

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 14688 - L2 Version 2  
Chandra X-Ray Center

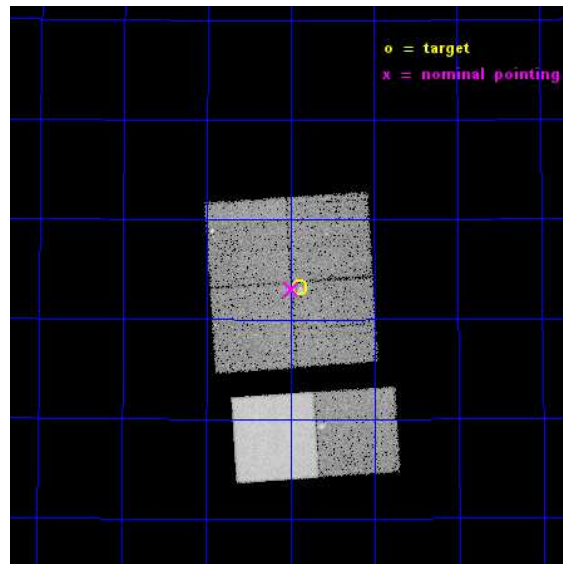
L2 Processing Date : Nov 29 2014

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# 1 Front

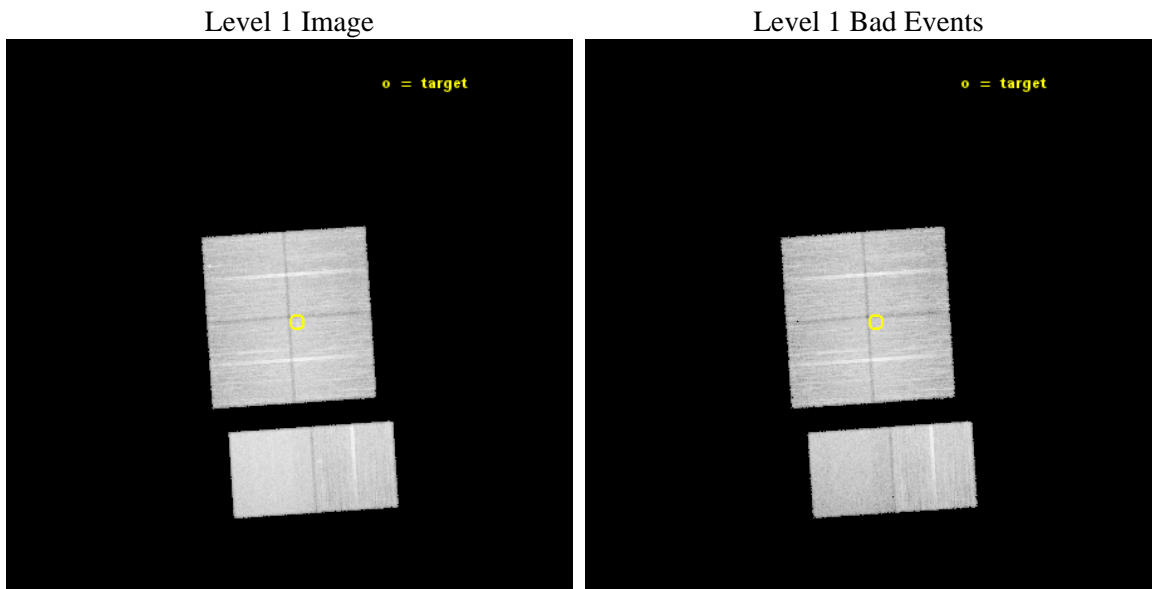
seq_num	501822	Sequence number
obs_id	14688	Observation id
title	A Legacy Study of the Relativistic Shocks of PWNe	Proposal title
observer	Prof. Roger Romani	Principal investigator
object	PSR J0358+5413	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	59.72375	Observer's specified target RA [deg]
dec_targ	54.220472	Observer's specified target Dec [deg]
ra_nom	59.747279168162	Nominal RA [deg]
dec_nom	54.217051385015	Nominal Dec [deg]
roll_nom	176.18959353401	Nominal Roll [deg]
revision	2	Processing version of data
ontime	26966.358899236	Sum of GTIs [s]
livetime	26624.894625662	Livetime [s]
ontime0	26969.59989959	Sum of GTIs [s]
ontime1	26969.59989959	Sum of GTIs [s]
ontime2	26966.358899236	Sum of GTIs [s]
ontime3	26969.59989959	Sum of GTIs [s]
ontime6	26969.59989959	Sum of GTIs [s]
ontime7	26969.59989959	Sum of GTIs [s]
l2events	153995	Number of level 2 events



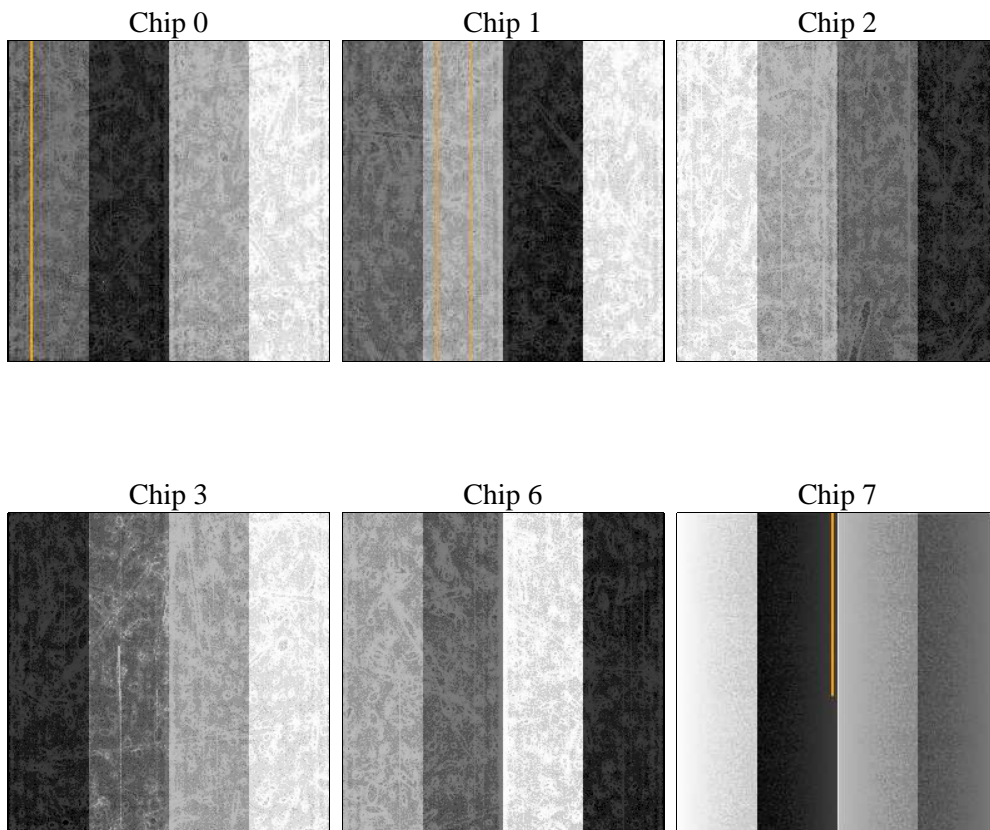
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27000.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	26966.358899236	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime0	26969.59989959	Sum of GTIs [s]
date	2014-11-29T14:21:48	Date and time of file creation	ontime1	26969.59989959	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	26966.358899236	Sum of GTIs [s]
			ontime3	26969.59989959	Sum of GTIs [s]
			ontime6	26969.59989959	Sum of GTIs [s]
			ontime7	26969.59989959	Sum of GTIs [s]
			l1events	875682	Number of level 1 events

