

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 7485 - L2 Version 3
Chandra X-Ray Center

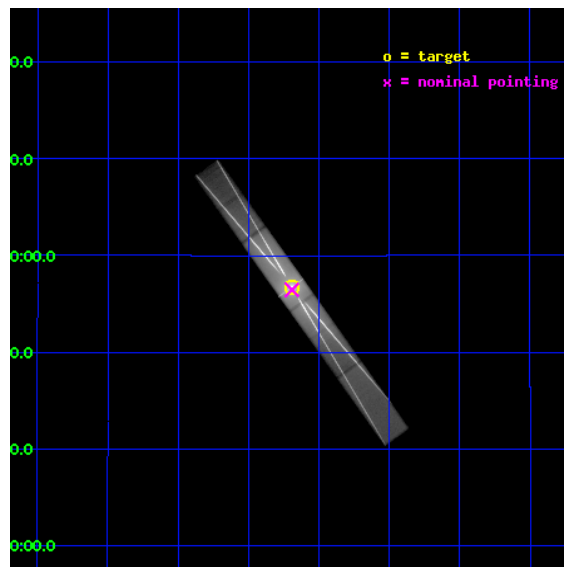
L2 Processing Date : Apr 30 2012

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1 Front

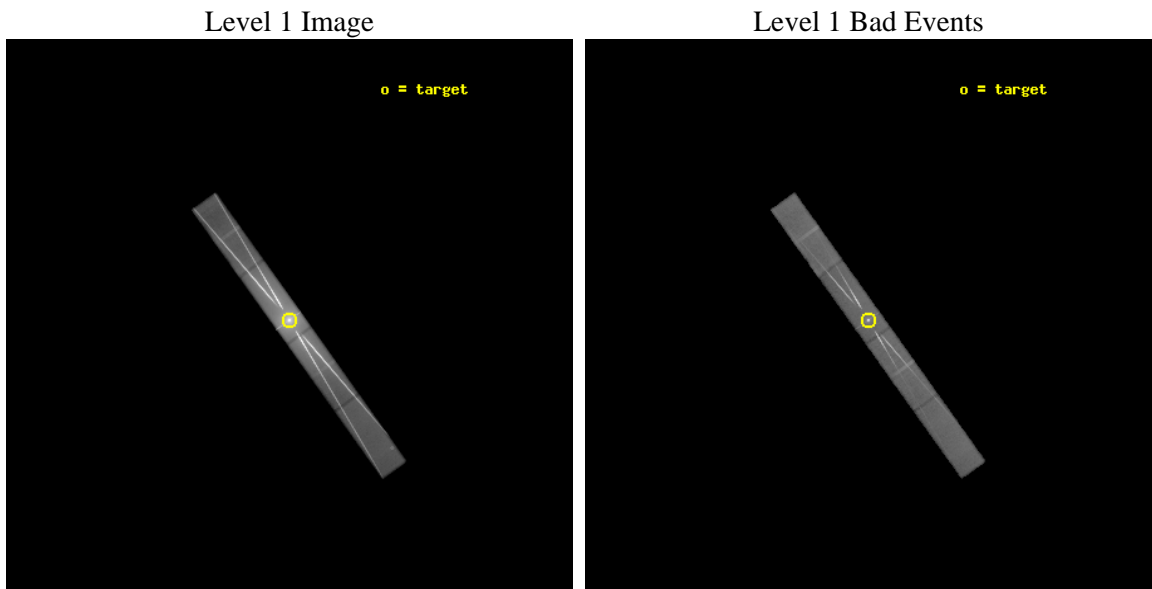
seq_num	400595	Sequence number
obs_id	7485	Observation id
title	High Resolution Spectroscopy of GRS 1915+105 in the 'Soft' State	
observer	Dr Yoshihiro Ueda	Principal investigator
object	GRS 1915+105	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	288.798333	Observer's specified target RA [deg]
dec_targ	10.945806	Observer's specified target Dec [deg]
ra_nom	288.79799216413	Nominal RA [deg]
dec_nom	10.940964515399	Nominal Dec [deg]
roll_nom	234.29736782694	Nominal Roll [deg]
revision	3	Processing version of data
ontime	48997.199513316	Sum of GTIs [s]
livetime	47376.909218059	Livetime [s]
ontime5	48997.199513316	Sum of GTIs [s]
ontime6	48997.199513316	Sum of GTIs [s]
ontime7	48997.199513316	Sum of GTIs [s]
ontime8	48997.199513316	Sum of GTIs [s]
l2events	7117846	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	48820.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	48997.199513316	Sum of GTIs [s]
caldbver	4.4.9	 	ontime5	48997.199513316	Sum of GTIs [s]
date	2012-04-29T14:36:45	Date and time of file creation	ontime6	48997.199513316	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	48997.199513316	Sum of GTIs [s]
			ontime8	48997.199513316	Sum of GTIs [s]
			l1events	8421057	Number of level 1 events

2.1.3 Events

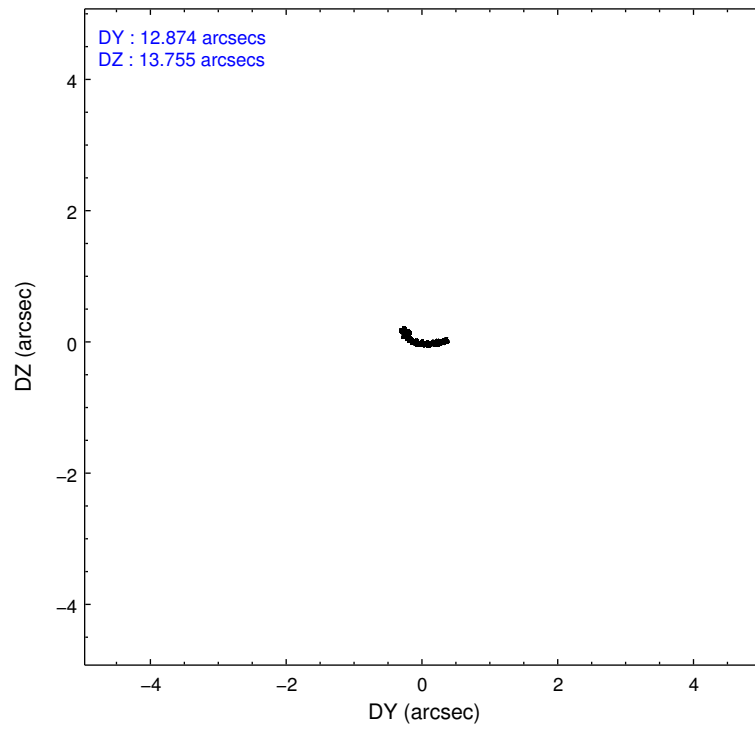
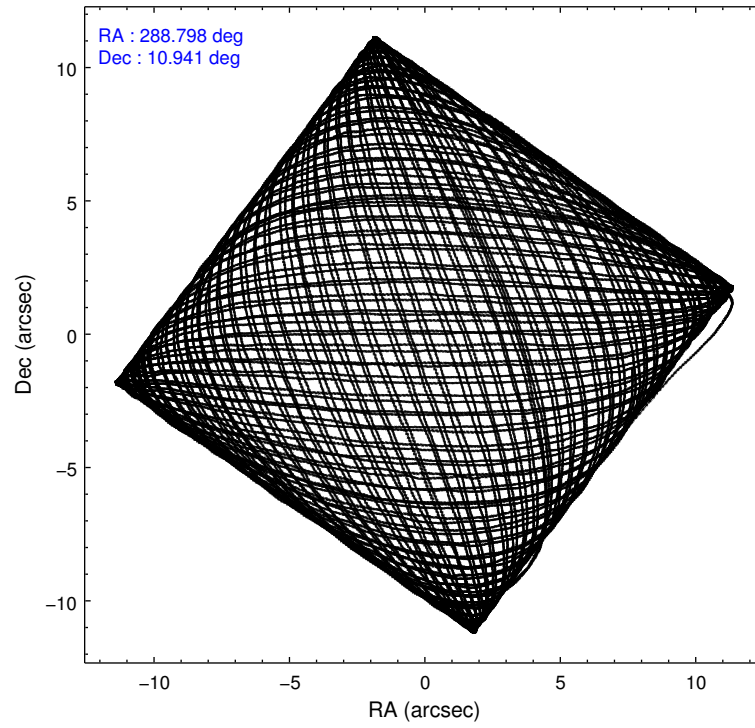
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	440987	2773504	4469580	736986
rejected events	160571	295722	427330	198355
rejected %	36%	10%	9%	26%

