

V&V Reference Report

L2 ASCDS Version : 10.2.1

Observation 15737 - L2 Version 4
Chandra X-Ray Center

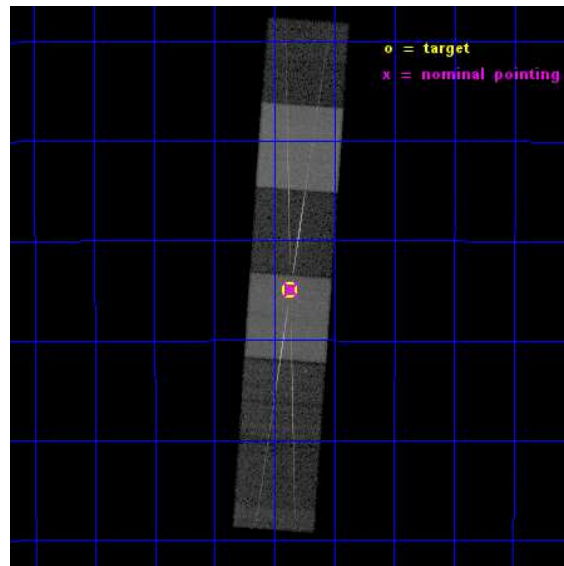
L2 Processing Date : Dec 10 2014

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1 Front

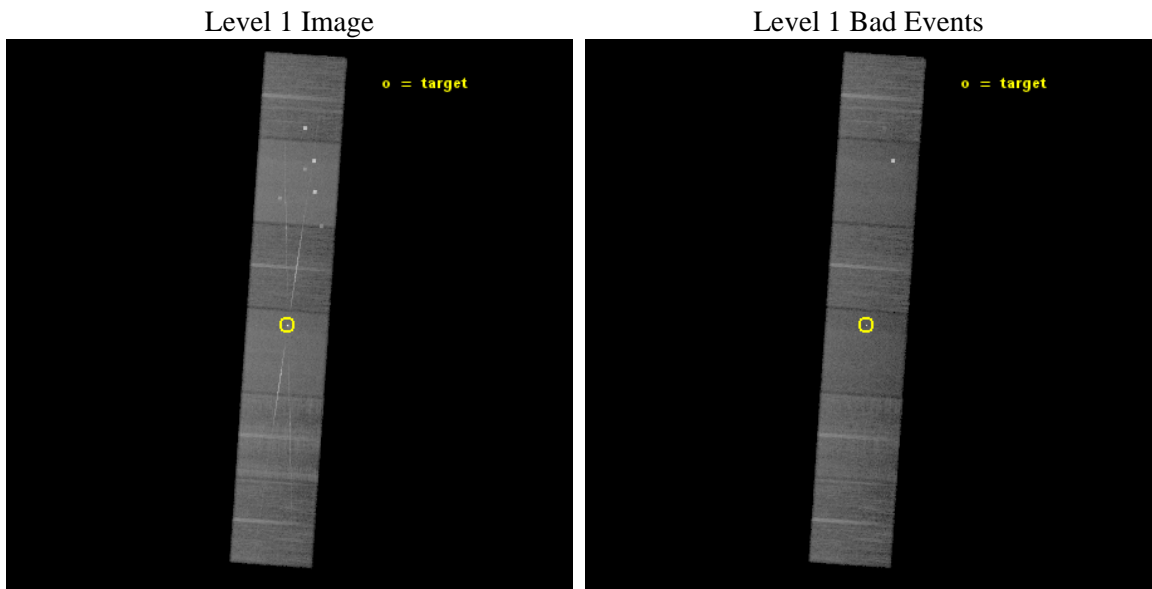
seq_num	300321	Sequence number
obs_id	15737	Observation id
title	A Fermi/LAT Trigger of Grating Observations of One Bright Nova in Outburst	Proposal title
observer	Regents' Professor Sumner Starrfield	Principal investigator
object	V745 Sco	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	268.842792	Observer's specified target RA [deg]
dec_targ	-33.249581	Observer's specified target Dec [deg]
ra_nom	268.83961624736	Nominal RA [deg]
dec_nom	-33.248154571513	Nominal Dec [deg]
roll_nom	94.076372559588	Nominal Roll [deg]
revision	4	Processing version of data
ontime	39963.630094171	Sum of GTIs [s]
livetime	39457.586546709	Livetime [s]
ontime4	39963.671134174	Sum of GTIs [s]
ontime5	39963.589054167	Sum of GTIs [s]
ontime6	39960.30704385	Sum of GTIs [s]
ontime7	39963.630094171	Sum of GTIs [s]
ontime8	39963.506974161	Sum of GTIs [s]
ontime9	39963.465934157	Sum of GTIs [s]
l2events	366884	Number of level 2 events



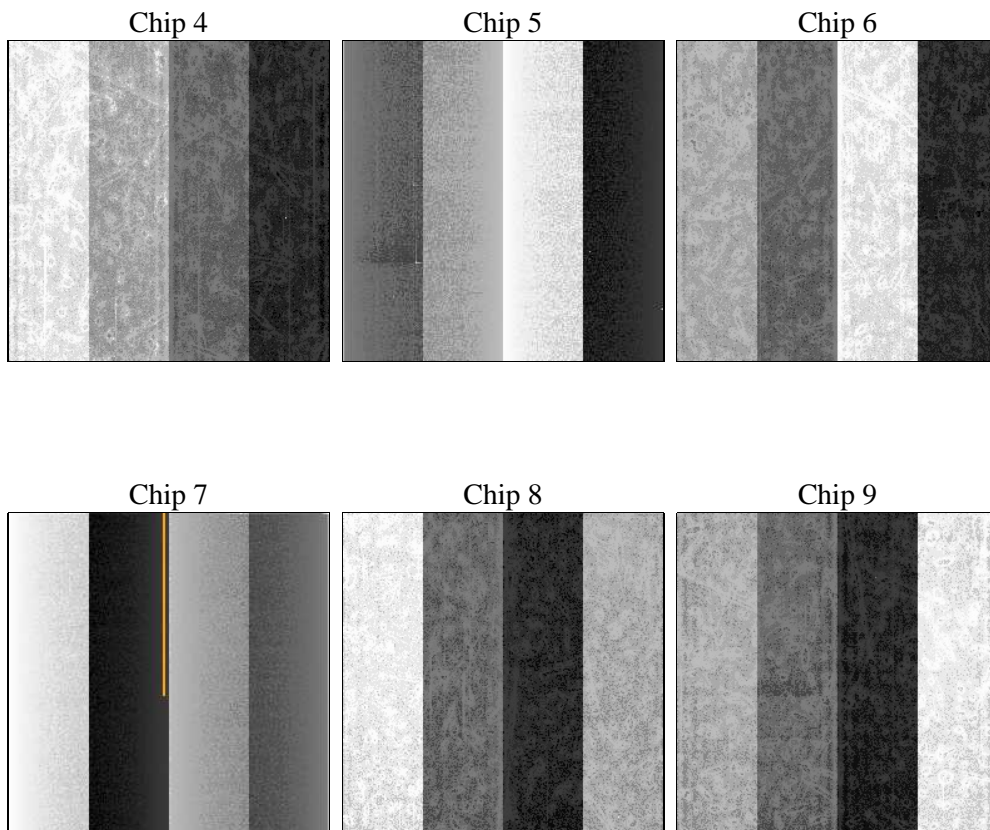
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	40000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	39963.630094171	Sum of GTIs [s]
caldbver	4.6.4	 	ontime4	39963.671134174	Sum of GTIs [s]
date	2014-12-10T12:21:16	Date and time of file creation	ontime5	39963.589054167	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	39960.30704385	Sum of GTIs [s]
			ontime7	39963.630094171	Sum of GTIs [s]
			ontime8	39963.506974161	Sum of GTIs [s]
			ontime9	39963.465934157	Sum of GTIs [s]
			l1events	1406061	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			z0_pos	(4077.77 4085.80)	src1a sky level position

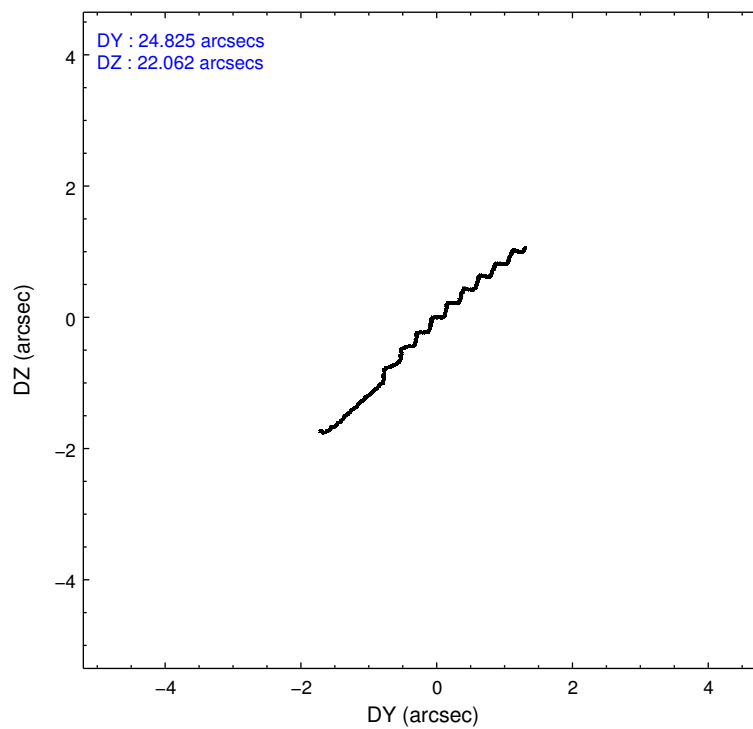
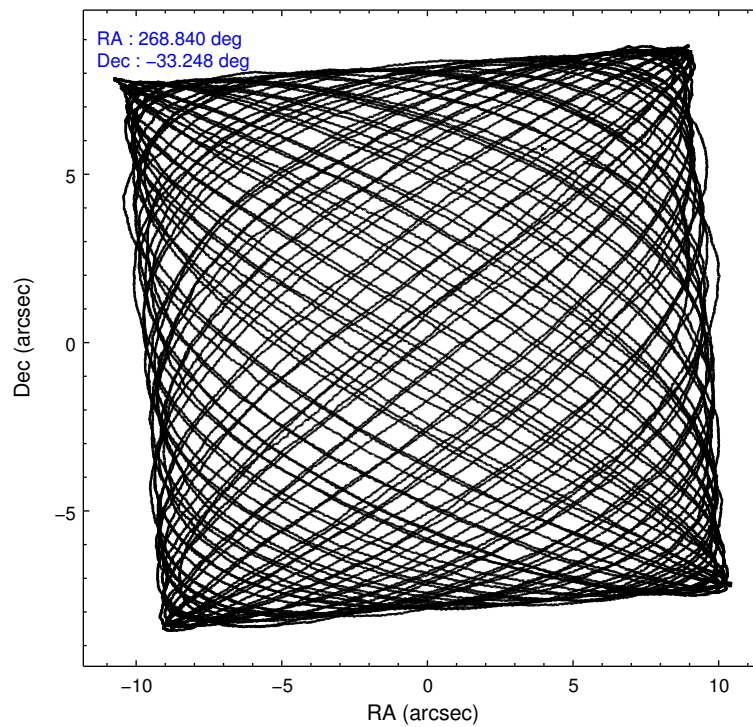
2.1.4 Events

