

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12368 - L2 Version 3  
Chandra X-Ray Center

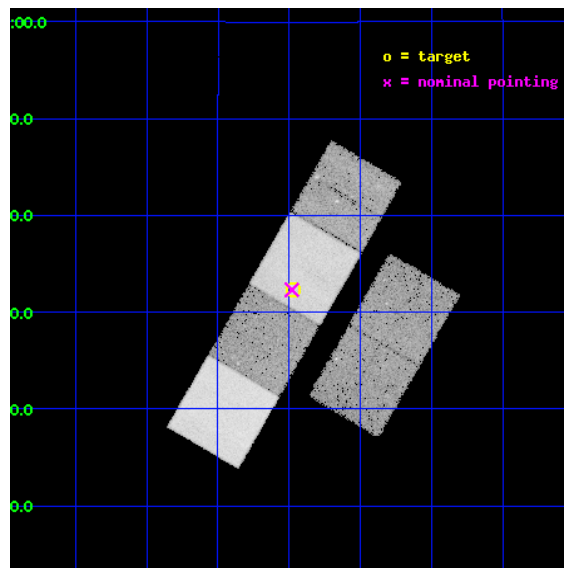
L2 Processing Date : Feb 28 2012

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# 1 Front

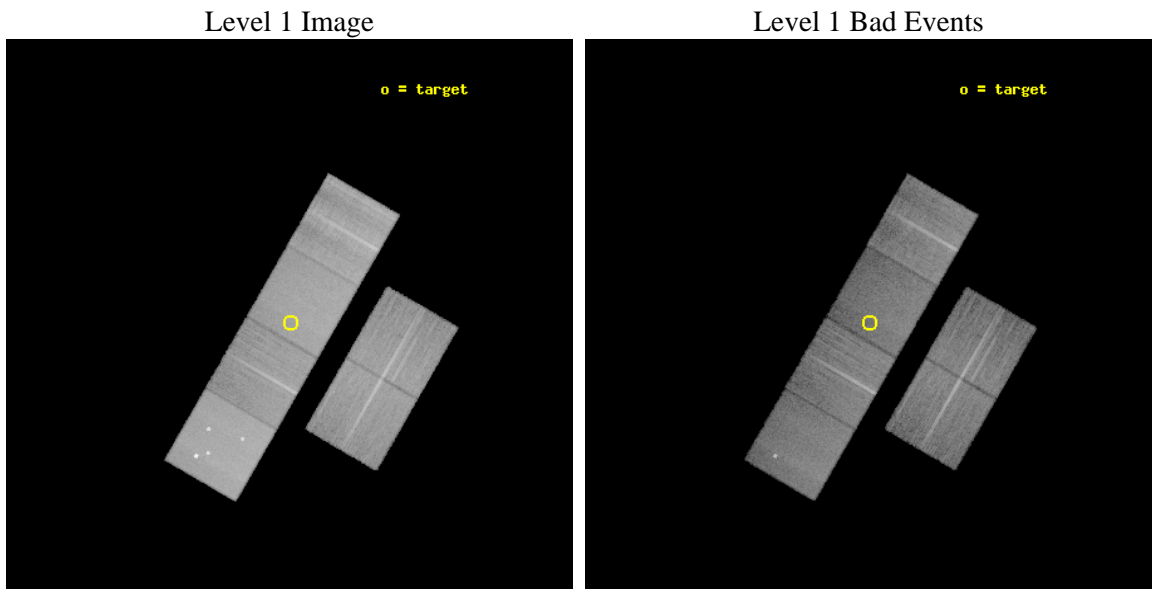
seq_num	200702	Sequence number
obs_id	12368	Observation id
title	X-rays from Planetary Nebulae: Unveiling Binarity, Magnetic Fields, and Wind Collisions	Proposal title
observer	Dr. Joel Kastner	Principal investigator
object	NGC 6781	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	289.617083	Observer's specified target RA [deg]
dec_targ	6.538694	Observer's specified target Dec [deg]
ra_nom	289.62013304147	Nominal RA [deg]
dec_nom	6.5385813361367	Nominal Dec [deg]
roll_nom	300.05847946291	Nominal Roll [deg]
revision	3	Processing version of data
ontime	28616.431216002	Sum of GTIs [s]
livetime	28254.072733198	Livetime [s]
ontime2	28613.231305599	Sum of GTIs [s]
ontime3	28613.067125618	Sum of GTIs [s]
ontime5	28616.390175998	Sum of GTIs [s]
ontime6	28613.108155668	Sum of GTIs [s]
ontime7	28616.431216002	Sum of GTIs [s]
ontime8	28616.267055988	Sum of GTIs [s]
l2events	297100	Number of level 2 events



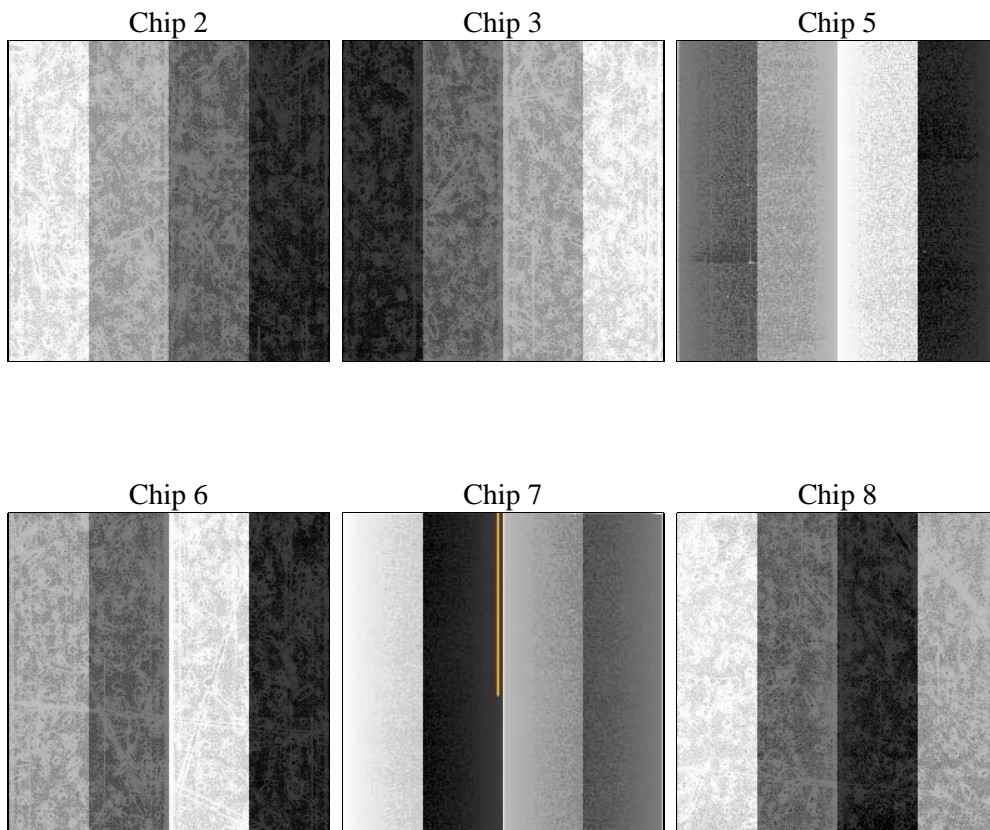
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	28652.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	28616.431216002	Sum of GTIs [s]
caldbver	4.4.8	&#160	ontime2	28613.231305599	Sum of GTIs [s]
date	2012-02-28T16:39:24	Date and time of file creation	ontime3	28613.067125618	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	28616.390175998	Sum of GTIs [s]
			ontime6	28613.108155668	Sum of GTIs [s]
			ontime7	28616.431216002	Sum of GTIs [s]
			ontime8	28616.267055988	Sum of GTIs [s]
			l1events	1262199	Number of level 1 events

