

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 12103 - L2 Version 2  
Chandra X-Ray Center

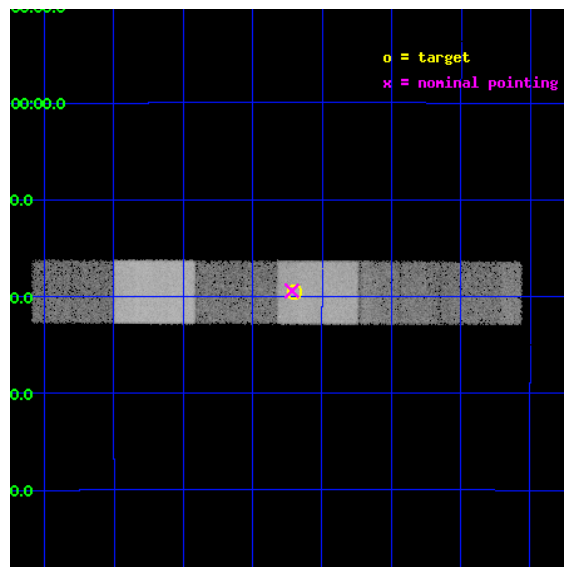
L2 Processing Date : Jun 21 2012

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# 1 Front

seq_num	702305	Sequence number
obs_id	12103	Observation id
title	Investigating the Complexity of NGC 2992 with HETG	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	NGC 2992	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	146.425	Observer's specified target RA [deg]
dec_targ	-14.326389	Observer's specified target Dec [deg]
ra_nom	146.42922988557	Nominal RA [deg]
dec_nom	-14.323817591188	Nominal Dec [deg]
roll_nom	0.15768139943643	Nominal Roll [deg]
revision	2	Processing version of data
ontime	19167.5	Sum of GTIs [s]
livetime	18857.92824985	Livetime [s]
ontime4	19167.5	Sum of GTIs [s]
ontime5	19167.5	Sum of GTIs [s]
ontime6	19164.958979666	Sum of GTIs [s]
ontime7	19167.5	Sum of GTIs [s]
ontime8	19167.5	Sum of GTIs [s]
ontime9	19164.958979845	Sum of GTIs [s]
l2events	190013	Number of level 2 events

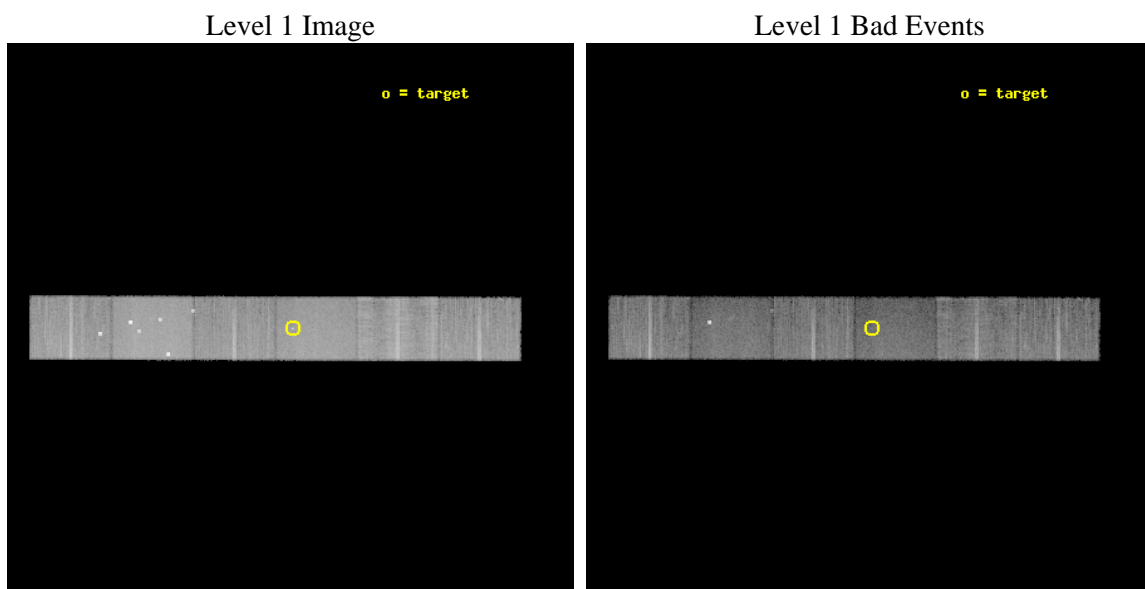




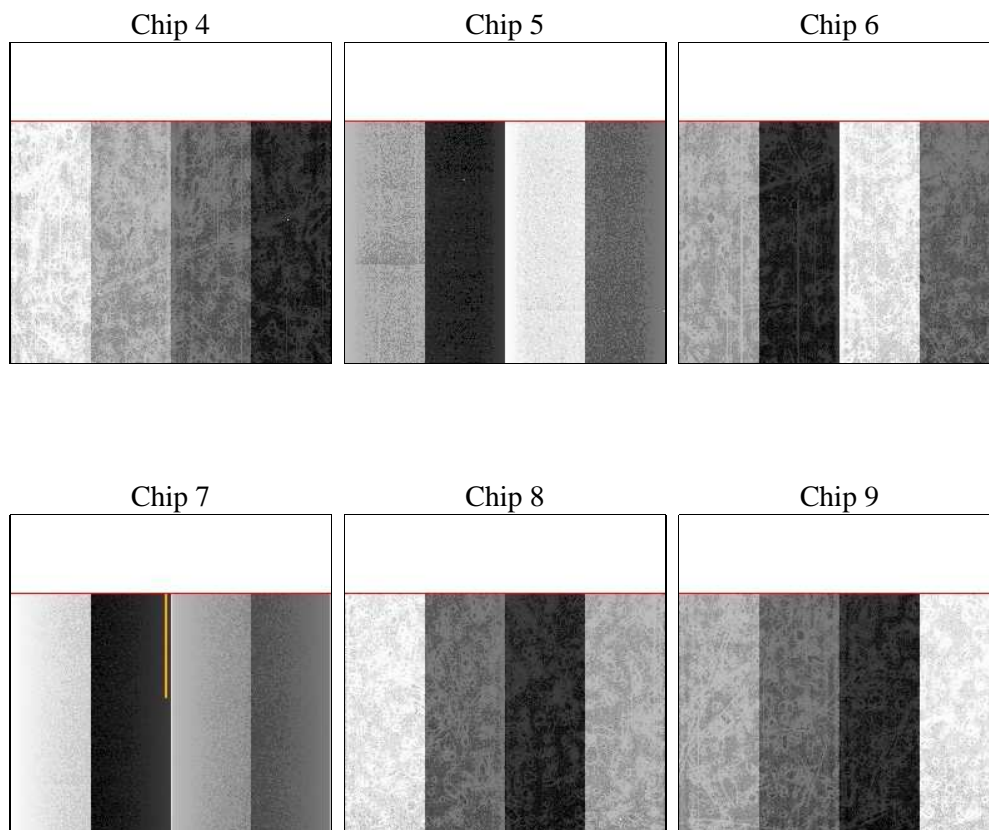
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	19023.752000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	19167.5	Sum of GTIs [s]
caldsver	4.4.10	&#160	ontime4	19167.5	Sum of GTIs [s]
date	2012-06-21T02:31:54	Date and time of file creation	ontime5	19167.5	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	19164.958979666	Sum of GTIs [s]
			ontime7	19167.5	Sum of GTIs [s]
			ontime8	19167.5	Sum of GTIs [s]
			ontime9	19164.958979845	Sum of GTIs [s]
			l1events	869496	Number of level 1 events

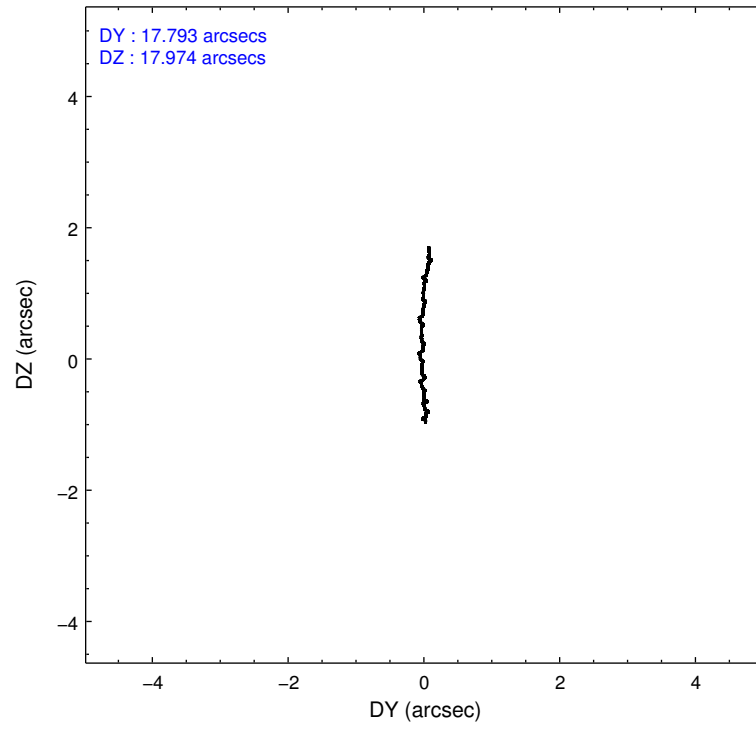
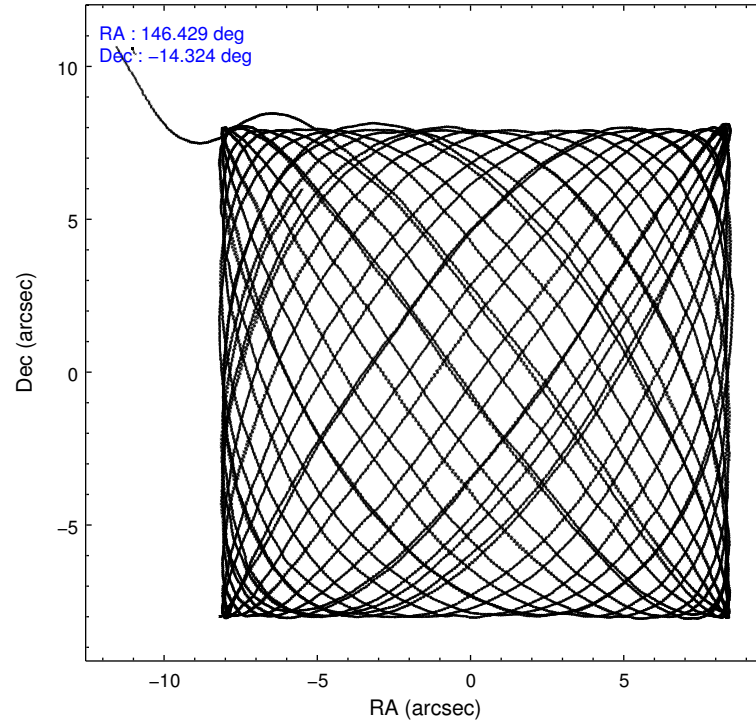
### 2.1.4 Events

