

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 10816 - L2 Version 3
Chandra X-Ray Center

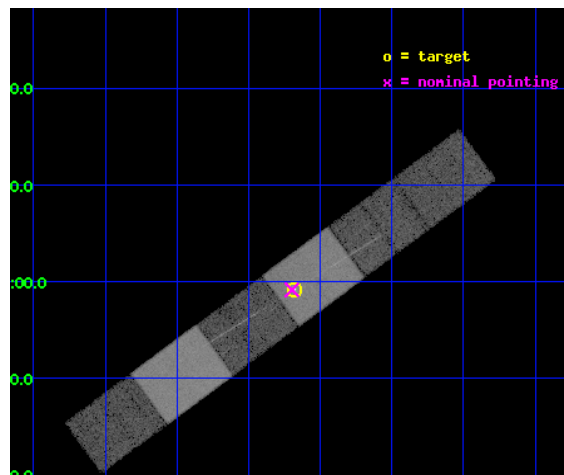
L2 Processing Date : May 31 2012

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1 Front

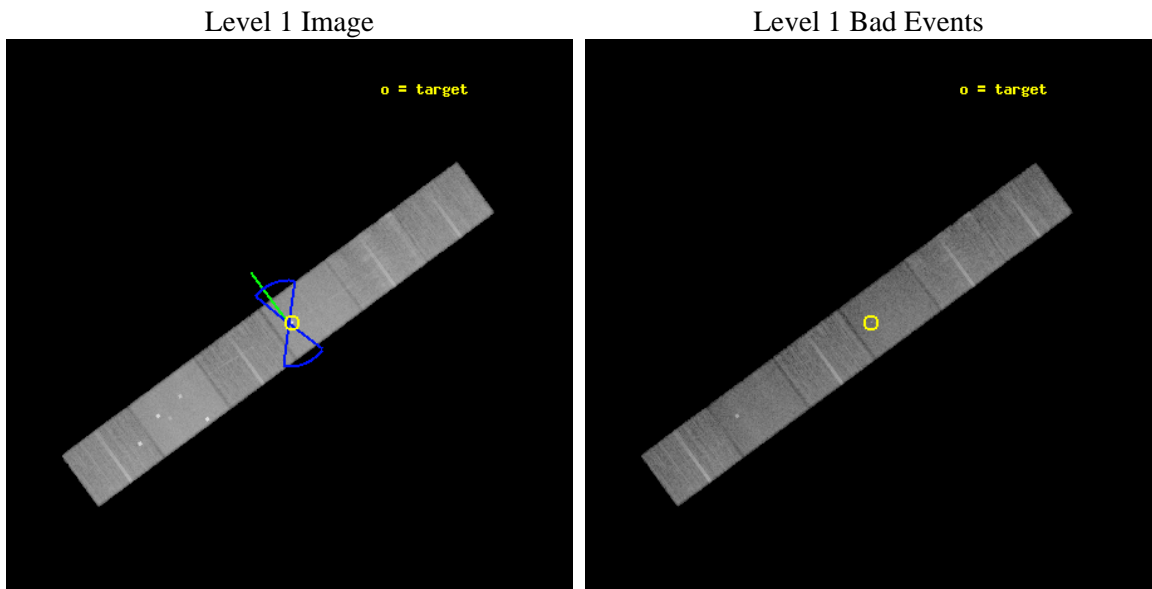
seq_num	701591	Sequence number
obs_id	10816	Observation id
title	NGC 1068: Photo-ionized gas in the nucleus, and ionization cone	Pr
observer	Prof Claude Canizares	Principal investigator
object	NGC 1068	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	40.669583	Observer's specified target RA [deg]
dec_targ	-0.013333	Observer's specified target Dec [deg]
ra_nom	40.674407532805	Nominal RA [deg]
dec_nom	-0.013721156354438	Nominal Dec [deg]
roll_nom	323.65663060549	Nominal Roll [deg]
revision	3	Processing version of data
ontime	16429.648630321	Sum of GTIs [s]
livetime	16164.295554498	Livetime [s]
ontime4	16429.689670324	Sum of GTIs [s]
ontime5	16429.607590318	Sum of GTIs [s]
ontime6	16429.566550314	Sum of GTIs [s]
ontime7	16429.648630321	Sum of GTIs [s]
ontime8	16429.525510311	Sum of GTIs [s]
ontime9	16429.484470308	Sum of GTIs [s]
l2events	223502	Number of level 2 events



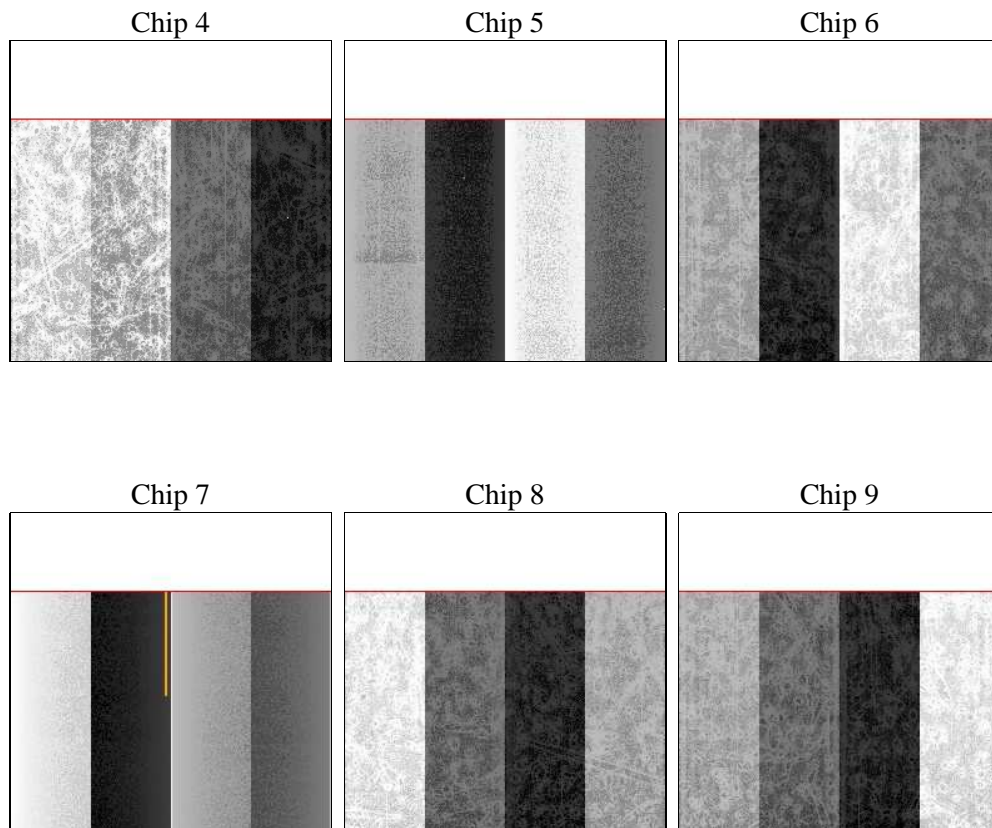
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	16759.327000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	16429.648630321	Sum of GTIs [s]
caldsver	4.4.9	 	ontime4	16429.689670324	Sum of GTIs [s]
date	2012-05-24T02:55:48	Date and time of file creation	ontime5	16429.607590318	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	16429.566550314	Sum of GTIs [s]
			ontime7	16429.648630321	Sum of GTIs [s]
			ontime8	16429.525510311	Sum of GTIs [s]
			ontime9	16429.484470308	Sum of GTIs [s]
			l1events	950116	Number of level 1 events

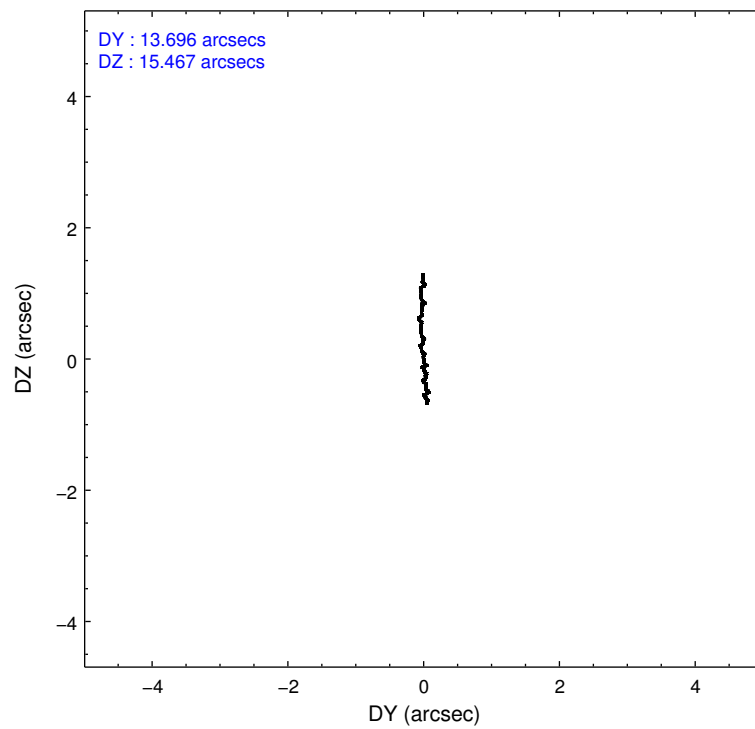
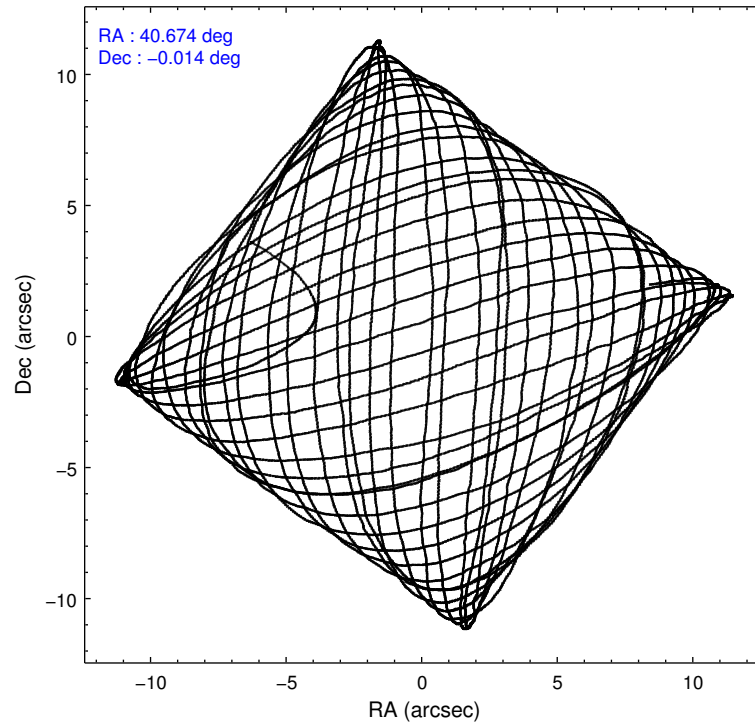
2.1.4 Events

