

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1943 - L2 Version 3  
Chandra X-Ray Center

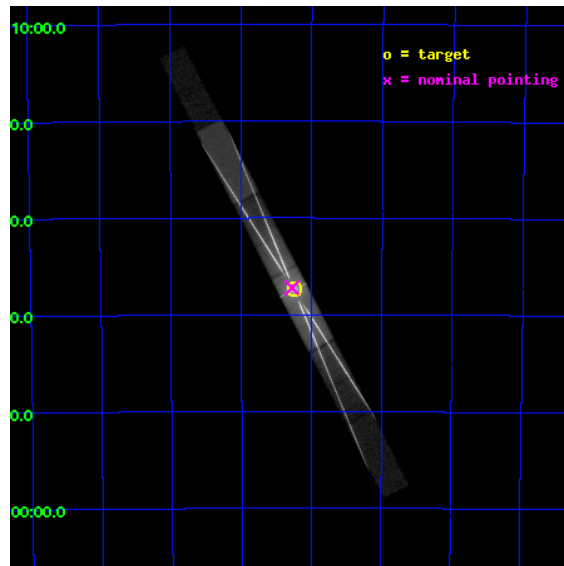
L2 Processing Date : Sep 14 2012

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# 1 Front

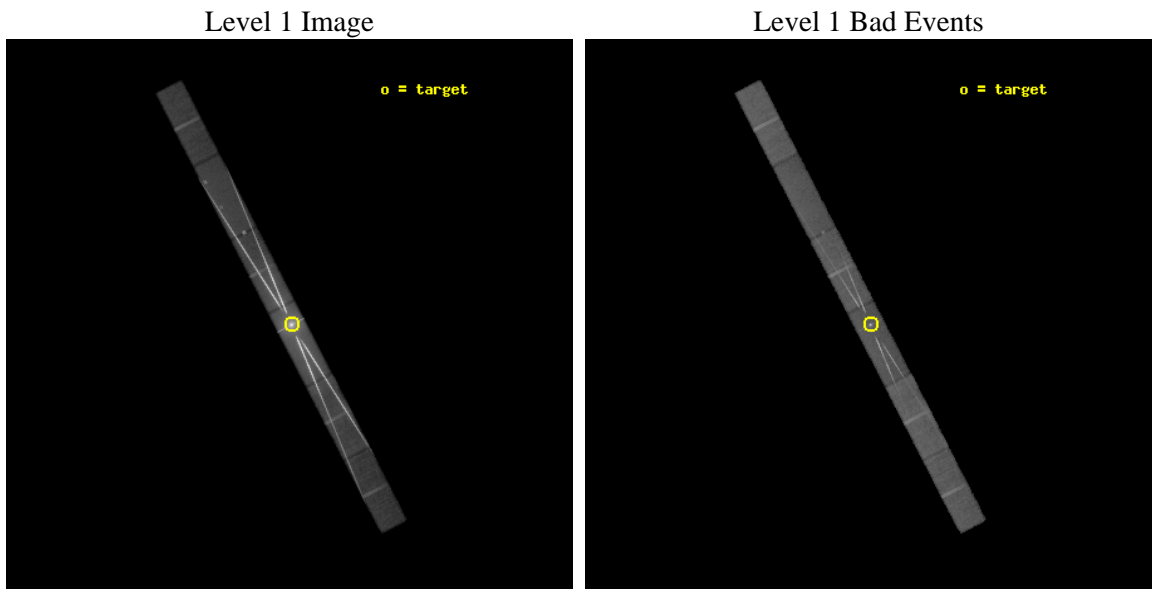
seq_num	400156	Sequence number
obs_id	1943	Observation id
title	THE WIND AND ACCRETION DISK IN CEN X-3/V779 CEN	Proposal title
observer	Dr. Patrick Wojdowski	Principal investigator
object	CEN X-3	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	170.313333	Observer's specified target RA [deg]
dec_targ	-60.623333	Observer's specified target Dec [deg]
ra_nom	170.32044778642	Nominal RA [deg]
dec_nom	-60.620421667975	Nominal Dec [deg]
roll_nom	62.562583601149	Nominal Roll [deg]
revision	3	Processing version of data
ontime	46776.59989278	Sum of GTIs [s]
livetime	45345.090273679	Livetime [s]
ontime4	46776.59989278	Sum of GTIs [s]
ontime5	46776.59989278	Sum of GTIs [s]
ontime6	46776.59989278	Sum of GTIs [s]
ontime7	46776.59989278	Sum of GTIs [s]
ontime8	46776.59989278	Sum of GTIs [s]
ontime9	46776.59989278	Sum of GTIs [s]
l2events	3419389	Number of level 2 events



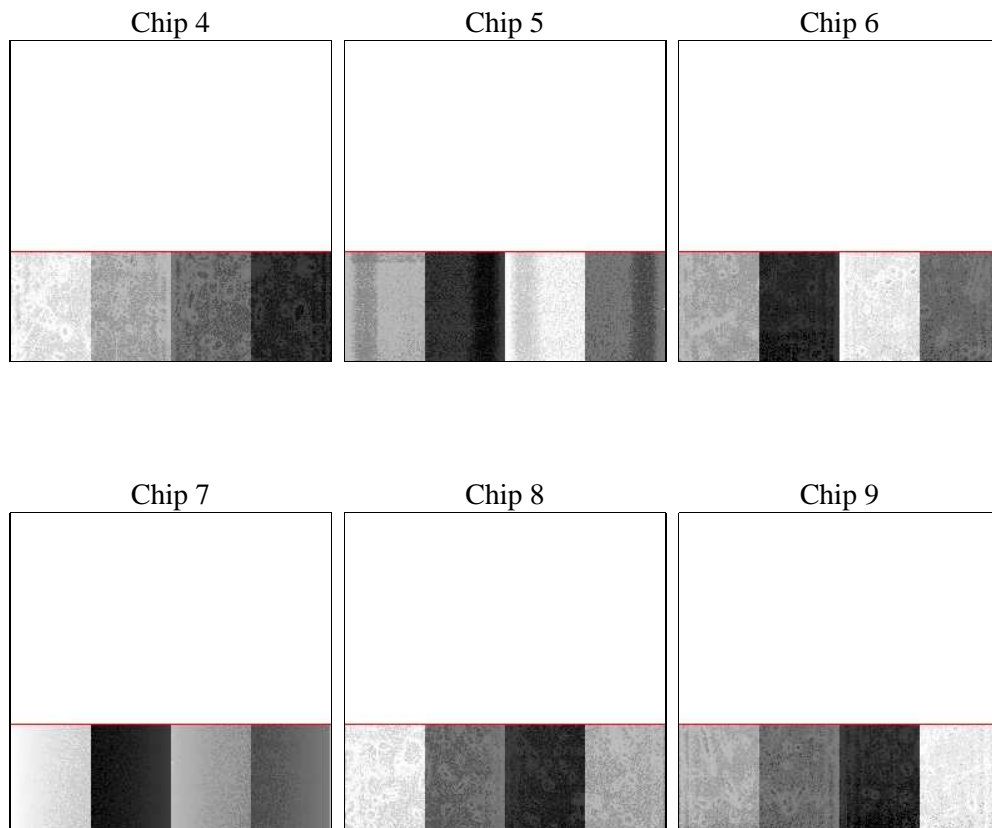
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	46618.800000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	46776.59989278	Sum of GTIs [s]
caldbver	4.5.1.1	&#160	ontime4	46776.59989278	Sum of GTIs [s]
date	2012-09-05T06:11:52	Date and time of file creation	ontime5	46776.59989278	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	46776.59989278	Sum of GTIs [s]
			ontime7	46776.59989278	Sum of GTIs [s]
			ontime8	46776.59989278	Sum of GTIs [s]
			ontime9	46776.59989278	Sum of GTIs [s]
			l1events	4267927	Number of level 1 events

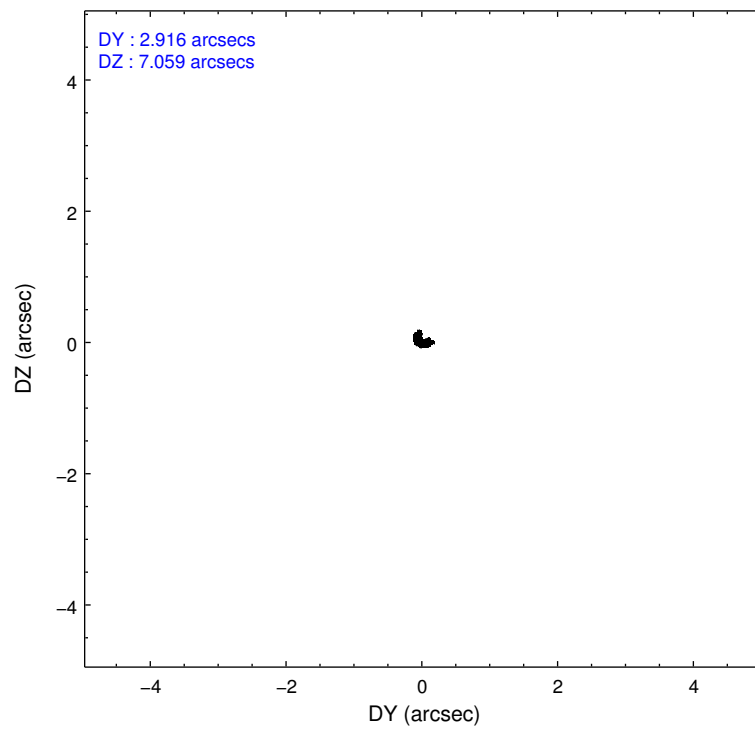
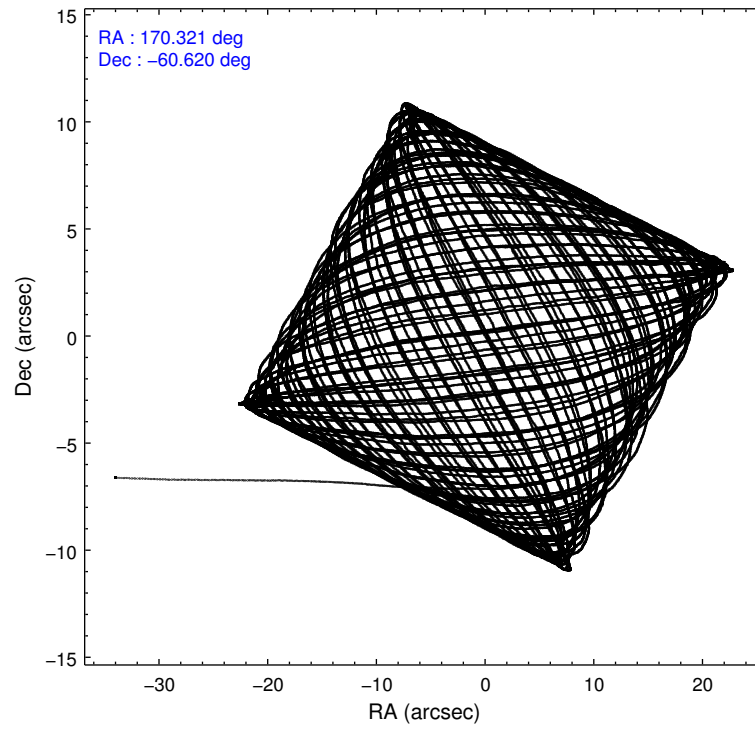
### 2.1.4 Events

