

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13956 - L2 Version 1  
Chandra X-Ray Center

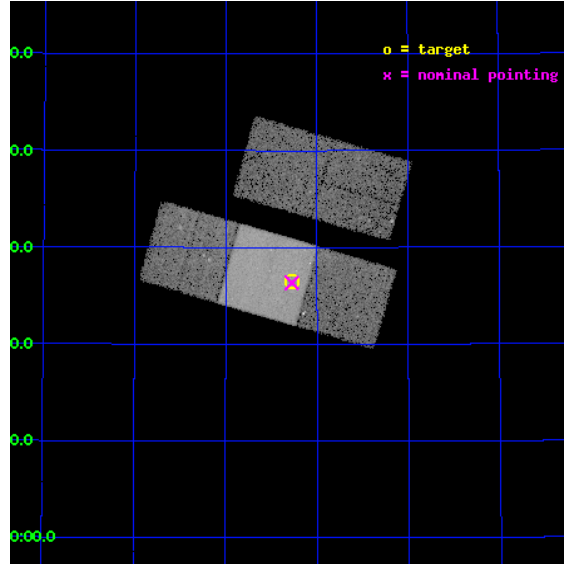
L2 Processing Date : Feb 10 2012

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# 1 Front

seq_num	702678	Sequence number
obs_id	13956	Observation id
title	Identifying Analogs of NGC 6240: Galaxies with Dual Supermassive Black Holes	Proposal title
observer	Dr. Julia Comerford	Principal investigator
object	SDSS J085416.76+502632.0	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	133.57	Observer's specified target RA [deg]
dec_targ	50.442222	Observer's specified target Dec [deg]
ra_nom	133.56867858442	Nominal RA [deg]
dec_nom	50.439319625682	Nominal Dec [deg]
roll_nom	196.09758236576	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20344.151631474	Sum of GTIs [s]
livetime	20078.340313263	Livetime [s]
ontime2	20343.987471461	Sum of GTIs [s]
ontime3	20337.787560761	Sum of GTIs [s]
ontime6	20344.110591471	Sum of GTIs [s]
ontime7	20344.151631474	Sum of GTIs [s]
ontime8	20344.028511465	Sum of GTIs [s]
l2events	124755	Number of level 2 events

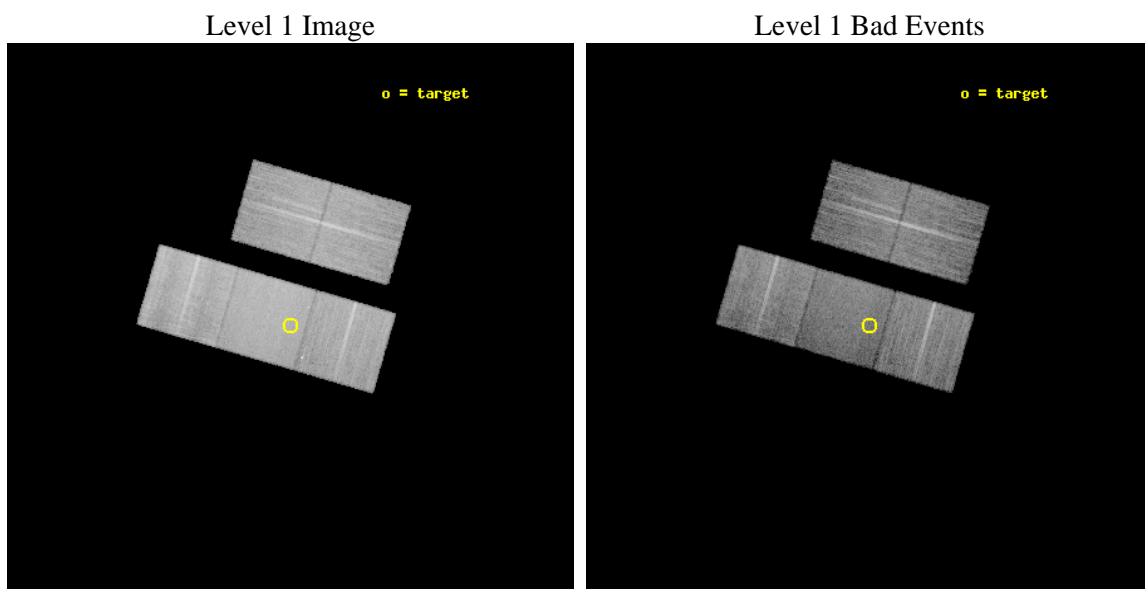




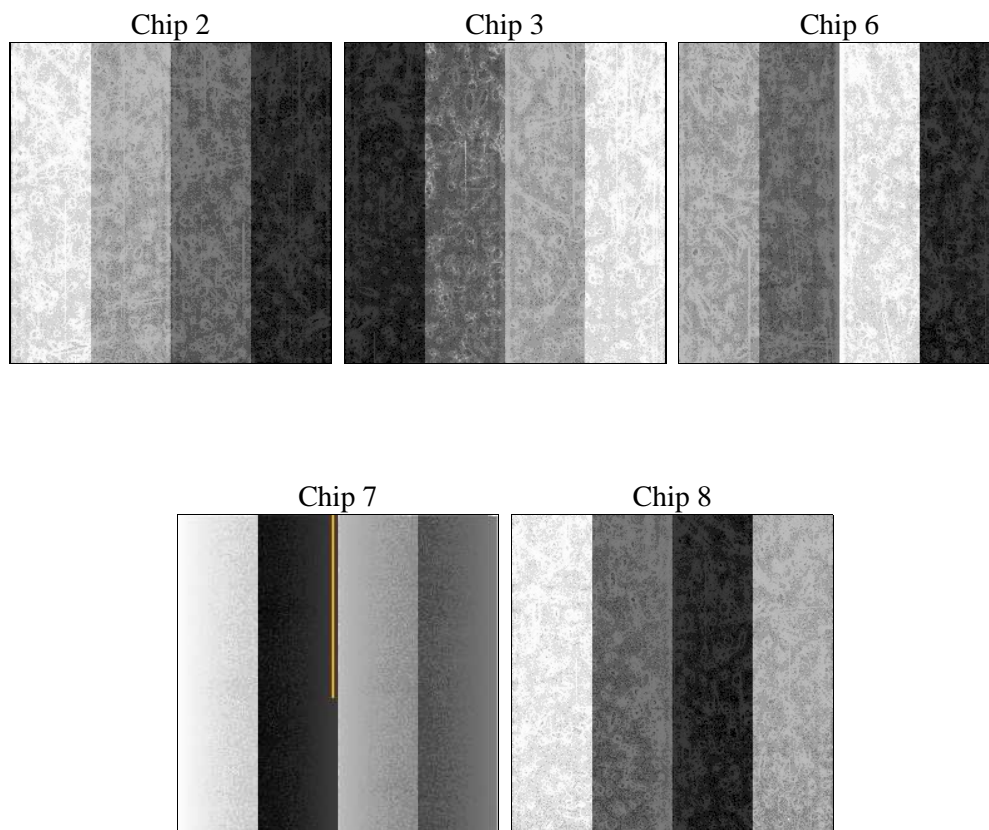
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20278.874000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	20344.151631474	Sum of GTIs [s]
caldbver	4.4.7	&#160	ontime2	20343.987471461	Sum of GTIs [s]
date	2012-02-11T00:41:04	Date and time of file creation	ontime3	20337.787560761	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	20344.110591471	Sum of GTIs [s]
			ontime7	20344.151631474	Sum of GTIs [s]
			ontime8	20344.028511465	Sum of GTIs [s]
			l1events	705405	Number of level 1 events

