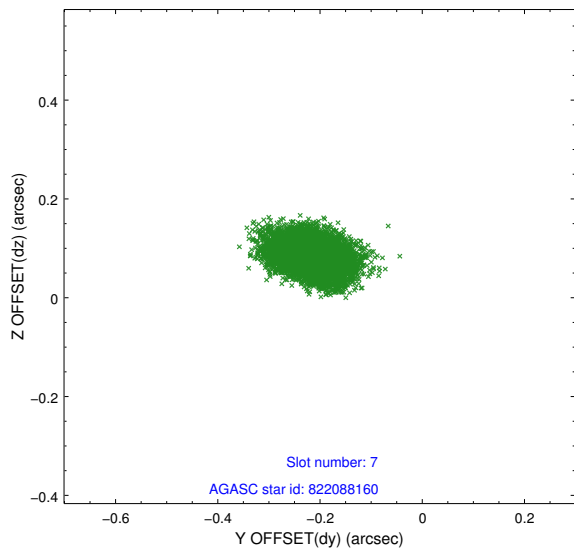
### 2.4.3 Slot 5



### 2.4.4 Slot 6

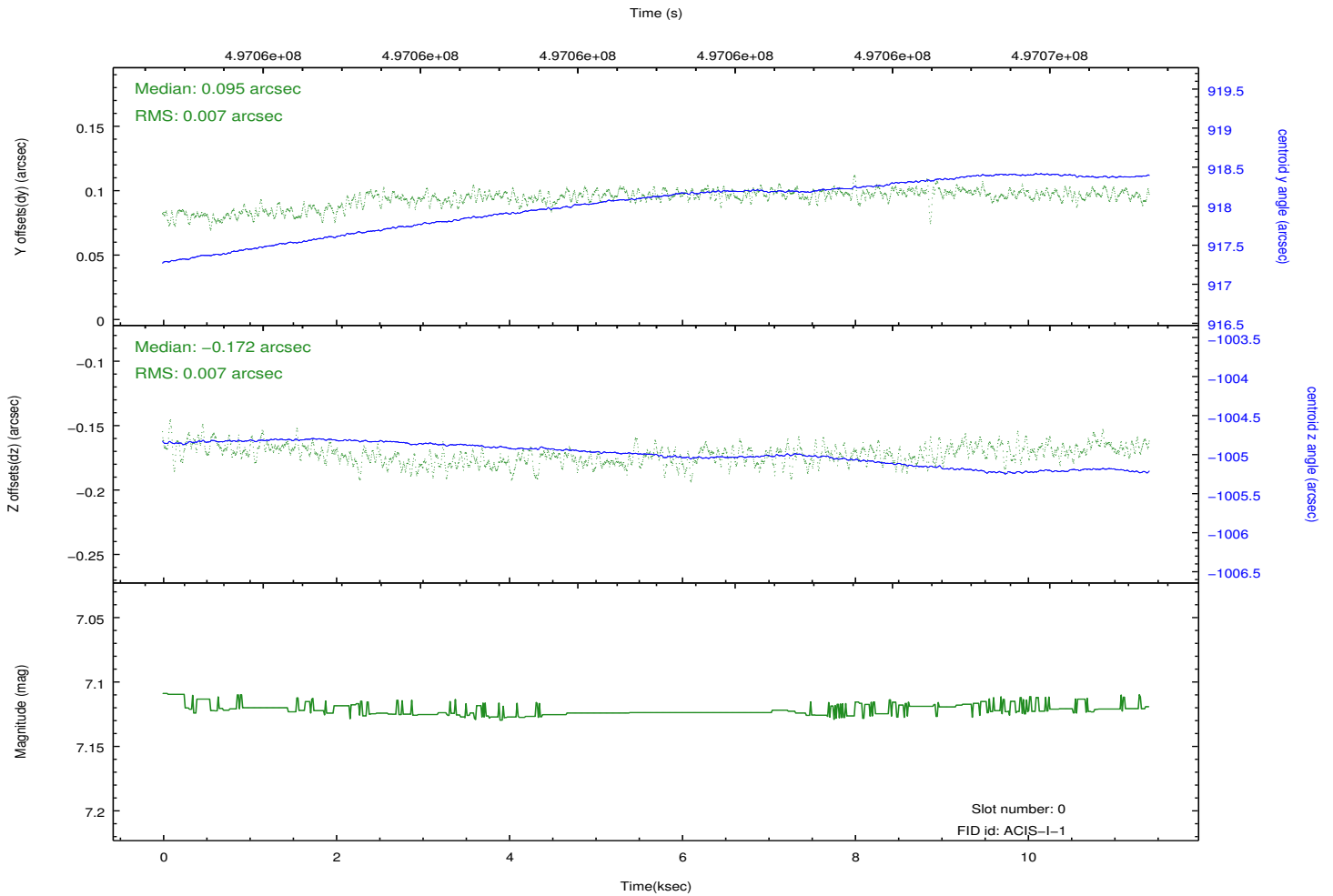
