

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 241 - L2 Version 4
Chandra X-Ray Center

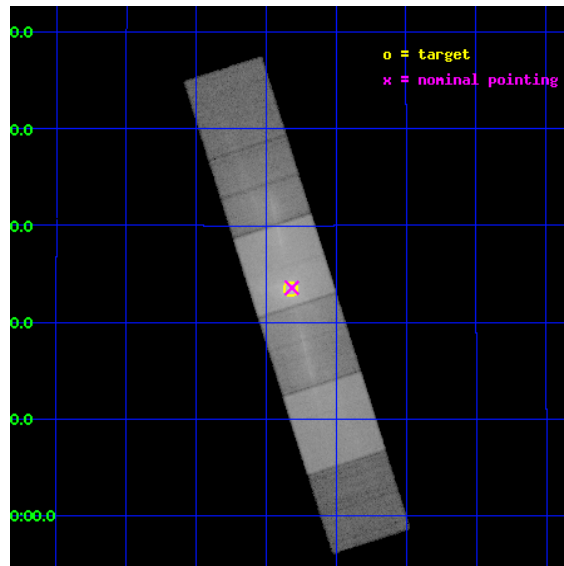
L2 Processing Date : Aug 30 2012

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1 Front

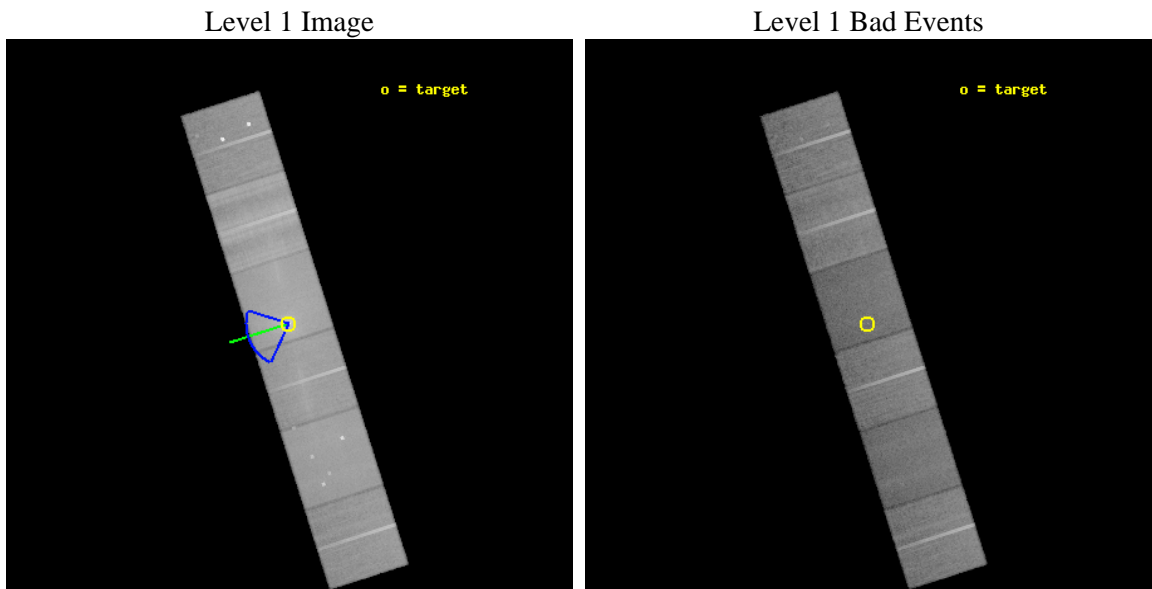
seq_num	600001	Sequence number
obs_id	241	Observation id
title	THE DETAILED X-RAY SPECTRA OF ELLIPTICAL GALAXIES	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	NGC 4486	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.705417	Observer's specified target RA [deg]
dec_targ	12.391111	Observer's specified target Dec [deg]
ra_nom	187.7040715861	Nominal RA [deg]
dec_nom	12.392817336928	Nominal Dec [deg]
roll_nom	252.28820642061	Nominal Roll [deg]
revision	4	Processing version of data
ontime	38530.4334272	Sum of GTIs [s]
livetime	38042.537878903	Livetime [s]
ontime4	38527.233487055	Sum of GTIs [s]
ontime5	38530.392387196	Sum of GTIs [s]
ontime6	38527.110396981	Sum of GTIs [s]
ontime7	38530.4334272	Sum of GTIs [s]
ontime8	38527.069356978	Sum of GTIs [s]
ontime9	38530.269267201	Sum of GTIs [s]
l2events	949939	Number of level 2 events



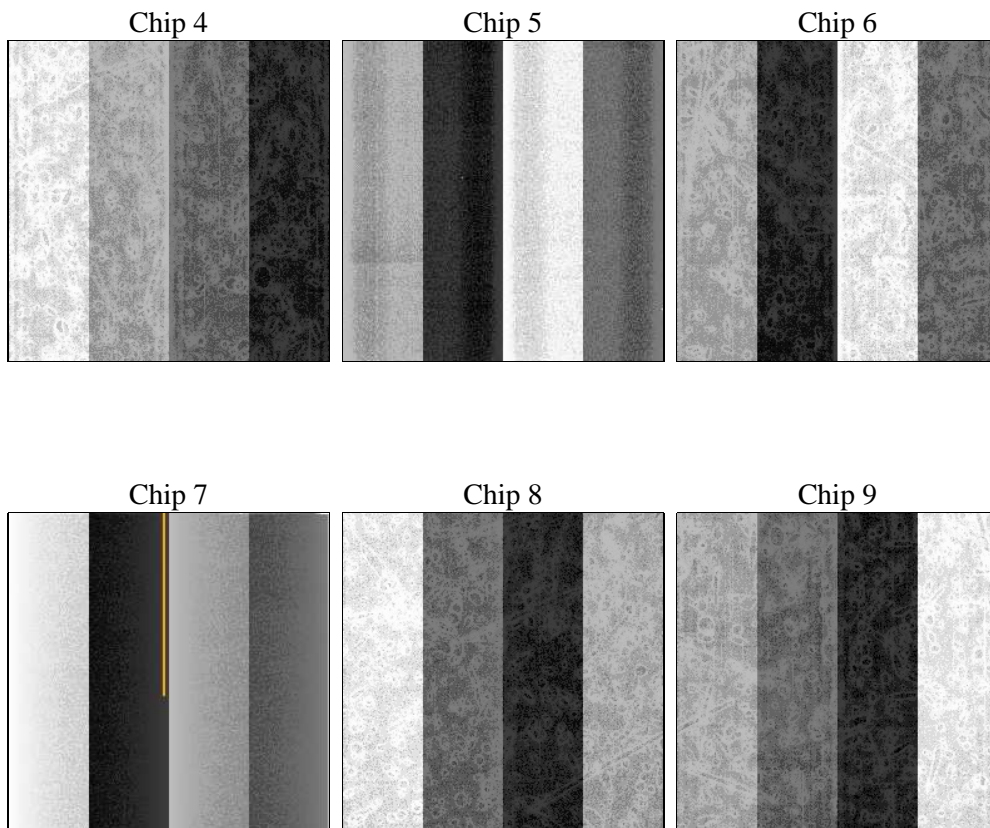
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	38530.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	38530.4334272	Sum of GTIs [s]
caldbver	4.5.1.1	 	ontime4	38527.233487055	Sum of GTIs [s]
date	2012-08-30T19:03:57	Date and time of file creation	ontime5	38530.392387196	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	38527.110396981	Sum of GTIs [s]
			ontime7	38530.4334272	Sum of GTIs [s]
			ontime8	38527.069356978	Sum of GTIs [s]
			ontime9	38530.269267201	Sum of GTIs [s]
			l1events	2383583	Number of level 1 events

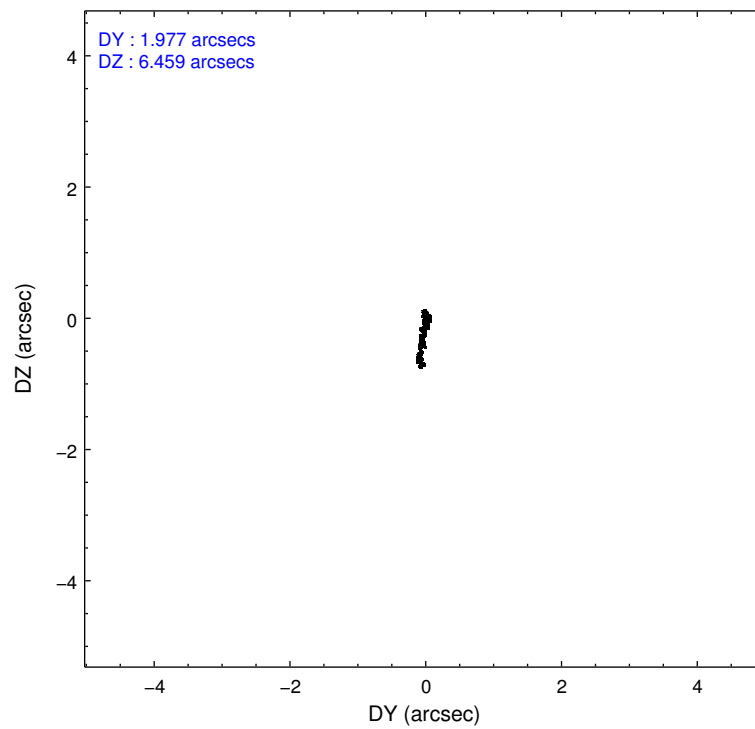
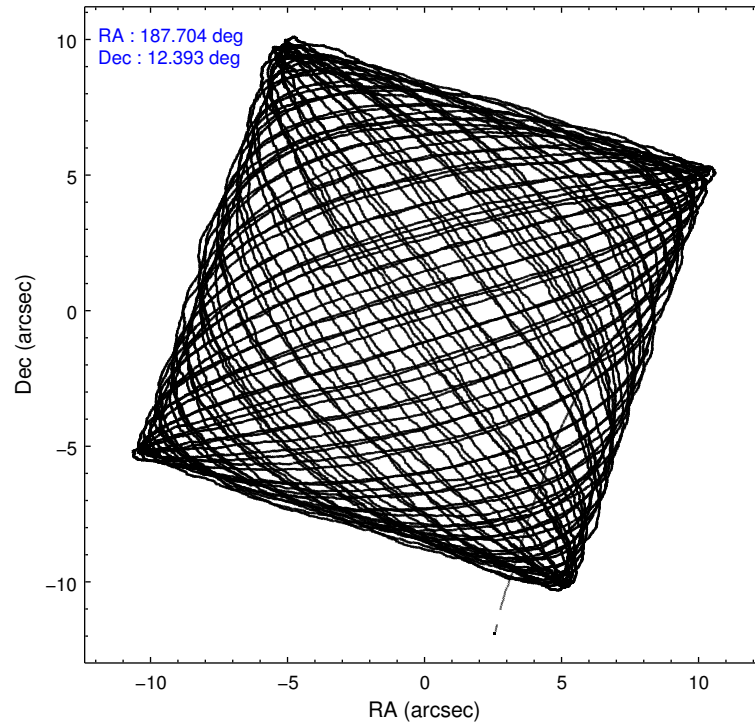
2.1.4 Events

