

# V&V Reference Report

## L2 ASCDS Version : 7.6.9

Observation 2087 - L2 Version 001  
Chandra X-Ray Center

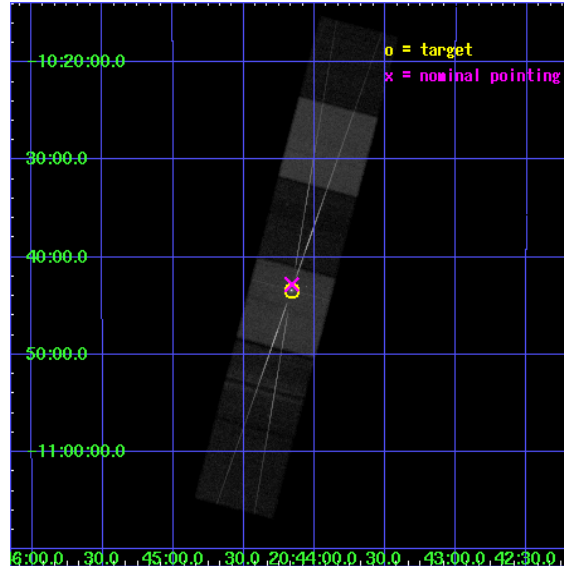
L2 Processing Date : Nov 14 2006

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# 1 Front

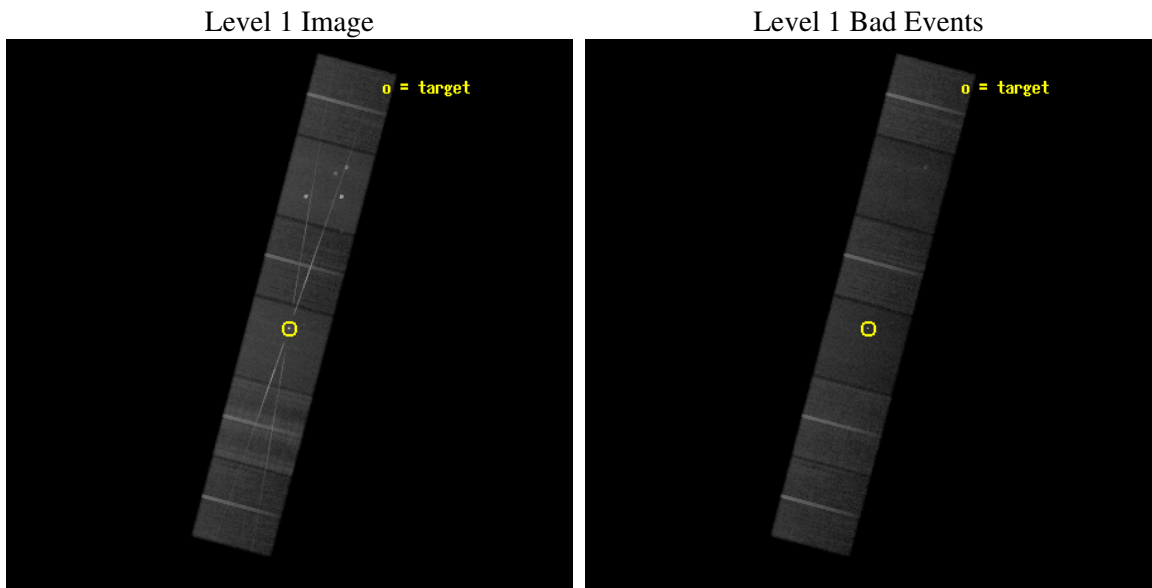
seq_num	700277
obs_id	2087
title	SIMULTANEOUS HST AND CHANDRA OBSERVATIONS OF THE X-RAY/UV ABSORBERS IN SEYFERT 1 GALAXIES
observer	Dr. Tahir Yaqoob
object	MKN 509
dtcycle	0
cycle	P
ra_targ	311.040833
dec_targ	-10.723417
ra_nom	311.04004312519
dec_nom	-10.713659910535
roll_nom	104.82264976863
revision	2
ontime	58691.20005466
livetime	57948.01673997
ontime4	58687.959064499
ontime5	58691.20005466
ontime6	58691.20005466
ontime7	58691.20005466
ontime8	58691.20005466
ontime9	58691.20005466
l2events	589073



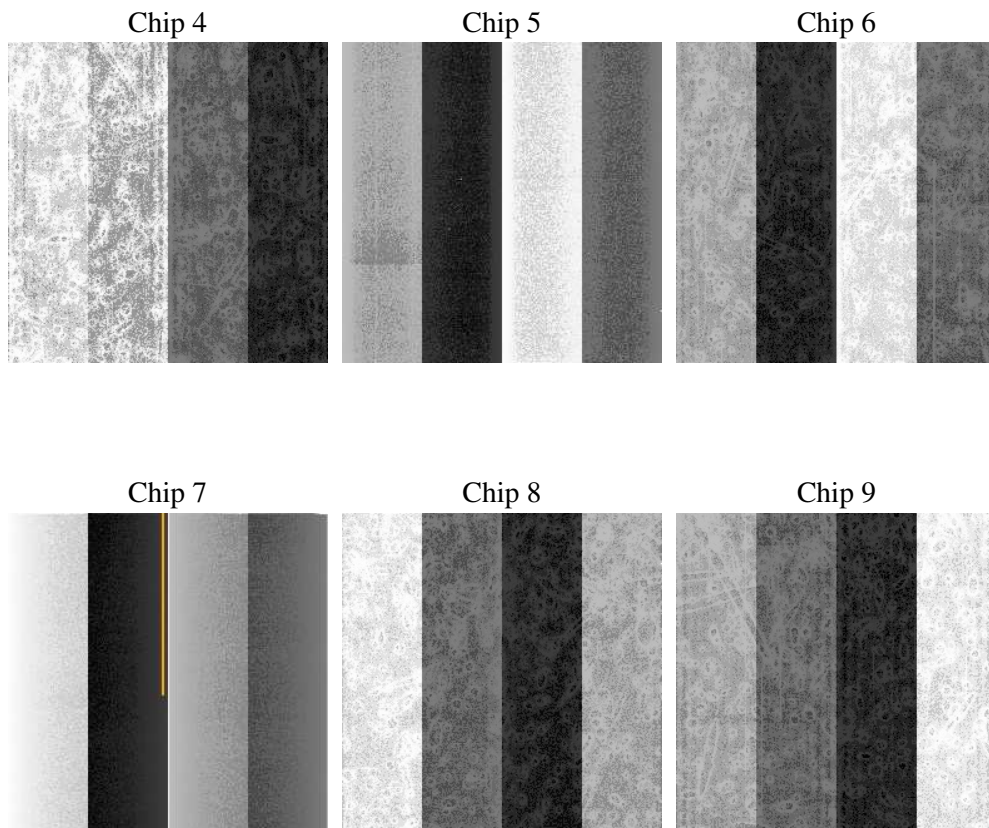
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1
ascdsver	7.6.9
caldsver	3.2.4
date	2006-11-14T18:47:32
revision	2

sched_exp_time	58740.000000
ontime	58694.463723913
ontime4	58691.222733751
ontime5	58694.463893518
ontime6	58694.463723913
ontime7	58694.463723913
ontime8	58694.463723913
ontime9	58694.463723913
l1events	2437504

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	369742	453480	368966	441259	480786	323271
rejected events	321851	236201	291005	248669	324103	277089
rejected %	87%	52%	78%	56%	67%	85%

