

# V&V Reference Report

## L2 ASCDS Version : 7.6.10

Observation 671 - L2 Version 4  
Chandra X-Ray Center

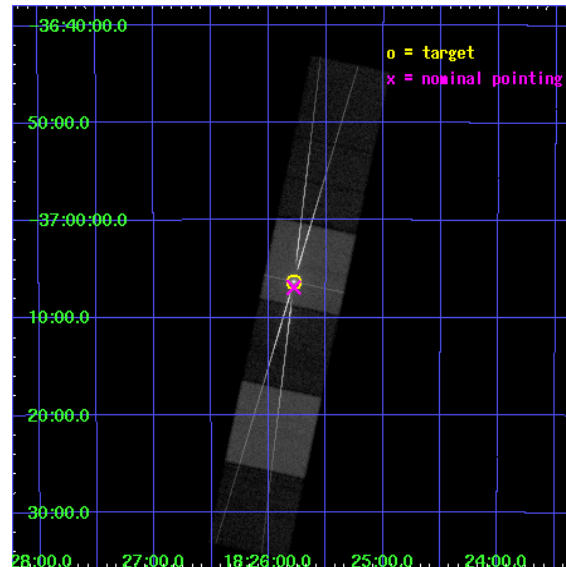
L2 Processing Date : Aug 27 2007

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# 1 Front

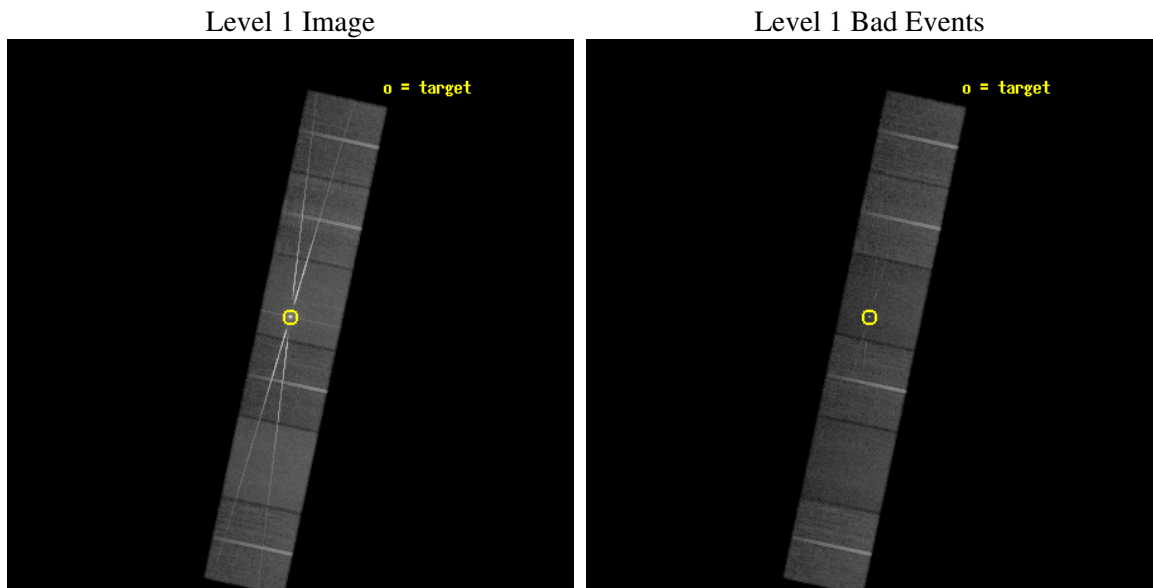
seq_num	400038
obs_id	671
title	HIGH RESOLUTION SPECTROSCOPY OF THE ACCRETION DISK CORONA SOURCE 4U 1822-37
observer	PROF. STEVEN KAHN
object	4U 1822-37
dtcycle	0
cycle	P
ra_targ	276.444583
dec_targ	-37.10525
ra_nom	276.4449473195
dec_nom	-37.115172876645
roll_nom	282.10414806767
revision	4
ontime	39948.759076968
livetime	39442.90383528
ontime4	39948.759076983
ontime5	39948.759047061
ontime6	39952.000037208
ontime7	39948.759076968
ontime8	39945.518266276
ontime9	39939.036186263
l2events	652338



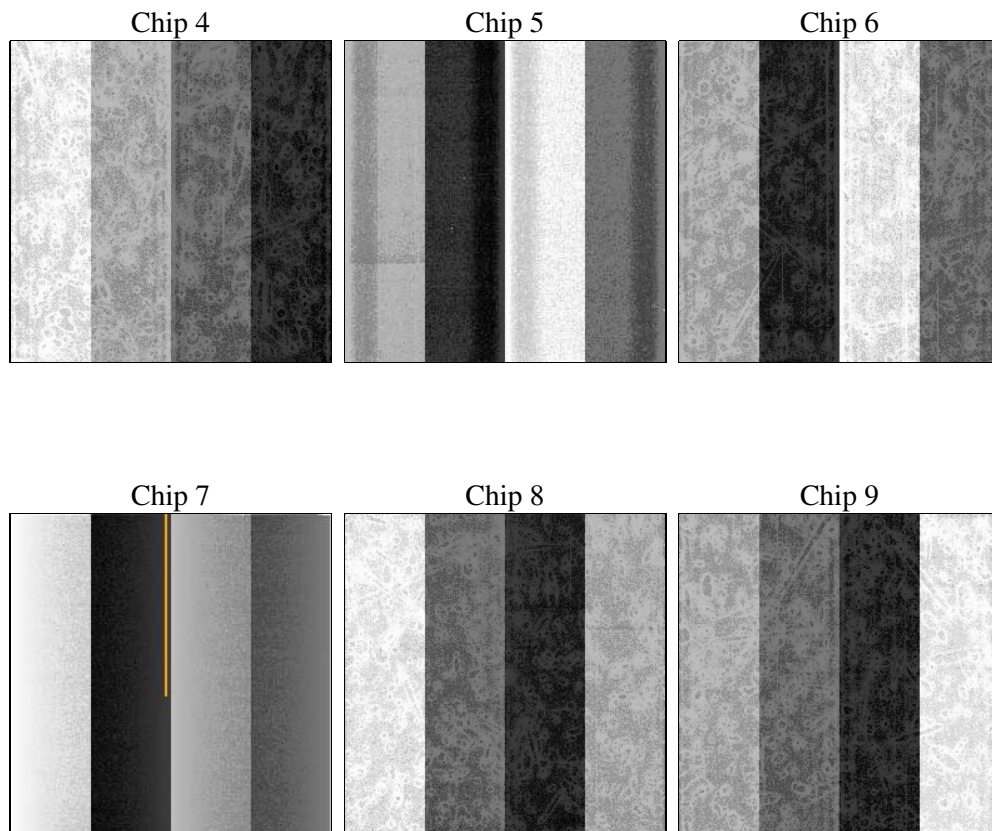
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.11
caldsver	3.4.0
date	2007-08-27T21:01:16
revision	4

sched_exp_time	40000.000000
ontime	39948.759076968
ontime4	39948.759076983
ontime5	39948.759047061
ontime6	39952.000037208
ontime7	39948.759076968
ontime8	39945.518266276
ontime9	39939.036186263
l1events	1989103