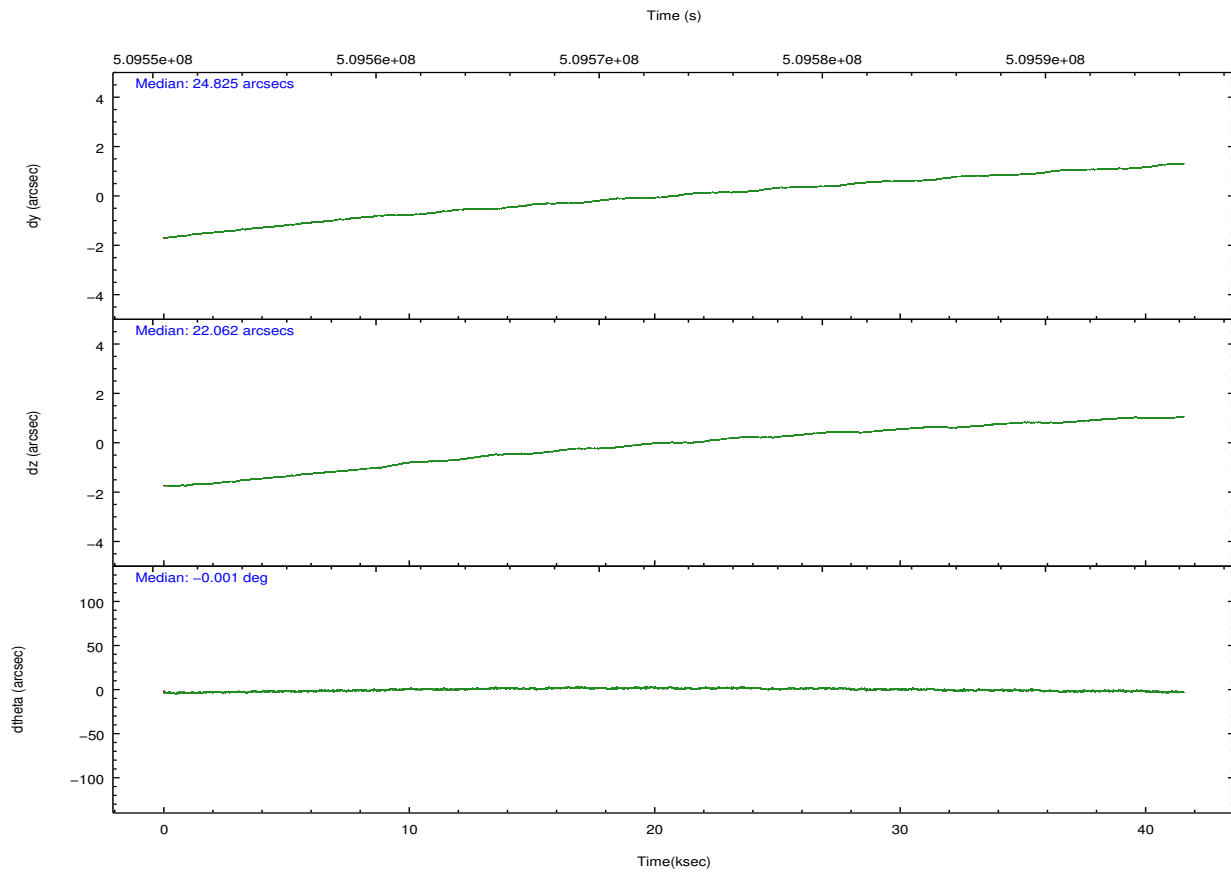
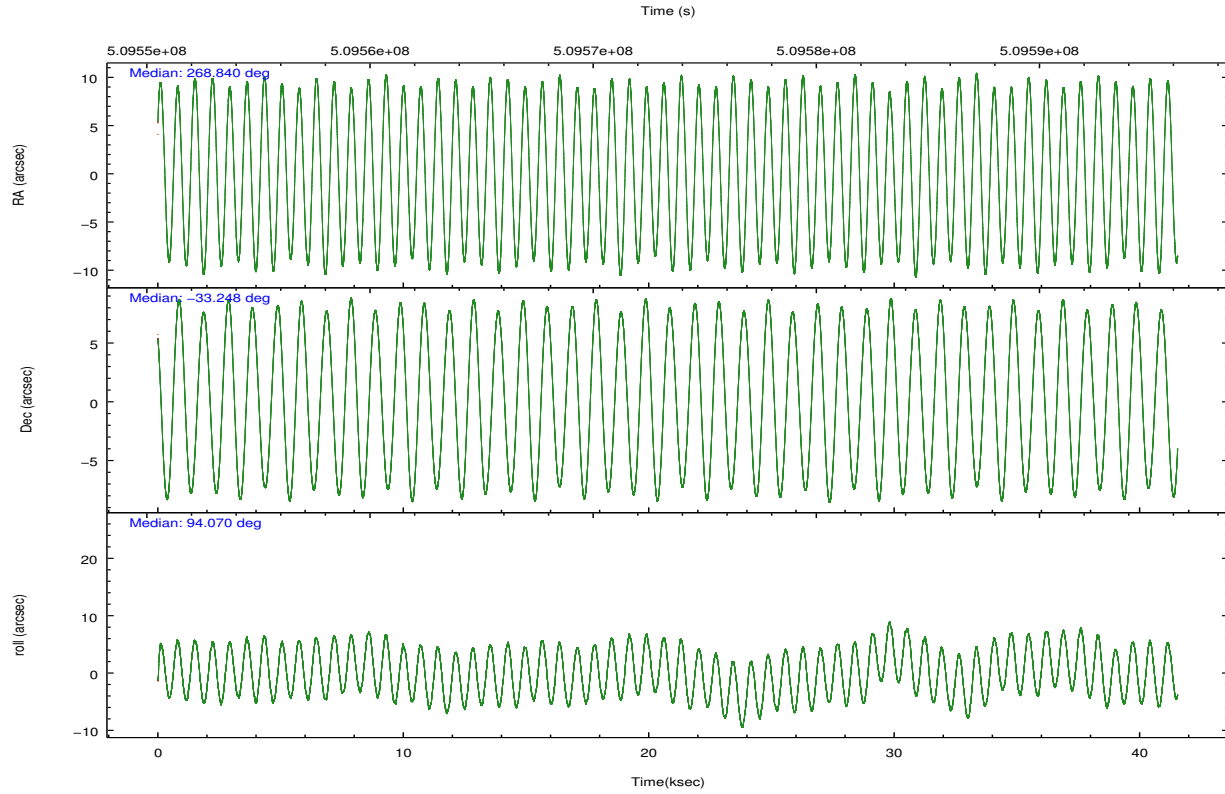
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	206217	317937	192183	265706	244942	179076	grade 0 events	20338	24516	19640	14056	25388	10023
rejected events	171453	160905	155411	139144	173770	153879		9%	7%	10%	5%	10%	5%
rejected %	83%	50%	80%	52%	70%	85%	grade 1 events	245	487	152	438	175	92
								0%	0%	0%	0%	0%	0%
							grade 2 events	5645	45305	6537	27132	15309	5257
								2%	14%	3%	10%	6%	2%
							grade 3 events	2443	5283	2614	11175	6854	2537
								1%	1%	1%	4%	2%	1%
							grade 4 events	2326	5241	2659	11283	6710	2284
								1%	1%	1%	4%	2%	1%
							grade 5 events	9410	22527	9401	25884	13614	10103
								4%	7%	4%	9%	5%	5%
							grade 6 events	4015	76699	5324	62928	16913	5099
								1%	24%	2%	23%	6%	2%
							grade 7 events	161795	137879	145856	112810	159979	143681
								78%	43%	75%	42%	65%	80%

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	268.858305	268.8396162473572	CCD I2 on	N	N
[deg] Pointing Dec	-33.270580	-33.24815457151334	CCD I3 on	N	N
[deg] Pointing Roll	93.929992	94.07637255958754	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
[s] Observation start time (MET)	509554004.184000	509552252.88615	CCD S5 on	Y	Y
Observation start date	2014-02-23T14:45:37	2014-02-23T14:17:32	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	509594004.184000	509594571.03848	On-chip summing requested	N	N
Observation end date	2014-02-24T01:52:17	2014-02-24T02:02:51	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect





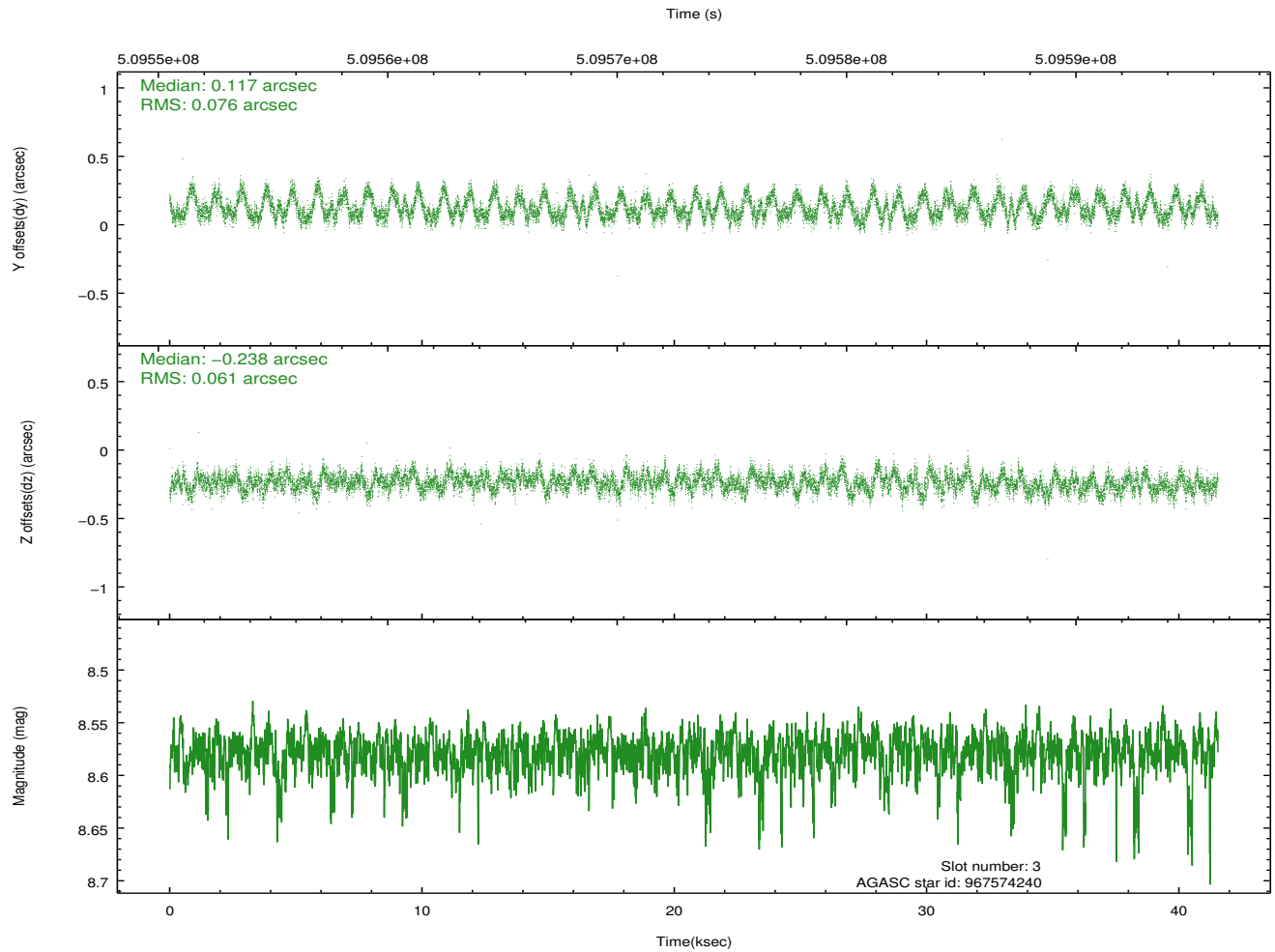
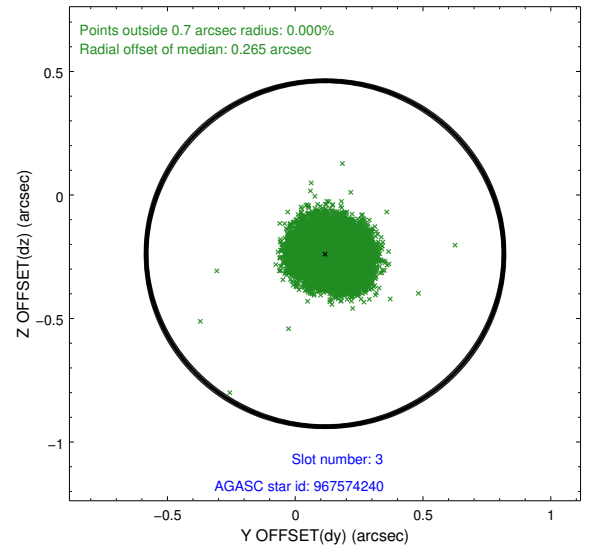
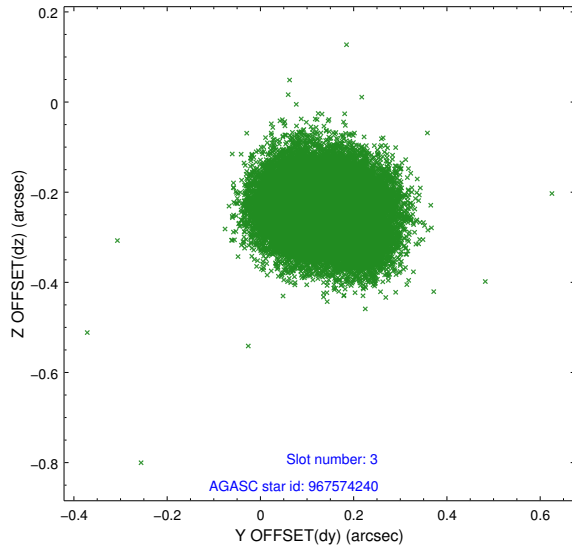
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.88	10134	-0.179	-0.102	0.009	0.017	0.000000	0.000000	-778.28	-1743.55
1	FID		ACIS-S-4	6.97	10134	0.210	0.103	0.011	0.017	0.000000	0.000000	2135.47	164.98
2	FID		ACIS-S-6	7.09	10134	-0.060	0.007	0.011	0.017	0.000000	0.000000	383.96	802.38
3	GUIDE	used	967574240	8.58	20264	0.117	-0.238	0.105	0.165	268.514181	-33.472857	-657.11	1080.90
4	GUIDE	used	967582656	8.01	20260	-0.170	0.541	0.071	0.117	269.593497	-32.909675	1136.50	-2304.32
5	GUIDE	used	968104512	8.72	20264	0.185	-0.292	0.137	0.237	268.190357	-33.844560	-1930.93	2134.35
6	GUIDE	used	967580064	8.54	20265	-0.320	-0.011	0.072	0.122	269.044722	-32.587064	2415.55	-732.17
7	GUIDE	used	968110992	8.08	20264	0.157	-0.002	0.081	0.139	268.673148	-33.905496	-2242.45	708.59

