

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 1907 - L2 Version 4
Chandra X-Ray Center

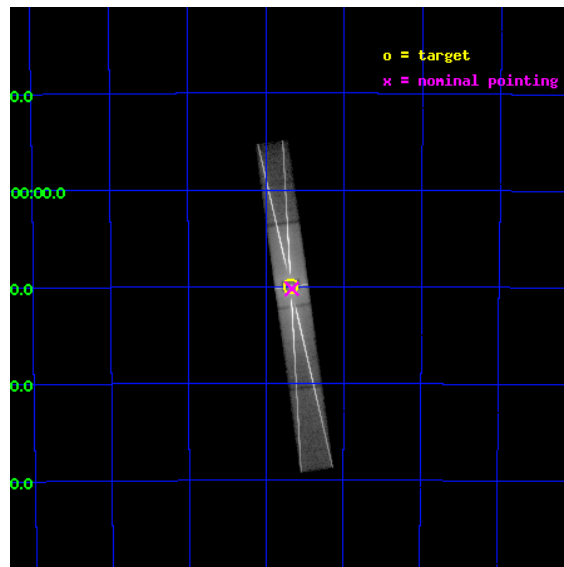
L2 Processing Date : Oct 12 2012

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1 Front

seq_num	400120	Sequence number
obs_id	1907	Observation id
title	PHASE RESOLVED SPECTROSCOPY OF THE X-RAY P-CYGNI PROFILES FROM CIRCINUS X-1	Proposal title
observer	Prof. William Brandt	Principal investigator
object	CIR X-1	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	230.170833	Observer's specified target RA [deg]
dec_targ	-57.166667	Observer's specified target Dec [deg]
ra_nom	230.16668949963	Nominal RA [deg]
dec_nom	-57.170553606837	Nominal Dec [deg]
roll_nom	262.03948817281	Nominal Roll [deg]
revision	4	Processing version of data
ontime	8212.9814075381	Sum of GTIs [s]
livetime	7961.6386012345	Livetime [s]
ontime5	8212.9403675348	Sum of GTIs [s]
ontime6	8212.8993275315	Sum of GTIs [s]
ontime7	8212.9814075381	Sum of GTIs [s]
ontime8	8212.8582875431	Sum of GTIs [s]
l2events	1181075	Number of level 2 events

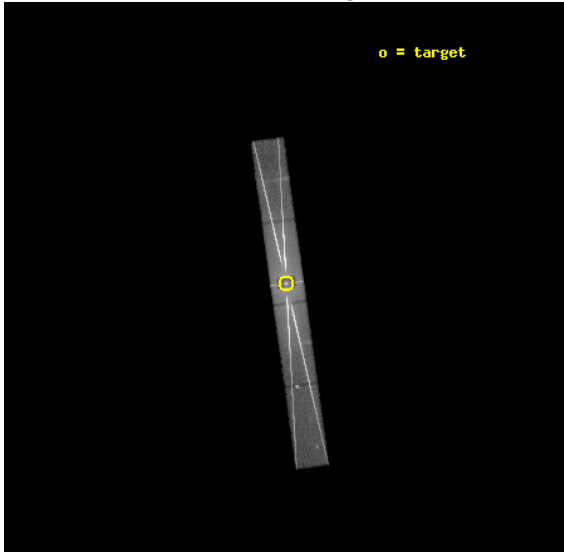


2 OBI

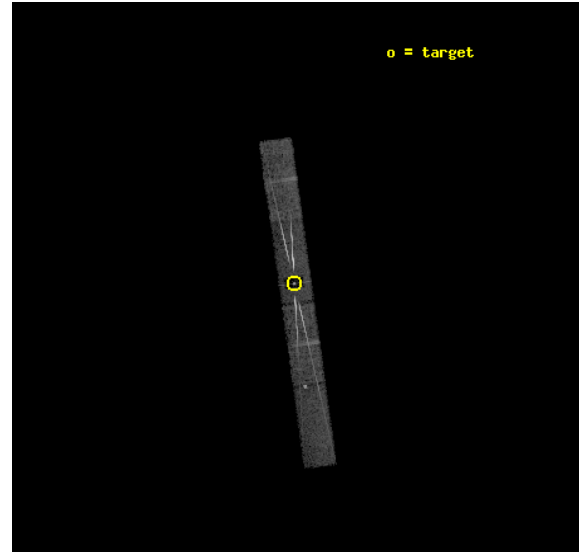
2.1 OBI

2.1.1 Images

Level 1 Image



Level 1 Bad Events



2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	7634.319000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	8212.9814075381	Sum of GTIs [s]
caldbver	4.5.1.1	 	ontime5	8212.9403675348	Sum of GTIs [s]
date	2012-09-22T07:43:28	Date and time of file creation	ontime6	8212.8993275315	Sum of GTIs [s]
revision	4	Processing version of data	ontime7	8212.9814075381	Sum of GTIs [s]
			ontime8	8212.8582875431	Sum of GTIs [s]
			l1events	1376087	Number of level 1 events

2.1.3 Events

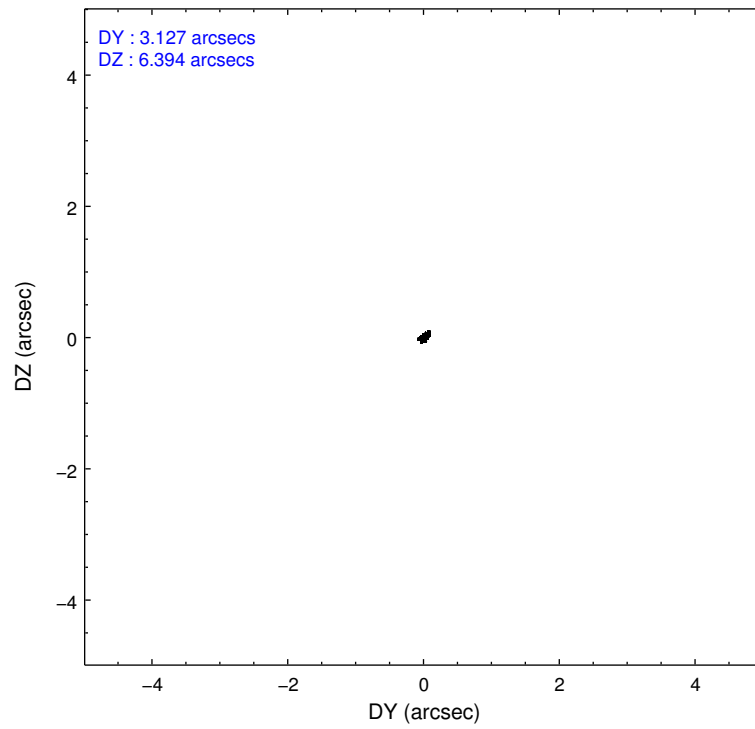
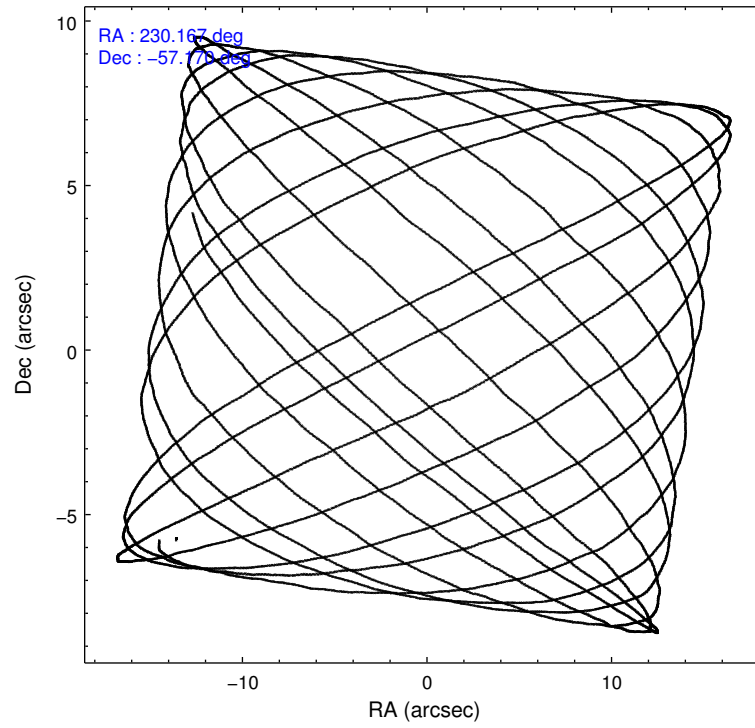
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	85725	507538	630564	152260
rejected events	20138	44327	58738	27745
rejected %	23%	8%	9%	18%