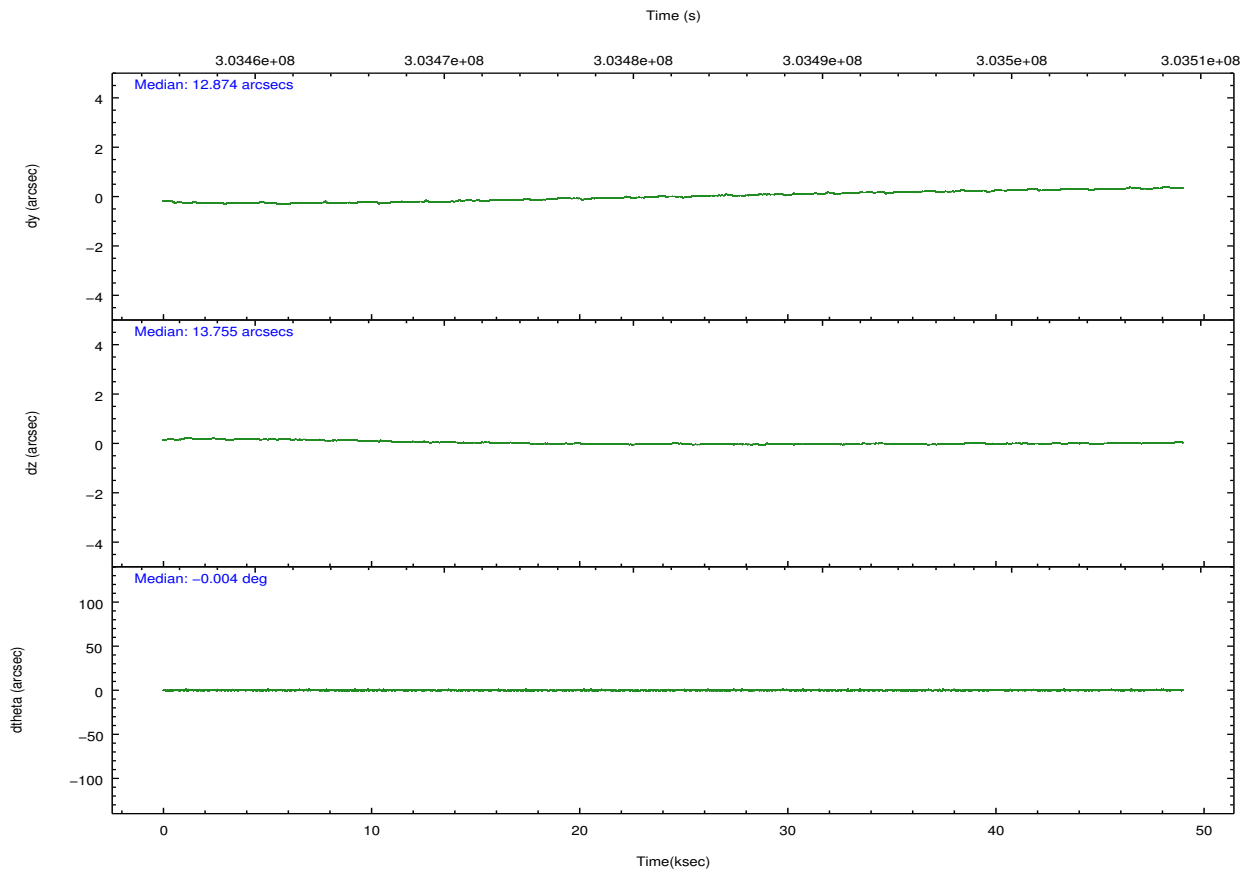
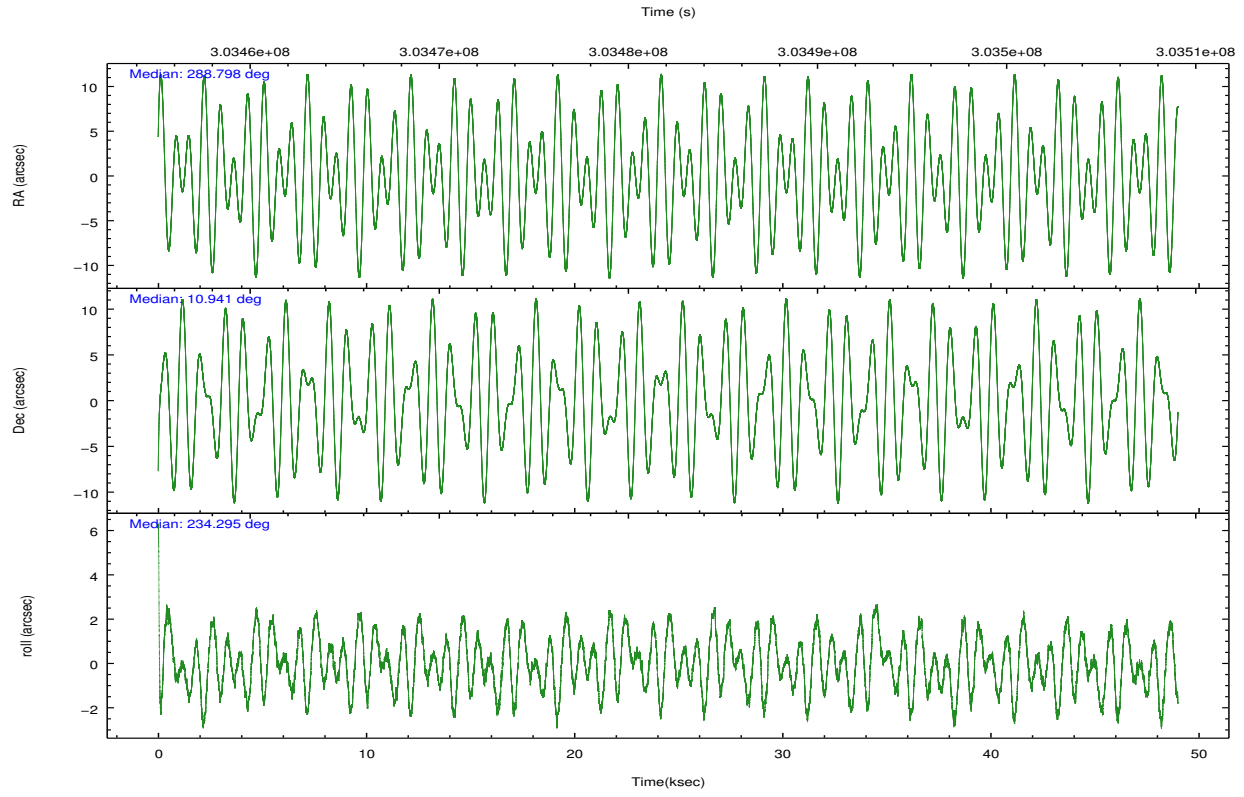
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	42555	1707180	634049	384924
	9%	61%	14%	52%
grade 1 events	783	41170	15336	2071
	0%	1%	0%	0%
grade 2 events	97432	363223	1039745	71577
	22%	13%	23%	9%
grade 3 events	17675	126023	385397	25617
	4%	4%	8%	3%
grade 4 events	17455	123729	382428	25076
	3%	4%	8%	3%
grade 5 events	16107	46681	105070	11217
	3%	1%	2%	1%
grade 6 events	113323	168963	1614700	34119
	25%	6%	36%	4%
grade 7 events	135657	196535	292855	182385
	30%	7%	6%	24%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	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	288.800373	288.7979921641348	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	10.968209	10.94096451539861	Subarray start row	1	1
[deg] Pointing Roll	234.140284	234.2973678269428	Subarray row count	350	350
[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	1.2
[mm] SIM translation stage pos	-182.132523	-182.1344861297048			
[mm] SIM translation stage offset	-8	-7.998036453302973			
[s] Observation start time (MET)	303457765.184000	303456158.308			
Observation start date	2007-08-14T05:48:20	2007-08-14T05:22:38			
[s] Observation end time (MET)	303506585.184000	303507307.34795			
Observation end date	2007-08-14T19:22:00	2007-08-14T19:35:07			
Read mode	TIMED	TIMED			

2.3 Aspect



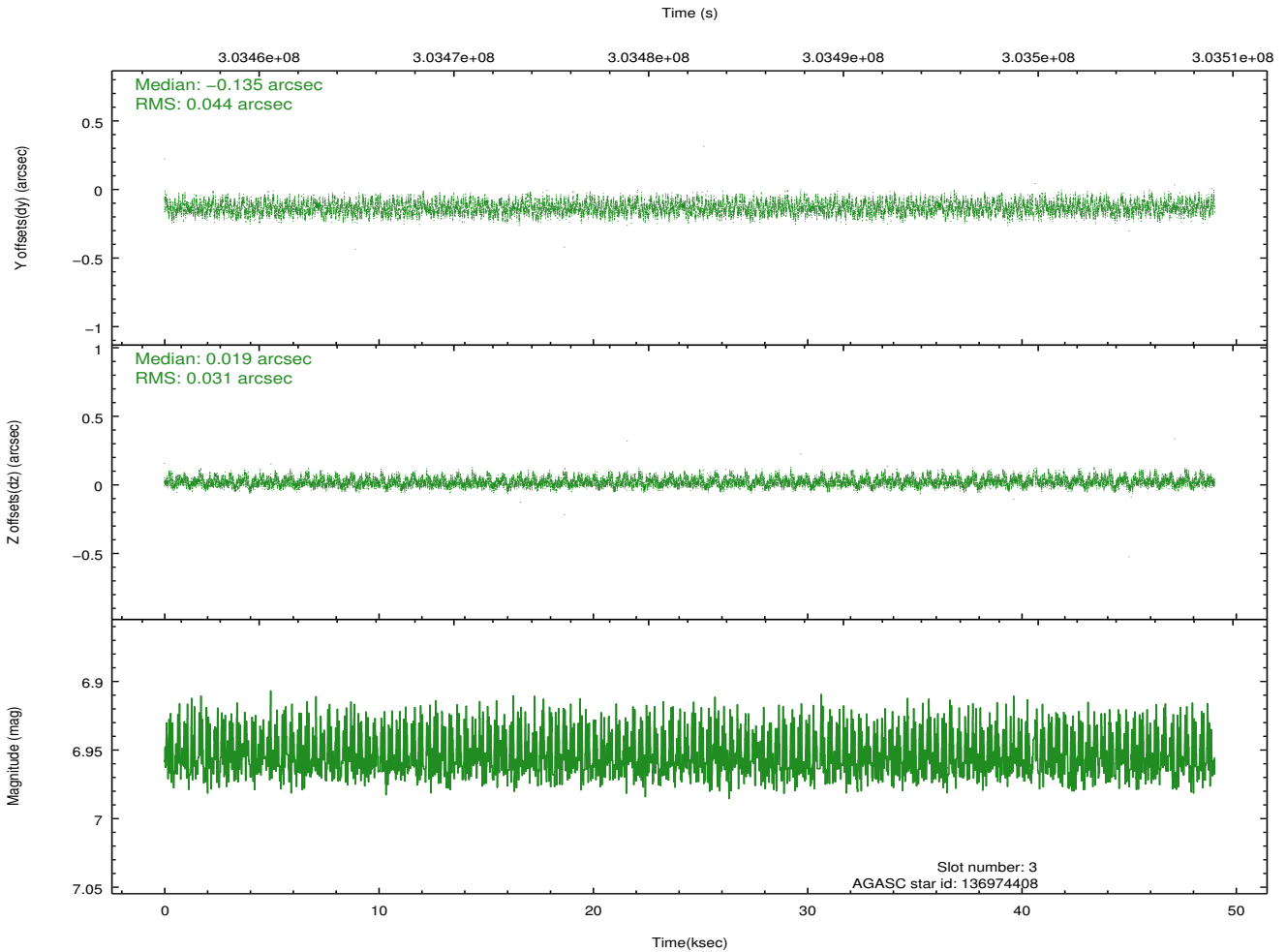
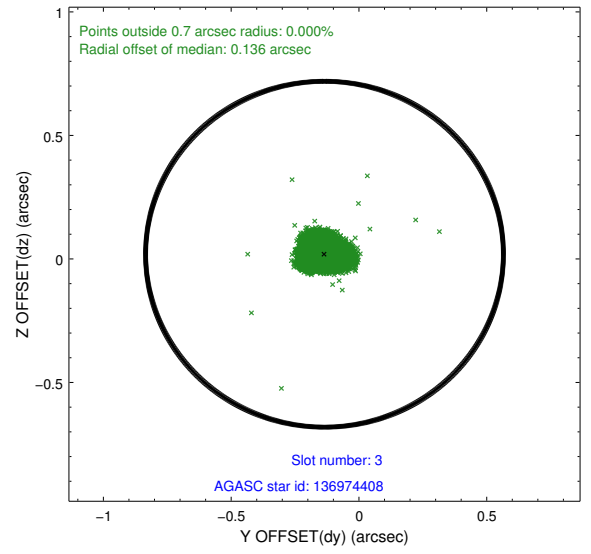
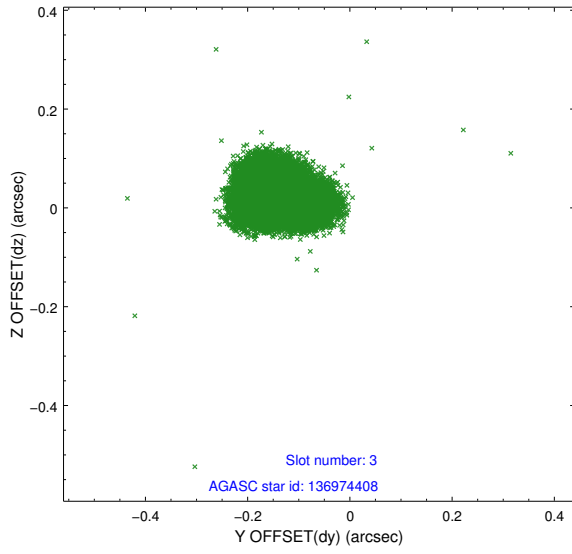


