

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 10965 - L2 Version 3  
Chandra X-Ray Center

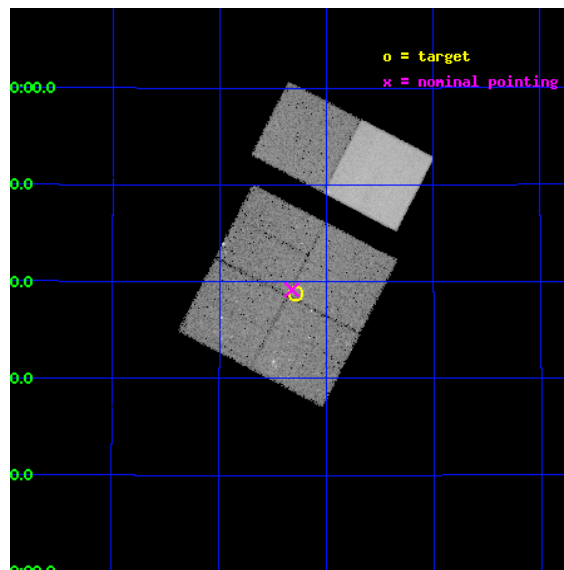
L2 Processing Date : Jun 25 2012

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# 1 Front

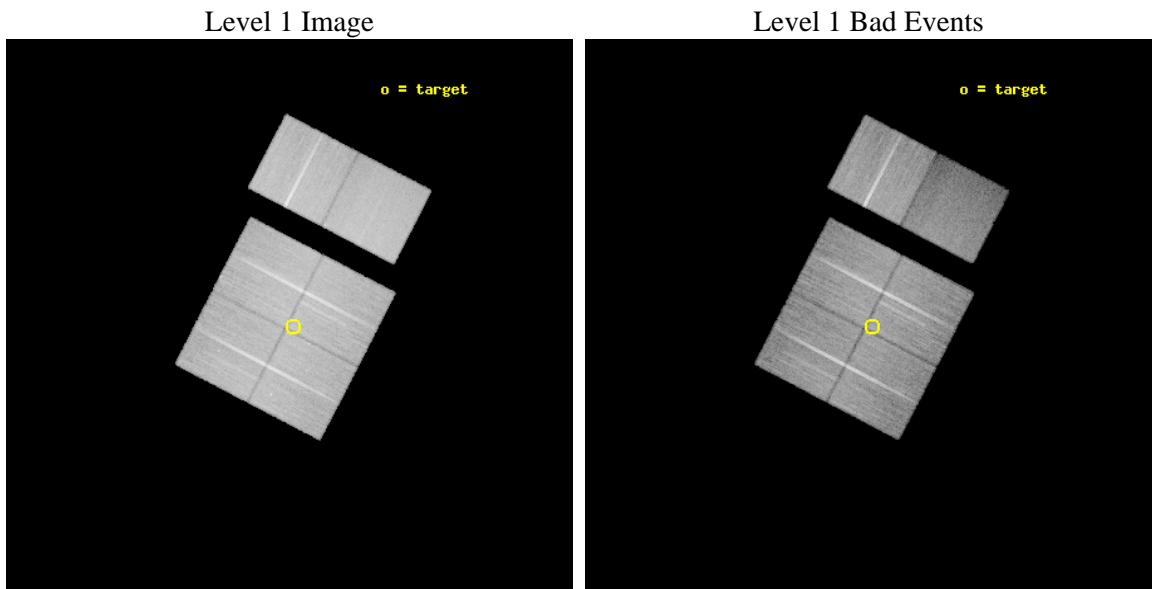
seq_num	200597	Sequence number
obs_id	10965	Observation id
title	The Chandra Cygnus OB2 Survey	Proposal title
observer	Dr. Jeremy Drake	Principal investigator
object	Cygnus OB2	Source name
dtycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	308.573015	Observer's specified target RA [deg]
dec_targ	41.647249	Observer's specified target Dec [deg]
ra_nom	308.5807170151	Nominal RA [deg]
dec_nom	41.652945614029	Nominal Dec [deg]
roll_nom	27.403563019974	Nominal Roll [deg]
revision	3	Processing version of data
ontime	30041.558897913	Sum of GTIs [s]
livetime	29661.154590292	Livetime [s]
ontime0	30041.558927834	Sum of GTIs [s]
ontime1	30041.558917761	Sum of GTIs [s]
ontime2	30044.799888134	Sum of GTIs [s]
ontime3	30041.558897913	Sum of GTIs [s]
ontime6	30038.317957461	Sum of GTIs [s]
ontime7	30044.799888134	Sum of GTIs [s]
l2events	217130	Number of level 2 events



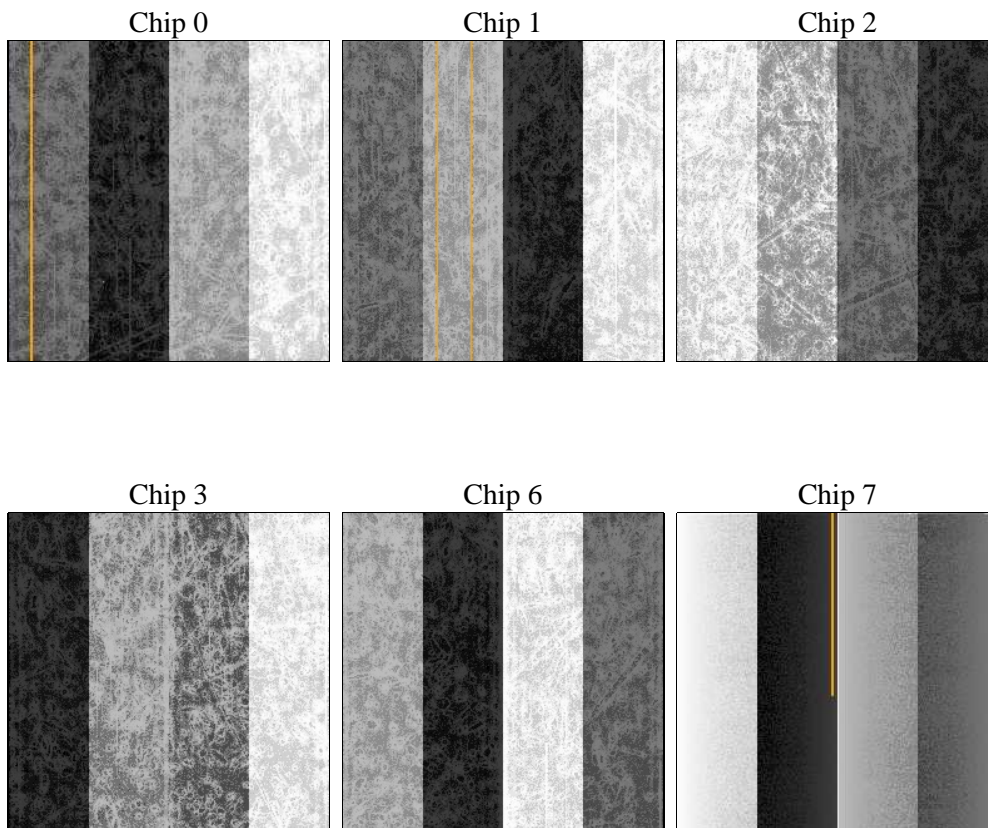
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	30041.558897913	Sum of GTIs [s]
caldbver	4.4.10	&#160	ontime0	30041.558927834	Sum of GTIs [s]
date	2012-06-25T20:47:35	Date and time of file creation	ontime1	30041.558917761	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	30044.799888134	Sum of GTIs [s]
			ontime3	30041.558897913	Sum of GTIs [s]
			ontime6	30038.317957461	Sum of GTIs [s]
			ontime7	30044.799888134	Sum of GTIs [s]
			l1events	1361585	Number of level 1 events

