

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 10815 - L2 Version 3
Chandra X-Ray Center

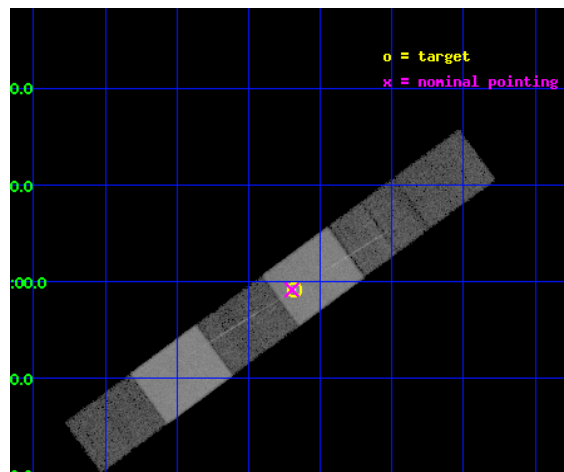
L2 Processing Date : Jun 1 2012

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1 Front

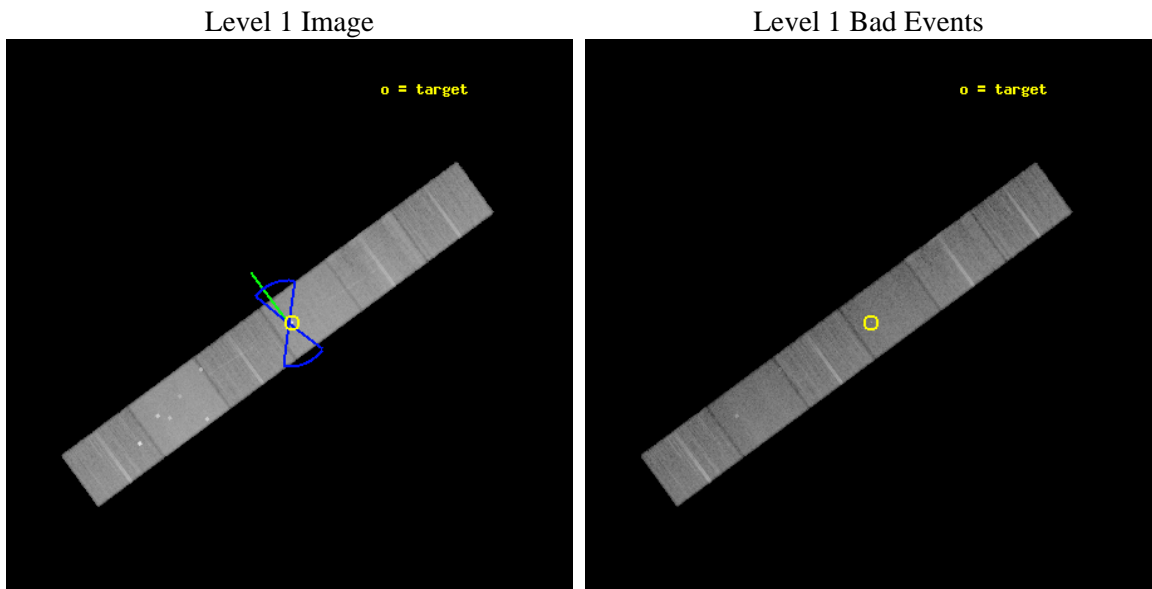
seq_num	701591	Sequence number
obs_id	10815	Observation id
title	NGC 1068: Photo-ionized gas in the nucleus, and ionization cone	Pr
observer	Prof Claude Canizares	Principal investigator
object	NGC 1068	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	40.669583	Observer's specified target RA [deg]
dec_targ	-0.013333	Observer's specified target Dec [deg]
ra_nom	40.674425813318	Nominal RA [deg]
dec_nom	-0.01372969833098	Nominal Dec [deg]
roll_nom	323.65662977438	Nominal Roll [deg]
revision	3	Processing version of data
ontime	19382.5	Sum of GTIs [s]
livetime	19069.455813368	Livetime [s]
ontime4	19382.5	Sum of GTIs [s]
ontime5	19382.5	Sum of GTIs [s]
ontime6	19382.5	Sum of GTIs [s]
ontime7	19382.5	Sum of GTIs [s]
ontime8	19382.5	Sum of GTIs [s]
ontime9	19382.5	Sum of GTIs [s]
l2events	262538	Number of level 2 events



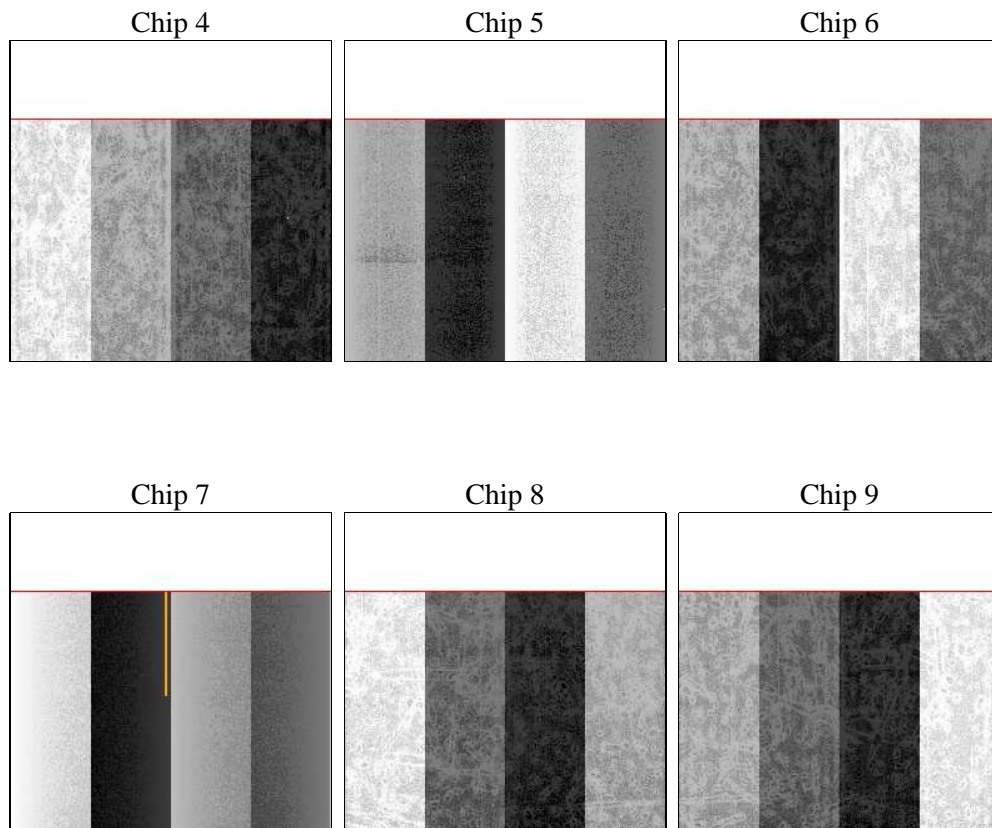
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	19622.724000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	19382.5	Sum of GTIs [s]
caldsver	4.4.9	 	ontime4	19382.5	Sum of GTIs [s]
date	2012-05-24T16:08:00	Date and time of file creation	ontime5	19382.5	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	19382.5	Sum of GTIs [s]
			ontime7	19382.5	Sum of GTIs [s]
			ontime8	19382.5	Sum of GTIs [s]
			ontime9	19382.5	Sum of GTIs [s]
			l1events	1110908	Number of level 1 events

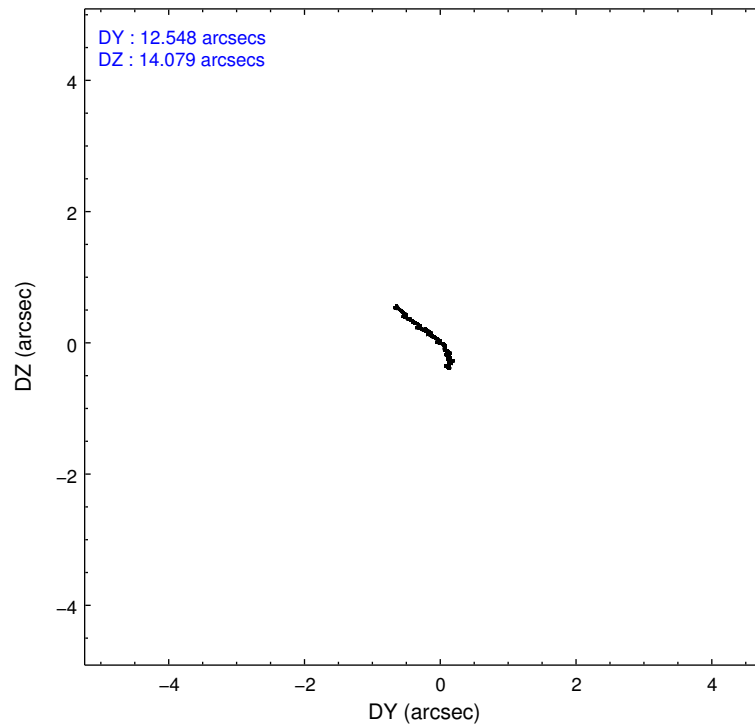
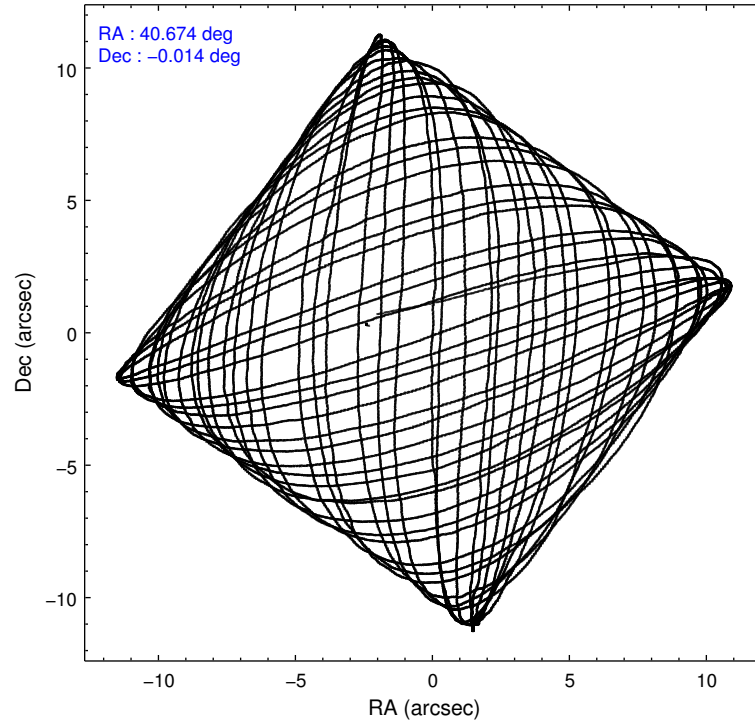
2.1.4 Events

