

# V&V Reference Report

## L2 ASCDS Version : 7.6.7.2

Observation 4559 - L2 Version 001  
Chandra X-Ray Center

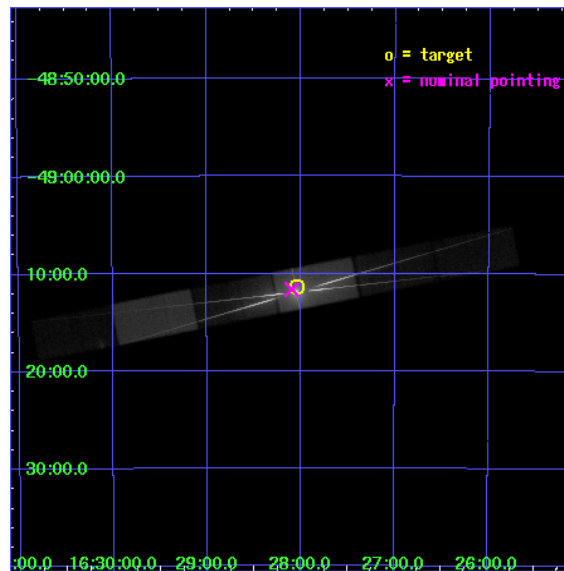
L2 Processing Date : May 1 2006

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# 1 Front

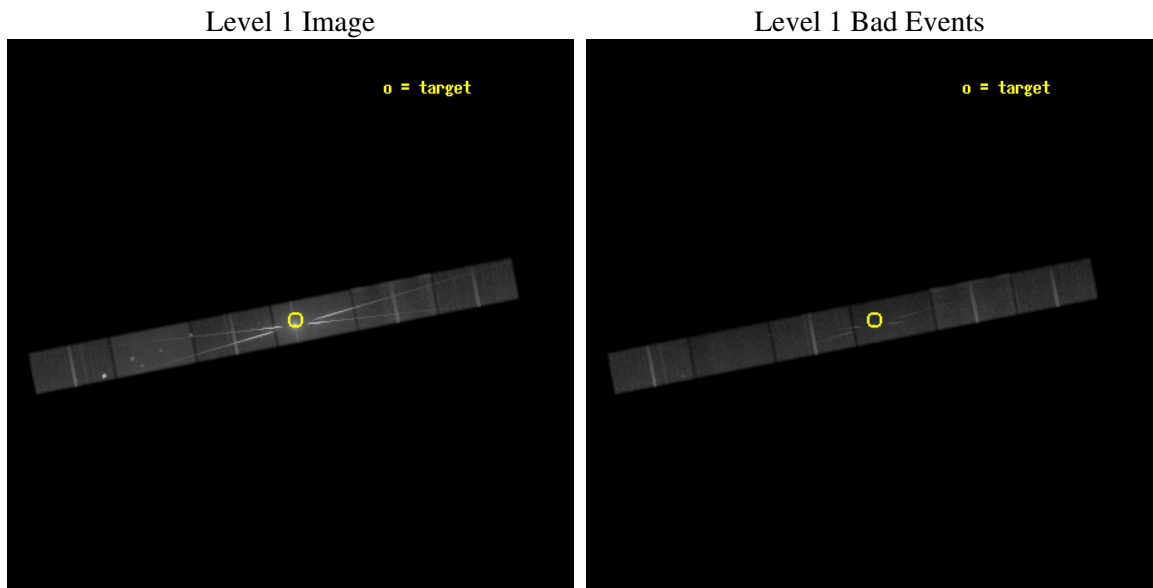
seq_num	400342
obs_id	4559
title	The Near Eddington Neutron Star 4U 1624-460: A Probe of Disk, Wind, and ISM structure
observer	Prof Julia Lee
object	4U 1624-49
dtcycle	0
cycle	P
ra_targ	247.01
dec_targ	-49.190306
ra_nom	247.02377350517
dec_nom	-49.193794561212
roll_nom	348.89782367865
revision	2
ontime	75136.599473119
livetime	73365.470698147
ontime4	75134.178854197
ontime5	75134.858472914
ontime6	75136.599473119
ontime7	75136.599473119
ontime8	75134.858472943
ontime9	75136.599473119
l2events	1420858



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images

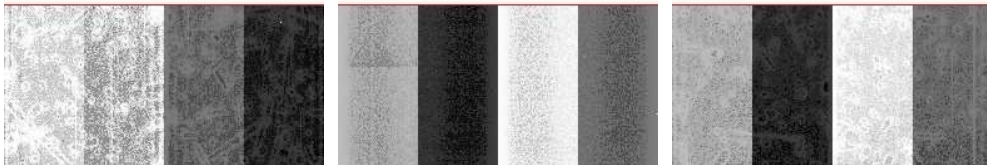


#### 2.1.2 Bias

Chip 4

Chip 5

Chip 6



Chip 7

Chip 8

Chip 9



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.7.2
caldbver	3.2.1
date	2006-05-01T12:16:19
revision	2

sched_exp_time	75000.000000
ontime	75492.548237443
ontime4	75489.06620717
ontime5	75490.807237238
ontime6	75492.548237443
ontime7	75492.548237443
ontime8	75490.807237267
ontime9	75492.548237443
l1events	3192074

### 2.1.4 Events

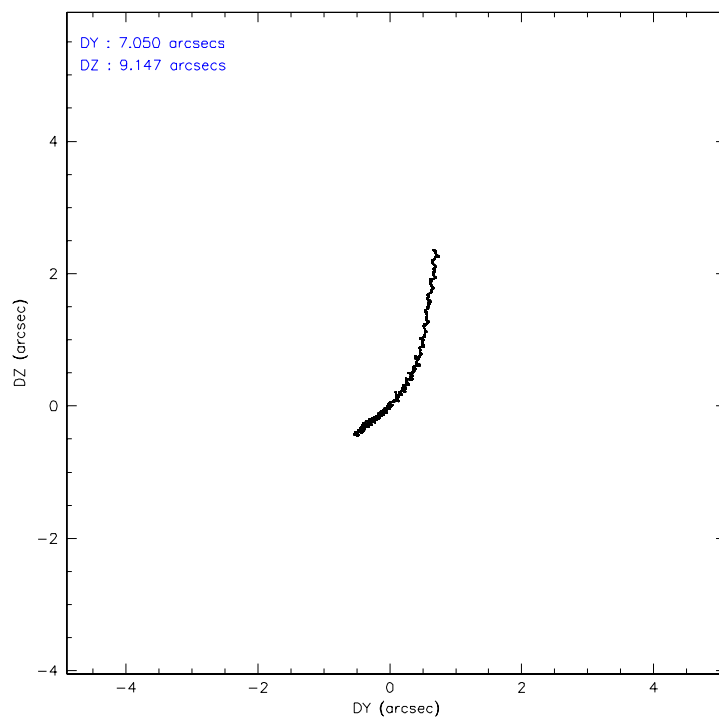
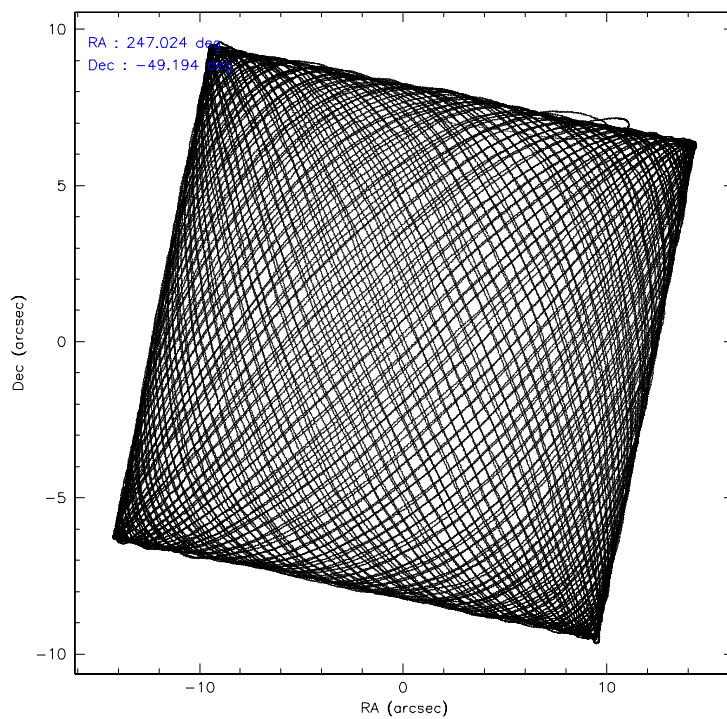
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	379241	442598	581046	1060353	428174	300662
rejected events	295839	237516	278649	254719	302067	255109
rejected %	78%	53%	47%	24%	70%	84%

