

# V&V Reference Report

## L2 ASCDS Version : 7.6.10

Observation 2121 - L2 Version <sub>e</sub>1  
Chandra X-Ray Center

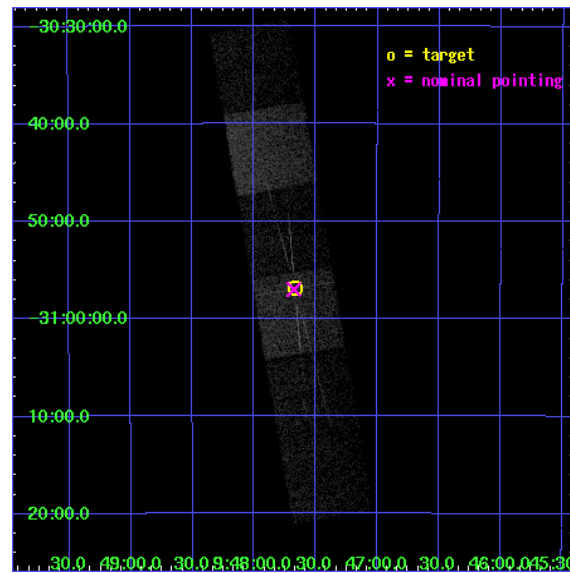
L2 Processing Date : Jun 16 2007

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI Primary</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>OBI Secondary</b>	<b>17</b>
3.1	OBI . . . . .	17
3.1.1	Images . . . . .	17
3.1.2	Bias . . . . .	17
3.1.3	Parameters . . . . .	18
3.1.4	Events . . . . .	18
<b>4</b>	<b>Gratings</b>	<b>19</b>
4.1	HEG Arm . . . . .	19
4.2	MEG Arm . . . . .	21
<b>A</b>	<b>Summary</b>	<b>23</b>
A.1	Status . . . . .	23
A.2	Comments . . . . .	23

# 1 Front

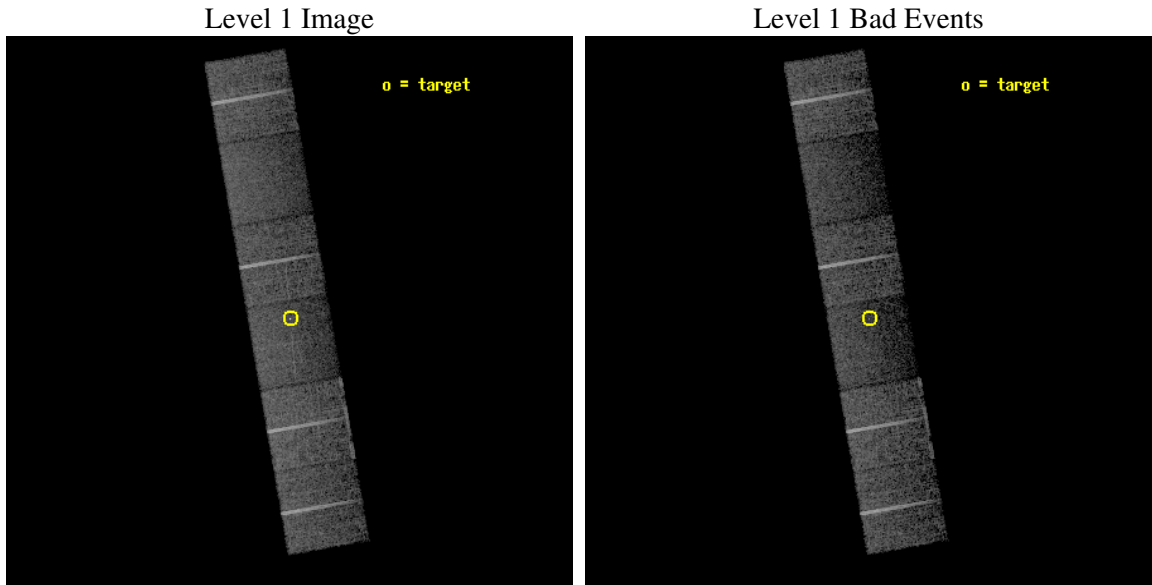
seq_num	700311
obs_id	2121
title	FIGHTING THE AGN UNIFICATION BATTLE WITH CHANDRA
observer	DR. KIMBERLY WEAVER
object	MCG-5-23-16
dtcycle	0
cycle	P
ra_targ	146.9175
dec_targ	-30.948417
ra_nom	146.91925741284
dec_nom	-30.949996290081
roll_nom	80.157533311954
revision	3
ontime	16240.028946325
livetime	1387.4990556074
ontime4	16240.039952099
ontime5	16239.987906322
ontime6	16239.949568942
ontime7	16240.028946325
ontime8	16239.949568942
ontime9	16239.949568942
l2events	36443



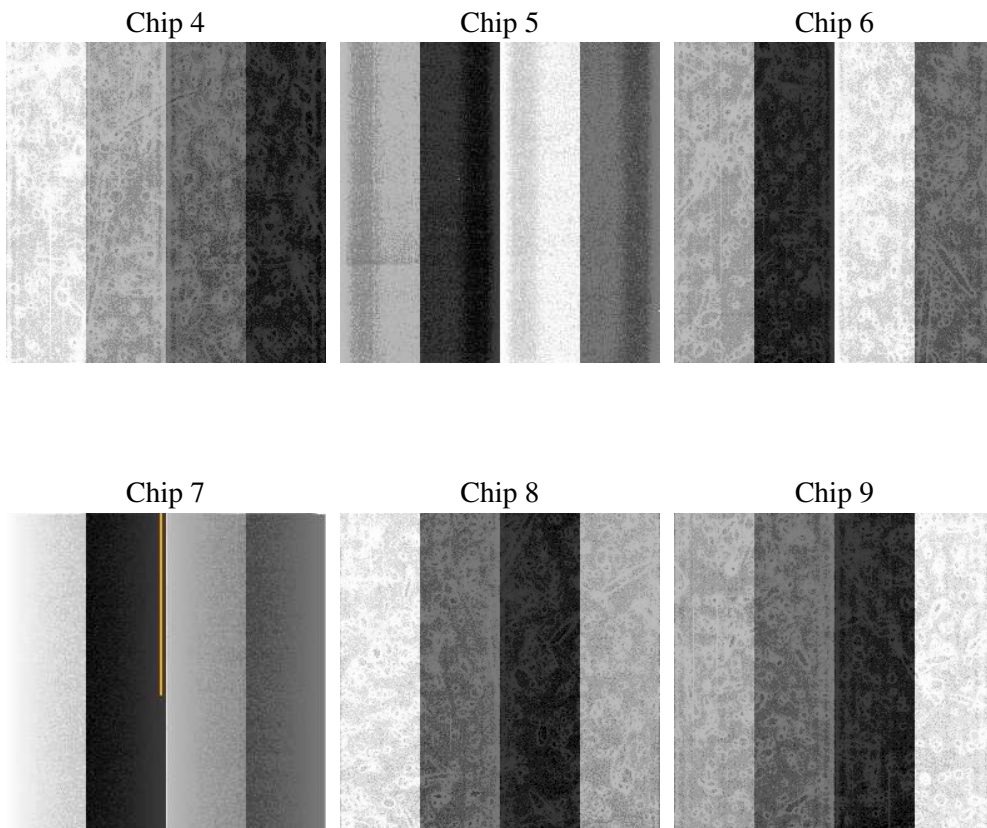
## 2 OBI Primary

### 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	2007-06-16T14:30:30
revision	3

sched_exp_time	76300.000000
ontime	16240.028946325
ontime4	16240.039952099
ontime5	16239.987906322
ontime6	16239.949568942
ontime7	16240.028946325
ontime8	16239.949568942
ontime9	16239.949568942
l1events	302486

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	55060	41504	51643	42803	62426	49050
rejected events	51476	28329	47435	30571	54897	45632
rejected %	93%	68%	91%	71%	87%	93%

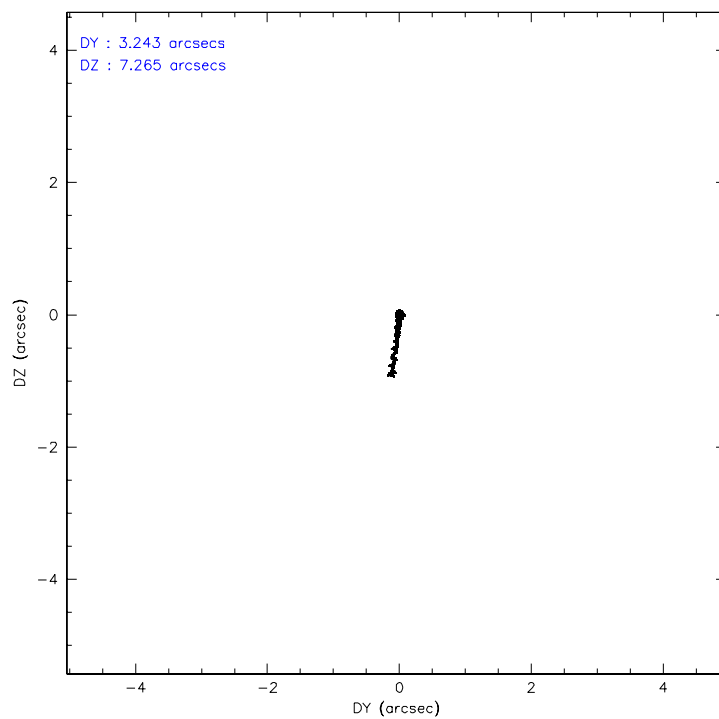
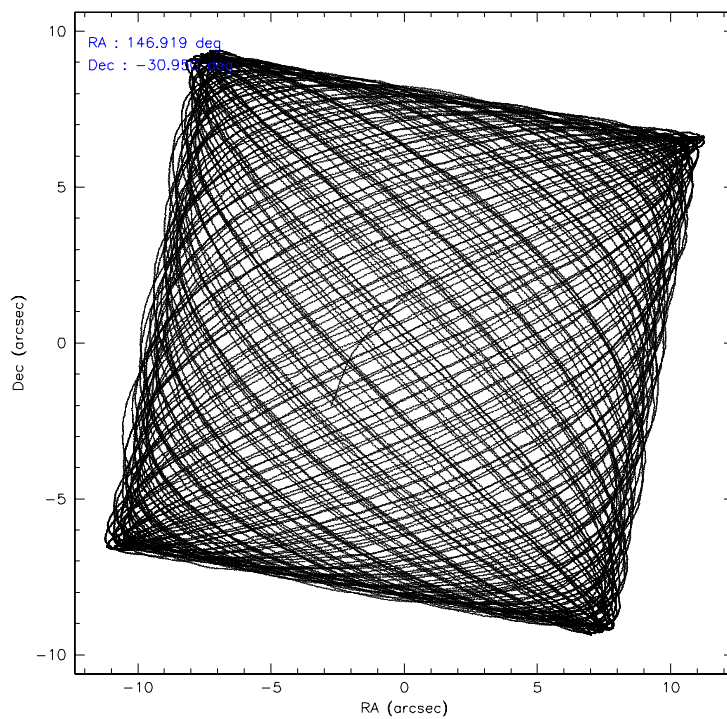
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1026	891	1469	1473	1885	913
	1%	2%	2%	3%	3%	1%
grade 1 events	16	51	21	46	20	8
	0%	0%	0%	0%	0%	0%
grade 2 events	882	3332	917	2680	1617	763
	1%	8%	1%	6%	2%	1%
grade 3 events	492	713	515	1218	940	526
	0%	1%	0%	2%	1%	1%
grade 4 events	486	642	514	1177	928	489
	0%	1%	0%	2%	1%	0%
grade 5 events	1274	3119	1304	3013	1739	1328
	2%	7%	2%	7%	2%	2%
grade 6 events	700	7602	795	5685	2161	728
	1%	18%	1%	13%	3%	1%
grade 7 events	50184	25154	46108	27511	53136	44295
	91%	60%	89%	64%	85%	90%

