

V&V Reference Report

L2 ASCDS Version : 10.3.3

Observation 17576 - L2 Version 1
Chandra X-Ray Center

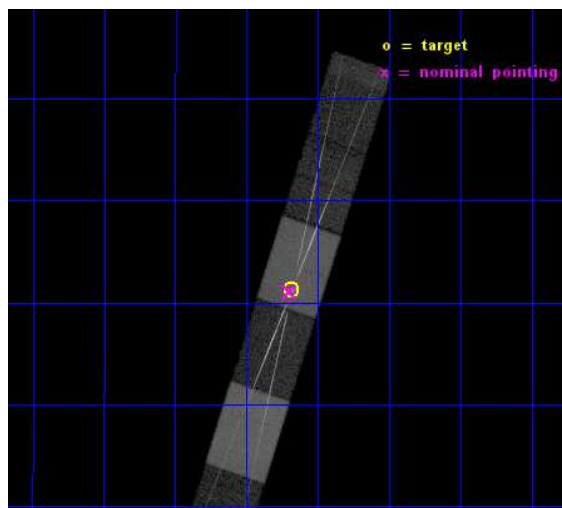
L2 Processing Date : Jan 28 2015

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1 Front

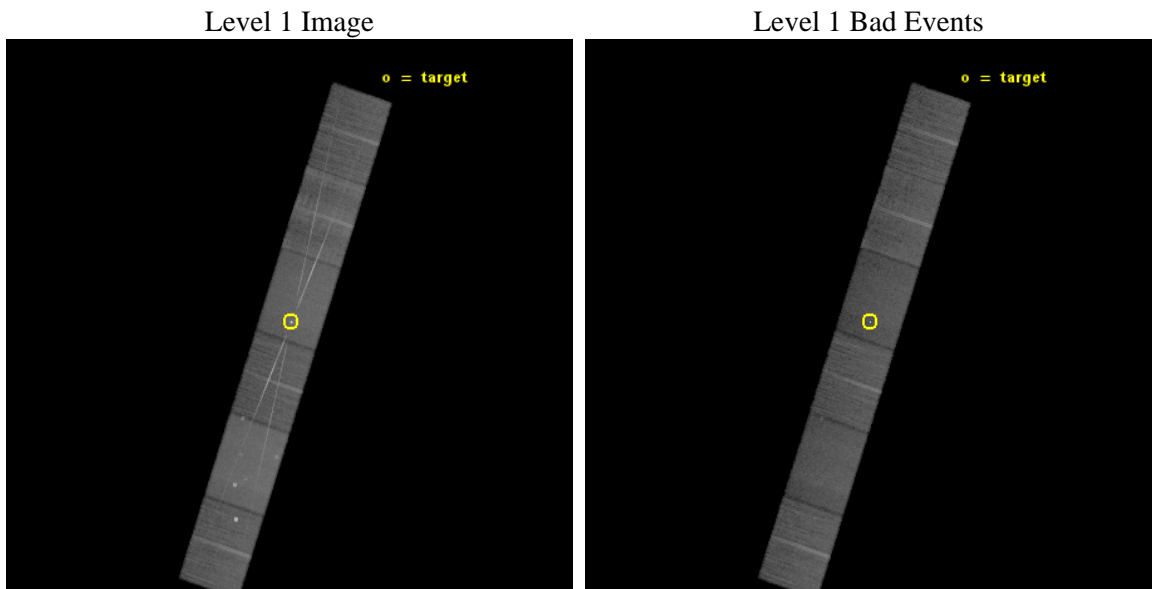
seq_num	703009	Sequence number
obs_id	17576	Observation id
title	Unifying X-ray winds in radio galaxies with Chandra HETG	Proposal
observer	Dr. Francesco Tombesi	Principal investigator
object	3C 120	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	68.29625	Observer's specified target RA [deg]
dec_targ	5.354333	Observer's specified target Dec [deg]
ra_nom	68.300045460507	Nominal RA [deg]
dec_nom	5.3511436909016	Nominal Dec [deg]
roll_nom	288.23301834023	Nominal Roll [deg]
revision	1	Processing version of data
ontime	44030.0	Sum of GTIs [s]
livetime	43318.877310078	Livetime [s]
ontime4	44030.0	Sum of GTIs [s]
ontime5	44030.0	Sum of GTIs [s]
ontime6	44030.0	Sum of GTIs [s]
ontime7	44030.0	Sum of GTIs [s]
ontime8	44030.0	Sum of GTIs [s]
ontime9	44027.458949685	Sum of GTIs [s]
l2events	364955	Number of level 2 events



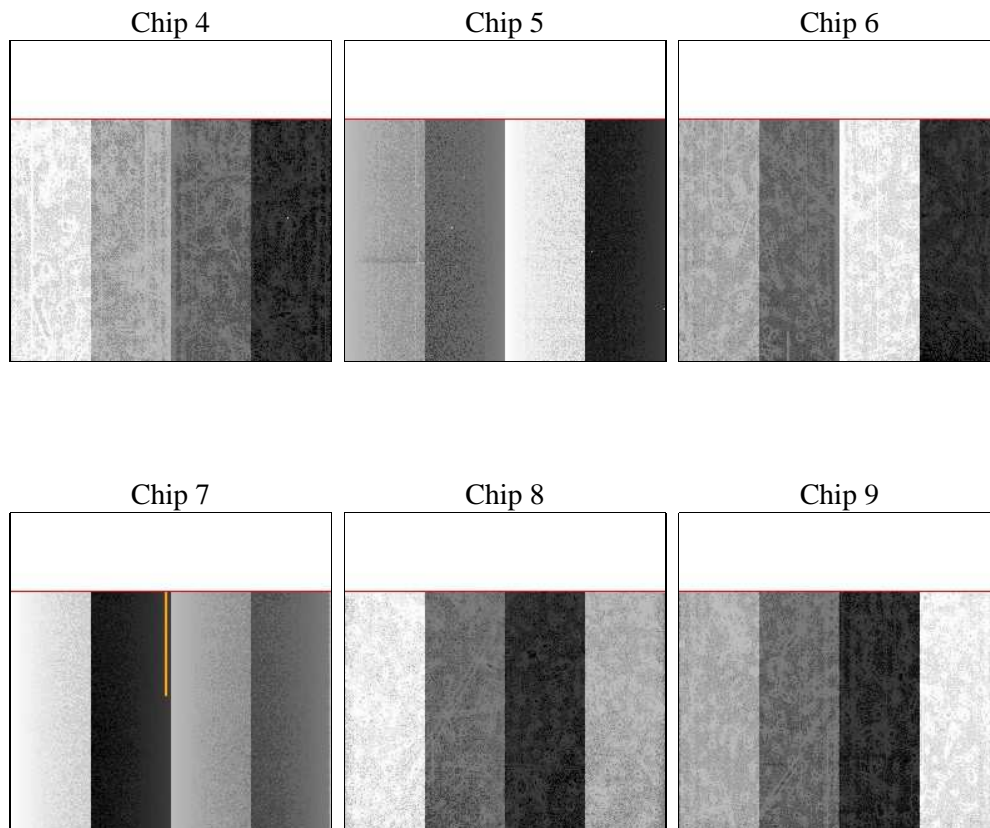
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	44000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.3	Processing system revision	ontime	44030.0	Sum of GTIs [s]
caldbver	4.6.6	 	ontime4	44030.0	Sum of GTIs [s]
date	2015-01-29T01:21:24	Date and time of file creation	ontime5	44030.0	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	44030.0	Sum of GTIs [s]
			ontime7	44030.0	Sum of GTIs [s]
			ontime8	44030.0	Sum of GTIs [s]
			ontime9	44027.458949685	Sum of GTIs [s]
			l1events	1315778	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zpc_pos	(41123.40, 4110.22)	src1a sky pixel position

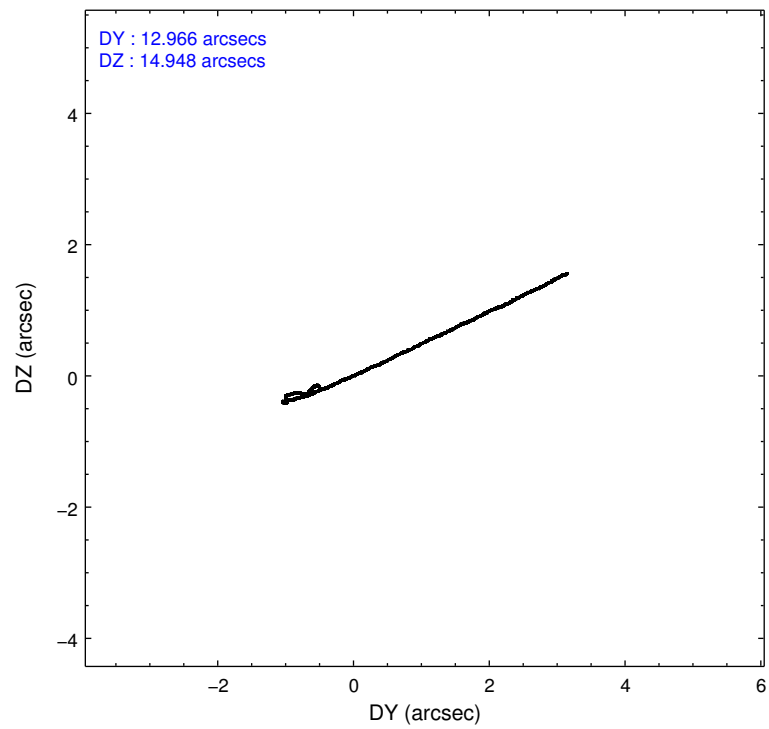
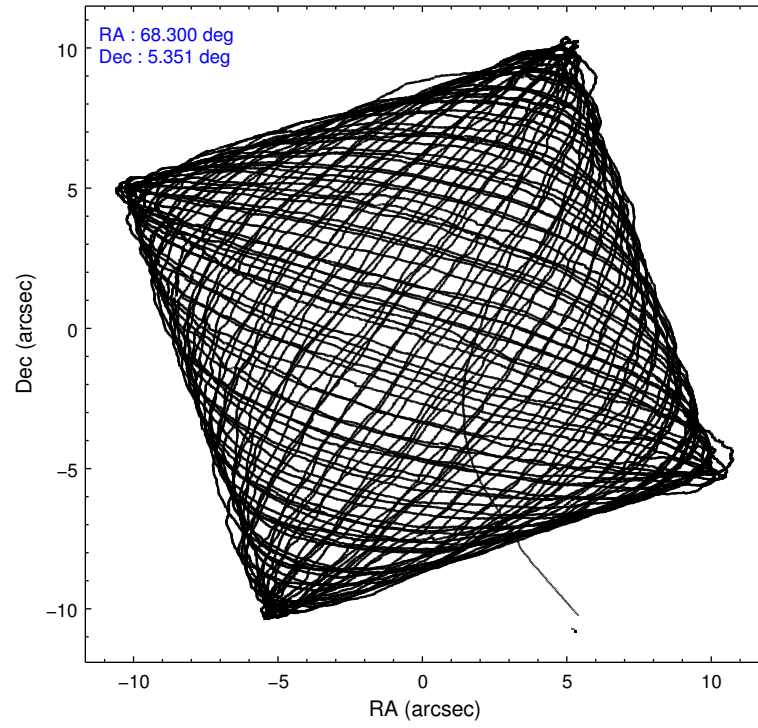
2.1.4 Events

