

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 15586 - L2 Version 2  
Chandra X-Ray Center

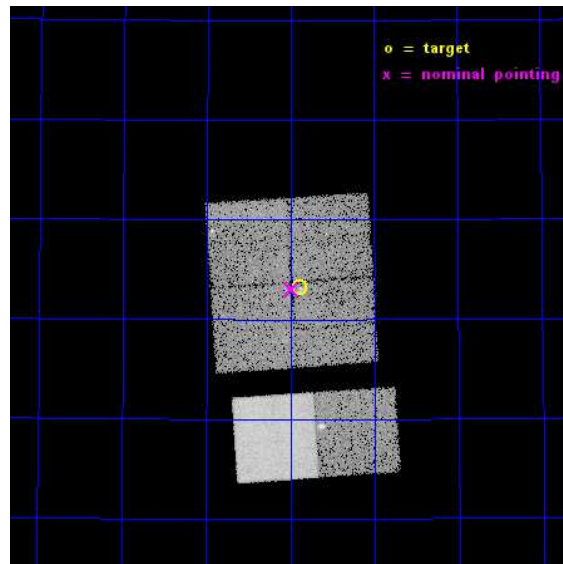
L2 Processing Date : Nov 29 2014

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# 1 Front

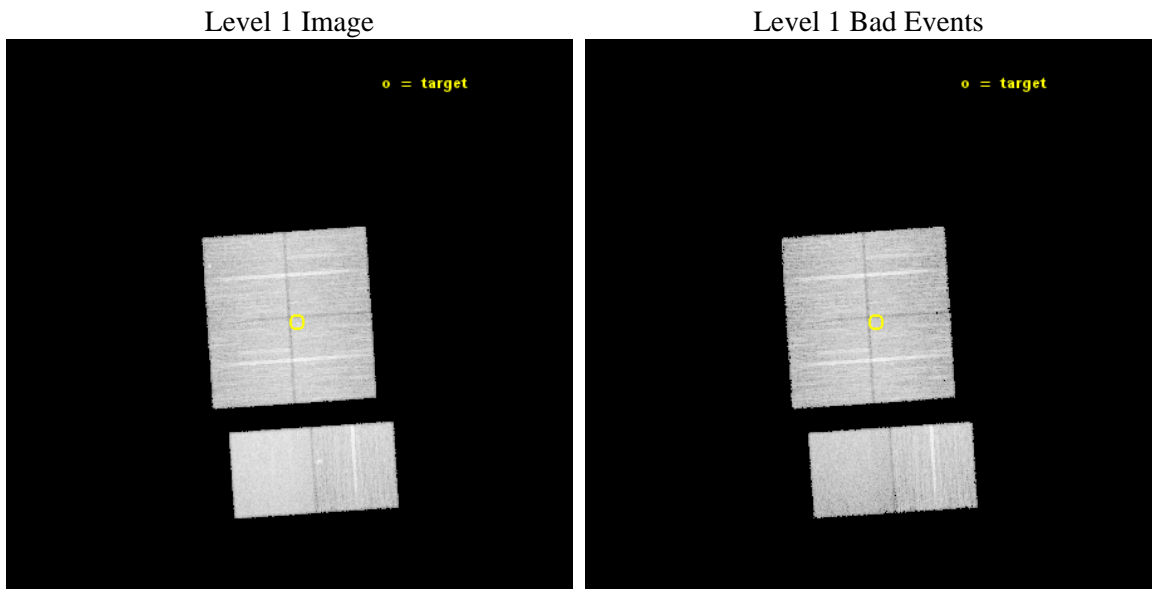
seq_num	501822	Sequence number
obs_id	15586	Observation id
title	A Legacy Study of the Relativistic Shocks of PWNe	Proposal title
observer	Prof. Roger Romani	Principal investigator
object	PSR J0358+5413	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	59.72375	Observer's specified target RA [deg]
dec_targ	54.220472	Observer's specified target Dec [deg]
ra_nom	59.747285143806	Nominal RA [deg]
dec_nom	54.217047194743	Nominal Dec [deg]
roll_nom	176.18957051565	Nominal Roll [deg]
revision	2	Processing version of data
ontime	20470.399923801	Sum of GTIs [s]
livetime	20211.191394171	Livetime [s]
ontime0	20467.158943474	Sum of GTIs [s]
ontime1	20470.399923801	Sum of GTIs [s]
ontime2	20470.399923801	Sum of GTIs [s]
ontime3	20470.399923801	Sum of GTIs [s]
ontime6	20463.917932808	Sum of GTIs [s]
ontime7	20470.399923801	Sum of GTIs [s]
l2events	116131	Number of level 2 events



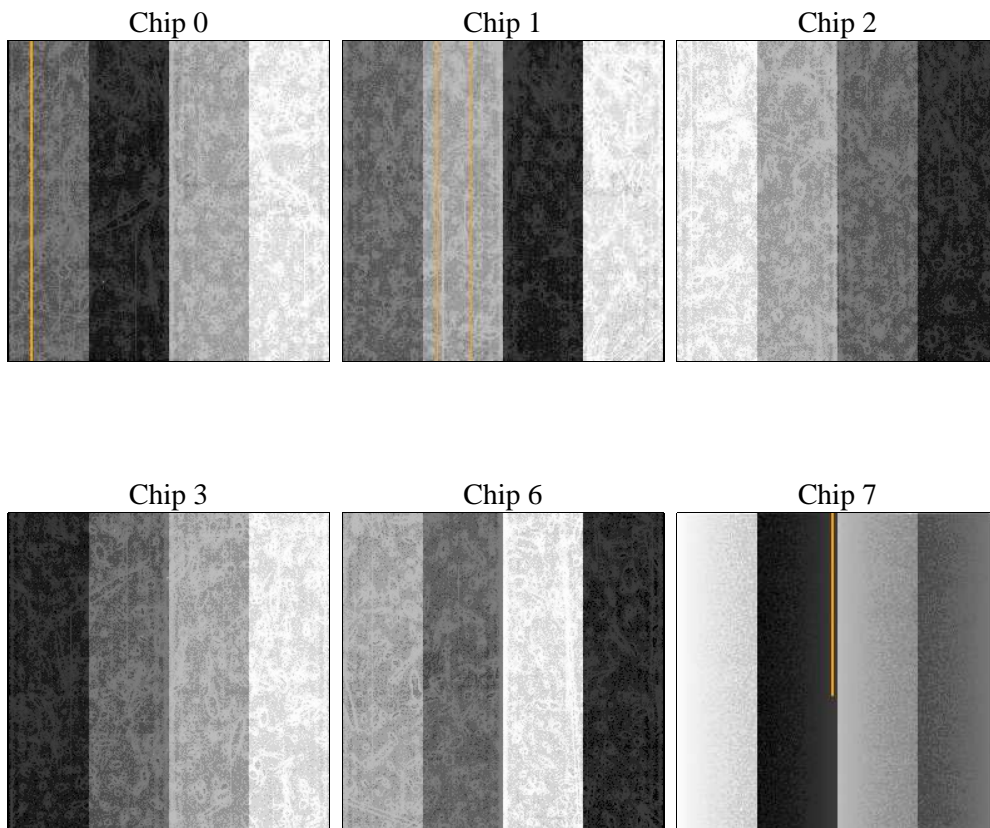
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20500.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	20470.399923801	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	20467.158943474	Sum of GTIs [s]
date	2014-11-29T20:40:35	Date and time of file creation	ontime1	20470.399923801	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	20470.399923801	Sum of GTIs [s]
			ontime3	20470.399923801	Sum of GTIs [s]
			ontime6	20463.917932808	Sum of GTIs [s]
			ontime7	20470.399923801	Sum of GTIs [s]
			l1events	654811	Number of level 1 events

