

V&V Reference Report

L2 ASCDS Version : 8.4.3

Observation 12472 - L2 Version 2
Chandra X-Ray Center

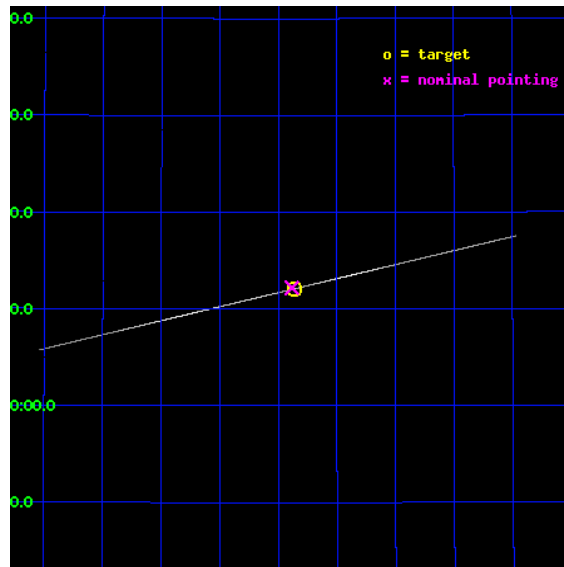
L2 Processing Date : Feb 1 2012

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1 Front

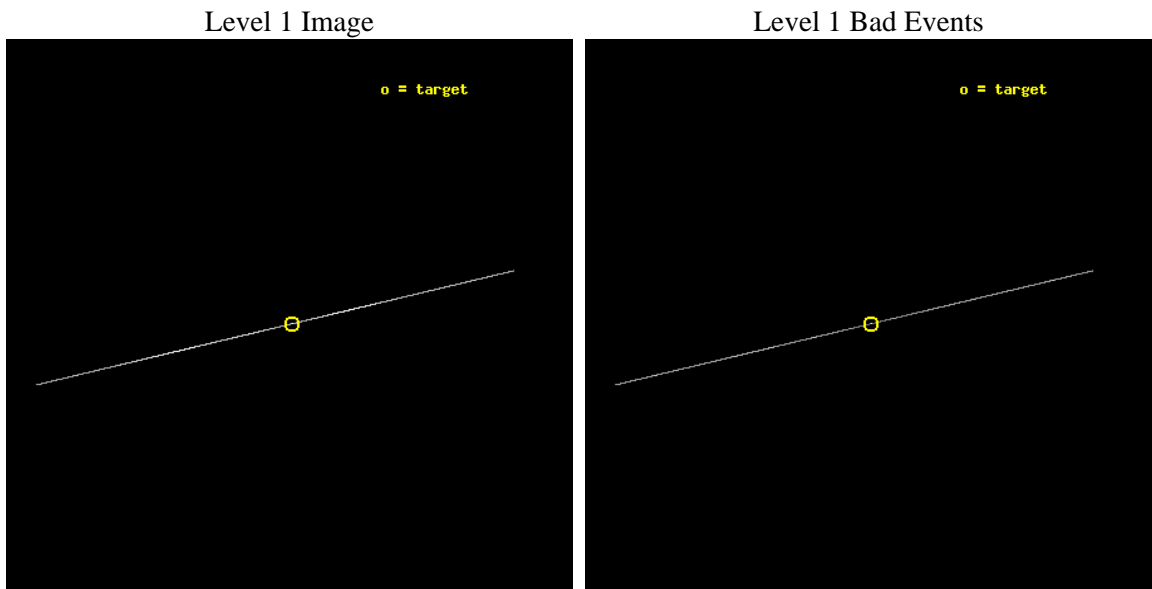
seq_num	401213	Sequence number
obs_id	12472	Observation id
title	Filling the gap in understanding the wind structure of HDE 226868 / Cyg X-1	Proposal title
observer	Manfred Hanke	Principal investigator
object	Cyg X-1	Source name
ra_targ	299.590417	Observer's specified target RA [deg]
dec_targ	35.201611	Observer's specified target Dec [deg]
ra_nom	299.59606692199	Nominal RA [deg]
dec_nom	35.203132201739	Nominal Dec [deg]
roll_nom	346.66185758502	Nominal Roll [deg]
revision	2	Processing version of data
ontime	3319.1482067108	Sum of GTIs [s]
livetime	3306.1827840284	Livetime [s]
ontime4	7263.336720109	Sum of GTIs [s]
ontime5	11449.685310006	Sum of GTIs [s]
ontime6	5223.3373606801	Sum of GTIs [s]
ontime7	3319.1482067108	Sum of GTIs [s]
ontime8	5525.4517768025	Sum of GTIs [s]
ontime9	7396.1275841594	Sum of GTIs [s]
l2events	3616314	Number of level 2 events



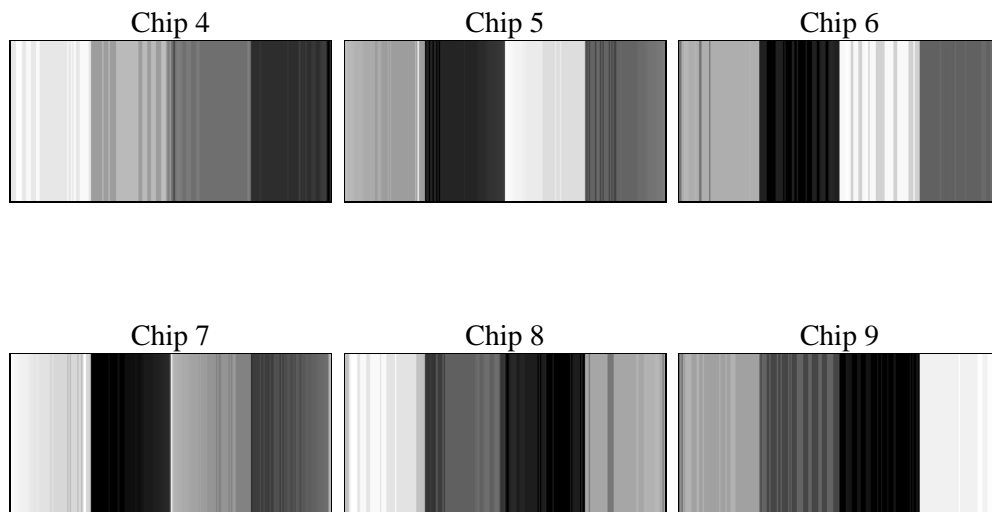
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	24000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	3319.1482067108	Sum of GTIs [s]
caldbver	4.4.7	 	ontime4	7263.336720109	Sum of GTIs [s]
date	2012-02-01T08:56:26	Date and time of file creation	ontime5	11449.685310006	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	5223.3373606801	Sum of GTIs [s]
			ontime7	3319.1482067108	Sum of GTIs [s]
			ontime8	5525.4517768025	Sum of GTIs [s]
			ontime9	7396.1275841594	Sum of GTIs [s]
			l1events	4354730	Number of level 1 events

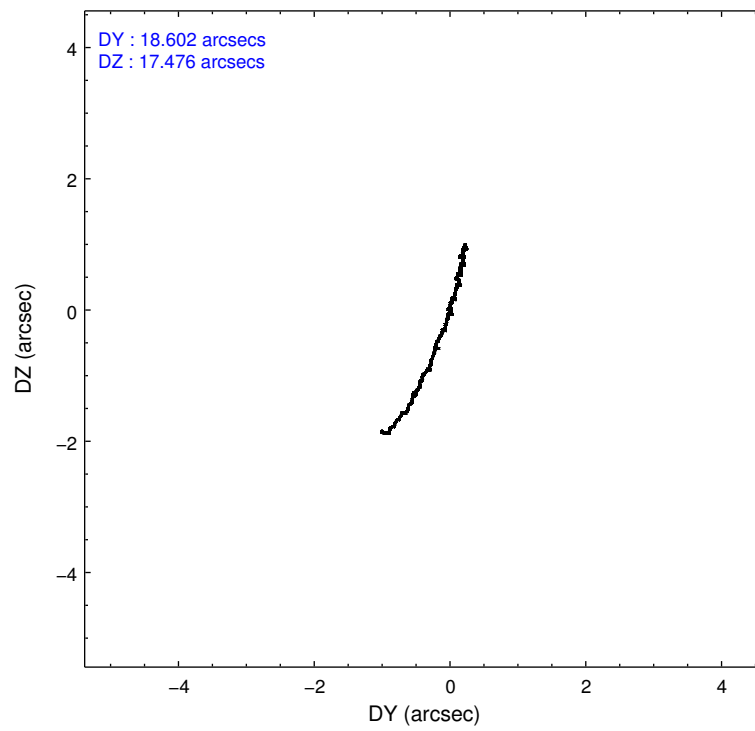
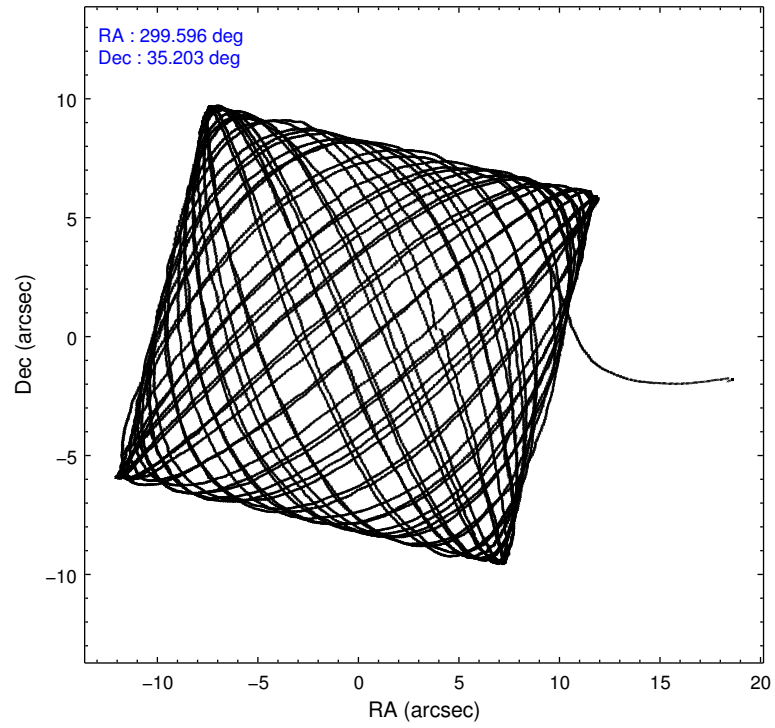
2.1.4 Events

