

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 10827 - L2 Version 3  
Chandra X-Ray Center

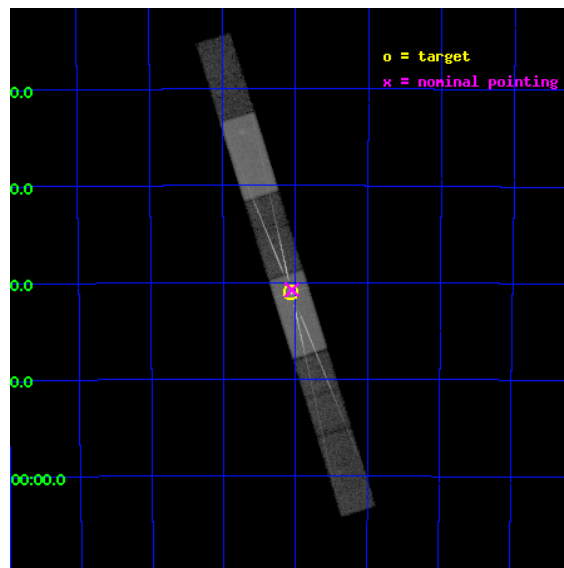
L2 Processing Date : May 29 2012

## 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

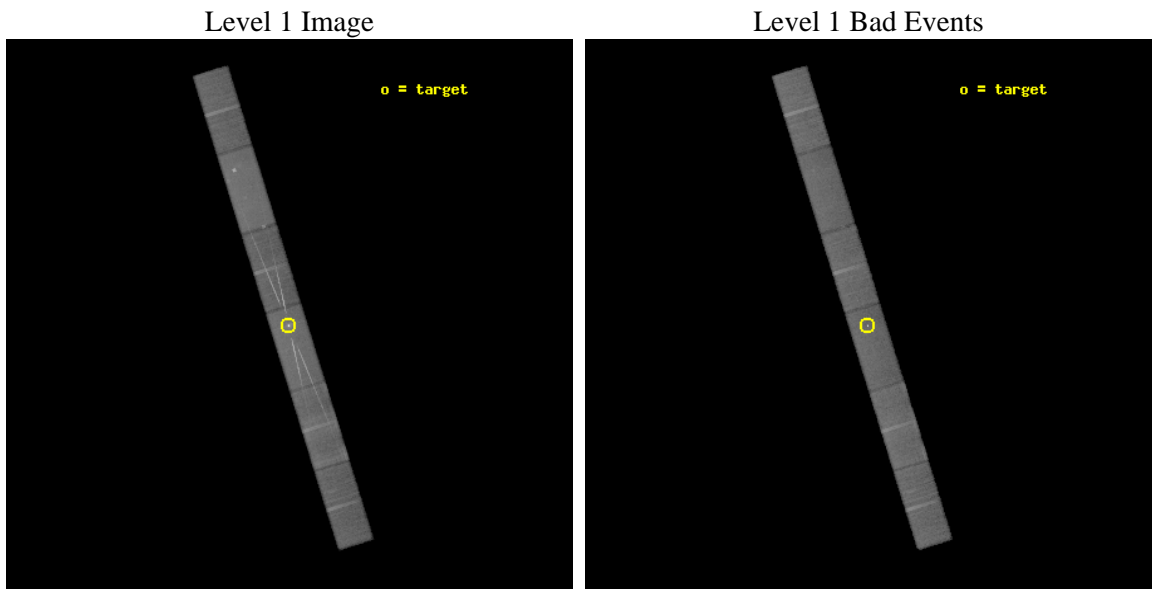
seq_num	200511	Sequence number
obs_id	10827	Observation id
title	Shock Dynamics in Eta Carinae Approaching the 2009 Periastron Passage: A Twisted Tail	Proposal title
observer	Dr Michael Corcoran	Principal investigator
object	Eta Car	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	161.265	Observer's specified target RA [deg]
dec_targ	-59.684528	Observer's specified target Dec [deg]
ra_nom	161.2626533059	Nominal RA [deg]
dec_nom	-59.679831466024	Nominal Dec [deg]
roll_nom	72.654599768611	Nominal Roll [deg]
revision	3	Processing version of data
ontime	28114.5	Sum of GTIs [s]
livetime	27365.772465348	Livetime [s]
ontime4	28112.958979845	Sum of GTIs [s]
ontime5	28114.5	Sum of GTIs [s]
ontime6	28114.5	Sum of GTIs [s]
ontime7	28114.5	Sum of GTIs [s]
ontime8	28114.5	Sum of GTIs [s]
ontime9	28114.5	Sum of GTIs [s]
l2events	317500	Number of level 2 events



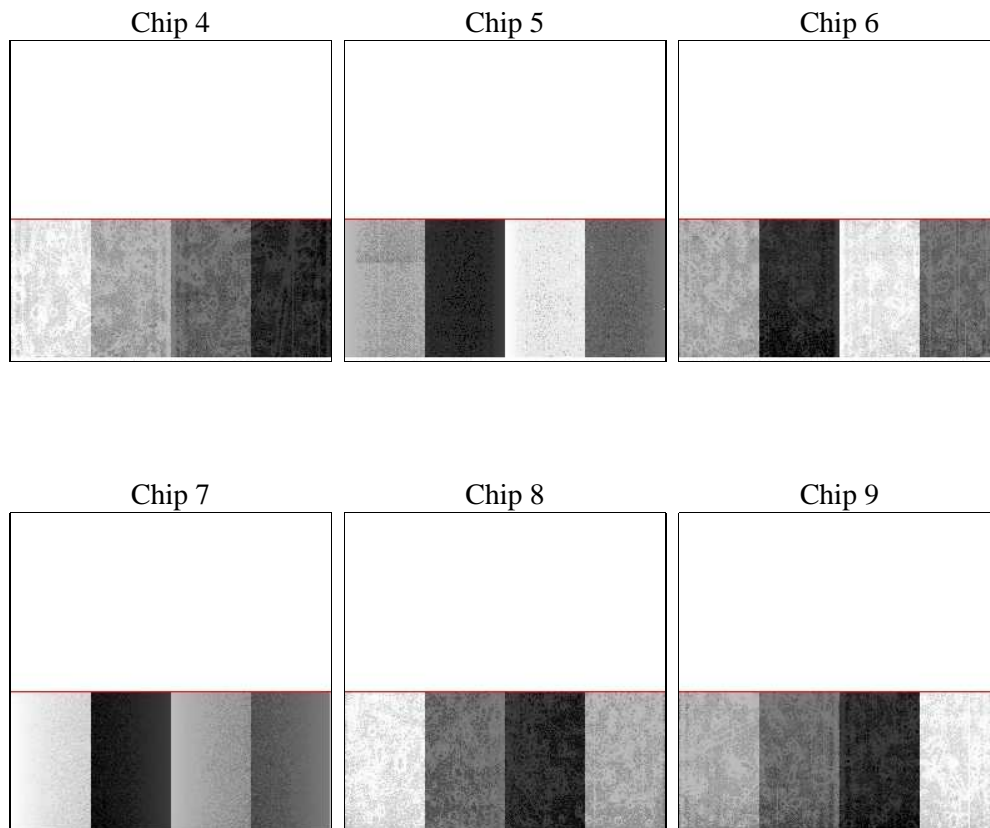
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27957.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	28114.5	Sum of GTIs [s]
caldsver	4.4.9	&#160	ontime4	28112.958979845	Sum of GTIs [s]
date	2012-05-26T05:18:45	Date and time of file creation	ontime5	28114.5	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	28114.5	Sum of GTIs [s]
			ontime7	28114.5	Sum of GTIs [s]
			ontime8	28114.5	Sum of GTIs [s]
			ontime9	28114.5	Sum of GTIs [s]
			l1events	1067396	Number of level 1 events

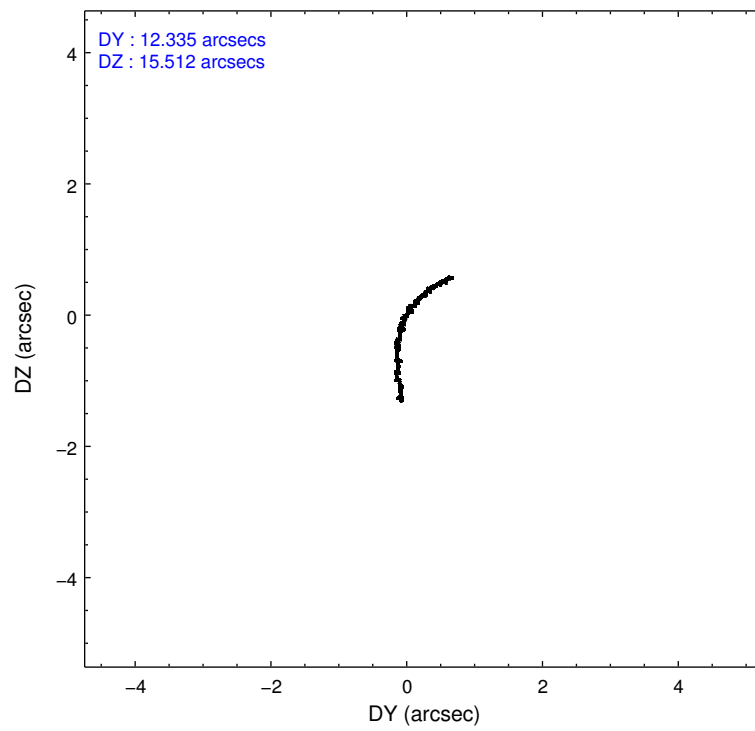
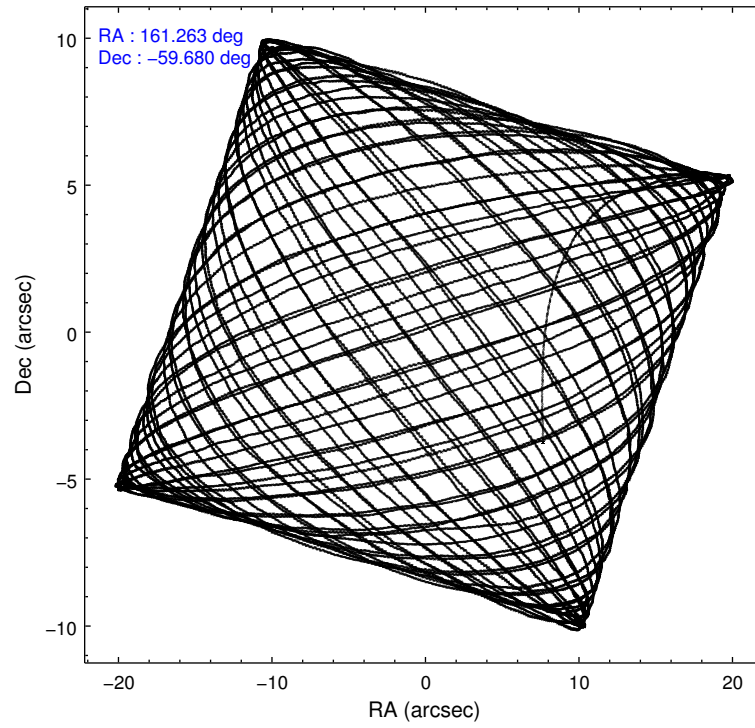
### 2.1.4 Events

