

# V&V Reference Report

## L2 ASCDS Version : 7.6.7.2

Observation 4899 - L2 Version 001  
Chandra X-Ray Center

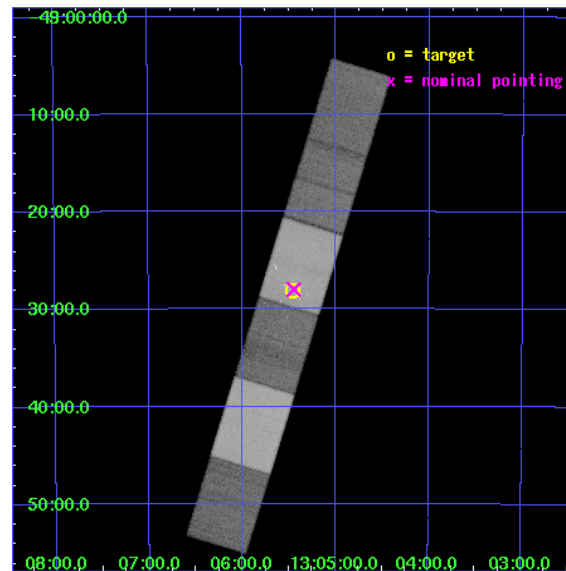
L2 Processing Date : May 15 2006

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# 1 Front

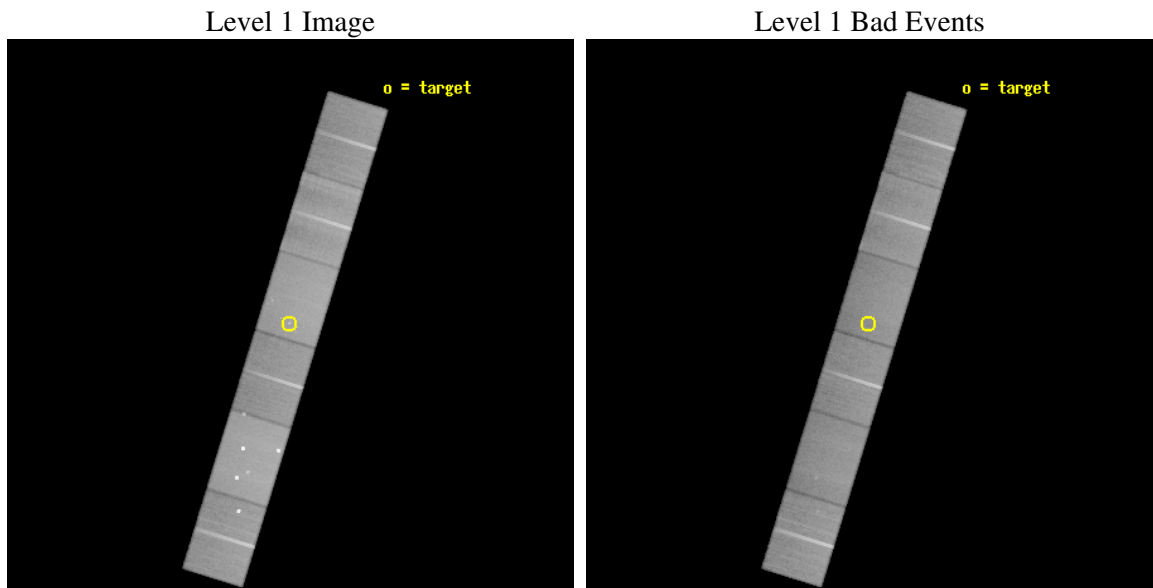
seq_num	700981
obs_id	4899
title	X-ray Spectroscopy of the Nuclear Region of the Seyfert 2 Galaxy NGC 4945
observer	Dr. Greg Madejski
object	NGC 4945
dtcycle	0
cycle	P
ra_targ	196.364583
dec_targ	-49.4675
ra_nom	196.36146060324
dec_nom	-49.466558682896
roll_nom	287.15425794795
revision	2
ontime	78640.0
livetime	77369.8957907
ontime4	78640.0
ontime5	78640.0
ontime6	78637.458999813
ontime7	78640.0
ontime8	78640.0
ontime9	78640.0
l2events	728211



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images

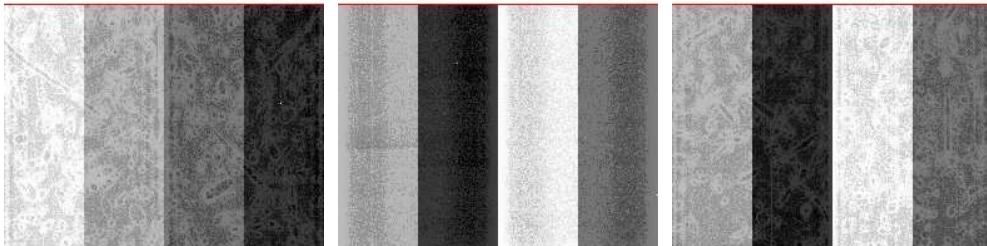


#### 2.1.2 Bias

Chip 4

Chip 5

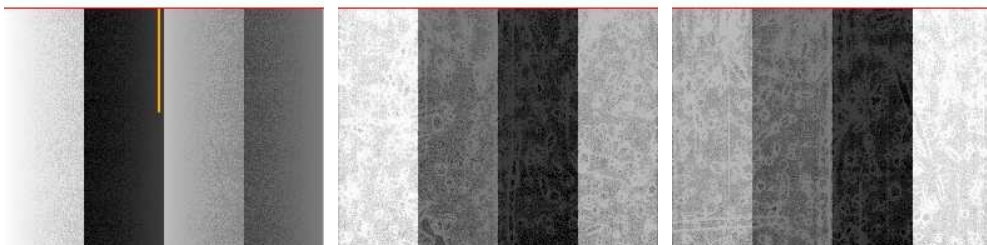
Chip 6



Chip 7

Chip 8

Chip 9



### 2.1.3 Parameters

obi_num	1
ascdsver	7.6.7.2
caldsver	3.2.2
date	2006-05-15T00:30:51
revision	2

sched_exp_time	78461.934000
ontime	80247.829554021
ontime4	80247.829554021
ontime5	80247.829554021
ontime6	80245.288553834
ontime7	80247.829554021
ontime8	80247.829534113
ontime9	80247.829554021
l1events	3289596

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	510841	688198	458297	608138	575665	448457
rejected events	436939	372804	395670	369030	447730	386524
rejected %	85%	54%	86%	60%	77%	86%

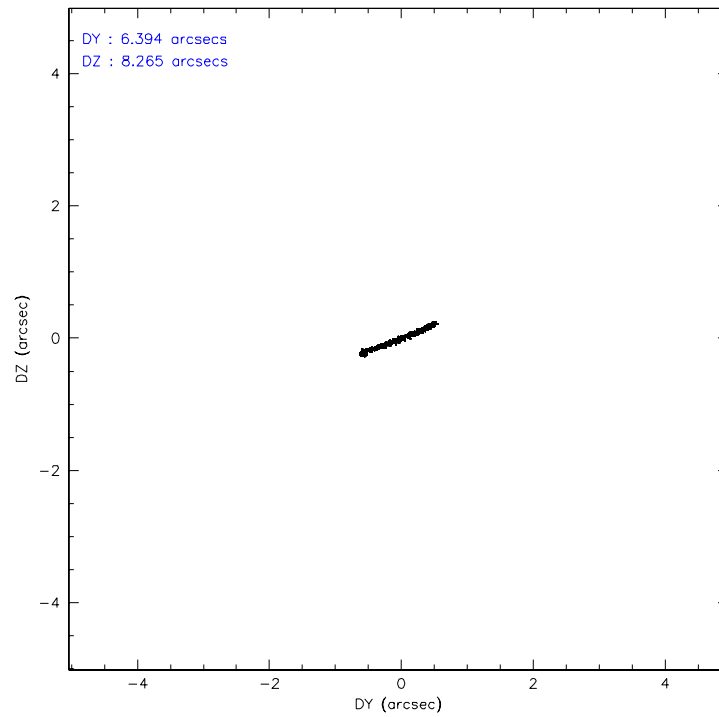
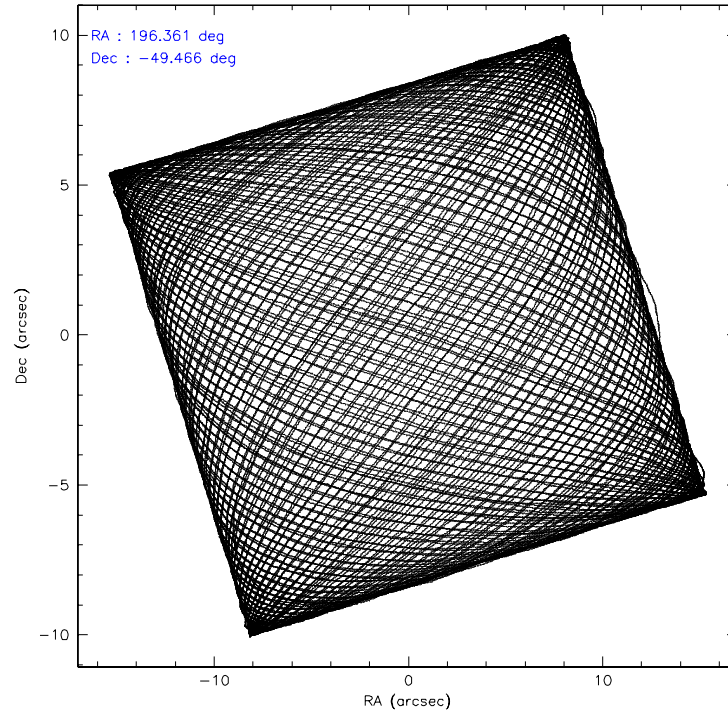
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	39201	50270	26404	15608	42197	26651
	7%	7%	5%	2%	7%	5%
grade 1 events	446	1113	184	384	346	244
	0%	0%	0%	0%	0%	0%
grade 2 events	13189	90149	12375	59396	27745	11811
	2%	13%	2%	9%	4%	2%
grade 3 events	6310	7678	6089	14527	13499	6377
	1%	1%	1%	2%	2%	1%
grade 4 events	6092	7238	5950	14204	12737	5978
	1%	1%	1%	2%	2%	1%
grade 5 events	19047	33217	19998	42979	26522	21371
	3%	4%	4%	7%	4%	4%
grade 6 events	10415	166837	12820	140050	34176	12262
	2%	24%	2%	23%	5%	2%
grade 7 events	416141	331696	374477	320990	418443	363763
	81%	48%	81%	52%	72%	81%