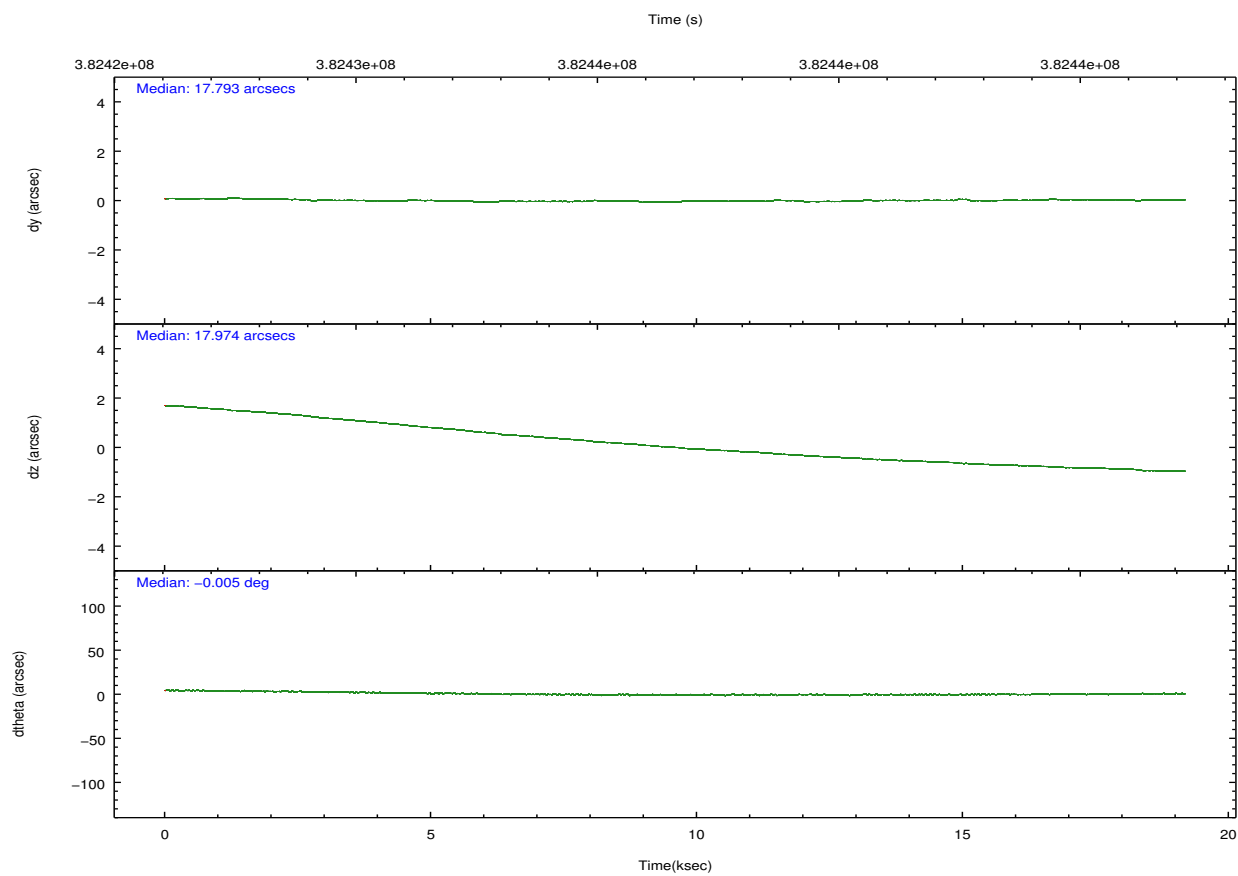
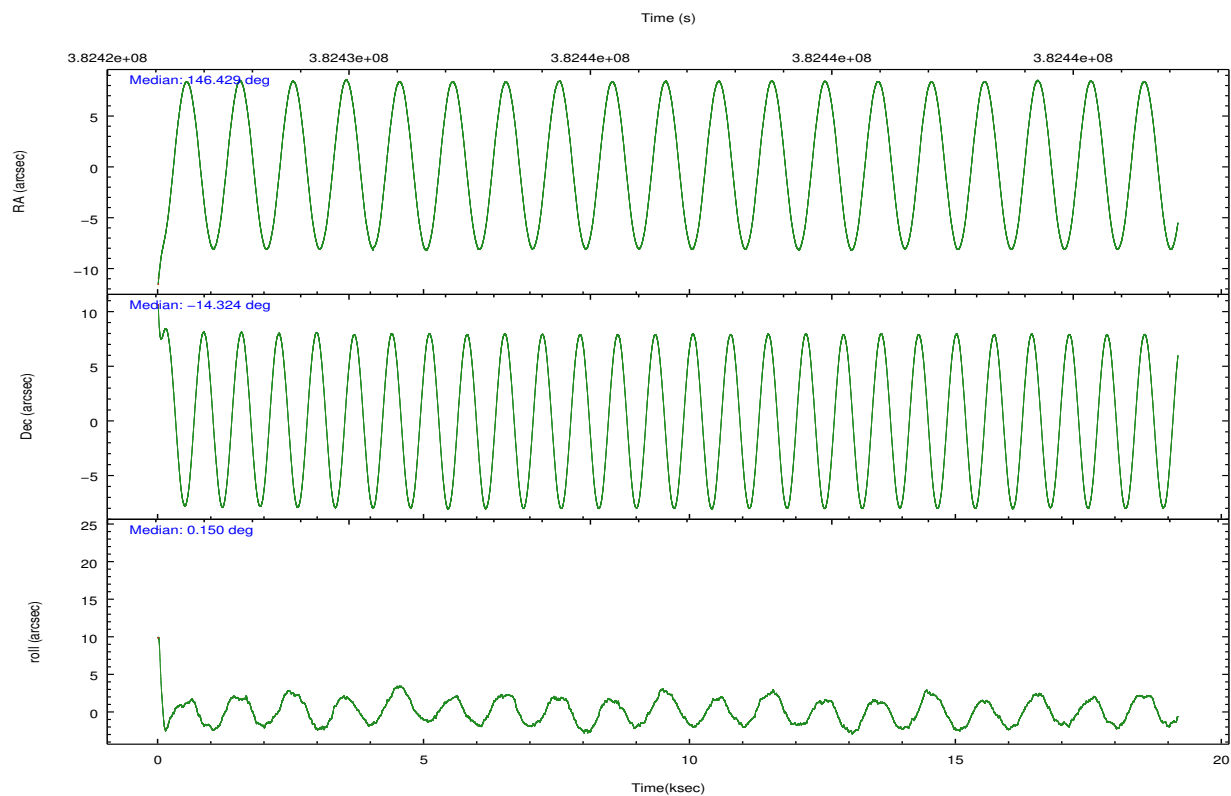
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	141370	188947	121454	139931	156256	121538	grade 0 events	9052	17089	4567	6029	11667	4979
rejected events	123813	92344	108321	76299	115932	107826		6%	9%	3%	4%	7%	4%
rejected %	87%	48%	89%	54%	74%	88%	grade 1 events	119	809	41	176	123	67
								0%	0%	0%	0%	0%	0%
							grade 2 events	3443	25941	2974	13427	9735	3039
								2%	13%	2%	9%	6%	2%
							grade 3 events	1531	5749	1506	6015	4343	1540
								1%	3%	1%	4%	2%	1%
							grade 4 events	1463	4138	1526	5928	4095	1500
								1%	2%	1%	4%	2%	1%
							grade 5 events	4906	17258	5013	14686	7495	5583
								3%	9%	4%	10%	4%	4%
							grade 6 events	2375	45329	2791	33350	11187	2883
								1%	23%	2%	23%	7%	2%
							grade 7 events	118481	72634	103036	60320	107611	101947
								83%	38%	84%	43%	68%	83%

## 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	146.405046	146.4292298855706	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-14.337889	-14.32381759118769	Subarray start row	1	1
[deg] Pointing Roll	359.995054	0.1576813994364321	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)	382427168.184000	382425903.73826			
Observation start date	2010-02-13T05:45:02	2010-02-13T05:25:03			
[s] Observation end time (MET)	382446192.184000	382446408.8643			
Observation end date	2010-02-13T11:02:06	2010-02-13T11:06:48			
Read mode	TIMED	TIMED			