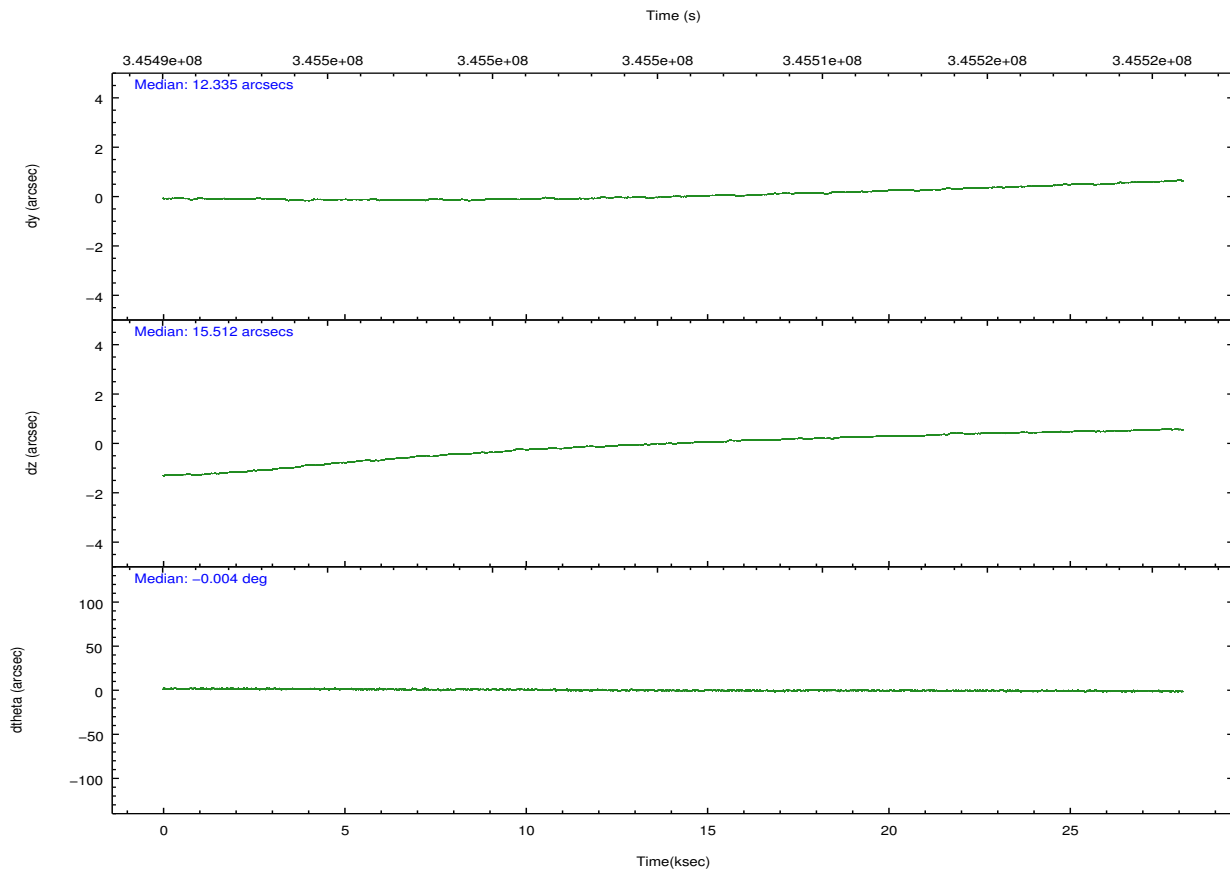
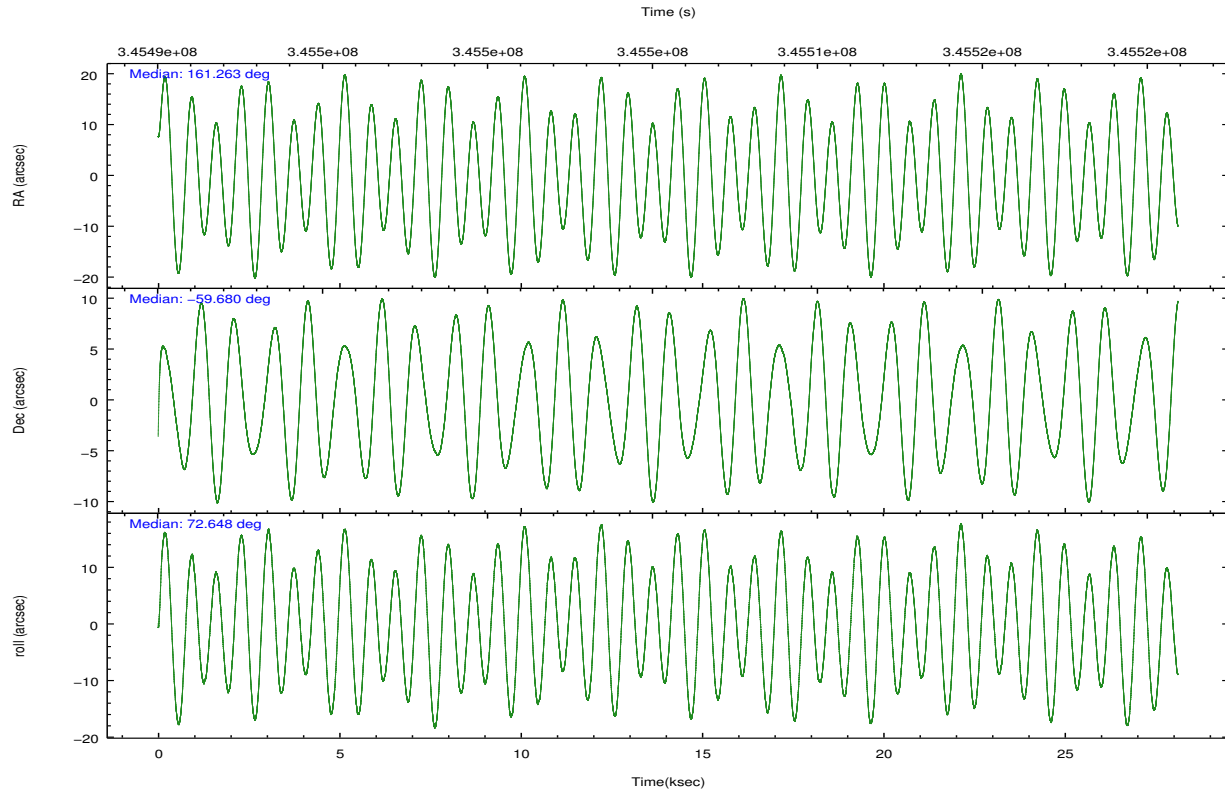
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	145831	205853	164262	240955	181412	129083	grade 0 events	8121	13890	29415	16967	19097	8679
rejected events	127273	106948	115876	111353	131654	109767		5%	6%	17%	7%	10%	6%
rejected %	87%	51%	70%	46%	72%	85%	grade 1 events	78	638	150	615	112	73
								0%	0%	0%	0%	0%	0%
							grade 2 events	4094	27955	7650	28118	10193	3631
								2%	13%	4%	11%	5%	2%
							grade 3 events	2003	5715	3320	12734	4855	2034
								1%	2%	2%	5%	2%	1%
							grade 4 events	1857	5405	3338	12355	4707	1916
								1%	2%	2%	5%	2%	1%
							grade 5 events	5594	15685	5962	19210	7879	6139
								3%	7%	3%	7%	4%	4%
							grade 6 events	2813	47970	5168	61131	11744	3377
								1%	23%	3%	25%	6%	2%
							grade 7 events	121271	88595	109259	89825	122825	103234
								83%	43%	66%	37%	67%	79%

## 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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	161.275211	161.262653305899	CCD I2 on	N	N
[deg] Pointing Dec	-59.706423	-59.67983146602414	CCD I3 on	N	N
[deg] Pointing Roll	72.508816	72.65459976861057	CCD S0 on	O1	Y
[s] Window start time (MET)	344476865.184000	344476865.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	347155266.184000	347155266.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-183.332523	-183.3212429520412	CCD S5 on	O2	Y
[mm] SIM translation stage offset	-6.8	-6.811279630966652	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	345491572.184000	345490447.65286	On-chip summing requested	N	N
Observation start date	2008-12-12T17:51:47	2008-12-12T17:34:07	Subarray requested	CUSTOM	CUSTOM
[s] Observation end time (MET)	345519529.184000	345519951.76682	Subarray start row	15	15
Observation end date	2008-12-13T01:37:44	2008-12-13T01:45:51	Subarray row count	440	440
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.5

## 2.3 Aspect



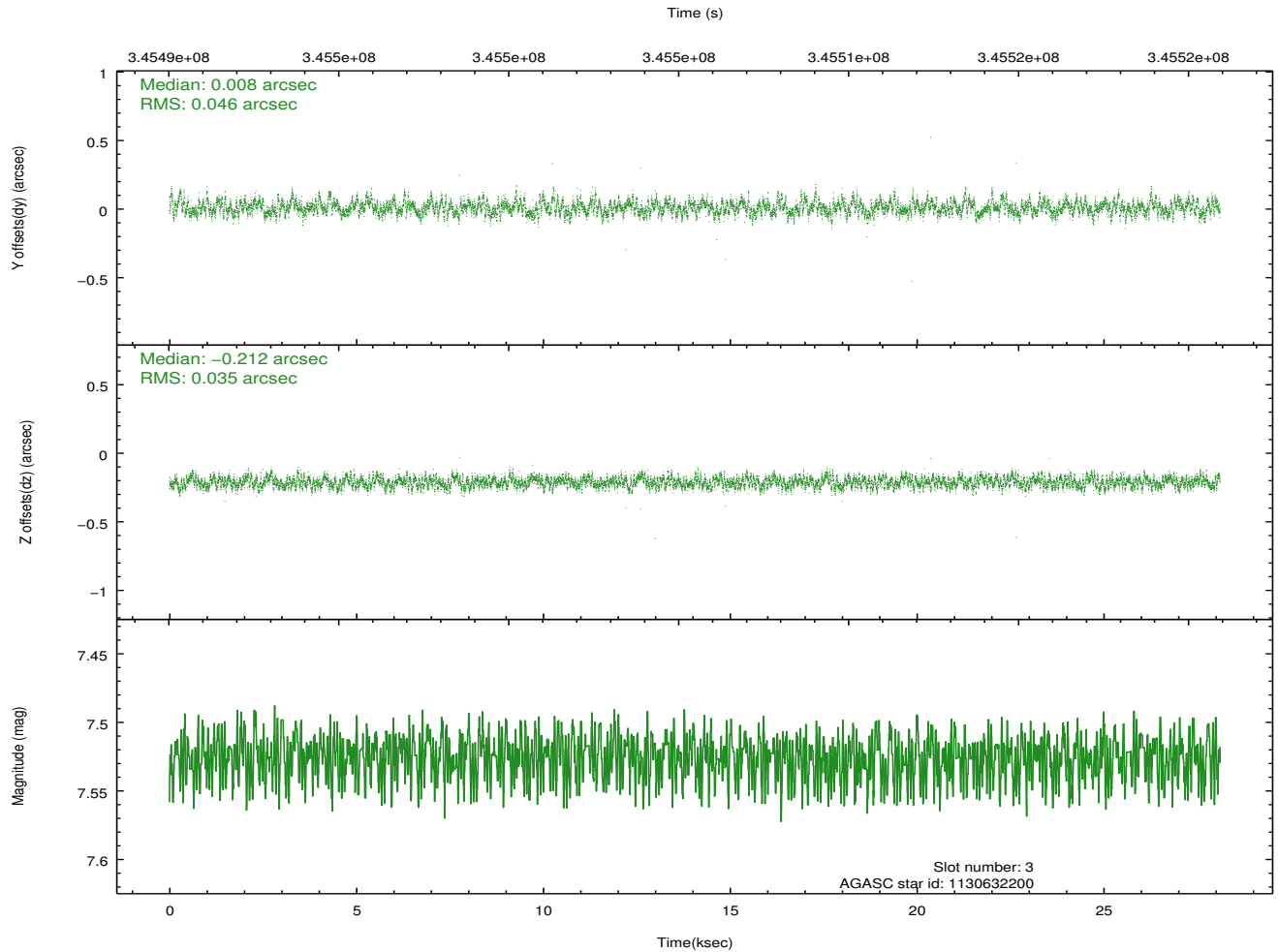
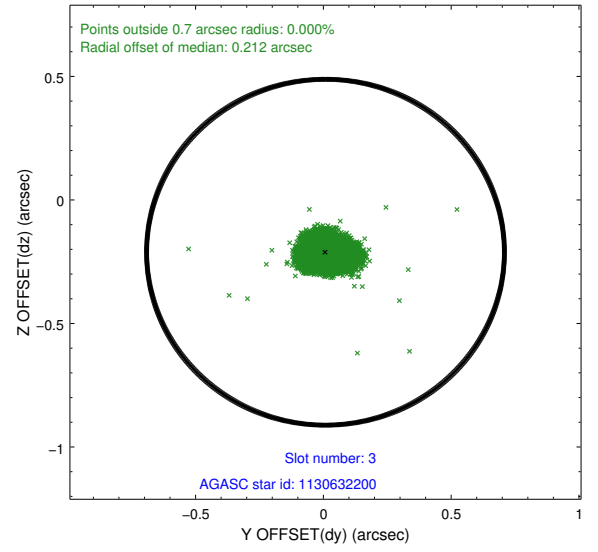
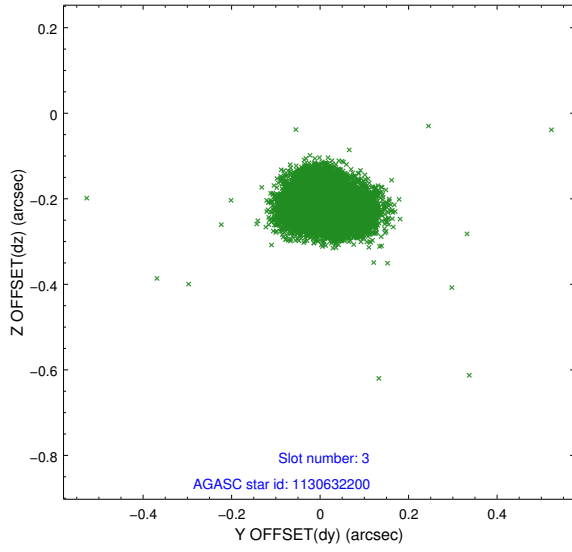


