

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9885 - L2 Version 2  
Chandra X-Ray Center

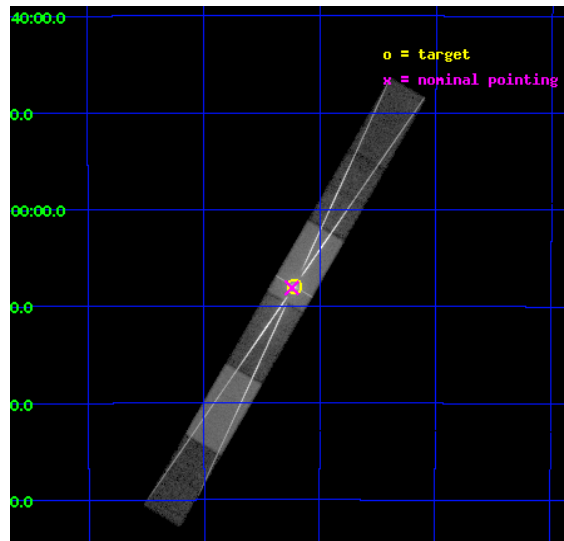
L2 Processing Date : May 17 2012

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# 1 Front

seq_num	400893	Sequence number
obs_id	9885	Observation id
title	Understanding the nature of high inclination low mass X-ray binaries: broad-band and line spectra from A1744-361	Proposal title
observer	Dr. Tod Strohmayer	Principal investigator
object	A1744-361	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	267.054583	Observer's specified target RA [deg]
dec_targ	-36.132833	Observer's specified target Dec [deg]
ra_nom	267.05989664093	Nominal RA [deg]
dec_nom	-36.135131019415	Nominal Dec [deg]
roll_nom	300.15976251688	Nominal Roll [deg]
revision	2	Processing version of data
ontime	21486.299849391	Sum of GTIs [s]
livetime	20979.82225794	Livetime [s]
ontime4	21486.299849391	Sum of GTIs [s]
ontime5	21486.299849391	Sum of GTIs [s]
ontime6	21482.817809105	Sum of GTIs [s]
ontime7	21486.299849391	Sum of GTIs [s]
ontime8	21486.299849391	Sum of GTIs [s]
ontime9	21484.558849156	Sum of GTIs [s]
l2events	944864	Number of level 2 events

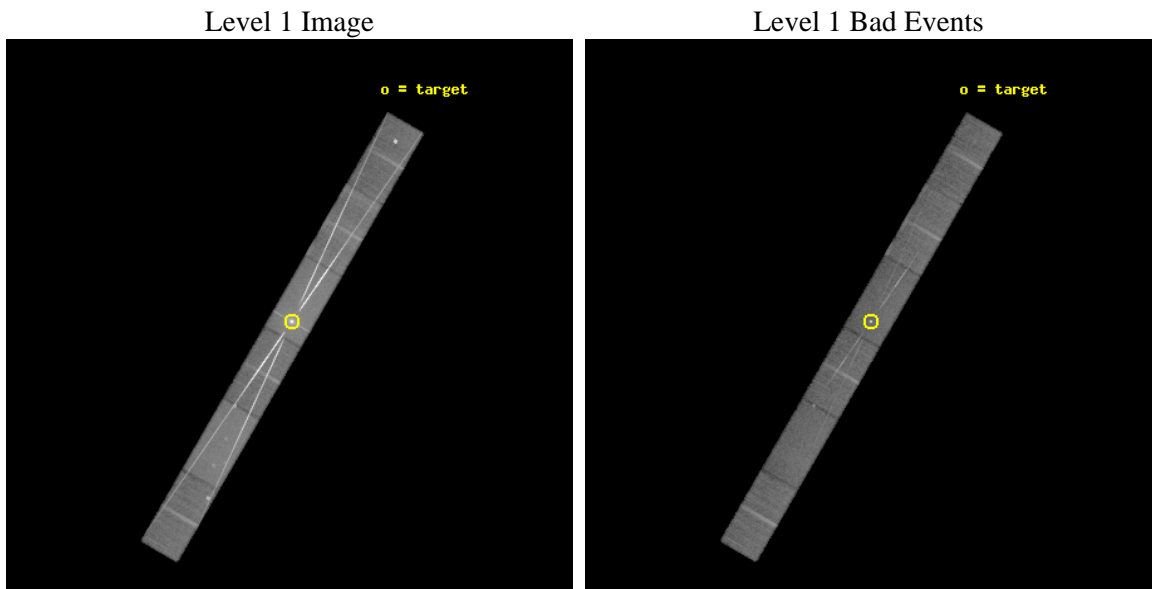




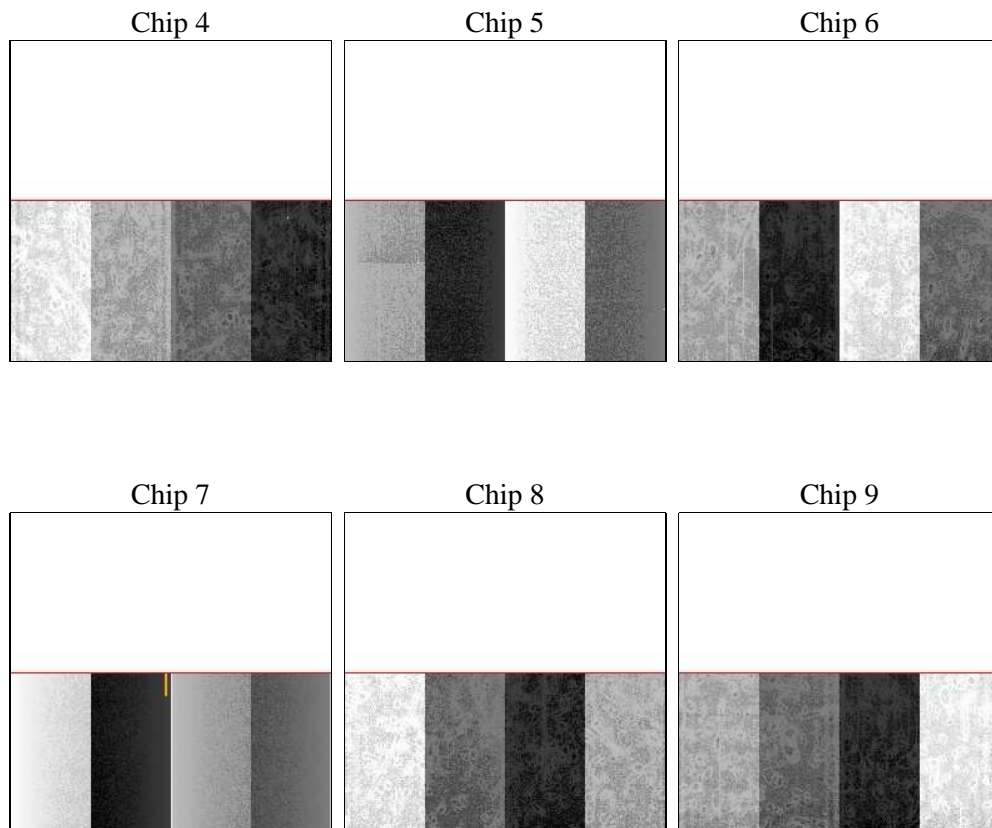
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	21320.764000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	21486.299849391	Sum of GTIs [s]
caldsver	4.4.9	&#160	ontime4	21486.299849391	Sum of GTIs [s]
date	2012-05-17T16:24:21	Date and time of file creation	ontime5	21486.299849391	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	21482.817809105	Sum of GTIs [s]
			ontime7	21486.299849391	Sum of GTIs [s]
			ontime8	21486.299849391	Sum of GTIs [s]
			ontime9	21484.558849156	Sum of GTIs [s]
			l1events	1648073	Number of level 1 events

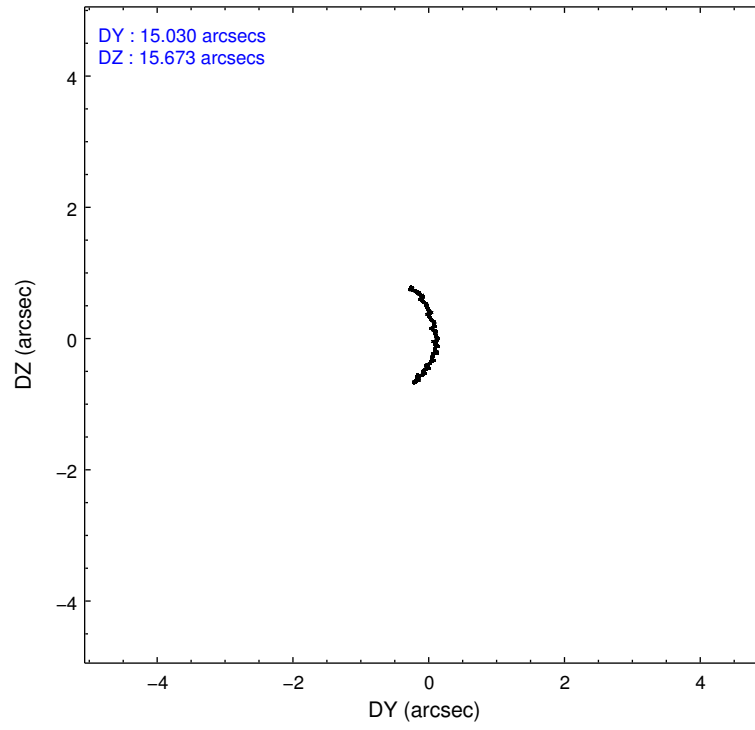
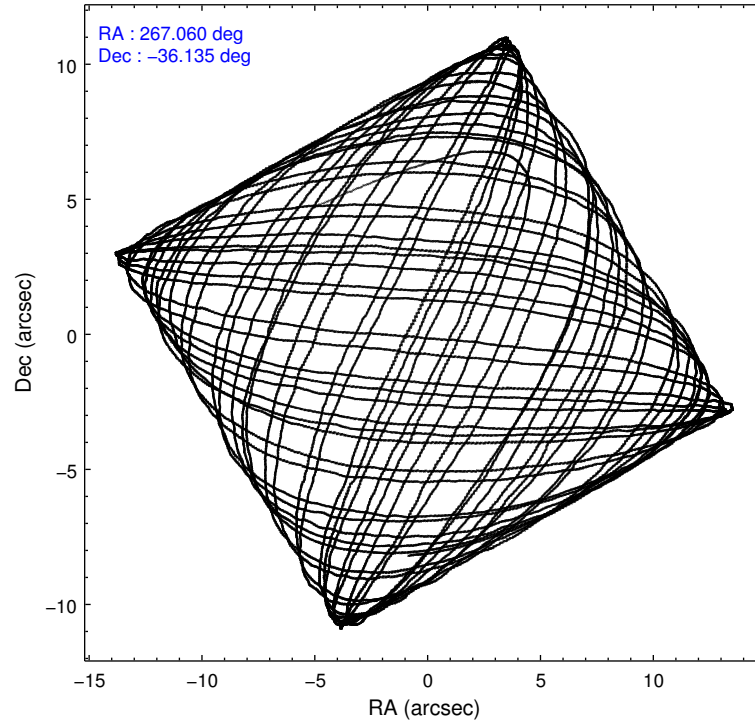
### 2.1.4 Events