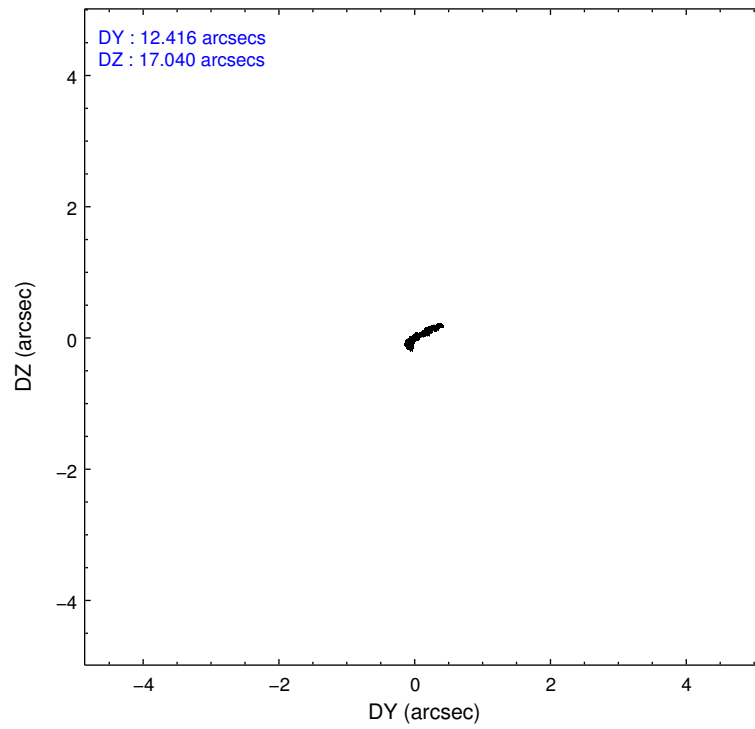
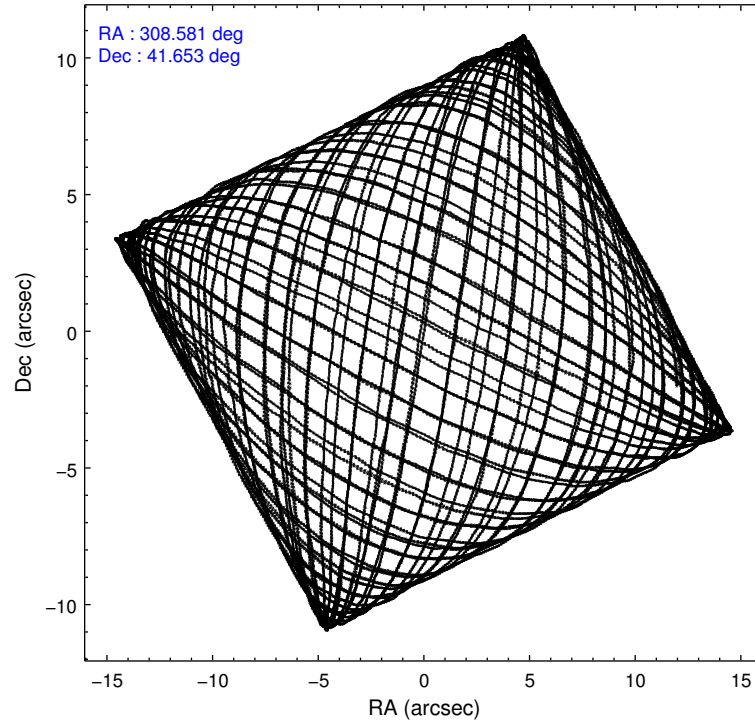
### 2.1.4 Events

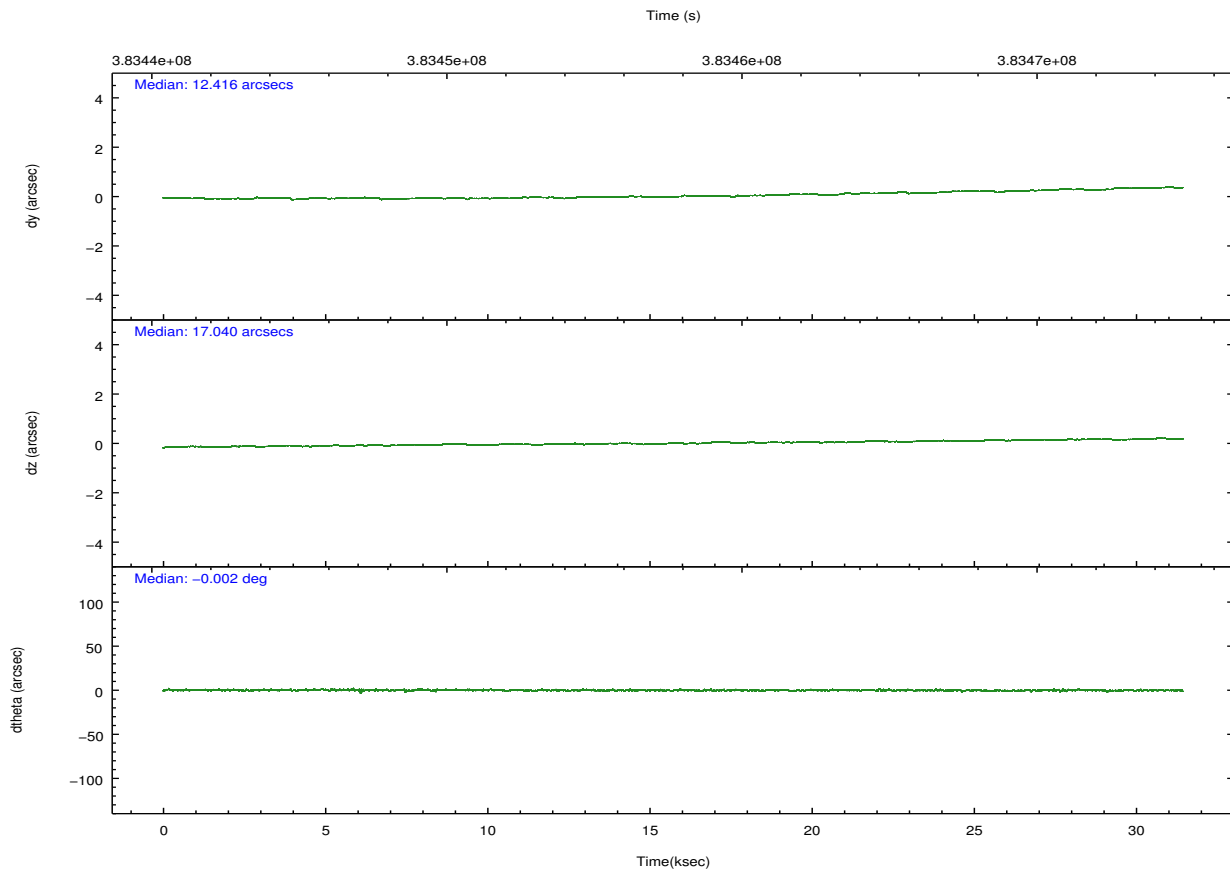
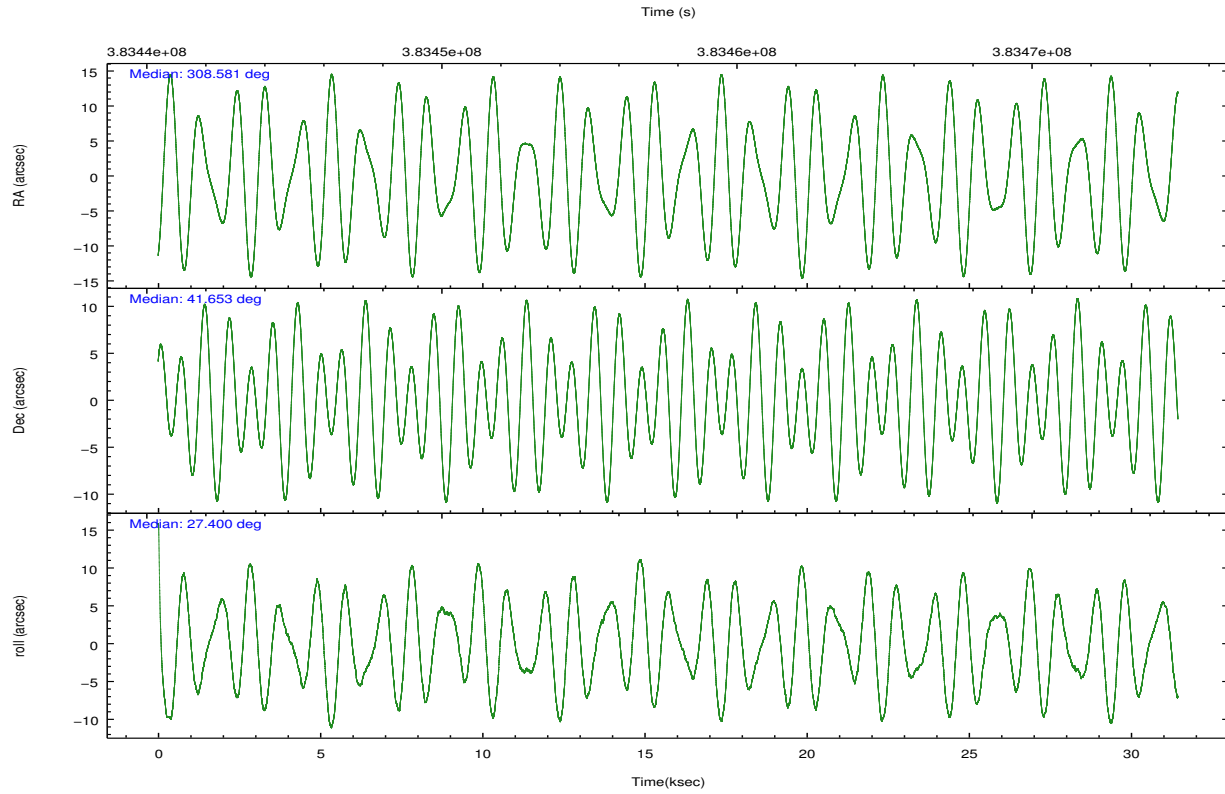
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	209945	214390	234376	225959	243966	232949	grade 0 events	10095	11328	9807	9049	9652	11608
rejected events	184176	186273	209543	202500	218365	118642		4%	5%	4%	4%	3%	4%
rejected %	87%	86%	89%	89%	89%	50%	grade 1 events	147	138	149	137	135	410
								0%	0%	0%	0%	0%	0%
							grade 2 events	6212	6066	5784	4973	5702	24481
								2%	2%	2%	2%	2%	10%
							grade 3 events	2596	2908	2397	2589	2618	10450
								1%	1%	1%	1%	1%	4%
							grade 4 events	2418	2811	2537	2494	2509	10203
								1%	1%	1%	1%	1%	4%
							grade 5 events	7504	7967	7287	8749	8453	24699
								3%	3%	3%	3%	3%	10%
							grade 6 events	4450	5011	4315	4358	5123	57587
								2%	2%	1%	1%	2%	24%
							grade 7 events	176523	178161	202100	193610	209774	93511
								84%	83%	86%	85%	85%	40%