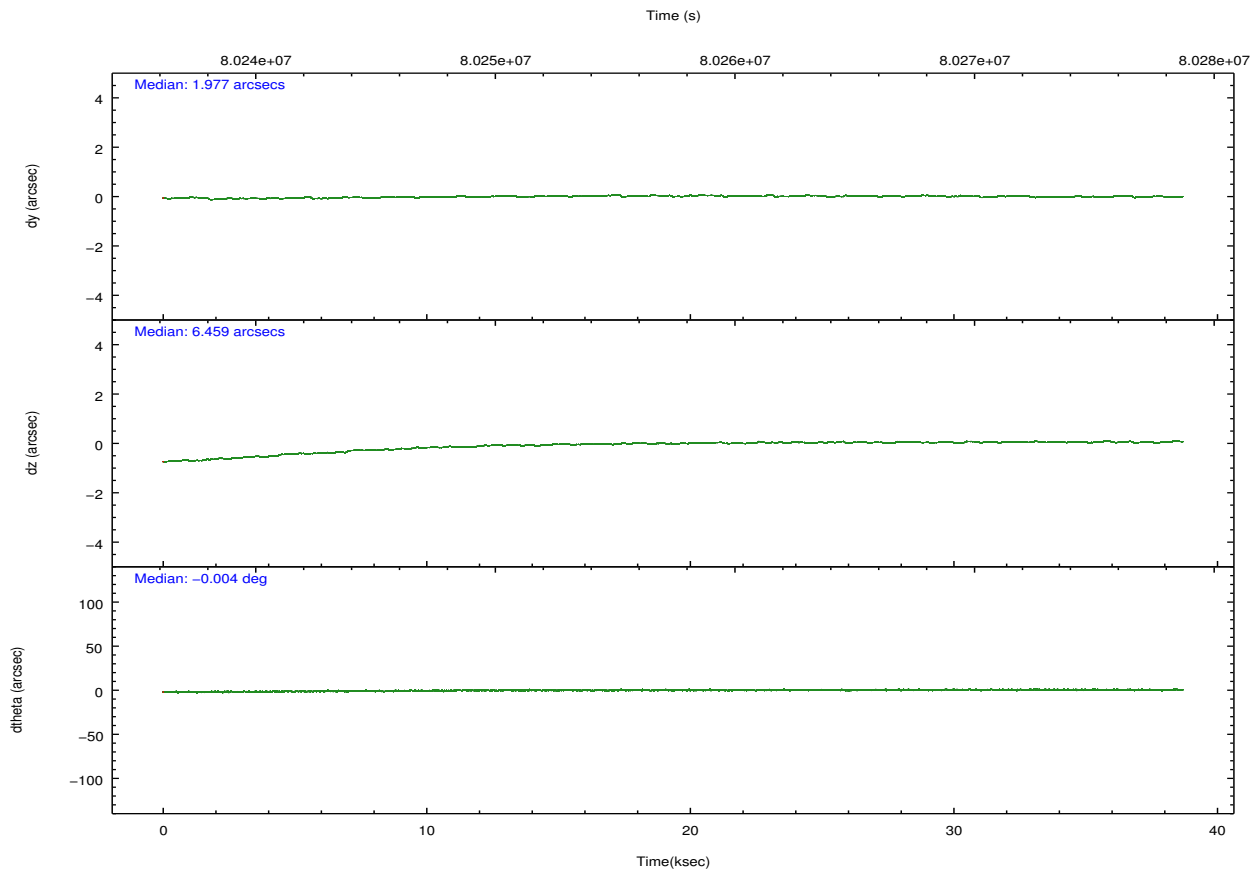
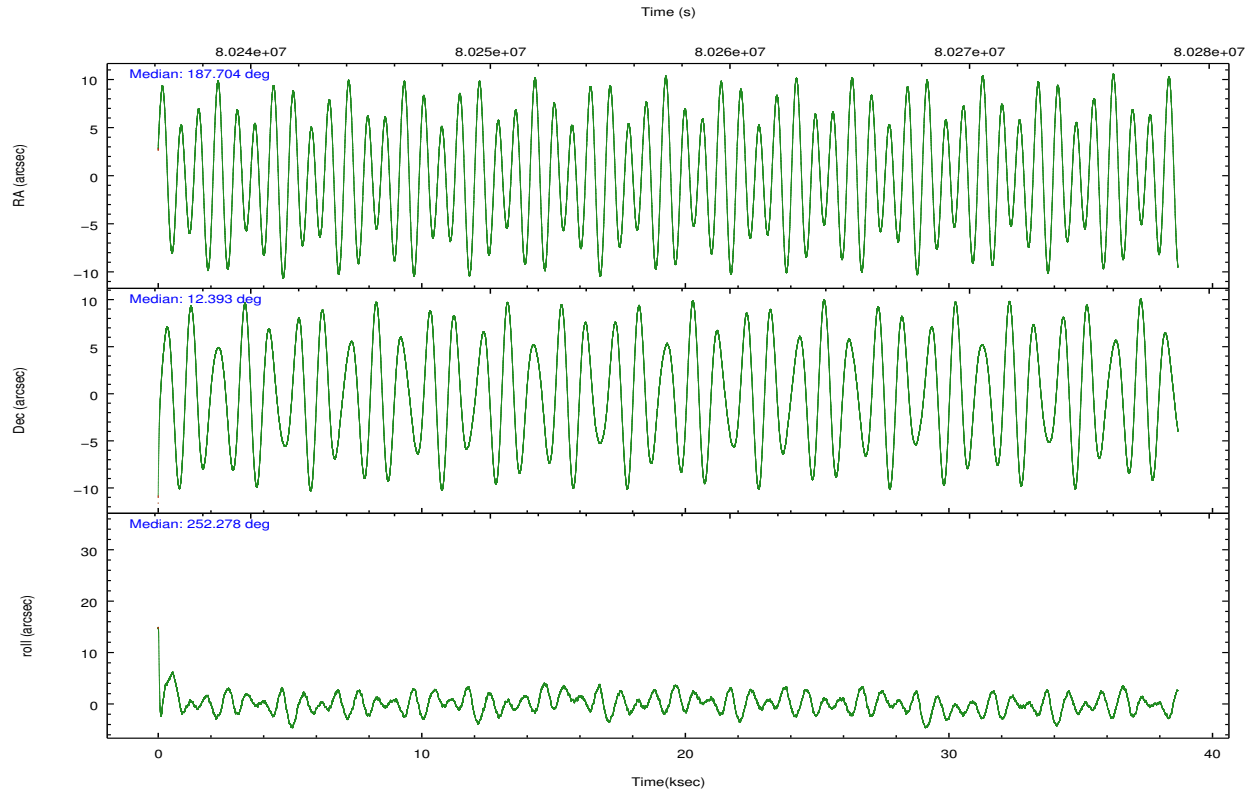
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	297010	395249	387966	514541	487041	301776	grade 0 events	35947	49091	119196	74190	112877	59970
rejected events	235175	156779	224845	149302	251772	214591		12%	12%	30%	14%	23%	19%
rejected %	79%	39%	57%	29%	51%	71%	grade 1 events	240	468	482	341	576	406
								0%	0%	0%	0%	0%	0%
							grade 2 events	12592	70938	20552	86917	35186	10233
								4%	17%	5%	16%	7%	3%
							grade 3 events	3378	13941	6920	39691	24023	3765
								1%	3%	1%	7%	4%	1%
							grade 4 events	3558	13986	6767	39275	21836	6171
								1%	3%	1%	7%	4%	2%
							grade 5 events	7202	23079	8581	26742	12258	8565
								2%	5%	2%	5%	2%	2%
							grade 6 events	6367	90563	9703	125226	41395	7064
								2%	22%	2%	24%	8%	2%
							grade 7 events	227726	133183	215765	122159	238890	205602
								76%	33%	55%	23%	49%	68%

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	187.697955	187.7040715860987	Subarray requested	NONE	NONE
[deg] Pointing Dec	12.419551	12.39281733692752	Alternating exposures requested	N	N
[deg] Pointing Roll	252.132893	252.2882064206149	[s] Primary exposure time	0.000000	3.2
[deg] Roll angle	246.000000	246.000000			
[deg] Roll tolerance	40.000000	40.000000			
Roll constraint allows 180D rotation	N	N			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
[s] Observation start time (MET)	80238230.184000	80237152.38038801			
Observation start date	2000-07-17T16:22:46	2000-07-17T16:05:52			
[s] Observation end time (MET)	80276760.184000	80277688.569391			
Observation end date	2000-07-18T03:04:56	2000-07-18T03:21:28			
Read mode	TIMED	TIMED			