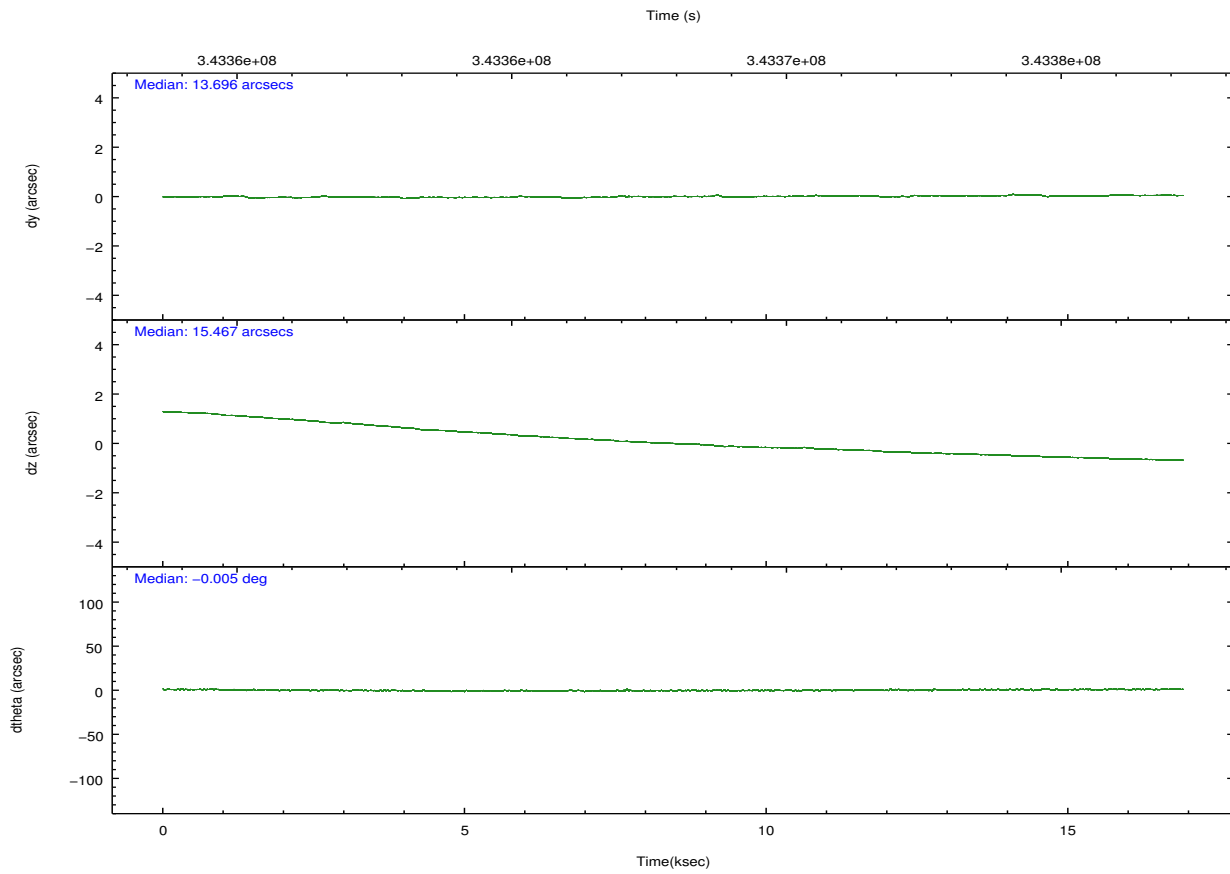
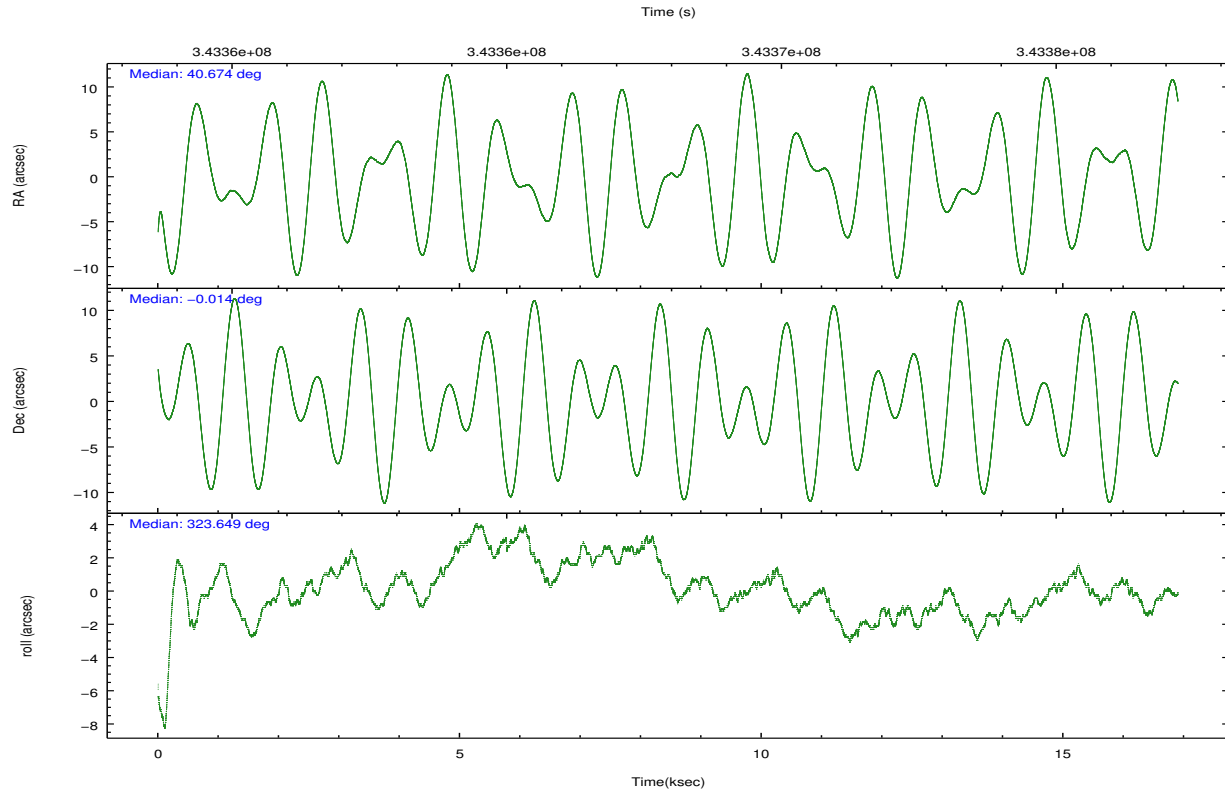
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	145392	206899	130248	179800	162220	125557	grade 0 events	11261	13648	7354	7724	12871	6936
rejected events	124121	107556	112955	101101	123481	108911		7%	6%	5%	4%	7%	5%
rejected %	85%	51%	86%	56%	76%	86%	grade 1 events	124	288	56	201	103	71
								0%	0%	0%	0%	0%	0%
							grade 2 events	3828	30682	3553	16316	8501	3323
								2%	14%	2%	9%	5%	2%
							grade 3 events	1741	3717	1590	7017	4021	1621
								1%	1%	1%	3%	2%	1%
							grade 4 events	1690	3489	1533	7226	3723	1585
								1%	1%	1%	4%	2%	1%
							grade 5 events	5686	14627	5949	16592	7936	6392
								3%	7%	4%	9%	4%	5%
							grade 6 events	2753	47819	3268	40429	9625	3183
								1%	23%	2%	22%	5%	2%
							grade 7 events	118309	92629	106945	84295	115440	102446
								81%	44%	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	40.67440753280515	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-0.011074	-0.01372115635443752	Subarray start row	1	1
[deg] Pointing Roll	323.499996	323.6566306054949	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)	343359637.184000	343358383.99756			
Observation start date	2008-11-18T01:39:32	2008-11-18T01:19:43			
[s] Observation end time (MET)	343376396.184000	343376607.47346			
Observation end date	2008-11-18T06:18:51	2008-11-18T06:23:27			
Read mode	TIMED	TIMED			