### 2.1.4 Events

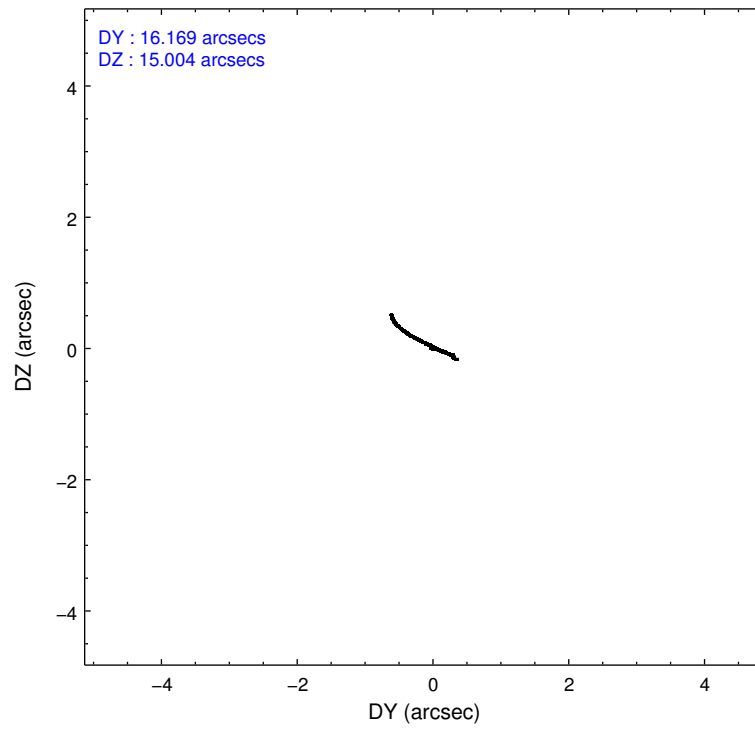
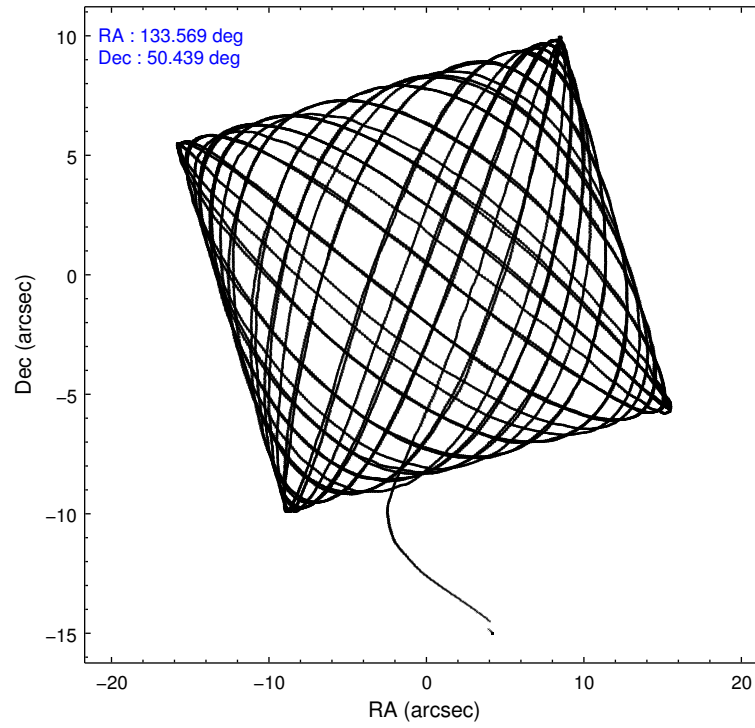
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	124049	121064	130072	164647	165573
rejected events	109854	107749	114338	91480	122008
rejected %	88%	89%	87%	55%	73%

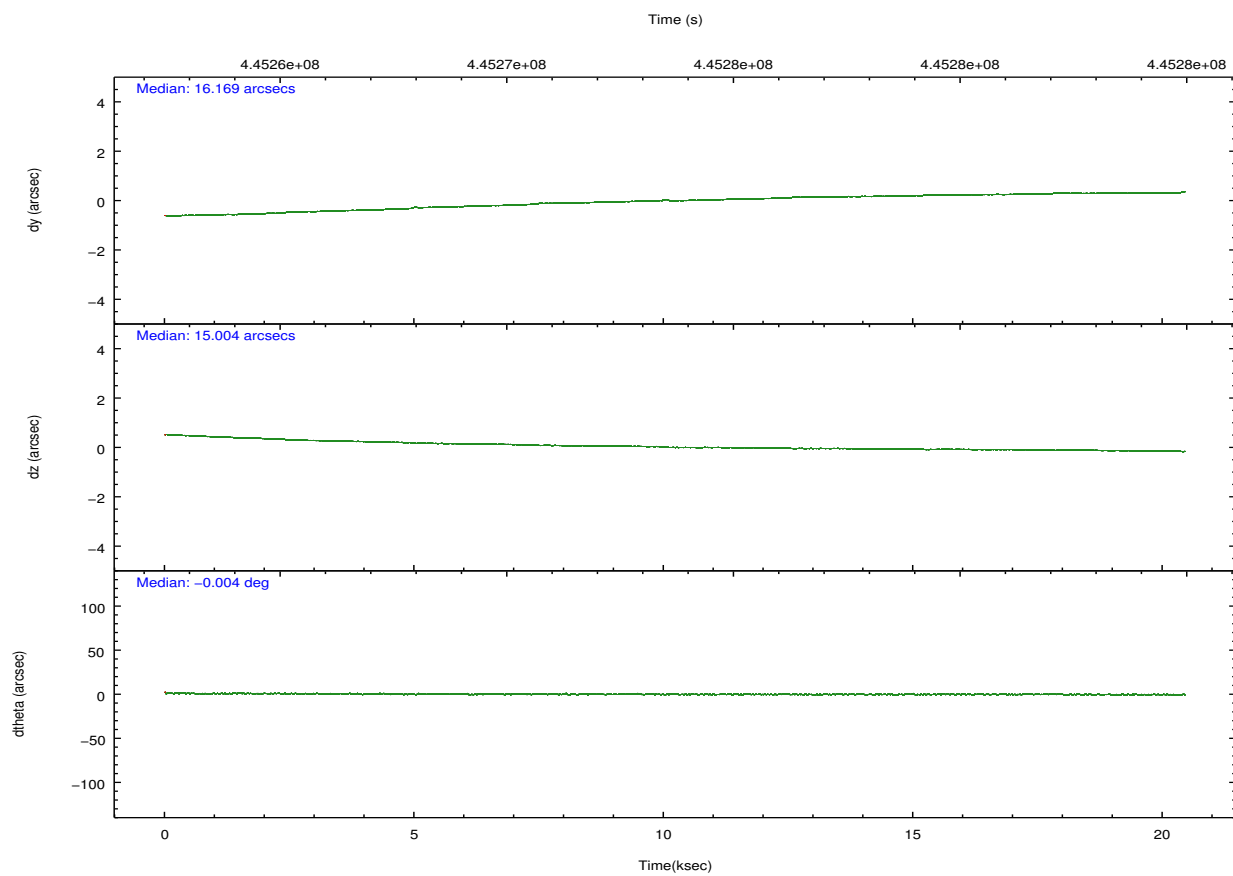
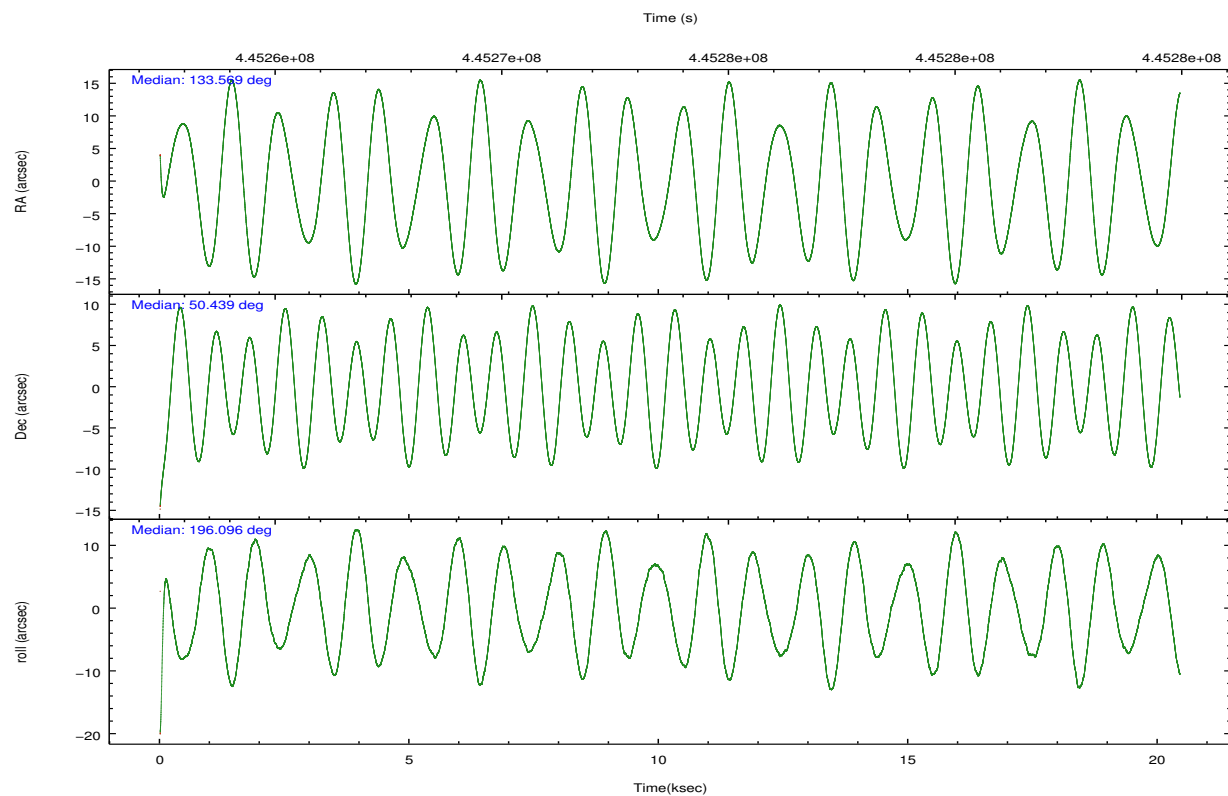
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	5025	4572	5820	6687	12918
	4%	3%	4%	4%	7%
grade 1 events	58	83	80	218	125
	0%	0%	0%	0%	0%
grade 2 events	3452	3045	3452	14899	10439
	2%	2%	2%	9%	6%
grade 3 events	1416	1441	1533	6469	4609
	1%	1%	1%	3%	2%
grade 4 events	1500	1462	1506	6405	4245
	1%	1%	1%	3%	2%
grade 5 events	5305	6117	6301	17141	8893
	4%	5%	4%	10%	5%
grade 6 events	2808	2797	3429	38722	11355
	2%	2%	2%	23%	6%
grade 7 events	104485	101547	107951	74106	112989
	84%	83%	82%	45%	68%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23678	ACIS-23678	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	133.598016	133.5686785844196	CCD I2 on	O2	Y
[deg] Pointing Dec	50.459271	50.43931962568222	CCD I3 on	O1	Y
[deg] Pointing Roll	195.918346	196.0975823657558	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	N	N
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	O3	Y
[s] Observation start time (MET)	445263665.184000	445262643.75583	CCD S5 on	N	N
Observation start date	2012-02-10T12:19:59	2012-02-10T12:04:03	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	445283944.184000	445284170.29448	On-chip summing requested	N	N
Observation end date	2012-02-10T17:57:58	2012-02-10T18:02:50	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