## 2.3 Aspect



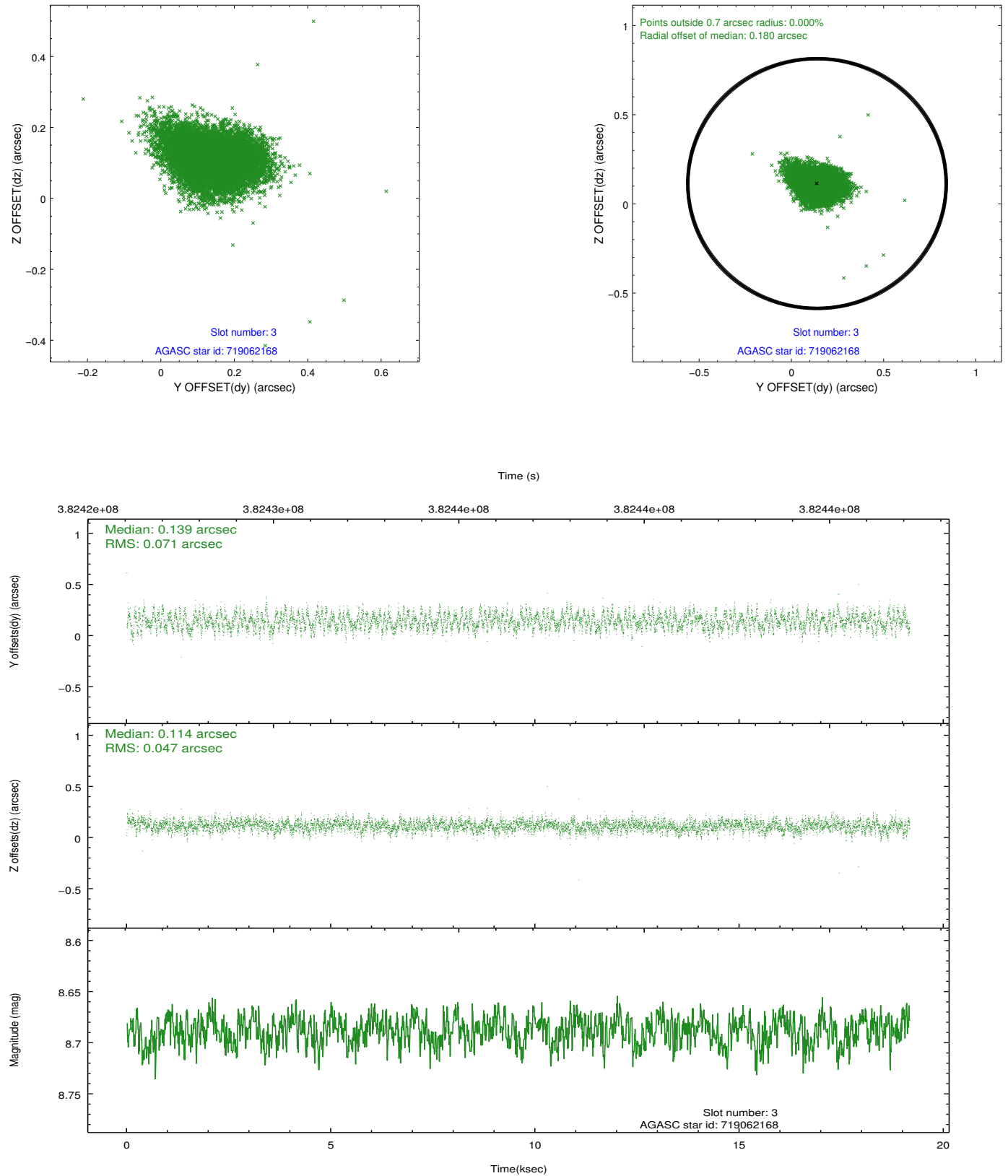


### Slot Statistics

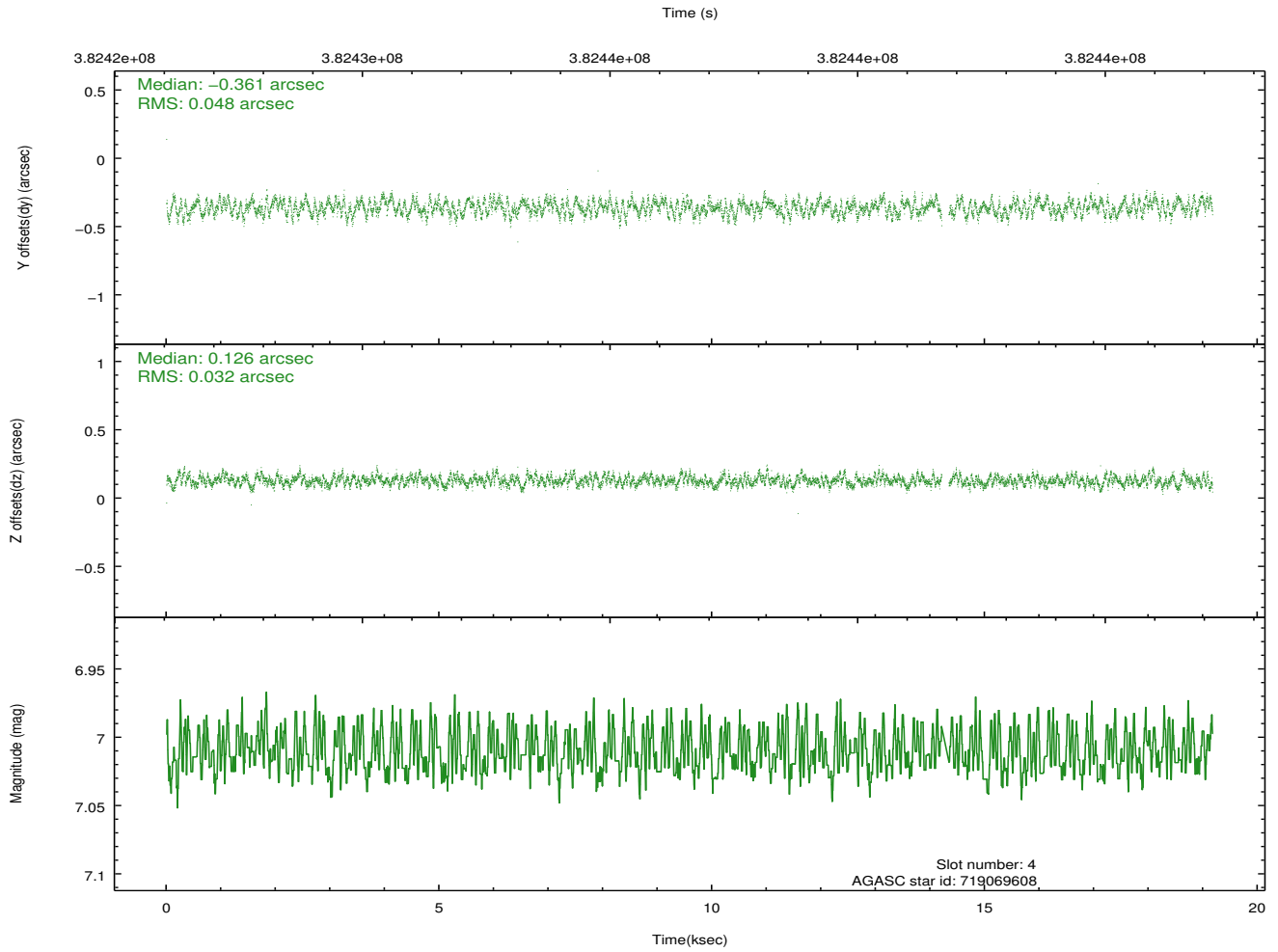
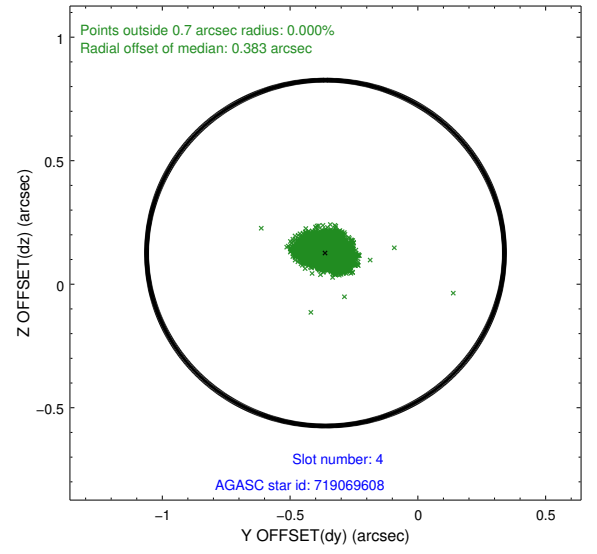
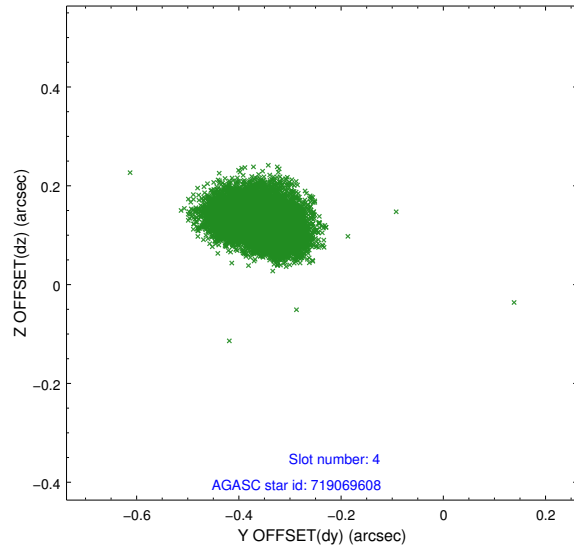
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.89	4677	-0.102	-0.044	0.015	0.028	0.000000	0.000000	-770.71	-1801.73
1	FID	ACIS-S-4	6.97	4677	0.200	0.060	0.013	0.024	0.000000	0.000000	2142.74	106.67
2	FID	ACIS-S-5	7.01	4677	-0.128	-0.008	0.015	0.025	0.000000	0.000000	-1823.35	100.45
3	GUIDE	719062168	8.69	9340	0.139	0.114	0.091	0.146	146.982073	-14.934546	2008.06	-2149.90
4	GUIDE	719069608	7.01	9288	-0.361	0.126	0.063	0.097	146.560429	-14.589983	541.60	-907.53
5	GUIDE	719072032	7.78	9352	-0.022	-0.033	0.053	0.084	146.772063	-14.036413	1281.70	1084.43
6	GUIDE	719068024	7.74	9352	0.115	-0.054	0.060	0.099	145.876734	-13.695740	-1847.82	2309.09
7	GUIDE	719065304	8.31	9350	0.127	-0.150	0.066	0.110	146.031410	-13.723490	-1307.22	2210.94

## 2.4 Star Slots

### 2.4.1 Slot 3

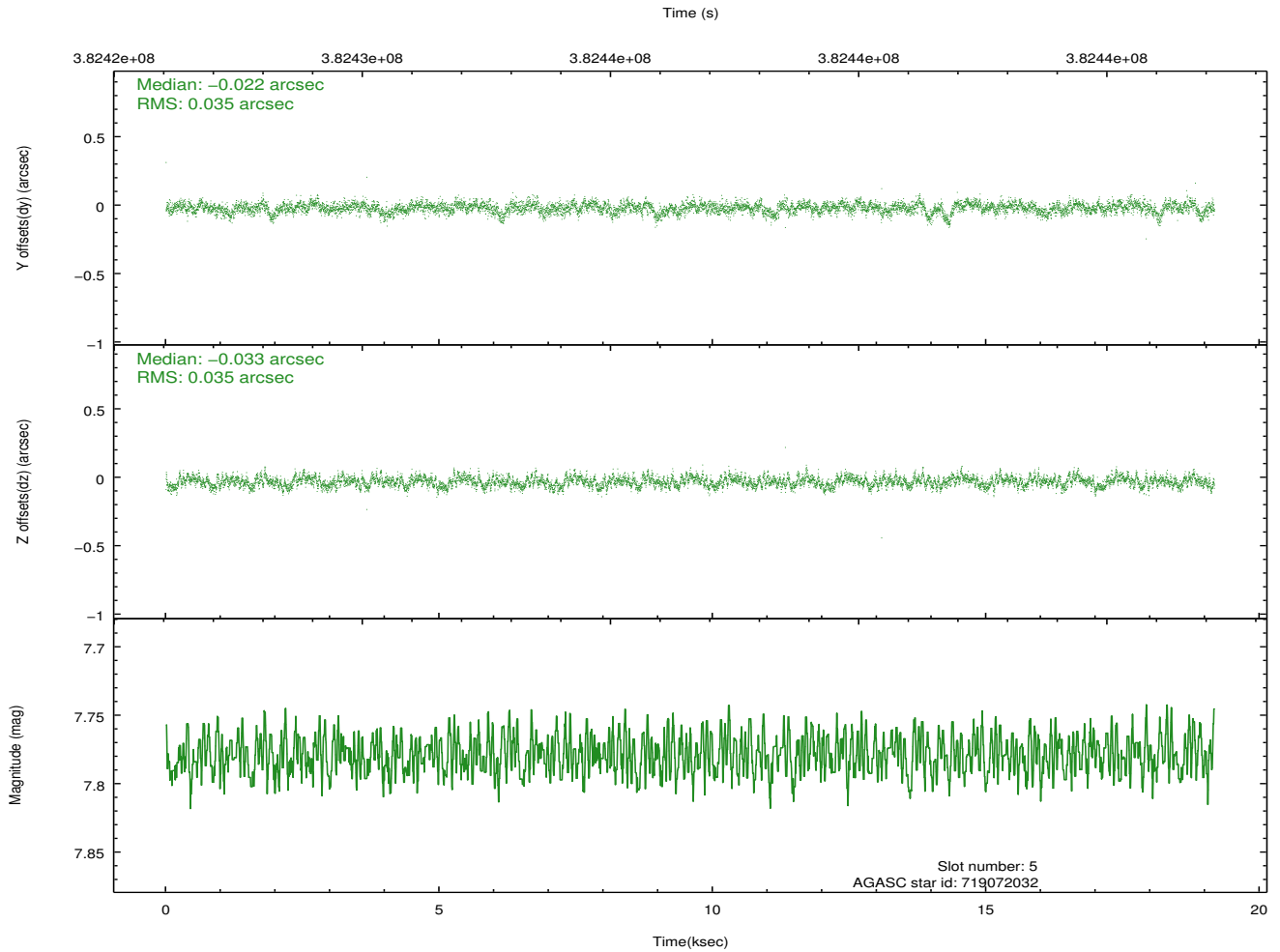
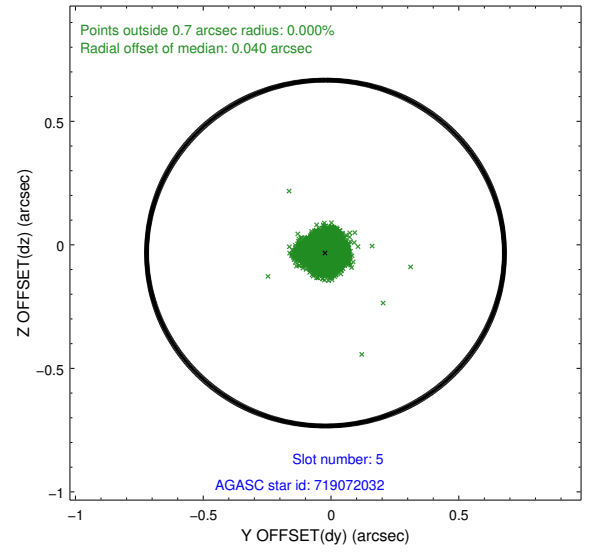
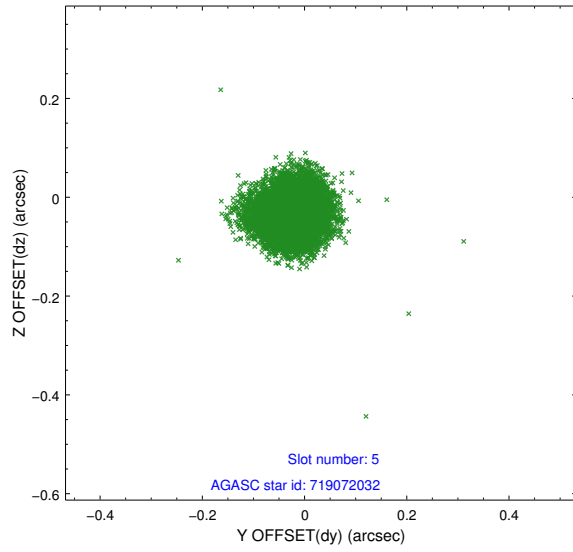


## 2.4.2 Slot 4

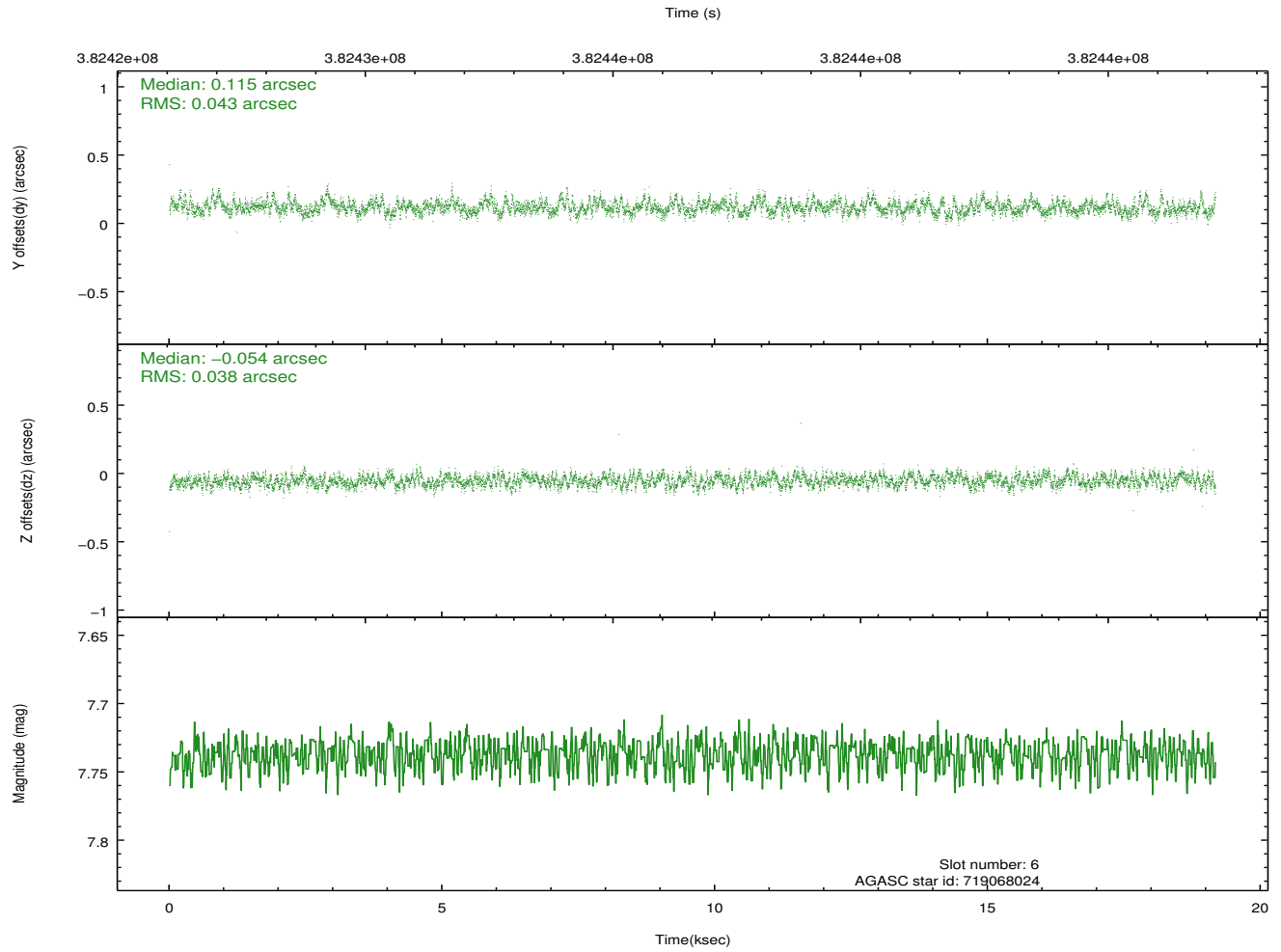
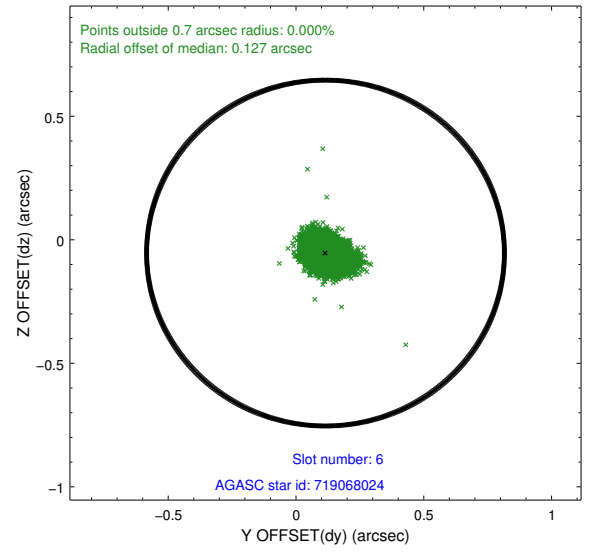
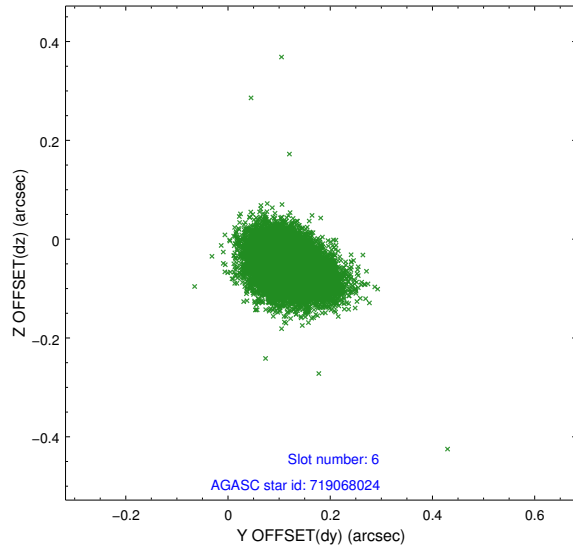




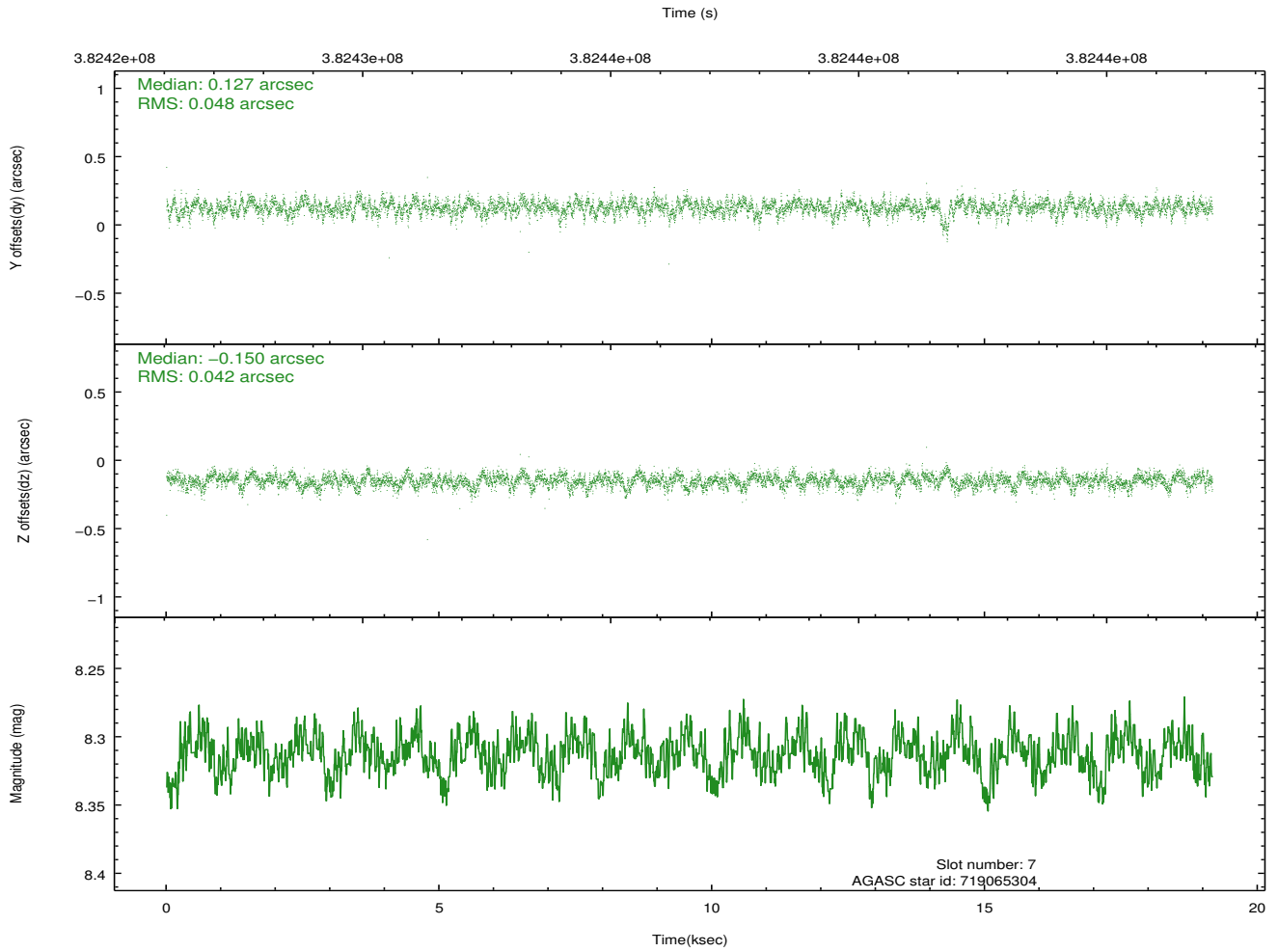
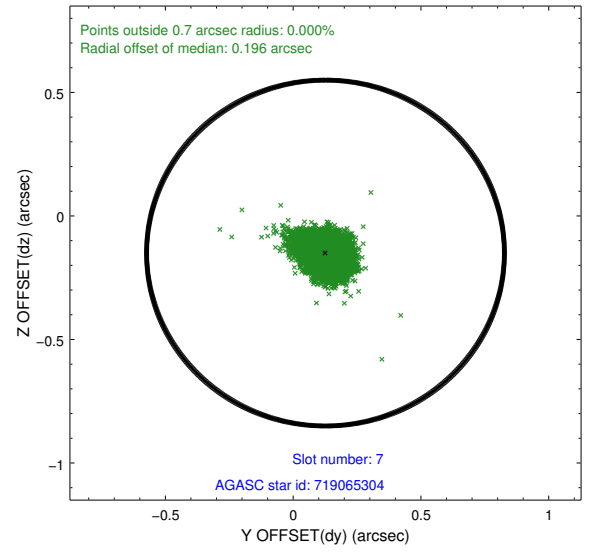
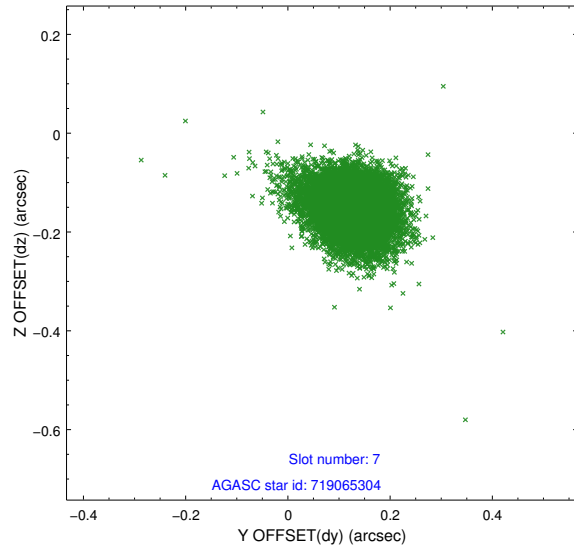
### 2.4.3 Slot 5