Slot Statistics

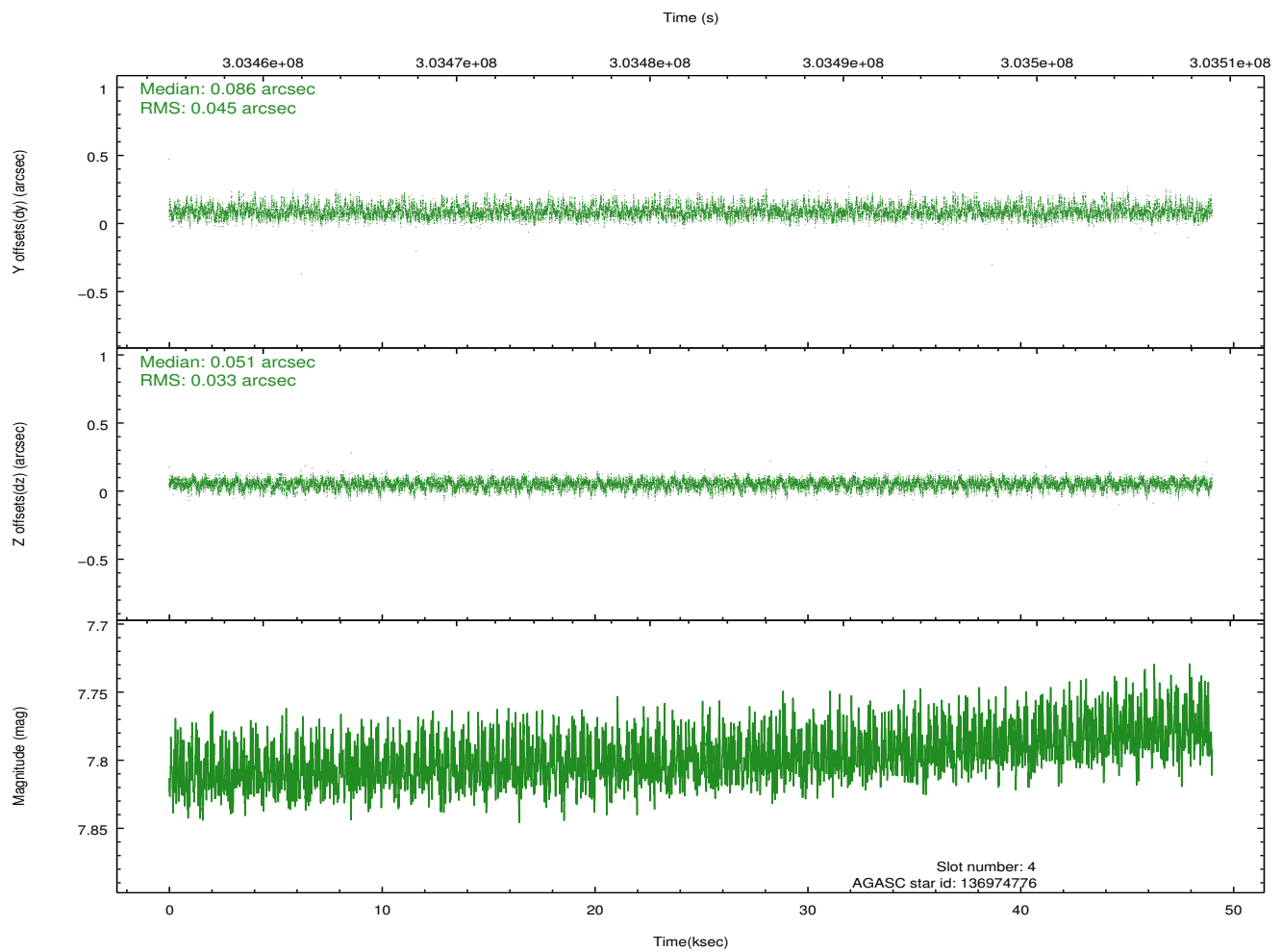
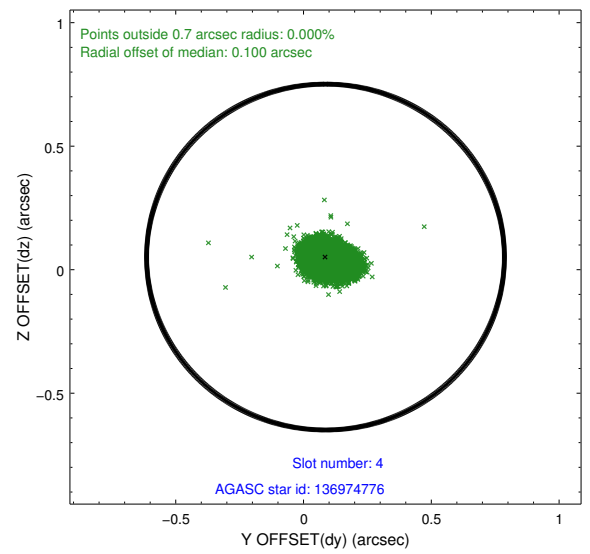
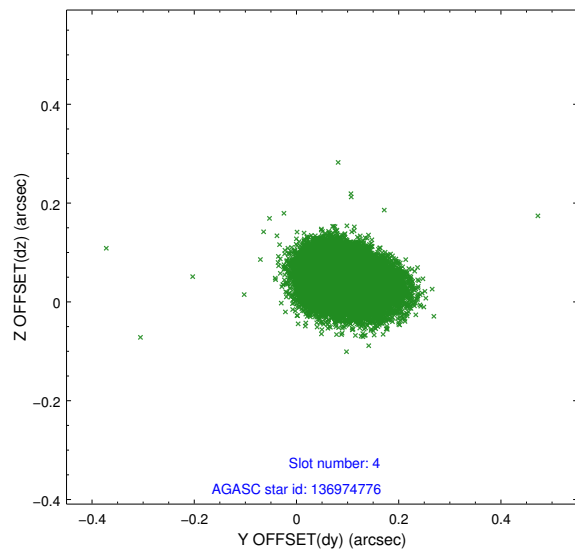
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	11951	-0.137	-0.099	0.007	0.012	0.000000	0.000000	-765.35	-1899.99
1	FID	ACIS-S-4	7.17	11950	0.122	0.078	0.007	0.012	0.000000	0.000000	2148.19	8.65
2	FID	ACIS-S-6	7.40	11949	-0.012	0.027	0.008	0.013	0.000000	0.000000	396.73	645.98
3	GUIDE	136974408	6.95	23865	-0.135	0.019	0.058	0.090	288.806802	10.212409	2191.93	1612.64
4	GUIDE	136974776	7.80	23900	0.086	0.051	0.058	0.097	288.742109	10.409402	1751.66	1011.57
5	GUIDE	136977584	8.41	23885	0.070	-0.086	0.065	0.103	288.635599	10.555283	1546.66	398.24
6	GUIDE	137497048	7.96	23893	-0.055	0.060	0.064	0.101	288.896055	11.554718	-1908.39	-961.45
7	GUIDE	137498872	7.07	23896	0.024	-0.047	0.060	0.102	288.350862	11.344926	-170.22	-2080.86

2.4 Star Slots

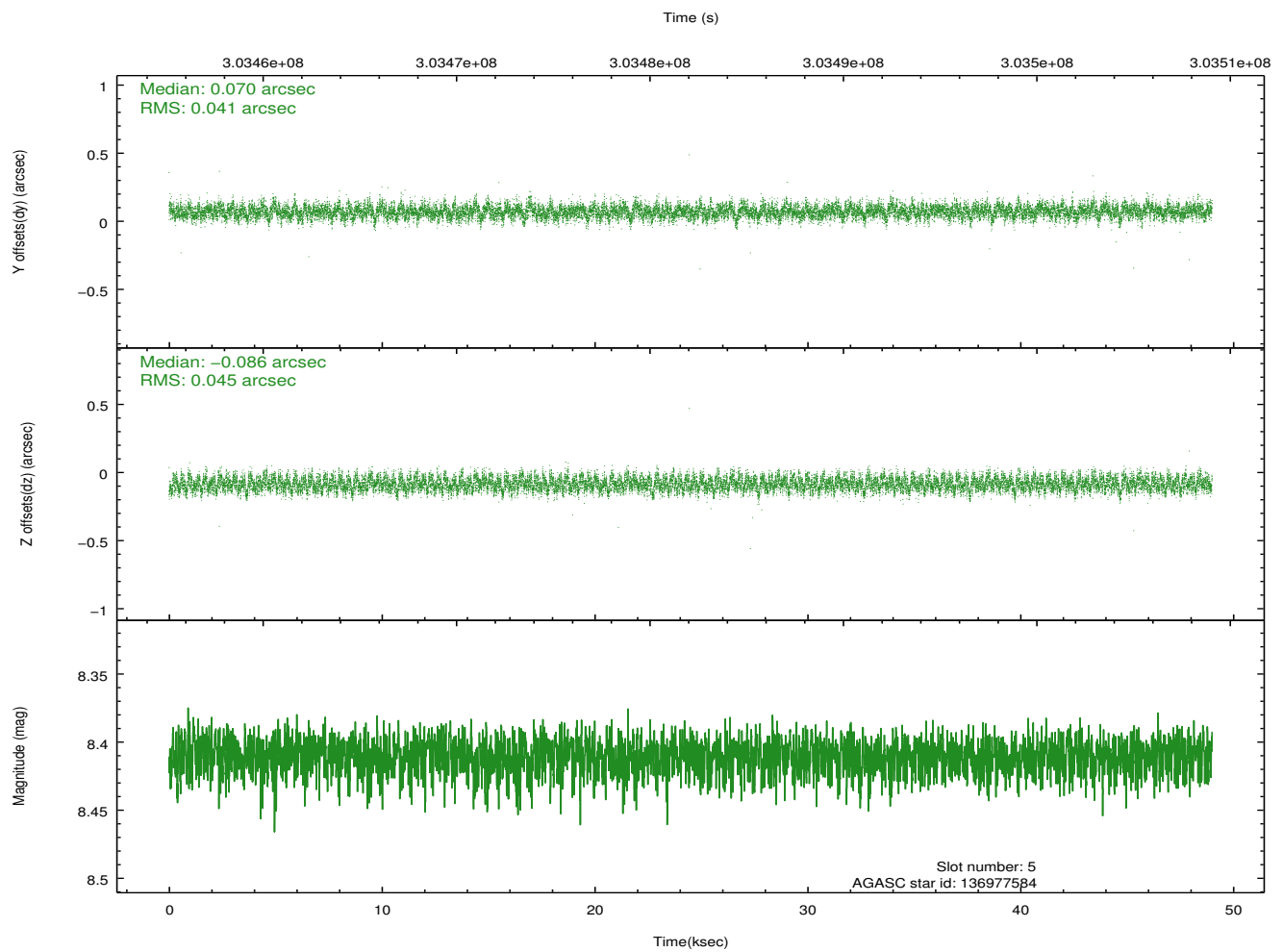
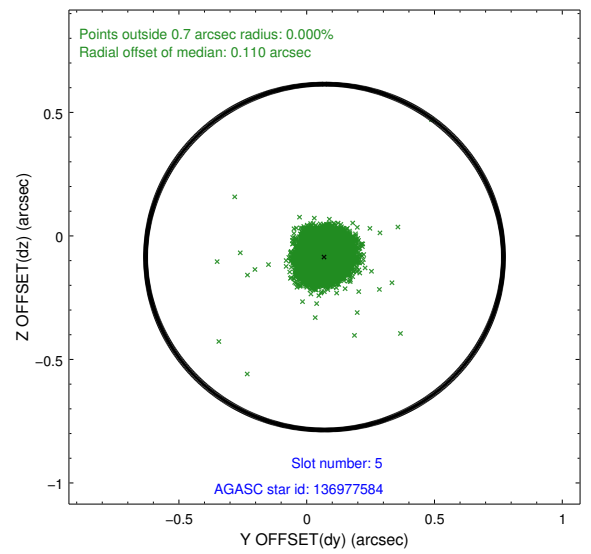
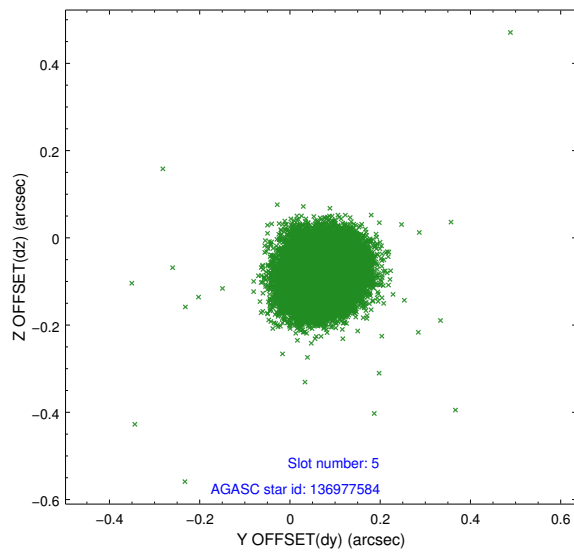
2.4.1 Slot 3



