

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 7830 - L2 Version 2  
Chandra X-Ray Center

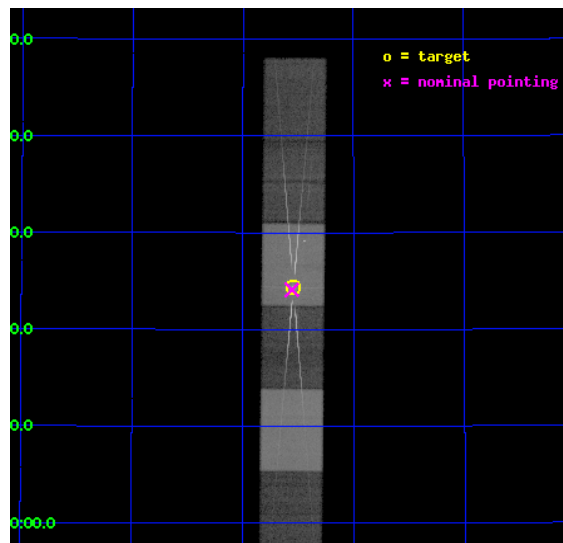
L2 Processing Date : Apr 30 2012

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# 1 Front

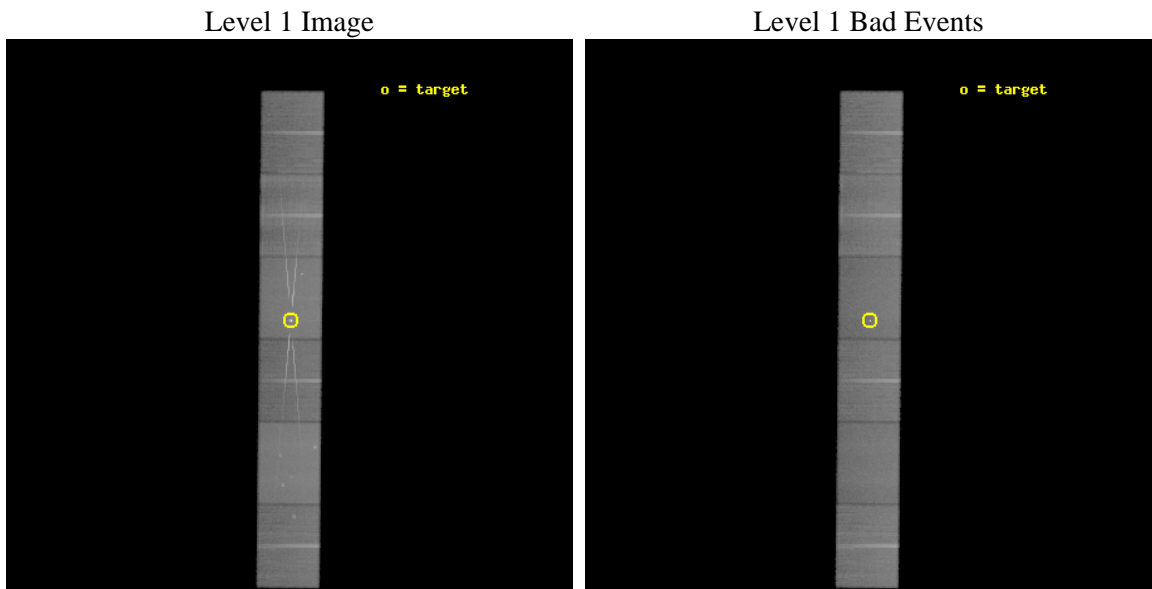
seq_num	701494	Sequence number
obs_id	7830	Observation id
title	Probing the Disk-Wind Connection in the Seyfert Galaxy NGC 4151	Pr
observer	Dr. Steven Kraemer	Principal investigator
object	NGC 4151	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	182.635833	Observer's specified target RA [deg]
dec_targ	39.405722	Observer's specified target Dec [deg]
ra_nom	182.63917155734	Nominal RA [deg]
dec_nom	39.401615810785	Nominal Dec [deg]
roll_nom	270.51725242404	Nominal Roll [deg]
revision	2	Processing version of data
ontime	50145.0	Sum of GTIs [s]
livetime	49335.114756163	Livetime [s]
ontime4	50145.0	Sum of GTIs [s]
ontime5	50145.0	Sum of GTIs [s]
ontime6	50145.0	Sum of GTIs [s]
ontime7	50145.0	Sum of GTIs [s]
ontime8	50145.0	Sum of GTIs [s]
ontime9	50145.0	Sum of GTIs [s]
l2events	724072	Number of level 2 events



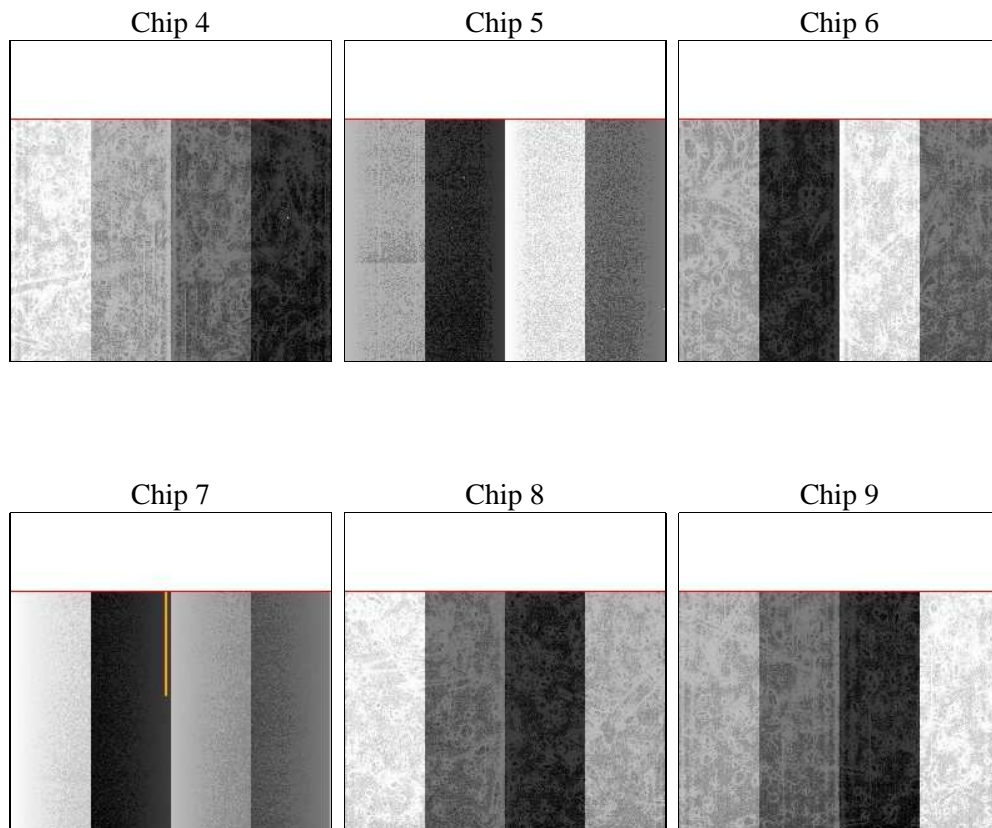
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	50000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	50145.0	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	50145.0	Sum of GTIs [s]
date	2012-04-28T16:41:21	Date and time of file creation	ontime5	50145.0	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	50145.0	Sum of GTIs [s]
			ontime7	50145.0	Sum of GTIs [s]
			ontime8	50145.0	Sum of GTIs [s]
			ontime9	50145.0	Sum of GTIs [s]
			l1events	2897981	Number of level 1 events

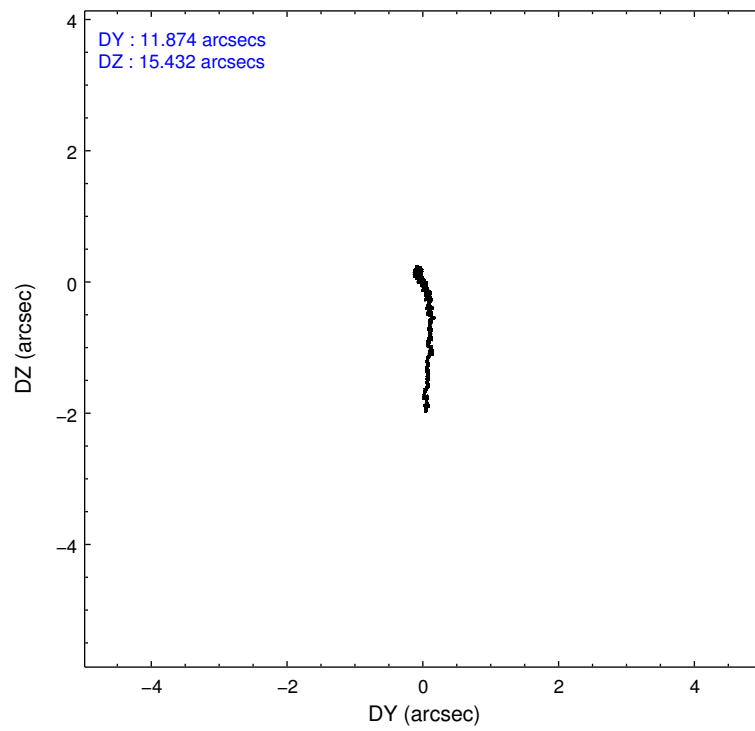
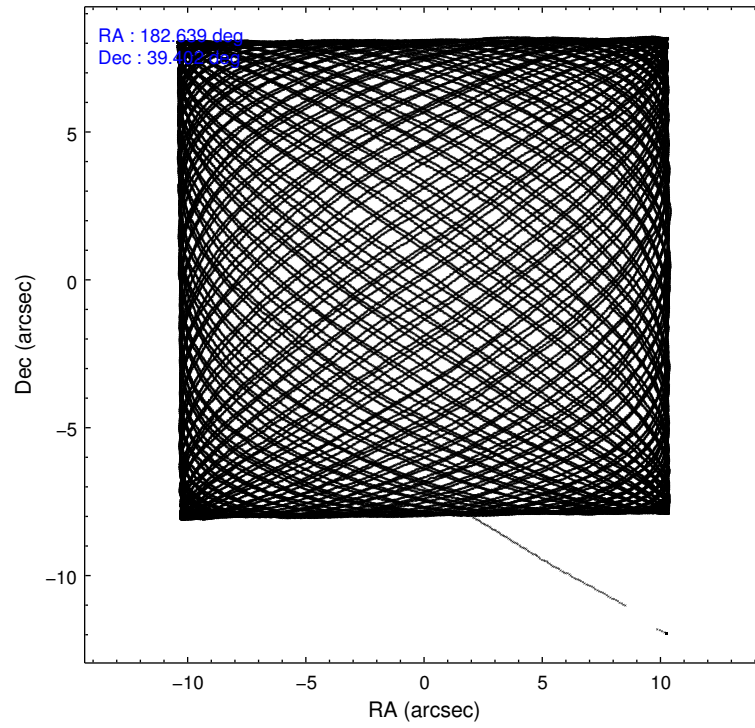
### 2.1.4 Events