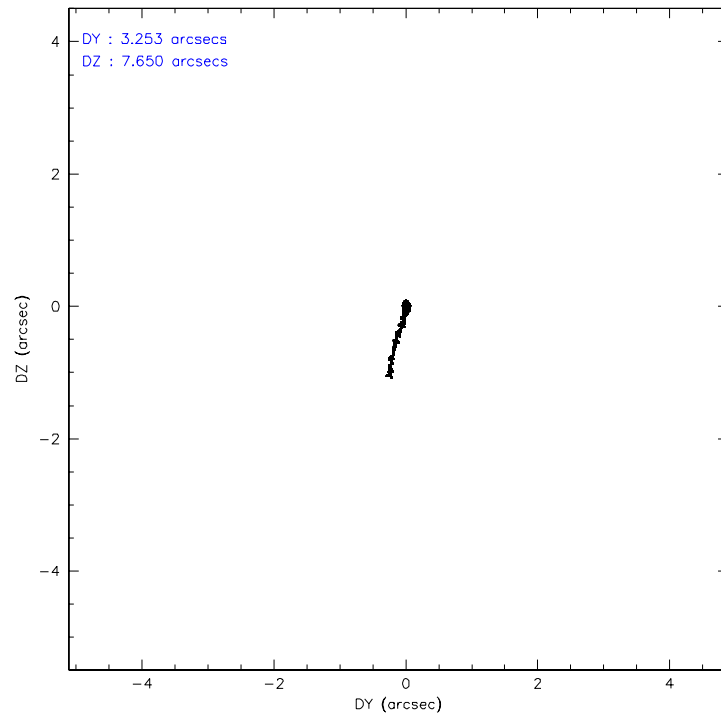
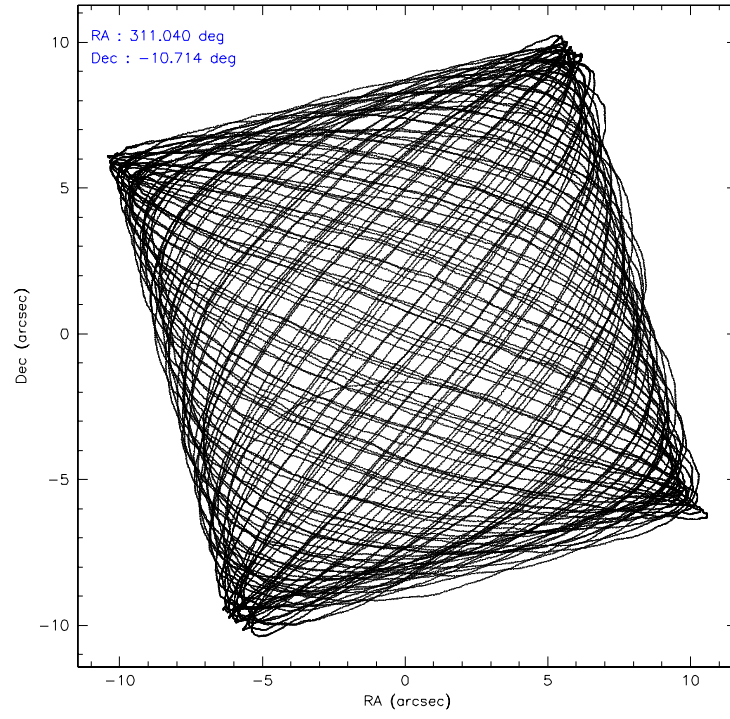
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	21278	33824	46330	16038	60856	21230
	5%	7%	12%	3%	12%	6%
grade 1 events	185	437	277	565	398	130
	0%	0%	0%	0%	0%	0%
grade 2 events	11727	63730	12754	48140	26284	9122
	3%	14%	3%	10%	5%	2%
grade 3 events	3619	6589	5027	11485	19457	3878
	0%	1%	1%	2%	4%	1%
grade 4 events	3756	5551	4829	11354	17520	3636
	1%	1%	1%	2%	3%	1%
grade 5 events	10582	19945	12481	26938	16277	12422
	2%	4%	3%	6%	3%	3%
grade 6 events	7513	107608	9025	105588	32570	8319
	2%	23%	2%	23%	6%	2%
grade 7 events	311082	215796	278243	221151	307424	264534
	84%	47%	75%	50%	63%	81%

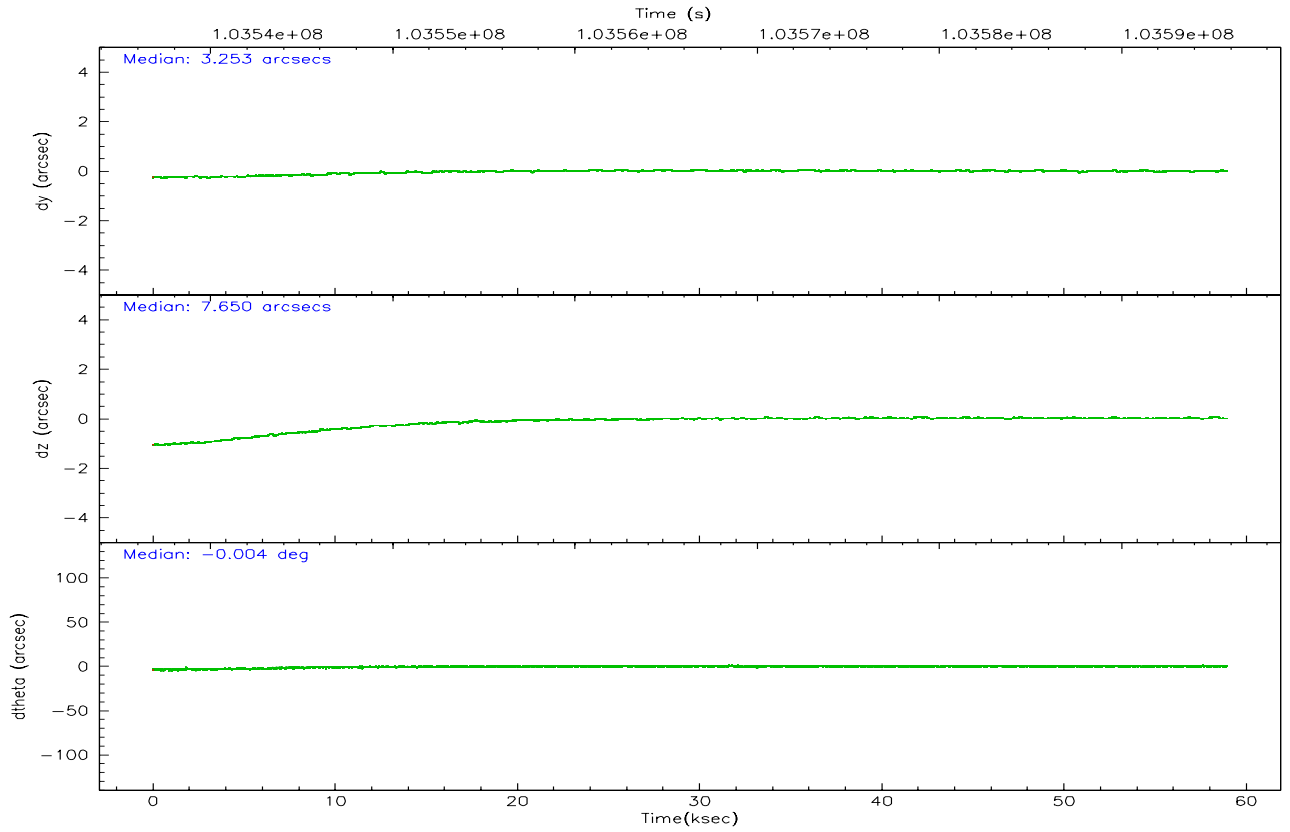
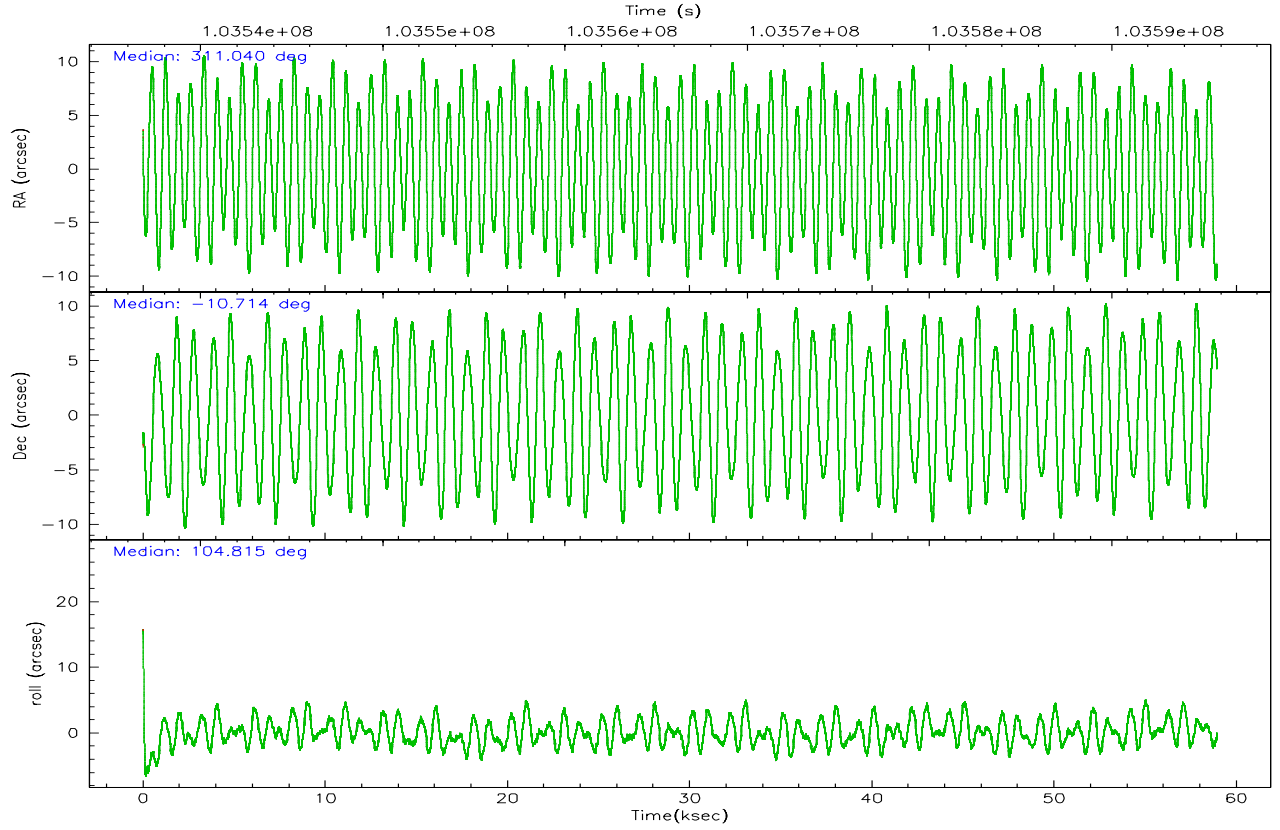