### Slot Statistics

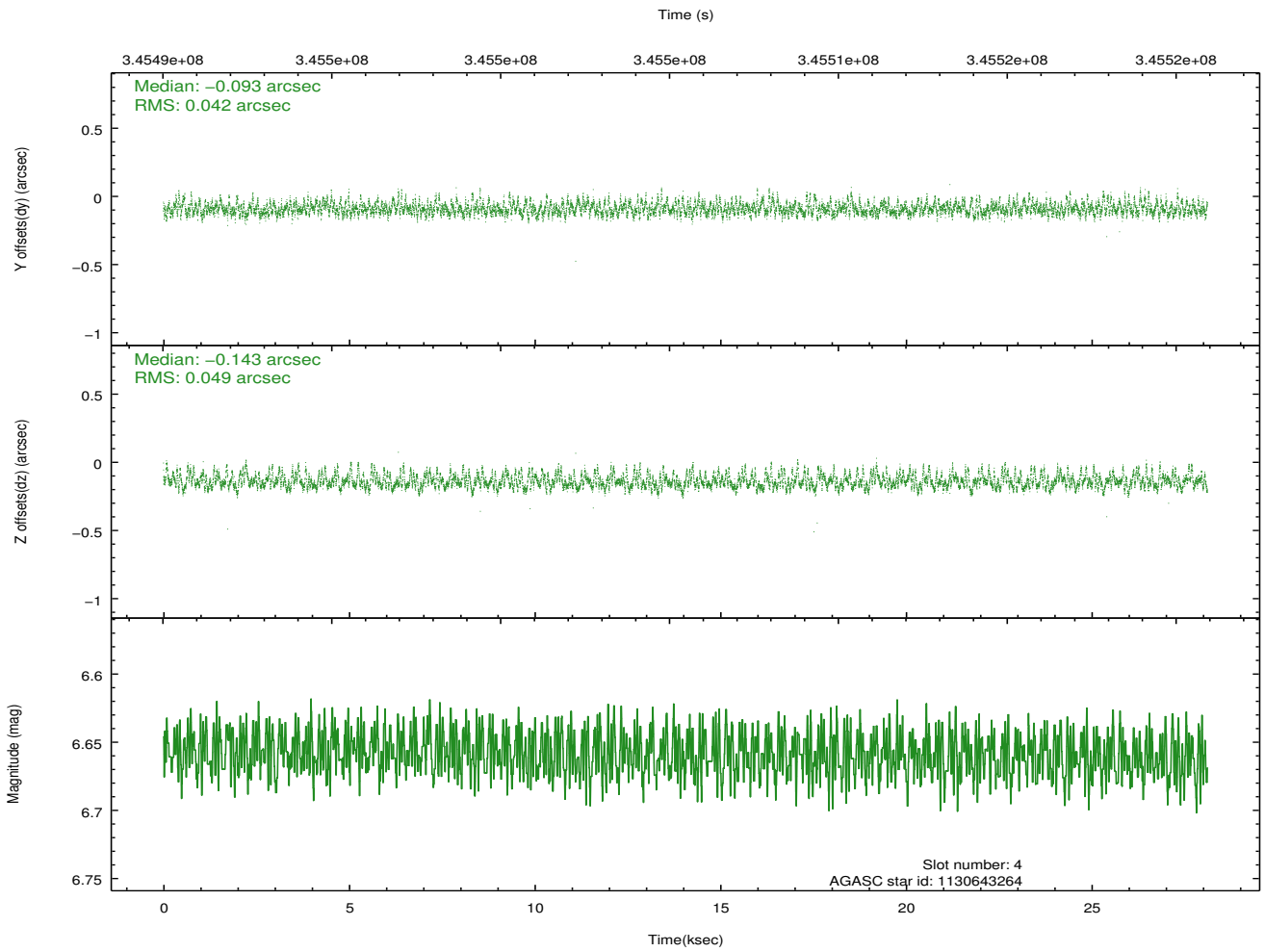
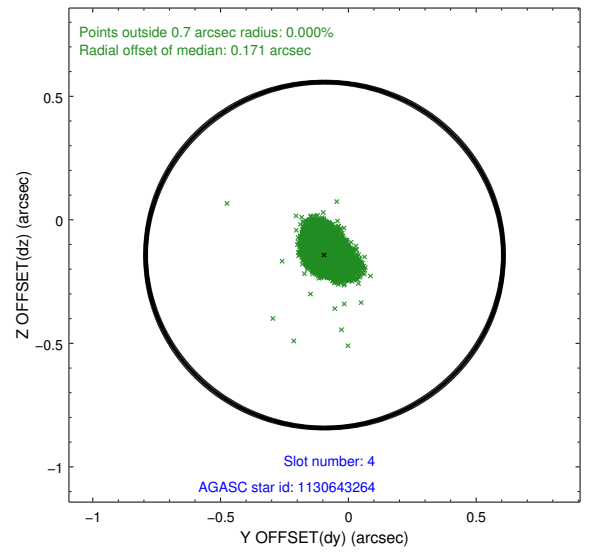
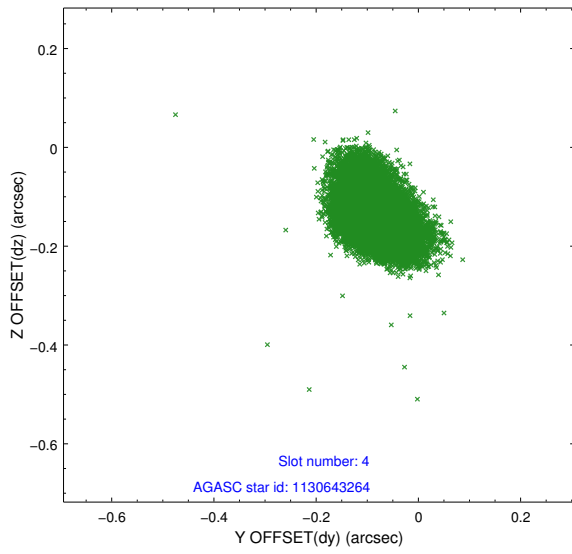
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	6.95	6858	0.032	0.114	0.019	0.036	0.000000	0.000000	931.19	-1872.65
1	FID	ACIS-S-2	6.86	6858	-0.149	-0.117	0.011	0.021	0.000000	0.000000	-764.85	-1877.52
2	FID	ACIS-S-4	6.93	6858	0.092	0.007	0.011	0.018	0.000000	0.000000	2148.48	31.25
3	GUIDE	1130632200	7.52	13717	0.008	-0.212	0.060	0.098	161.433843	-59.407820	1112.56	46.05
4	GUIDE	1130643264	6.66	13716	-0.093	-0.143	0.069	0.113	160.322990	-59.676912	-430.61	1679.00
5	GUIDE	1130640672	8.27	13712	-0.035	0.097	0.064	0.104	162.096044	-59.540805	1010.39	-1251.58
6	GUIDE	1174012960	7.15	13717	0.051	-0.056	0.057	0.086	160.855674	-60.332270	-2375.44	35.07
7	GUIDE	1174033752	8.45	13707	0.062	0.312	0.076	0.122	162.418977	-60.164599	-973.97	-2454.26

## 2.4 Star Slots

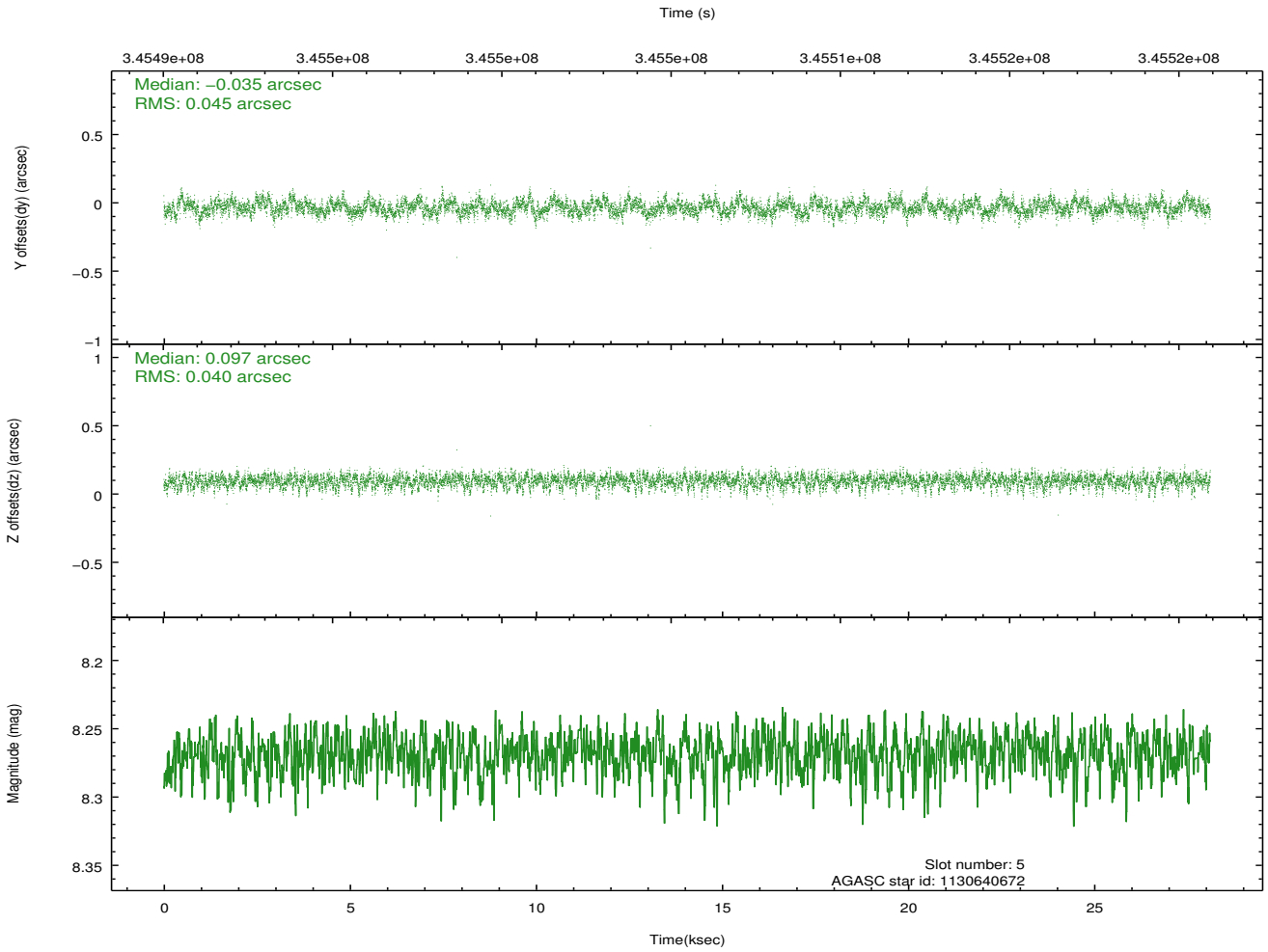
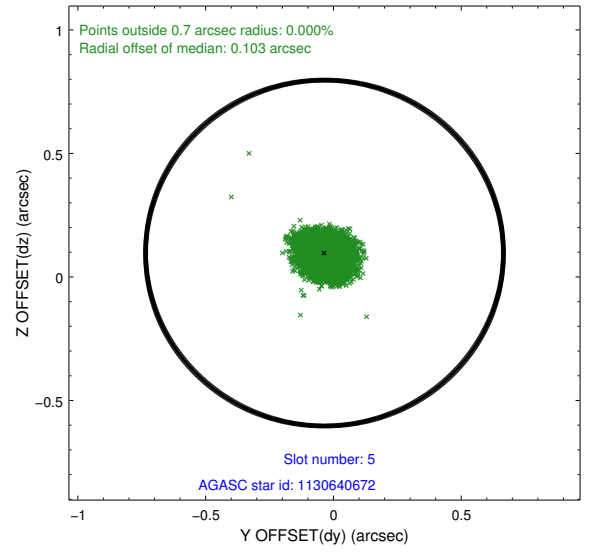
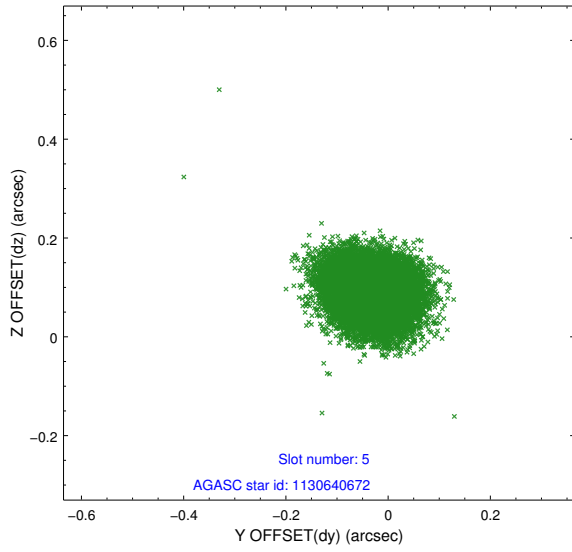
### 2.4.1 Slot 3



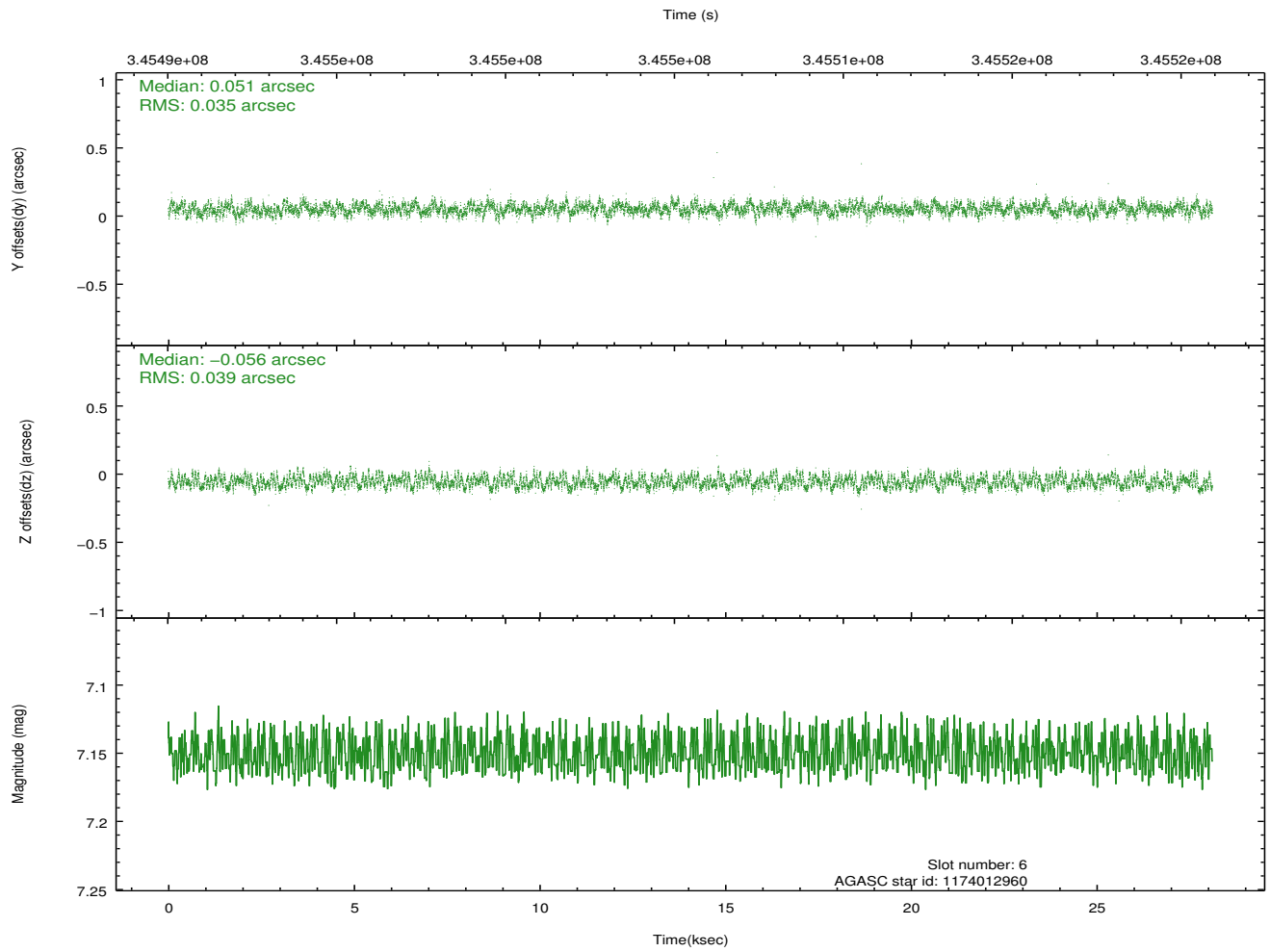
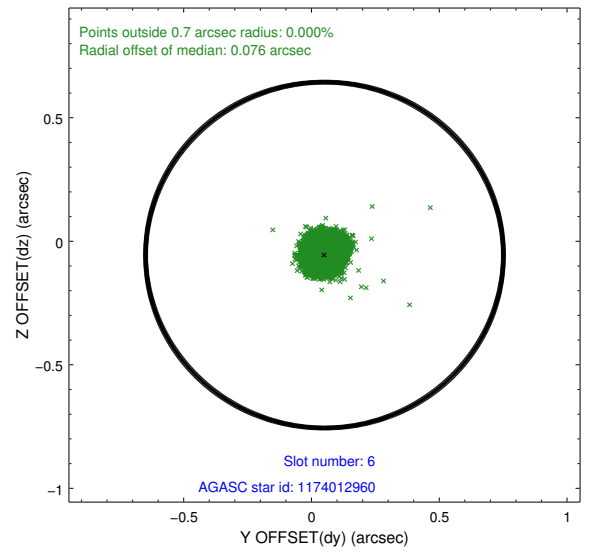
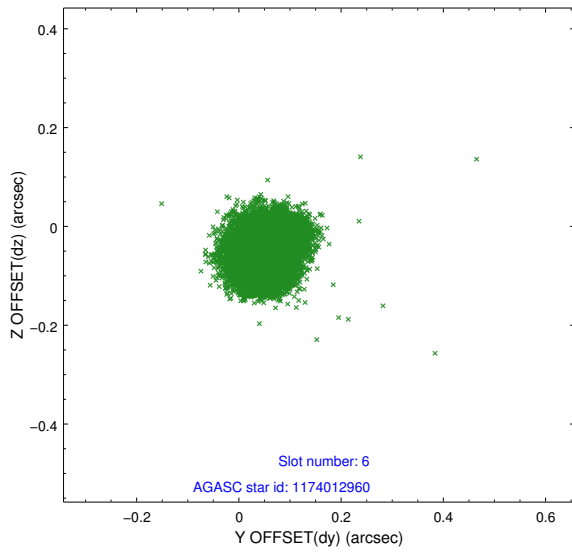
### 2.4.2 Slot 4



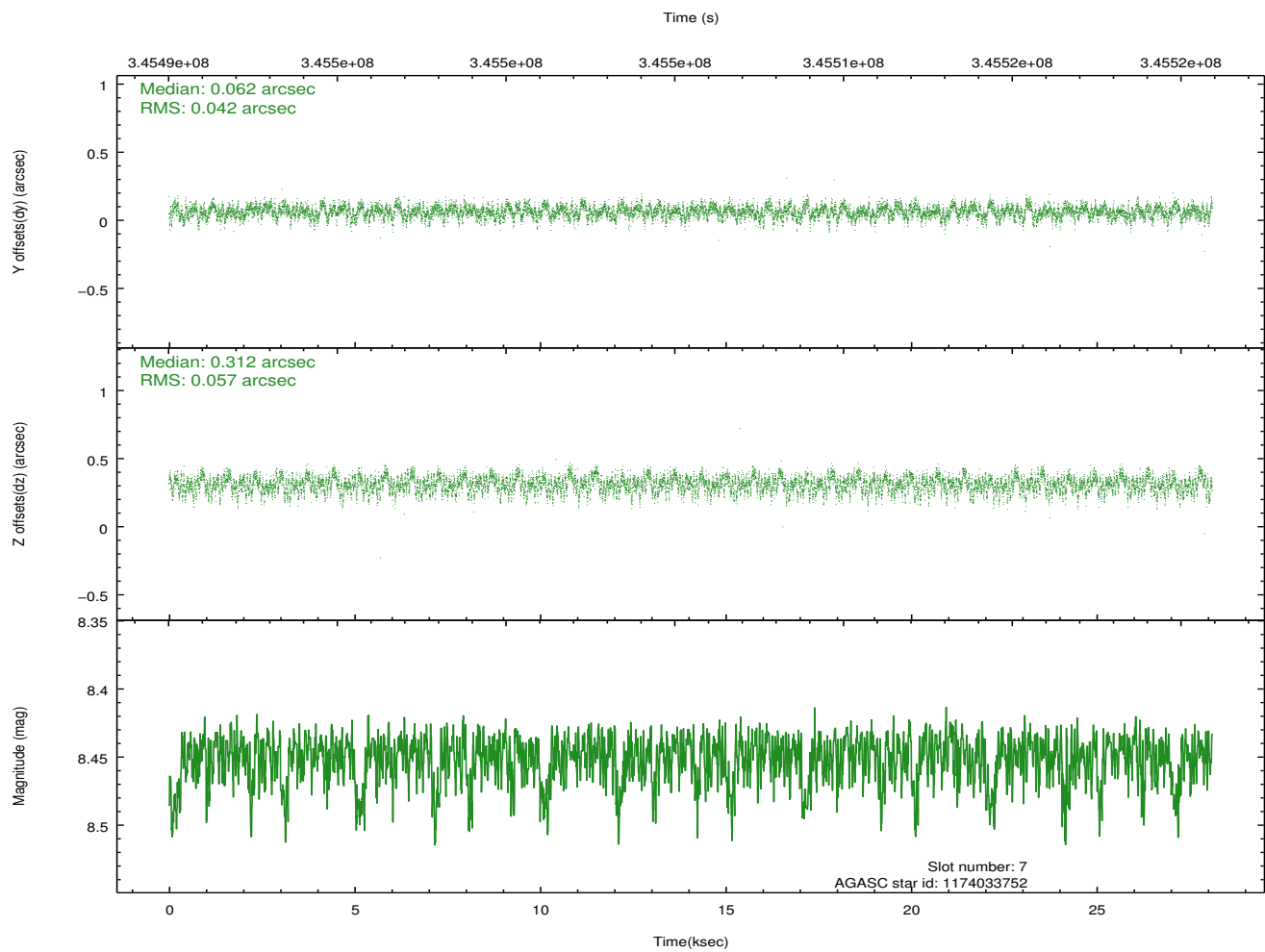
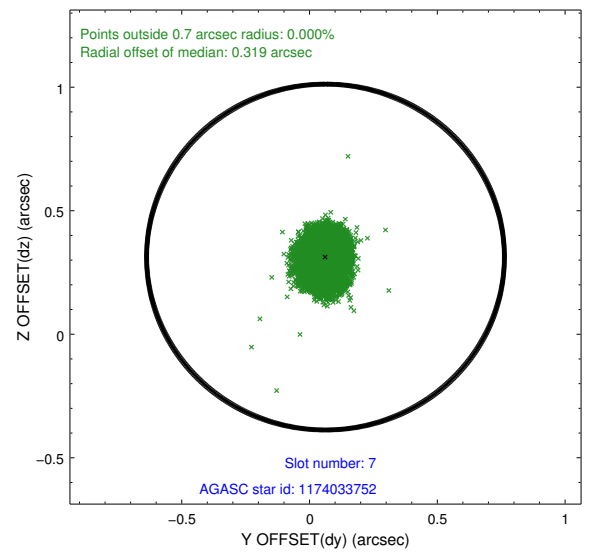
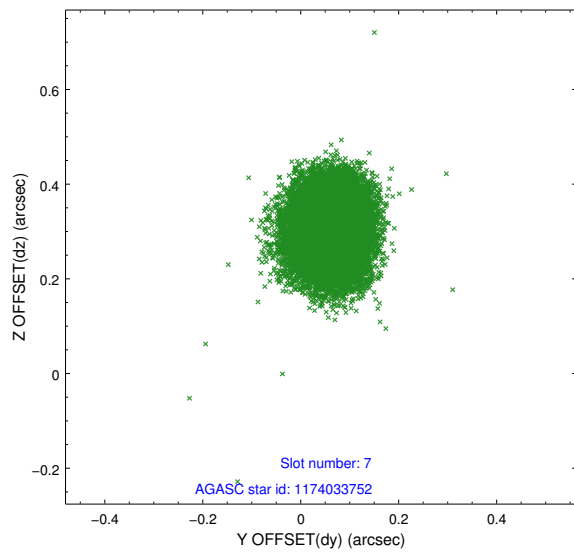
### 2.4.3 Slot 5



### 2.4.4 Slot 6

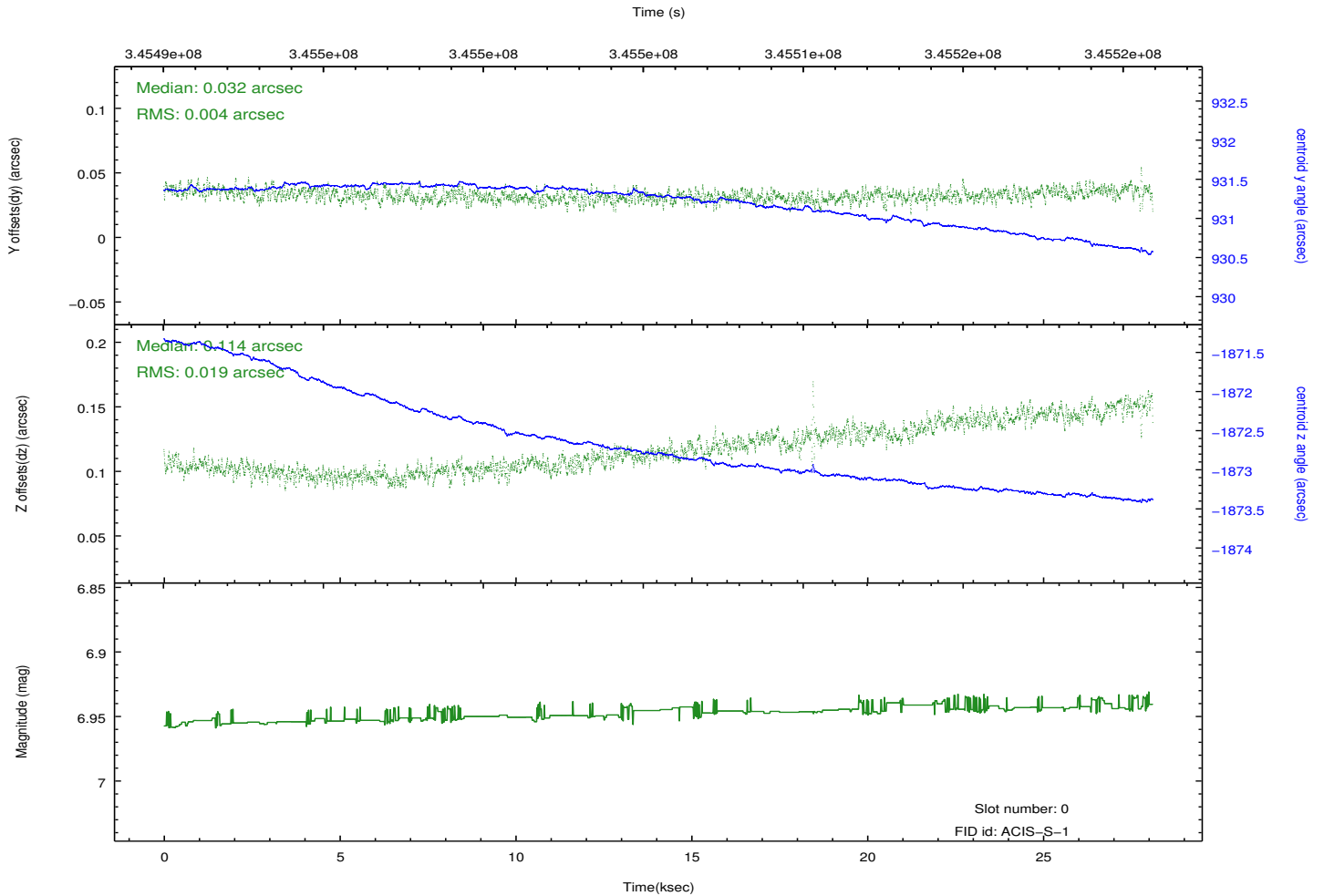
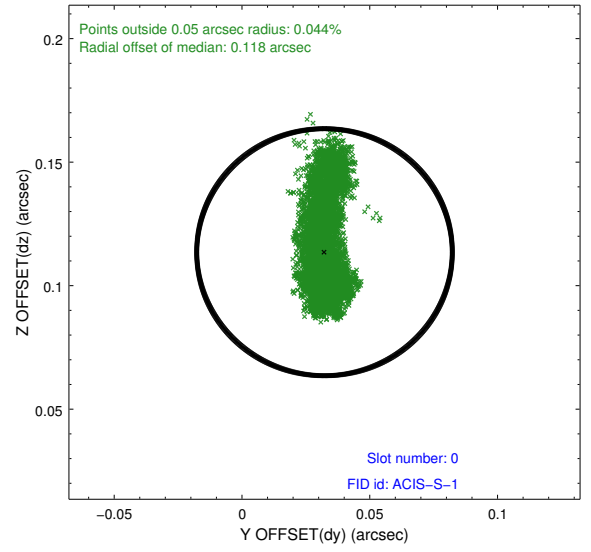
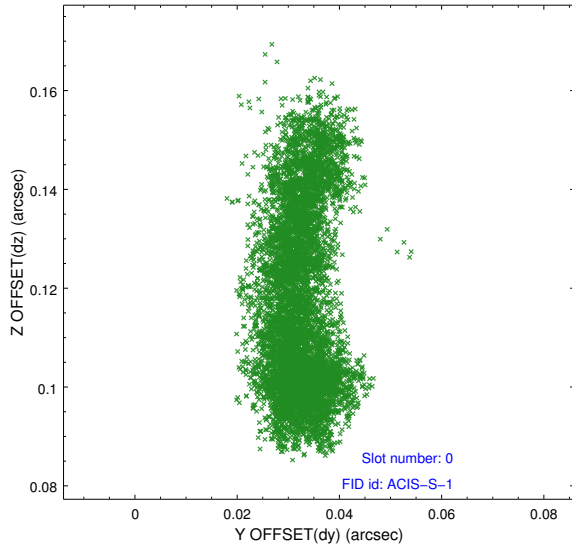


