

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9884 - L2 Version 2  
Chandra X-Ray Center

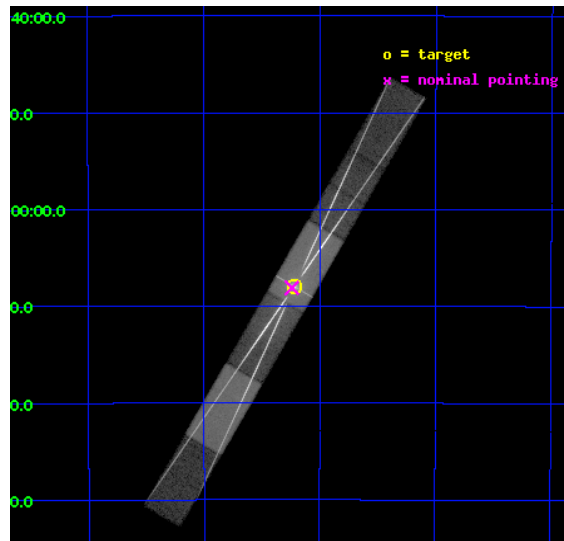
L2 Processing Date : May 17 2012

## 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

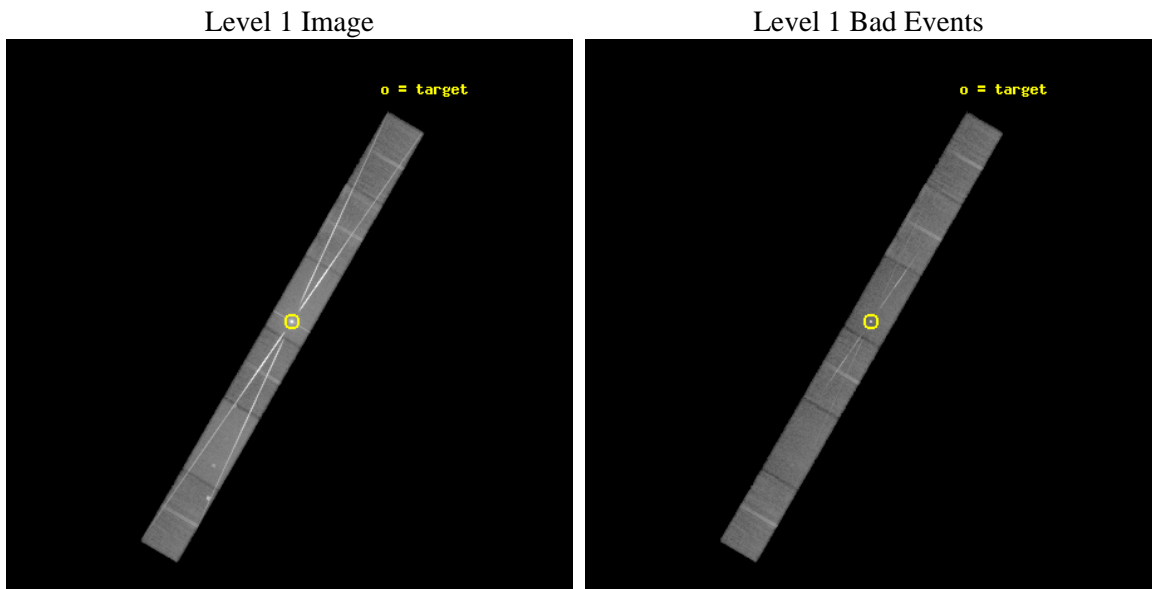
seq_num	400893	Sequence number
obs_id	9884	Observation id
title	Understanding the nature of high inclination low mass X-ray binaries: broad-band and line spectra from A1744-361	Proposal title
observer	Dr. Tod Strohmayer	Principal investigator
object	A1744-361	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	267.054583	Observer's specified target RA [deg]
dec_targ	-36.132833	Observer's specified target Dec [deg]
ra_nom	267.05986950752	Nominal RA [deg]
dec_nom	-36.135112991108	Nominal Dec [deg]
roll_nom	300.15974213192	Nominal Roll [deg]
revision	2	Processing version of data
ontime	24758.799826443	Sum of GTIs [s]
livetime	24175.182479985	Livetime [s]
ontime4	24758.799826443	Sum of GTIs [s]
ontime5	24758.799826443	Sum of GTIs [s]
ontime6	24715.274143994	Sum of GTIs [s]
ontime7	24758.799826443	Sum of GTIs [s]
ontime8	24711.792113662	Sum of GTIs [s]
ontime9	24758.799826443	Sum of GTIs [s]
l2events	1090967	Number of level 2 events



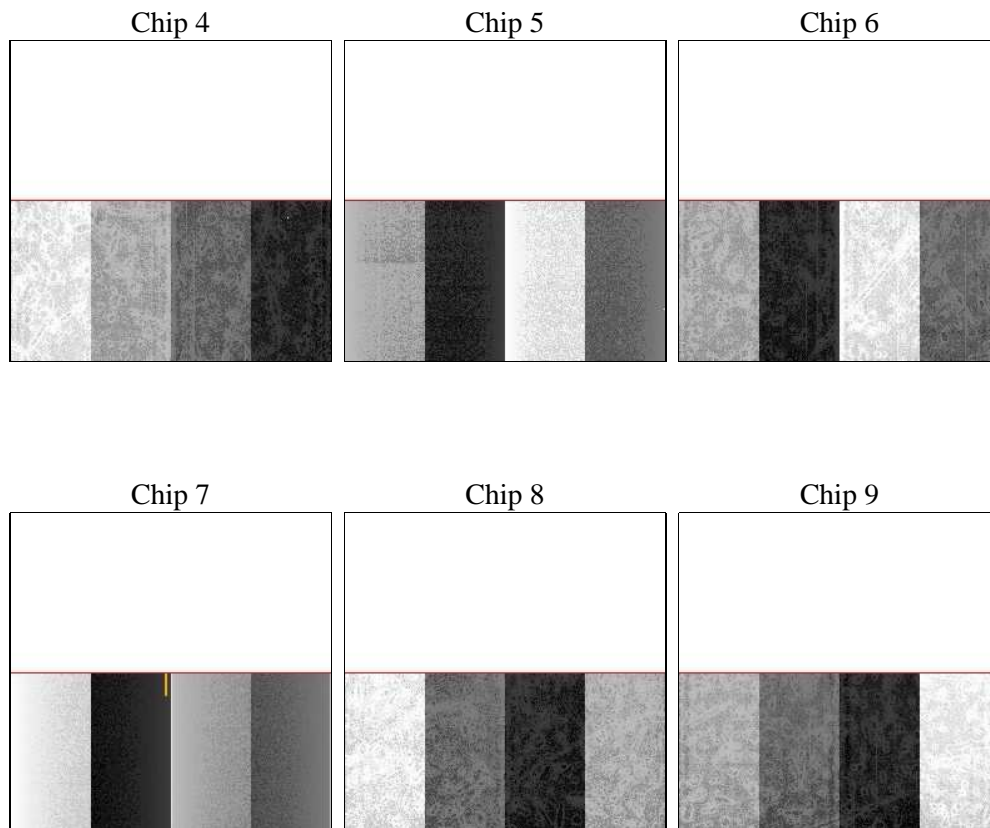
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	24600.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	24758.799826443	Sum of GTIs [s]
caldsver	4.4.9	&#160	ontime4	24758.799826443	Sum of GTIs [s]
date	2012-05-17T16:29:23	Date and time of file creation	ontime5	24758.799826443	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	24715.274143994	Sum of GTIs [s]
			ontime7	24758.799826443	Sum of GTIs [s]
			ontime8	24711.792113662	Sum of GTIs [s]
			ontime9	24758.799826443	Sum of GTIs [s]
			l1events	1885826	Number of level 1 events

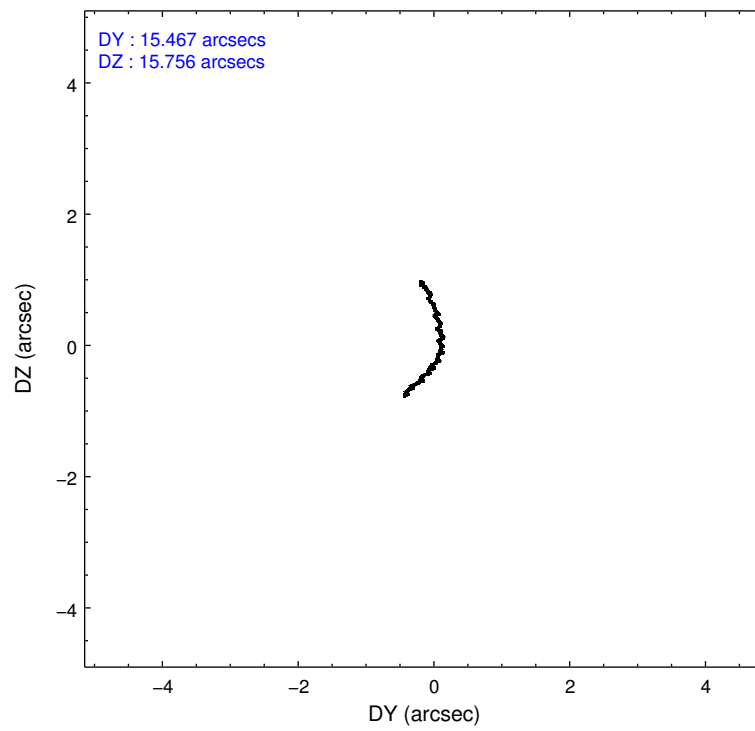
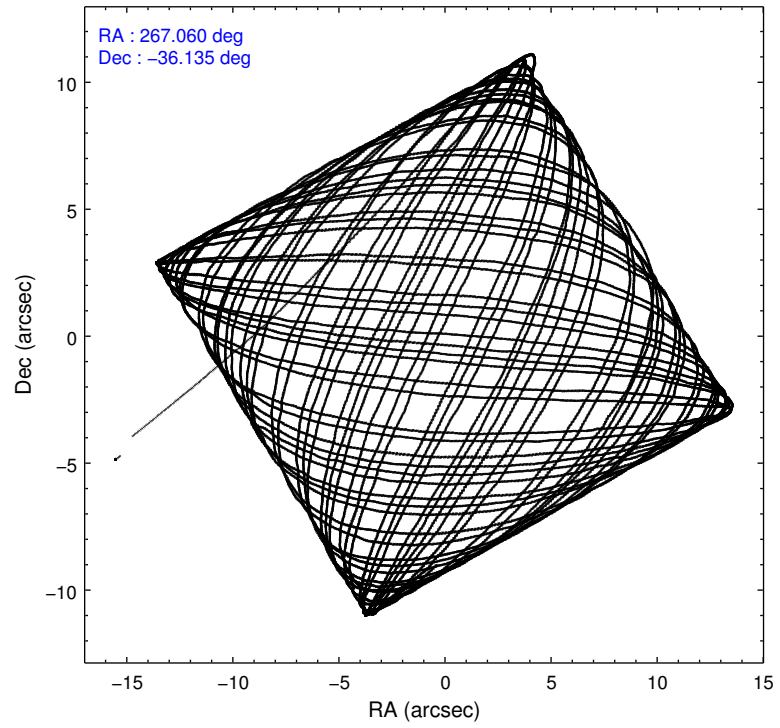
### 2.1.4 Events