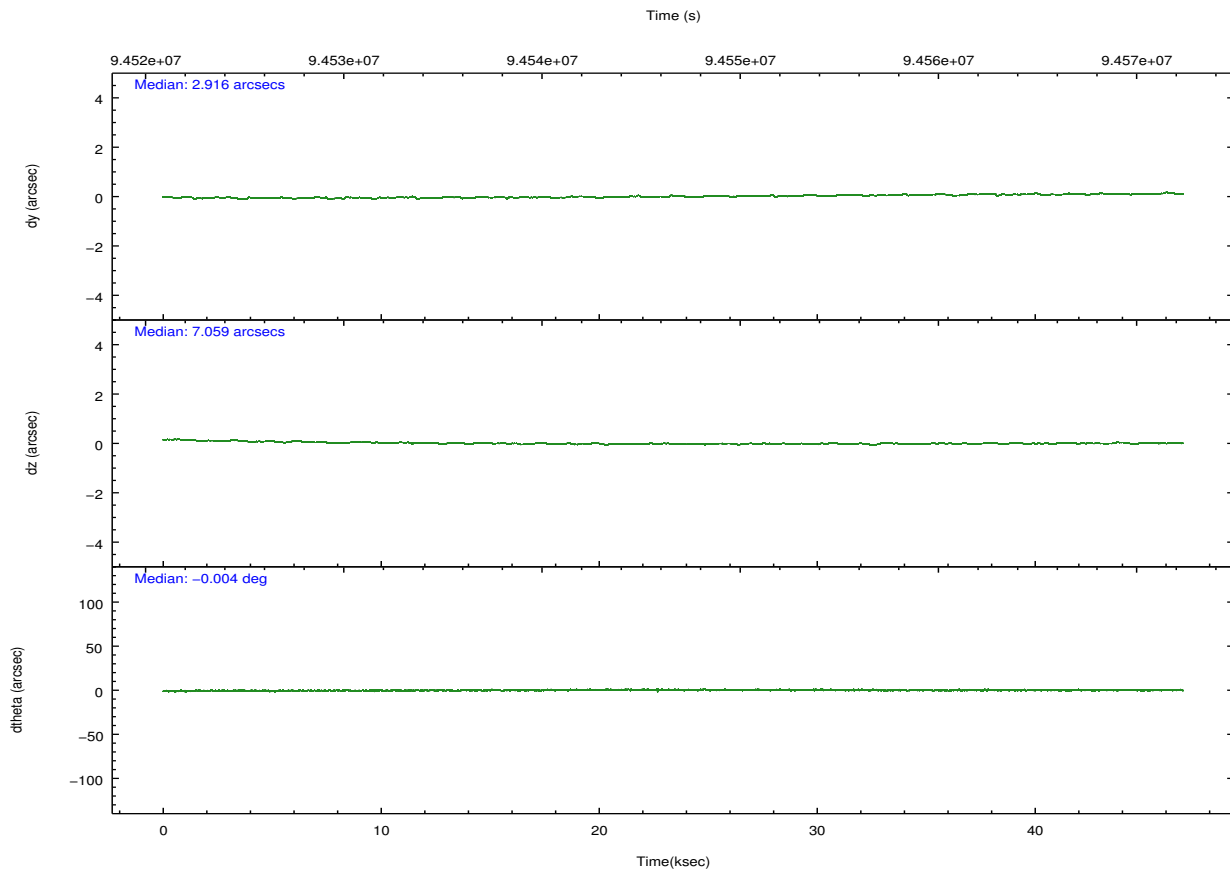
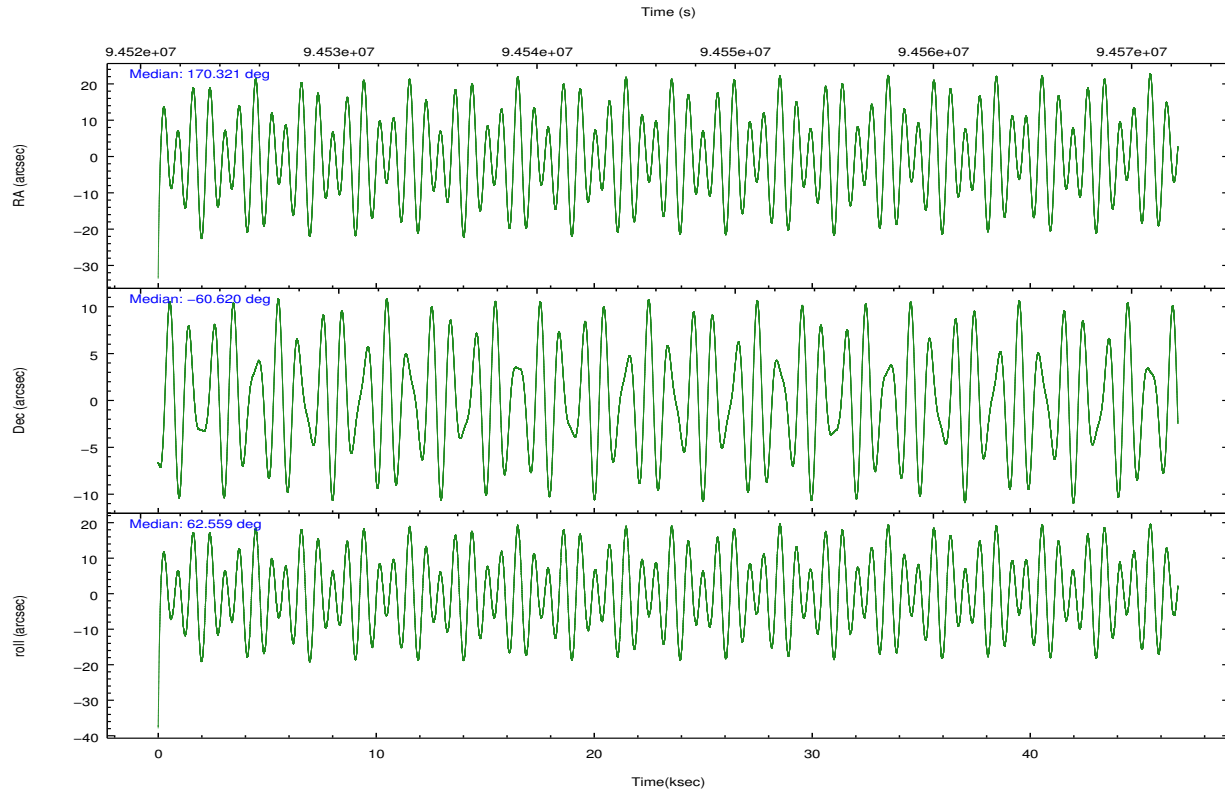
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	126382	267758	1346417	1913953	487864	125553	grade 0 events	6725	55470	856012	345009	273437	21060
rejected events	111177	75754	139188	162083	121959	91699		5%	20%	63%	18%	56%	16%
rejected %	87%	28%	10%	8%	24%	73%	grade 1 events	37	909	12506	8128	1490	77
								0%	0%	0%	0%	0%	0%
							grade 2 events	3035	51773	161380	416430	43375	4998
								2%	19%	11%	21%	8%	3%
							grade 3 events	1734	16613	57984	187701	16194	2595
								1%	6%	4%	9%	3%	2%
							grade 4 events	1634	16367	57424	186582	15815	2507
								1%	6%	4%	9%	3%	1%
							grade 5 events	3346	12834	15012	45124	5869	3794
								2%	4%	1%	2%	1%	3%
							grade 6 events	2214	52810	78648	622409	18566	2938
								1%	19%	5%	32%	3%	2%
							grade 7 events	107657	60982	107451	102570	113118	87584
								85%	22%	7%	5%	23%	69%

## 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	170.323388	170.3204477864242	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-60.647721	-60.62042166797466	Subarray start row	1	1
[deg] Pointing Roll	62.408522	62.56258360114877	Subarray row count	350	350
[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	1.3
[mm] SIM translation stage pos	-182.042523	-182.036427832944			
[mm] SIM translation stage offset	-8.09	-8.096094750063799			
Phase constraints	Y	Y			
[d] Phase period	2.087029	2.087029			
[d] Phase epoch (MJD)	51930.150440	51930.150440			
Phase start	0.360000	0.360000			
Phase end	0.640000	0.640000			
Phase start error	0.070000	0.070000			
Phase end error	0.070000	0.070000			
[s] Observation start time (MET)	94523380.184000	94522410.33218101			
Observation start date	2000-12-30T00:28:36	2000-12-30T00:13:30			
[s] Observation end time (MET)	94569999.184000	94570313.709016			
Observation end date	2000-12-30T13:25:35	2000-12-30T13:31:53			
Read mode	TIMED	TIMED			

