

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 9638 - L2 Version 3
Chandra X-Ray Center

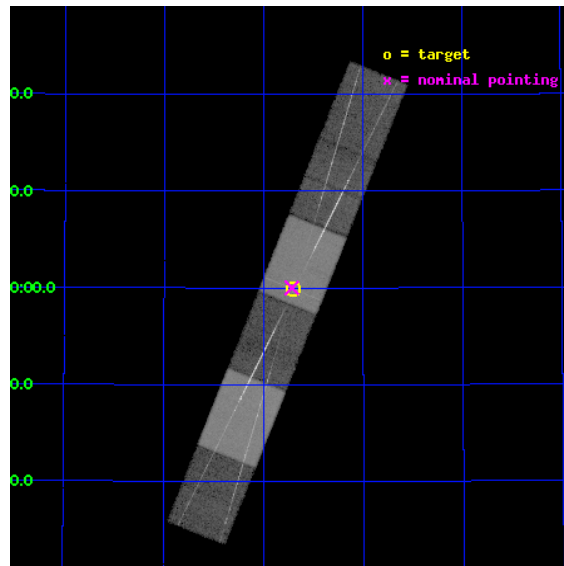
L2 Processing Date : May 14 2012

Contents

1	Front	2
2	OBI	3
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
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

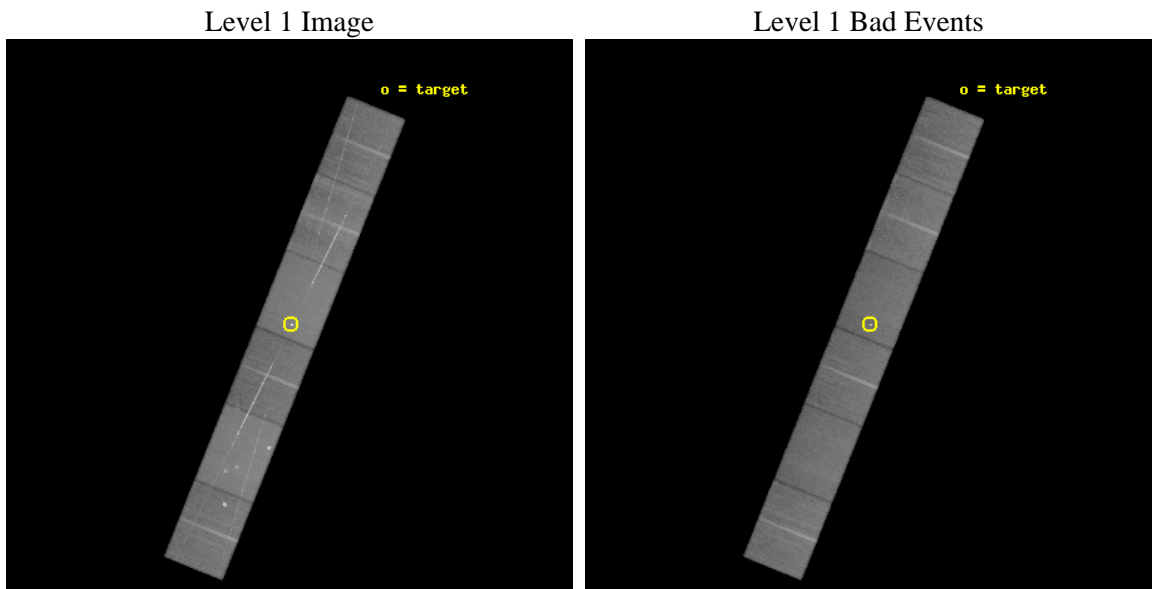
seq_num	290761	Sequence number
obs_id	9638	Observation id
title	AO9 Calibration Observations of Capella	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	Capella	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	79.17625	Observer's specified target RA [deg]
dec_targ	45.997889	Observer's specified target Dec [deg]
ra_nom	79.178921625595	Nominal RA [deg]
dec_nom	46.000113894816	Nominal Dec [deg]
roll_nom	291.87375857213	Nominal Roll [deg]
revision	3	Processing version of data
ontime	31540.0	Sum of GTIs [s]
livetime	31030.601643421	Livetime [s]
ontime4	31540.0	Sum of GTIs [s]
ontime5	31540.0	Sum of GTIs [s]
ontime6	31540.0	Sum of GTIs [s]
ontime7	31540.0	Sum of GTIs [s]
ontime8	31537.458999753	Sum of GTIs [s]
ontime9	31540.0	Sum of GTIs [s]
l2events	504677	Number of level 2 events



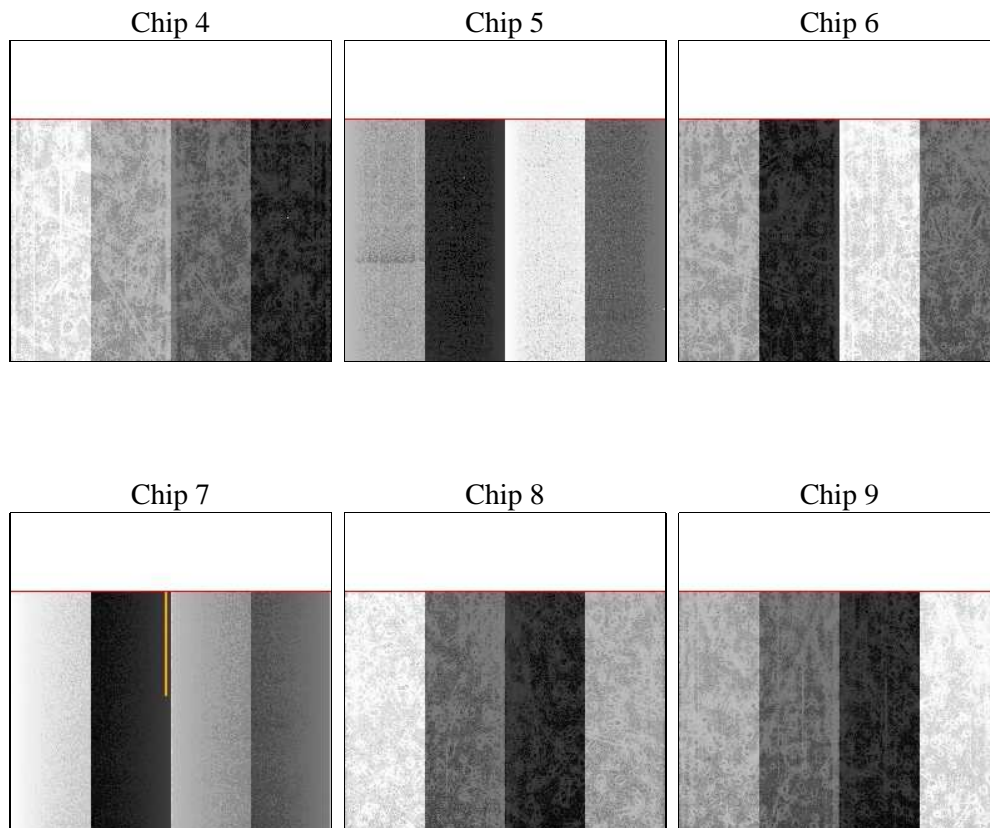
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	31500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	31540.0	Sum of GTIs [s]
caldsver	4.4.9	 	ontime4	31540.0	Sum of GTIs [s]
date	2012-05-13T02:27:59	Date and time of file creation	ontime5	31540.0	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	31540.0	Sum of GTIs [s]
			ontime7	31540.0	Sum of GTIs [s]
			ontime8	31537.458999753	Sum of GTIs [s]
			ontime9	31540.0	Sum of GTIs [s]
			l1events	1828422	Number of level 1 events

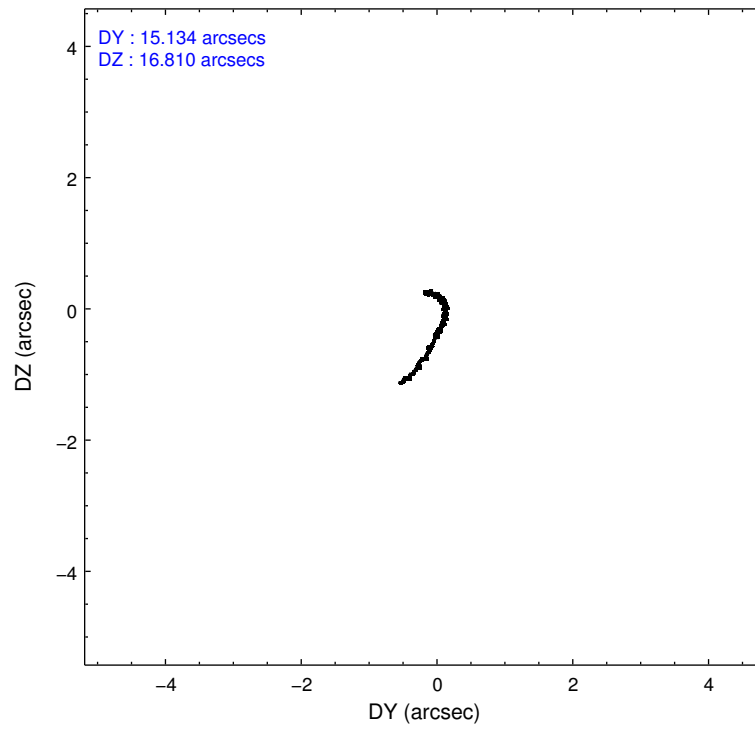
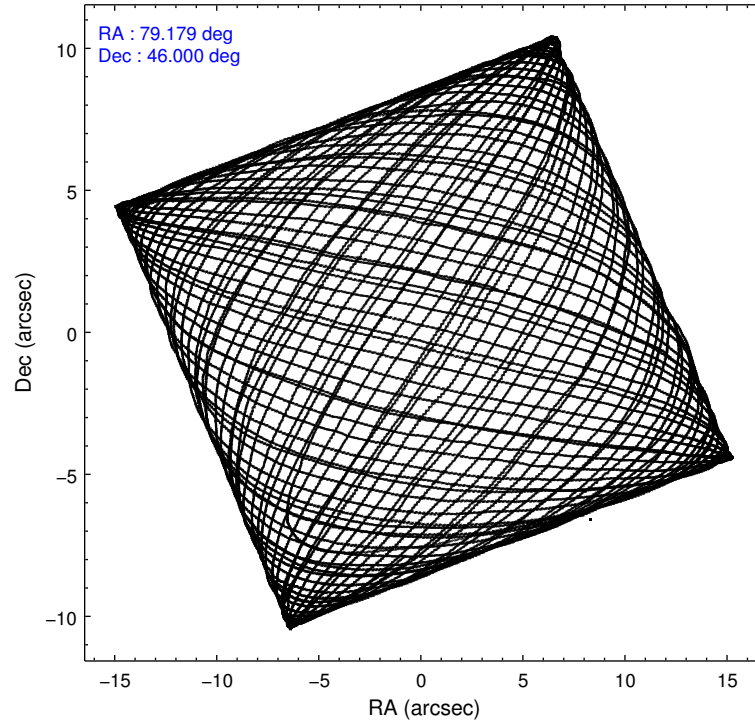
2.1.4 Events