2.3 Aspect



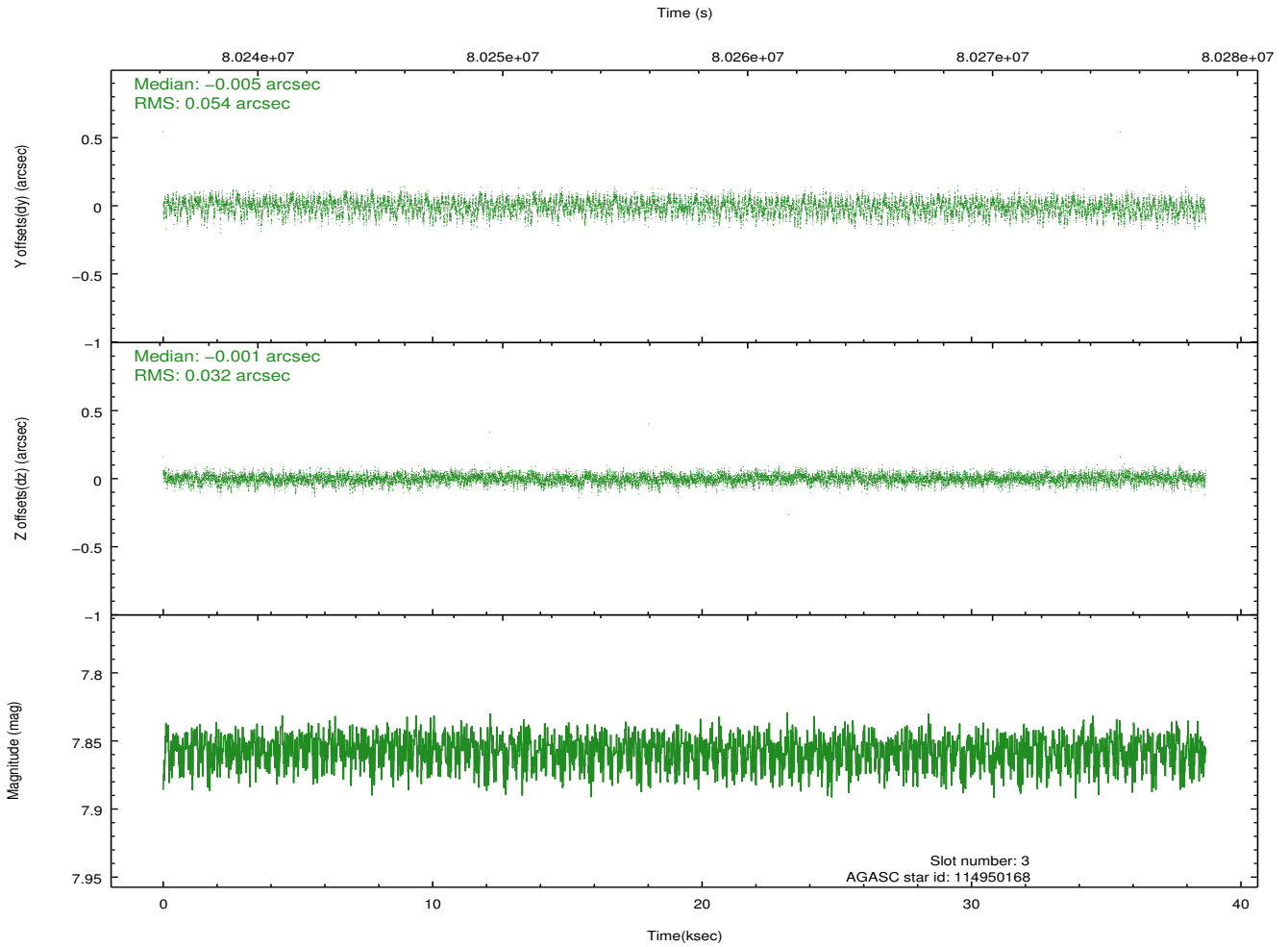
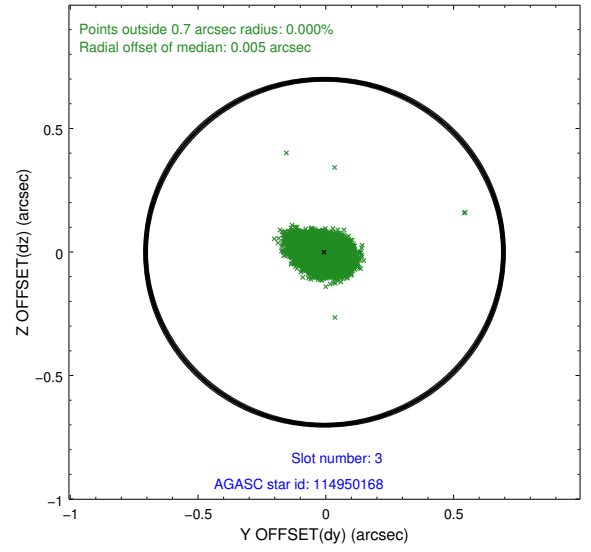
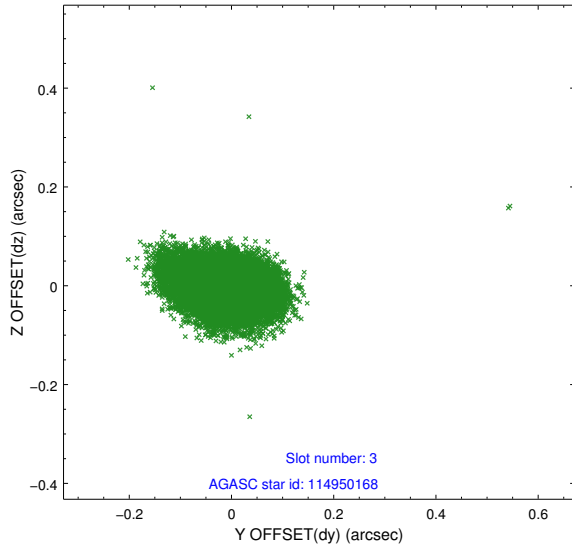


Slot Statistics

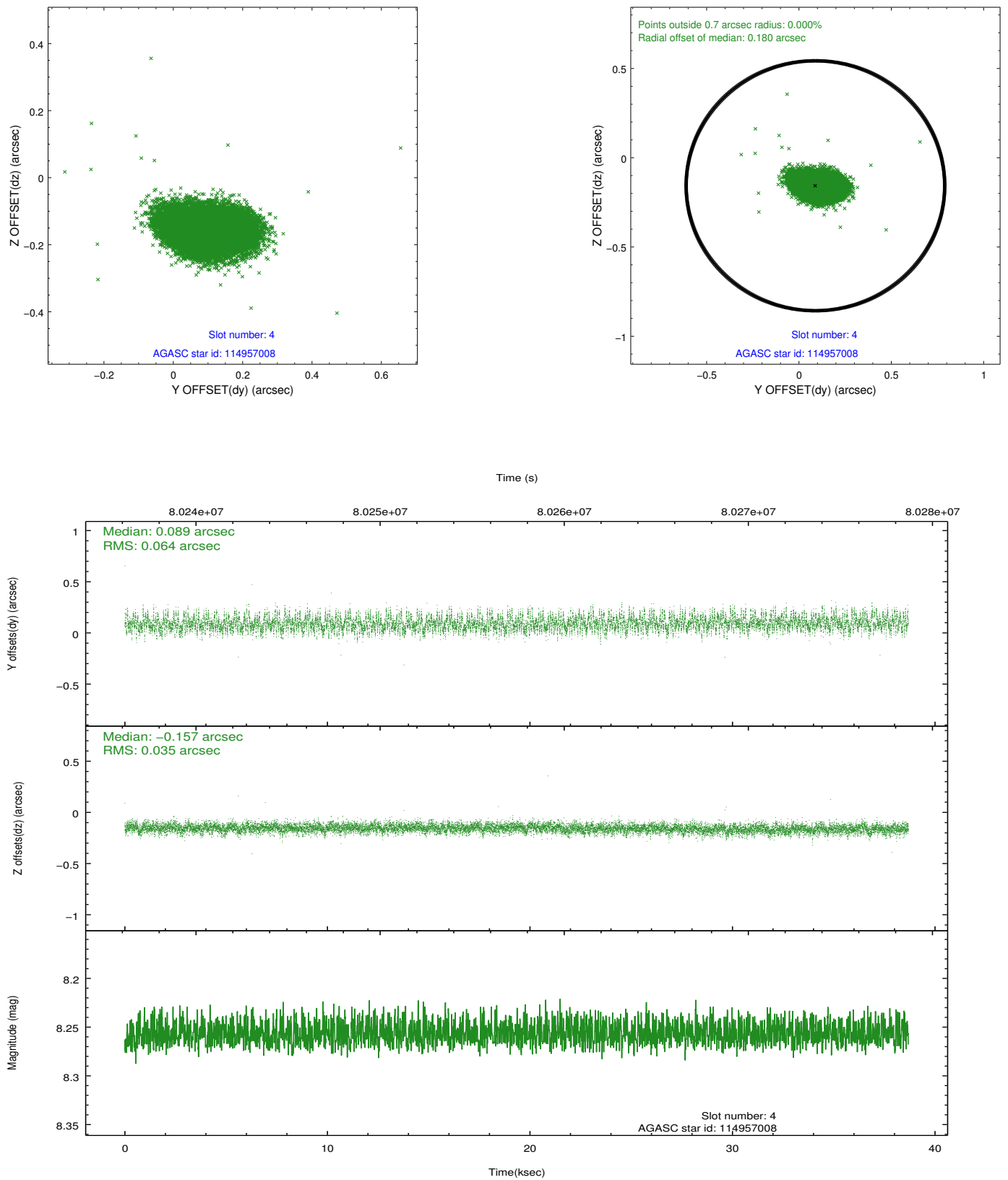
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	9435	-0.029	0.009	0.008	0.013	0.000000	0.000000	-754.61	-1727.49
1	FID	ACIS-S-4	7.21	9437	-0.024	0.012	0.008	0.014	0.000000	0.000000	2158.66	180.98
2	FID	ACIS-S-5	7.23	9436	0.022	-0.012	0.007	0.011	0.000000	0.000000	-1807.37	174.65
3	GUIDE	114950168	7.86	18869	-0.005	-0.001	0.065	0.108	187.143398	12.117441	1632.00	-1523.72
4	GUIDE	114957008	8.26	18869	0.089	-0.157	0.075	0.129	186.894794	12.099160	1961.46	-2337.48
5	GUIDE	114955056	8.33	18872	-0.061	0.118	0.067	0.106	187.914001	12.127854	765.34	1046.70
6	GUIDE	114952424	9.33	18861	0.079	0.107	0.079	0.129	187.477948	11.953762	1833.20	-221.96
7	GUIDE	114952792	9.50	18861	-0.102	-0.066	0.087	0.144	187.070263	12.344747	931.13	-2018.38

2.4 Star Slots

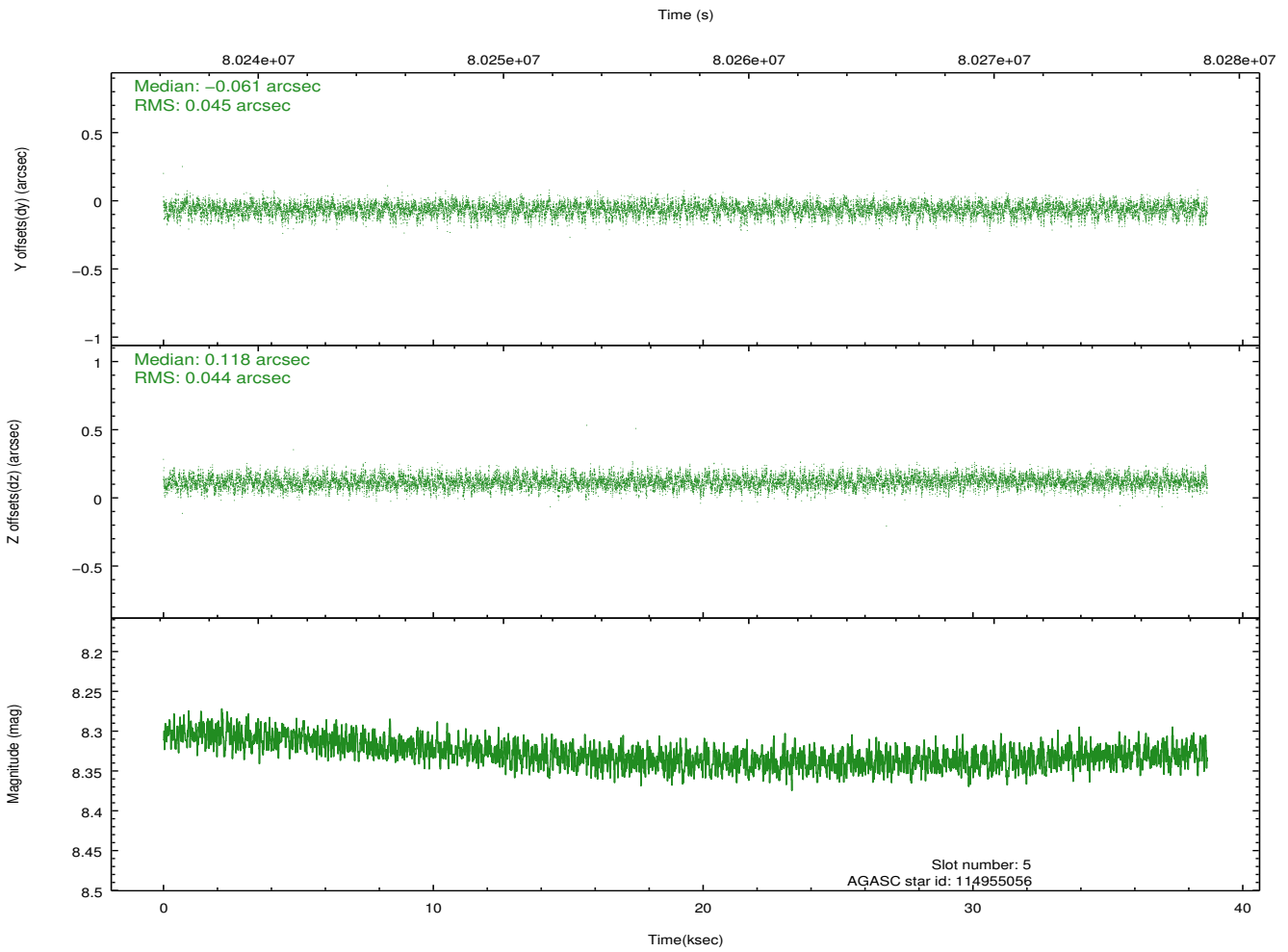
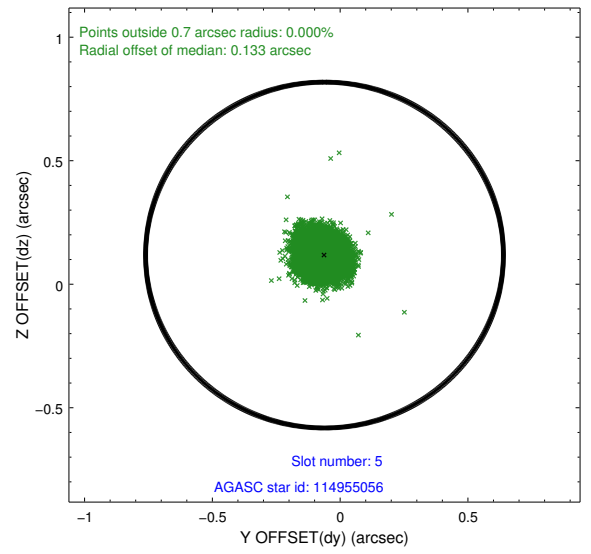
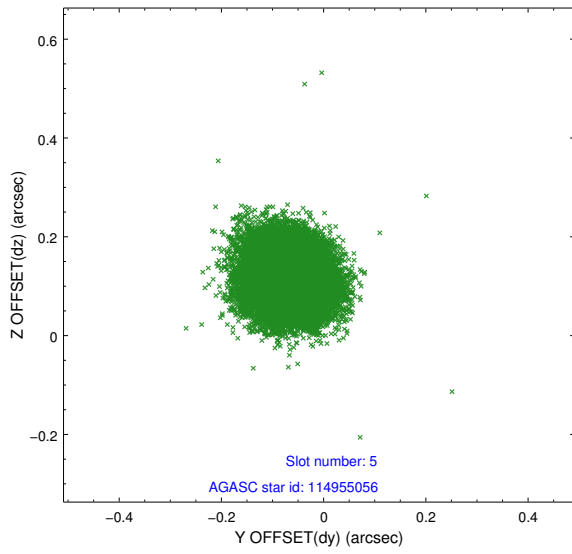
2.4.1 Slot 3



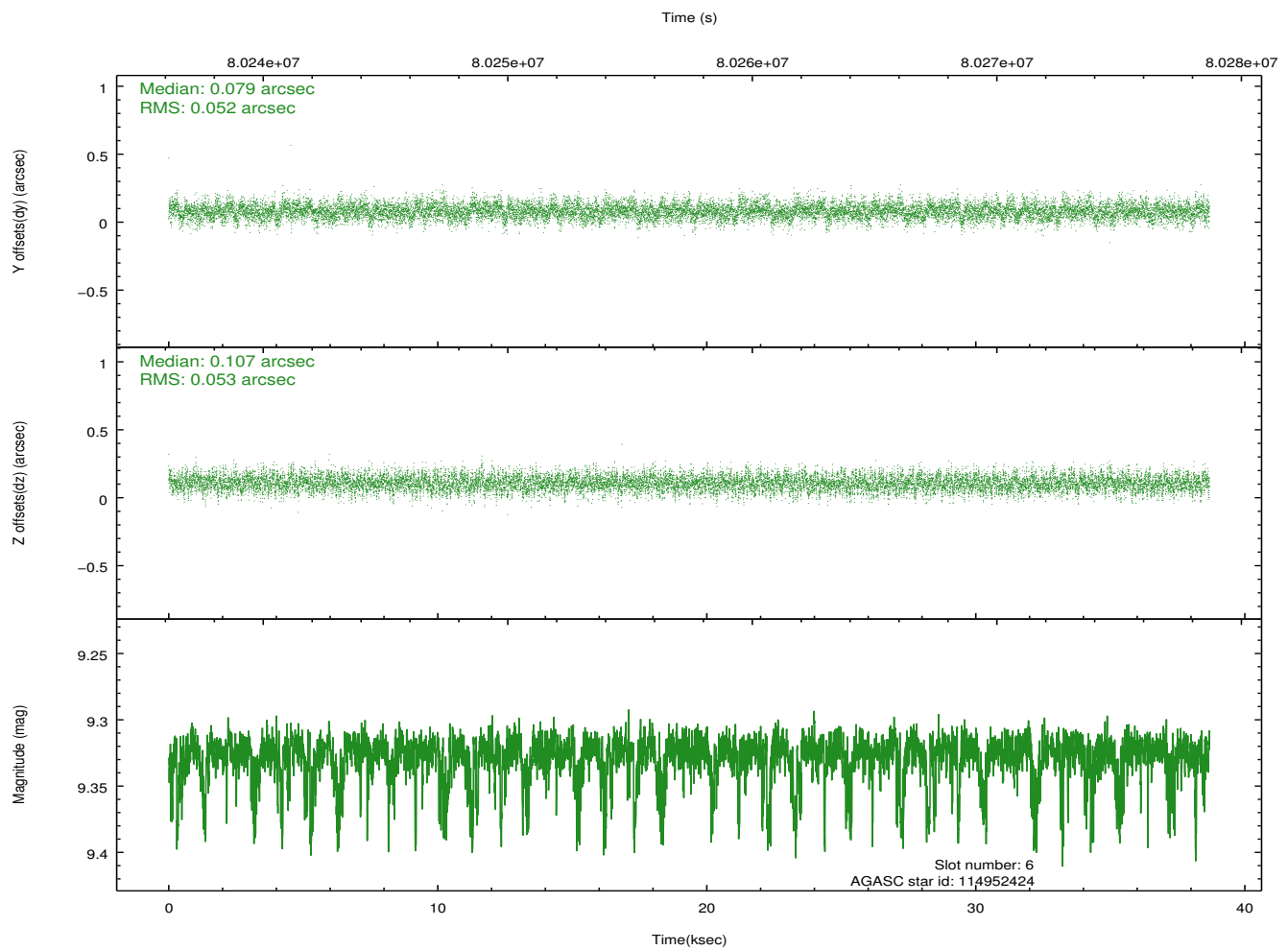
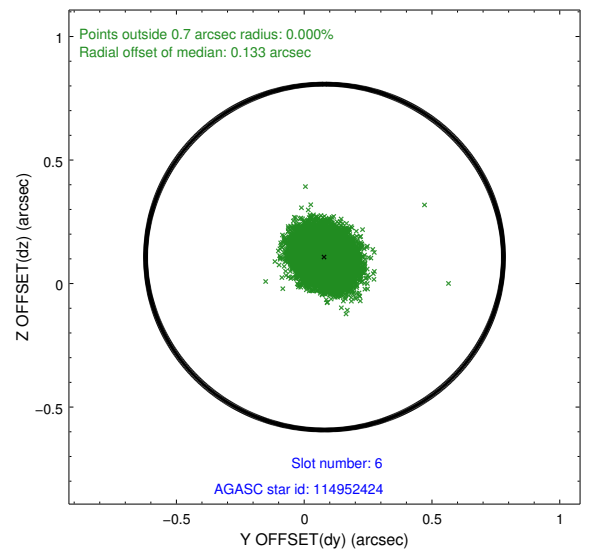
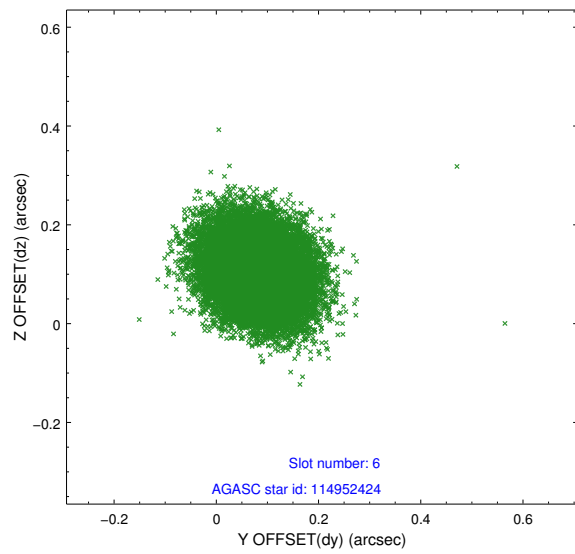
2.4.2 Slot 4



