

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 4439 - L2 Version 5
Chandra X-Ray Center

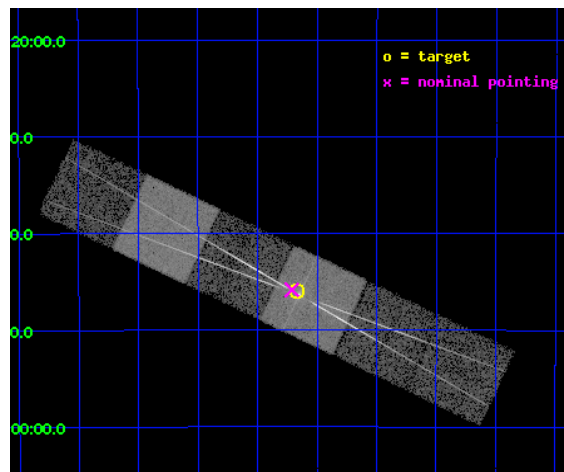
L2 Processing Date : Feb 9 2013

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1 Front

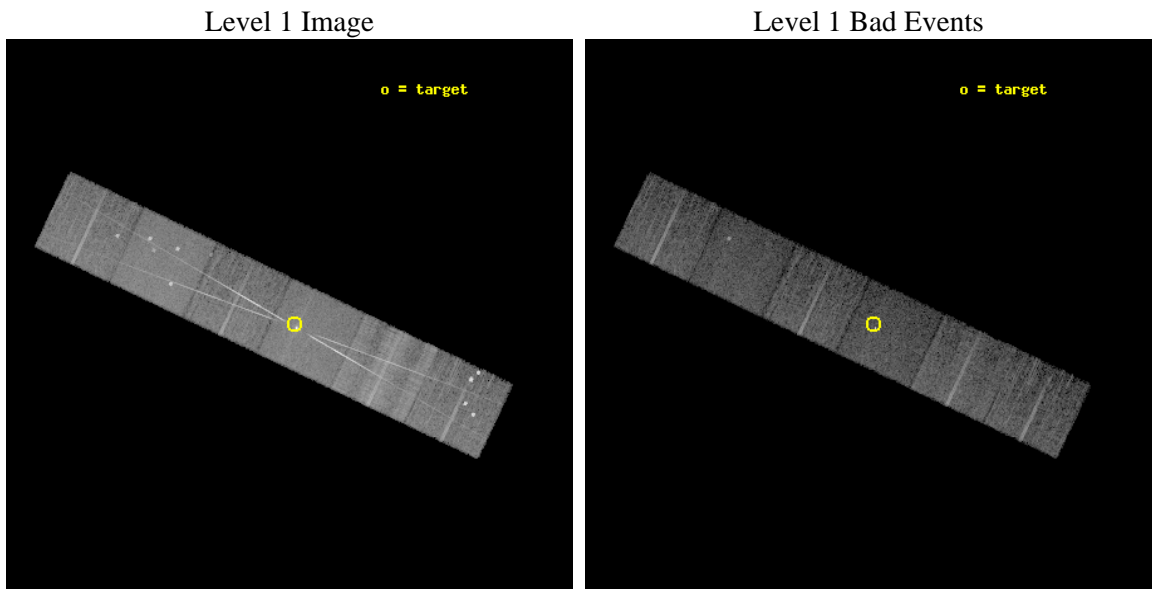
seq_num	400324	Sequence number
obs_id	4439	Observation id
title	Localization and Spectroscopy of the Millisecond X-Ray Pulsar XTE J1814-338	Proposal title
observer	Prof. Deepto Chakrabarty	Principal investigator
object	XTE J1814-338	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	273.416667	Observer's specified target RA [deg]
dec_targ	-33.766667	Observer's specified target Dec [deg]
ra_nom	273.42793312004	Nominal RA [deg]
dec_nom	-33.764087802062	Nominal Dec [deg]
roll_nom	25.346448129498	Nominal Roll [deg]
revision	5	Processing version of data
ontime	9983.9999628067	Sum of GTIs [s]
livetime	9857.5765436346	Livetime [s]
ontime4	9980.7589825094	Sum of GTIs [s]
ontime5	9983.9999628067	Sum of GTIs [s]
ontime6	9980.7589825094	Sum of GTIs [s]
ontime7	9983.9999628067	Sum of GTIs [s]
ontime8	9983.9999628067	Sum of GTIs [s]
ontime9	9980.7589825094	Sum of GTIs [s]
l2events	156248	Number of level 2 events



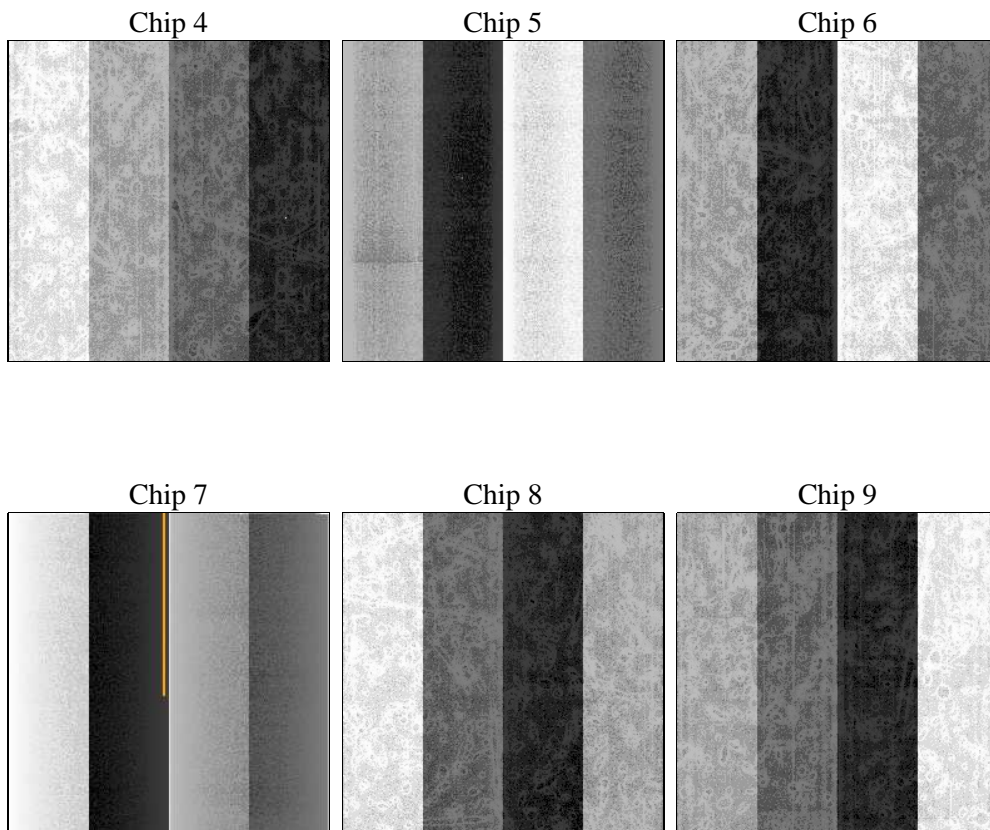
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10124.600000	[s] Scheduled observation exposure time
ascdsver	8.5.1.1	Processing system revision	ontime	9983.9999628067	Sum of GTIs [s]
caldbver	4.5.5	 	ontime4	9980.7589825094	Sum of GTIs [s]
date	2013-02-09T17:22:49	Date and time of file creation	ontime5	9983.9999628067	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	9980.7589825094	Sum of GTIs [s]
			ontime7	9983.9999628067	Sum of GTIs [s]
			ontime8	9983.9999628067	Sum of GTIs [s]
			ontime9	9980.7589825094	Sum of GTIs [s]
			l1events	557736	Number of level 1 events