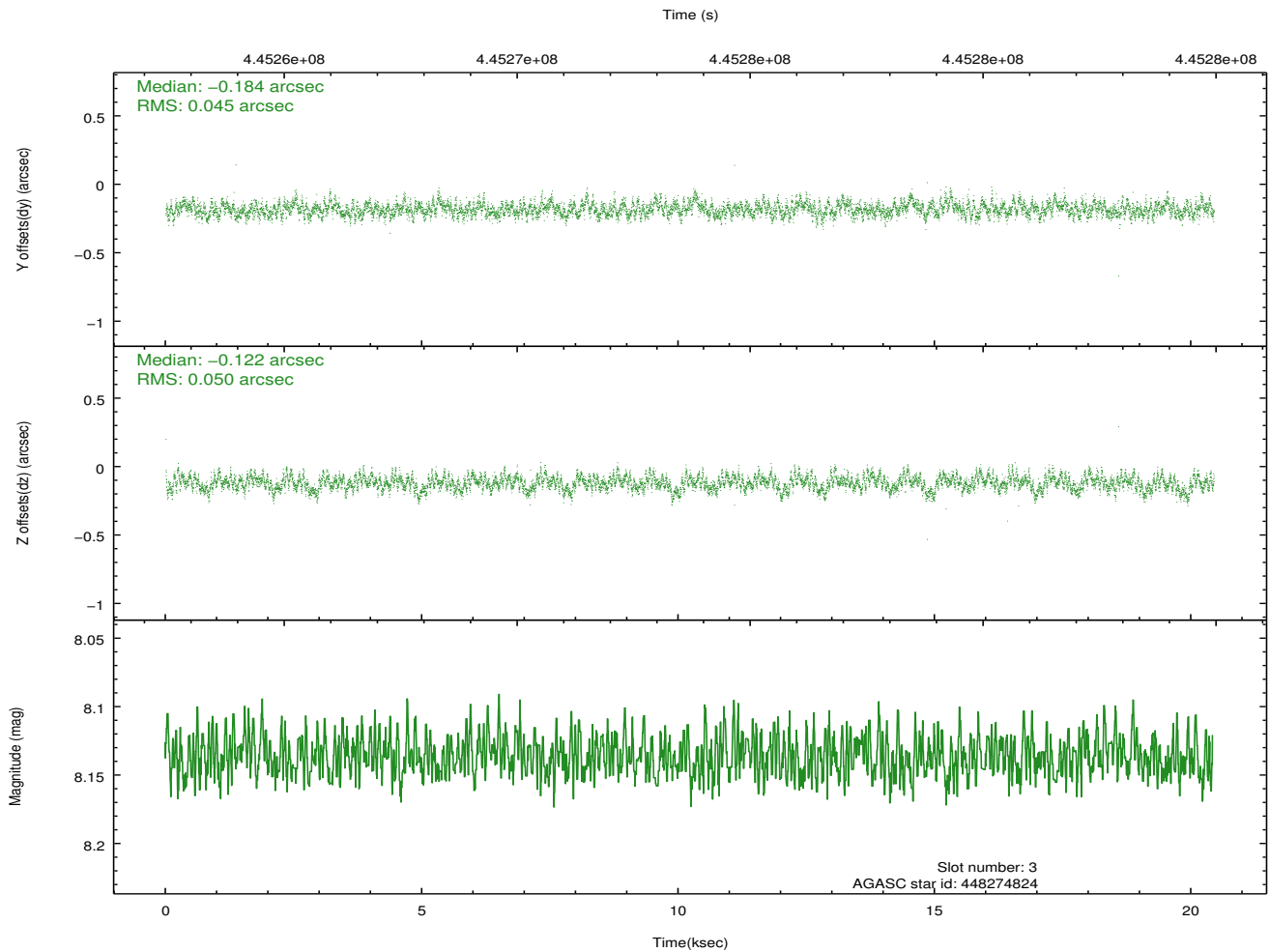
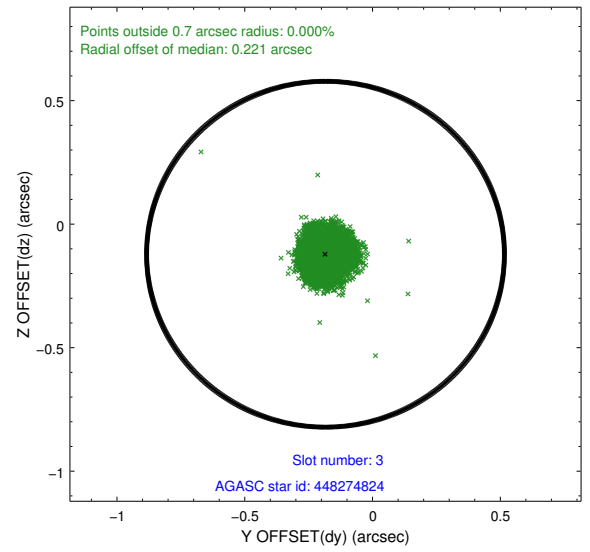
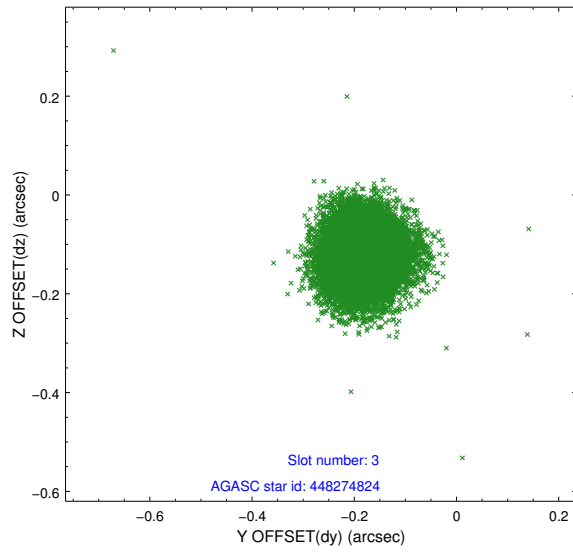