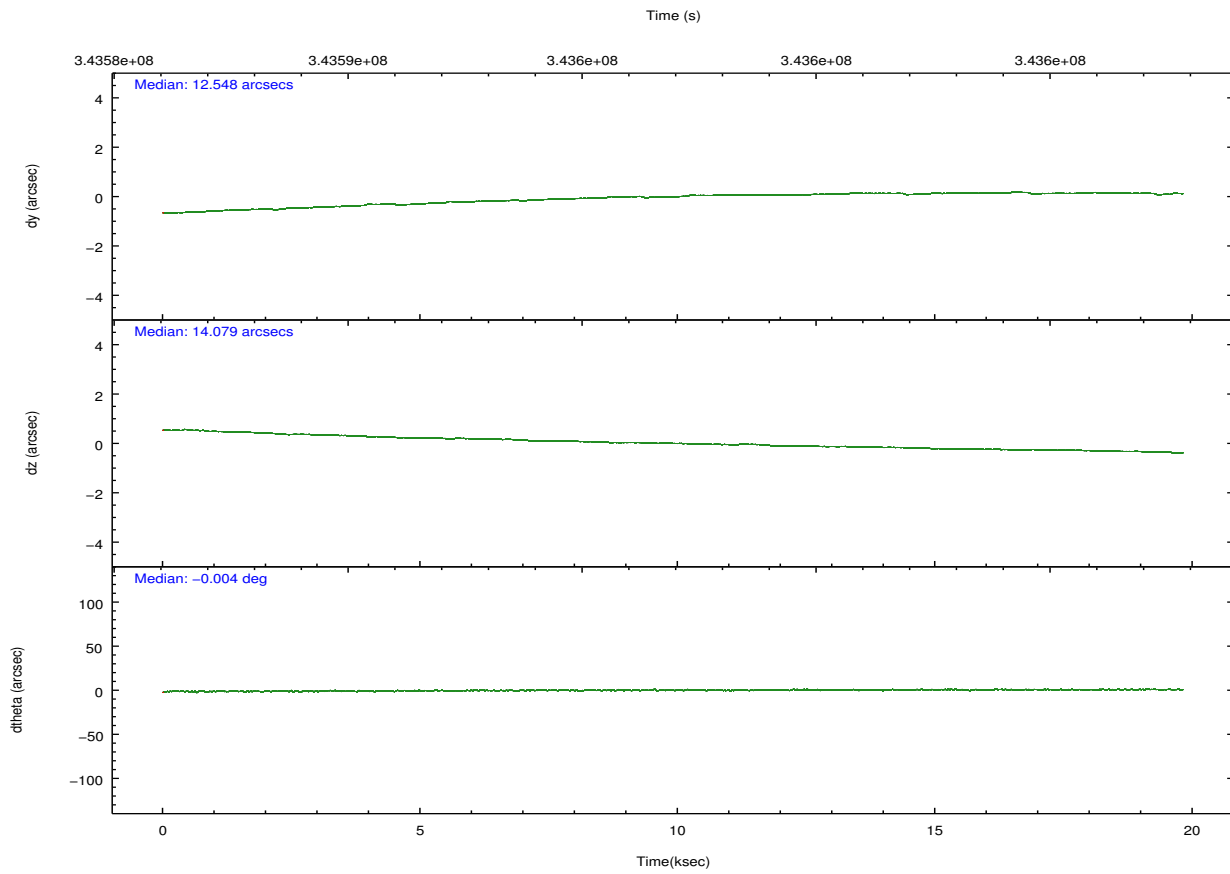
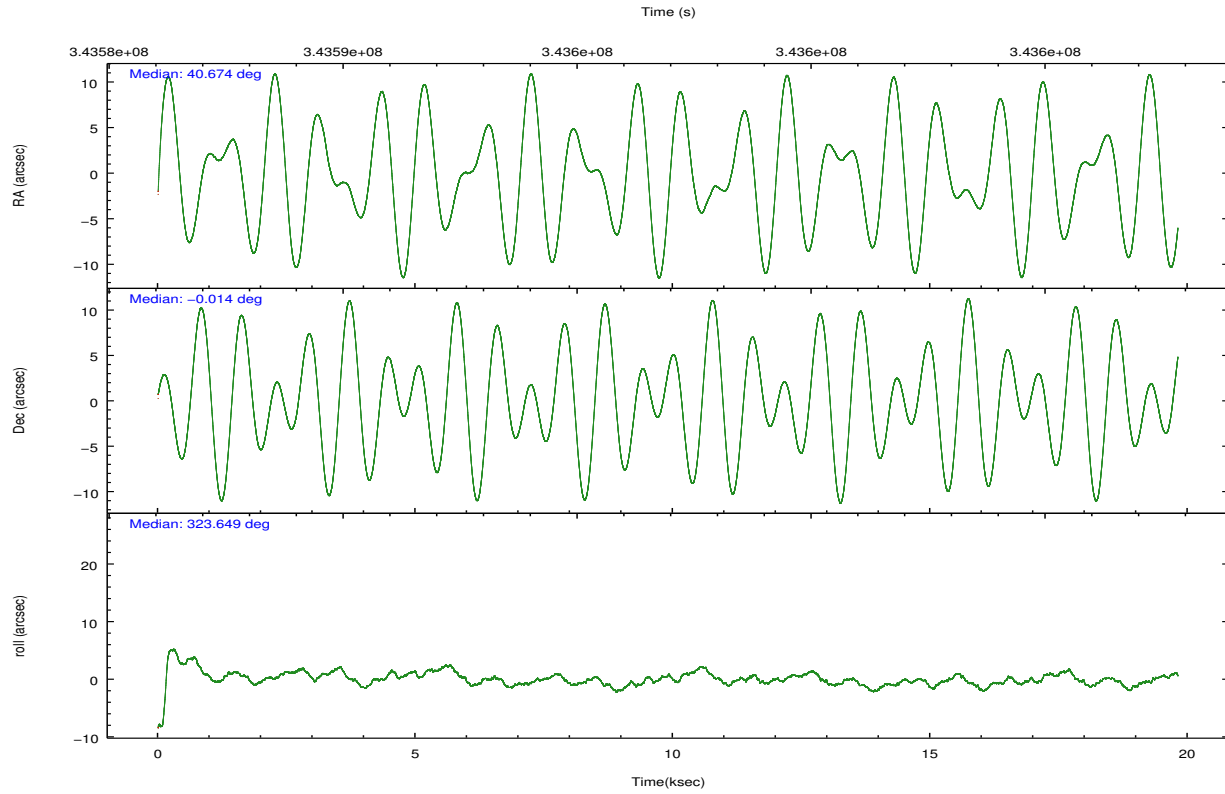
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	168157	238054	153683	212166	192977	145871	grade 0 events	14840	12510	8471	9416	14860	7942
rejected events	142058	125857	133588	119415	147689	126683		8%	5%	5%	4%	7%	5%
rejected %	84%	52%	86%	56%	76%	86%	grade 1 events	164	380	63	233	134	87
								0%	0%	0%	0%	0%	0%
							grade 2 events	4165	34275	4221	19535	9934	3842
								2%	14%	2%	9%	5%	2%
							grade 3 events	1959	4542	1907	8322	4649	1944
								1%	1%	1%	3%	2%	1%
							grade 4 events	1887	4288	1752	8150	4377	1881
								1%	1%	1%	3%	2%	1%
							grade 5 events	6671	17254	7029	19793	9359	7675
								3%	7%	4%	9%	4%	5%
							grade 6 events	3254	56607	3749	47341	11478	3583
								1%	23%	2%	22%	5%	2%
							grade 7 events	135217	108198	126491	99376	138186	118917
								80%	45%	82%	46%	71%	81%

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	40.647198	40.67442581331801	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-0.011074	-0.01372969833098014	Subarray start row	1	1
[deg] Pointing Roll	323.499996	323.656629774384	Subarray row count	774	774
[deg] Roll angle	338.000000	338.000000	Alternating exposures requested	N	N
[deg] Roll tolerance	30.000000	30.000000	[s] Primary exposure time	0.000000	2.5
Roll constraint allows 180D rotation	Y	Y			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-186.772523	-186.7834551222893			
[mm] SIM translation stage offset	-3.36	-3.349067460718516			
[s] Observation start time (MET)	343587240.184000	343585467.63377			
Observation start date	2008-11-20T16:52:55	2008-11-20T16:24:27			
[s] Observation end time (MET)	343606863.184000	343607076.68483			
Observation end date	2008-11-20T22:19:58	2008-11-20T22:24:36			
Read mode	TIMED	TIMED			

2.3 Aspect



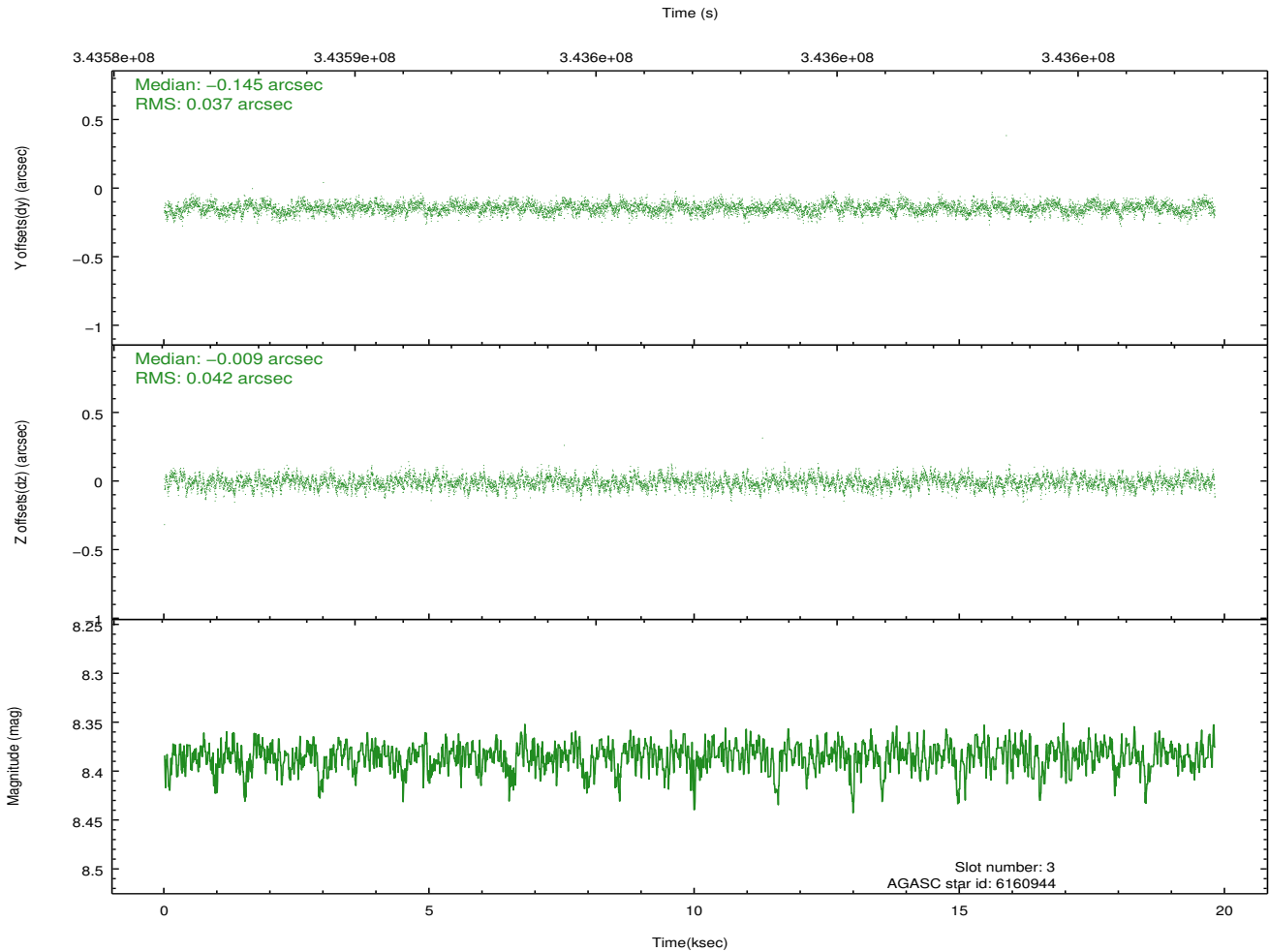
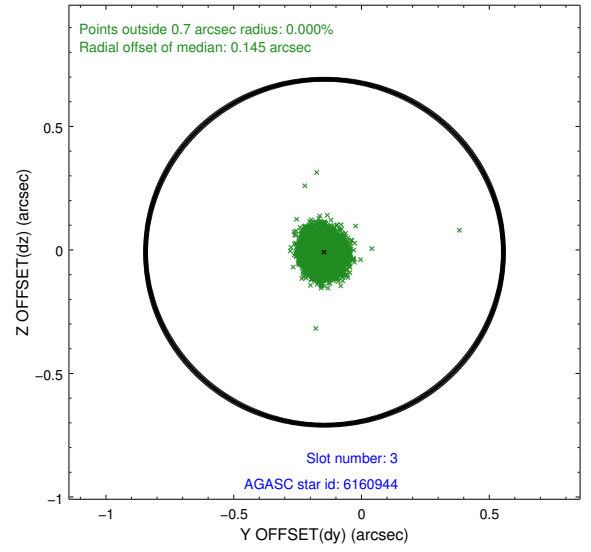
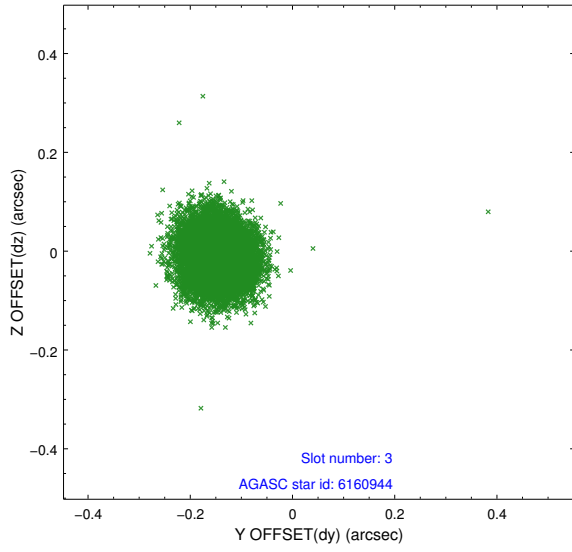


Slot Statistics

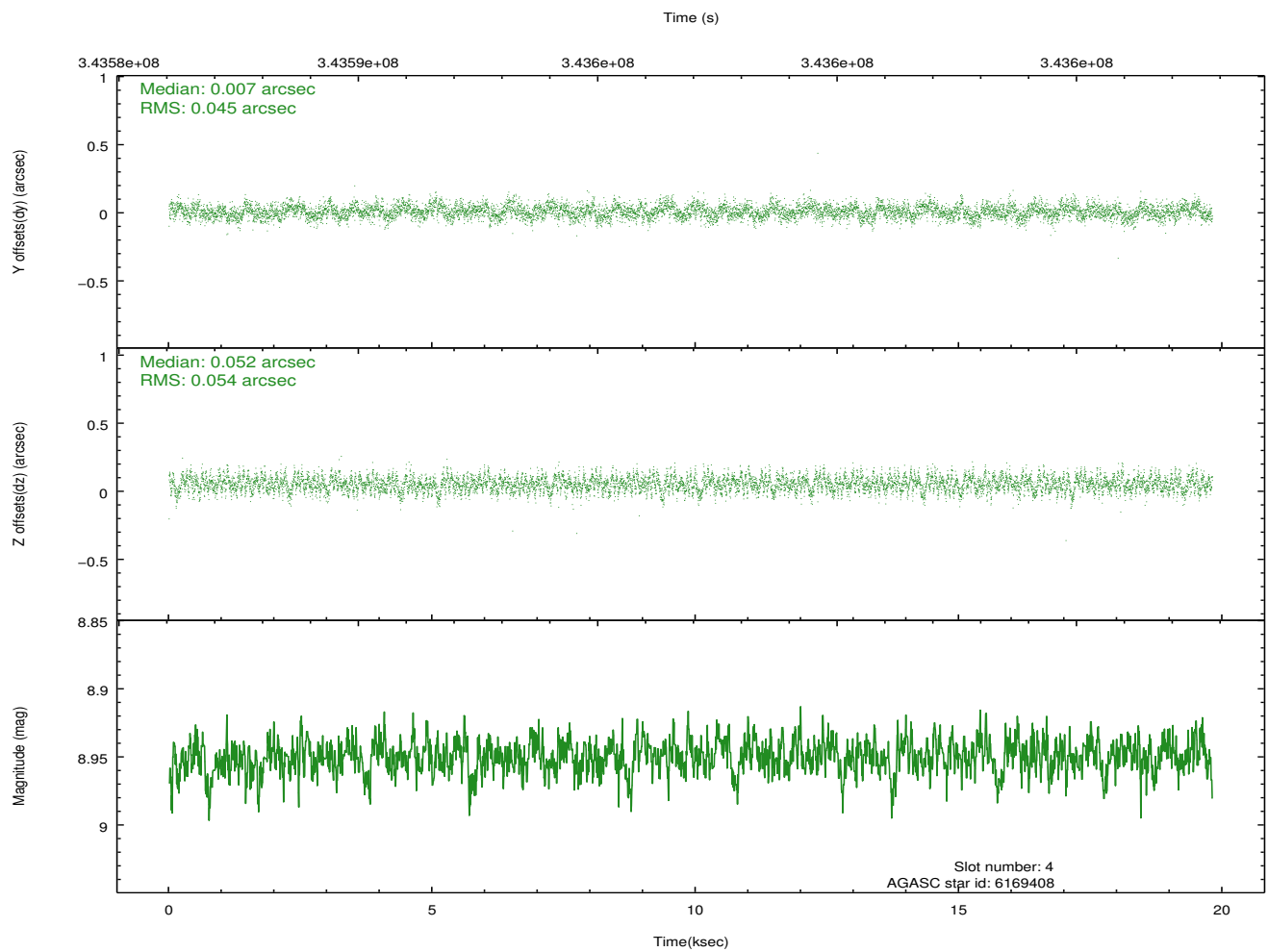
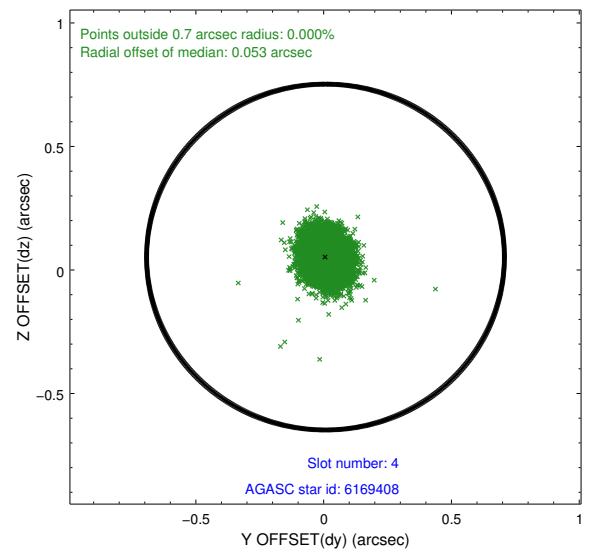
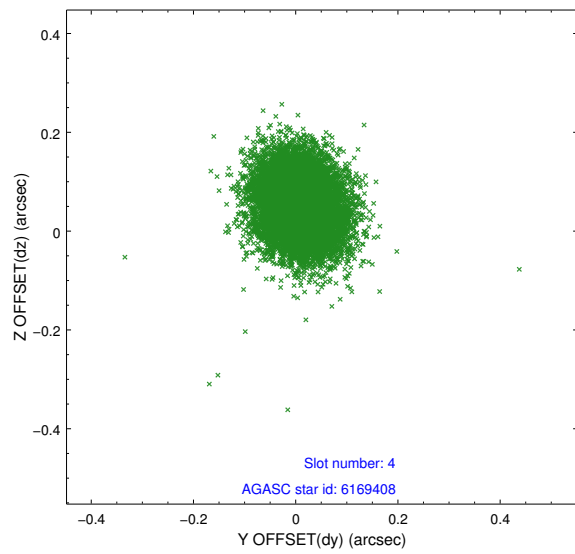
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.91	4832	-0.062	-0.072	0.010	0.017	0.000000	0.000000	-765.19	-1804.66
1	FID	ACIS-S-4	6.99	4832	0.103	0.049	0.009	0.017	0.000000	0.000000	2148.17	103.71
2	FID	ACIS-S-5	7.04	4832	-0.071	0.031	0.011	0.019	0.000000	0.000000	-1817.79	97.60
3	GUIDE	6160944	8.39	9658	-0.145	-0.009	0.059	0.096	40.821496	0.087247	293.96	657.76
4	GUIDE	6169408	8.95	9652	0.007	0.052	0.074	0.119	40.937839	0.210390	366.85	1263.09
5	GUIDE	615907528	7.77	9657	-0.068	-0.092	0.048	0.078	41.252710	-0.191636	2139.01	774.35
6	GUIDE	615909768	9.07	9663	0.143	0.087	0.080	0.130	40.904100	-0.344520	1458.02	-414.90
7	GUIDE	615913552	8.70	9655	0.064	-0.038	0.064	0.103	41.235237	-0.003650	1686.20	1280.74