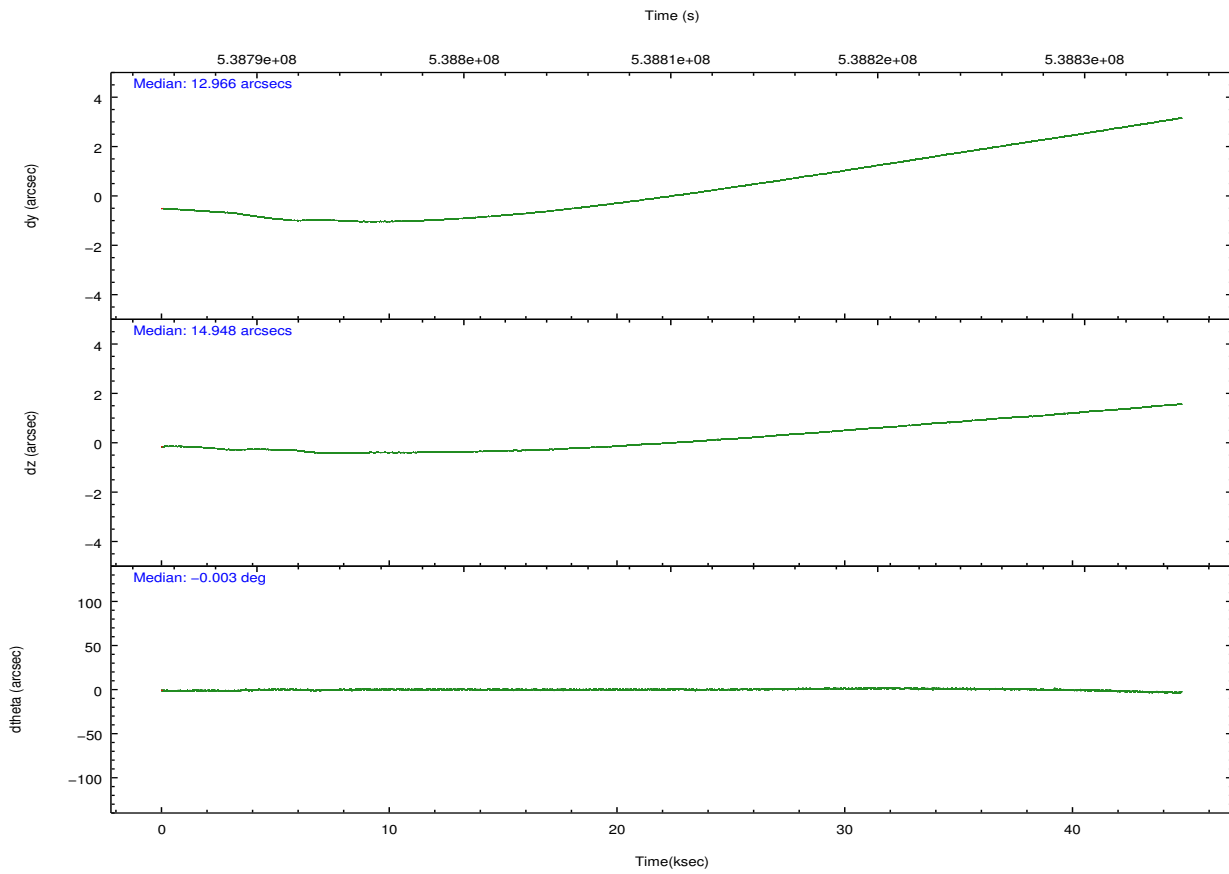
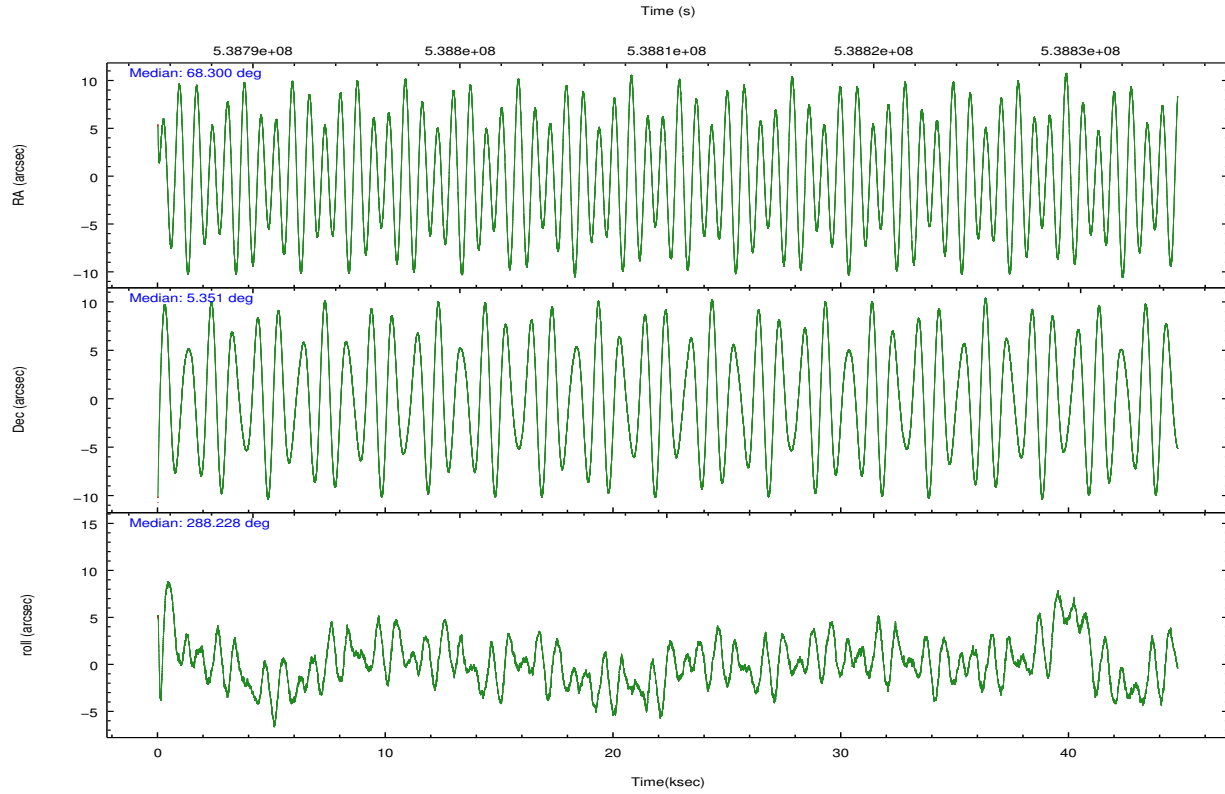
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	194722	273516	194716	261748	224427	166649	grade 0 events	18319	14489	27077	15897	25039	9002
rejected events	162881	137846	148742	129251	155849	143650		9%	5%	13%	6%	11%	5%
rejected %	83%	50%	76%	49%	69%	86%	grade 1 events	162	667	138	581	174	67
								0%	0%	0%	0%	0%	0%
							grade 2 events	5170	40668	7448	28751	14973	4966
								2%	14%	3%	10%	6%	2%
							grade 3 events	2336	5288	3006	12111	6356	2223
								1%	1%	1%	4%	2%	1%
							grade 4 events	2184	5096	3014	11927	5928	2209
								1%	1%	1%	4%	2%	1%
							grade 5 events	8161	19605	8194	24284	11901	9014
								4%	7%	4%	9%	5%	5%
							grade 6 events	3835	70135	5429	63815	16299	4599
								1%	25%	2%	24%	7%	2%
							grade 7 events	154555	117568	140410	104382	143757	134569
								79%	42%	72%	39%	64%	80%

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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	68.279248	68.30004546050664	CCD I2 on	N	N
[deg] Pointing Dec	5.369143	5.351143690901631	CCD I3 on	N	N
[deg] Pointing Roll	288.078333	288.2330183402341	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-187.132523	-187.1228876879999	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-3	-3.009634895007935	CCD S4 on	Y	Y
[s] Observation start time (MET)	538788441.184000	538786902.70701	CCD S5 on	O2	Y
Observation start date	2015-01-27T23:26:14	2015-01-27T23:01:42	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	538832441.184000	538833174.7970901	On-chip summing requested	N	N
Observation end date	2015-01-28T11:39:34	2015-01-28T11:52:54	Subarray requested	CUSTOM	CUSTOM
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	774	774
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect





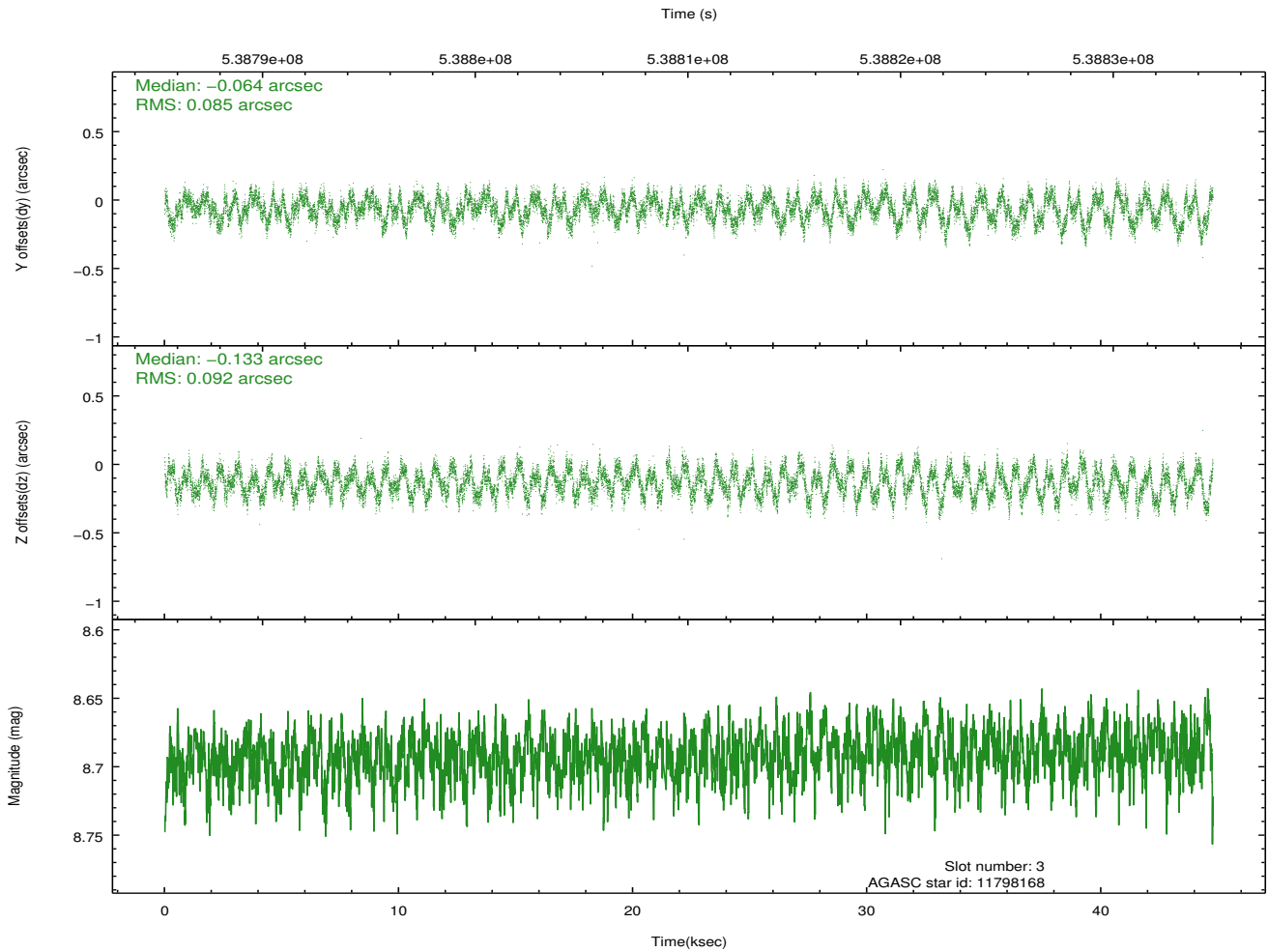
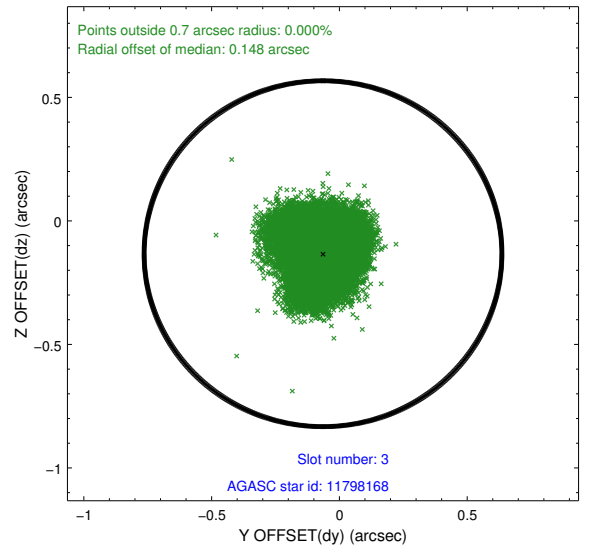
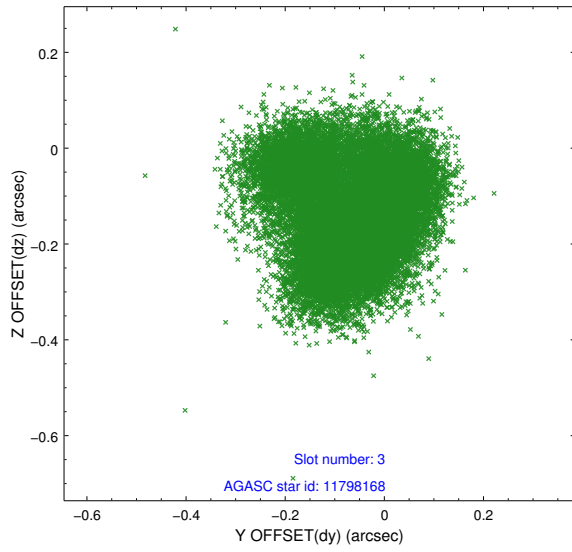
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.02	10920	-0.108	-0.107	0.023	0.033	0.000000	0.000000	-766.24	-1798.80
1	FID		ACIS-S-4	7.11	10921	0.271	0.079	0.038	0.059	0.000000	0.000000	2147.47	109.80
2	FID		ACIS-S-5	7.15	10921	-0.208	0.034	0.028	0.038	0.000000	0.000000	-1819.15	103.50
3	GUIDE	used	11798168	8.69	21772	-0.064	-0.133	0.137	0.206	68.723067	4.993277	1780.31	1093.87
4	GUIDE	used	11801400	7.90	21837	-0.233	-0.028	0.076	0.126	68.459989	5.385023	150.35	631.20
5	GUIDE	used	11801640	8.20	21832	0.490	-0.176	0.125	0.202	67.856054	4.575290	2246.21	-2330.30
6	GUIDE	used	12324304	8.91	21833	-0.081	-0.043	0.081	0.133	68.756585	5.787053	-900.09	2092.30
7	GUIDE	used	12327088	8.60	21836	-0.112	0.380	0.093	0.151	67.823561	5.844308	-2132.85	-1019.94

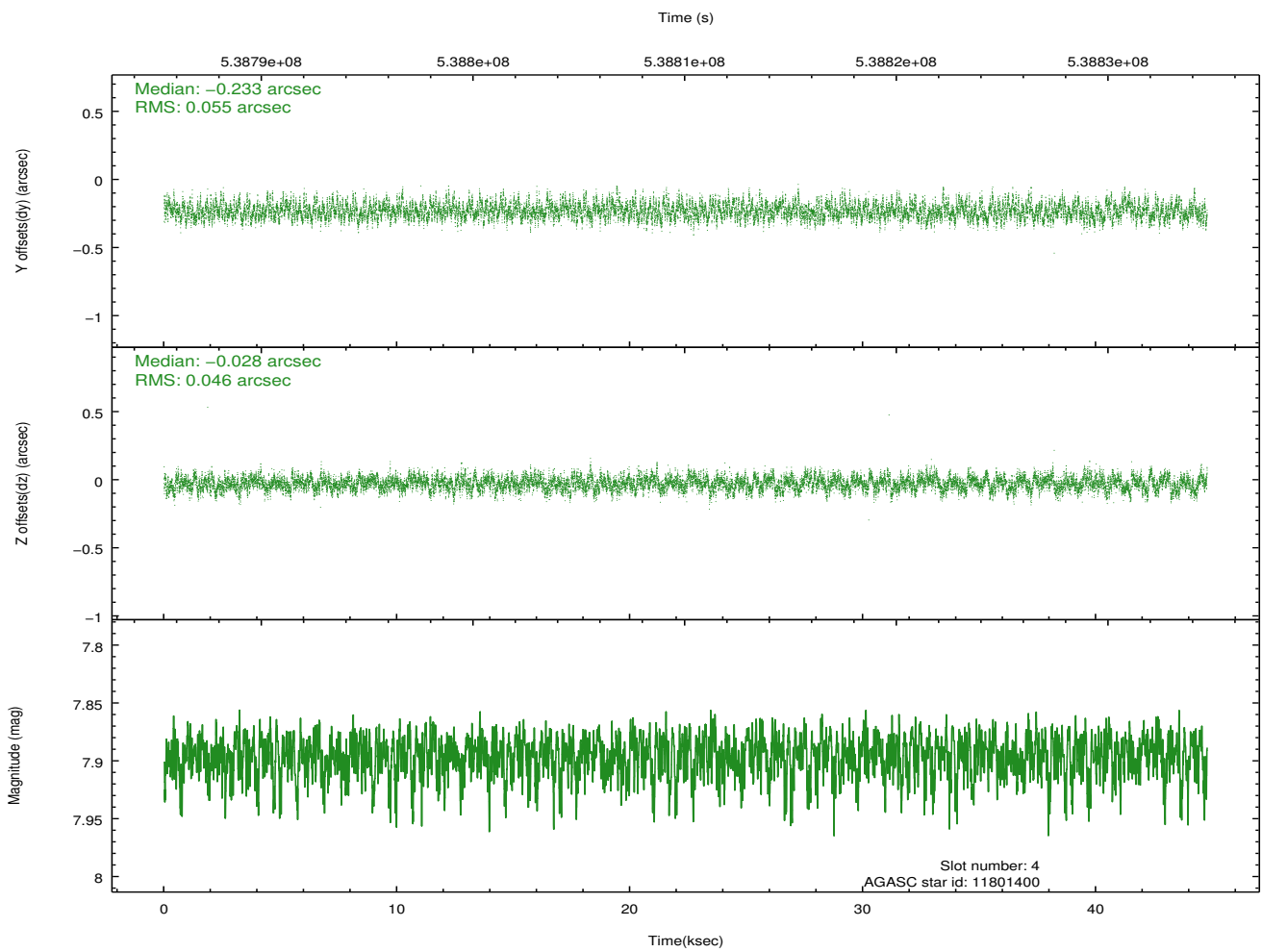
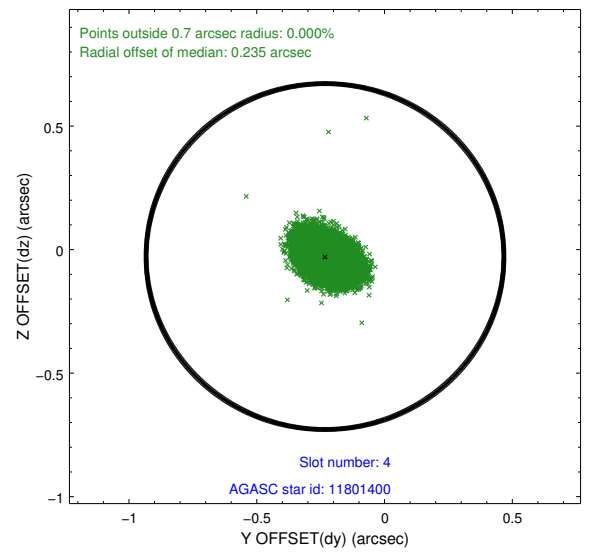
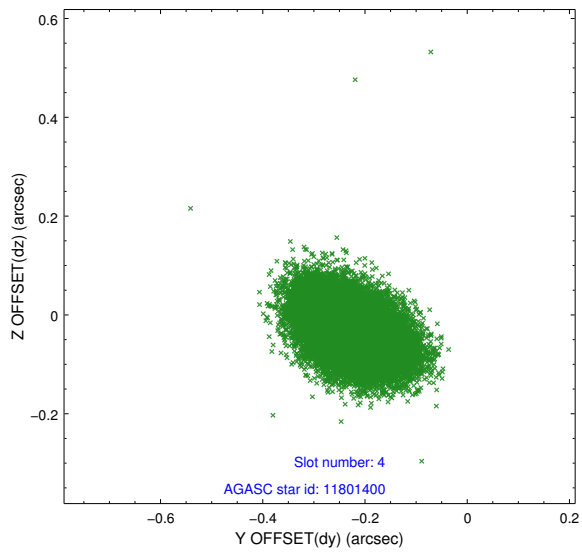
∞

