

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 2704 - L2 Version 3
Chandra X-Ray Center

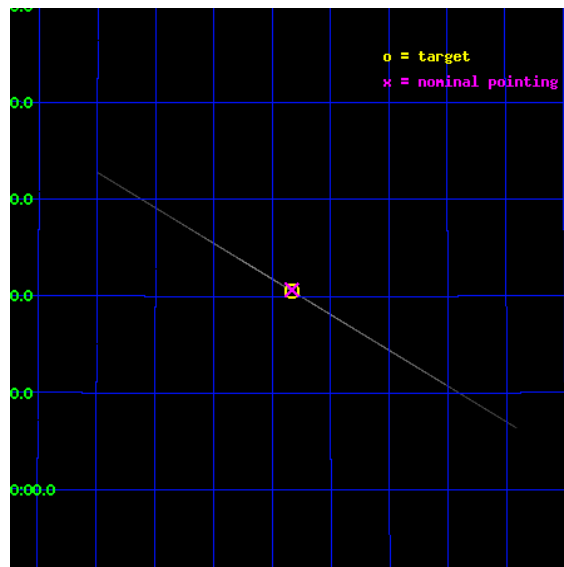
L2 Processing Date : Oct 10 2012

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

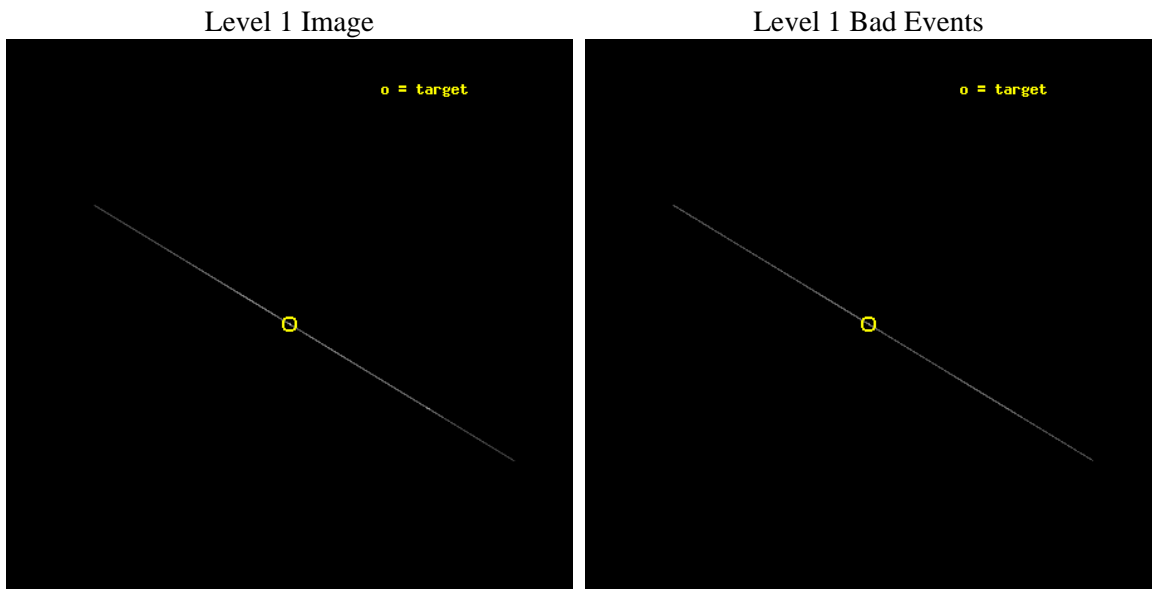
seq_num	400184	Sequence number
obs_id	2704	Observation id
title	HIGH RESOLUTION SPECTROSCOPY OF HERCULES X-1	Proposal title
observer	Dr. Daniel Scott	Principal investigator
object	HER X-1 MAIN HI LATE	Source name
ra_targ	254.4575	Observer's specified target RA [deg]
dec_targ	35.342472	Observer's specified target Dec [deg]
ra_nom	254.45795348548	Nominal RA [deg]
dec_nom	35.344670072297	Nominal Dec [deg]
roll_nom	211.00727080803	Nominal Roll [deg]
revision	3	Processing version of data
ontime	18723.5	Sum of GTIs [s]
livetime	18650.361328125	Livetime [s]
ontime4	18723.5	Sum of GTIs [s]
ontime5	18723.5	Sum of GTIs [s]
ontime6	18723.5	Sum of GTIs [s]
ontime7	18723.5	Sum of GTIs [s]
ontime8	18723.5	Sum of GTIs [s]
ontime9	18723.5	Sum of GTIs [s]
l2events	1327109	Number of level 2 events



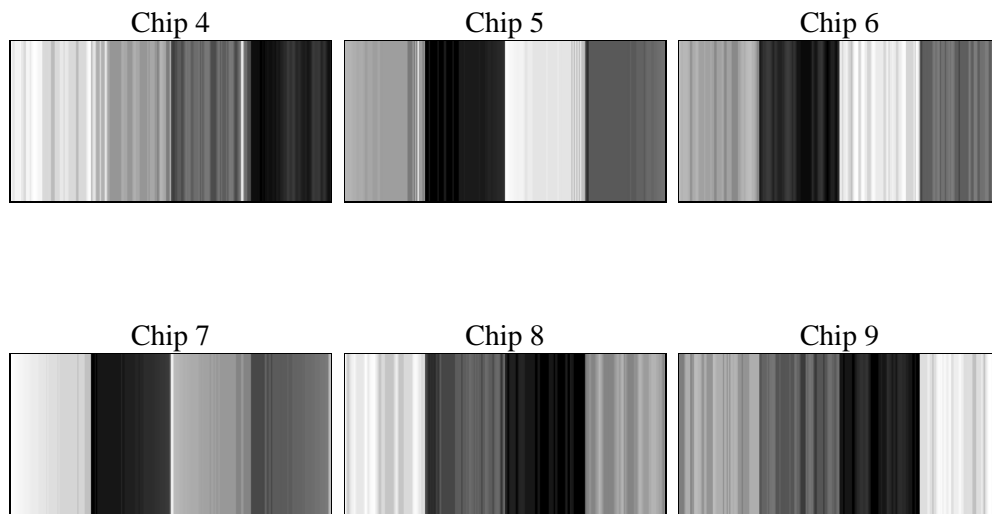
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	18500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	18723.5	Sum of GTIs [s]
caldbver	4.5.2	 	ontime4	18723.5	Sum of GTIs [s]
date	2012-10-10T04:25:42	Date and time of file creation	ontime5	18723.5	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	18723.5	Sum of GTIs [s]
			ontime7	18723.5	Sum of GTIs [s]
			ontime8	18723.5	Sum of GTIs [s]
			ontime9	18723.5	Sum of GTIs [s]
			l1events	1530786	Number of level 1 events

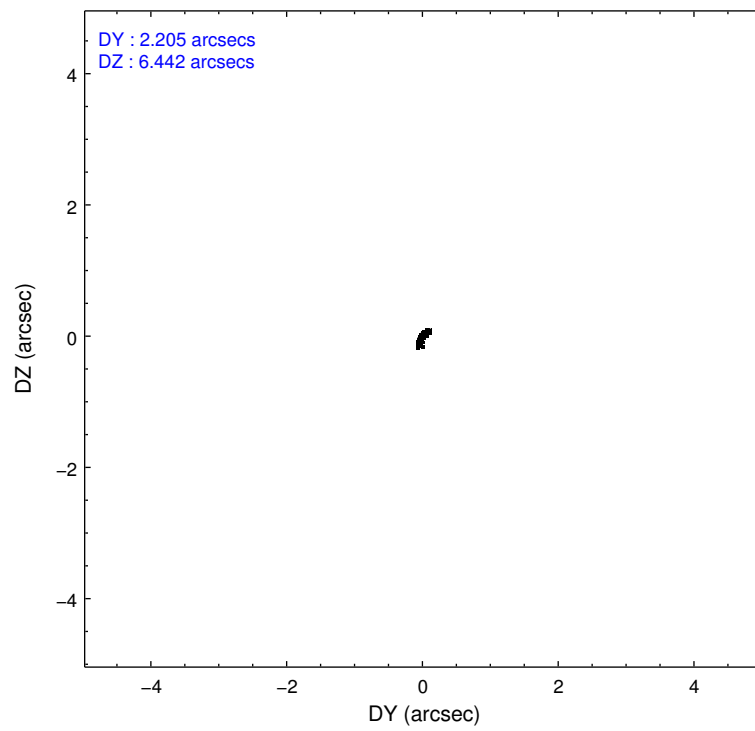
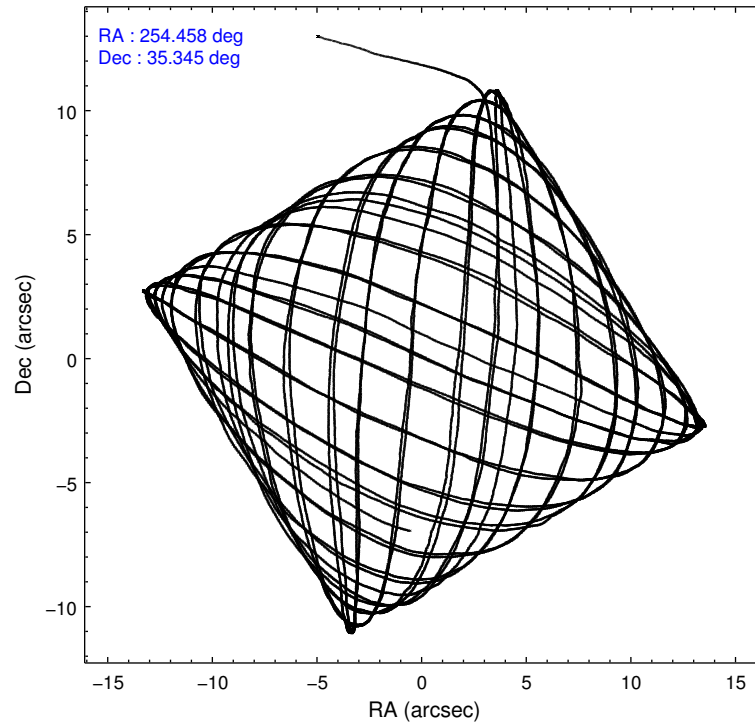
2.1.4 Events

