

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 14691 - L2 Version 2  
Chandra X-Ray Center

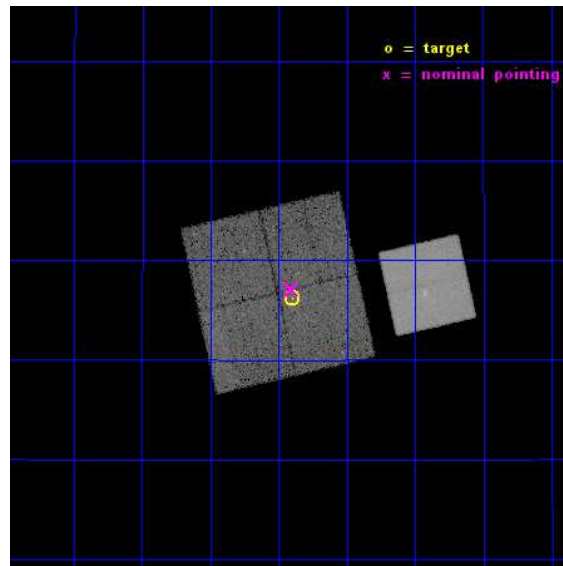
L2 Processing Date : Nov 29 2014

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# 1 Front

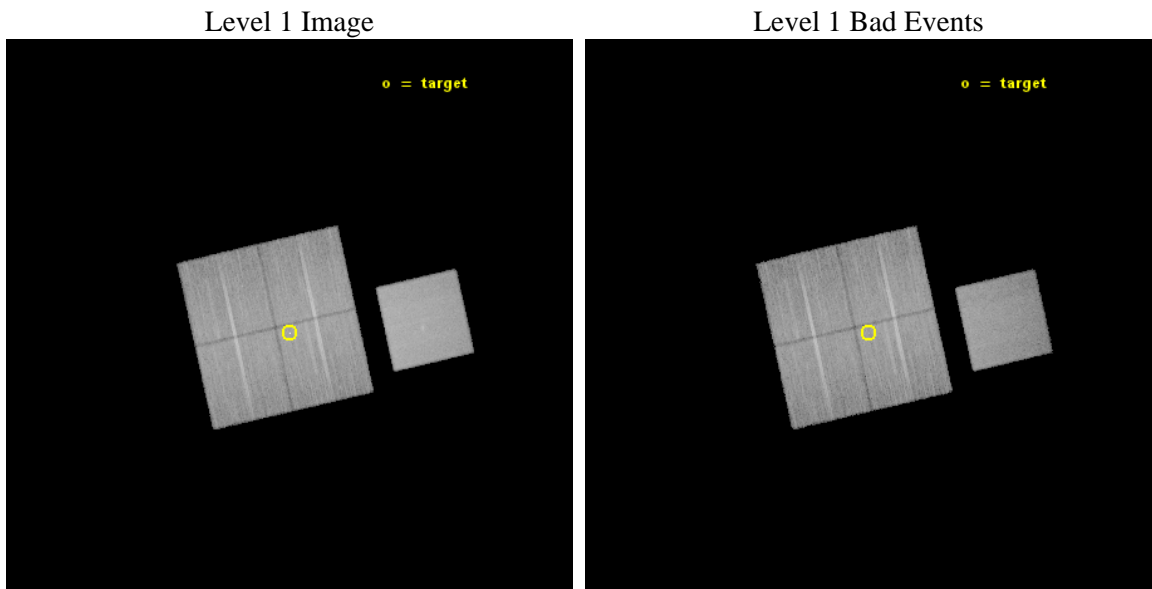
seq_num	501823	Sequence number
obs_id	14691	Observation id
title	A Legacy Study of the Relativistic Shocks of PWNe	Proposal title
observer	Prof. Roger Romani	Principal investigator
object	PSR J0633+1746	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	98.475833	Observer's specified target RA [deg]
dec_targ	17.77025	Observer's specified target Dec [deg]
ra_nom	98.476737067725	Nominal RA [deg]
dec_nom	17.784800685377	Nominal Dec [deg]
roll_nom	77.208407271525	Nominal Roll [deg]
revision	2	Processing version of data
ontime	37069.126693606	Sum of GTIs [s]
livetime	36584.79126346	Livetime [s]
ontime0	37065.862523258	Sum of GTIs [s]
ontime1	37065.903612792	Sum of GTIs [s]
ontime2	37062.803542793	Sum of GTIs [s]
ontime3	37069.126693606	Sum of GTIs [s]
ontime7	37069.16773361	Sum of GTIs [s]
l2events	188290	Number of level 2 events



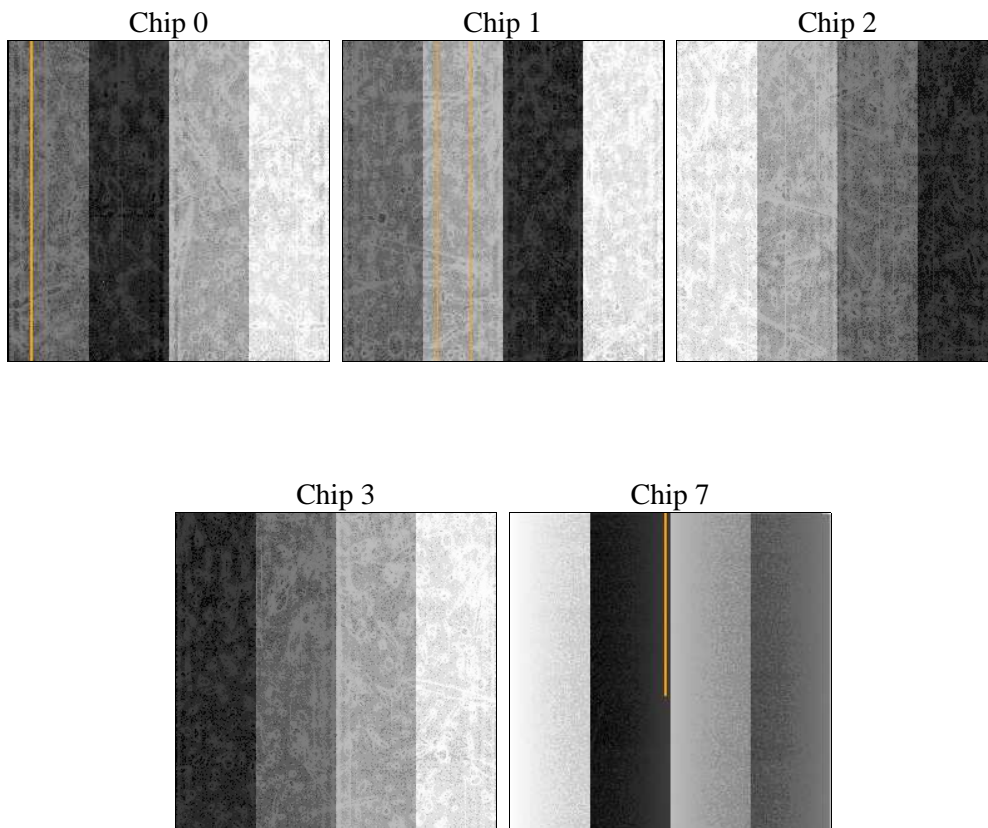
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37000.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	37069.126693606	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	37065.862523258	Sum of GTIs [s]
date	2014-11-30T01:11:07	Date and time of file creation	ontime1	37065.903612792	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	37062.803542793	Sum of GTIs [s]
			ontime3	37069.126693606	Sum of GTIs [s]
			ontime7	37069.16773361	Sum of GTIs [s]
			l1events	994441	Number of level 1 events

### 2.1.4 Events

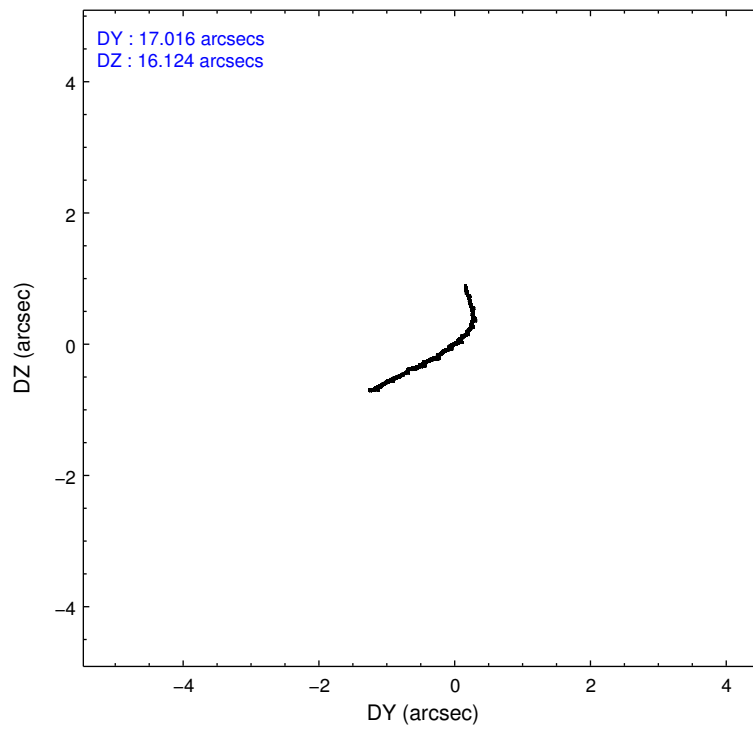
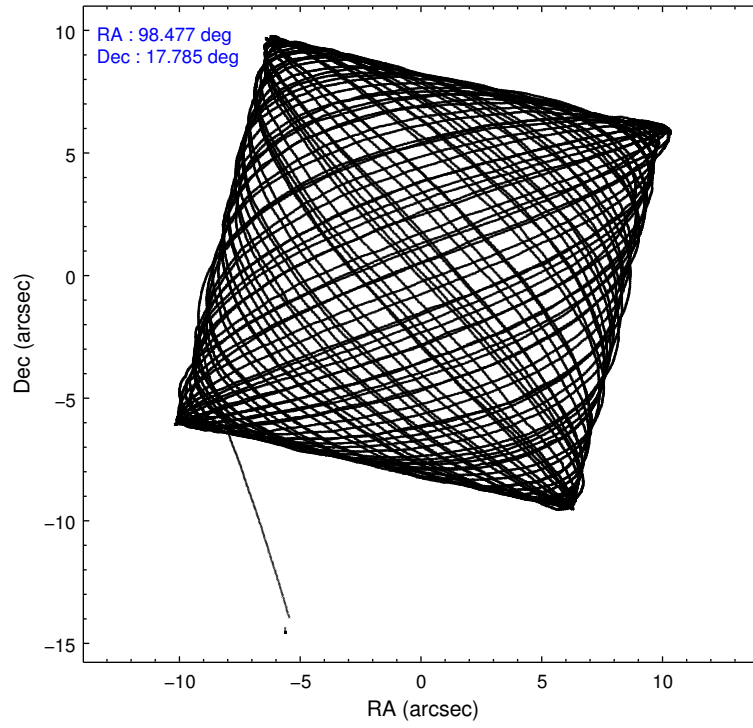
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 7
level 1 events	174728	179449	187630	191637	260997
rejected events	152286	155151	165721	168932	146931
rejected %	87%	86%	88%	88%	56%

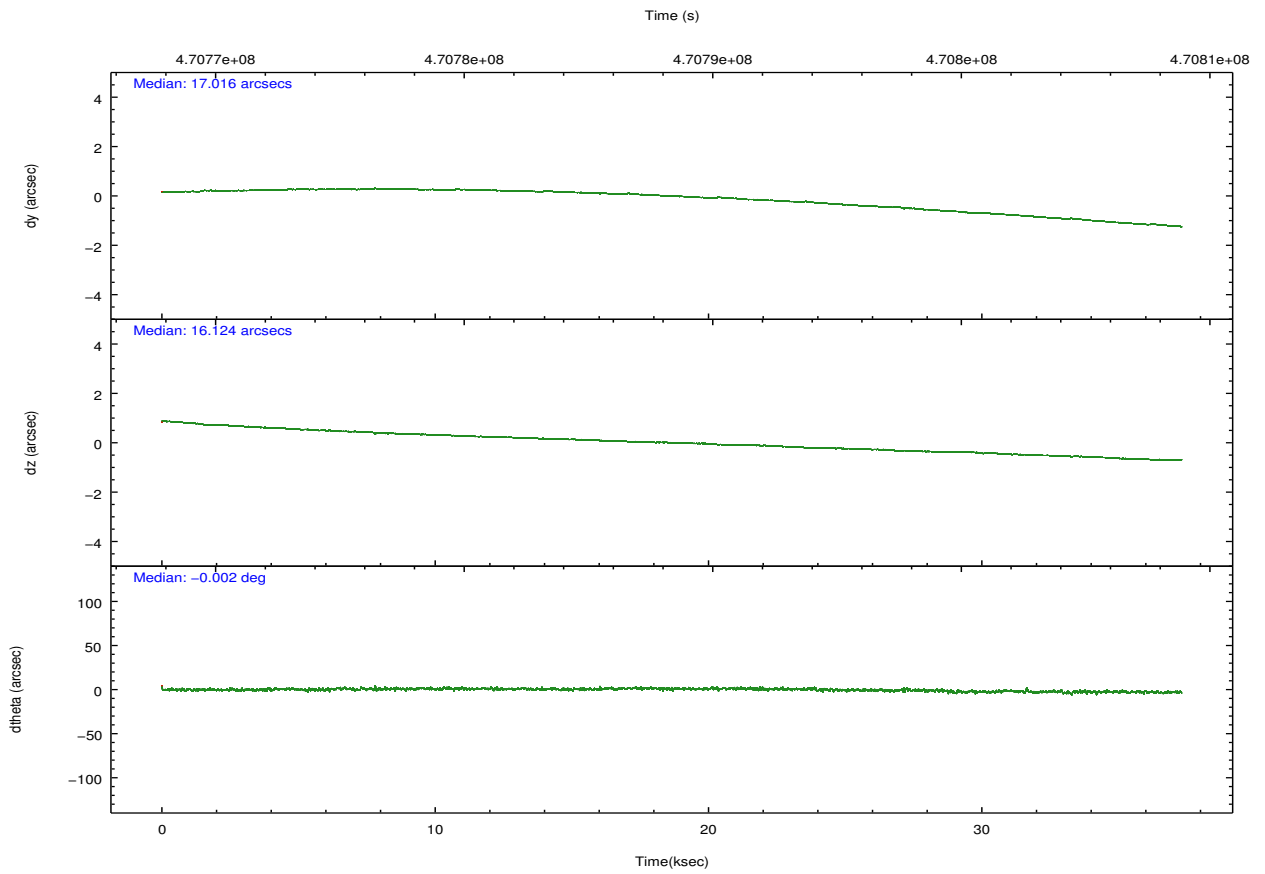
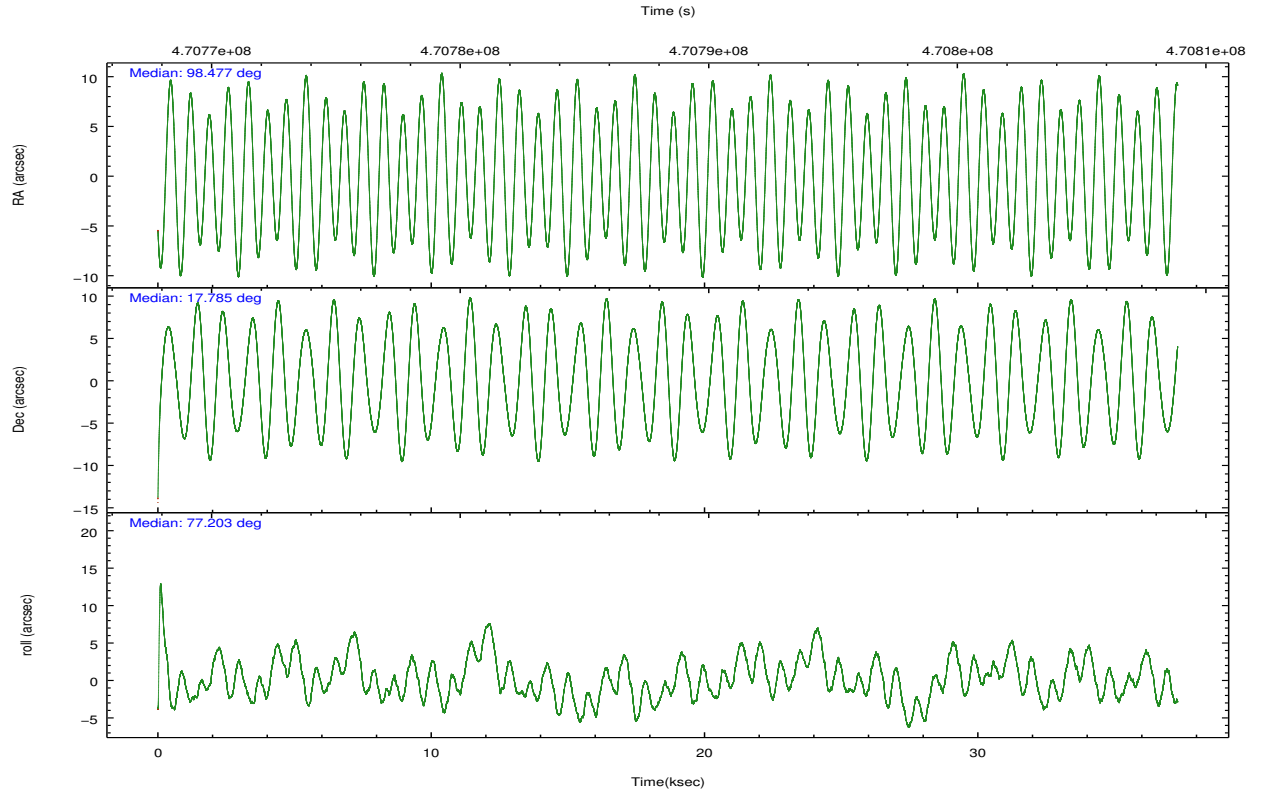
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 7
grade 0 events	7695	8428	7663	8472	9985
	4%	4%	4%	4%	3%
grade 1 events	107	99	97	124	331
	0%	0%	0%	0%	0%
grade 2 events	5388	5594	5341	4921	23269
	3%	3%	2%	2%	8%
grade 3 events	2379	2370	2209	2350	9690
	1%	1%	1%	1%	3%
grade 4 events	2230	2461	2297	2323	9726
	1%	1%	1%	1%	3%
grade 5 events	9035	9479	8401	10139	26931
	5%	5%	4%	5%	10%
grade 6 events	4751	5448	4402	4640	61400
	2%	3%	2%	2%	23%
grade 7 events	143143	145570	157220	158668	119665
	81%	81%	83%	82%	45%