2.3 Aspect





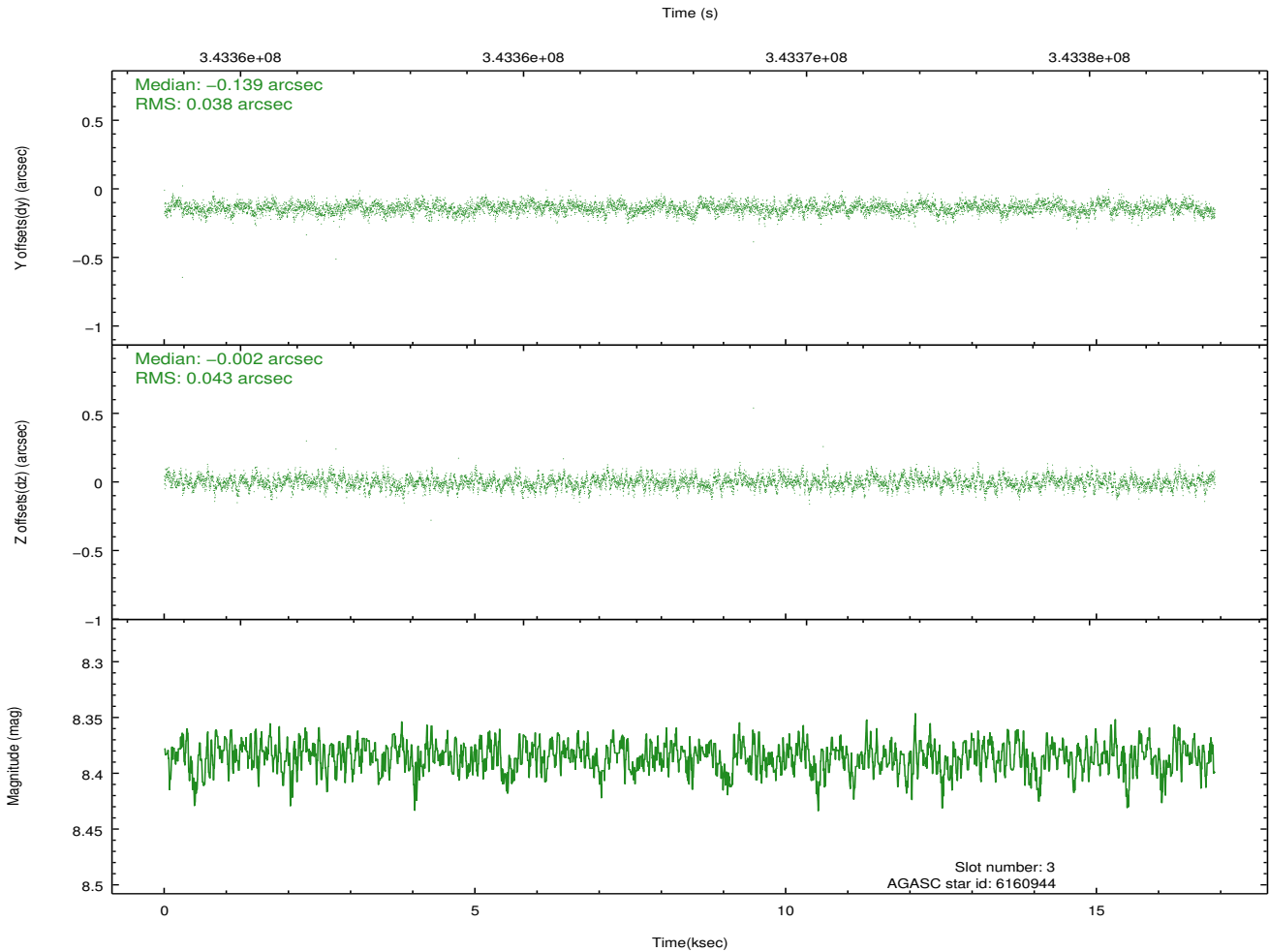
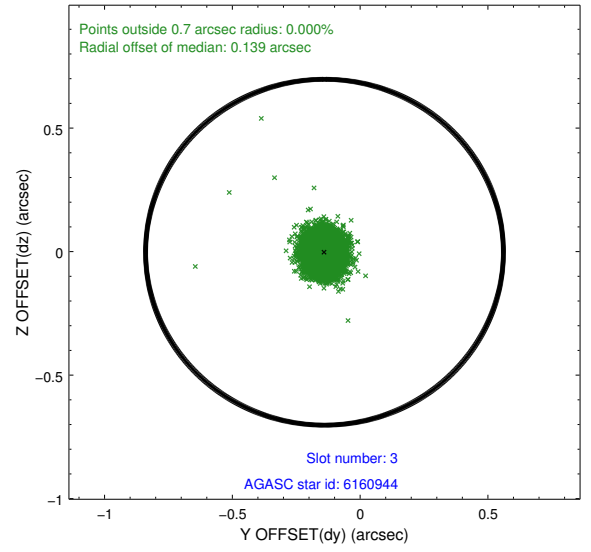
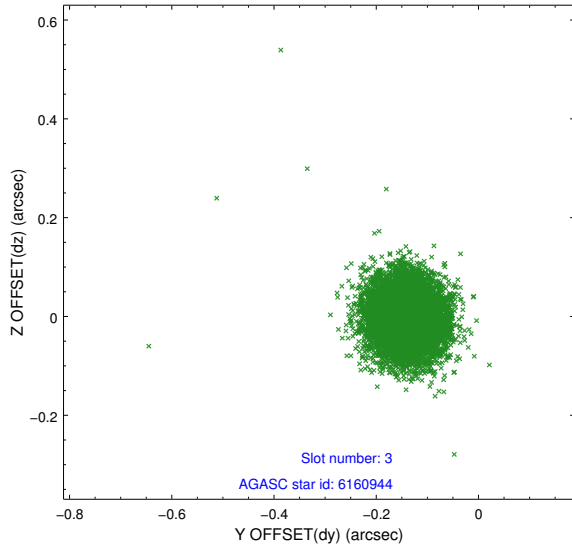
Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.88	4123	-0.089	-0.036	0.014	0.024	0.000000	0.000000	-766.47	-1806.15
1	FID	ACIS-S-4	6.96	4123	0.170	0.053	0.008	0.015	0.000000	0.000000	2146.93	102.16
2	FID	ACIS-S-5	7.00	4123	-0.112	-0.008	0.010	0.019	0.000000	0.000000	-1819.03	96.02
3	GUIDE	6160944	8.39	8242	-0.139	-0.002	0.060	0.098	40.821496	0.087247	294.03	657.77
4	GUIDE	6169408	8.95	8242	0.004	0.038	0.081	0.128	40.937839	0.210390	366.92	1263.10
5	GUIDE	615907528	7.77	8245	-0.073	-0.095	0.051	0.084	41.252710	-0.191636	2139.08	774.38
6	GUIDE	615909768	9.07	8240	0.141	0.108	0.081	0.131	40.904100	-0.344520	1458.12	-414.86
7	GUIDE	615913552	8.70	8239	0.068	-0.049	0.064	0.105	41.235237	-0.003650	1686.31	1280.72

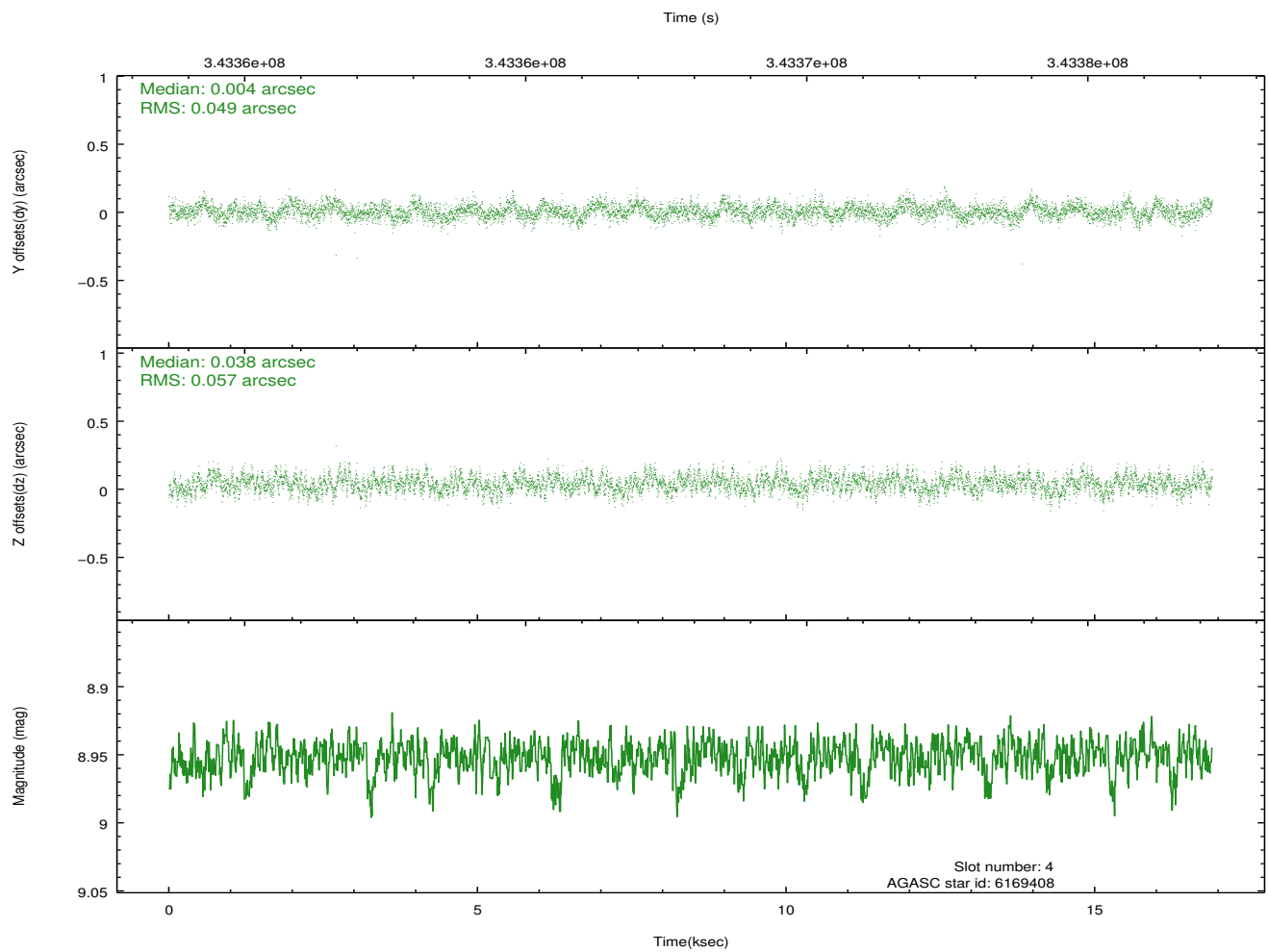
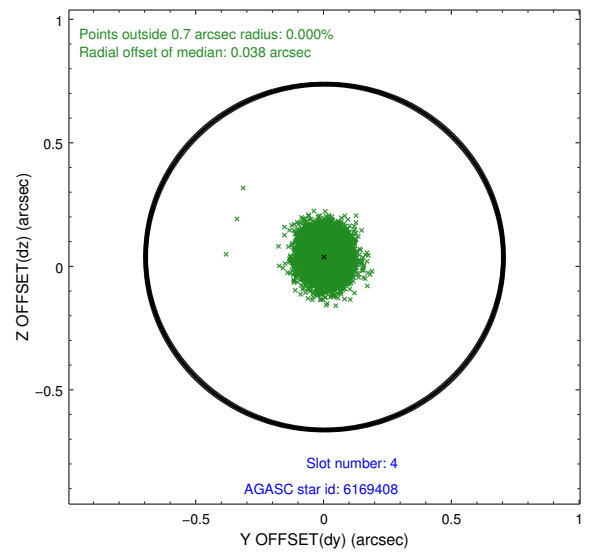
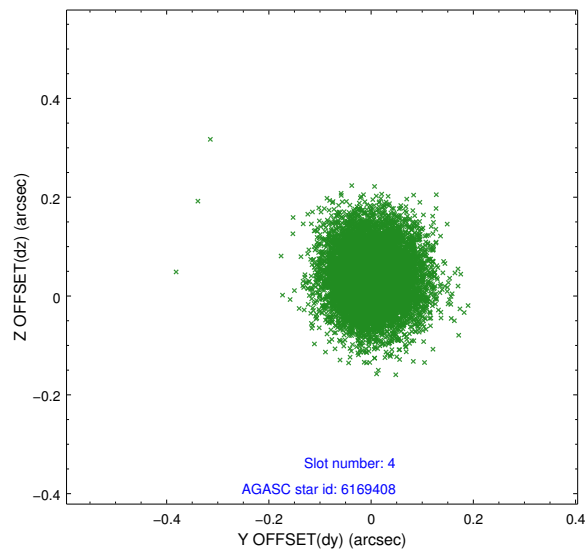
∞

