

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13968 - L2 Version 1  
Chandra X-Ray Center

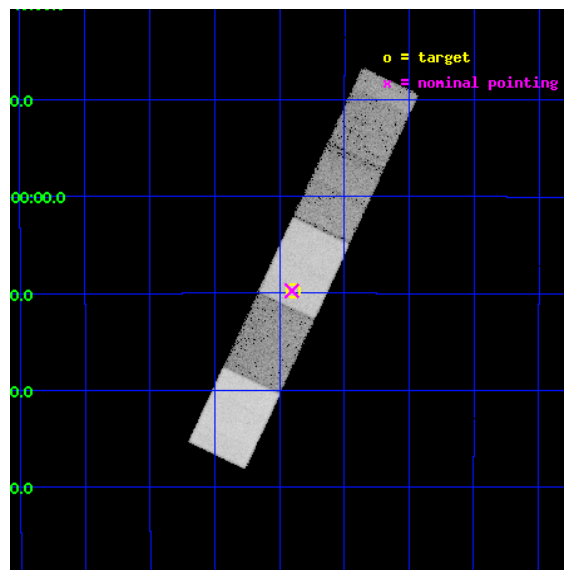
L2 Processing Date : Apr 9 2012

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>3</b>	<b>Gratings</b>	<b>17</b>
3.1	HEG Arm . . . . .	17
3.2	MEG Arm . . . . .	19
<b>A</b>	<b>Summary</b>	<b>21</b>
A.1	Status . . . . .	21
A.2	Comments . . . . .	21

# 1 Front

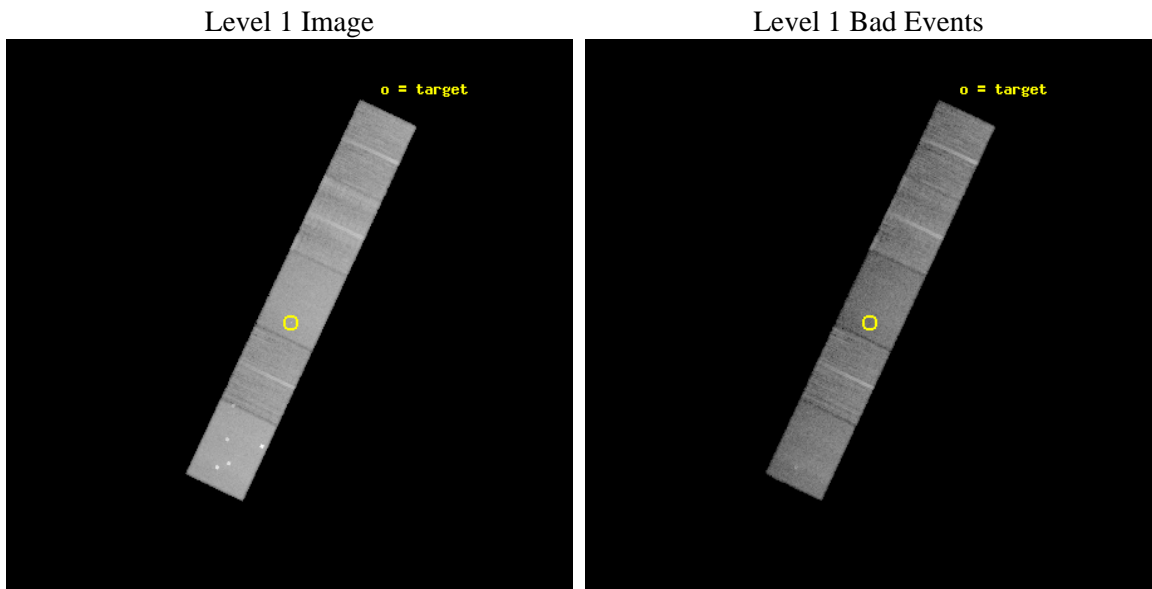
seq_num	702689	Sequence number
obs_id	13968	Observation id
title	A DIRECT TEST OF AGN FEEDBACK IN LATE-TYPE GALAXIES: SPATIALLY RESOLVED HETG SPECTROSCOPY OF NGC 3393	Proposal title
observer	Dr Daniel Evans	Principal investigator
object	NGC 3393	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	162.097917	Observer's specified target RA [deg]
dec_targ	-25.162083	Observer's specified target Dec [deg]
ra_nom	162.1012149702	Nominal RA [deg]
dec_nom	-25.162456843366	Nominal Dec [deg]
roll_nom	295.15802472117	Nominal Roll [deg]
revision	1	Processing version of data
ontime	28543.011545479	Sum of GTIs [s]
livetime	28063.131988476	Livetime [s]
ontime5	28542.970505476	Sum of GTIs [s]
ontime6	28540.488425314	Sum of GTIs [s]
ontime7	28543.011545479	Sum of GTIs [s]
ontime8	28542.888425469	Sum of GTIs [s]
ontime9	28542.847385466	Sum of GTIs [s]
l2events	200769	Number of level 2 events



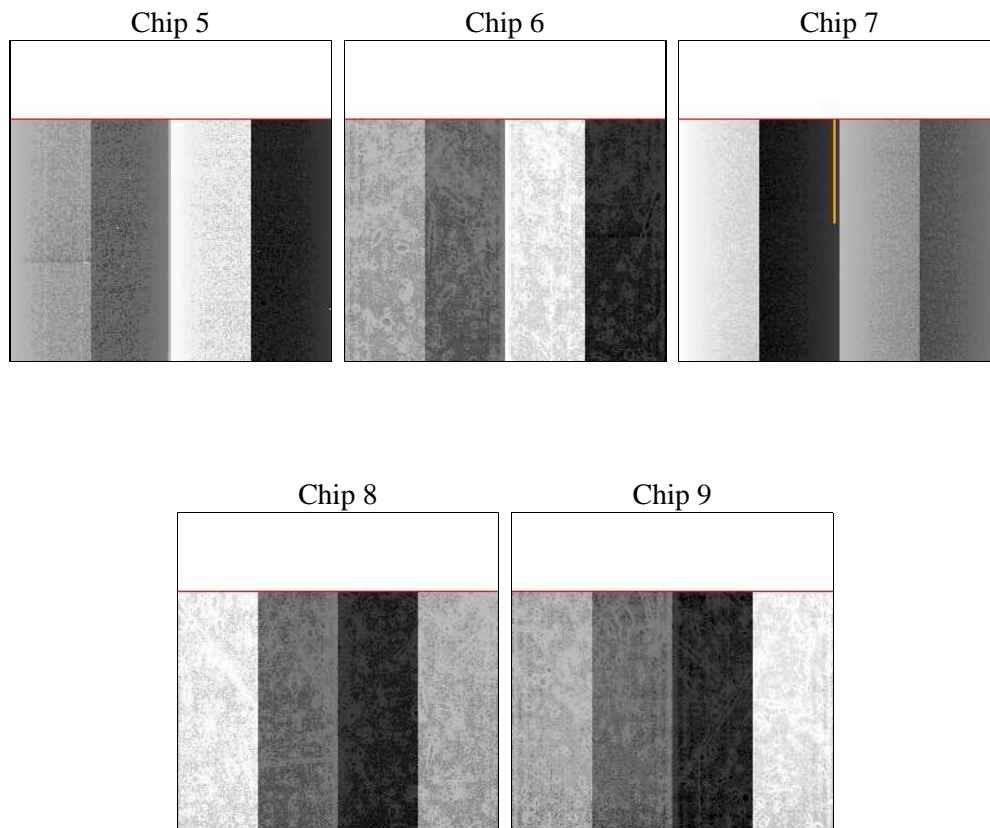
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	28493.359000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	28543.011545479	Sum of GTIs [s]
caldsver	4.4.9	&#160	ontime5	28542.970505476	Sum of GTIs [s]
date	2012-04-09T22:55:50	Date and time of file creation	ontime6	28540.488425314	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	28543.011545479	Sum of GTIs [s]
			ontime8	28542.888425469	Sum of GTIs [s]
			ontime9	28542.847385466	Sum of GTIs [s]
			l1events	778019	Number of level 1 events

### 2.1.4 Events

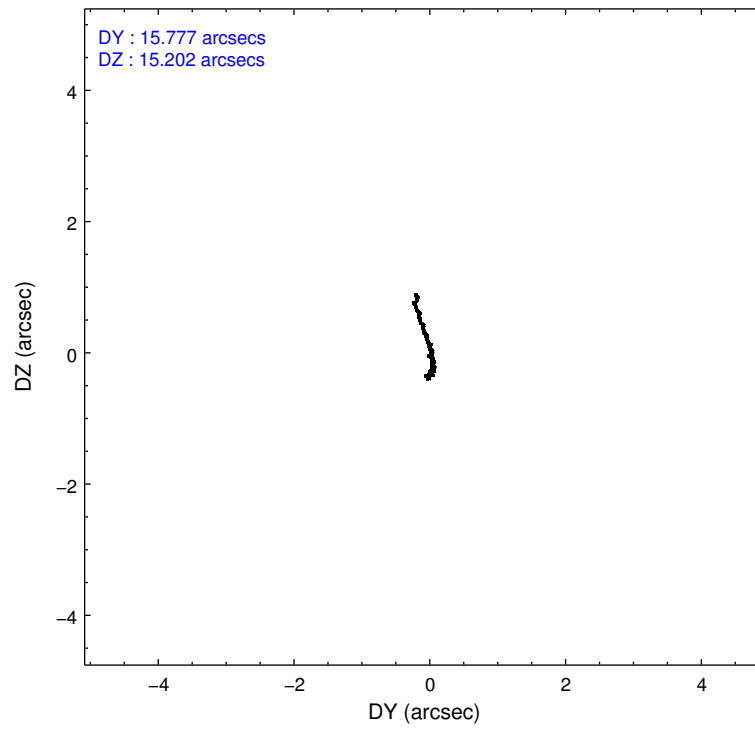
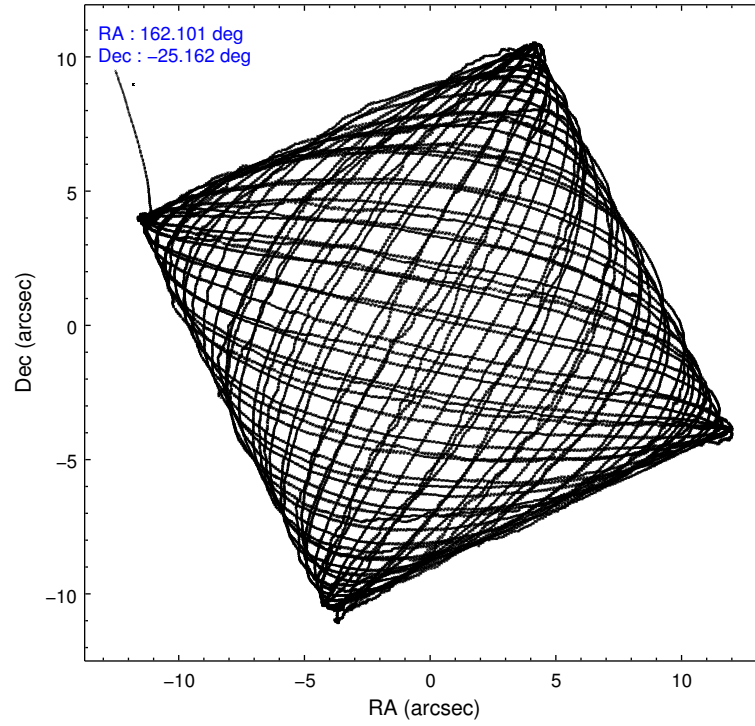
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	210307	123174	160956	162137	121445
rejected events	100929	108813	89910	120603	106062
rejected %	47%	88%	55%	74%	87%