## 2.4.4 Slot 6

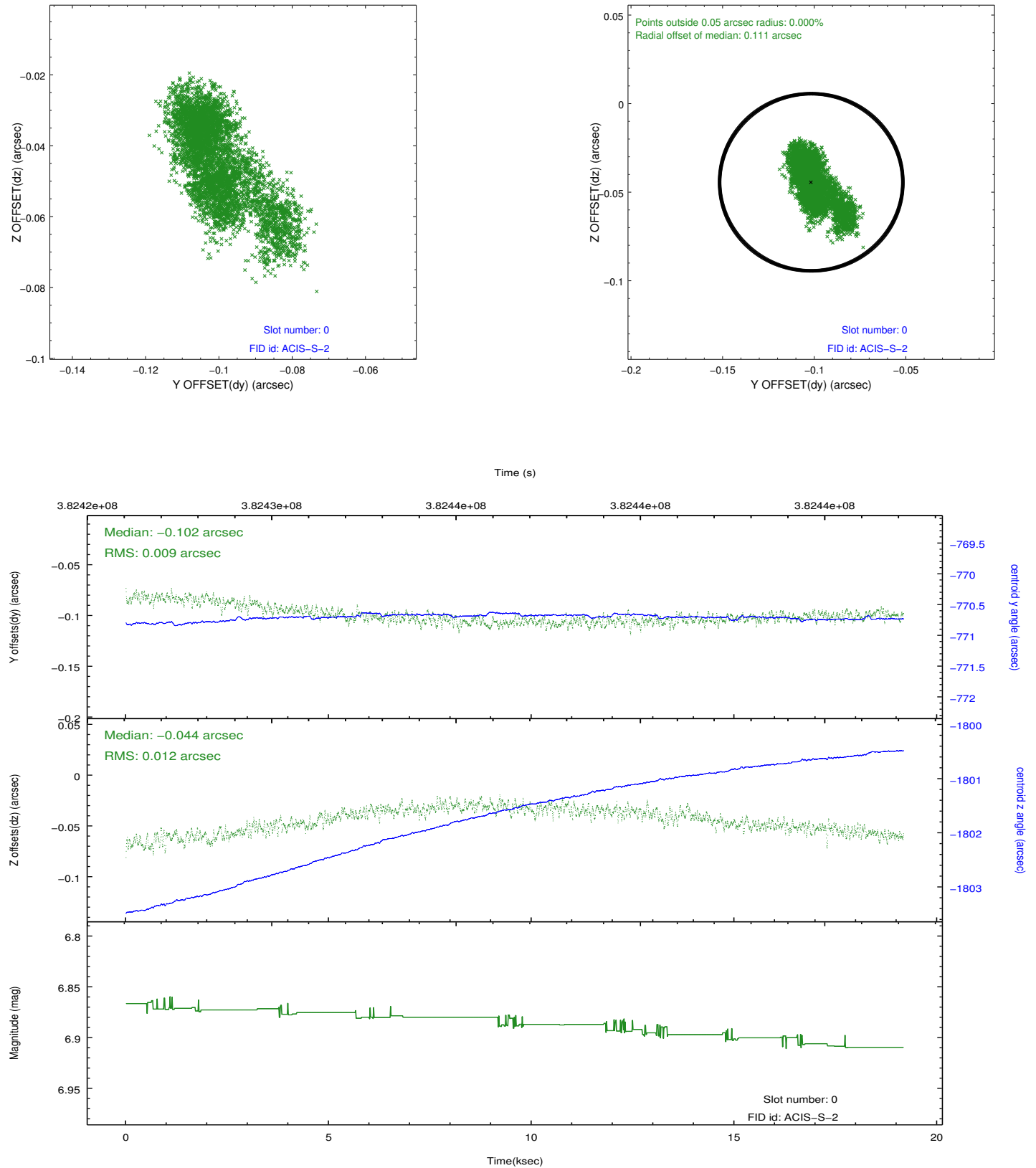


### 2.4.5 Slot 7

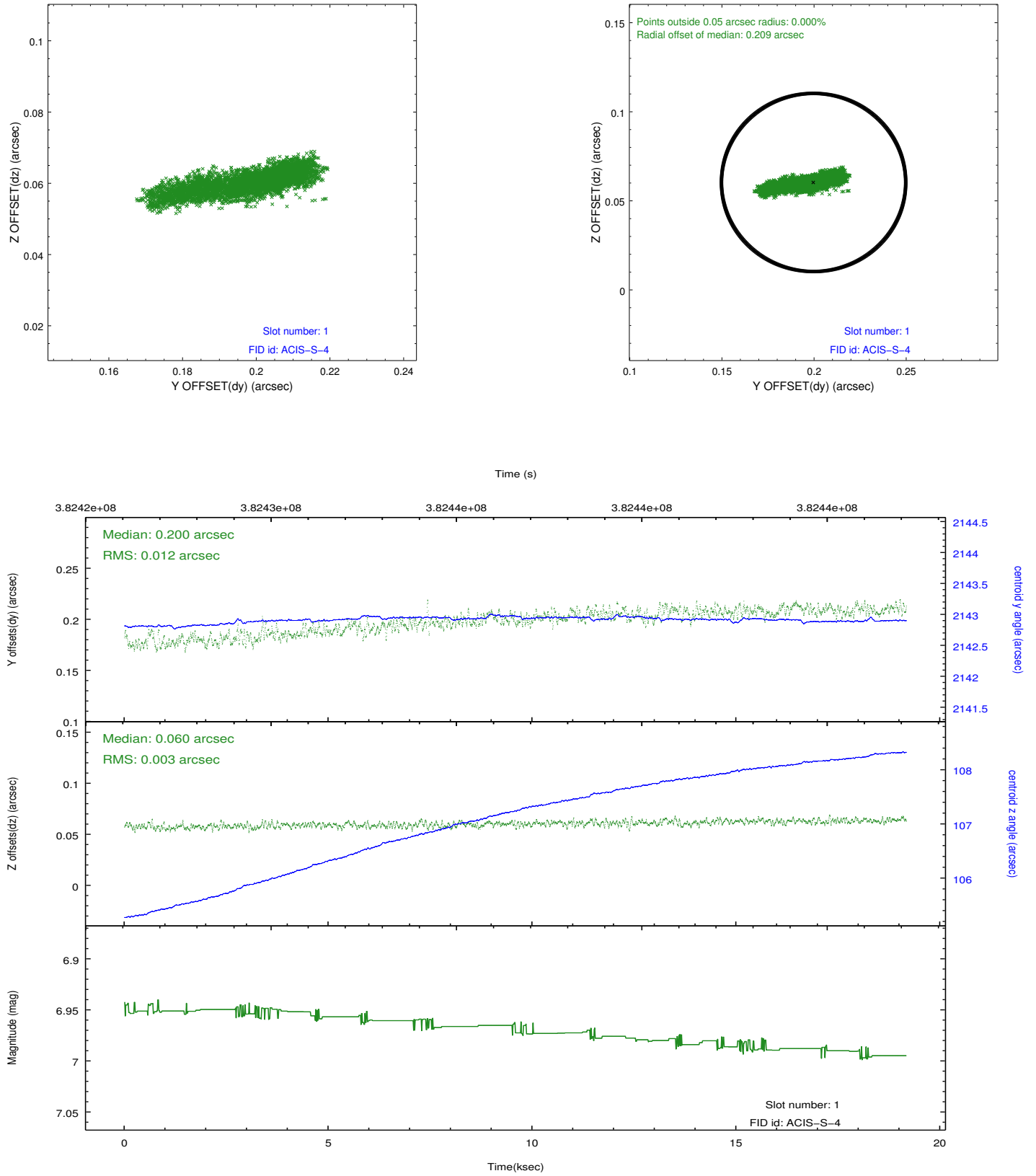


## 2.5 FID Slots

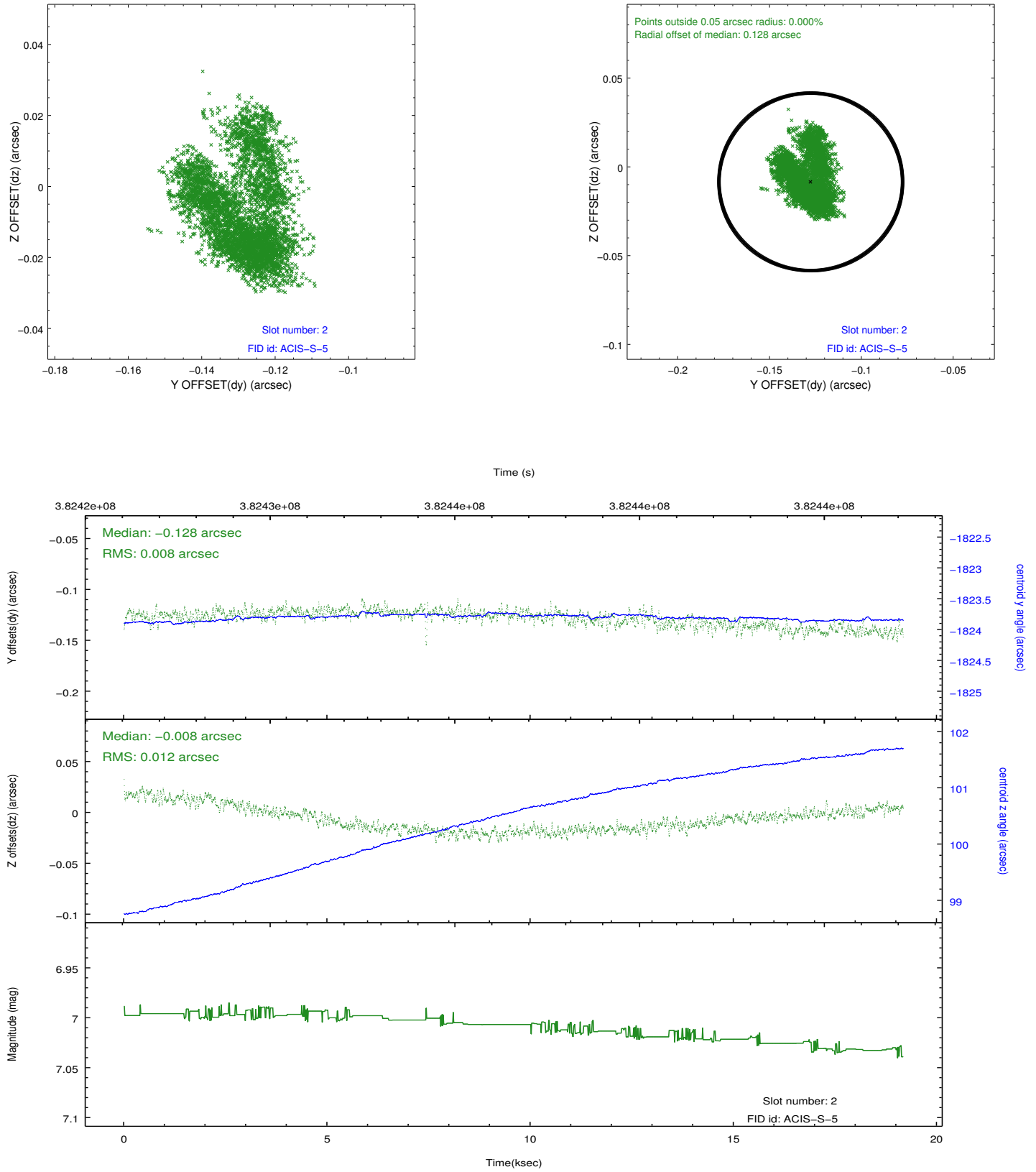
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

