

# V&V Reference Report

## L2 ASCDS Version : 7.6.8

Observation 4442 - L2 Version 001  
Chandra X-Ray Center

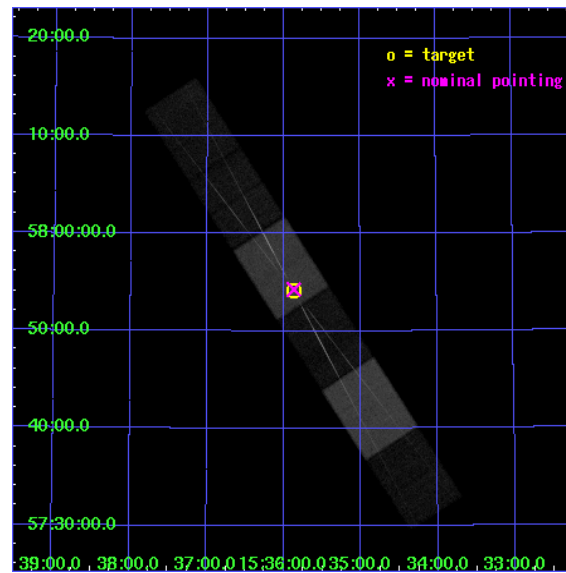
L2 Processing Date : Jul 14 2006

## 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

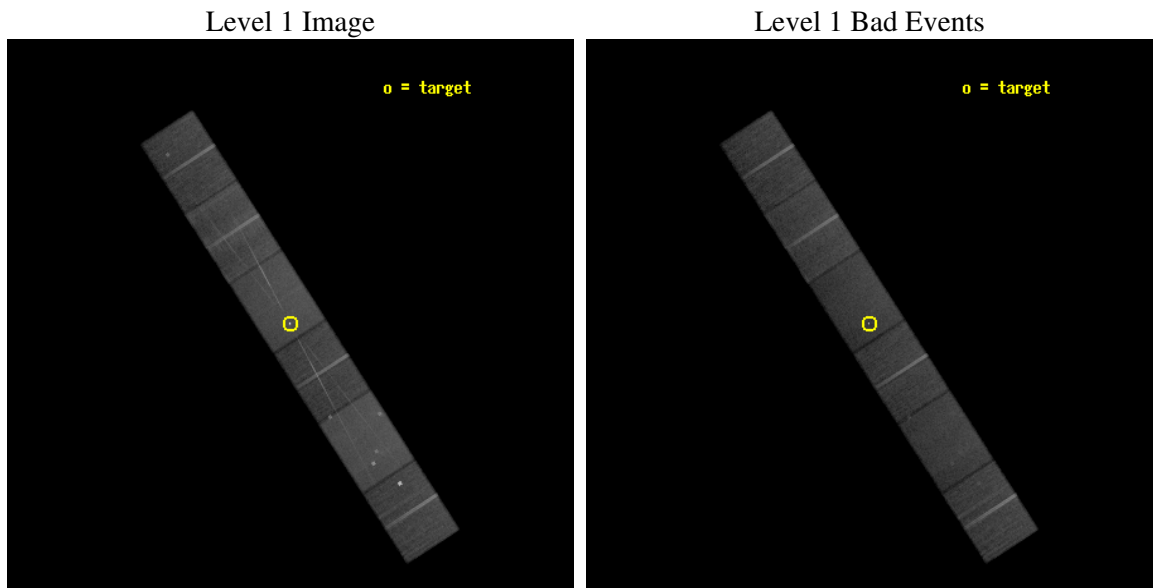
seq_num	700629
obs_id	4442
title	PROBING THE WARM ABSORBER/EMITTER IN THE SEYFERT 1 GALAXY MARKARIAN 290
observer	Prof. Claude Canizares
object	MARKARIAN 290
dtcycle	0
cycle	P
ra_targ	233.967917
dec_targ	57.9025
ra_nom	233.96680587739
dec_nom	57.904656592001
roll_nom	237.15757705804
revision	2
ontime	50180.0
livetime	49369.549475805
ontime4	50180.0
ontime5	50180.0
ontime6	50180.0
ontime7	50180.0
ontime8	50177.459009826
ontime9	50180.0
l2events	402599



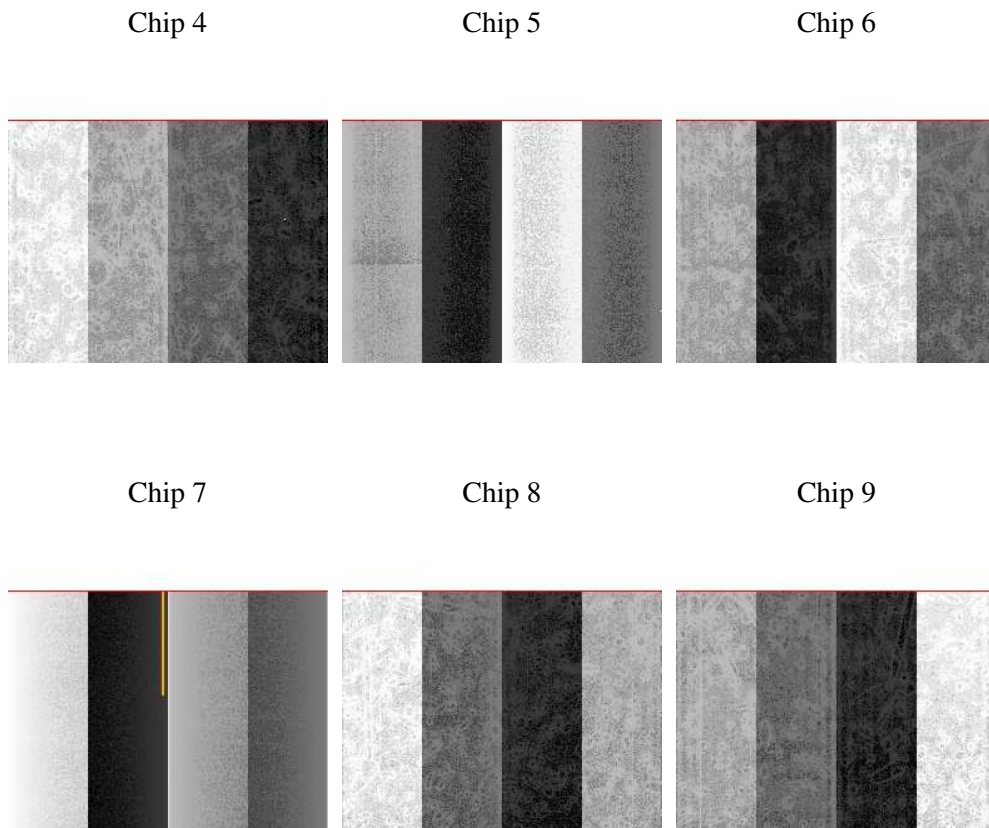
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.8
caldsver	3.2.2
date	2006-07-14T12:14:28
revision	2

sched_exp_time	50000.000000
ontime	50591.493235916
ontime4	50591.493235916
ontime5	50591.493235916
ontime6	50591.493235916
ontime7	50591.493235916
ontime8	50591.493265808
ontime9	50594.034255981
l1events	1775338

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	280607	353034	252065	340448	309148	240036
rejected events	236203	196423	213741	197616	242023	208959
rejected %	84%	55%	84%	58%	78%	87%

