

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 1923 - L2 Version 6
Chandra X-Ray Center

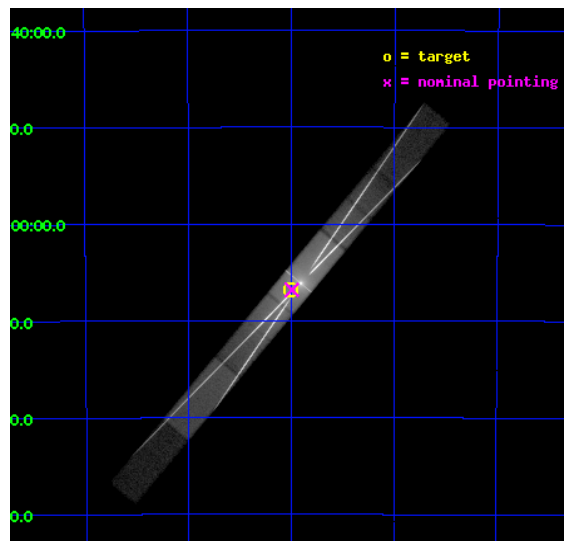
L2 Processing Date : Oct 12 2012

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1 Front

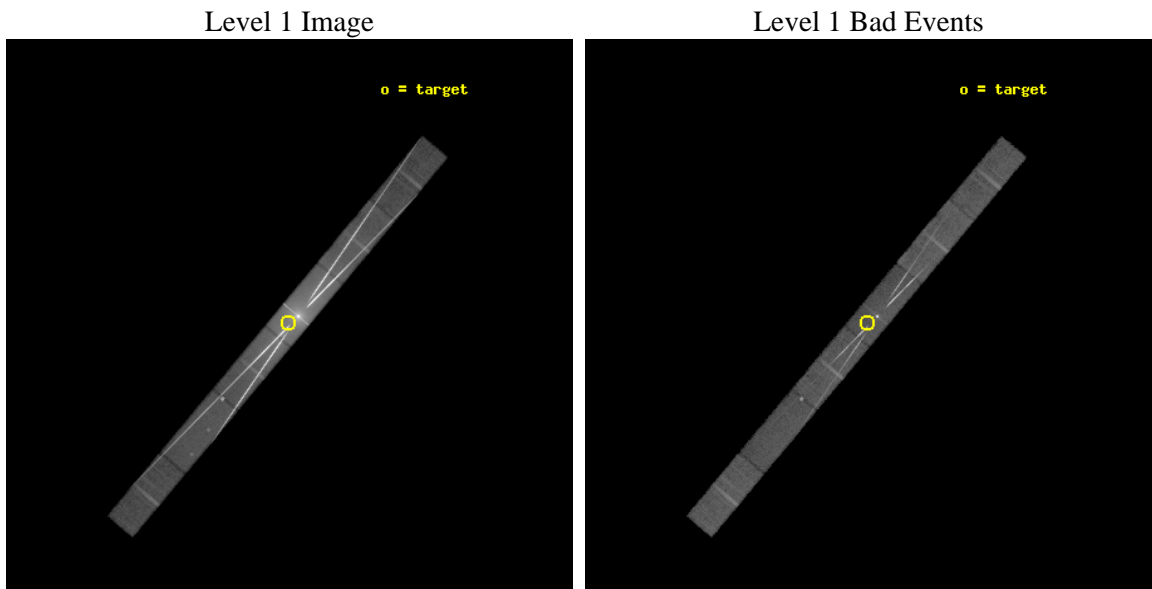
seq_num	400136	Sequence number
obs_id	1923	Observation id
title	DETAILED STUDY OF THE IRON LINE AND LOW ENERGY FEATURES IN Z AND ATOLL SOURCES	Proposal title
observer	Prof. Natale Robba	Principal investigator
object	4U1705-44	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	257.251667	Observer's specified target RA [deg]
dec_targ	-44.113333	Observer's specified target Dec [deg]
ra_nom	257.24860007939	Nominal RA [deg]
dec_nom	-44.113371004396	Nominal Dec [deg]
roll_nom	309.95908025289	Nominal Roll [deg]
revision	6	Processing version of data
ontime	25127.200106978	Sum of GTIs [s]
livetime	24411.5917322	Livetime [s]
ontime4	25127.200106978	Sum of GTIs [s]
ontime5	25127.200106978	Sum of GTIs [s]
ontime6	25127.200106978	Sum of GTIs [s]
ontime7	25127.200106978	Sum of GTIs [s]
ontime8	25127.200106978	Sum of GTIs [s]
ontime9	25127.200106978	Sum of GTIs [s]
l2events	2848511	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	25000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	25127.200106978	Sum of GTIs [s]
caldbver	4.5.1.1	 	ontime4	25127.200106978	Sum of GTIs [s]
date	2012-09-20T12:11:04	Date and time of file creation	ontime5	25127.200106978	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	25127.200106978	Sum of GTIs [s]
			ontime7	25127.200106978	Sum of GTIs [s]
			ontime8	25127.200106978	Sum of GTIs [s]
			ontime9	25127.200106978	Sum of GTIs [s]
			l1events	3590756	Number of level 1 events

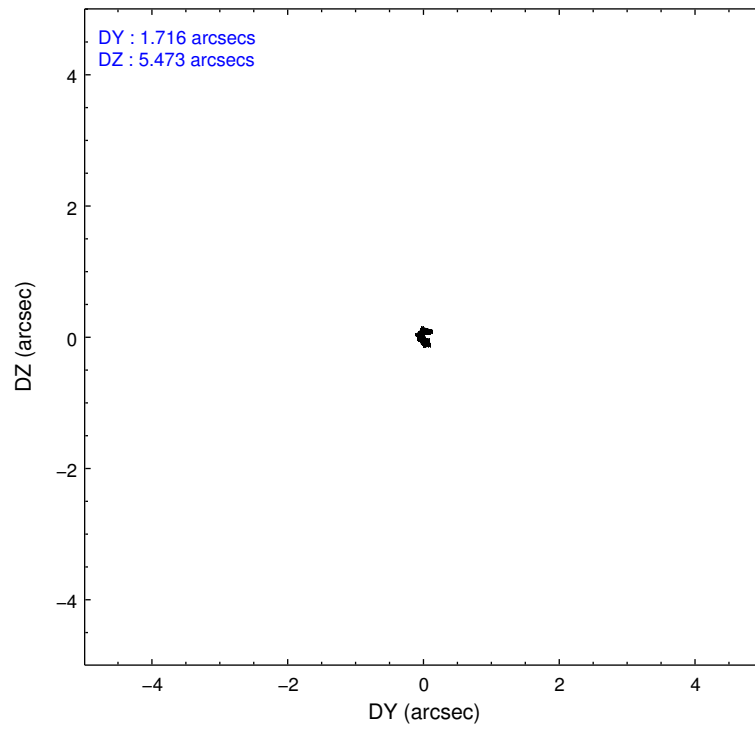
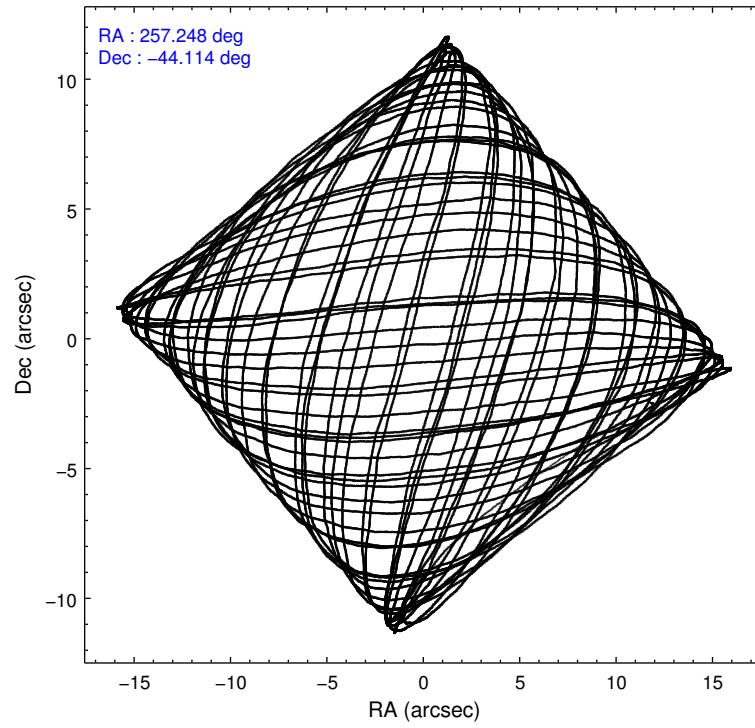
2.1.3 Events