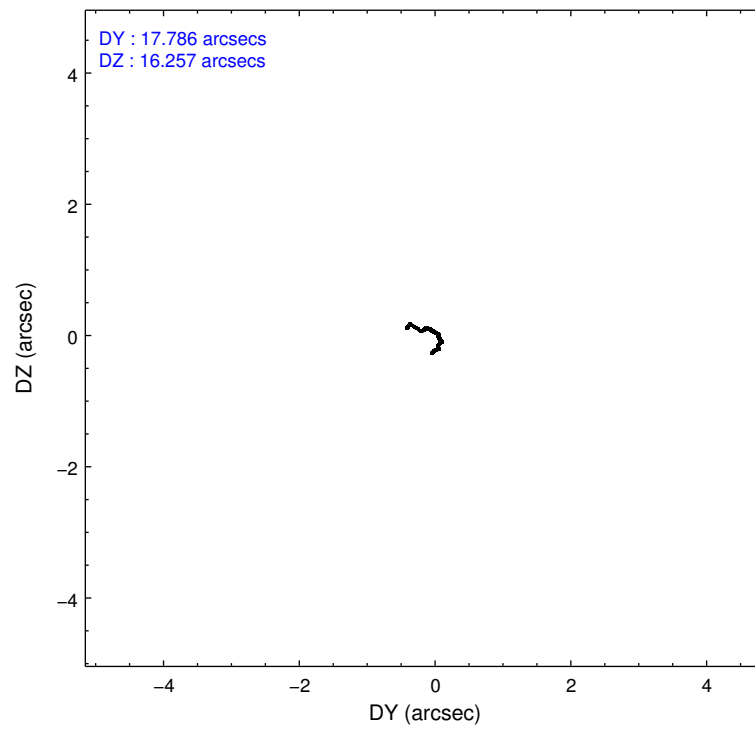
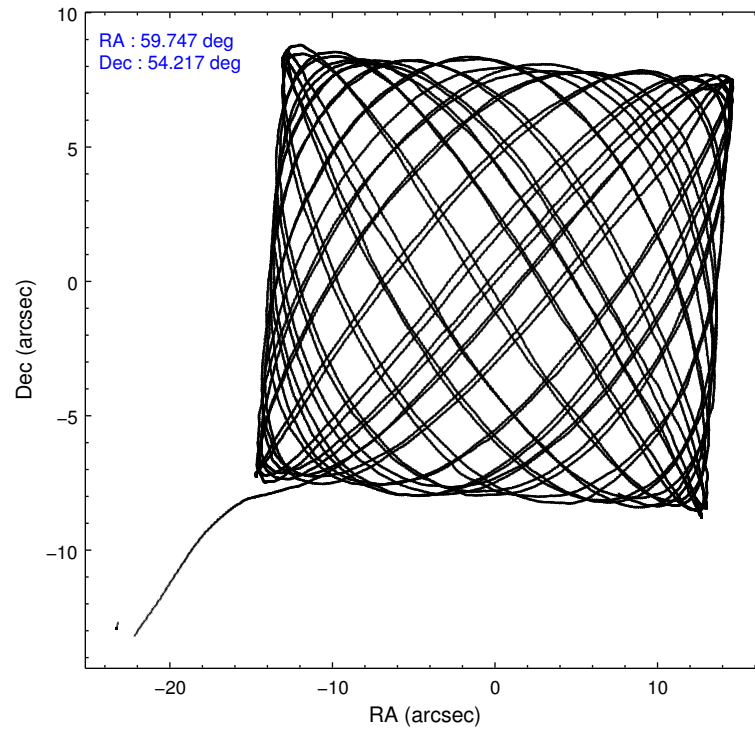
### 2.1.4 Events

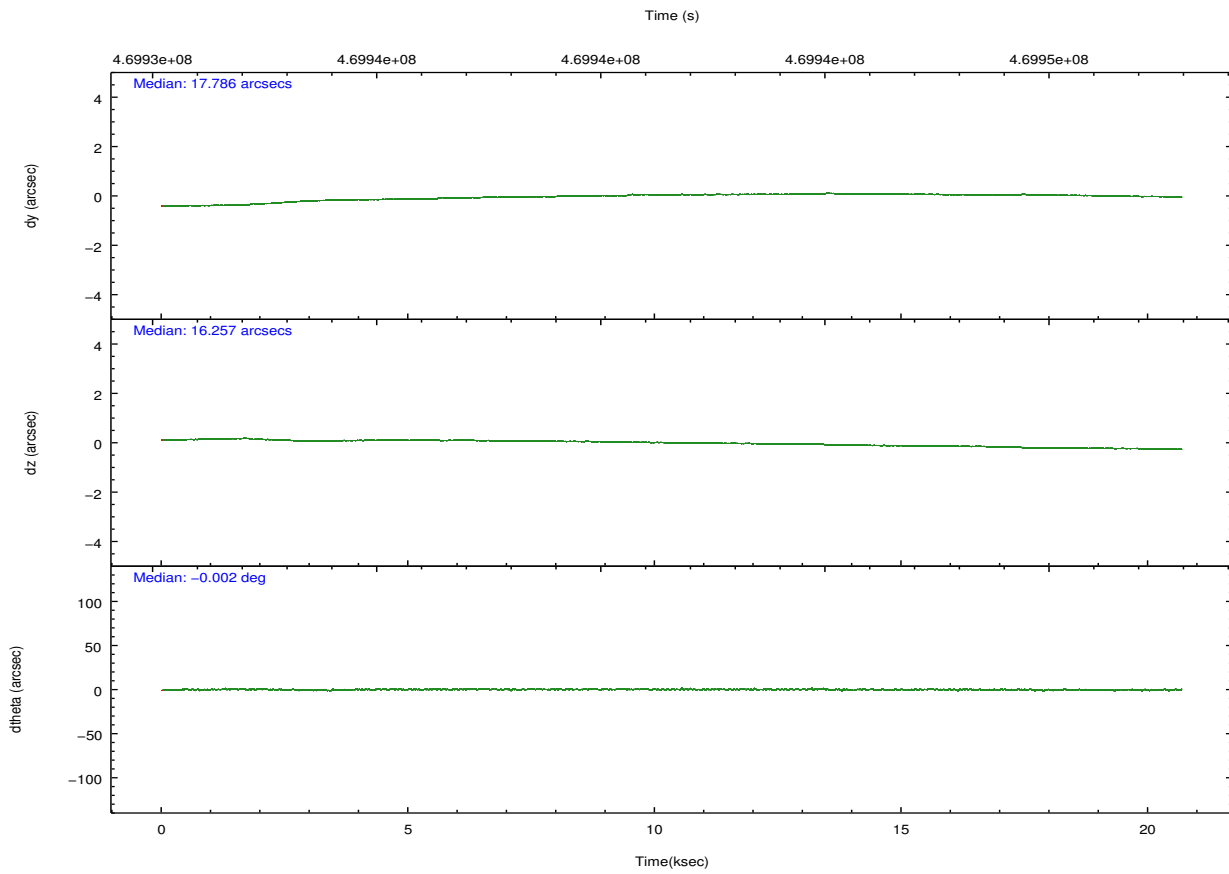
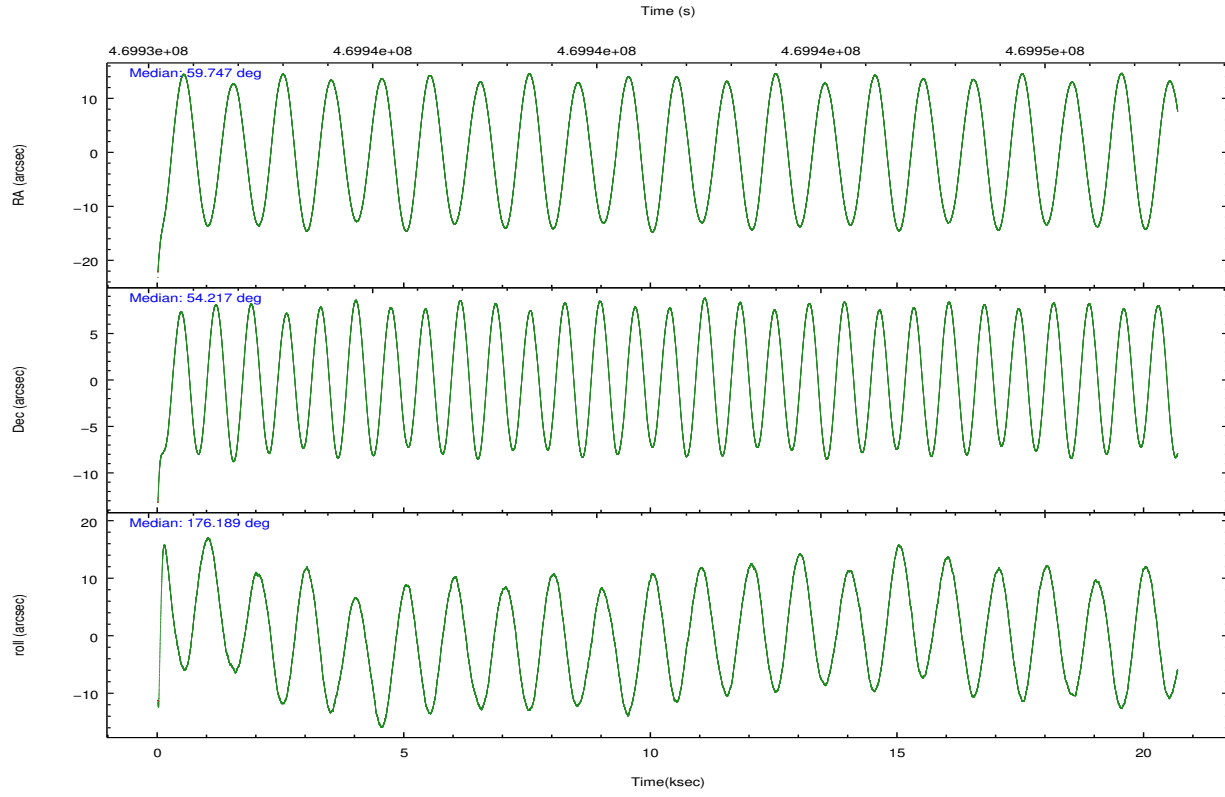
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	94712	100007	103332	102927	110755	143078	grade 0 events	4165	5043	4903	4223	4729	5329
rejected events	82396	85955	90550	90936	97439	80087		4%	5%	4%	4%	4%	3%
rejected %	86%	85%	87%	88%	87%	55%	grade 1 events	50	62	56	63	66	161
								0%	0%	0%	0%	0%	0%
							grade 2 events	3057	3311	3016	2669	2927	12851
								3%	3%	2%	2%	2%	8%
							grade 3 events	1301	1344	1219	1290	1334	5474
								1%	1%	1%	1%	1%	3%
							grade 4 events	1241	1336	1238	1233	1313	5416
								1%	1%	1%	1%	1%	3%
							grade 5 events	4902	5252	4639	5444	5629	14802
								5%	5%	4%	5%	5%	10%
							grade 6 events	2554	3020	2407	2580	3016	33937
								2%	3%	2%	2%	2%	23%
							grade 7 events	77442	80639	85854	85425	91741	65108
								81%	80%	83%	82%	82%	45%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-012367	ACIS-012367	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	59.789396	59.74728514380575	CCD I2 on	Y	Y
[deg] Pointing Dec	54.229301	54.21704719474312	CCD I3 on	Y	Y
[deg] Pointing Roll	175.946744	176.1895705156469	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	-233.592463	-233.5874344608287	CCD S3 on	O2	Y
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	469931423.184000	469930383.73027	CCD S5 on	N	N
Observation start date	2012-11-22T00:29:16	2012-11-22T00:13:03	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	469951923.184000	469952451.98146	On-chip summing requested	N	N
Observation end date	2012-11-22T06:10:56	2012-11-22T06:20:51	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



