

# V&V Reference Report

## L2 ASCDS Version : 7.6.9

Observation 2088 - L2 Version 001  
Chandra X-Ray Center

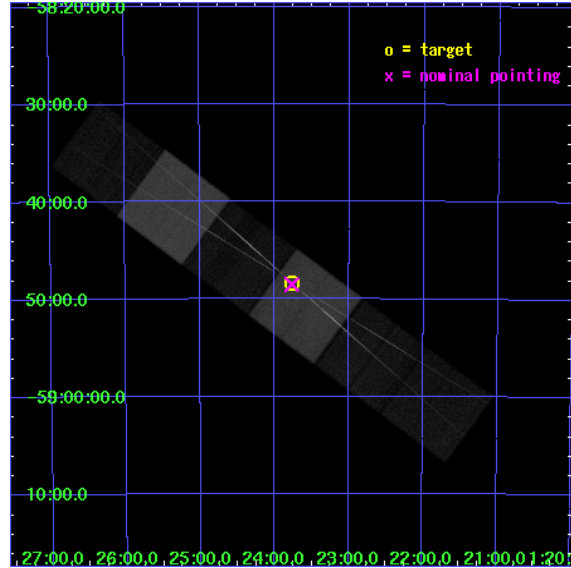
L2 Processing Date : Dec 31 2006

## 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

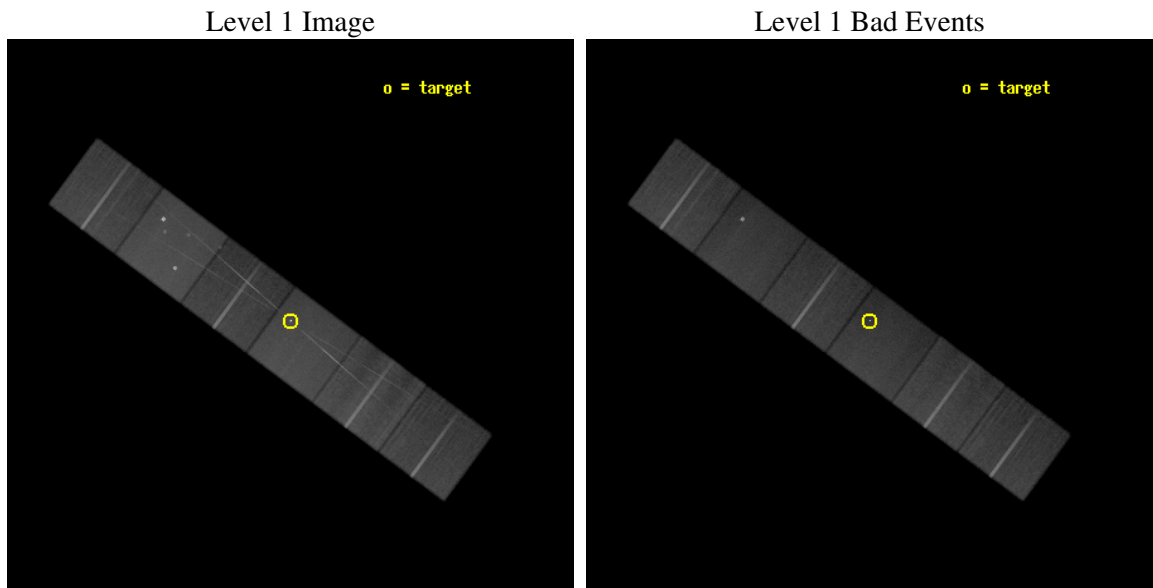
seq_num	700278
obs_id	2088
title	DECONVOLUTION OF THE RELATIVISTIC FE-K LINES IN SEYFERT 1 GALAXIES AND PHYSICS FROM THE NARROW EMISSION COMPONENT
observer	Dr. Tahir Yaqoob
object	FAIRALL 9
dtcycle	0
cycle	P
ra_targ	20.942083
dec_targ	-58.806417
ra_nom	20.941838708722
dec_nom	-58.808626821352
roll_nom	36.524672819513
revision	2
ontime	79942.400074452
livetime	78930.121269175
ontime4	79935.918104008
ontime5	79942.400074452
ontime6	79942.400074452
ontime7	79942.400074452
ontime8	79942.400074452
ontime9	79939.159064382
l2events	849477



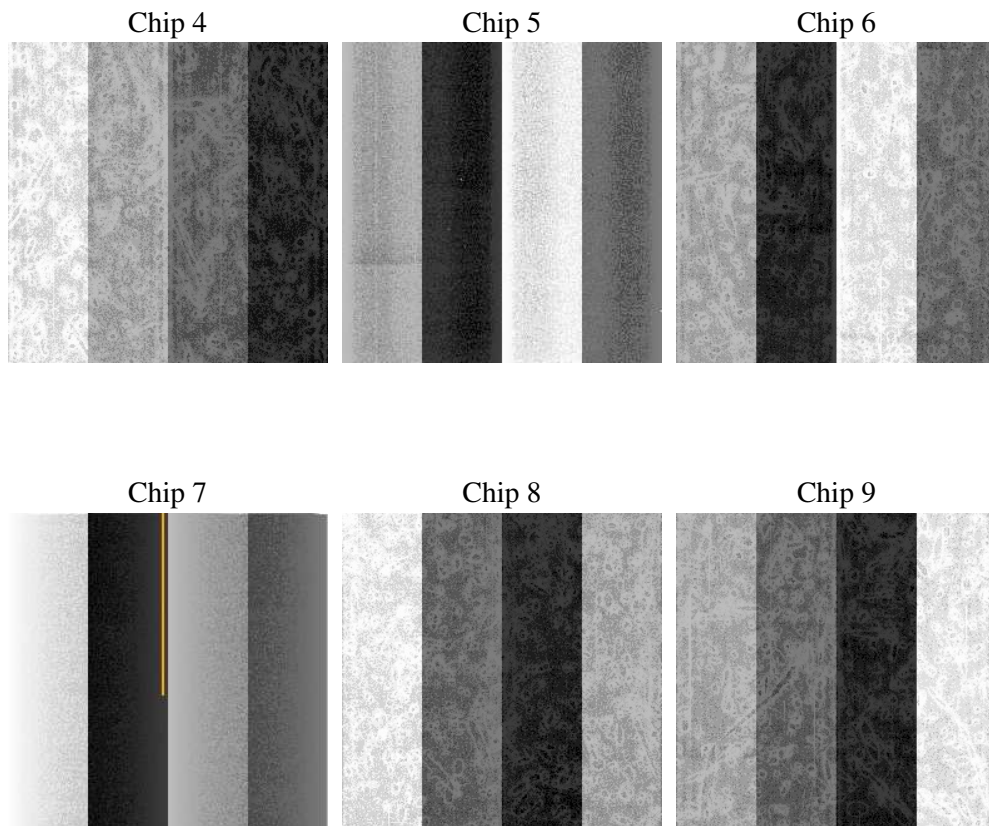
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.9
caldsver	3.2.4
date	2006-12-31T11:26:50
revision	2

sched_exp_time	80000.000000
ontime	79949.031730413
ontime4	79942.549759969
ontime5	79949.03176032
ontime6	79949.031730413
ontime7	79949.031730413
ontime8	79949.031730413
ontime9	79945.790720344
l1events	3883765

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	604558	771933	555663	723876	687553	540182
rejected events	540296	425266	474860	428380	541735	476422
rejected %	89%	55%	85%	59%	78%	88%