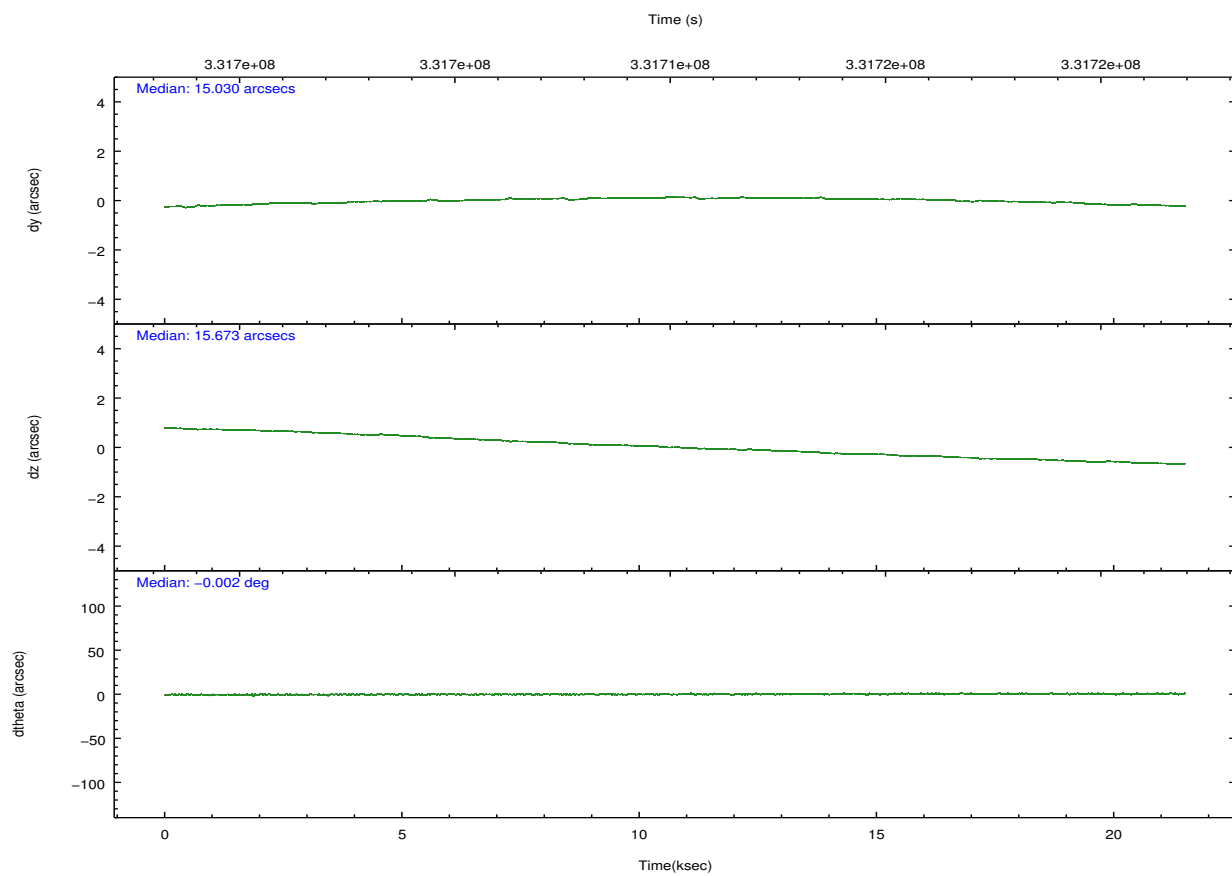
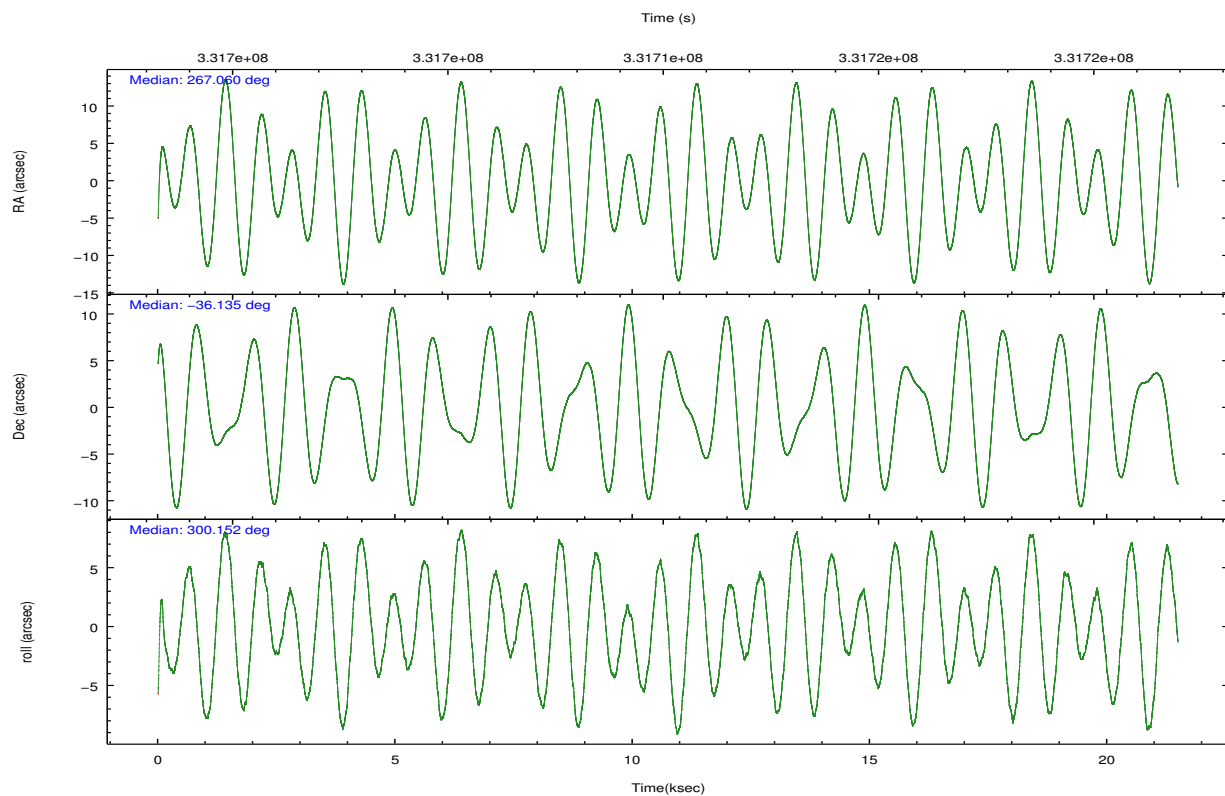
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	136499	232017	401612	480294	255490	142161	grade 0 events	18372	30008	219099	74261	98111	35055
rejected events	107765	95326	106953	103245	114282	95091		13%	12%	54%	15%	38%	24%
rejected %	78%	41%	26%	21%	44%	66%	grade 1 events	141	784	2346	1331	626	179
								0%	0%	0%	0%	0%	0%
							grade 2 events	4395	39922	37407	92305	18661	5040
								3%	17%	9%	19%	7%	3%
							grade 3 events	1911	9788	13097	40716	7326	2266
								1%	4%	3%	8%	2%	1%
							grade 4 events	1864	9706	12924	40568	7159	2235
								1%	4%	3%	8%	2%	1%
							grade 5 events	4857	14083	6971	19604	7073	5386
								3%	6%	1%	4%	2%	3%
							grade 6 events	2728	49804	14437	132935	11490	3263
								1%	21%	3%	27%	4%	2%
							grade 7 events	102231	77922	95331	78574	105044	88737
								74%	33%	23%	16%	41%	62%

## 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	267.030290	267.0598966409313	Subarray requested	CUSTOM	1/2
[deg] Pointing Dec	-36.121835	-36.13513101941527	Subarray start row	1	1
[deg] Pointing Roll	299.985674	300.1597625168784	Subarray row count	512	512
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	1.7
[mm] SIM translation stage pos	-183.992523	-183.9875365069546			
[mm] SIM translation stage offset	-6.14	-6.144986076053243			
[s] Observation start time (MET)	331699541.184000	331698371.61466			
Observation start date	2008-07-06T02:44:36	2008-07-06T02:26:11			
[s] Observation end time (MET)	331720862.184000	331721081.51577			
Observation end date	2008-07-06T08:39:57	2008-07-06T08:44:41			
Read mode	TIMED	TIMED			