## 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	308.561006	308.5807170150997	CCD I2 on	Y	Y
[deg] Pointing Dec	41.629708	41.652945614029	CCD I3 on	Y	Y
[deg] Pointing Roll	27.207981	27.40356301997398	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	O2	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O1	Y
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	383443384.184000	383441746.95226	CCD S5 on	N	N
Observation start date	2010-02-25T00:01:58	2010-02-24T23:35:46	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	383473384.184000	383474468.02892	On-chip summing requested	N	N
Observation end date	2010-02-25T08:21:58	2010-02-25T08:41:08	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



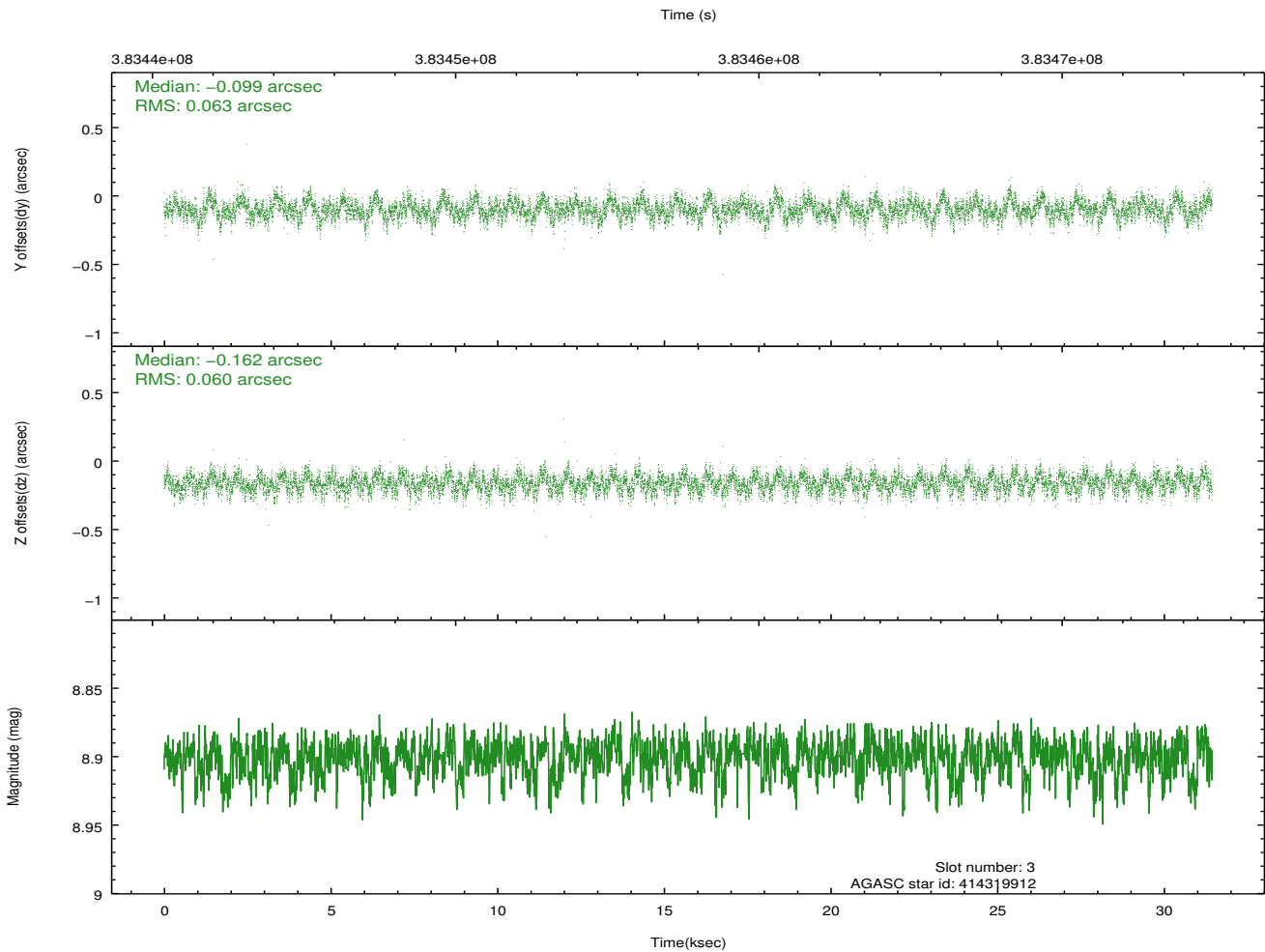
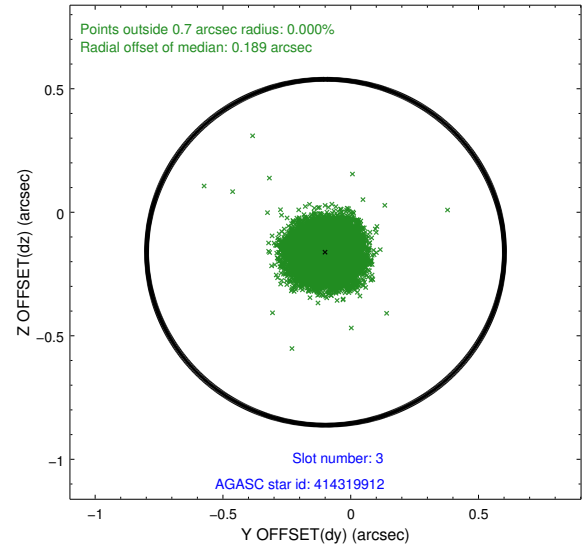
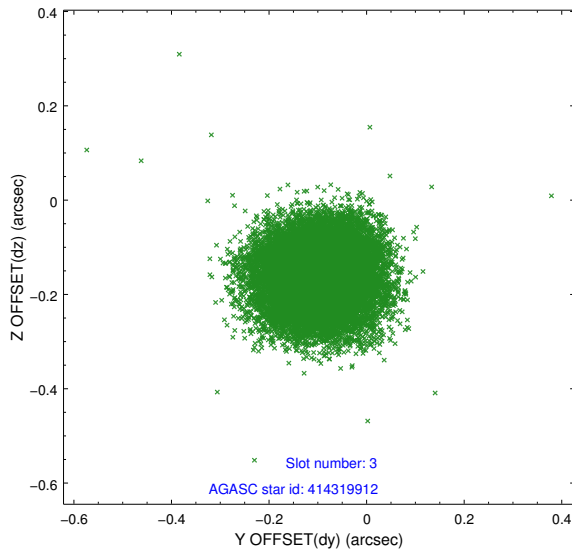