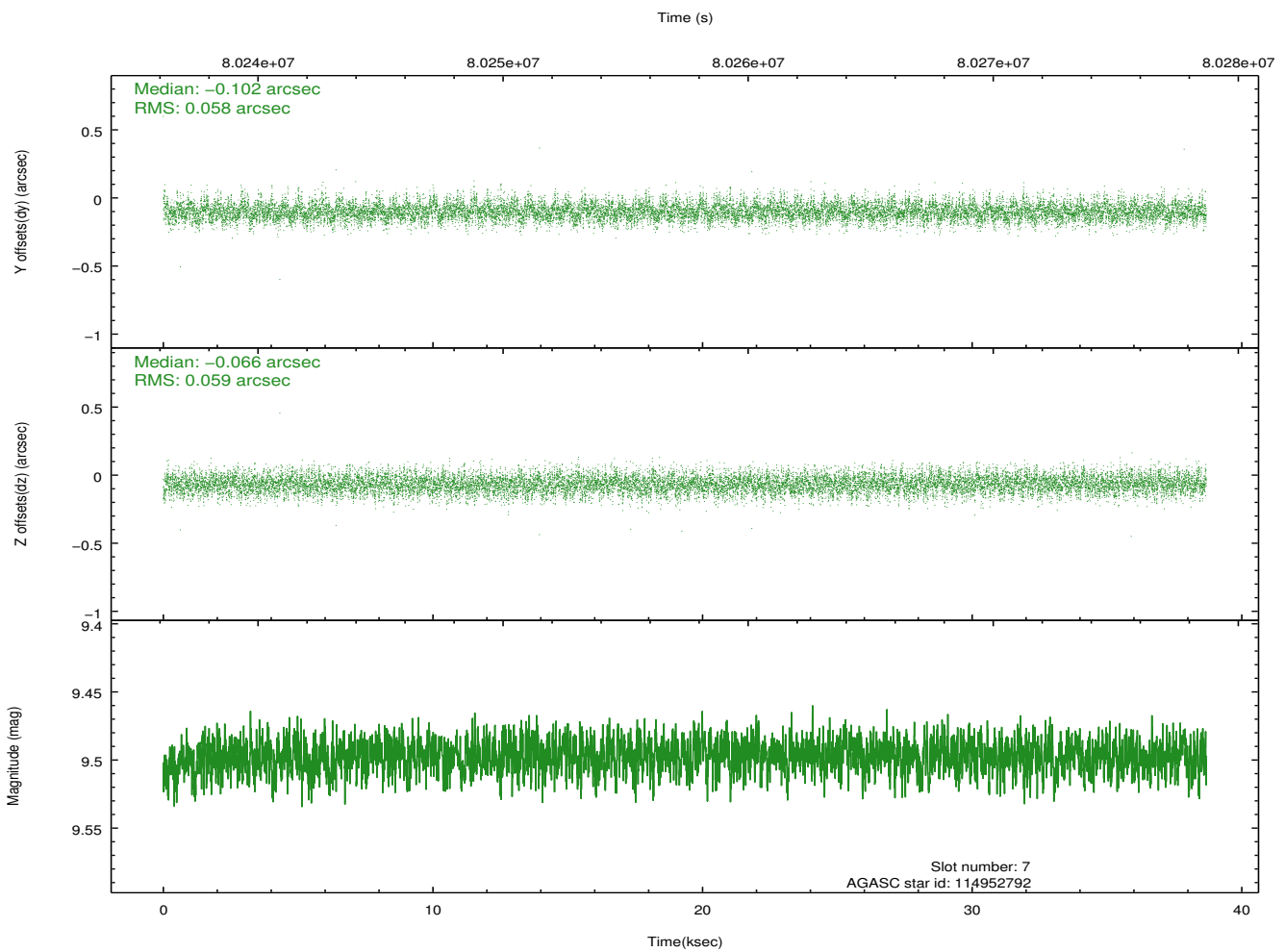
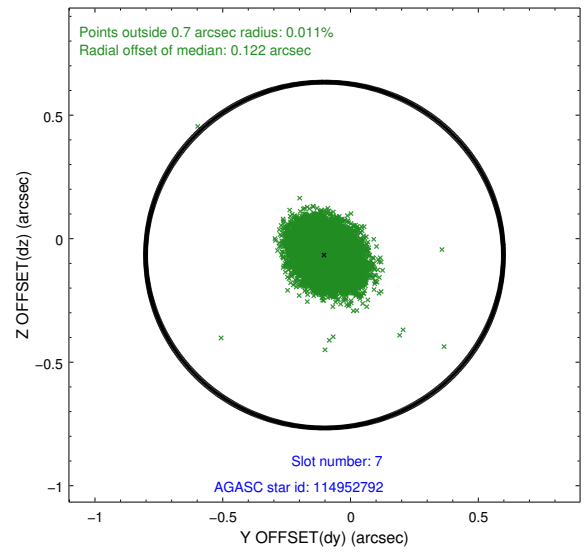
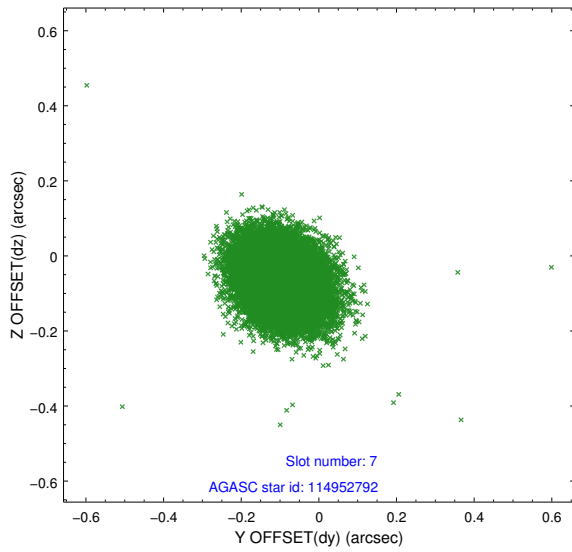
2.4.3 Slot 5