## 2.4.5 Slot 7

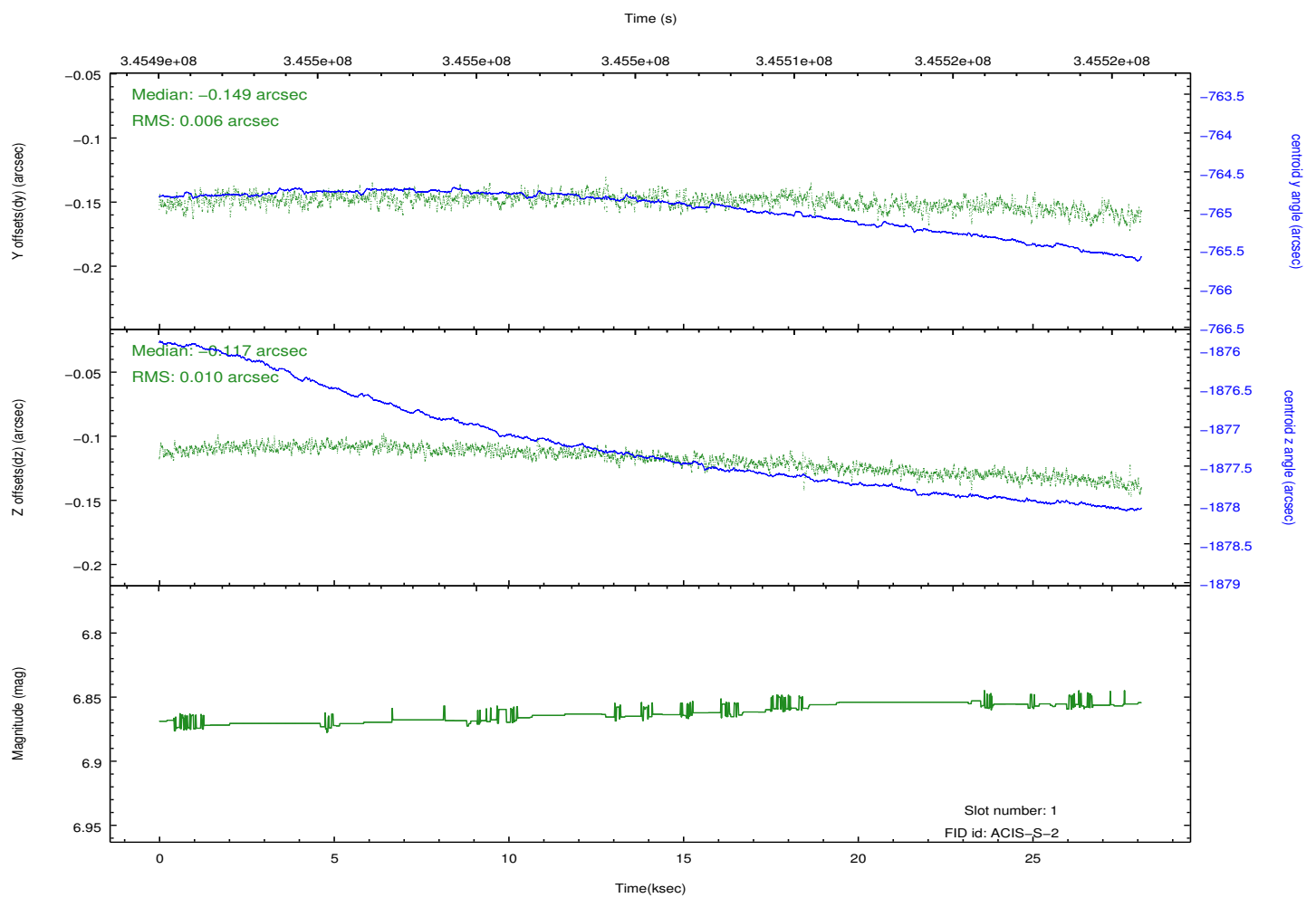
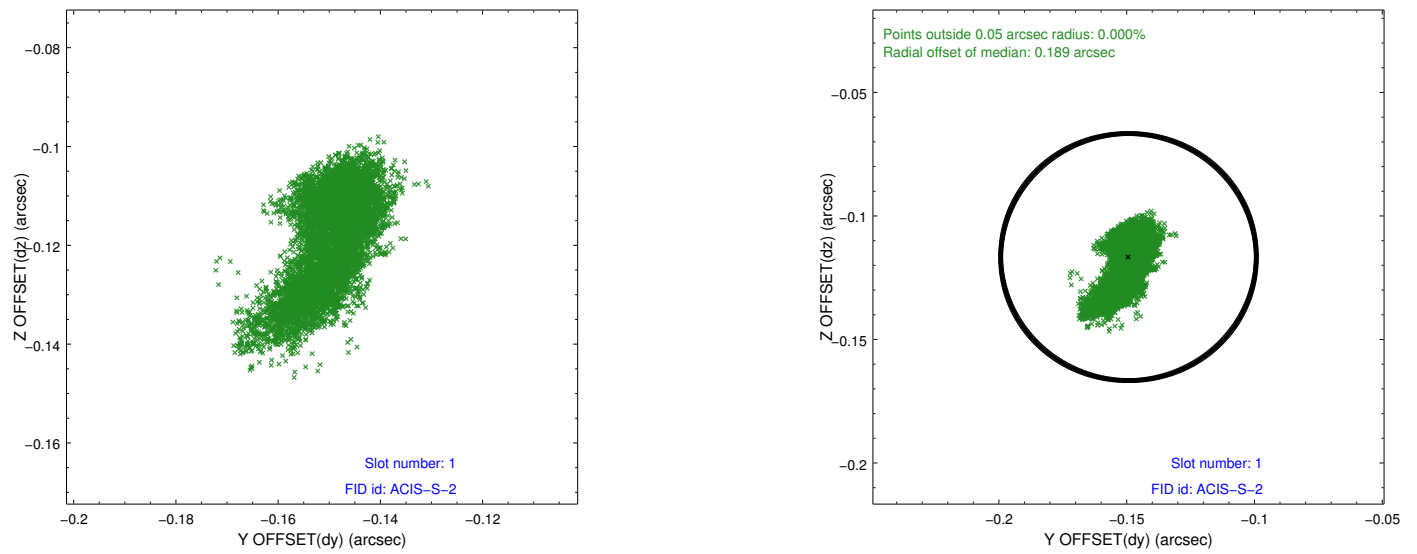


## 2.5 FID Slots

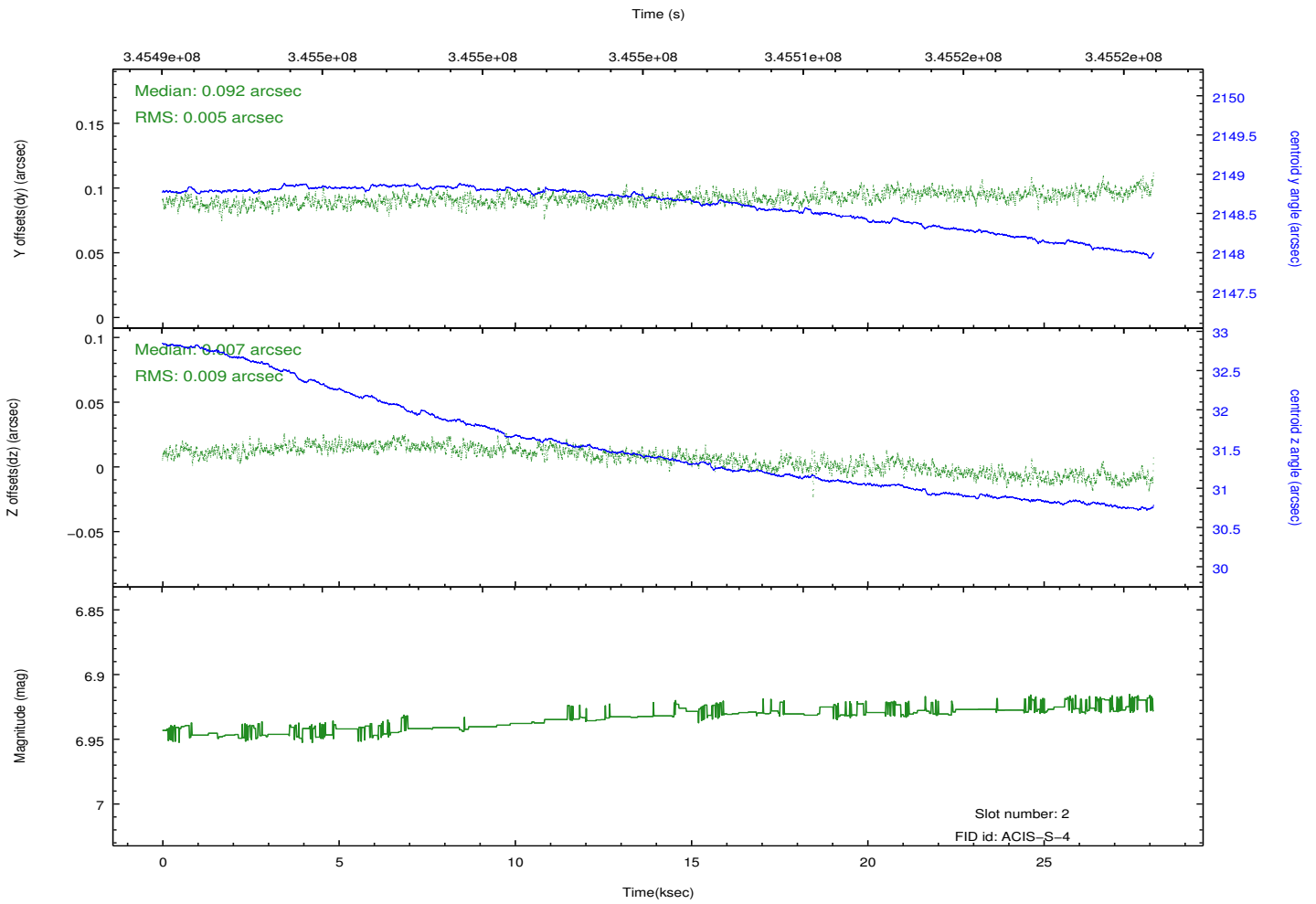
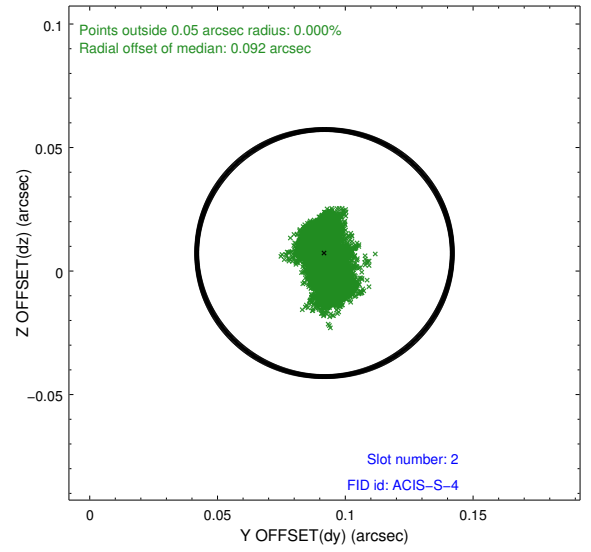
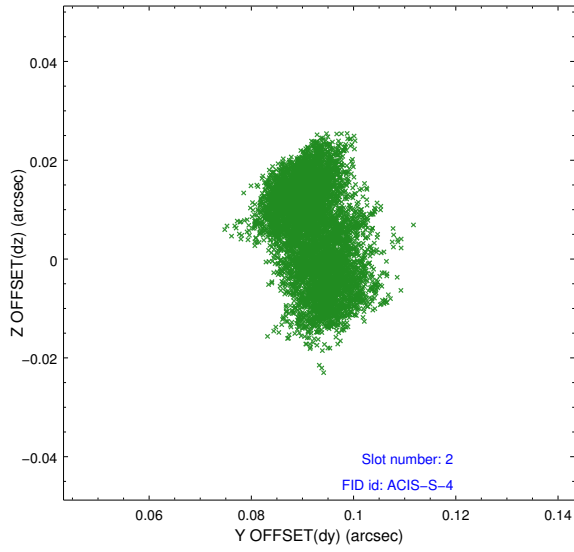
### 2.5.1 Slot 0