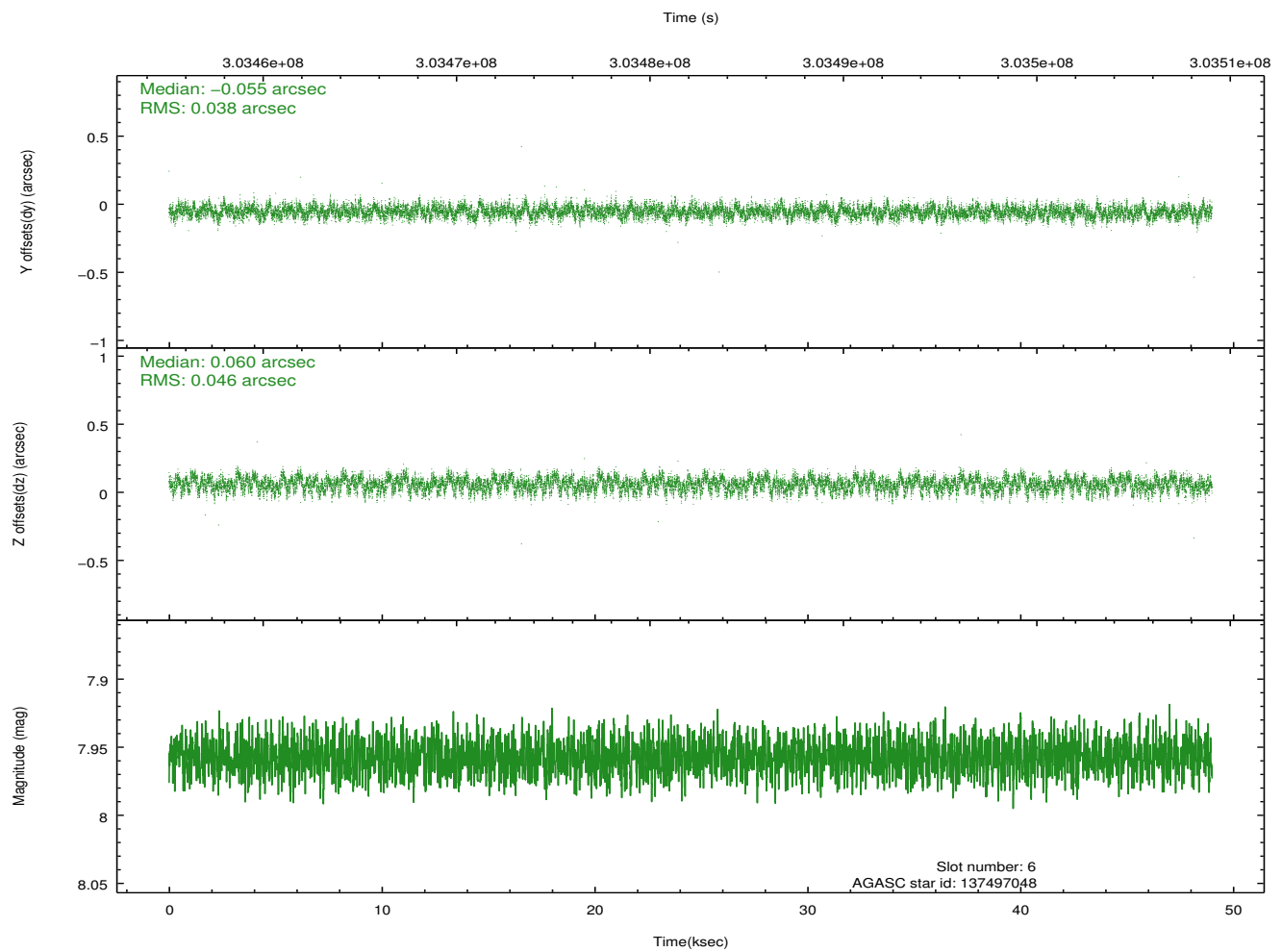
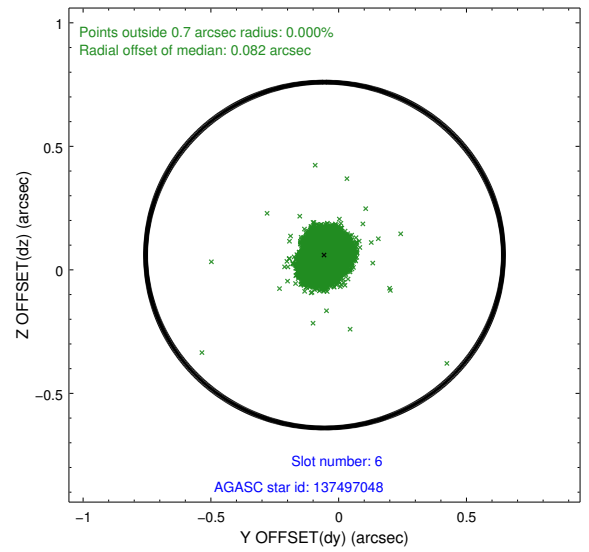
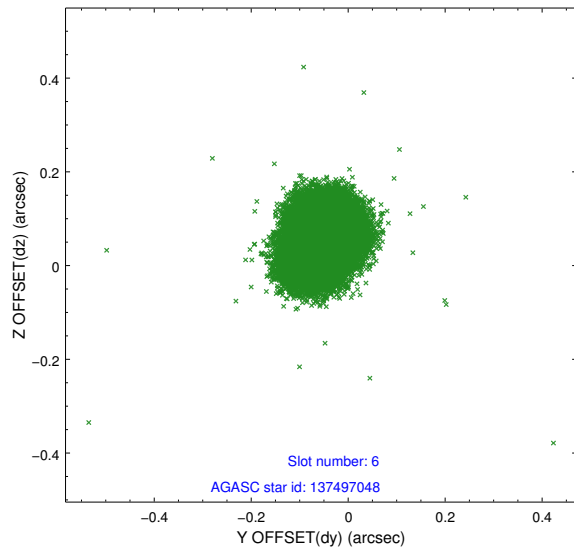
2.4.2 Slot 4



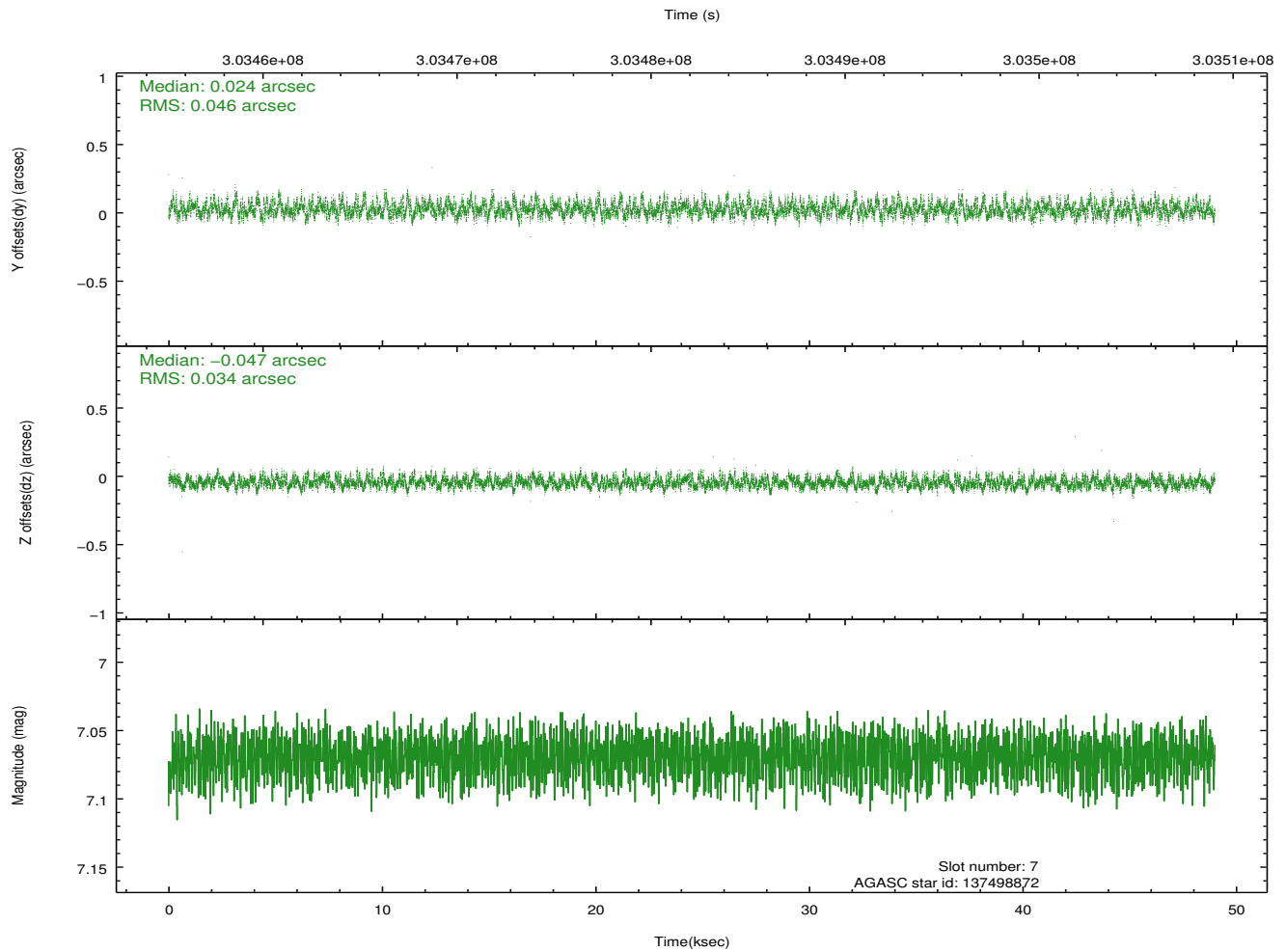
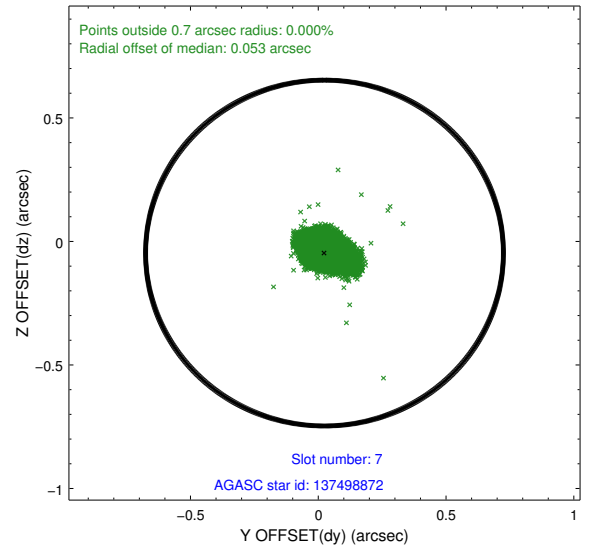
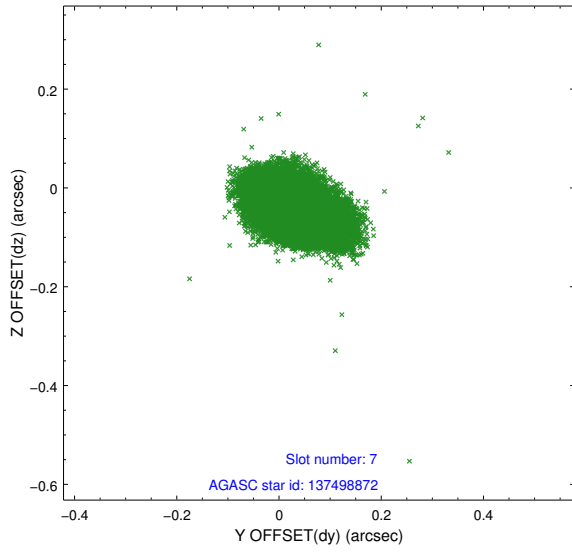
2.4.3 Slot 5



2.4.4 Slot 6

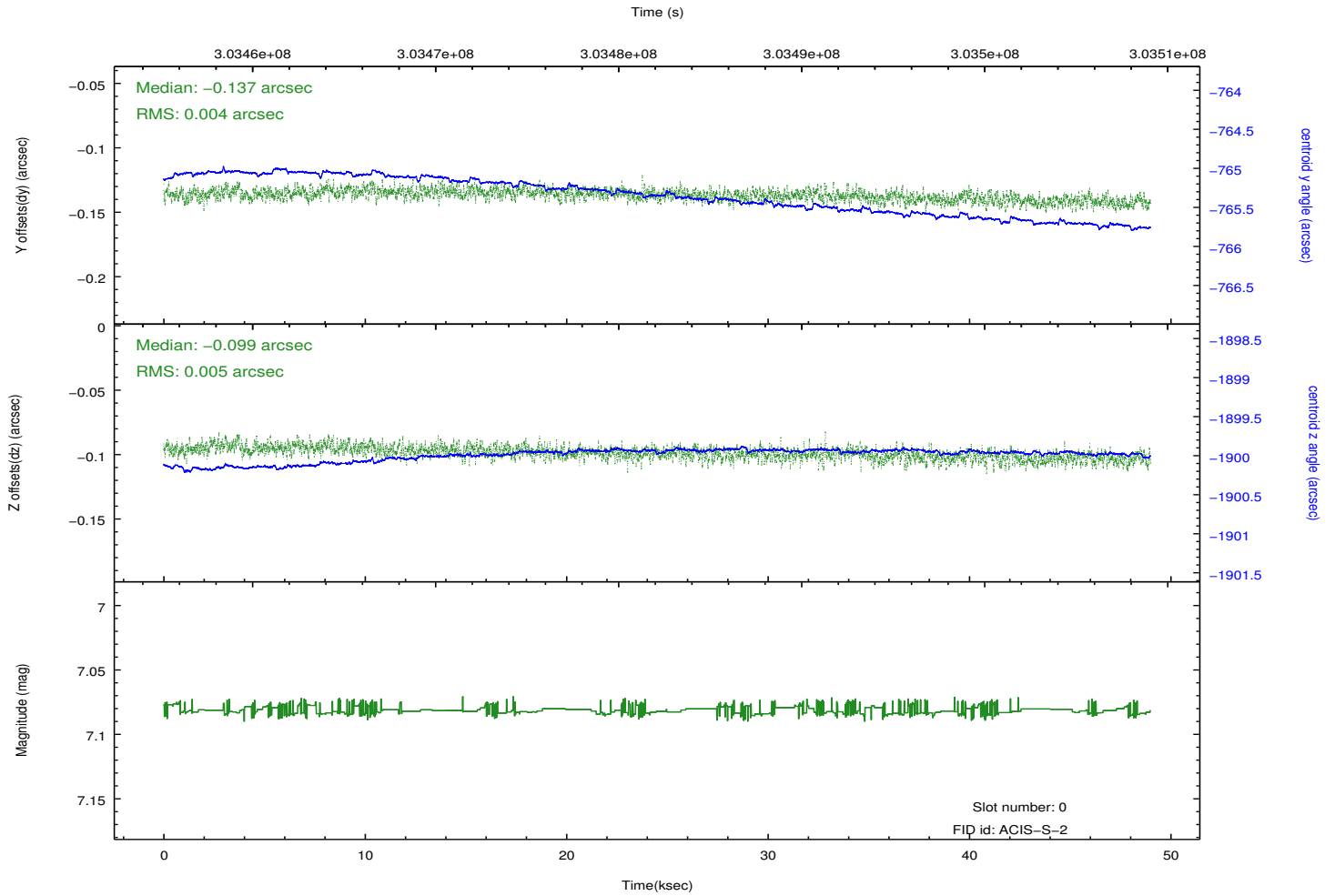
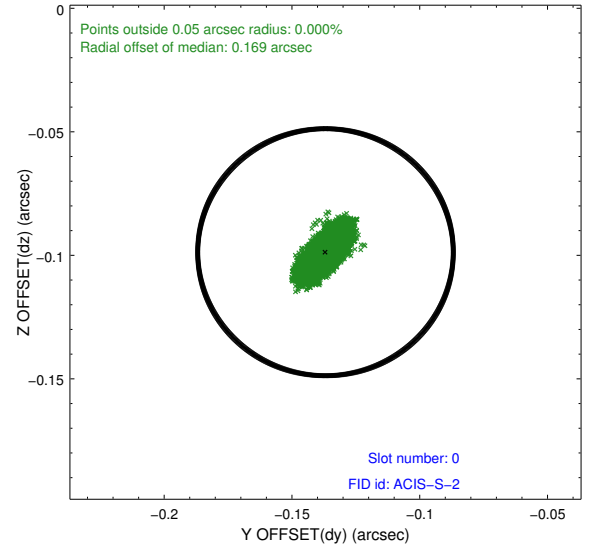
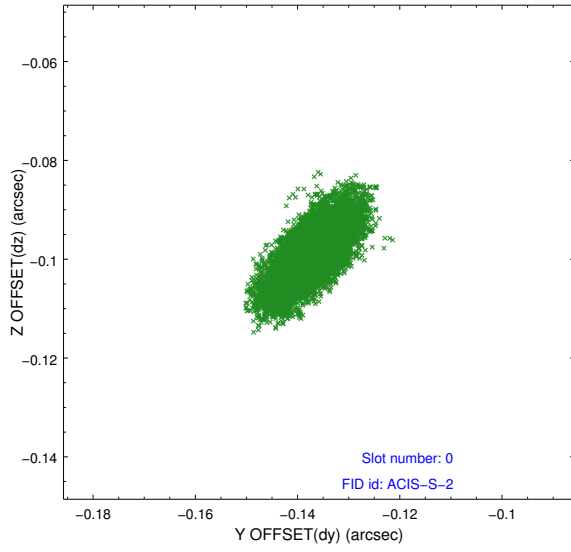


2.4.5 Slot 7

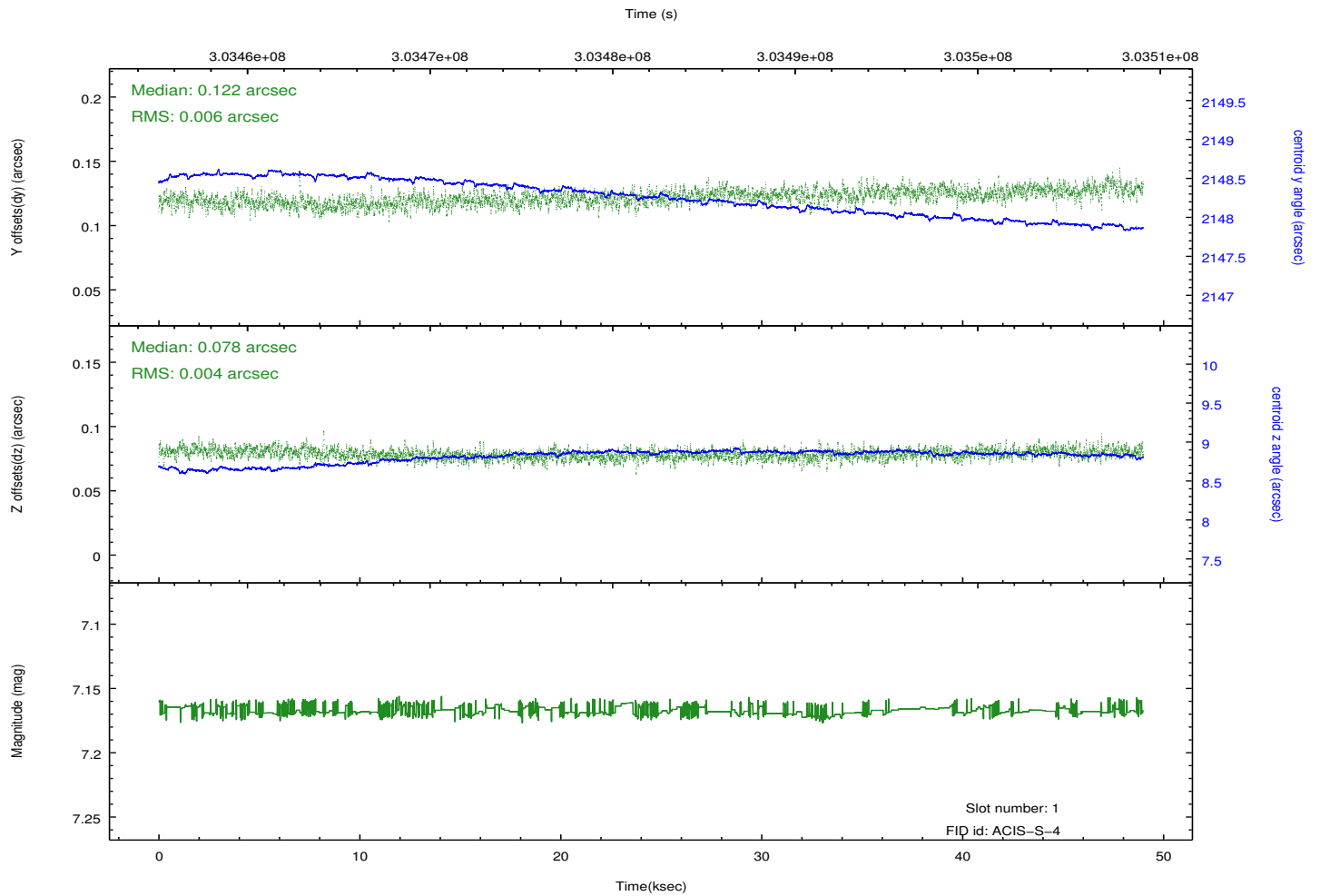
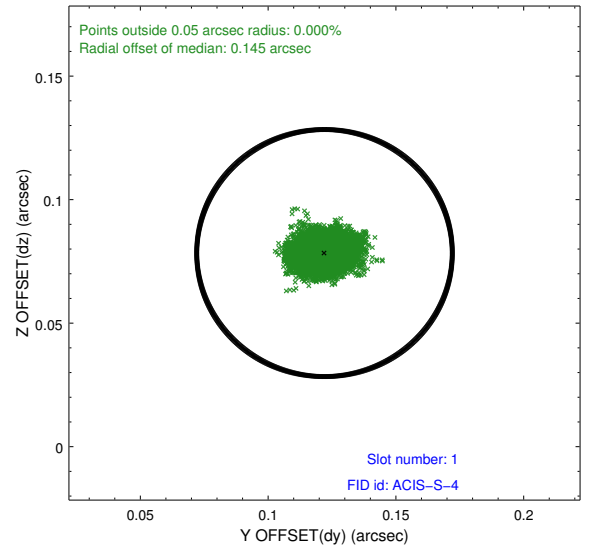
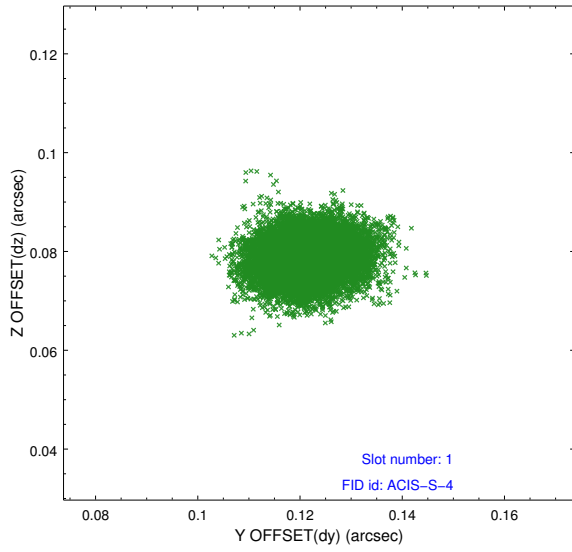


2.5 FID Slots

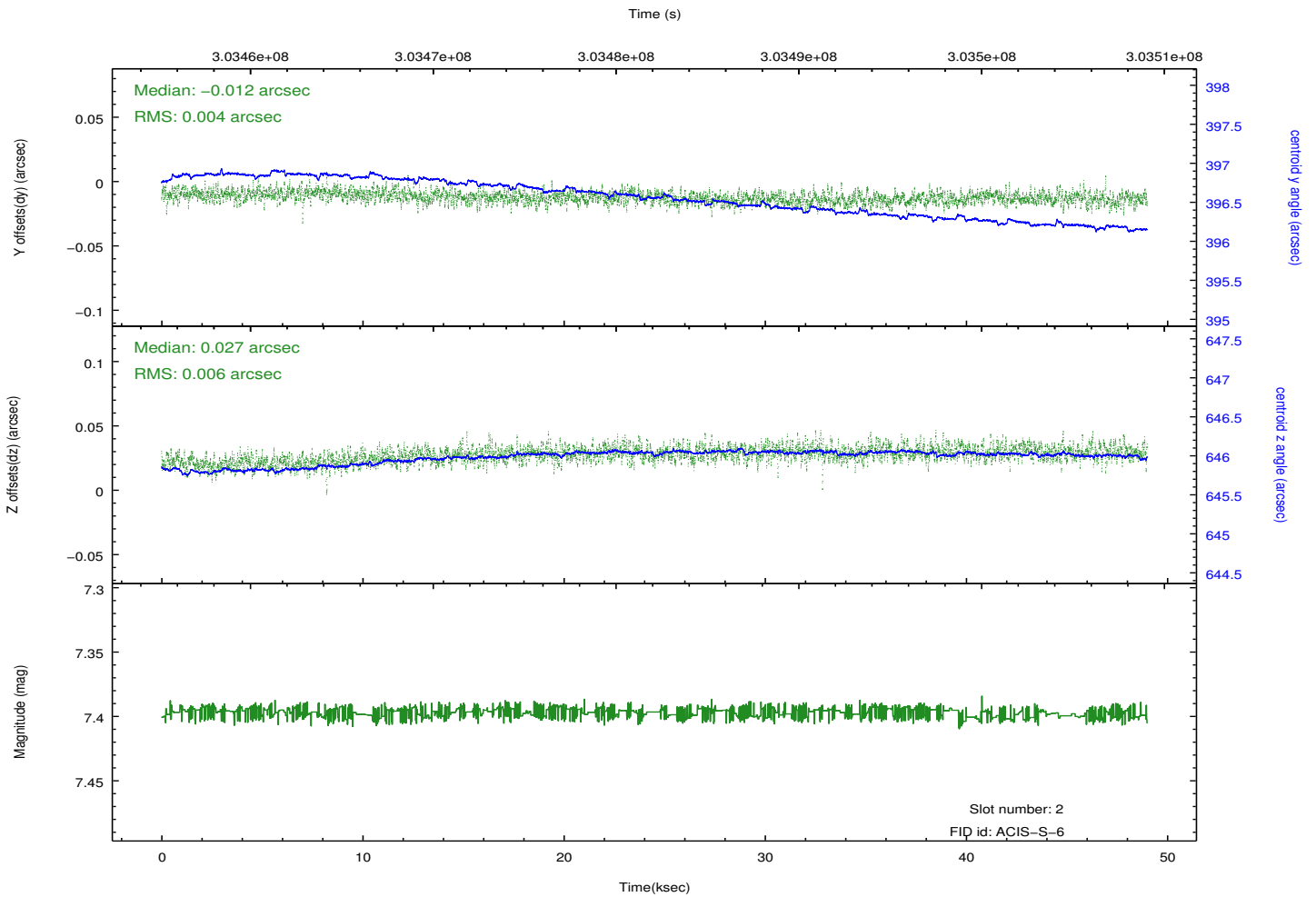
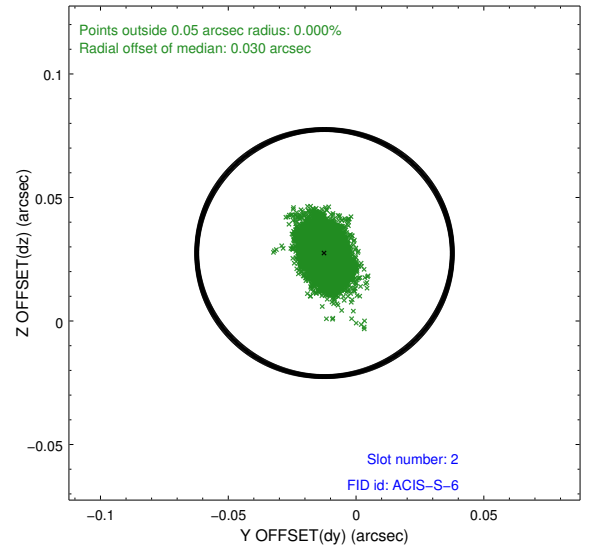
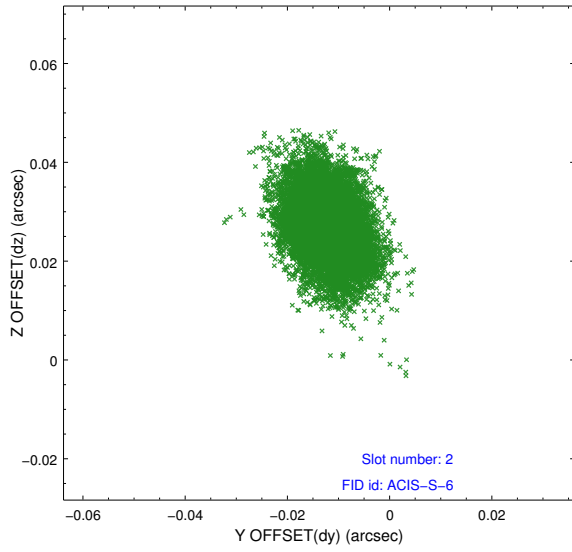
2.5.1 Slot 0