2.4.4 Slot 6

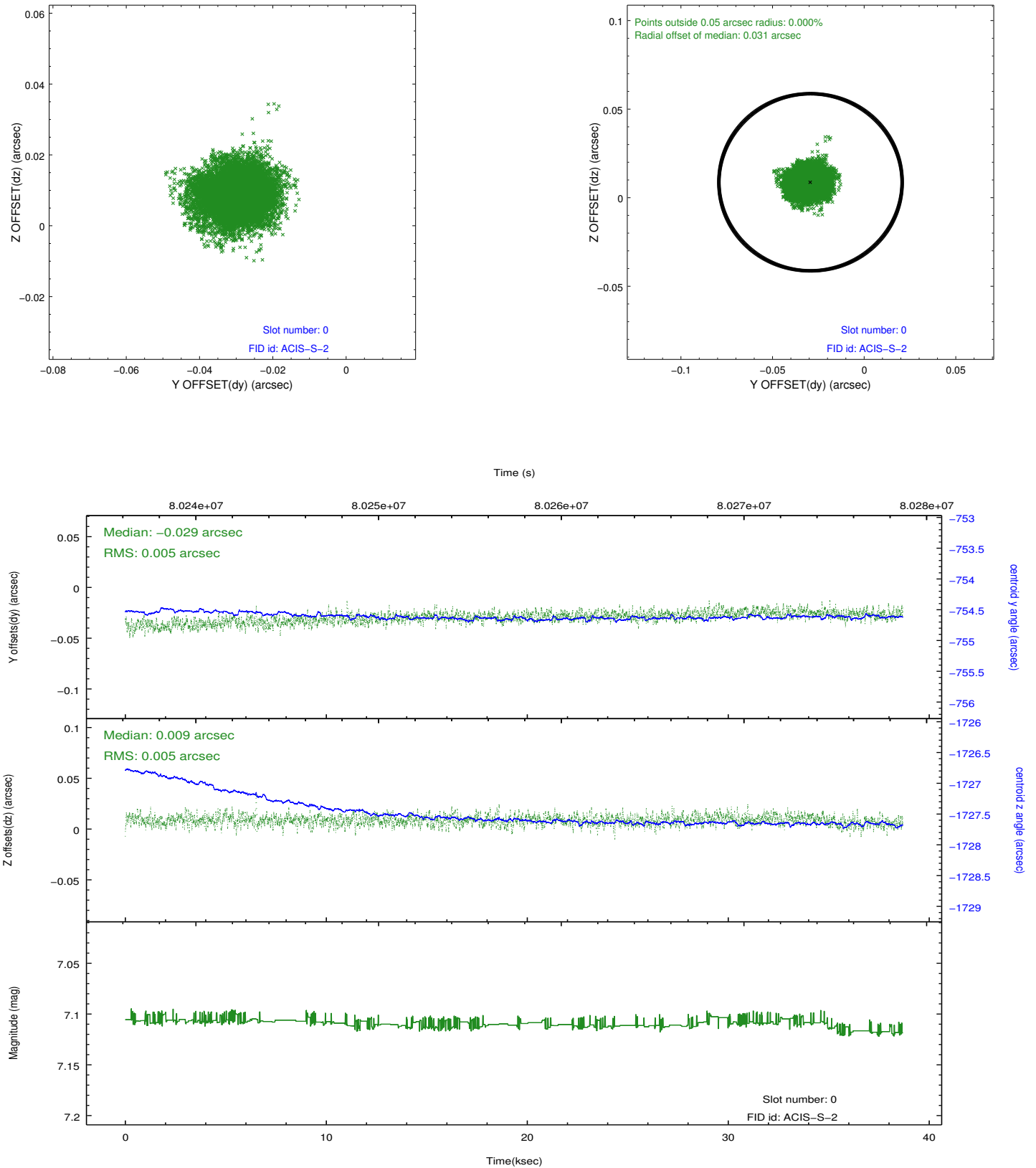


2.4.5 Slot 7

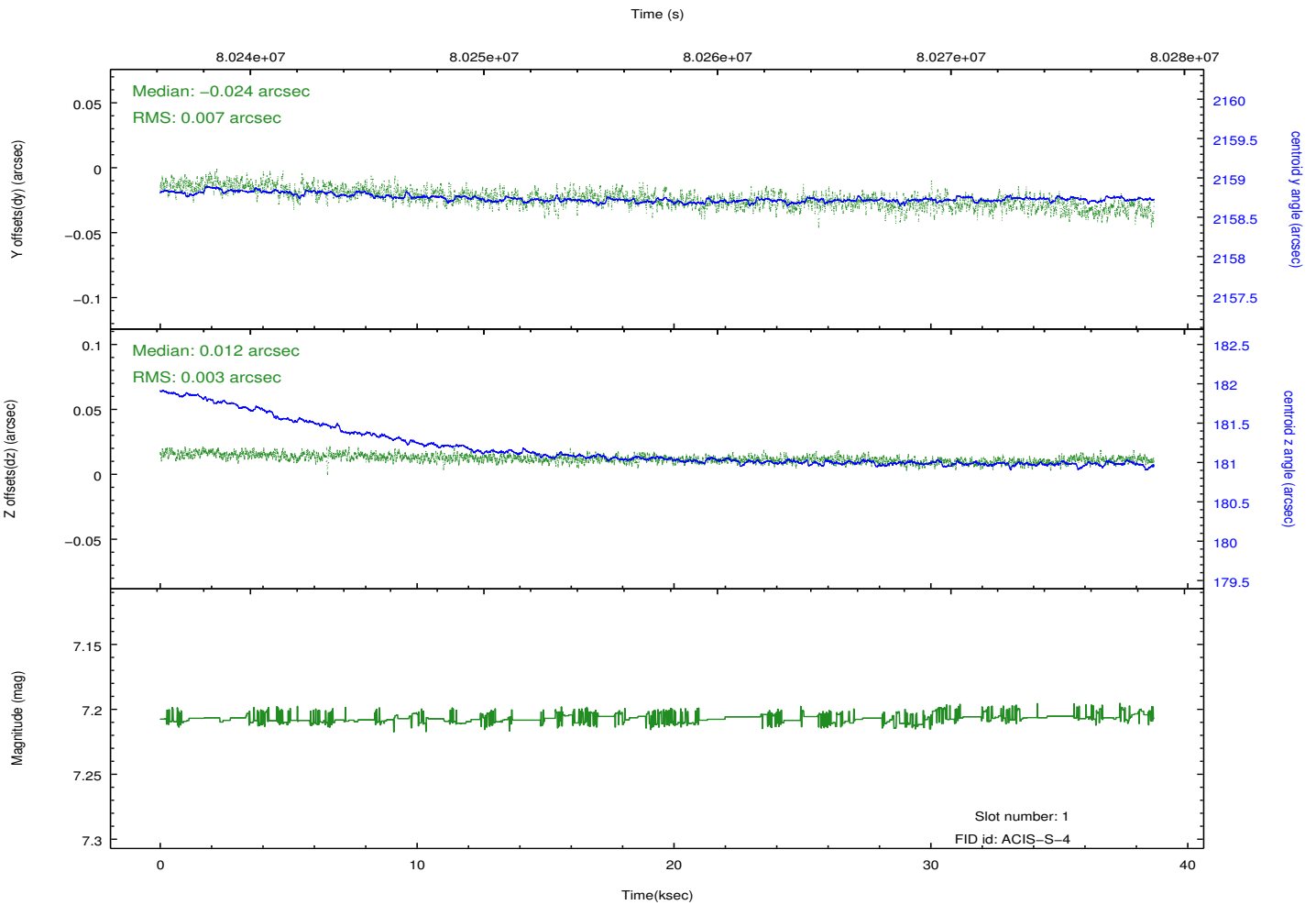
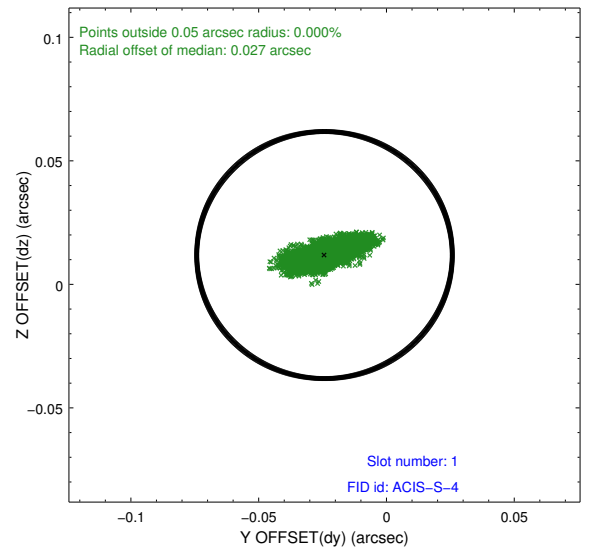
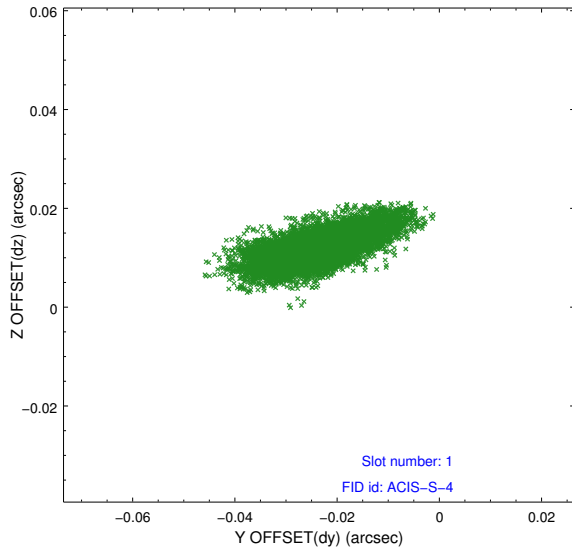


2.5 FID Slots

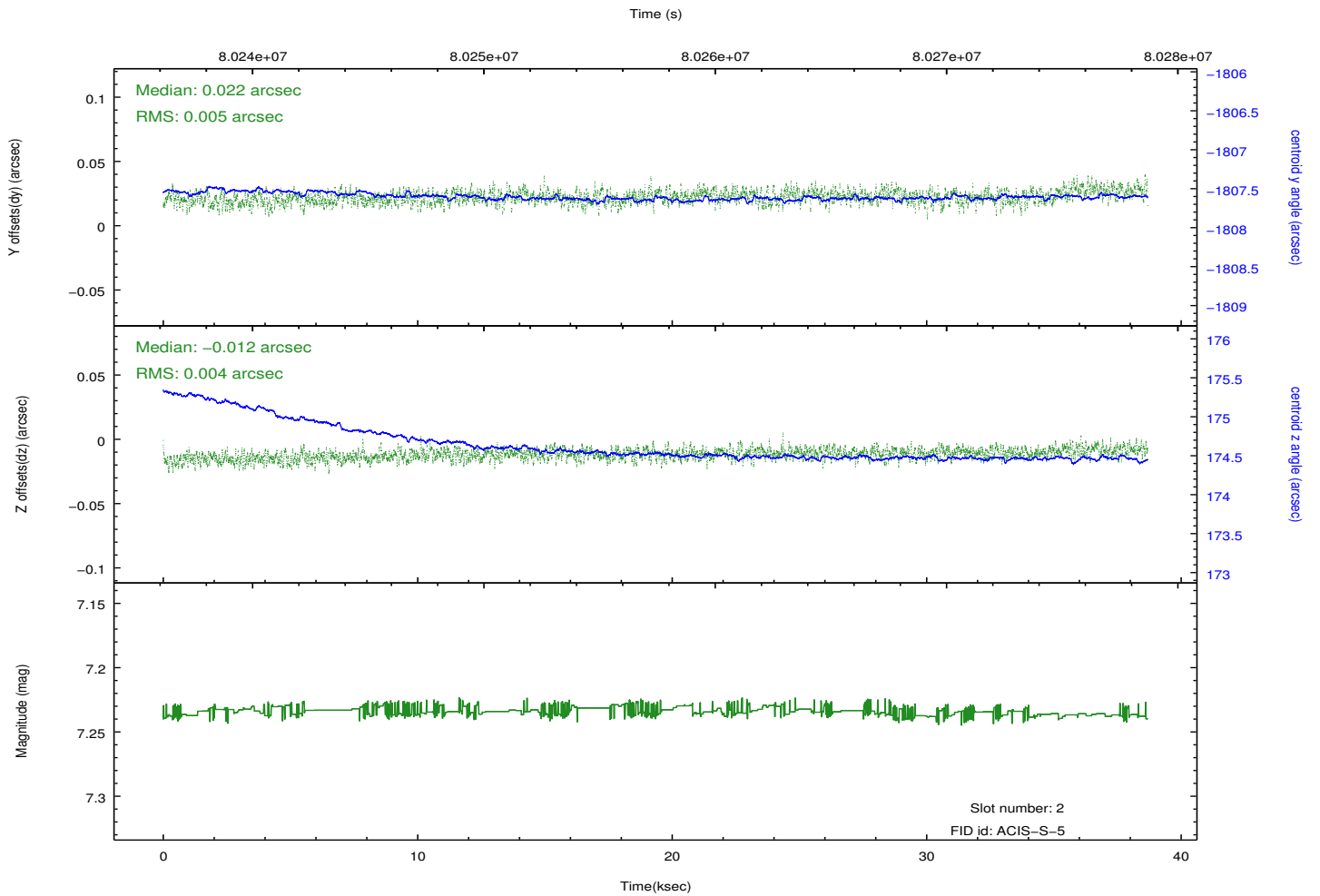
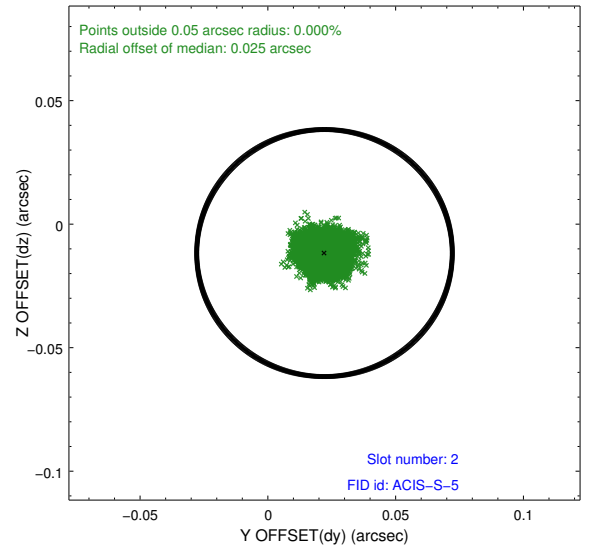
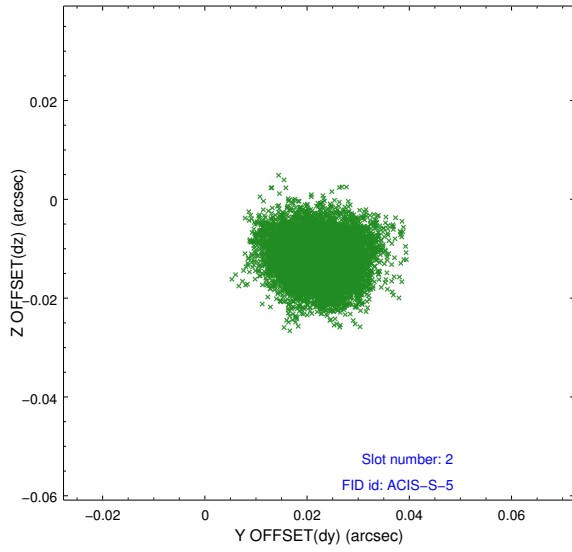
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

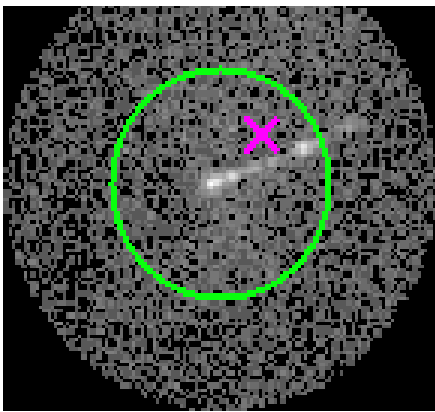


3 Gratings

3.1 HEG Arm



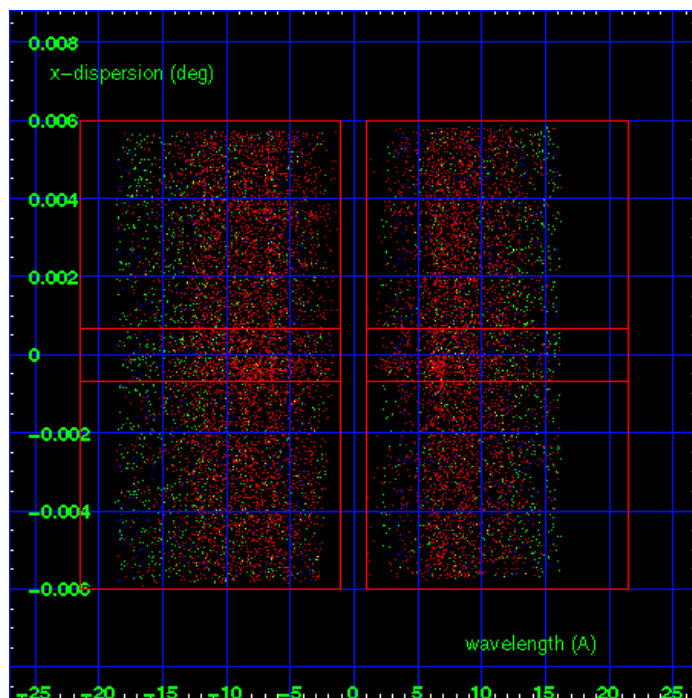
HEG Order Sort 123



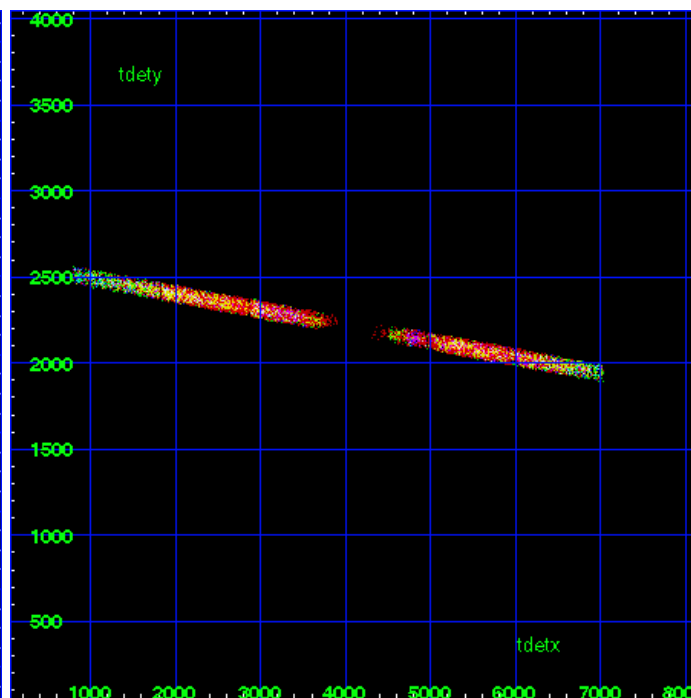
HEG Zero Order



HEG Order Sort ALL

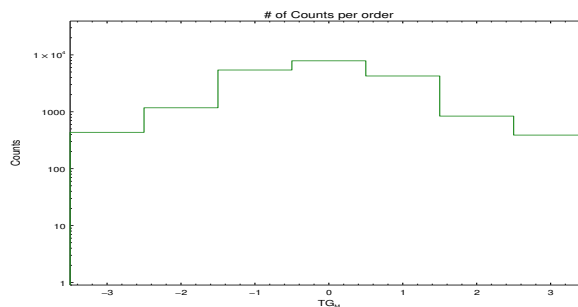


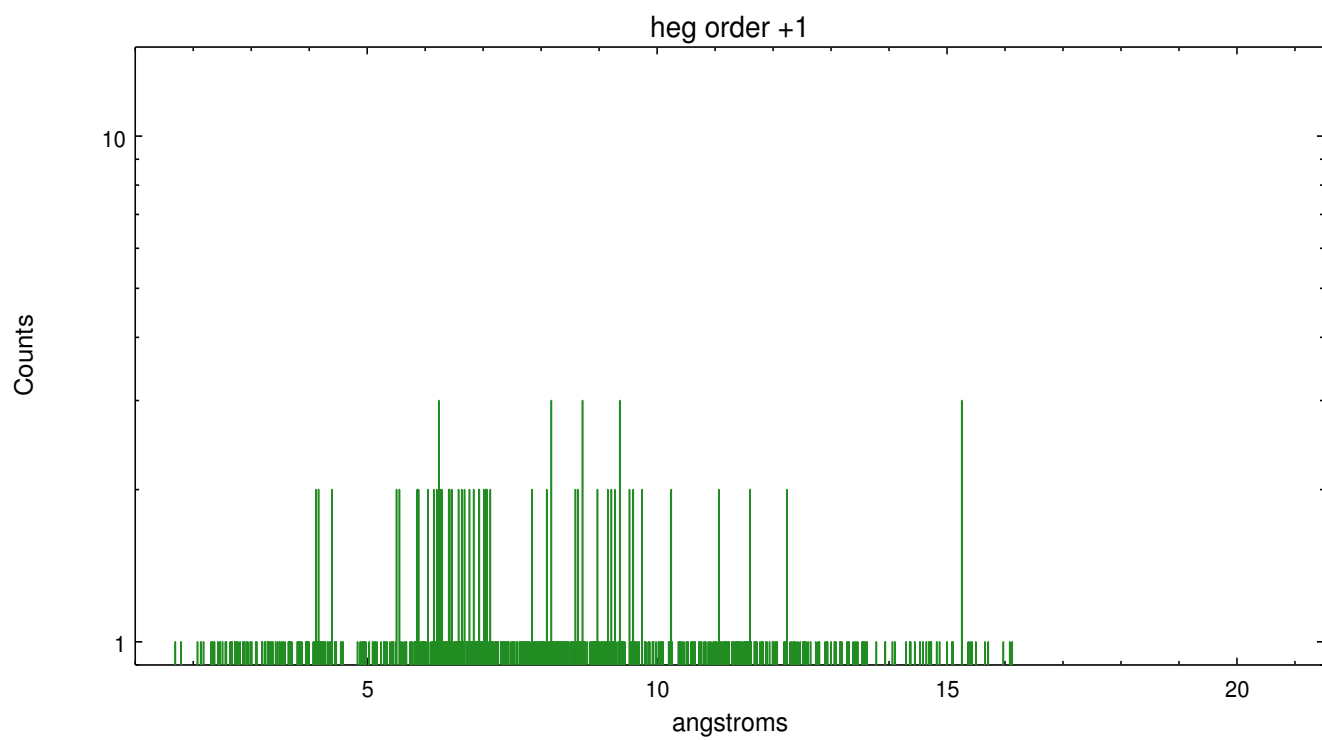
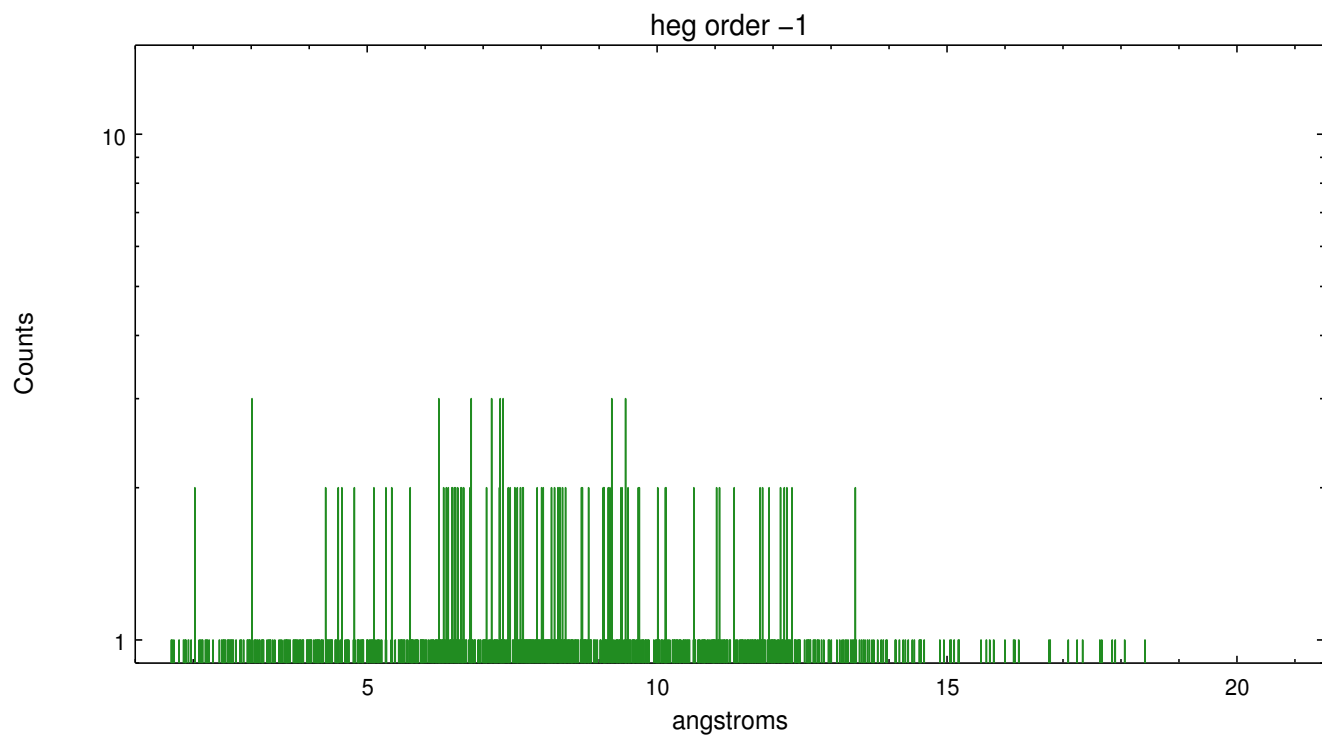
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	435	1175	5420	7866	4256	839	389