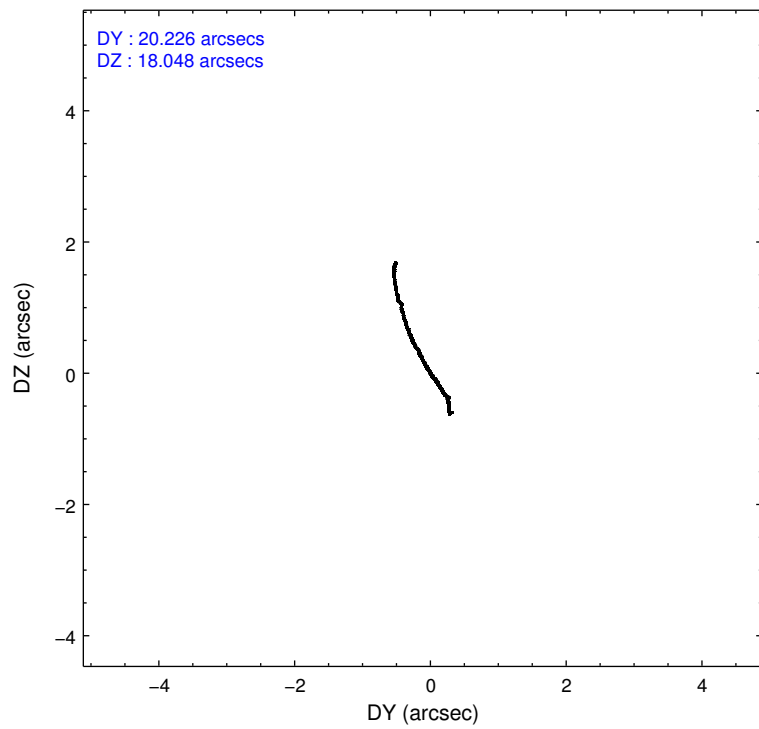
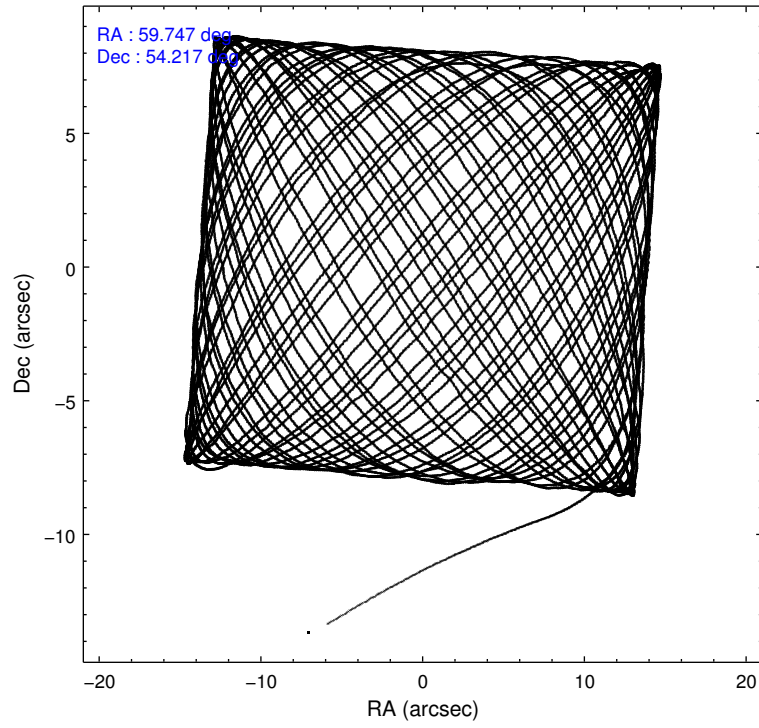
### 2.1.4 Events

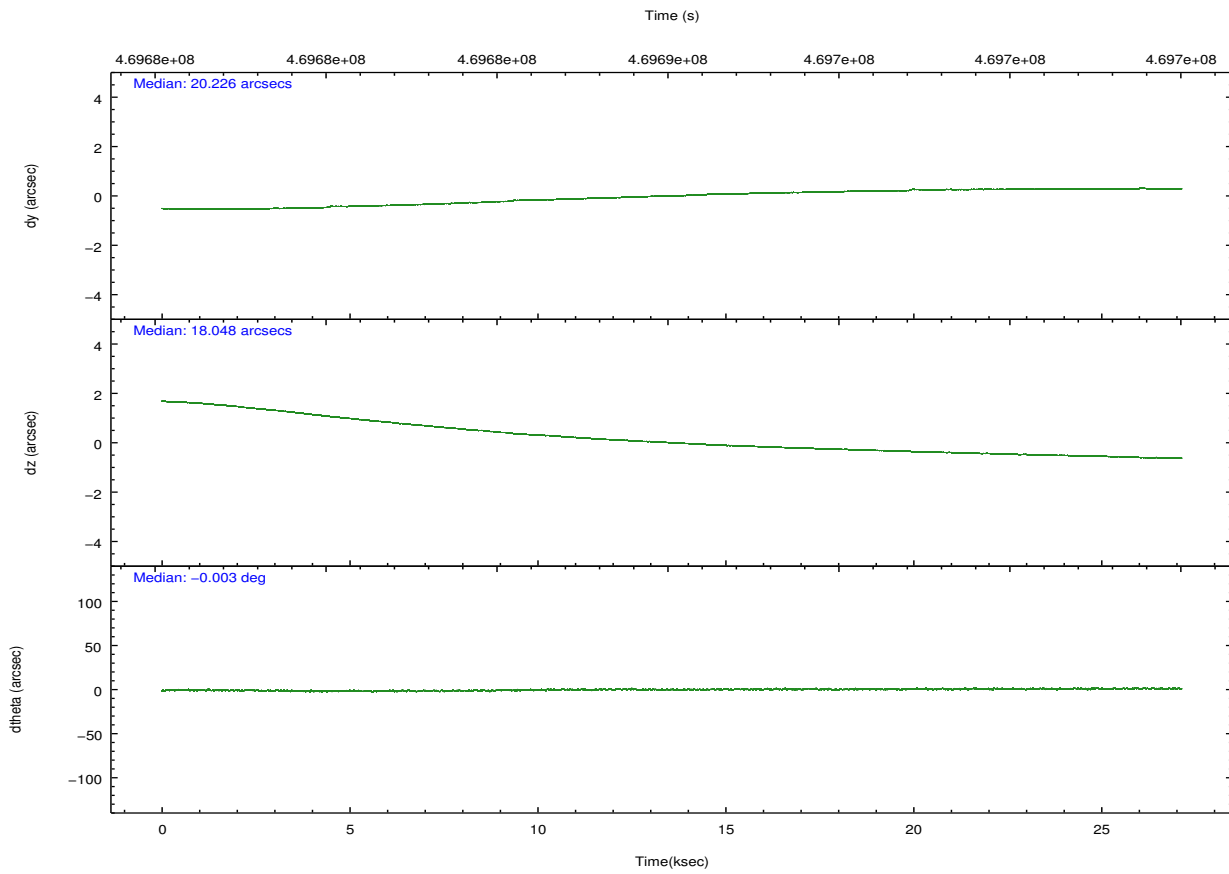
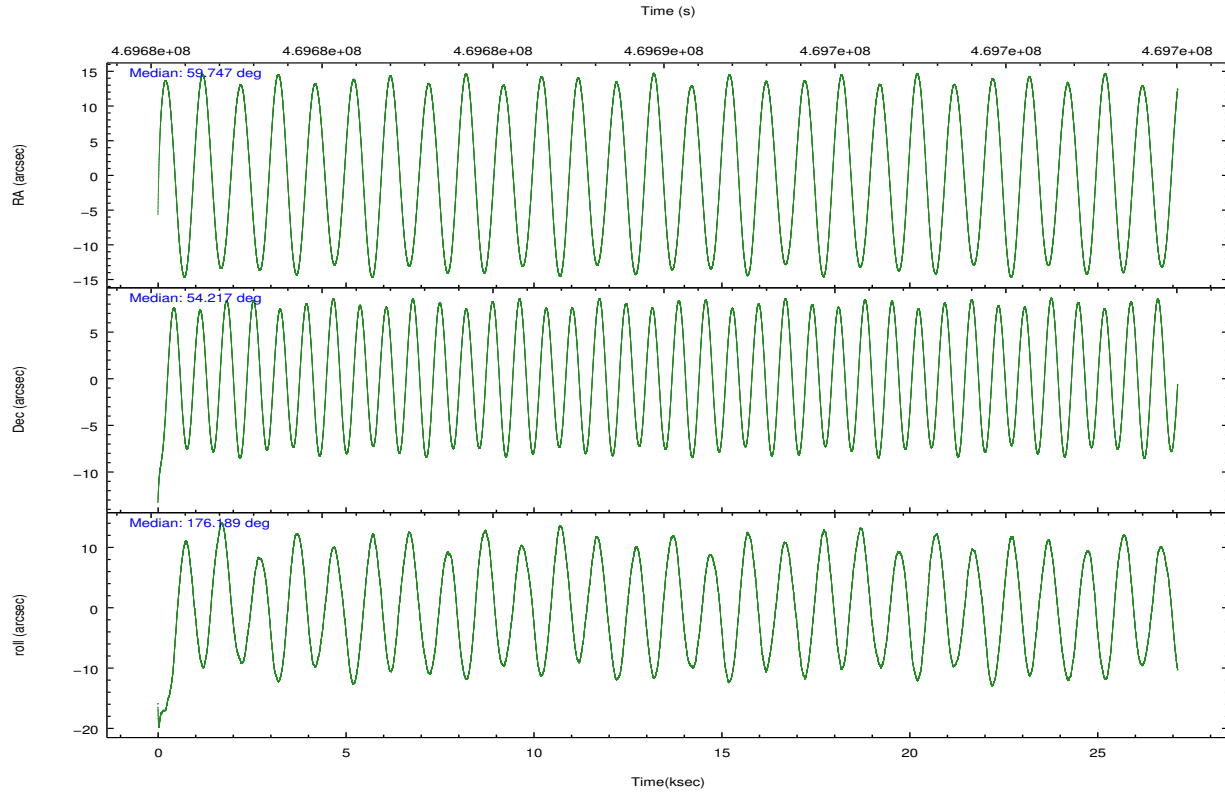
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	124584	132137	140194	135916	151099	191752	grade 0 events	5521	6397	6680	5626	6015	7271
rejected events	108128	113848	122865	120149	133636	108014		4%	4%	4%	4%	3%	3%
rejected %	86%	86%	87%	88%	88%	56%	grade 1 events	76	80	106	82	53	209
								0%	0%	0%	0%	0%	0%
							grade 2 events	4038	4264	4122	3506	3992	17172
								3%	3%	2%	2%	2%	8%
							grade 3 events	1808	1905	1658	1637	1744	7234
								1%	1%	1%	1%	1%	3%
							grade 4 events	1644	1849	1657	1676	1723	7154
								1%	1%	1%	1%	1%	3%
							grade 5 events	6620	6963	6143	7440	7614	20212
								5%	5%	4%	5%	5%	10%
							grade 6 events	3447	3879	3212	3322	3993	44919
								2%	2%	2%	2%	2%	23%
							grade 7 events	101430	106800	116616	112627	125965	87581
								81%	80%	83%	82%	83%	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	59.74727916816215	CCD I2 on	Y	Y
[deg] Pointing Dec	54.229301	54.21705138501475	CCD I3 on	Y	Y
[deg] Pointing Roll	175.946744	176.1895935340122	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)	469676670.184000	469675492.86655	CCD S5 on	N	N
Observation start date	2012-11-19T01:43:23	2012-11-19T01:24:52	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	469703670.184000	469704247.70559	On-chip summing requested	N	N
Observation end date	2012-11-19T09:13:23	2012-11-19T09:24:07	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



