

# V&V Reference Report

## L2 ASCDS Version : 8.5

Observation 4570 - L2 Version 4  
Chandra X-Ray Center

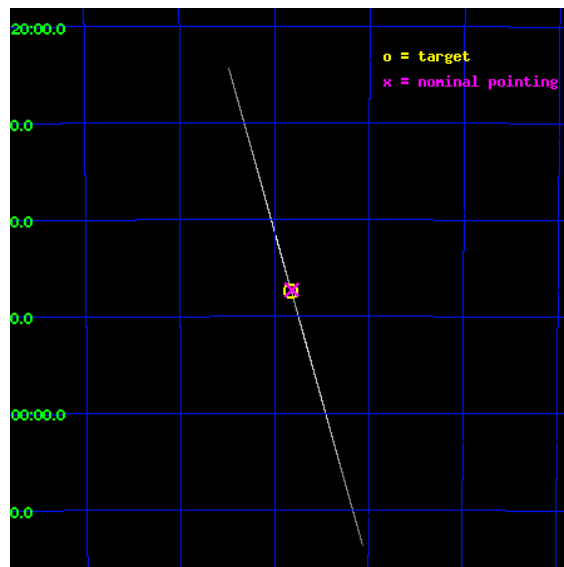
L2 Processing Date : Dec 17 2012

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# 1 Front

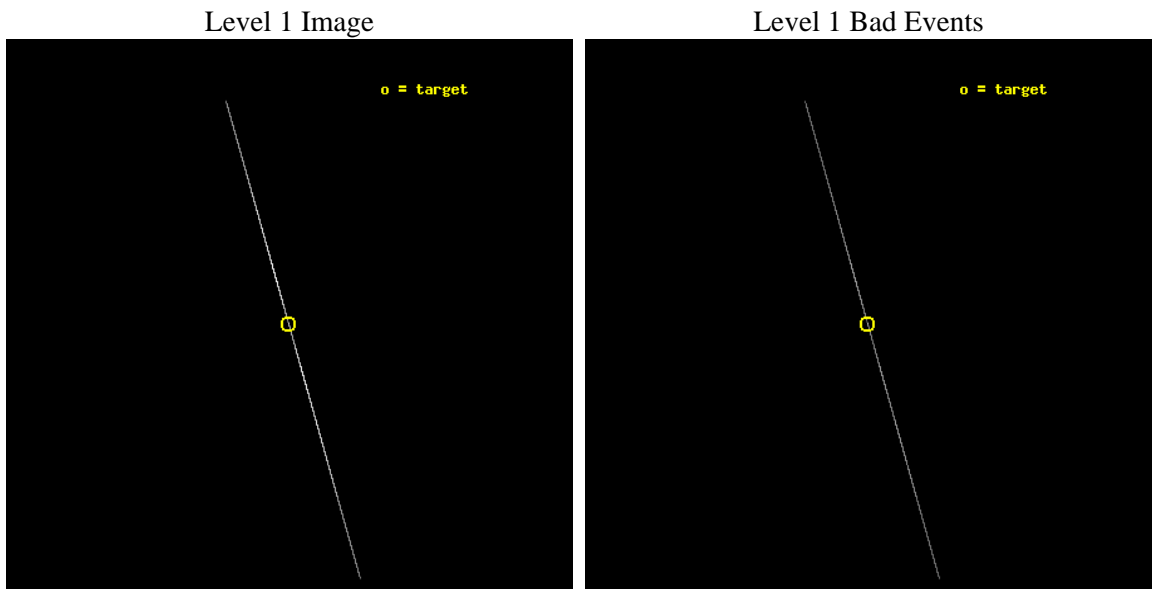
seq_num	400353	Sequence number
obs_id	4570	Observation id
title	Resolving Relativistic Effects and the Accretion Flow Geometry of a Black Hole in Outburst	Proposal title
observer	Dr Jon Miller	Principal investigator
object	GX 339-4	Source name
ra_targ	255.70625	Observer's specified target RA [deg]
dec_targ	-48.789722	Observer's specified target Dec [deg]
ra_nom	255.70443369775	Nominal RA [deg]
dec_nom	-48.787850977375	Nominal Dec [deg]
roll_nom	254.10017858654	Nominal Roll [deg]
revision	4	Processing version of data
ontime	39051.70246619	Sum of GTIs [s]
livetime	38899.156753431	Livetime [s]
ontime4	50185.25	Sum of GTIs [s]
ontime5	50185.25	Sum of GTIs [s]
ontime6	33304.024689347	Sum of GTIs [s]
ontime7	39051.70246619	Sum of GTIs [s]
ontime8	45345.083697349	Sum of GTIs [s]
ontime9	50185.25	Sum of GTIs [s]
l2events	16999481	Number of level 2 events



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



### 2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	50000.000000	[s] Scheduled observation exposure time
ascdsver	8.5	Processing system revision	ontime	39051.70246619	Sum of GTIs [s]
caldbver	4.5.4	&#160	ontime4	50185.25	Sum of GTIs [s]
date	2012-12-09T20:38:32	Date and time of file creation	ontime5	50185.25	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	33304.024689347	Sum of GTIs [s]
			ontime7	39051.70246619	Sum of GTIs [s]
			ontime8	45345.083697349	Sum of GTIs [s]
			ontime9	50185.25	Sum of GTIs [s]
			l1events	18530729	Number of level 1 events

### 2.1.3 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	371330	2564413	5365076	6128908	3522211	578791	grade 0 events	19415	470037	2276339	1289610	2383140	67128
rejected events	23212	84040	75527	123658	50598	22280		5%	18%	42%	21%	67%	11%
rejected %	6%	3%	1%	2%	1%	3%	grade 1 events	283	890	7876	8023	7308	451
								0%	0%	0%	0%	0%	0%
							grade 2 events	284042	1103860	2565087	1748996	802254	422796
								76%	43%	47%	28%	22%	73%
							grade 3 events	9288	130952	103160	619779	97349	10163
								2%	5%	1%	10%	2%	1%
							grade 4 events	9762	127870	102811	615958	96373	10911
								2%	4%	1%	10%	2%	1%
							grade 5 events	15083	58902	37759	86140	31112	18580
								4%	2%	0%	1%	0%	3%
							grade 6 events	33457	671902	272044	1760402	104675	48762
								9%	26%	5%	28%	2%	8%
							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_GRADED	CC33_GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	255.693830	255.7044336977453	Subarray requested	NONE	NONE
[deg] Pointing Dec	-48.761518	-48.78785097737472	Alternating exposures requested	N	N
[deg] Pointing Roll	253.935575	254.1001785865443	[s] Primary exposure time	0.000000	0
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-182.632523	-182.6398635053184			
[mm] SIM translation stage offset	-7.5	-7.49265907768941			
[s] Observation start time (MET)	213256379.184000	213254697.59273			
Observation start date	2004-10-04T05:51:55	2004-10-04T05:24:57			
[s] Observation end time (MET)	213306379.184000	213307224.74508			
Observation end date	2004-10-04T19:45:15	2004-10-04T20:00:24			
Read mode	CONTINUOUS	CONTINUOUS			

## 2.3 Aspect

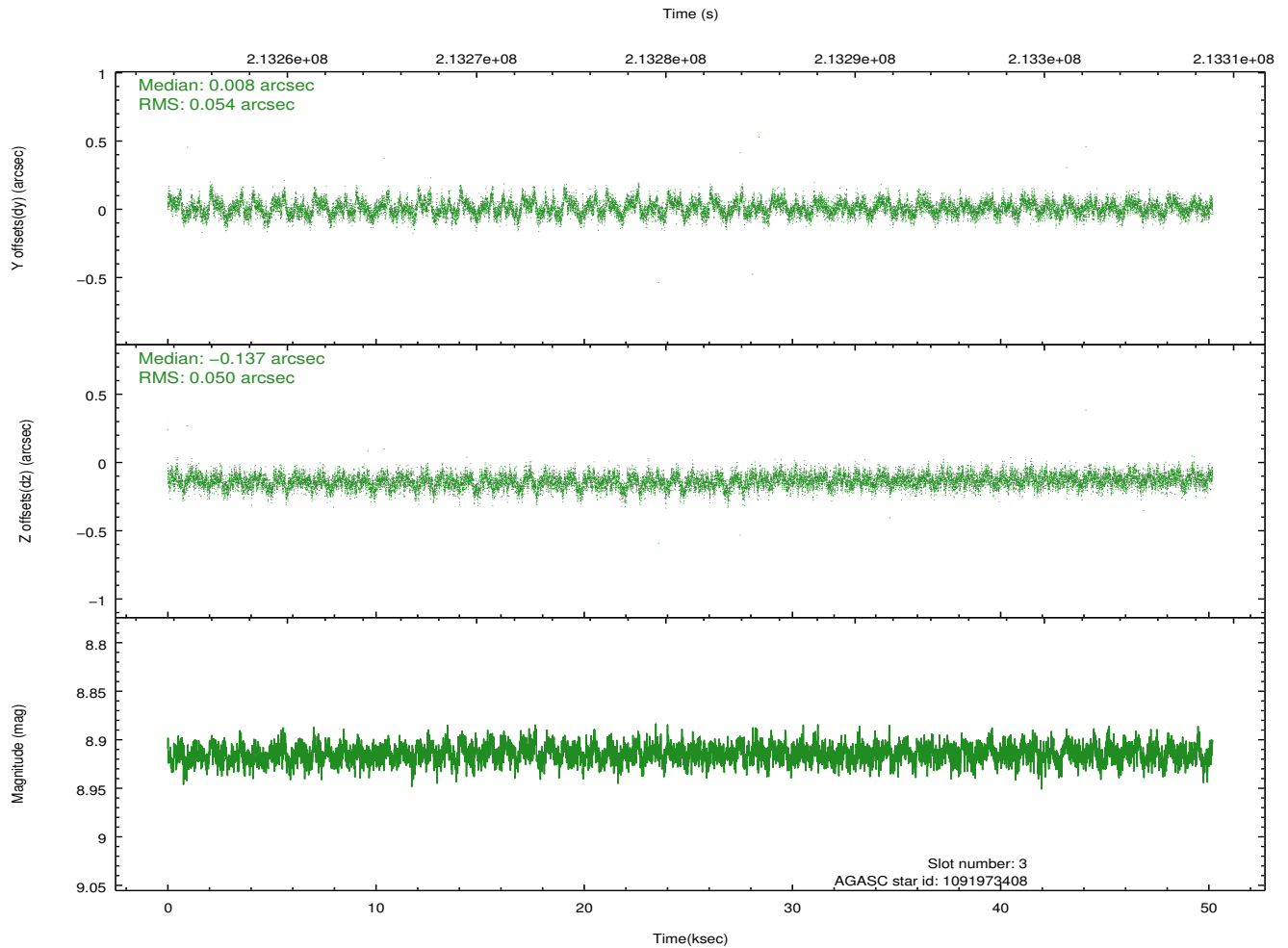
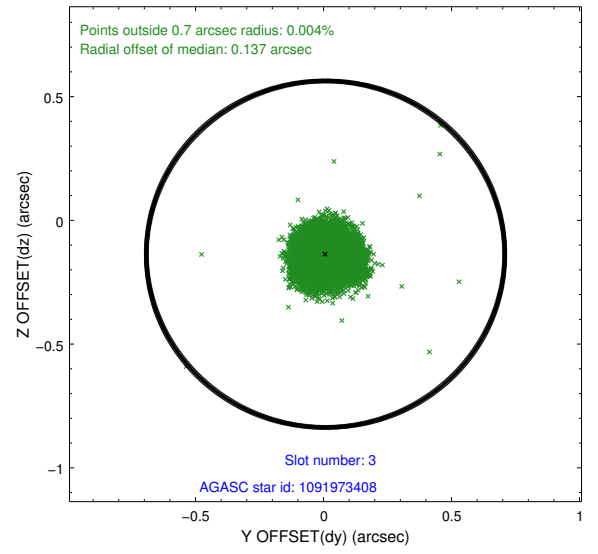
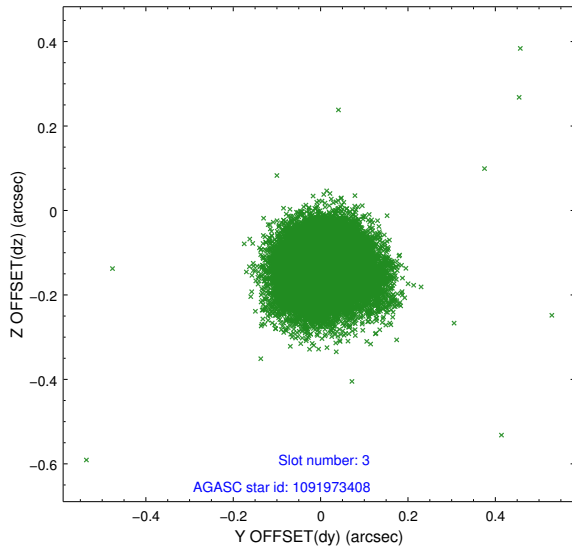


### Slot Statistics

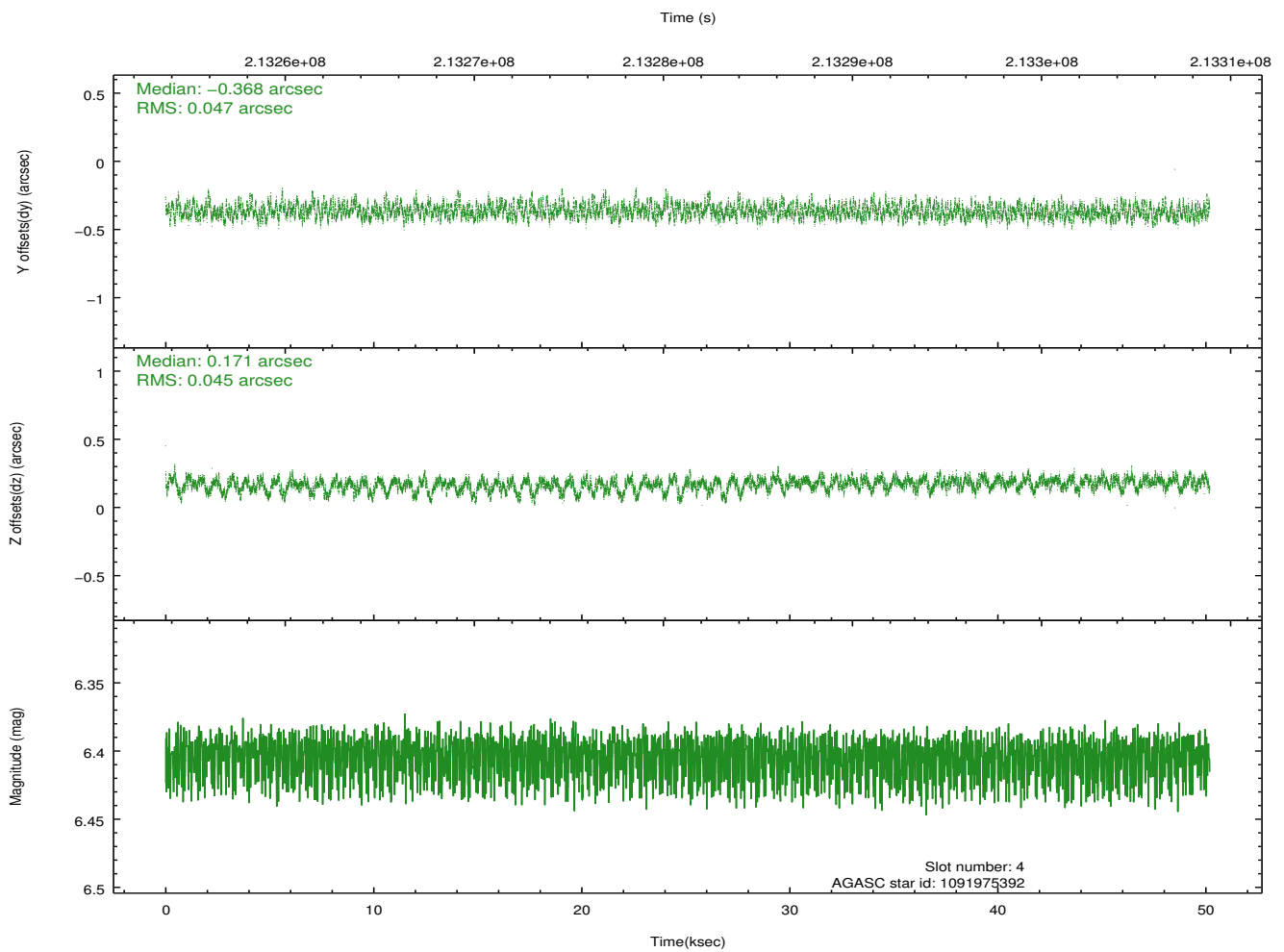
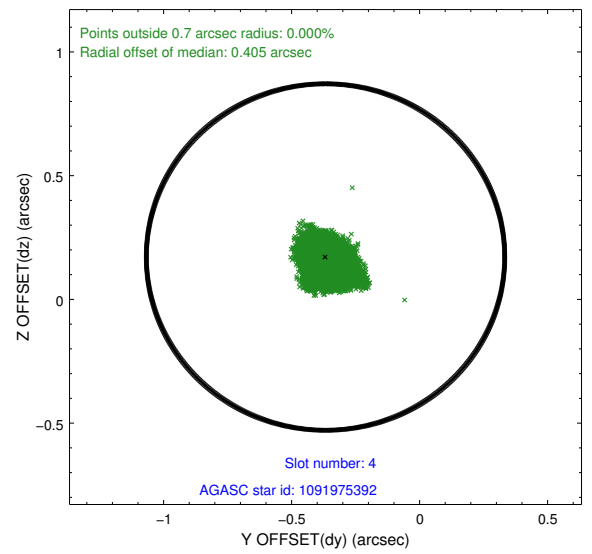
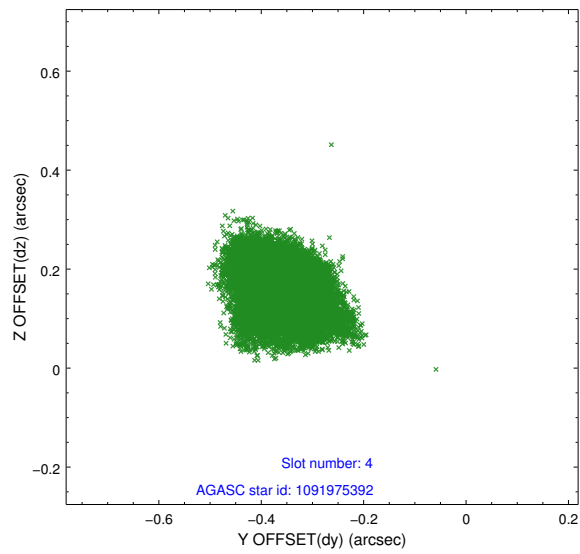
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-4	7.17	12242	0.074	0.004	0.010	0.018	0.000000	0.000000	2153.78	21.49
1	FID	ACIS-S-5	7.23	12241	-0.062	0.013	0.007	0.038	0.000000	0.000000	-1812.57	14.99
2	FID	ACIS-S-6	7.39	12241	-0.040	-0.003	0.011	0.027	0.000000	0.000000	401.96	658.70
3	GUIDE	1091973408	8.91	24475	0.008	-0.137	0.078	0.125	255.800233	-48.601800	-622.17	84.37
4	GUIDE	1091975392	6.40	24484	-0.368	0.171	0.068	0.116	255.805002	-48.336791	-1542.83	-167.15
5	GUIDE	1092111344	9.94	24456	0.037	-0.006	0.181	0.377	256.132869	-48.213784	-2183.17	467.33
6	GUIDE	1092485728	6.89	24483	0.082	0.110	0.066	0.106	254.773222	-48.875124	1009.31	-1977.36
7	GUIDE	1092491384	9.13	24465	0.244	-0.156	0.088	0.145	254.923973	-49.184437	1973.85	-1316.83

## 2.4 Star Slots

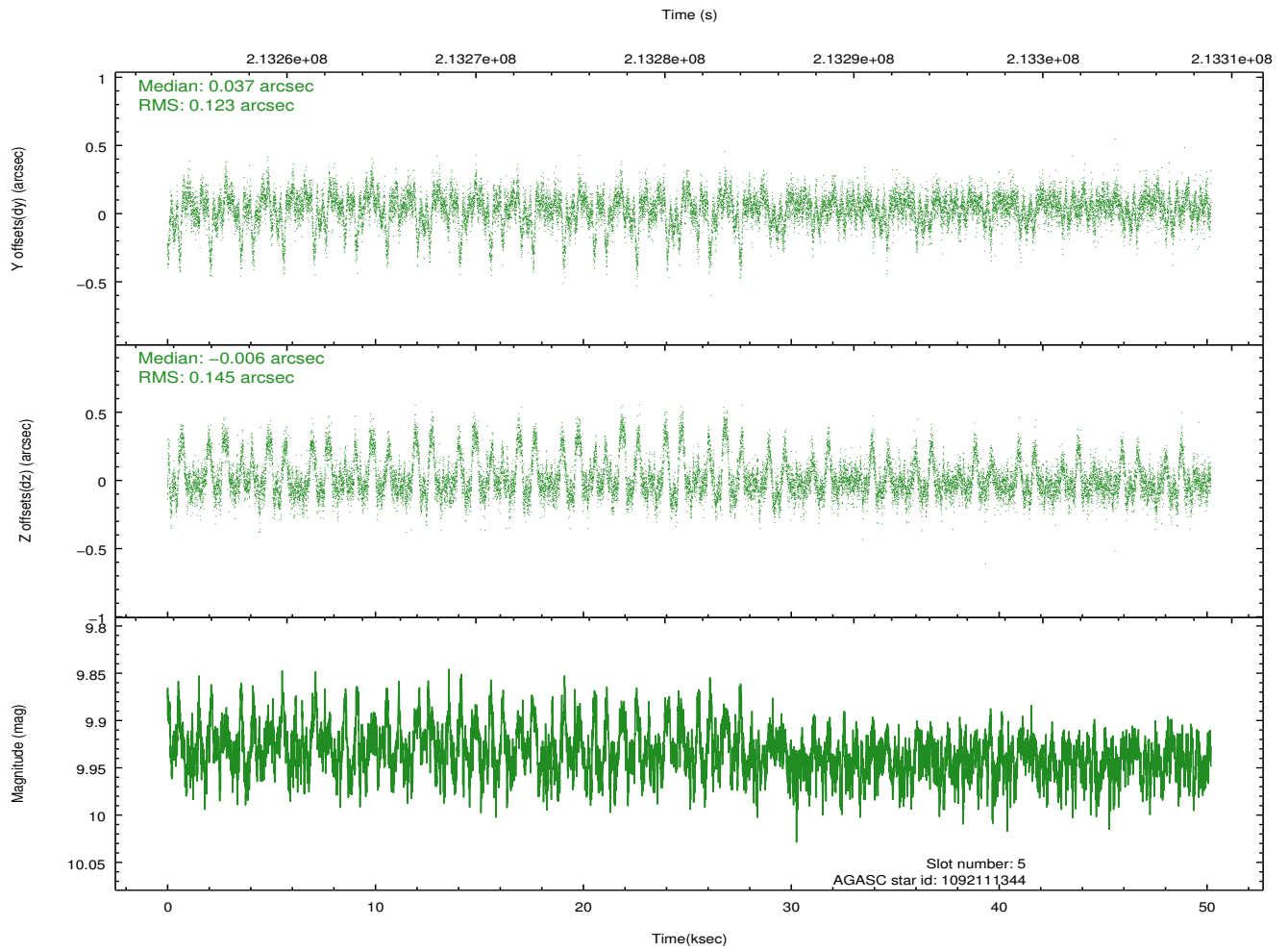
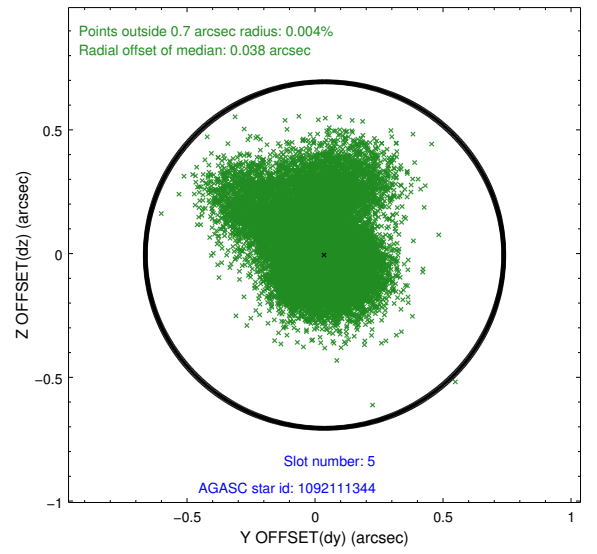
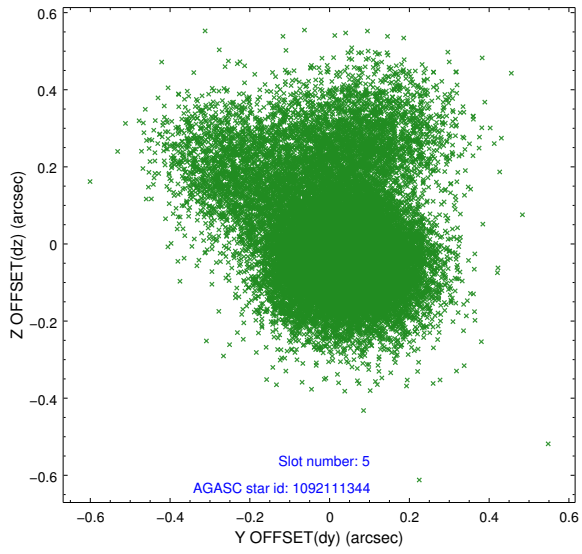
### 2.4.1 Slot 3



