

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 689 - L2 Version 6  
Chandra X-Ray Center

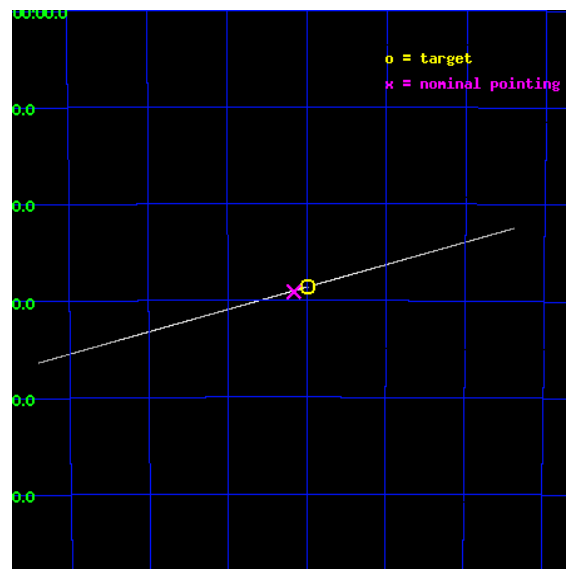
L2 Processing Date : Sep 14 2012

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# 1 Front

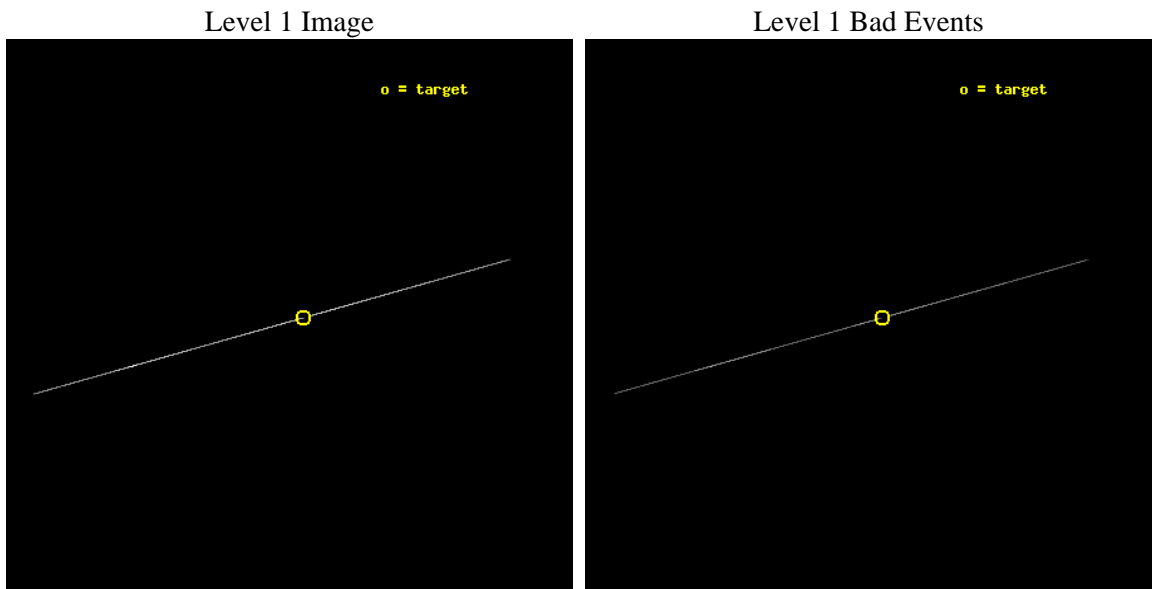
seq_num	400056	Sequence number
obs_id	689	Observation id
title	AXAF OBSERVATIONS OF A BRIGHT BLACK HOLE X-RAY BINARY IN OUTBURST	&#160
observer	Prof. Walter Lewin	Principal investigator
object	XTE J1550-564 (OUTBURST DECAY)	Source name
ra_targ	237.745417	Observer's specified target RA [deg]
dec_targ	-56.476472	Observer's specified target Dec [deg]
ra_nom	237.79088720892	Nominal RA [deg]
dec_nom	-56.485427056936	Nominal Dec [deg]
roll_nom	344.35368668677	Nominal Roll [deg]
revision	6	Processing version of data
ontime	3124.25	Sum of GTIs [s]
livetime	3112.0458984375	Livetime [s]
ontime4	3124.25	Sum of GTIs [s]
ontime5	3124.25	Sum of GTIs [s]
ontime6	3124.25	Sum of GTIs [s]
ontime7	3124.25	Sum of GTIs [s]
ontime8	3124.25	Sum of GTIs [s]
ontime9	3124.25	Sum of GTIs [s]
l2events	54954	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	2913.563000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	3124.25	Sum of GTIs [s]
caldsver	4.5.1.1	&#160	ontime4	3124.25	Sum of GTIs [s]
date	2012-08-28T05:37:36	Date and time of file creation	ontime5	3124.25	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	3124.25	Sum of GTIs [s]
			ontime7	3124.25	Sum of GTIs [s]
			ontime8	3124.25	Sum of GTIs [s]
			ontime9	3124.25	Sum of GTIs [s]
			l1events	95174	Number of level 1 events

### 2.1.3 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	5957	30810	13272	22717	15699	6719
rejected events	1985	8252	2341	5637	3676	2198
rejected %	33%	26%	17%	24%	23%	32%

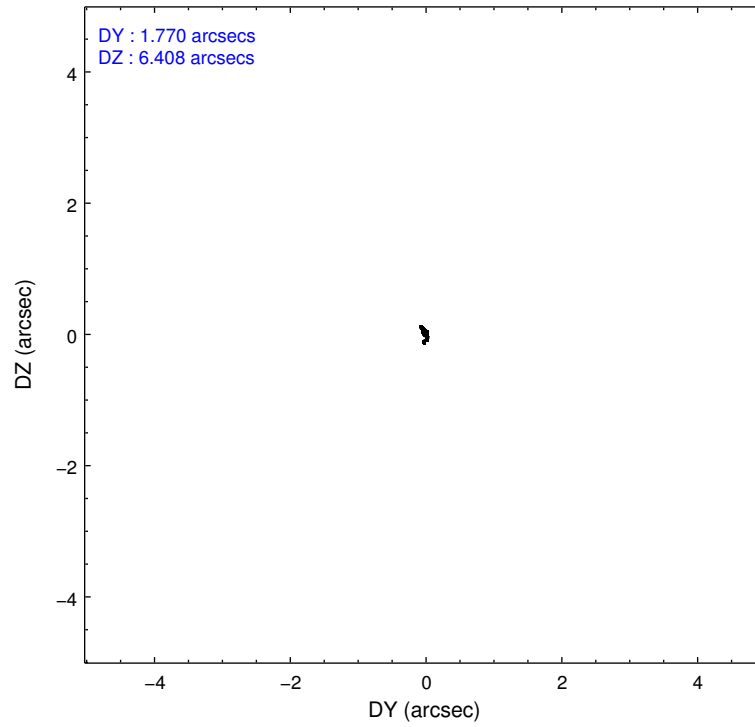
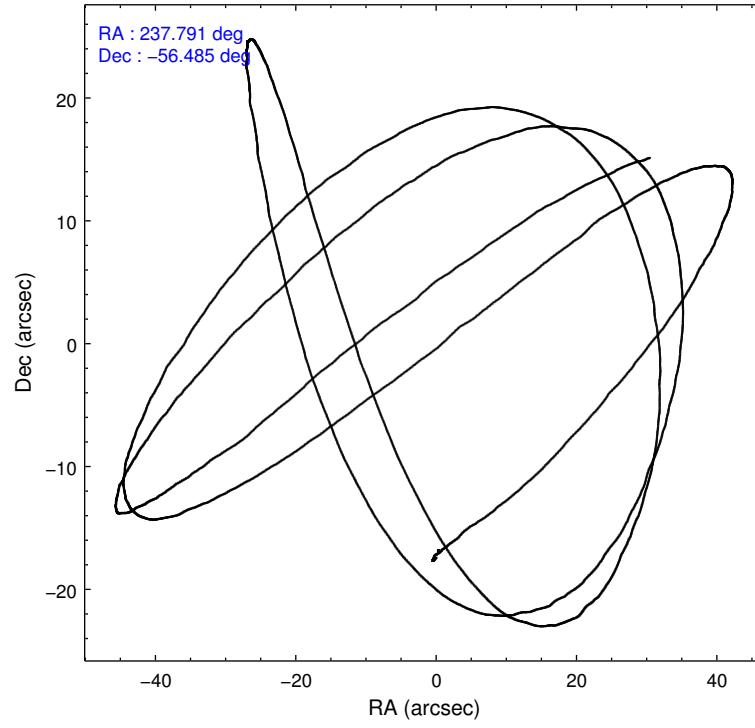
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	507	10011	594	1520	1748	651
	8%	32%	4%	6%	11%	9%
grade 1 events	15	21	12	26	29	18
	0%	0%	0%	0%	0%	0%
grade 2 events	2175	7681	8797	6128	7733	2419
	36%	24%	66%	26%	49%	36%
grade 3 events	778	476	704	974	1201	696
	13%	1%	5%	4%	7%	10%
grade 4 events	788	439	677	1087	1125	781
	13%	1%	5%	4%	7%	11%
grade 5 events	772	1878	953	2114	1256	1006
	12%	6%	7%	9%	8%	14%
grade 6 events	922	10304	1535	10868	2607	1148
	15%	33%	11%	47%	16%	17%
grade 7 events	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%