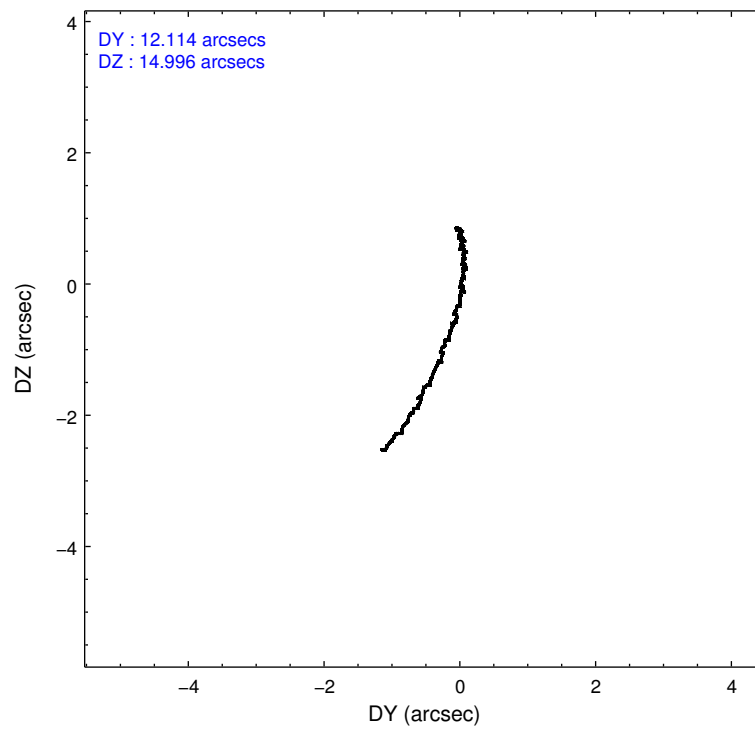
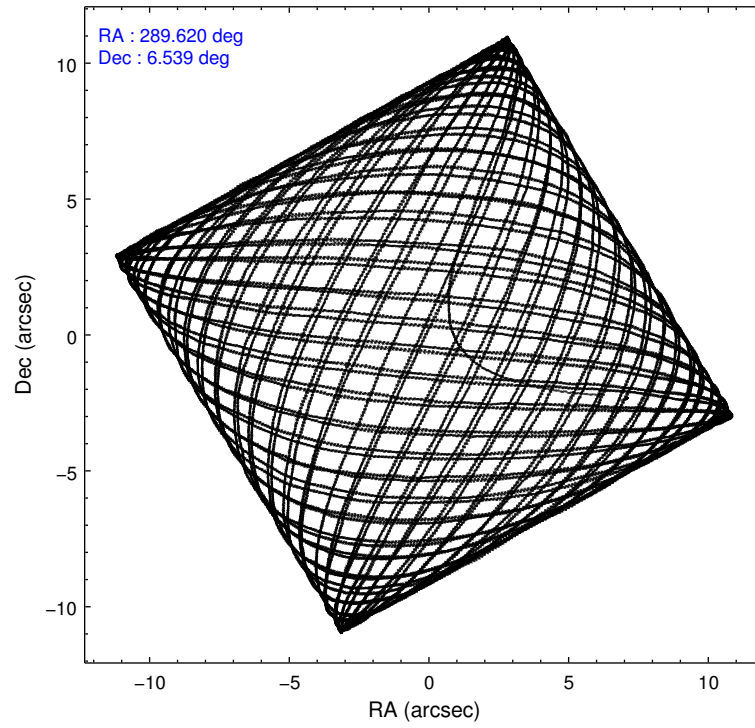
### 2.1.4 Events

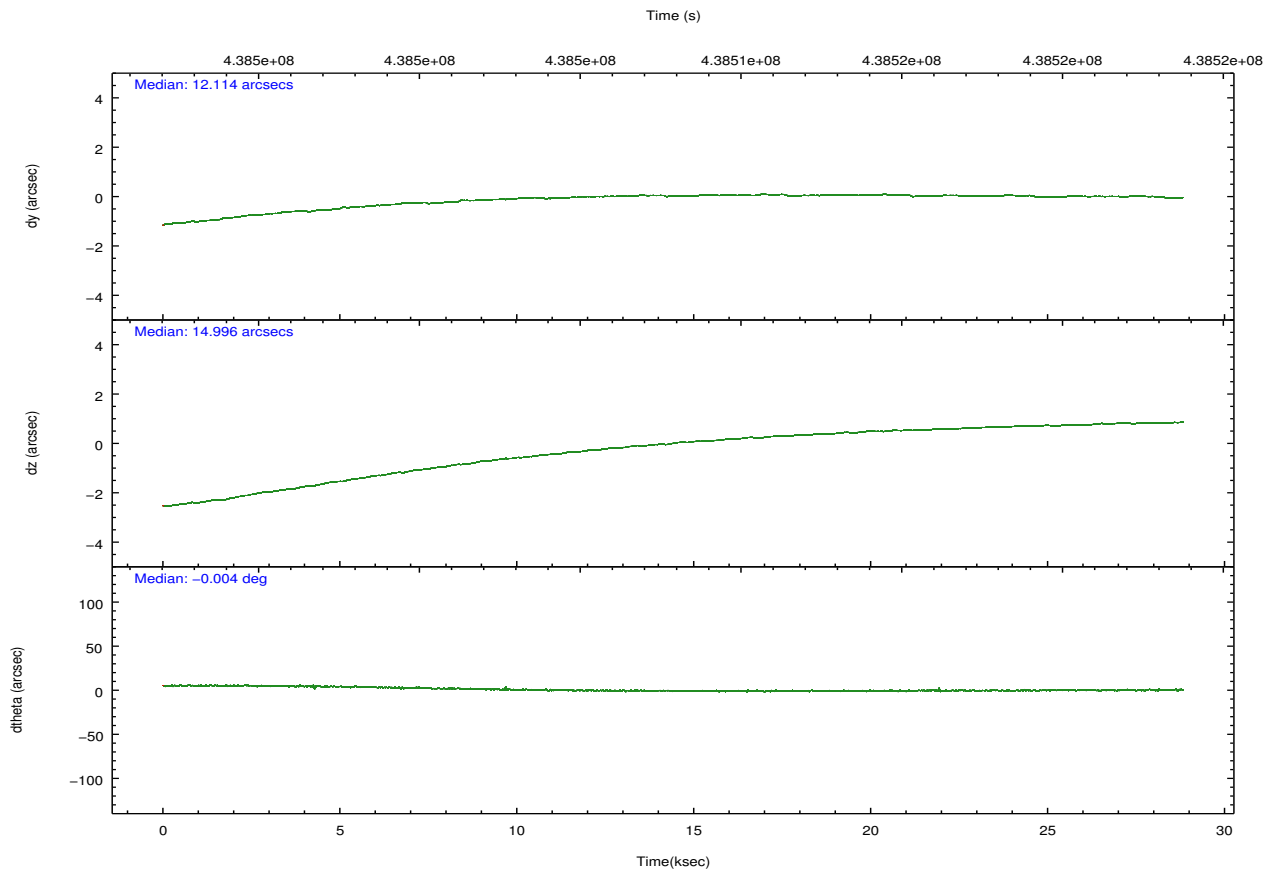
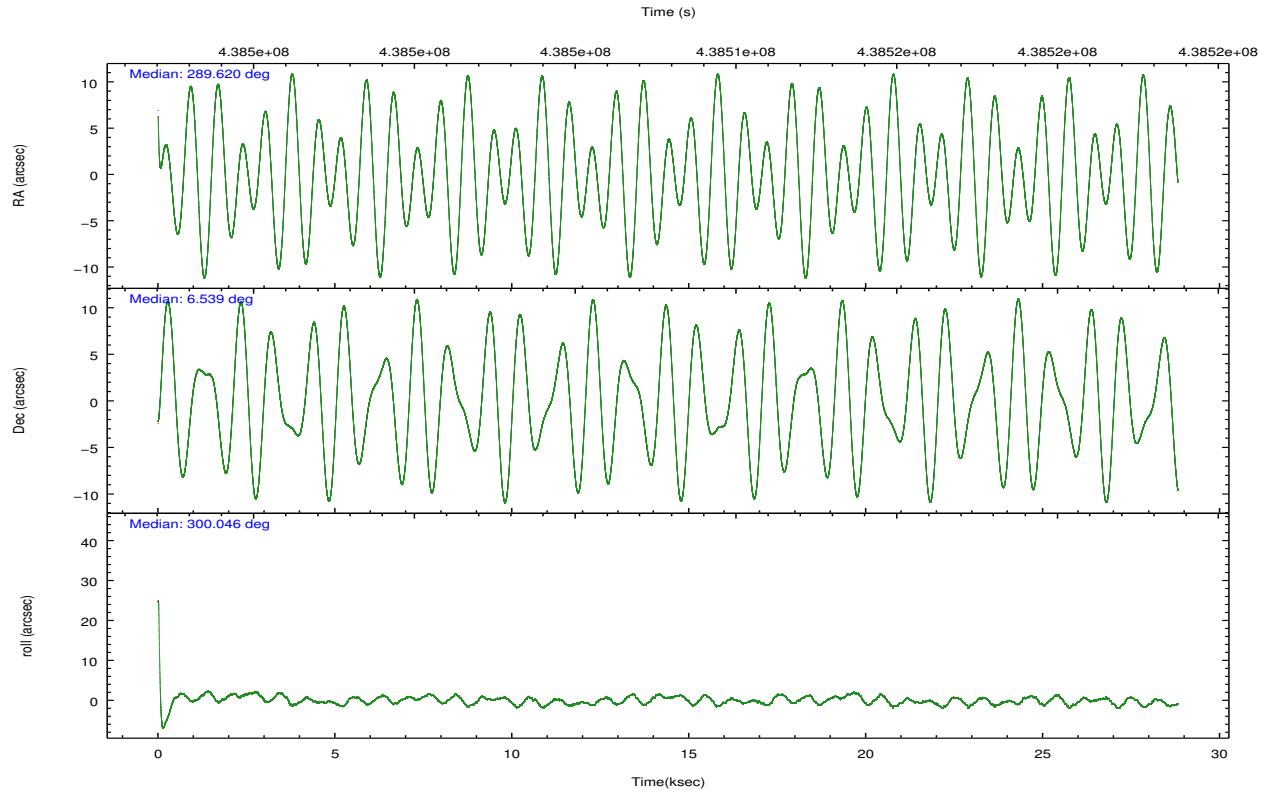
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	174456	166968	285484	175346	224642	235303	grade 0 events	7152	6482	20926	7485	8841	19418
rejected events	154587	148619	141872	154270	125082	171404		4%	3%	7%	4%	3%	8%
rejected %	88%	89%	49%	87%	55%	72%	grade 1 events	125	95	1793	76	286	197
								0%	0%	0%	0%	0%	0%
							grade 2 events	4941	4037	40944	4626	20408	14831
								2%	2%	14%	2%	9%	6%
							grade 3 events	1990	2103	5009	2166	8862	6645
								1%	1%	1%	1%	3%	2%
							grade 4 events	1970	1977	5197	2113	8557	6203
								1%	1%	1%	1%	3%	2%
							grade 5 events	7545	8458	20784	8335	23673	12270
								4%	5%	7%	4%	10%	5%
							grade 6 events	3819	3756	71568	4689	52918	16809
								2%	2%	25%	2%	23%	7%
							grade 7 events	146914	140060	119263	145856	101097	158930
								84%	83%	41%	83%	45%	67%