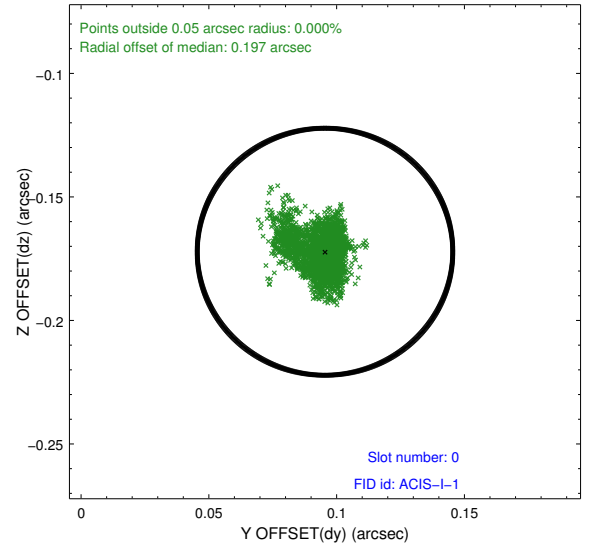
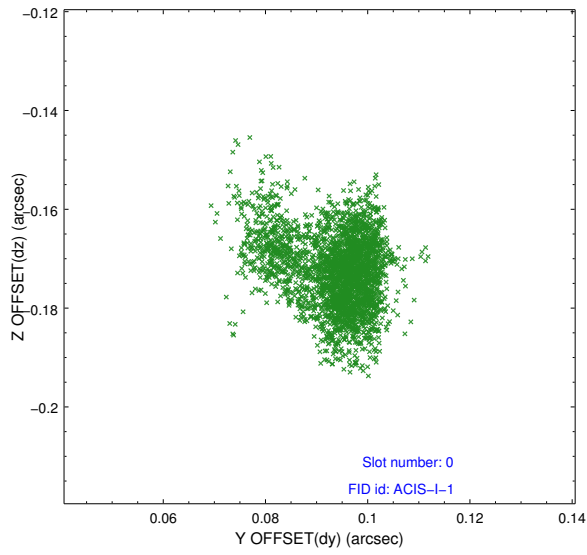