### 2.1.4 Events

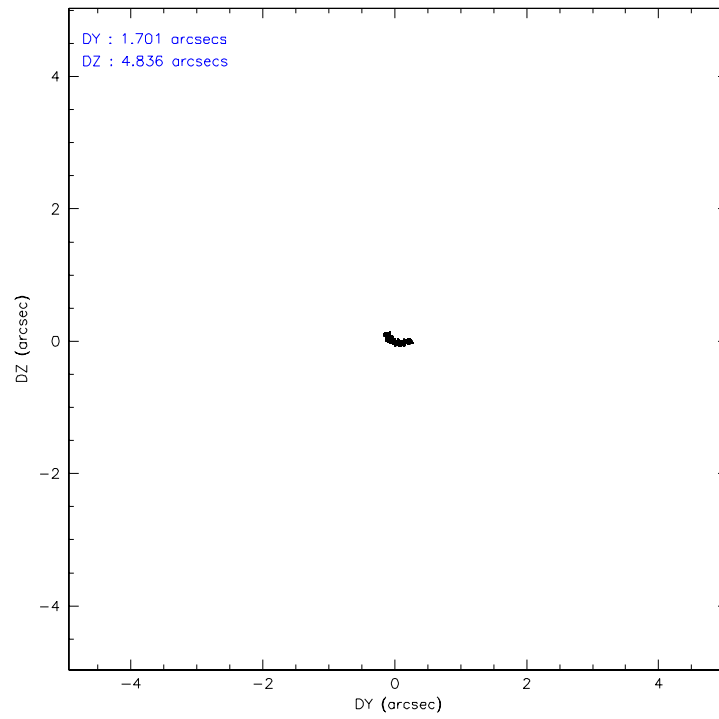
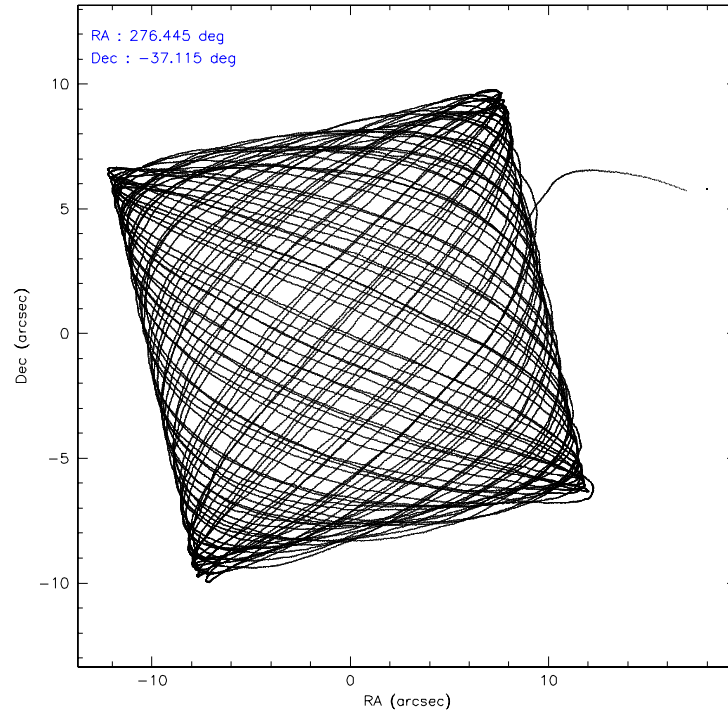
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	271773	335218	343275	447390	341120	250327
rejected events	239733	176795	220048	178516	246543	215738
rejected %	88%	52%	64%	39%	72%	86%

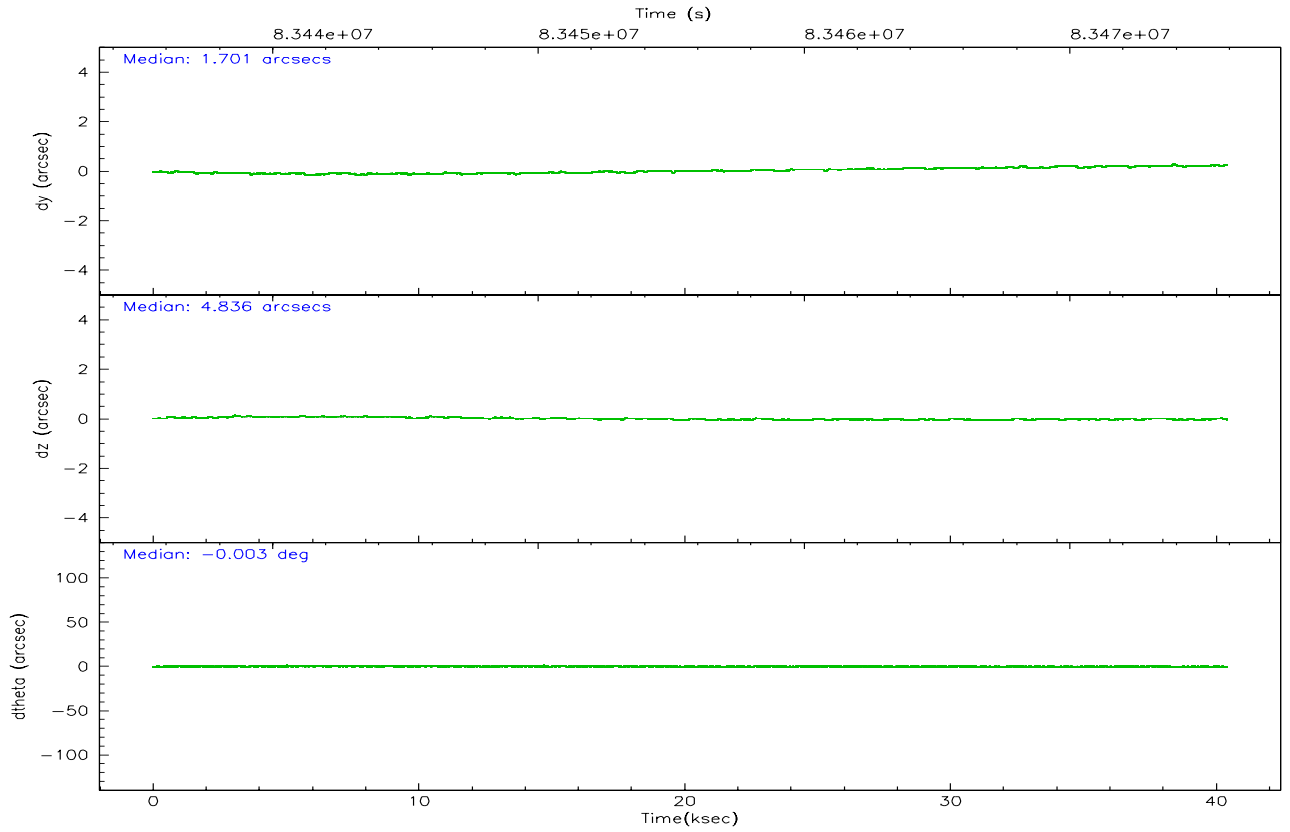
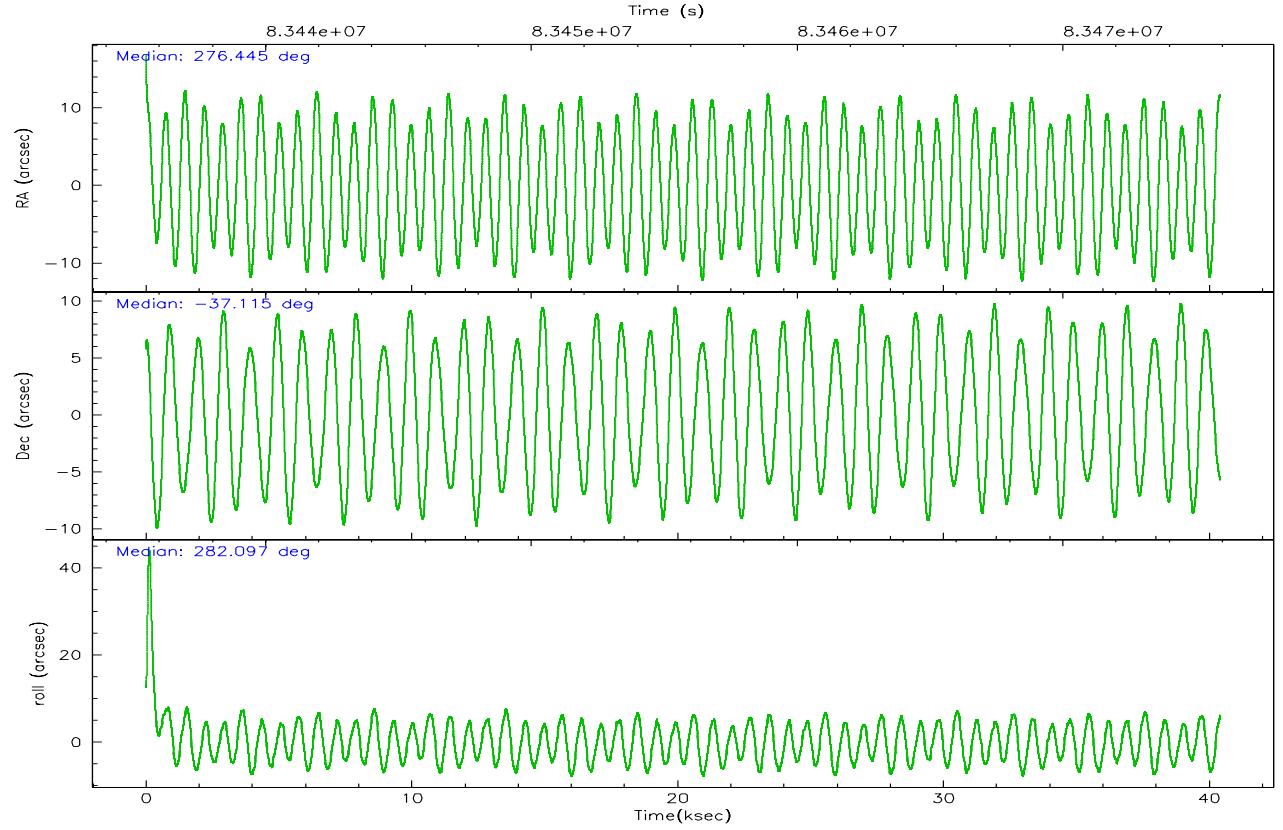
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	14739	15370	81272	43449	48223	16869
	5%	4%	23%	9%	14%	6%
grade 1 events	125	332	549	779	301	120
	0%	0%	0%	0%	0%	0%
grade 2 events	6927	46414	17498	59221	16262	6186
	2%	13%	5%	13%	4%	2%
grade 3 events	2806	8101	6952	27139	7472	3054
	1%	2%	2%	6%	2%	1%
grade 4 events	2702	7928	6706	26624	7017	2954
	0%	2%	1%	5%	2%	1%
grade 5 events	8259	25508	10324	30825	12398	9939
	3%	7%	3%	6%	3%	3%
grade 6 events	4869	80622	10806	112462	15616	5531
	1%	24%	3%	25%	4%	2%
grade 7 events	231346	150943	209168	146891	233831	205674
	85%	45%	60%	32%	68%	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	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	276.421783	276.4449473194979	Subarray requested	NONE	NONE
Pointing Dec	-37.094954	-37.11517287664532	Alternating exposures requested	N	N
Pointing Roll	281.933558	282.1041480676694	Primary exposure time	3.200000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
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	83435918.184000	83434837.31211901			
Observation start date	2000-08-23T16:37:34	2000-08-23T16:20:37			
Observation end time	83475918.184000	83476452.826179			
Observation end date	2000-08-24T03:44:14	2000-08-24T03:54:12			
Read mode	TIMED	TIMED			