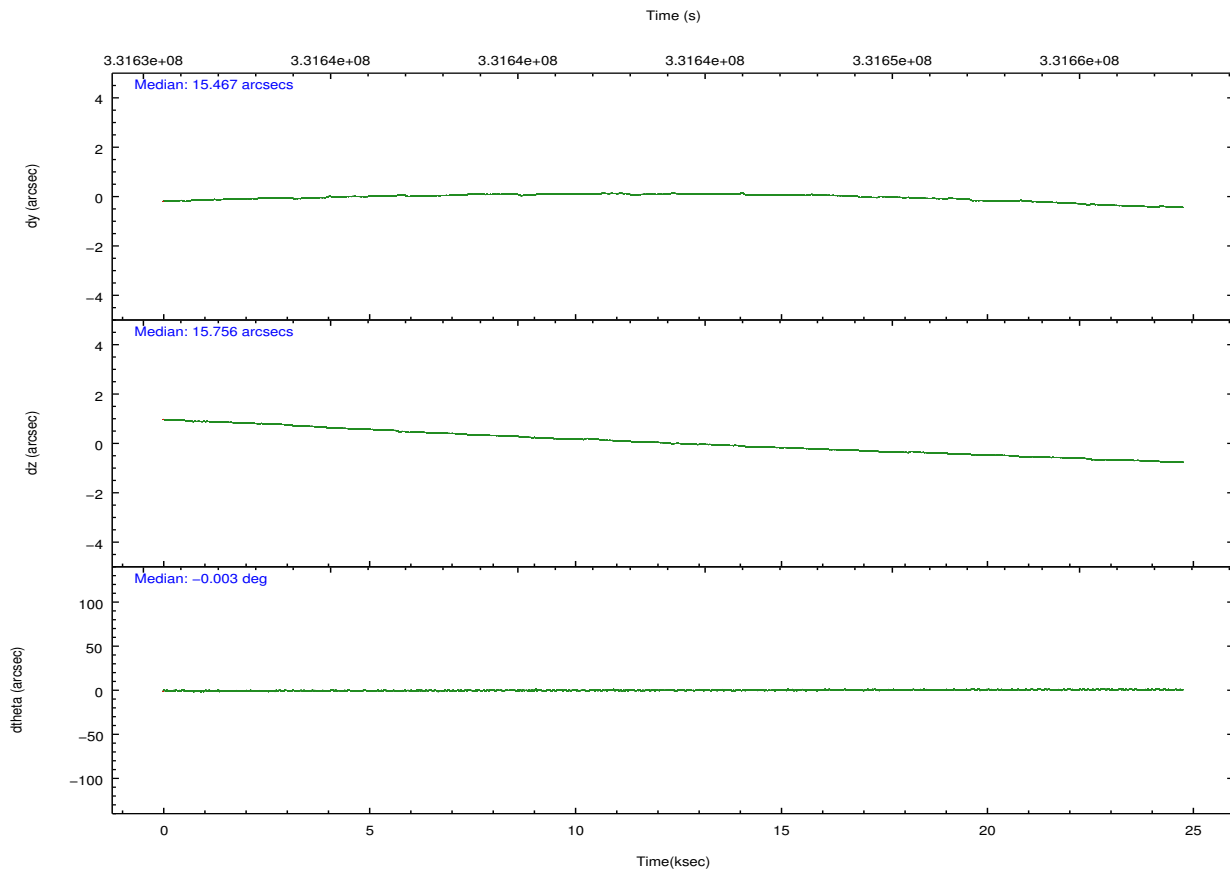
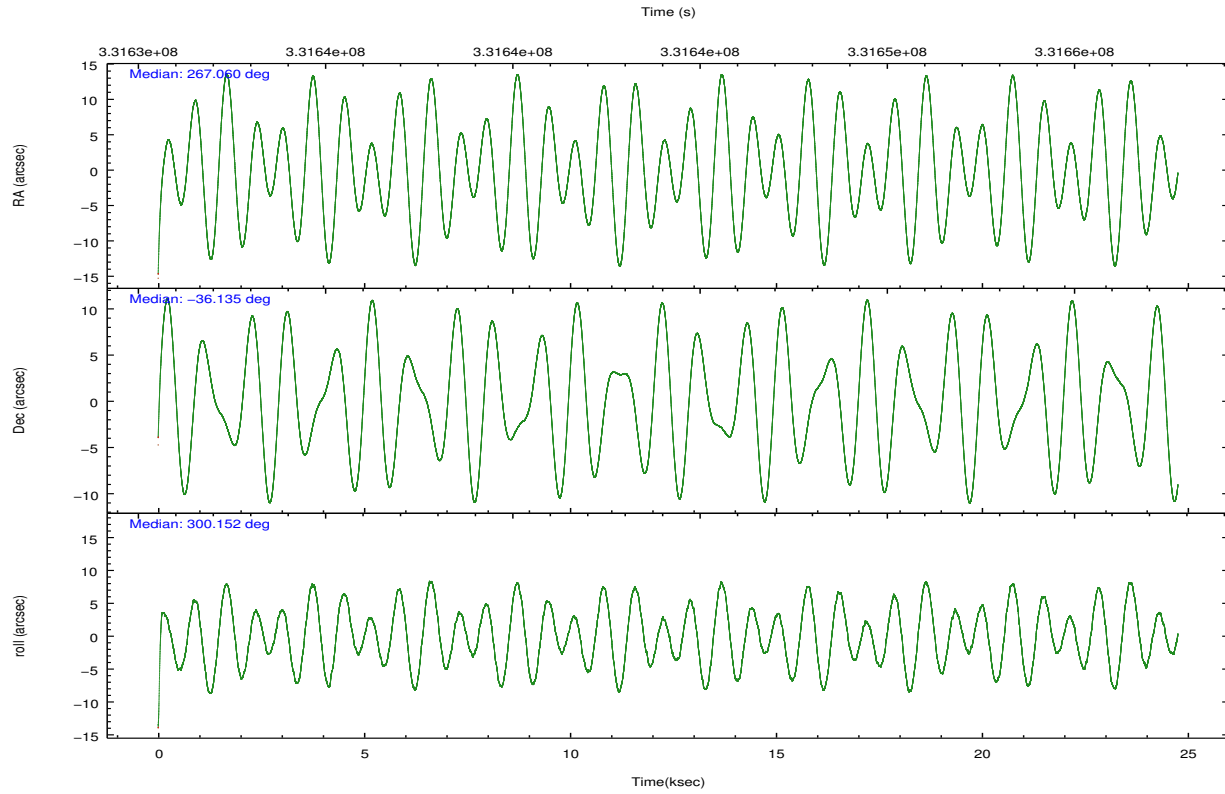
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	159603	266378	464864	544286	300386	150309	grade 0 events	22650	34249	256188	84083	117290	26578
rejected events	124966	106505	123229	117063	133480	109306		14%	12%	55%	15%	39%	17%
rejected %	78%	39%	26%	21%	44%	72%	grade 1 events	193	382	2881	1565	704	135
								0%	0%	0%	0%	0%	0%
							grade 2 events	4937	47167	42783	104500	21833	5812
								3%	17%	9%	19%	7%	3%
							grade 3 events	2304	11635	14961	46696	8598	2659
								1%	4%	3%	8%	2%	1%
							grade 4 events	2225	11349	14795	46273	8074	2560
								1%	4%	3%	8%	2%	1%
							grade 5 events	5458	15860	7884	22235	8016	6135
								3%	5%	1%	4%	2%	4%
							grade 6 events	2895	57236	15631	148798	13496	3771
								1%	21%	3%	27%	4%	2%
							grade 7 events	118941	88500	109741	90136	122375	102659
								74%	33%	23%	16%	40%	68%

## 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	267.030290	267.0598695075248	Subarray requested	CUSTOM	1/2
[deg] Pointing Dec	-36.121835	-36.13511299110809	Subarray start row	1	1
[deg] Pointing Roll	299.985674	300.1597421319223	Subarray row count	512	512
[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	1.7
[mm] SIM translation stage pos	-183.992523	-183.9875365069546			
[mm] SIM translation stage offset	-6.14	-6.144986076053243			
[s] Observation start time (MET)	331631923.184000	331630762.61135			
Observation start date	2008-07-05T07:57:38	2008-07-05T07:39:22			
[s] Observation end time (MET)	331656523.184000	331657383.91265			
Observation end date	2008-07-05T14:47:38	2008-07-05T15:03:03			
Read mode	TIMED	TIMED			

## 2.3 Aspect



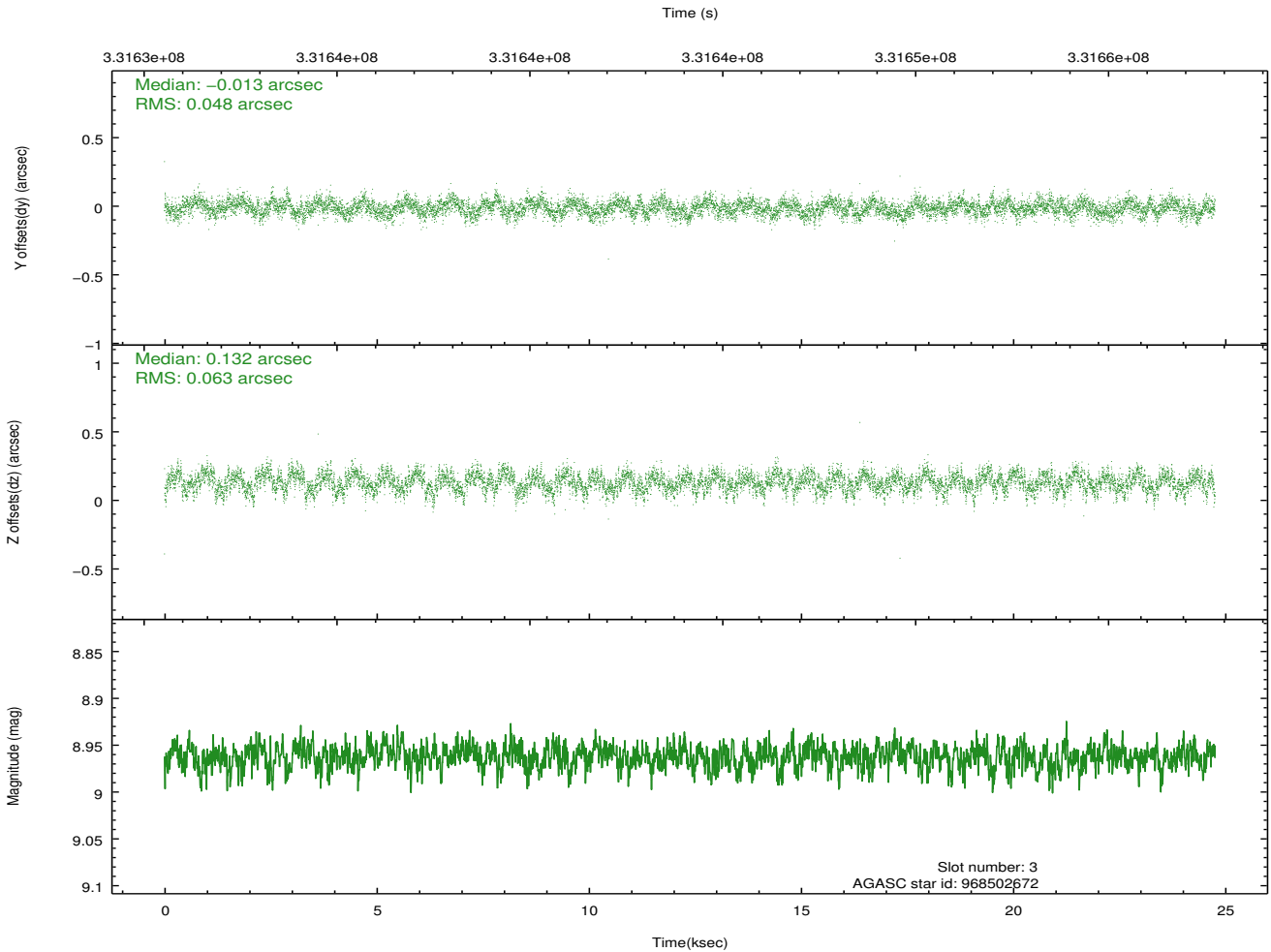
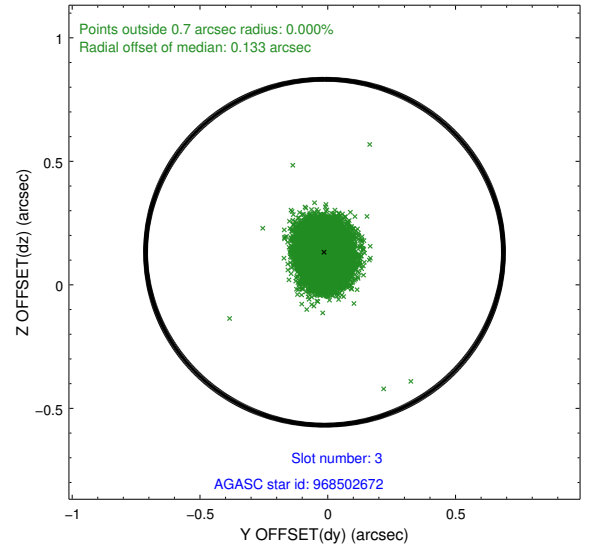
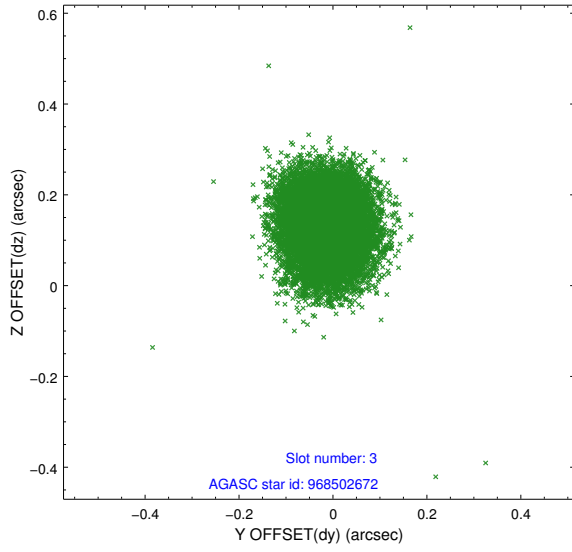