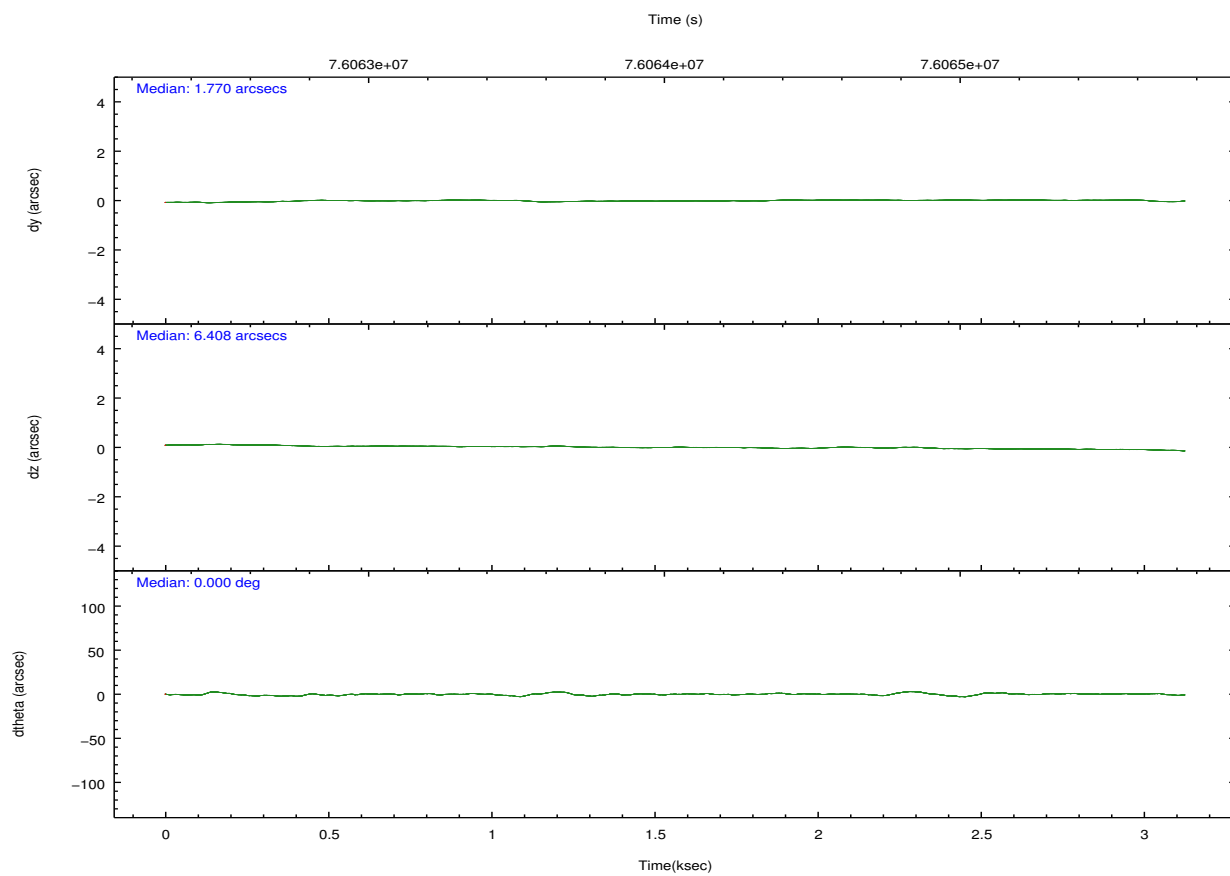
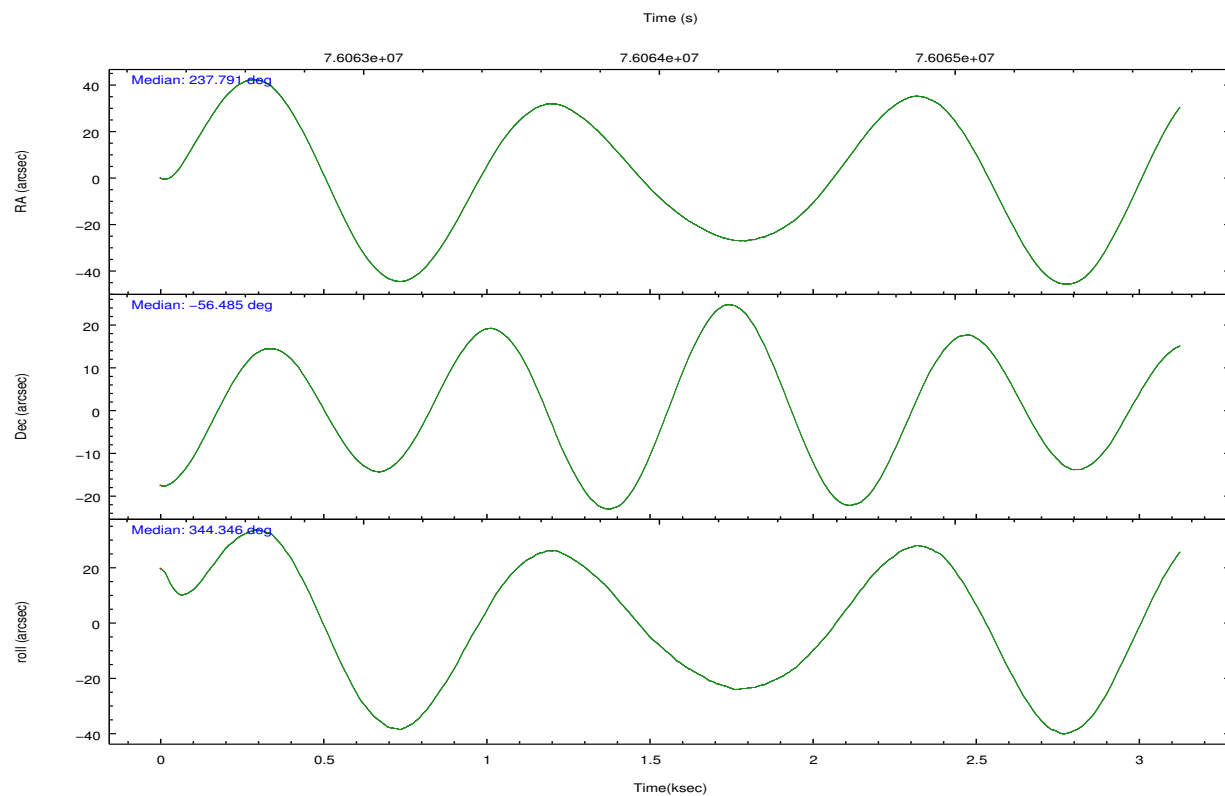
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	CC33_GRADED	CC33_GRADED
Observation mode	POINTING	POINTING
[deg] Pointing RA	237.742612	237.7908872089216
[deg] Pointing Dec	-56.492327	-56.48542705693585
[deg] Pointing Roll	344.156737	344.3536866867728
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-200.132523	-200.1369836888744
[mm] SIM translation stage offset	10	10.00446110586662
[s] Observation start time (MET)	76062688.184000	76061575.901482
Observation start date	2000-05-30T08:30:24	2000-05-30T08:12:55
[s] Observation end time (MET)	76065601.184000	76065910.626642
Observation end date	2000-05-30T09:18:57	2000-05-30T09:25:10
Read mode	CONTINUOUS	CONTINUOUS

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0

## 2.3 Aspect





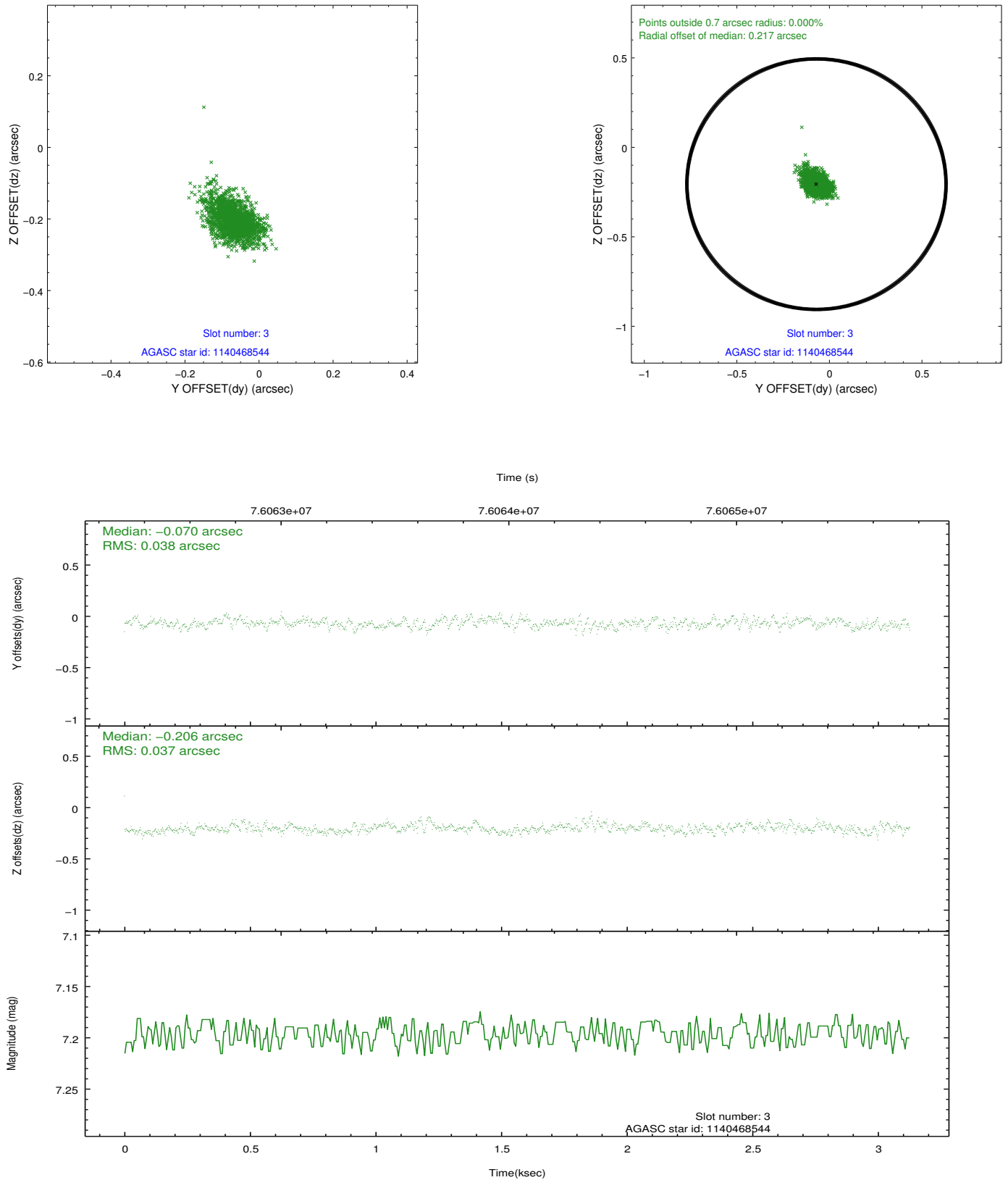
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.13	763	0.110	0.167	0.011	0.021	0.000000	0.000000	-754.98	-1521.11
1	FID	ACIS-S-4	7.23	763	-0.079	-0.098	0.009	0.018	0.000000	0.000000	2157.34	385.07
2	FID	ACIS-S-5	7.22	763	-0.062	-0.059	0.009	0.017	0.000000	0.000000	-1805.22	381.40
3	GUIDE	1140468544	7.20	1526	-0.070	-0.206	0.055	0.093	237.524626	-55.920475	-985.73	1858.05
4	GUIDE	1141004216	8.14	1526	-0.021	0.088	0.067	0.116	237.245988	-56.471011	-971.12	-199.42
5	GUIDE	1140989920	8.89	1526	-0.110	0.075	0.086	0.139	237.647305	-57.151120	467.58	-2333.86
6	GUIDE	1141000720	9.21	1525	0.102	0.019	0.082	0.137	238.678440	-56.280404	1594.05	1229.65
7	GUIDE	1140984088	9.47	1525	0.095	0.016	0.087	0.141	237.763213	-56.698871	242.92	-704.70

