

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 671 - L2 Version 5
Chandra X-Ray Center

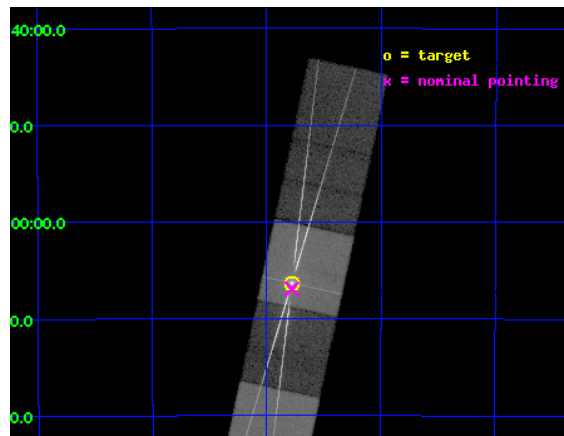
L2 Processing Date : Sep 14 2012

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1 Front

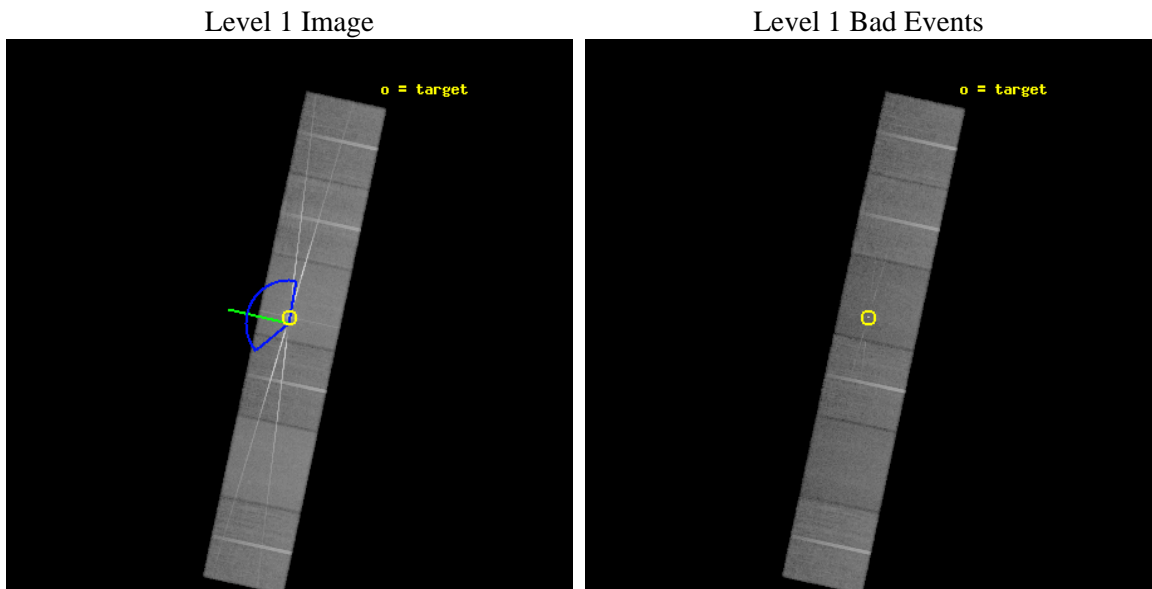
seq_num	400038	Sequence number
obs_id	671	Observation id
title	HIGH RESOLUTION SPECTROSCOPY OF THE ACCRETION DISK CORONA SOURCE 4U 1822-37	Proposal title
observer	PROF. STEVEN KAHN	Principal investigator
object	4U 1822-37	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	276.444583	Observer's specified target RA [deg]
dec_targ	-37.10525	Observer's specified target Dec [deg]
ra_nom	276.4449473195	Nominal RA [deg]
dec_nom	-37.115172876645	Nominal Dec [deg]
roll_nom	282.10414806767	Nominal Roll [deg]
revision	5	Processing version of data
ontime	39947.944246218	Sum of GTIs [s]
livetime	39442.099322408	Livetime [s]
ontime4	39947.985286236	Sum of GTIs [s]
ontime5	39947.903176308	Sum of GTIs [s]
ontime6	39951.103126466	Sum of GTIs [s]
ontime7	39947.944246218	Sum of GTIs [s]
ontime8	39944.58031553	Sum of GTIs [s]
ontime9	39938.057195514	Sum of GTIs [s]
l2events	649586	Number of level 2 events



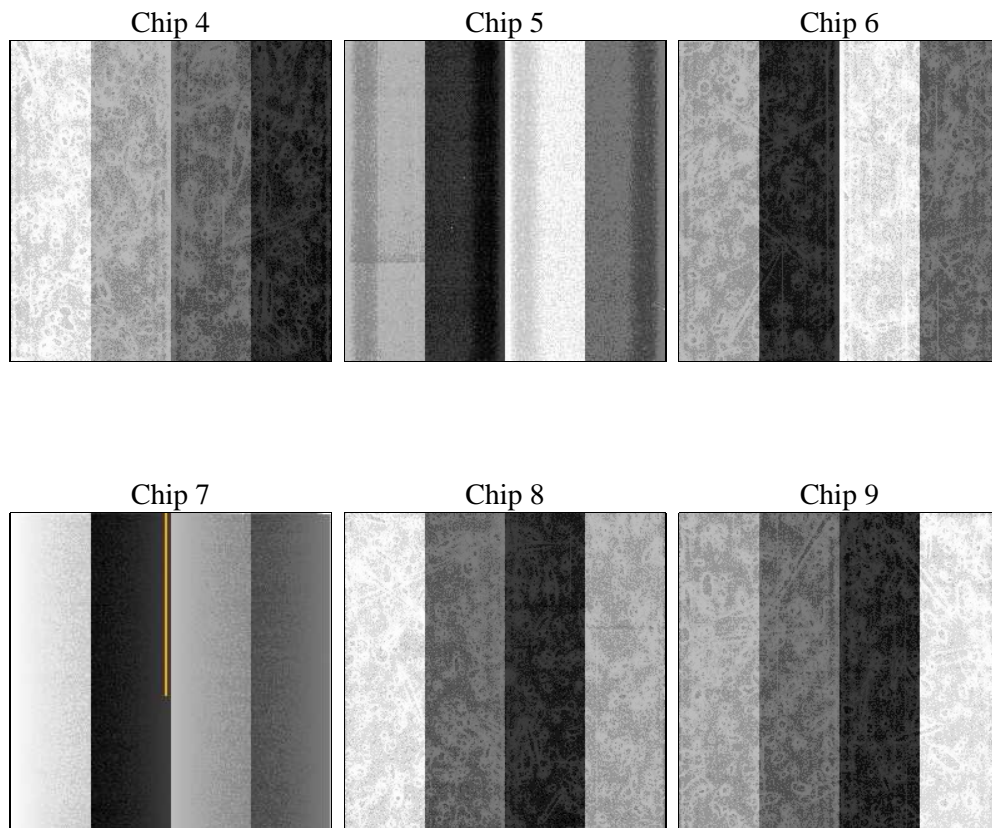
2 OBI

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	8.4.5	Processing system revision	ontime	39947.944246218	Sum of GTIs [s]
caldsver	4.5.1.1	 	ontime4	39947.985286236	Sum of GTIs [s]
date	2012-09-04T18:27:31	Date and time of file creation	ontime5	39947.903176308	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	39951.103126466	Sum of GTIs [s]
			ontime7	39947.944246218	Sum of GTIs [s]
			ontime8	39944.58031553	Sum of GTIs [s]
			ontime9	39938.057195514	Sum of GTIs [s]
			l1events	1989103	Number of level 1 events

2.1.4 Events

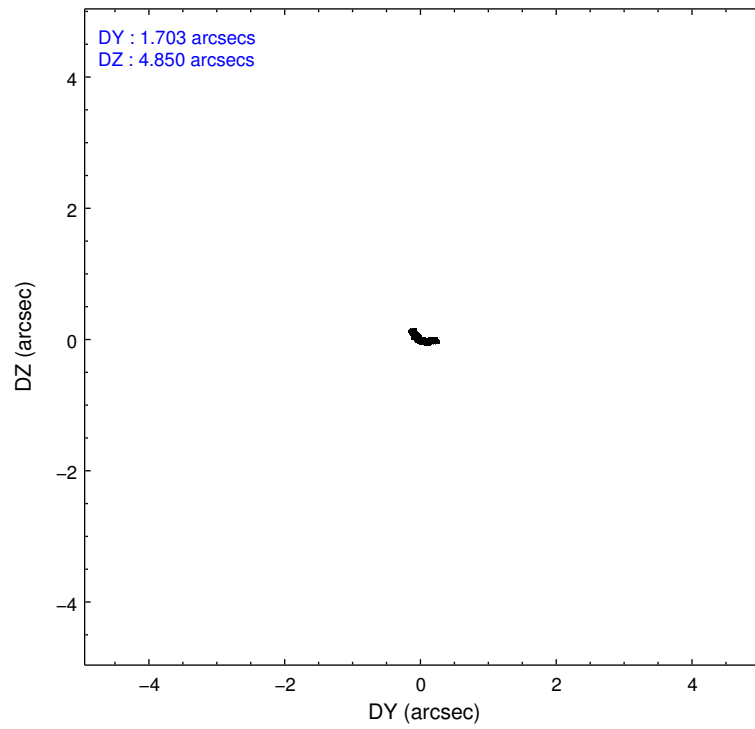
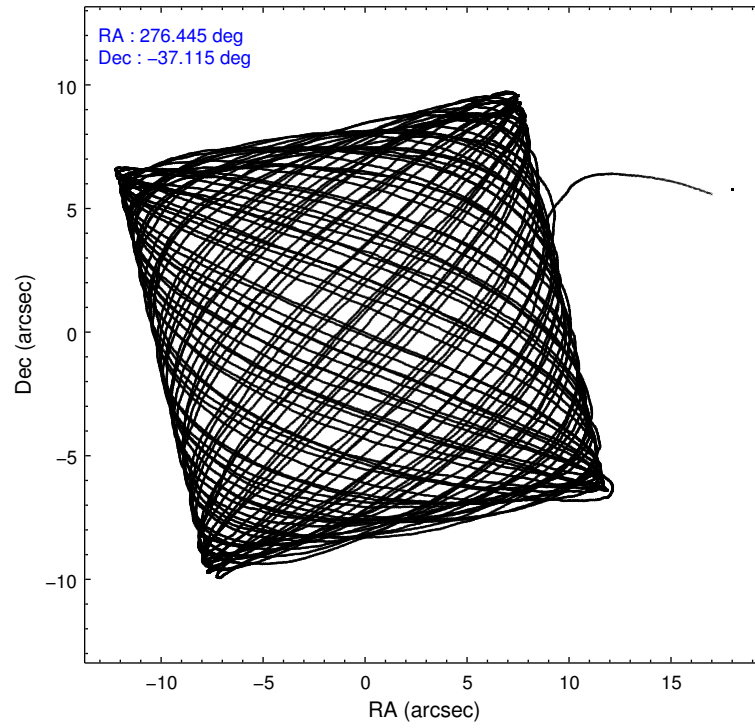
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	271773	335218	343275	447390	341120	250327	grade 0 events	14742	15360	81275	43441	48225	16872
rejected events	239733	176826	220053	178527	246544	215737		5%	4%	23%	9%	14%	6%
rejected %	88%	52%	64%	39%	72%	86%	grade 1 events	126	332	549	779	301	120
								0%	0%	0%	0%	0%	0%
							grade 2 events	6923	46424	17495	59231	16260	6183
								2%	13%	5%	13%	4%	2%
							grade 3 events	2806	8087	6952	27122	7474	3054
								1%	2%	2%	6%	2%	1%
							grade 4 events	2702	7907	6706	26620	7018	2954
								0%	2%	1%	5%	2%	1%
							grade 5 events	8259	25501	10330	30820	12403	9941
								3%	7%	3%	6%	3%	3%
							grade 6 events	4870	80626	10801	112470	15612	5532
								1%	24%	3%	25%	4%	2%
							grade 7 events	231345	150981	209167	146907	233827	205671
								85%	45%	60%	32%	68%	82%