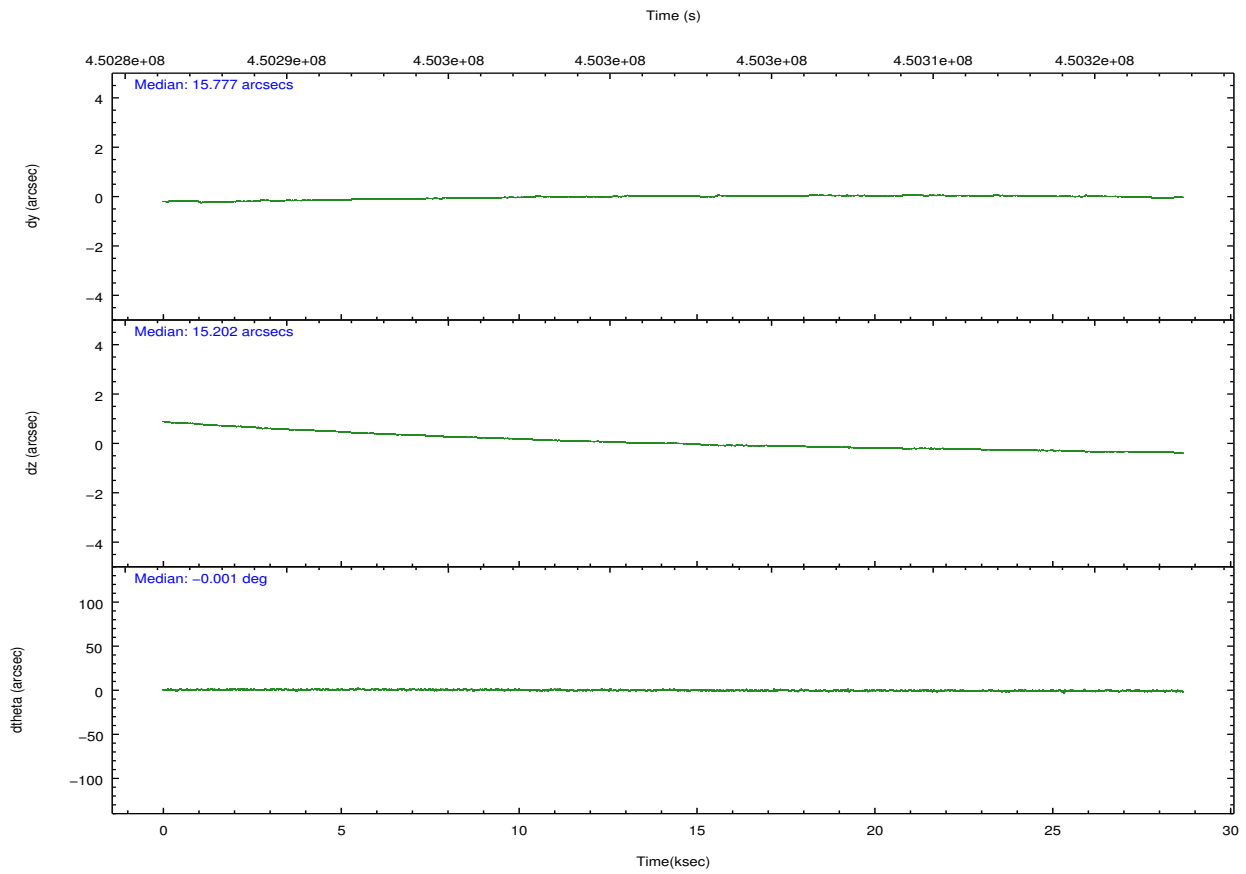
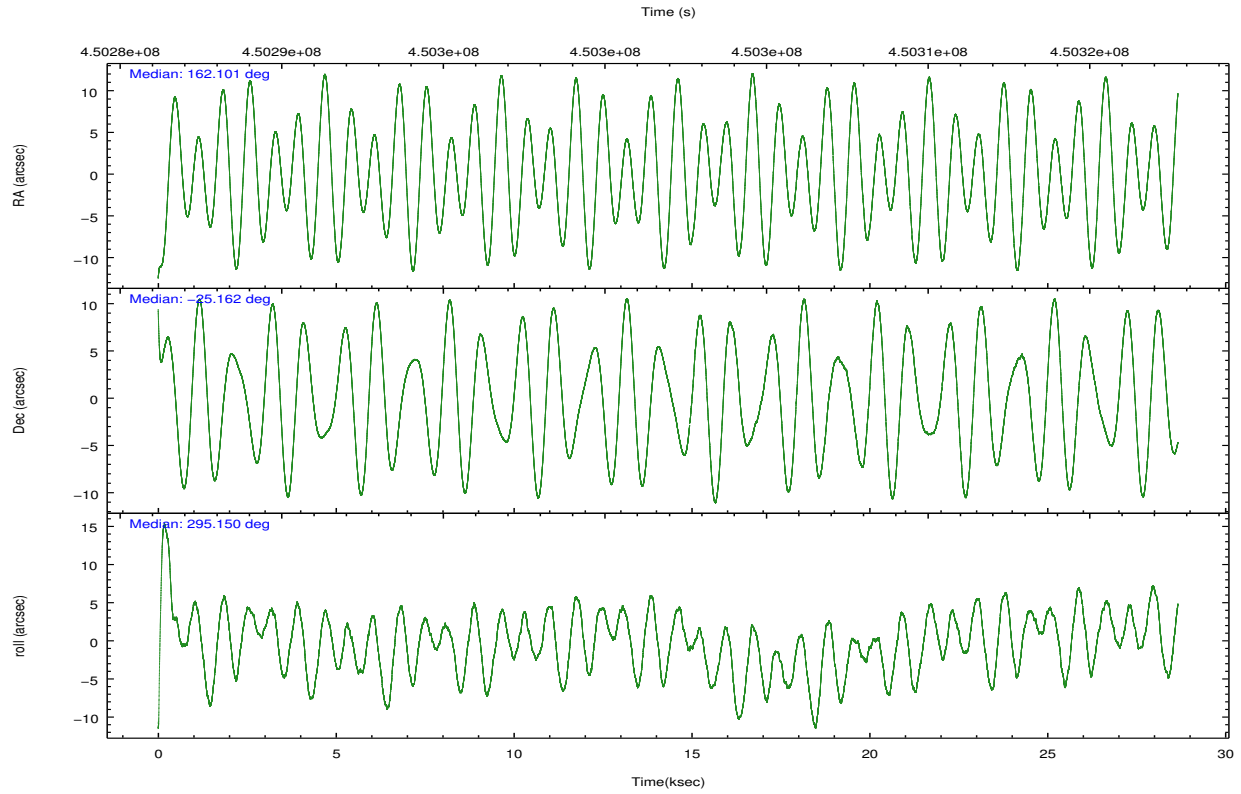
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	20136	4622	6178	11665	5254
	9%	3%	3%	7%	4%
grade 1 events	315	52	192	87	54
	0%	0%	0%	0%	0%
grade 2 events	30268	3298	14500	9925	3342
	14%	2%	9%	6%	2%
grade 3 events	4181	1669	6311	4545	1696
	1%	1%	3%	2%	1%
grade 4 events	4215	1558	6482	4193	1653
	2%	1%	4%	2%	1%
grade 5 events	15866	6180	16819	8704	6553
	7%	5%	10%	5%	5%
grade 6 events	50590	3215	37575	11209	3438
	24%	2%	23%	6%	2%
grade 7 events	84736	102580	72899	111809	99455
	40%	83%	45%	68%	81%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	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	162.076205	162.1012149701997	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-25.147153	-25.16245684336647	Subarray start row	1	1
[deg] Pointing Roll	294.990776	295.1580247211702	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	2.4
[mm] SIM translation stage pos	-187.132523	-187.1228876879999			
[mm] SIM translation stage offset	-3	-3.009634895007935			
[s] Observation start time (MET)	450287781.184000	450286261.27209			
Observation start date	2012-04-08T15:55:15	2012-04-08T15:31:01			
[s] Observation end time (MET)	450316274.184000	450316499.28619			
Observation end date	2012-04-08T23:50:08	2012-04-08T23:54:59			
Read mode	TIMED	TIMED			