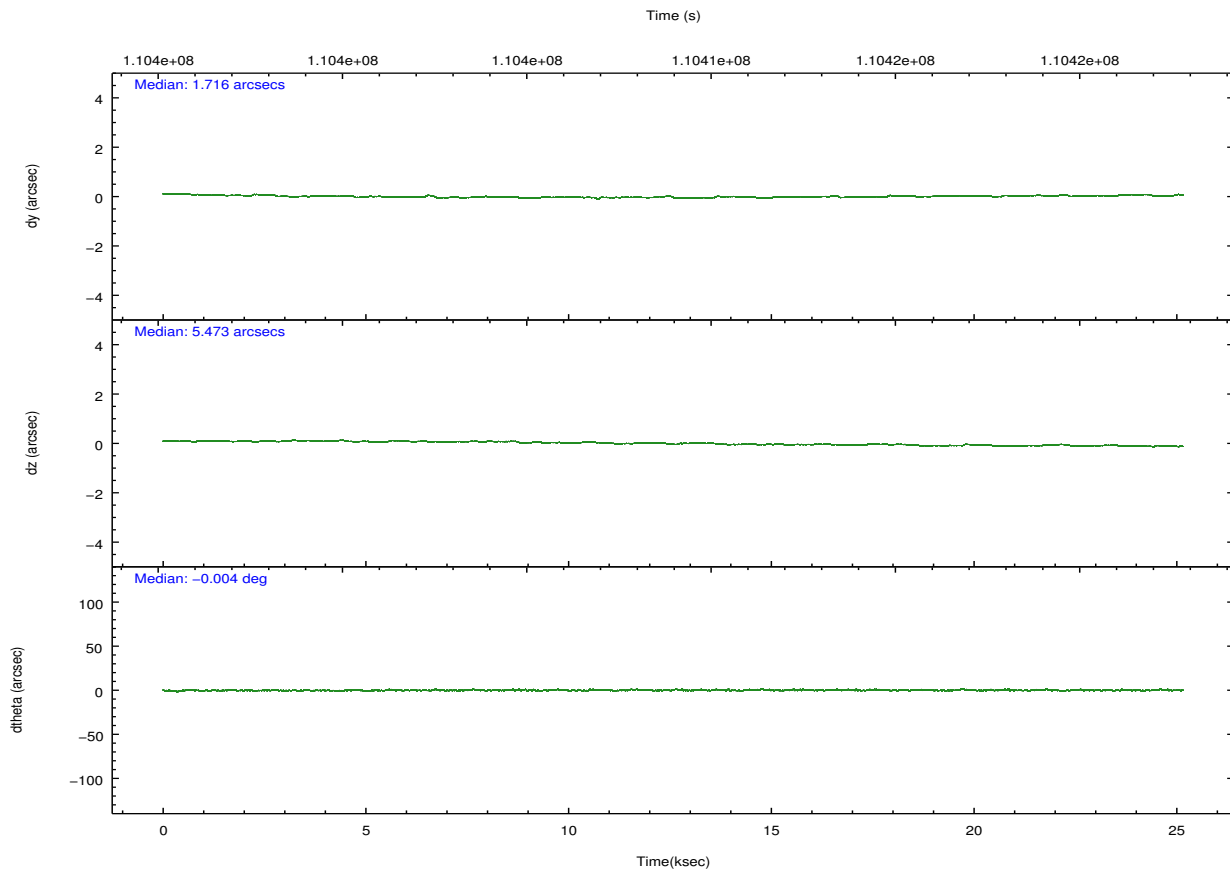
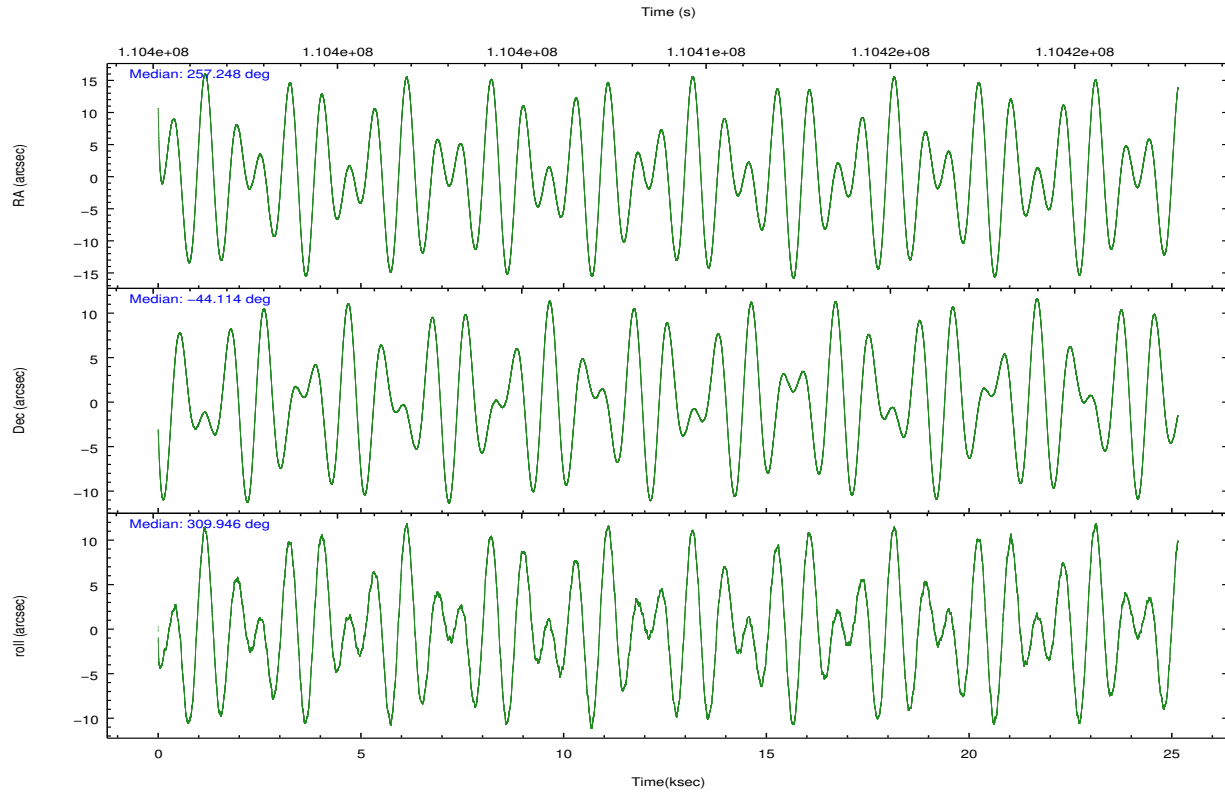
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	105142	201859	969155	1675695	514299	124606	grade 0 events	15150	31845	634639	250173	318426	38652
rejected events	87288	68254	111168	182528	101790	76790		14%	15%	65%	14%	61%	31%
rejected %	83%	33%	11%	10%	19%	61%	grade 1 events	68	1892	11018	6779	2779	107
								0%	0%	1%	0%	0%	0%
							grade 2 events	4988	45923	115789	384209	52422	8119
								4%	22%	11%	22%	10%	6%
							grade 3 events	1913	10043	39510	143899	17911	3179
								1%	4%	4%	8%	3%	2%
							grade 4 events	1790	10402	39233	141538	17845	3241
								1%	5%	4%	8%	3%	2%
							grade 5 events	2249	7739	11313	42899	5327	2611
								2%	3%	1%	2%	1%	2%
							grade 6 events	3087	45239	43560	594091	18863	4517
								2%	22%	4%	35%	3%	3%
							grade 7 events	75897	48776	74093	112107	80726	64180
								72%	24%	7%	6%	15%	51%

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	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	257.212762	257.2486000793872	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-44.104289	-44.11337100439634	Subarray start row	1	1
[deg] Pointing Roll	309.777514	309.9590802528919	Subarray row count	400	400
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	1.4
[mm] SIM translation stage pos	-182.642523	-182.6373491900168			
[mm] SIM translation stage offset	-7.49	-7.495173392990978			
[s] Observation start time (MET)	110396521.184000	110395292.39661			
Observation start date	2001-07-01T17:40:57	2001-07-01T17:21:32			
[s] Observation end time (MET)	110421521.184000	110422805.96018			
Observation end date	2001-07-02T00:37:37	2001-07-02T01:00:05			
Read mode	TIMED	TIMED			

2.3 Aspect



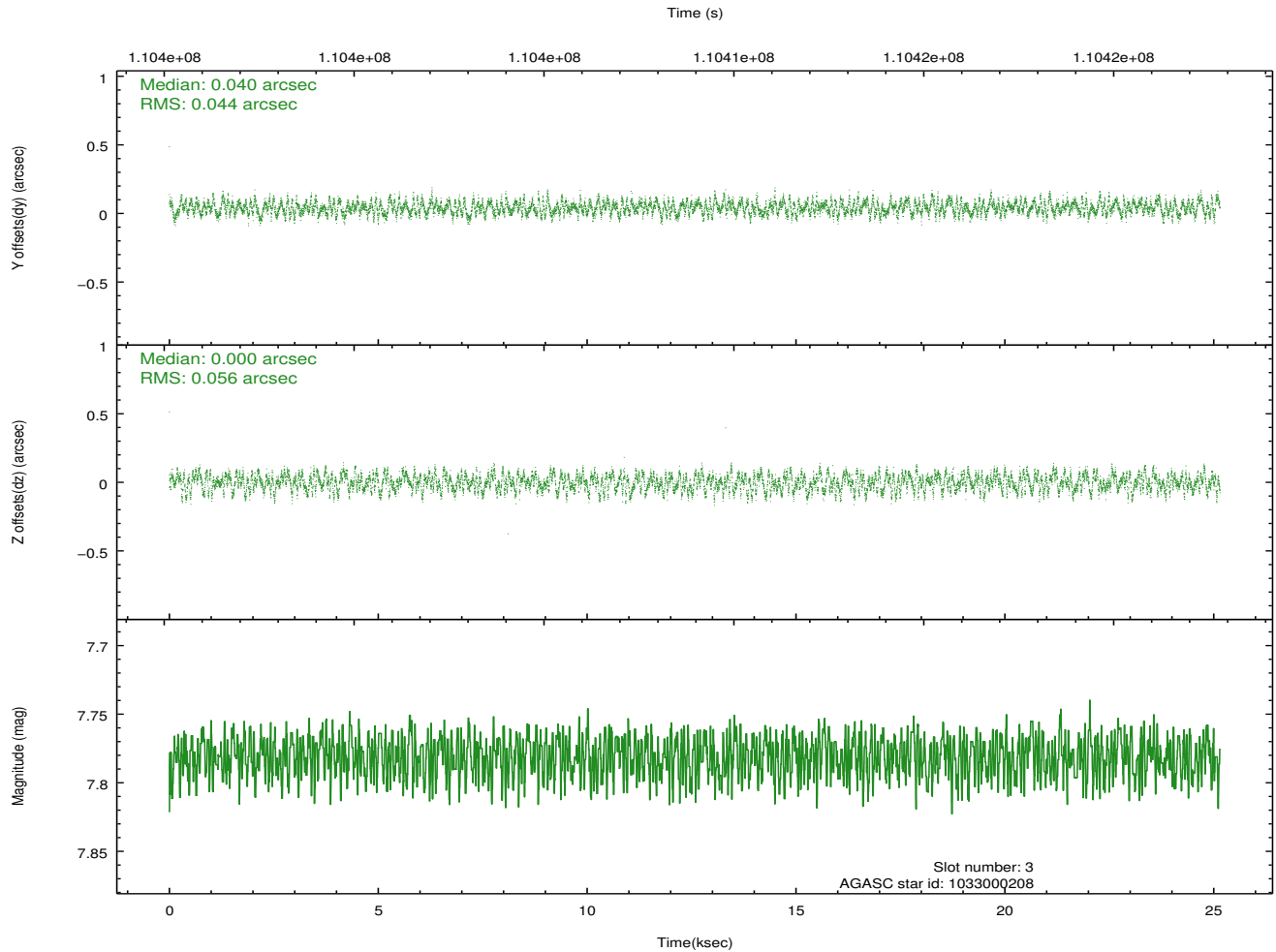
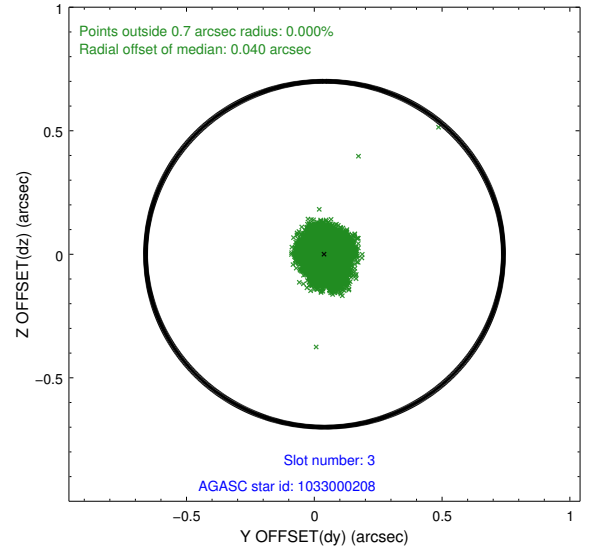
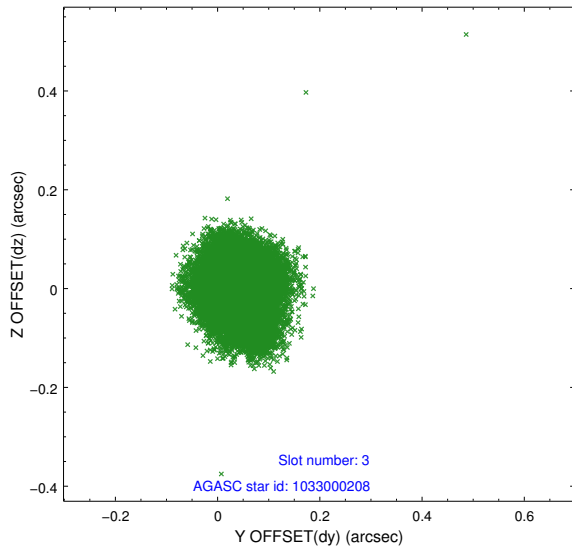