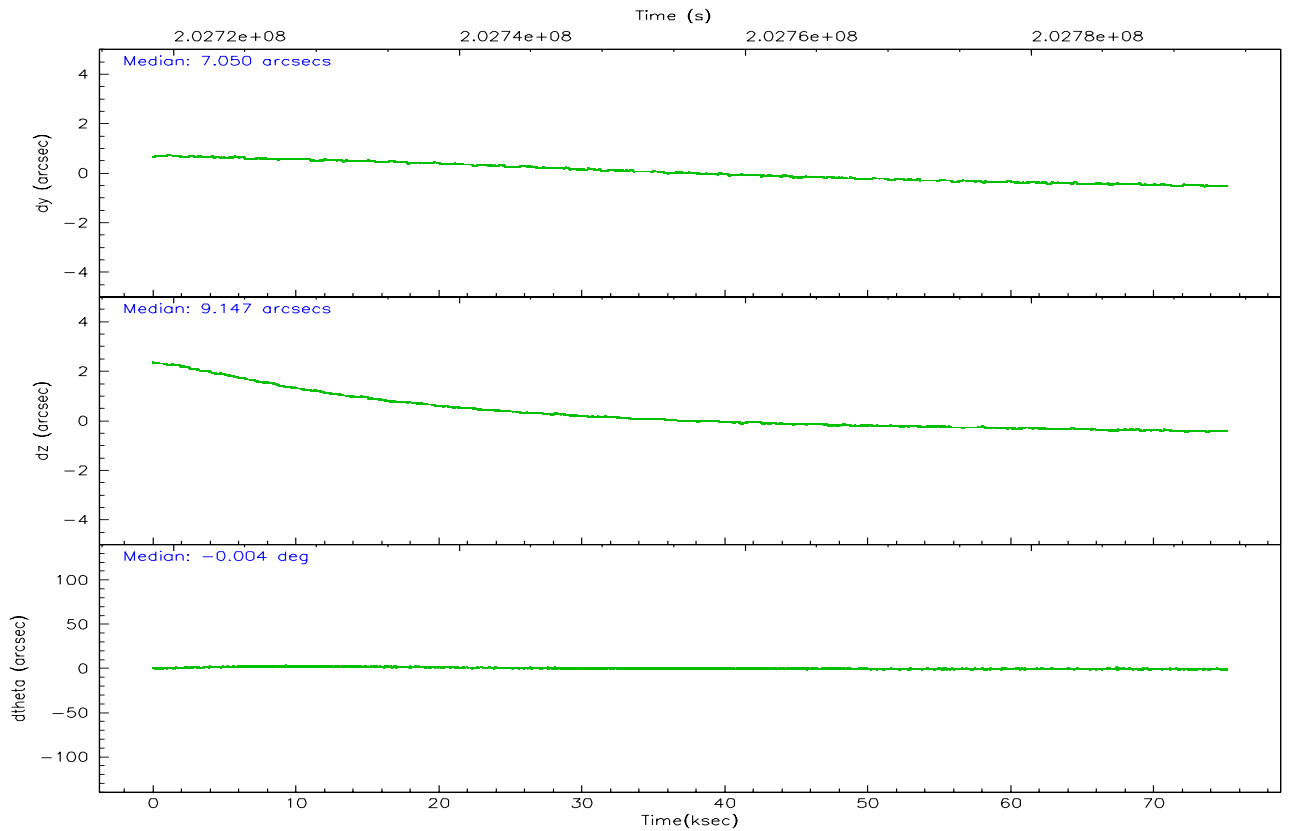
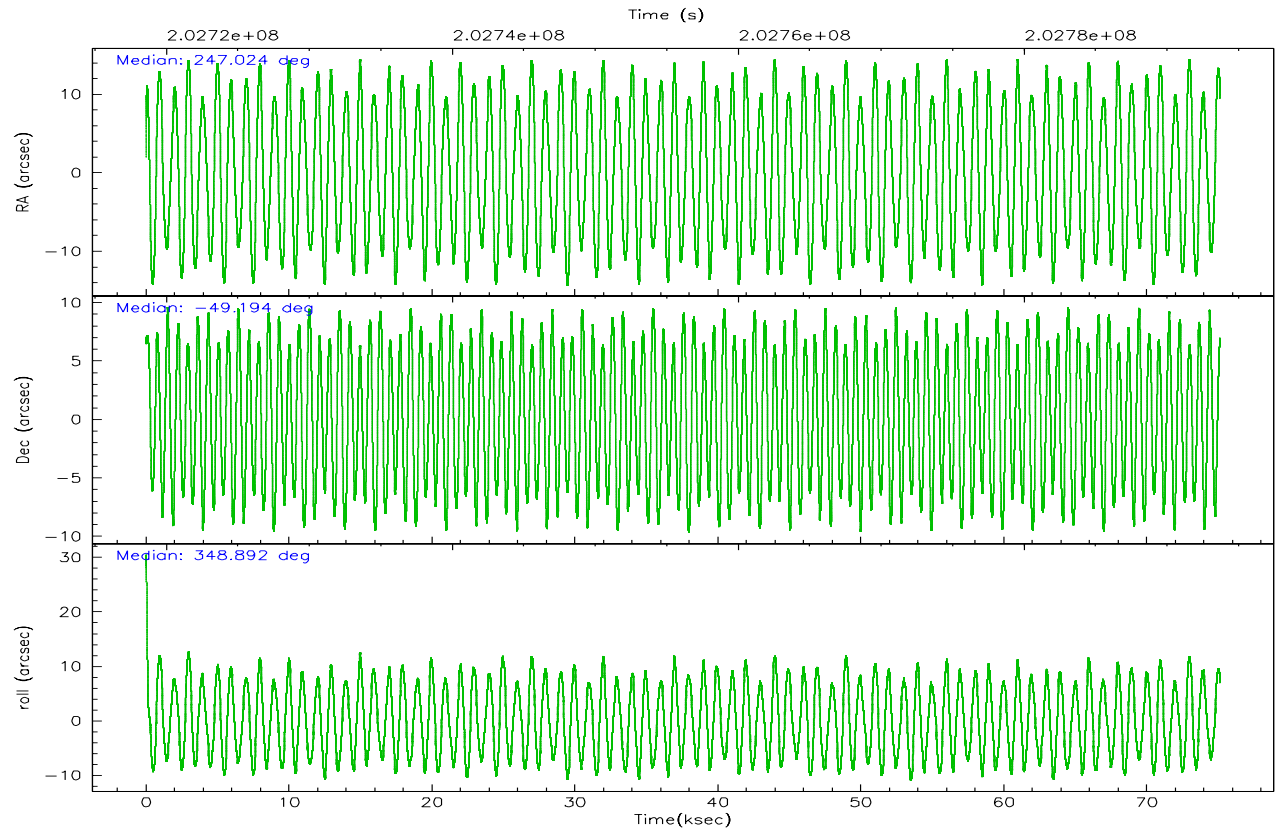
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	59964	16815	191712	125275	56543	21087
	15%	3%	32%	11%	13%	7%
grade 1 events	454	529	1142	1654	311	152
	0%	0%	0%	0%	0%	0%
grade 2 events	8780	64459	46584	206626	23259	8043
	2%	14%	8%	19%	5%	2%
grade 3 events	4423	7541	17669	71676	11467	4607
	1%	1%	3%	6%	2%	1%
grade 4 events	4396	6904	17618	70955	10904	4548
	1%	1%	3%	6%	2%	1%
grade 5 events	11966	23396	14038	38230	16096	12944
	3%	5%	2%	3%	3%	4%
grade 6 events	6214	110352	29716	333392	24361	7466
	1%	24%	5%	31%	5%	2%
grade 7 events	283044	212602	262567	212545	285233	241815
	74%	48%	45%	20%	66%	80%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	On-chip summing requested	N	N
Observation mode	POINTING	POINTING	Subarray requested	CUSTOM	1/2
Pointing RA	246.984553	247.0237735051698	Subarray start row	1	1
Pointing Dec	-49.202951	-49.19379456121233	Subarray row count	512	512
Pointing Roll	348.711503	348.897823678653	Alternating exposures requested	N	N
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Primary exposure time	0.000000	1.7
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-183.992523	-183.985022191653			
SIM translation stage offset (mm)	-6.14	-6.147500391354811			
Phase constraints	Y	Y			
Phase period	0.869907	0.869907			
Phase epoch	50454.000000	50454.000000			
Phase start	0.000000	0.000000			
Phase end	1.000000	1.000000			
Phase start error	0.000000	0.000000			
Phase end error	0.000000	0.000000			
Observation start time	202718715.184000	202717566.4367			
Observation start date	2004-06-04T06:44:11	2004-06-04T06:26:06			
Observation end time	202793715.184000	202794377.8901			
Observation end date	2004-06-05T03:34:11	2004-06-05T03:46:17			
Read mode	TIMED	TIMED			