2.4 Star Slots

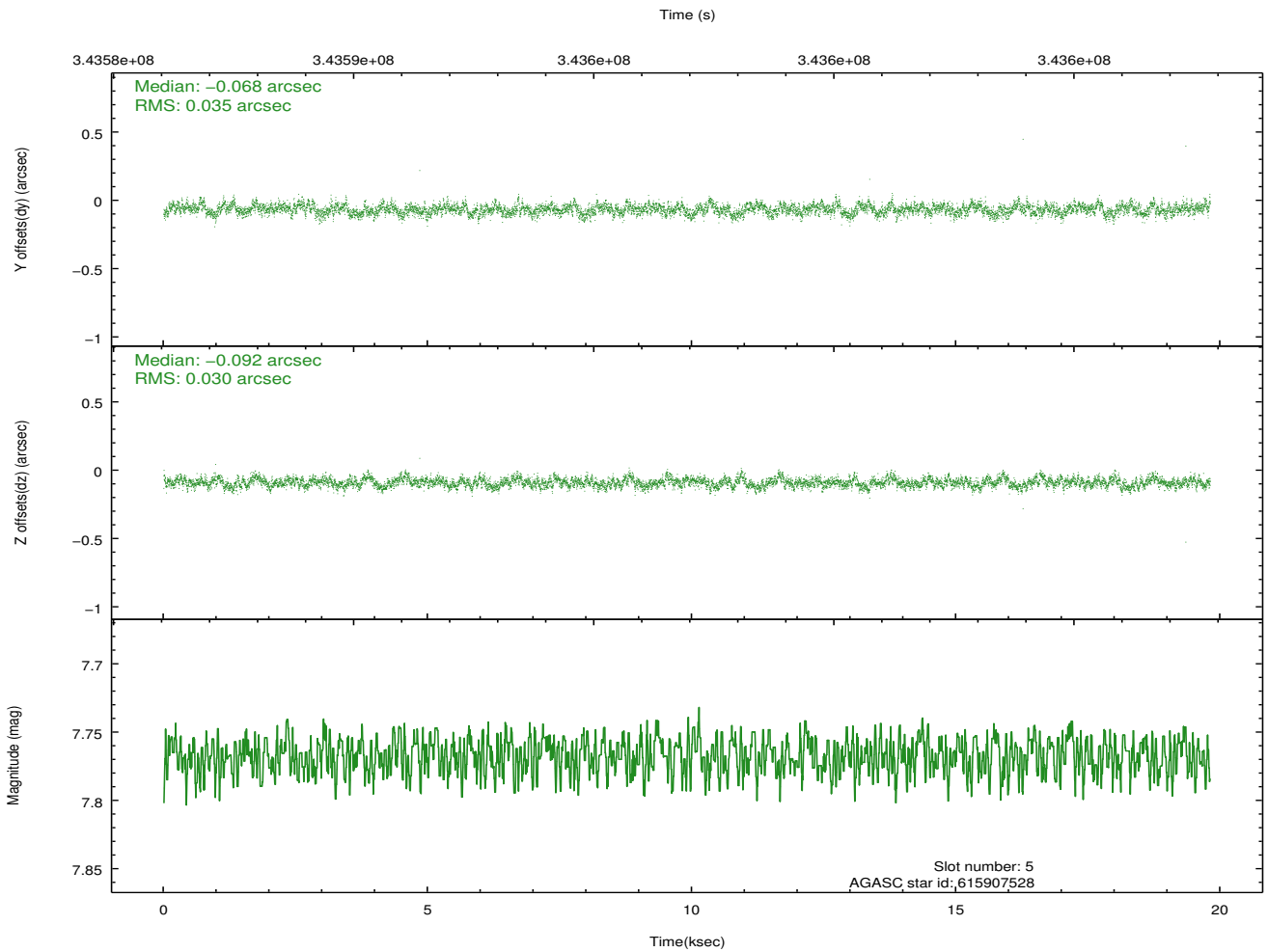
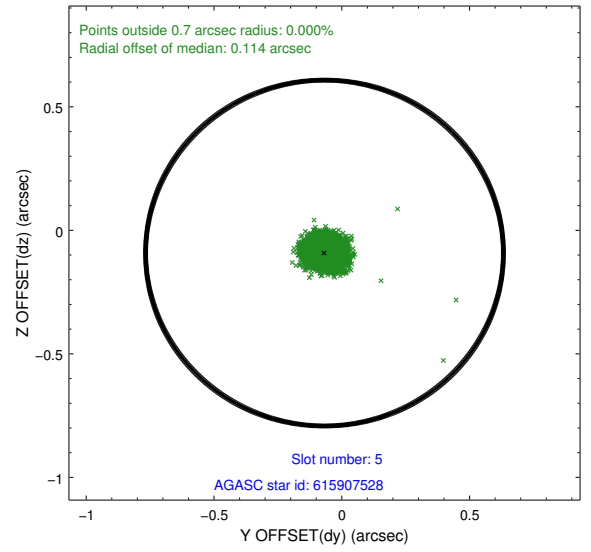
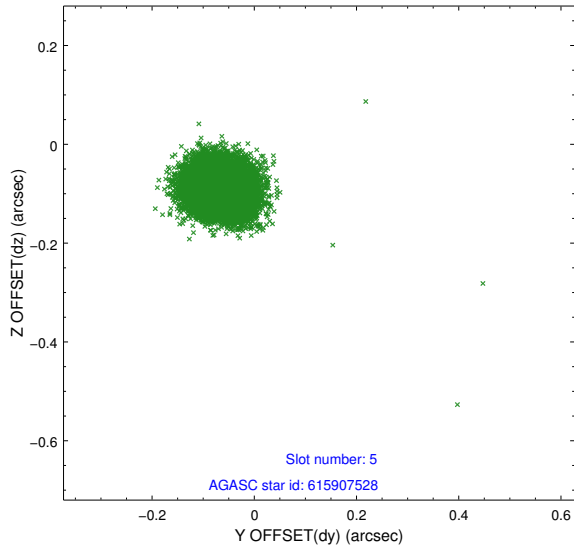
2.4.1 Slot 3



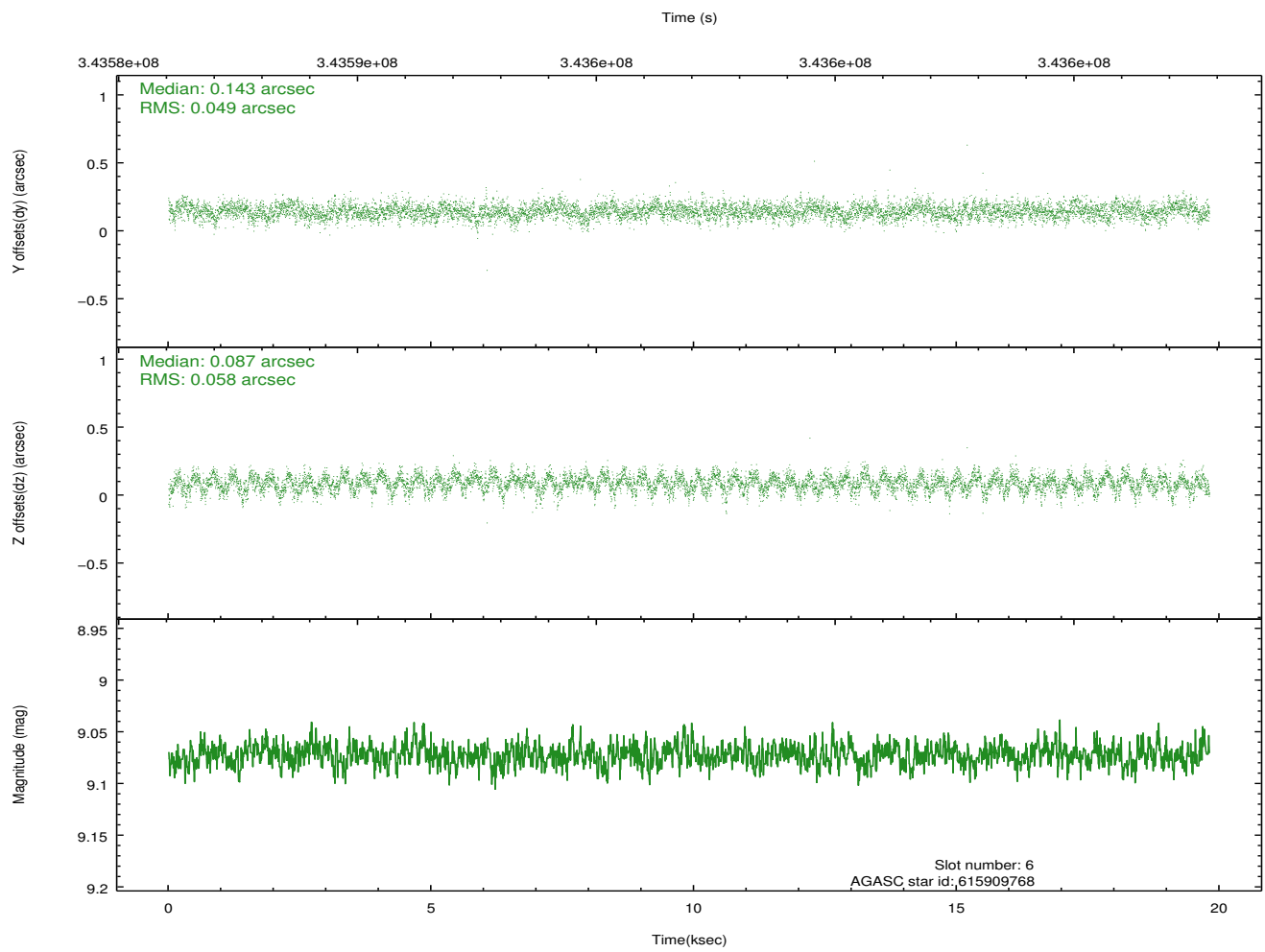
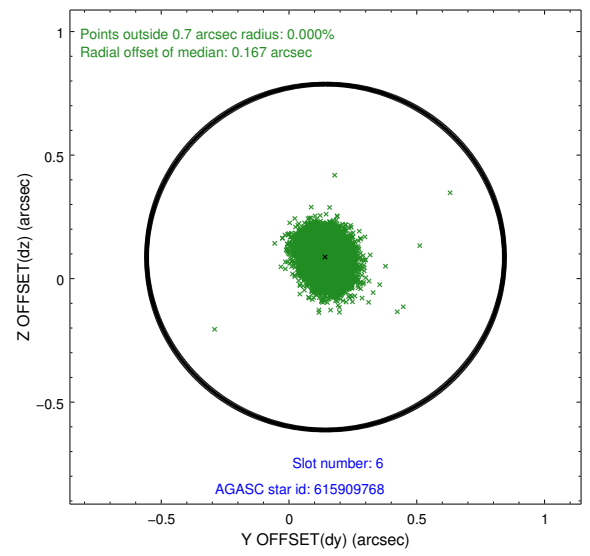
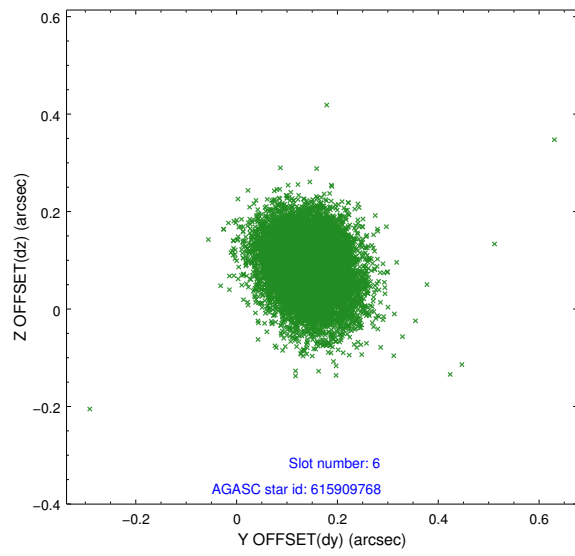
2.4.2 Slot 4



