

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1921 - L2 Version 4  
Chandra X-Ray Center

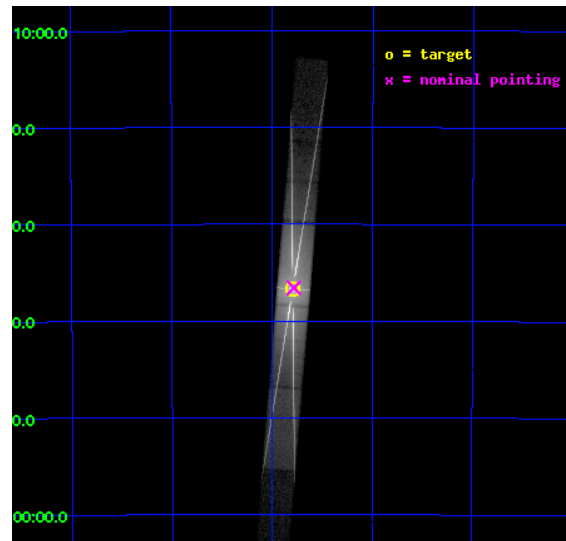
L2 Processing Date : Sep 21 2012

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# 1 Front

seq_num	400134	Sequence number
obs_id	1921	Observation id
title	DETAILED STUDY OF THE IRON LINE AND LOW ENERGY FEATURES IN Z AND ATOLL SOURCES	Proposal title
observer	Prof. Natale Robba	Principal investigator
object	GX340+0	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	251.448333	Observer's specified target RA [deg]
dec_targ	-45.610833	Observer's specified target Dec [deg]
ra_nom	251.44574870707	Nominal RA [deg]
dec_nom	-45.609571118216	Nominal Dec [deg]
roll_nom	274.68380059315	Nominal Roll [deg]
revision	4	Processing version of data
ontime	24043.600102365	Sum of GTIs [s]
livetime	23358.852039715	Livetime [s]
ontime4	24043.600102365	Sum of GTIs [s]
ontime5	24043.600102365	Sum of GTIs [s]
ontime6	24043.600102365	Sum of GTIs [s]
ontime7	24043.600102365	Sum of GTIs [s]
ontime8	24043.600102365	Sum of GTIs [s]
ontime9	24043.600102365	Sum of GTIs [s]
l2events	1671817	Number of level 2 events

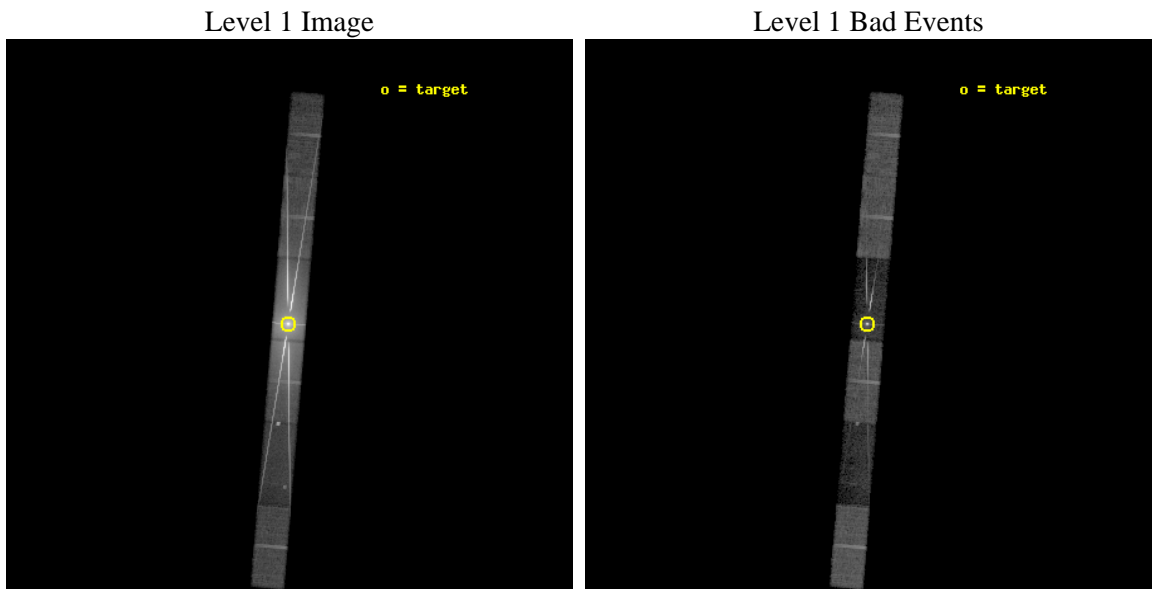




## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



### 2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	23856.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	24043.600102365	Sum of GTIs [s]
caldsver	4.5.1.1	&#160	ontime4	24043.600102365	Sum of GTIs [s]
date	2012-09-21T14:16:31	Date and time of file creation	ontime5	24043.600102365	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	24043.600102365	Sum of GTIs [s]
			ontime7	24043.600102365	Sum of GTIs [s]
			ontime8	24043.600102365	Sum of GTIs [s]
			ontime9	24043.600102365	Sum of GTIs [s]
			l1events	2030704	Number of level 1 events

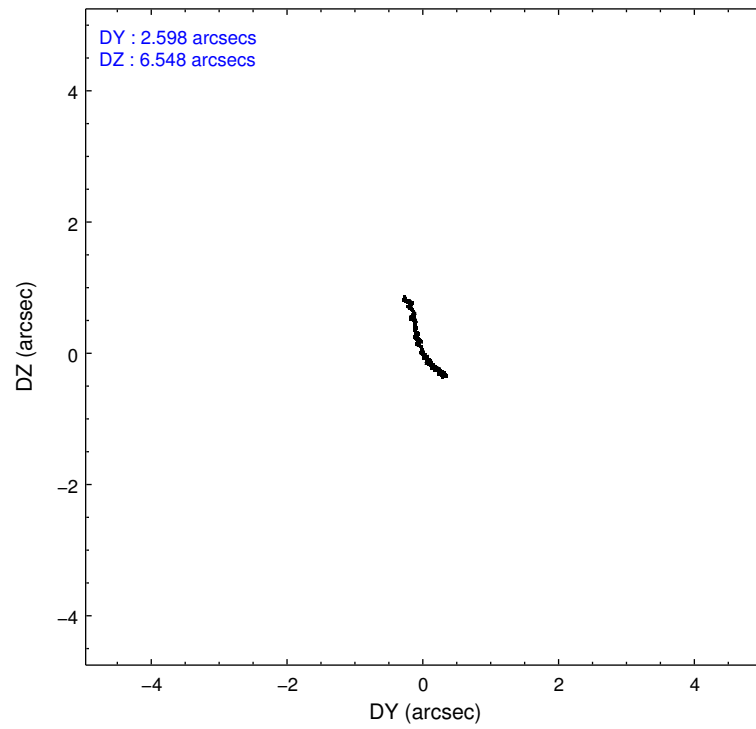
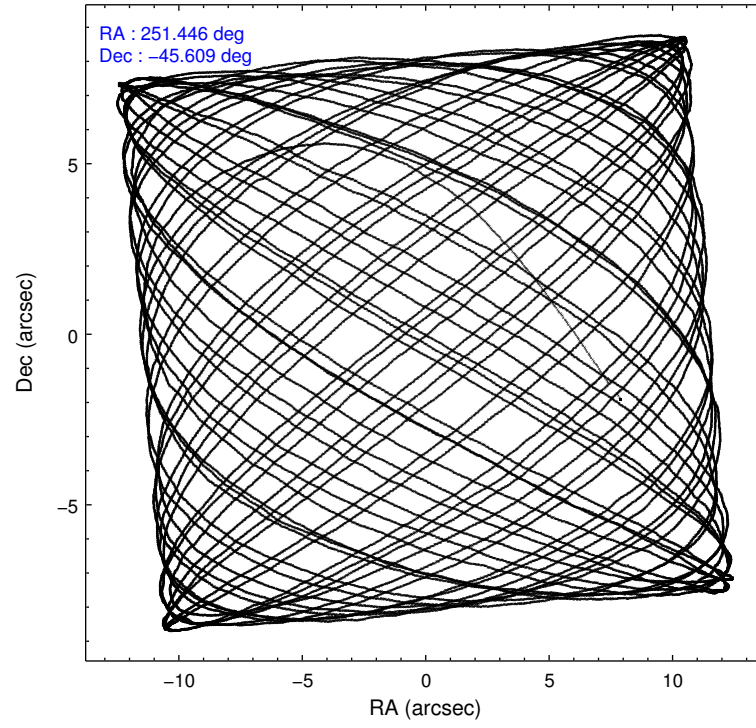
### 2.1.3 Events