## 2.3 Aspect



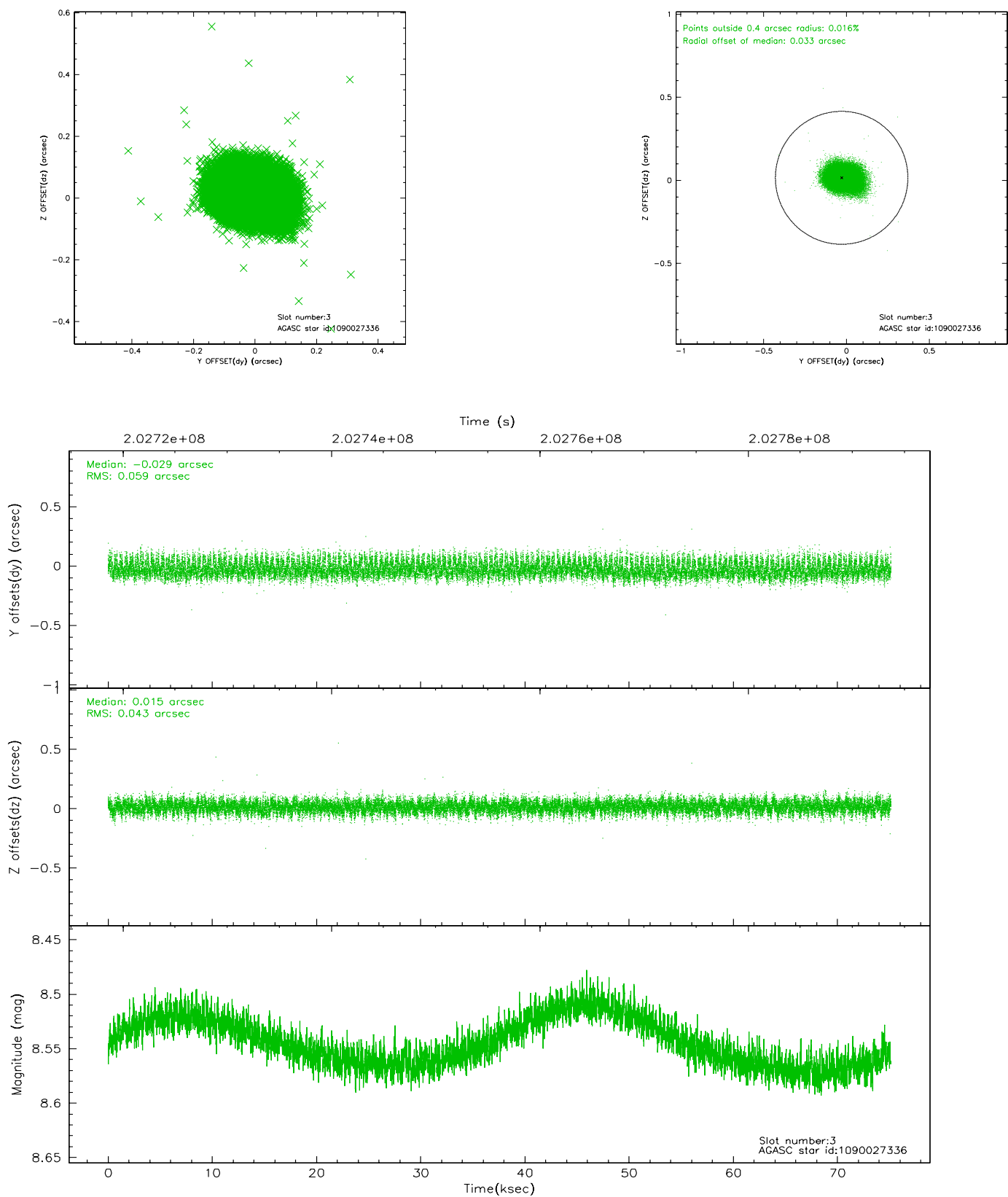


### Slot Statistics

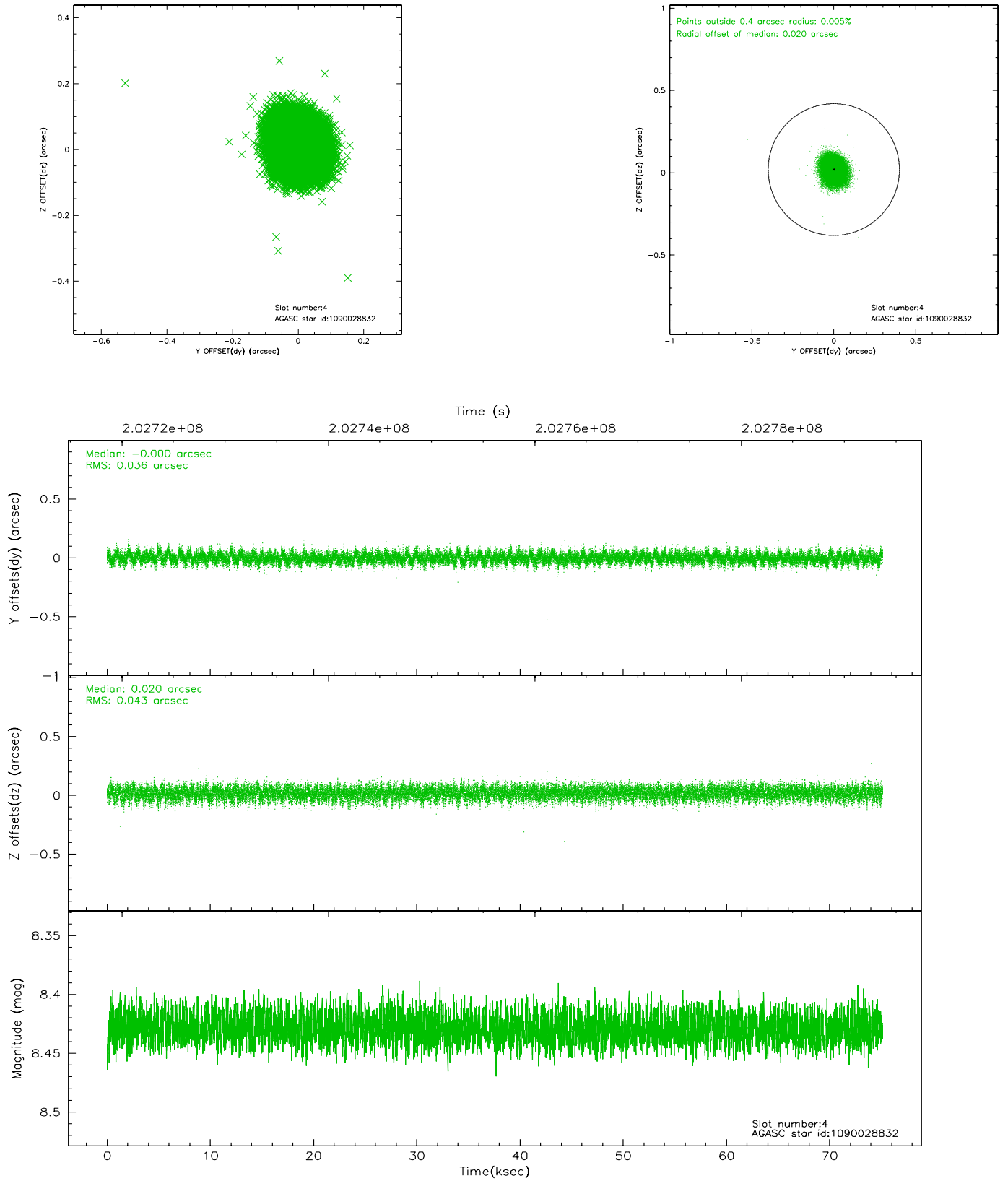
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	18327	-0.059	-0.062	0.025	0.047	0.000000	0.000000	-759.48	-1857.46
1	FID	ACIS-S-4	7.18	18327	0.053	0.045	0.031	0.042	0.000000	0.000000	2153.95	51.18
2	FID	ACIS-S-5	7.22	18325	-0.031	0.019	0.021	0.046	0.000000	0.000000	-1812.37	44.77
3	GUIDE	1090027336	8.55	36650	-0.029	0.015	0.077	0.127	246.243090	-48.601393	-2153.39	1769.67
4	GUIDE	1090028832	8.43	36650	-0.000	0.020	0.060	0.098	247.053685	-48.746399	-160.78	1644.00
5	GUIDE	1090527696	7.23	36650	0.000	0.023	0.055	0.090	246.414931	-49.424565	-1150.72	-1048.35
6	GUIDE	1090534672	9.32	36478	0.046	0.041	0.102	0.165	247.311518	-48.955183	583.72	1024.57
7	GUIDE	1090029704	9.39	36628	-0.015	-0.095	0.118	0.193	247.219940	-48.584716	114.14	2291.60