## 2.3 Aspect



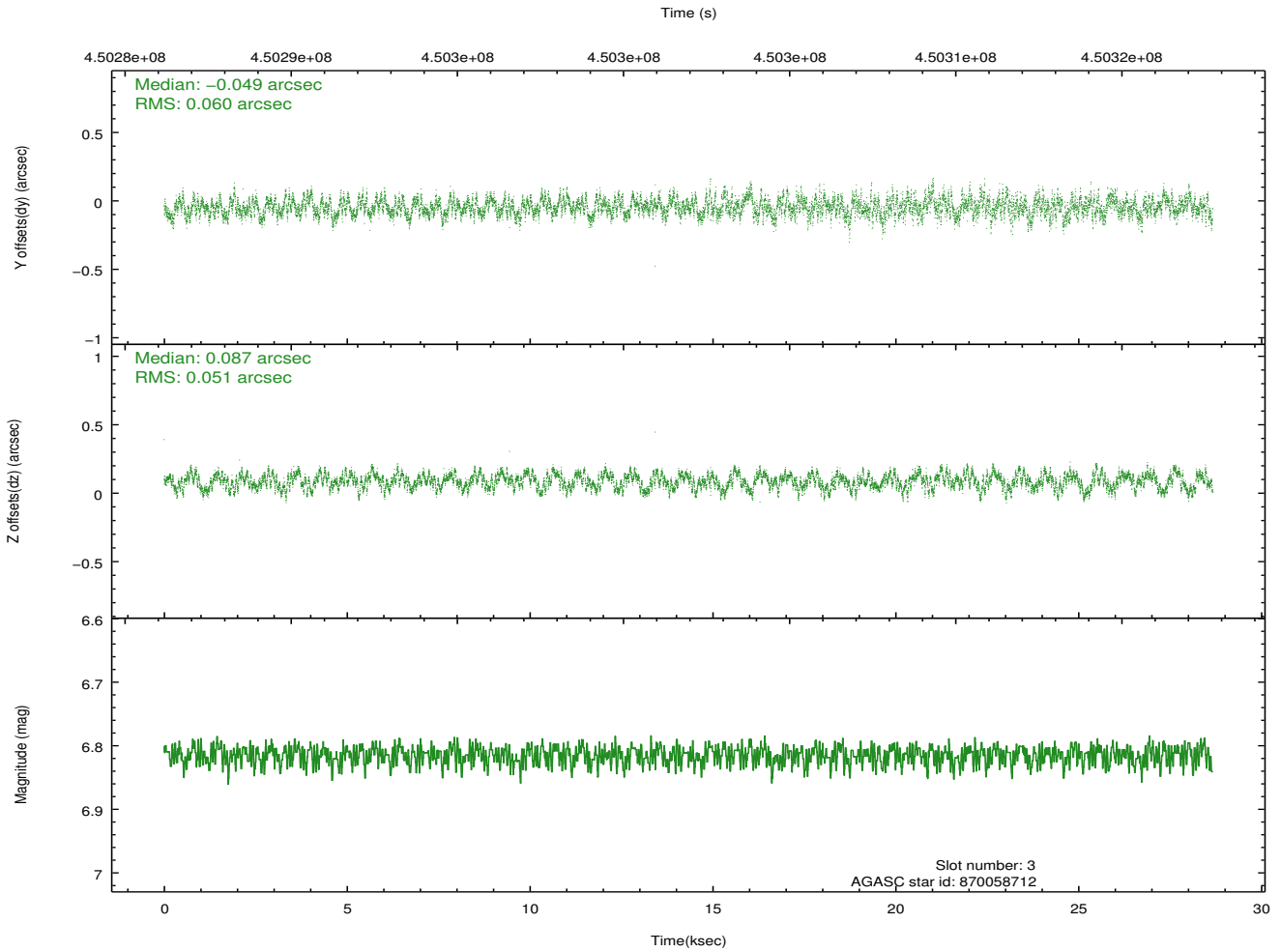
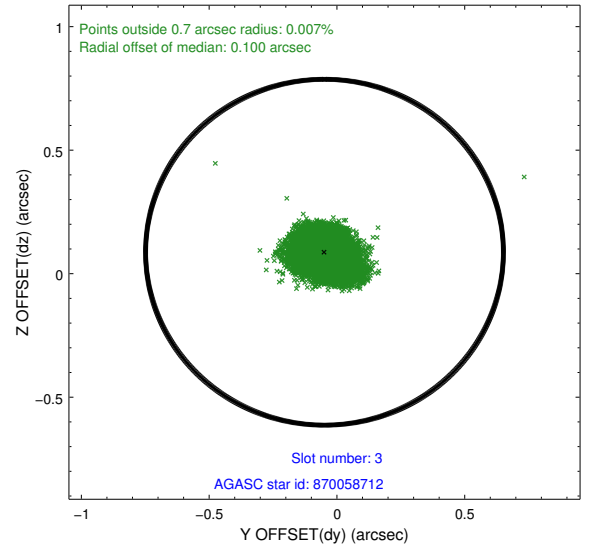
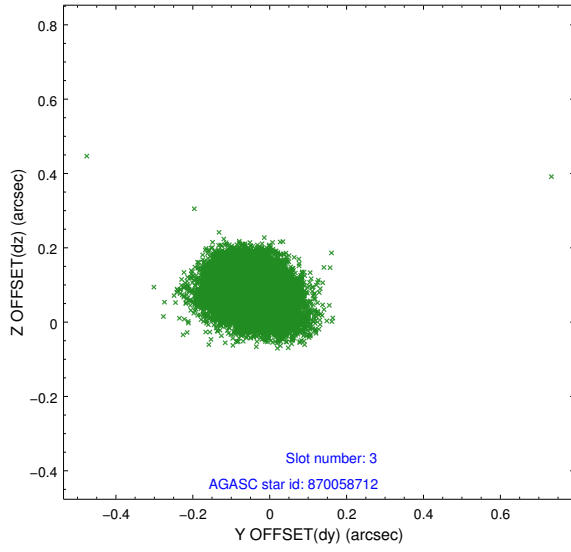


### Slot Statistics

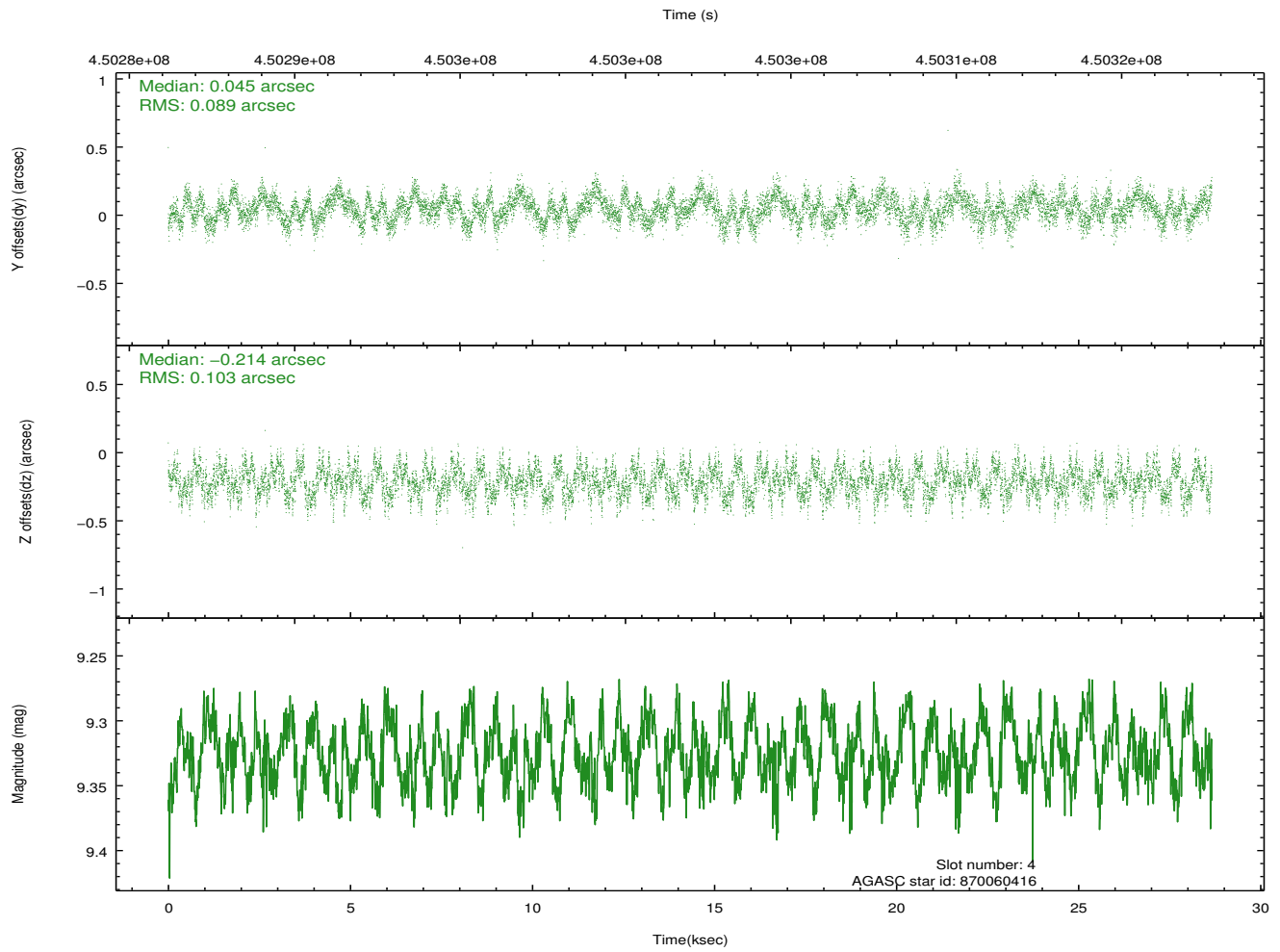
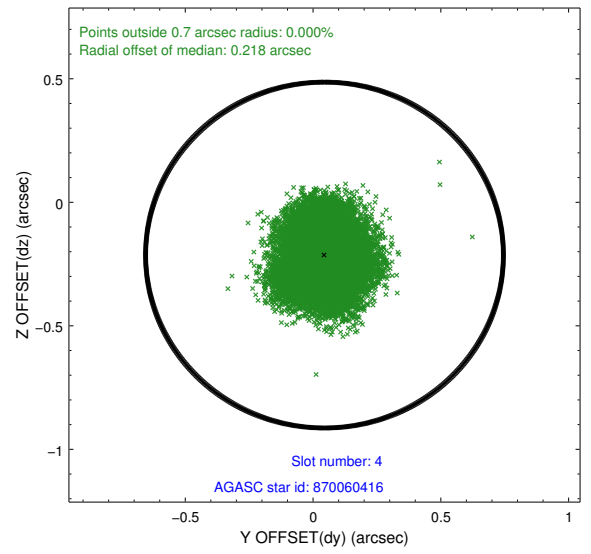
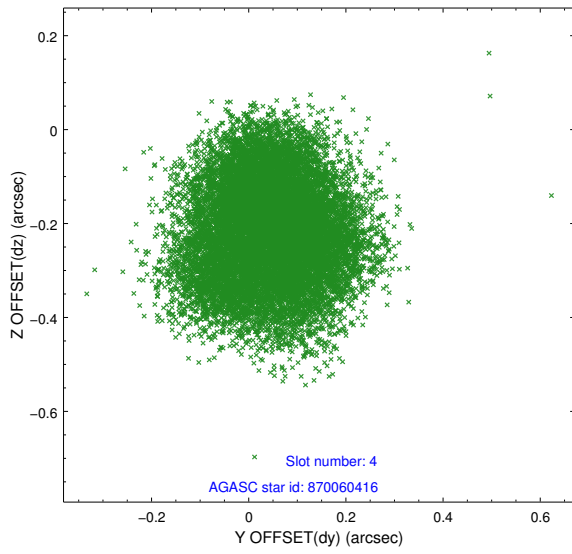
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.96	6992	-0.011	-0.090	0.007	0.011	0.000000	0.000000	-768.63	-1798.85
1	FID	ACIS-S-5	7.09	6992	-0.118	0.018	0.008	0.013	0.000000	0.000000	-1821.79	103.18
2	FID	ACIS-S-6	7.22	6992	0.103	0.080	0.006	0.010	0.000000	0.000000	393.13	747.13
3	GUIDE	870058712	6.81	13983	-0.049	0.087	0.084	0.132	161.694136	-25.533829	739.31	-1713.56
4	GUIDE	870060416	9.33	13971	0.045	-0.214	0.149	0.226	162.151228	-25.161120	149.60	200.71
5	GUIDE	870063952	8.30	13974	-0.017	-0.114	0.106	0.168	161.785917	-24.549213	-2351.51	47.12
6	GUIDE	870061456	9.48	13972	0.065	0.127	0.175	0.282	161.242140	-25.108001	-1268.13	-2407.58
7	GUIDE	870064776	10.12	13892	-0.039	0.157	0.222	0.334	162.285196	-24.443058	-2008.04	1691.52