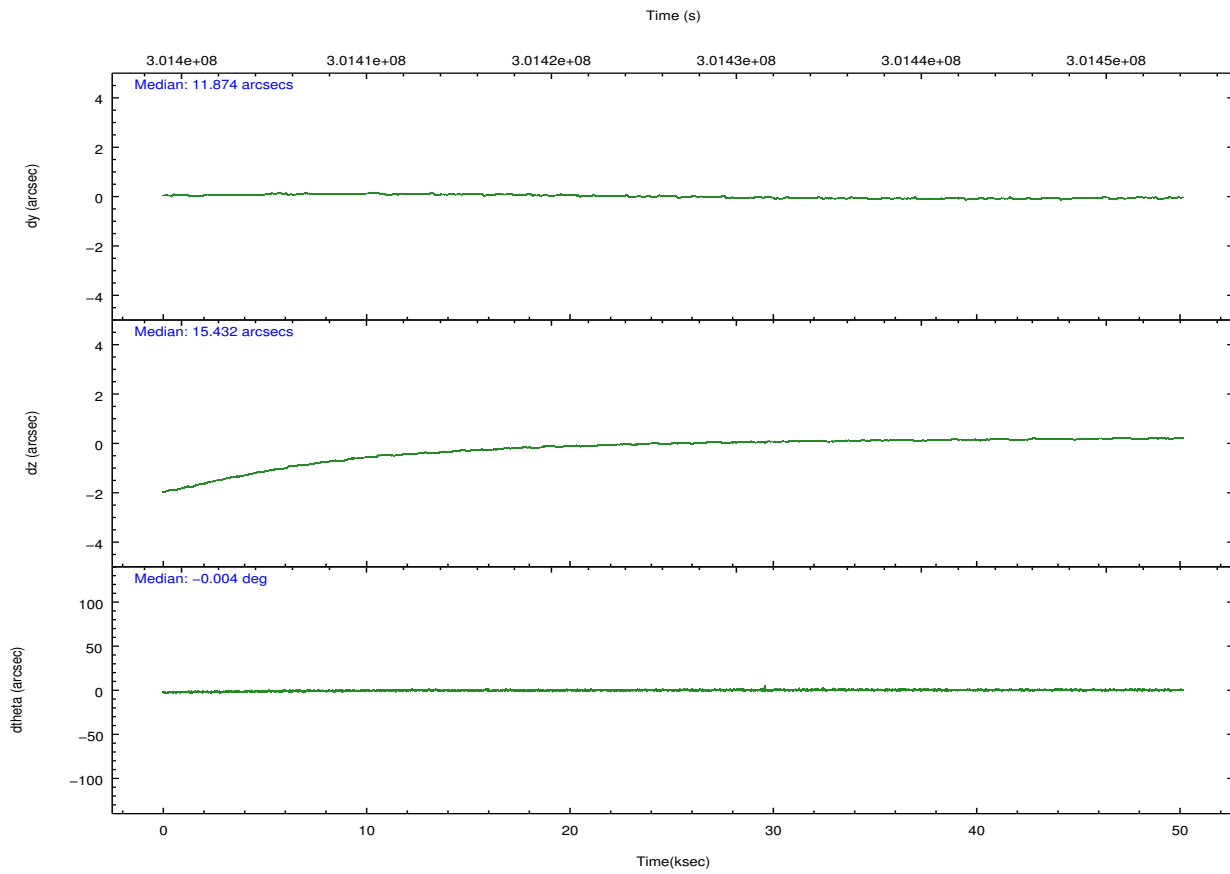
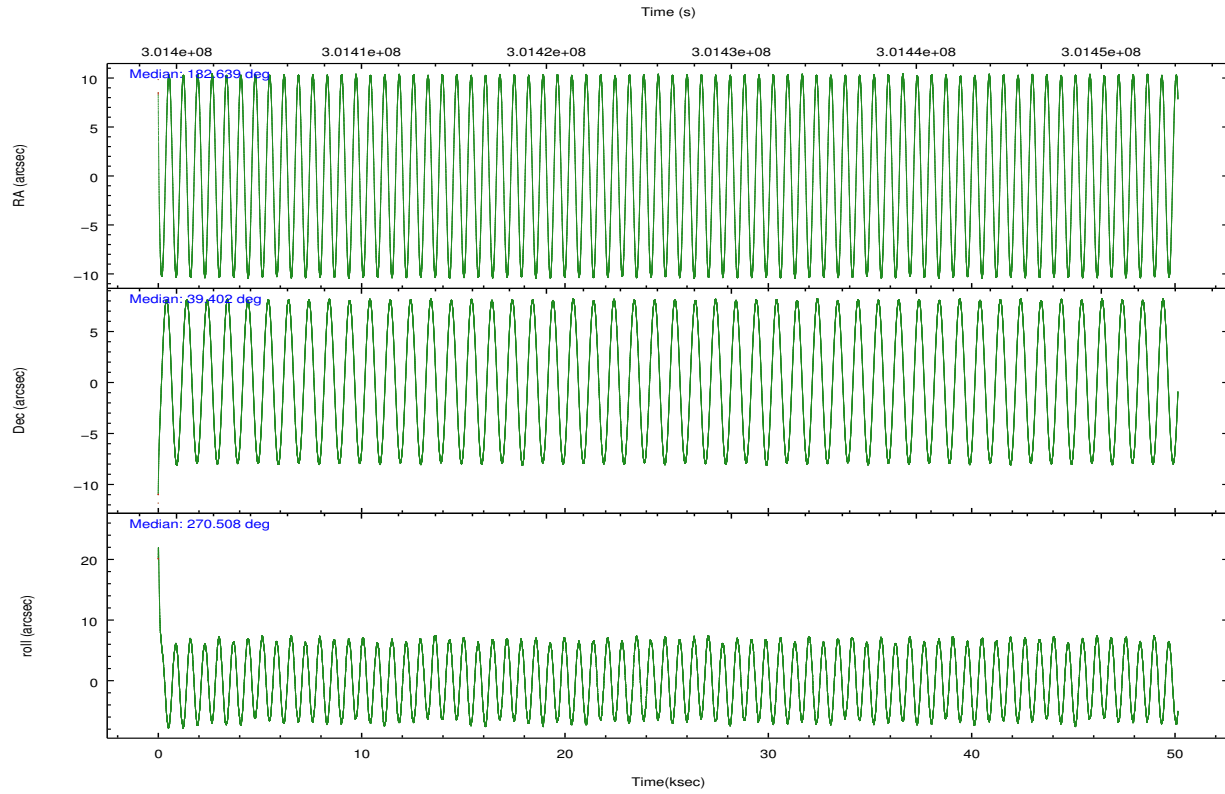
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	429126	574411	421172	585324	505201	382747	grade 0 events	23708	21997	42929	30909	40913	20882
rejected events	379060	317217	341202	312942	387262	334451		5%	3%	10%	5%	8%	5%
rejected %	88%	55%	81%	53%	76%	87%	grade 1 events	316	885	288	986	344	211
								0%	0%	0%	0%	0%	0%
							grade 2 events	10894	80623	14864	58623	26003	9942
								2%	14%	3%	10%	5%	2%
							grade 3 events	5028	11822	6198	25285	12459	4916
								1%	2%	1%	4%	2%	1%
							grade 4 events	4783	11453	6222	25324	11581	4754
								1%	1%	1%	4%	2%	1%
							grade 5 events	16648	42793	17572	51041	23531	18656
								3%	7%	4%	8%	4%	4%
							grade 6 events	7602	140943	11310	139214	30391	9318
								1%	24%	2%	23%	6%	2%
							grade 7 events	360147	263895	321789	253942	359979	314068
								83%	45%	76%	43%	71%	82%

## 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	182.620788	182.6391715573415	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	39.424976	39.40161581078537	Subarray start row	1	1
[deg] Pointing Roll	270.372289	270.5172524240363	Subarray row count	774	774
[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	2.5
[mm] SIM translation stage pos	-187.132523	-187.1228876879999			
[mm] SIM translation stage offset	-3	-3.009634895007935			
[s] Observation start time (MET)	301401647.184000	301399828.32183			
Observation start date	2007-07-21T10:39:42	2007-07-21T10:10:28			
[s] Observation end time (MET)	301451647.184000	301452609.16186			
Observation end date	2007-07-22T00:33:02	2007-07-22T00:50:09			
Read mode	TIMED	TIMED			

## 2.3 Aspect



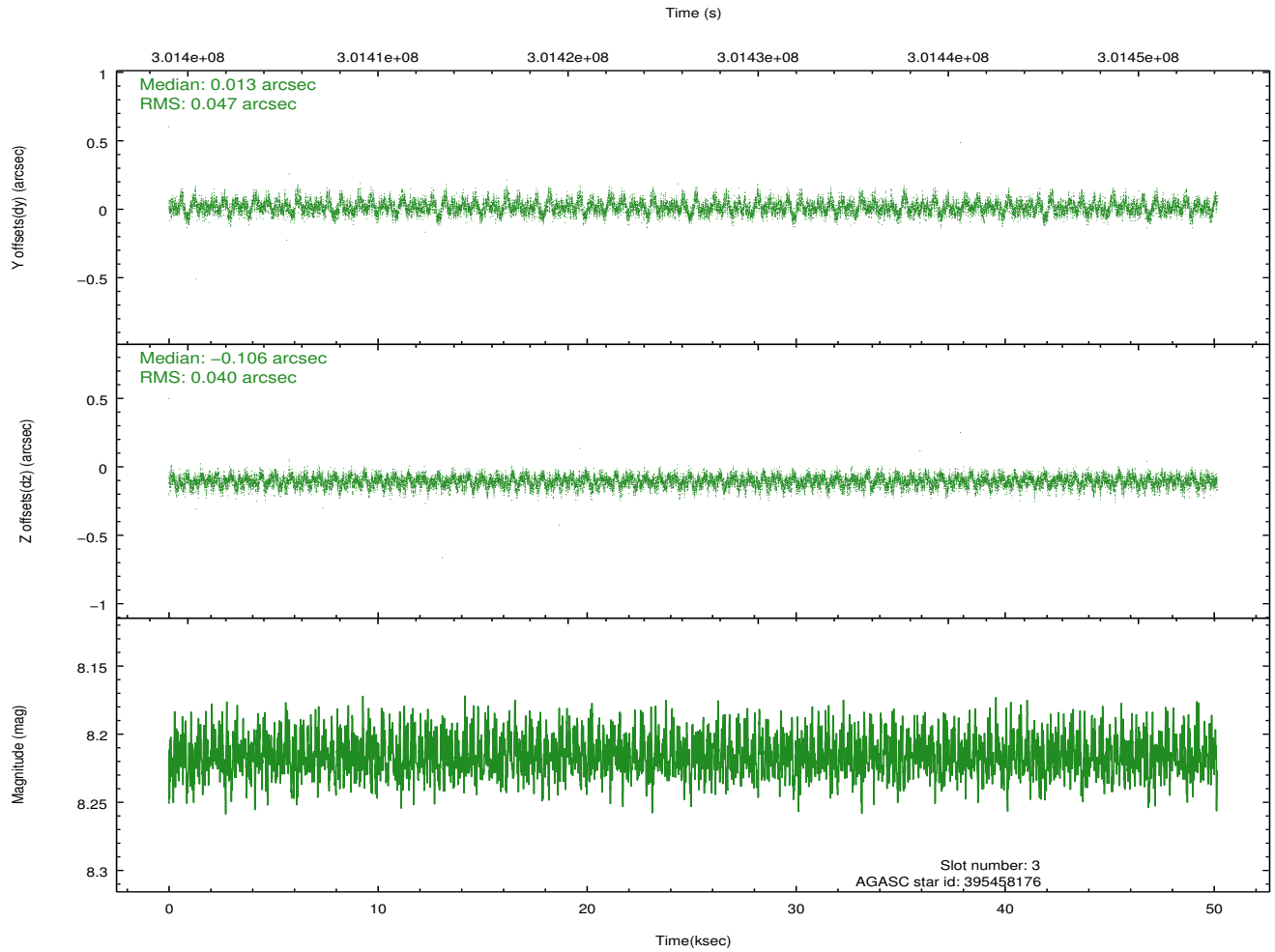
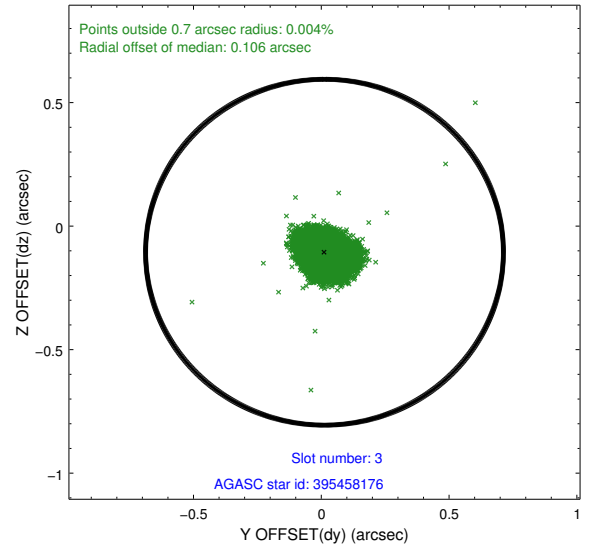
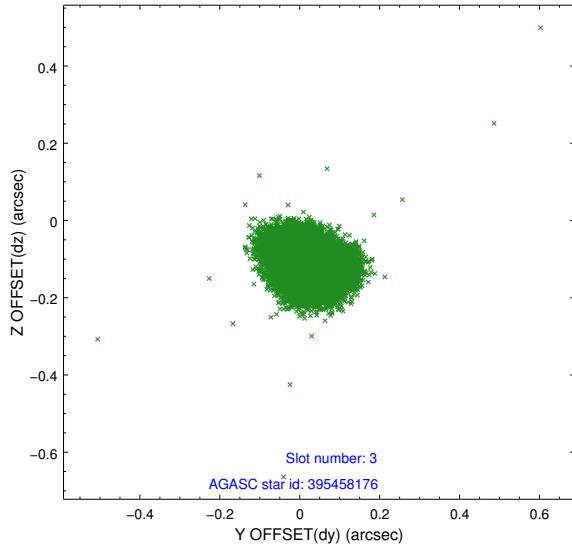