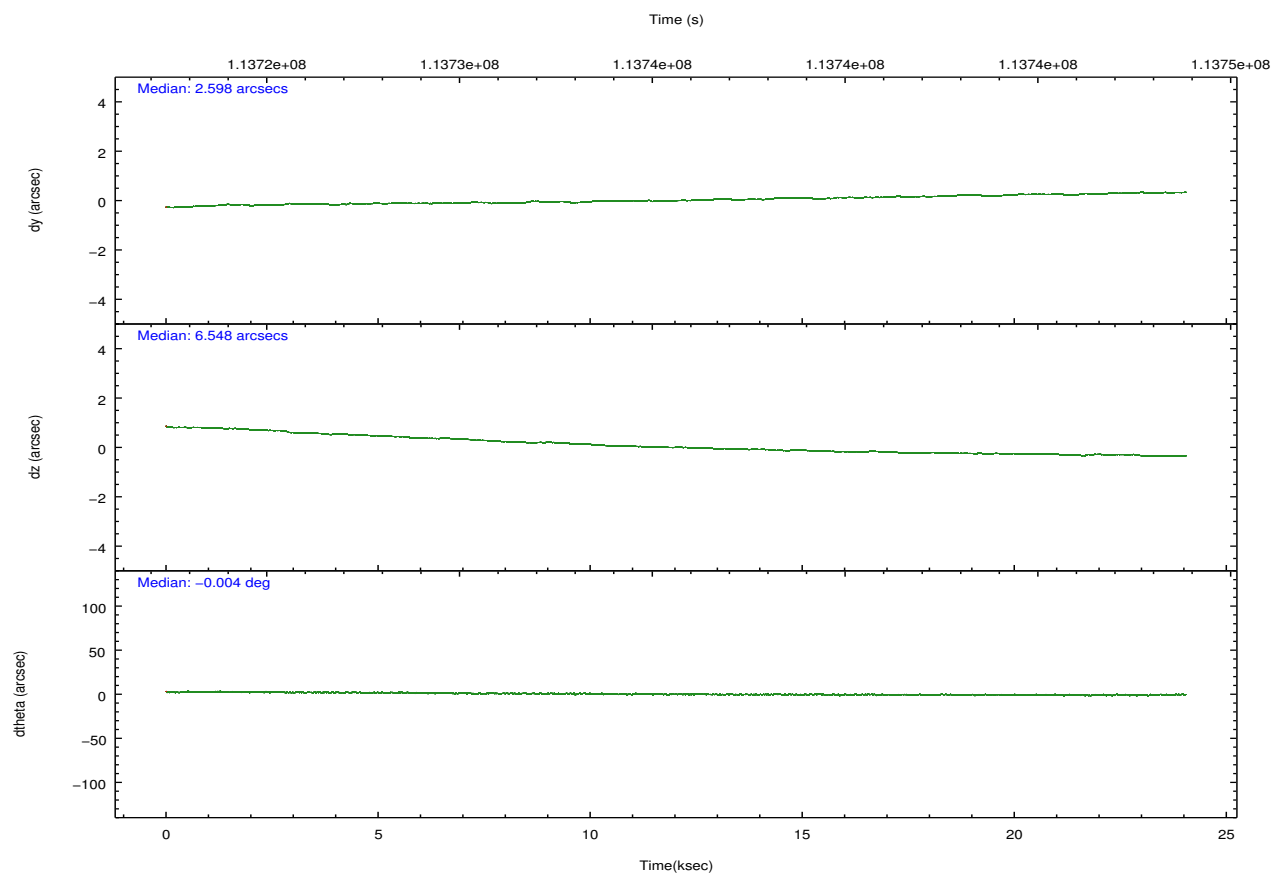
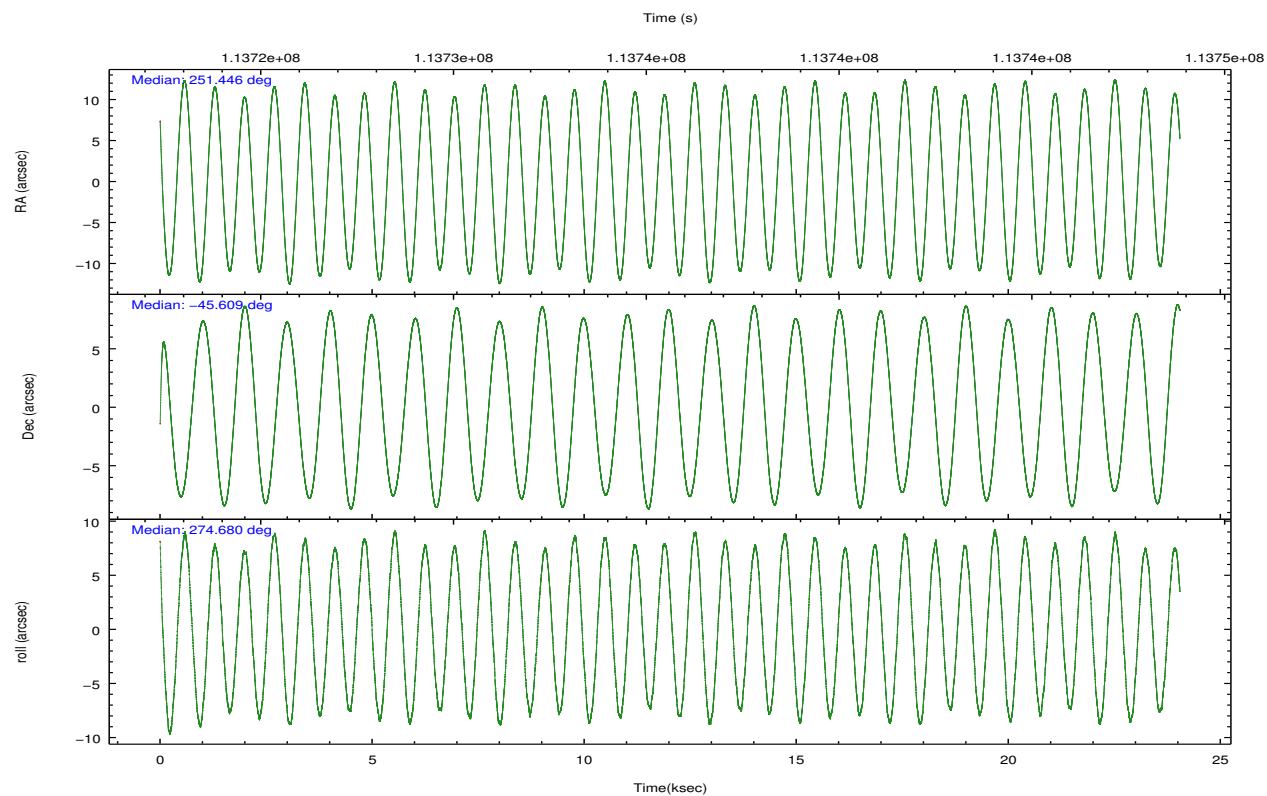
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	68123	74775	639342	1039861	148869	59734	grade 0 events	3262	11159	375501	169290	62599	7681
rejected events	61163	15538	69345	53870	54614	47035		4%	14%	58%	16%	42%	12%
rejected %	89%	20%	10%	5%	36%	78%	grade 1 events	16	327	5260	2946	201	25
								0%	0%	0%	0%	0%	0%
							grade 2 events	1405	22087	86314	247887	13574	1810
								2%	29%	13%	23%	9%	3%
							grade 3 events	831	4035	29793	95263	5311	1099
								1%	5%	4%	9%	3%	1%
							grade 4 events	844	3834	30115	94441	5026	1127
								1%	5%	4%	9%	3%	1%
							grade 5 events	564	3085	5751	16613	1261	681
								0%	4%	0%	1%	0%	1%
							grade 6 events	719	19185	49888	385312	8261	1113
								1%	25%	7%	37%	5%	1%
							grade 7 events	60482	11063	56720	28109	52636	46198
								88%	14%	8%	2%	35%	77%

## 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	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	251.423215	251.445748707069	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-45.587312	-45.60957111821563	Subarray start row	1	1
[deg] Pointing Roll	274.511066	274.6838005931456	Subarray row count	400	400
[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	1.4
[mm] SIM translation stage pos	-182.642523	-182.6398635053184			
[mm] SIM translation stage offset	-7.49	-7.49265907768941			
[s] Observation start time (MET)	113723785.184000	113722643.42707			
Observation start date	2001-08-09T05:55:21	2001-08-09T05:37:23			
[s] Observation end time (MET)	113747641.184000	113747774.89056			
Observation end date	2001-08-09T12:32:57	2001-08-09T12:36:14			
Read mode	TIMED	TIMED			