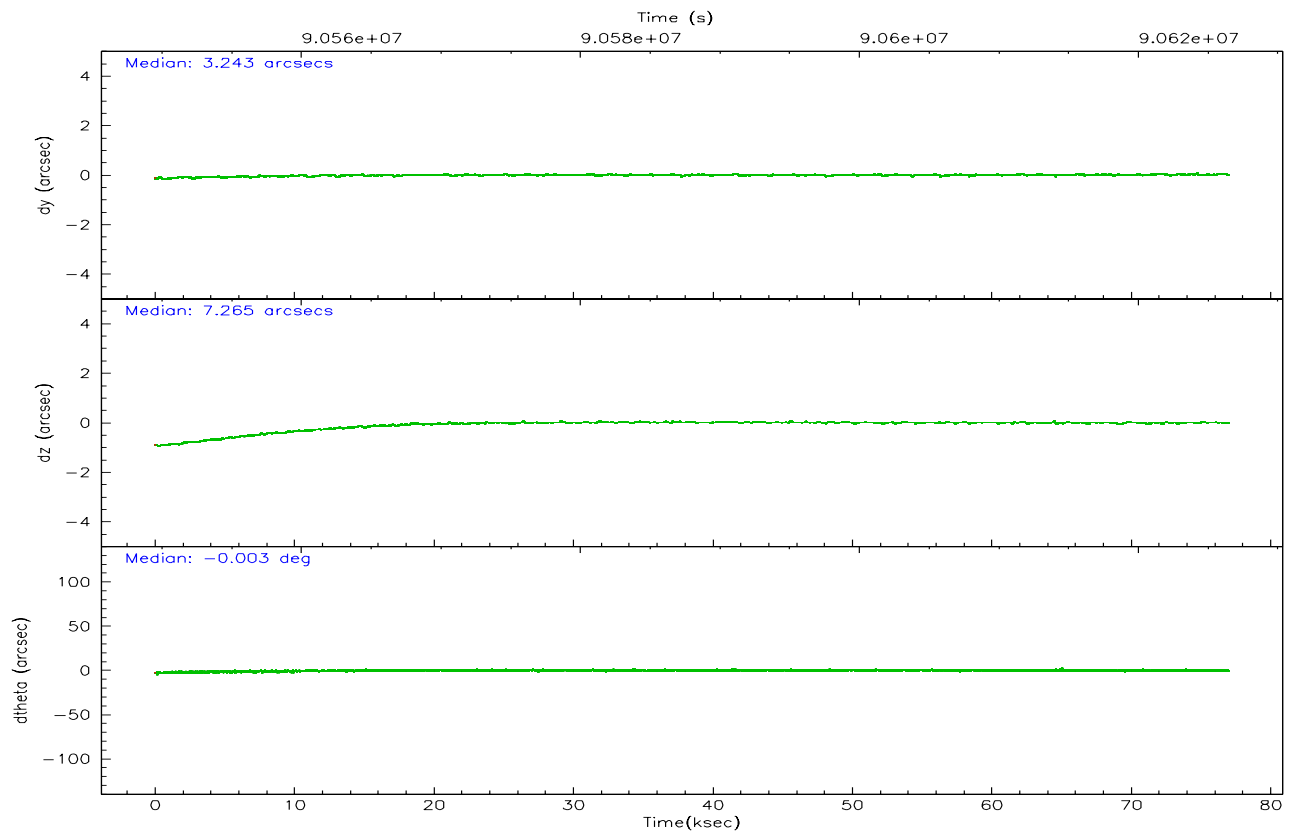
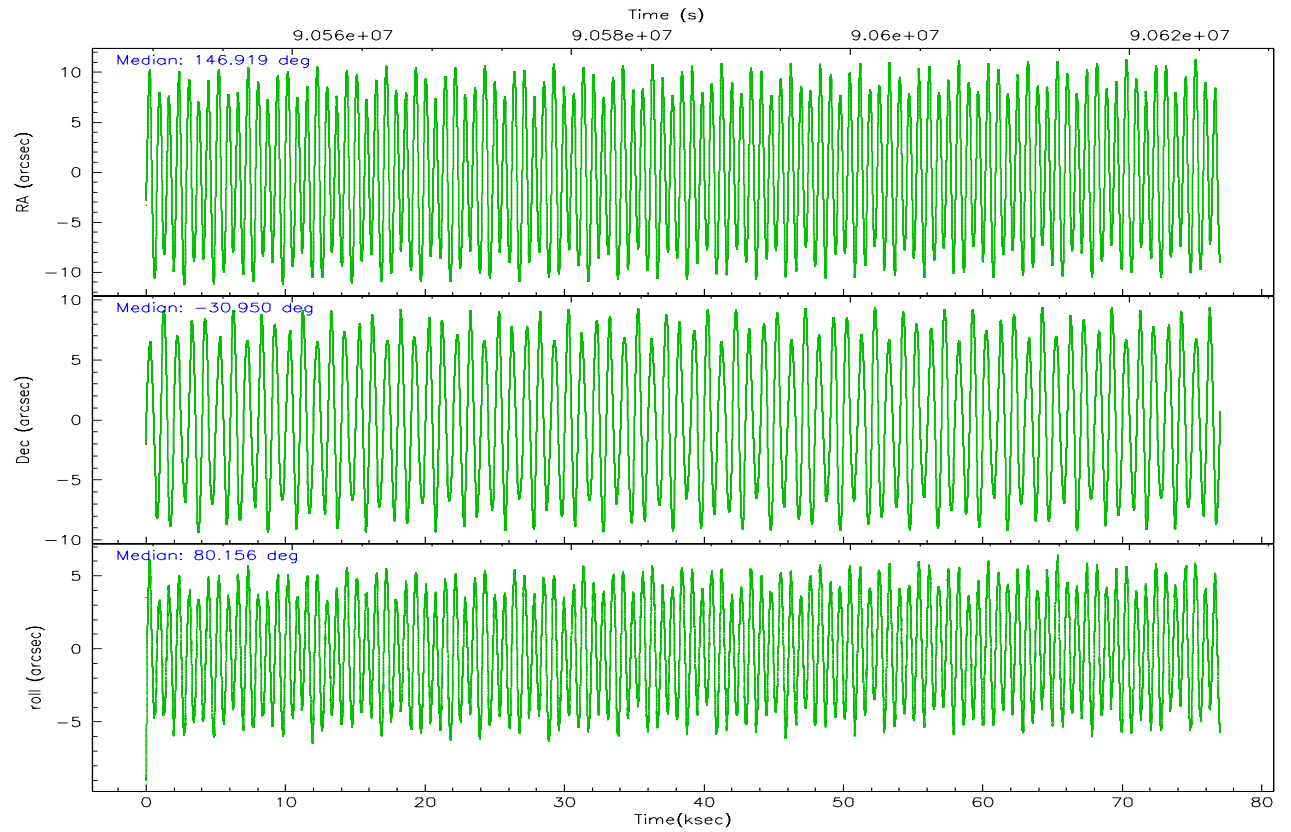


## 2.2 Compared Parameters

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	146.930463	146.9192574128437	Subarray requested	NONE	NONE
Pointing Dec	-30.975594	-30.94999629008123	Alternating exposures requested	Y	Y
Pointing Roll	80.006671	80.15753331195421	Primary exposure time	0.300000	0.3
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Secondary exposure time	0.000000	3.2
SIM defocus (mm)	0	0.001444936568705701	Duty cycle	4	4
SIM translation stage pos (mm)	-190.132523	-190.1400660498719			
SIM translation stage offset (mm)	0	0.00754346686406393			
Observation start time	90550213.184000	90548984.86783101			
Observation start date	2000-11-14T00:49:09	2000-11-14T00:29:44			
Observation end time	90626513.184000	90626933.558304			
Observation end date	2000-11-14T22:00:49	2000-11-14T22:08:53			
Read mode	TIMED	TIMED			