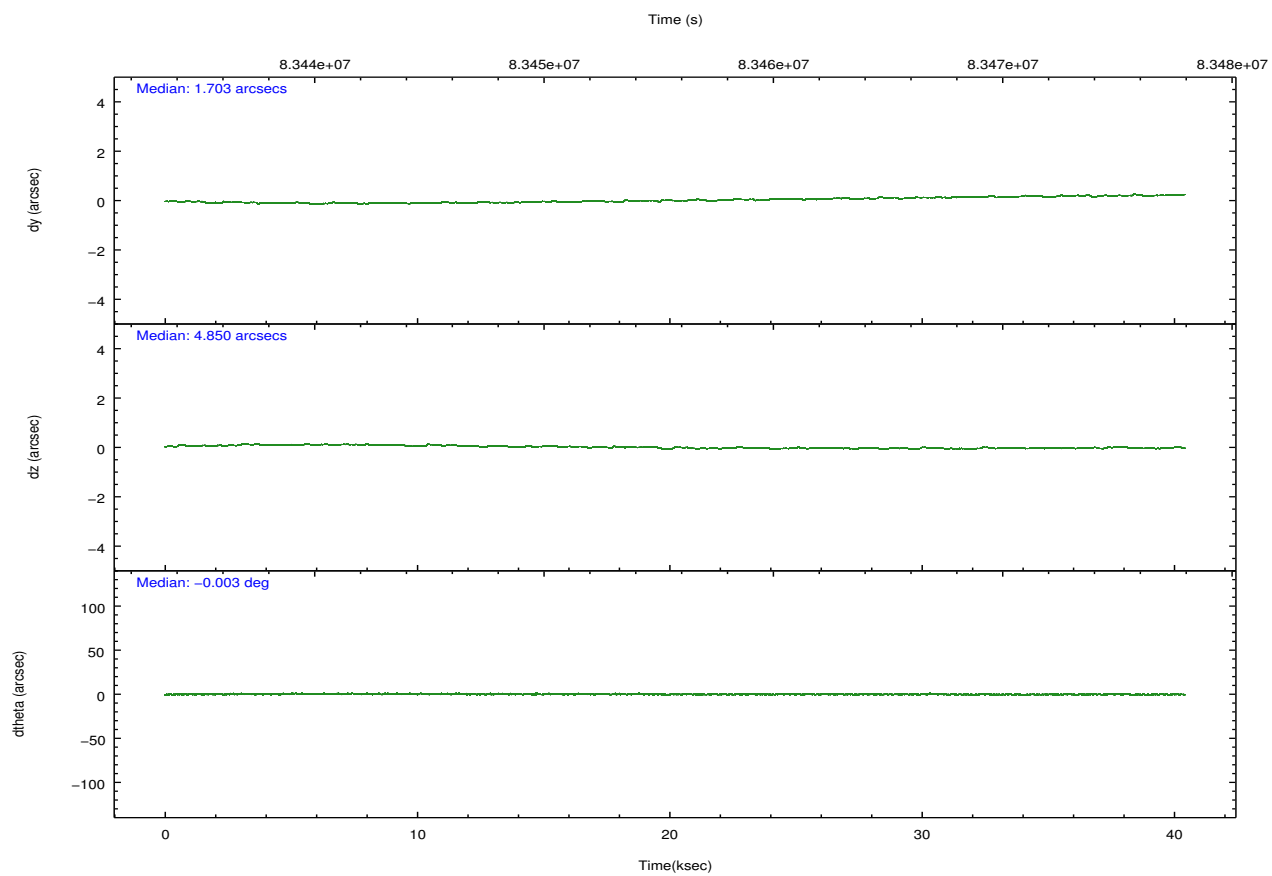
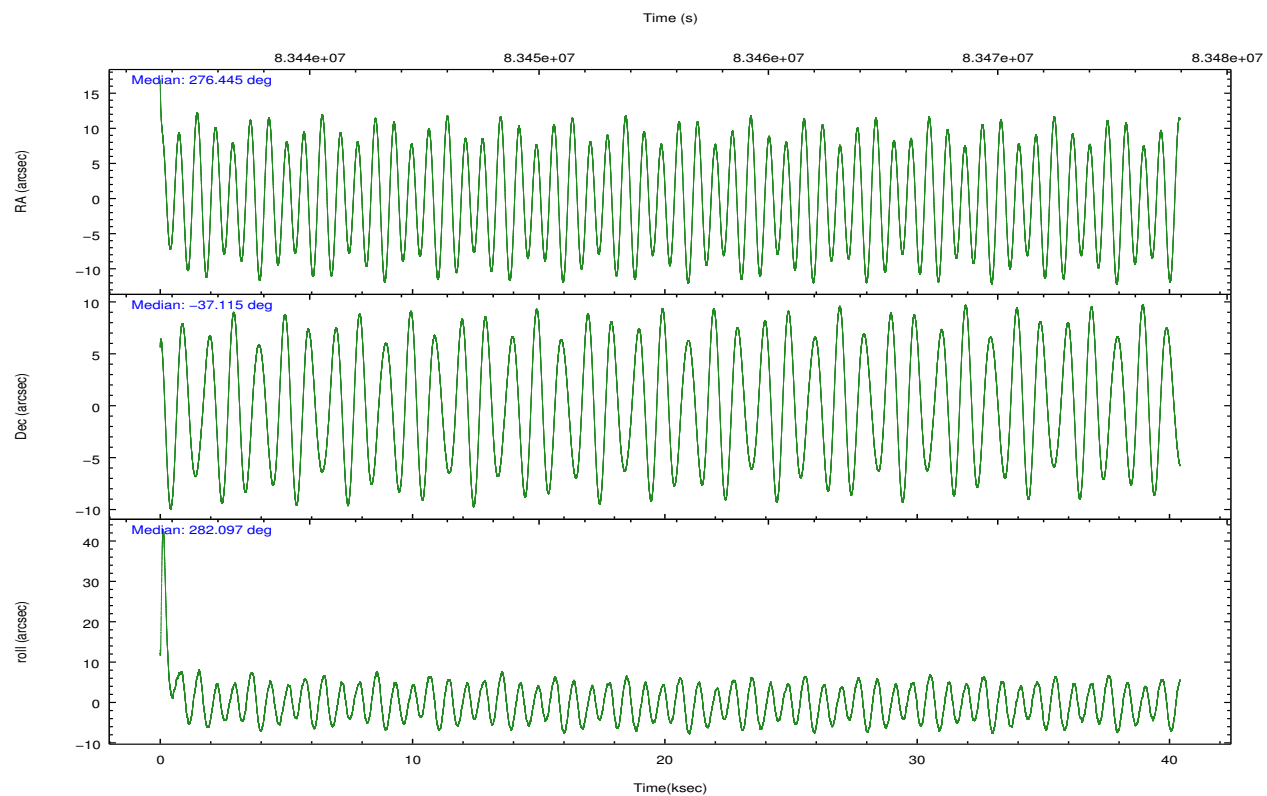
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	276.421783	276.4449473194979
[deg] Pointing Dec	-37.094954	-37.11517287664532
[deg] Pointing Roll	281.933558	282.1041480676694
[deg] Roll angle	300.000000	300.000000
[deg] Roll tolerance	70.000000	70.000000
Roll constraint allows 180D rotation	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-187.132523	-187.1228876879999
[mm] SIM translation stage offset	-3	-3.009634895007935
[s] Observation start time (MET)	83435918.184000	83434837.31211901
Observation start date	2000-08-23T16:37:34	2000-08-23T16:20:37
[s] Observation end time (MET)	83475918.184000	83476452.826179
Observation end date	2000-08-24T03:44:14	2000-08-24T03:54:12
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