## 2.3 Aspect



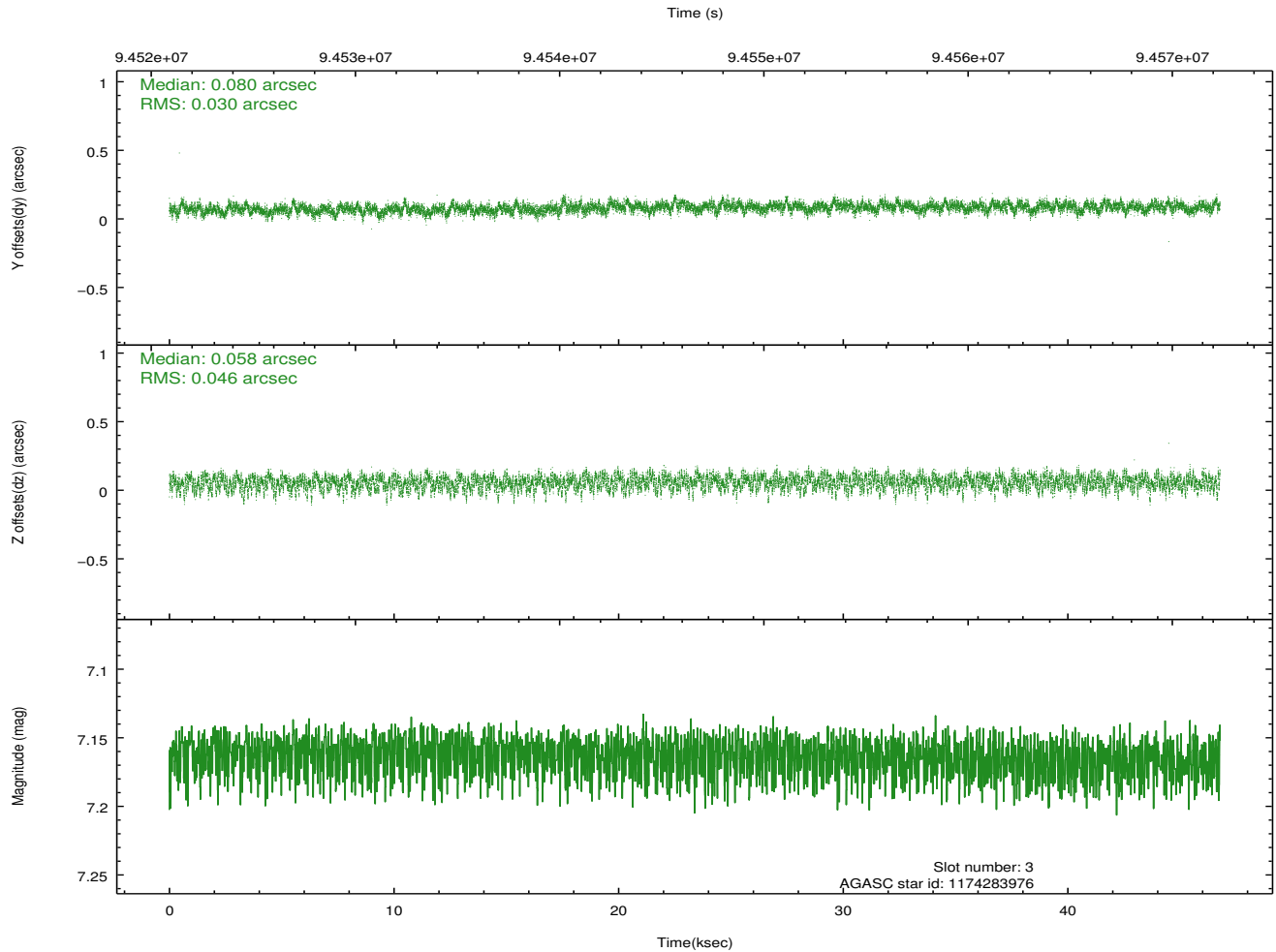
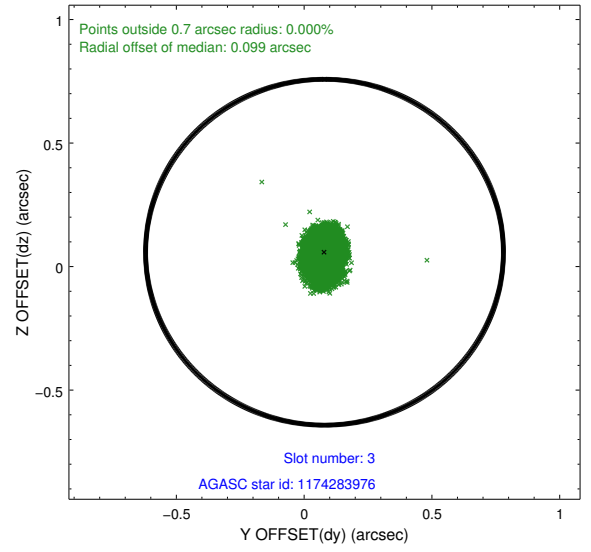
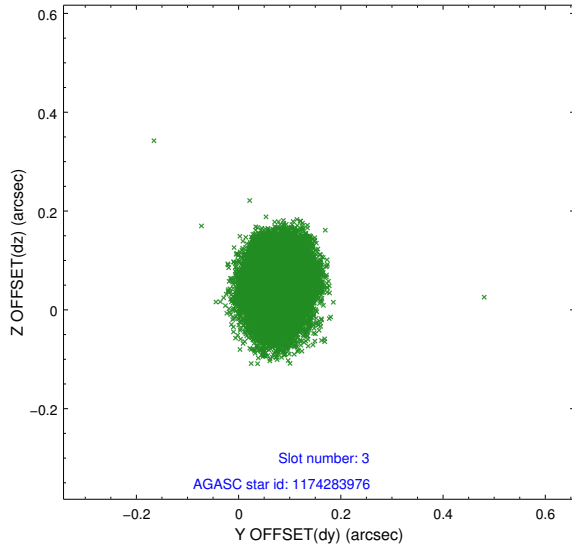


### Slot Statistics

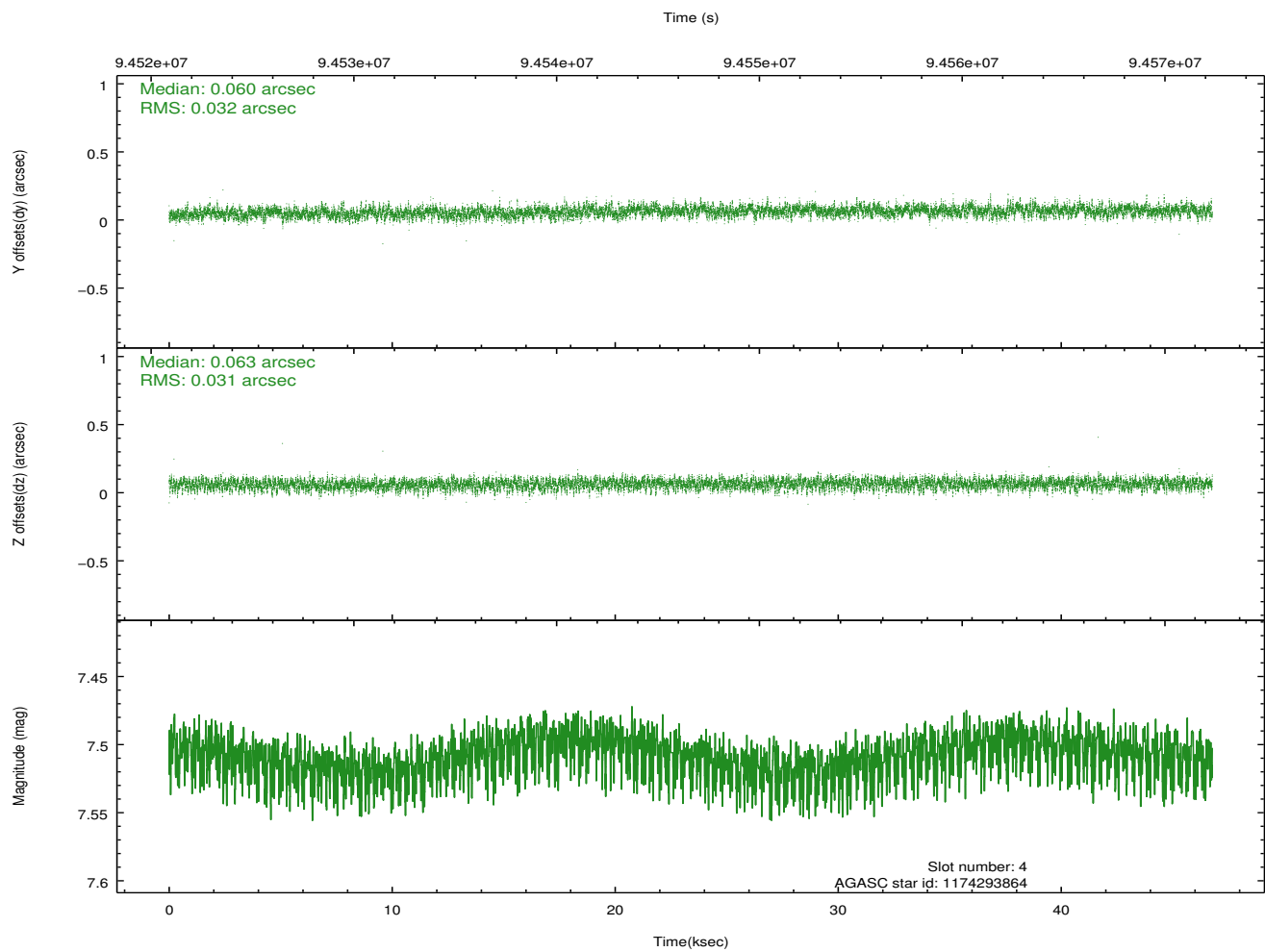
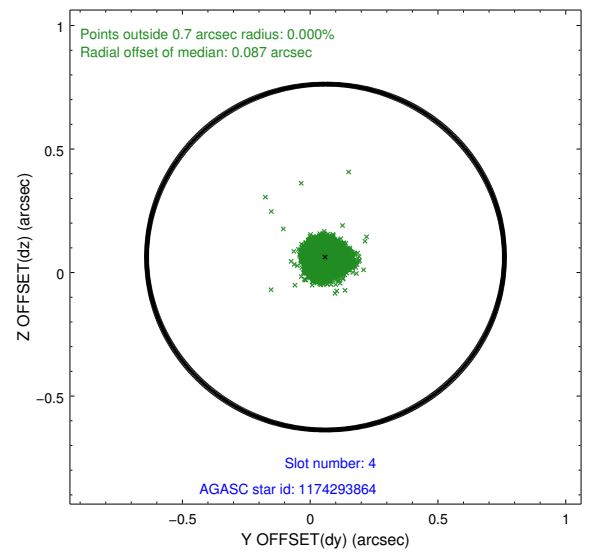
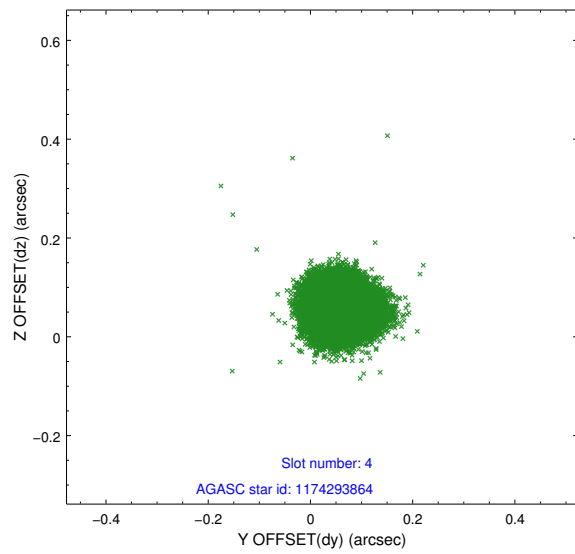
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	11410	-0.023	-0.073	0.012	0.021	0.000000	0.000000	-755.01	-1895.09
1	FID	ACIS-S-4	7.18	11410	0.004	0.030	0.021	0.035	0.000000	0.000000	2158.31	13.48
2	FID	ACIS-S-5	7.23	11410	-0.015	0.051	0.012	0.022	0.000000	0.000000	-1807.86	7.16
3	GUIDE	1174283976	7.16	22818	0.080	0.058	0.058	0.096	170.390254	-61.226219	-1792.53	-1066.64
4	GUIDE	1174293864	7.51	22818	0.060	0.063	0.048	0.075	170.089015	-61.097044	-1623.66	-387.51
5	GUIDE	1174285376	7.71	22815	-0.114	-0.135	0.061	0.095	169.630551	-60.244001	708.18	1767.80
6	GUIDE	1174291288	8.38	22815	-0.011	0.089	0.050	0.084	171.098092	-60.555450	921.80	-1064.06
7	GUIDE	1174294224	8.27	22815	-0.017	-0.067	0.054	0.086	170.238614	-60.161504	1480.35	945.90