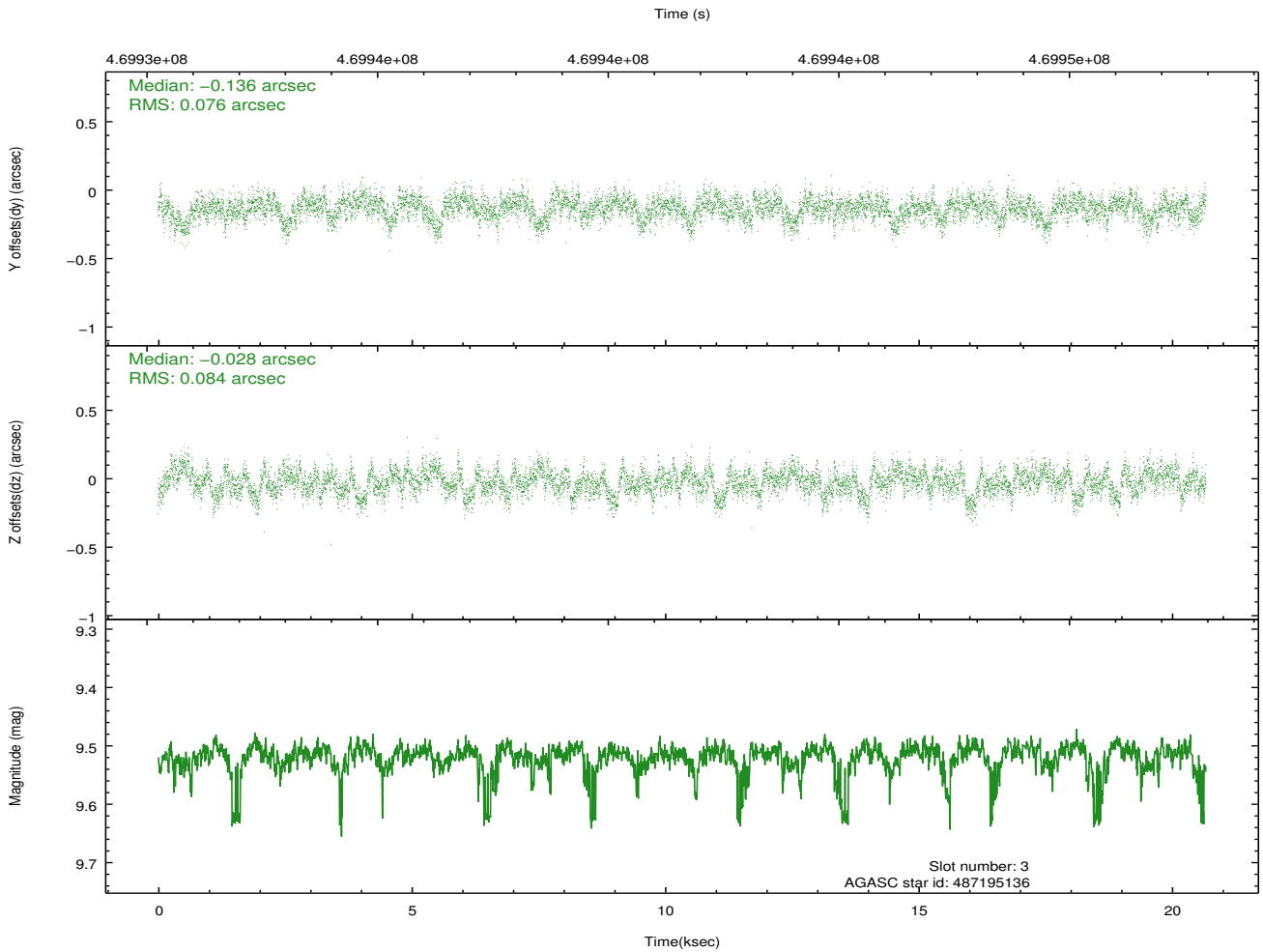
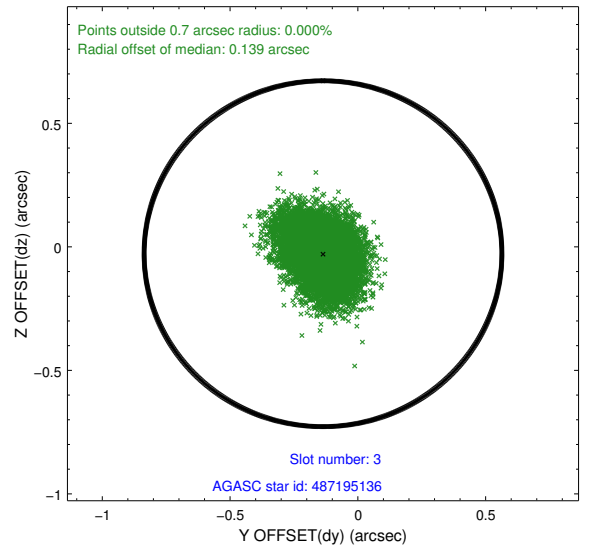
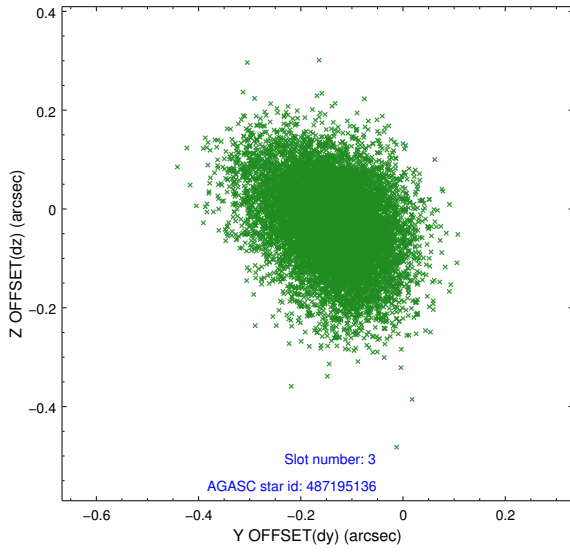


### Slot Statistics

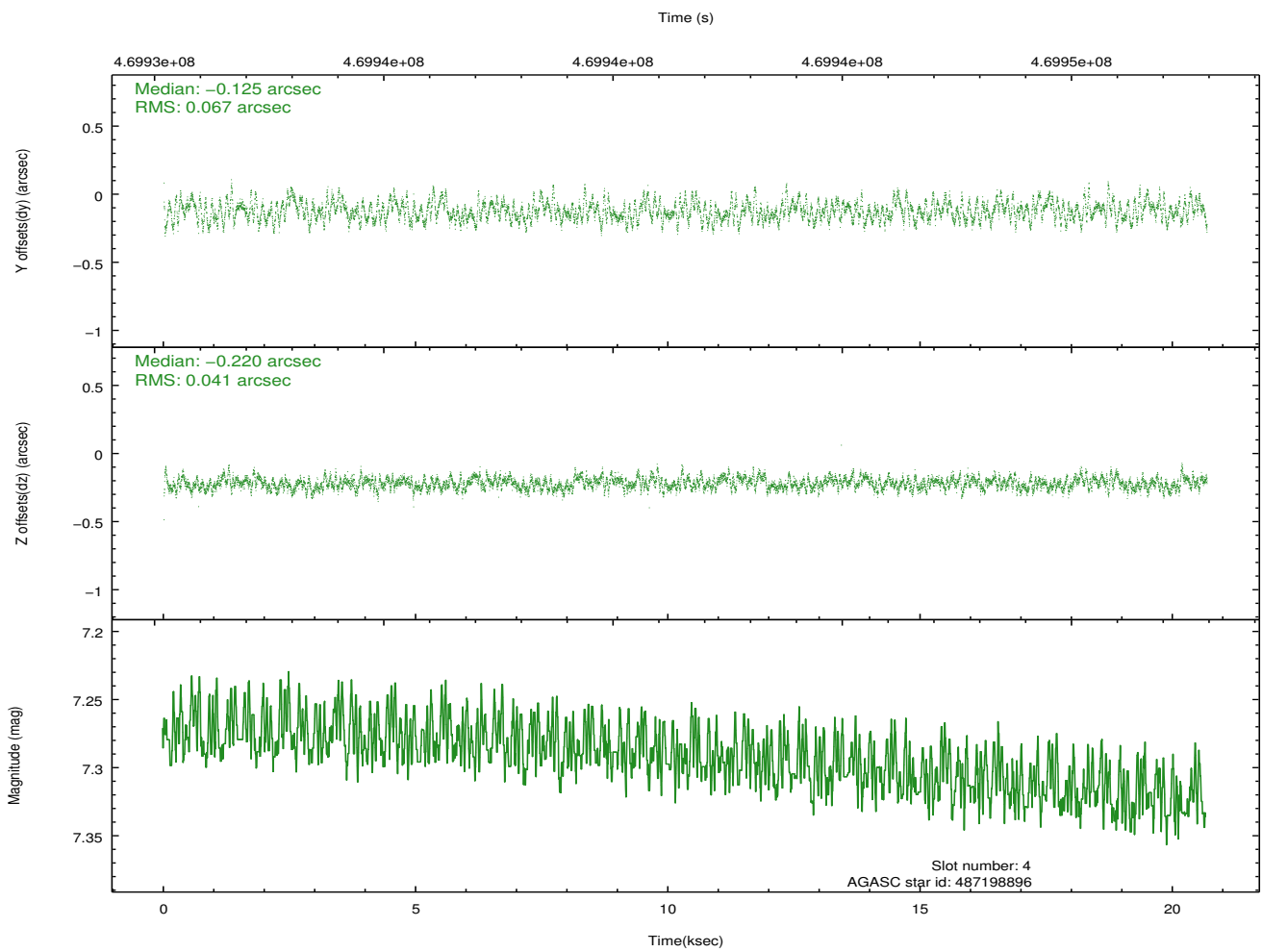
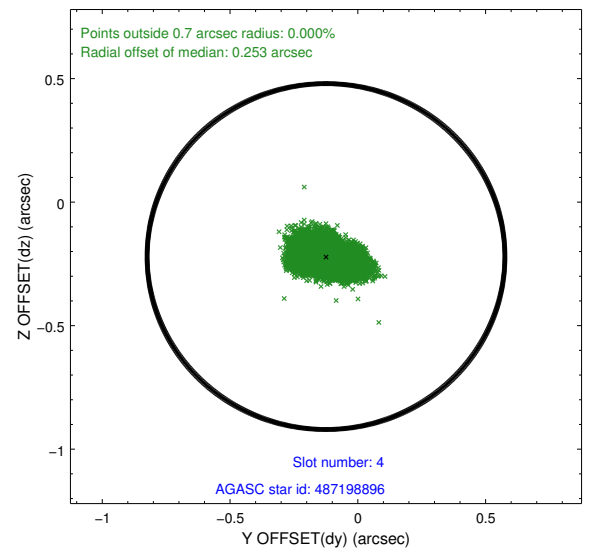
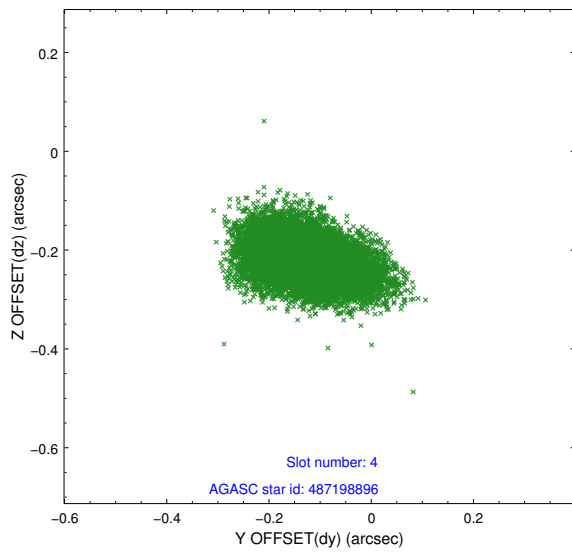
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.12	5044	0.072	-0.048	0.007	0.012	0.000000	0.000000	921.72	-839.91
1	FID		ACIS-I-5	7.11	5044	-0.269	0.056	0.008	0.014	0.000000	0.000000	-1826.63	1057.59
2	FID		ACIS-I-6	7.12	5044	0.105	0.062	0.009	0.015	0.000000	0.000000	387.11	1702.30
3	GUIDE	used	487195136	9.52	10065	-0.136	-0.028	0.120	0.199	58.914846	53.877945	1762.65	1382.01
4	GUIDE	used	487198896	7.29	10085	-0.125	-0.220	0.083	0.139	59.659200	53.988692	214.05	883.54
5	GUIDE	used	487200976	8.59	10081	-0.075	-0.189	0.091	0.140	59.647091	54.074996	260.84	575.29
6	GUIDE	used	487851880	8.11	10083	0.235	0.218	0.063	0.100	60.850967	54.723956	-2074.13	-1948.04
7	GUIDE	used	487858168	8.08	10083	0.101	0.224	0.068	0.106	60.468138	54.475181	-1352.84	-989.96

## 2.4 Star Slots

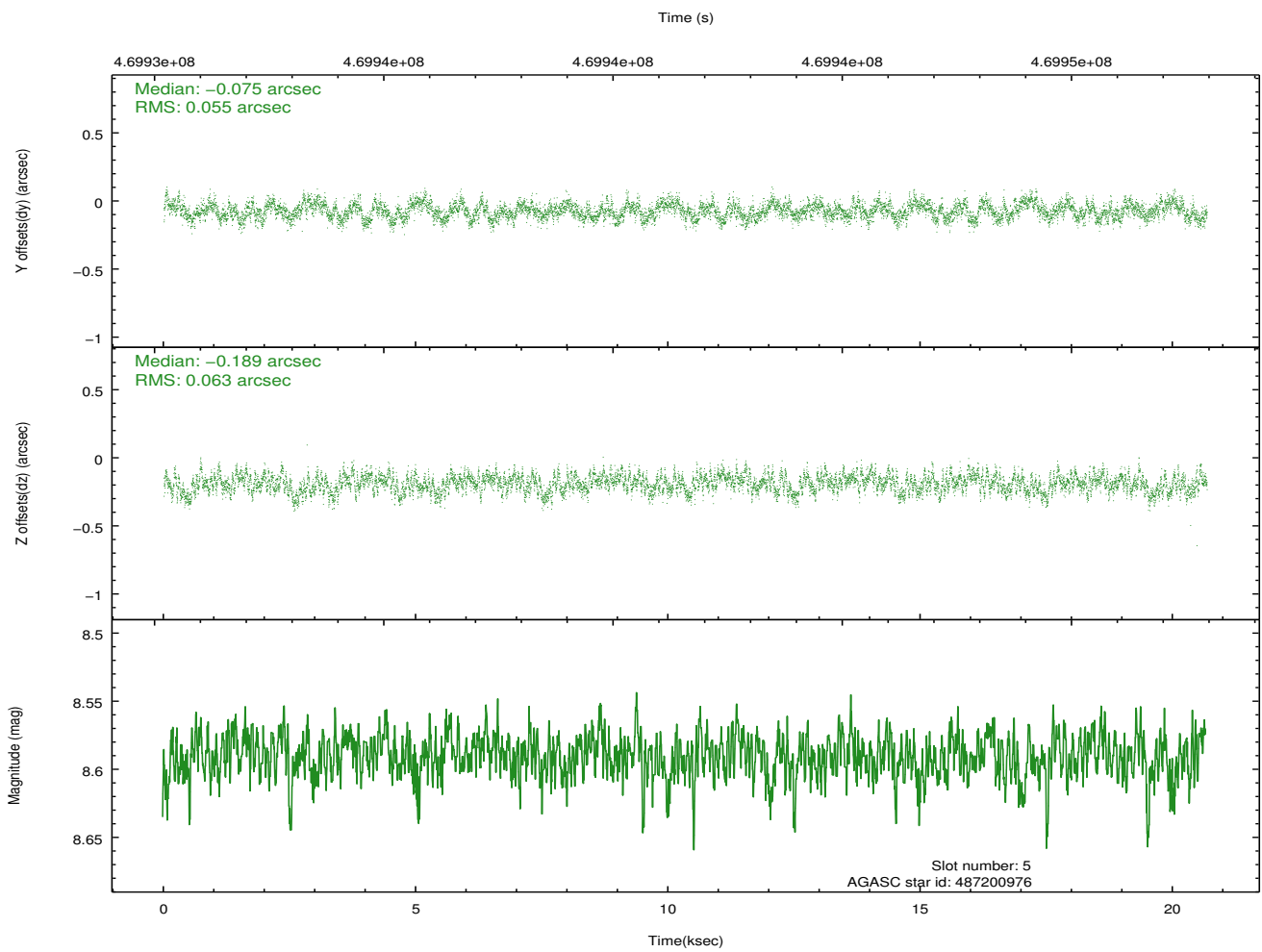
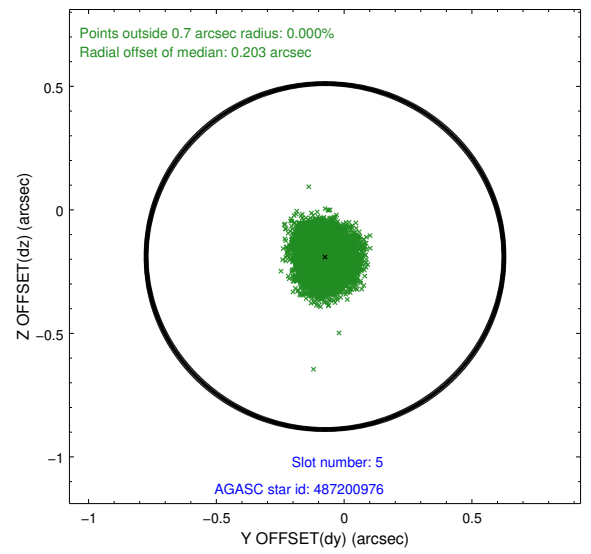
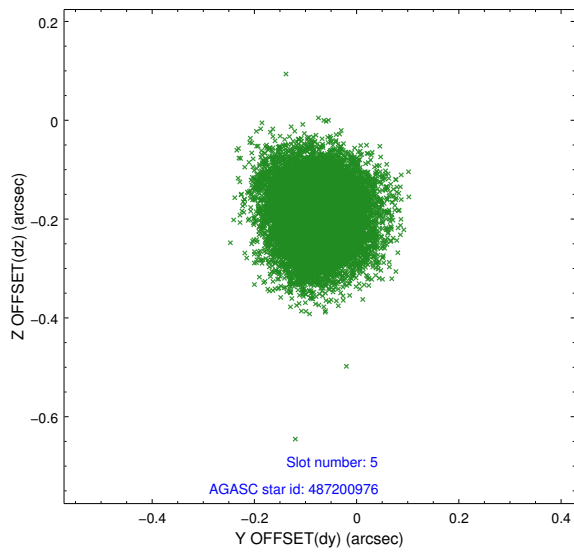
### 2.4.1 Slot 3



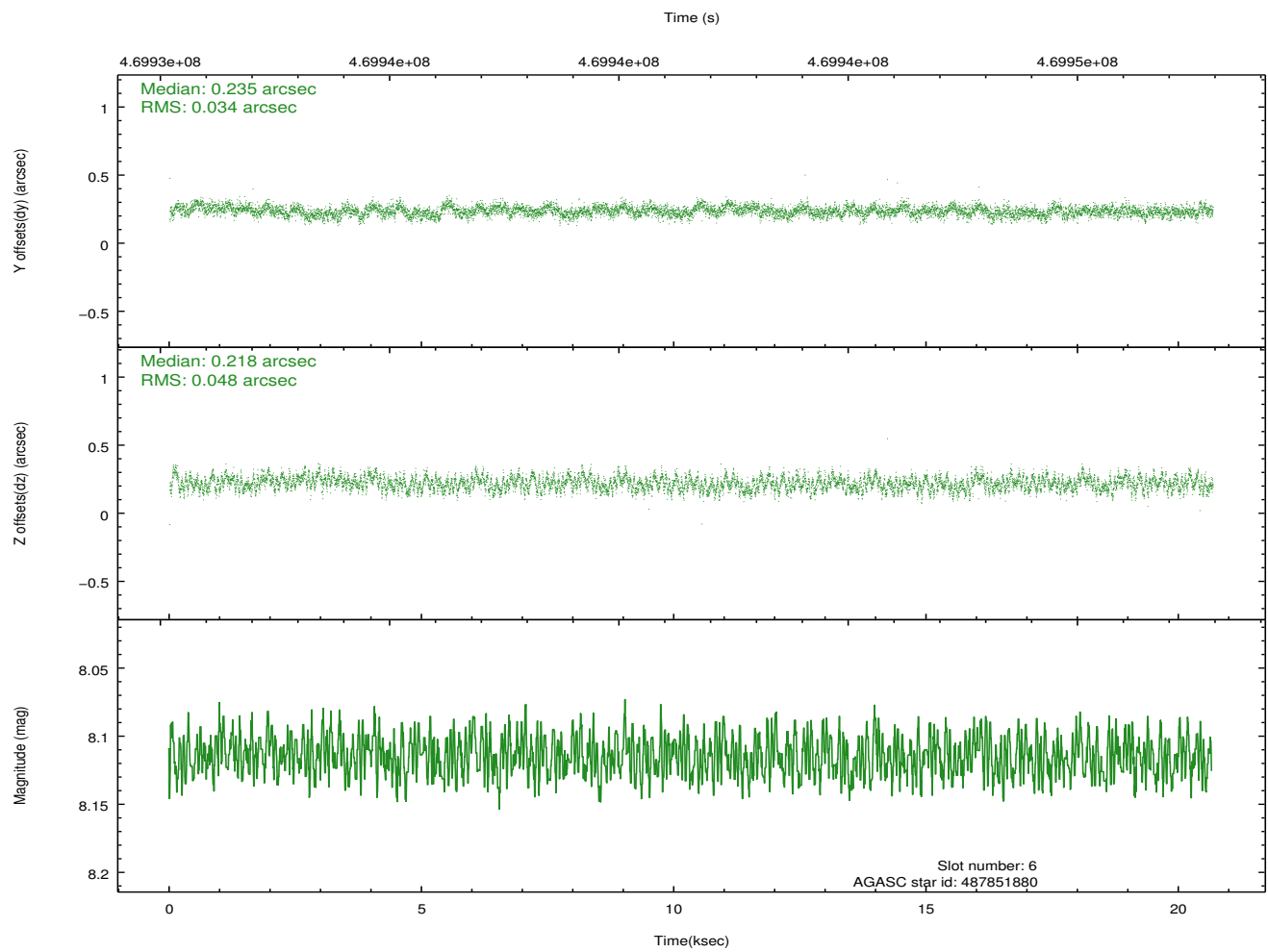
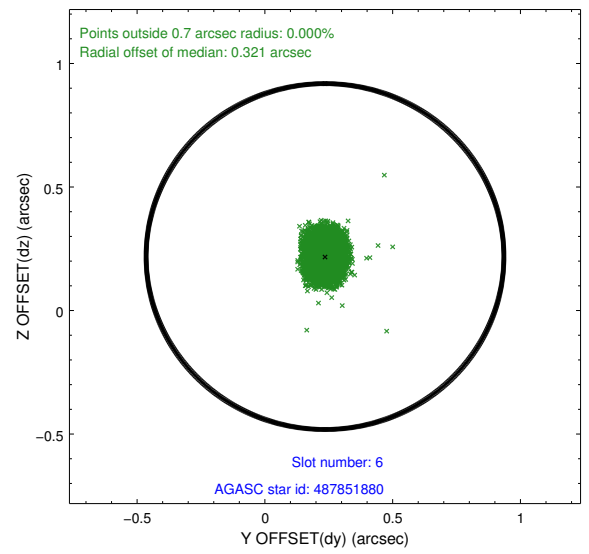
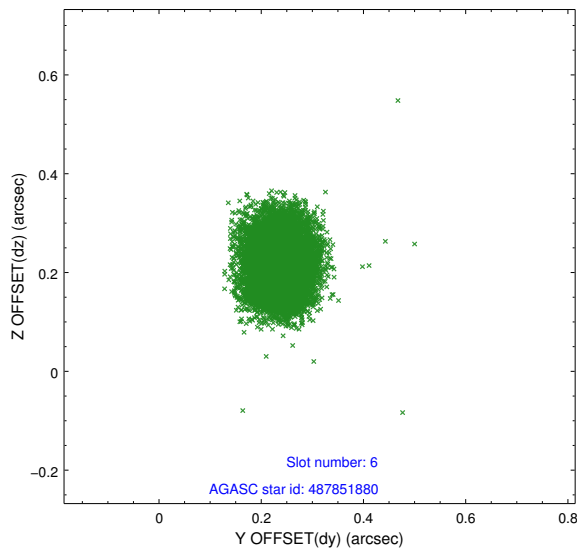
## 2.4.2 Slot 4