2.3 Aspect



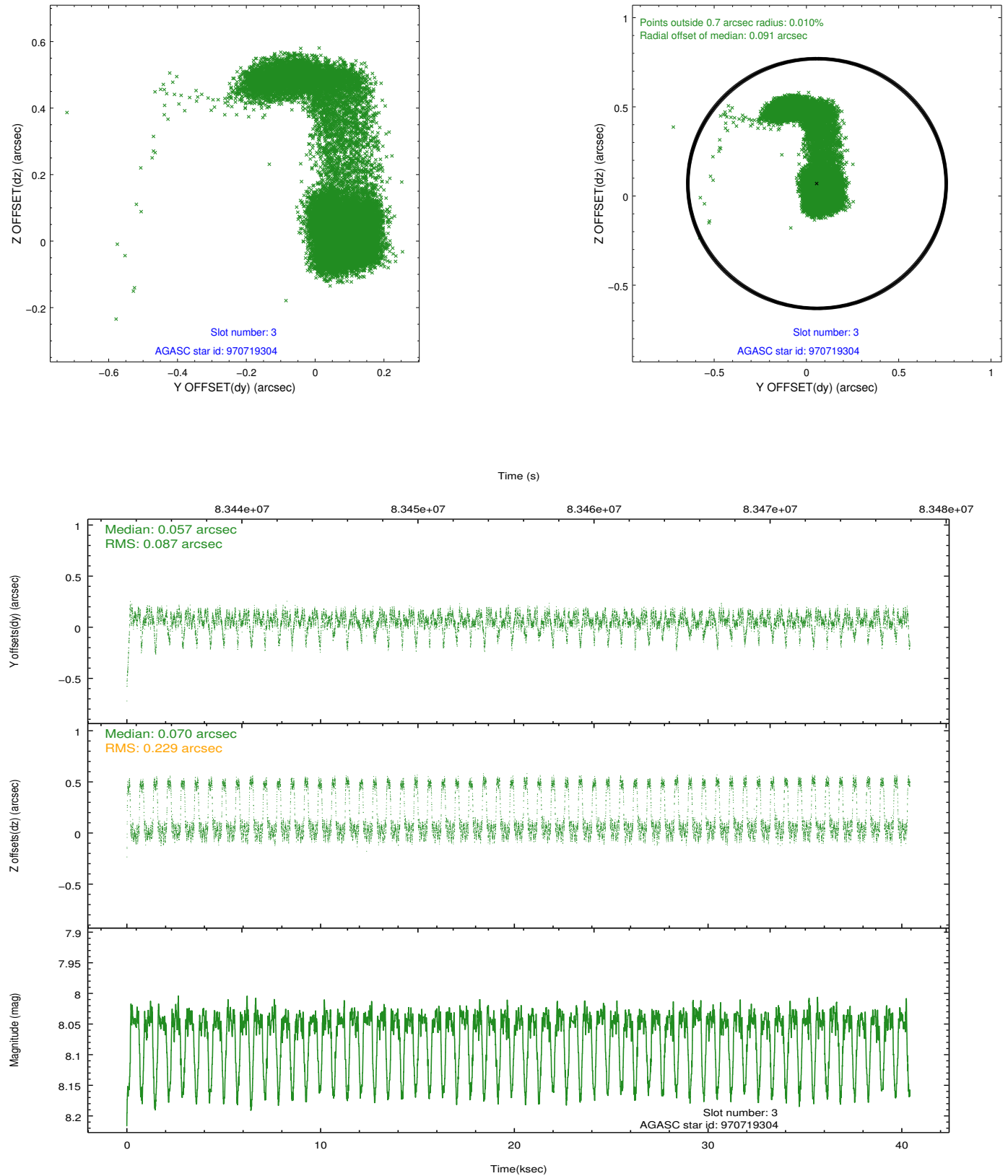


Slot Statistics

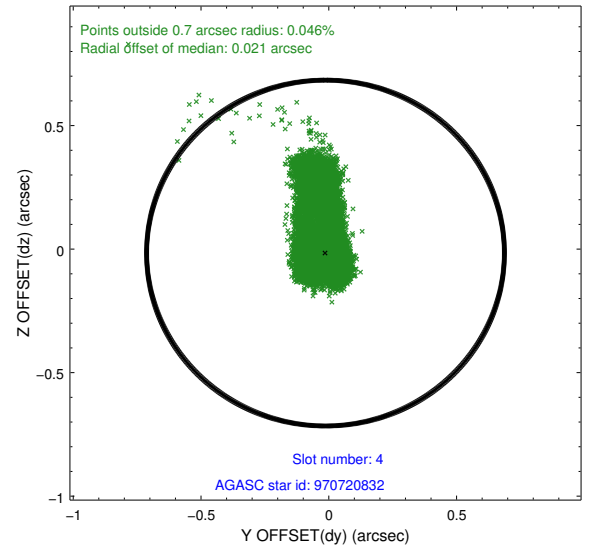
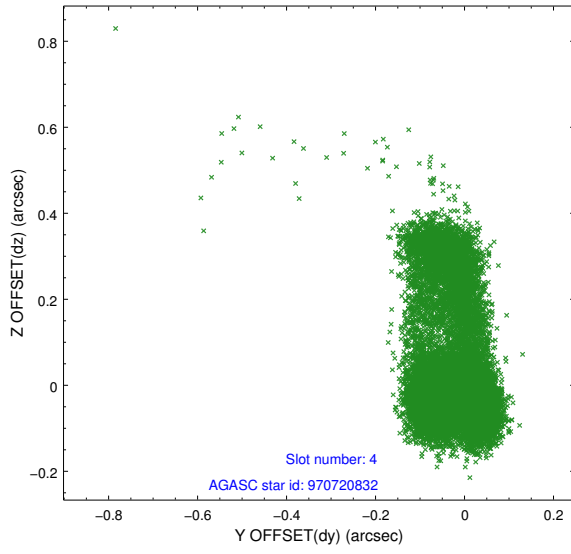
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	9857	-0.030	-0.036	0.007	0.012	0.000000	0.000000	-754.18	-1788.14
1	FID	ACIS-S-4	7.19	9854	0.004	0.024	0.006	0.010	0.000000	0.000000	2159.15	120.35
2	FID	ACIS-S-5	7.23	9856	-0.005	0.020	0.007	0.011	0.000000	0.000000	-1806.95	114.07
3	GUIDE	970719304	8.05	19709	0.057	0.070	0.174	0.469	277.277255	-37.299580	1237.33	2243.15
4	GUIDE	970720832	8.10	19713	-0.013	-0.016	0.091	0.334	277.196112	-36.995844	119.31	2250.85
5	GUIDE	1035604392	9.44	19705	-0.000	-0.091	0.153	0.297	275.759258	-37.563529	1265.70	-2199.26
6	GUIDE	970597584	9.14	19699	-0.066	-0.057	0.103	0.231	275.922701	-36.819014	-1266.07	-1202.44
7	GUIDE	970588592	9.50	19707	0.033	0.056	0.124	0.246	276.258556	-36.829844	-1031.21	-262.53