## 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	98.485387	98.47673706772549	CCD I2 on	Y	Y
[deg] Pointing Dec	17.758567	17.78480068537719	CCD I3 on	Y	Y
[deg] Pointing Roll	76.997085	77.20840727152464	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	-231.252463	-231.254149860981	CCD S3 on	O1	Y
[mm] SIM translation stage offset	-2.34	-2.338303141948671	CCD S4 on	N	N
[s] Observation start time (MET)	470770008.184000	470769007.51287	CCD S5 on	N	N
Observation start date	2012-12-01T17:25:41	2012-12-01T17:10:07	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	470807008.184000	470808437.21499	On-chip summing requested	N	N
Observation end date	2012-12-02T03:42:21	2012-12-02T04:07:17	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



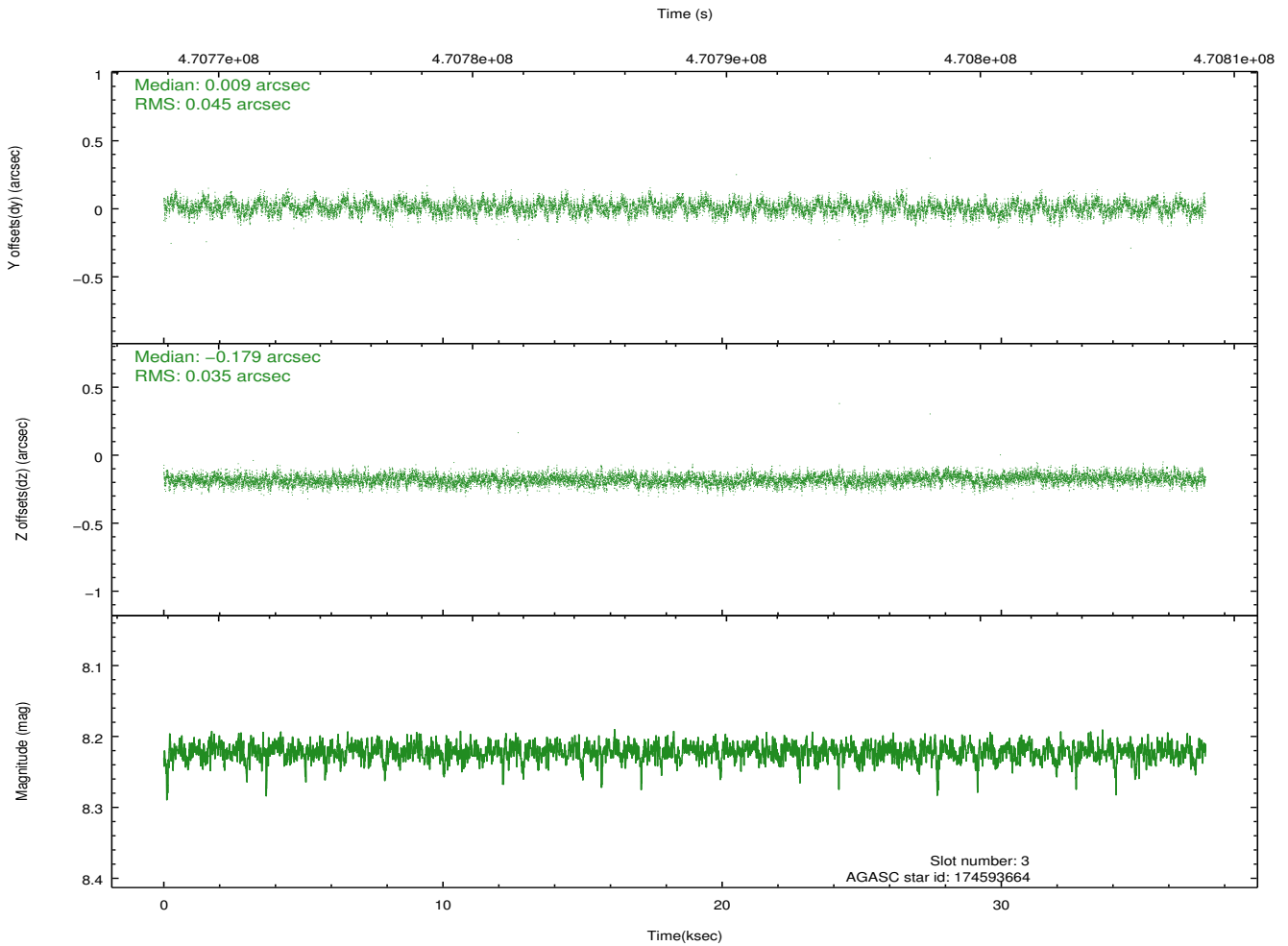
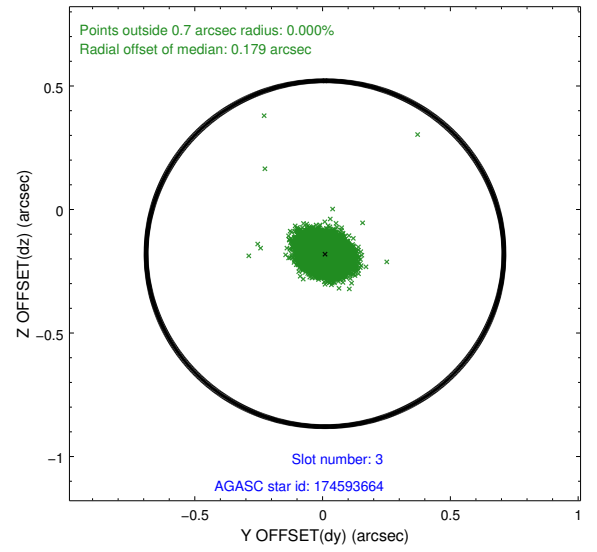
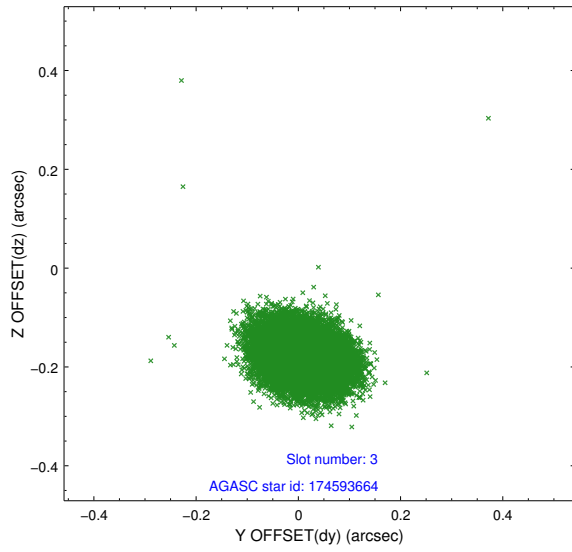