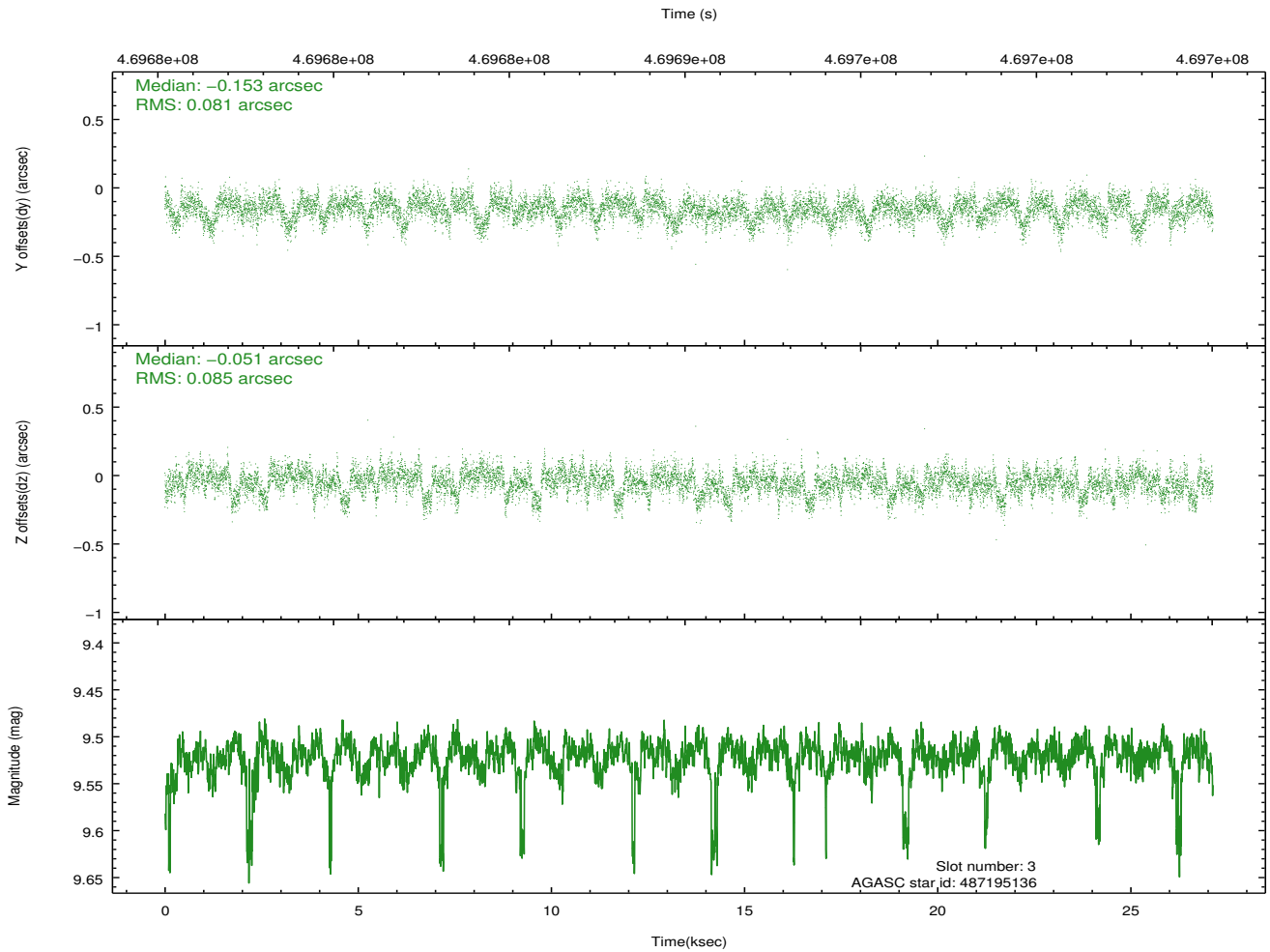
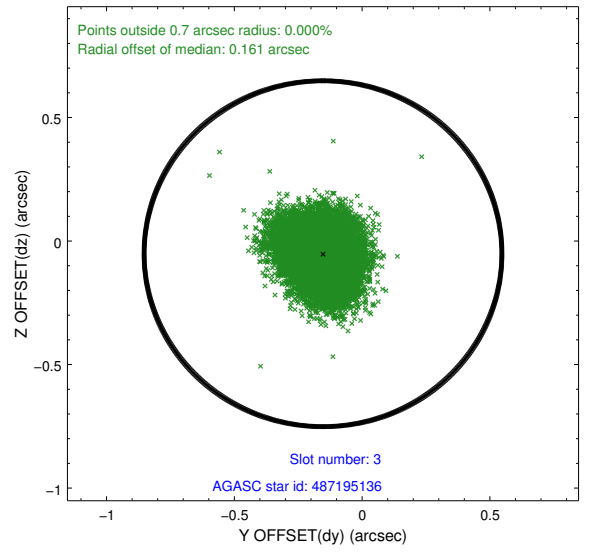
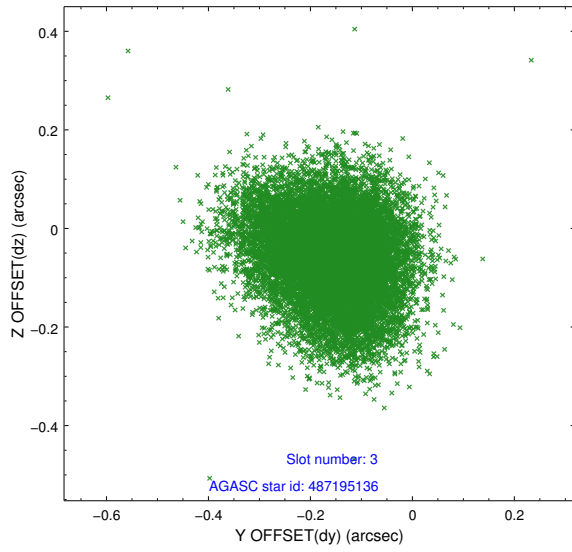