## 2.3 Aspect



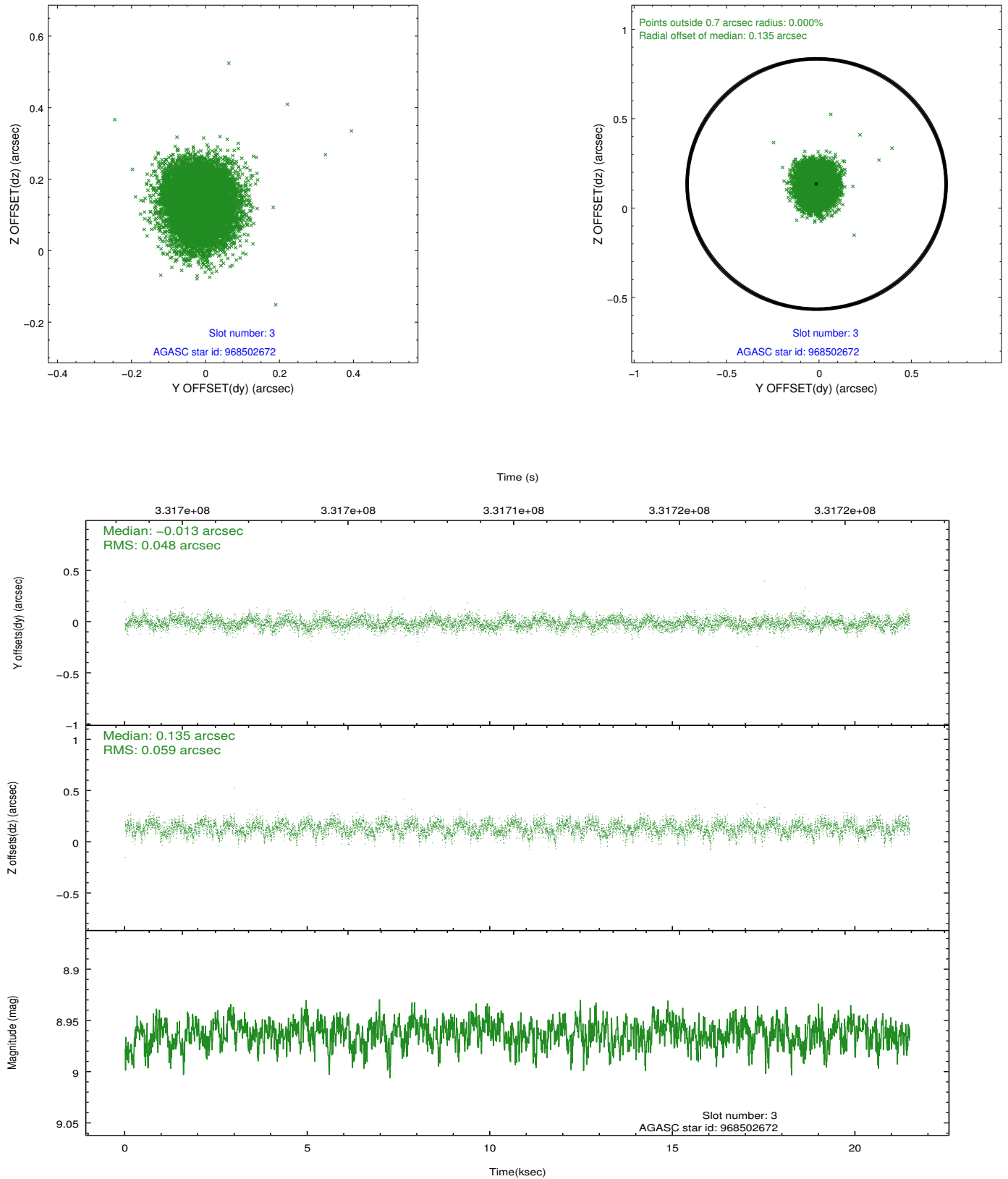


### Slot Statistics

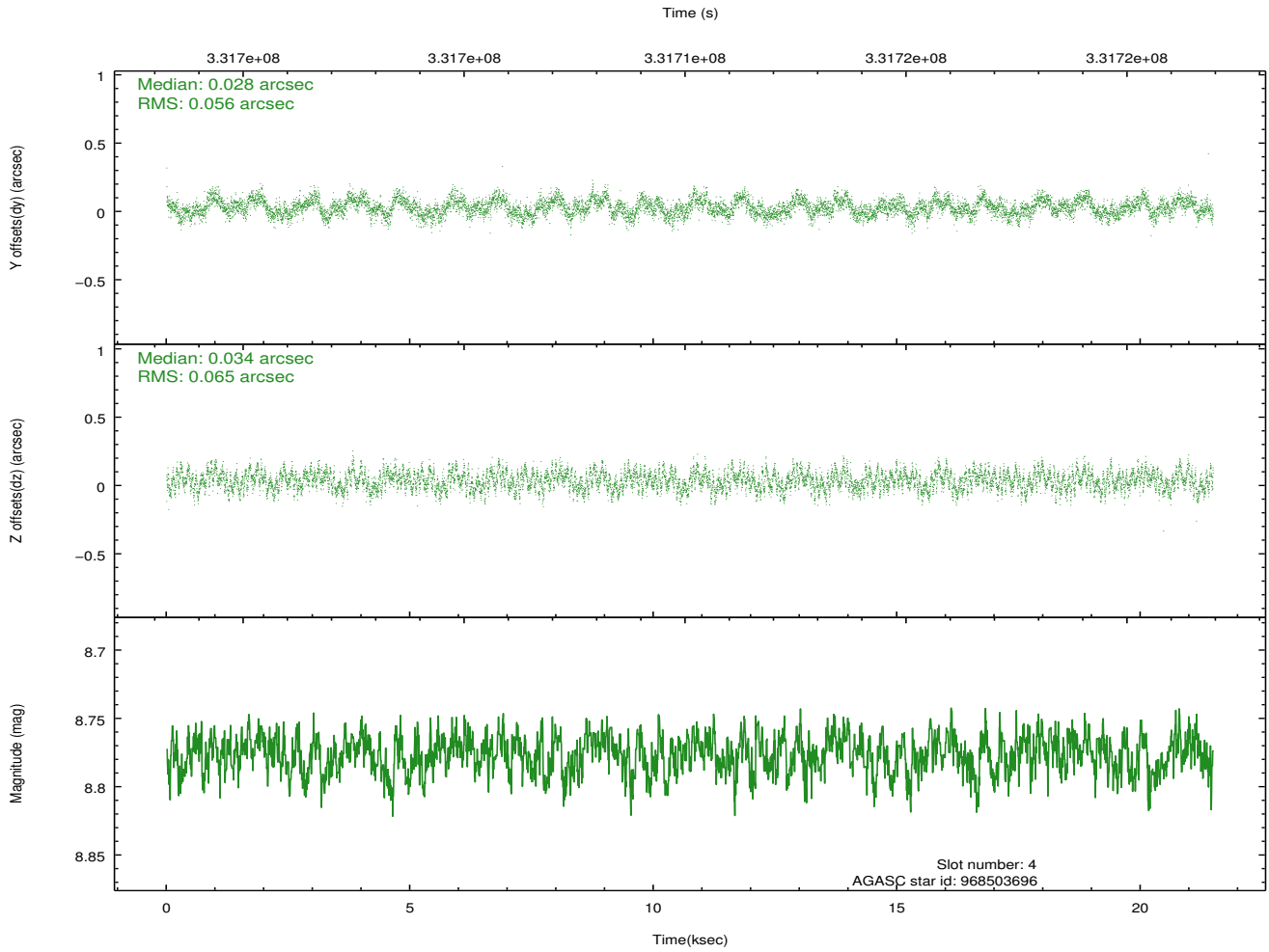
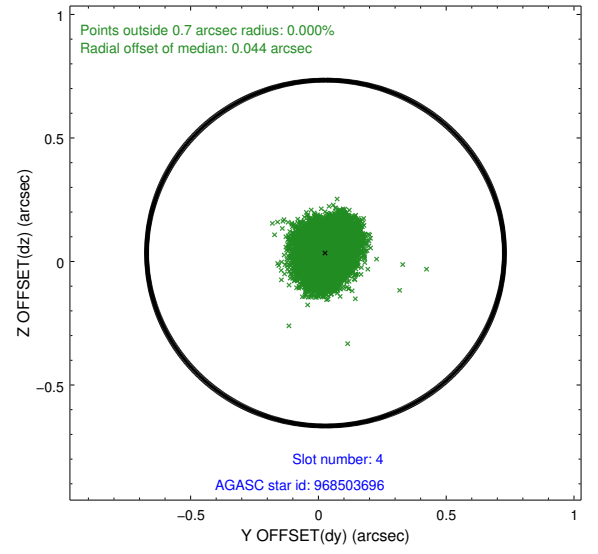
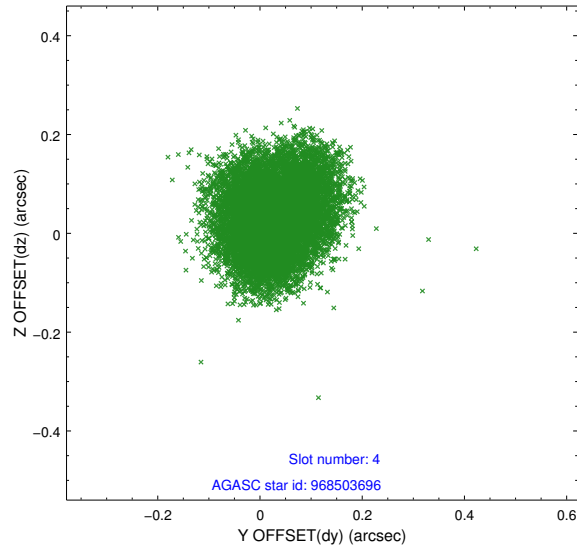
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.87	5241	-0.143	-0.108	0.007	0.012	0.000000	0.000000	-767.74	-1863.85
1	FID	ACIS-S-4	6.95	5242	0.105	0.087	0.008	0.012	0.000000	0.000000	2145.76	44.55
2	FID	ACIS-S-6	7.15	5242	0.010	0.028	0.009	0.015	0.000000	0.000000	394.67	682.12
3	GUIDE	968502672	8.96	10471	-0.013	0.135	0.081	0.130	266.858331	-35.977361	-700.35	-174.17
4	GUIDE	968503696	8.78	10477	0.028	0.034	0.093	0.145	266.913804	-35.806902	-1151.75	271.82
5	GUIDE	968494256	7.75	10479	0.084	-0.059	0.072	0.123	266.804762	-36.985927	2371.33	-2116.78
6	GUIDE	968639336	8.64	10480	-0.014	-0.099	0.094	0.143	267.813813	-35.890844	429.91	2389.85
7	GUIDE	968641112	7.16	10481	-0.091	-0.008	0.069	0.108	267.924934	-36.467732	2383.33	1615.55