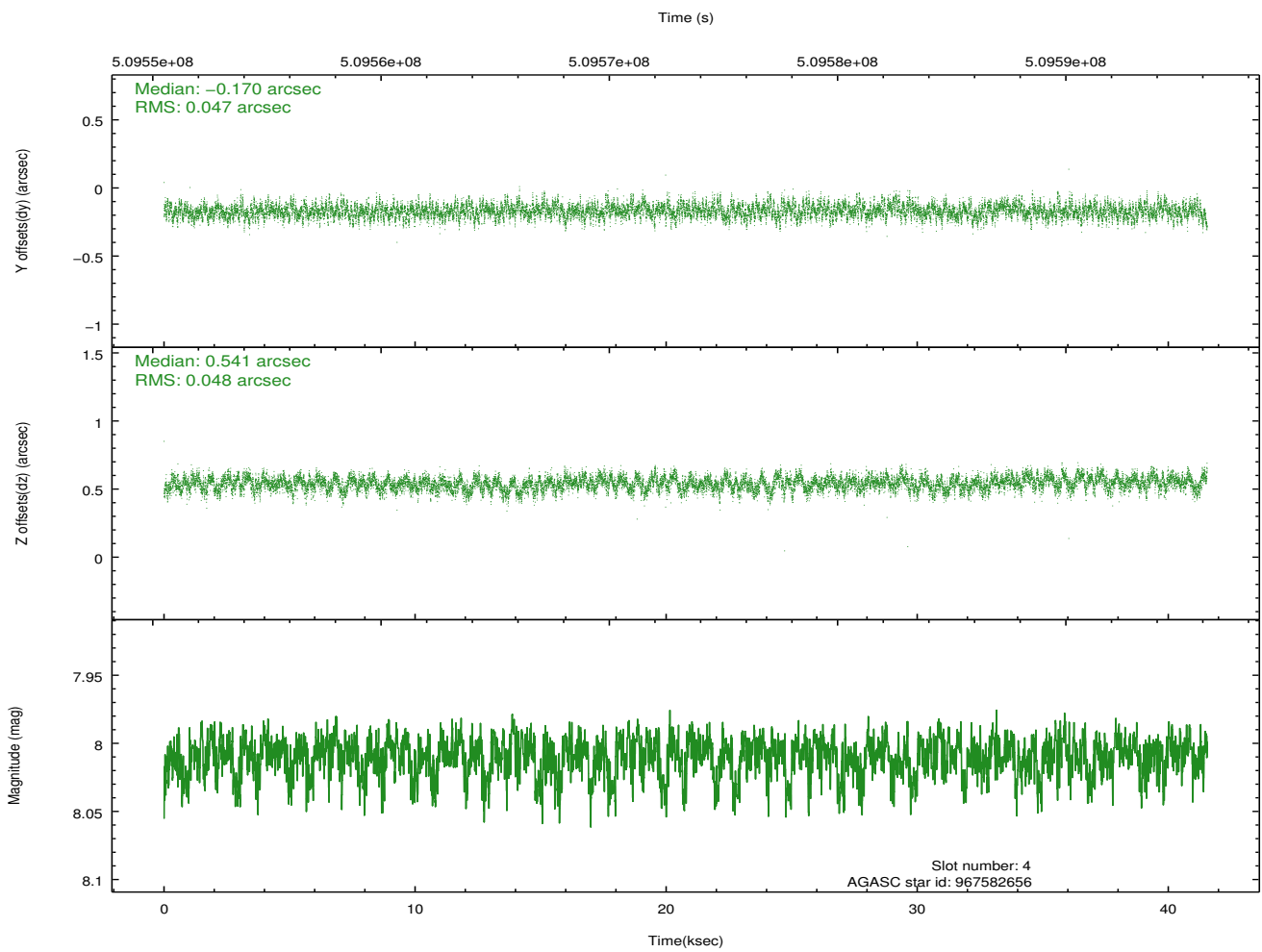
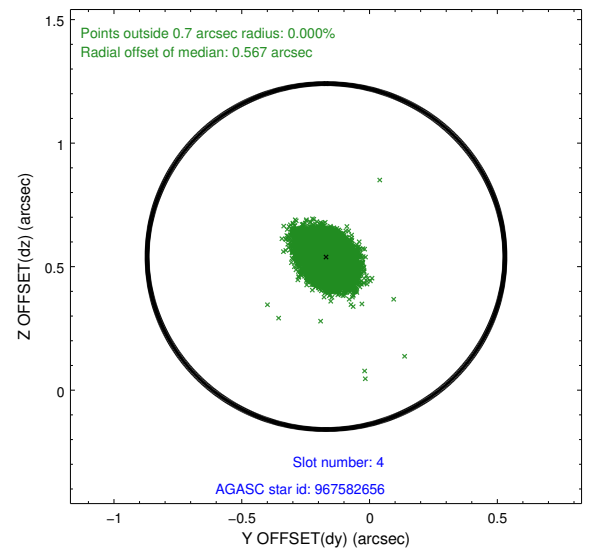
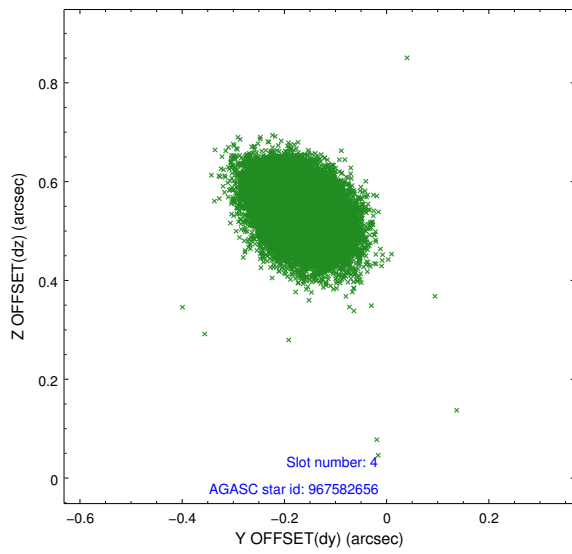
∞