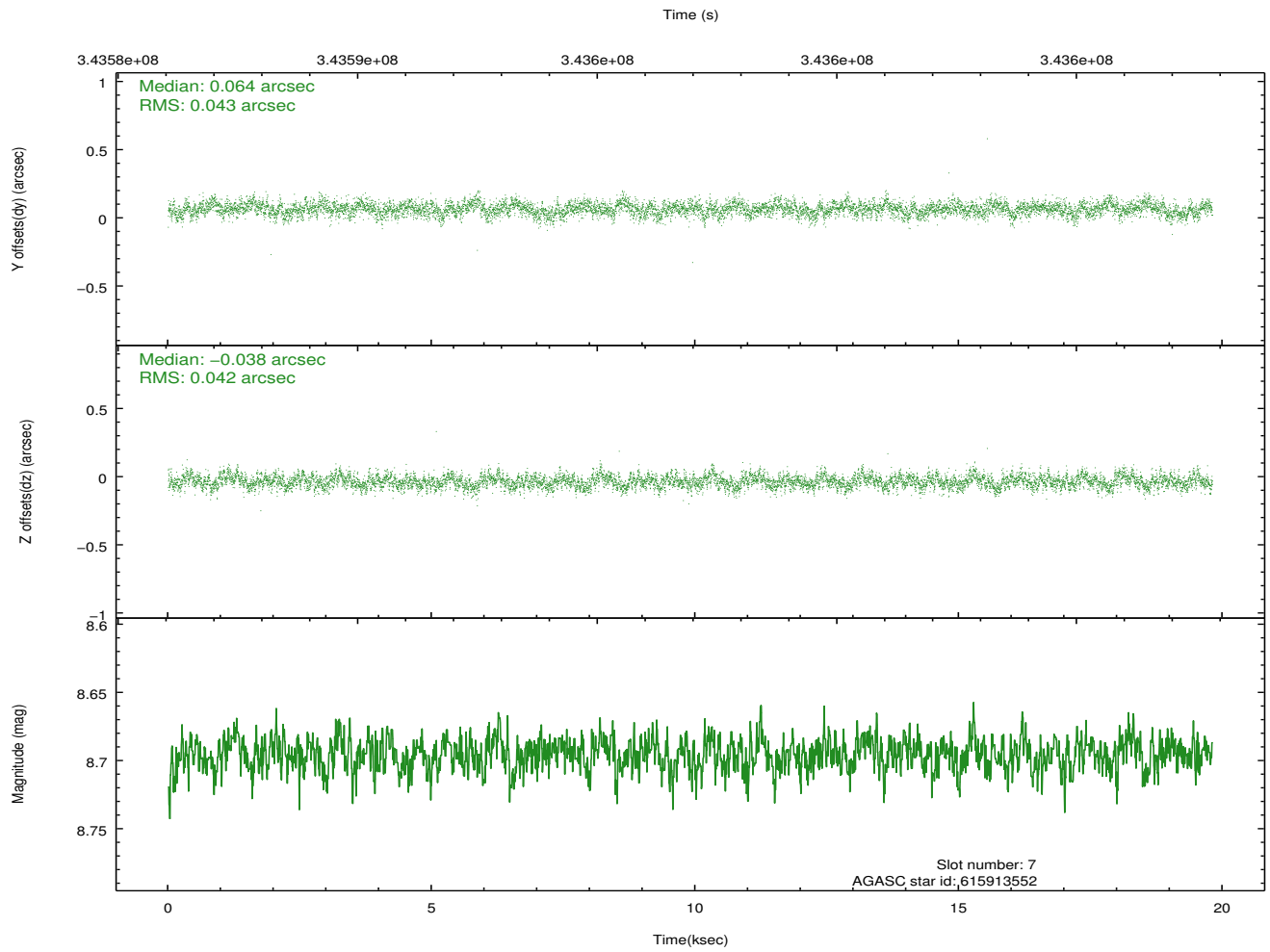
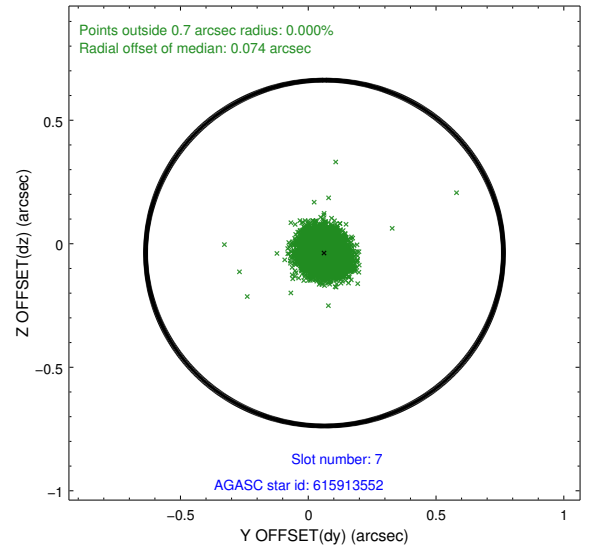
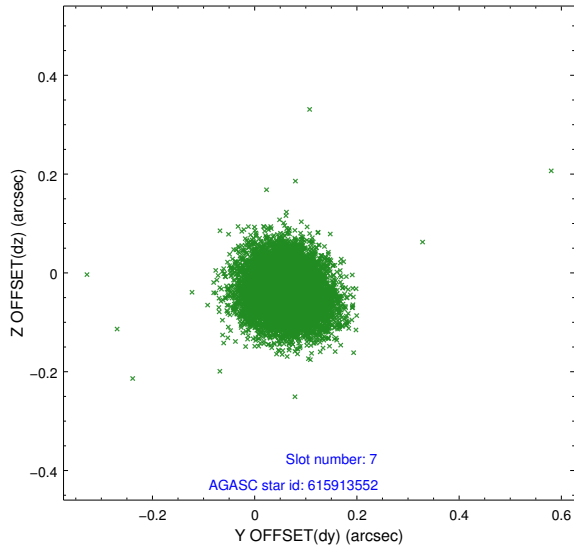
2.4.3 Slot 5



2.4.4 Slot 6

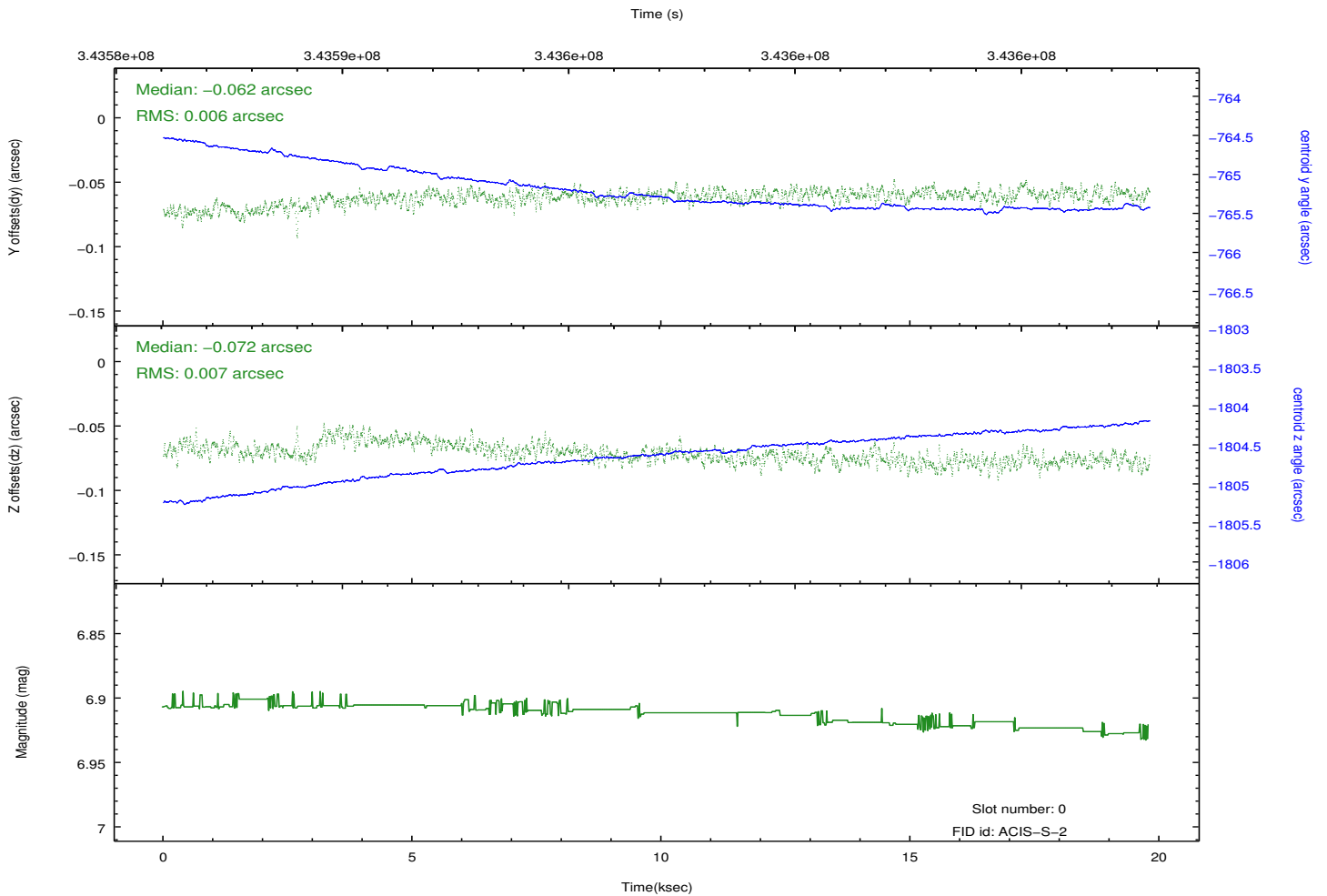
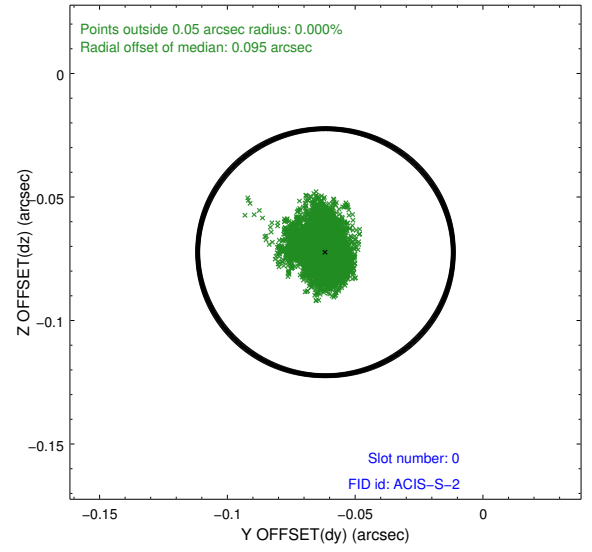
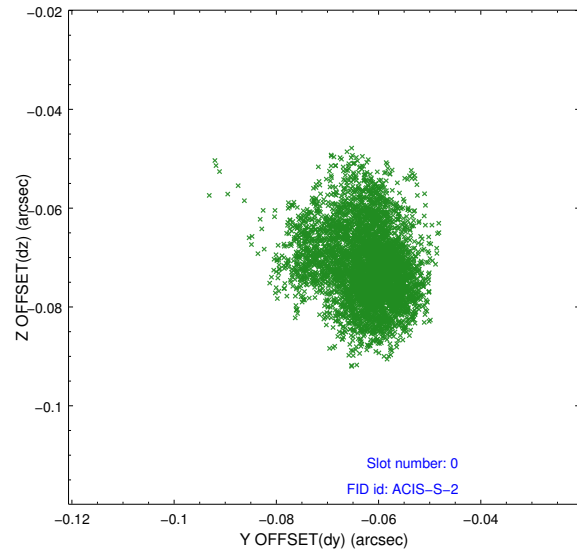