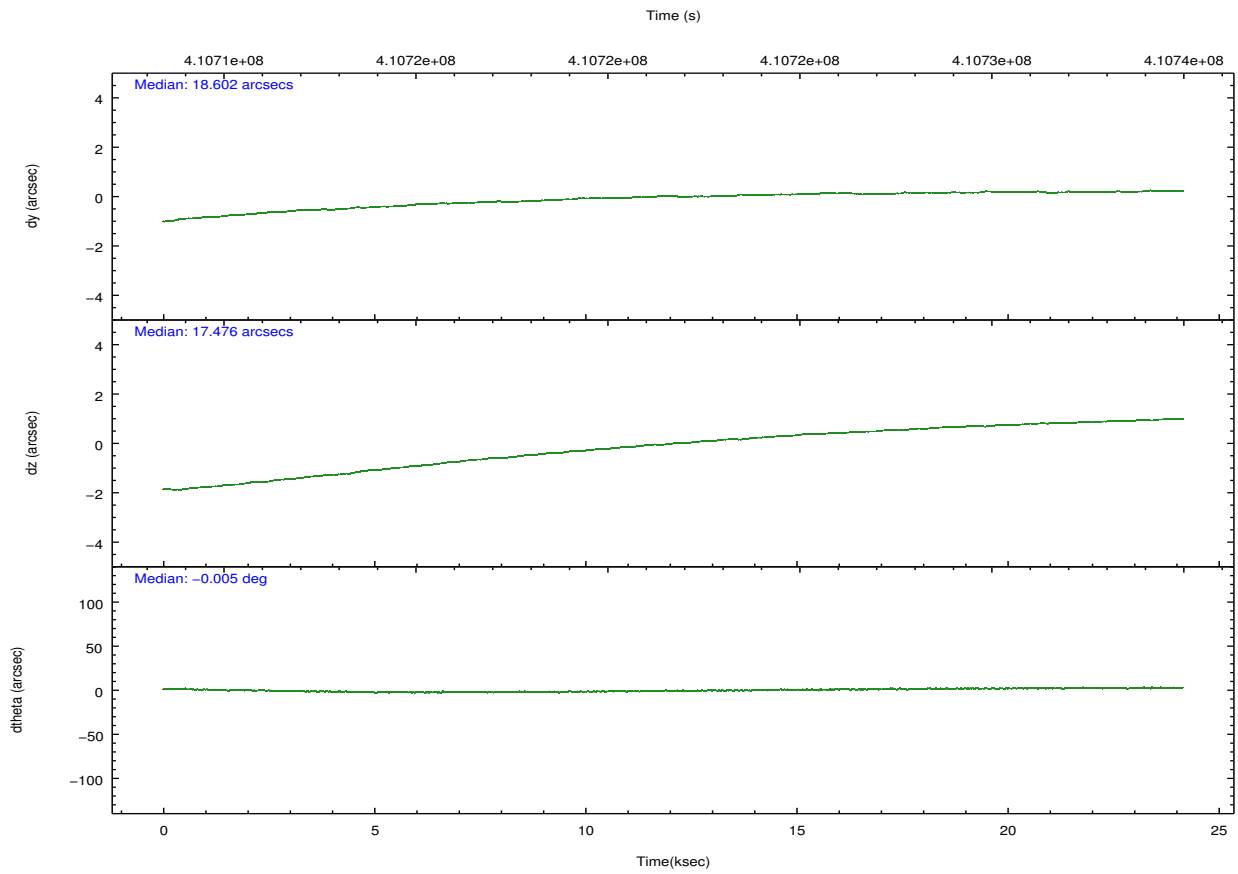
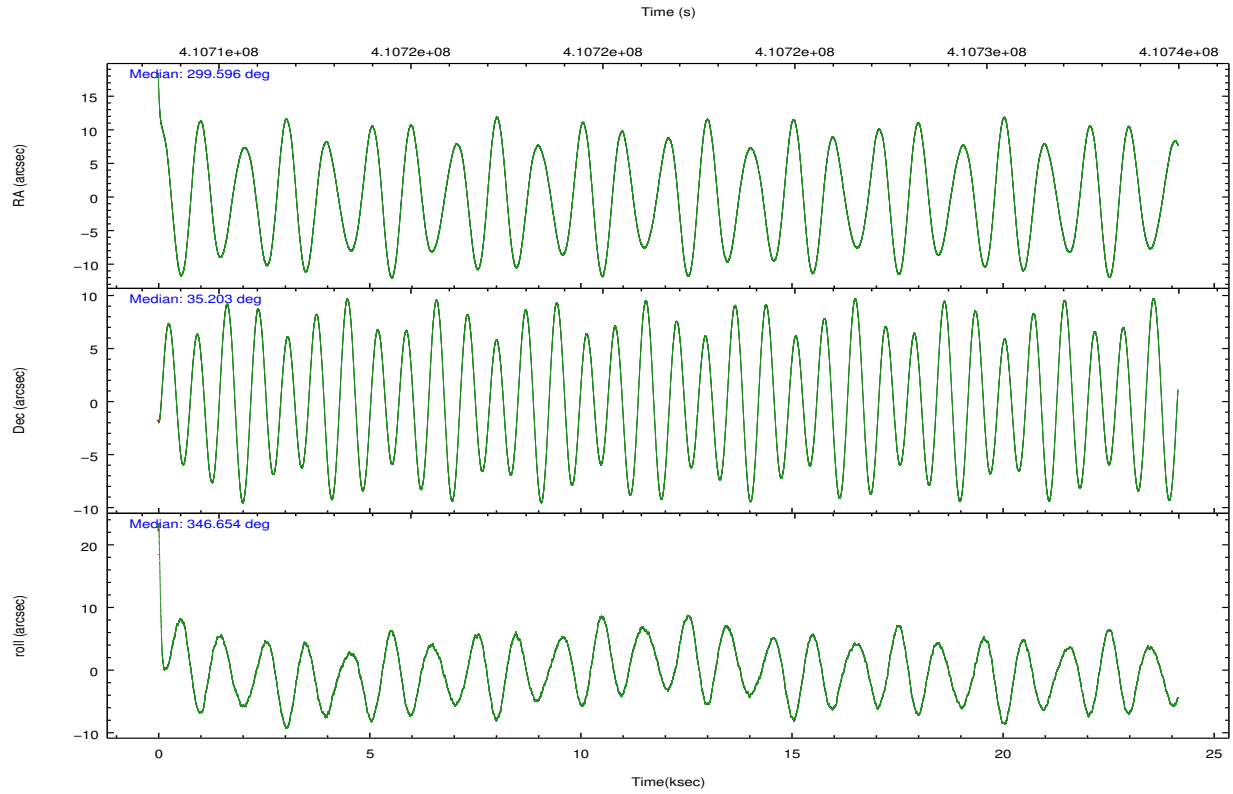
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	196040	1300458	722454	1143894	703736	288148	grade 0 events	4509	312487	395999	263018	487007	45190
rejected events	80110	124264	67960	55869	90098	82351		2%	24%	54%	22%	69%	15%
rejected %	40%	9%	9%	4%	12%	28%	grade 1 events	37	721	2055	2746	2075	87
								0%	0%	0%	0%	0%	0%
							grade 2 events	100542	475819	192300	301051	87979	141906
								51%	36%	26%	26%	12%	49%
							grade 3 events	1374	82787	19548	122522	13858	3540
								0%	6%	2%	10%	1%	1%
							grade 4 events	1416	82140	19555	122792	14167	3631
								0%	6%	2%	10%	2%	1%
							grade 5 events	1662	18455	4166	13030	3761	2488
								0%	1%	0%	1%	0%	0%
							grade 6 events	8144	223802	27486	279246	11003	11687
								4%	17%	3%	24%	1%	4%
							grade 7 events	78356	104247	61345	39489	83886	79619
								39%	8%	8%	3%	11%	27%

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	CC33_FAINT	CC33_FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	299.564134	299.596066921994	Subarray requested	NONE	NONE
[deg] Pointing Dec	35.194938	35.2031322017393	Alternating exposures requested	N	N
[deg] Pointing Roll	346.523631	346.6618575850152	[s] Primary exposure time	0.000000	0
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-178.832523	-178.8382187693597			
[mm] SIM translation stage offset	-11.3	-11.29430381364813			
Phase constraints	Y	Y			
[d] Phase period	5.599829	5.599829			
[d] Phase epoch (MJD)	53409.897700	53409.897700			
Phase start	0.250000	0.250000			
Phase end	0.400000	0.400000			
Phase start error	0.050000	0.050000			
Phase end error	0.100000	0.100000			
[s] Observation start time (MET)	410709774.184000	410708830.12246			
Observation start date	2011-01-06T14:01:48	2011-01-06T13:47:10			
[s] Observation end time (MET)	410733774.184000	410734643.72379			
Observation end date	2011-01-06T20:41:48	2011-01-06T20:57:23			
Read mode	CONTINUOUS	CONTINUOUS			

2.3 Aspect



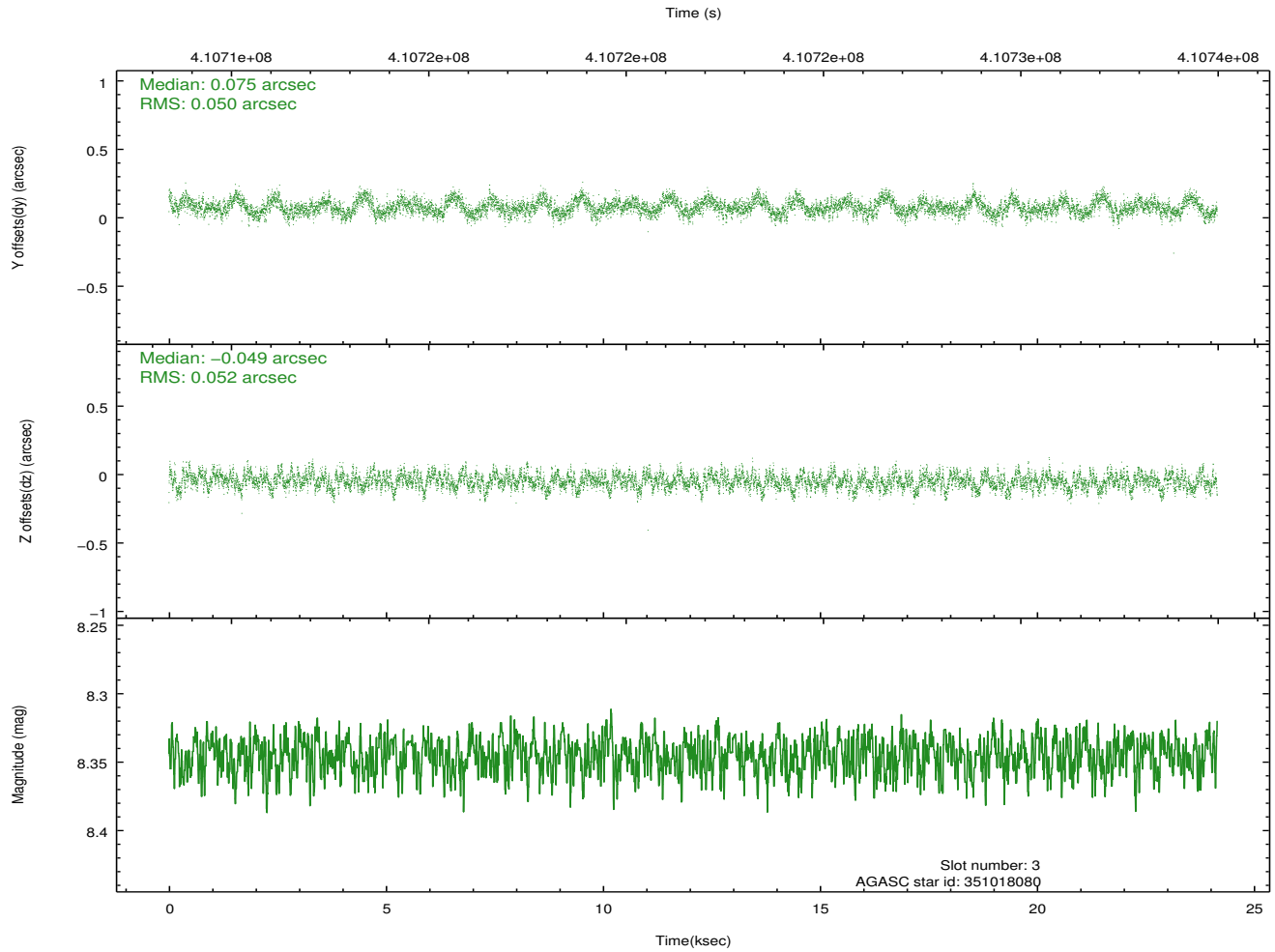
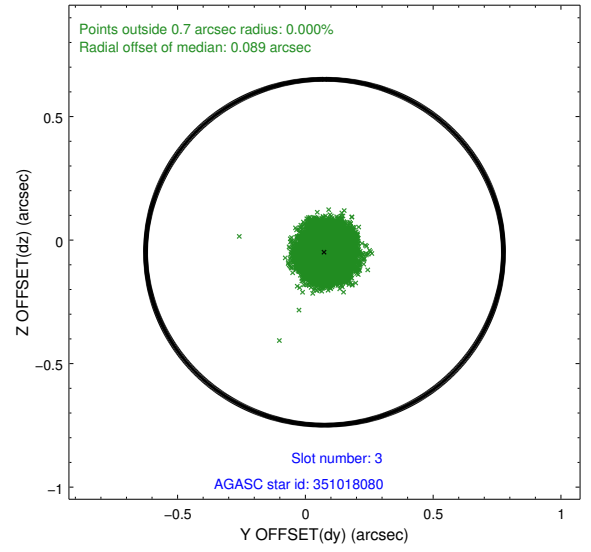
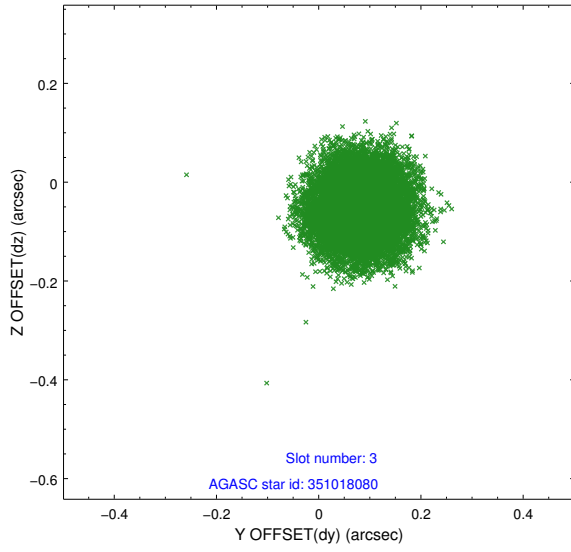