## 2.3 Aspect



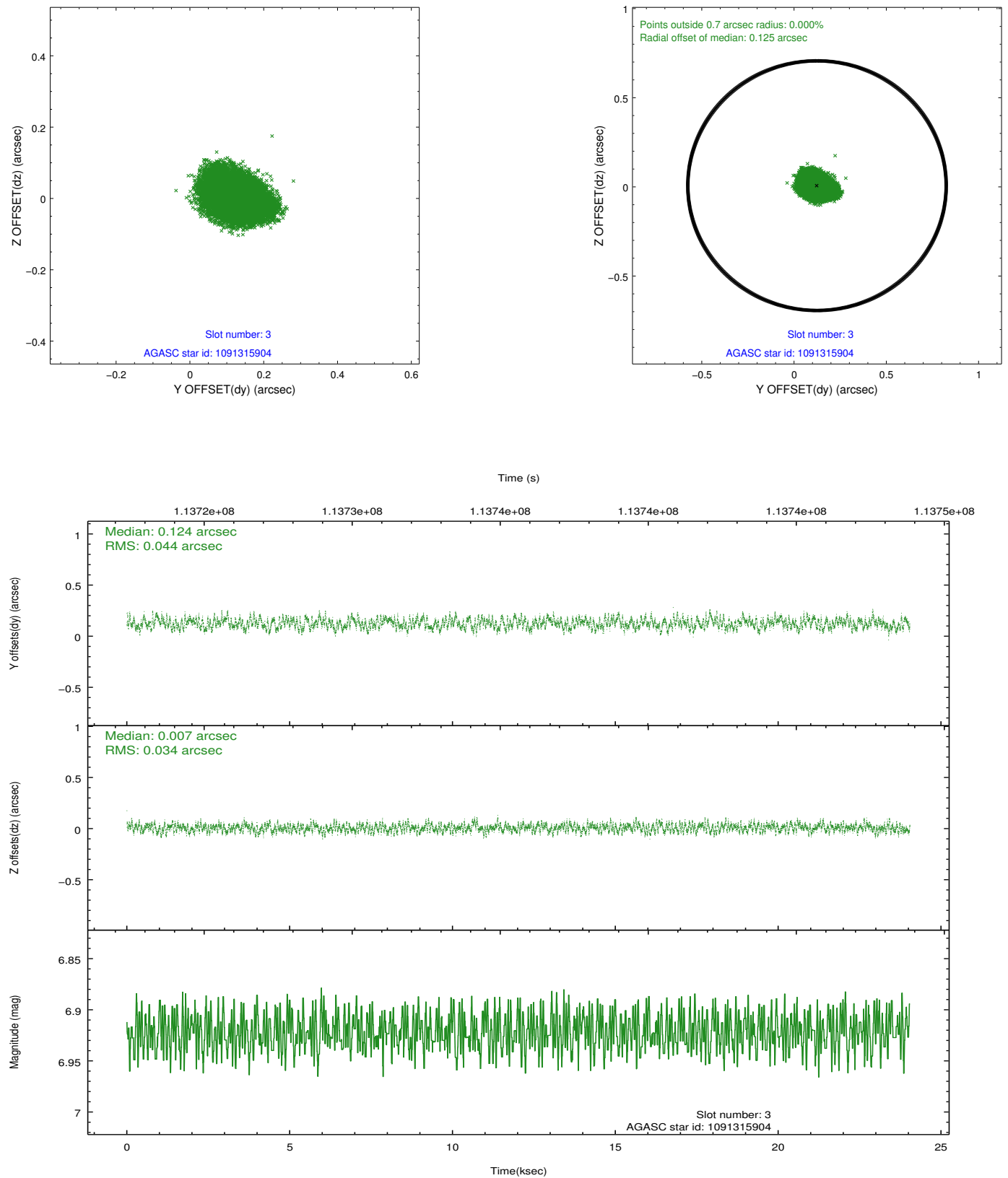


### Slot Statistics

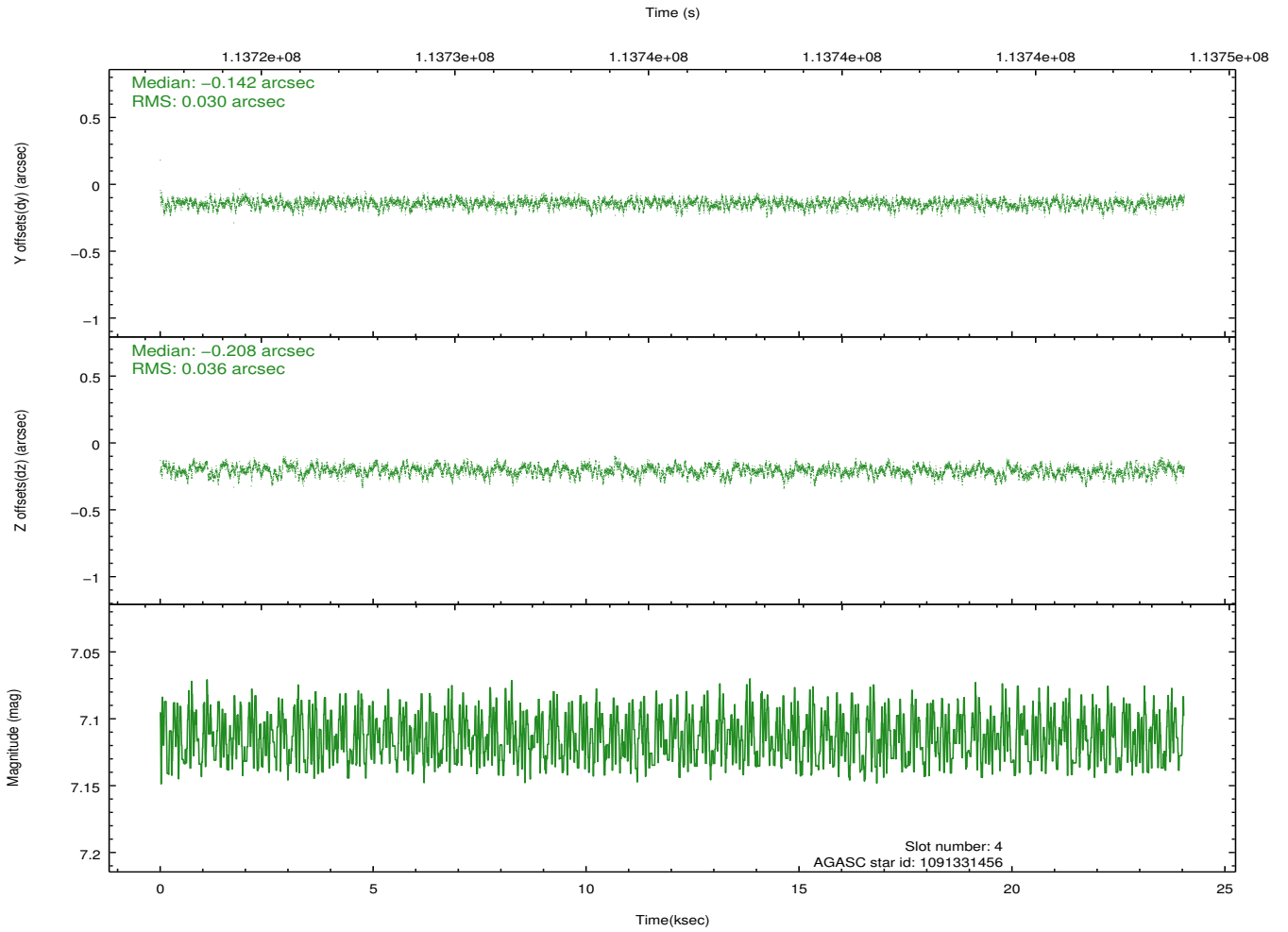
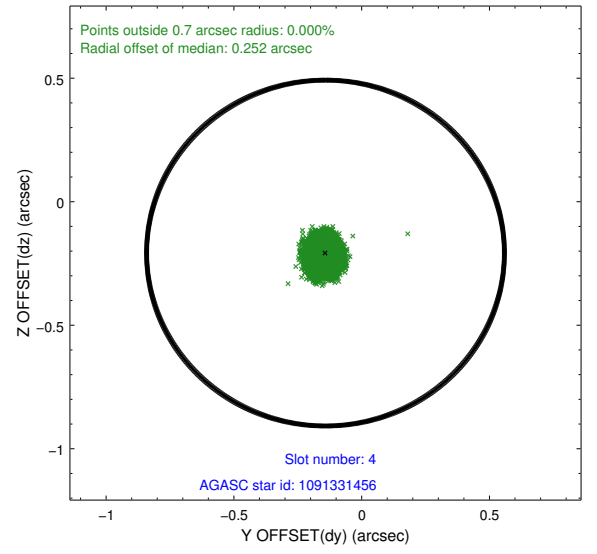
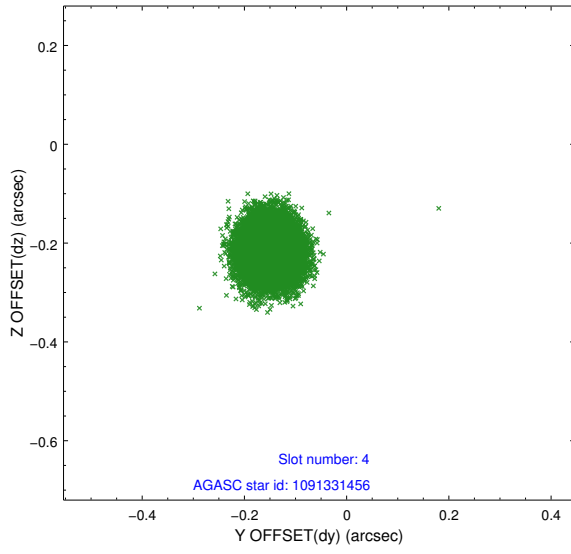
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	5865	-0.053	-0.077	0.016	0.030	0.000000	0.000000	-754.78	-1882.25
1	FID	ACIS-S-4	7.18	5864	0.002	0.047	0.007	0.015	0.000000	0.000000	2158.50	26.17
2	FID	ACIS-S-5	7.23	5864	0.019	0.038	0.014	0.027	0.000000	0.000000	-1807.38	20.00
3	GUIDE	1091315904	6.92	11728	0.124	0.007	0.060	0.095	252.023077	-45.944918	1408.20	1395.46
4	GUIDE	1091331456	7.11	11729	-0.142	-0.208	0.050	0.082	250.457488	-45.368726	-960.65	-2374.10
5	GUIDE	1032728728	7.57	11727	-0.225	0.109	0.056	0.089	252.061735	-44.936530	-2200.55	1805.81
6	GUIDE	1091318704	7.62	11658	-0.047	0.106	0.062	0.099	251.955714	-45.390313	-595.93	1397.81
7	GUIDE	1091341680	8.44	11727	0.286	-0.014	0.060	0.095	251.240217	-46.114317	1857.26	-604.25

