

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 12075 - L2 Version 3  
Chandra X-Ray Center

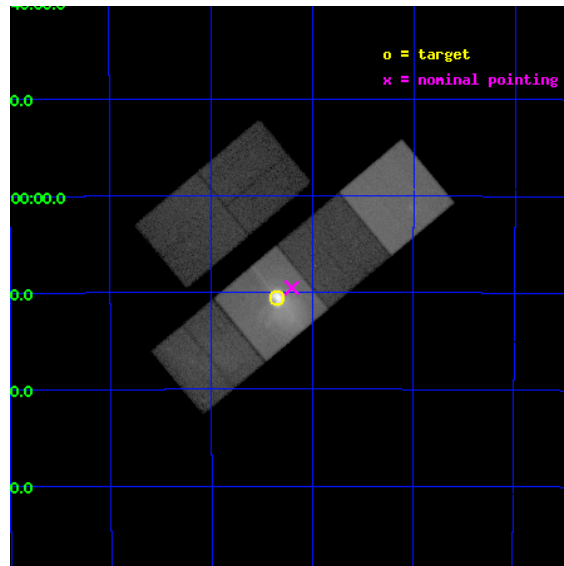
L2 Processing Date : Jul 2 2012

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# 1 Front

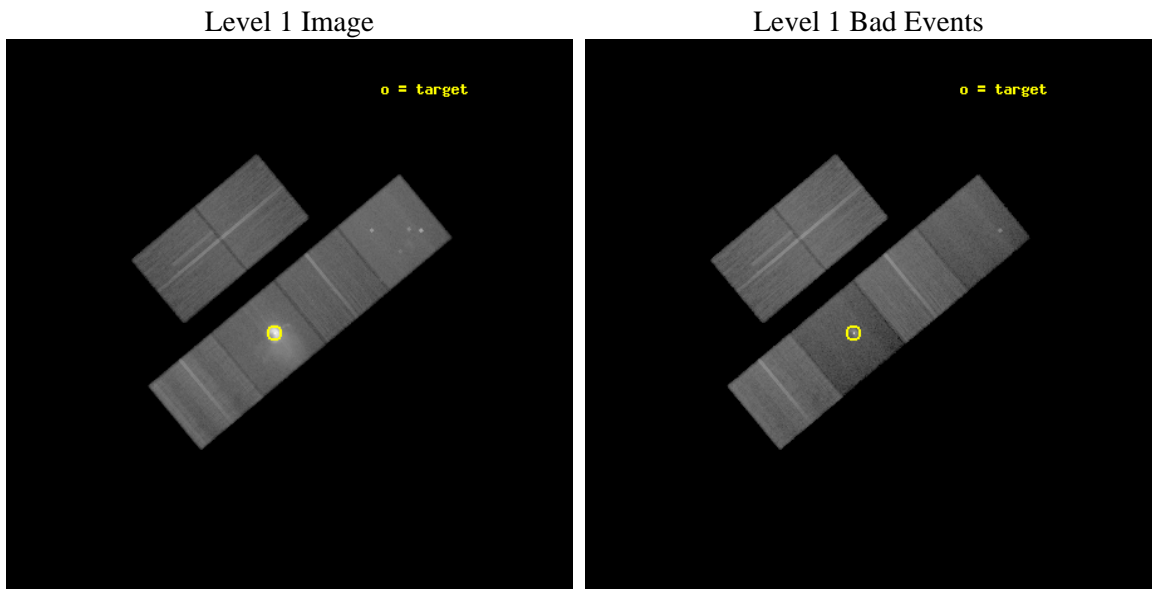
seq_num	501357	Sequence number
obs_id	12075	Observation id
title	The Unique Dynamical Vela Pulsar Wind Nebula	Proposal title
observer	Dr. George Pavlov	Principal investigator
object	Vela PWN	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	128.83625	Observer's specified target RA [deg]
dec_targ	-45.176583	Observer's specified target Dec [deg]
ra_nom	128.80046075441	Nominal RA [deg]
dec_nom	-45.158746561279	Nominal Dec [deg]
roll_nom	140.144330762	Nominal Roll [deg]
revision	3	Processing version of data
ontime	42319.999842405	Sum of GTIs [s]
liveltime	41784.118522356	Livetime [s]
ontime2	42319.999842405	Sum of GTIs [s]
ontime3	42319.999842405	Sum of GTIs [s]
ontime5	42319.999842405	Sum of GTIs [s]
ontime6	42319.999842405	Sum of GTIs [s]
ontime7	42319.999842405	Sum of GTIs [s]
ontime8	42316.75884223	Sum of GTIs [s]
l2events	1093726	Number of level 2 events



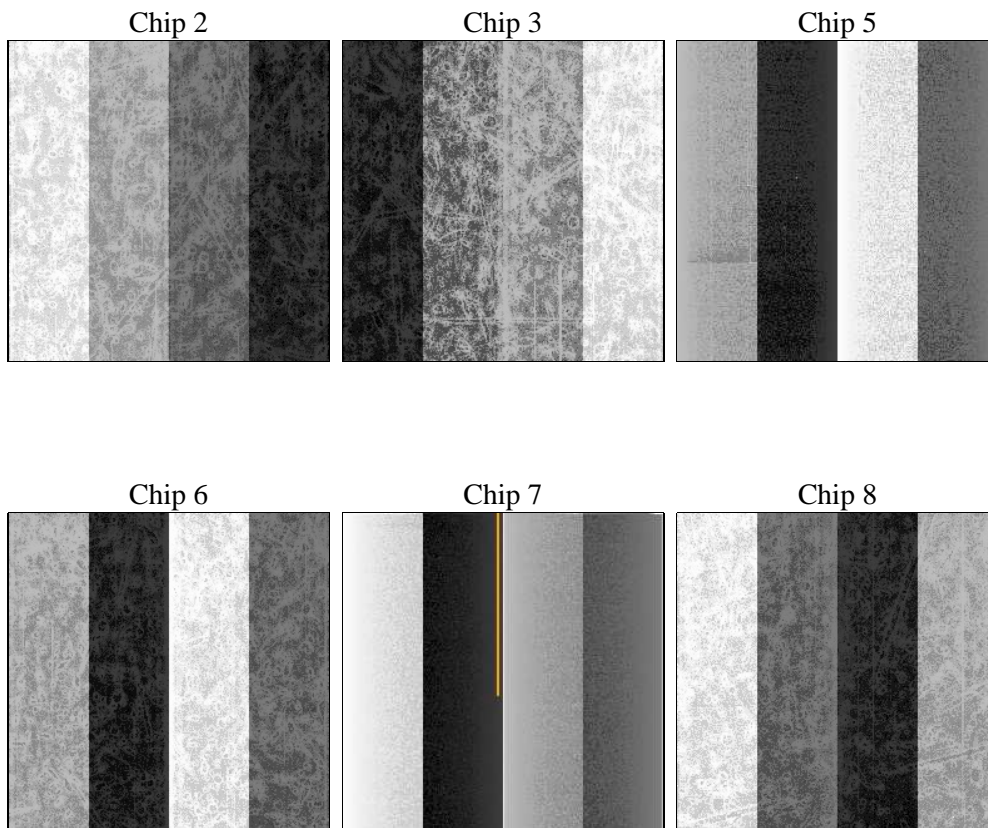
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	42268.775000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	42319.999842405	Sum of GTIs [s]
caldbver	4.5.0	&#160	ontime2	42319.999842405	Sum of GTIs [s]
date	2012-07-02T23:45:16	Date and time of file creation	ontime3	42319.999842405	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	42319.999842405	Sum of GTIs [s]
			ontime6	42319.999842405	Sum of GTIs [s]
			ontime7	42319.999842405	Sum of GTIs [s]
			ontime8	42316.75884223	Sum of GTIs [s]
			l1events	2503161	Number of level 1 events