## 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	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	289.596089	289.6201330414669	CCD I2 on	O4	Y
[deg] Pointing Dec	6.551884	6.538581336136741	CCD I3 on	O5	Y
[deg] Pointing Roll	299.904576	300.058479462915	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O3	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-190.132523	-190.145094680475	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01257209746719923	CCD S4 on	O2	Y
[s] Observation start time (MET)	438493646.184000	438492354.91074	CCD S5 on	N	N
Observation start date	2011-11-24T03:46:20	2011-11-24T03:25:54	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	438522298.184000	438523131.56236	On-chip summing requested	N	N
Observation end date	2011-11-24T11:43:52	2011-11-24T11:58:51	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



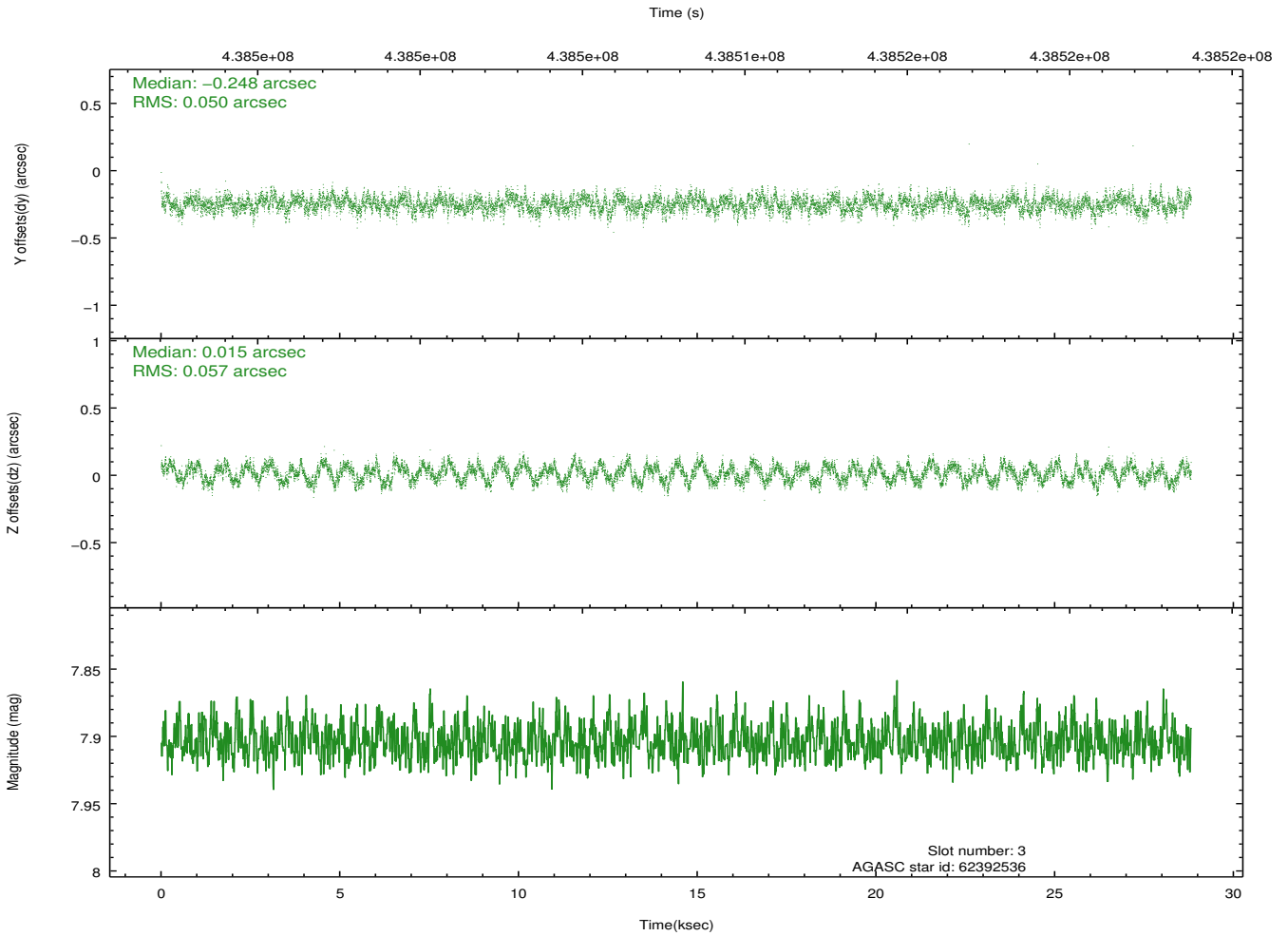
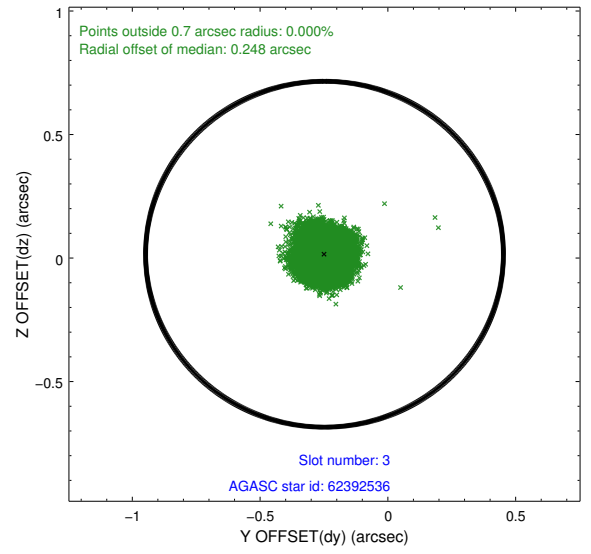
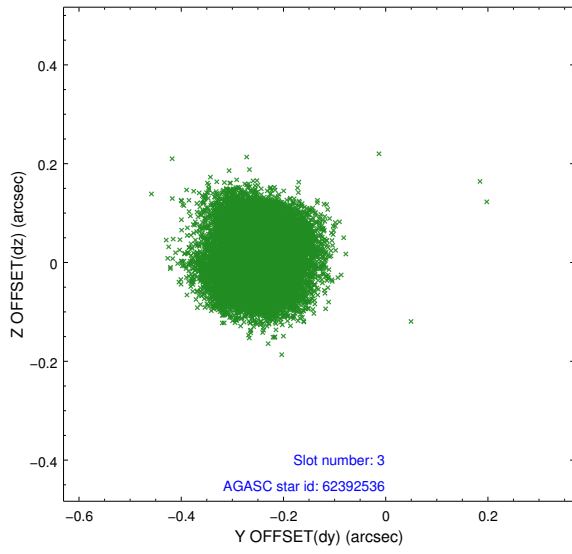


