

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 2970 - L2 Version 3  
Chandra X-Ray Center

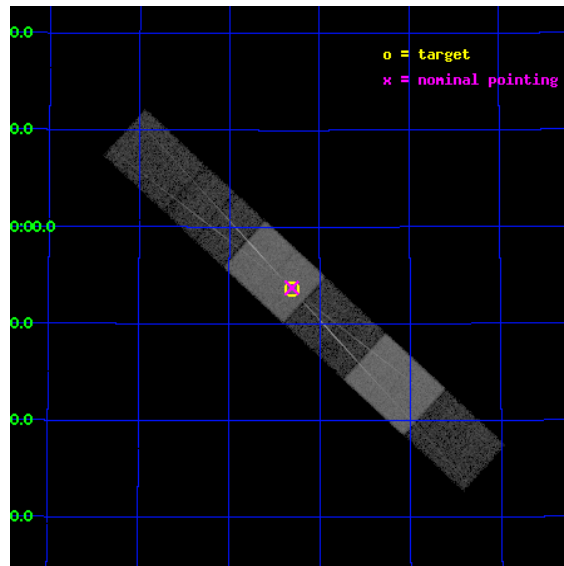
L2 Processing Date : Oct 4 2012

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# 1 Front

seq_num	700409	Sequence number
obs_id	2970	Observation id
title	PROBING THE INTERGALACTIC MEDIUM AT LOW REDSHIFT	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	1ES 1028+511	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	157.826667	Observer's specified target RA [deg]
dec_targ	50.893333	Observer's specified target Dec [deg]
ra_nom	157.82653942595	Nominal RA [deg]
dec_nom	50.89554742672	Nominal Dec [deg]
roll_nom	222.60673173652	Nominal Roll [deg]
revision	3	Processing version of data
ontime	21757.5	Sum of GTIs [s]
livetime	21406.097503384	Livetime [s]
ontime4	21757.5	Sum of GTIs [s]
ontime5	21757.5	Sum of GTIs [s]
ontime6	21757.5	Sum of GTIs [s]
ontime7	21757.5	Sum of GTIs [s]
ontime8	21757.5	Sum of GTIs [s]
ontime9	21757.5	Sum of GTIs [s]
l2events	175171	Number of level 2 events

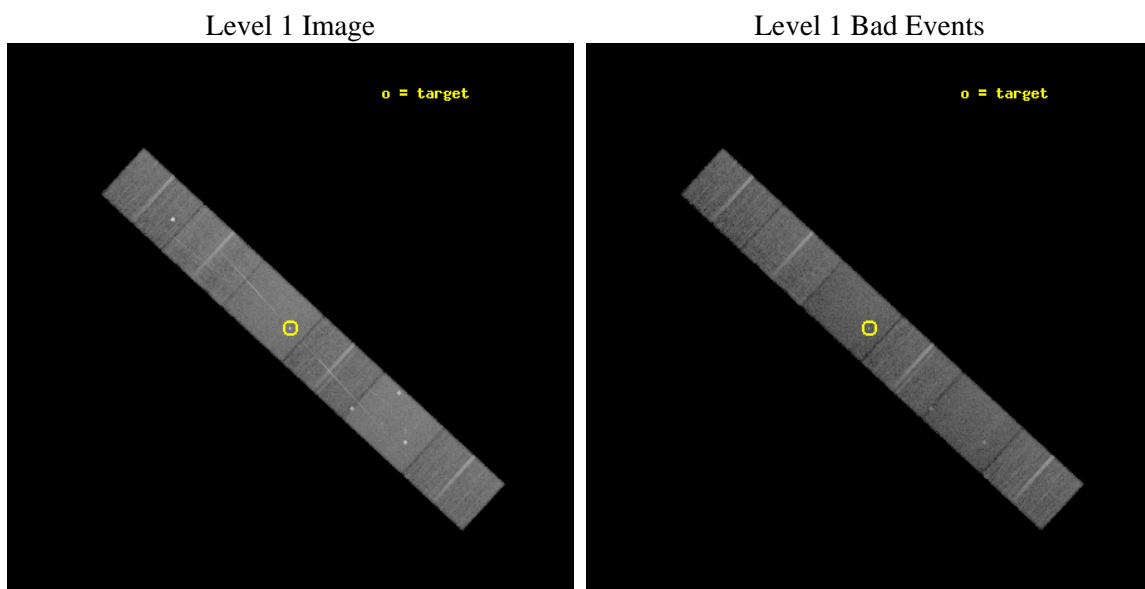




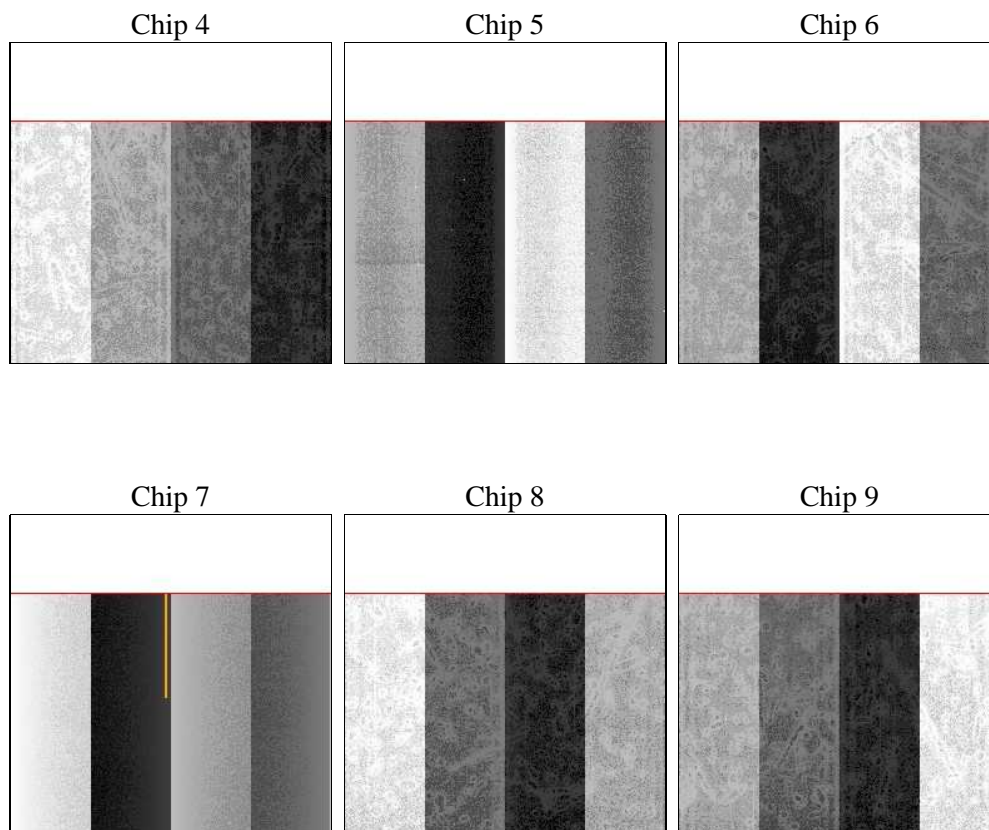
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	22000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	21757.5	Sum of GTIs [s]
caldsver	4.5.2	&#160	ontime4	21757.5	Sum of GTIs [s]
date	2012-10-04T16:28:59	Date and time of file creation	ontime5	21757.5	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	21757.5	Sum of GTIs [s]
			ontime7	21757.5	Sum of GTIs [s]
			ontime8	21757.5	Sum of GTIs [s]
			ontime9	21757.5	Sum of GTIs [s]
			l1events	760801	Number of level 1 events

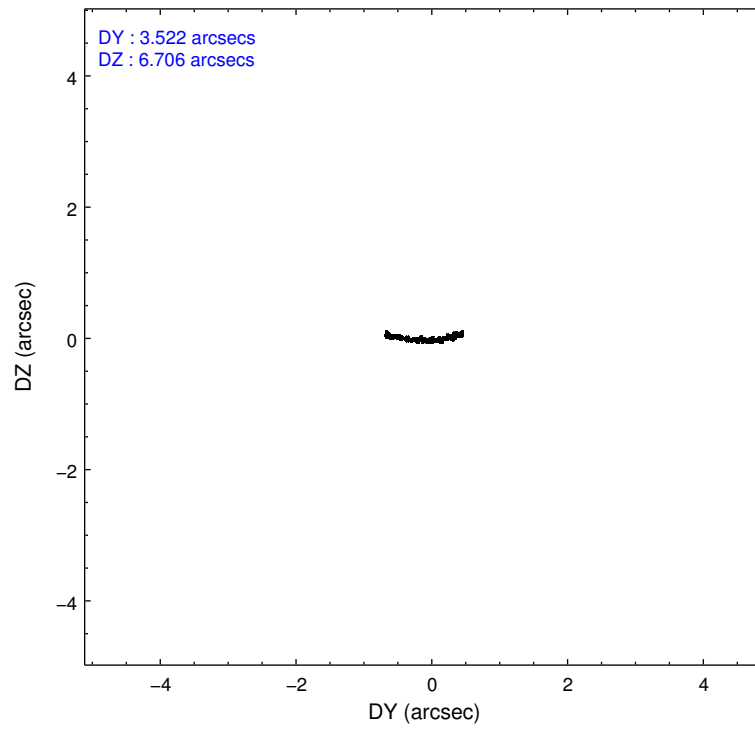
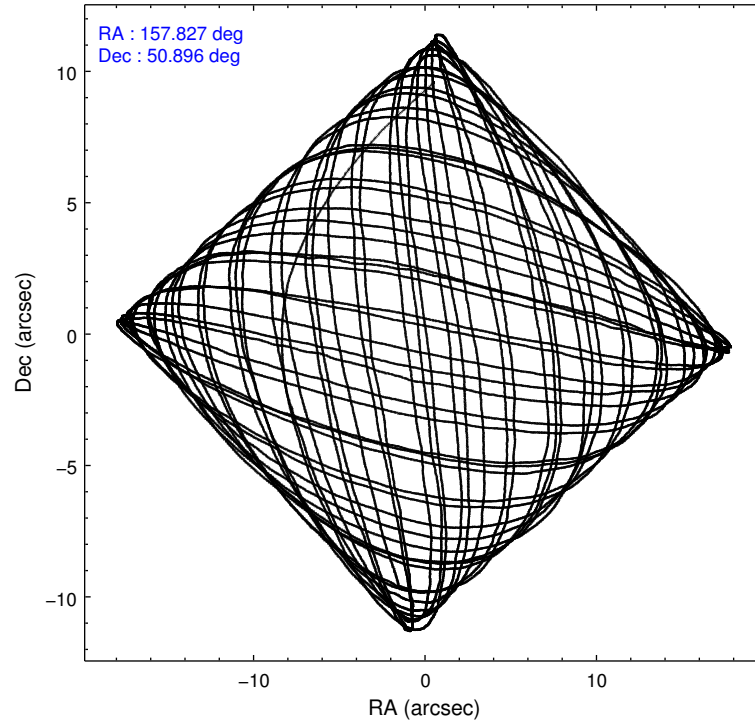
### 2.1.4 Events

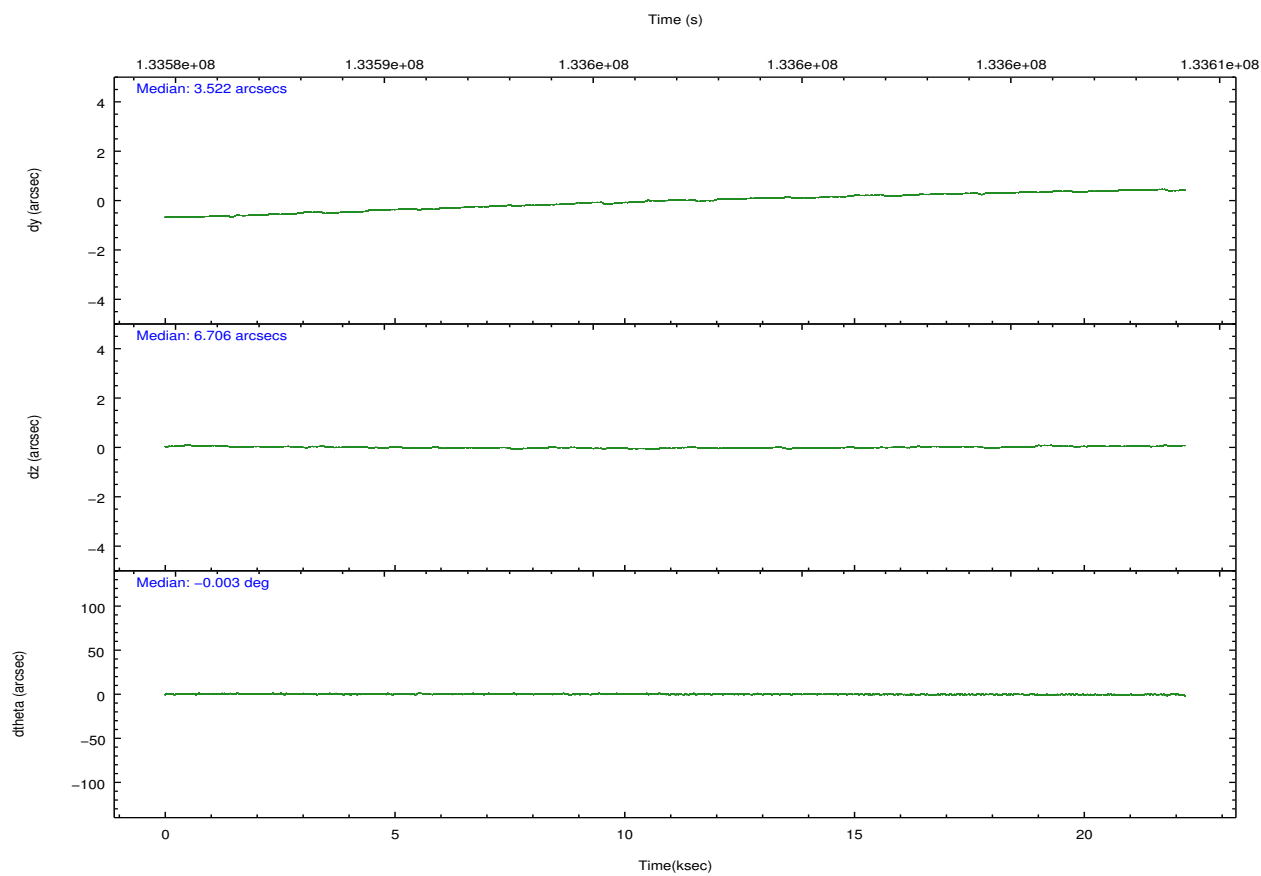
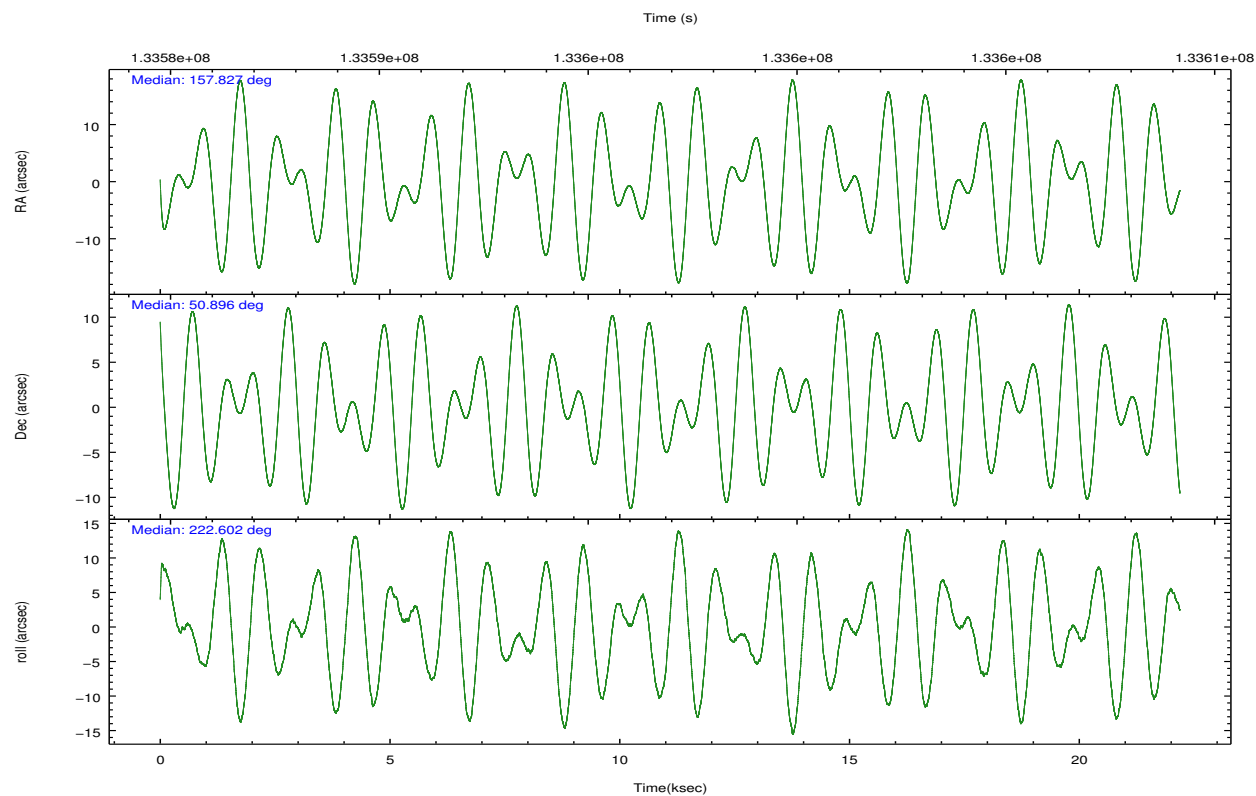
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	113231	152664	108761	141375	134492	110278	grade 0 events	5317	13297	7858	6900	10106	11998
rejected events	100095	78129	92828	78157	105055	89986		4%	8%	7%	4%	7%	10%
rejected %	88%	51%	85%	55%	78%	81%	grade 1 events	46	729	64	205	55	40
								0%	0%	0%	0%	0%	0%
							grade 2 events	3040	19500	2866	13015	6031	3261
								2%	12%	2%	9%	4%	2%
							grade 3 events	1273	3651	1386	5919	3109	1317
								1%	2%	1%	4%	2%	1%
							grade 4 events	1244	3449	1357	5936	2782	1246
								1%	2%	1%	4%	2%	1%
							grade 5 events	3835	11582	4353	13219	5566	4514
								3%	7%	4%	9%	4%	4%
							grade 6 events	2262	34646	2466	31458	7412	2472
								1%	22%	2%	22%	5%	2%
							grade 7 events	96214	65810	88411	64723	99431	85430
								84%	43%	81%	45%	73%	77%

## 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	157.838954	157.82653942595	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	50.921656	50.89554742672048	Subarray start row	1	1
[deg] Pointing Roll	222.440463	222.6067317365212	Subarray row count	774	774
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	2.5
[mm] SIM translation stage pos	-187.132523	-187.1254020033014			
[mm] SIM translation stage offset	-3	-3.007120579706367			
[s] Observation start time (MET)	133586055.184000	133585336.12117			
Observation start date	2002-03-27T03:13:11	2002-03-27T03:02:16			
[s] Observation end time (MET)	133608055.184000	133608837.32212			
Observation end date	2002-03-27T09:19:51	2002-03-27T09:33:57			
Read mode	TIMED	TIMED			

## 2.3 Aspect



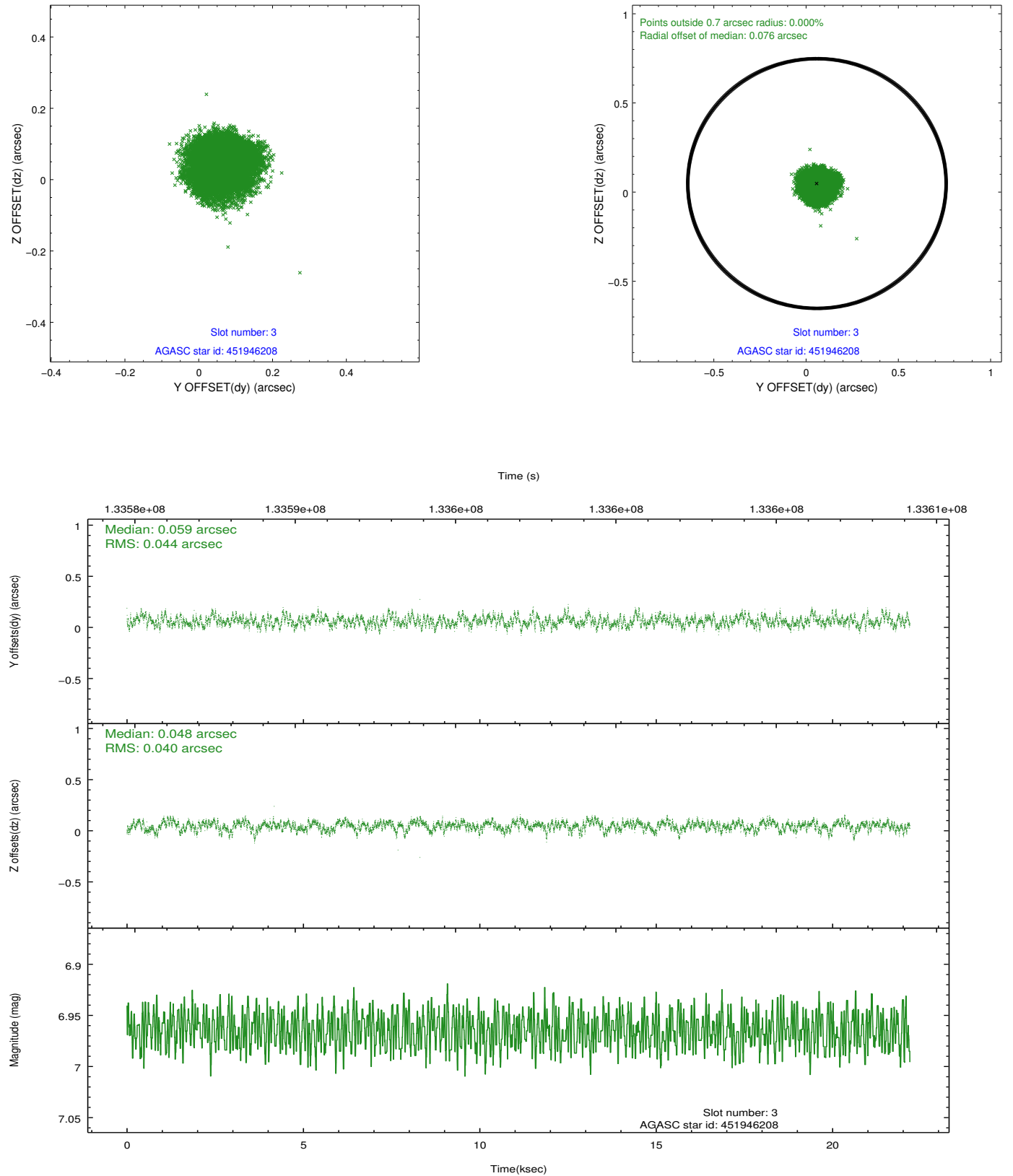


### Slot Statistics

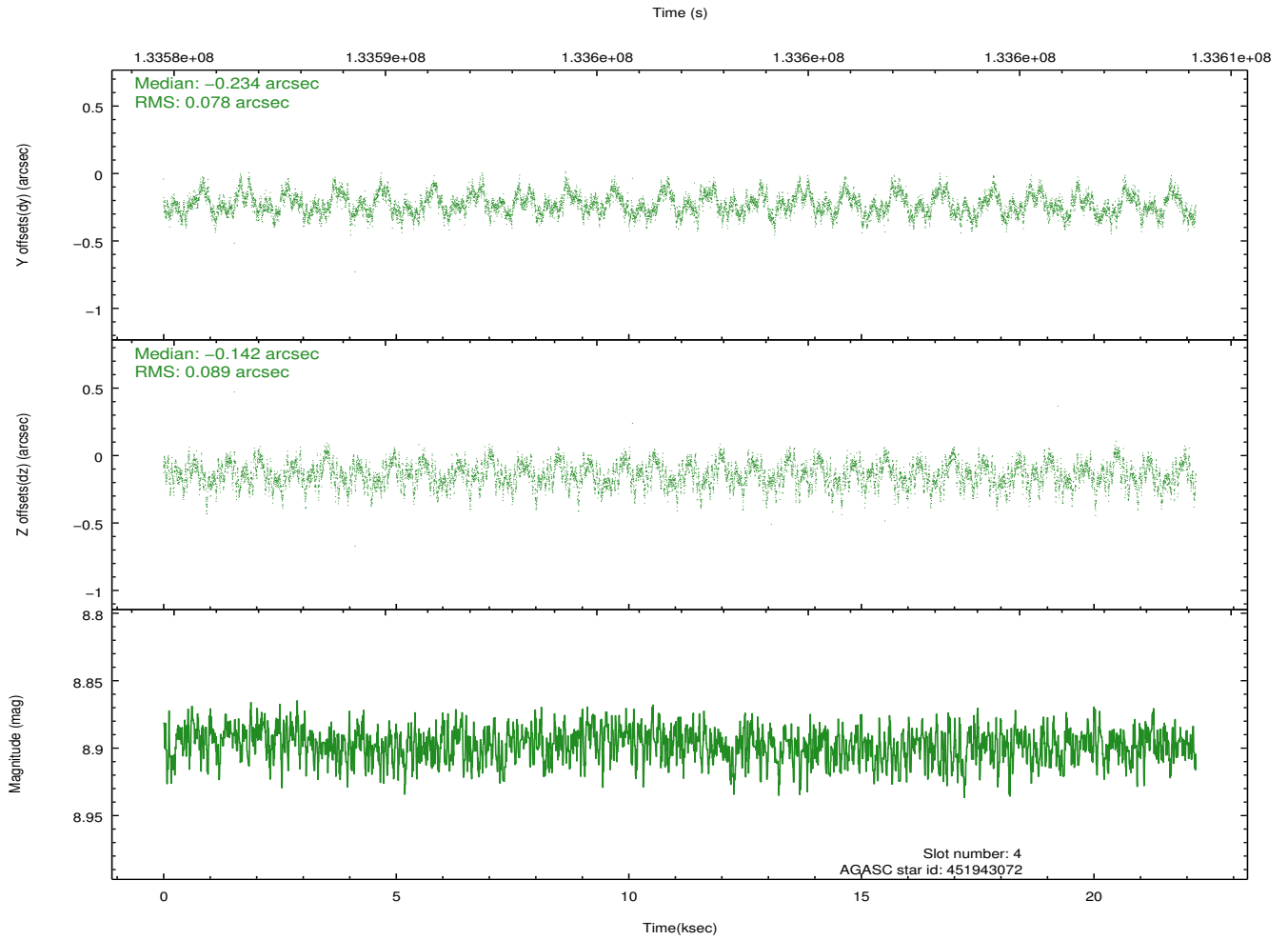
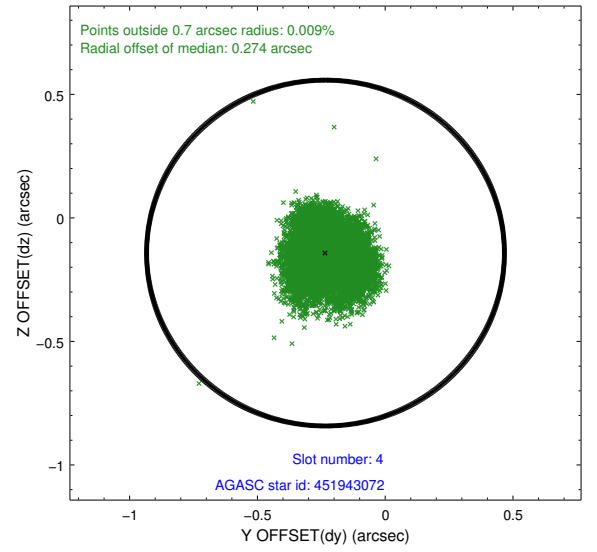
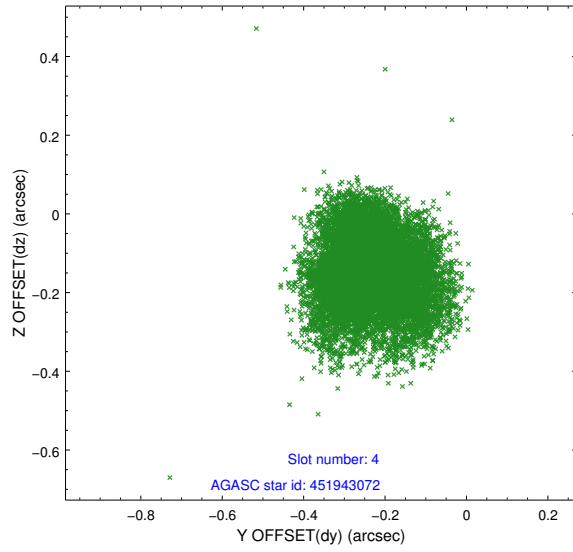
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-3	7.35	5410	-0.084	-0.019	0.008	0.013	0.000000	0.000000	57.18	-1919.04
1	FID	ACIS-S-4	7.20	5410	0.037	0.054	0.017	0.026	0.000000	0.000000	2157.48	118.36
2	FID	ACIS-S-5	7.24	5412	0.020	-0.025	0.017	0.025	0.000000	0.000000	-1808.54	112.20
3	GUIDE	451946208	6.96	10822	0.059	0.048	0.064	0.102	157.563600	50.569125	1321.05	510.97
4	GUIDE	451943072	8.90	10819	-0.234	-0.142	0.127	0.200	157.774577	51.808956	-2049.15	-2454.42
5	GUIDE	451944768	9.19	10816	0.003	-0.089	0.091	0.145	157.673498	51.401166	-890.21	-1525.42
6	GUIDE	451029568	9.42	10818	0.136	0.051	0.104	0.170	156.626708	51.050272	1697.93	-2209.61
7	GUIDE	451944336	9.53	10811	0.030	0.136	0.084	0.138	158.260486	51.372141	-1794.35	-559.79

## 2.4 Star Slots

### 2.4.1 Slot 3

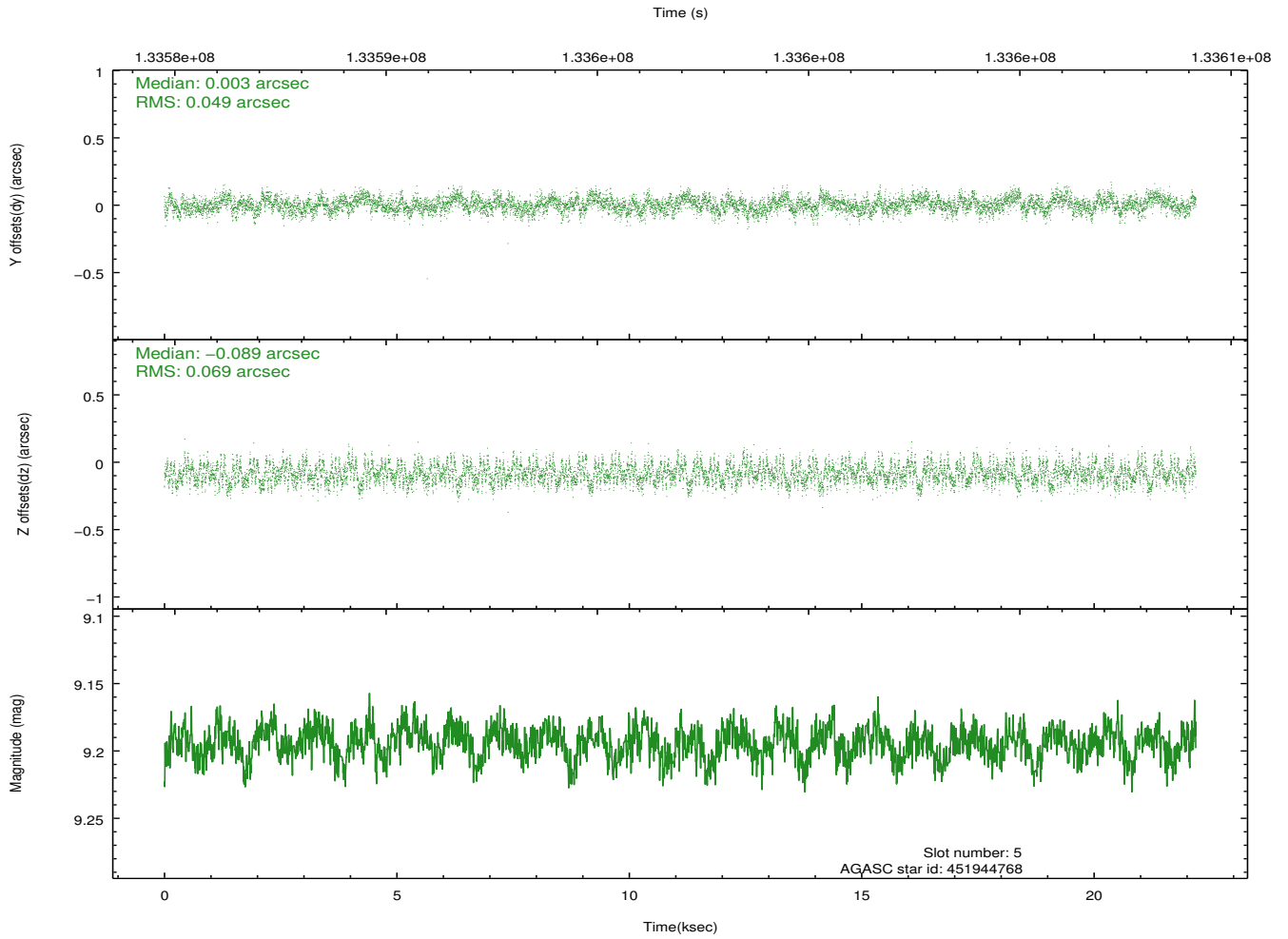
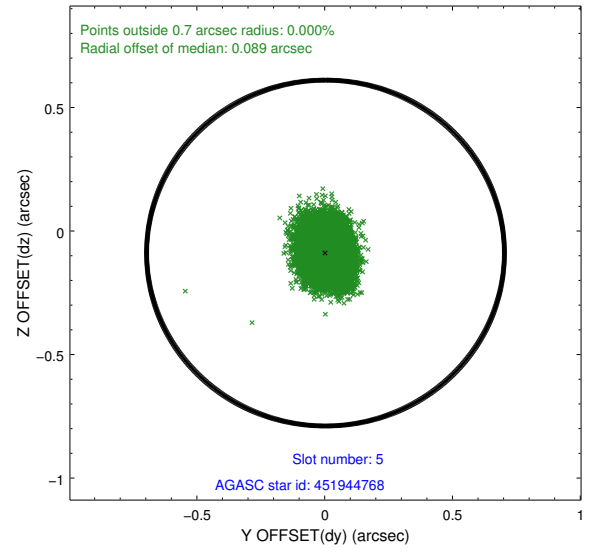
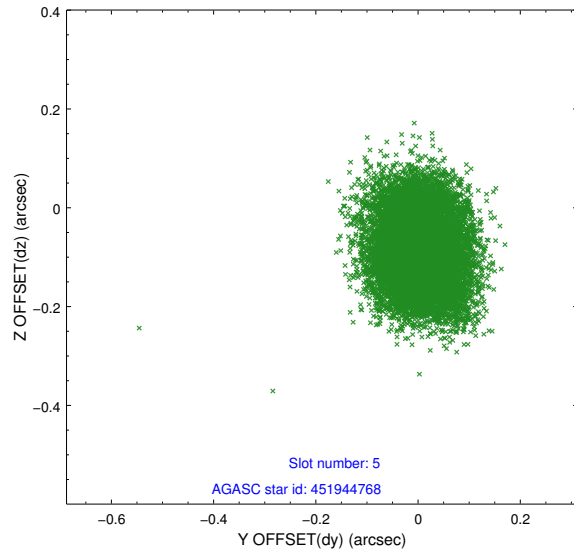


## 2.4.2 Slot 4

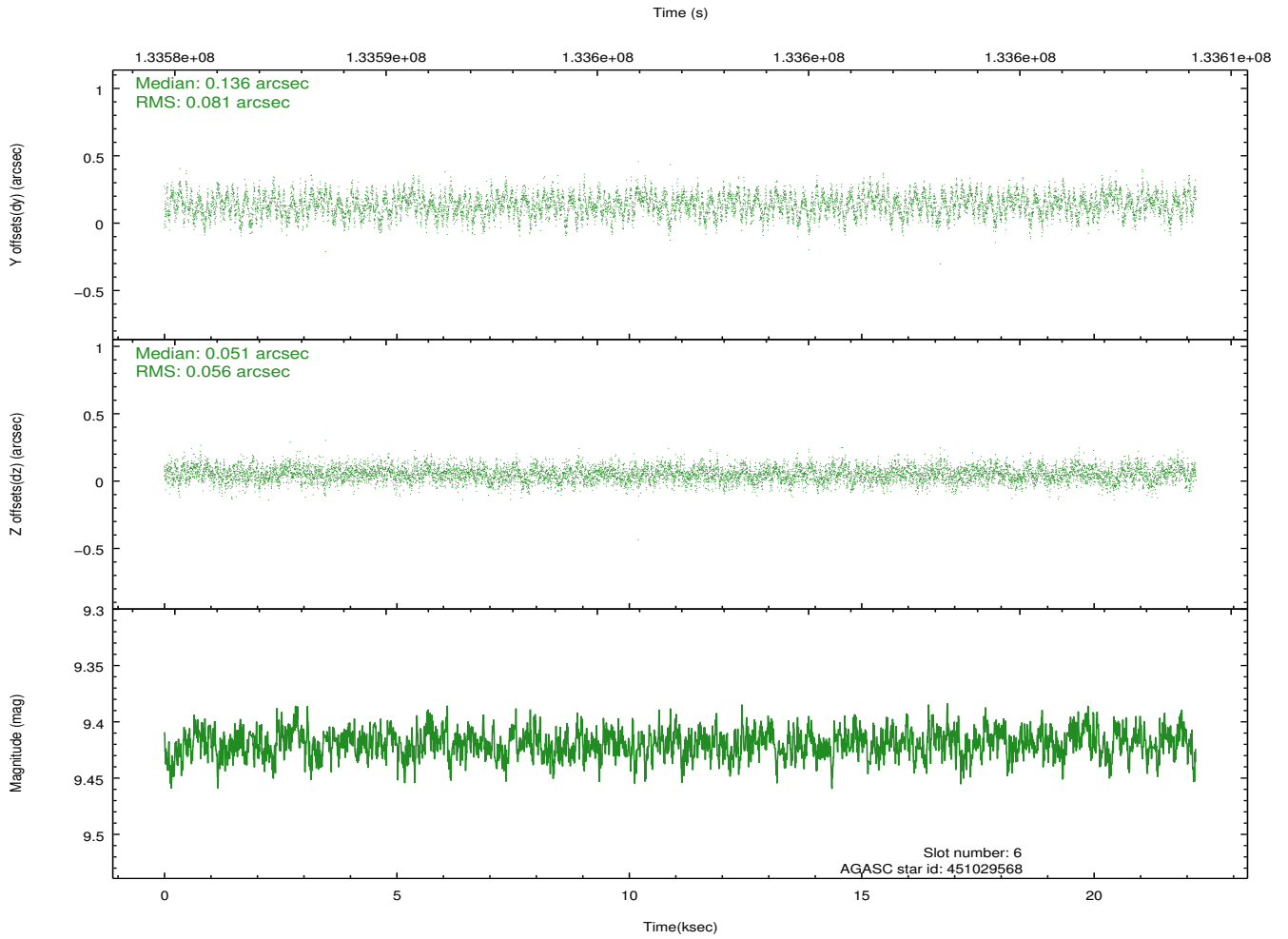
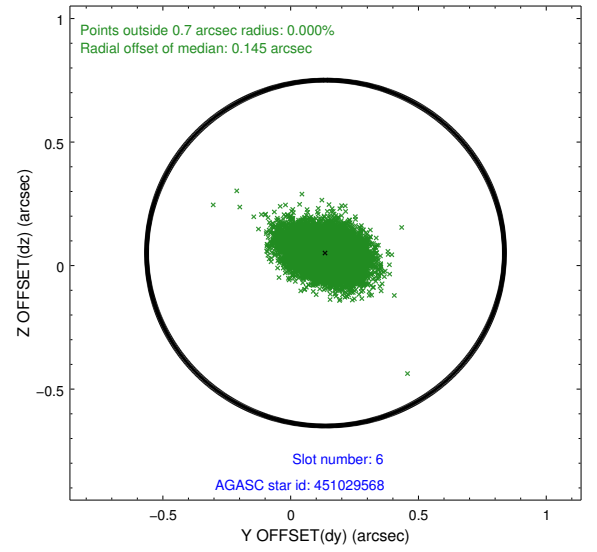
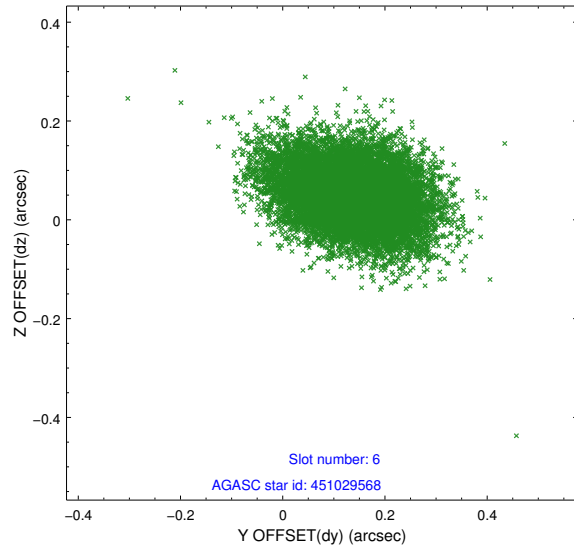




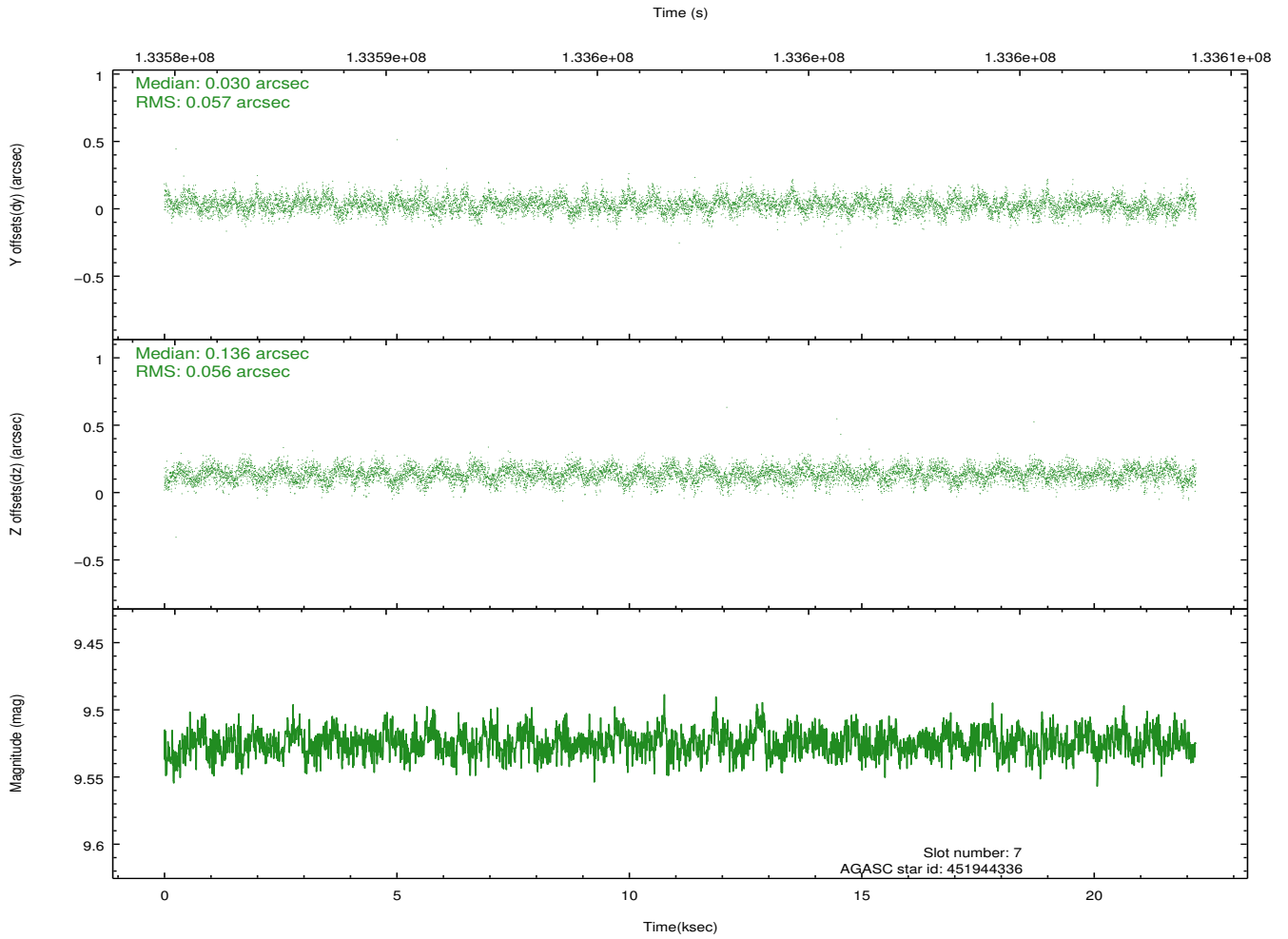
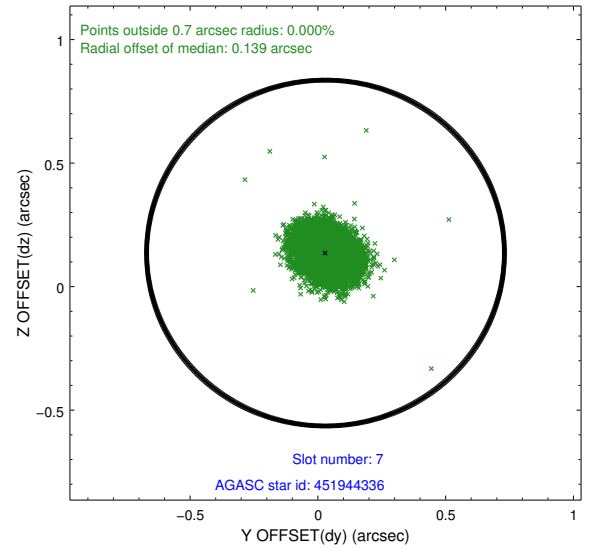
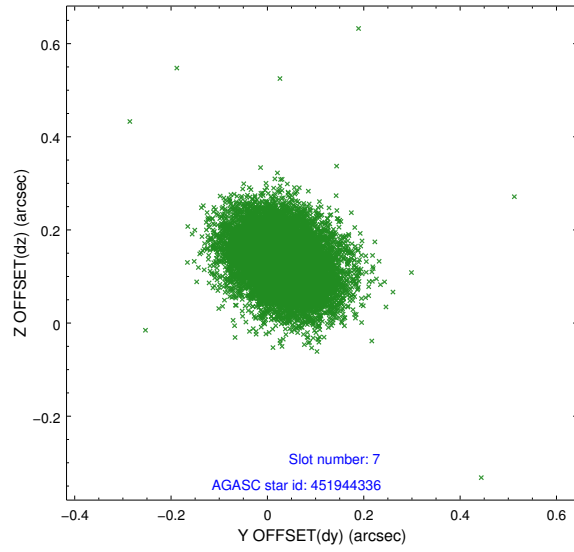
### 2.4.3 Slot 5



## 2.4.4 Slot 6

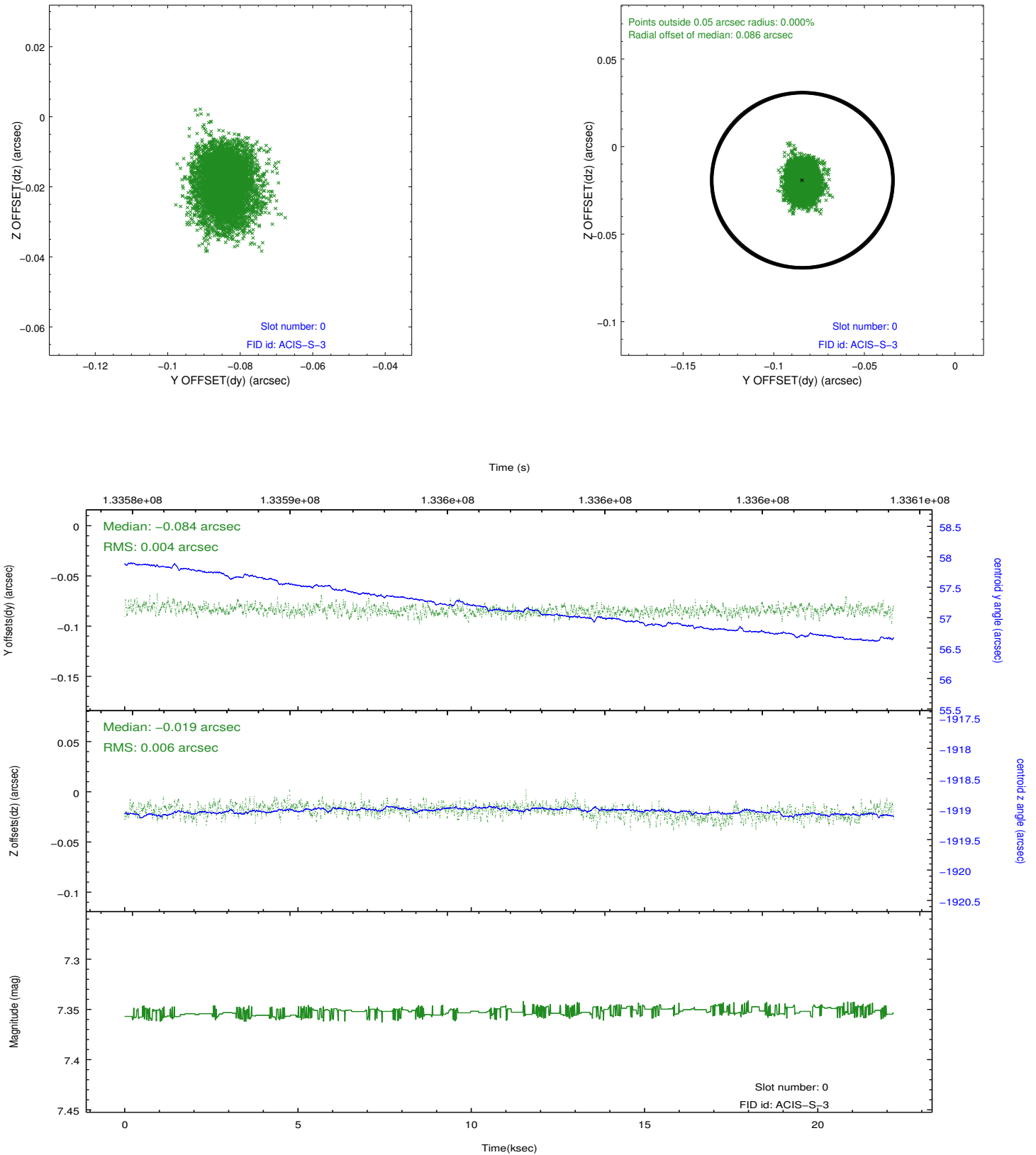


## 2.4.5 Slot 7

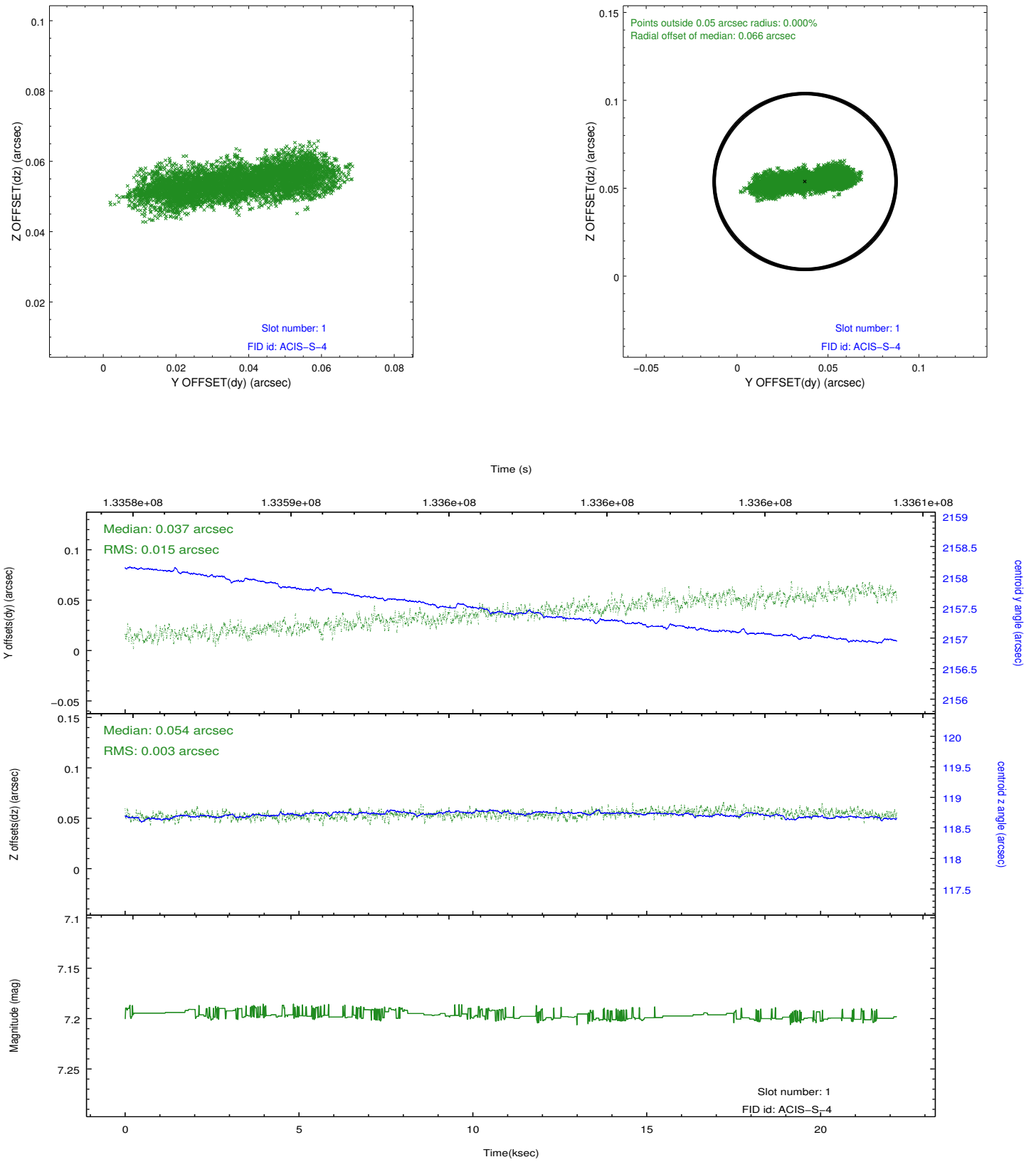


## 2.5 FID Slots

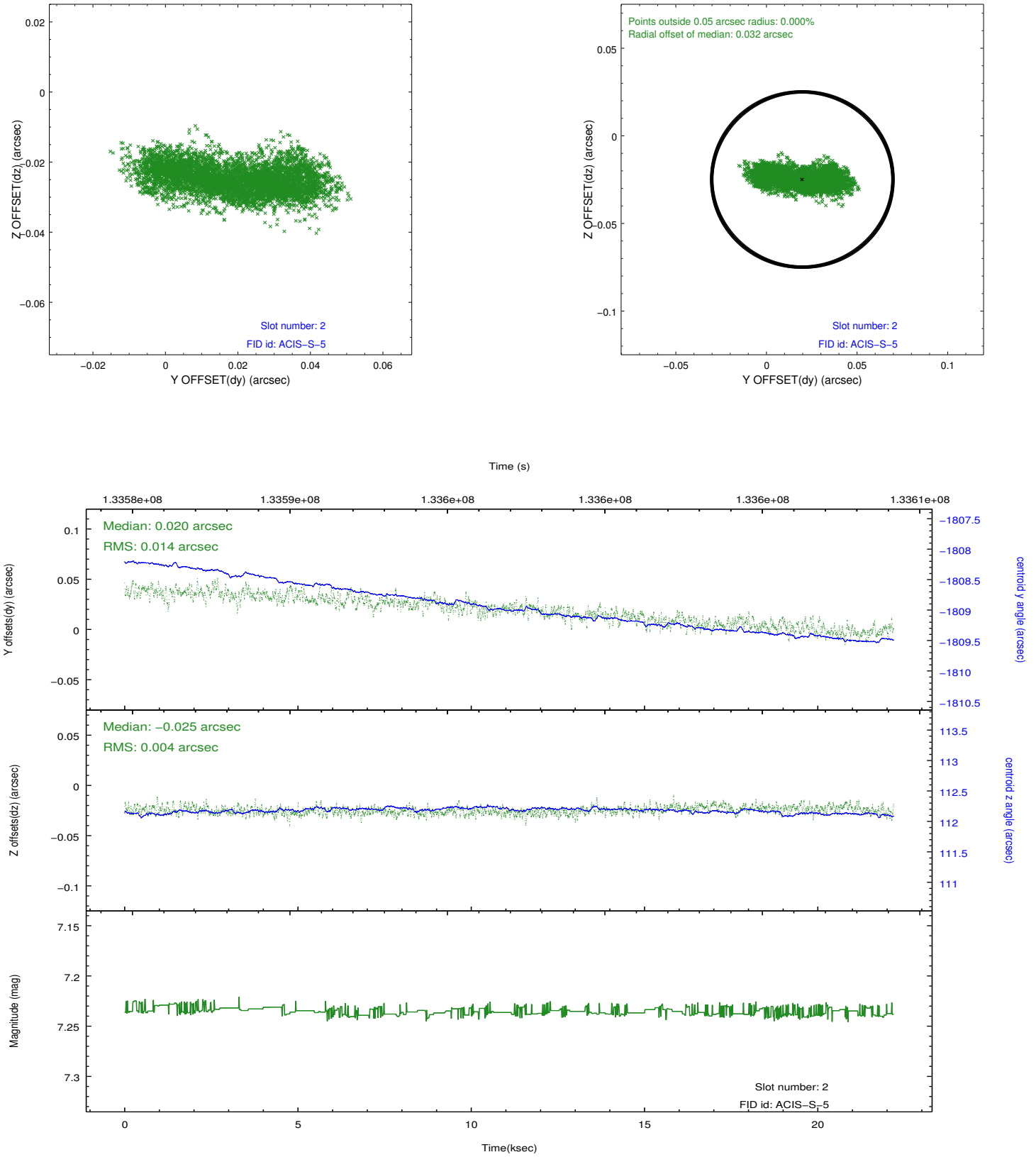
### 2.5.1 Slot 0



## 2.5.2 Slot 1

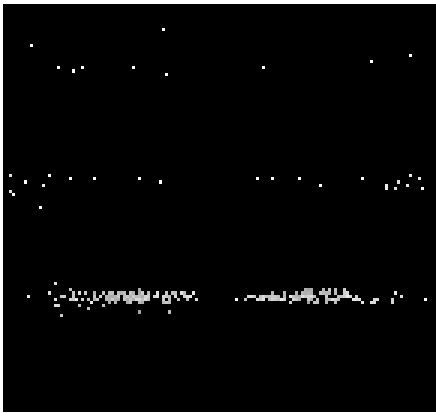


### 2.5.3 Slot 2

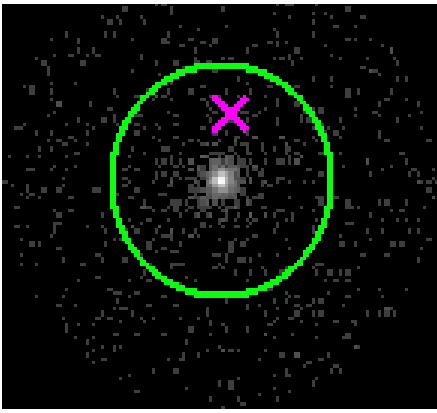


# 3 Gratings

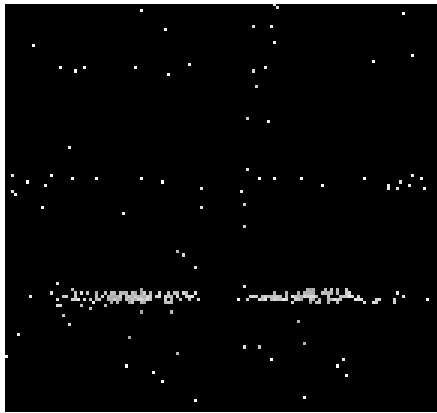
## 3.1 HEG Arm



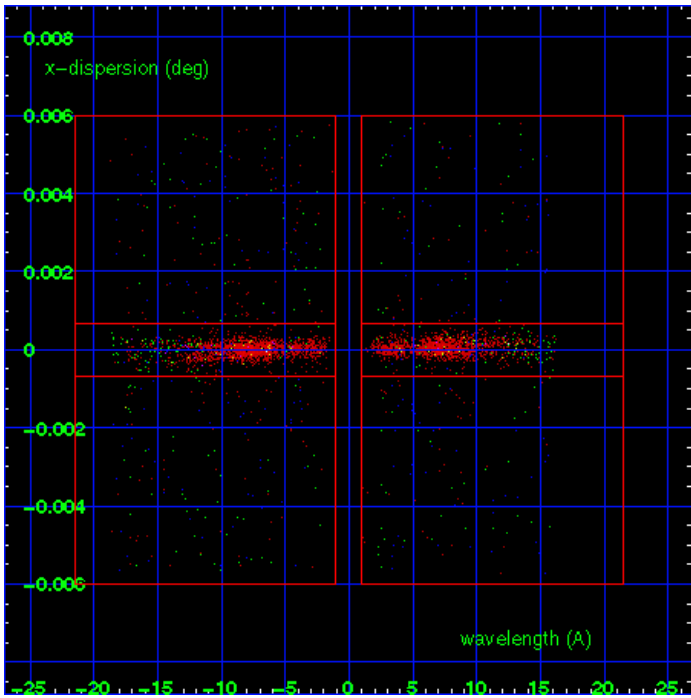
HEG Order Sort 123



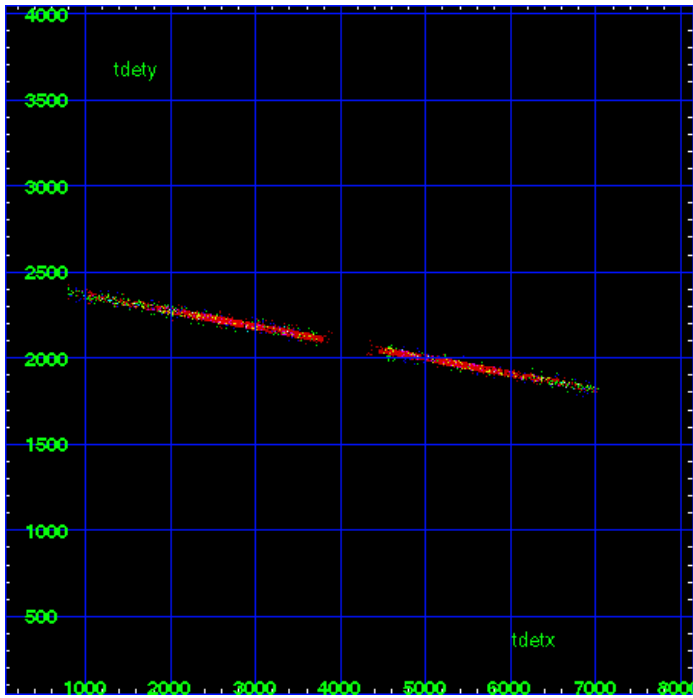
HEG Zero Order



HEG Order Sort ALL

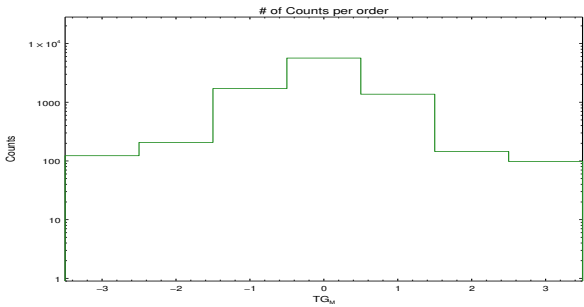


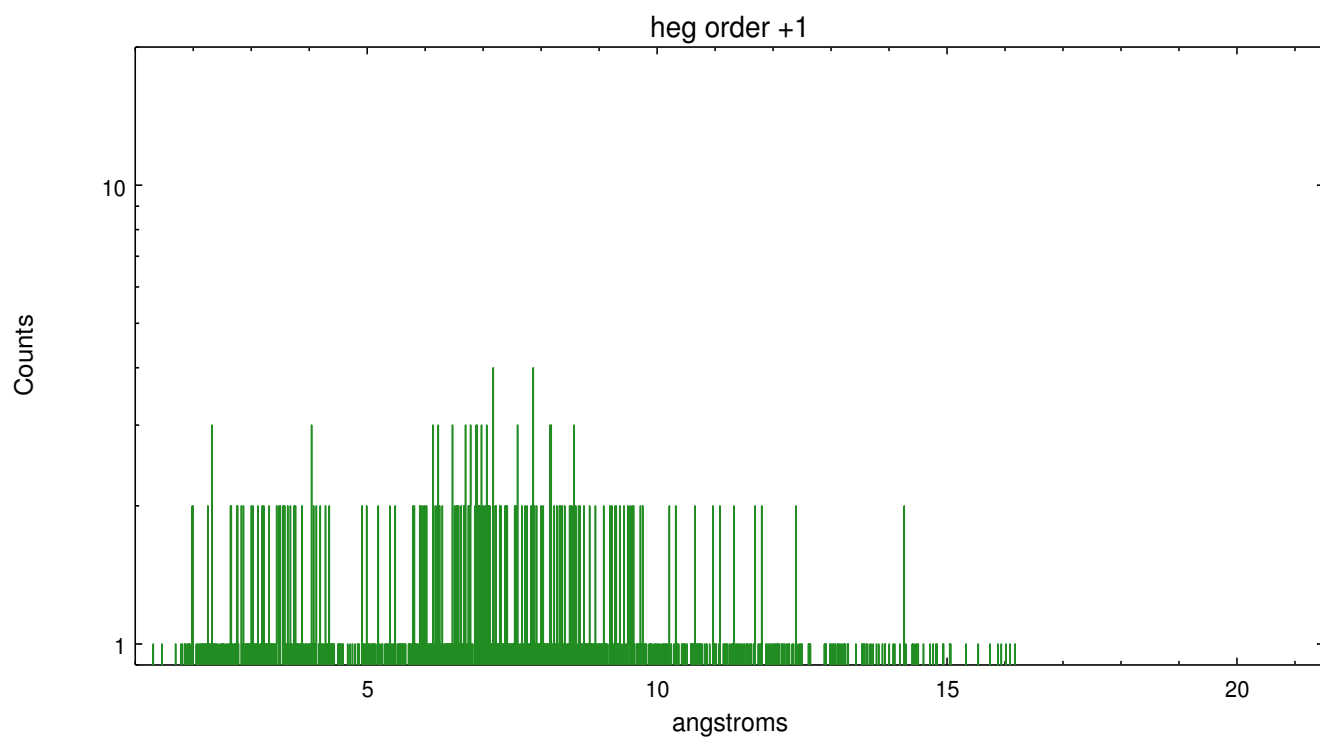
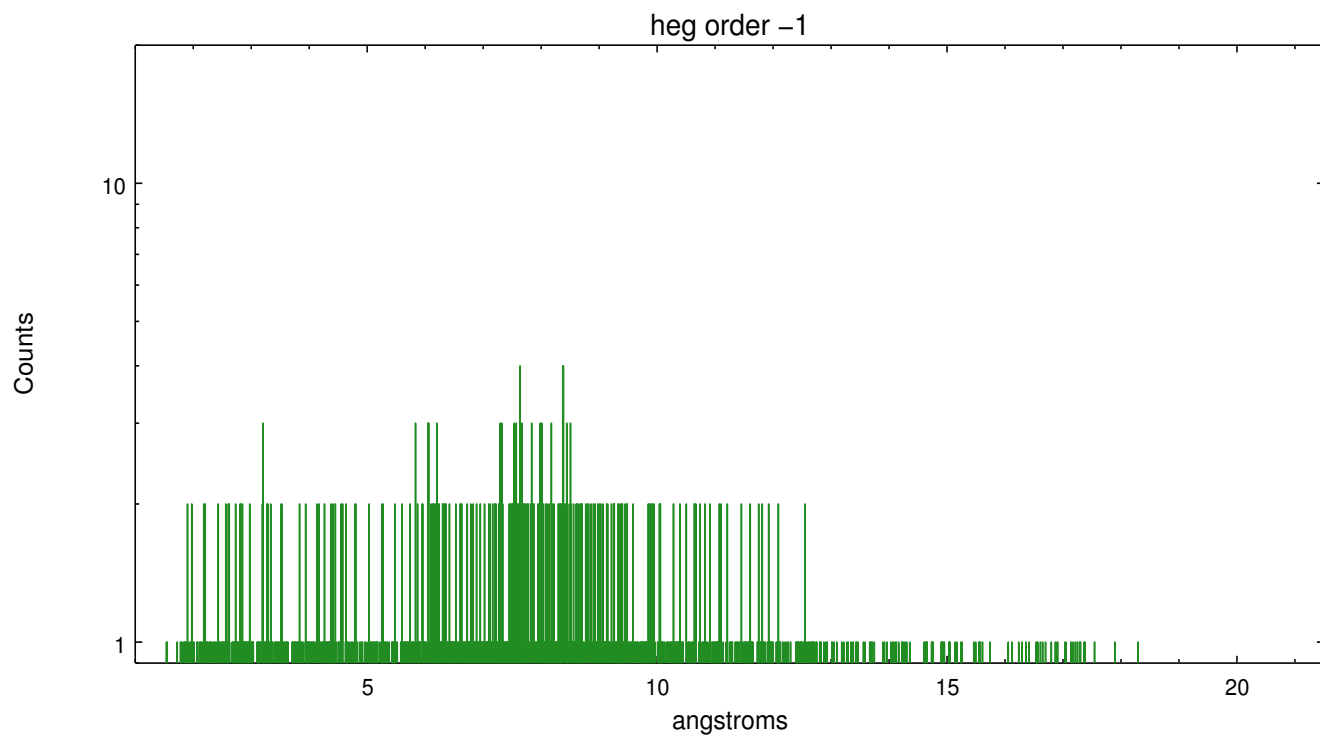
Spot Image HEG



Full Detector HEG

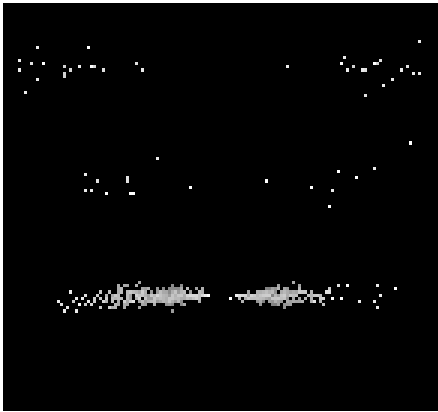
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	123	207	1710	5657	1371	145	98



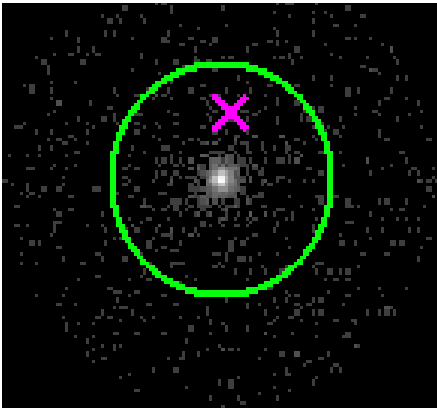




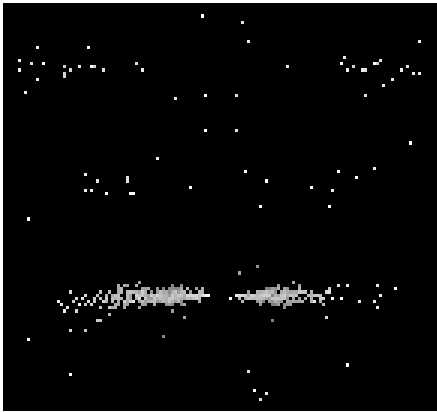
3.2 MEG Arm



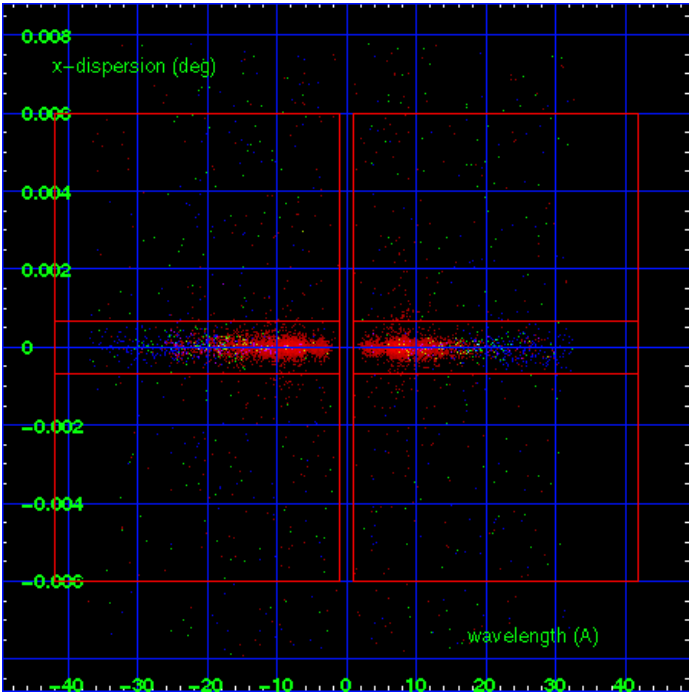
MEG Order Sort 123



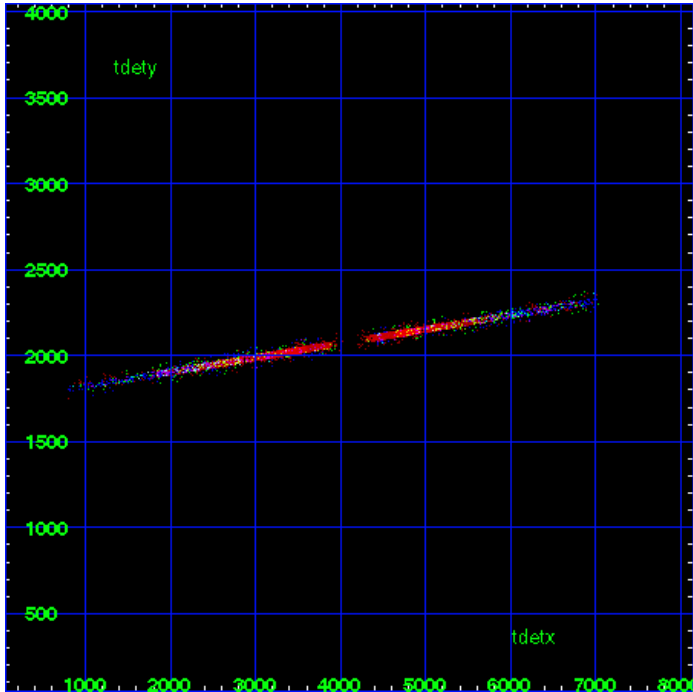
MEG Zero Order



MEG Order Sort ALL

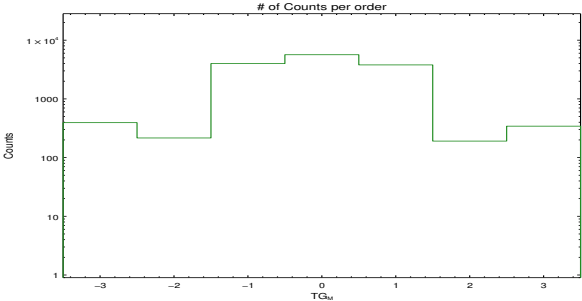


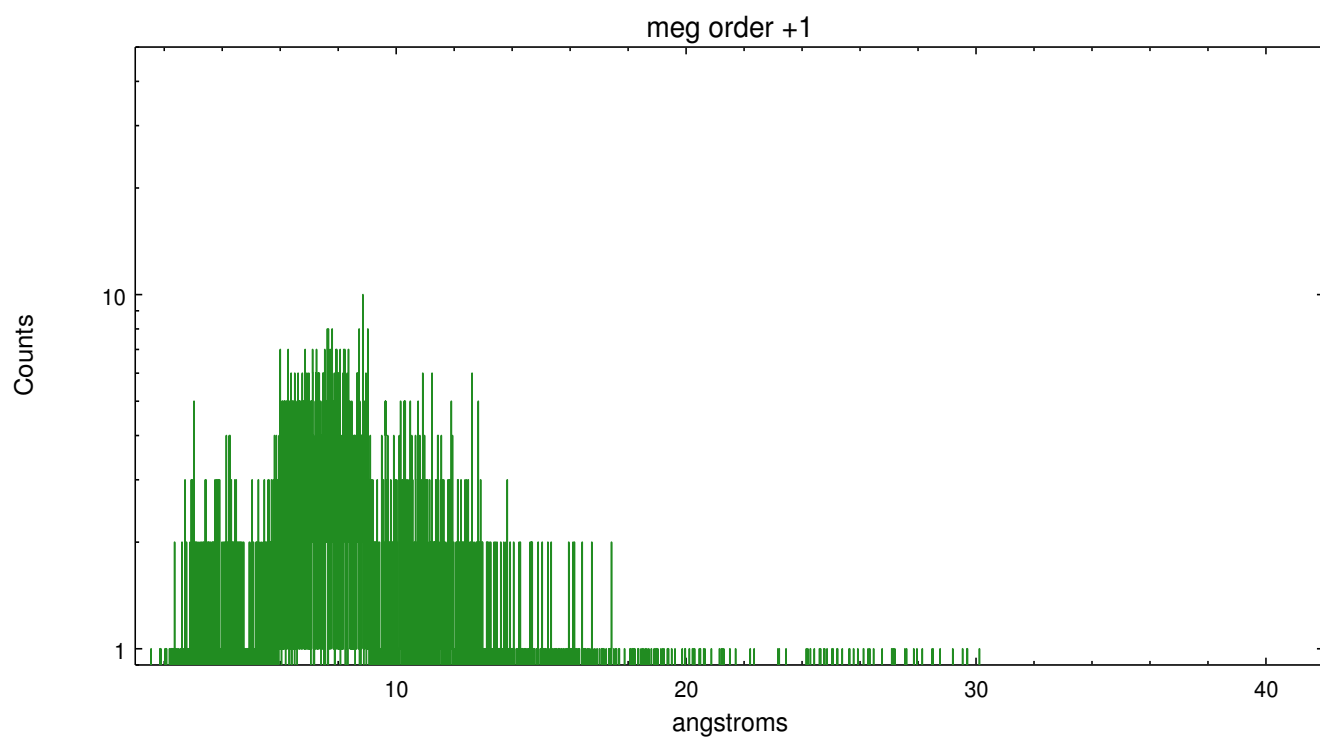
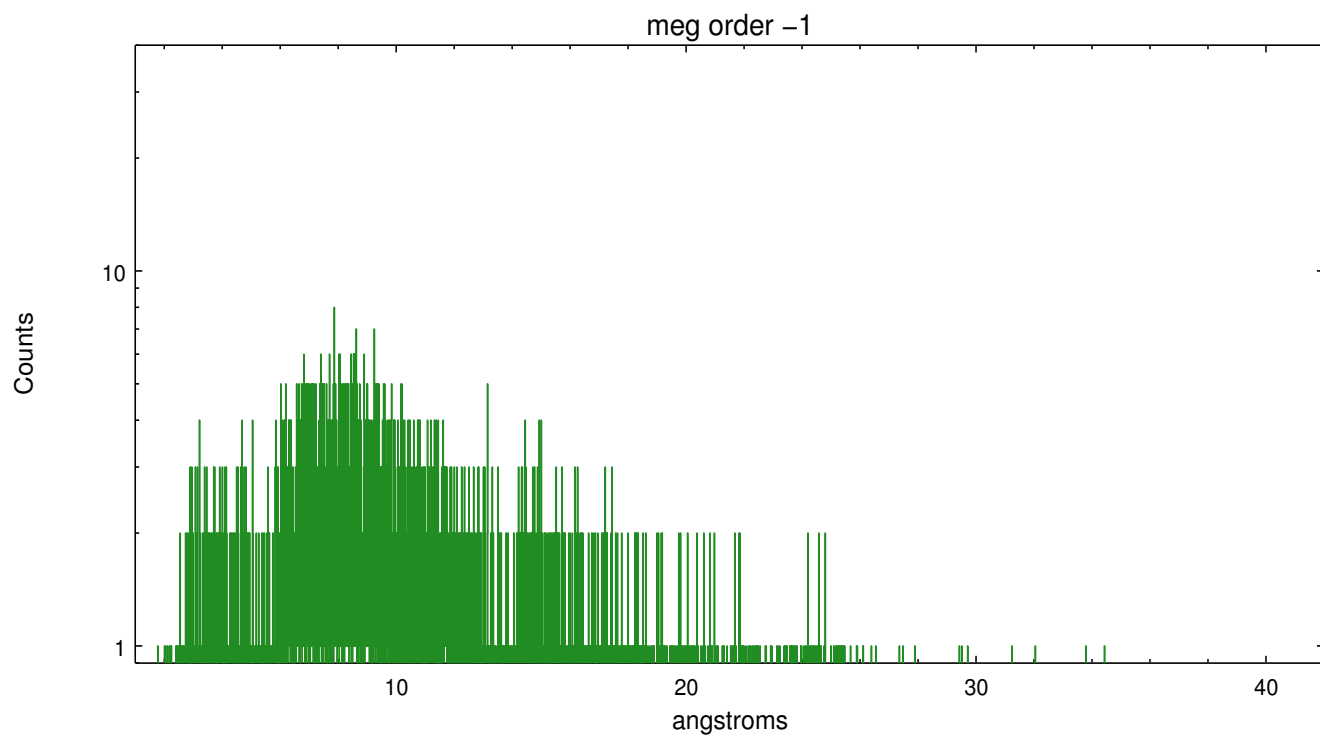
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	394	216	3993	5657	3794	191	343





## A Summary

### A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	21.76

### A.2 Comments