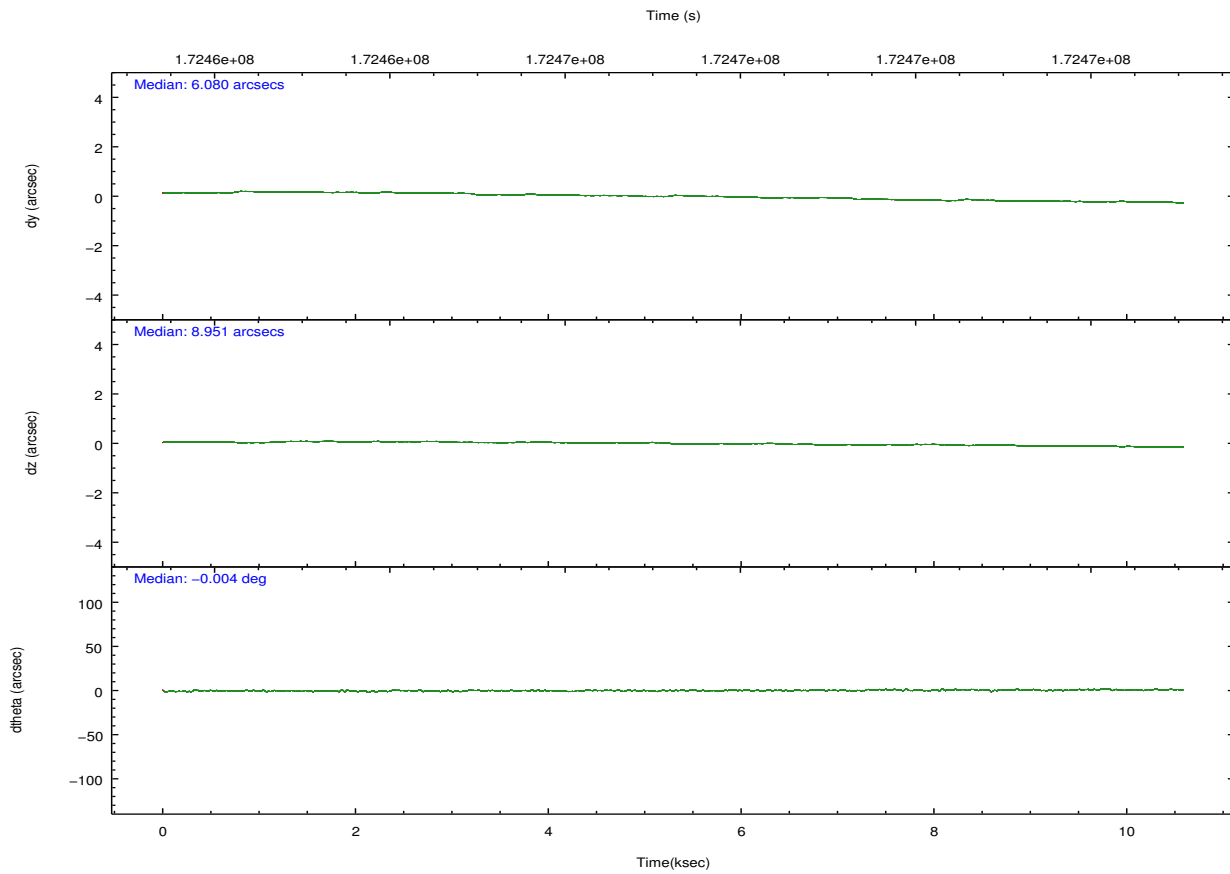
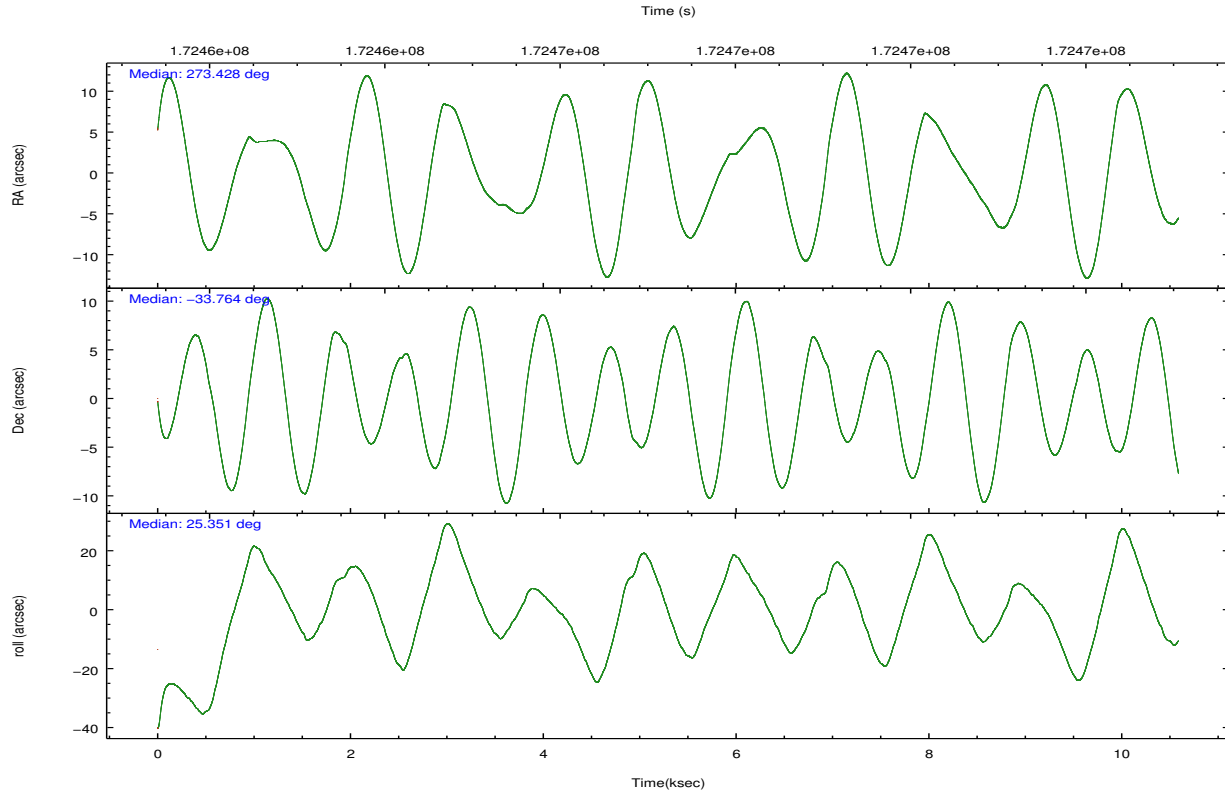
2.1.4 Events

	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	73235	96532	86531	102655	118647	80136	grade 0 events	6290	8815	19445	7996	21015	14719
rejected events	61668	48552	57991	47473	67099	57215		8%	9%	22%	7%	17%	18%
rejected %	84%	50%	67%	46%	56%	71%	grade 1 events	94	134	143	173	156	85
								0%	0%	0%	0%	0%	0%
							grade 2 events	2342	13673	4087	12004	8102	4928
								3%	14%	4%	11%	6%	6%
							grade 3 events	829	2245	1377	5414	6250	820
								1%	2%	1%	5%	5%	1%
							grade 4 events	802	2098	1360	5428	5784	818
								1%	2%	1%	5%	4%	1%
							grade 5 events	2417	6777	2795	7974	3883	2907
								3%	7%	3%	7%	3%	3%
							grade 6 events	1307	21165	2278	24352	10432	1642
								1%	21%	2%	23%	8%	2%
							grade 7 events	59154	41625	55046	39314	63025	54217
								80%	43%	63%	38%	53%	67%

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	273.409633	273.4279331200361	Subarray requested	NONE	NONE
[deg] Pointing Dec	-33.786728	-33.76408780206225	Alternating exposures requested	N	N
[deg] Pointing Roll	25.179648	25.34644812949766	[s] Primary exposure time	0.000000	3.2
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1425803651734			
[mm] SIM translation stage offset	0	0.01005778216563158			
[s] Observation start time (MET)	172462399.184000	172461298.91176			
Observation start date	2003-06-20T02:12:15	2003-06-20T01:54:58			
[s] Observation end time (MET)	172472524.184000	172473138.17477			
Observation end date	2003-06-20T05:01:00	2003-06-20T05:12:18			
Read mode	TIMED	TIMED			

2.3 Aspect

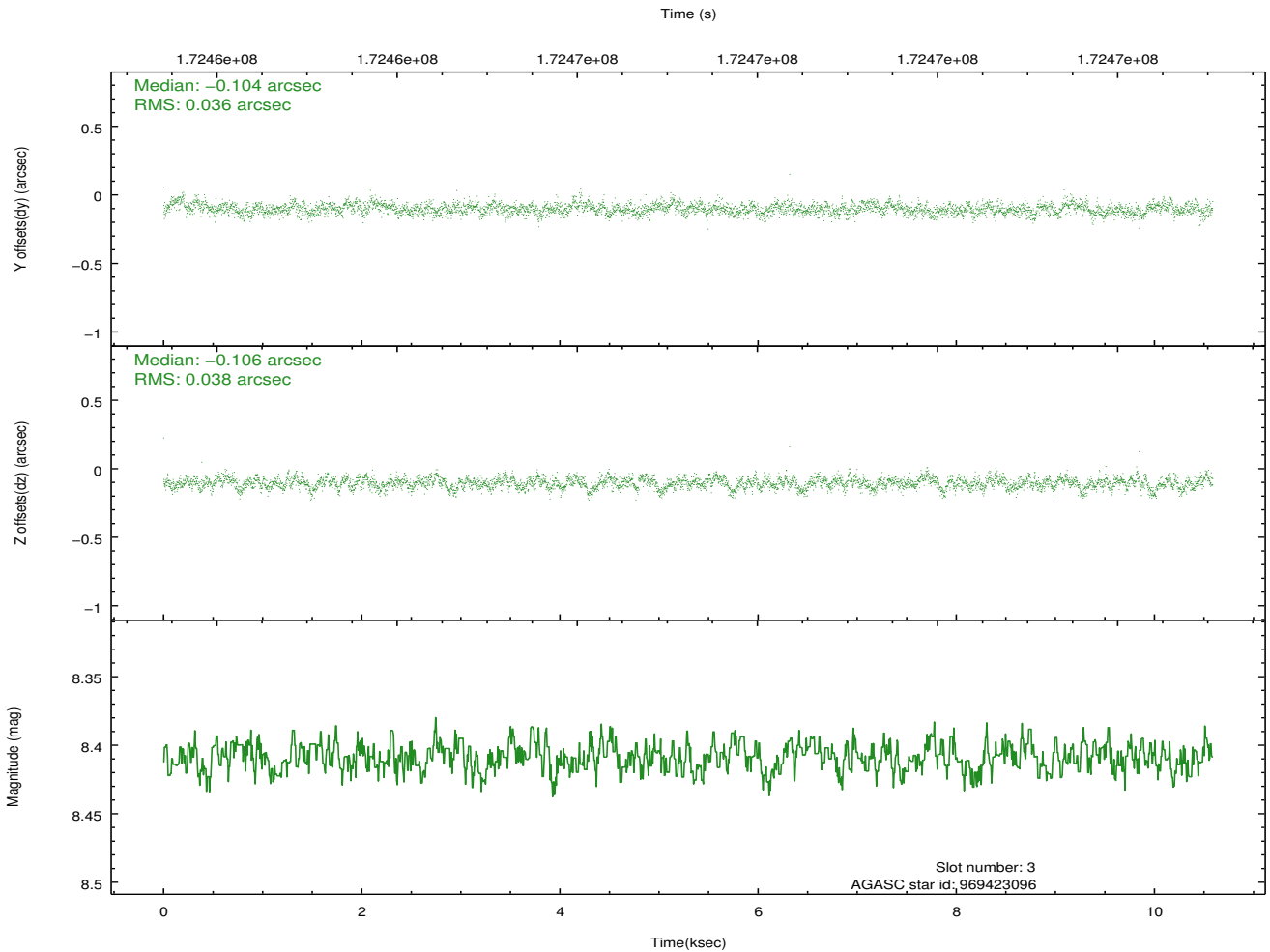
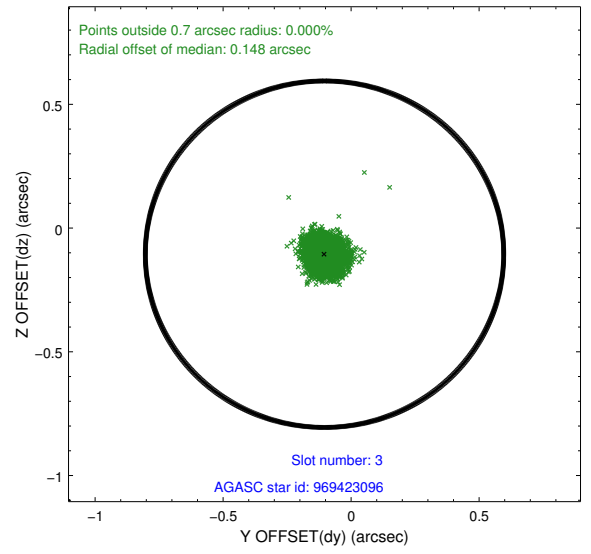
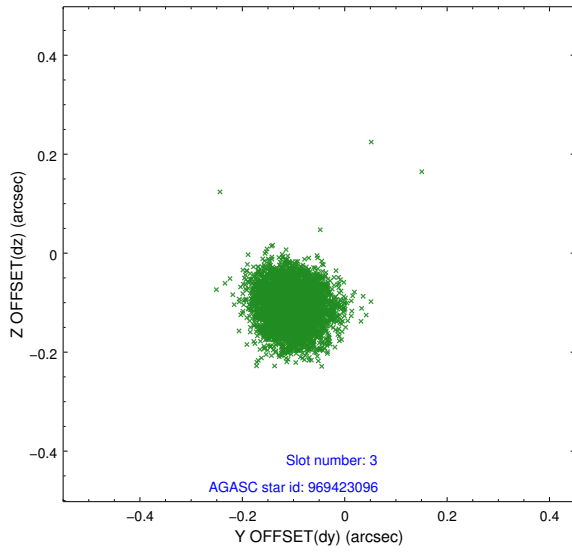