## 2.4 Star Slots

### 2.4.1 Slot 3

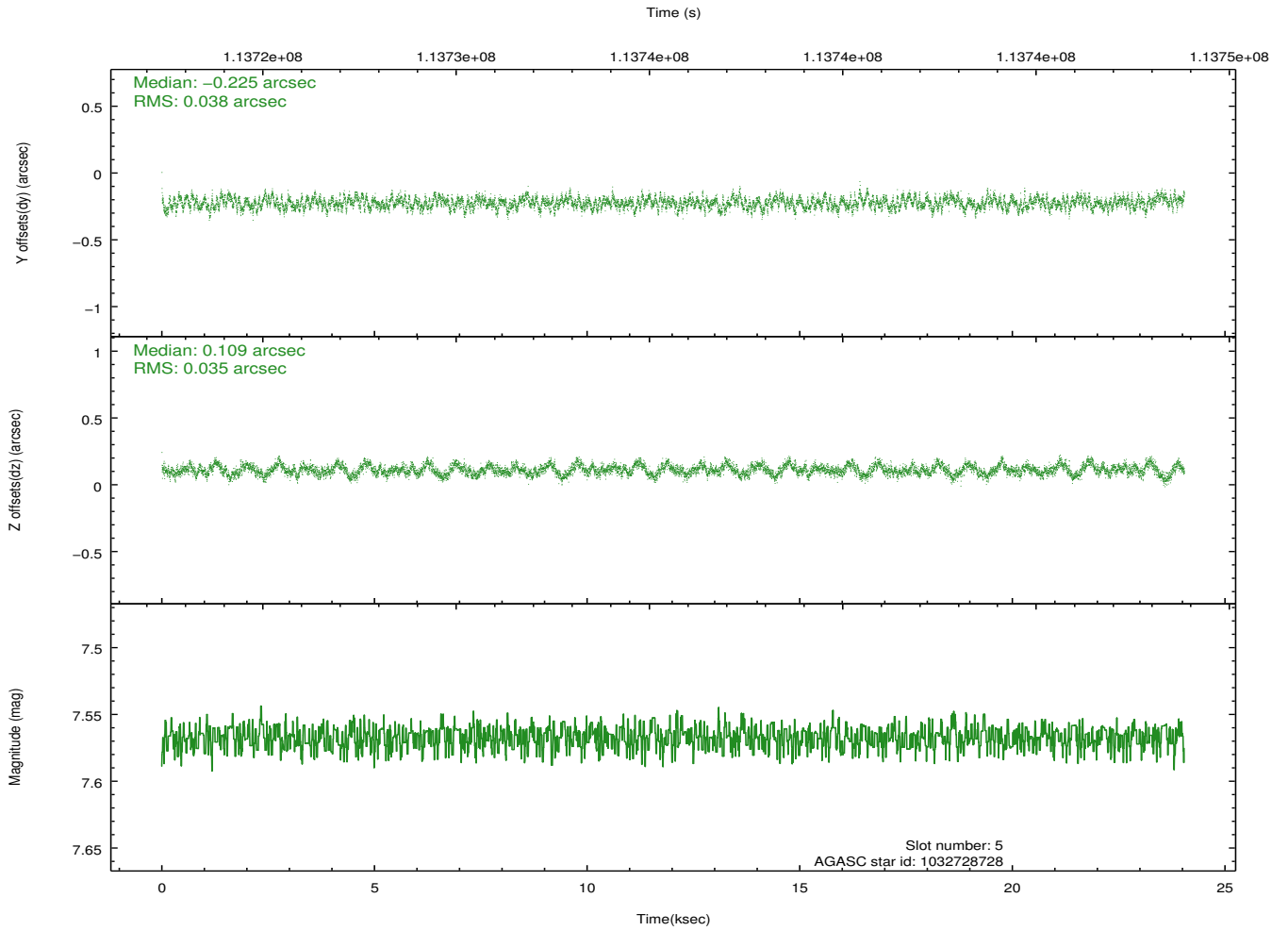
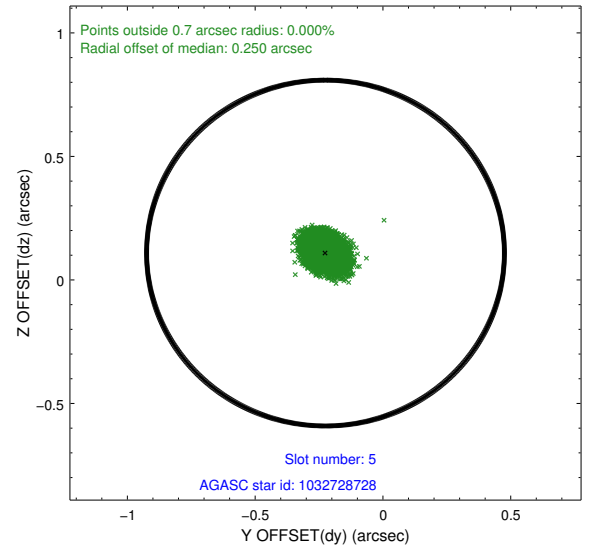
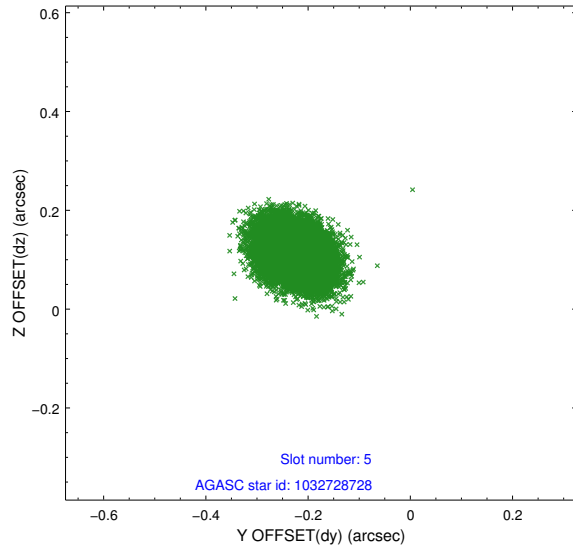


## 2.4.2 Slot 4

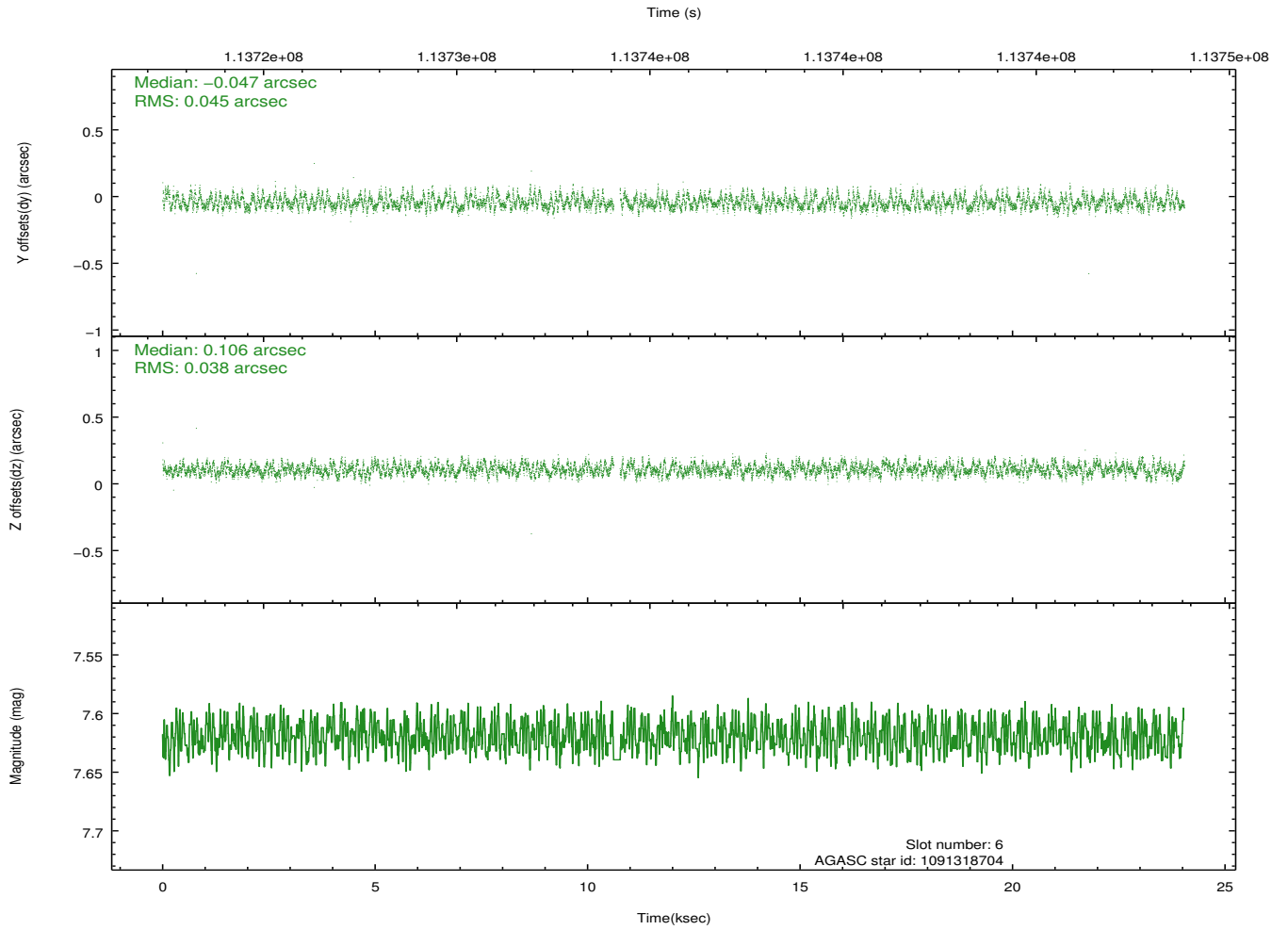
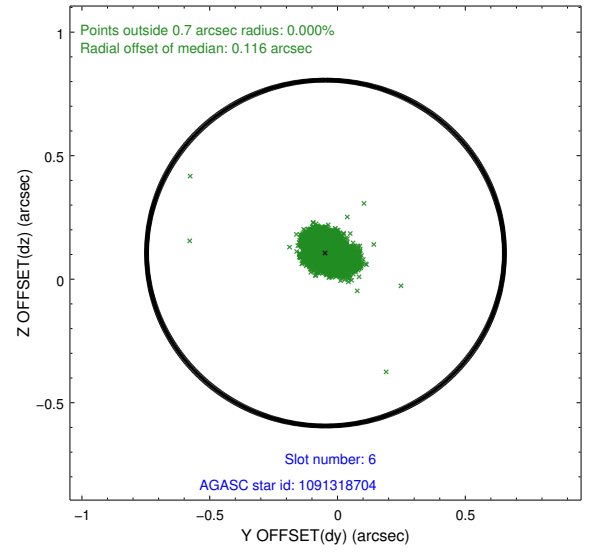
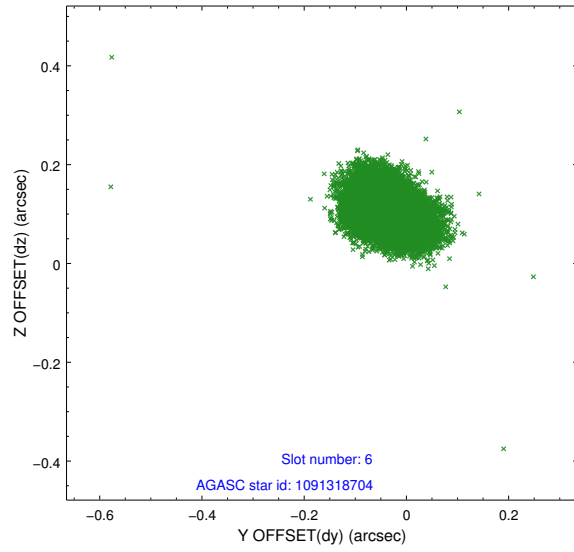




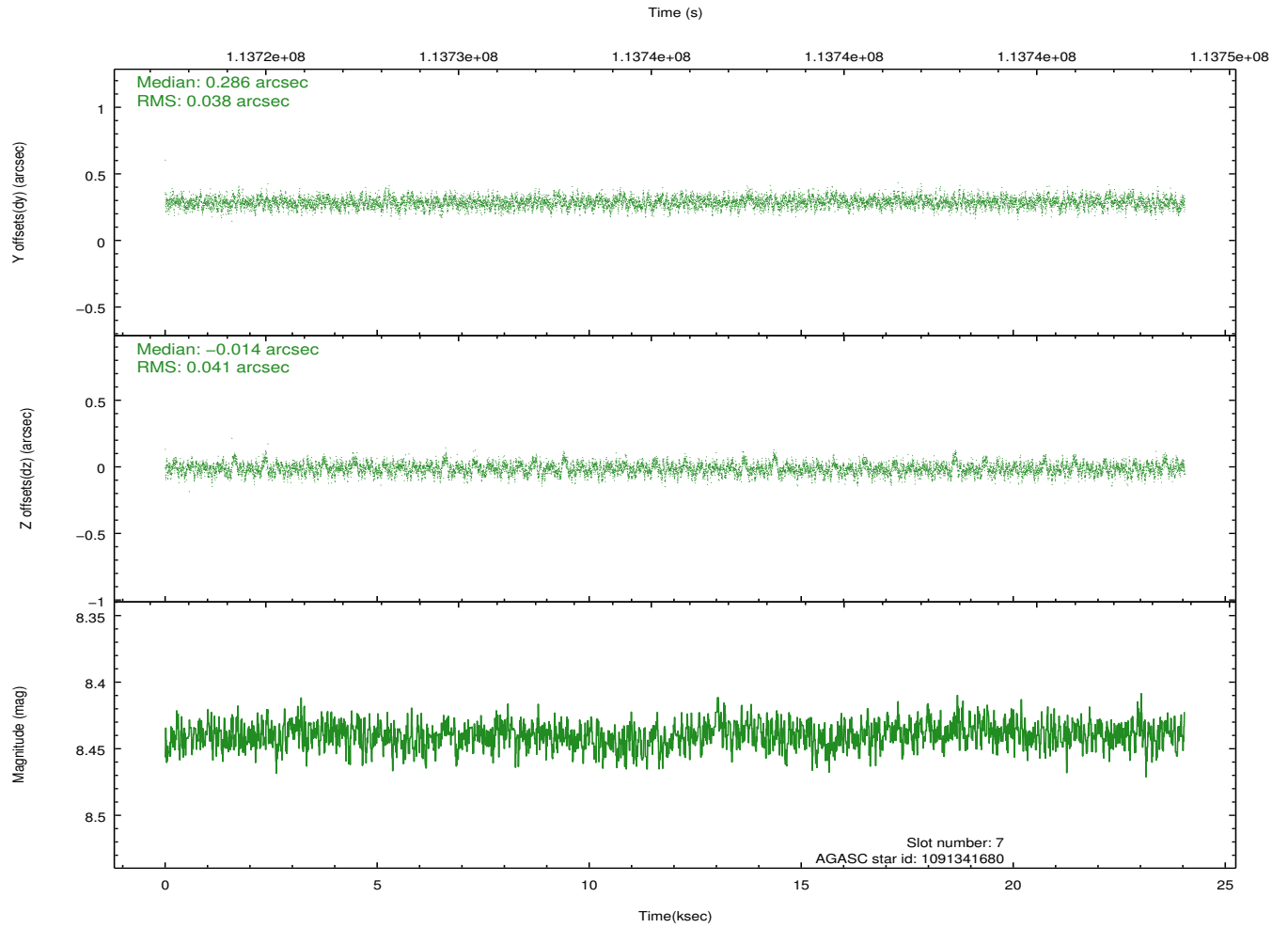
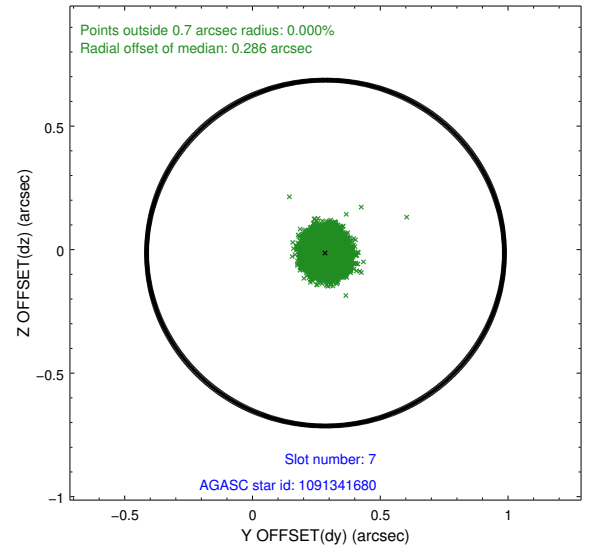
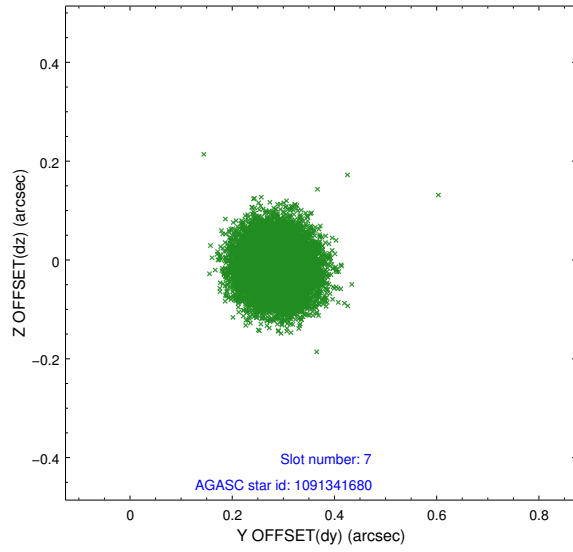
### 2.4.3 Slot 5