### Slot Statistics

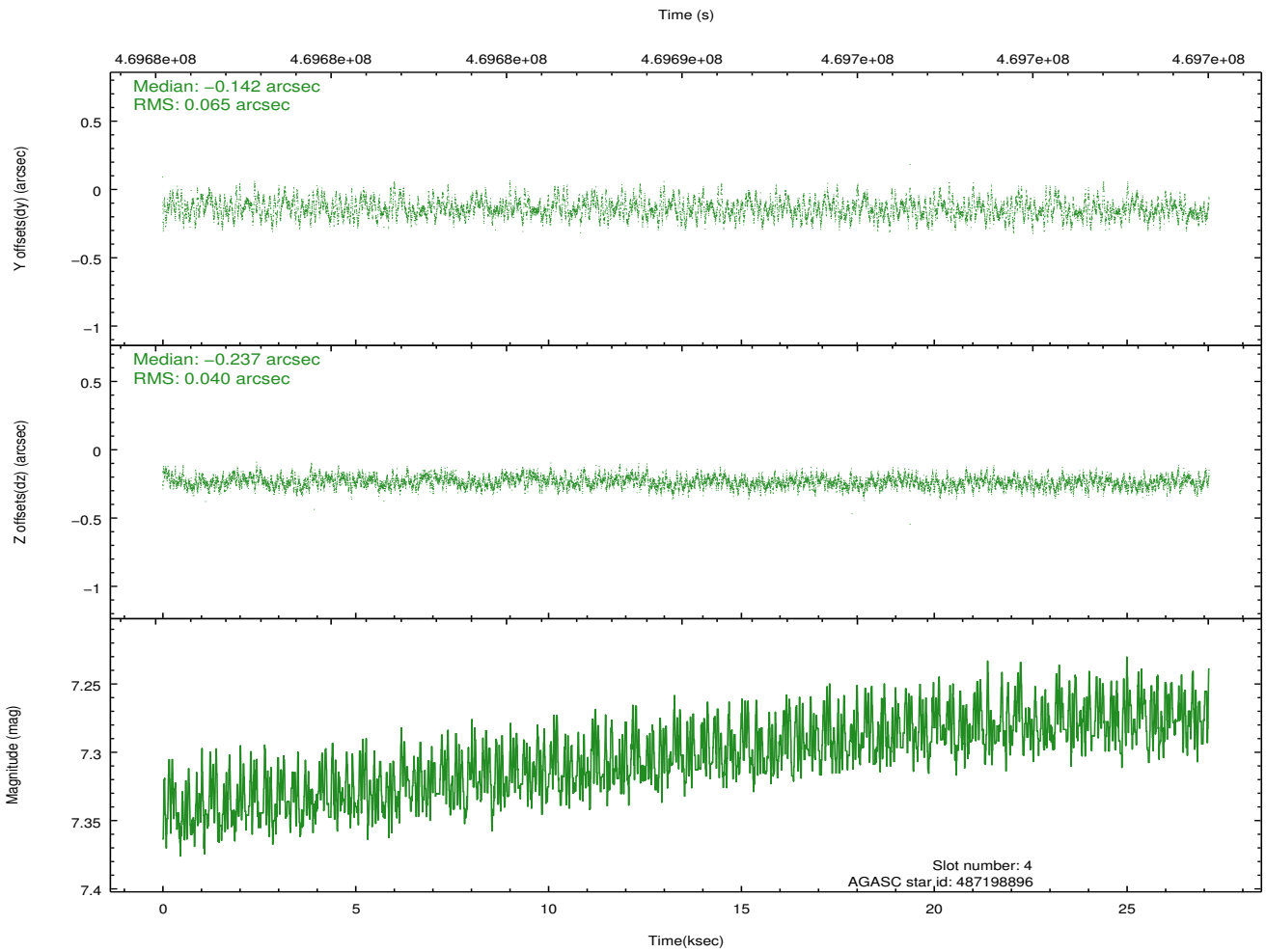
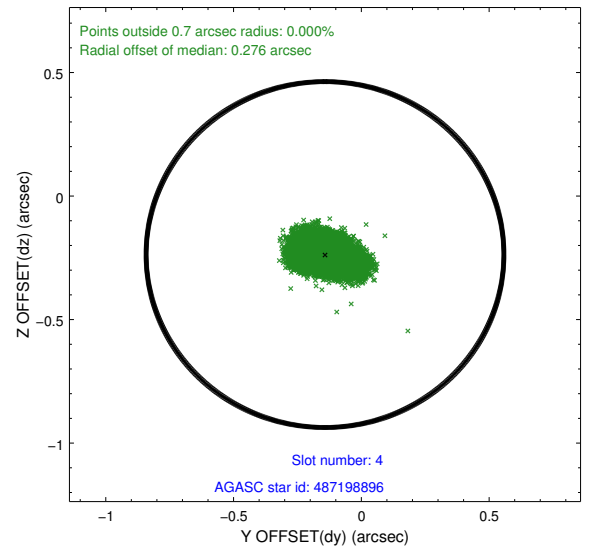
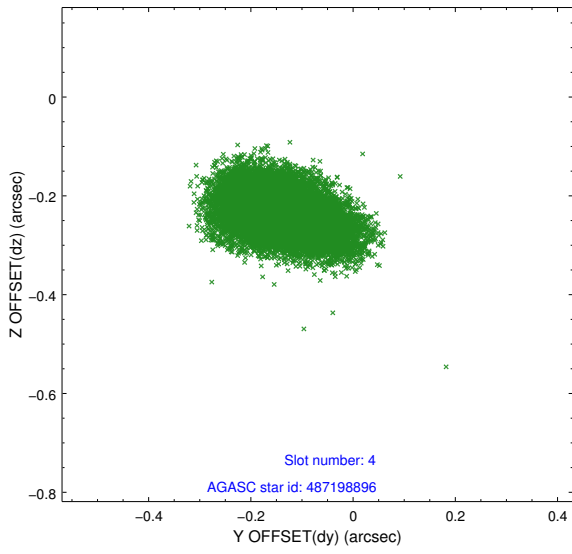
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.09	6618	0.040	0.035	0.012	0.019	0.000000	0.000000	919.20	-841.89
1	FID		ACIS-I-5	7.08	6617	-0.248	0.046	0.010	0.016	0.000000	0.000000	-1829.17	1055.51
2	FID		ACIS-I-6	7.09	6618	0.116	-0.010	0.013	0.029	0.000000	0.000000	384.68	1700.11
3	GUIDE	used	487195136	9.52	13183	-0.153	-0.051	0.126	0.202	58.914846	53.877945	1762.60	1381.98
4	GUIDE	used	487198896	7.30	13231	-0.142	-0.237	0.080	0.136	59.659200	53.988692	213.97	883.49
5	GUIDE	used	487200976	8.59	13232	-0.093	-0.193	0.089	0.139	59.647091	54.074996	260.80	575.27
6	GUIDE	used	487851880	8.12	13229	0.270	0.250	0.072	0.115	60.850967	54.723956	-2074.12	-1948.03
7	GUIDE	used	487858168	8.08	13232	0.116	0.239	0.068	0.106	60.468138	54.475181	-1352.79	-989.91