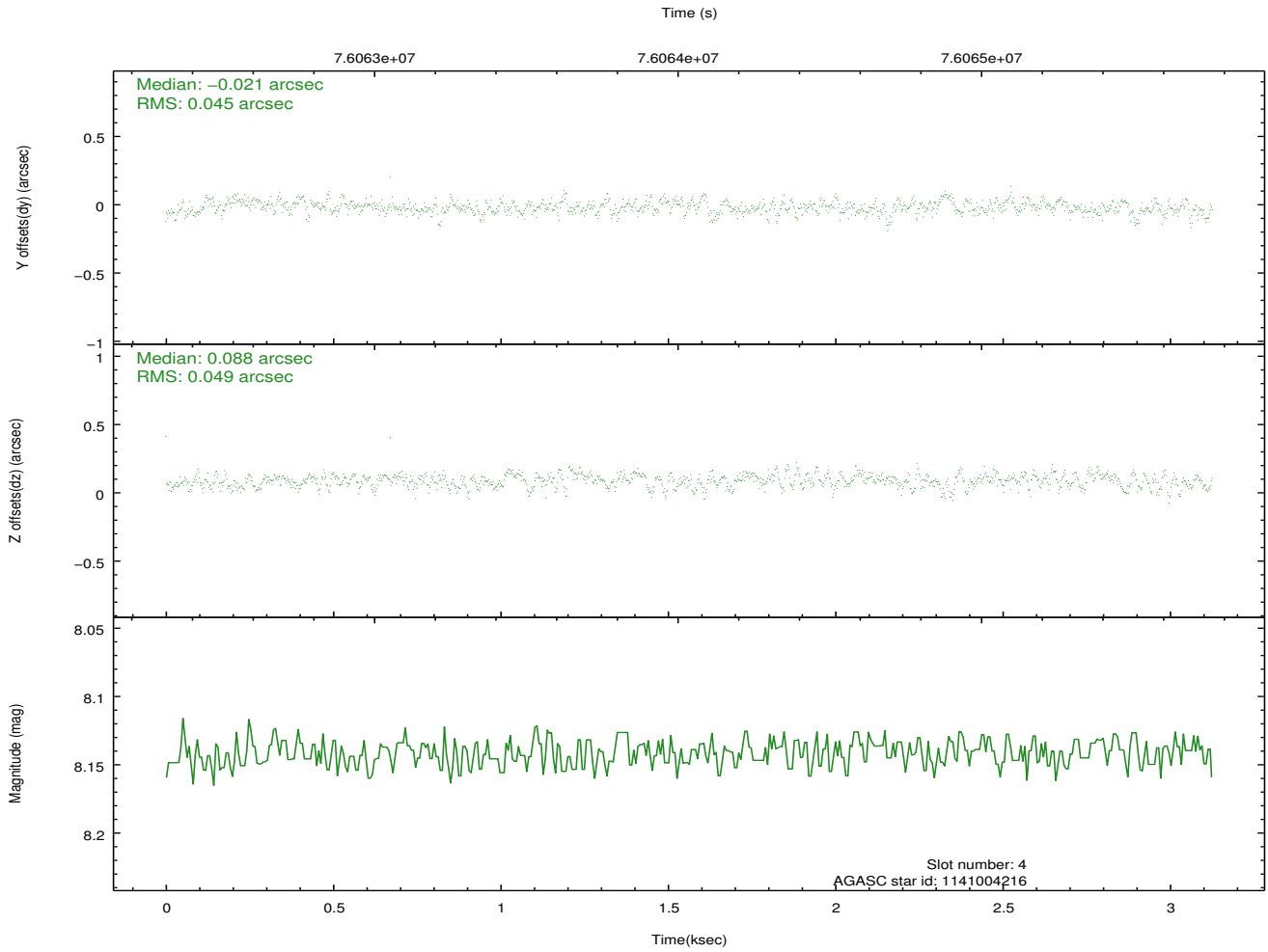
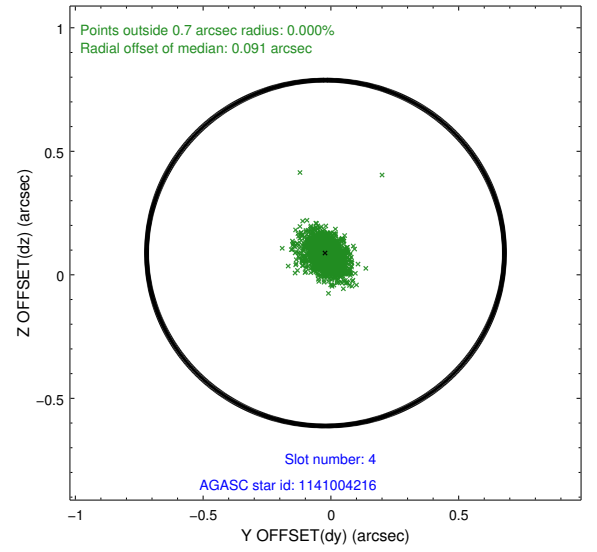
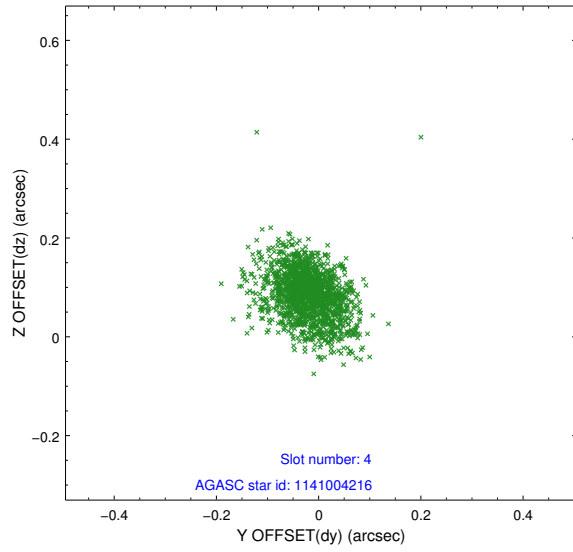


## 2.4 Star Slots

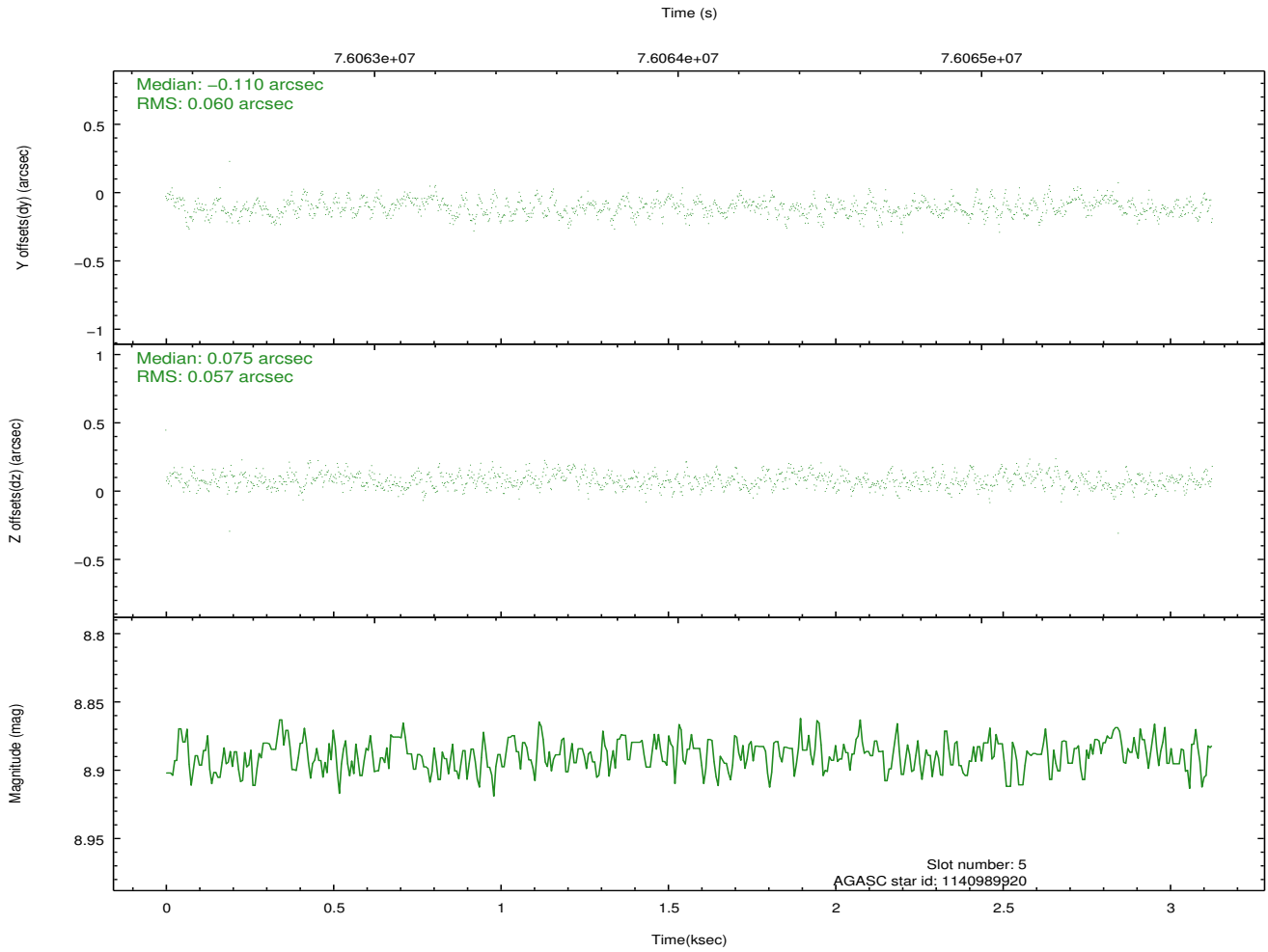
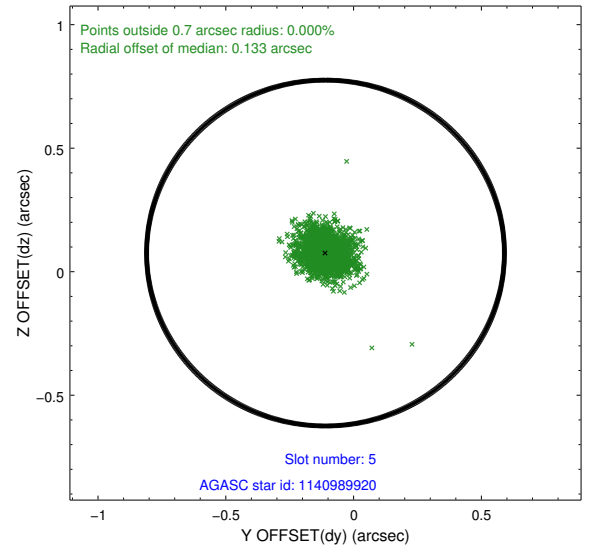
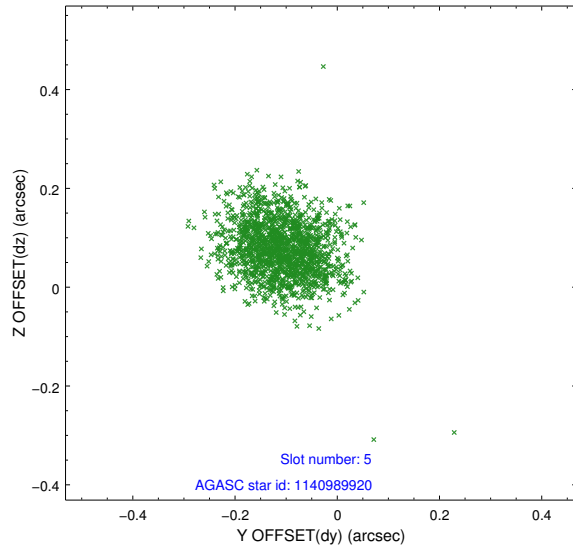
### 2.4.1 Slot 3



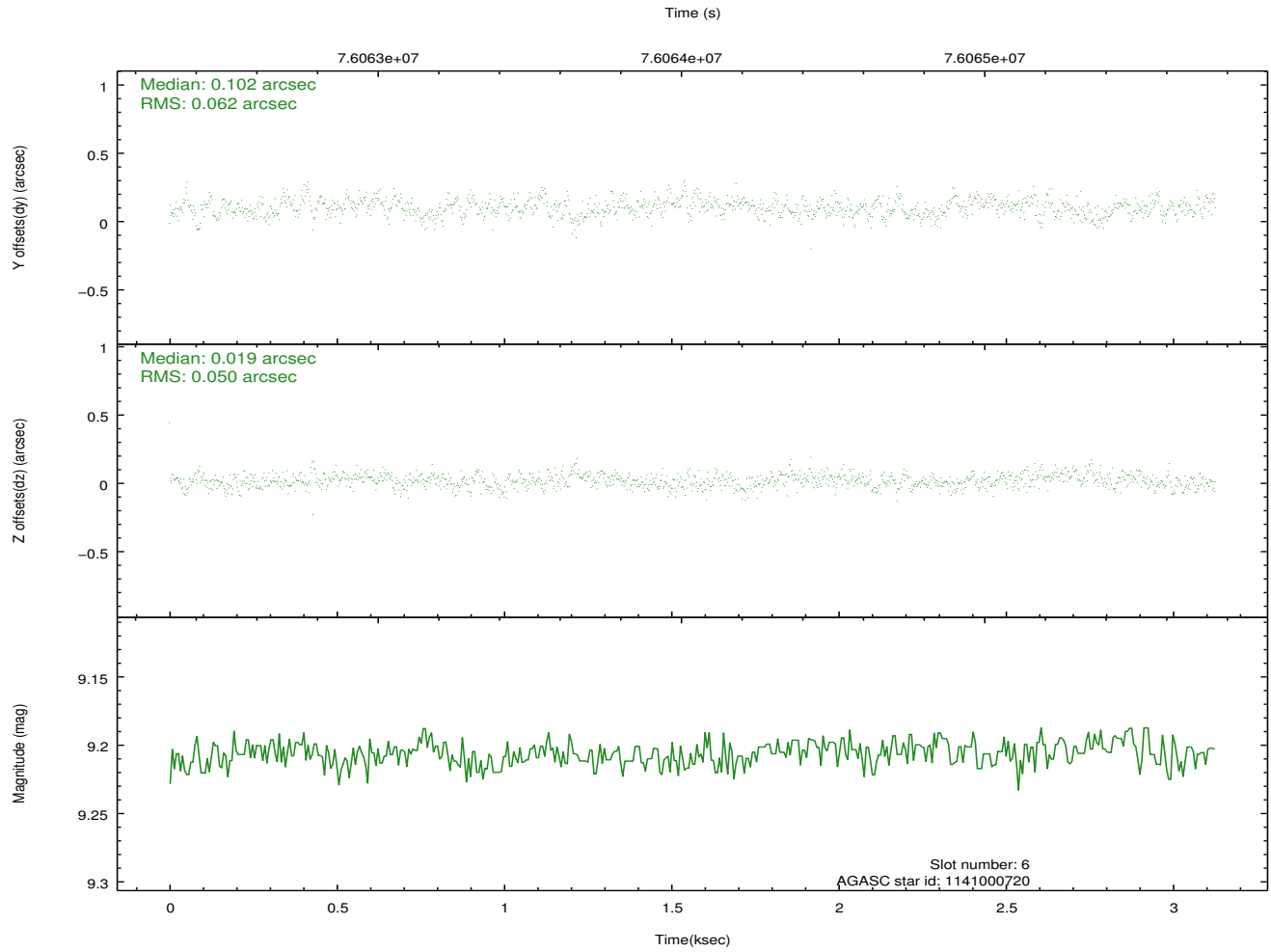
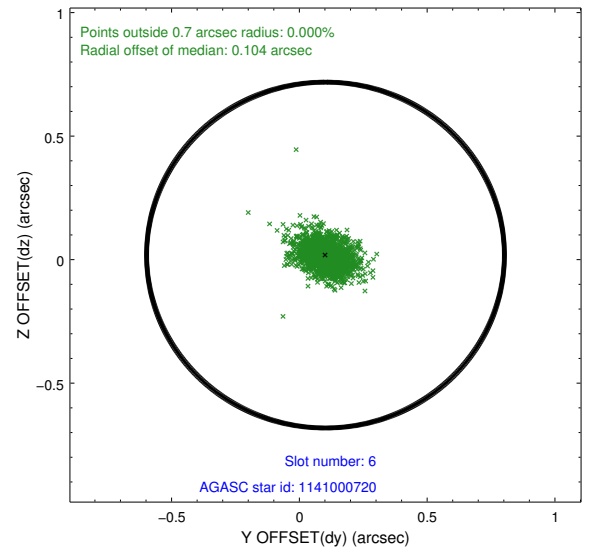
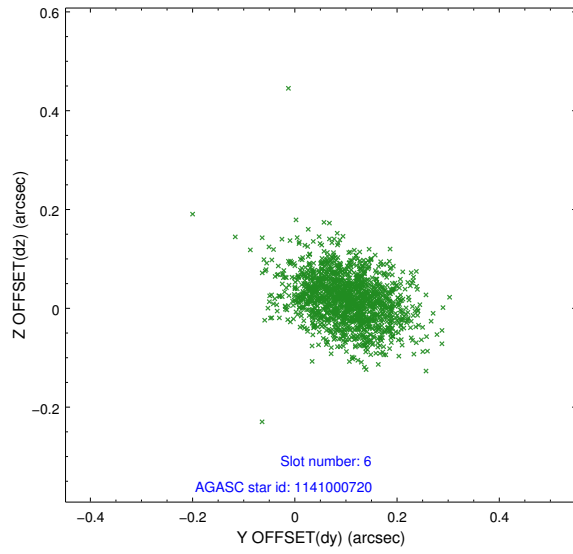
## 2.4.2 Slot 4



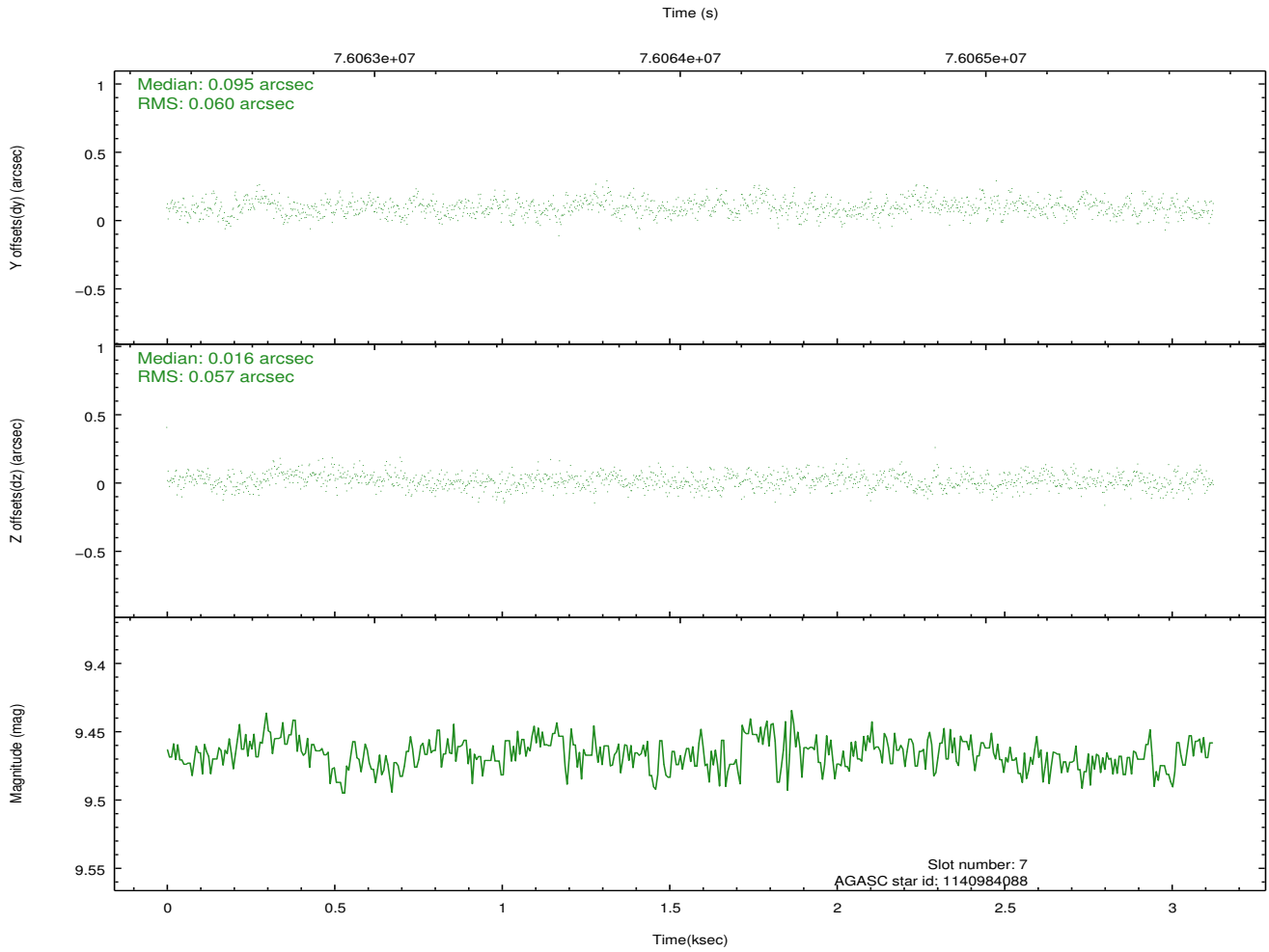
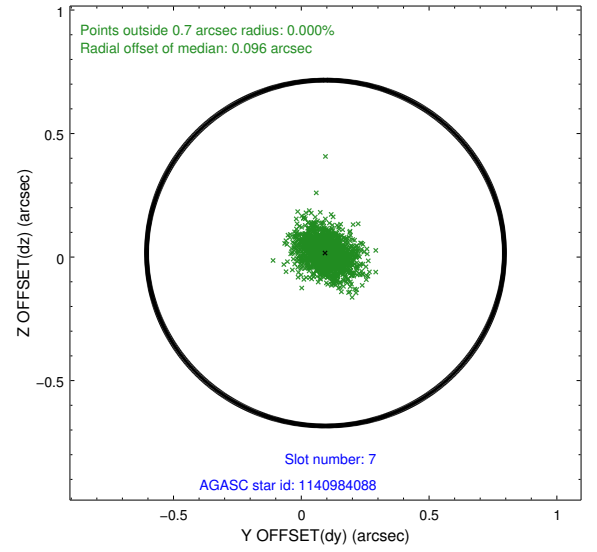
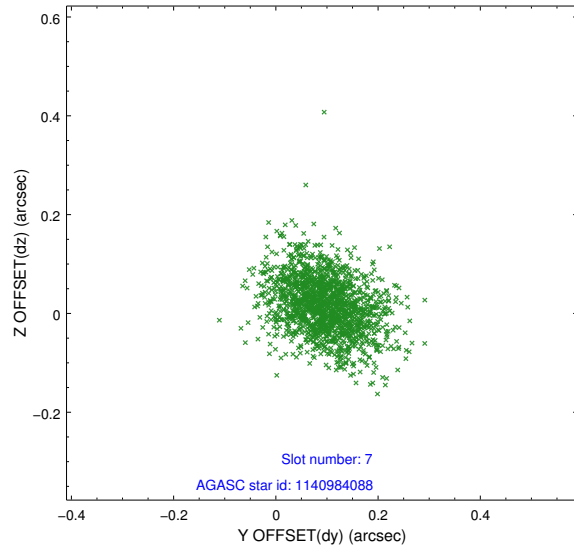
### 2.4.3 Slot 5