## 2.4 Star Slots

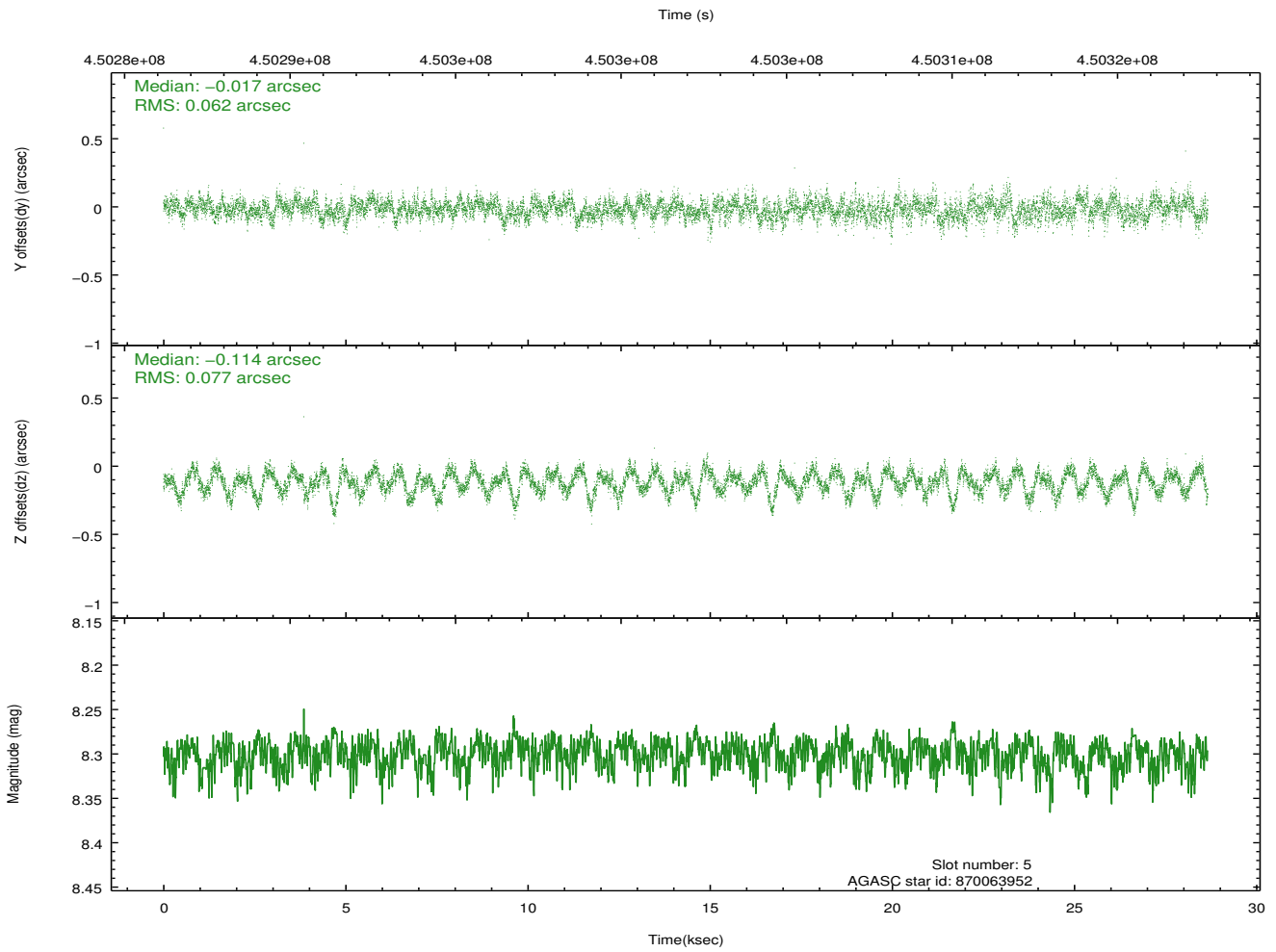
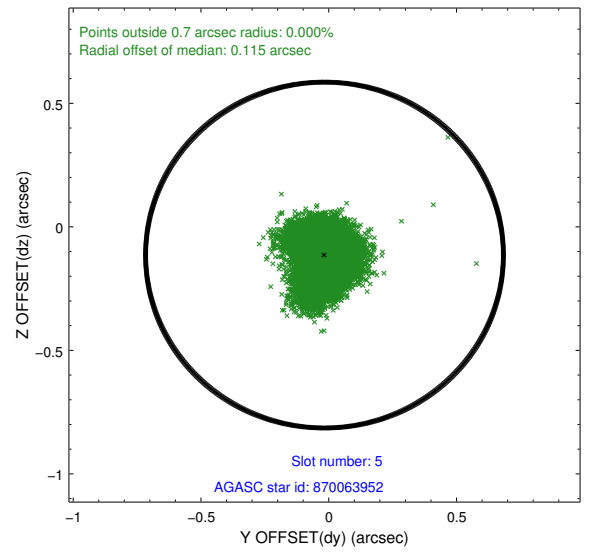
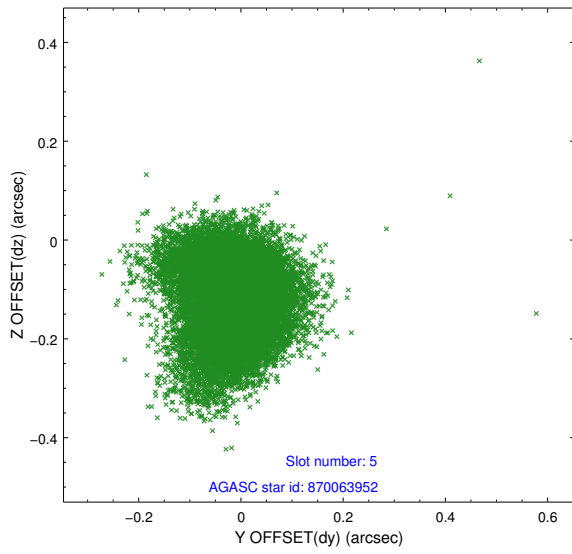
### 2.4.1 Slot 3



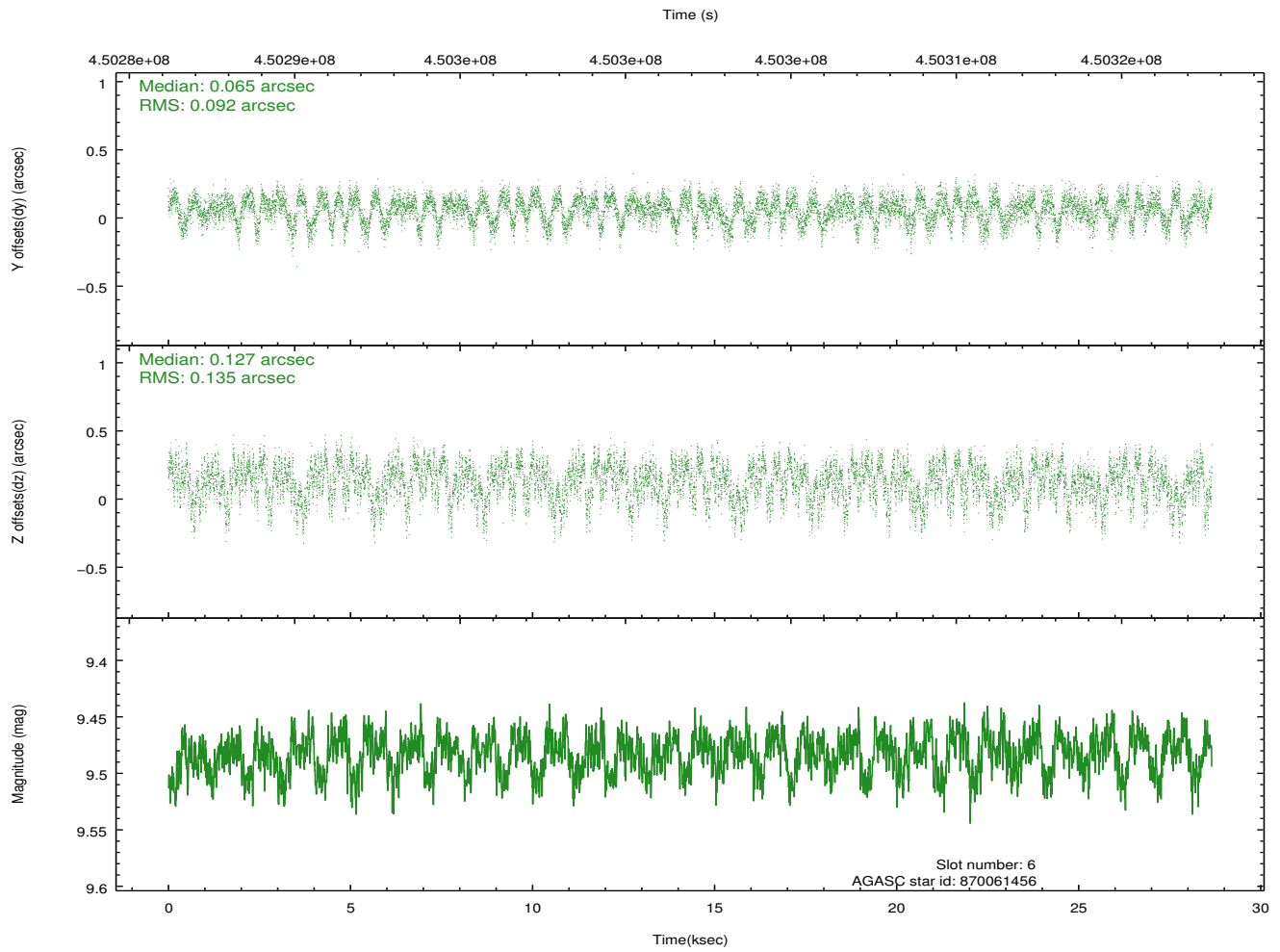
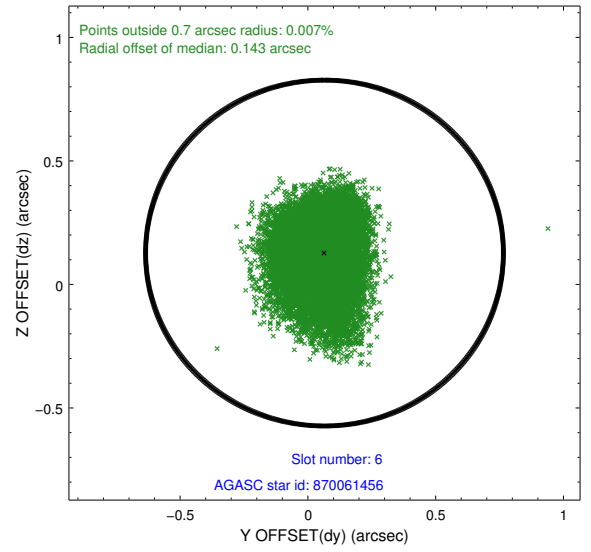
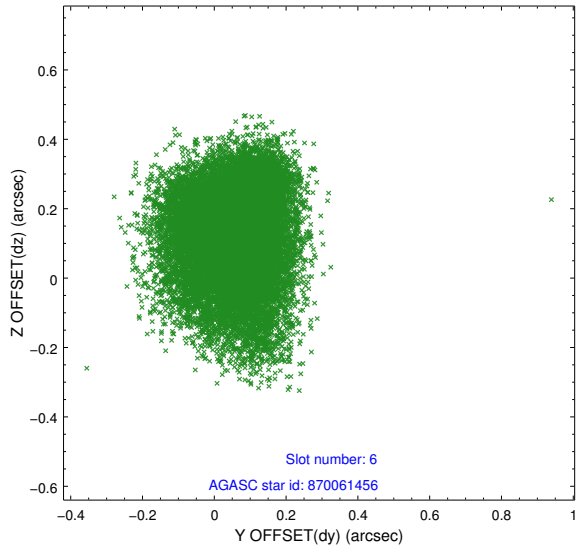
### 2.4.2 Slot 4