## 2.4.4 Slot 6

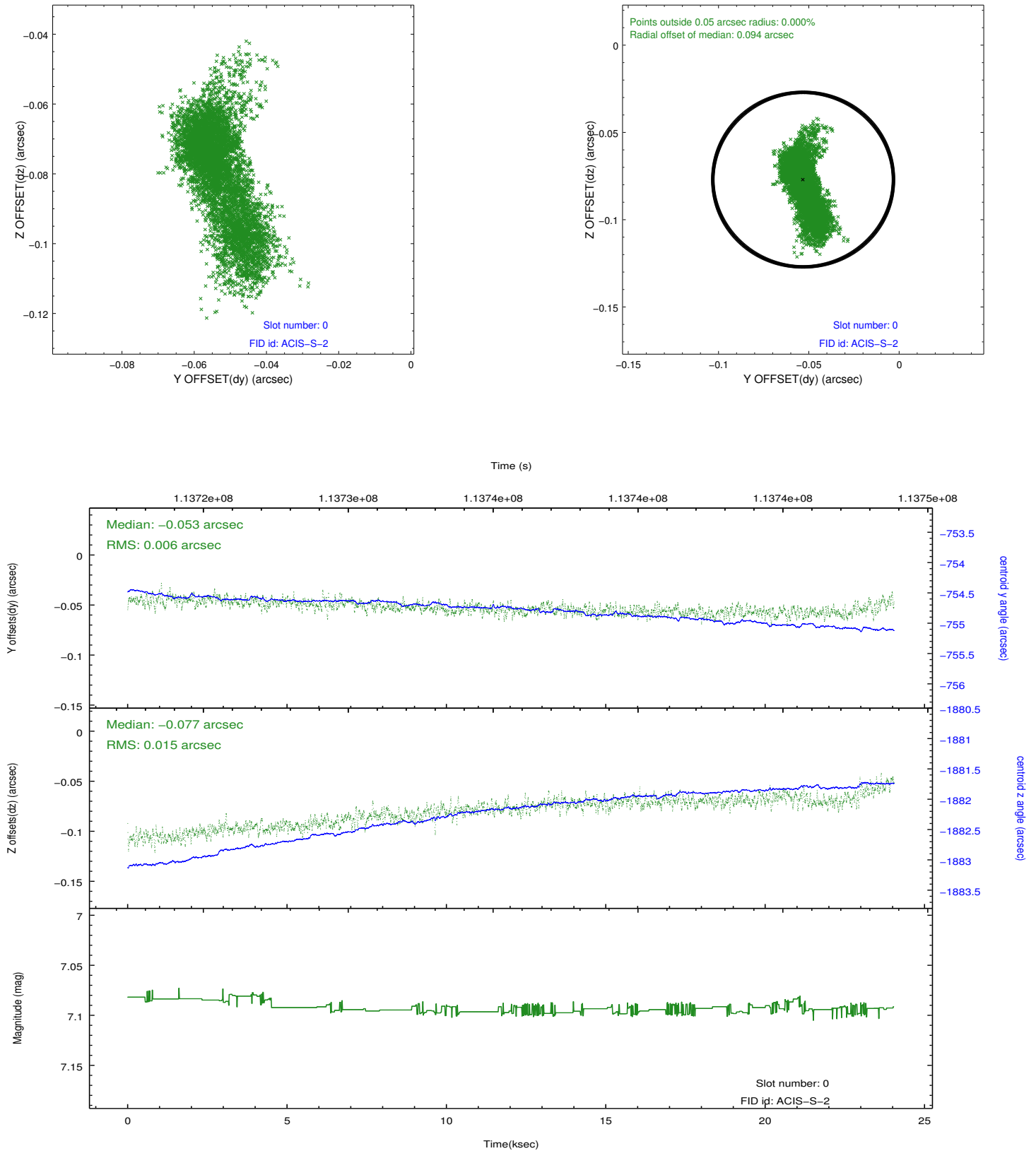


## 2.4.5 Slot 7

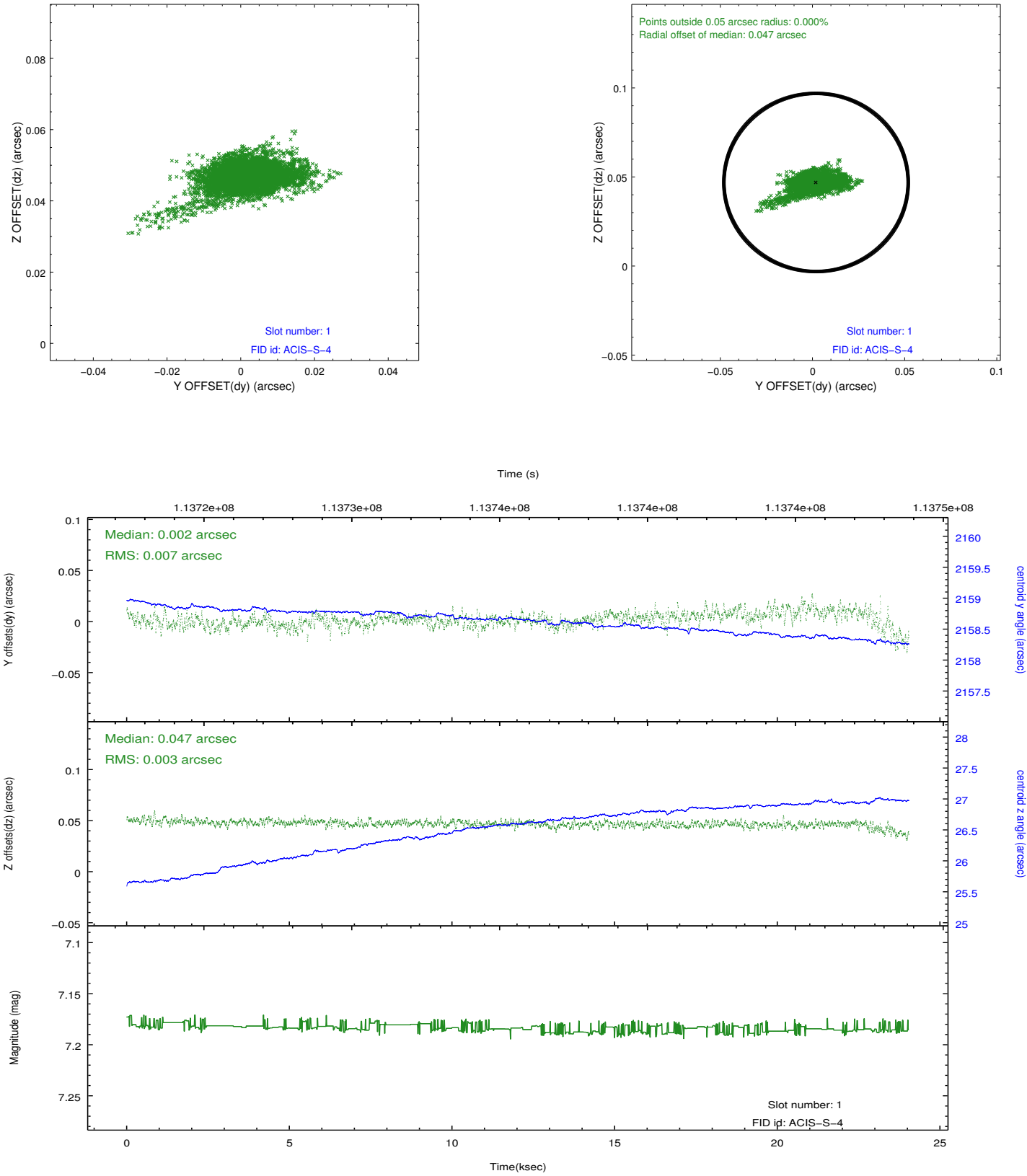


## 2.5 FID Slots

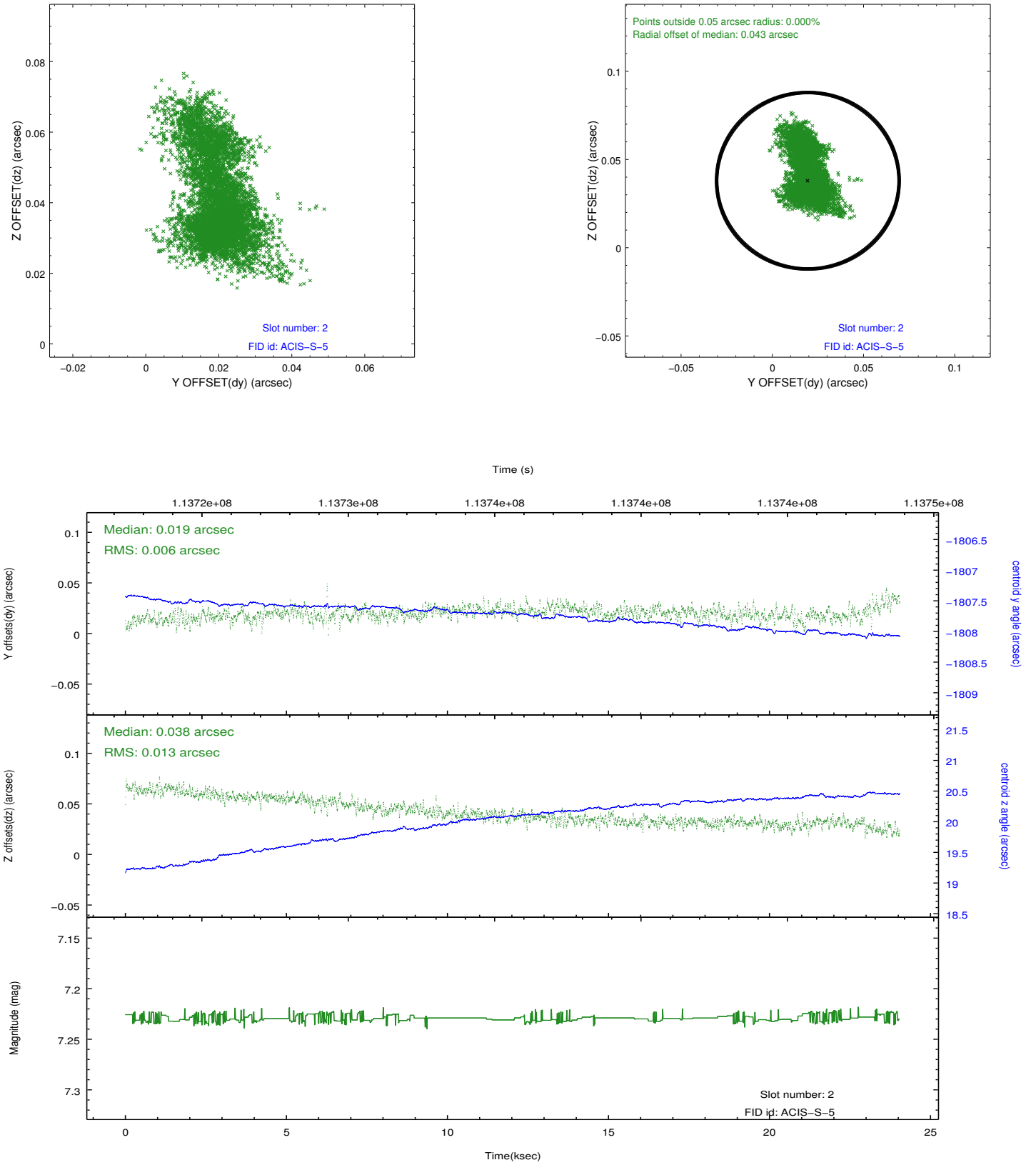
### 2.5.1 Slot 0



## 2.5.2 Slot 1

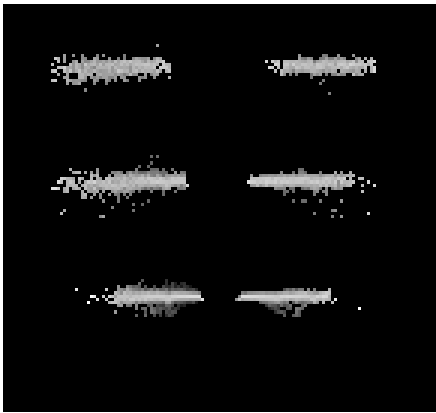


### 2.5.3 Slot 2

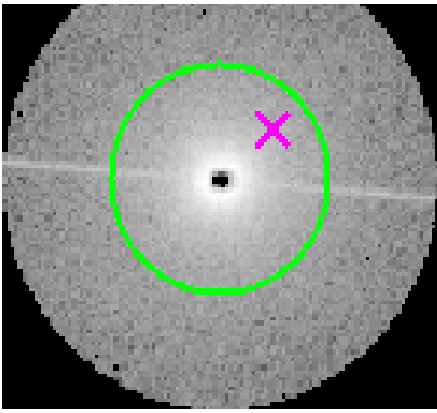


# 3 Gratings

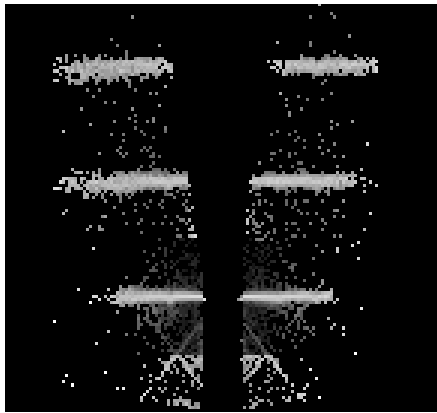
## 3.1 HEG Arm



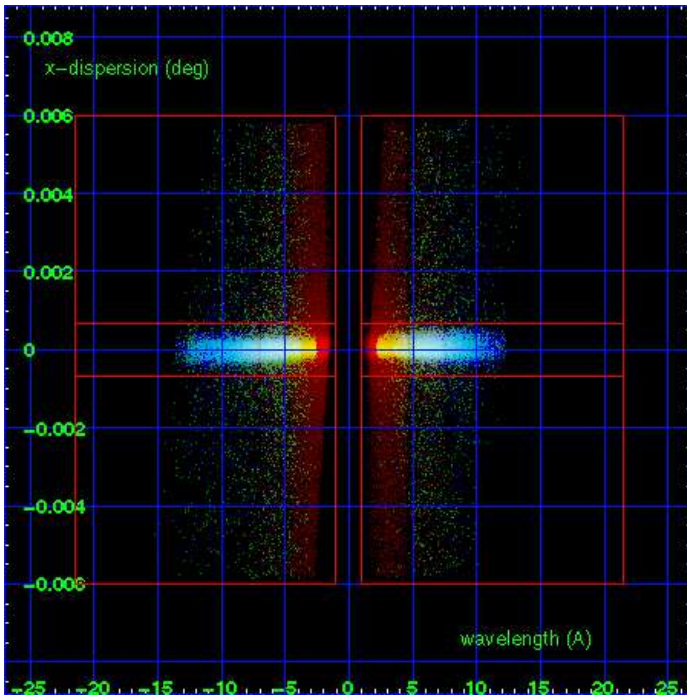