2.4 Star Slots

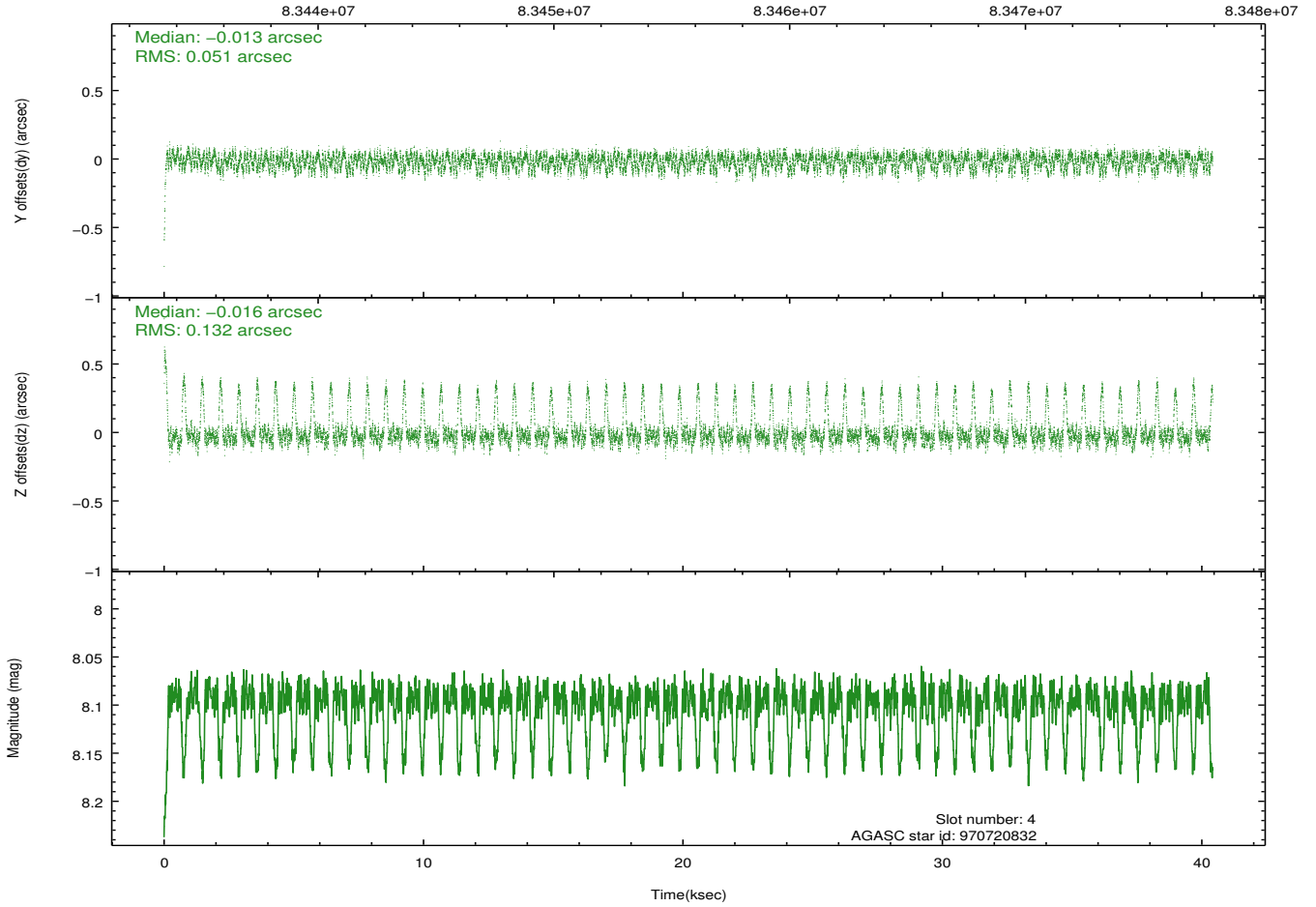
2.4.1 Slot 3



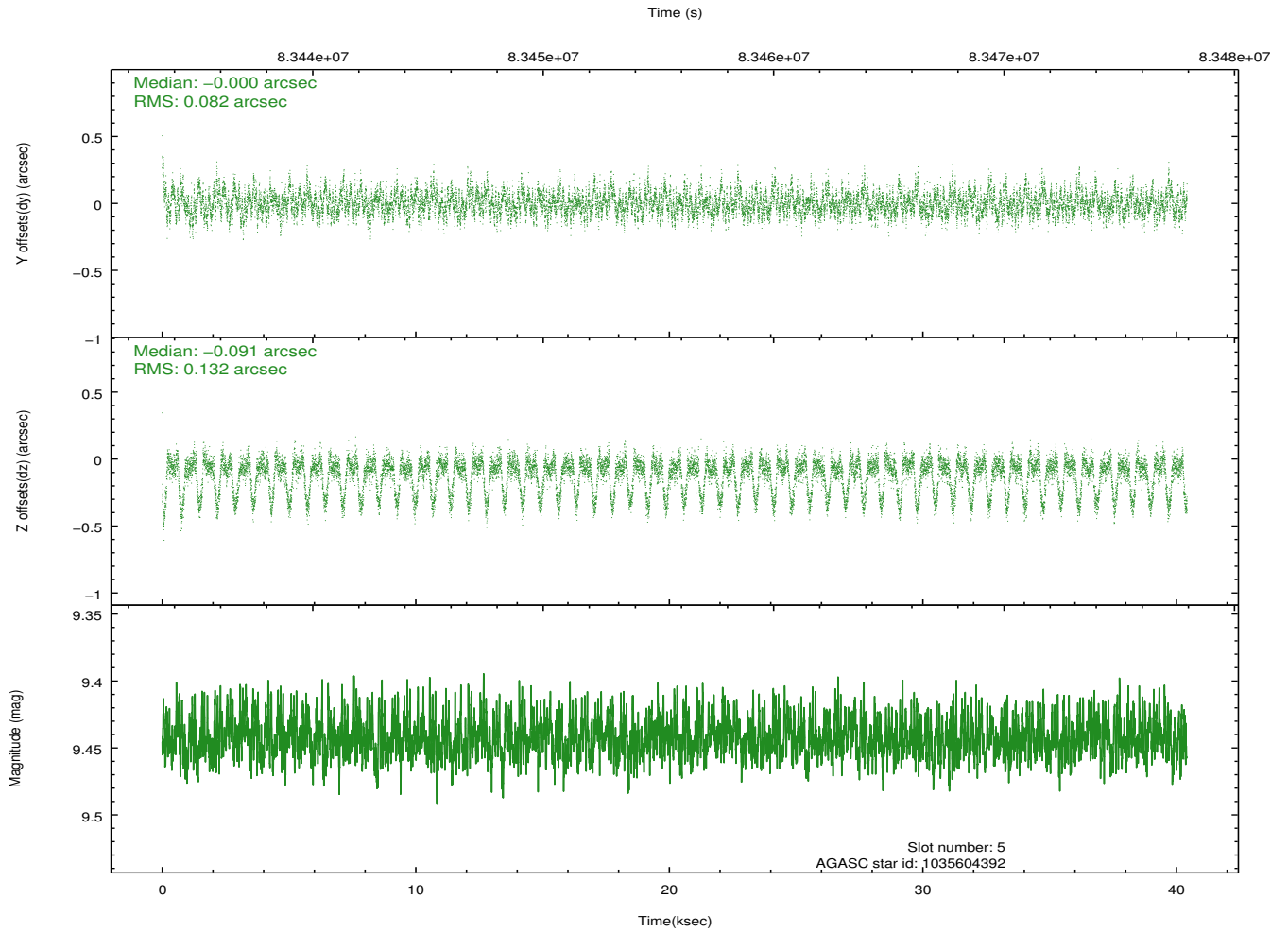
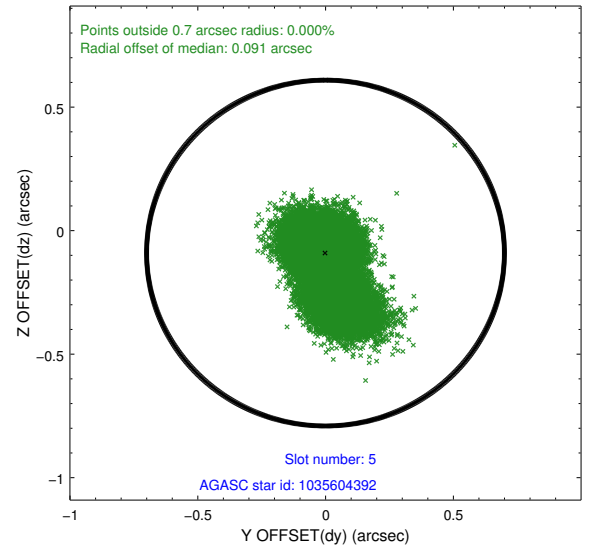
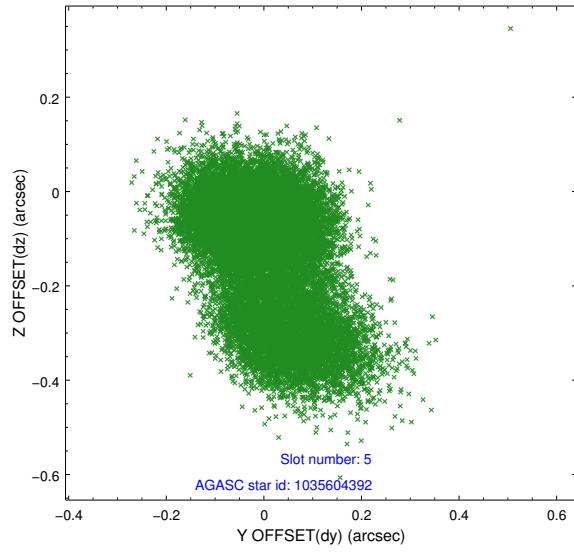
2.4.2 Slot 4



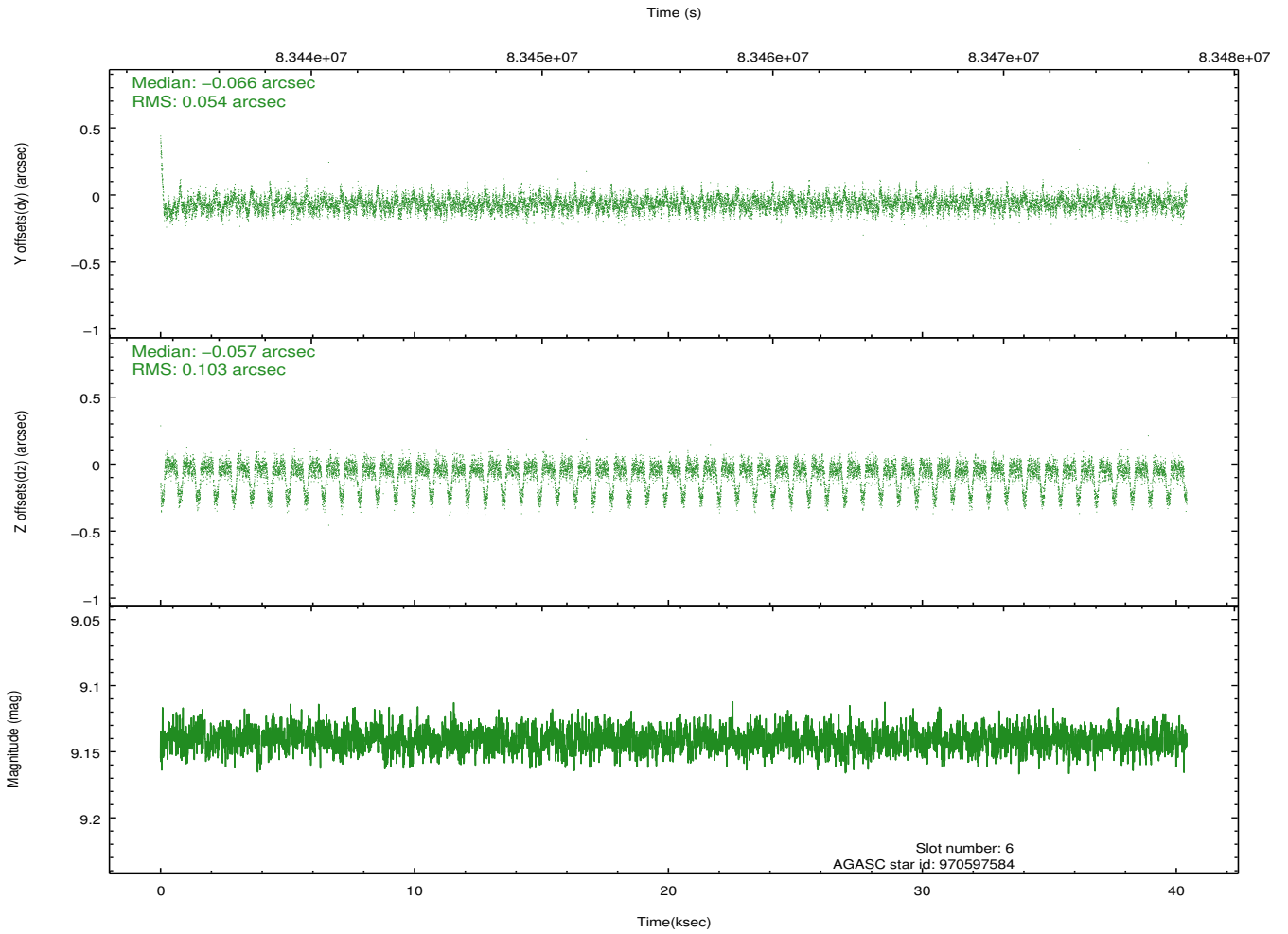
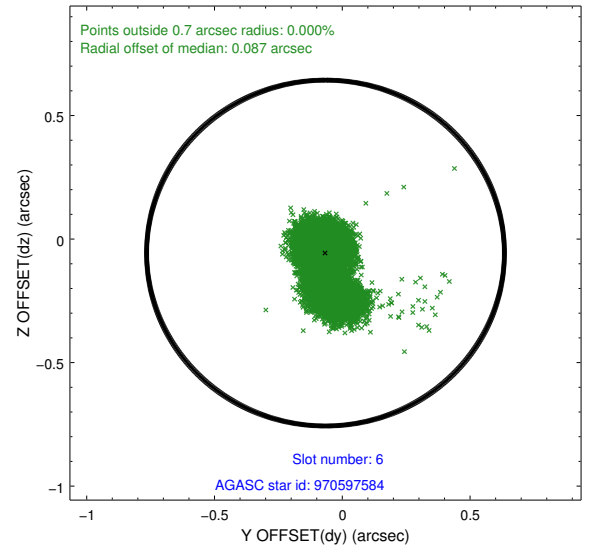
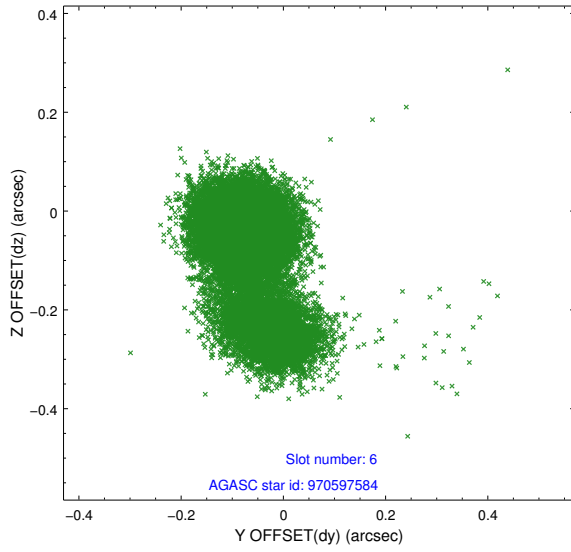
Time (s)



