

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 679 - L2 Version 6  
Chandra X-Ray Center

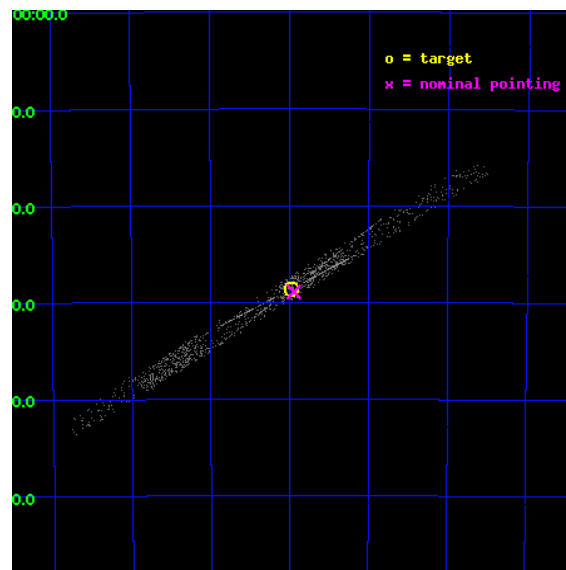
L2 Processing Date : Sep 11 2012

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# 1 Front

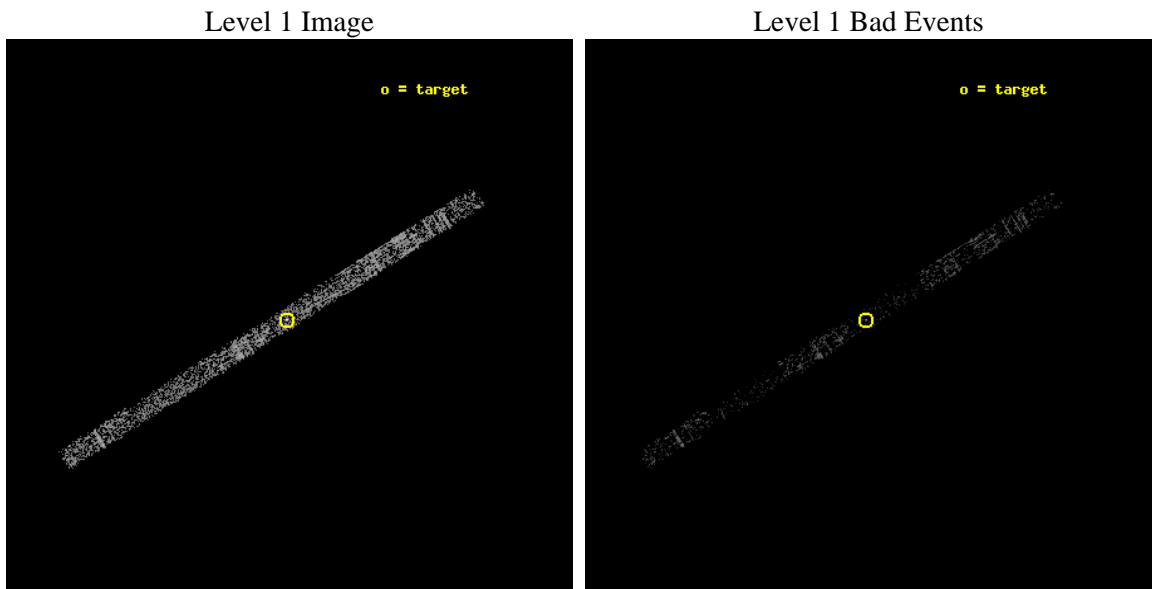
seq_num	400046	Sequence number
obs_id	679	Observation id
title	AXAF OBSERVATIONS OF A BRIGHT BLACK HOLE X-RAY BINARY IN OUTBURST	&#160
observer	Prof. Walter Lewin	Principal investigator
object	XTE J1550-564 (0.05 CRAB)	Source name
dtcycle	0	&#160
cycle	P	events are from which exps? P[primary] S[econdar
ra_targ	237.745417	Observer's specified target RA [deg]
dec_targ	-56.476472	Observer's specified target Dec [deg]
ra_nom	237.736577433	Nominal RA [deg]
dec_nom	-56.481952844418	Nominal Dec [deg]
roll_nom	327.8212910218	Nominal Roll [deg]
revision	6	Processing version of data
ontime	1166.6921179444	Sum of GTIs [s]
livetime	264.64405046524	Livetime [s]
ontime4	1166.6921179444	Sum of GTIs [s]
ontime5	1166.6920880079	Sum of GTIs [s]
ontime6	1166.6921179444	Sum of GTIs [s]
ontime7	1166.6921179444	Sum of GTIs [s]
ontime8	1166.6921179444	Sum of GTIs [s]
ontime9	1166.6920880079	Sum of GTIs [s]
l2events	1812	Number of level 2 events



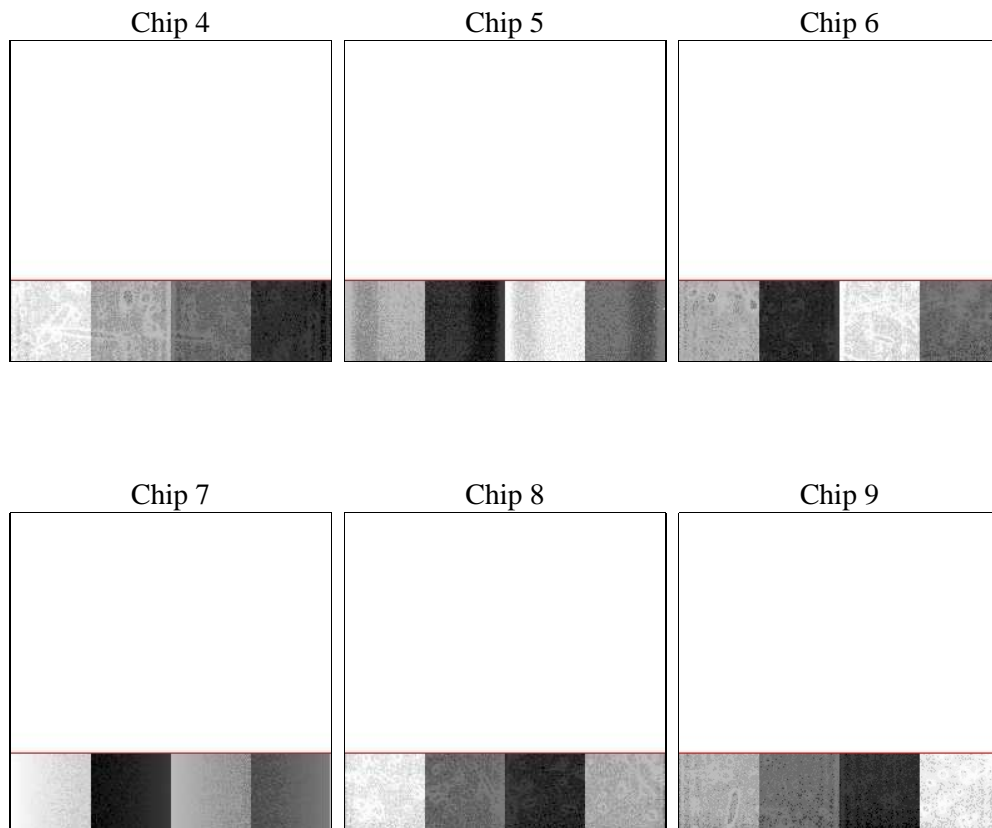
## 2 OBI Primary

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	6000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	1166.6921179444	Sum of GTIs [s]
caldsver	4.5.1.1	&#160	ontime4	1166.6921179444	Sum of GTIs [s]
date	2012-08-28T22:19:19	Date and time of file creation	ontime5	1166.6920880079	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	1166.6921179444	Sum of GTIs [s]
			ontime7	1166.6921179444	Sum of GTIs [s]
			ontime8	1166.6921179444	Sum of GTIs [s]
			ontime9	1166.6920880079	Sum of GTIs [s]
			l1events	10094	Number of level 1 events

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	1501	1009	1879	1545	2548	1612
rejected events	1366	636	1570	635	1826	1488
rejected %	91%	63%	83%	41%	71%	92%

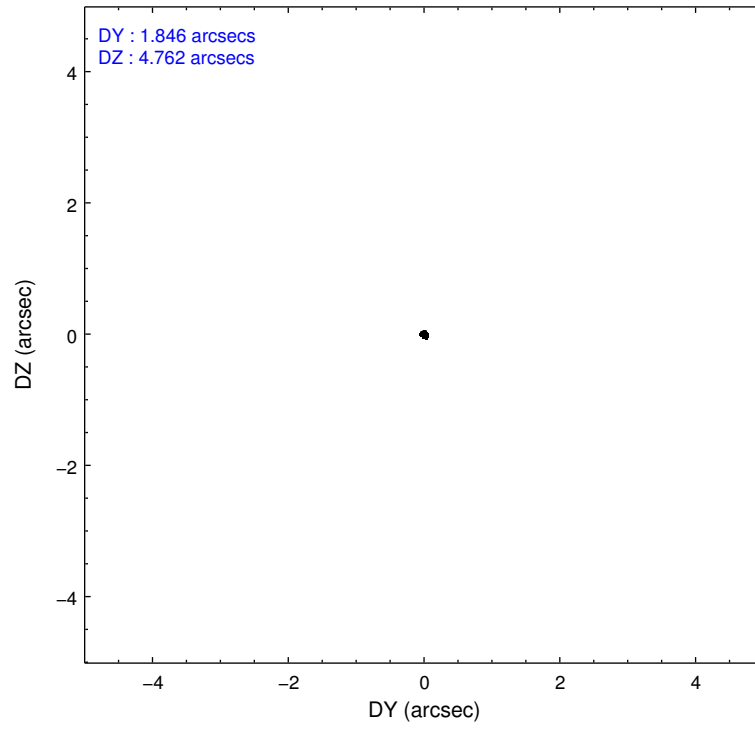
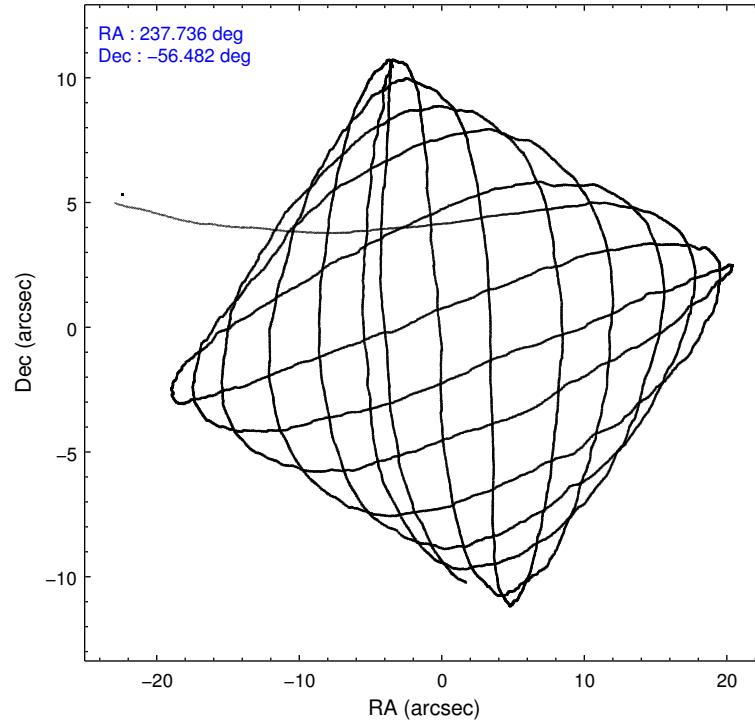
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	37	40	187	151	223	44
	2%	3%	9%	9%	8%	2%
grade 1 events	0	1	1	1	2	0
	0%	0%	0%	0%	0%	0%
grade 2 events	35	99	48	230	67	18
	2%	9%	2%	14%	2%	1%
grade 3 events	27	46	25	113	154	22
	1%	4%	1%	7%	6%	1%
grade 4 events	20	37	30	97	145	24
	1%	3%	1%	6%	5%	1%
grade 5 events	27	69	25	89	42	20
	1%	6%	1%	5%	1%	1%
grade 6 events	19	171	26	350	154	24
	1%	16%	1%	22%	6%	1%
grade 7 events	1336	546	1537	514	1761	1460
	89%	54%	81%	33%	69%	90%