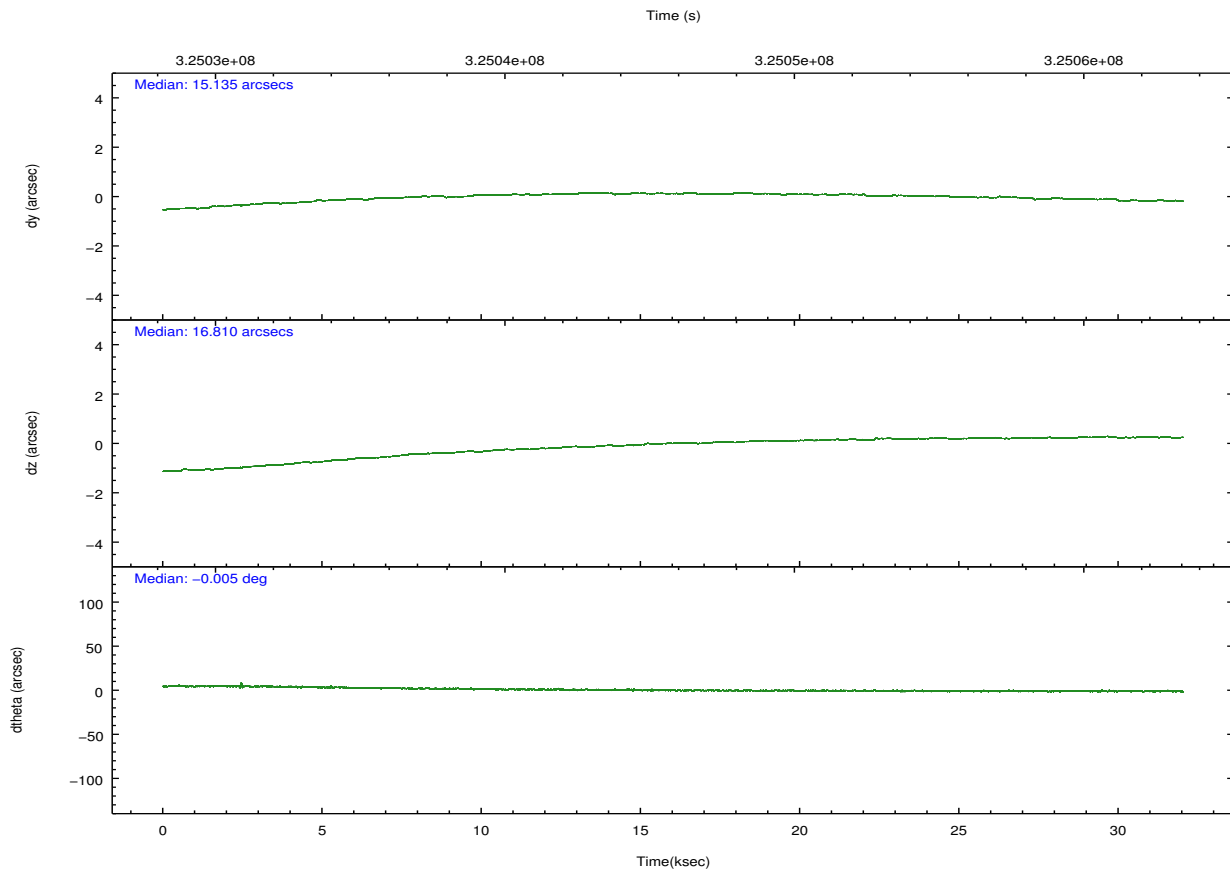
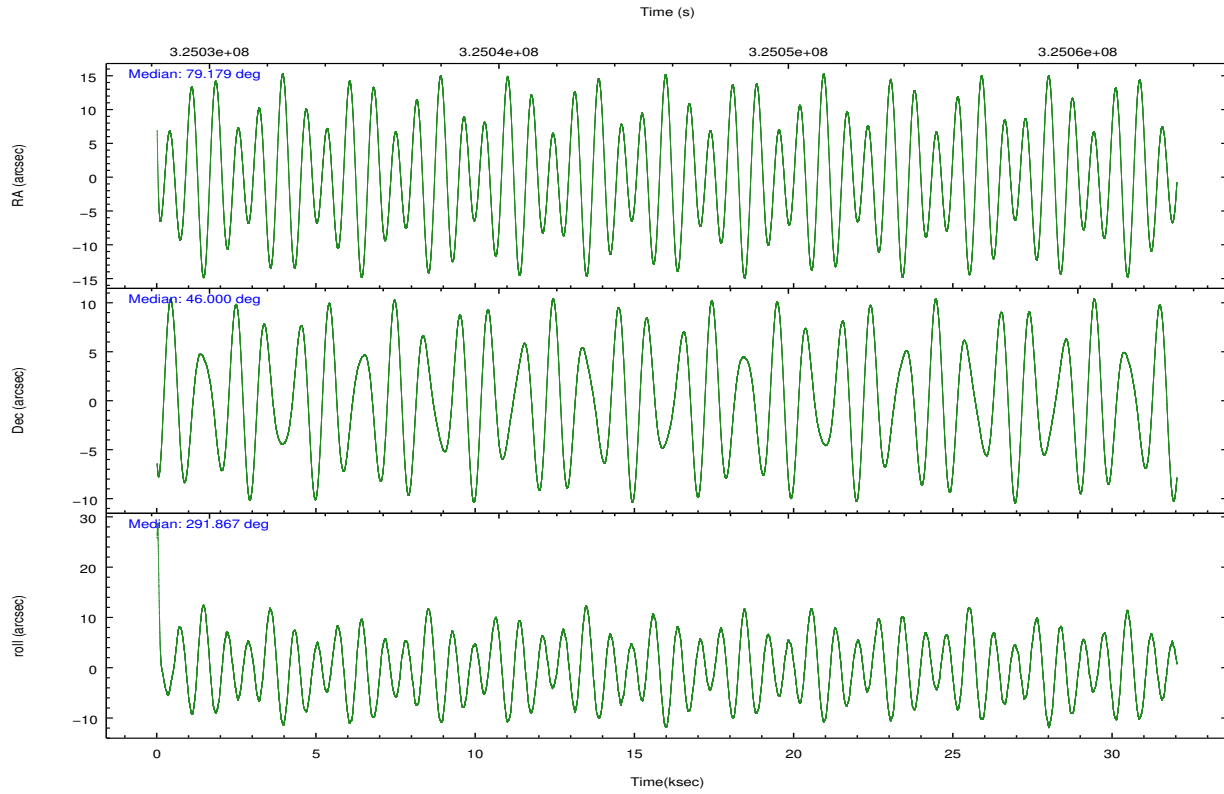
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	269940	389596	255962	353653	324310	234961	grade 0 events	28408	33737	33015	17627	45382	17979
rejected events	223418	191289	201447	194710	228057	198560		10%	8%	12%	4%	13%	7%
rejected %	82%	49%	78%	55%	70%	84%	grade 1 events	260	534	226	598	356	138
								0%	0%	0%	0%	0%	0%
							grade 2 events	7112	56663	8499	33504	17629	6557
								2%	14%	3%	9%	5%	2%
							grade 3 events	3143	9738	3465	14447	7779	3174
								1%	2%	1%	4%	2%	1%
							grade 4 events	2938	9305	3491	14317	7071	2934
								1%	2%	1%	4%	2%	1%
							grade 5 events	10646	26786	11000	31418	14635	11688
								3%	6%	4%	8%	4%	4%
							grade 6 events	4930	88878	6050	79053	18404	5764
								1%	22%	2%	22%	5%	2%
							grade 7 events	212503	163955	190216	162689	213054	186727
								78%	42%	74%	46%	65%	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	79.147636	79.17892162559473	CCD I2 on	N	N
[deg] Pointing Dec	46.016693	46.00011389481628	CCD I3 on	N	N
[deg] Pointing Roll	291.739629	291.8737585721279	CCD S0 on	O1	Y
[s] Window start time (MET)	318211265.184000	318211265.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	325900865.184000	325900865.184000	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	-187.132523	-187.127916318603	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-3	-3.004606264404799	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	325030328.184000	325029110.3891	On-chip summing requested	N	N
Observation start date	2008-04-19T22:11:03	2008-04-19T21:51:50	Subarray requested	CUSTOM	CUSTOM
[s] Observation end time (MET)	325061828.184000	325062770.87824	Subarray start row	1	1
Observation end date	2008-04-20T06:56:03	2008-04-20T07:12:50	Subarray row count	774	774
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect



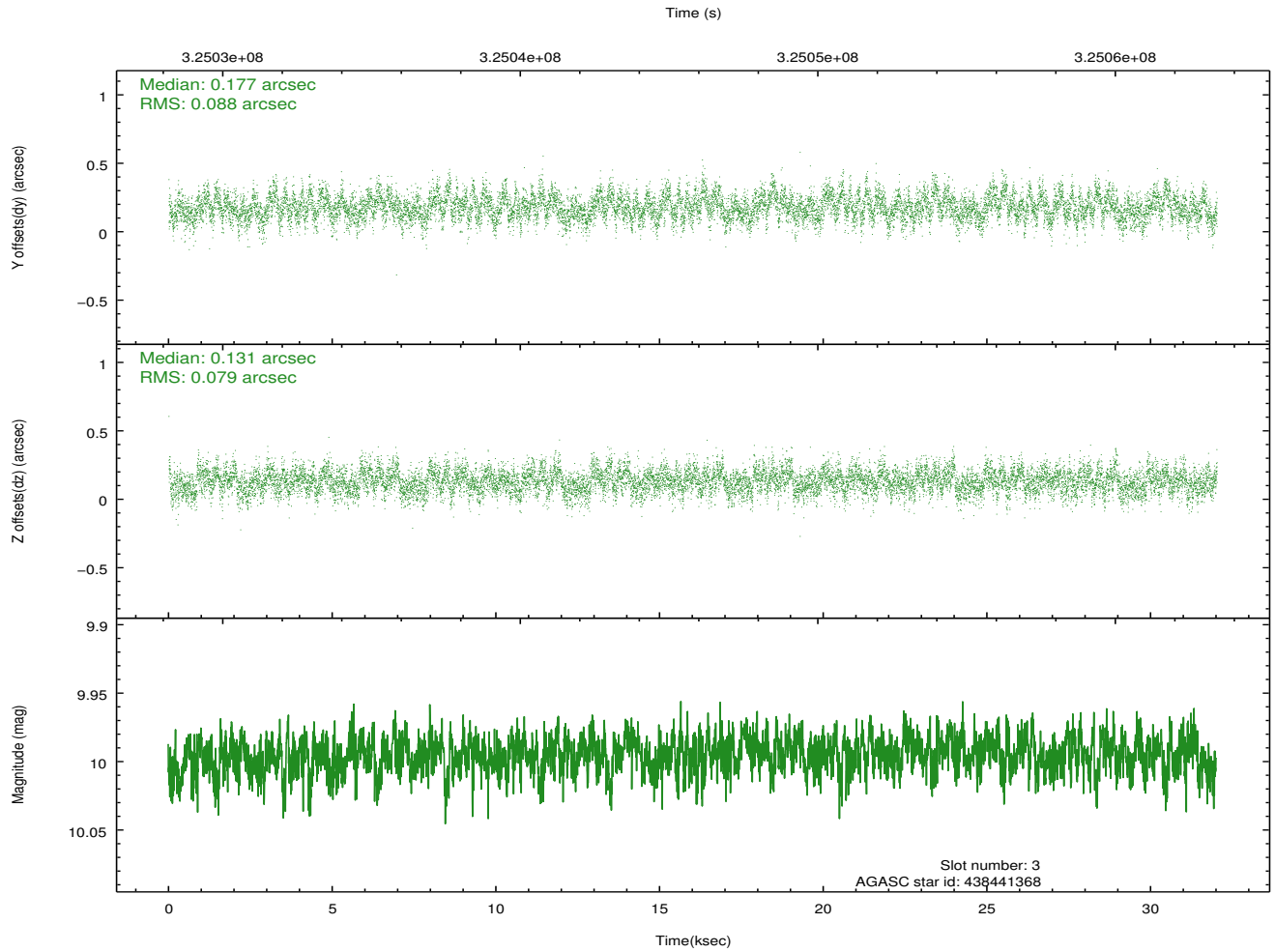
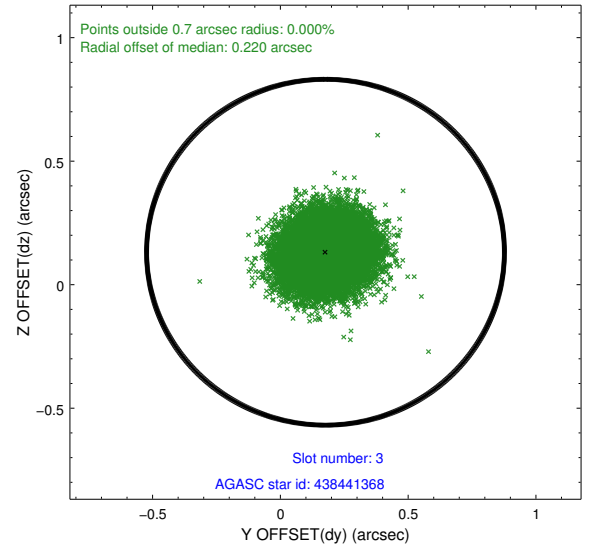
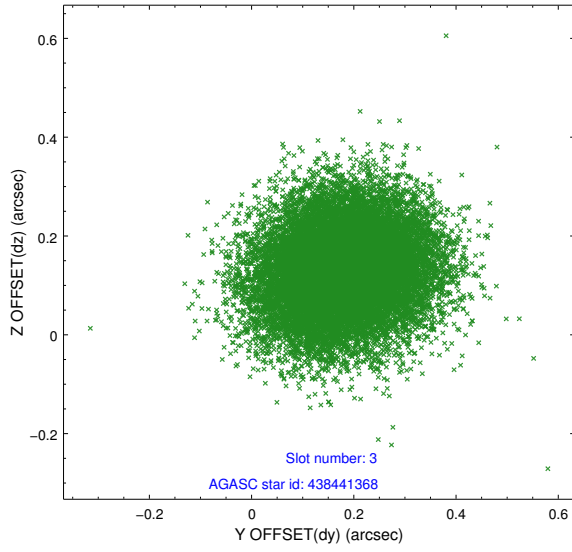


Slot Statistics

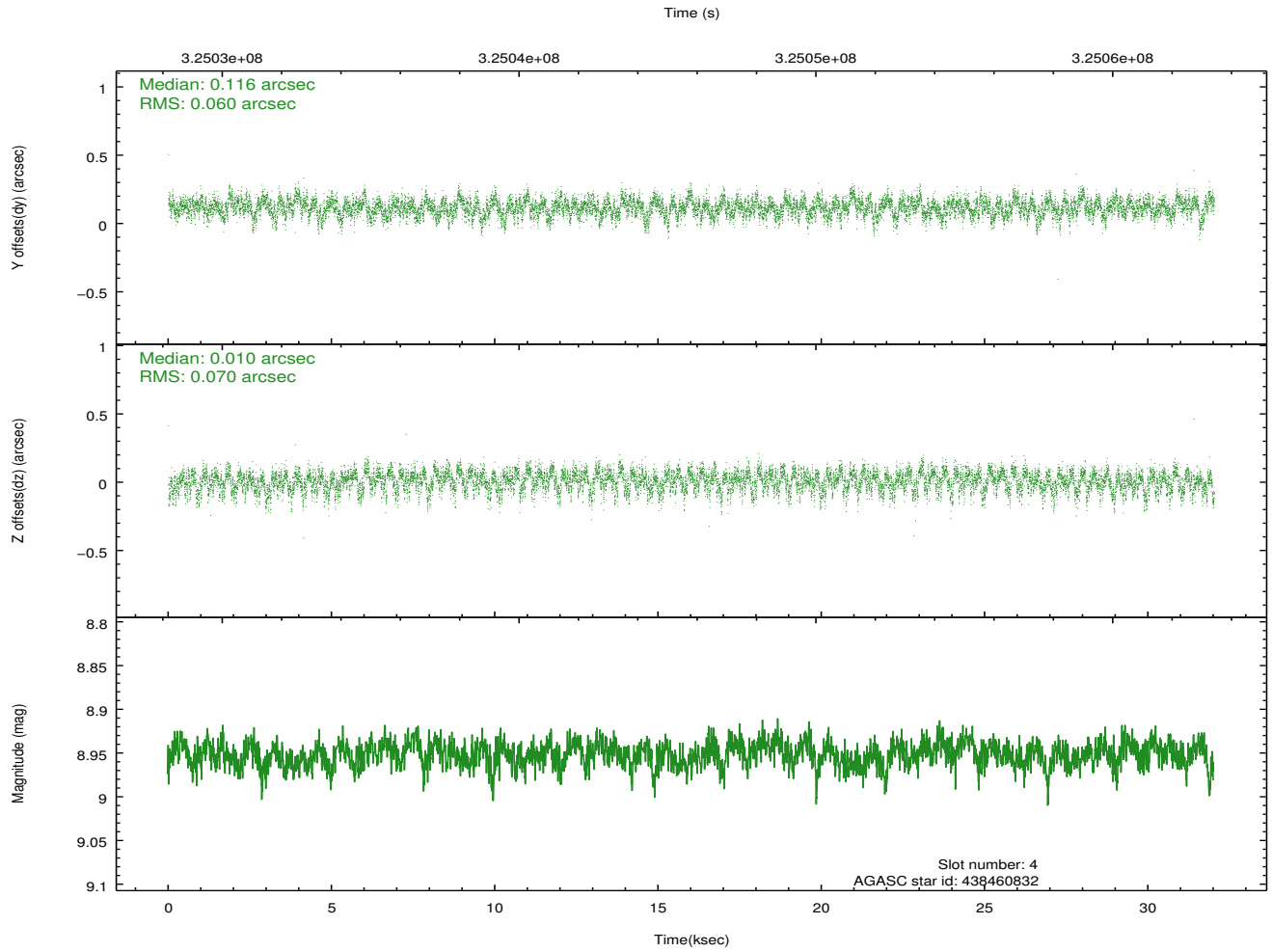
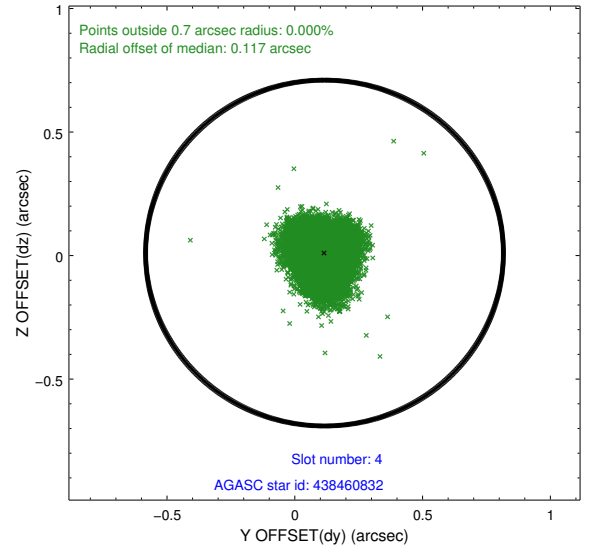
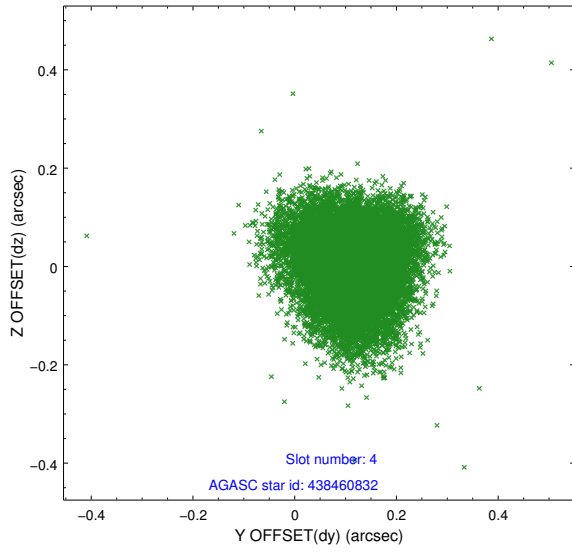
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	6.95	7811	-0.002	0.072	0.015	0.041	0.000000	0.000000	928.17	-1795.66
1	FID	ACIS-S-4	6.94	7811	0.119	-0.046	0.011	0.021	0.000000	0.000000	2145.73	108.31
2	FID	ACIS-S-5	6.98	7811	-0.144	-0.015	0.014	0.047	0.000000	0.000000	-1820.77	102.00
3	GUIDE	438441368	10.00	15599	0.177	0.131	0.127	0.202	78.646413	46.420494	-1813.97	-615.29
4	GUIDE	438460832	8.95	15608	0.116	0.010	0.098	0.158	78.414614	45.554782	853.32	-2328.79
5	GUIDE	440149808	8.42	15611	-0.194	0.093	0.058	0.094	78.873930	46.405955	-1554.10	-111.53
6	GUIDE	440163960	8.86	15612	0.015	-0.072	0.076	0.124	79.298370	45.827072	774.10	99.04
7	GUIDE	440164960	8.29	15614	-0.112	-0.155	0.072	0.118	79.132526	46.140947	-428.63	130.70

2.4 Star Slots

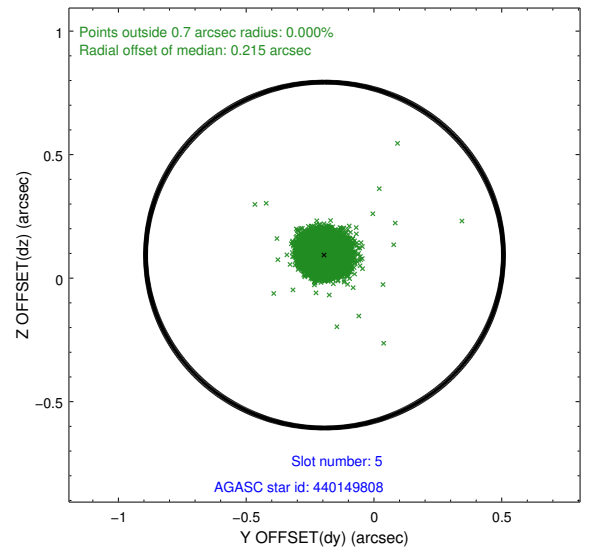
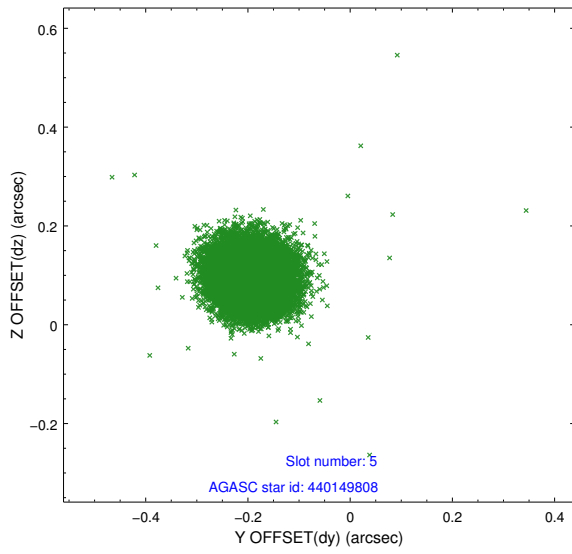
2.4.1 Slot 3



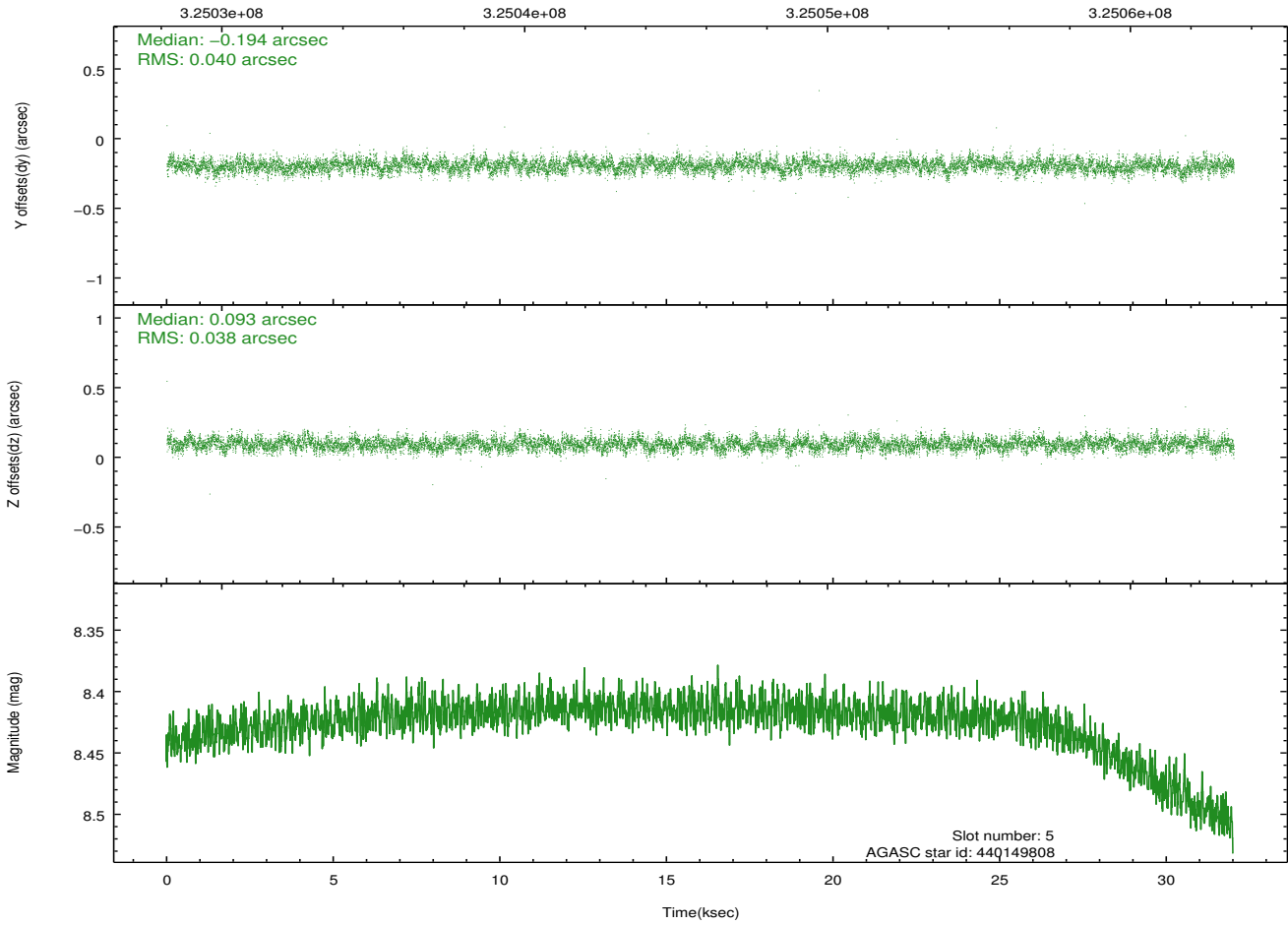
2.4.2 Slot 4



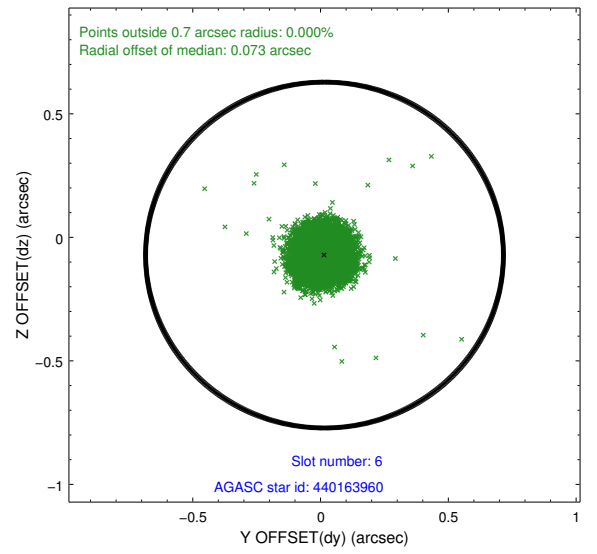
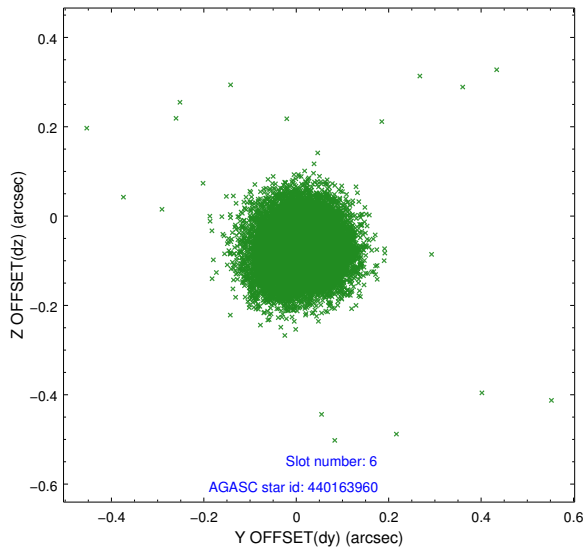
2.4.3 Slot 5



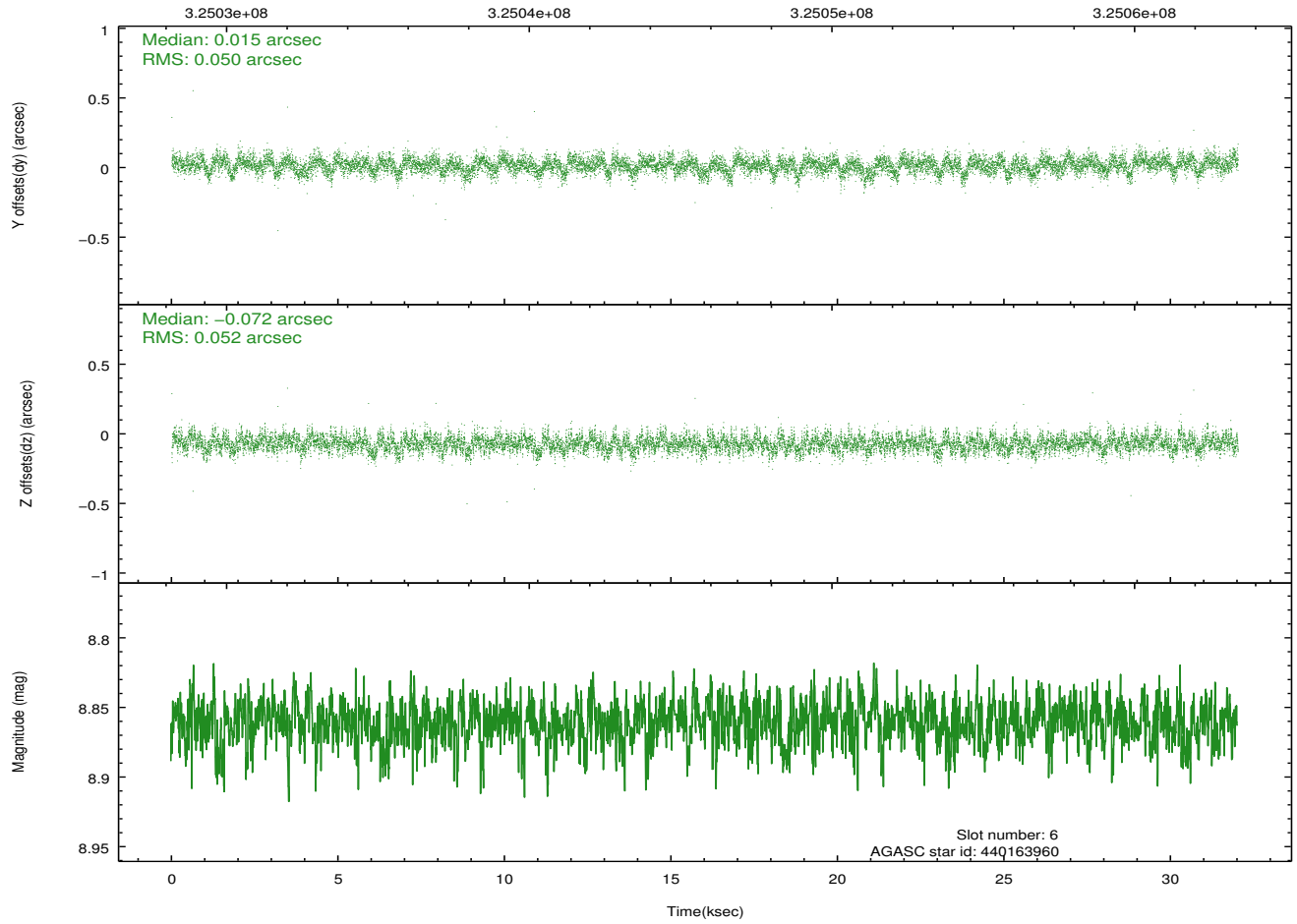
Time (s)



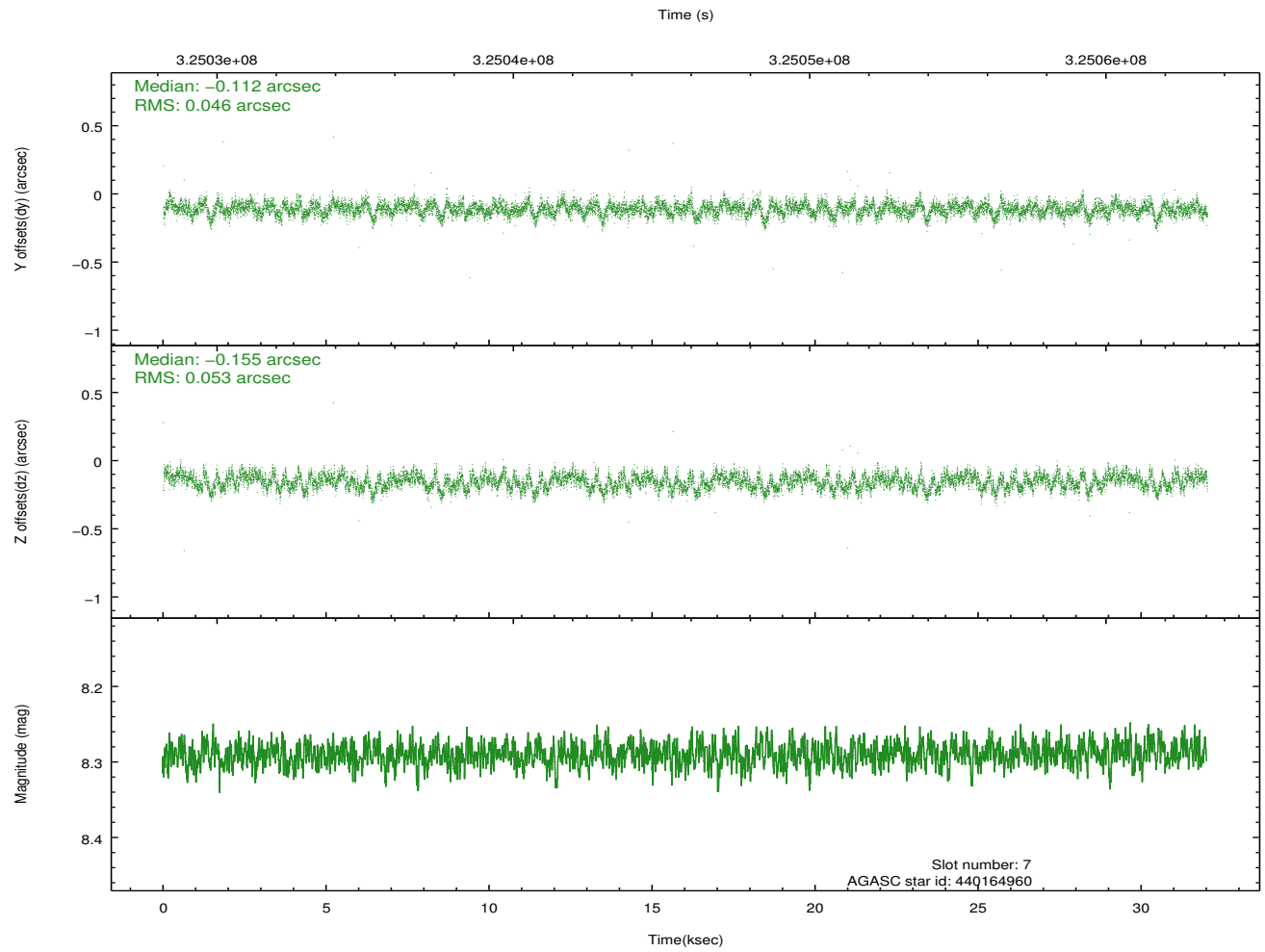
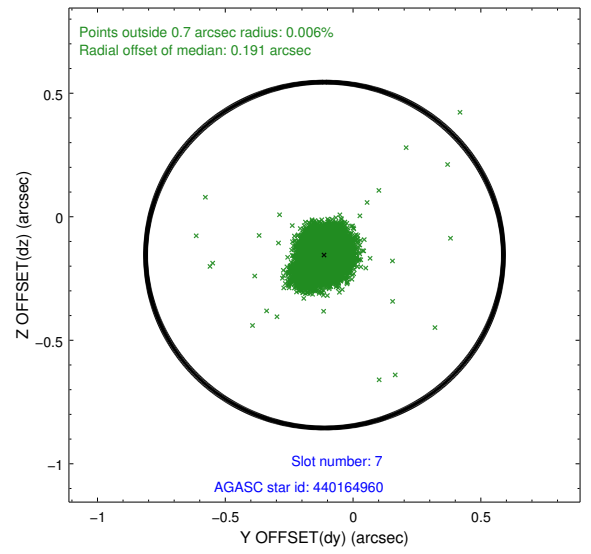
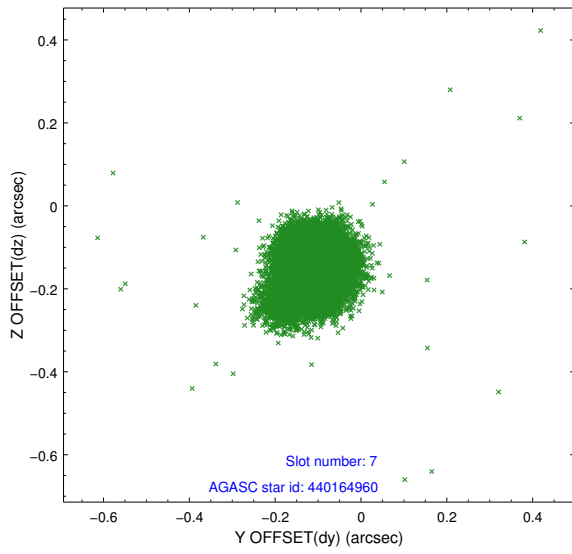
2.4.4 Slot 6



Time (s)

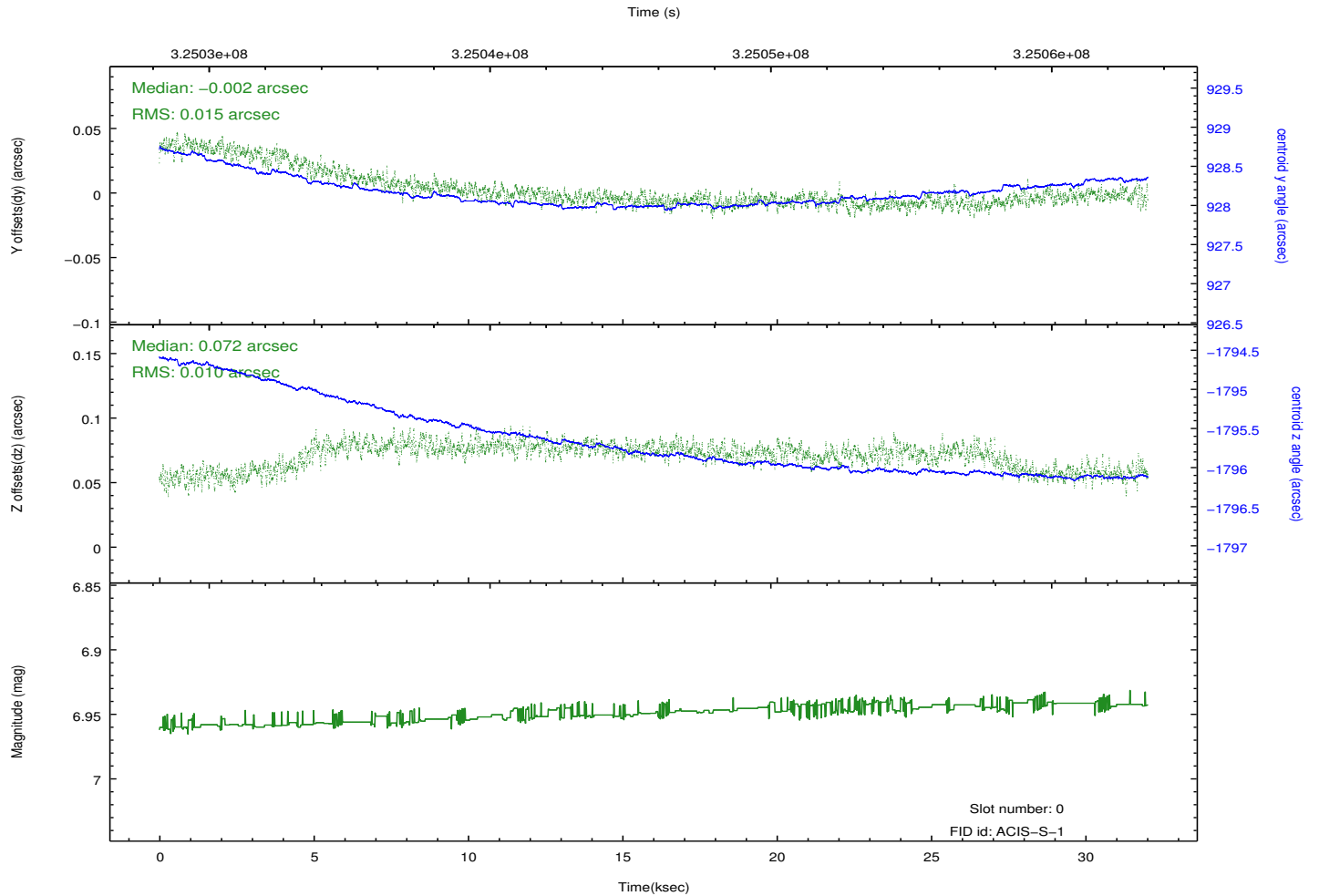
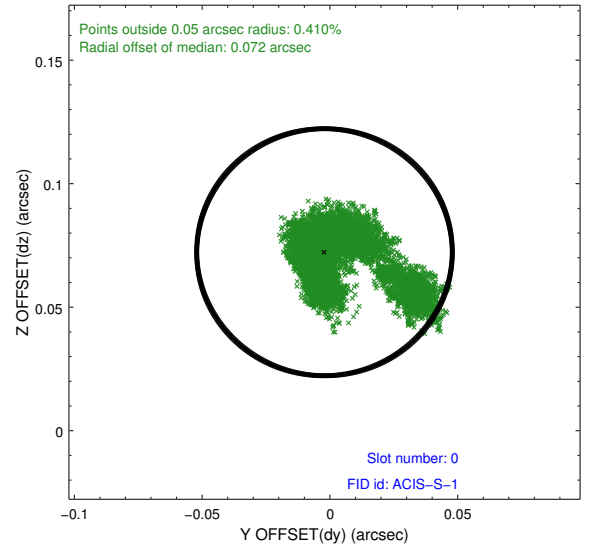
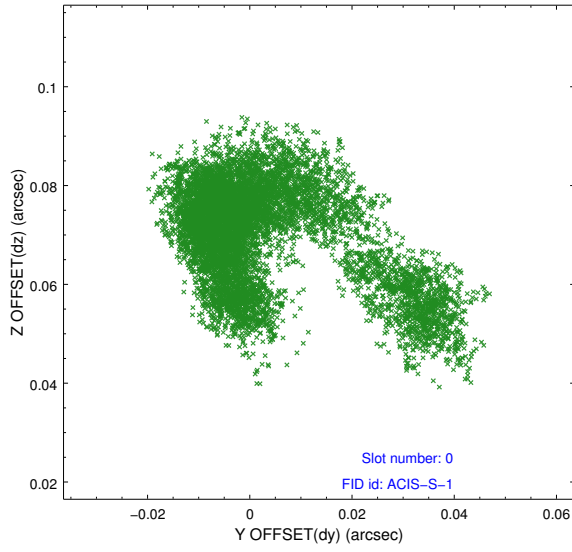


2.4.5 Slot 7

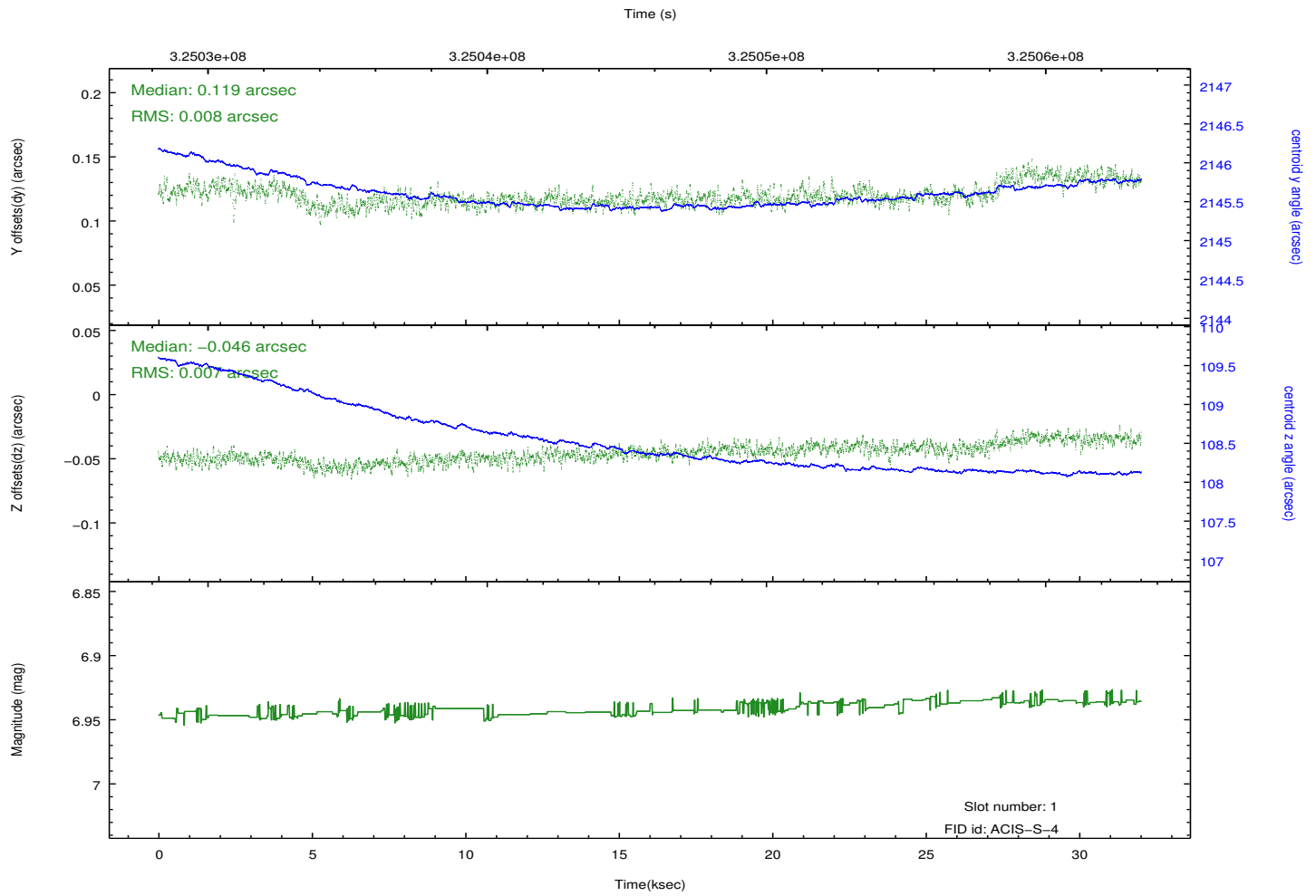
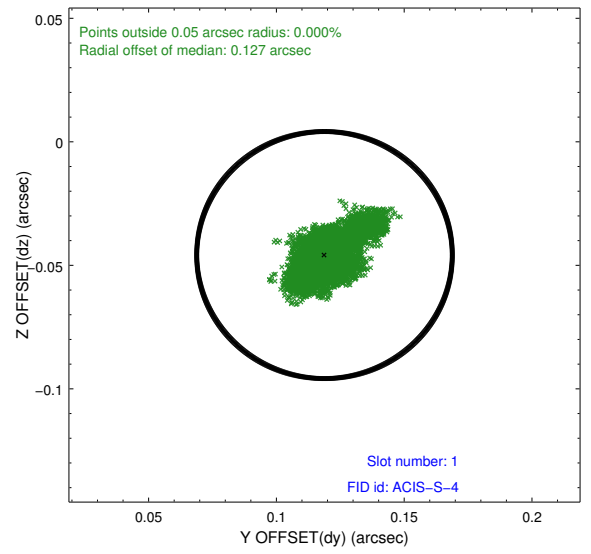
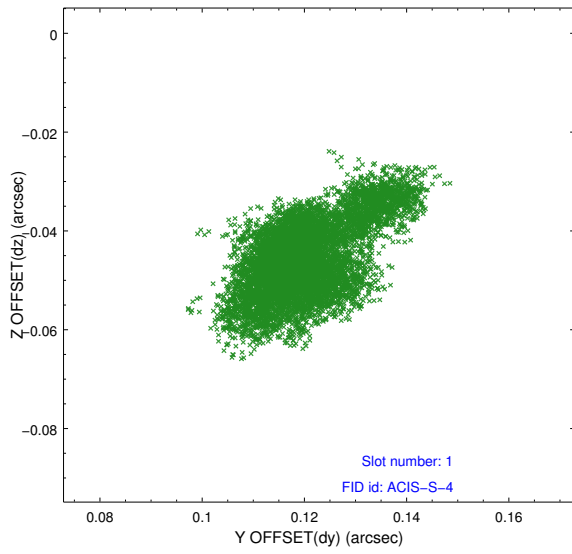


2.5 FID Slots

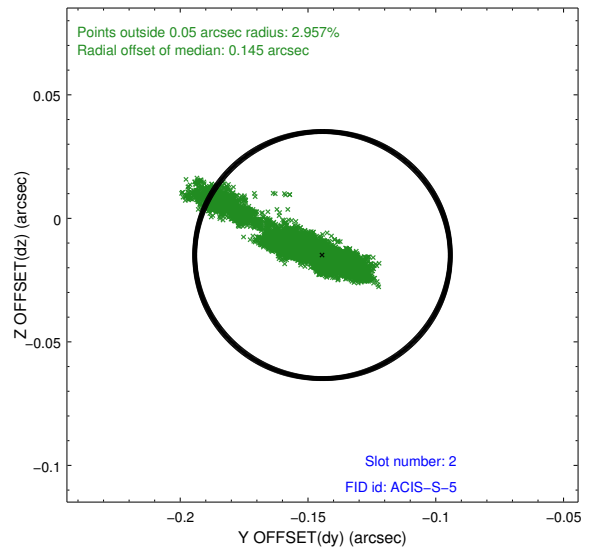
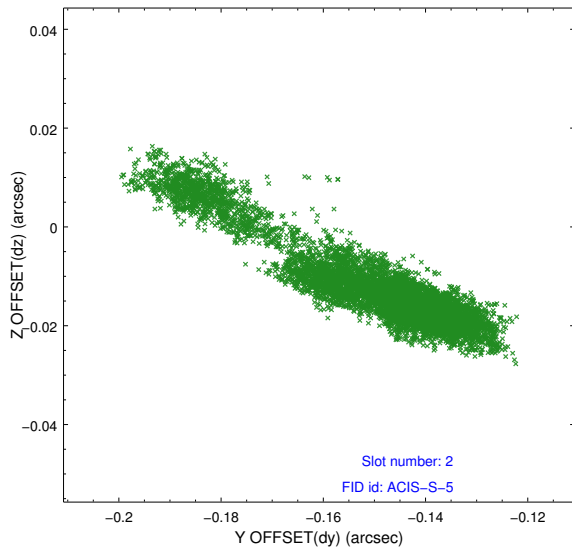
2.5.1 Slot 0



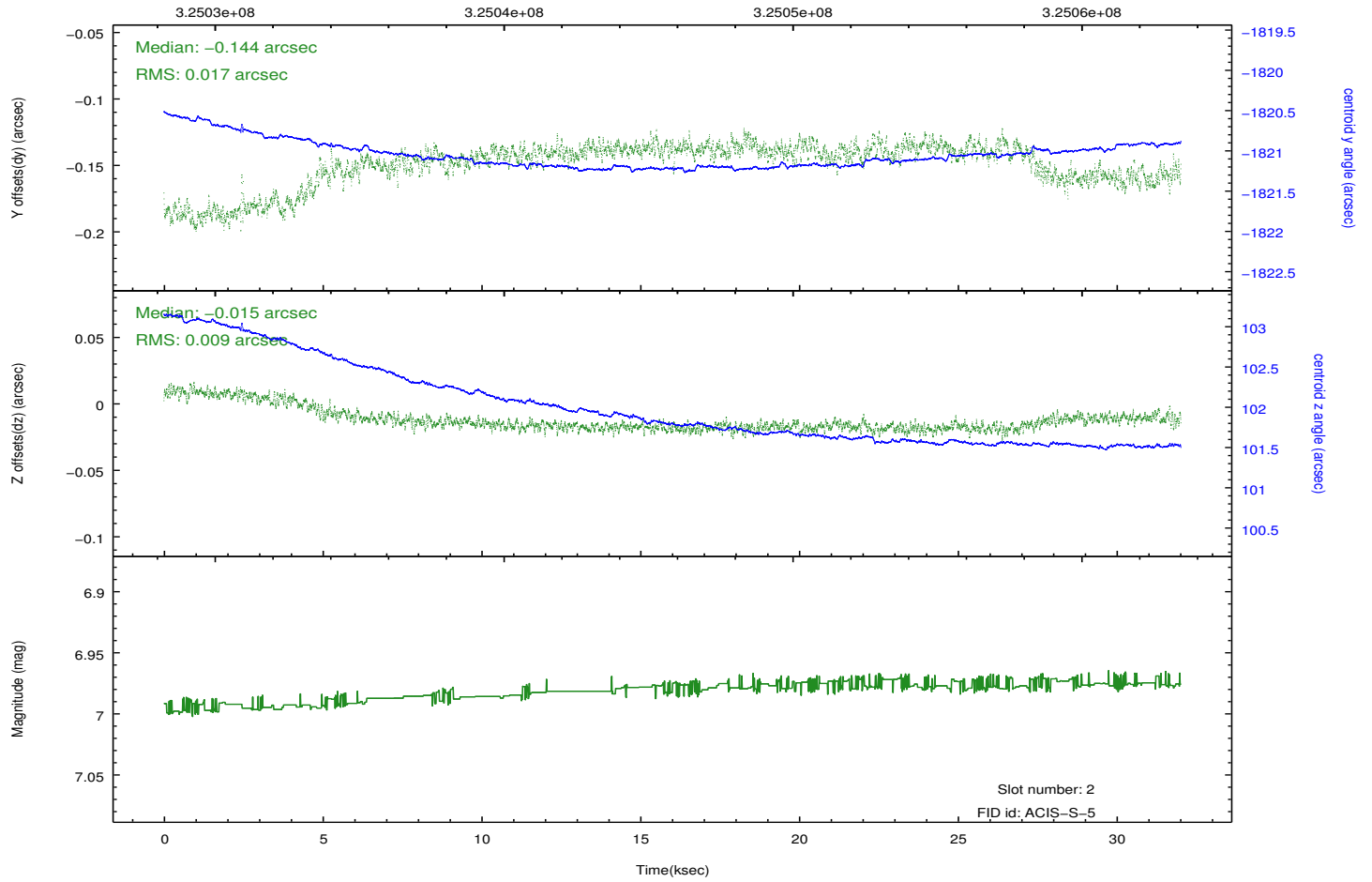
2.5.2 Slot 1



2.5.3 Slot 2

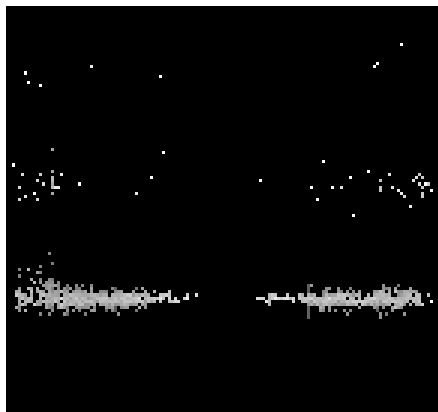


Time (s)

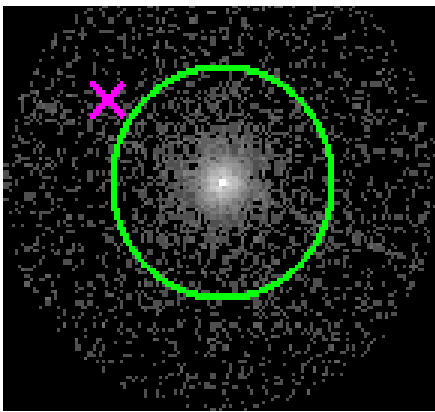


3 Gratings

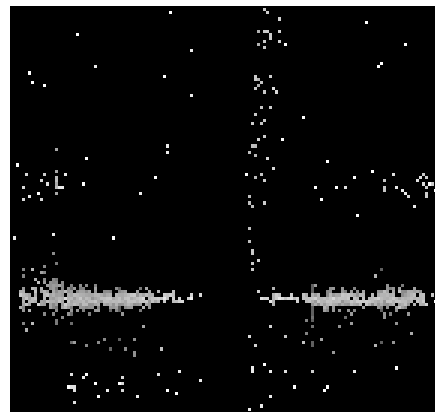
3.1 HEG Arm



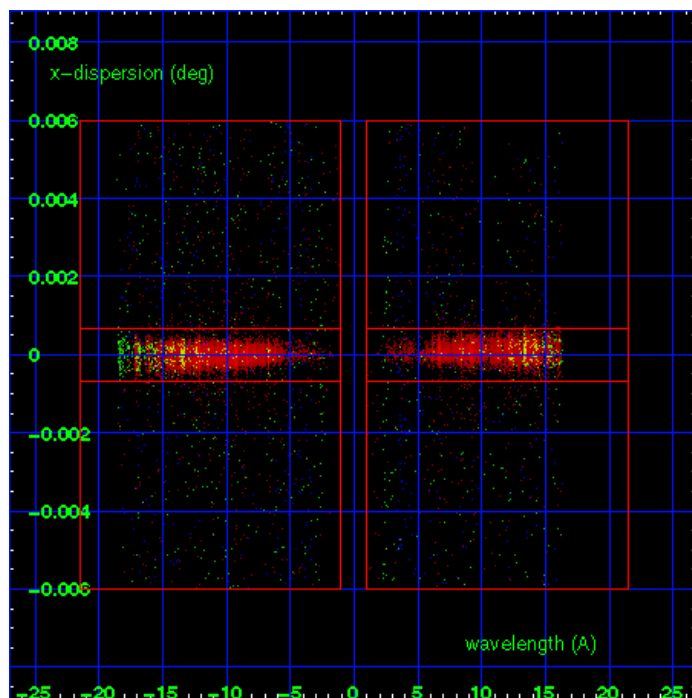
HEG Order Sort 123



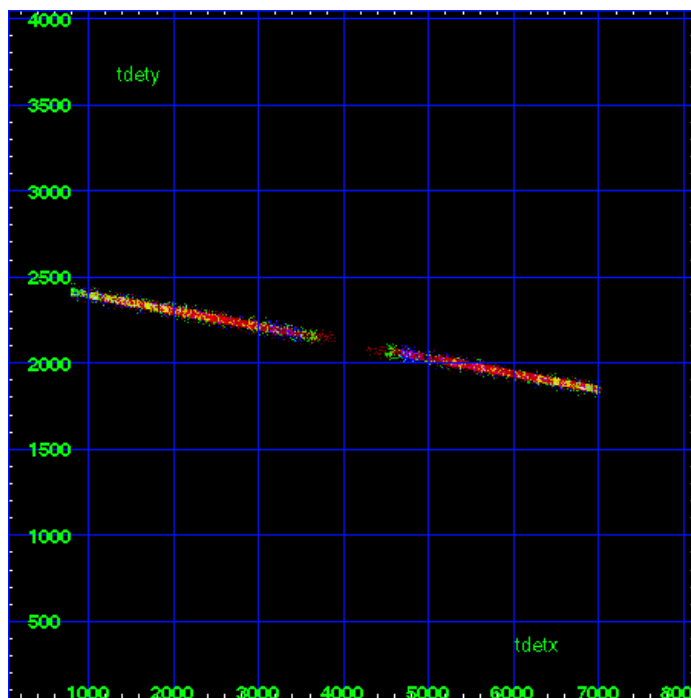
HEG Zero Order



HEG Order Sort ALL

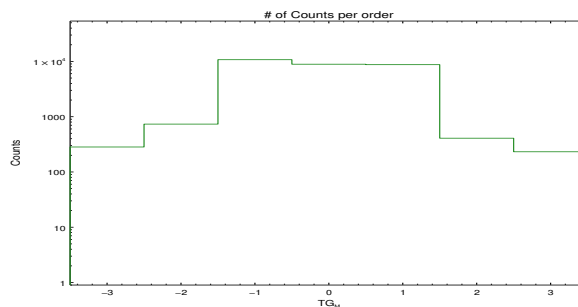


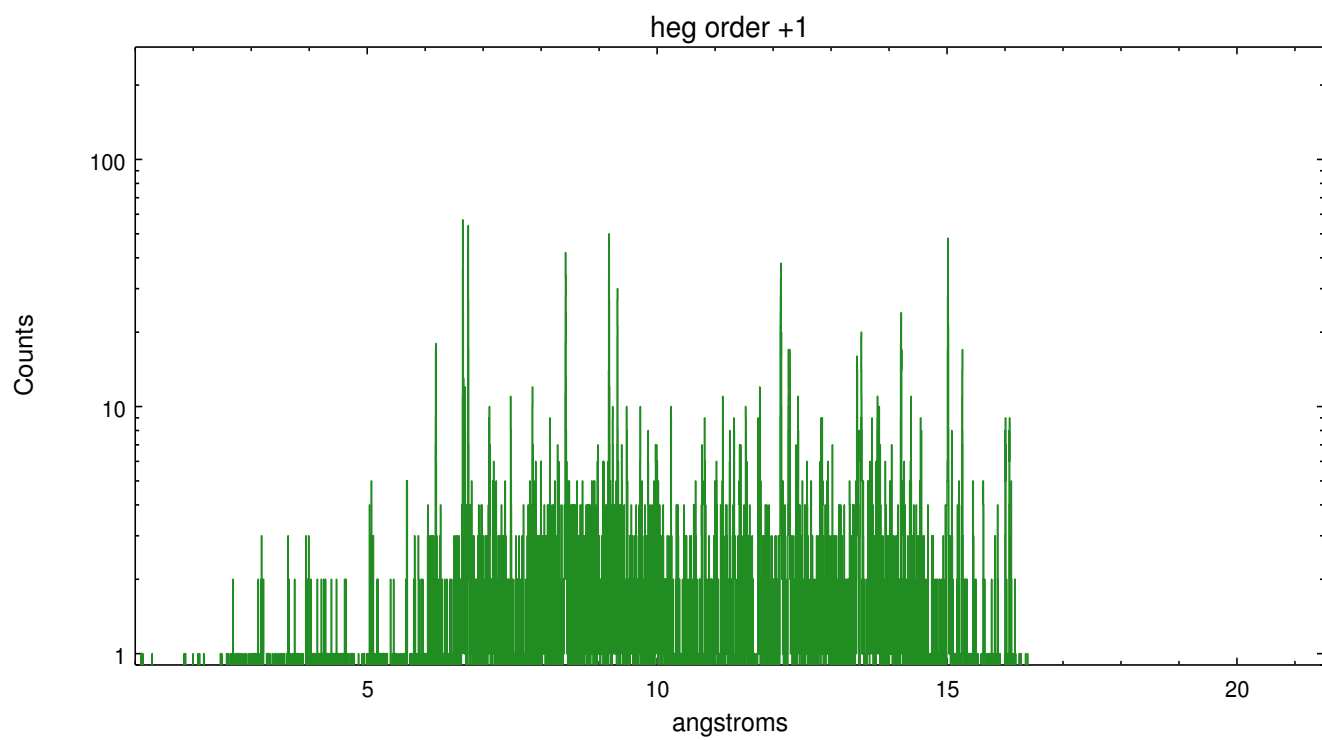
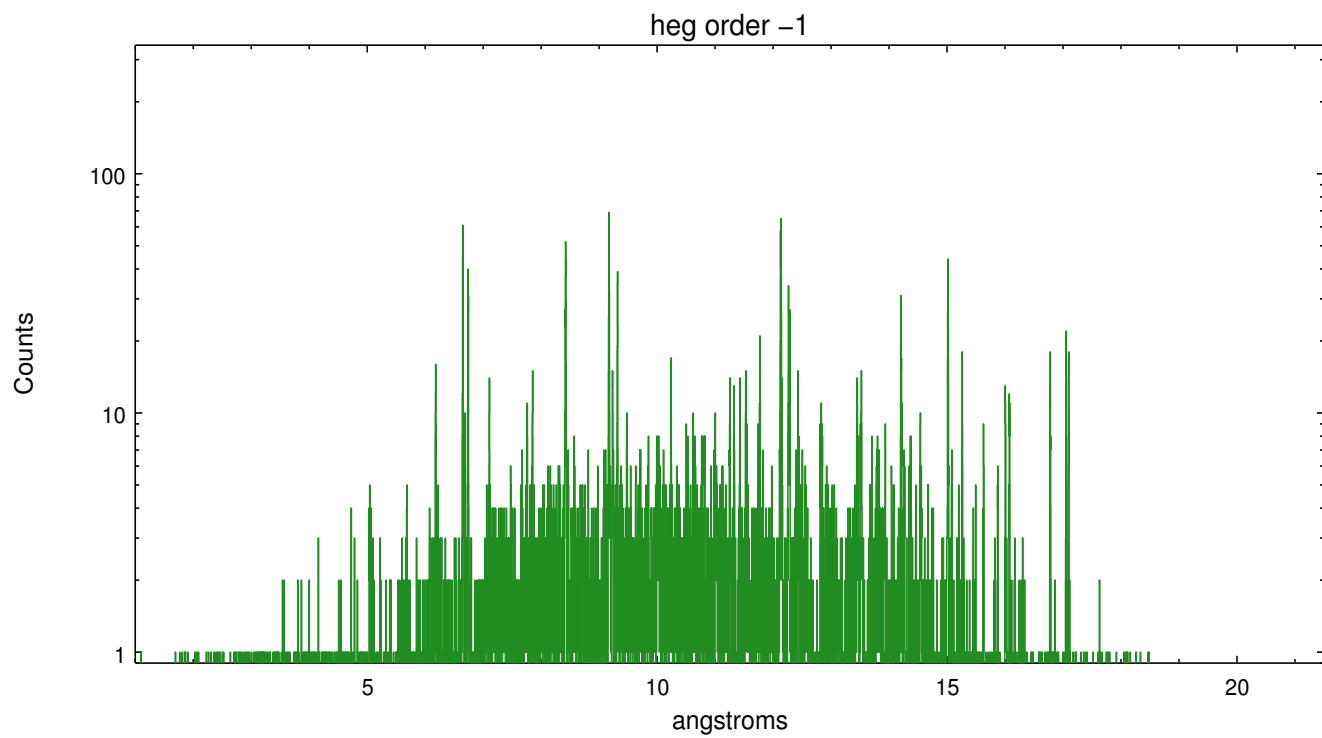
Spot Image HEG



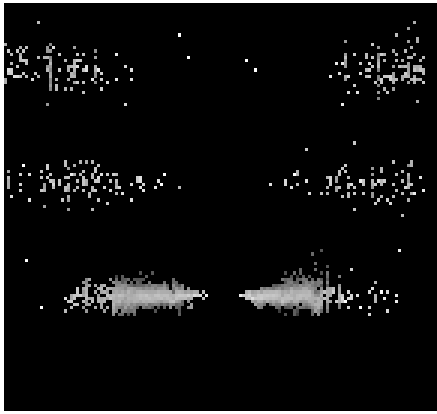
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	283	734	10746	8895	8737	408	232

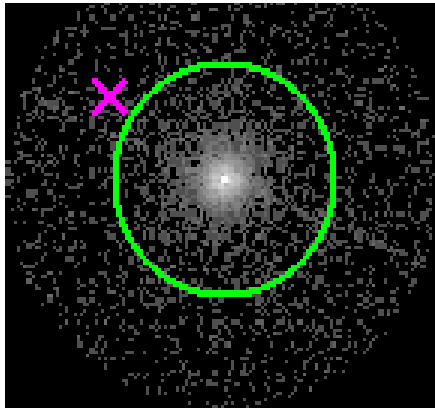




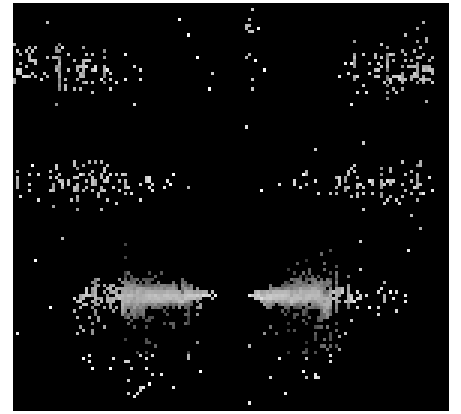
3.2 MEG Arm



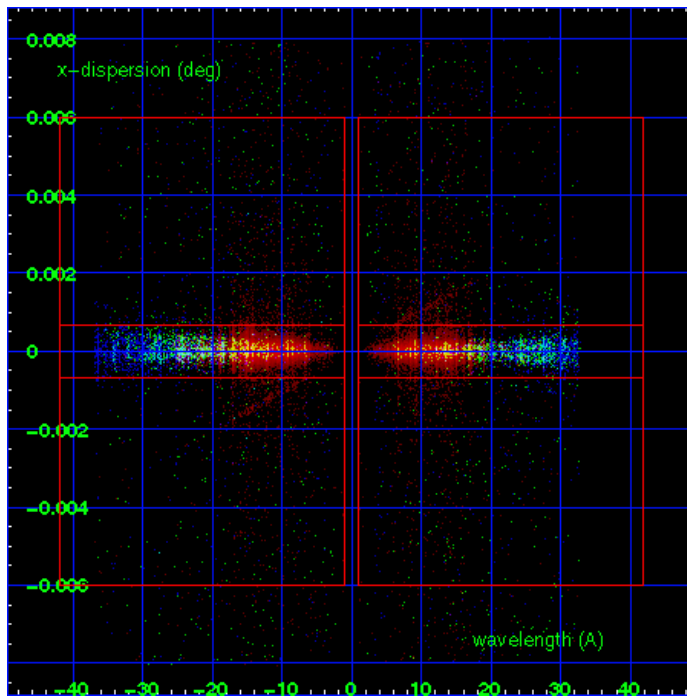
MEG Order Sort 123



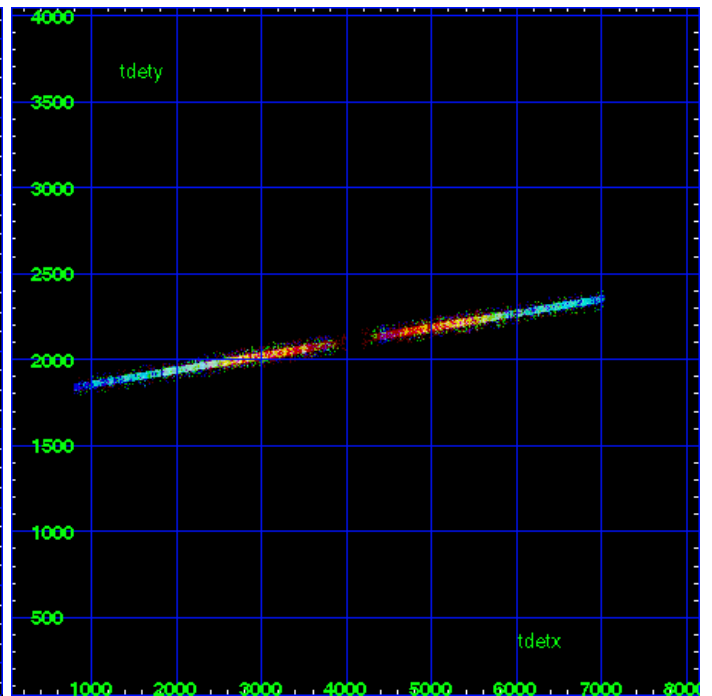
MEG Zero Order



MEG Order Sort ALL

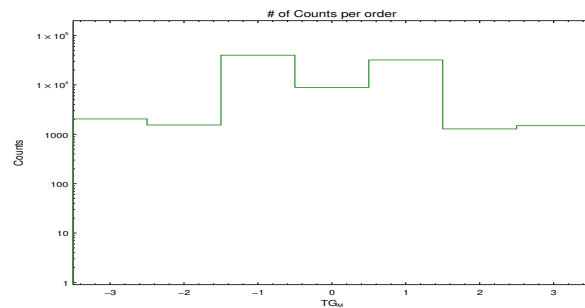


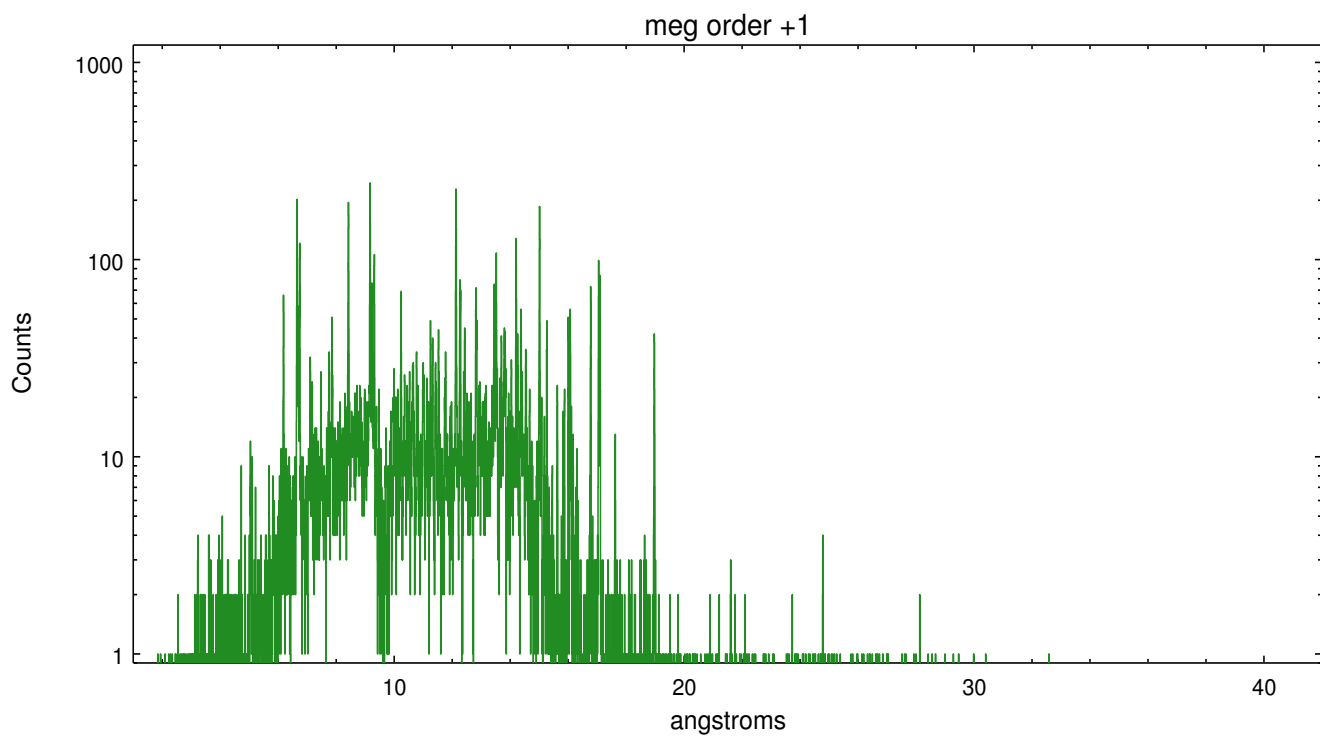
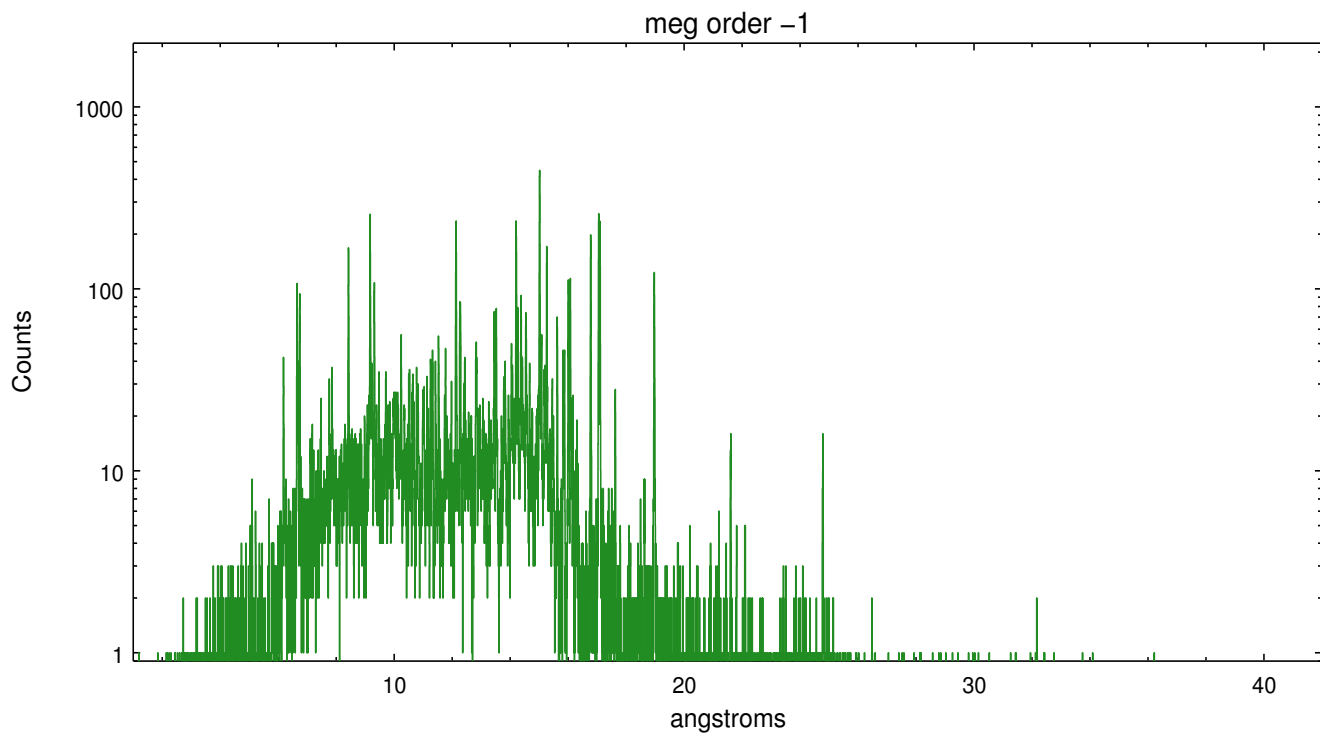
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2045	1541	39889	8895	31976	1283	1493





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	31.54

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 ($x=4128.75$, $y=4073.82$) 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.