2.4 Star Slots

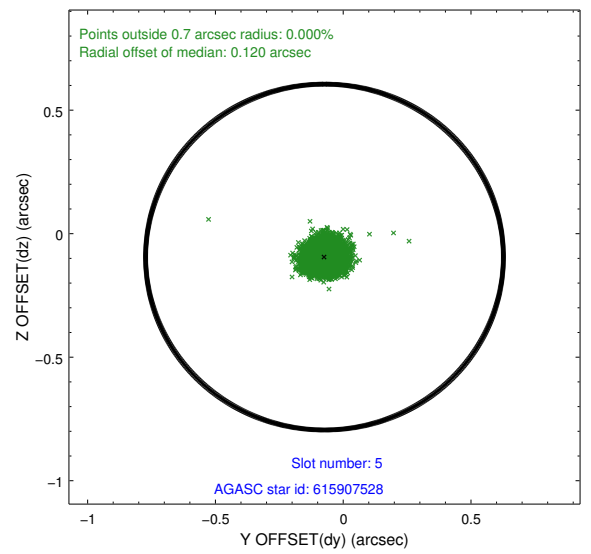
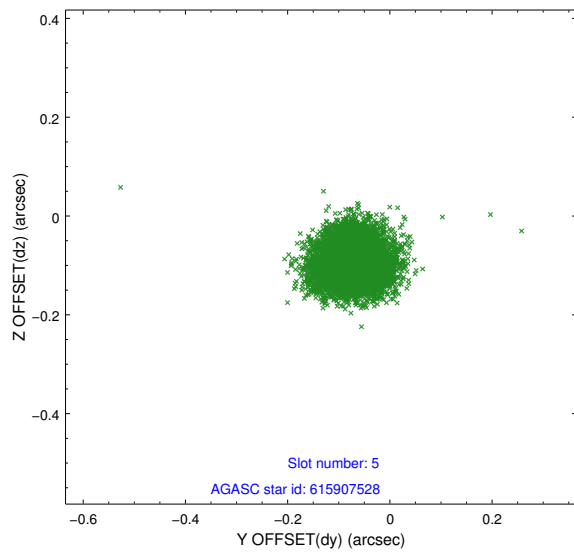
2.4.1 Slot 3



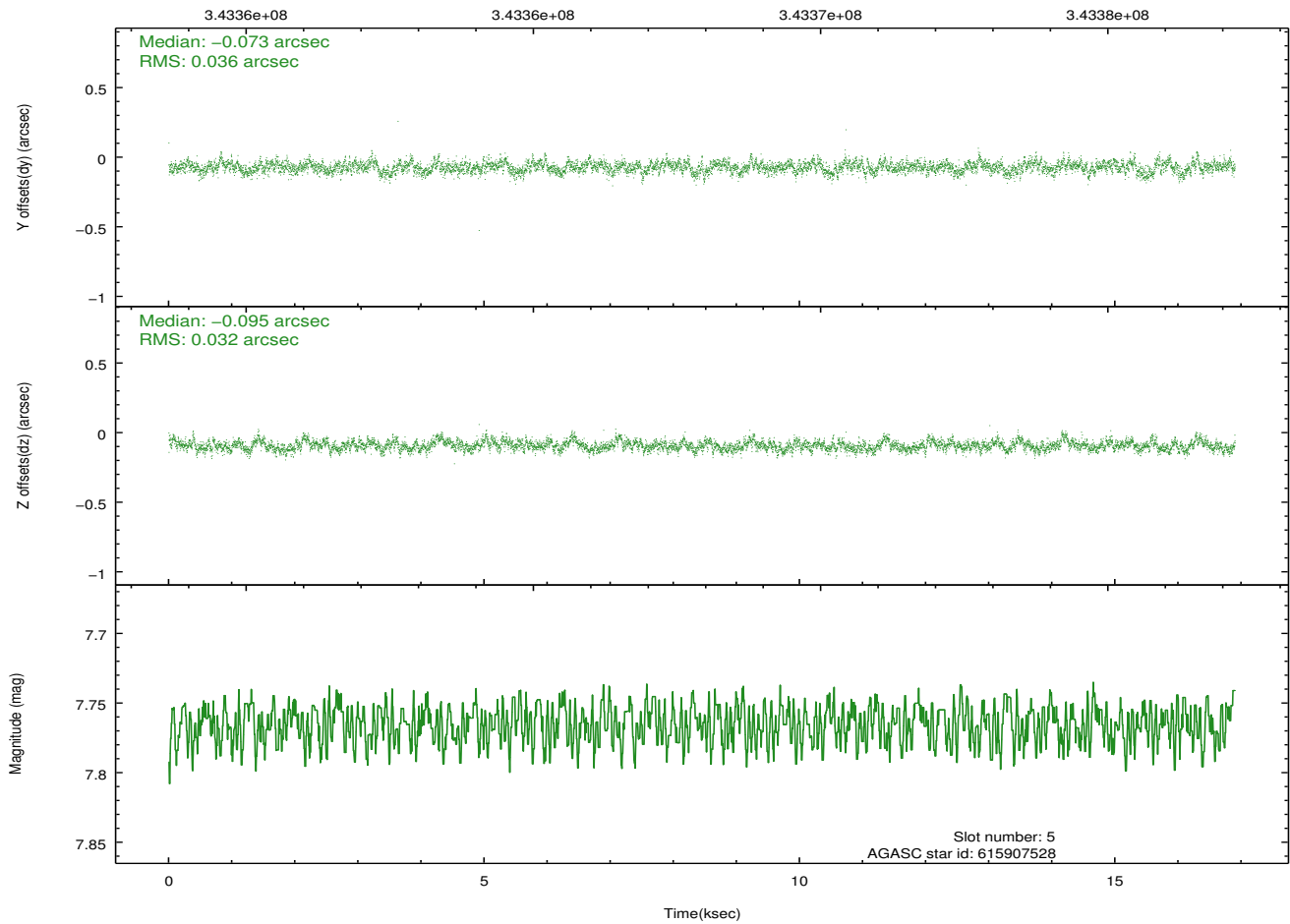
2.4.2 Slot 4



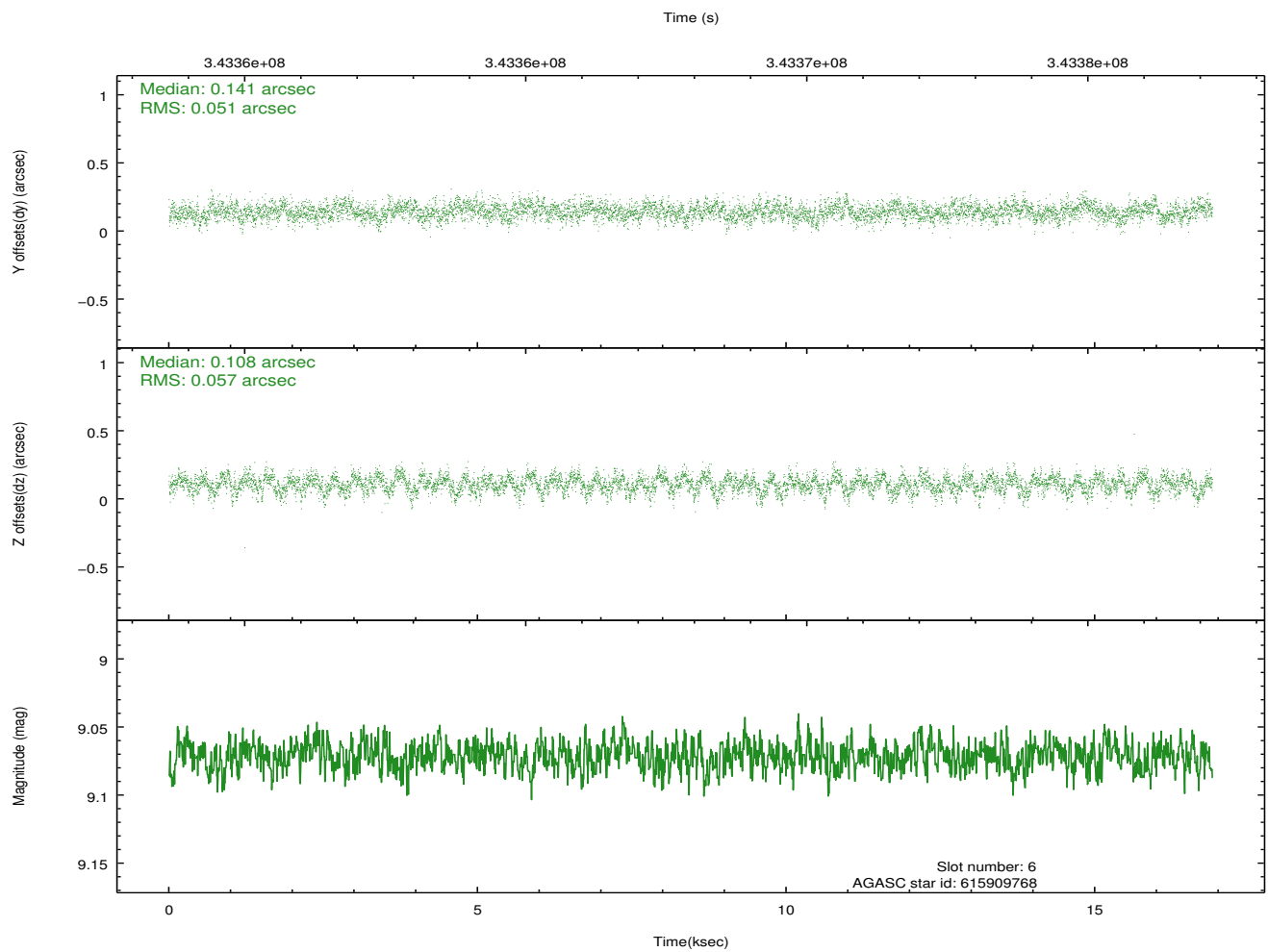
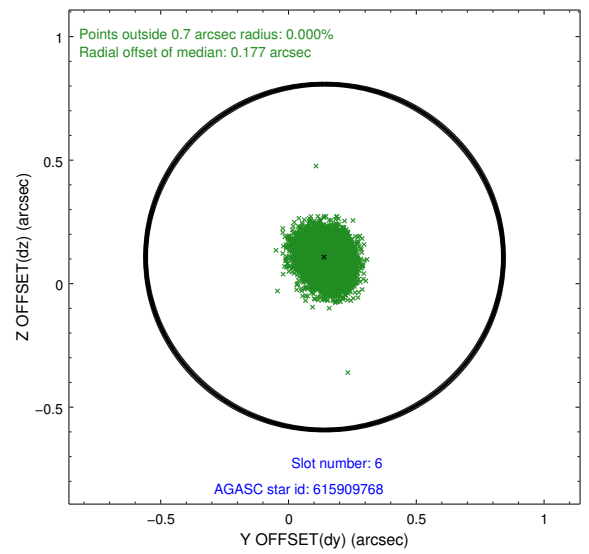
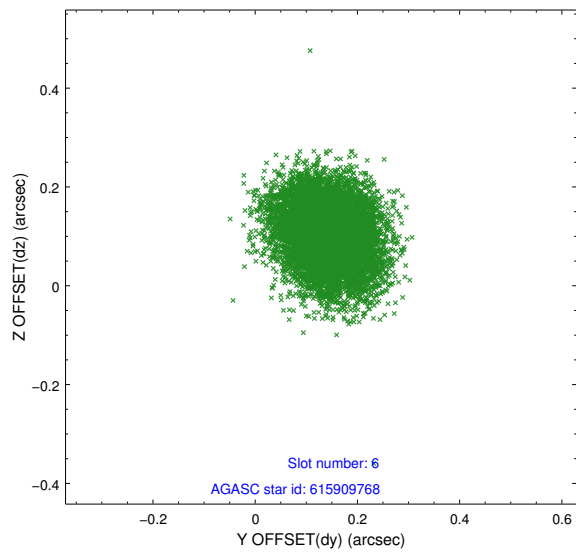
2.4.3 Slot 5