## 2.4 Star Slots

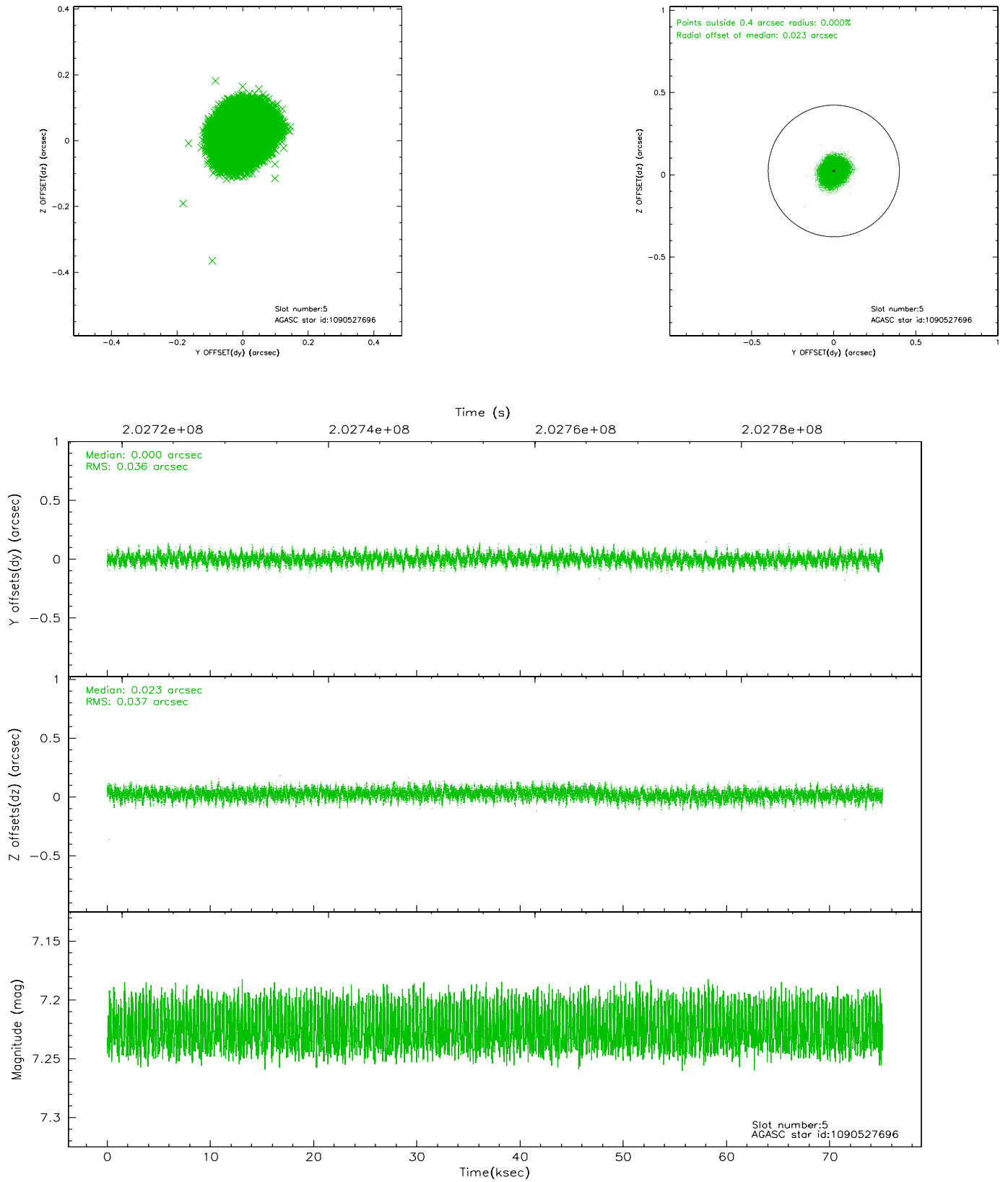
### 2.4.1 Slot 3



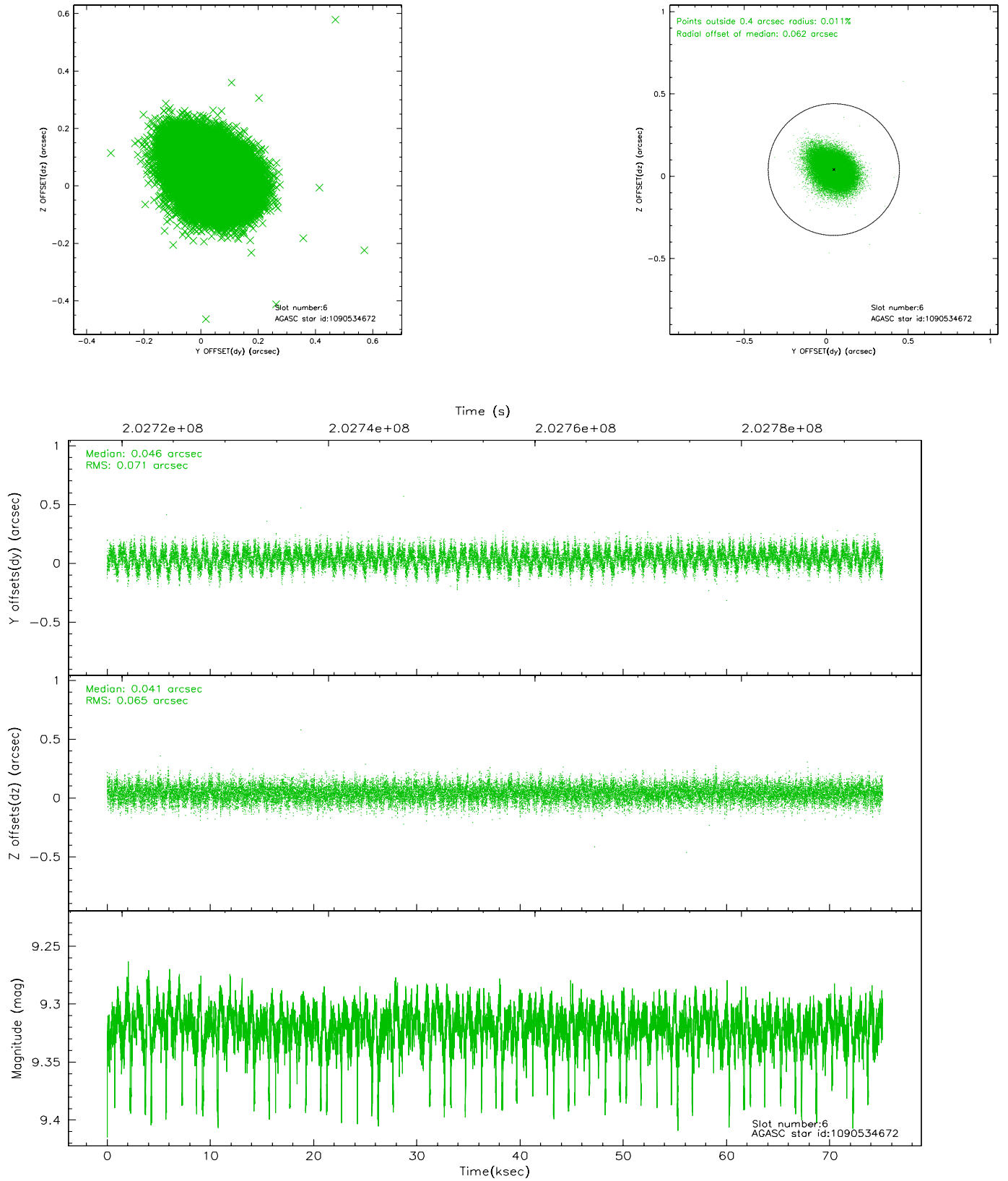
## 2.4.2 Slot 4



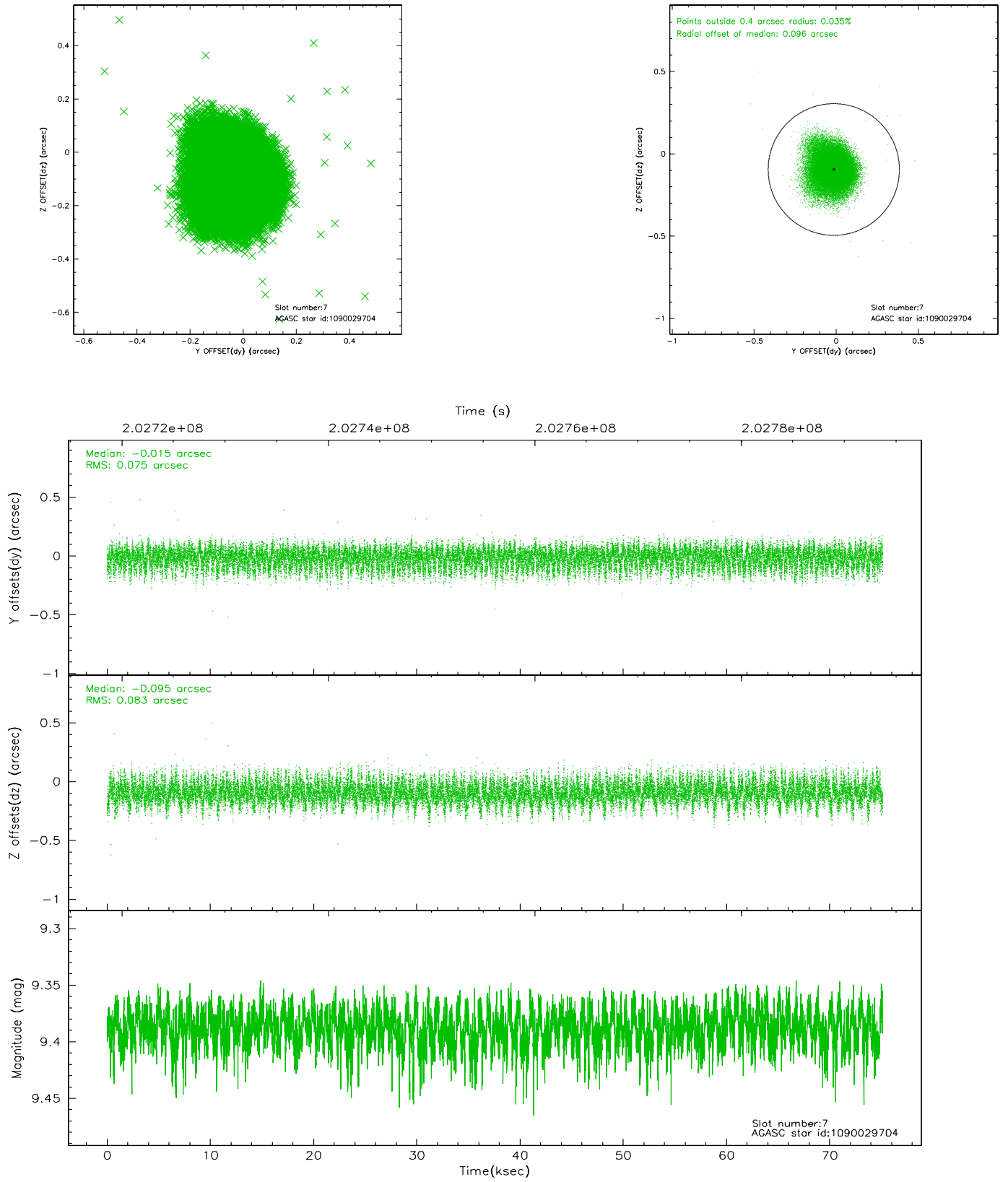
### 2.4.3 Slot 5



## 2.4.4 Slot 6

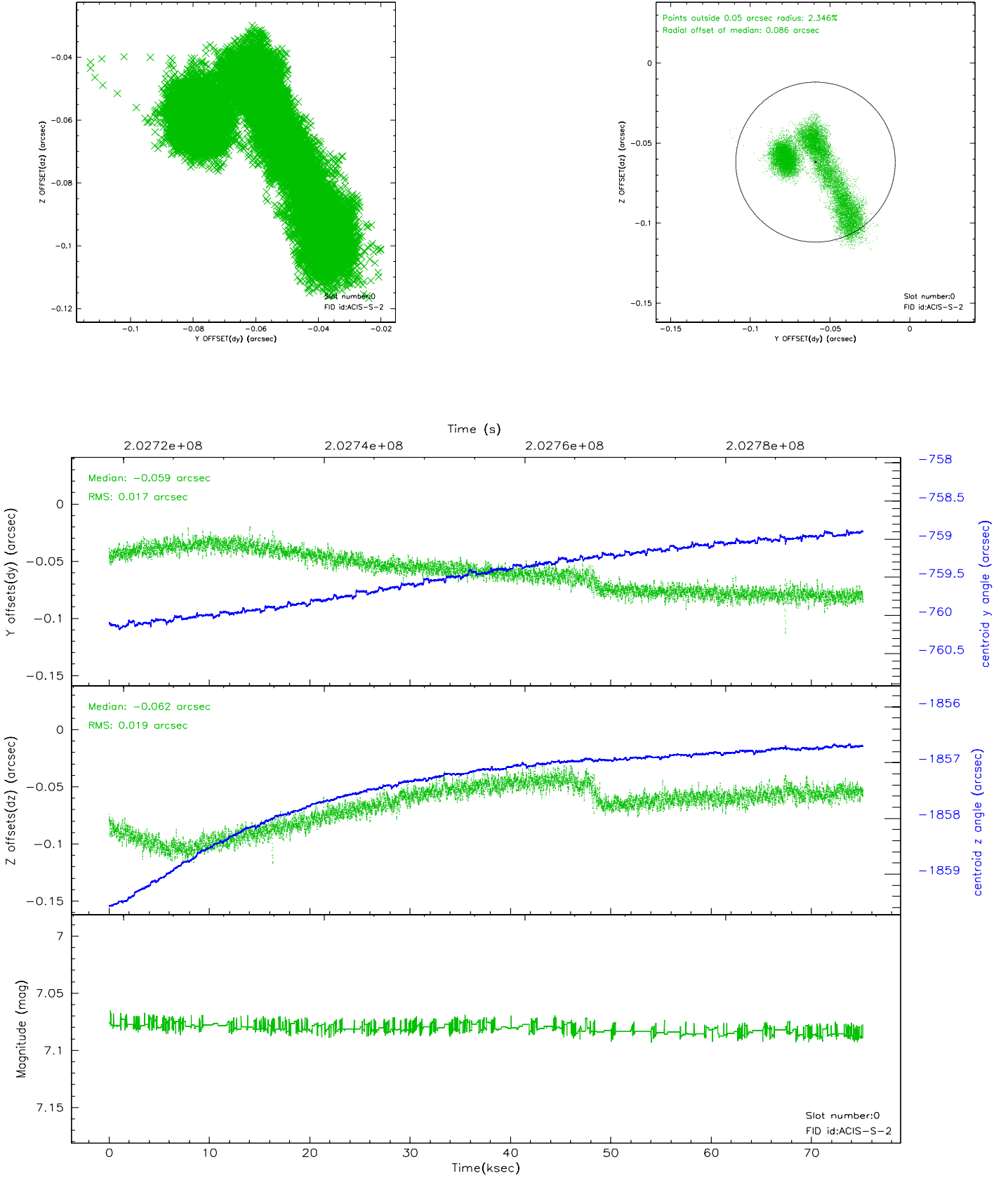


## 2.4.5 Slot 7

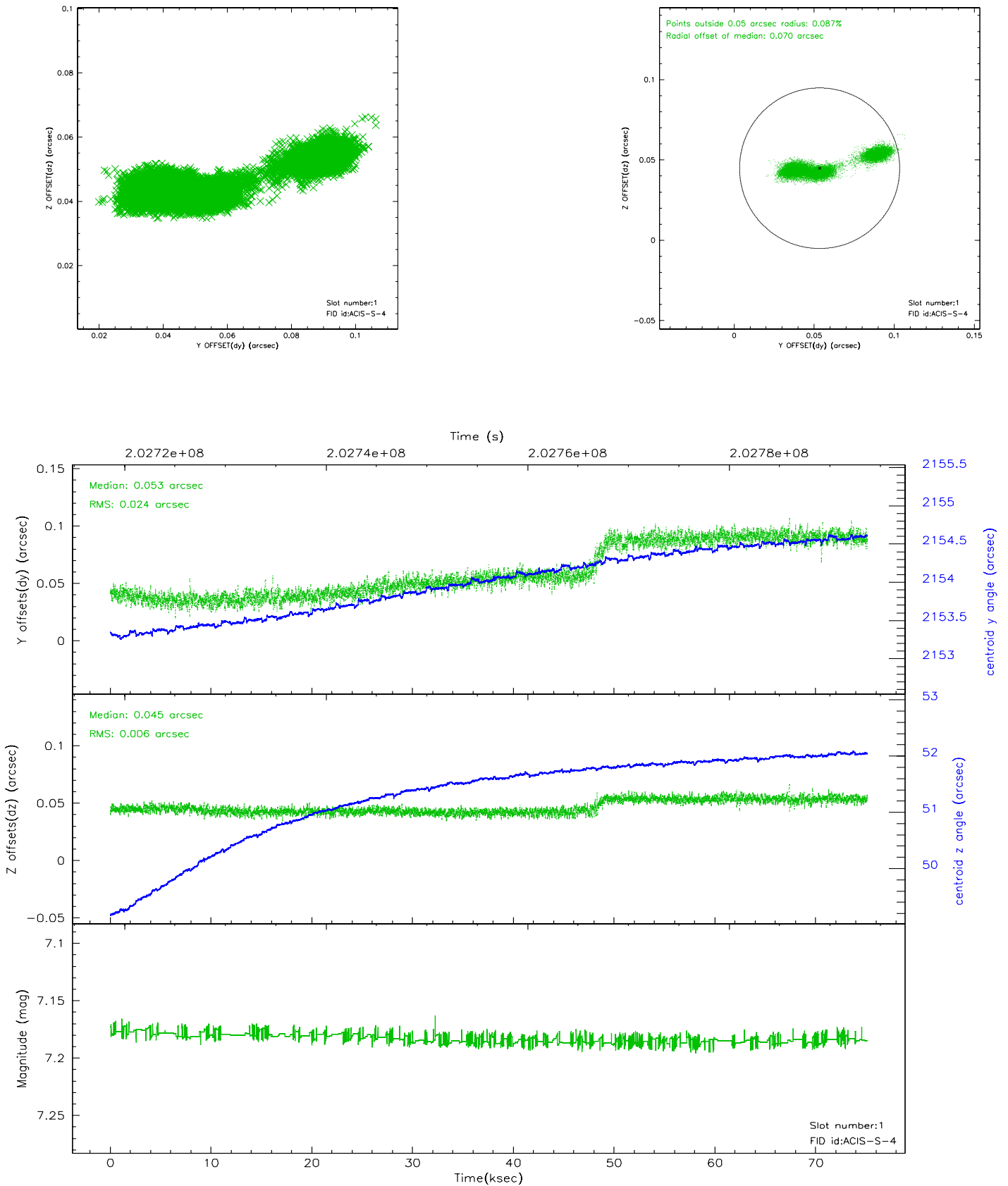


## 2.5 FID Slots

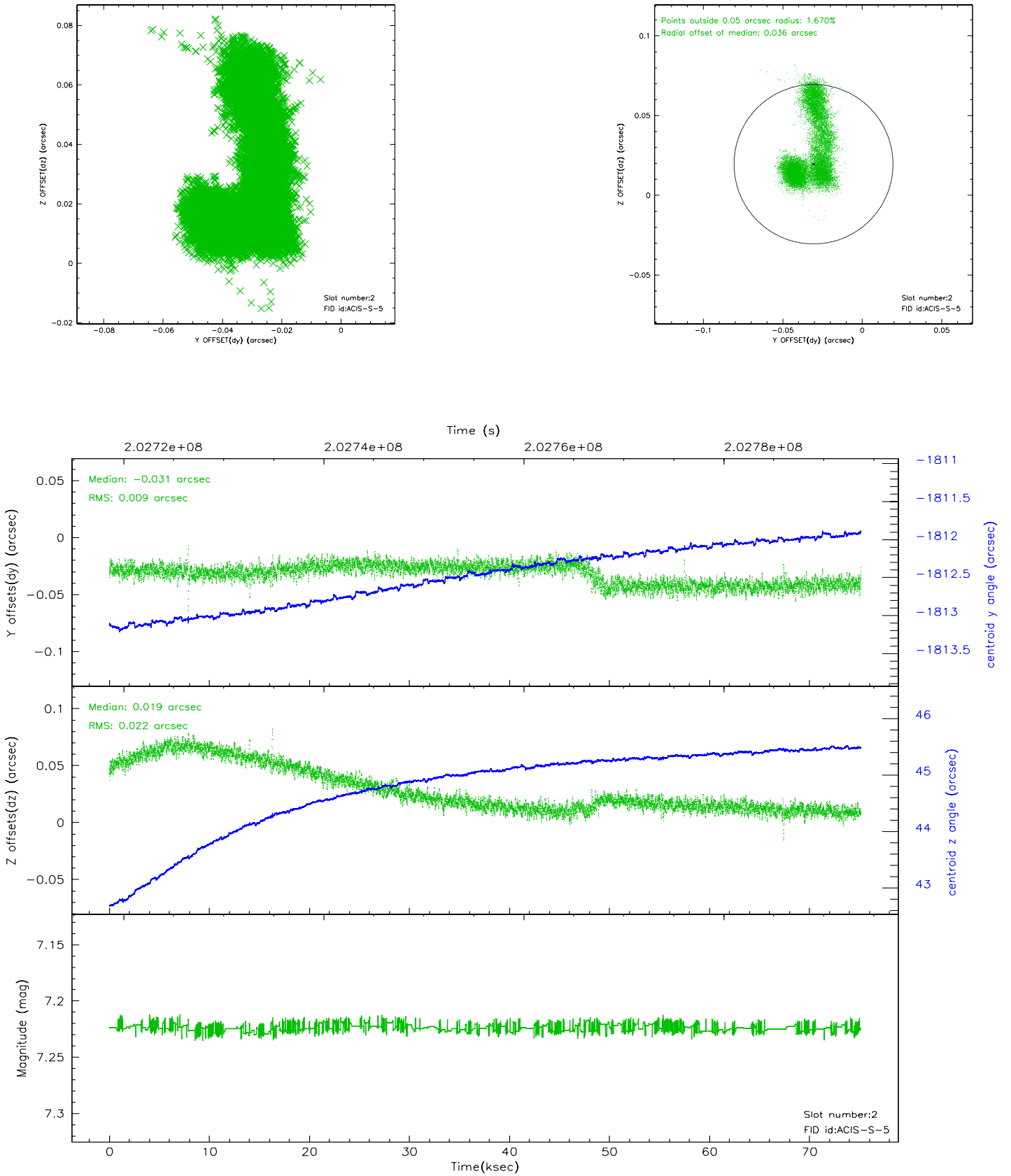
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

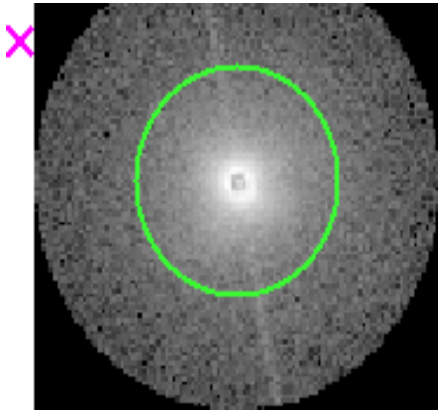


# 3 Gratings

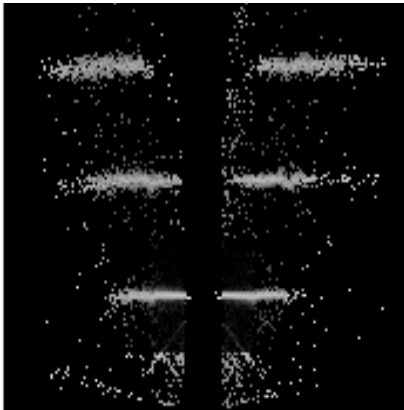
## 3.1 HEG Arm



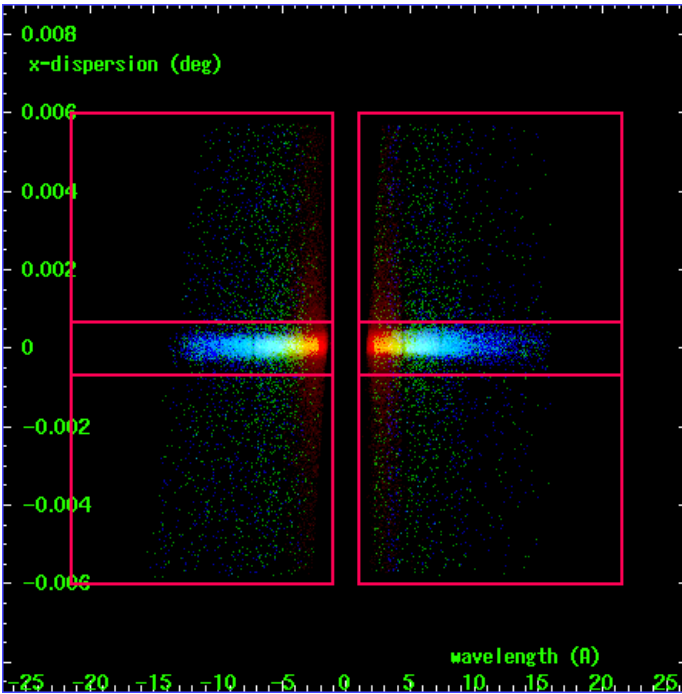
HEG Order Sort 123



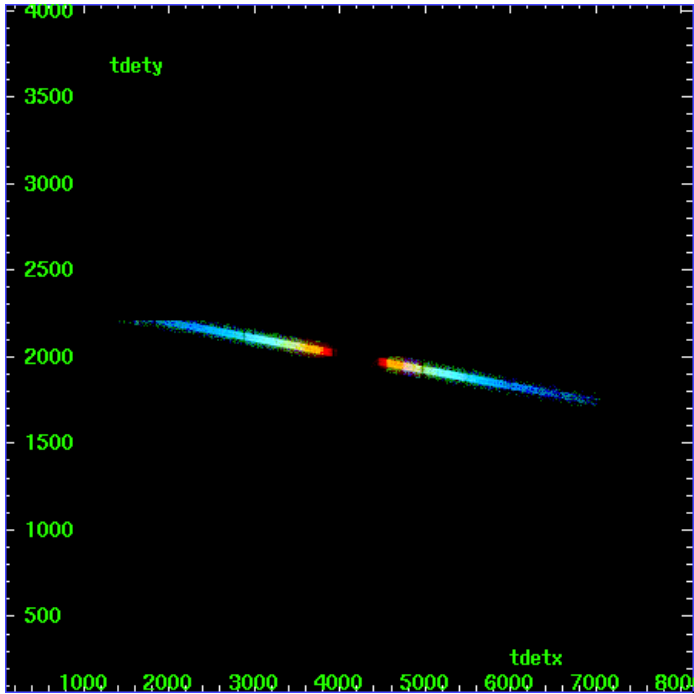
HEG Zero Order



HEG Order Sort ALL

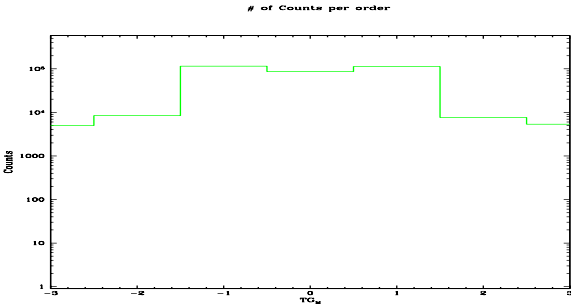


Spot Image HEG

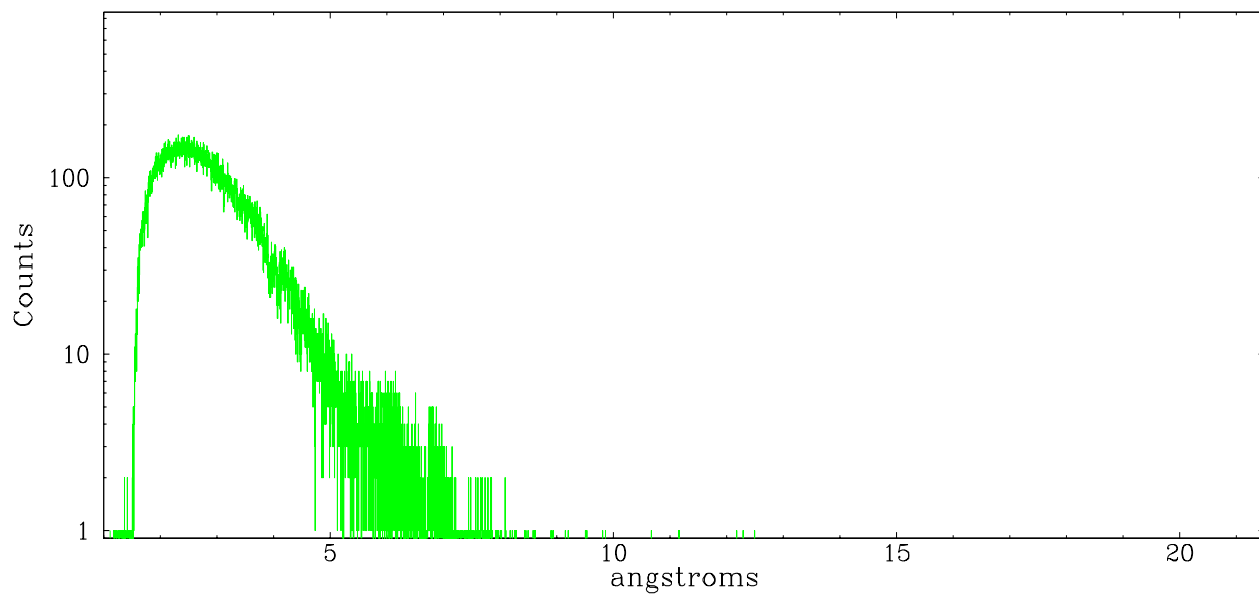


Full Detector HEG

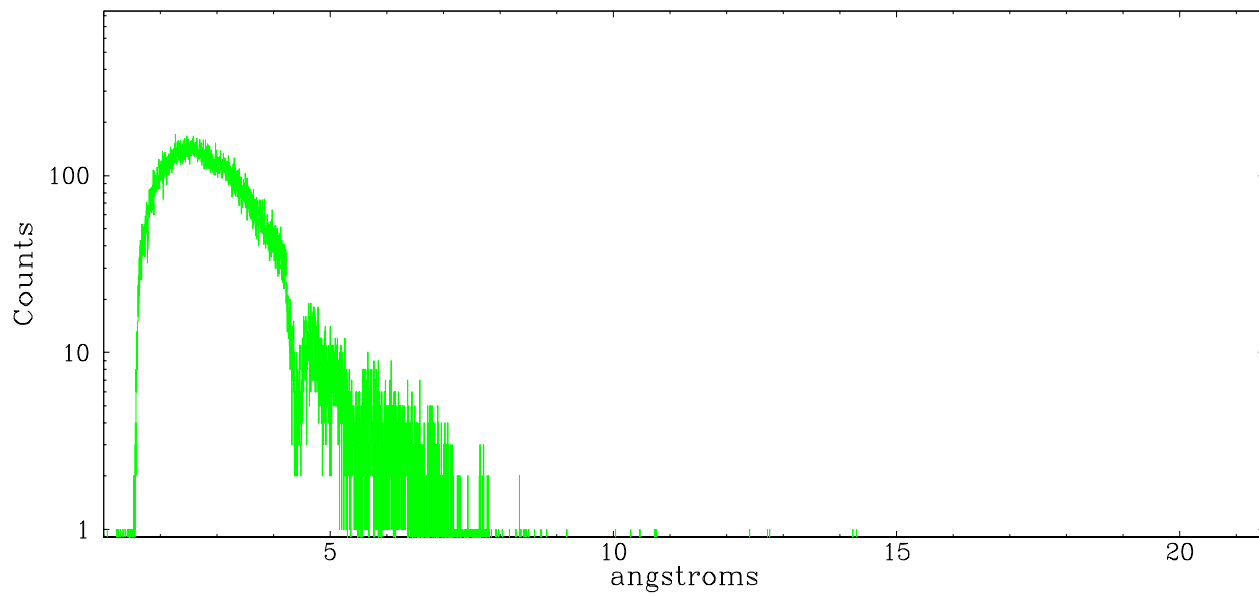
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	4972	8463	115580	86368	112730	7646	5361



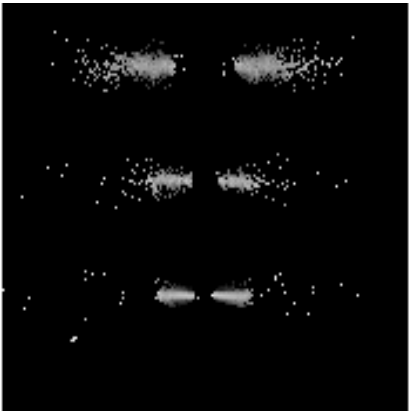
heg order -1



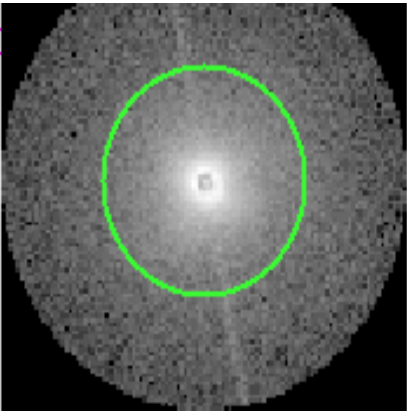
heg order +1



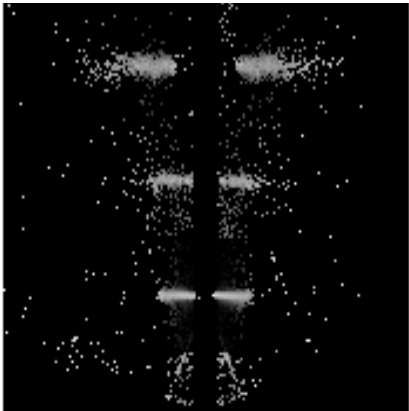
3.2 MEG Arm



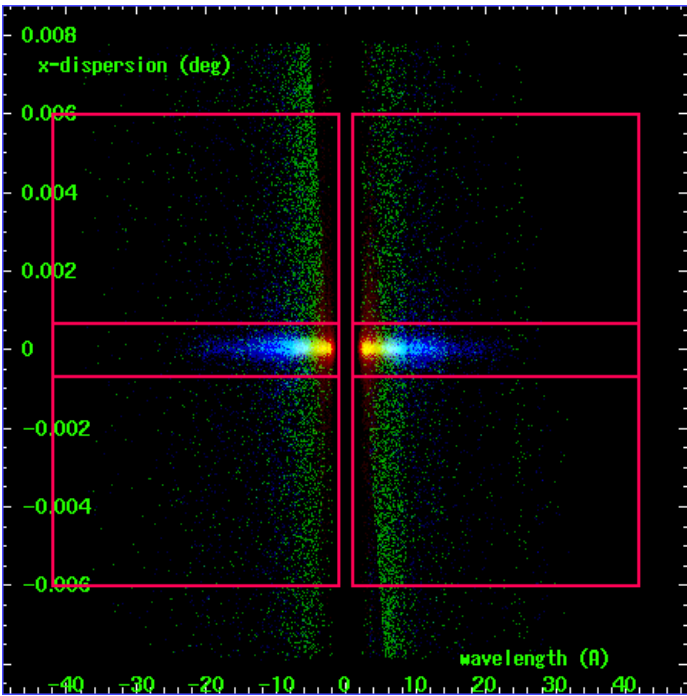
MEG Order Sort 123



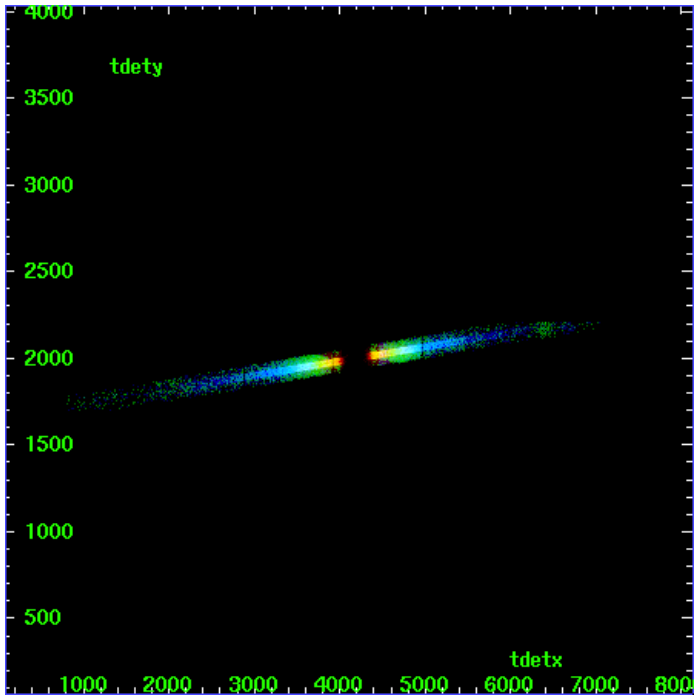
MEG Zero Order



MEG Order Sort ALL

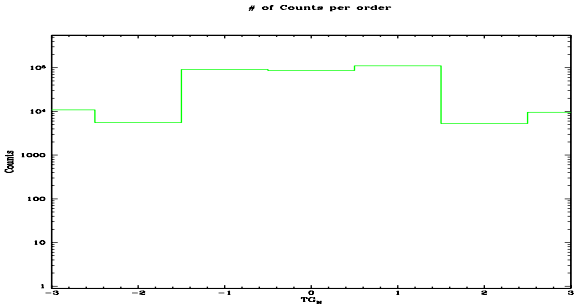


Spot Image MEG

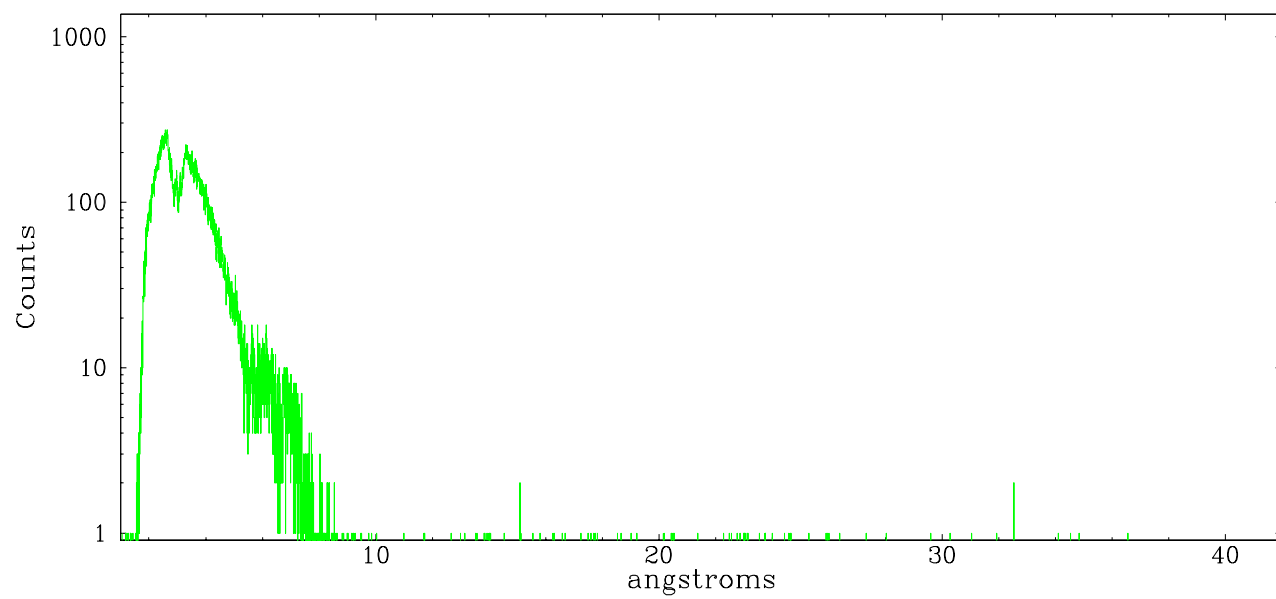


Full Detector MEG

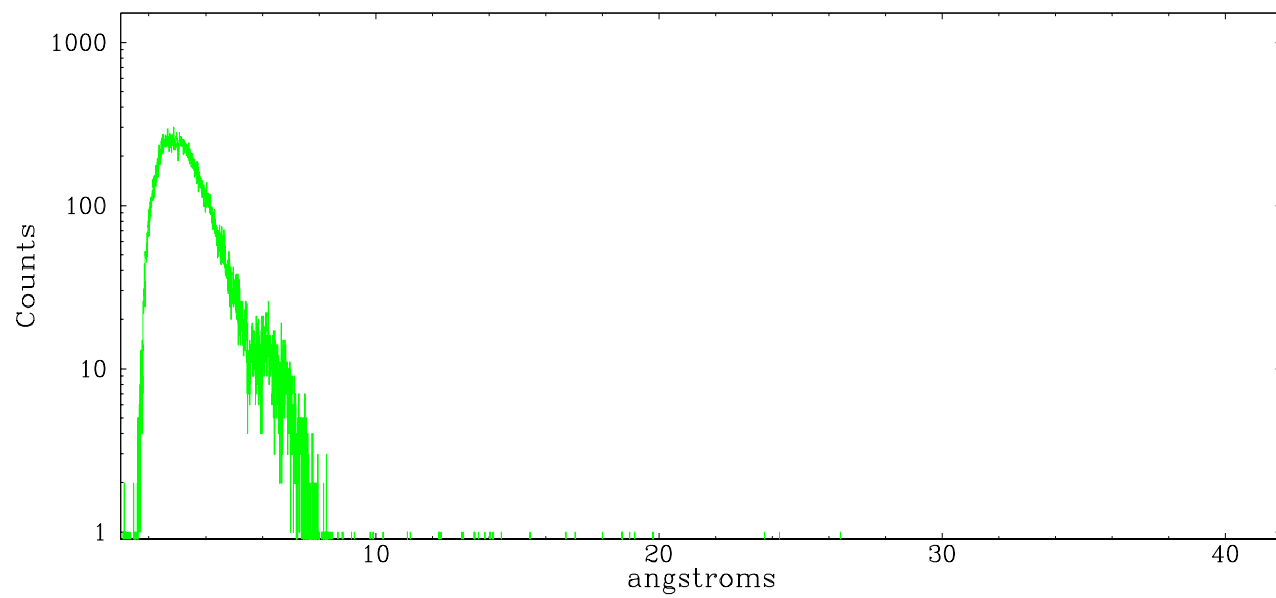
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	10902	5542	90971	86368	110368	5296	9577



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2006.05.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	75.136

## A.2 Comments

Zeroth order coordinates off by about +30 degrees in dec only from the

coordinates requested. However, the zeroth order is at the exact  
coordinates

found in SIMBAD for this object. Due to this apparent error in requestd  
coordinates,

the target is not placed precisely in the center of the chip and the  
dispersed

spectral arms do not have equal energy coverage between the + and -  
arms.

The MEG - arm has more low energy coverage than usual and MEG + arm has  
less low energy coverage than usual. The reverse is true for HEG.

Zeroth order piled up. User should verify that the zeroth order position  
used to specify the spectral extraction regions is correct.