## 2.4 Star Slots

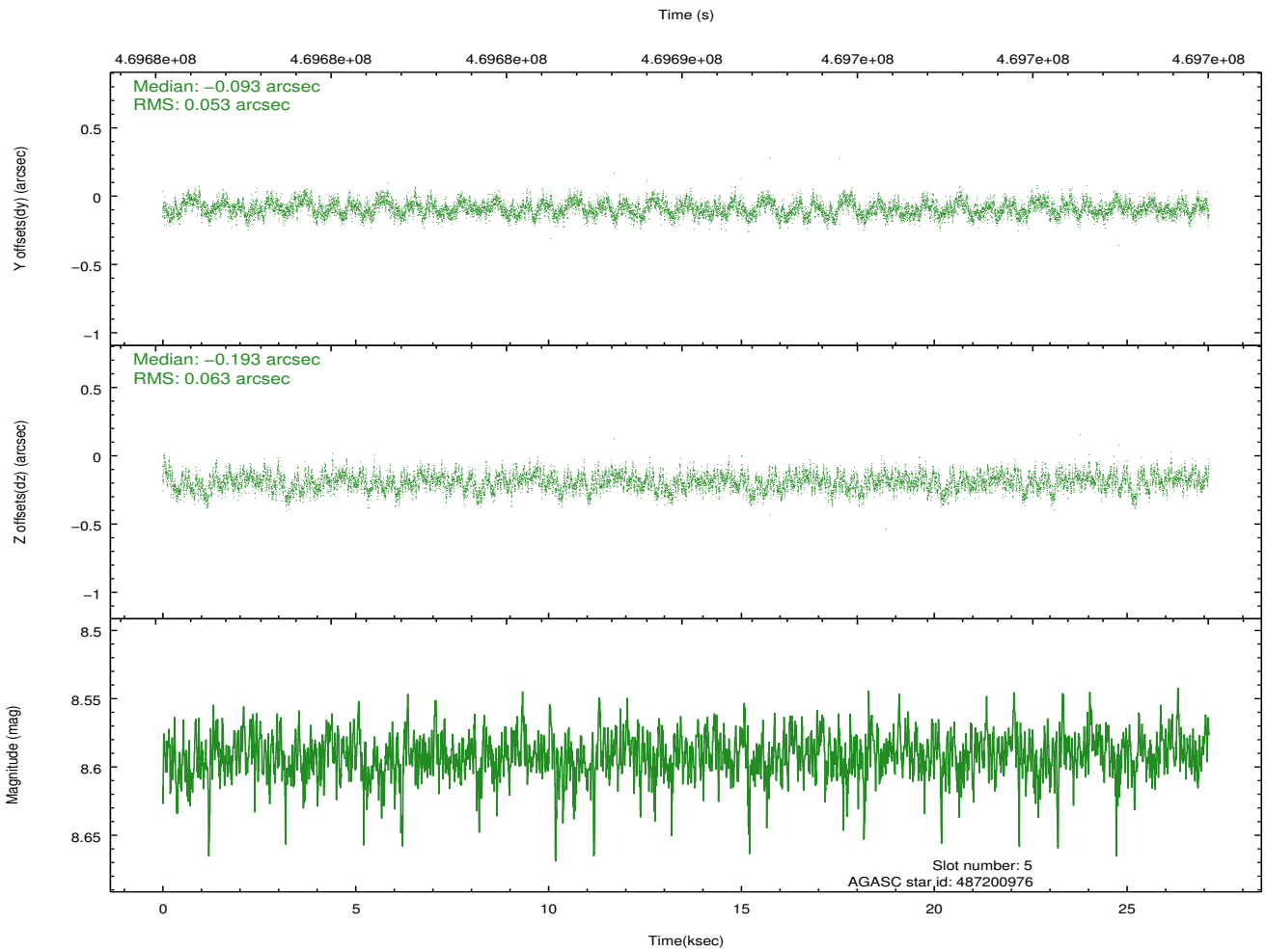
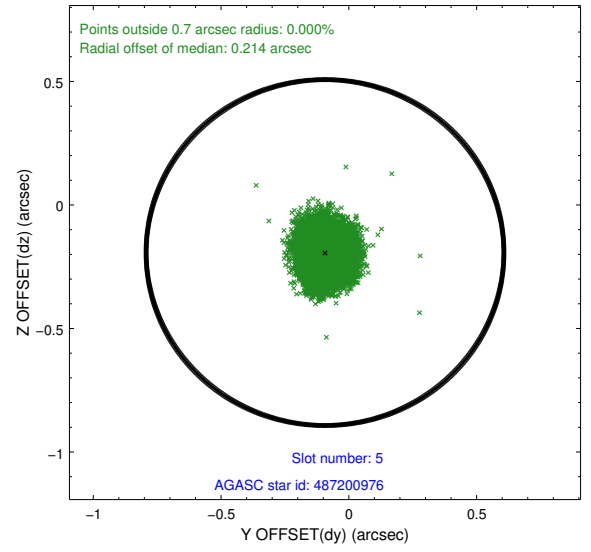
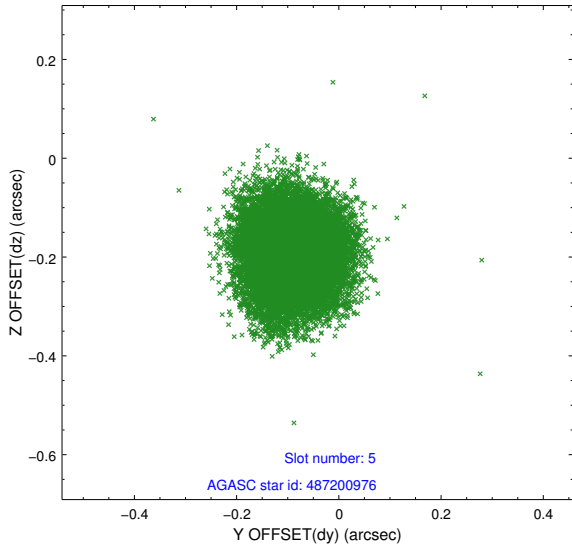
### 2.4.1 Slot 3



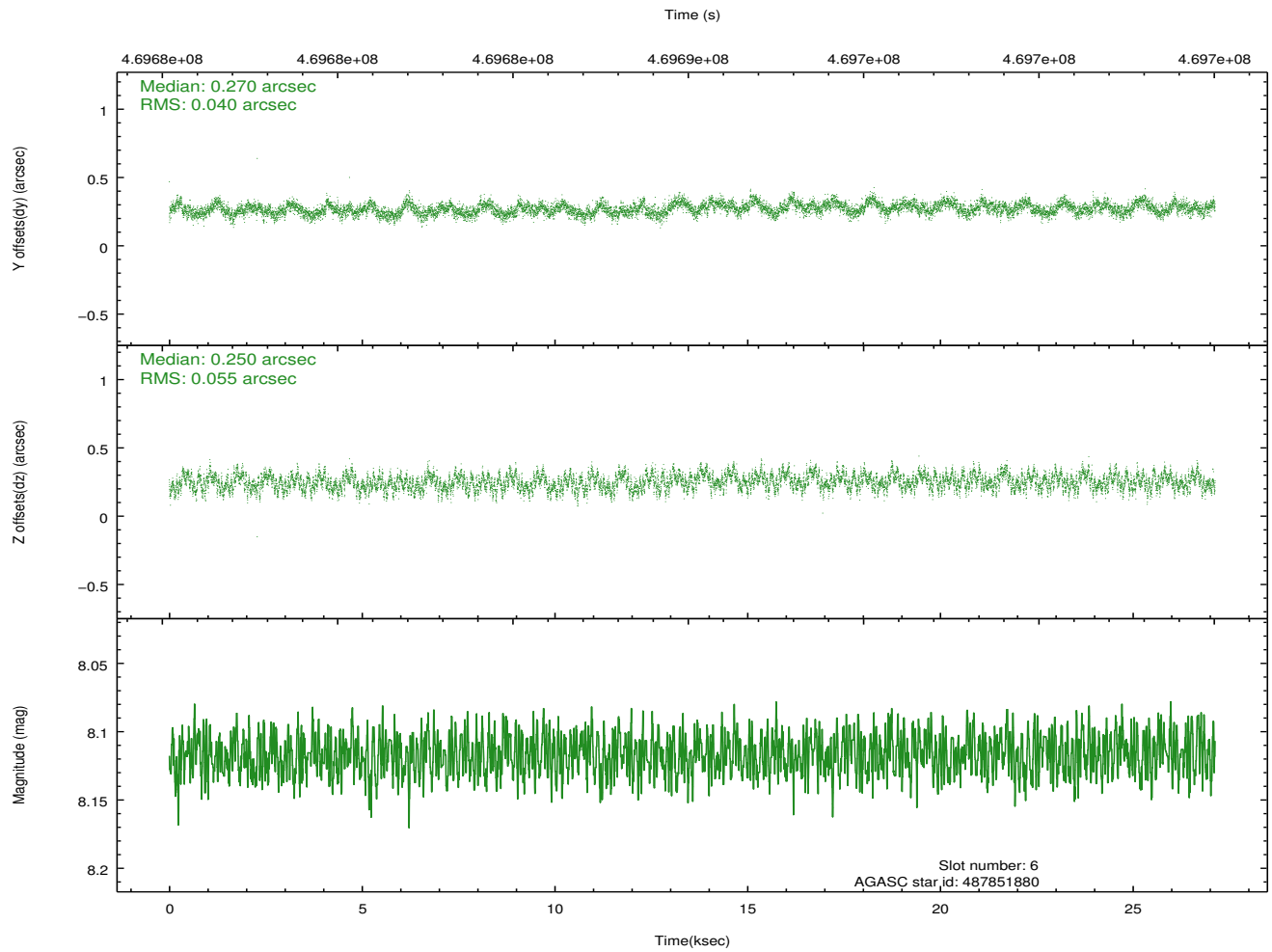
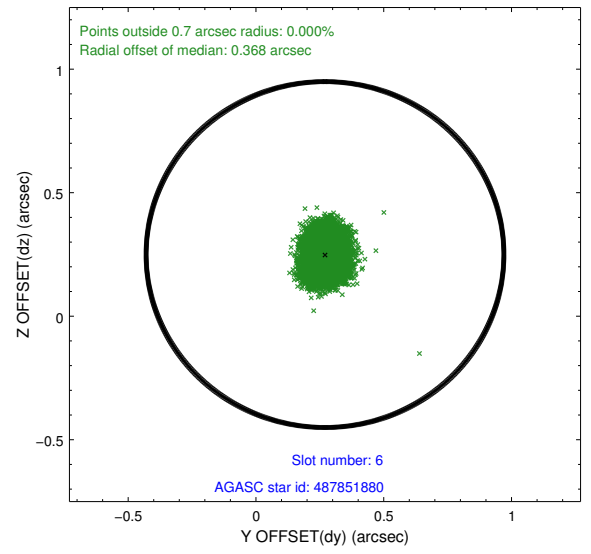
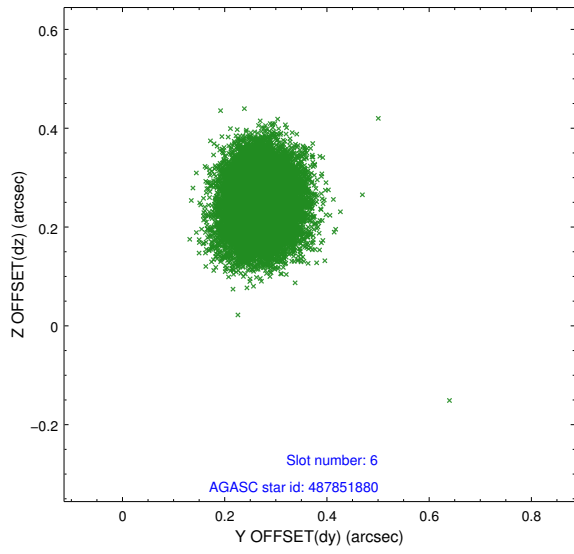
## 2.4.2 Slot 4