### Slot Statistics

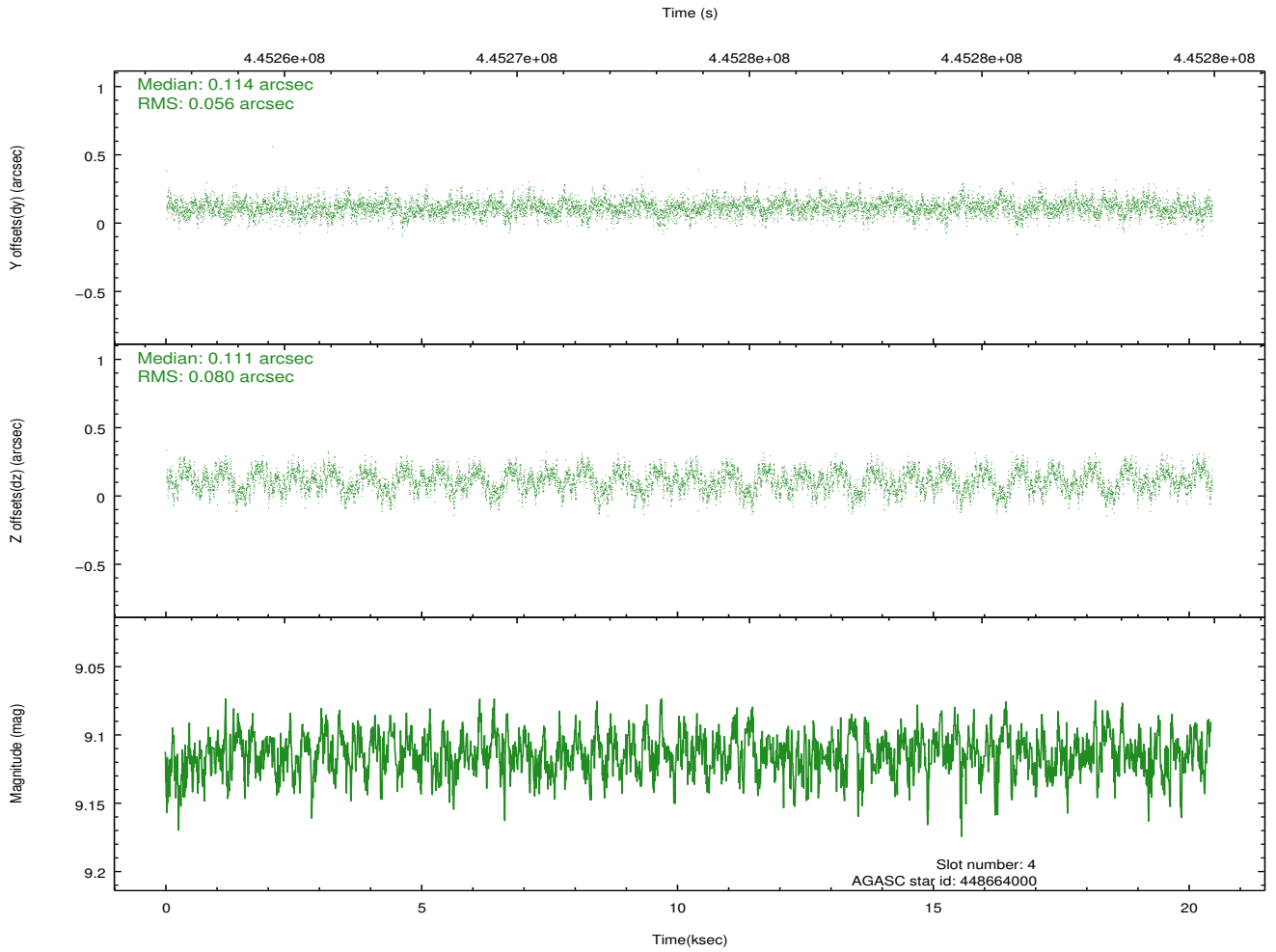
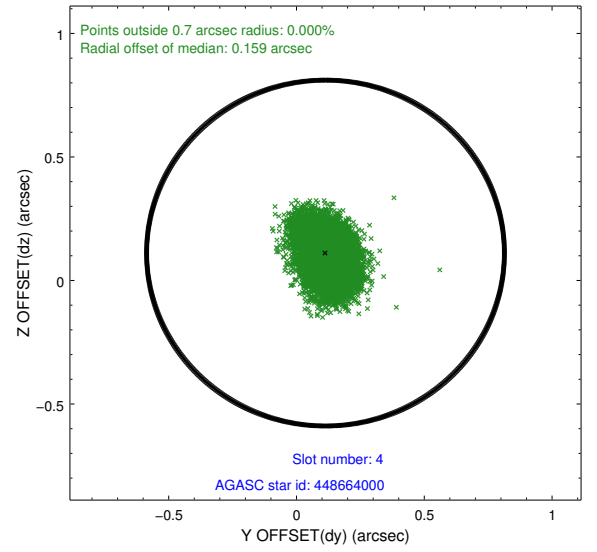
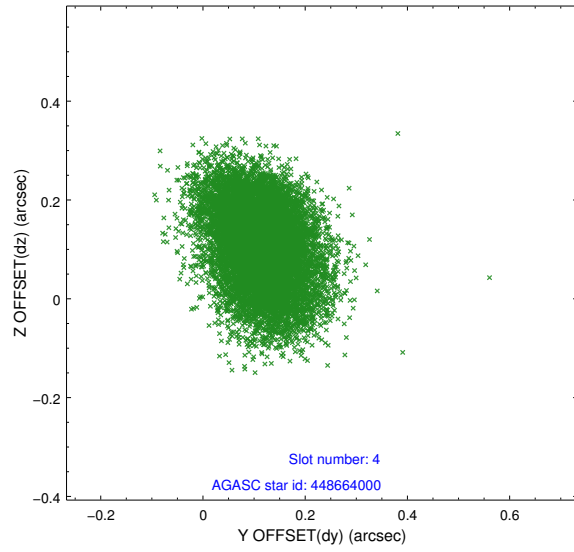
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.93	4987	-0.118	-0.001	0.007	0.012	0.000000	0.000000	-769.23	-1736.45
1	FID	ACIS-S-4	7.02	4987	0.222	0.057	0.006	0.013	0.000000	0.000000	2144.30	171.90
2	FID	ACIS-S-5	7.05	4985	-0.135	-0.048	0.008	0.014	0.000000	0.000000	-1821.86	165.67
3	GUIDE	448274824	8.14	9971	-0.184	-0.122	0.072	0.112	133.166564	49.944959	1468.20	1503.73
4	GUIDE	448664000	9.11	9963	0.114	0.111	0.104	0.170	133.020821	50.409660	1321.87	-195.76
5	GUIDE	448665664	7.77	9972	-0.113	0.185	0.077	0.124	134.299090	50.741733	-1816.28	-546.45
6	GUIDE	448667104	9.15	9964	0.329	-0.242	0.106	0.169	133.286470	50.378451	767.50	82.10
7	GUIDE	448268104	8.10	9964	-0.151	0.068	0.073	0.117	133.921469	49.838302	-109.52	2354.44