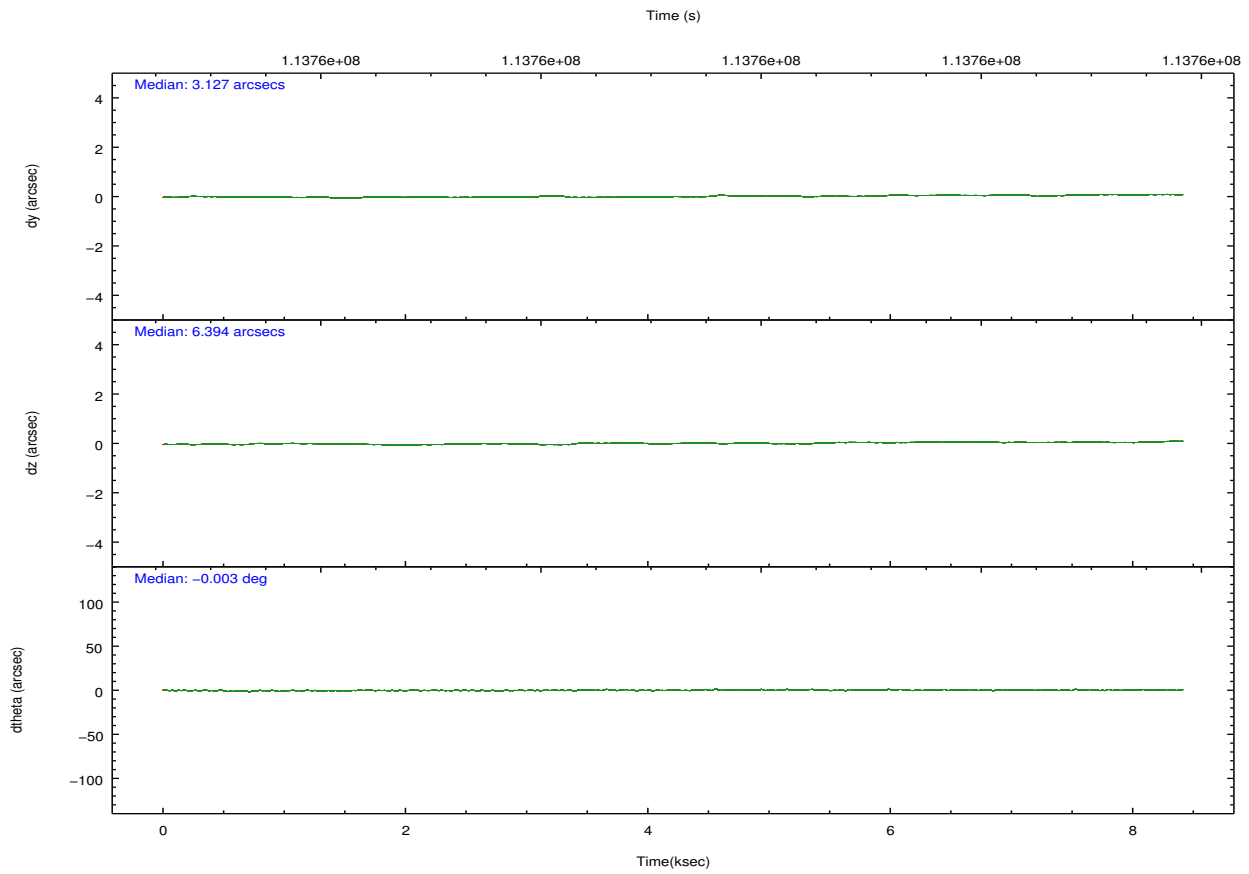
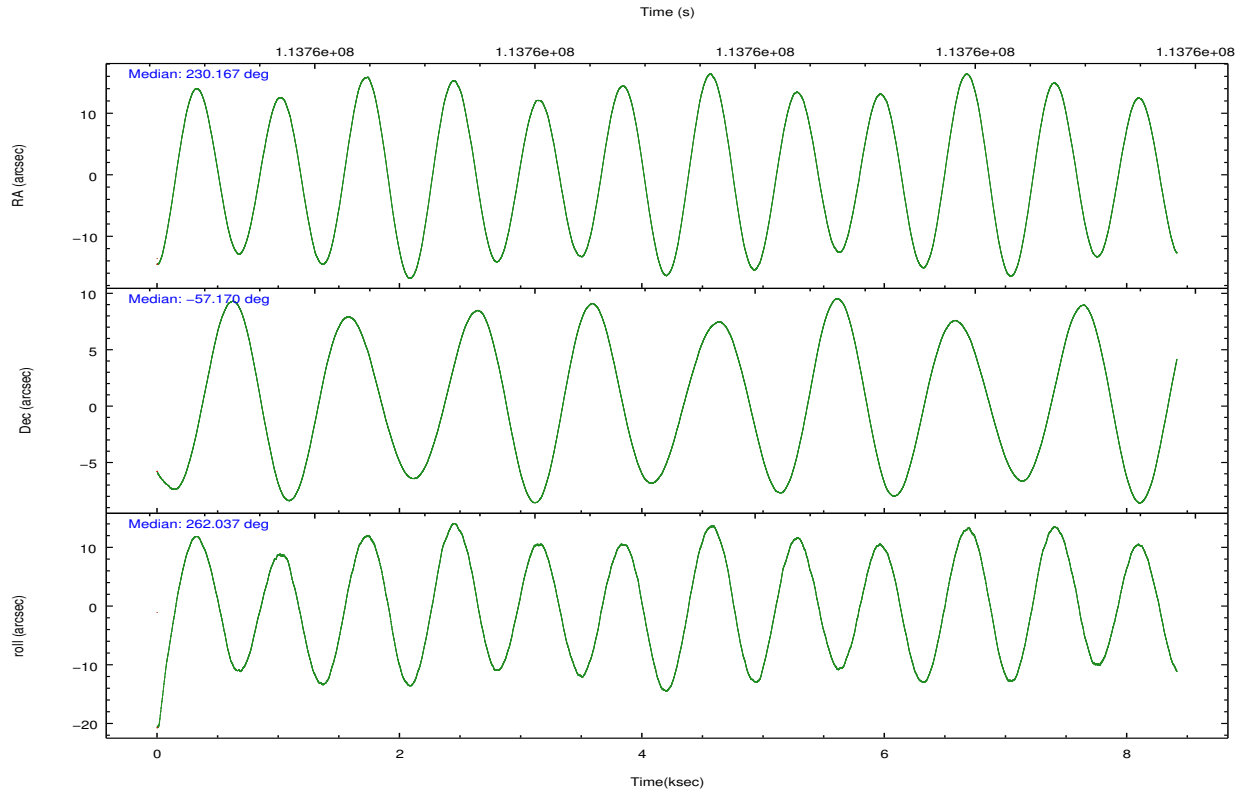
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	15109	320870	95980	92993
	17%	63%	15%	61%
grade 1 events	1109	8322	2662	620
	1%	1%	0%	0%
grade 2 events	21892	65182	145205	14959
	25%	12%	23%	9%
grade 3 events	4759	23336	55261	5405
	5%	4%	8%	3%
grade 4 events	4653	22853	54682	5392
	5%	4%	8%	3%
grade 5 events	2686	8383	16842	1498
	3%	1%	2%	0%
grade 6 events	19206	31153	220930	5804
	22%	6%	35%	3%
grade 7 events	16311	27439	39002	25589
	19%	5%	6%	16%

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	230.147282	230.1666894996346	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-57.145318	-57.17055360683675	Subarray start row	15	15
[deg] Pointing Roll	261.866556	262.0394881728097	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	1.3
[mm] SIM translation stage pos	-182.832523	-182.8384944141416			
[mm] SIM translation stage offset	-7.3	-7.294028168866163			
Phase constraints	Y	Y			
[d] Phase period	16.536700	16.536700			
[d] Phase epoch (MJD)	52100.241000	52100.241000			
Phase start	0.830000	0.830000			
Phase end	0.870000	0.870000			
Phase start error	0.020000	0.020000			
Phase end error	0.020000	0.020000			
[s] Observation start time (MET)	113755772.184000	113754516.82833			
Observation start date	2001-08-09T14:48:28	2001-08-09T14:28:36			
[s] Observation end time (MET)	113763406.184000	113763720.81619			
Observation end date	2001-08-09T16:55:42	2001-08-09T17:02:00			
Read mode	TIMED	TIMED			

2.3 Aspect



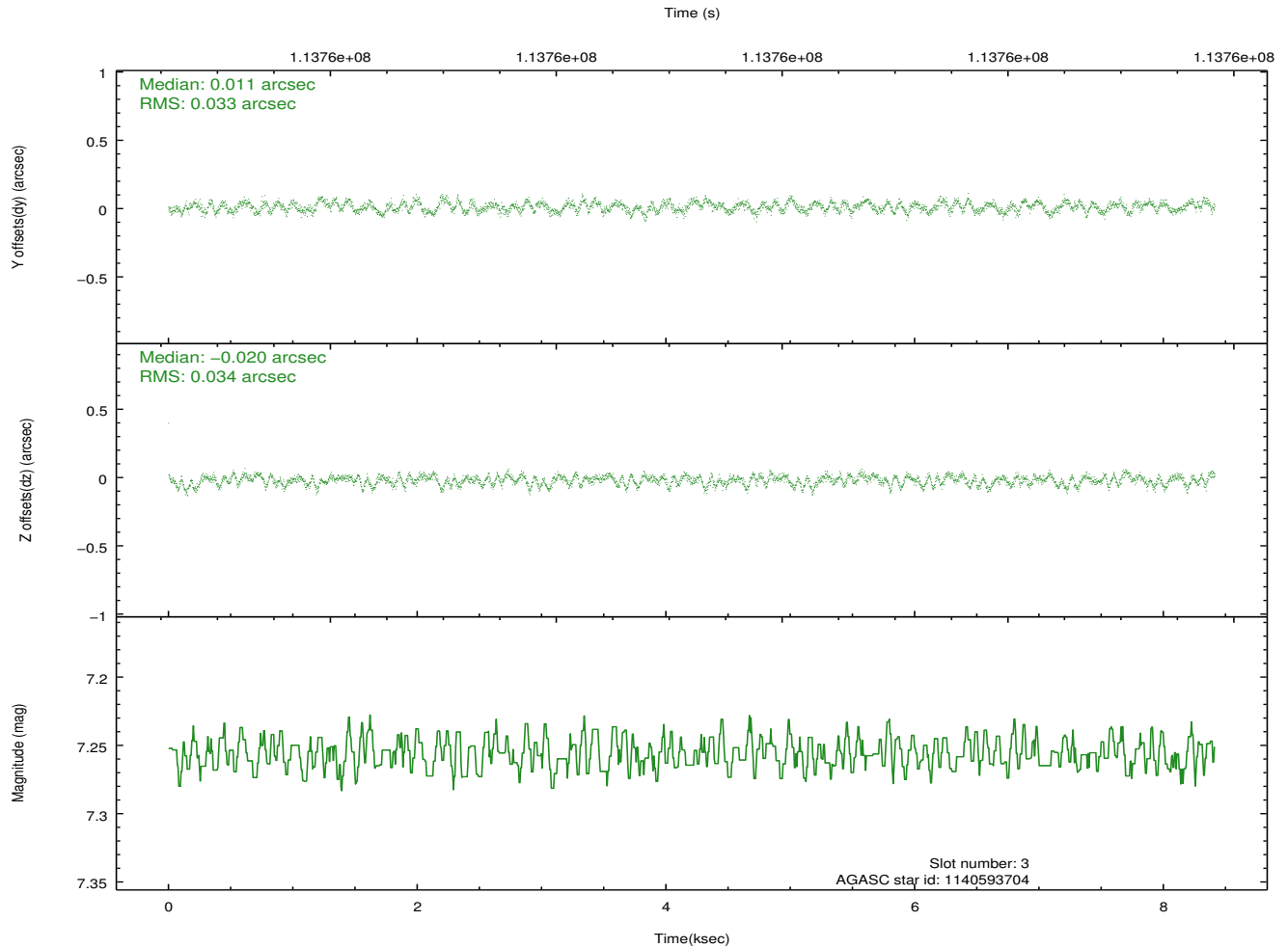
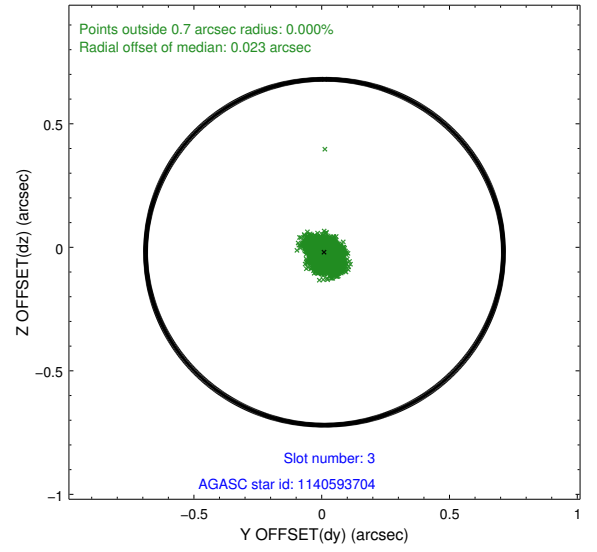
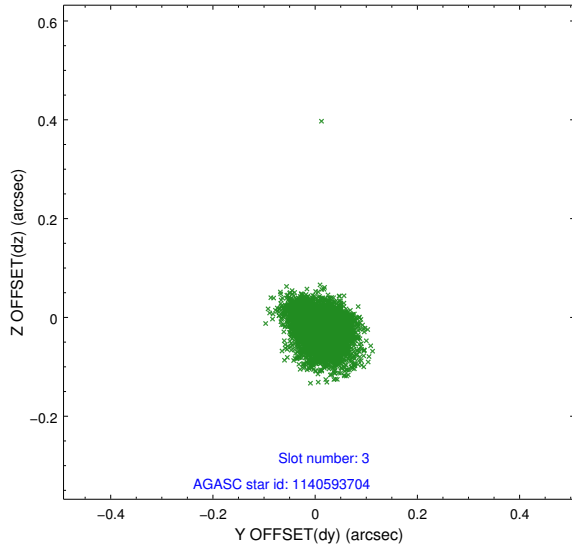


Slot Statistics

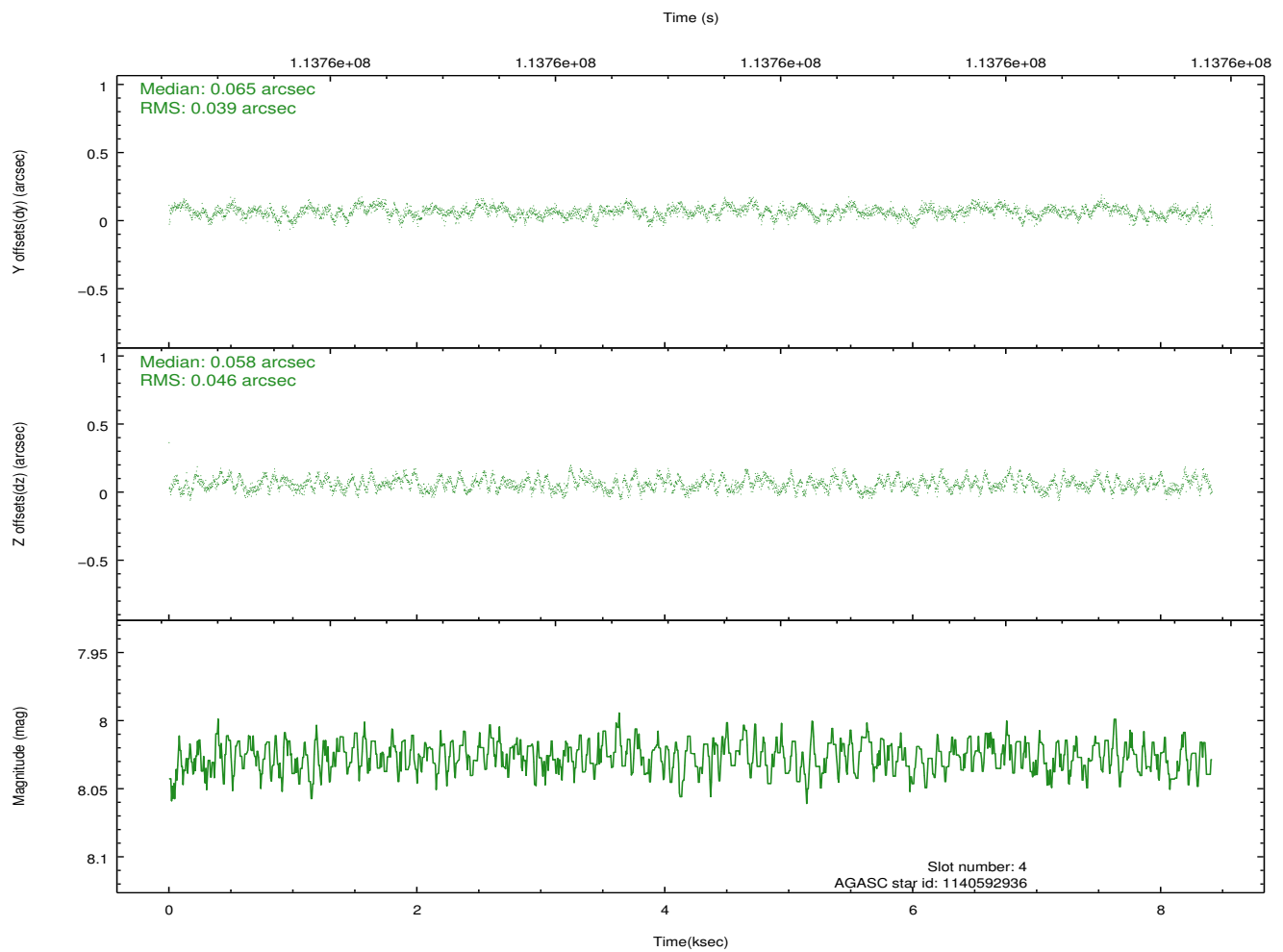
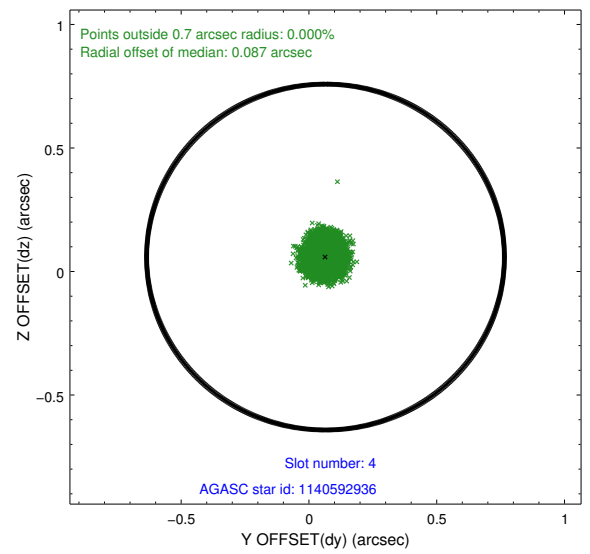
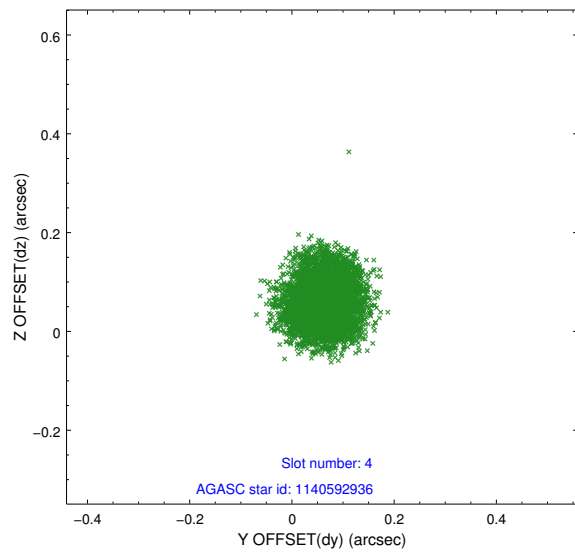
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	2053	-0.033	-0.091	0.008	0.013	0.000000	0.000000	-755.33	-1877.91
1	FID	ACIS-S-4	7.19	2053	-0.020	0.040	0.005	0.010	0.000000	0.000000	2157.70	29.88
2	FID	ACIS-S-5	7.23	2053	0.021	0.059	0.007	0.011	0.000000	0.000000	-1807.23	24.40
3	GUIDE	1140593704	7.26	4105	0.011	-0.020	0.051	0.078	229.741417	-57.540991	1524.52	-574.82
4	GUIDE	1140592936	8.03	4104	0.065	0.058	0.066	0.099	228.953111	-57.013969	-114.99	-2381.43
5	GUIDE	1140722888	8.10	4105	-0.005	-0.048	0.053	0.086	230.457489	-57.599243	1535.44	822.80
6	GUIDE	1140723840	8.58	4103	-0.001	-0.090	0.064	0.106	230.379592	-56.994965	-598.03	374.15
7	GUIDE	1140726312	8.88	4104	-0.071	0.103	0.074	0.118	231.010622	-56.676215	-1901.80	1452.49

2.4 Star Slots

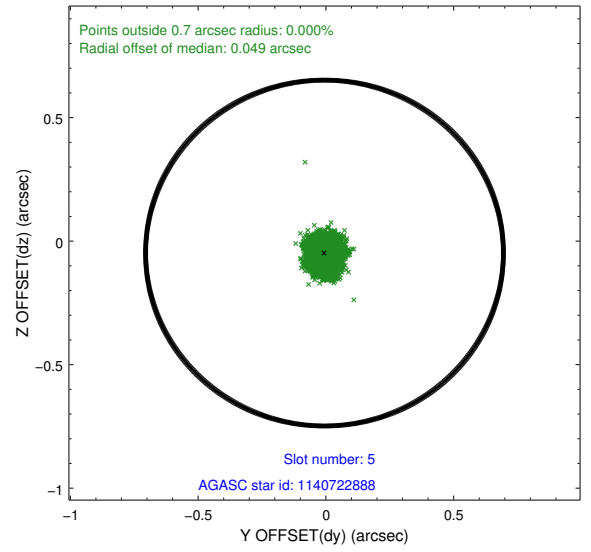
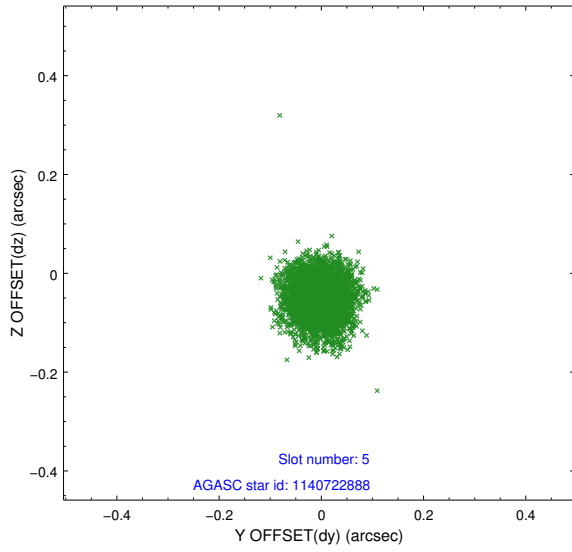
2.4.1 Slot 3