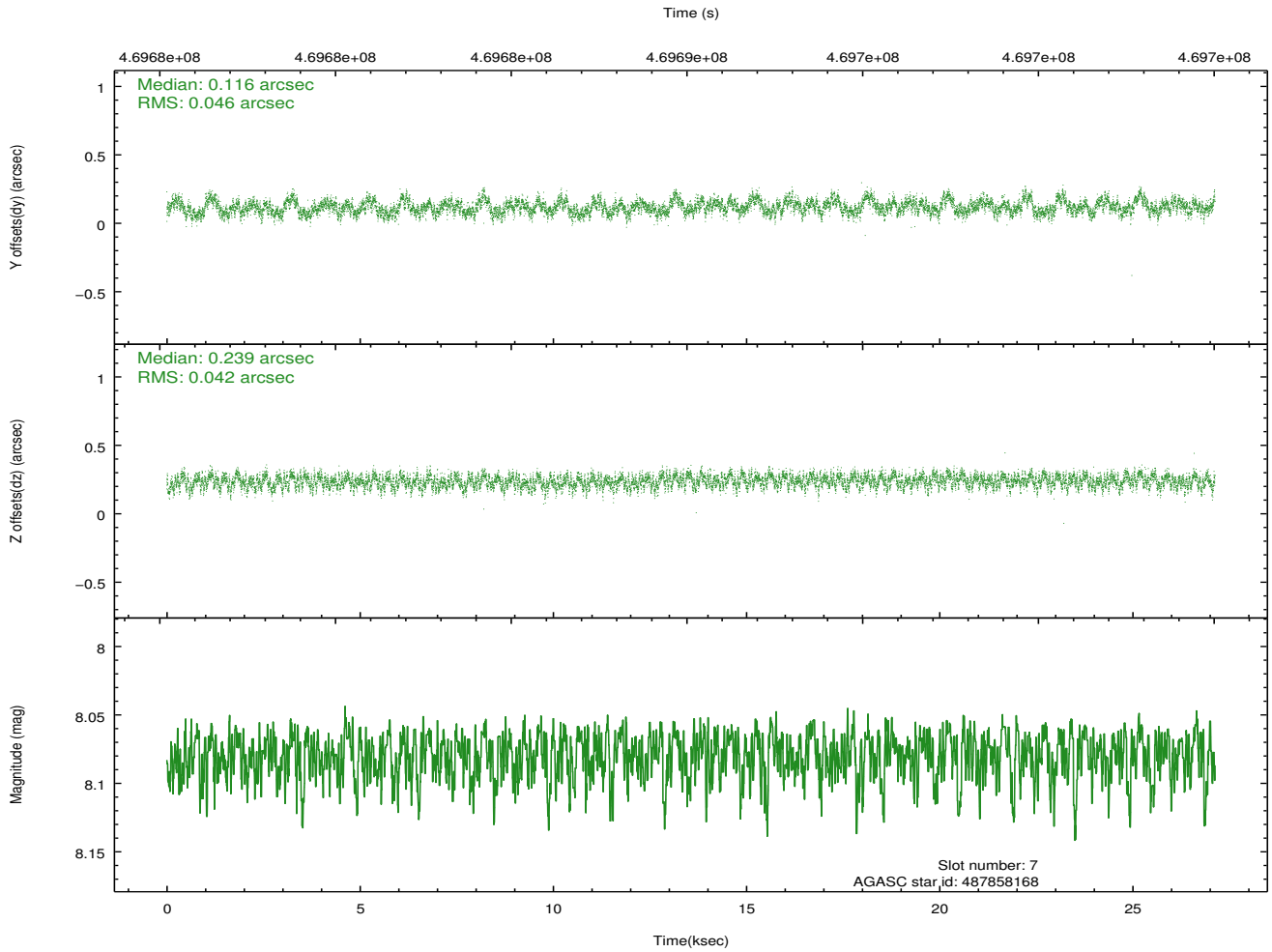
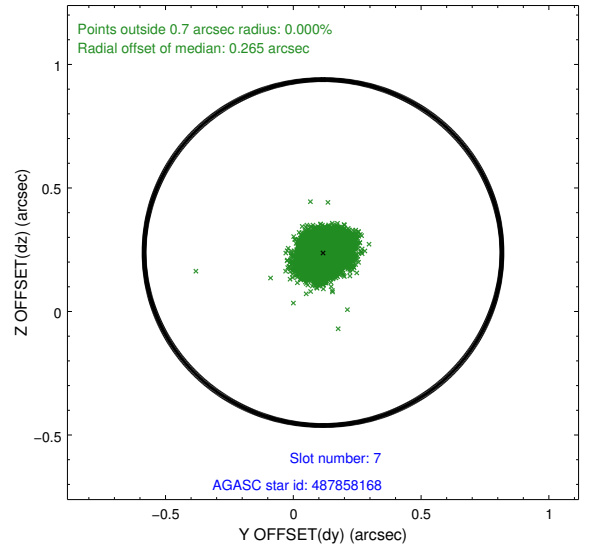
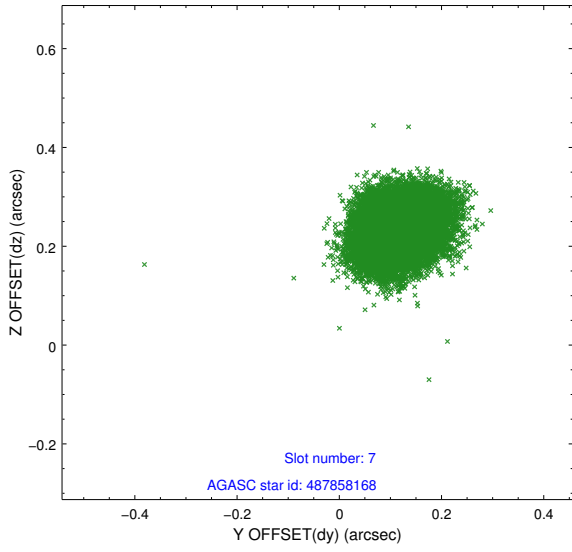
### 2.4.3 Slot 5