## 2.4 Star Slots

### 2.4.1 Slot 3

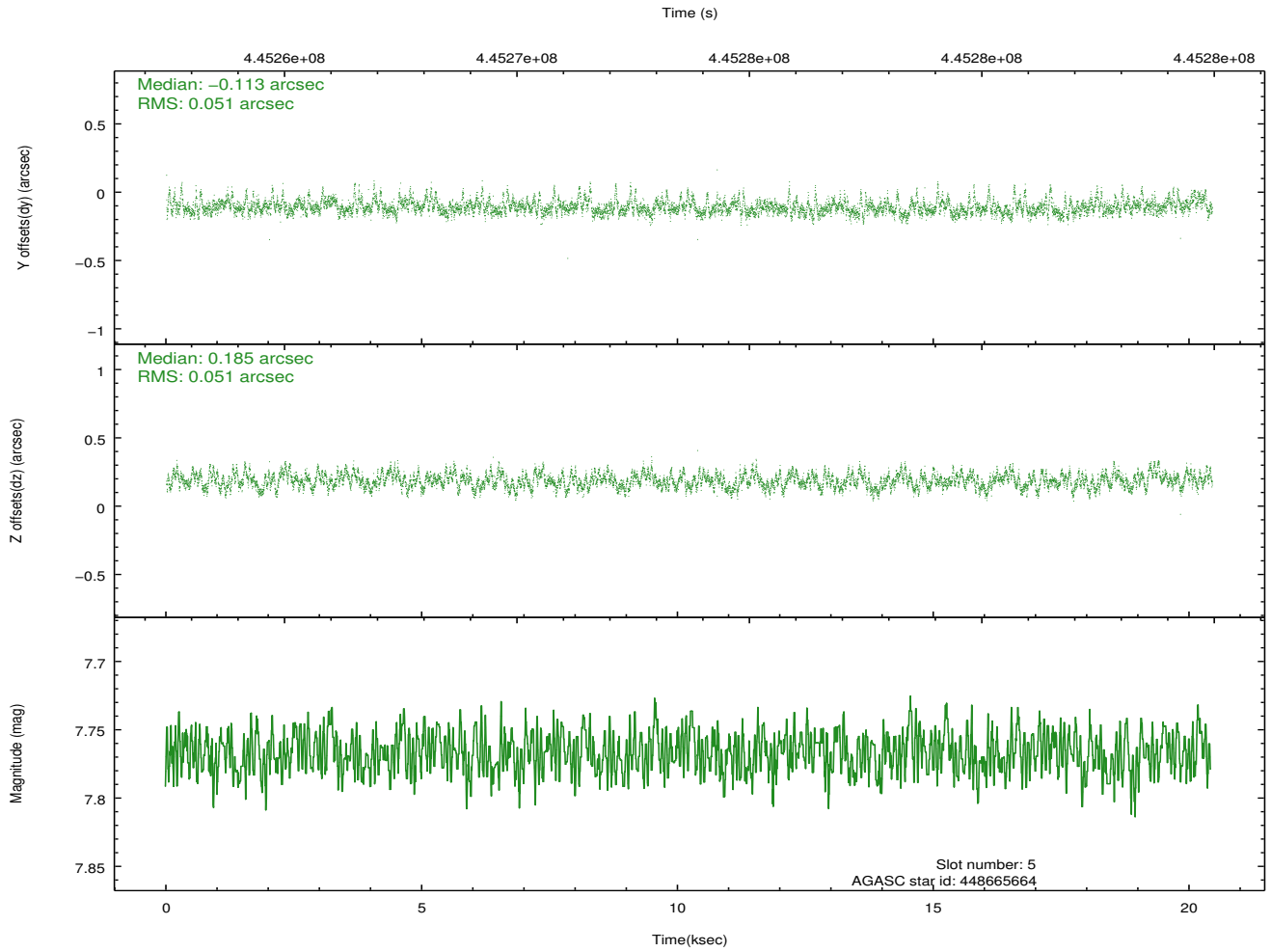
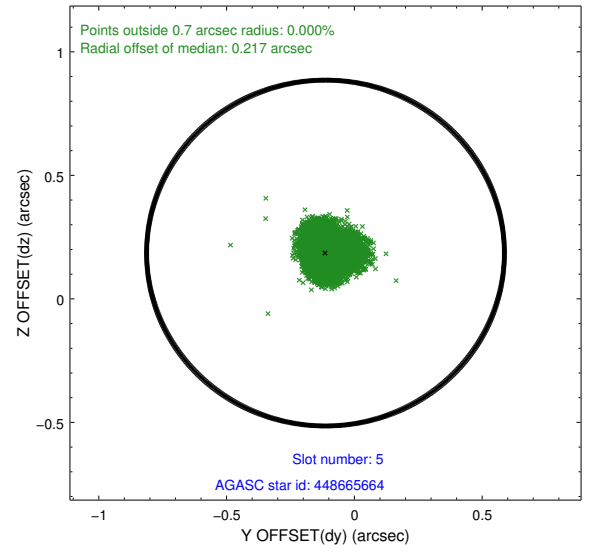
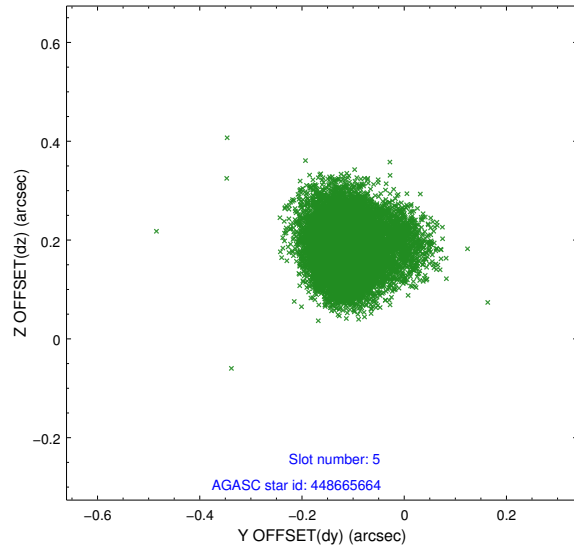