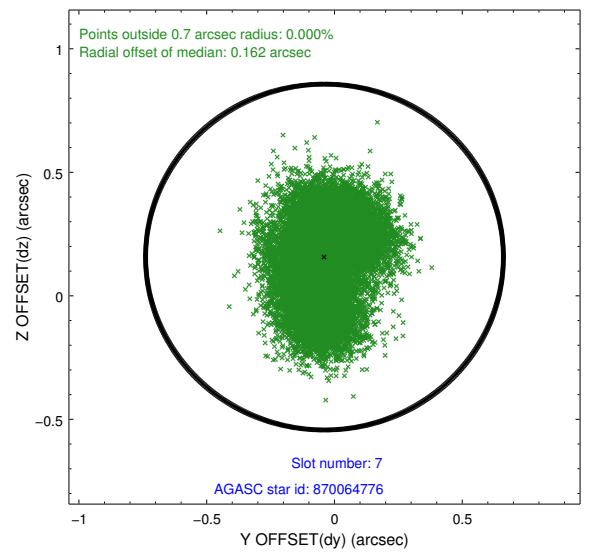
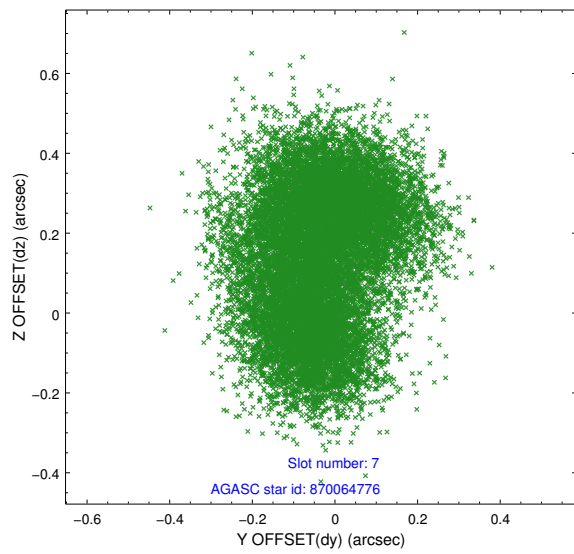
### 2.4.3 Slot 5



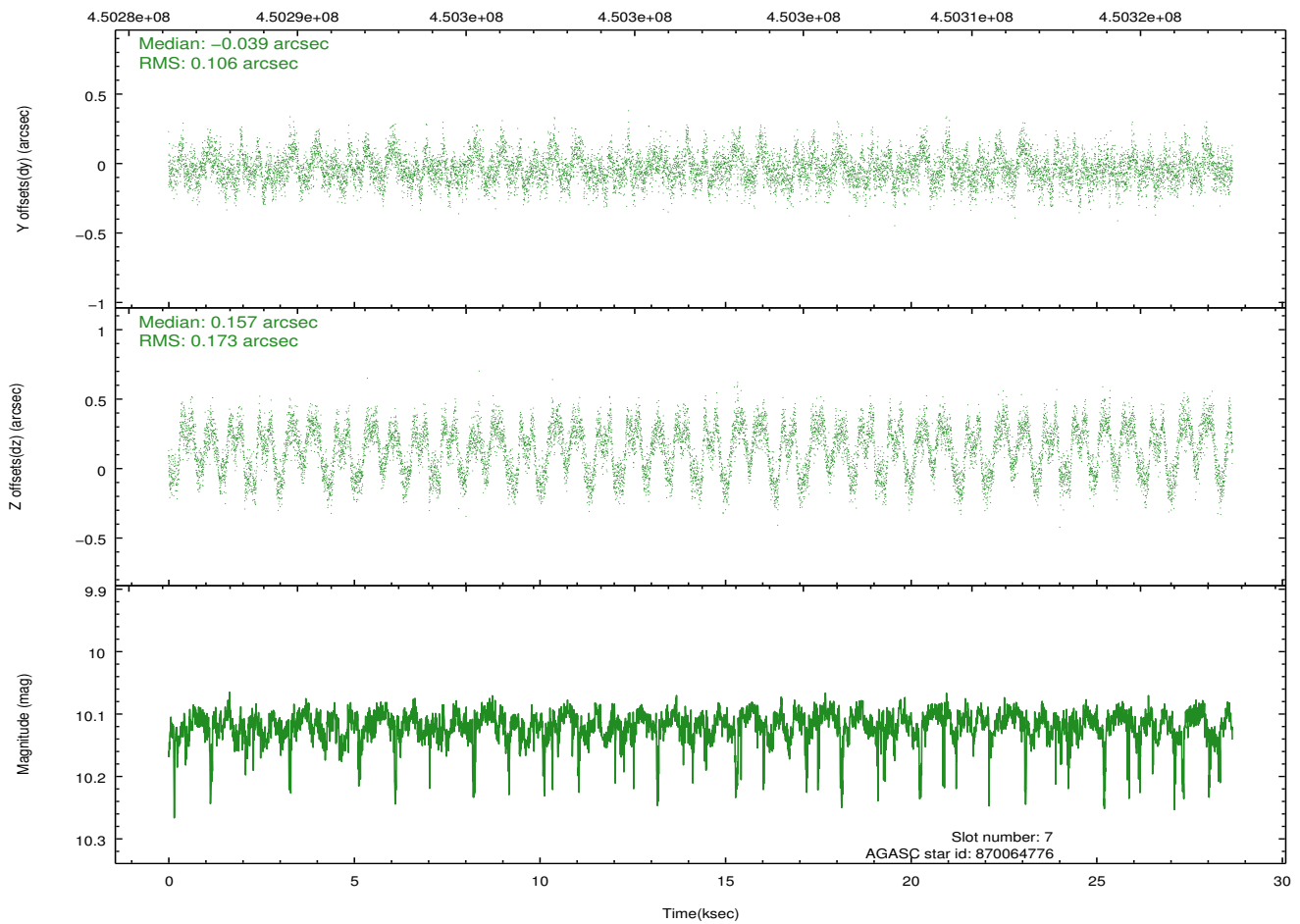
### 2.4.4 Slot 6



## 2.4.5 Slot 7

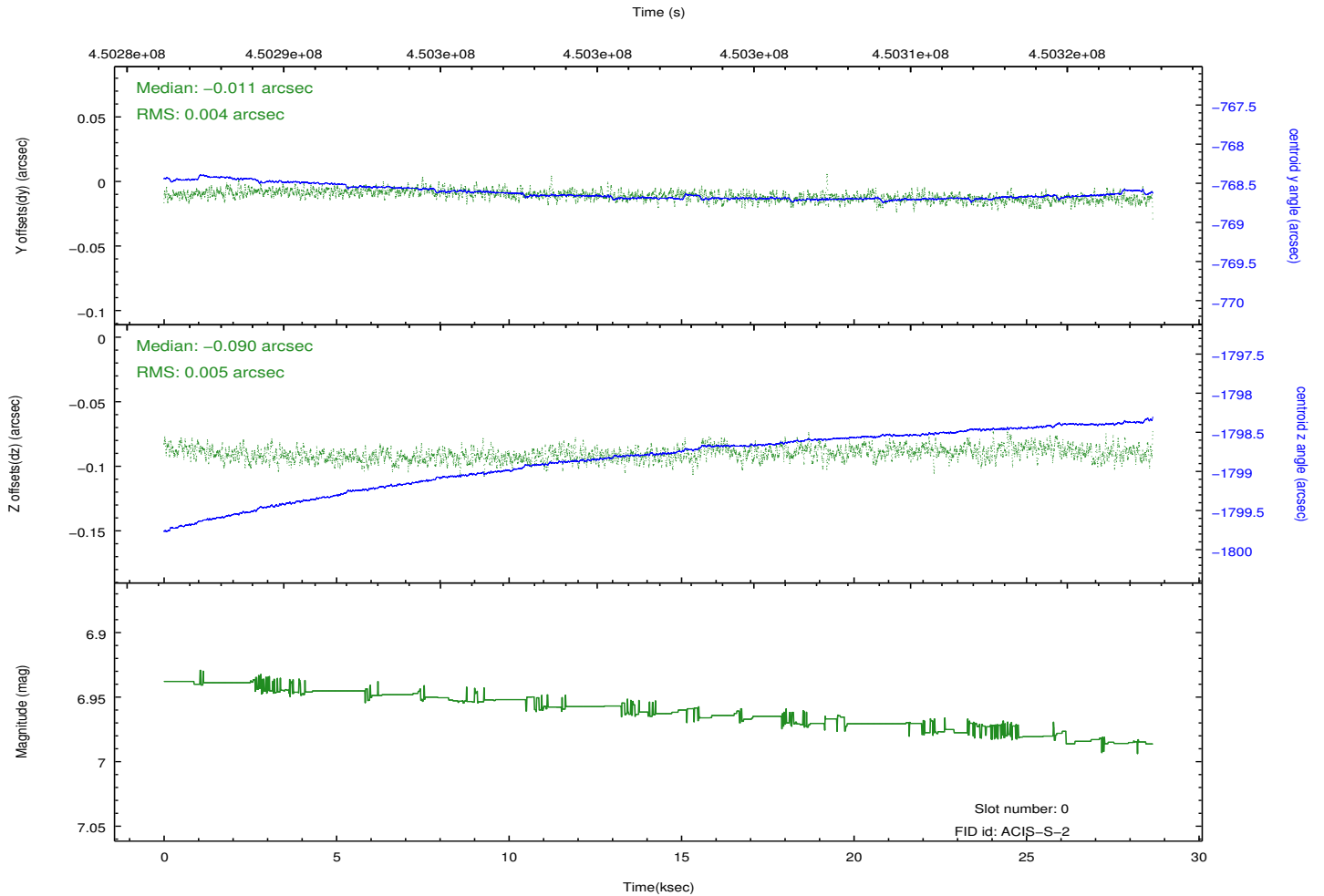
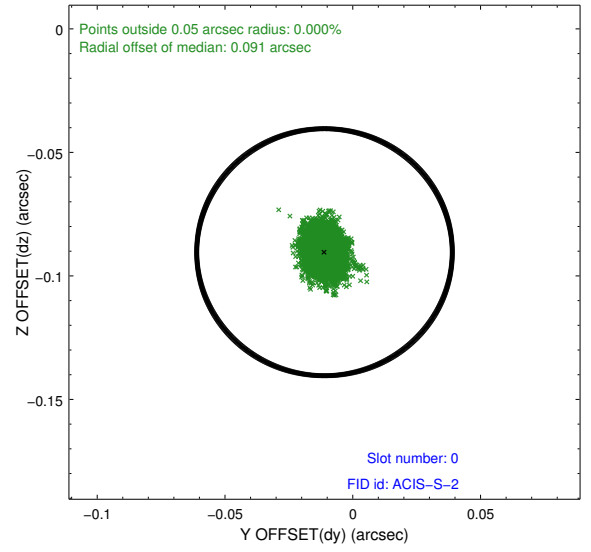
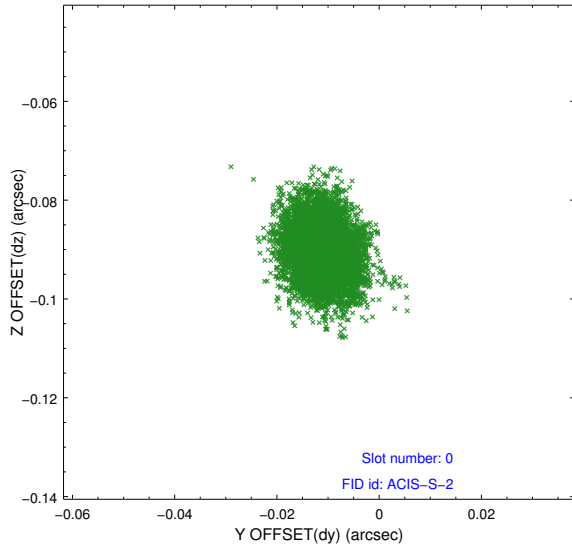


Time (s)