### Slot Statistics

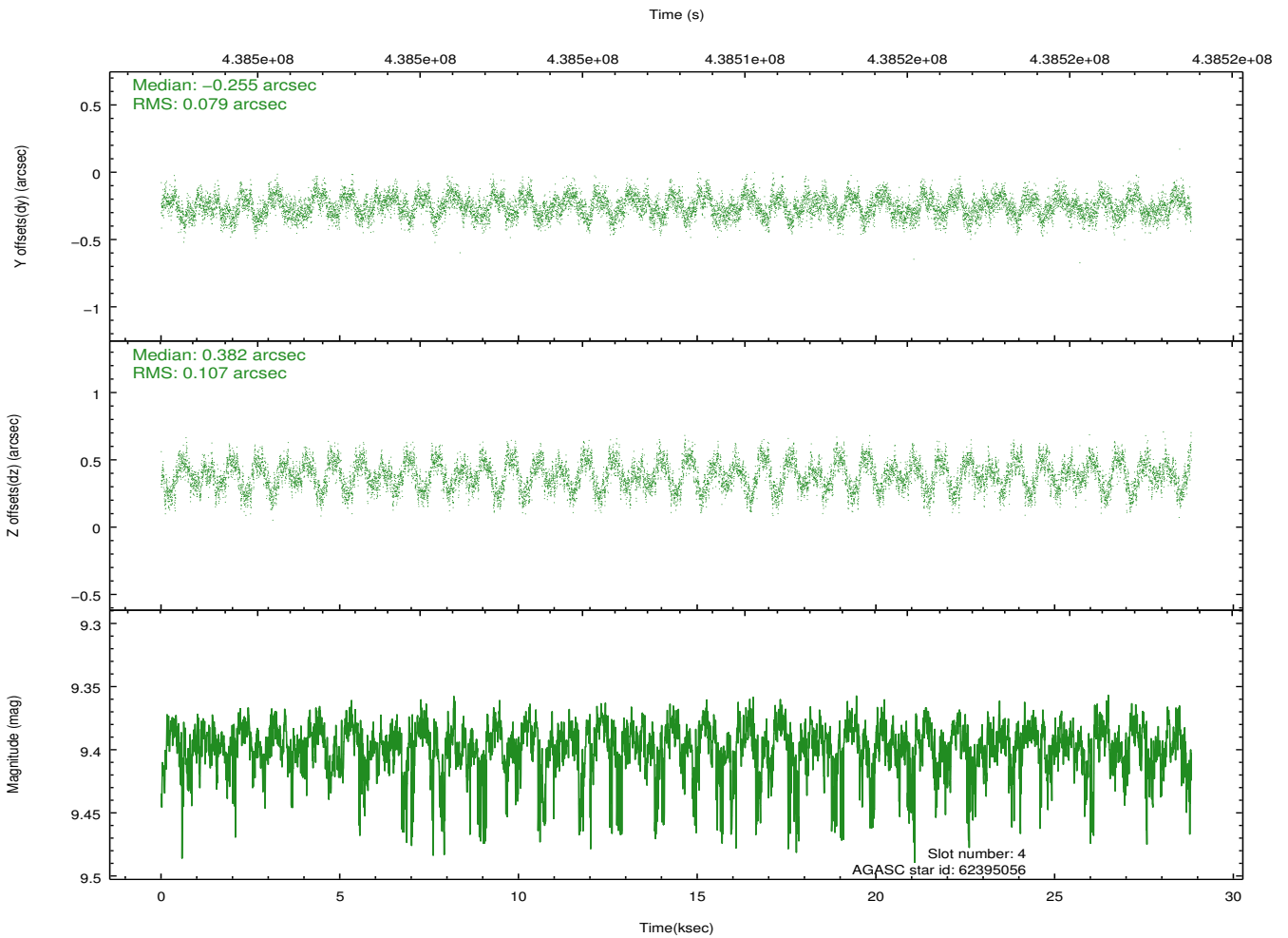
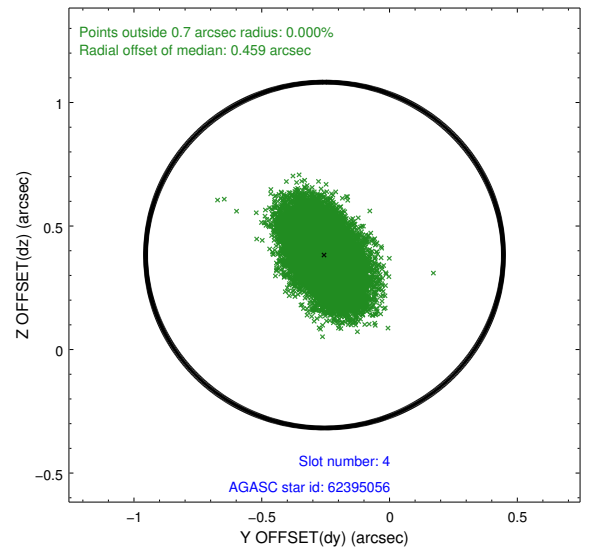
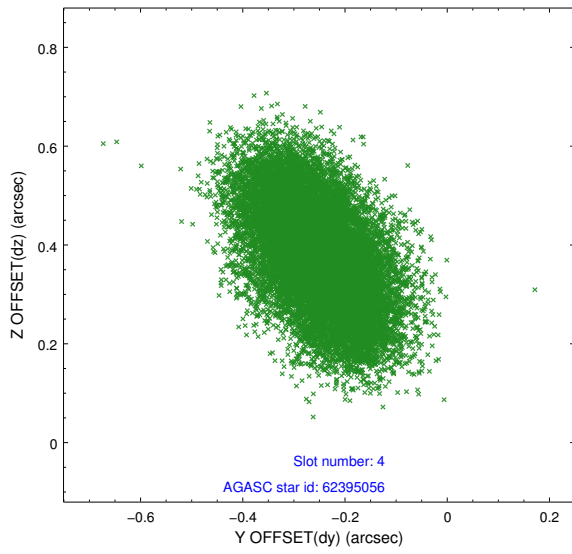
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.91	7029	-0.055	-0.015	0.017	0.029	0.000000	0.000000	-764.88	-1735.96
1	FID	ACIS-S-4	7.00	7029	0.181	0.030	0.014	0.034	0.000000	0.000000	2148.58	172.49
2	FID	ACIS-S-5	7.03	7029	-0.156	-0.009	0.016	0.028	0.000000	0.000000	-1817.72	166.21
3	GUIDE	62392536	7.90	14055	-0.248	0.015	0.083	0.124	289.831475	7.143678	-1428.23	1791.21
4	GUIDE	62395056	9.40	14045	-0.255	0.382	0.144	0.225	289.342182	6.812239	-1265.09	-318.99
5	GUIDE	62398064	9.45	14046	-0.025	-0.164	0.127	0.199	289.859584	6.478364	699.40	685.42
6	GUIDE	62399328	8.15	14051	0.221	-0.298	0.096	0.149	290.151833	6.644057	703.08	1888.09
7	GUIDE	62408720	8.67	14044	0.307	0.062	0.092	0.154	289.272224	5.771976	1856.54	-2404.50