2.4 Star Slots

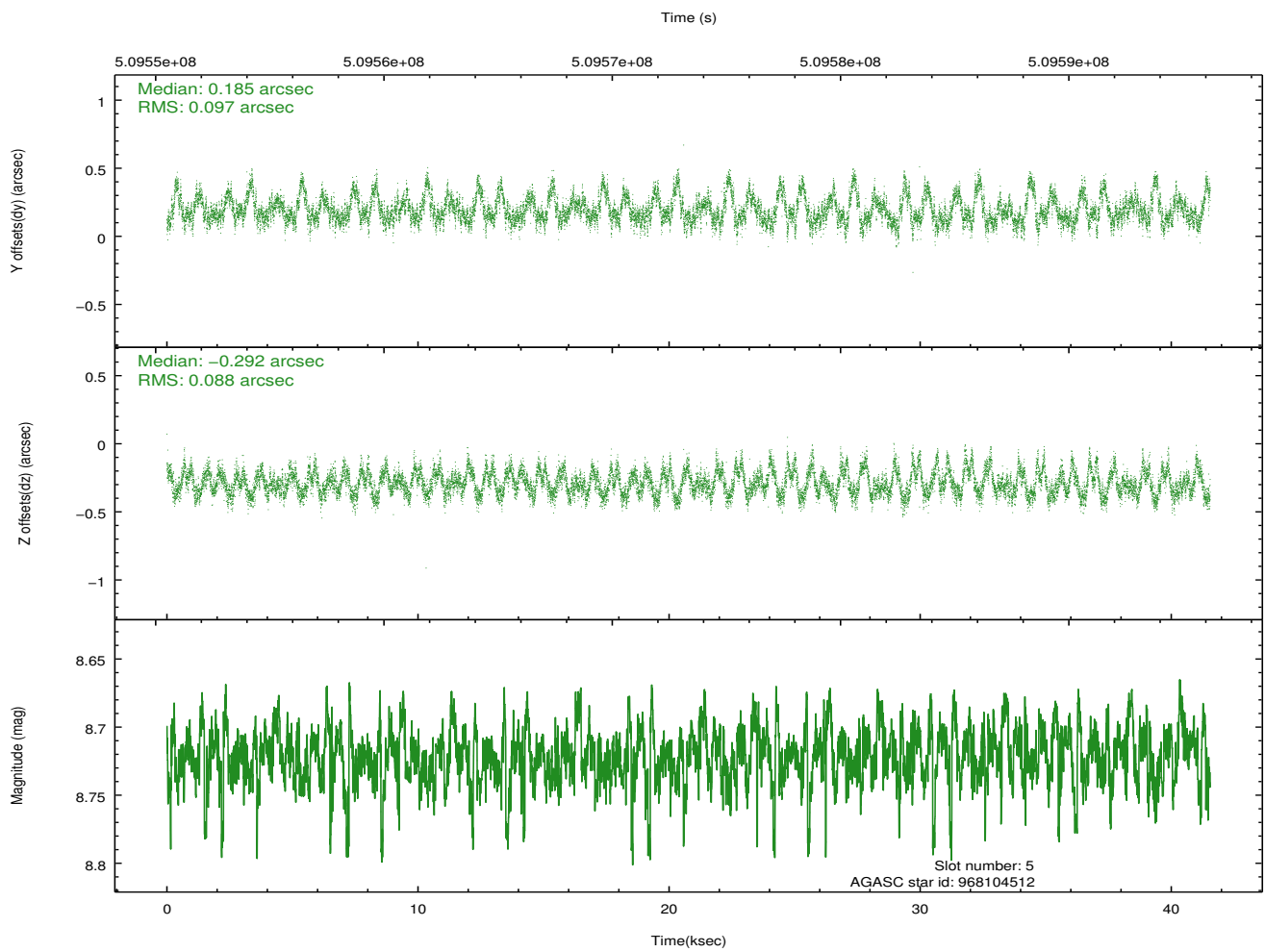
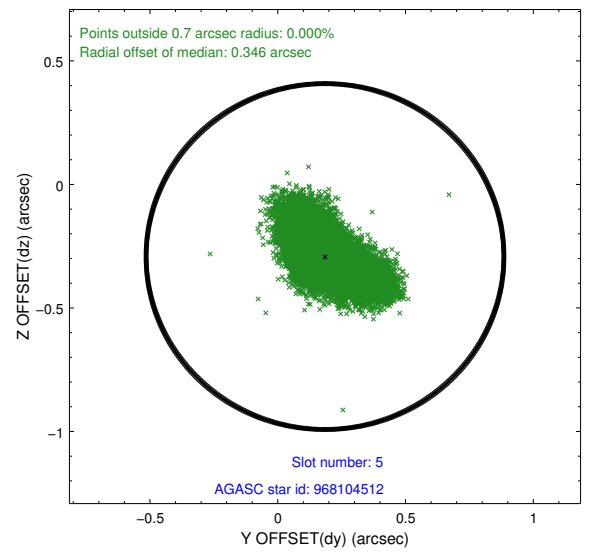
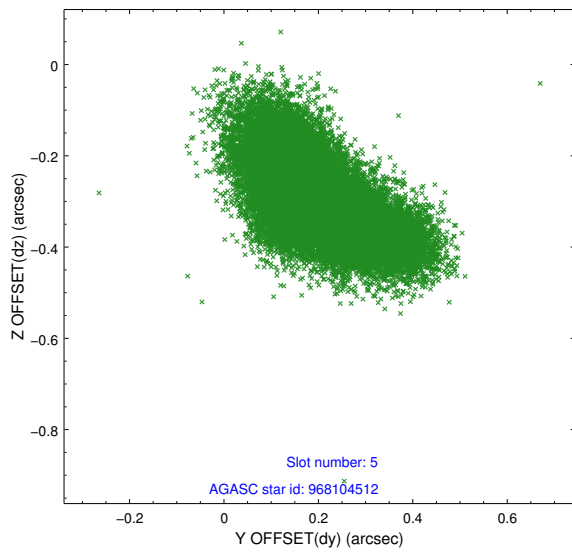
2.4.1 Slot 3



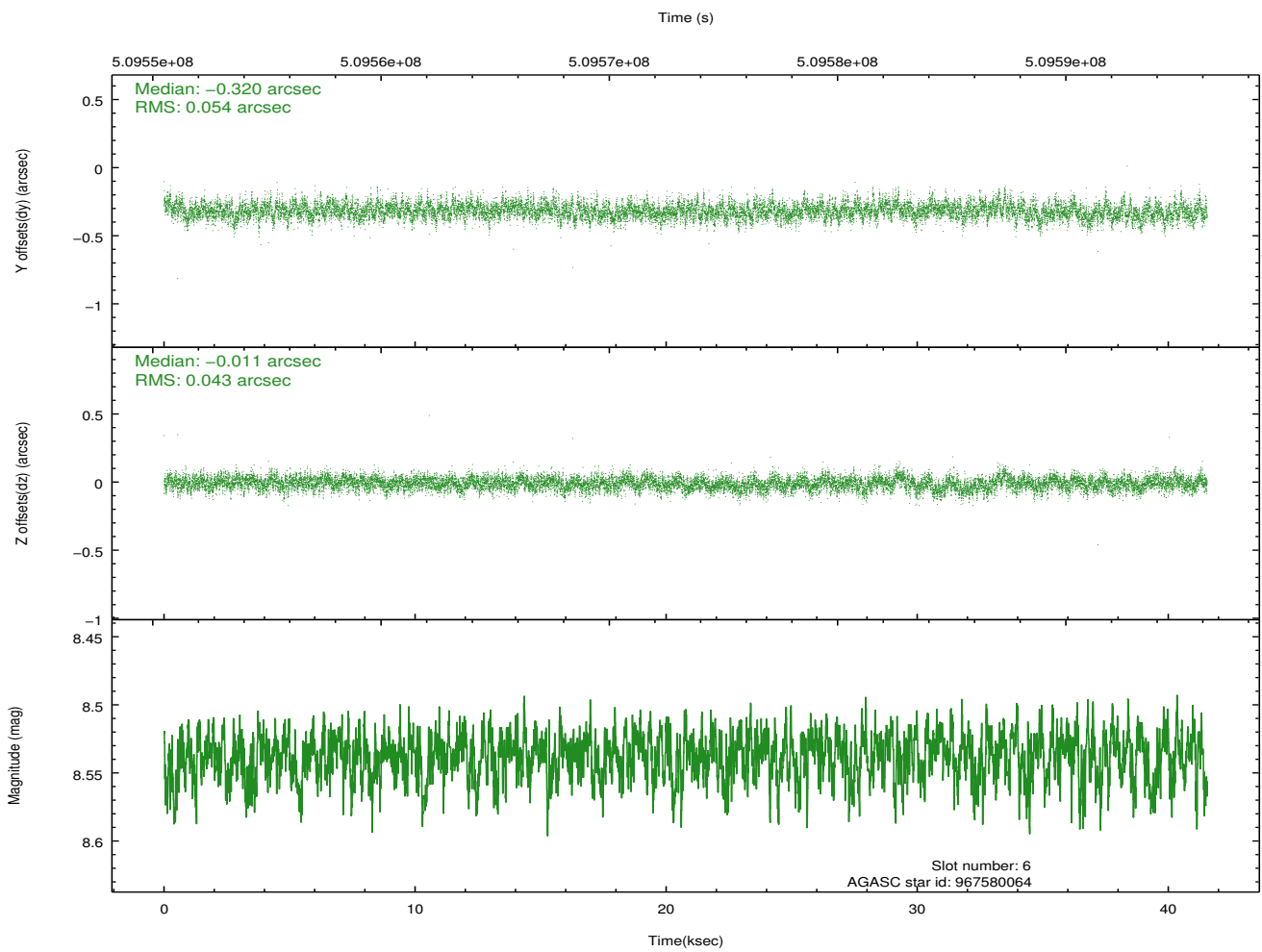
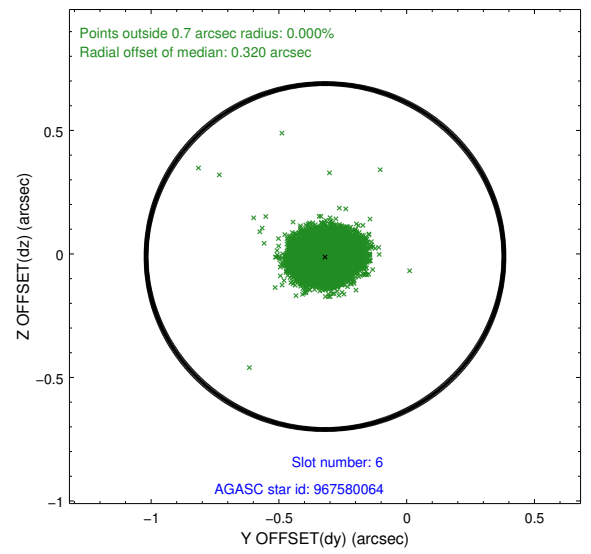
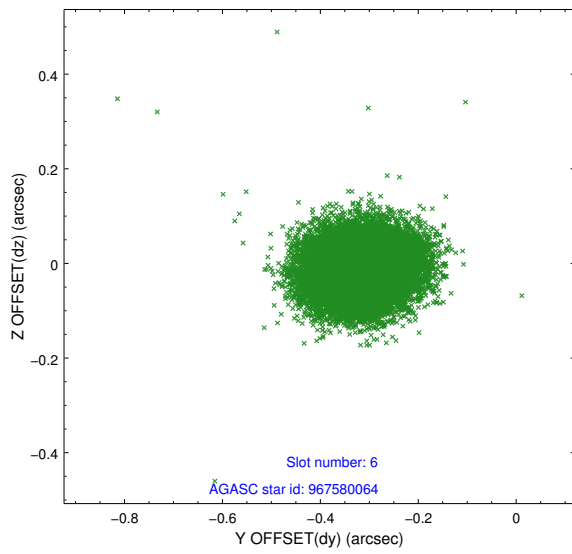
2.4.2 Slot 4



