

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1600 - L2 Version 3  
Chandra X-Ray Center

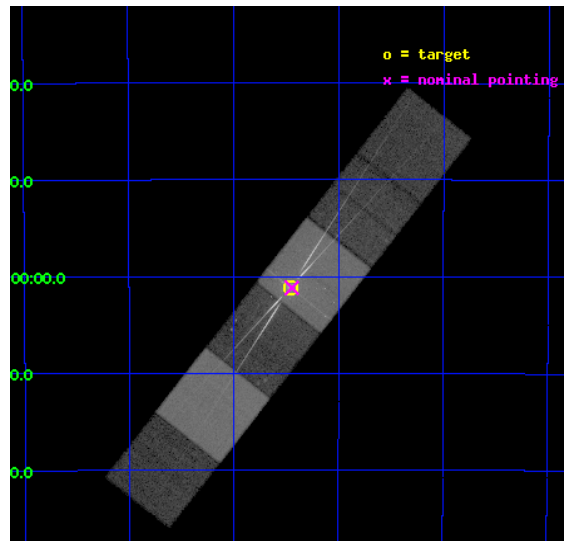
L2 Processing Date : Sep 19 2012

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# 1 Front

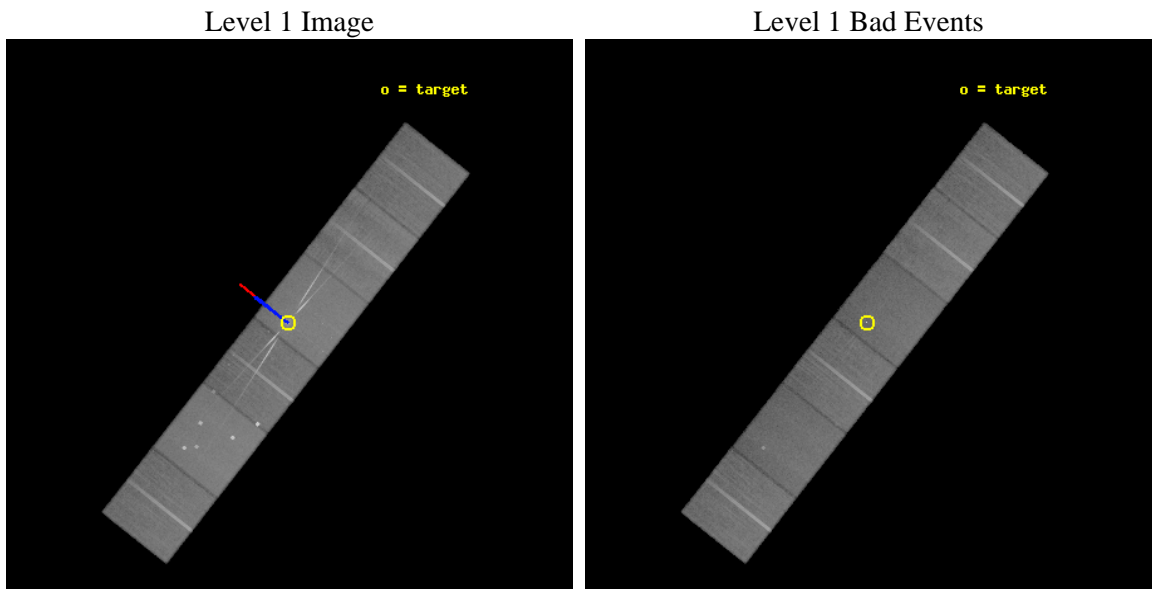
seq_num	700216	Sequence number
obs_id	1600	Observation id
title	A HIGH RESOLUTION X-RAY SPECTRUM OF THE NUCLEUS OF CENTAURUS A	Pro
observer	Dr. Stephen Murray	Principal investigator
object	CENTAURUS A	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	201.364167	Observer's specified target RA [deg]
dec_targ	-43.019722	Observer's specified target Dec [deg]
ra_nom	201.36116223322	Nominal RA [deg]
dec_nom	-43.019690785718	Nominal Dec [deg]
roll_nom	308.15457852797	Nominal Roll [deg]
revision	3	Processing version of data
ontime	47446.400044173	Sum of GTIs [s]
livetime	46845.605158021	Livetime [s]
ontime4	47436.67714344	Sum of GTIs [s]
ontime5	47446.400044173	Sum of GTIs [s]
ontime6	47443.159054011	Sum of GTIs [s]
ontime7	47446.400044173	Sum of GTIs [s]
ontime8	47446.400044173	Sum of GTIs [s]
ontime9	47446.400044173	Sum of GTIs [s]
l2events	579870	Number of level 2 events



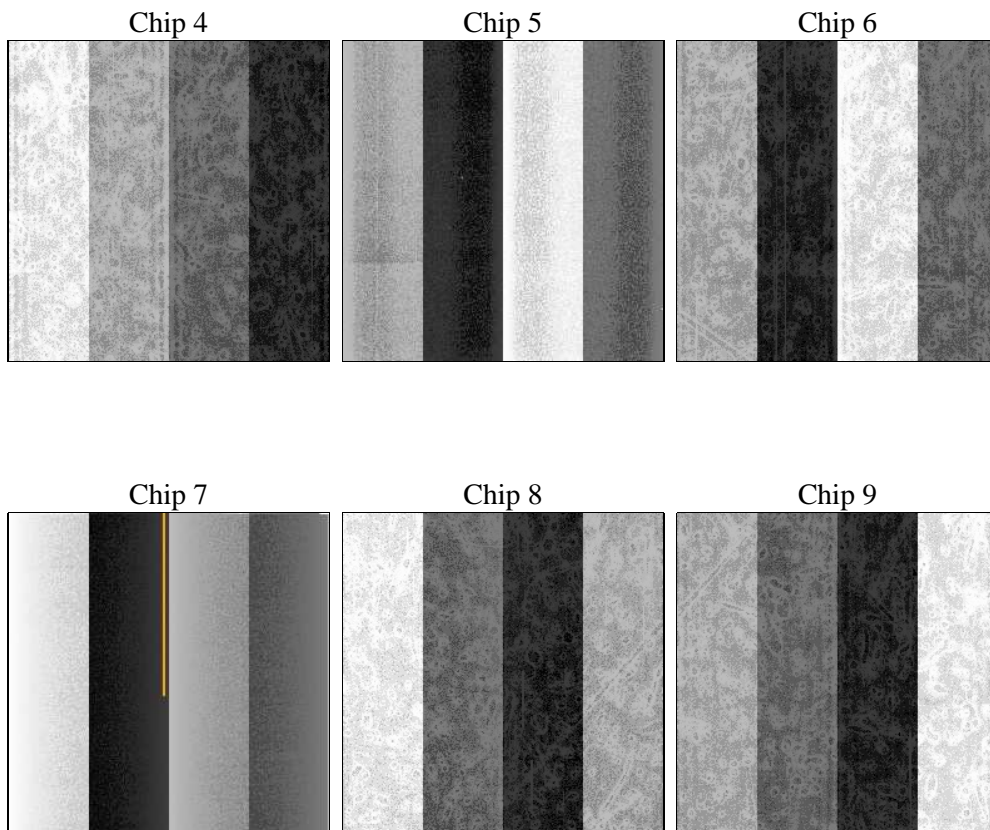
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	47500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	47446.400044173	Sum of GTIs [s]
caldbver	4.5.1.1	&#160	ontime4	47436.67714344	Sum of GTIs [s]
date	2012-09-18T23:29:30	Date and time of file creation	ontime5	47446.400044173	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	47443.159054011	Sum of GTIs [s]
			ontime7	47446.400044173	Sum of GTIs [s]
			ontime8	47446.400044173	Sum of GTIs [s]
			ontime9	47446.400044173	Sum of GTIs [s]
			l1events	2311111	Number of level 1 events

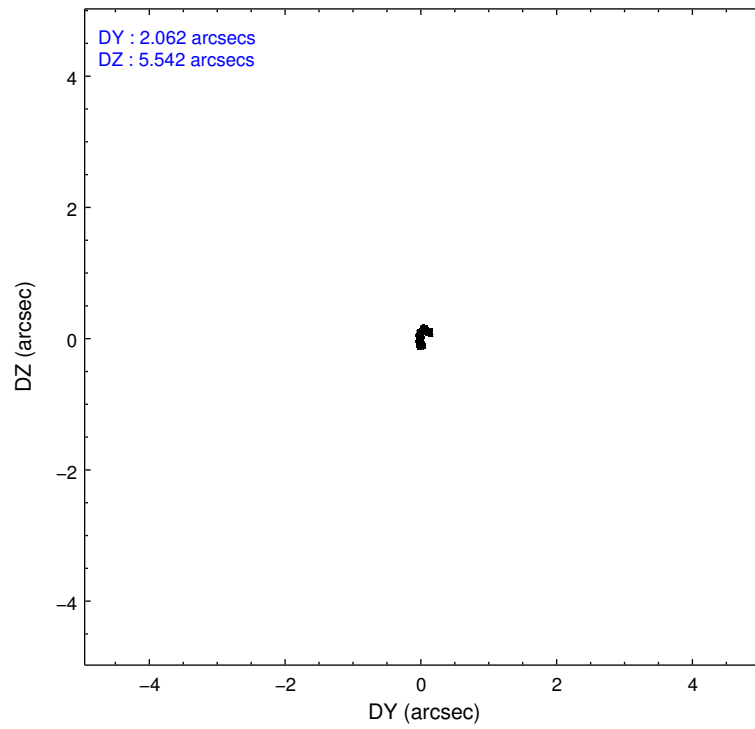
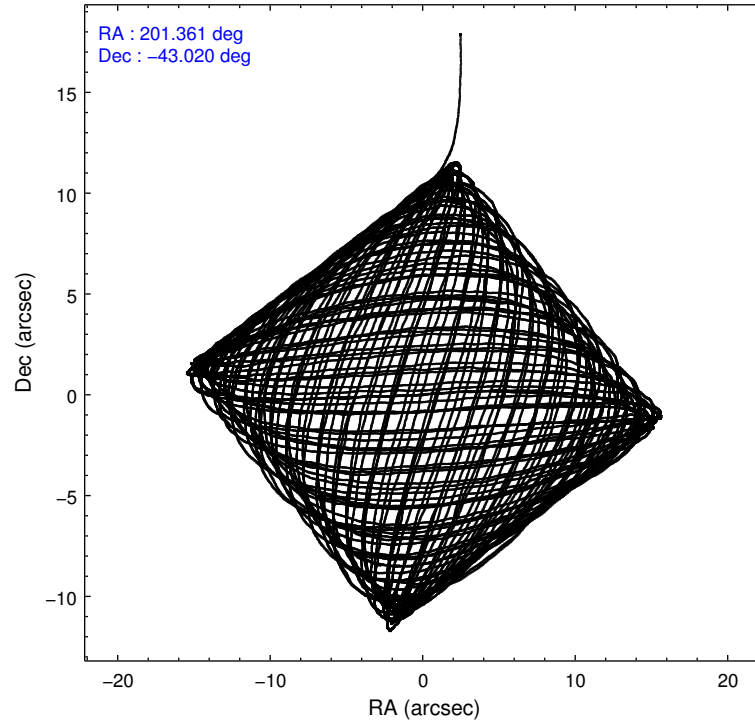
### 2.1.4 Events