Slot Statistics

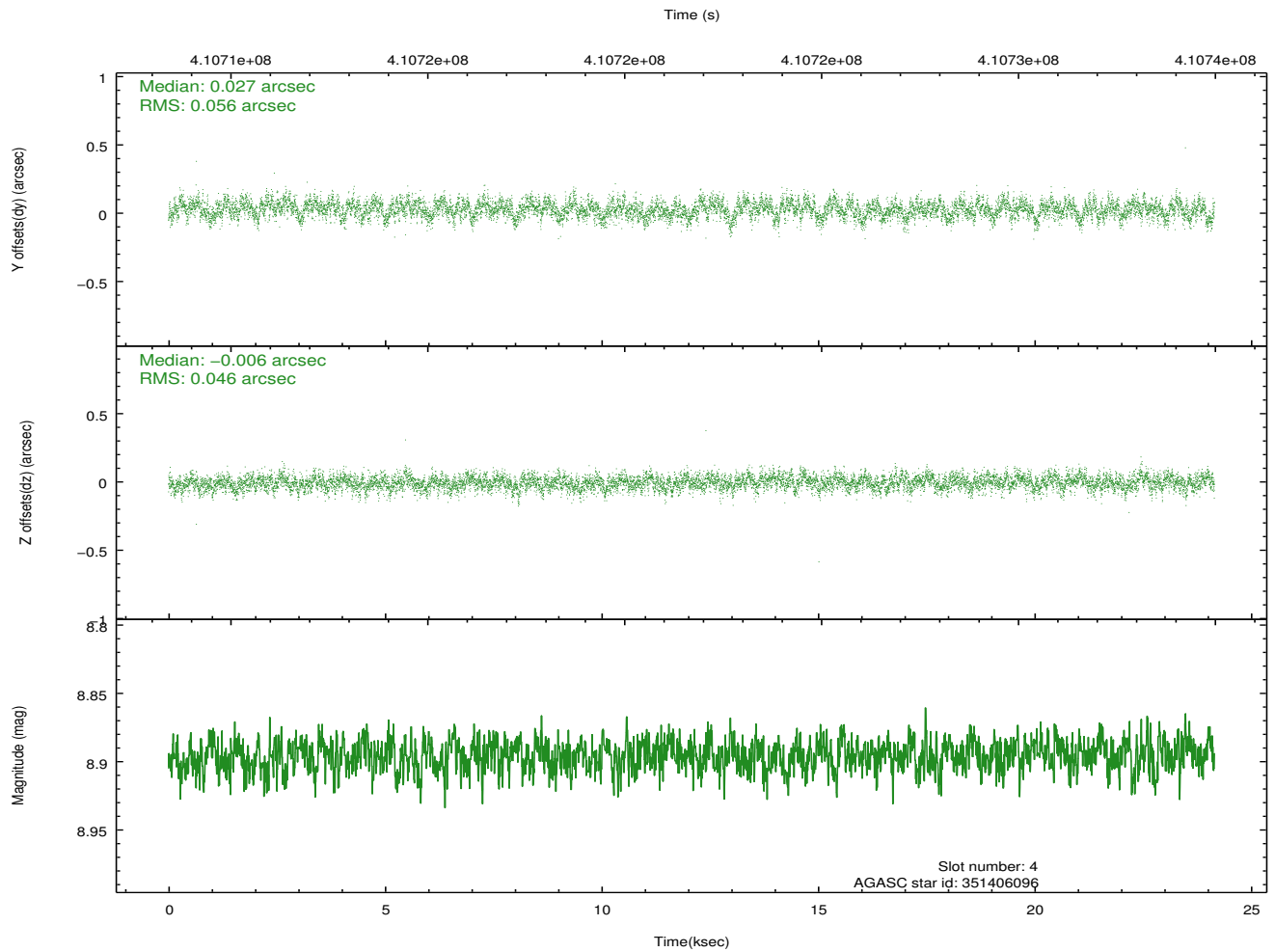
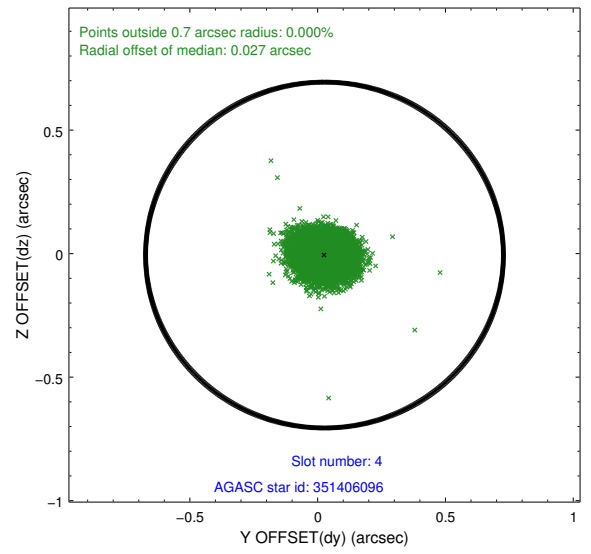
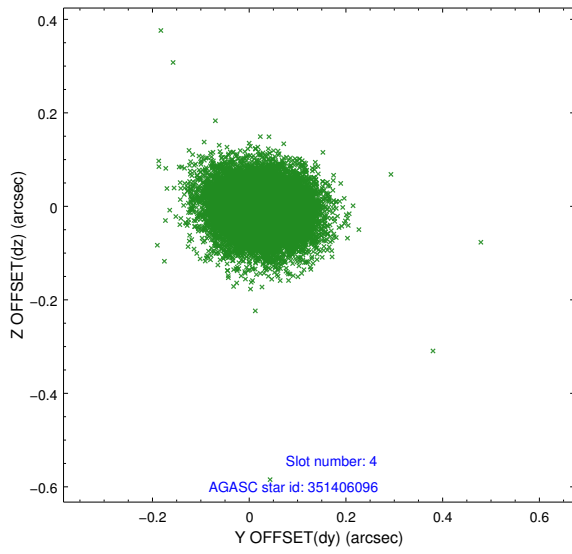
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.88	5892	-0.131	-0.415	0.040	0.072	0.000000	0.000000	-770.81	-1971.66
1	FID	ACIS-S-4	6.96	5889	0.223	0.175	0.020	0.037	0.000000	0.000000	2142.73	-62.76
2	FID	ACIS-S-5	7.03	5891	-0.120	0.247	0.036	0.050	0.000000	0.000000	-1823.50	-68.92
3	GUIDE	351018080	8.34	11778	0.075	-0.049	0.078	0.122	299.327312	34.581247	-167.23	-2311.16
4	GUIDE	351406096	8.90	11775	0.027	-0.006	0.077	0.123	299.076637	35.711249	-1819.68	1478.58
5	GUIDE	351550592	7.43	11781	-0.024	-0.044	0.074	0.115	300.511890	35.641112	2318.94	2221.74
6	GUIDE	351014072	8.33	11779	-0.025	0.067	0.072	0.114	299.502600	34.724591	218.26	-1688.57
7	GUIDE	351029968	8.35	11769	-0.054	0.035	0.065	0.103	299.542339	34.721380	335.11	-1672.81

2.4 Star Slots

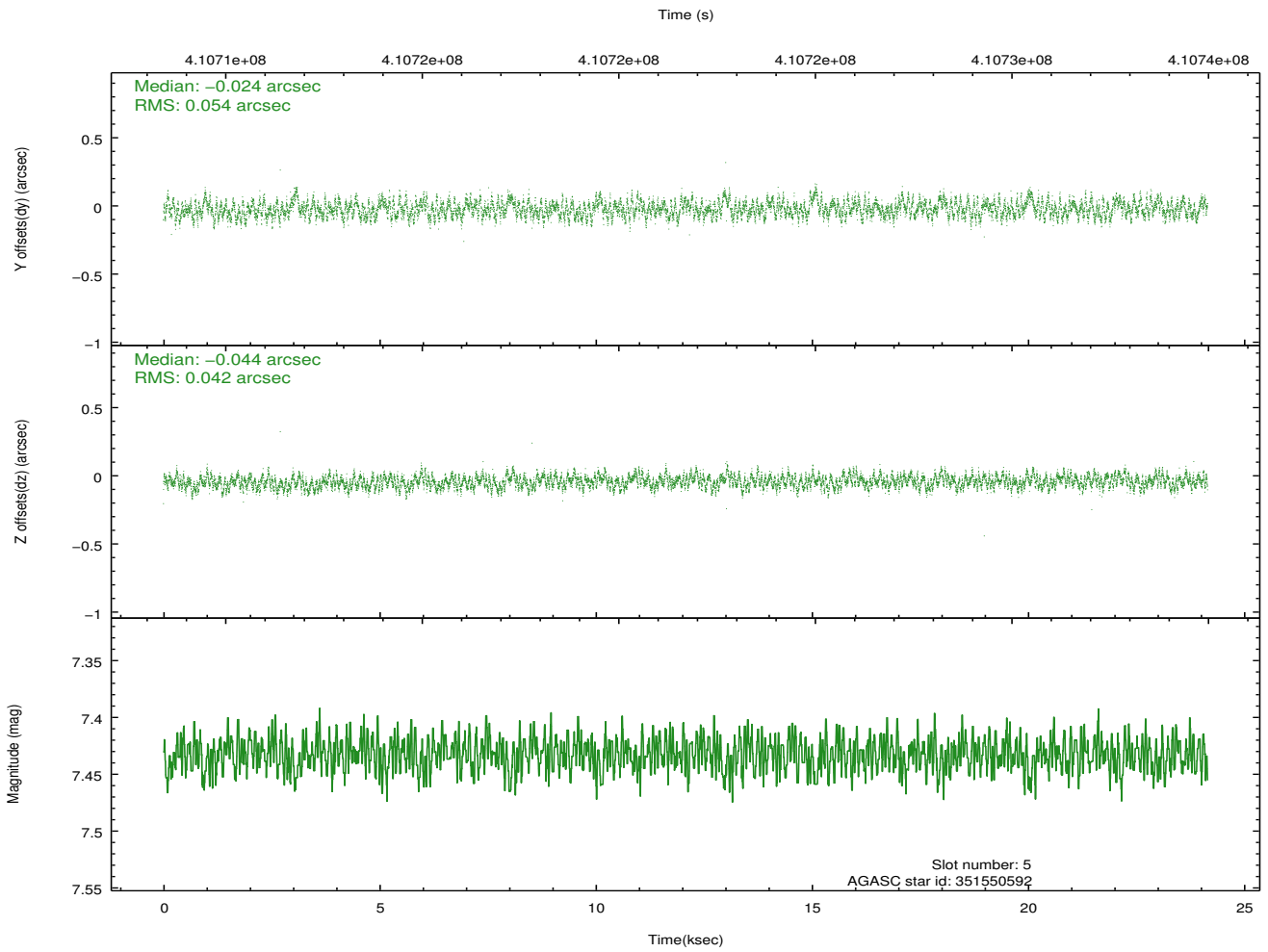
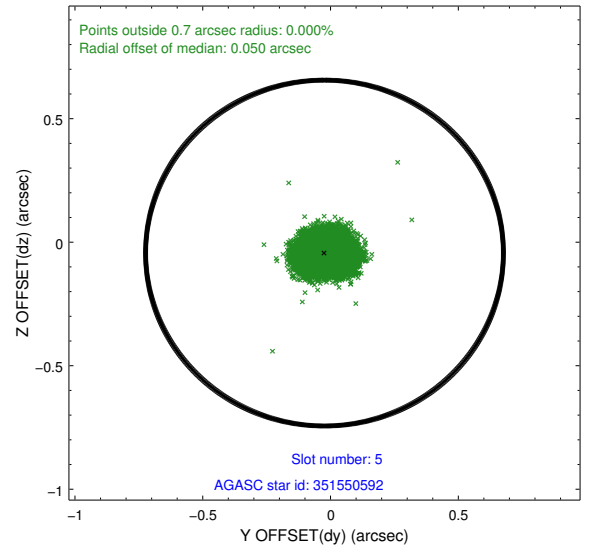
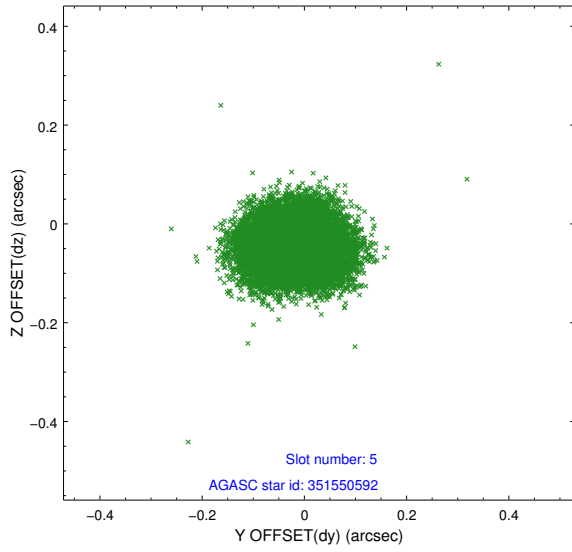
2.4.1 Slot 3



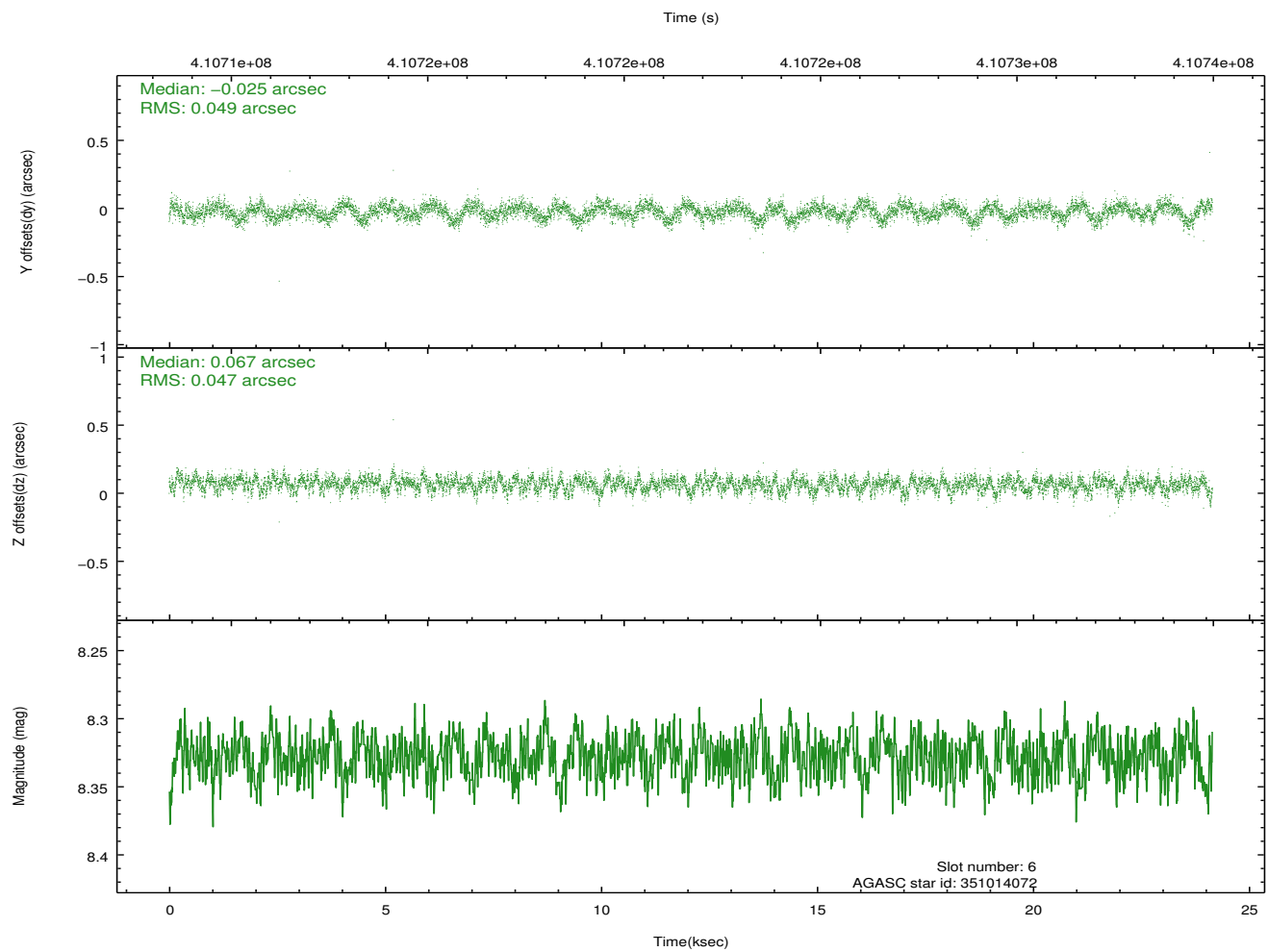
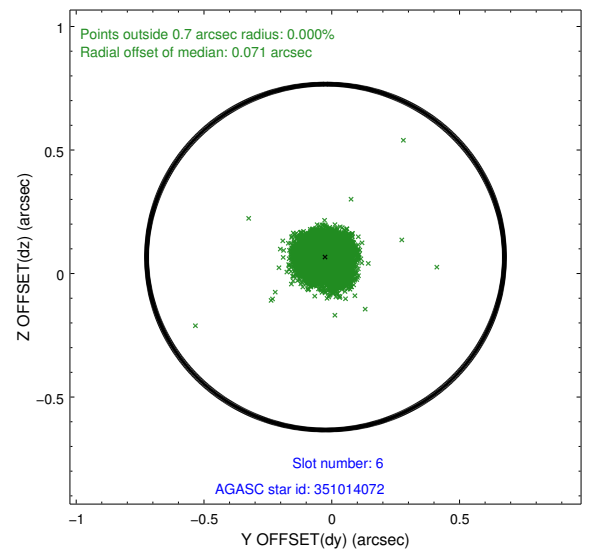
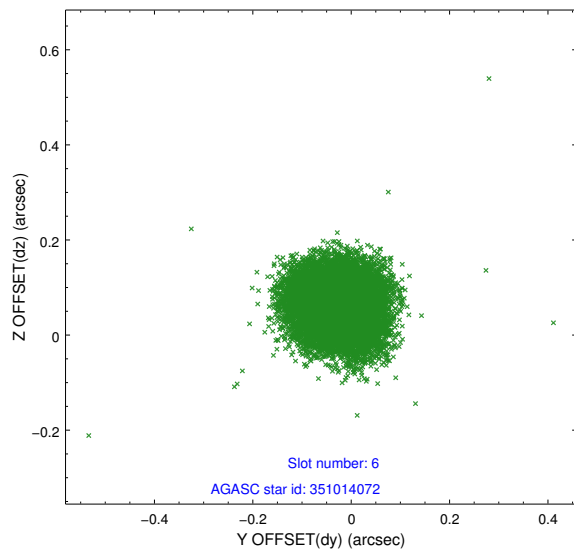
2.4.2 Slot 4



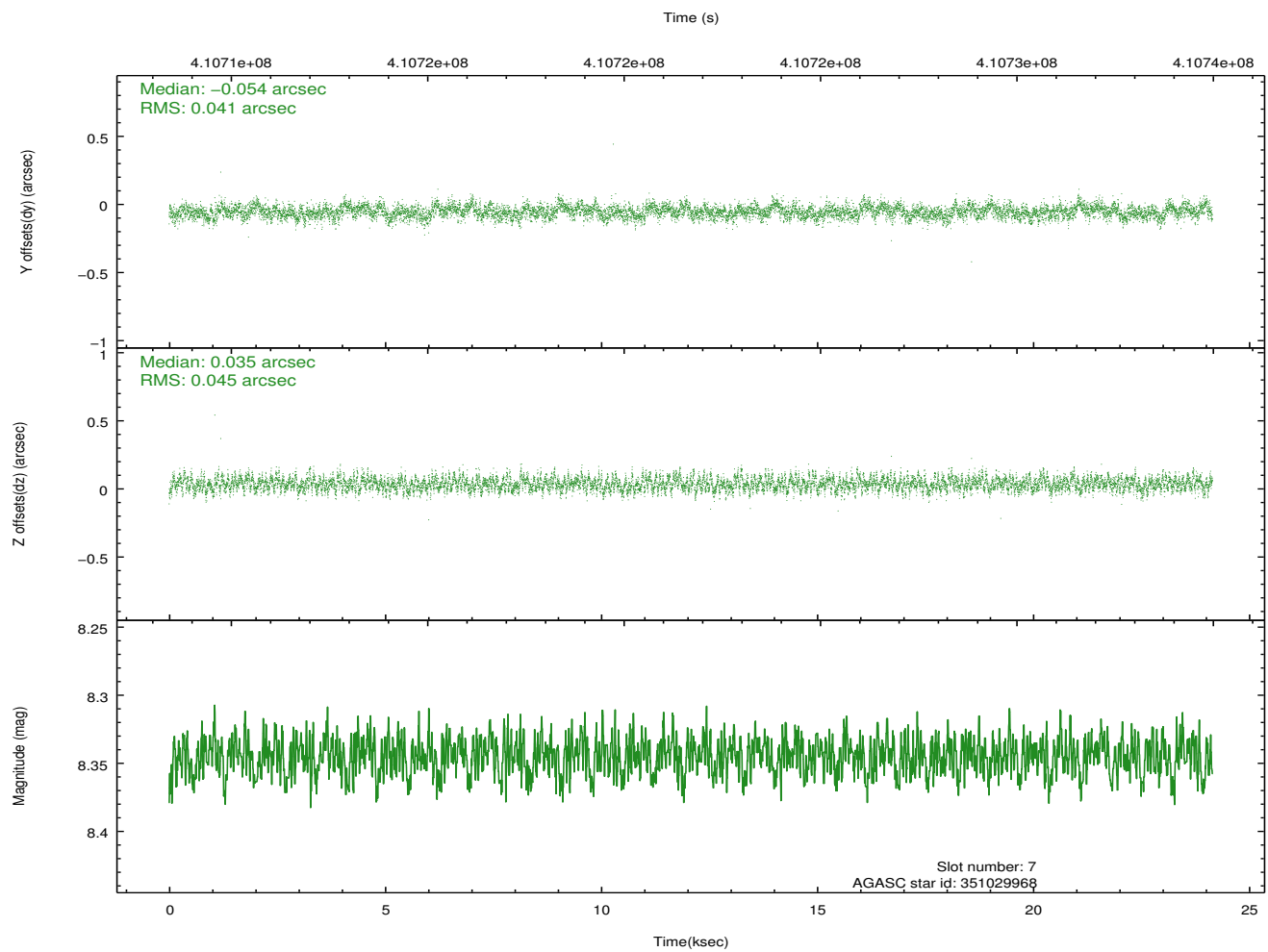
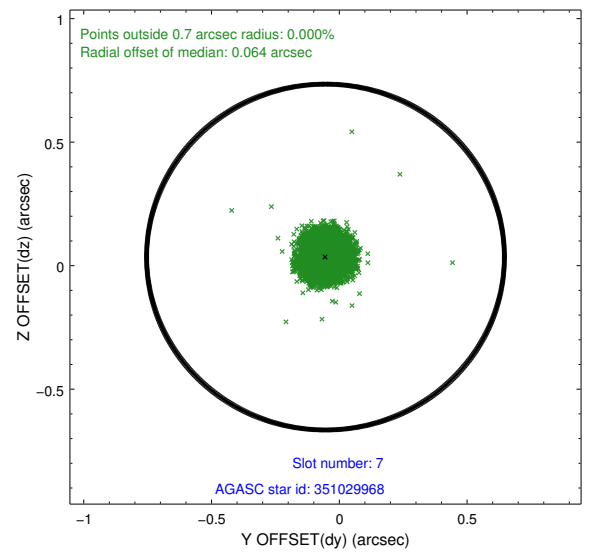
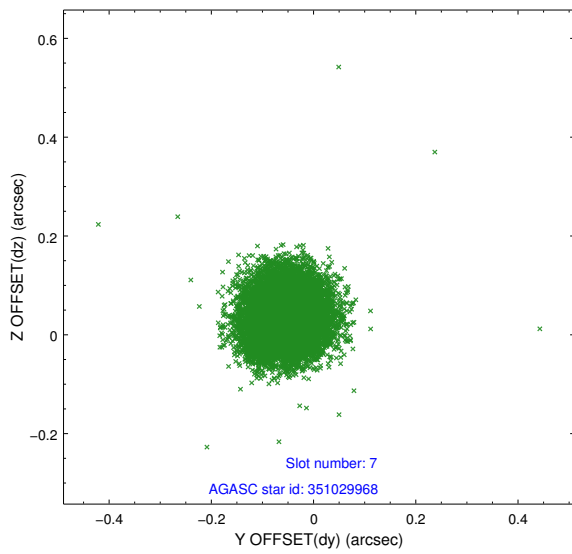
2.4.3 Slot 5



2.4.4 Slot 6

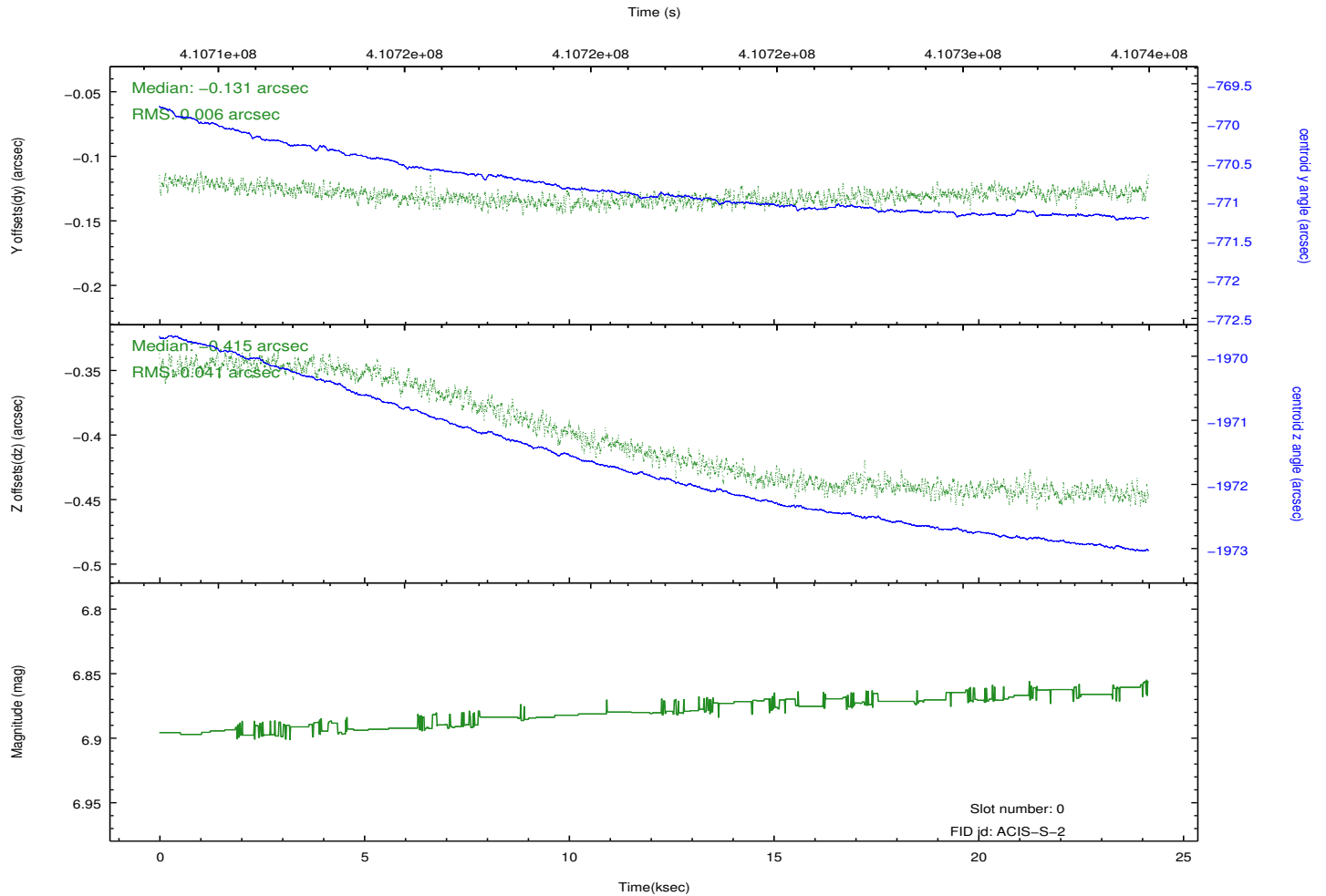
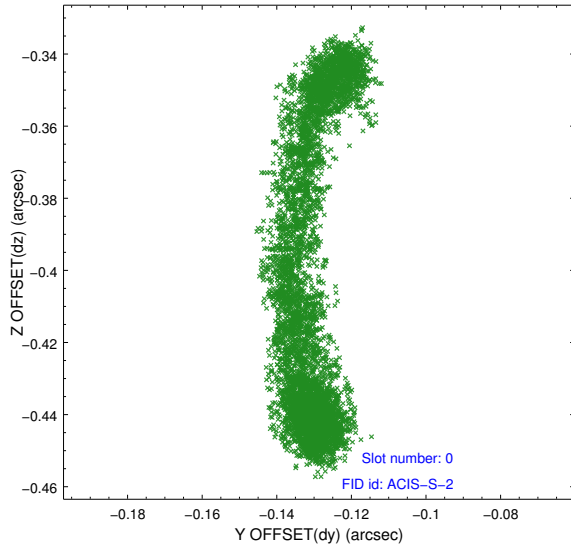


2.4.5 Slot 7

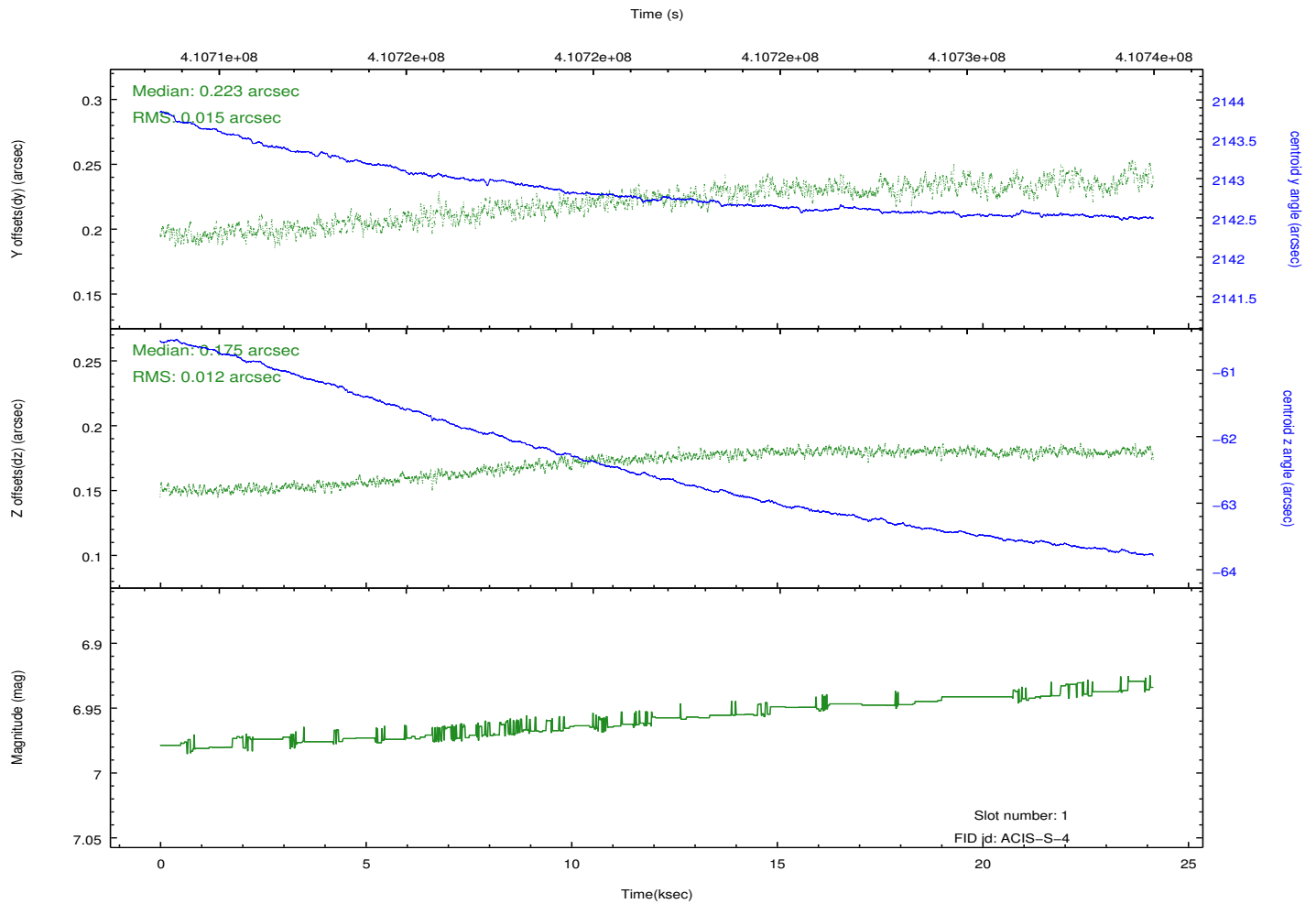
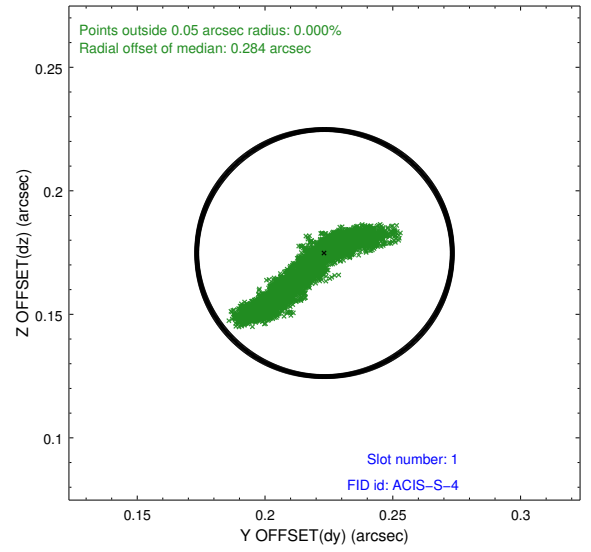
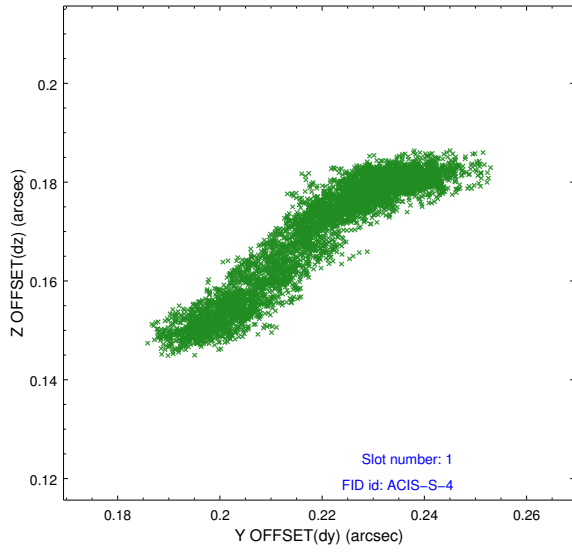


2.5 FID Slots

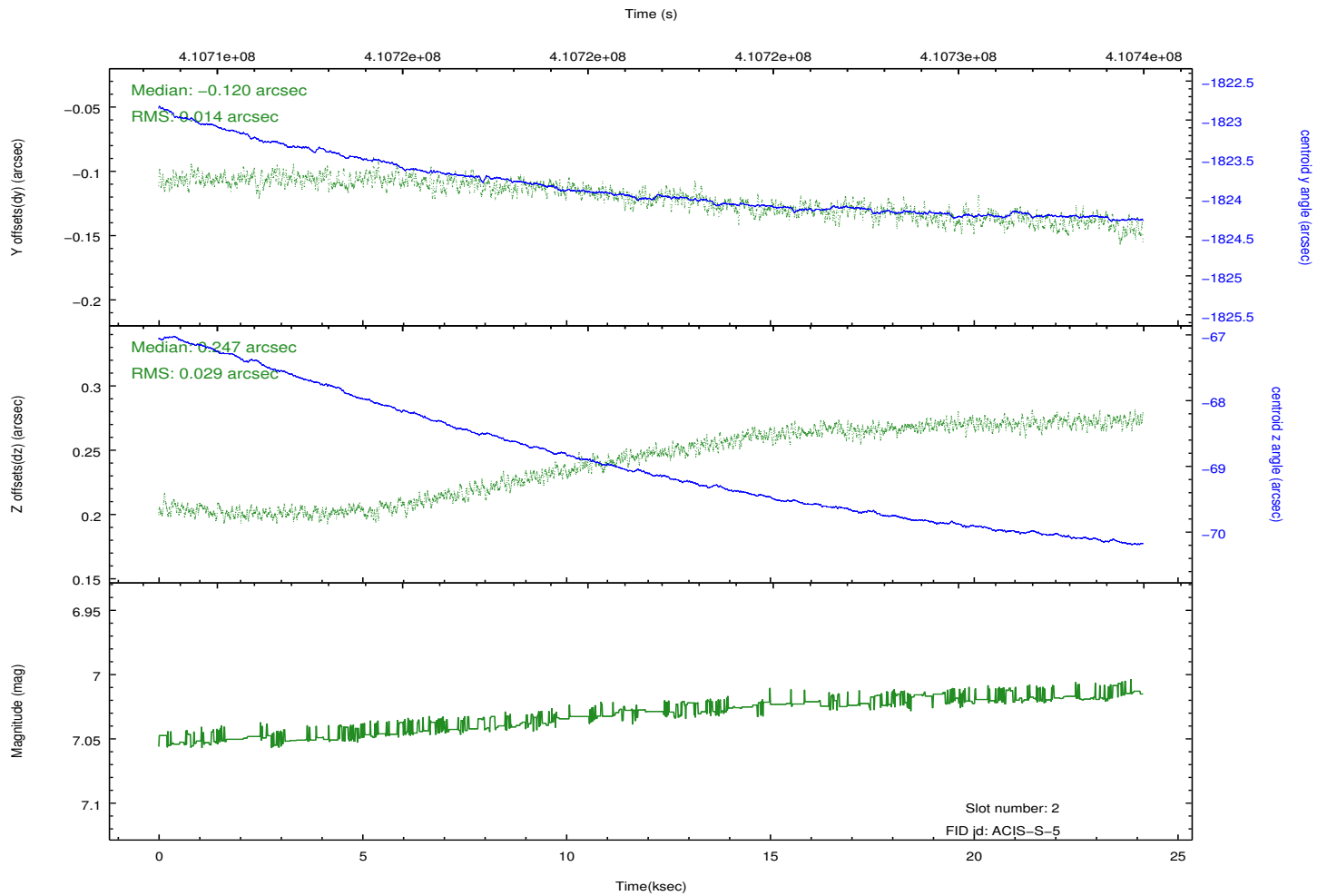
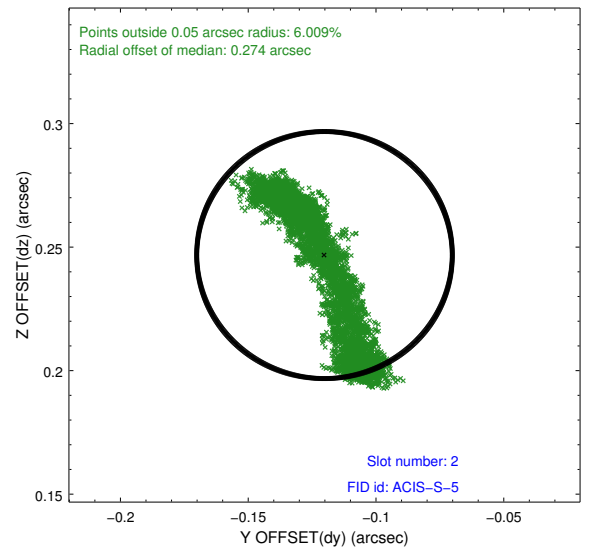
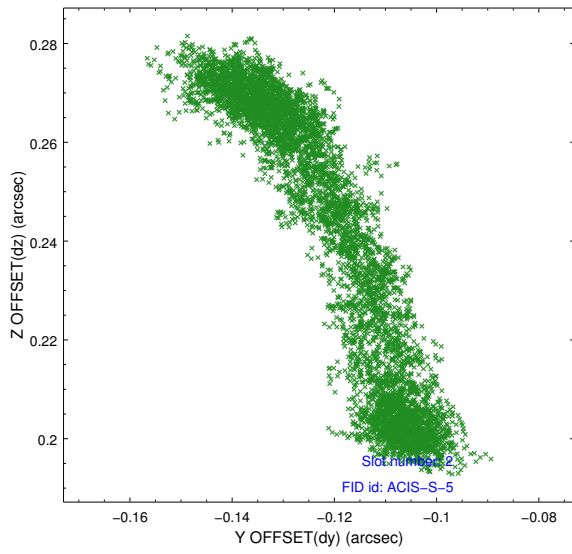
2.5.1 Slot 0



2.5.2 Slot 1

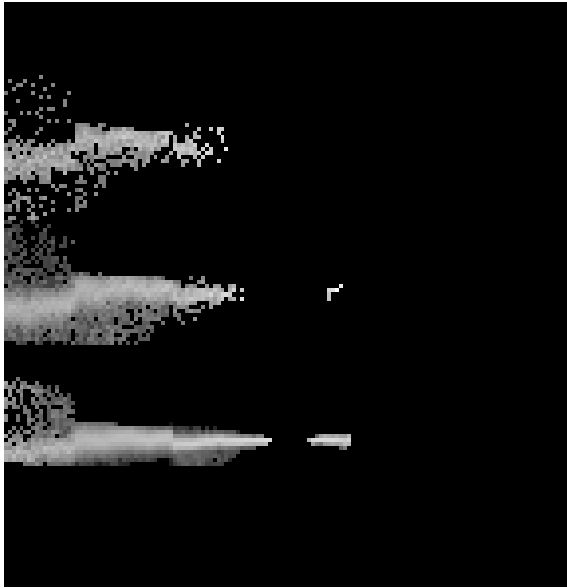


2.5.3 Slot 2

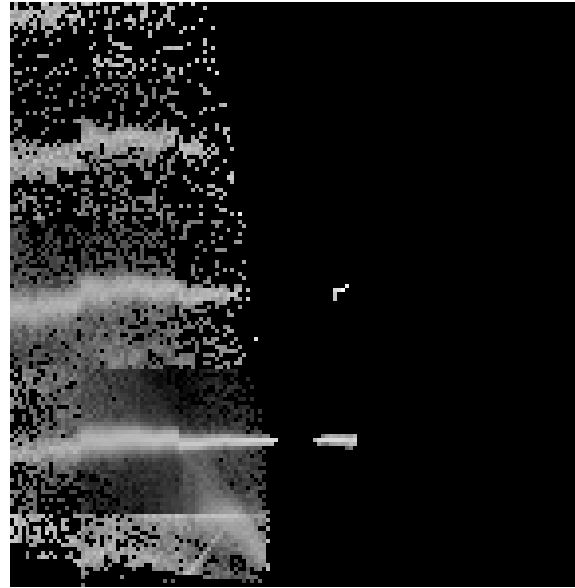


3 Gratings

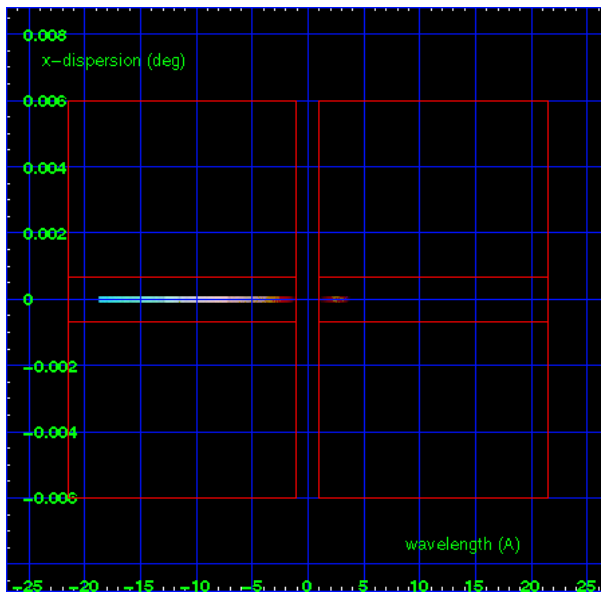
3.1 HEG Arm



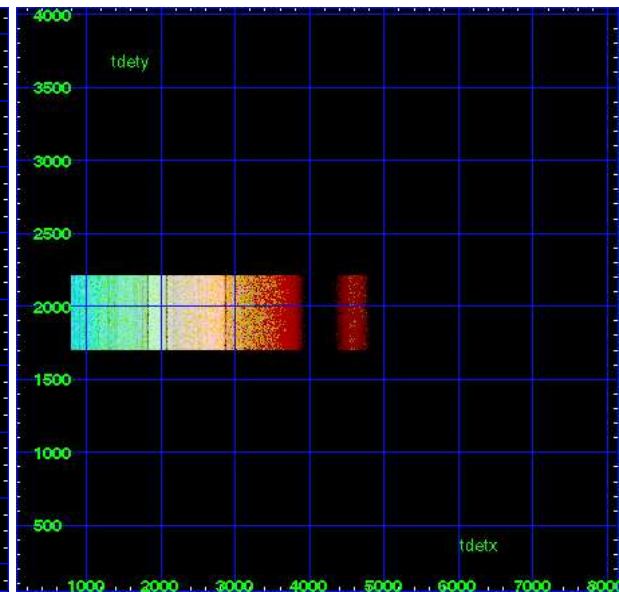
HEG Order Sort 123



HEG Order Sort ALL

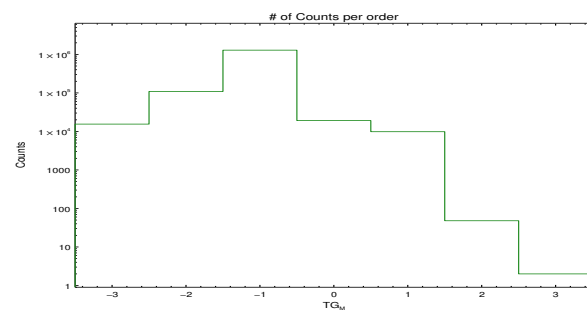


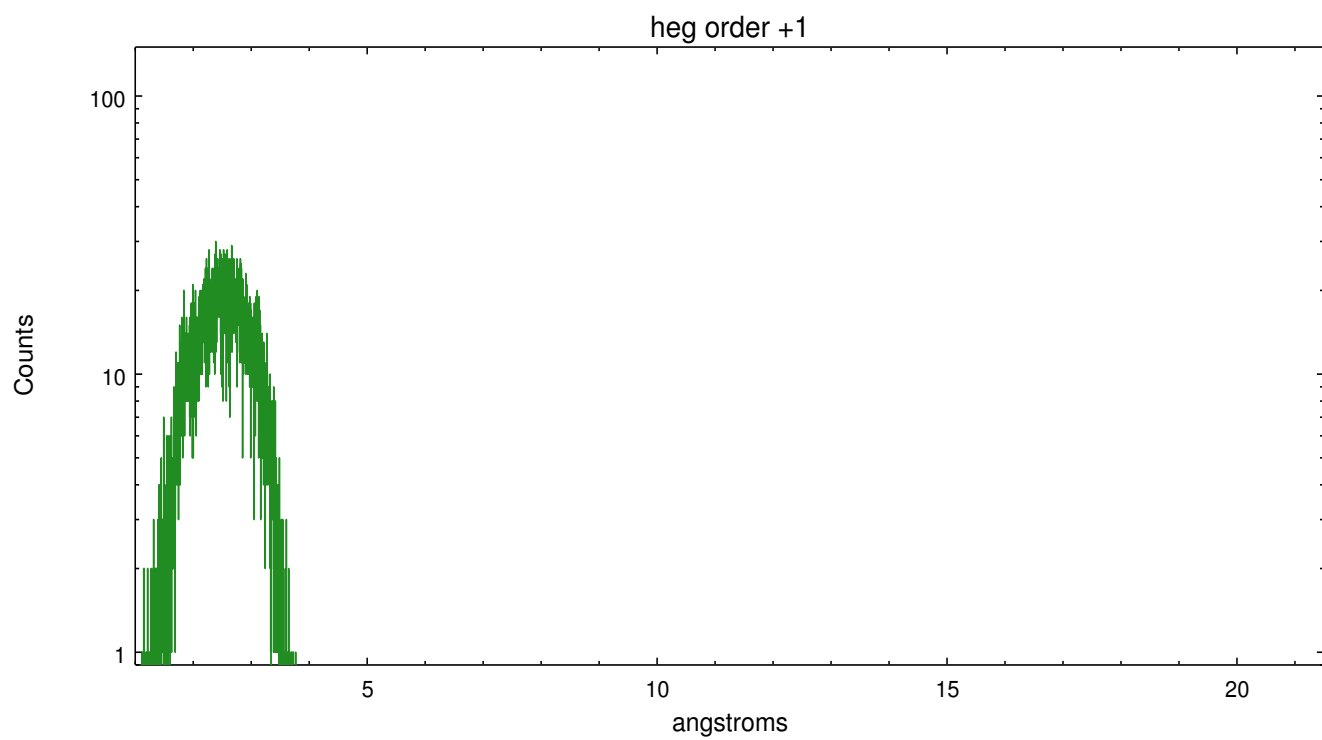
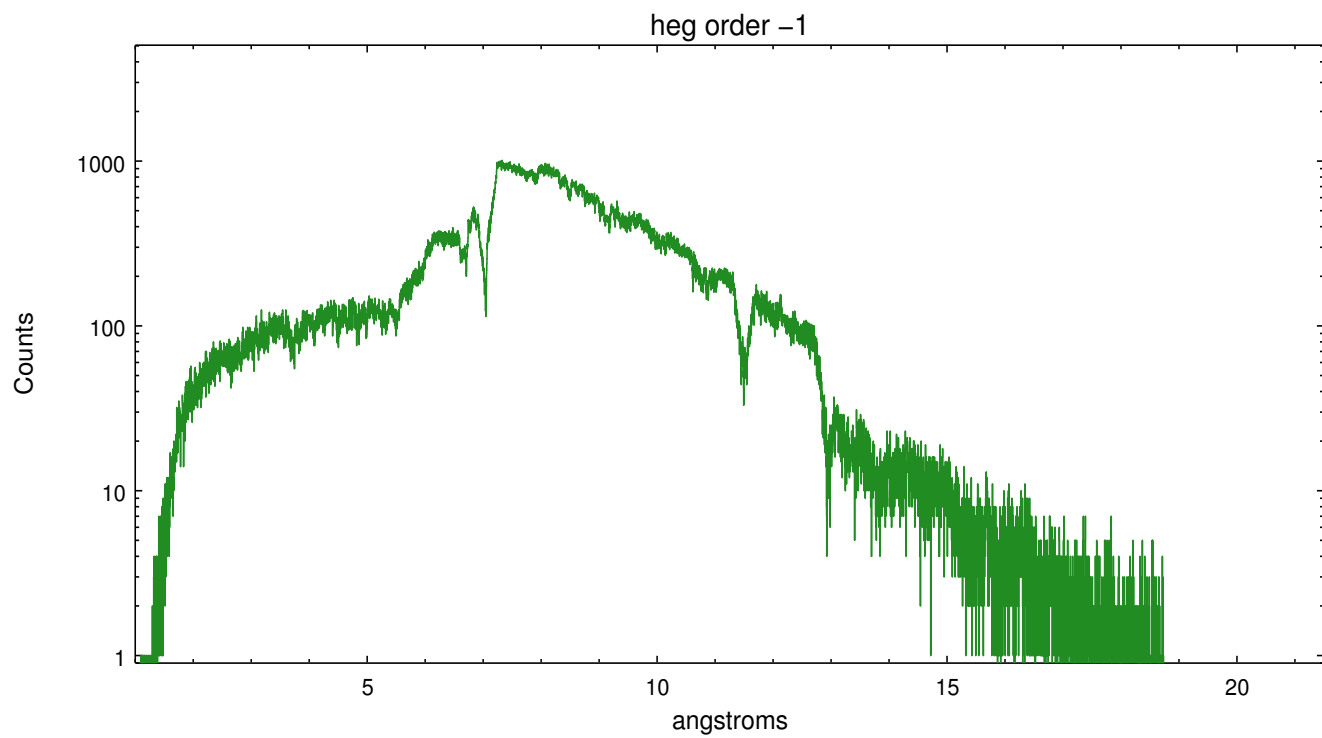
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	15487	108985	1287892	19120	9844	48	2