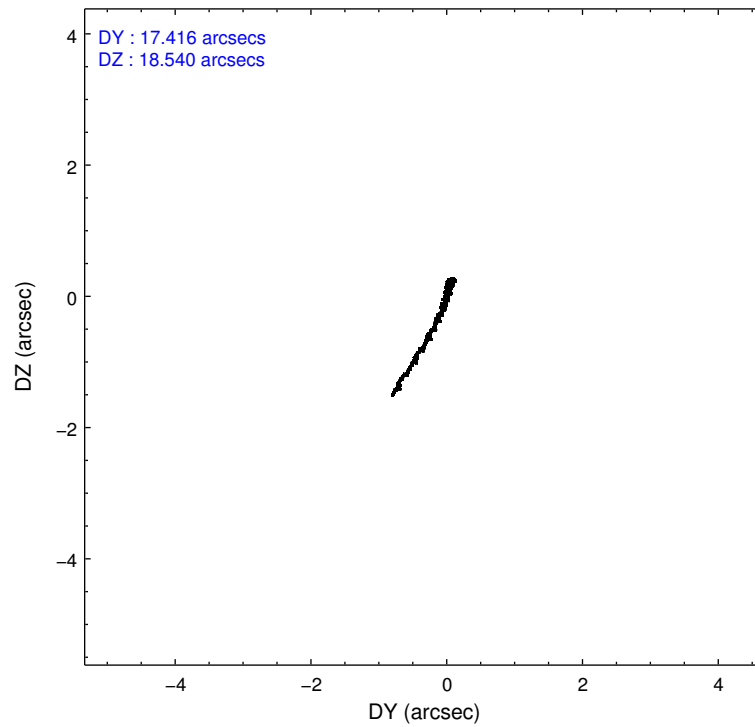
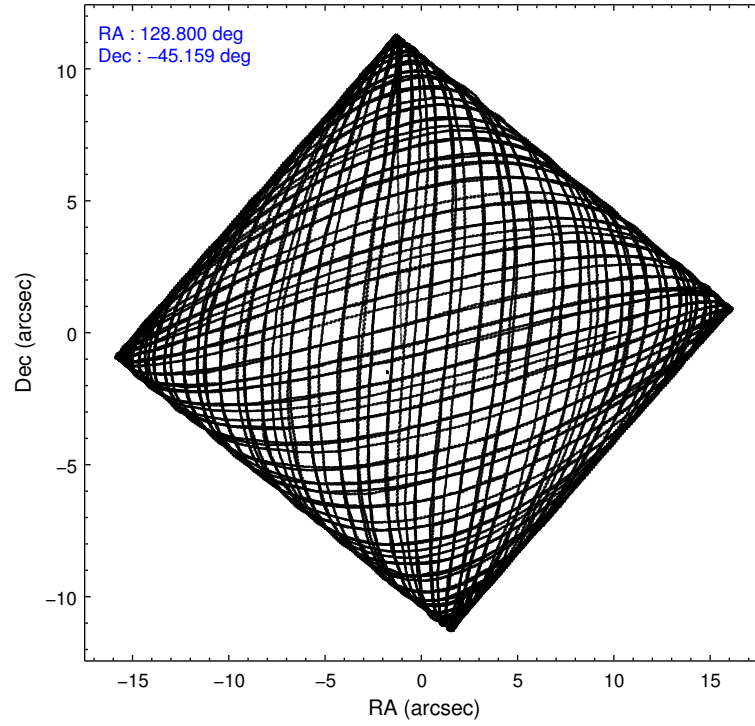
### 2.1.4 Events

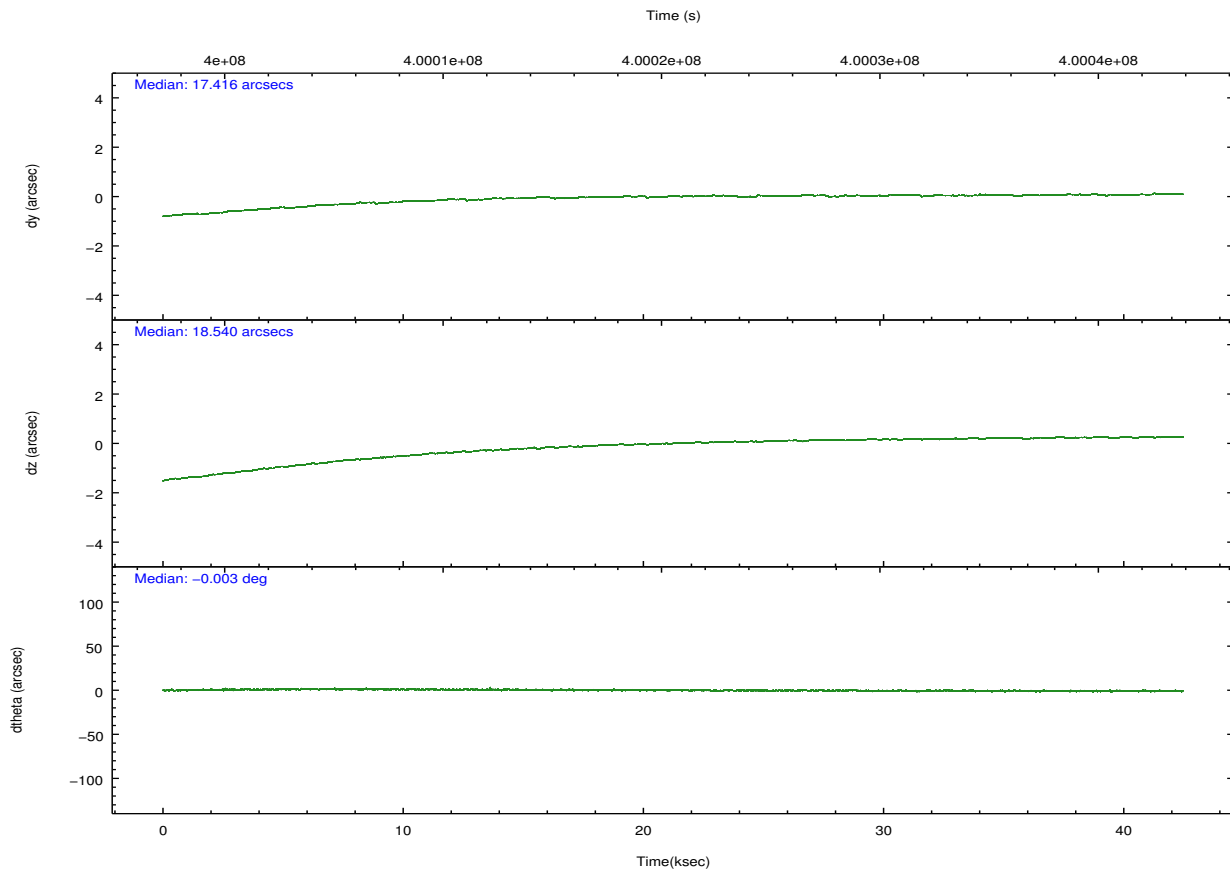
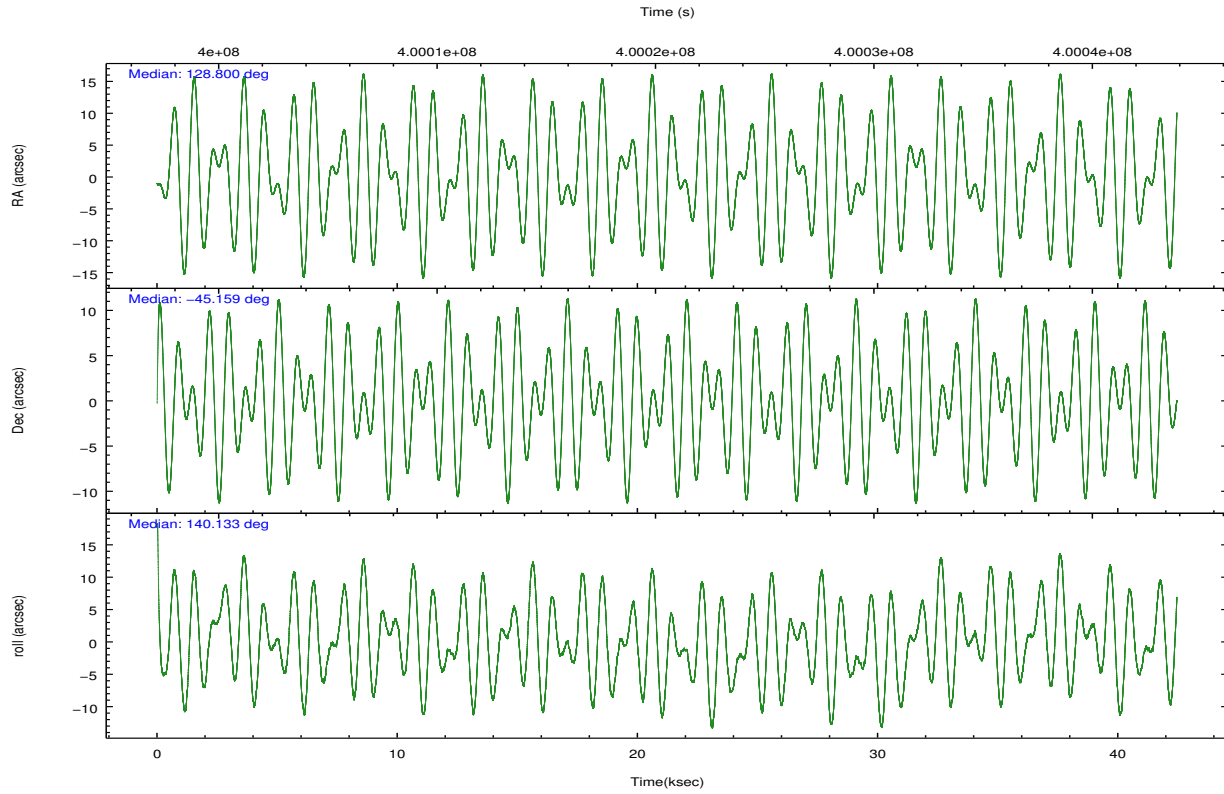
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	313413	292621	393580	316471	788839	398237	grade 0 events	28517	29948	56305	38812	187235	67262
rejected events	265213	243241	147214	254943	131506	253603		9%	10%	14%	12%	23%	16%
rejected %	84%	83%	37%	80%	16%	63%	grade 1 events	245	293	1844	292	1729	455
								0%	0%	0%	0%	0%	0%
							grade 2 events	8458	7688	71725	9299	166219	27734
								2%	2%	18%	2%	21%	6%
							grade 3 events	3209	3466	12545	3725	70590	11739
								1%	1%	3%	1%	8%	2%
							grade 4 events	3344	3332	12134	3760	69934	11032
								1%	1%	3%	1%	8%	2%
							grade 5 events	6943	8427	27258	8444	31173	14037
								2%	2%	6%	2%	3%	3%
							grade 6 events	4674	4950	93672	5934	163397	26873
								1%	1%	23%	1%	20%	6%
							grade 7 events	258023	234517	118097	246205	98562	239105
								82%	80%	30%	77%	12%	60%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	128.838761	128.8004607544109	CCD I2 on	O2	Y
[deg] Pointing Dec	-45.163063	-45.15874656127931	CCD I3 on	Y	Y
[deg] Pointing Roll	140.014864	140.1443307619986	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O1	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	399999490.184000	399998090.53359	CCD S5 on	N	N
Observation start date	2010-09-04T14:57:04	2010-09-04T14:34:50	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	400041759.184000	400041985.13585	On-chip summing requested	N	N
Observation end date	2010-09-05T02:41:33	2010-09-05T02:46:25	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