### Slot Statistics

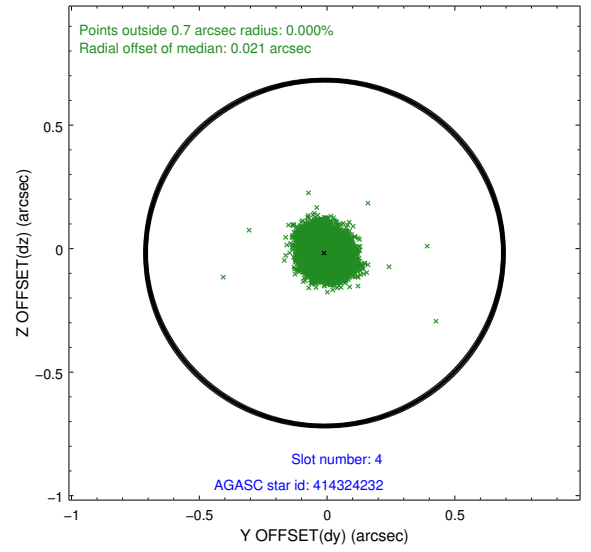
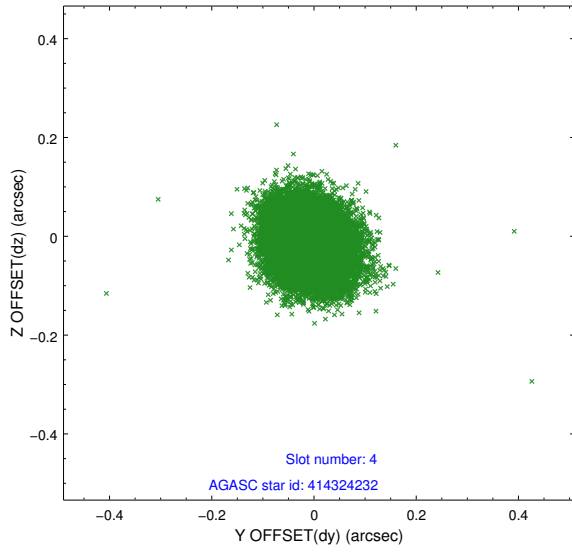
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.01	7668	-0.025	-0.092	0.008	0.014	0.000000	0.000000	927.03	-840.80
1	FID	ACIS-I-4	6.93	7669	0.140	0.100	0.009	0.017	0.000000	0.000000	2147.27	1059.17
2	FID	ACIS-I-5	7.00	7668	-0.214	0.063	0.009	0.018	0.000000	0.000000	-1821.08	1057.05
3	GUIDE	414319912	8.90	15320	-0.099	-0.162	0.093	0.147	308.768330	42.373876	1715.53	2131.16
4	GUIDE	414324232	8.31	15334	-0.010	-0.018	0.067	0.109	308.637806	41.996627	786.78	1081.14
5	GUIDE	414326136	7.38	15337	-0.072	0.093	0.064	0.102	308.256176	41.473642	-987.08	-121.99
6	GUIDE	414327224	7.99	15335	0.044	0.047	0.077	0.122	309.355439	41.393115	1523.68	-1729.28
7	GUIDE	413799128	8.73	15326	0.131	0.039	0.074	0.119	307.948219	41.110579	-2329.37	-897.04

## 2.4 Star Slots

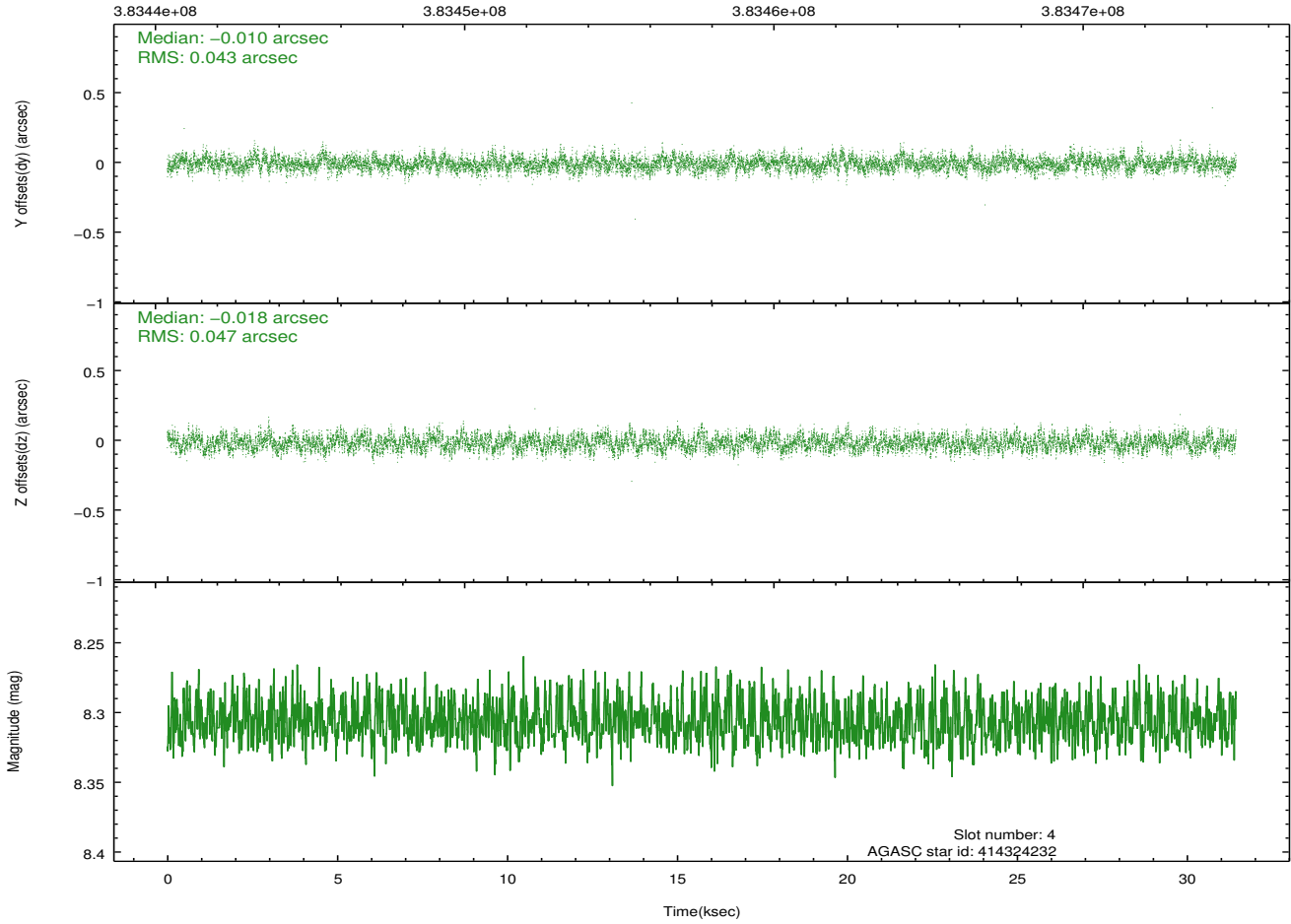
### 2.4.1 Slot 3



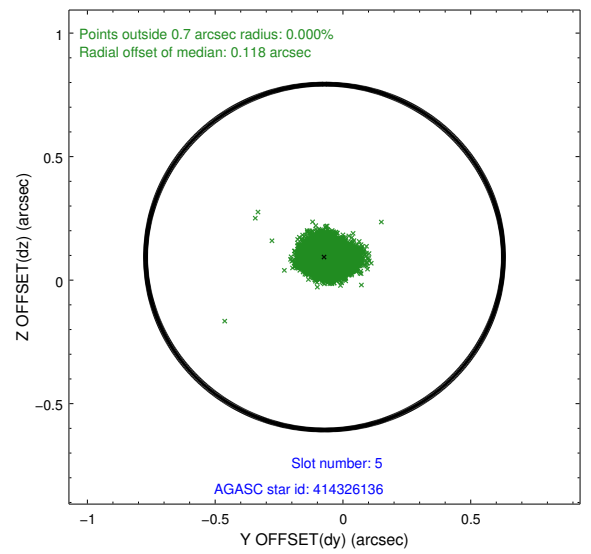
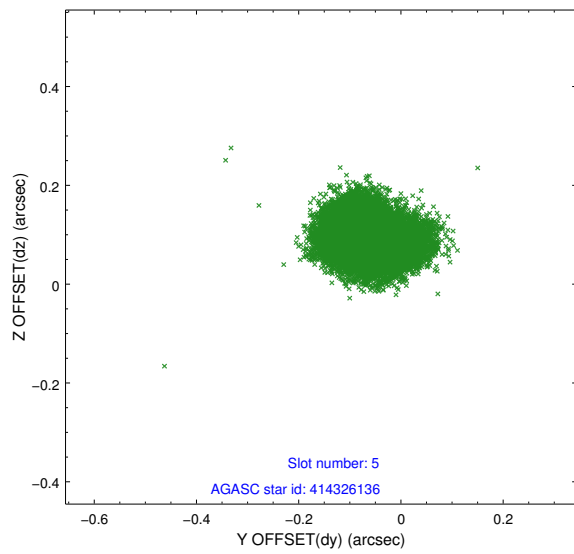
### 2.4.2 Slot 4