## 2.4.5 Slot 7

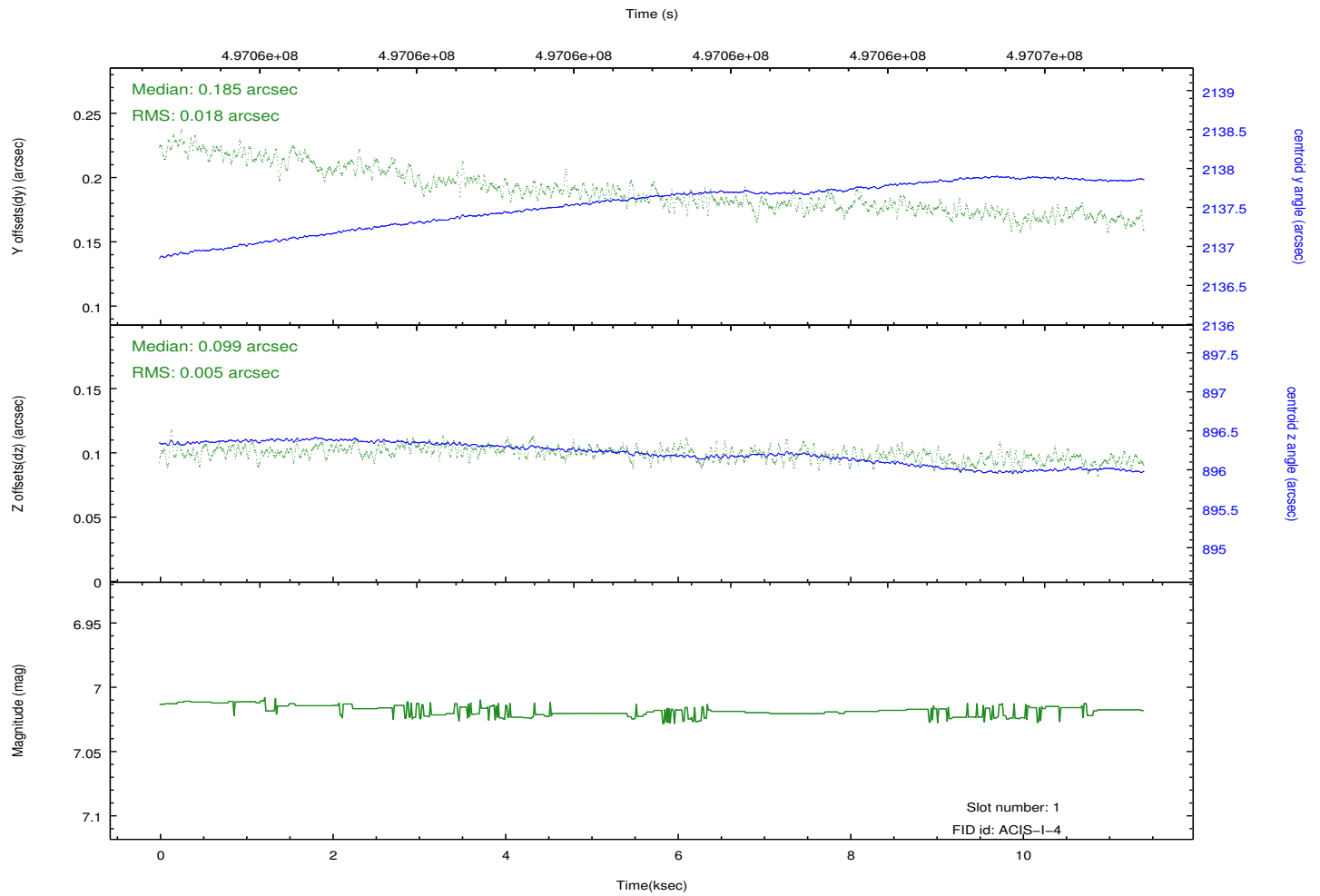
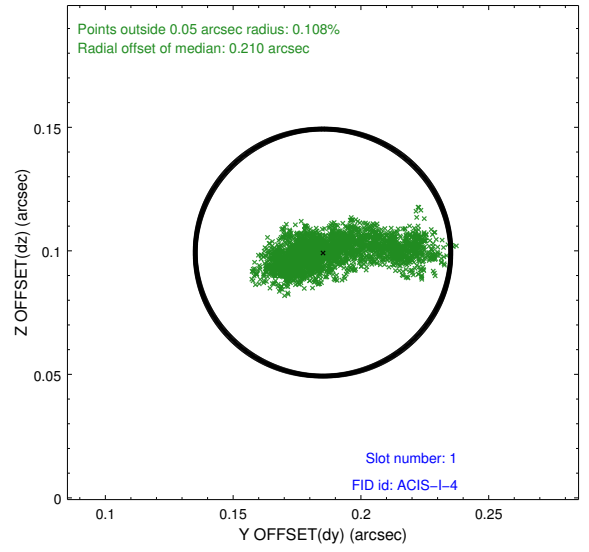
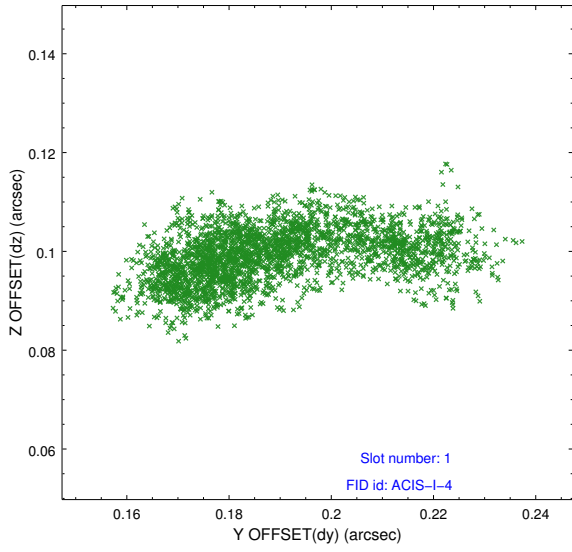