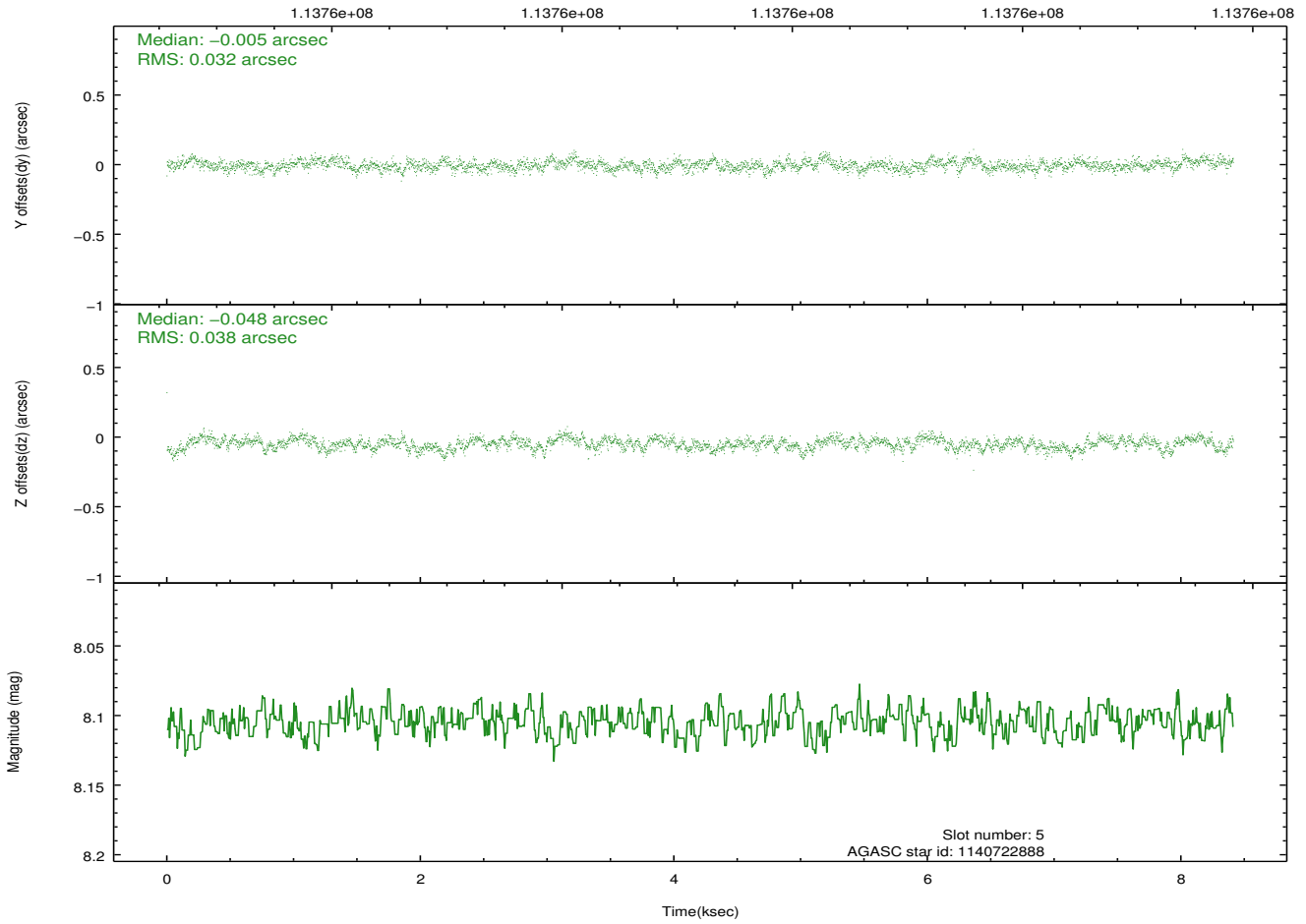
2.4.2 Slot 4



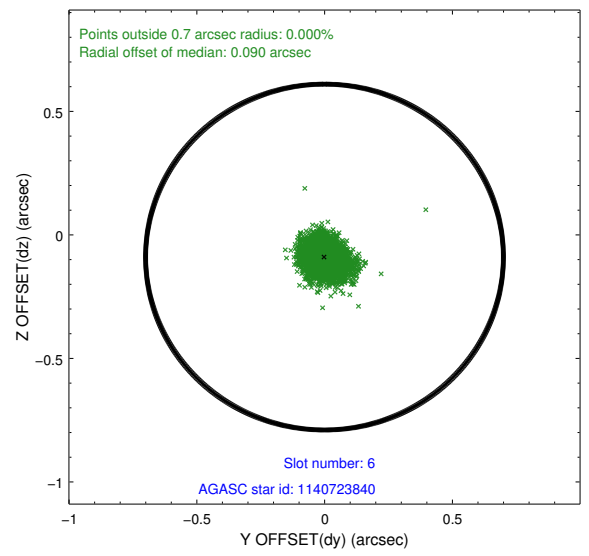
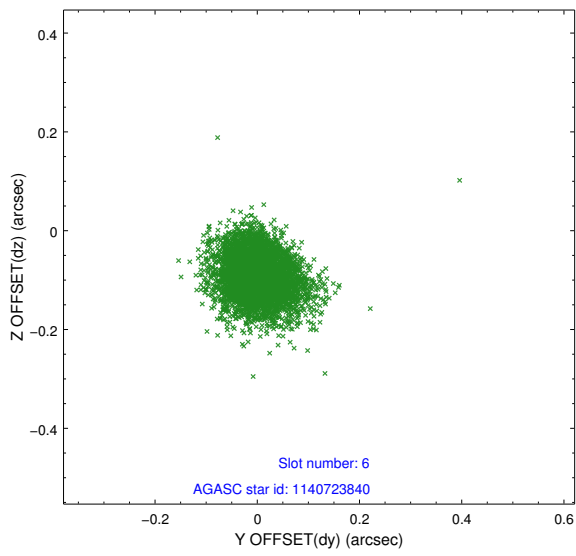
2.4.3 Slot 5



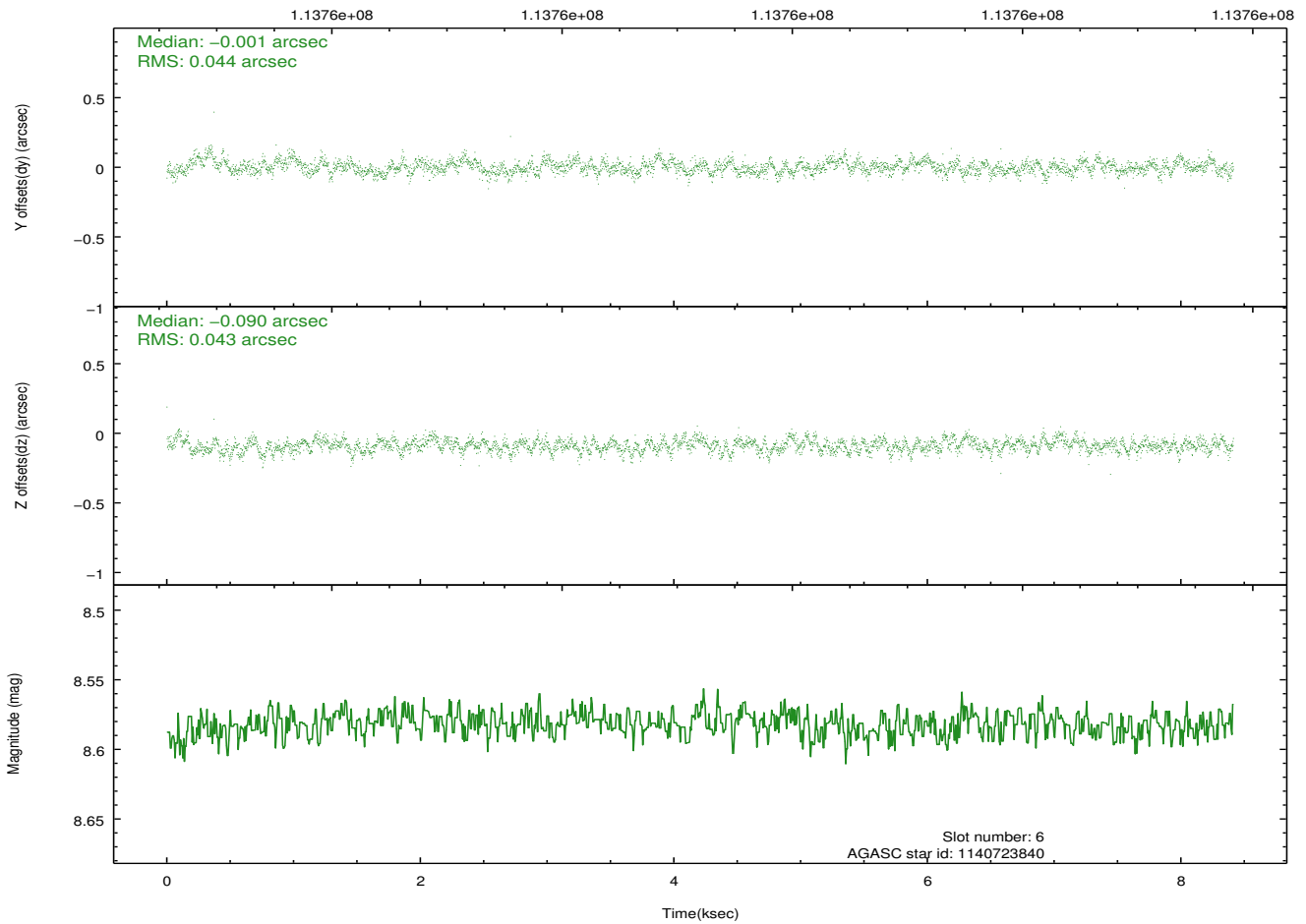
Time (s)



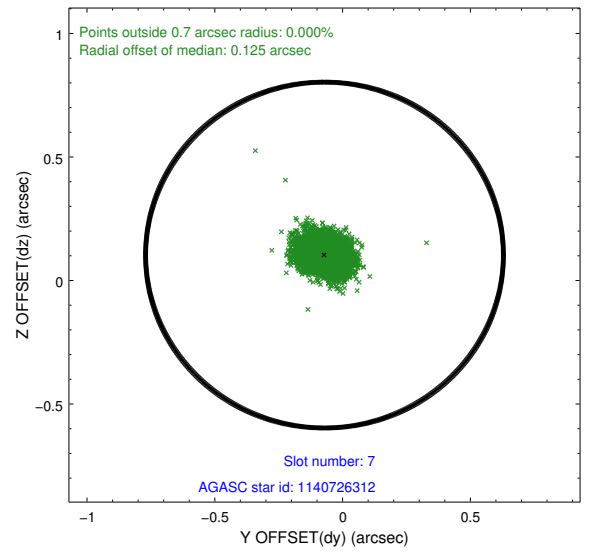
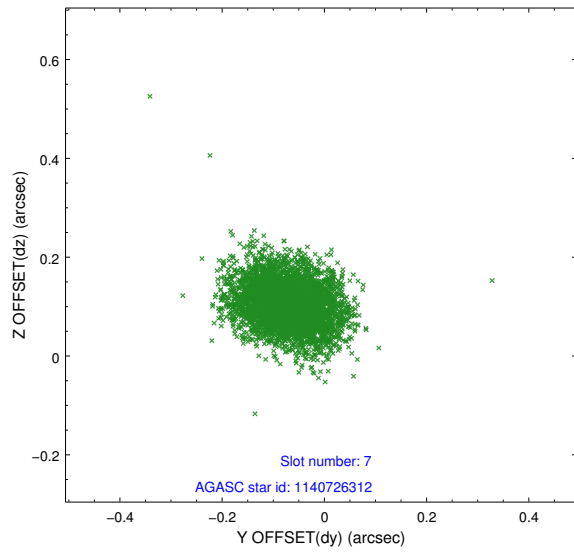
2.4.4 Slot 6



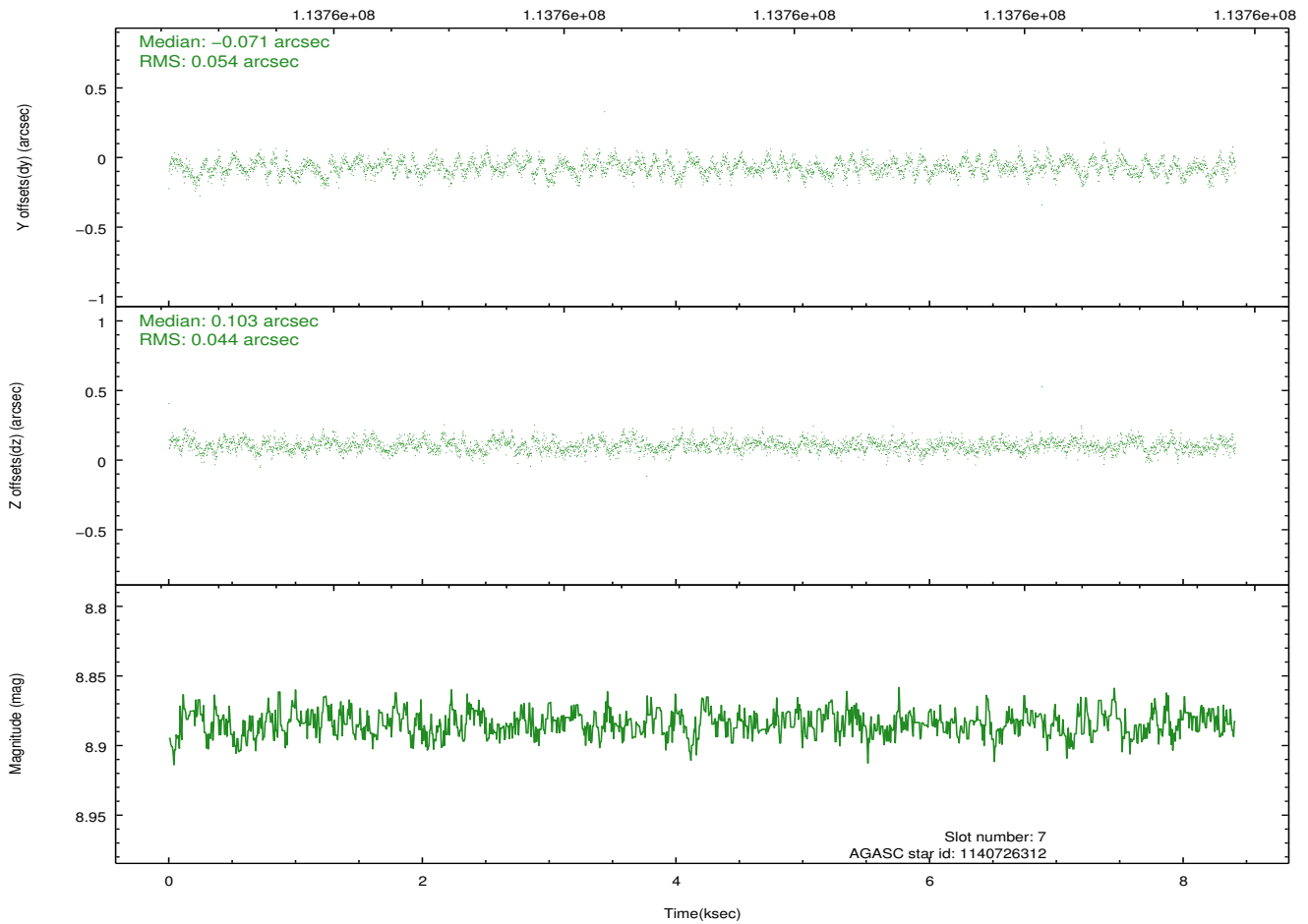
Time (s)



2.4.5 Slot 7

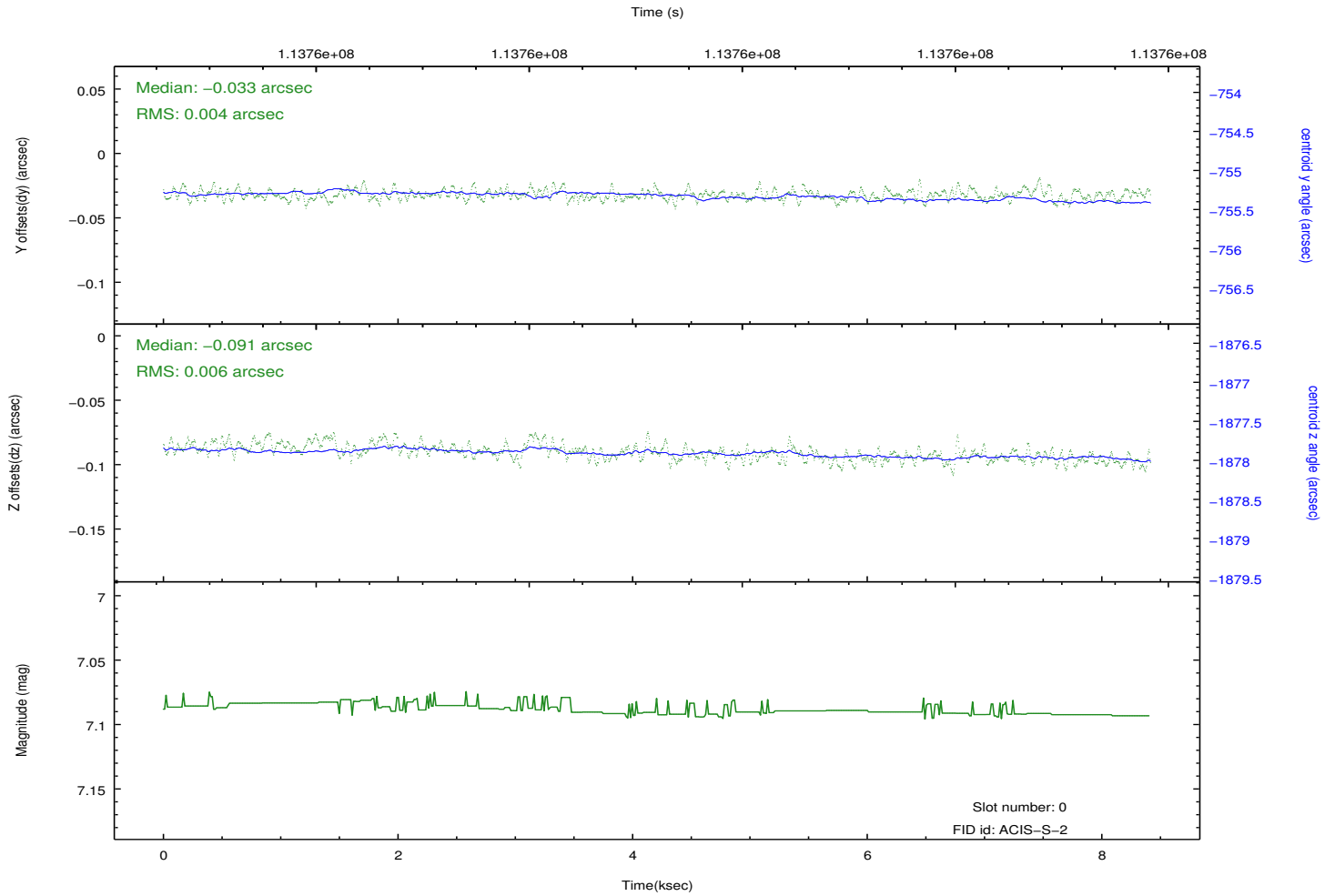
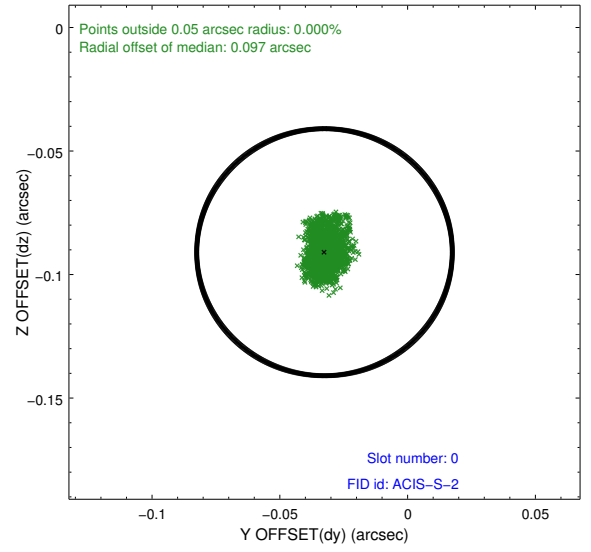
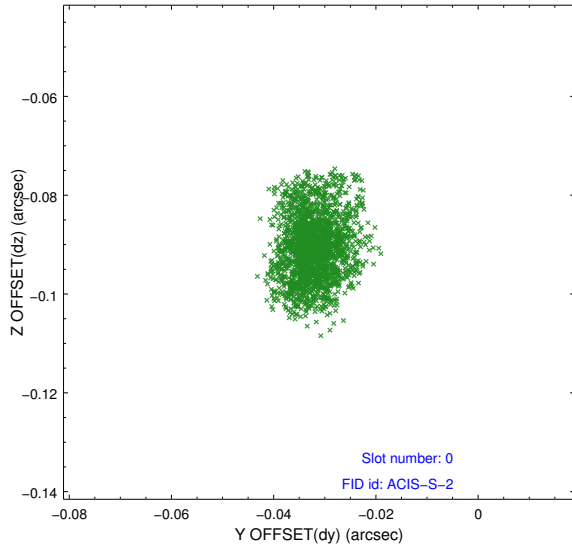


Time (s)

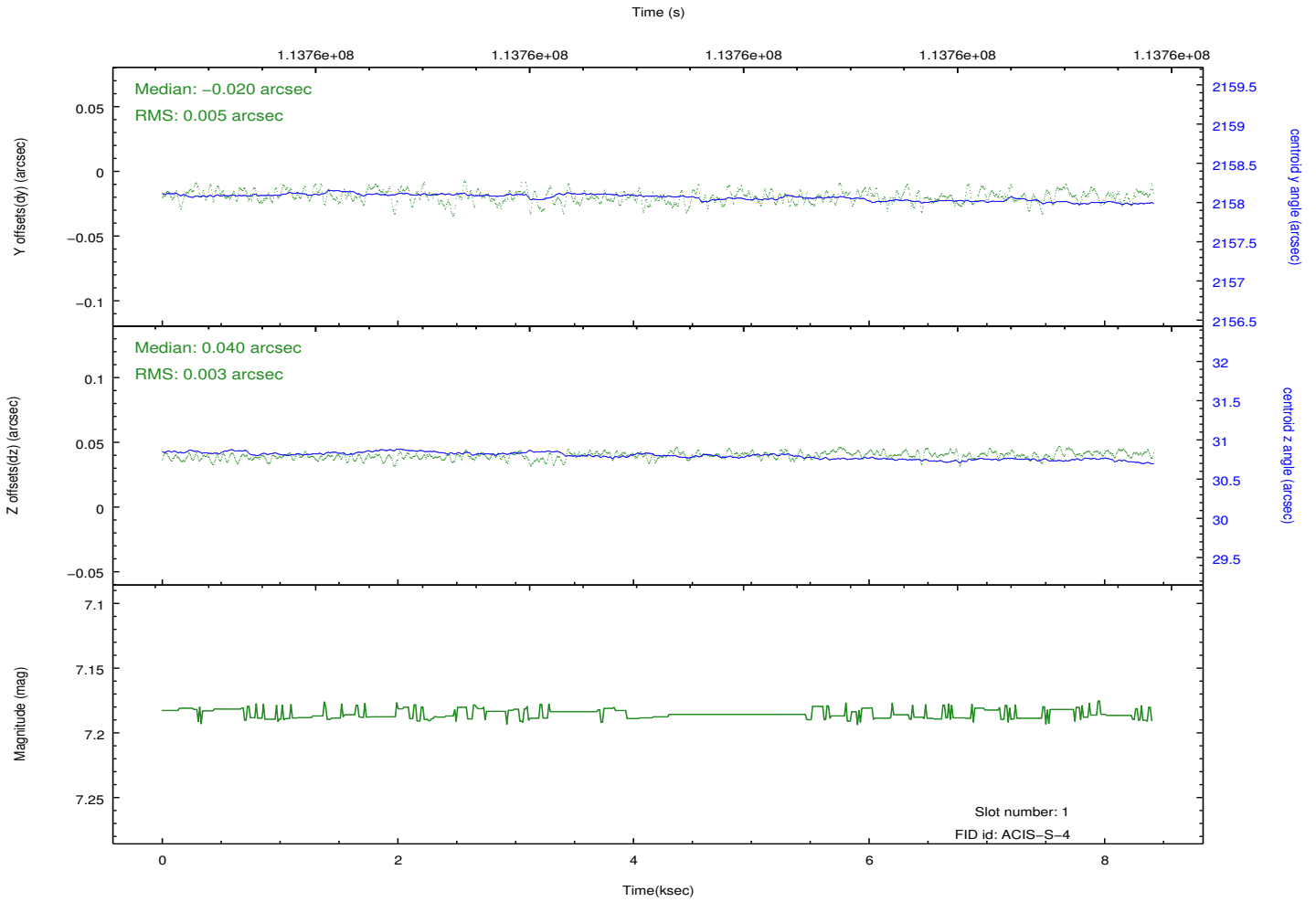
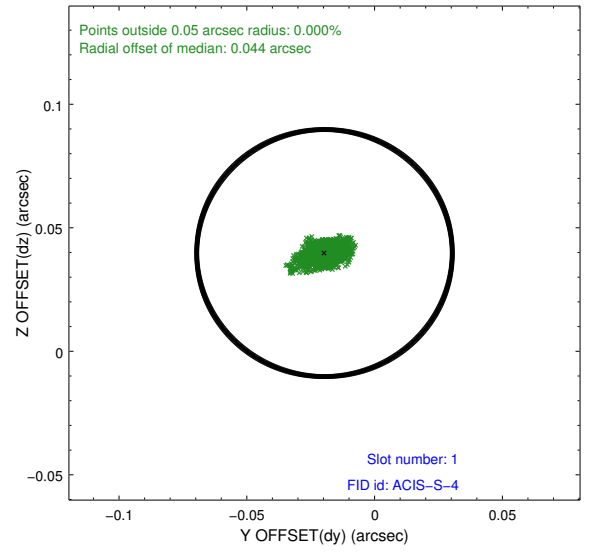
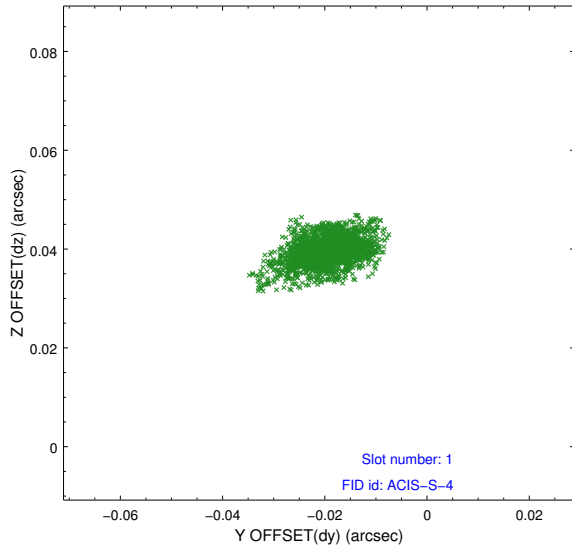


2.5 FID Slots

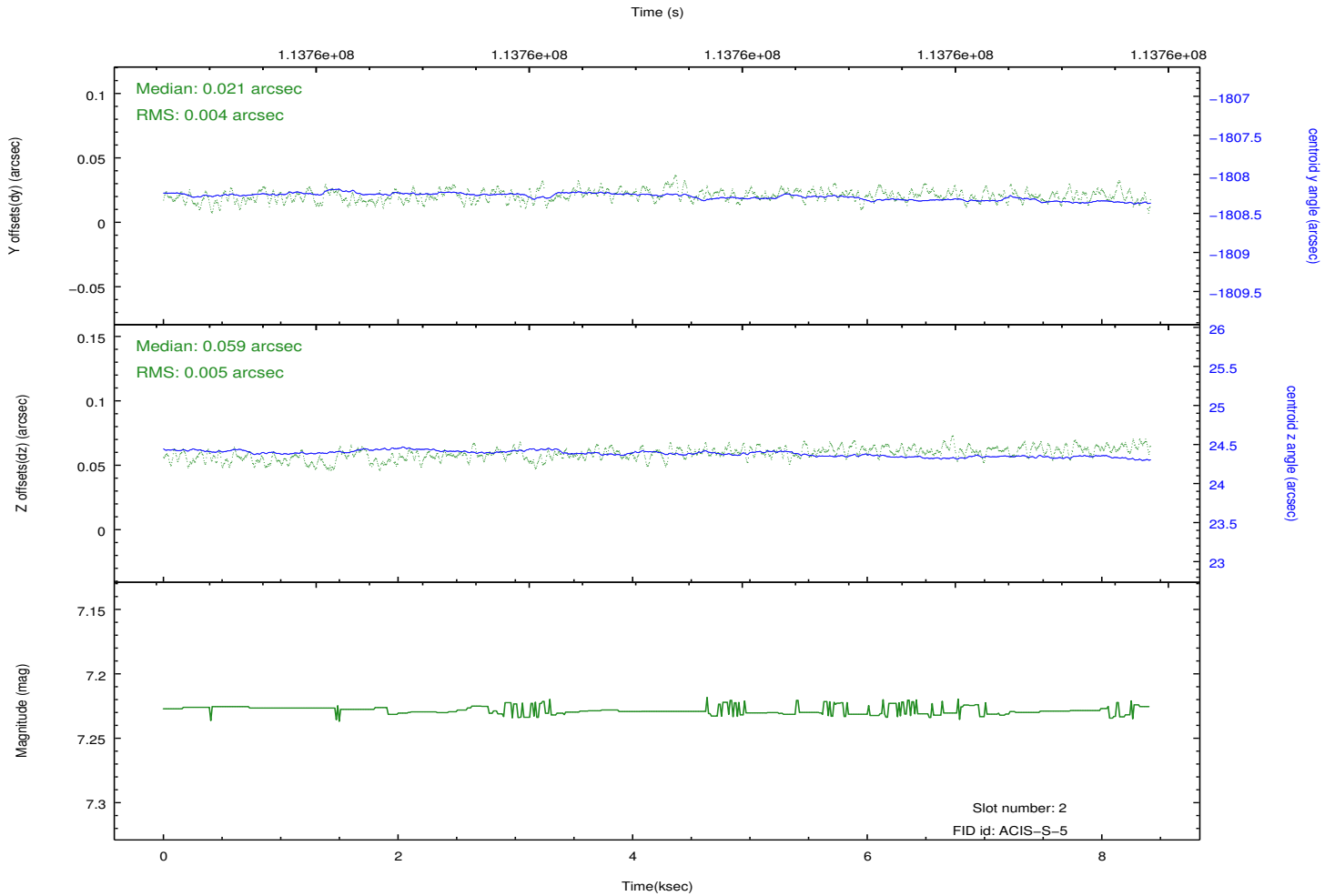
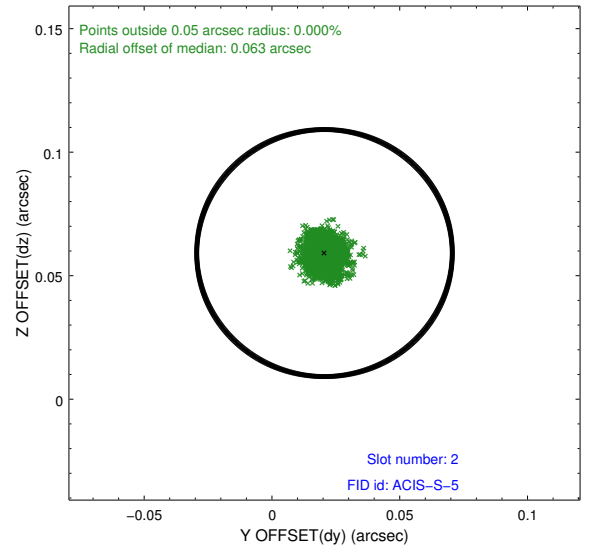
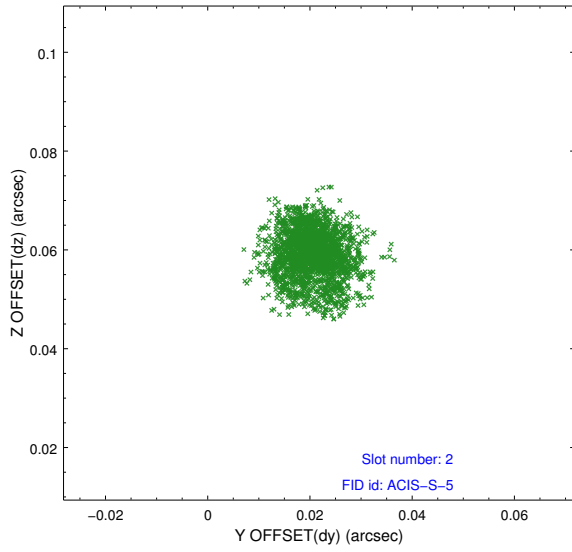
2.5.1 Slot 0



