

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 5513 - L2 Version 3  
Chandra X-Ray Center

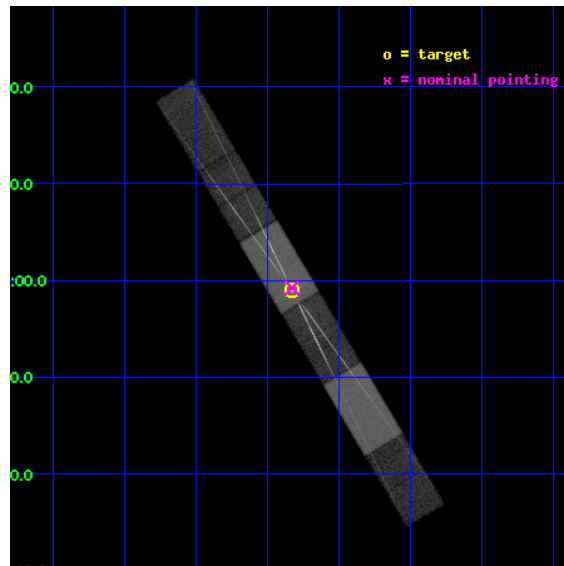
L2 Processing Date : Dec 28 2012

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# 1 Front

seq_num	400443	Sequence number
obs_id	5513	Observation id
title	Detailed Studies of the Jets in SS 433	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	SS 433	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	287.95625	Observer's specified target RA [deg]
dec_targ	4.982778	Observer's specified target Dec [deg]
ra_nom	287.95703764428	Nominal RA [deg]
dec_nom	4.9873161393065	Nominal Dec [deg]
roll_nom	239.09197999708	Nominal Roll [deg]
revision	3	Processing version of data
ontime	49177.800325692	Sum of GTIs [s]
livetime	48081.541186637	Livetime [s]
ontime4	49177.800325692	Sum of GTIs [s]
ontime5	49177.800325692	Sum of GTIs [s]
ontime6	49174.118275553	Sum of GTIs [s]
ontime7	49177.800325692	Sum of GTIs [s]
ontime8	49177.800325692	Sum of GTIs [s]
ontime9	49175.959315538	Sum of GTIs [s]
l2events	463713	Number of level 2 events

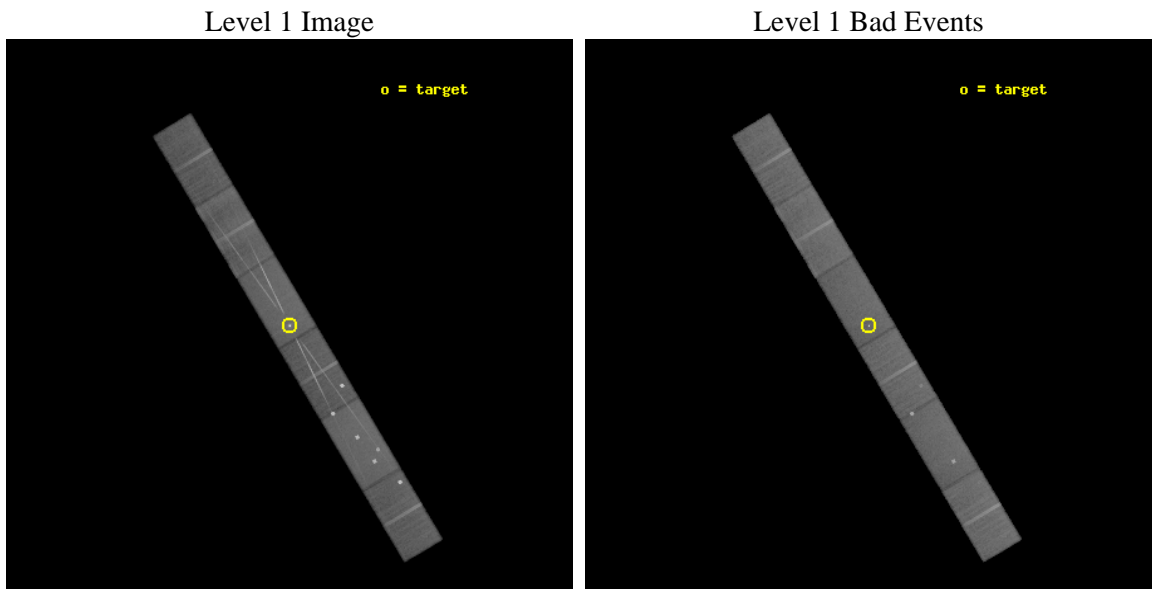




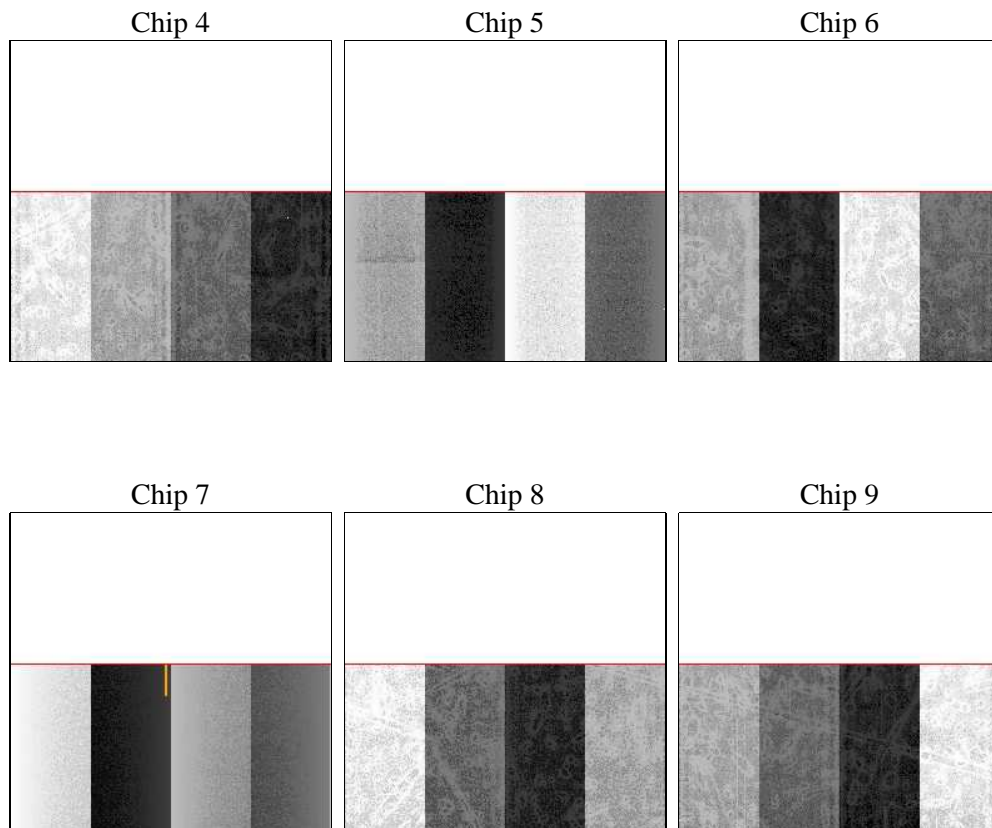
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	49000.000000	[s] Scheduled observation exposure time
ascdsver	8.5.1.1	Processing system revision	ontime	49177.800325692	Sum of GTIs [s]
caldsver	4.5.5	&#160	ontime4	49177.800325692	Sum of GTIs [s]
date	2012-12-27T05:59:43	Date and time of file creation	ontime5	49177.800325692	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	49174.118275553	Sum of GTIs [s]
			ontime7	49177.800325692	Sum of GTIs [s]
			ontime8	49177.800325692	Sum of GTIs [s]
			ontime9	49175.959315538	Sum of GTIs [s]
			l1events	1695092	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	246872	352674	277214	349674	269817	198841	grade 0 events	36899	42424	44480	23915	28402	12265
rejected events	194344	167416	180375	165992	200842	170898		14%	12%	16%	6%	10%	6%
rejected %	78%	47%	65%	47%	74%	85%	grade 1 events	227	2824	184	780	193	81
								0%	0%	0%	0%	0%	0%
							grade 2 events	5715	47888	36133	39614	13120	5234
								2%	13%	13%	11%	4%	2%
							grade 3 events	2929	10600	4728	17991	6524	2943
								1%	3%	1%	5%	2%	1%
							grade 4 events	2889	10222	4545	17825	6112	2839
								1%	2%	1%	5%	2%	1%
							grade 5 events	8160	28942	9432	28493	11292	9208
								3%	8%	3%	8%	4%	4%
							grade 6 events	4164	74409	7117	84659	14908	4714
								1%	21%	2%	24%	5%	2%
							grade 7 events	185889	135365	170595	136397	189266	161557
								75%	38%	61%	39%	70%	81%

## 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	287.957108	287.9570376442761	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	5.014565	4.987316139306476	Subarray start row	1	1
[deg] Pointing Roll	238.935346	239.0919799970754	Subarray row count	542	542
[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	1.8
[mm] SIM translation stage pos	-184.532523	-184.5306286120915			
[mm] SIM translation stage offset	-5.6	-5.601893970916279			
Phase constraints	Y	Y			
[d] Phase period	13.082110	13.082110			
[d] Phase epoch (MJD)	52377.900000	52377.900000			
Phase start	0.000000	0.000000			
Phase end	0.020000	0.020000			
Phase start error	0.050000	0.050000			
Phase end error	0.050000	0.050000			
[s] Observation start time (MET)	240221544.184000	240220497.21439			
Observation start date	2005-08-12T08:11:20	2005-08-12T07:54:57			
[s] Observation end time (MET)	240270544.184000	240272287.90426			
Observation end date	2005-08-12T21:48:00	2005-08-12T22:18:07			
Read mode	TIMED	TIMED			