### Slot Statistics

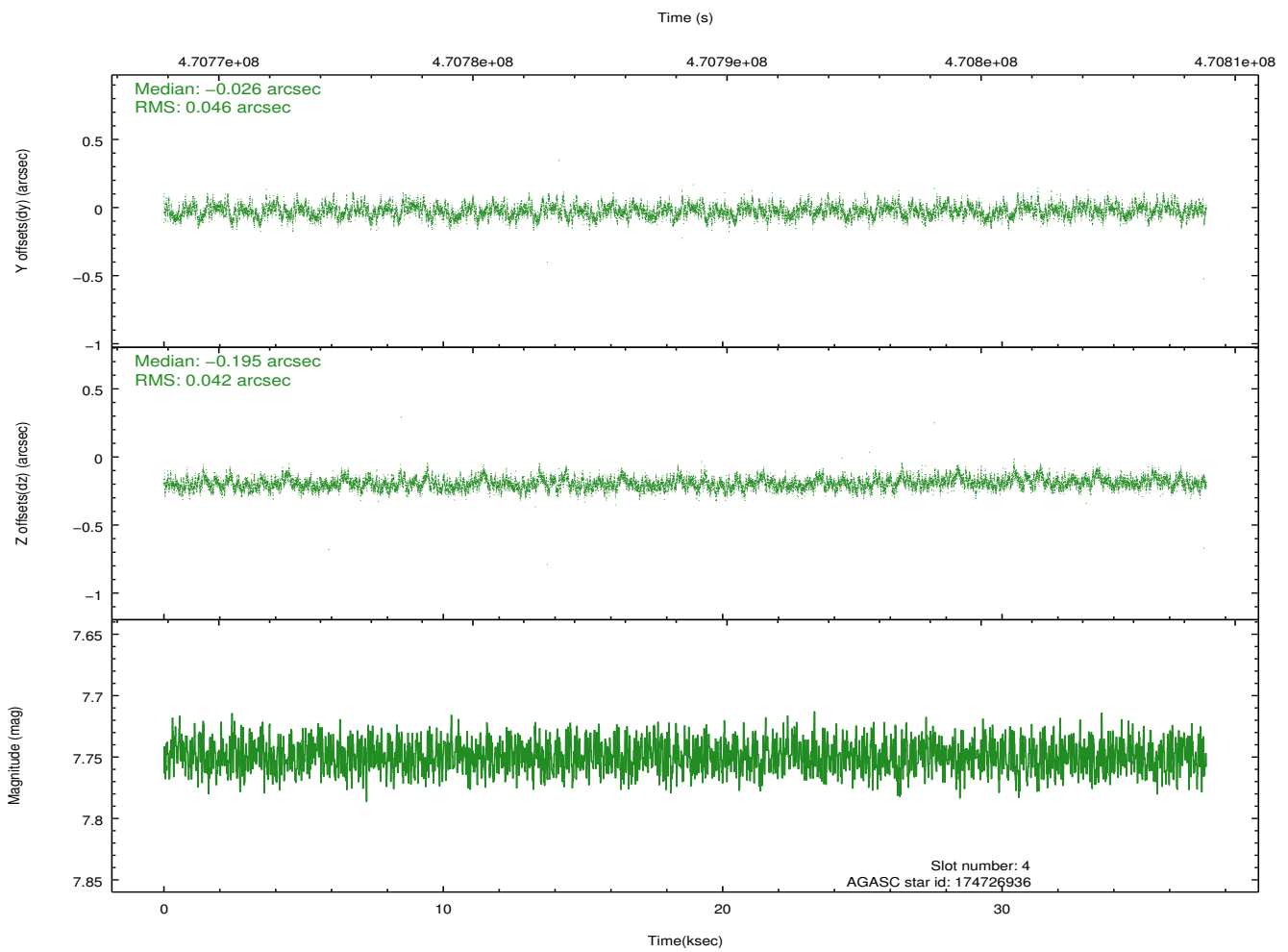
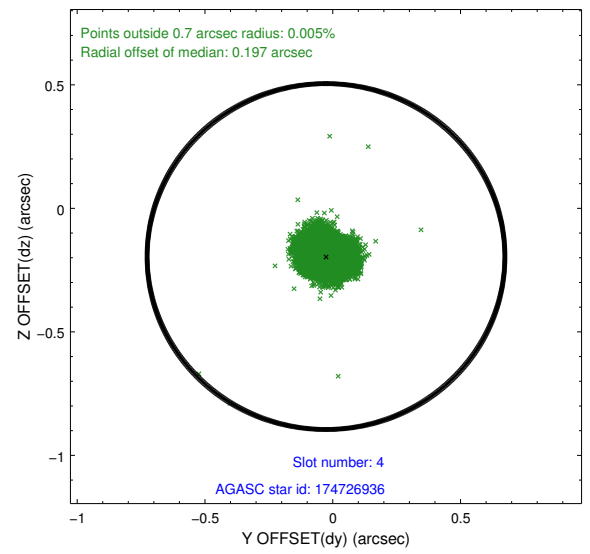
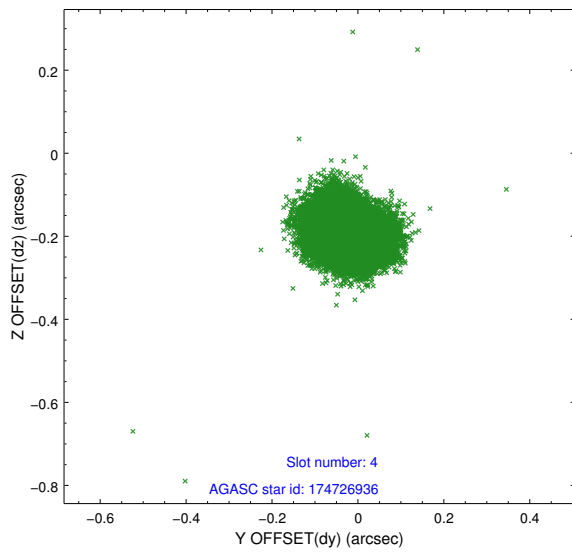
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.13	9100	-0.006	0.022	0.015	0.028	0.000000	0.000000	922.53	-887.67
1	FID		ACIS-I-2	7.06	9099	-0.227	-0.088	0.013	0.022	0.000000	0.000000	-771.89	-893.92
2	FID		ACIS-I-4	7.06	9100	0.133	0.133	0.013	0.020	0.000000	0.000000	2142.41	1012.51
3	GUIDE	used	174593664	8.22	18197	0.009	-0.179	0.060	0.098	97.965949	17.333165	-1891.32	1395.11
4	GUIDE	used	174726936	7.75	18199	-0.026	-0.195	0.066	0.107	98.009571	17.665063	-693.42	1514.76
5	GUIDE	used	174729584	9.08	18176	0.154	0.367	0.118	0.179	98.936877	17.044487	-2152.83	-2091.83
6	GUIDE	used	174730168	8.12	18198	-0.001	0.008	0.081	0.132	98.803227	18.065078	1319.40	-812.38
7	GUIDE	used	174721496	9.17	18023	-0.142	-0.002	0.115	0.181	98.690774	18.351692	2239.01	-202.98