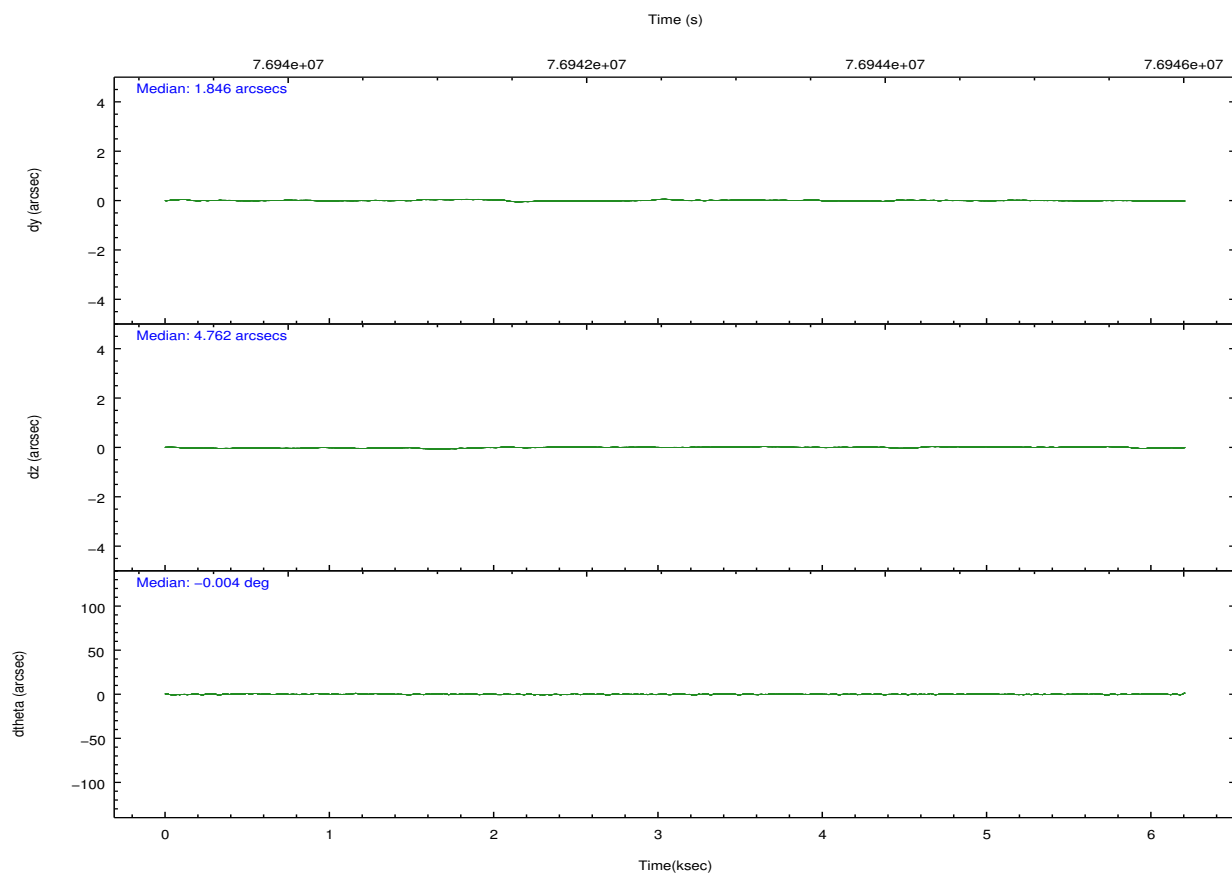
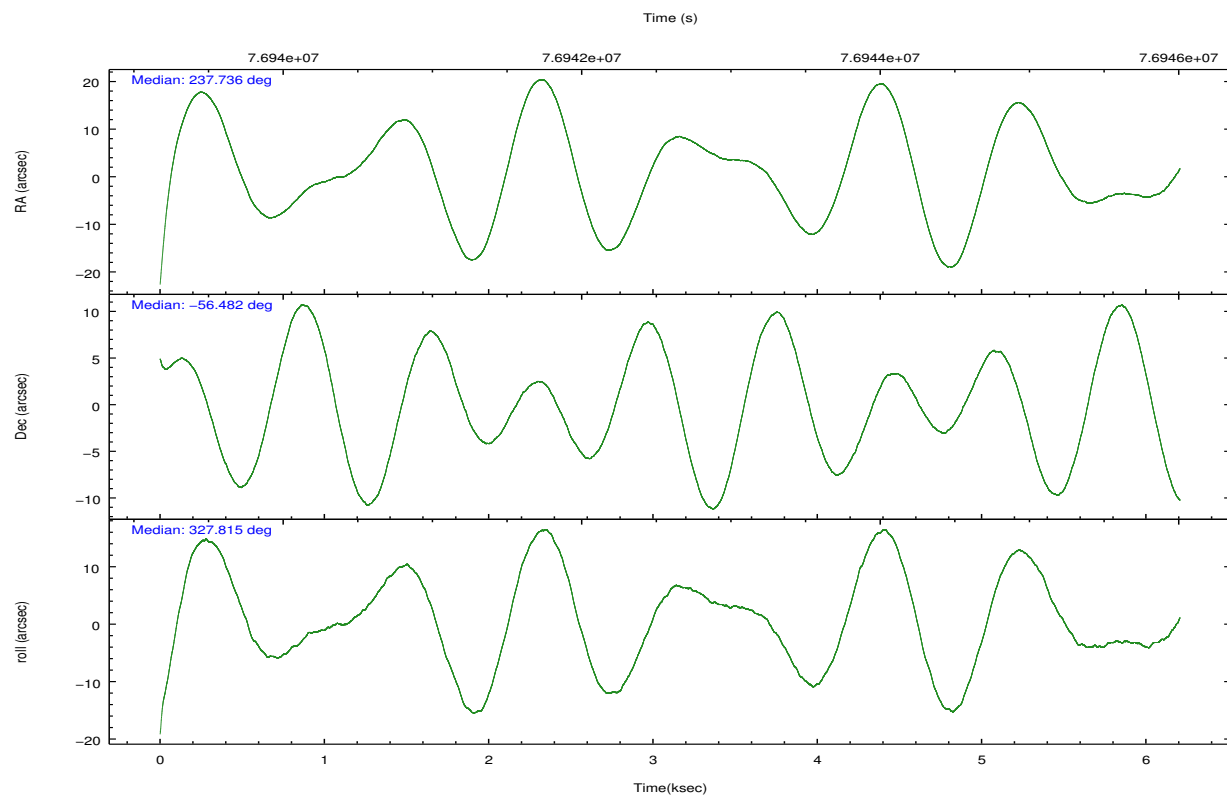


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	237.686930	237.7365774329976	Subarray requested	CUSTOM	1/4
[deg] Pointing Dec	-56.481069	-56.48195284441785	Subarray start row	1	1
[deg] Pointing Roll	327.623251	327.8212910217966	Subarray row count	256	256
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	Y	Y
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.300000	0.3
[mm] SIM translation stage pos	-182.132523	-182.1344861297048	[s] Secondary exposure time	0.000000	1.1
[mm] SIM translation stage offset	-8	-7.998036453302973	Duty cycle	5	5
[s] Observation start time (MET)	76939696.184000	76938728.396274			
Observation start date	2000-06-09T12:07:12	2000-06-09T11:52:08			
[s] Observation end time (MET)	76945696.184000	76946266.24655201			
Observation end date	2000-06-09T13:47:12	2000-06-09T13:57:46			
Read mode	TIMED	TIMED			