### Slot Statistics

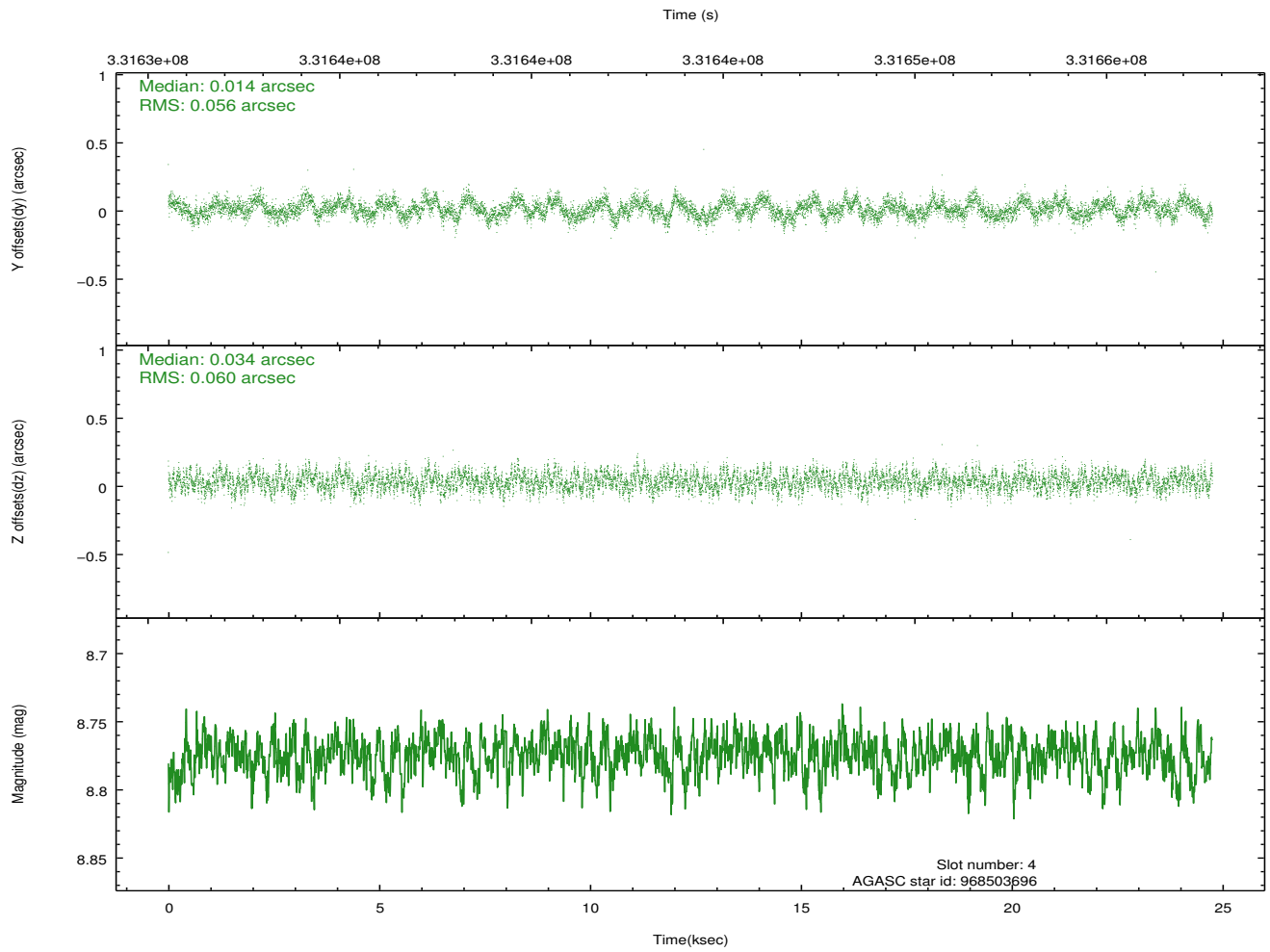
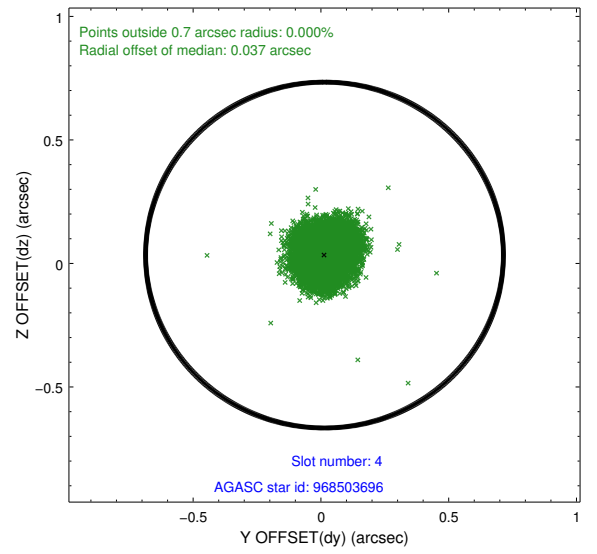
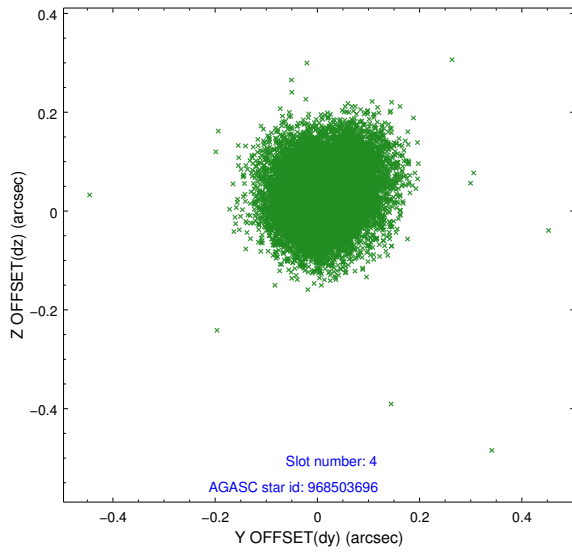
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.86	6039	-0.139	-0.104	0.007	0.012	0.000000	0.000000	-768.16	-1863.94
1	FID	ACIS-S-4	6.95	6040	0.097	0.086	0.008	0.013	0.000000	0.000000	2145.35	44.50
2	FID	ACIS-S-6	7.15	6039	0.014	0.025	0.011	0.021	0.000000	0.000000	394.20	682.01
3	GUIDE	968502672	8.96	12070	-0.013	0.132	0.084	0.135	266.858331	-35.977361	-700.25	-174.13
4	GUIDE	968503696	8.77	12071	0.014	0.034	0.089	0.140	266.913804	-35.806902	-1151.65	271.86
5	GUIDE	968494256	7.75	12075	0.088	-0.060	0.074	0.127	266.804762	-36.985927	2371.45	-2116.75
6	GUIDE	968639336	8.64	12073	-0.011	-0.101	0.092	0.139	267.813813	-35.890844	429.98	2389.92
7	GUIDE	968641112	7.16	12076	-0.086	-0.006	0.069	0.106	267.924934	-36.467732	2383.43	1615.56