## 2.4 Star Slots

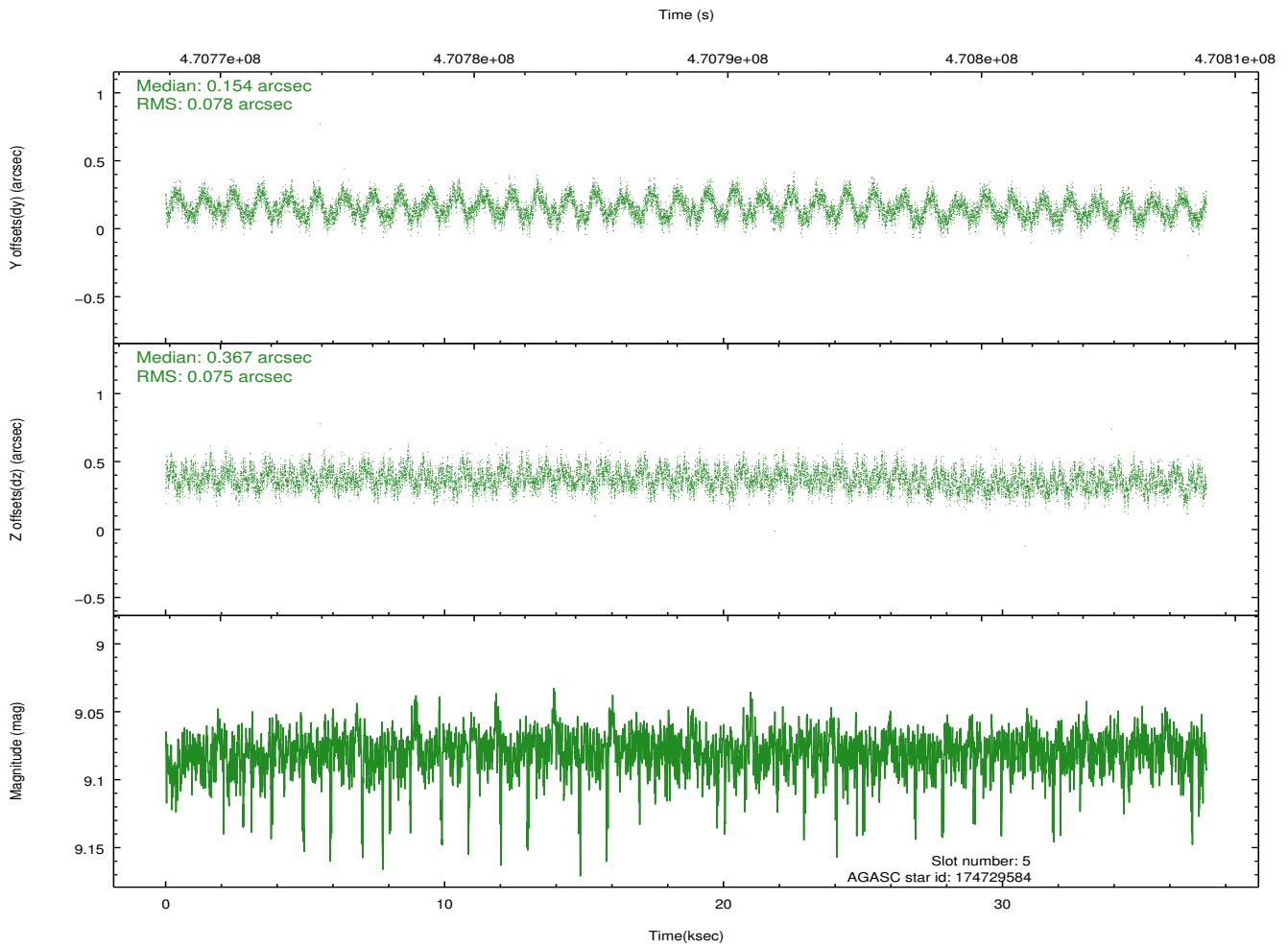
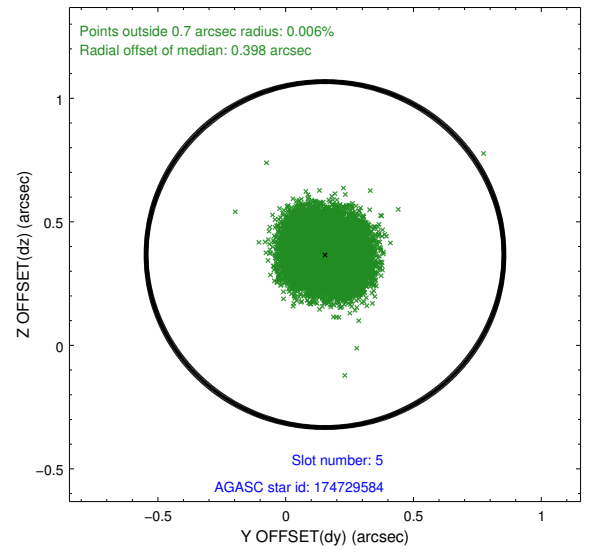
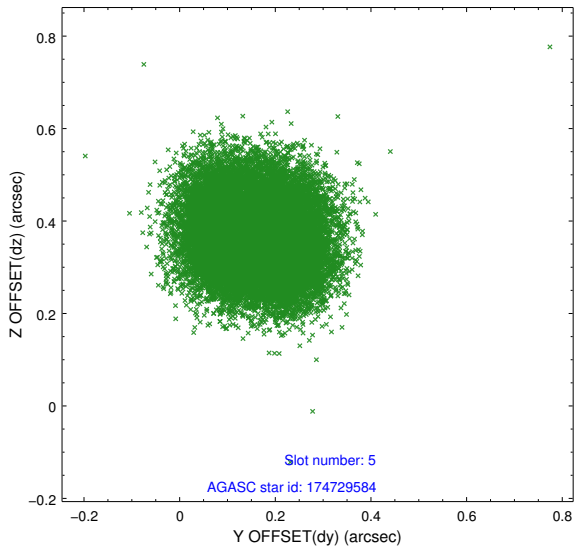
### 2.4.1 Slot 3



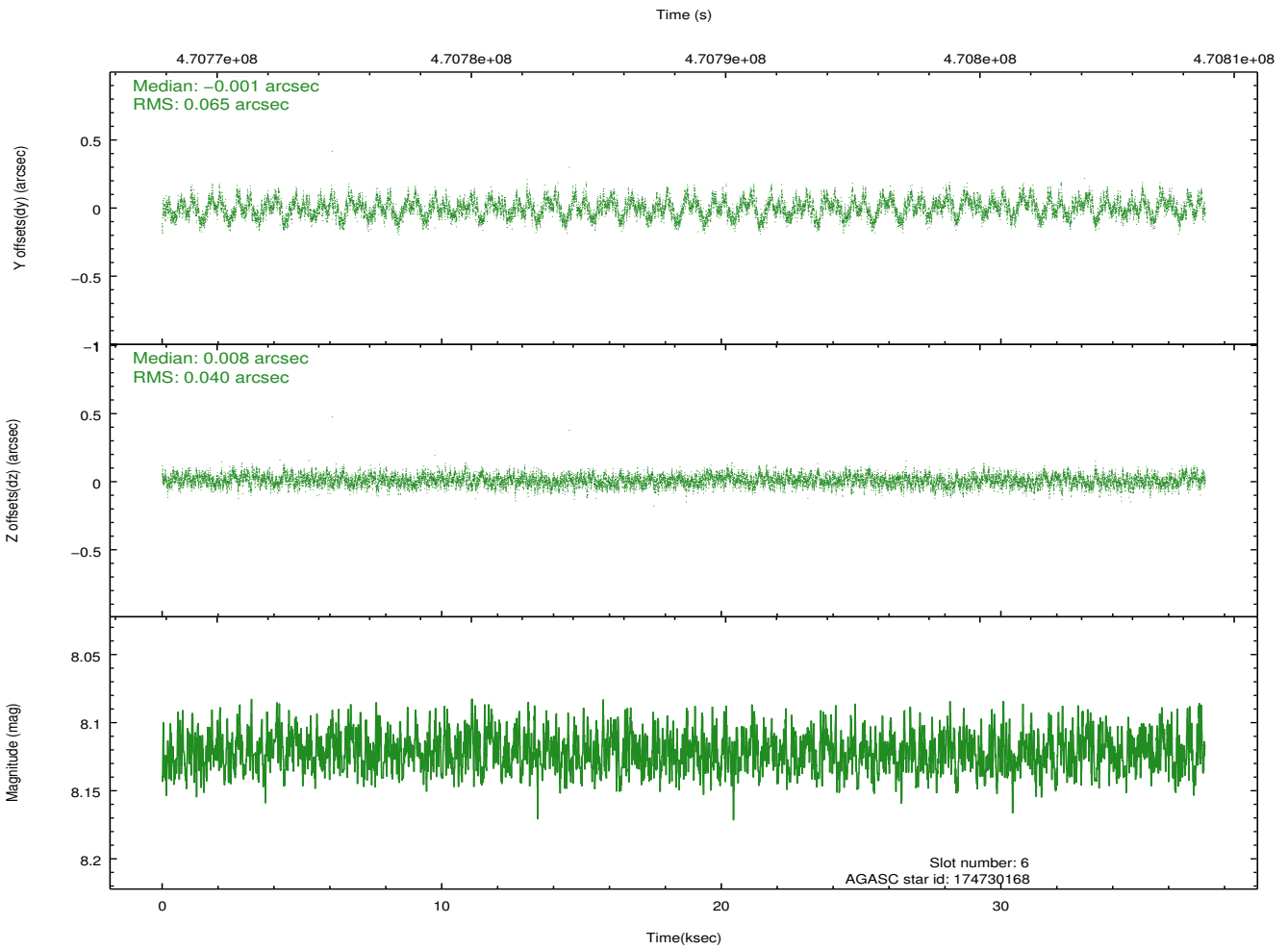
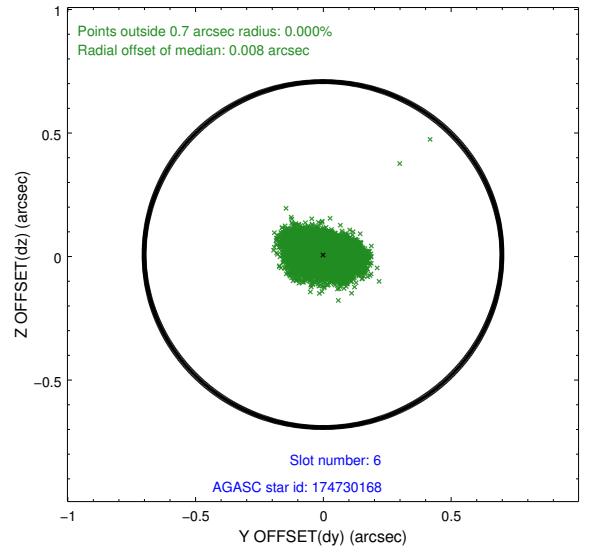
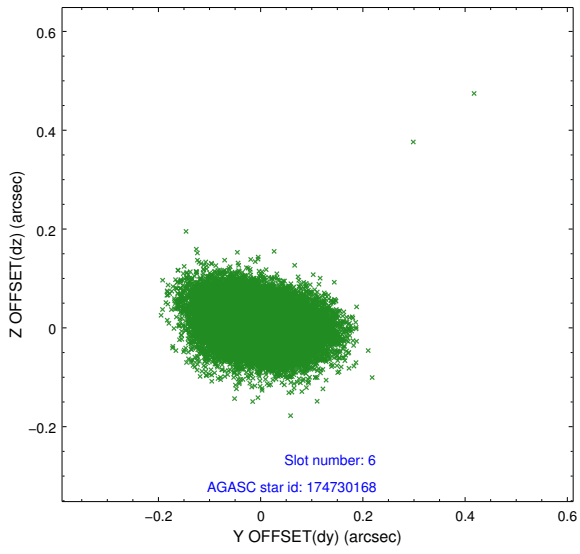
## 2.4.2 Slot 4