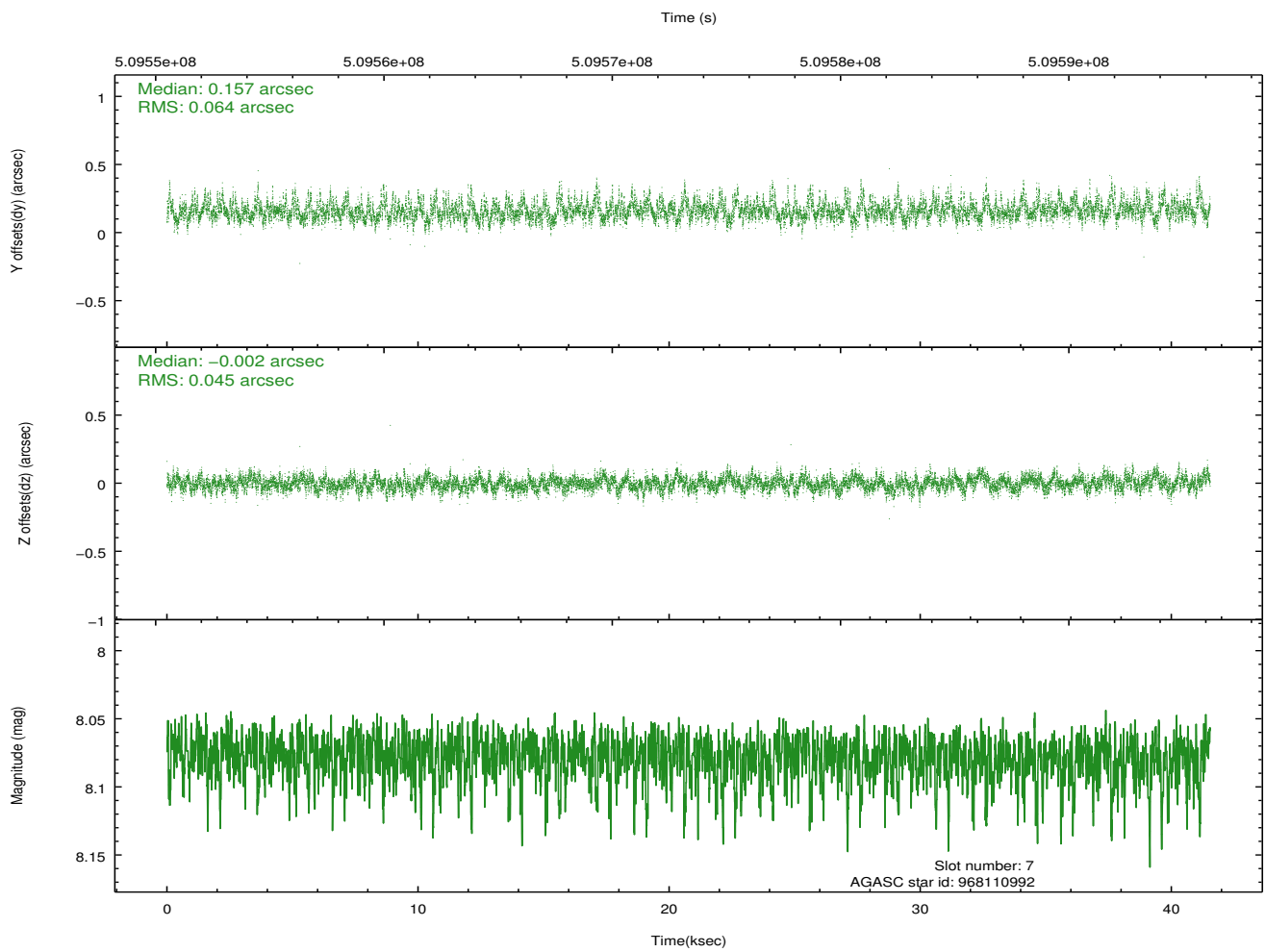
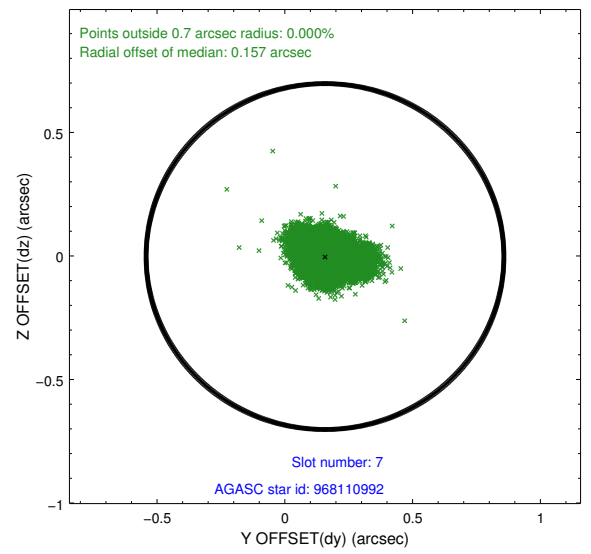
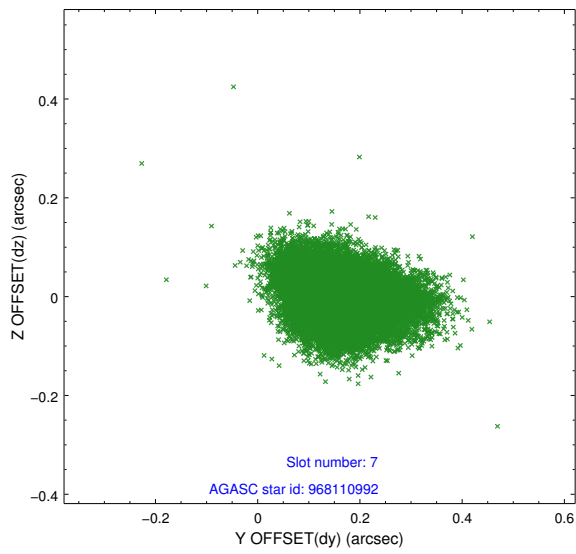
2.4.3 Slot 5



2.4.4 Slot 6

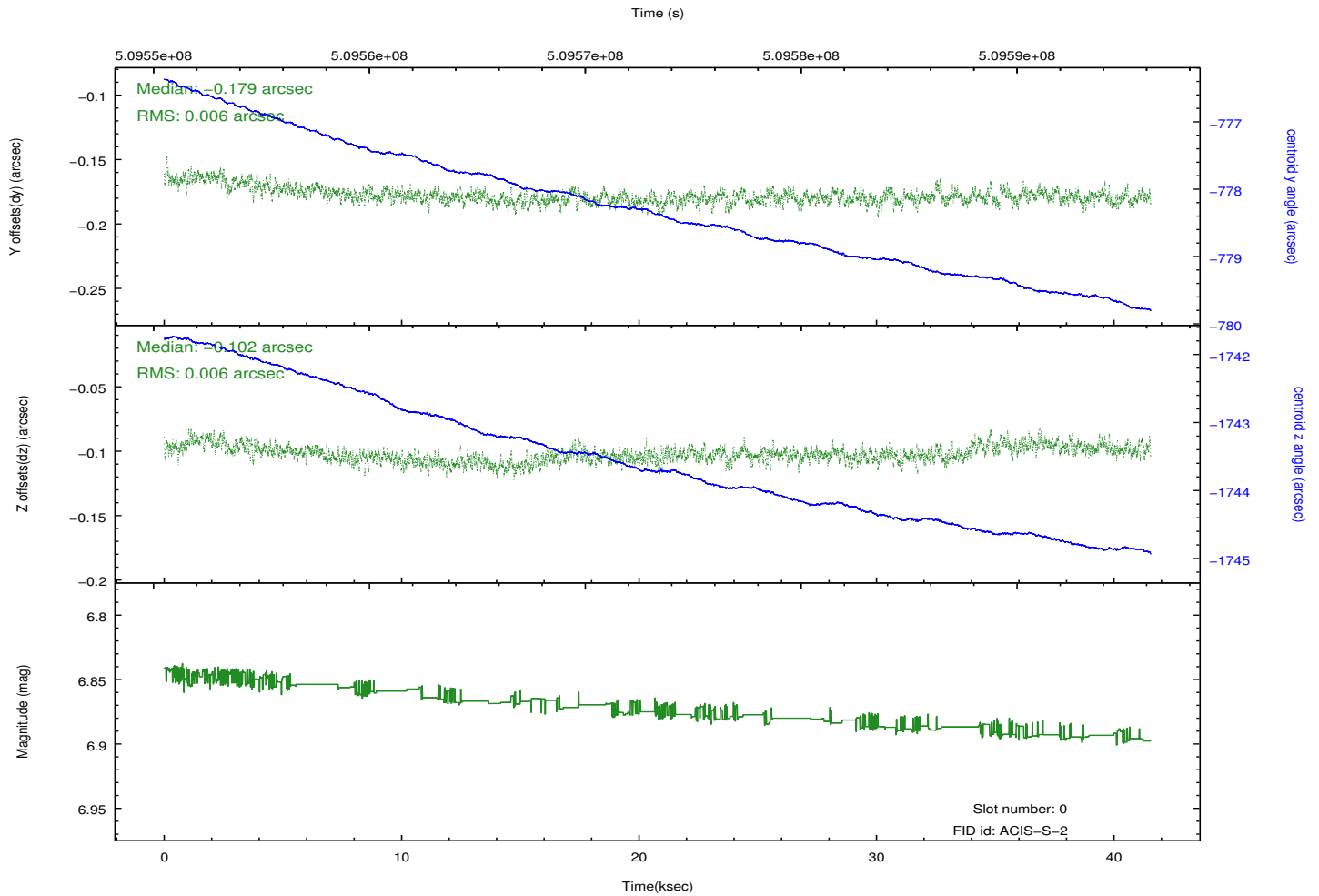
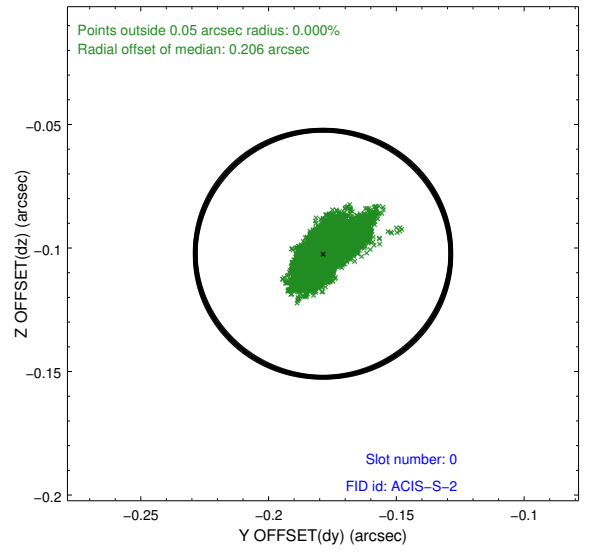
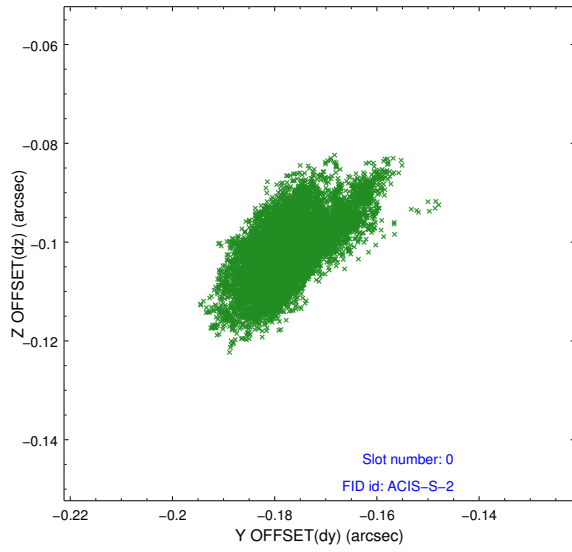