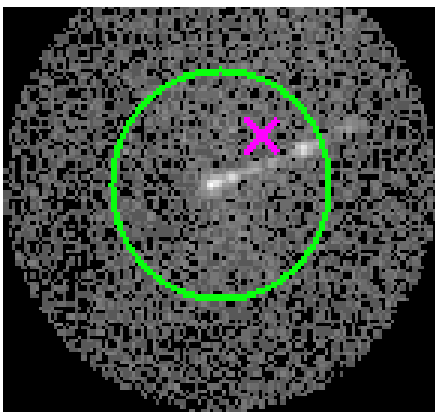




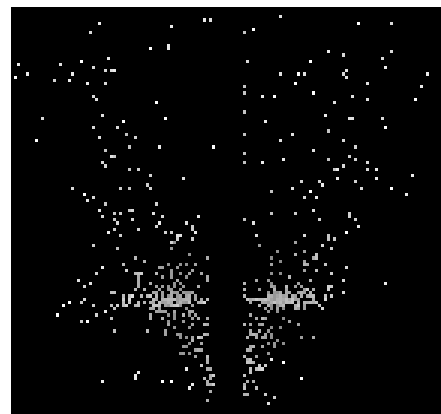
3.2 MEG Arm



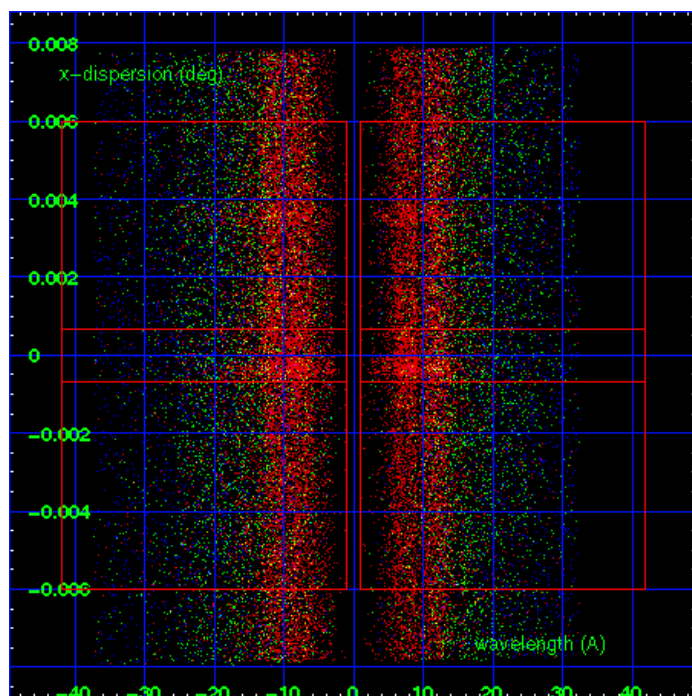
MEG Order Sort 123



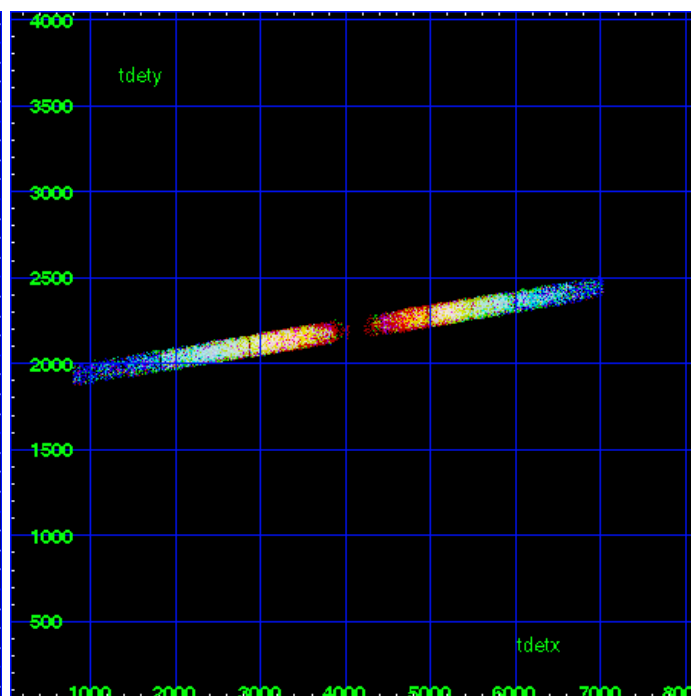
MEG Zero Order



MEG Order Sort ALL

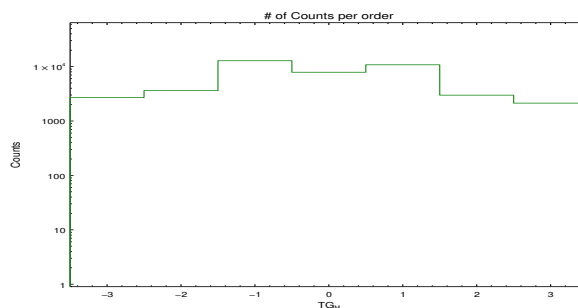


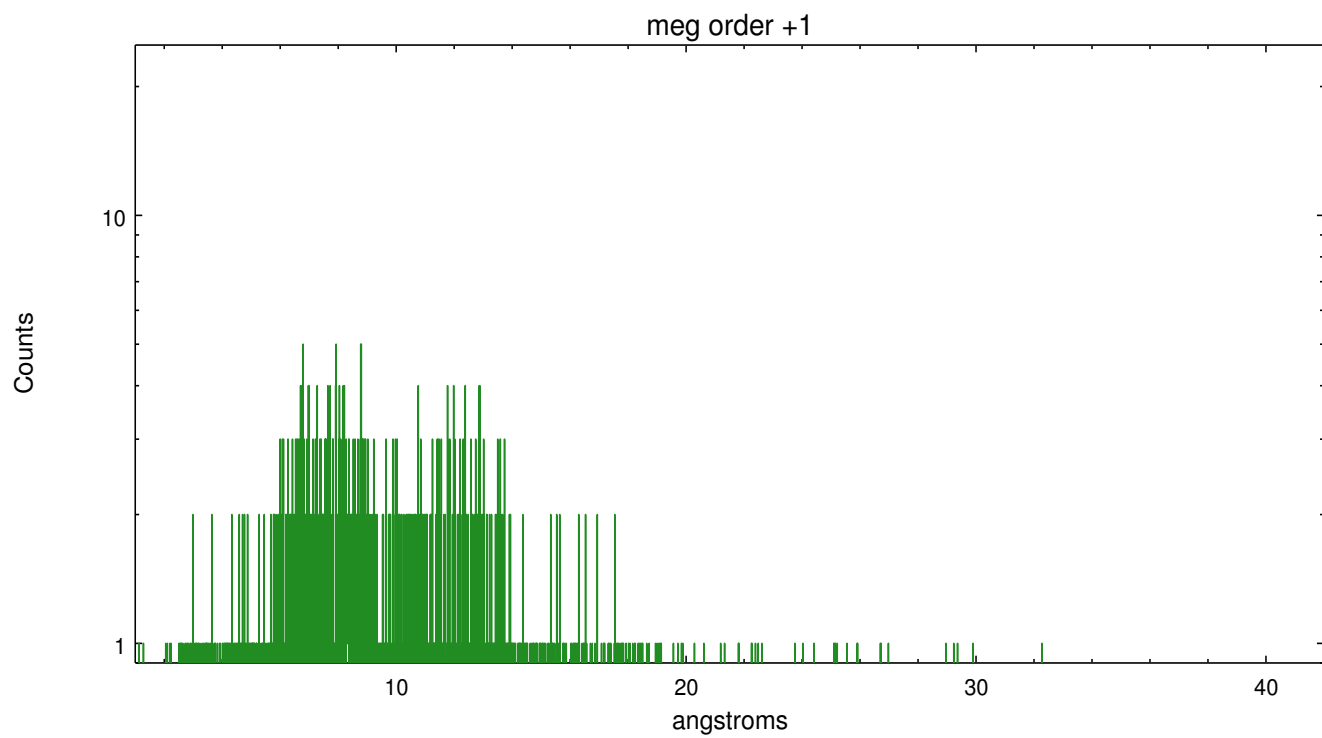
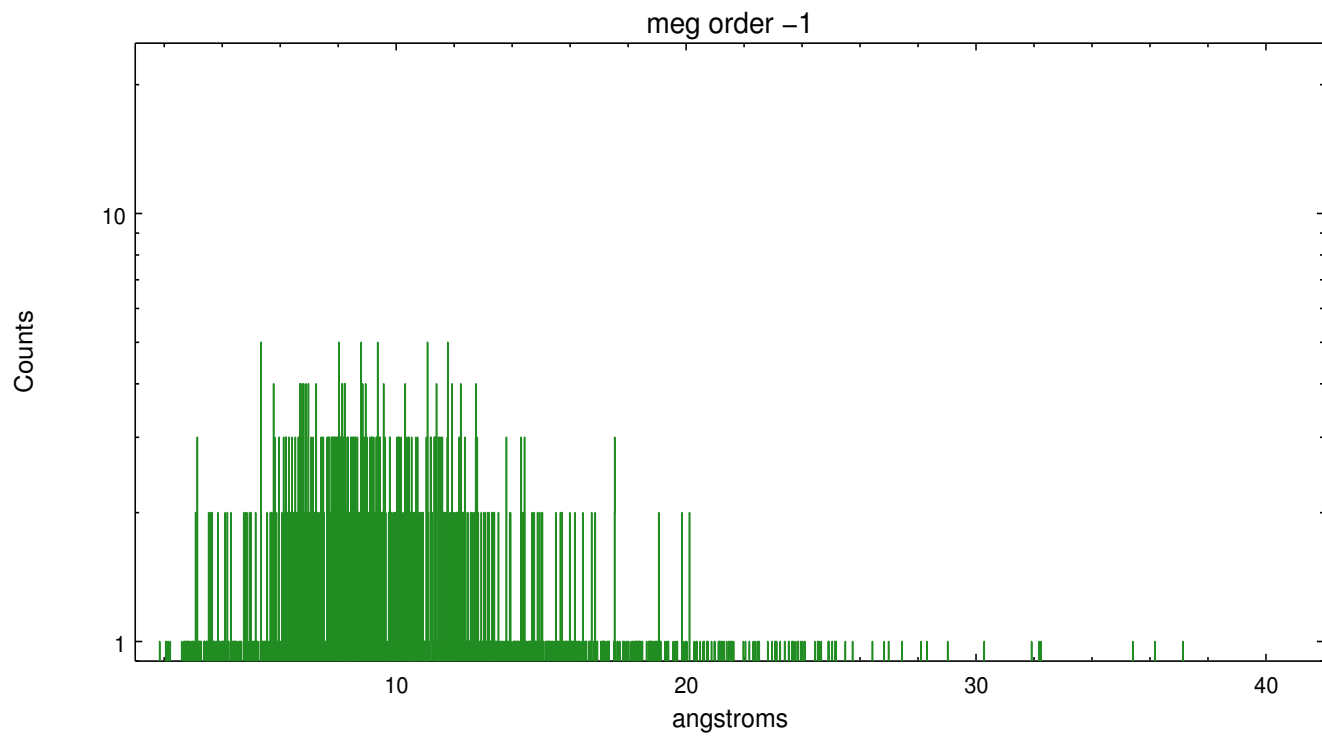
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2697	3617	12832	7866	10801	2984	2130





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.08.31
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	38.531

A.2 Comments

The source is extended, making analysis of the spectral data more complex. The position of an event in the focal plane is not a unique function of the position within the source and the photon energy for the case of an extended source. The consequence is that there is a degradation of the apparent spectral resolution.

However, the jet is perpendicular to the dispersion direction, so it should be possible to separate the spectra for different regions of the nucleus and knots in the jets.

===

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.