## 2.4 Star Slots

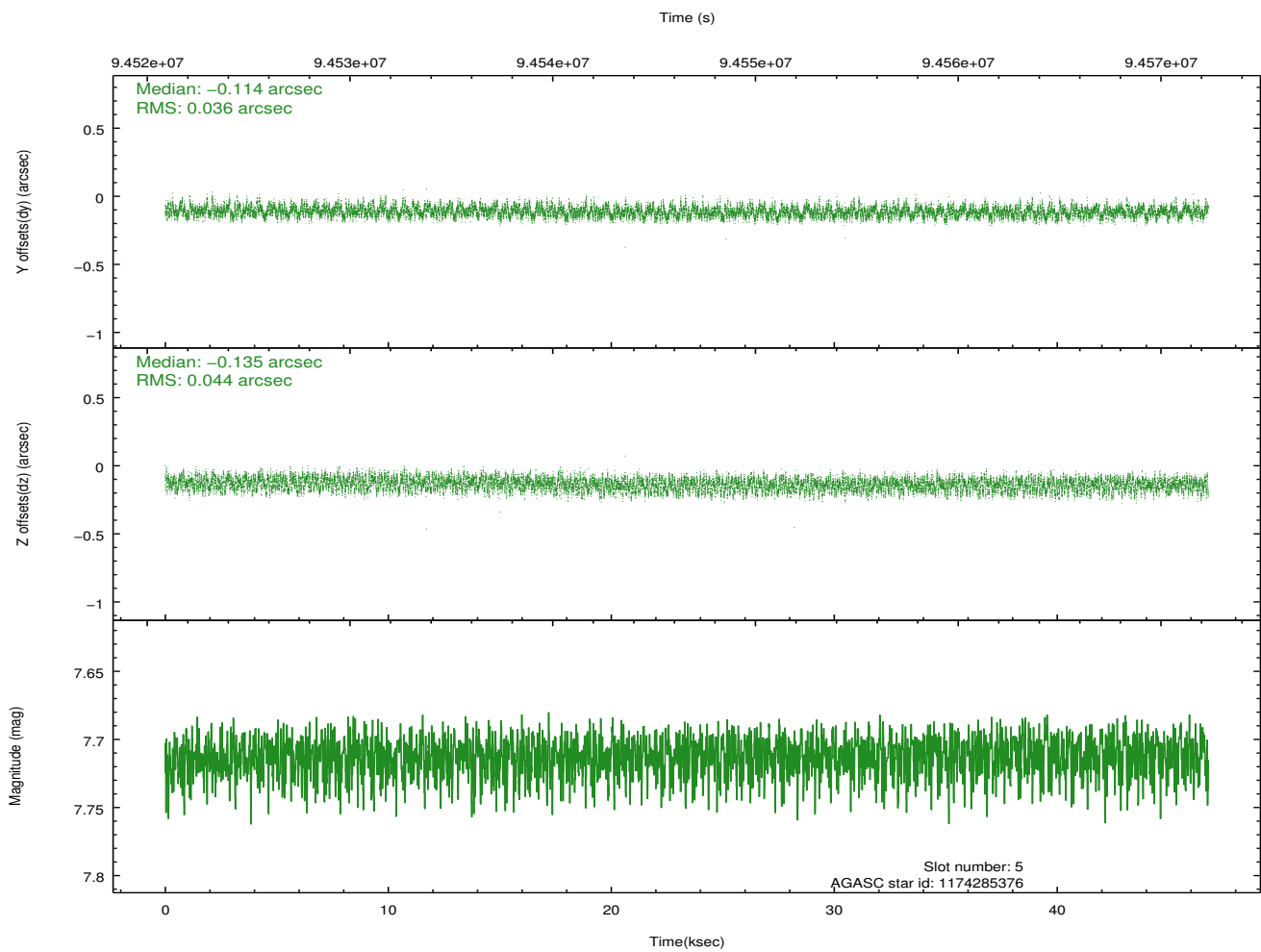
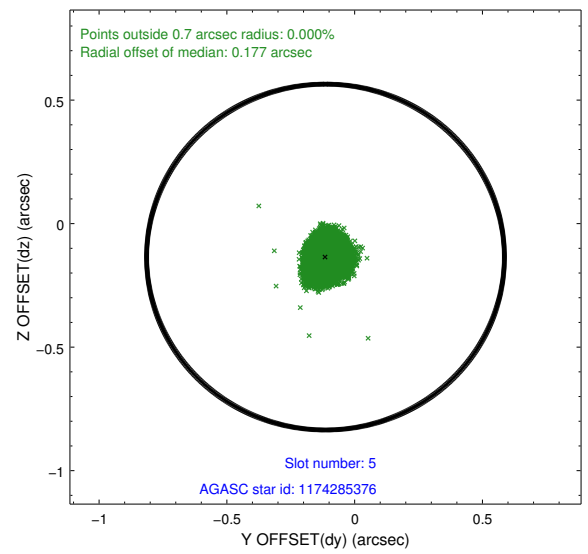
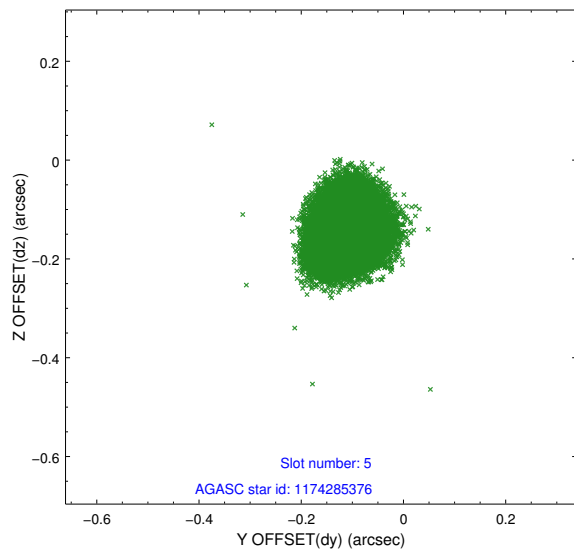
### 2.4.1 Slot 3



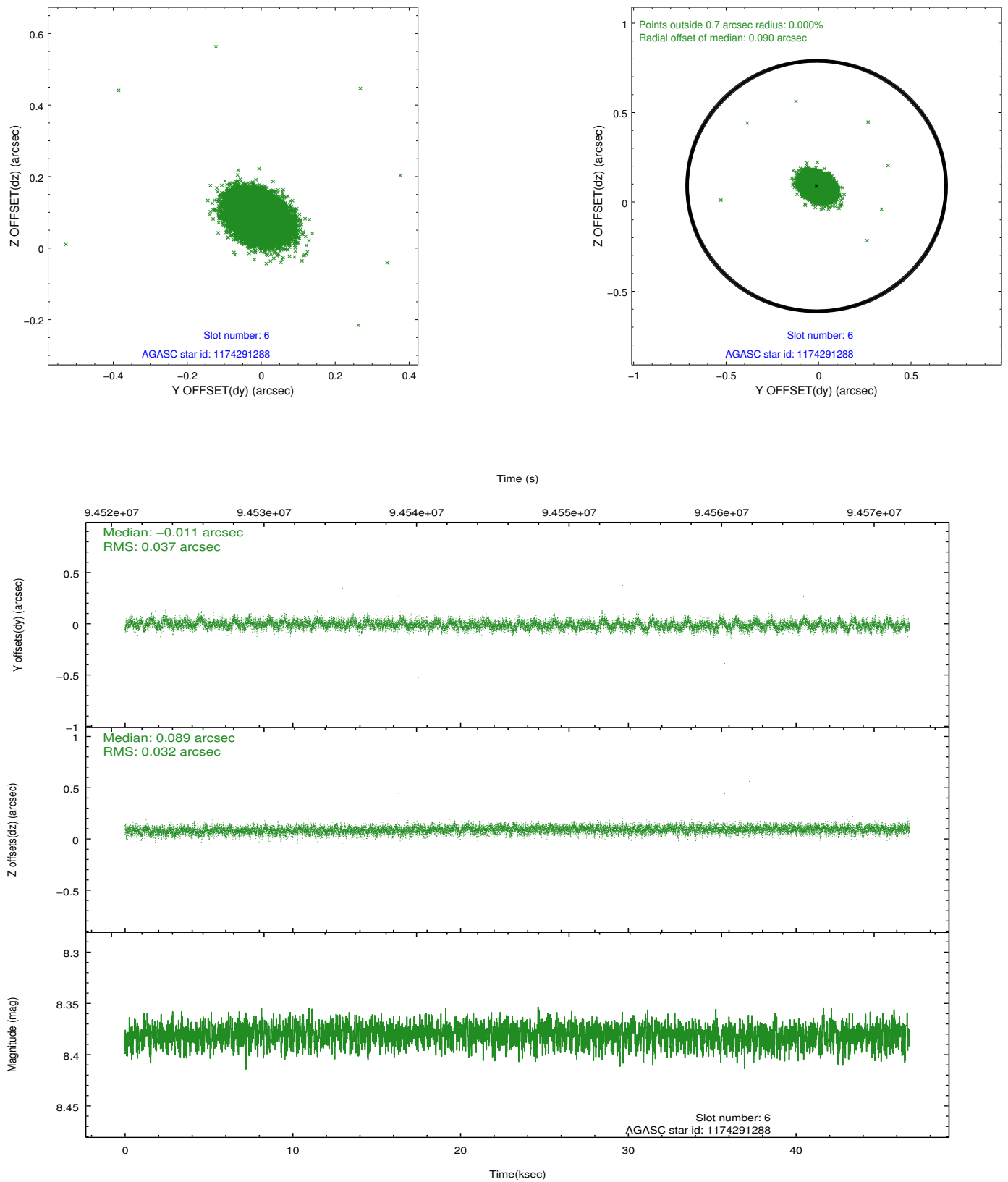
## 2.4.2 Slot 4



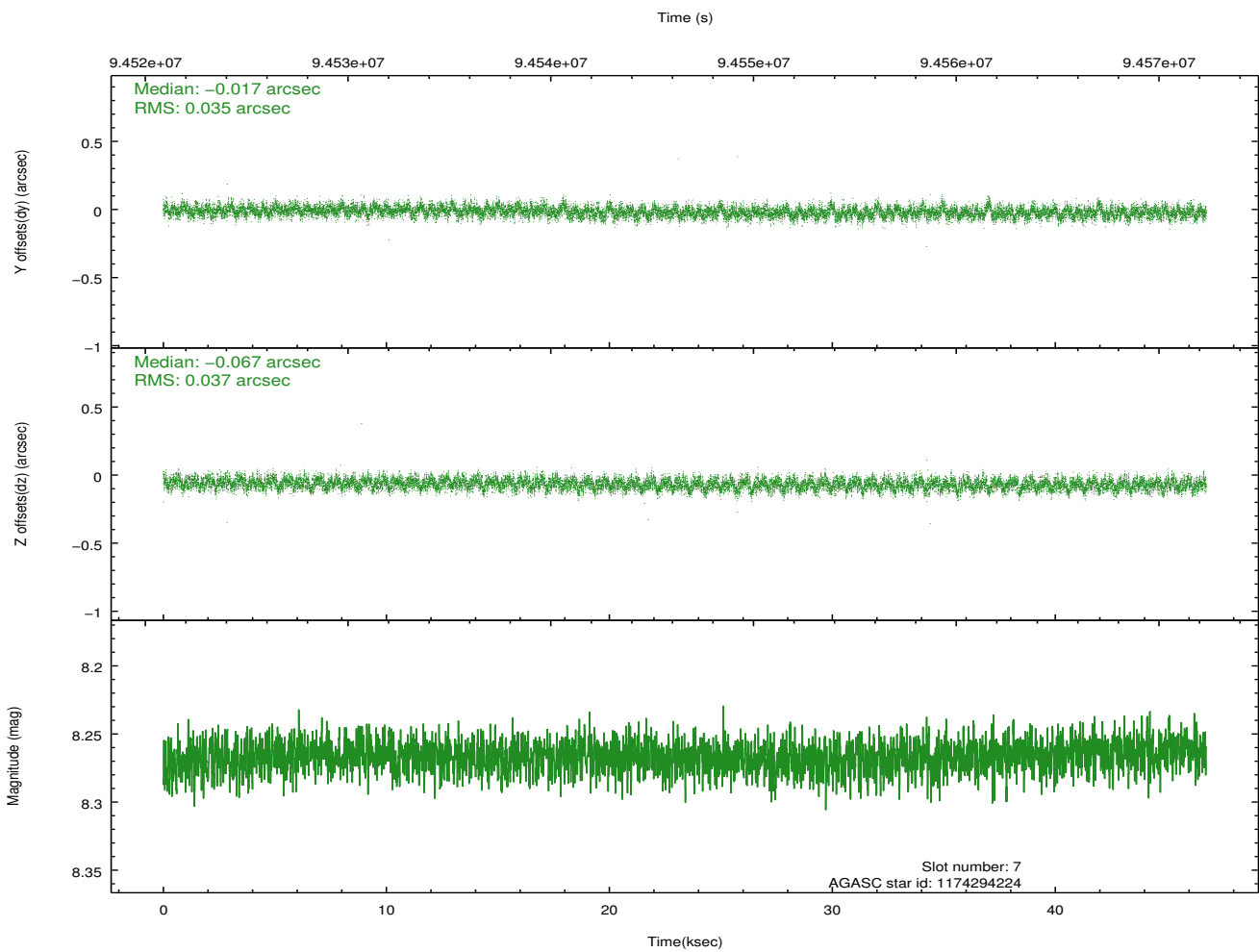
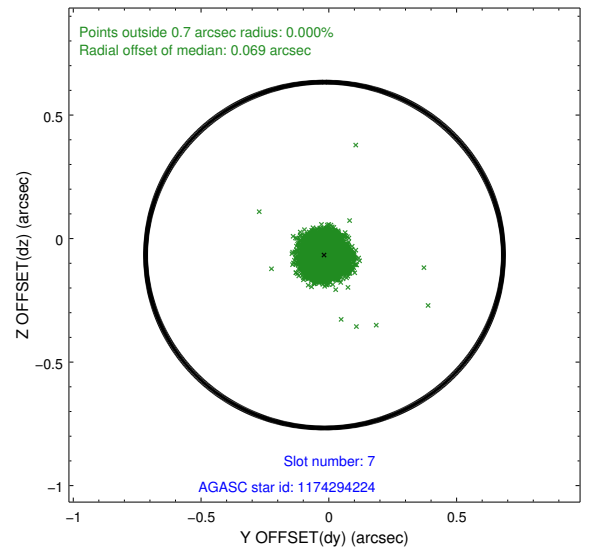
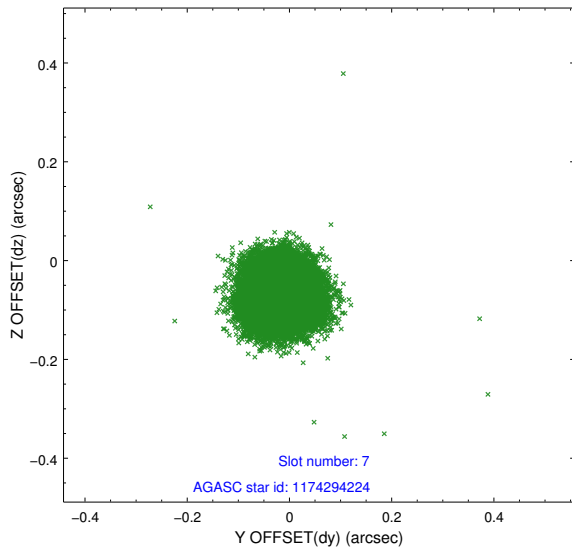
### 2.4.3 Slot 5



## 2.4.4 Slot 6

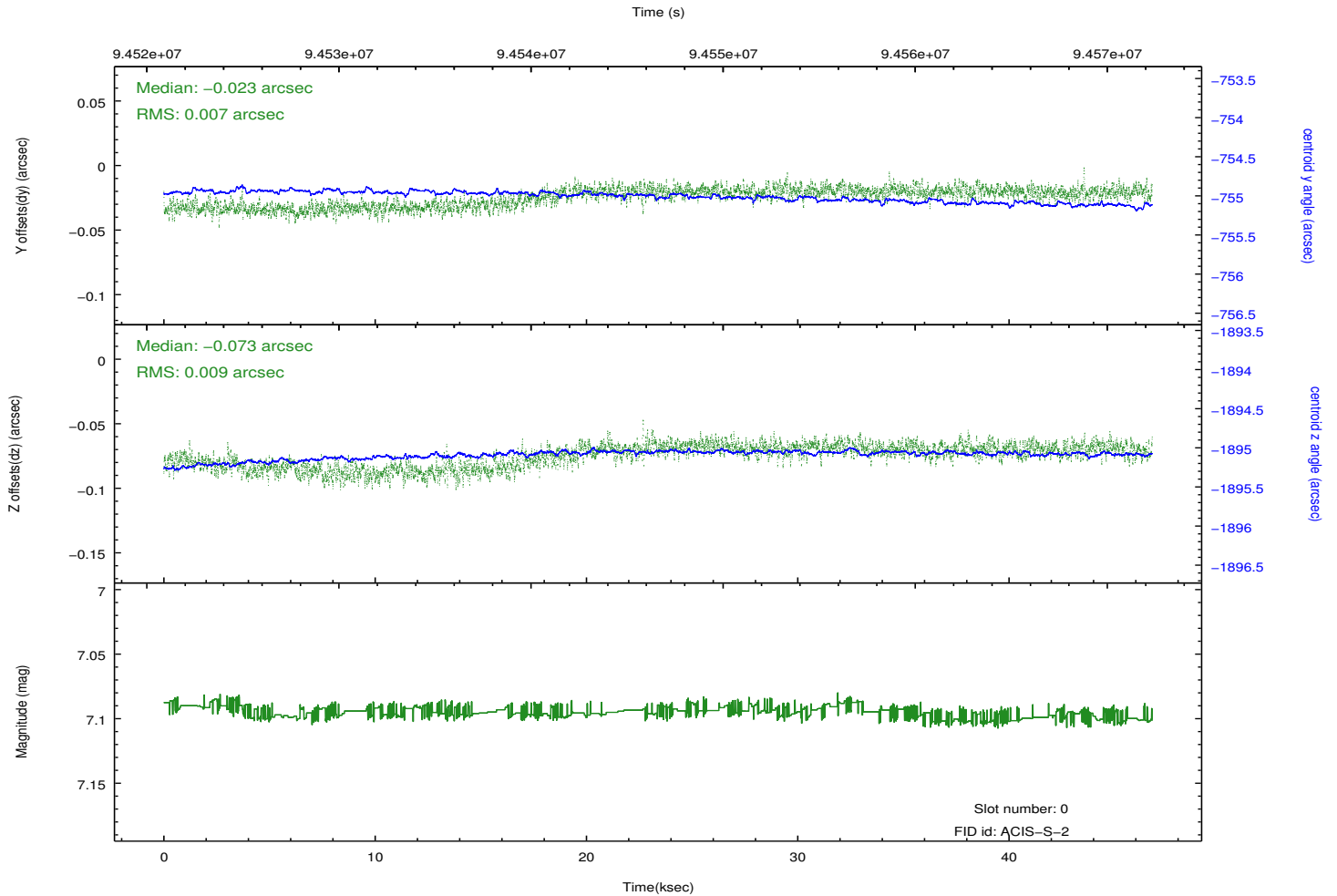
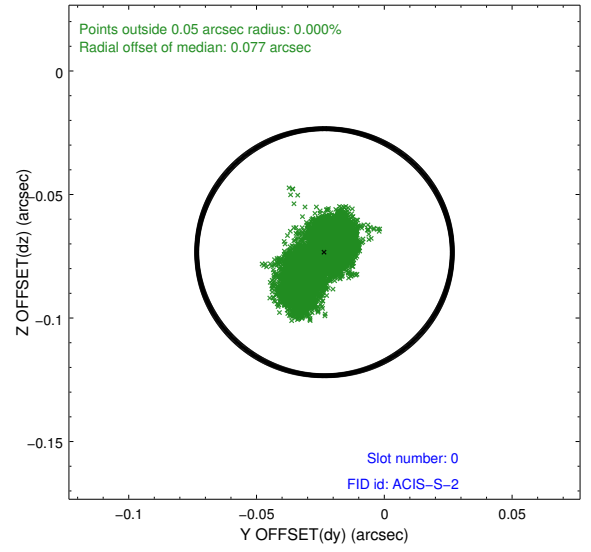
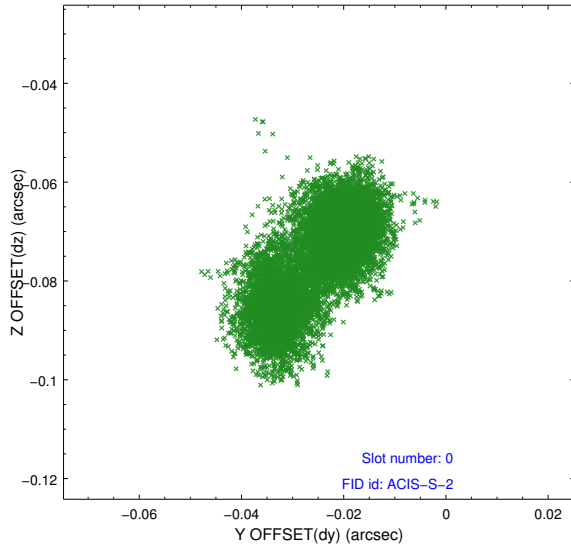


## 2.4.5 Slot 7

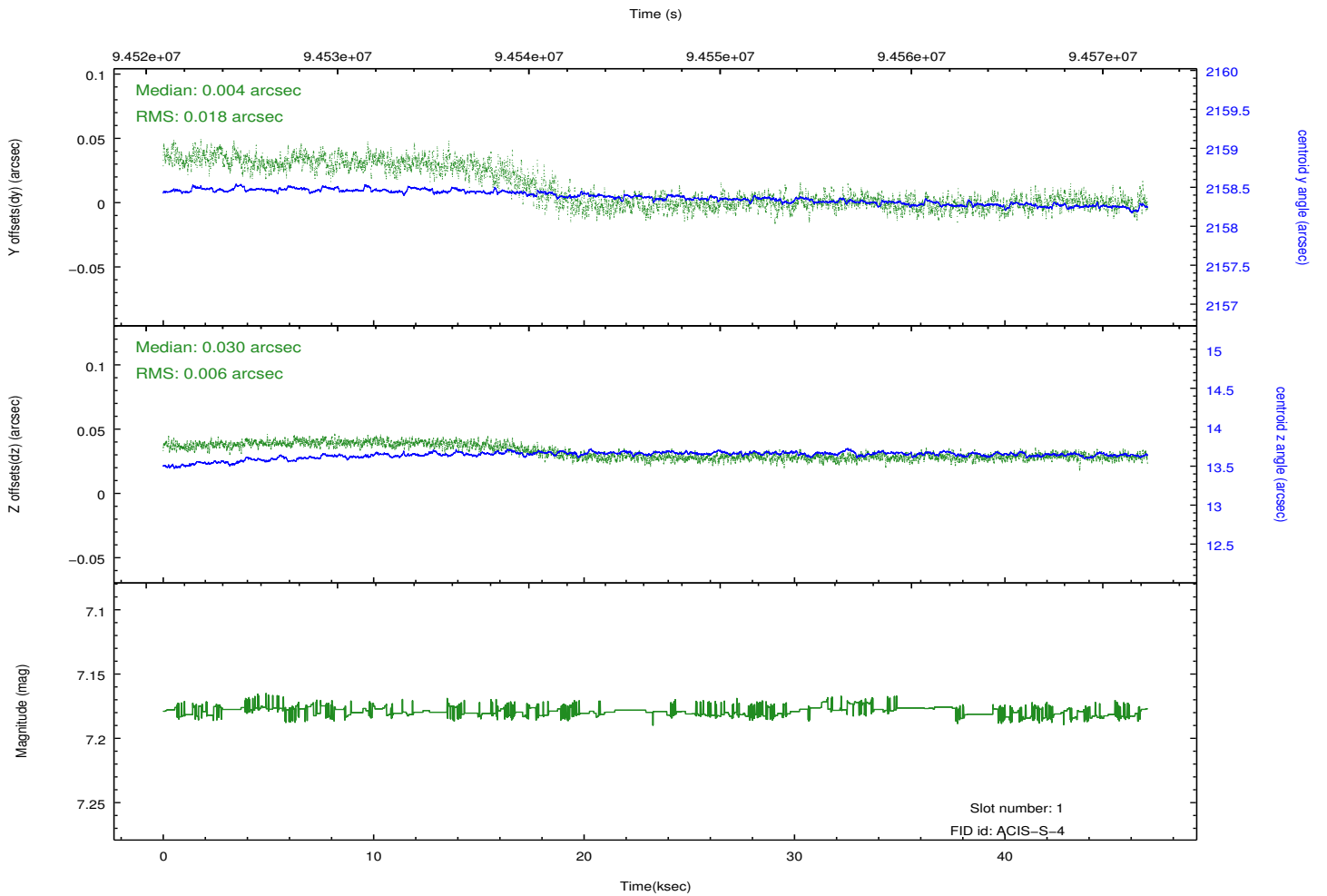
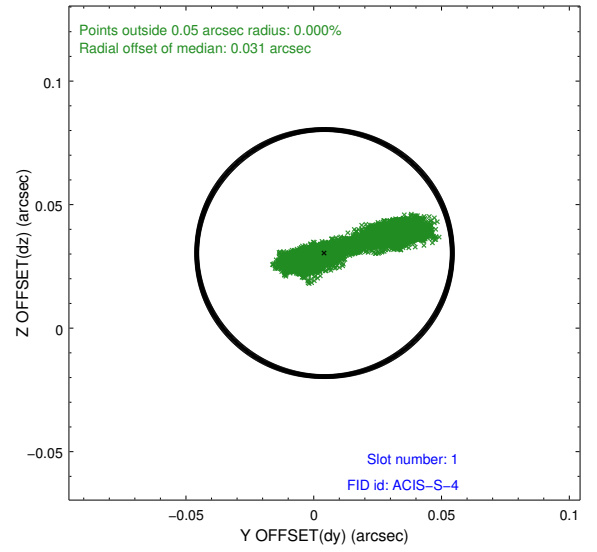
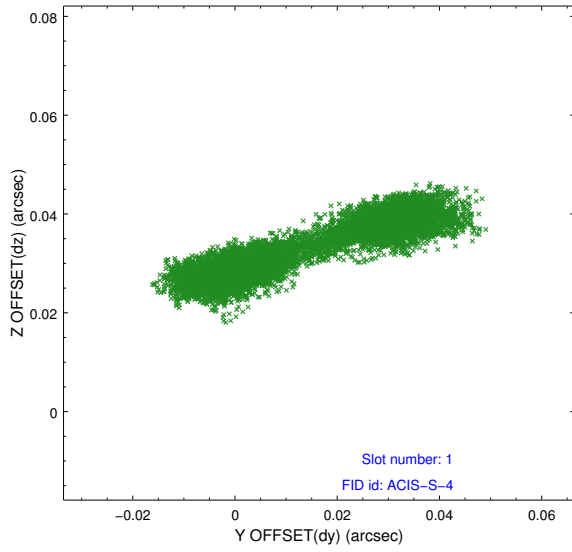


## 2.5 FID Slots

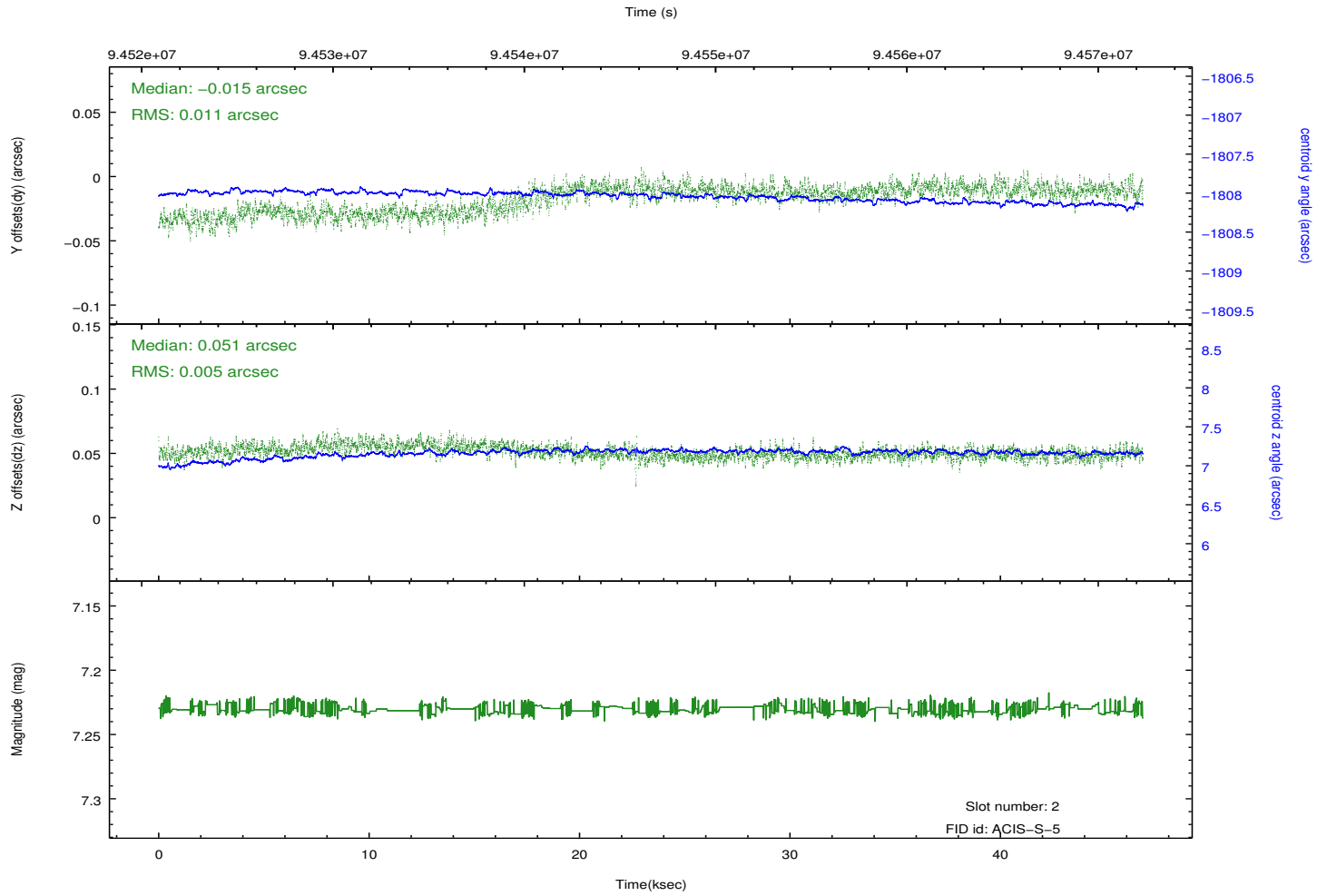
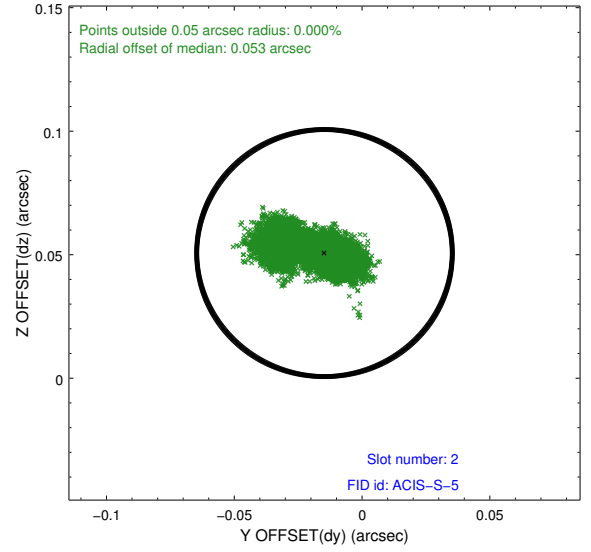
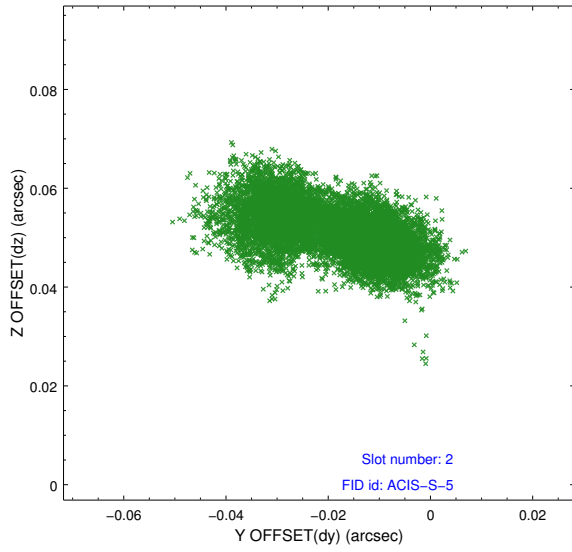
### 2.5.1 Slot 0