## 2.4 Star Slots

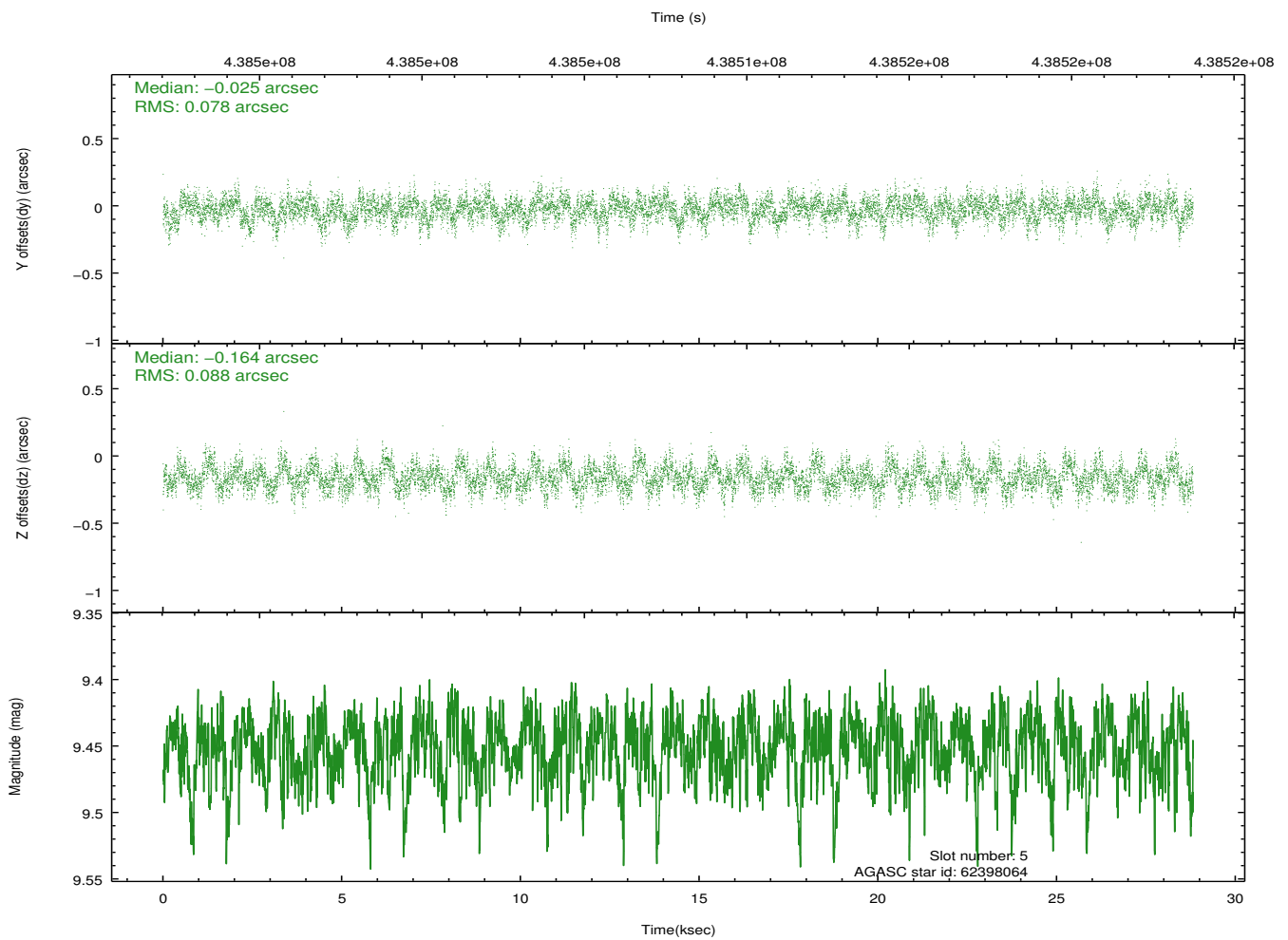
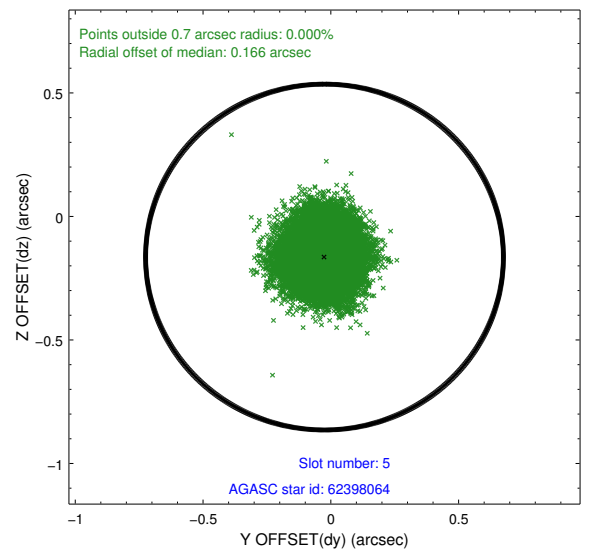
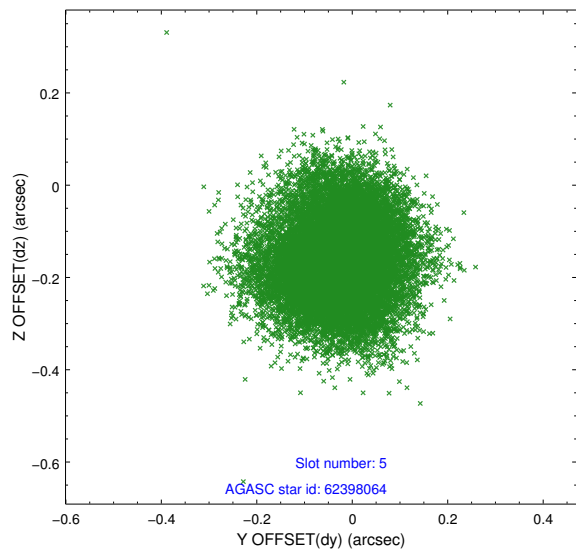
### 2.4.1 Slot 3



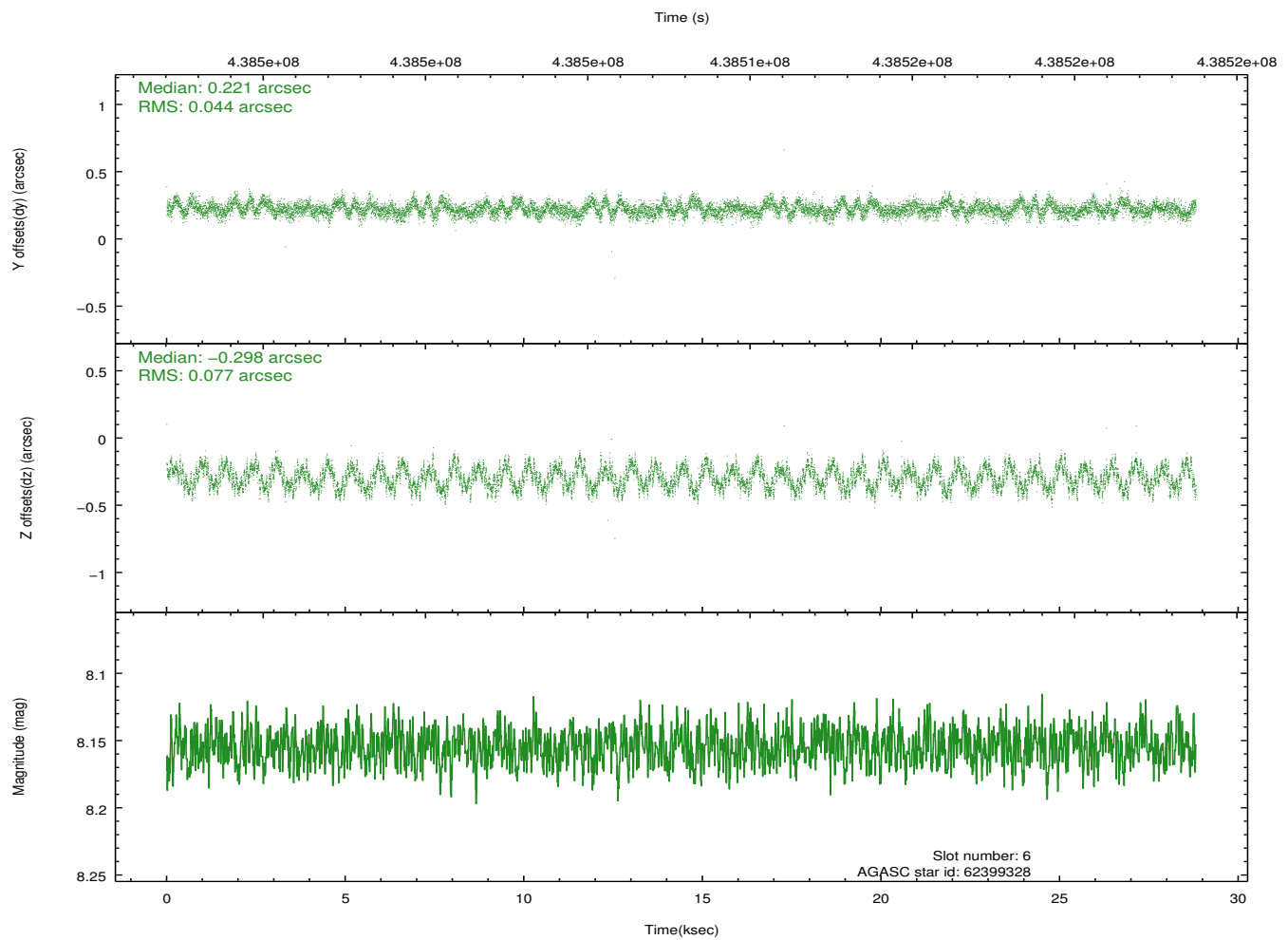
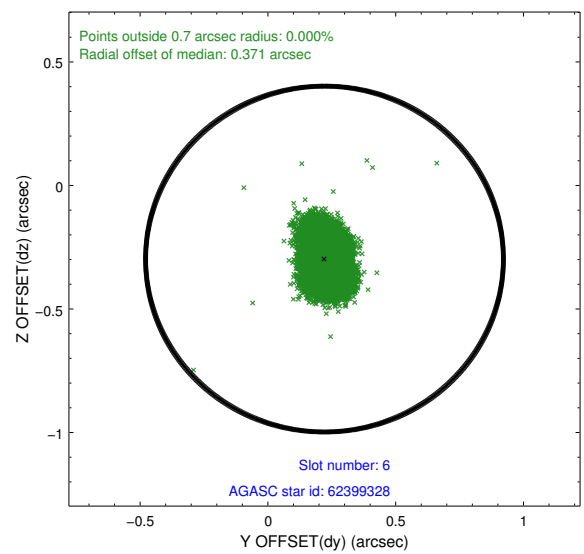
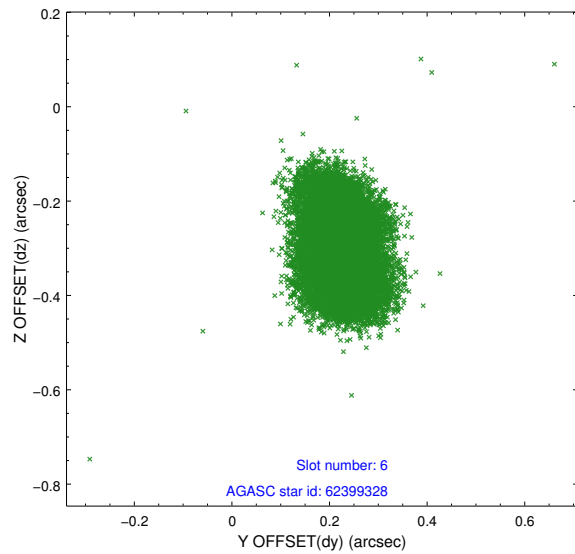
## 2.4.2 Slot 4



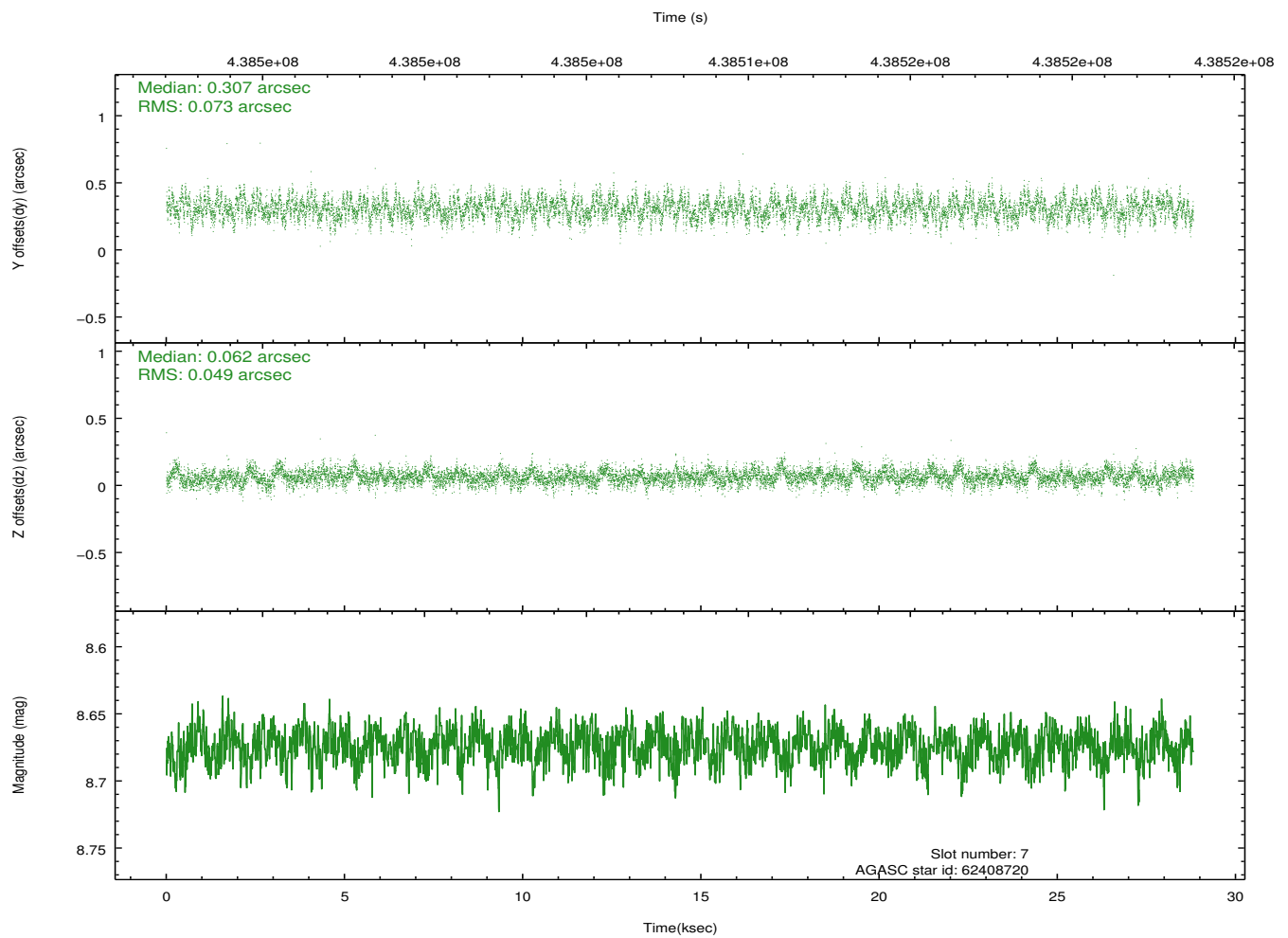
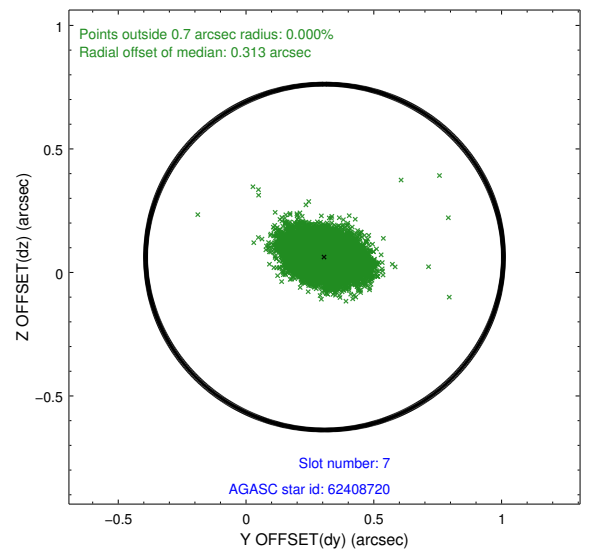
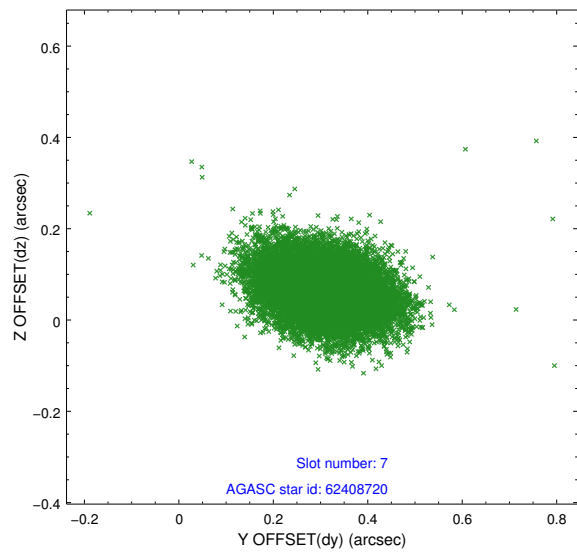
### 2.4.3 Slot 5



## 2.4.4 Slot 6

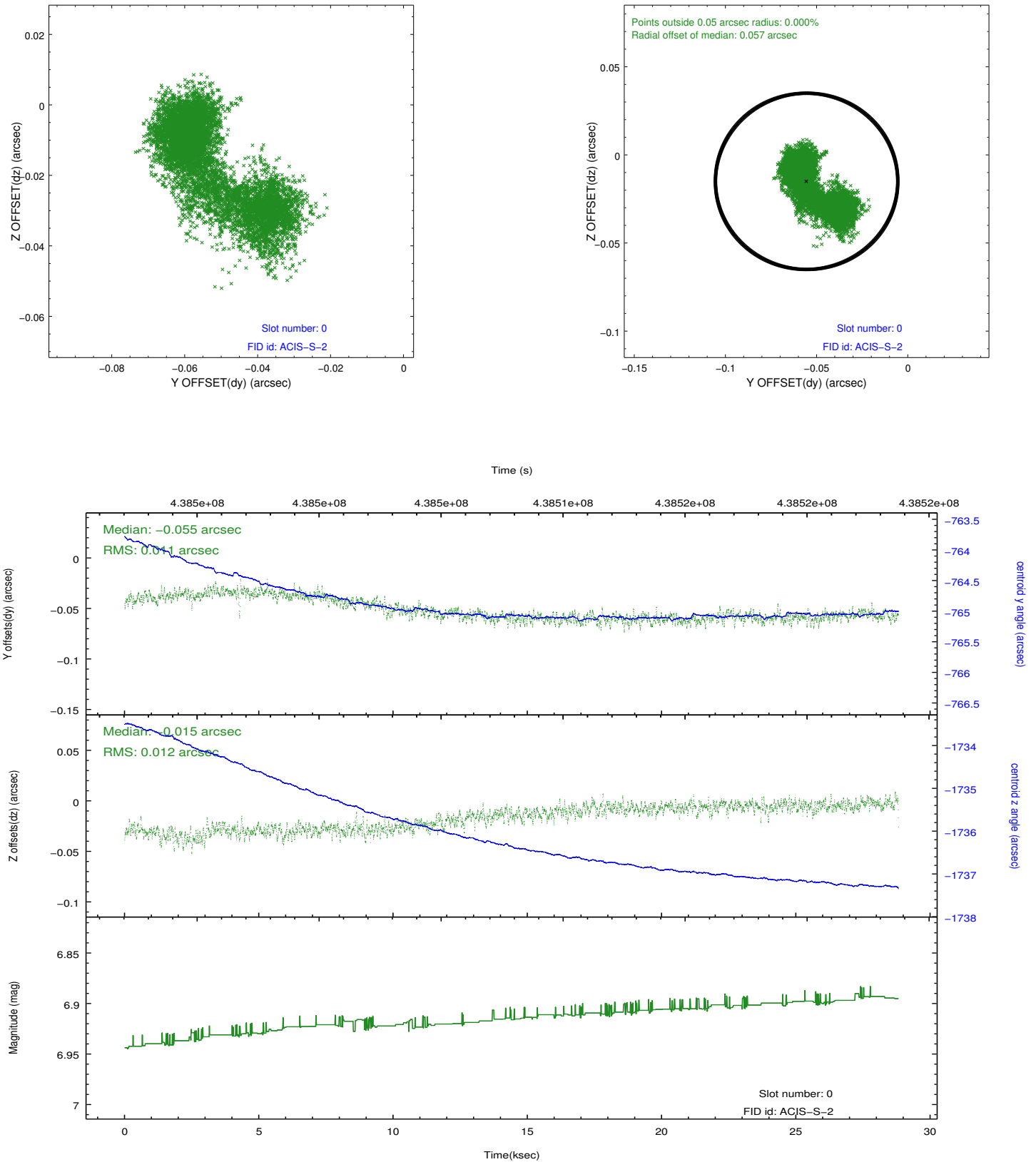


## 2.4.5 Slot 7

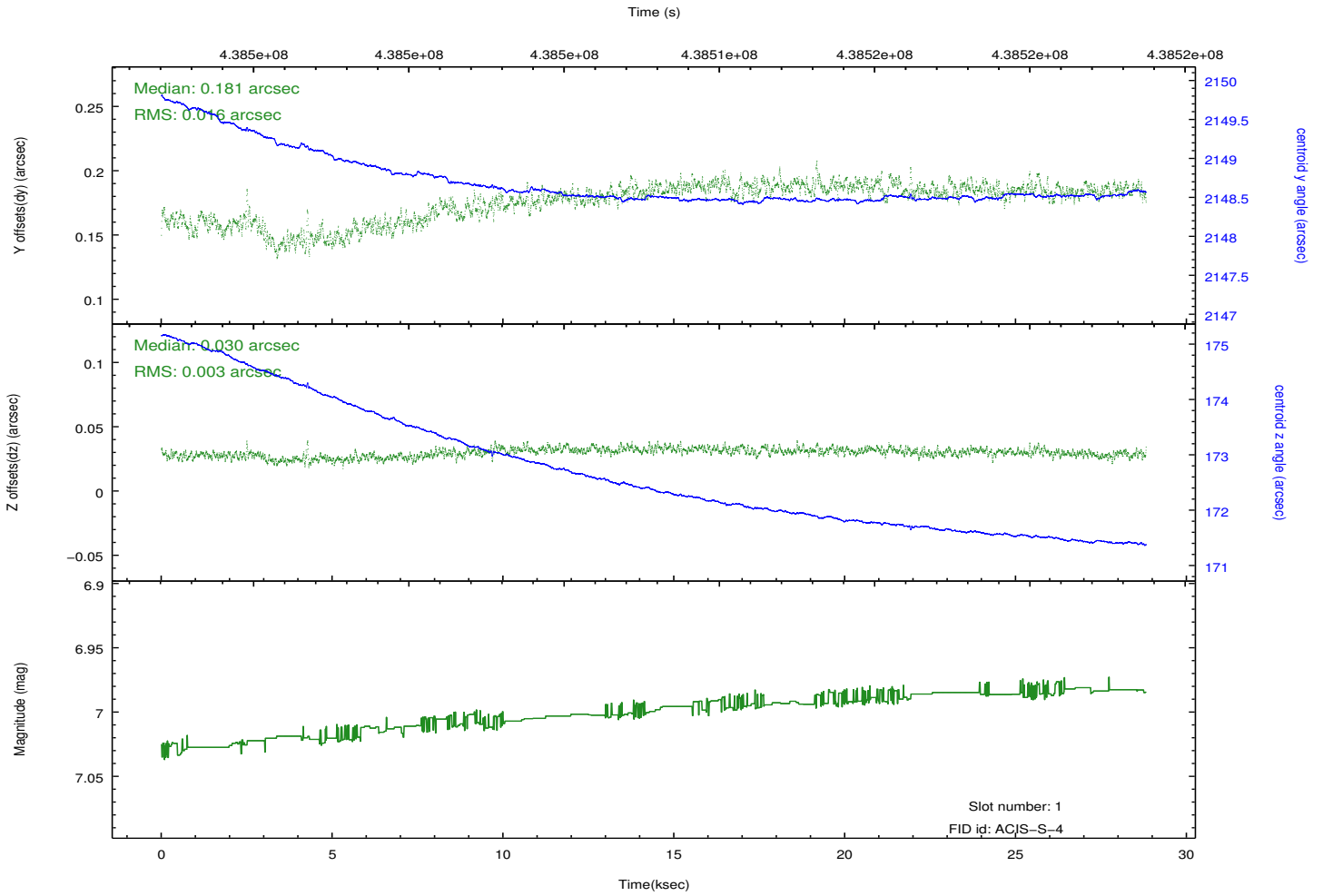
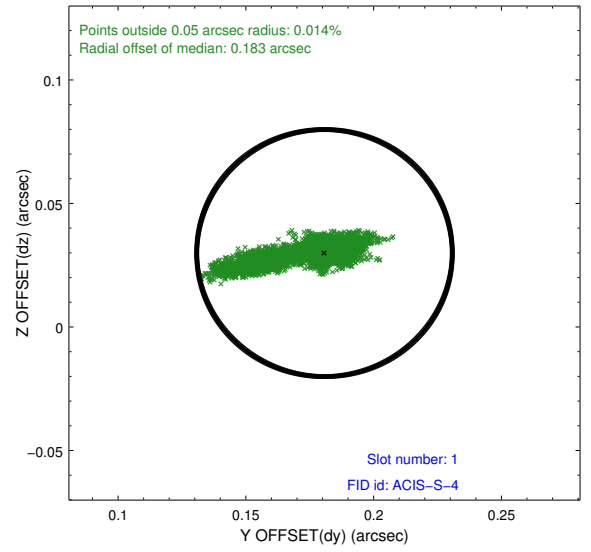
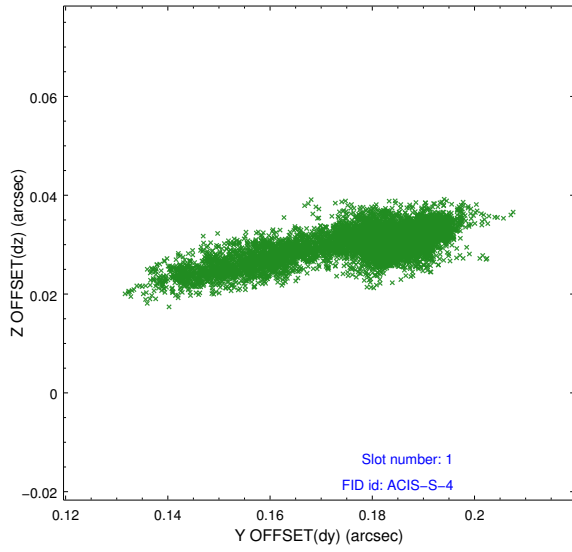


## 2.5 FID Slots

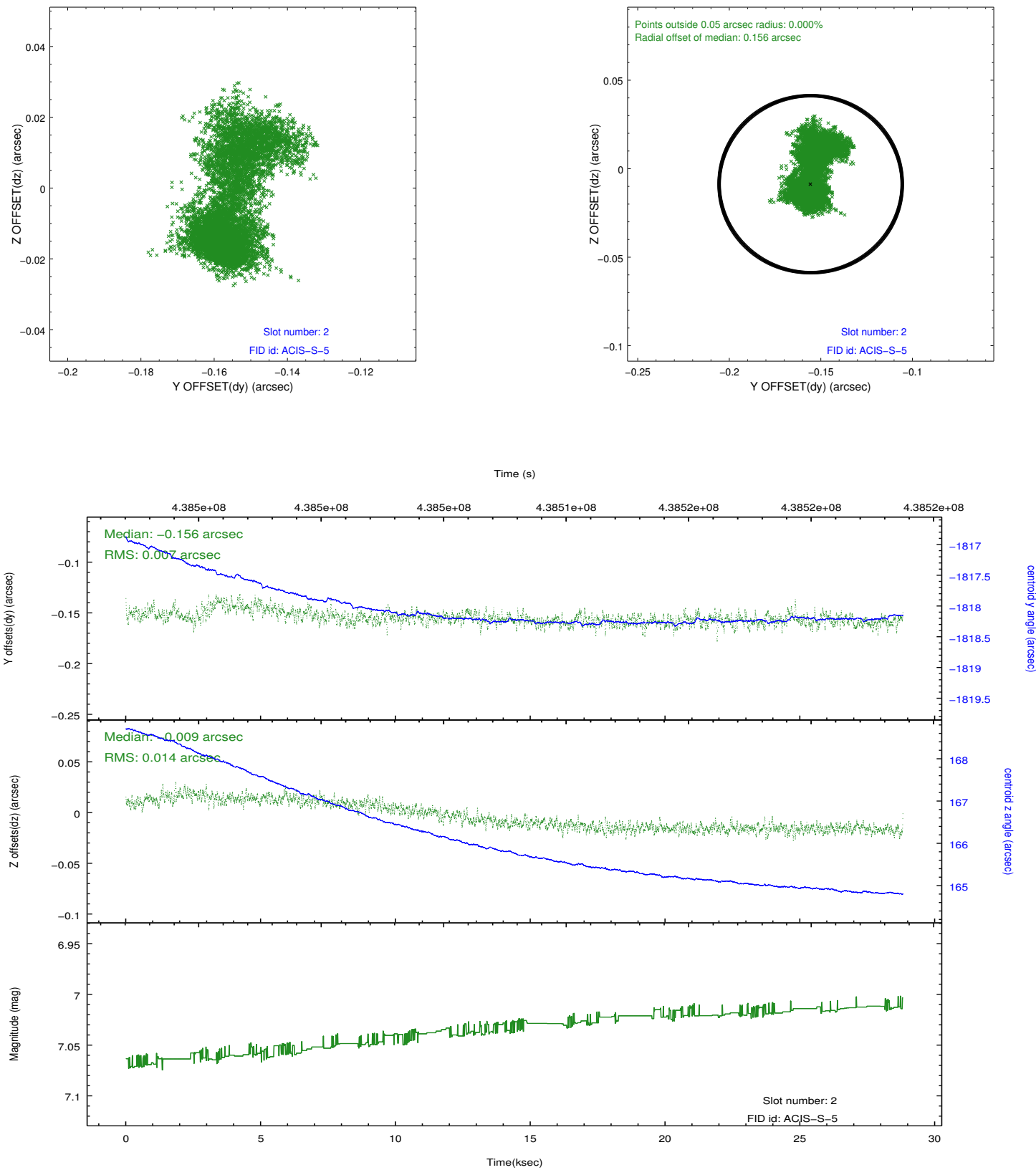
### 2.5.1 Slot 0



## 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)	2012.02.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	28.616431218505

## A.2 Comments

Two spatial regions of the original bias map for CCD = 8 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 = 8 has been reconstructed for this processing to remove these anomalies using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords:

region

1: (289.61532,6.68313), (289.61394,6.68549), (289.49233,6.61548), (289.49370,6.61312)

region 2:

(289.52071,6.67868), (289.51341,6.69119), (289.46455,6.66306), (289.47186,6.65054)