## 2.3 Aspect



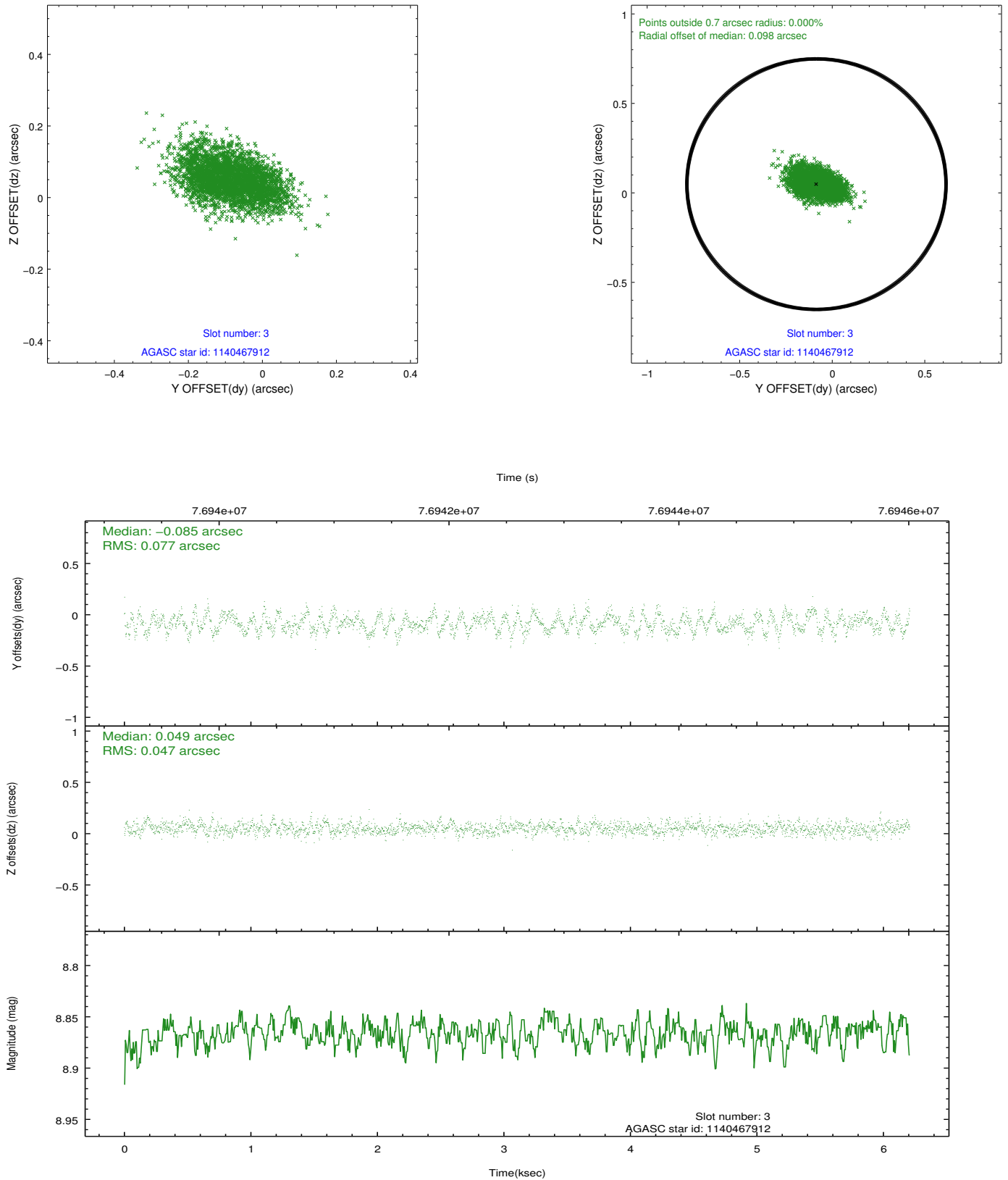


### Slot Statistics

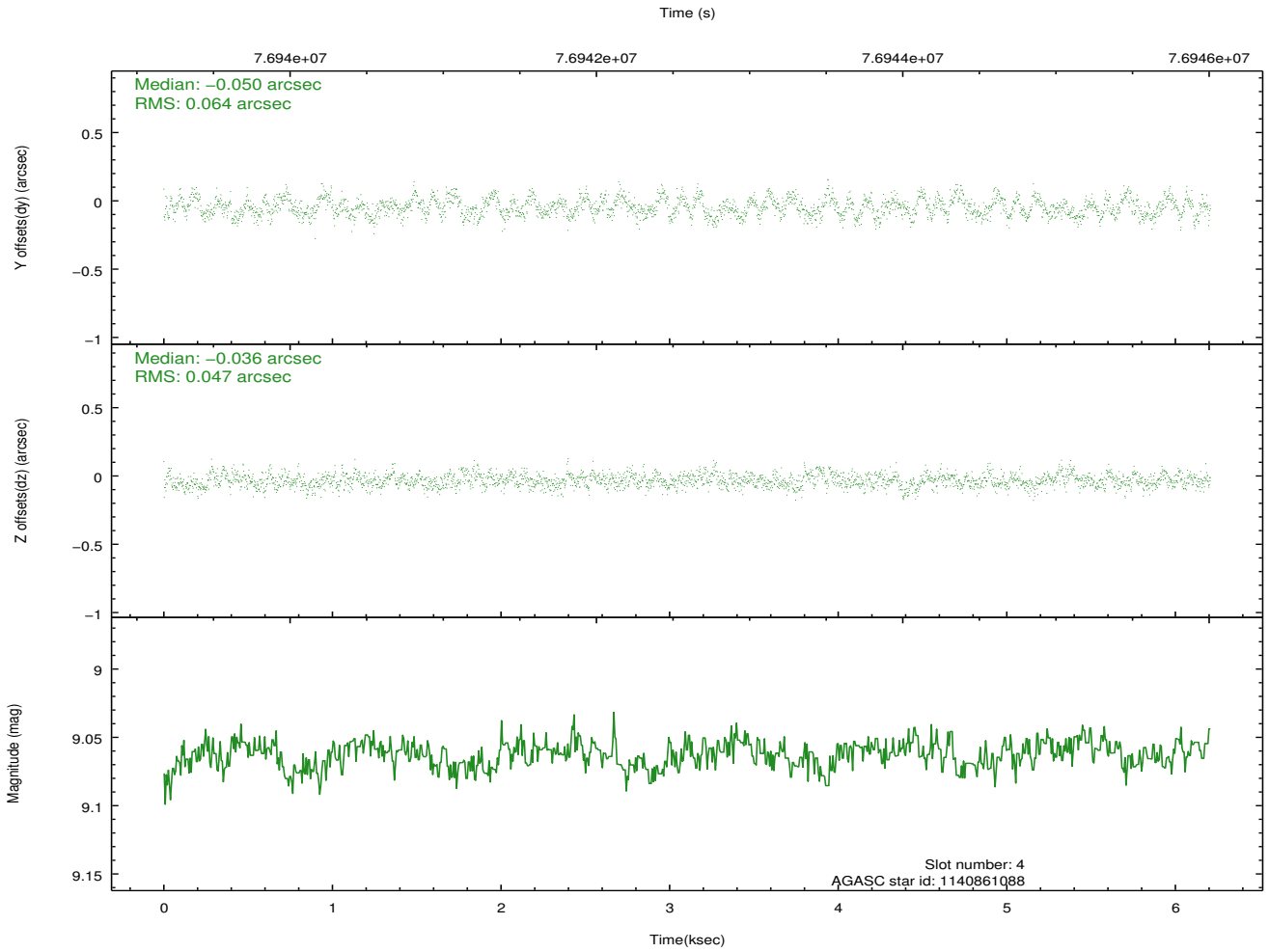
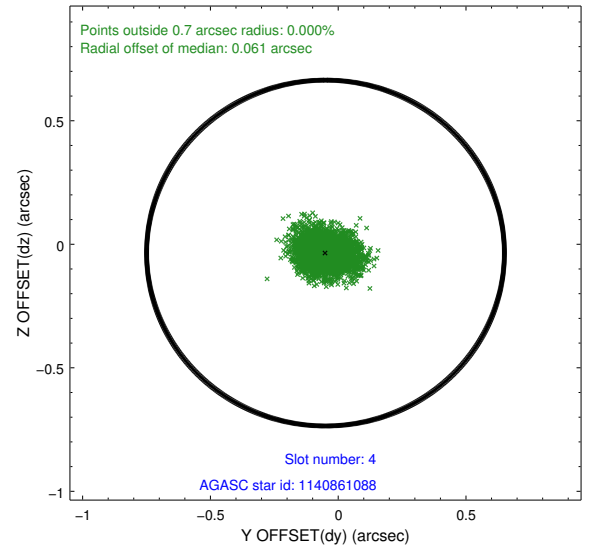
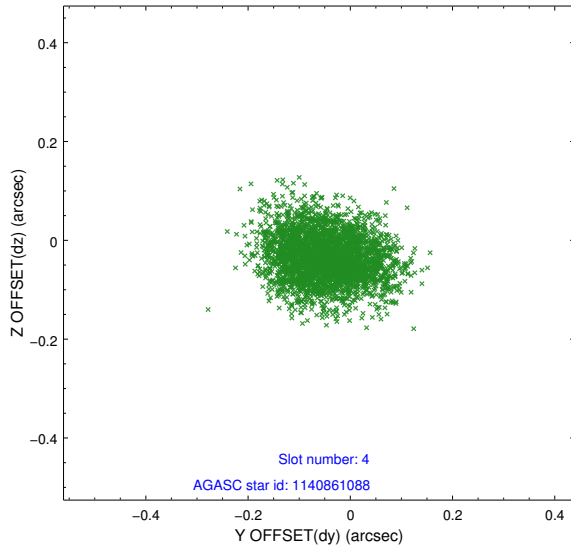
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	1512	-0.065	-0.072	0.007	0.011	0.000000	0.000000	-753.96	-1890.69
1	FID	ACIS-S-4	7.19	1509	0.061	0.051	0.006	0.010	0.000000	0.000000	2159.02	16.78
2	FID	ACIS-S-5	7.22	1511	-0.028	0.029	0.007	0.012	0.000000	0.000000	-1805.52	11.55
3	GUIDE	1140467912	8.87	3022	-0.085	0.049	0.095	0.154	237.351144	-55.585312	-2302.72	2355.28
4	GUIDE	1140861088	9.06	3024	-0.050	-0.036	0.085	0.136	236.443591	-56.463656	-2110.00	-1290.35
5	GUIDE	1140986032	9.39	3021	-0.035	-0.038	0.102	0.164	237.745074	-57.277932	1631.93	-2363.34
6	GUIDE	1141000720	9.19	3025	0.032	0.013	0.084	0.138	238.678440	-56.280404	1295.28	1657.64
7	GUIDE	1141004616	9.67	3022	0.135	0.009	0.088	0.144	238.066818	-56.808784	1266.40	-597.34

## 2.4 Star Slots

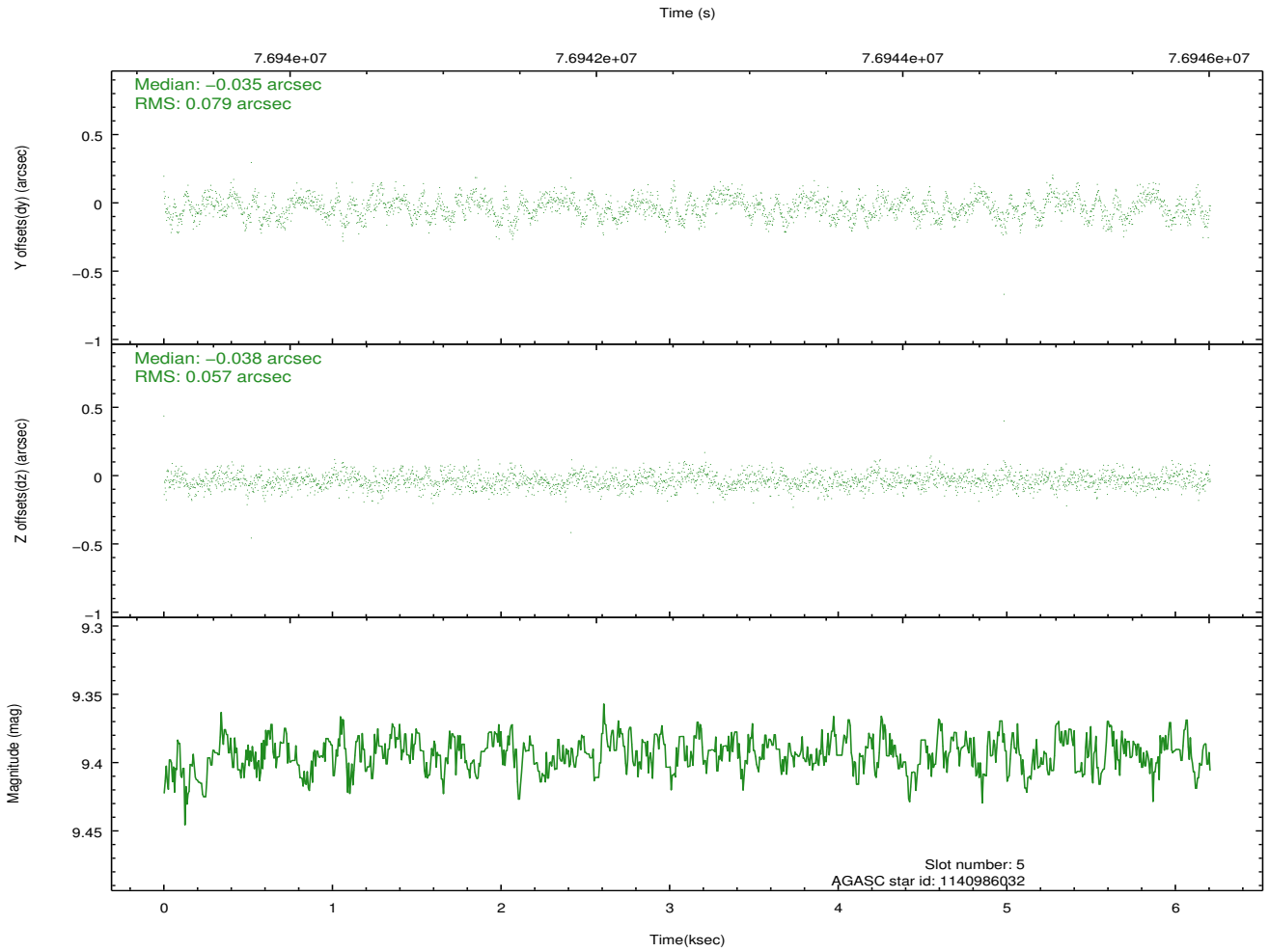
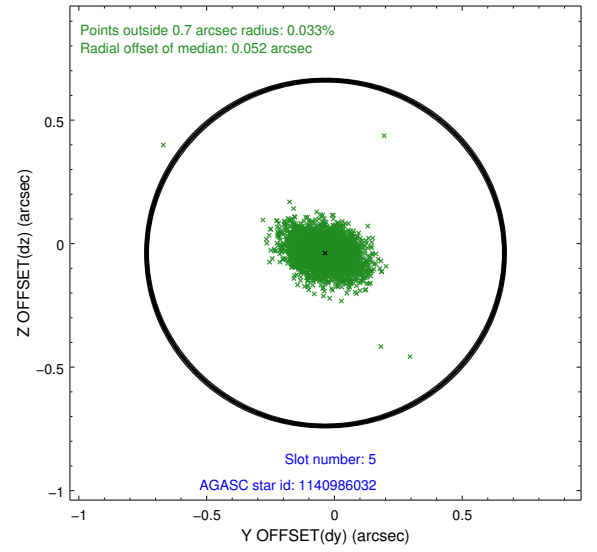
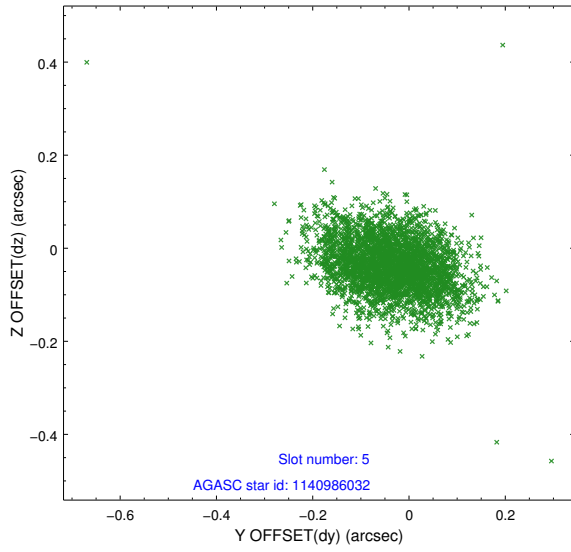
### 2.4.1 Slot 3