## 2.5.2 Slot 1

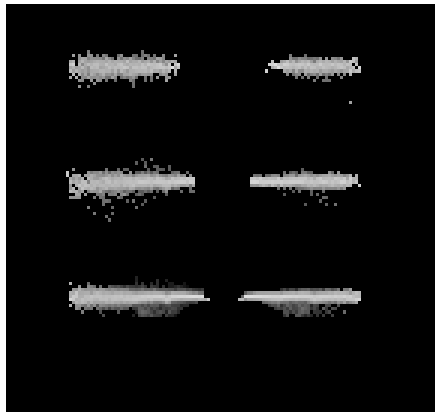


### 2.5.3 Slot 2

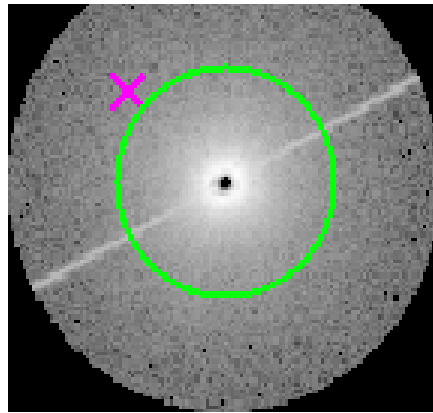


# 3 Gratings

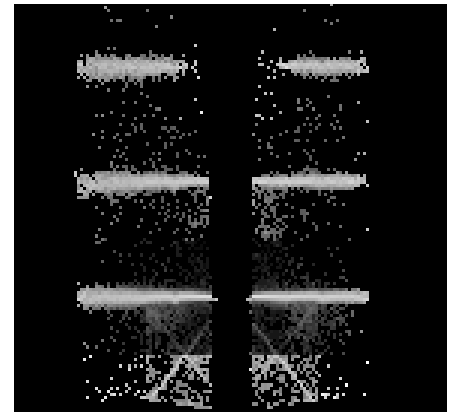
## 3.1 HEG Arm



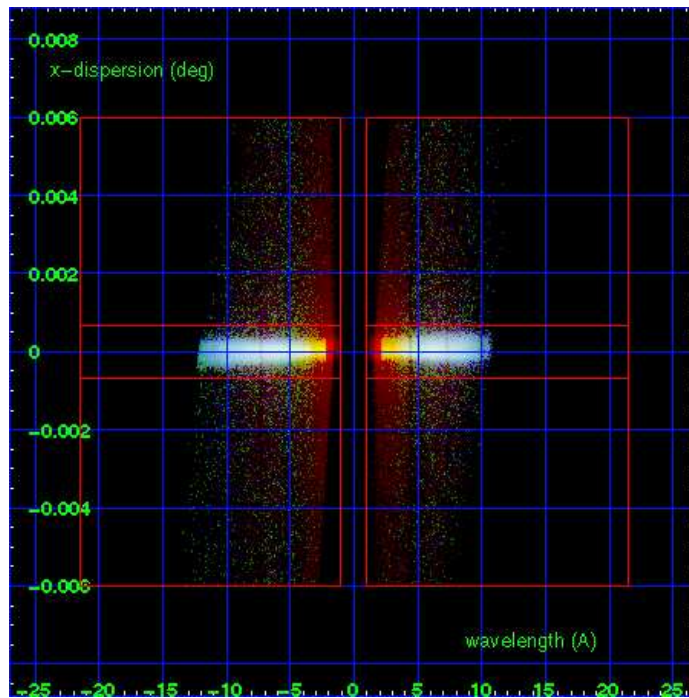
HEG Order Sort 123



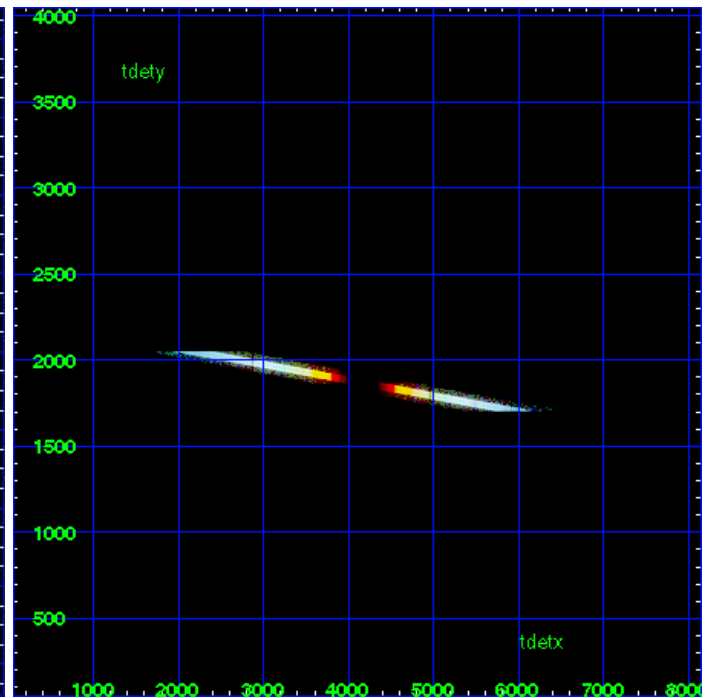
HEG Zero Order



HEG Order Sort ALL

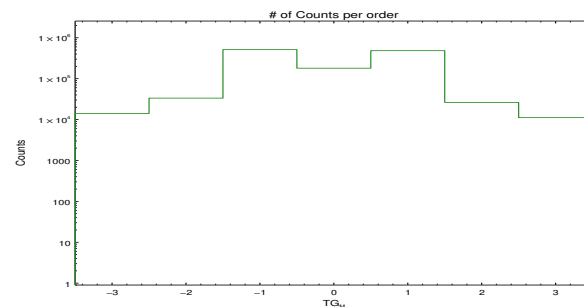


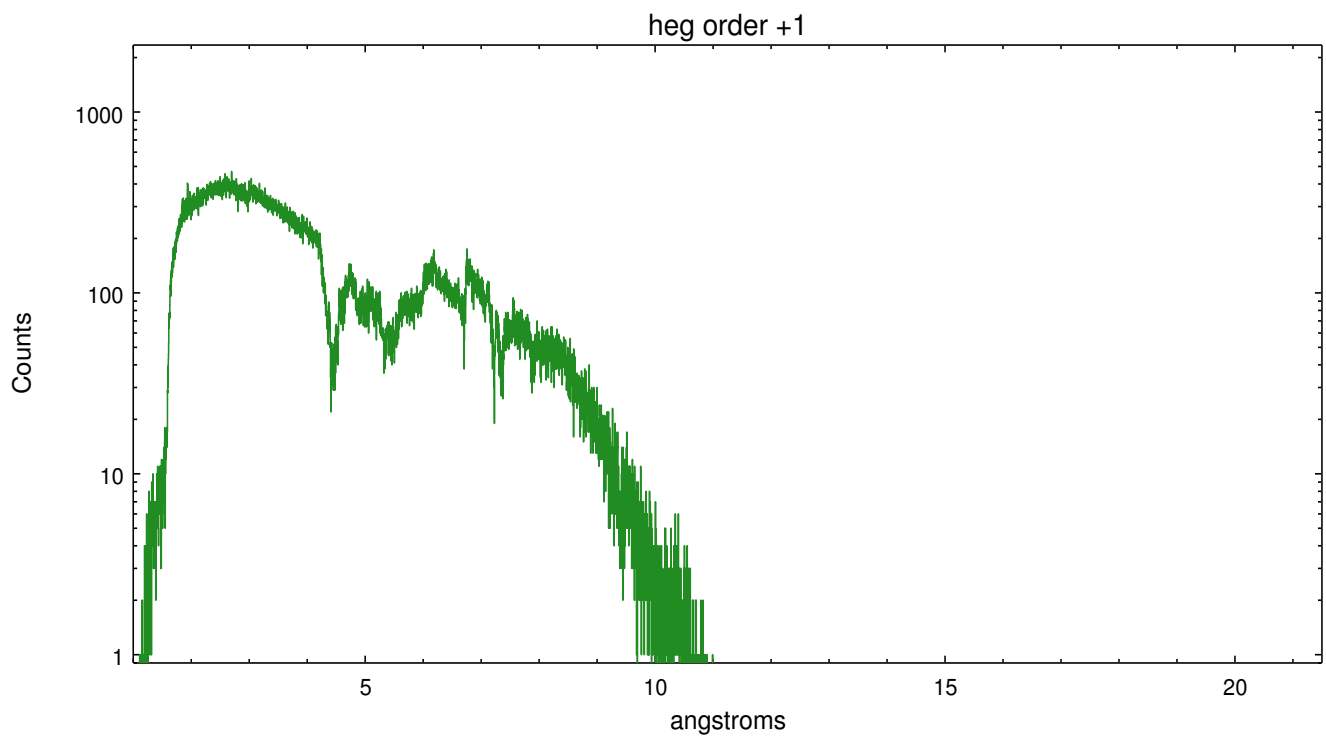
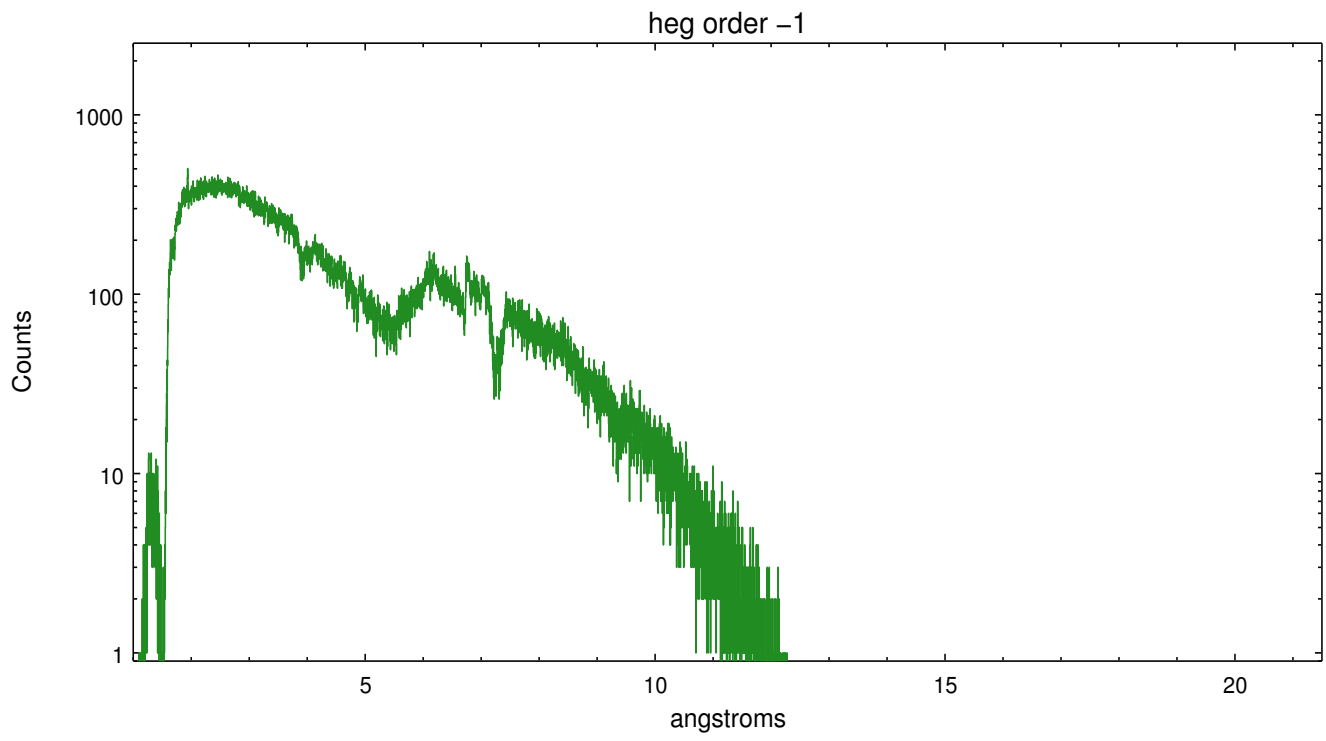
Spot Image HEG



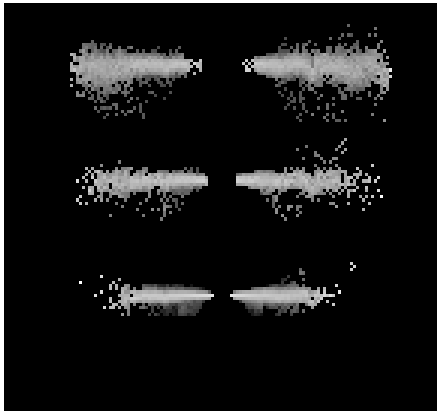
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	14125	33434	512602	180308	483724	26300	11154