2.4 Star Slots

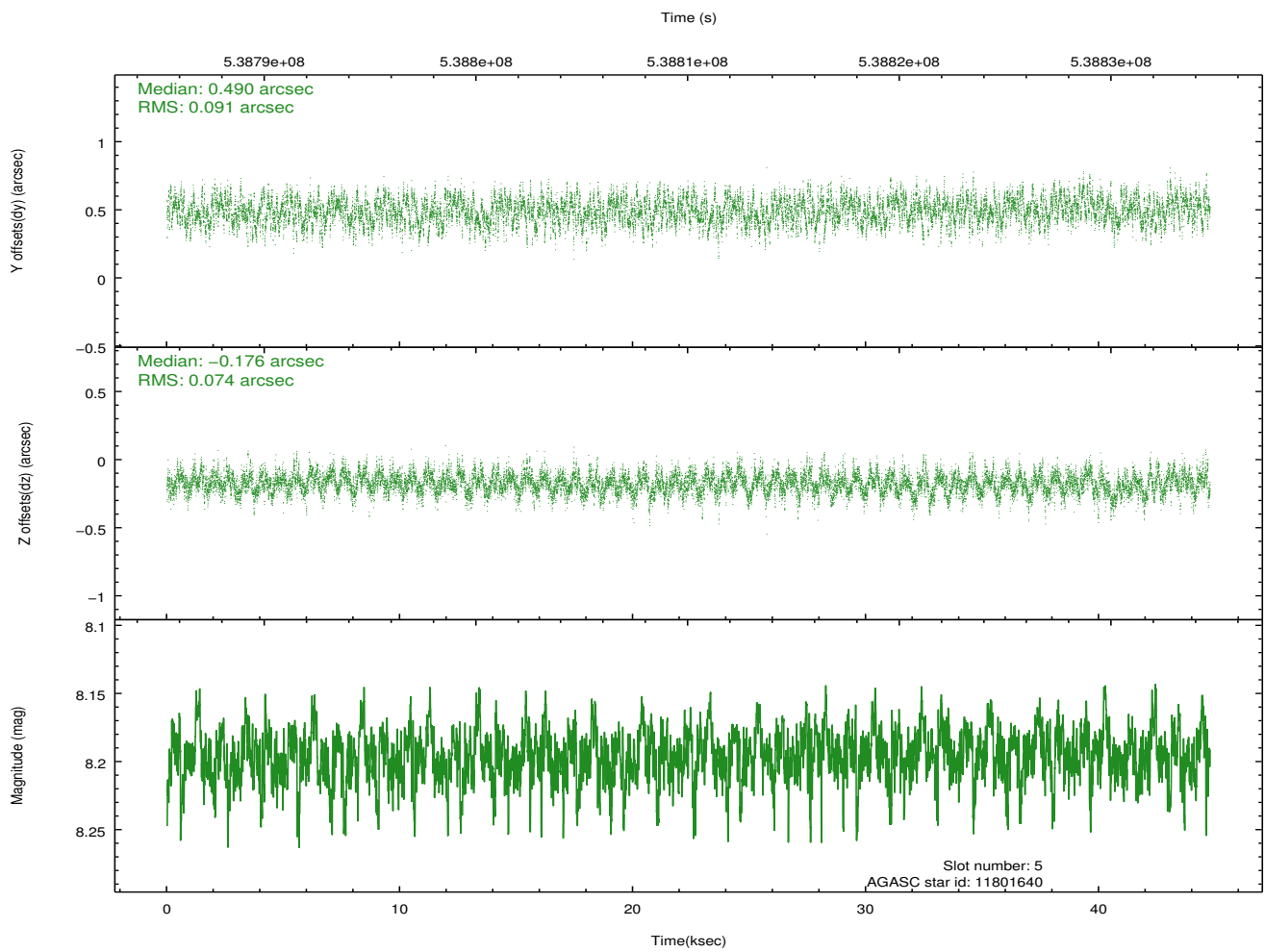
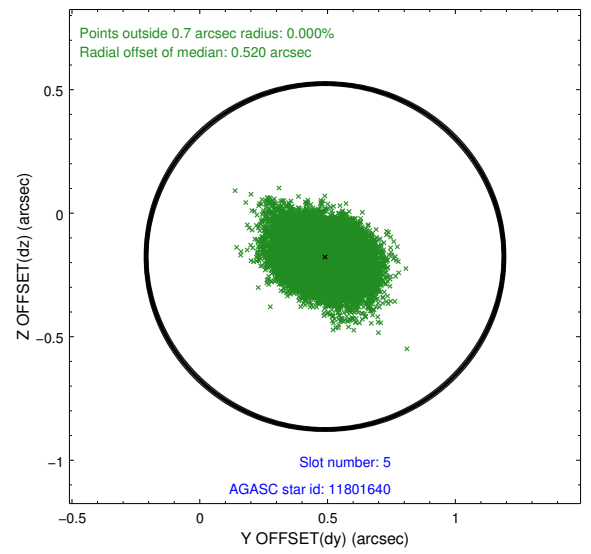
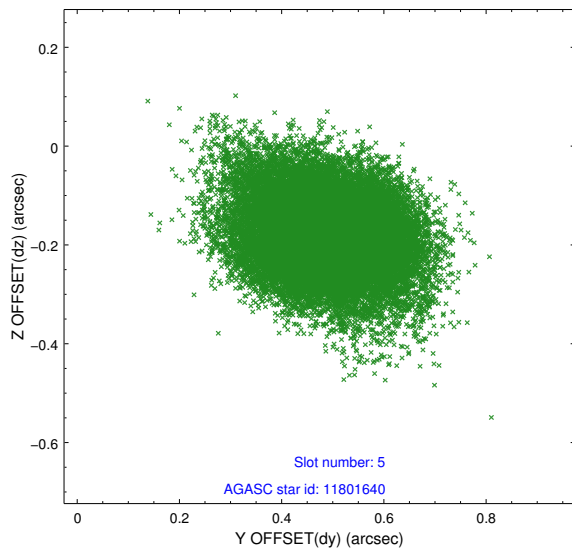
2.4.1 Slot 3



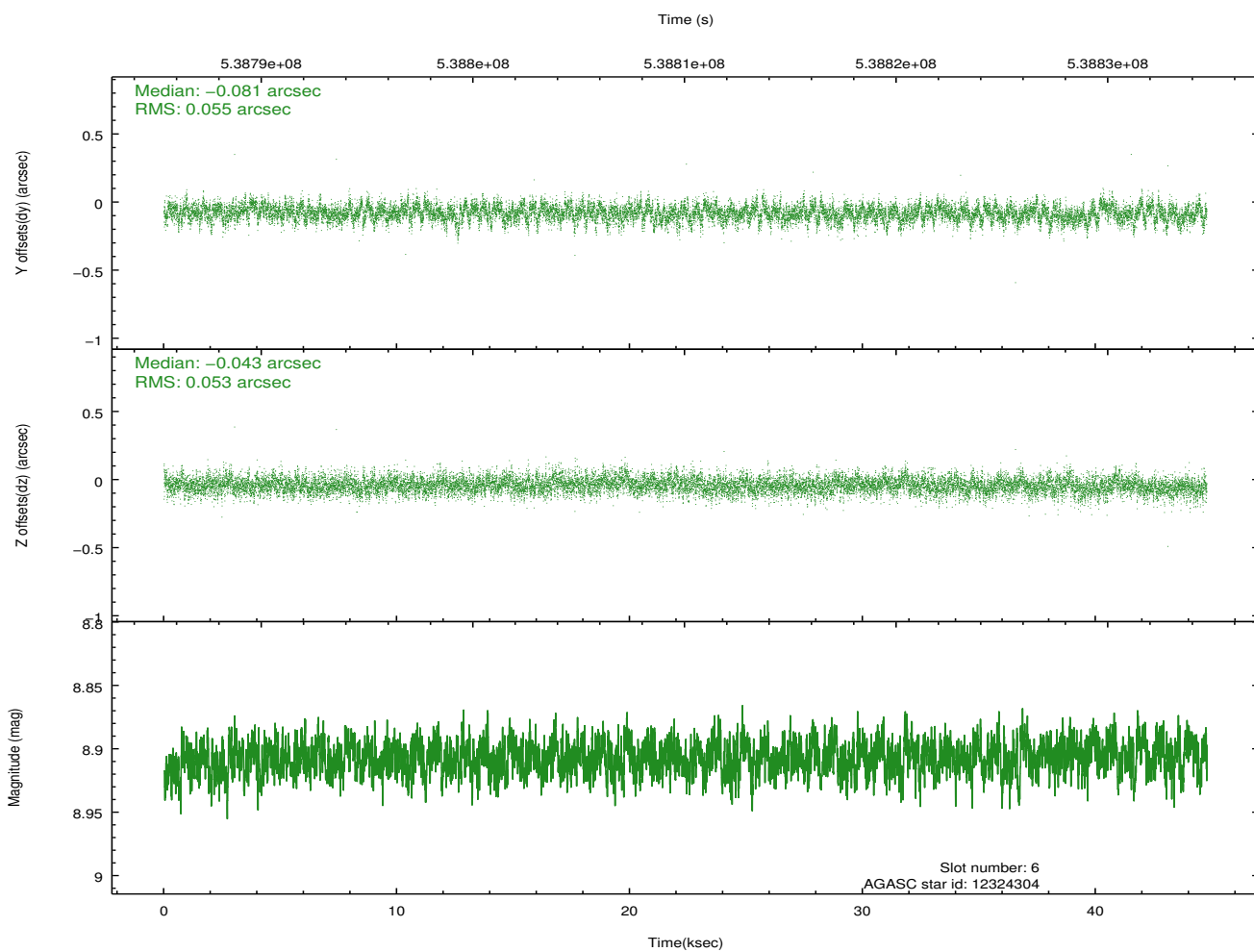
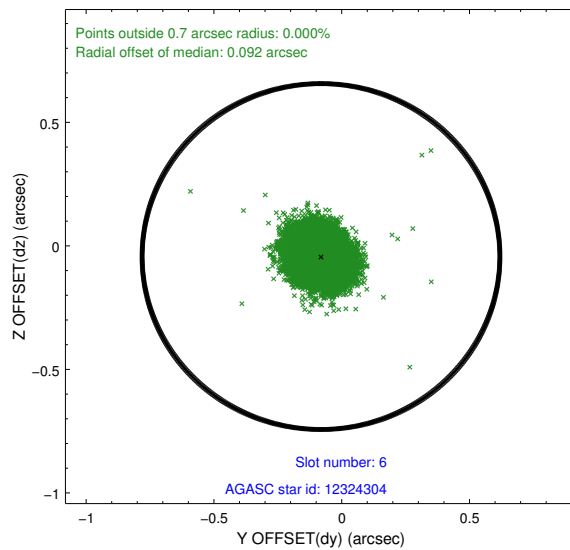
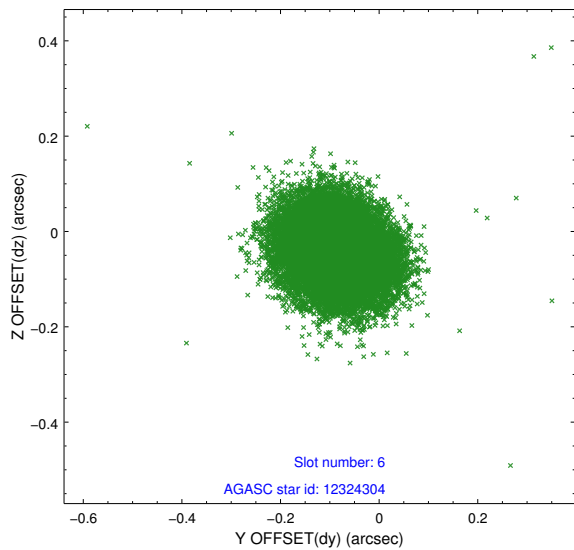
2.4.2 Slot 4



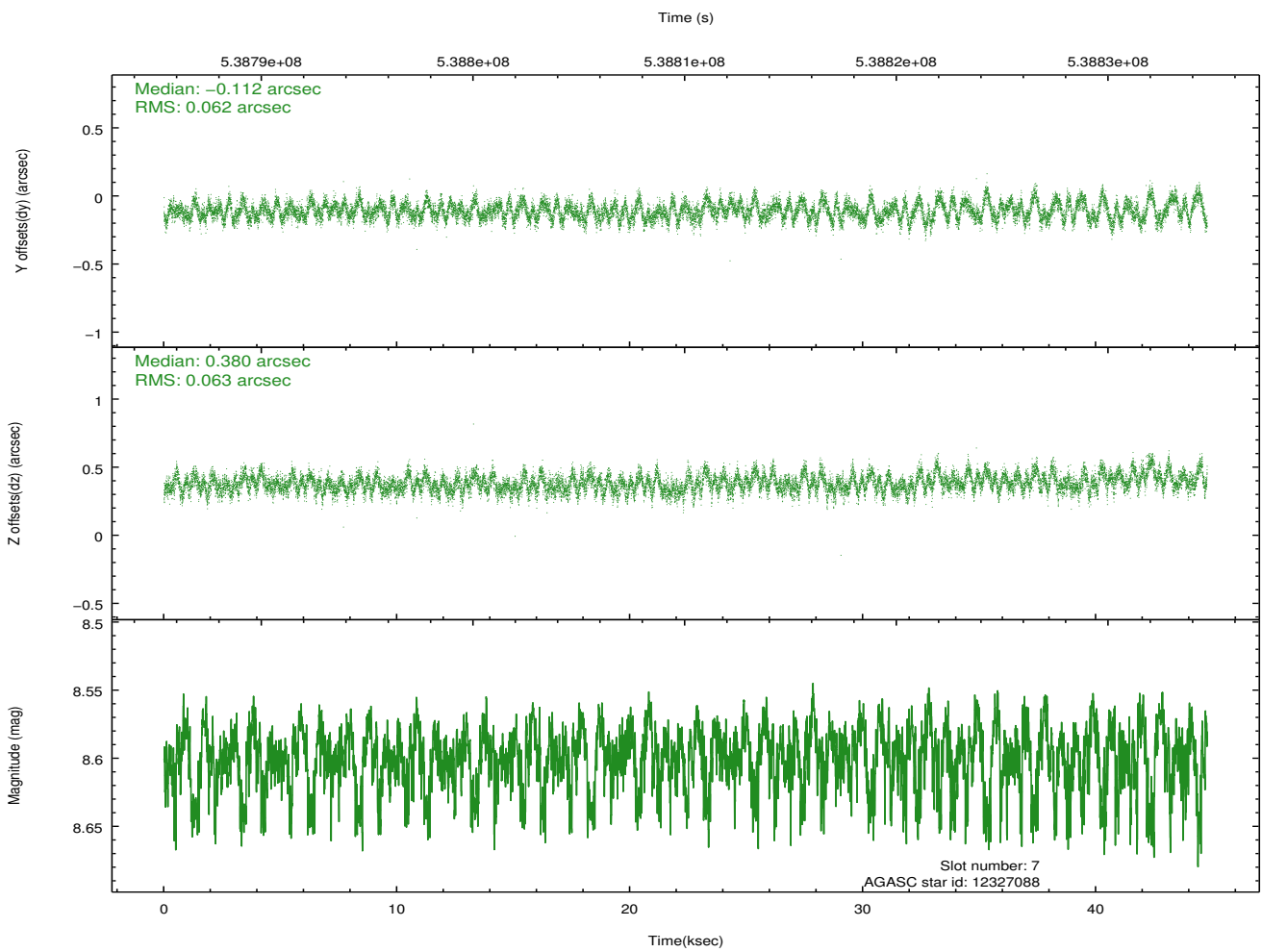
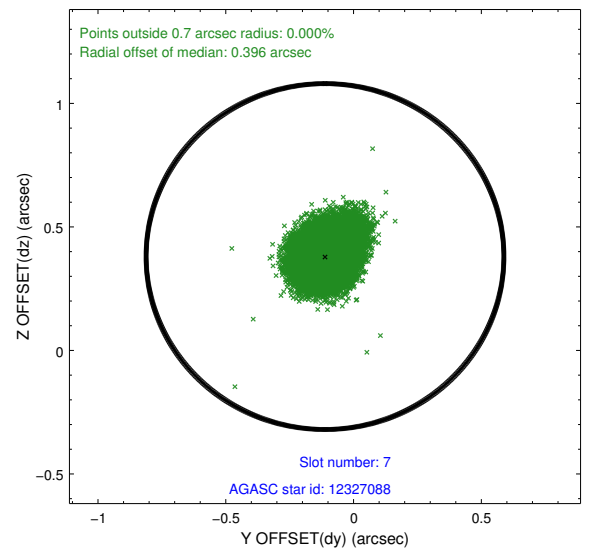
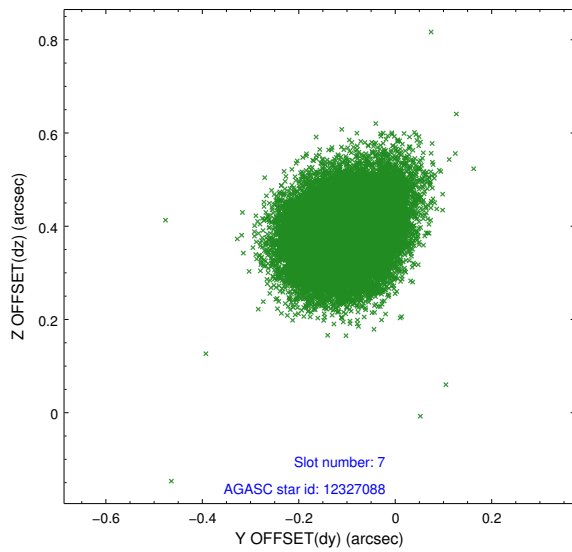
2.4.3 Slot 5



2.4.4 Slot 6

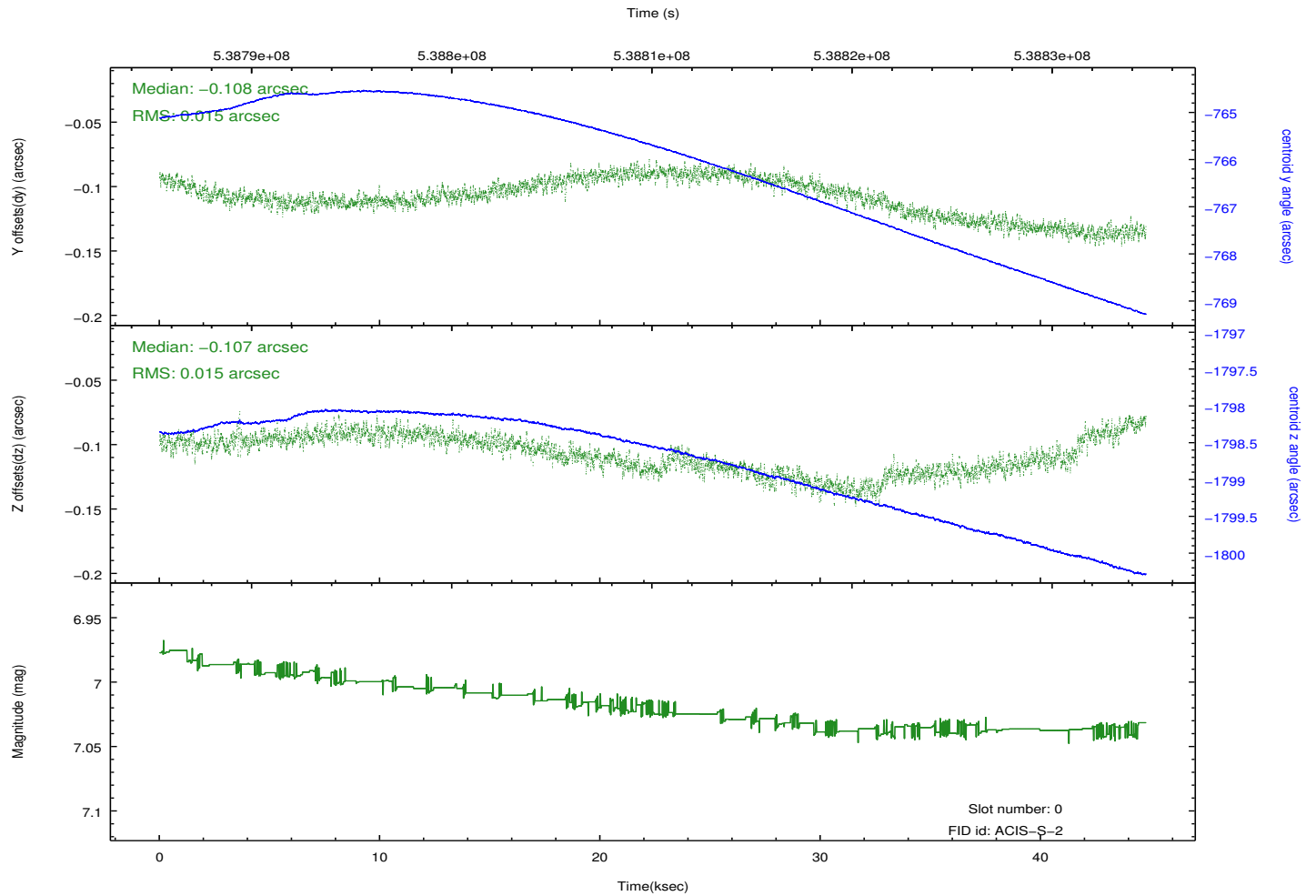
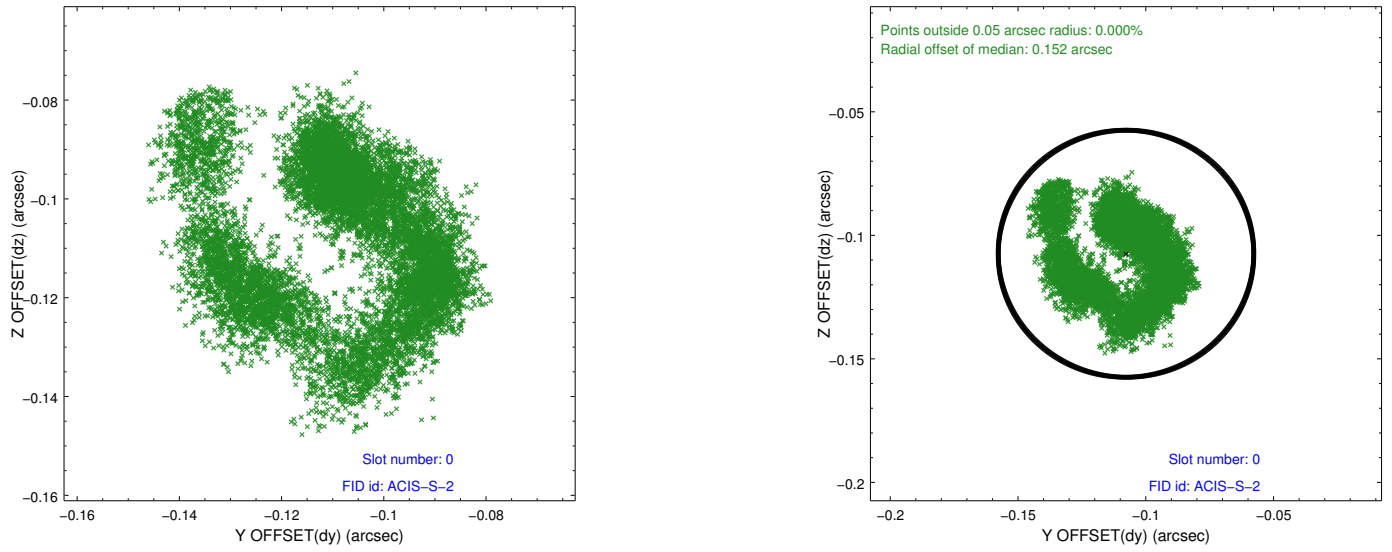