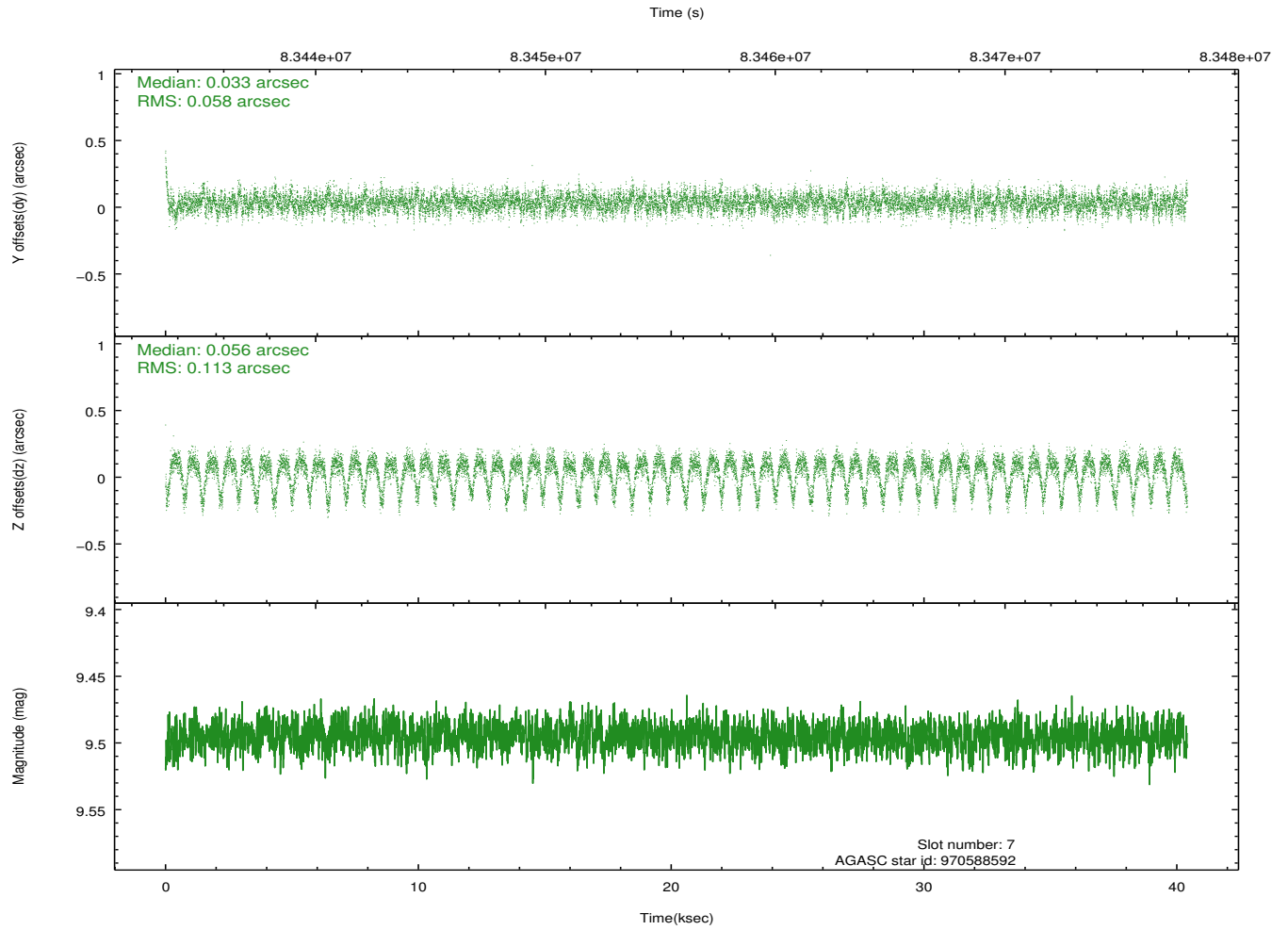
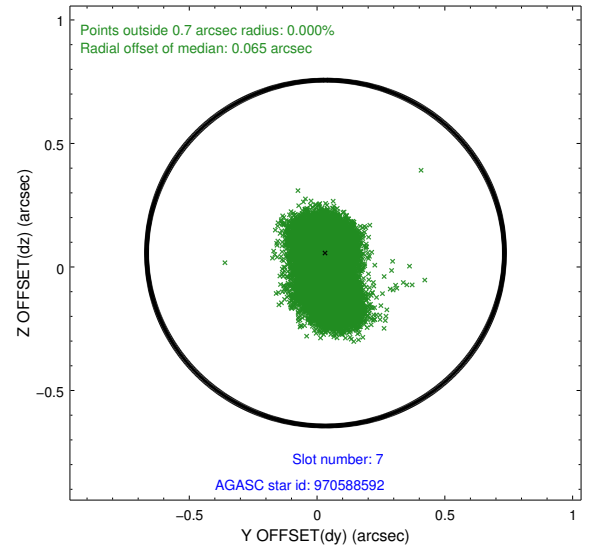
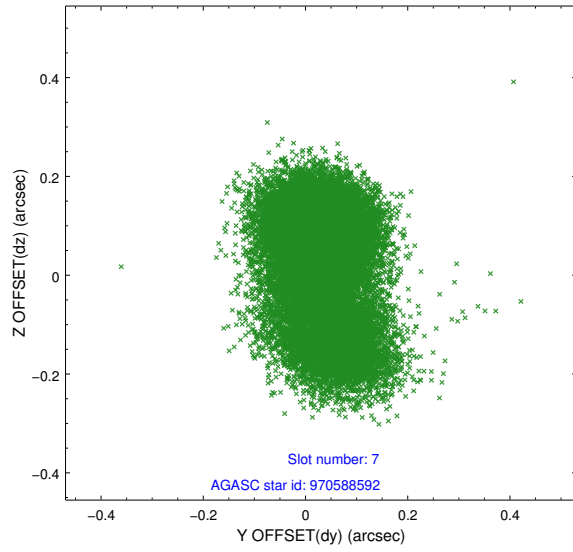
2.4.3 Slot 5