## 2.5 FID Slots

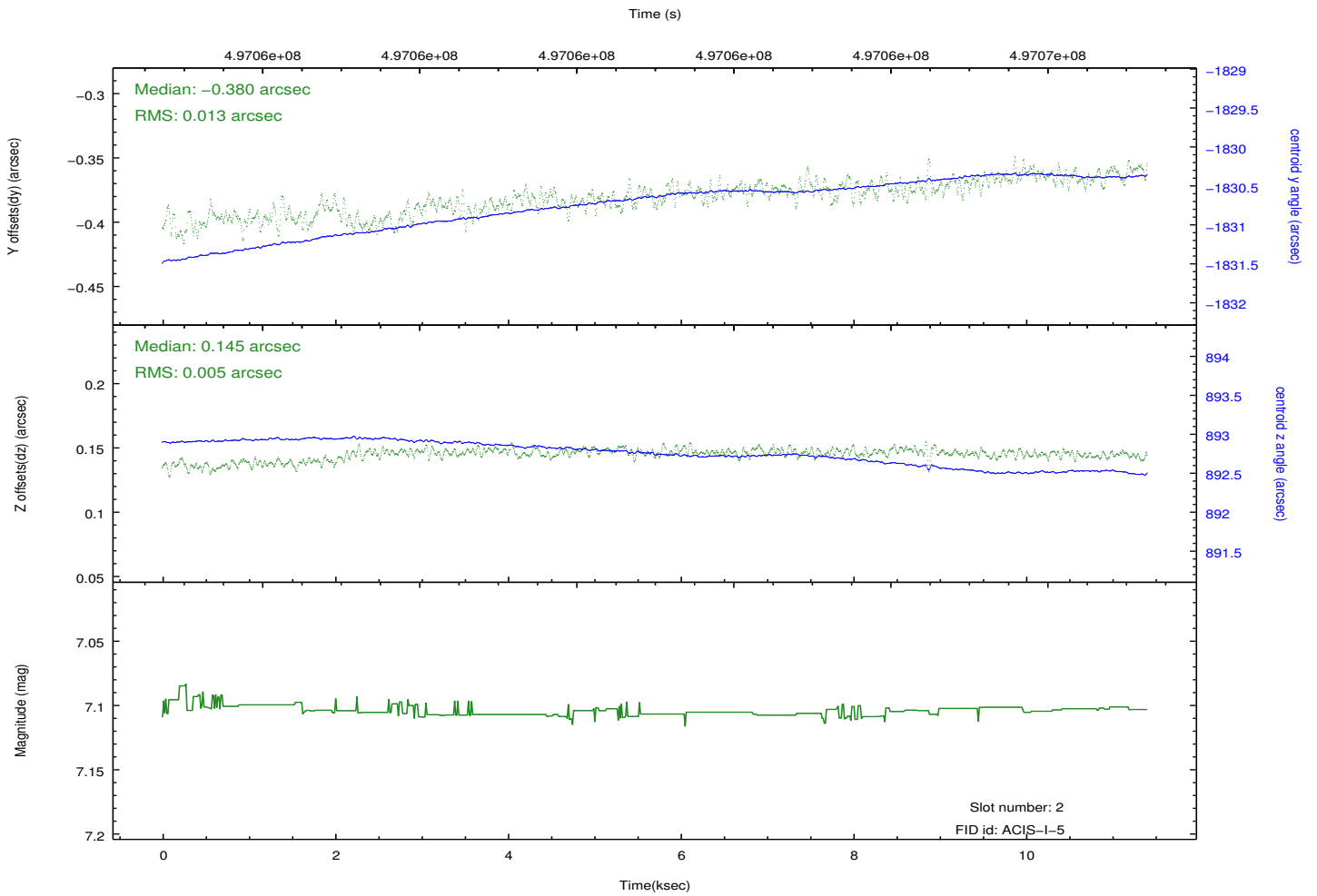
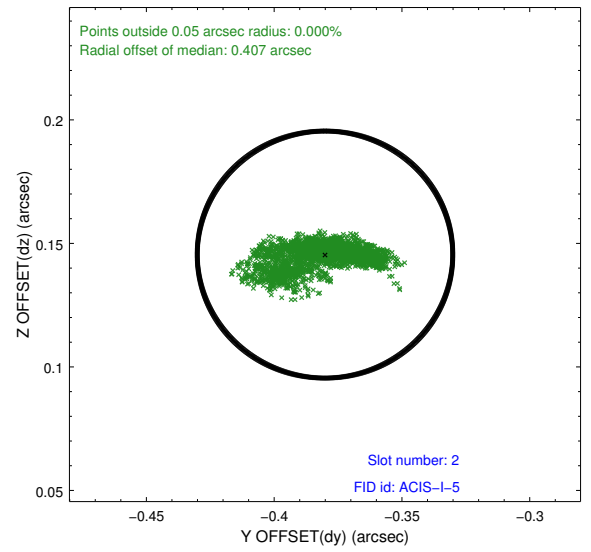
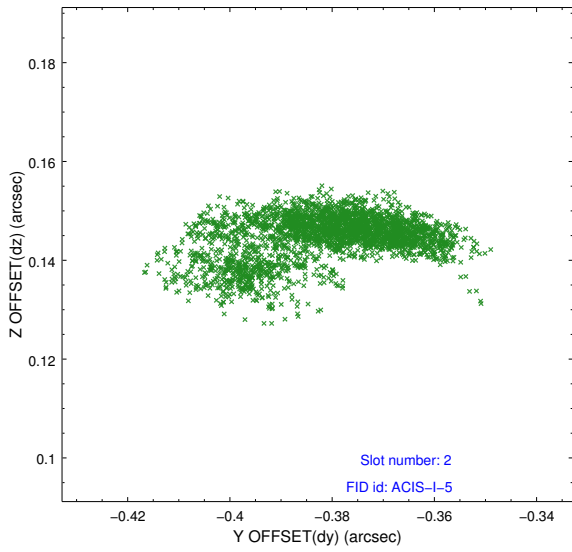
### 2.5.1 Slot 0



## 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)	2014.12.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.411062828064

## A.2 Comments

This observation was interrupted by safing of the science instruments due to high solar radiation environment. The observation was interrupted at 275:02:04 GMT.

The high count rate resulted in telemetry saturation and a large number of dropped exposures. The ONTIME value reflects the lost exposure time.

The high count rate also lead to biases that were corrupted for a number of pixels. As a result of this corruption, the Level 1 event file exhibits a number of pixels that appear to be hot. The large number of events for these pixels is due to abnormally low estimates of the biases. These pixels were identified as bad by `acis_build_badpix`. The events on them were flagged as being on bad pixels and excluded from the Level 2 event file. These bad pixels do not overlap the bright spot in the vicinity of the source.

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.