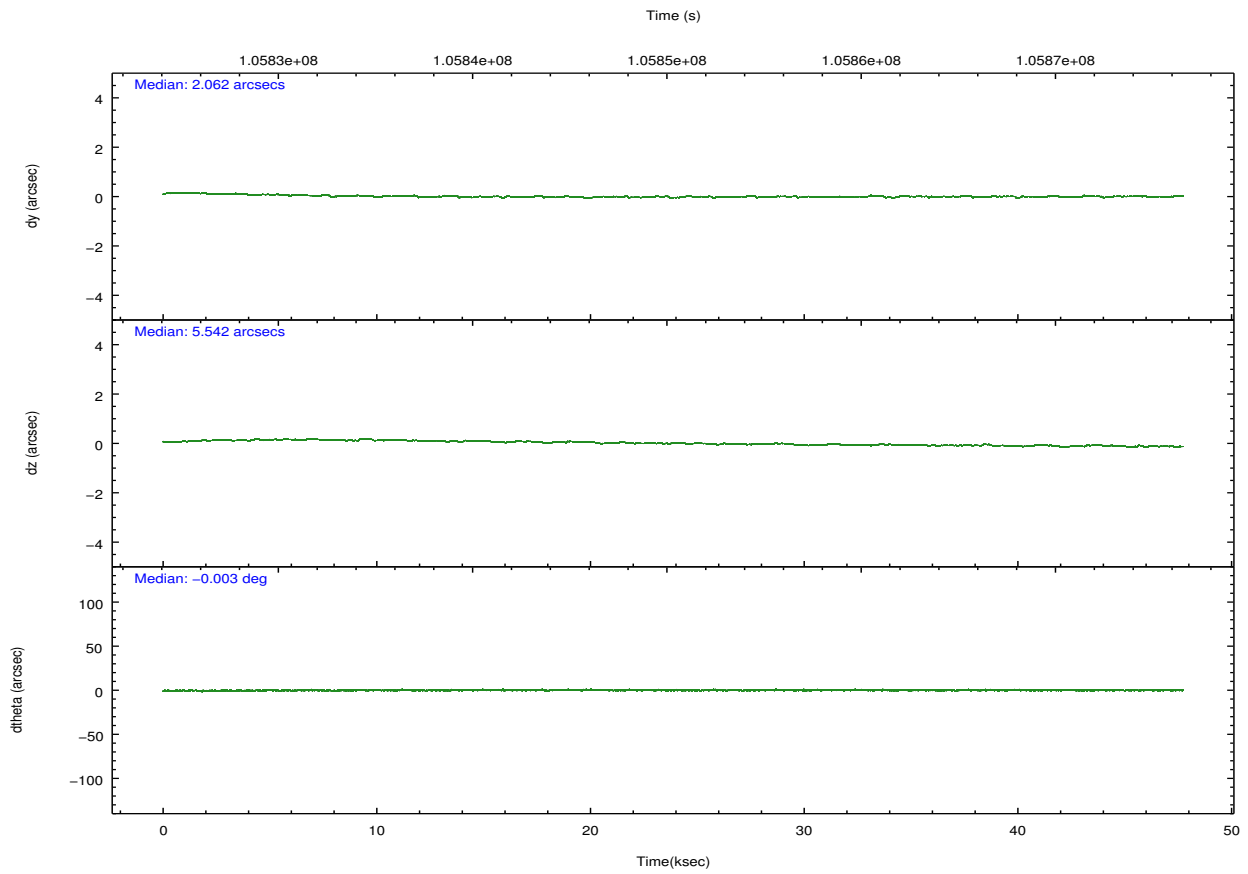
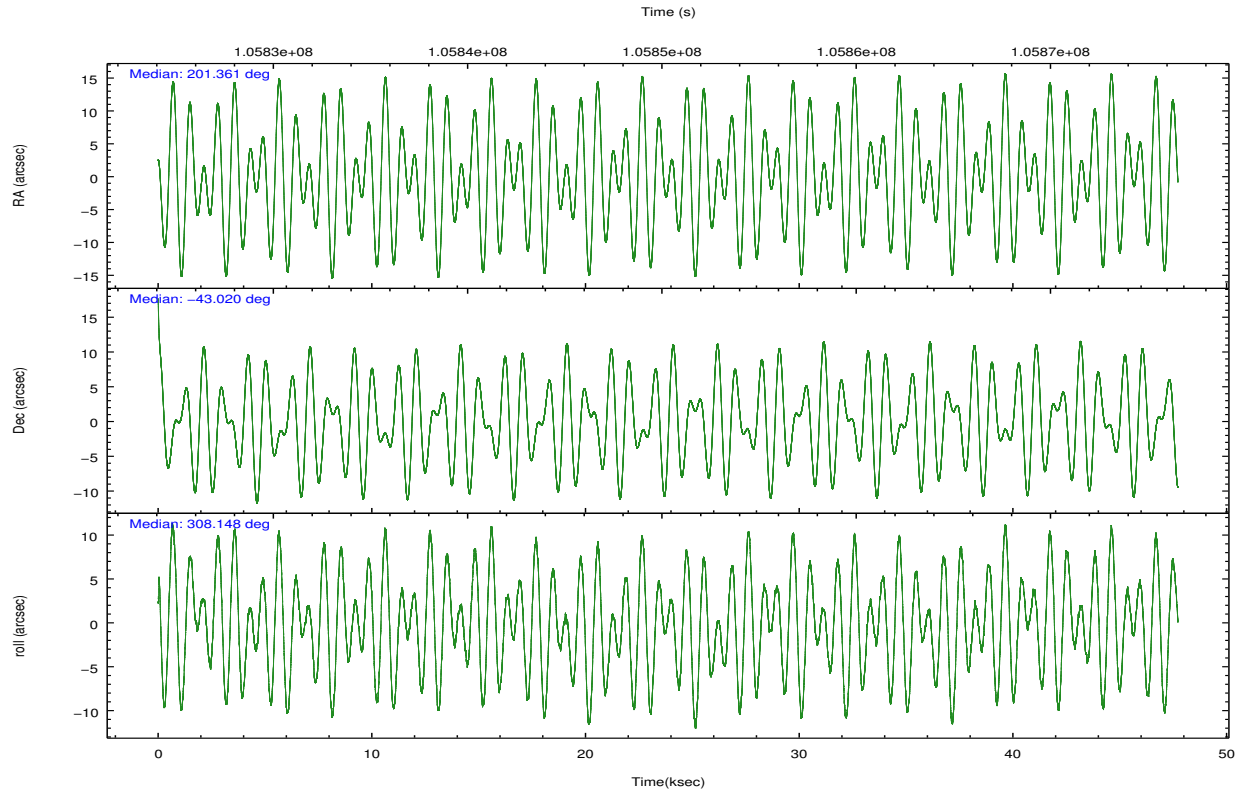
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	338448	442543	369483	464017	387717	308903	grade 0 events	15123	33631	55366	30104	27978	14754
rejected events	301933	232309	278247	232478	306205	272715		4%	7%	14%	6%	7%	4%
rejected %	89%	52%	75%	50%	78%	88%	grade 1 events	158	634	375	716	228	123
								0%	0%	0%	0%	0%	0%
							grade 2 events	8558	59323	13476	48145	17039	7401
								2%	13%	3%	10%	4%	2%
							grade 3 events	3357	8406	5857	22212	8542	3556
								0%	1%	1%	4%	2%	1%
							grade 4 events	3284	7885	5654	21587	7797	3440
								0%	1%	1%	4%	2%	1%
							grade 5 events	10814	31782	13256	39129	16108	13151
								3%	7%	3%	8%	4%	4%
							grade 6 events	6199	100997	10887	109510	20160	7040
								1%	22%	2%	23%	5%	2%
							grade 7 events	290955	199885	264612	192614	289865	259438
								85%	45%	71%	41%	74%	83%

## 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	201.326370	201.3611622332186	Subarray requested	NONE	NONE
[deg] Pointing Dec	-43.009793	-43.01969078571835	Alternating exposures requested	N	N
[deg] Pointing Roll	307.974219	308.1545785279711	[s] Primary exposure time	0.000000	3.2
[deg] Roll angle	307.000000	307.000000			
[deg] Roll tolerance	1.000000	1.000000			
Roll constraint allows 180D rotation	N	N			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-187.132523	-187.1228876879999			
[mm] SIM translation stage offset	-3	-3.009634895007935			
[s] Observation start time (MET)	105826678.184000	105825703.84362			
Observation start date	2001-05-09T20:16:54	2001-05-09T20:01:43			
[s] Observation end time (MET)	105874178.184000	105875471.18306			
Observation end date	2001-05-10T09:28:34	2001-05-10T09:51:11			
Read mode	TIMED	TIMED			