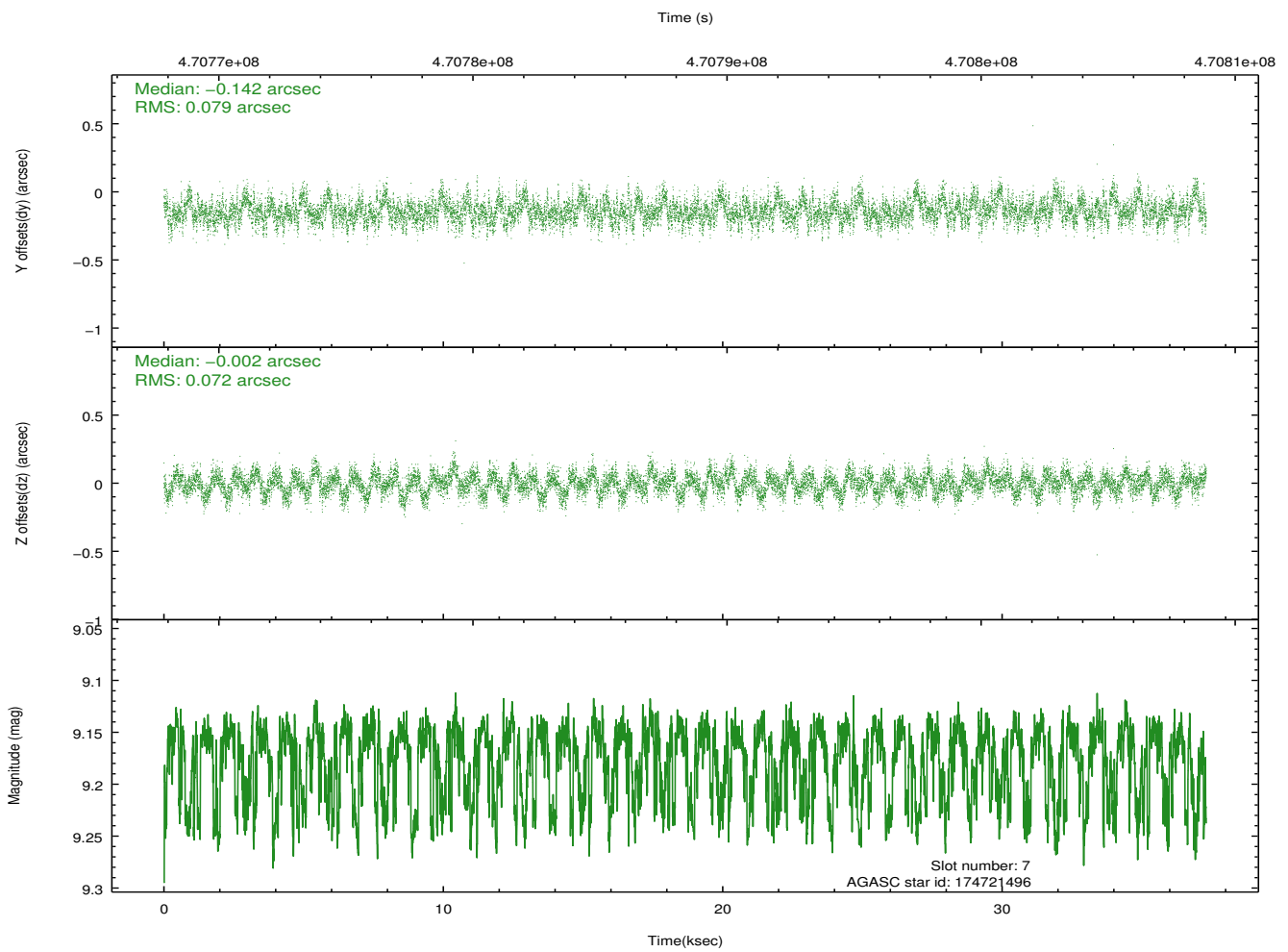
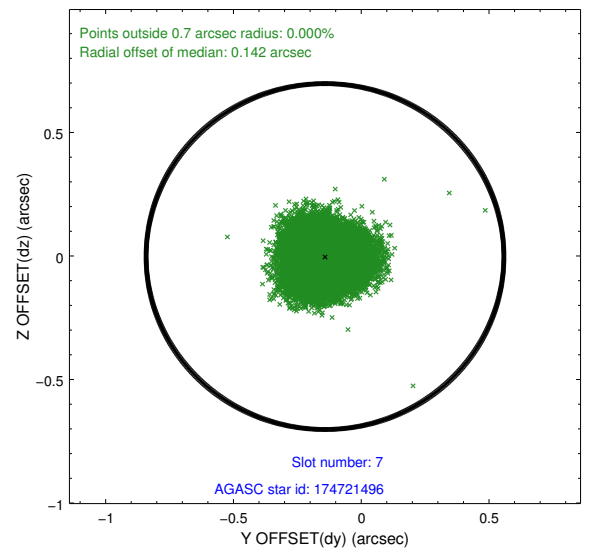
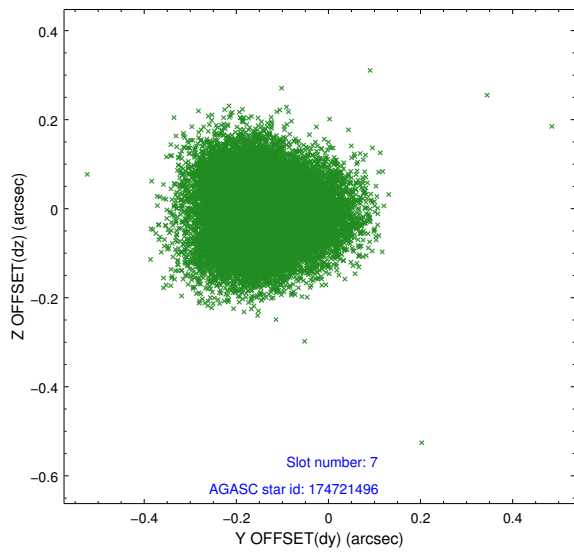
### 2.4.3 Slot 5