2.5.2 Slot 1

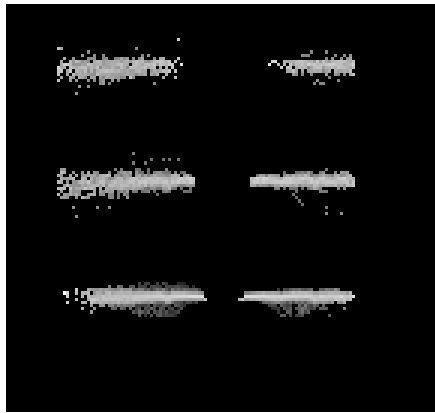


2.5.3 Slot 2

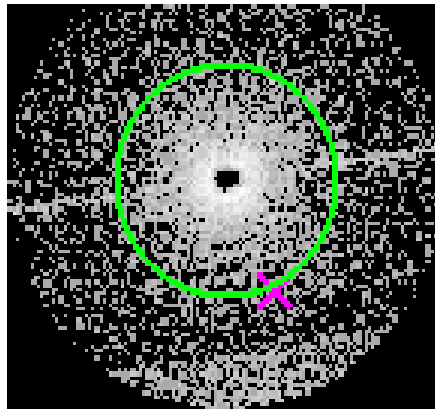


3 Gratings

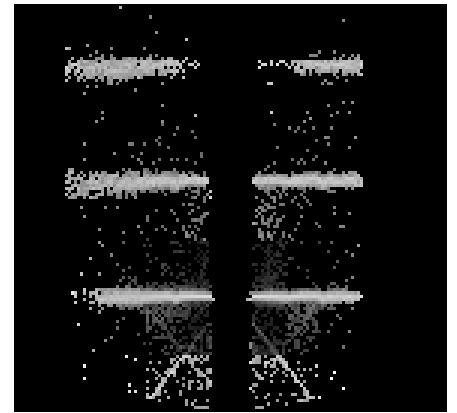
3.1 HEG Arm



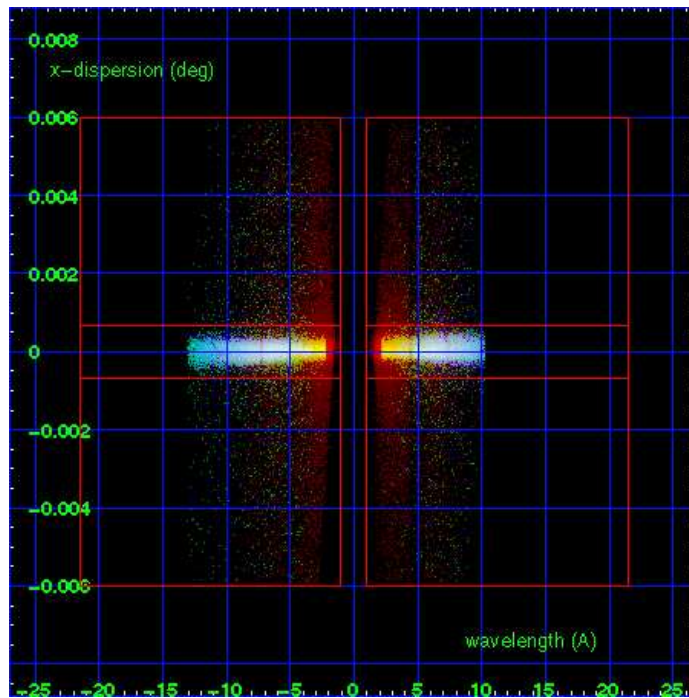
HEG Order Sort 123



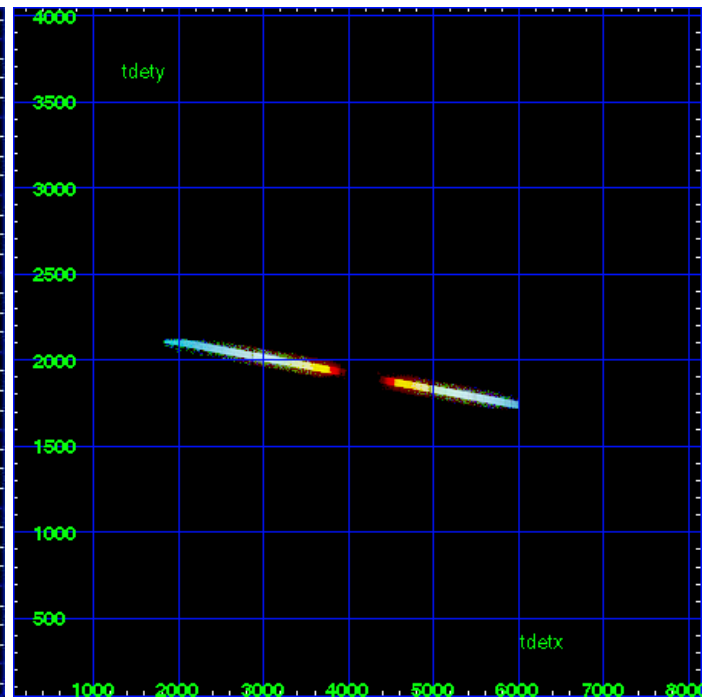
HEG Zero Order



HEG Order Sort ALL

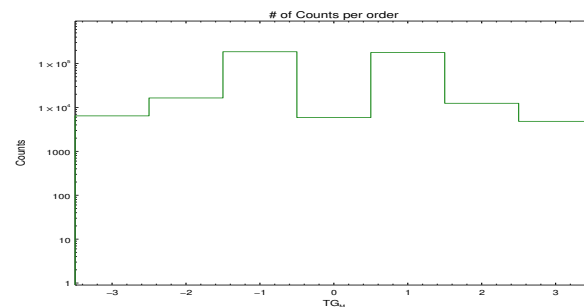


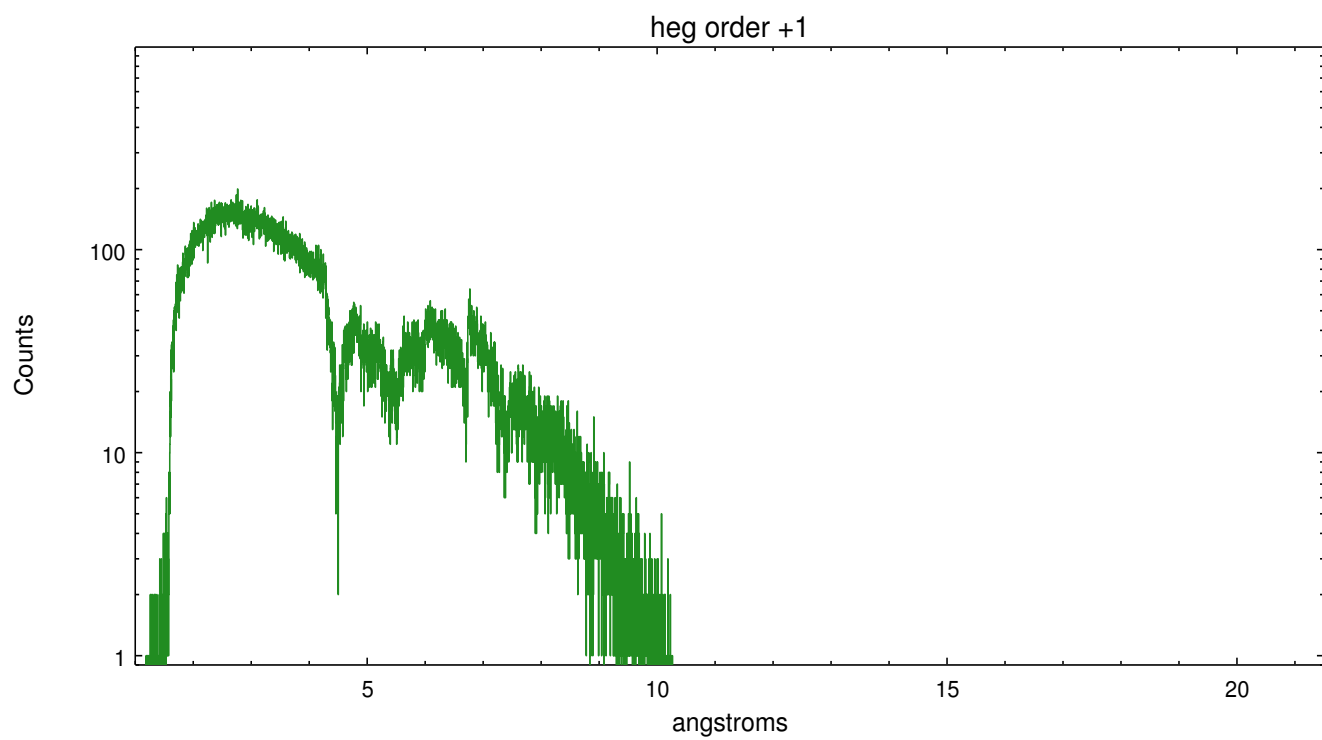
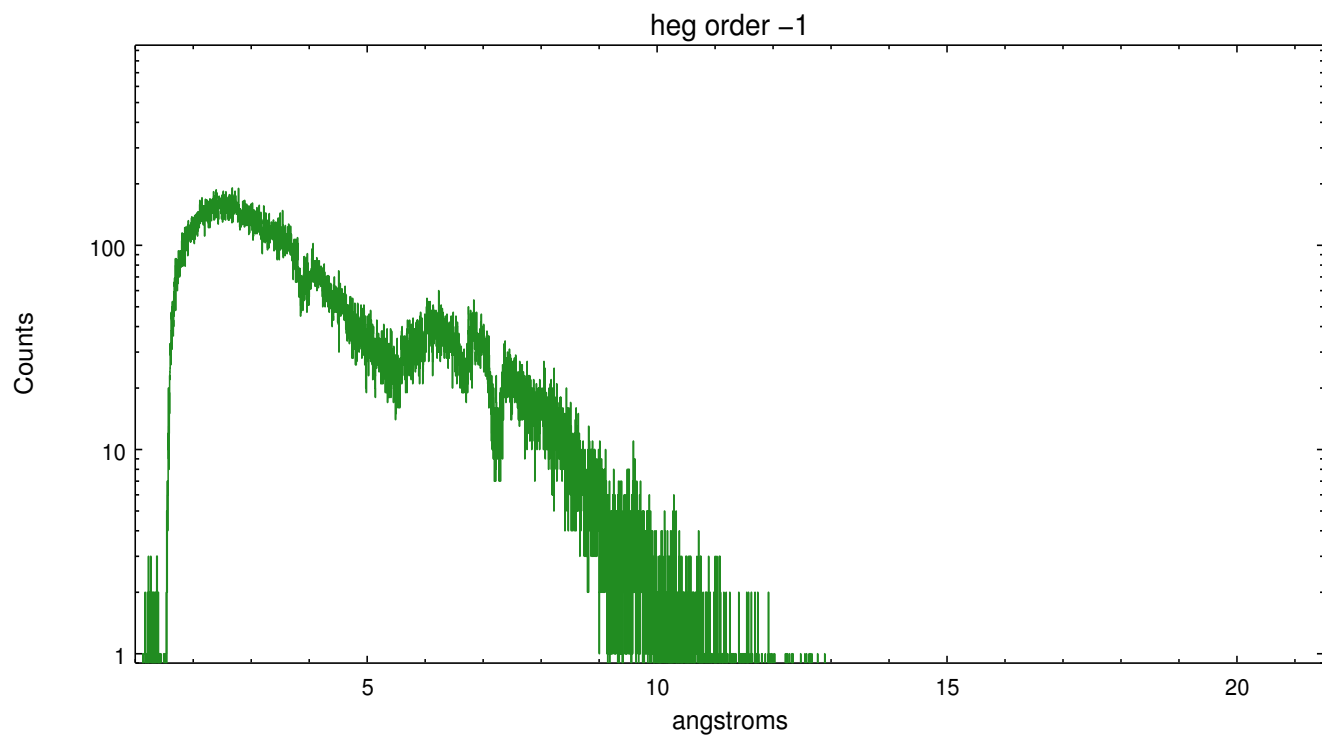
Spot Image HEG



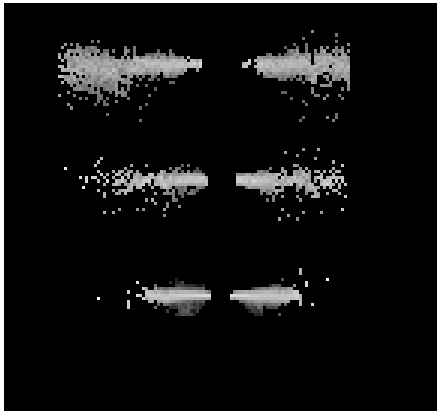
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	6428	16452	185858	5877	177718	12424	4818