HEG Order Sort 123



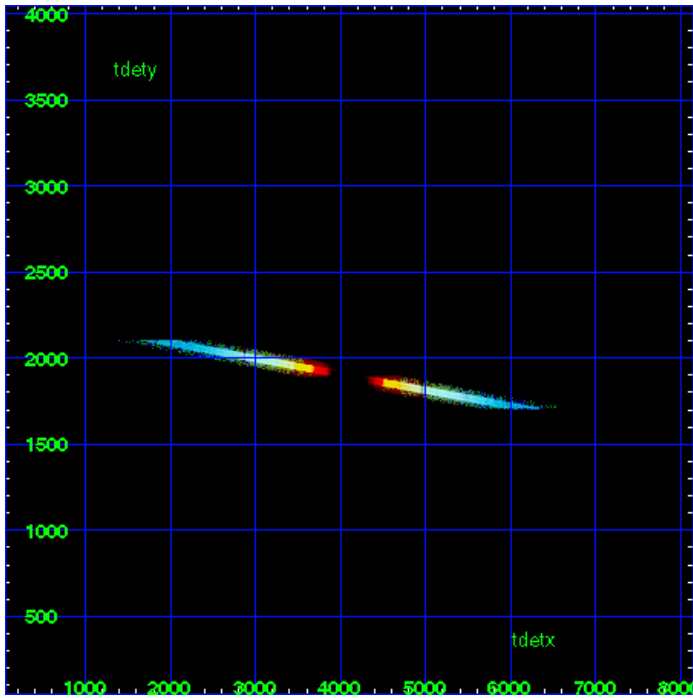
HEG Zero Order



HEG Order Sort ALL

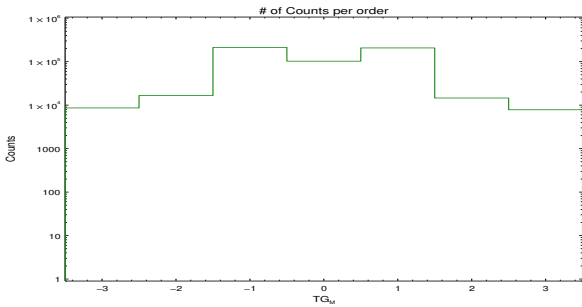


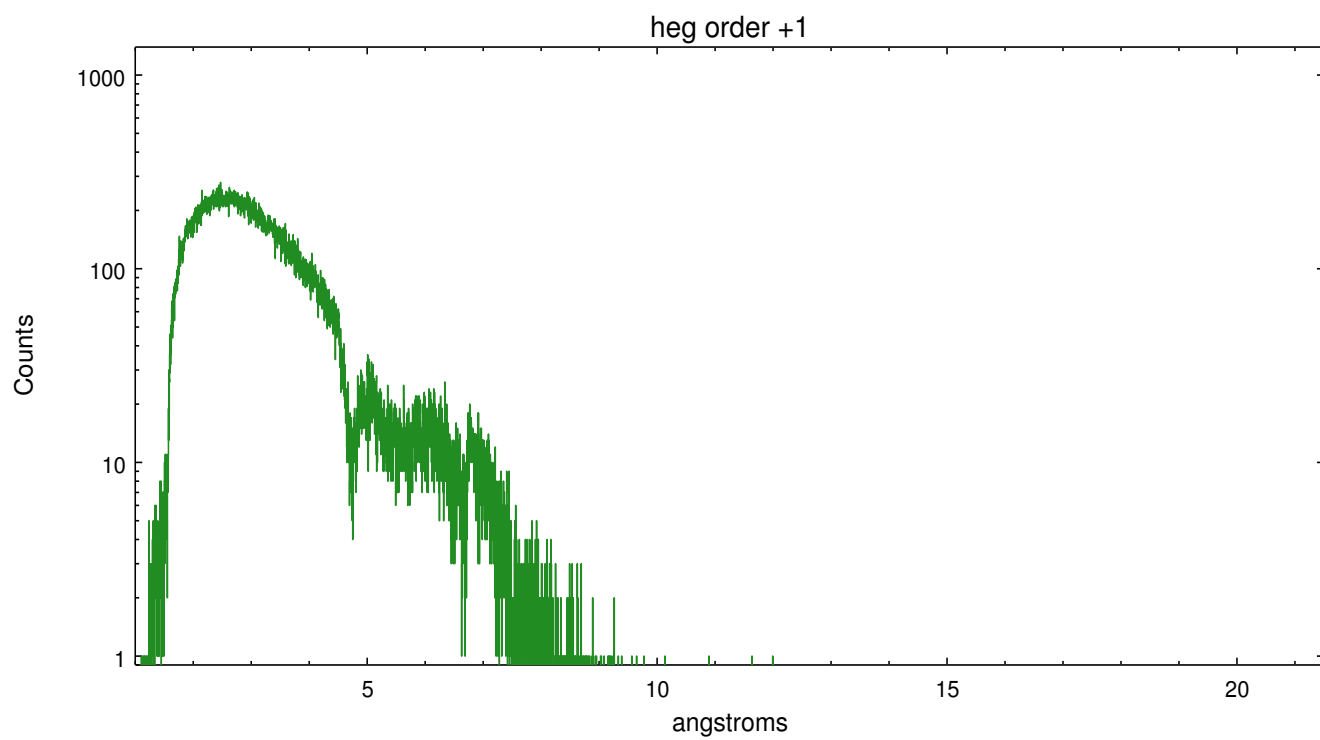
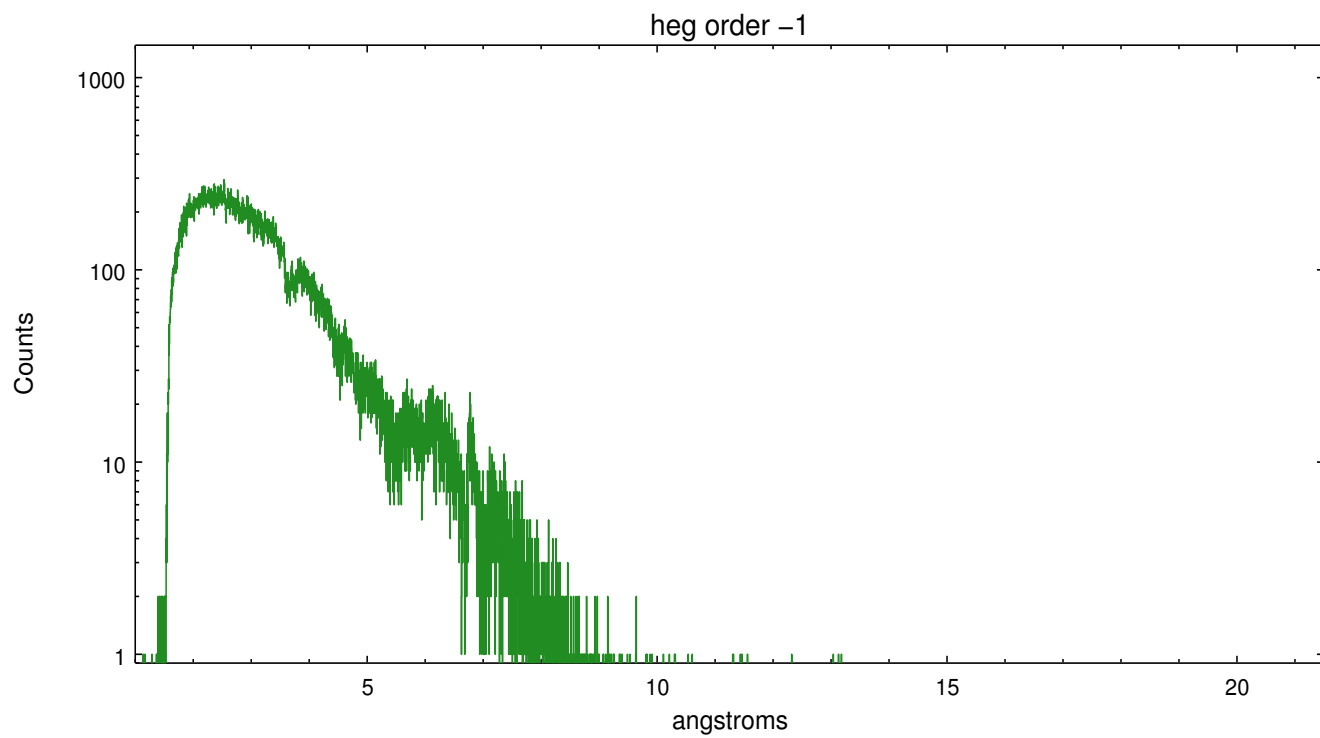
Spot Image HEG



Full Detector HEG

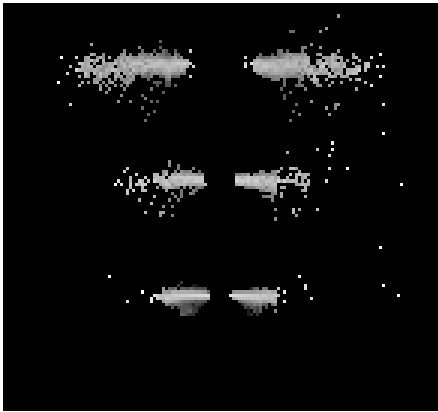
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	8624	16647	212466	102542	207018	14587	7834