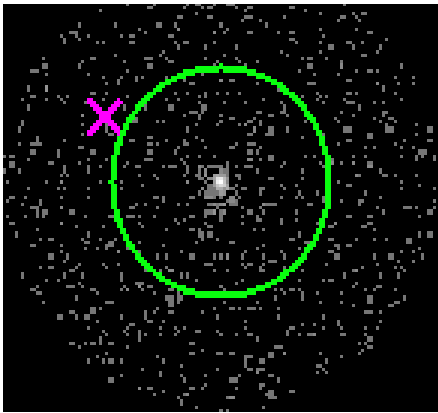


# 3 Gratings

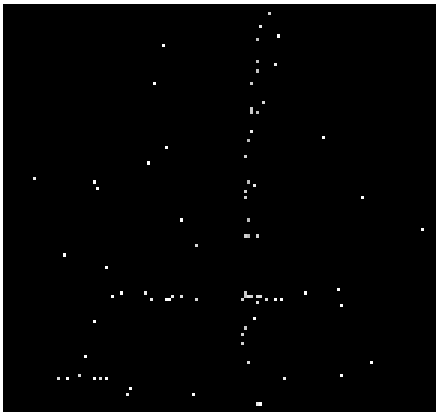
## 3.1 HEG Arm



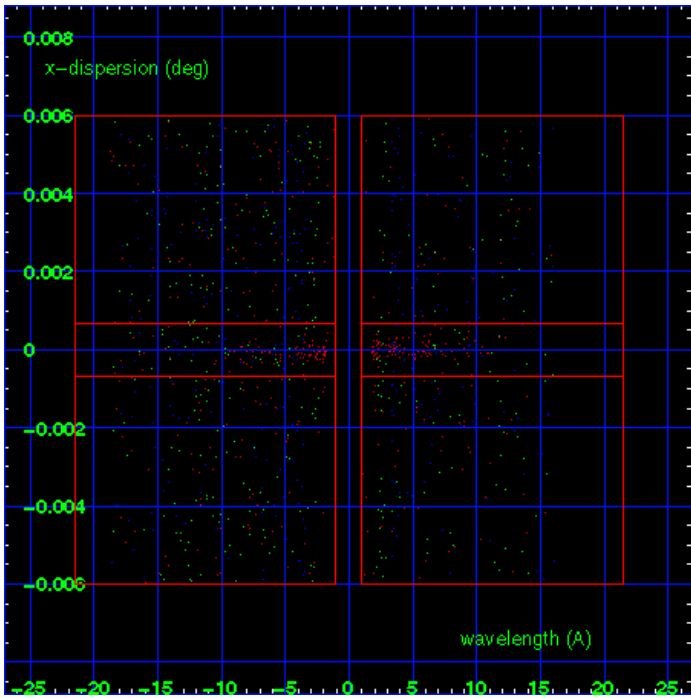
HEG Order Sort 123



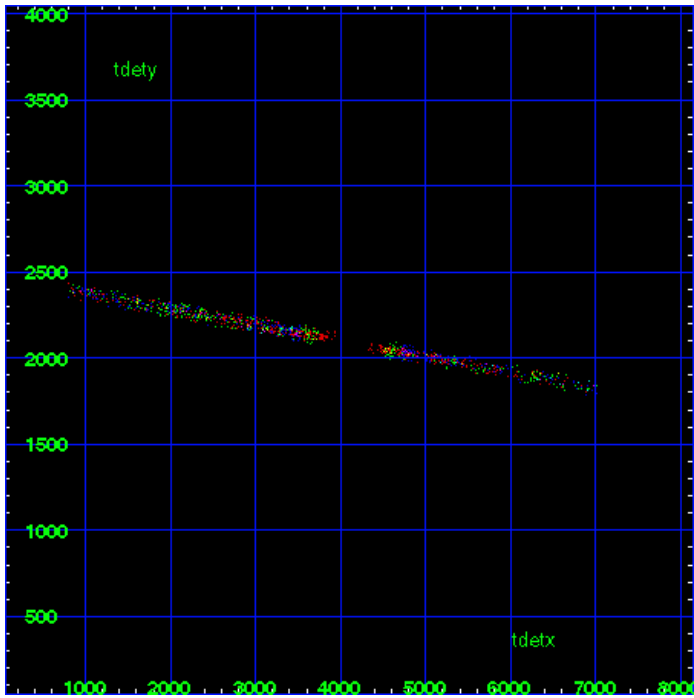
HEG Zero Order



HEG Order Sort ALL

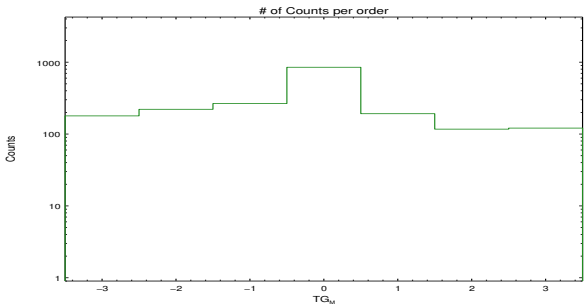


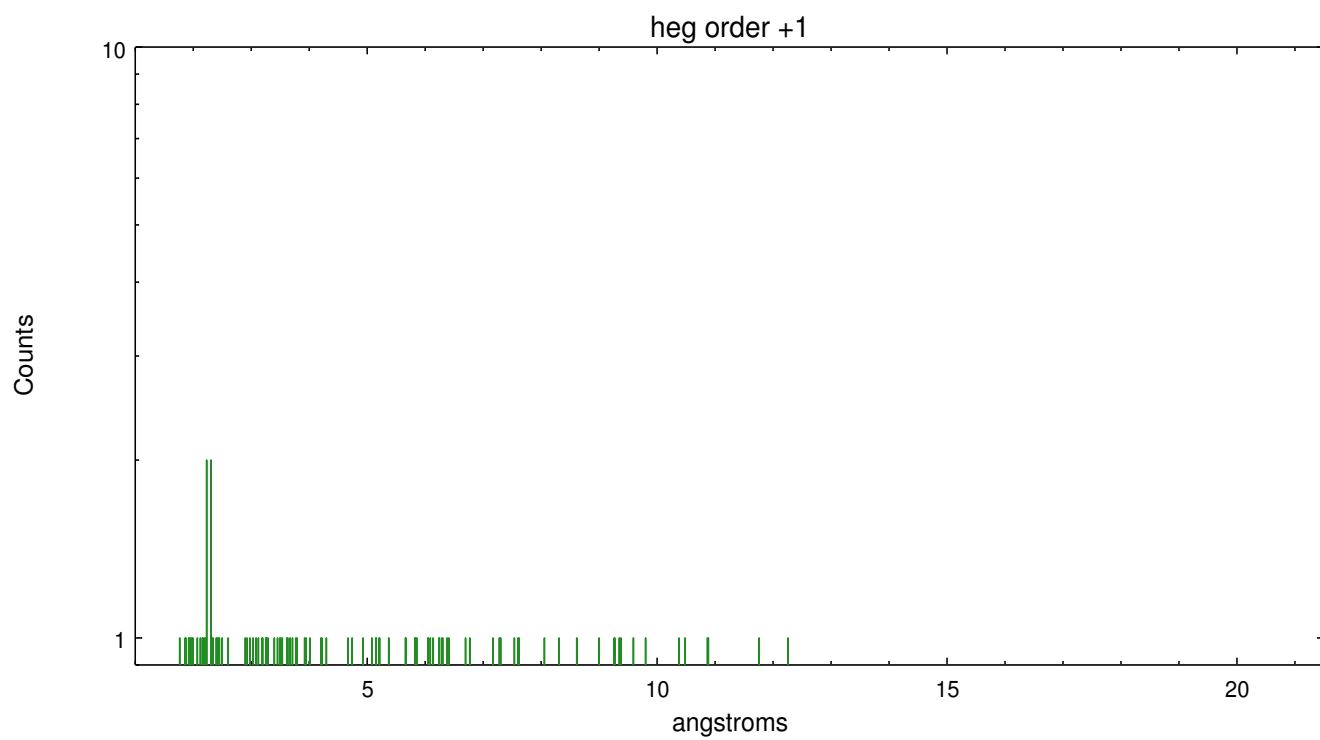
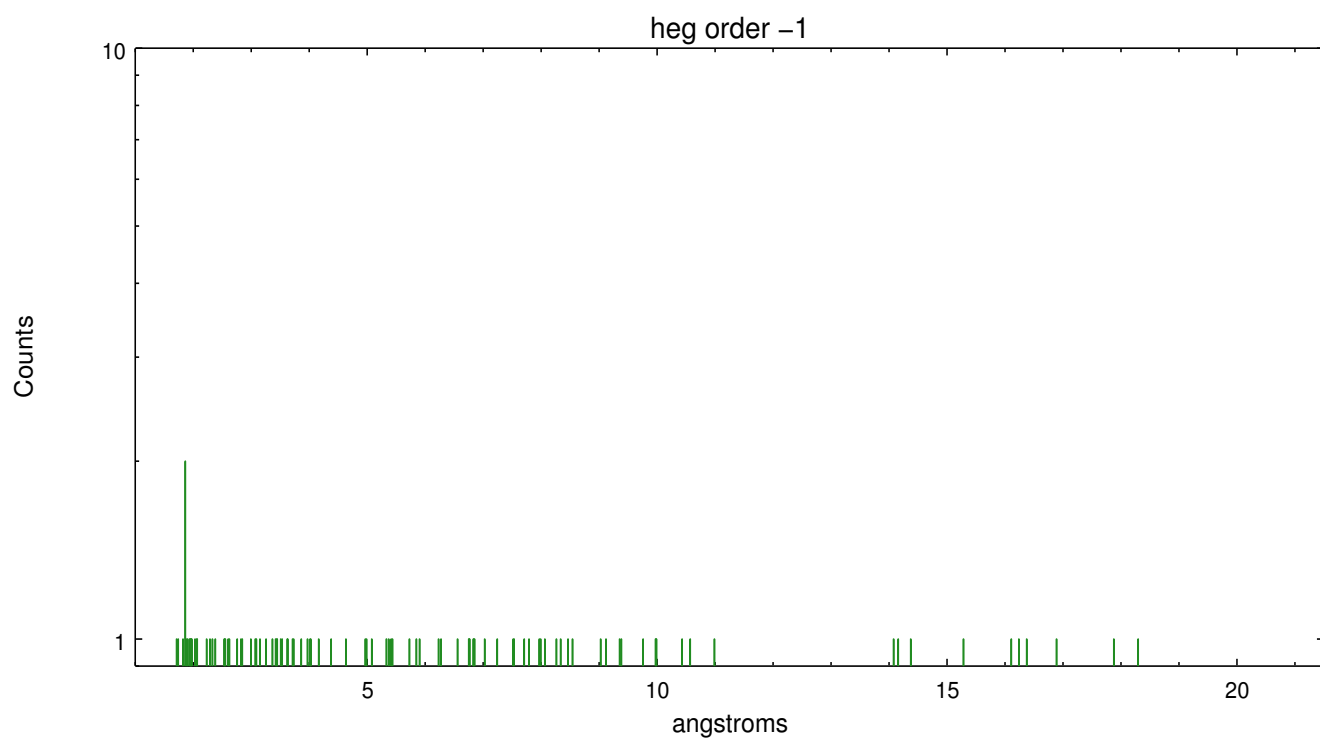
Spot Image HEG



Full Detector HEG

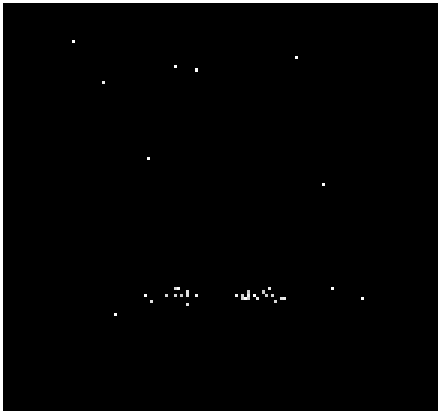
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	179	221	266	850	192	117	121