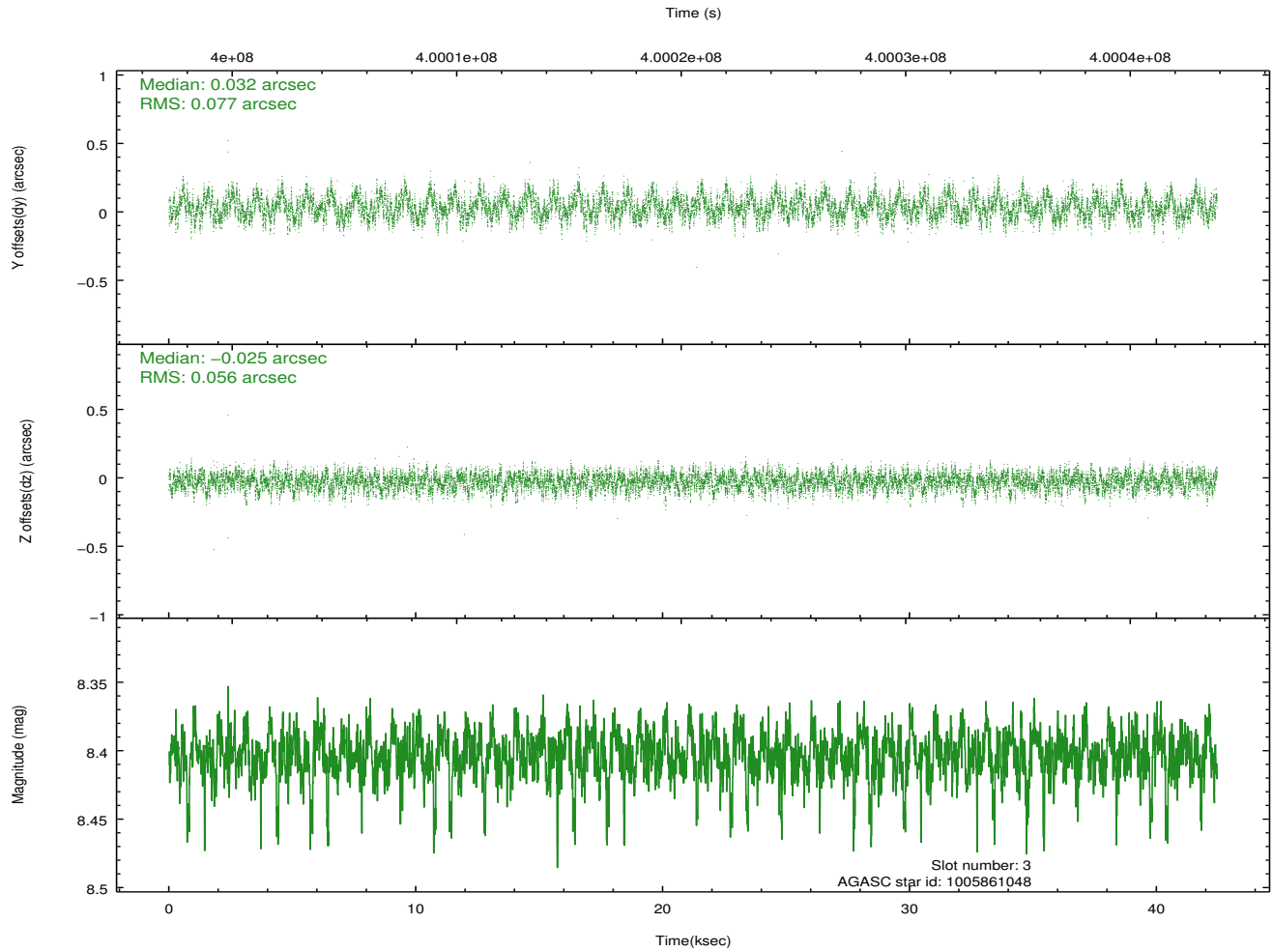
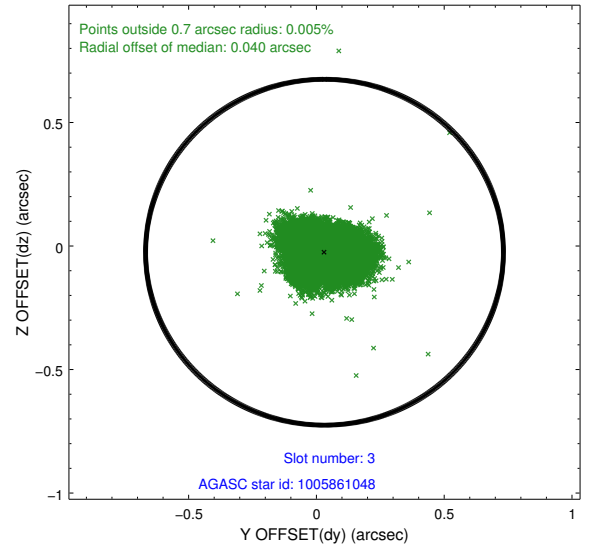
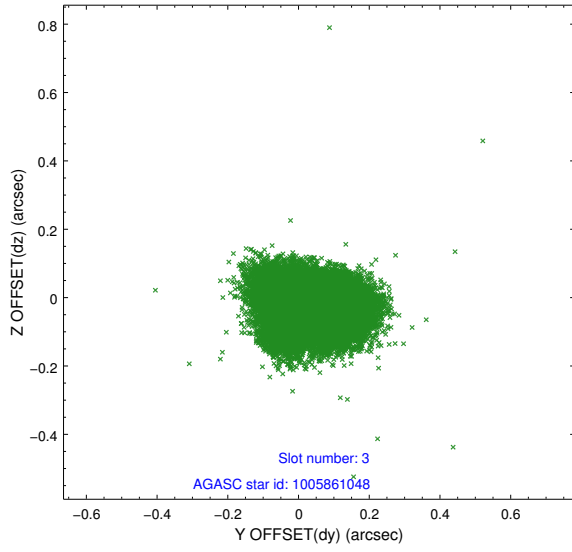