## 2.4.2 Slot 4

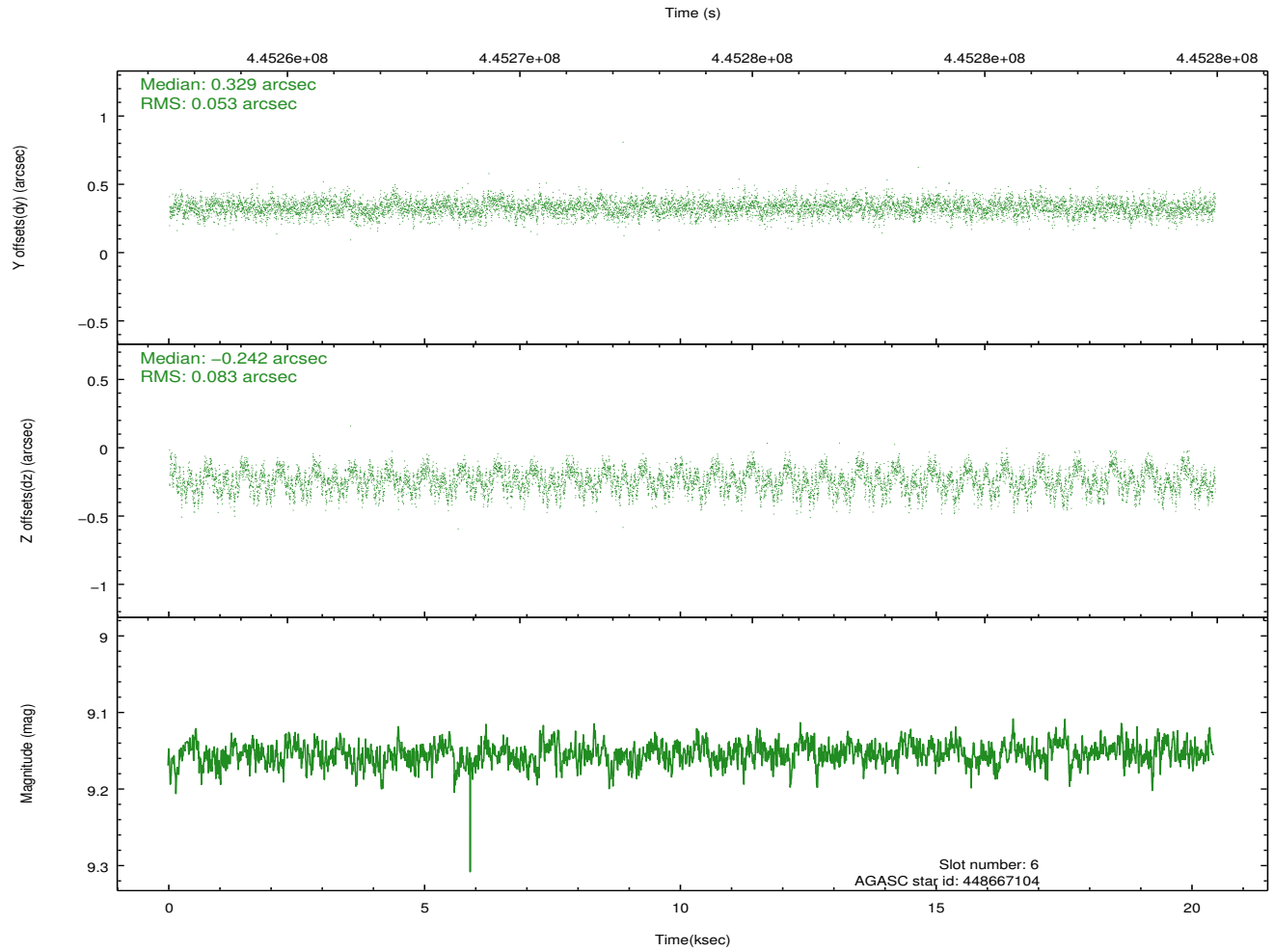
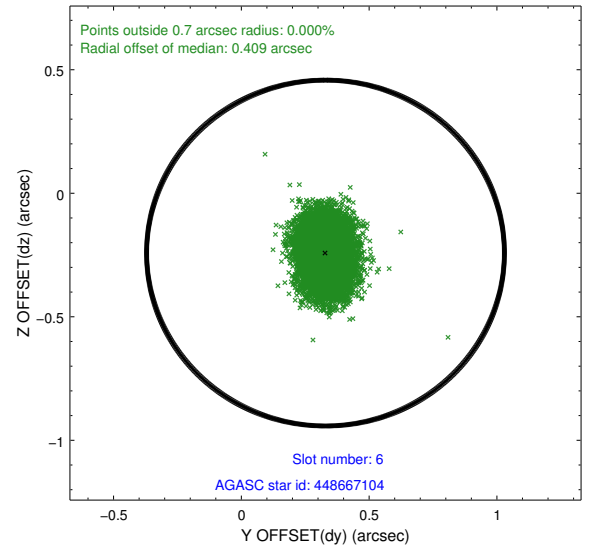
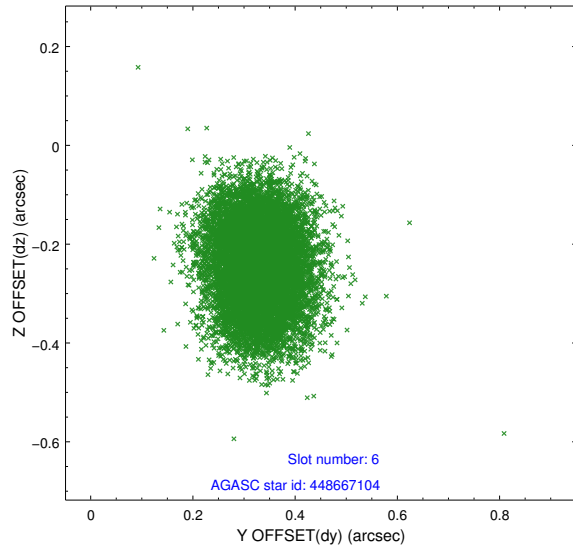