## 2.2 Compared Parameters

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	311.059825	311.0400431251903	Subarray requested	NONE	NONE
Pointing Dec	-10.732835	-10.71365991053548	Alternating exposures requested	N	N
Pointing Roll	104.669697	104.8226497686345	Primary exposure time	0.000000	3.2
Window start time	103507264.184000	103507264.184000			
Window stop time	103593664.184000	103593664.184000			
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	103537060.184000	103536091.55479			
Observation start date	2001-04-13T08:16:36	2001-04-13T08:01:31			
Observation end time	103595800.184000	103596444.06963			
Observation end date	2001-04-14T00:35:36	2001-04-14T00:47:24			
Read mode	TIMED	TIMED			

## 2.3 Aspect



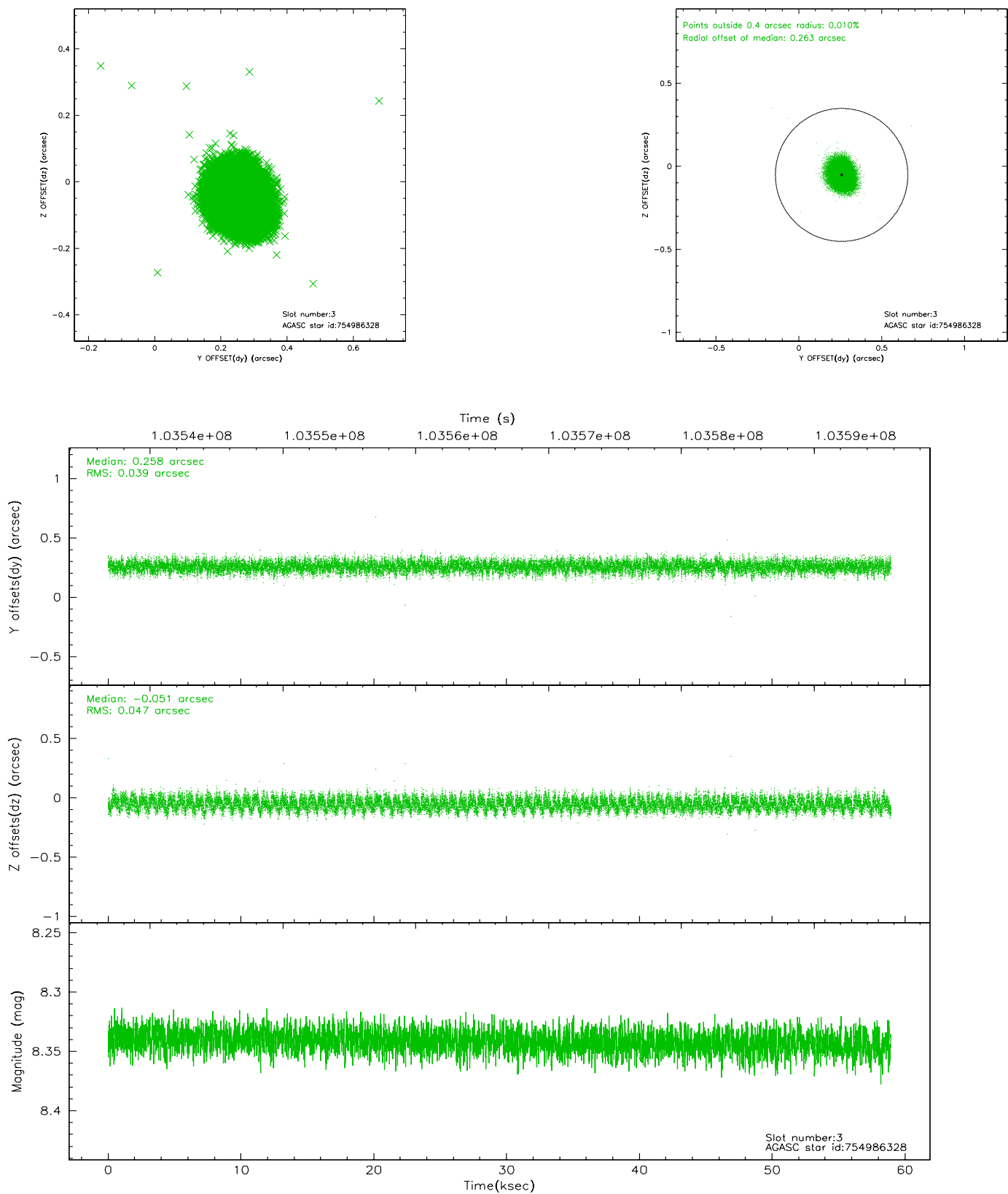


### Slot Statistics

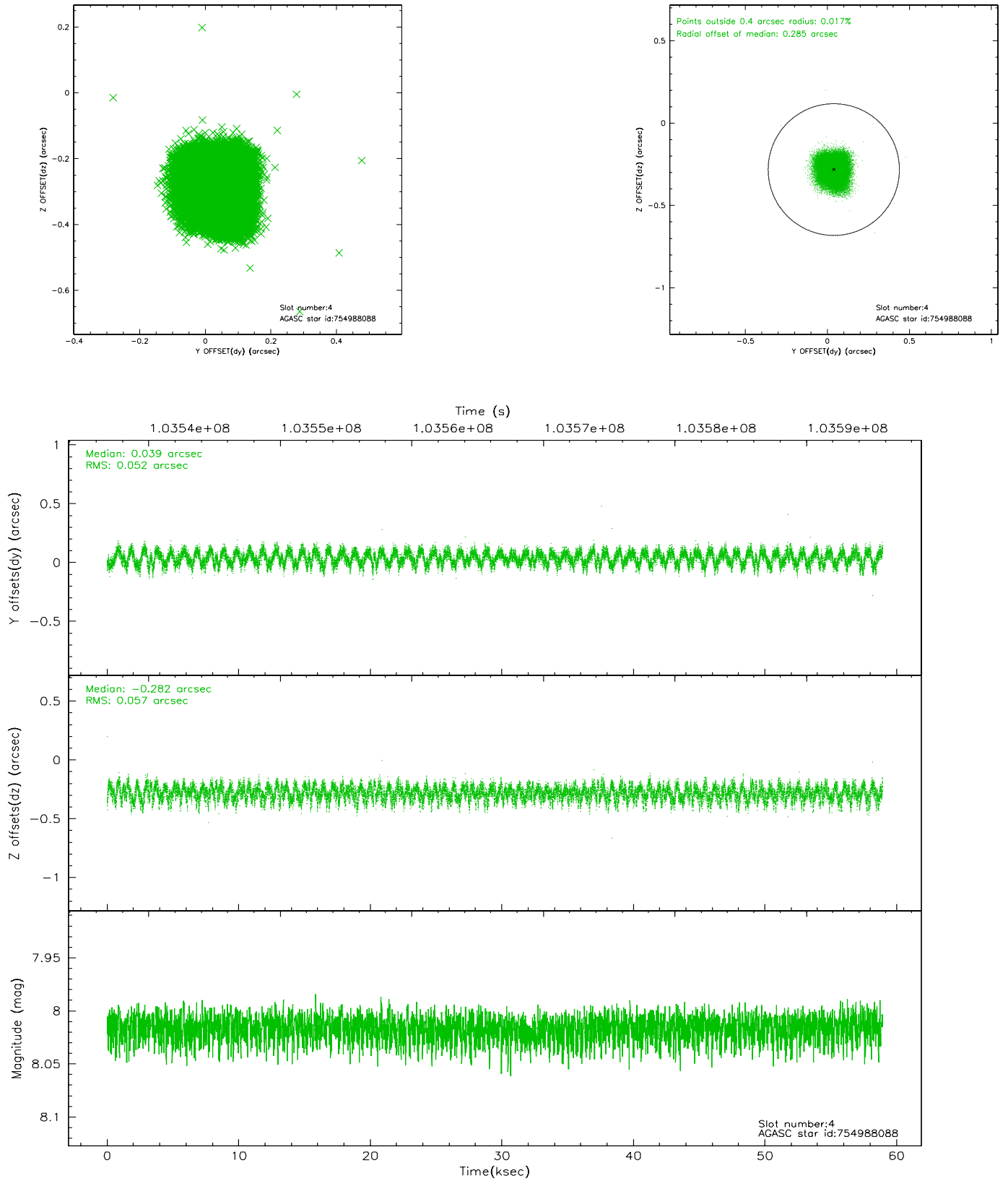
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	14381	0.018	0.026	0.009	0.019	0.000000	0.000000	-755.86	-1728.64
1	FID	ACIS-S-4	7.19	14379	-0.099	-0.016	0.005	0.009	0.000000	0.000000	2157.33	179.83
2	FID	ACIS-S-5	7.24	14380	0.049	-0.001	0.008	0.020	0.000000	0.000000	-1808.71	173.48
3	GUIDE	754986328	8.34	28755	0.258	-0.051	0.066	0.102	311.302289	-11.116462	-1552.01	-478.66
4	GUIDE	754988088	8.02	28752	0.039	-0.282	0.084	0.128	310.817833	-10.742115	184.93	836.59
5	GUIDE	754982760	8.74	28754	-0.091	0.066	0.067	0.109	311.420520	-10.122139	1803.51	-1792.54
6	GUIDE	754975824	9.28	28752	-0.210	0.116	0.094	0.155	311.474980	-9.986287	2227.41	-2103.72
7	GUIDE	754979560	9.79	28675	0.006	0.155	0.123	0.195	311.686364	-10.402880	586.48	-2445.90

## 2.4 Star Slots

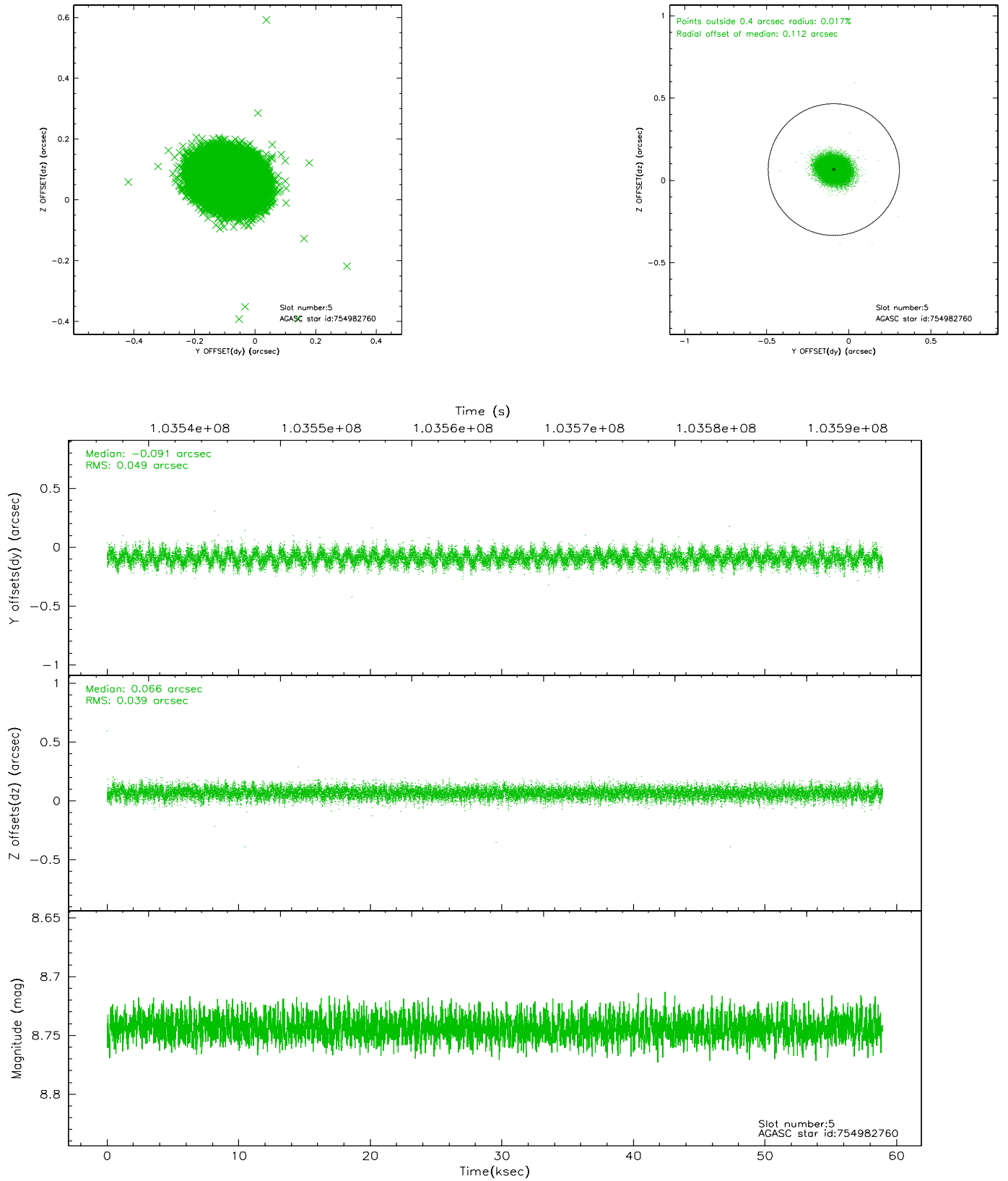
### 2.4.1 Slot 3



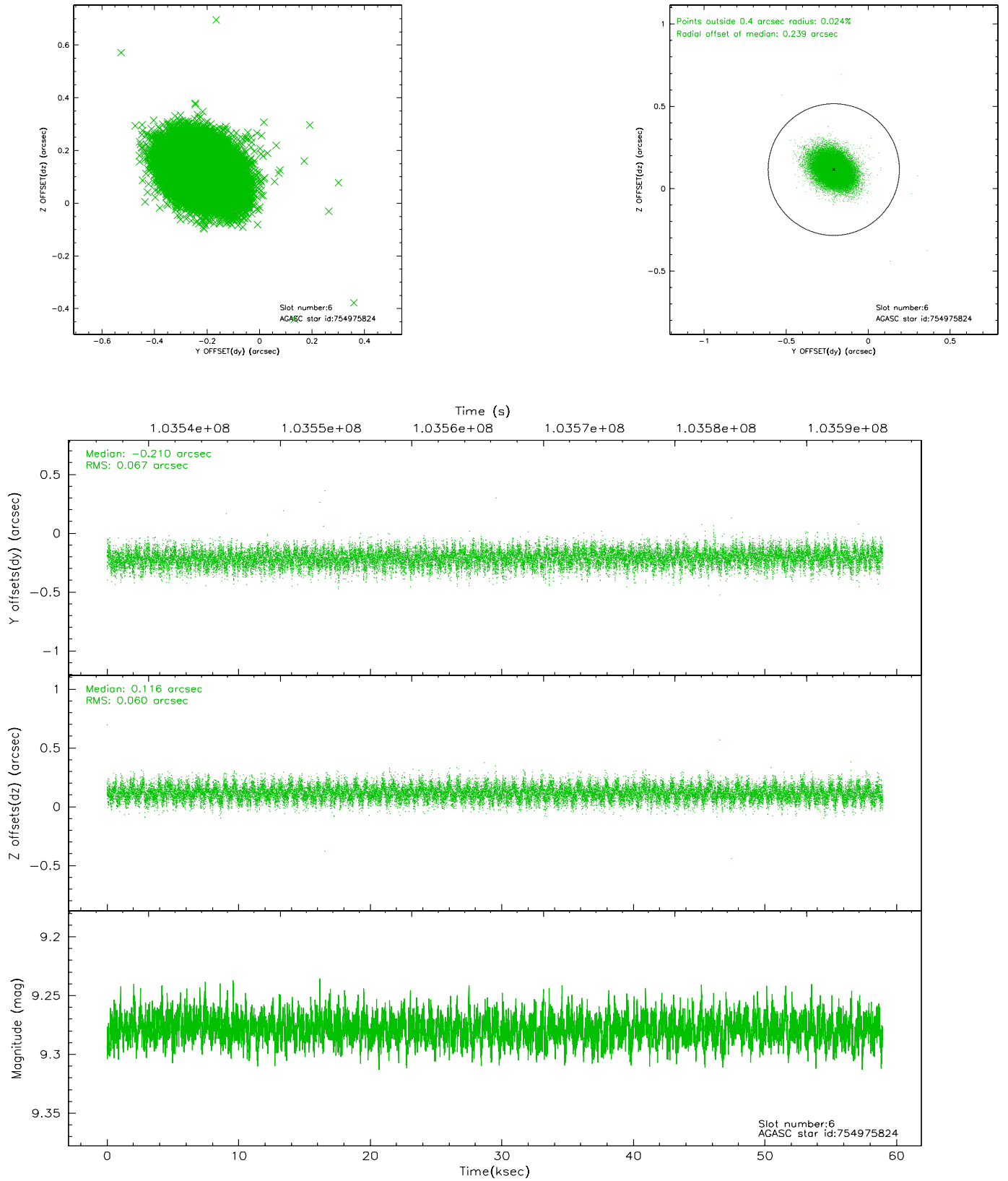
## 2.4.2 Slot 4



### 2.4.3 Slot 5

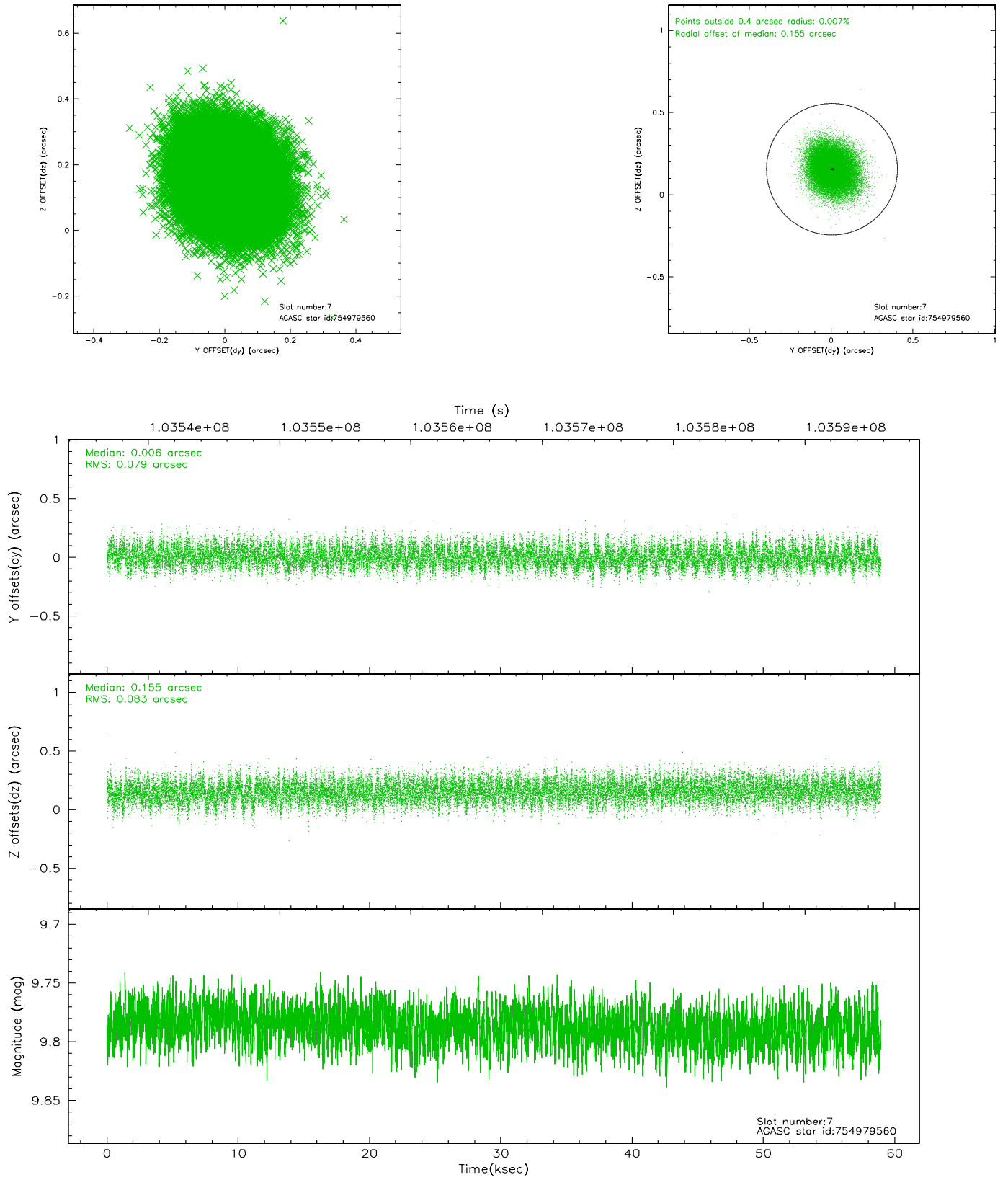


## 2.4.4 Slot 6



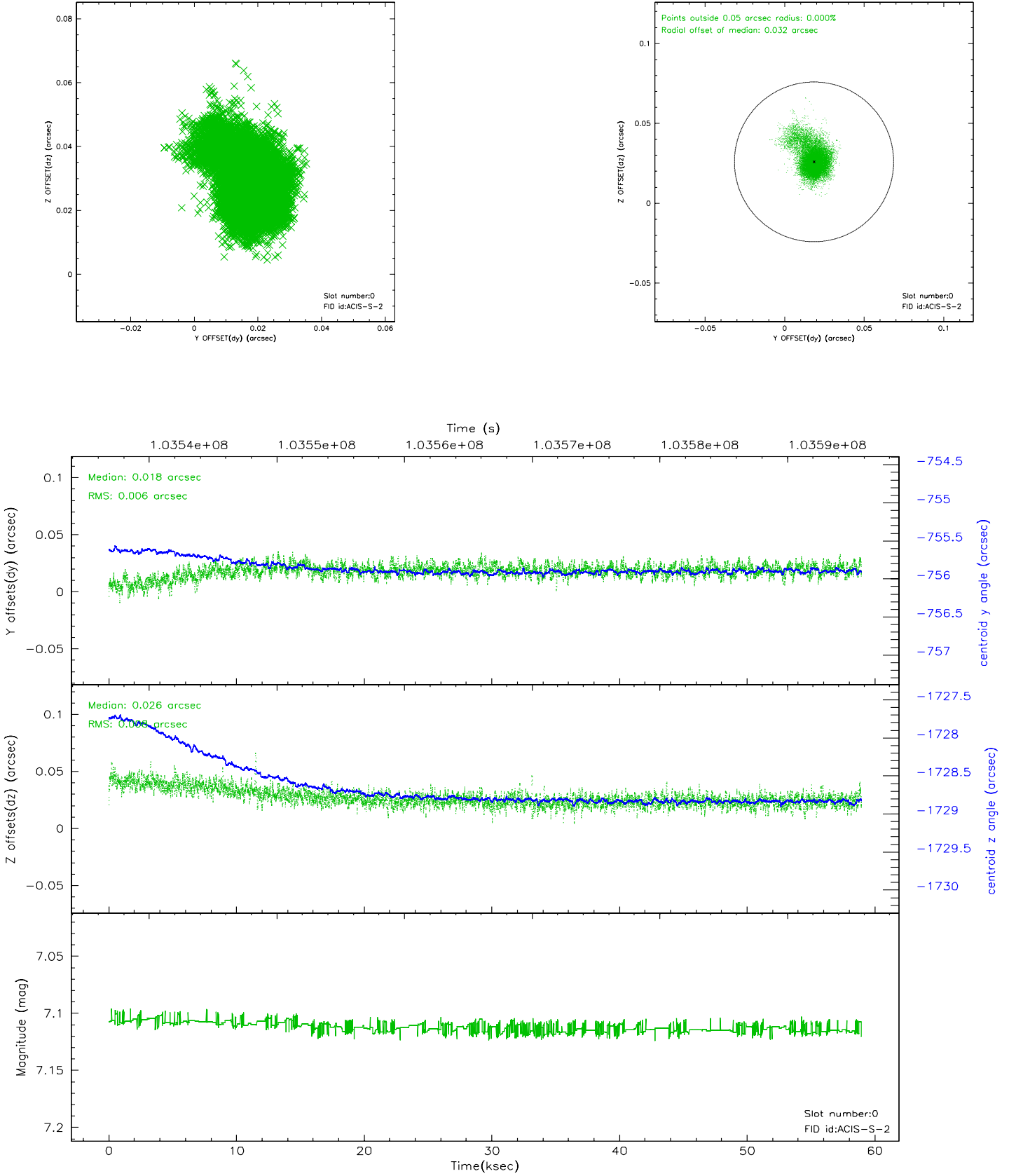


## 2.4.5 Slot 7

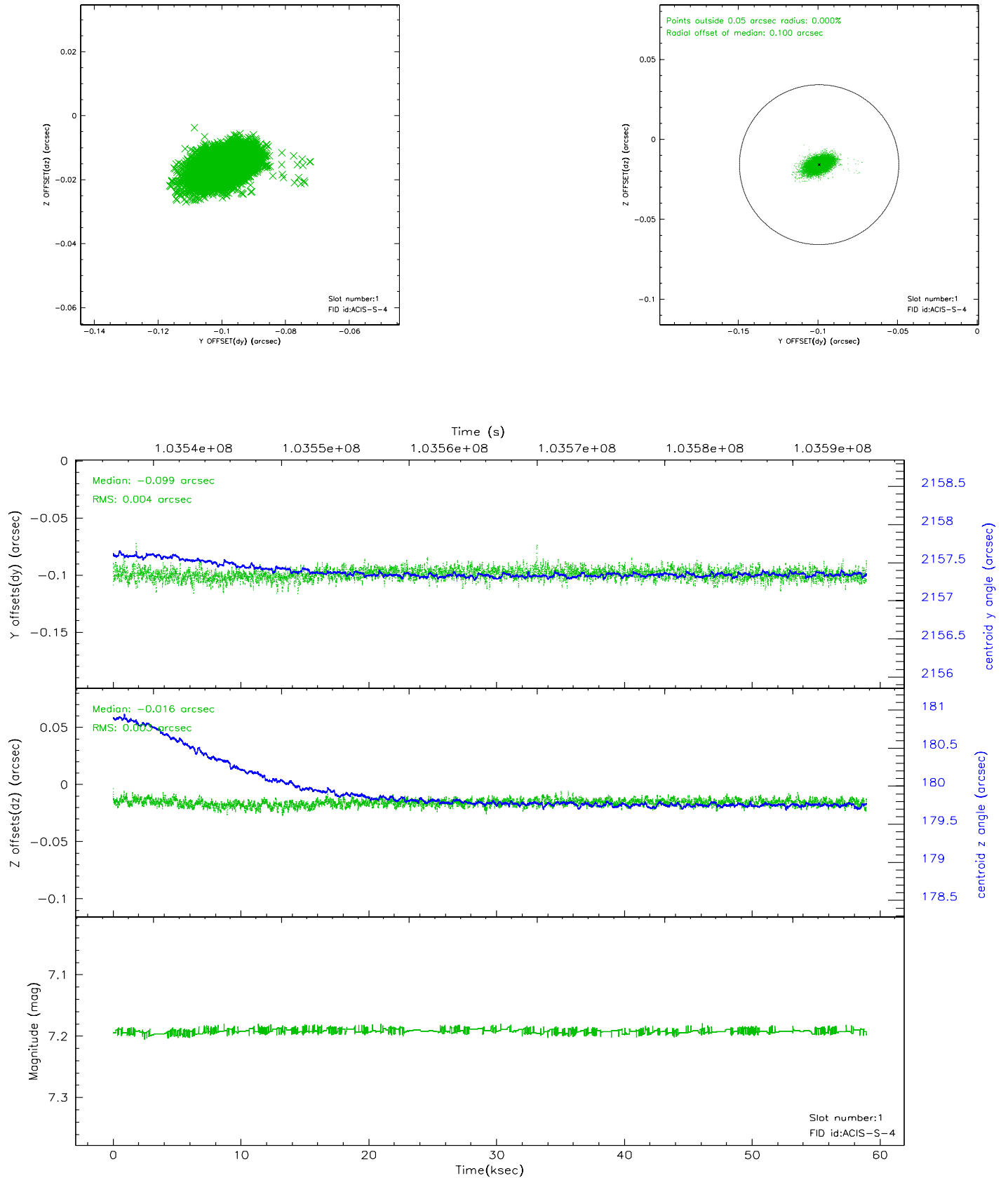


## 2.5 FID Slots

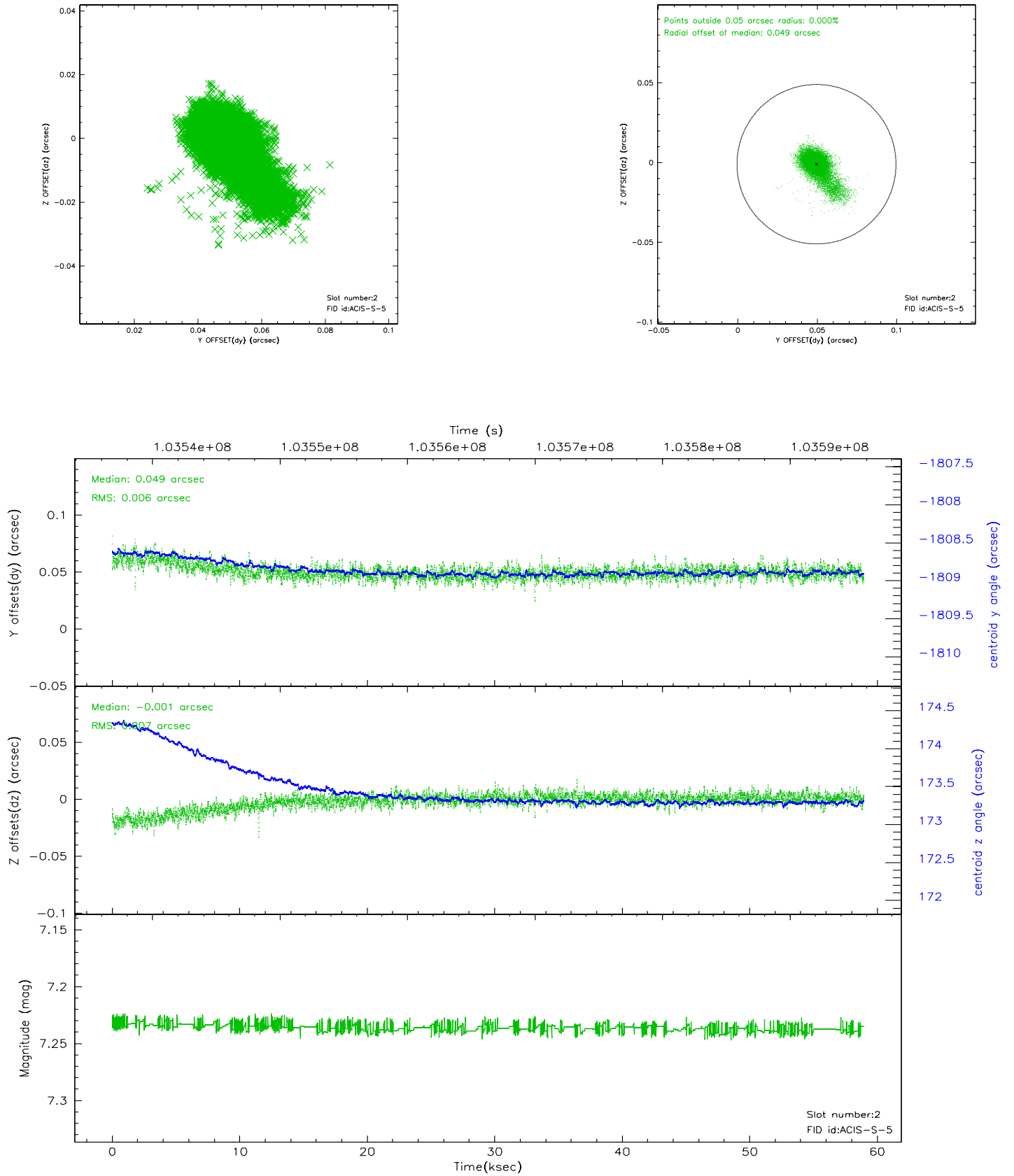
### 2.5.1 Slot 0



## 2.5.2 Slot 1

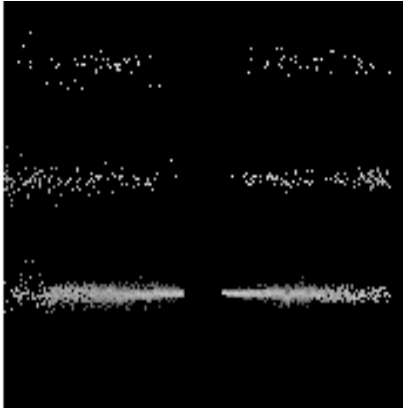


### 2.5.3 Slot 2

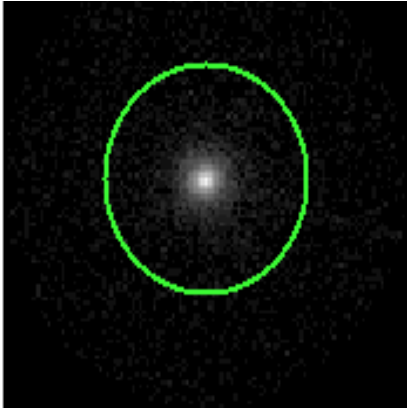


# 3 Gratings

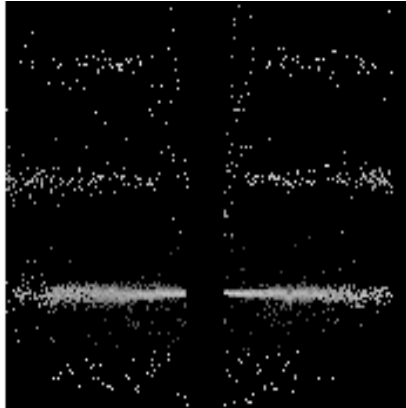
## 3.1 HEG Arm



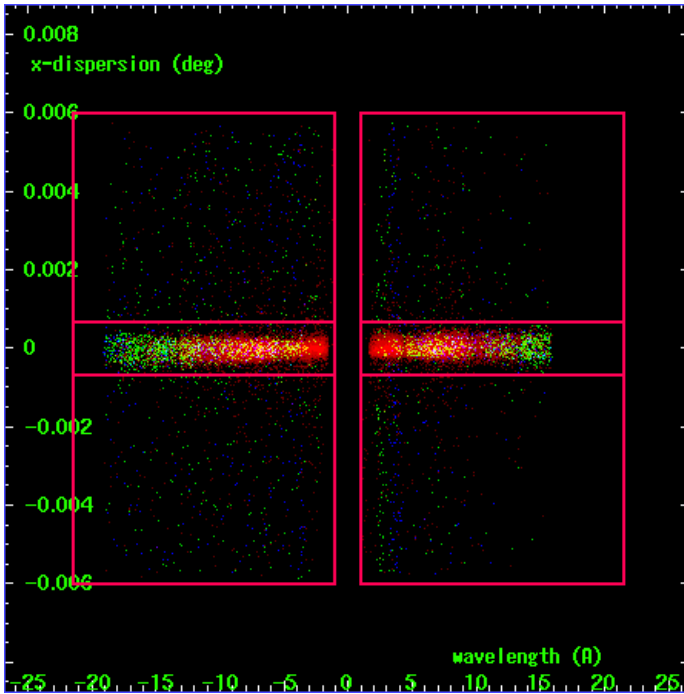
HEG Order Sort 123



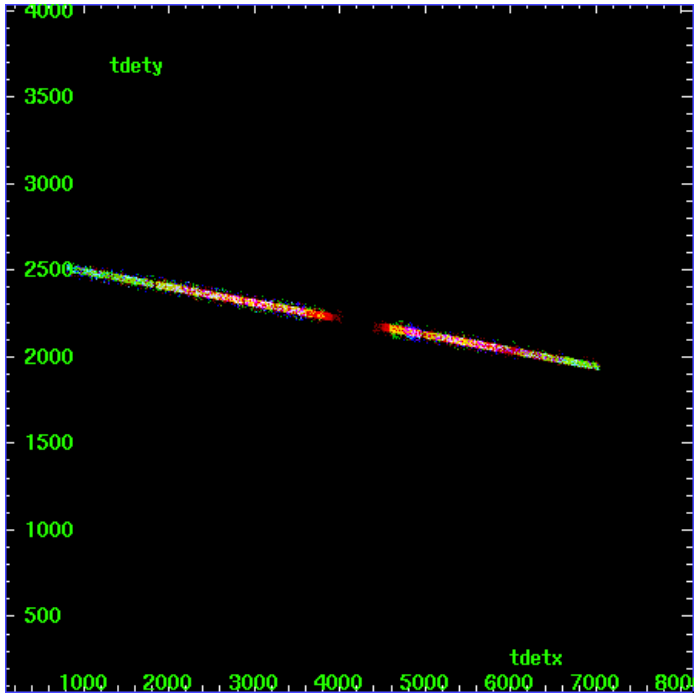
HEG Zero Order



HEG Order Sort ALL

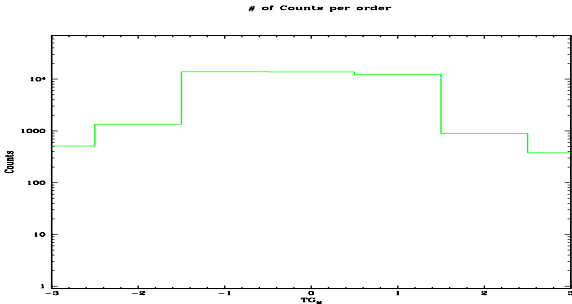


Spot Image HEG

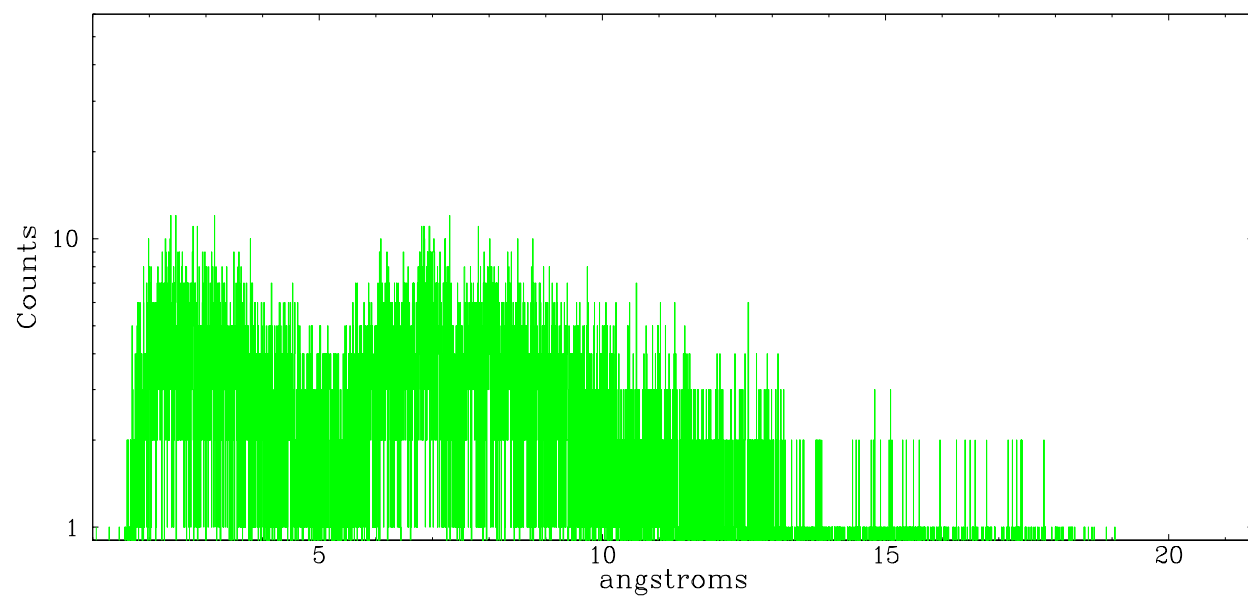


Full Detector HEG

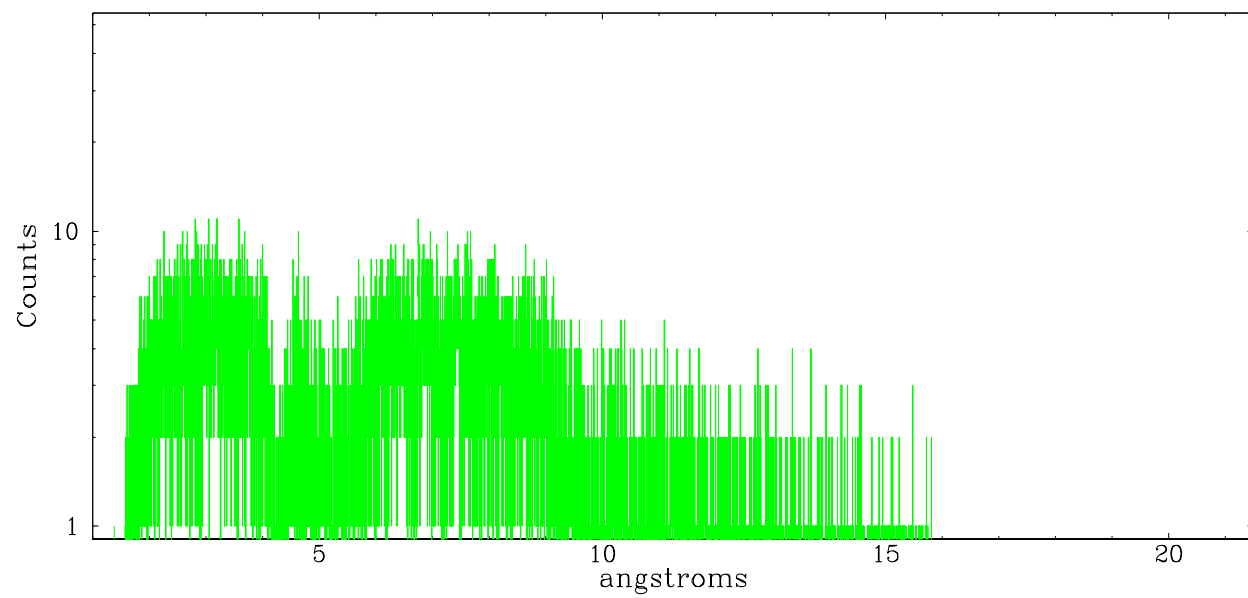
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	511	1342	13830	13773	12382	894	377



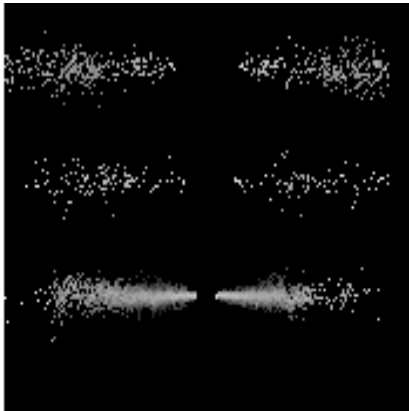
heg order -1



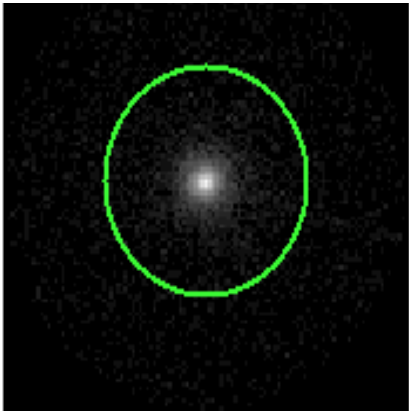
heg order +1



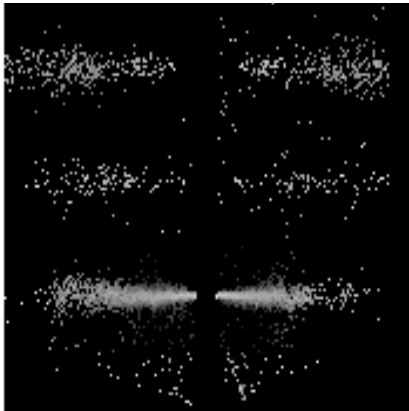
3.2 MEG Arm



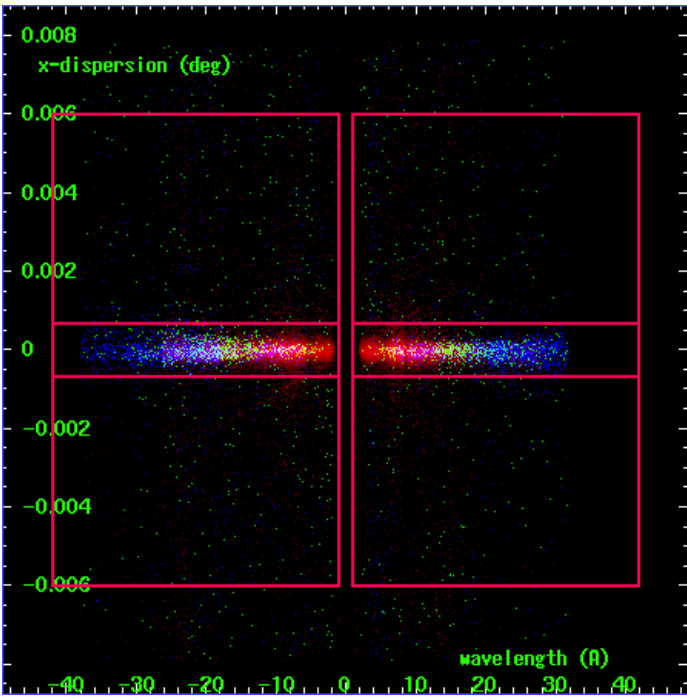
MEG Order Sort 123



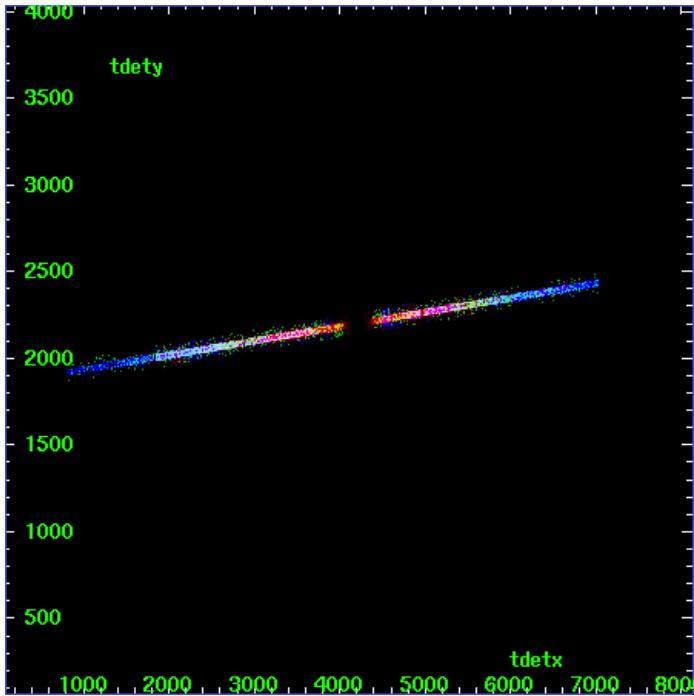
MEG Zero Order



MEG Order Sort ALL

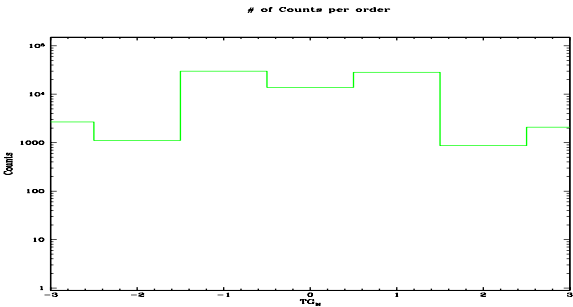


Spot Image MEG

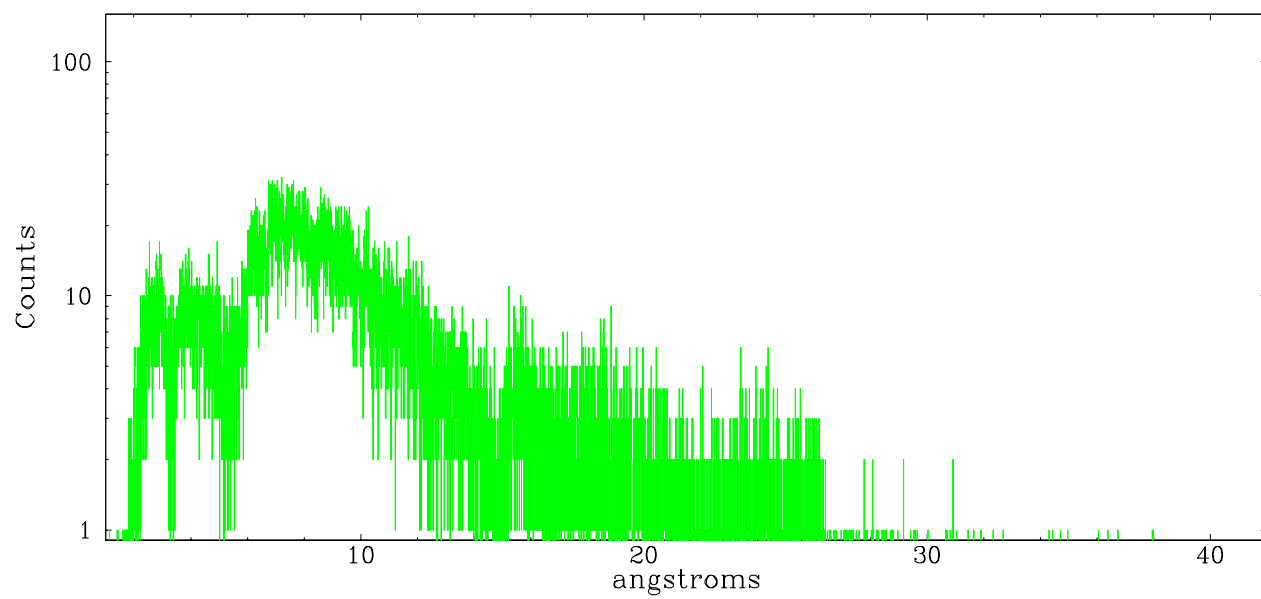


Full Detector MEG

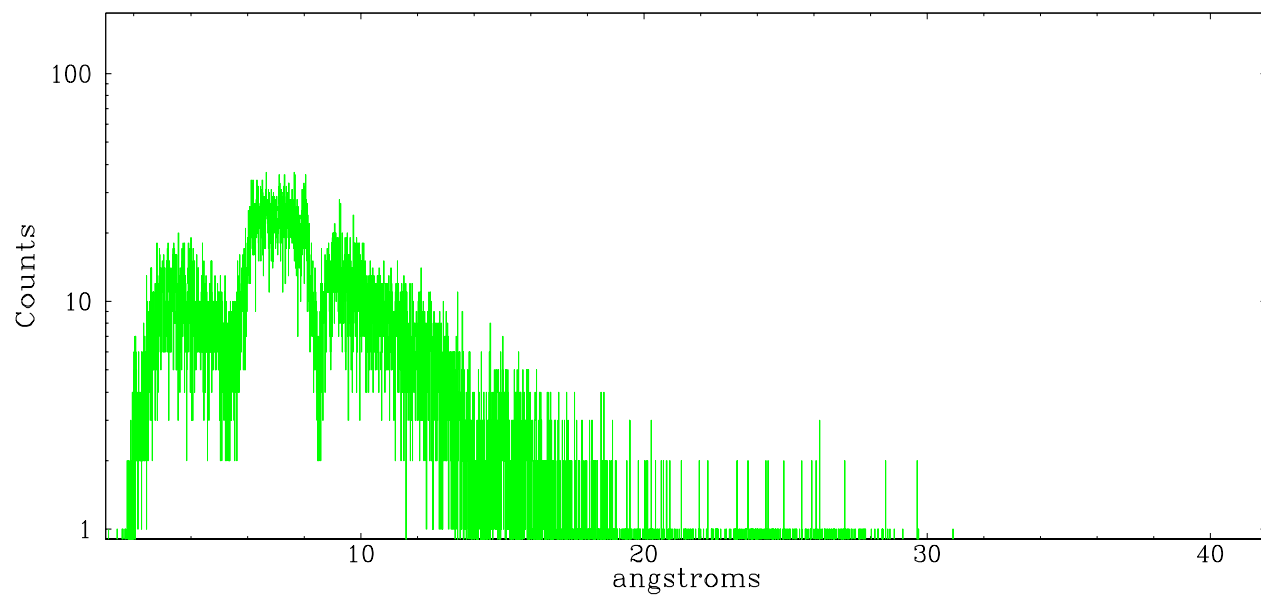
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2685	1111	29906	13773	28392	871	2096



meg order -1



meg order +1





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2006.11.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	58.691

## A.2 Comments

time window request: Apr 13 2001 12:00AM Apr 14 2001 12:00AM  
actual: 2001-04-13T08:01:31 2001-04-14T00:47:24  
OK (extends a bit beyond end)