### Slot Statistics

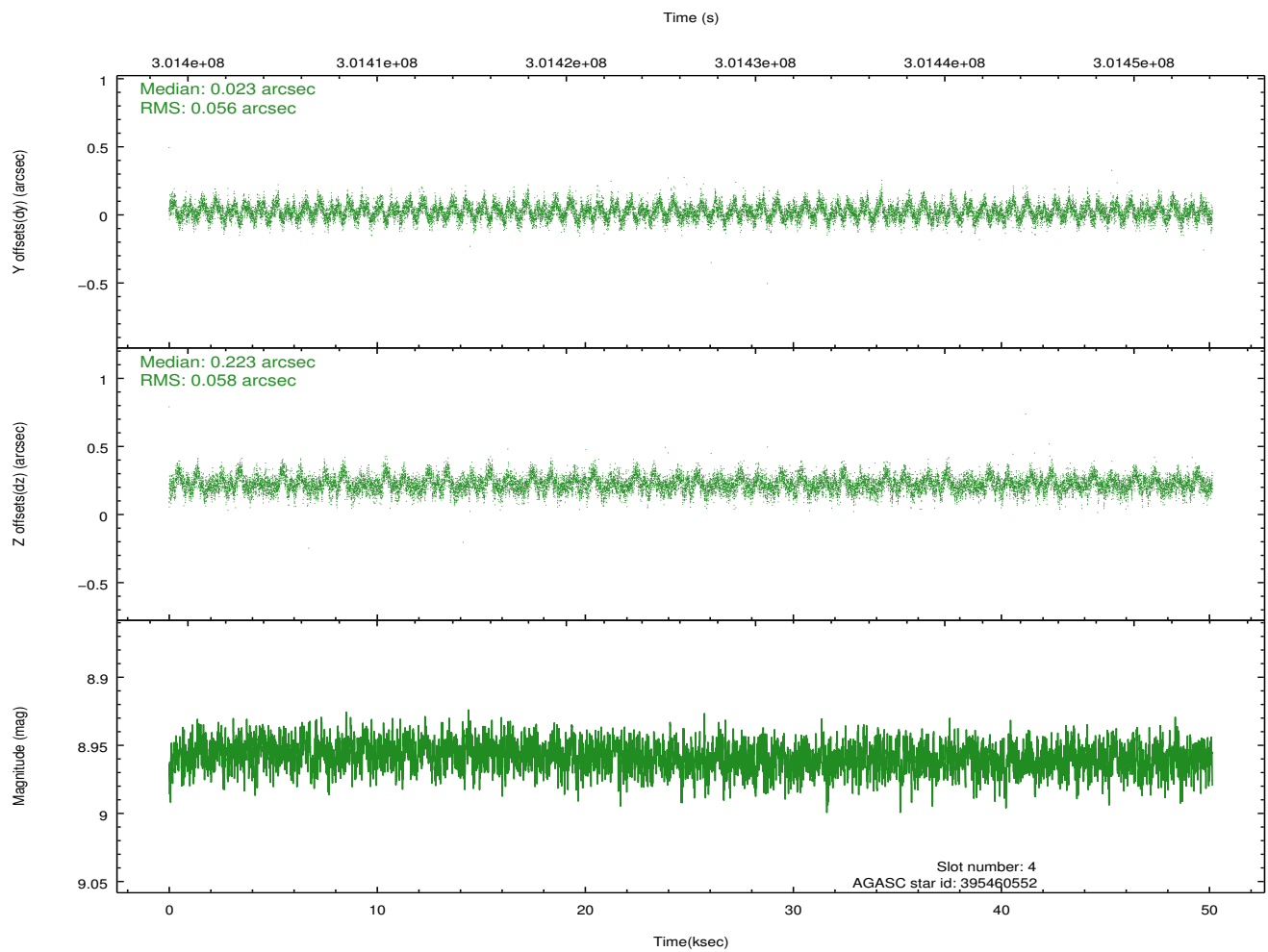
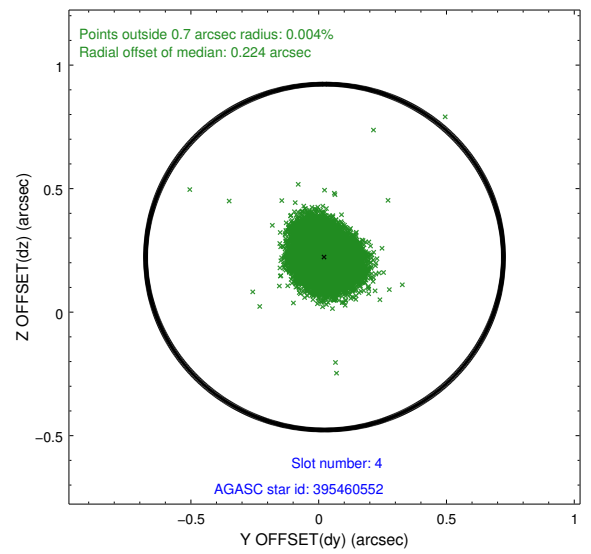
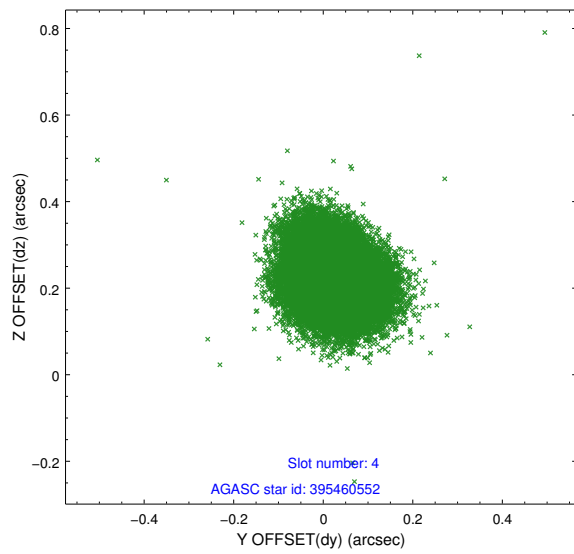
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.17	12231	-0.020	0.034	0.019	0.084	0.000000	0.000000	931.43	-1794.34
1	FID	ACIS-S-4	7.17	12232	0.066	-0.010	0.009	0.036	0.000000	0.000000	2148.93	109.79
2	FID	ACIS-S-6	7.35	12232	-0.069	-0.011	0.018	0.049	0.000000	0.000000	397.33	747.15
3	GUIDE	395458176	8.22	24458	0.013	-0.106	0.065	0.106	182.790485	39.130199	1064.00	467.26
4	GUIDE	395460552	8.96	24442	0.023	0.223	0.086	0.138	183.182835	39.403608	82.28	1563.39
5	GUIDE	395461032	7.48	24458	-0.093	-0.004	0.054	0.085	182.028999	39.655498	-845.47	-1635.76
6	GUIDE	395451464	7.52	24460	0.055	0.017	0.047	0.077	182.473792	39.433512	-33.39	-408.36
7	GUIDE	395450568	8.40	24456	0.004	-0.134	0.066	0.108	183.486363	39.987765	-2022.21	2400.47