## 2.3 Aspect

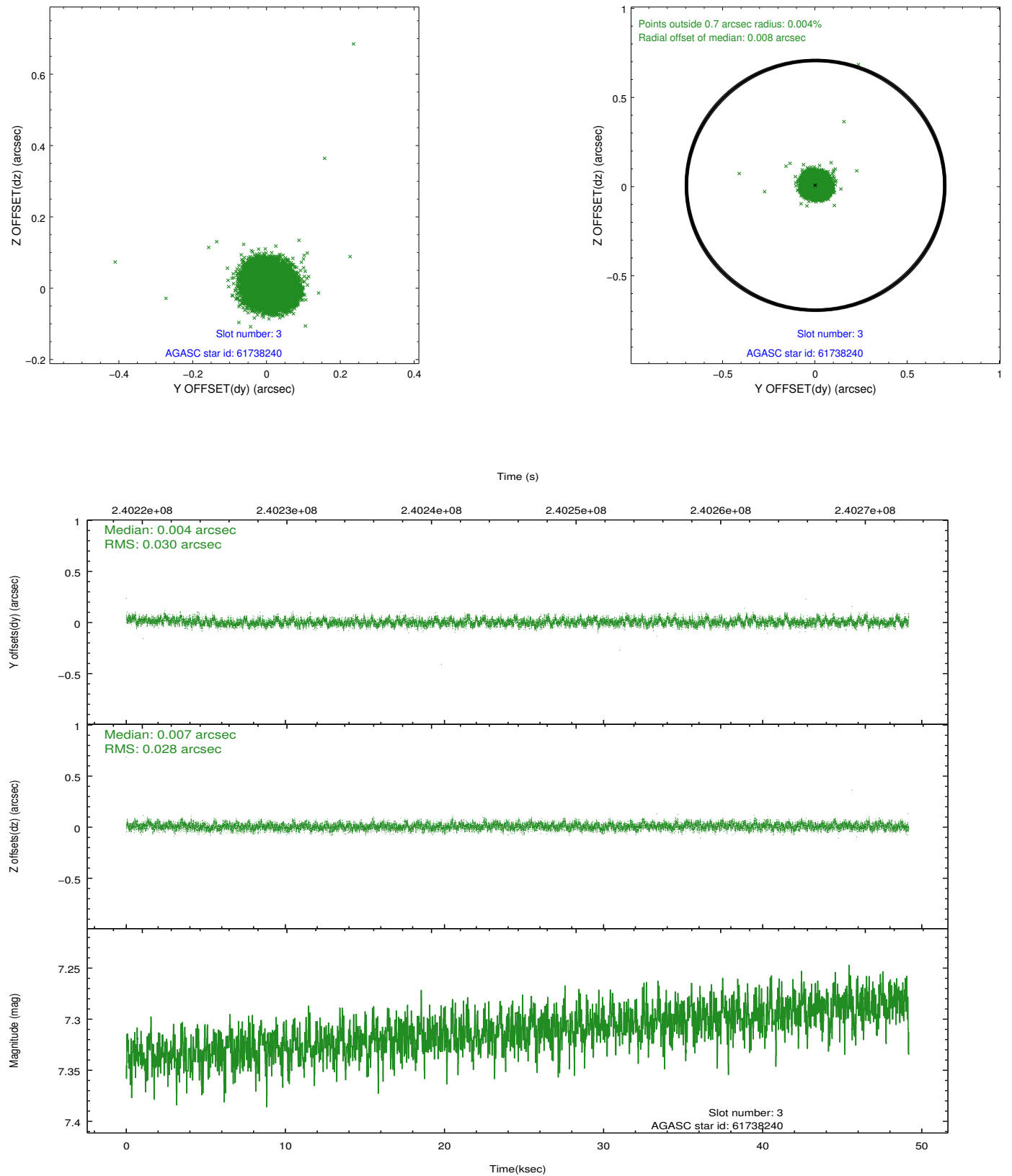


### Slot Statistics

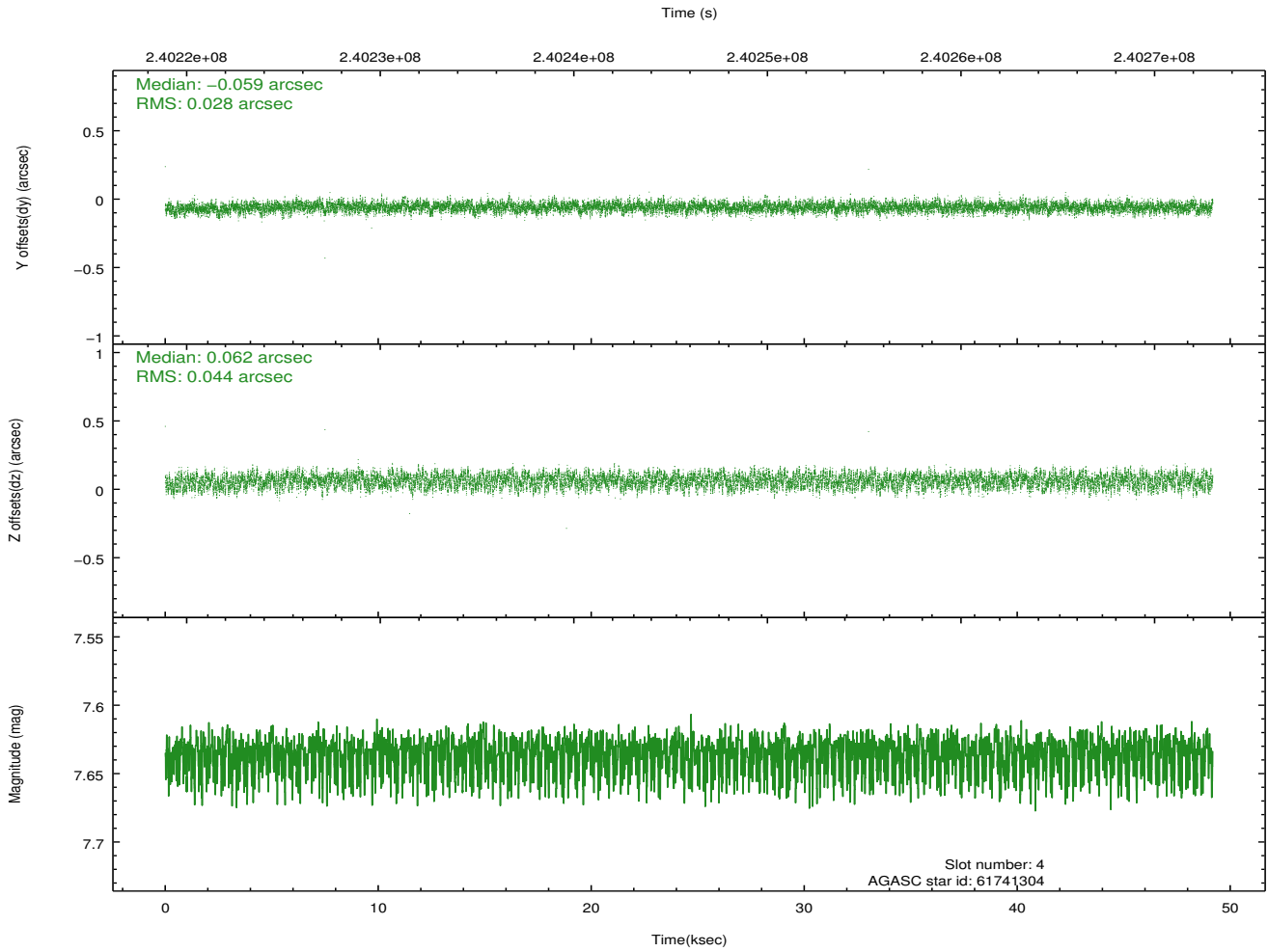
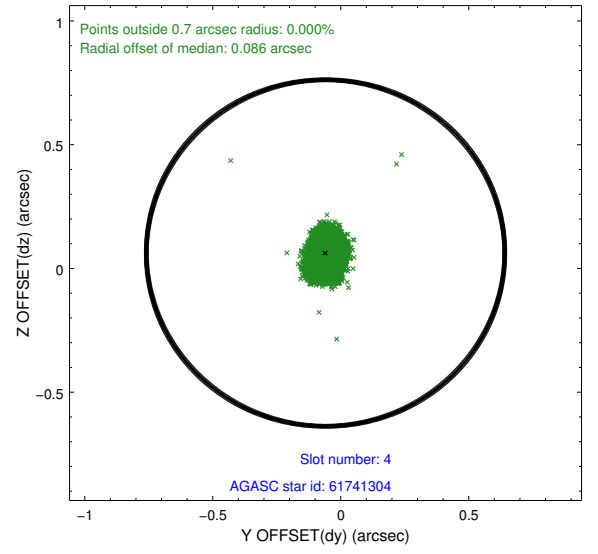
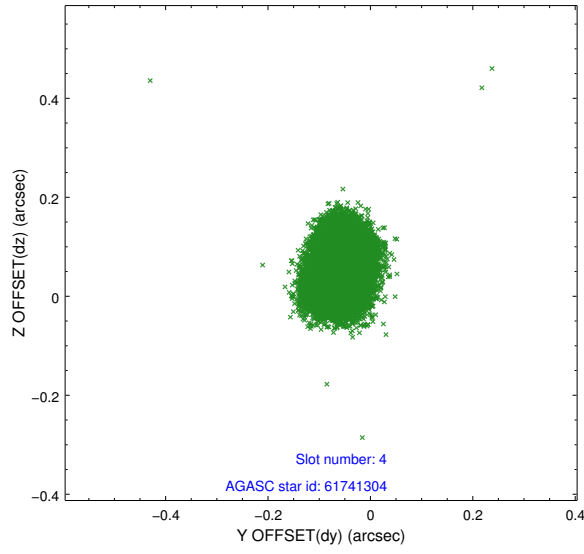
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.19	11995	0.061	0.004	0.008	0.014	0.000000	0.000000	935.87	-1842.41
1	FID	ACIS-S-5	7.23	11990	-0.105	0.053	0.008	0.015	0.000000	0.000000	-1813.29	55.20
2	FID	ACIS-S-6	7.39	11992	0.022	-0.045	0.008	0.013	0.000000	0.000000	401.41	699.04
3	GUIDE	61738240	7.31	23984	0.004	0.007	0.044	0.070	287.996556	4.354861	1961.40	1347.04
4	GUIDE	61741304	7.64	23987	-0.059	0.062	0.056	0.089	287.957418	5.377327	-1119.15	-672.63
5	GUIDE	61743800	7.48	23986	0.076	-0.094	0.061	0.094	287.776811	5.274666	-468.44	-1036.83
6	GUIDE	61744976	7.58	23989	-0.102	0.007	0.050	0.079	288.430364	5.306675	-1776.70	910.26
7	GUIDE	61745016	8.65	23984	0.079	0.017	0.060	0.096	288.113628	4.368816	1701.49	1681.35