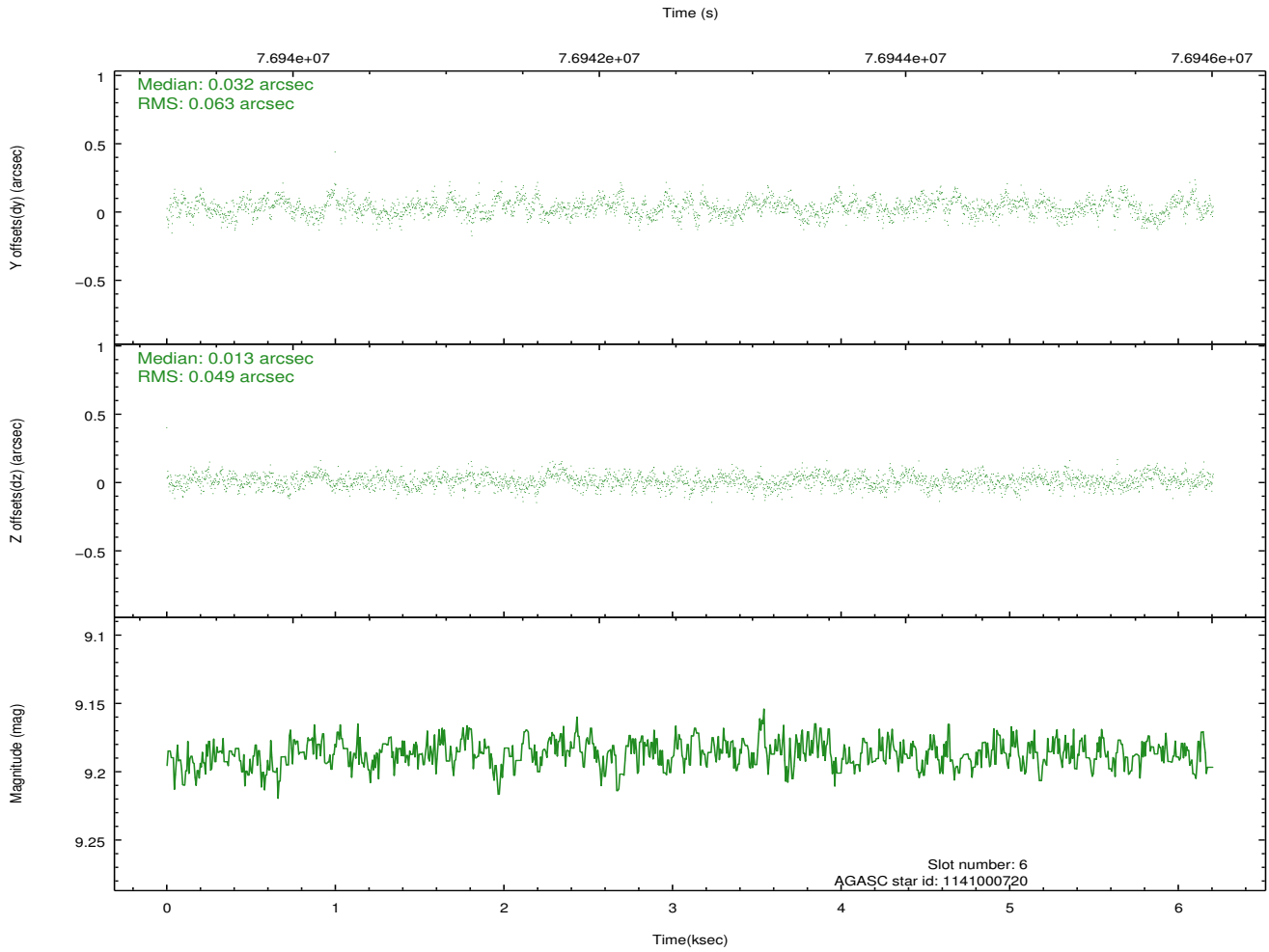
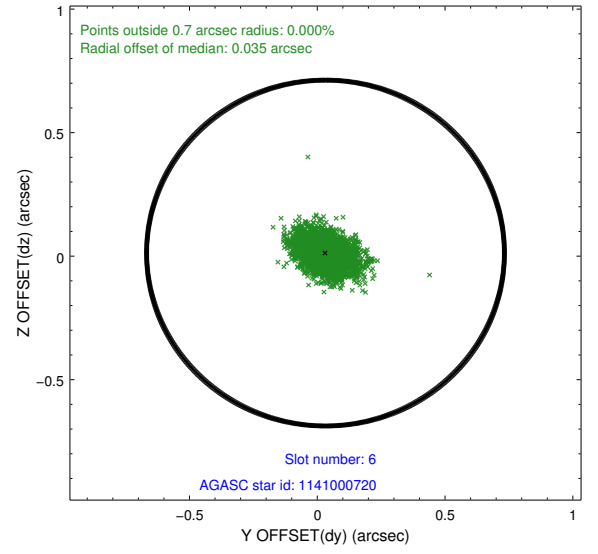
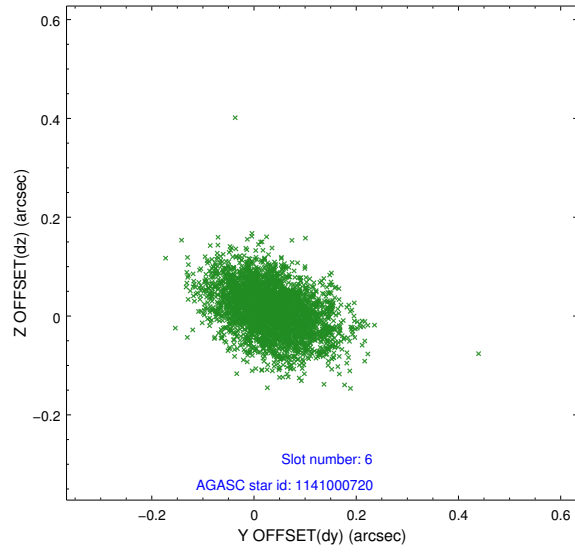
## 2.4.2 Slot 4



### 2.4.3 Slot 5

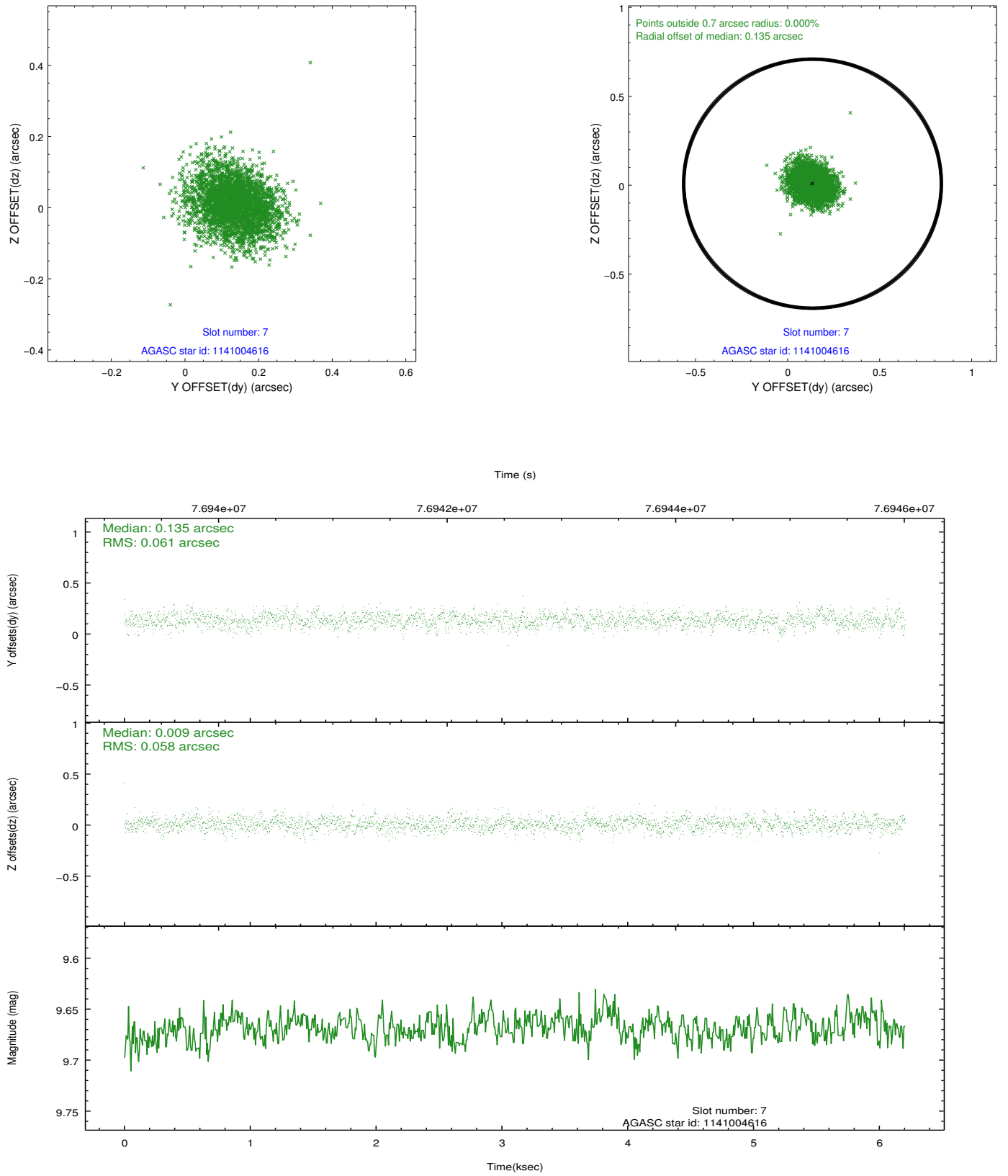


## 2.4.4 Slot 6



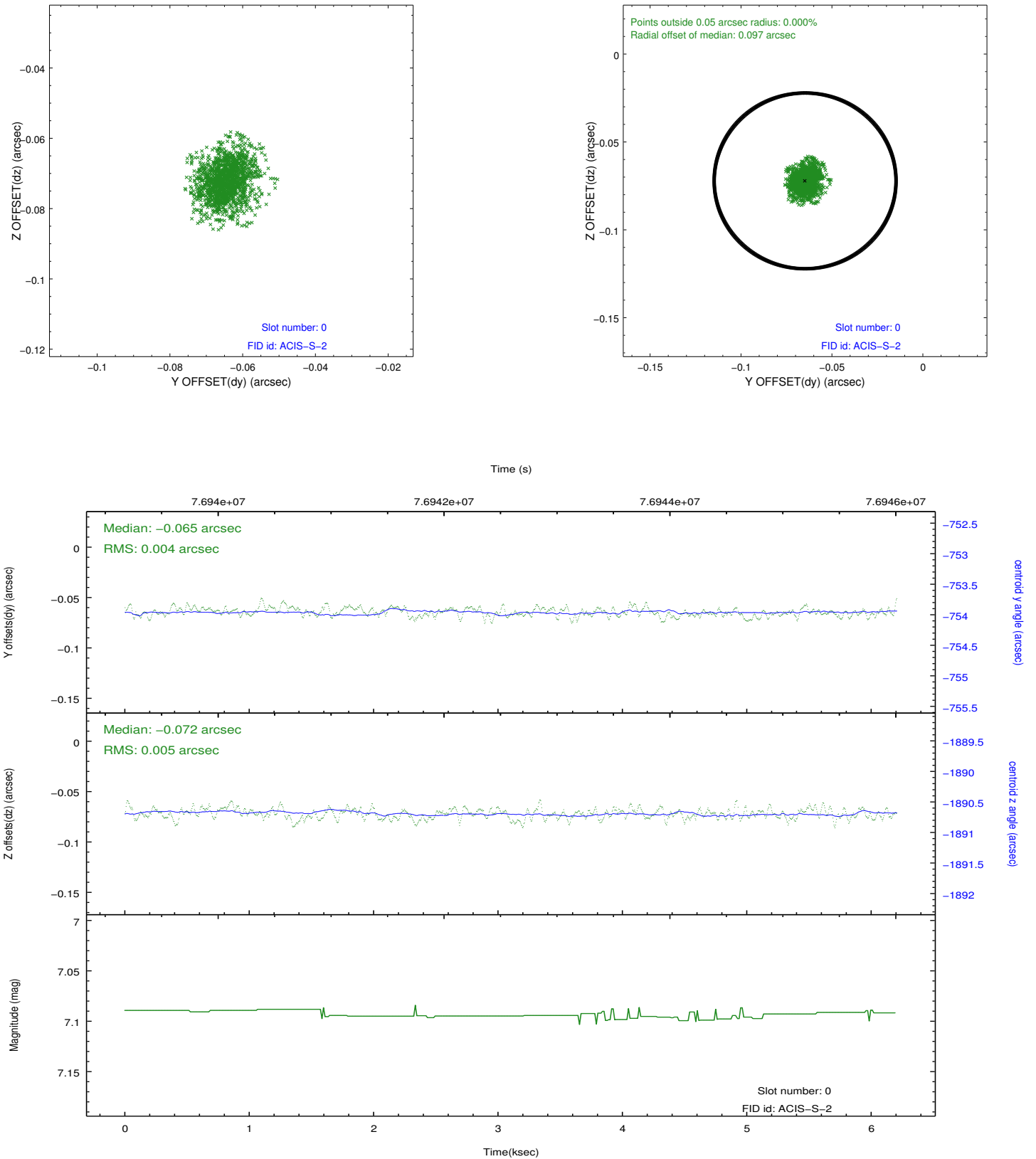


## 2.4.5 Slot 7

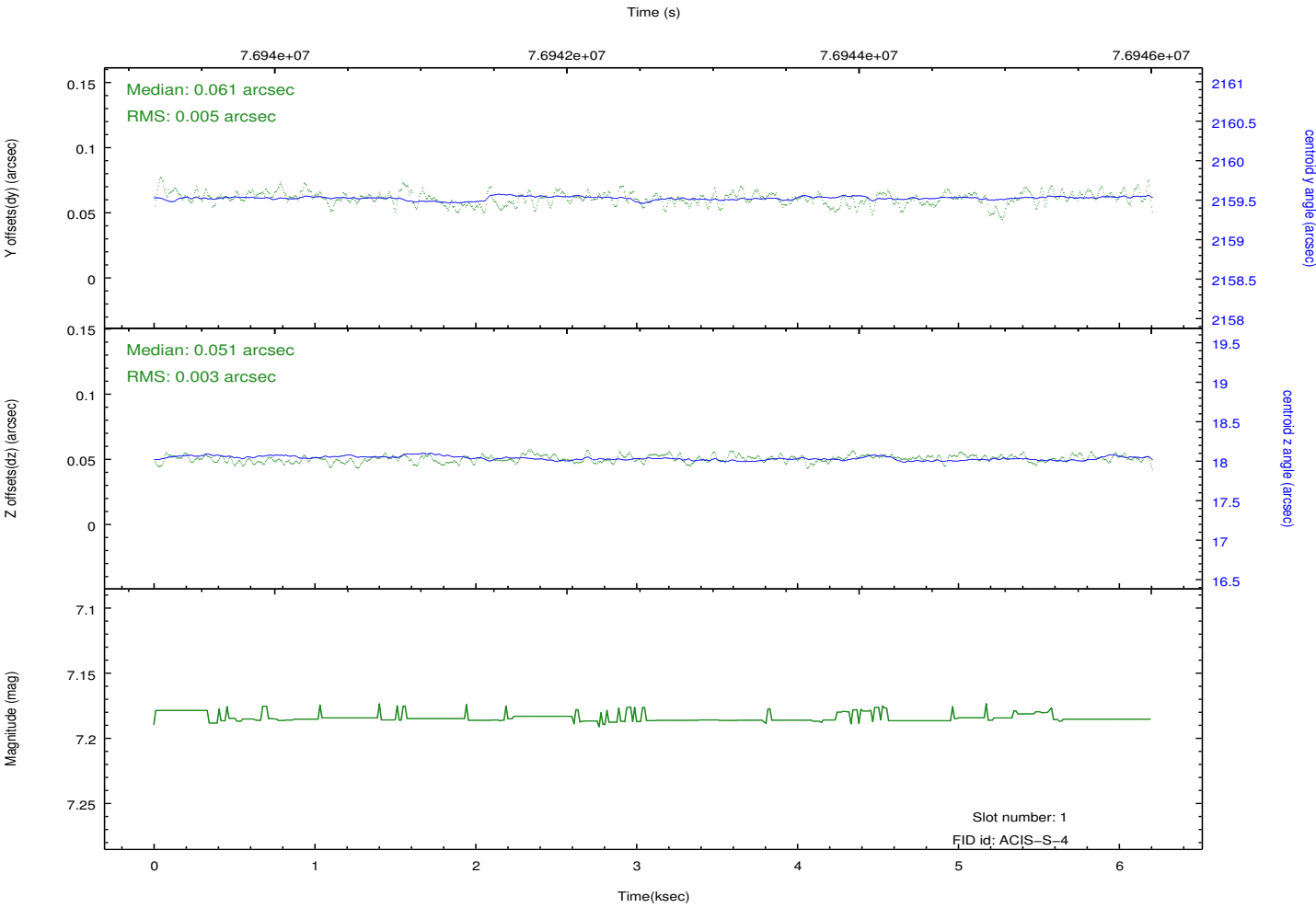
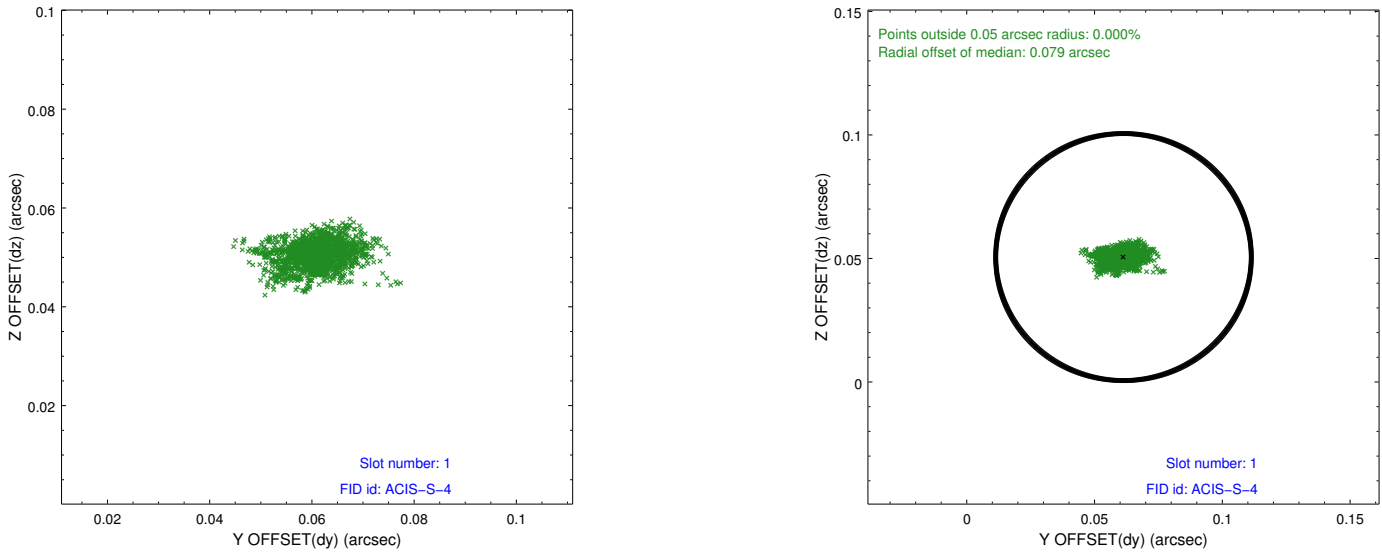


## 2.5 FID Slots

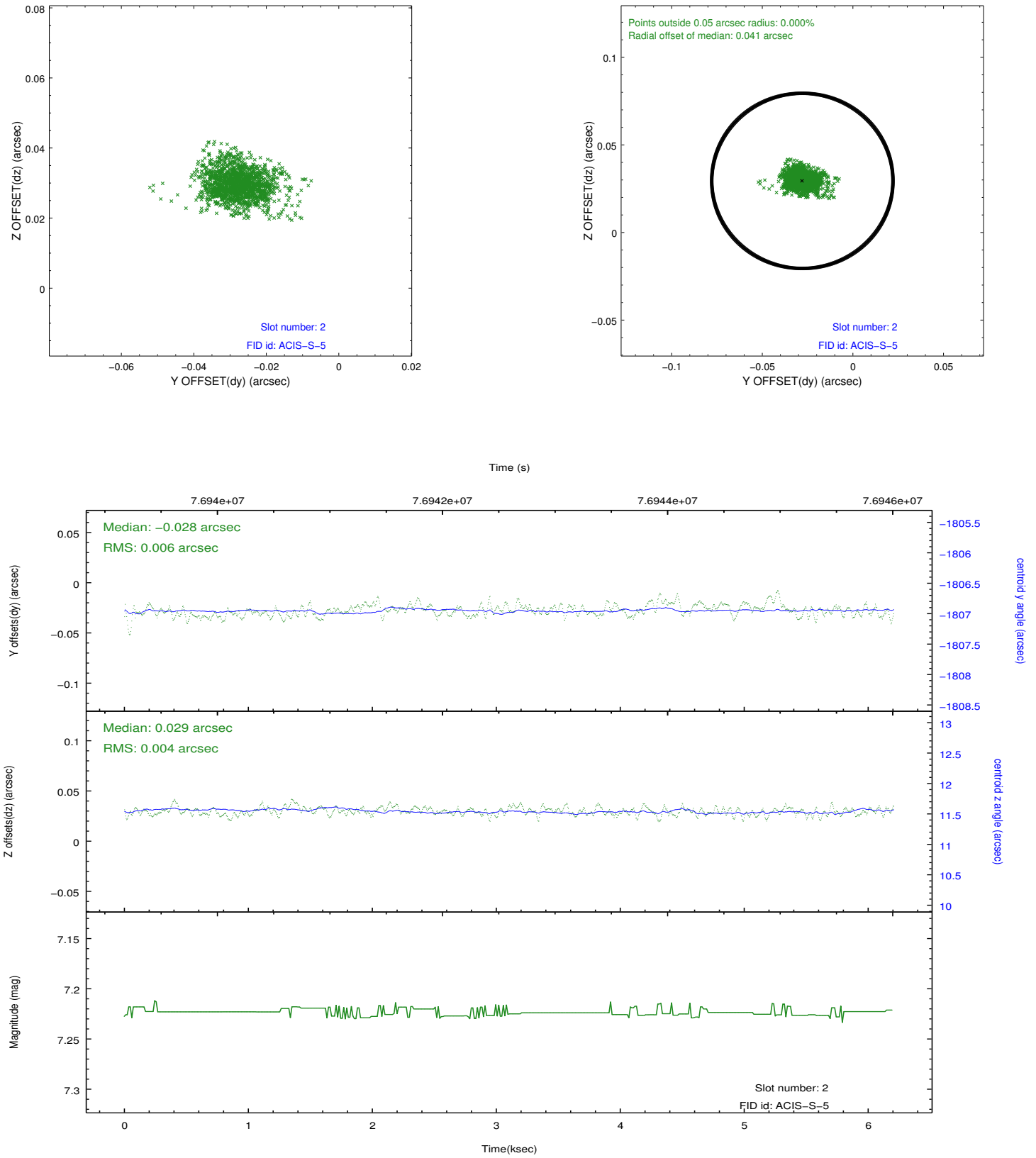
### 2.5.1 Slot 0



2.5.2 Slot 1



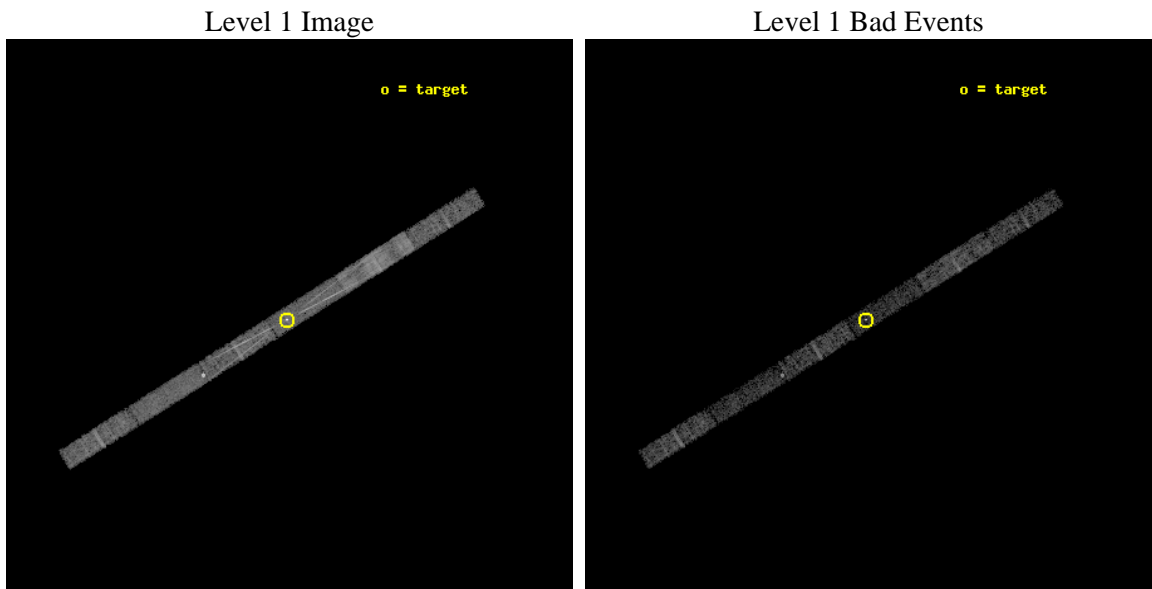
### 2.5.3 Slot 2



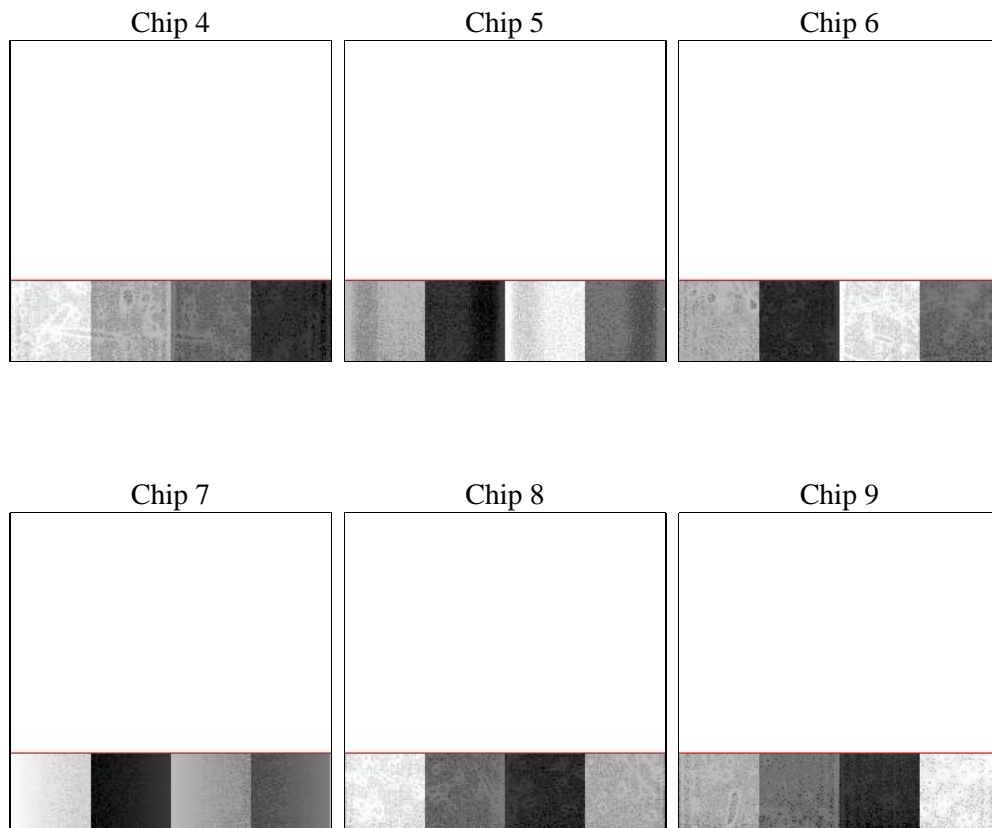
## 3 OBI Secondary

### 3.1 OBI

#### 3.1.1 Images



#### 3.1.2 Bias



### 3.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	6000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	5036.9868606329	Sum of GTIs [s]
caldsver	4.5.1.1	&#160	ontime4	5037.0279306173	Sum of GTIs [s]
date	2012-08-28T22:19:54	Date and time of file creation	ontime5	5035.8049302995	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	5036.9048703015	Sum of GTIs [s]
			ontime7	5036.9868606329	Sum of GTIs [s]
			ontime8	5036.8638602644	Sum of GTIs [s]
			ontime9	5037.9638003856	Sum of GTIs [s]
			l1events	89682	Number of level 1 events

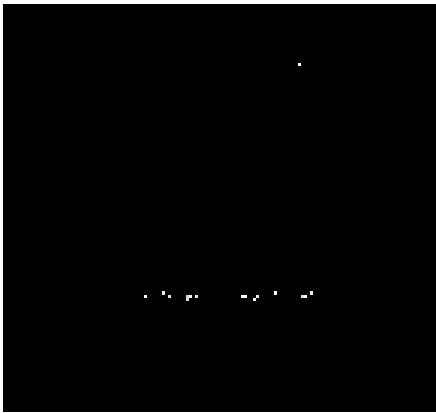
### 3.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	11705	12936	14368	18104	23283	9286
rejected events	10200	6393	9174	6729	12407	8037
rejected %	87%	49%	63%	37%	53%	86%

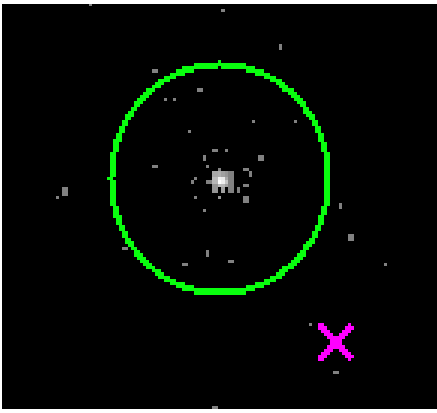
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	619	1322	3561	1747	3956	524
	5%	10%	24%	9%	16%	5%
grade 1 events	2	284	13	65	31	5
	0%	2%	0%	0%	0%	0%
grade 2 events	427	1723	740	2607	1244	225
	3%	13%	5%	14%	5%	2%
grade 3 events	162	613	305	1154	2261	161
	1%	4%	2%	6%	9%	1%
grade 4 events	170	577	320	1237	2000	178
	1%	4%	2%	6%	8%	1%
grade 5 events	208	1101	315	1191	446	266
	1%	8%	2%	6%	1%	2%
grade 6 events	209	2671	390	4958	1929	223
	1%	20%	2%	27%	8%	2%
grade 7 events	9908	4645	8724	5145	11416	7704
	84%	35%	60%	28%	49%	82%