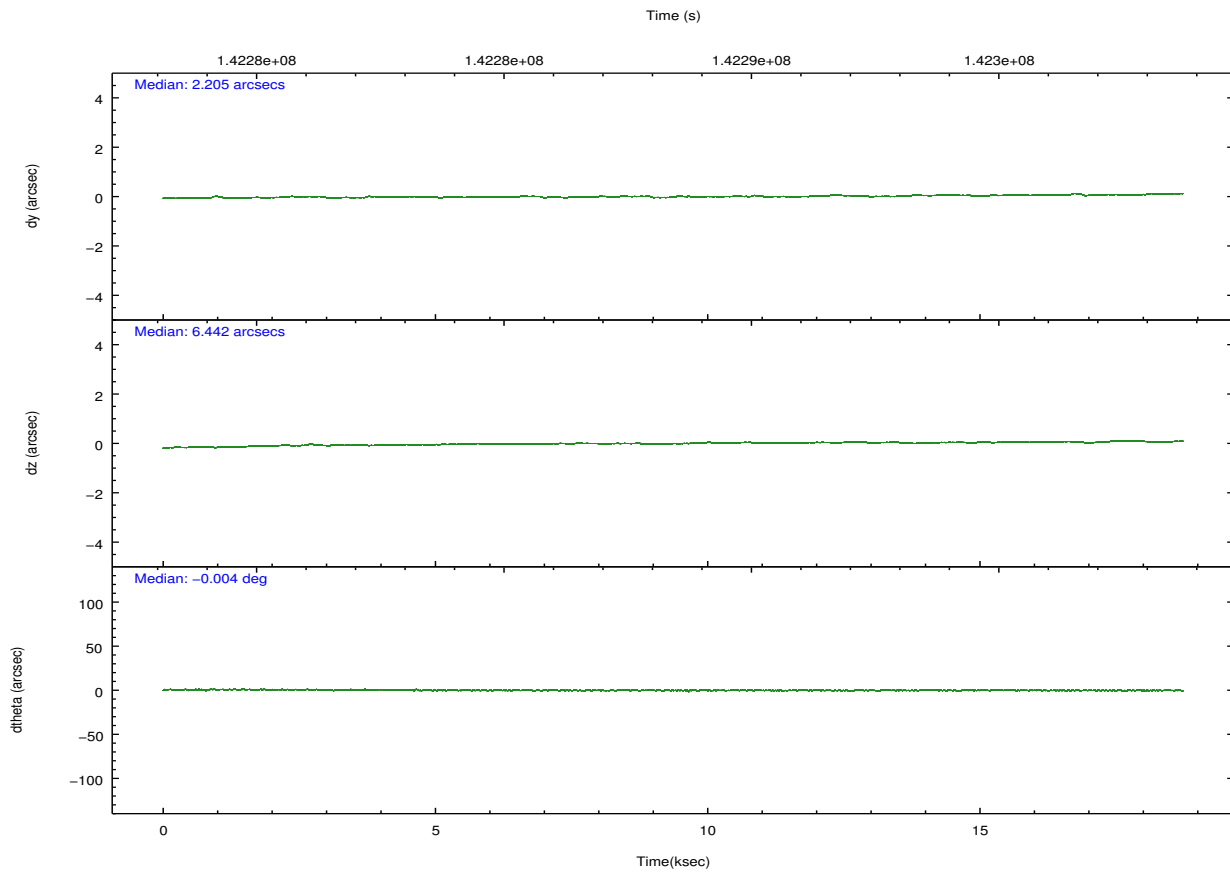
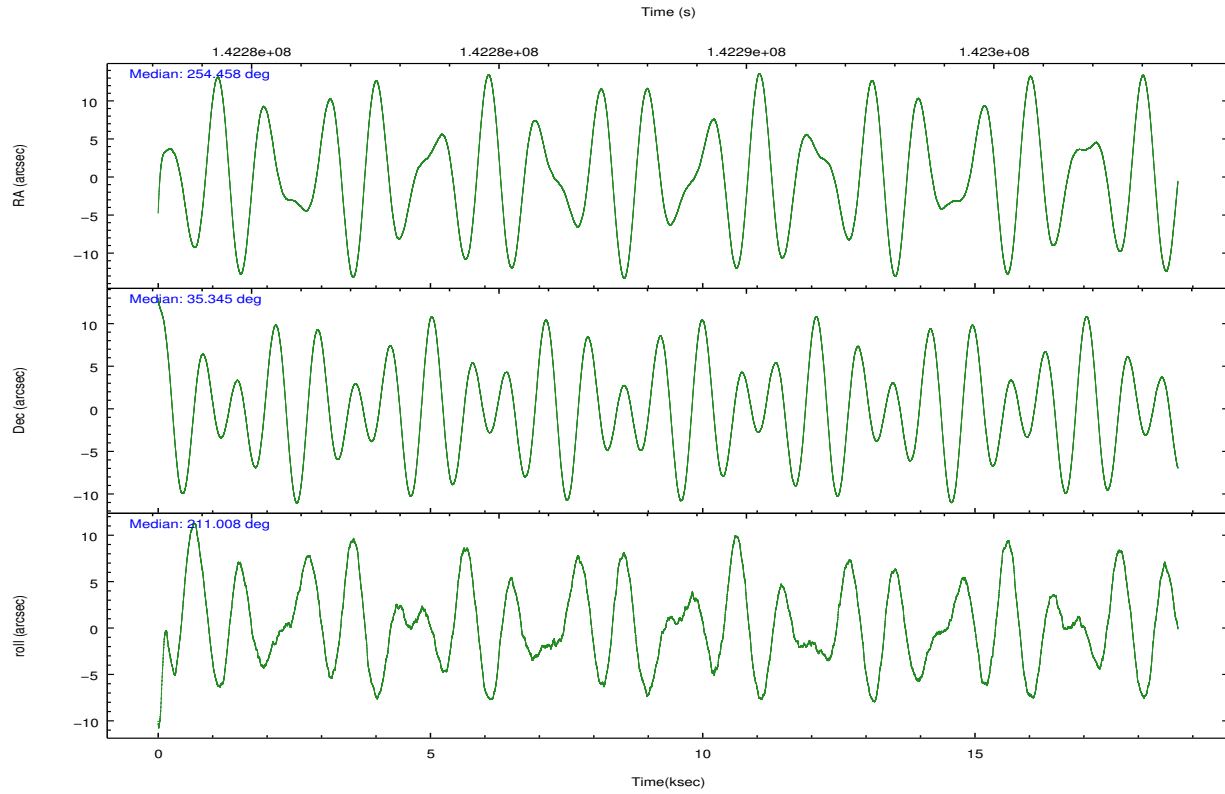
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	43169	205139	252007	825393	154629	50449	grade 0 events	8616	59655	30787	185055	52550	12764
rejected events	5359	17722	7863	47568	9124	6189		19%	29%	12%	22%	33%	25%
rejected %	12%	8%	3%	5%	5%	12%	grade 1 events	119	186	115	6050	205	107
								0%	0%	0%	0%	0%	0%
							grade 2 events	17749	56847	180082	199155	65540	19618
								41%	27%	71%	24%	42%	38%
							grade 3 events	3387	8201	3908	80299	7040	3059
								7%	3%	1%	9%	4%	6%
							grade 4 events	3508	8203	3917	78843	6945	3229
								8%	3%	1%	9%	4%	6%
							grade 5 events	4461	12540	6058	34623	7083	5317
								10%	6%	2%	4%	4%	10%
							grade 6 events	5329	59507	27140	241368	15266	6355
								12%	29%	10%	29%	9%	12%
							grade 7 events	0	0	0	0	0	0
								0%	0%	0%	0%	0%	0%

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	CC33_FAINT	CC33_FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	254.473795	254.457953485479	Subarray requested	NONE	NONE
[deg] Pointing Dec	35.368654	35.34467007229679	Alternating exposures requested	N	N
[deg] Pointing Roll	210.841475	211.0072708080252	[s] Primary exposure time	0.000000	0
[s] Window start time (MET)	142260364.184000	142260364.184000			
[s] Window stop time (MET)	142318024.184000	142318024.184000			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-186.132523	-186.1423047203915			
[mm] SIM translation stage offset	-4	-3.990217862616333			
Phase constraints	Y	Y			
[d] Phase period	34.853430	34.853430			
[d] Phase epoch (MJD)	52242.791000	52242.791000			
Phase start	0.200000	0.200000			
Phase end	0.270000	0.270000			
Phase start error	0.001000	0.001000			
Phase end error	0.001000	0.001000			
[s] Observation start time (MET)	142279283.184000	142278304.07576			
Observation start date	2002-07-05T18:00:19	2002-07-05T17:45:04			
[s] Observation end time (MET)	142297783.184000	142298561.66409			

2.3 Aspect



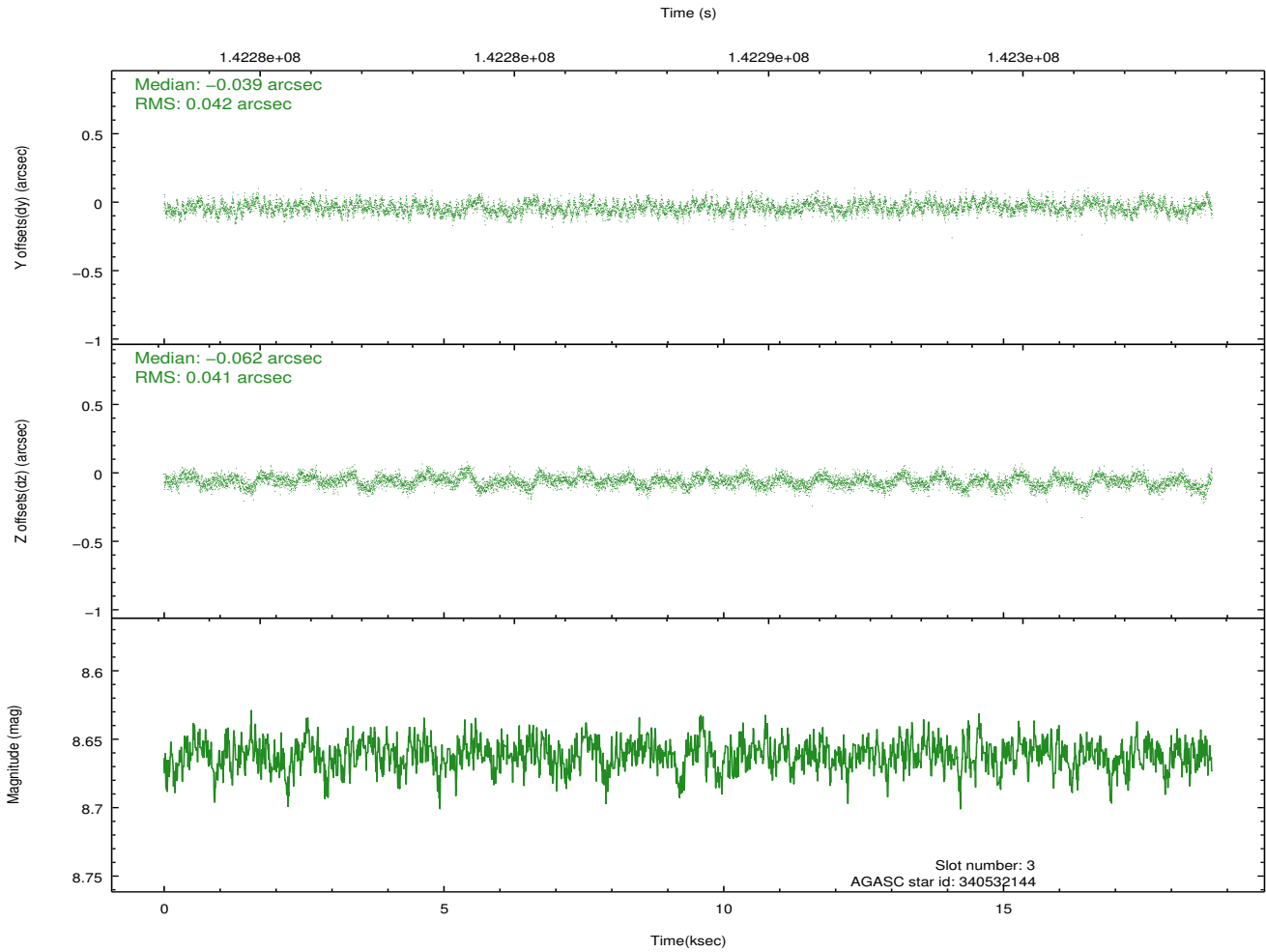
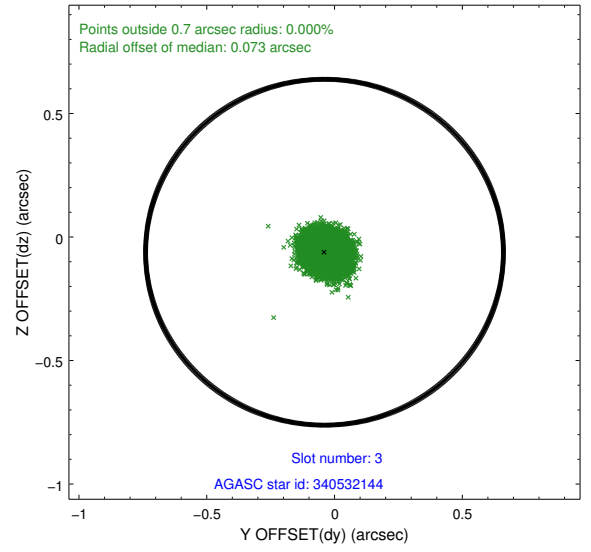
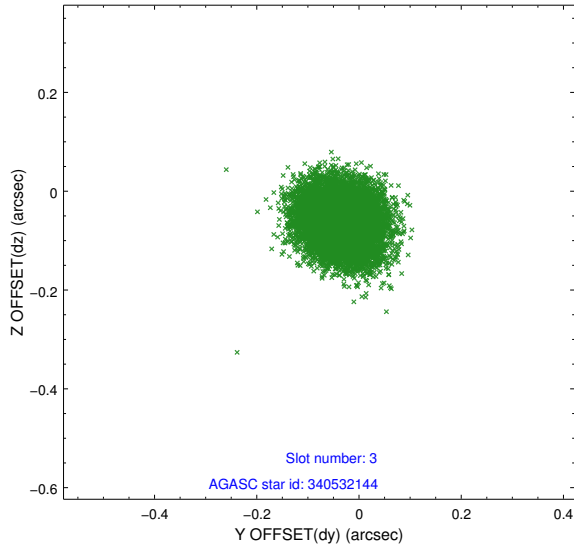