## 2.4.4 Slot 6

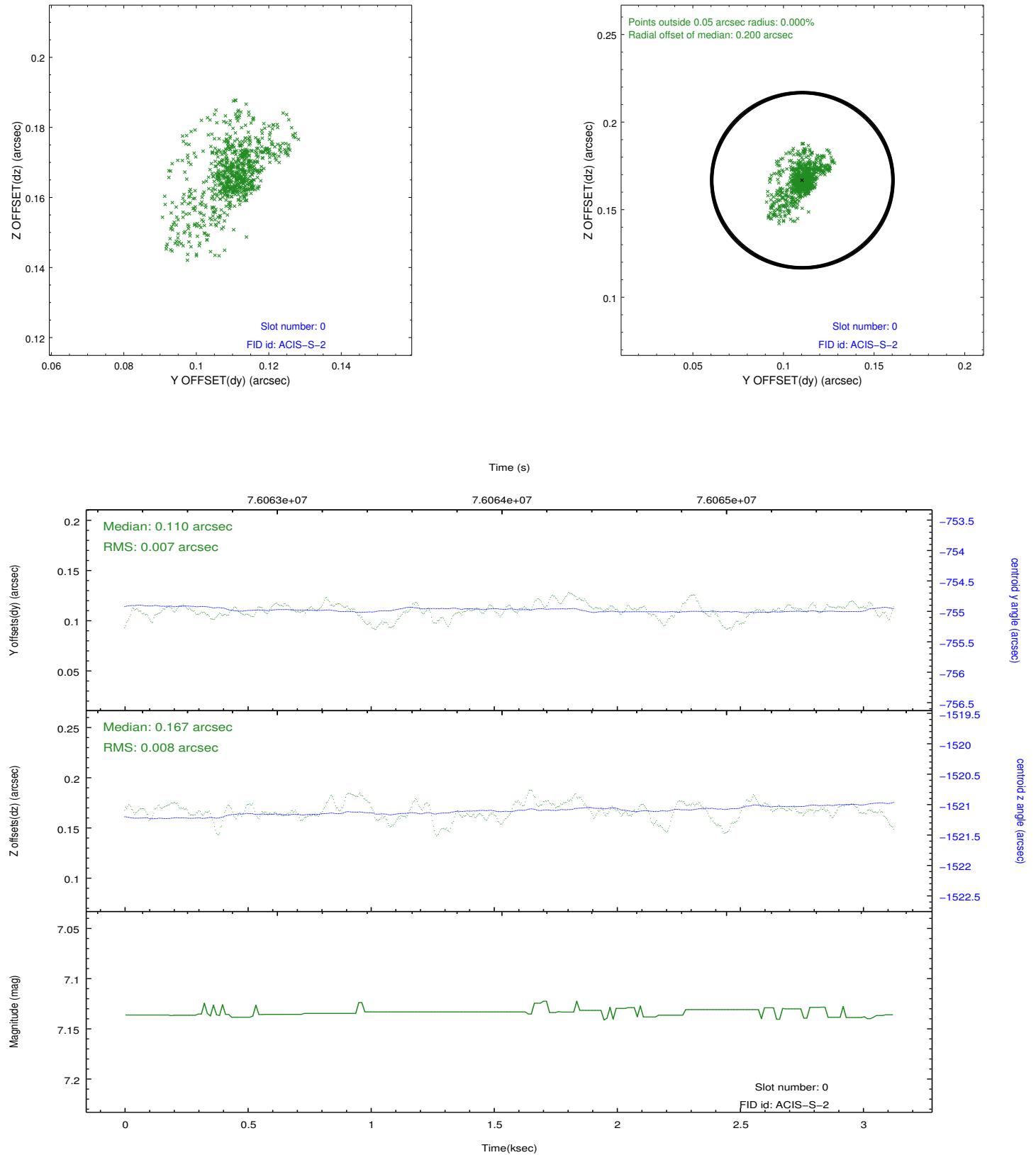


## 2.4.5 Slot 7

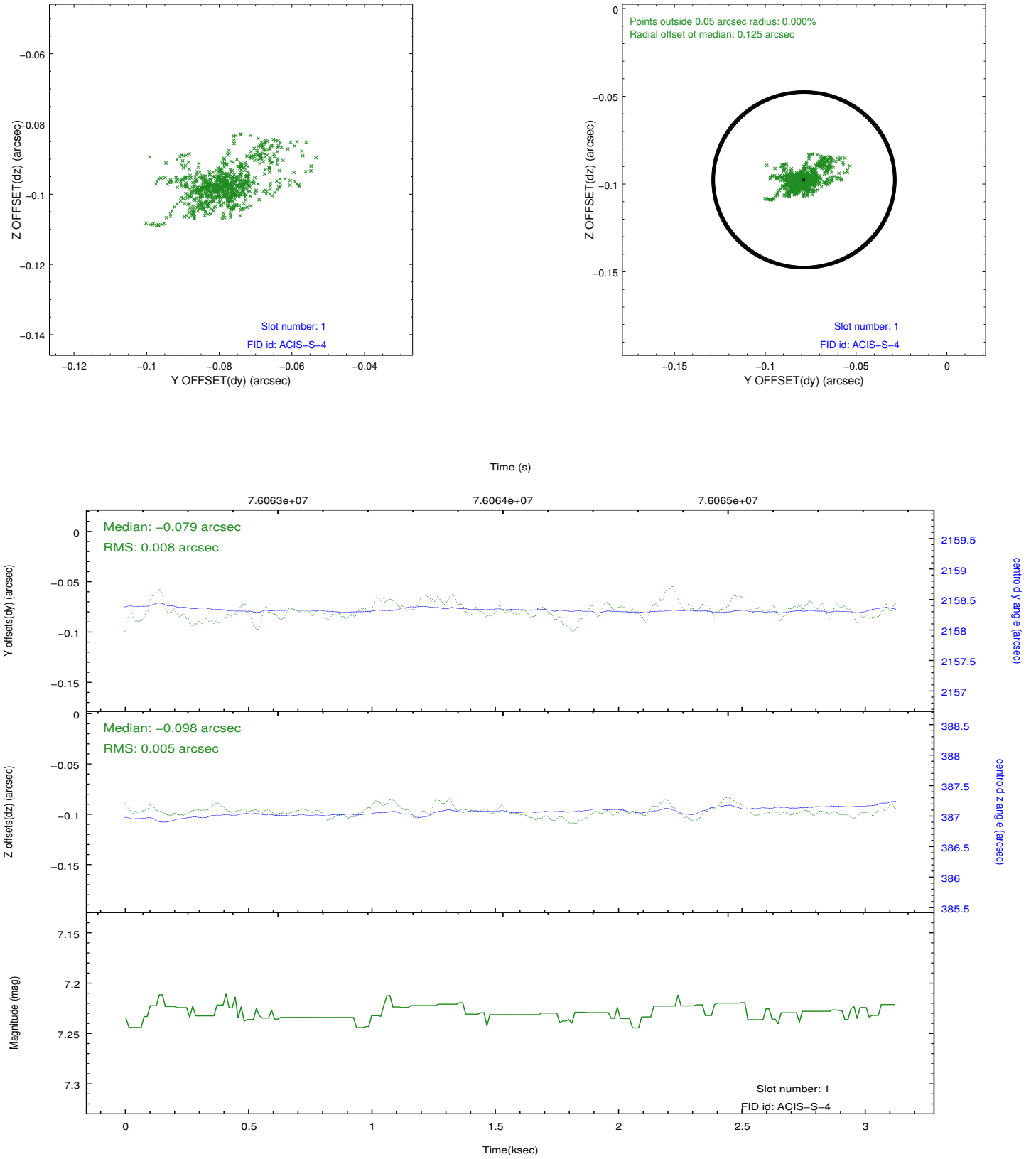


## 2.5 FID Slots

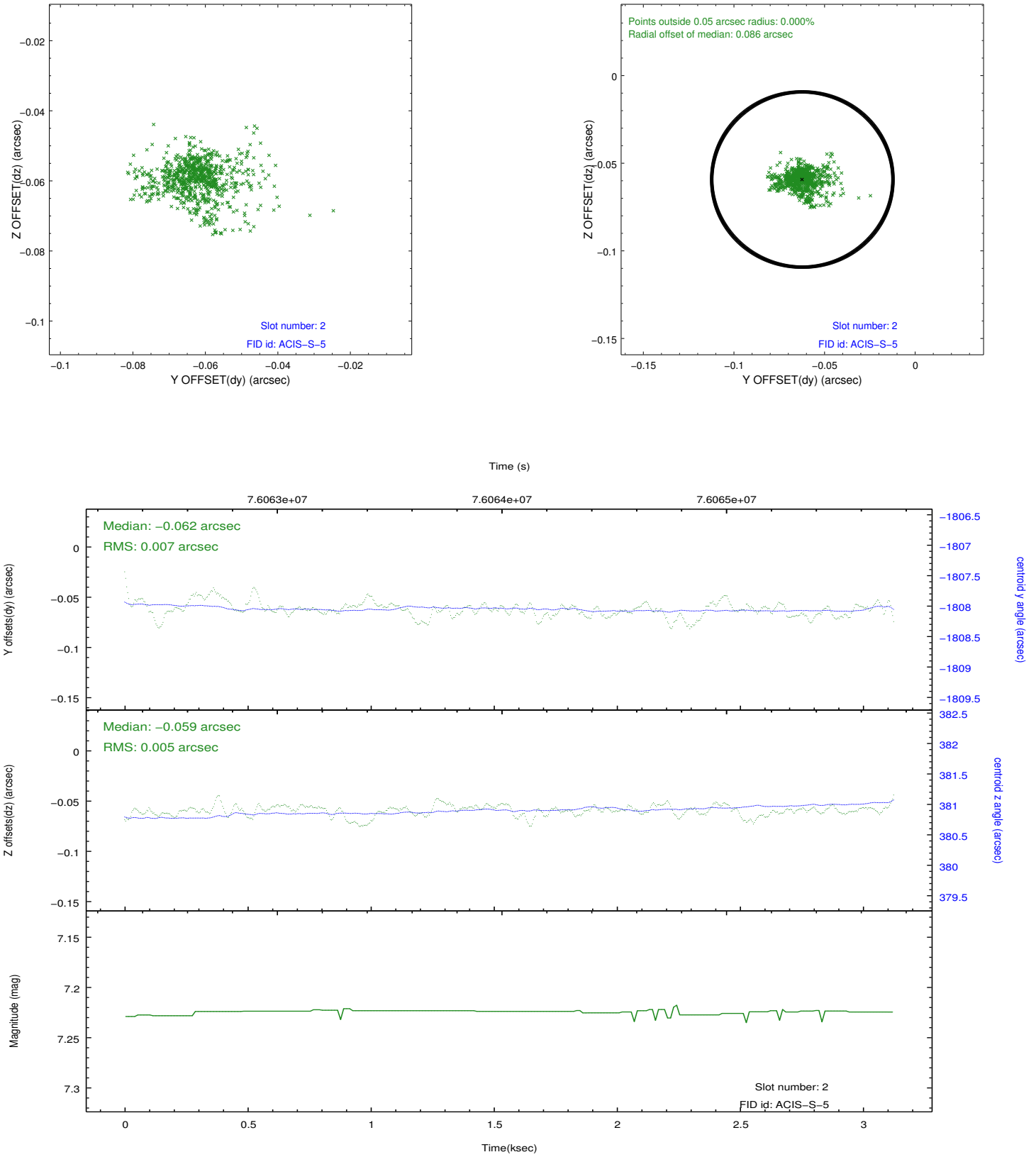
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2