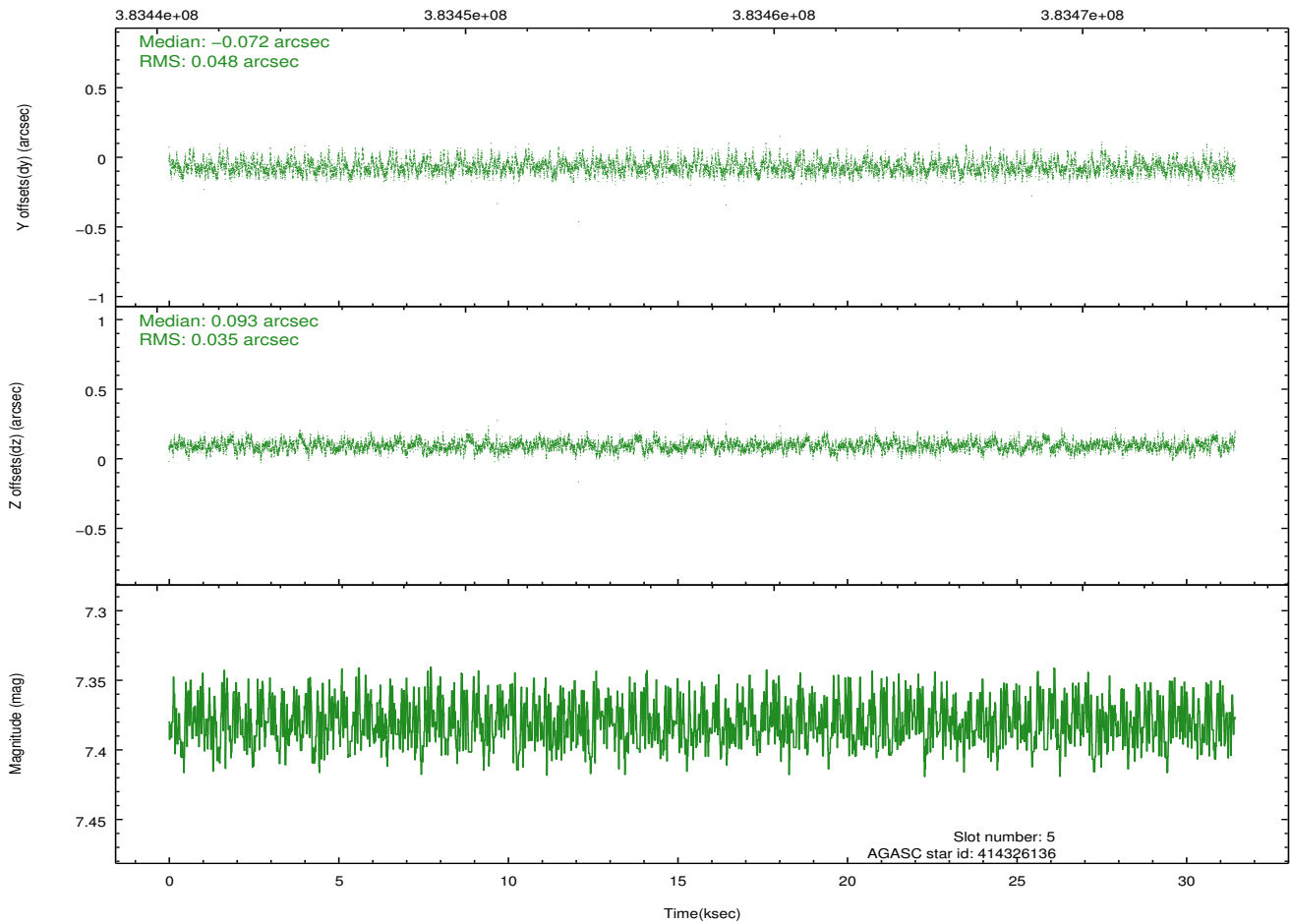
Time (s)



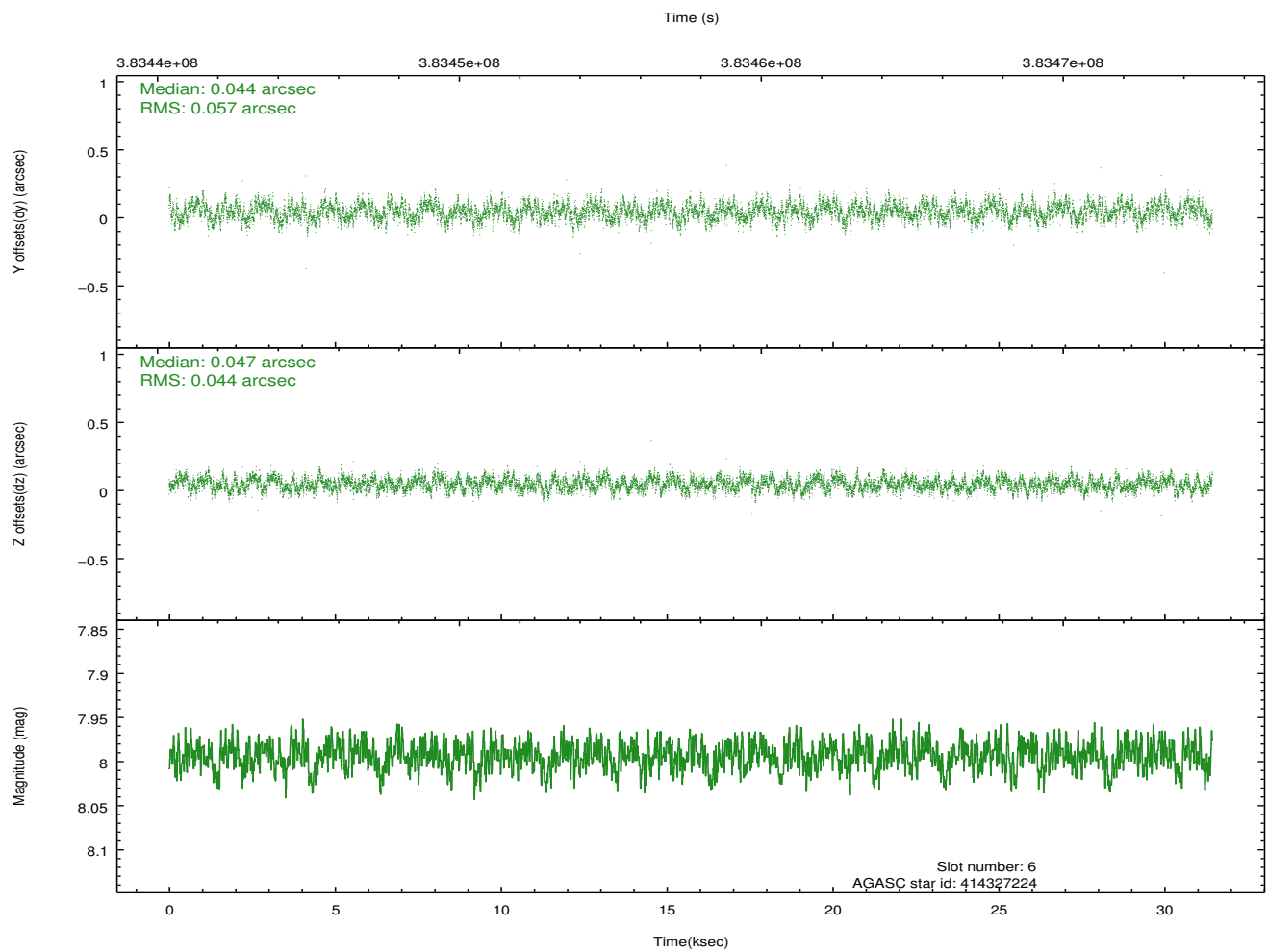
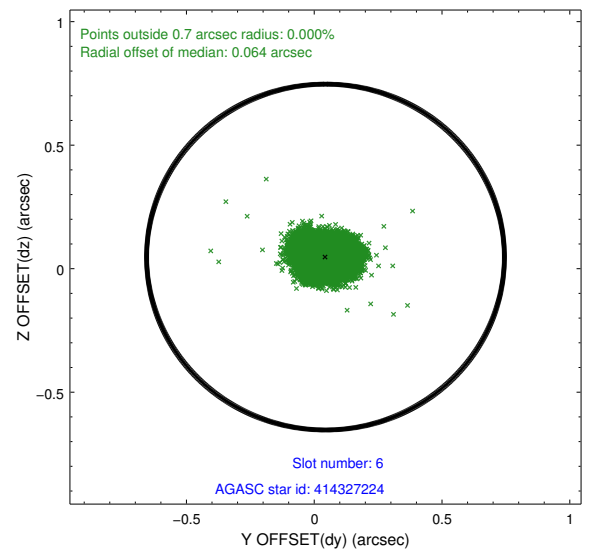
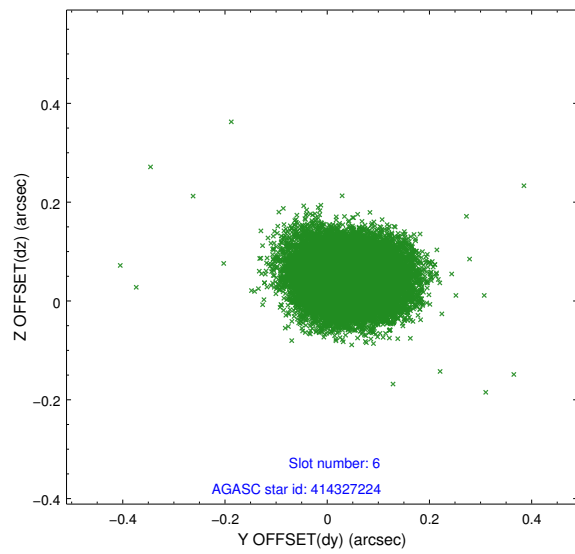
### 2.4.3 Slot 5



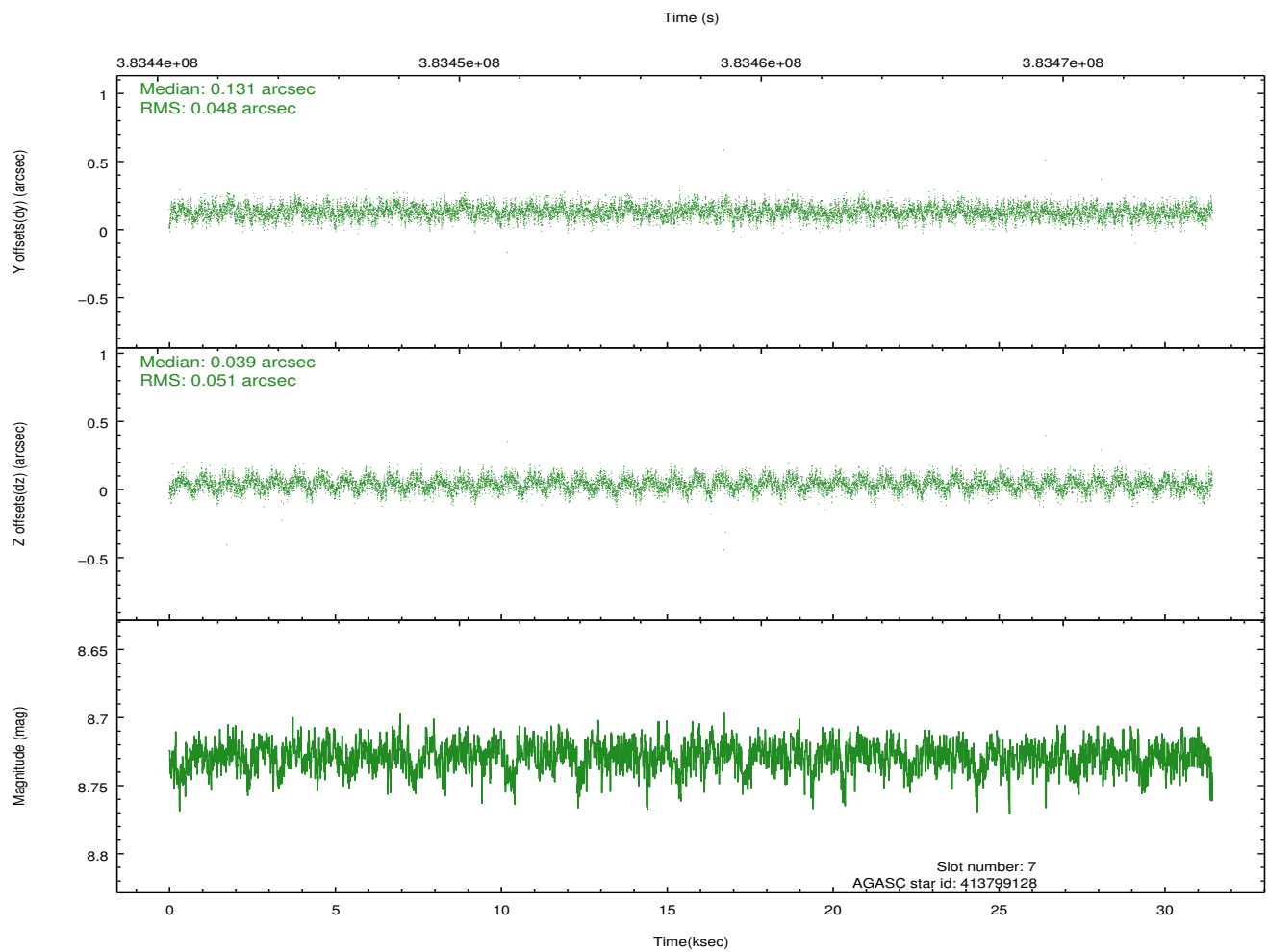
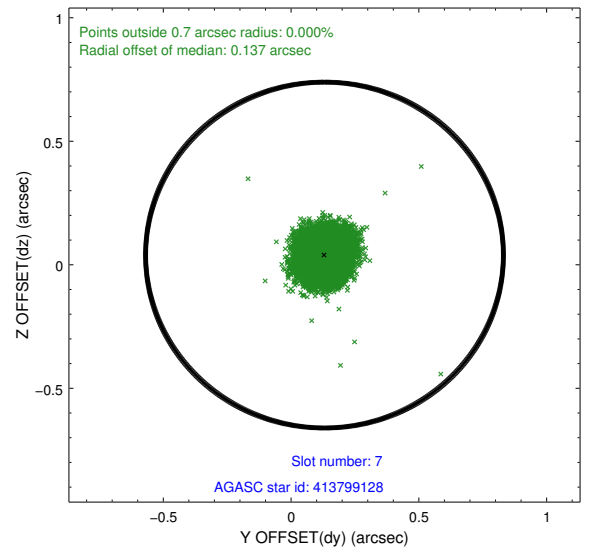
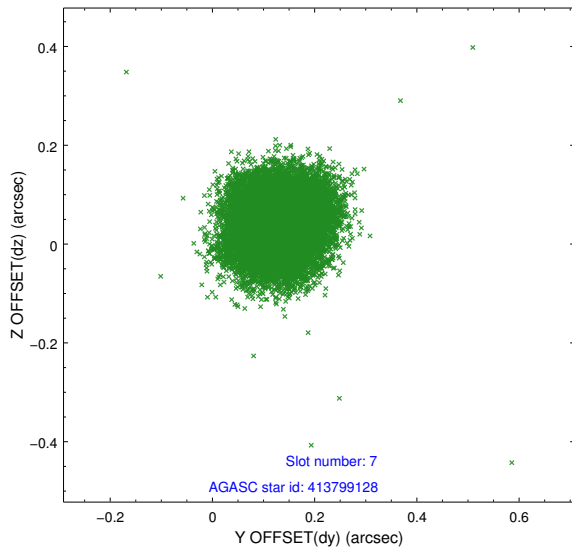
Time (s)