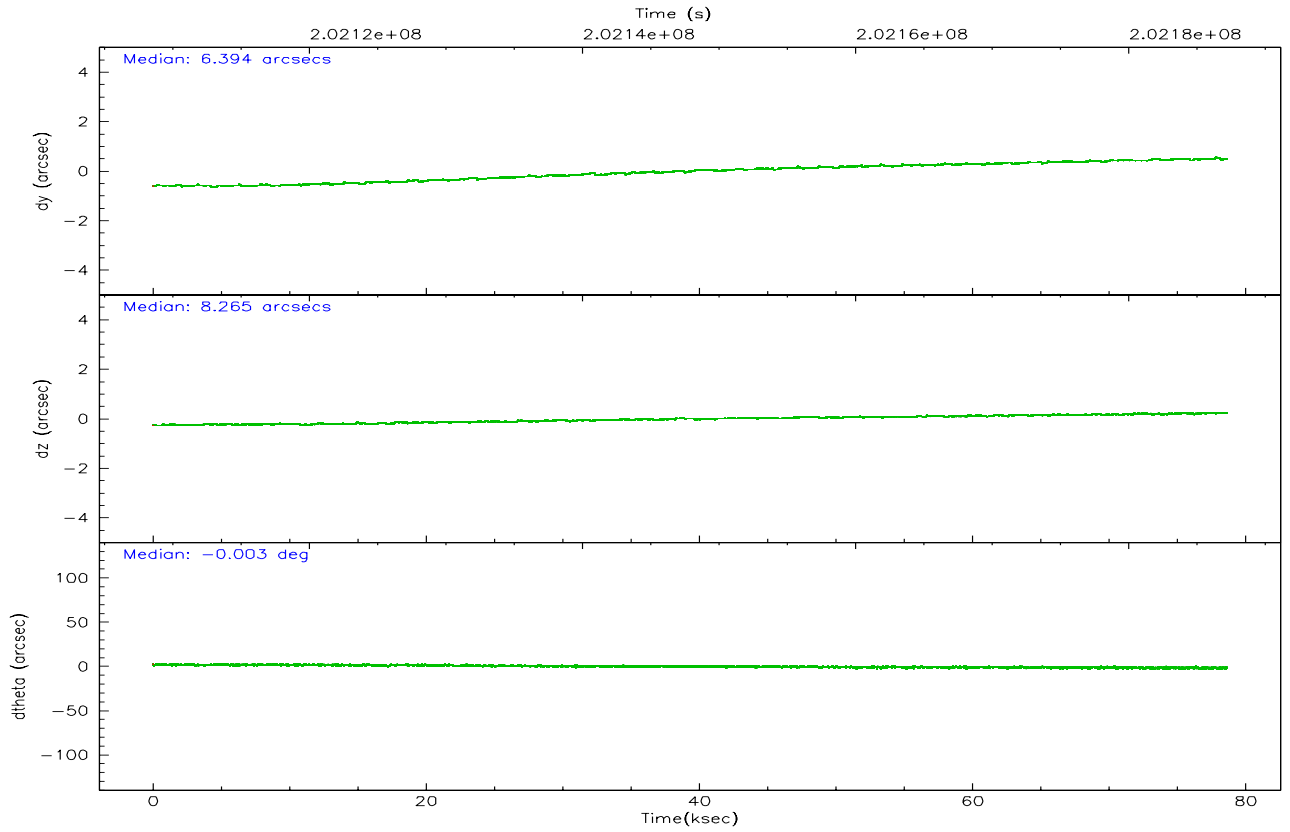
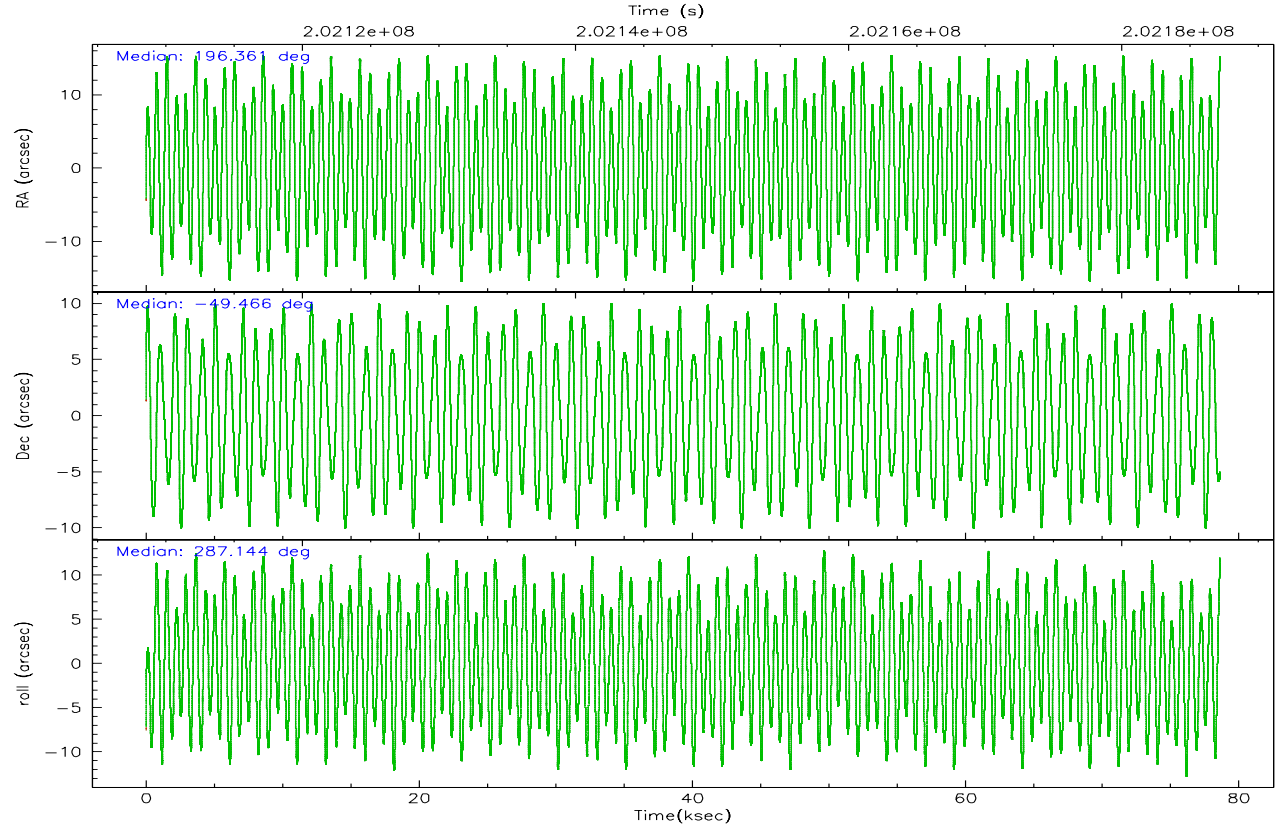


## 2.2 Compared Parameters

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	On-chip summing requested	N	N
Observation mode	POINTING	POINTING	Subarray requested	CUSTOM	CUSTOM
Pointing RA	196.330379	196.3614606032361	Subarray start row	1	1
Pointing Dec	-49.448324	-49.46655868289579	Subarray row count	774	774
Pointing Roll	286.974008	287.1542579479528	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	-187.1254020033014			
SIM translation stage offset (mm)	-3	-3.007120579706367			
Observation start time	202108739.184000	202106824.77222			
Observation start date	2004-05-28T05:17:55	2004-05-28T04:47:04			
Observation end time	202187201.184000	202187419.50078			
Observation end date	2004-05-29T03:05:37	2004-05-29T03:10:19			
Read mode	TIMED	TIMED			