2.4.4 Slot 6

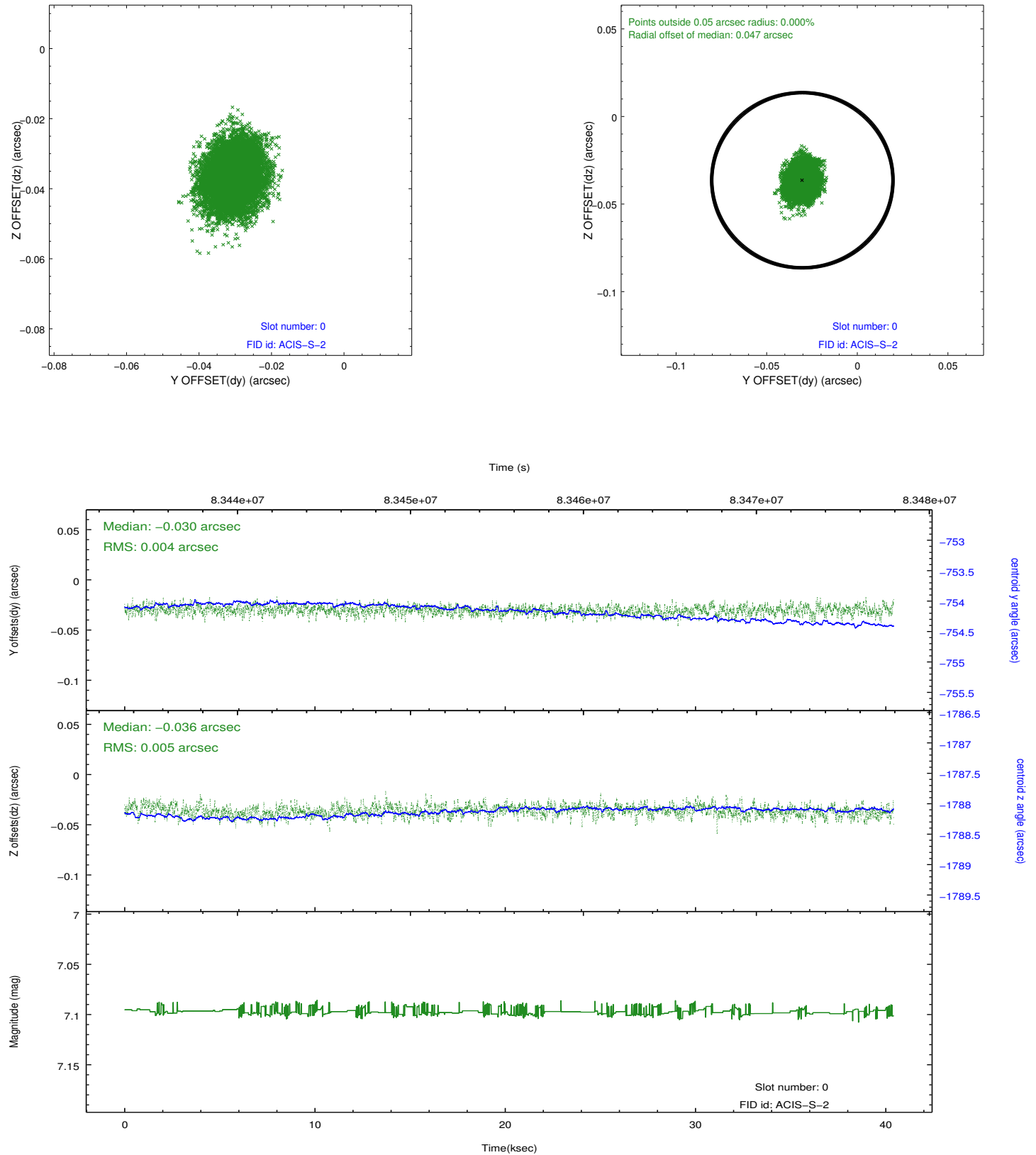


2.4.5 Slot 7

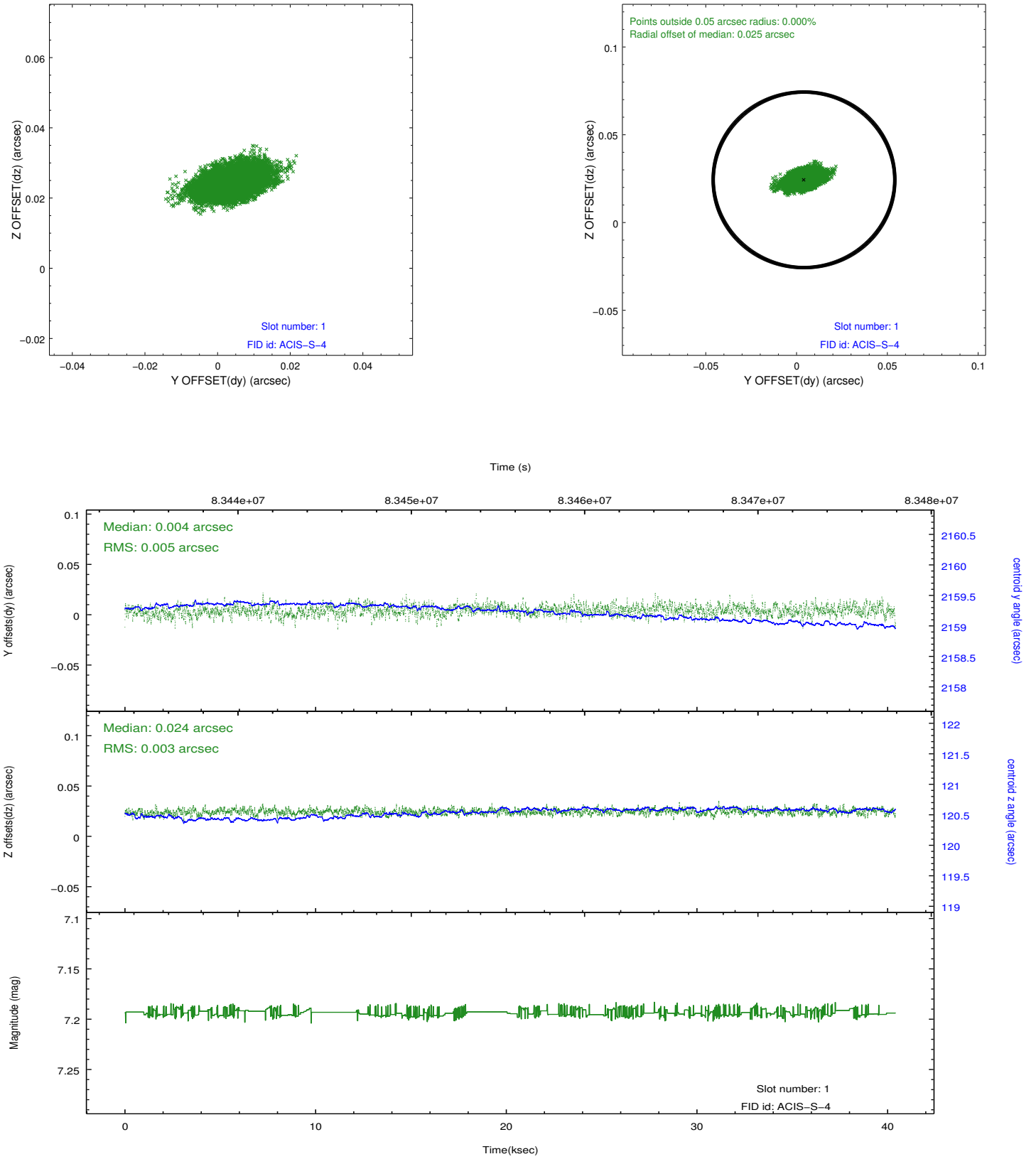


2.5 FID Slots

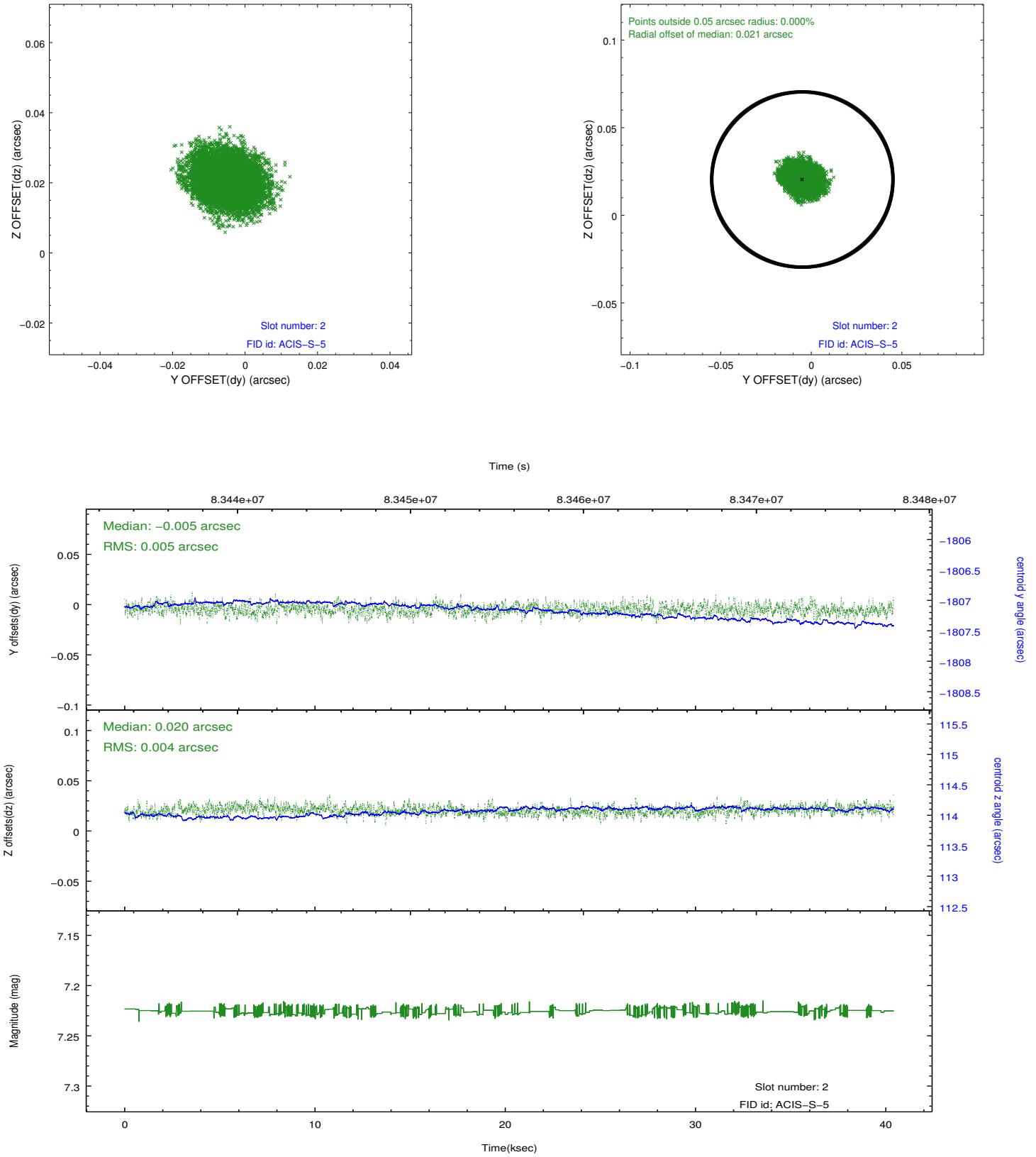
2.5.1 Slot 0



2.5.2 Slot 1

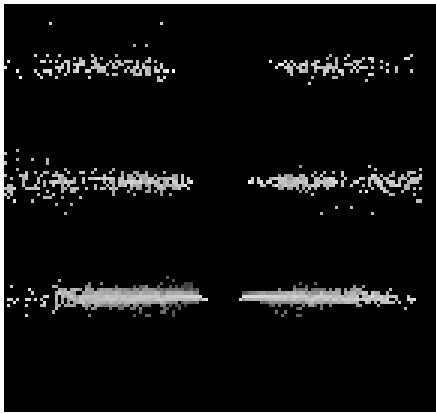


2.5.3 Slot 2

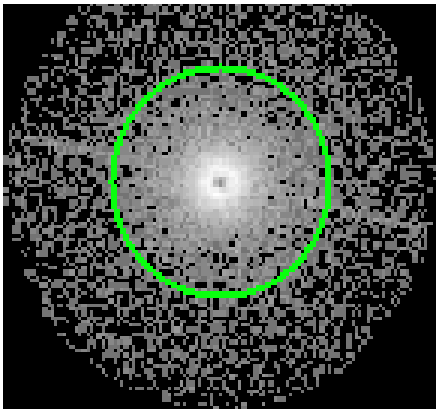


3 Gratings

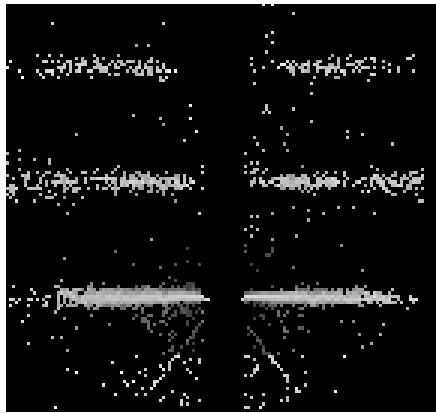
3.1 HEG Arm



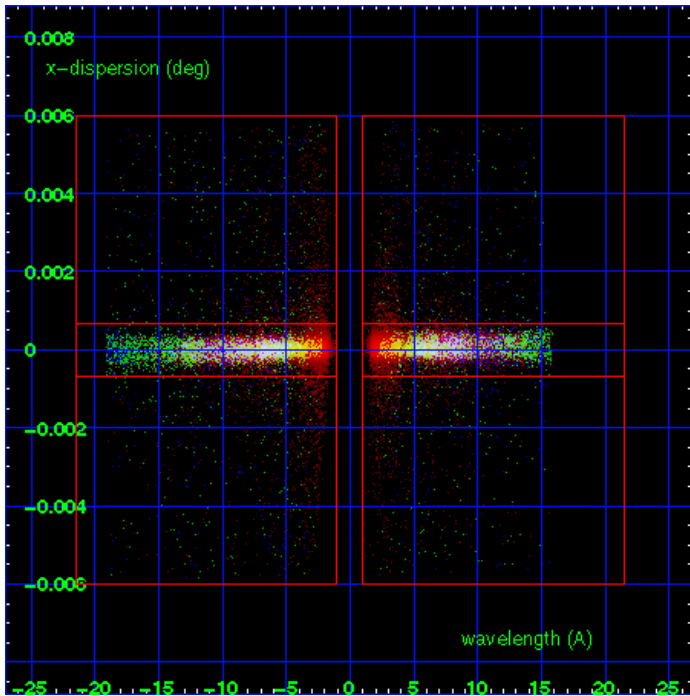
HEG Order Sort 123



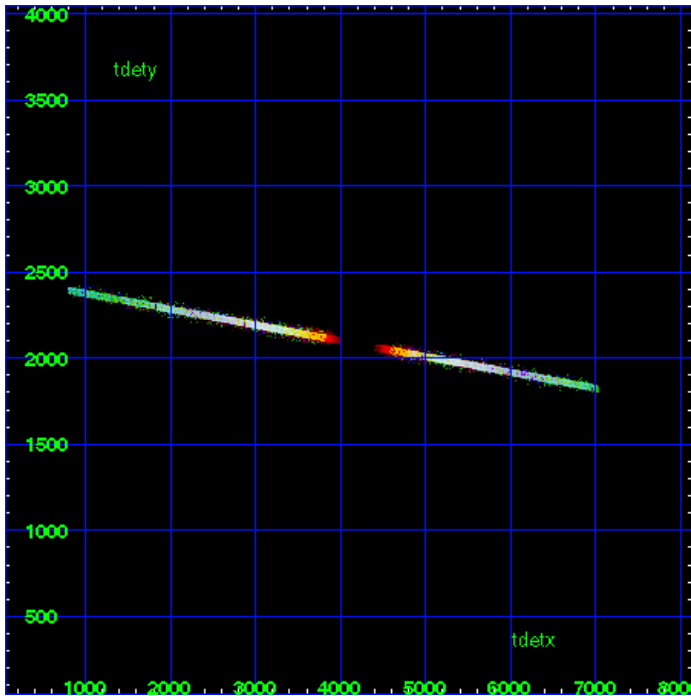
HEG Zero Order



HEG Order Sort ALL

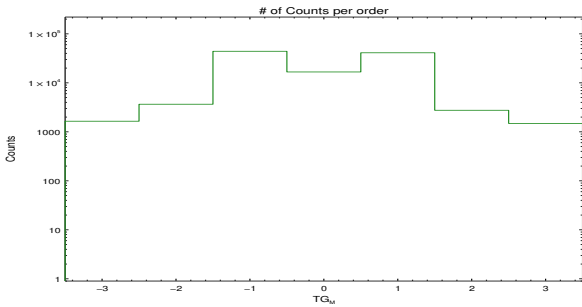


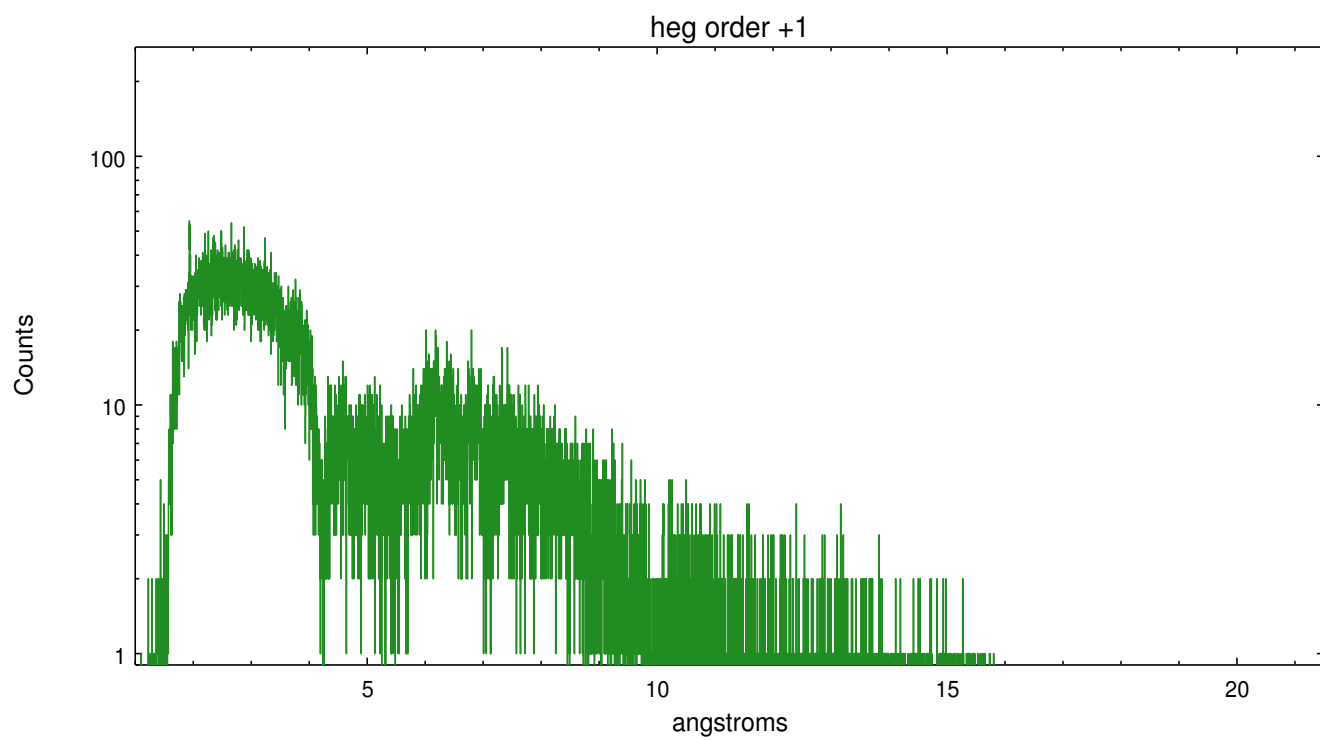
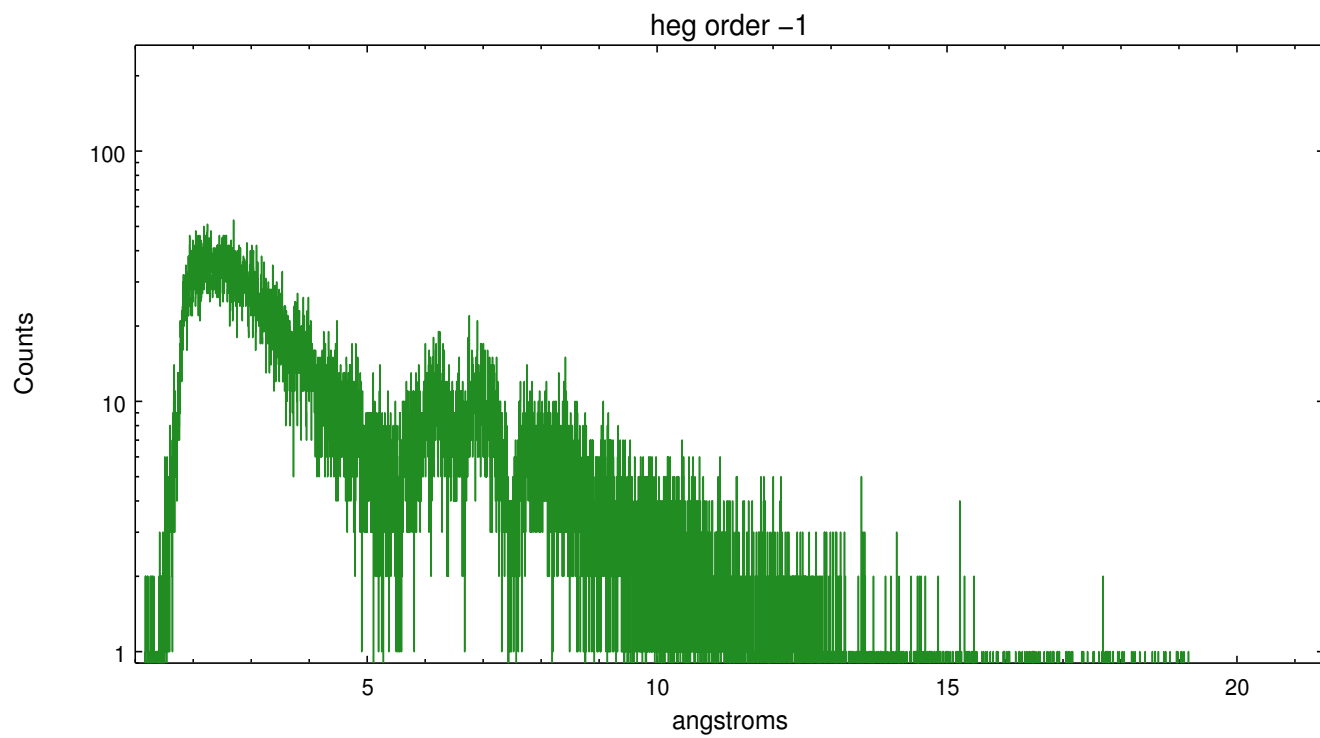
Spot Image HEG



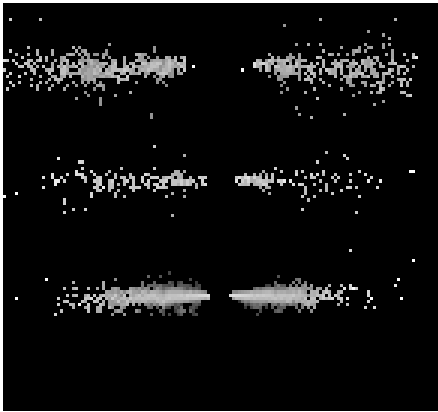
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1646	3658	44066	16685	41092	2753	1485