Slot Statistics

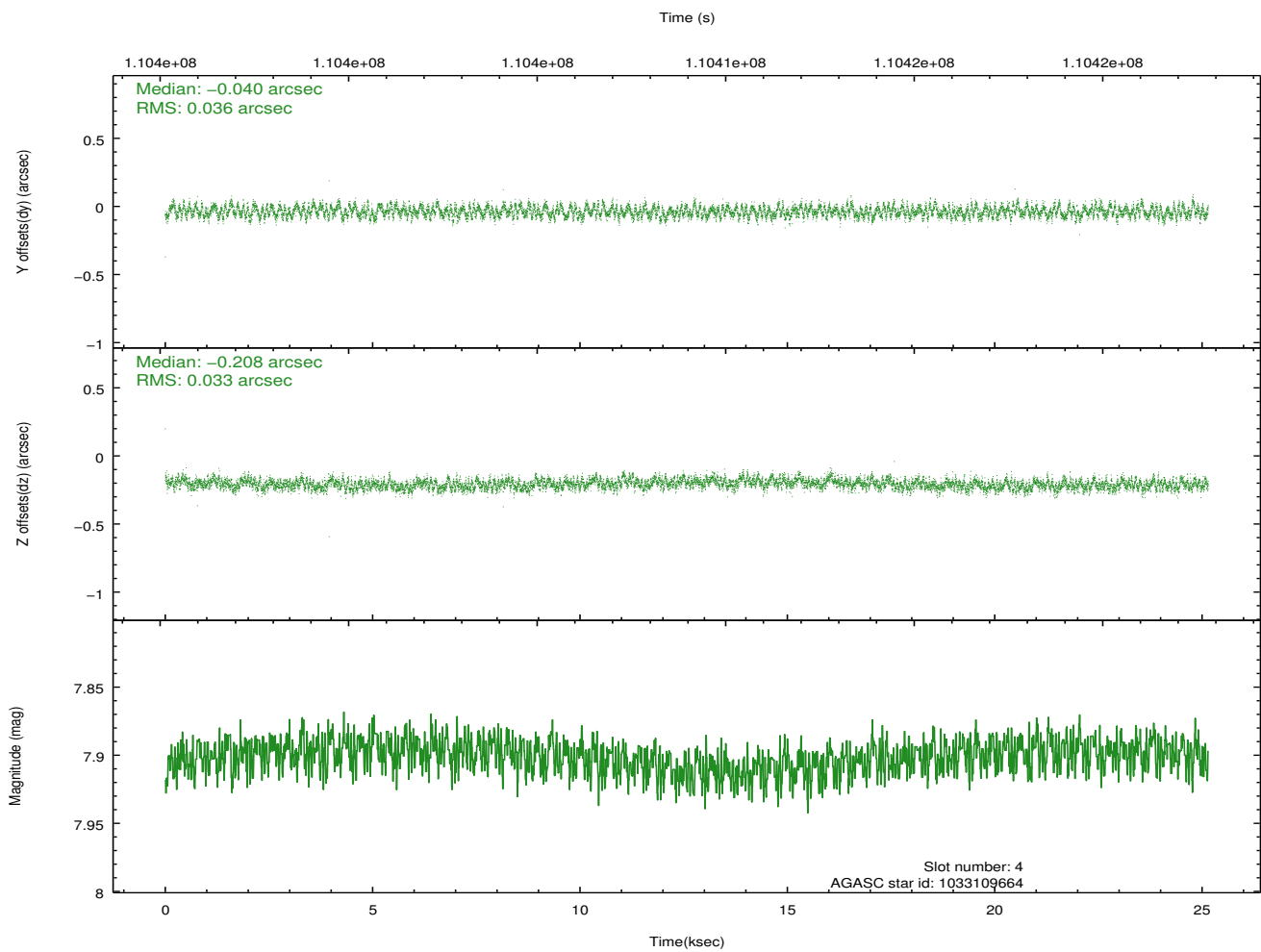
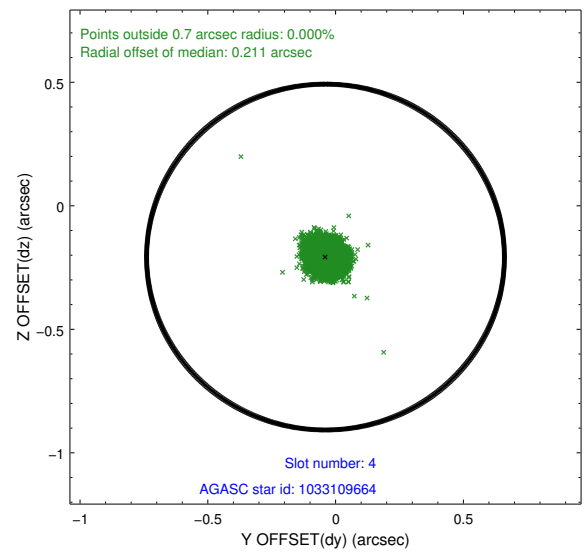
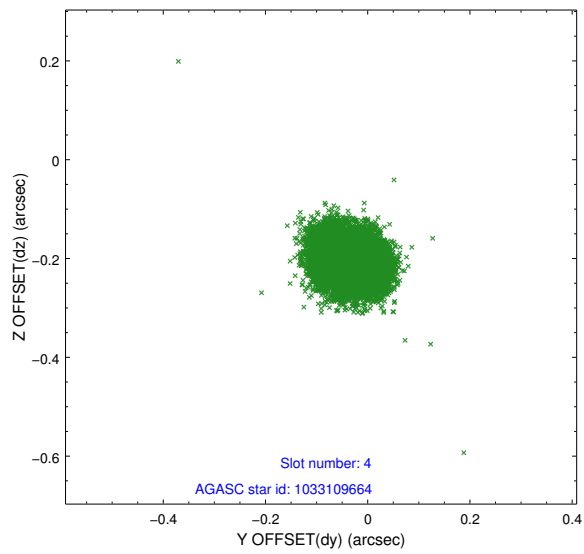
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	6135	-0.076	-0.046	0.006	0.012	0.000000	0.000000	-753.87	-1881.07
1	FID	ACIS-S-4	7.18	6133	0.027	0.059	0.006	0.011	0.000000	0.000000	2159.46	27.36
2	FID	ACIS-S-6	7.41	6134	0.021	-0.005	0.007	0.012	0.000000	0.000000	408.36	664.83
3	GUIDE	1033000208	7.78	12266	0.040	0.000	0.077	0.115	256.502750	-44.372681	-420.17	-2025.96
4	GUIDE	1033109664	7.90	12270	-0.040	-0.208	0.053	0.082	257.645718	-43.523560	-882.21	2205.20
5	GUIDE	1032985488	8.41	12269	-0.042	0.065	0.081	0.121	256.341779	-44.392959	-625.59	-2392.79
6	GUIDE	1032980048	8.61	12269	0.002	0.057	0.071	0.115	256.605534	-44.572067	302.46	-2276.47
7	GUIDE	1032979296	8.75	12267	0.036	0.094	0.082	0.139	257.257446	-43.353483	-2003.10	1820.28

2.4 Star Slots

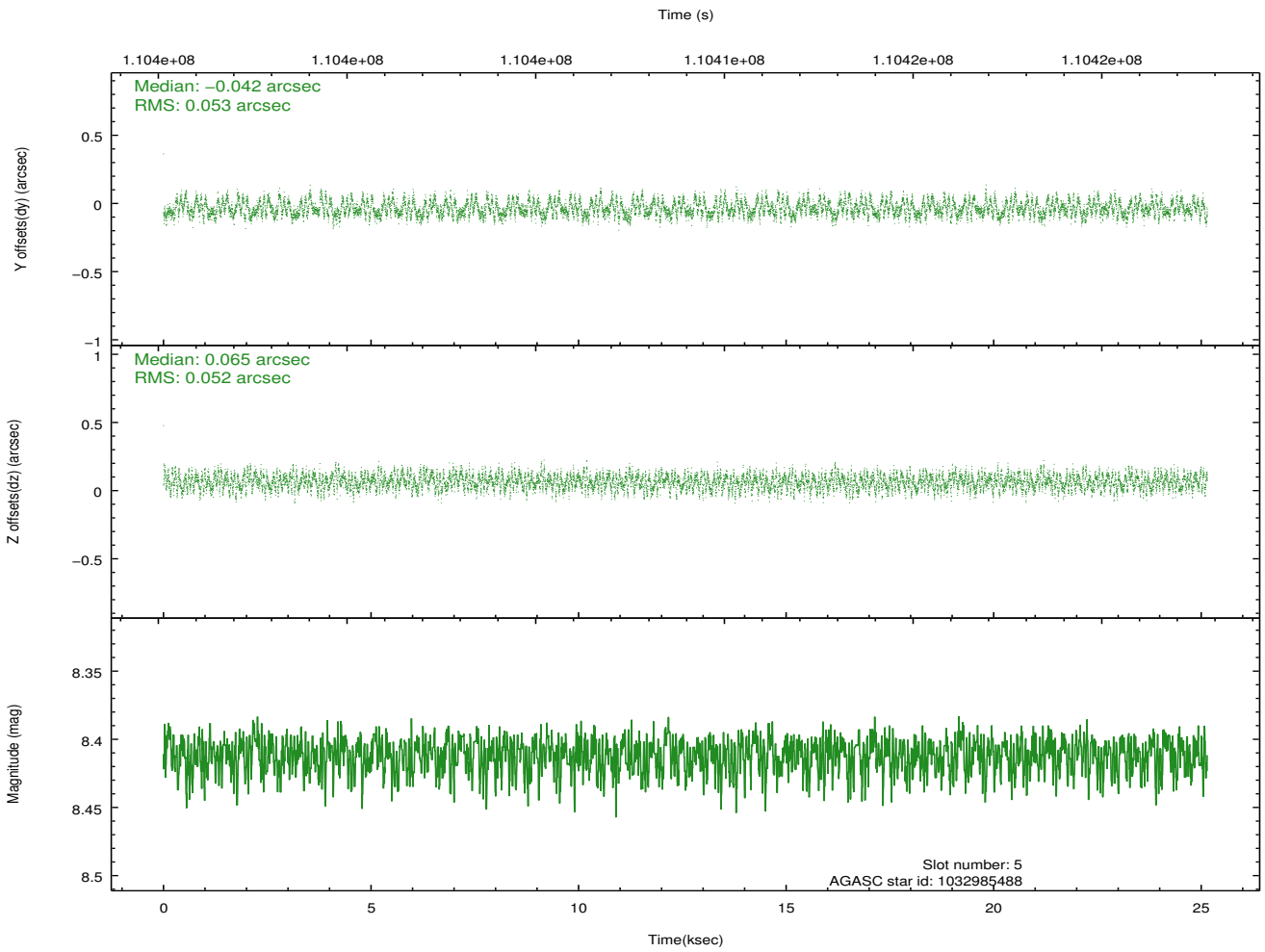
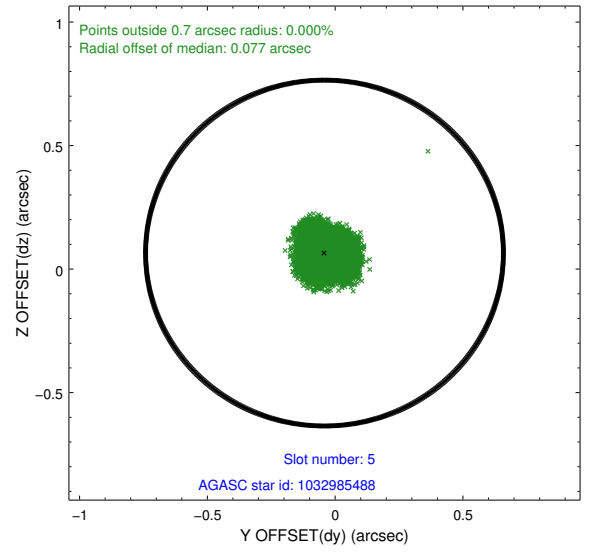
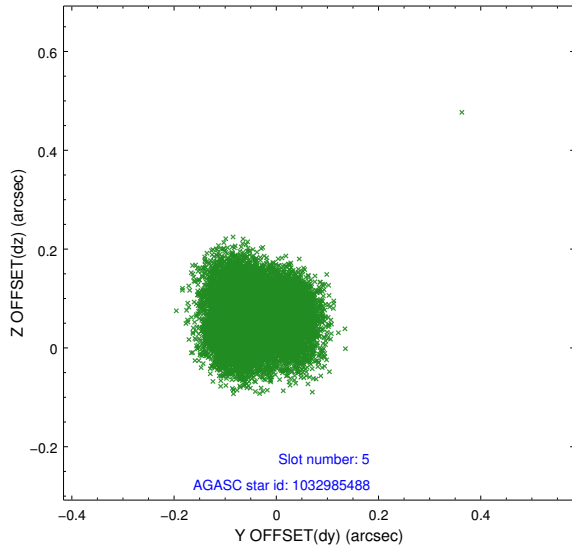
2.4.1 Slot 3