### 2.4.4 Slot 6

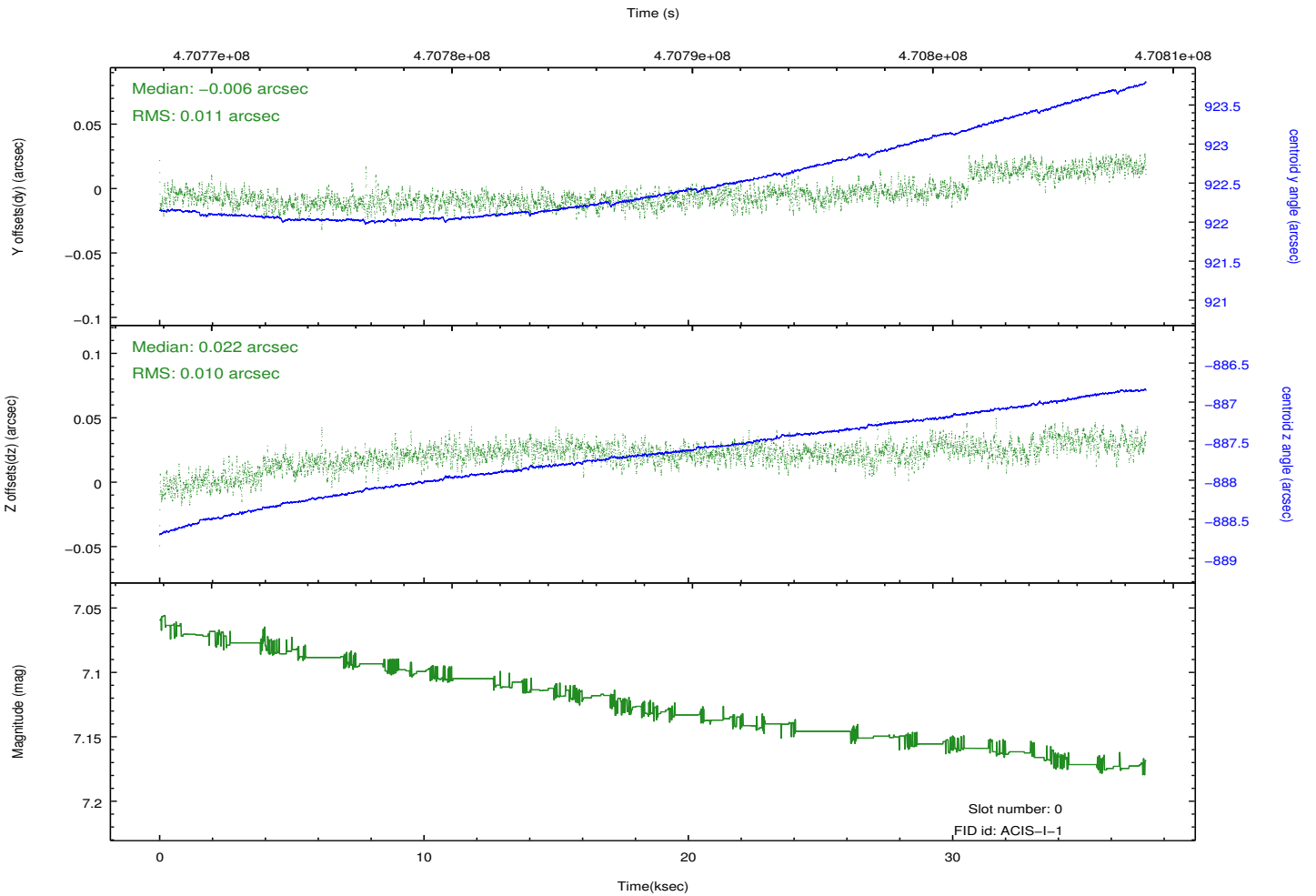
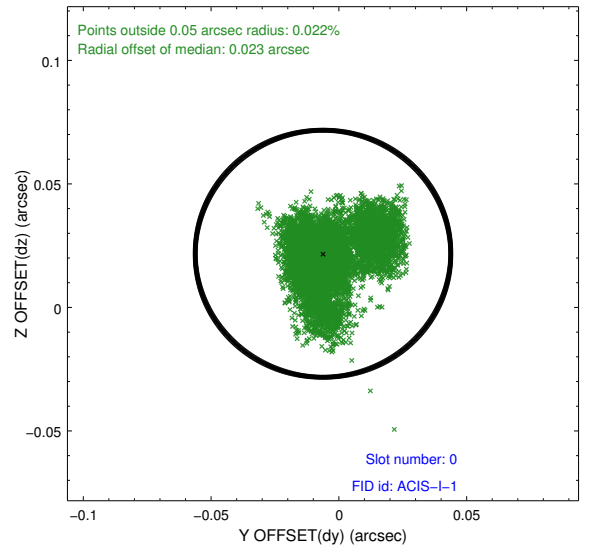
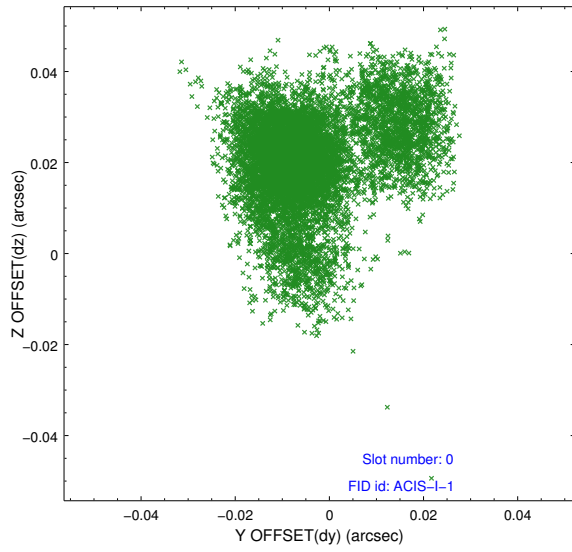


## 2.4.5 Slot 7

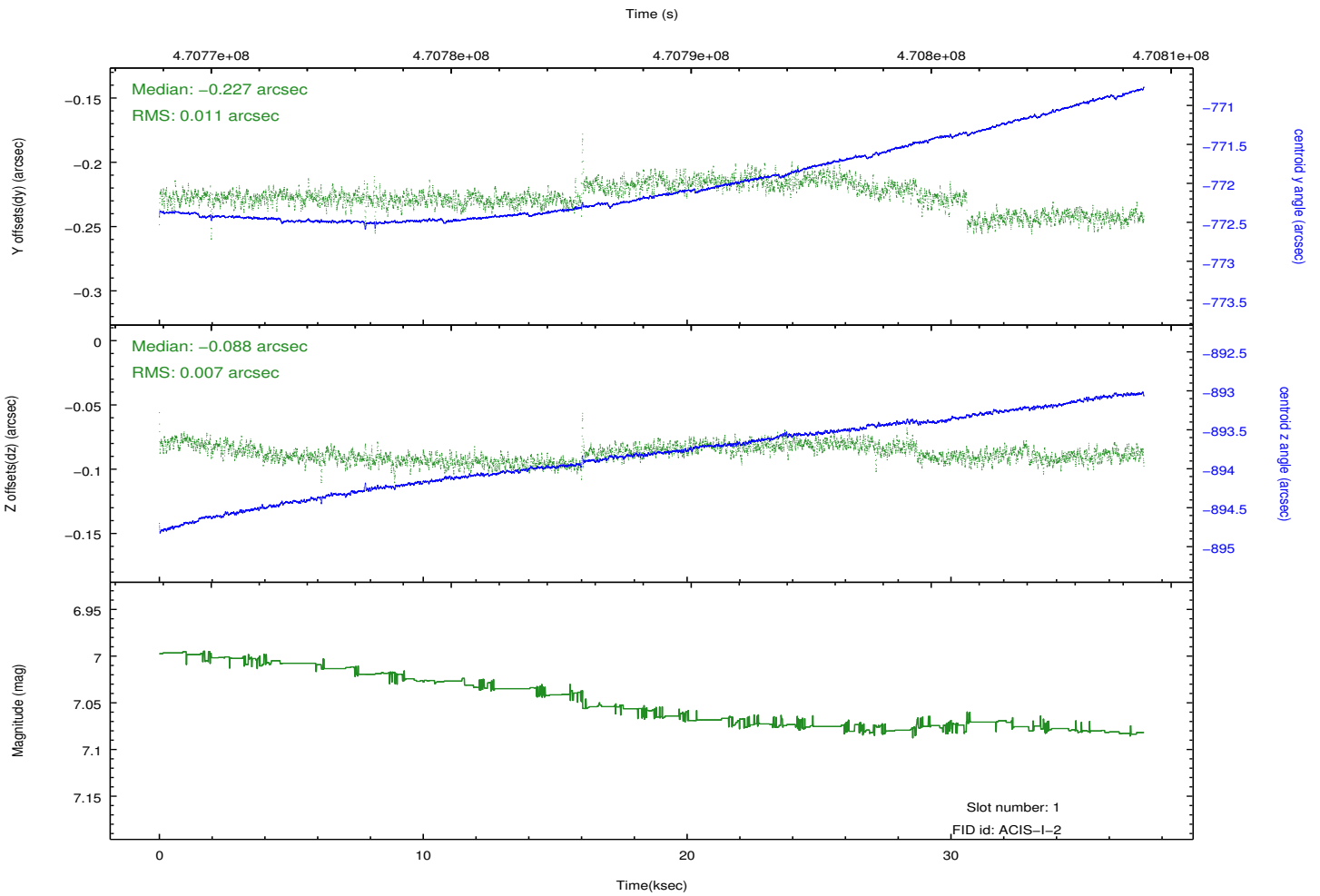
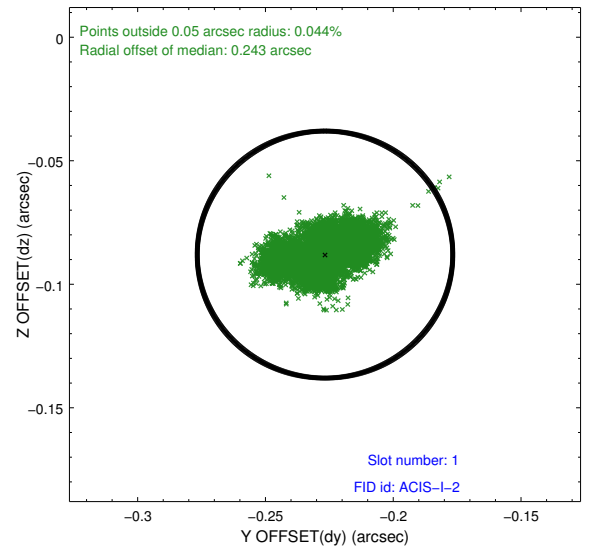
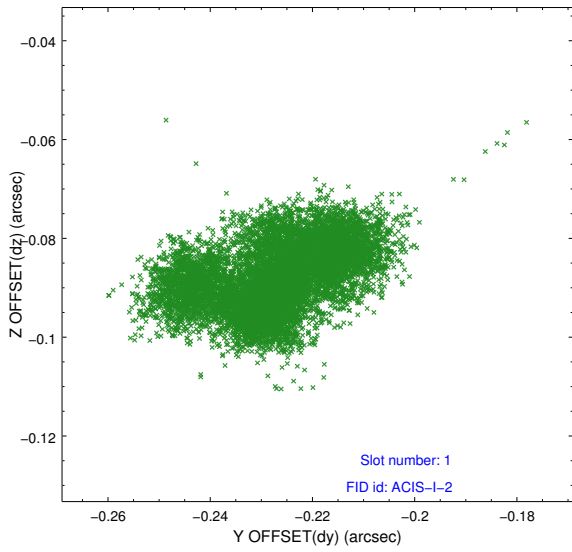