## 2.3 Aspect





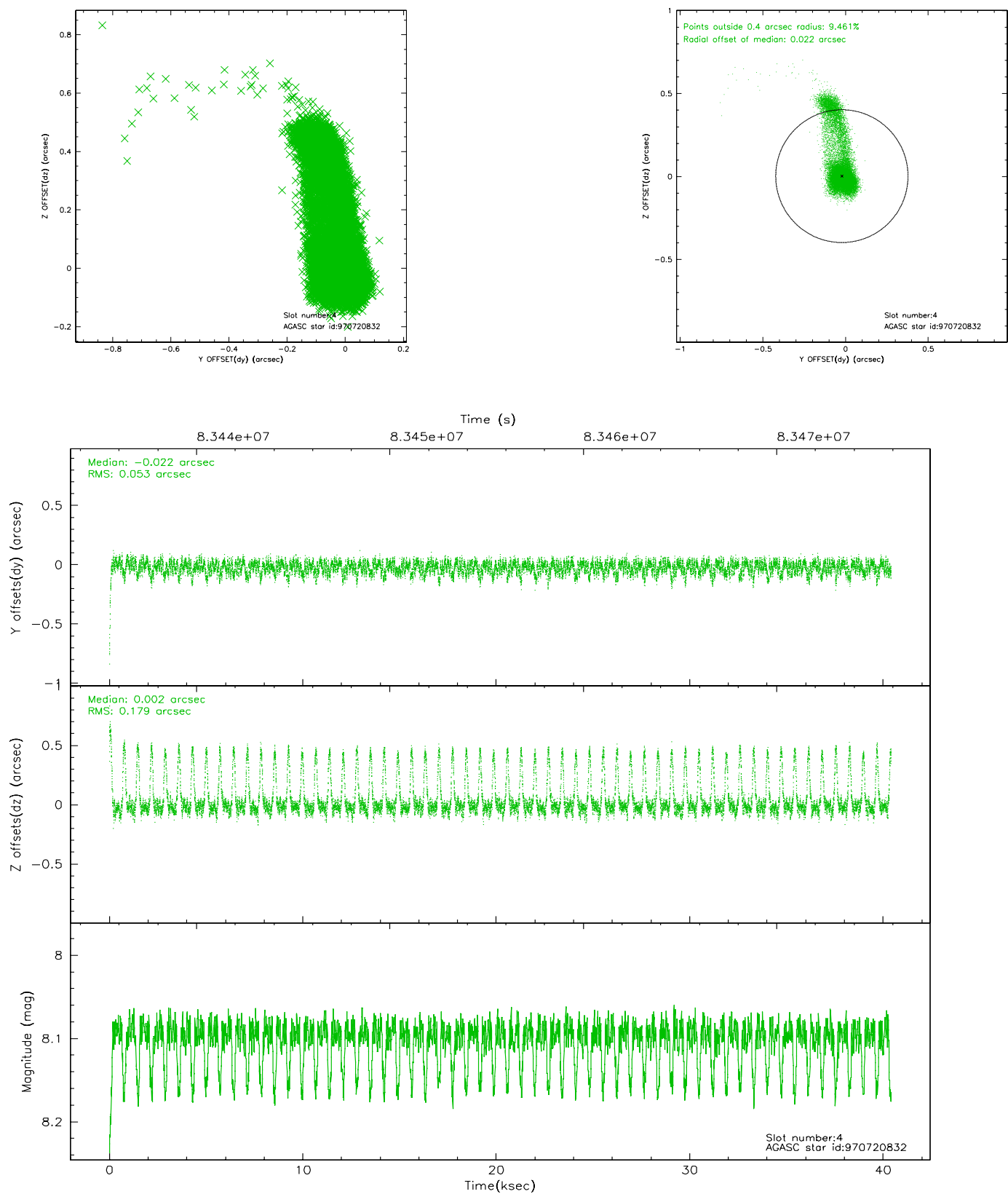
### Slot Statistics

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	9857	-0.019	-0.013	0.007	0.012	0.000000	0.000000	-754.16	-1788.10
1	FID	ACIS-S-4	7.19	9854	-0.038	0.013	0.005	0.009	0.000000	0.000000	2159.11	120.36
2	FID	ACIS-S-5	7.23	9856	0.026	0.009	0.006	0.010	0.000000	0.000000	-1806.92	114.08
3	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
4	GUIDE	970720832	8.10	19713	-0.022	0.002	0.097	0.441	277.196112	-36.995844	119.25	2250.73
5	GUIDE	1035604392	9.44	19705	0.026	-0.066	0.123	0.204	275.759258	-37.563529	1265.70	-2199.26
6	GUIDE	970597584	9.14	19699	-0.046	-0.048	0.079	0.134	275.922701	-36.819014	-1266.07	-1202.44
7	GUIDE	970588592	9.50	19707	0.045	0.068	0.091	0.154	276.258556	-36.829844	-1031.21	-262.53

