

# V&V Reference Report

## L2 ASCDS Version : 10

Observation 15109 - L2 Version 2  
Chandra X-Ray Center

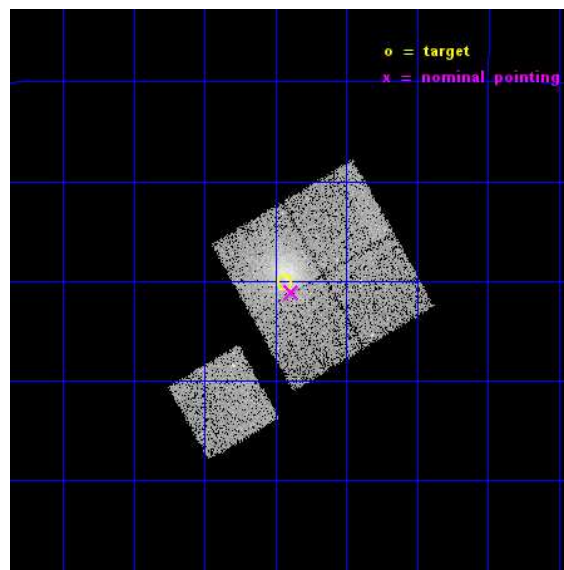
L2 Processing Date : Dec 4 2014

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# 1 Front

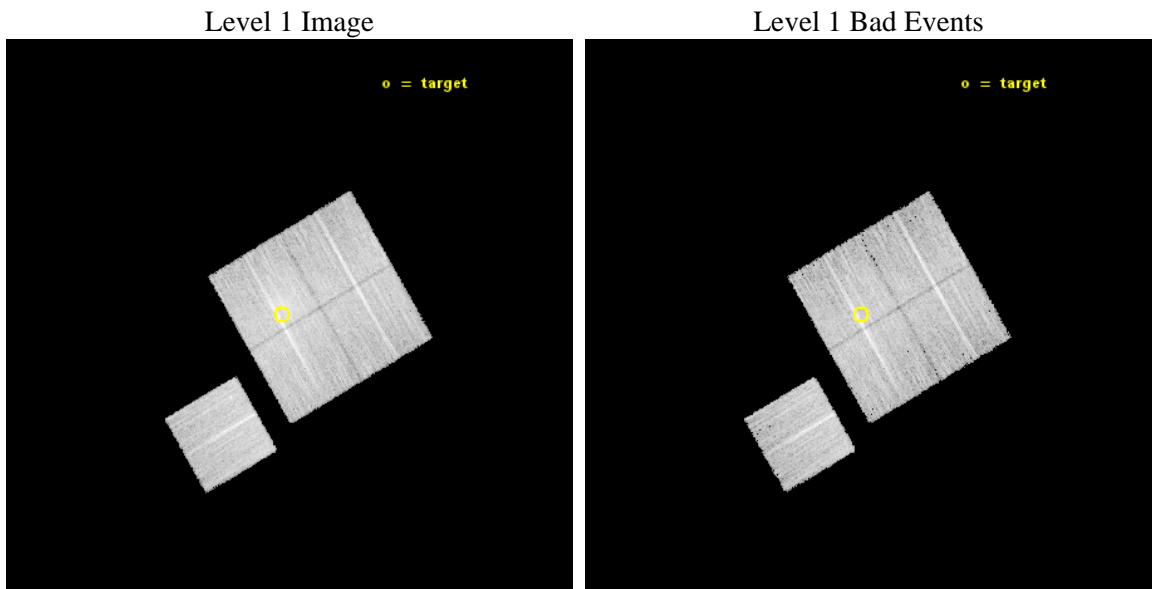
seq_num	801238	Sequence number
obs_id	15109	Observation id
title	A Chandra-Planck Legacy Program for Massive Clusters of Galaxies	P
observer	Dr. Christine Jones	Principal investigator
object	G244.69+32.49	Source name
dtycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	146.359167	Observer's specified target RA [deg]
dec_targ	-8.668333	Observer's specified target Dec [deg]
ra_nom	146.34688321304	Nominal RA [deg]
dec_nom	-8.6856266719929	Nominal Dec [deg]
roll_nom	239.81778411808	Nominal Roll [deg]
revision	2	Processing version of data
ontime	16085.900123715	Sum of GTIs [s]
livetime	15875.725996332	Livetime [s]
ontime0	16085.900123715	Sum of GTIs [s]
ontime1	16085.900123715	Sum of GTIs [s]
ontime2	16085.900123715	Sum of GTIs [s]
ontime3	16085.900123715	Sum of GTIs [s]
ontime6	16085.900123715	Sum of GTIs [s]
l2events	49860	Number of level 2 events



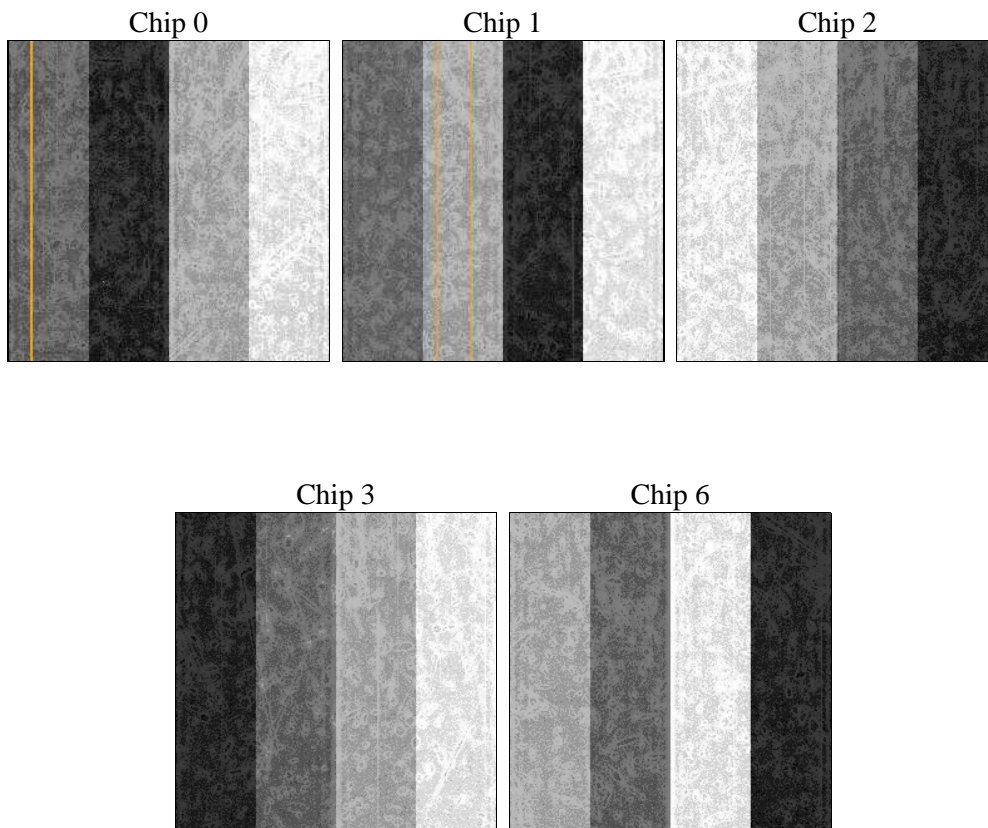
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	16000.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	16085.900123715	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	16085.900123715	Sum of GTIs [s]
date	2014-12-04T06:39:12	Date and time of file creation	ontime1	16085.900123715	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	16085.900123715	Sum of GTIs [s]
			ontime3	16085.900123715	Sum of GTIs [s]
			ontime6	16085.900123715	Sum of GTIs [s]
			l1events	388321	Number of level 1 events