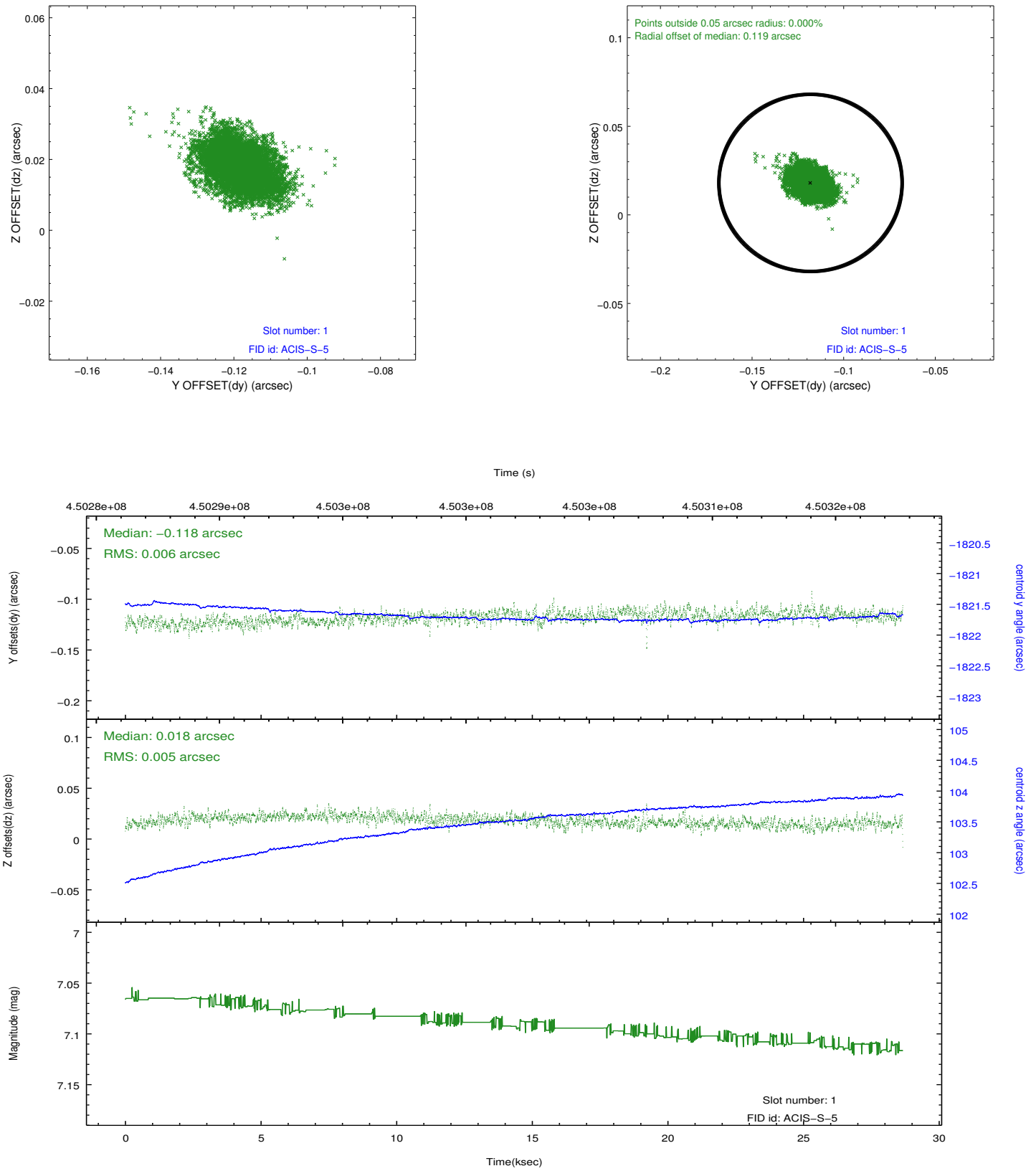


## 2.5 FID Slots

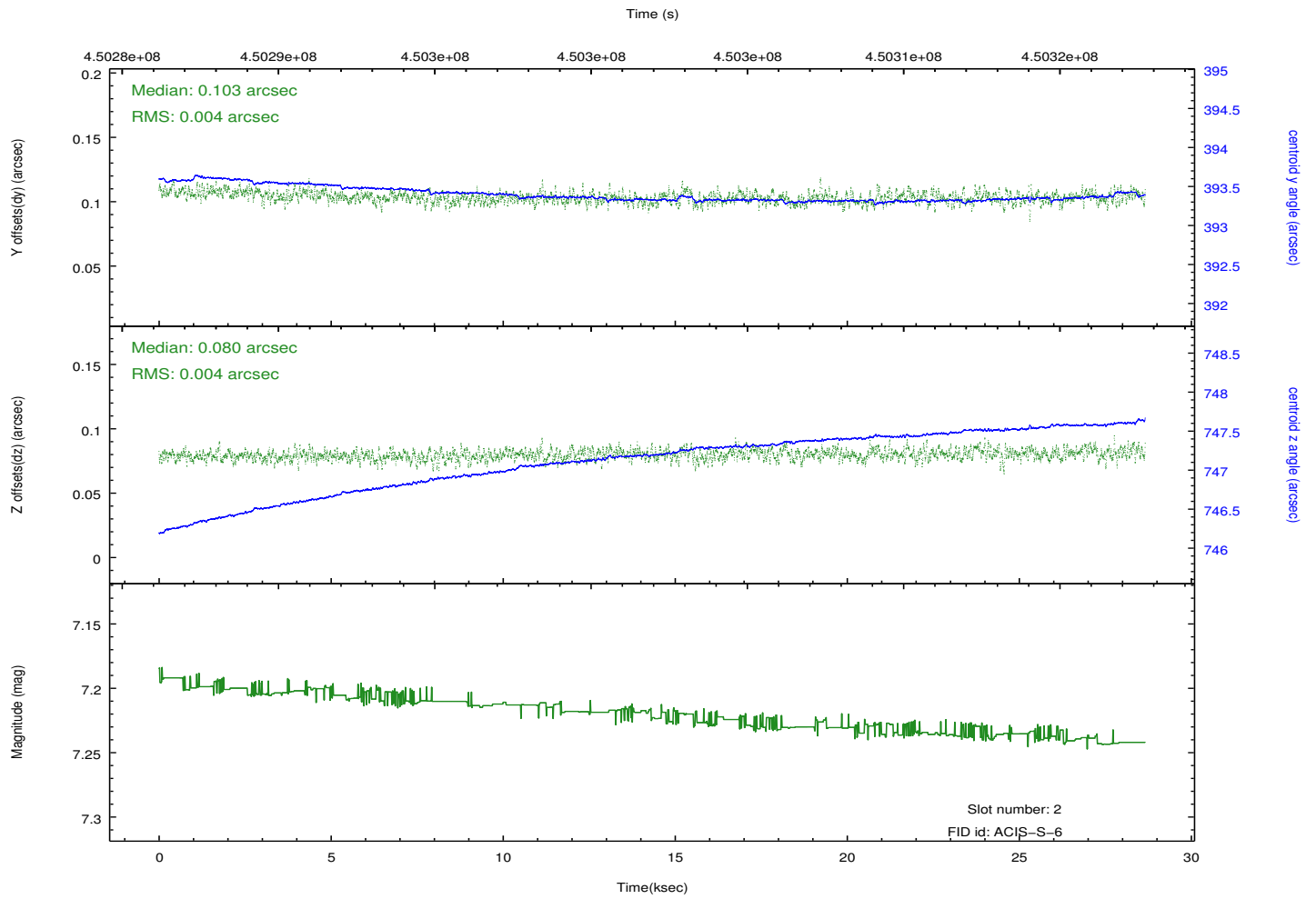
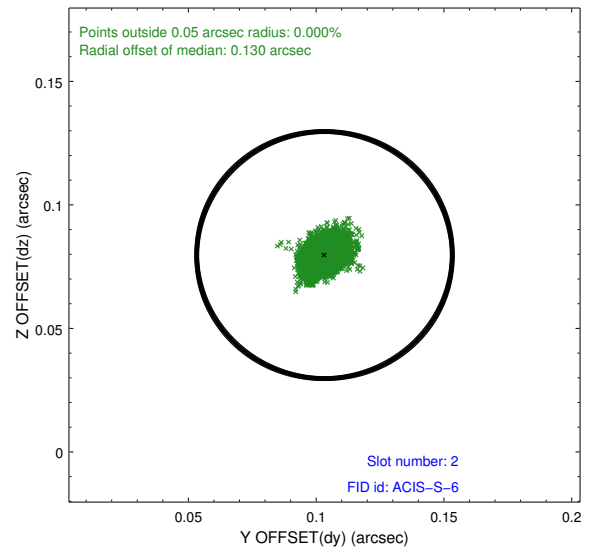
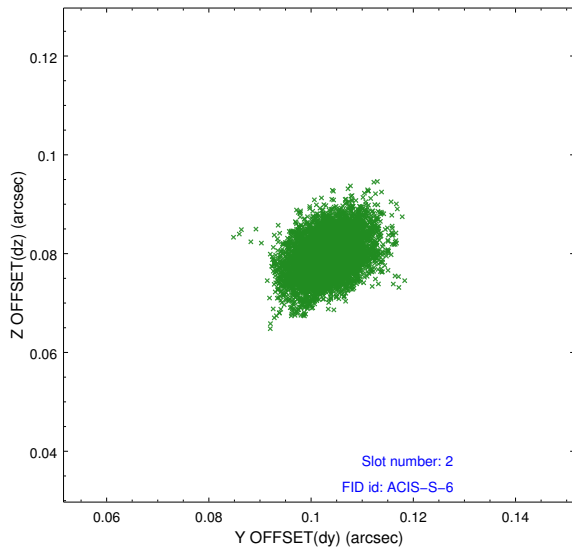
### 2.5.1 Slot 0