## 2.5 FID Slots

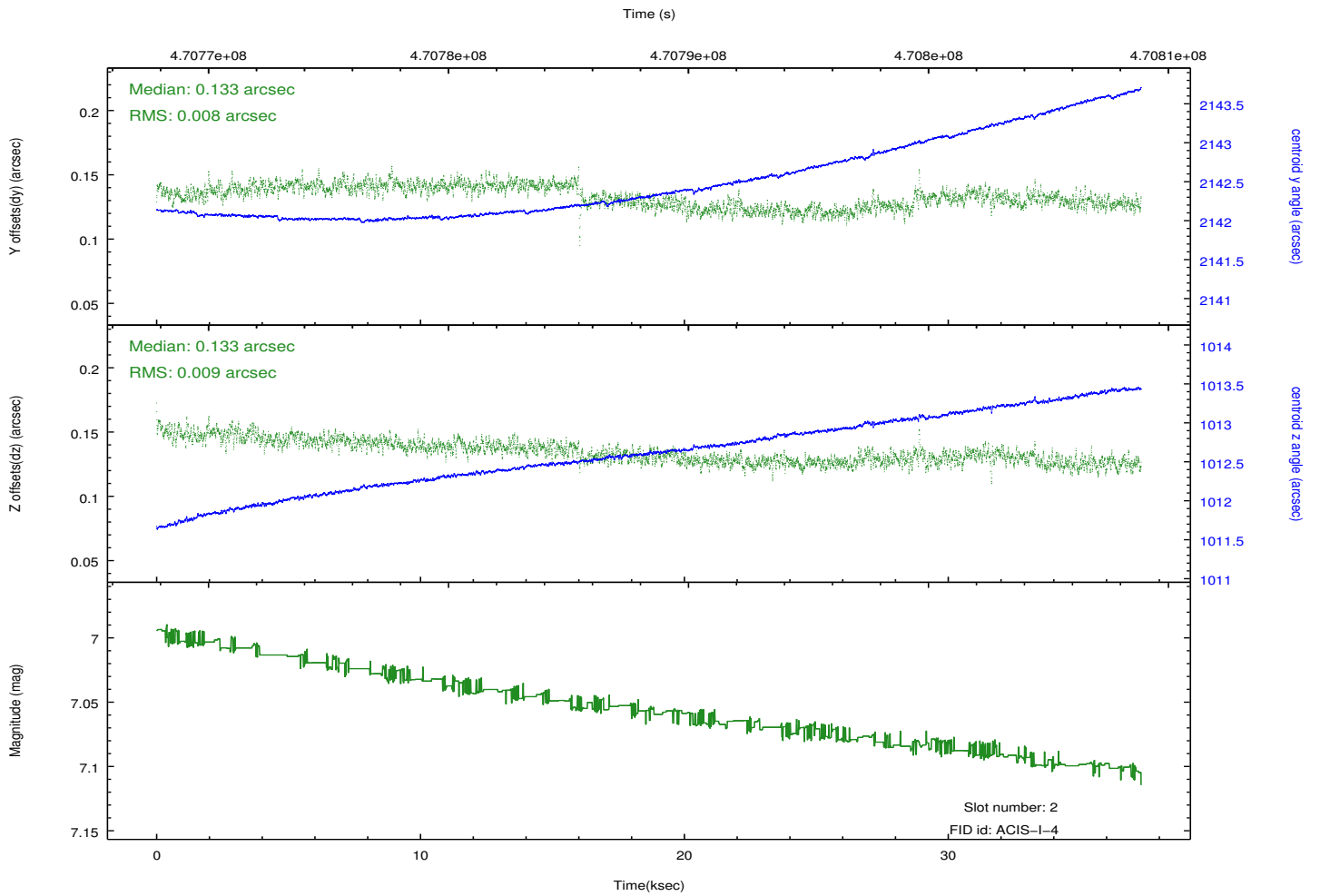
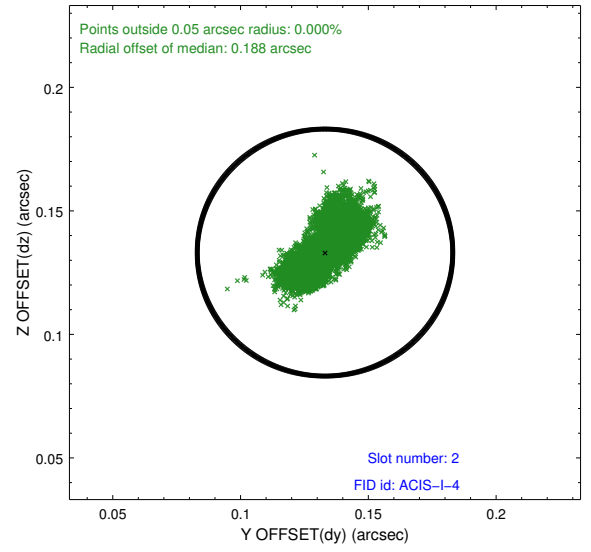
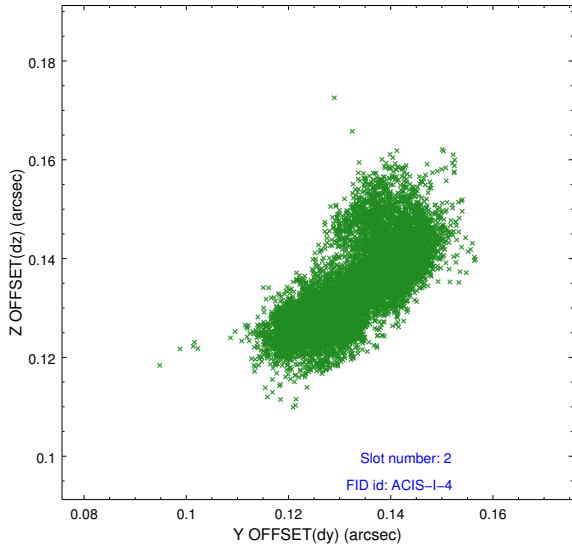
### 2.5.1 Slot 0



## 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	37.069126693606

## 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.