2.4.5 Slot 7

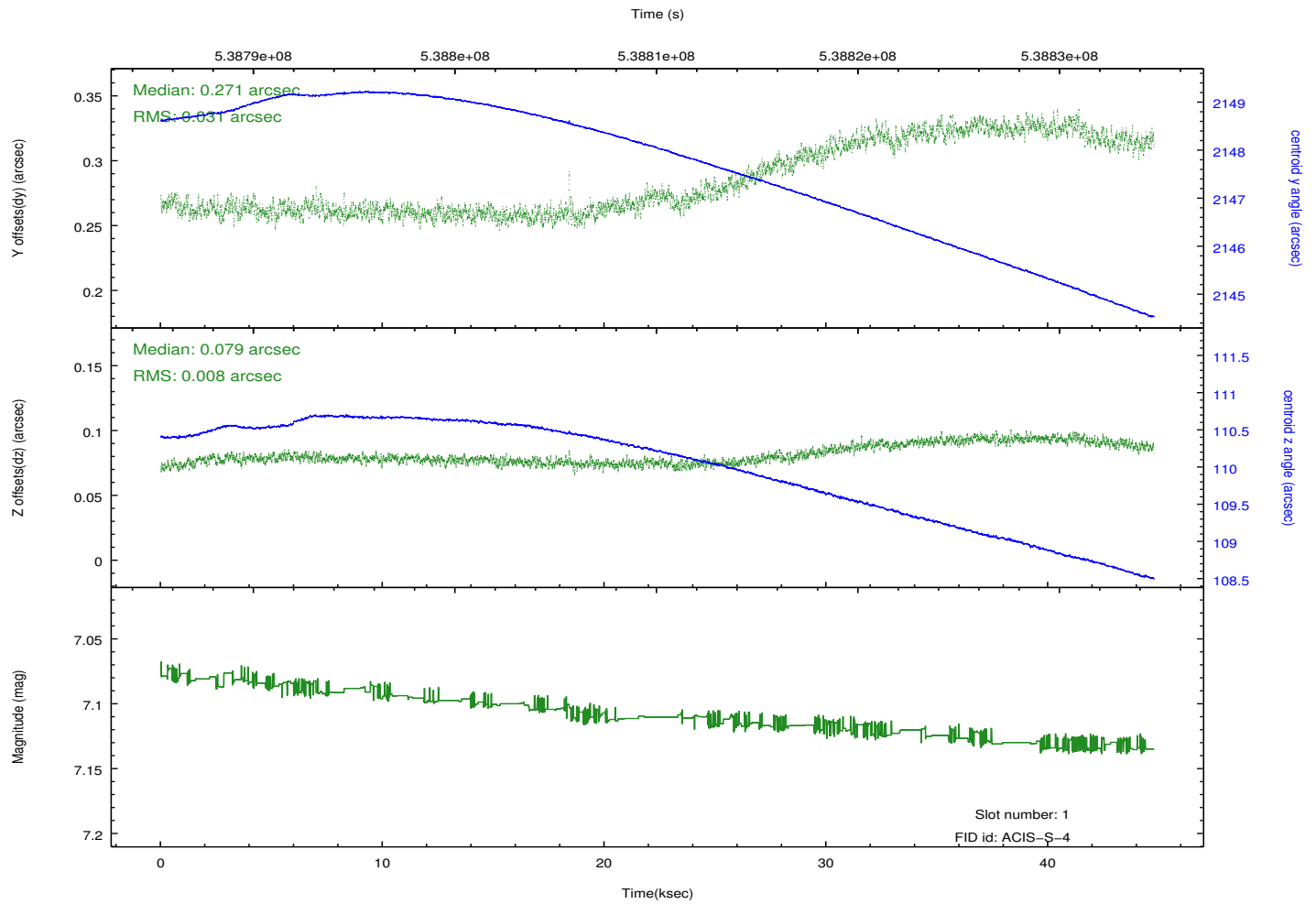
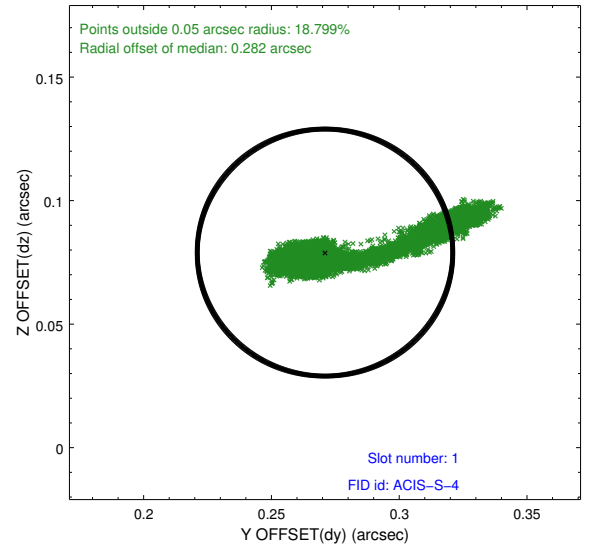
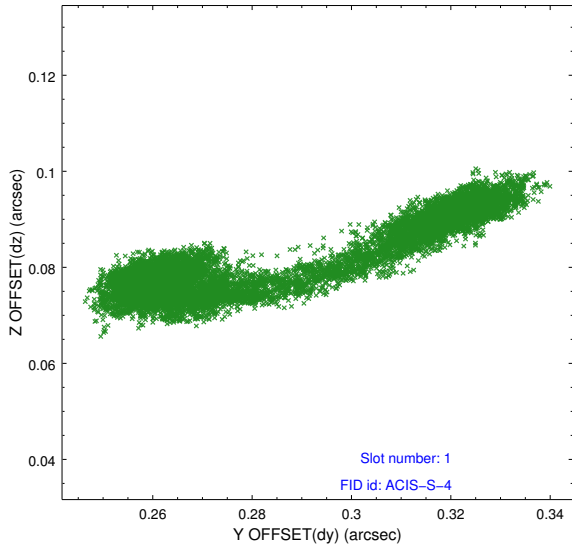


2.5 FID Slots

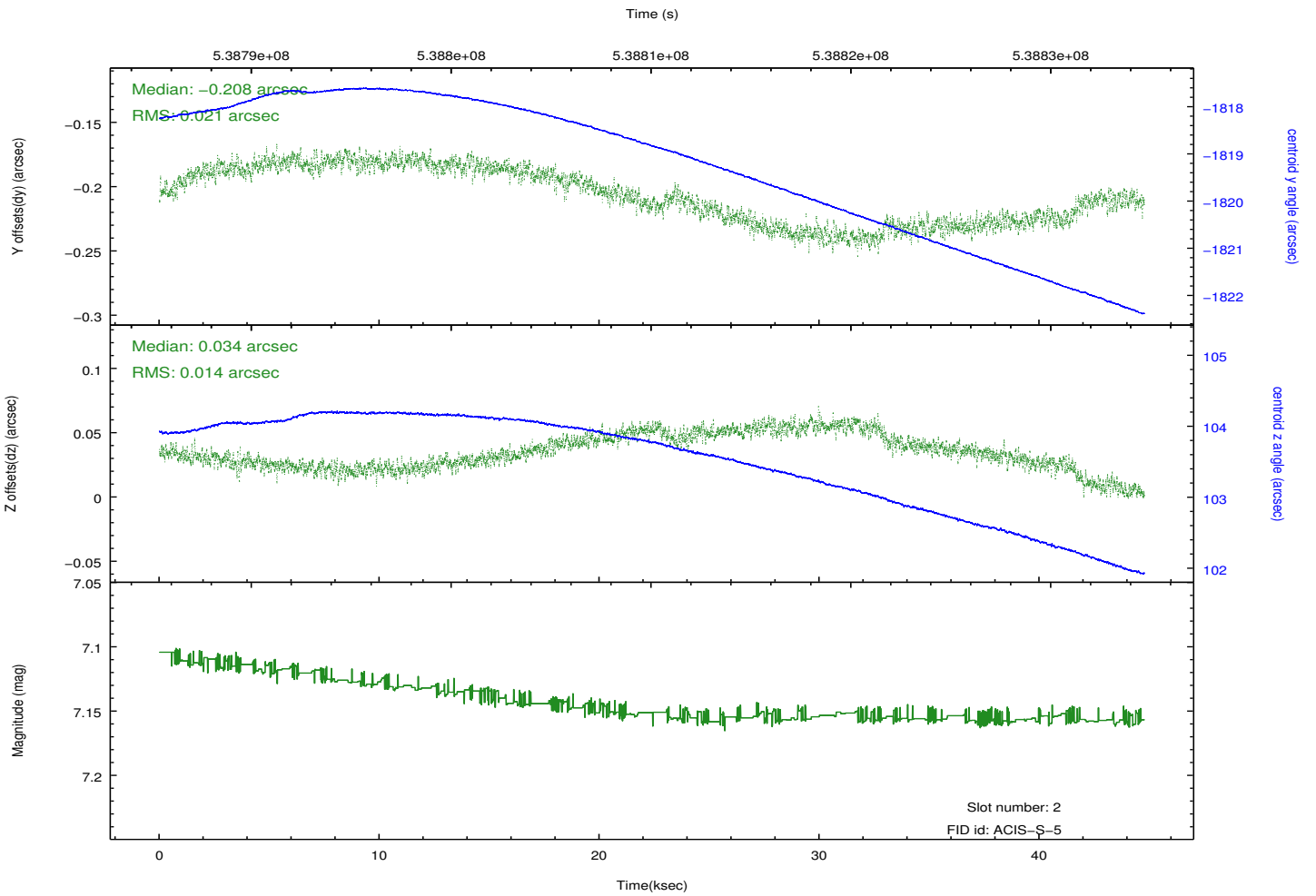
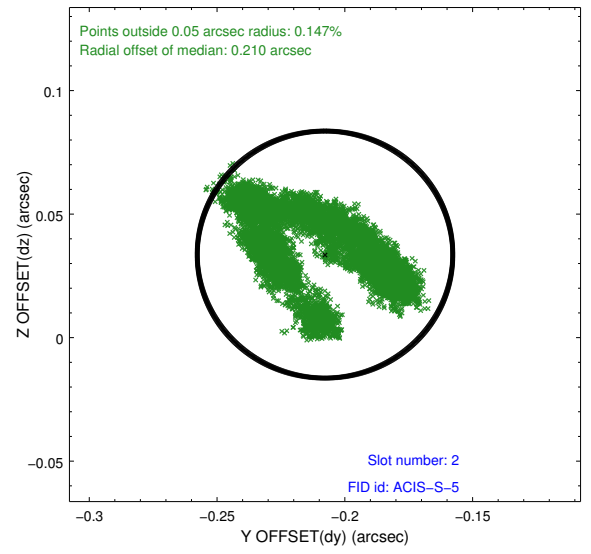
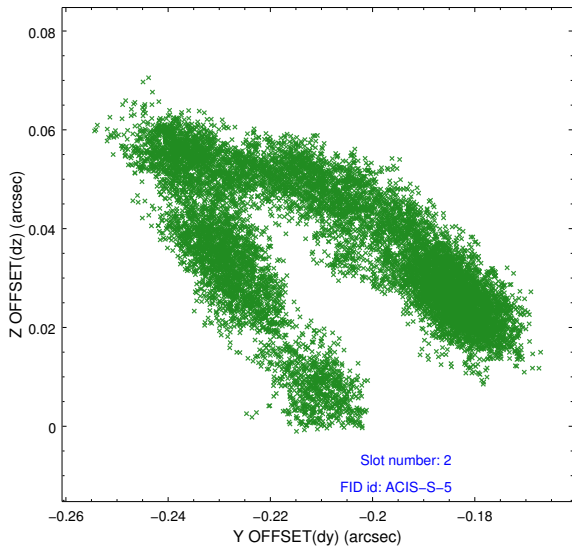
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