## 2.4 Star Slots

### 2.4.1 Slot 3

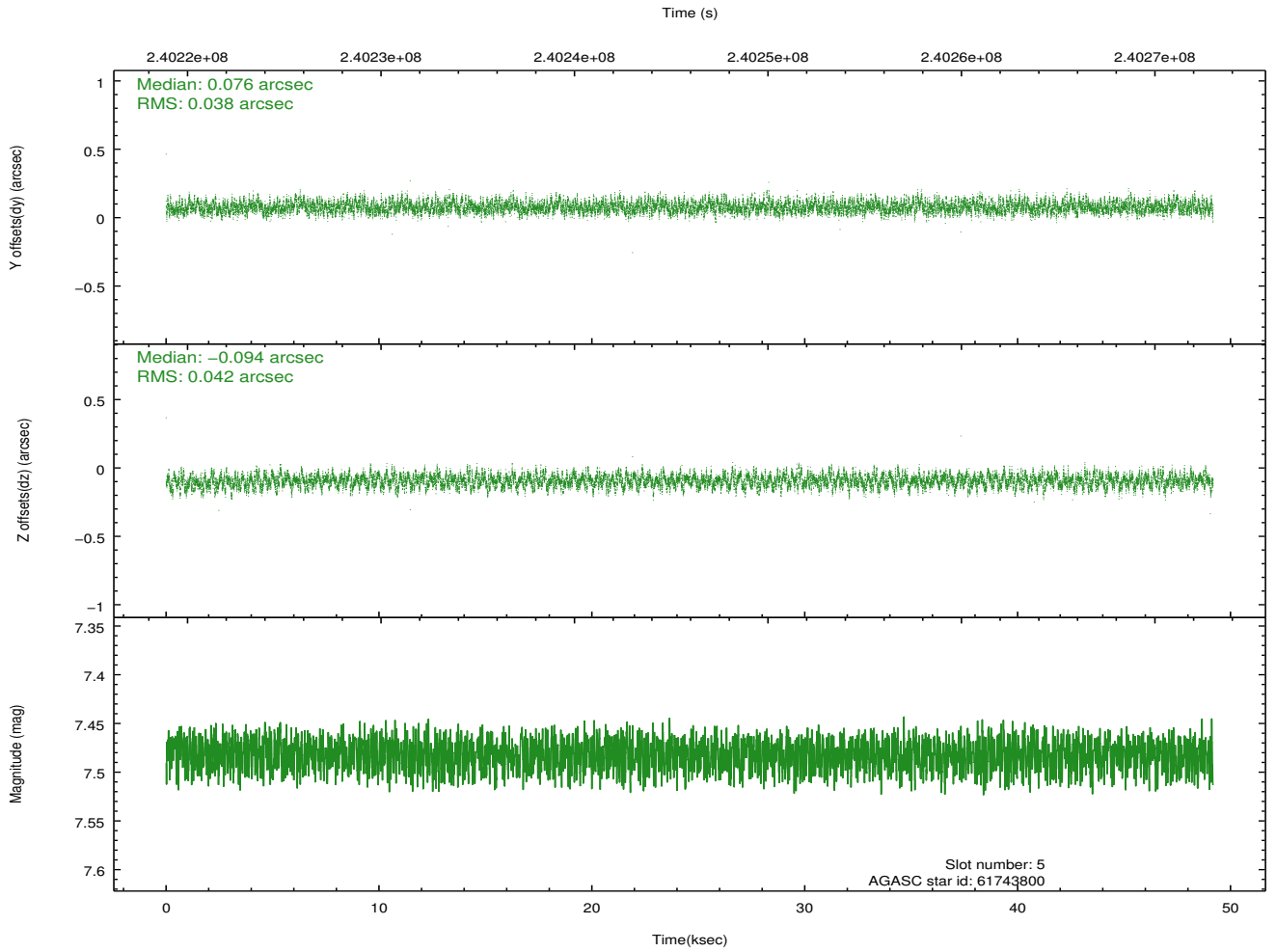
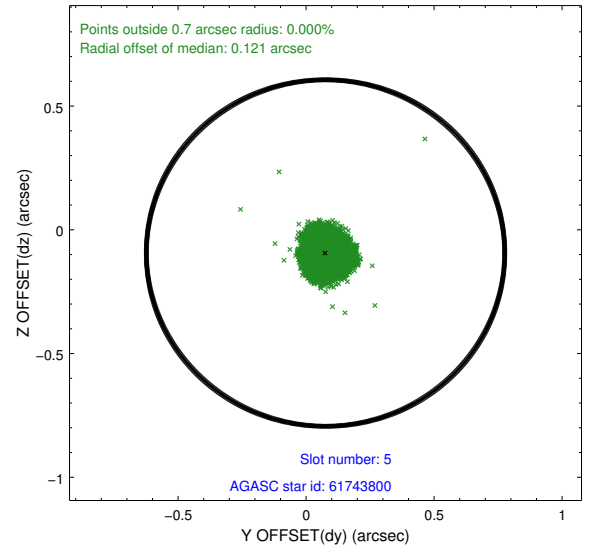
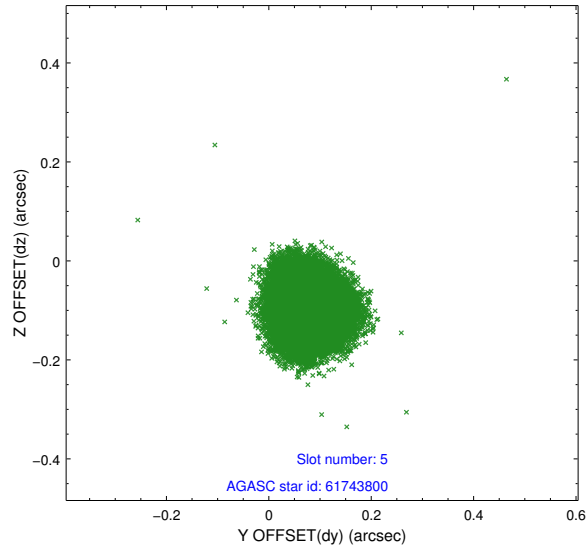