### Slot Statistics

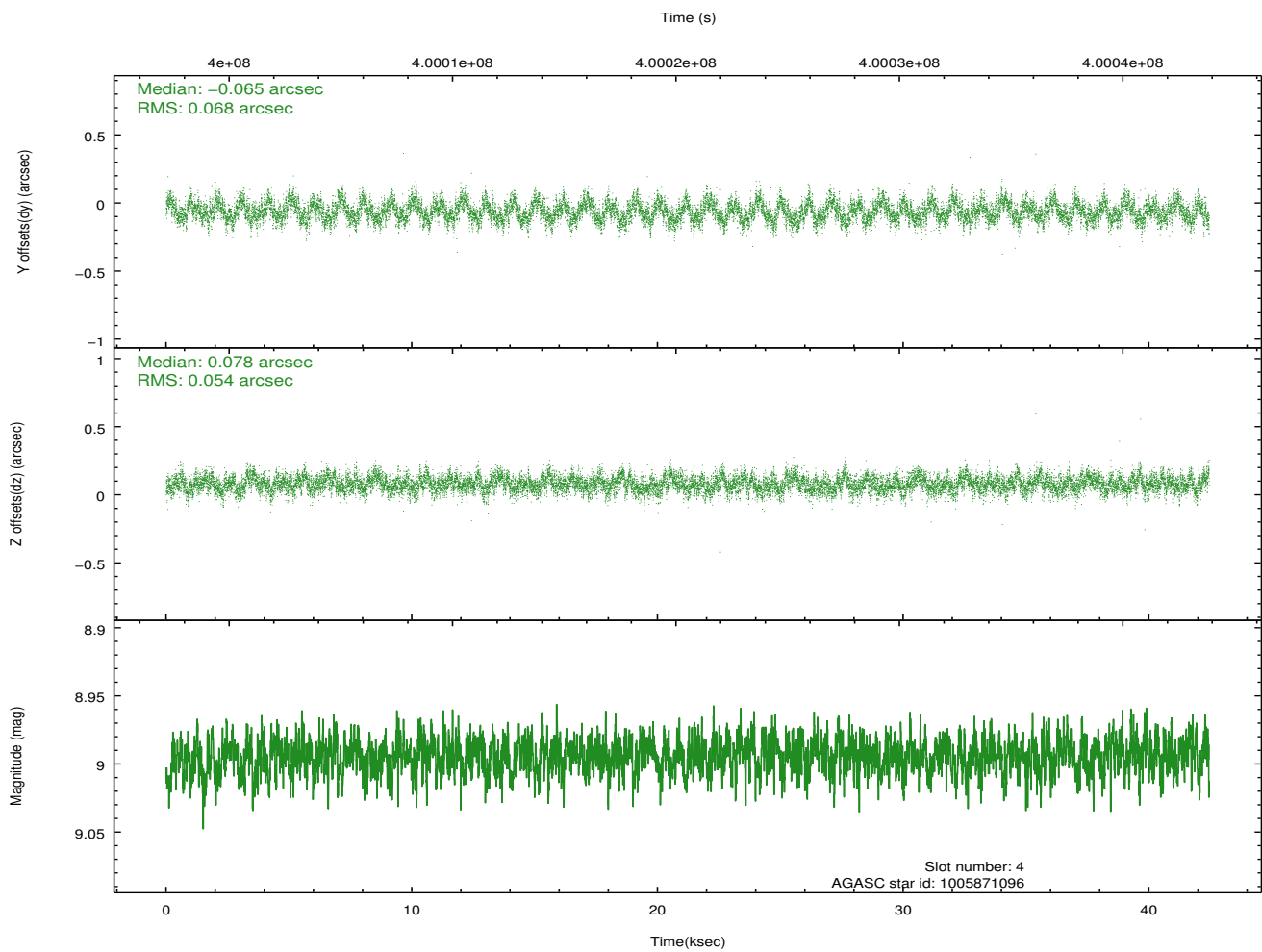
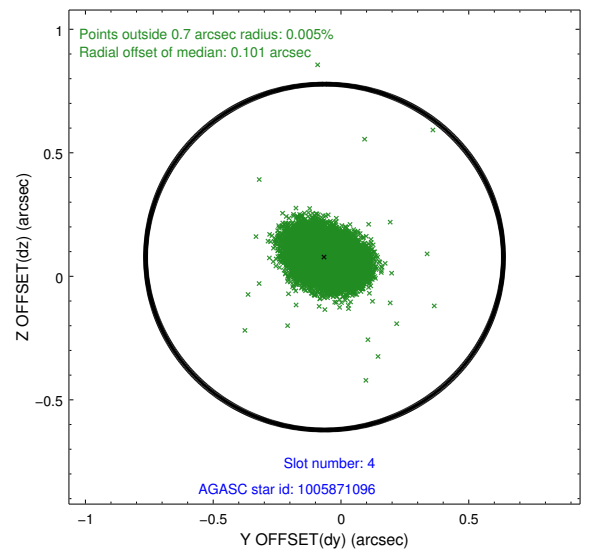
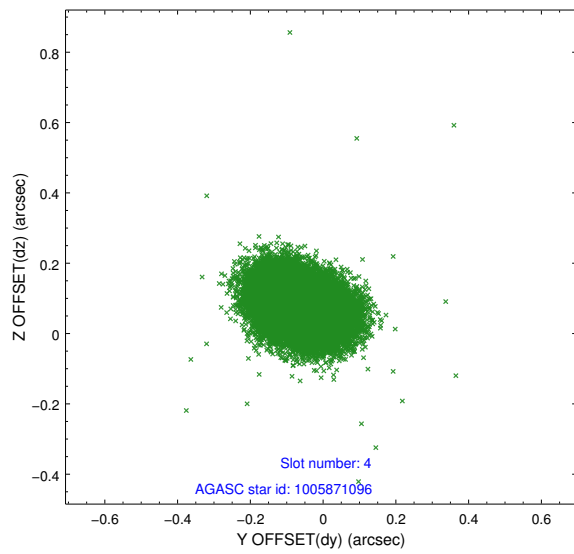
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.89	10355	-0.067	-0.055	0.010	0.021	0.000000	0.000000	-770.44	-1739.80
1	FID	ACIS-S-4	6.97	10353	0.195	0.047	0.011	0.028	0.000000	0.000000	2143.13	168.73
2	FID	ACIS-S-5	7.01	10356	-0.158	0.016	0.009	0.023	0.000000	0.000000	-1823.33	162.44
3	GUIDE	1005861048	8.40	20699	0.032	-0.025	0.103	0.163	128.669106	-44.528323	1802.37	-1470.55
4	GUIDE	1005871096	8.99	20691	-0.065	0.078	0.092	0.148	128.774147	-44.764566	1048.56	-992.97
5	GUIDE	1005871784	7.99	20698	0.171	0.009	0.082	0.134	128.533947	-44.544833	2029.18	-1201.45
6	GUIDE	1068263200	9.12	20684	0.018	-0.067	0.092	0.151	128.222628	-45.344390	771.40	1506.31
7	GUIDE	1005869048	8.26	20699	-0.163	0.013	0.063	0.105	128.429058	-44.495949	2348.21	-1161.73