## 2.3 Aspect



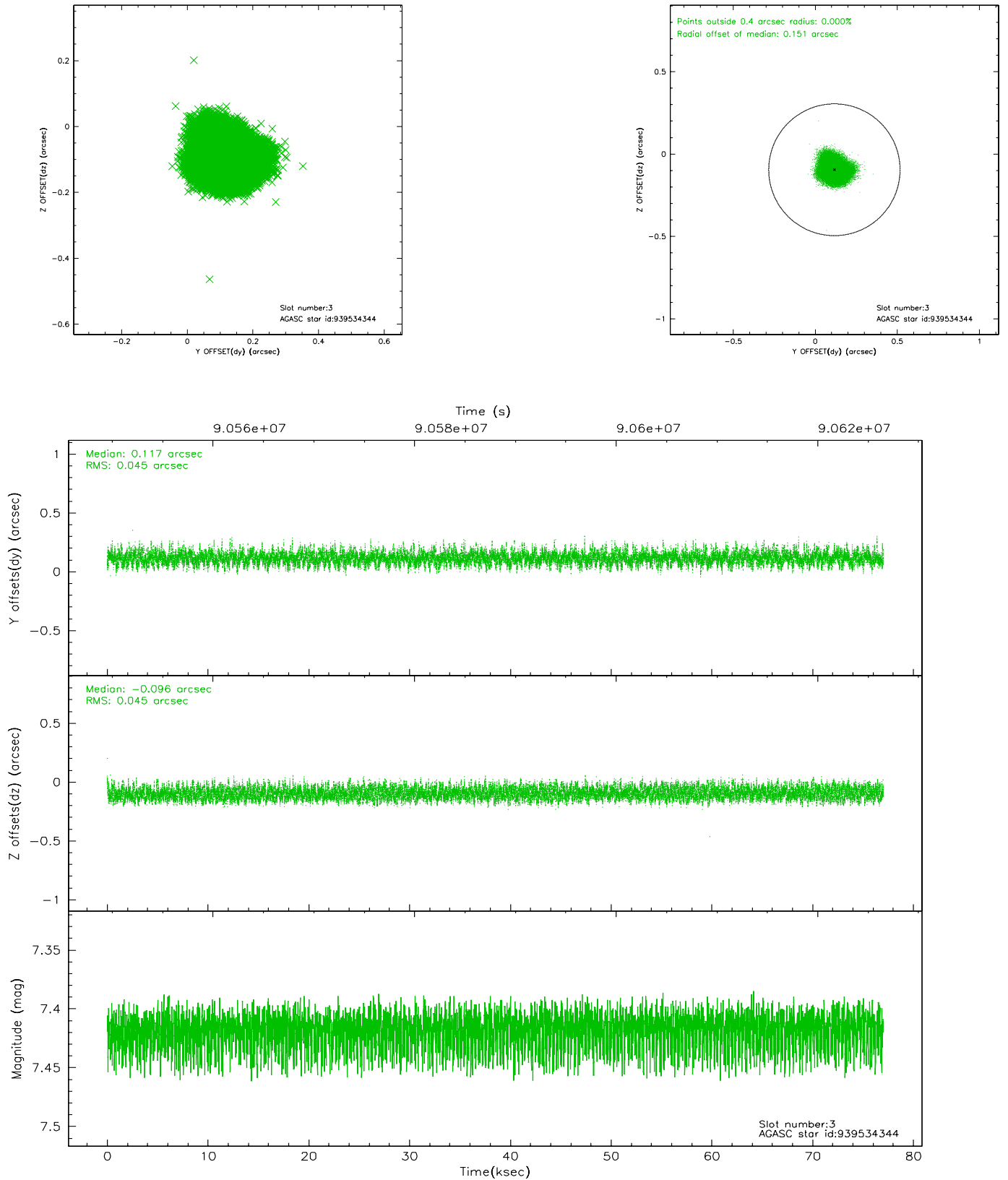


### Slot Statistics

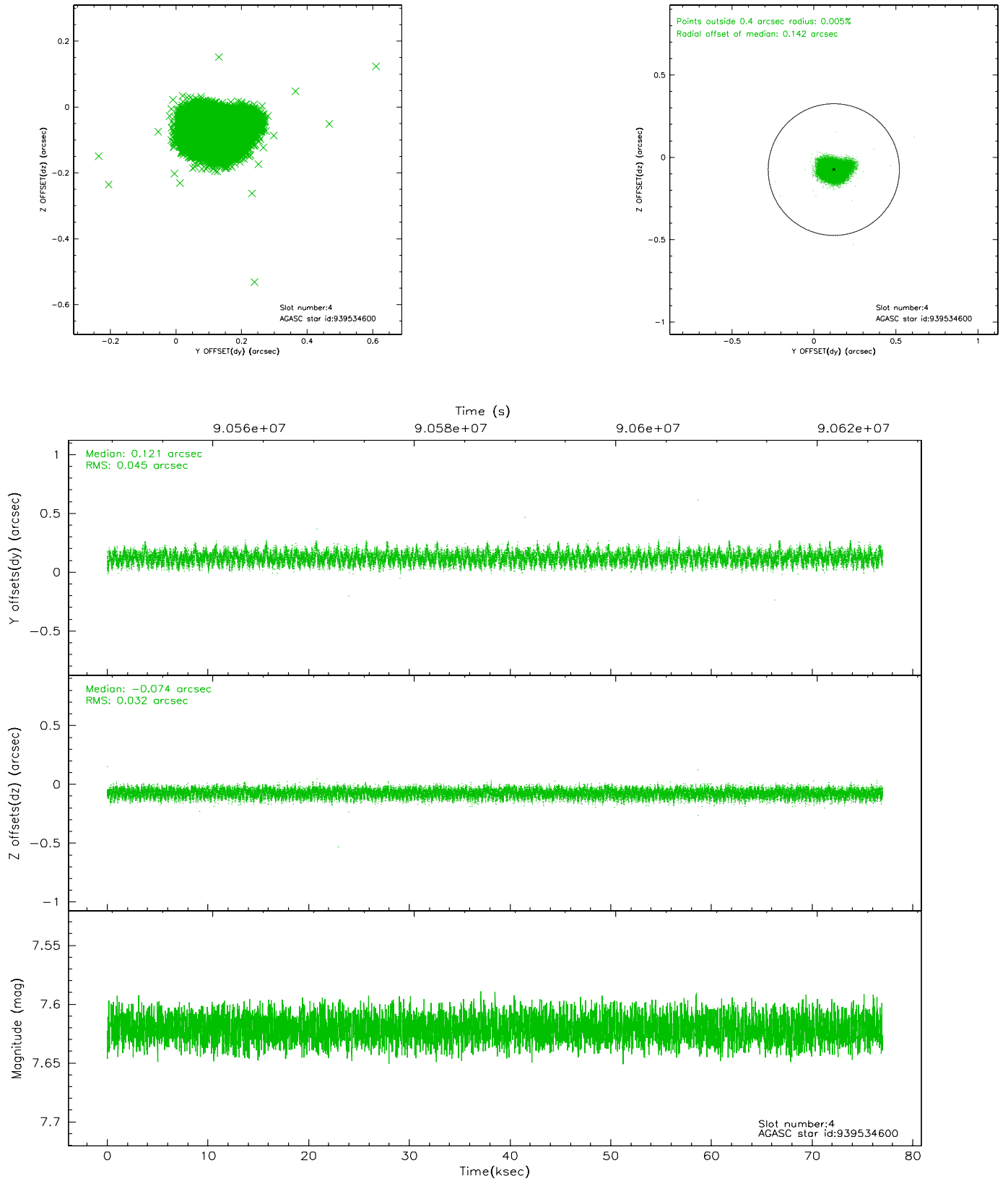
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	18784	0.037	0.029	0.007	0.016	0.000000	0.000000	-755.87	-1728.30
1	FID	ACIS-S-4	7.20	18783	-0.058	-0.025	0.007	0.016	0.000000	0.000000	2157.37	180.17
2	BAD	ACIS-S-5	7.24	17915	0.054	-0.016	0.014	0.029	0.000000	0.000000	-1808.75	173.82
3	GUIDE	939534344	7.42	37566	0.117	-0.096	0.069	0.107	146.766481	-31.268117	-1125.03	314.03
4	GUIDE	939534600	7.62	37568	0.121	-0.074	0.059	0.095	146.627860	-31.274479	-1222.50	729.99
5	GUIDE	939526424	7.65	37567	-0.307	0.084	0.058	0.093	147.134985	-30.320640	2431.37	-216.64
6	GUIDE	939536144	7.94	37569	0.012	0.208	0.073	0.111	147.554054	-31.366124	-1057.27	-2132.51
7	GUIDE	939531496	7.89	37564	0.054	-0.123	0.049	0.079	146.759515	-30.973615	-85.06	520.69