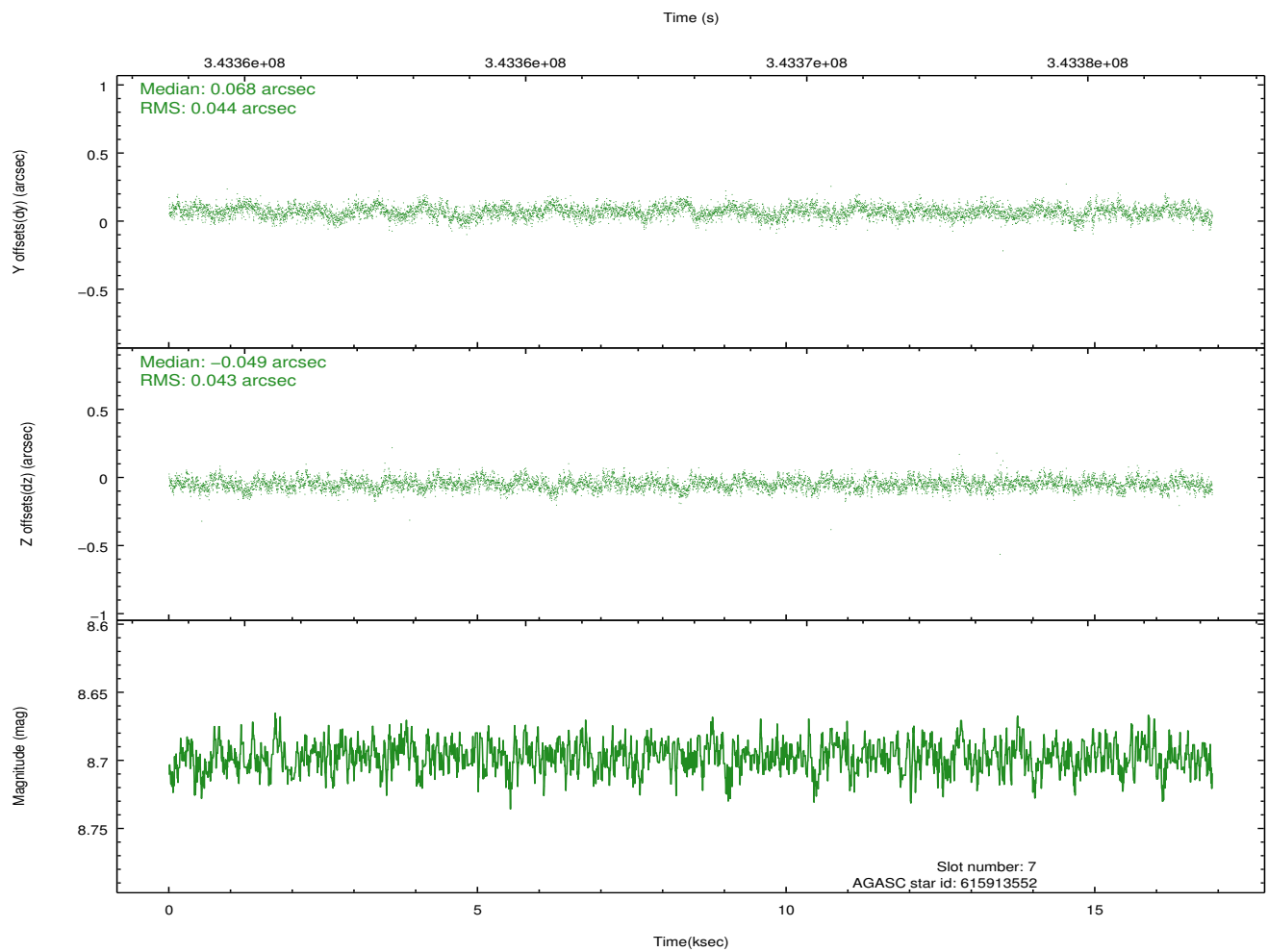
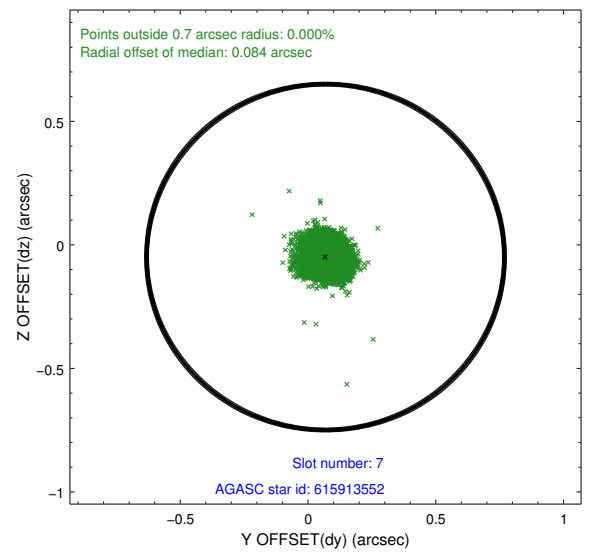
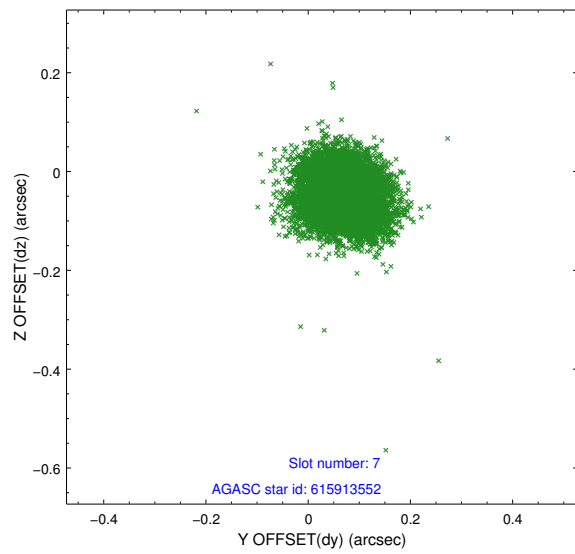
Time (s)