## 2.4 Star Slots

### 2.4.1 Slot 3

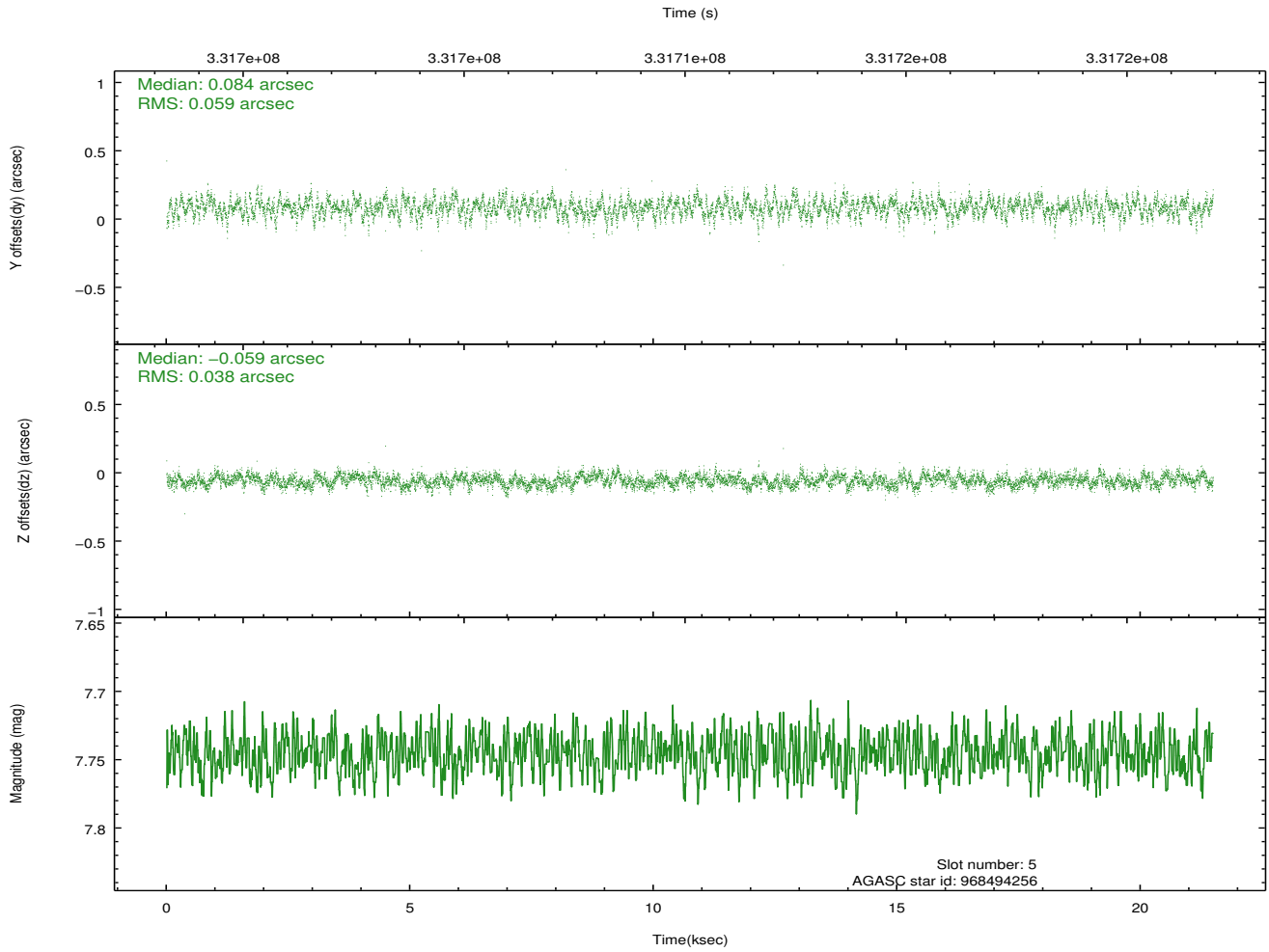
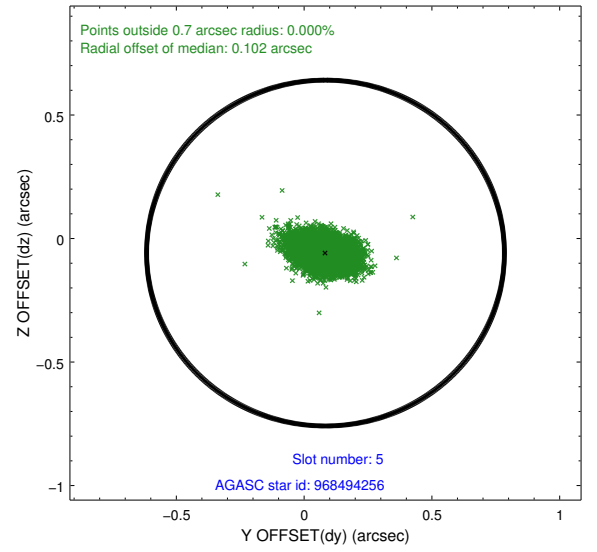
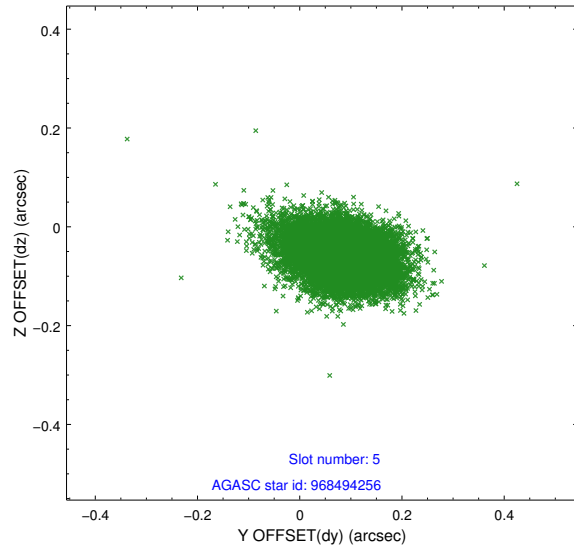


## 2.4.2 Slot 4

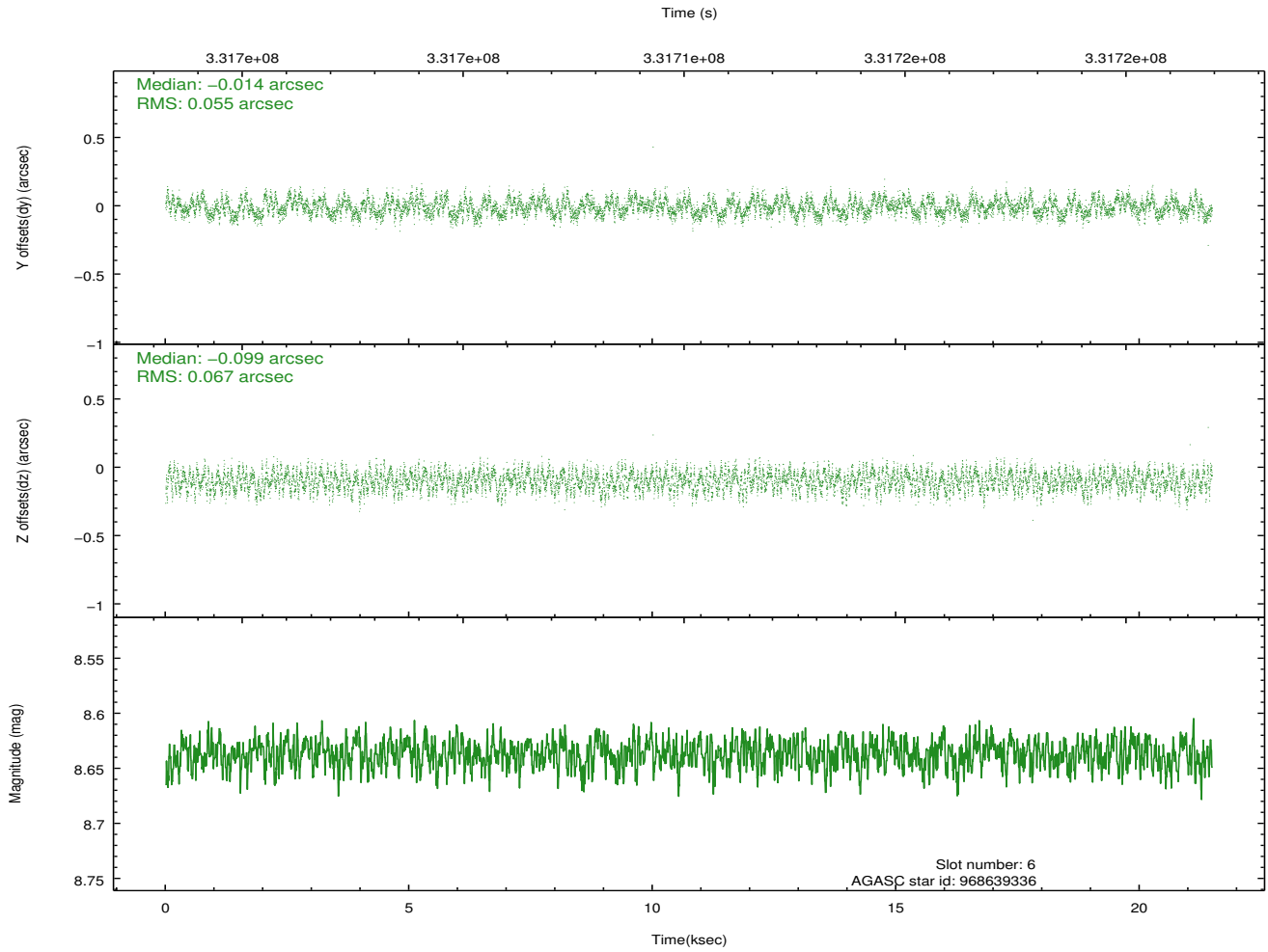
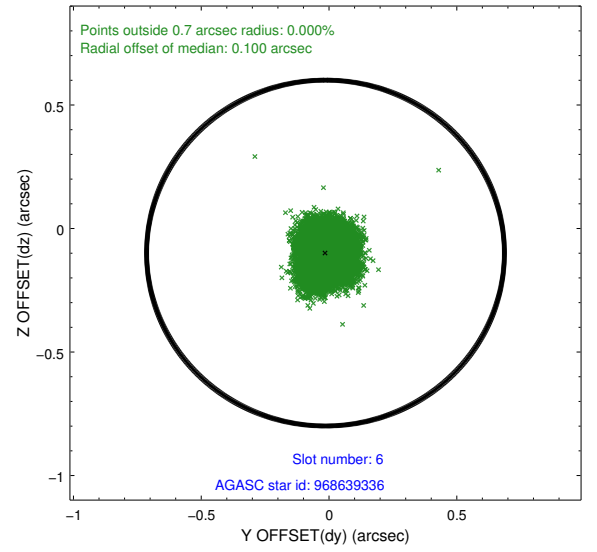
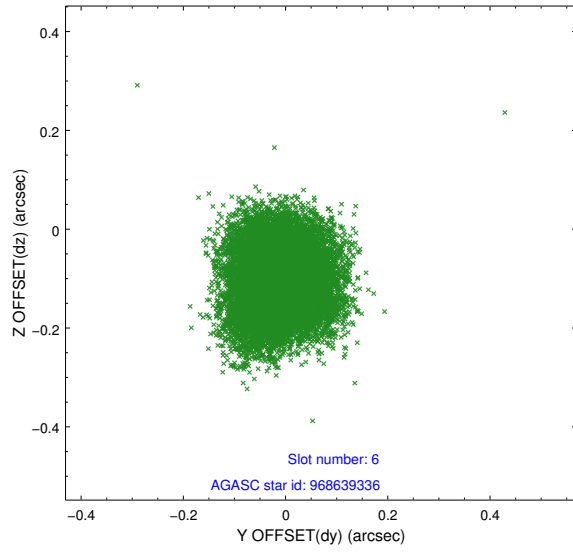