Slot Statistics

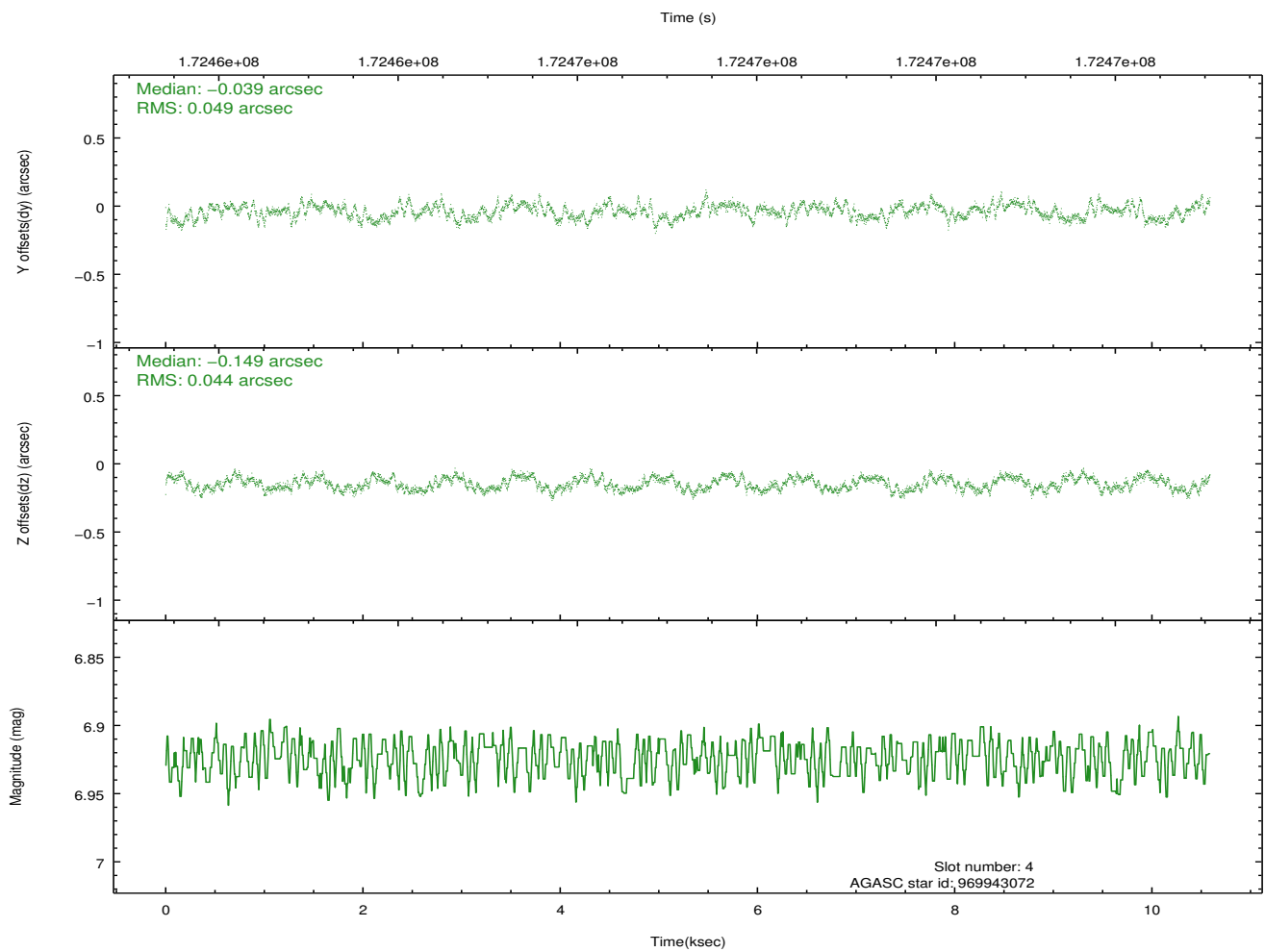
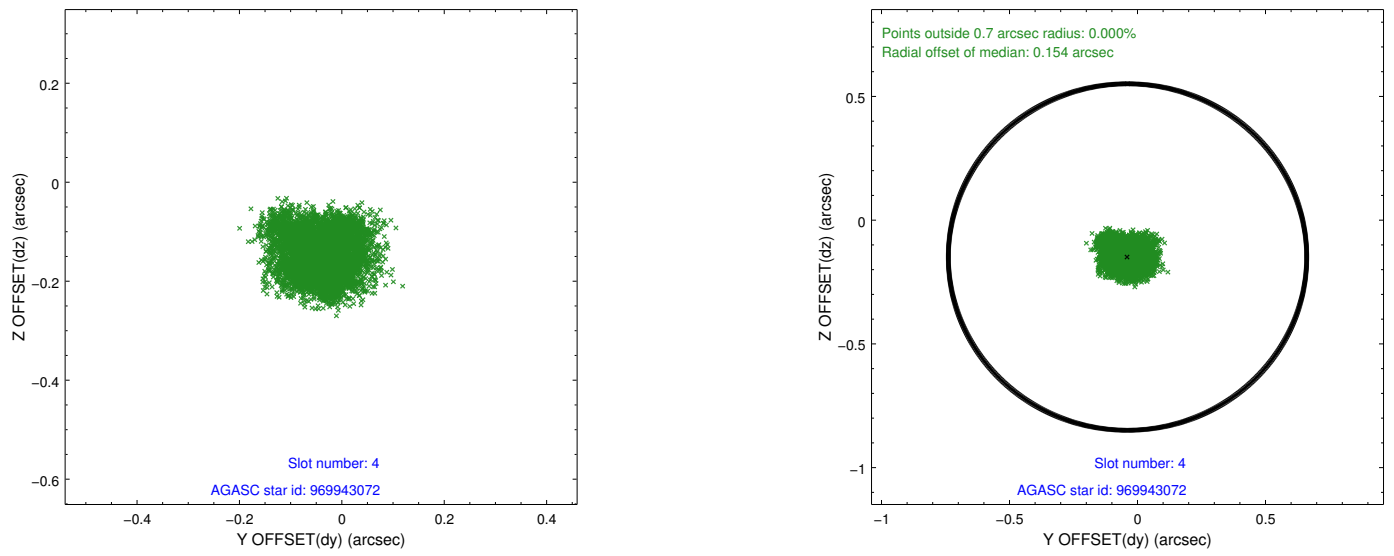
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.18	2582	0.023	0.005	0.008	0.014	0.000000	0.000000	937.22	-1725.75
1	FID	ACIS-S-5	7.23	2582	-0.057	0.024	0.006	0.010	0.000000	0.000000	-1811.53	171.39
2	FID	ACIS-S-6	7.36	2583	0.012	-0.017	0.008	0.013	0.000000	0.000000	402.30	815.81
3	GUIDE	969423096	8.41	5165	-0.104	-0.106	0.055	0.091	273.993243	-33.502196	2018.75	176.73
4	GUIDE	969943072	6.92	5166	-0.039	-0.149	0.071	0.109	272.673807	-33.918752	-2194.80	497.93
5	GUIDE	969413584	9.39	5162	0.209	0.230	0.081	0.132	273.781101	-32.900670	2372.18	2407.27
6	GUIDE	969942440	8.86	5161	-0.062	0.026	0.081	0.131	273.001128	-34.593225	-2332.14	-2114.22
7	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