2.4.4 Slot 6

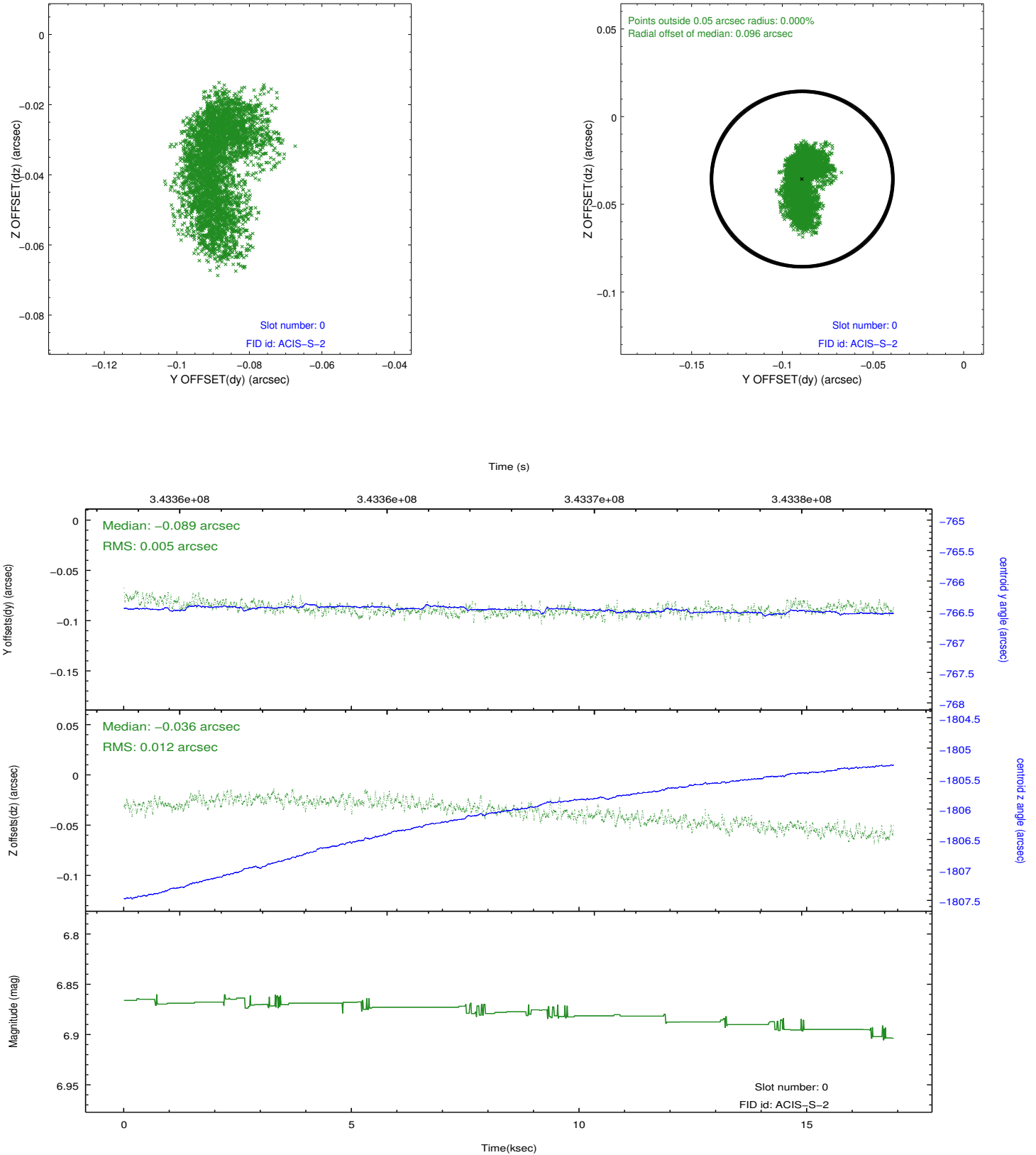


2.4.5 Slot 7

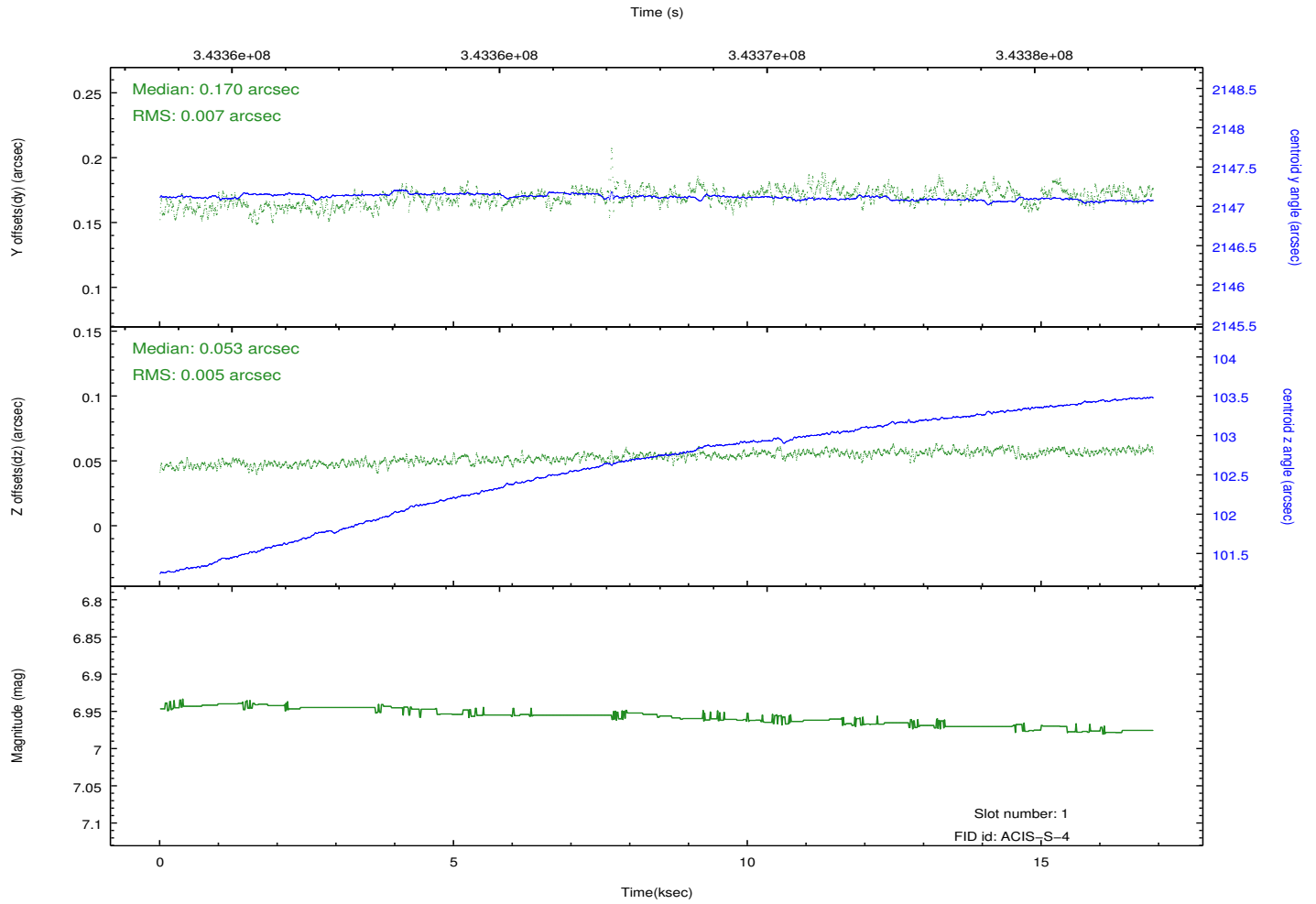
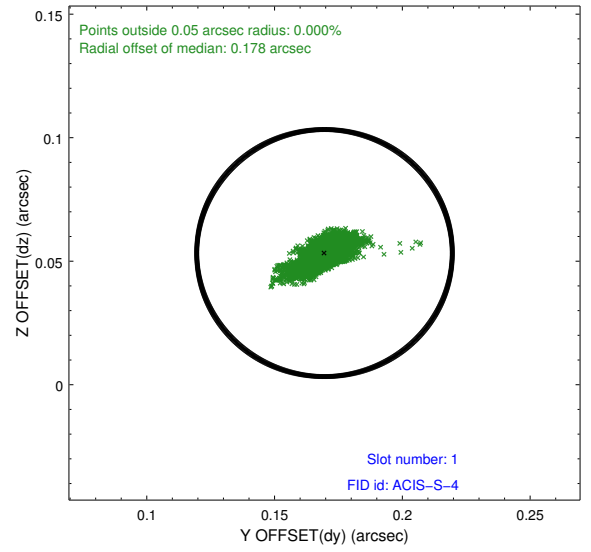
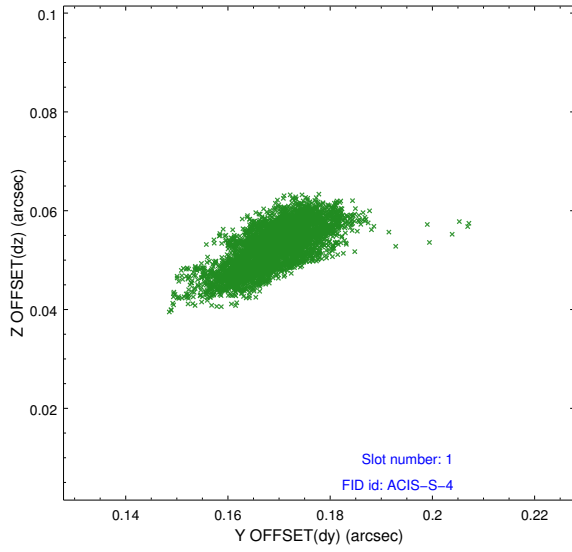


2.5 FID Slots

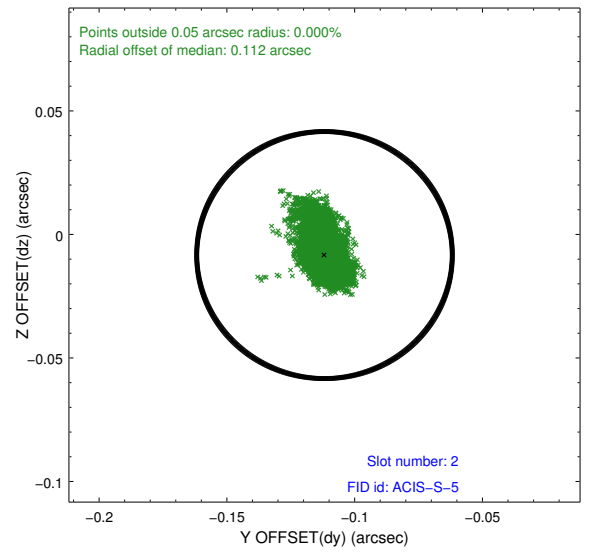
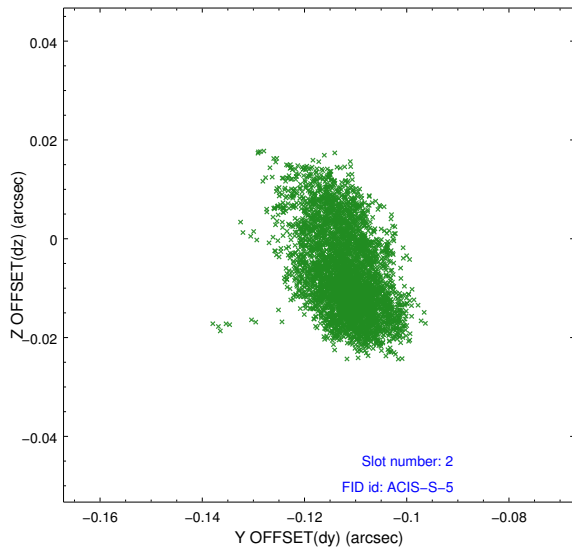
2.5.1 Slot 0



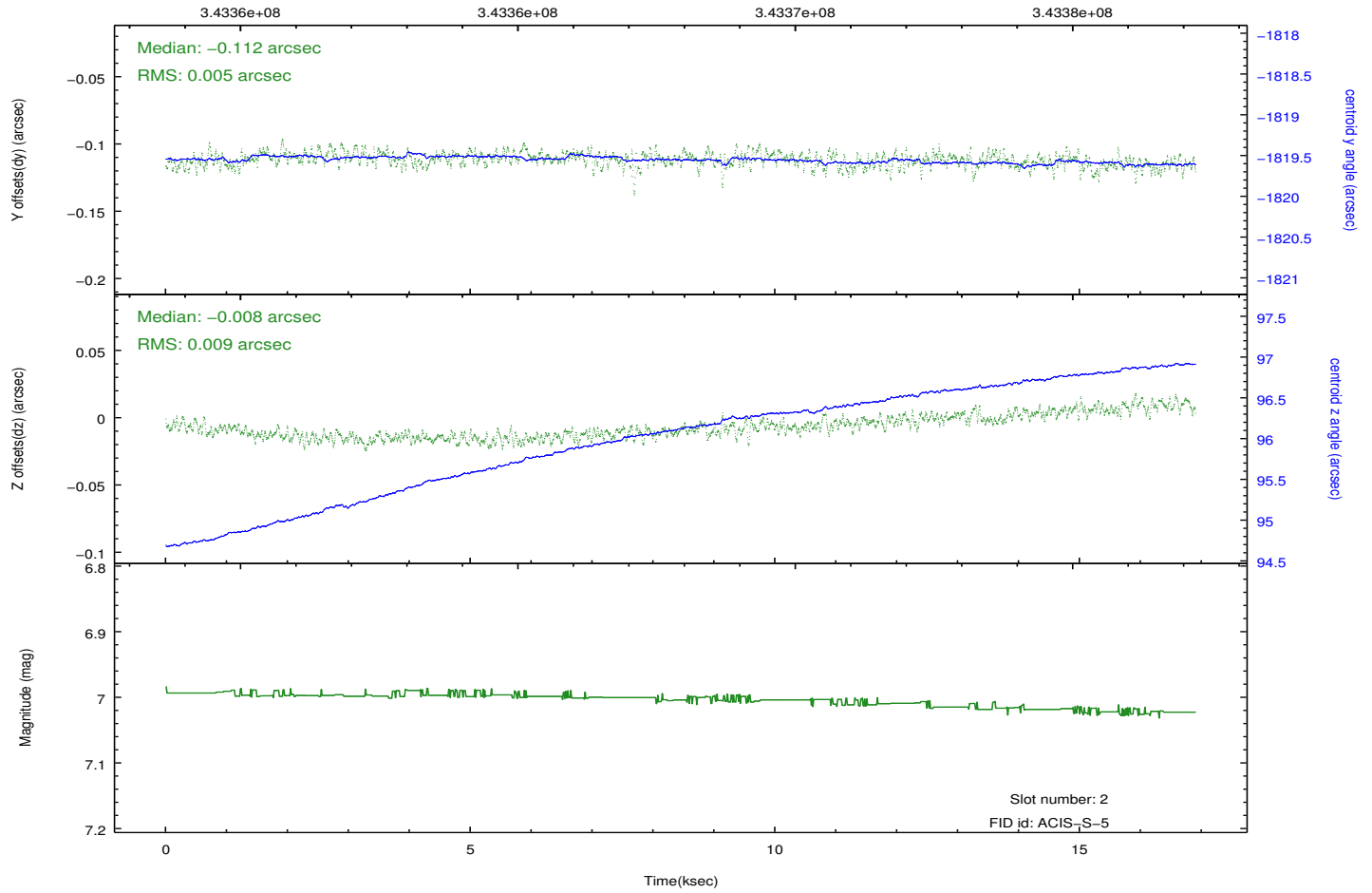
2.5.2 Slot 1



2.5.3 Slot 2



Time (s)

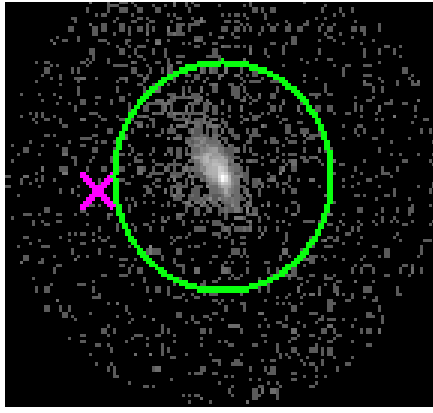


3 Gratings

3.1 HEG Arm



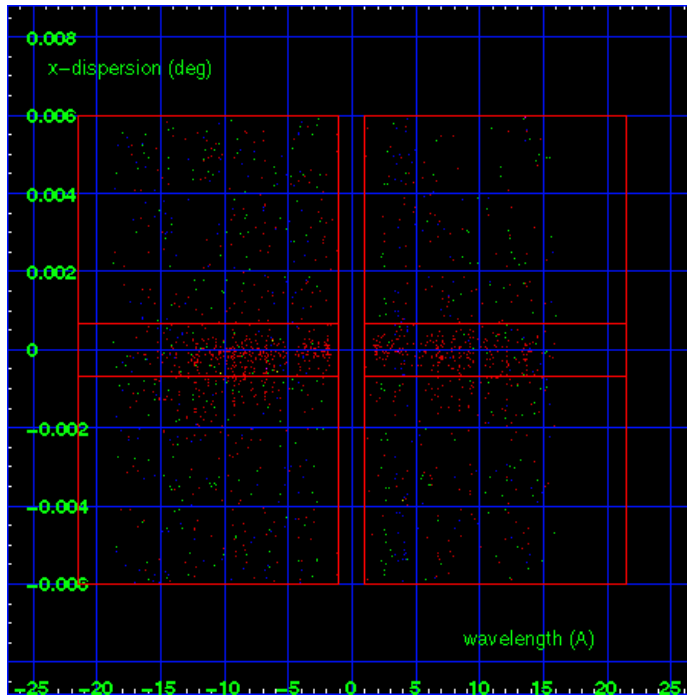
HEG Order Sort 123



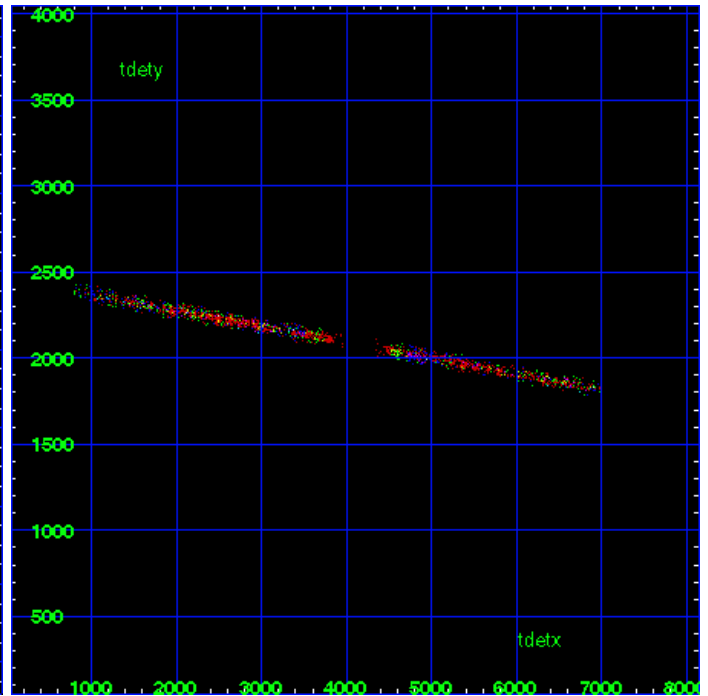
HEG Zero Order



HEG Order Sort ALL

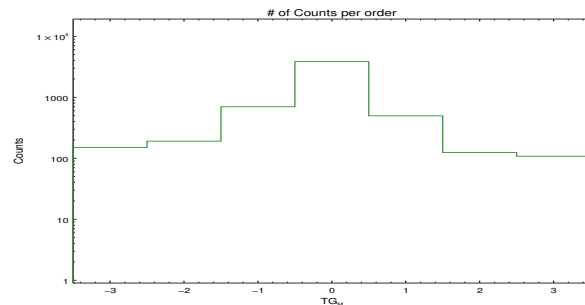


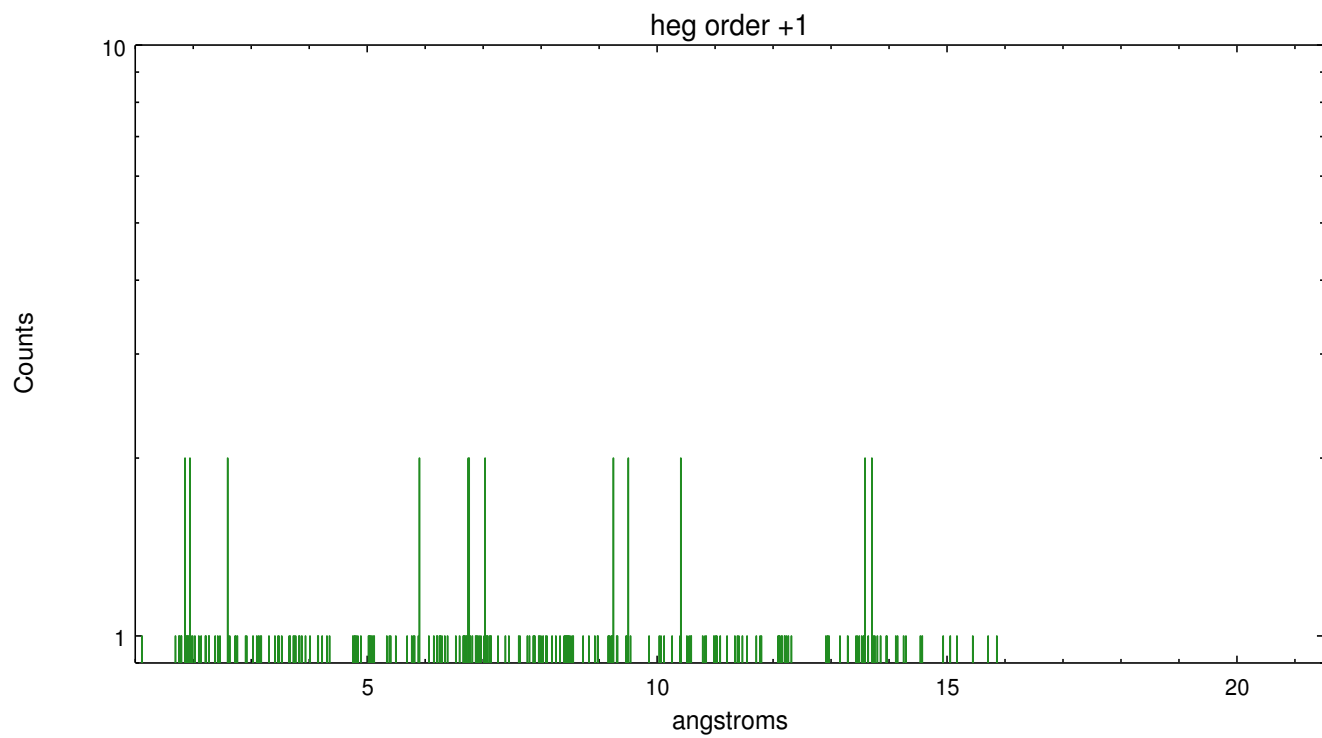
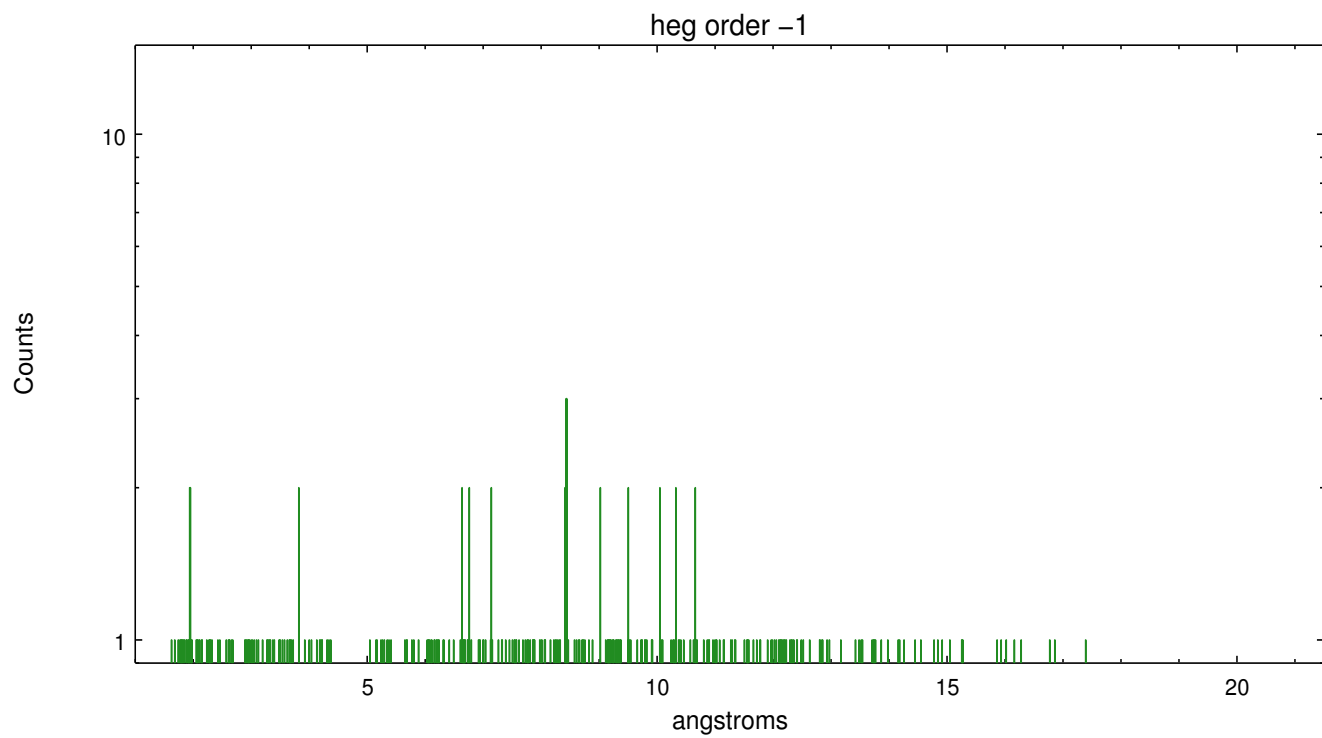
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	151	191	700	3839	497	124	108