## 2.5.2 Slot 1

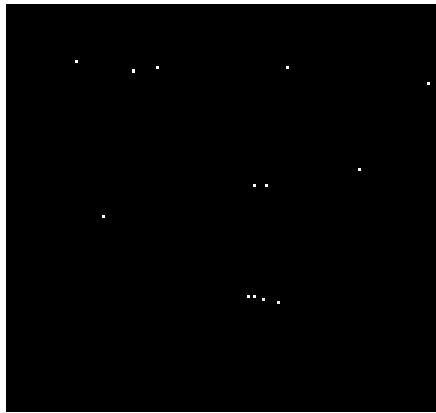


### 2.5.3 Slot 2

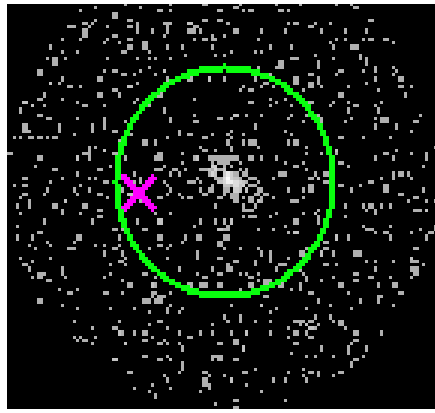


### 3 Gratings

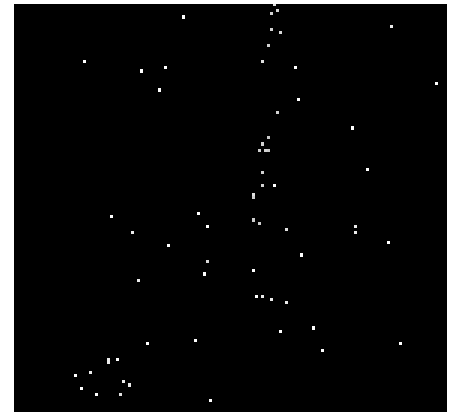
#### 3.1 HEG Arm



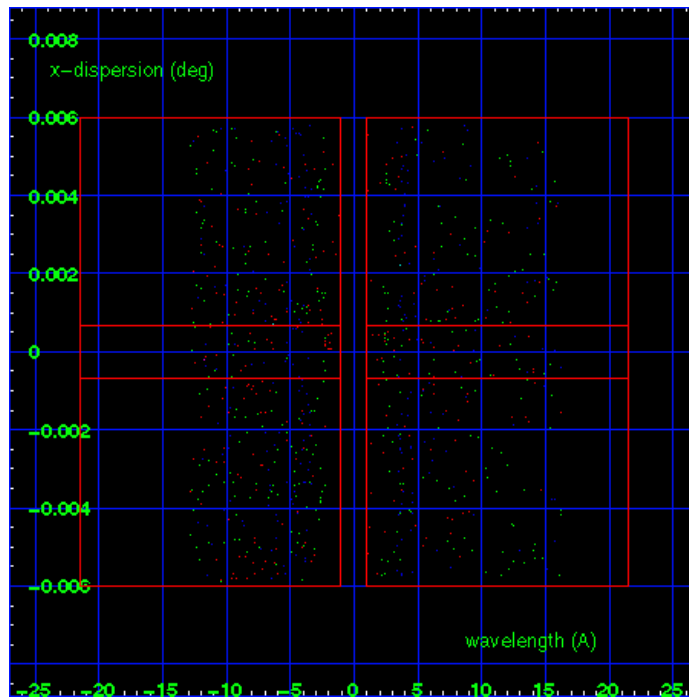
HEG Order Sort 123



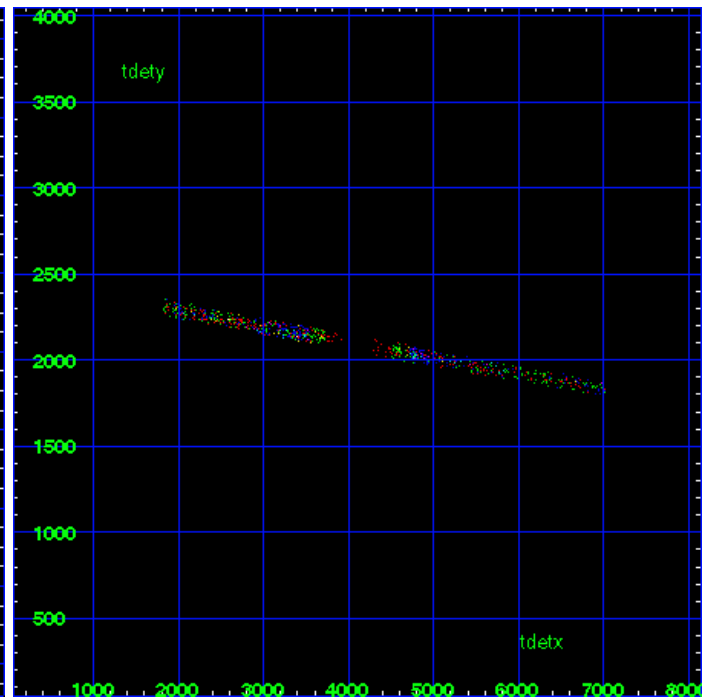
HEG Zero Order



HEG Order Sort ALL

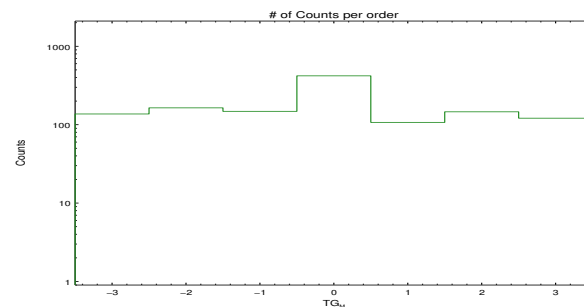


Spot Image HEG

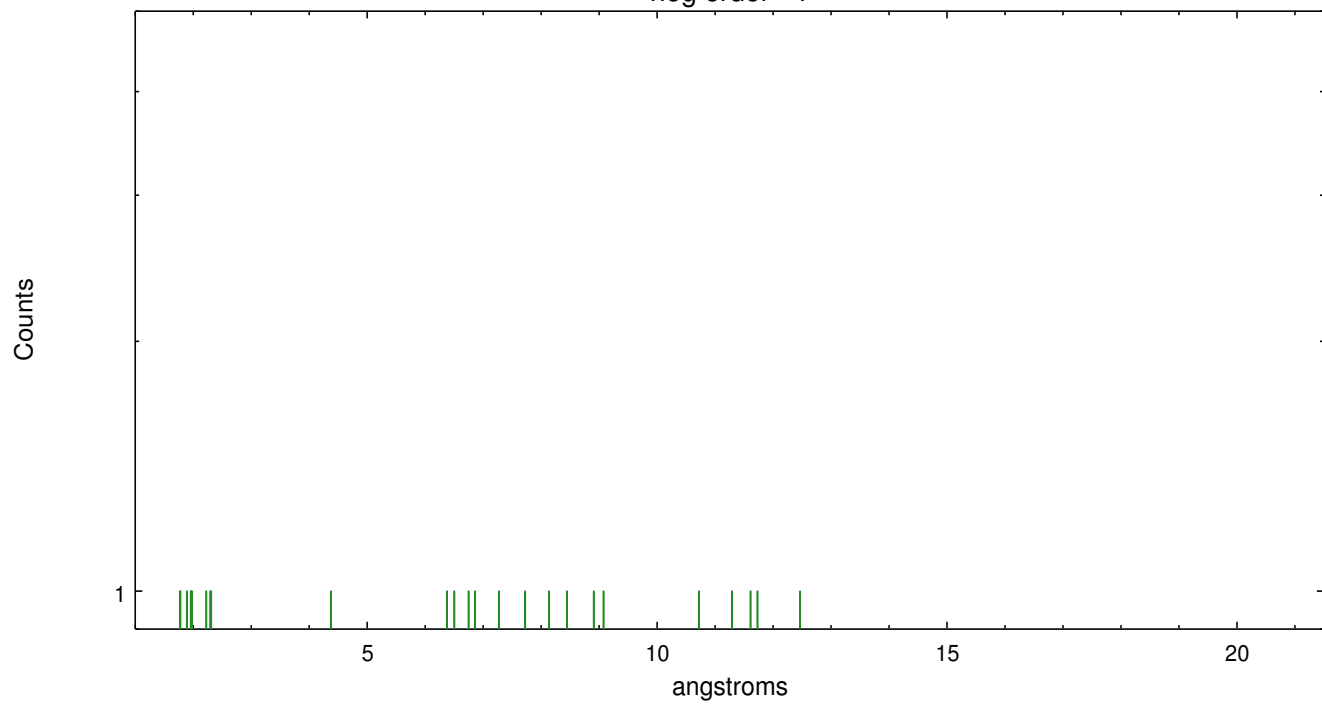


Full Detector HEG

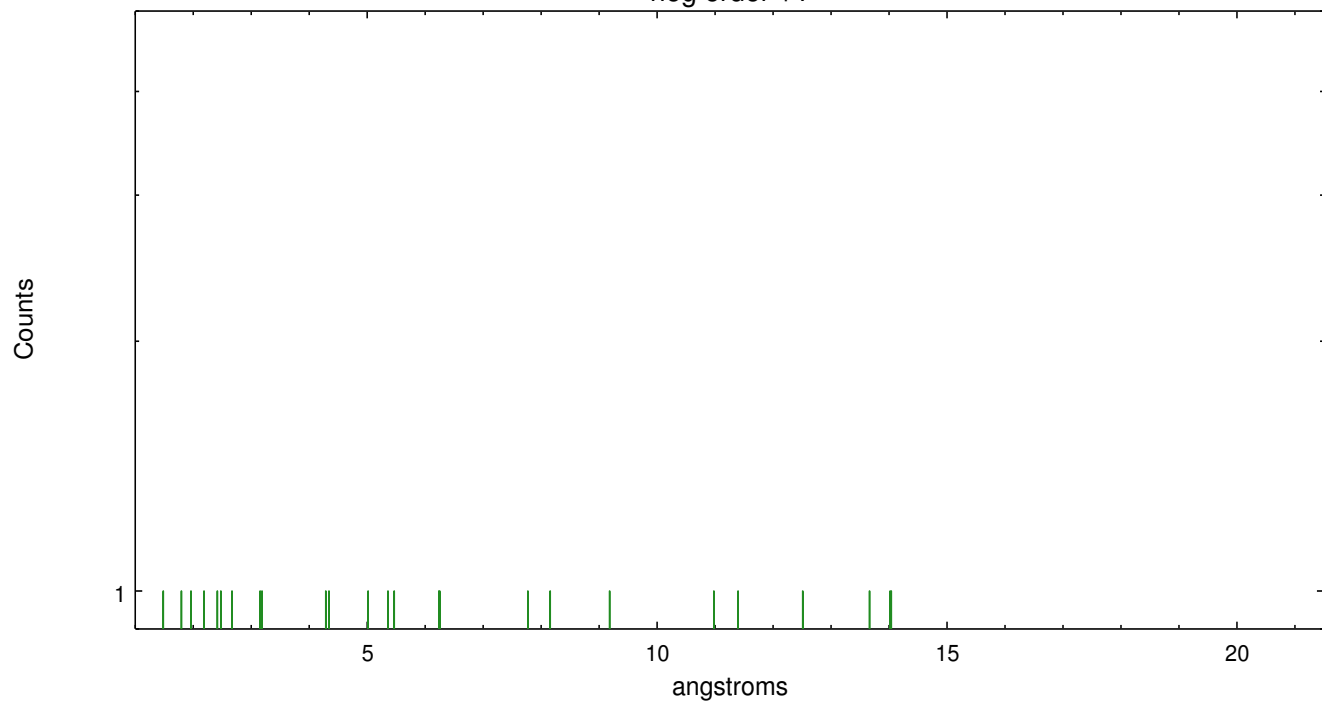
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	137	164	148	420	107	146	121