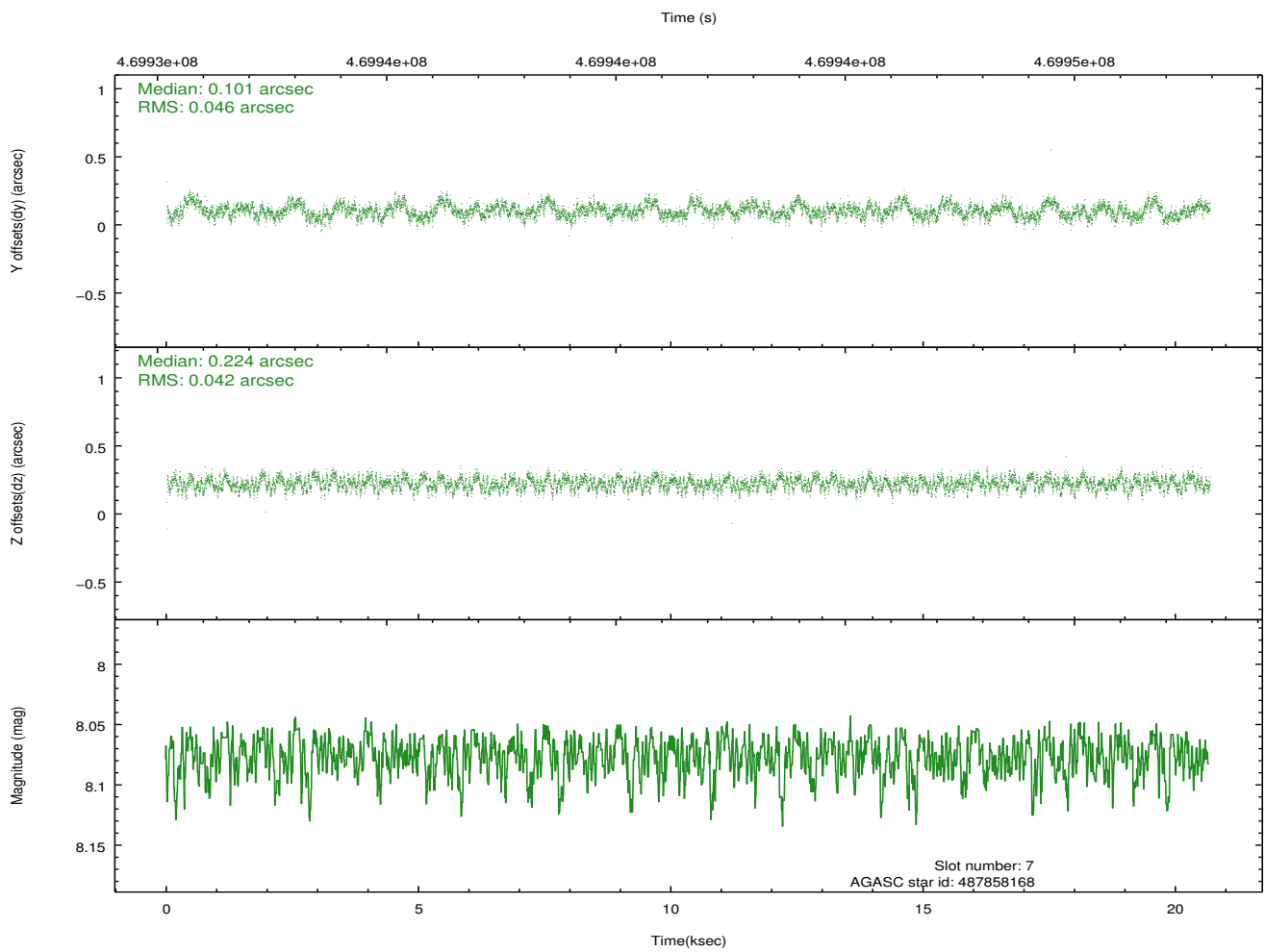
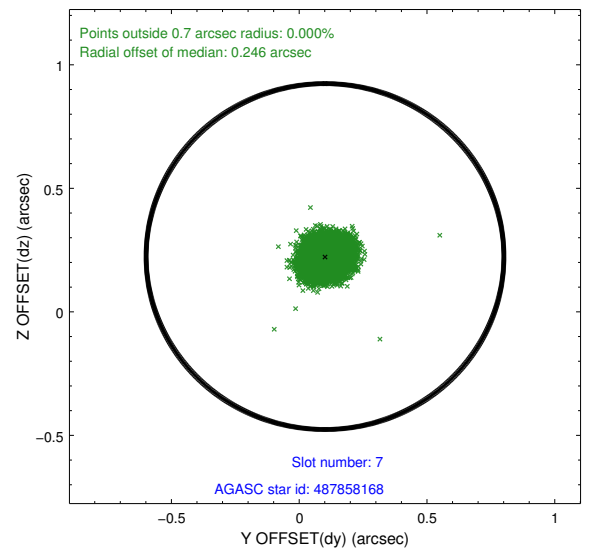
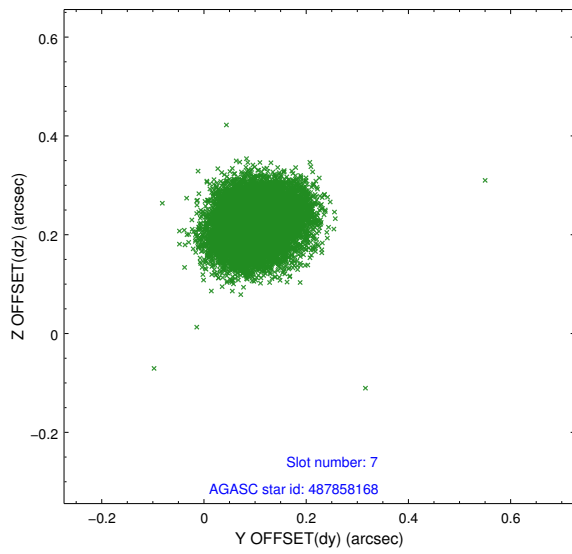
### 2.4.3 Slot 5



## 2.4.4 Slot 6

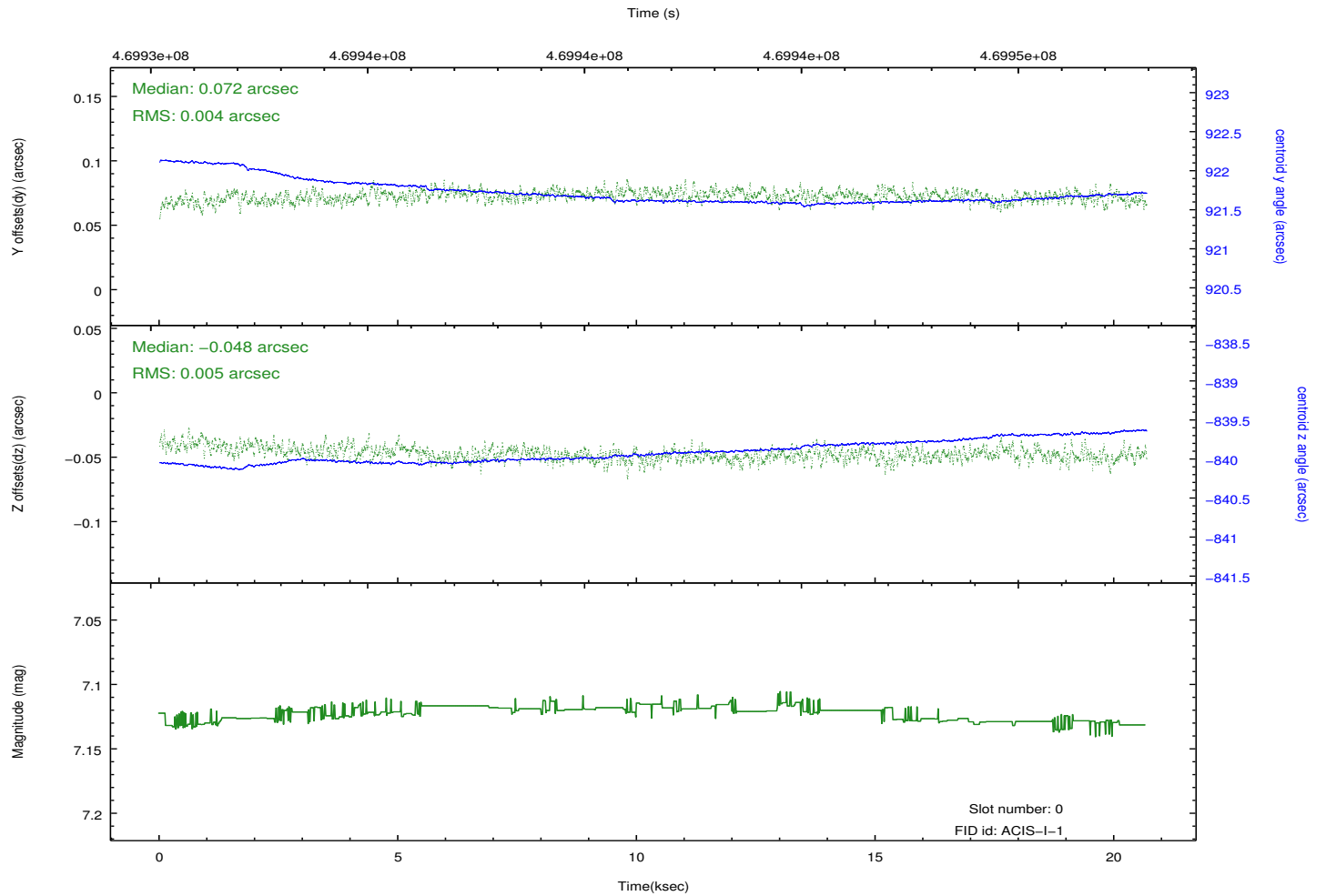
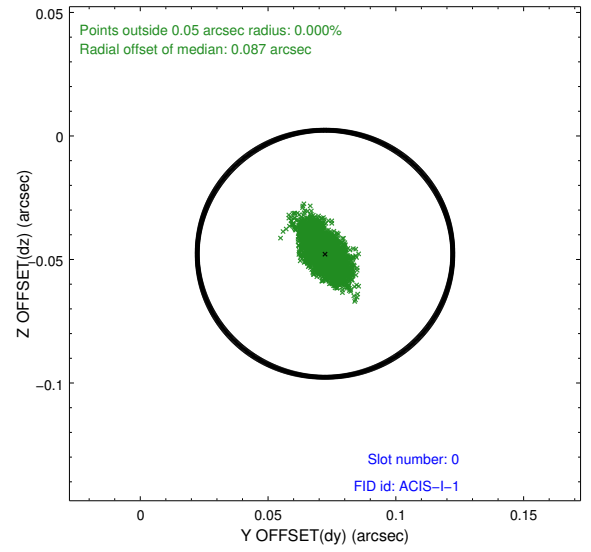
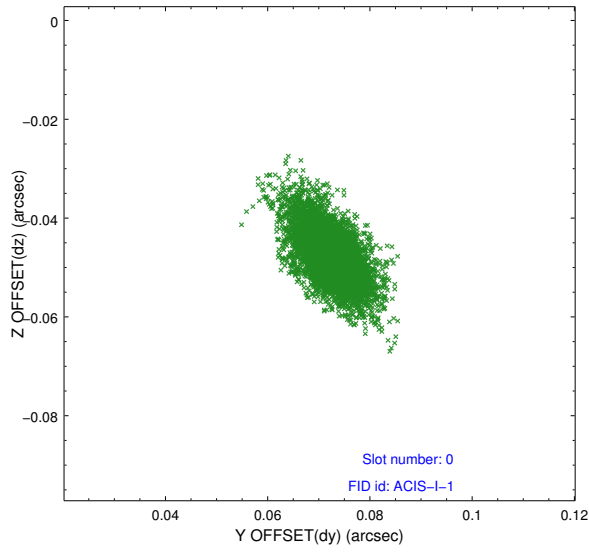


### 2.4.5 Slot 7

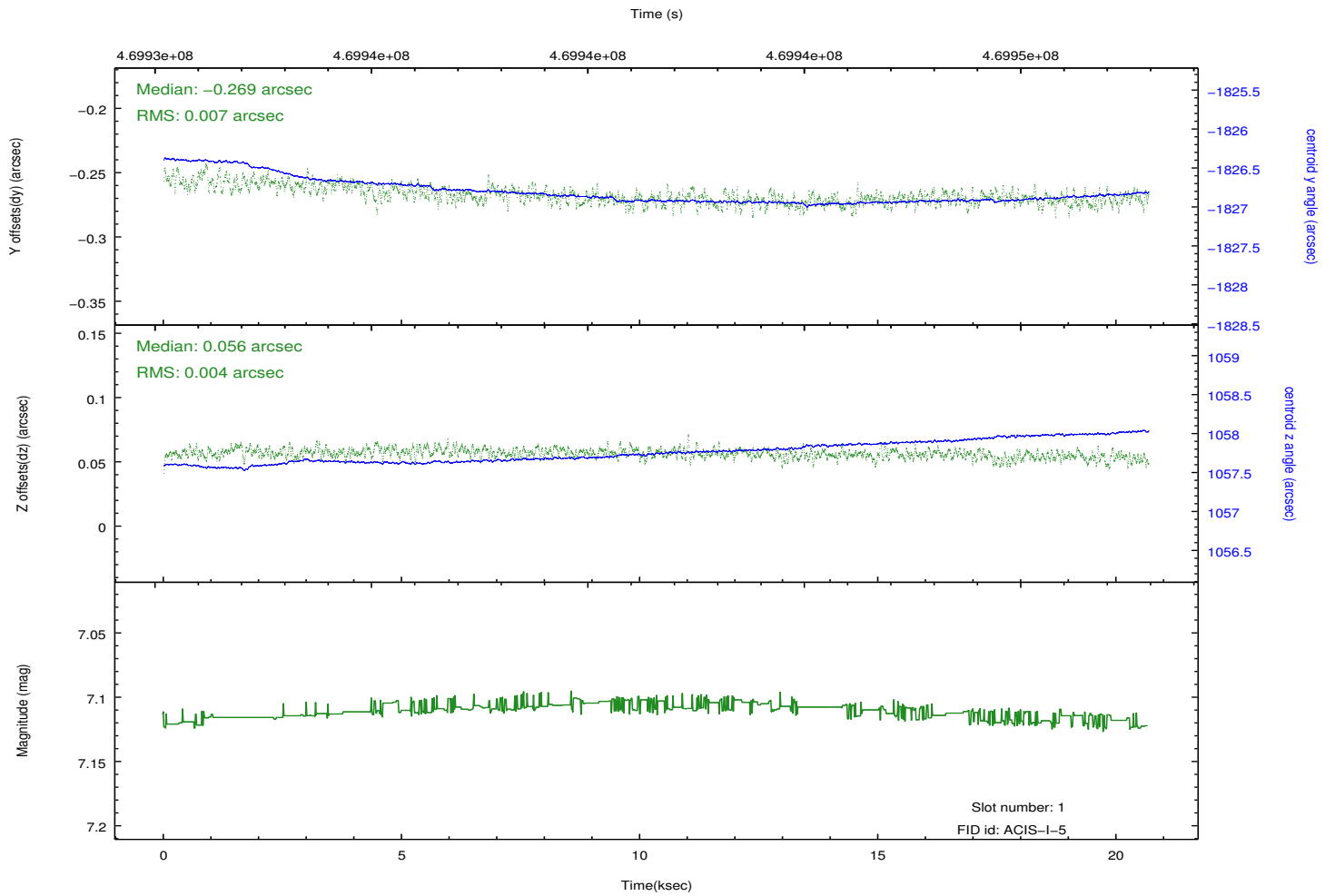
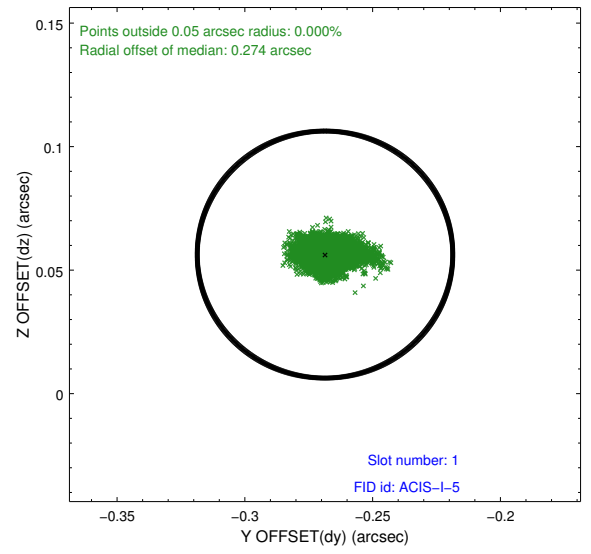
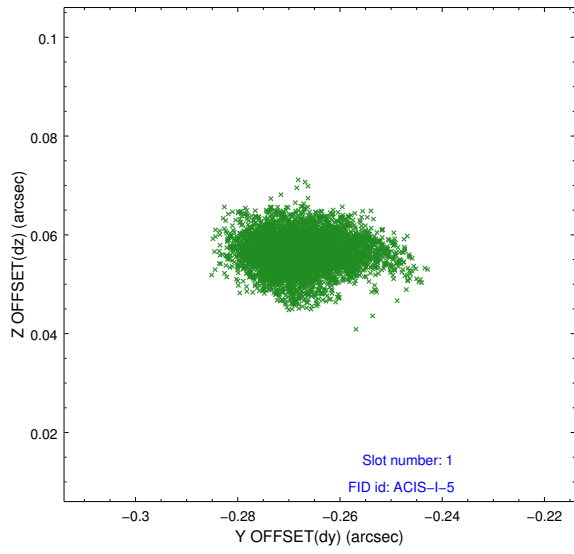


## 2.5 FID Slots

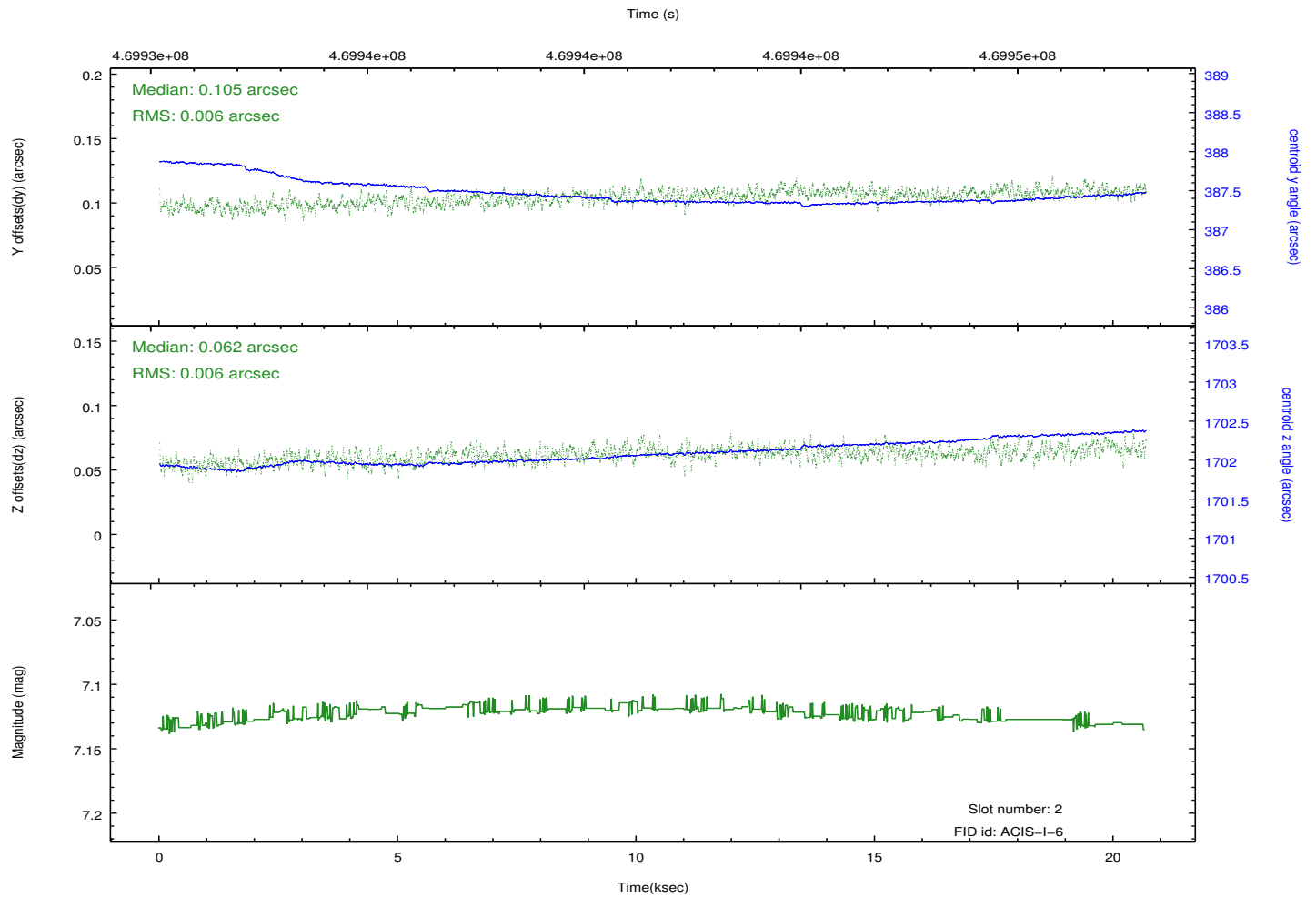
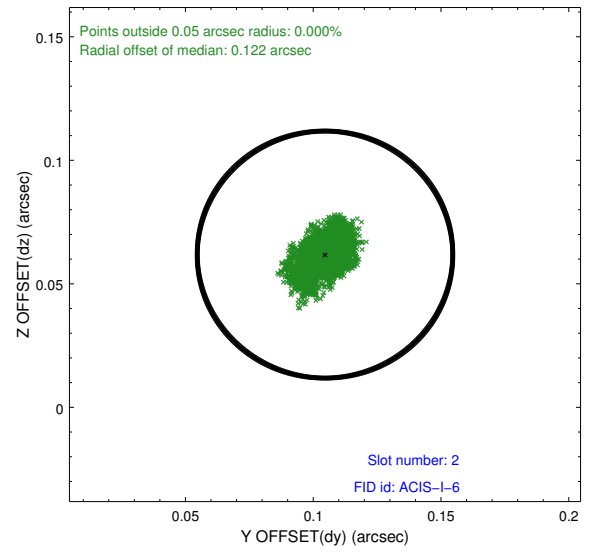
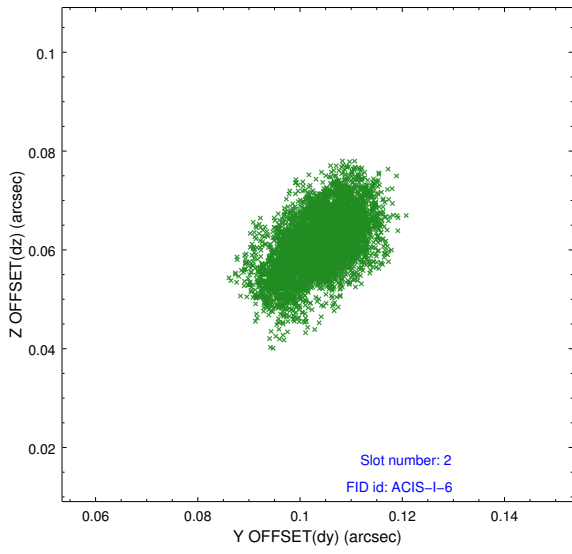
### 2.5.1 Slot 0



## 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)	2014.12.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.470399923801

## 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.