### 2.1.4 Events

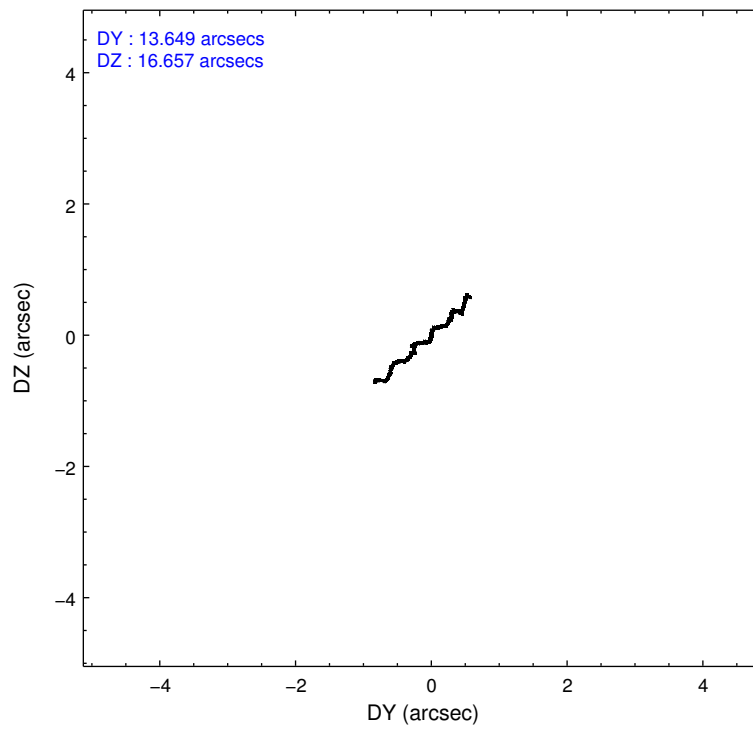
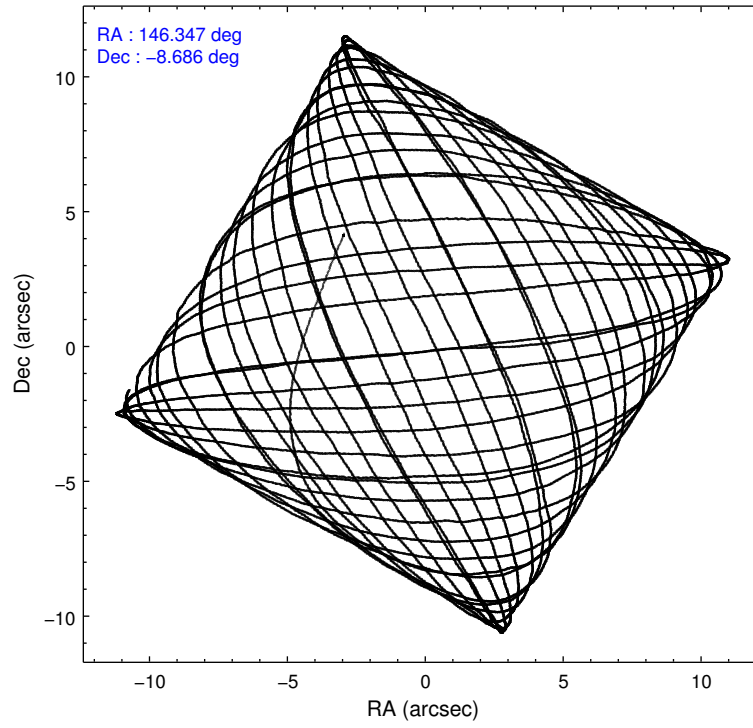
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	70597	72076	77361	87825	80462
rejected events	61116	61433	67788	69707	70886
rejected %	86%	85%	87%	79%	88%

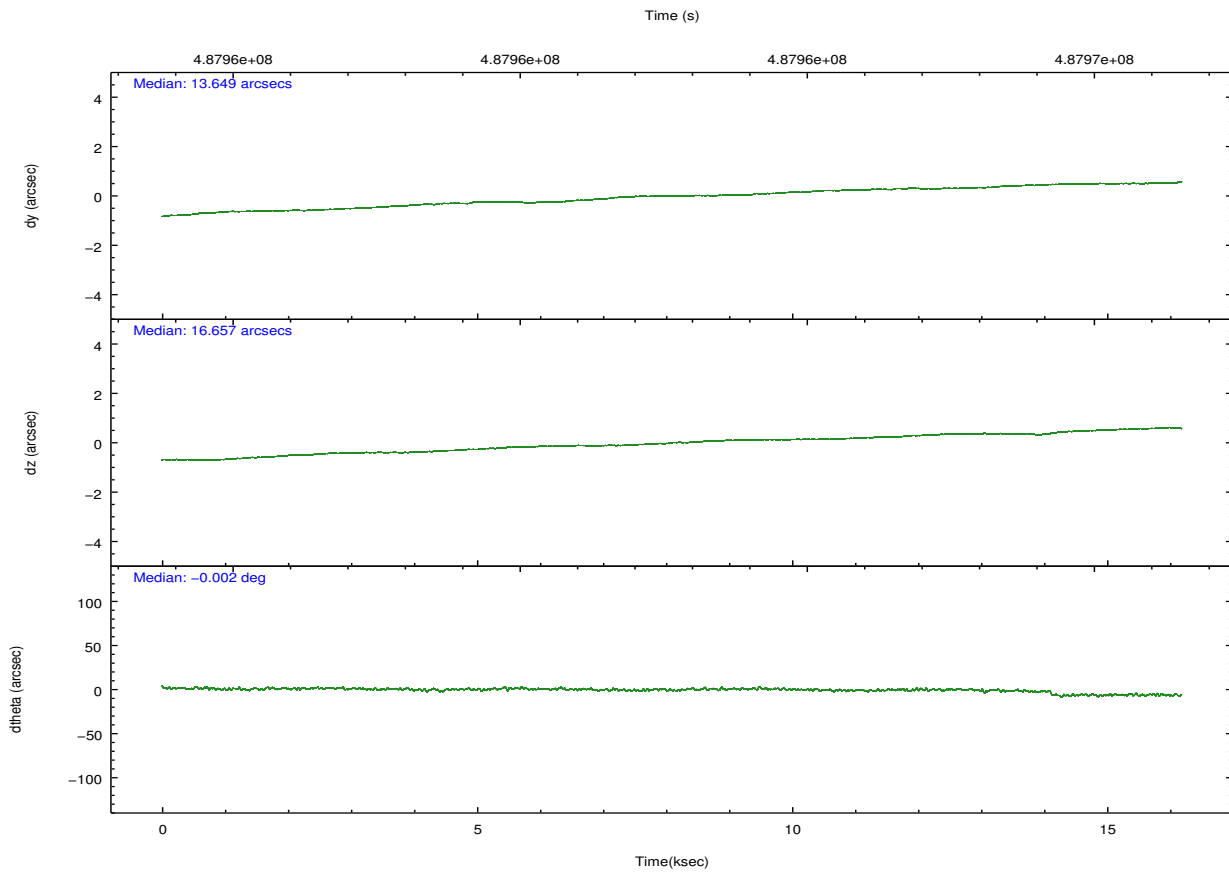
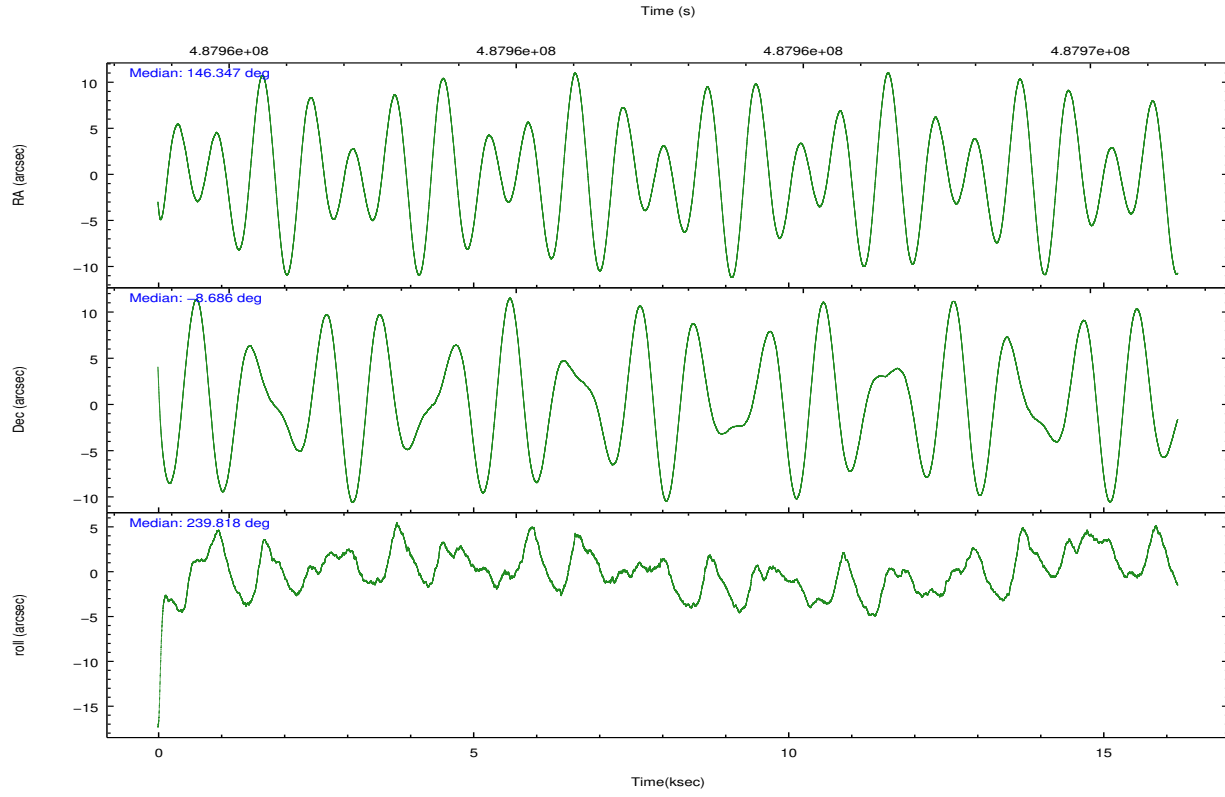
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	3332	3788	3577	10741	3254
	4%	5%	4%	12%	4%
grade 1 events	38	36	55	75	35
	0%	0%	0%	0%	0%
grade 2 events	2325	2556	2222	2919	2089
	3%	3%	2%	3%	2%
grade 3 events	951	1028	933	1243	1006
	1%	1%	1%	1%	1%
grade 4 events	926	1064	959	1208	991
	1%	1%	1%	1%	1%
grade 5 events	3641	3888	3487	4303	4066
	5%	5%	4%	4%	5%
grade 6 events	1949	2210	1883	2013	2237
	2%	3%	2%	2%	2%
grade 7 events	57435	57506	64245	65323	66784
	81%	79%	83%	74%	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	146.346858	146.346883213043	CCD I2 on	Y	Y
[deg] Pointing Dec	-8.658114	-8.685626671992932	CCD I3 on	Y	Y
[deg] Pointing Roll	239.609101	239.8177841180766	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	-224.842463	-224.8401315267014	CCD S3 on	N	N
[mm] SIM translation stage offset	-8.75	-8.752321476228246	CCD S4 on	N	N
[s] Observation start time (MET)	487954732.184000	487953766.37947	CCD S5 on	N	N
Observation start date	2013-06-18T14:57:45	2013-06-18T14:42:46	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	487970732.184000	487971569.09294	On-chip summing requested	N	N
Observation end date	2013-06-18T19:24:25	2013-06-18T19:39:29	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





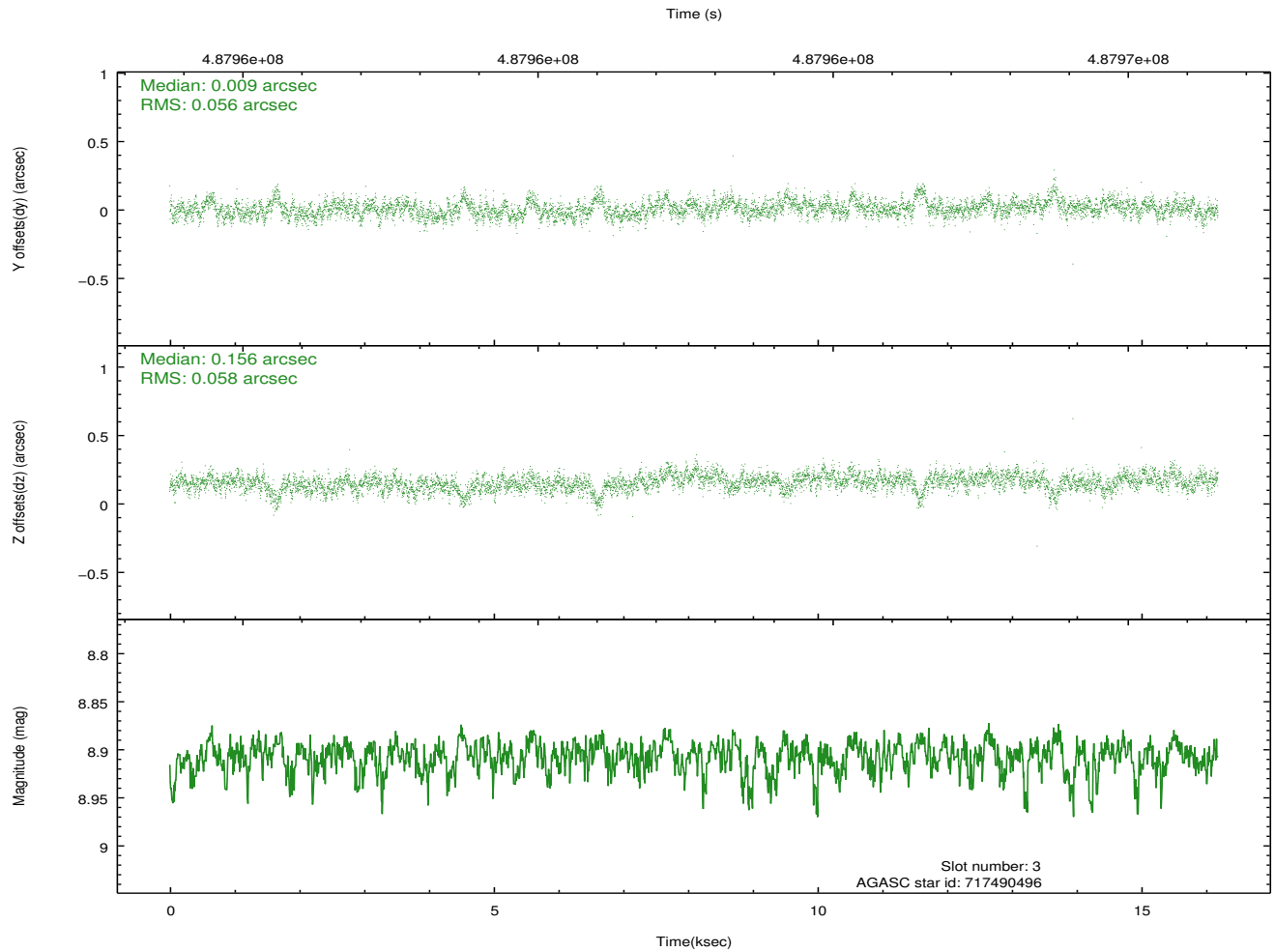
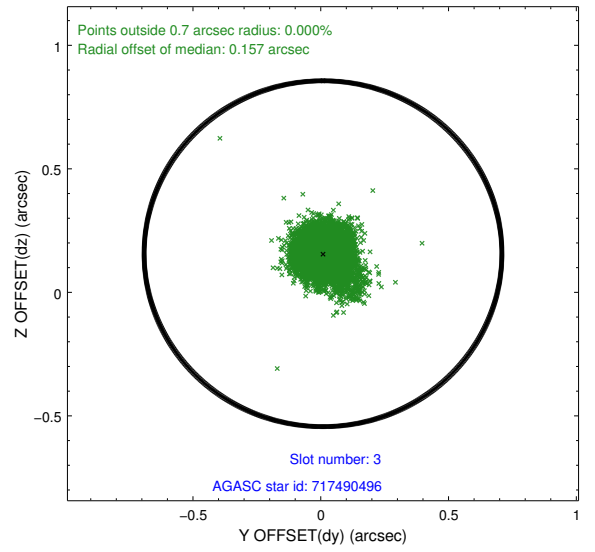
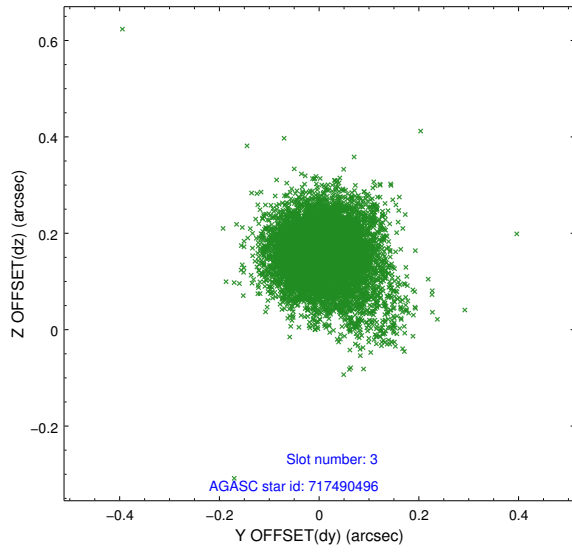
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.06	3948	0.146	-0.142	0.014	0.047	0.000000	0.000000	925.88	-1020.09
1	FID		ACIS-I-2	7.03	3948	-0.270	0.050	0.009	0.038	0.000000	0.000000	-768.94	-1025.36
2	FID		ACIS-I-4	6.97	3948	0.025	0.158	0.010	0.028	0.000000	0.000000	2145.03	880.92
3	GUIDE	used	717490496	8.91	7891	0.009	0.156	0.082	0.141	146.301171	-7.943760	-2136.01	-1441.46
4	GUIDE	used	717490912	9.31	7887	0.012	-0.123	0.100	0.164	146.875423	-8.315033	-2017.17	999.63
5	GUIDE	used	717494144	9.67	7885	0.167	-0.079	0.138	0.222	146.582037	-9.282237	1515.47	1857.59
6	GUIDE	used	717494176	9.07	7883	-0.134	0.113	0.117	0.181	146.670251	-9.283347	1360.74	2130.39
7	GUIDE	used	717492600	8.93	7887	-0.043	-0.064	0.093	0.151	146.808620	-9.186878	812.74	2379.23