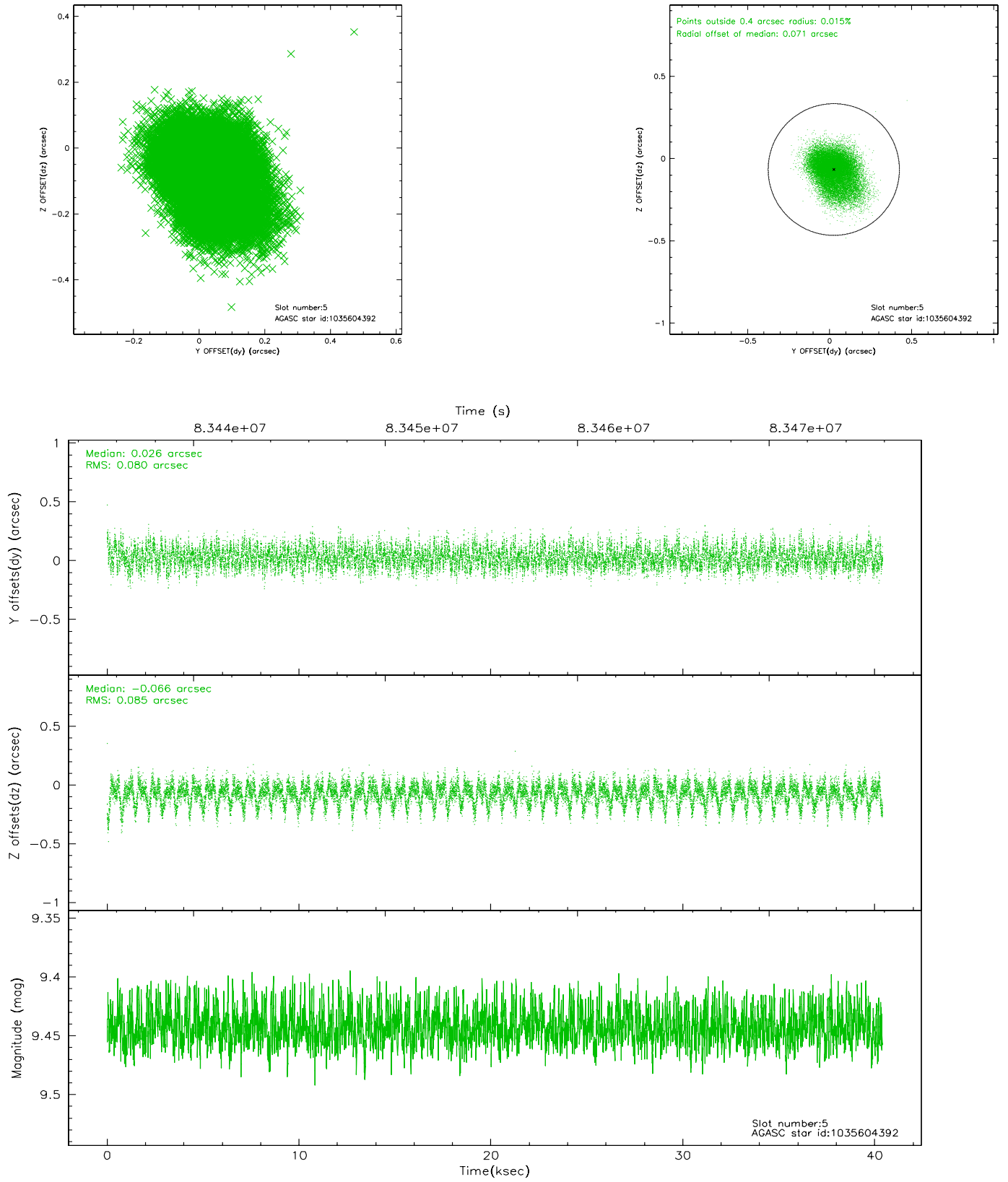


## 2.4 Star Slots

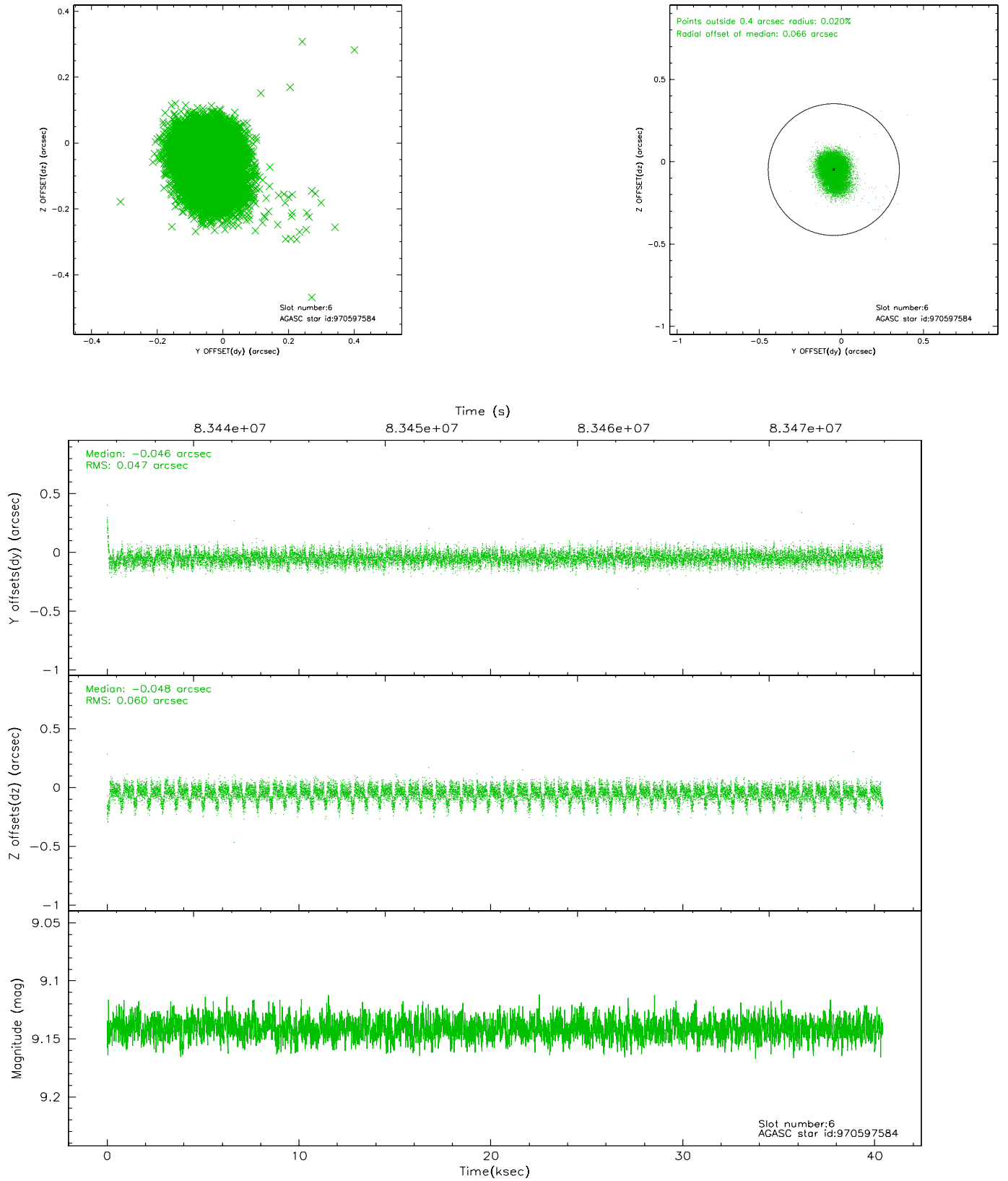
### 2.4.1 Slot 4



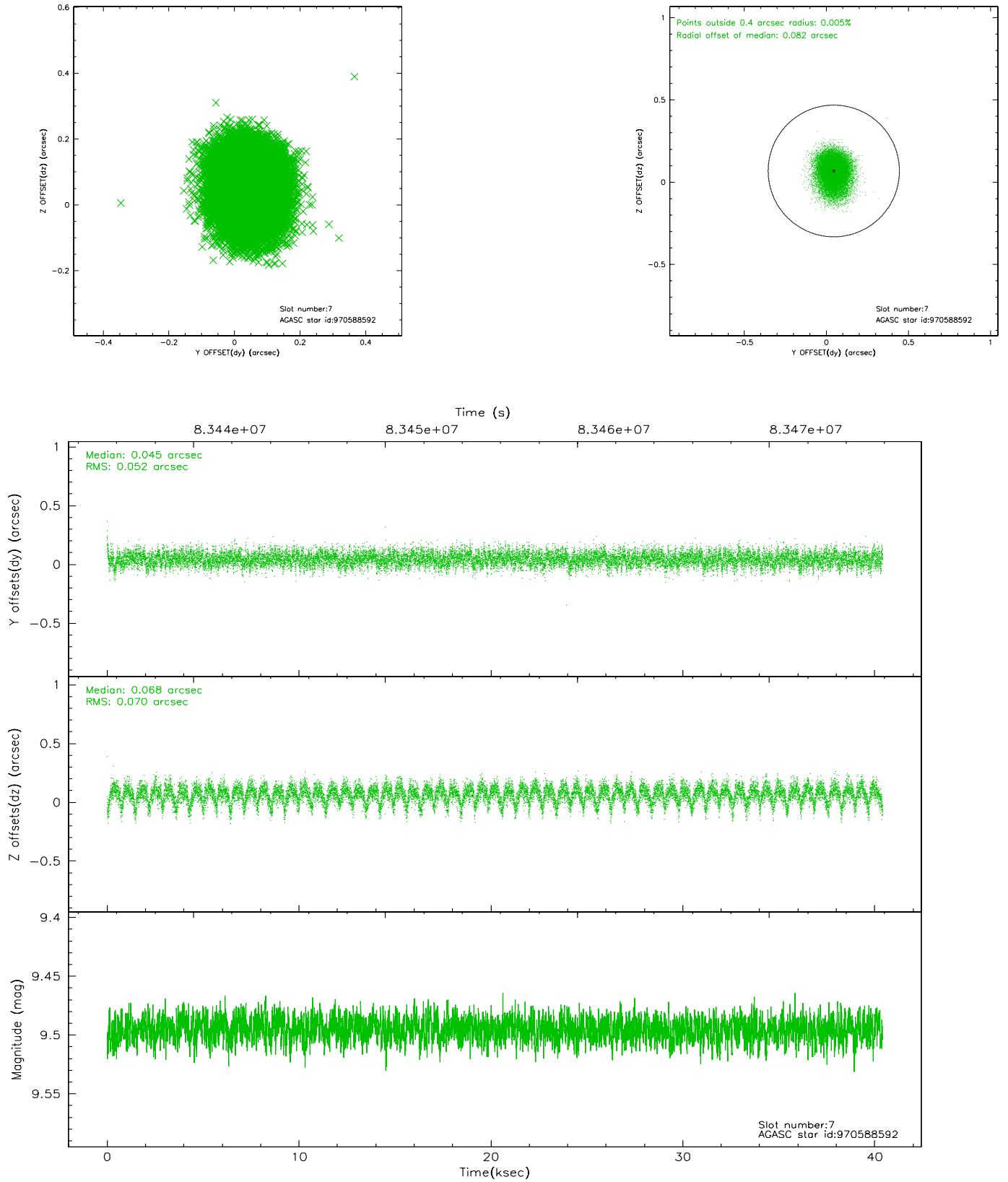
## 2.4.2 Slot 5



### 2.4.3 Slot 6

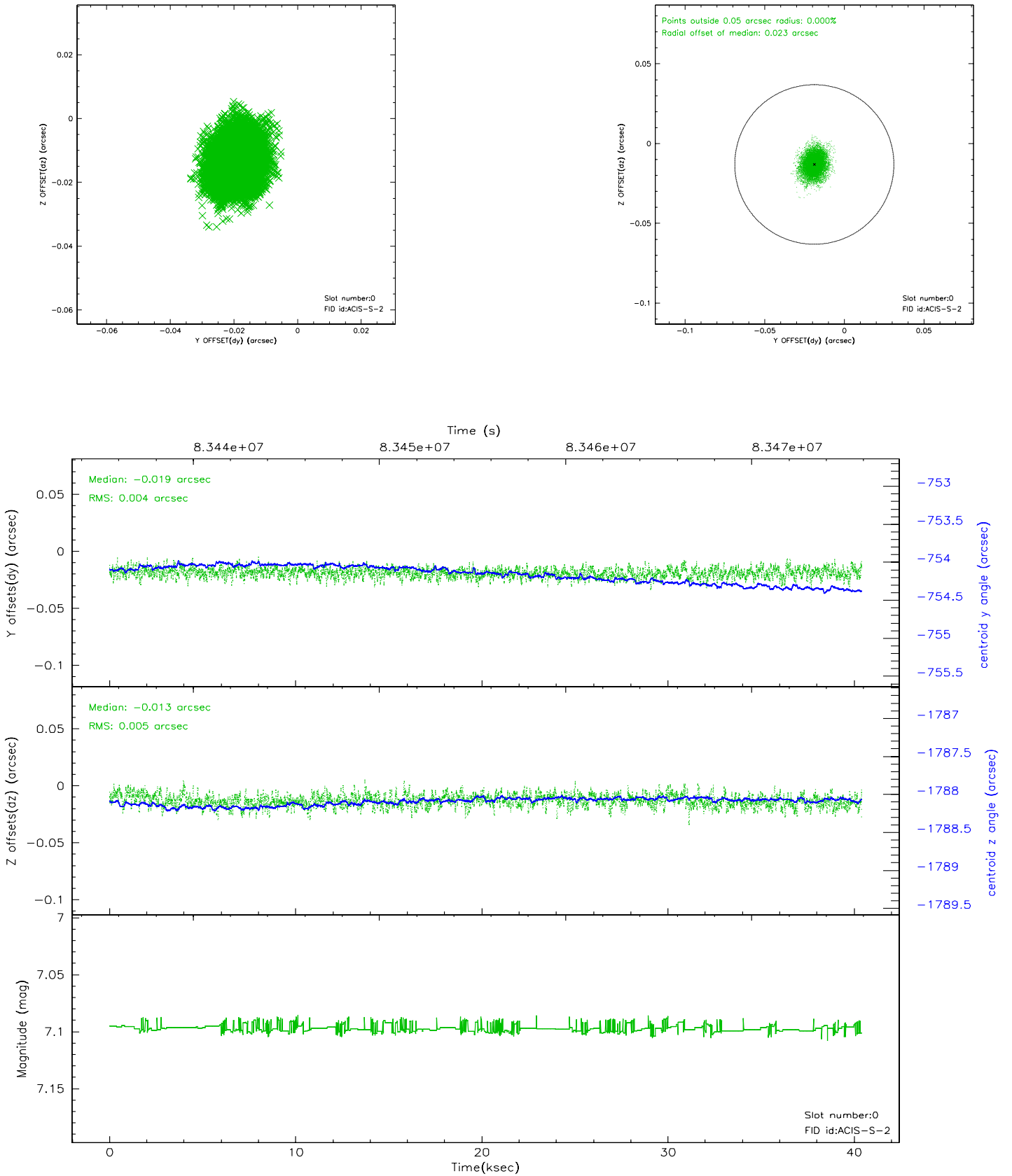


## 2.4.4 Slot 7

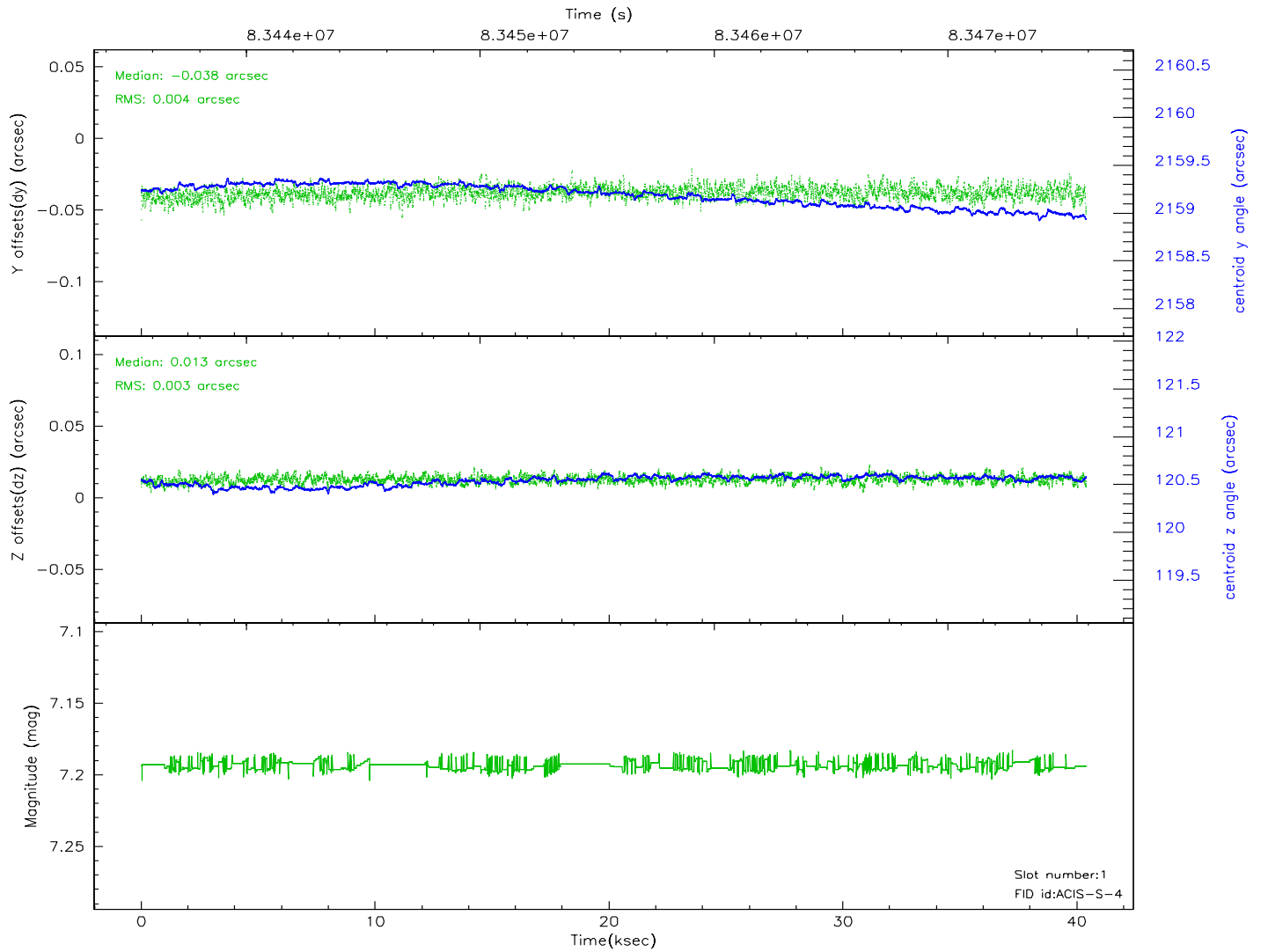
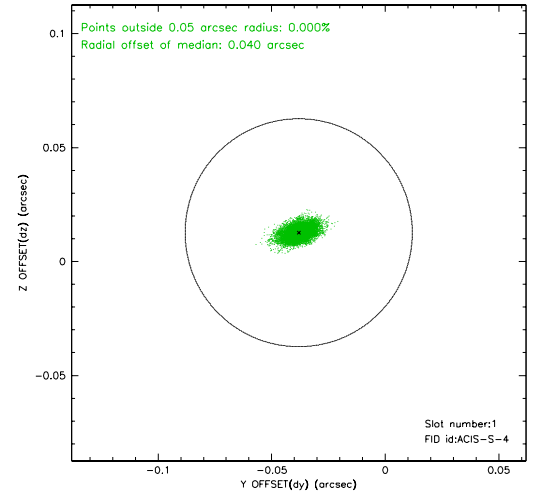
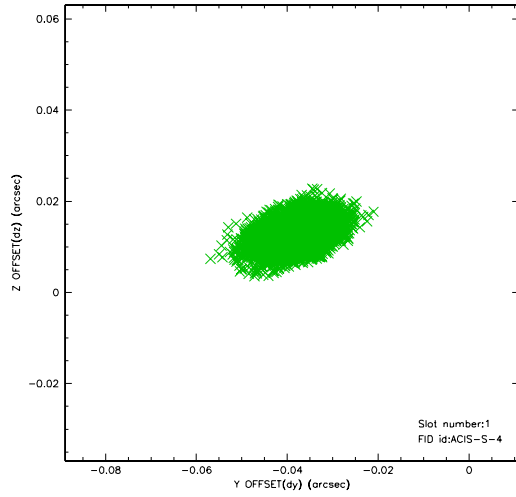


## 2.5 FID Slots

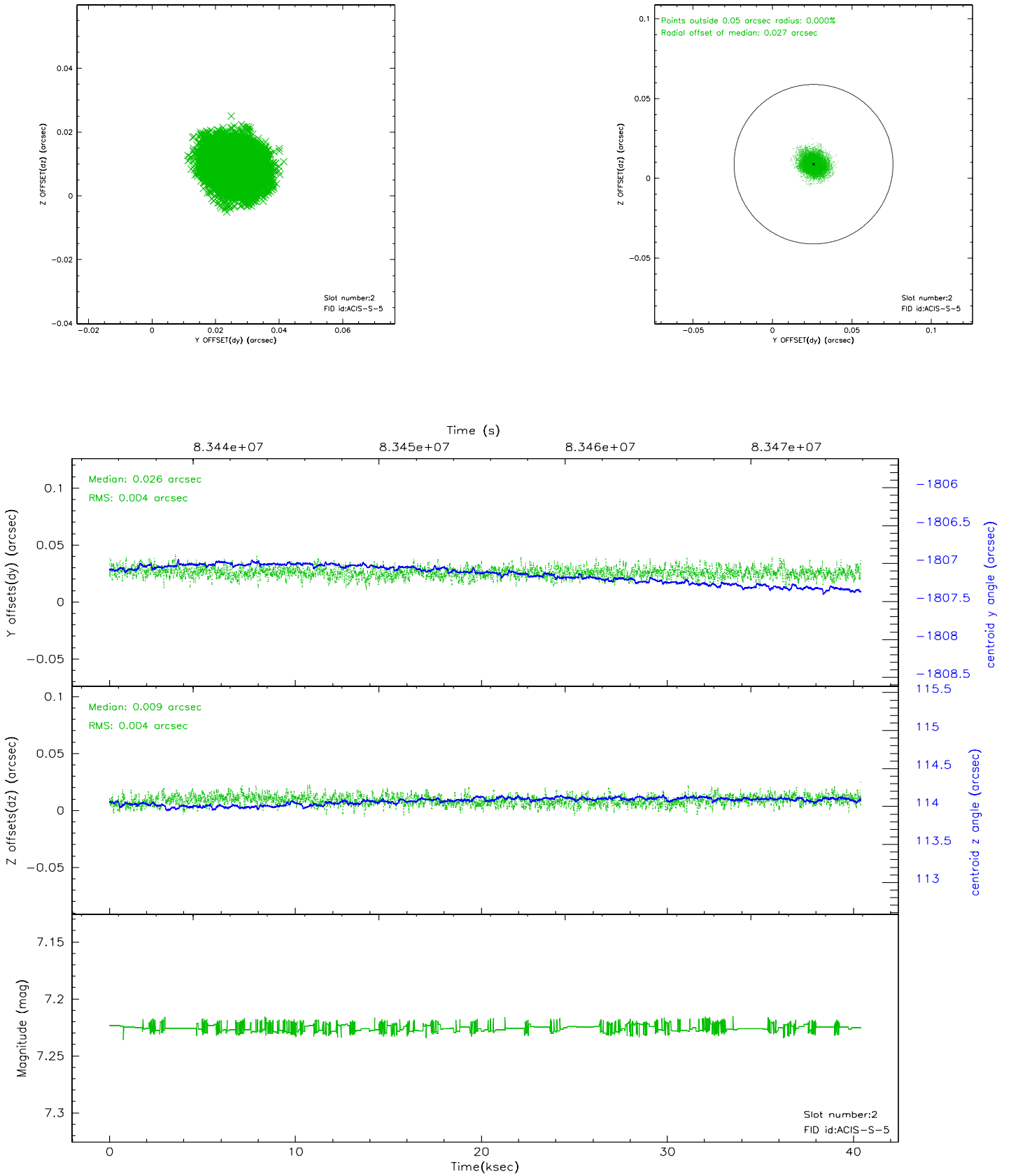
### 2.5.1 Slot 0



## 2.5.2 Slot 1

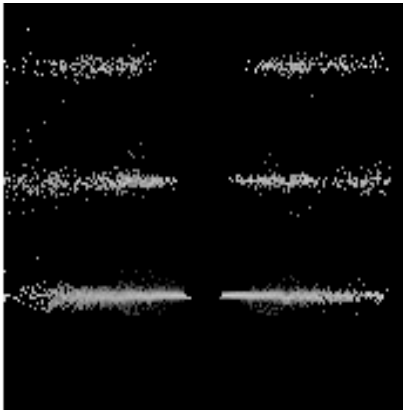


### 2.5.3 Slot 2

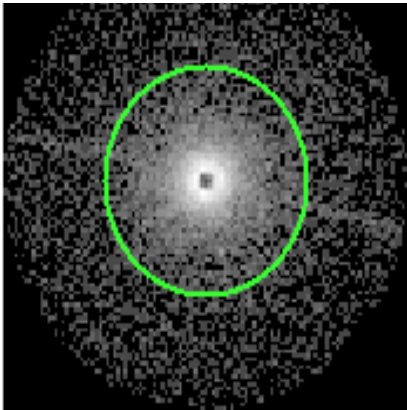


# 3 Gratings

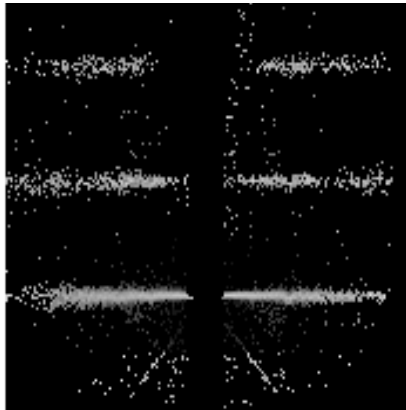
## 3.1 HEG Arm



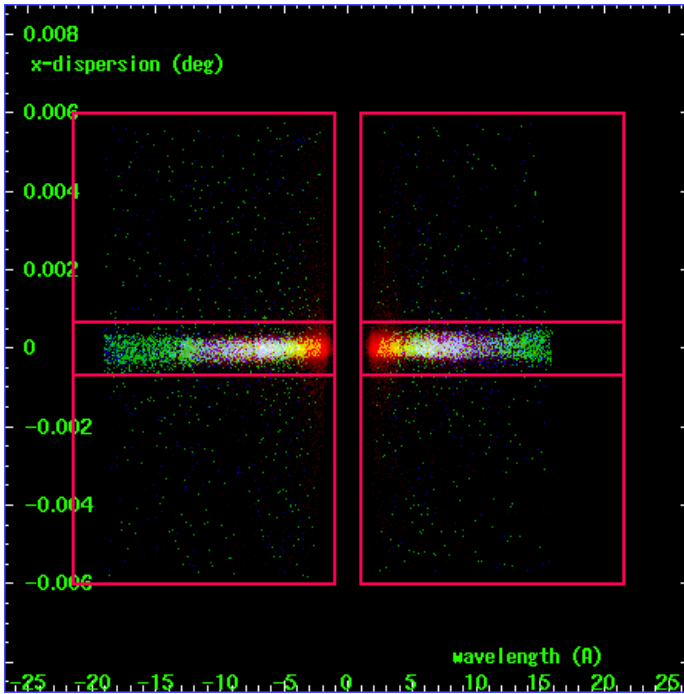
HEG Order Sort 123



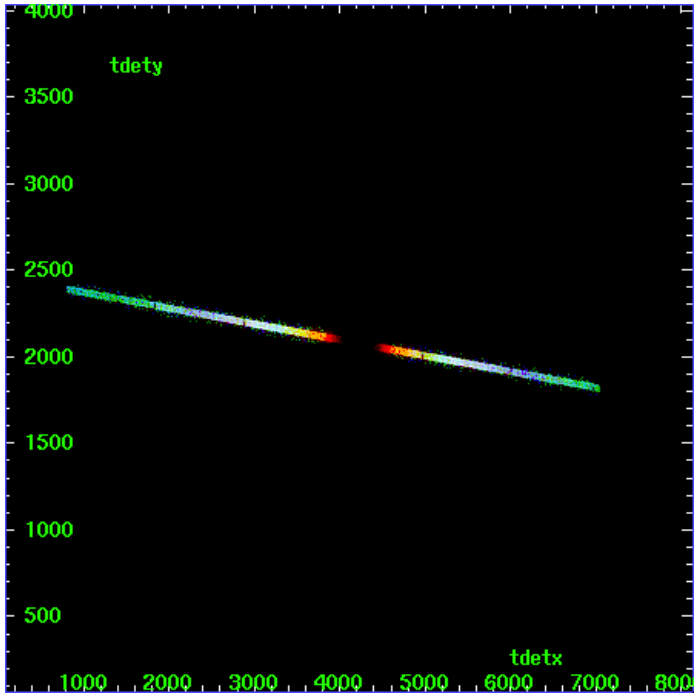
HEG Zero Order



HEG Order Sort ALL

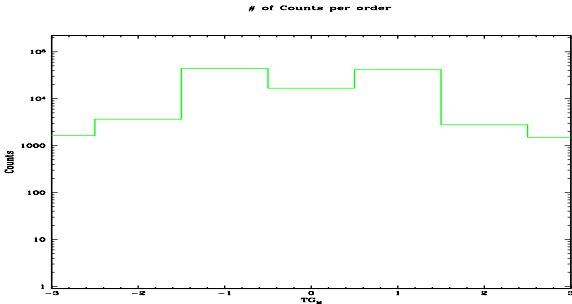


Spot Image HEG



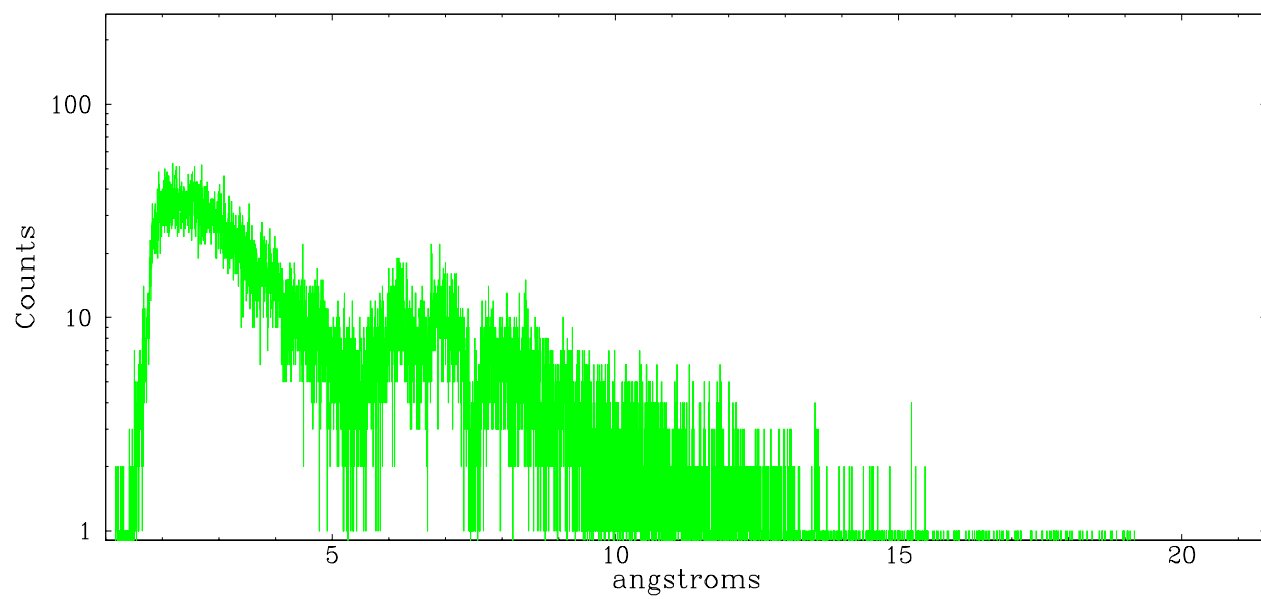
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1648	3658	44064	16688	41292	2776	1507

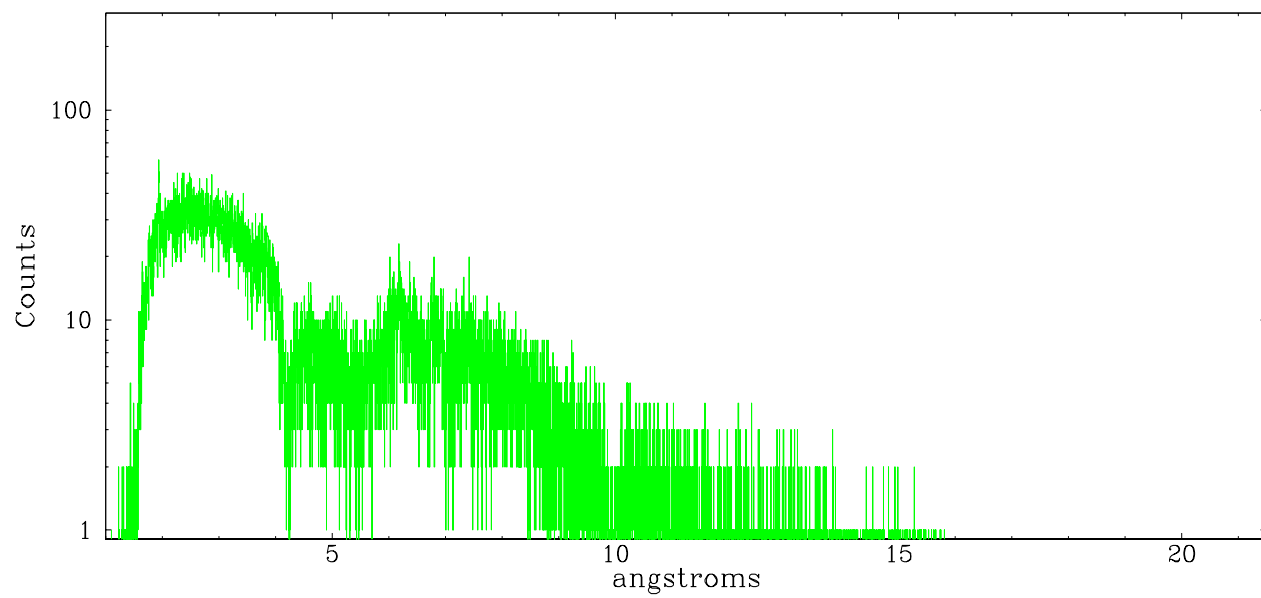




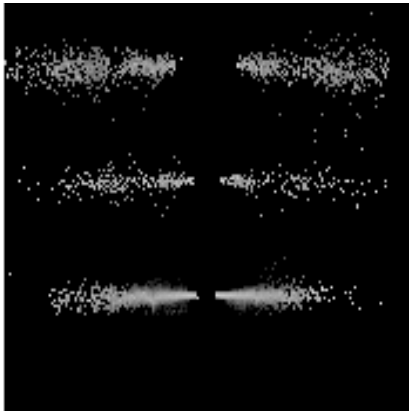
heg order -1



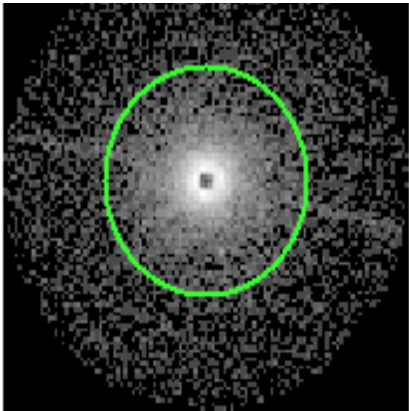
heg order +1



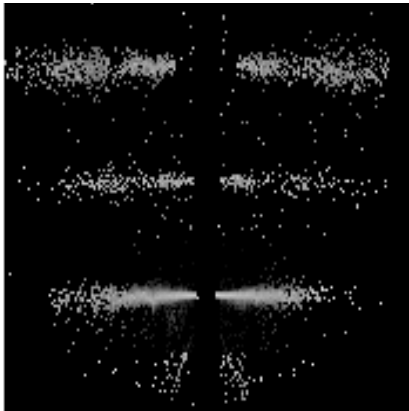
### 3.2 MEG Arm



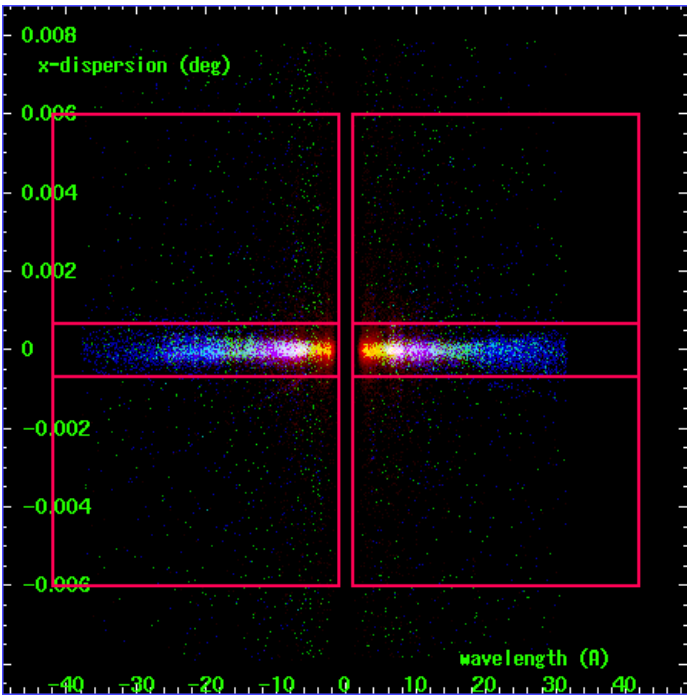
MEG Order Sort 123



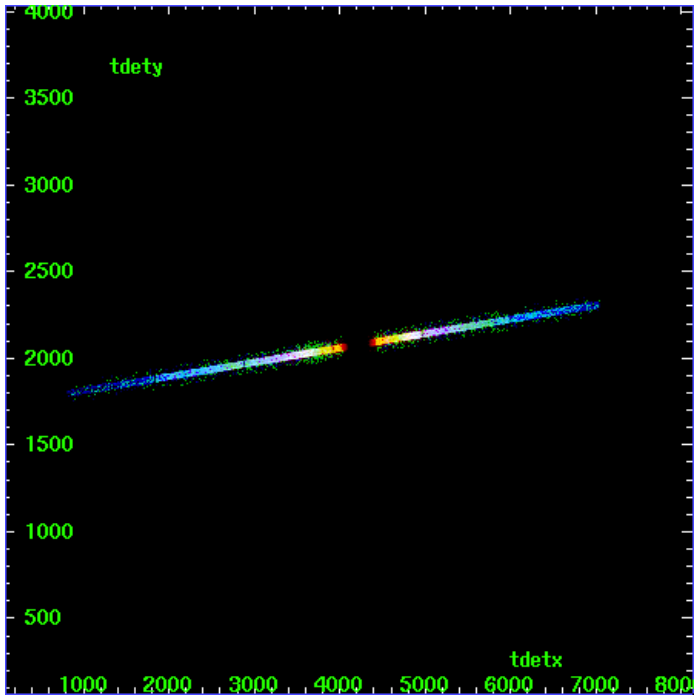
MEG Zero Order



MEG Order Sort ALL

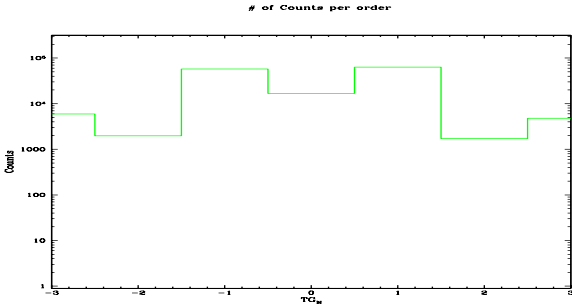


Spot Image MEG

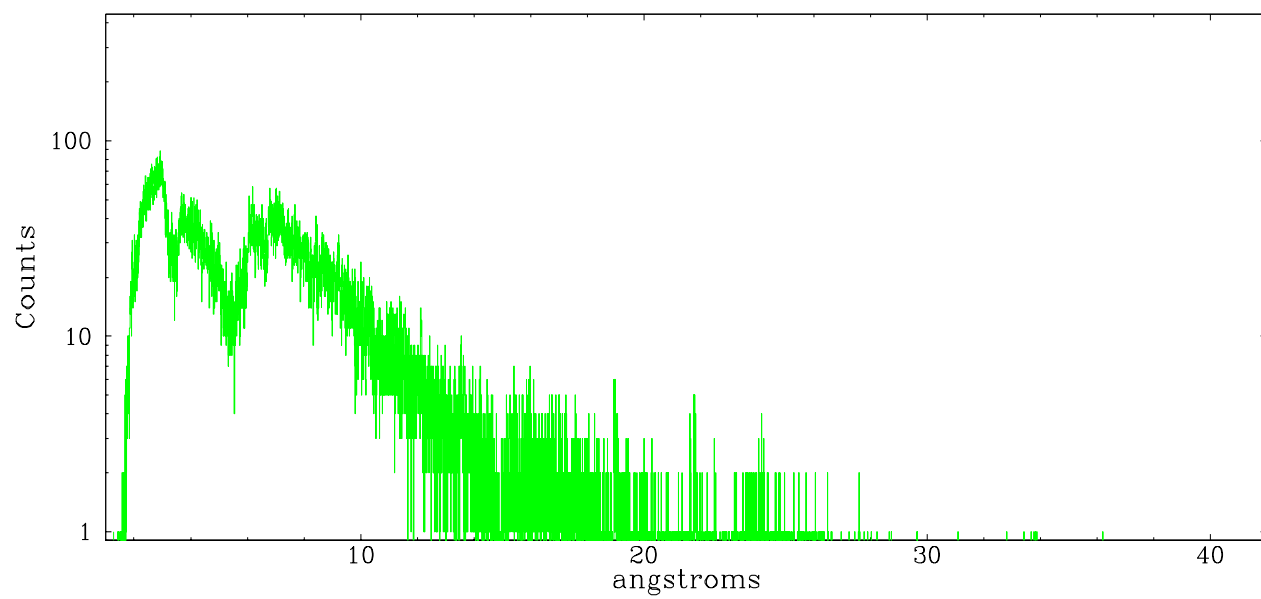


Full Detector MEG

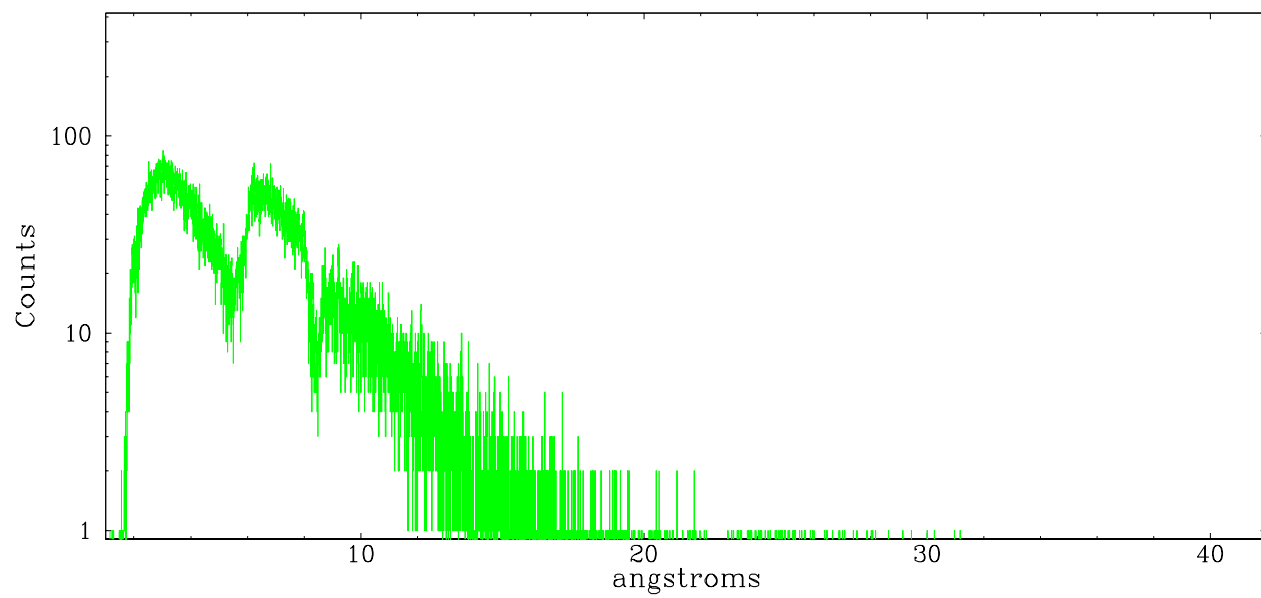
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5940	1979	57526	16688	63004	1720	4804



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.08.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.95

## A.2 Comments

Zeroth order severely piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates (x=4095.83, y=4169.76) into the \*src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm (preferred position), or the readout streak and the heg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the \*src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.=====

The guide star in slot 3 was removed from the aspect solution due to poor data quality. The aspect solution is not expected to be degraded by removing one guide star from the solution.=====

Focal plane temperature is warmer than -118.7 C degrees during the first approximately 3 ksec of this observation. The ACIS spectral response calibration for the front-illuminated chips is less accurate at these warmer temperatures than it is at -119.7 C. The back-illuminatd chips are not affected at the focal plane temperatures recorded for this observation. Users whose science objectives depend on the most accurate spectral response (i.e.: fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect.