

# V&V Reference Report

## L2 ASCDS Version : 7.6.10

Observation 2330 - L2 Version 001  
Chandra X-Ray Center

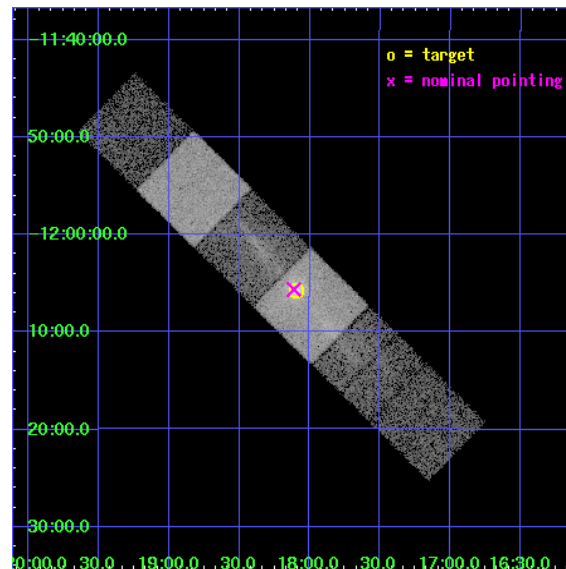
L2 Processing Date : Jun 21 2007

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>3</b>	<b>Gratings</b>	<b>17</b>
3.1	HEG Arm . . . . .	17
3.2	MEG Arm . . . . .	19
<b>A</b>	<b>Summary</b>	<b>21</b>
A.1	Status . . . . .	21
A.2	Comments . . . . .	21

# 1 Front

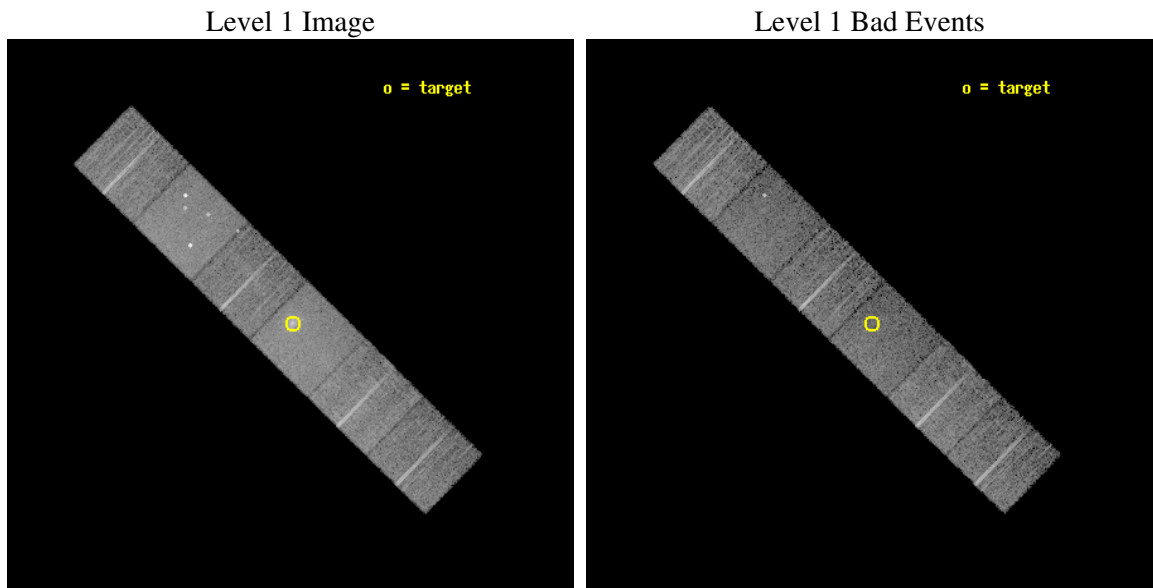
seq_num	800173
obs_id	2330
title	ACIS-S/HETG OBSERVATIONS OF THE CENTRAL REGION OF THE HYDRA A CLUSTER OF GALAXIES
observer	Dr. J. Jernigan
object	HYDRA A
dtcycle	0
cycle	P
ra_targ	139.52375
dec_targ	-12.095833
ra_nom	139.52801394094
dec_nom	-12.094173405973
roll_nom	44.420969634823
revision	3
ontime	9756.8000090867
livetime	9633.253532532
ontime4	9756.8000090867
ontime5	9756.8000090867
ontime6	9756.8000090867
ontime7	9756.8000090867
ontime8	9756.8000090867
ontime9	9756.8000090867
l2events	108100



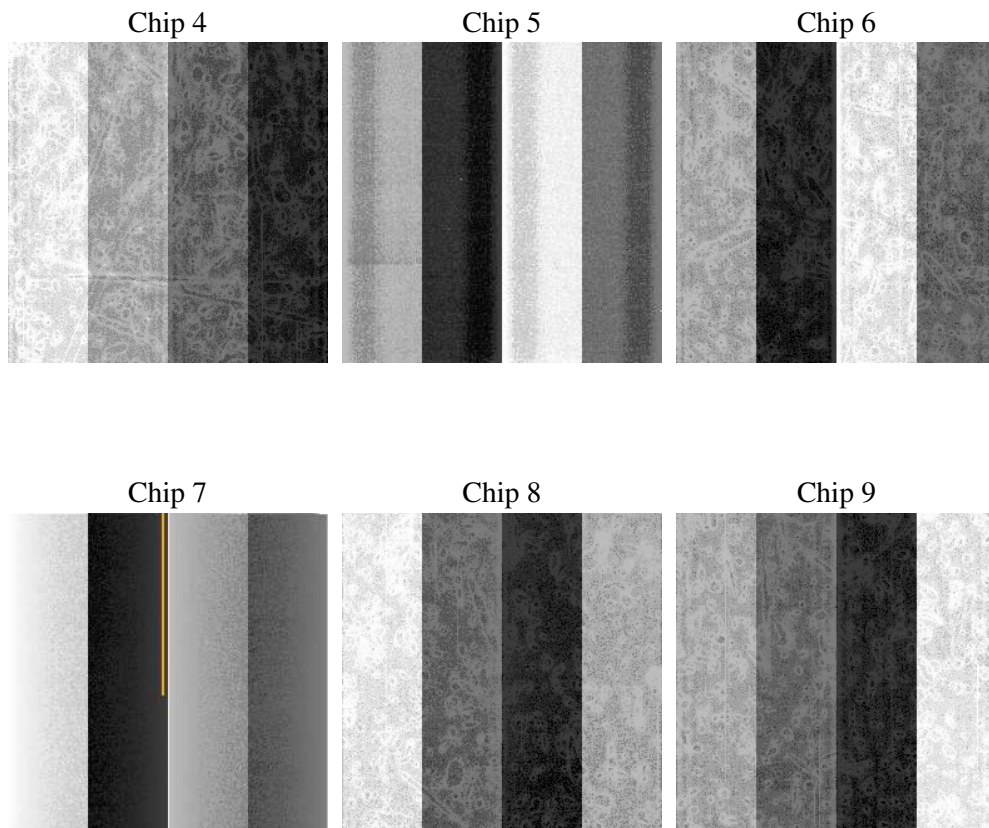
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.10
caldbver	3.4.0
date	2007-06-21T12:14:51
revision	3

sched_exp_time	10000.000000
ontime	9756.8000090867
ontime4	9756.8000090867
ontime5	9756.8000090867
ontime6	9756.8000090867
ontime7	9756.8000090867
ontime8	9756.8000090867
ontime9	9756.8000090867
l1events	436365

### 2.1.4 Events

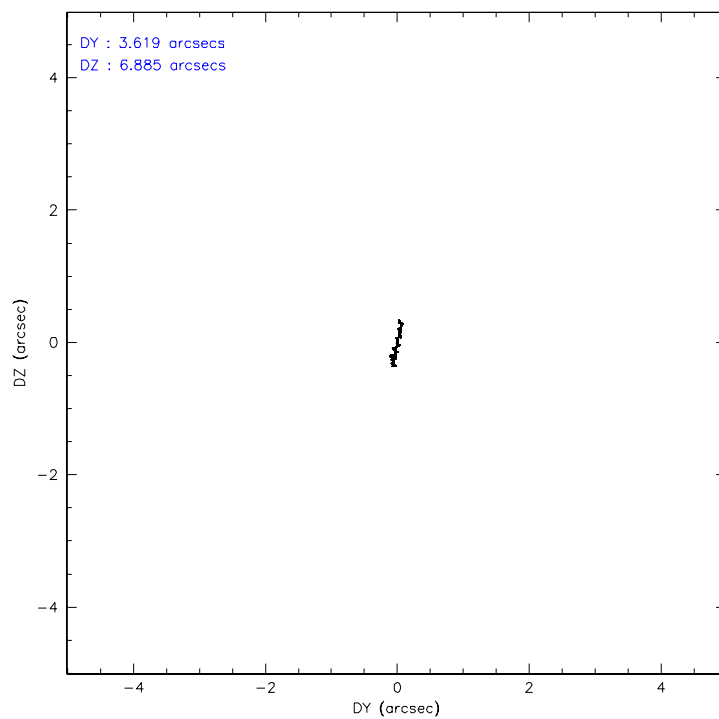
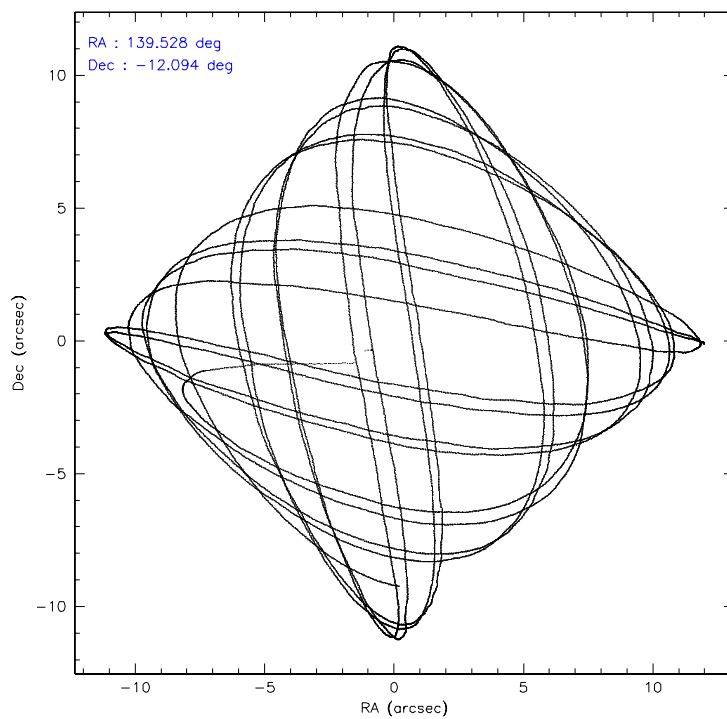
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	67821	85044	61992	85387	77998	58123
rejected events	60719	44465	50269	43154	60919	50898
rejected %	89%	52%	81%	50%	78%	87%

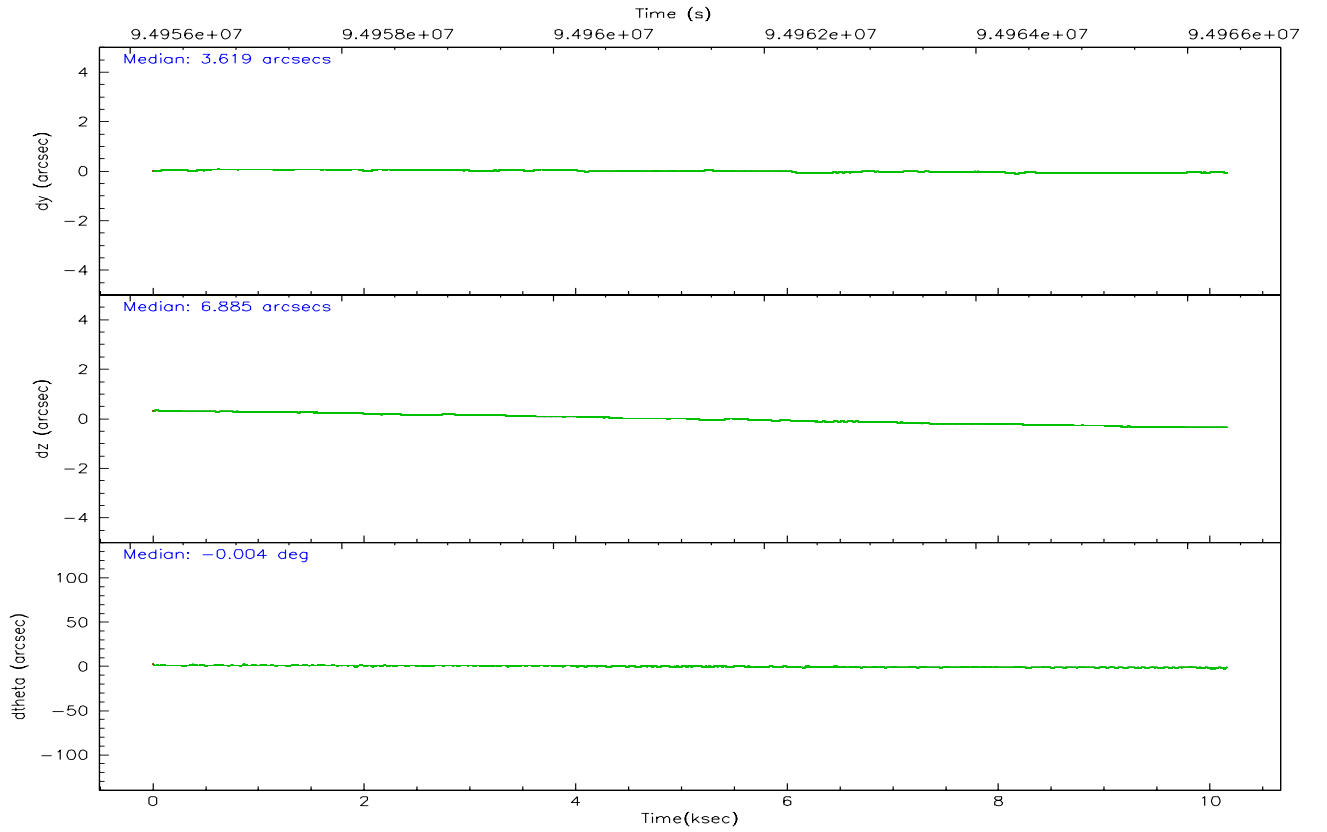
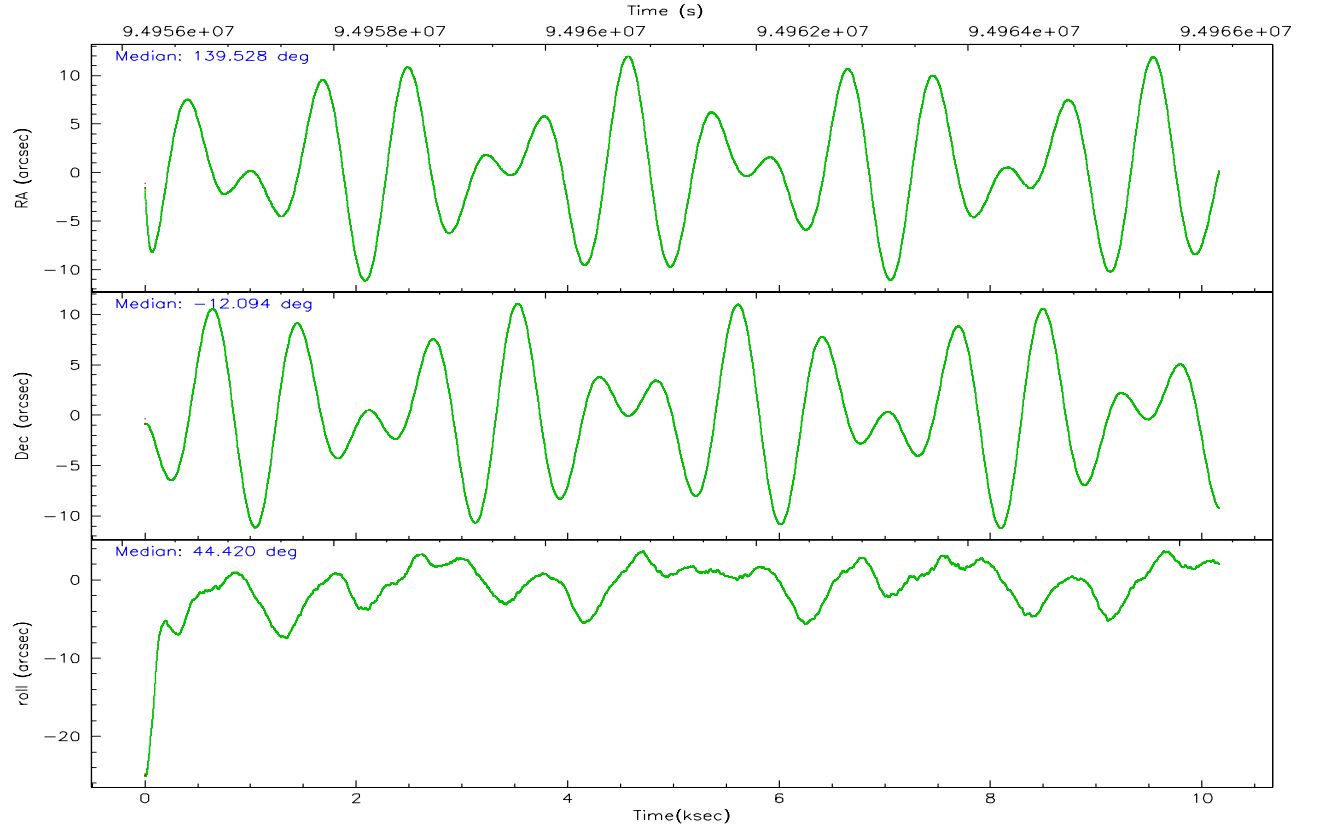
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	3036	6247	6801	5605	6957	3138
	4%	7%	10%	6%	8%	5%
grade 1 events	25	126	51	70	57	33
	0%	0%	0%	0%	0%	0%
grade 2 events	1618	11928	1863	8964	3237	1392
	2%	14%	3%	10%	4%	2%
grade 3 events	625	1721	808	4135	1689	711
	0%	2%	1%	4%	2%	1%
grade 4 events	611	1614	829	4126	1621	636
	0%	1%	1%	4%	2%	1%
grade 5 events	2004	6283	2410	7113	2980	2461
	2%	7%	3%	8%	3%	4%
grade 6 events	1214	19086	1424	19418	3579	1352
	1%	22%	2%	22%	4%	2%
grade 7 events	58688	38039	47806	35956	57878	48400
	86%	44%	77%	42%	74%	83%

## 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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	139.520770	139.5280139409427	Subarray requested	NONE	NONE
Pointing Dec	-12.120550	-12.0941734059732	Alternating exposures requested	N	N
Pointing Roll	44.262829	44.42096963482349	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-190.132523	-190.1400660498719			
SIM translation stage offset (mm)	0	0.00754346686406393			
Observation start time	94956380.184000	94955323.711272			
Observation start date	2001-01-04T00:45:16	2001-01-04T00:28:43			
Observation end time	94966380.184000	94967860.99925201			
Observation end date	2001-01-04T03:31:56	2001-01-04T03:57:40			
Read mode	TIMED	TIMED			

## 2.3 Aspect





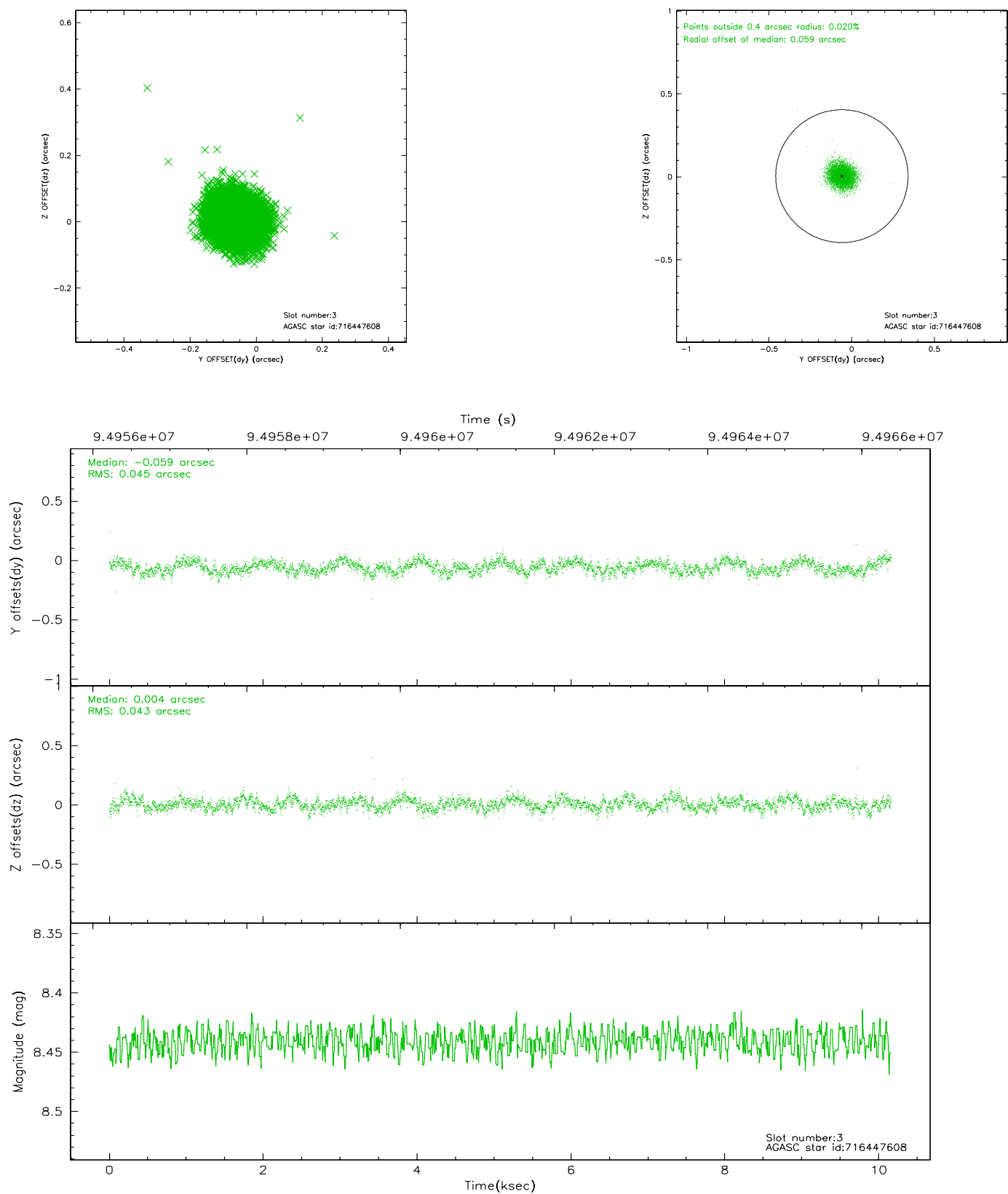
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	2478	0.003	0.031	0.009	0.015	0.000000	0.000000	-756.28	-1728.00
1	FID	ACIS-S-4	7.20	2477	-0.051	-0.009	0.006	0.012	0.000000	0.000000	2156.71	179.89
2	FID	ACIS-S-5	7.23	2477	0.018	-0.013	0.008	0.013	0.000000	0.000000	-1808.43	174.17
3	GUIDE	716447608	8.44	4955	-0.059	0.004	0.067	0.104	139.107687	-11.923612	-548.19	1522.38
4	GUIDE	716578888	9.26	4954	-0.329	-0.073	0.081	0.132	139.858876	-11.605741	2146.29	494.73
5	GUIDE	716452568	9.32	4956	0.019	0.084	0.083	0.132	139.317316	-12.008019	-230.22	790.05
6	GUIDE	716454552	9.00	4954	0.277	-0.110	0.141	0.202	139.524204	-12.319370	-490.82	-521.11
7	GUIDE	716452328	8.85	4955	0.086	0.108	0.078	0.122	138.982178	-12.235590	-1647.69	1024.50

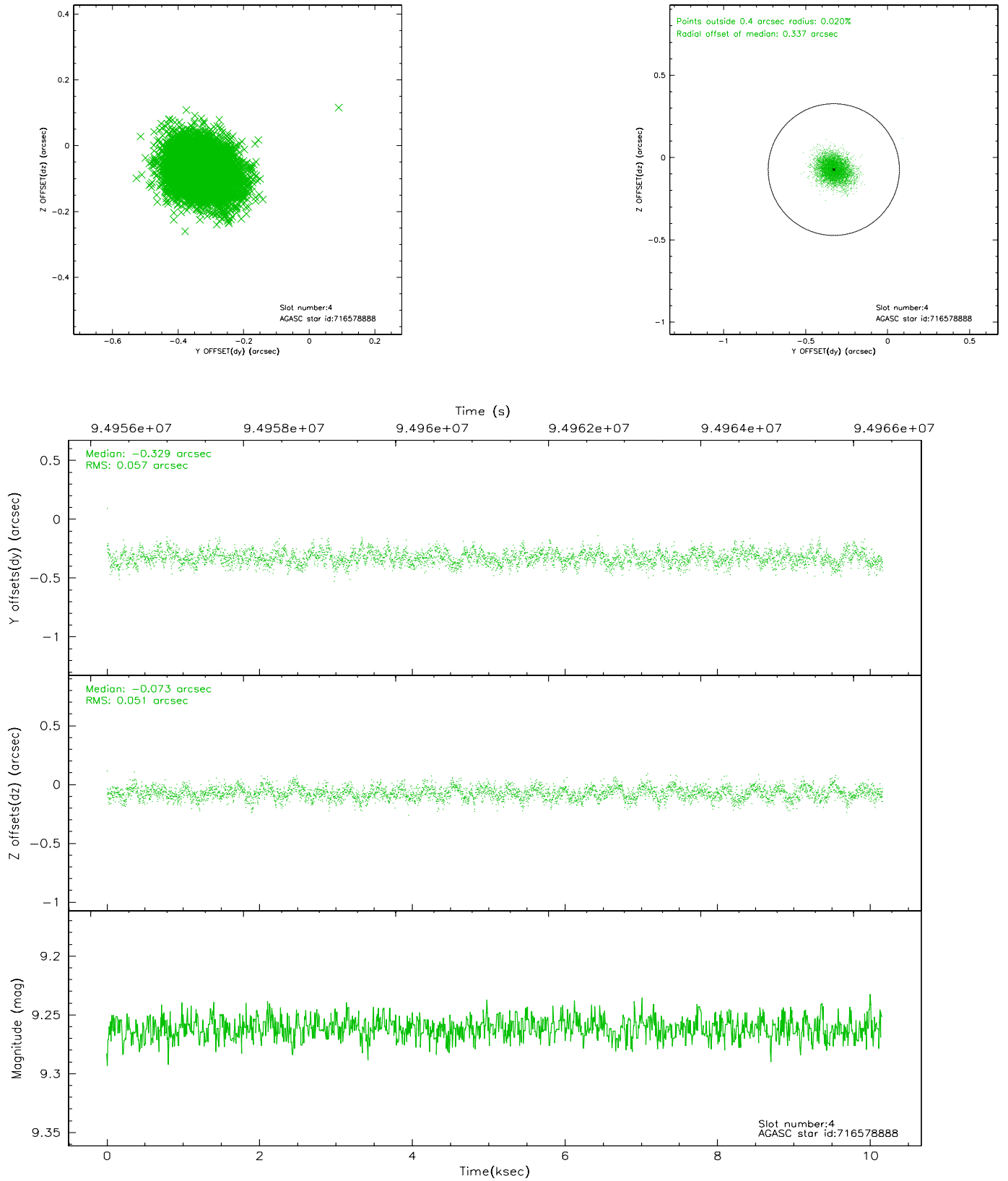


## 2.4 Star Slots

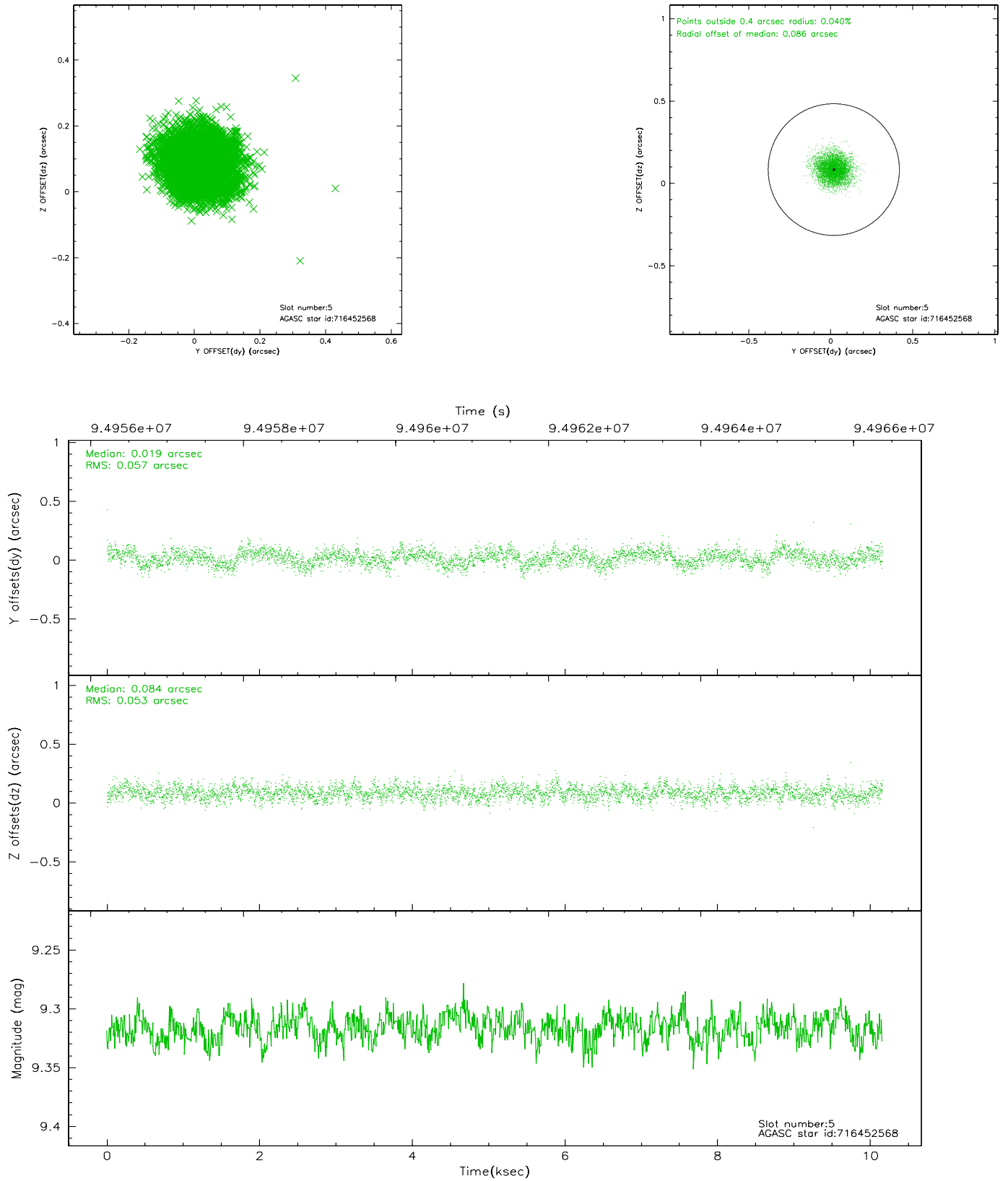
### 2.4.1 Slot 3



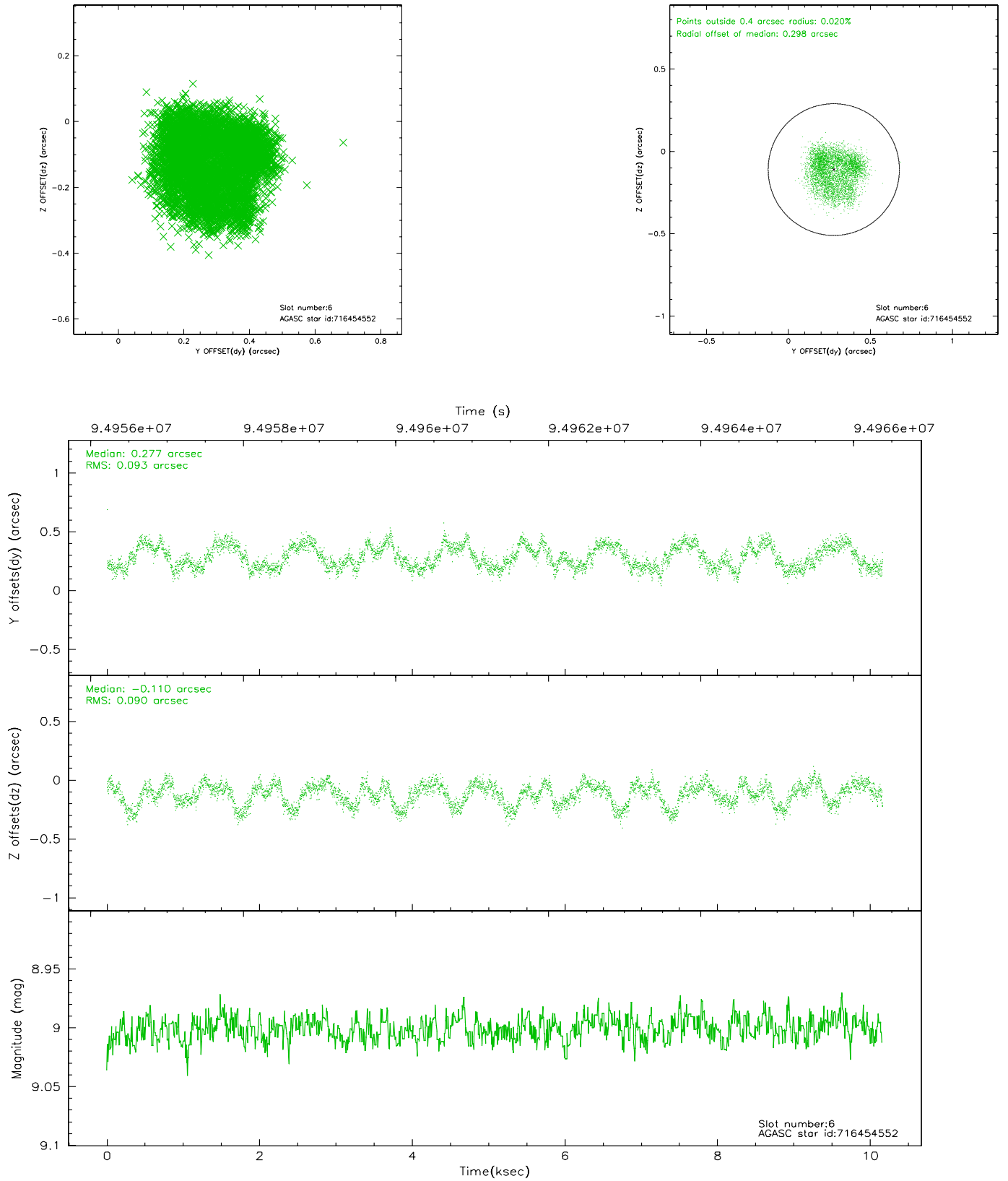
## 2.4.2 Slot 4



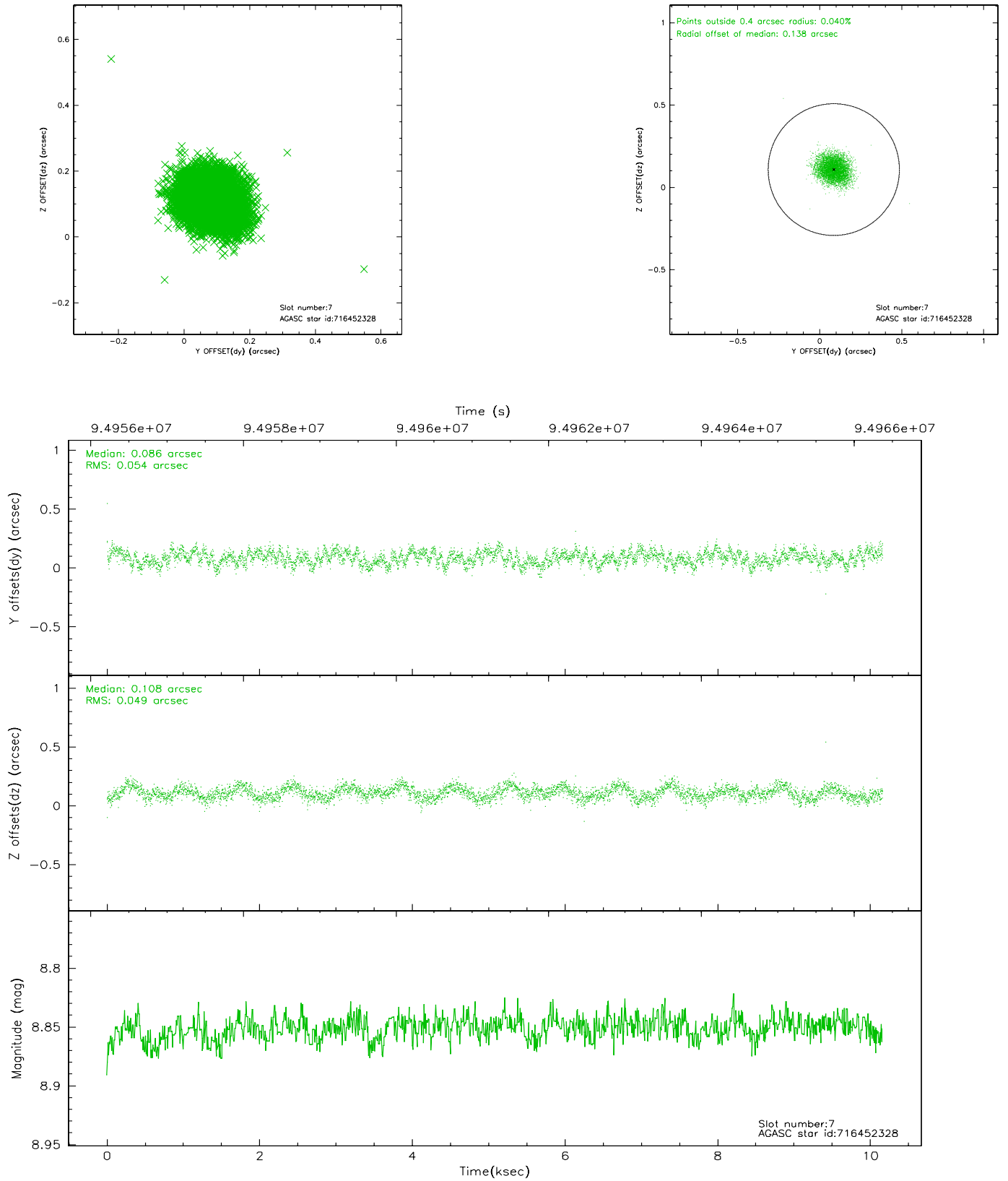
### 2.4.3 Slot 5



## 2.4.4 Slot 6

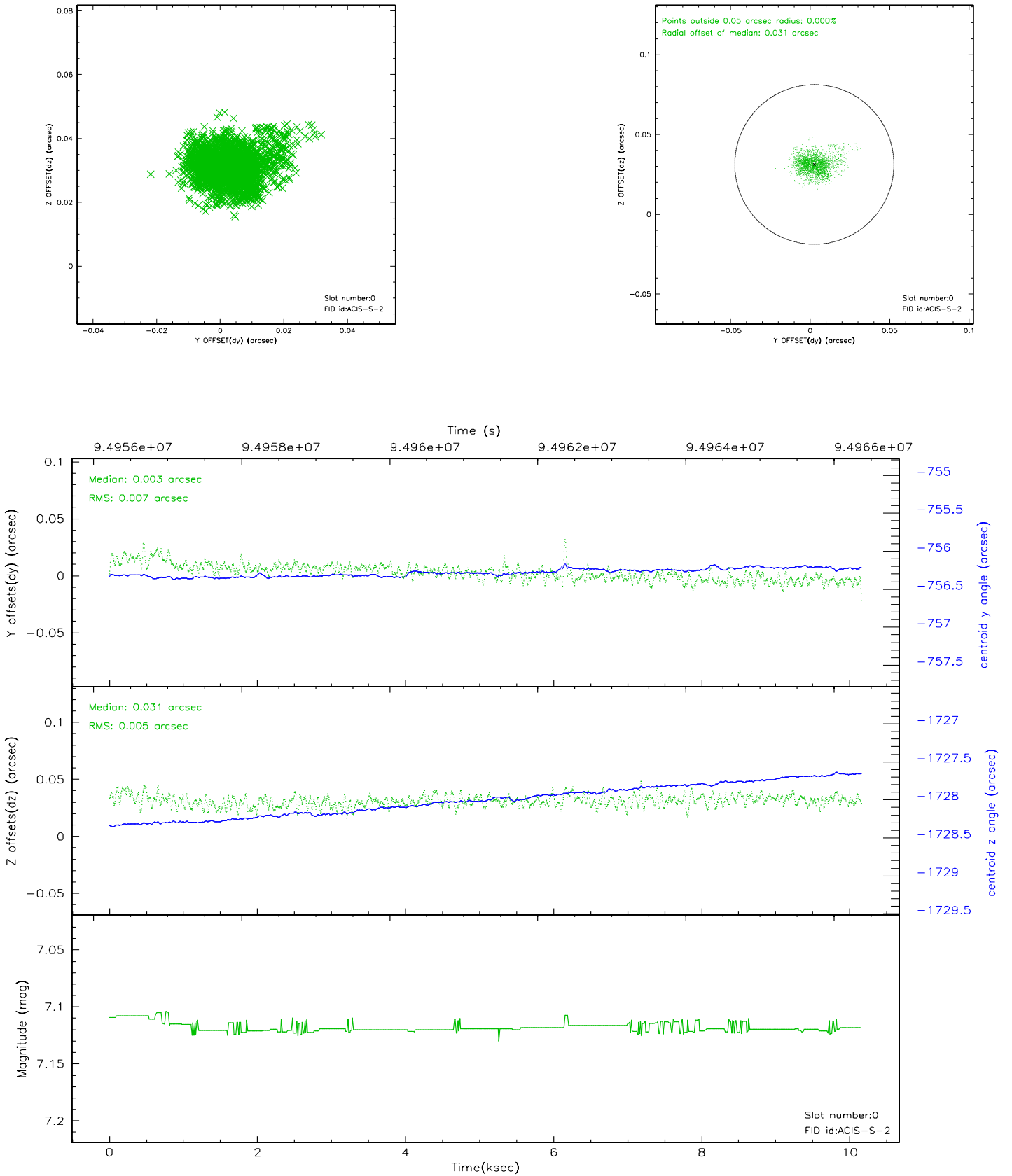


## 2.4.5 Slot 7

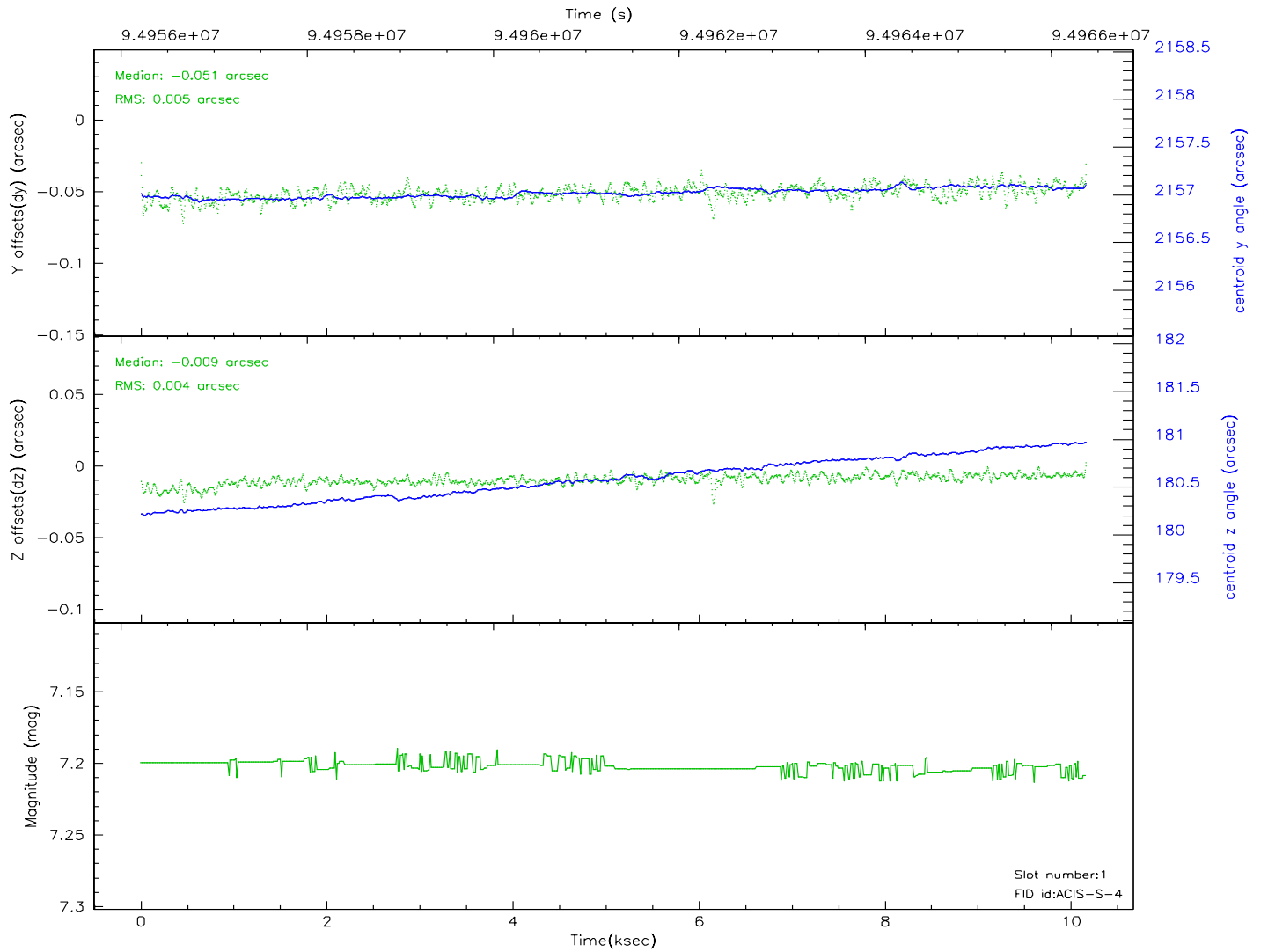
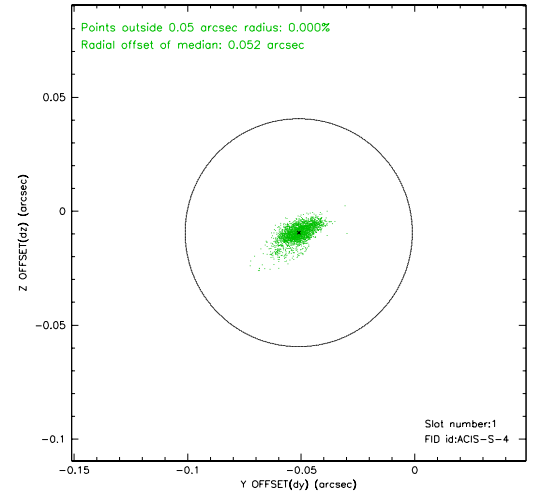
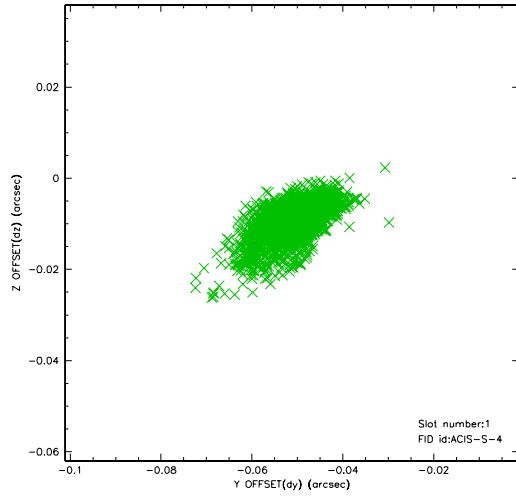


## 2.5 FID Slots

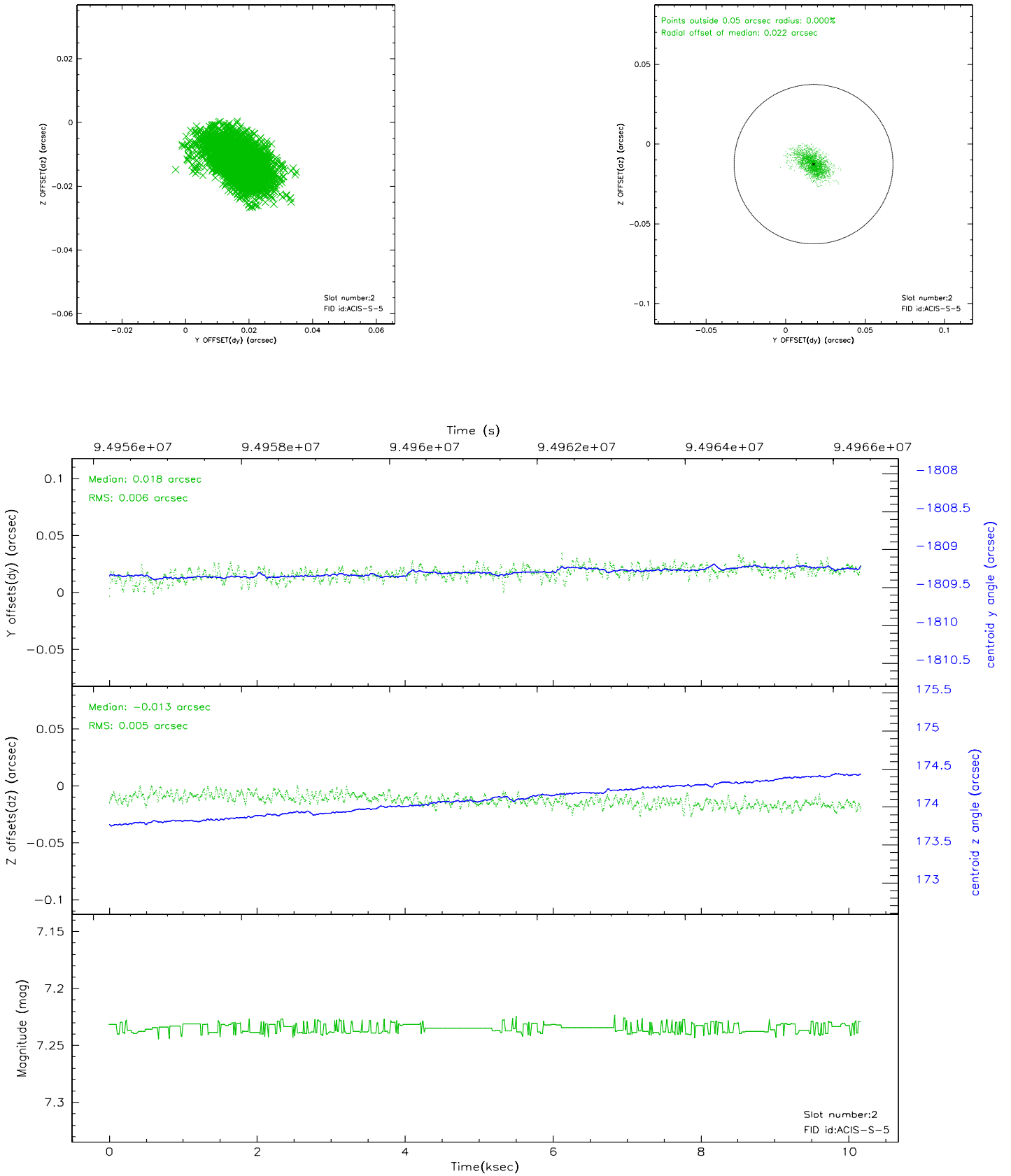
### 2.5.1 Slot 0



## 2.5.2 Slot 1



## 2.5.3 Slot 2



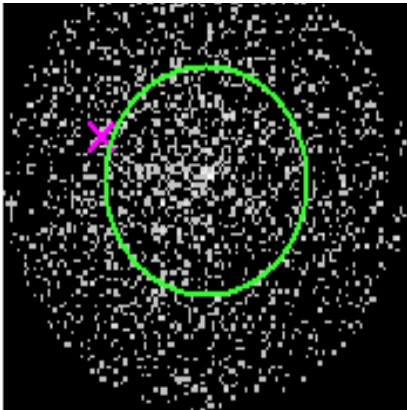


# 3 Gratings

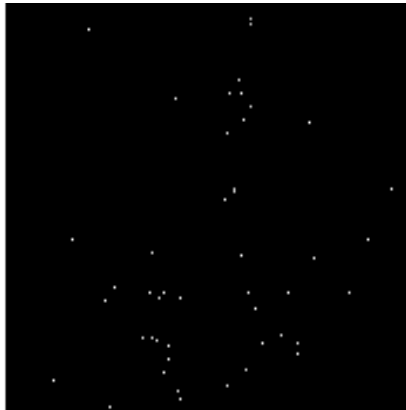
## 3.1 HEG Arm



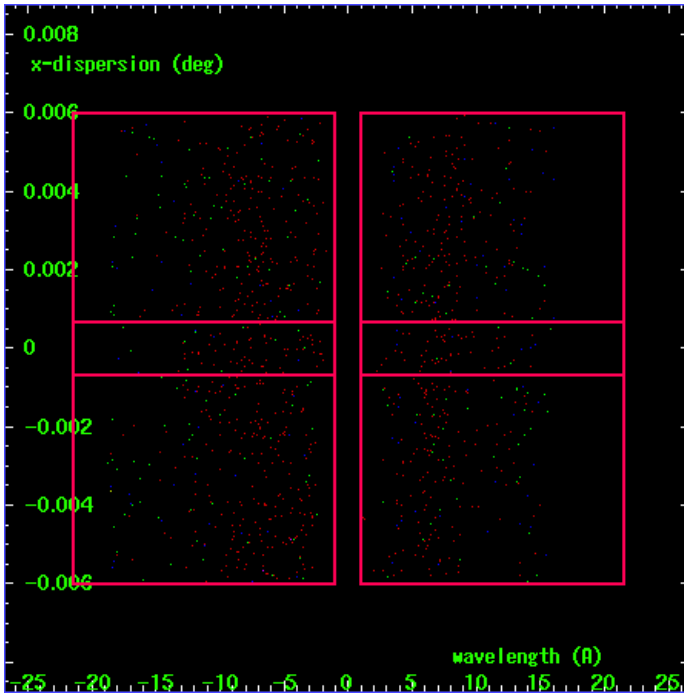
HEG Order Sort 123



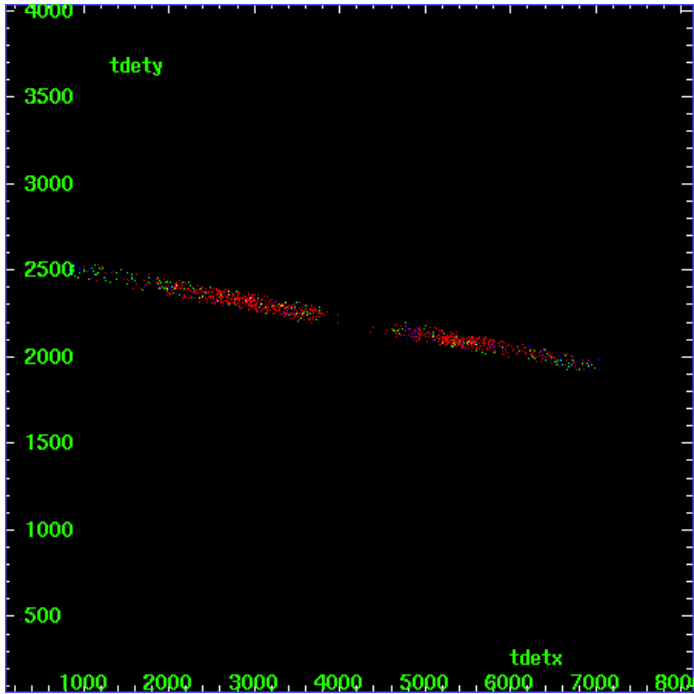
HEG Zero Order



HEG Order Sort ALL

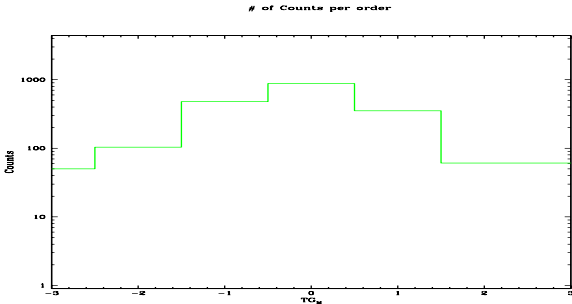


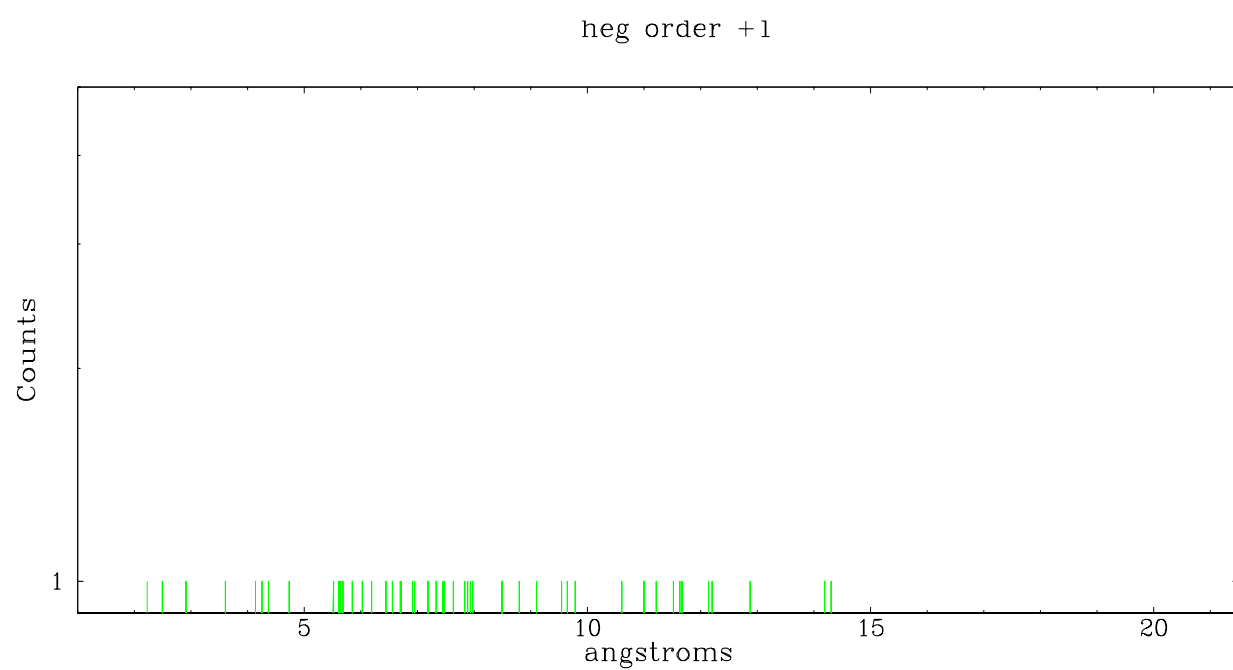
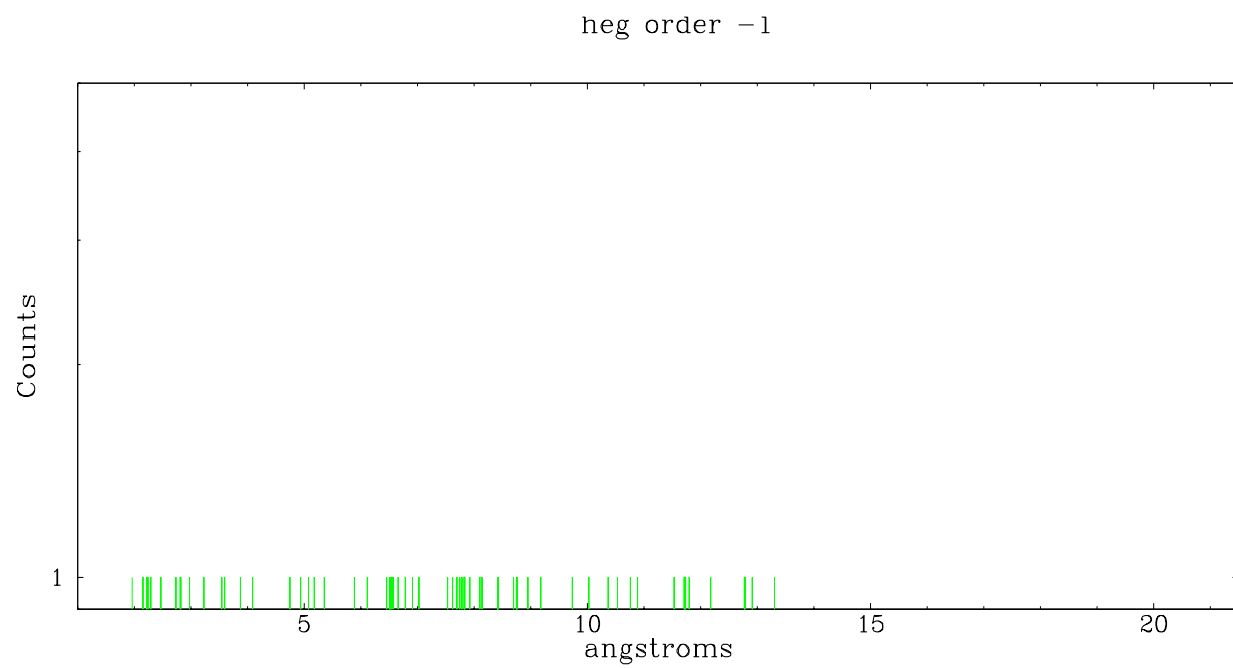
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	50	104	478	877	353	61	61

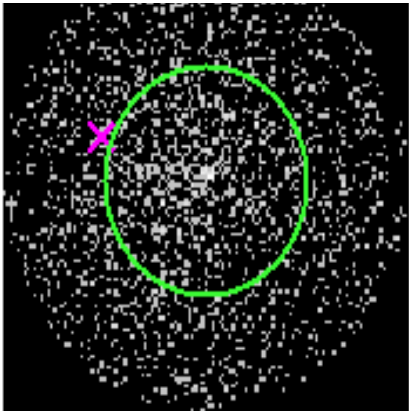




3.2 MEG Arm



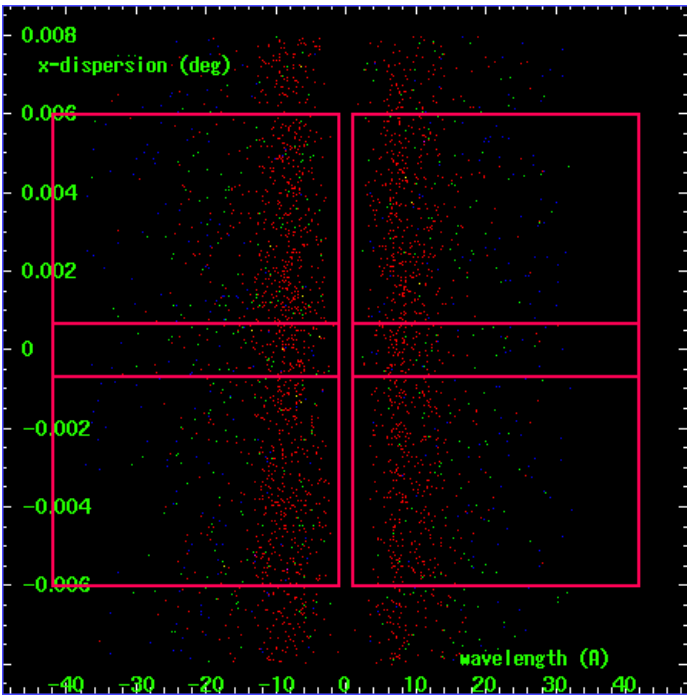
MEG Order Sort 123



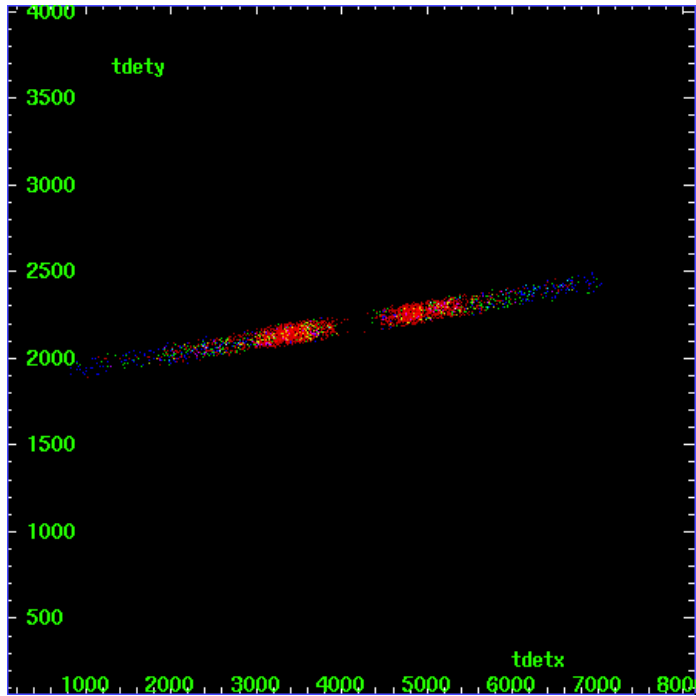
MEG Zero Order



MEG Order Sort ALL

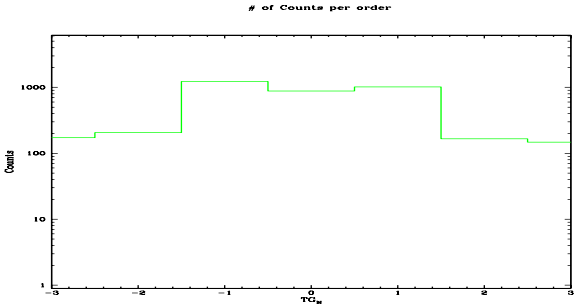


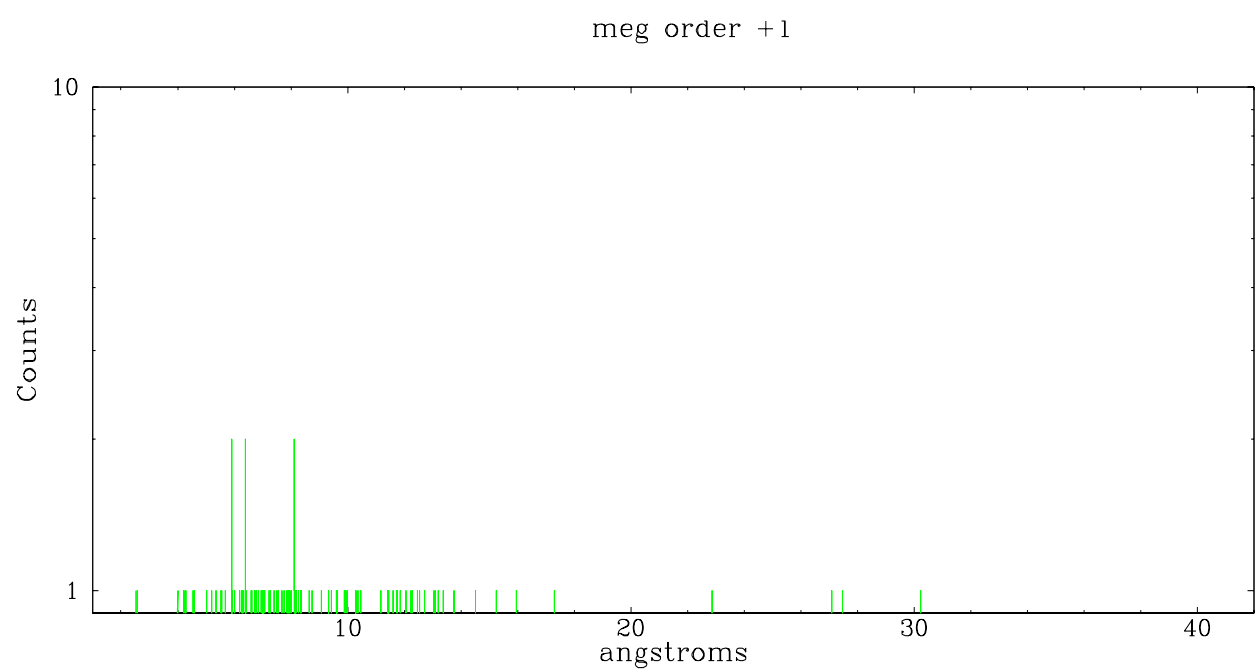
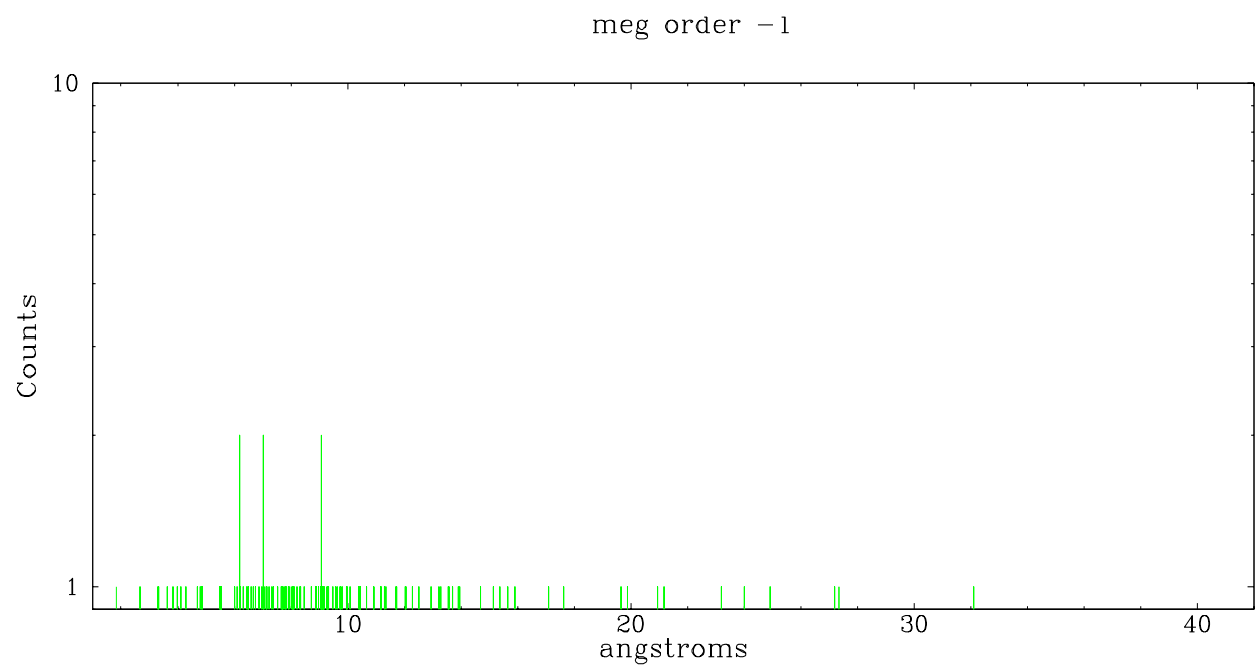
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	172	205	1230	877	1018	166	148





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.06.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.756

## A.2 Comments

Standard software processing technique using the tool tgdetect failed to determine an accurate position for the zeroth order for this observation. The source is extended and assymmetric. The processing software defaulted to the coordinates supplied by the user as the position of the zeroth order for the grating spectral extraction. For grating analysis of localized X-ray emission withing the extended emission, the investigator will need to extract one or more dispersed spectra using user-defined zeroth order positions for all positions of interest. Coordinates used as zeroth order position for extracting dispersed spectra in this processing: ra=09:18:05.699, dec=-12:05:45.00.