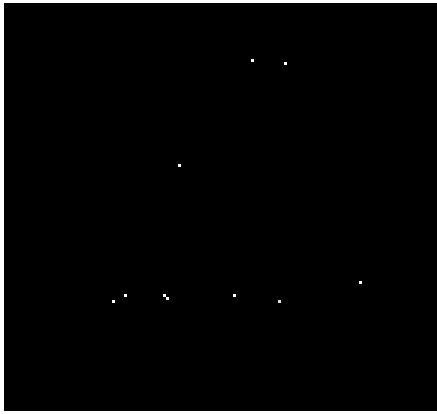
heg order -1



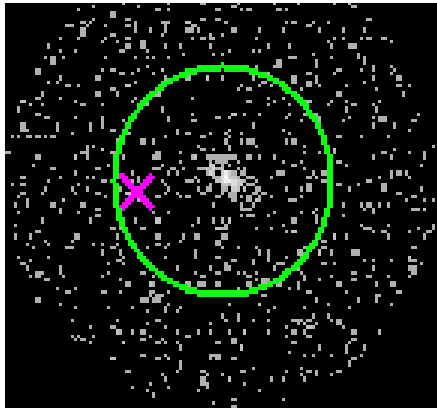
heg order +1



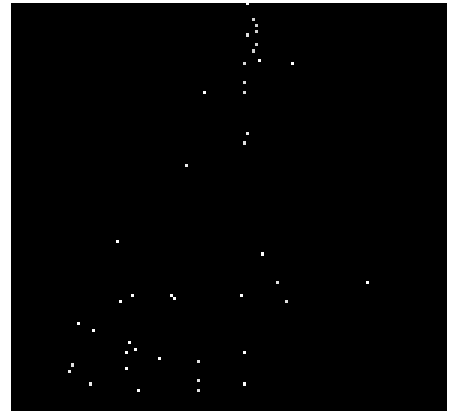
### 3.2 MEG Arm



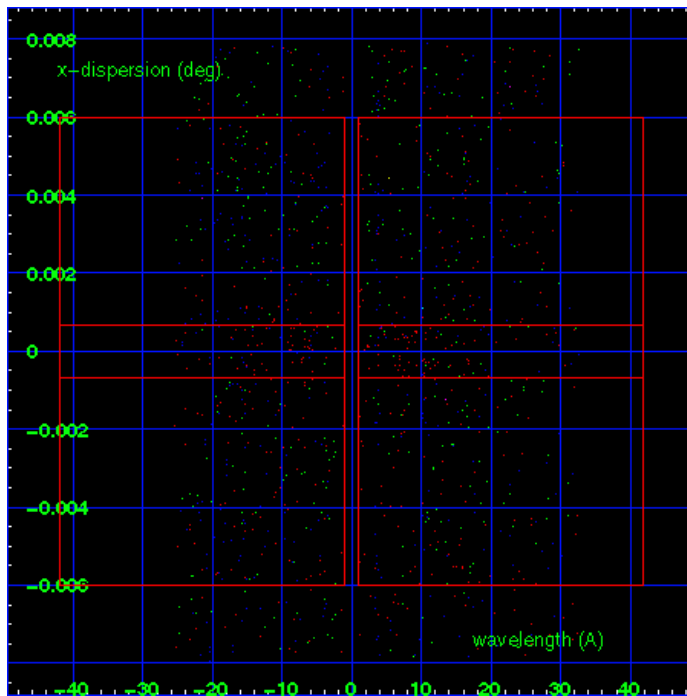
MEG Order Sort 123



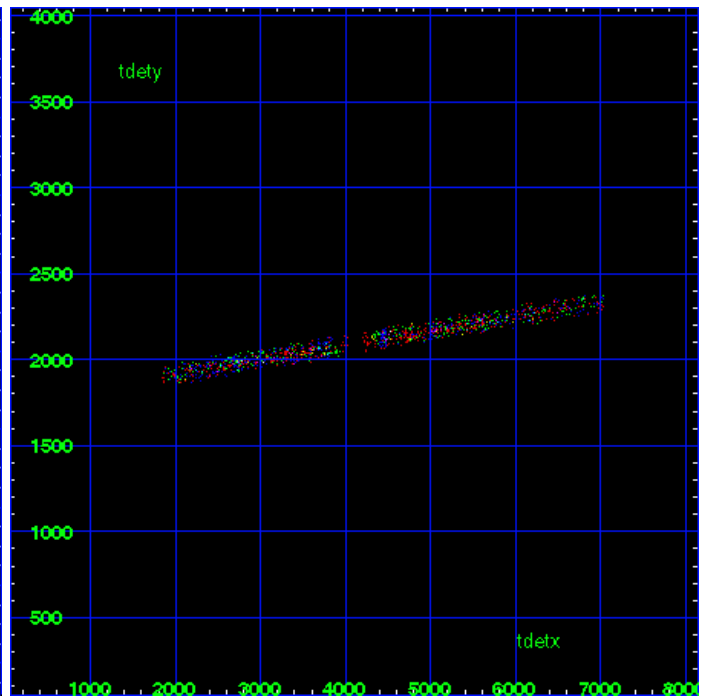
MEG Zero Order



MEG Order Sort ALL

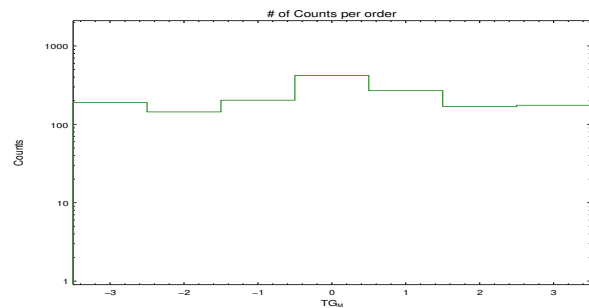


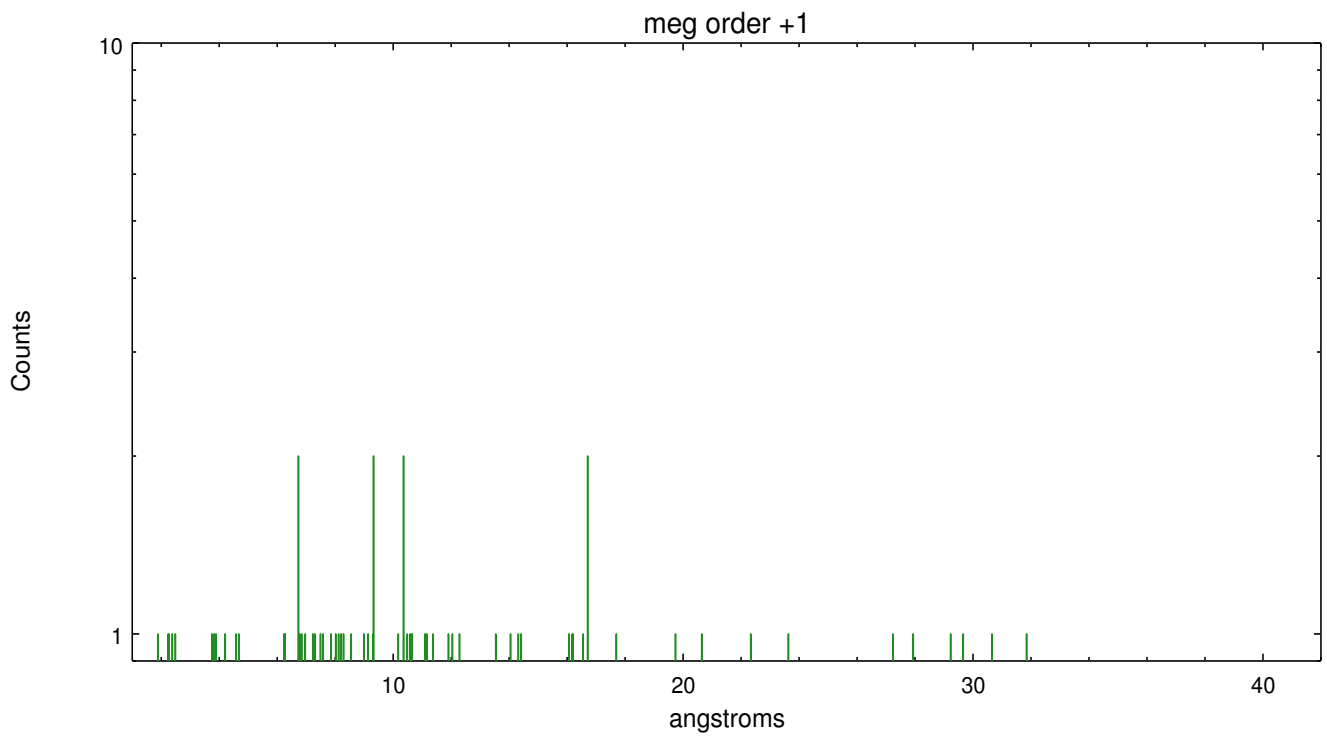
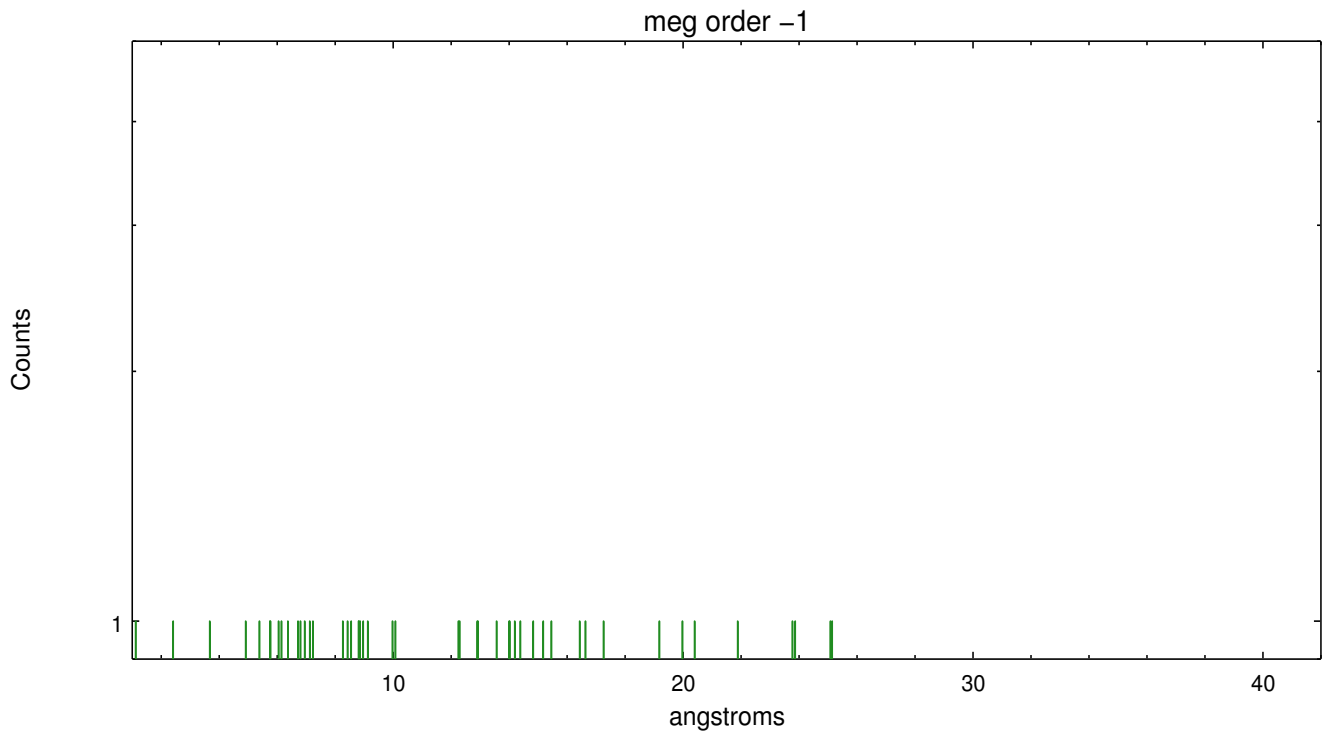
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	190	144	203	420	269	169	175





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.04.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	28.543011545479

## A.2 Comments

Standard software processing technique using the tool `tgdetect` failed to determine an accurate position for the zeroth order for this observation. No source found with s/n greater than 5. The source is extended and asymmetric. The processing software defaulted to the coordinates supplied by the user for the position of the zeroth order for the grating spectral extraction. For grating analysis of localized X-ray emission within the extended emission, the investigator will need to extract one or more dispersed spectra using user-defined zeroth order positions for all positions of interest.