## 2.5.2 Slot 1

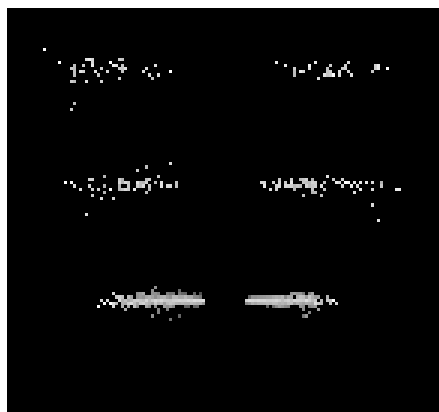


### 2.5.3 Slot 2

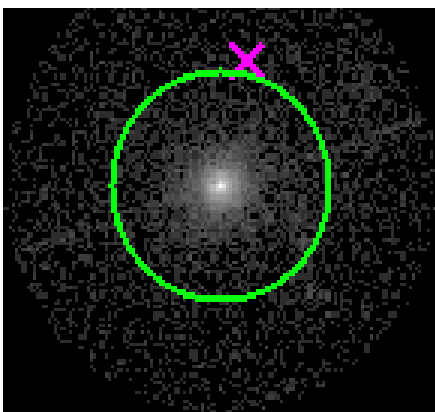


### 3 Gratings

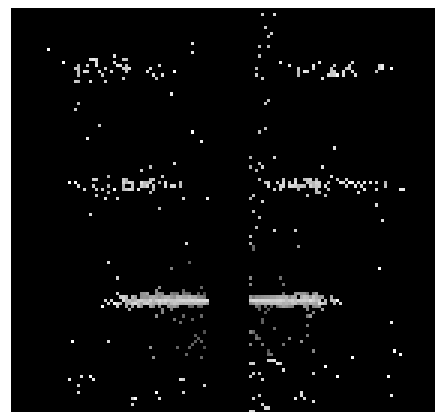
#### 3.1 HEG Arm



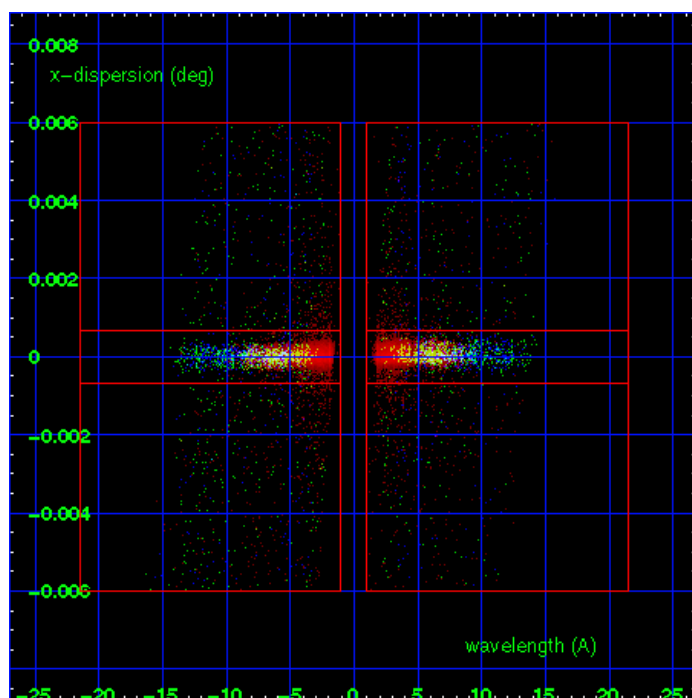
HEG Order Sort 123



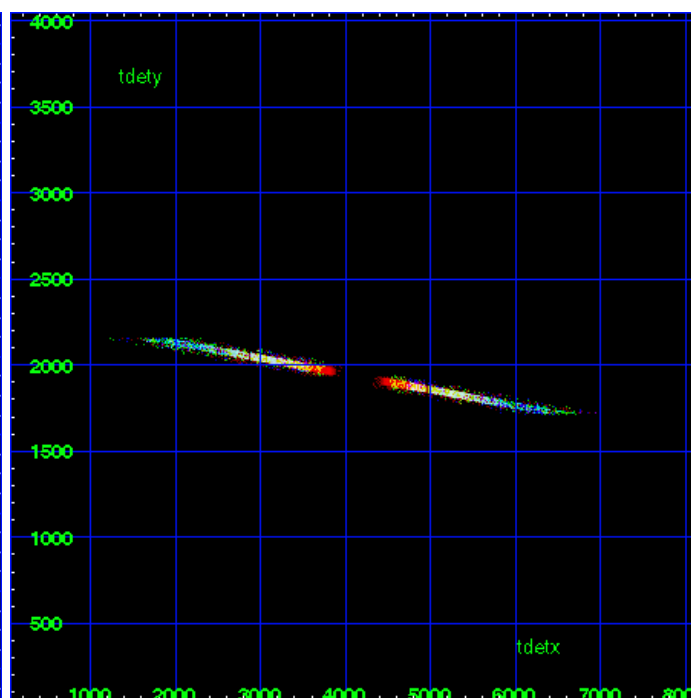
HEG Zero Order



HEG Order Sort ALL

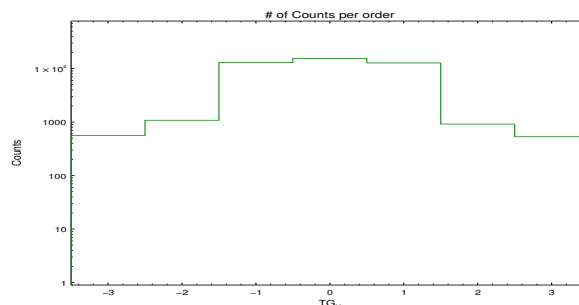


Spot Image HEG

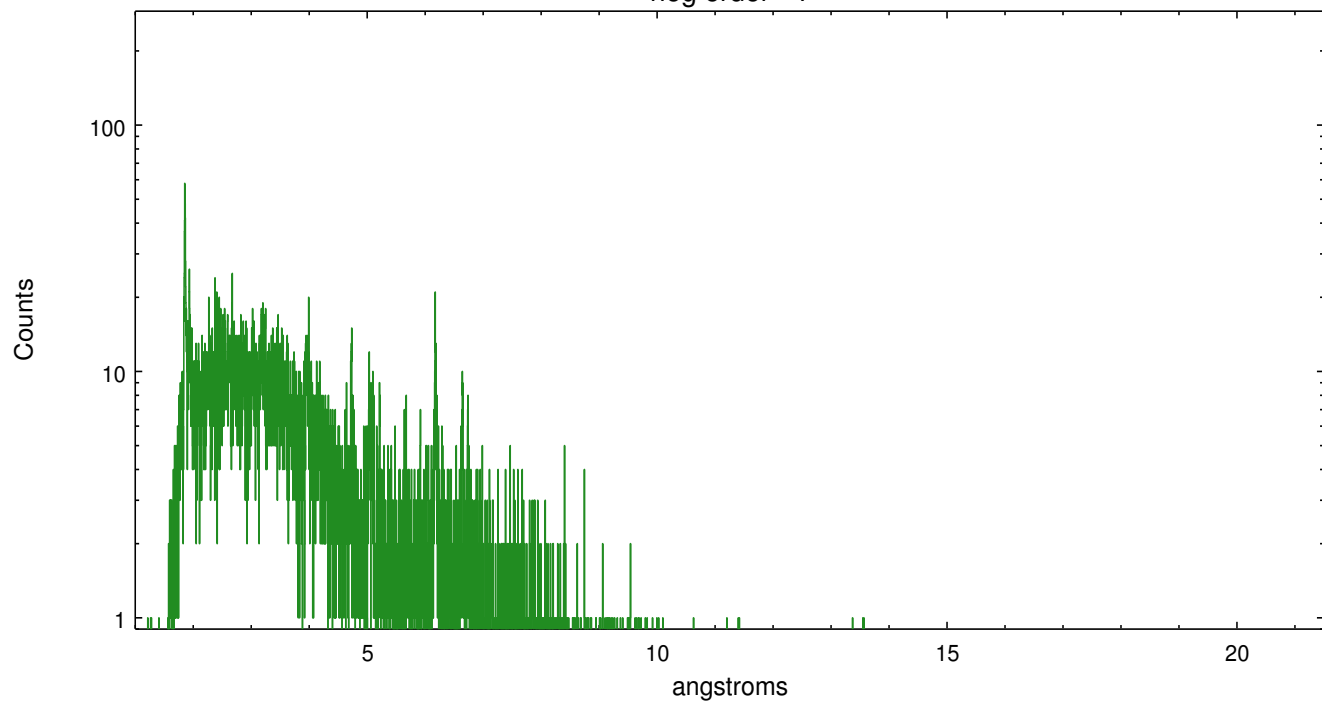


Full Detector HEG

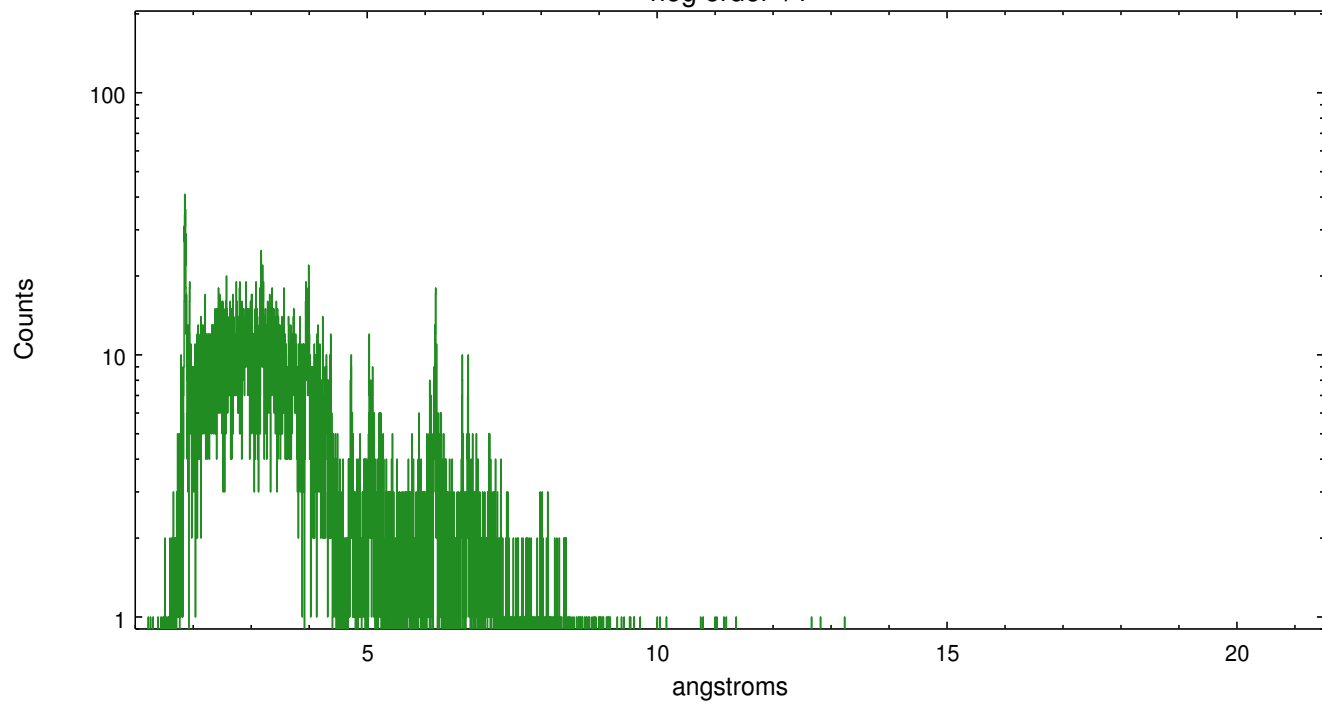
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	563	1080	13004	15452	12728	917	532