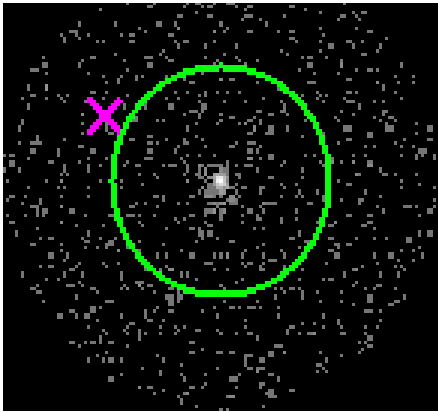




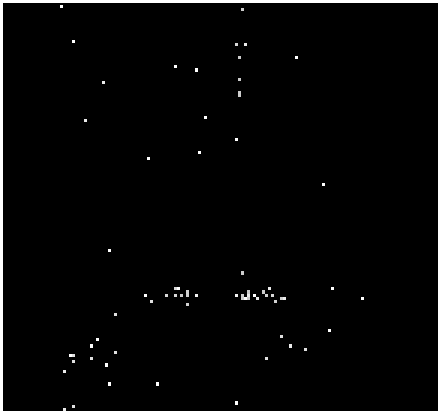
3.2 MEG Arm



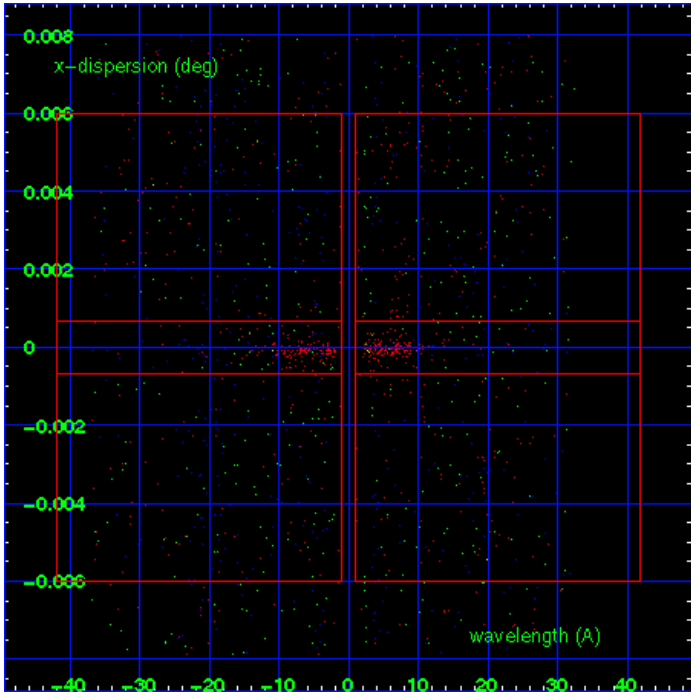
MEG Order Sort 123



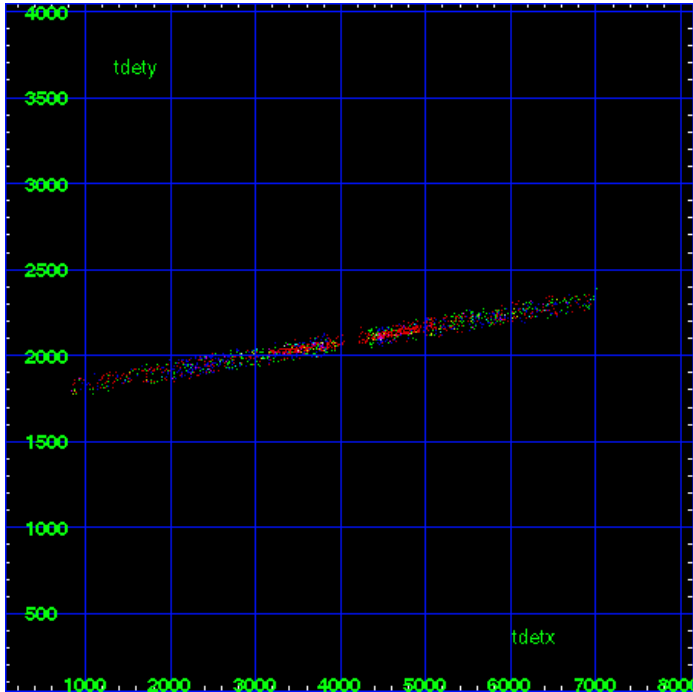
MEG Zero Order



MEG Order Sort ALL

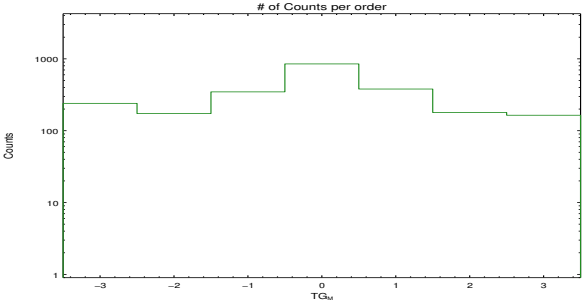


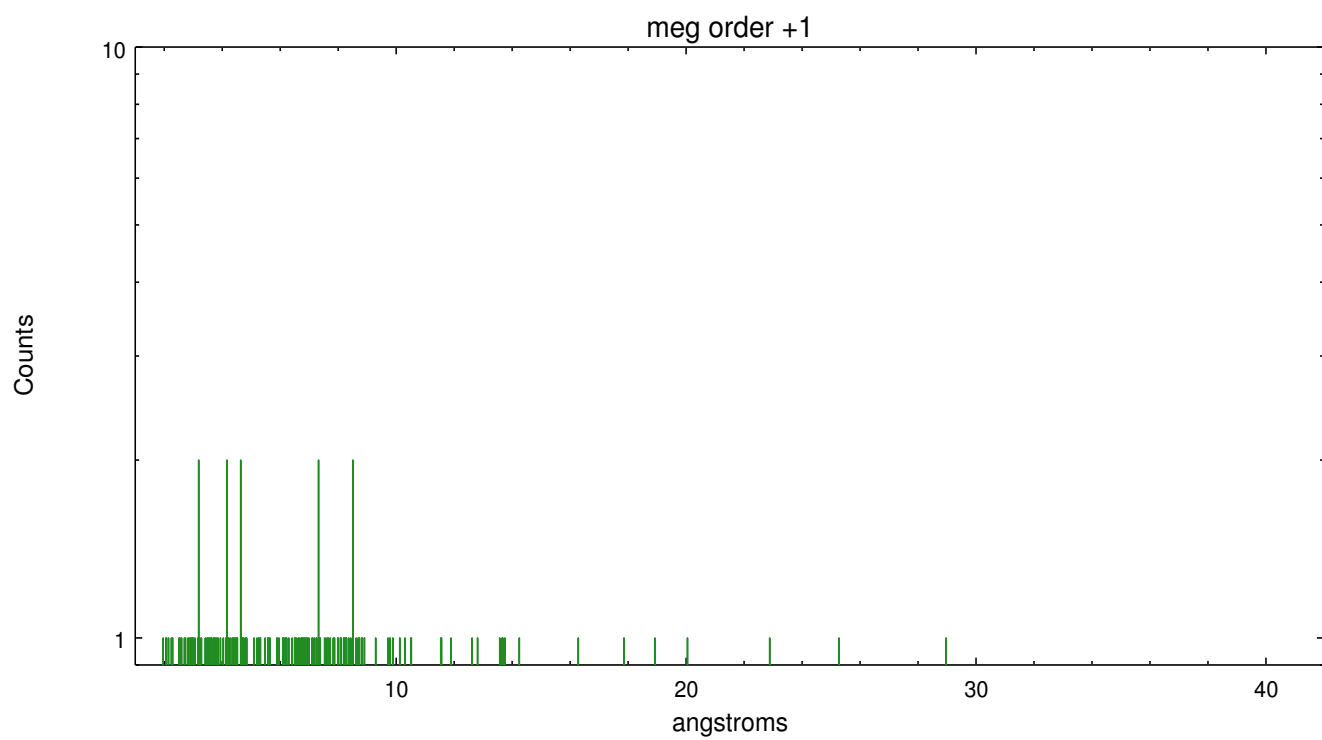
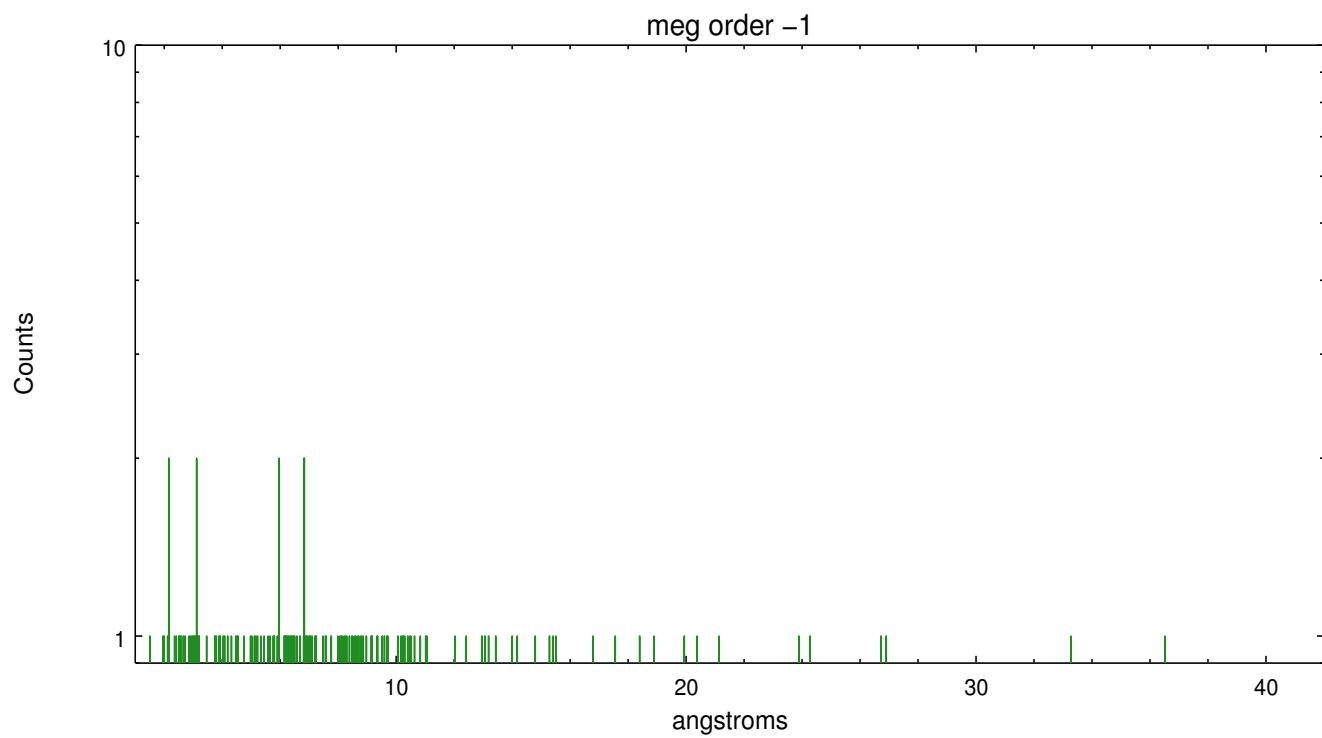
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	240	173	347	850	380	179	164





## A Summary

### A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.1675

### A.2 Comments

Comment: Some diffuse emission around source. Comment: Background important longward of 15A.