2.4 Star Slots

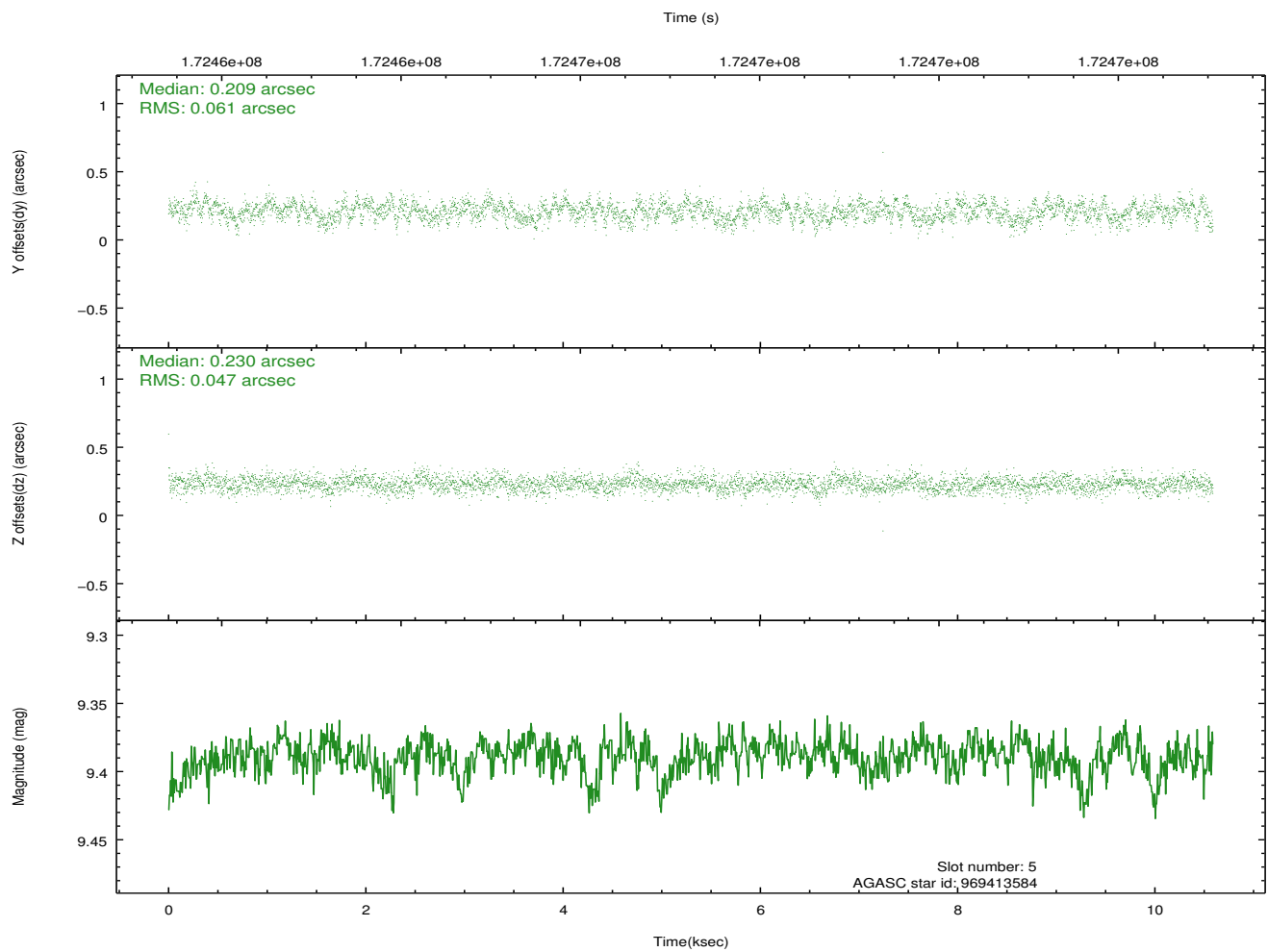
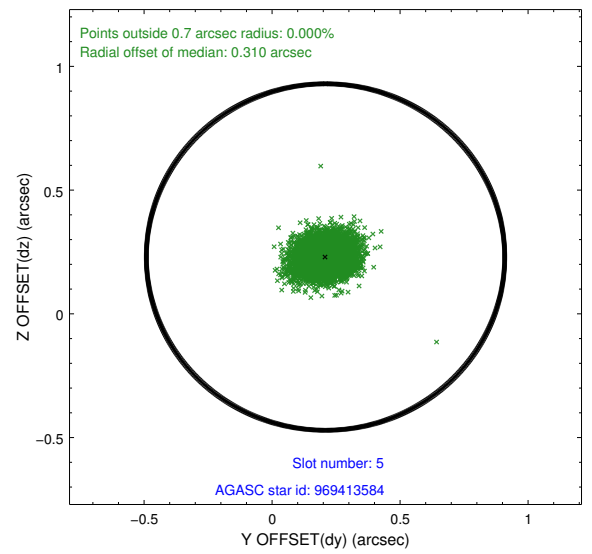
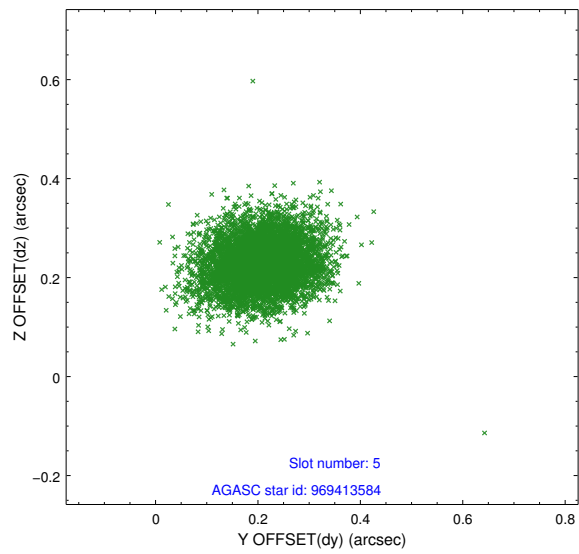
2.4.1 Slot 3