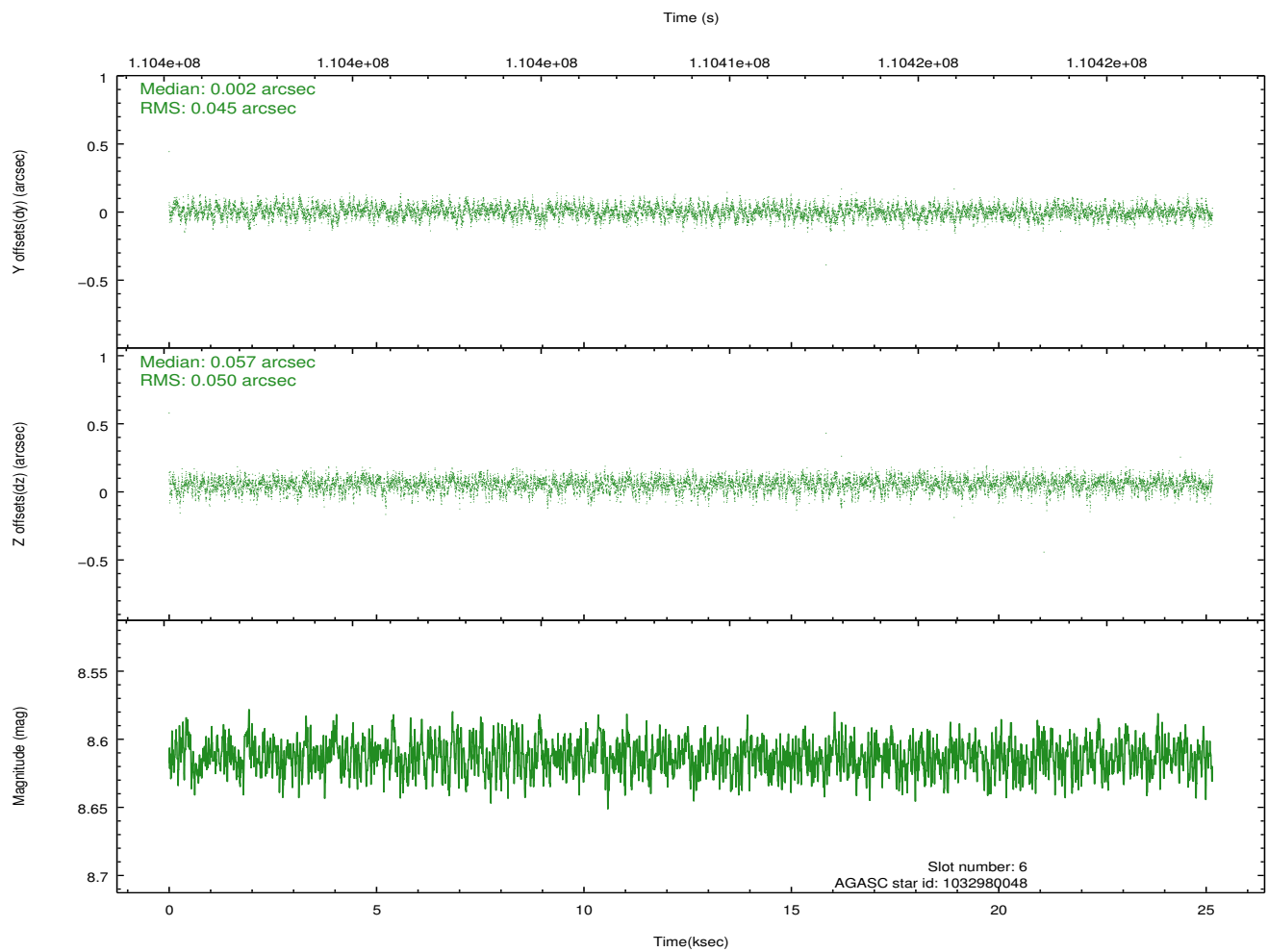
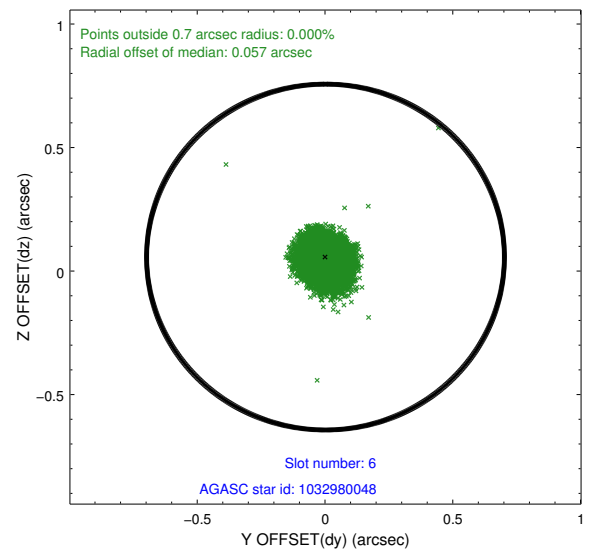
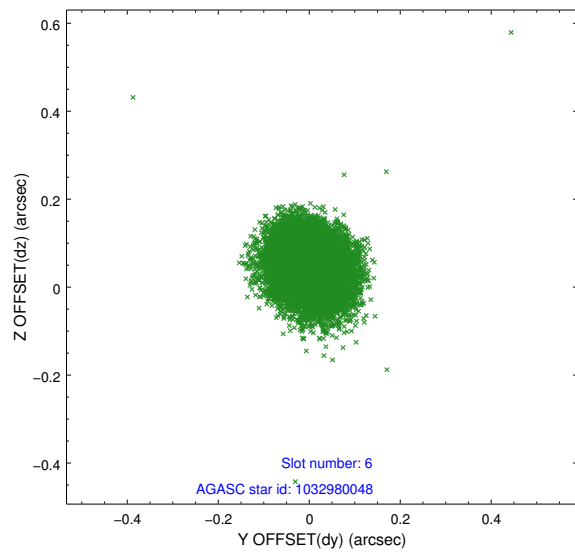
2.4.2 Slot 4