## 2.4 Star Slots

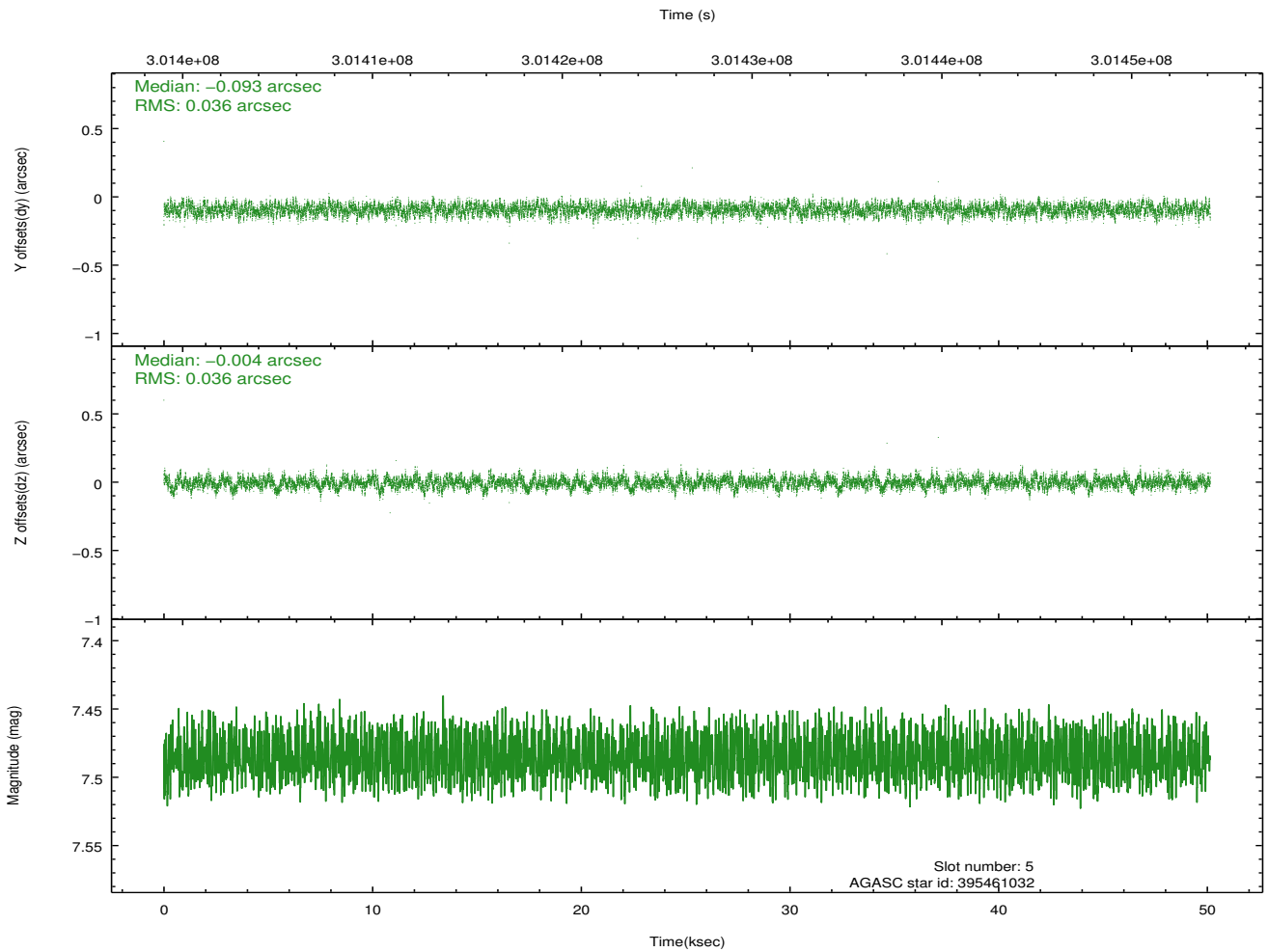
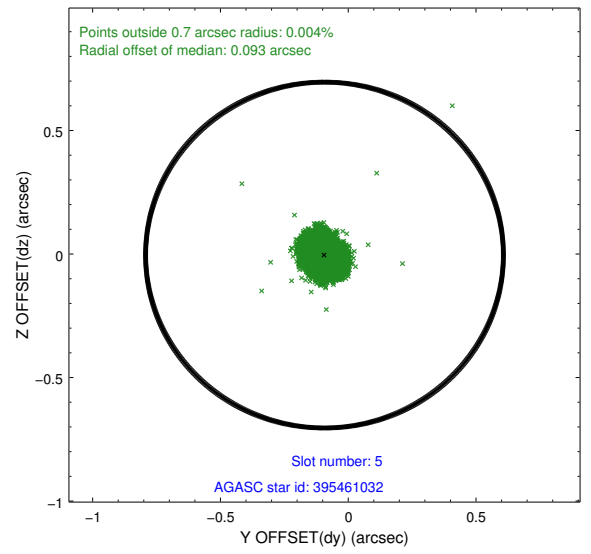
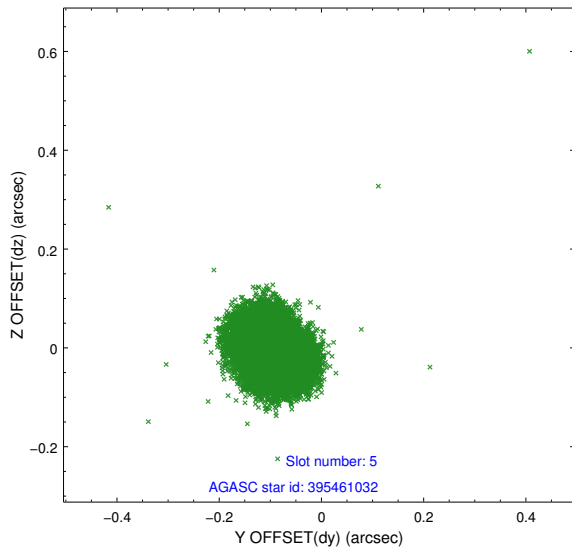
### 2.4.1 Slot 3



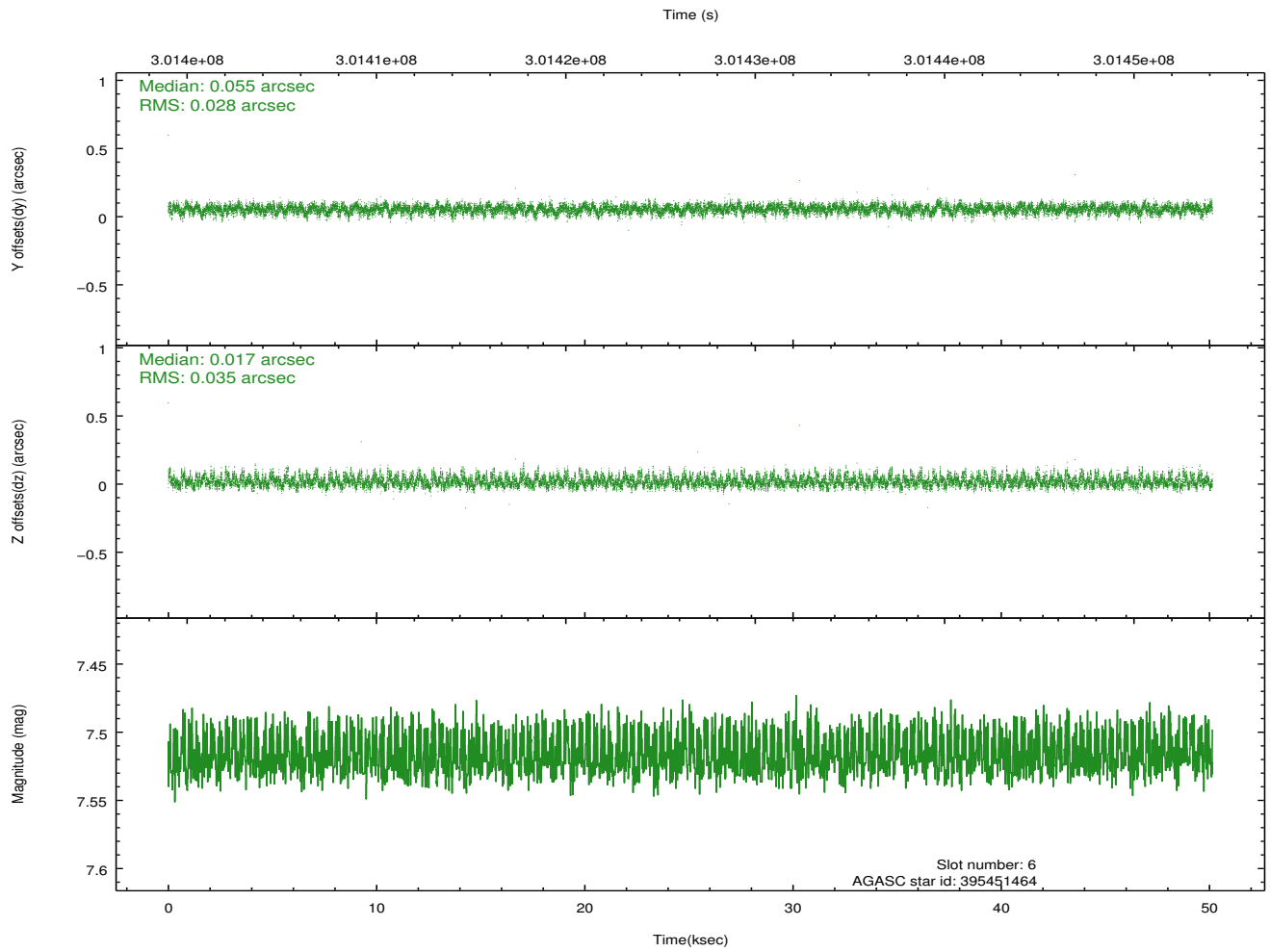
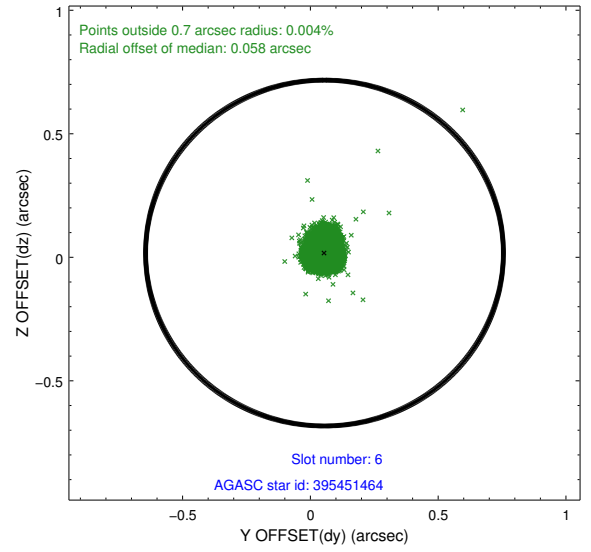
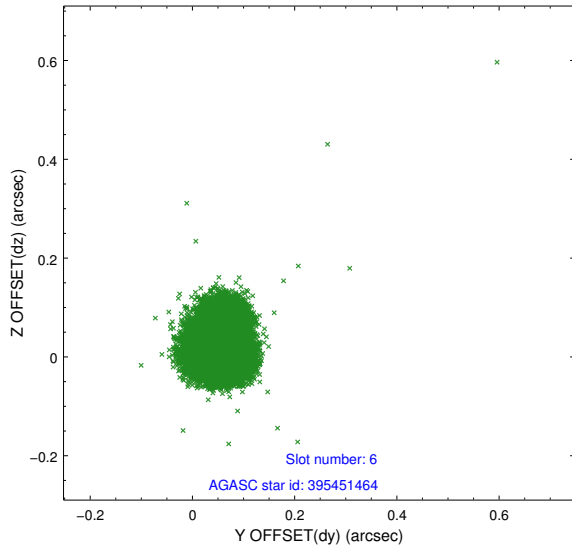
## 2.4.2 Slot 4