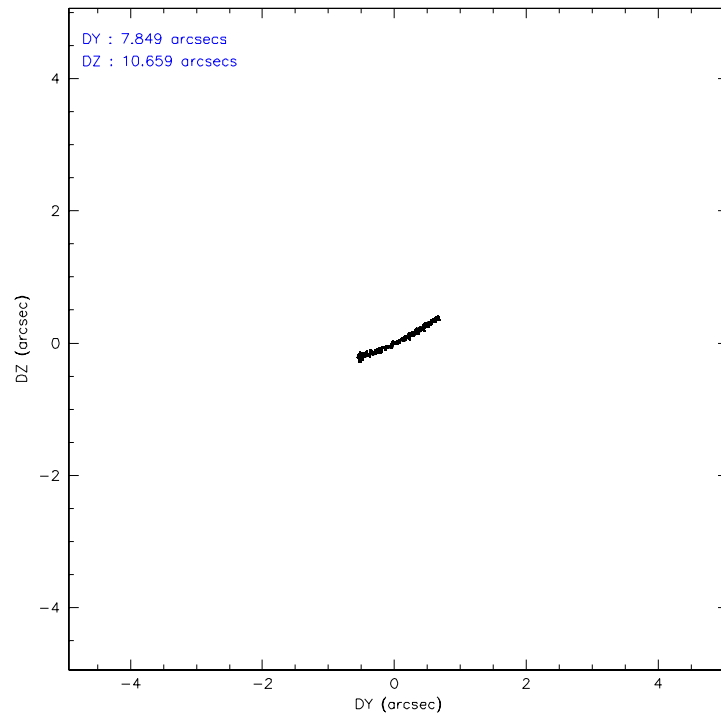
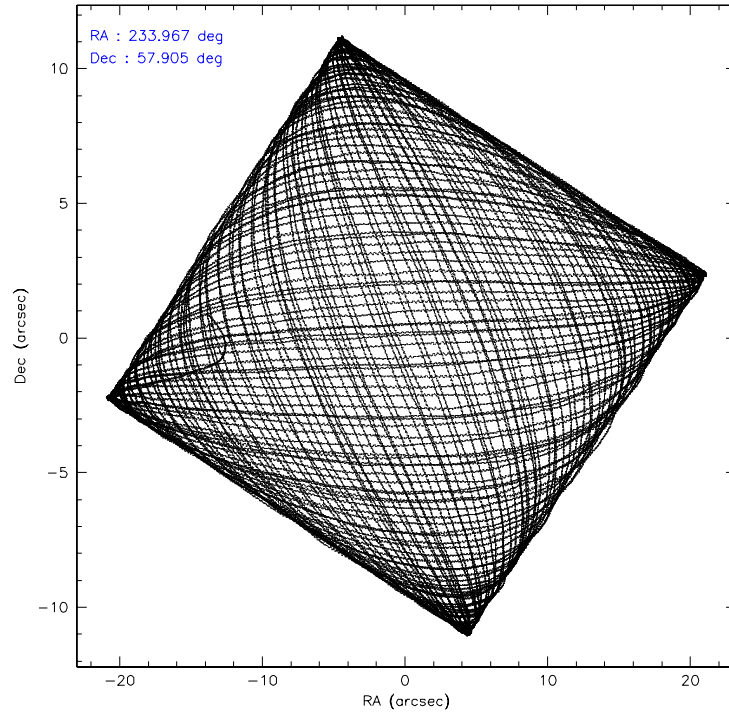
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	27674	13272	19176	11505	23837	13710
	9%	3%	7%	3%	7%	5%
grade 1 events	249	509	130	388	173	157
	0%	0%	0%	0%	0%	0%
grade 2 events	6239	48344	6945	35159	13814	5791
	2%	13%	2%	10%	4%	2%
grade 3 events	3139	4309	3314	9216	7065	3150
	1%	1%	1%	2%	2%	1%
grade 4 events	3049	4098	3307	9097	6686	3115
	1%	1%	1%	2%	2%	1%
grade 5 events	10034	17499	10630	23393	13872	11081
	3%	4%	4%	6%	4%	4%
grade 6 events	4691	87877	5826	78933	16331	5550
	1%	24%	2%	23%	5%	2%
grade 7 events	225532	177126	202737	172757	227370	197482
	80%	50%	80%	50%	73%	82%

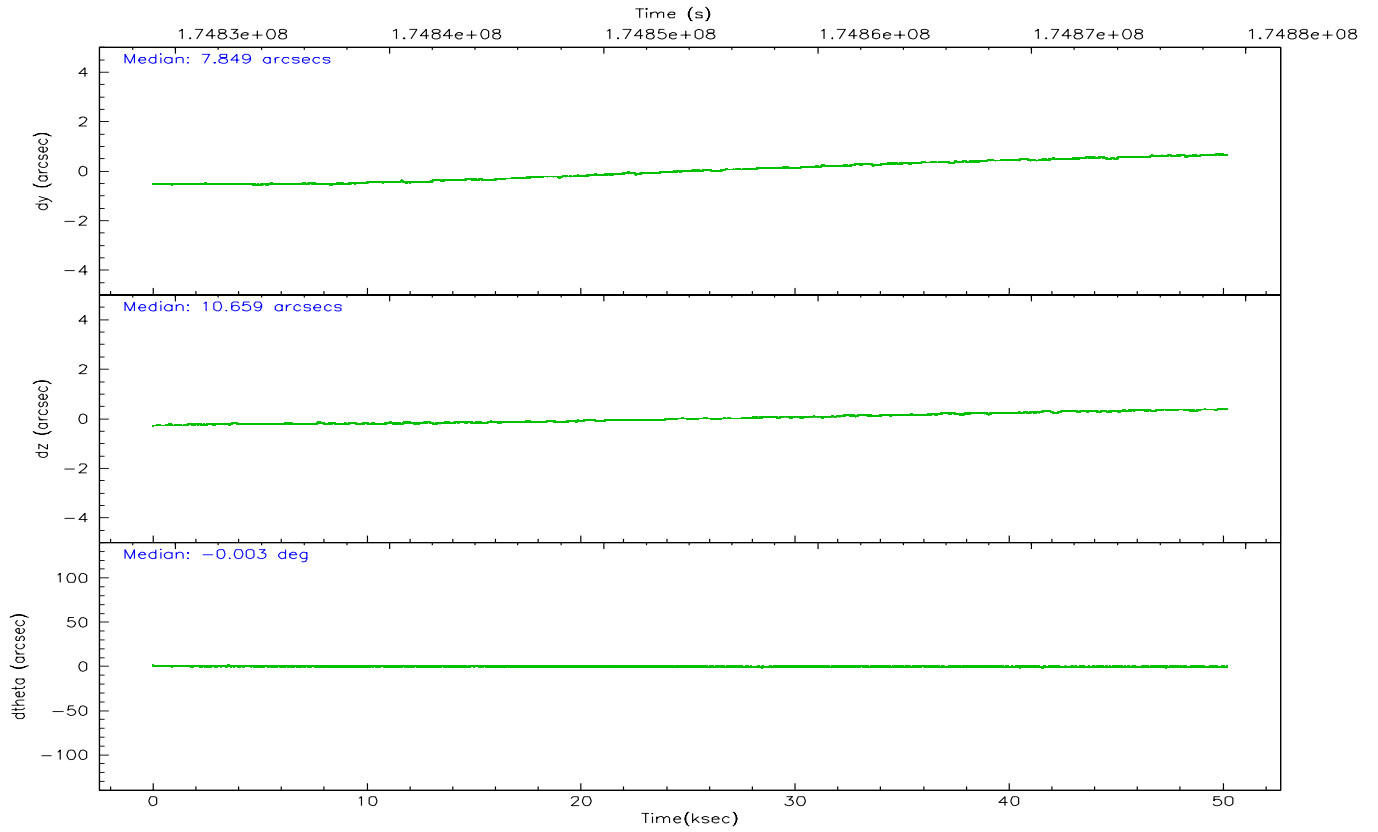
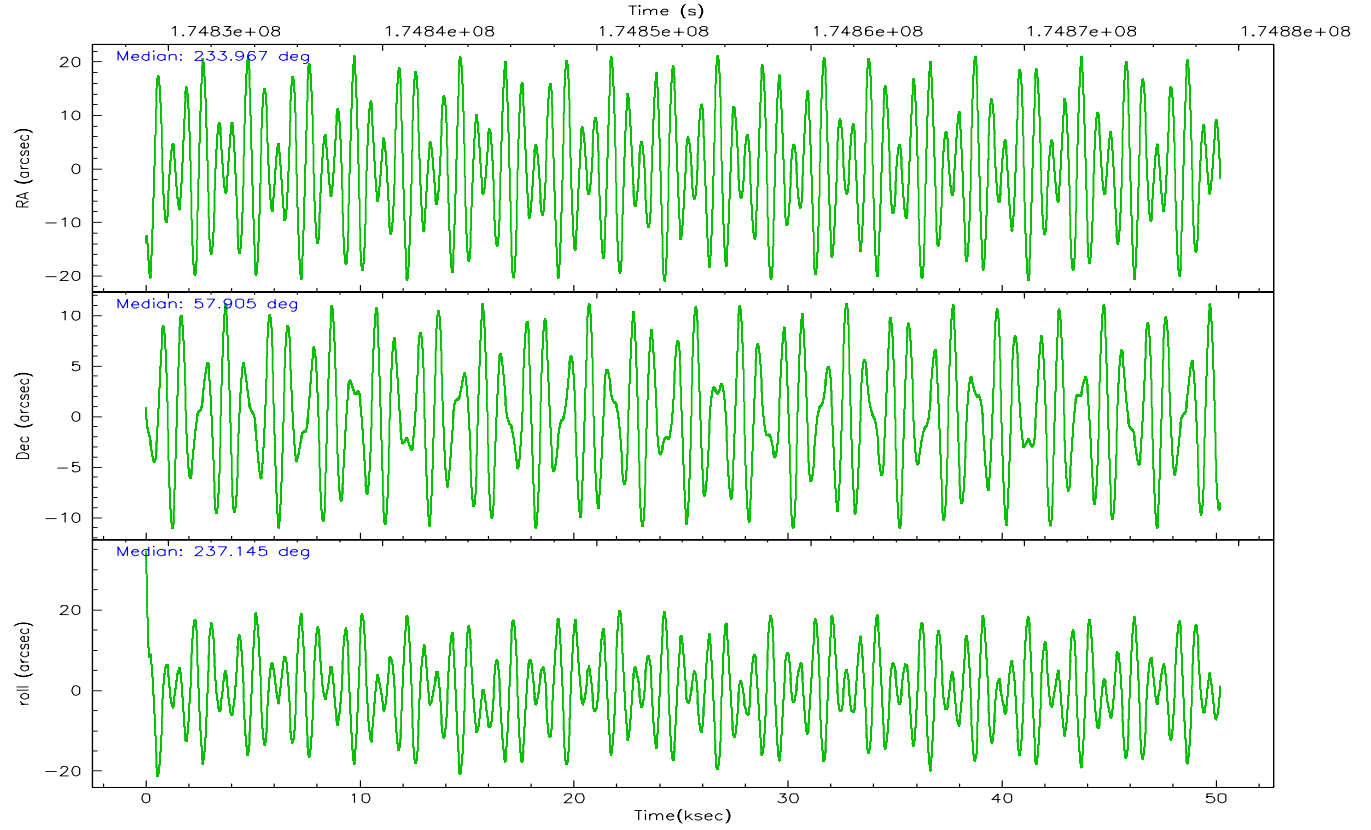


## 2.2 Compared Parameters

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	CUSTOM
Pointing RA	233.968636	233.9668058773856	Subarray start row	1	1
Pointing Dec	57.931855	57.90465659200062	Subarray row count	774	774
Pointing Roll	236.999392	237.157577058035	Alternating exposures requested	N	N
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Primary exposure time	0.000000	2.5
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-187.132523	-187.1228876879999			
SIM translation stage offset (mm)	-3	-3.009634895007935			
Observation start time	174829133.184000	174827959.43747			
Observation start date	2003-07-17T11:37:49	2003-07-17T11:19:19			
Observation end time	174879133.184000	174879695.80217			
Observation end date	2003-07-18T01:31:09	2003-07-18T01:41:35			
Read mode	TIMED	TIMED			

## 2.3 Aspect



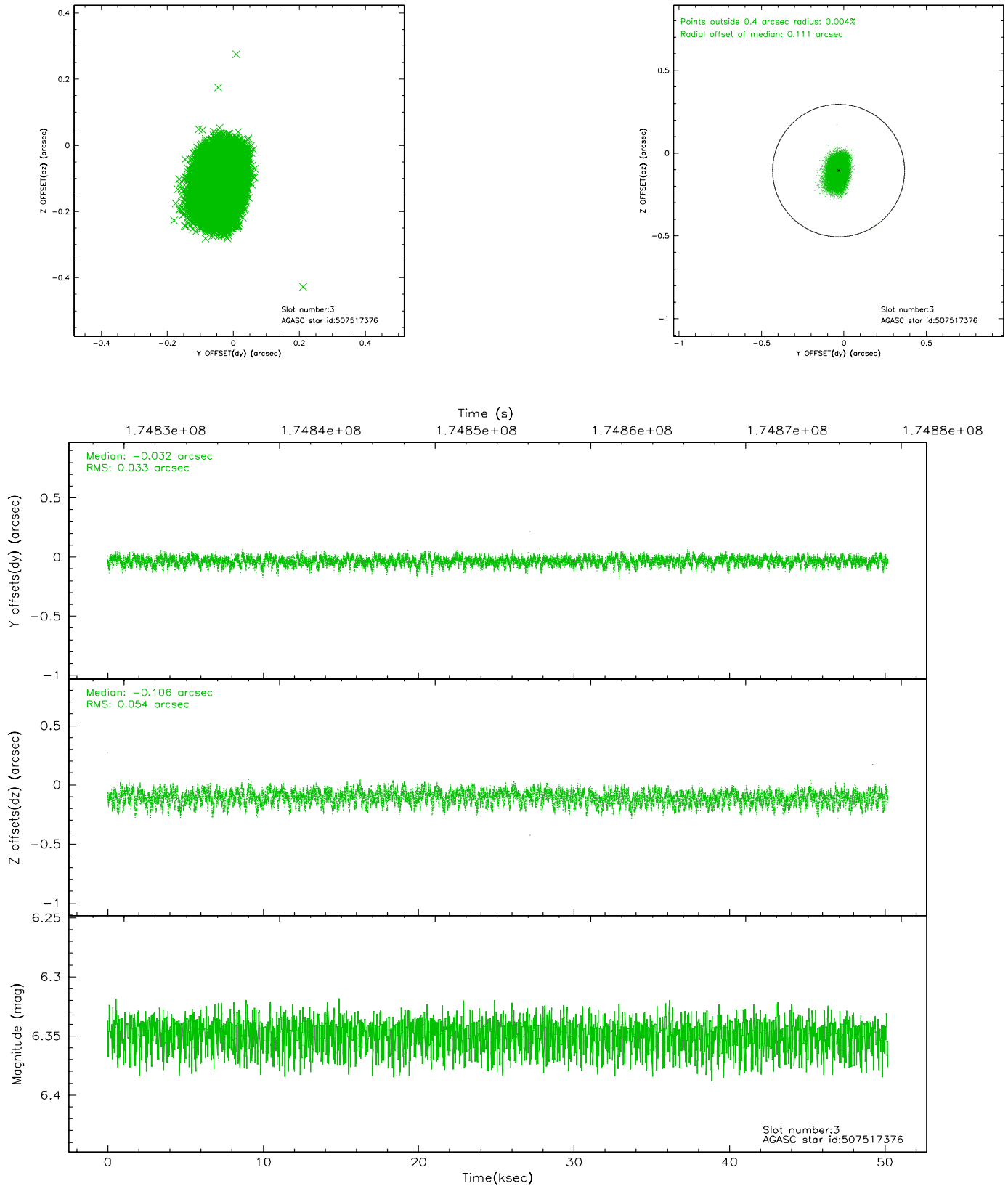


### Slot Statistics

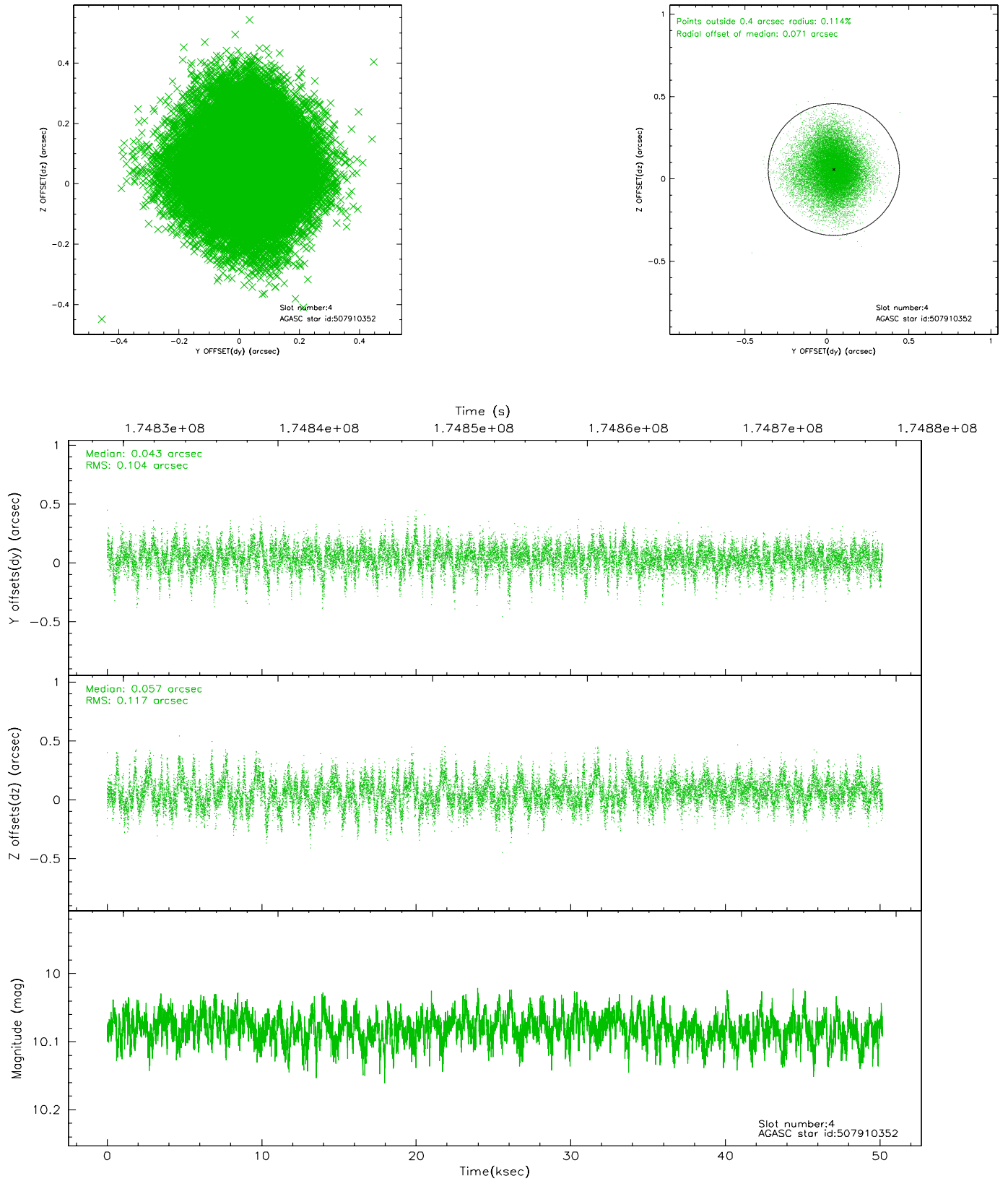
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	12241	-0.027	-0.055	0.009	0.014	0.000000	0.000000	-760.47	-1794.13
1	FID	ACIS-S-4	7.18	12241	0.038	0.028	0.013	0.020	0.000000	0.000000	2152.90	114.42
2	FID	ACIS-S-5	7.23	12240	-0.044	0.036	0.014	0.021	0.000000	0.000000	-1813.33	108.11
3	GUIDE	507517376	6.35	24481	-0.032	-0.106	0.067	0.112	234.727410	57.461777	611.99	2149.34
4	GUIDE	507910352	10.08	24465	0.043	0.057	0.167	0.276	232.620414	57.785943	1828.83	-1897.42
5	GUIDE	507910944	9.11	24474	-0.095	-0.003	0.081	0.128	233.075683	57.963052	825.70	-1497.34
6	GUIDE	507914840	9.61	24398	0.091	-0.030	0.094	0.154	234.138477	57.741300	397.50	647.05
7	GUIDE	507915904	7.82	24475	0.001	0.080	0.073	0.116	234.676266	57.520719	490.10	1949.72

## 2.4 Star Slots

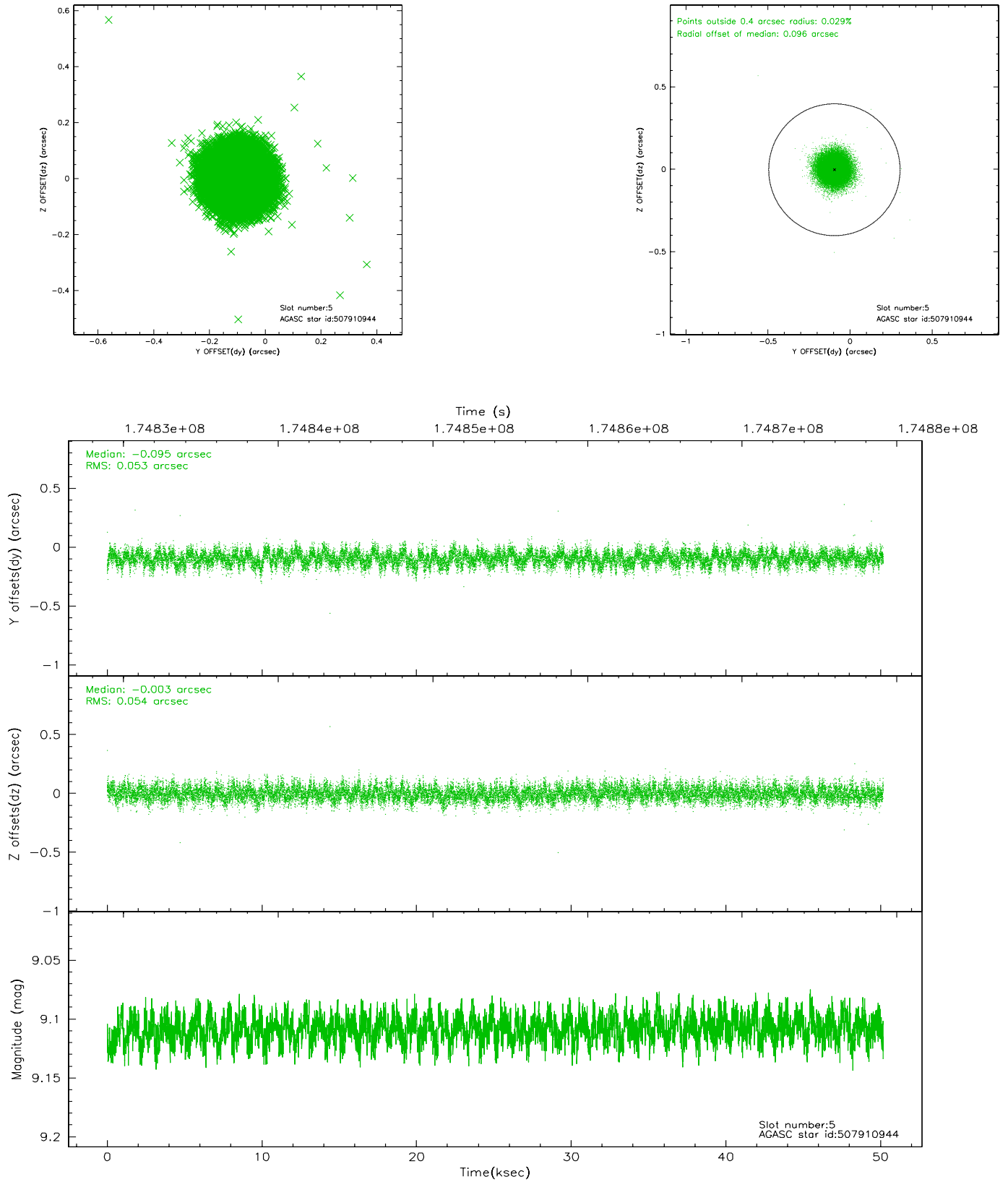
### 2.4.1 Slot 3



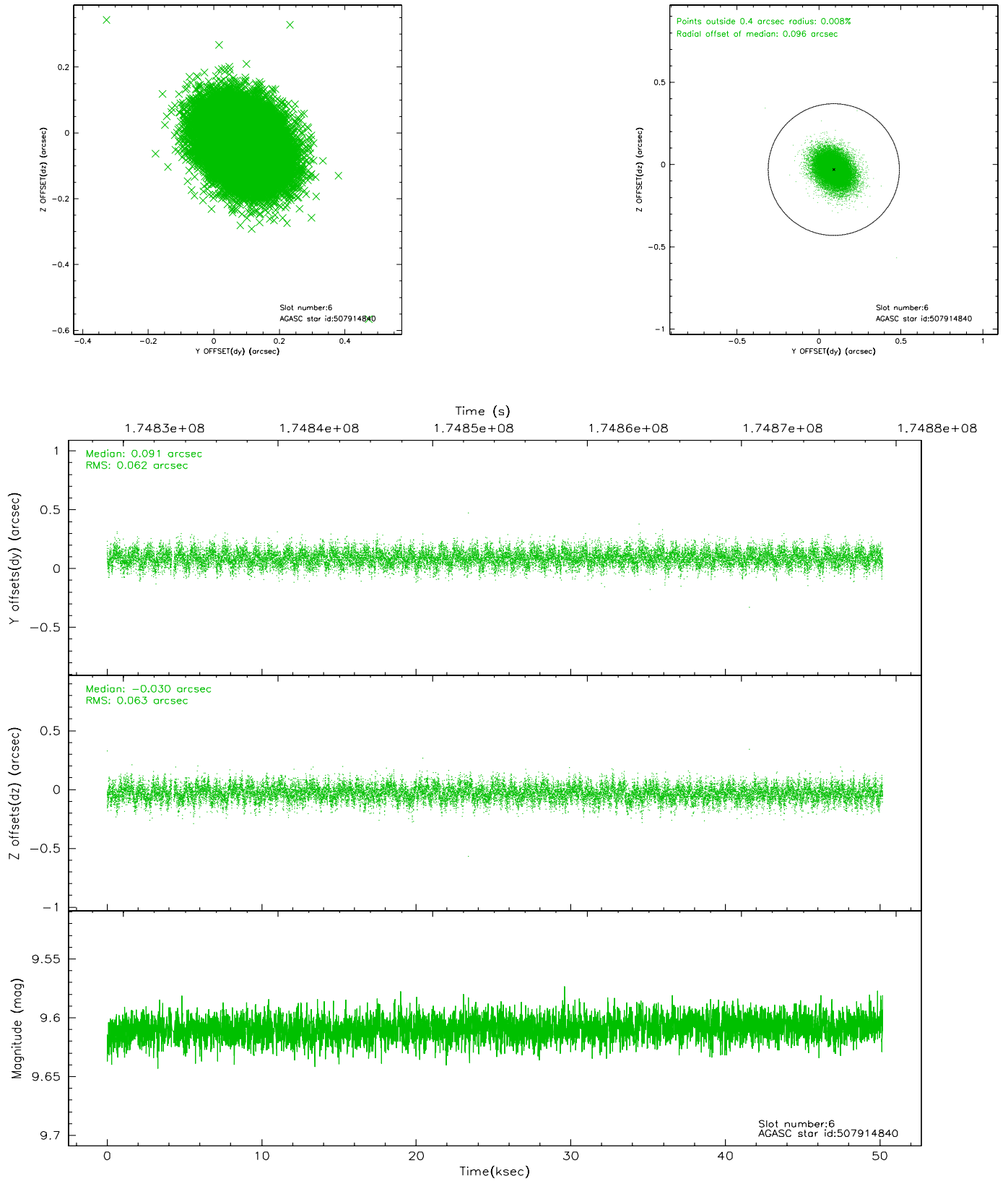
## 2.4.2 Slot 4



### 2.4.3 Slot 5

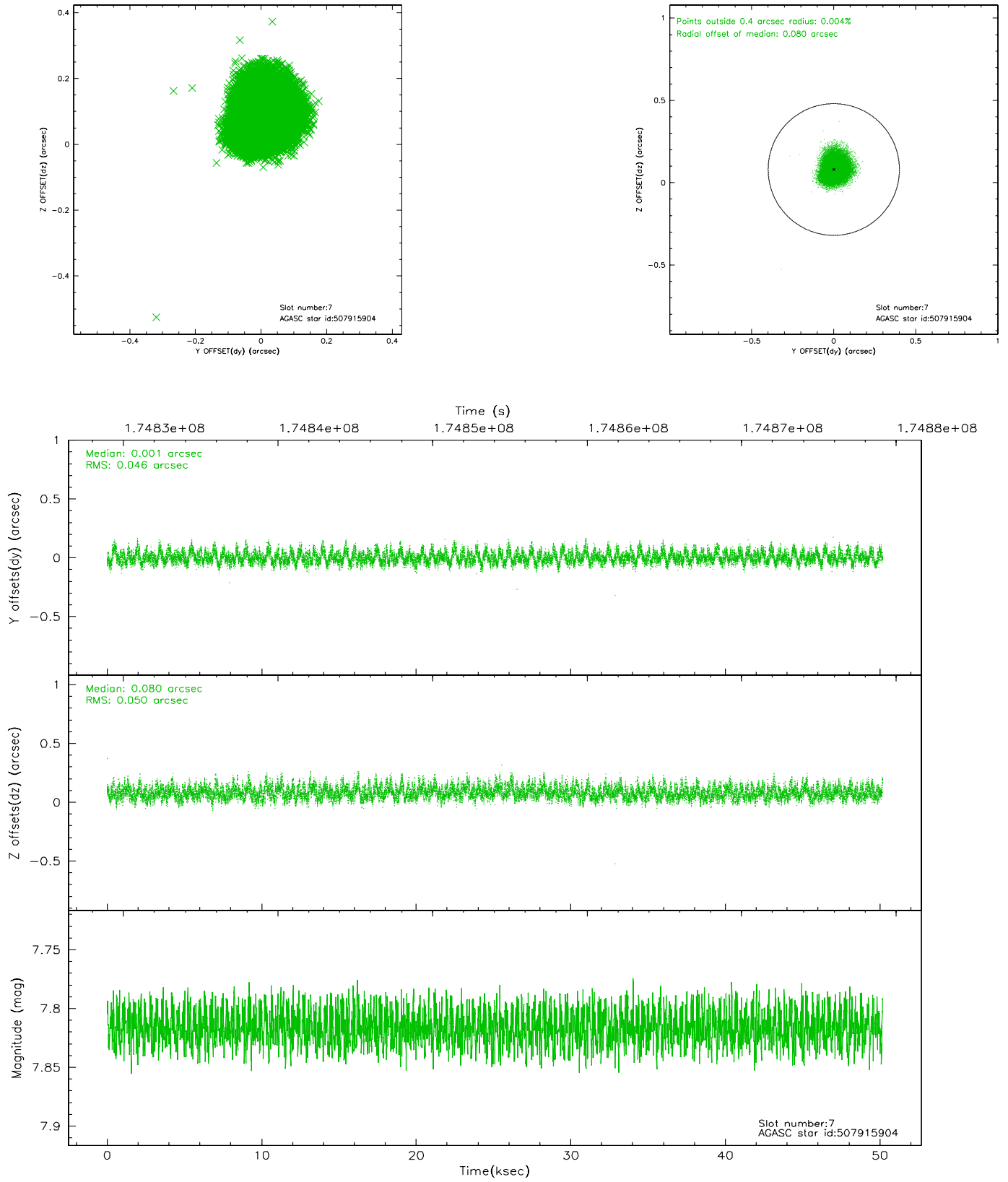


## 2.4.4 Slot 6



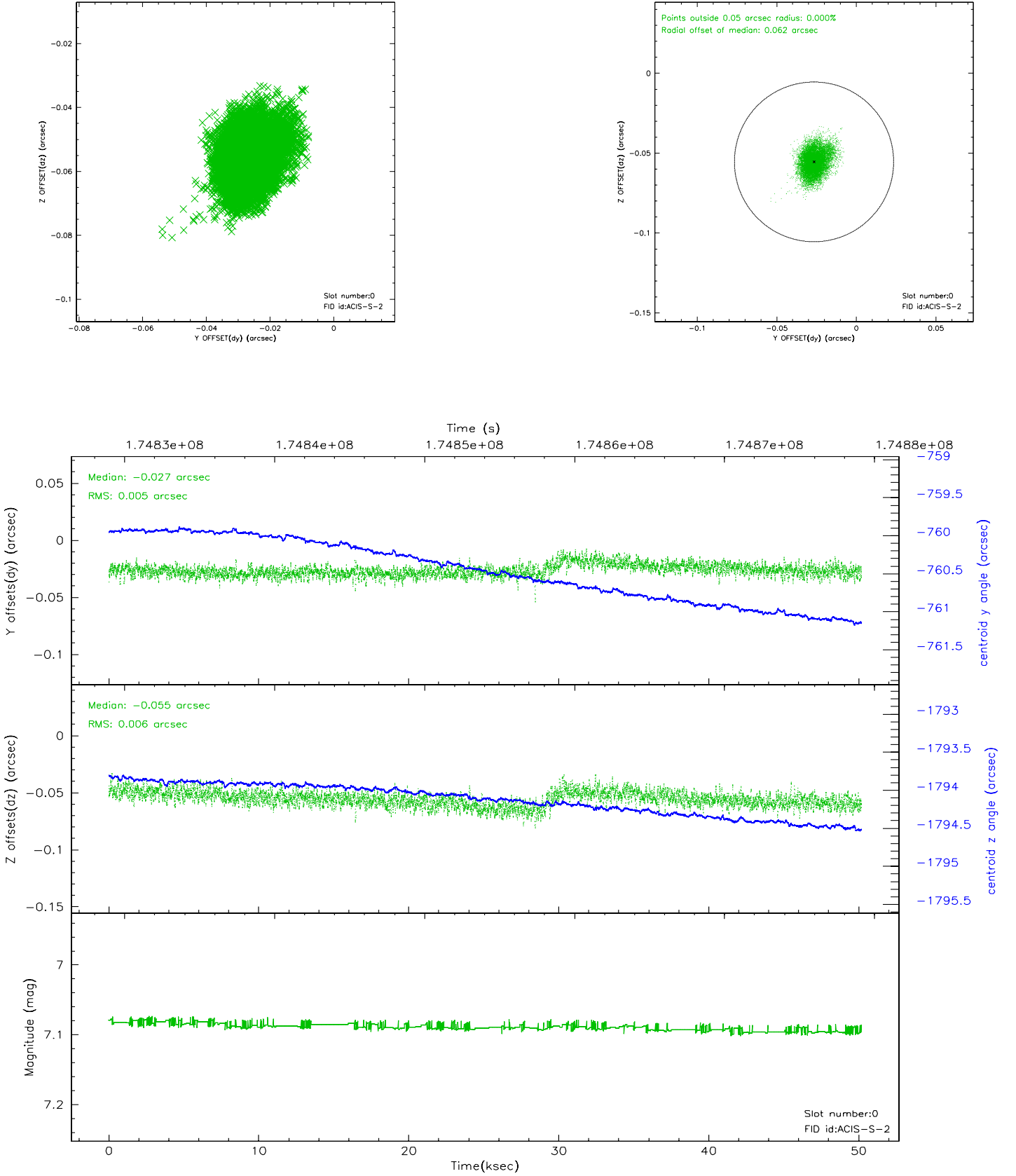


## 2.4.5 Slot 7

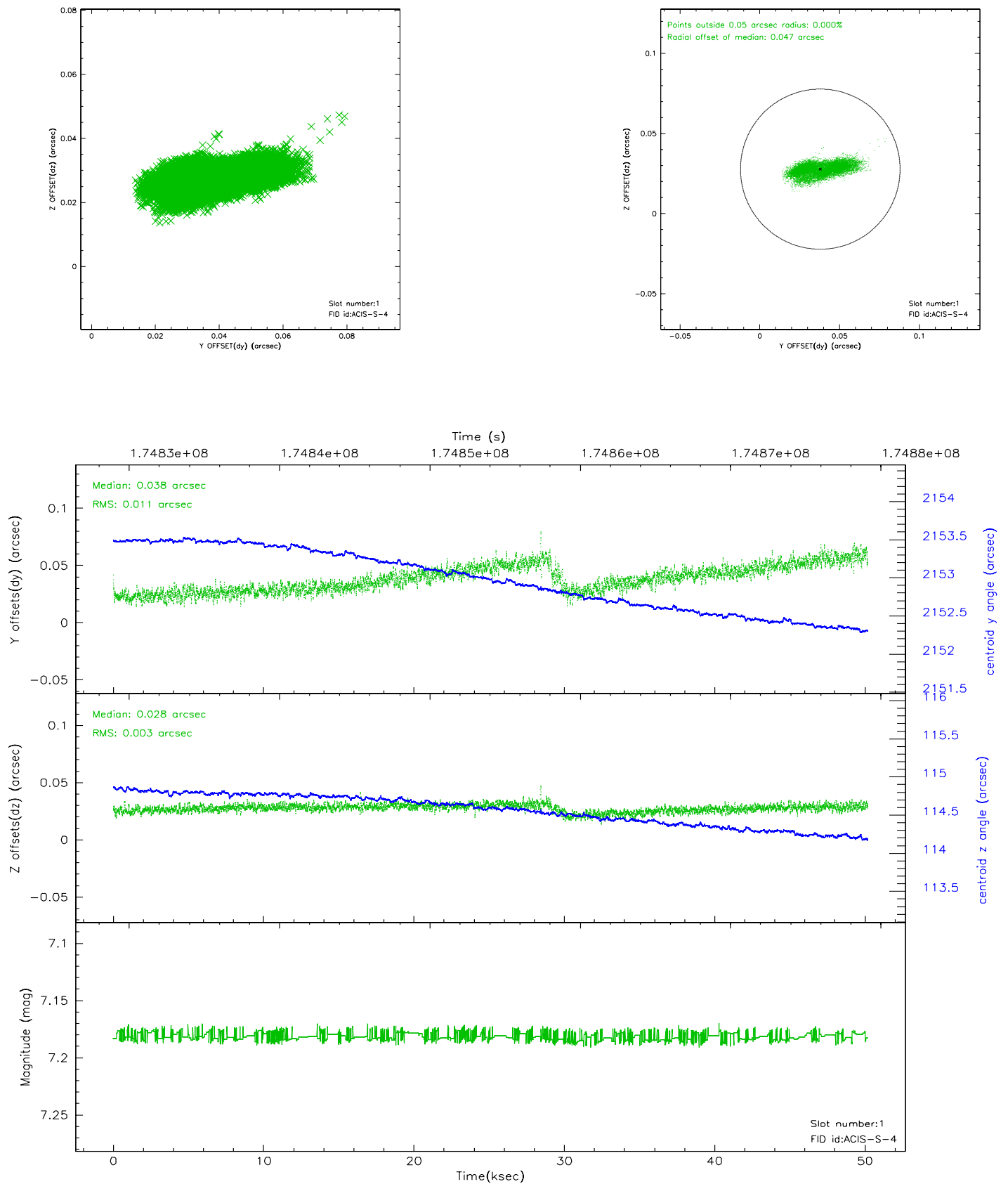


## 2.5 FID Slots

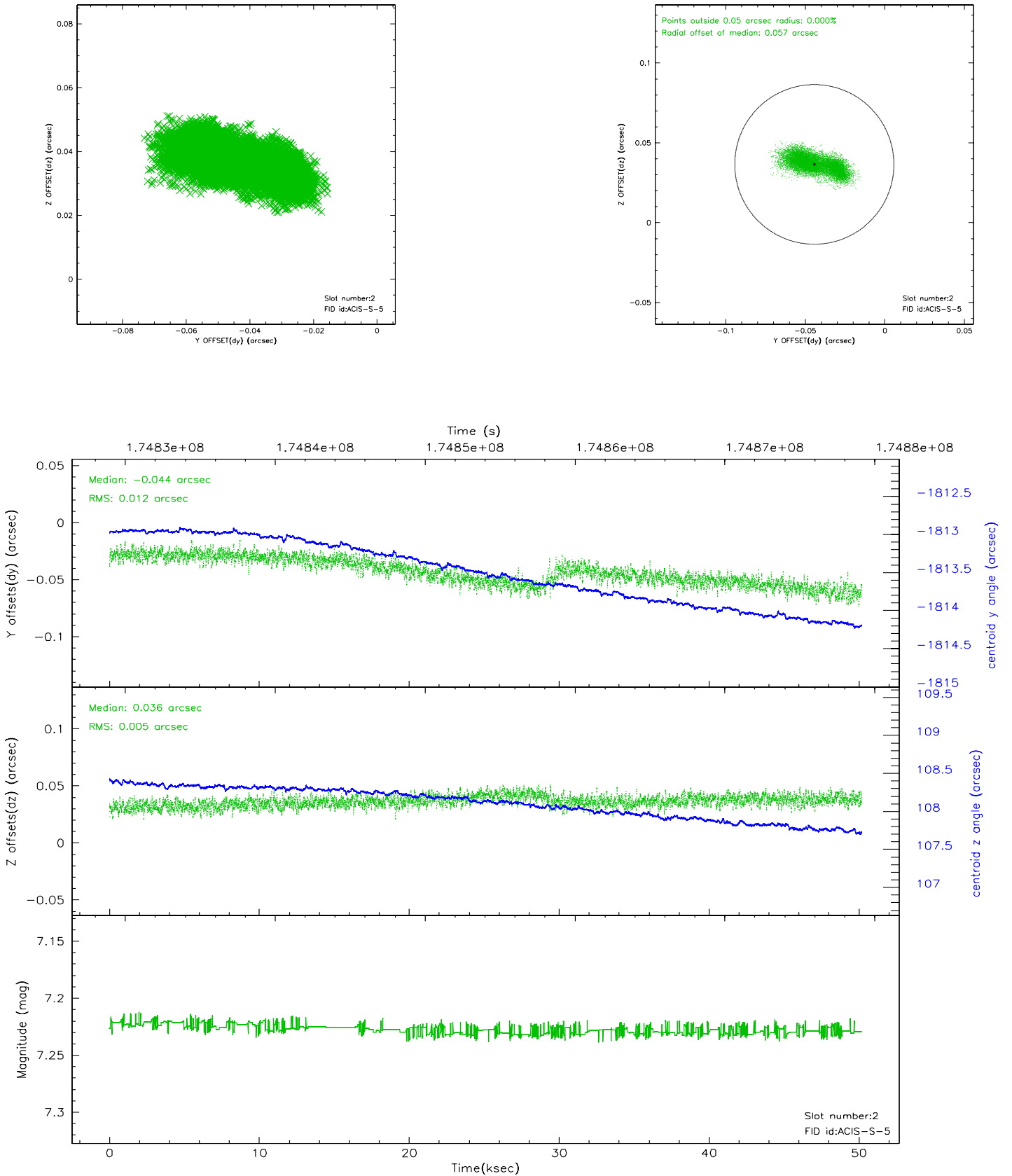
### 2.5.1 Slot 0



## 2.5.2 Slot 1

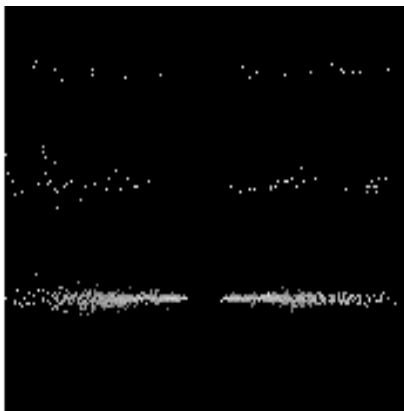


### 2.5.3 Slot 2

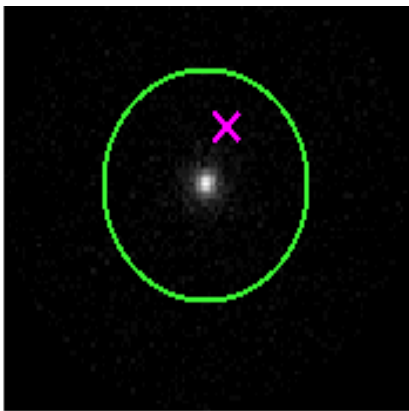


# 3 Gratings

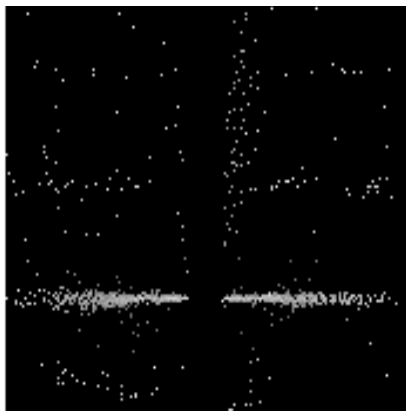
## 3.1 HEG Arm



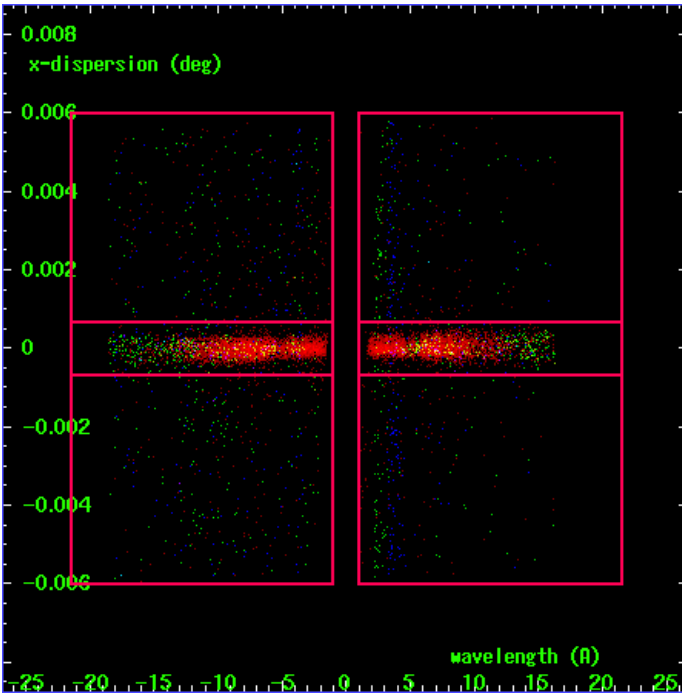
HEG Order Sort 123



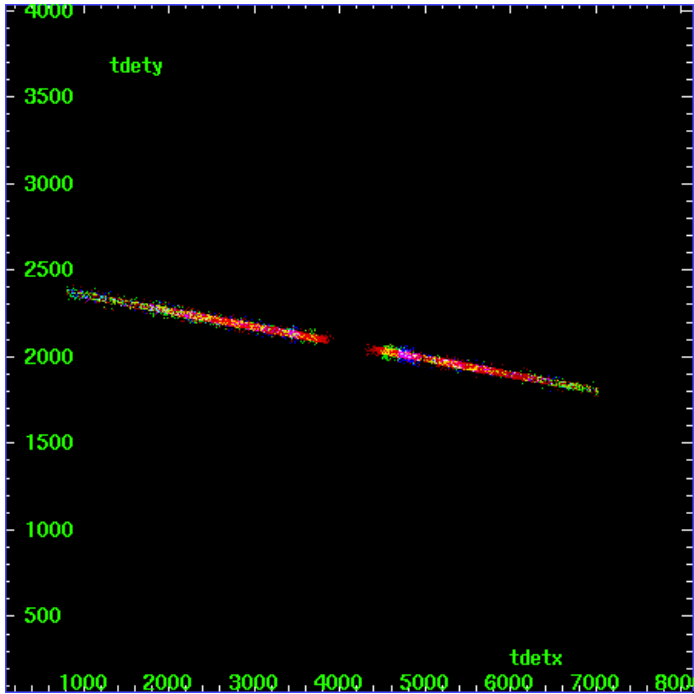
HEG Zero Order



HEG Order Sort ALL

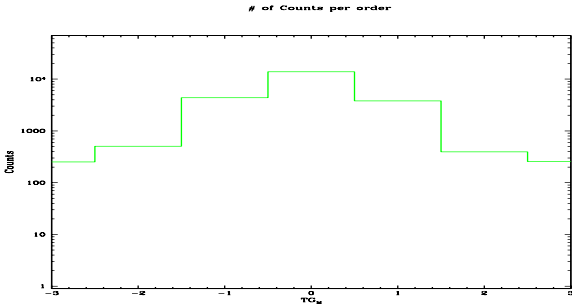


Spot Image HEG

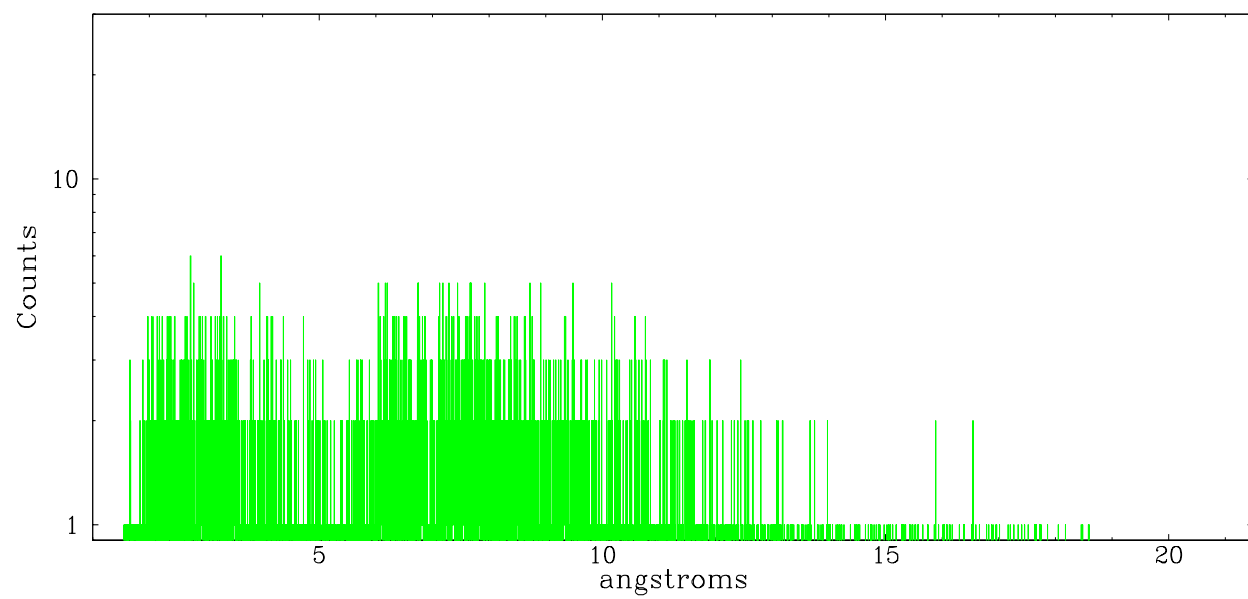


Full Detector HEG

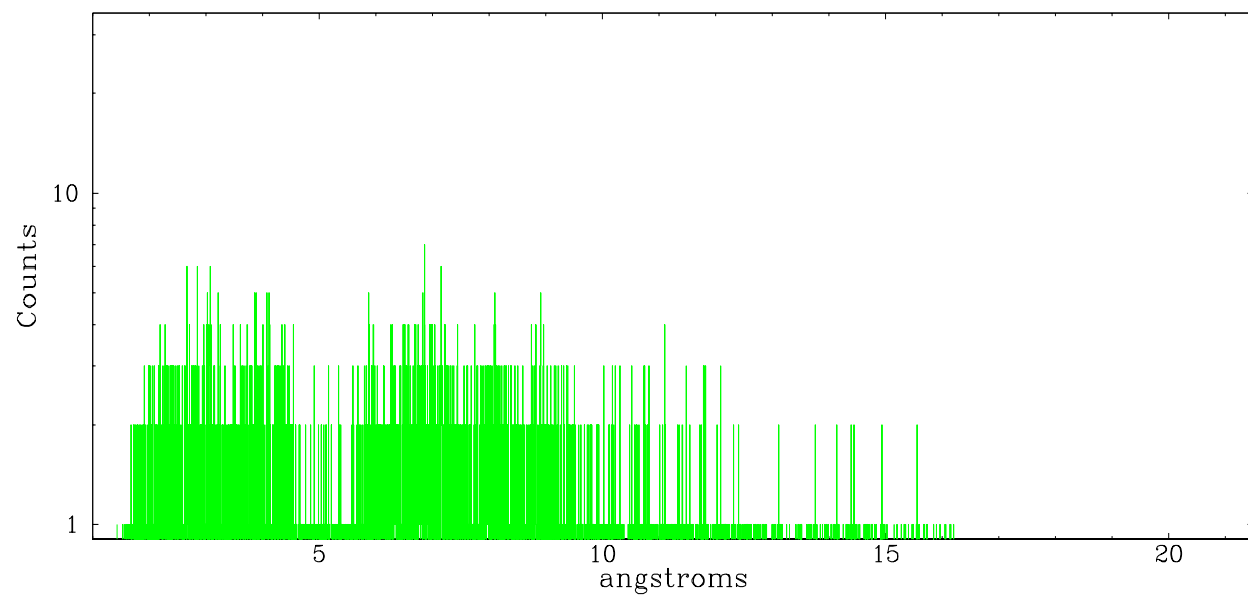
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	252	507	4364	13814	3808	393	255



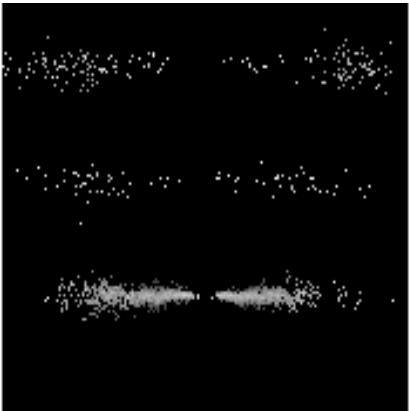
heg order -1



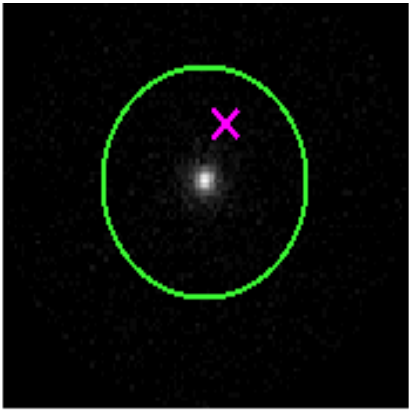
heg order +1



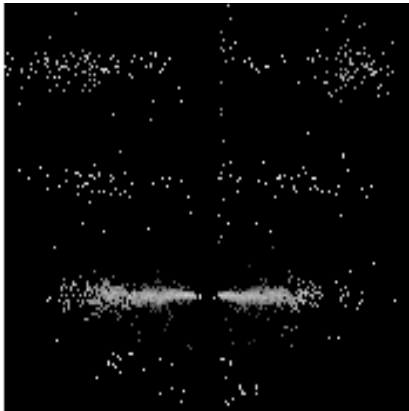
3.2 MEG Arm



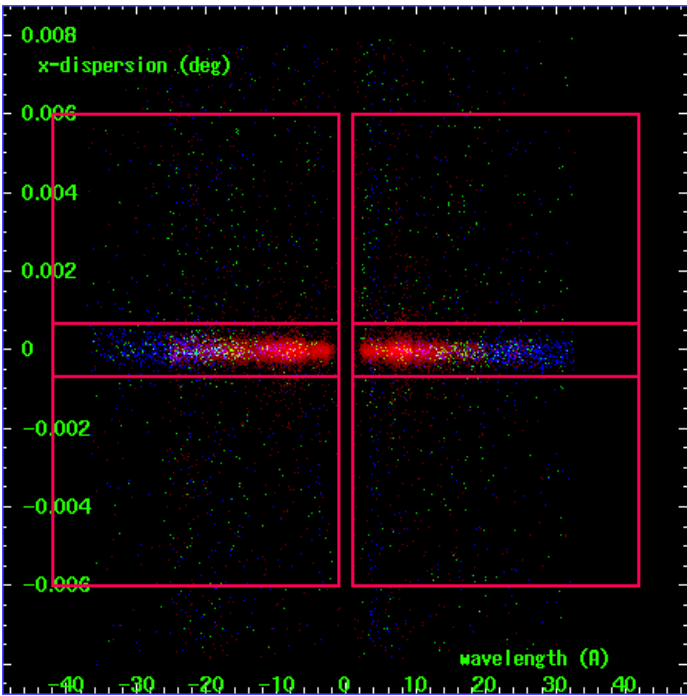
MEG Order Sort 123



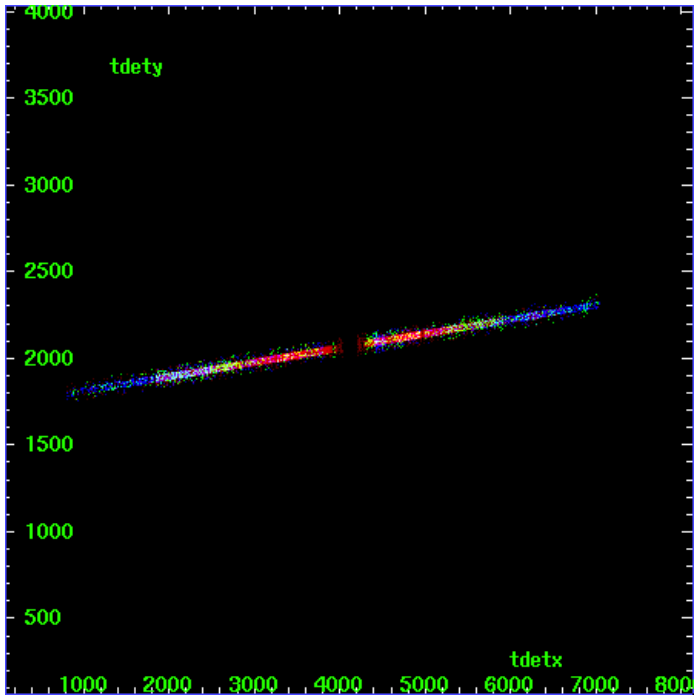
MEG Zero Order



MEG Order Sort ALL

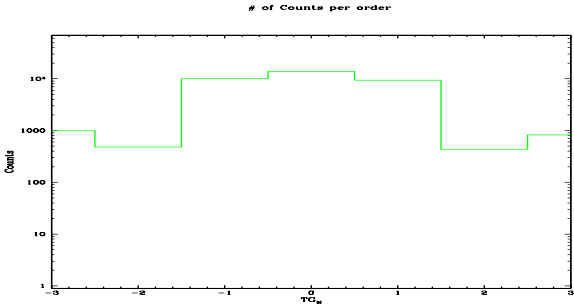


Spot Image MEG

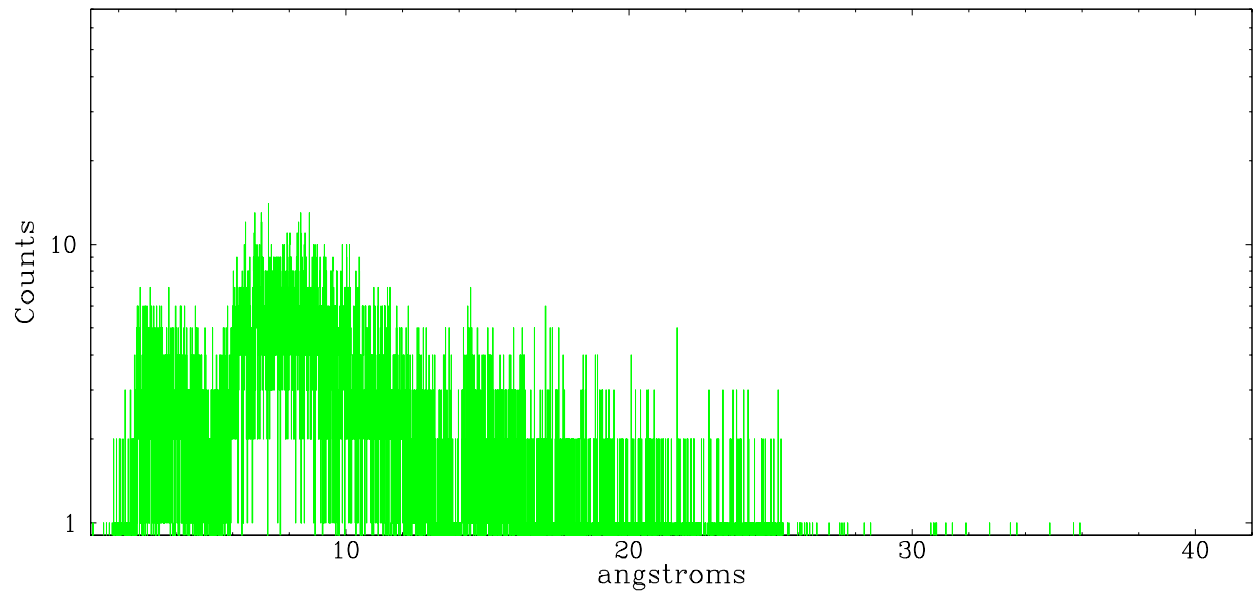


Full Detector MEG

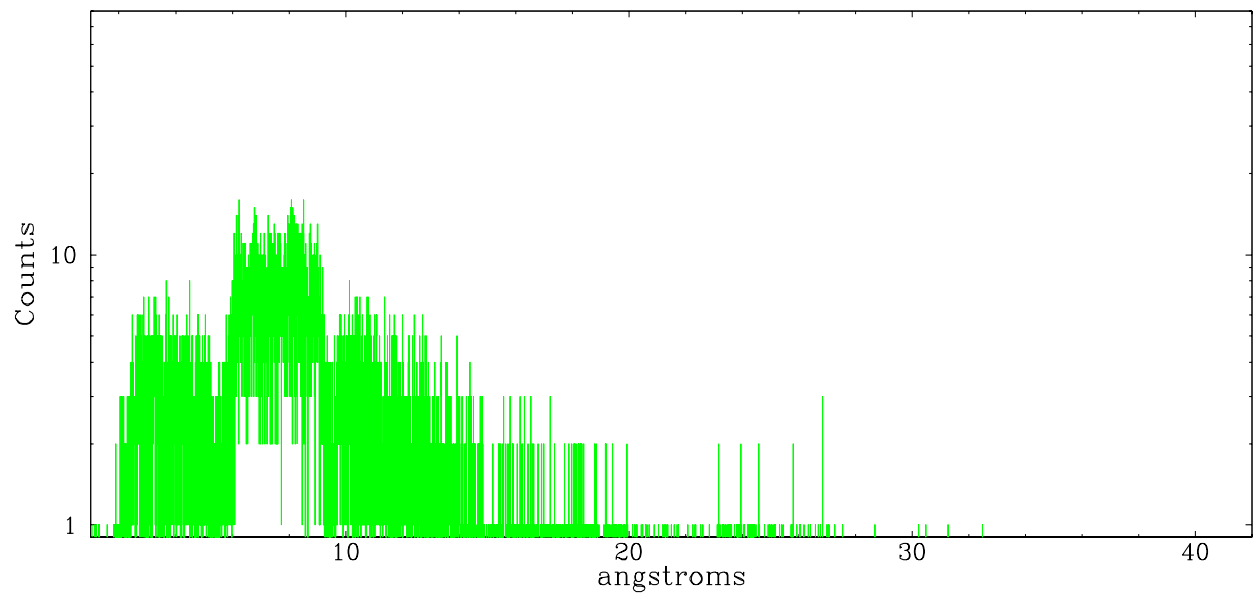
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	986	482	10054	13814	9417	436	827



meg order -1



meg order +1





## A Summary

### A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2006.07.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	50.18

### A.2 Comments