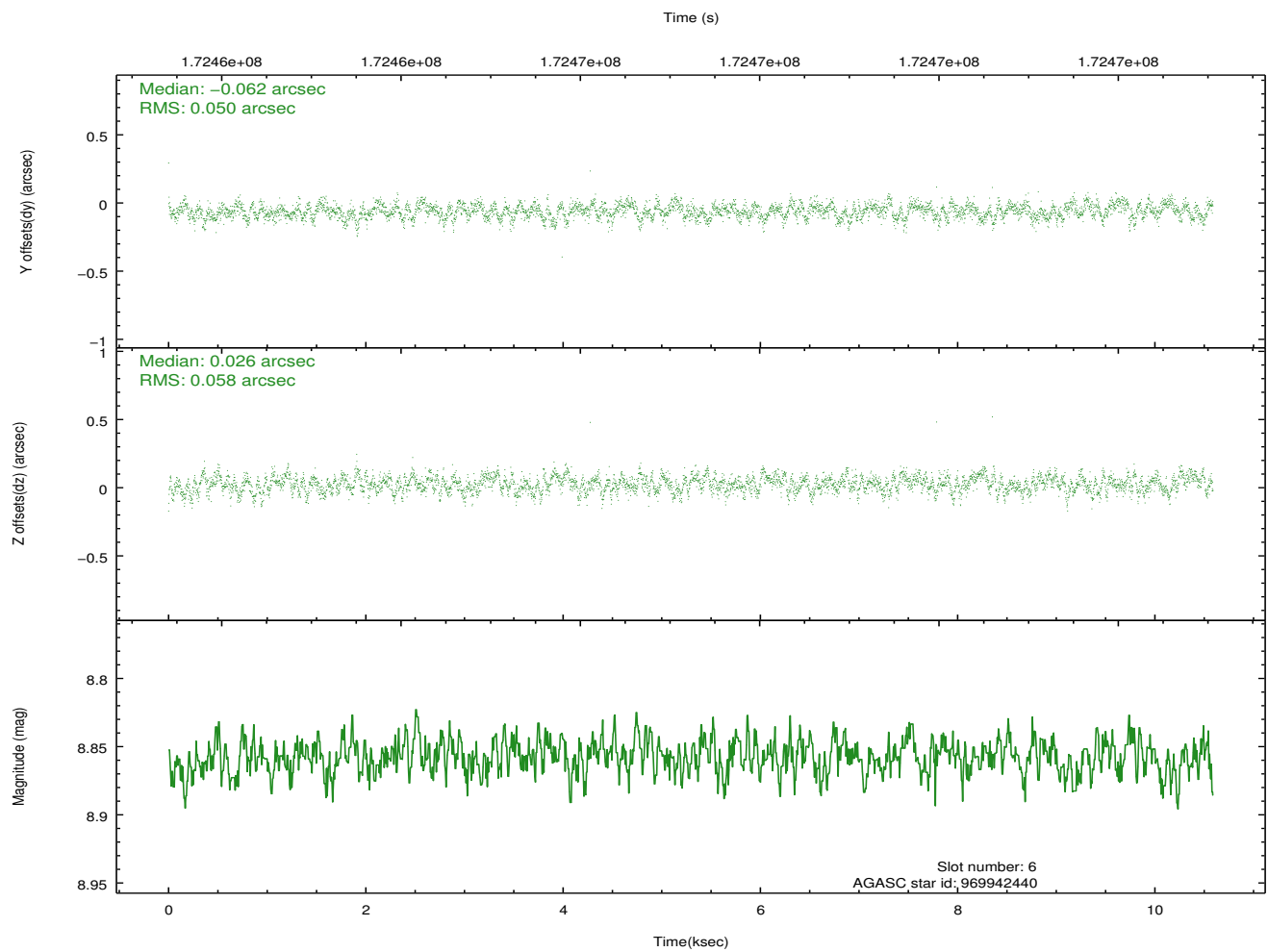
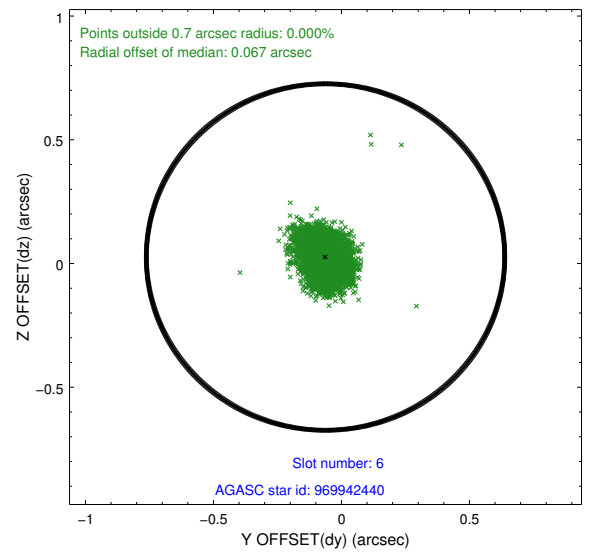
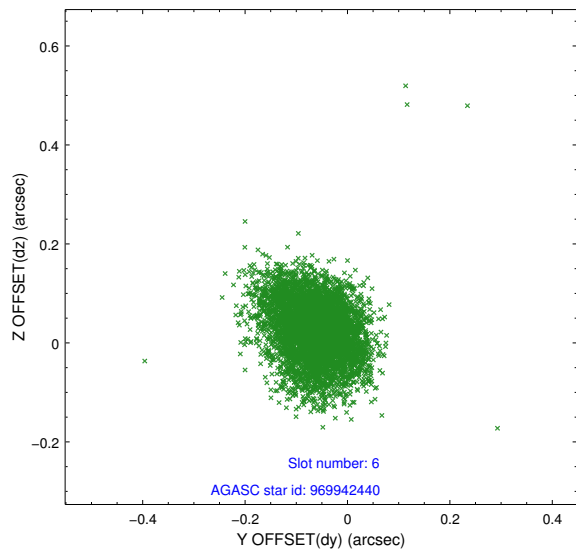
2.4.2 Slot 4



2.4.3 Slot 5

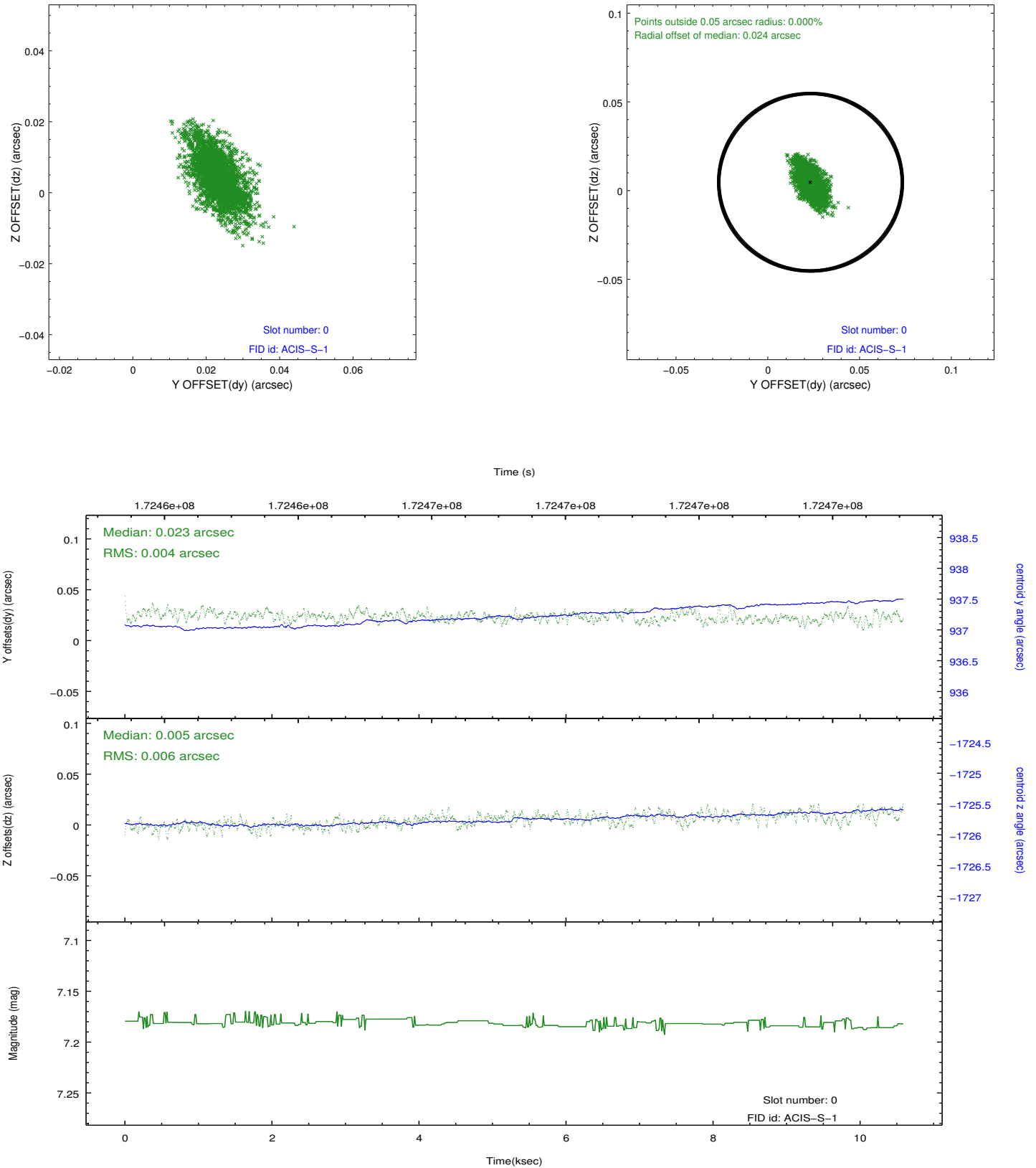


2.4.4 Slot 6

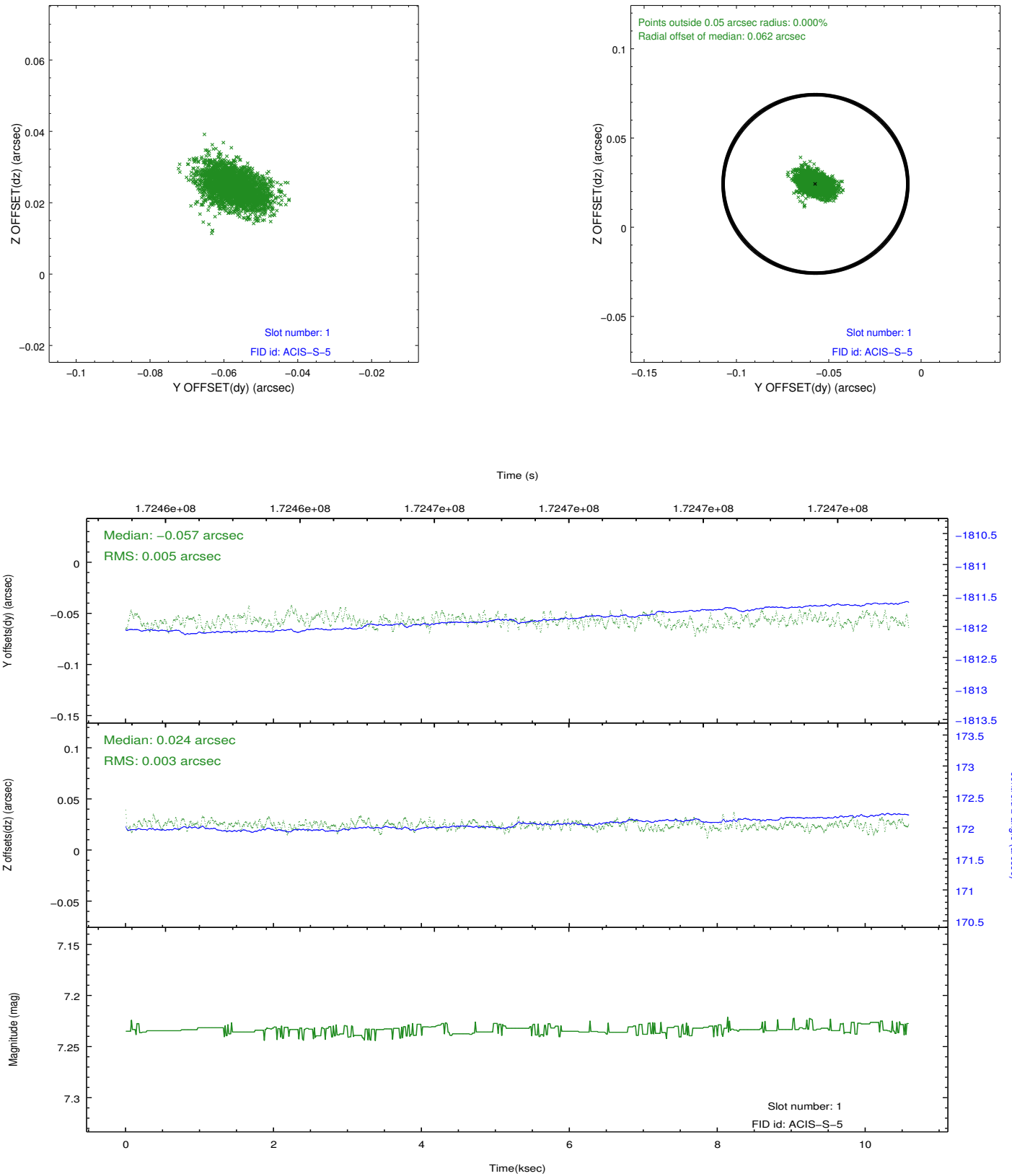


2.5 FID Slots

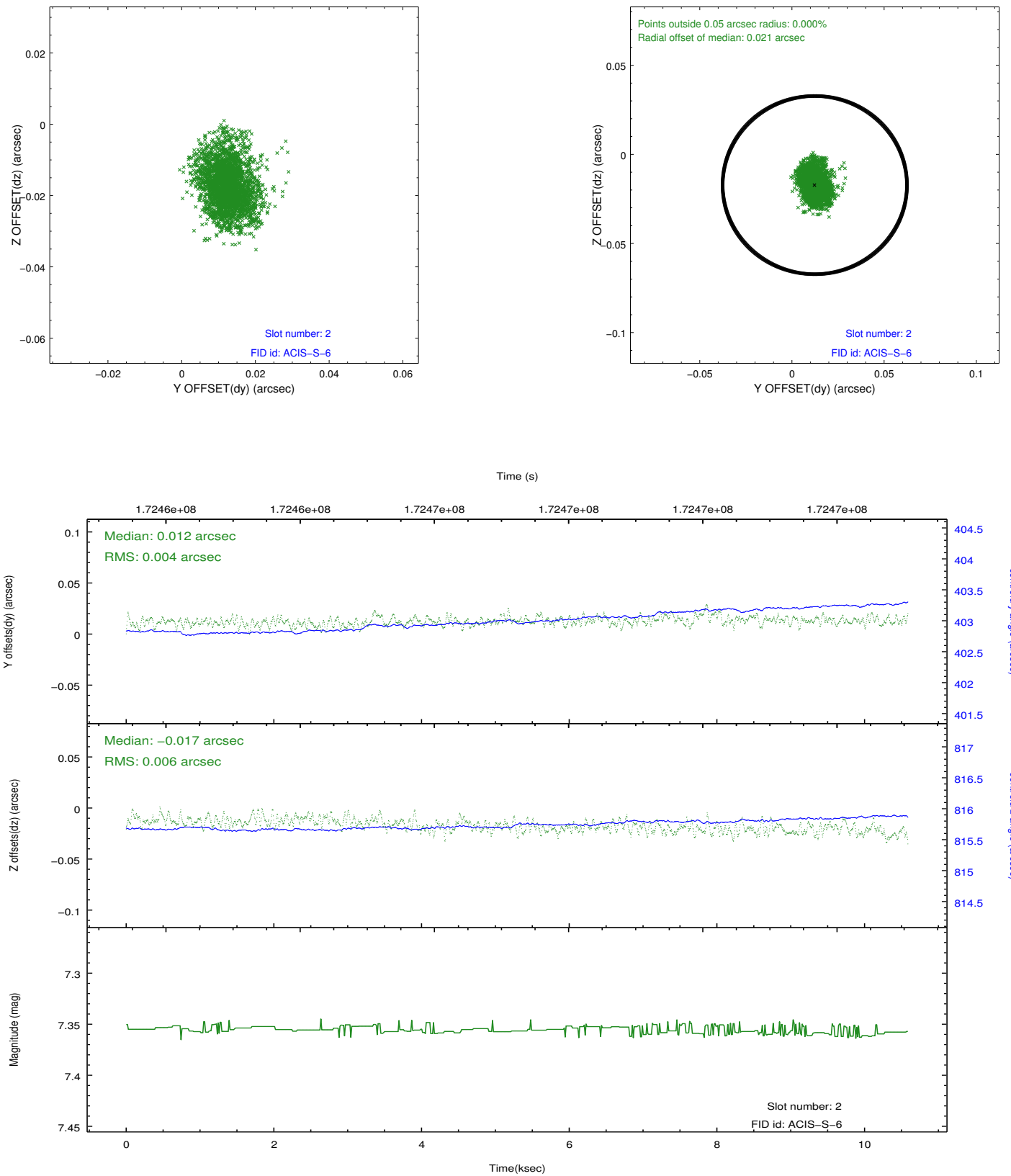
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

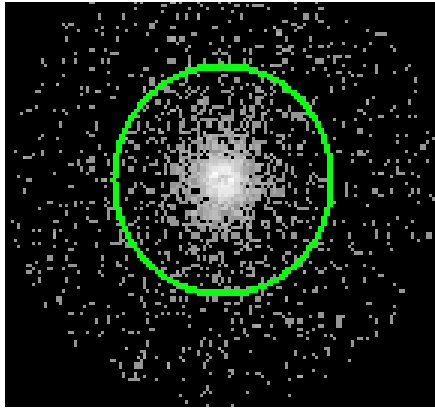


3 Gratings

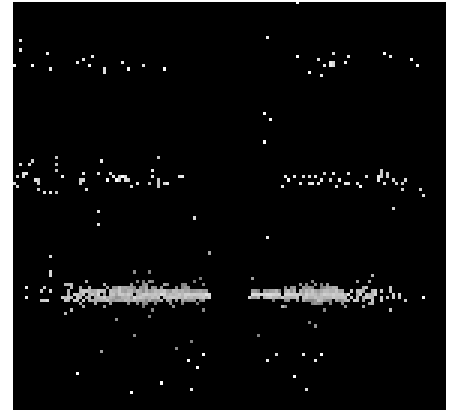
3.1 HEG Arm



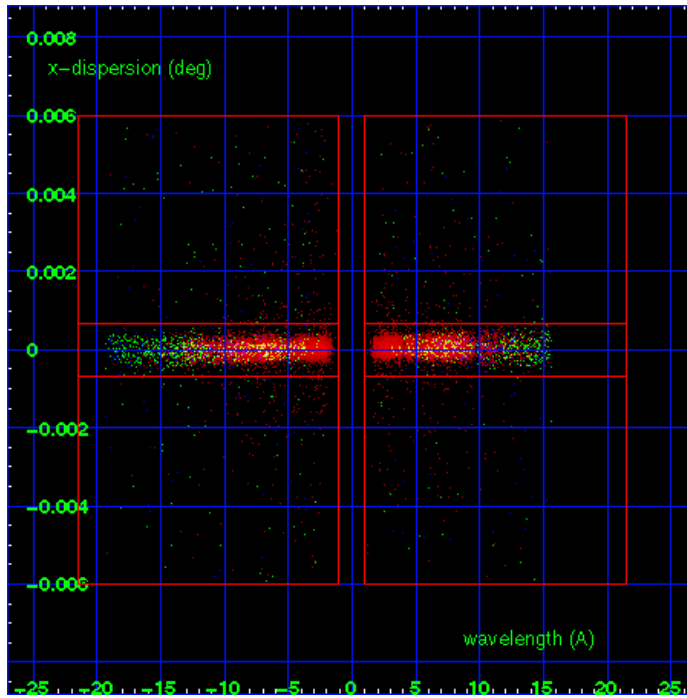
HEG Order Sort 123



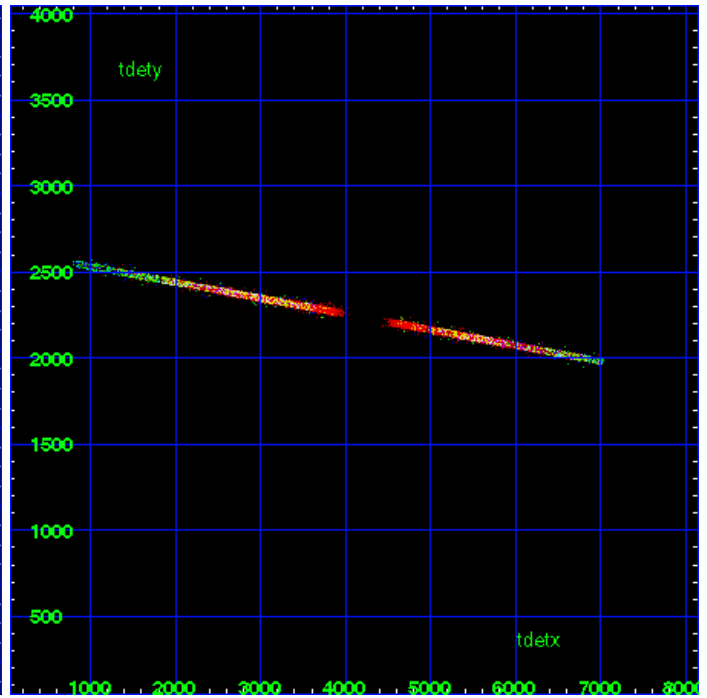
HEG Zero Order



HEG Order Sort ALL

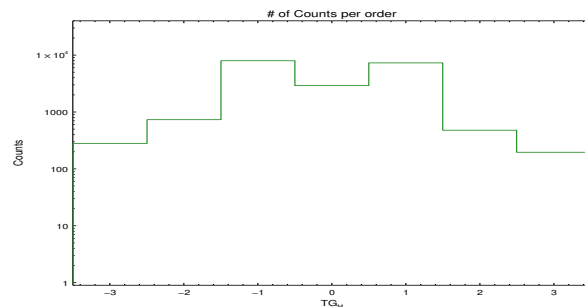


Spot Image HEG

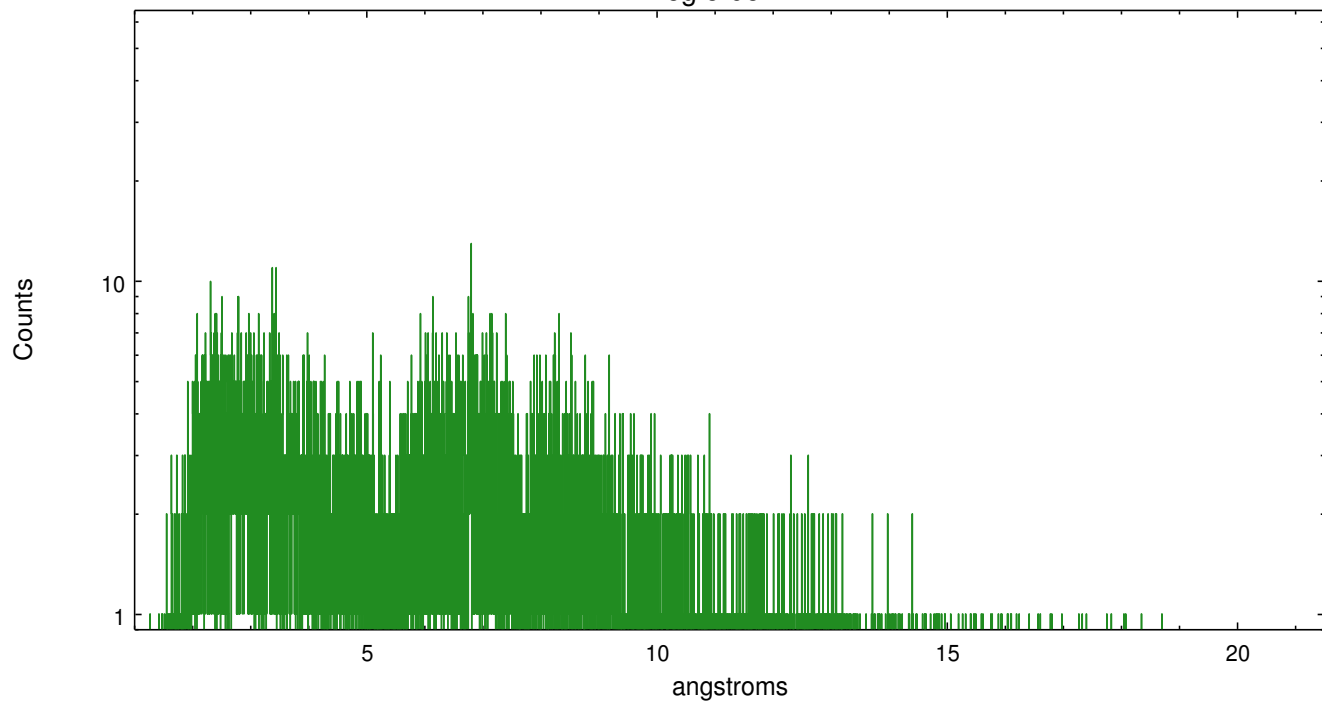


Full Detector HEG

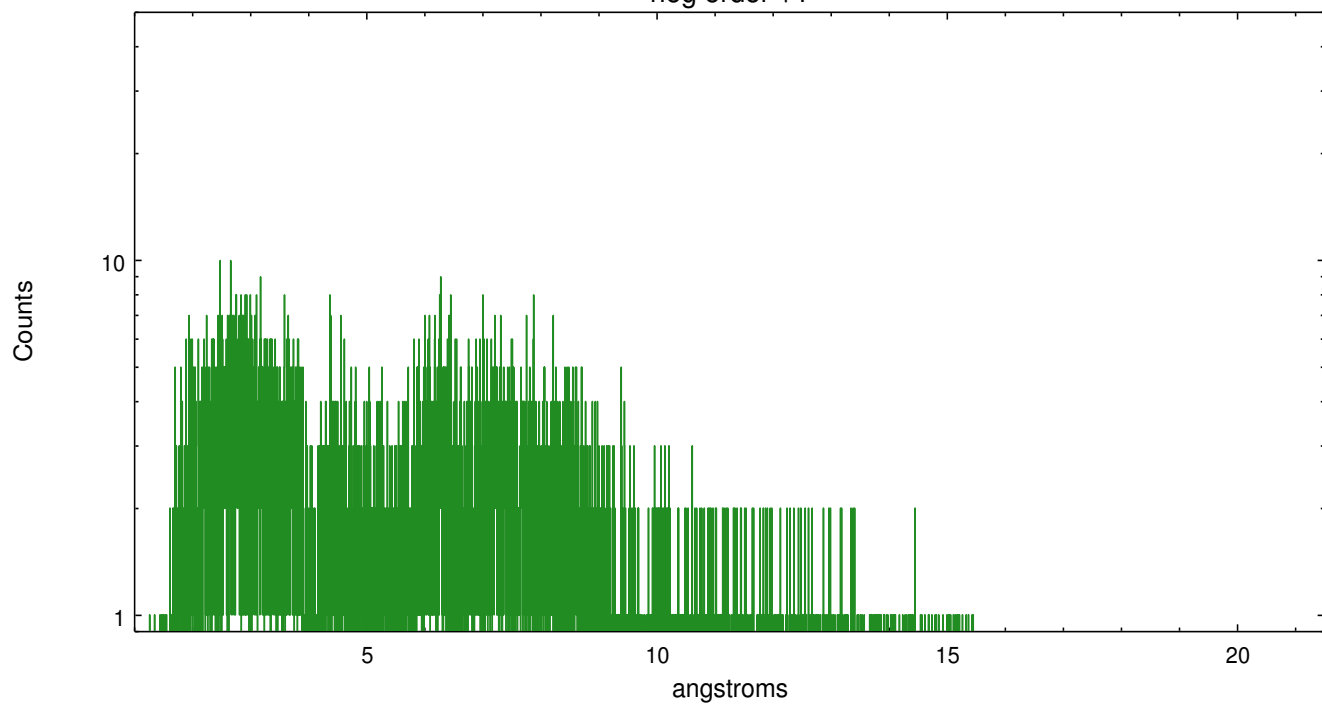
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	281	735	8015	2932	7345	479	196