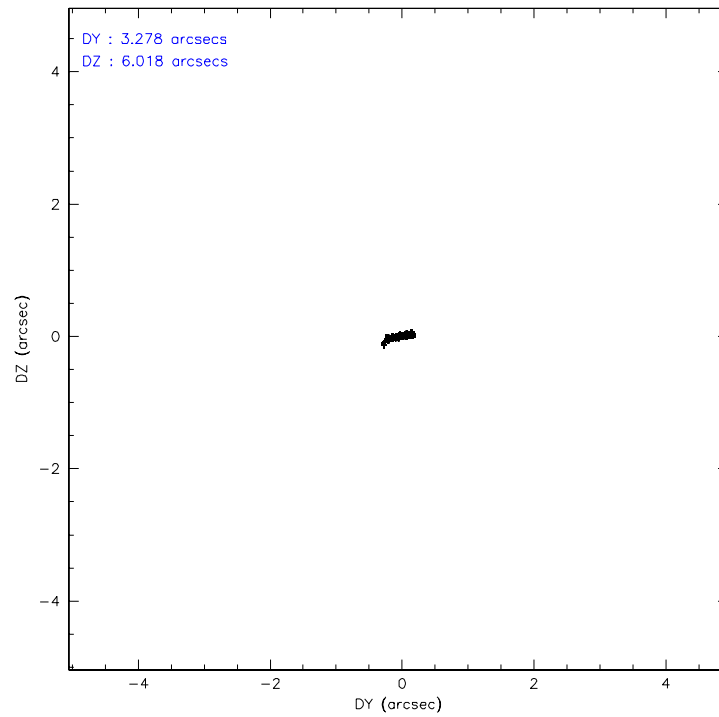
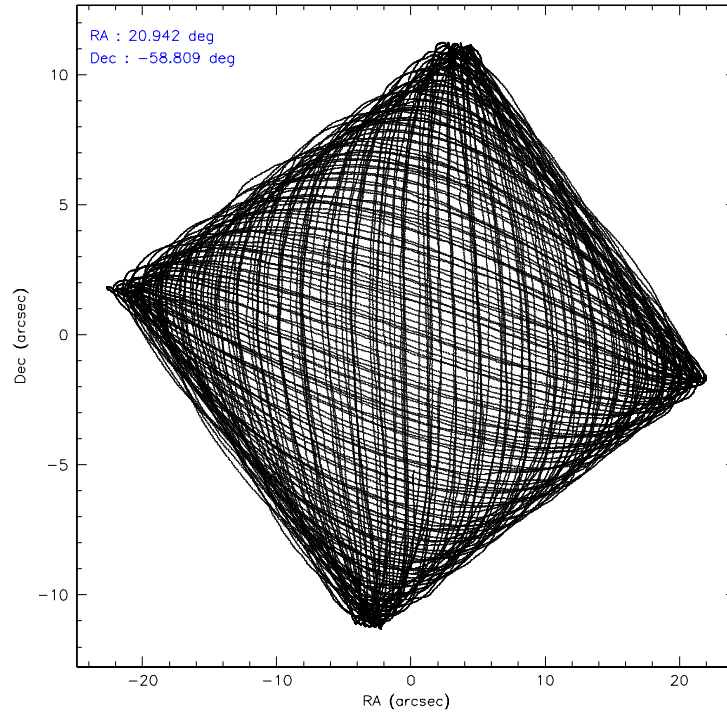
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	26257	41568	40225	21515	51345	26392
	4%	5%	7%	2%	7%	4%
grade 1 events	268	7482	342	781	444	237
	0%	0%	0%	0%	0%	0%
grade 2 events	15331	100705	14484	72654	30385	12695
	2%	13%	2%	10%	4%	2%
grade 3 events	5990	8115	6749	17552	14884	6243
	0%	1%	1%	2%	2%	1%
grade 4 events	5677	8534	6769	16897	13831	6016
	0%	1%	1%	2%	2%	1%
grade 5 events	19488	36530	22302	49247	29266	23089
	3%	4%	4%	6%	4%	4%
grade 6 events	11016	187773	12582	166901	35381	12419
	1%	24%	2%	23%	5%	2%
grade 7 events	520531	381226	452210	378329	512017	453091
	86%	49%	81%	52%	74%	83%

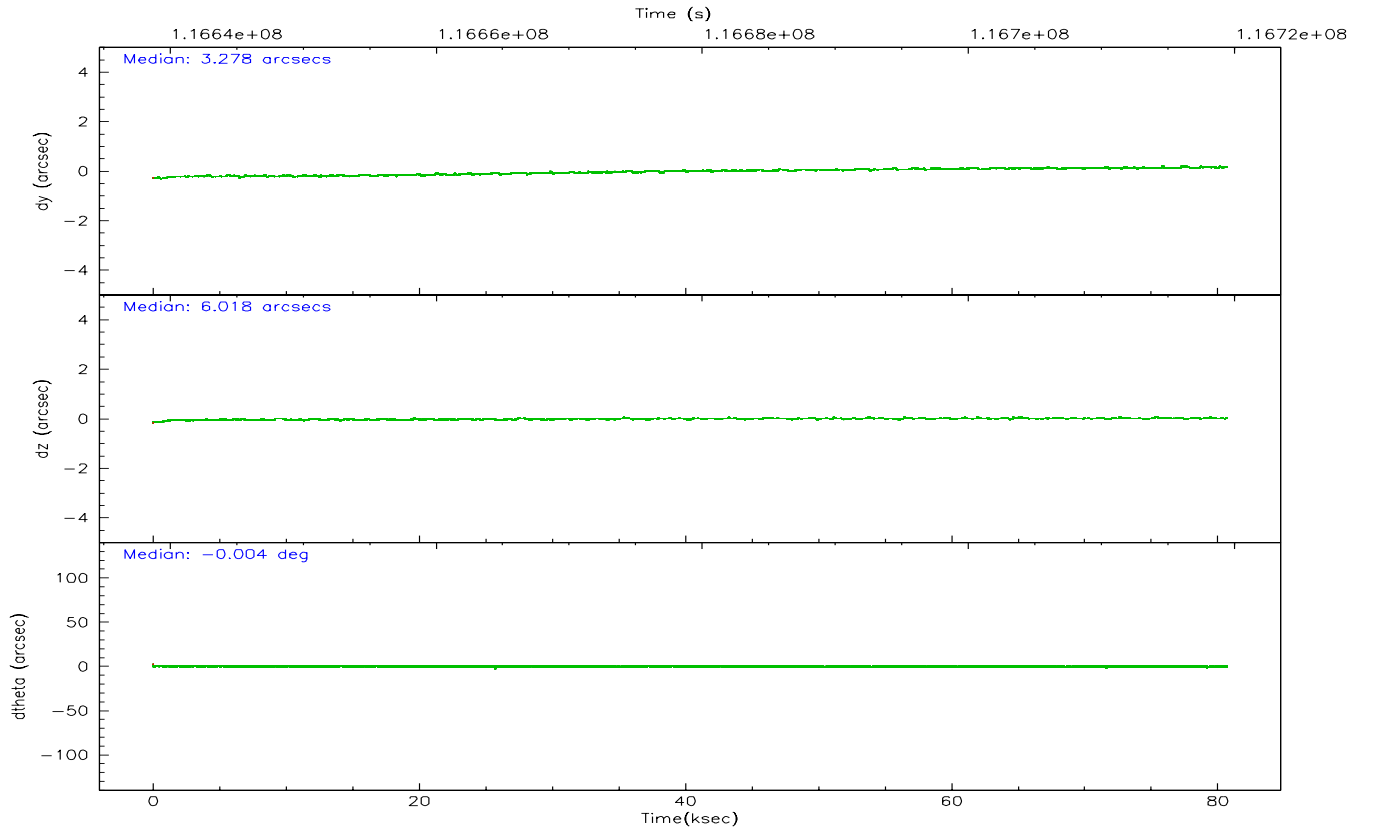
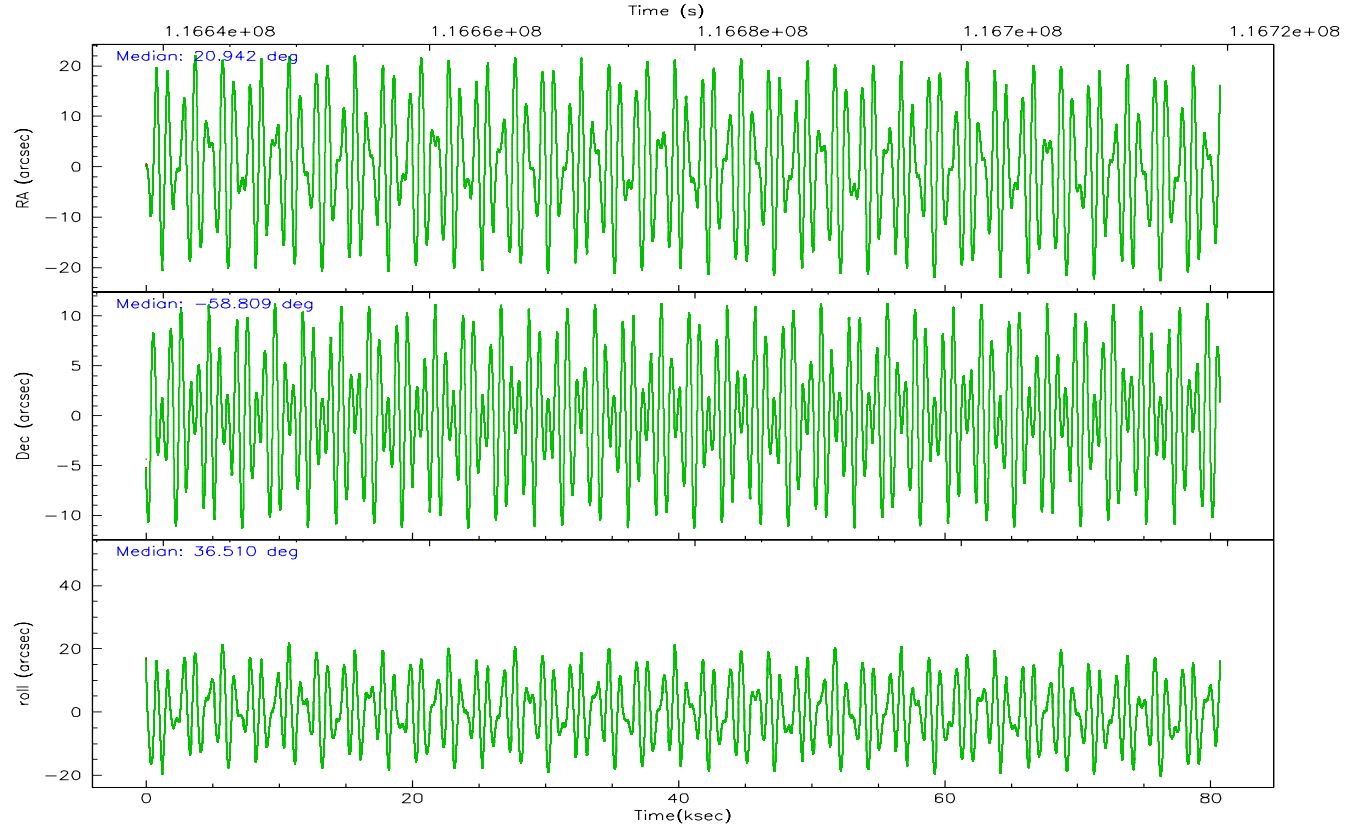