2.5.2 Slot 1

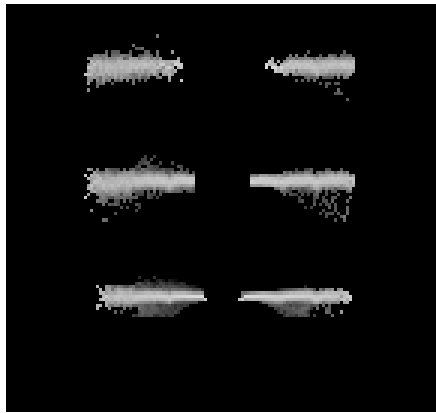


2.5.3 Slot 2

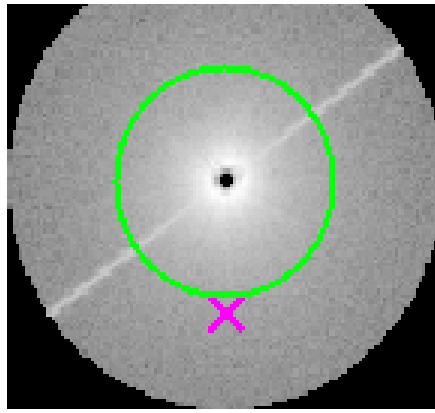


3 Gratings

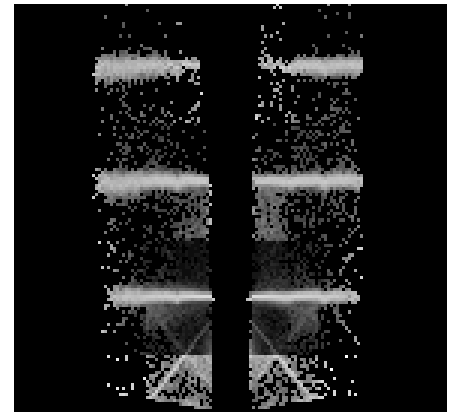
3.1 HEG Arm



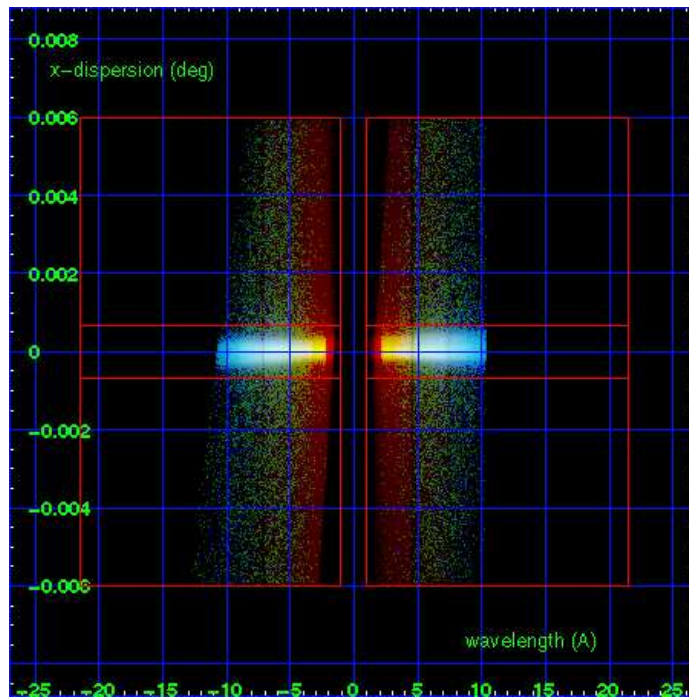
HEG Order Sort 123



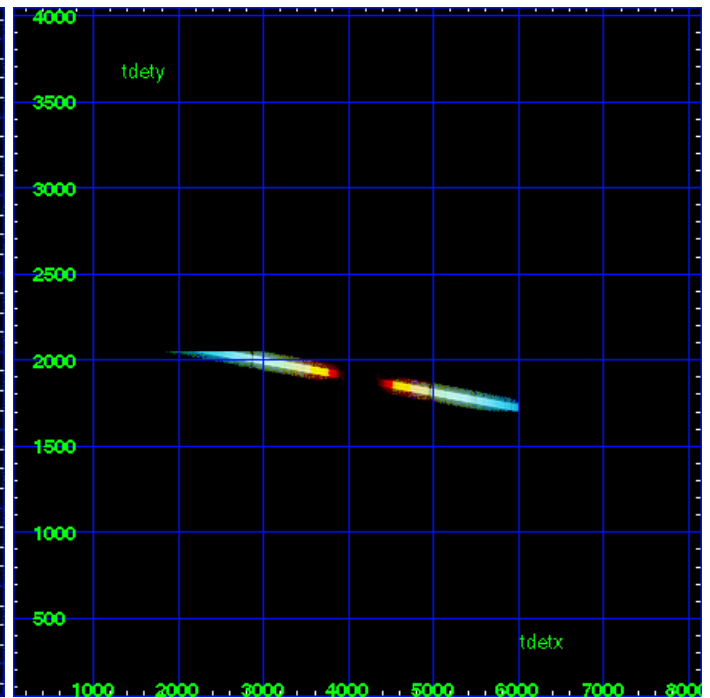
HEG Zero Order



HEG Order Sort ALL

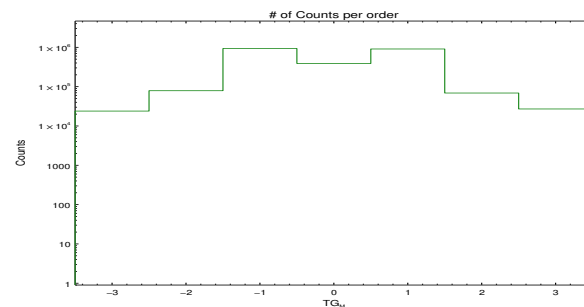


Spot Image HEG

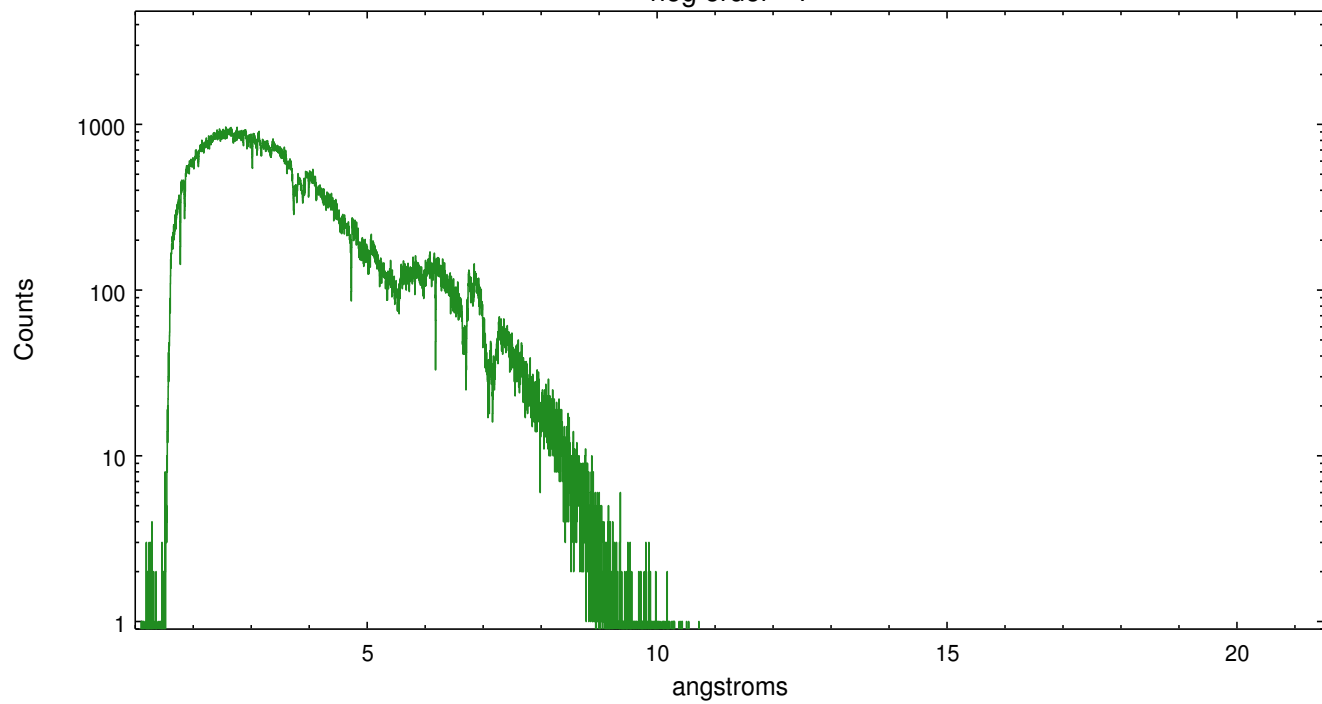


Full Detector HEG

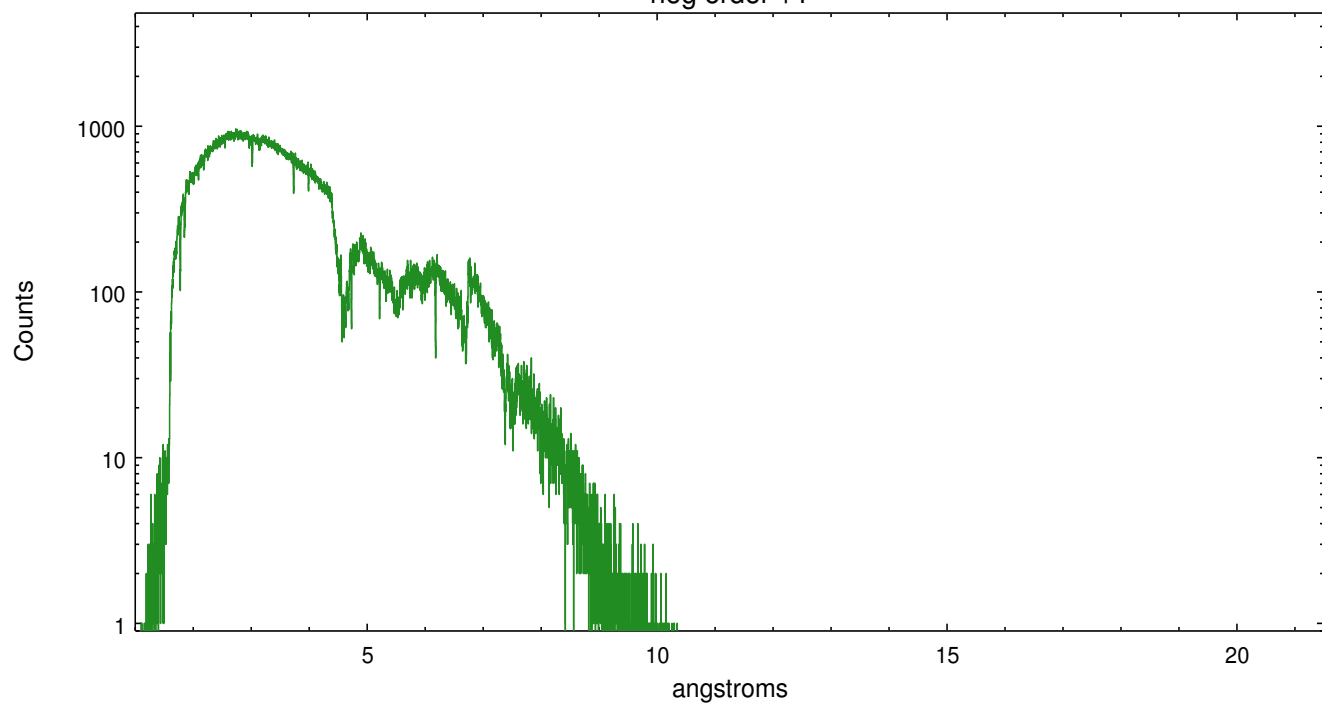
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	23914	78931	932642	388675	908338	68857	27078