2.4.5 Slot 7

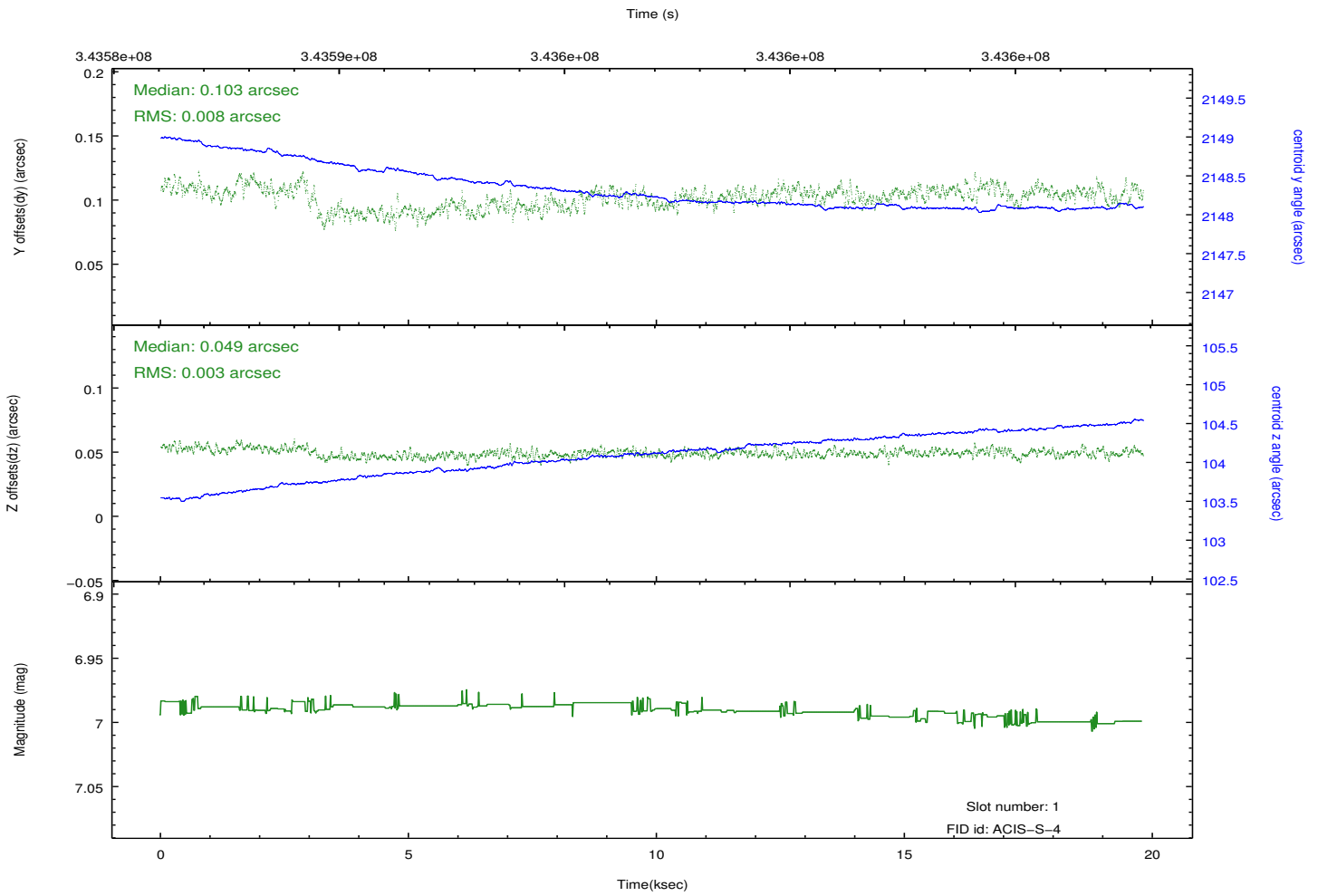
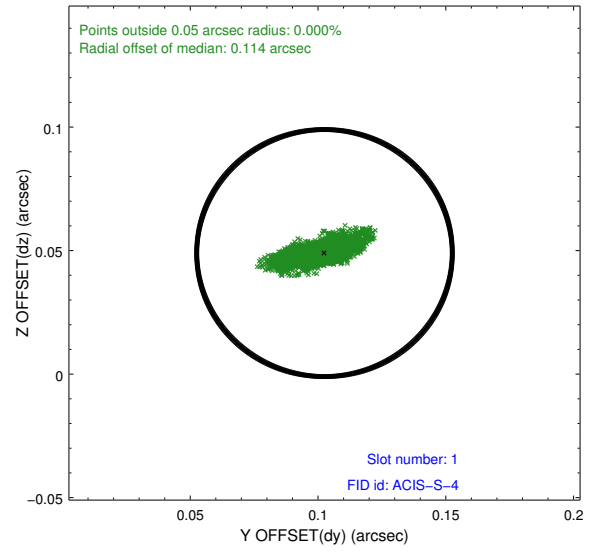
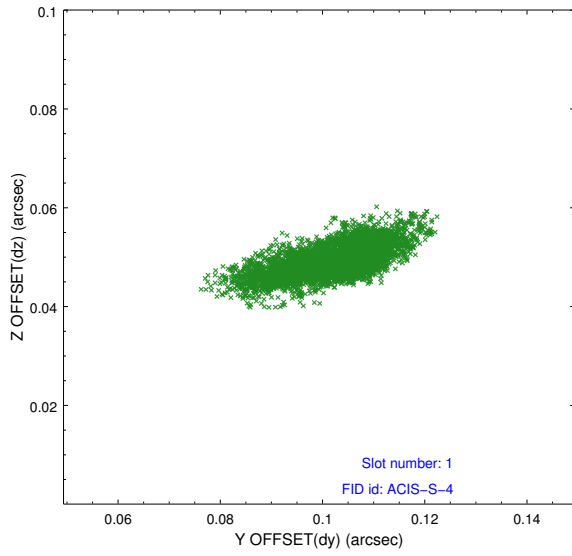


2.5 FID Slots

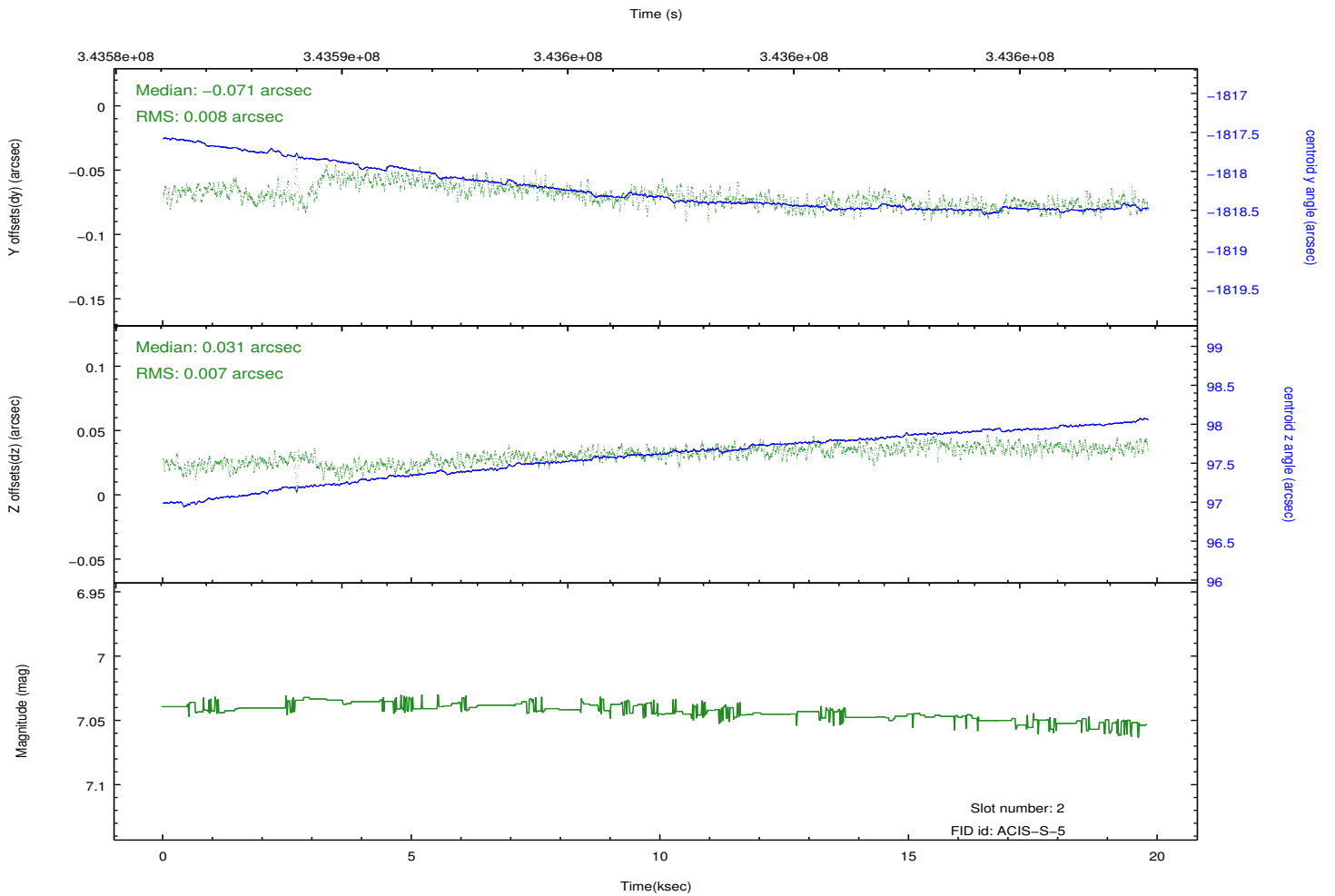
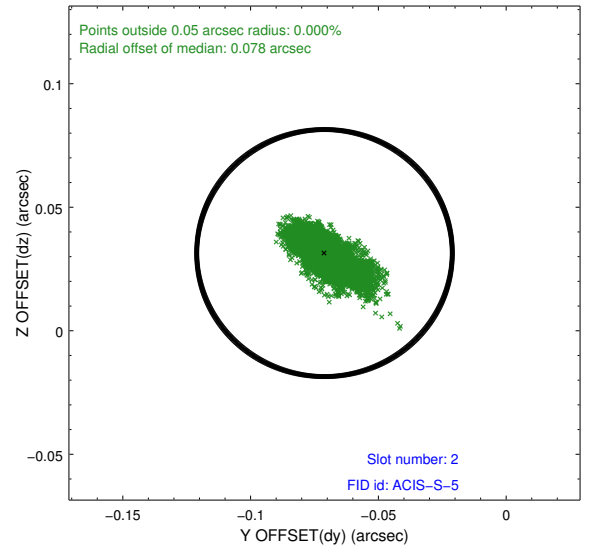
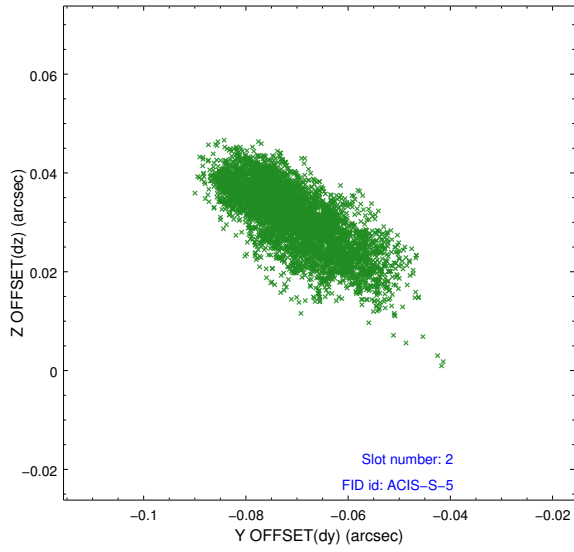
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