2.4.5 Slot 7

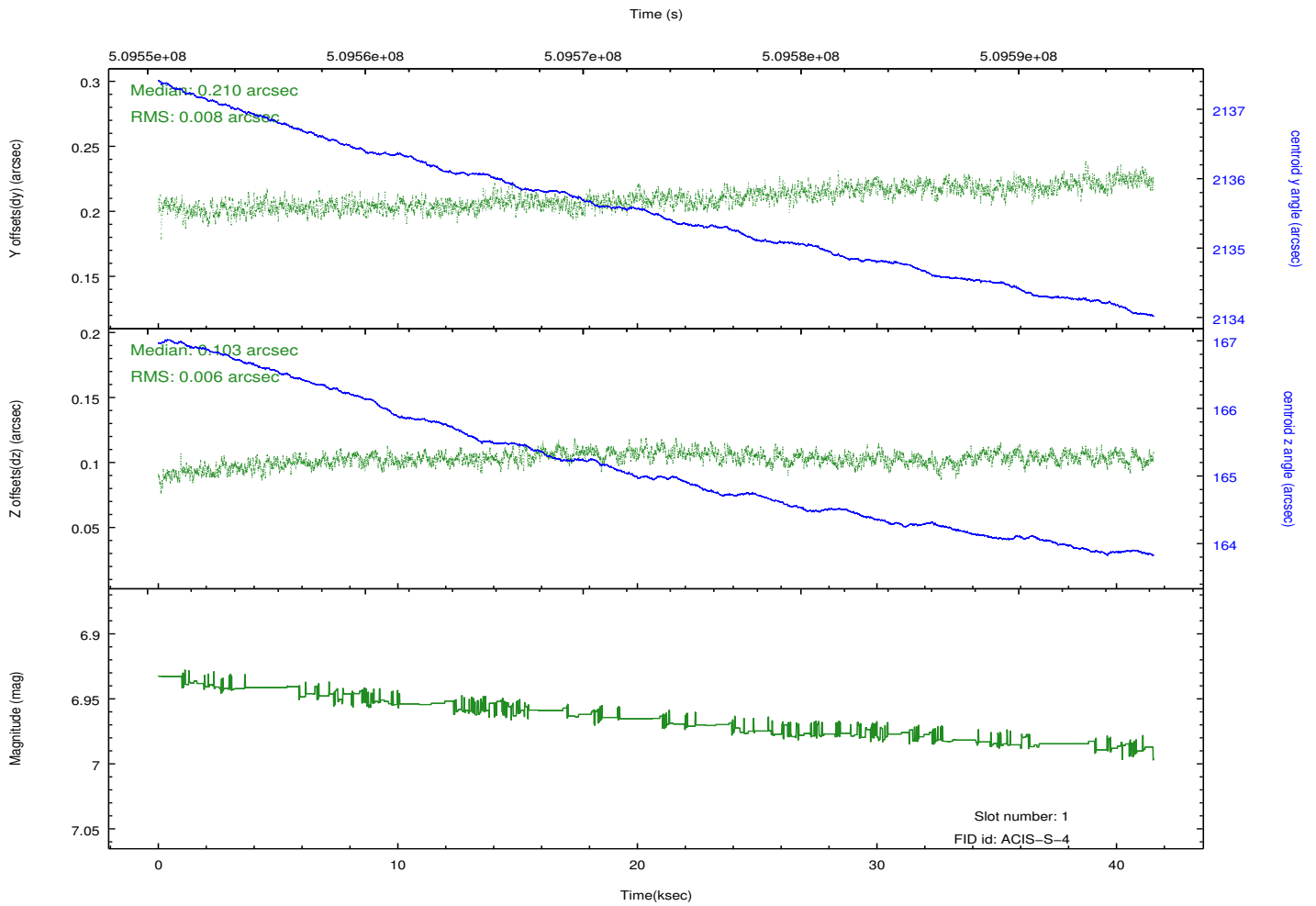
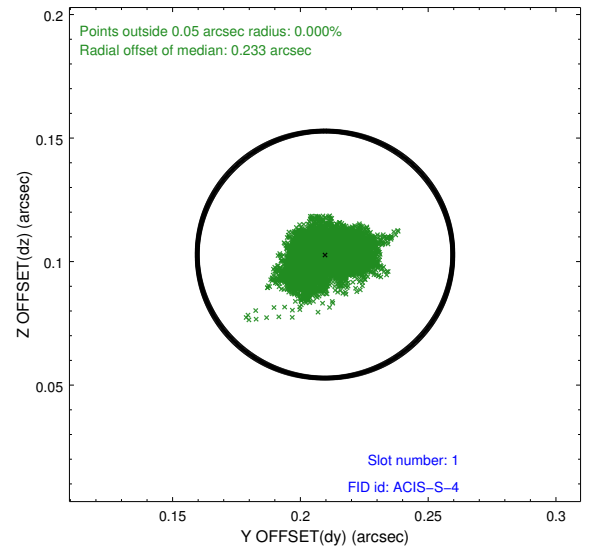
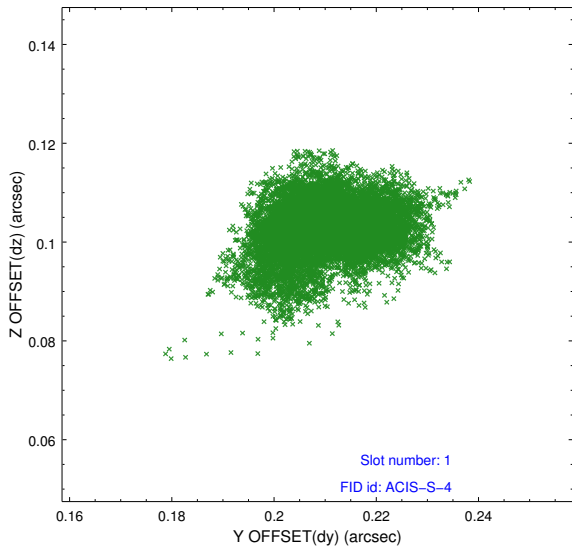


2.5 FID Slots

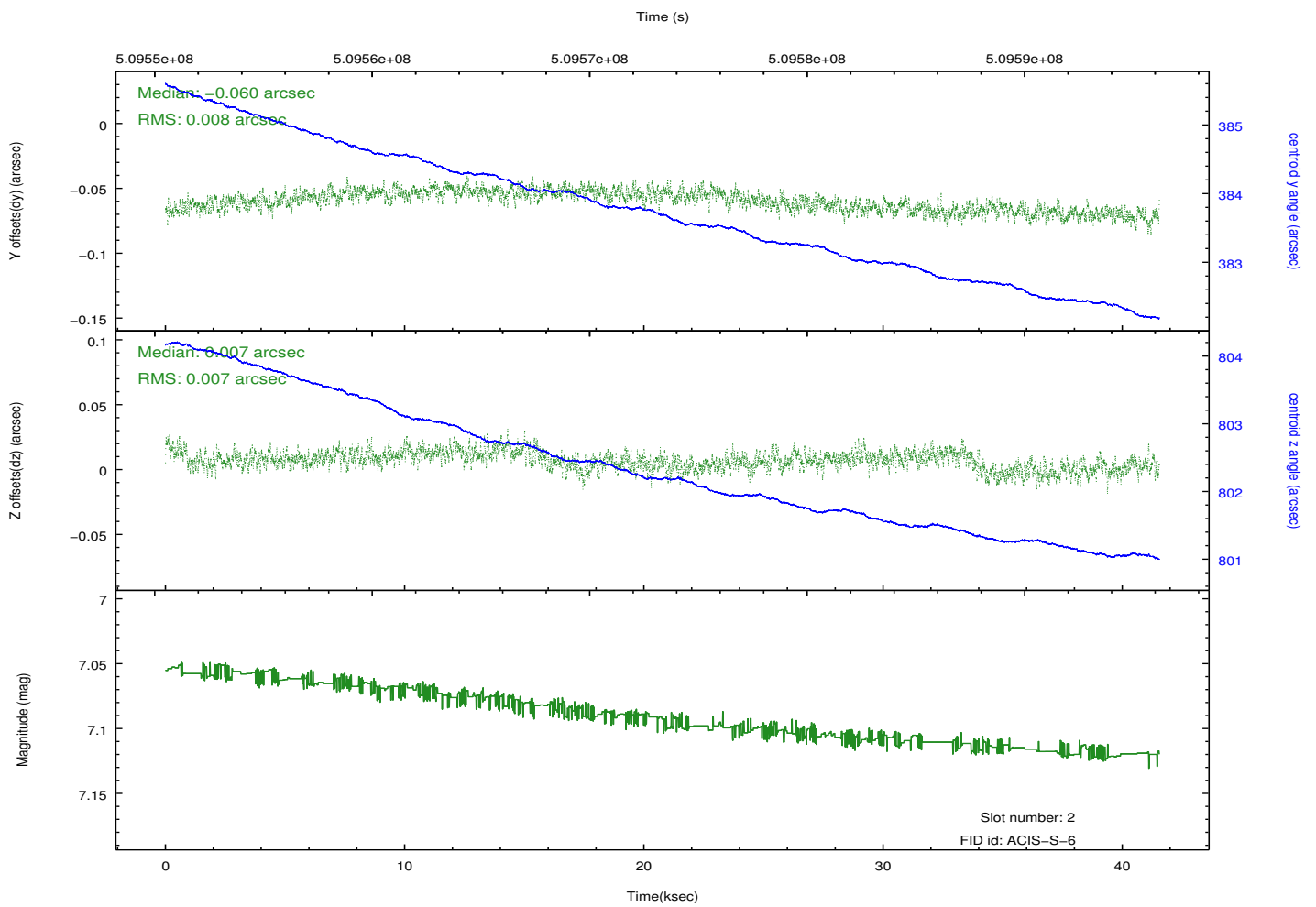
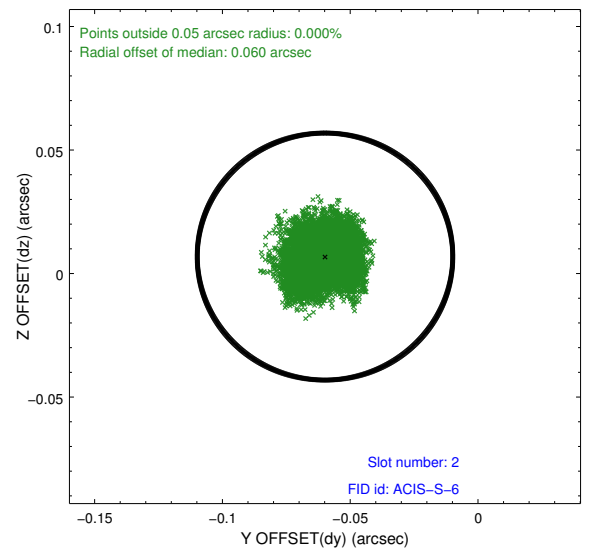
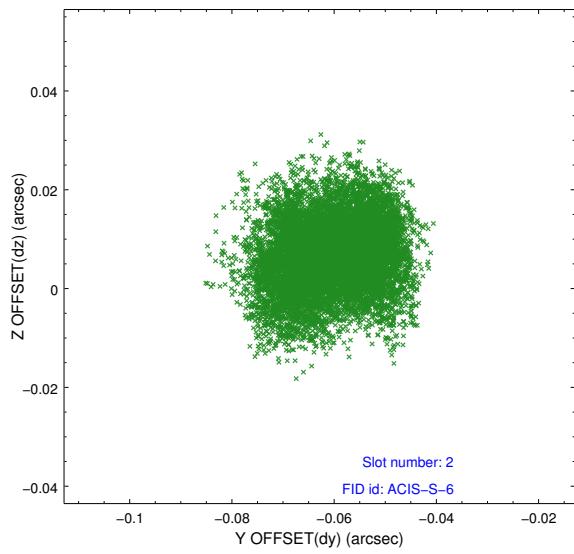
2.5.1 Slot 0



2.5.2 Slot 1

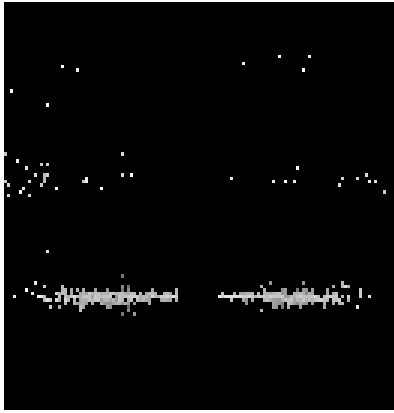


2.5.3 Slot 2

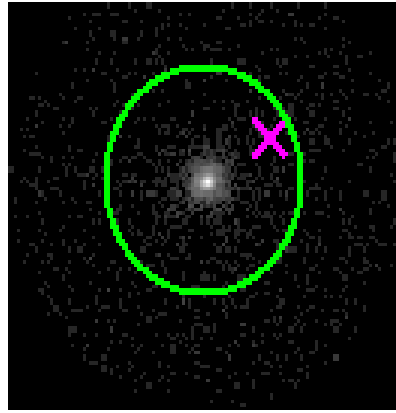


3 Gratings

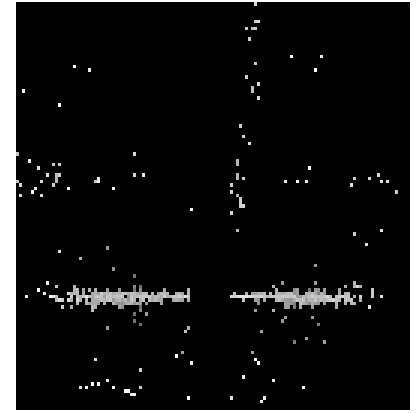
3.1 HEG Arm



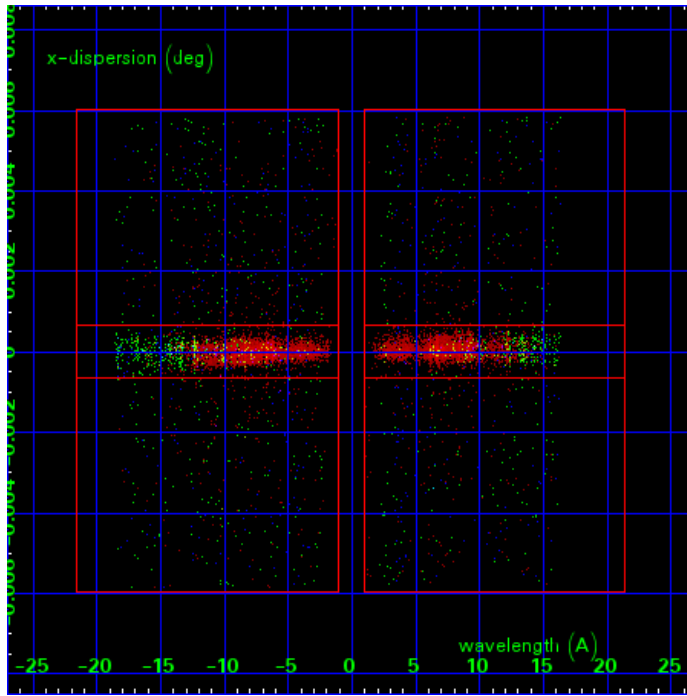
HEG Order Sort 123



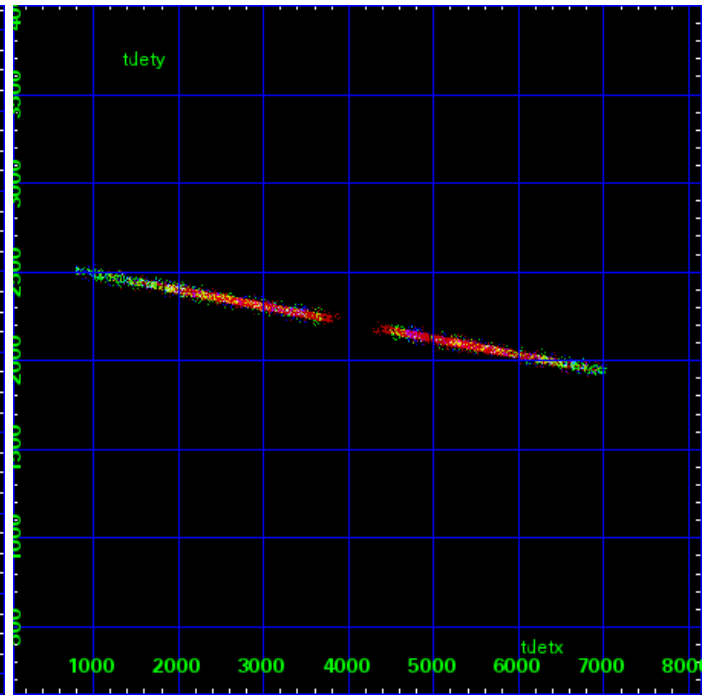
HEG Zero Order



HEG Order Sort ALL

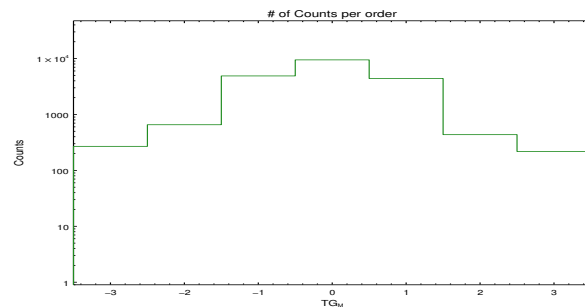


Spot Image HEG

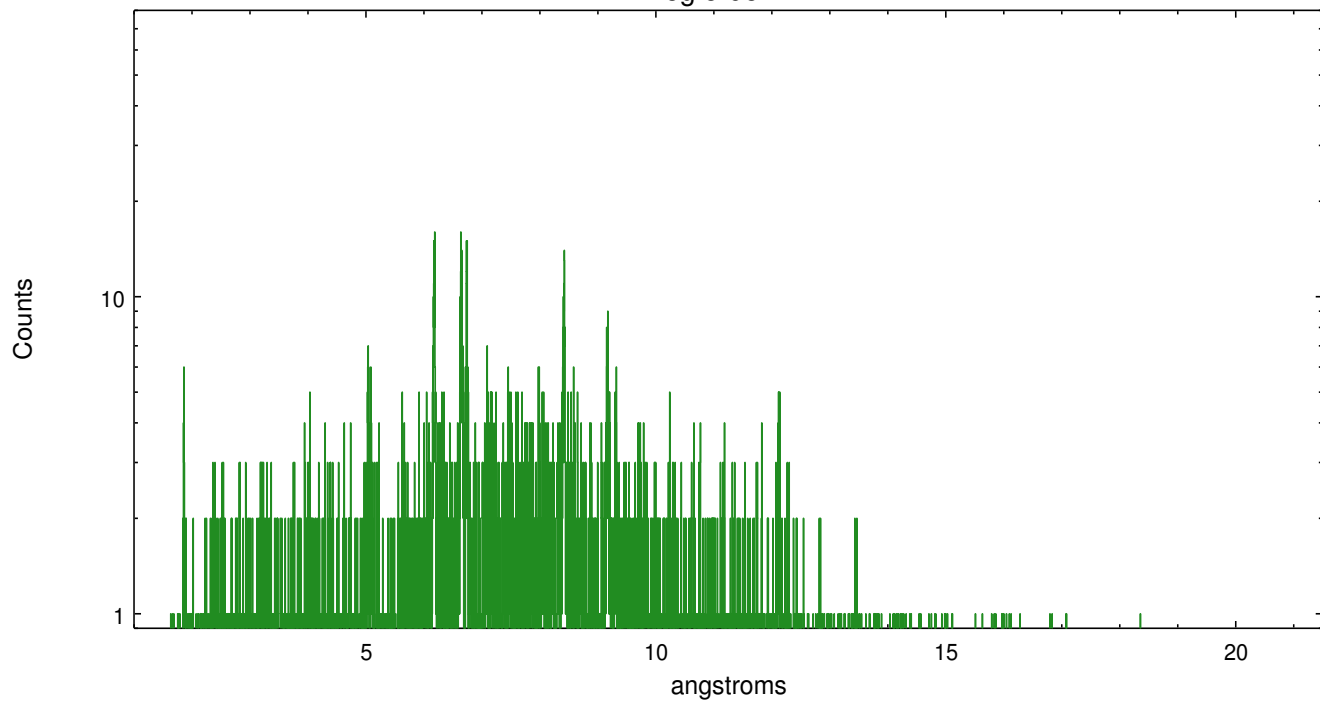


Full Detector HEG

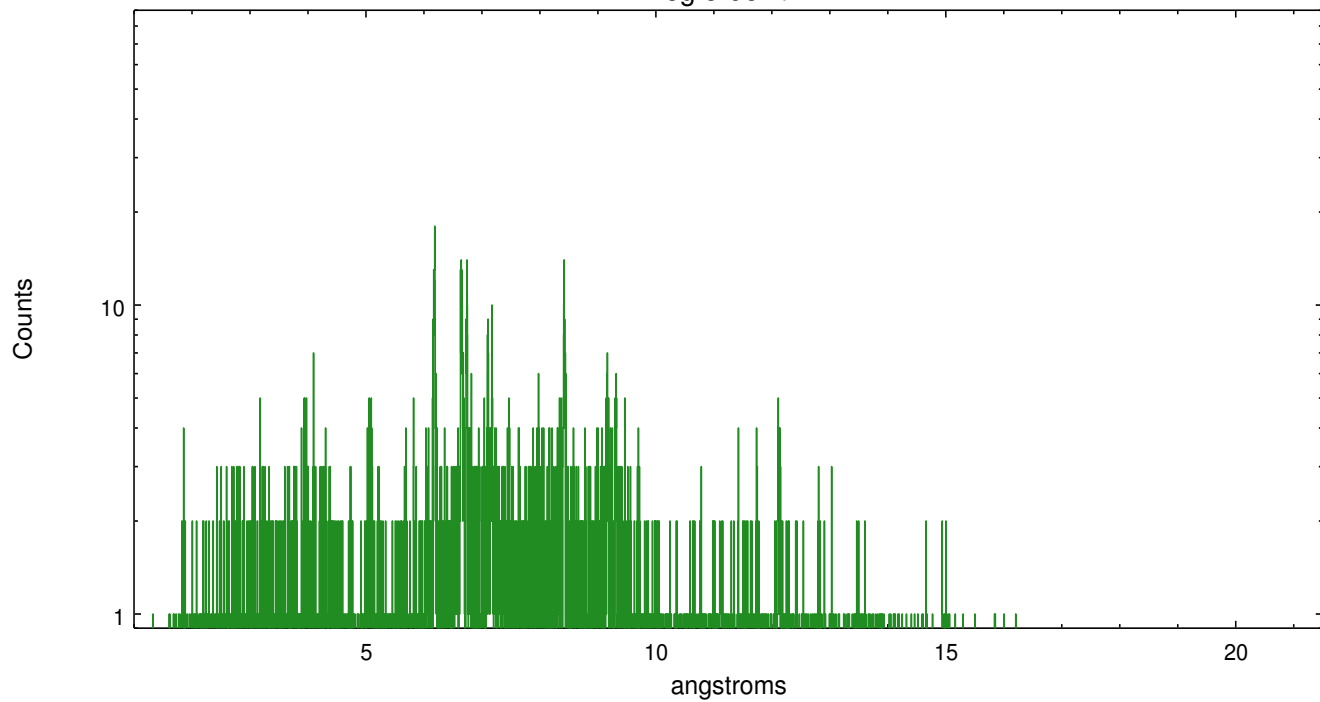
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	269	656	4894	9477	4400	436	218