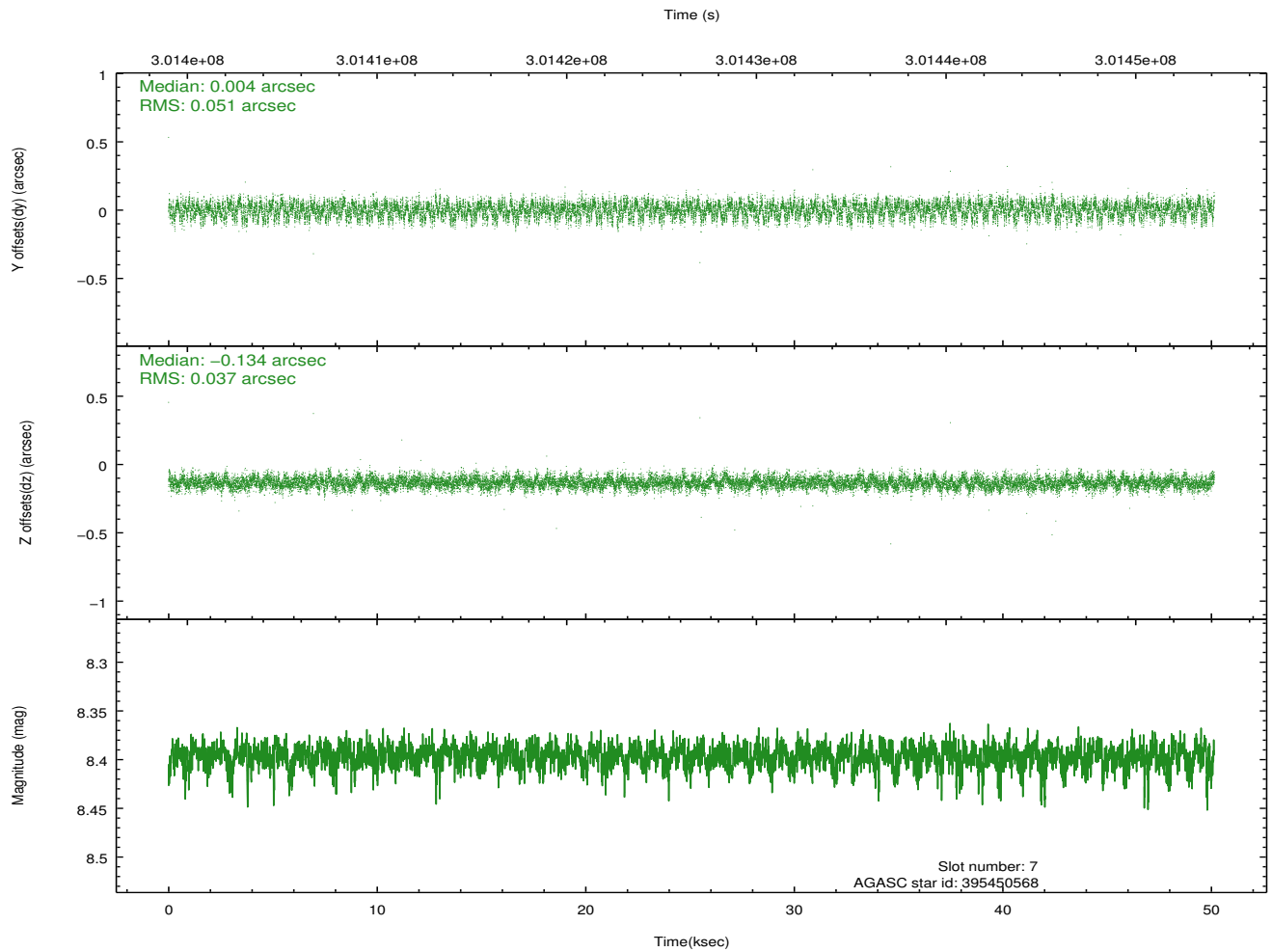
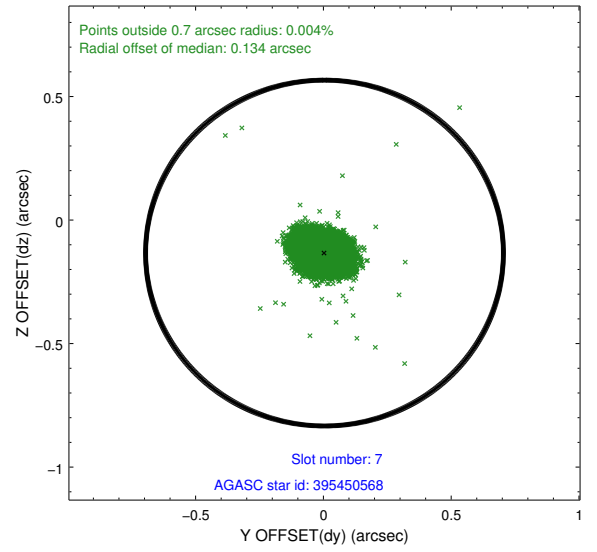
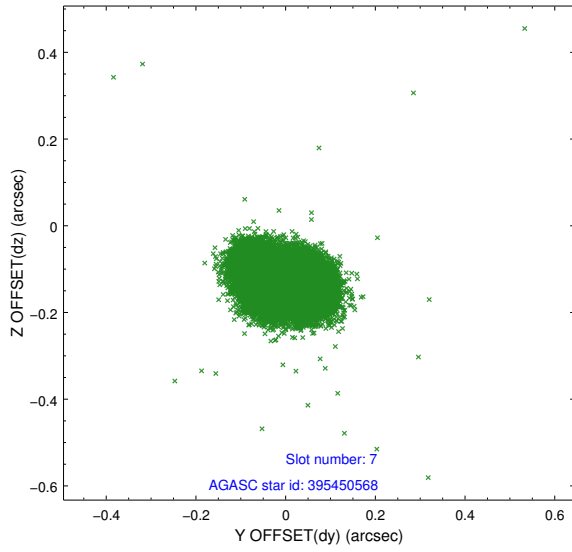
### 2.4.3 Slot 5



### 2.4.4 Slot 6

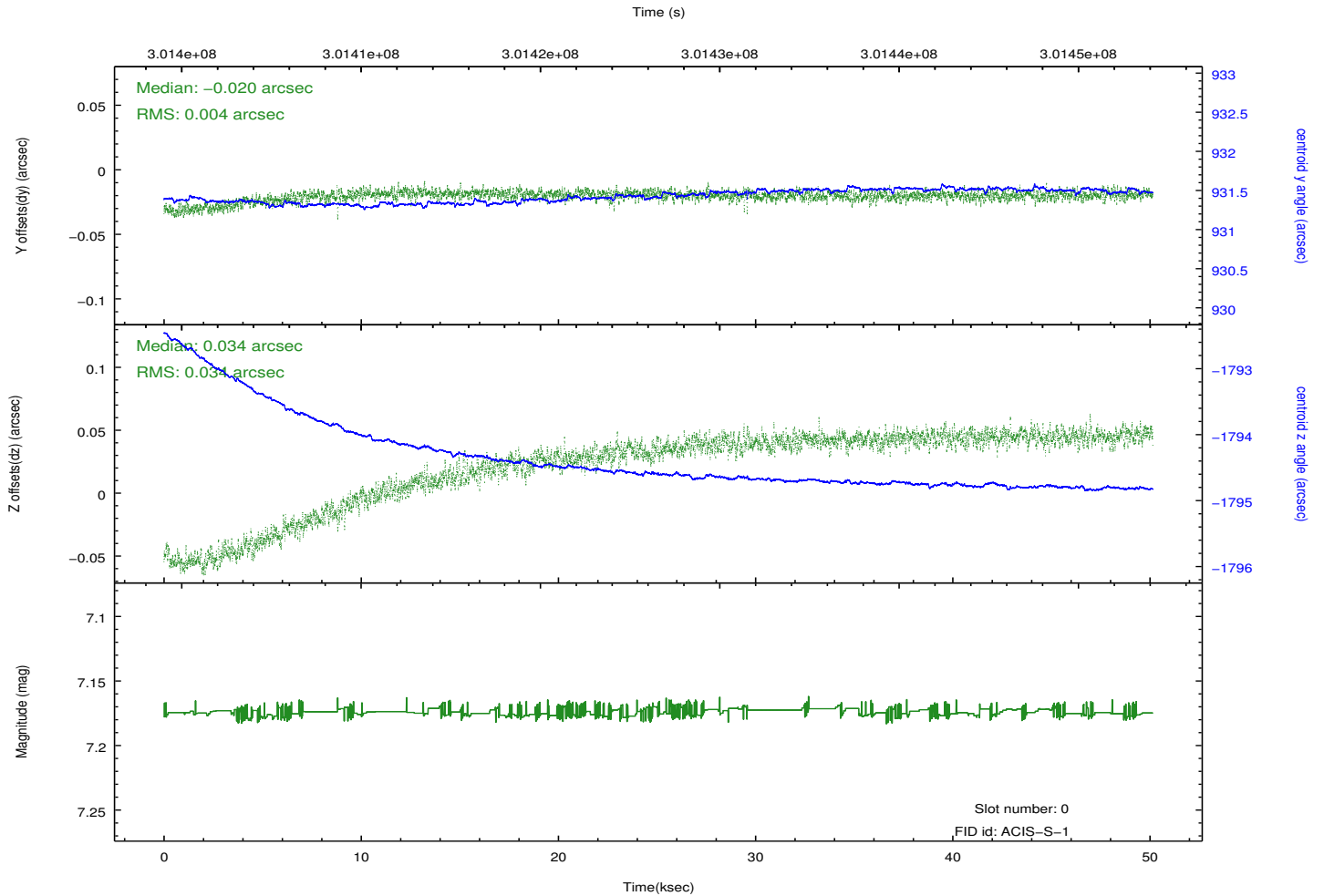
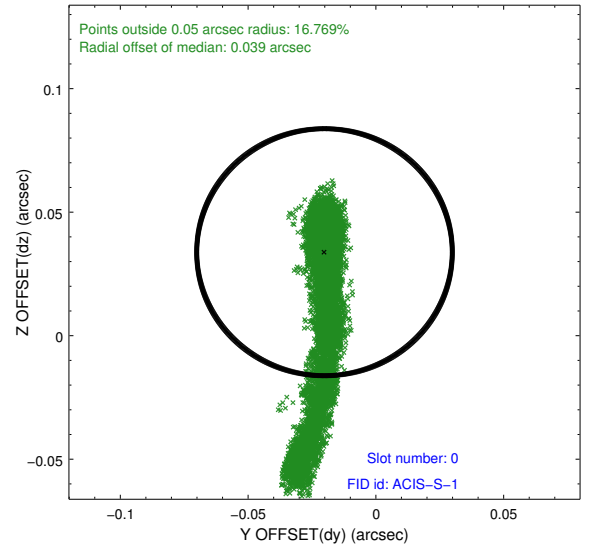
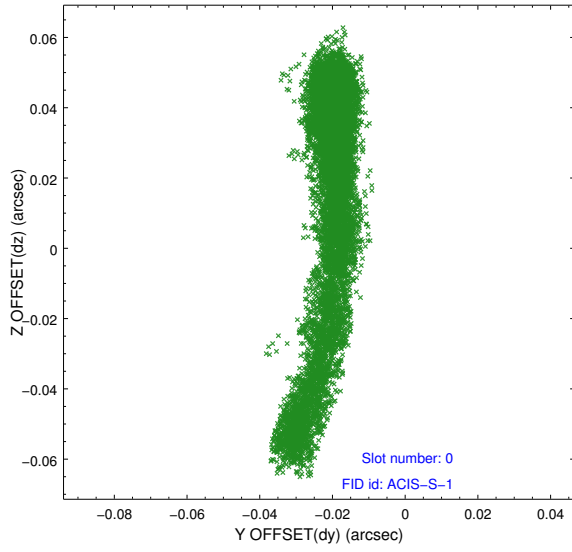