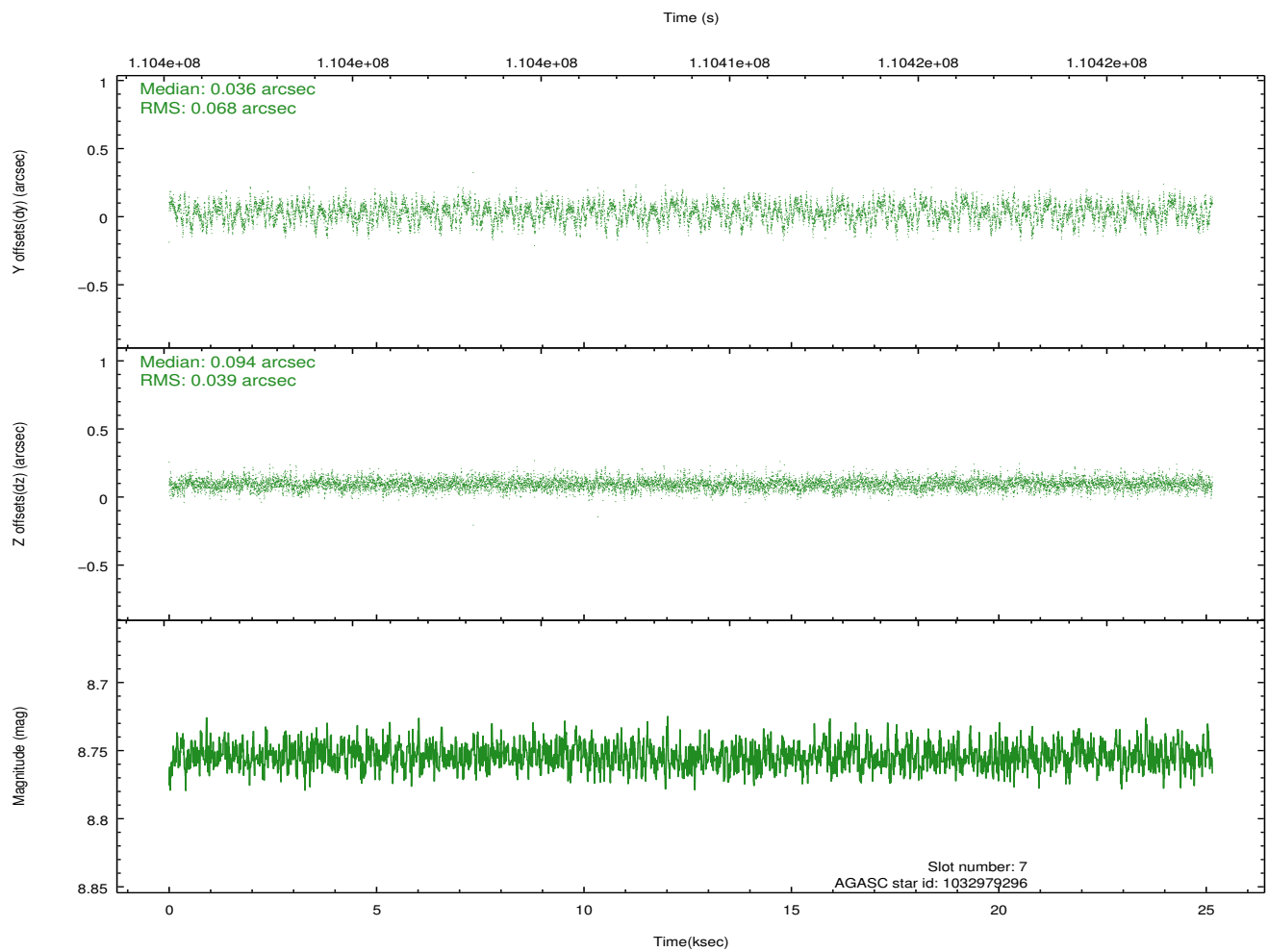
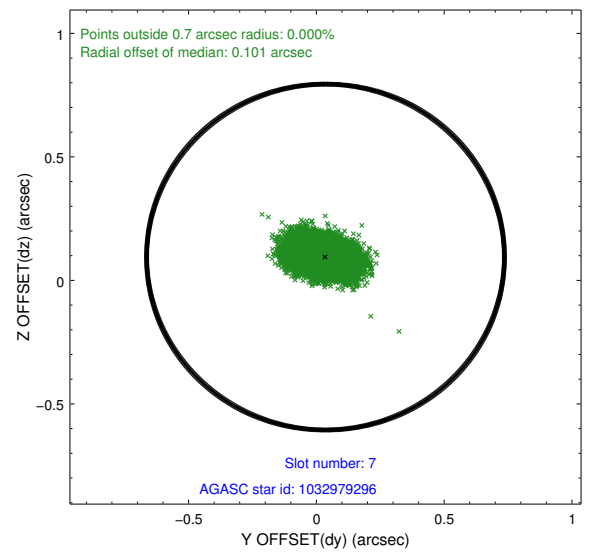
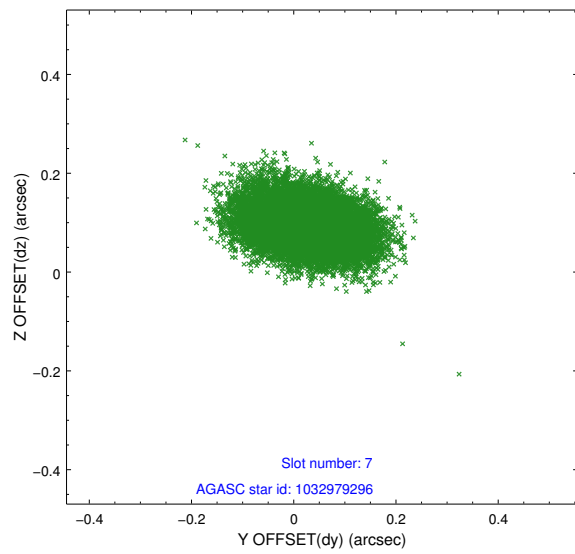
2.4.3 Slot 5



2.4.4 Slot 6

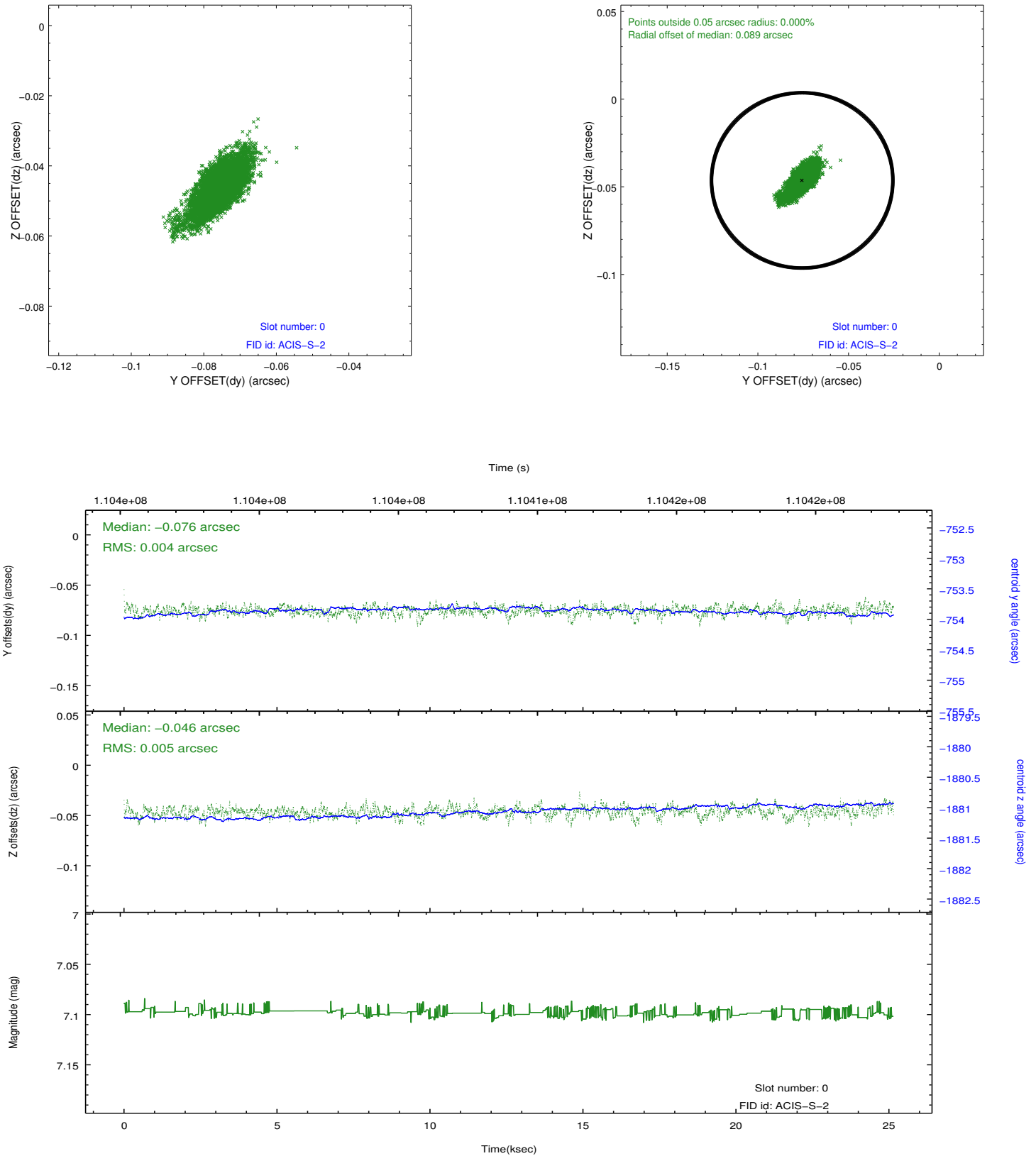


2.4.5 Slot 7

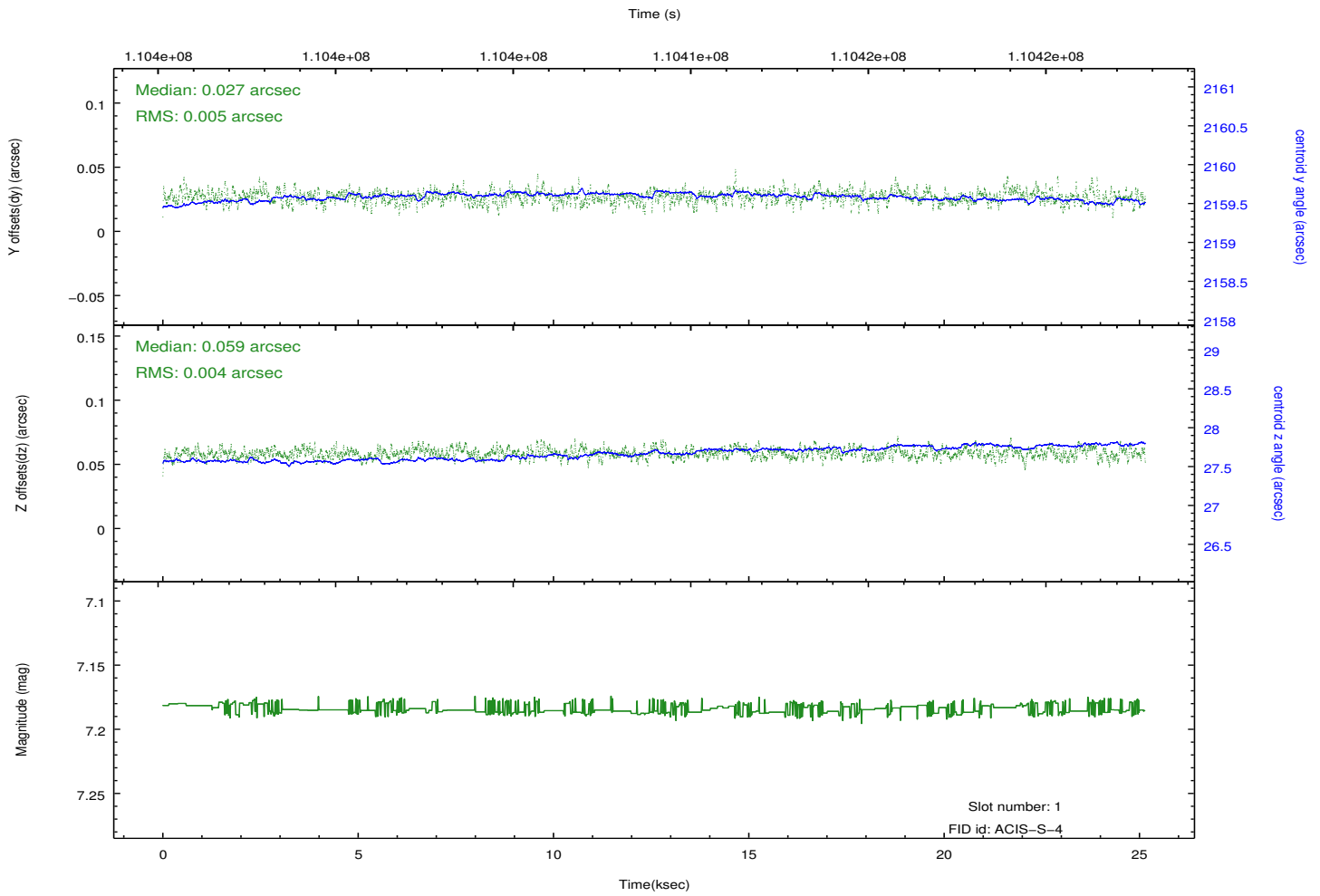
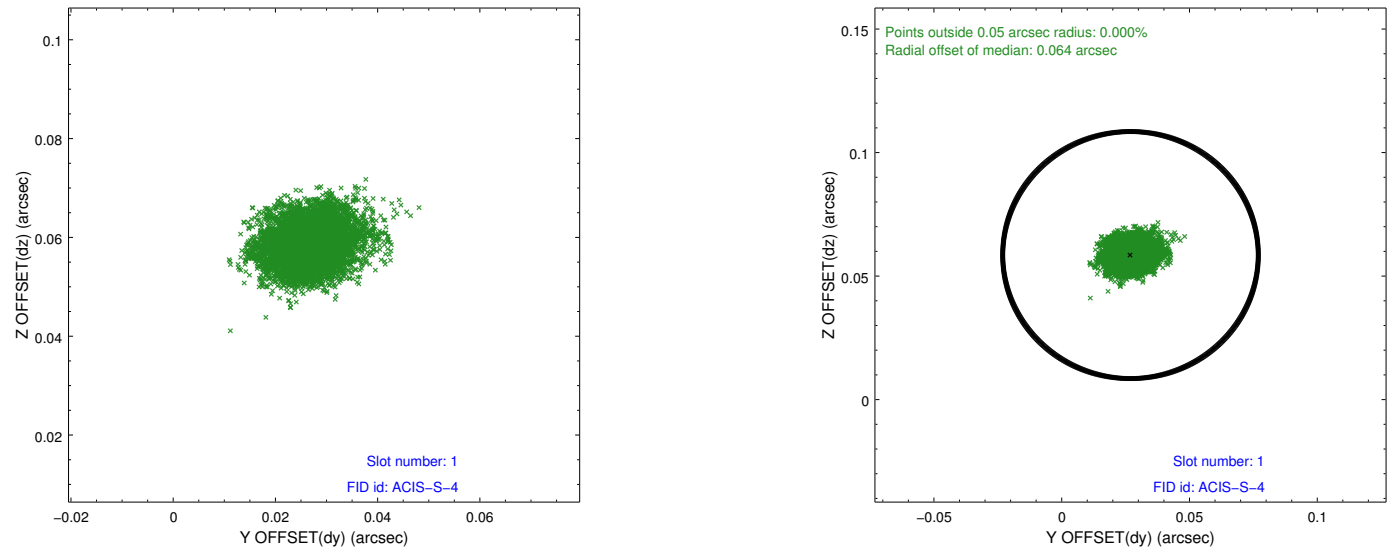


2.5 FID Slots

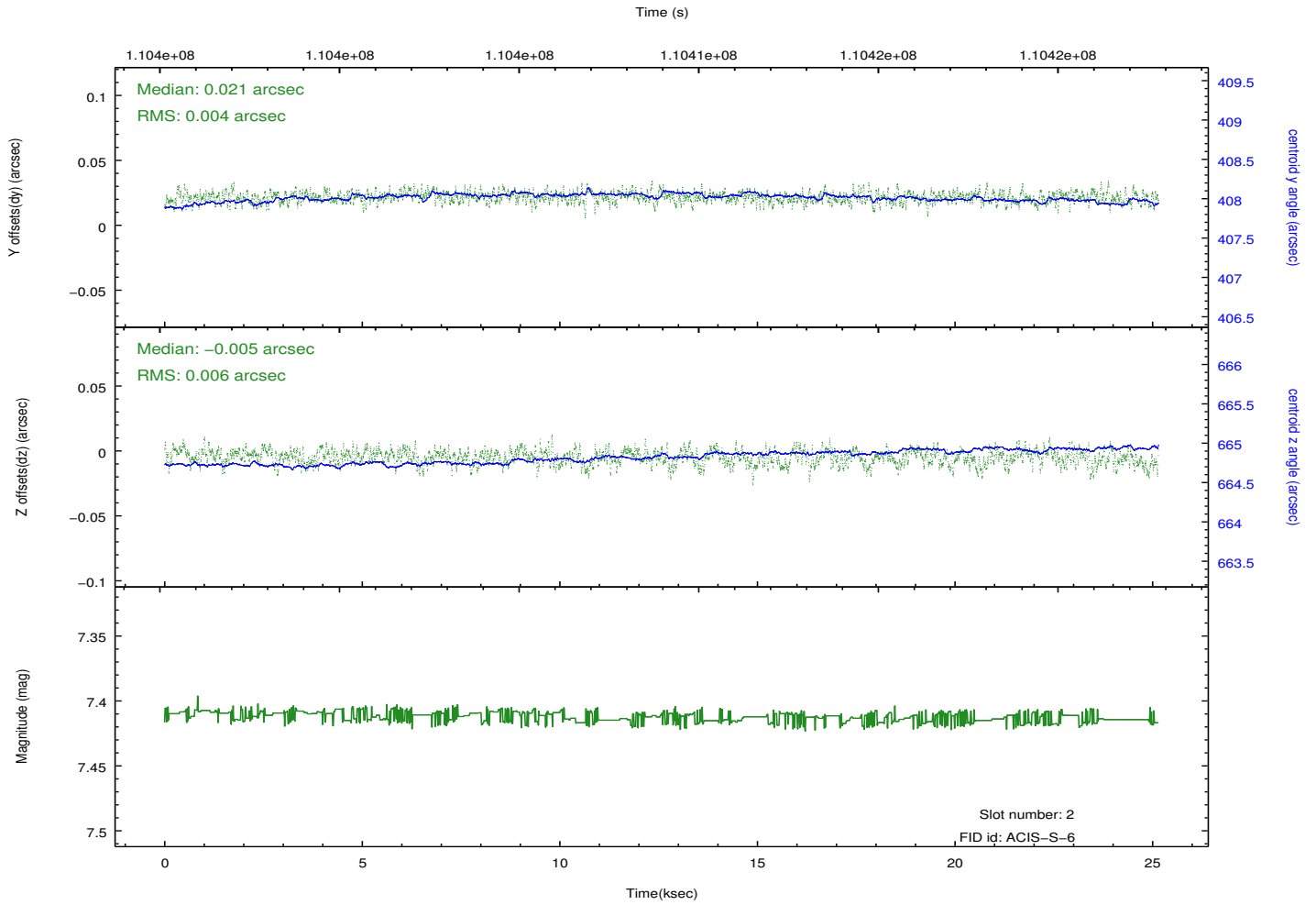
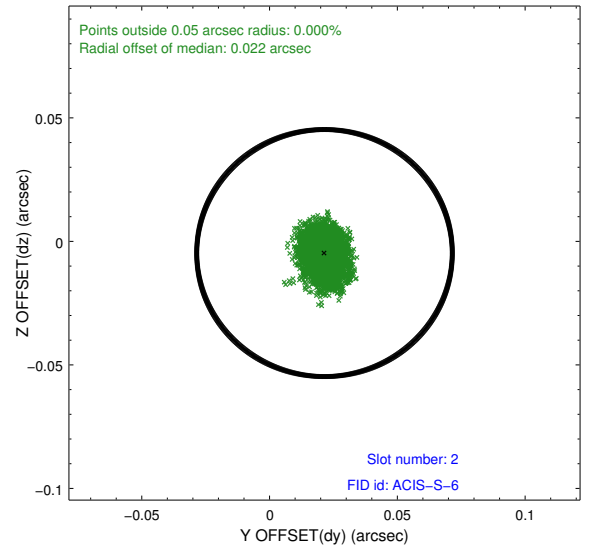
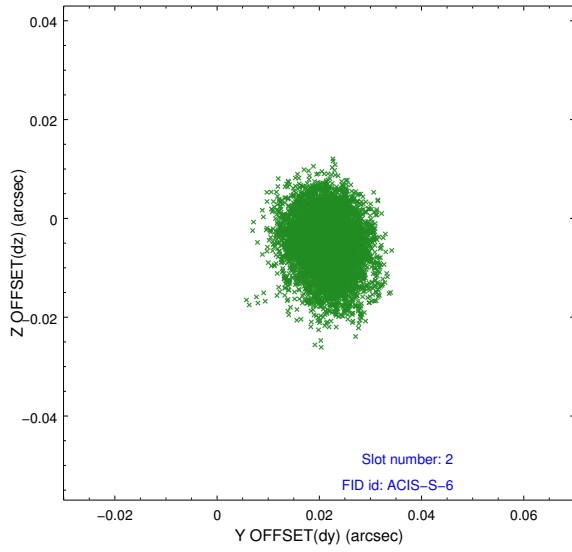
2.5.1 Slot 0



2.5.2 Slot 1

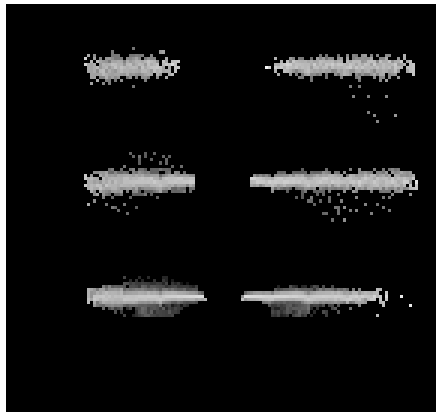


2.5.3 Slot 2

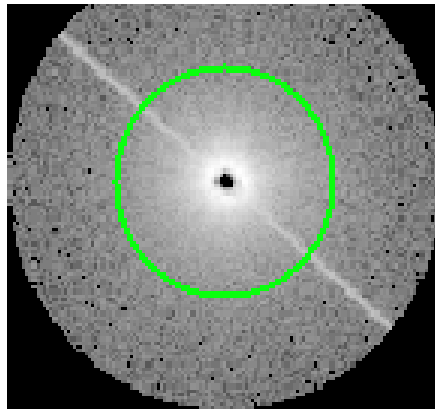


3 Gratings

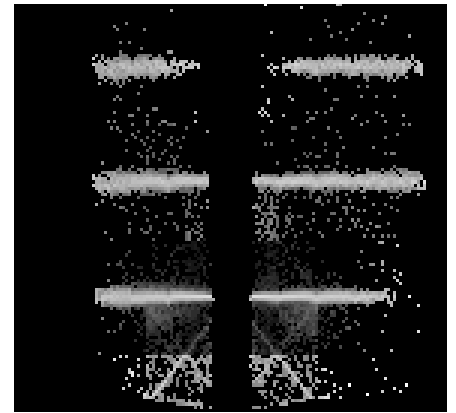
3.1 HEG Arm



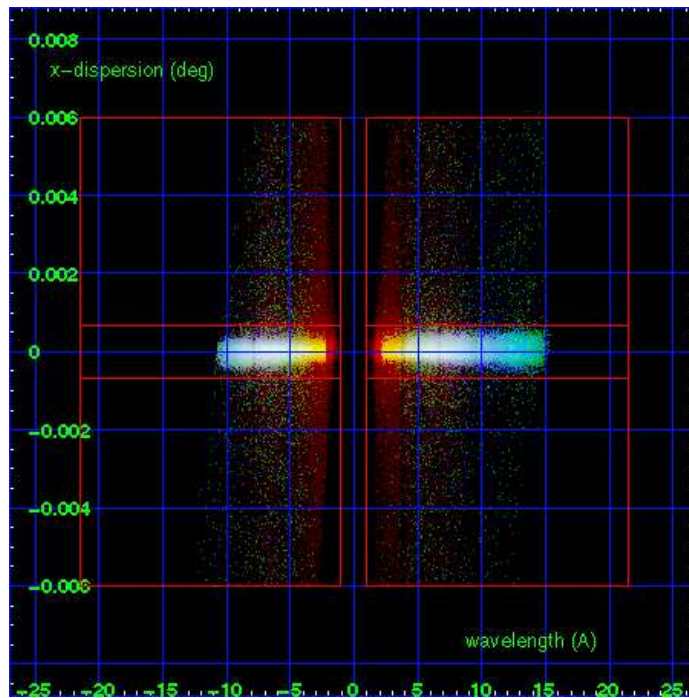
HEG Order Sort 123



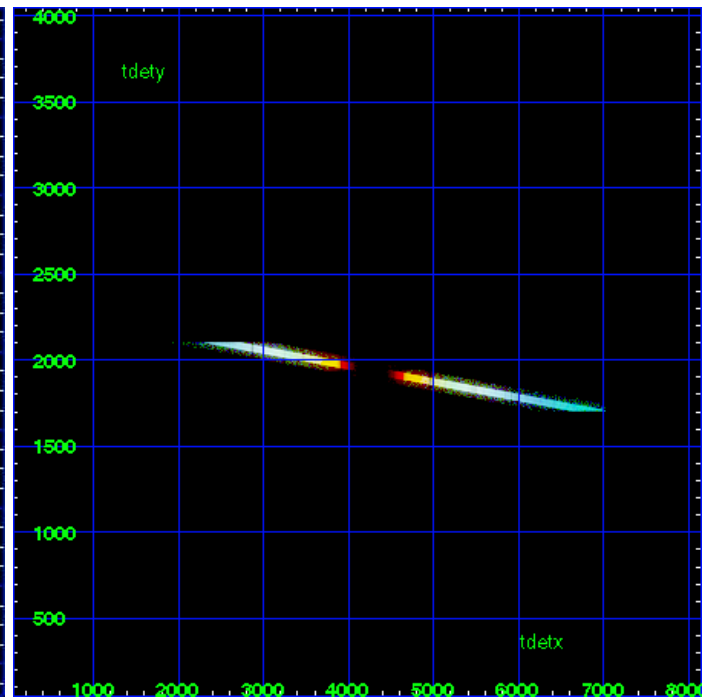
HEG Zero Order



HEG Order Sort ALL

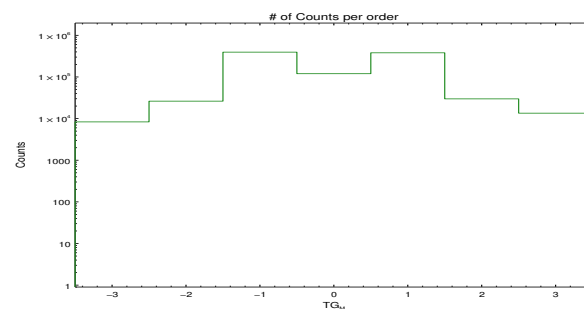


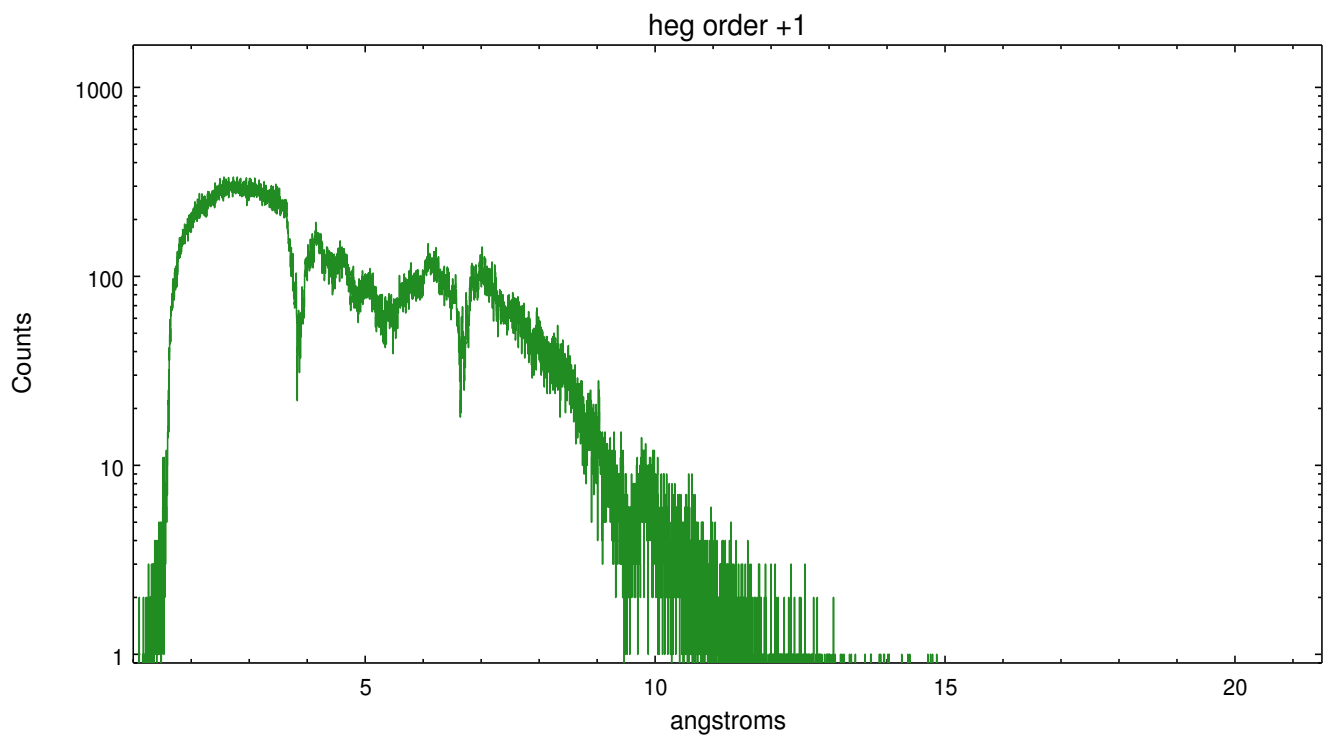
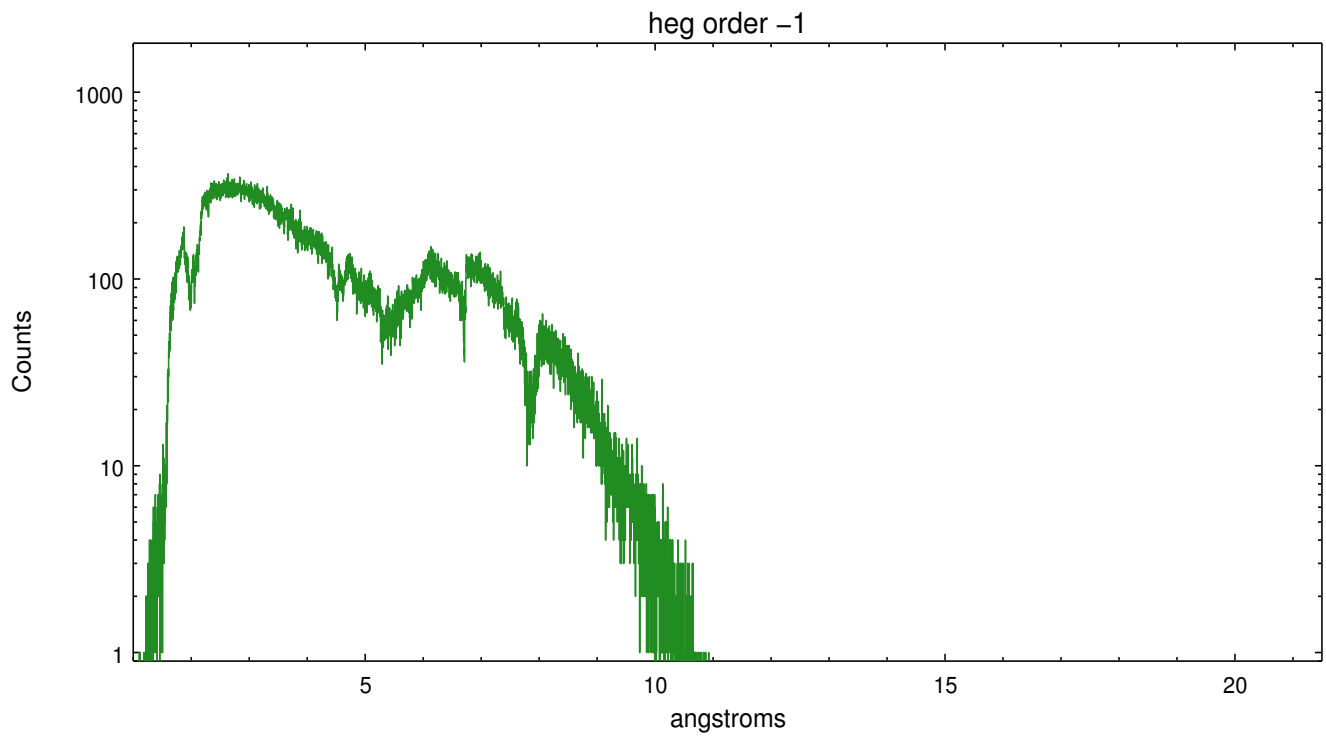
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	8337	26236	394521	119907	380617	29793	13494

