

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 1022 - L2 Version 5
Chandra X-Ray Center

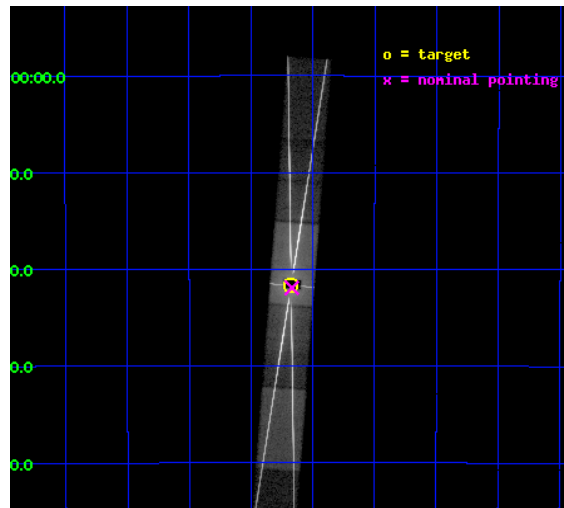
L2 Processing Date : Sep 25 2012

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

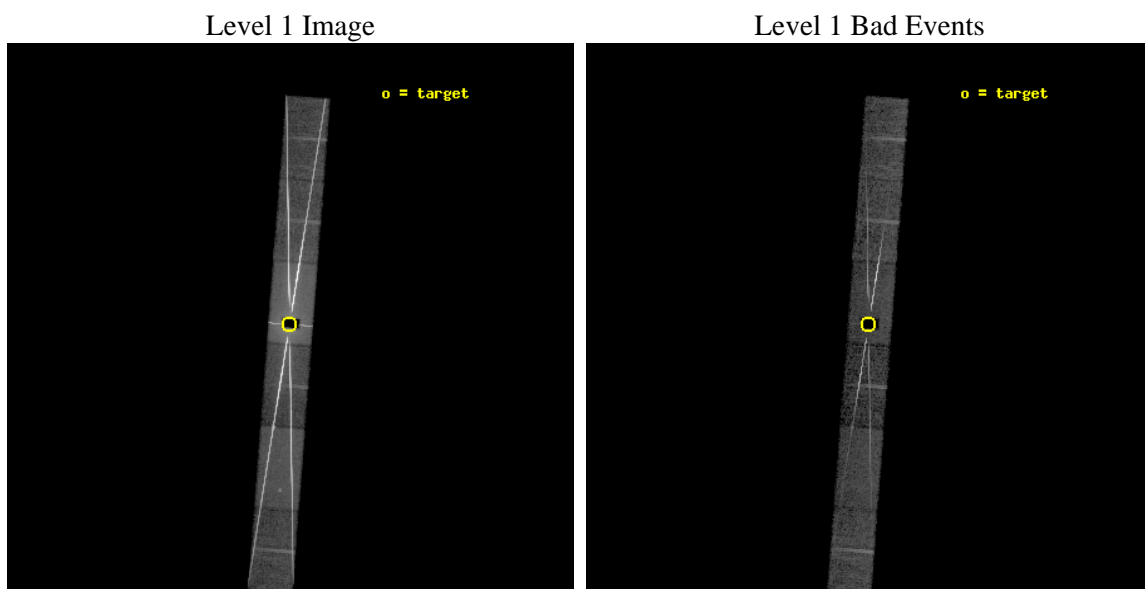
seq_num	400100	Sequence number
obs_id	1022	Observation id
title	ACCRETION DISK LINES AND CONTINUUM IN 4U 1820-30	Proposal title
observer	Dr. Stephen Murray	Principal investigator
object	NGC6624	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	275.91875	Observer's specified target RA [deg]
dec_targ	-30.361111	Observer's specified target Dec [deg]
ra_nom	275.91718841916	Nominal RA [deg]
dec_nom	-30.365316224011	Nominal Dec [deg]
roll_nom	274.41501376697	Nominal Roll [deg]
revision	5	Processing version of data
ontime	10888.199981987	Sum of GTIs [s]
livetime	10645.482970265	Livetime [s]
ontime4	9262.596590966	Sum of GTIs [s]
ontime5	10888.199981987	Sum of GTIs [s]
ontime6	6713.8960778266	Sum of GTIs [s]
ontime7	10888.199981987	Sum of GTIs [s]
ontime8	8649.5454682708	Sum of GTIs [s]
ontime9	10731.714541972	Sum of GTIs [s]
l2events	1519509	Number of level 2 events



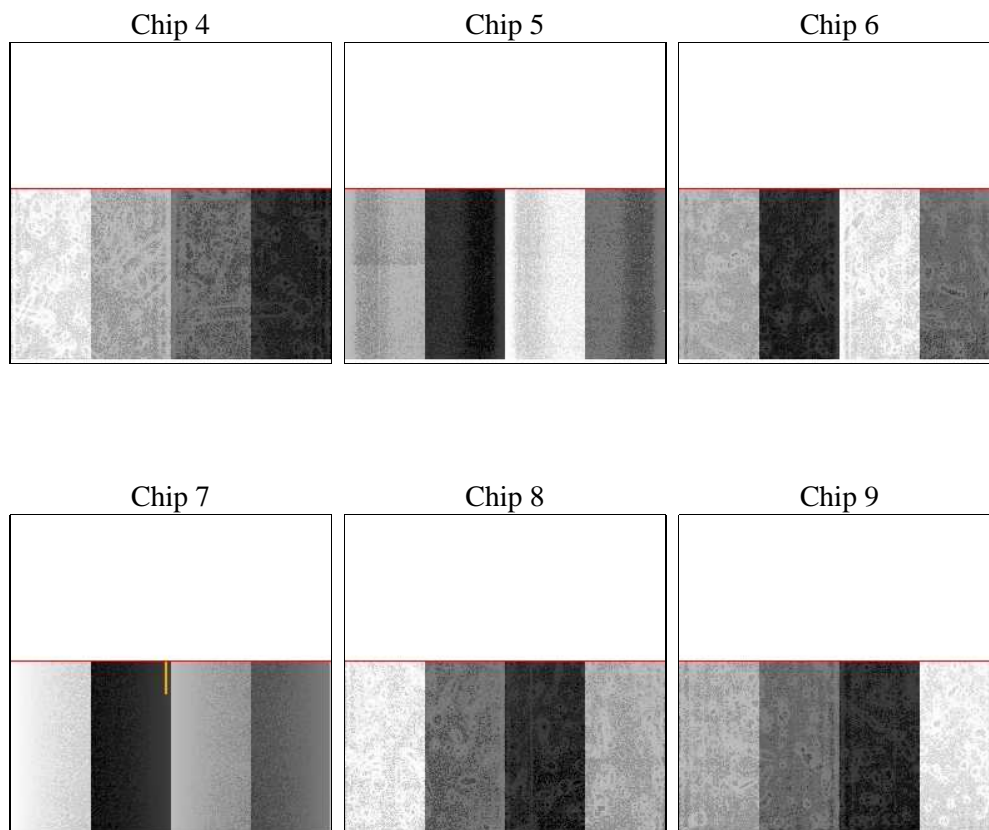
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10742.536000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	10888.199981987	Sum of GTIs [s]
caldsver	4.5.1.1	 	ontime4	9262.596590966	Sum of GTIs [s]
date	2012-09-24T07:36:17	Date and time of file creation	ontime5	10888.199981987	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	6713.8960778266	Sum of GTIs [s]
			ontime7	10888.199981987	Sum of GTIs [s]
			ontime8	8649.5454682708	Sum of GTIs [s]
			ontime9	10731.714541972	Sum of GTIs [s]
			l1events	1919767	Number of level 1 events

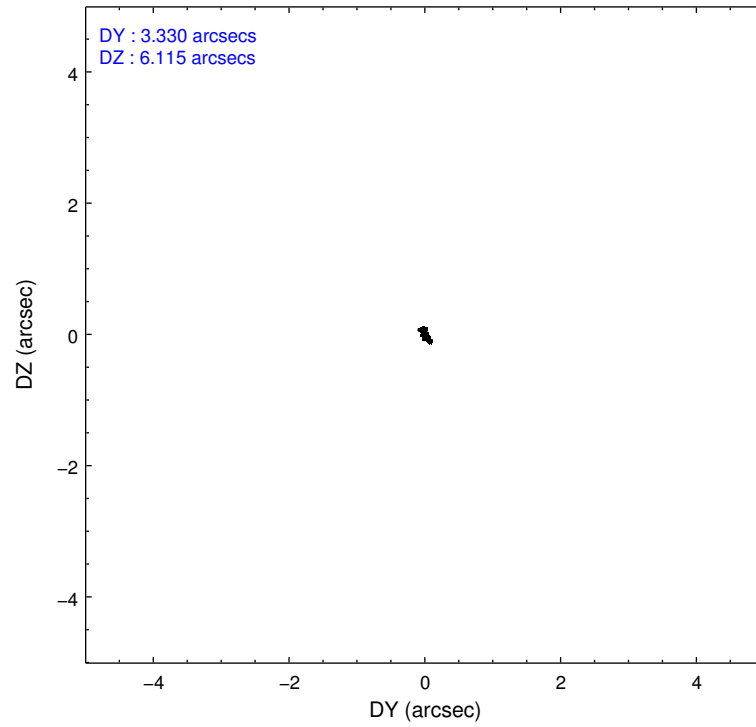
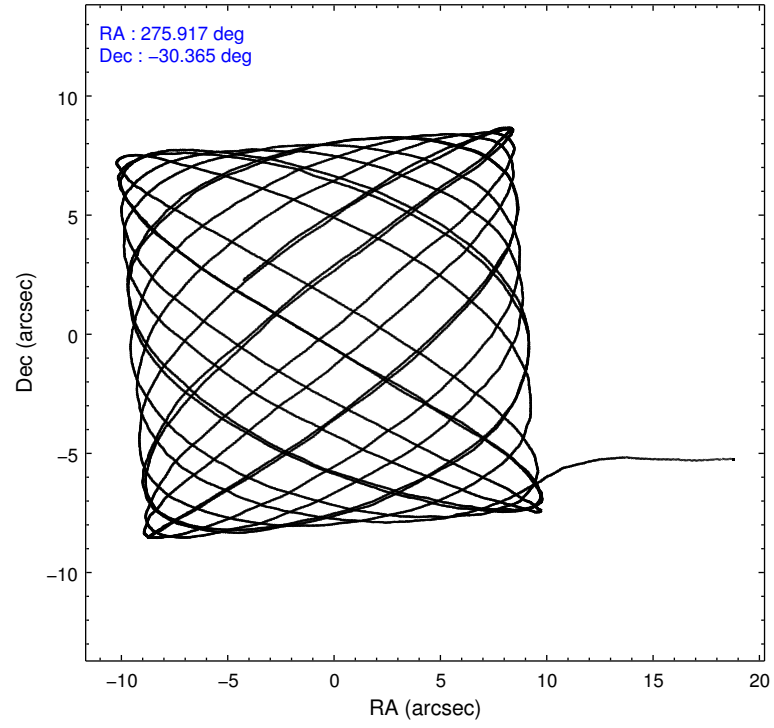
2.1.4 Events

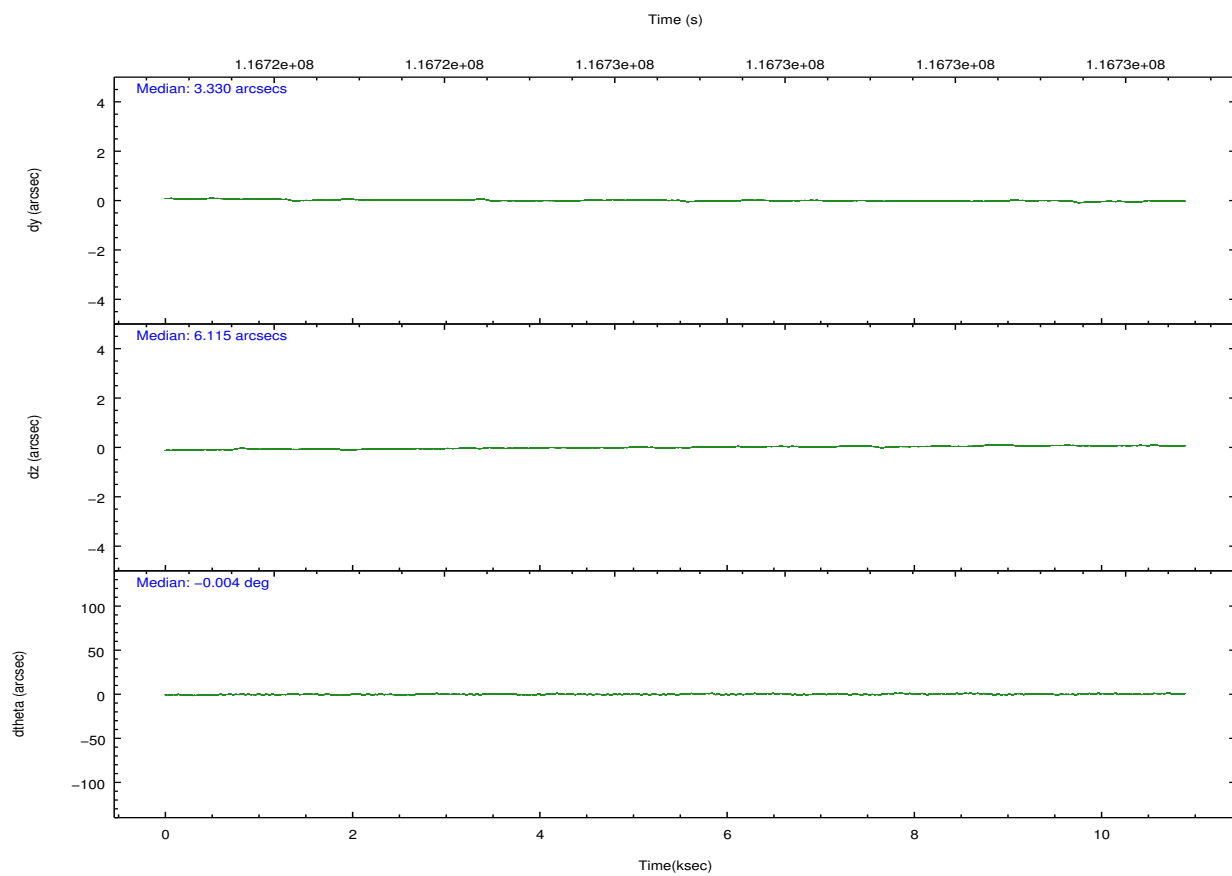
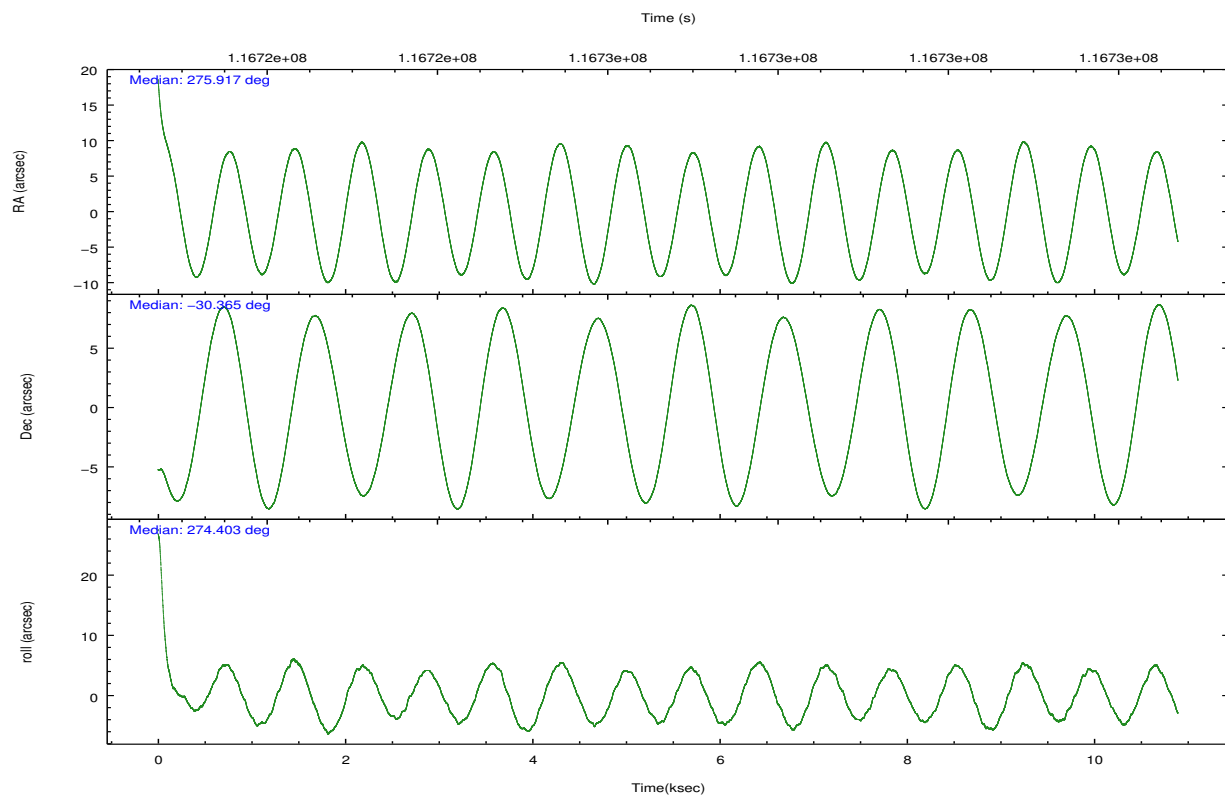
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	72966	245979	478598	691652	319290	111282	grade 0 events	27315	73968	314093	122431	217301	57570
rejected events	38126	39311	60486	99618	51202	39685		37%	30%	65%	17%	68%	51%
rejected %	52%	15%	12%	14%	16%	35%	grade 1 events	119	977	13254	6777	4571	249
								0%	0%	2%	0%	1%	0%
							grade 2 events	4171	57755	54970	145599	29036	7979
								5%	23%	11%	21%	9%	7%
							grade 3 events	1361	19476	20643	66364	10373	2712
								1%	7%	4%	9%	3%	2%
							grade 4 events	1337	19776	20043	66792	10129	2700
								1%	8%	4%	9%	3%	2%
							grade 5 events	1337	7263	9724	29074	3886	1759
								1%	2%	2%	4%	1%	1%
							grade 6 events	1306	39554	18754	202096	7732	2303
								1%	16%	3%	29%	2%	2%
							grade 7 events	36020	27210	27117	52519	36262	36010
								49%	11%	5%	7%	11%	32%

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	275.898979	275.9171884191607	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-30.342991	-30.36531622401095	Subarray start row	15	15
[deg] Pointing Roll	274.249160	274.4150137669727	Subarray row count	542	542
[s] Window start time (MET)	116380864.184000	116380864.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	117244864.184000	117244864.184000	[s] Primary exposure time	0.000000	1.8
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-184.532523	-184.5306286120915			
[mm] SIM translation stage offset	-5.6	-5.601893970916279			
[s] Observation start time (MET)	116721411.184000	116720300.12038			
Observation start date	2001-09-12T22:35:47	2001-09-12T22:18:20			
[s] Observation end time (MET)	116732154.184000	116732468.40836			
Observation end date	2001-09-13T01:34:50	2001-09-13T01:41:08			
Read mode	TIMED	TIMED			

2.3 Aspect



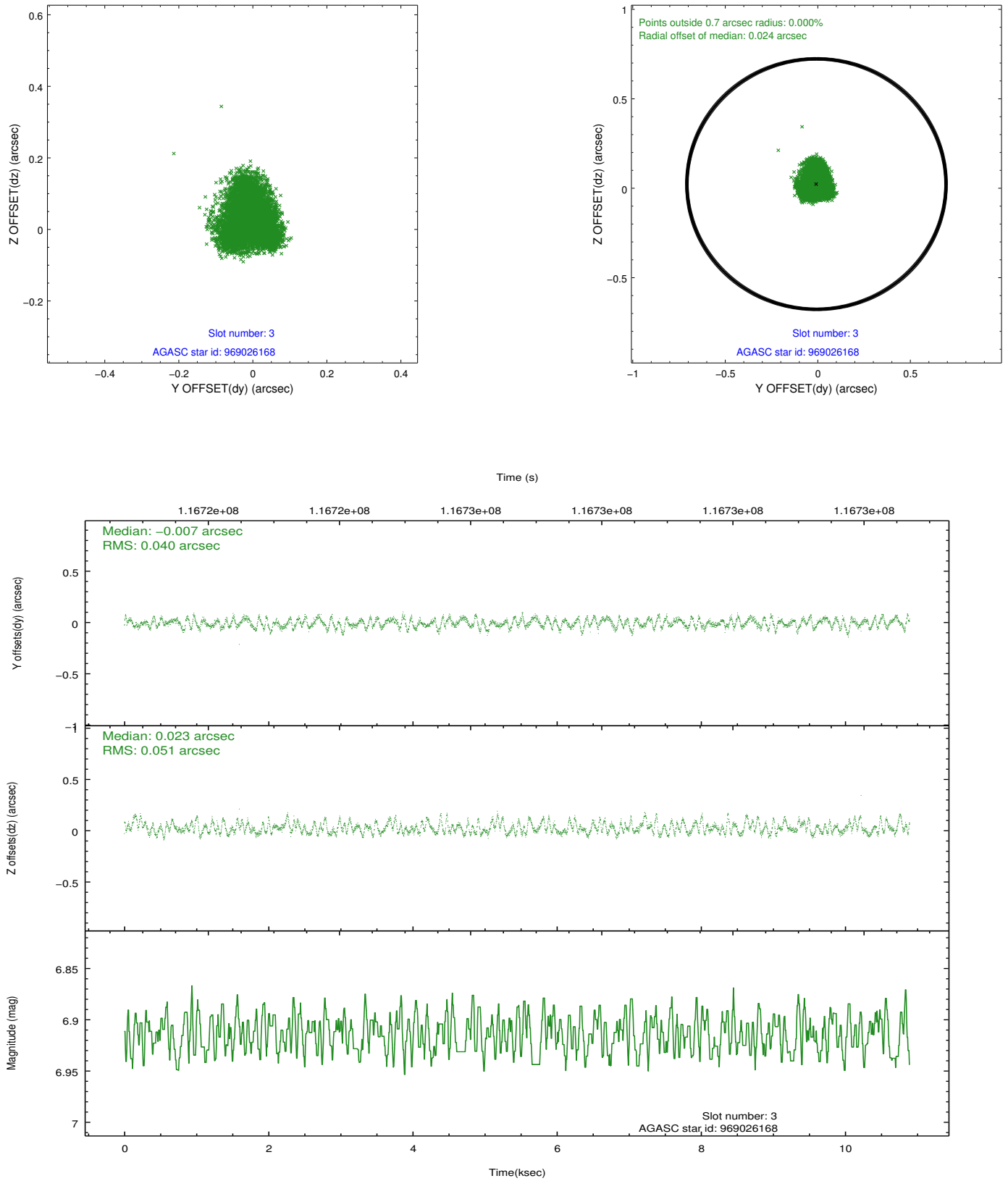


Slot Statistics

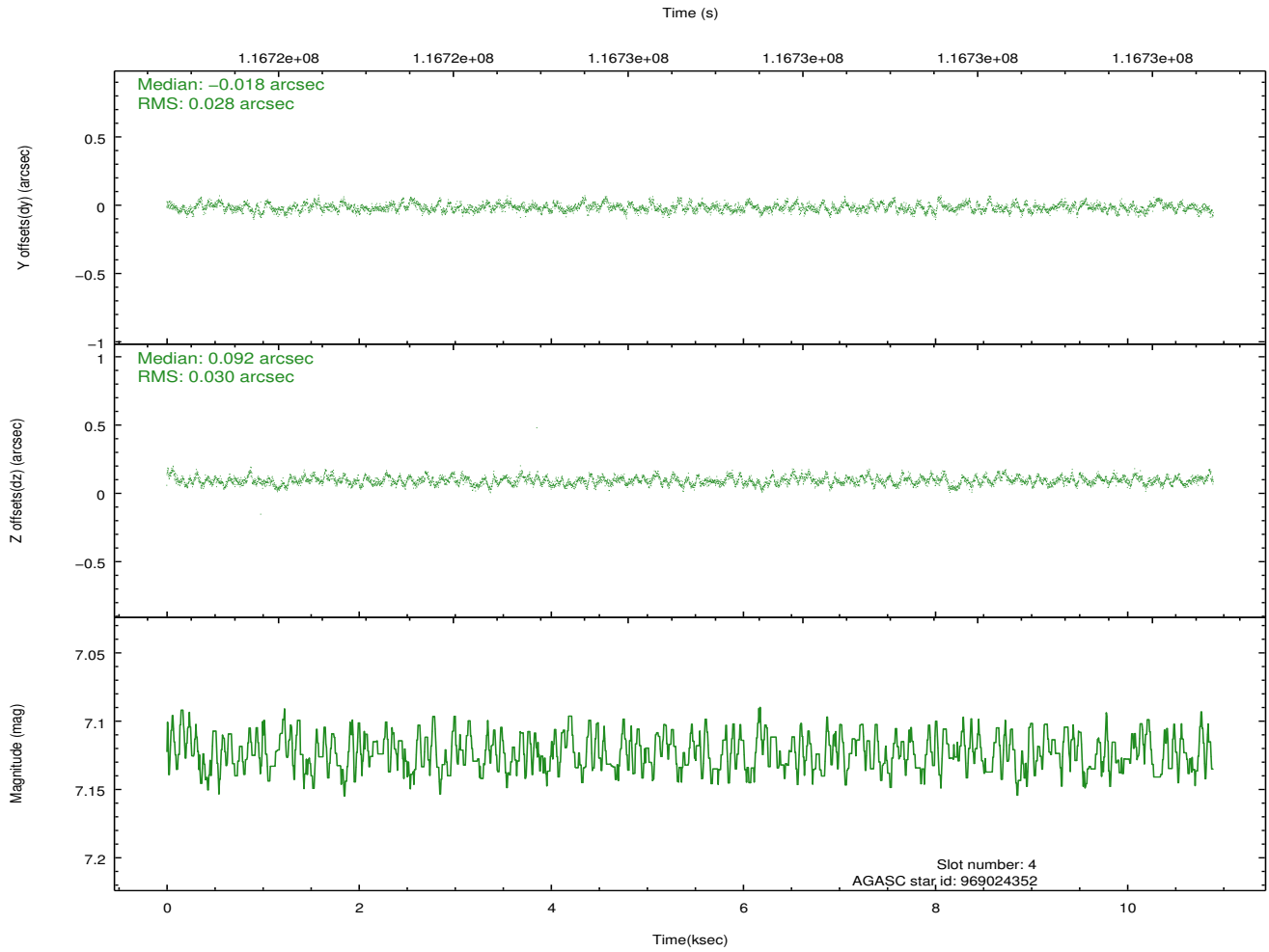
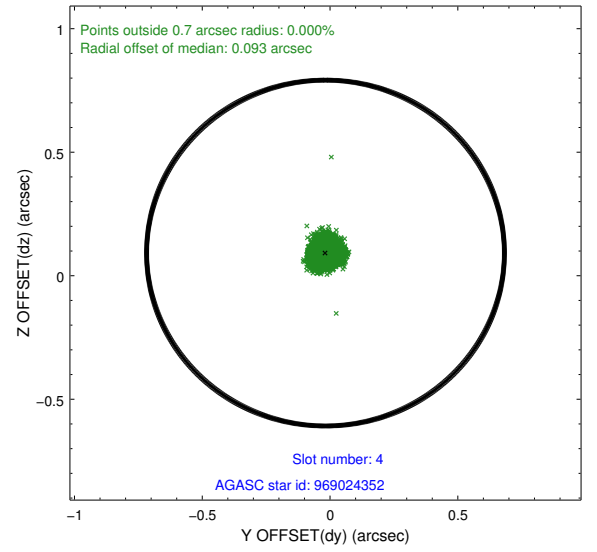
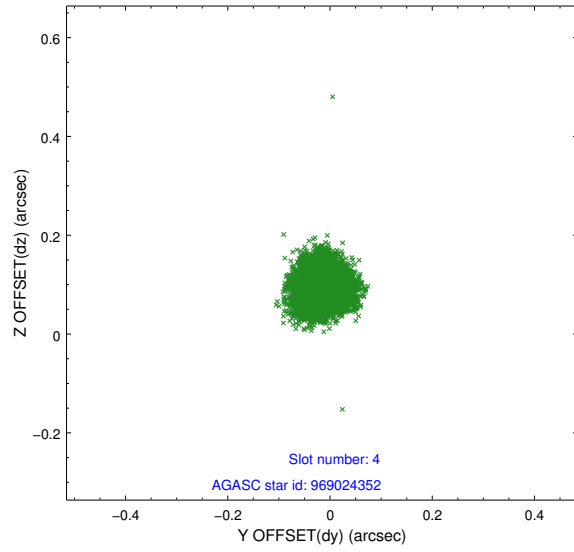
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.20	2656	0.054	0.048	0.008	0.013	0.000000	0.000000	940.46	-1838.34
1	FID	ACIS-S-4	7.19	2657	-0.052	-0.055	0.007	0.012	0.000000	0.000000	2158.06	65.16
2	FID	ACIS-S-5	7.23	2657	-0.028	0.019	0.006	0.011	0.000000	0.000000	-1807.85	59.42
3	GUIDE	969026168	6.91	5314	-0.007	0.023	0.070	0.109	276.670048	-30.393325	367.31	2373.74
4	GUIDE	969024352	7.12	5314	-0.018	0.092	0.044	0.070	276.375278	-30.253432	-207.48	1501.10
5	GUIDE	969019728	8.27	5310	-0.120	-0.092	0.062	0.100	275.177360	-30.122339	-949.80	-2182.65
6	GUIDE	969018704	8.74	5313	0.090	0.072	0.061	0.097	275.831054	-30.613541	957.22	-282.31
7	GUIDE	969021496	9.05	5311	0.053	-0.097	0.068	0.111	275.310242	-30.546513	602.27	-1875.08

2.4 Star Slots

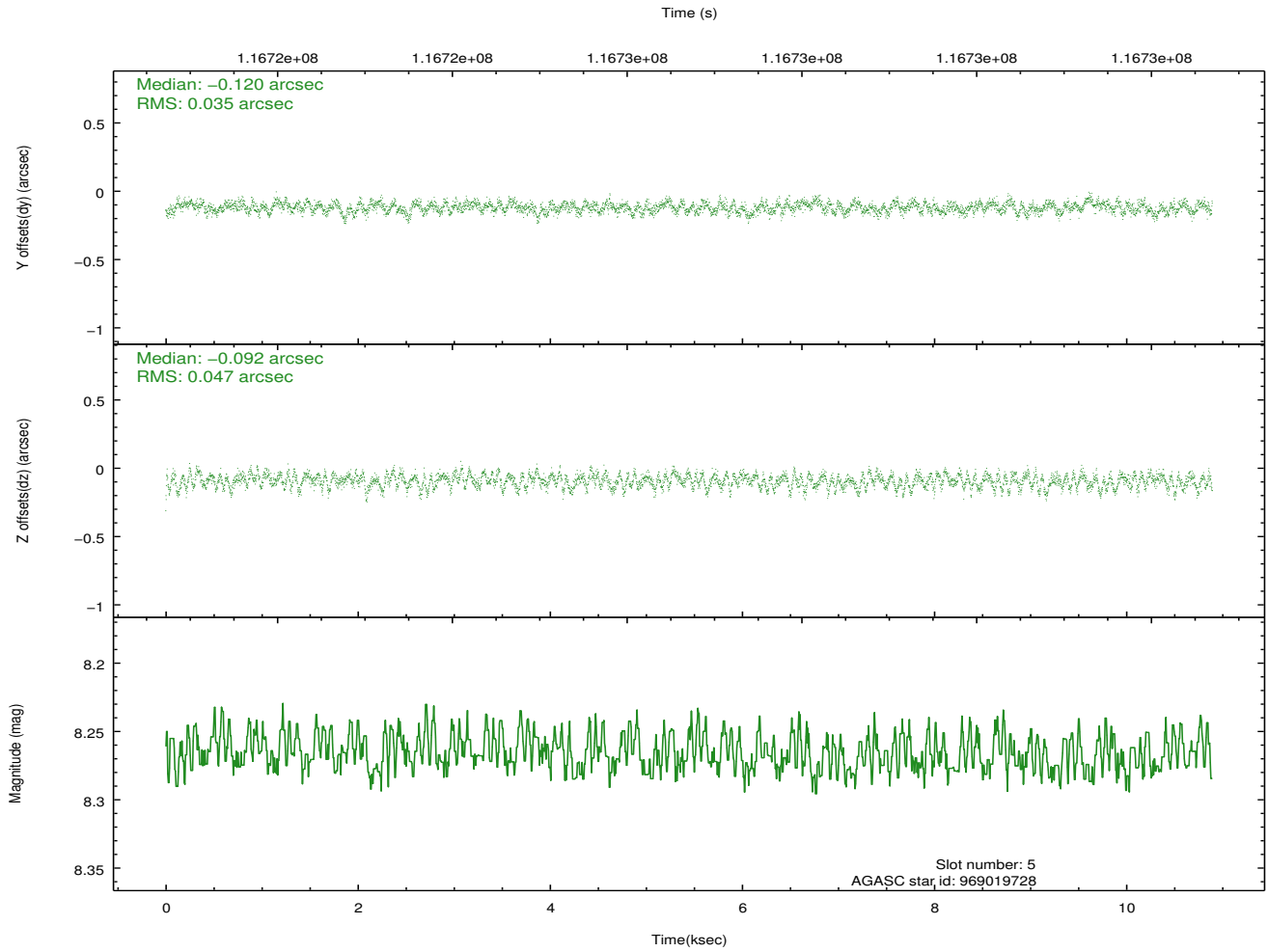
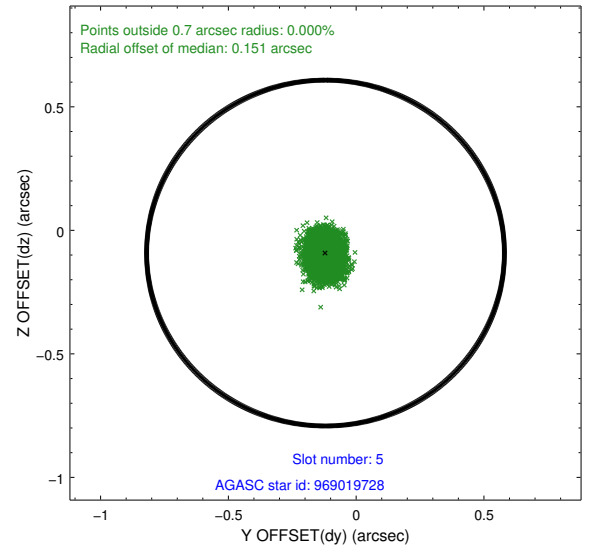
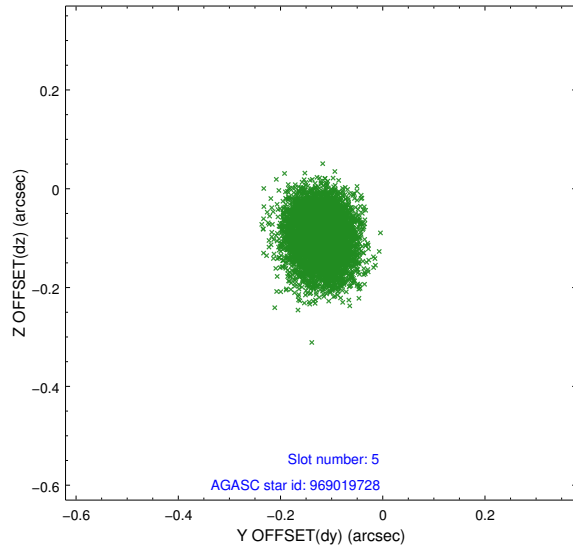
2.4.1 Slot 3



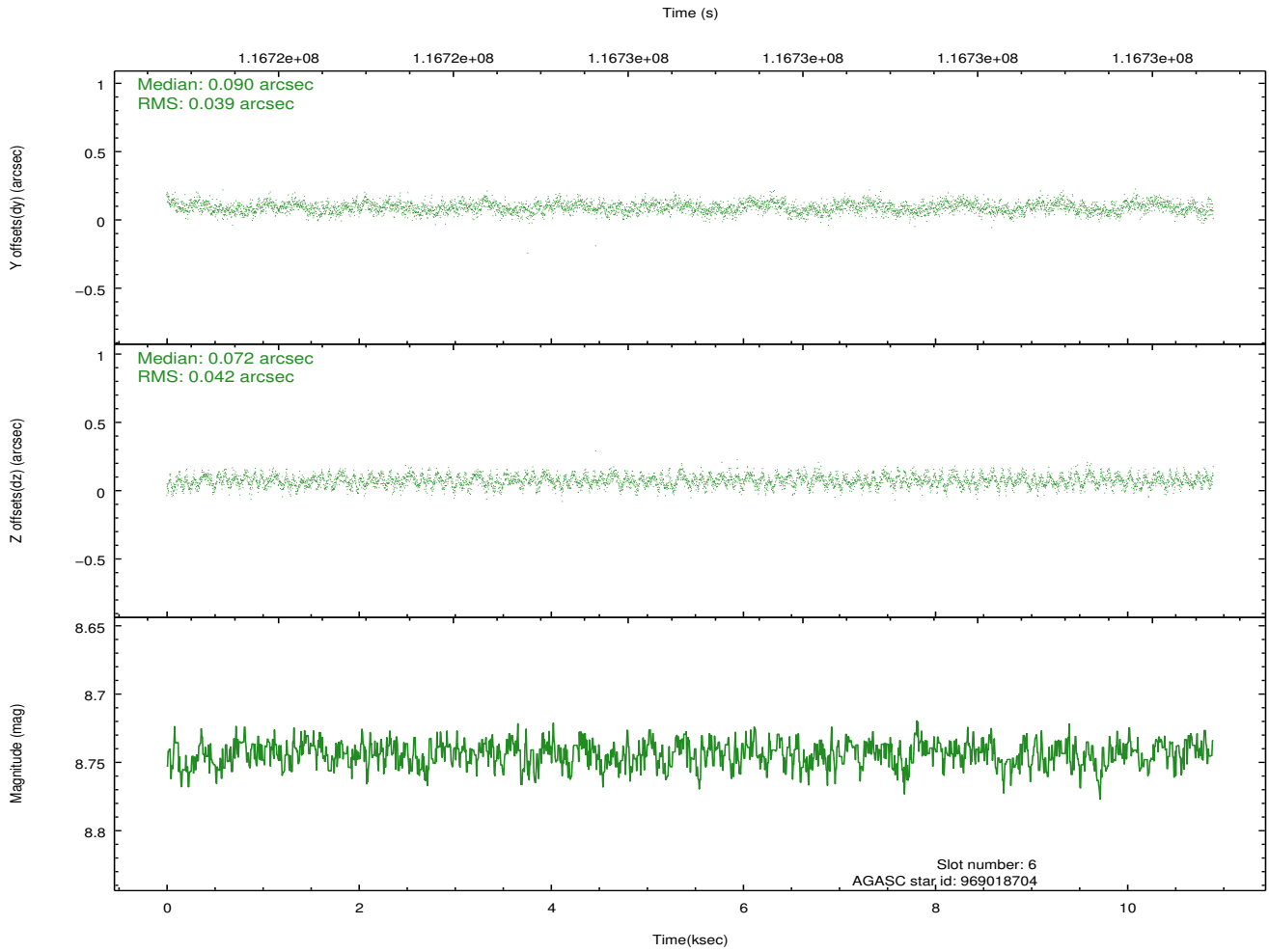
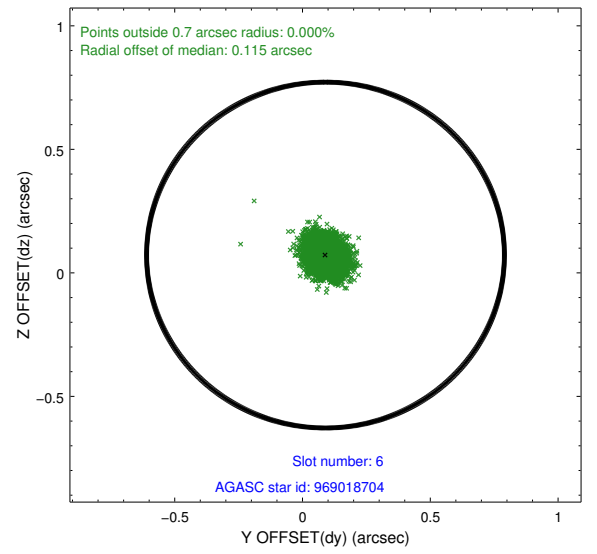
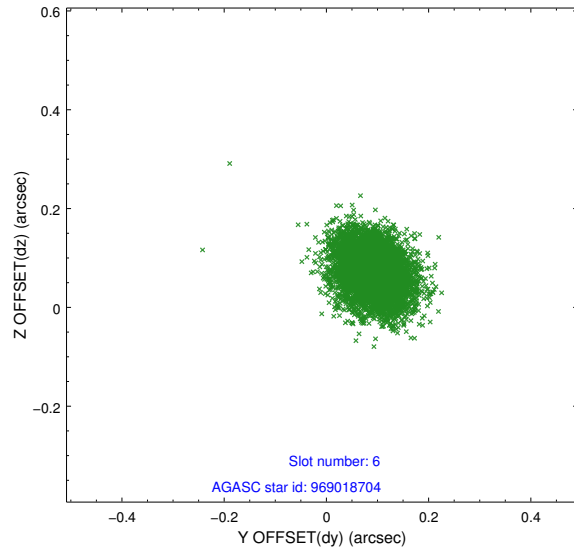
2.4.2 Slot 4



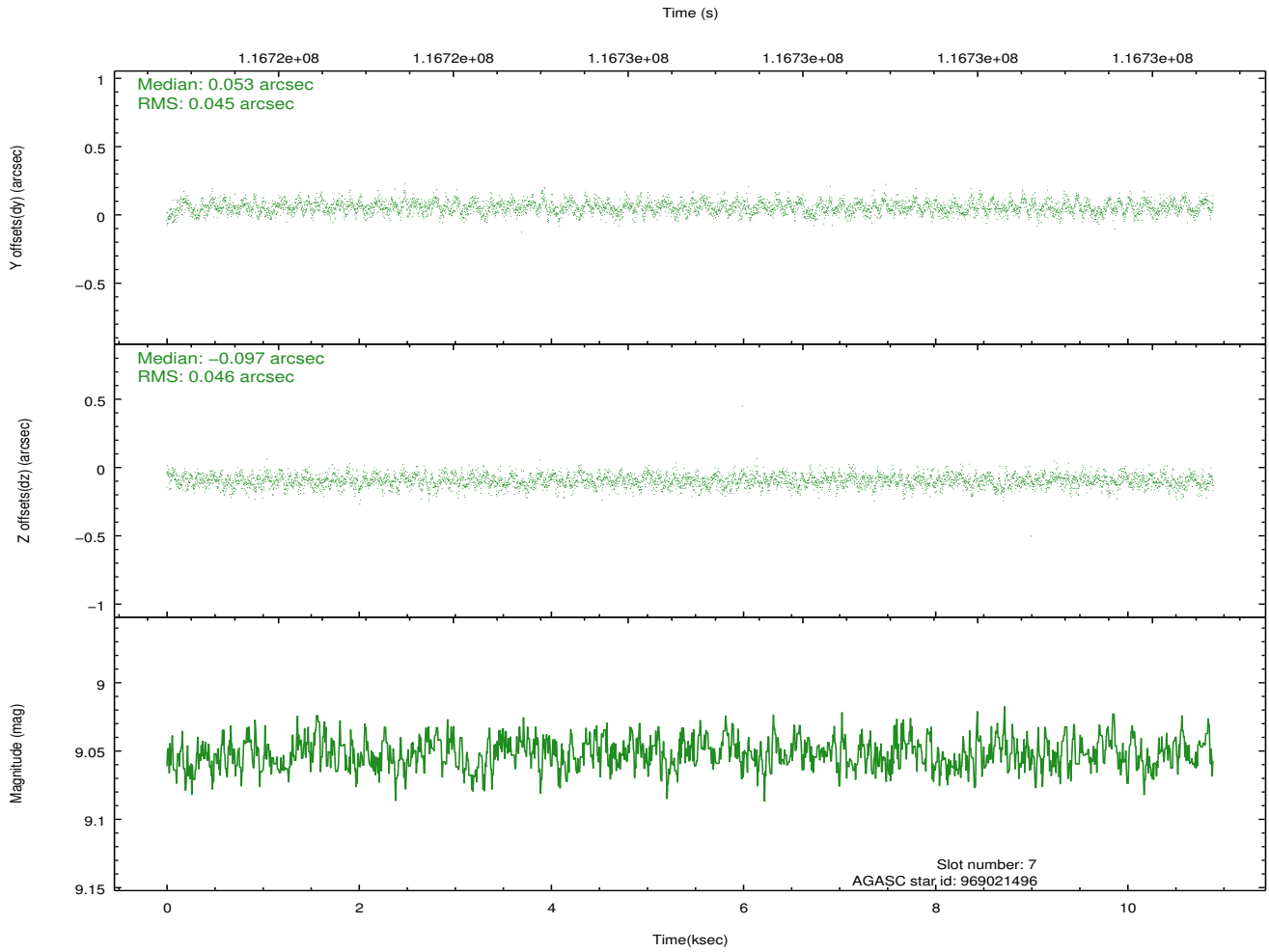
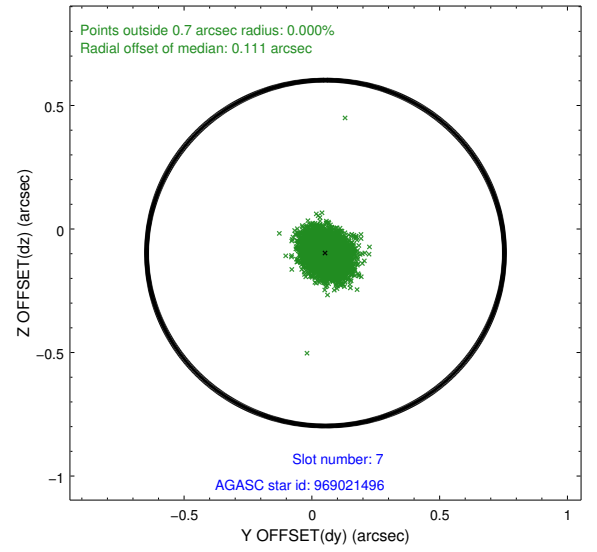
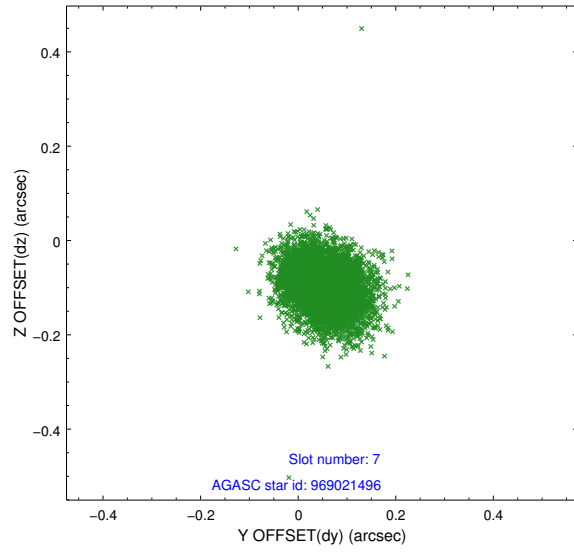
2.4.3 Slot 5



2.4.4 Slot 6

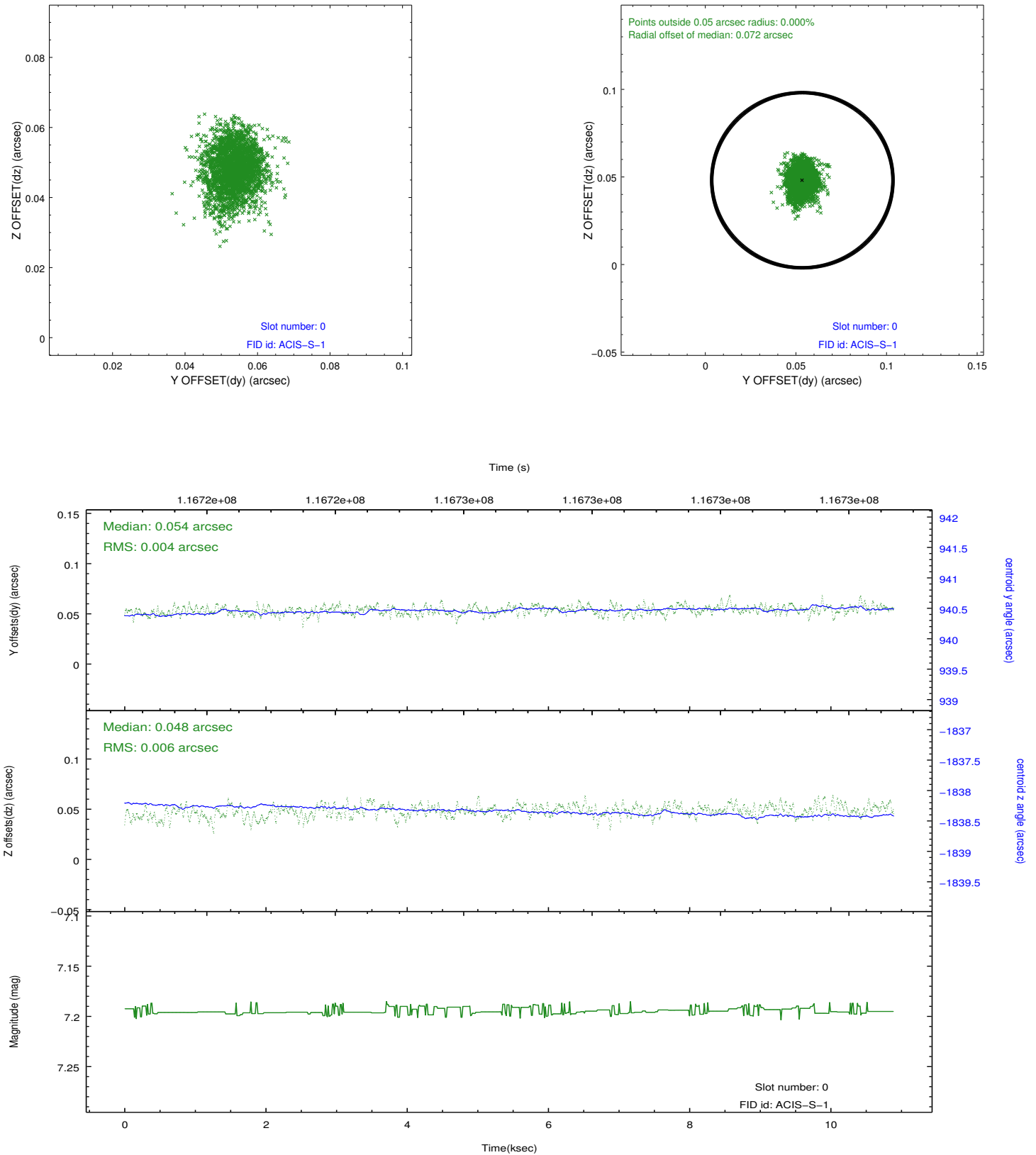


2.4.5 Slot 7

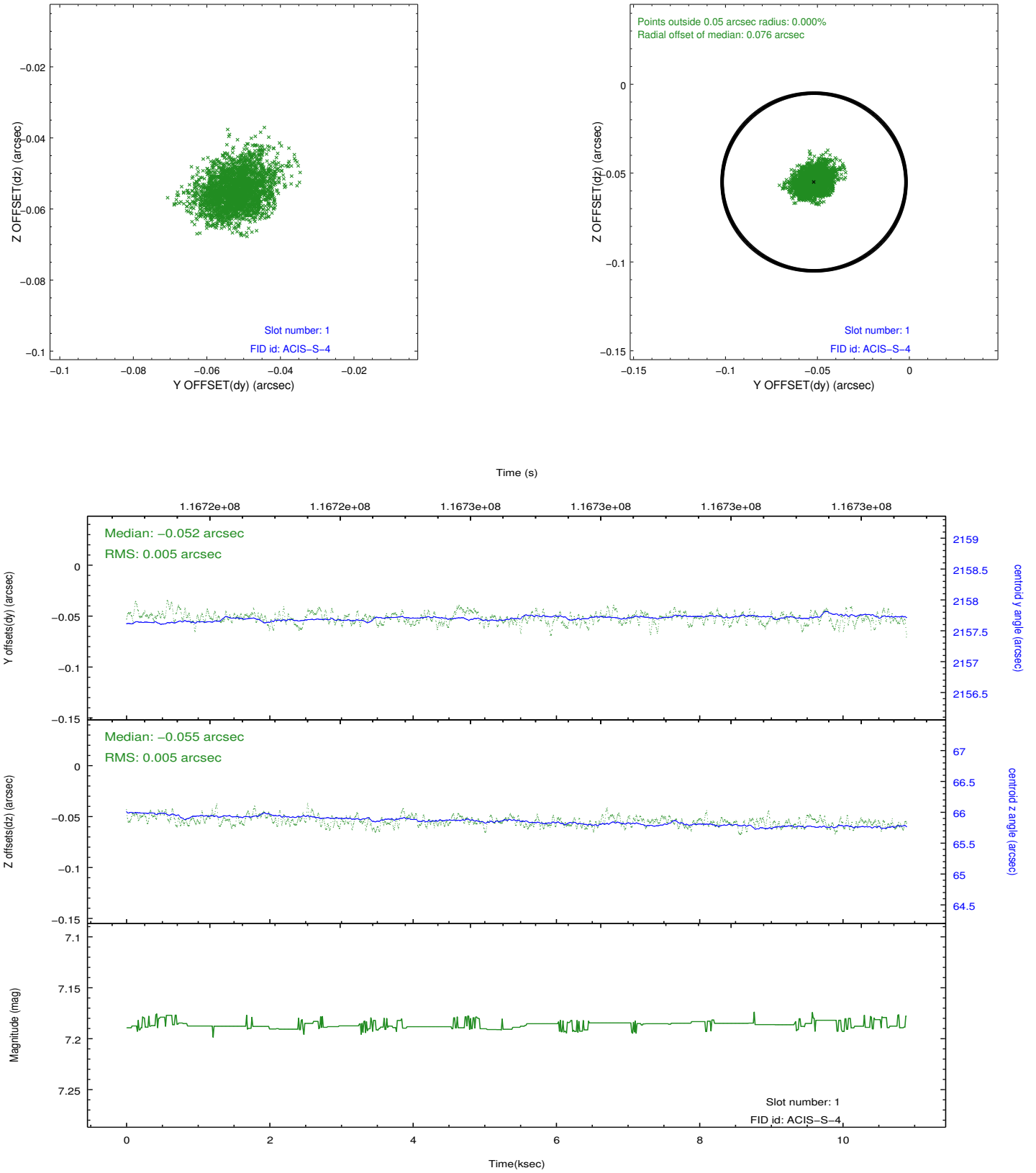


2.5 FID Slots

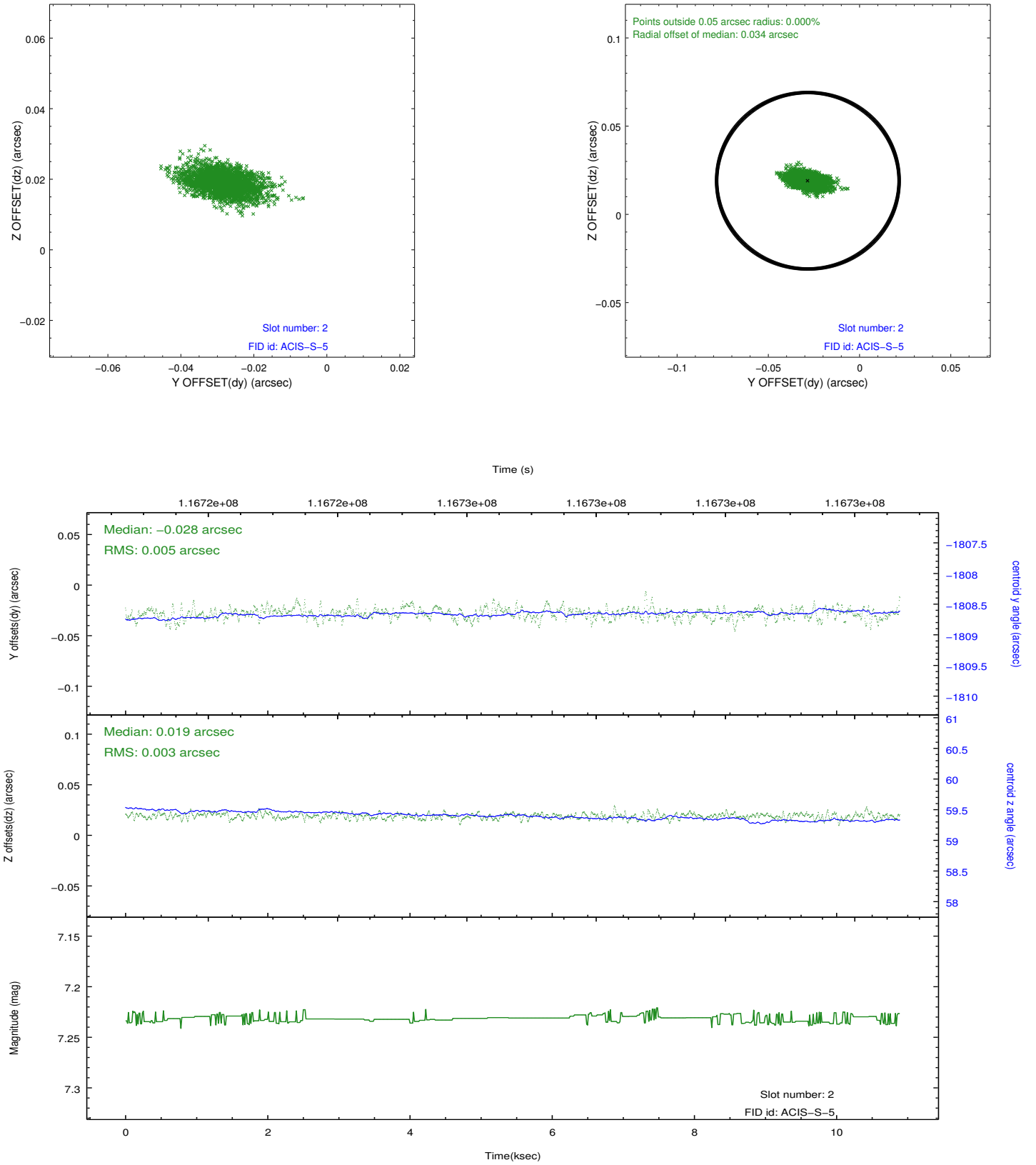
2.5.1 Slot 0



2.5.2 Slot 1

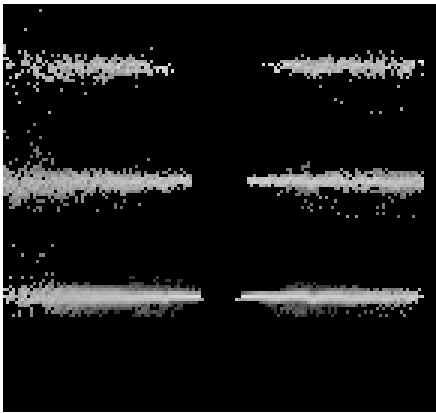


2.5.3 Slot 2

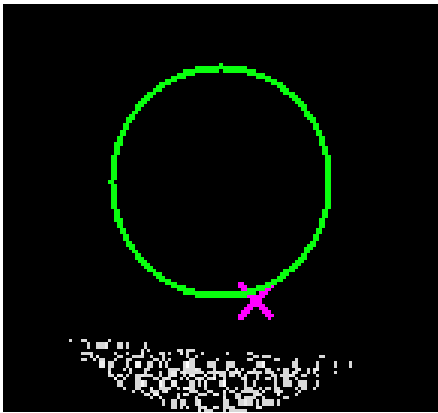


3 Gratings

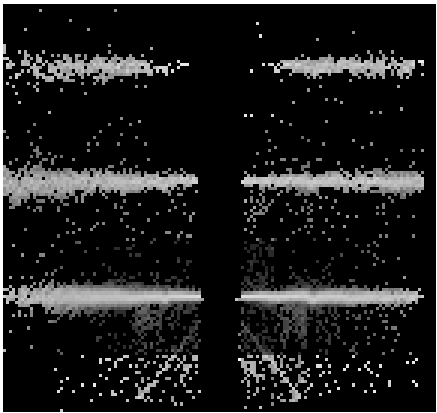
3.1 HEG Arm



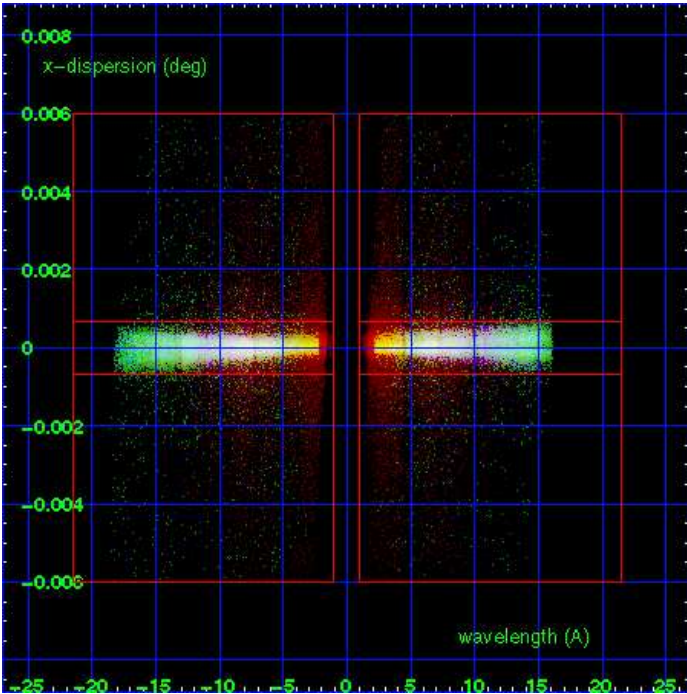
HEG Order Sort 123



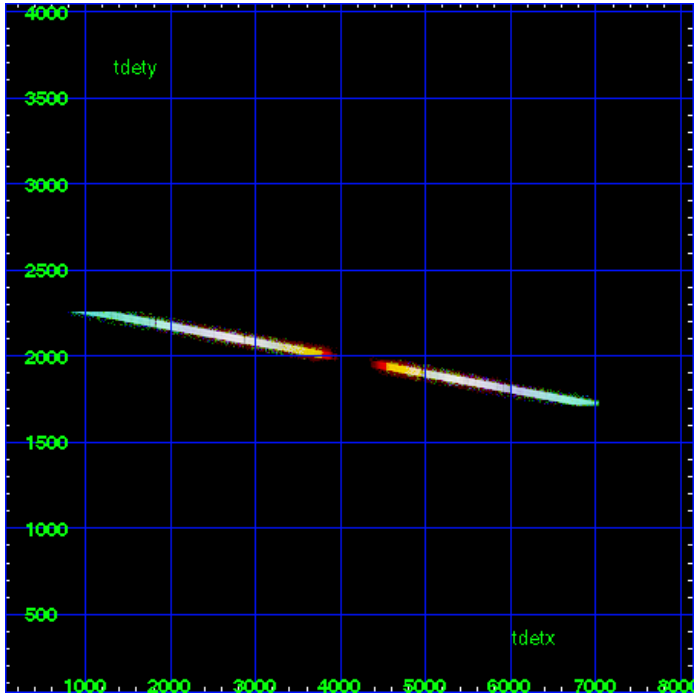
HEG Zero Order



HEG Order Sort ALL

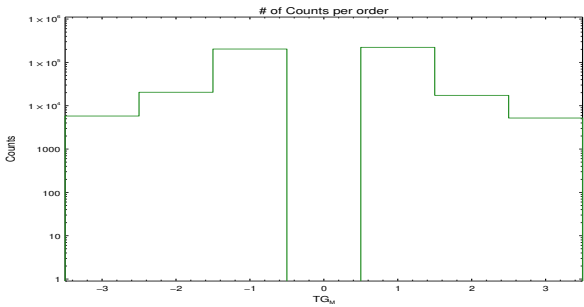


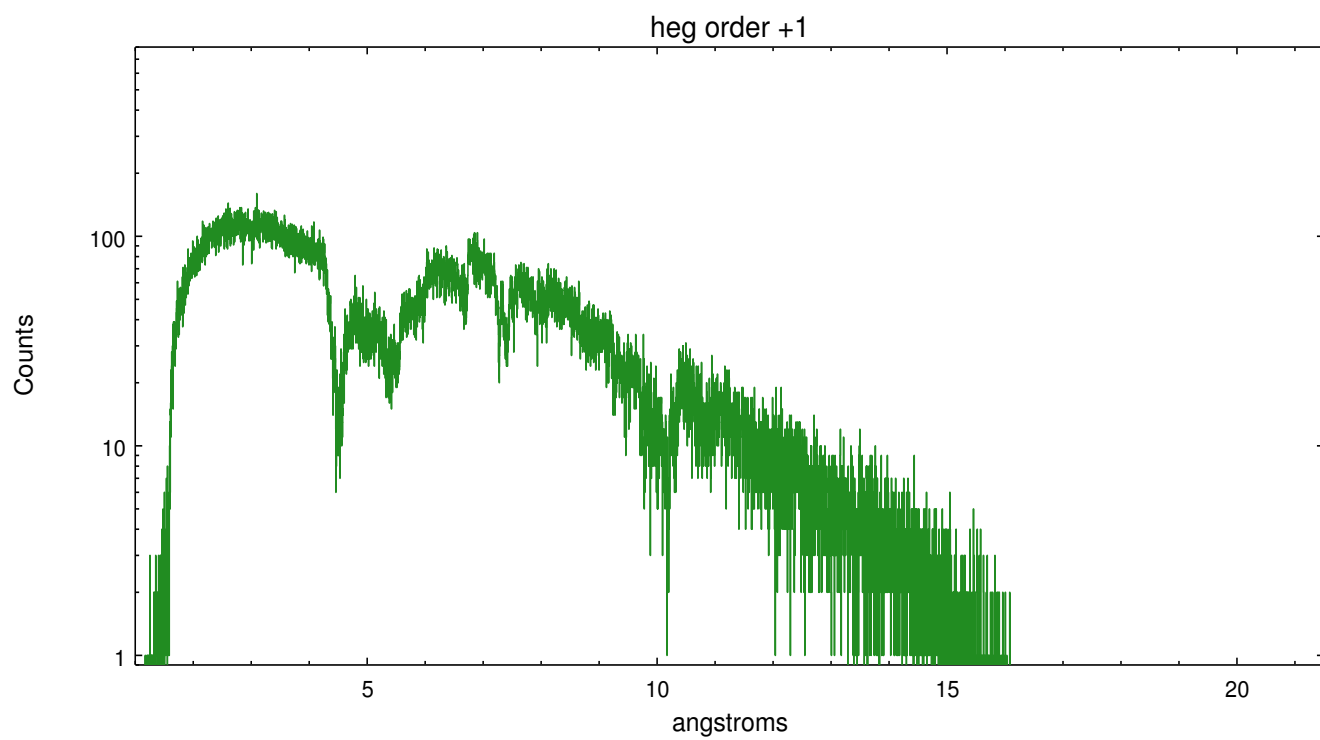
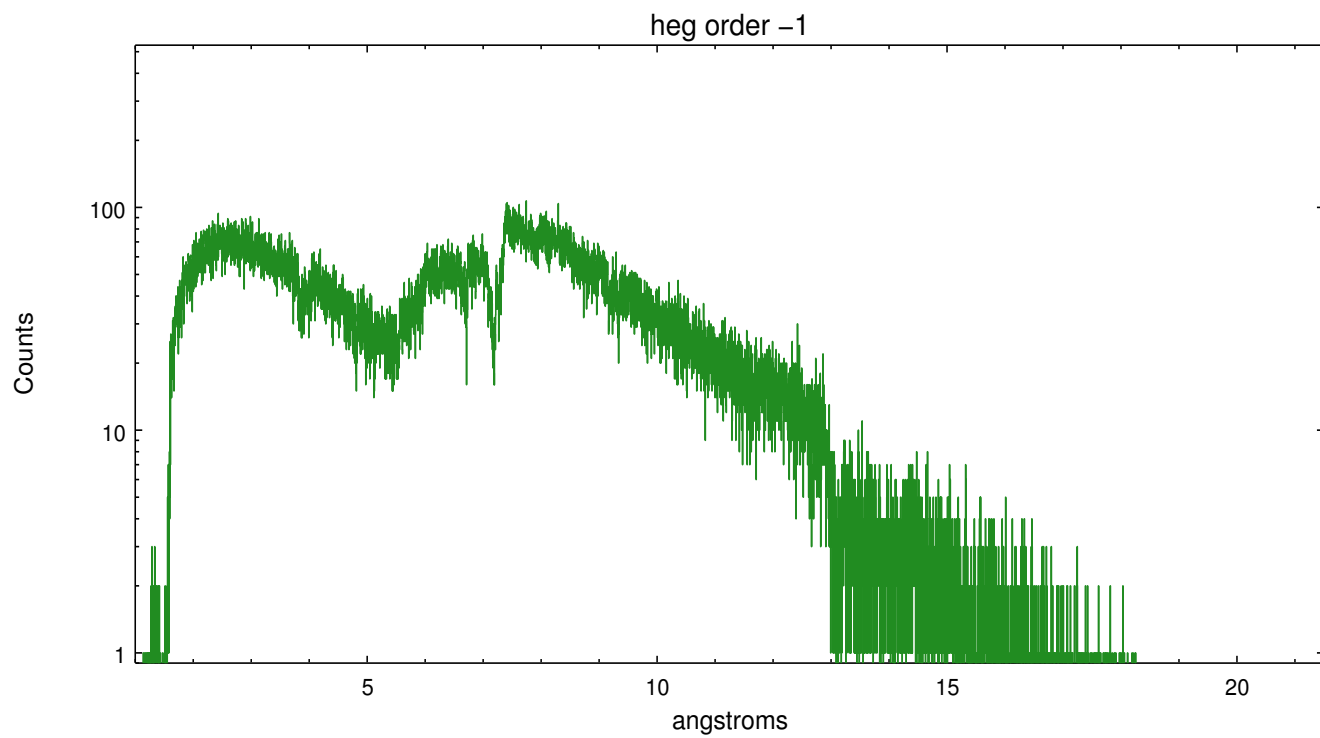
Spot Image HEG



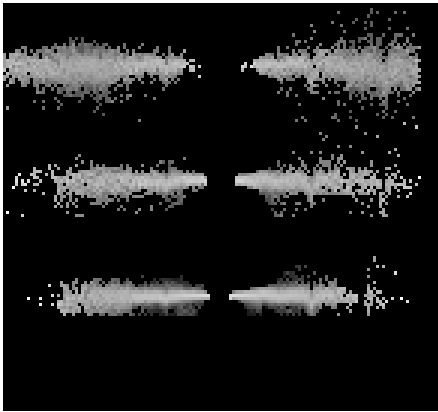
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5782	20451	203372	0	222505	17344	5200

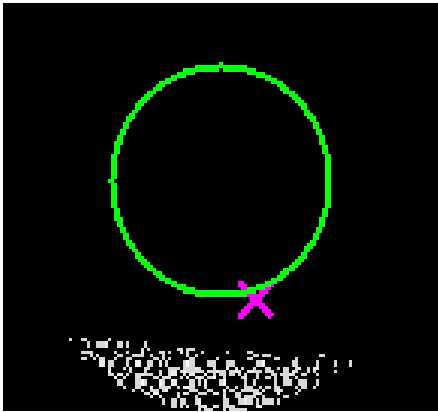




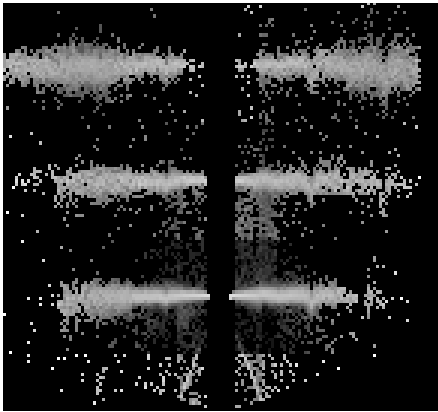
3.2 MEG Arm



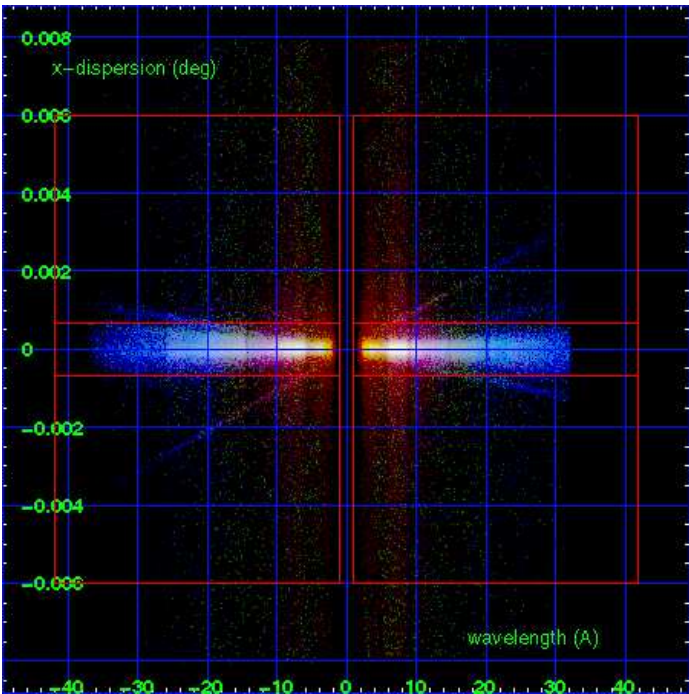
MEG Order Sort 123



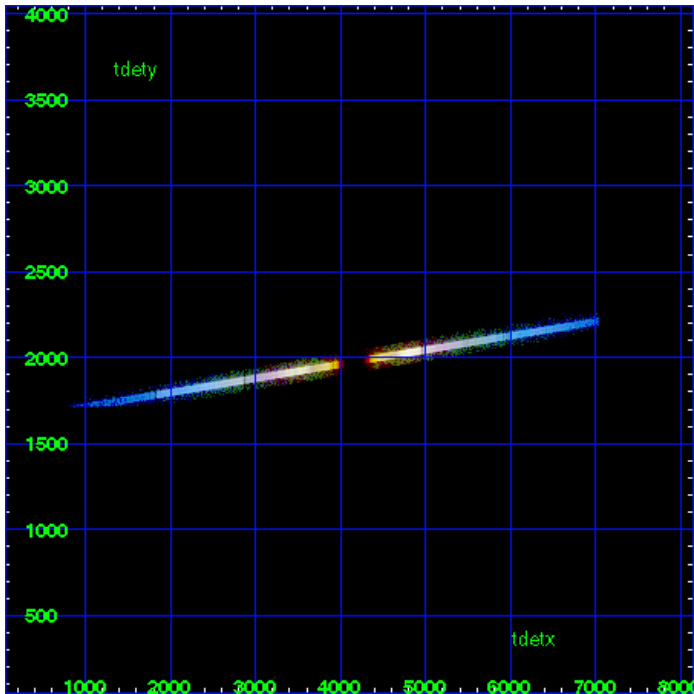
MEG Zero Order



MEG Order Sort ALL

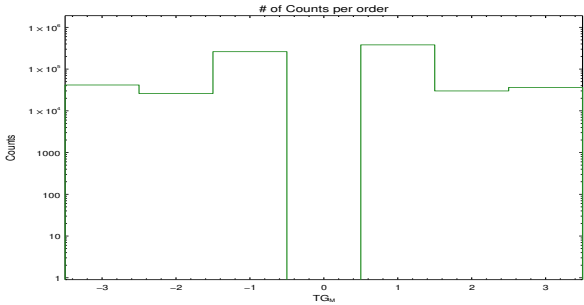


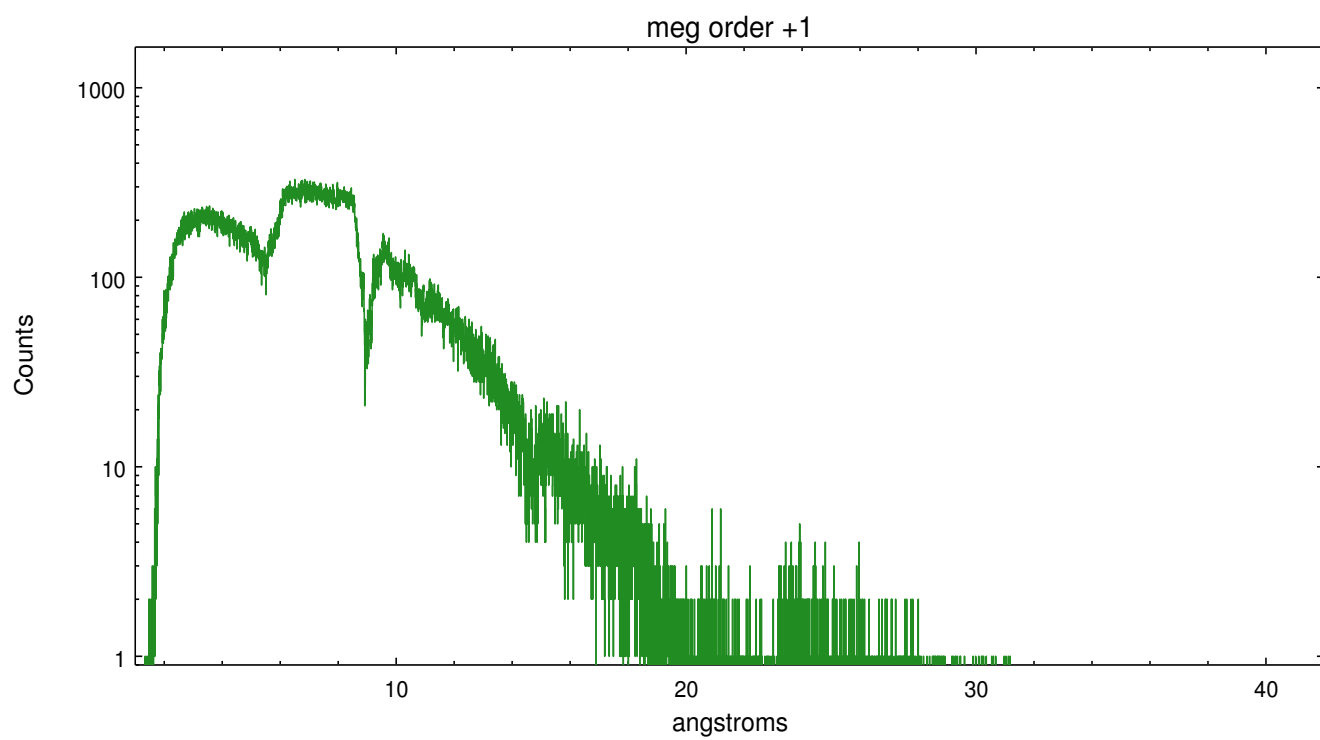
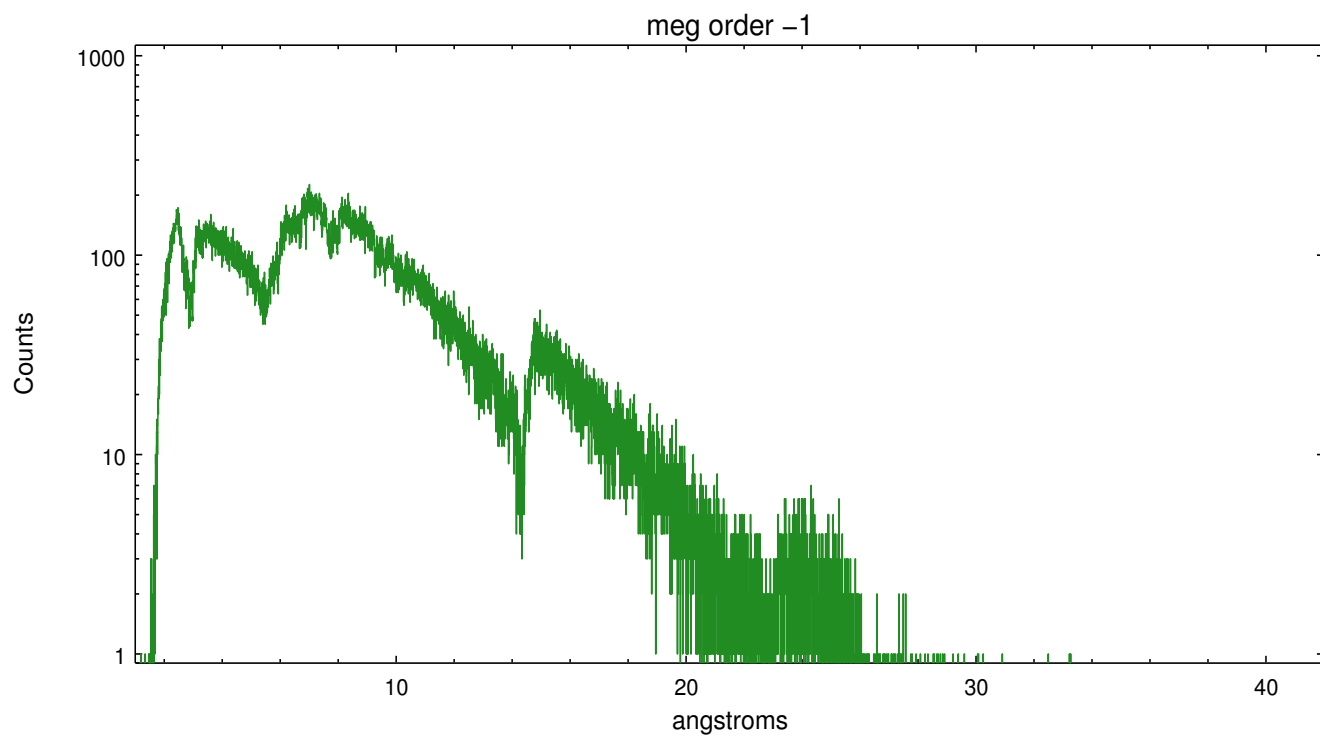
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	41602	25970	261580	0	380773	29969	36343





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.888

A.2 Comments

Standard data processing software did not correctly locate the zeroth order because a spatial exclusion window was used to block the zeroth order image. Manual intervention was used to input the correct sky coordinates (x=4086.41, y=4127.29) 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. 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 high count rate resulted in telemetry saturation and a large number of dropped exposures. The number of dropped exposures varied between the CCD chips.

This variation is reflected in the ONTIME for each chip.

The charge time is based on CCD_ID=5 (S1), which had no dropped frames and does reflect the requested exposure. Other chips have effective exposures ranging from 6.7-10.888ks.