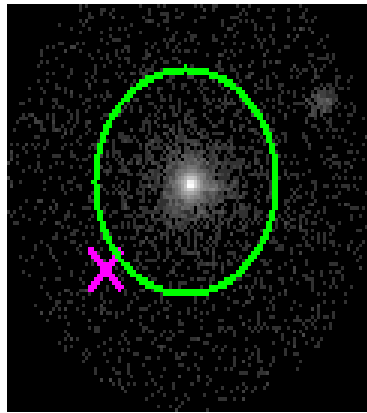


3 Gratings

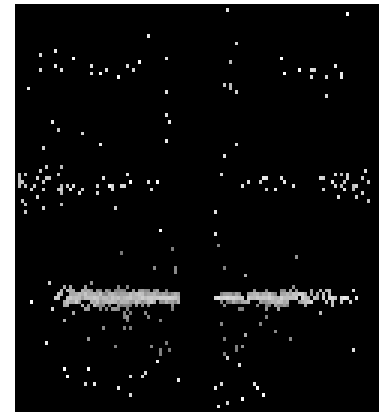
3.1 HEG Arm



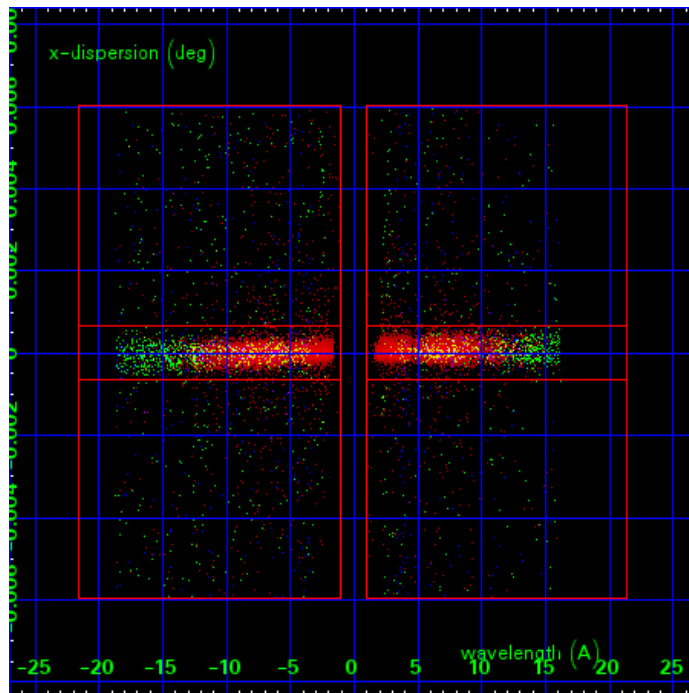
HEG Order Sort 123



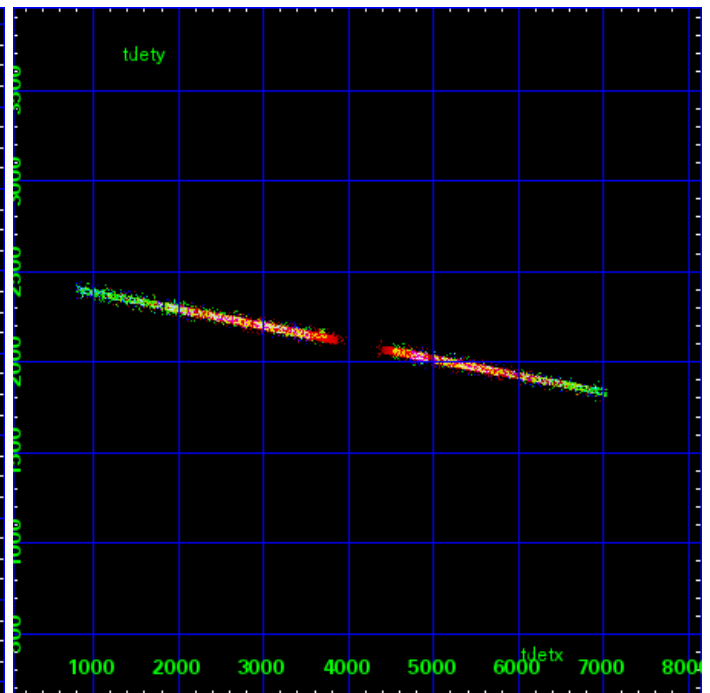
HEG Zero Order



HEG Order Sort ALL

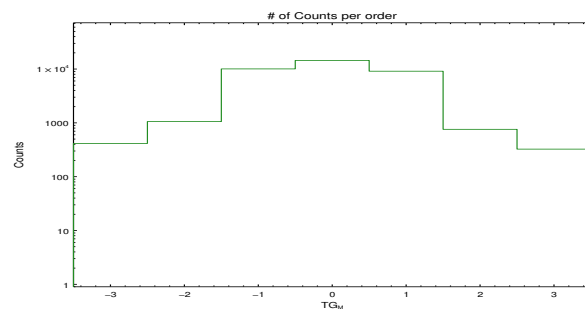


Spot Image HEG

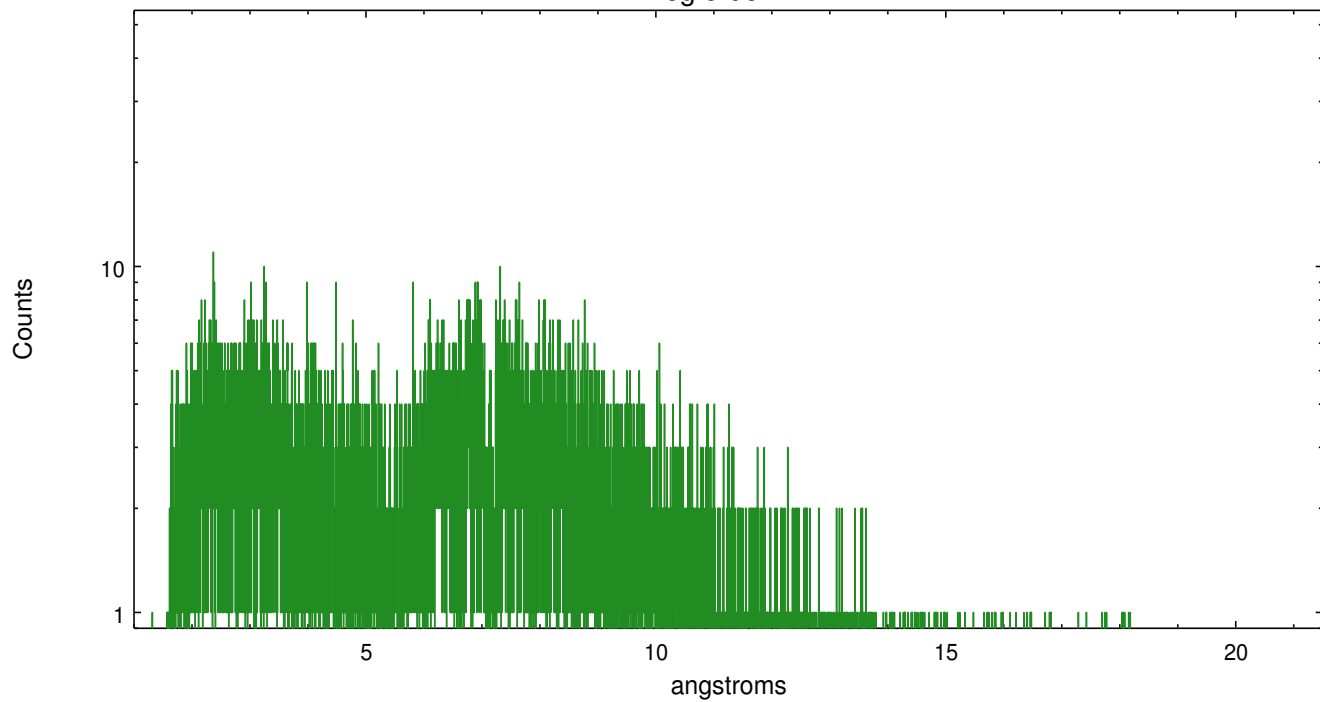


Full Detector HEG

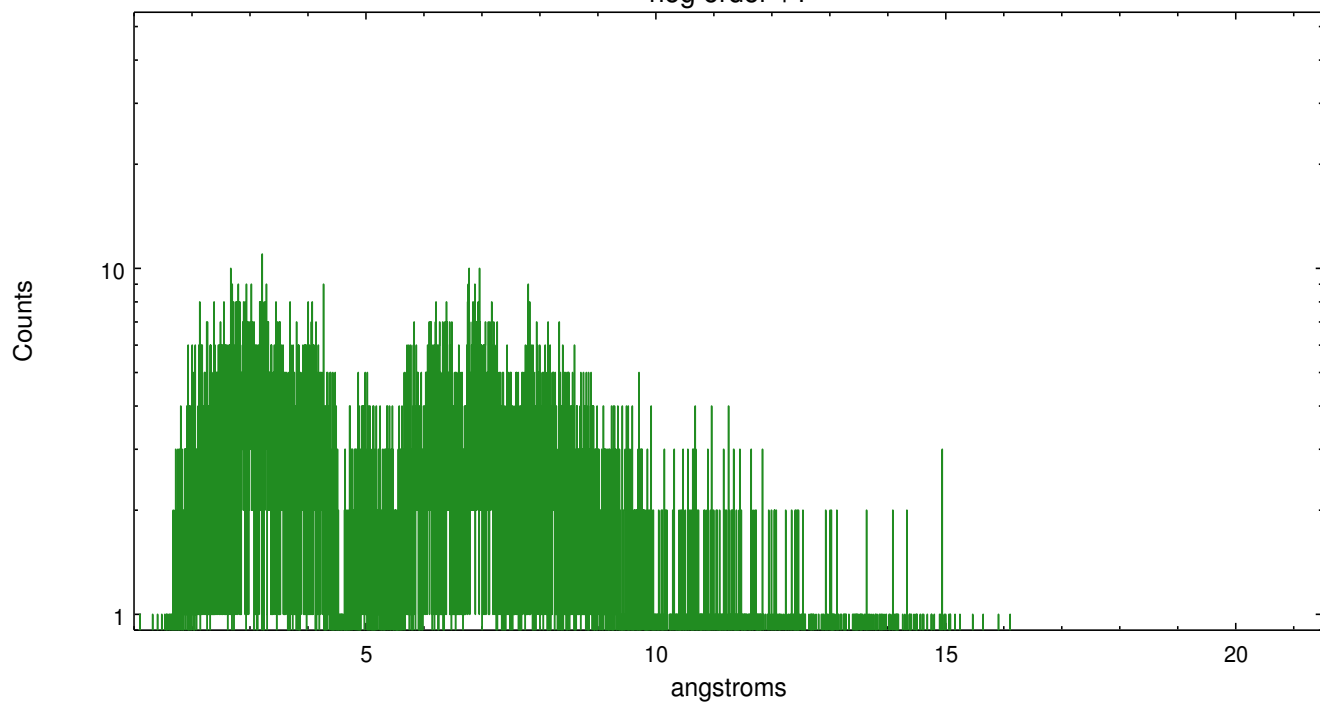
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	415	1056	10062	14470	9112	758	325