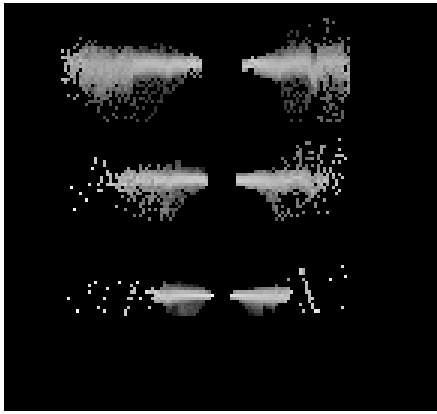
heg order -1



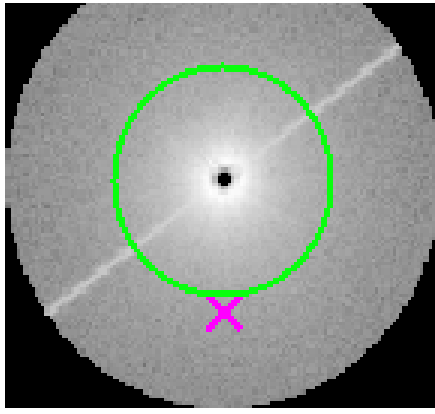
heg order +1



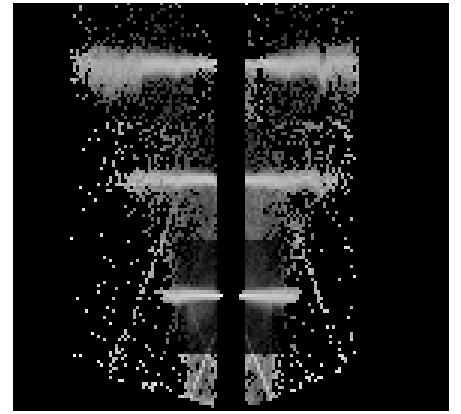
3.2 MEG Arm



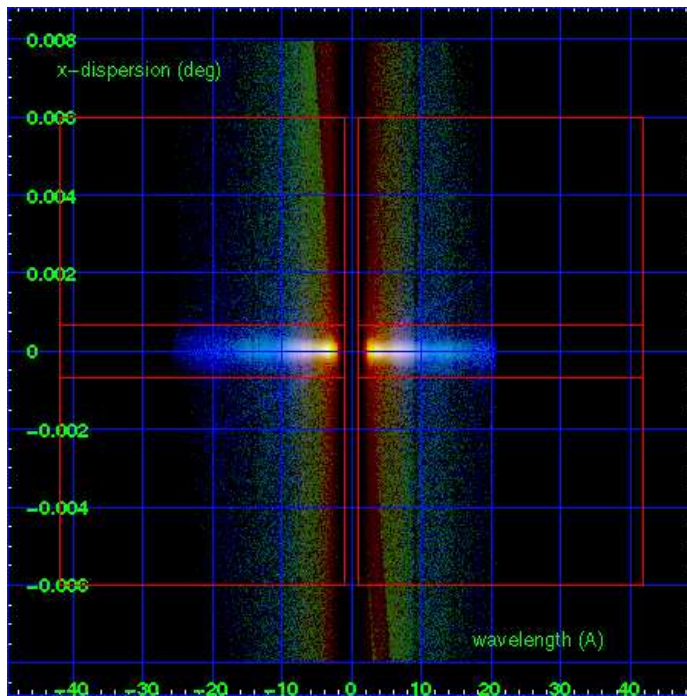
MEG Order Sort 123



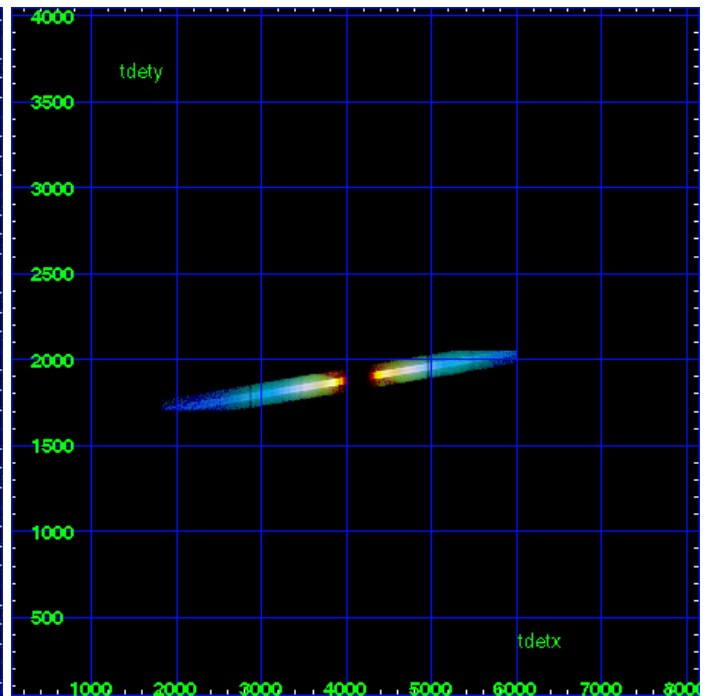
MEG Zero Order



MEG Order Sort ALL

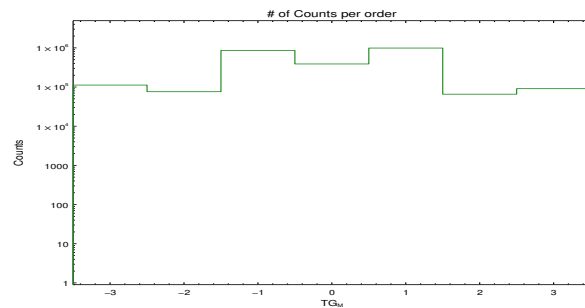


Spot Image MEG

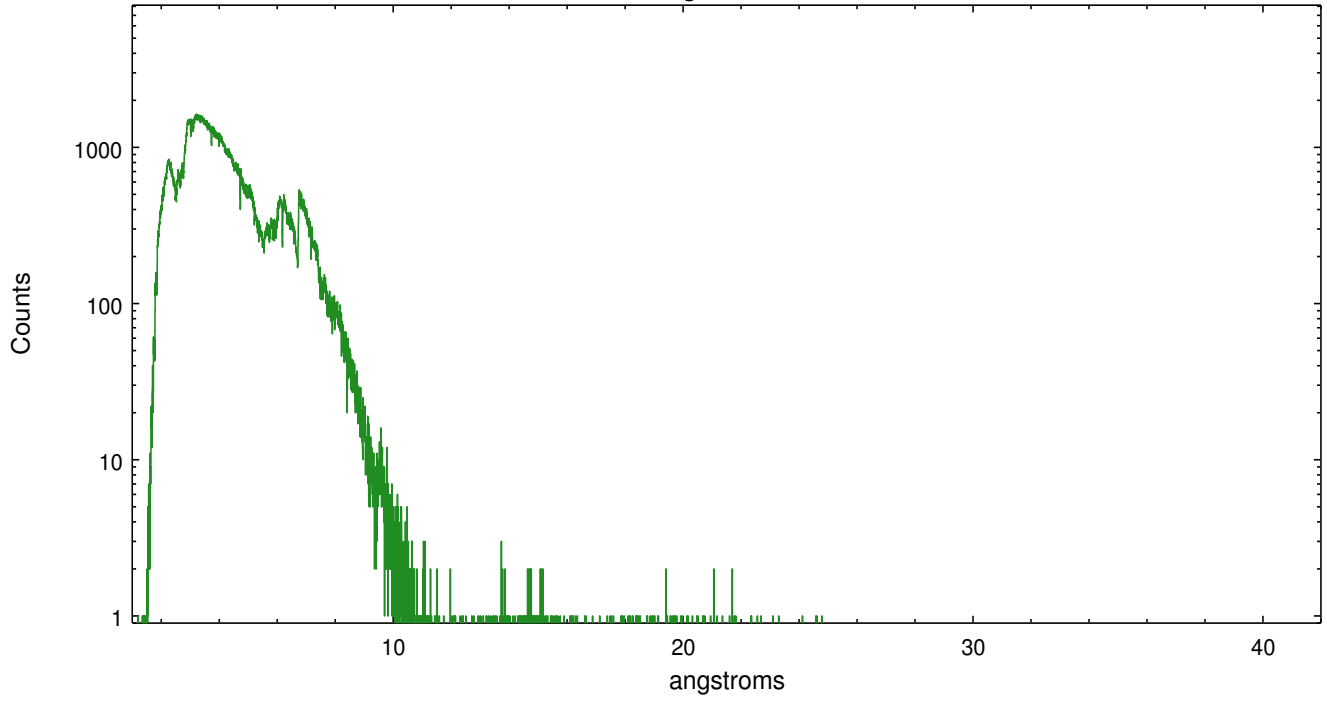


Full Detector MEG

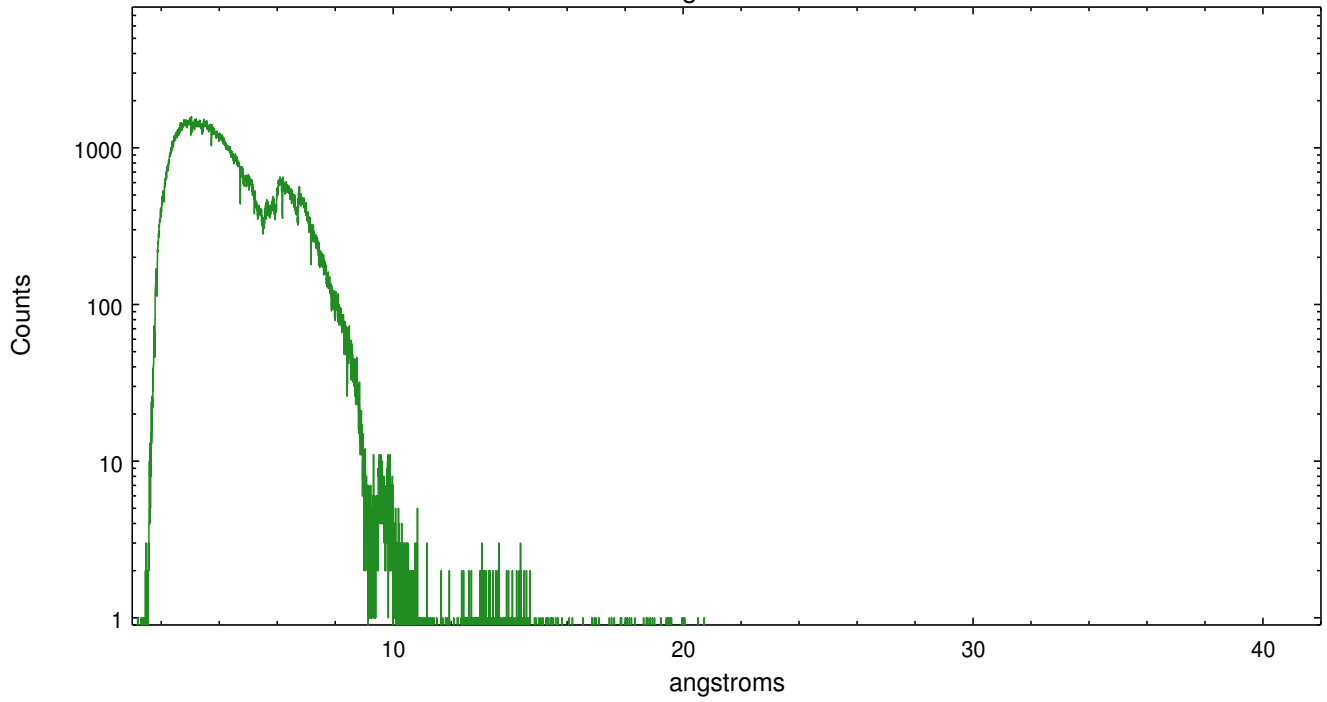
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	112209	76137	863272	388675	988603	65650	91007



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.01
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	48.9971995

A.2 Comments

Zeroth order severely piled up and cratered. Both dispersed spectral arms are also 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 ($X = 4095.78$, $Y = 4131.31$) 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 (preferred position), or the readout streak and the heg 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.