## 2.4.4 Slot 6

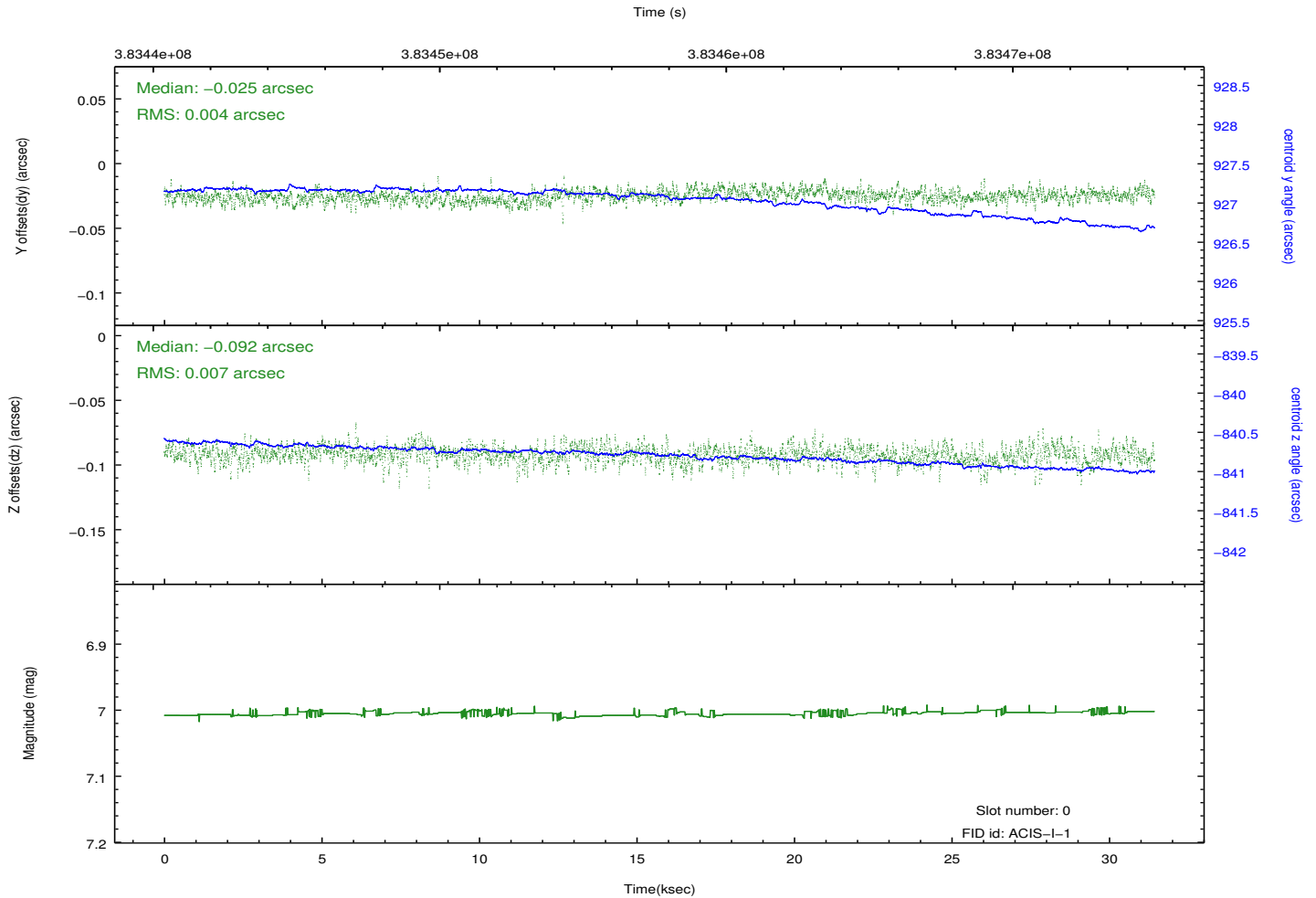
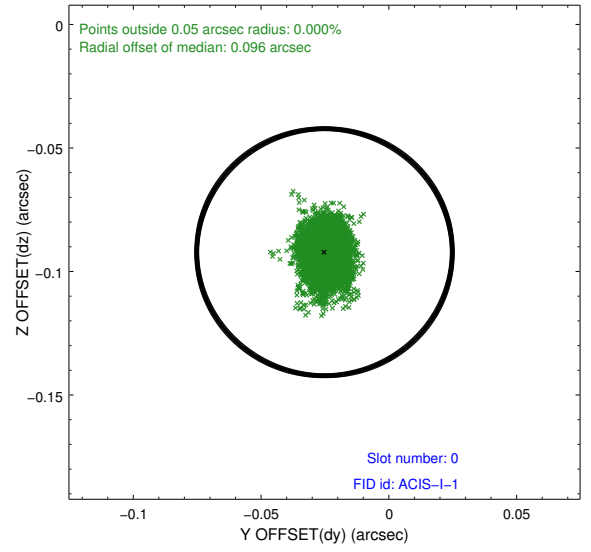
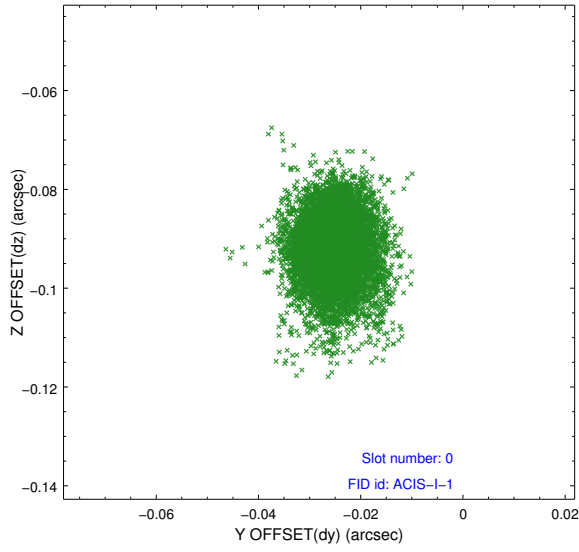


## 2.4.5 Slot 7

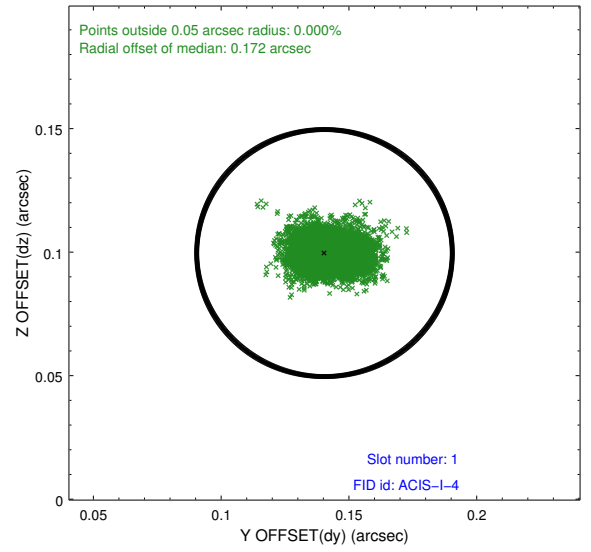
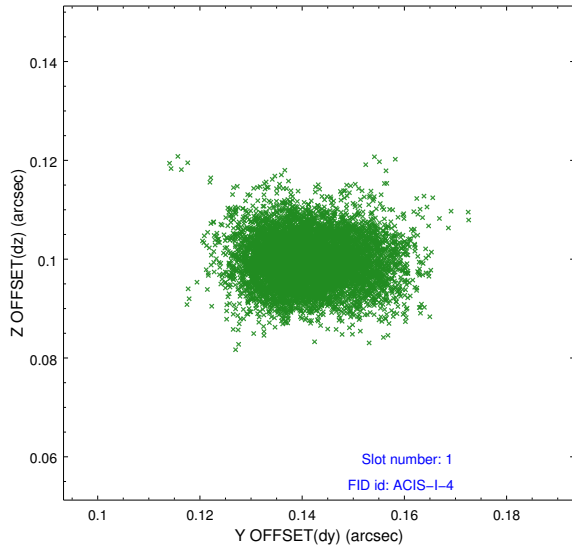