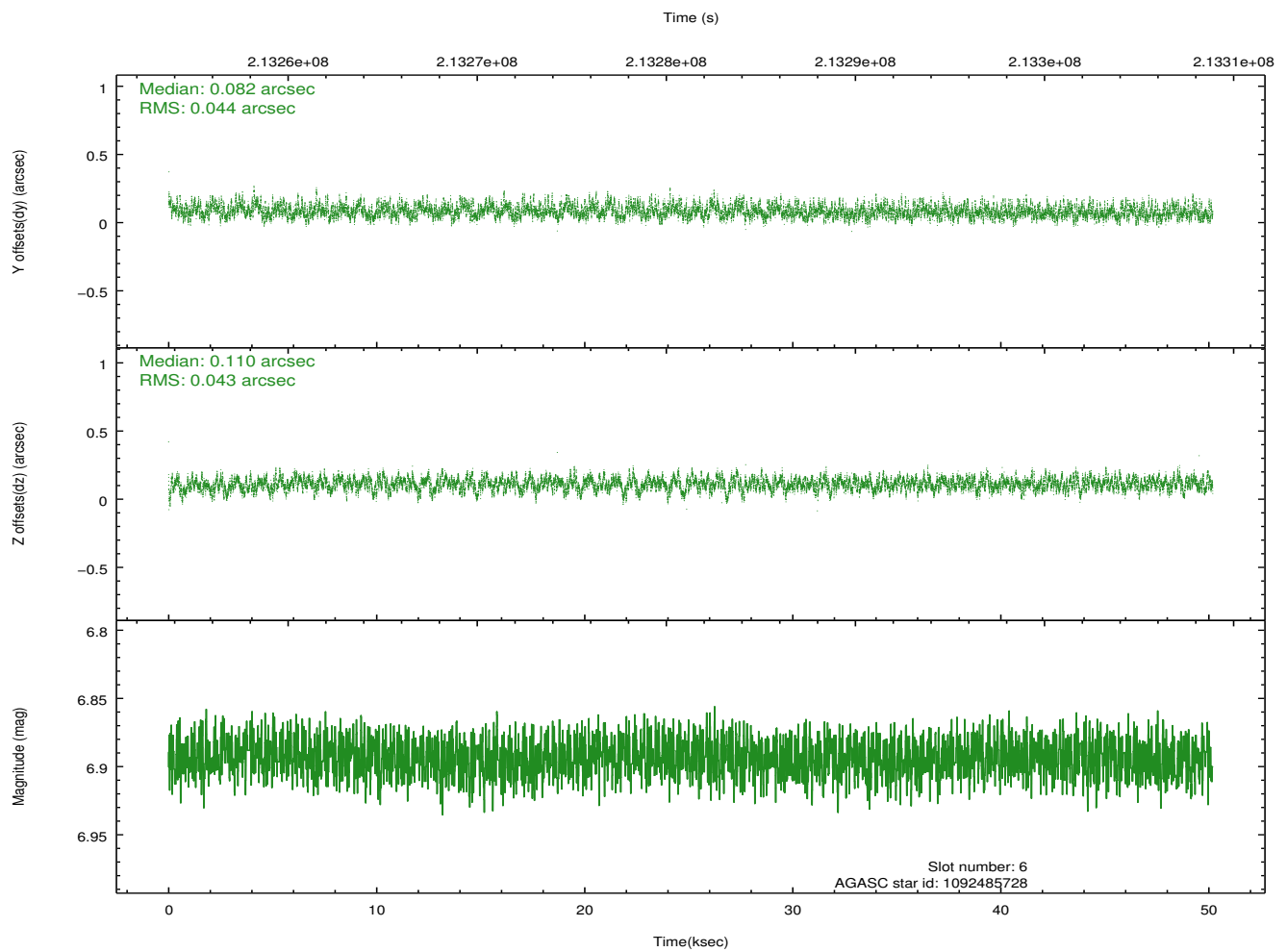
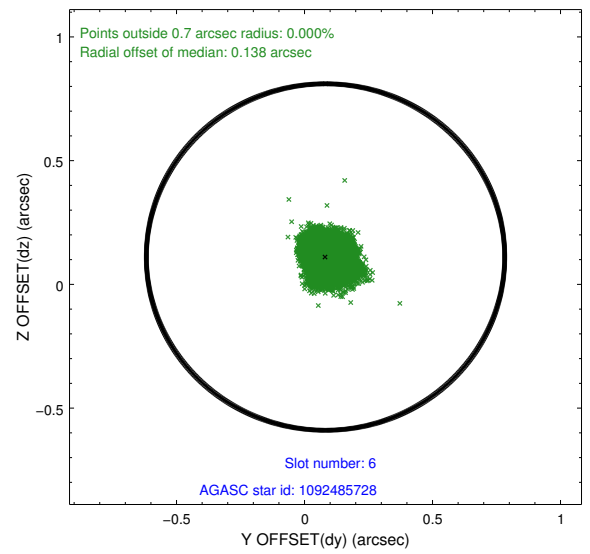
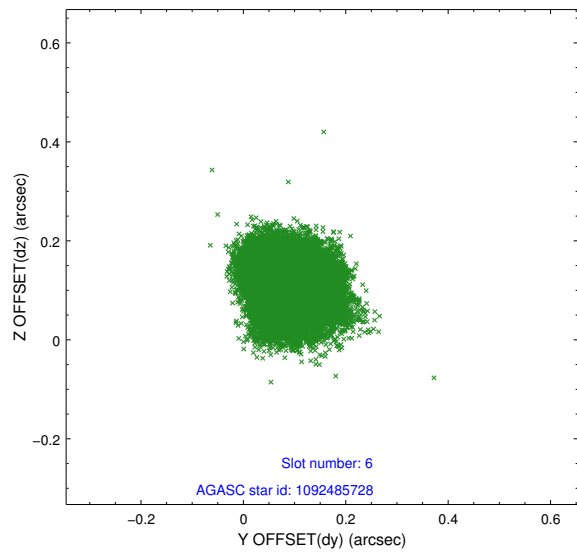
## 2.4.2 Slot 4



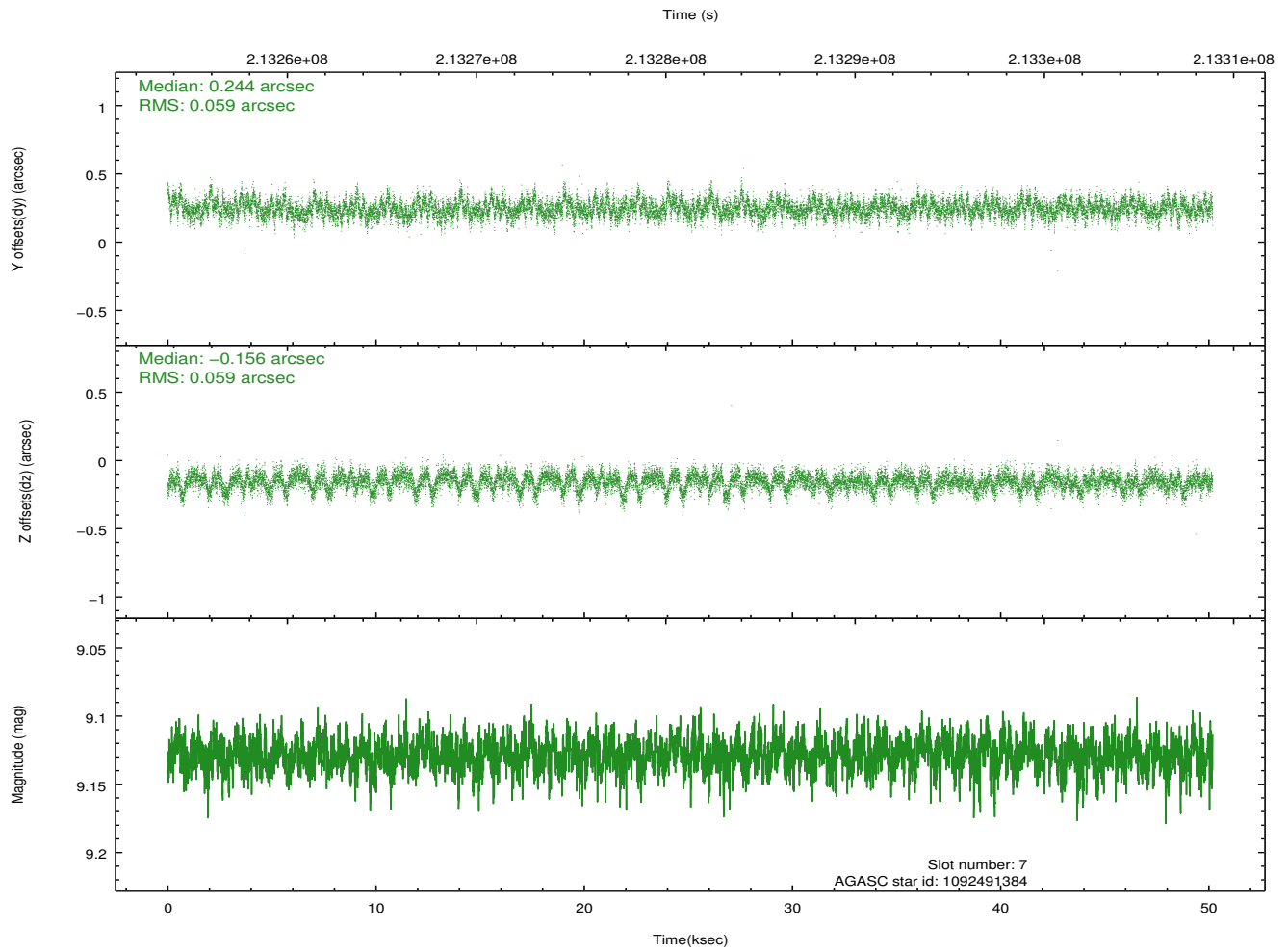
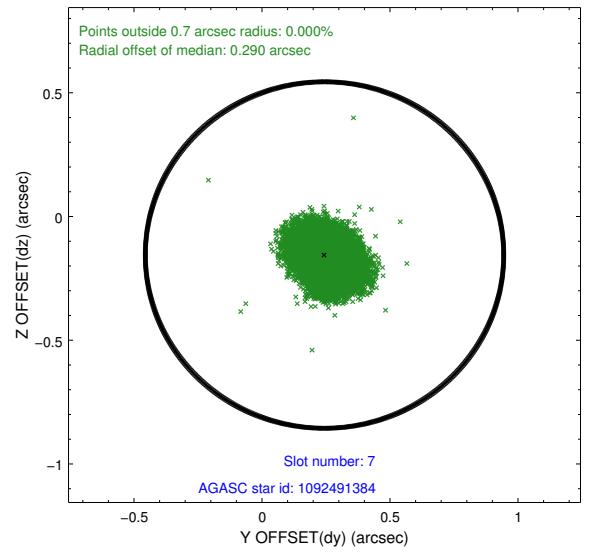
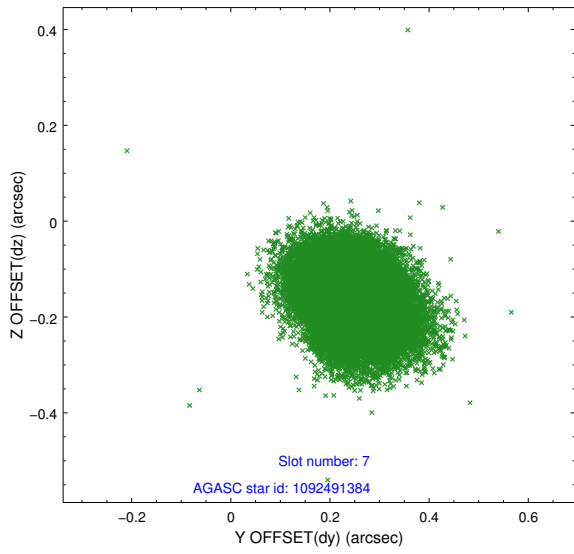
### 2.4.3 Slot 5



## 2.4.4 Slot 6

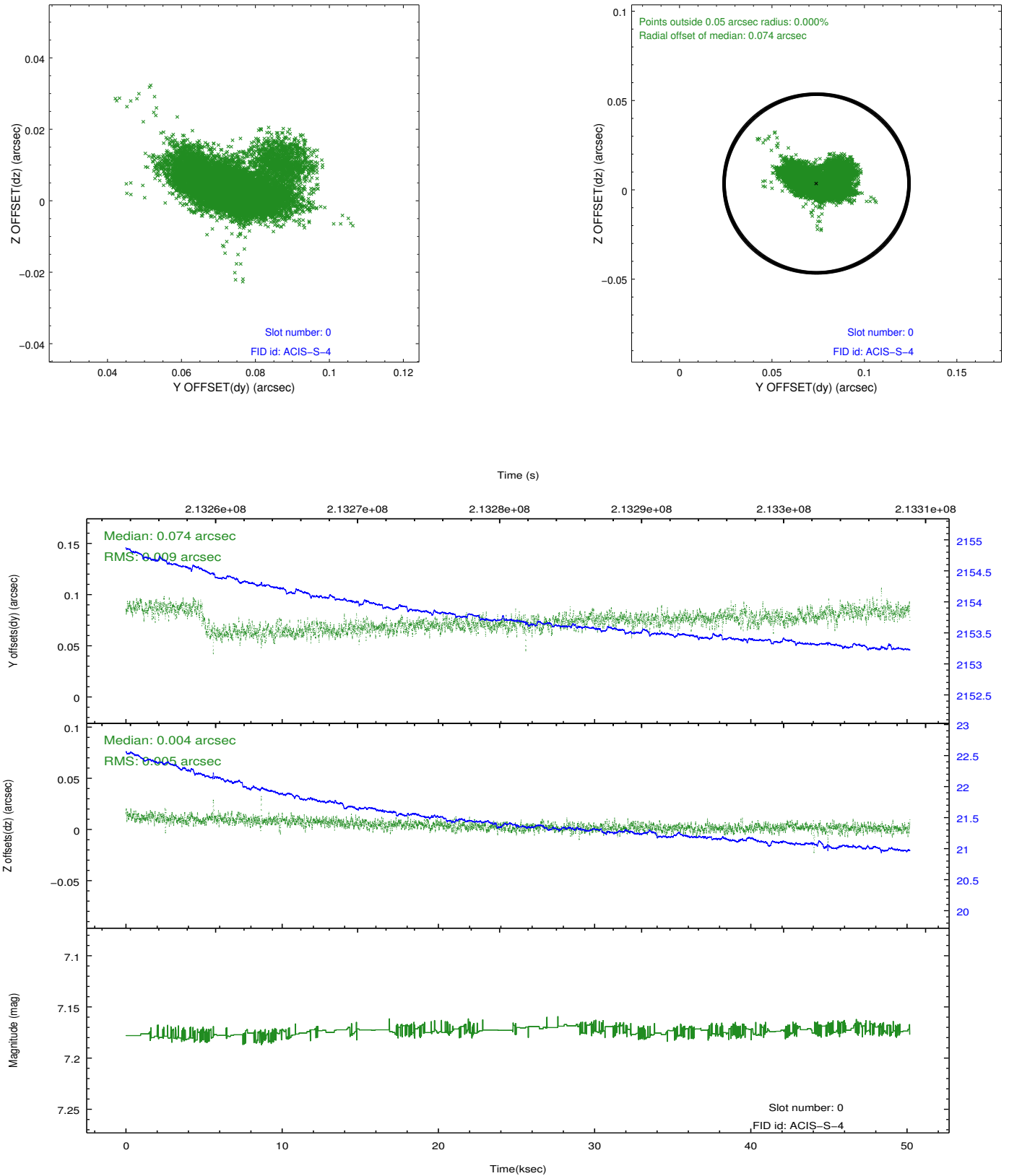


### 2.4.5 Slot 7

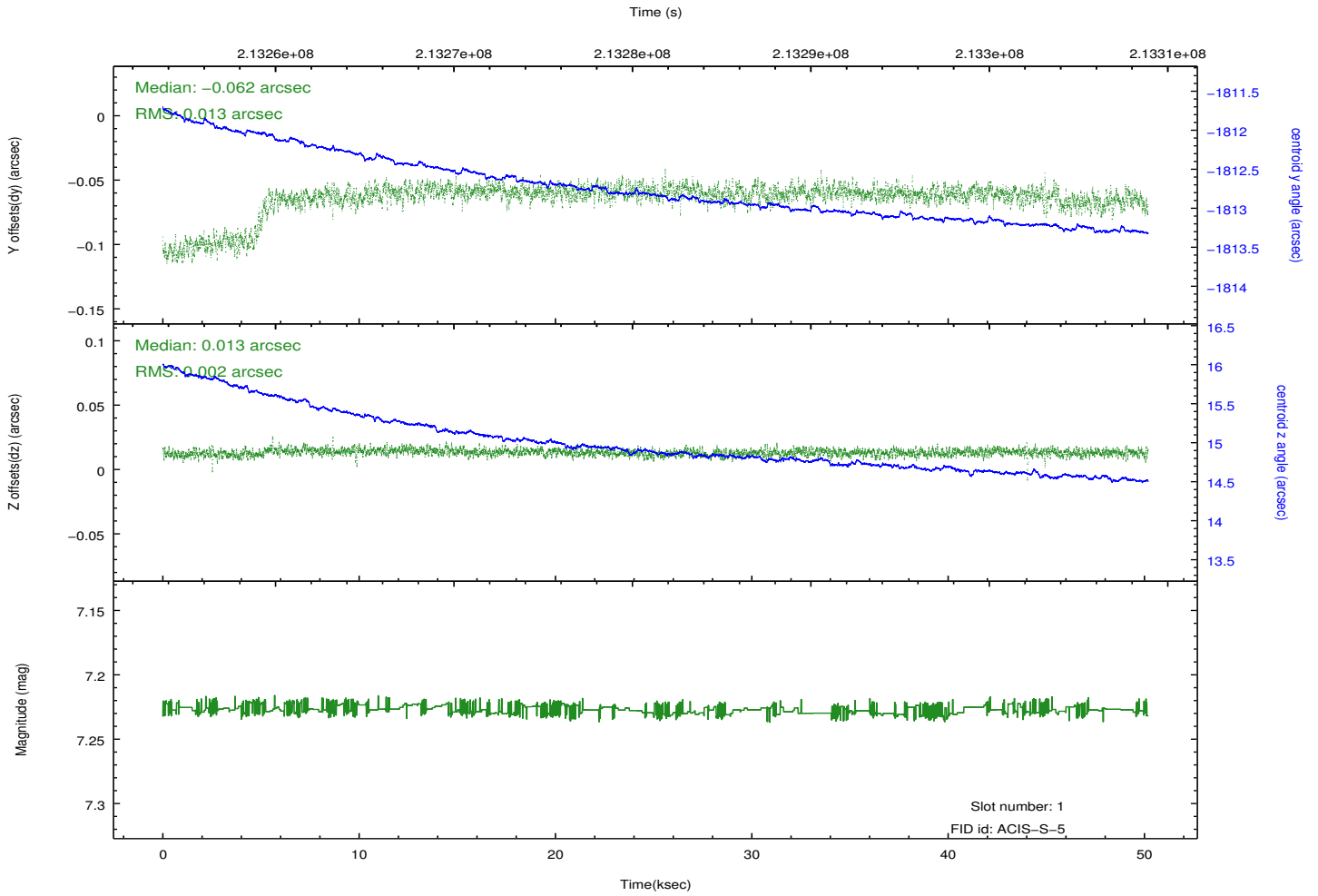
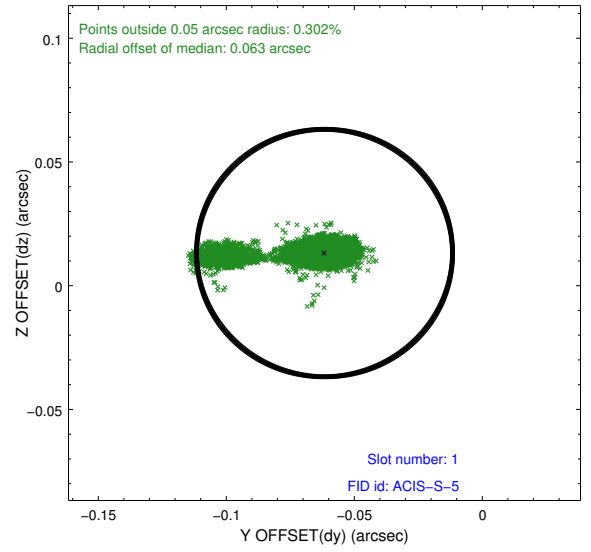
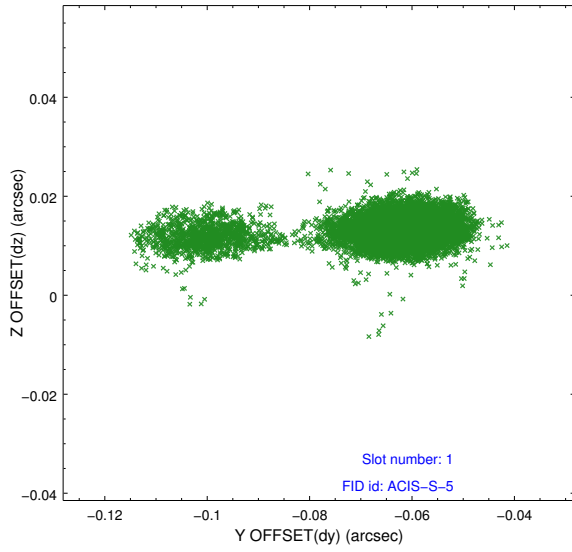


## 2.5 FID Slots

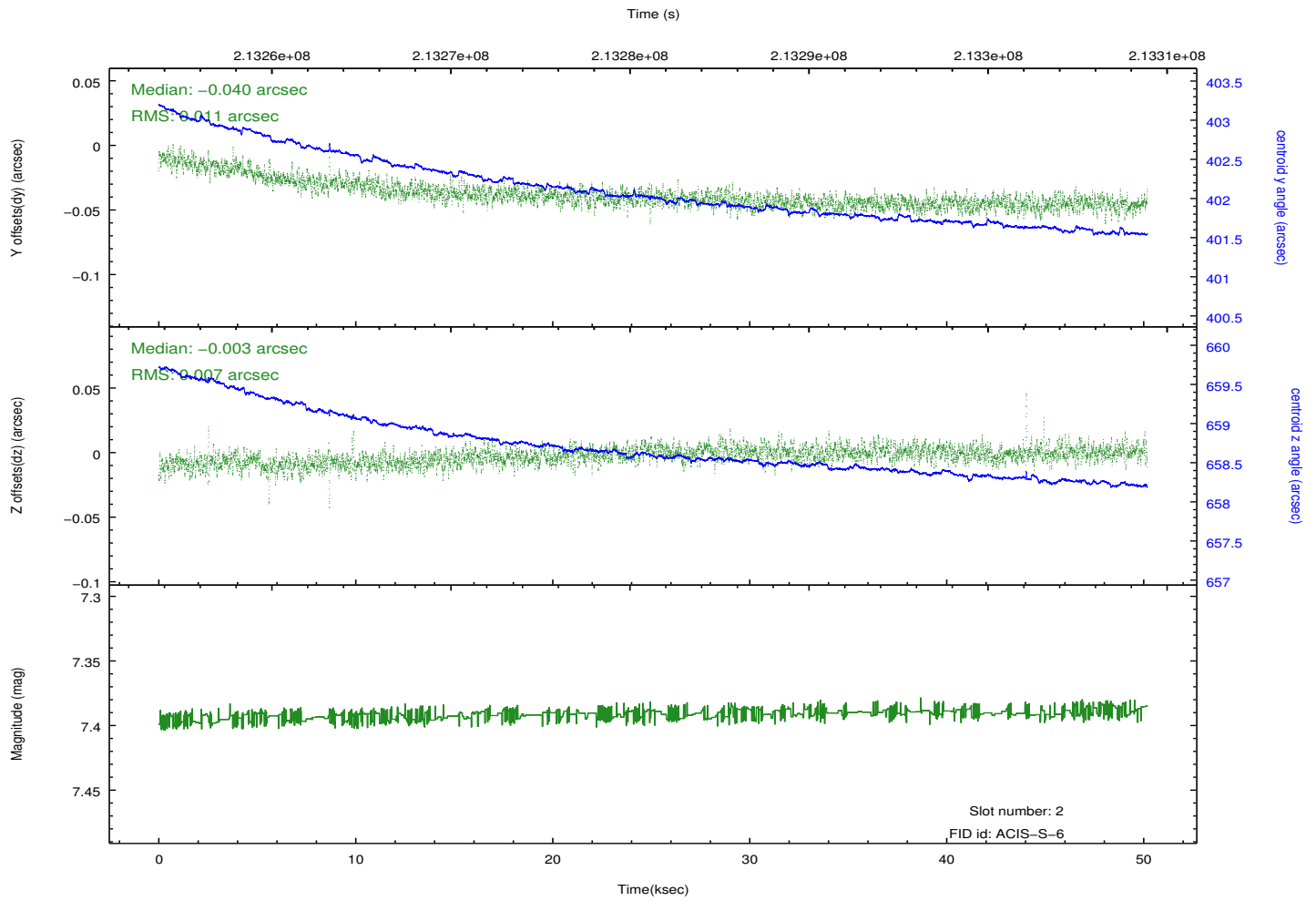
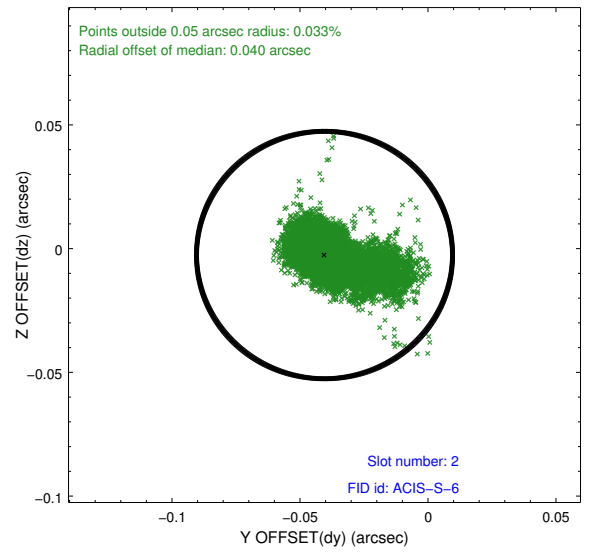
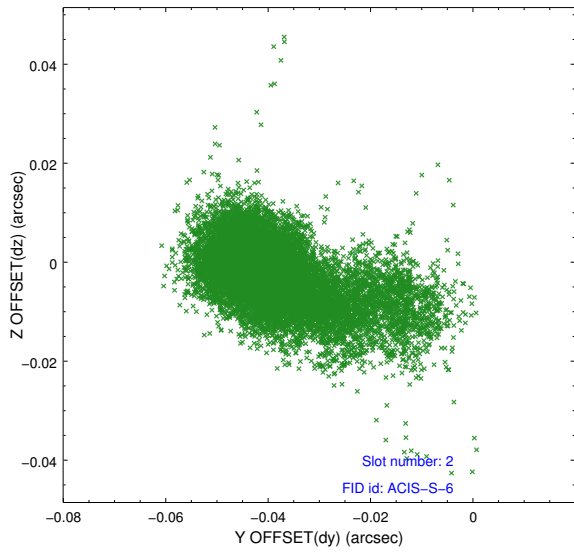
### 2.5.1 Slot 0



## 2.5.2 Slot 1

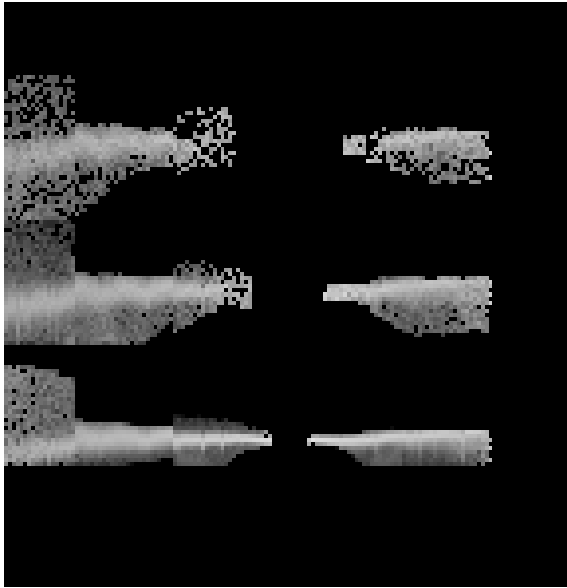


### 2.5.3 Slot 2



# 3 Gratings

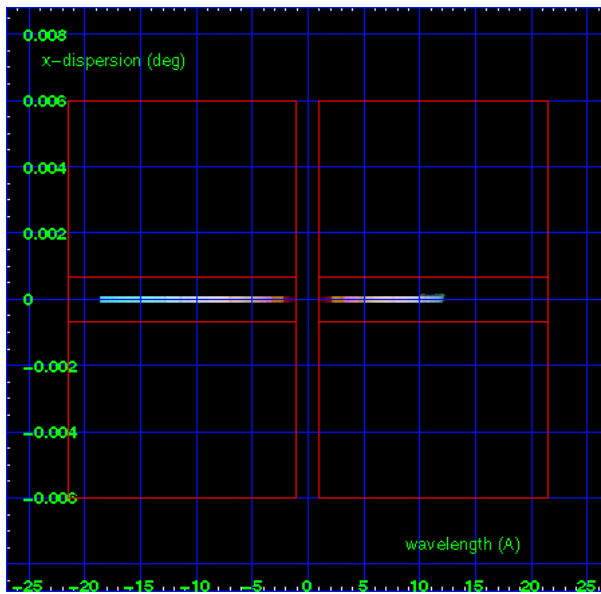
## 3.1 HEG Arm



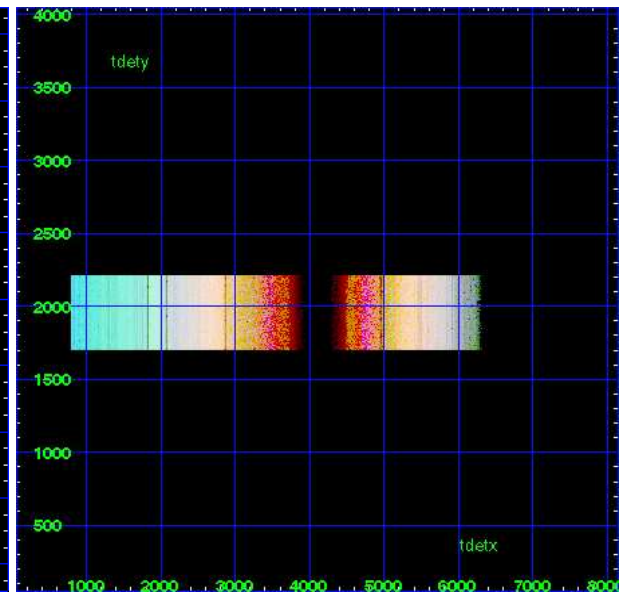
HEG Order Sort 123



HEG Order Sort ALL

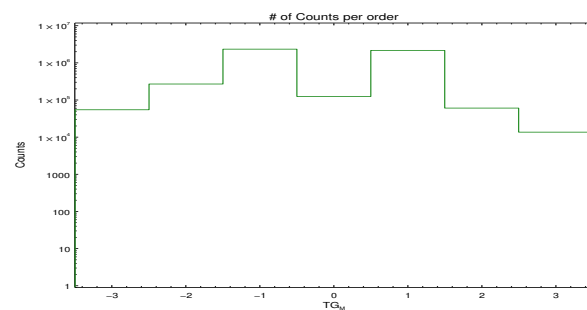


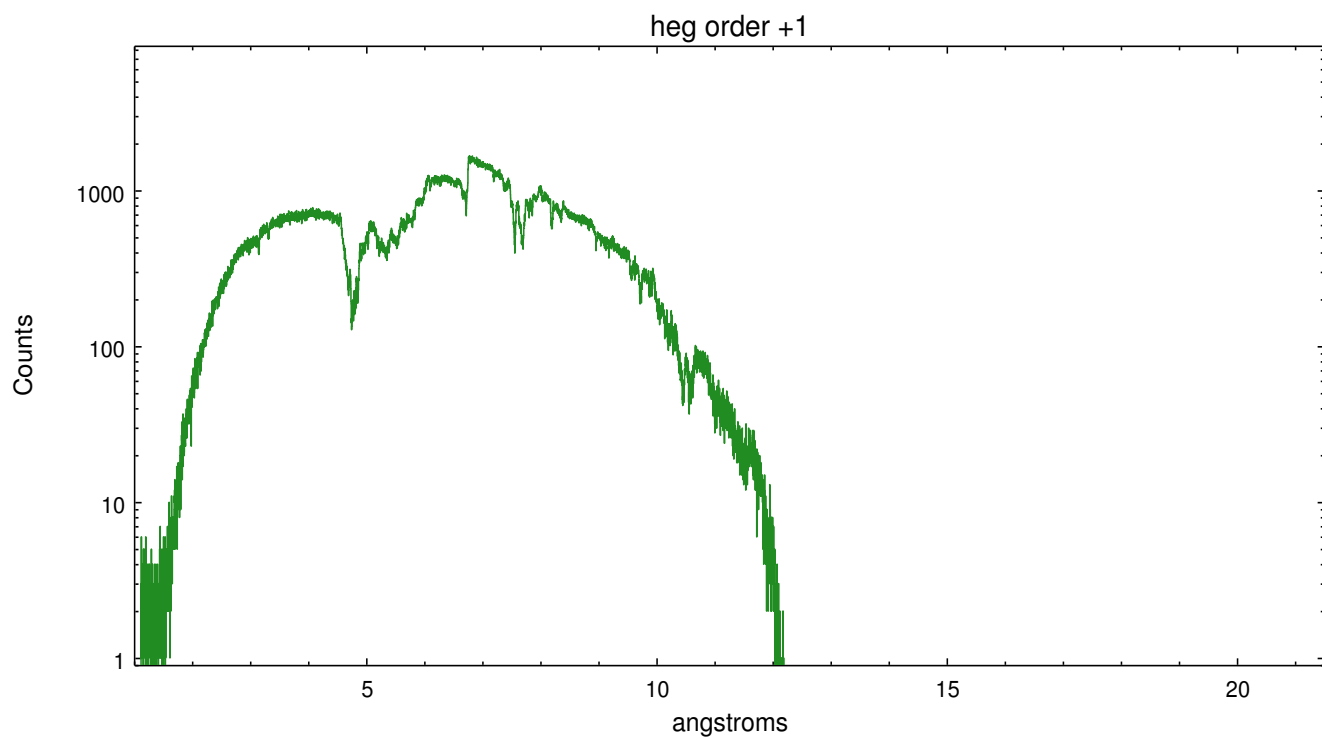
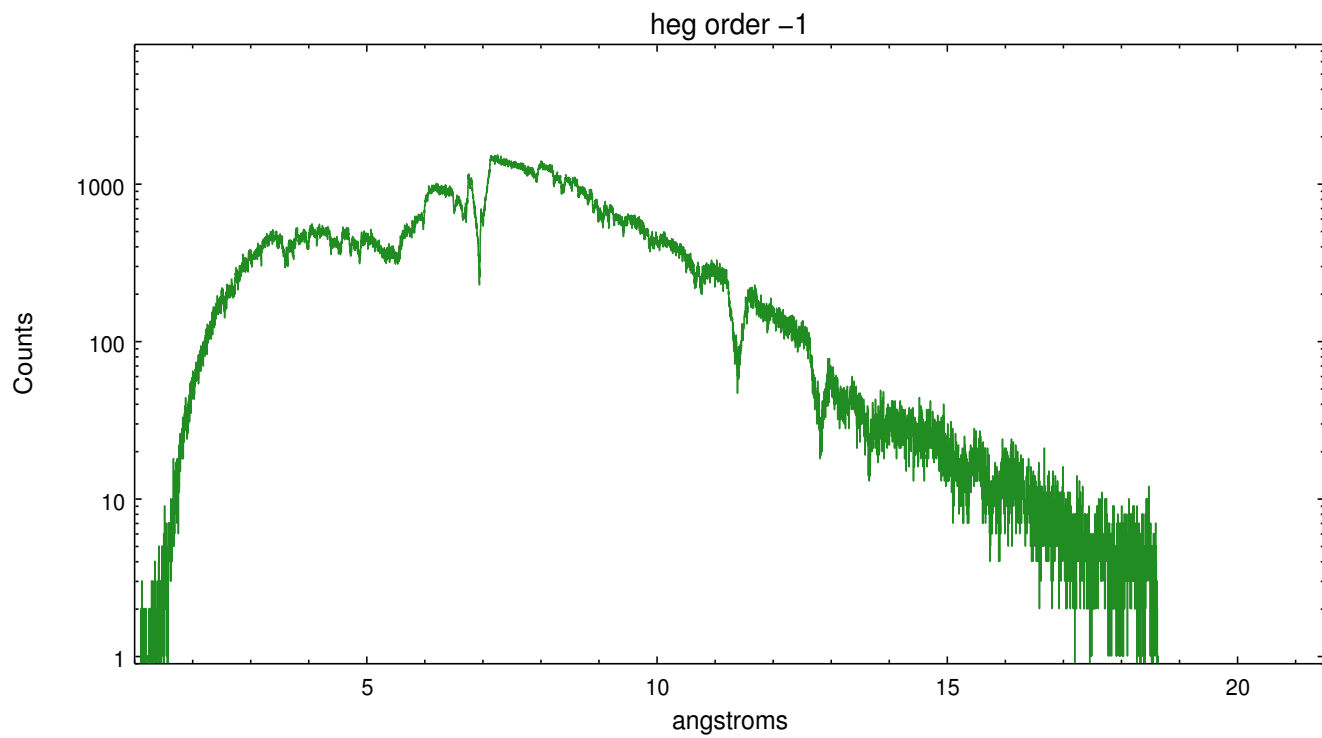
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	54945	271585	2363366	125267	2189601	60908	13669





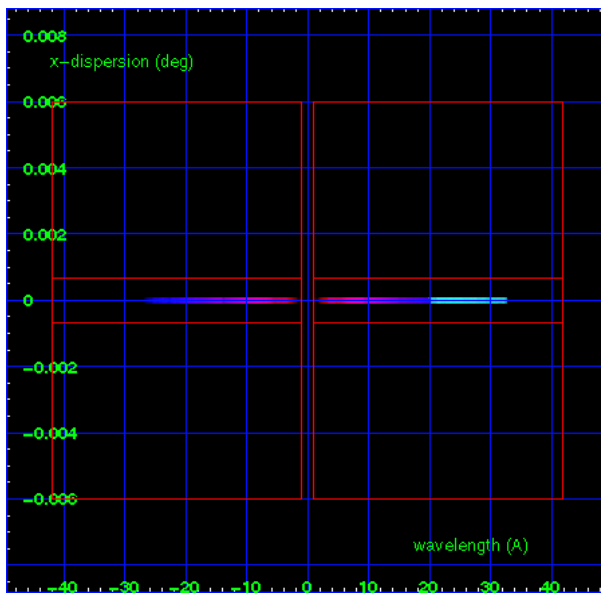
### 3.2 MEG Arm



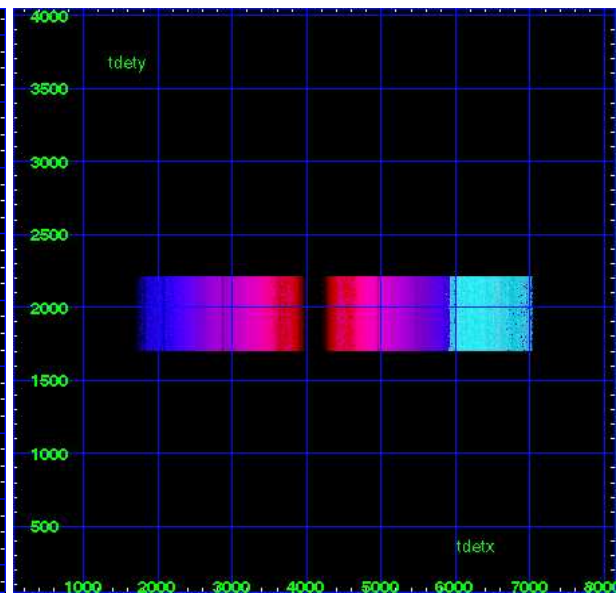
MEG Order Sort 123



MEG Order Sort ALL

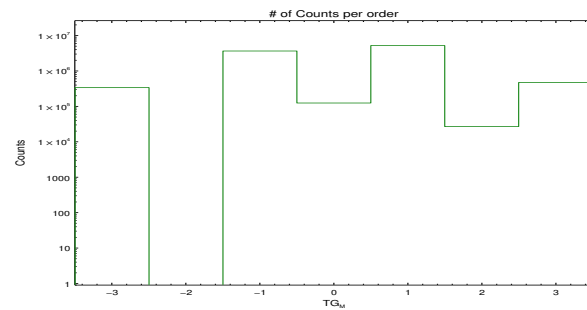


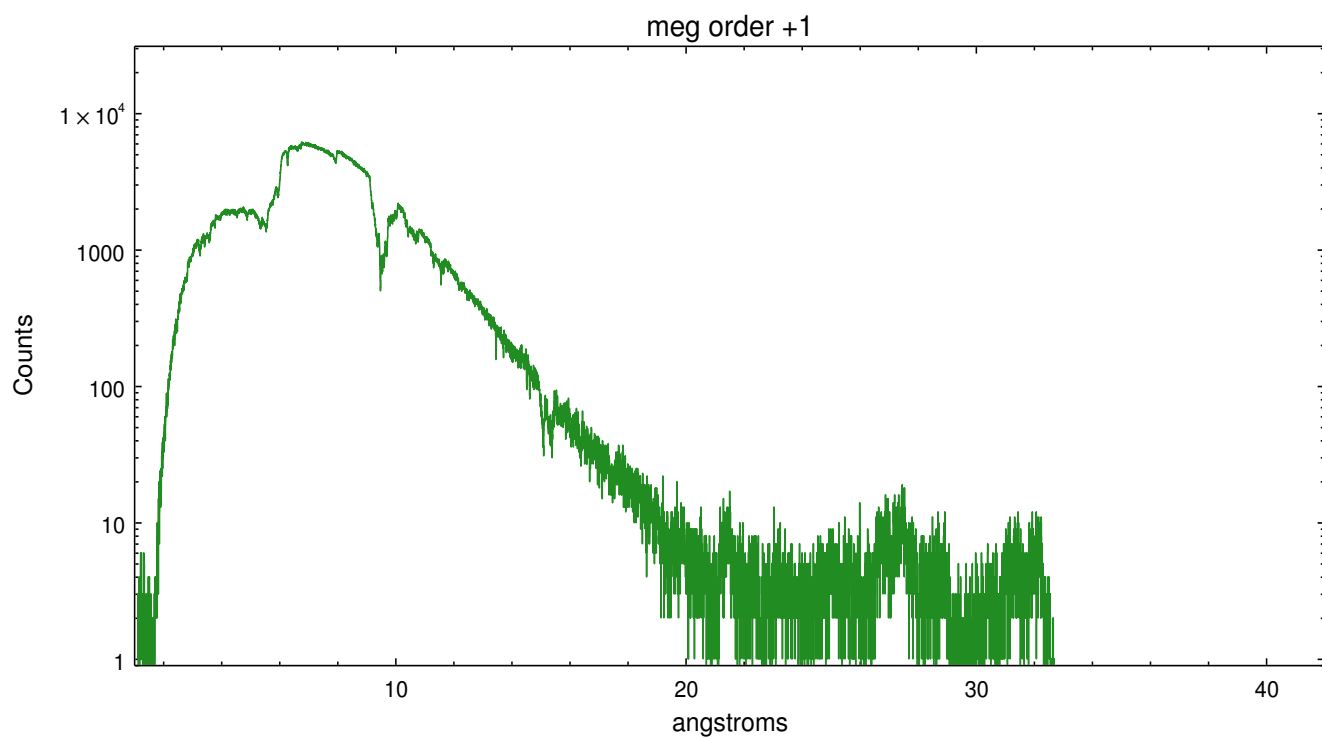
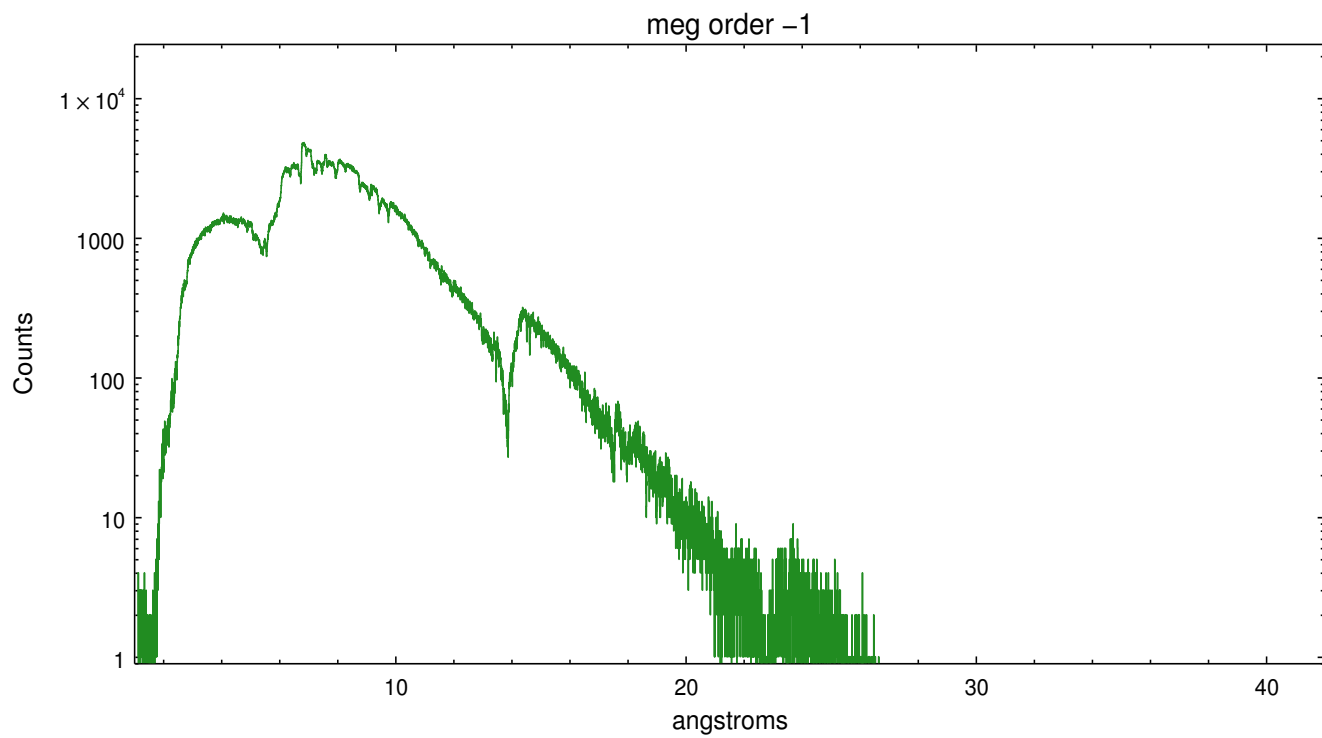
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	341642	0	3704539	125267	5266853	26995	476107





## A Summary

### A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2013.01.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	50.185

### A.2 Comments