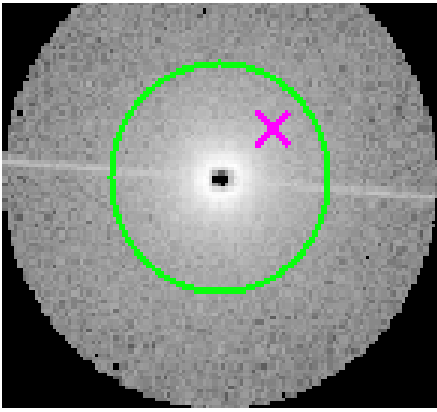




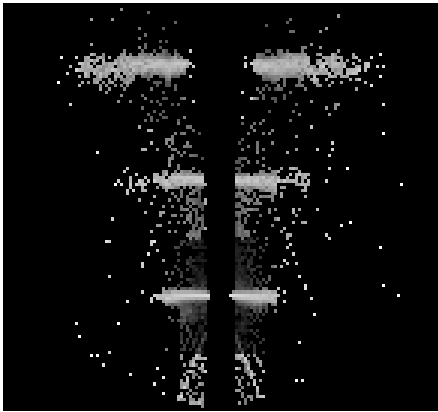
3.2 MEG Arm



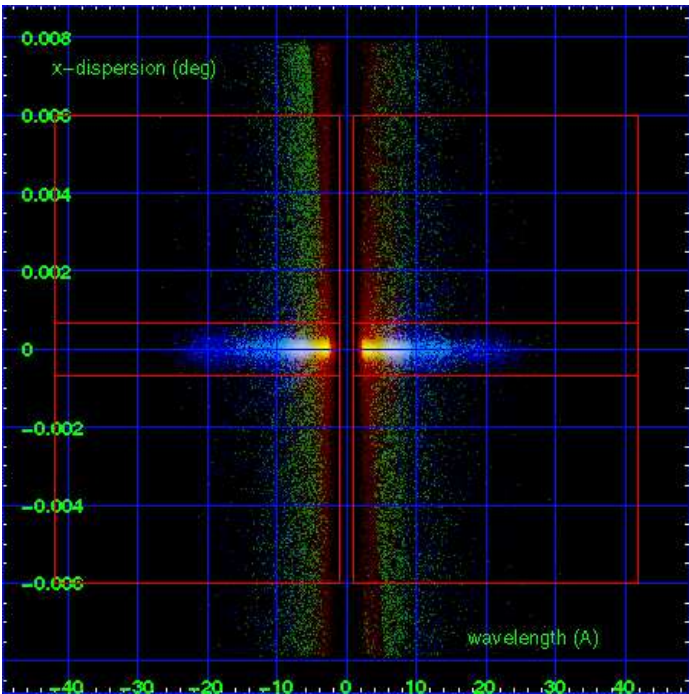
MEG Order Sort 123



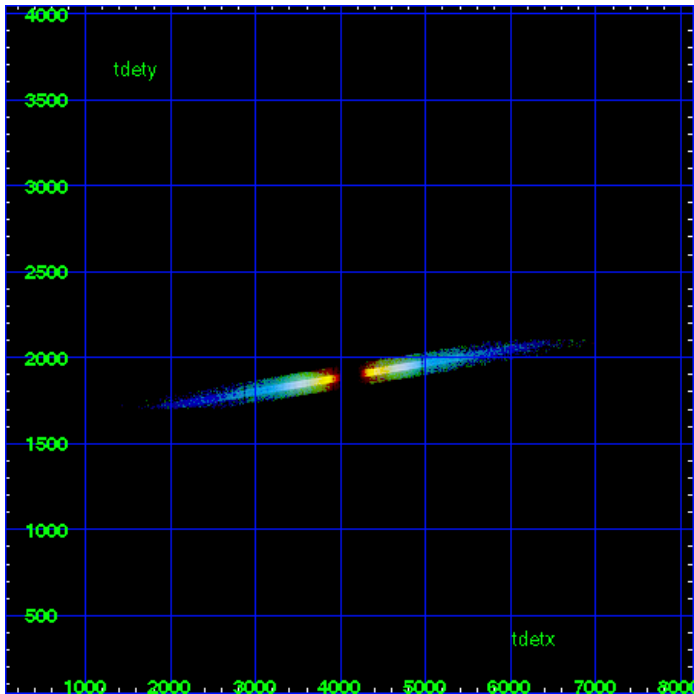
MEG Zero Order



MEG Order Sort ALL

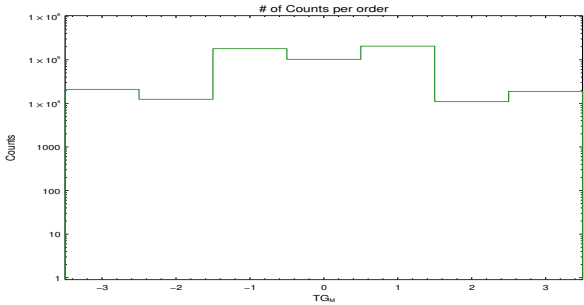


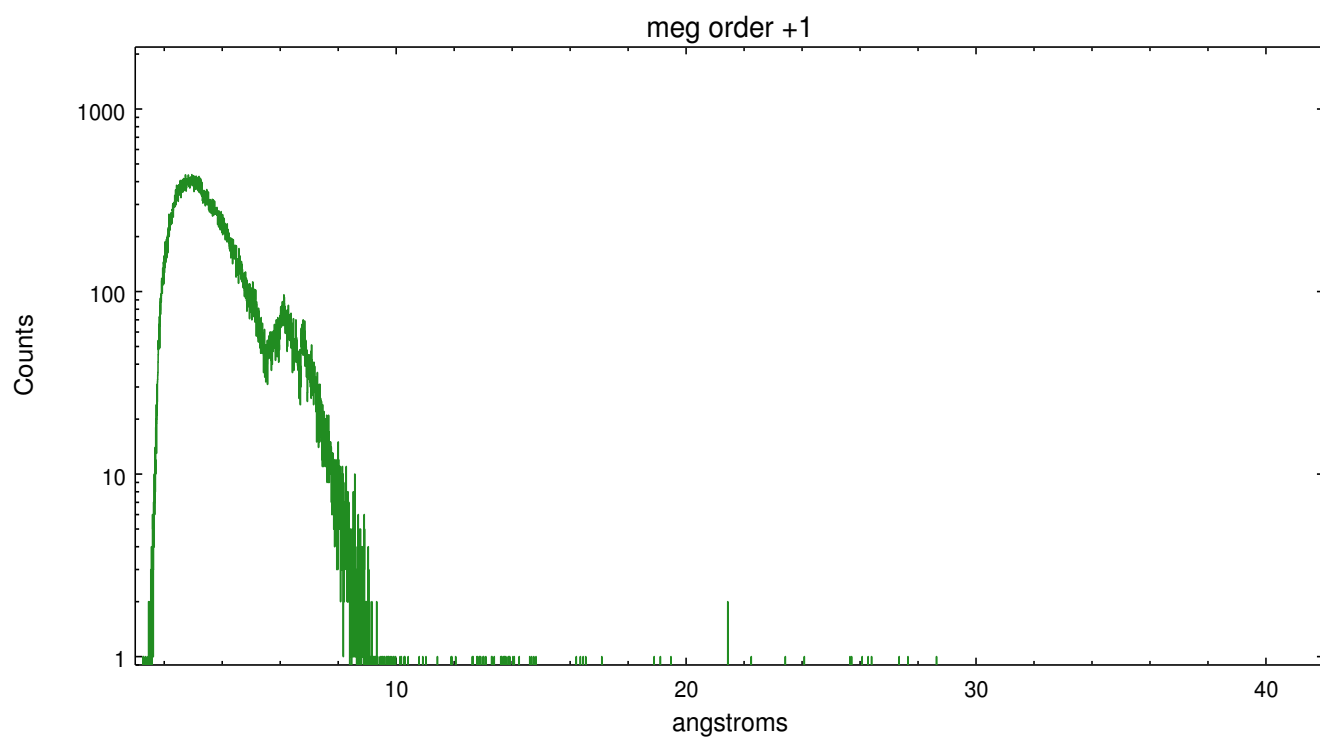
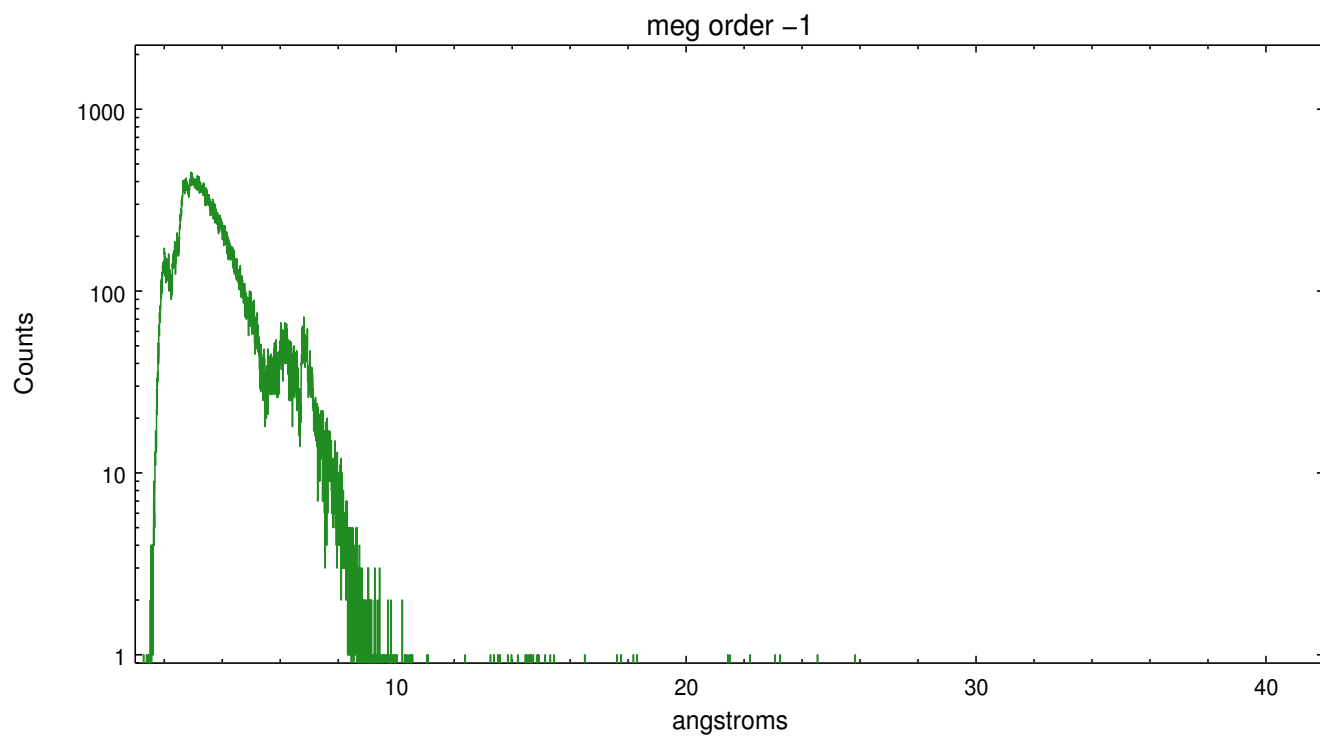
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	20953	12404	179693	102542	205502	10953	18819





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	24.043

## A.2 Comments

Zeroth order piled up. 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=4082.08, y=4083.53) 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 as tg\_findzo (currently in ISIS as findzo). 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.