## 2.3 Aspect



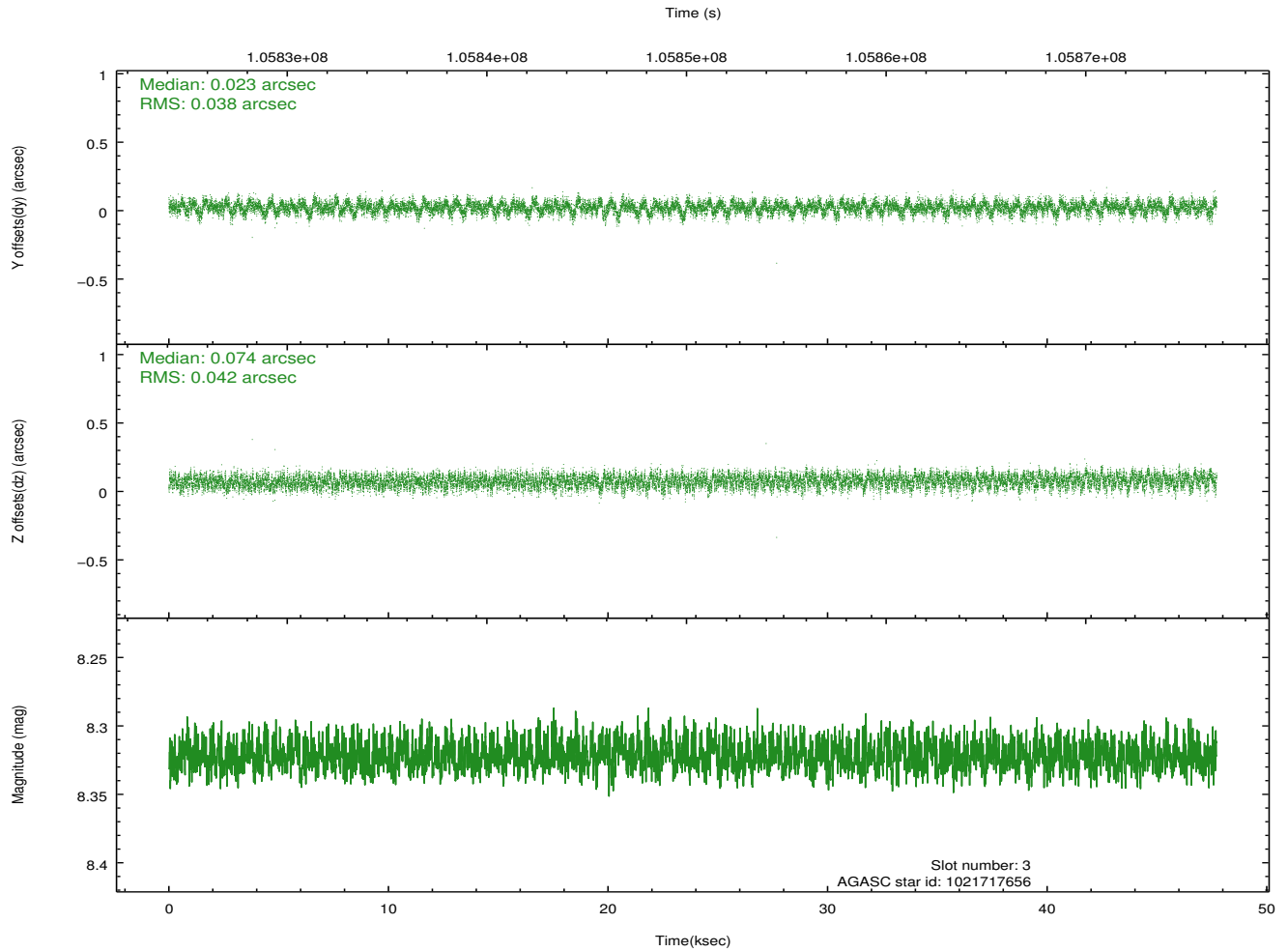
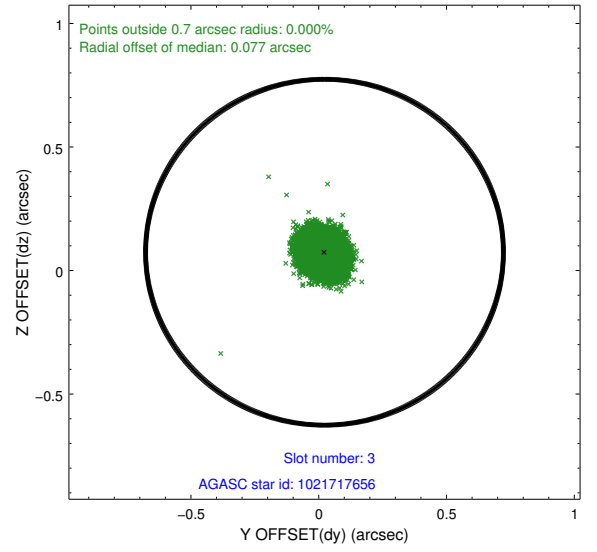
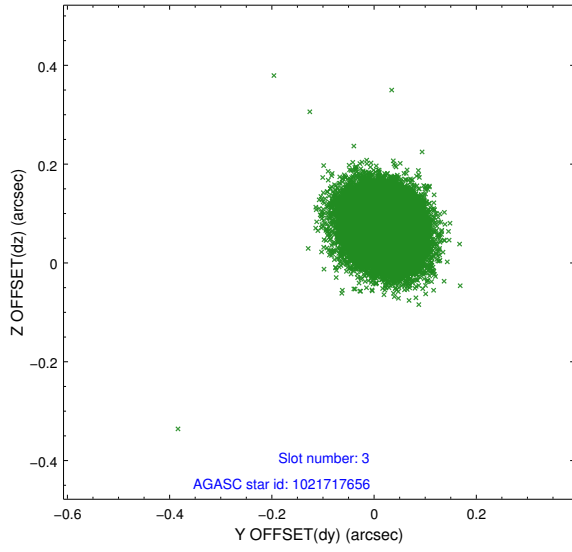


### Slot Statistics

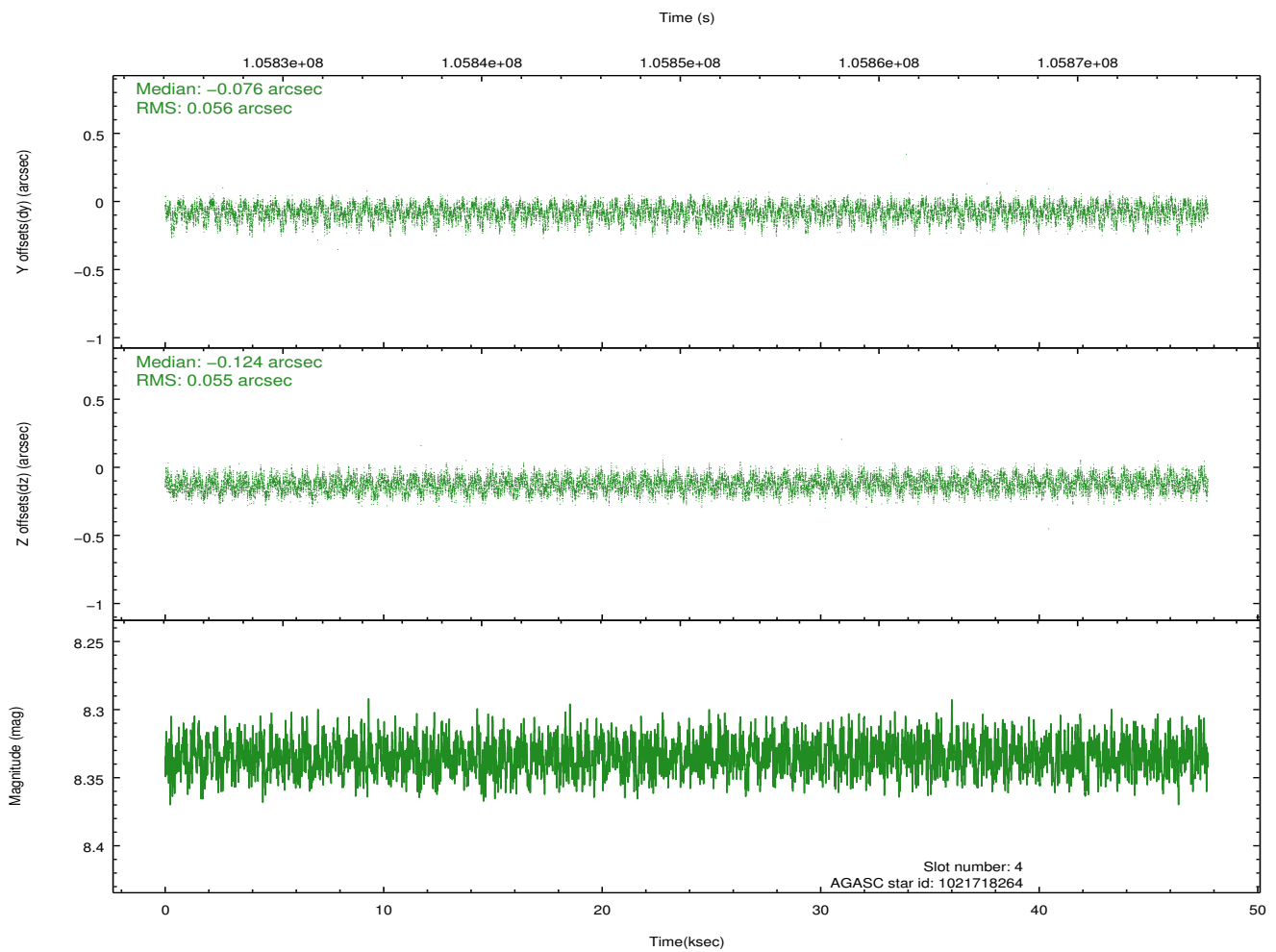
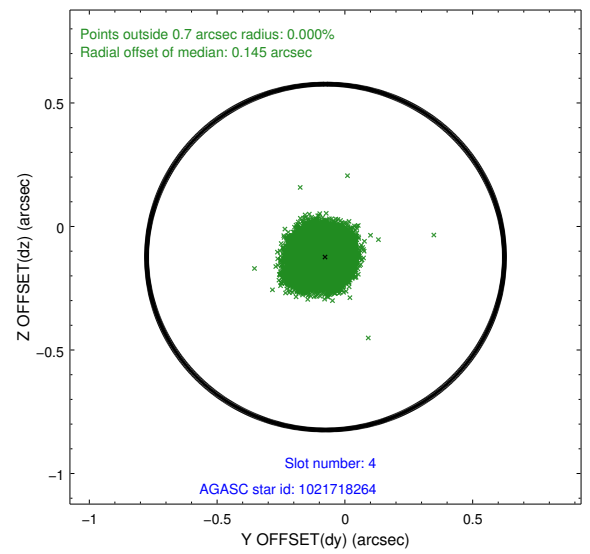
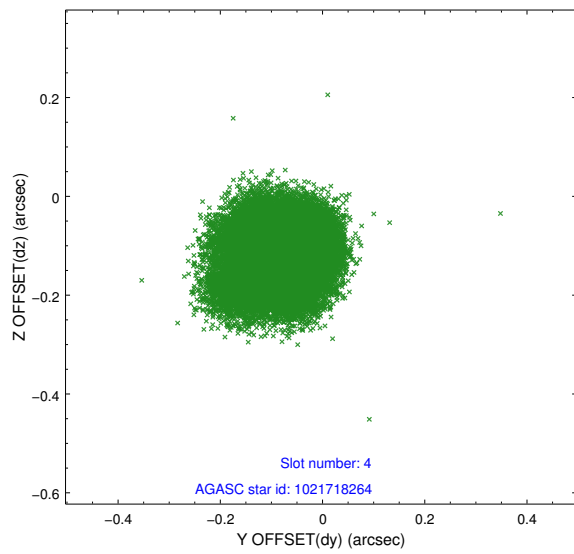
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	11640	-0.028	-0.054	0.007	0.011	0.000000	0.000000	-754.54	-1788.86
1	FID	ACIS-S-4	7.20	11639	-0.015	0.028	0.006	0.010	0.000000	0.000000	2158.79	119.67
2	FID	ACIS-S-5	7.23	11637	0.012	0.035	0.007	0.012	0.000000	0.000000	-1807.33	113.39
3	GUIDE	1021717656	8.32	23275	0.023	0.074	0.060	0.095	201.139642	-43.082878	-93.48	-548.02
4	GUIDE	1021718264	8.33	23273	-0.076	-0.124	0.085	0.132	202.114846	-42.795539	681.67	2111.56
5	GUIDE	1021721304	9.66	23260	-0.011	0.092	0.097	0.156	201.117326	-42.480412	-1842.63	735.87
6	GUIDE	1021716808	8.82	23276	0.047	-0.003	0.062	0.101	200.901189	-42.531395	-2048.76	169.75
7	GUIDE	1022231952	10.51	22913	0.020	-0.040	0.170	0.272	200.514966	-43.318830	-421.56	-2365.12

## 2.4 Star Slots

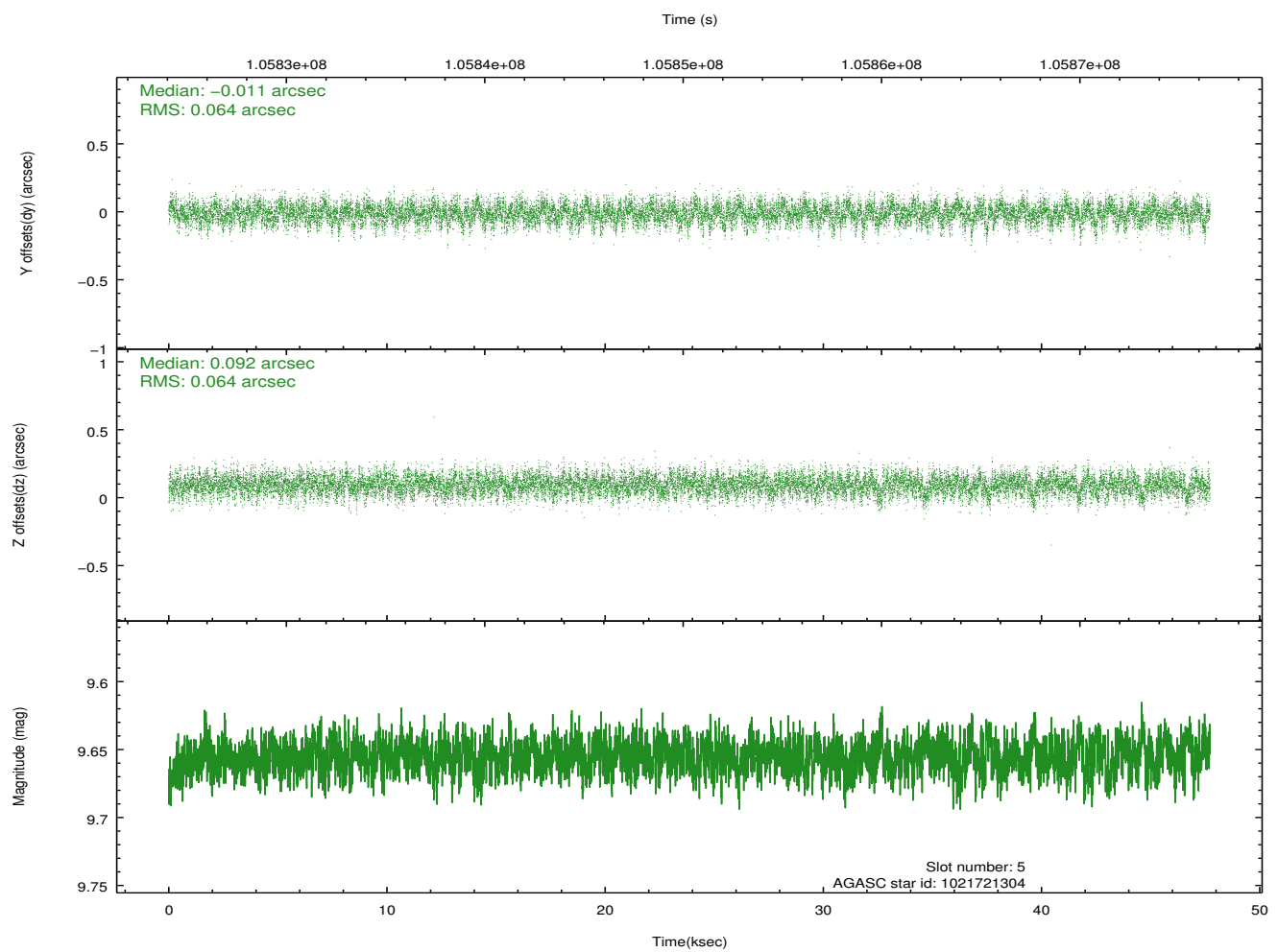
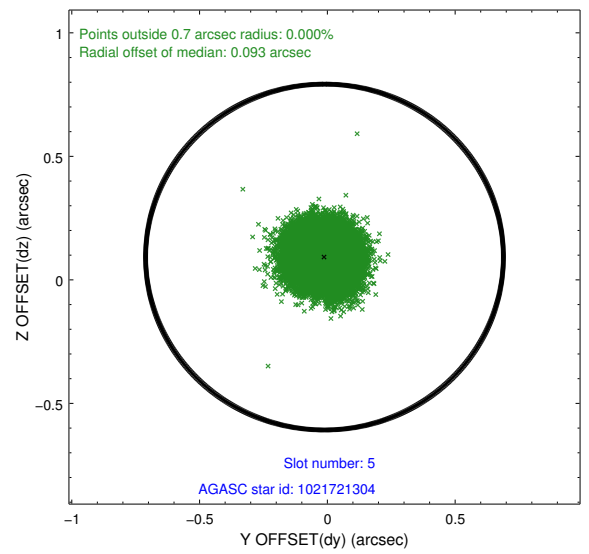
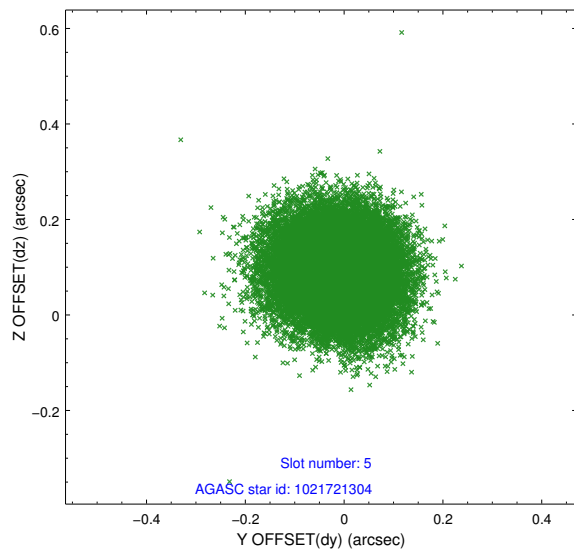
### 2.4.1 Slot 3



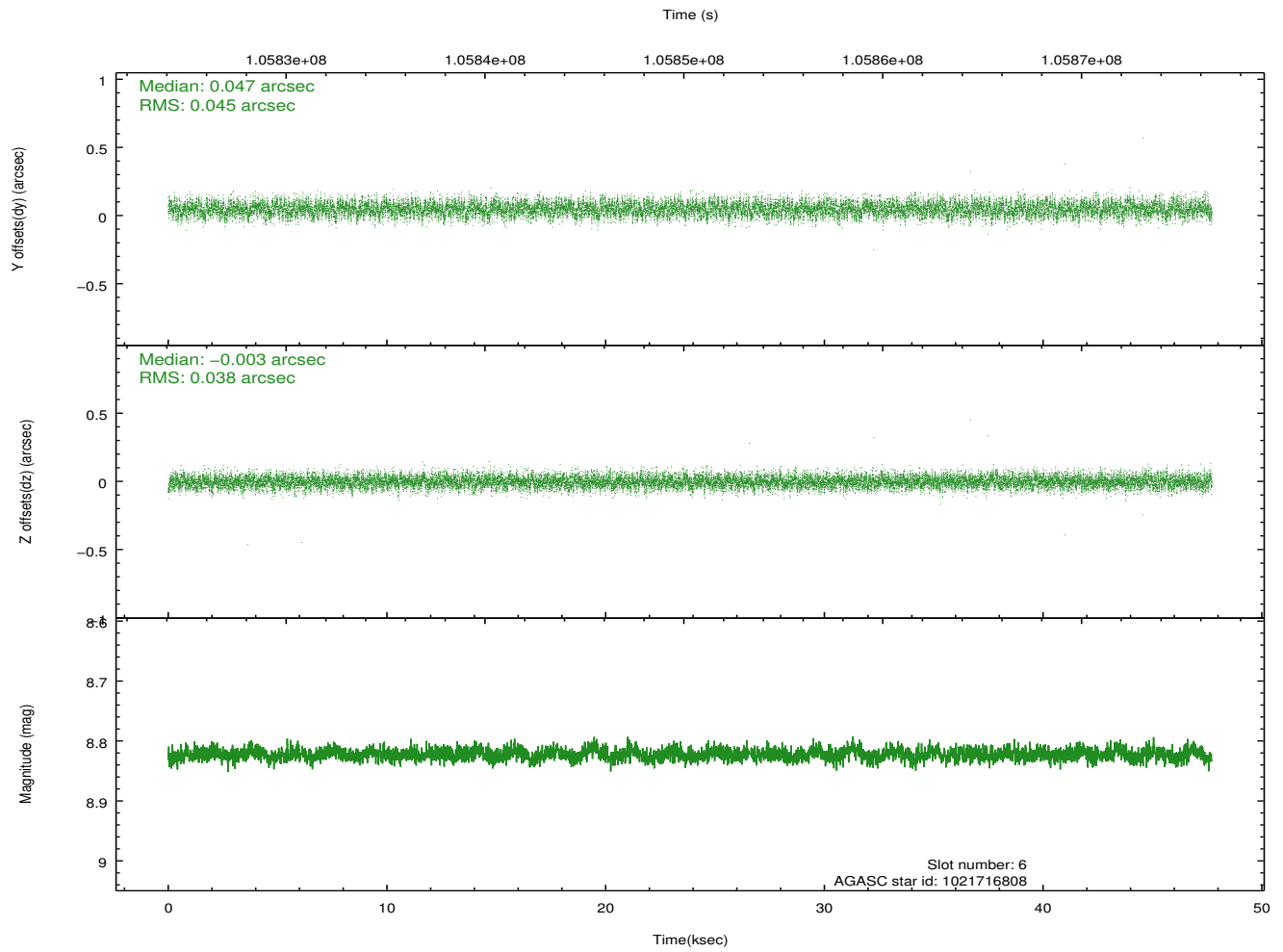
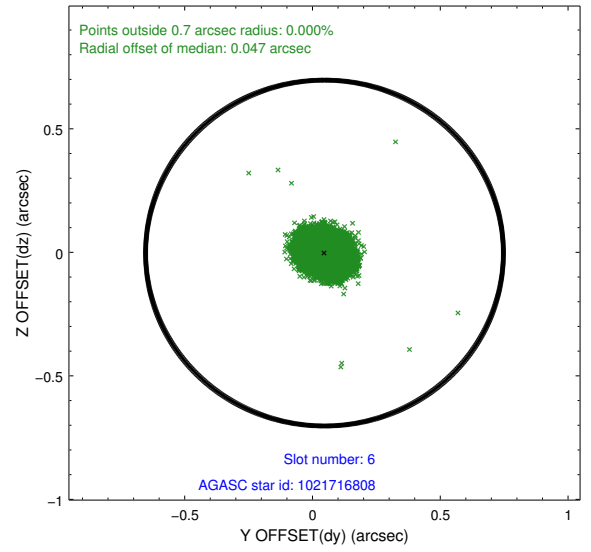
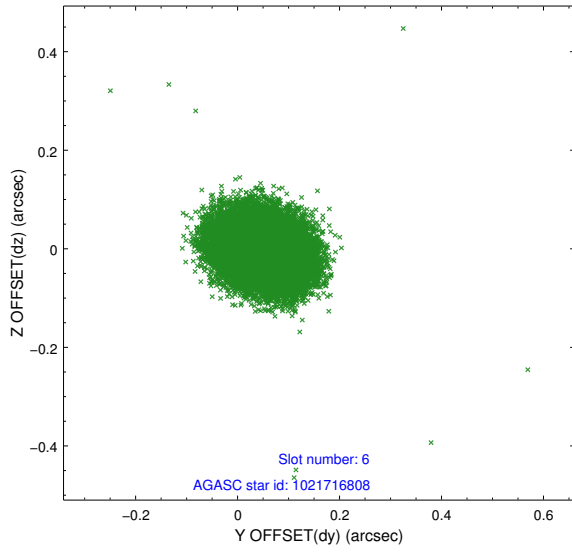
## 2.4.2 Slot 4



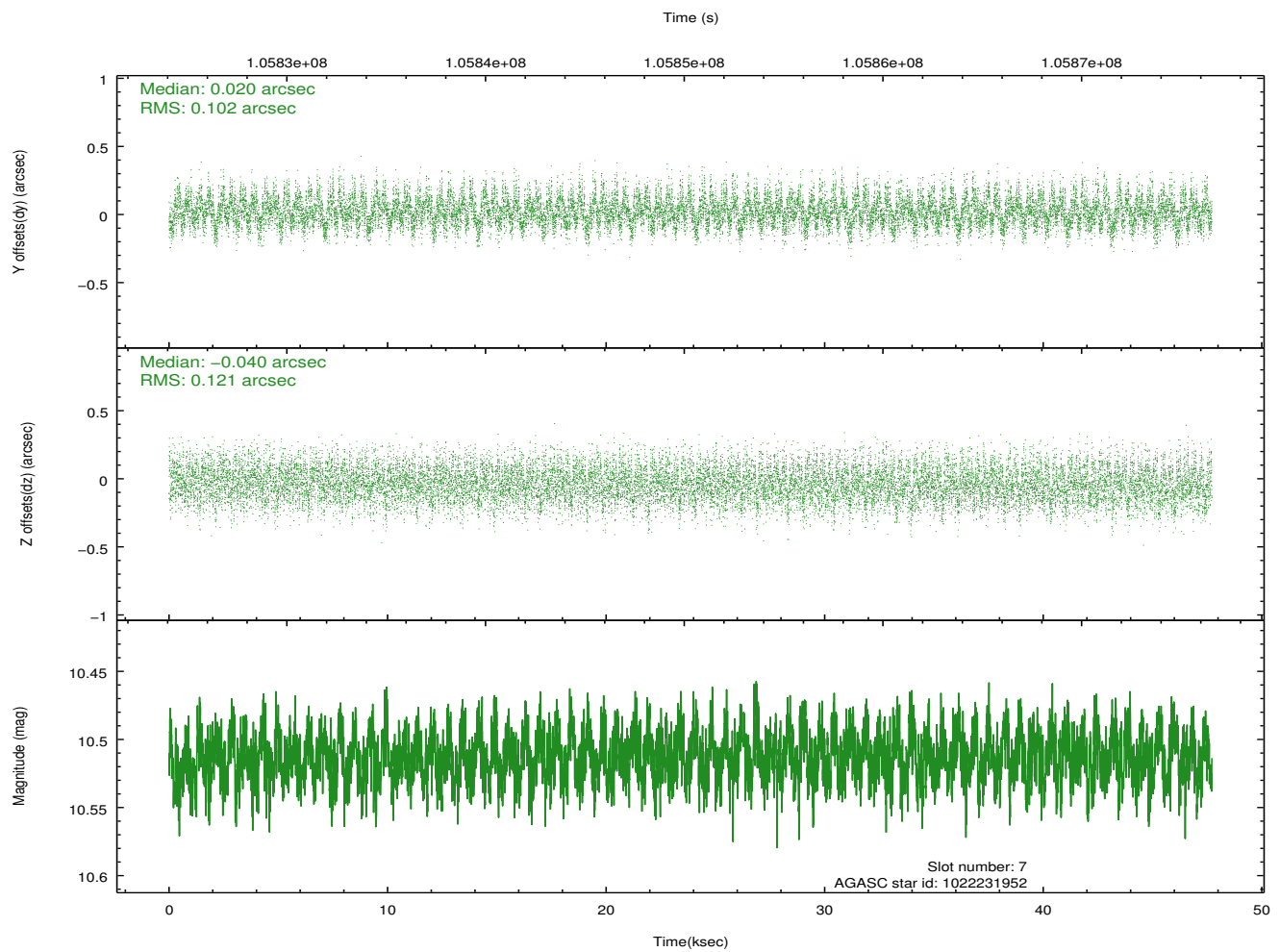
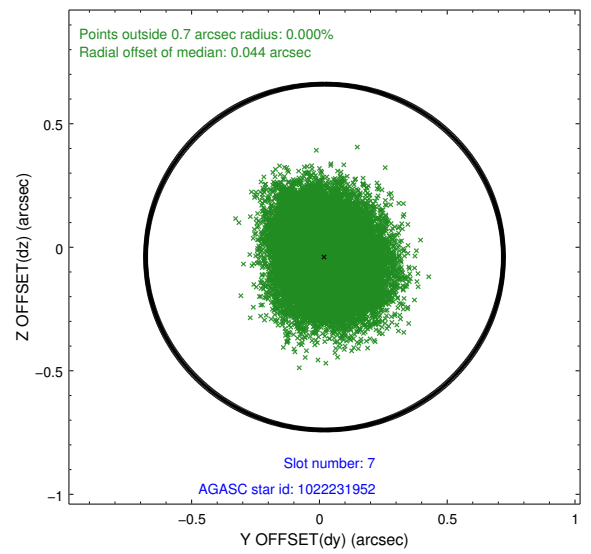
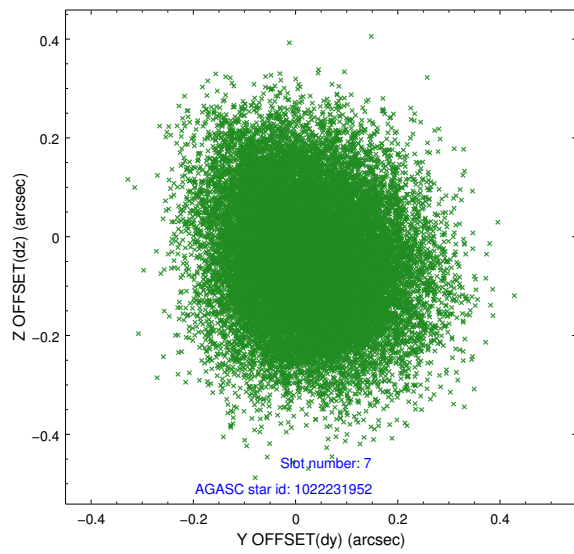
### 2.4.3 Slot 5



### 2.4.4 Slot 6

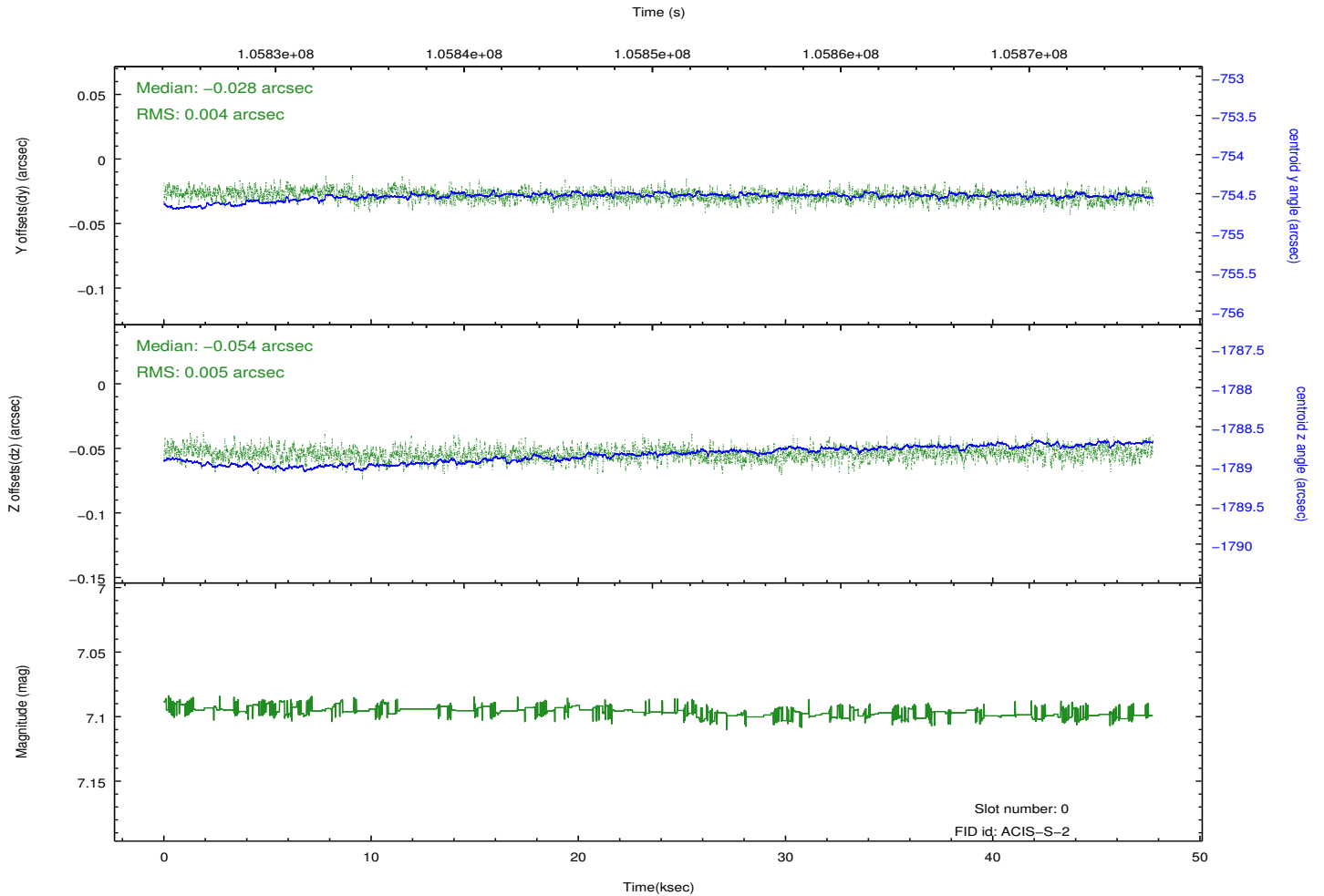
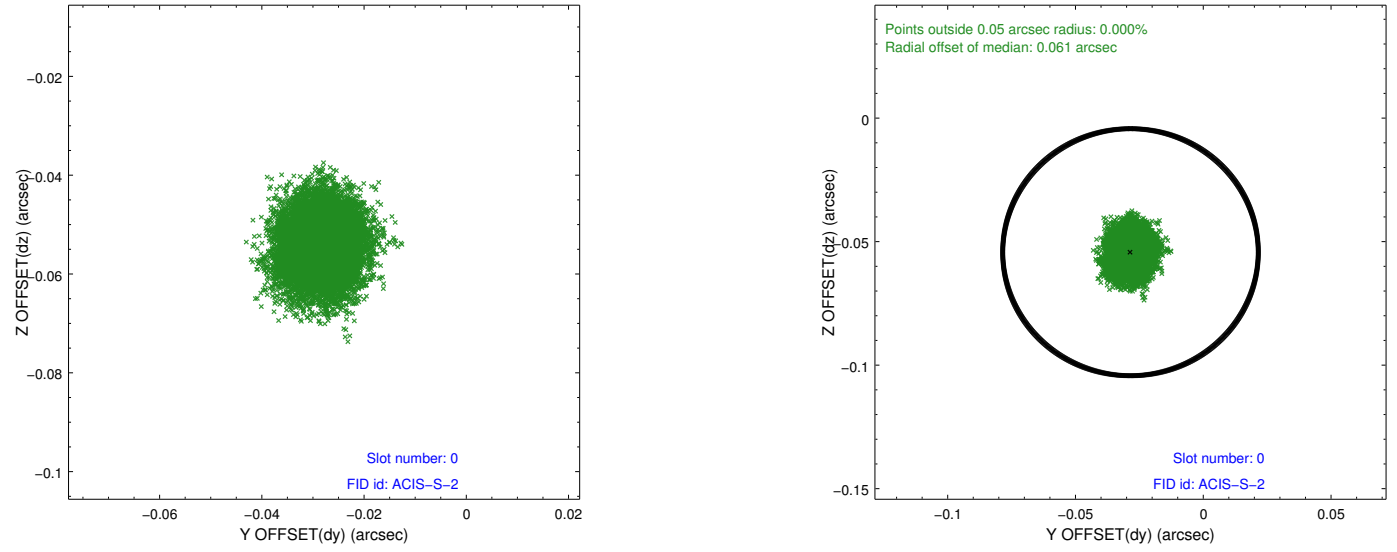


## 2.4.5 Slot 7

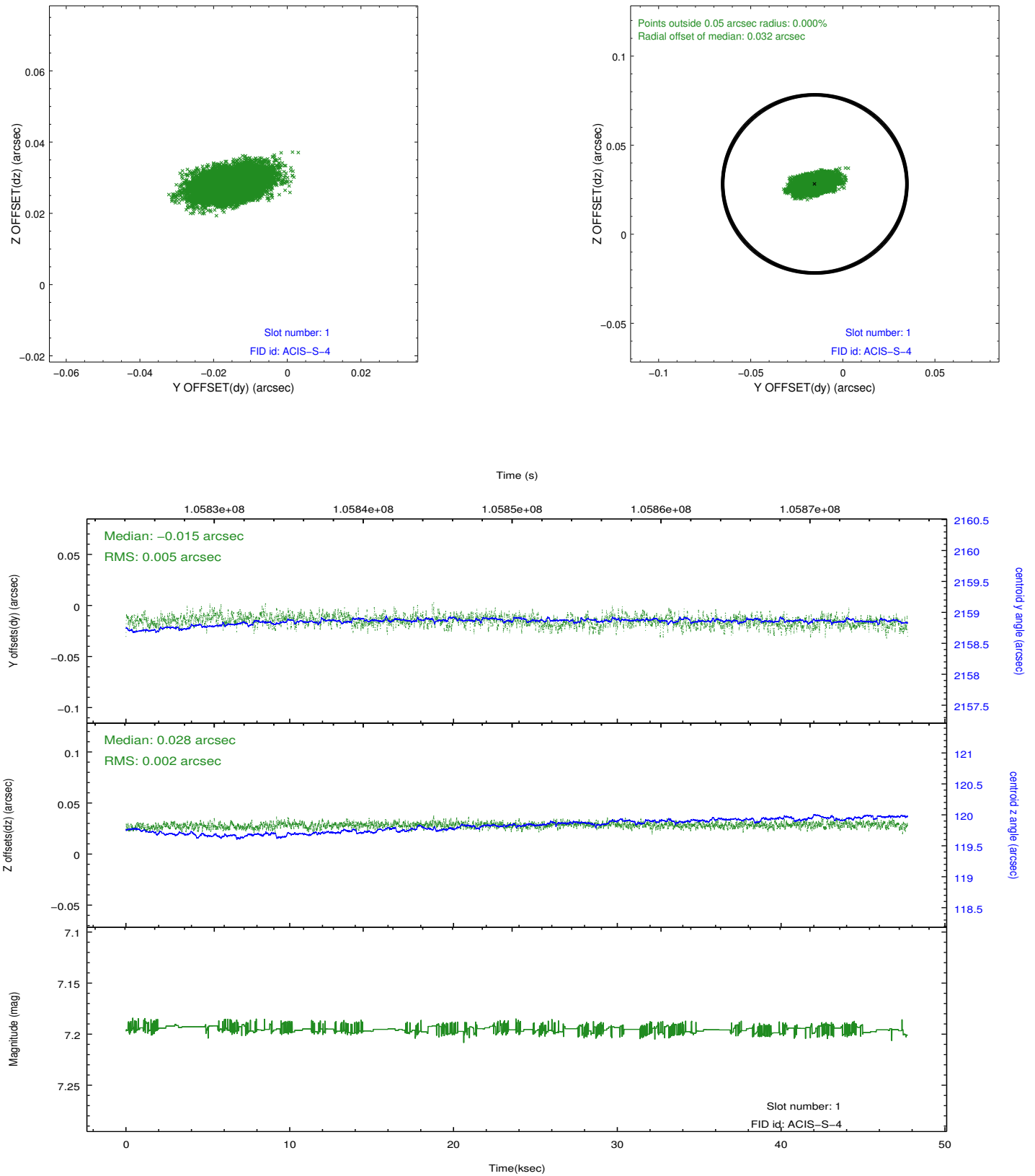


## 2.5 FID Slots

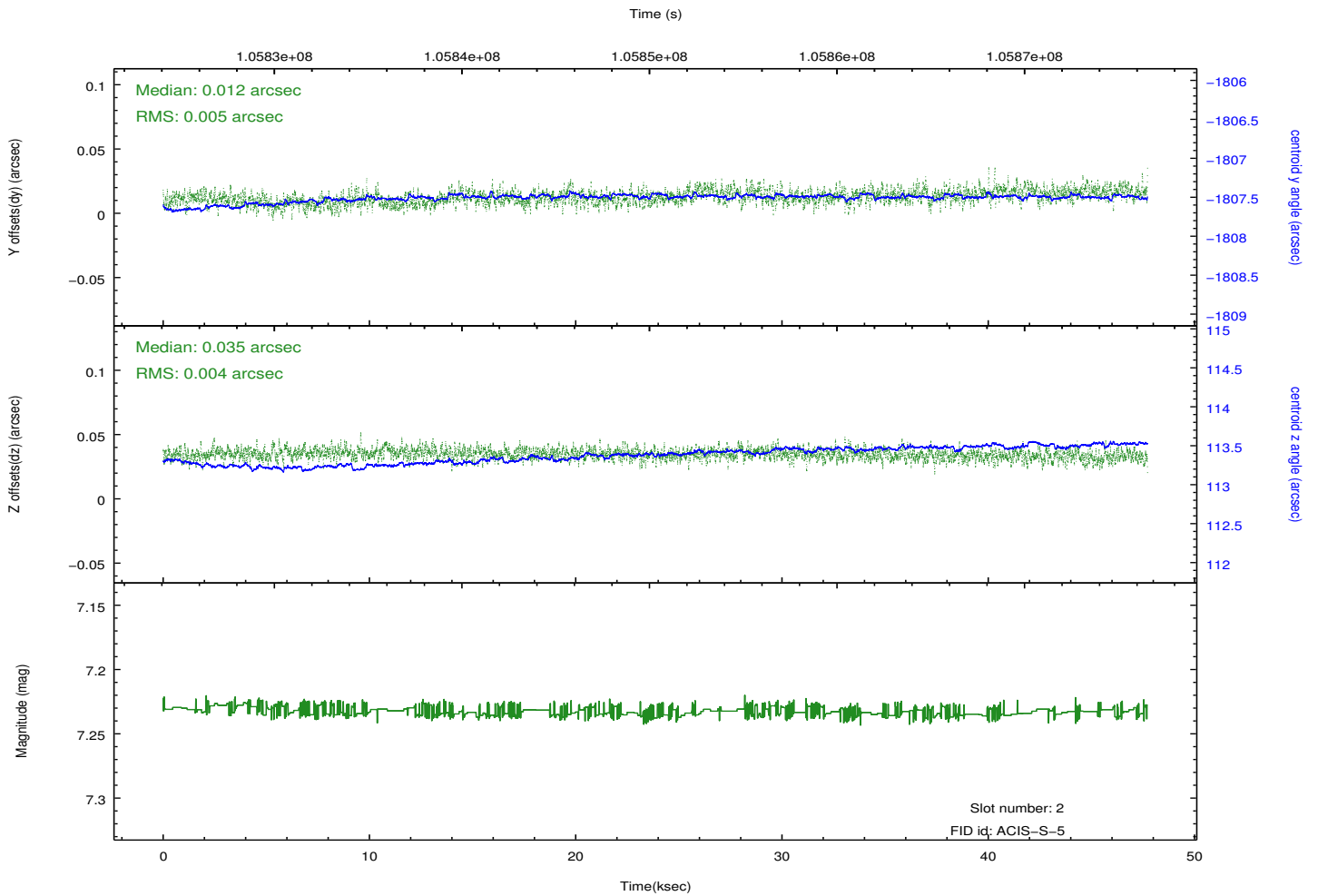
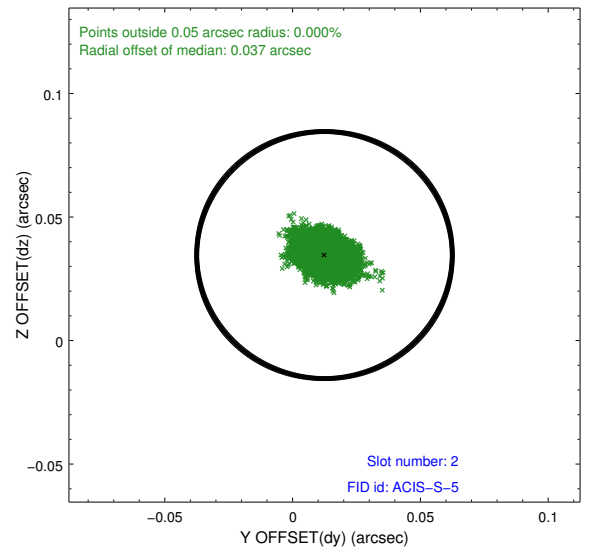
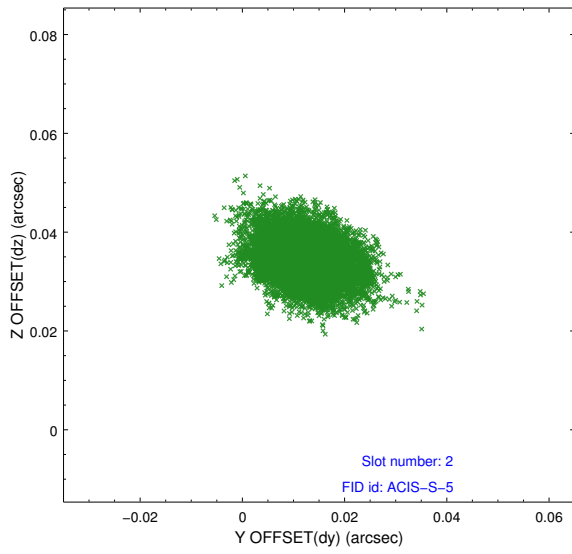
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

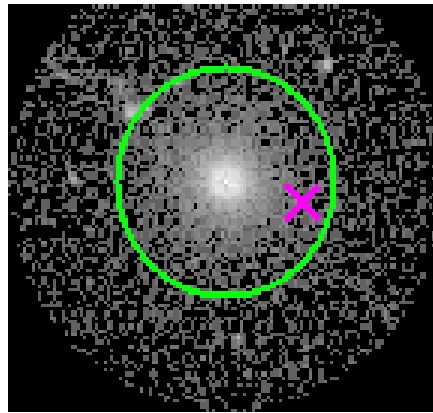


### 3 Gratings

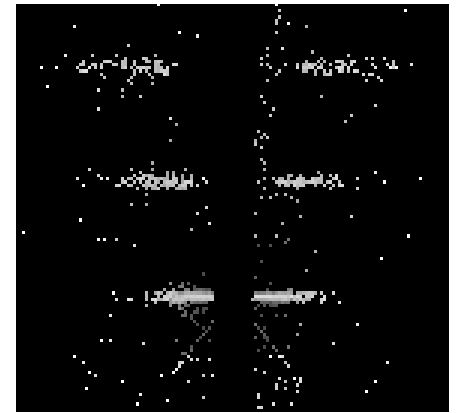
#### 3.1 HEG Arm



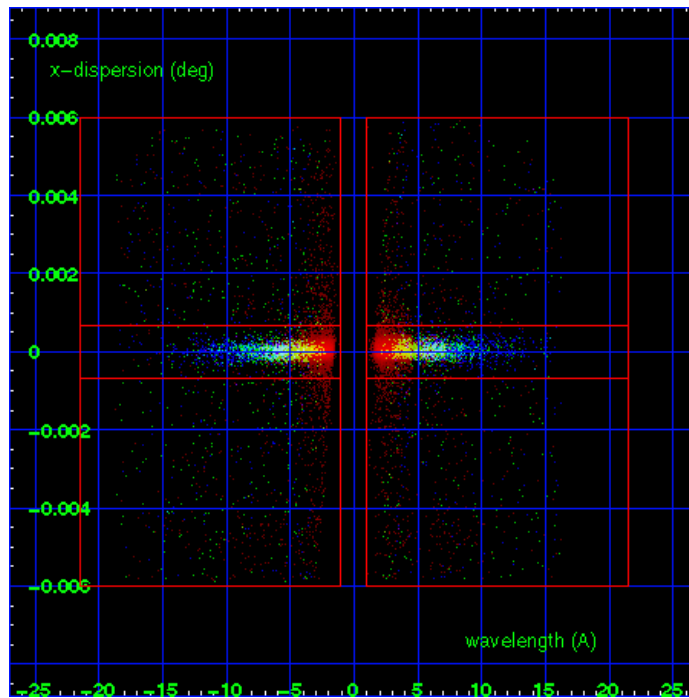
HEG Order Sort 123



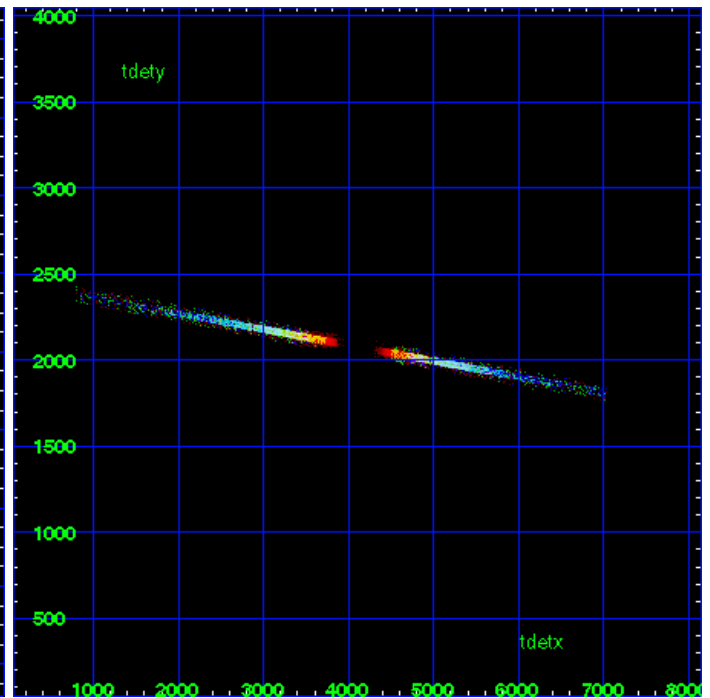
HEG Zero Order



HEG Order Sort ALL

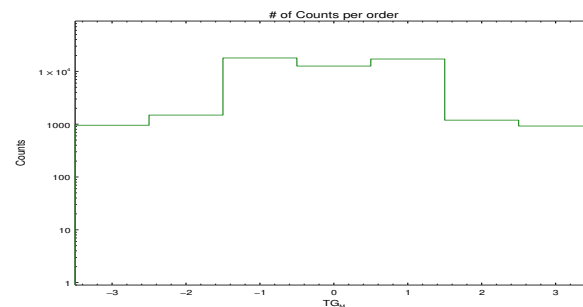


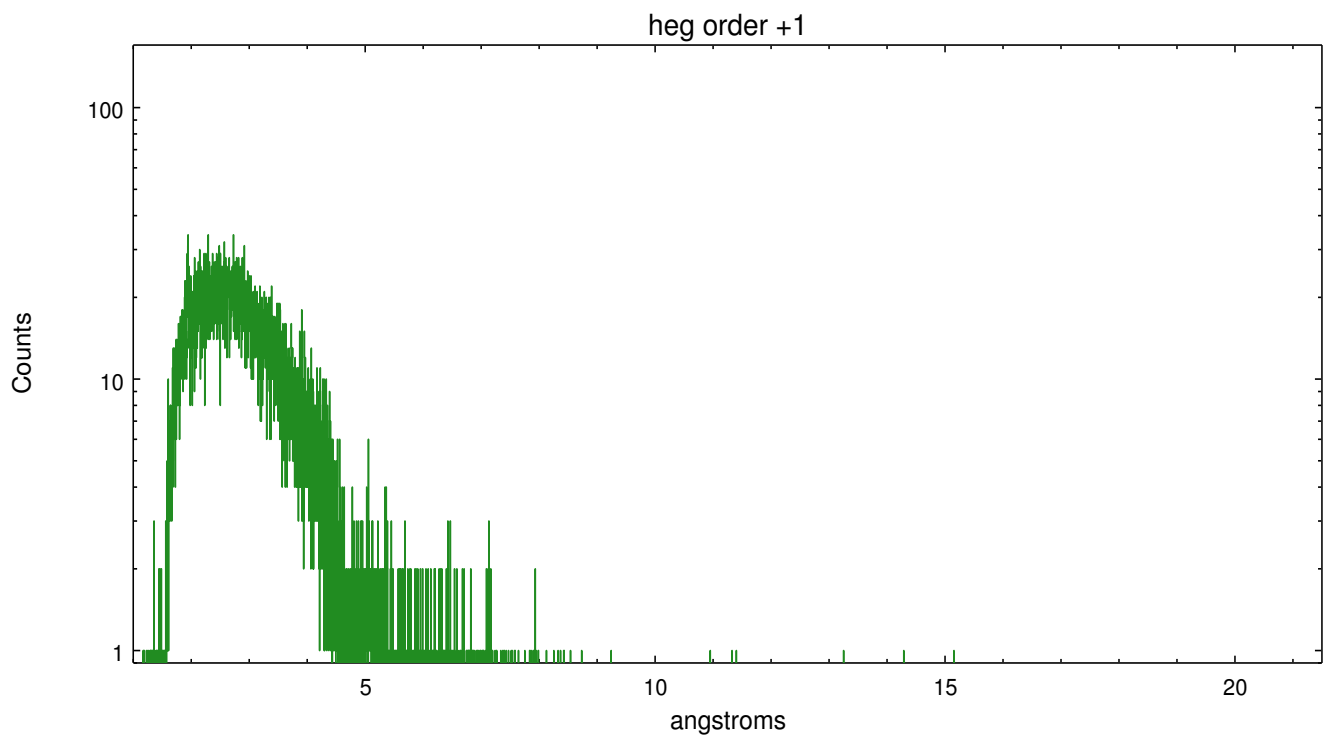
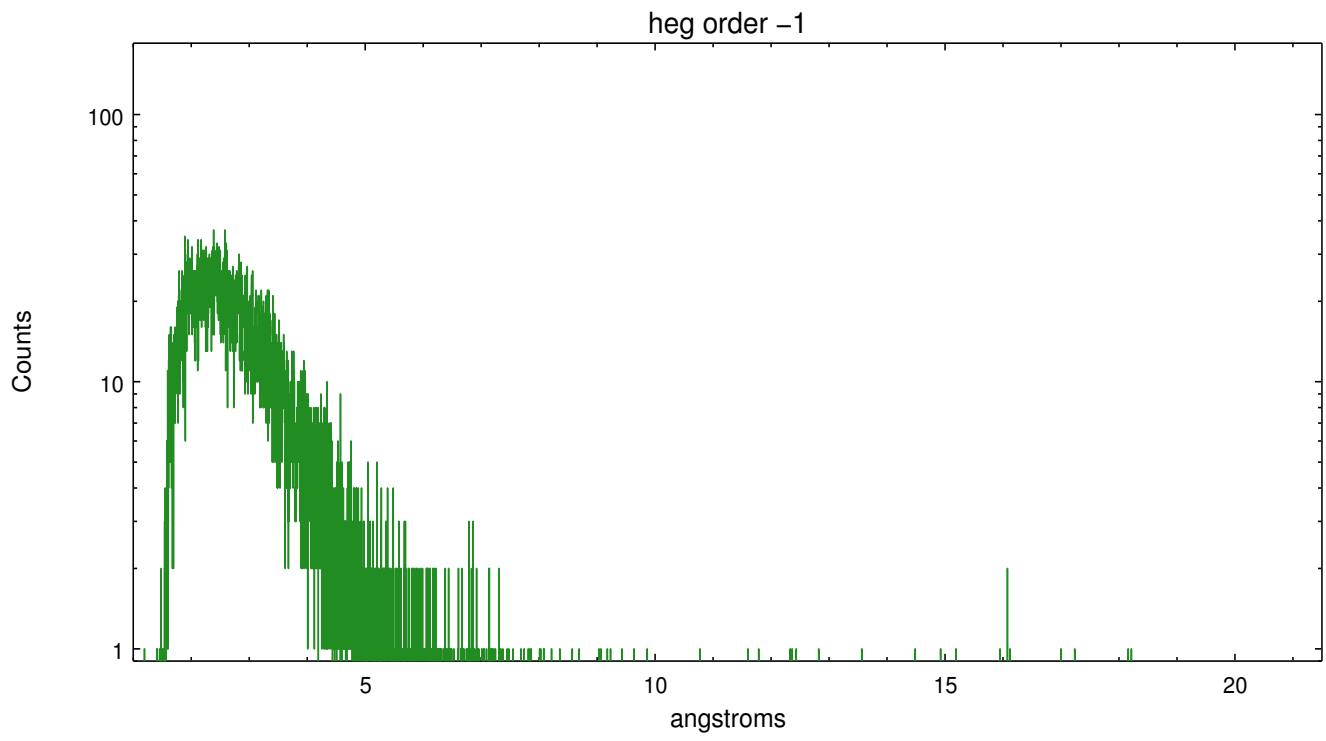
Spot Image HEG



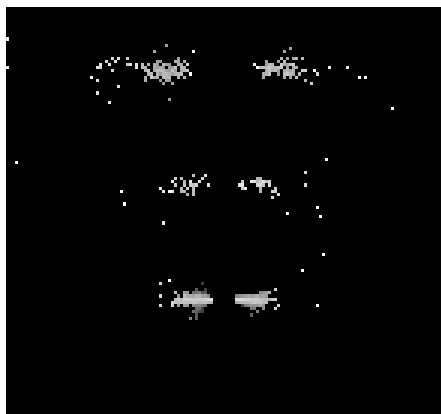
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	954	1486	17926	12589	17124	1191	922

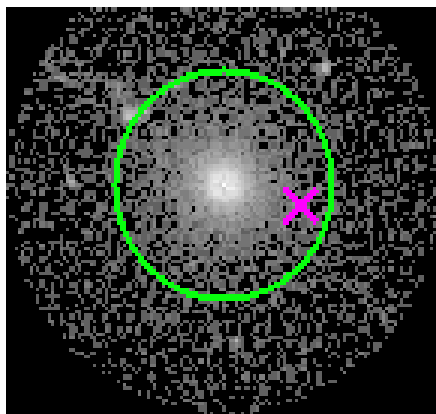




### 3.2 MEG Arm



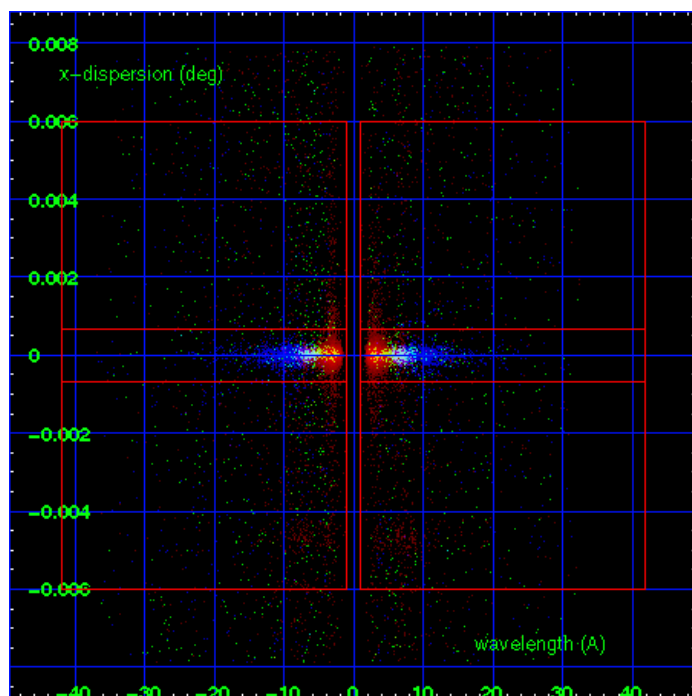
MEG Order Sort 123



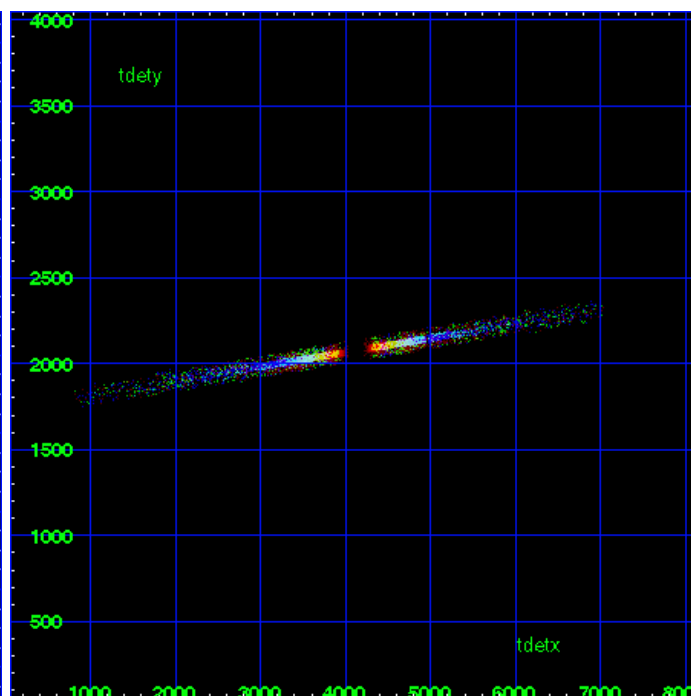
MEG Zero Order



MEG Order Sort ALL

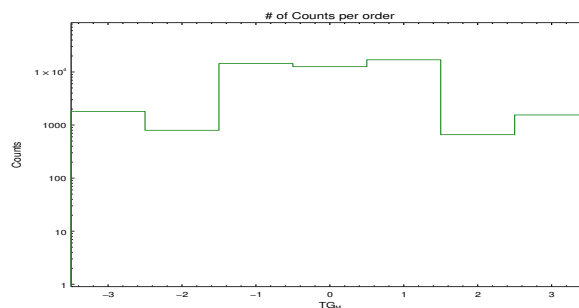


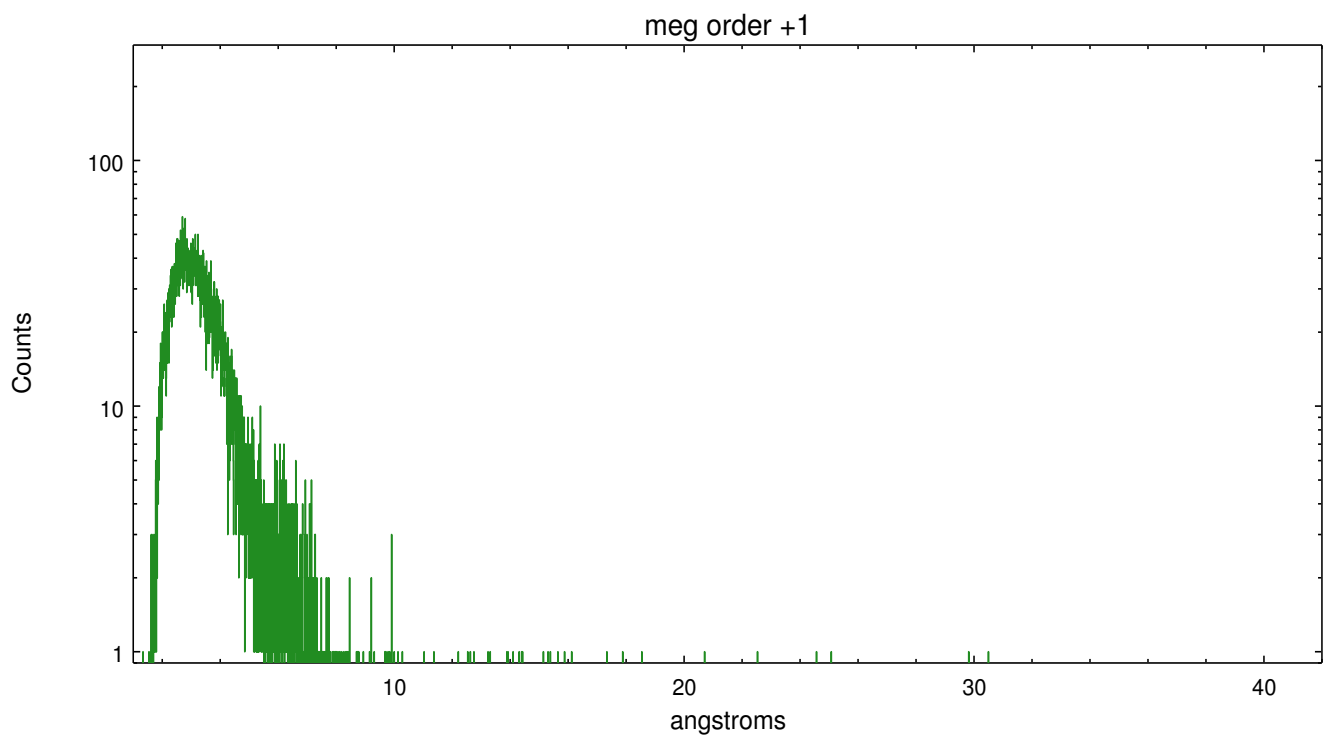
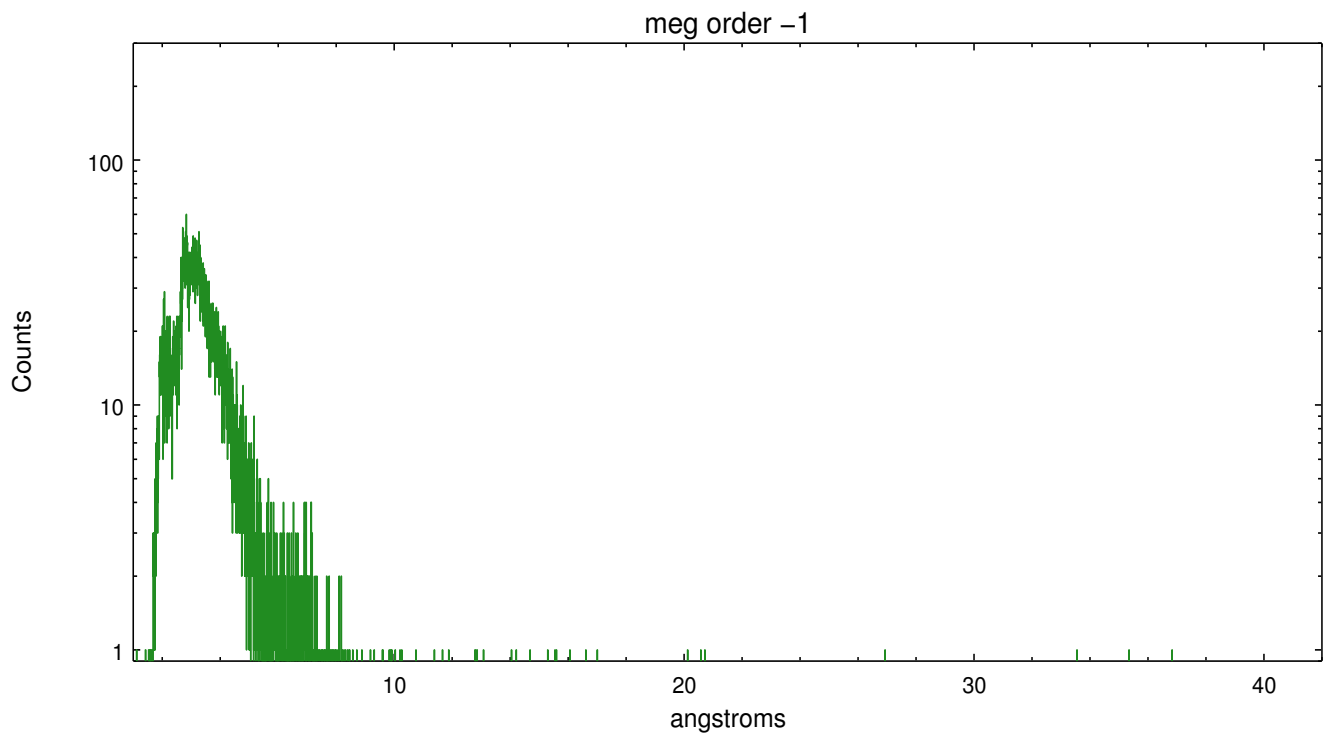
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1807	796	14408	12589	16969	659	1550





# 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	47.446

## 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=4075.44, y=4100.81) 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.