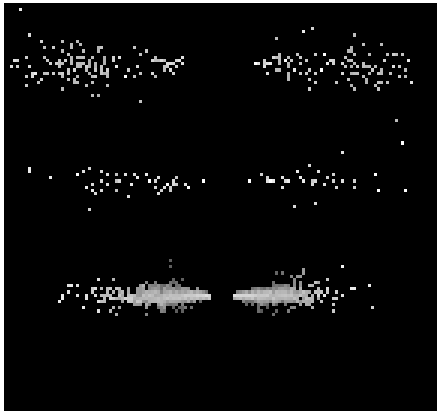
heg order -1



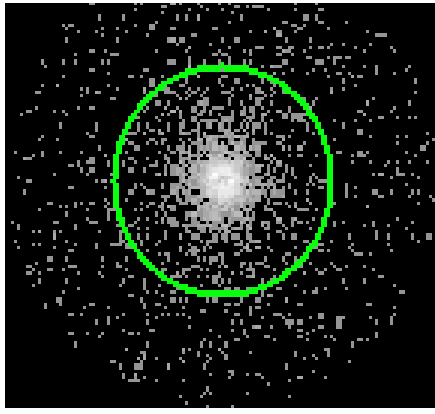
heg order +1



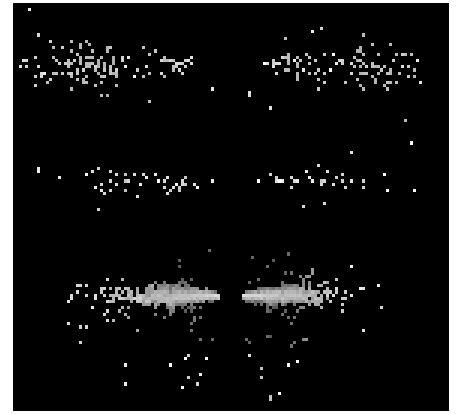
3.2 MEG Arm



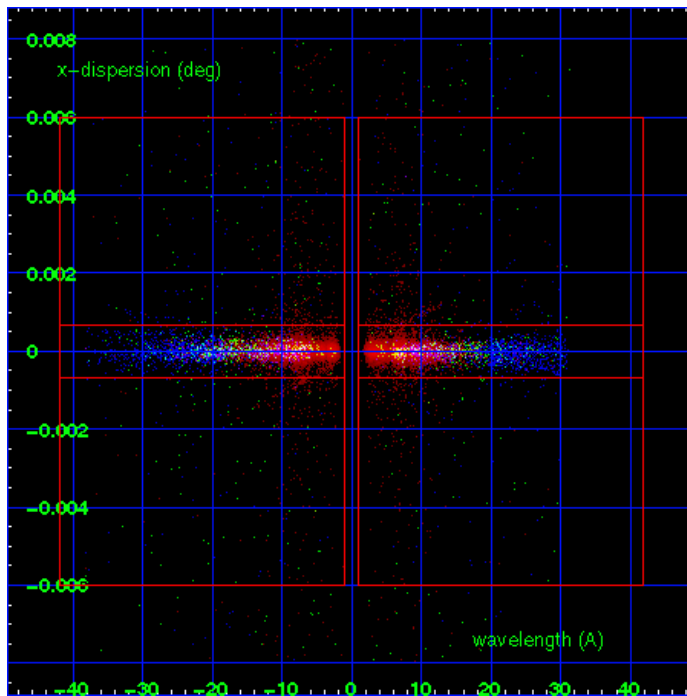
MEG Order Sort 123



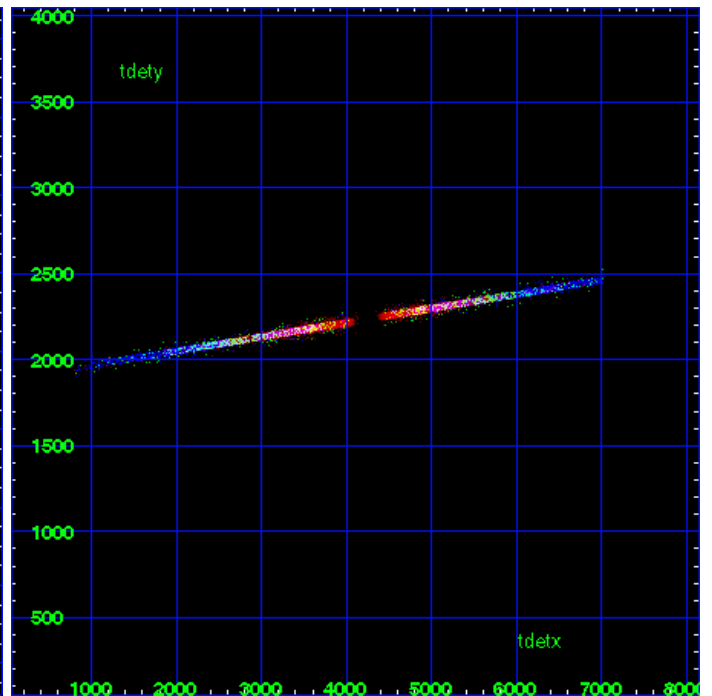
MEG Zero Order



MEG Order Sort ALL

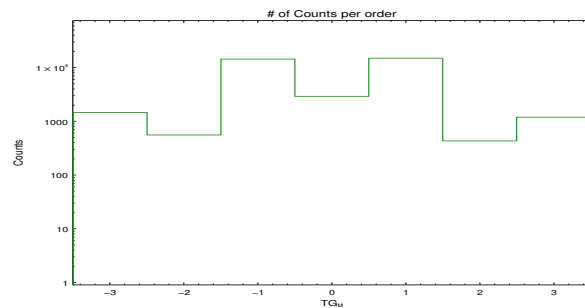


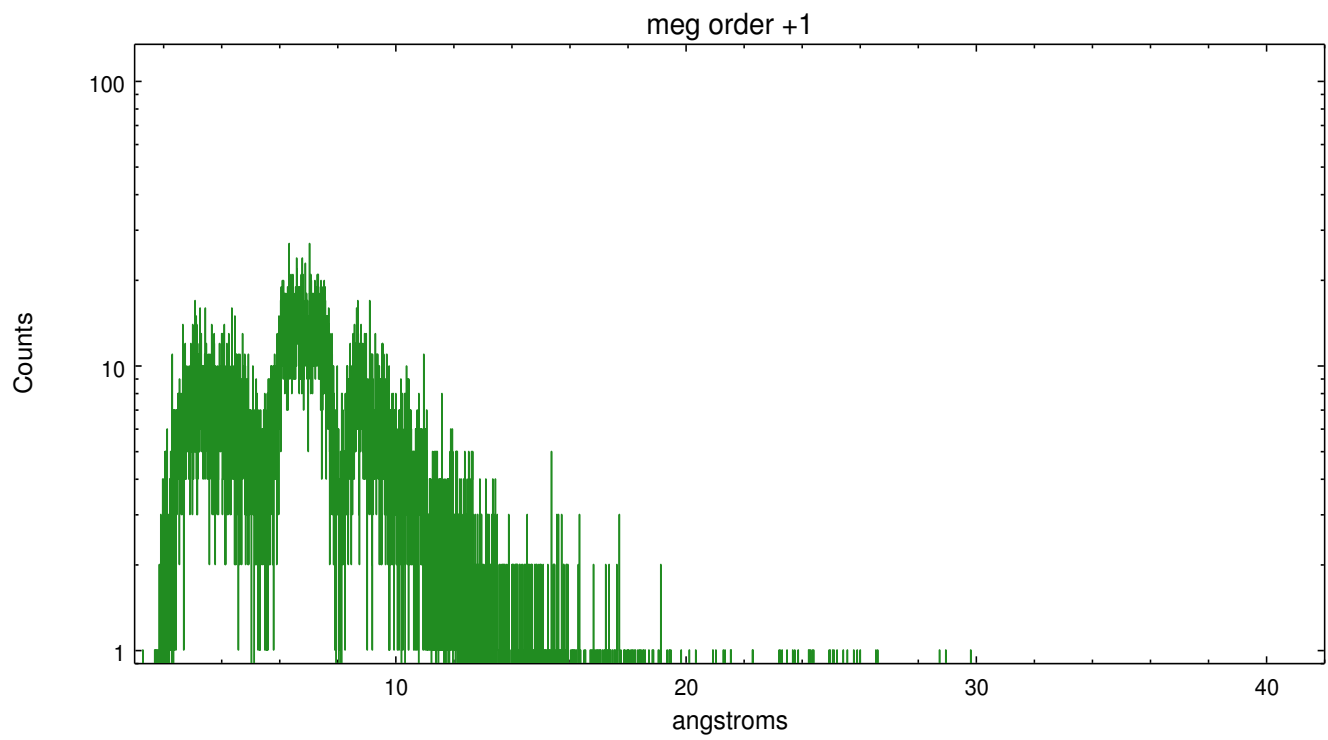
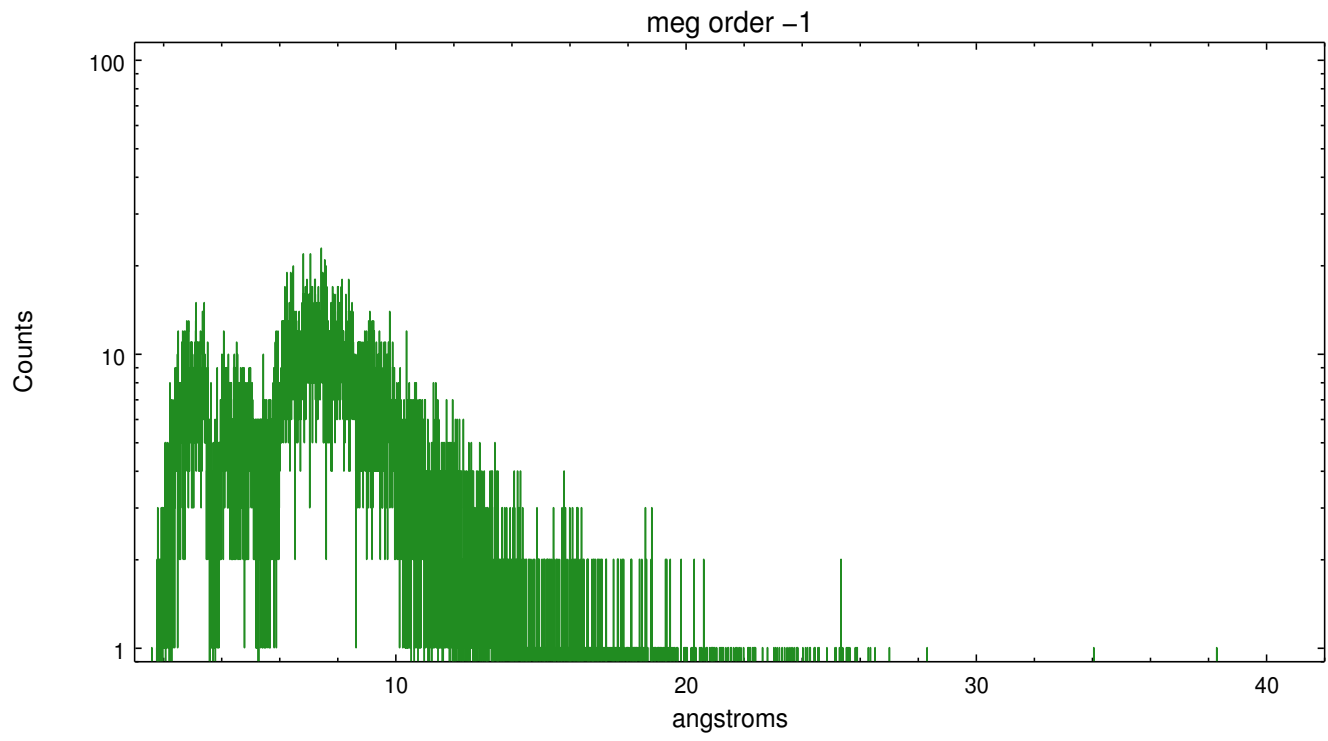
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1460	558	14520	2932	15114	432	1198





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.02.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.987

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 ($x=4189.67$, $y=4032.23$) into the `*src1a.fits` file table. These corrected coordinates were determined using a software tool developed by CXC called `tg_findzo`, available in CIAO. 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 `*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.

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The guide star in slot 7 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.