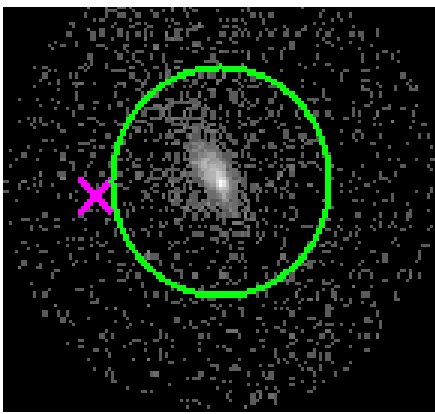




3.2 MEG Arm



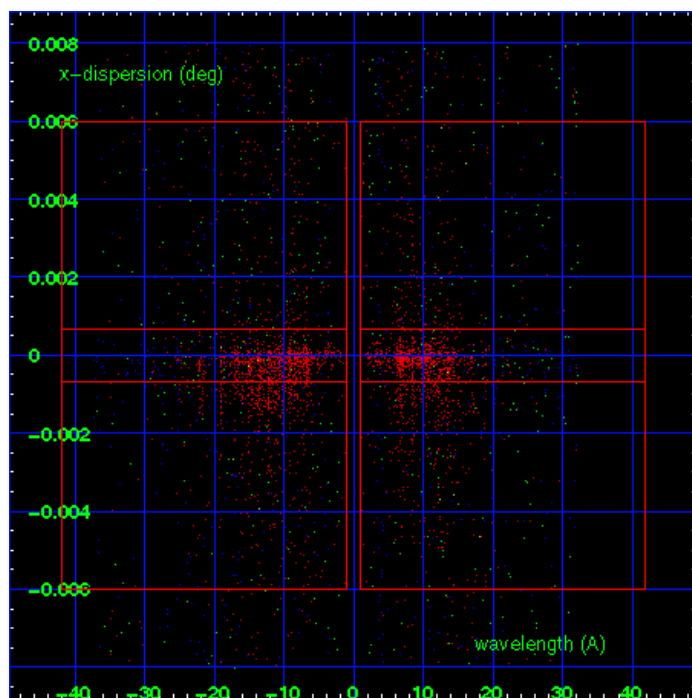
MEG Order Sort 123



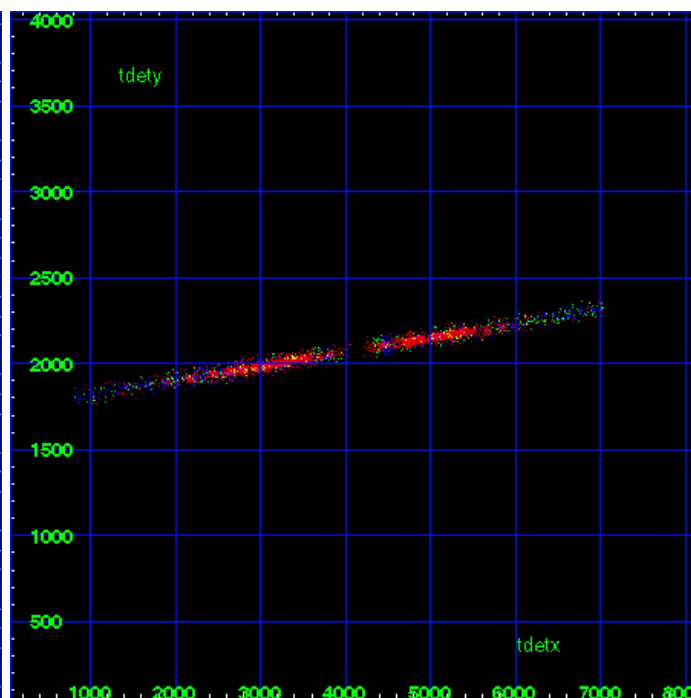
MEG Zero Order



MEG Order Sort ALL

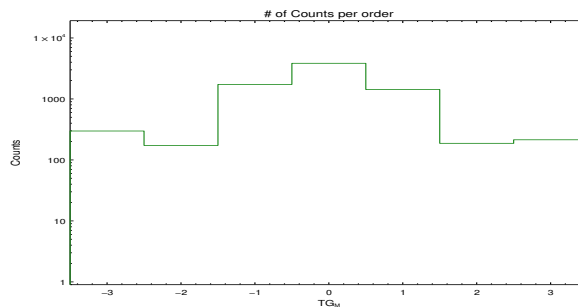


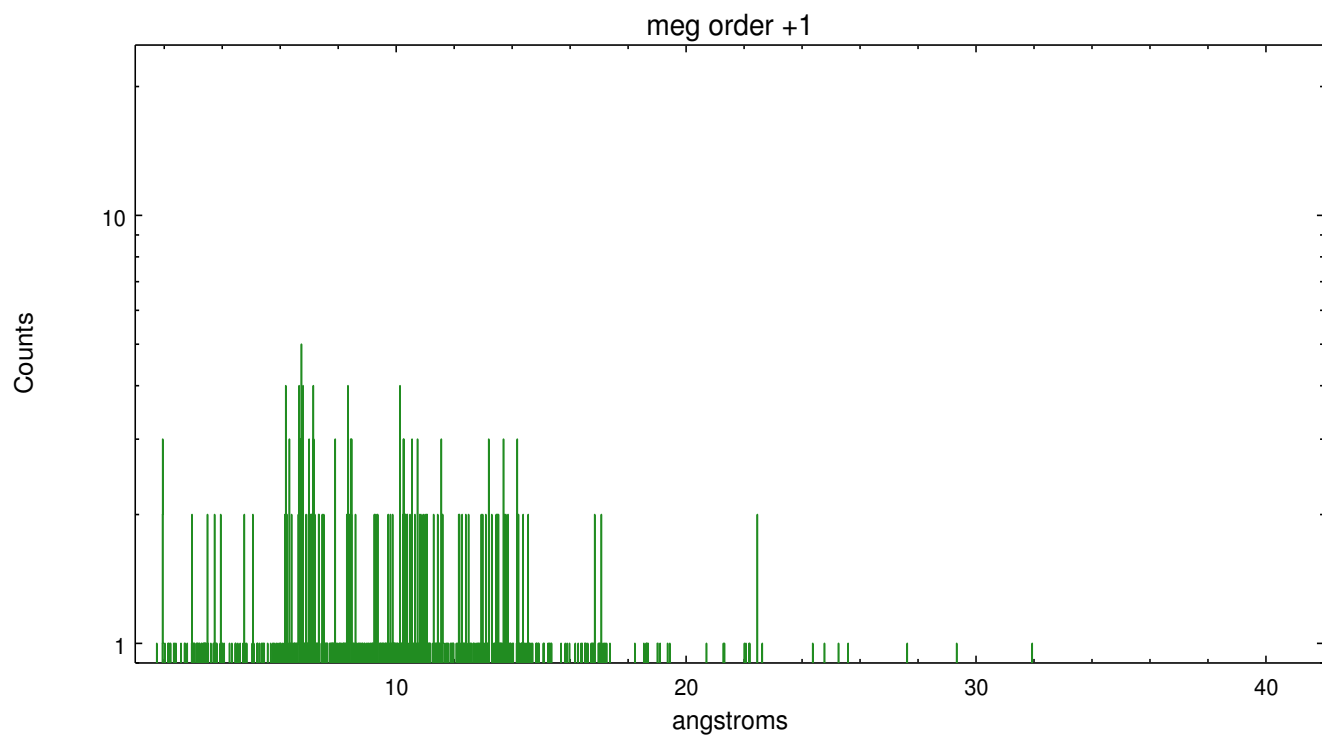
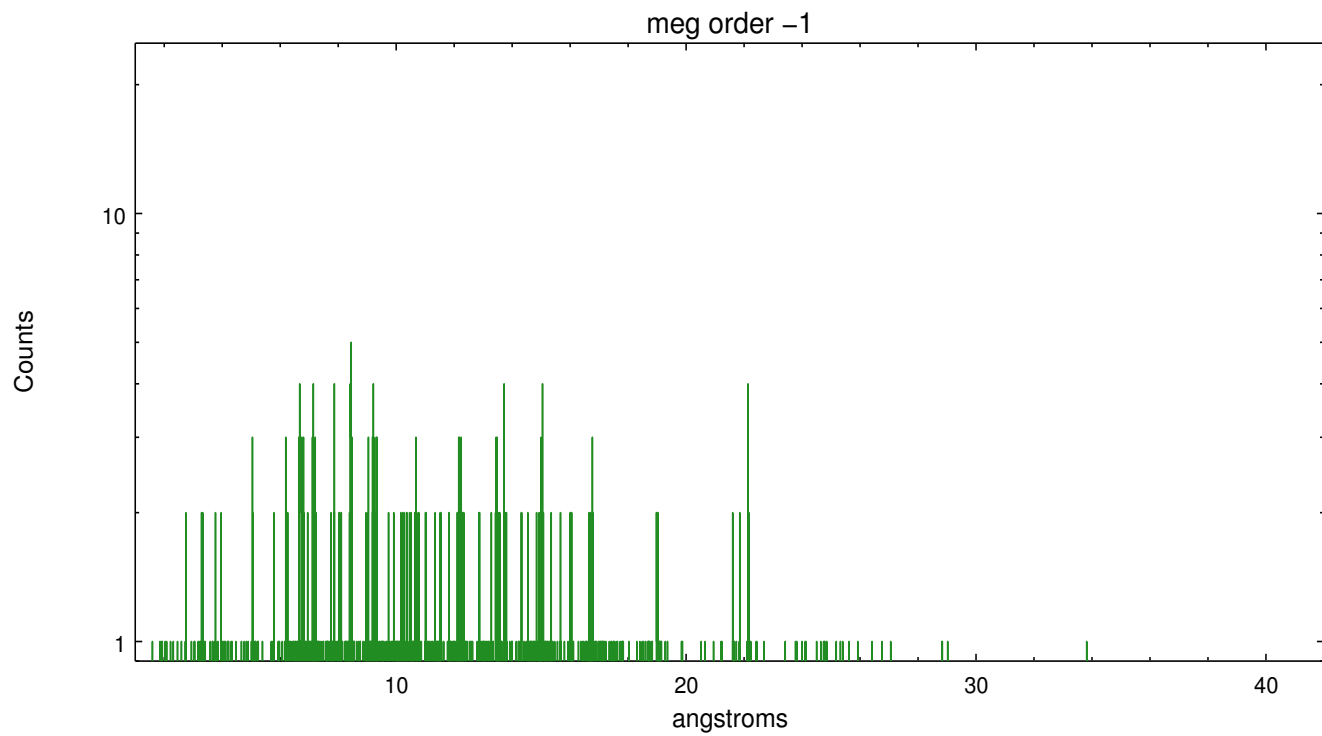
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	298	173	1729	3839	1428	187	214





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	16.43

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 ($x=4131.375$, $y=4099.625$) 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.

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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.