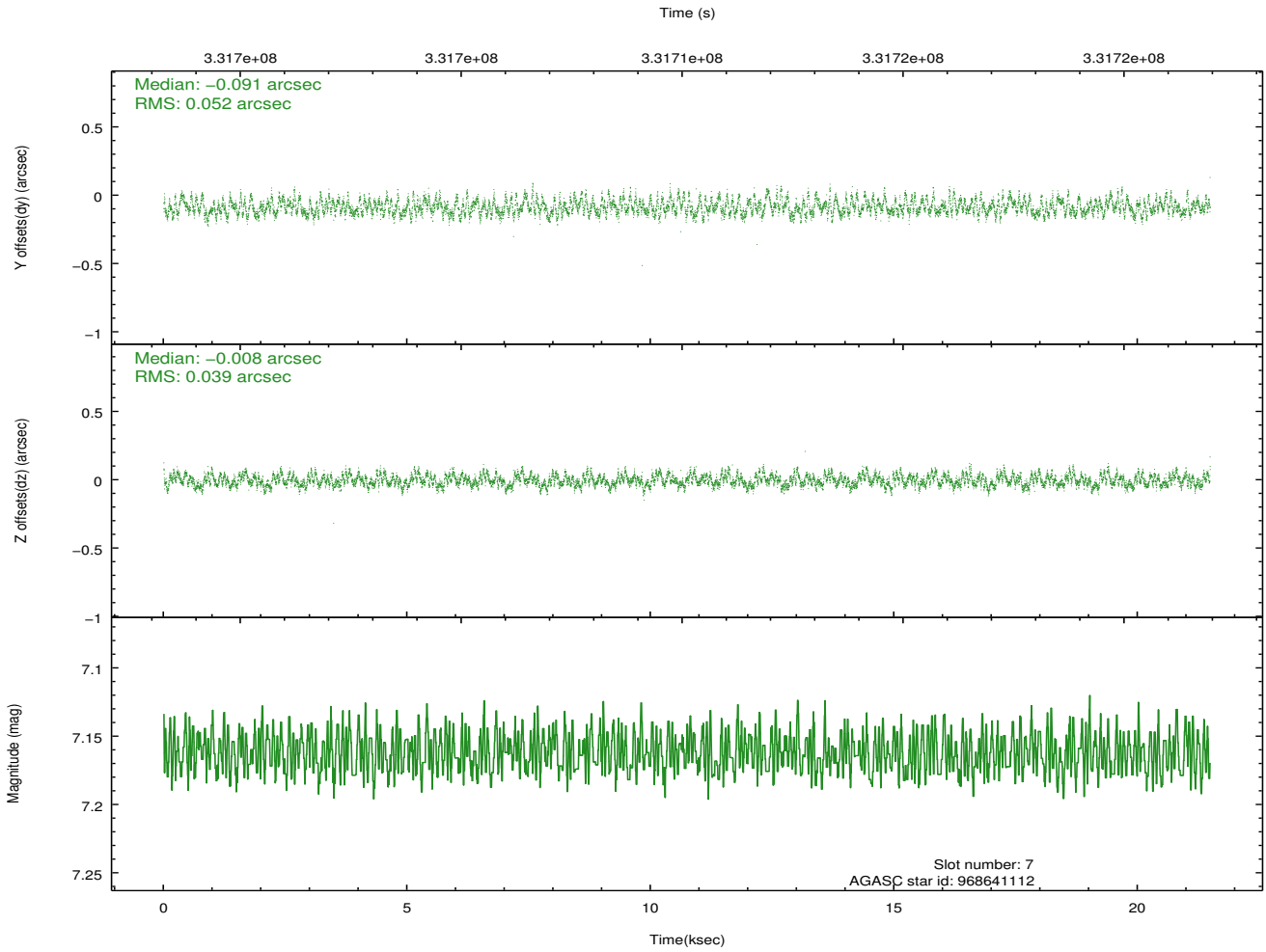
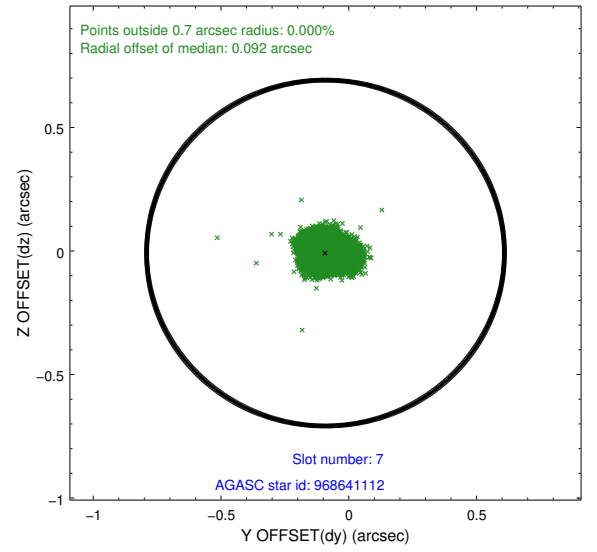
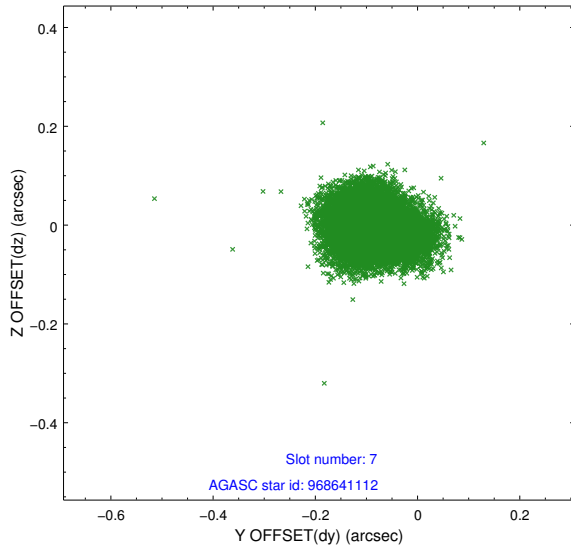
### 2.4.3 Slot 5



## 2.4.4 Slot 6

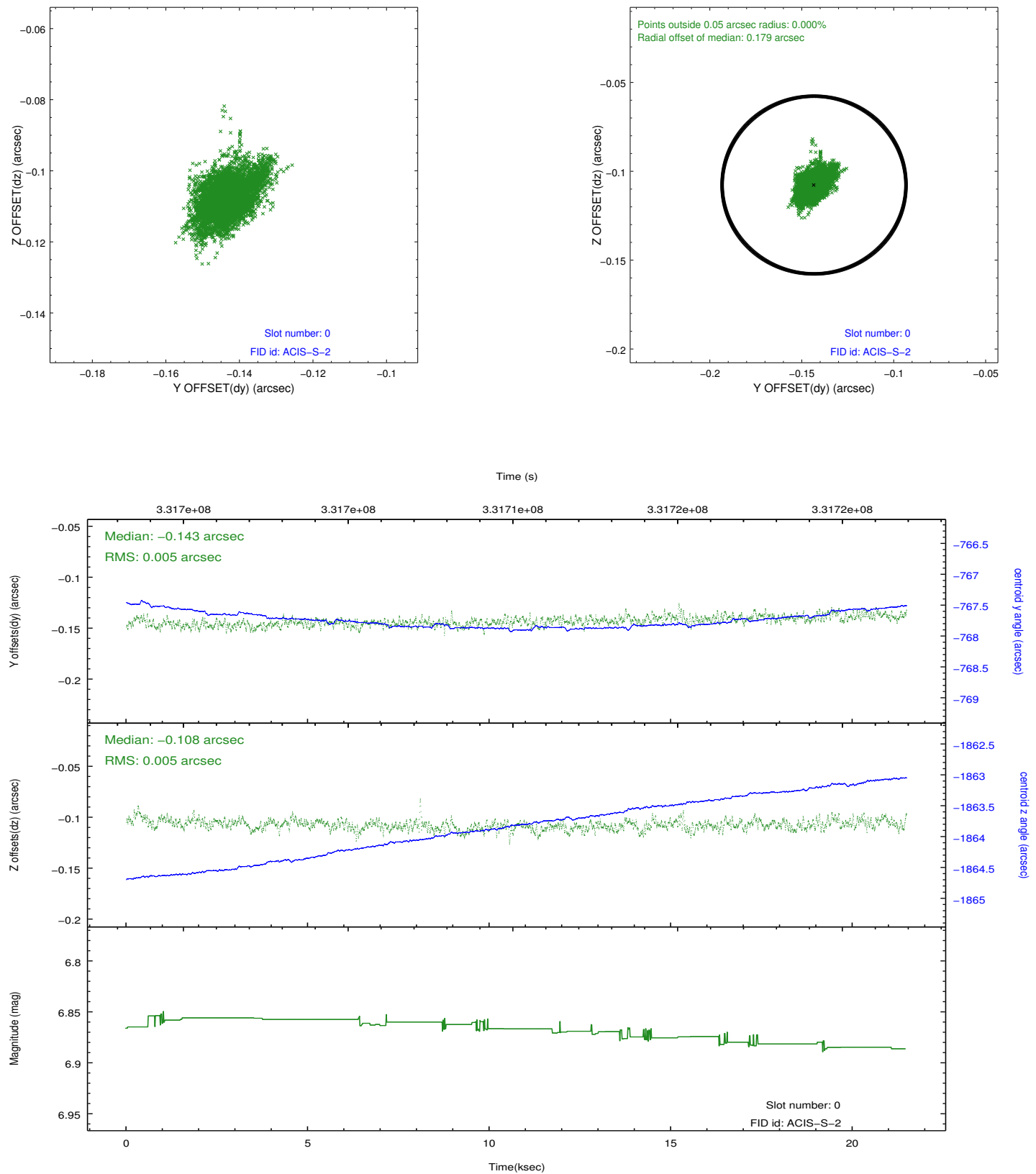


## 2.4.5 Slot 7

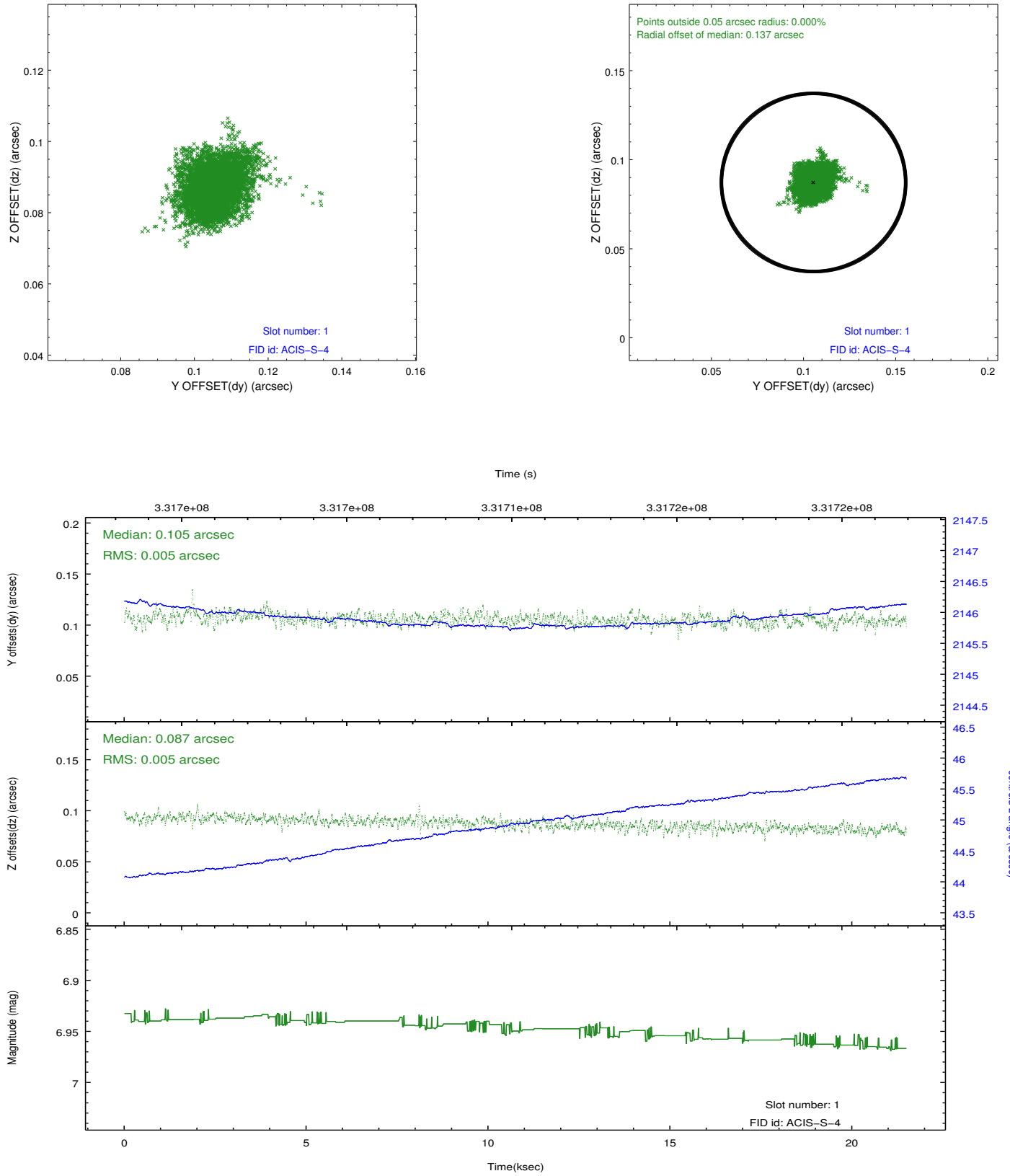


## 2.5 FID Slots

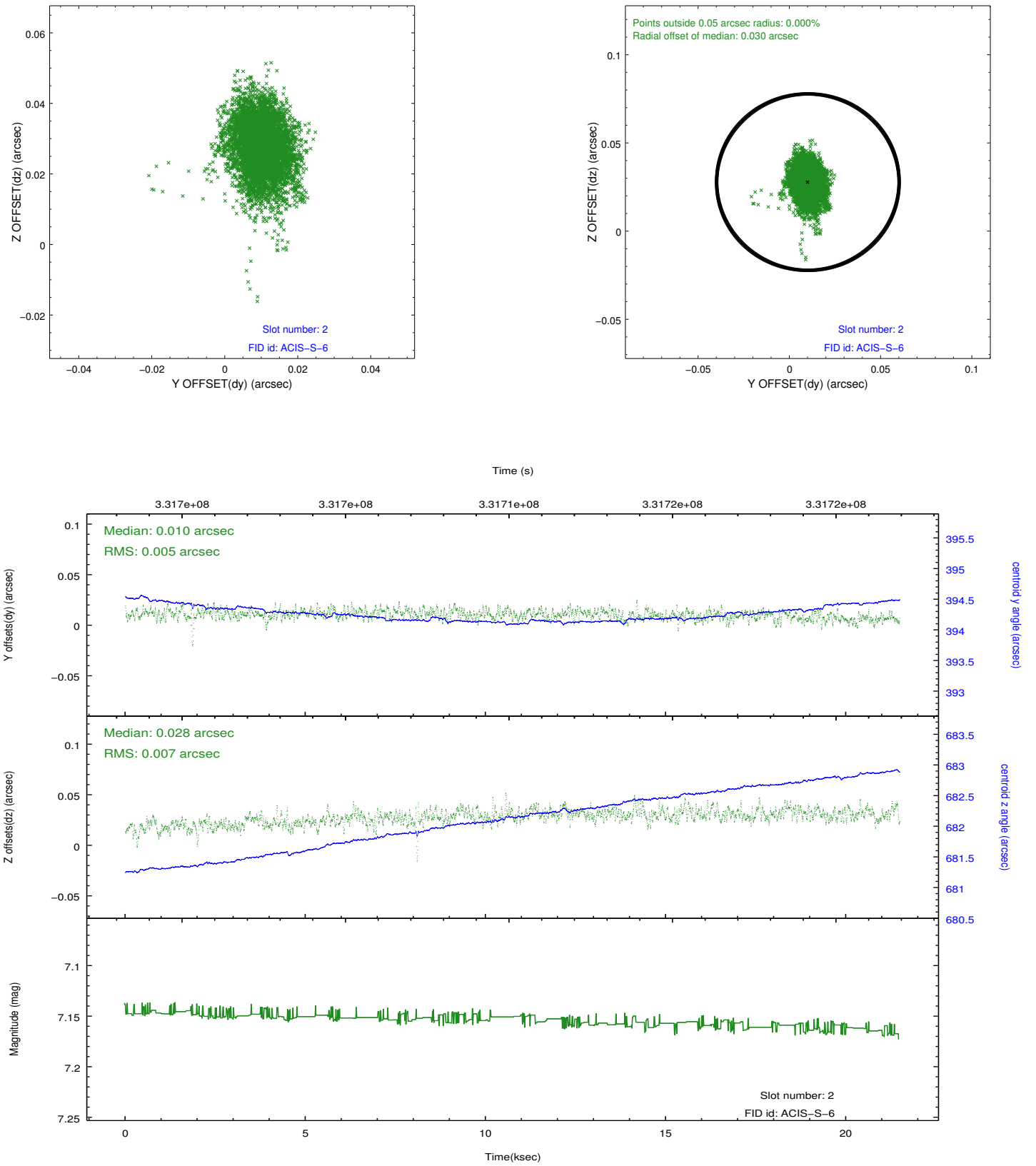
### 2.5.1 Slot 0



## 2.5.2 Slot 1

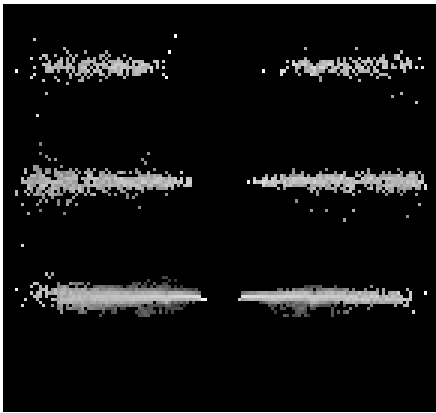


### 2.5.3 Slot 2

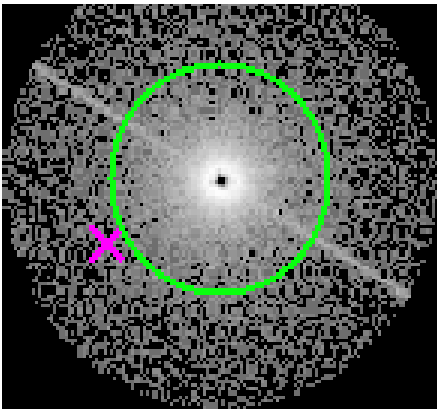


# 3 Gratings

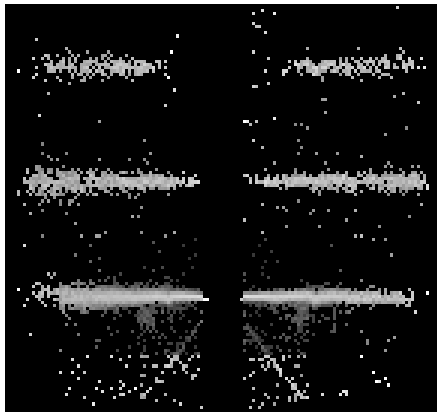
## 3.1 HEG Arm



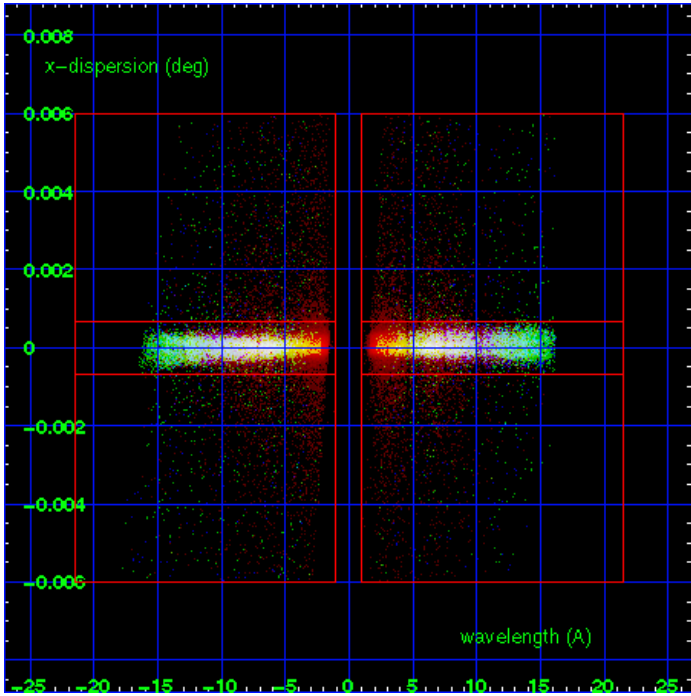
HEG Order Sort 123



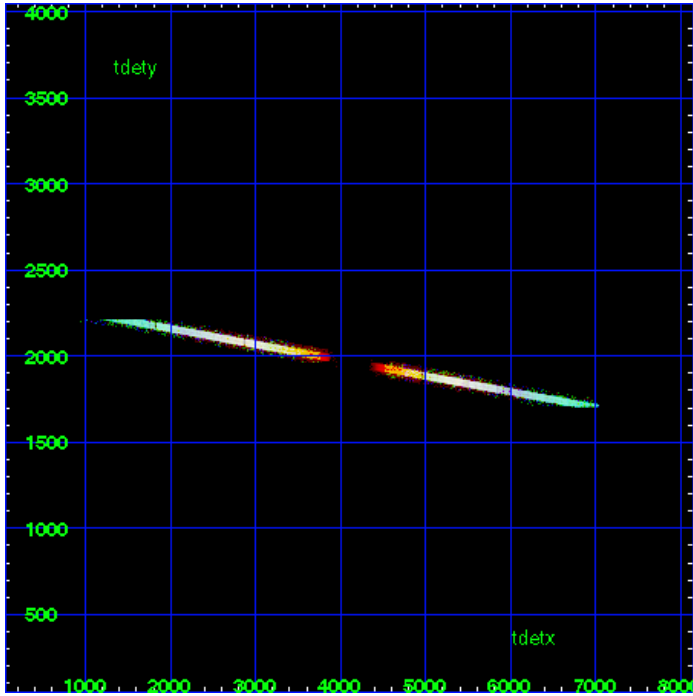
HEG Zero Order



HEG Order Sort ALL

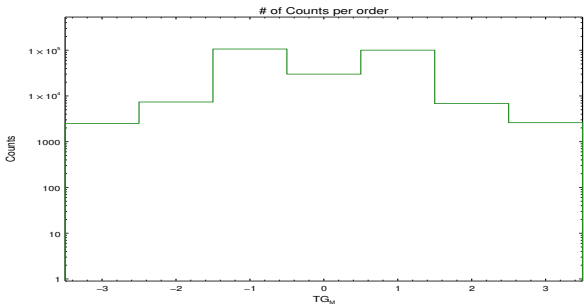


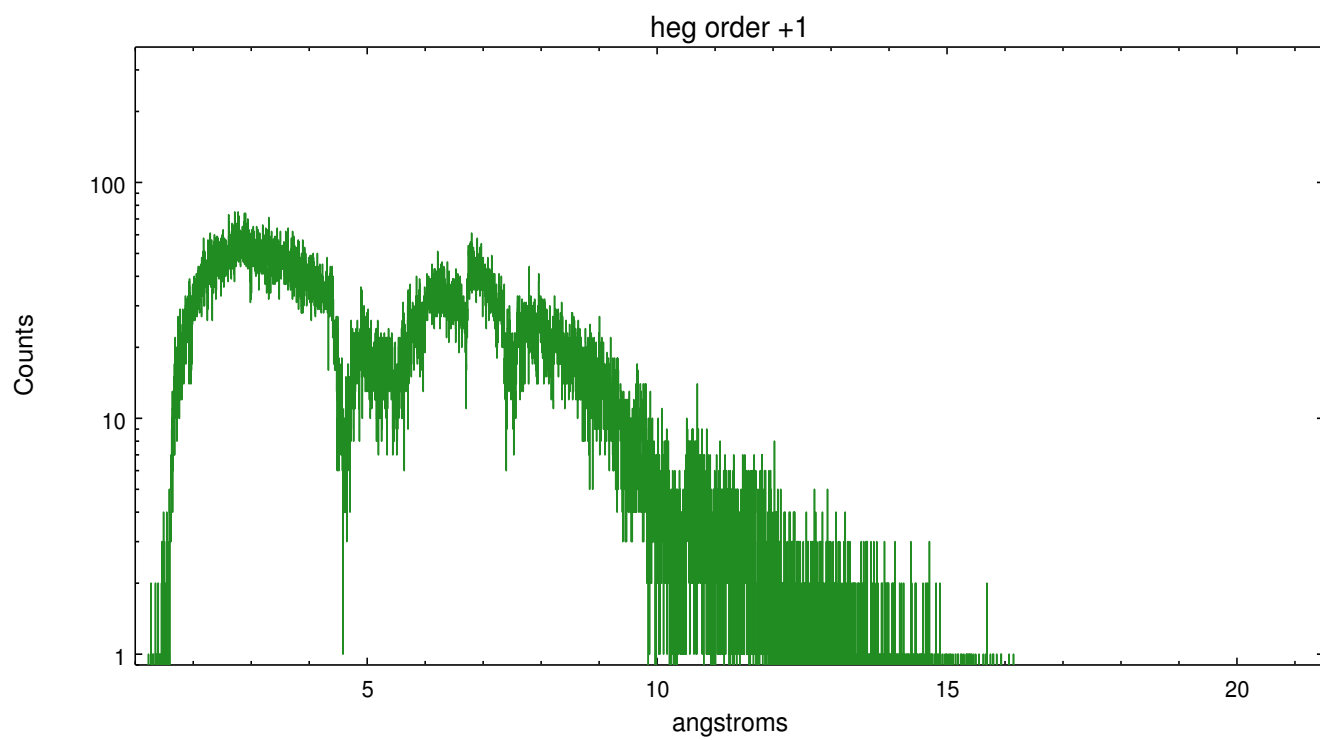
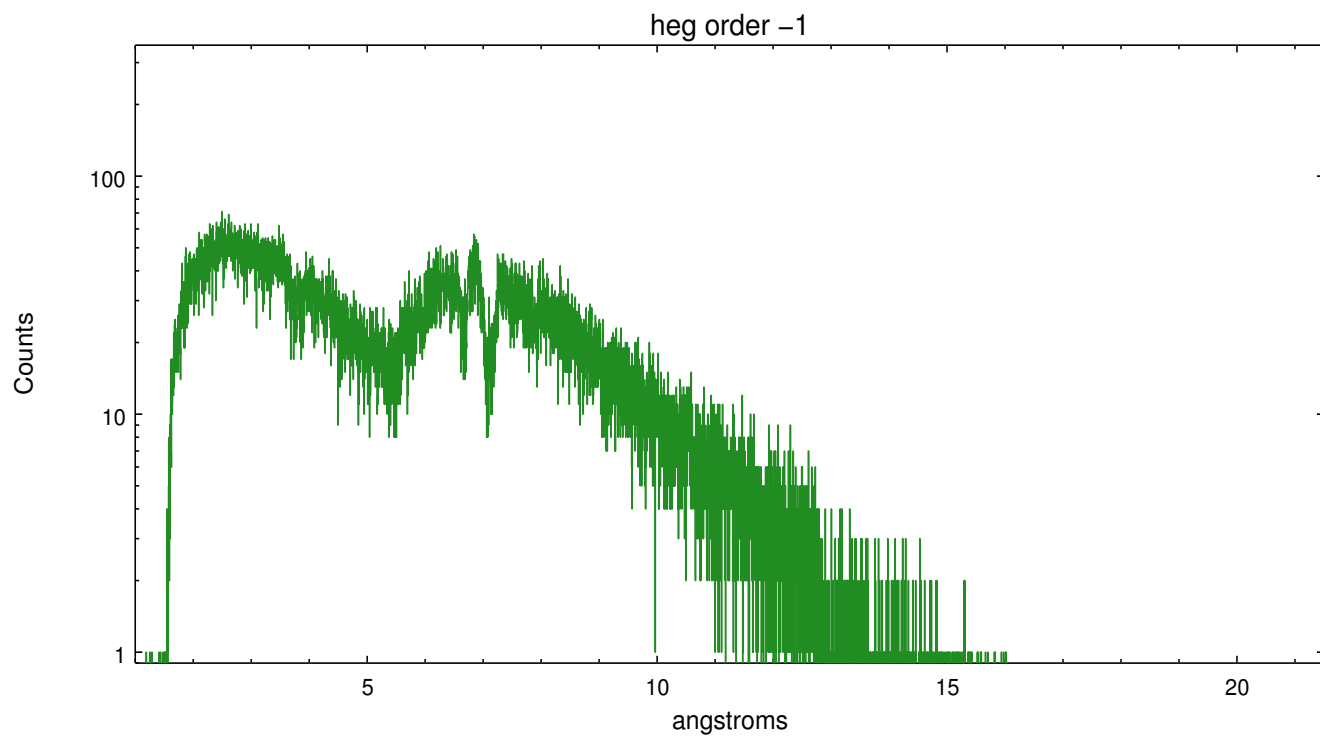
Spot Image HEG



Full Detector HEG

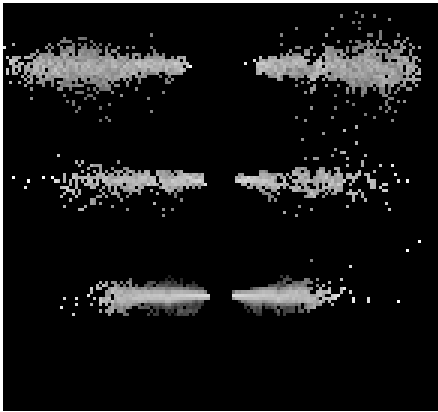
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2509	7374	106083	30000	100206	6819	2607