## 2.4 Star Slots

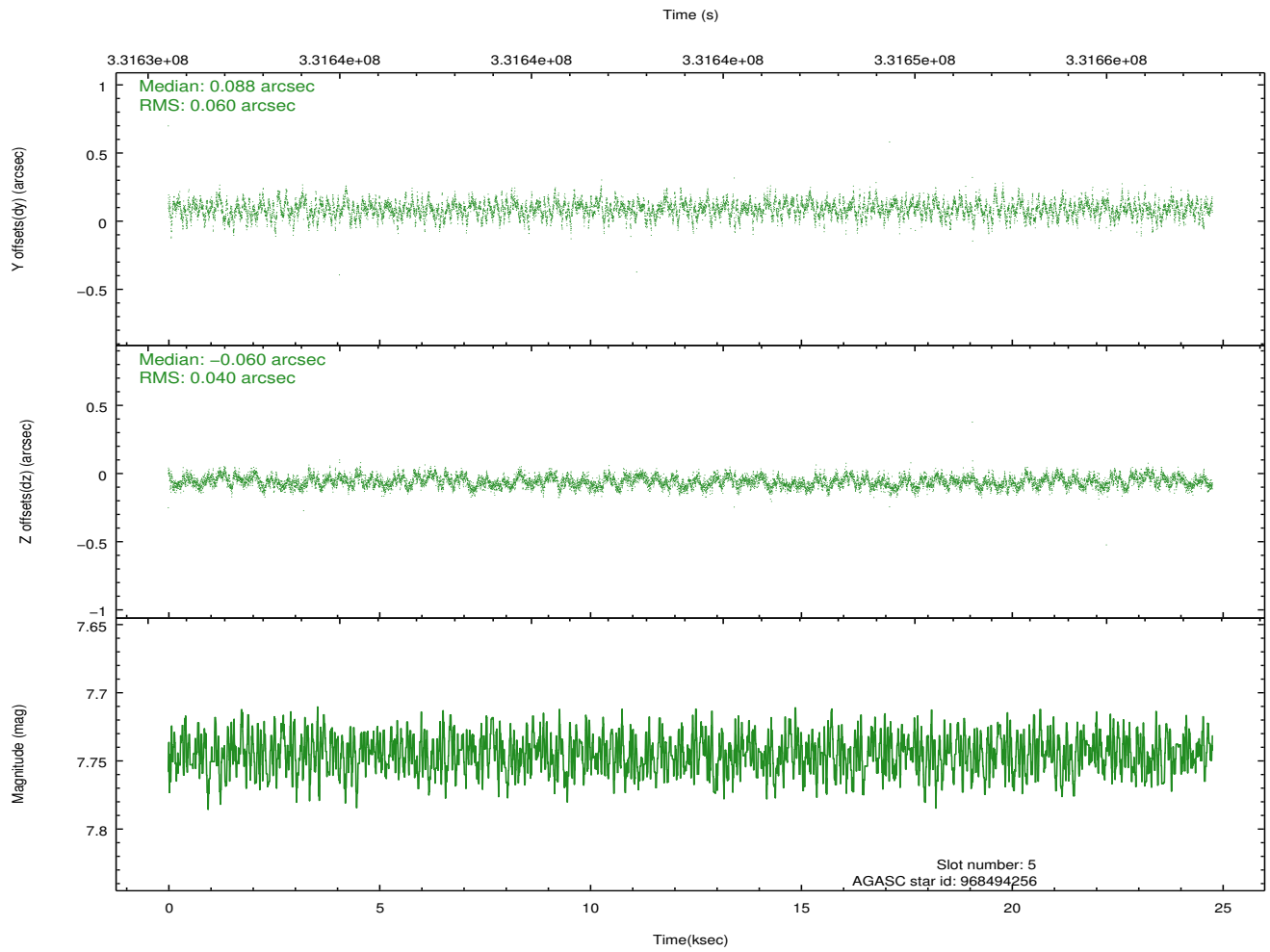
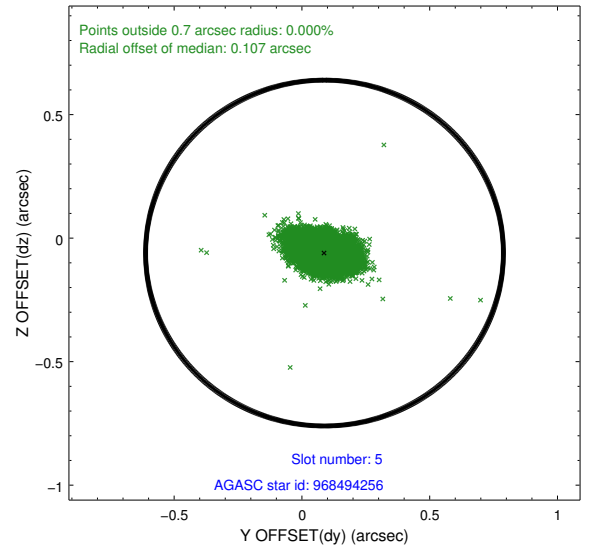
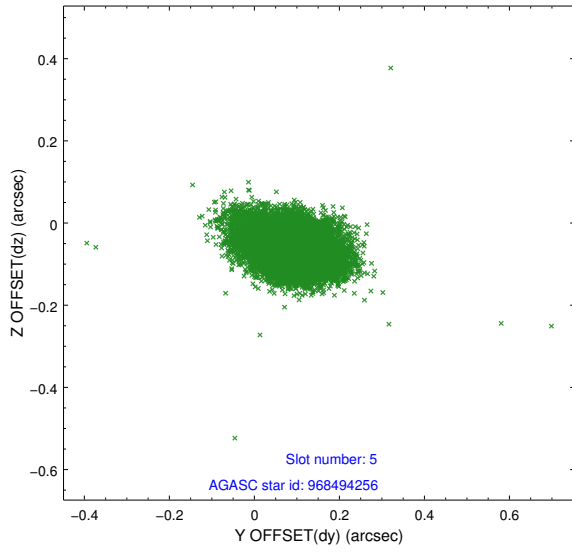
### 2.4.1 Slot 3



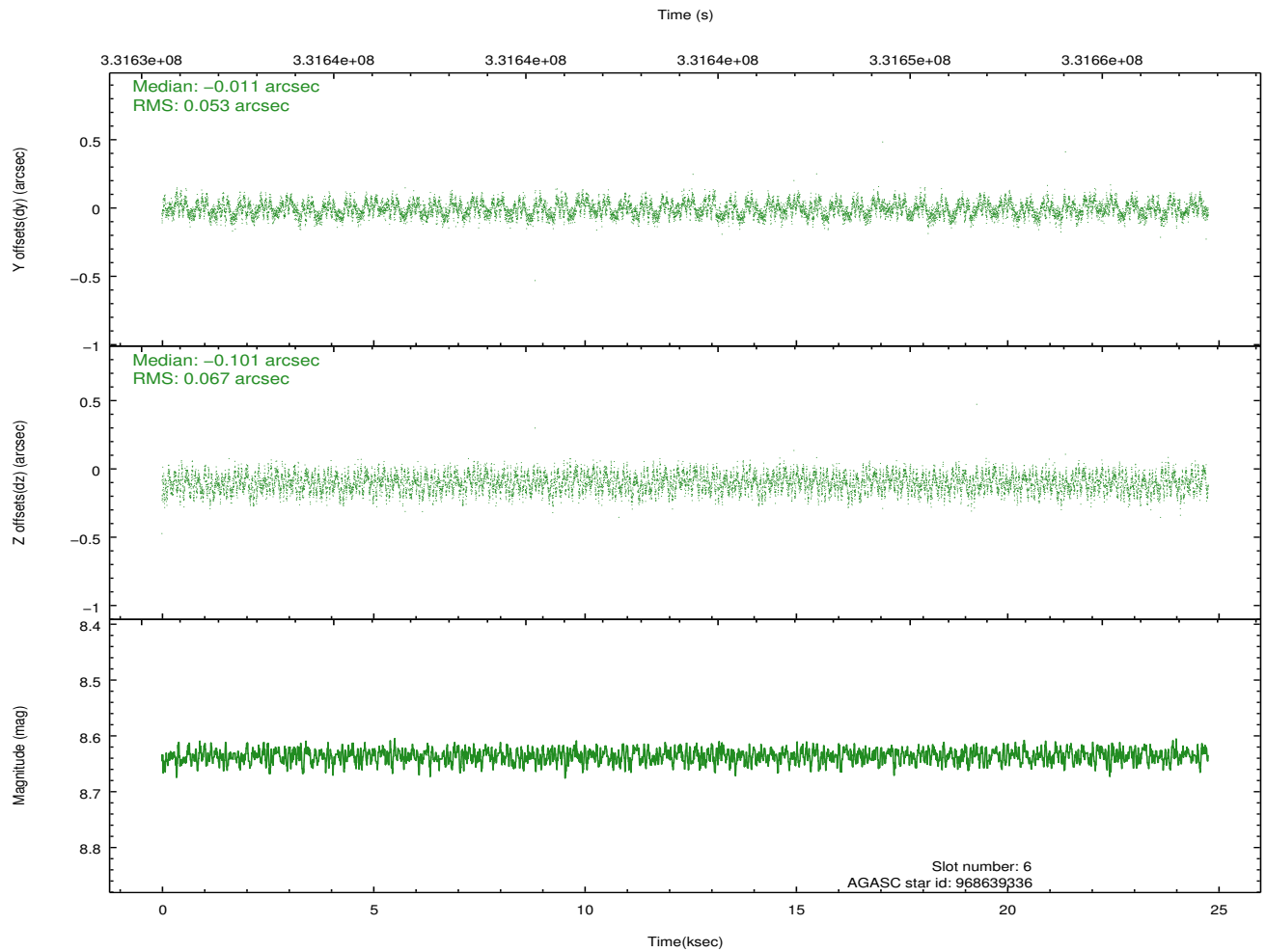
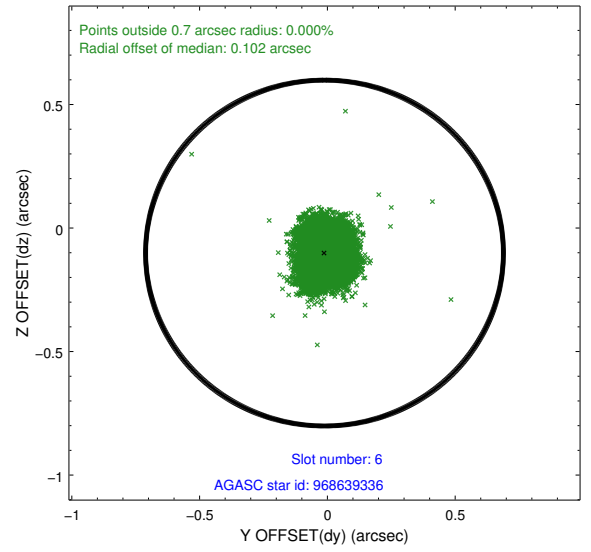
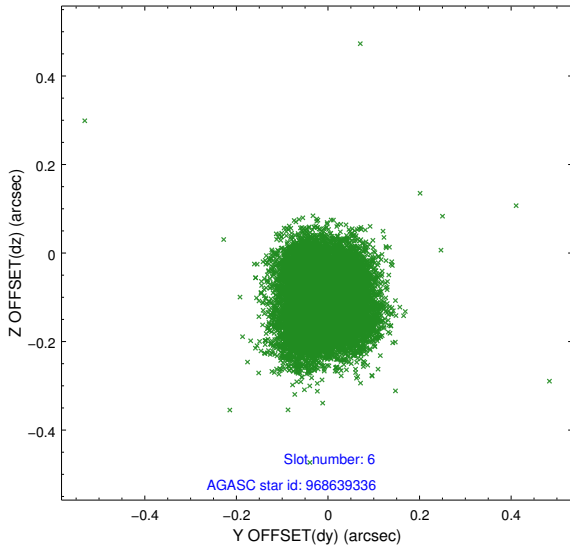
## 2.4.2 Slot 4