## 2.4.2 Slot 4

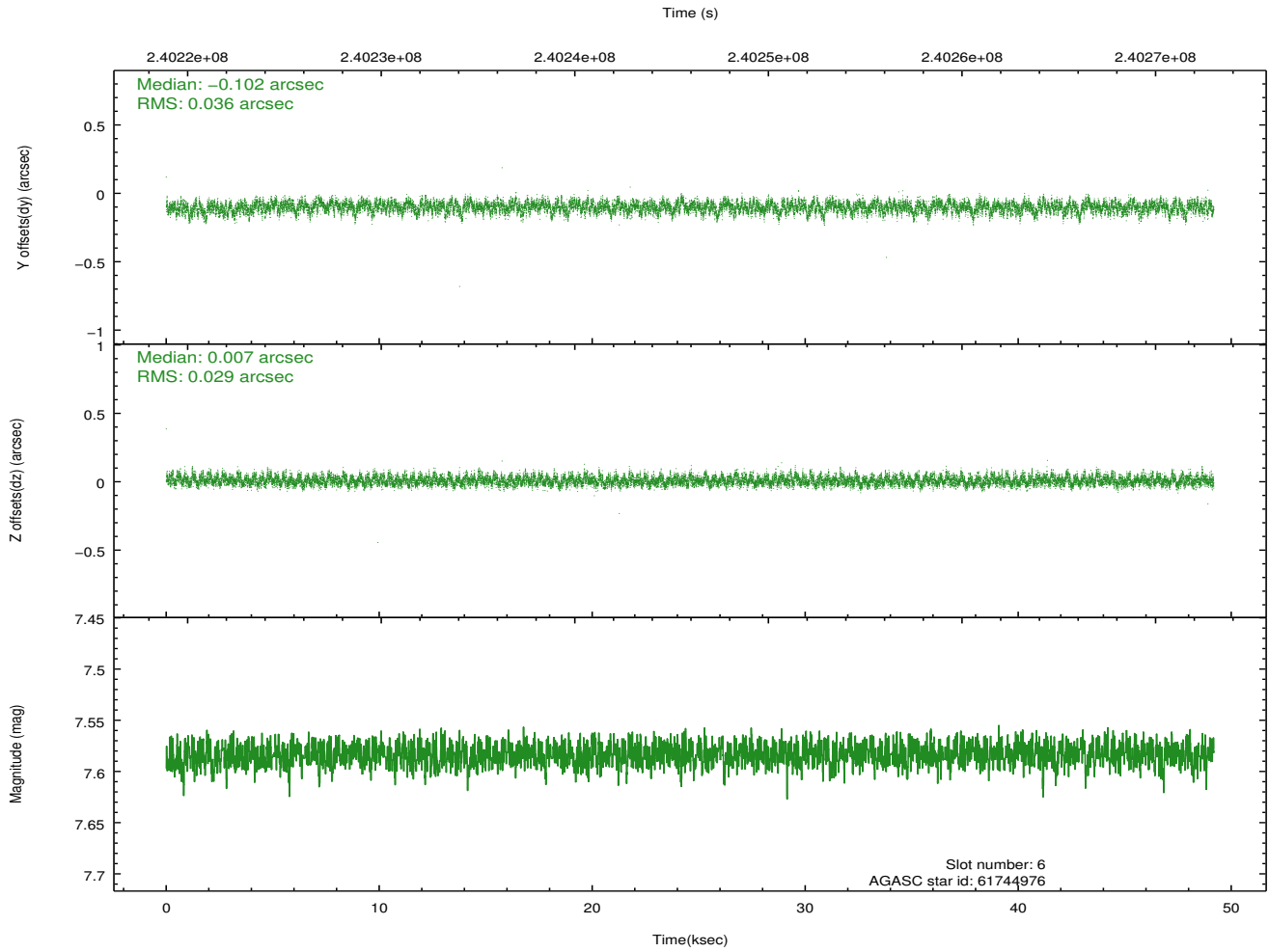
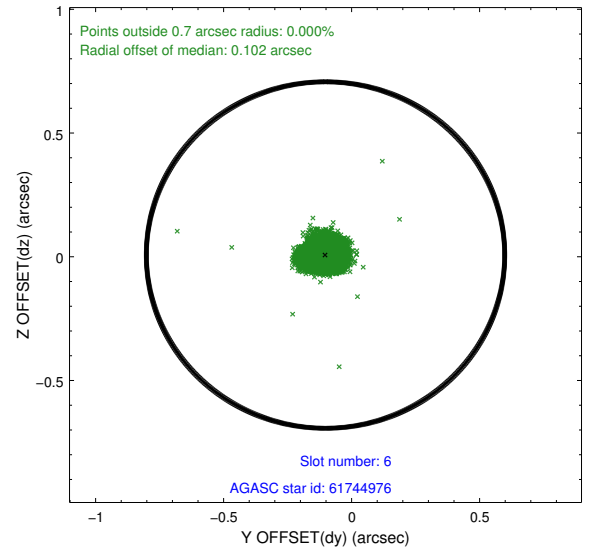
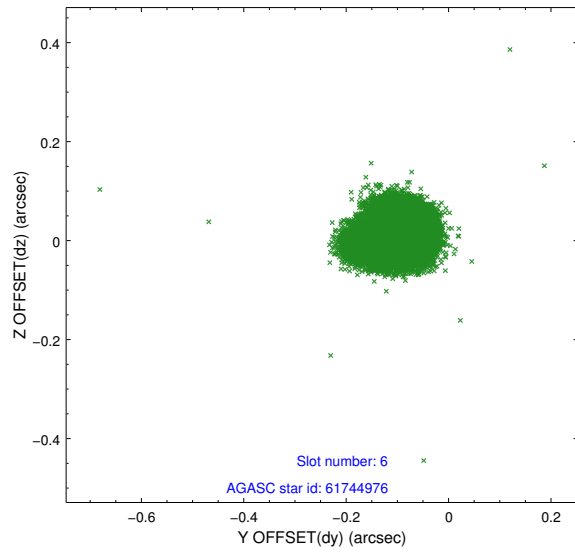




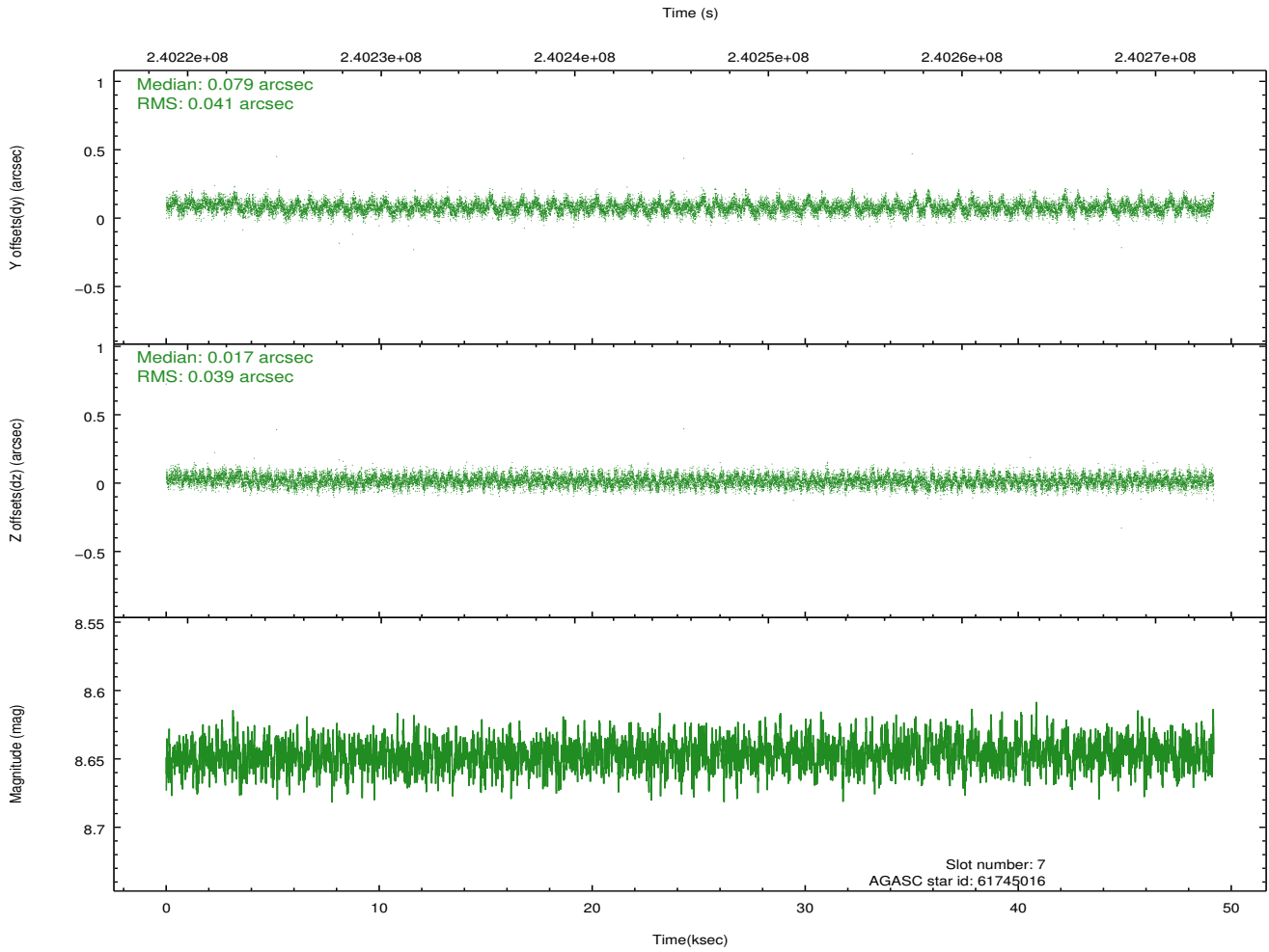
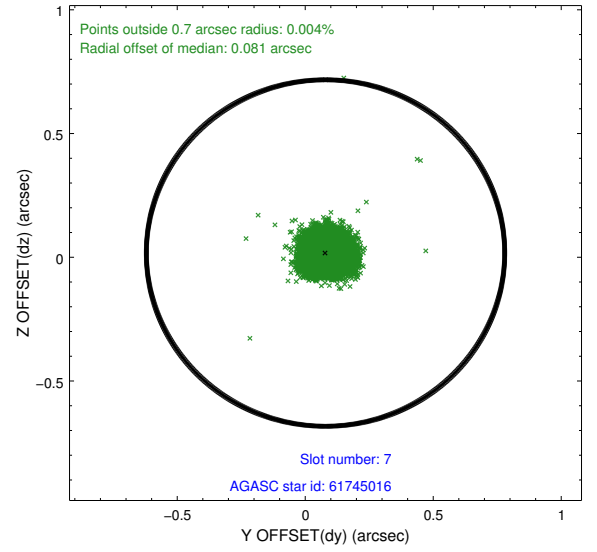
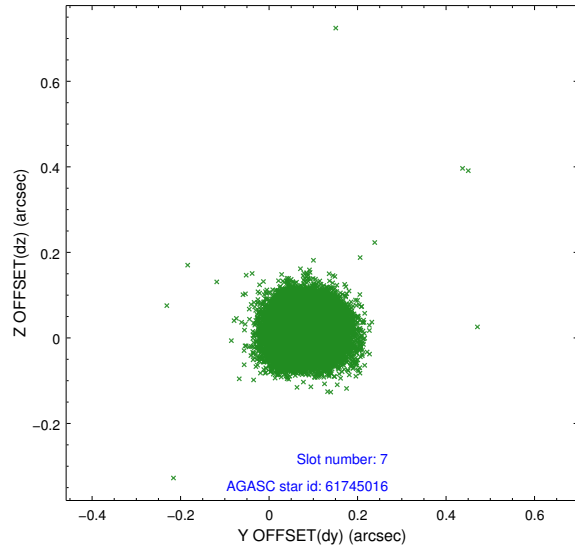
### 2.4.3 Slot 5