## 2.4 Star Slots

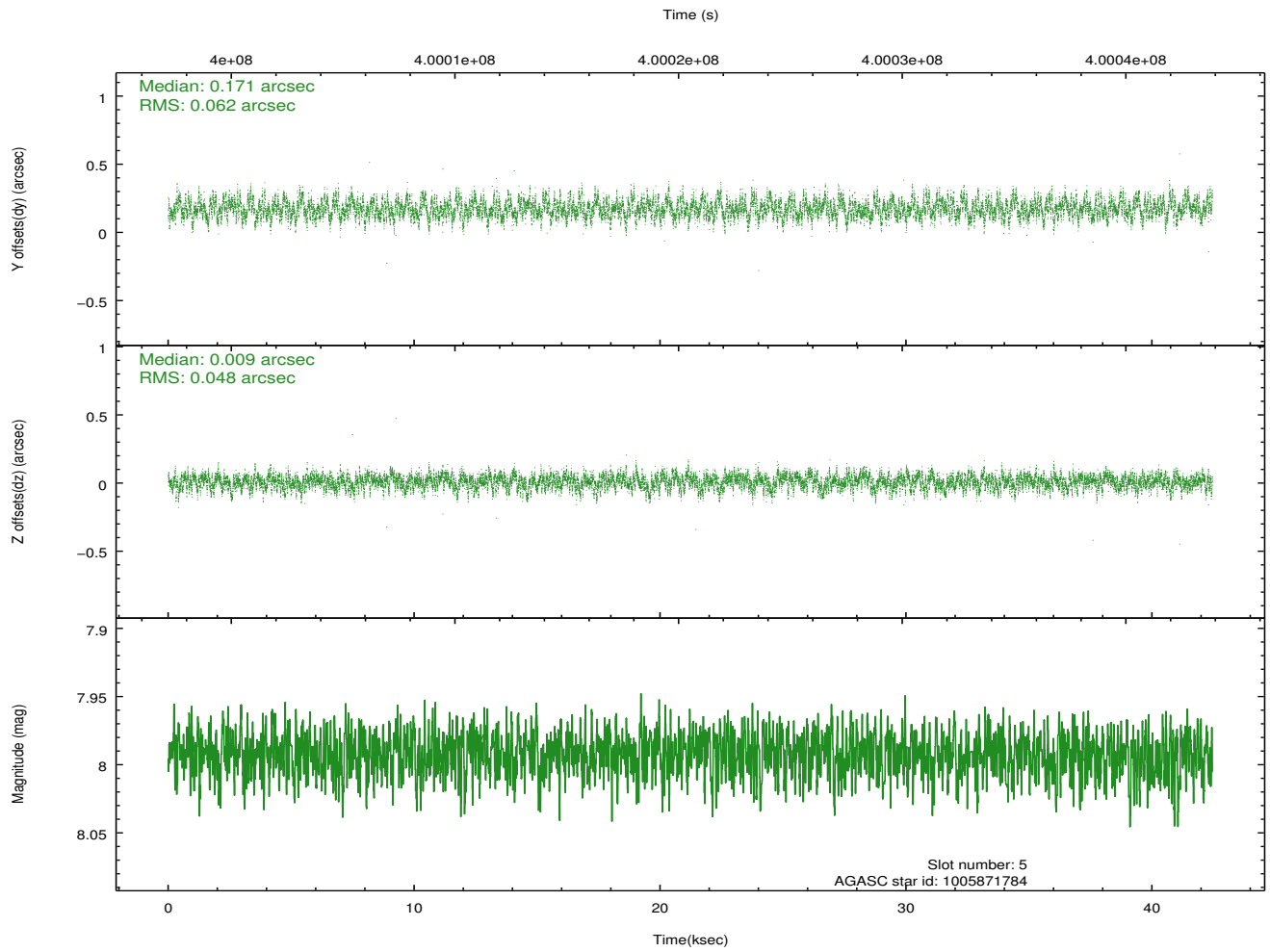
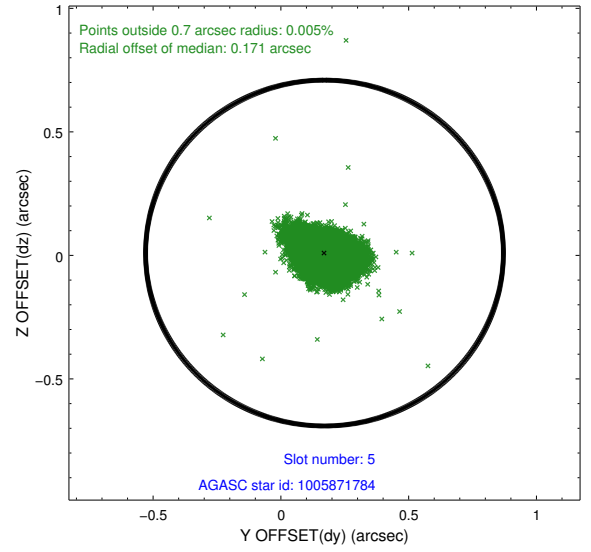
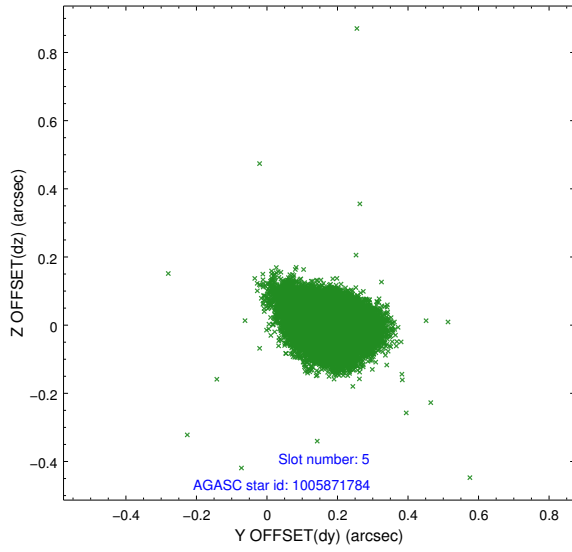
### 2.4.1 Slot 3



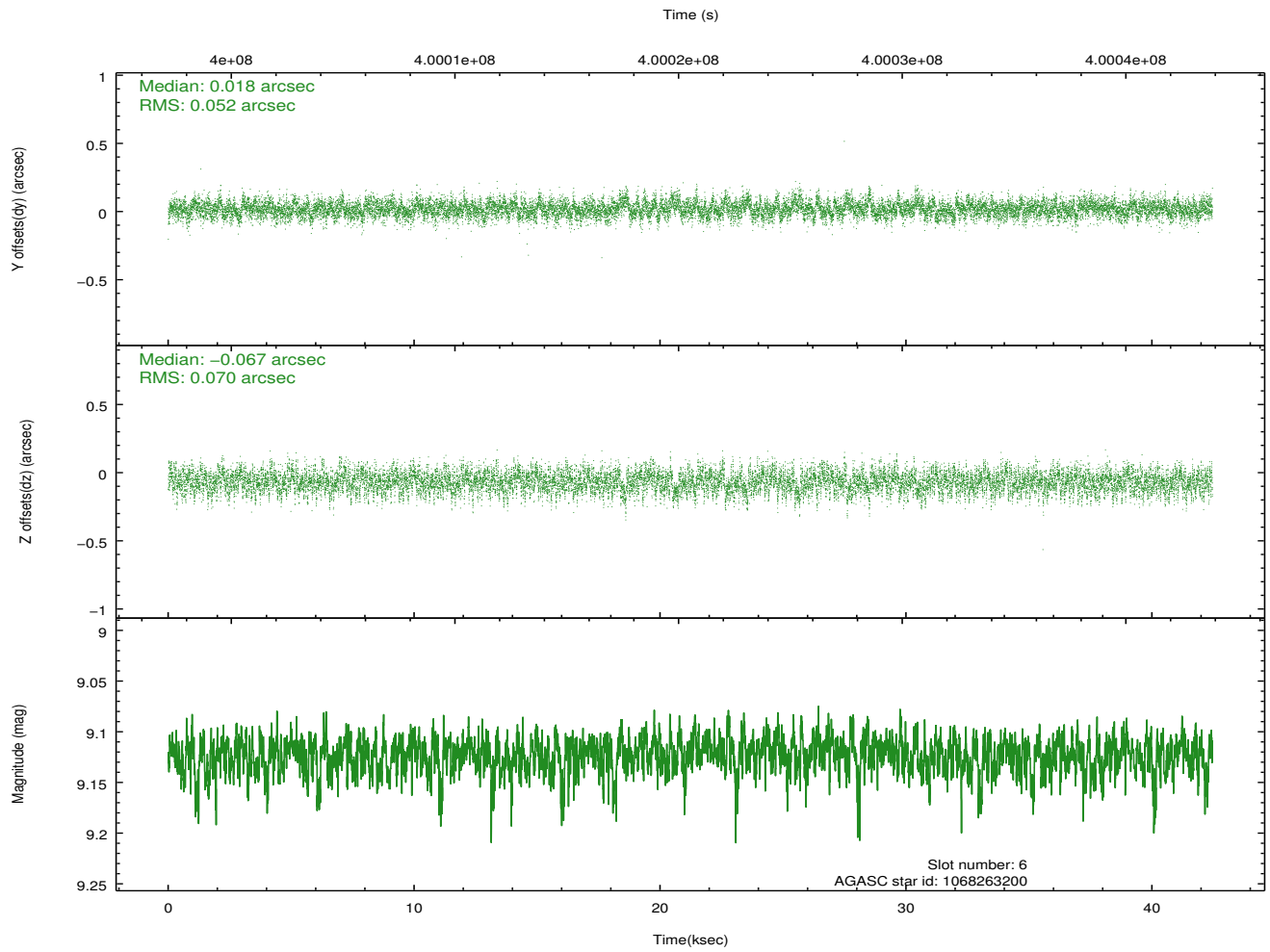
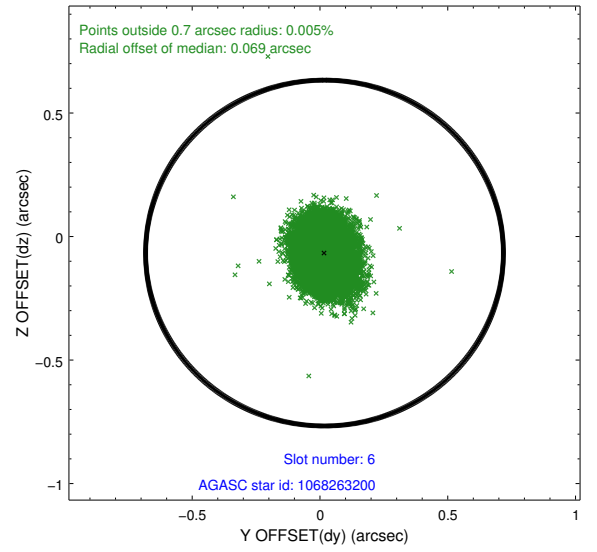
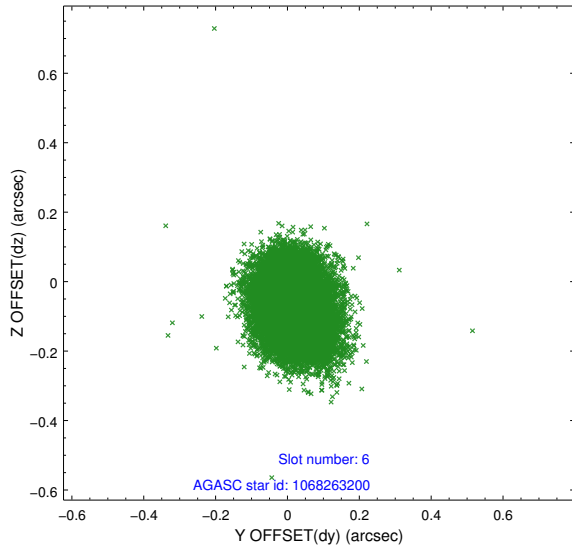
## 2.4.2 Slot 4