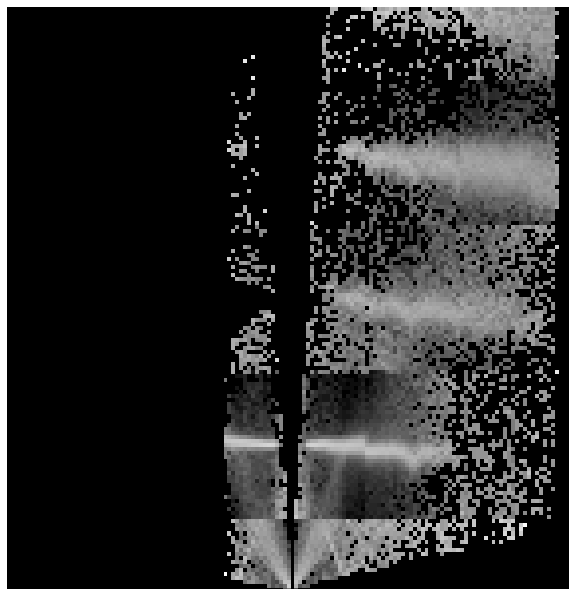




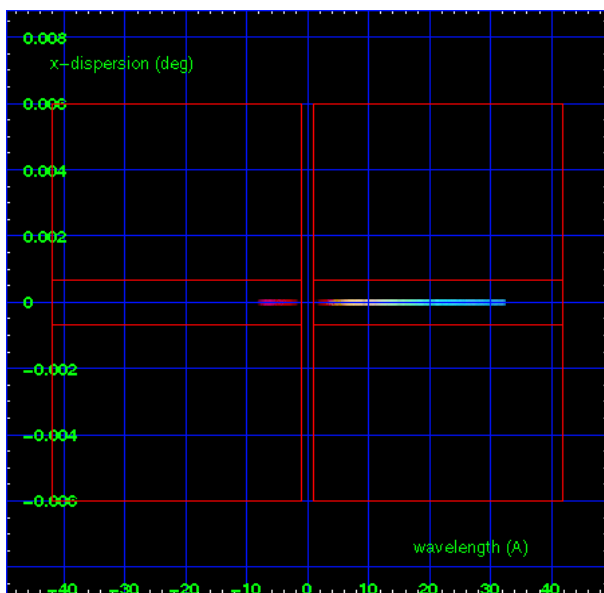
3.2 MEG Arm



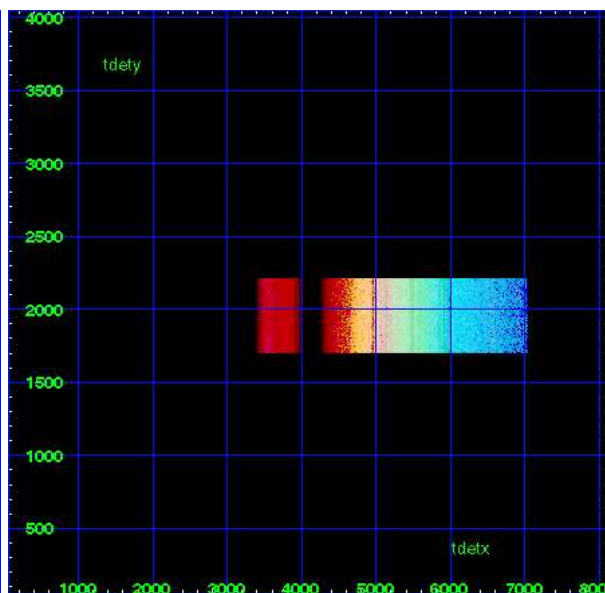
MEG Order Sort 123



MEG Order Sort ALL

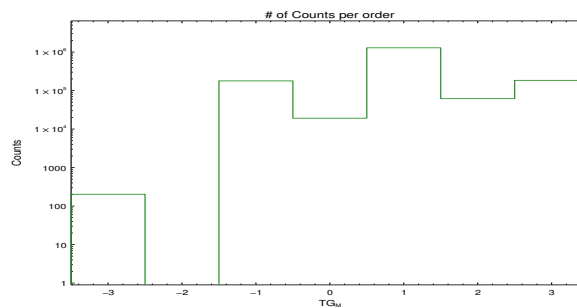


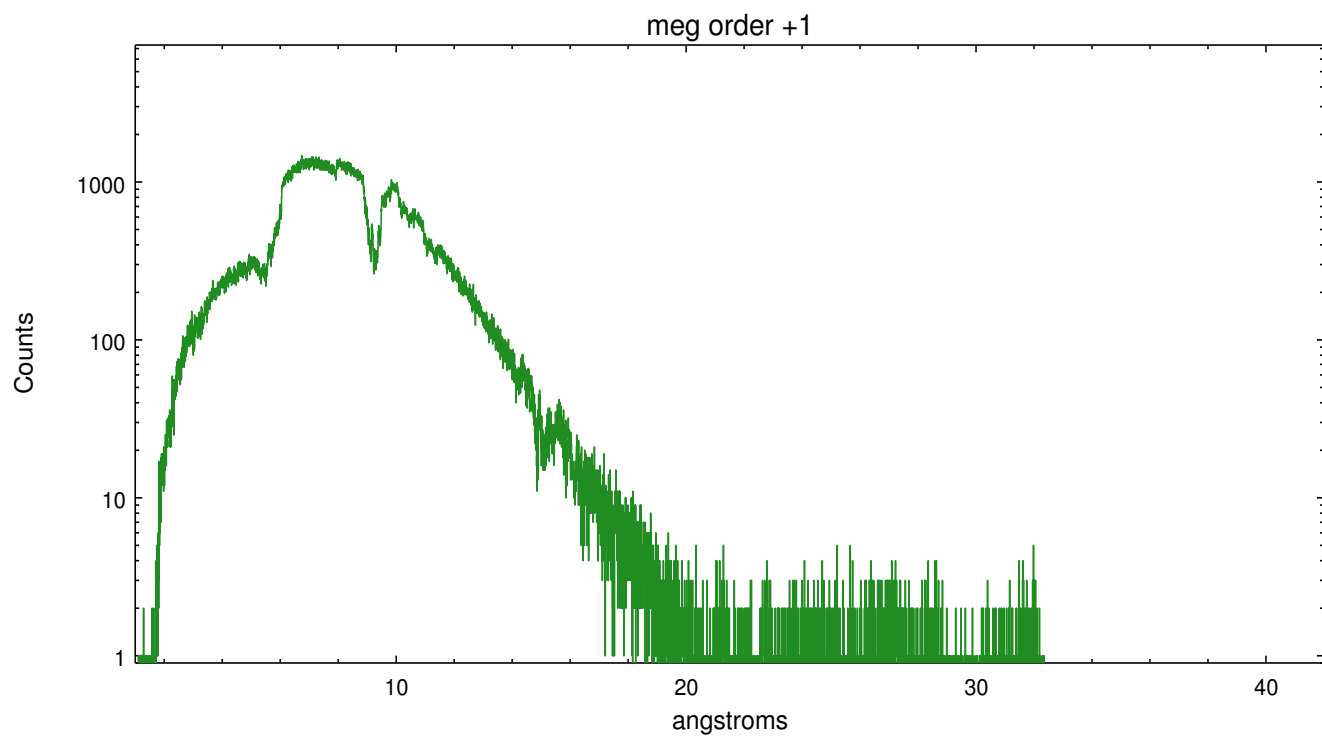
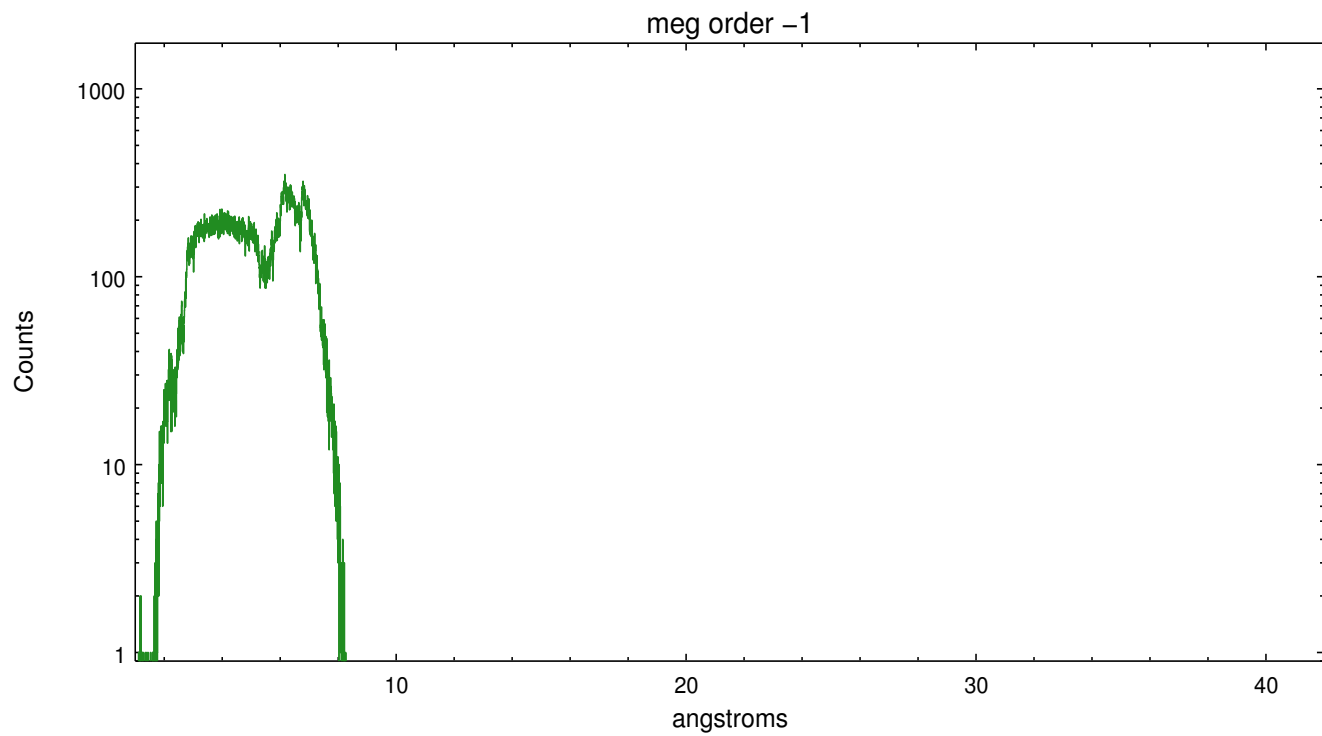
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	203	0	177948	19120	1285783	61466	183878





A Summary

A.1 Status

V&V Scientist	John Houck
V&V Date (YYYY-MM-DD)	2012.02.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	24

A.2 Comments

Comments for Obi 0

Fid in slot 0 radial offset > 0.400000 arcsec

Phase constraint met. Due to saturation ONTIME is significantly shorter time than the elapsed time; this is expected for very bright sources.

The actual elapsed time on source was 24 ksec, consistent with the proposed observation length.

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSE algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use `acis_process_events` to reprocess the data with the parameter `pix_adj=NONE` or `RANDOMIZE`, respectively.