## 2.2 Compared Parameters

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	20.921384	20.94183870872229	Subarray requested	NONE	NONE
Pointing Dec	-58.833753	-58.80862682135219	Alternating exposures requested	N	N
Pointing Roll	36.350540	36.52467281951317	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)	-187.132523	-187.1254020033014			
SIM translation stage offset (mm)	-3	-3.007120579706367			
Observation start time	116639431.184000	116638220.16714			
Observation start date	2001-09-11T23:49:27	2001-09-11T23:30:20			
Observation end time	116719431.184000	116720300.12038			
Observation end date	2001-09-12T22:02:47	2001-09-12T22:18:20			
Read mode	TIMED	TIMED			

## 2.3 Aspect



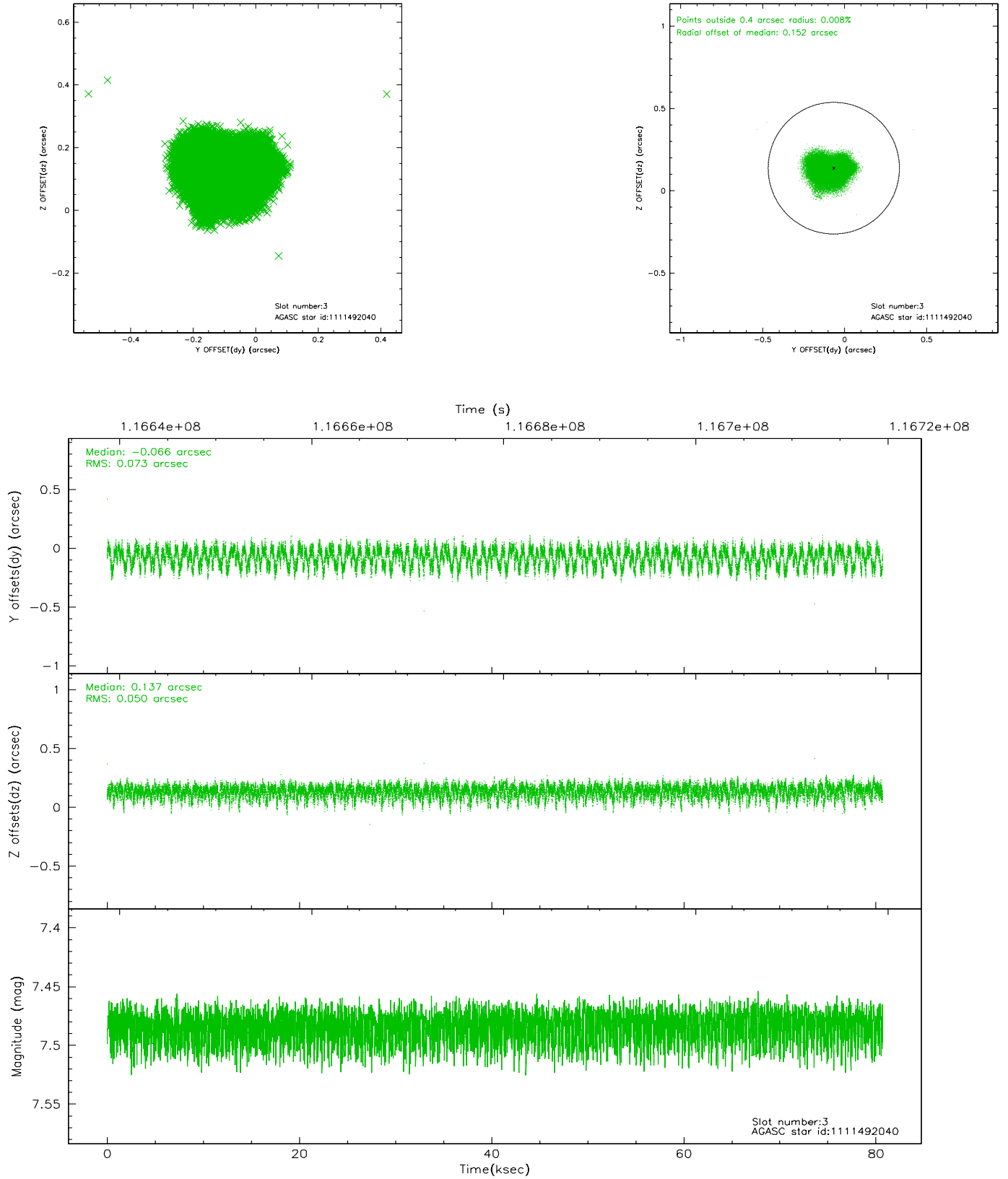


### Slot Statistics

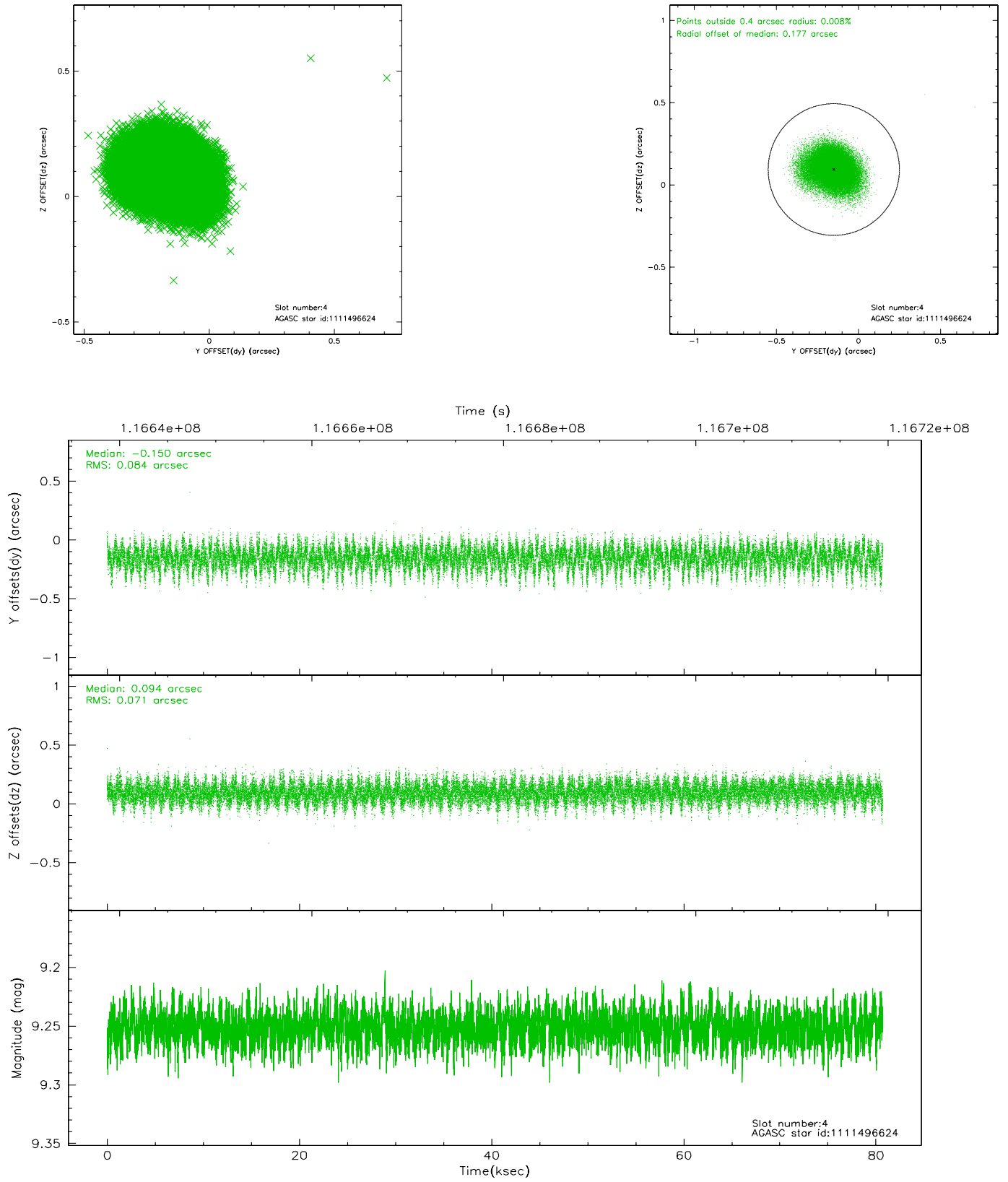
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	19681	-0.008	-0.029	0.007	0.011	0.000000	0.000000	-755.72	-1789.26
1	FID	ACIS-S-4	7.19	19678	-0.051	0.012	0.008	0.013	0.000000	0.000000	2157.56	119.31
2	FID	ACIS-S-5	7.23	19679	0.028	0.026	0.008	0.013	0.000000	0.000000	-1808.60	112.94
3	GUIDE	1111492040	7.48	39353	-0.066	0.137	0.095	0.152	20.539733	-59.126454	-1193.35	-432.32
4	GUIDE	1111496624	9.25	39356	-0.150	0.094	0.117	0.192	21.902189	-59.272961	508.60	-2353.02
5	GUIDE	1111494008	9.43	39346	0.151	0.028	0.246	0.461	21.487959	-59.277299	-108.81	-1907.01
6	GUIDE	1111494816	9.88	39269	0.008	-0.031	0.124	0.199	21.671373	-59.150602	435.16	-1745.23
7	GUIDE	1111498456	9.58	39345	0.004	-0.224	0.131	0.210	20.011887	-58.413082	-490.76	2226.75

## 2.4 Star Slots

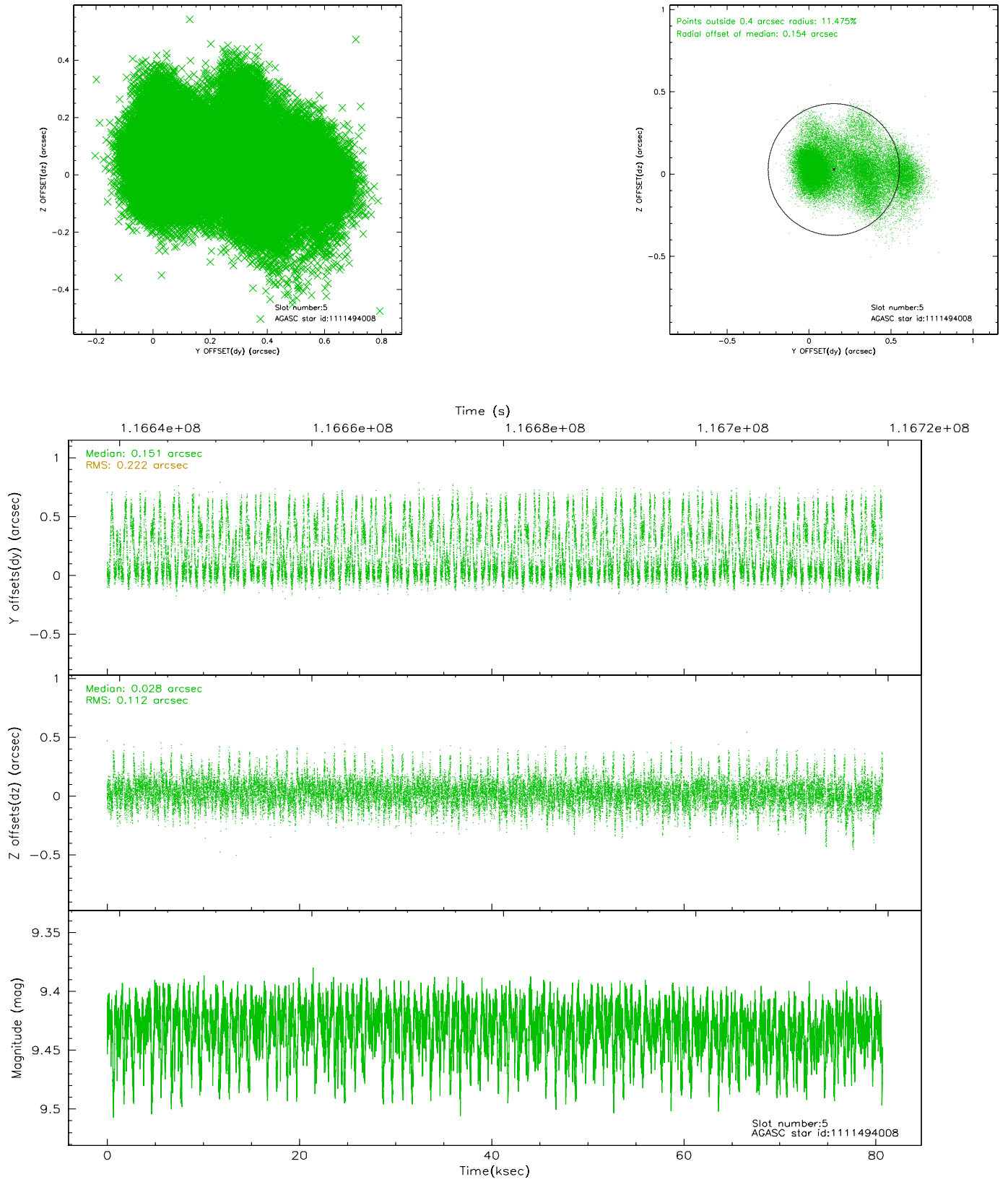
### 2.4.1 Slot 3



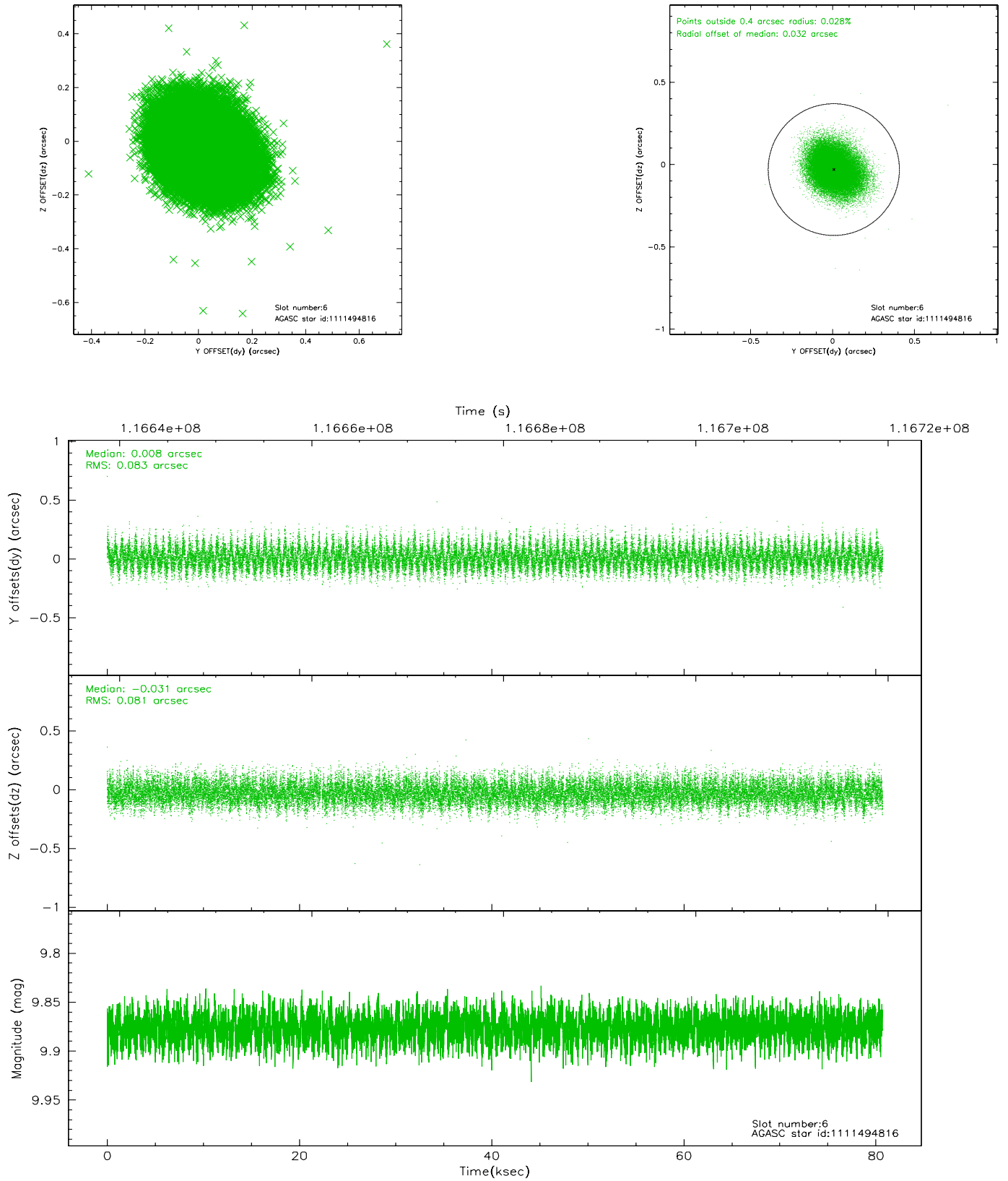
## 2.4.2 Slot 4



### 2.4.3 Slot 5

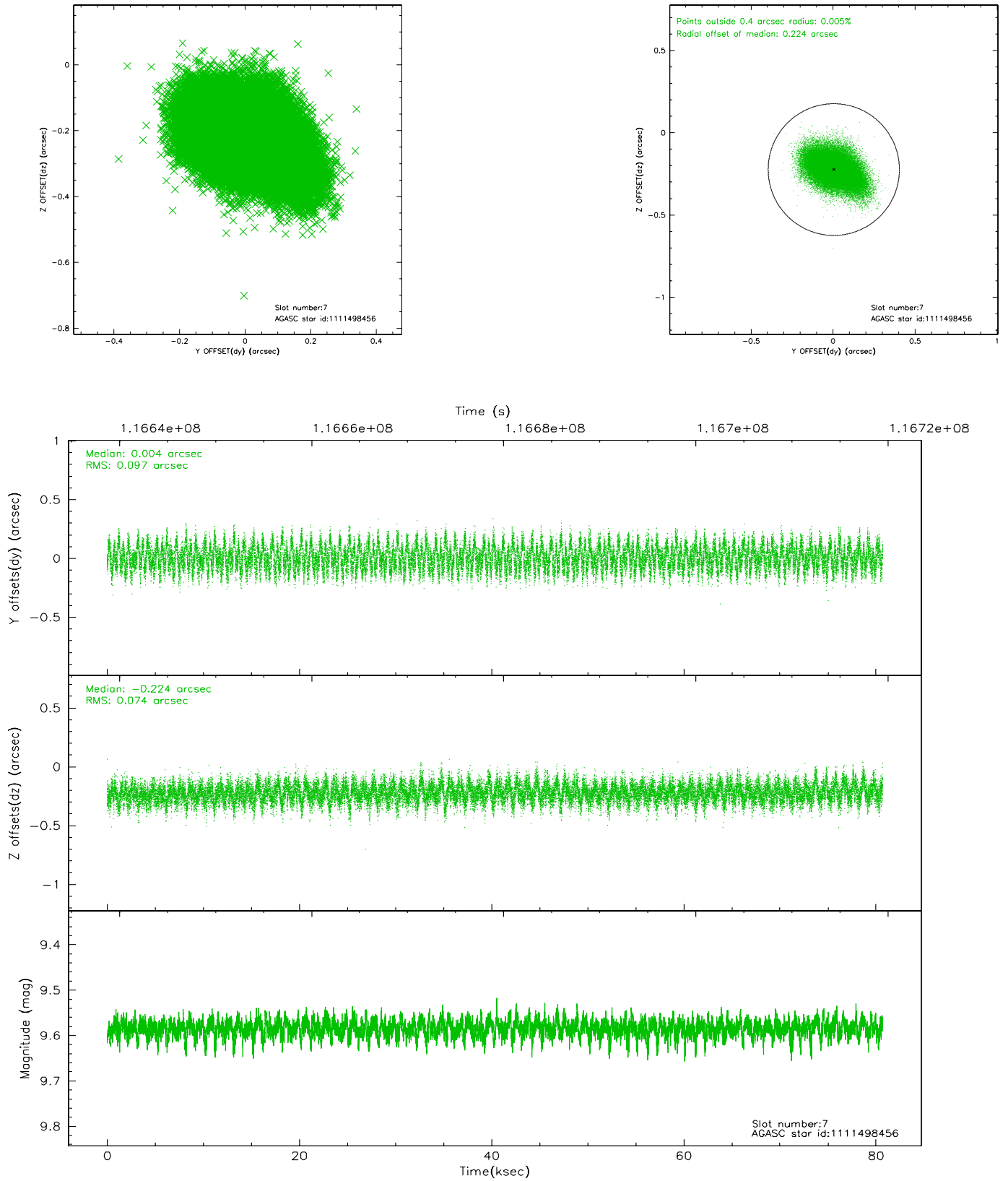


## 2.4.4 Slot 6



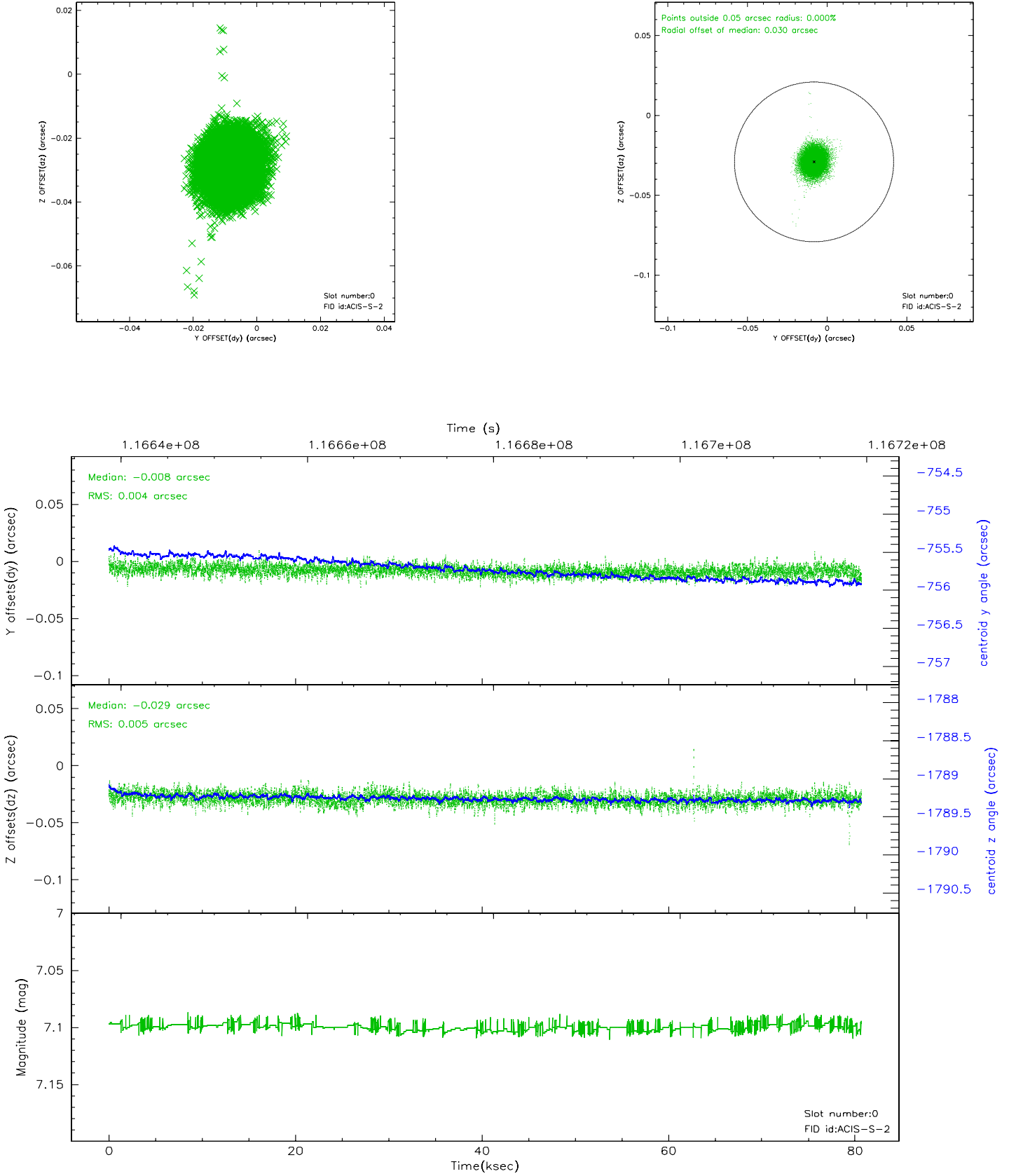


## 2.4.5 Slot 7

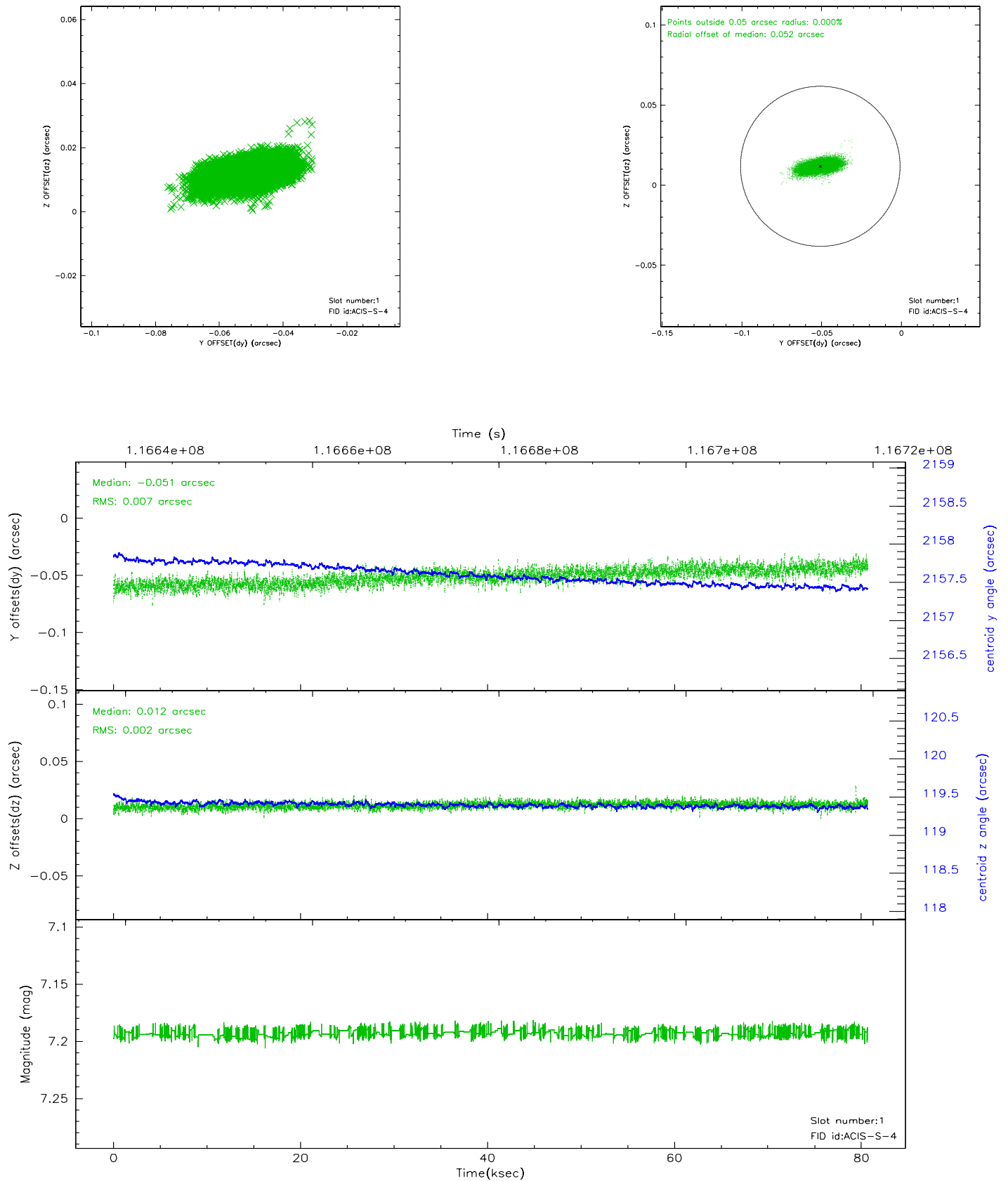


## 2.5 FID Slots

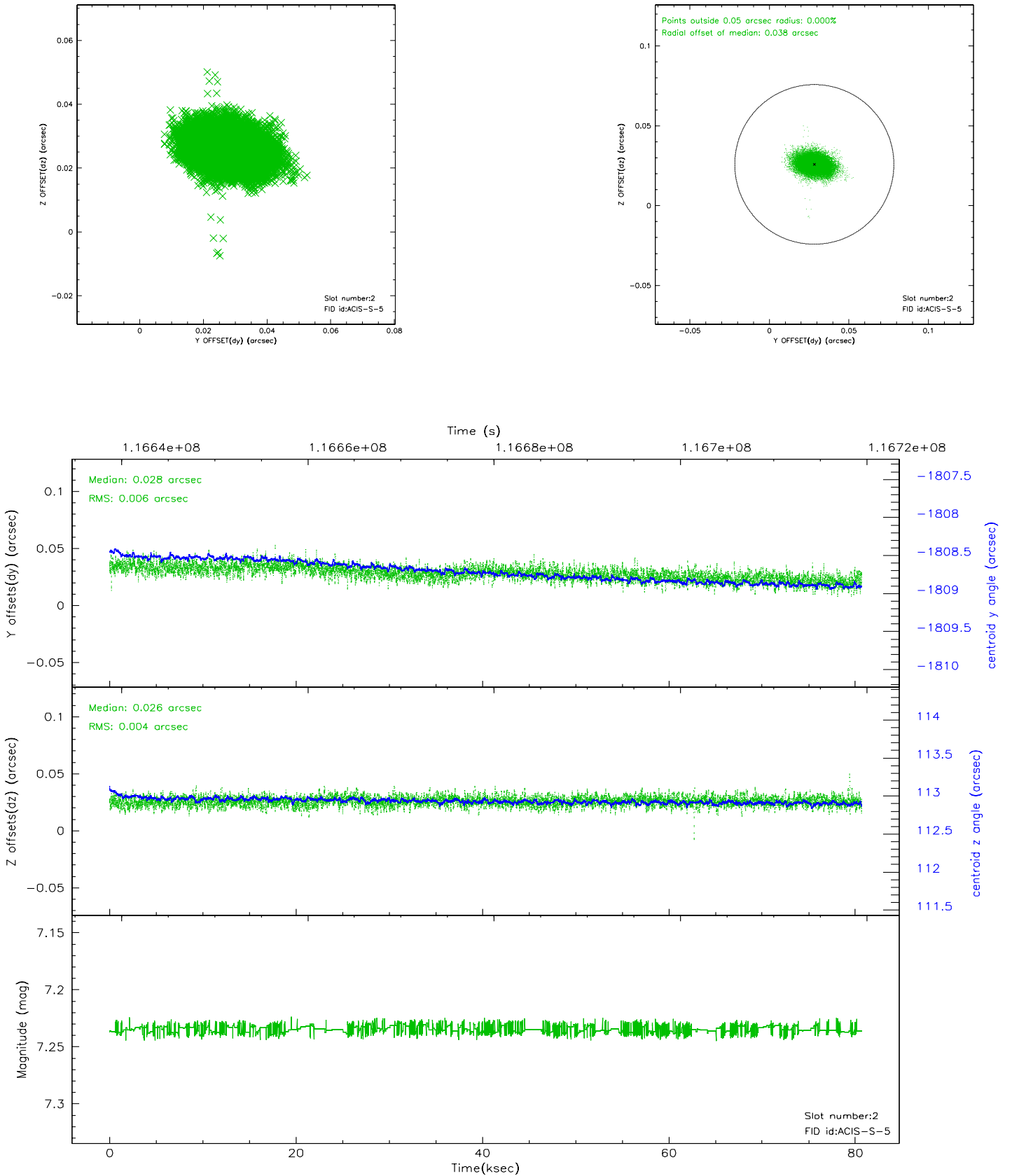
### 2.5.1 Slot 0



## 2.5.2 Slot 1

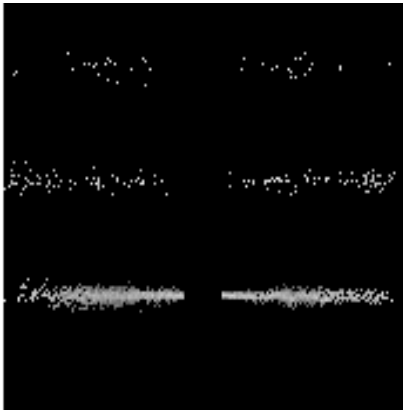


### 2.5.3 Slot 2

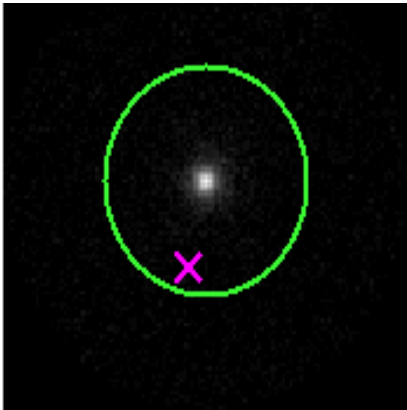


# 3 Gratings

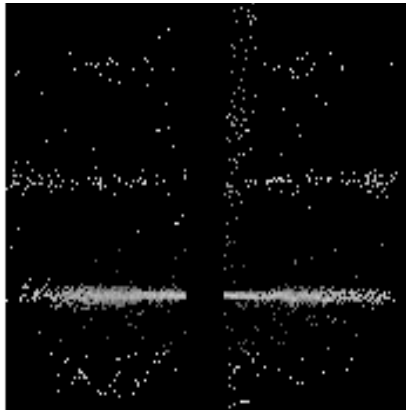
## 3.1 HEG Arm



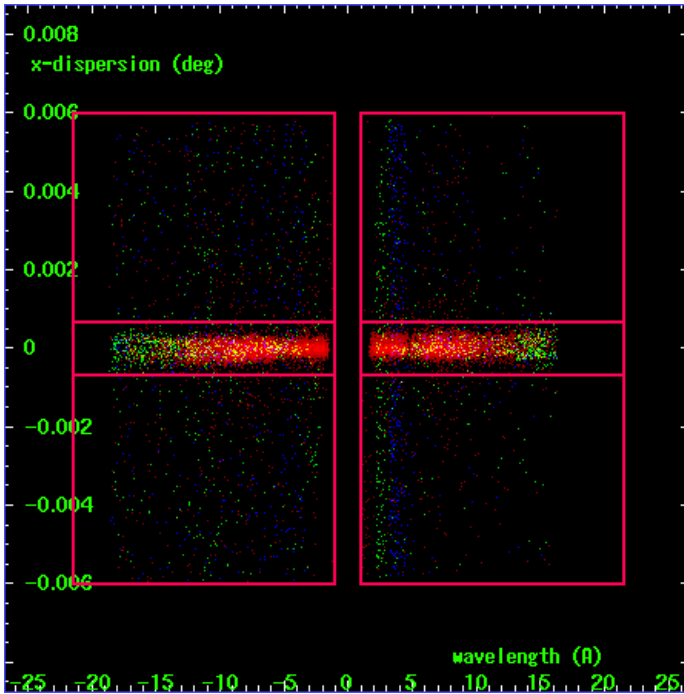
HEG Order Sort 123



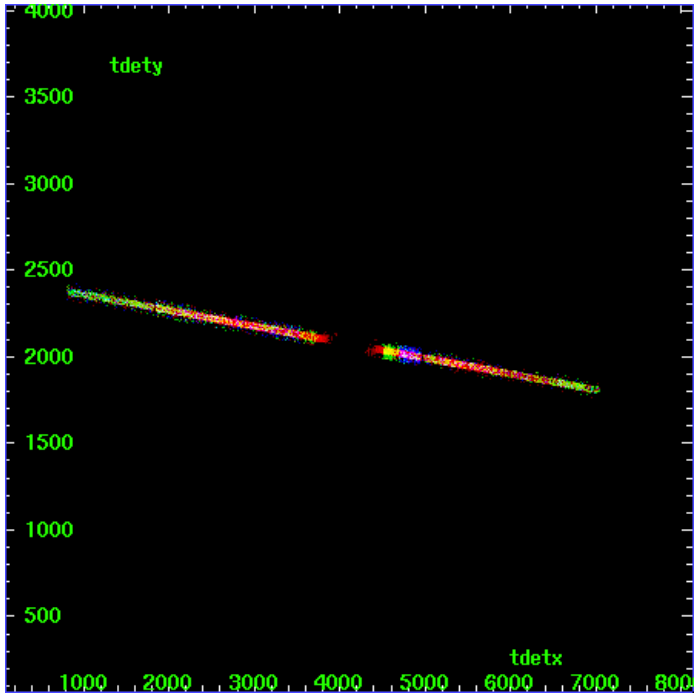
HEG Zero Order



HEG Order Sort ALL

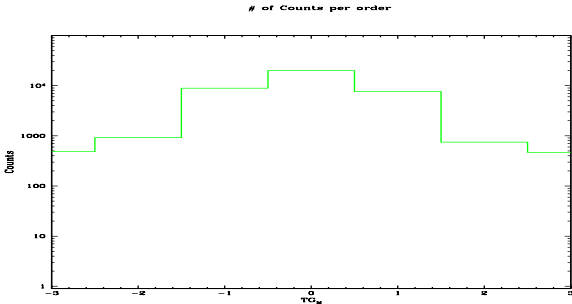


Spot Image HEG

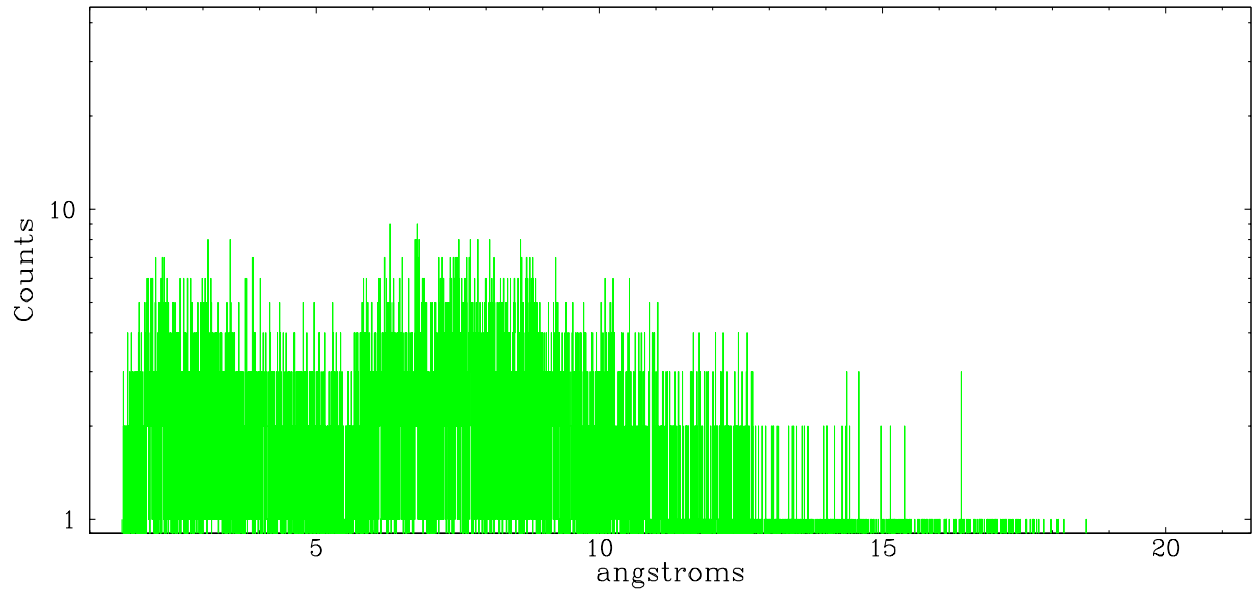


Full Detector HEG

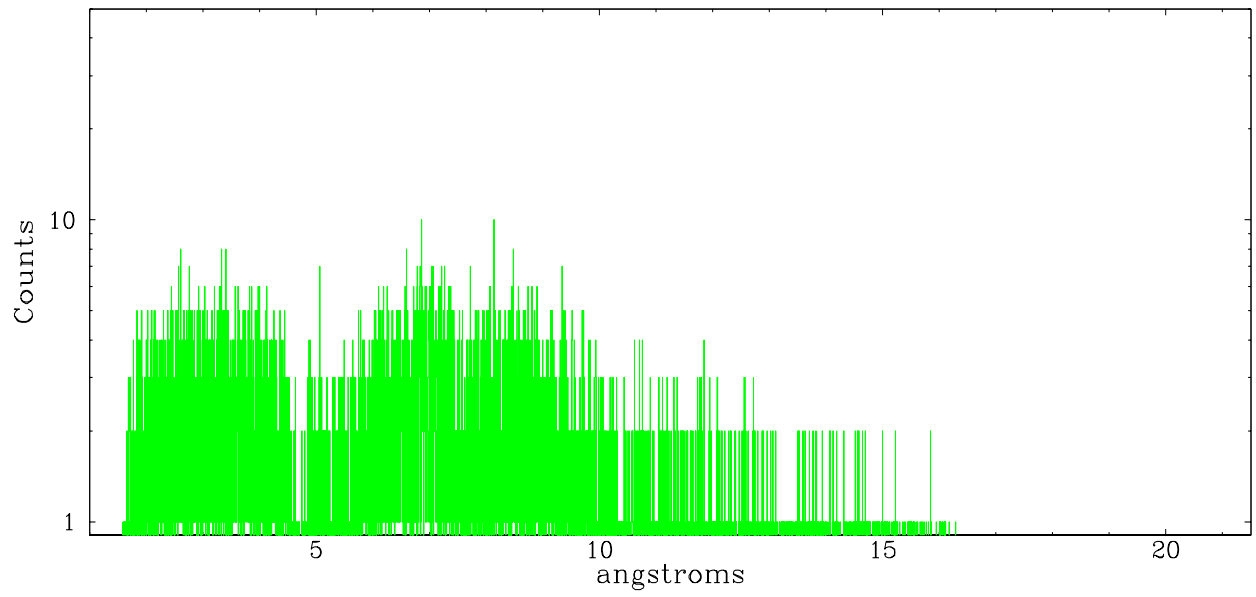
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	485	918	8906	19855	7624	747	468



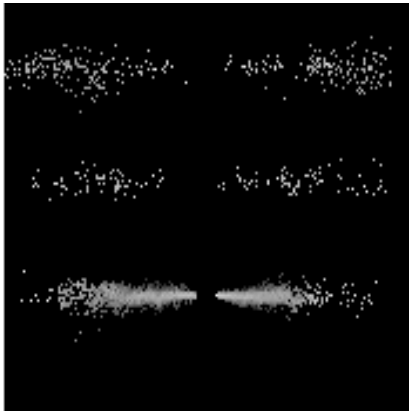
heg order -1



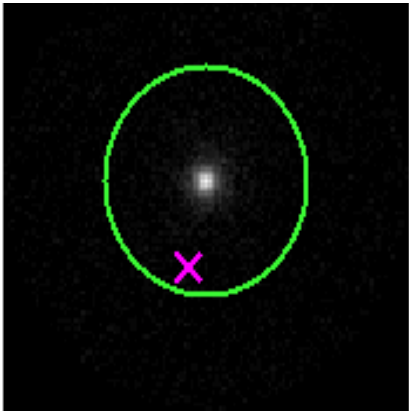
heg order +1



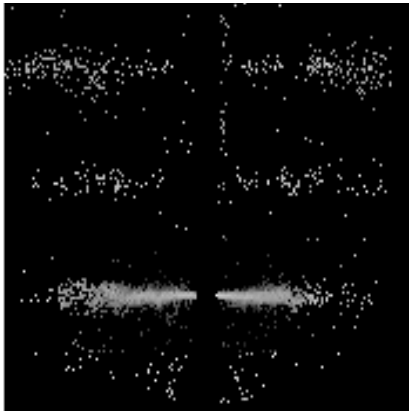
3.2 MEG Arm



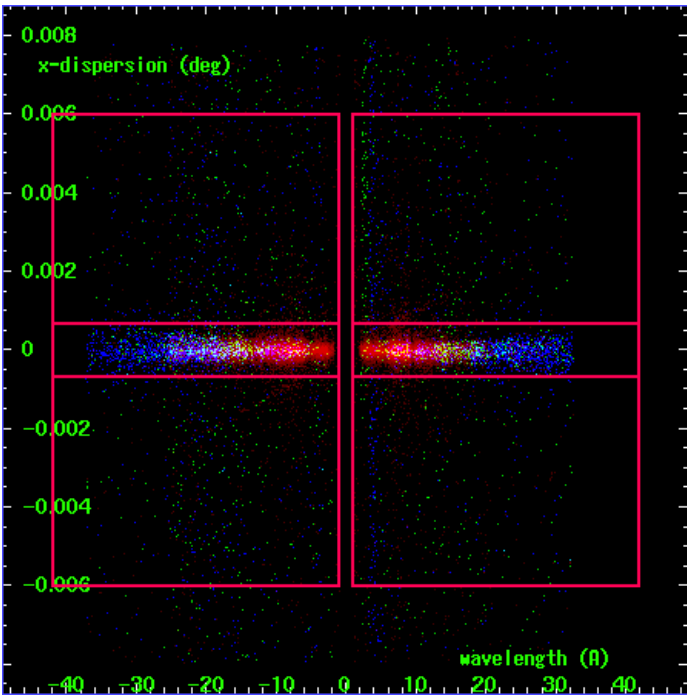
MEG Order Sort 123



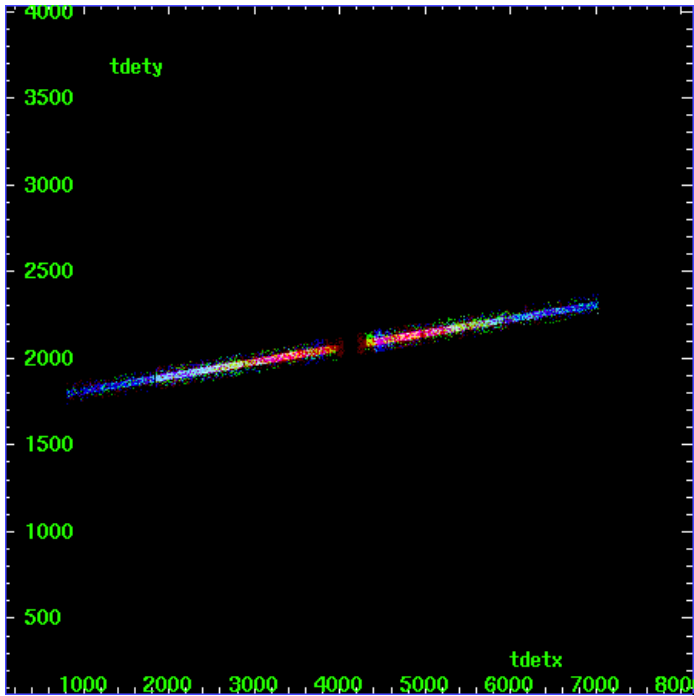
MEG Zero Order



MEG Order Sort ALL

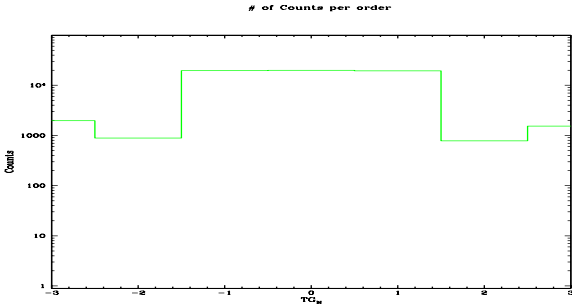


Spot Image MEG

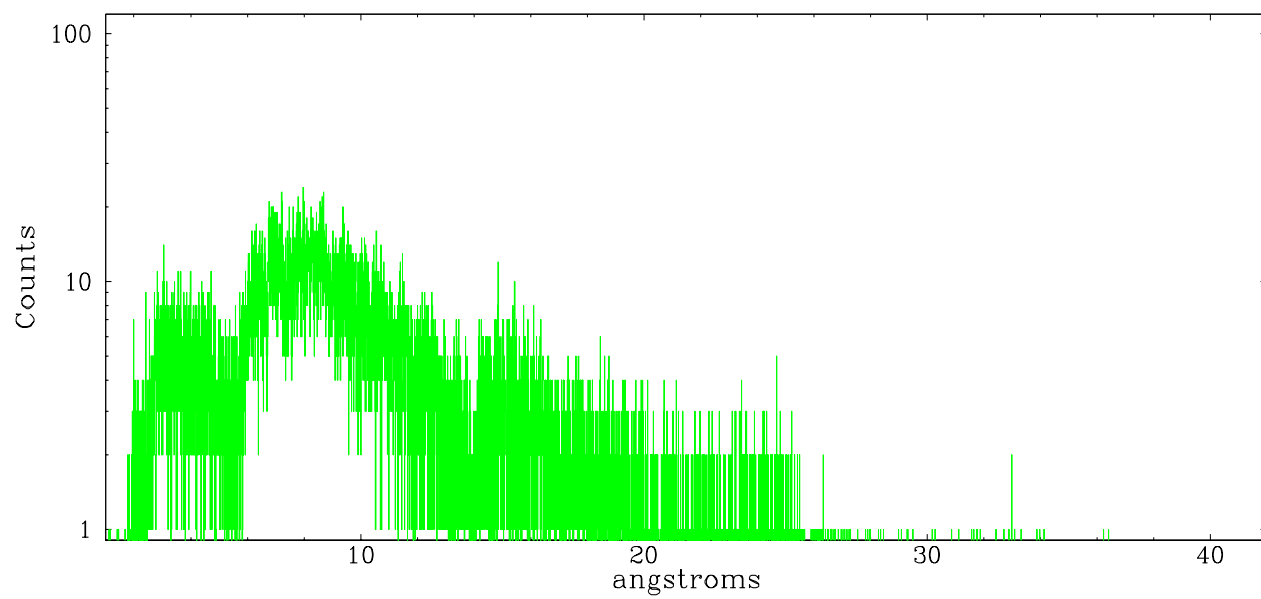


Full Detector MEG

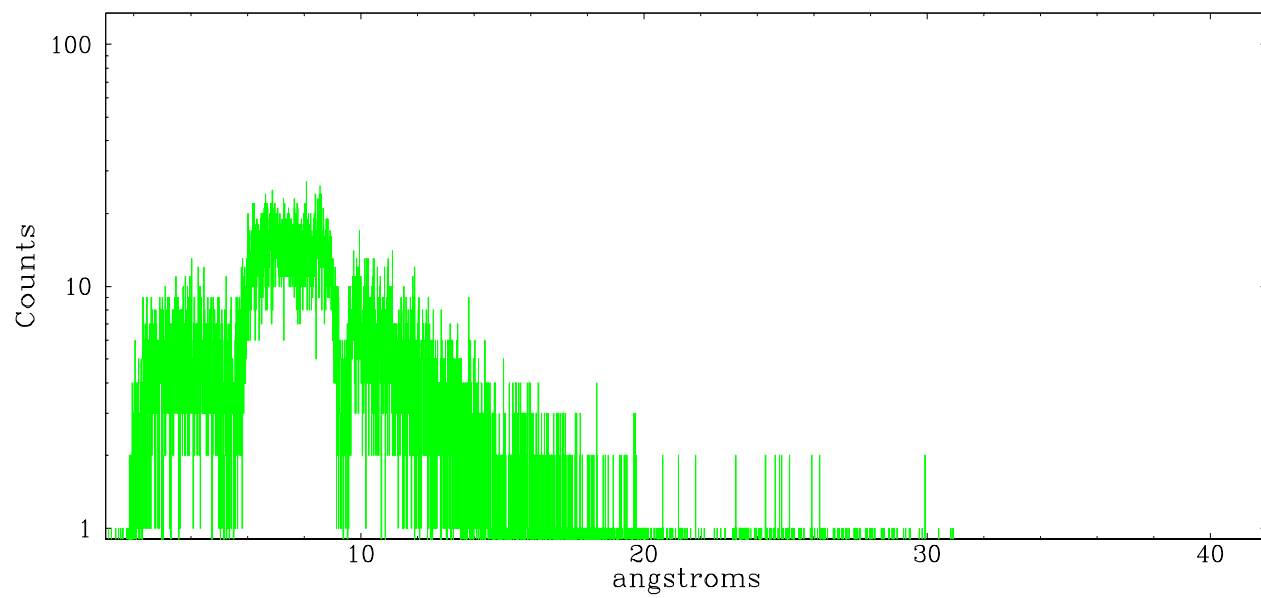
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1968	884	19563	19855	19341	780	1537



meg order -1



meg order +1





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.01.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	79.945

## A.2 Comments

Star in slot 5 has an RMS deviation > 0.200000 arcsec.  
The aspect solution is not expected to be degraded by this amount of deviation.