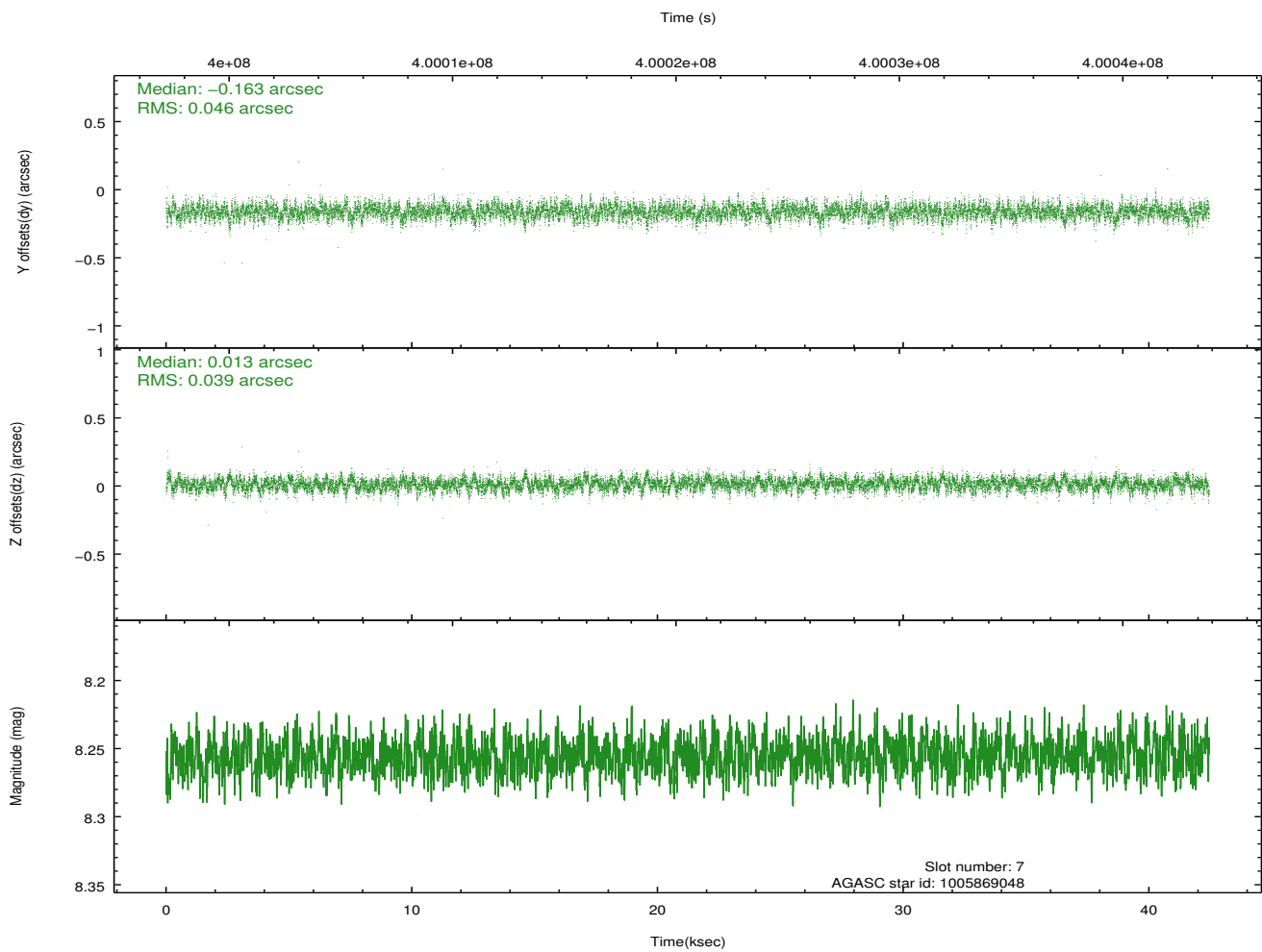
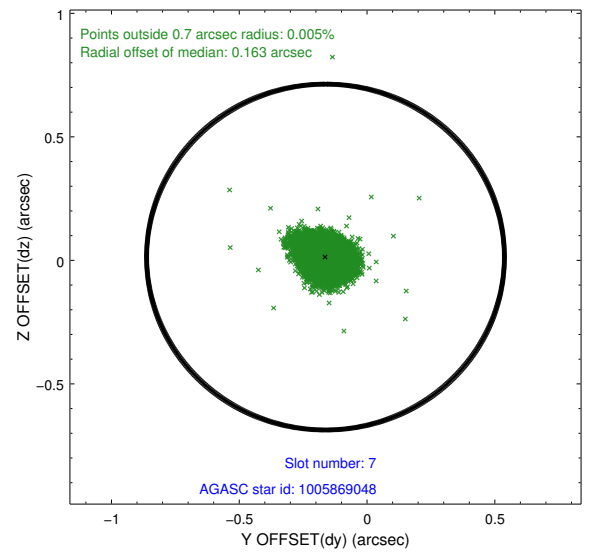
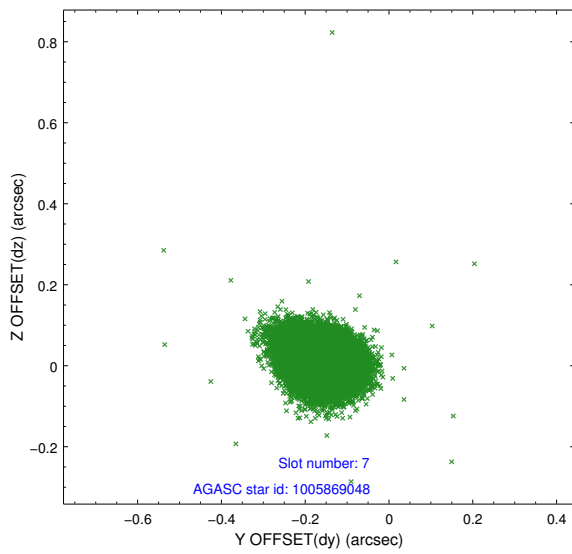
### 2.4.3 Slot 5