## 2.4.4 Slot 6

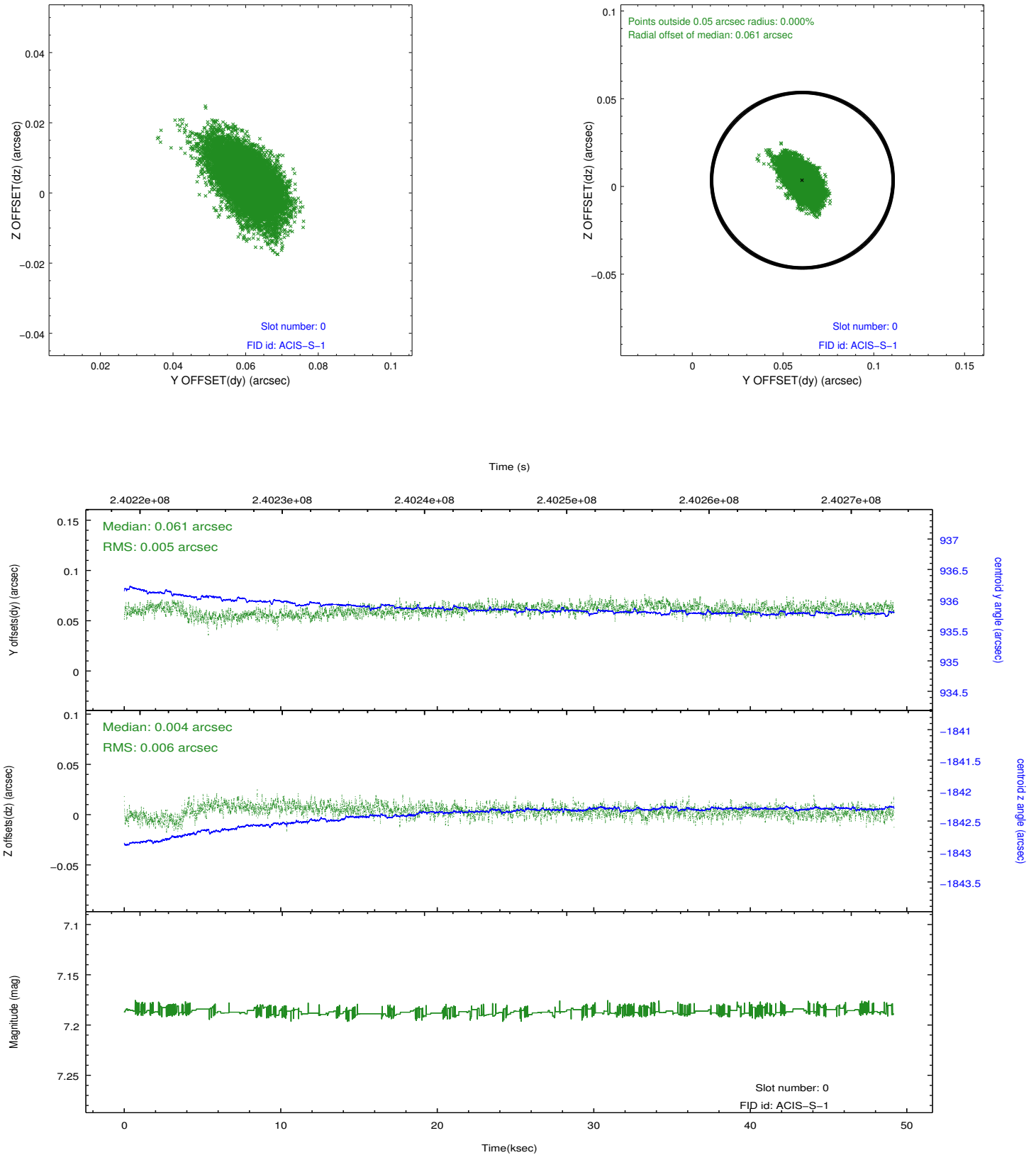


### 2.4.5 Slot 7

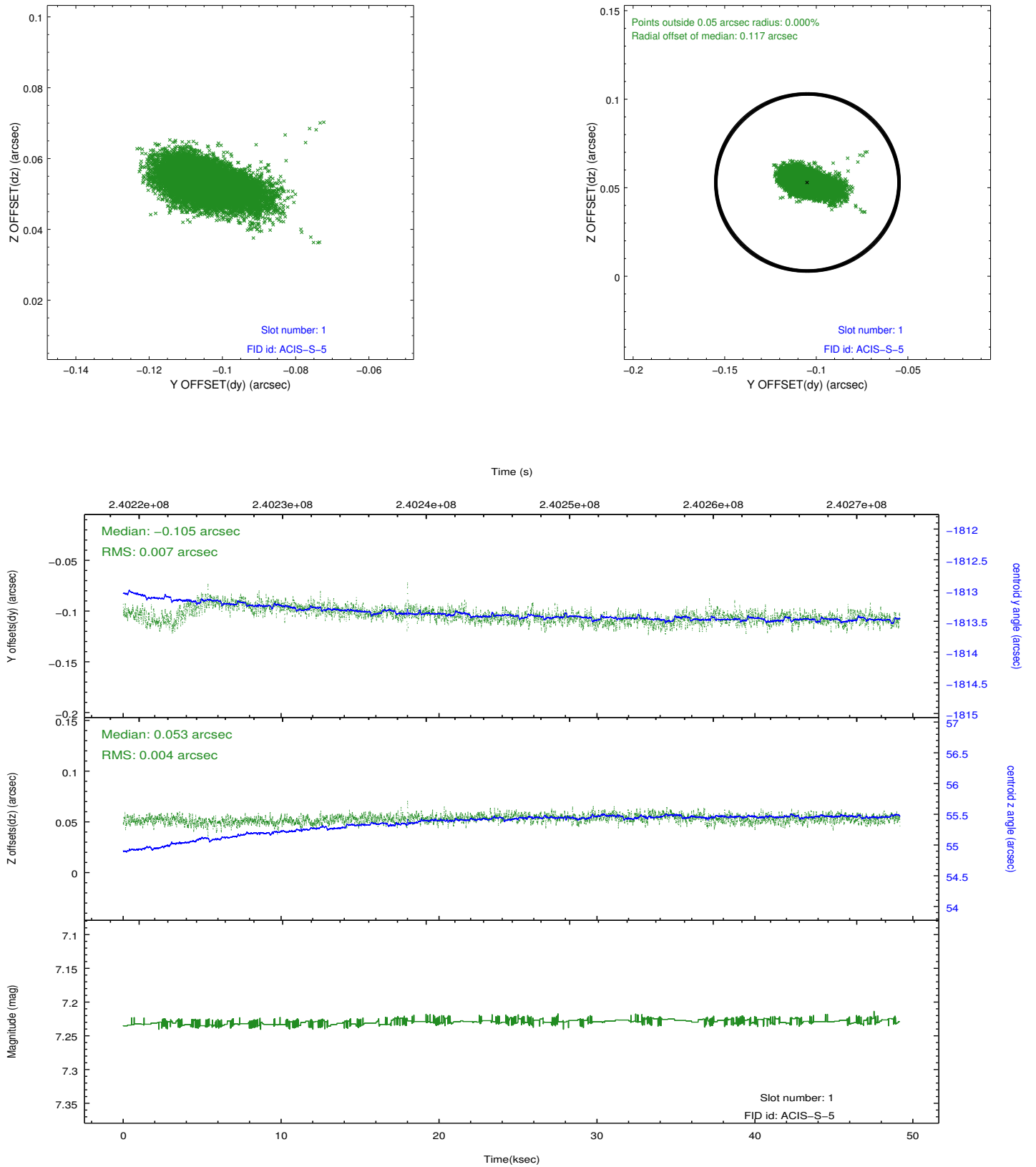


## 2.5 FID Slots

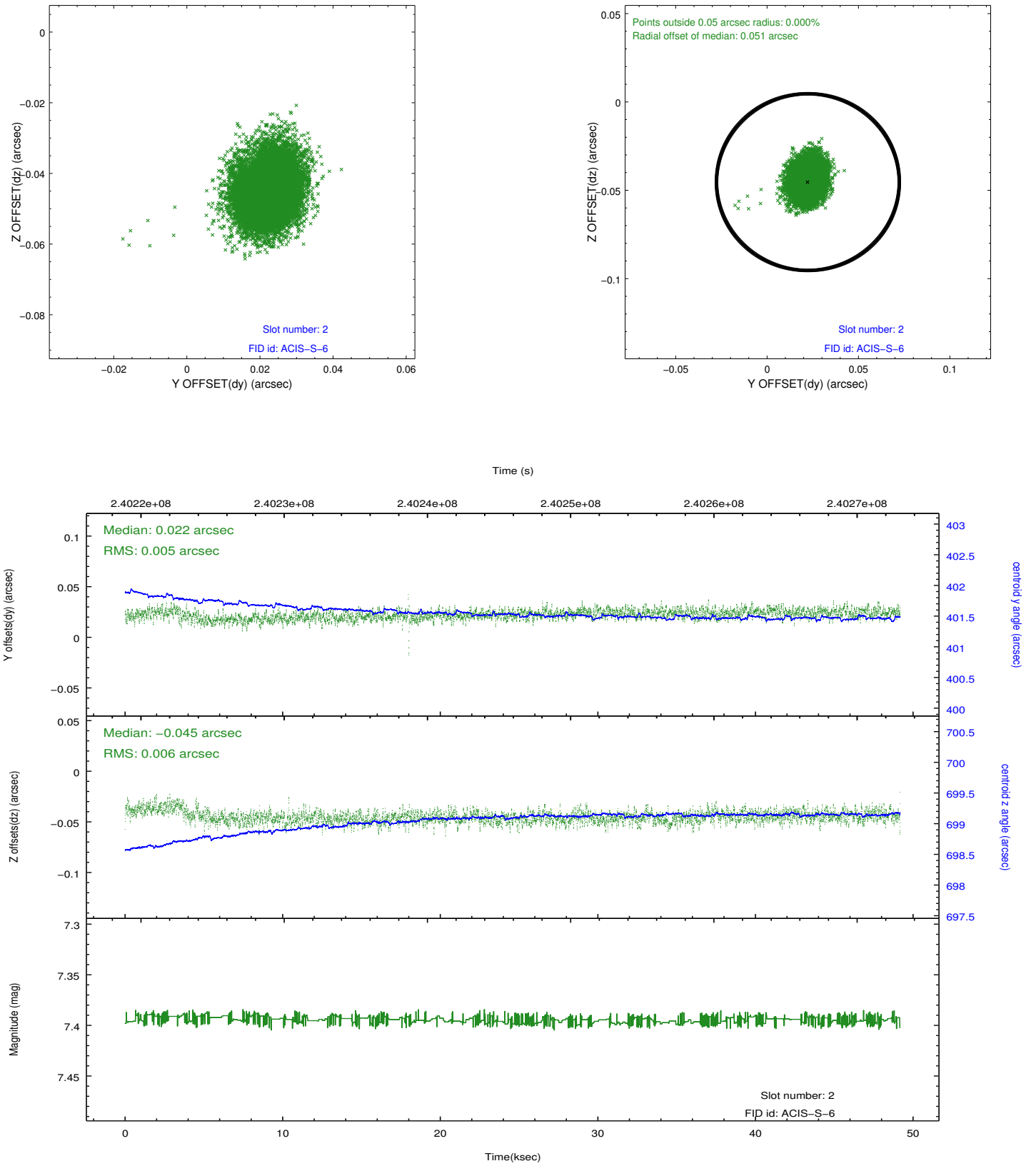
### 2.5.1 Slot 0



## 2.5.2 Slot 1

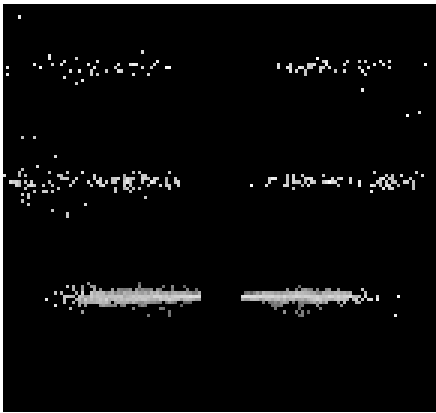