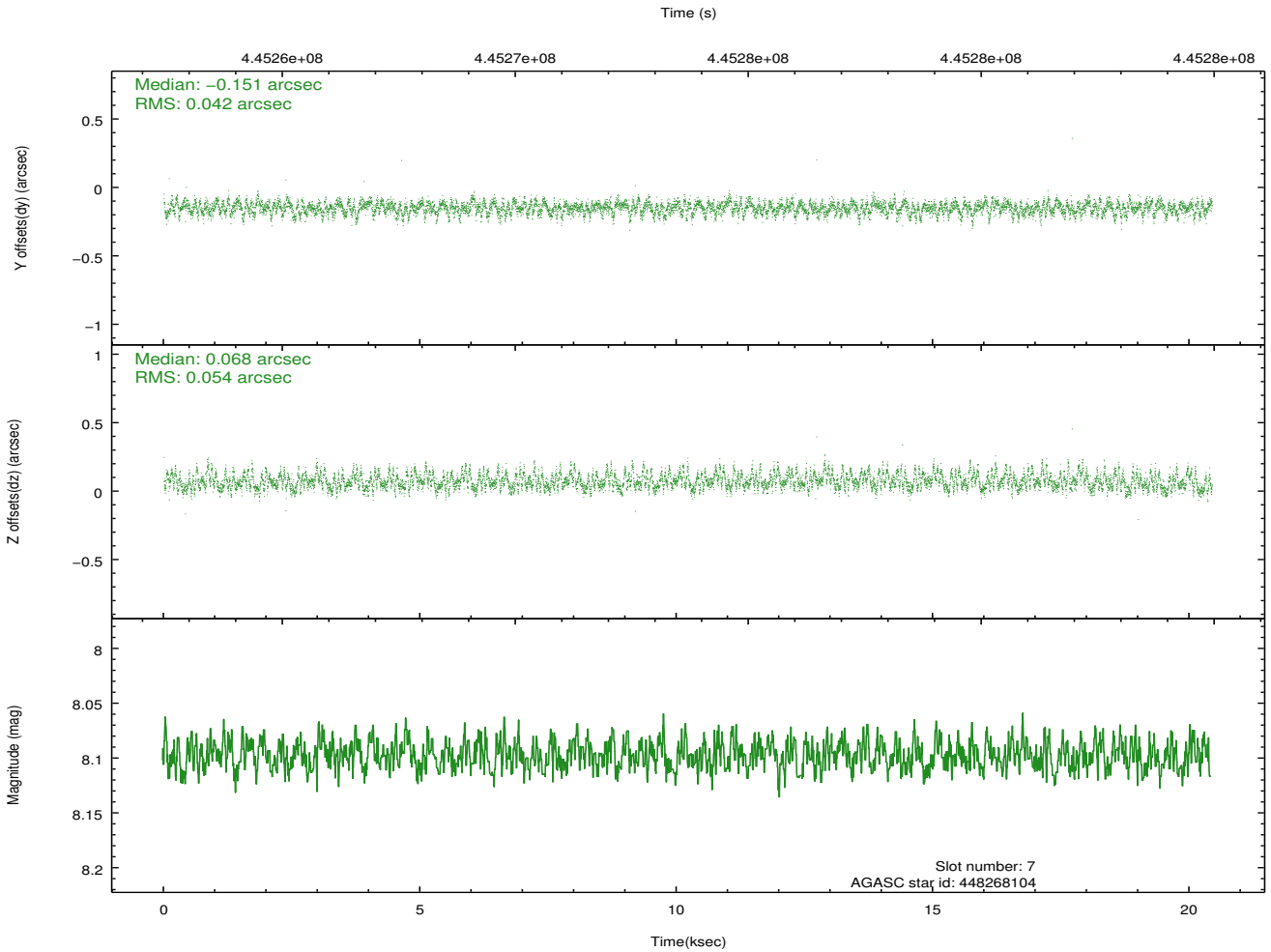
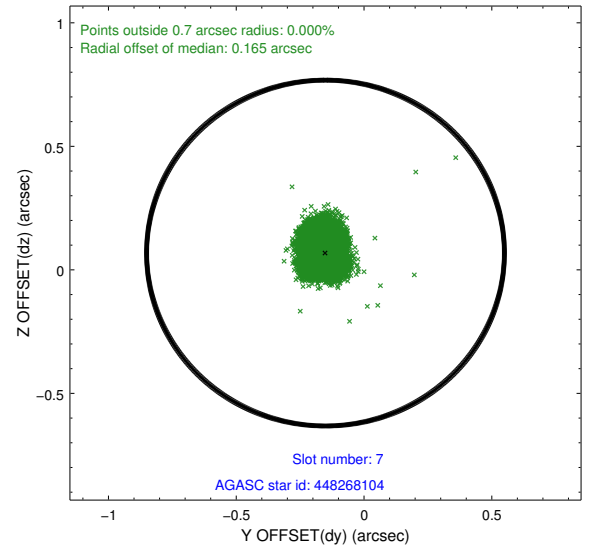
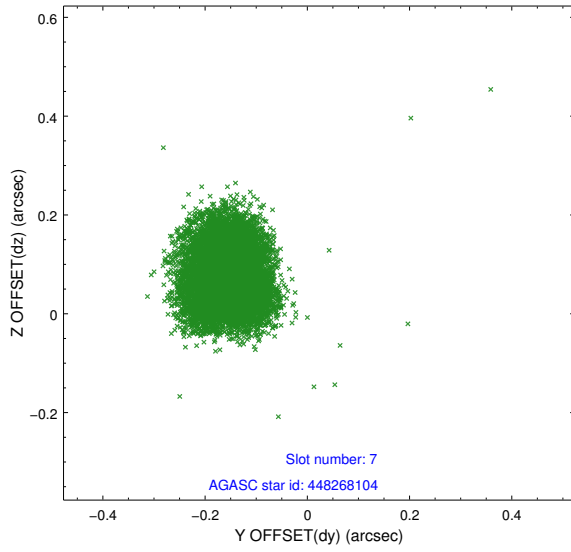
### 2.4.3 Slot 5



## 2.4.4 Slot 6

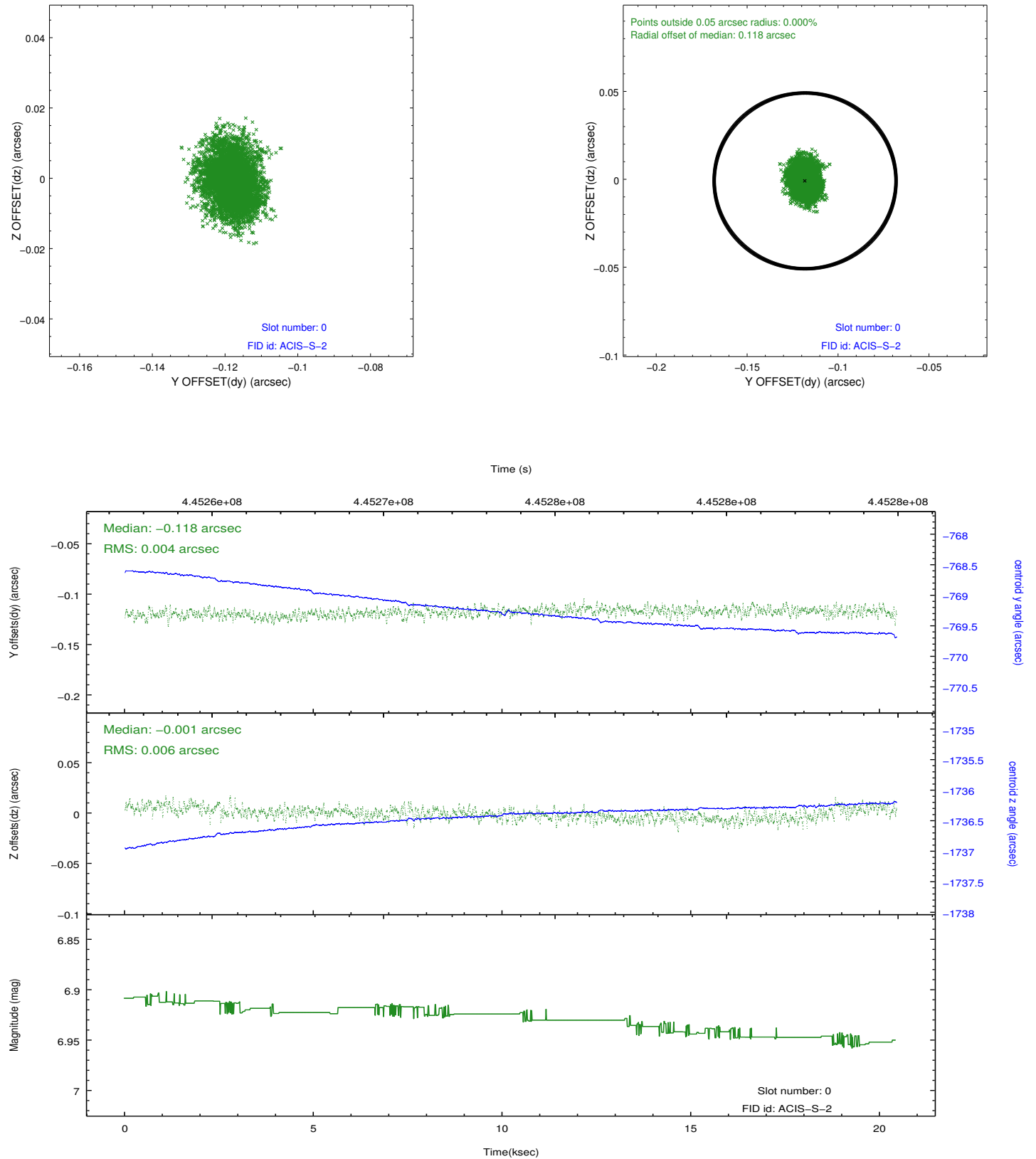


## 2.4.5 Slot 7

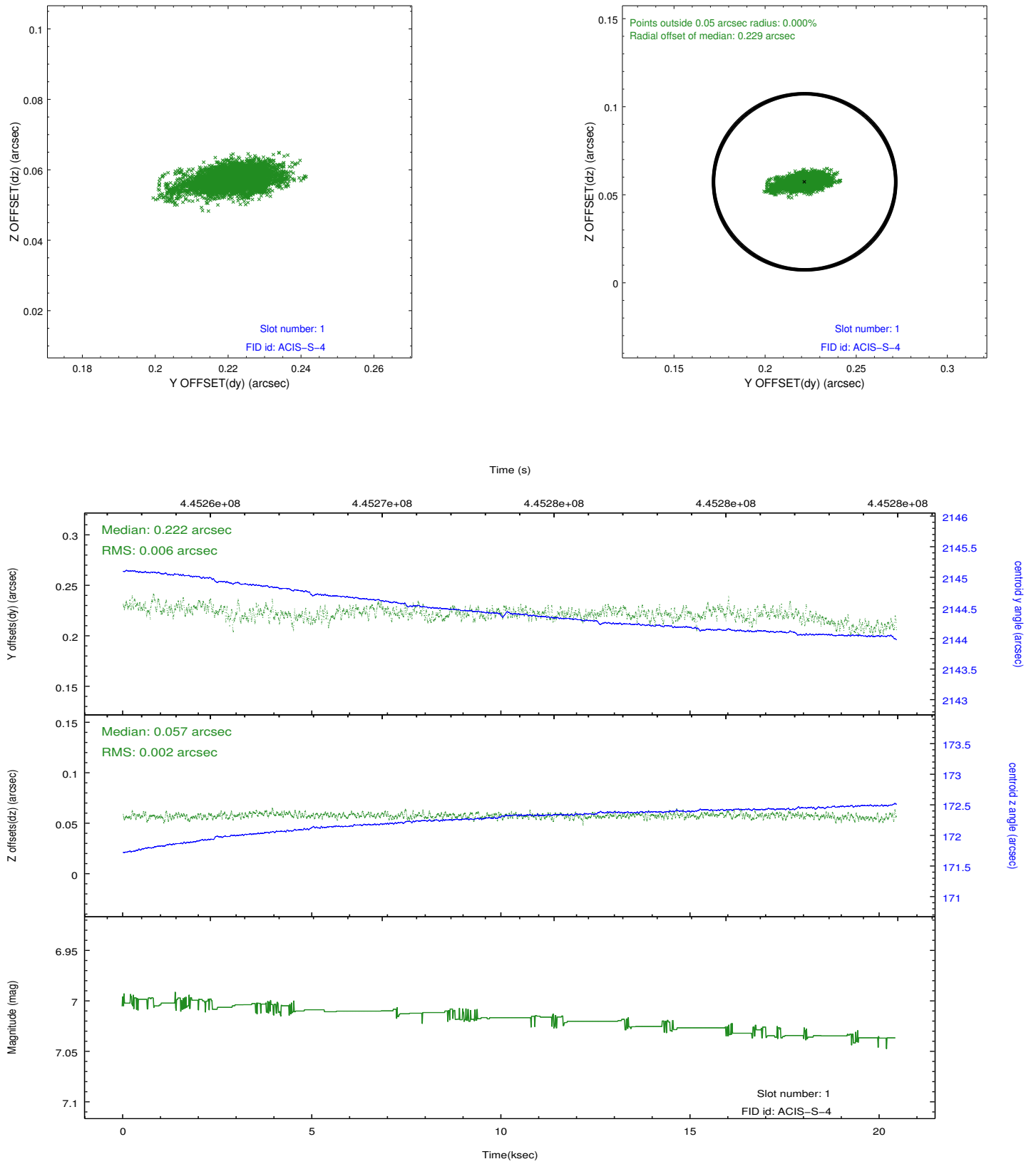


## 2.5 FID Slots

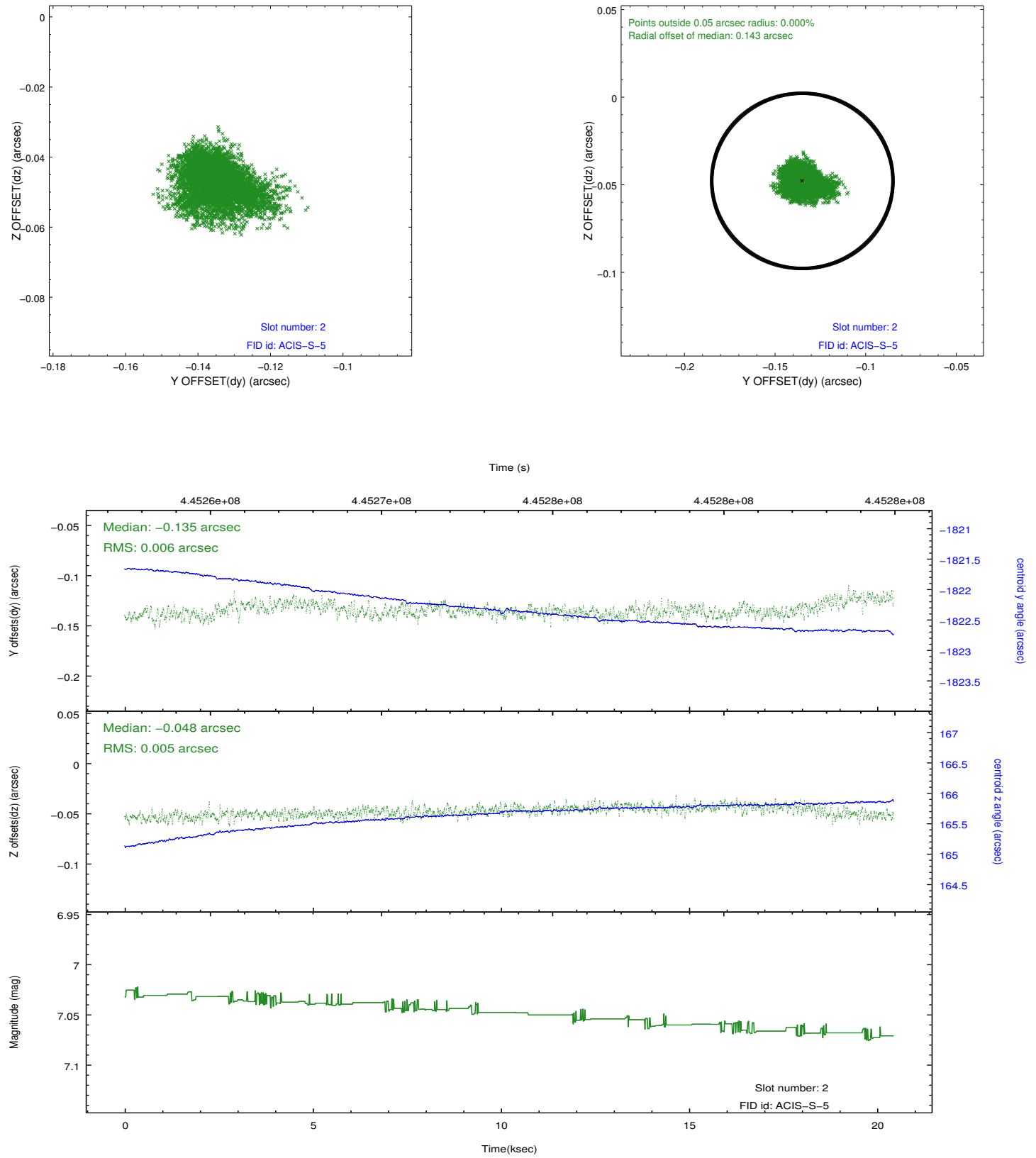
### 2.5.1 Slot 0



## 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)	2012.02.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.344151631474

## A.2 Comments

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use `acis_process_events` to reprocess the data with the parameter `pix_adj=NONE` or `RANDOMIZE`, respectively.

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Joint proposal with HST.