## 2.4.5 Slot 7

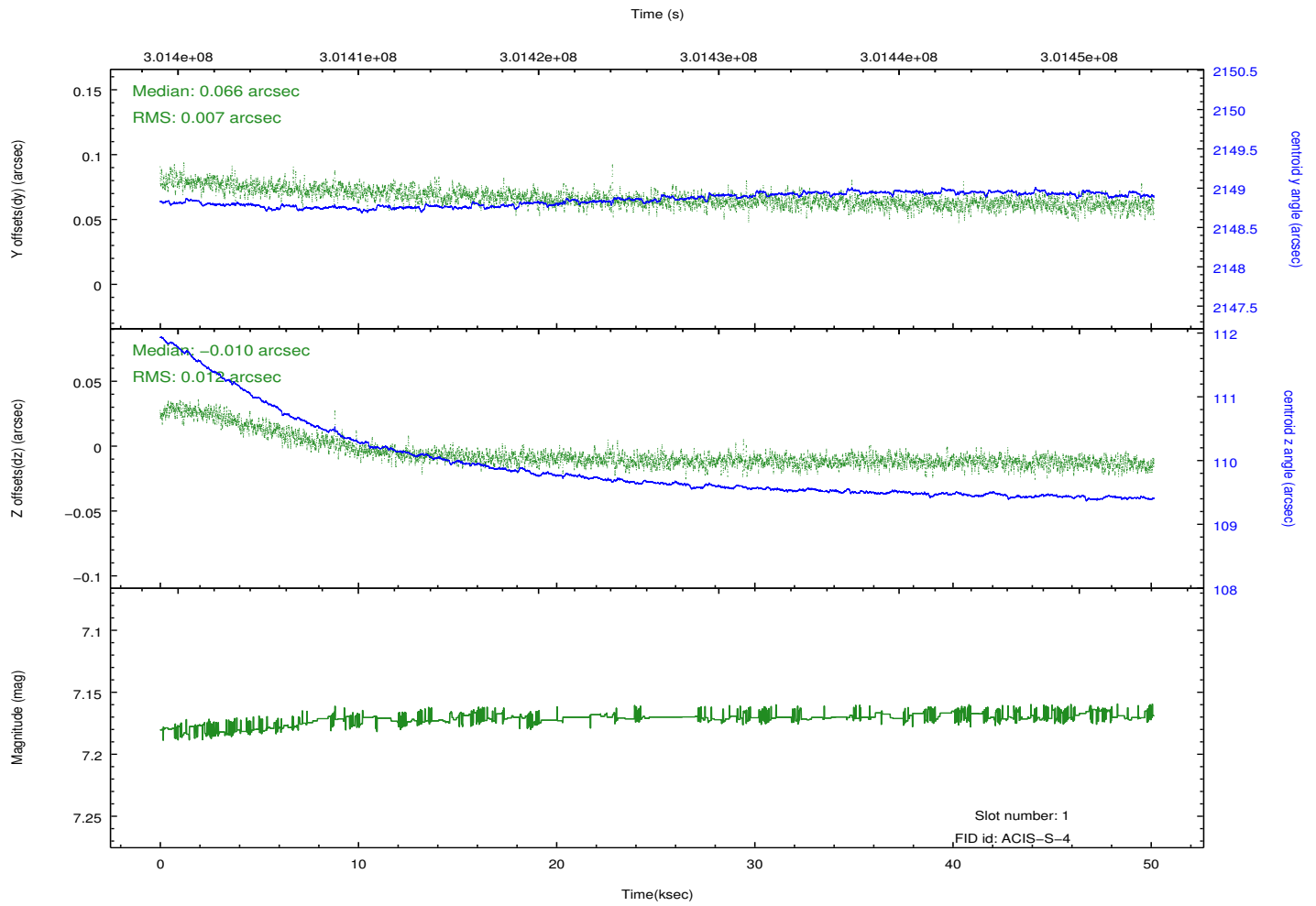
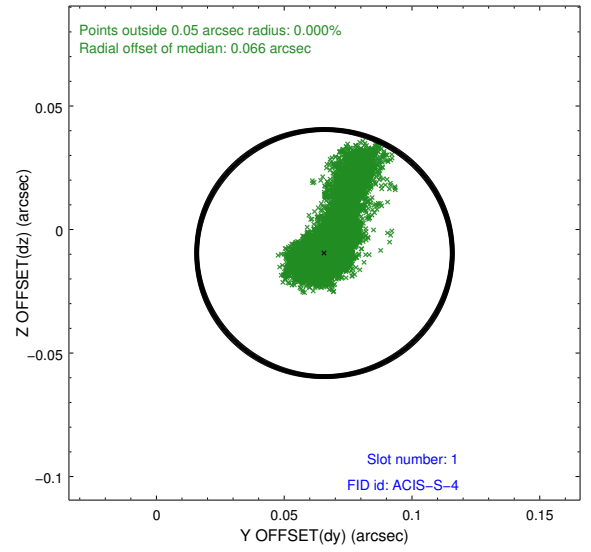
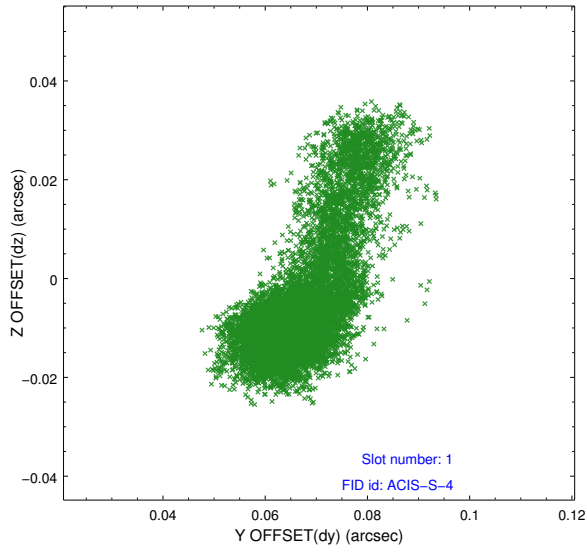


## 2.5 FID Slots

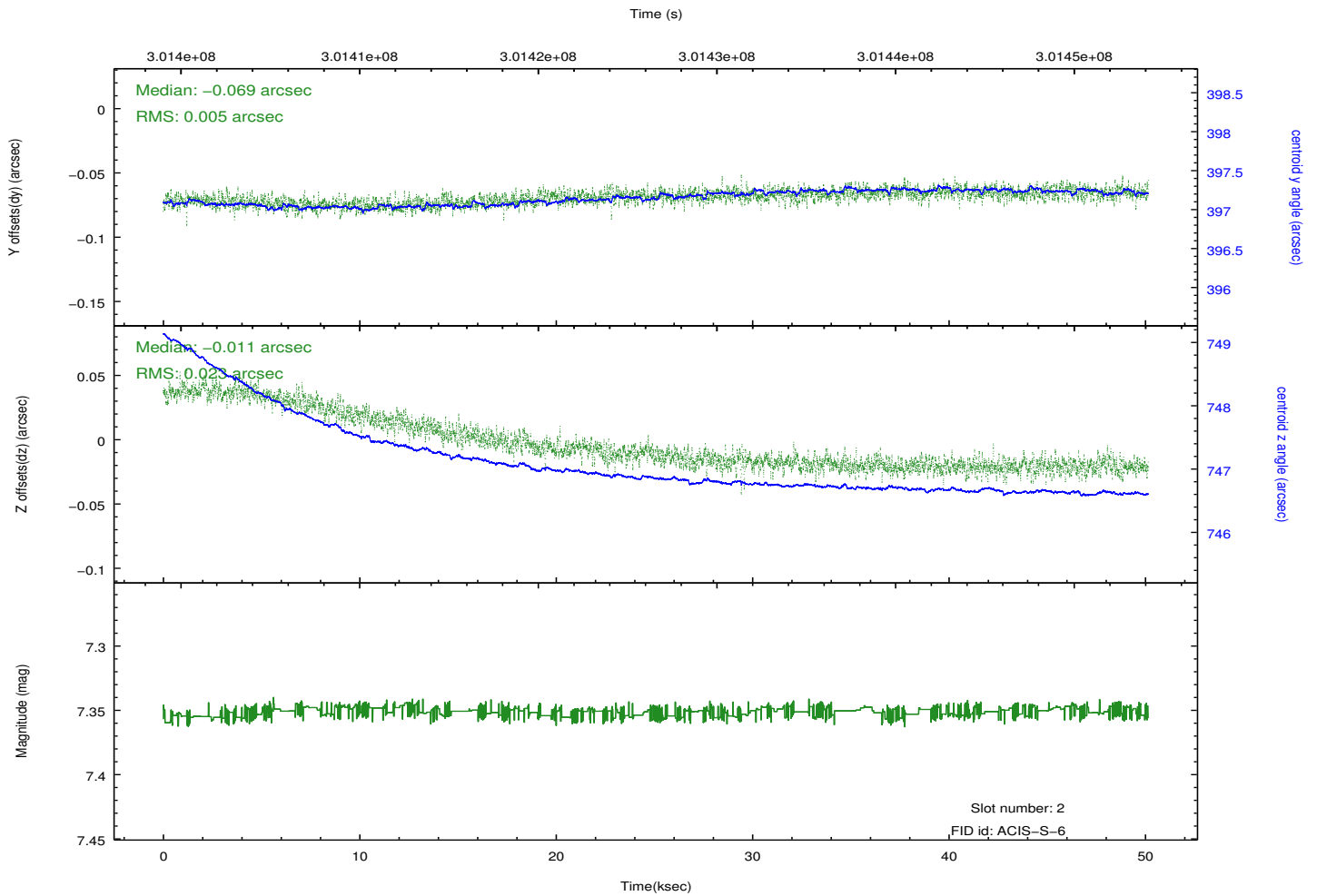
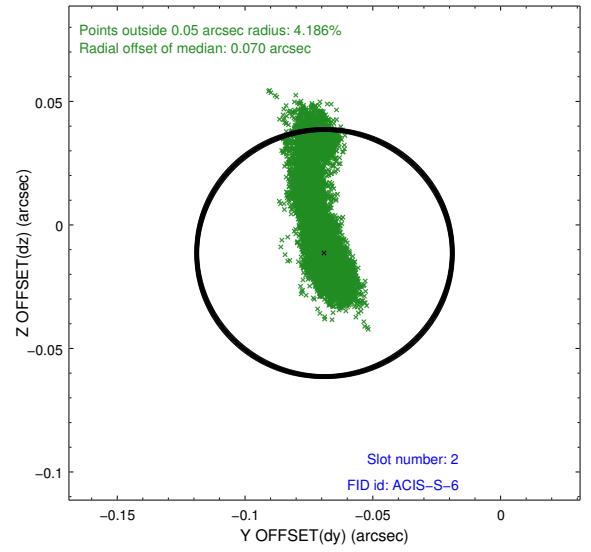
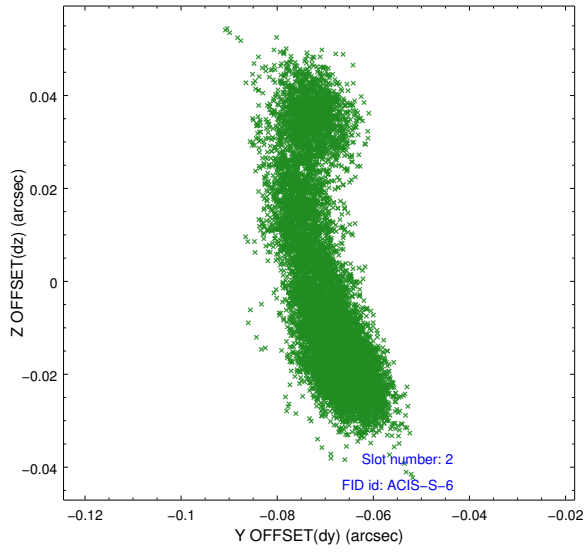
### 2.5.1 Slot 0