### 2.4.4 Slot 6

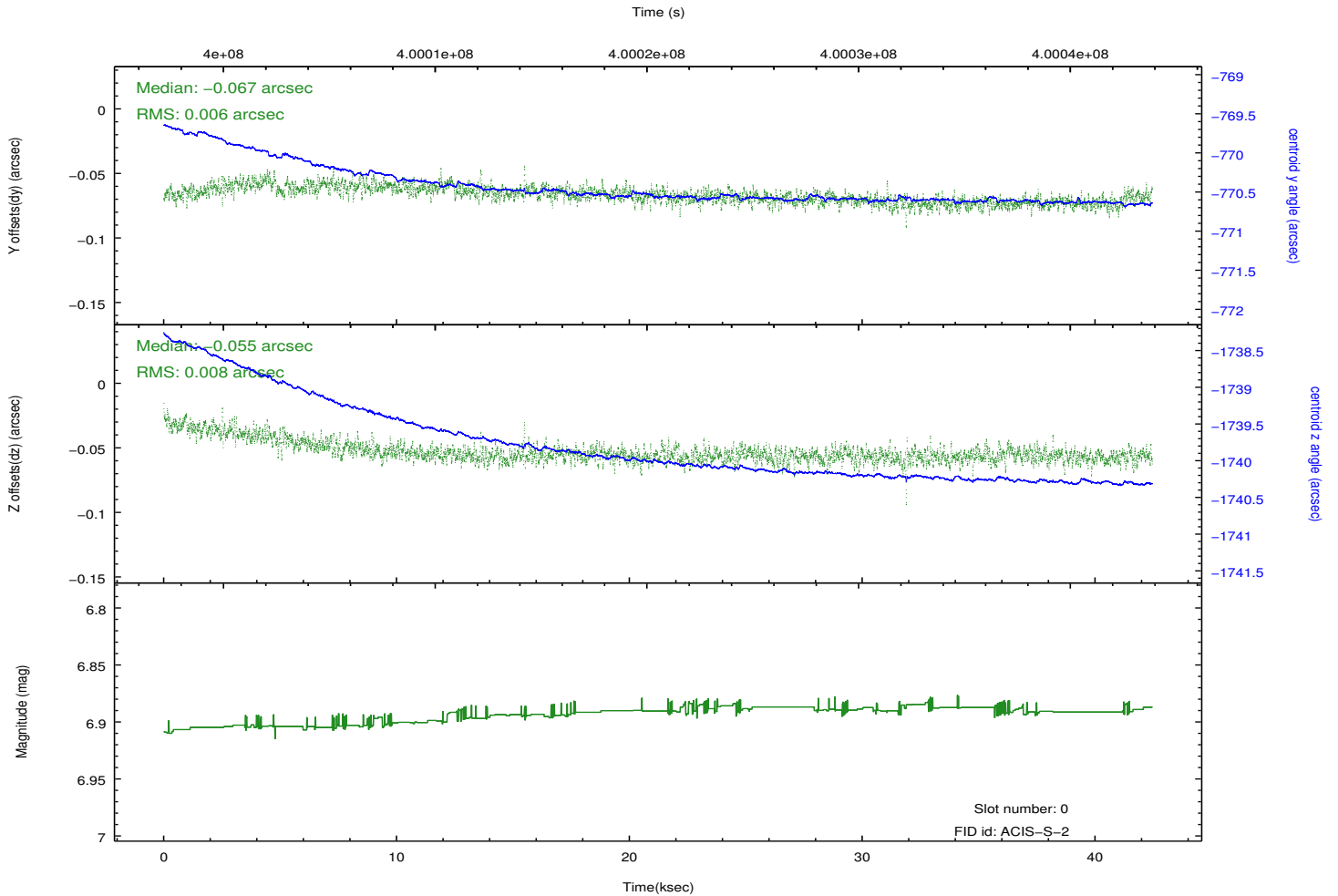
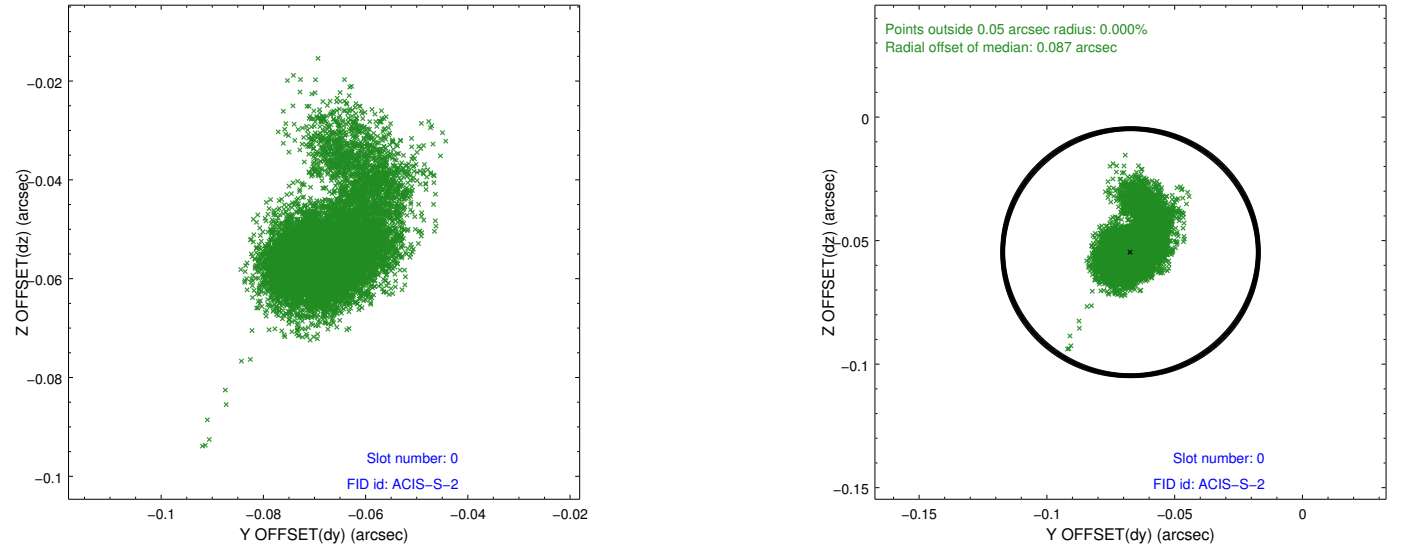


## 2.4.5 Slot 7

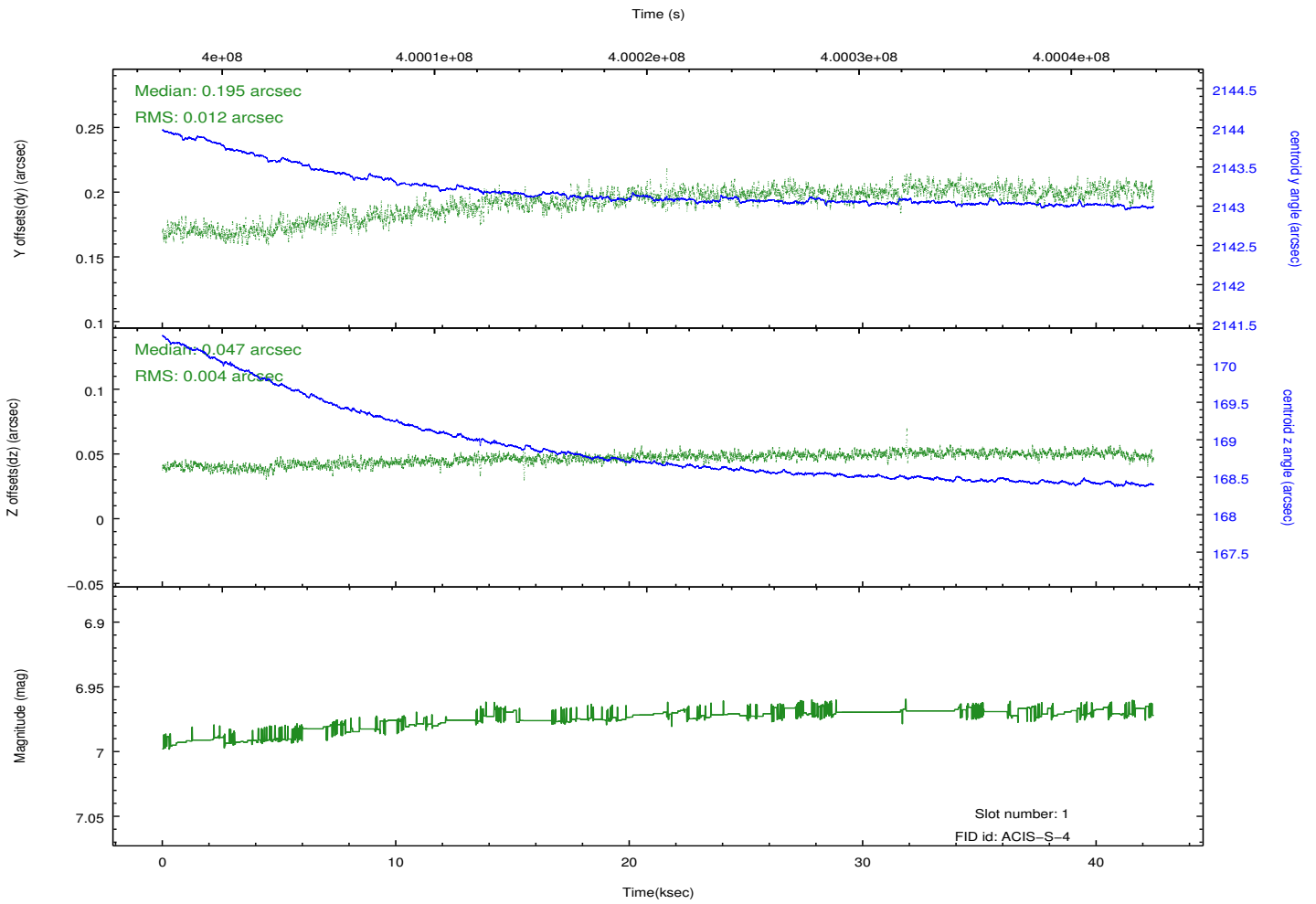
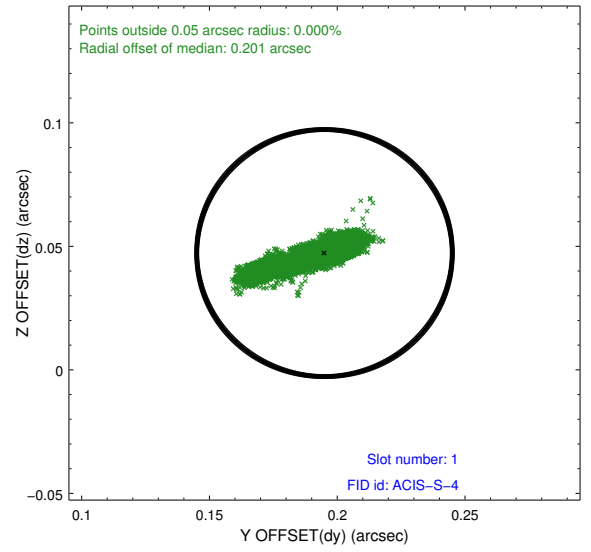
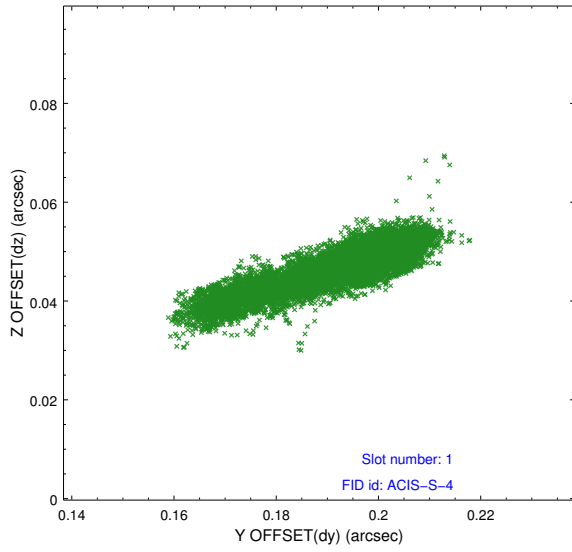