# 3 Gratings

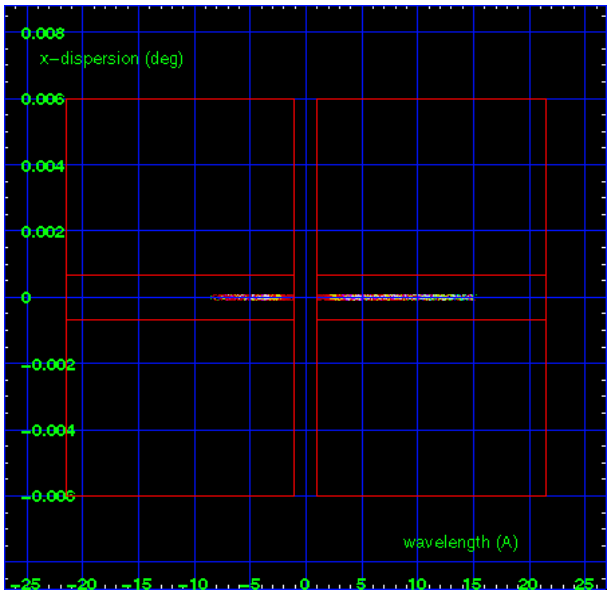
## 3.1 HEG Arm



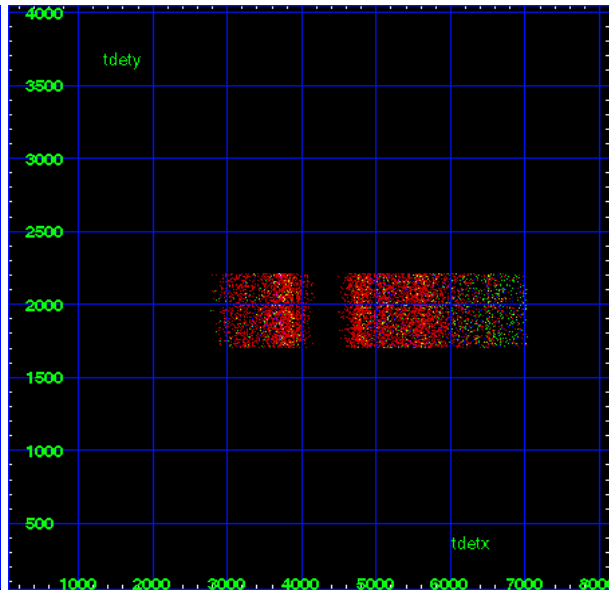
HEG Order Sort 123



HEG Order Sort ALL

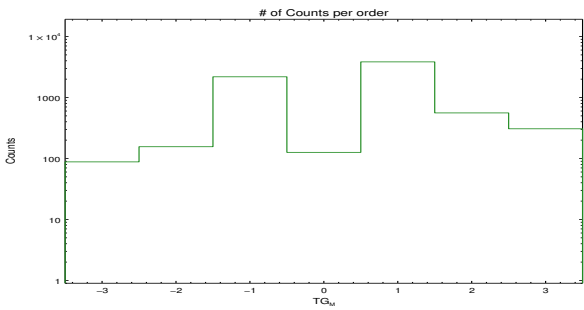


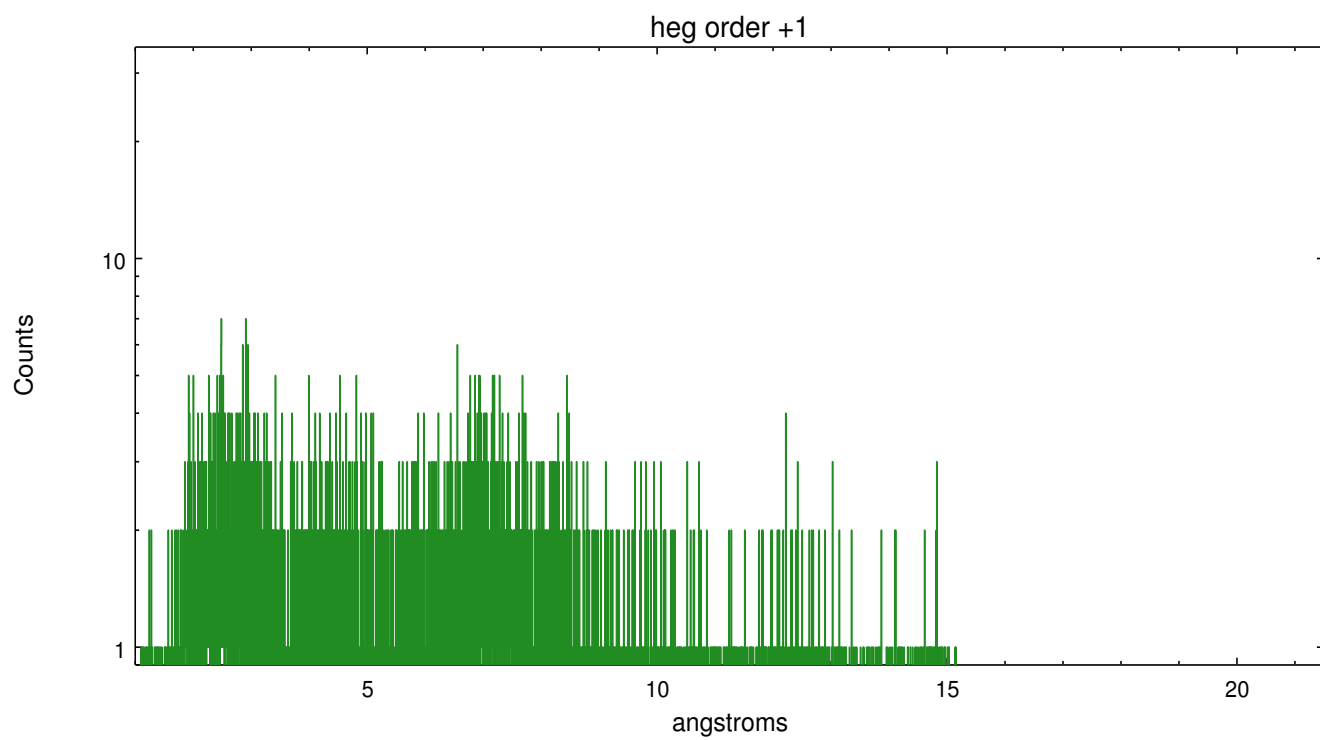
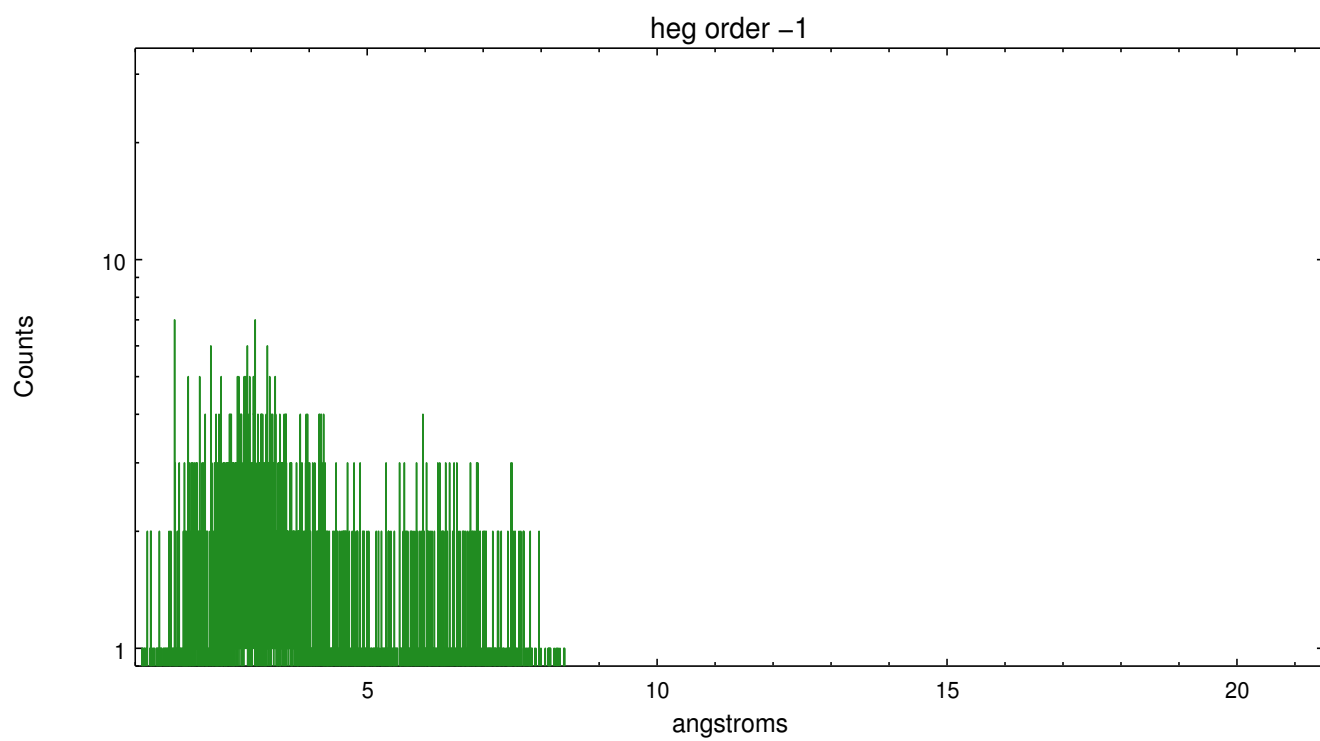
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	88	156	2186	126	3840	559	307