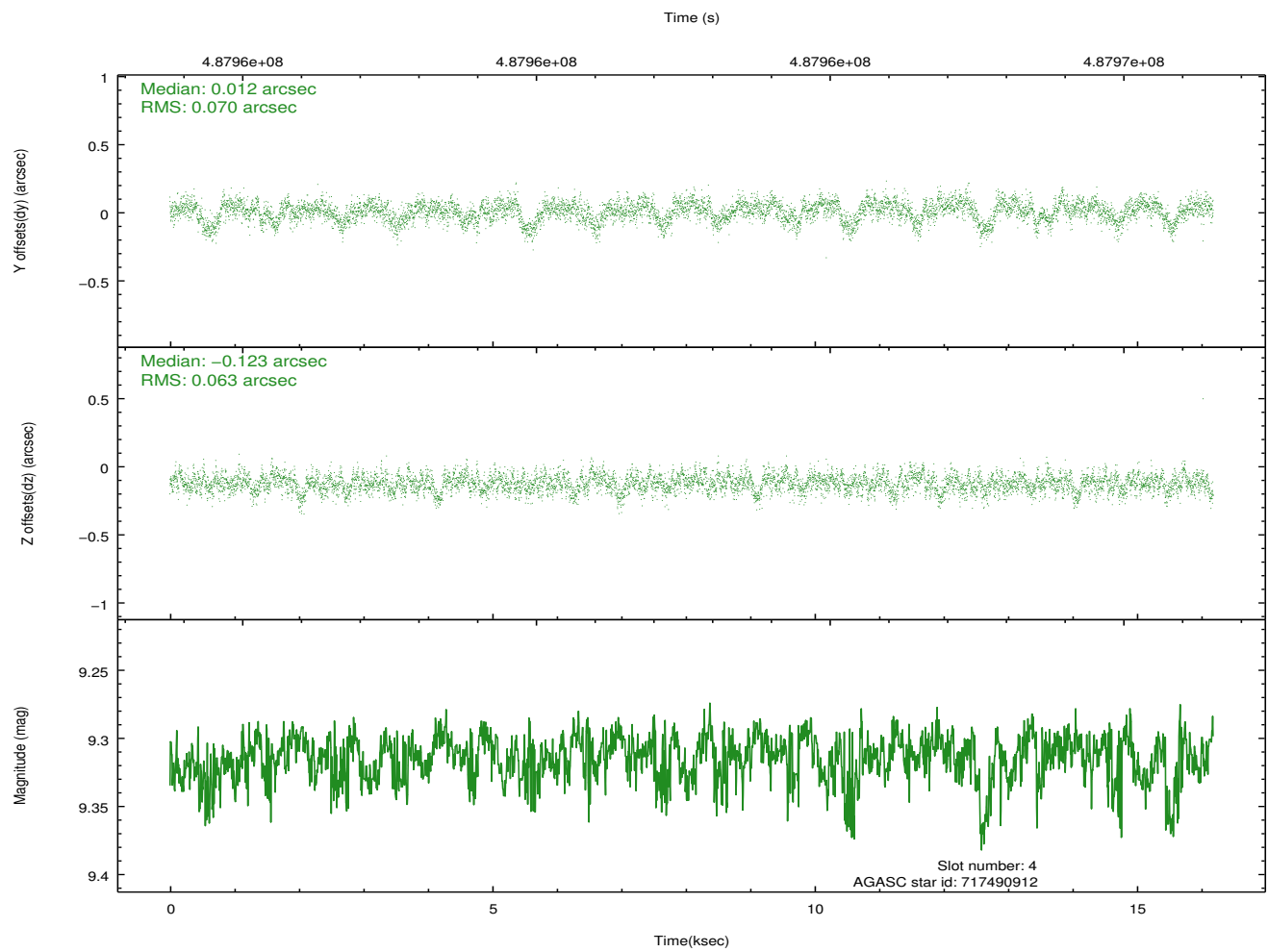
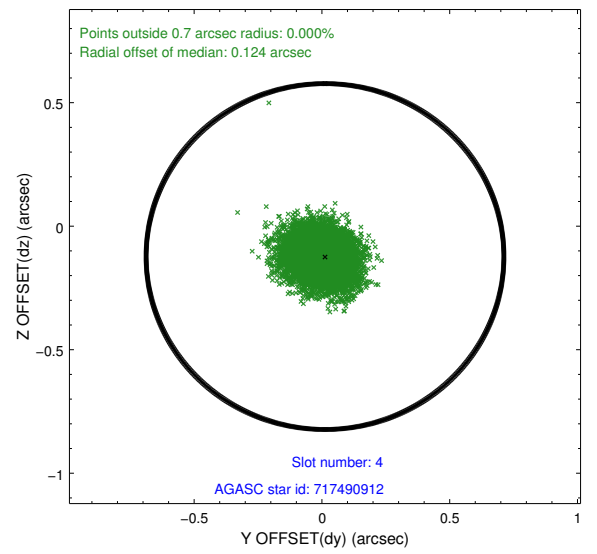
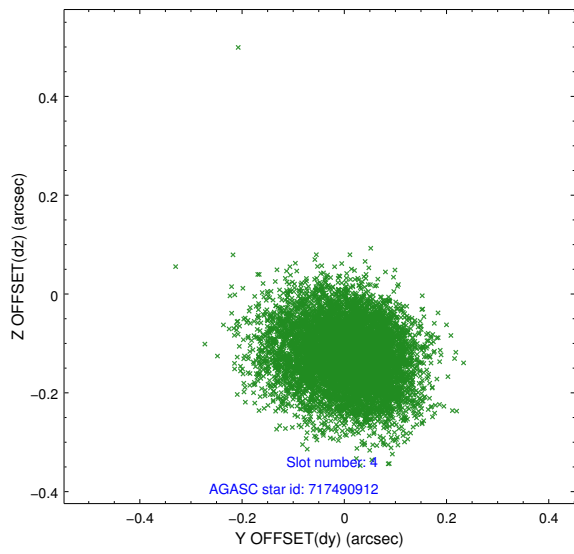
∞