# 4 Gratings

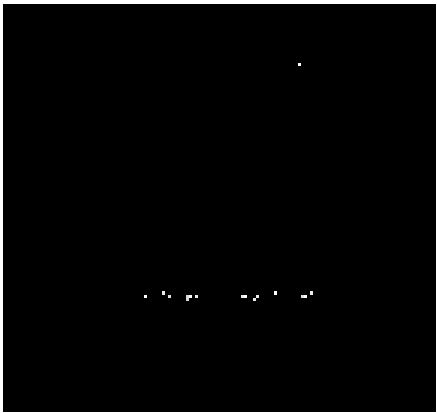
## 4.1 HEG Arm



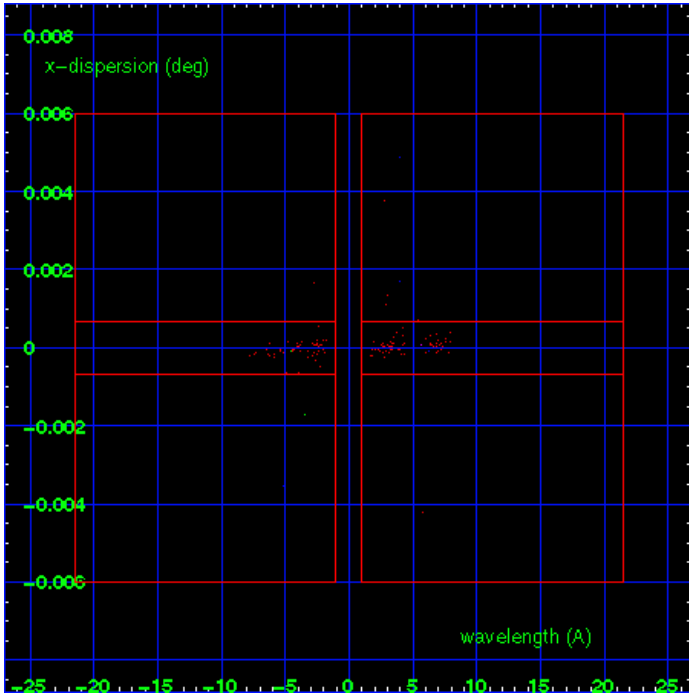
HEG Order Sort 123



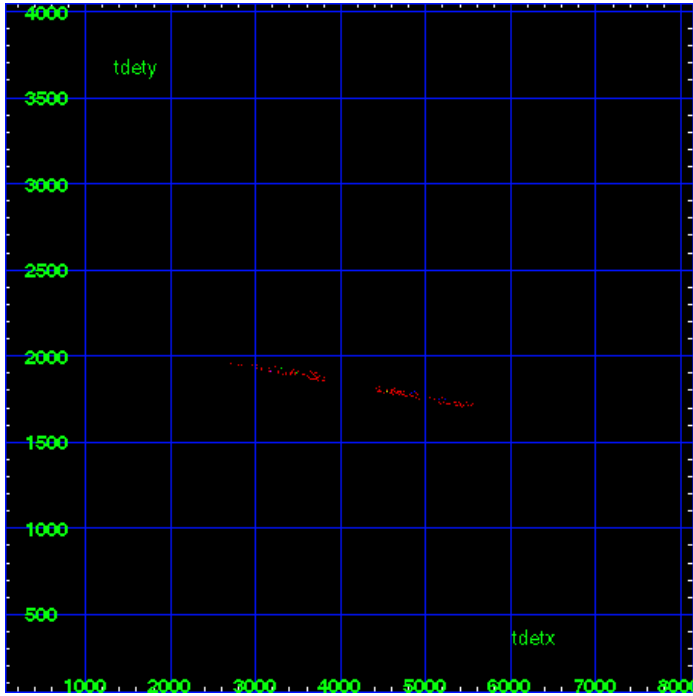
HEG Zero Order



HEG Order Sort ALL

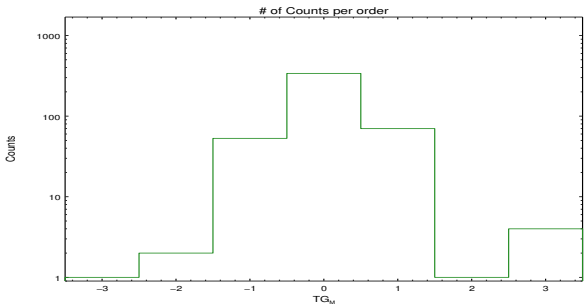


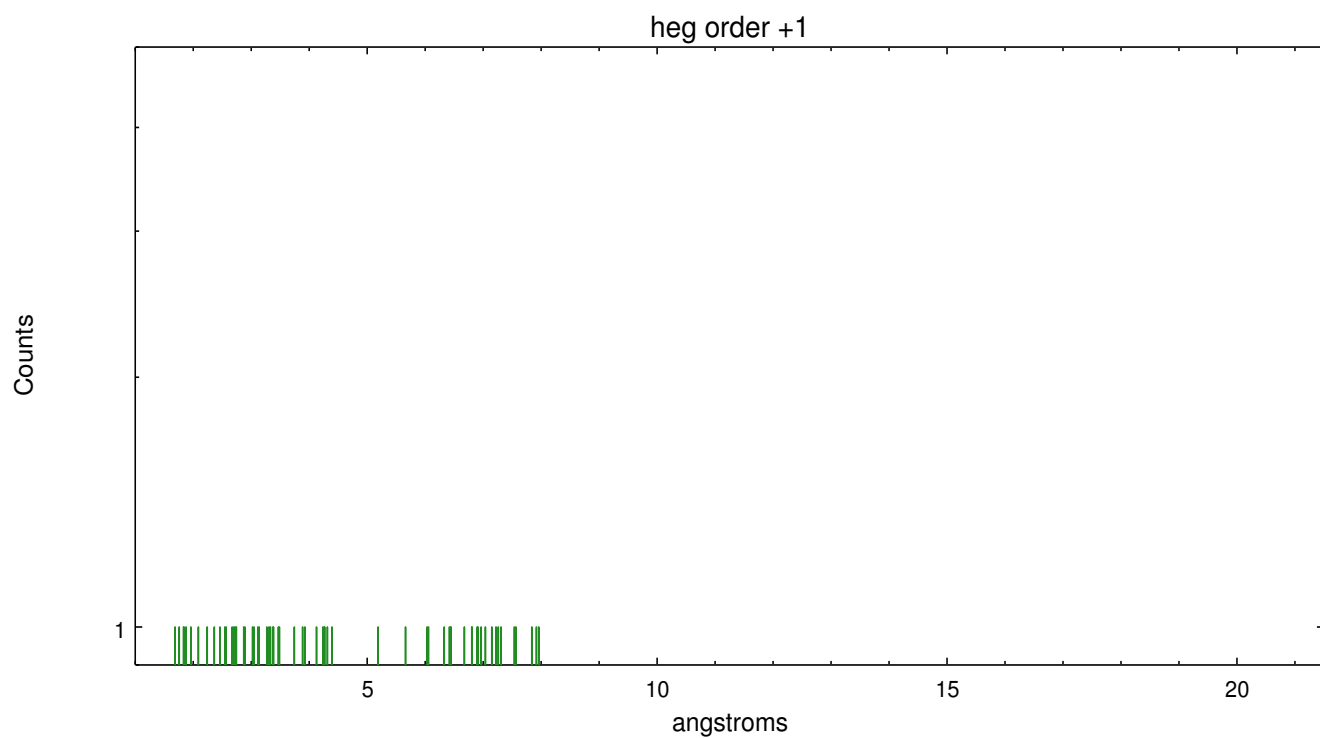
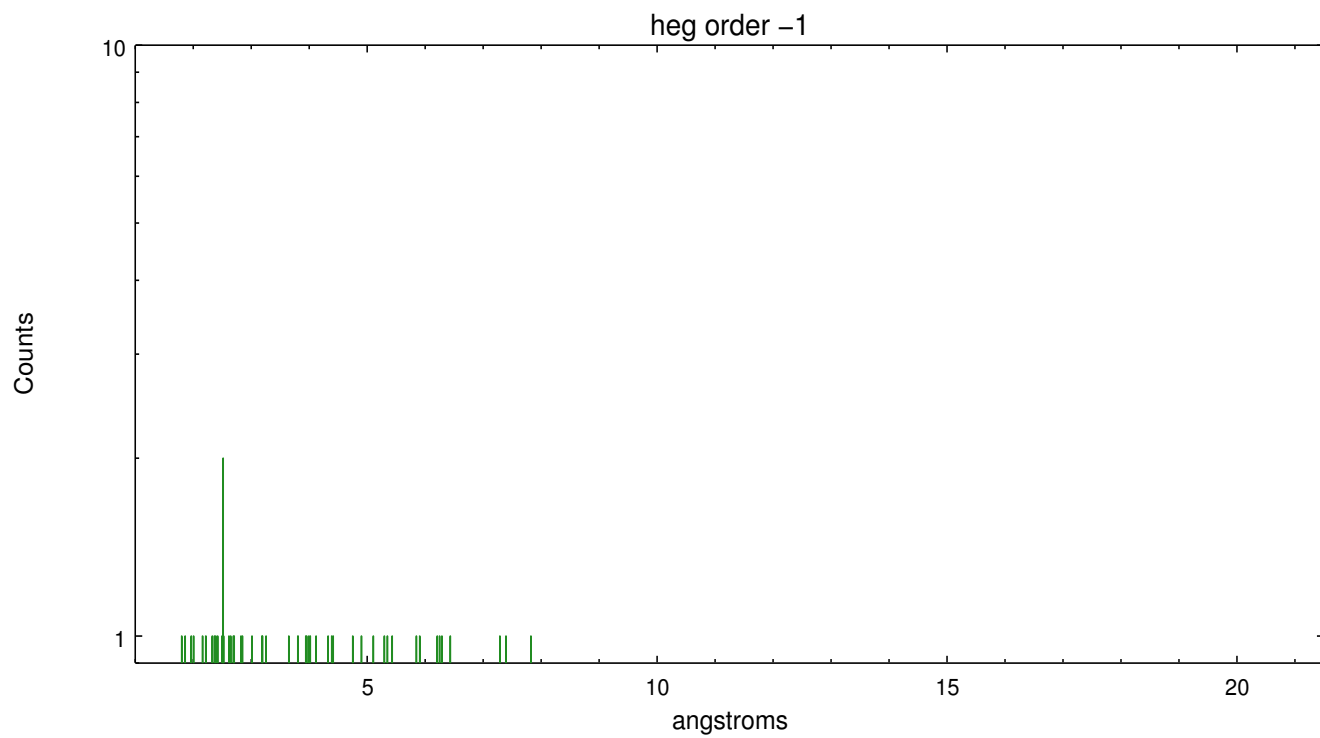
Spot Image HEG



Full Detector HEG

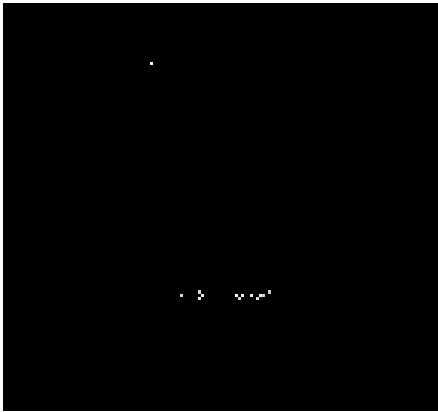
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1	2	53	339	70	1	4