## 2.4.4 Slot 6

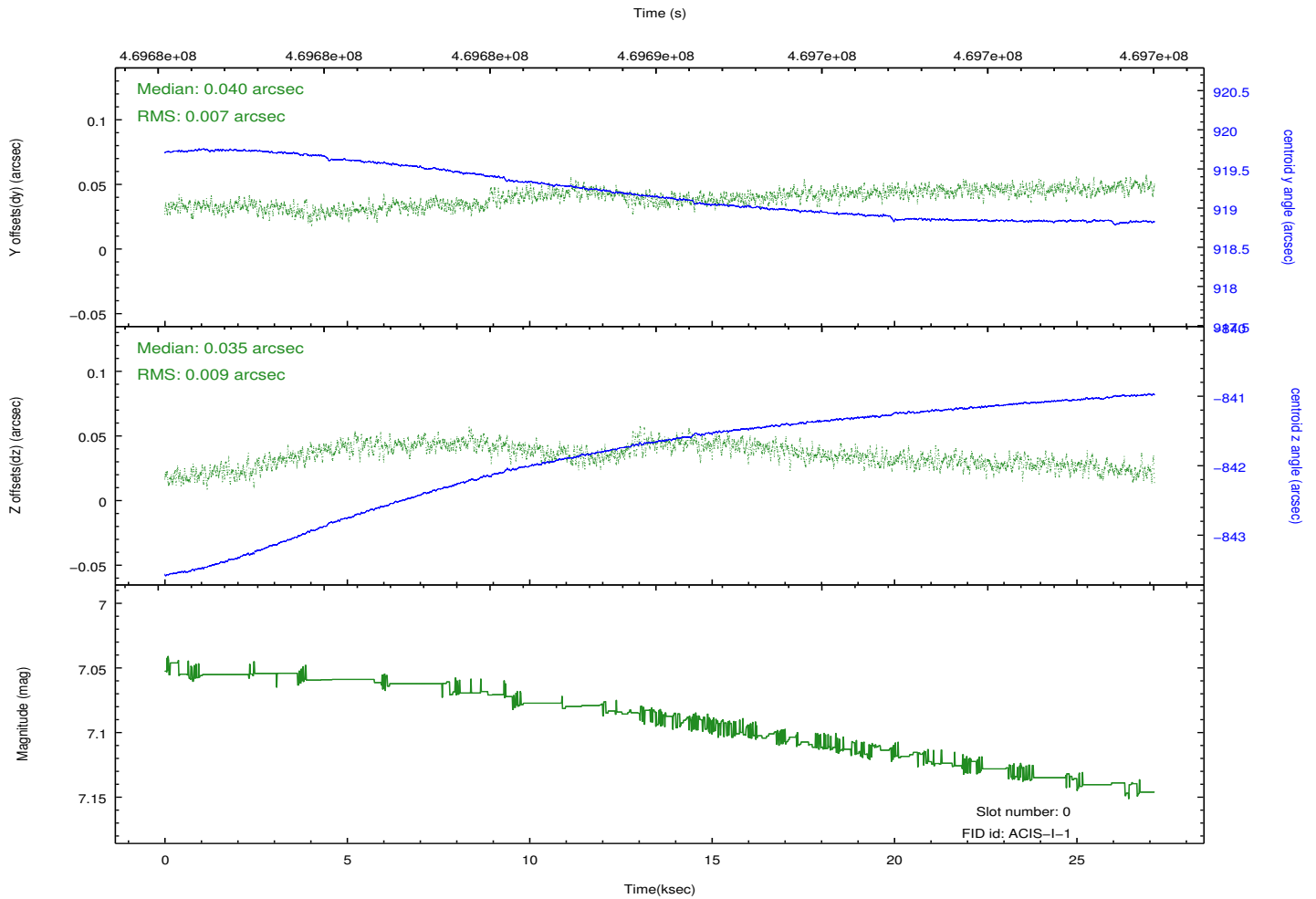
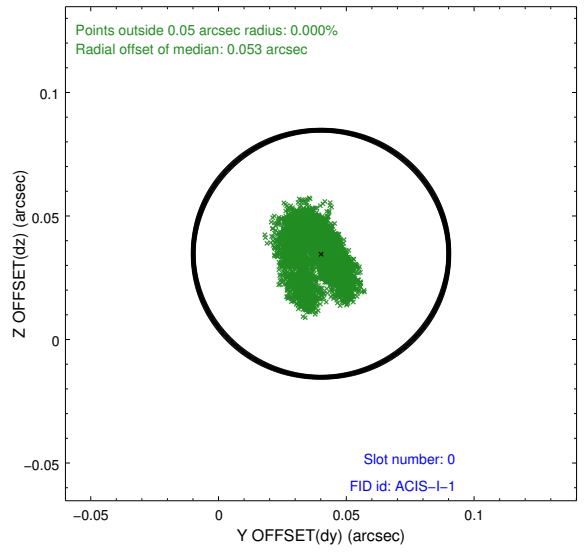
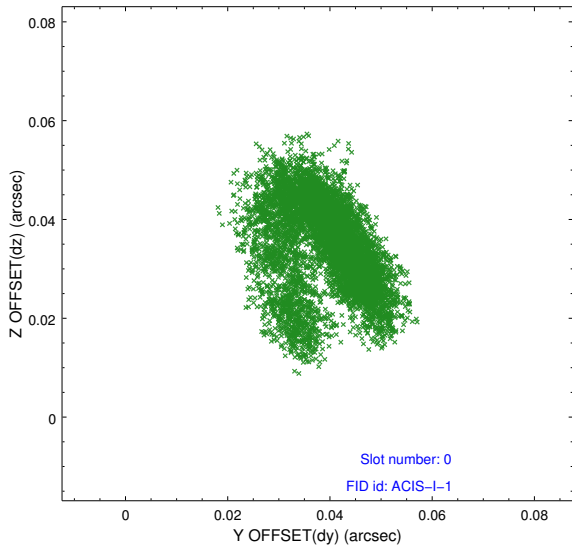


### 2.4.5 Slot 7

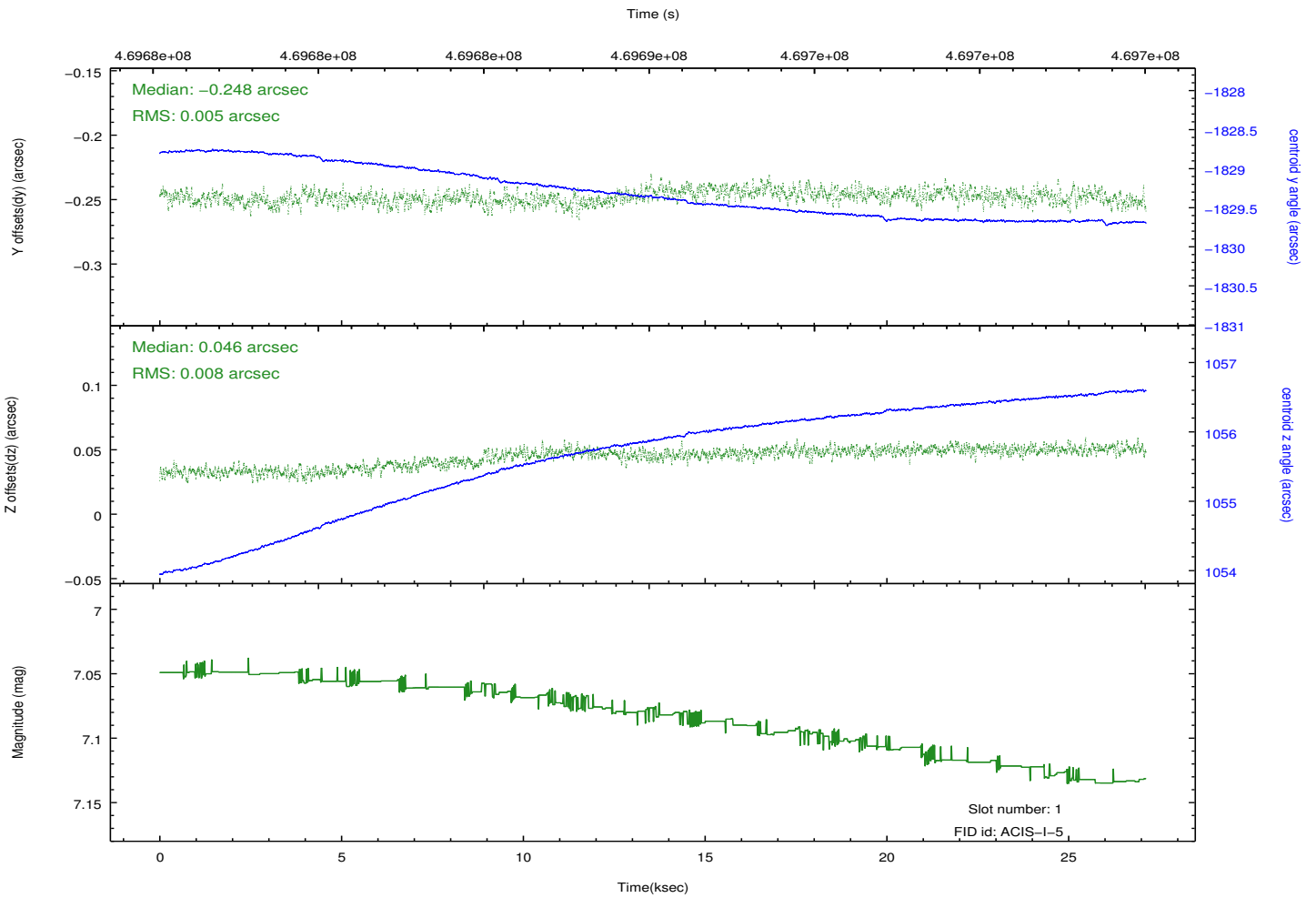
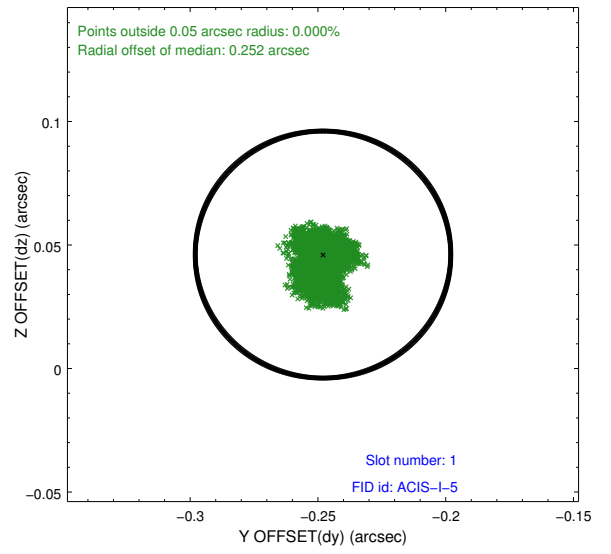
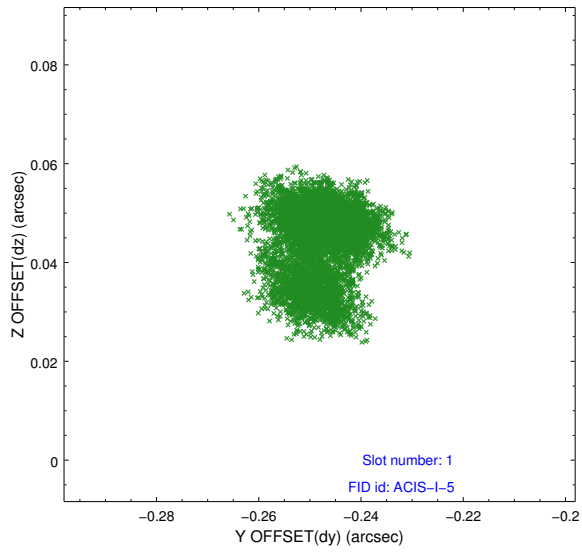


## 2.5 FID Slots

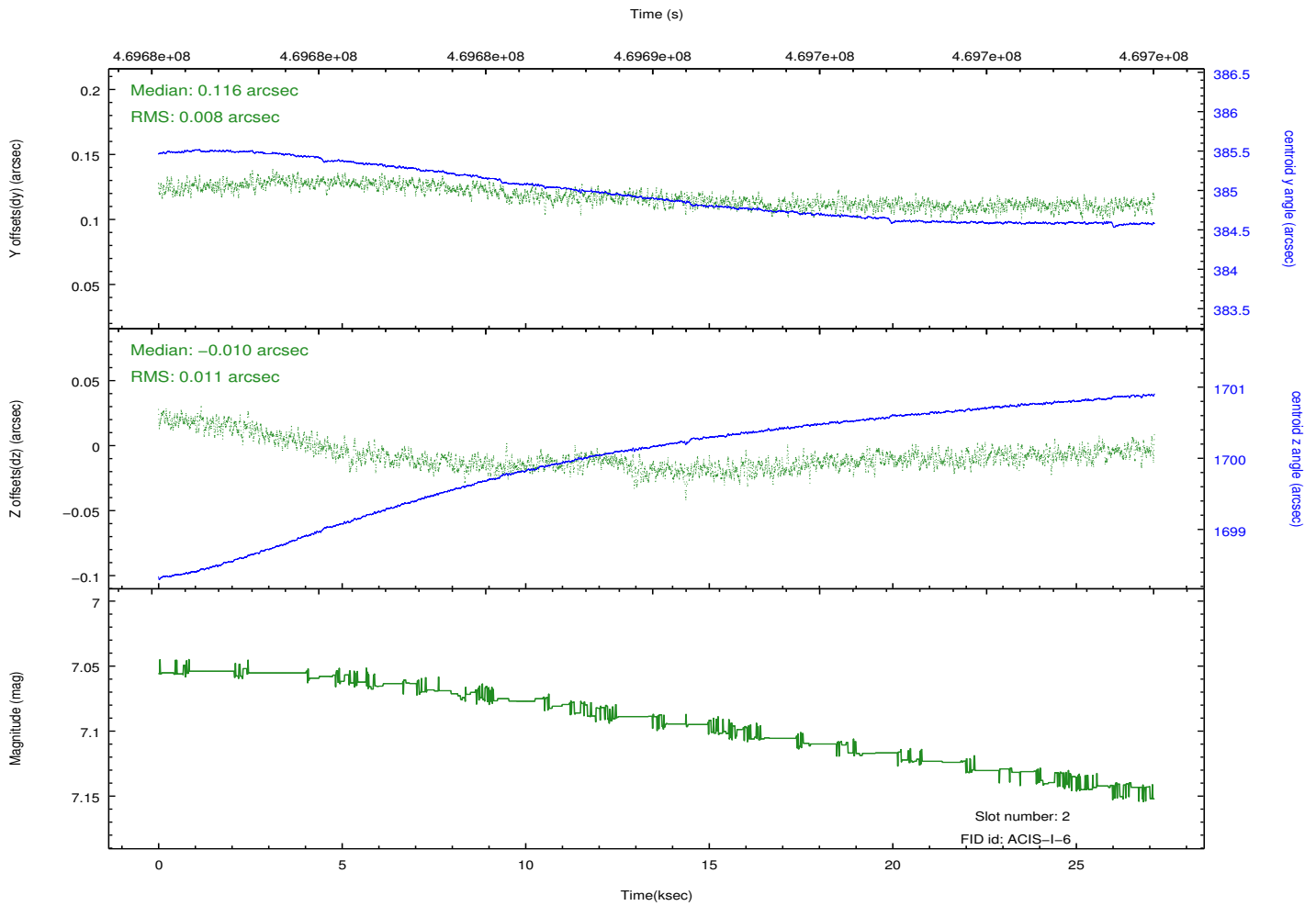
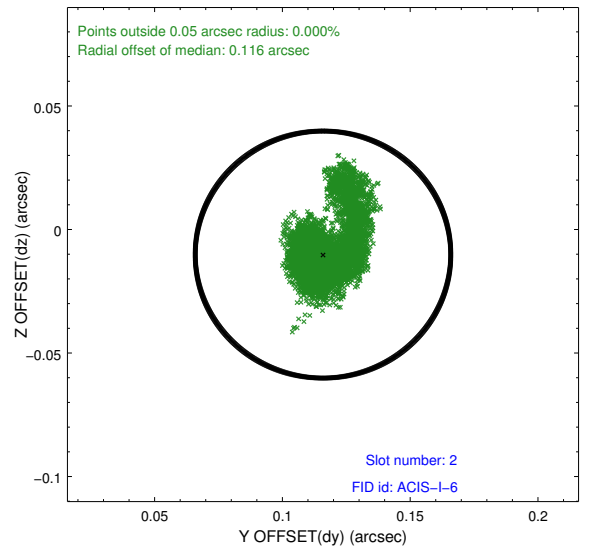
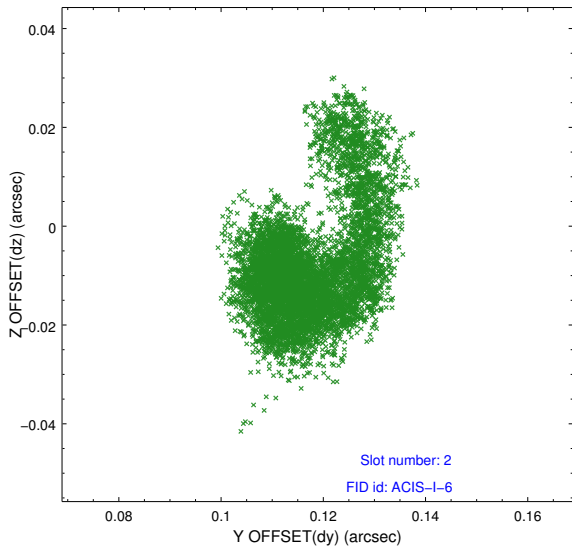
### 2.5.1 Slot 0



## 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)	2014.12.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	26.966358899236

## 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.