## 2.5 FID Slots

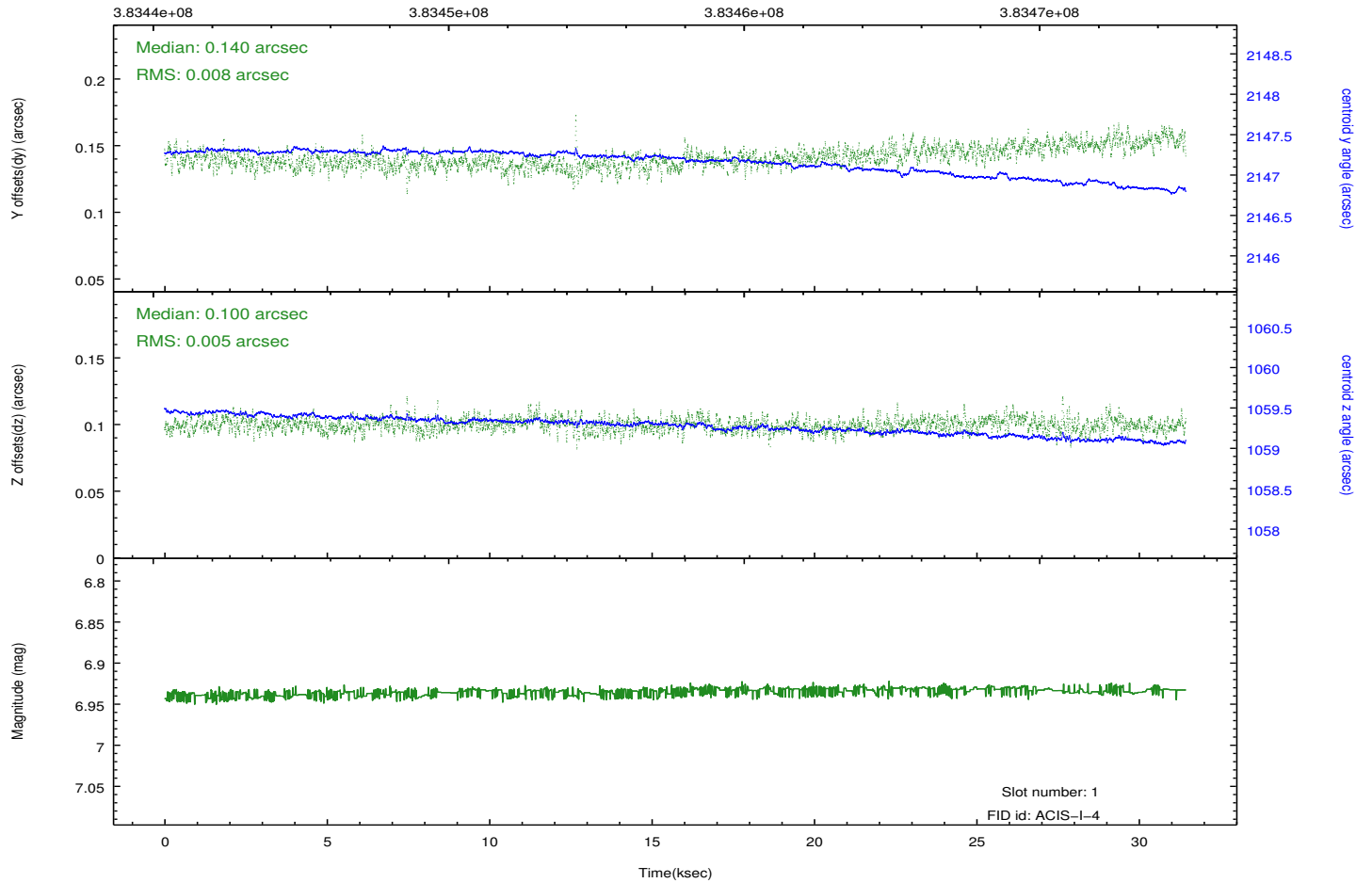
### 2.5.1 Slot 0



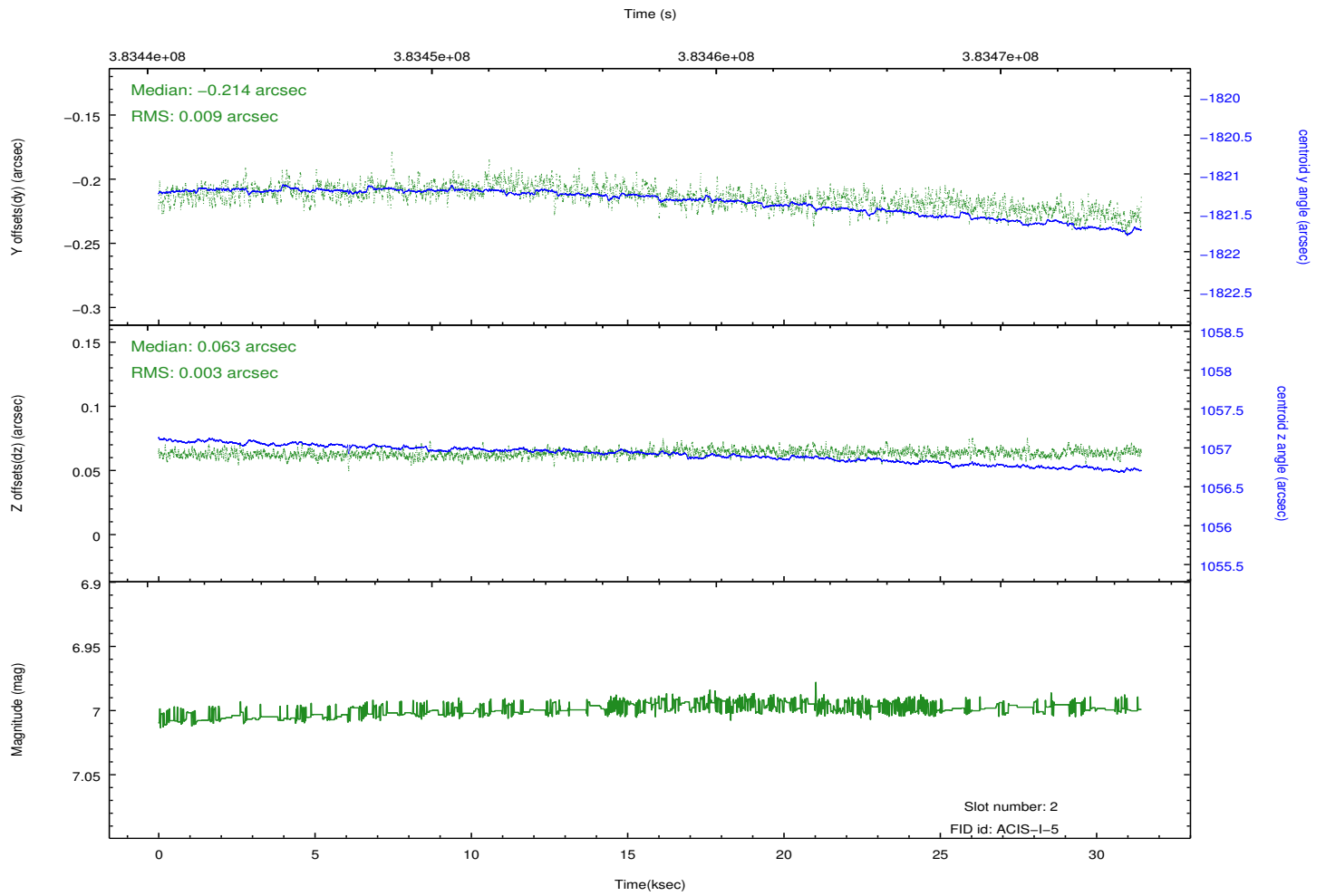
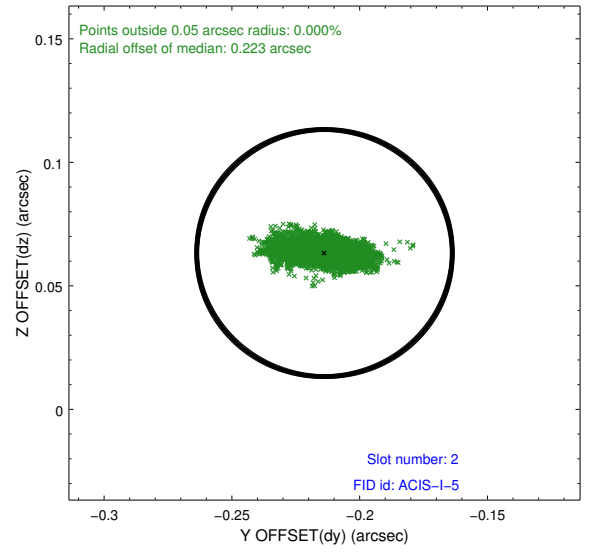
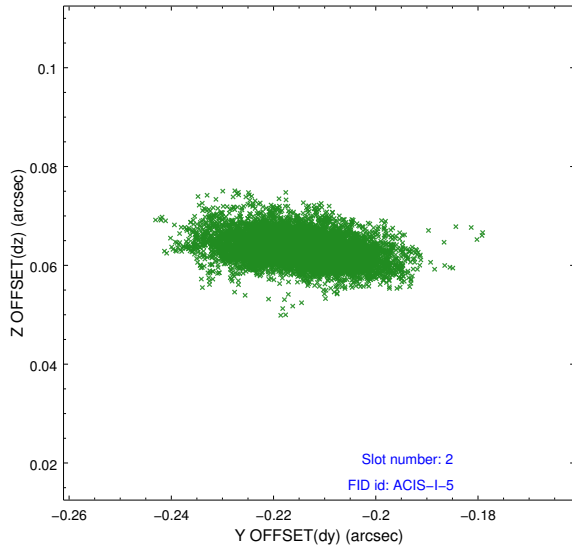
## 2.5.2 Slot 1



Time (s)



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.07.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.041558897853

## A.2 Comments

A spatial region of the original bias map for CCD = 1 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 = 1 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:  
(308.48499,41.56902), (308.48820,41.56443), (308.55499,41.59038), (308.55454,41.59604)