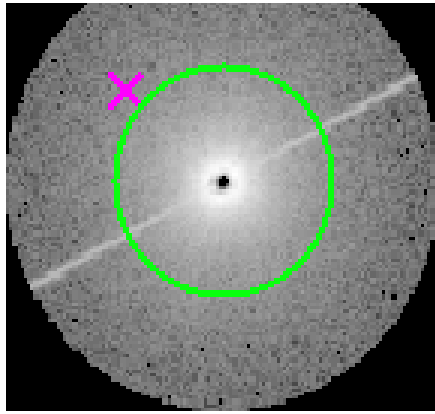




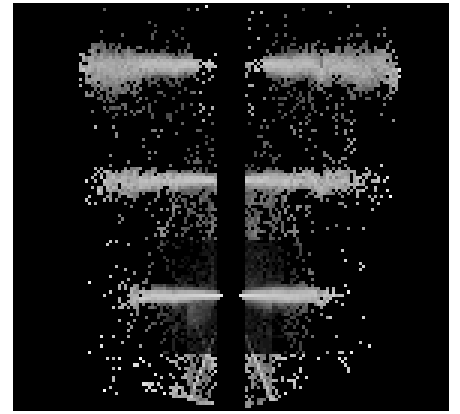
### 3.2 MEG Arm



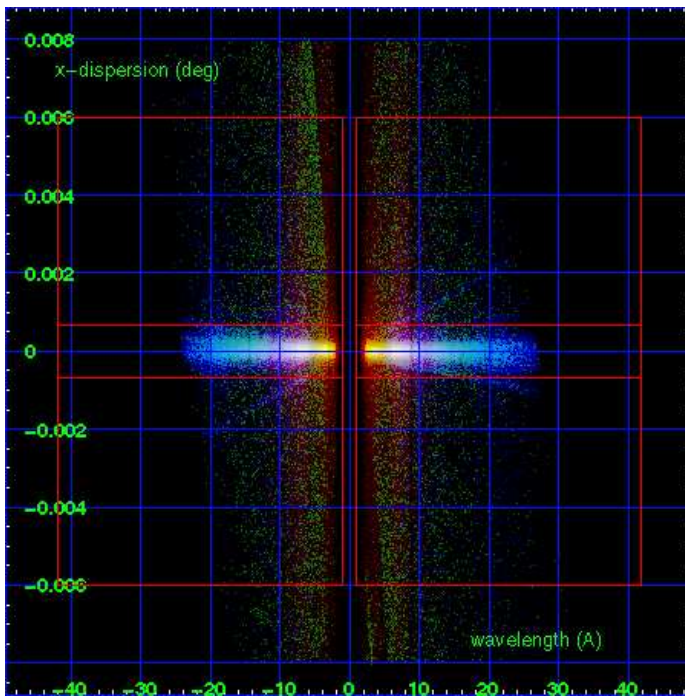
MEG Order Sort 123



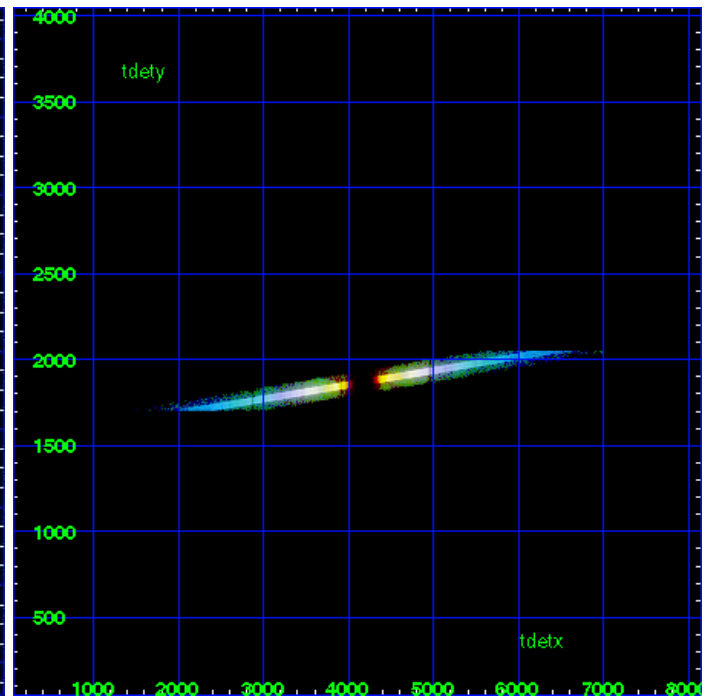
MEG Zero Order



MEG Order Sort ALL

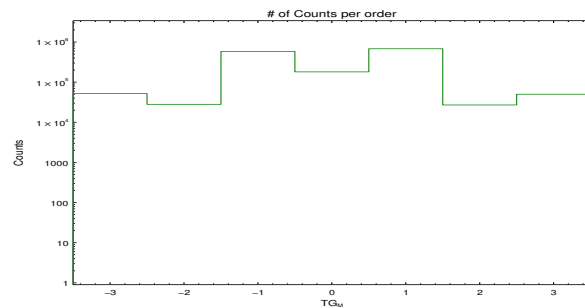


Spot Image MEG

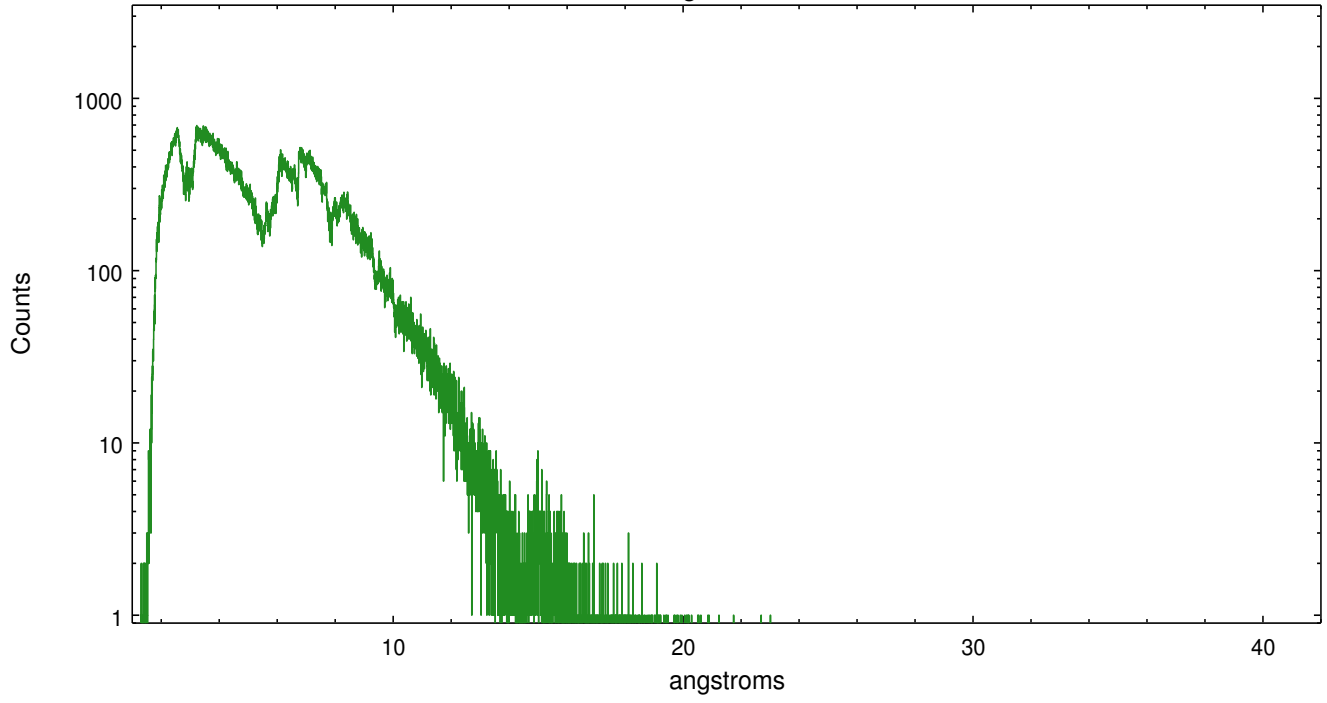


Full Detector MEG

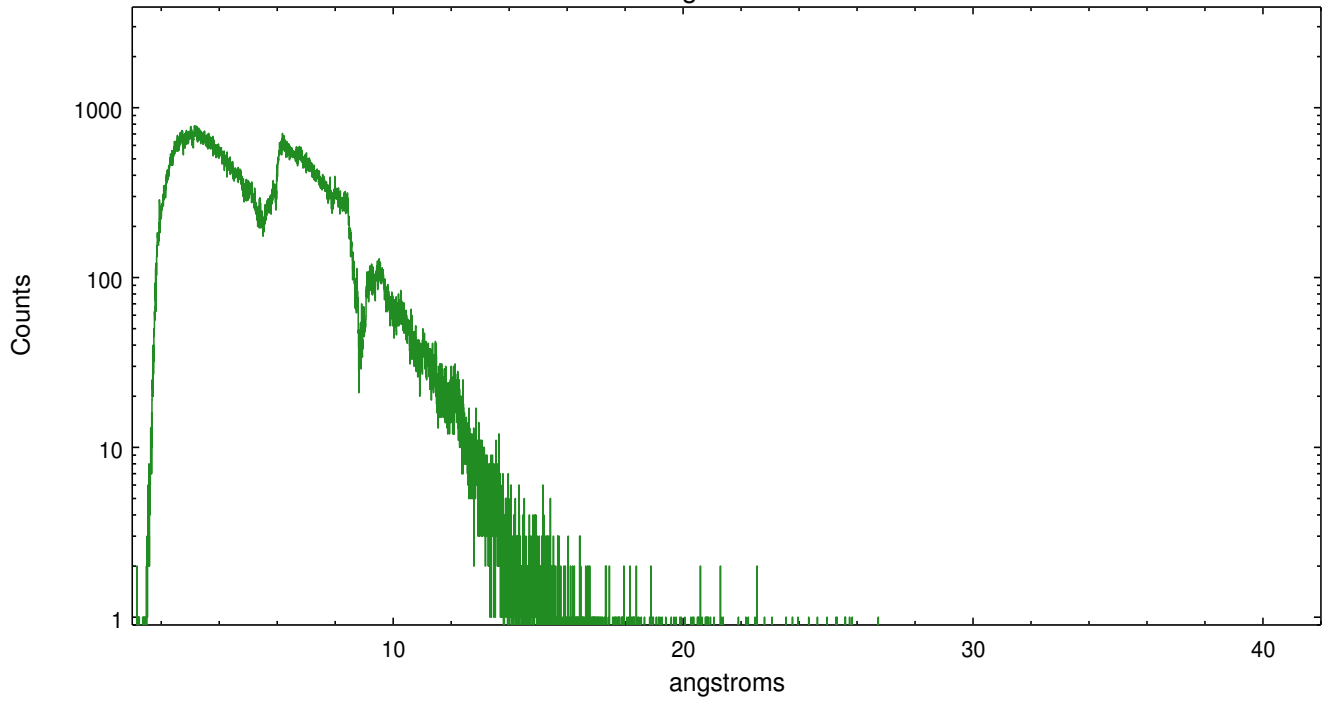
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	51808	27974	580422	180308	678981	26993	49920



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	46.776

## A.2 Comments

Due to the width of the subarray chosen, the lower energy ranges of the dispersed spectra are truncated.

===

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=4123.5, y=4071.71) 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.

===

Phase constraint met. Spectrum shows in image of bad events. This means that there is pileup in the dispersed spectrum.