Slot Statistics

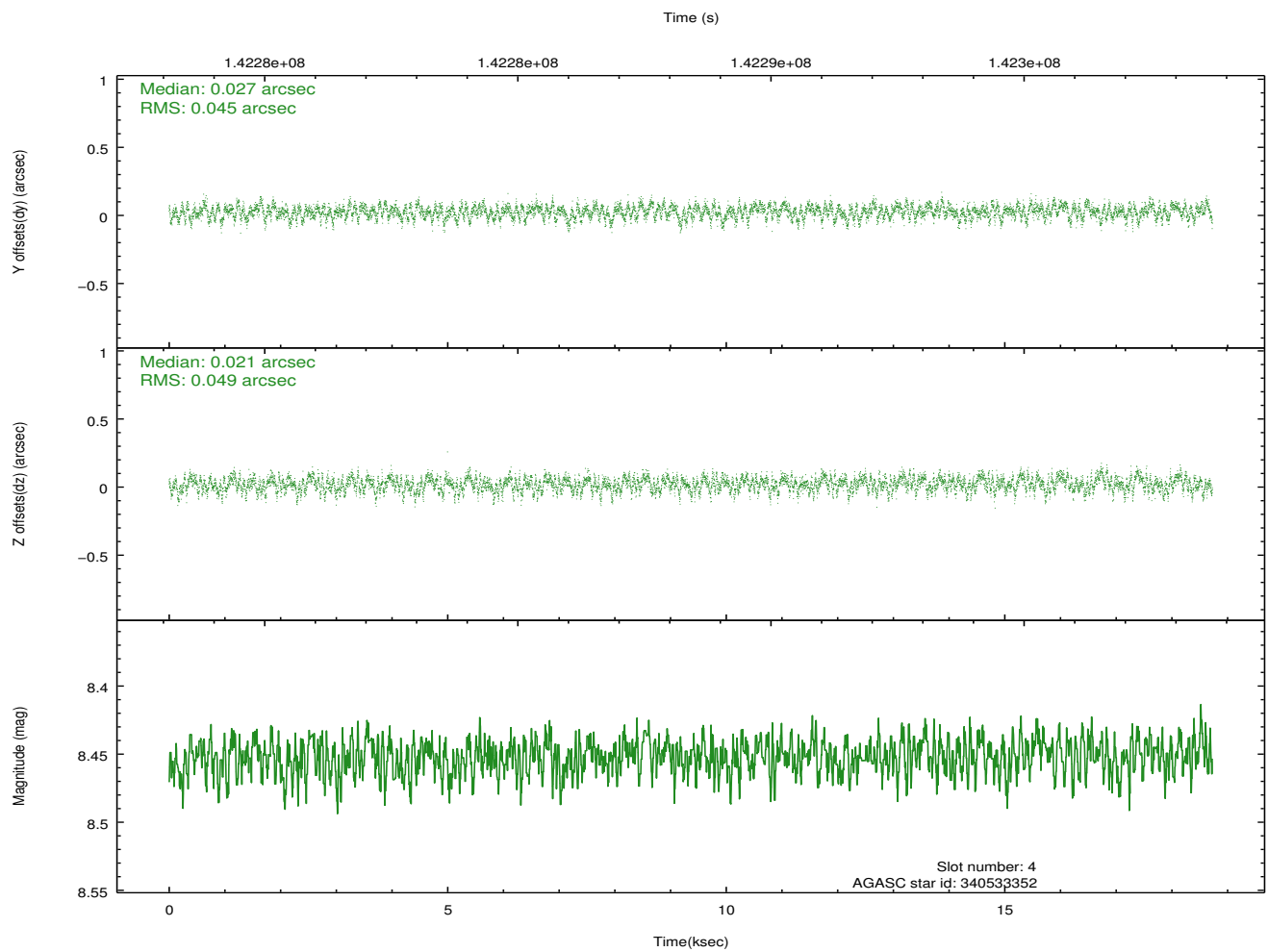
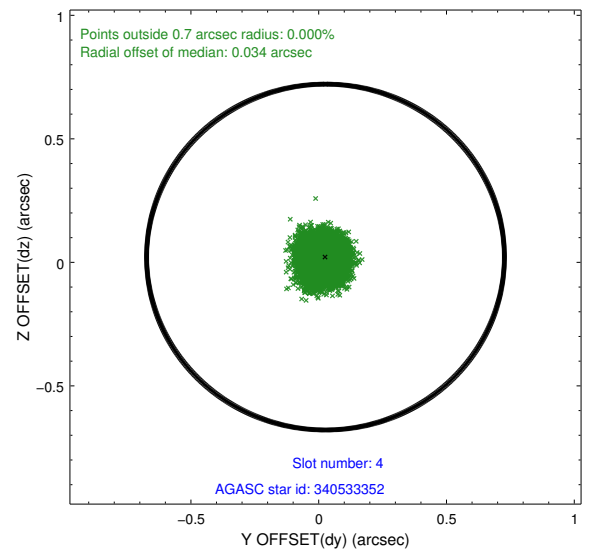
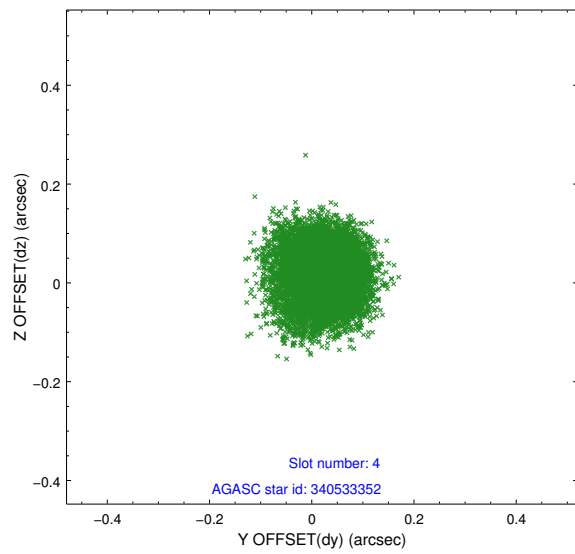
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	4568	-0.036	-0.090	0.007	0.011	0.000000	0.000000	-754.58	-1810.00
1	FID	ACIS-S-4	7.19	4567	0.019	0.041	0.006	0.012	0.000000	0.000000	2158.64	98.39
2	FID	ACIS-S-5	7.23	4568	-0.014	0.057	0.007	0.011	0.000000	0.000000	-1807.14	92.30
3	GUIDE	340532144	8.66	9135	-0.039	-0.062	0.063	0.101	255.164643	35.156544	-1358.38	1692.61
4	GUIDE	340533352	8.45	9133	0.027	0.021	0.071	0.115	254.563691	34.717962	972.11	2148.39
5	GUIDE	340534080	8.82	9137	0.013	0.020	0.076	0.128	255.228954	35.471551	-2095.39	810.76
6	GUIDE	340535128	8.60	9136	0.022	-0.021	0.050	0.081	255.168295	35.370645	-1758.31	1033.66
7	GUIDE	341060696	9.21	9133	-0.024	0.046	0.100	0.160	254.855764	35.681180	-1537.14	-395.27