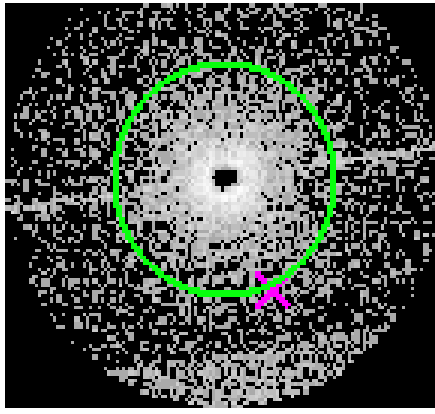




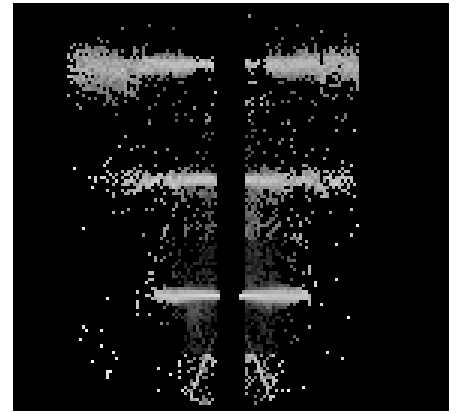
3.2 MEG Arm



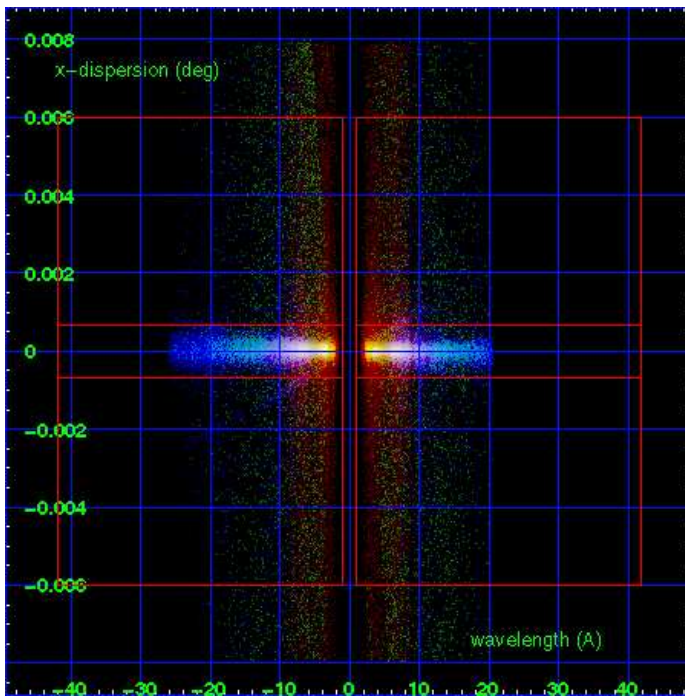
MEG Order Sort 123



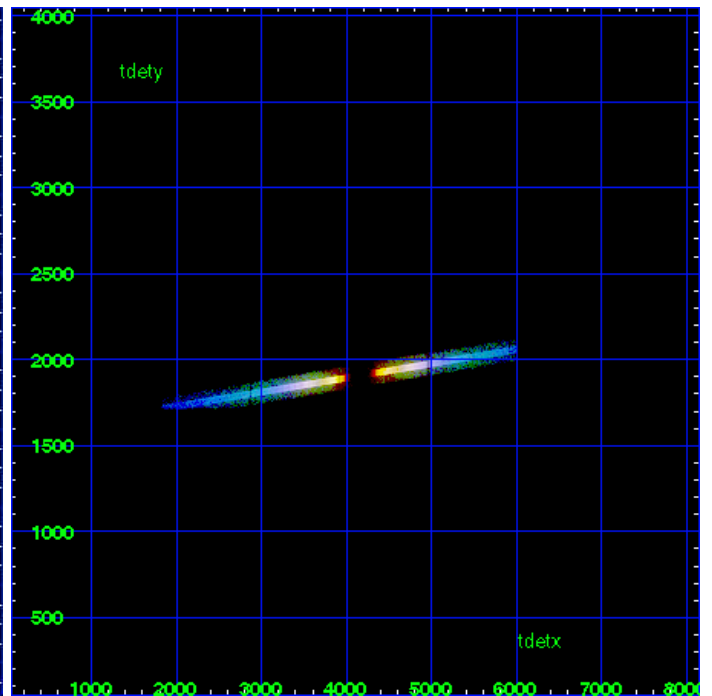
MEG Zero Order



MEG Order Sort ALL

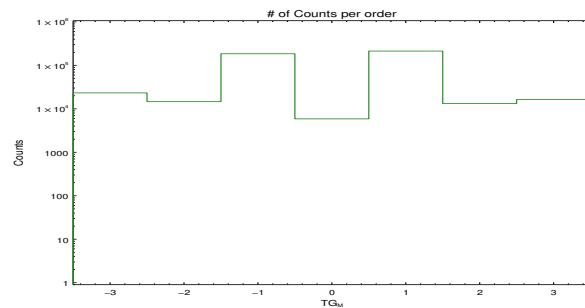


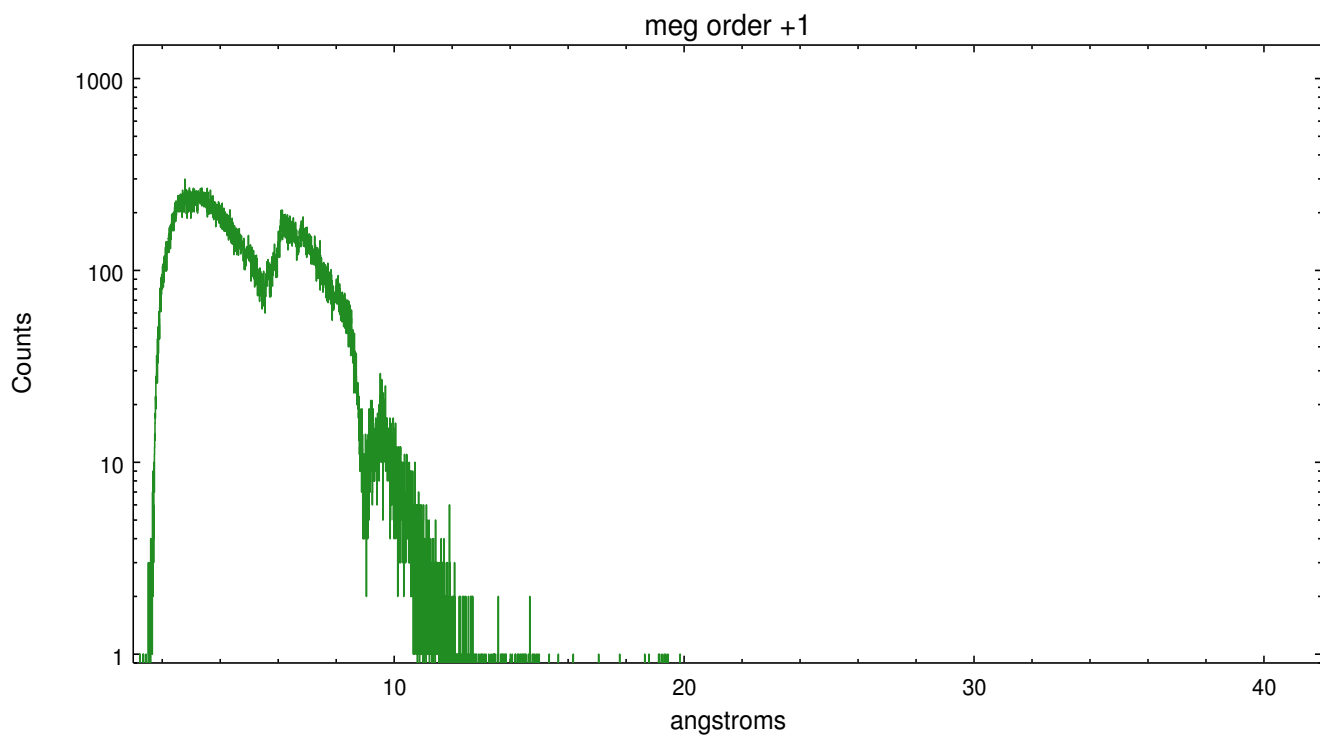
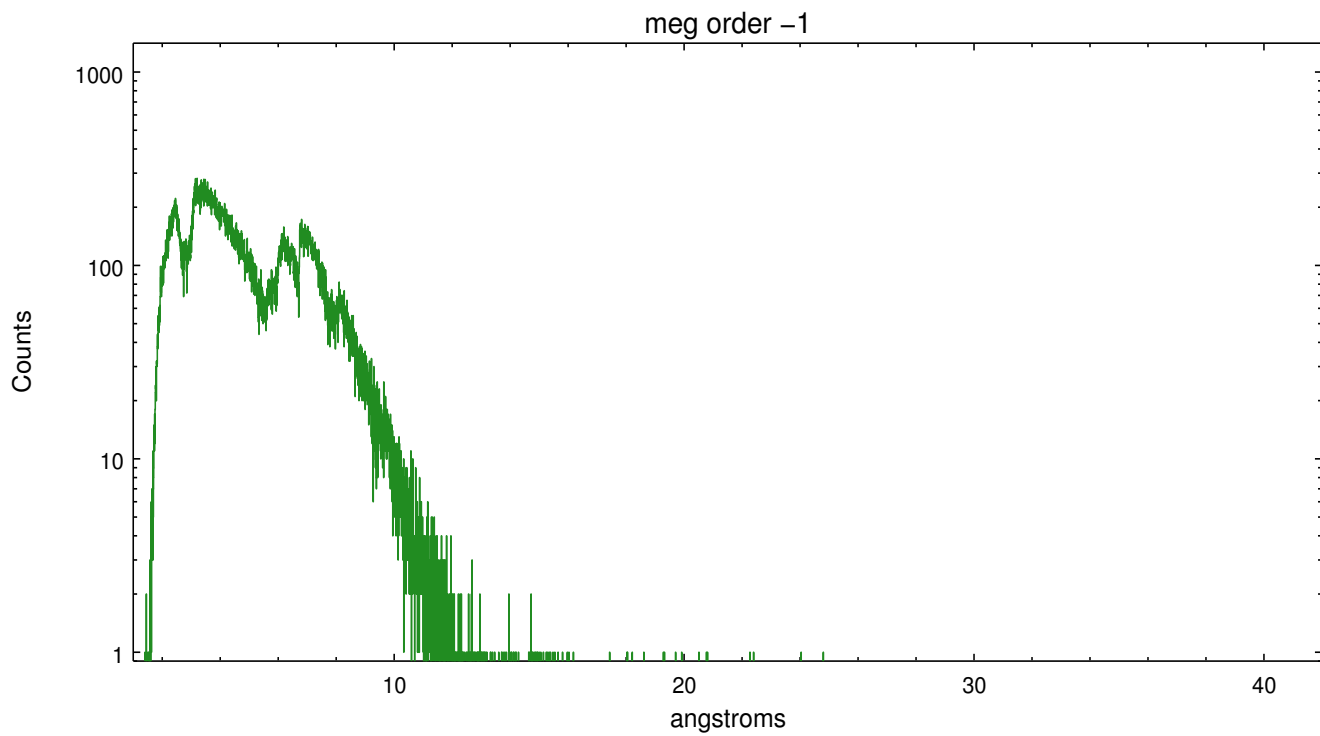
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	23277	14629	185106	5877	213327	13238	16341





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	8.213

A.2 Comments

A spatial exclusion window was used to filter the event from the zeroth order so that only 1 in 10 events were recorded. In spite of this filtering, the zeroth order is still piled up. Standard data processing software did not correctly locate the zeroth order due to the reduced count rate and to pileup. Manual intervention was used to input the correct sky coordinates (x=4082.41, y=4124.69) 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.

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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.