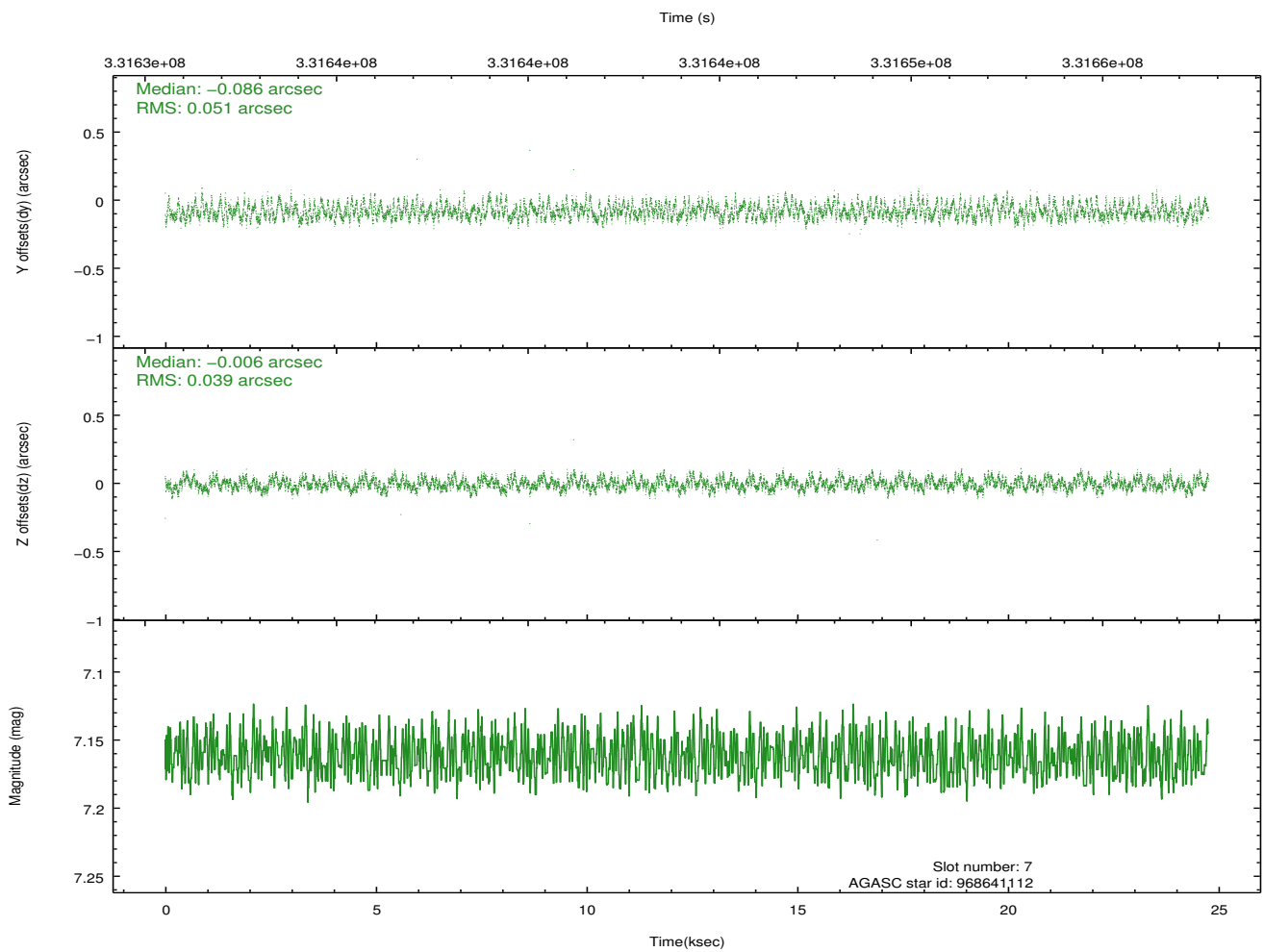
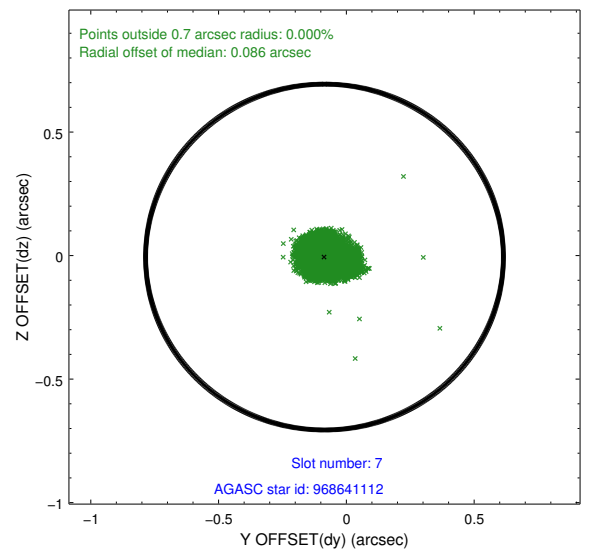
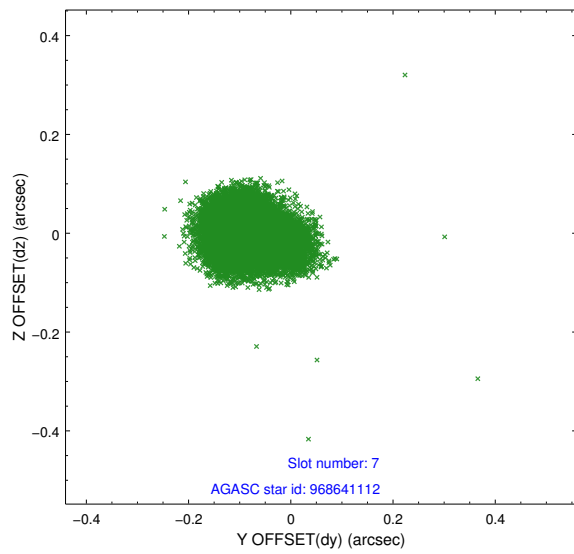
### 2.4.3 Slot 5



### 2.4.4 Slot 6

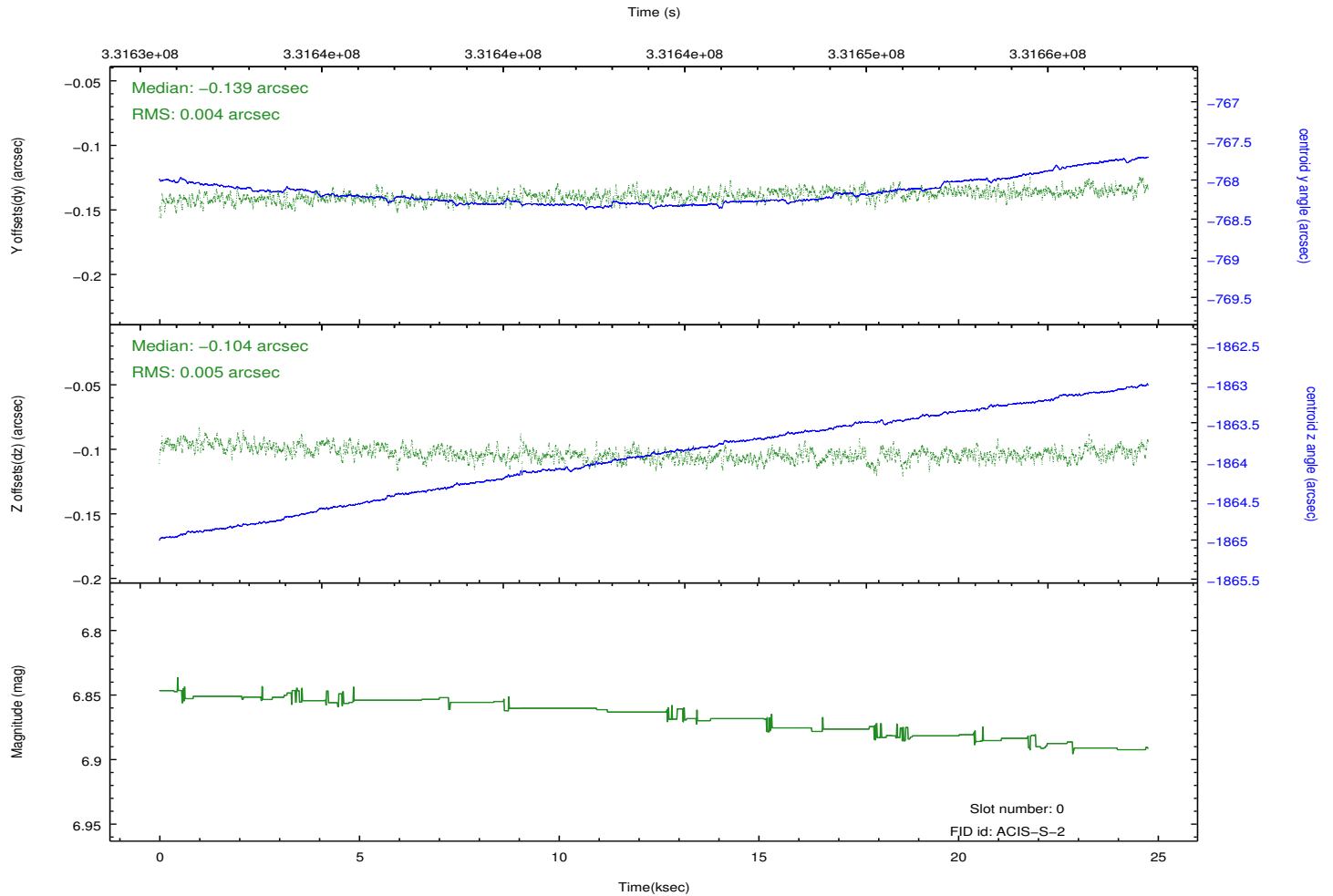
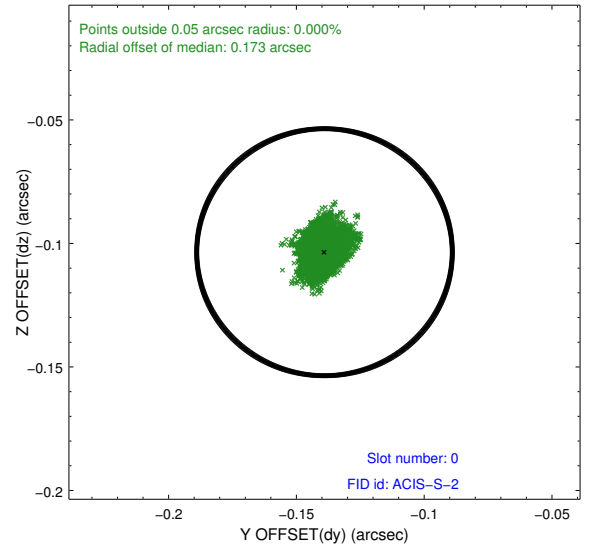
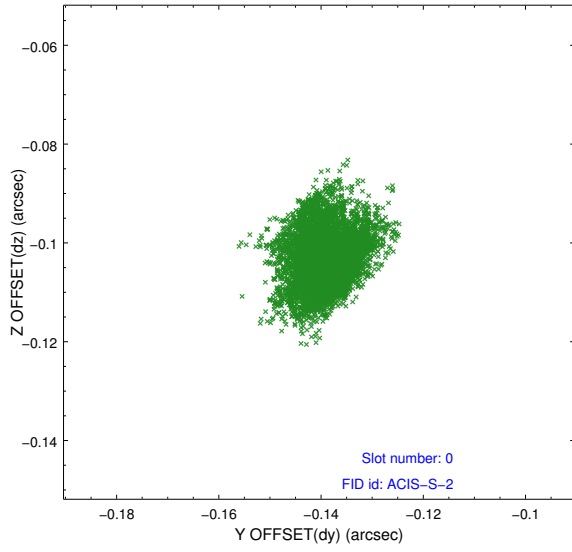


## 2.4.5 Slot 7

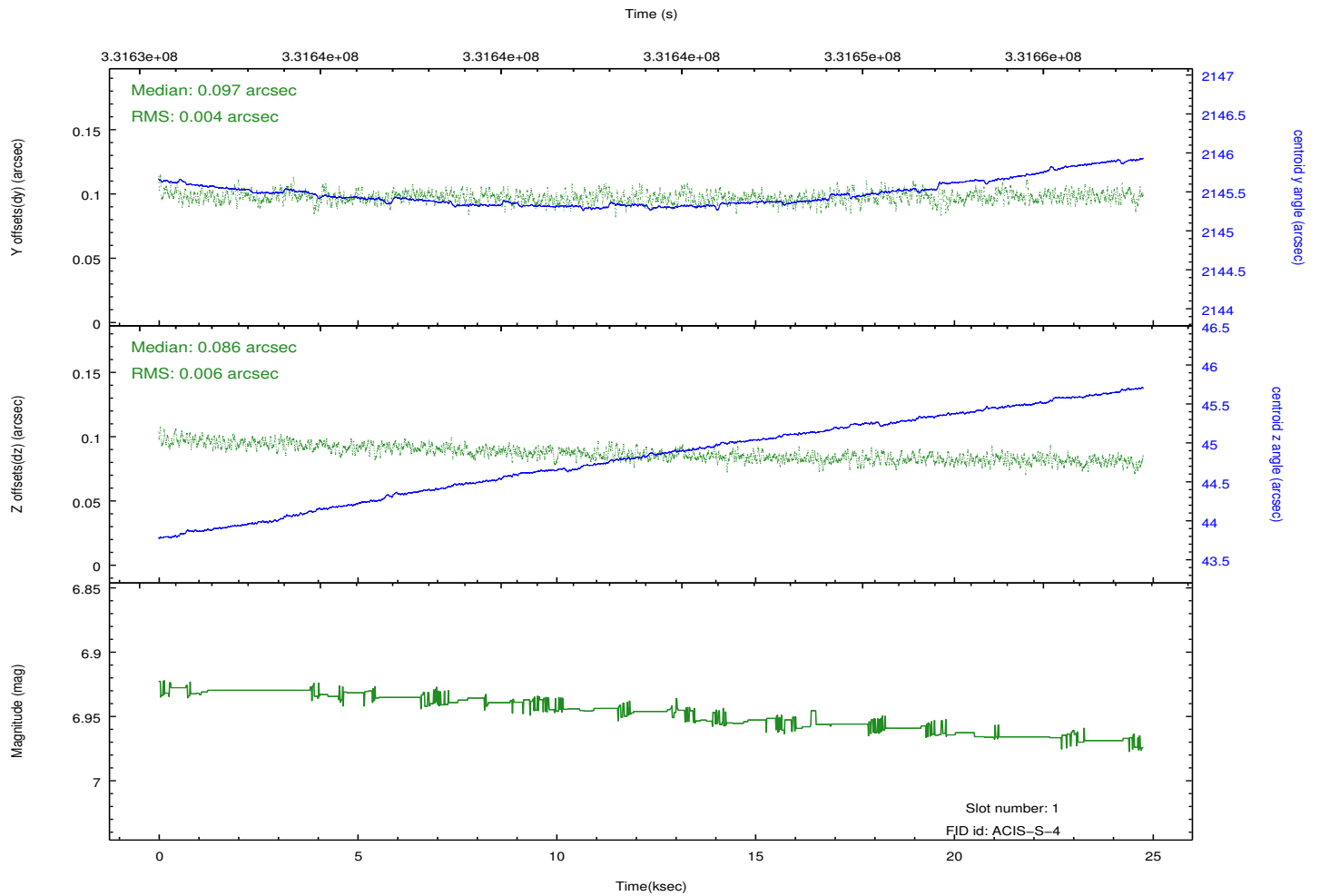
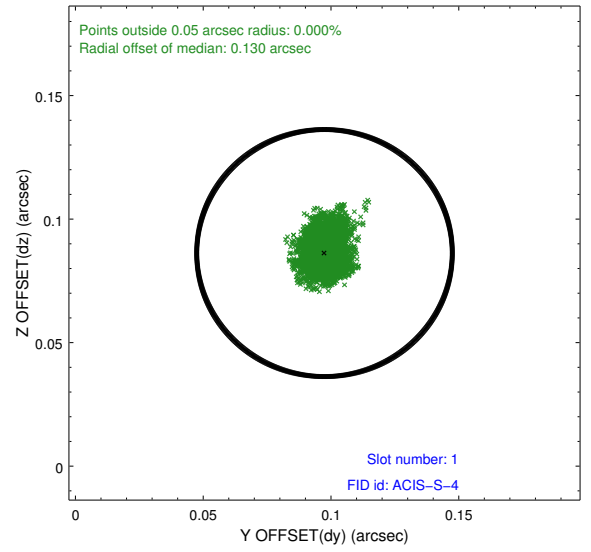
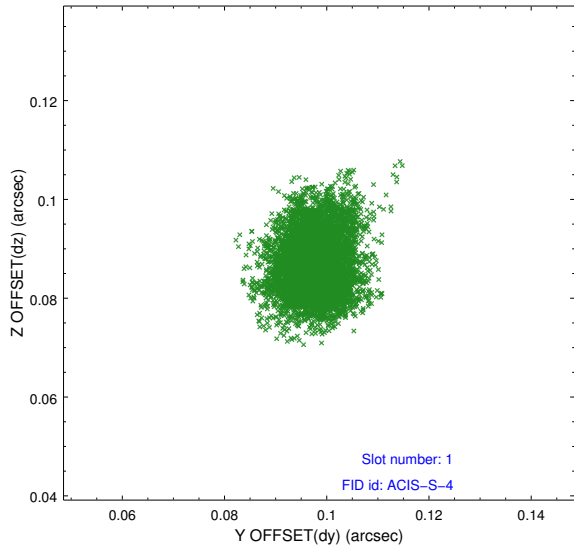


## 2.5 FID Slots

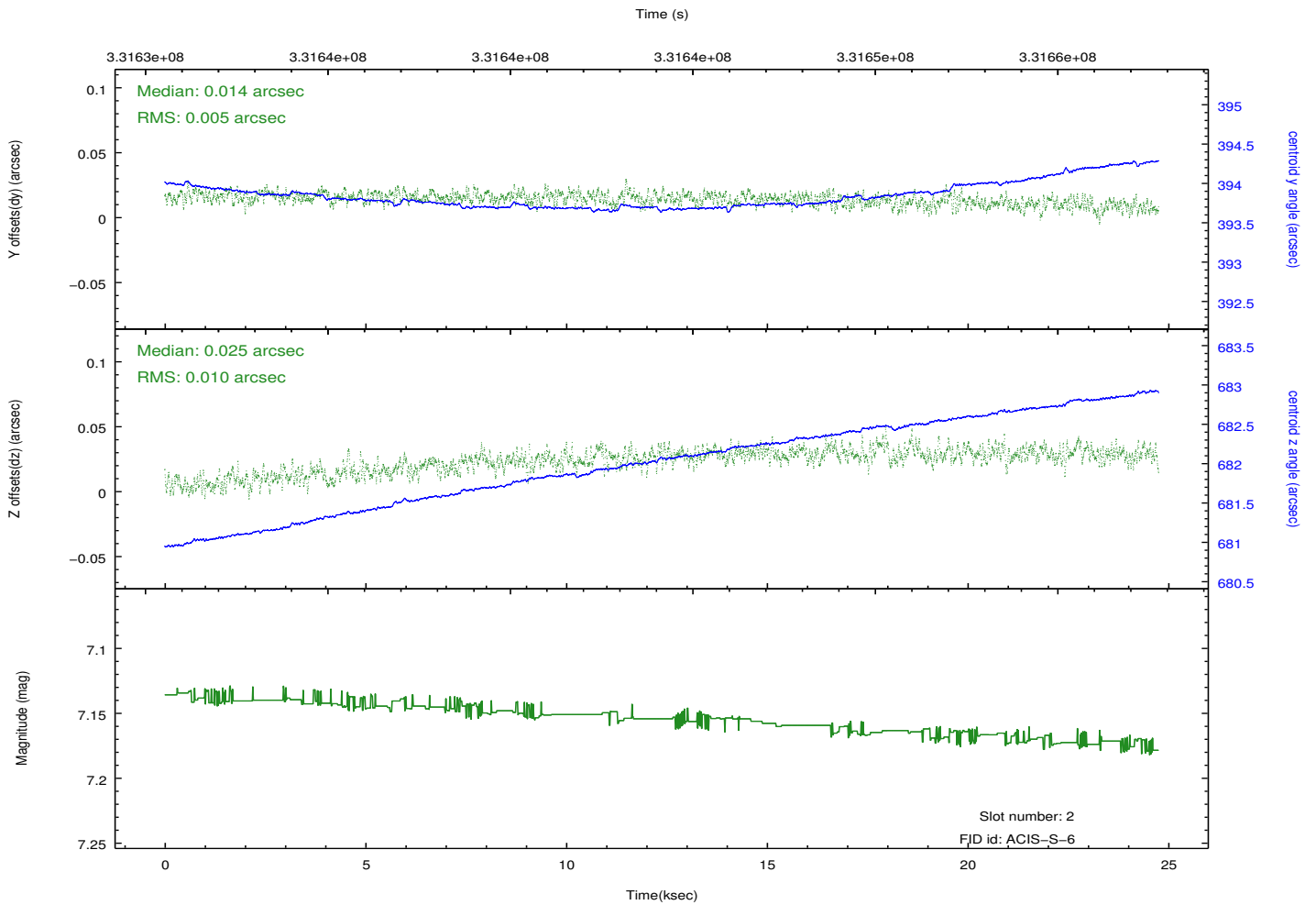
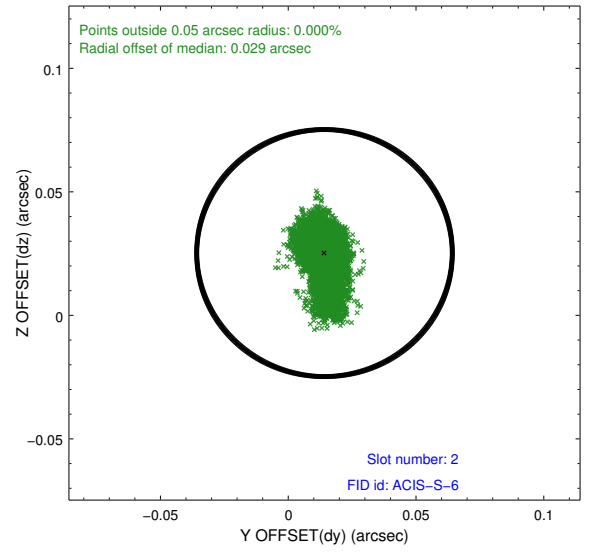
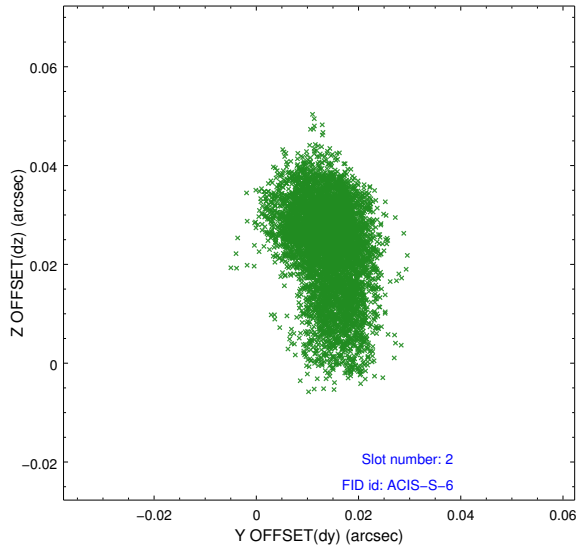
### 2.5.1 Slot 0



## 2.5.2 Slot 1

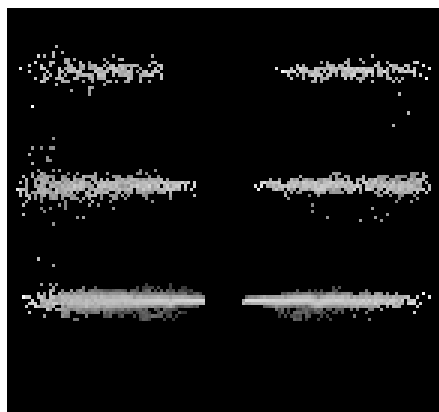


### 2.5.3 Slot 2

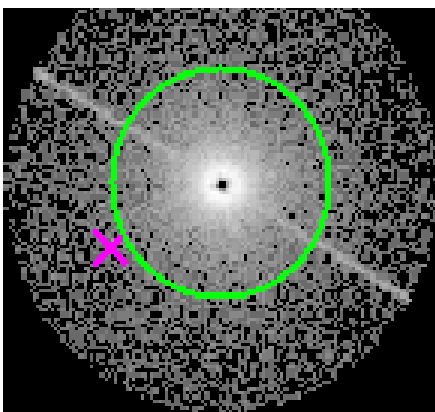


# 3 Gratings

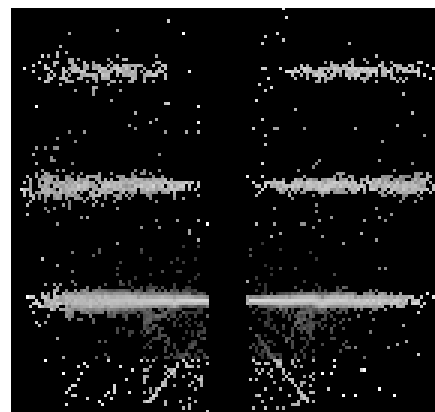
## 3.1 HEG Arm



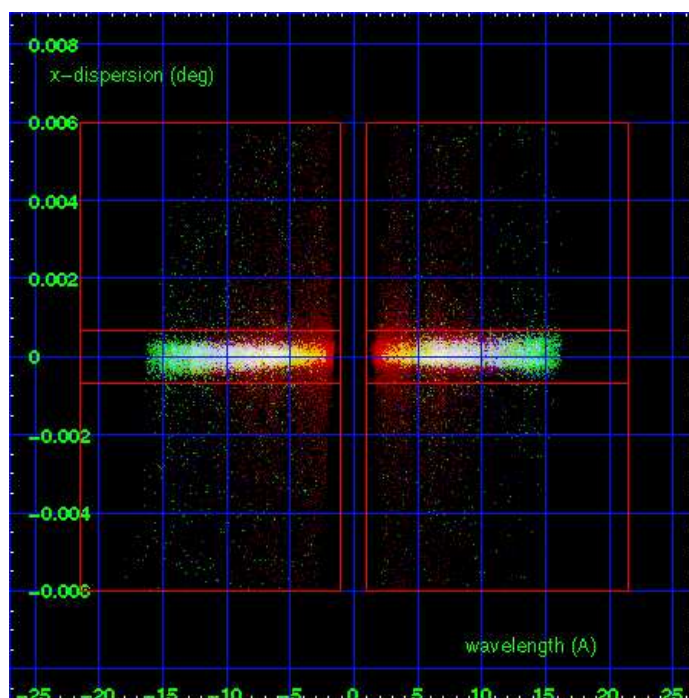
HEG Order Sort 123



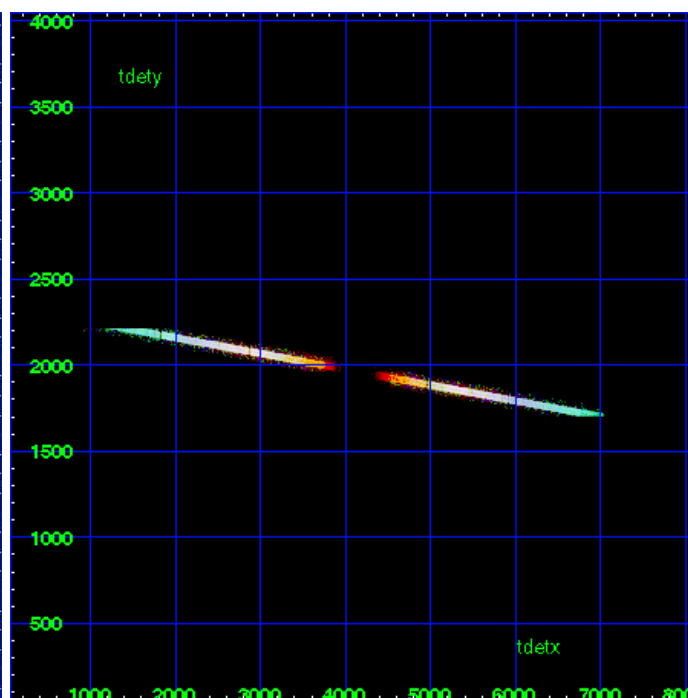
HEG Zero Order



HEG Order Sort ALL

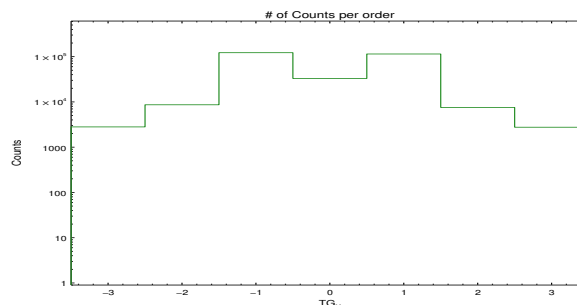


Spot Image HEG

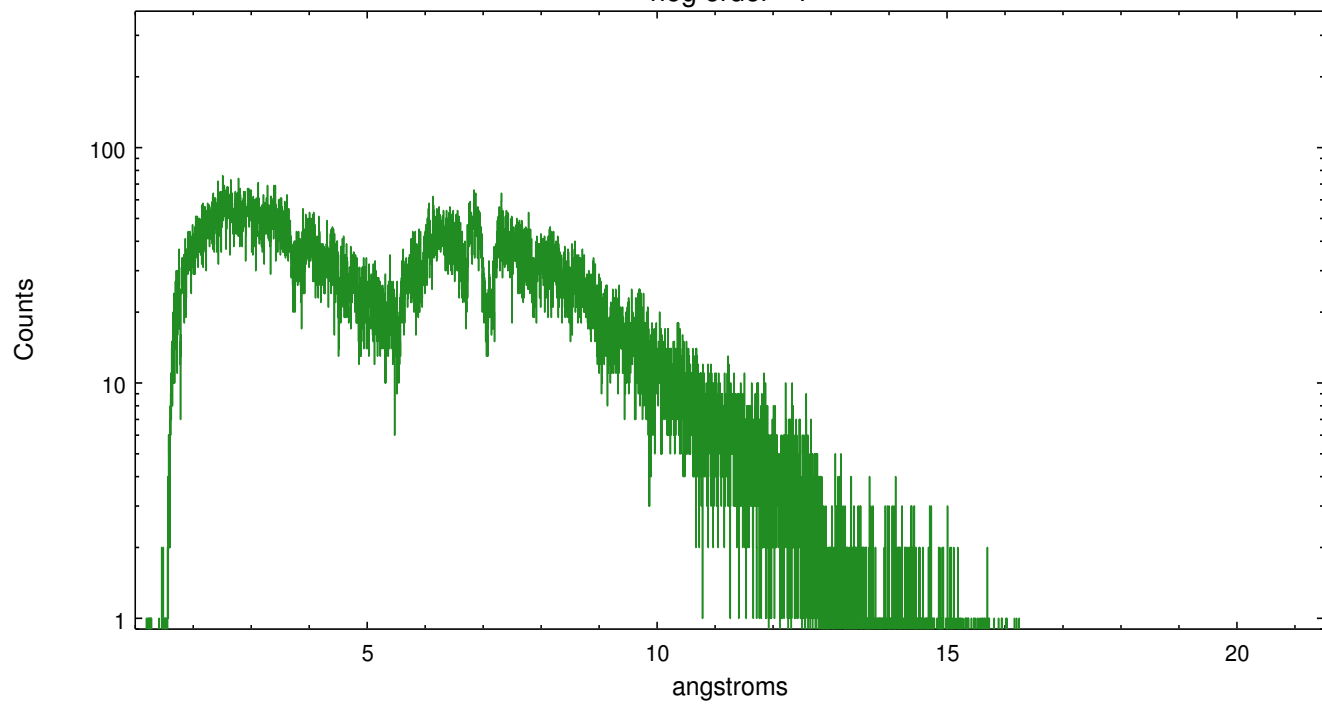


Full Detector HEG

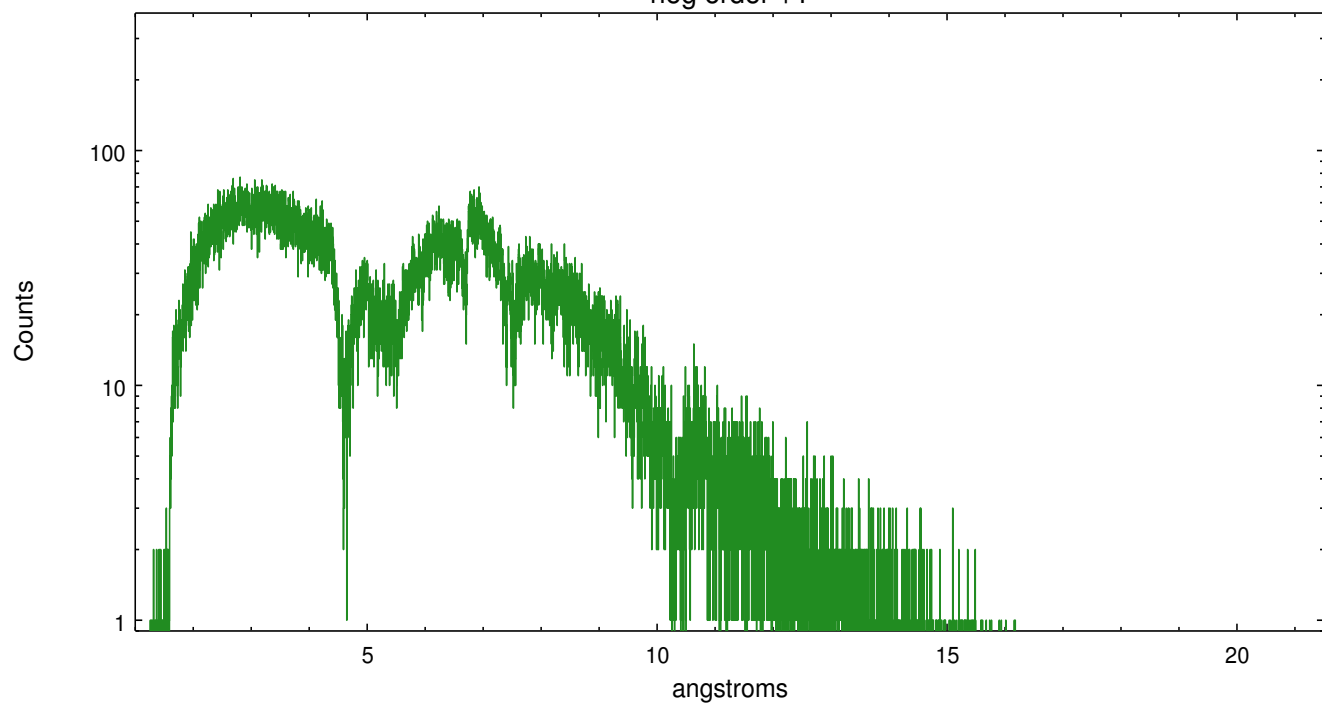
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2805	8644	122328	33003	114498	7551	2758



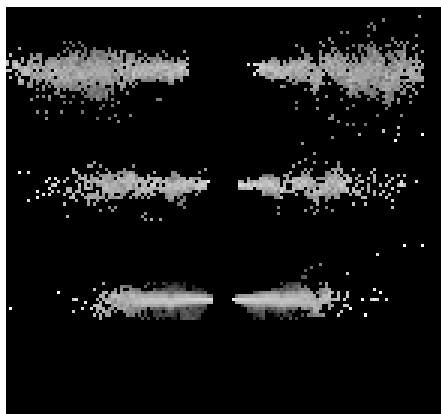
heg order -1



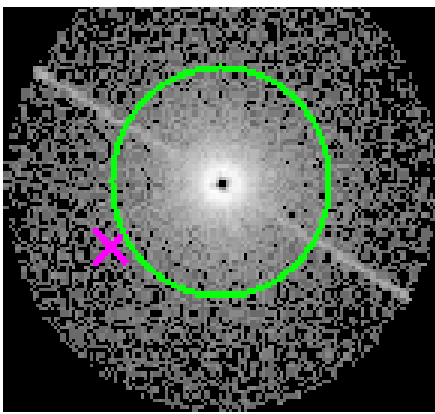
heg order +1



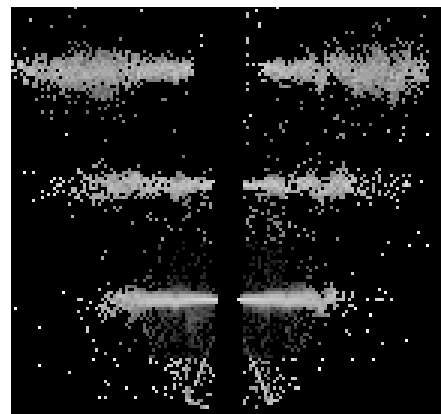
### 3.2 MEG Arm



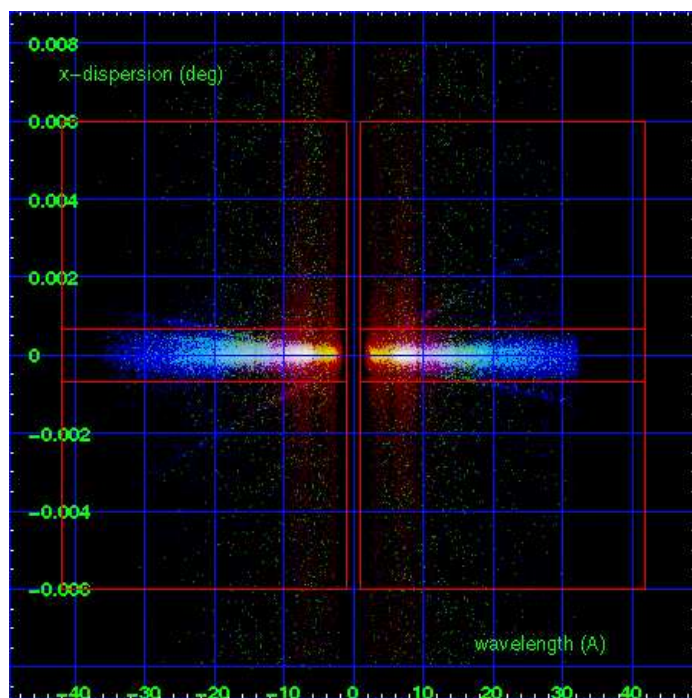
MEG Order Sort 123



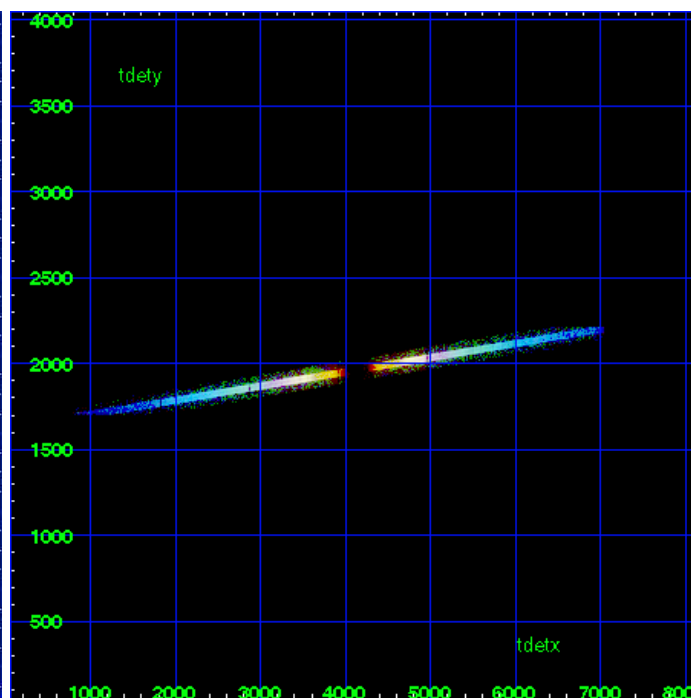
MEG Zero Order



MEG Order Sort ALL

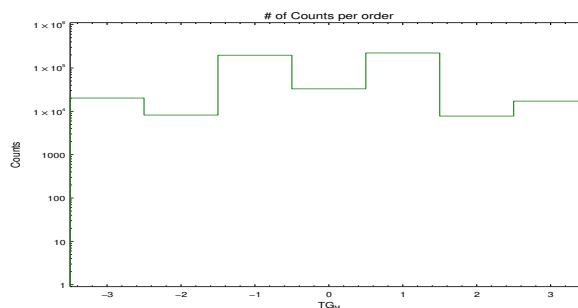


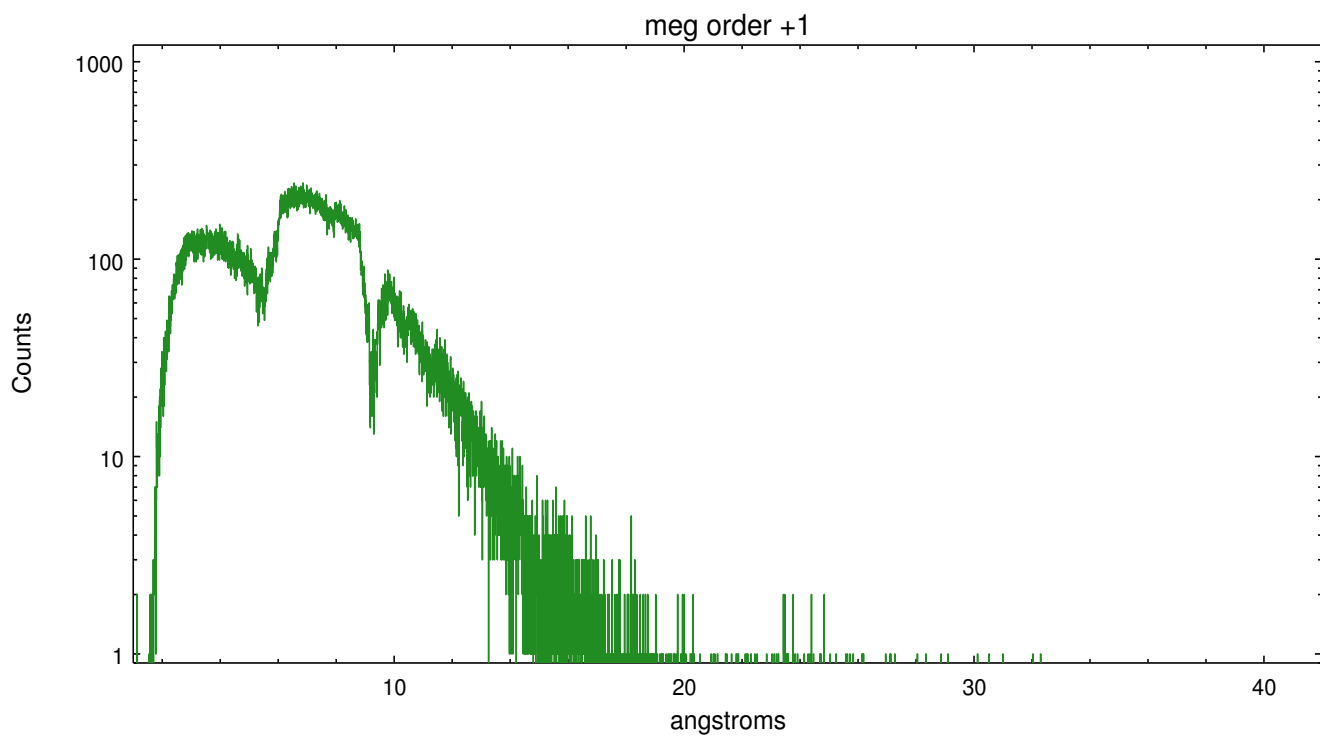
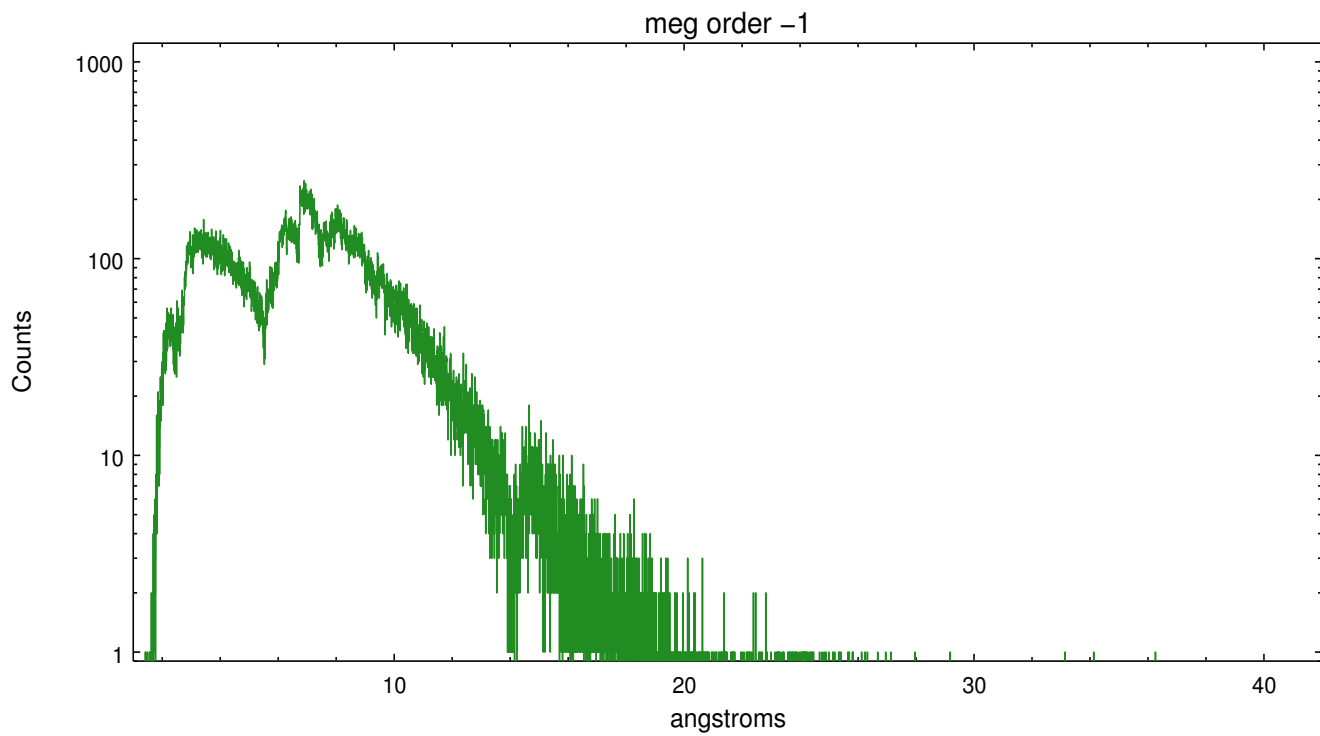
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	20215	8193	196728	33003	221642	7759	17167





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	24.7587998

## A.2 Comments

The grating spectra are visible in an image made from bad events. This means that the grating spectra are piled.

===

Zerth 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=4127.24, y=4113.07) 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.