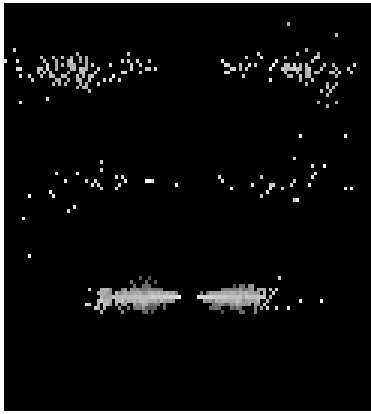
heg order -1



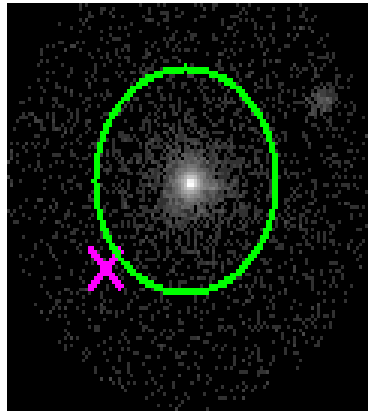
heg order +1



3.2 MEG Arm



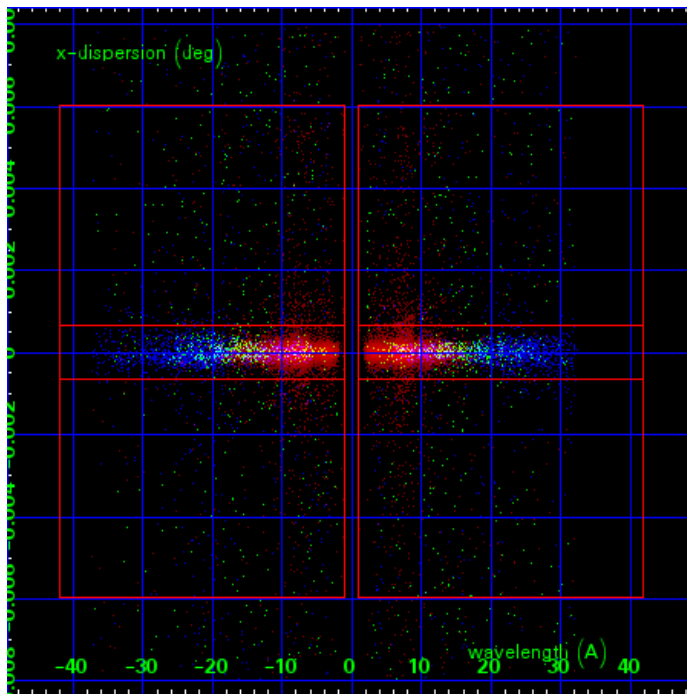
MEG Order Sort 123



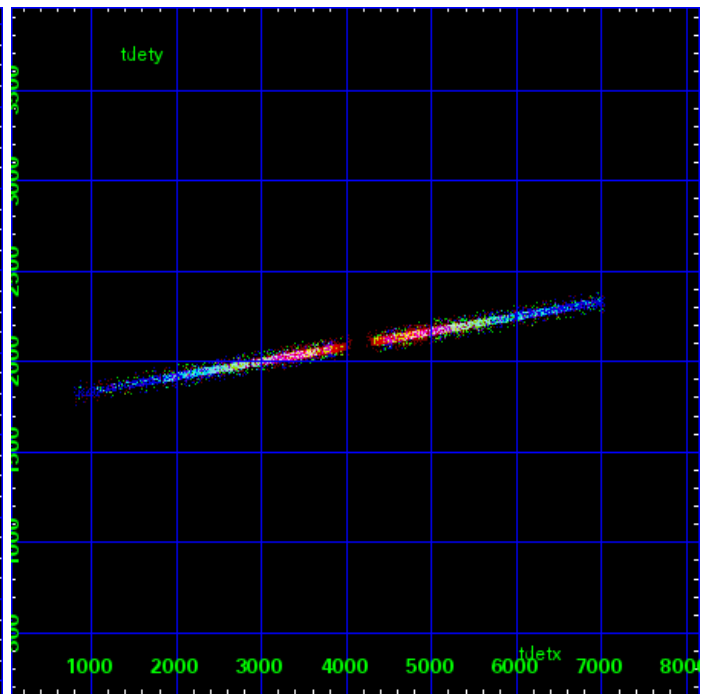
MEG Zero Order



MEG Order Sort ALL

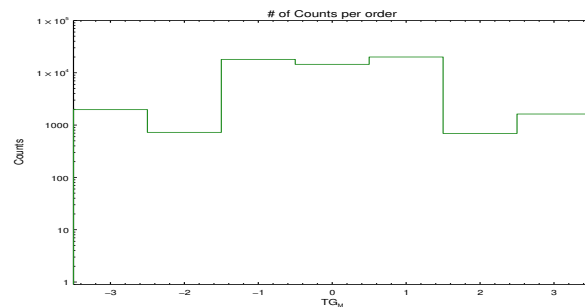


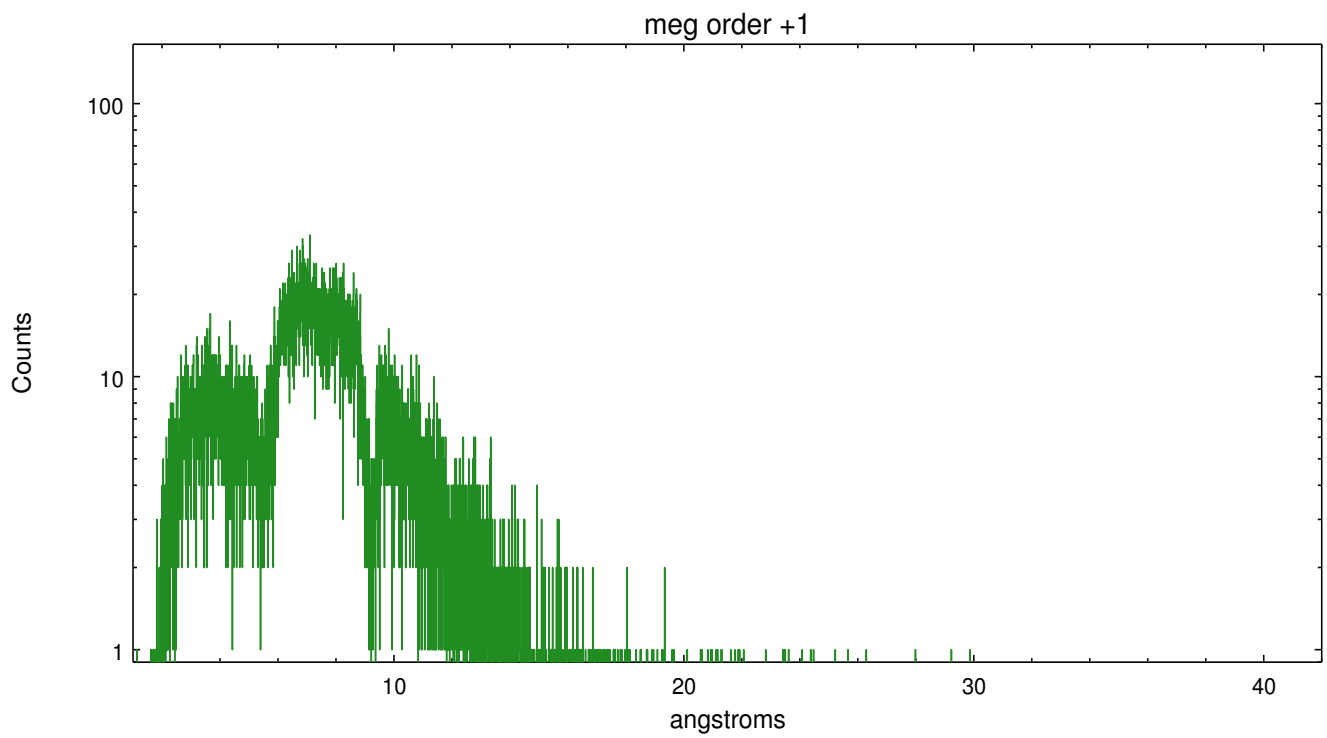
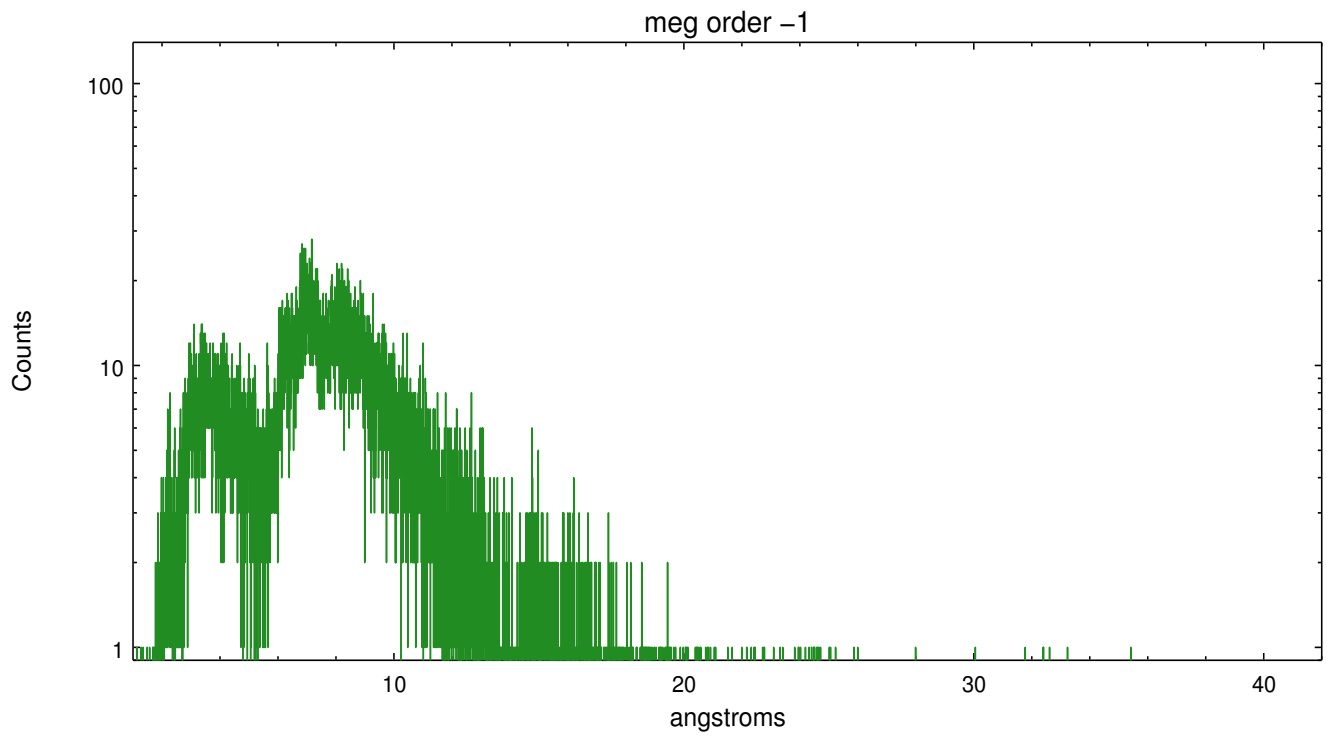
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1974	725	18005	14470	20008	693	1627





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.01.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	44.03

A.2 Comments

Zeroth order piled up. The zeroth order sky position was determined using a software tool developed by CXC called findzero, which is available in CIAO as part of the tgdetect2 tool. The tool calculates the point of intersection of the readout streak on the ACIS CCD and the meg dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.

===

Asymmetric source, extended in approximate cross-dispersion direction. The spectral data supplied in this processing are only energy-calibrated for the central bright X-ray region.

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.