## 2.5 FID Slots

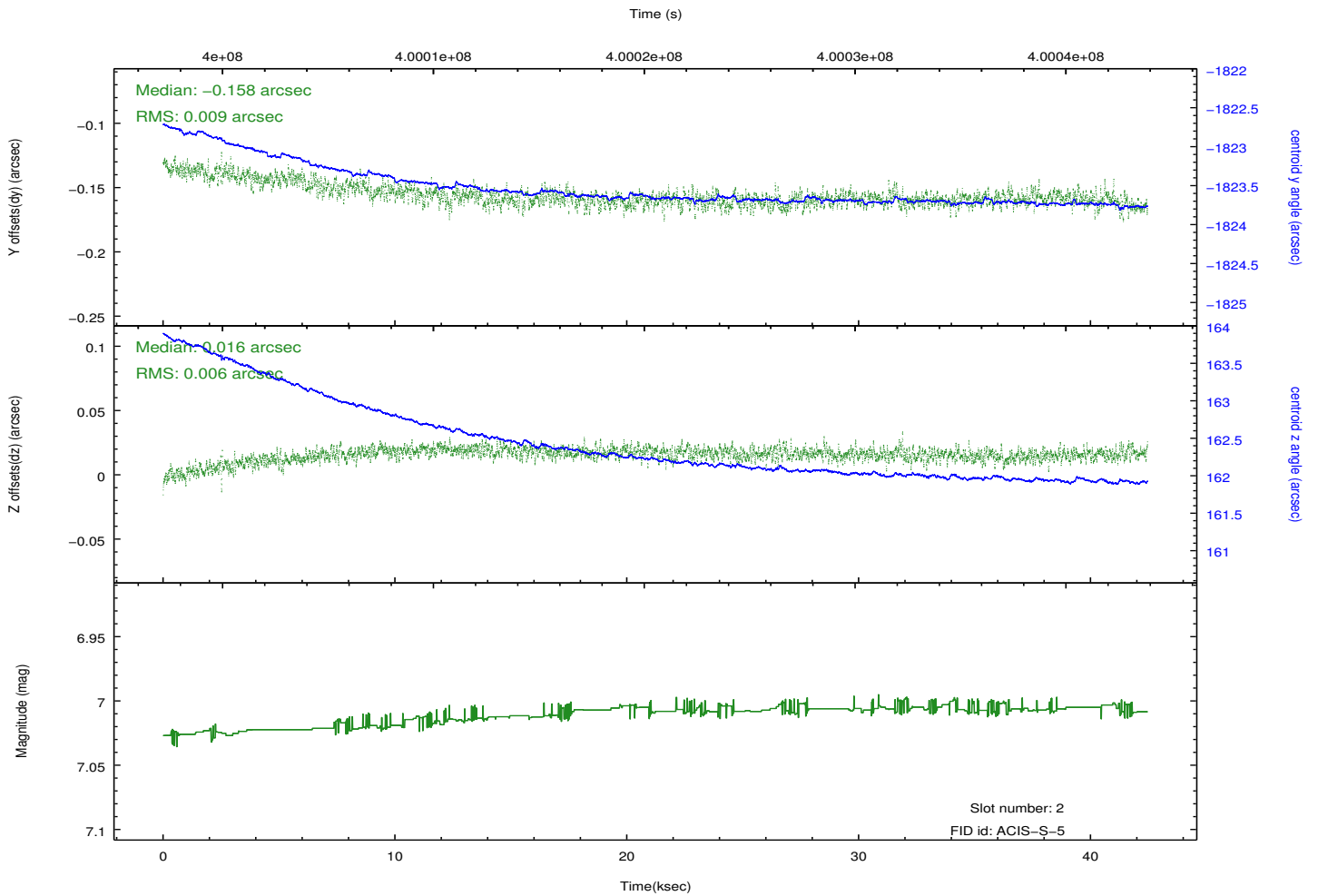
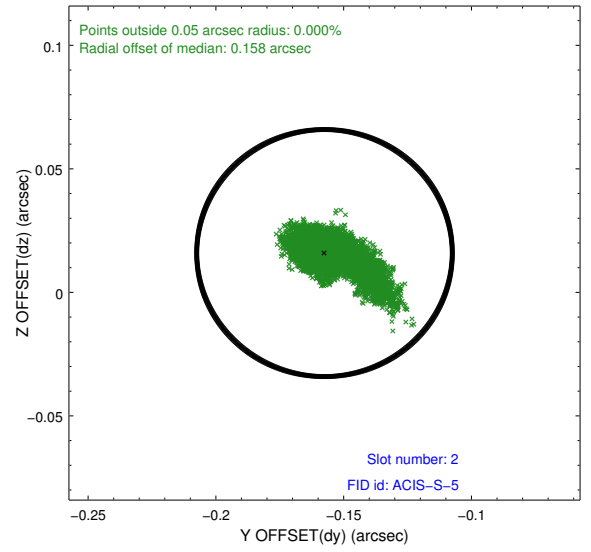
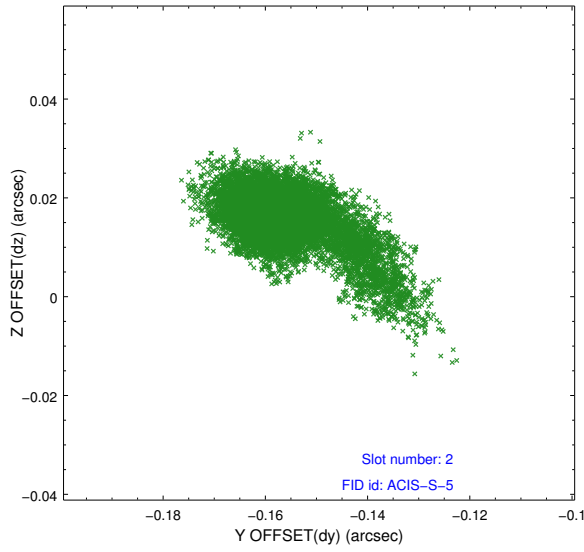
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.07.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	42.319999842405

## A.2 Comments

A spatial region of the original bias map for CCD = 6 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small ( $\sim 20$  eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 6 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords:  
(128.59270, -45.08407), (128.59804, -45.08722), (128.66116, -45.03395), (128.65582, -45.03080)