## 2.4 Star Slots

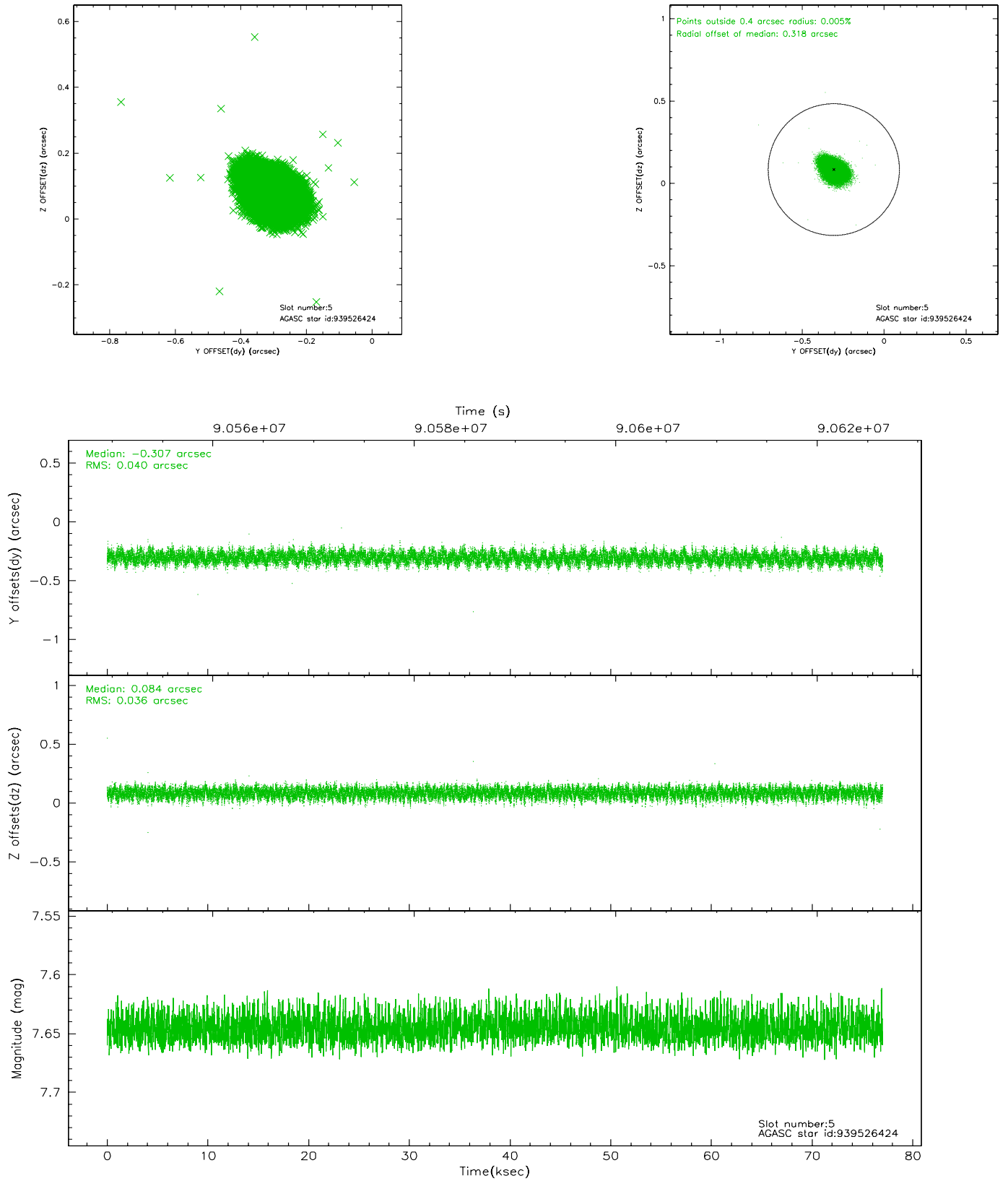
### 2.4.1 Slot 3



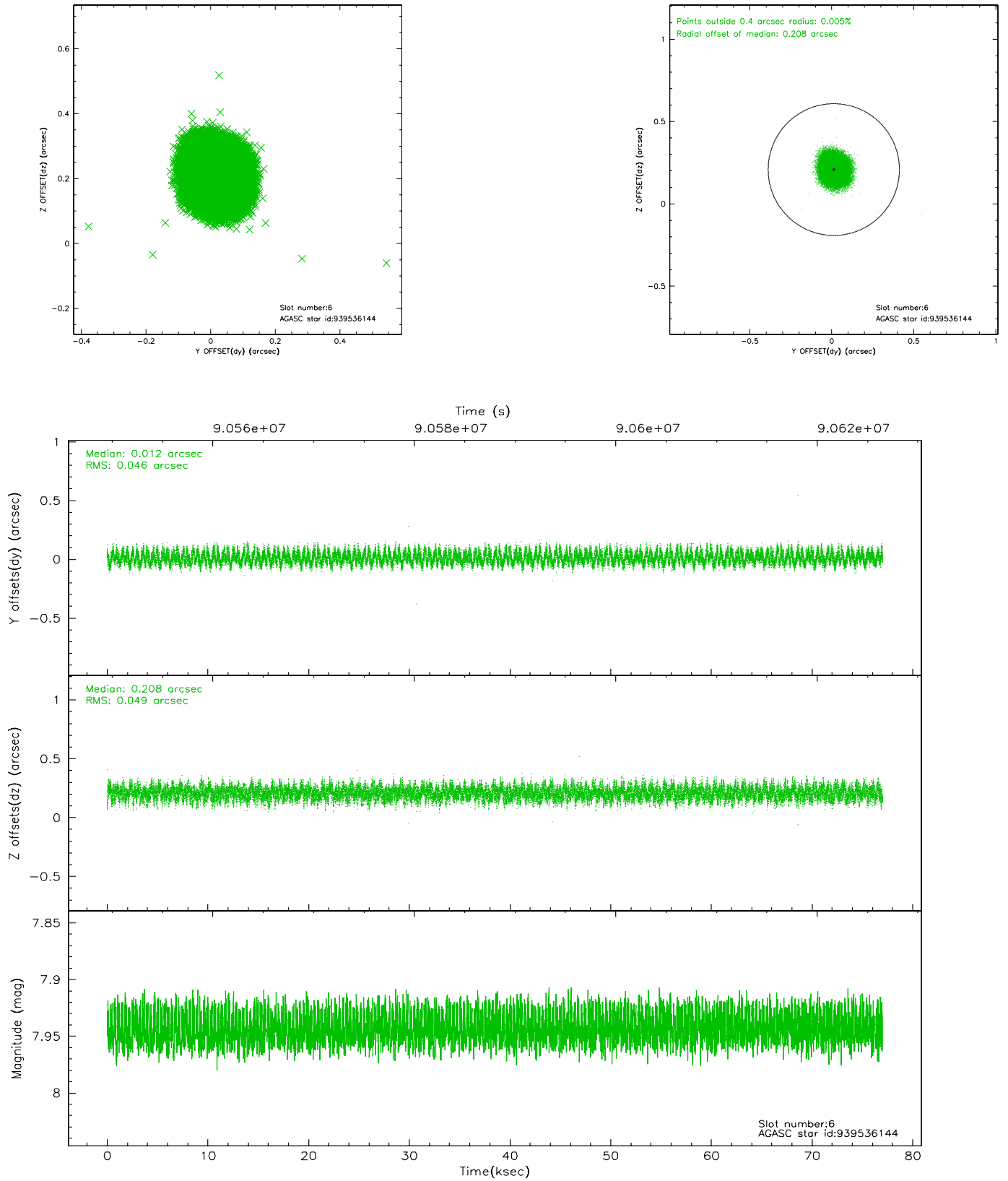
## 2.4.2 Slot 4



### 2.4.3 Slot 5

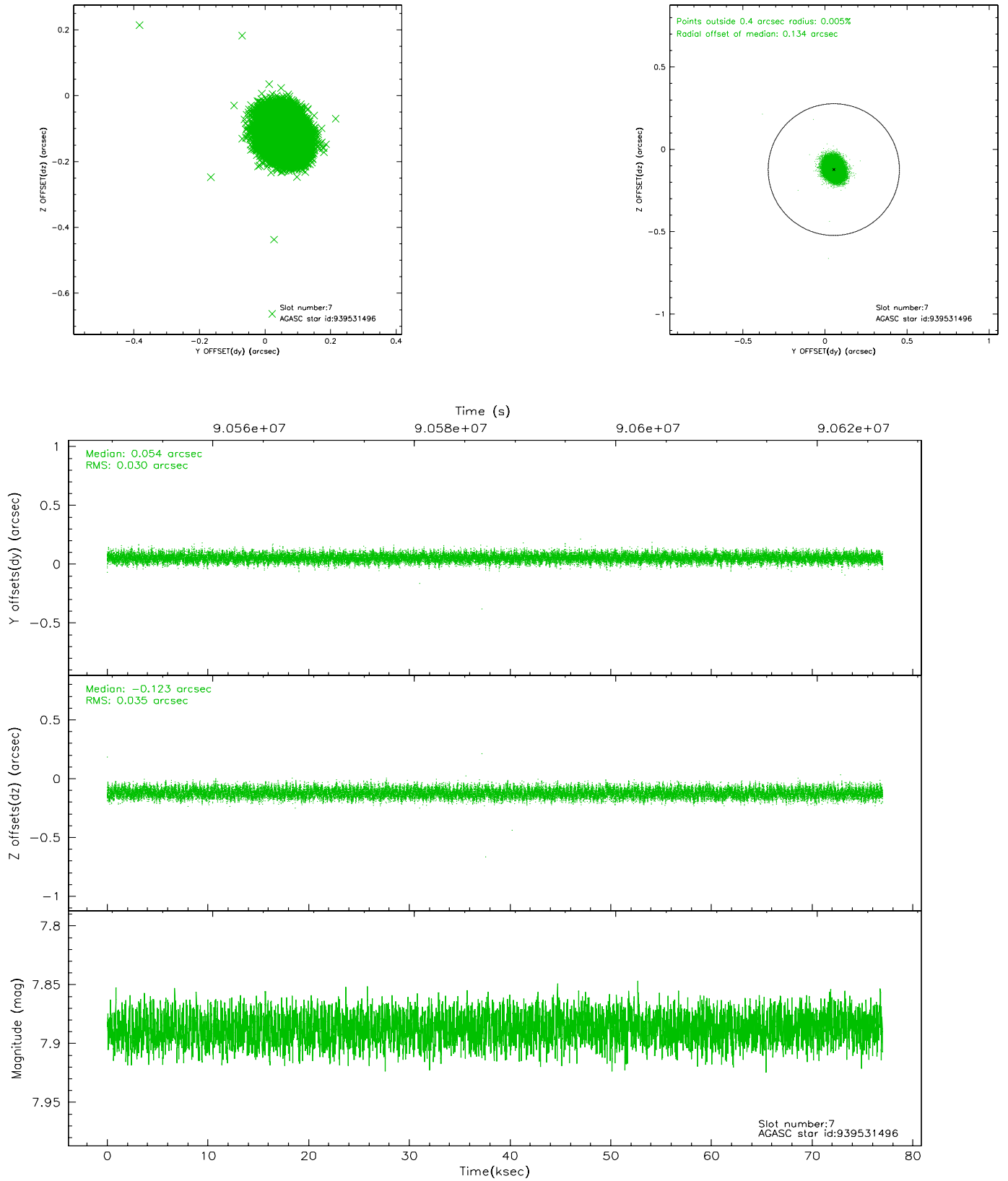


## 2.4.4 Slot 6



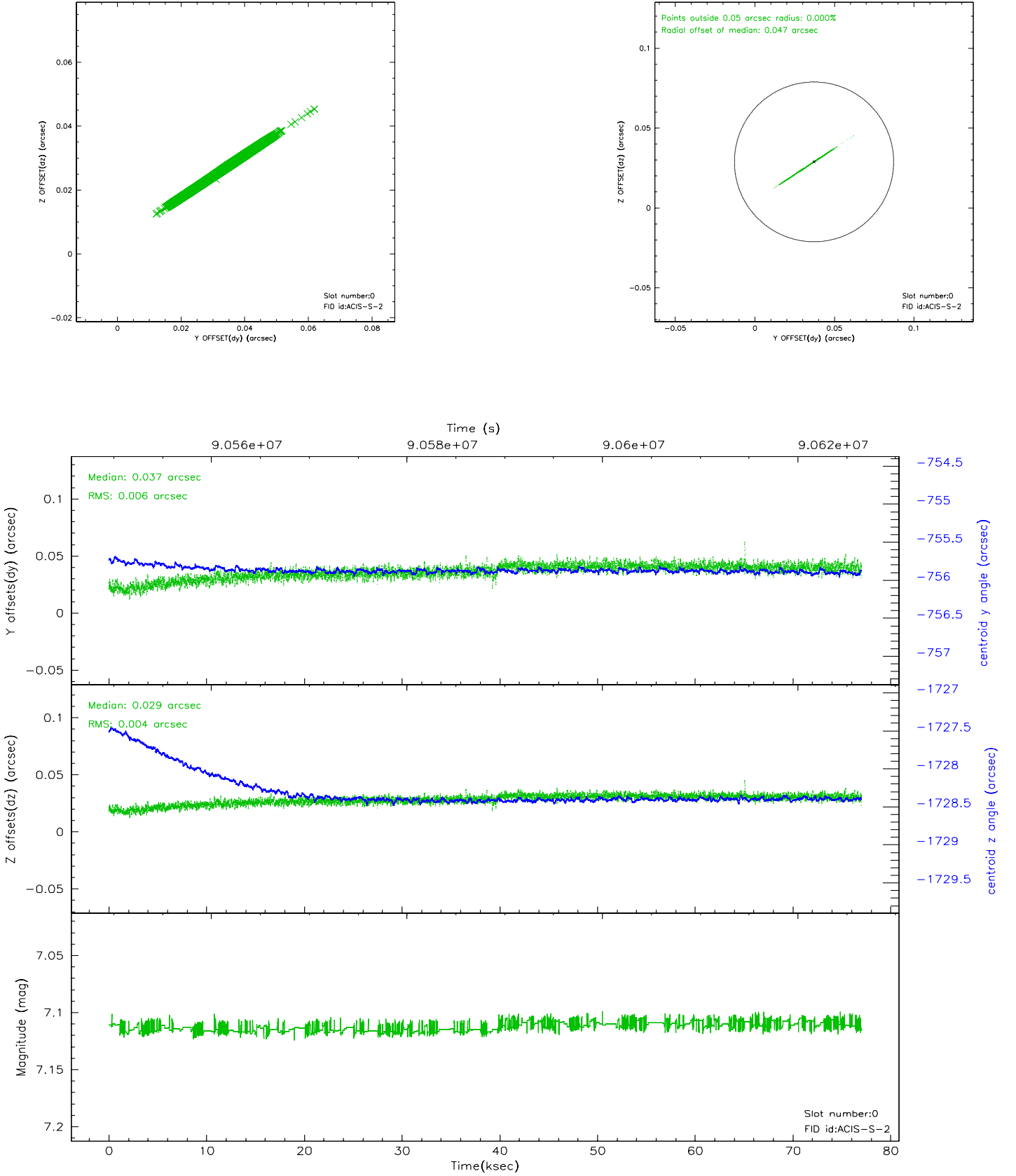


## 2.4.5 Slot 7

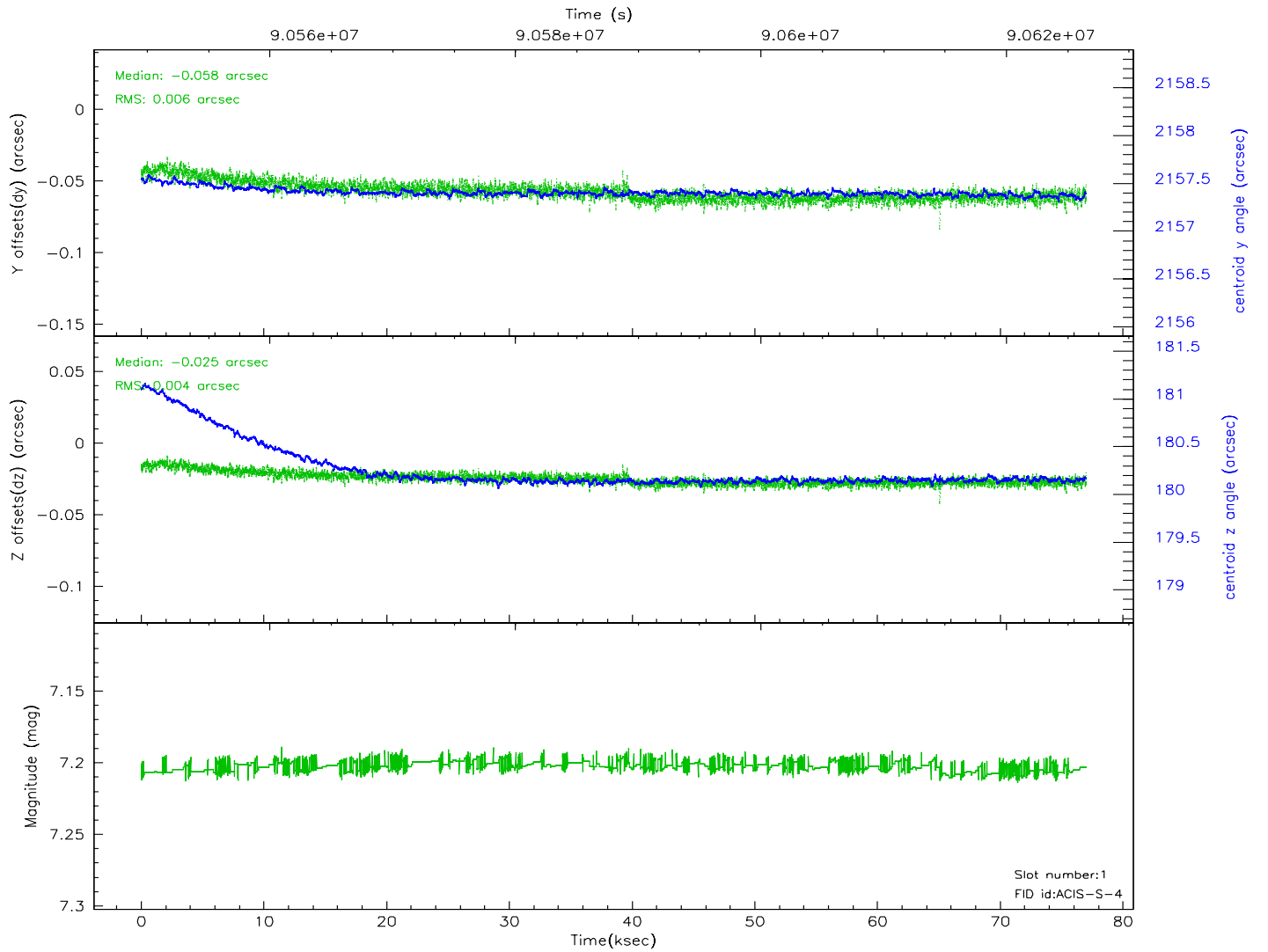
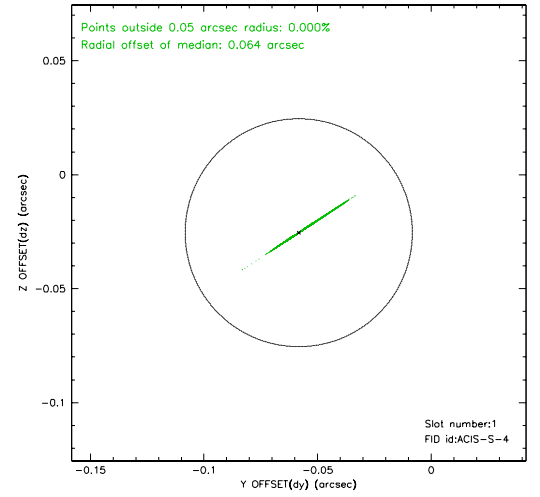
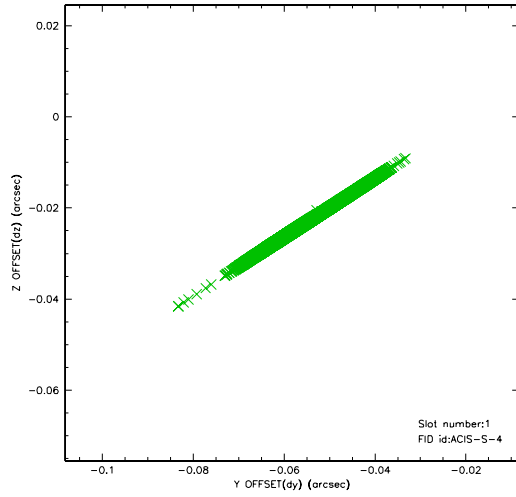


## 2.5 FID Slots

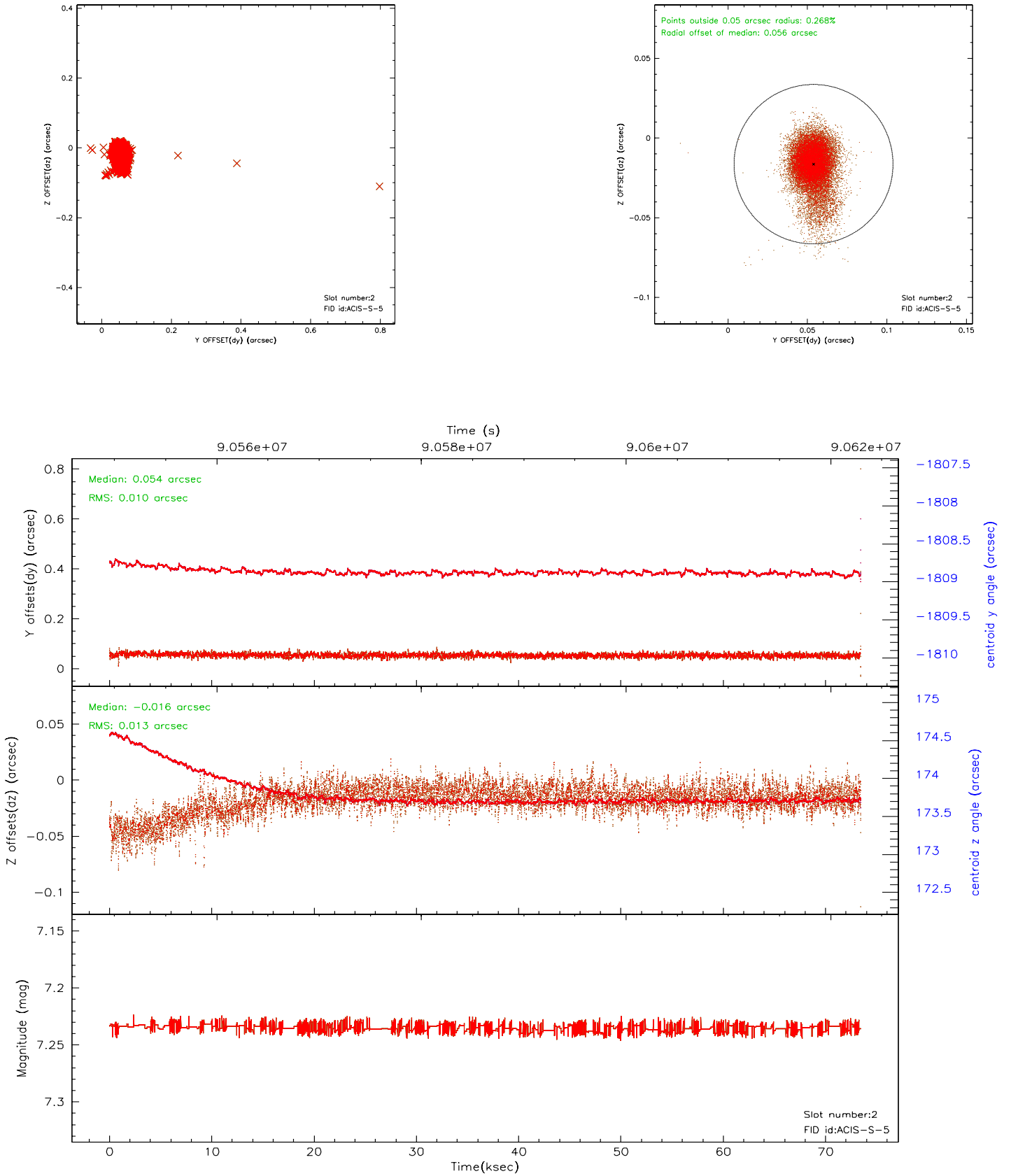
### 2.5.1 Slot 0



## 2.5.2 Slot 1



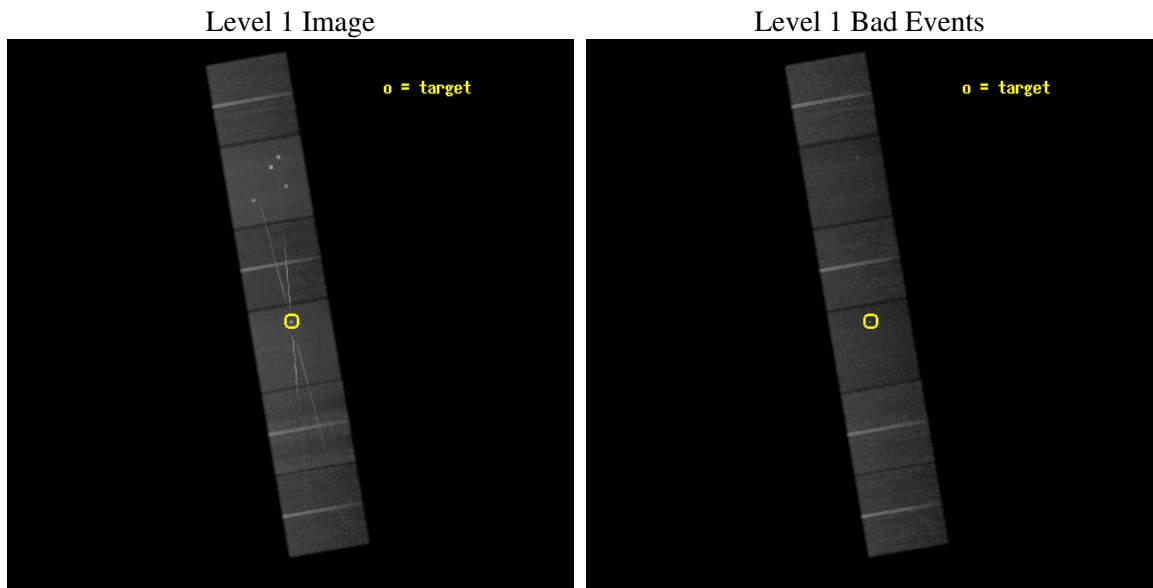
### 2.5.3 Slot 2



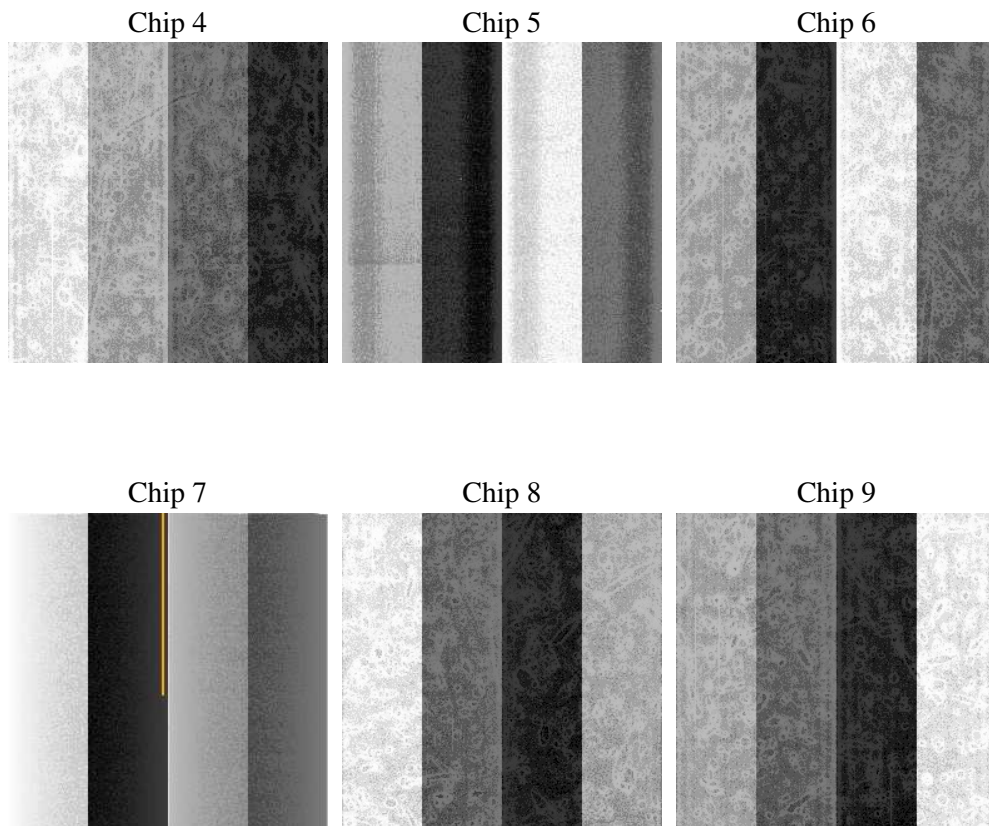
## 3 OBI Secondary

### 3.1 OBI

#### 3.1.1 Images



#### 3.1.2 Bias



### 3.1.3 Parameters

obi_num	0
ascdsver	7.6.10
caldsver	3.4.0
date	2007-06-16T14:56:35
revision	3

sched_exp_time	76300.000000
ontime	59978.243369579
ontime4	59978.241135597
ontime5	59978.243379608
ontime6	59978.242671356
ontime7	59978.243369579
ontime8	59978.24255161
ontime9	59978.243019685
l1events	2655828

### 3.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	406360	514491	390754	511036	471120	362067
rejected events	357653	266888	318302	271890	360673	315185
rejected %	88%	51%	81%	53%	76%	87%

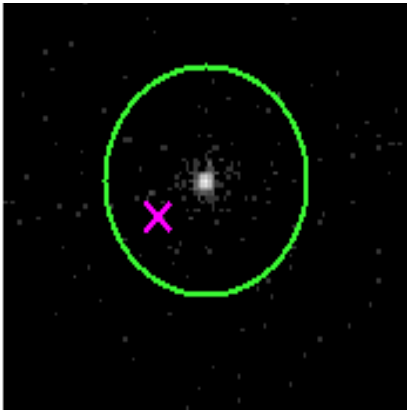
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	21063	37312	39265	26625	39699	20308
	5%	7%	10%	5%	8%	5%
grade 1 events	213	1082	262	785	303	160
	0%	0%	0%	0%	0%	0%
grade 2 events	11406	68768	12527	48492	21833	8991
	2%	13%	3%	9%	4%	2%
grade 3 events	4226	10600	5375	22365	11911	4465
	1%	2%	1%	4%	2%	1%
grade 4 events	4112	10143	5341	22272	11236	4217
	1%	1%	1%	4%	2%	1%
grade 5 events	12759	37614	14866	45762	18685	14917
	3%	7%	3%	8%	3%	4%
grade 6 events	7905	120802	9947	119418	25772	8904
	1%	23%	2%	23%	5%	2%
grade 7 events	344676	228170	303171	225317	341681	300105
	84%	44%	77%	44%	72%	82%

# 4 Gratings

## 4.1 HEG Arm



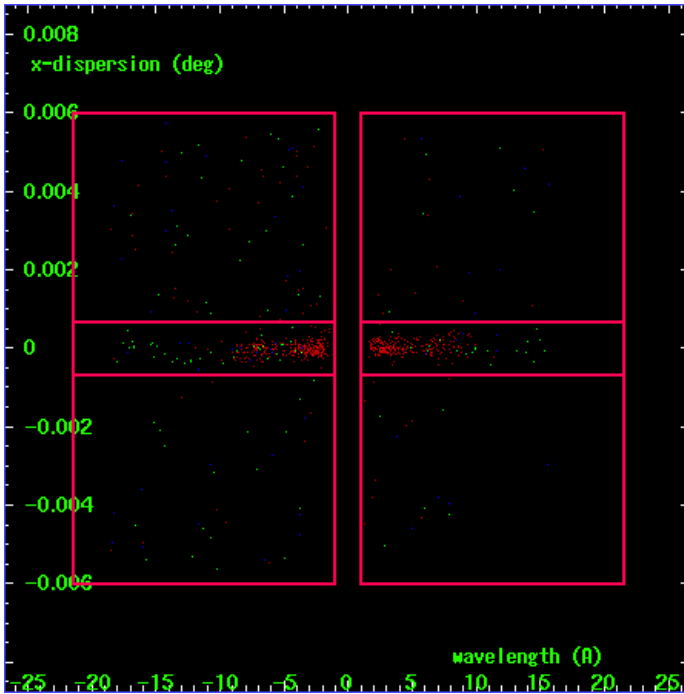
HEG Order Sort 123



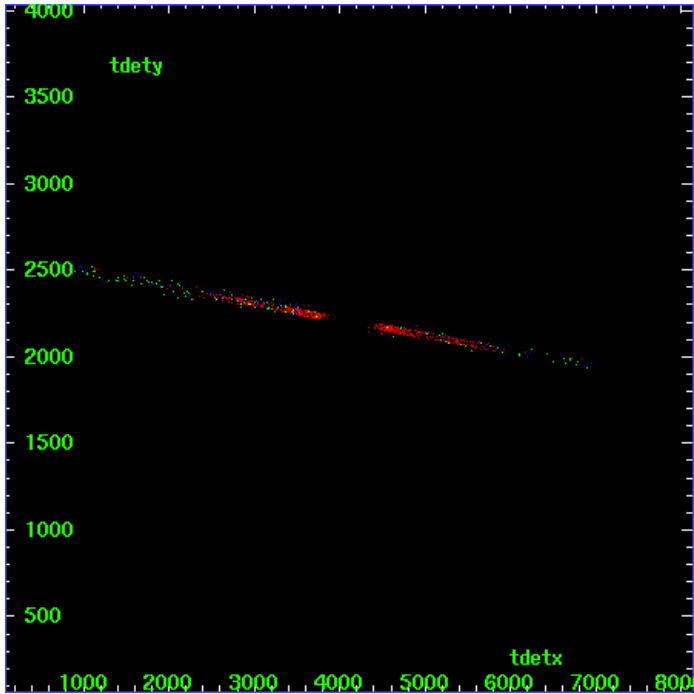
HEG Zero Order



HEG Order Sort ALL

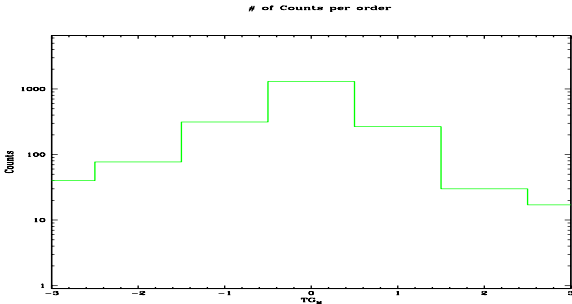


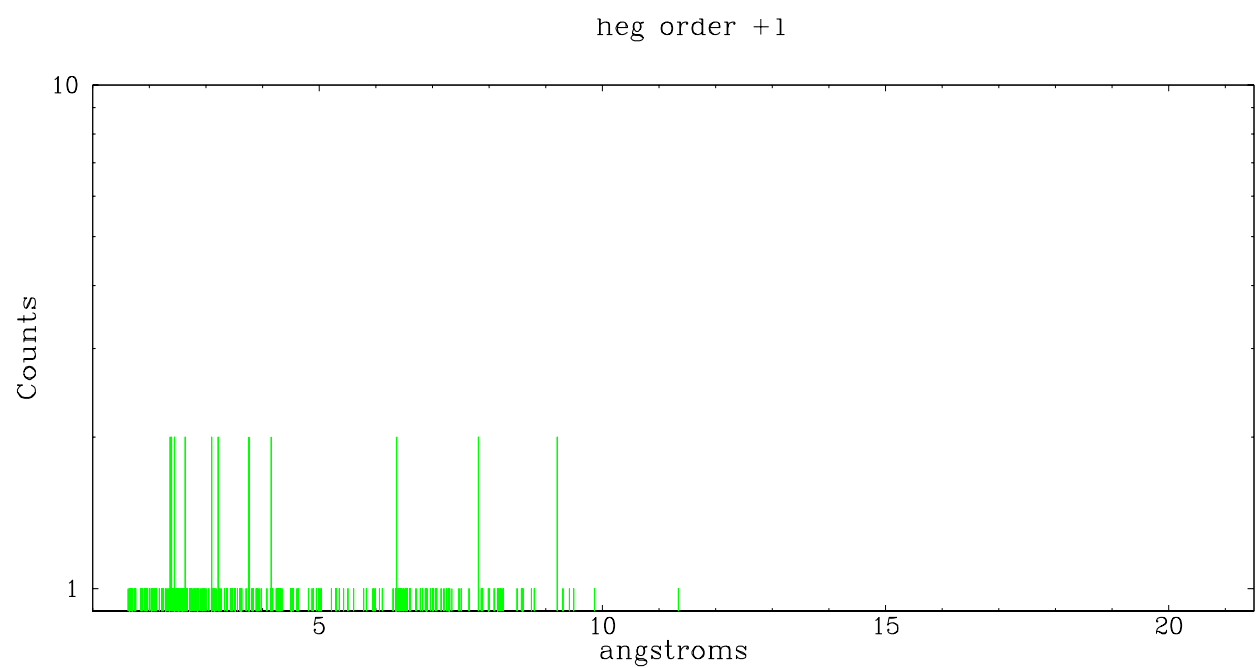
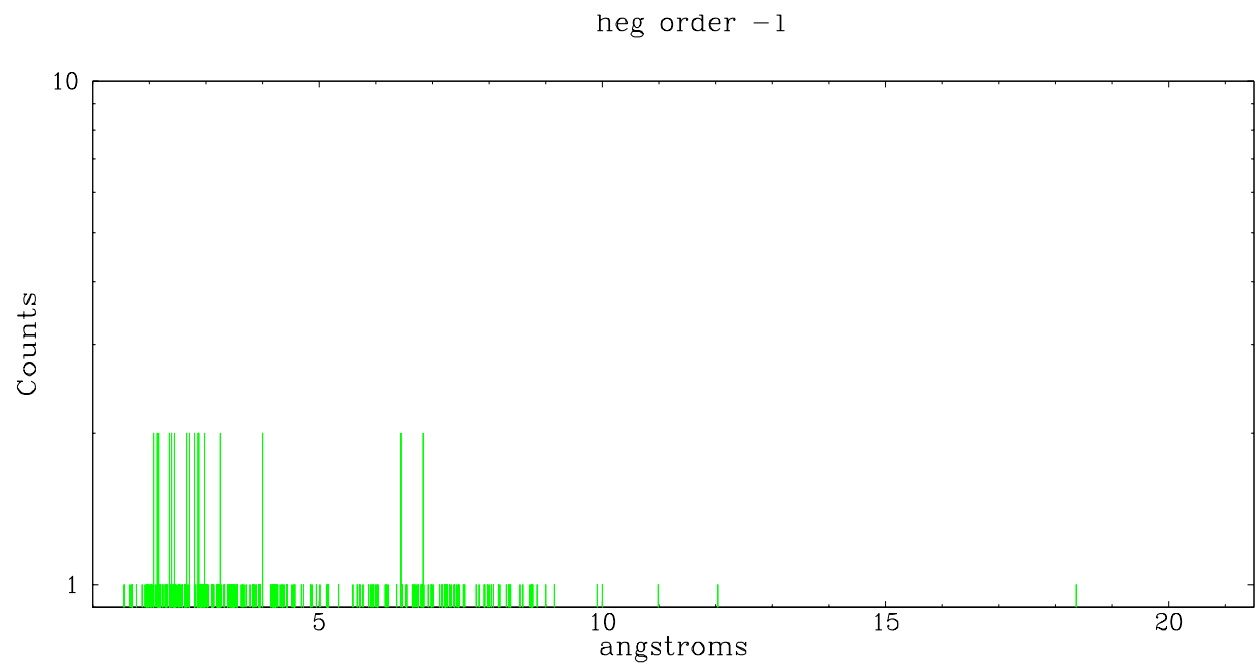
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	40	77	314	1301	266	30	17



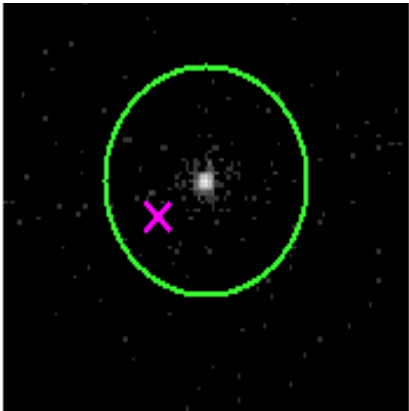




4.2 MEG Arm



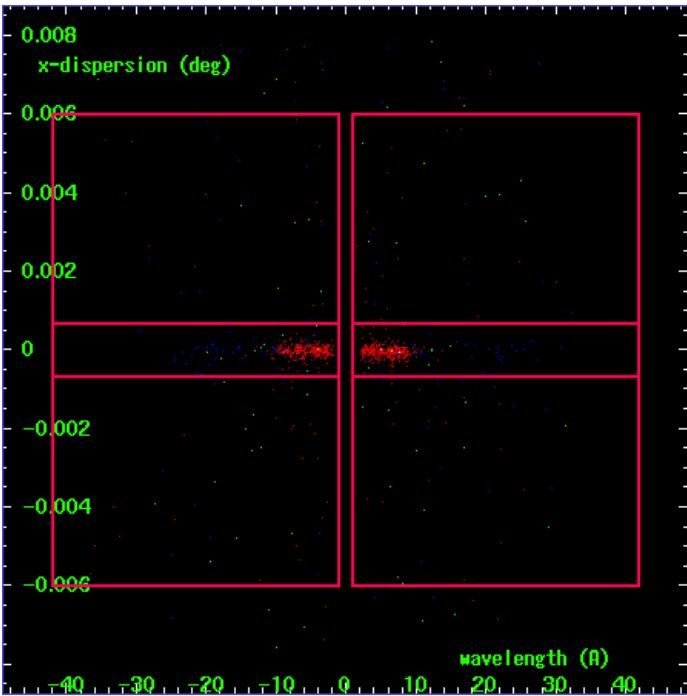
MEG Order Sort 123



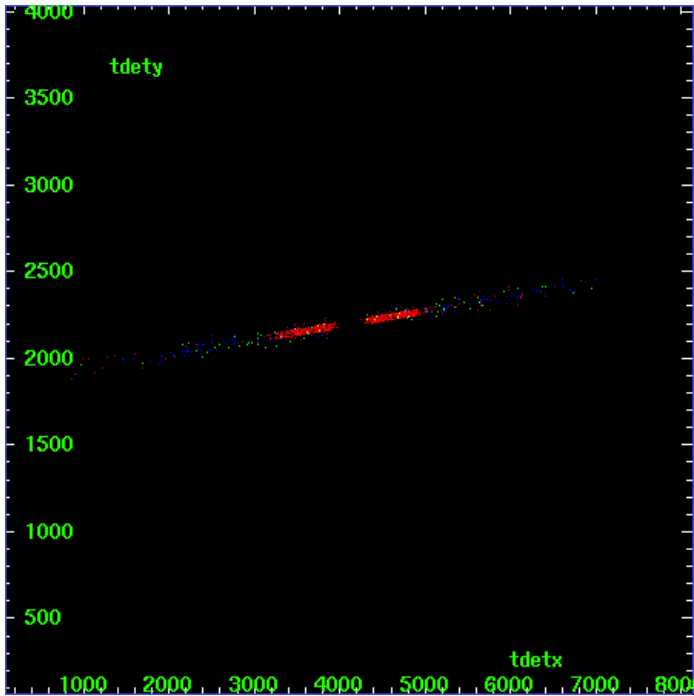
MEG Zero Order



MEG Order Sort ALL

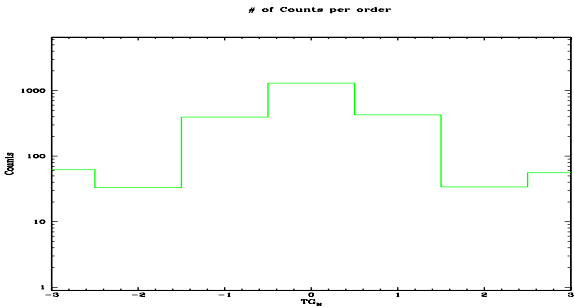


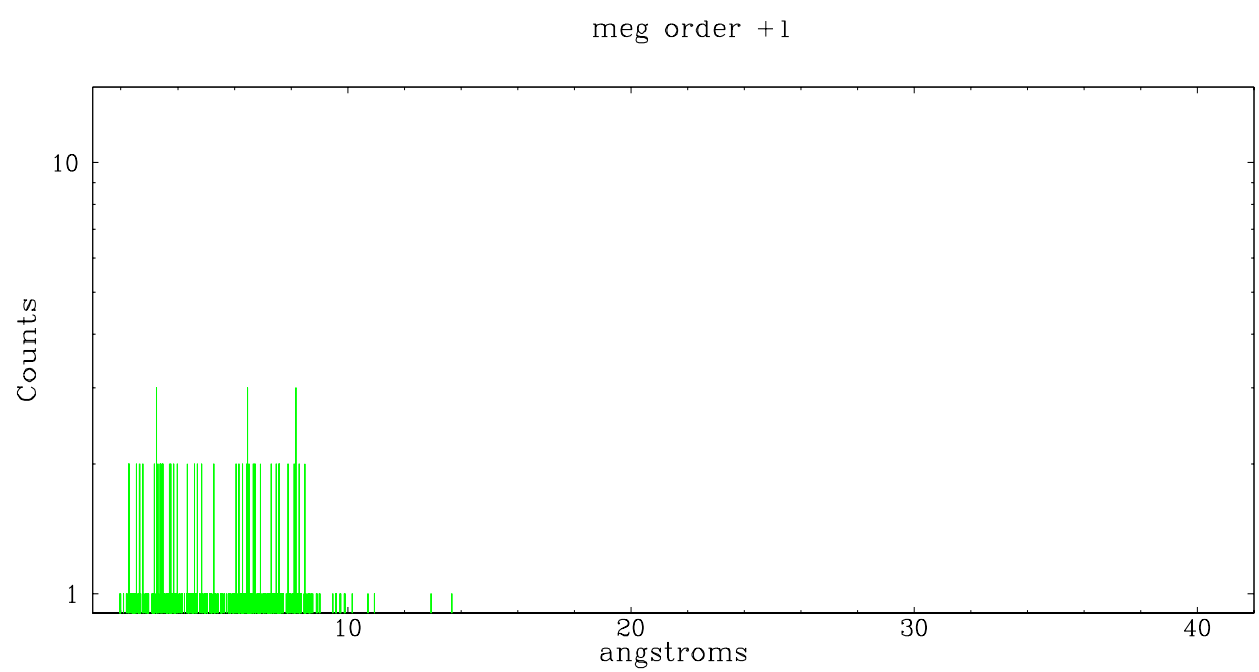
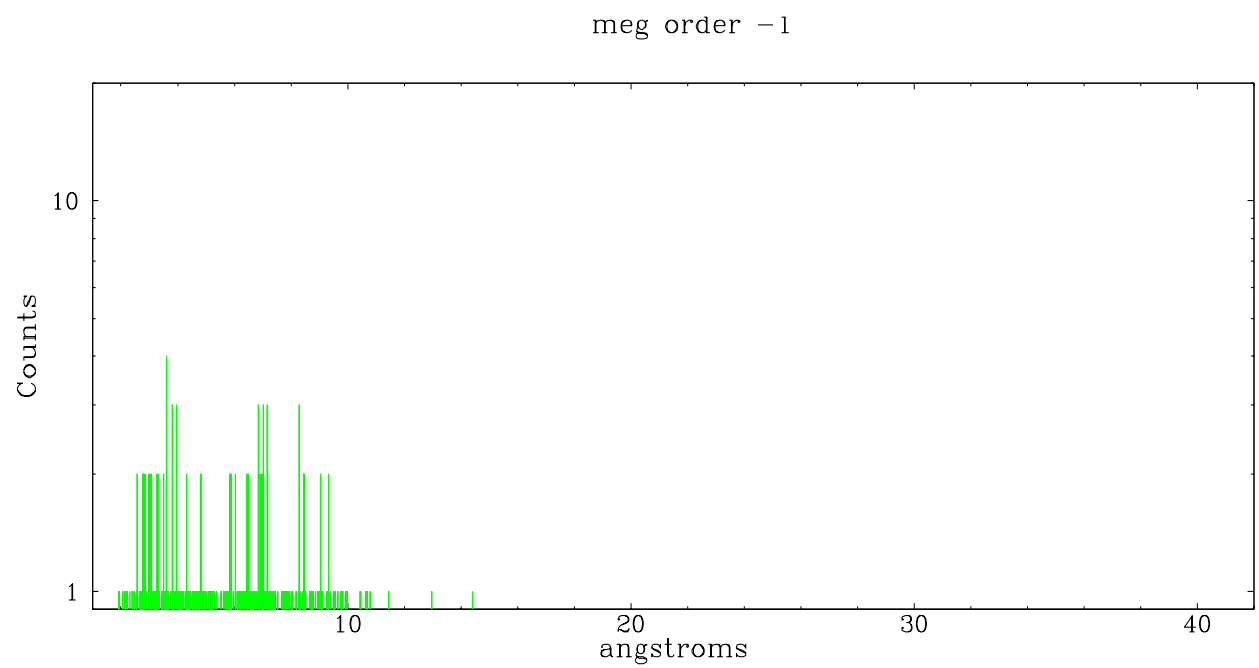
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	62	33	395	1301	427	34	56





## A Summary

### A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2007.06.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	76.22

### A.2 Comments