## 2.5.2 Slot 1

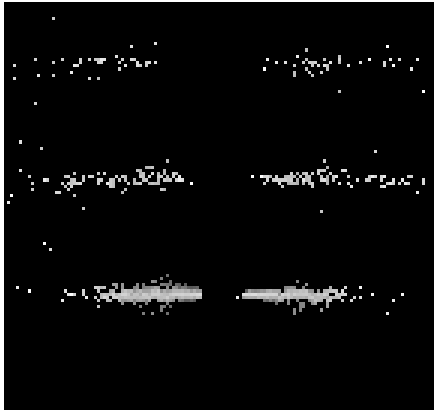


### 2.5.3 Slot 2

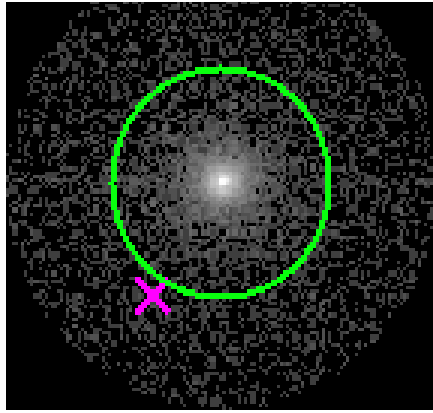


### 3 Gratings

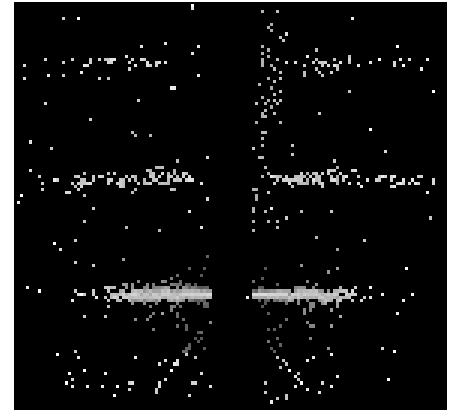
#### 3.1 HEG Arm



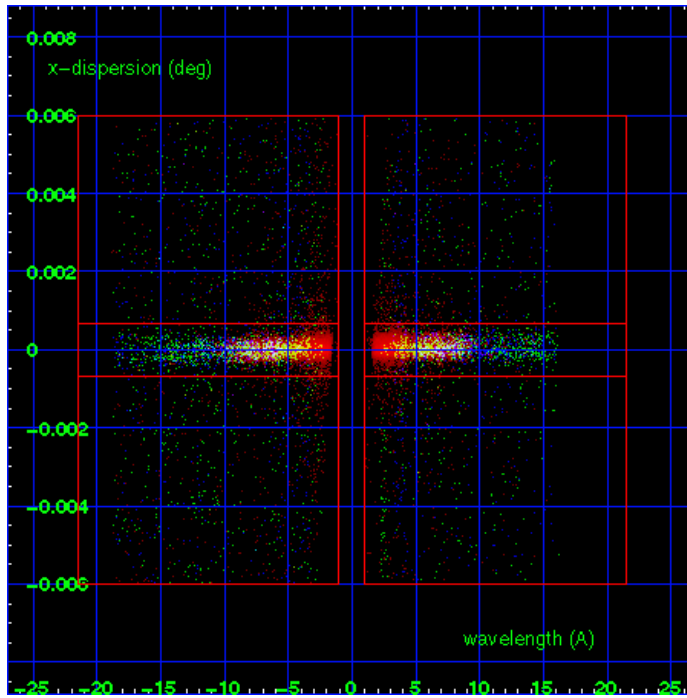
HEG Order Sort 123



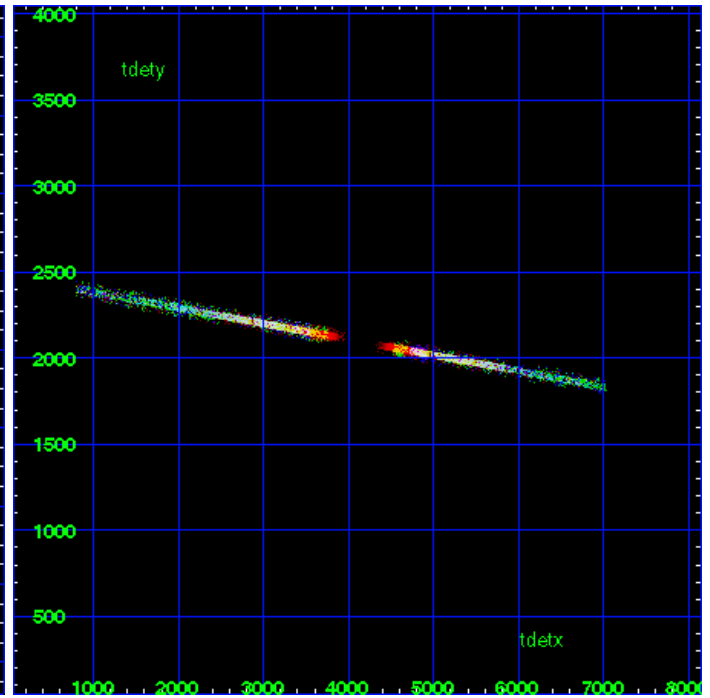
HEG Zero Order



HEG Order Sort ALL

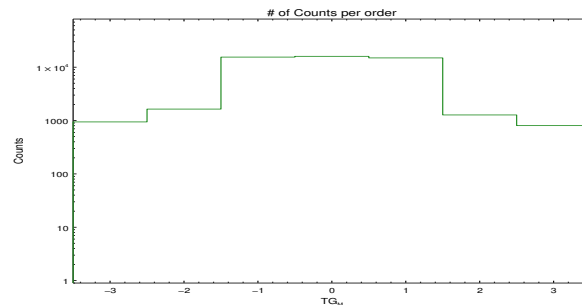


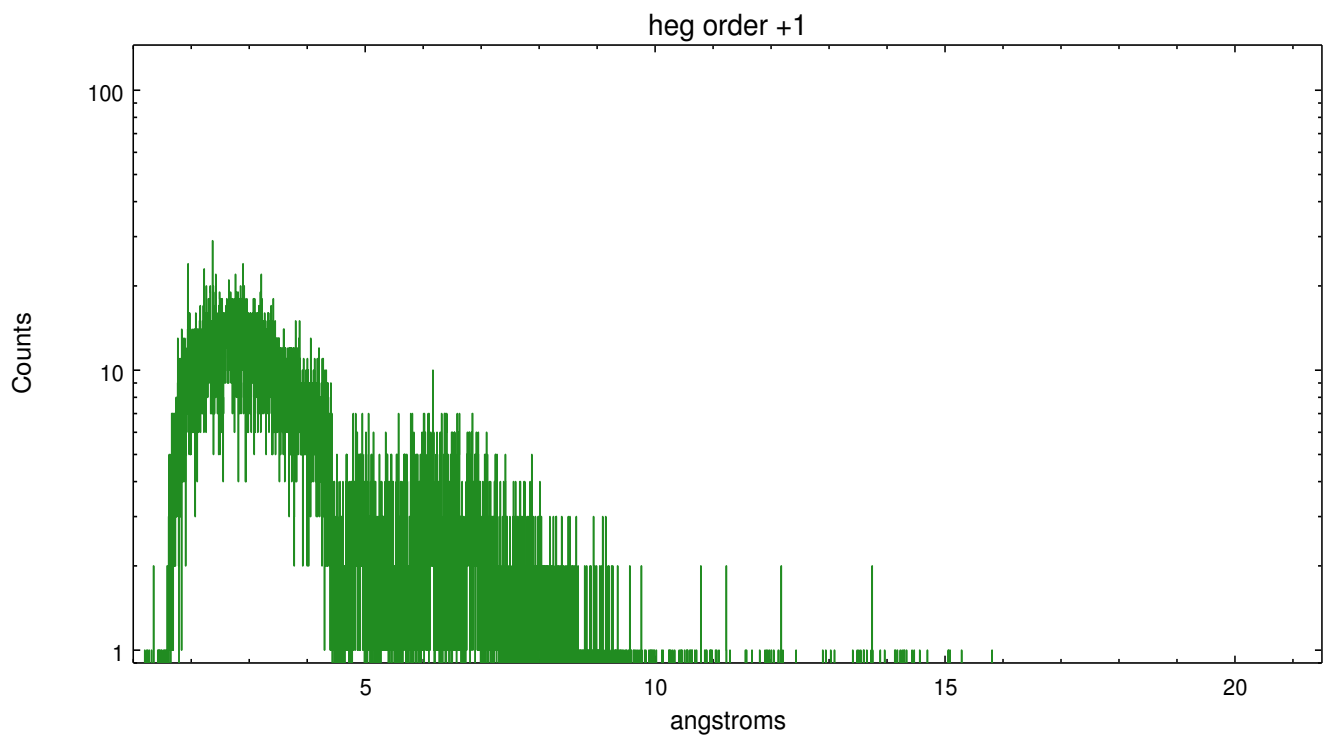
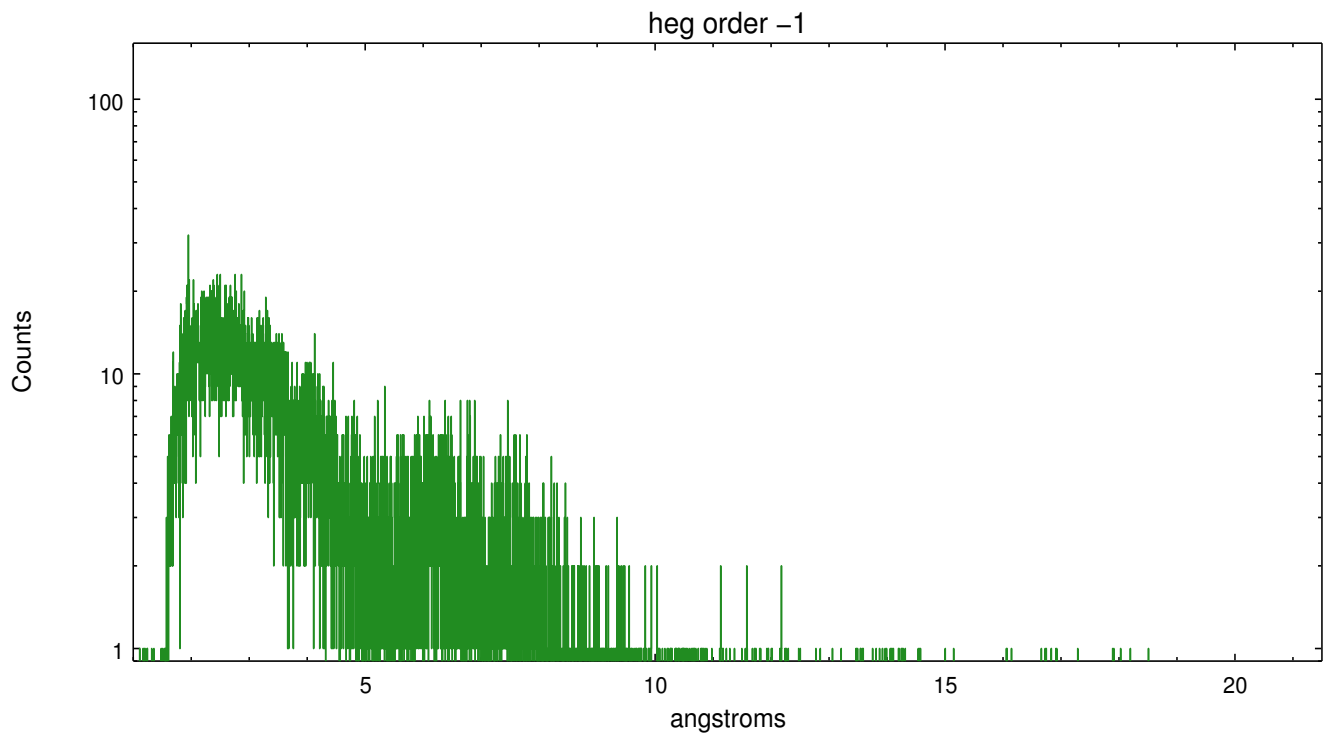
Spot Image HEG



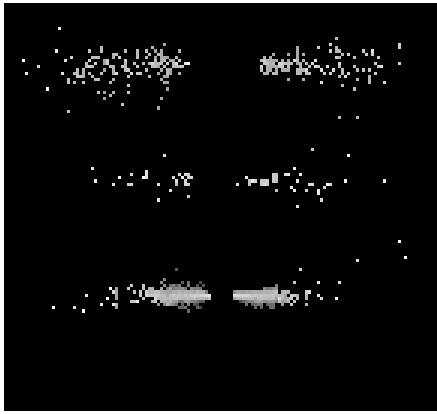
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	943	1640	15468	15983	14936	1274	804

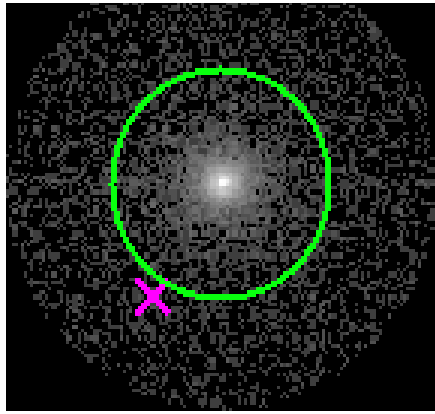




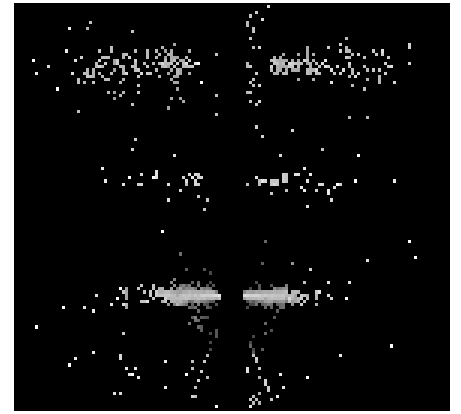
### 3.2 MEG Arm



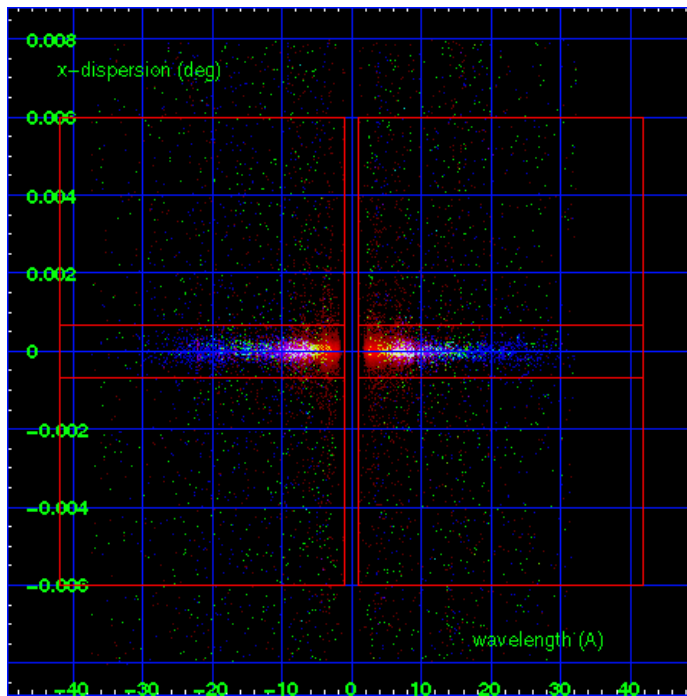
MEG Order Sort 123



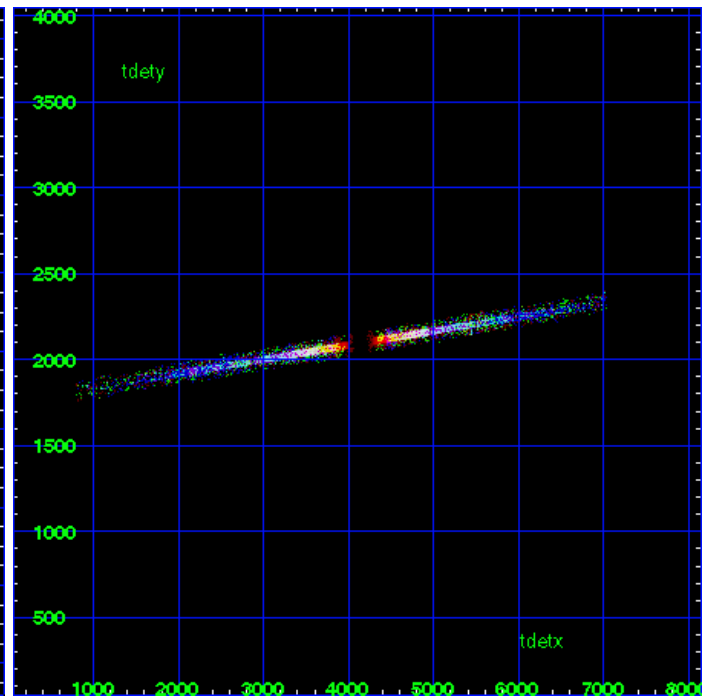
MEG Zero Order



MEG Order Sort ALL

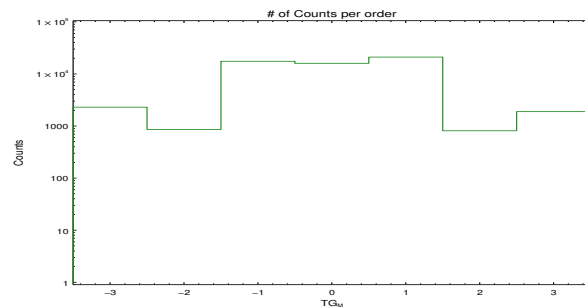


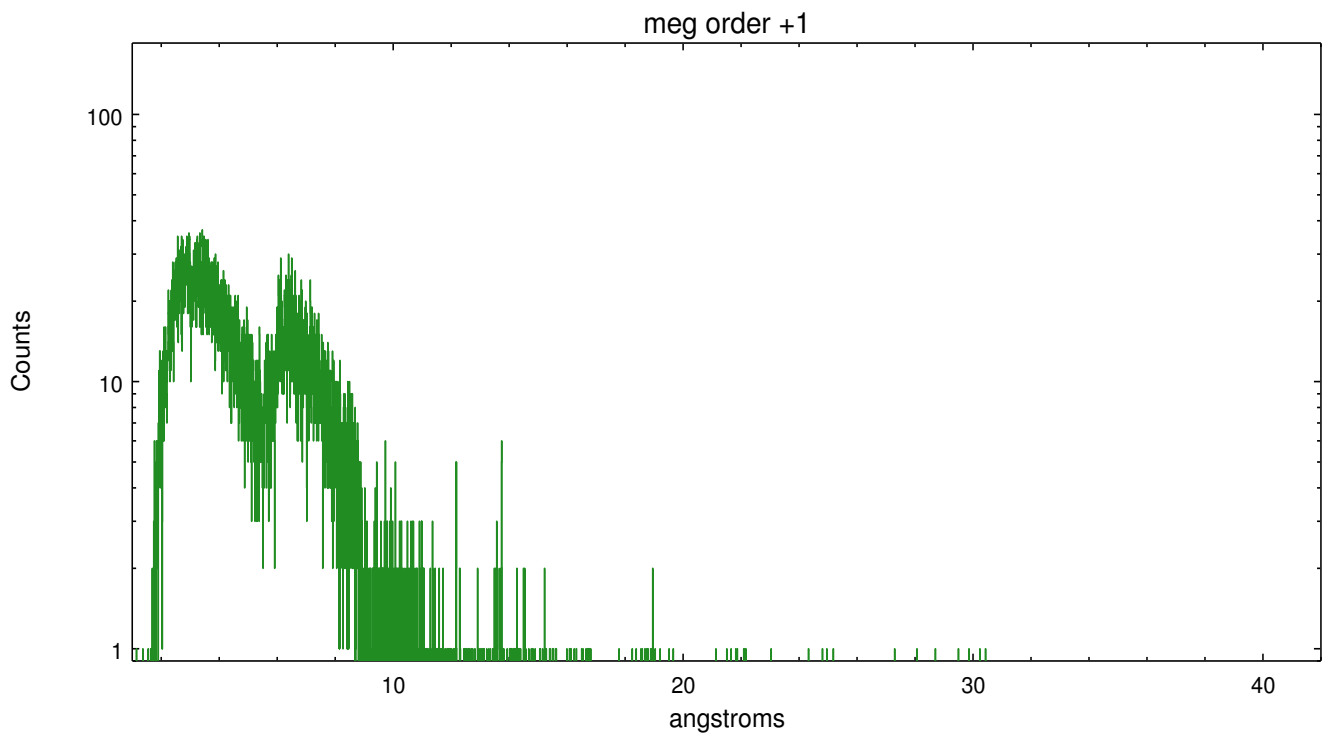
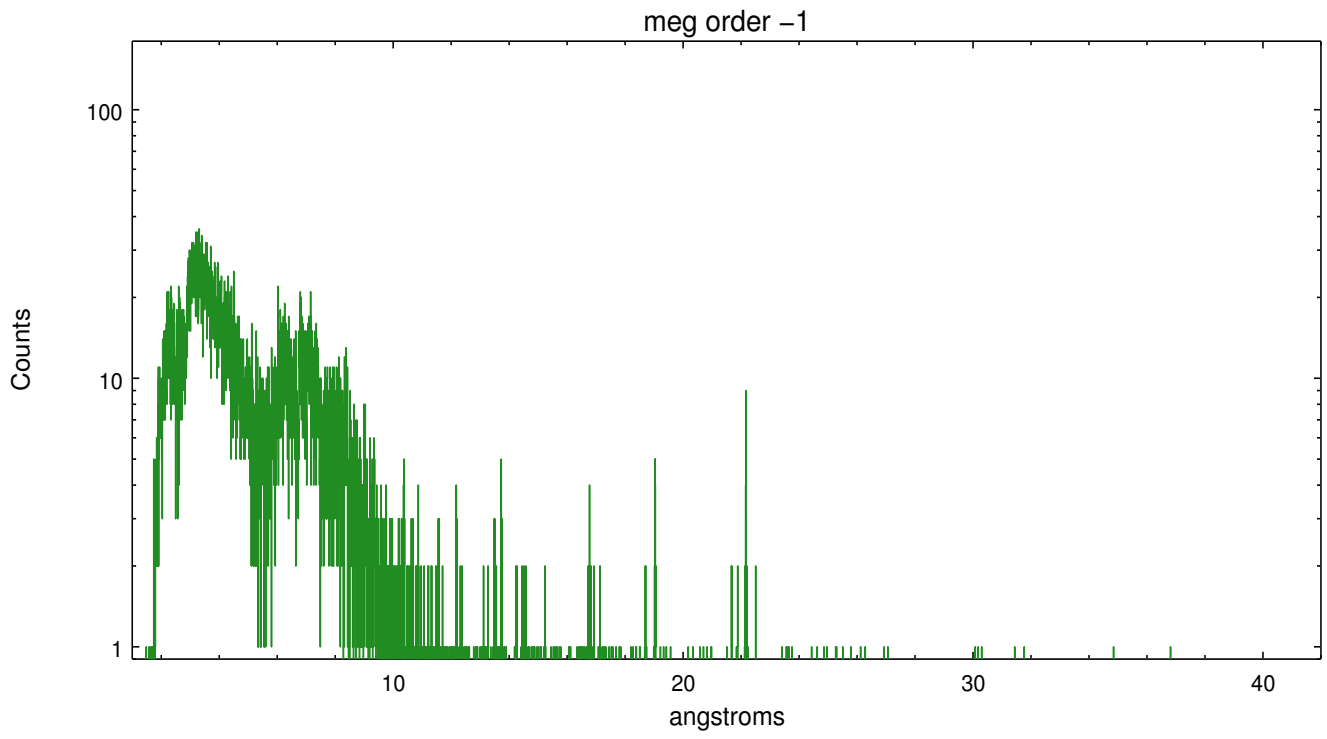
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2301	859	17481	15983	21051	811	1890





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	50.145

## 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=4115.43, y=4126.79) 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 (preferred position), or the readout streak and the heg 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.