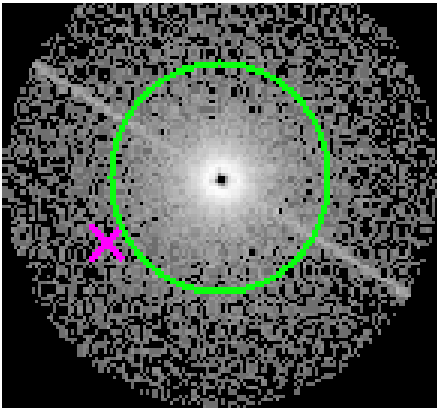




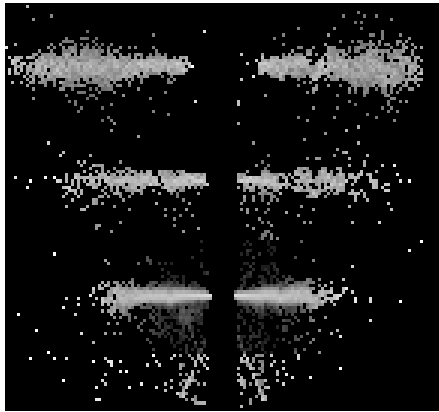
3.2 MEG Arm



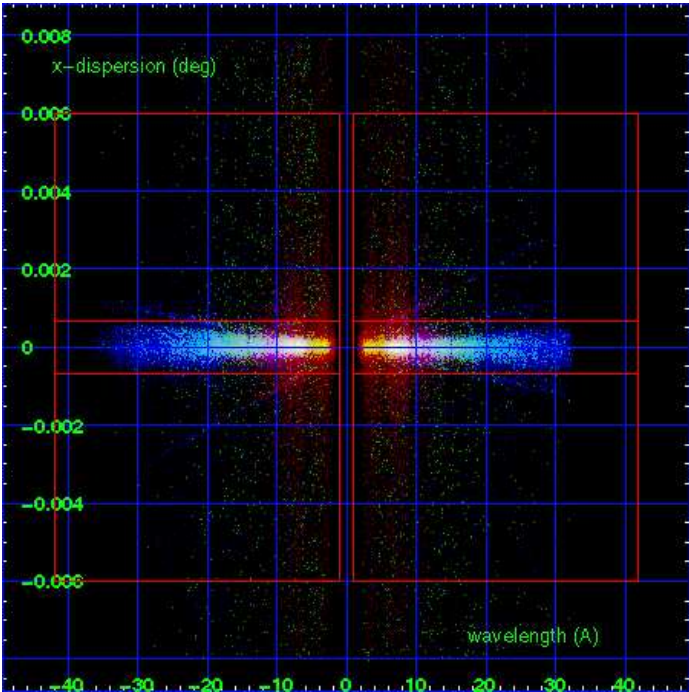
MEG Order Sort 123



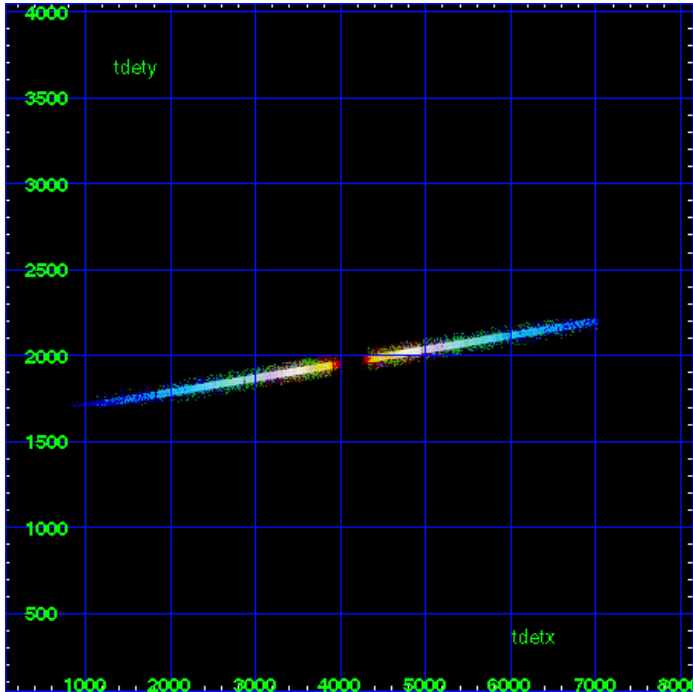
MEG Zero Order



MEG Order Sort ALL

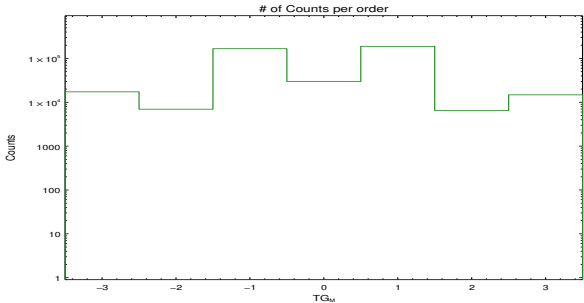


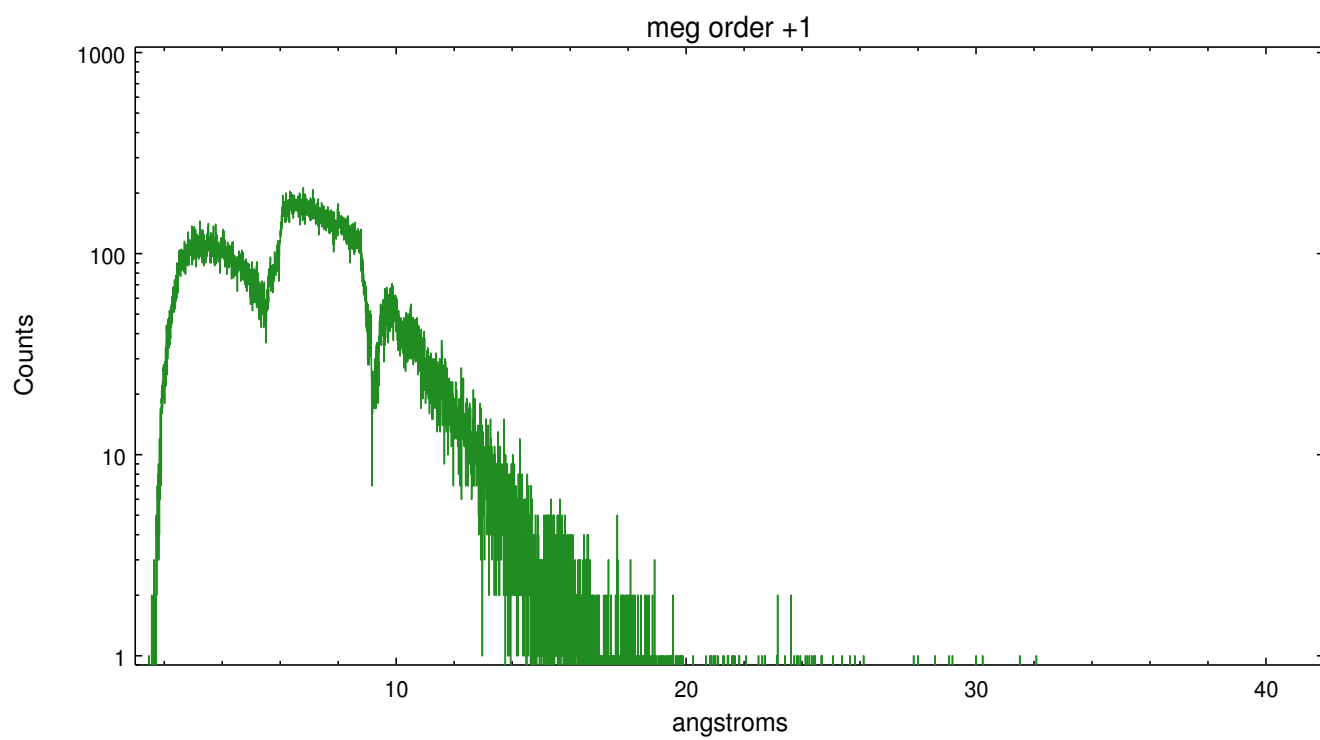
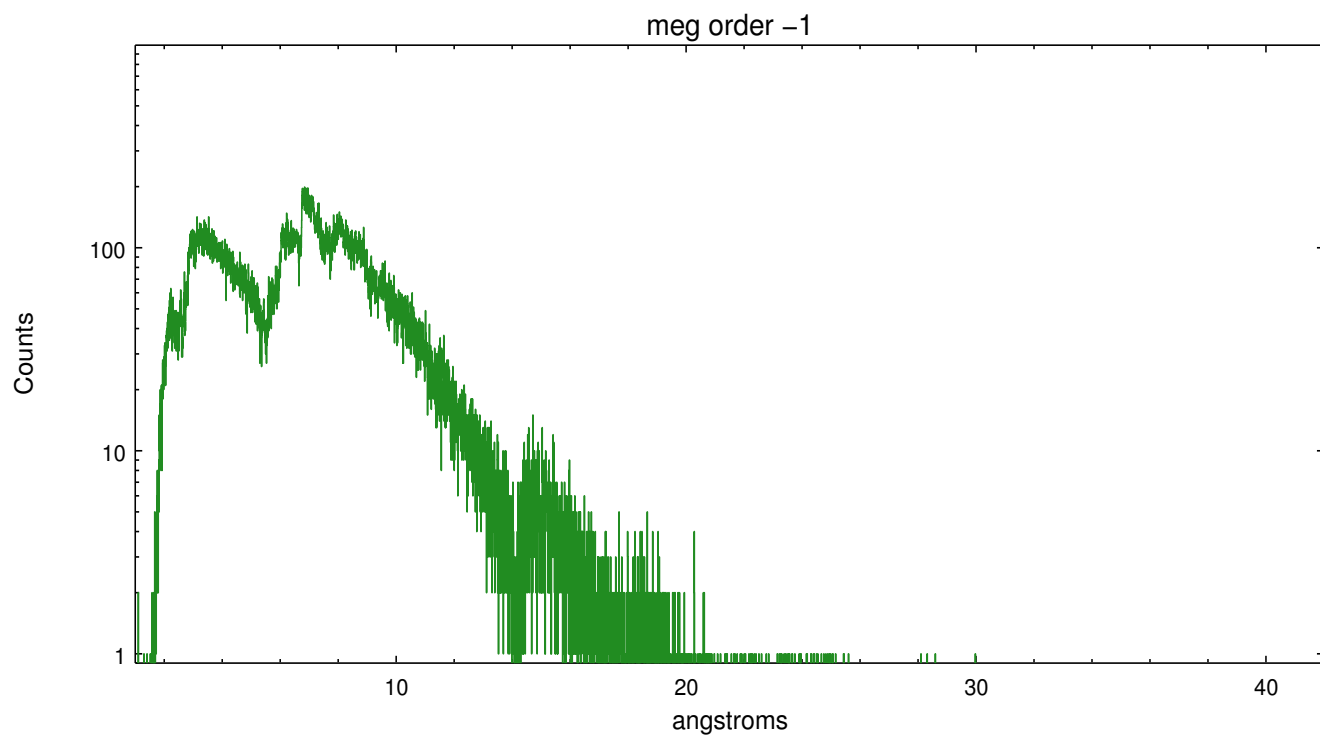
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	17318	6956	166873	30000	188967	6544	14798





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	21.4862998

## A.2 Comments

Zeroth order piled up and cratered. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates ( $x=4127.4$ ,  $y=4113.16$ ) into the `*src1a.fits` file table. These corrected coordinates were determined using a software tool developed by CXC called `findzero`, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm. The zeroth order source position determined by the standard pipeline processing using the tool `tgdetect` was not used in this processing. The newly determined zeroth order coordinates have been placed in the `*src1a.fits` file, replacing the coordinates determined by `tgdetect`. Note that these corrected coordinates of the zeroth order cannot be reproduced by running `tgdetect` on the data.