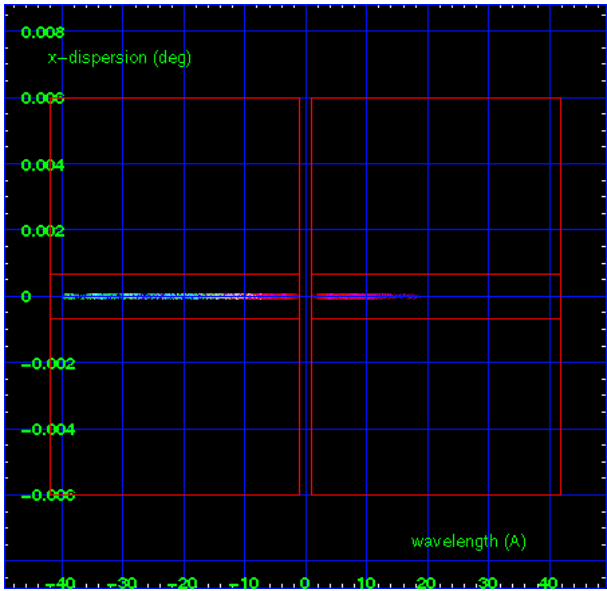
3.2 MEG Arm



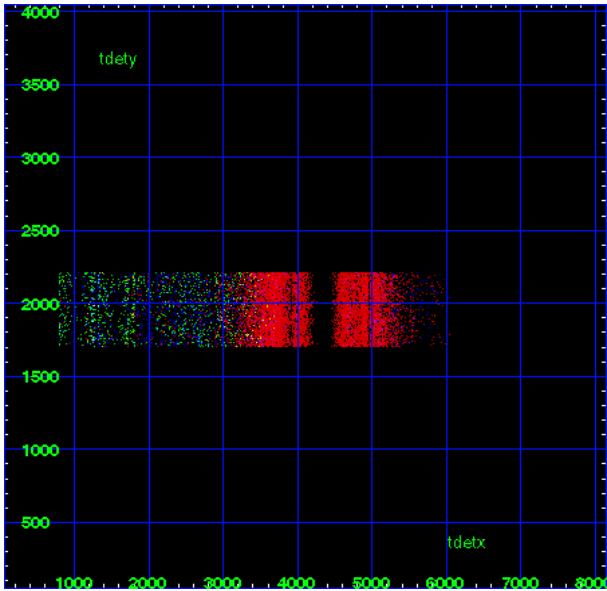
MEG Order Sort 123



MEG Order Sort ALL

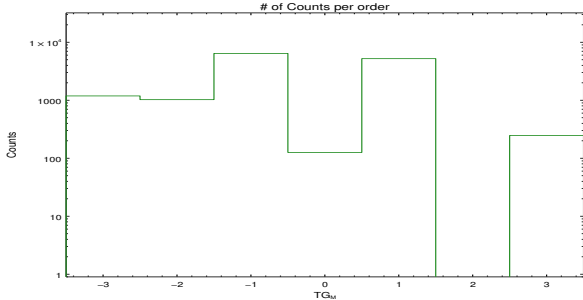


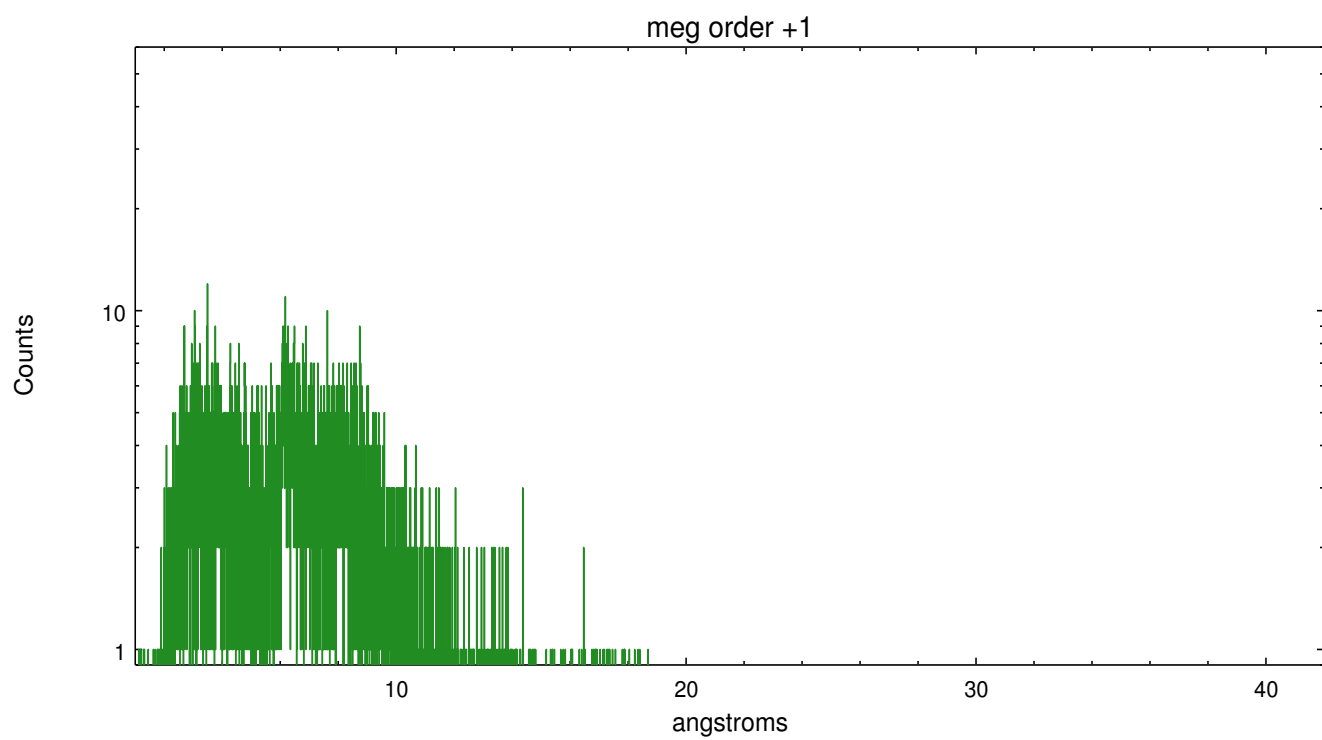
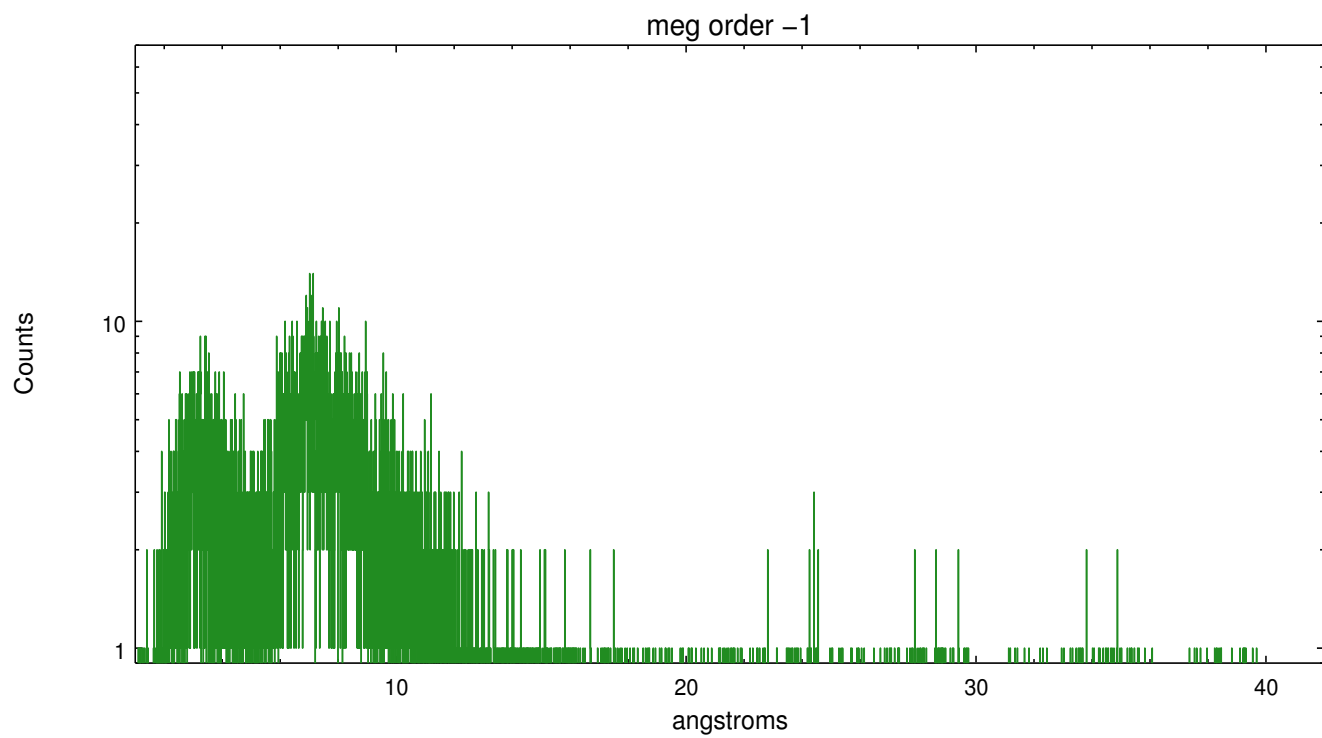
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1188	1025	6424	126	5221	0	247





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	3.109

## A.2 Comments

Charge time for this ObsId remains at previous value of 3.109 ks, although with current processing the charge time would have been 3.124 ks  
===.

Standard data processing software did not correctly locate the zeroth order because a spatial exclusion window was used to block the zeroth order image. The processing software defaulted to the coordinates supplied by the user for the position of the zeroth order for the grating spectral extraction (sky coordinates x=4280.25, y=4161.96). These coordinates are not centered in the exclusion window.  
===

For ACIS/CC-mode w/ HETG, with no SIM-Z offset, there are no MEG even order counts. MEG even orders overlap with HEG orders in energy, but MEG even order efficiencies are very low. Since HEG and MEG cannot be spatially separated, events are preferentially assigned to HEG. (MEG odd orders can be resolved.) For observations with a SIM-Z offset, HEG negative and MEG positive orders will be missing (off the array), and remove some of the ambiguity.