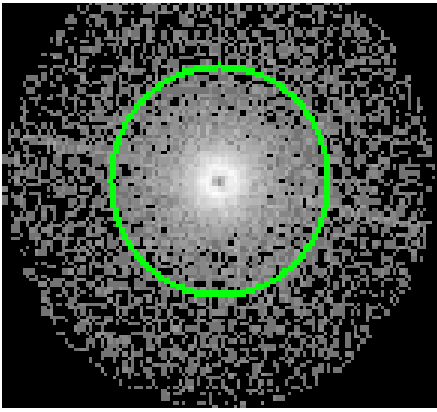




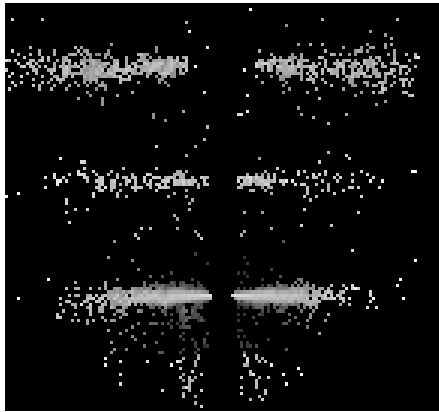
3.2 MEG Arm



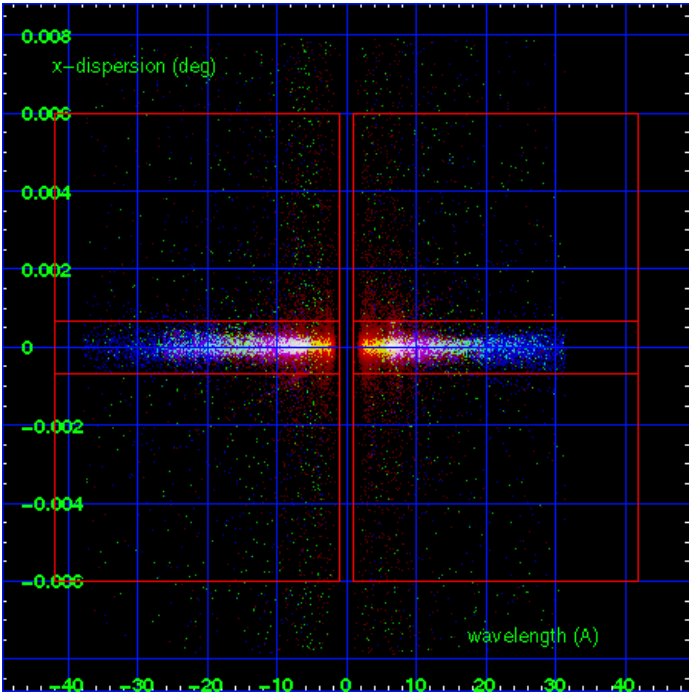
MEG Order Sort 123



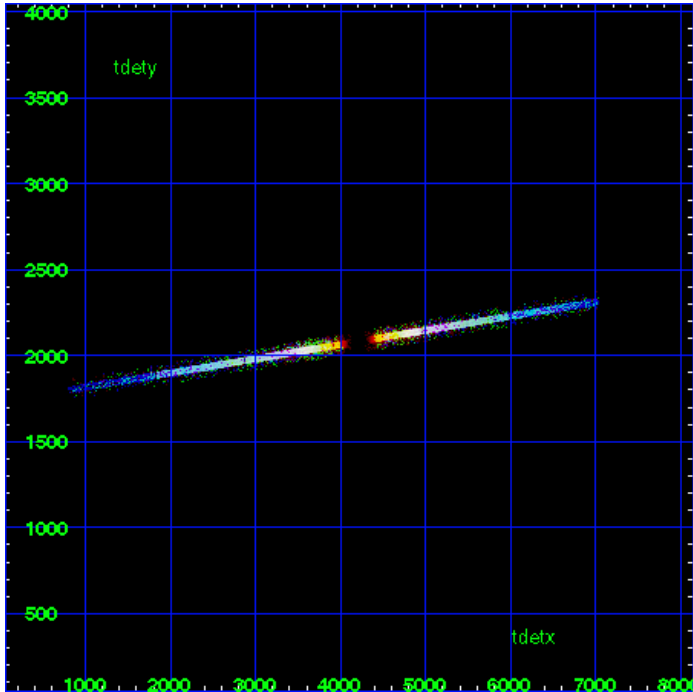
MEG Zero Order



MEG Order Sort ALL

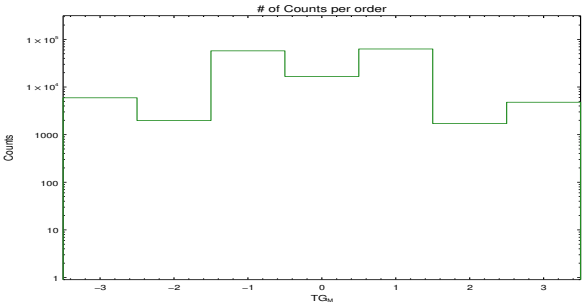


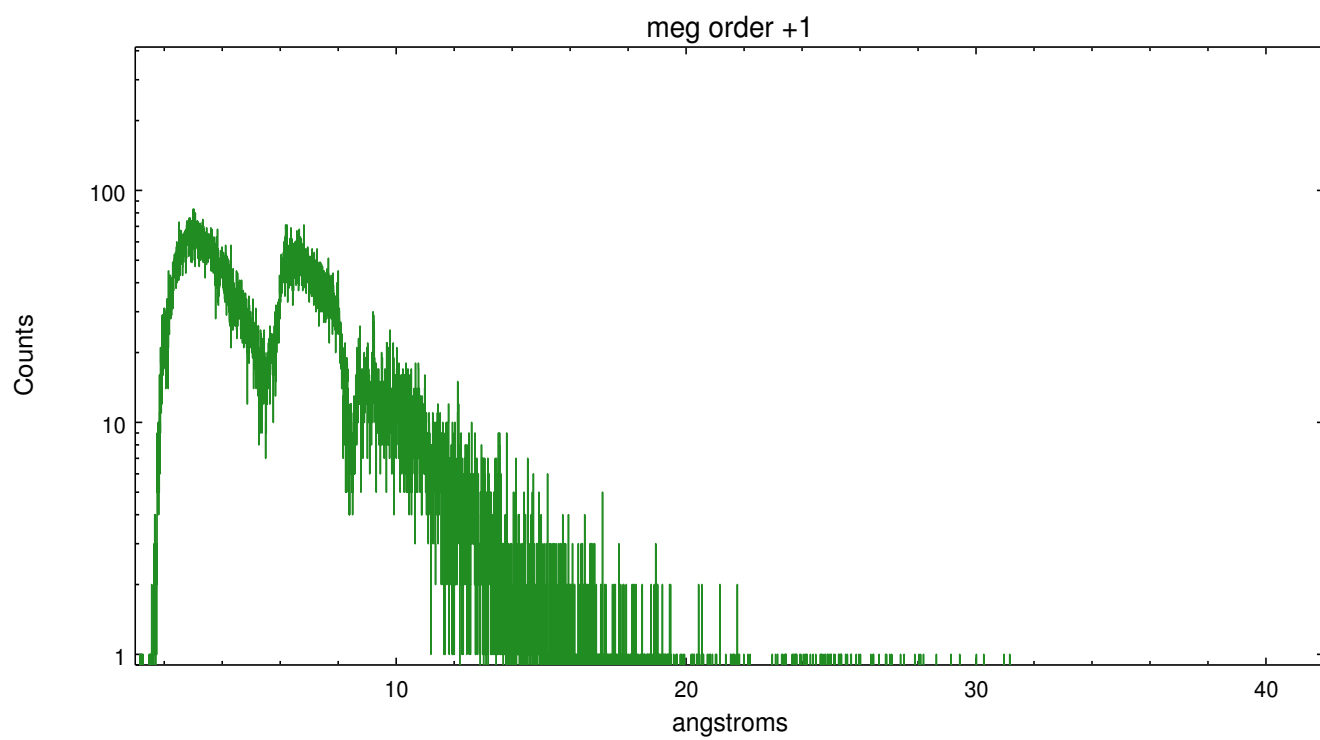
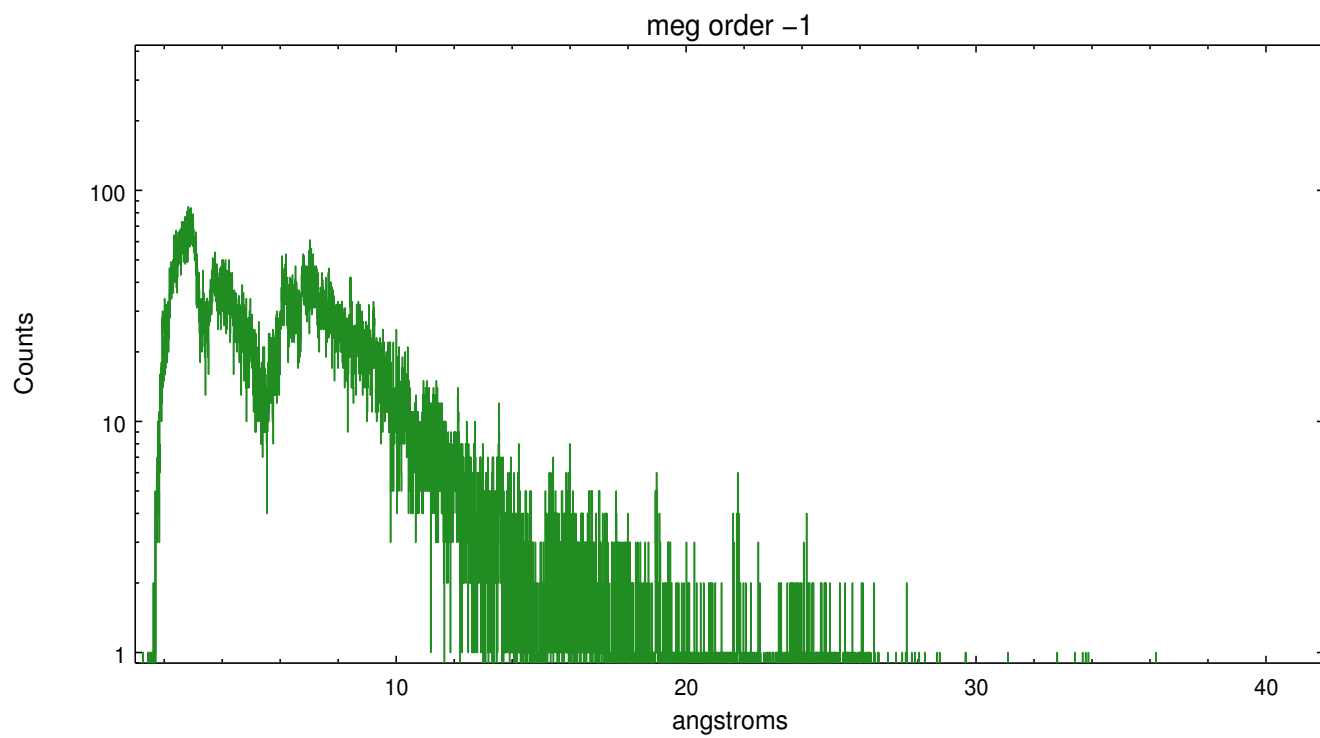
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5940	1979	57527	16685	62922	1707	4785





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.95

A.2 Comments

Roll constraint met.

===

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=4095.89, y=4169.8) 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 as tg_findzo (currently in ISIS as findzo). 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.