2.4 Star Slots

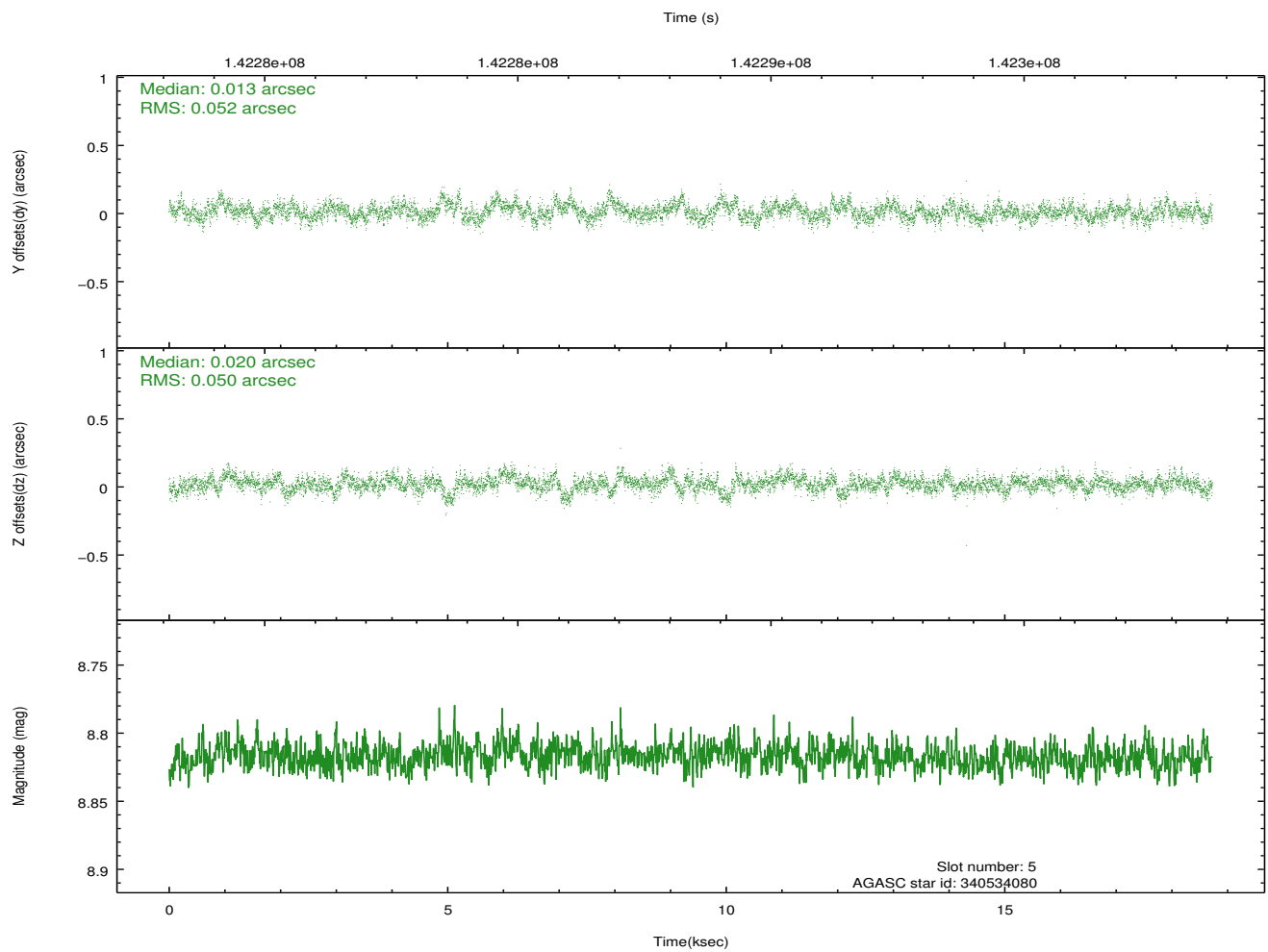
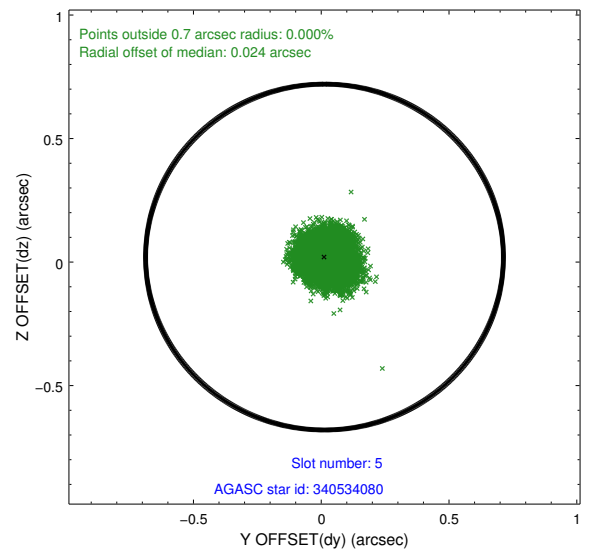
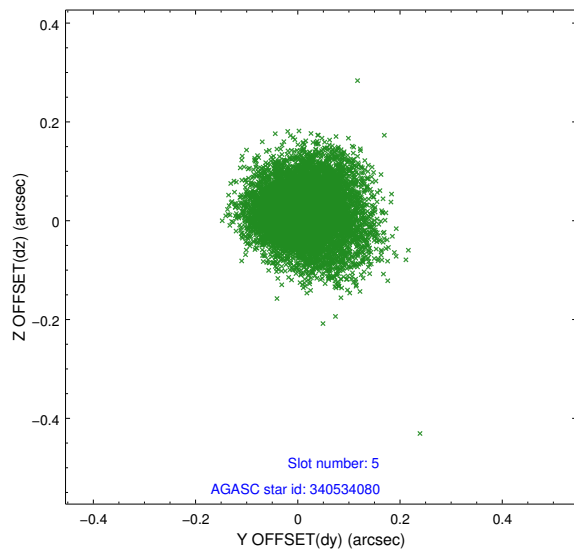
2.4.1 Slot 3



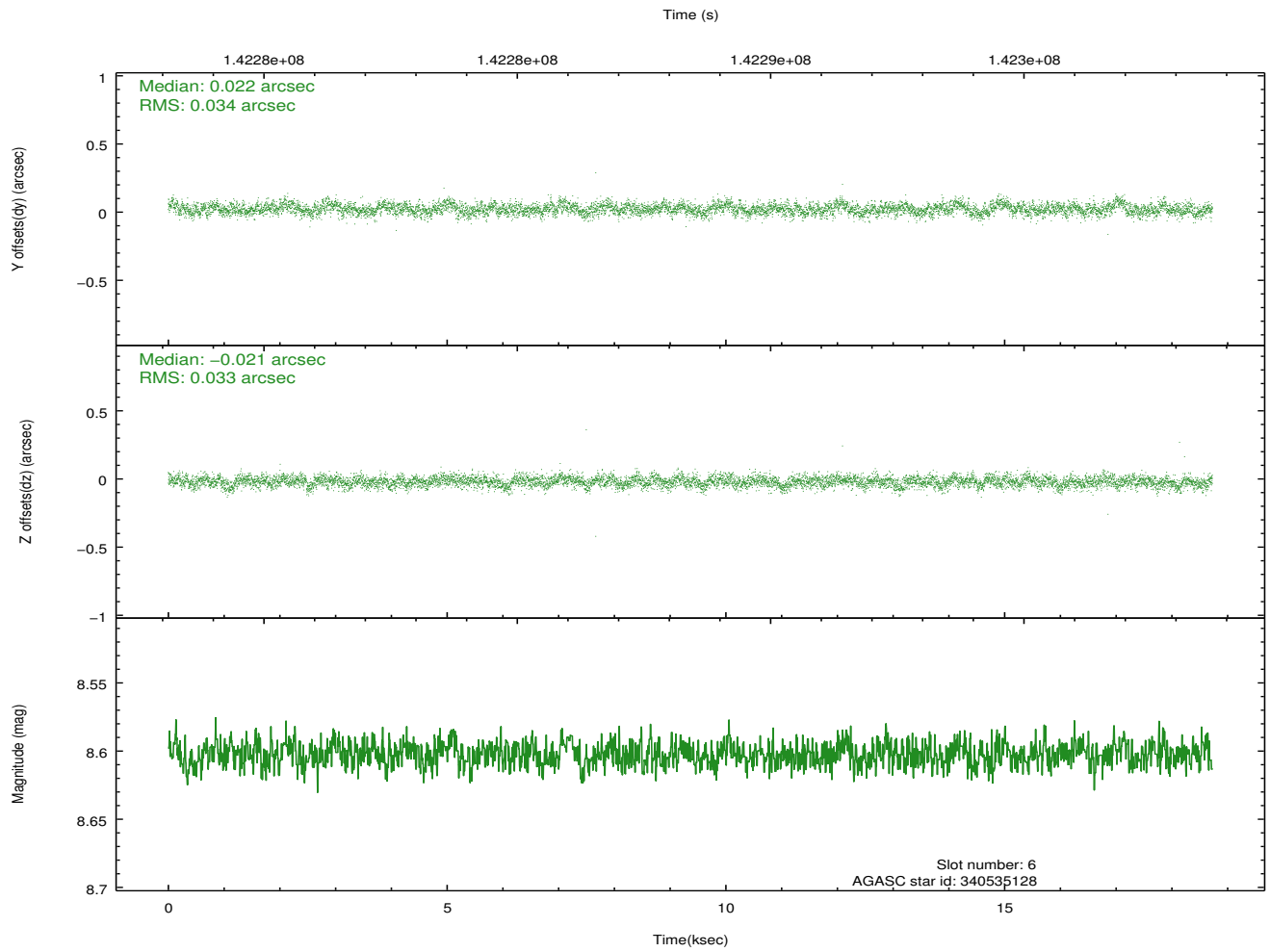
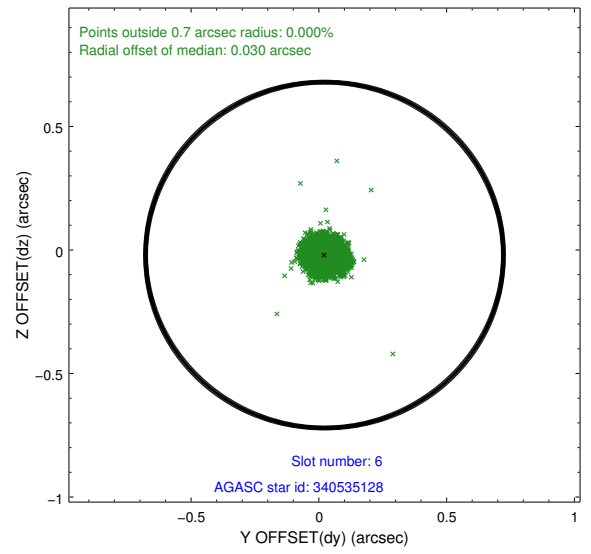
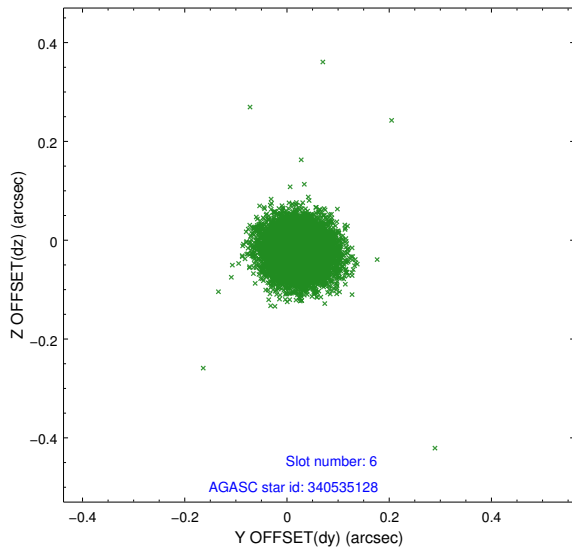
2.4.2 Slot 4



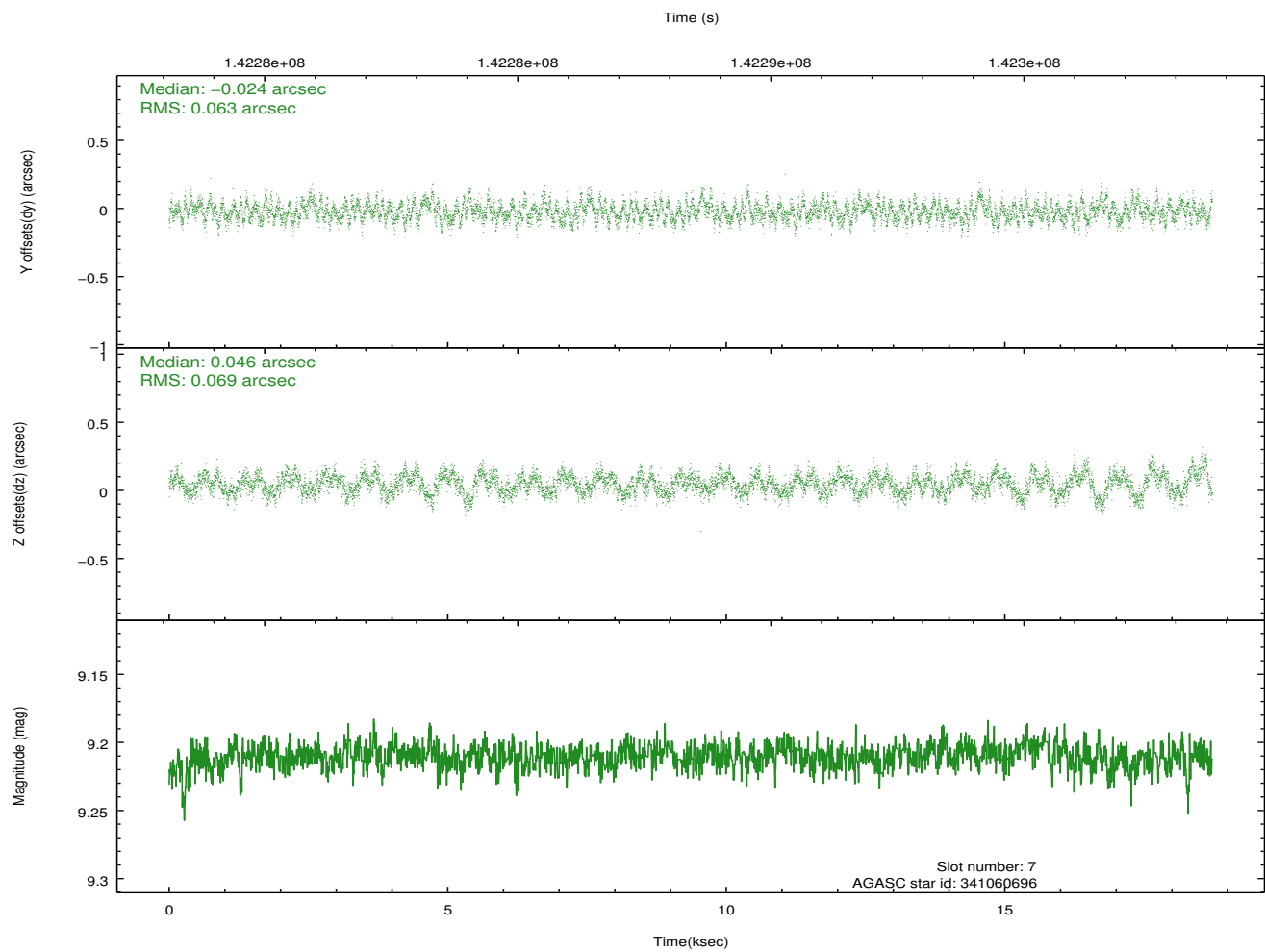
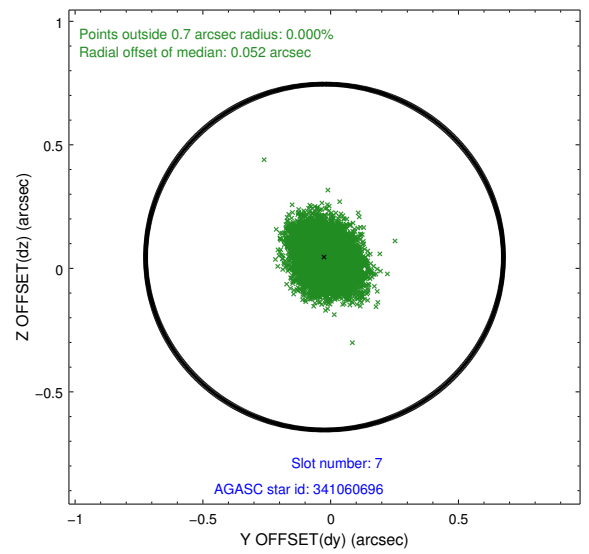
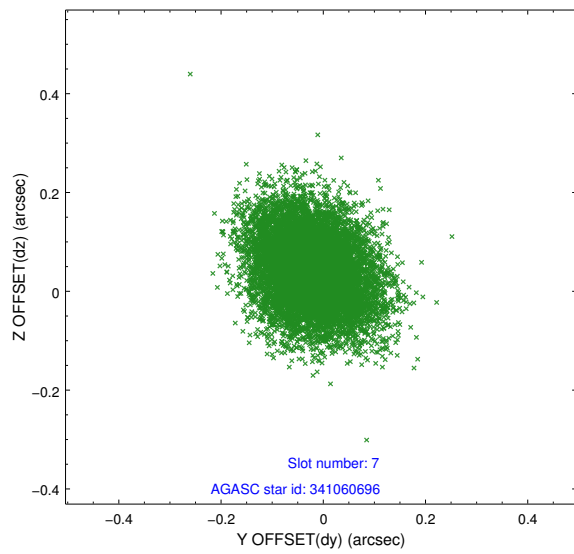
2.4.3 Slot 5



2.4.4 Slot 6

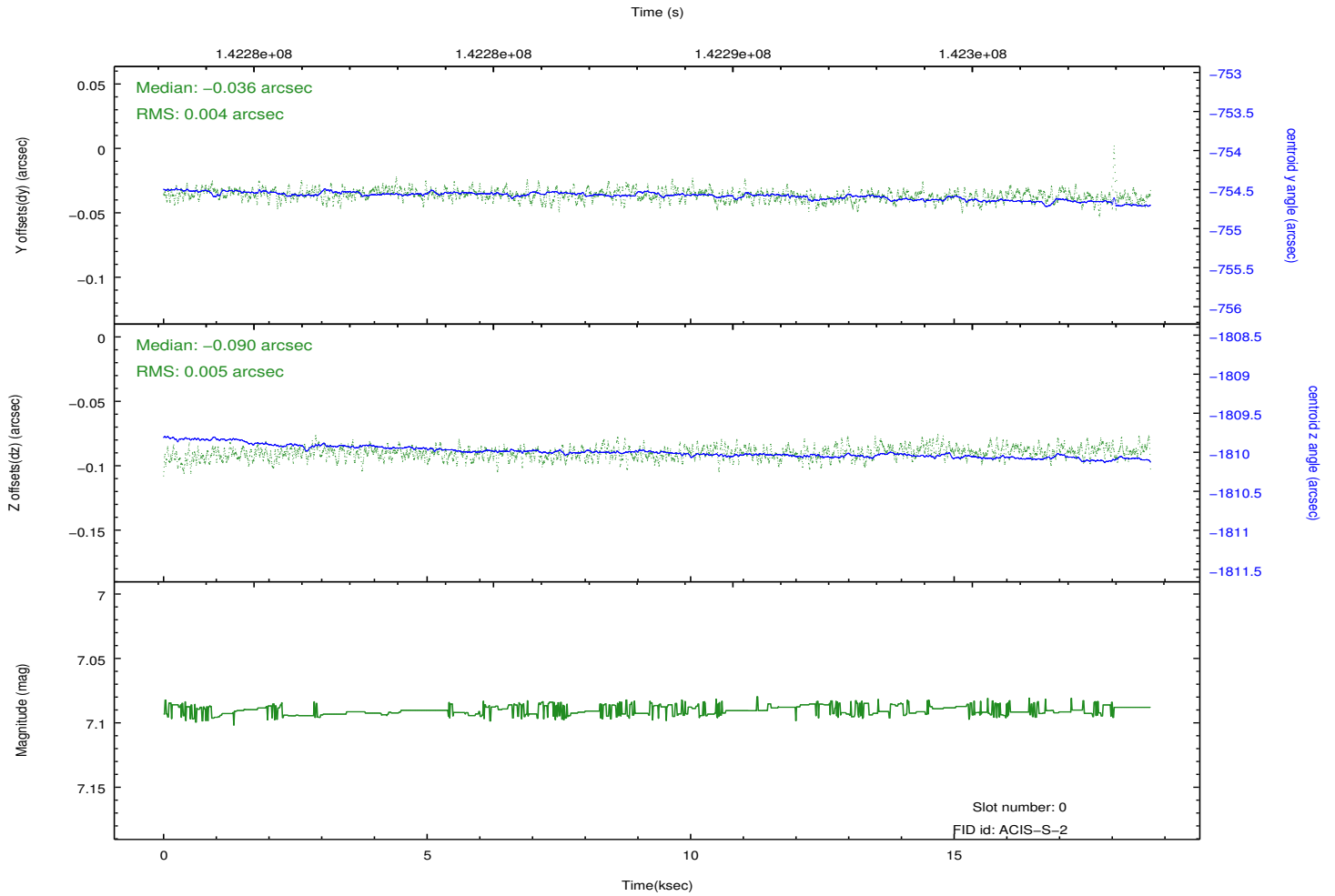
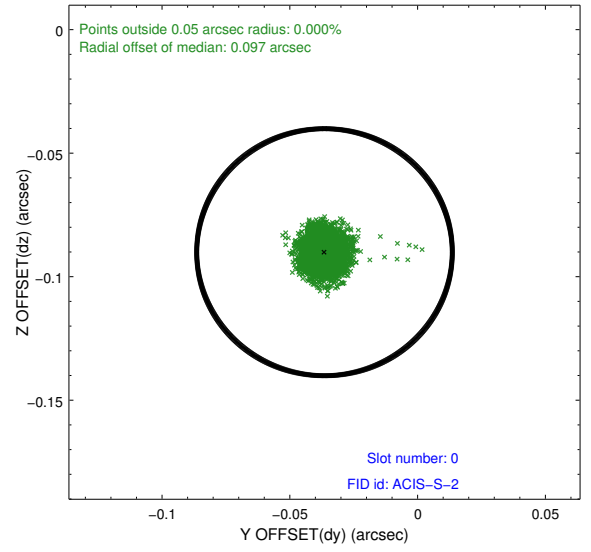
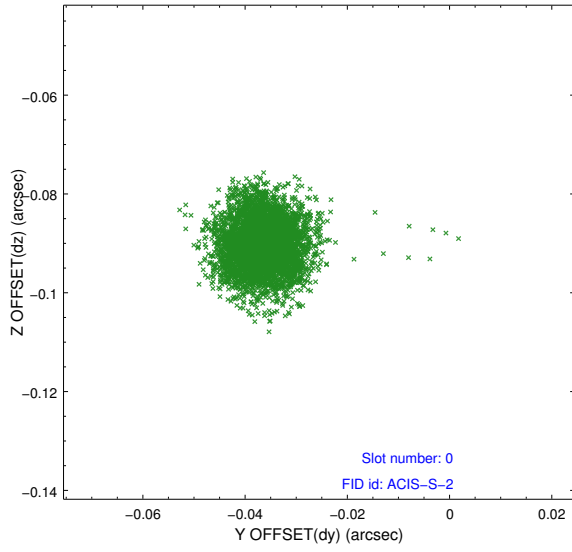


2.4.5 Slot 7

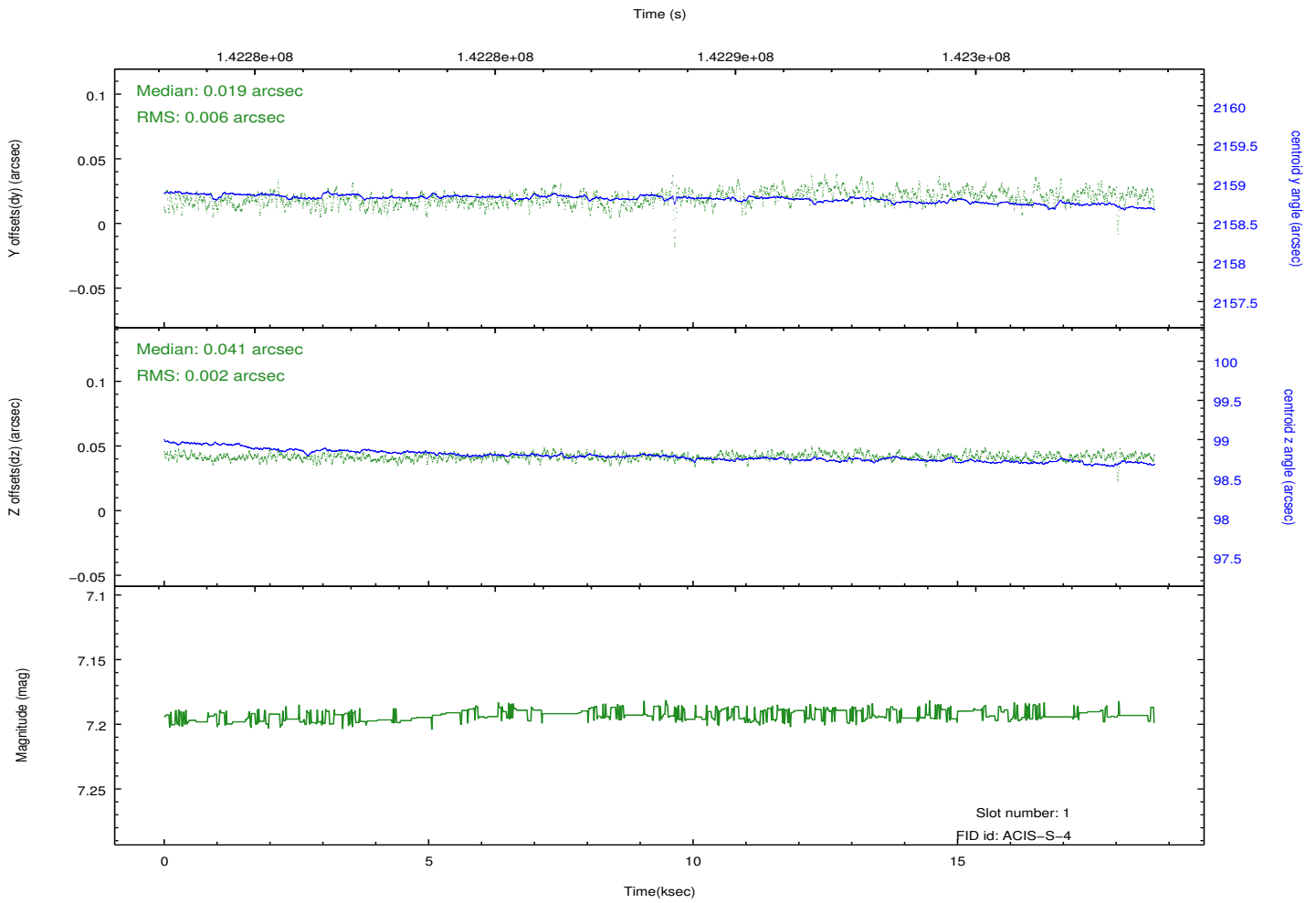
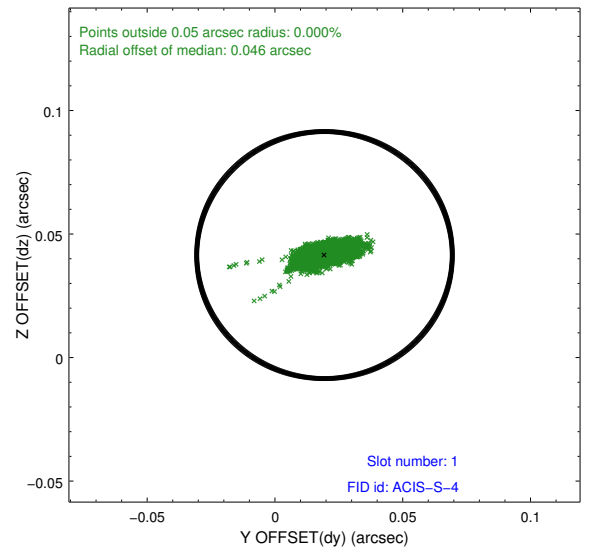
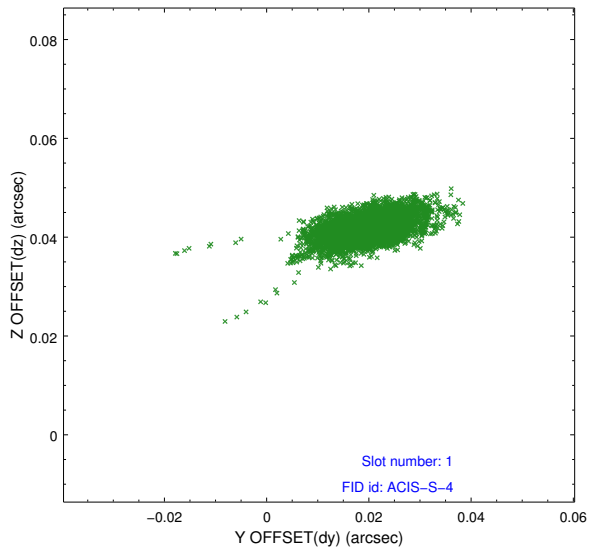


2.5 FID Slots

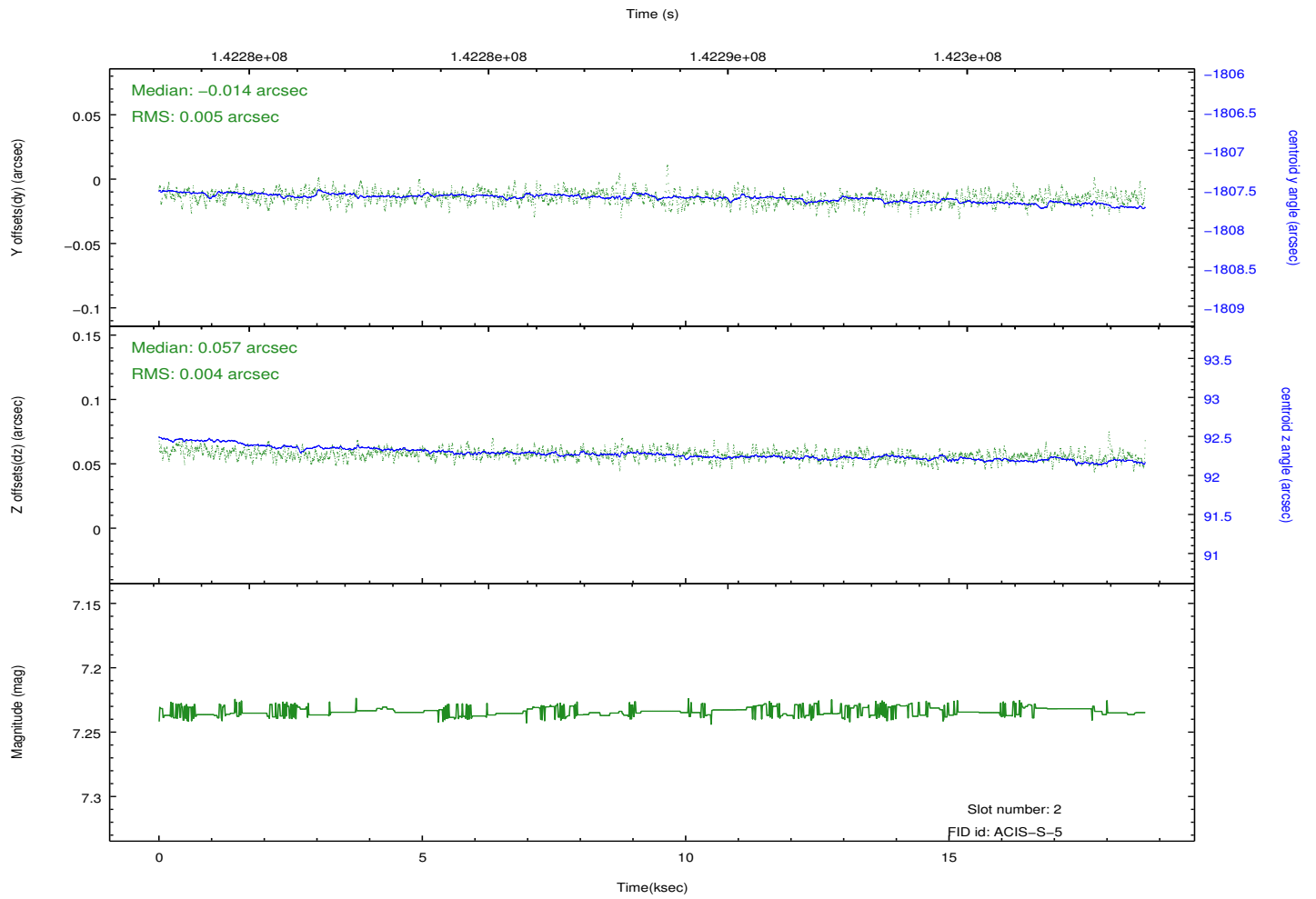
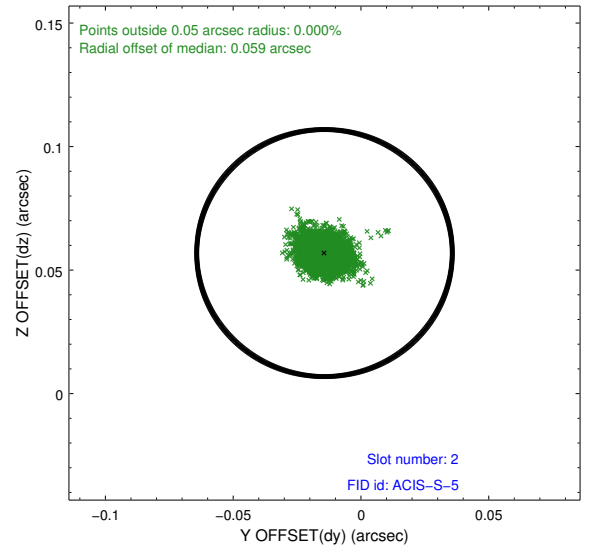
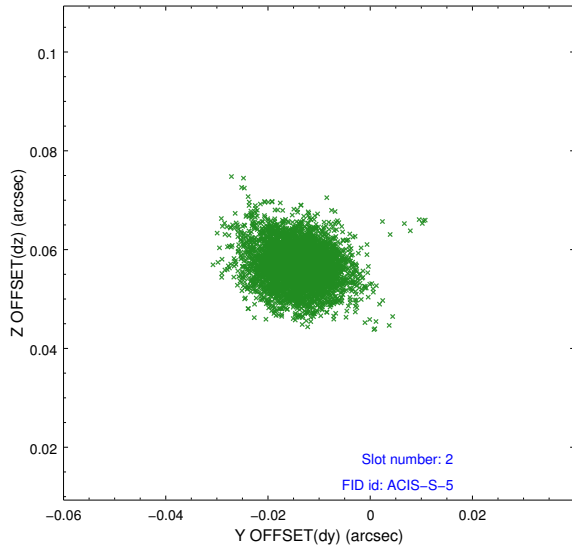
2.5.1 Slot 0



2.5.2 Slot 1

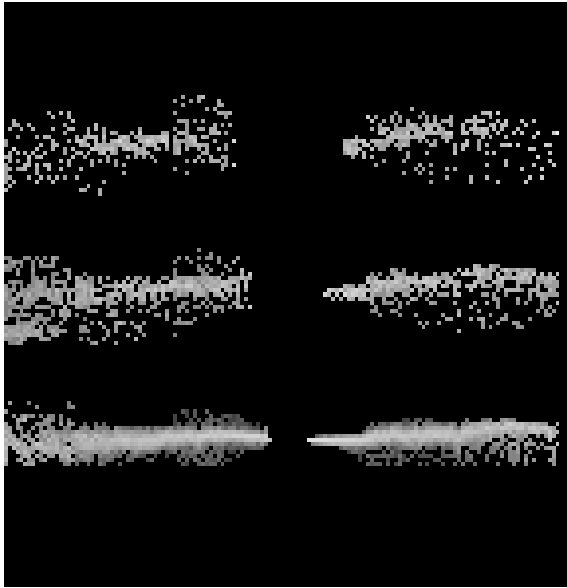


2.5.3 Slot 2

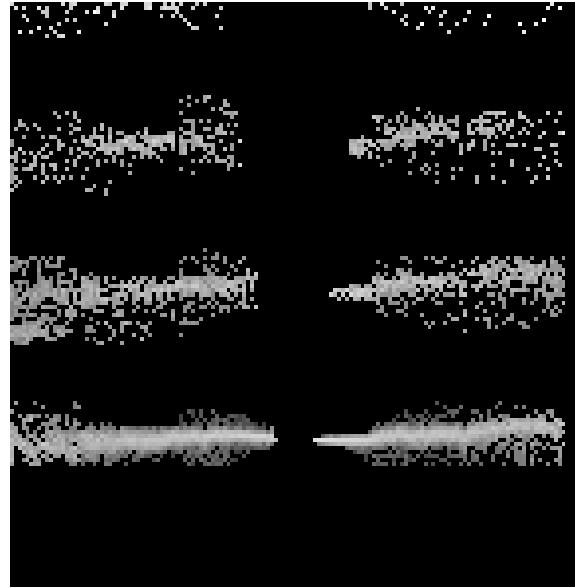


3 Gratings

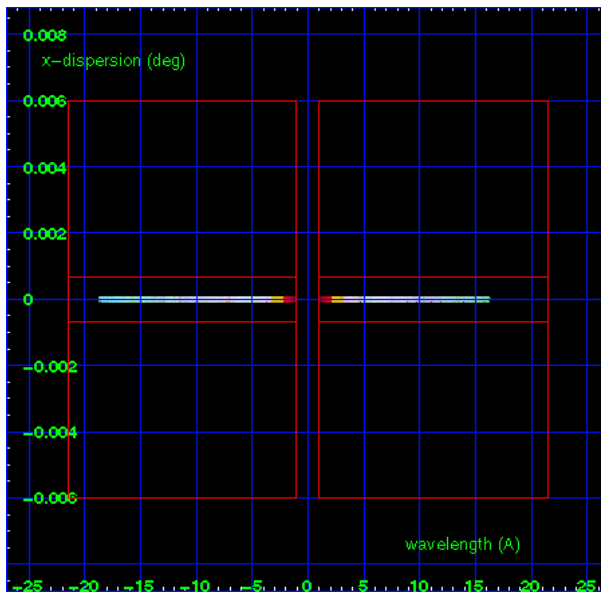
3.1 HEG Arm



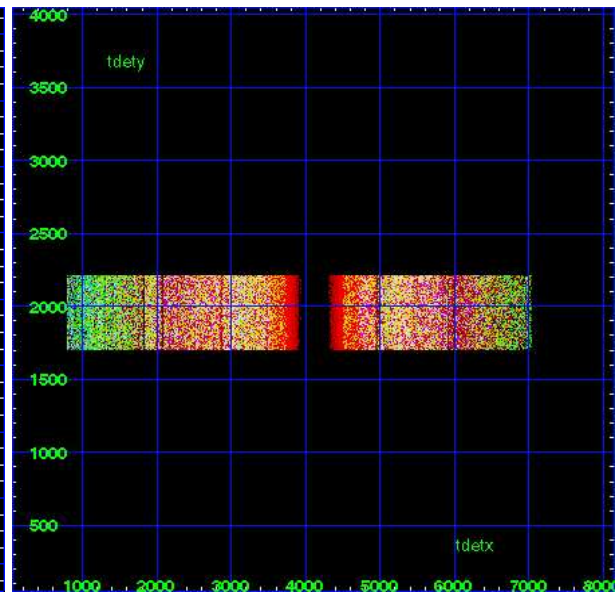
HEG Order Sort 123



HEG Order Sort ALL

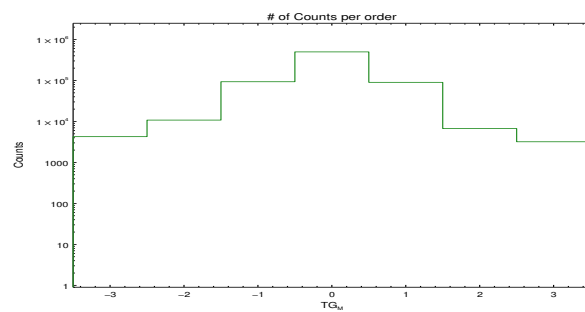


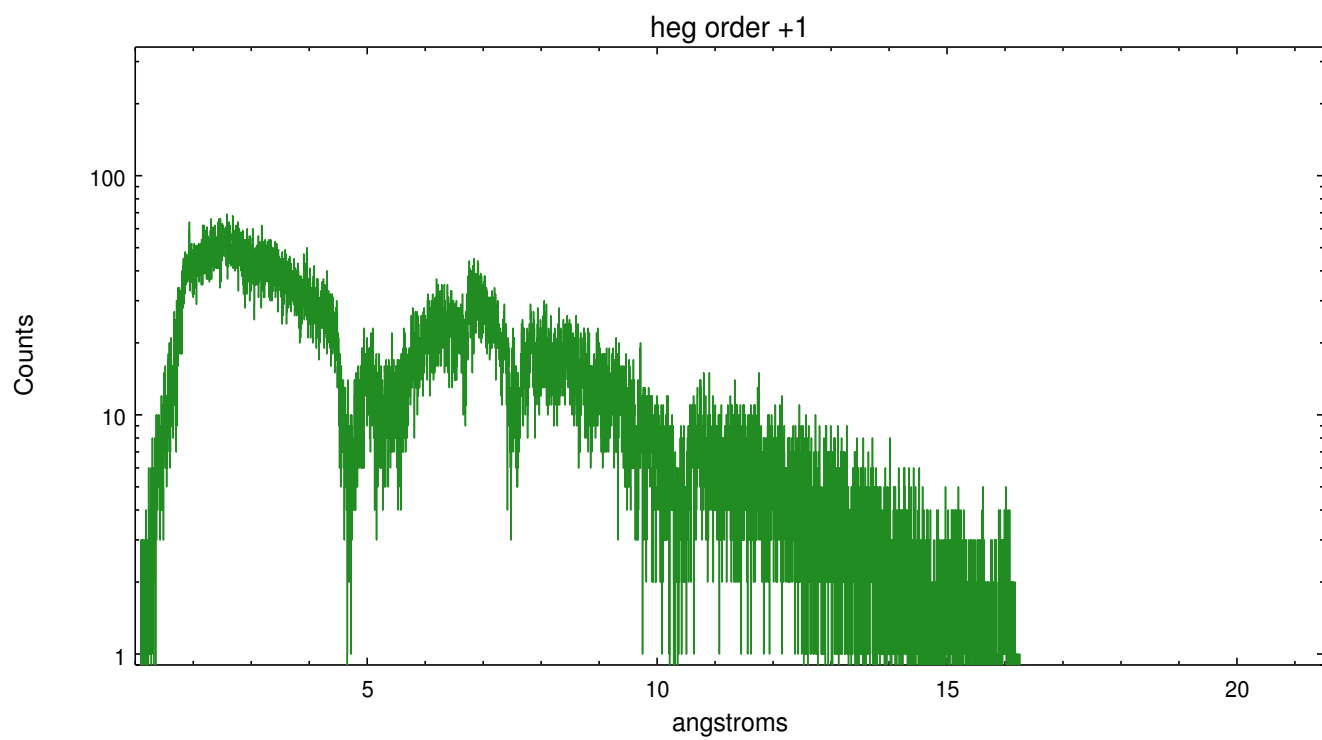
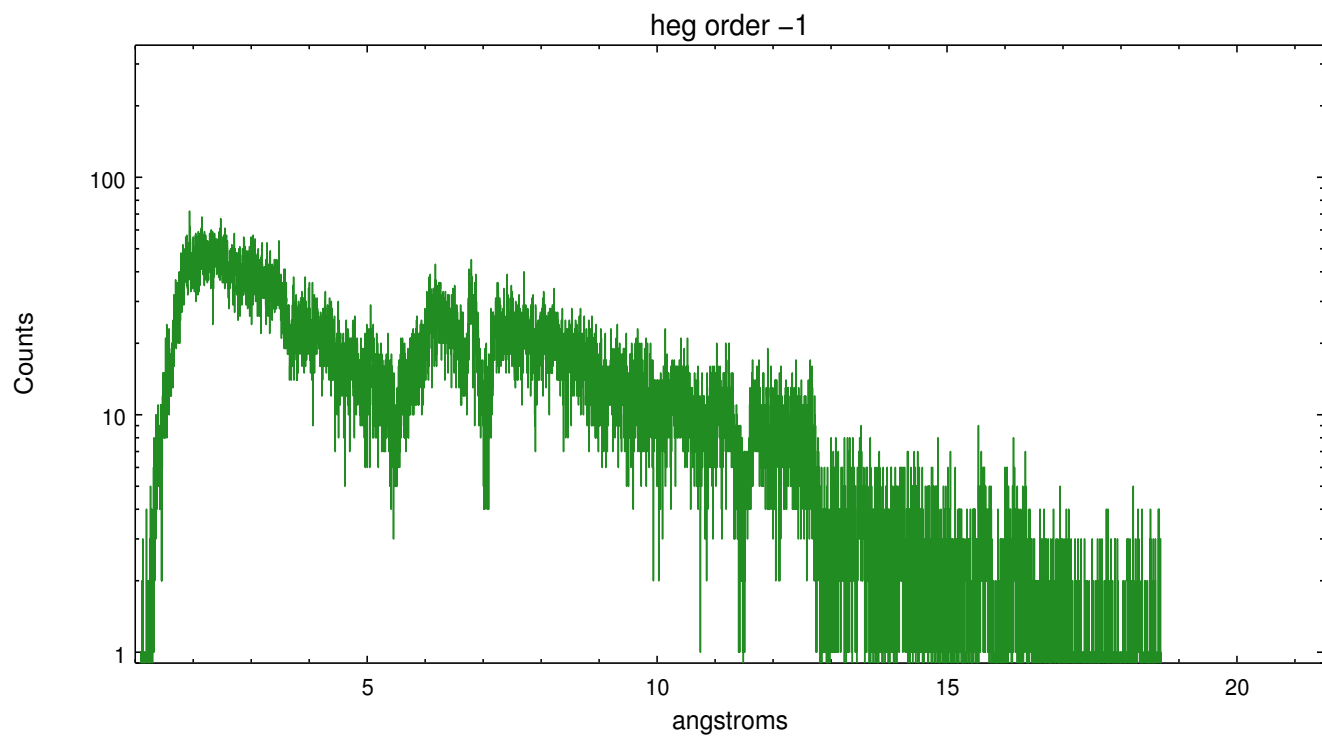
Spot Image HEG



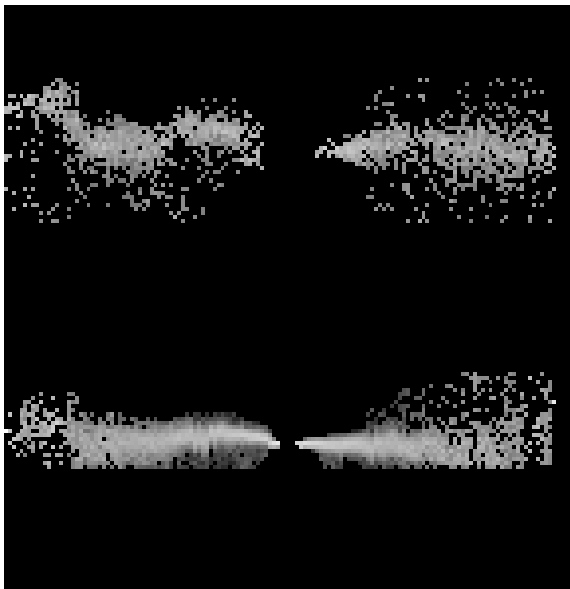
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	4262	10793	93255	498556	89991	6706	3196

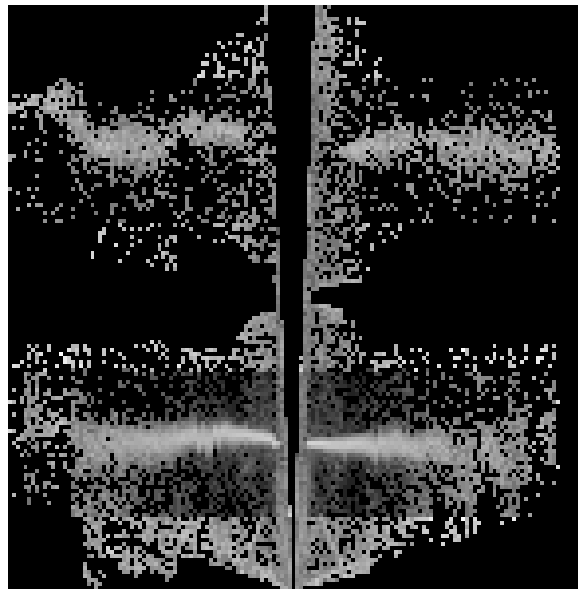




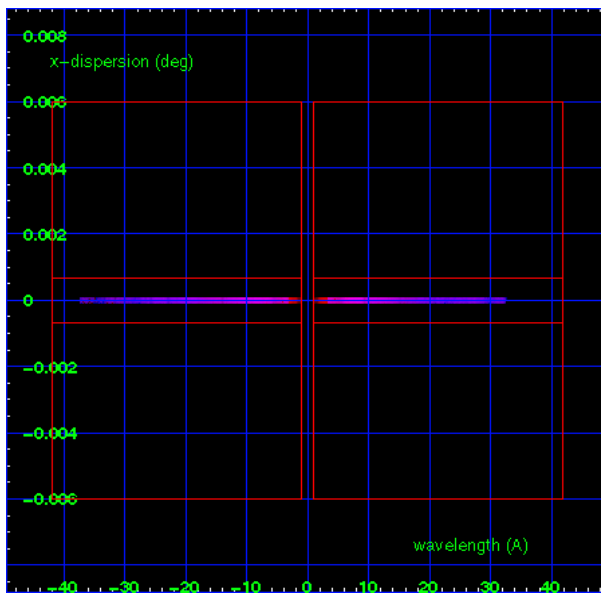
3.2 MEG Arm



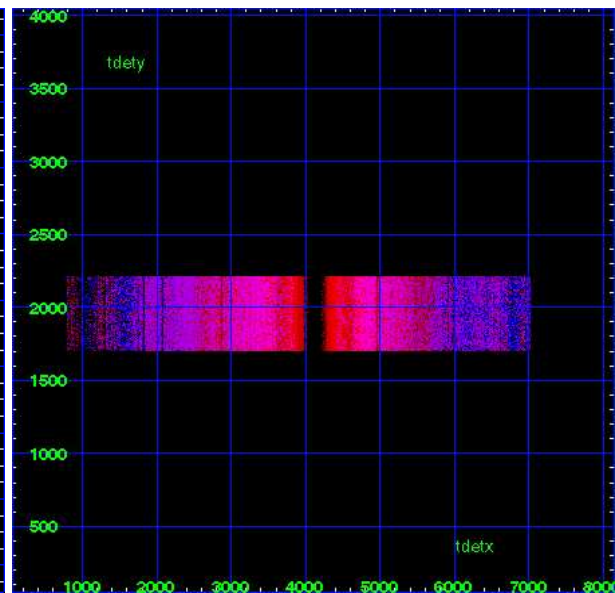
MEG Order Sort 123



MEG Order Sort ALL

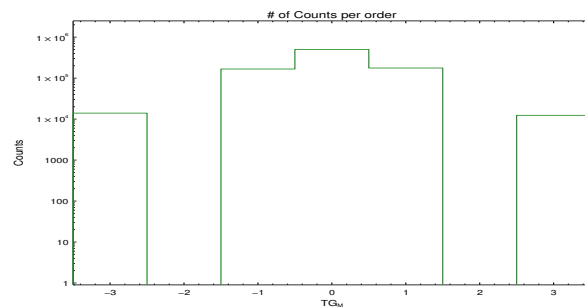


Spot Image MEG

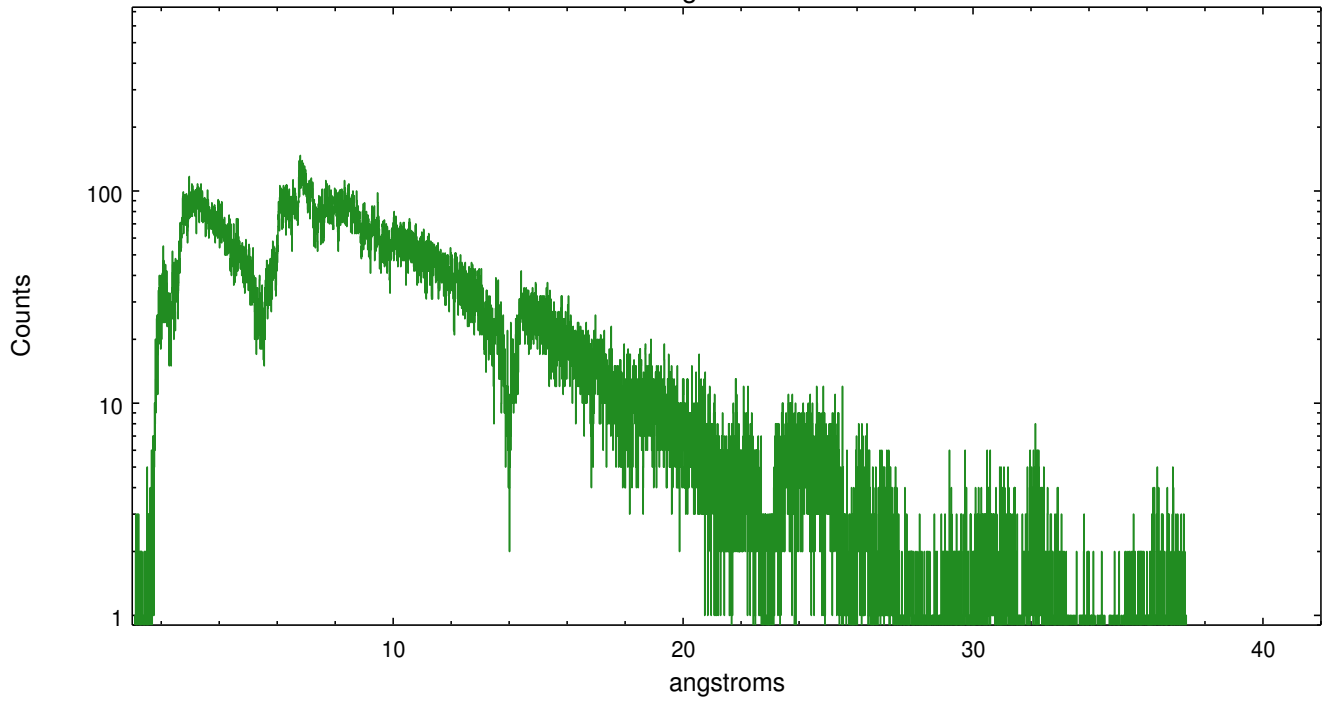


Full Detector MEG

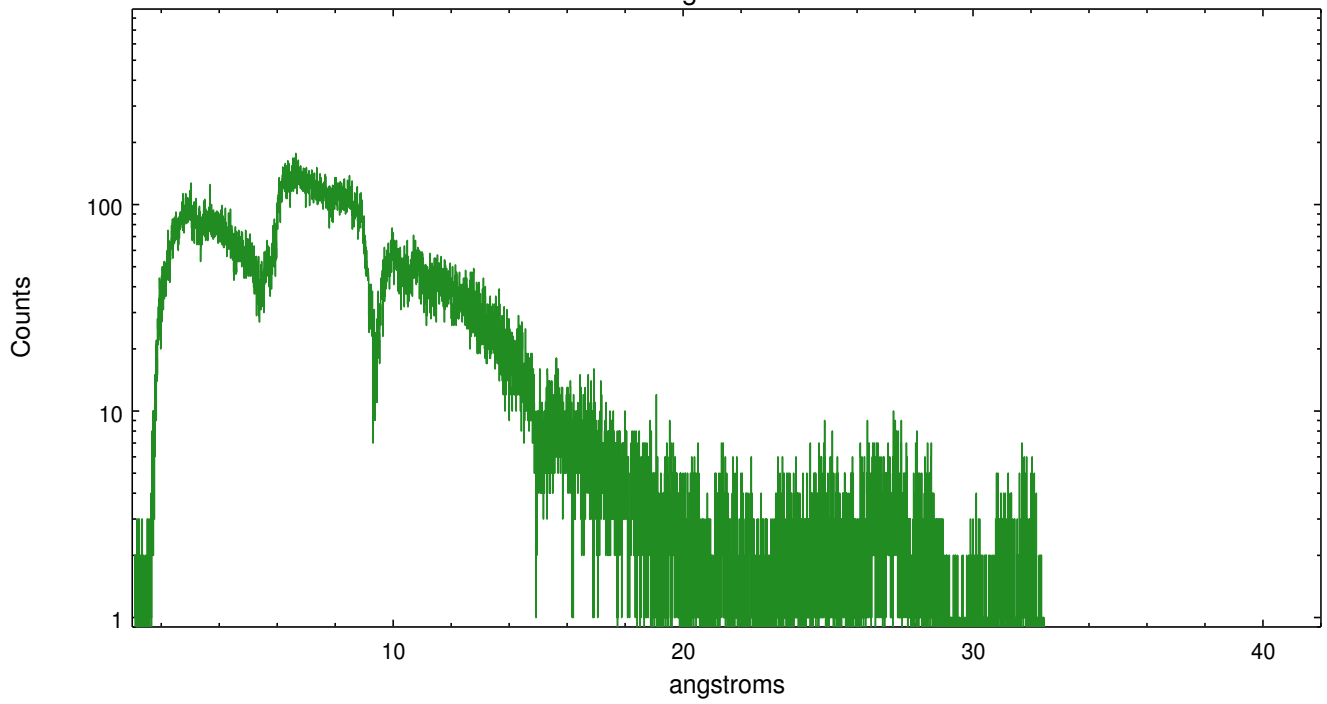
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	13991	0	166852	498556	176312	0	12356



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2012.10.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18.726

A.2 Comments

phase constraint met ($\phi_{\text{start}} \sim 0.25$)