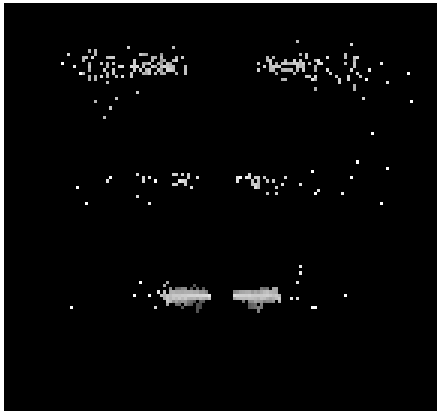
heg order -1



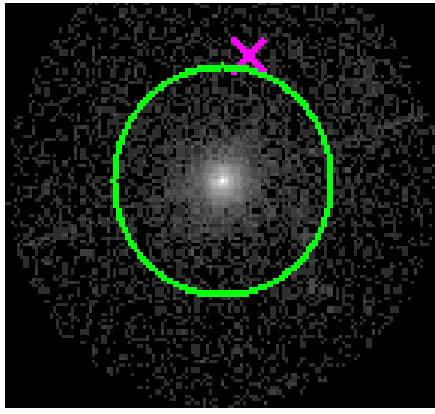
heg order +1



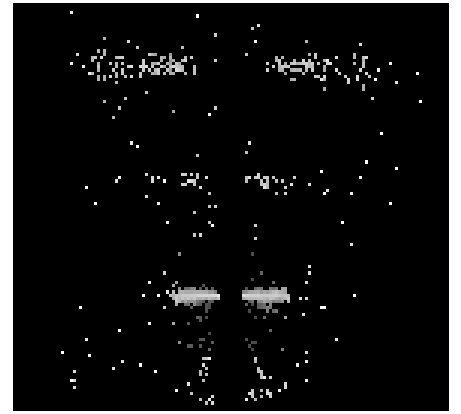
### 3.2 MEG Arm



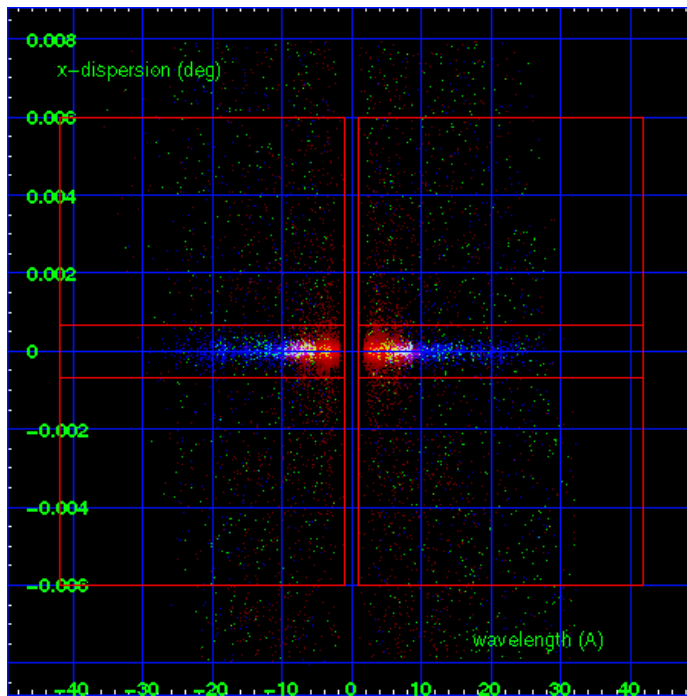
MEG Order Sort 123



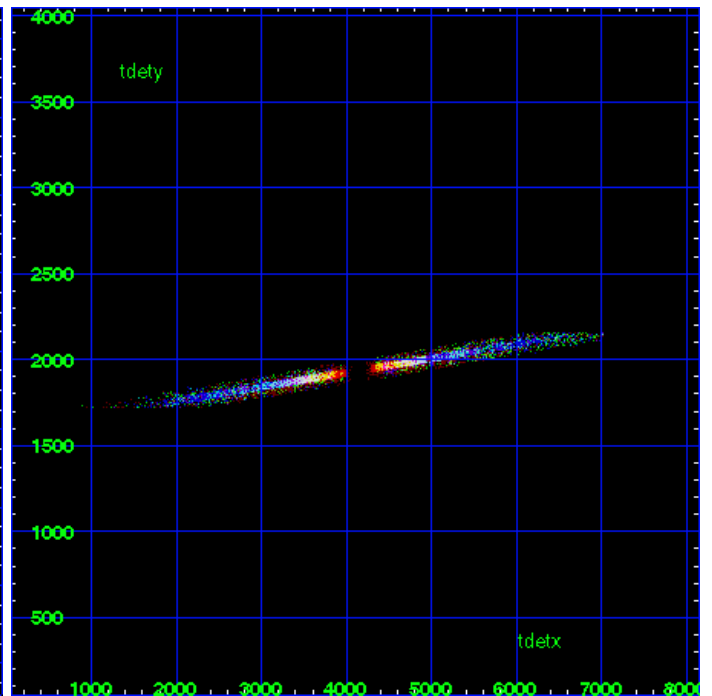
MEG Zero Order



MEG Order Sort ALL

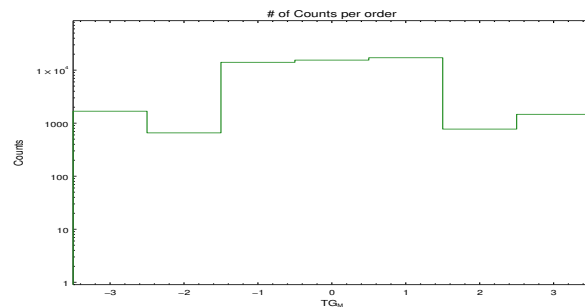


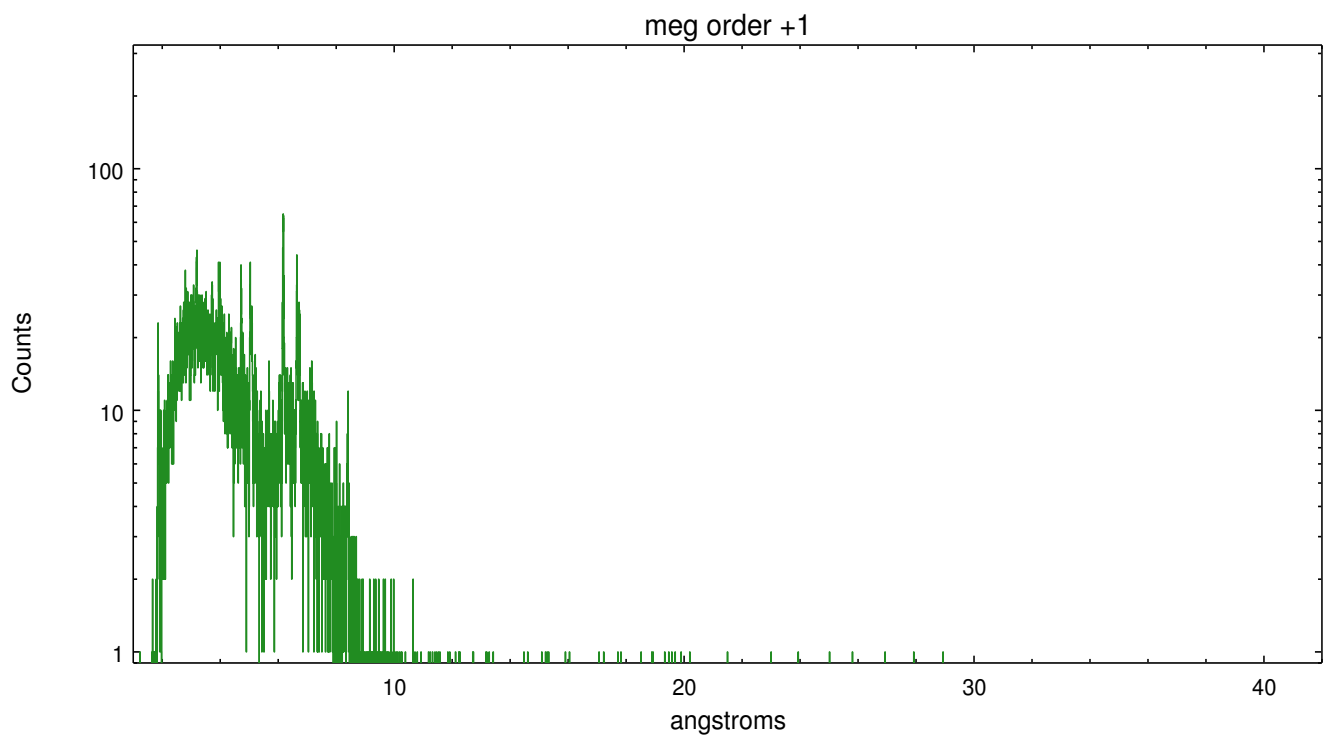
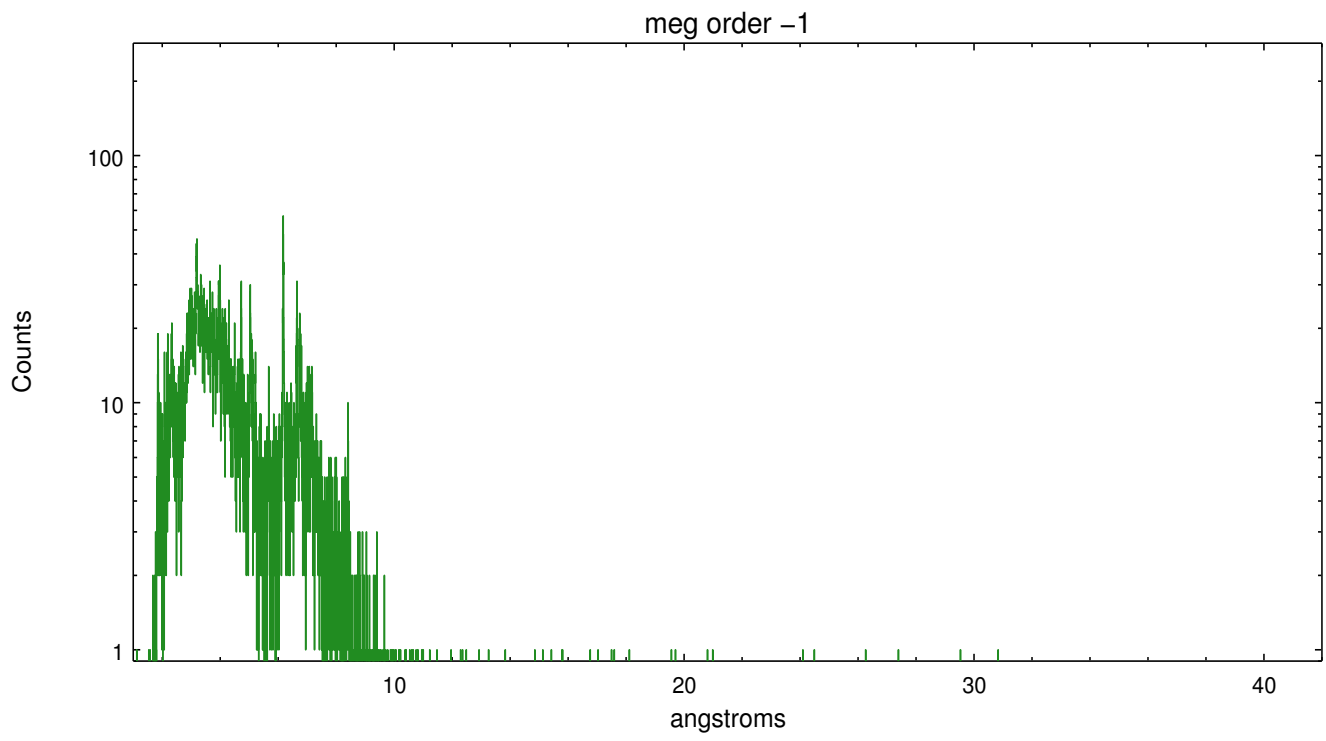
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1681	656	14045	15452	17118	773	1468





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	28.1145

## 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=4088.58, y=4063.21) into the \*srcla.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. 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 \*srcla.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.