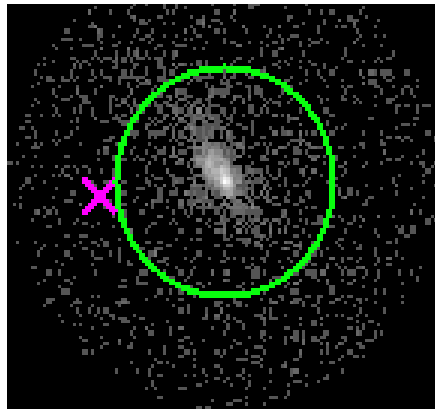


3 Gratings

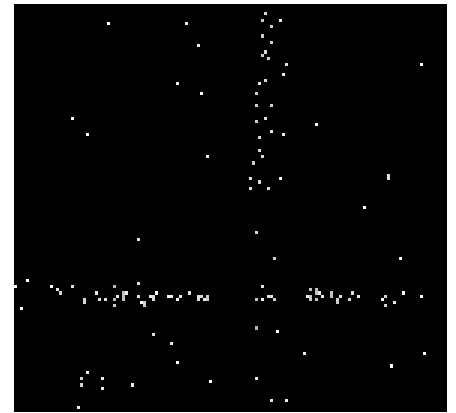
3.1 HEG Arm



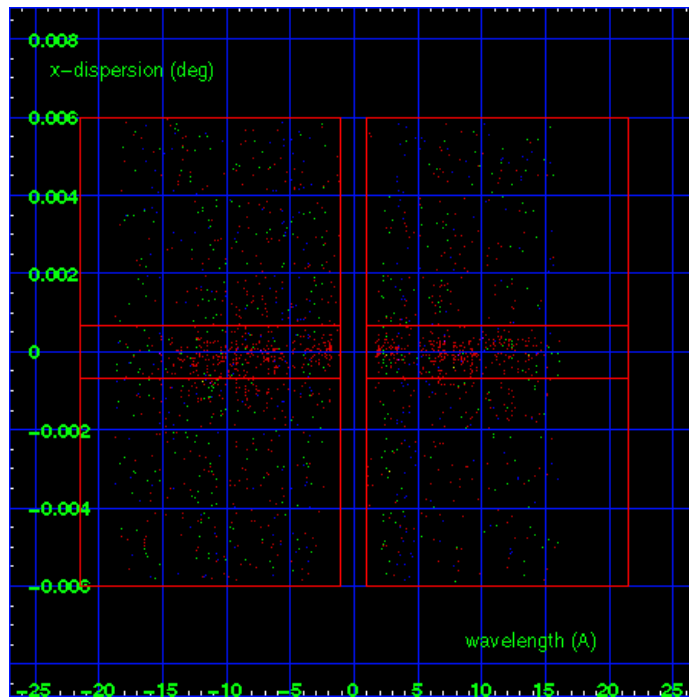
HEG Order Sort 123



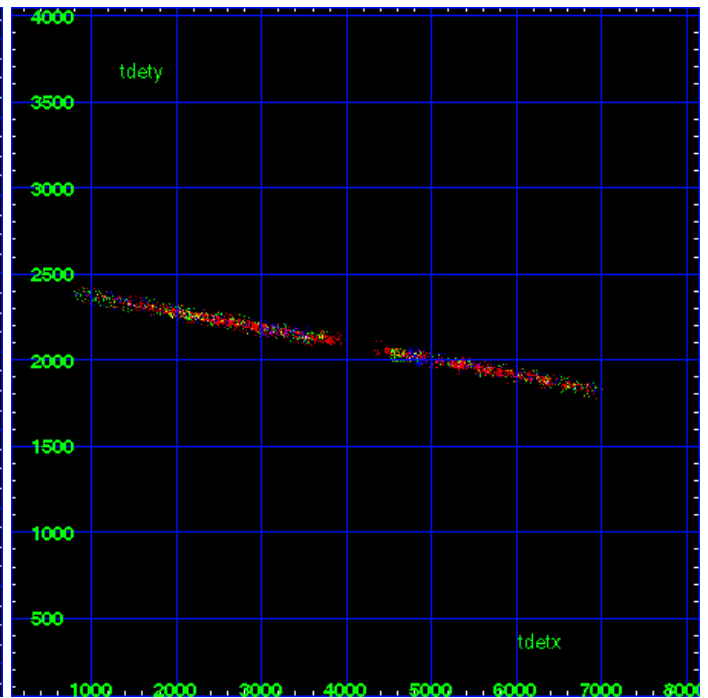
HEG Zero Order



HEG Order Sort ALL

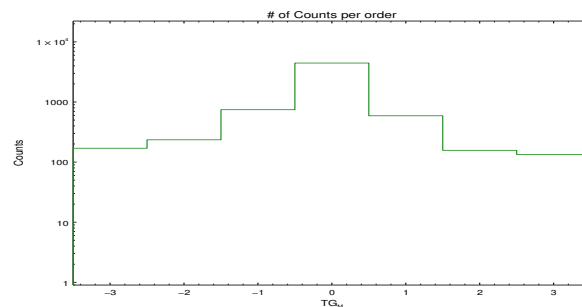


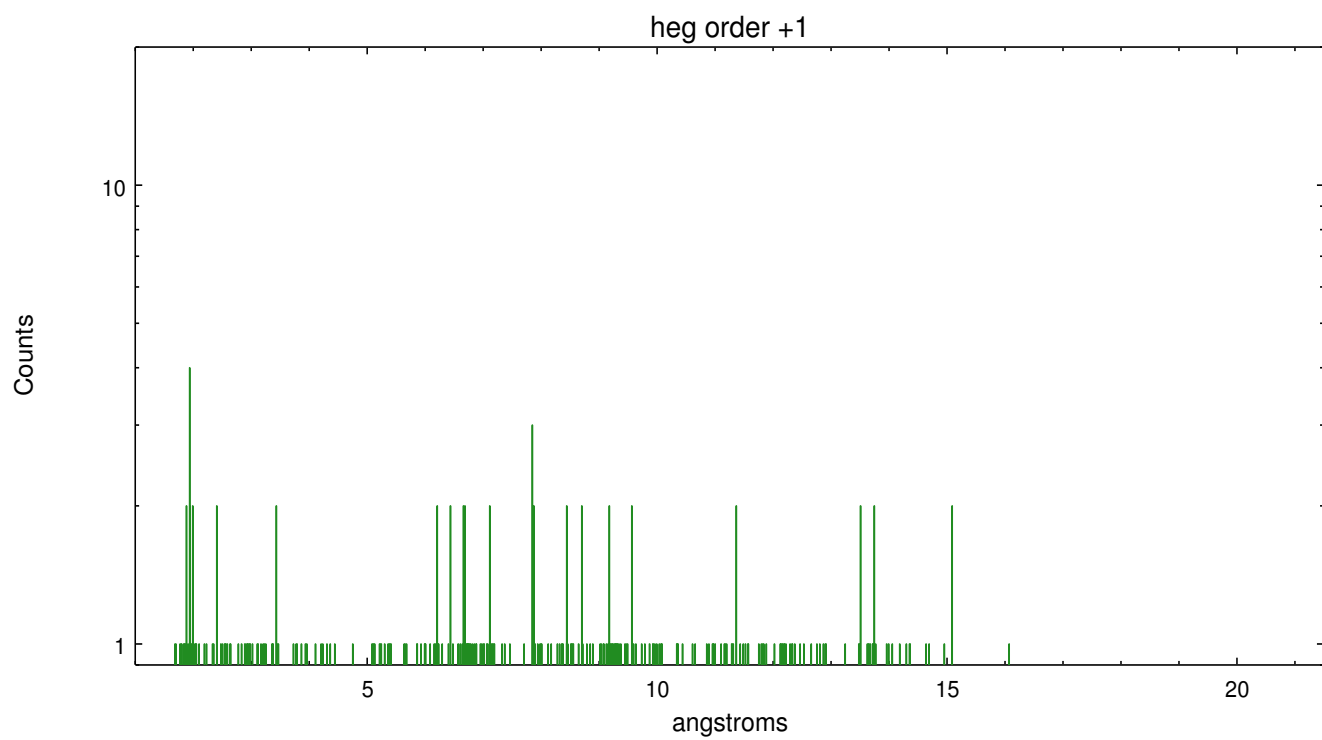
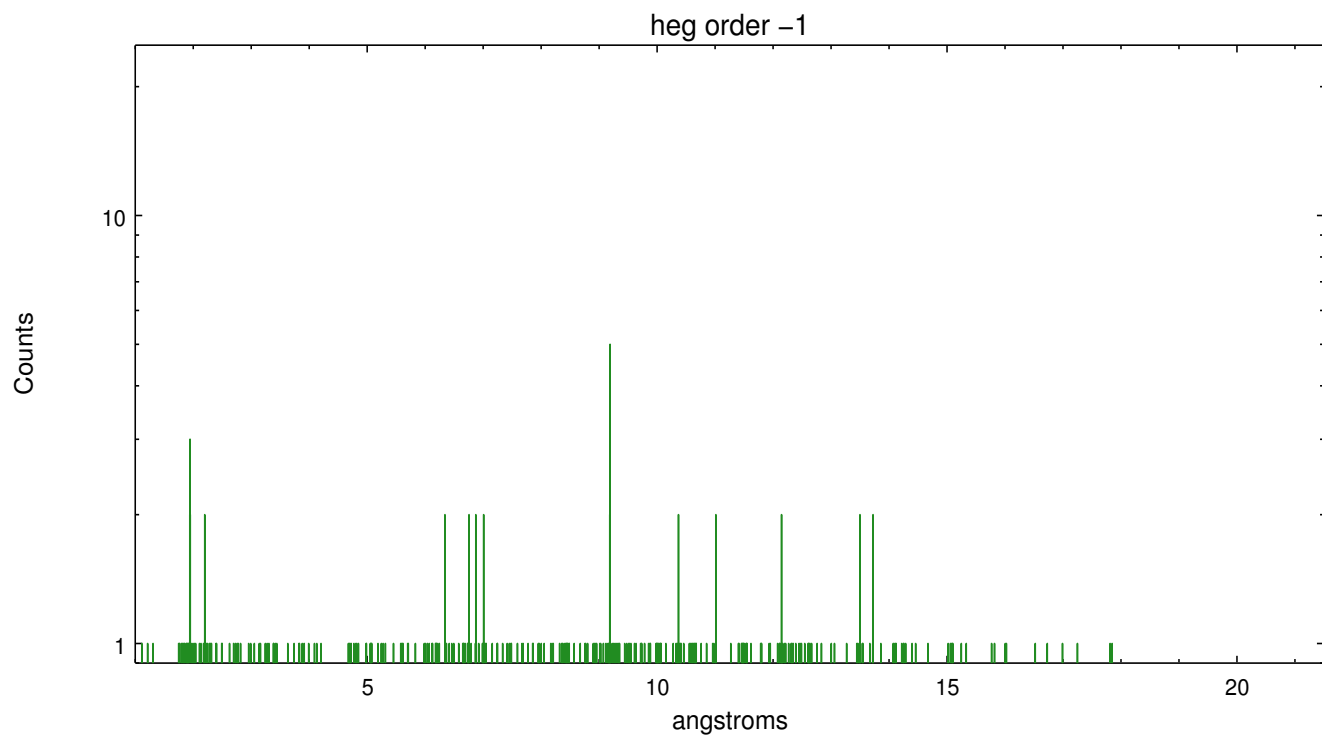
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	170	235	745	4447	590	157	134