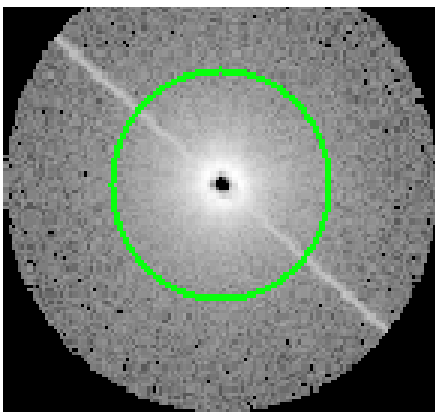




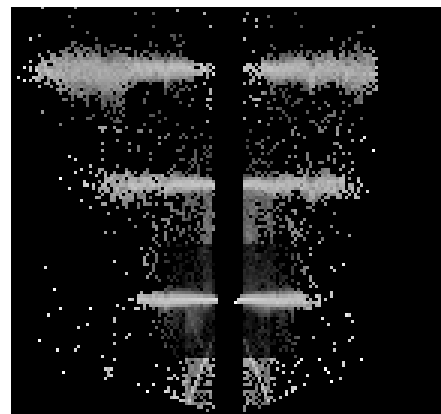
3.2 MEG Arm



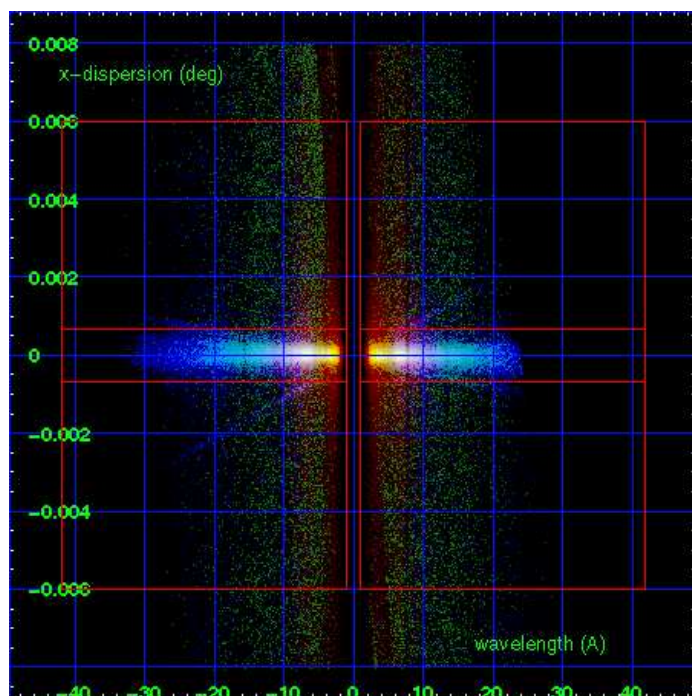
MEG Order Sort 123



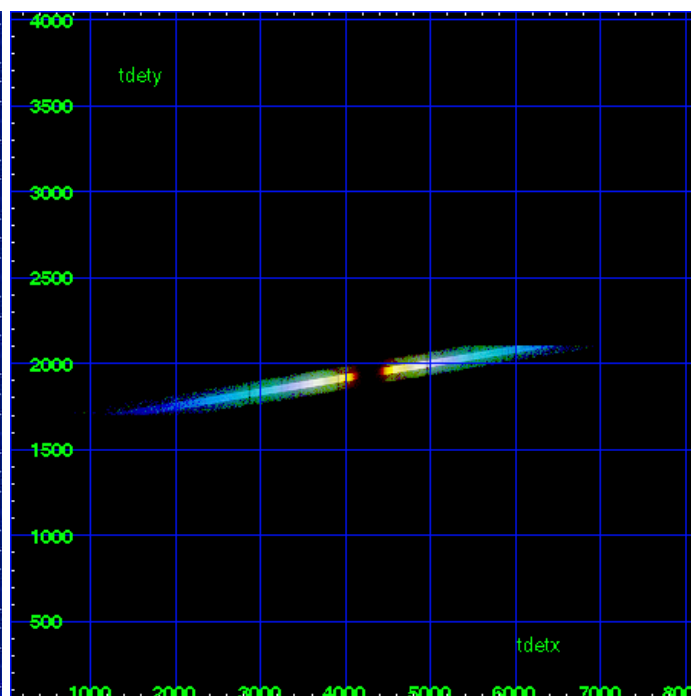
MEG Zero Order



MEG Order Sort ALL

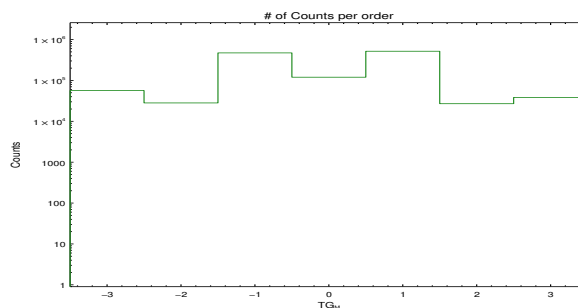


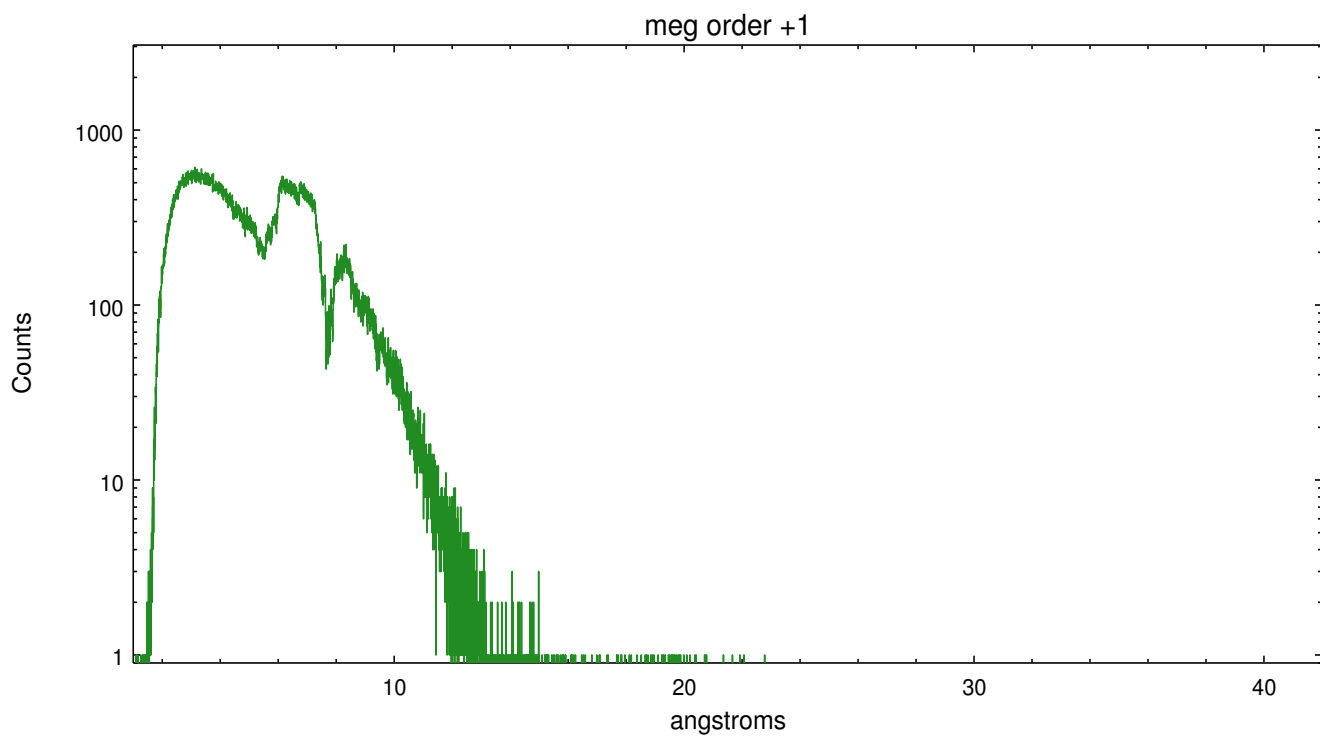
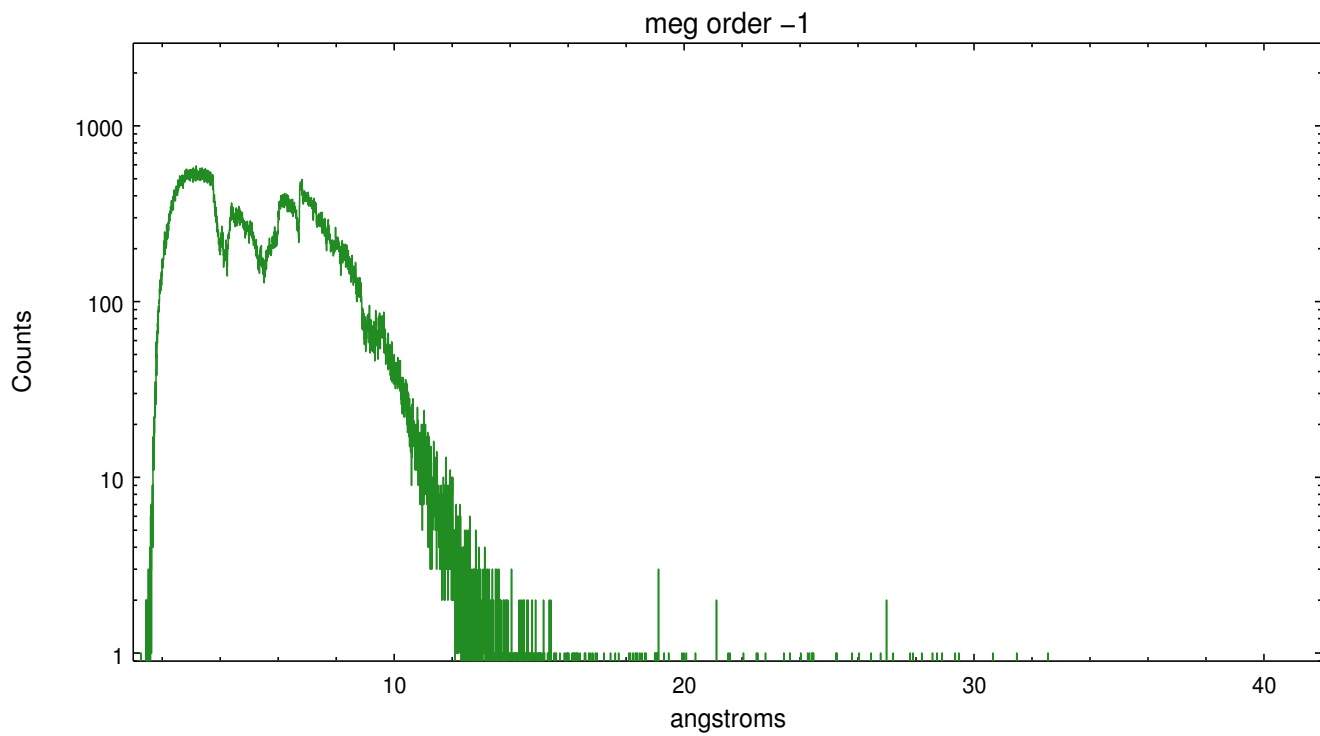
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	56644	28191	472308	119907	517827	27009	38387





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	25.127

A.2 Comments

Observer supplied incorrect coordinates. Observer coordinates off by 1.81 arcmin. The target is not centered in the subarray and the heg negative and meg positive order are truncated.

===

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=4209.86, y=4179.52) 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 heg arm (in this case the meg arm is very piled up). 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.

===

Command line used:

```
findzo('acisf01923_000N004_evt1.fits', 'h', 4, 4209, 4179);
```

===

Faint grating spectra can be seen in an image of bad events. This is probably due to pileup in the spectrum, causing migration to bad grades. This should be considered in analysis.