## 2.4 Star Slots

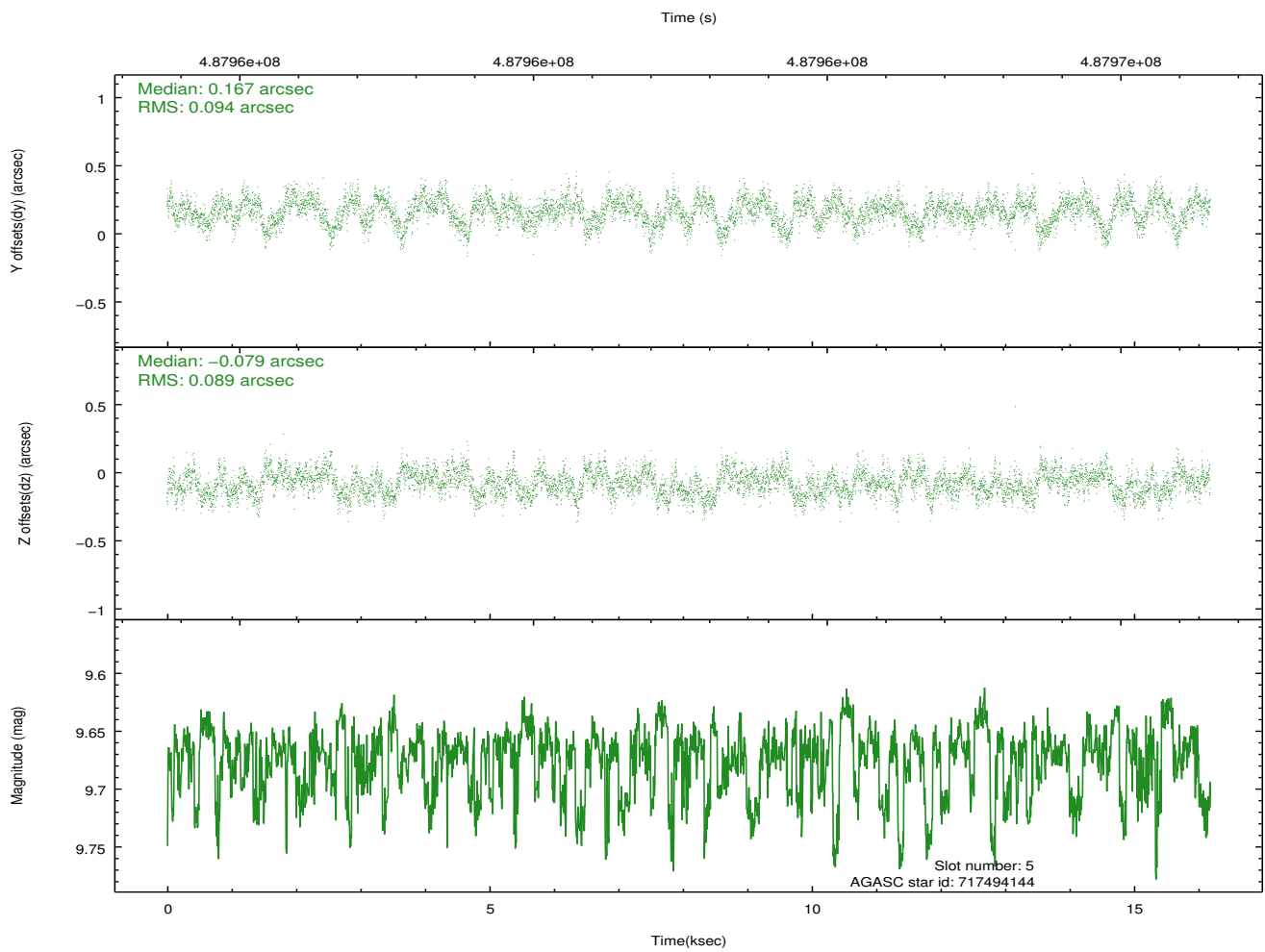
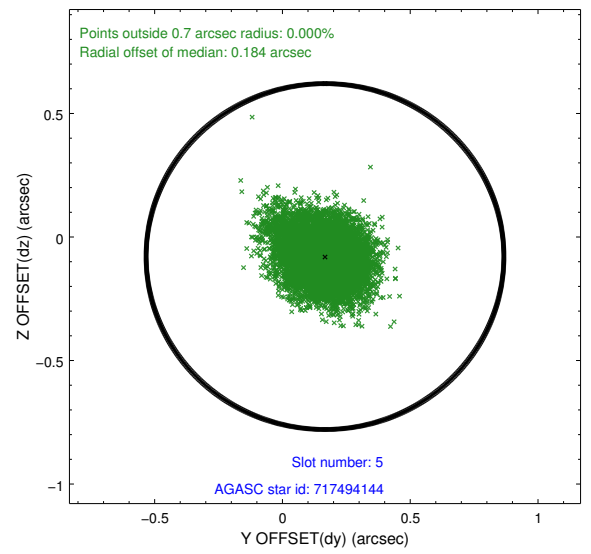
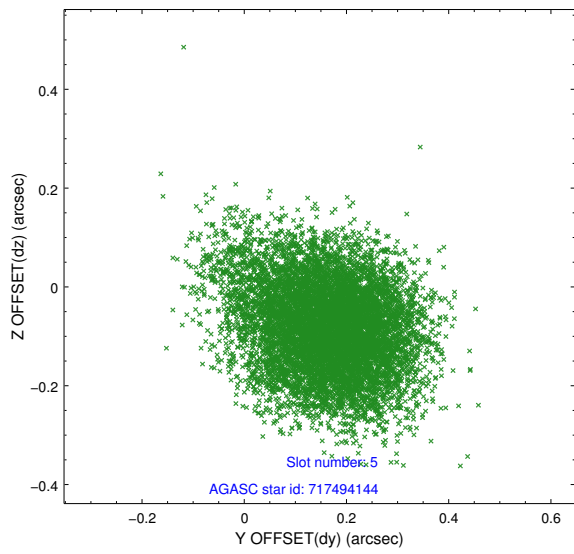
### 2.4.1 Slot 3



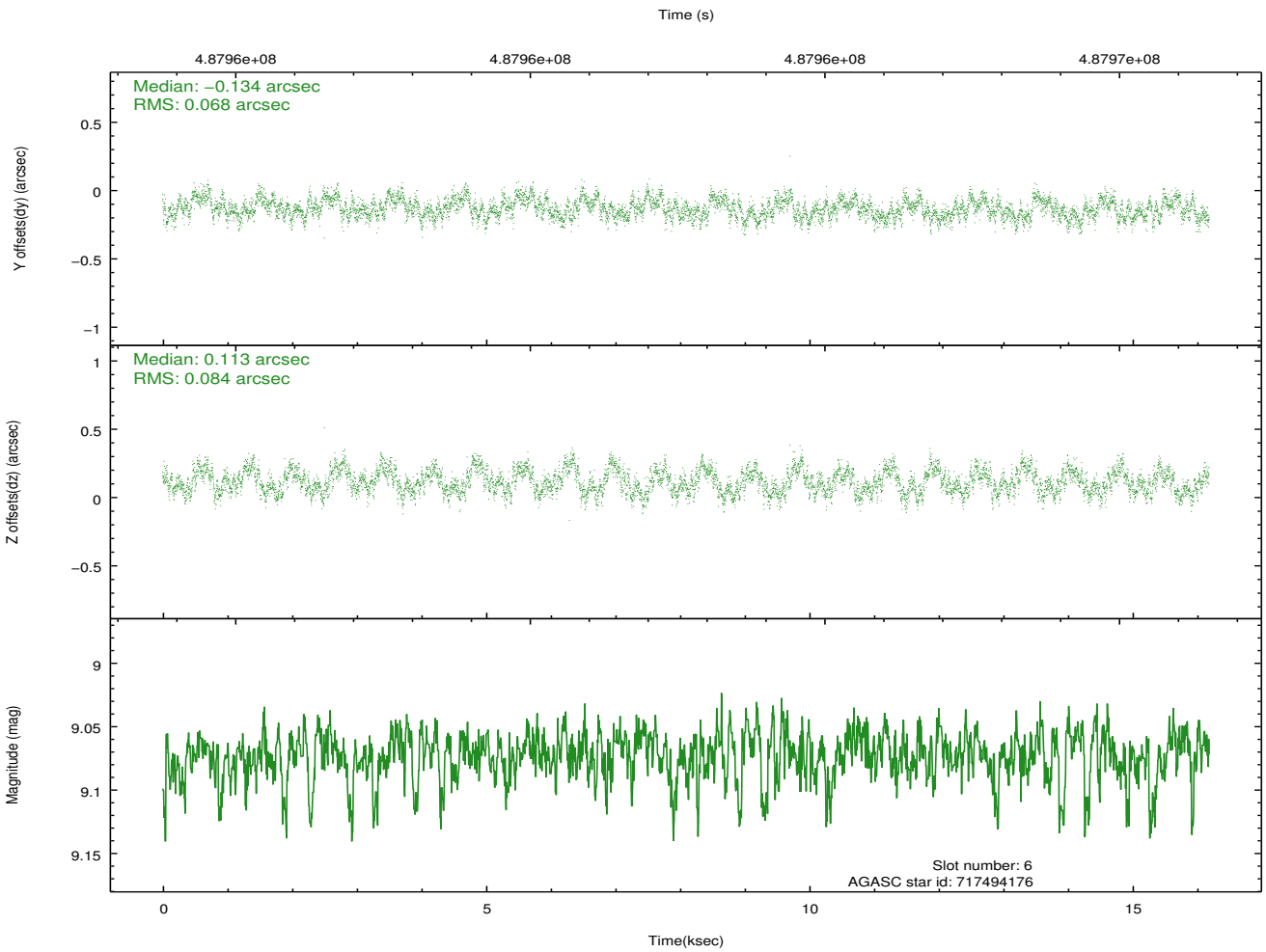
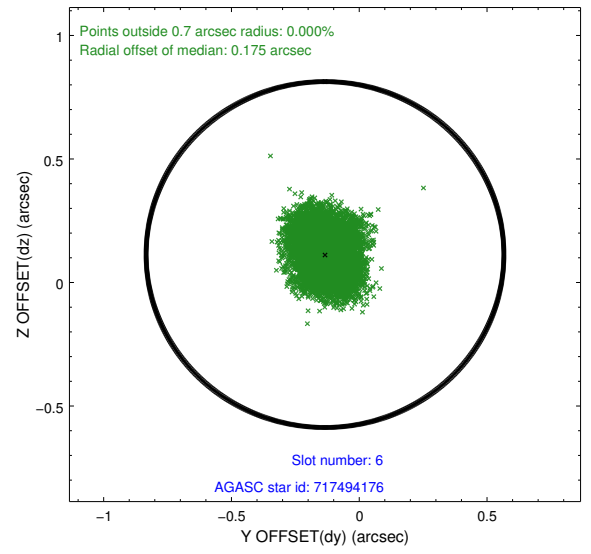
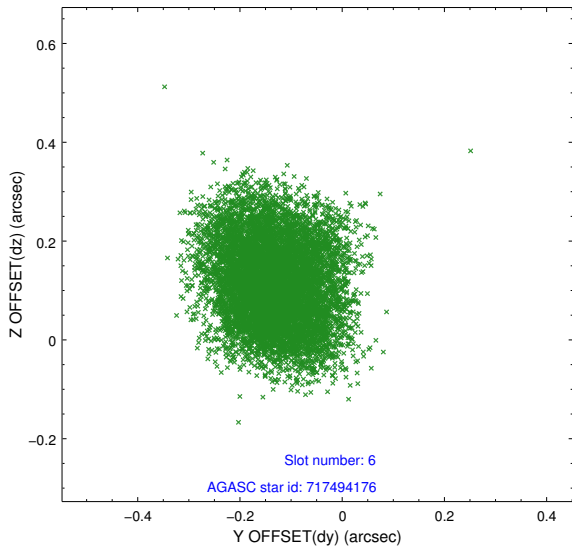
## 2.4.2 Slot 4



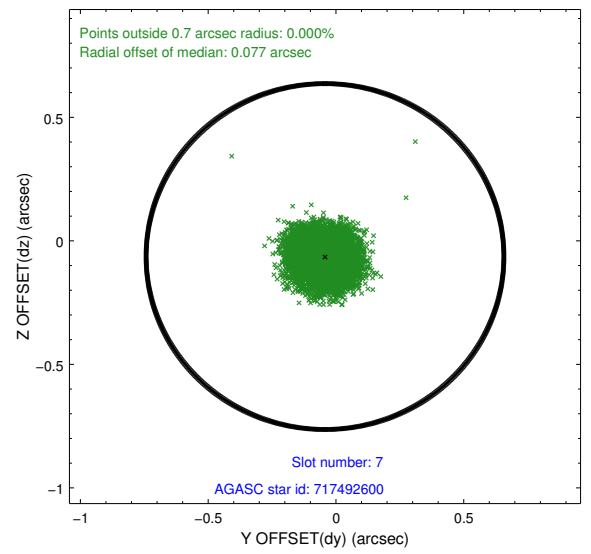
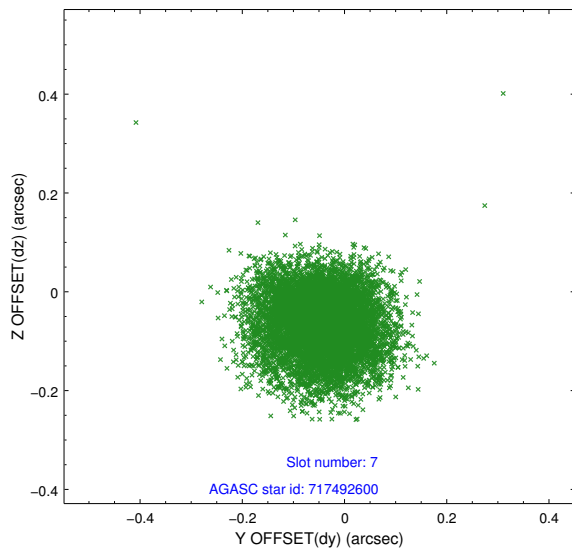
### 2.4.3 Slot 5



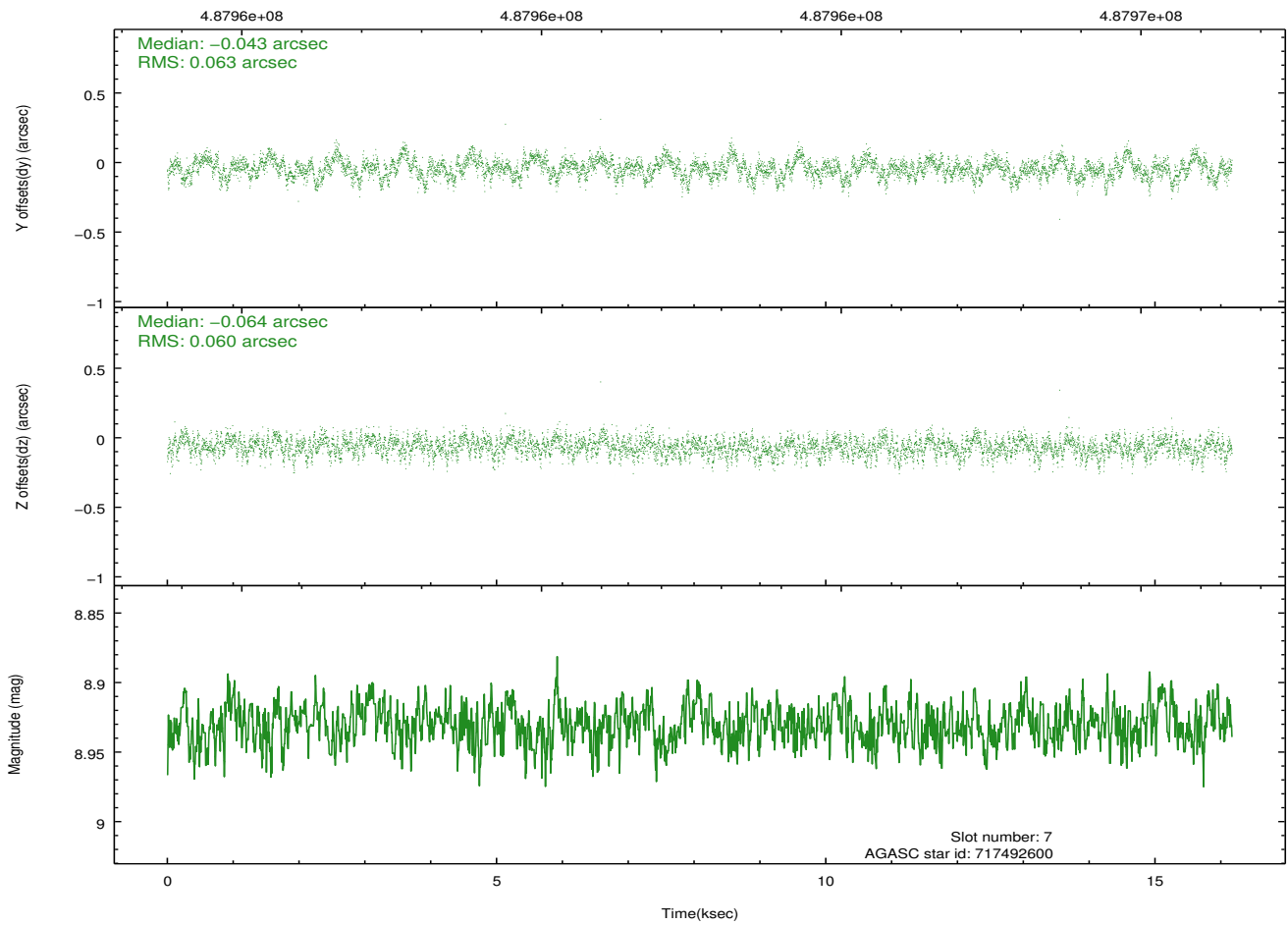
## 2.4.4 Slot 6



## 2.4.5 Slot 7

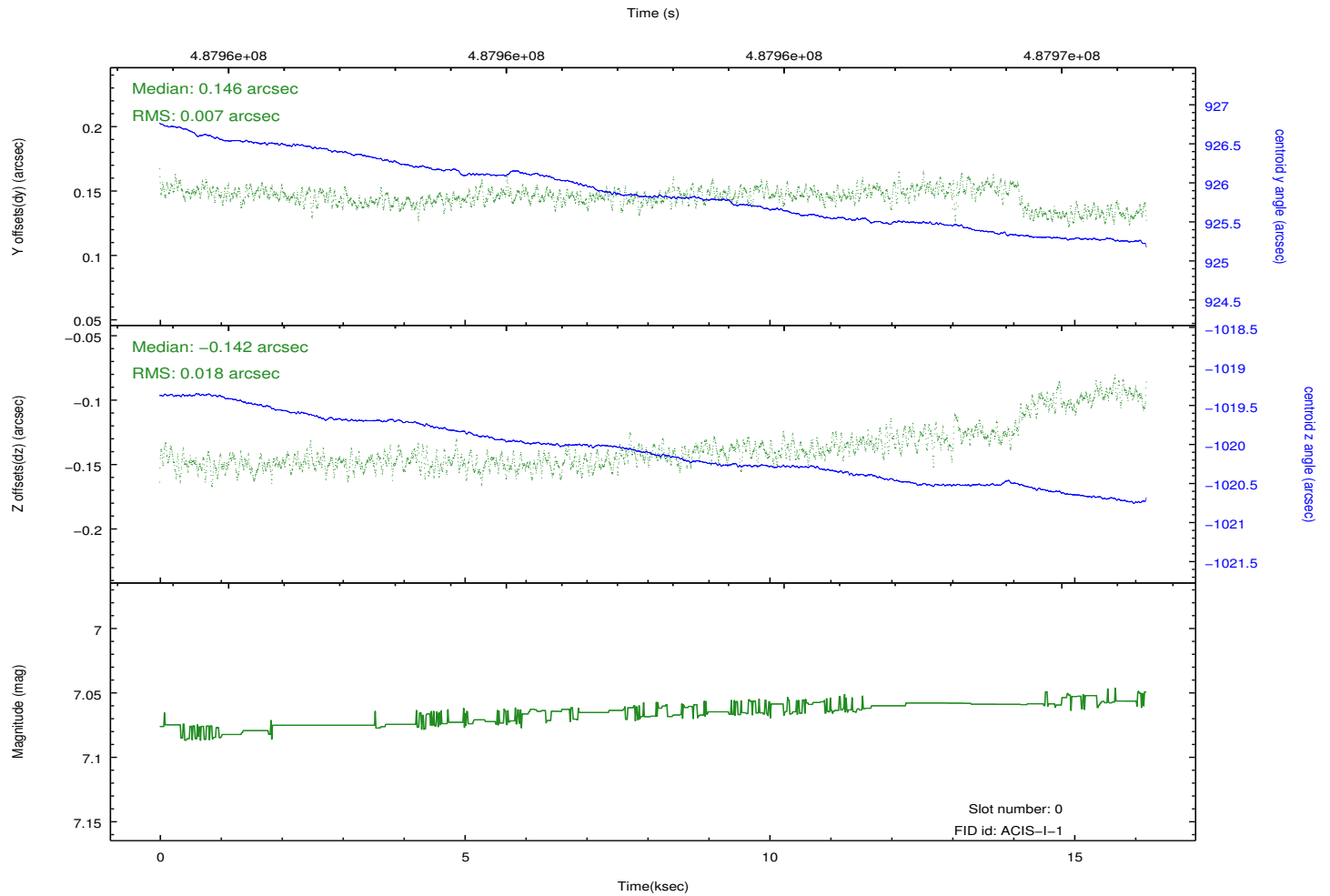
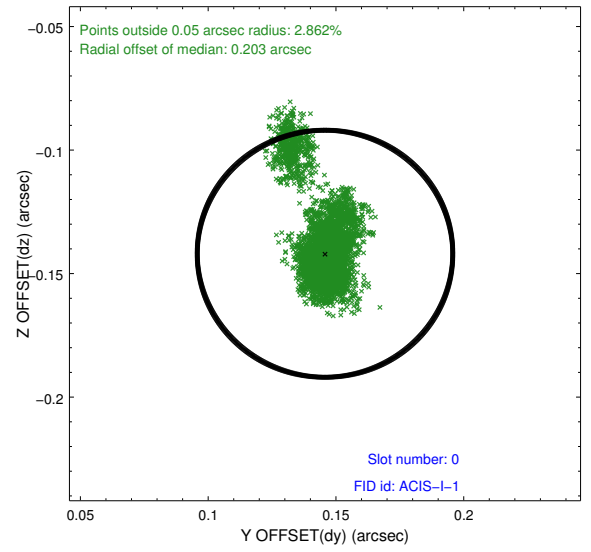
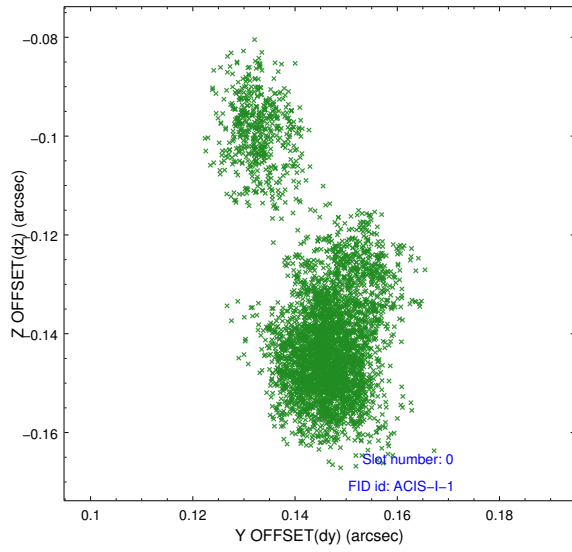


Time (s)