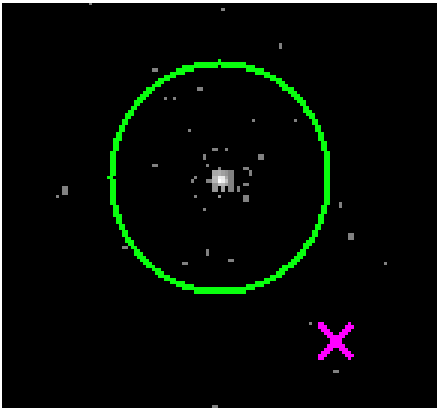




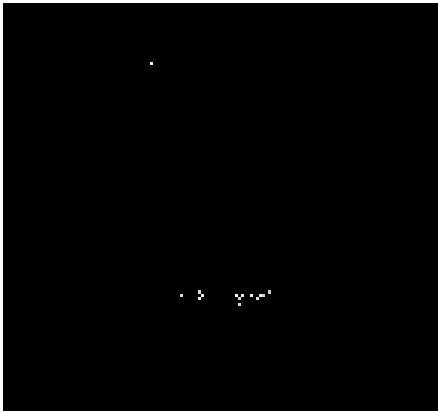
4.2 MEG Arm



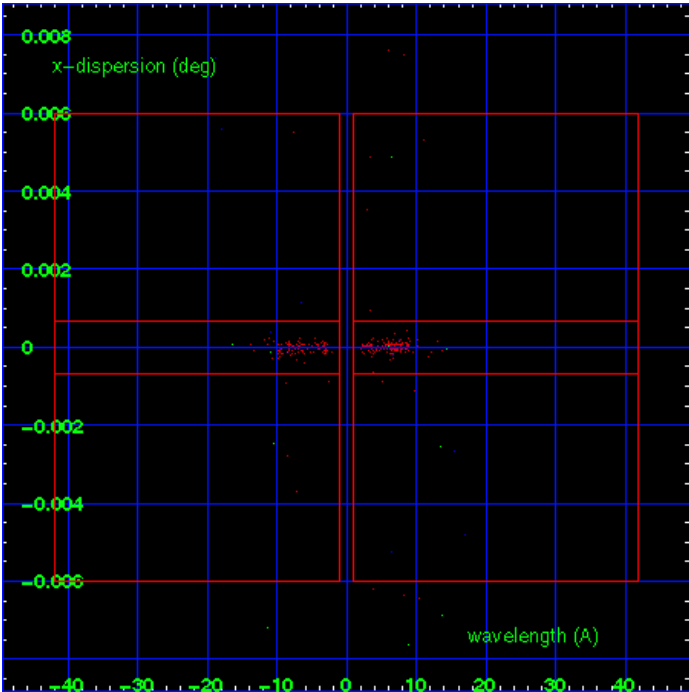
MEG Order Sort 123



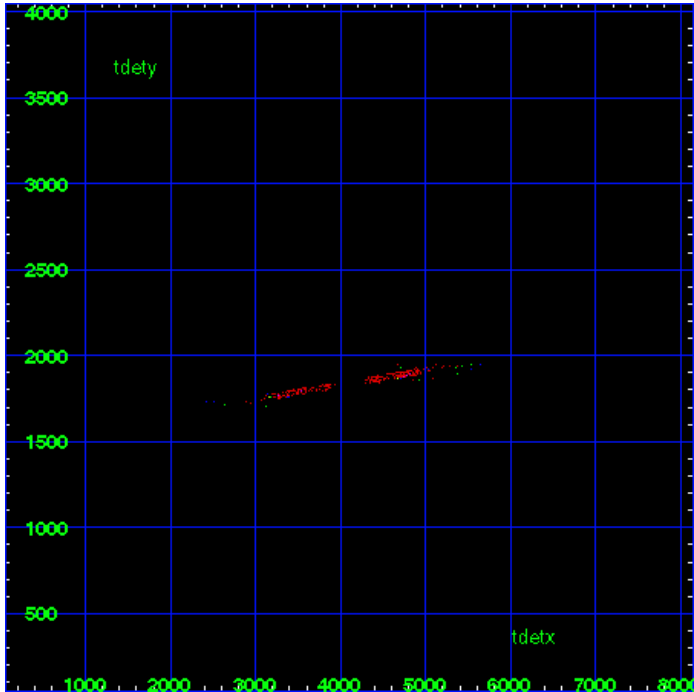
MEG Zero Order



MEG Order Sort ALL

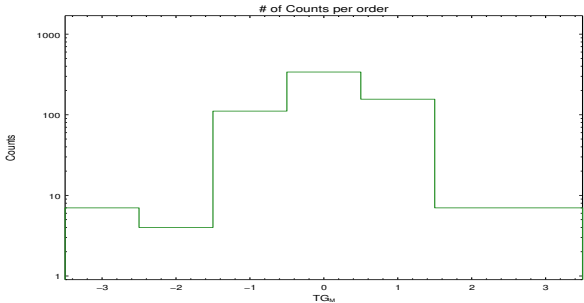


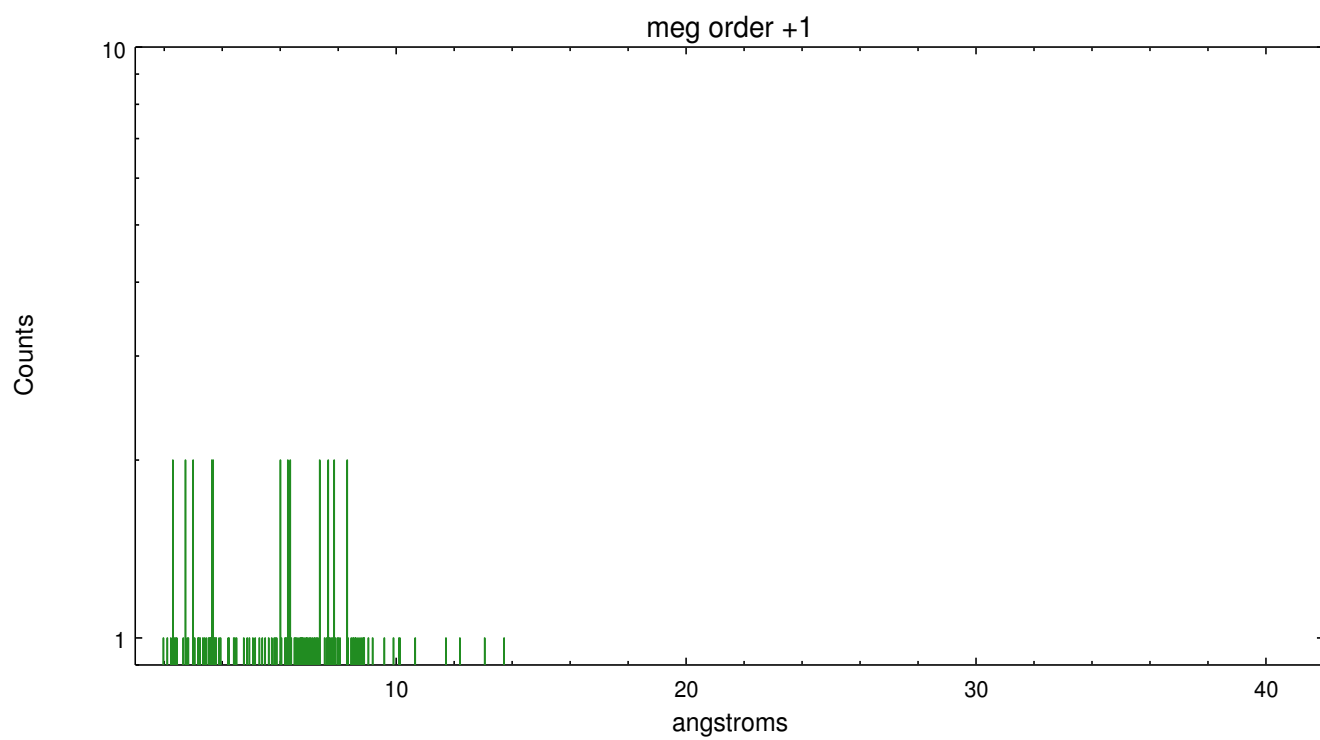
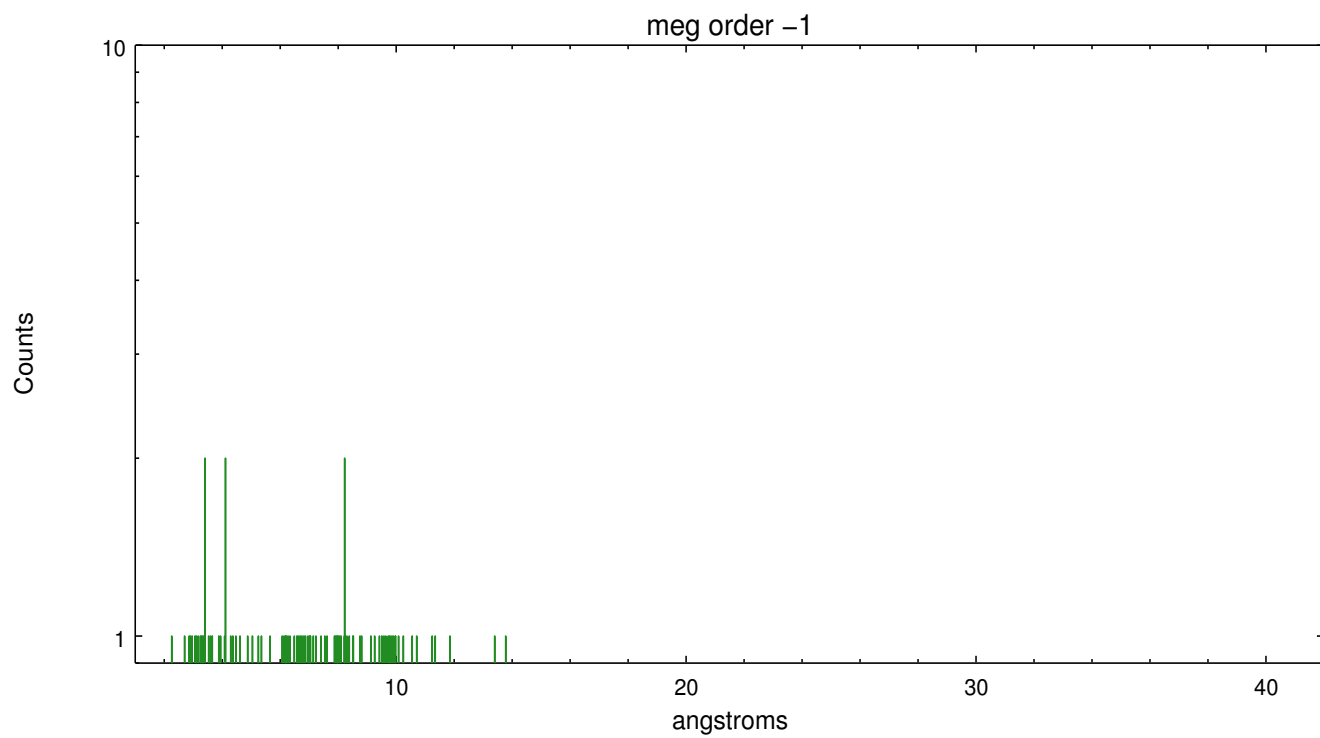
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	7	4	111	339	156	7	7





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	6.006

## A.2 Comments

Charge time for this ObsId remains at original value of 6.006 ks, although with the current processing the charge time would have been 6.204 ksec. Subarray is too narrow to include softer X-ray events in the dispersed spectra.

===

This is an interleave-mode observation. The primary exposure (e1) is shorter than the secondary exposure (e2). Therefore the longer exposure was used to determine the zeroth order position (x=4065.03, y=4136.60), then that position was applied to both exposures for purposes of spectral extraction. tgdetect was used to find the e2 zeroth order position.