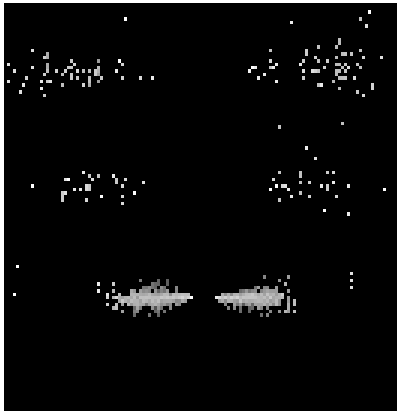
heg order -1



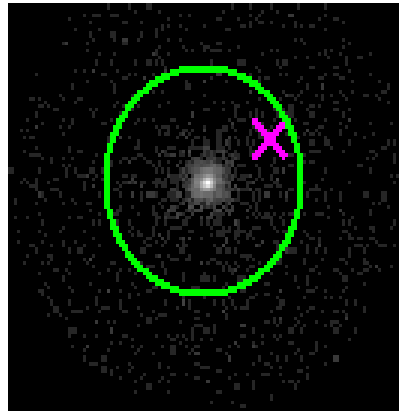
heg order +1



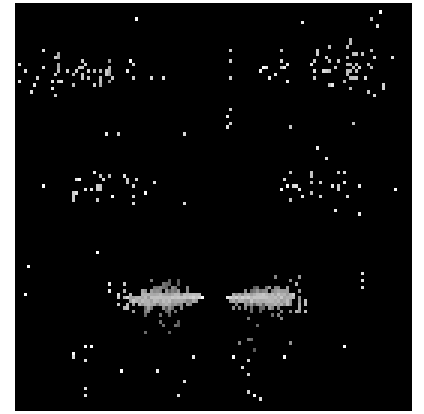
3.2 MEG Arm



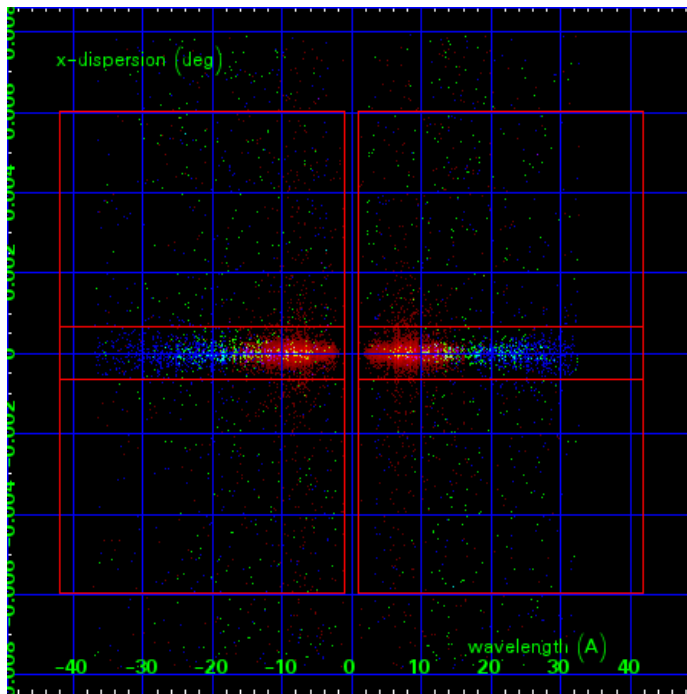
MEG Order Sort 123



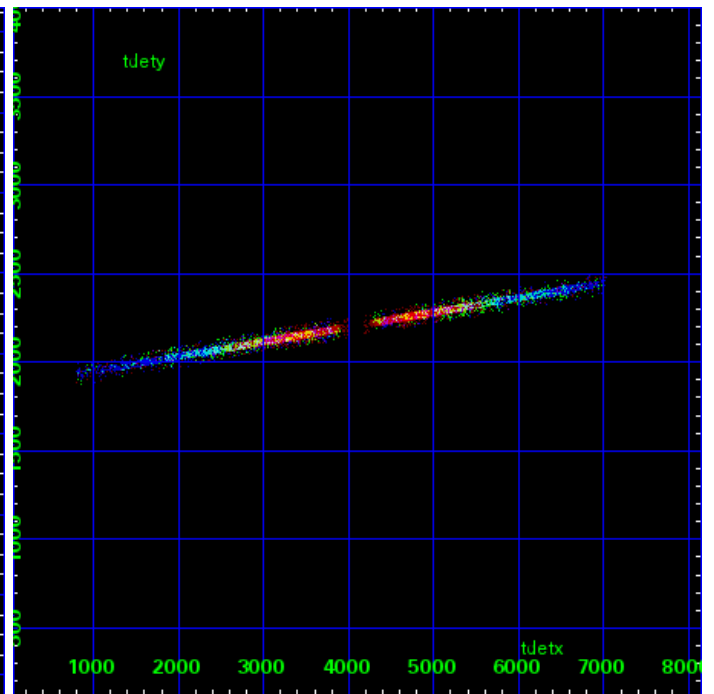
MEG Zero Order



MEG Order Sort ALL

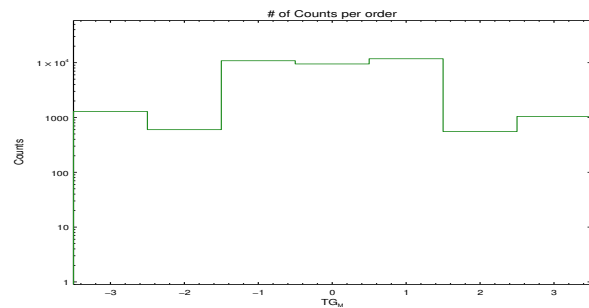


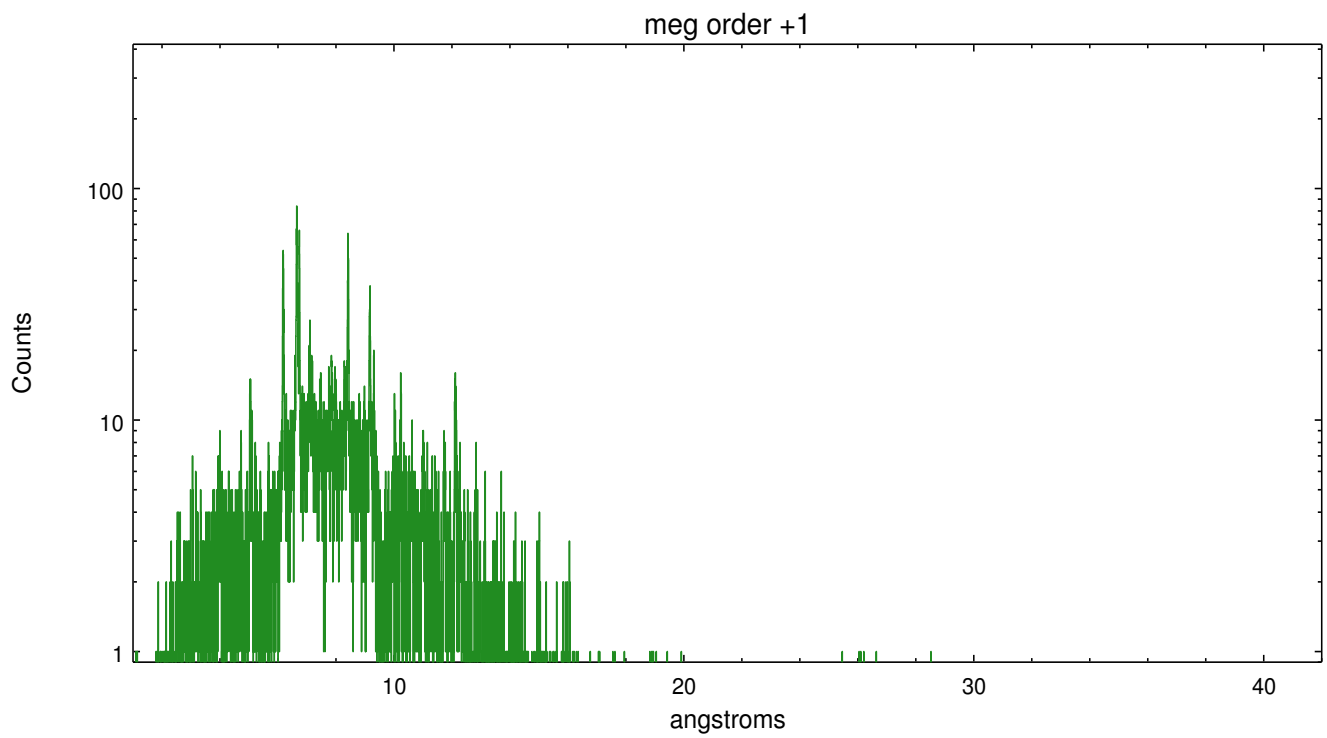
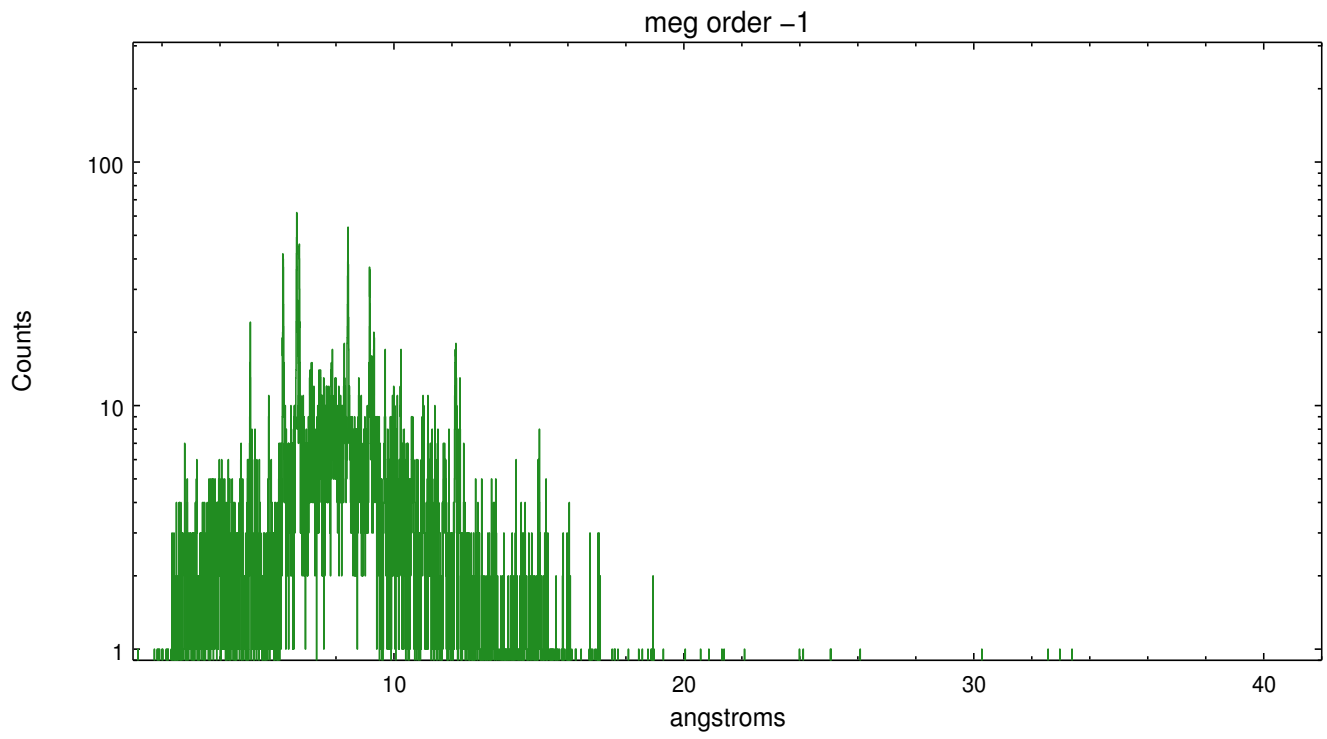
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1284	600	10850	9477	11793	554	1046





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.10.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.963630094171

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.

====

Zeroth order piled up. The zeroth order sky position was determined using a software tool developed by CXC called findzero, which is available in CIAO as part of the tgdetect2 tool. The tool calculates the point of intersection of the readout streak and the meg dispersed spectral arm, rather than using a centroid position of the source. The findzero position is more accurate than a centroid position for this case. ===== The bias map for CCD_ID = 4 suffers from anomalously high bias values in an 'exacto-knife'-shaped area of the bias file. Pixels in the event data that have been bias-corrected by one of the affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD_ID = 4 will be recreated to remove this anomaly and the data will be reprocessed. A spatial region of the original bias map for CCD = 4 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 4 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords:

(268.72455, -32.82682), (268.72480, -32.82982), (268.73323, -32.82932), (268.72698, -32.82668)