## 2.3 Aspect



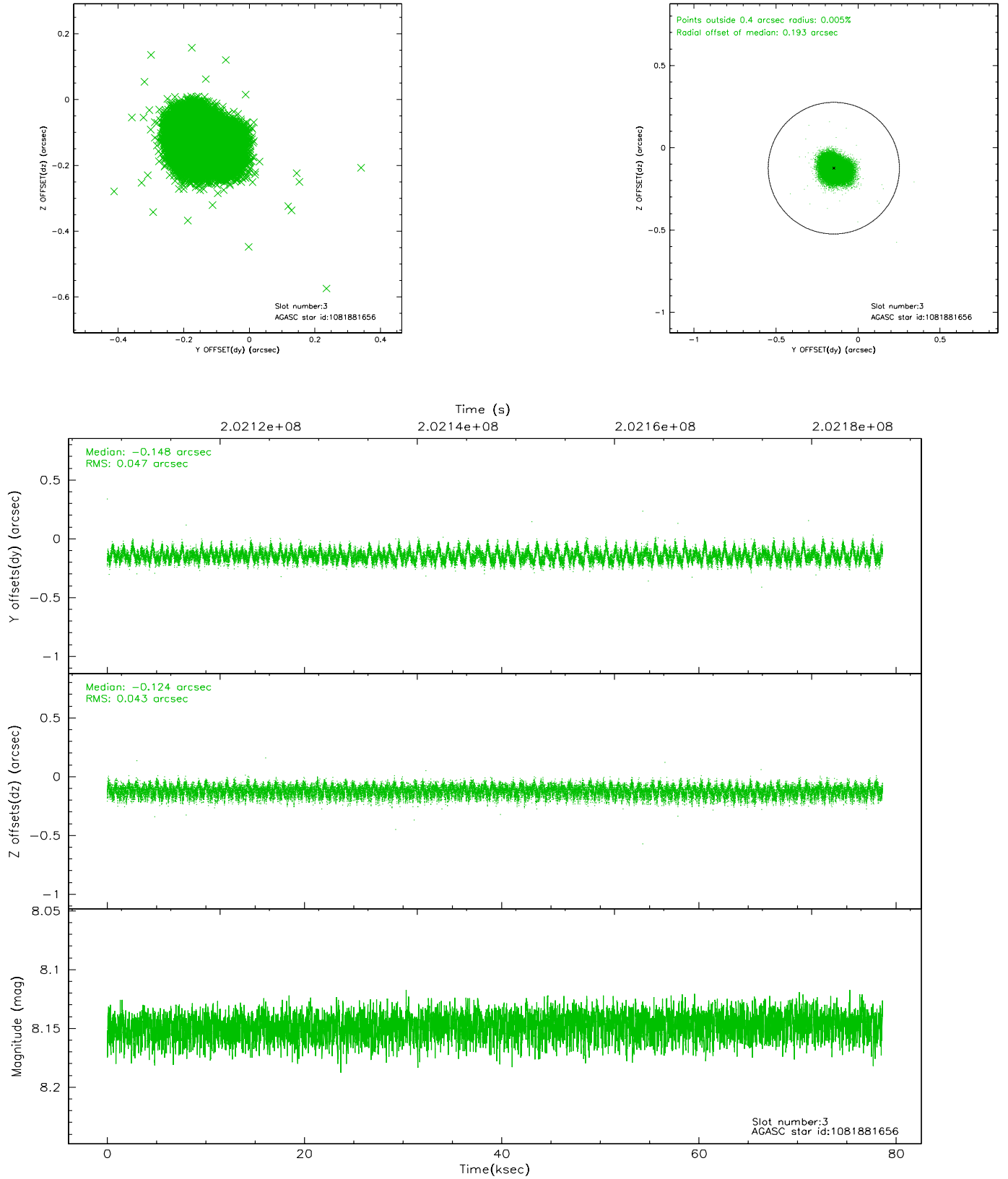


### Slot Statistics

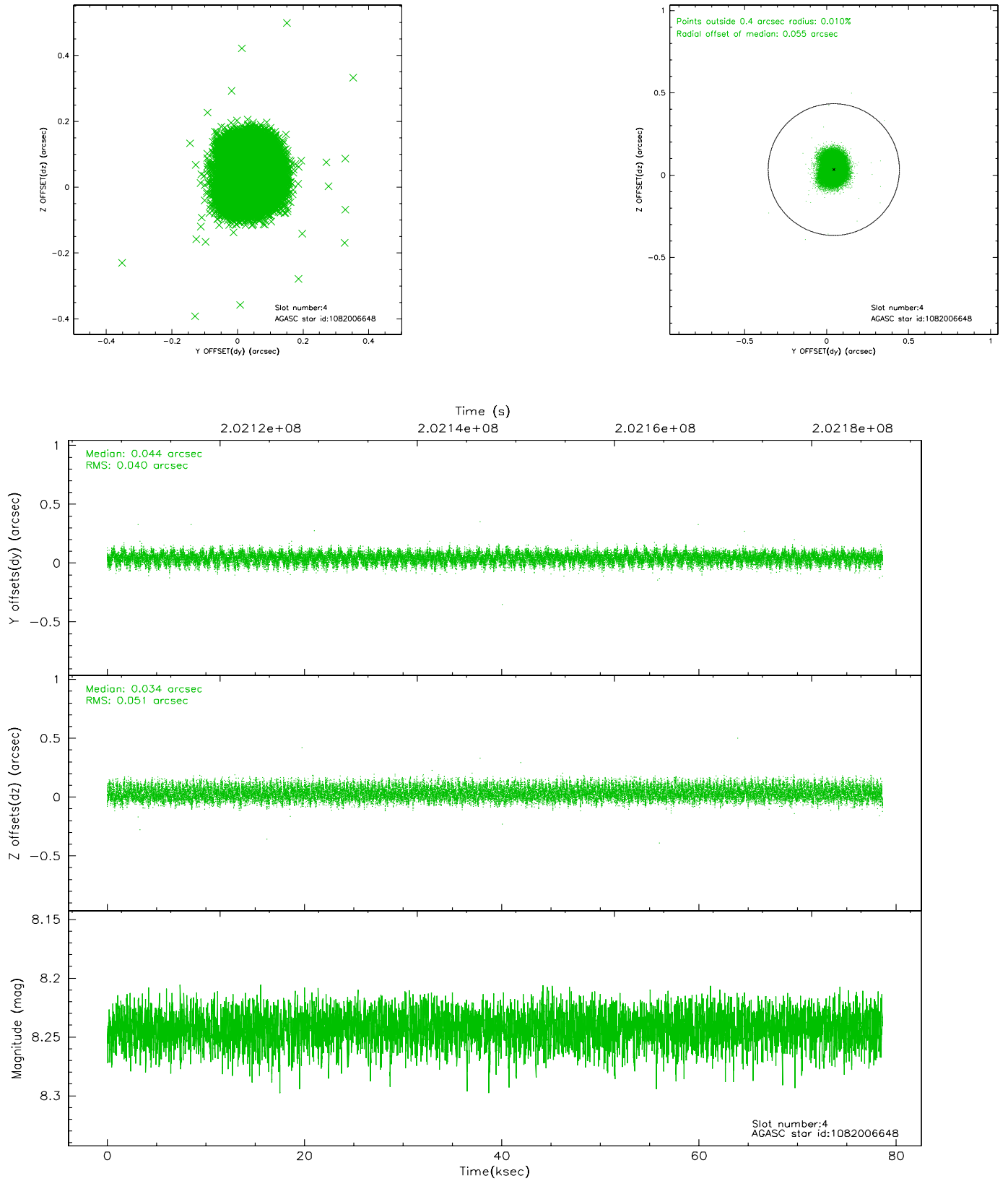
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	19180	-0.033	-0.012	0.007	0.012	0.000000	0.000000	-758.94	-1791.53
1	FID	ACIS-S-5	7.23	19179	-0.032	-0.023	0.010	0.016	0.000000	0.000000	-1811.99	110.51
2	FID	ACIS-S-6	7.37	19180	0.039	0.043	0.009	0.015	0.000000	0.000000	402.86	754.37
3	GUIDE	1081881656	8.15	38356	-0.148	-0.124	0.068	0.108	196.213950	-49.649201	612.86	-470.87
4	GUIDE	1082006648	8.24	38354	0.044	0.034	0.070	0.110	197.274351	-49.494968	818.17	2057.87
5	GUIDE	1082007984	8.20	38353	0.081	0.007	0.059	0.093	196.927081	-49.725914	1366.63	1034.95
6	GUIDE	1082011856	8.16	38354	-0.053	-0.028	0.062	0.096	197.058878	-49.171293	-445.47	1928.49
7	GUIDE	1081871496	9.30	38265	0.075	0.110	0.083	0.137	196.322420	-49.798146	1199.44	-384.97

## 2.4 Star Slots

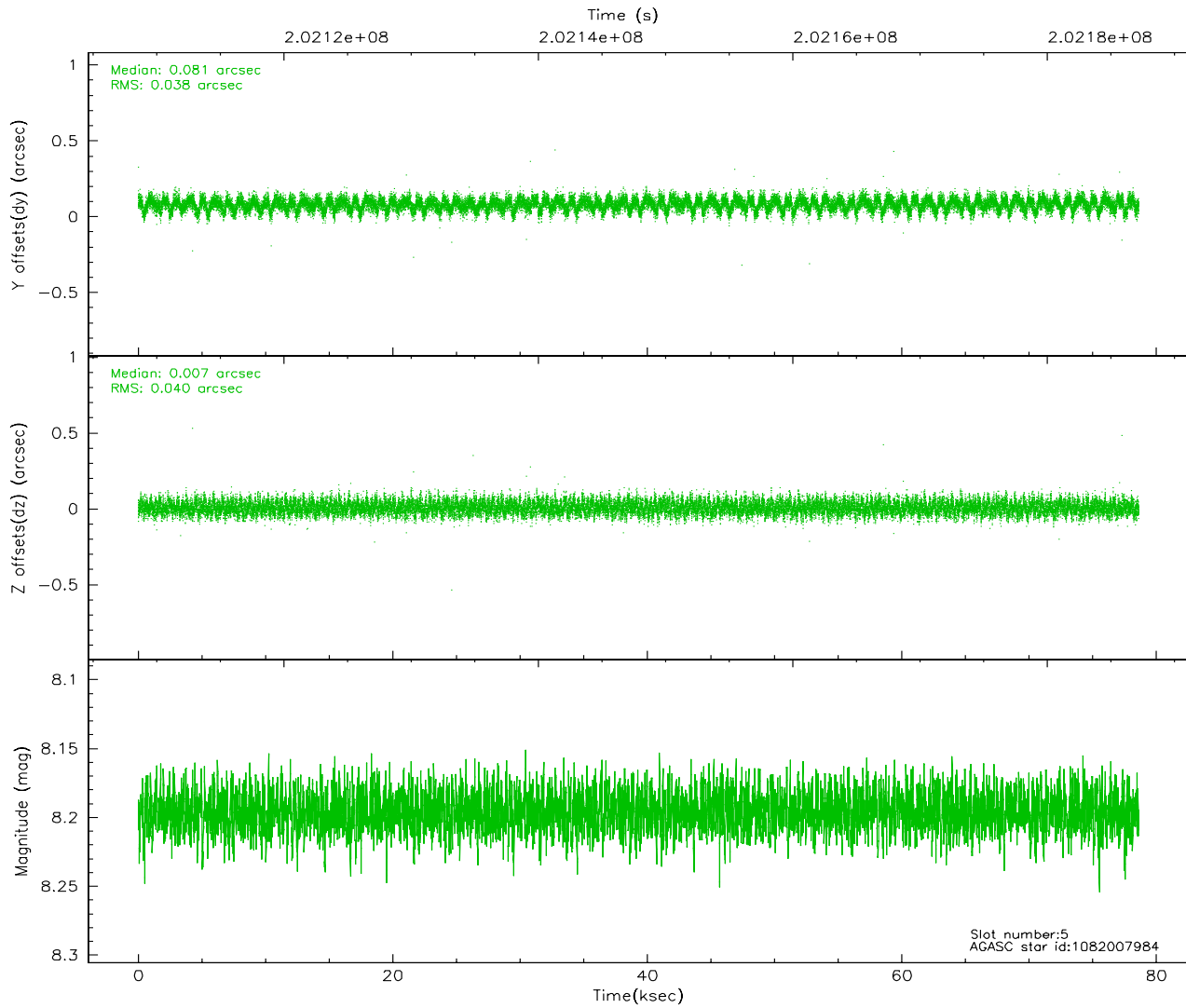
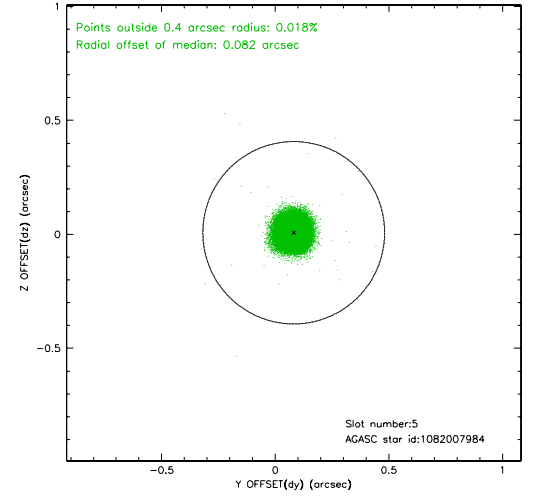
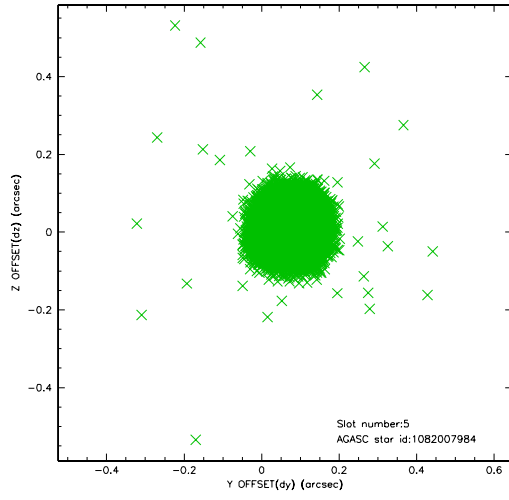
### 2.4.1 Slot 3



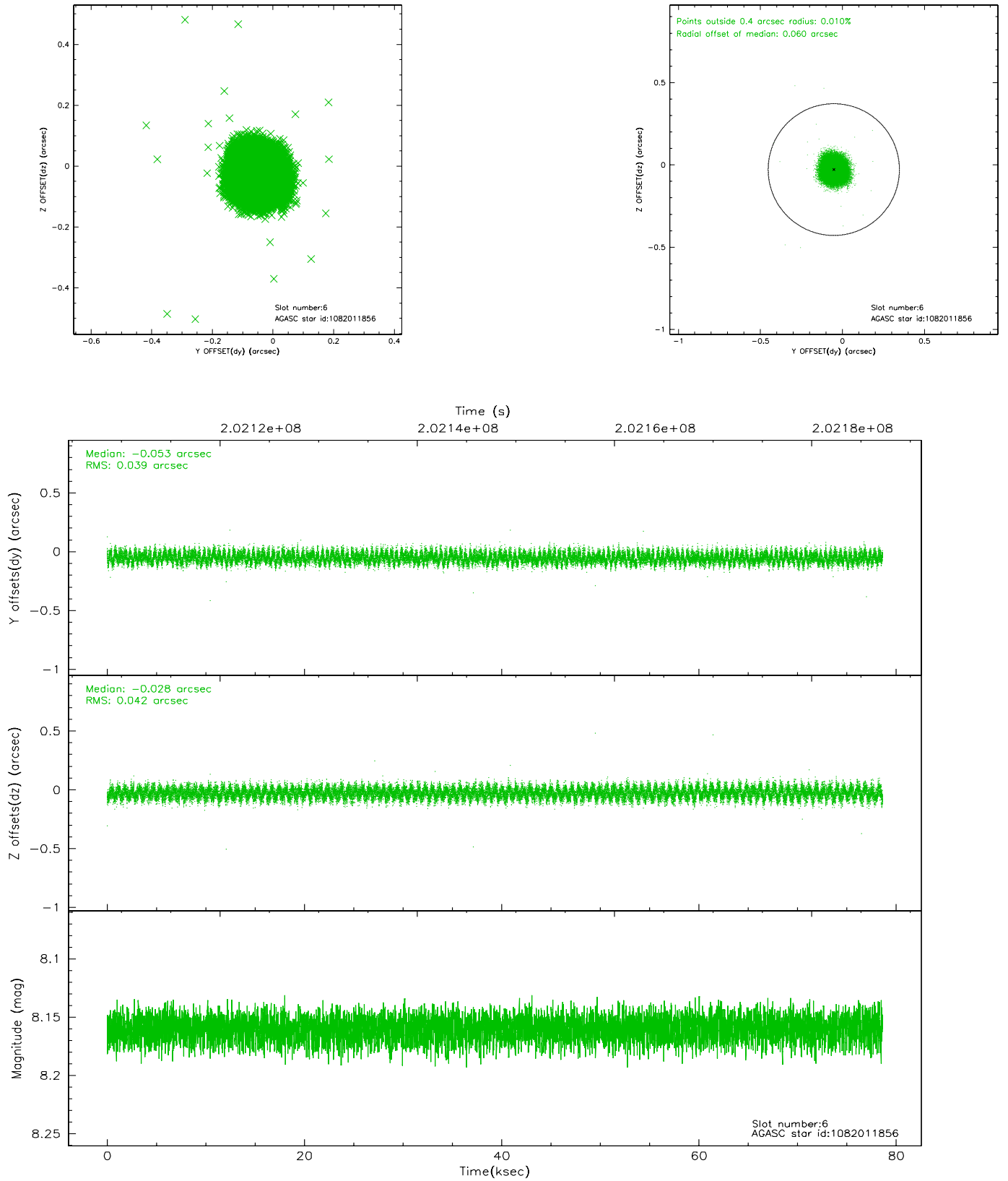
## 2.4.2 Slot 4



### 2.4.3 Slot 5

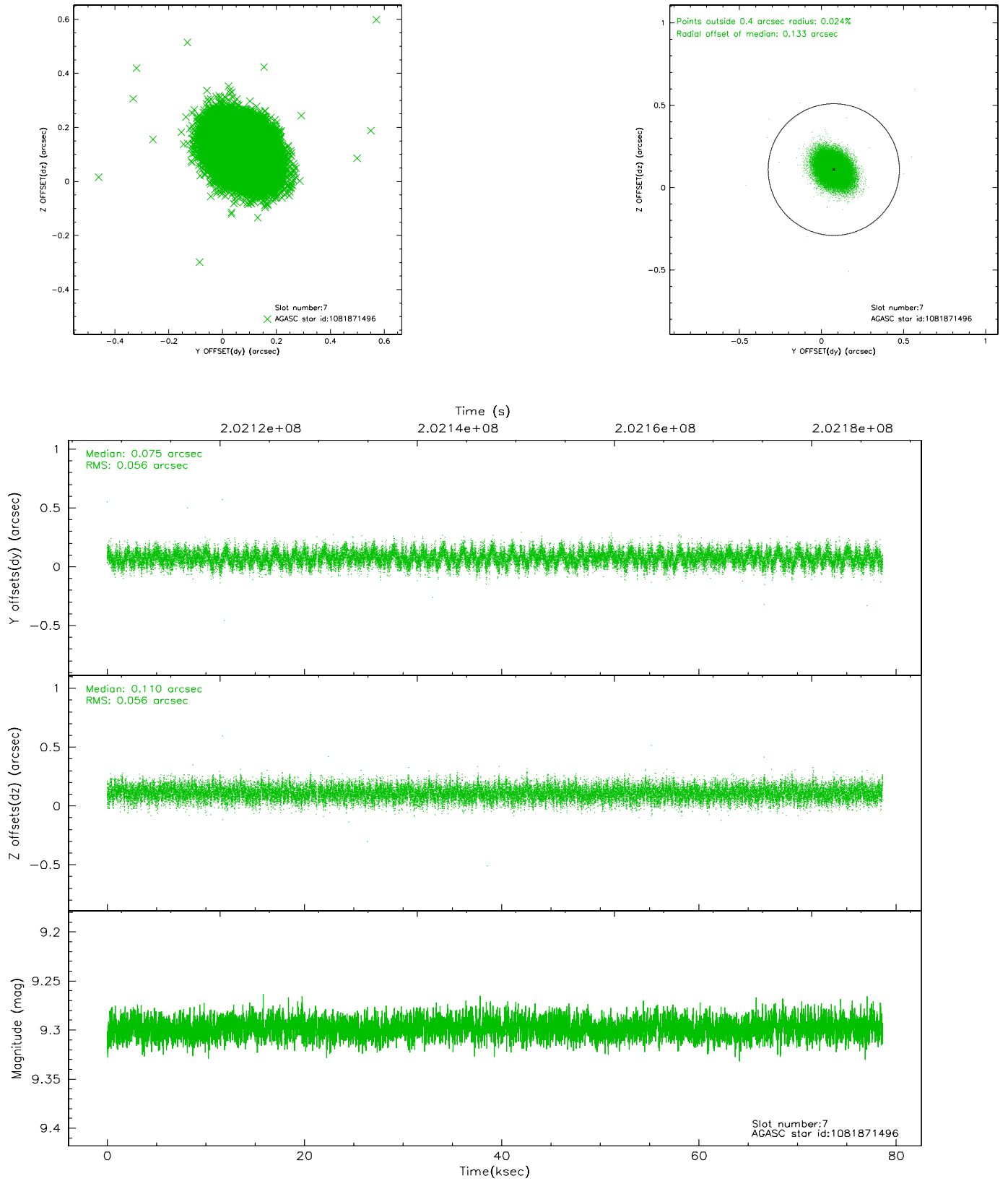


## 2.4.4 Slot 6



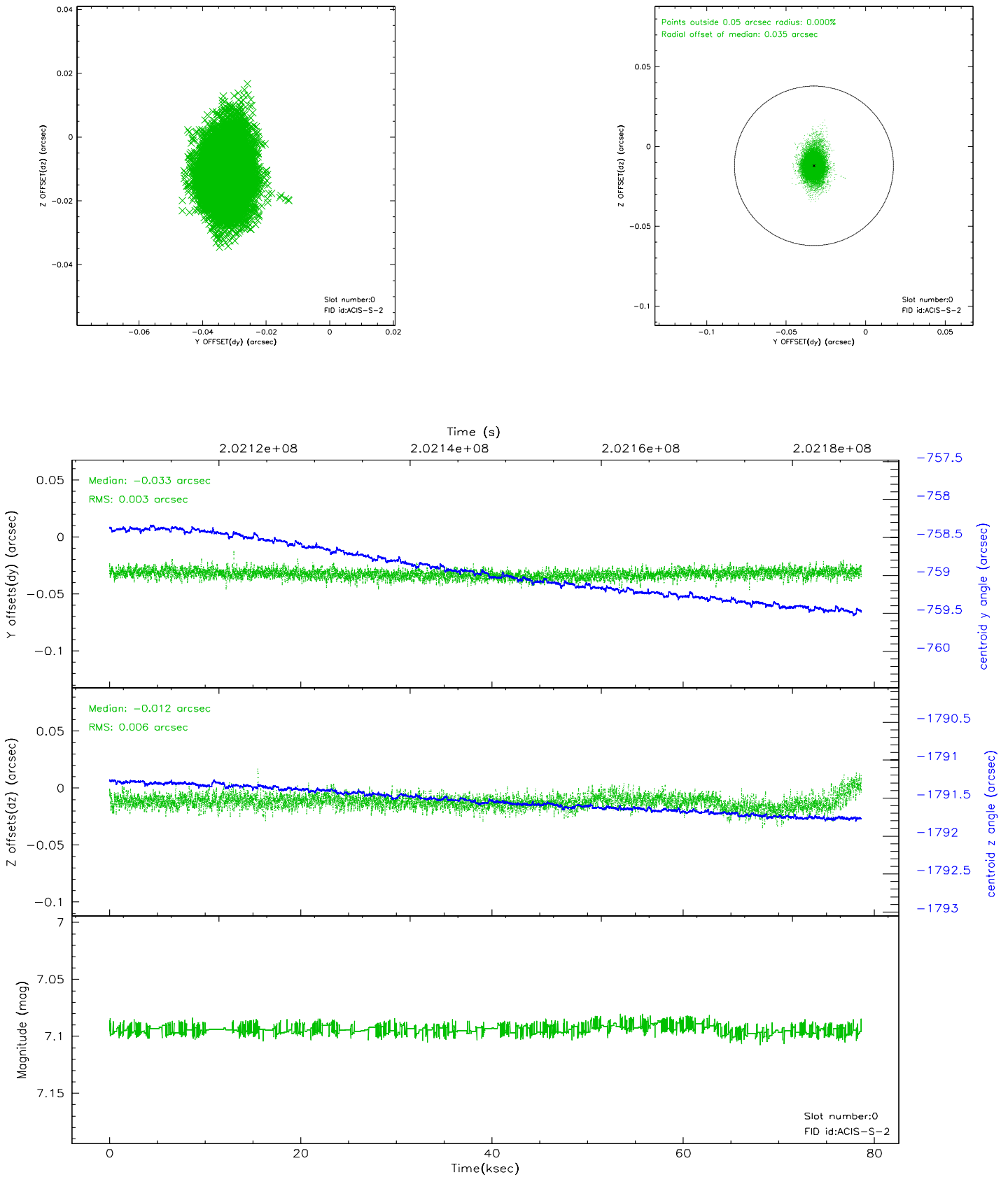


## 2.4.5 Slot 7

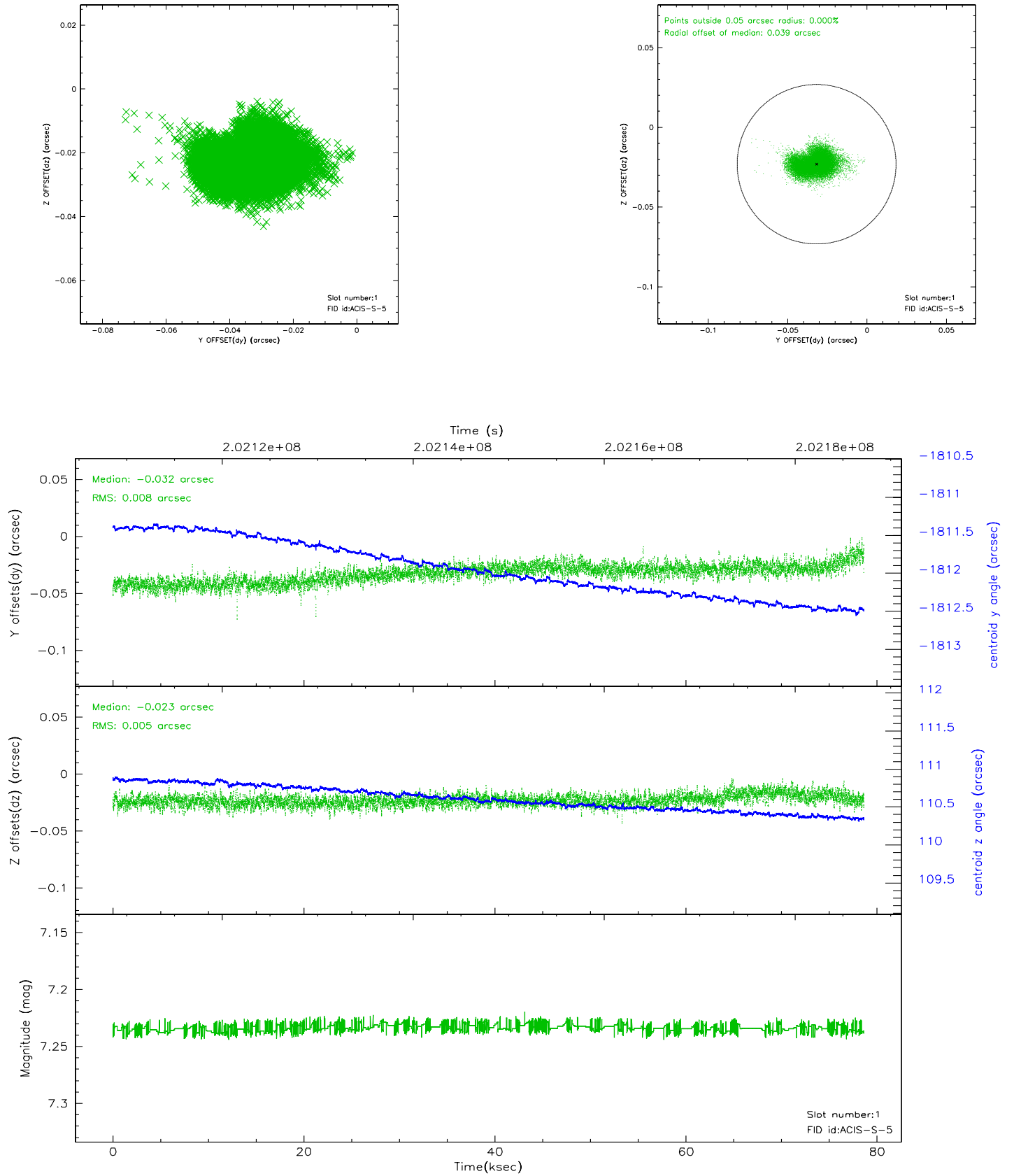


## 2.5 FID Slots

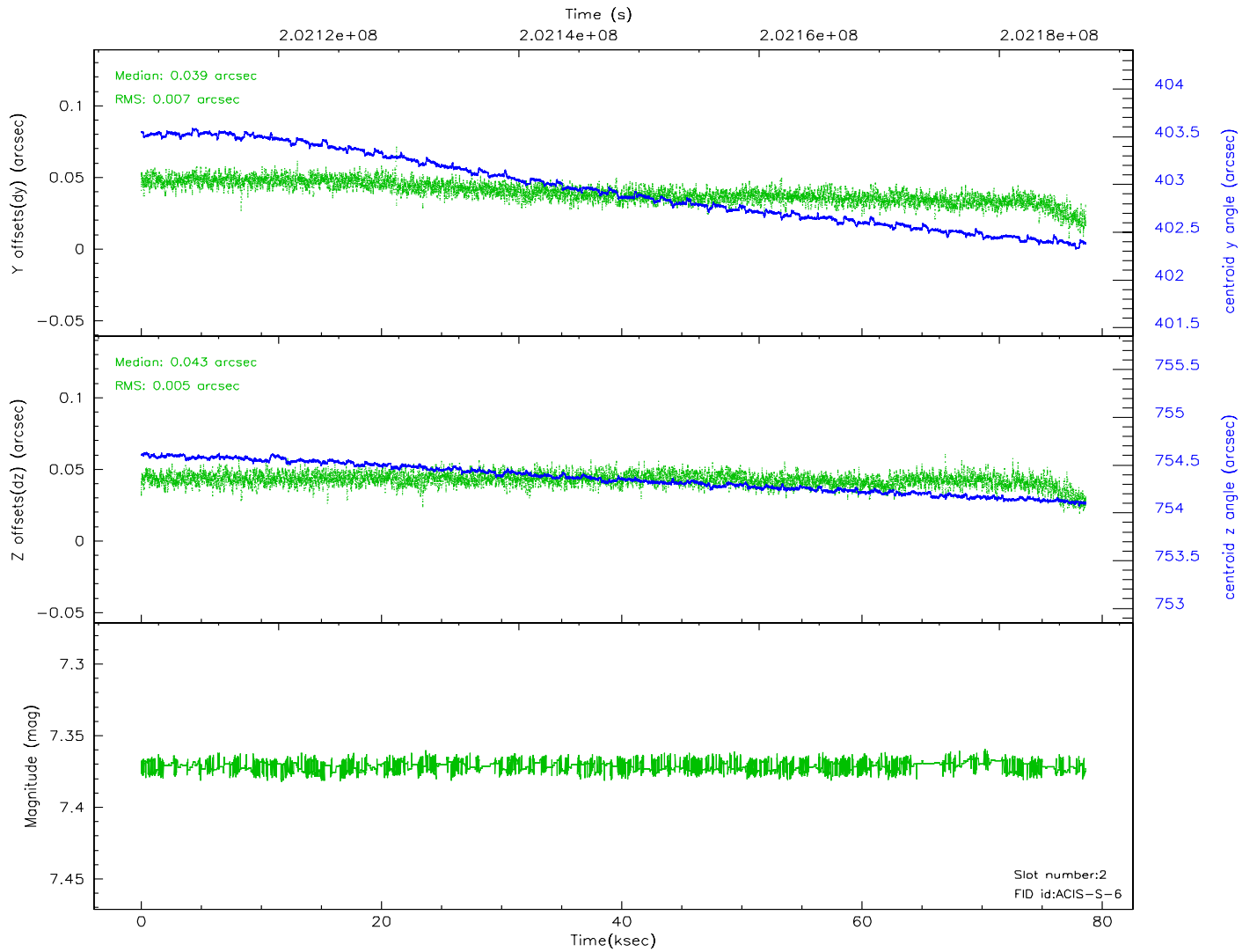
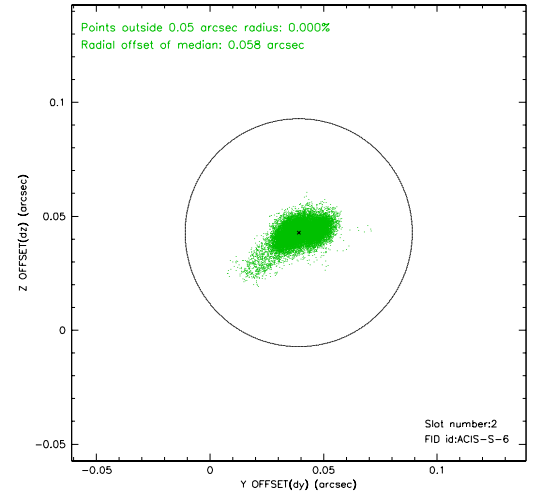
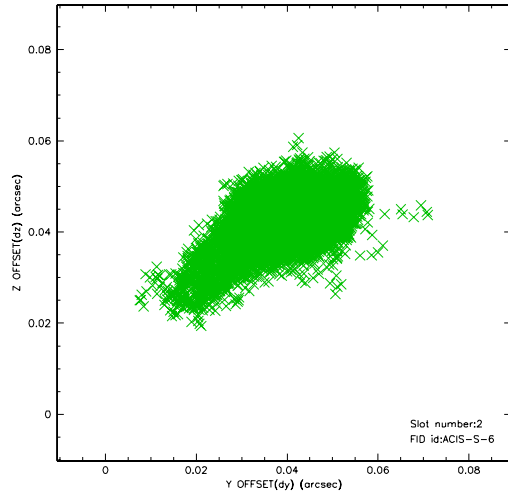
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

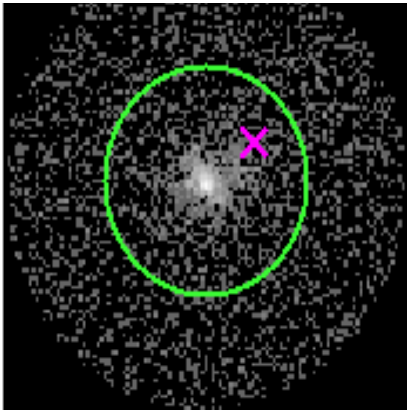


# 3 Gratings

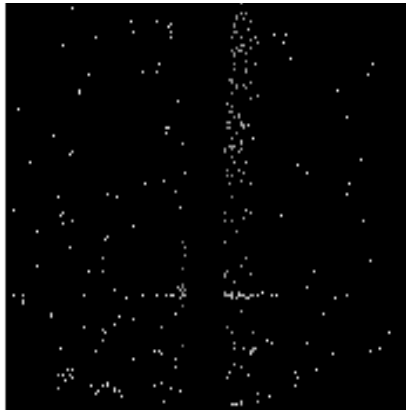
## 3.1 HEG Arm



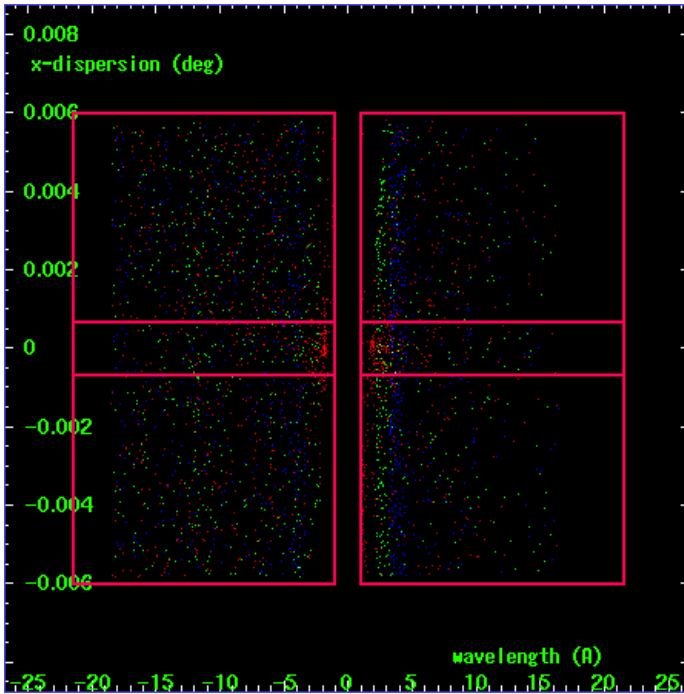
HEG Order Sort 123



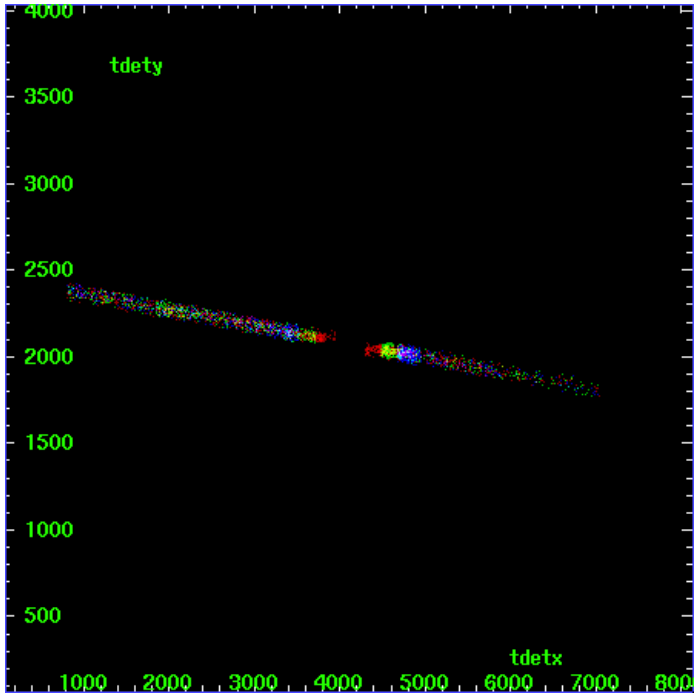
HEG Zero Order



HEG Order Sort ALL

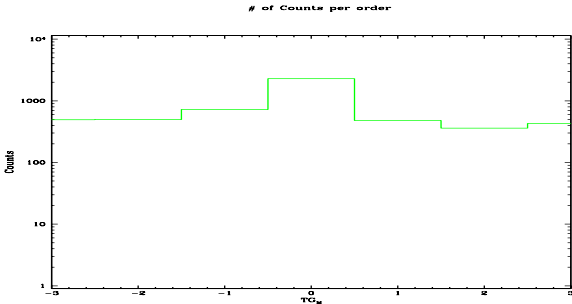


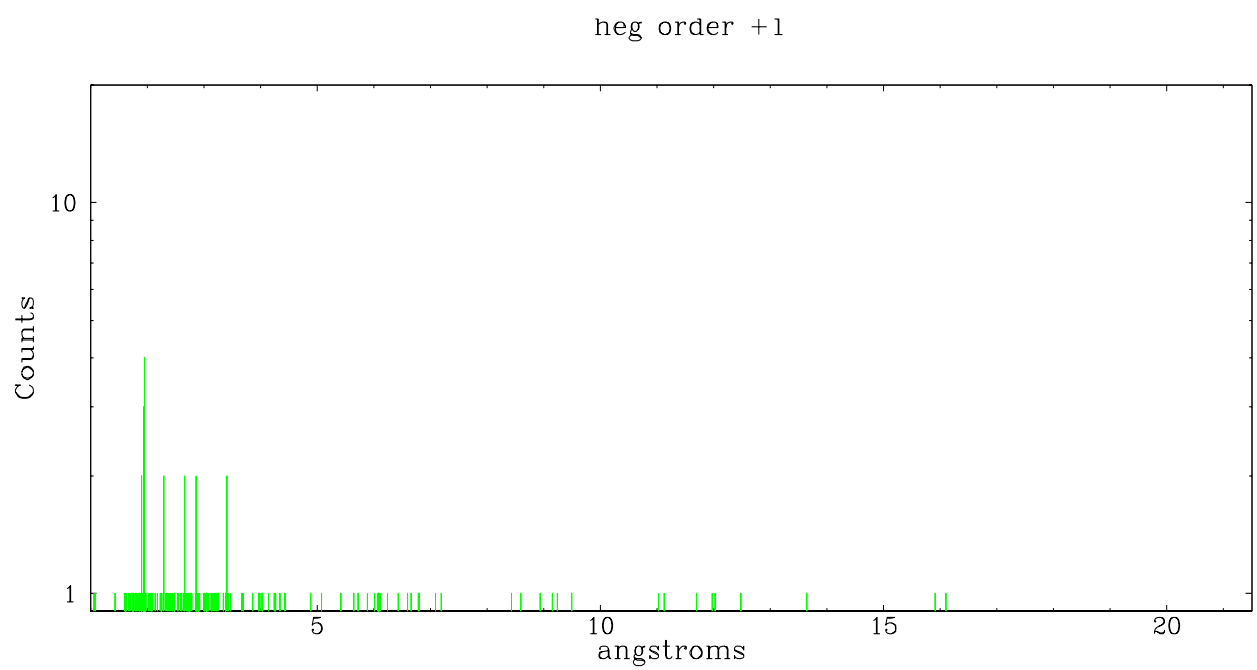
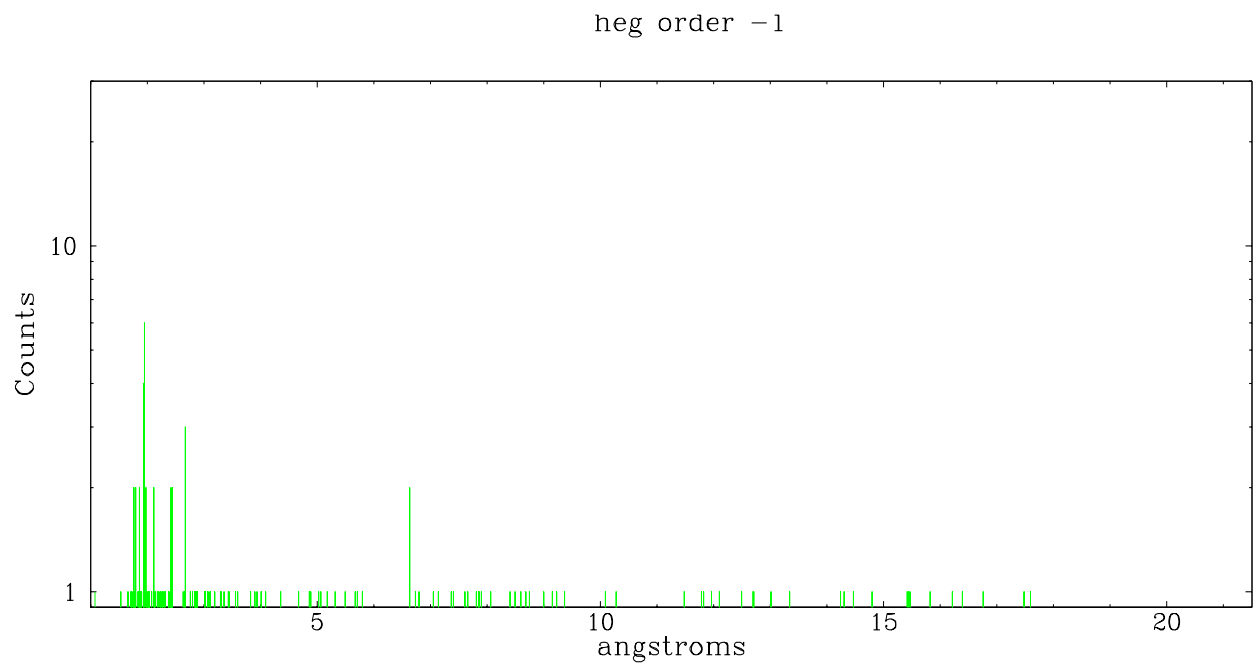
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	492	496	722	2280	478	361	428

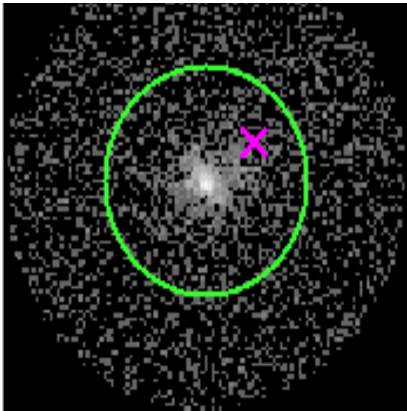




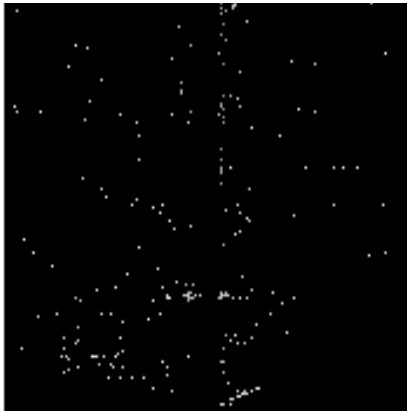
3.2 MEG Arm



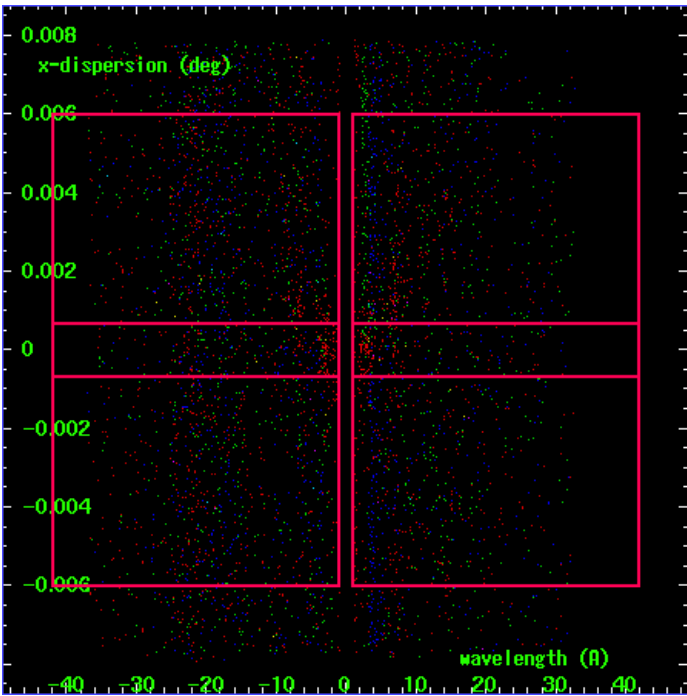
MEG Order Sort 123



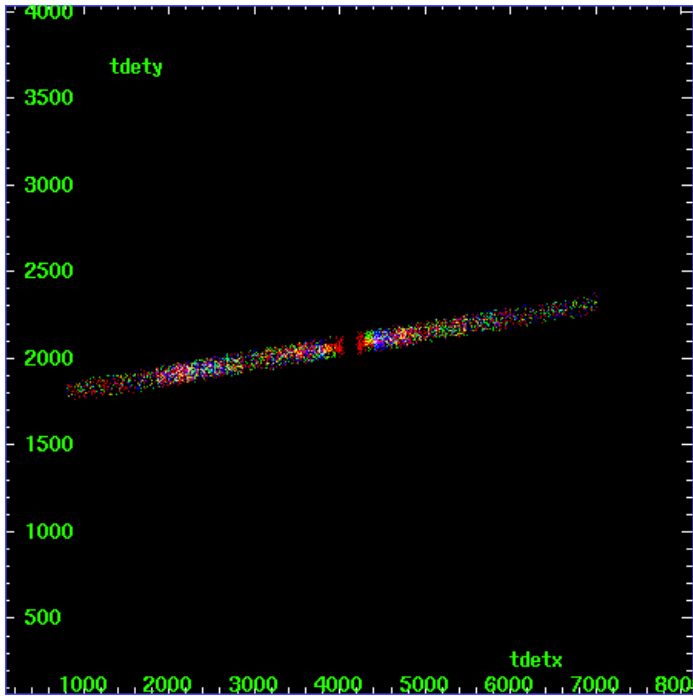
MEG Zero Order



MEG Order Sort ALL

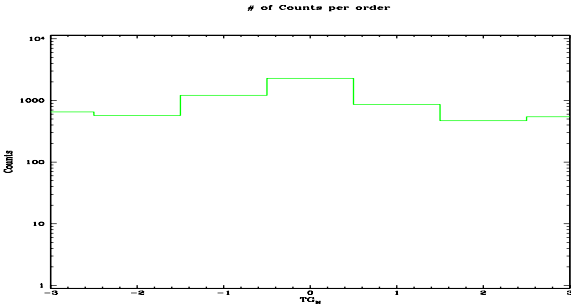


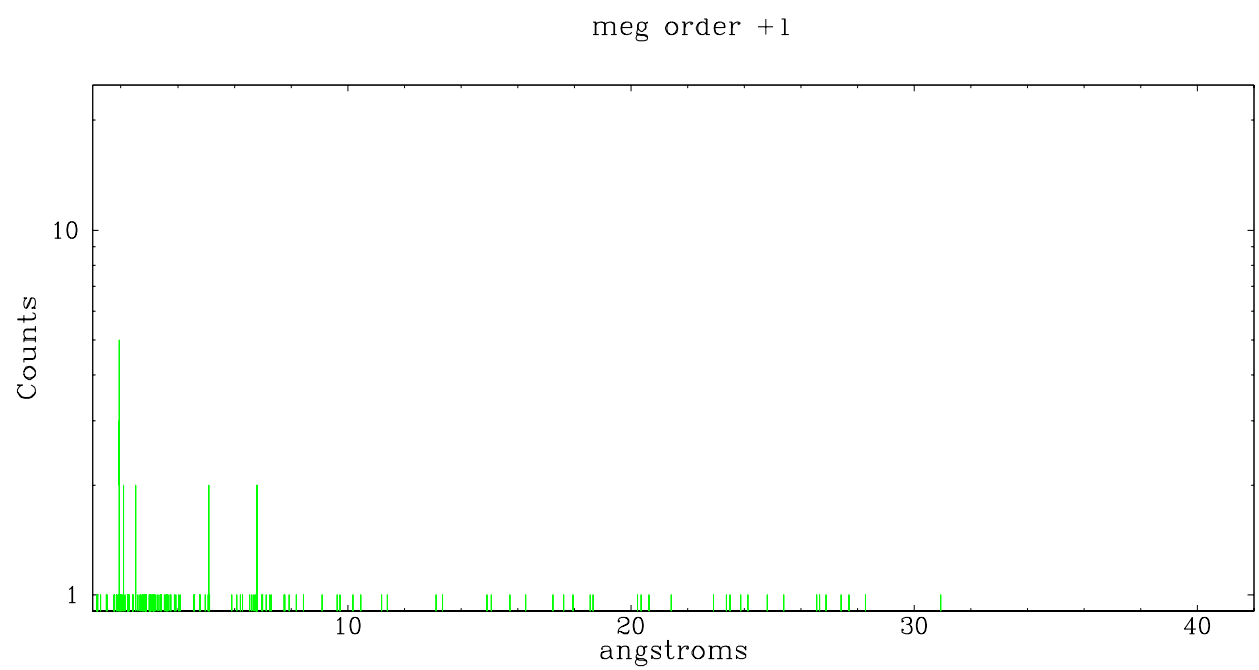
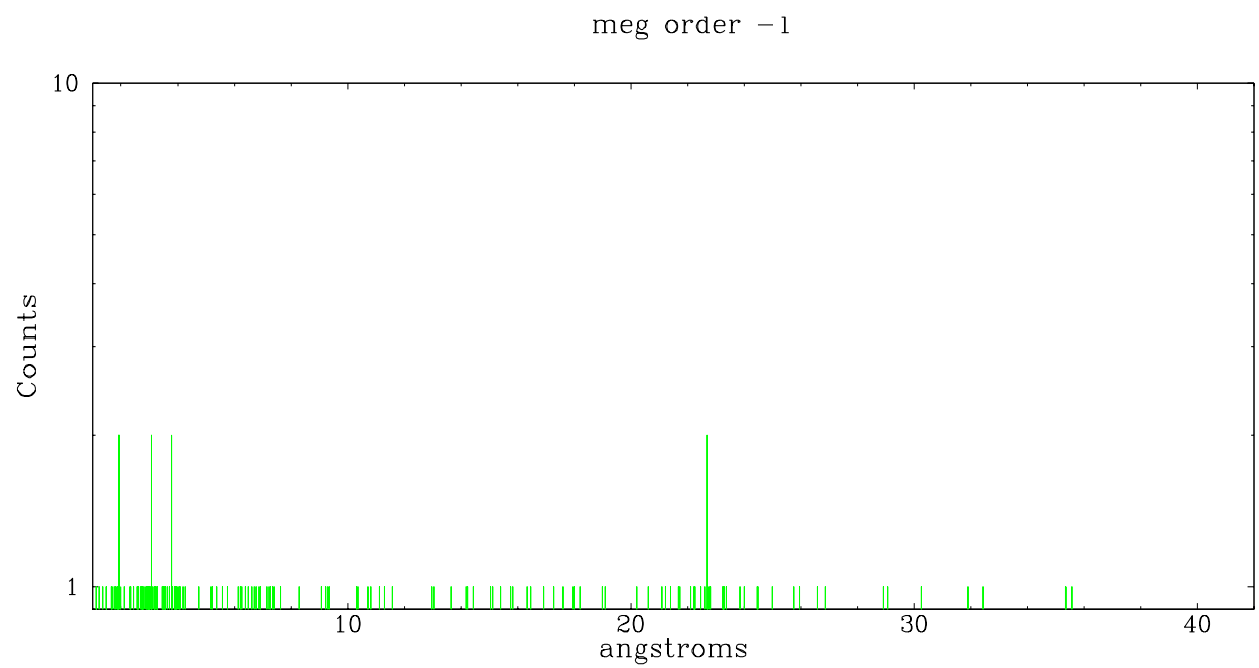
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	650	572	1214	2280	859	469	543







## A Summary

### A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2006.05.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	78.64

### A.2 Comments