### 2.5.3 Slot 2

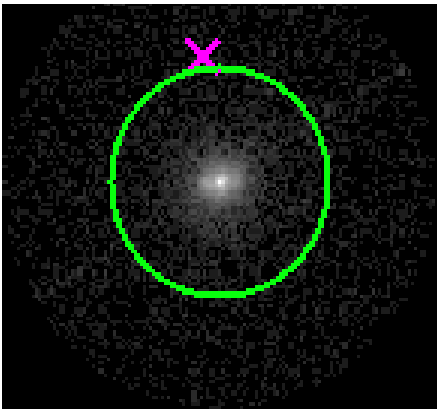


# 3 Gratings

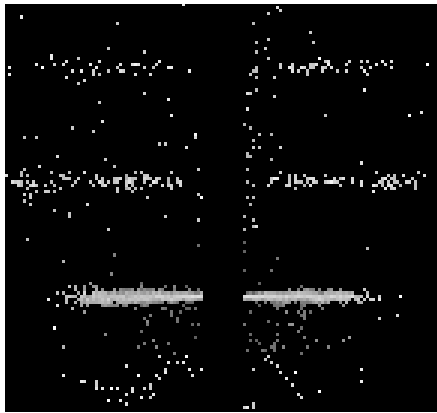
## 3.1 HEG Arm



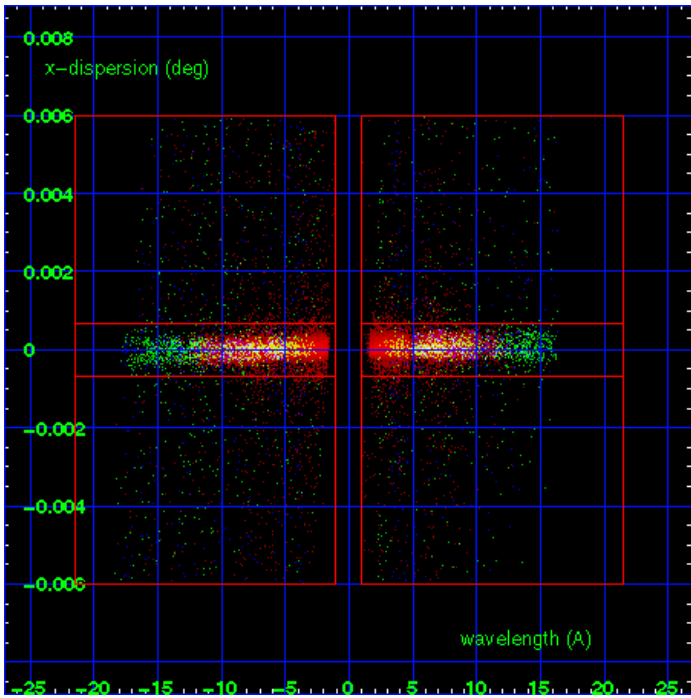
HEG Order Sort 123



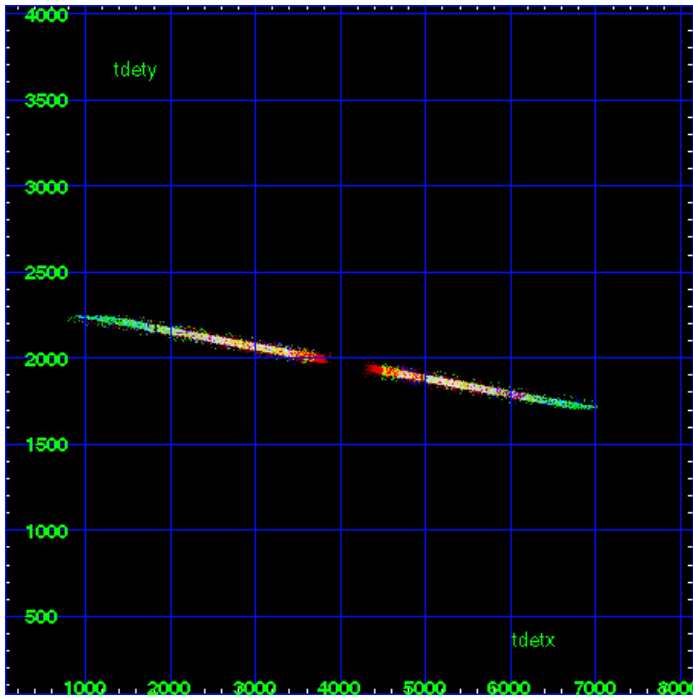
HEG Zero Order



HEG Order Sort ALL

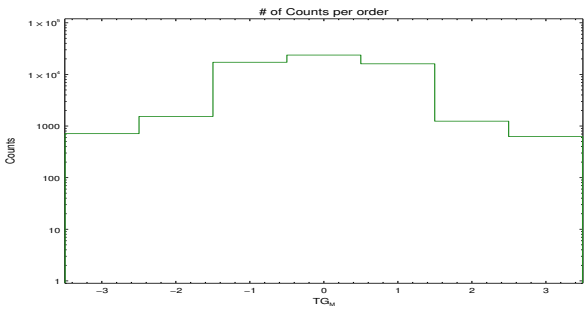


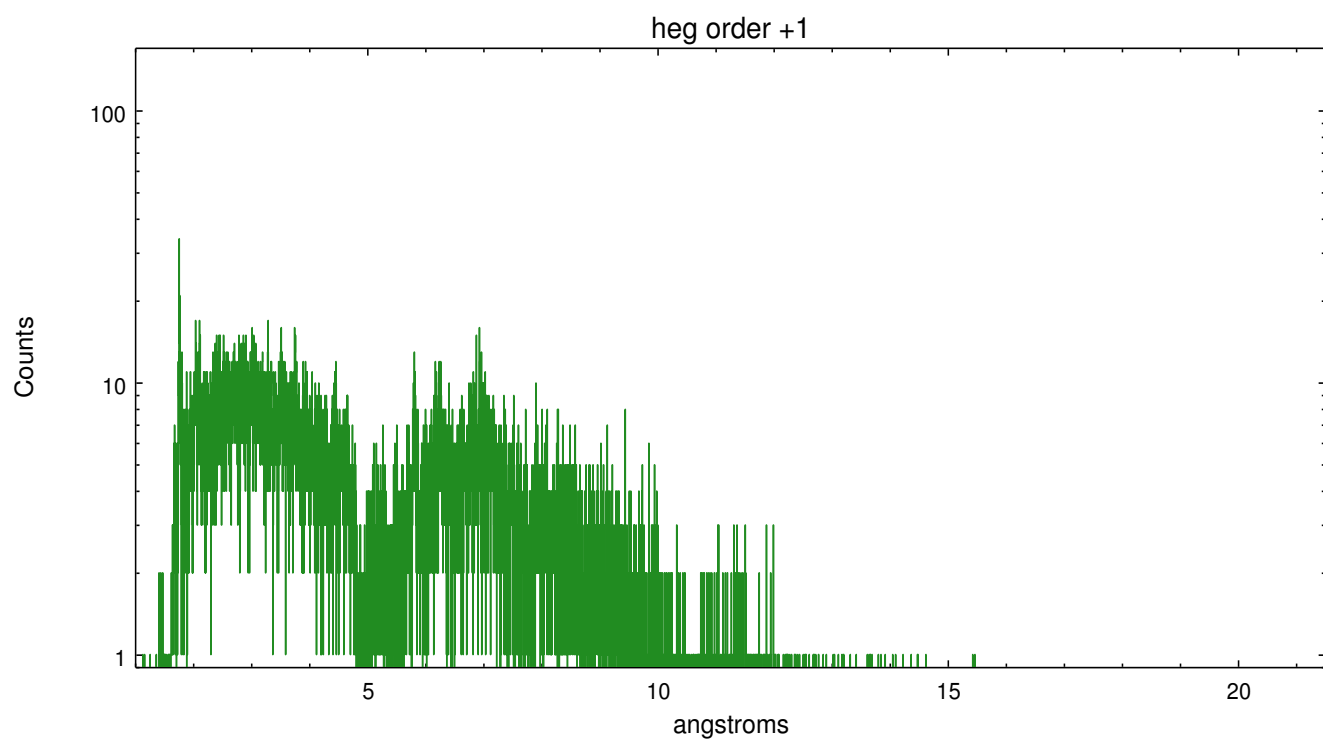
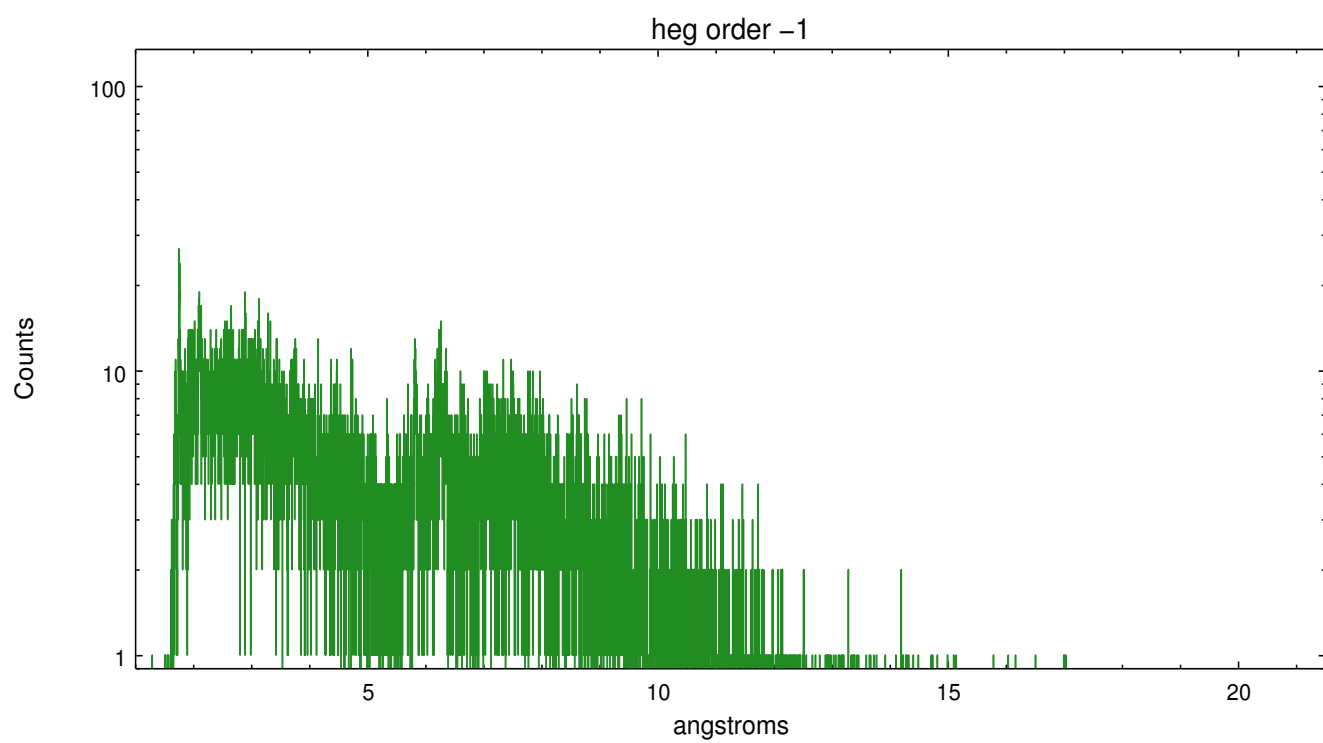
Spot Image HEG



Full Detector HEG

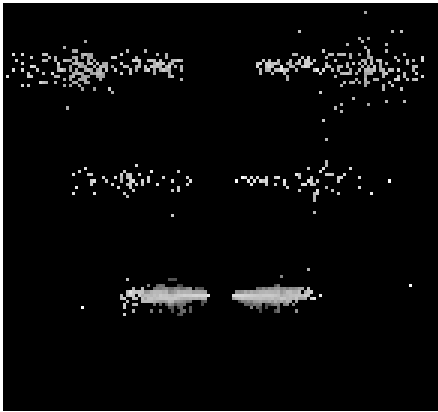
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	714	1540	17303	23884	16169	1245	626



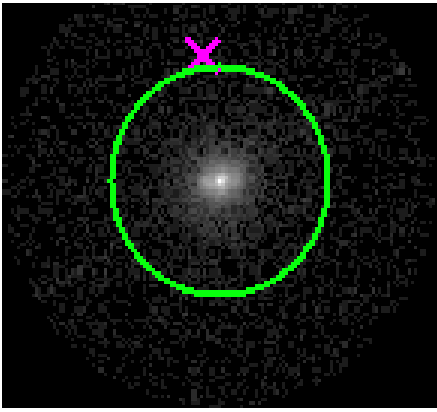




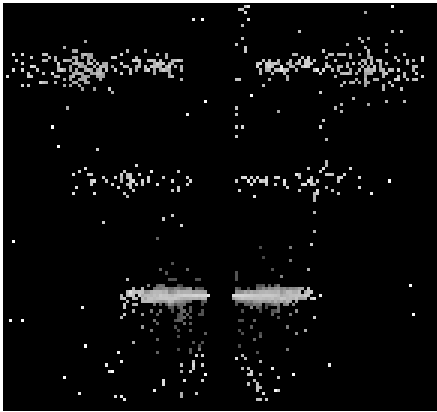
3.2 MEG Arm



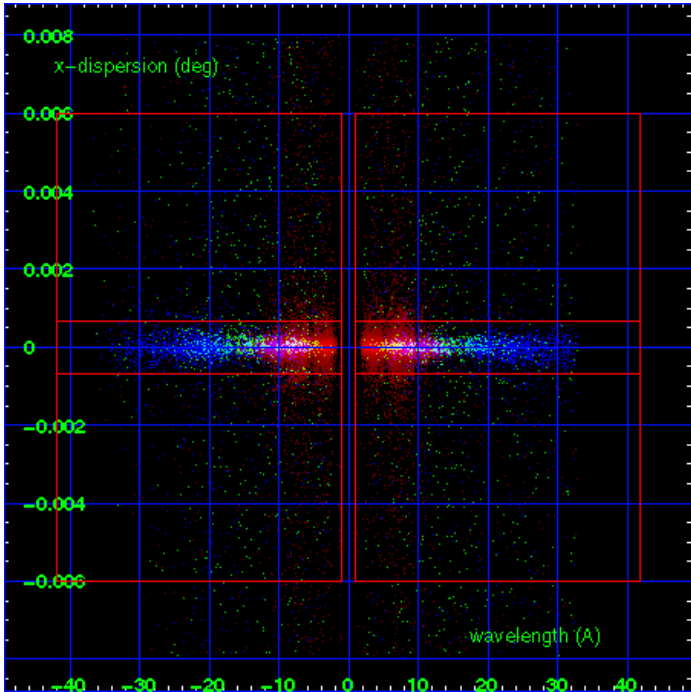
MEG Order Sort 123



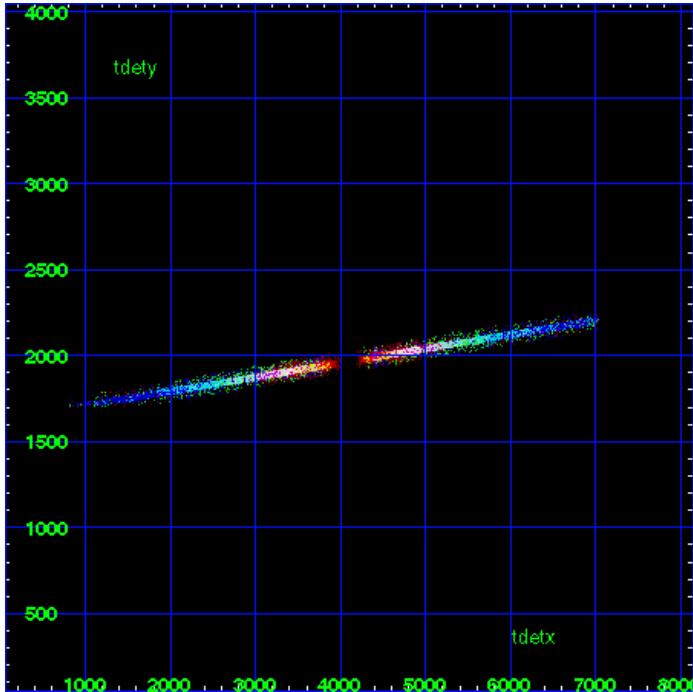
MEG Zero Order



MEG Order Sort ALL

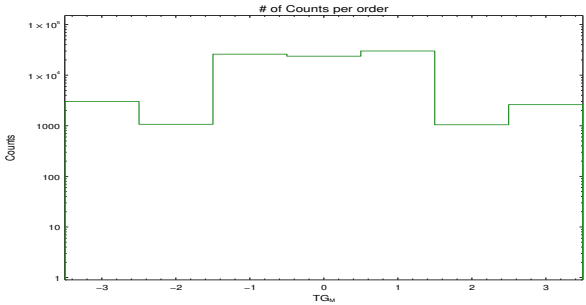


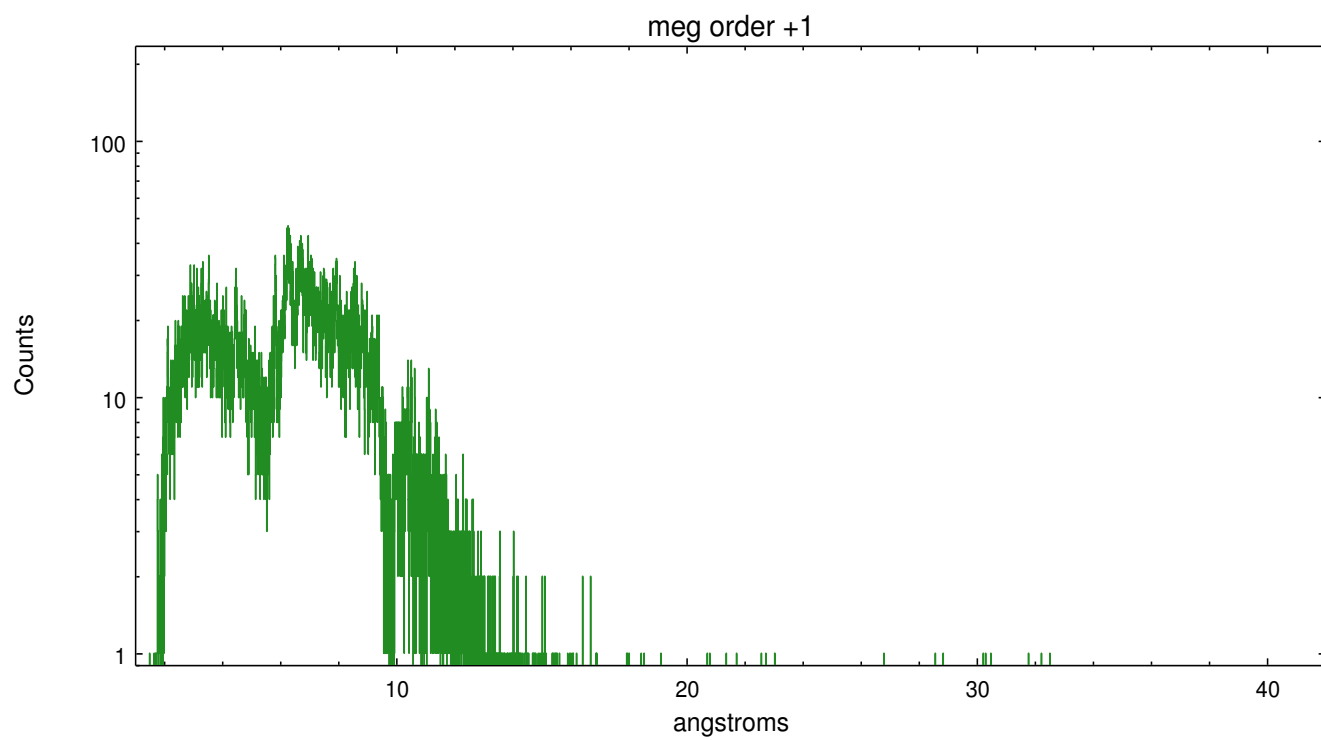
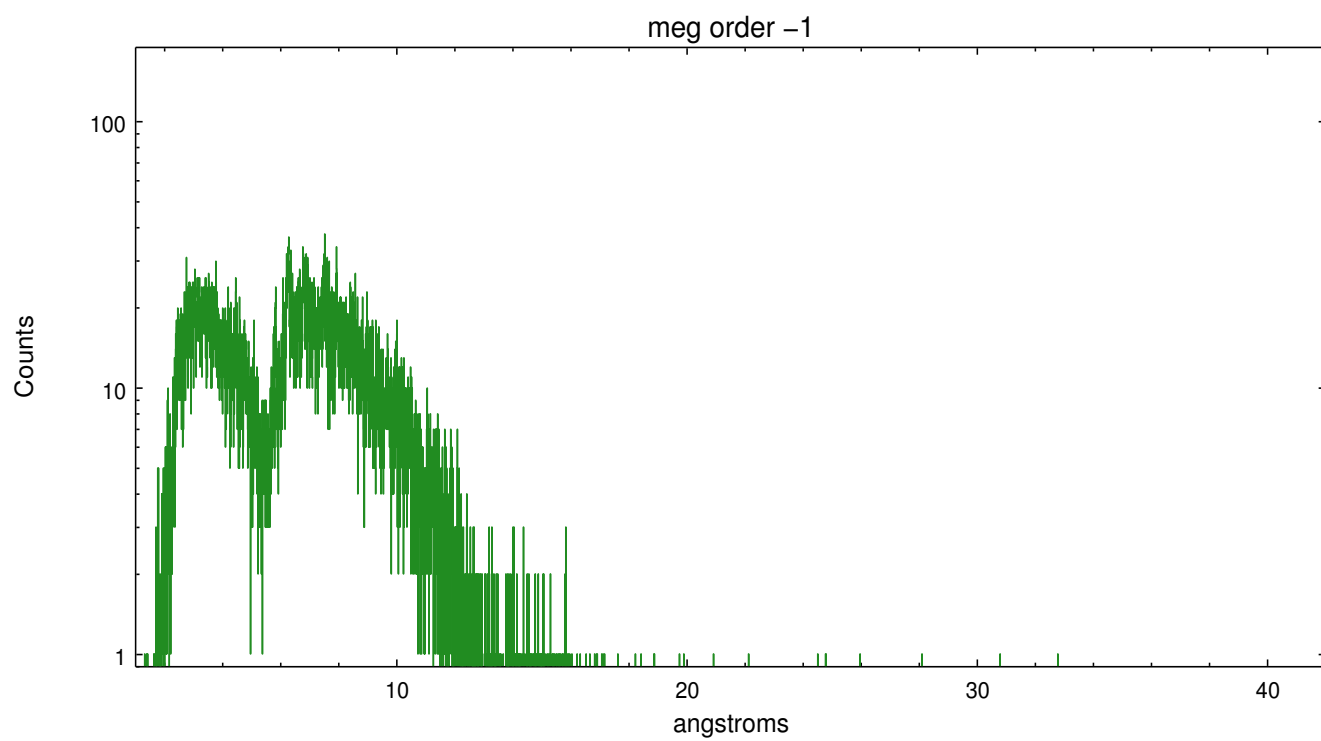
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3020	1071	26196	23884	30268	1049	2625





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	49.1778

## 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=4100.25, y=4062.93) 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.