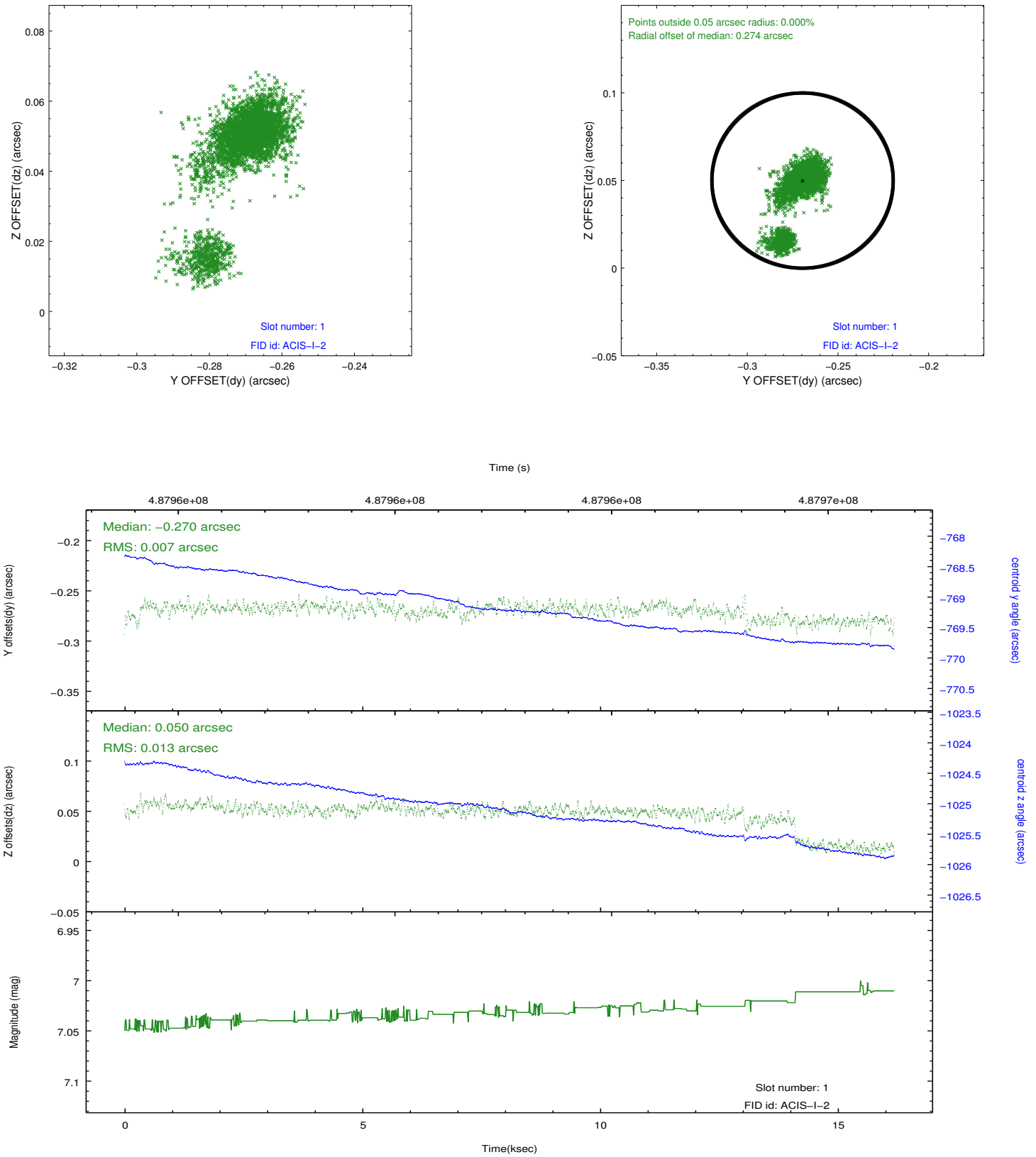


## 2.5 FID Slots

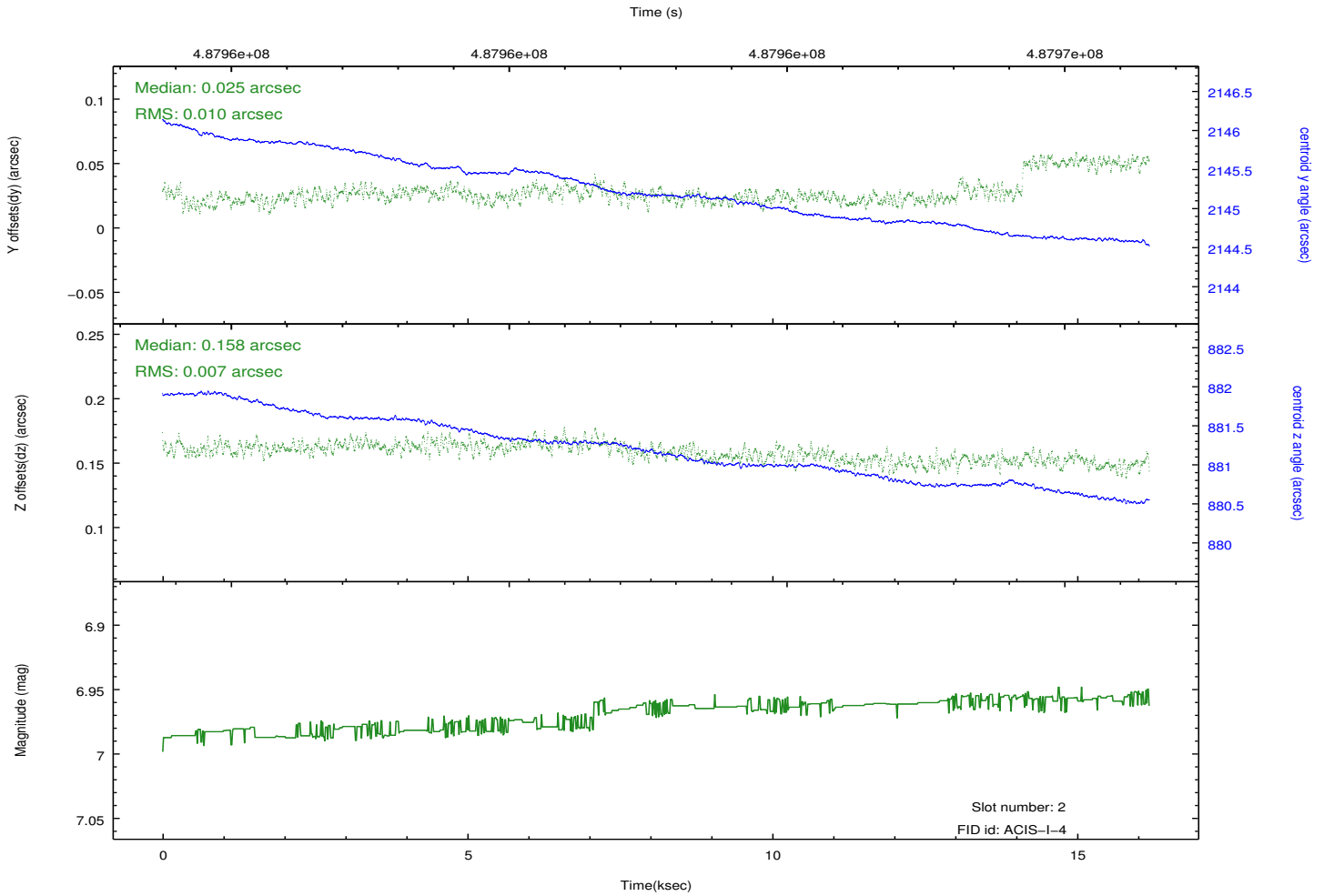
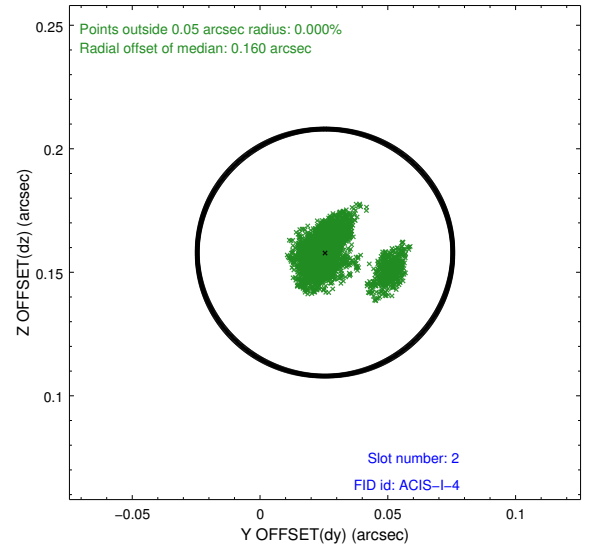
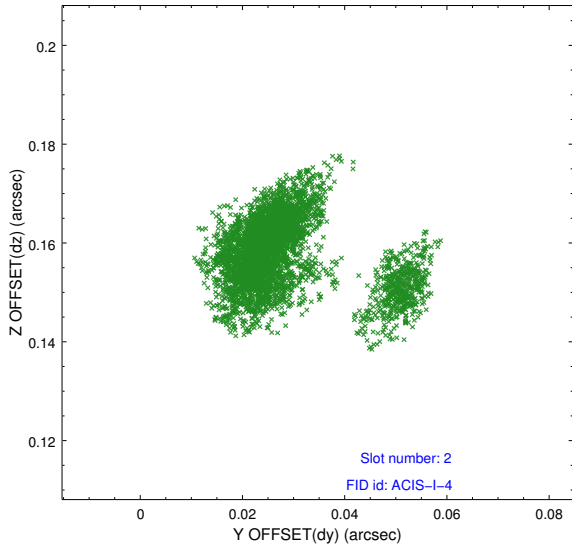
### 2.5.1 Slot 0



## 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)	2014.12.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	16.085900123715

## 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.