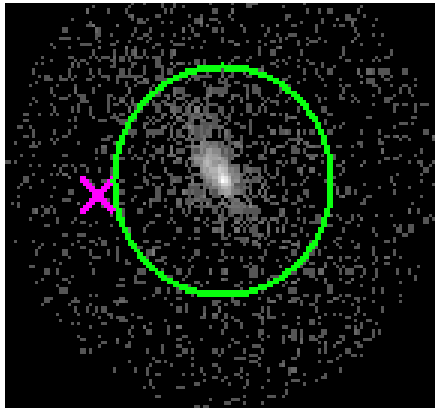




3.2 MEG Arm



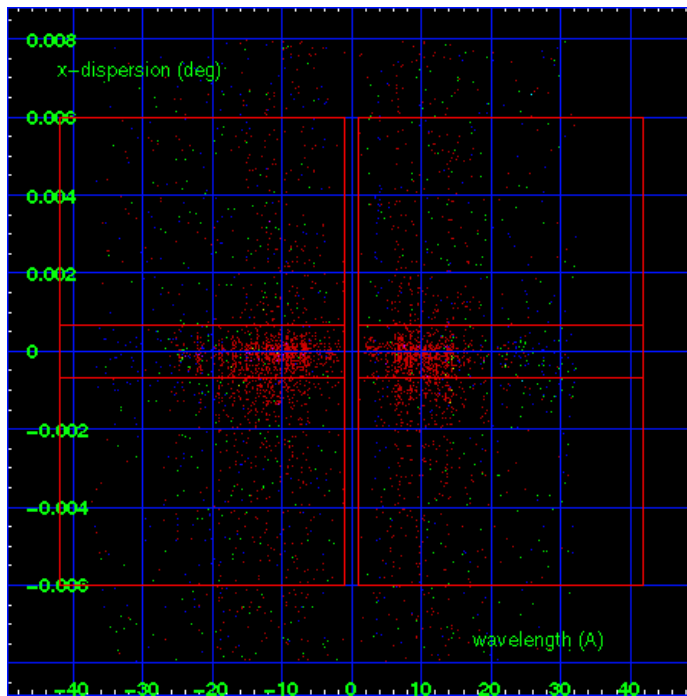
MEG Order Sort 123



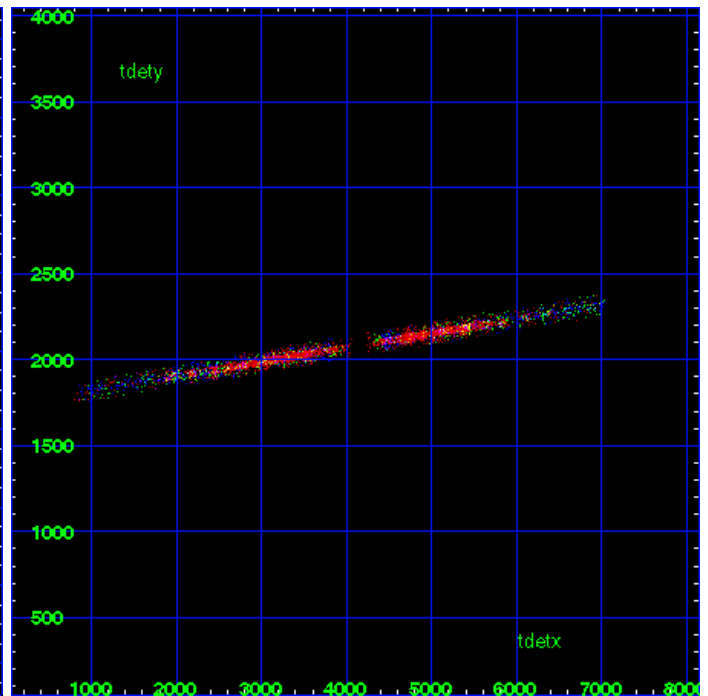
MEG Zero Order



MEG Order Sort ALL

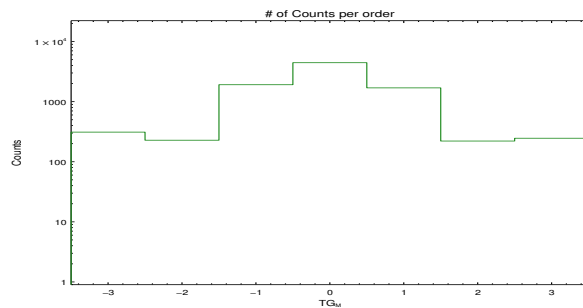


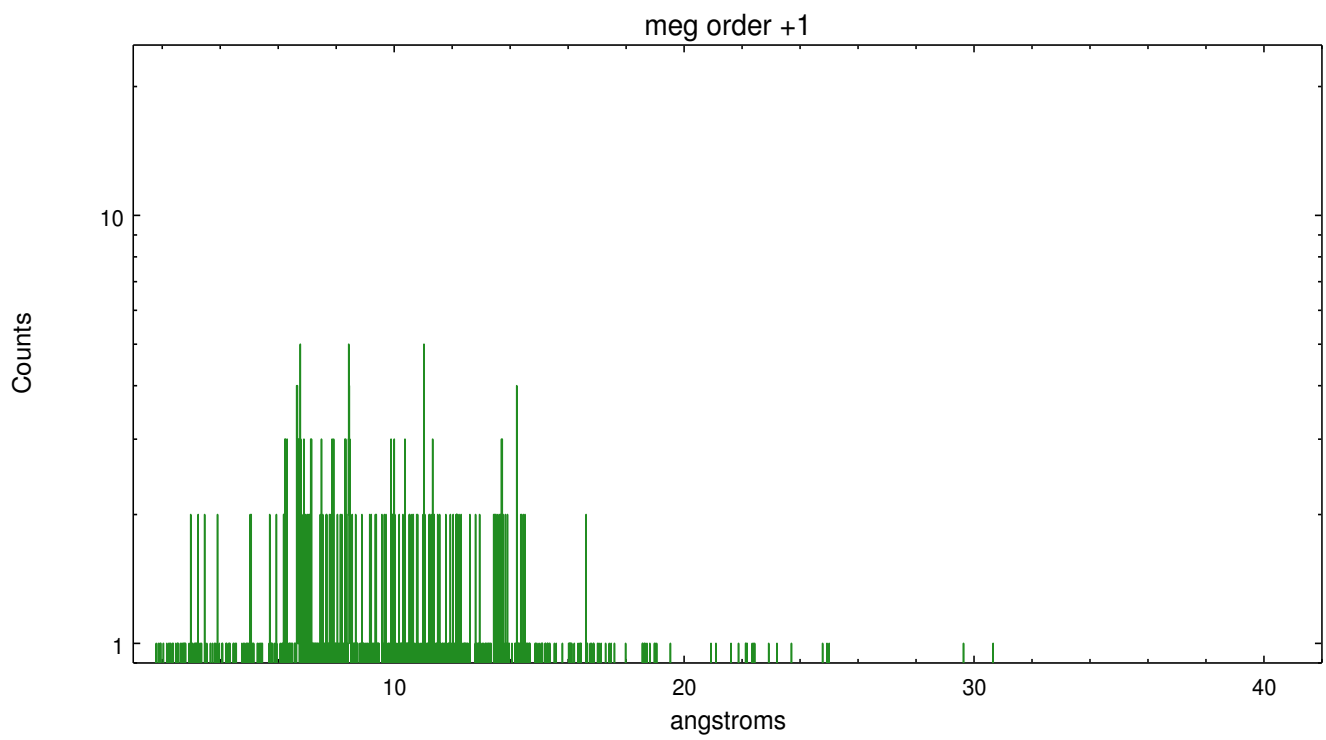
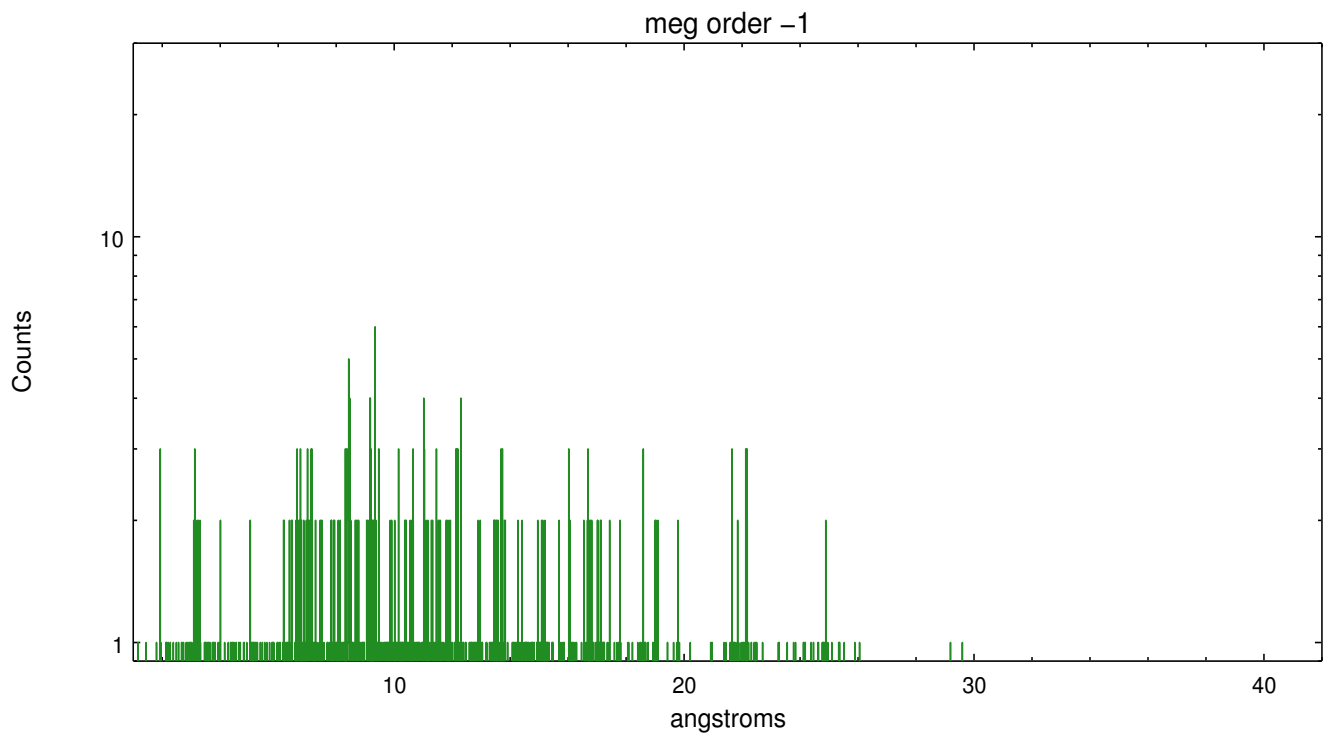
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	311	228	1913	4447	1695	221	246





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.3825

A.2 Comments

Source is extended and asymmetric. Standard software processing technique using the tool `tgdetect` did not give an accurate position for the zeroth order. The zeroth order position used in this processing was manually determined to be the brightest position in the nucleus. The newly determined zeroth order coordinates ($x=4131.125$, $y=4099.875$) have been placed in the `*src1a.fits` file, replacing the coordinates determined by `tgdetect`. Please note that rerunning `tgdetect` for analysis purposes will not give the same zeroth order position as that used in this processing.

===

Roll constraint met.

===

WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle.