

# V&V Reference Report

## L2 ASCDS Version : 7.6.7.1

Observation 5461 - L2 Version 3  
Chandra X-Ray Center

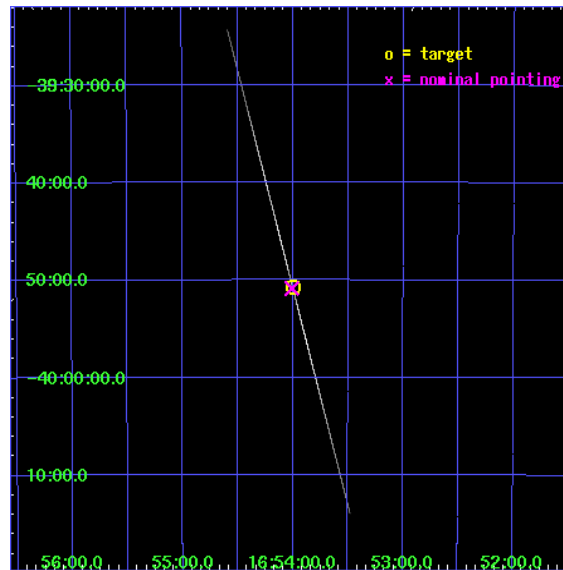
L2 Processing Date : Apr 14 2008

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# 1 Front

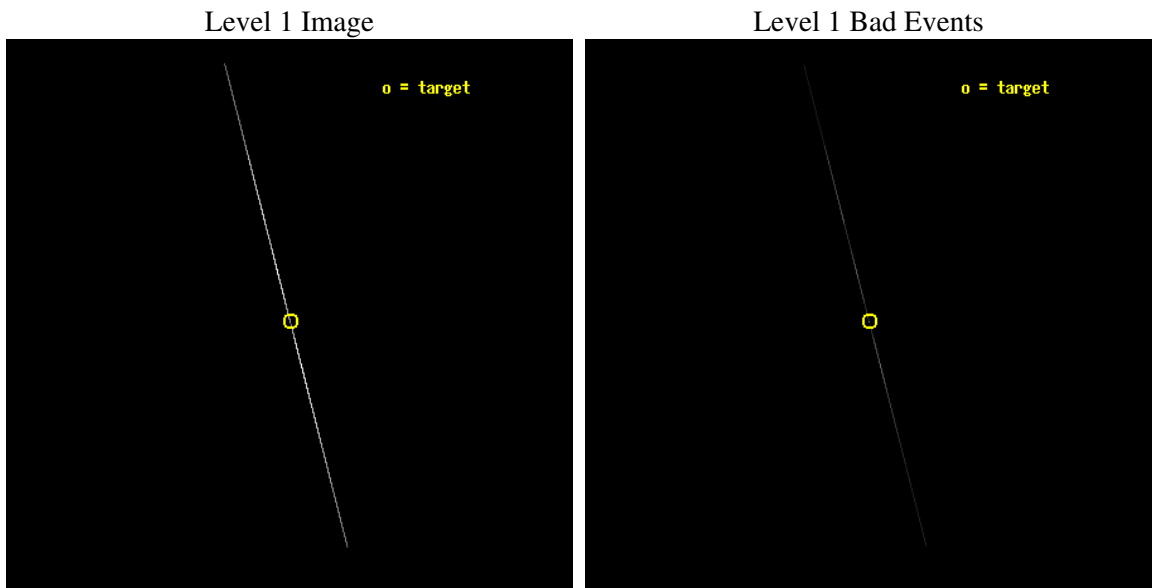
seq_num	400391
obs_id	5461
title	Relativistic Effects and Outflows in a Black Hole Transient
observer	Dr. Jon Miller
object	GROJ1655-40
ra_targ	253.500583
dec_targ	-39.845806
ra_nom	253.50219682741
dec_nom	-39.847668993182
roll_nom	75.517580725758
revision	3
ontime	25570.688715845
livetime	25470.803213049
ontime4	53811.507050812
ontime5	62152.25
ontime6	25952.876420468
ontime7	25570.688715845
ontime8	41798.192071646
ontime9	58164.229905397
l2events	21436584



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



## 2.1.2 Parameters

obi_num	0
ascdsver	7.6.11.6
caldsver	3.4.4
date	2008-04-12T01:12:12
revision	3

sched_exp_time	62000.000000
ontime	25570.688715845
ontime4	53811.507050812
ontime5	62152.25
ontime6	25952.876420468
ontime7	25570.688715845
ontime8	41798.192071646
ontime9	58164.229905397
l1events	23368941

## 2.1.3 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	506072	4019732	6726086	7005852	4248885	862314
rejected events	19179	96300	91747	127139	58035	26440
rejected %	3%	2%	1%	1%	1%	3%

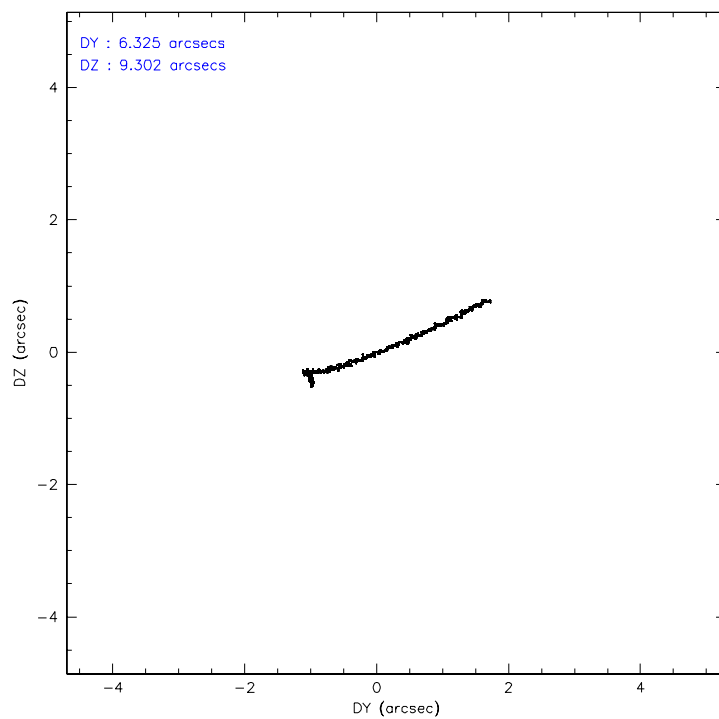
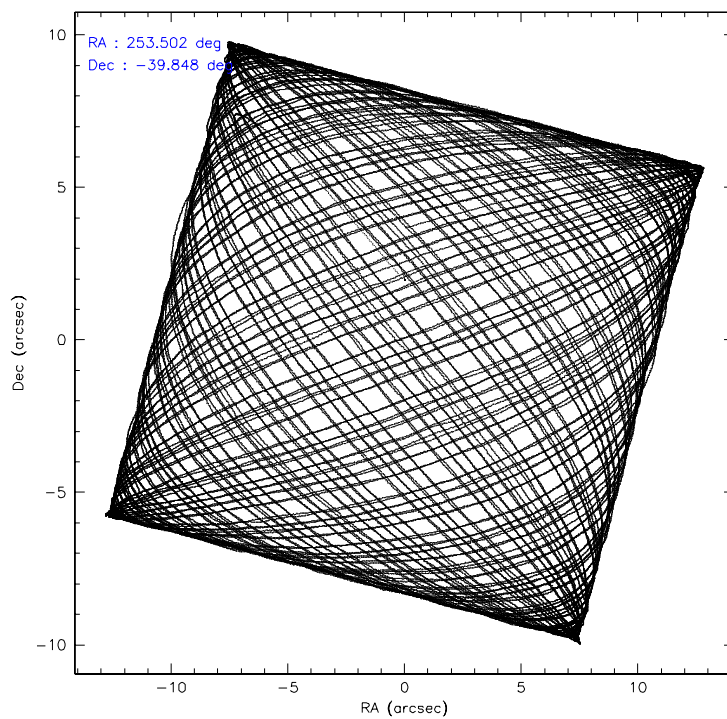
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	29144	825113	2293864	1384706	2687591	11101
	5%	20%	34%	19%	63%	12%
grade 1 events	318	1281	10081	8642	8789	602
	0%	0%	0%	0%	0%	0%
grade 2 events	395251	1697061	3700290	2019398	1151803	63181
	78%	42%	55%	28%	27%	73%
grade 3 events	9758	211444	107252	691378	113557	13097
	1%	5%	1%	9%	2%	1%
grade 4 events	10137	209145	107605	685513	112526	13907
	2%	5%	1%	9%	2%	1%
grade 5 events	16214	79409	47263	80508	32623	22413
	3%	1%	0%	1%	0%	2%
grade 6 events	45250	996279	459731	2135707	141996	69462
	8%	24%	6%	30%	3%	8%
grade 7 events	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%

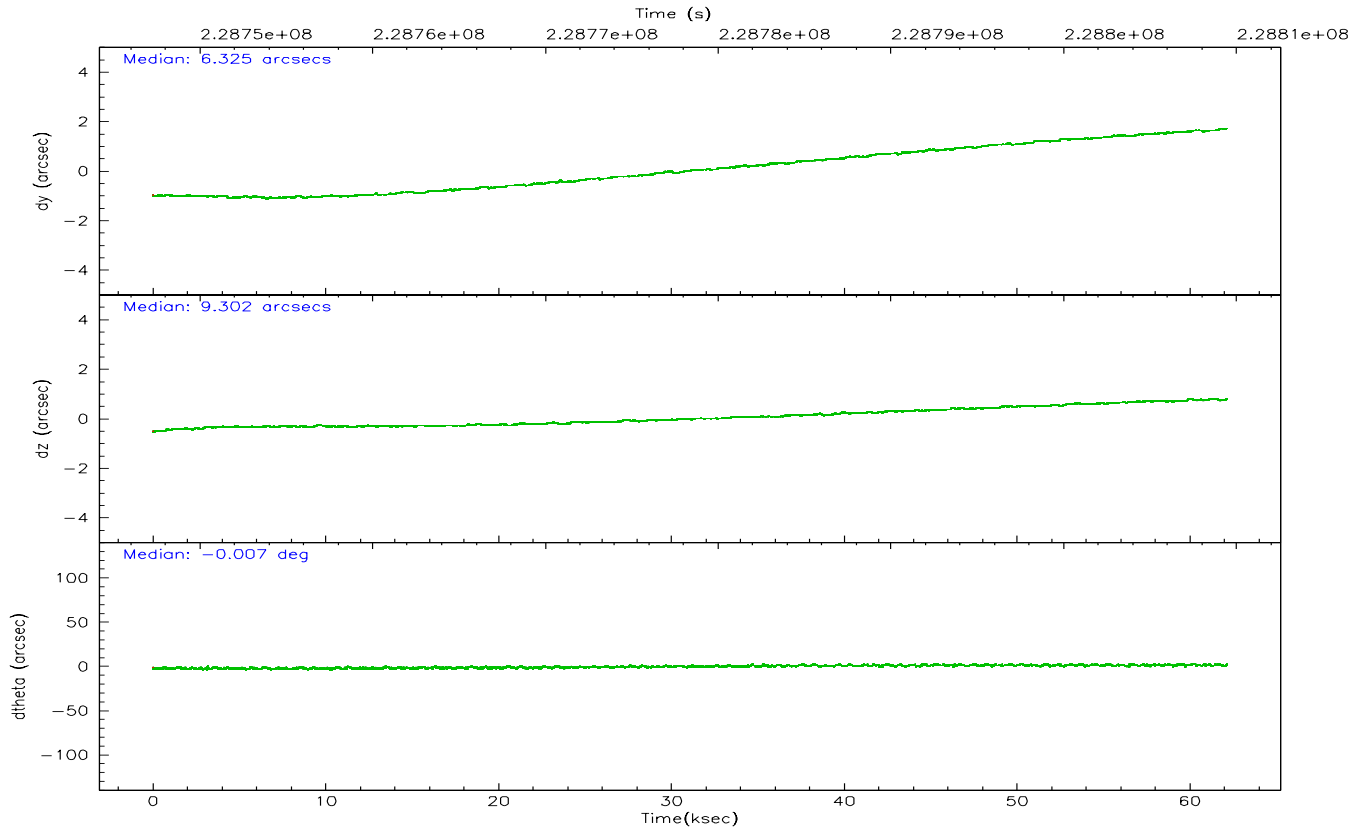
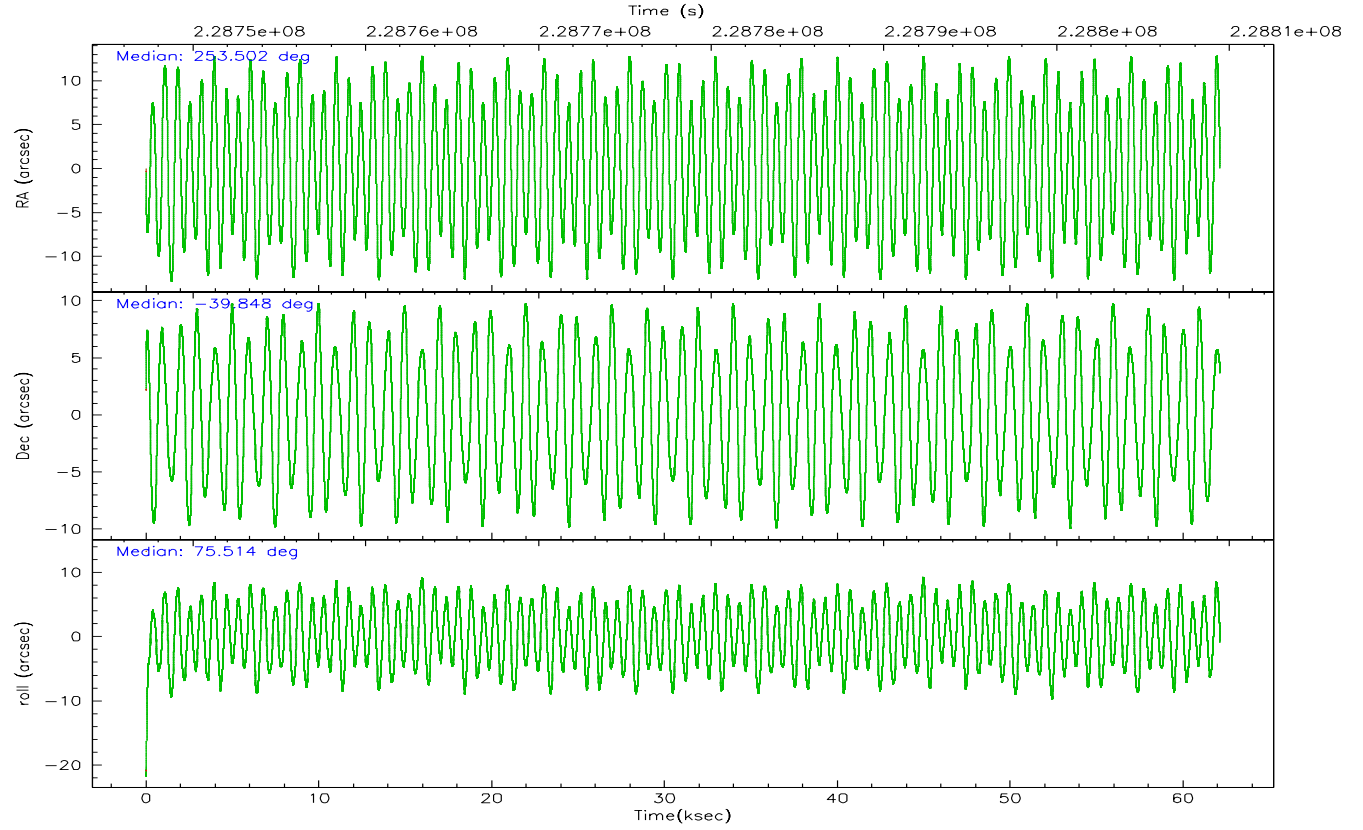


## 2.2 Compared Parameters

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	CC33_GRADED	CC33_GRADED	On-chip summing requested	N	N
Observation mode	POINTING	POINTING	Subarray requested	NONE	NONE
Pointing RA	253.512156	253.5021968274053	Alternating exposures requested	N	N
Pointing Dec	-39.873786	-39.84766899318225	Primary exposure time	0.000000	0
Pointing Roll	75.367335	75.51758072575797			
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-182.632523	-182.6373491900168			
SIM translation stage offset (mm)	-7.5	-7.495173392990978			
Observation start time	228747461.184000	228746504.72835			
Observation start date	2005-04-01T12:56:37	2005-04-01T12:41:44			
Observation end time	228809461.184000	228810013.21873			
Observation end date	2005-04-02T06:09:57	2005-04-02T06:20:13			
Read mode	CONTINUOUS	CONTINUOUS			

## 2.3 Aspect



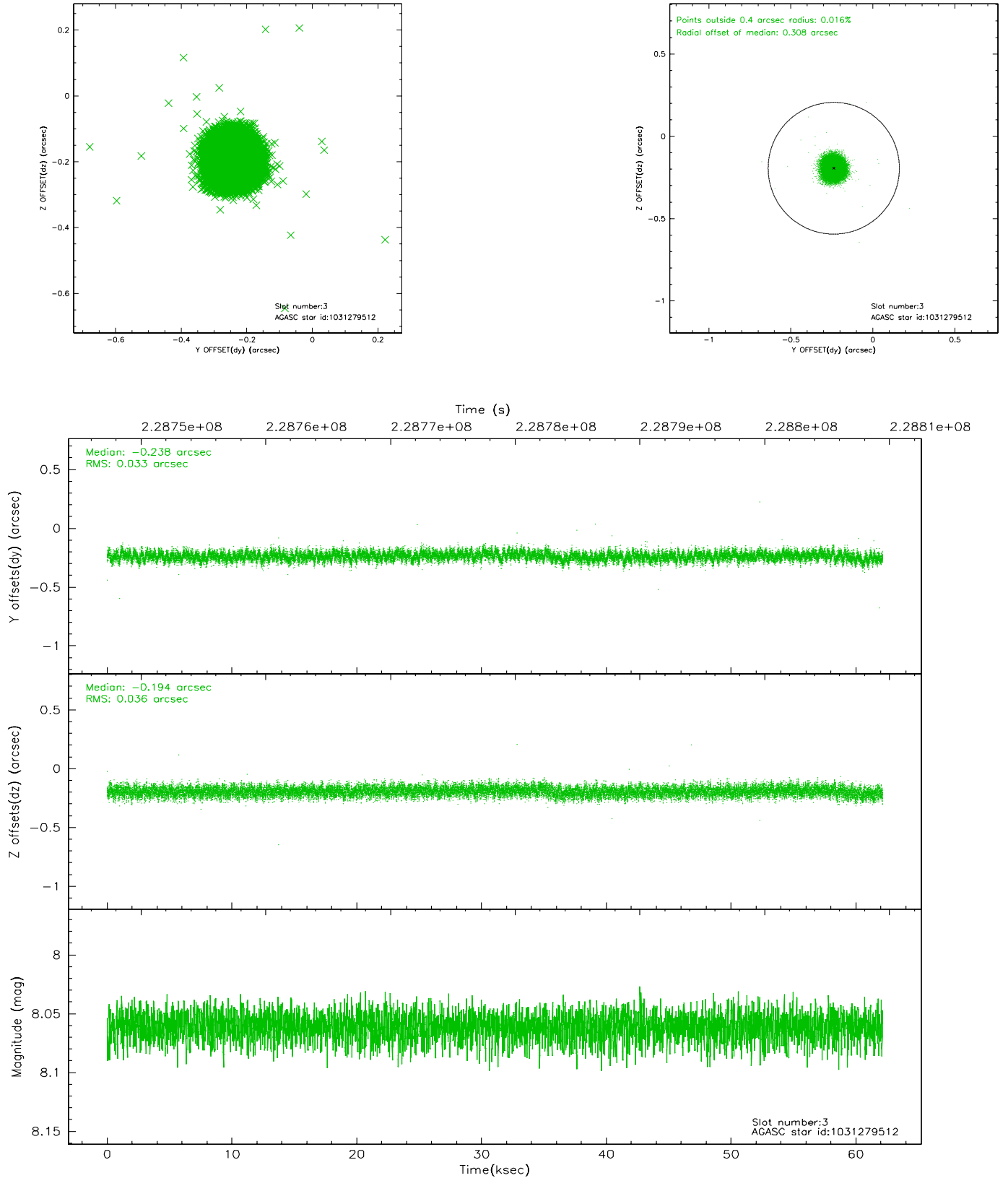


### Slot Statistics

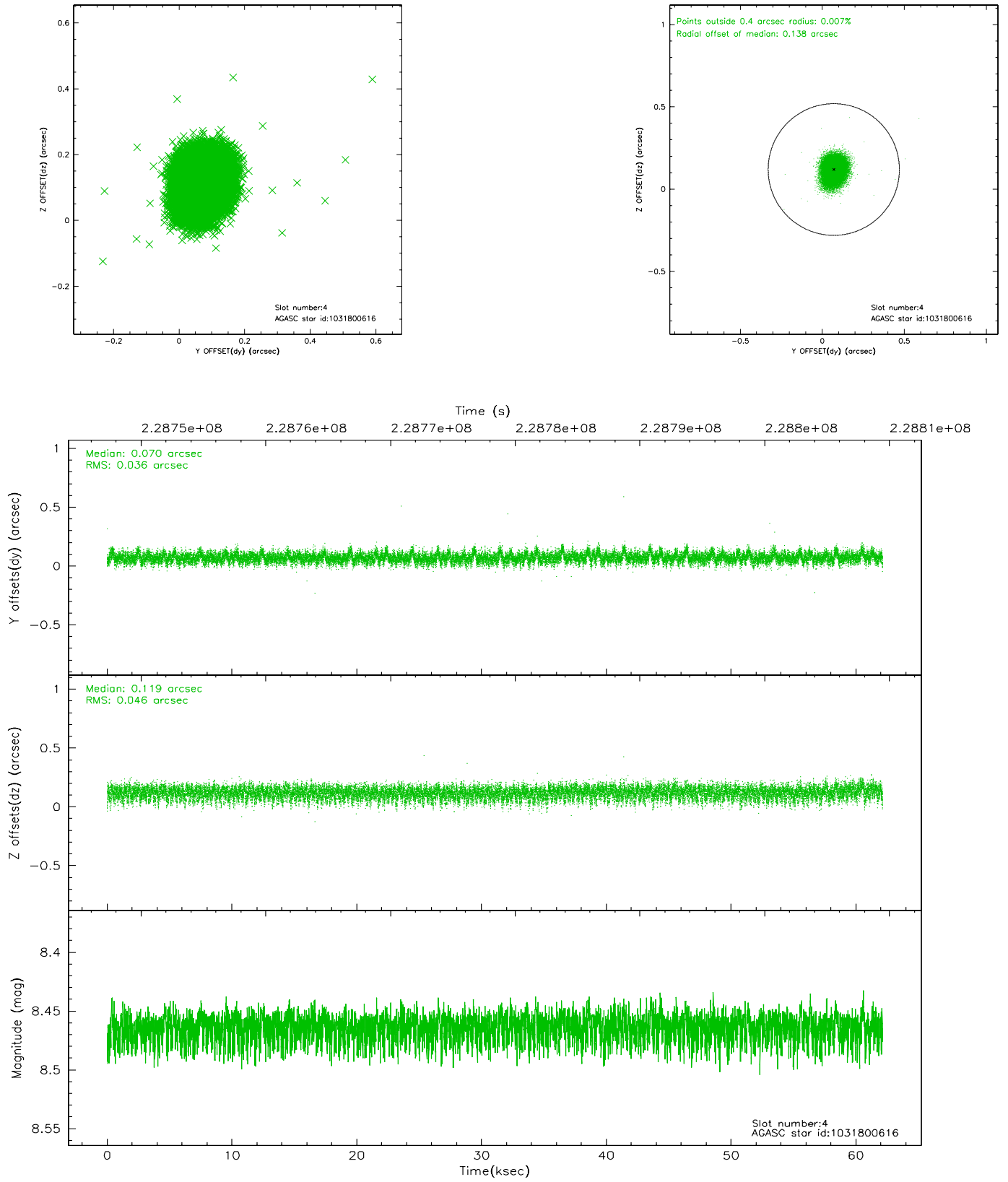
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.18	15161	0.076	0.085	0.028	0.038	0.000000	0.000000	937.55	-1880.55
1	FID	ACIS-S-2	7.09	15160	-0.136	-0.136	0.029	0.055	0.000000	0.000000	-758.58	-1885.32
2	FID	ACIS-S-5	7.22	15161	0.036	0.054	0.027	0.039	0.000000	0.000000	-1811.67	16.92
3	GUIDE	1031279512	8.06	30322	-0.238	-0.194	0.052	0.083	253.011652	-39.245400	1832.39	1920.69
4	GUIDE	1031800616	8.46	30318	0.070	0.119	0.062	0.101	253.926761	-40.253570	-1037.50	-1448.00
5	GUIDE	1031802536	8.41	30313	0.132	0.138	0.086	0.137	254.071271	-40.495693	-1783.89	-2047.83
6	GUIDE	1031808256	6.89	30322	0.120	0.143	0.046	0.071	253.549379	-40.452817	-1990.97	-625.25
7	GUIDE	1031807512	8.24	30317	-0.083	-0.209	0.068	0.107	252.886468	-39.697545	170.10	1835.48

## 2.4 Star Slots

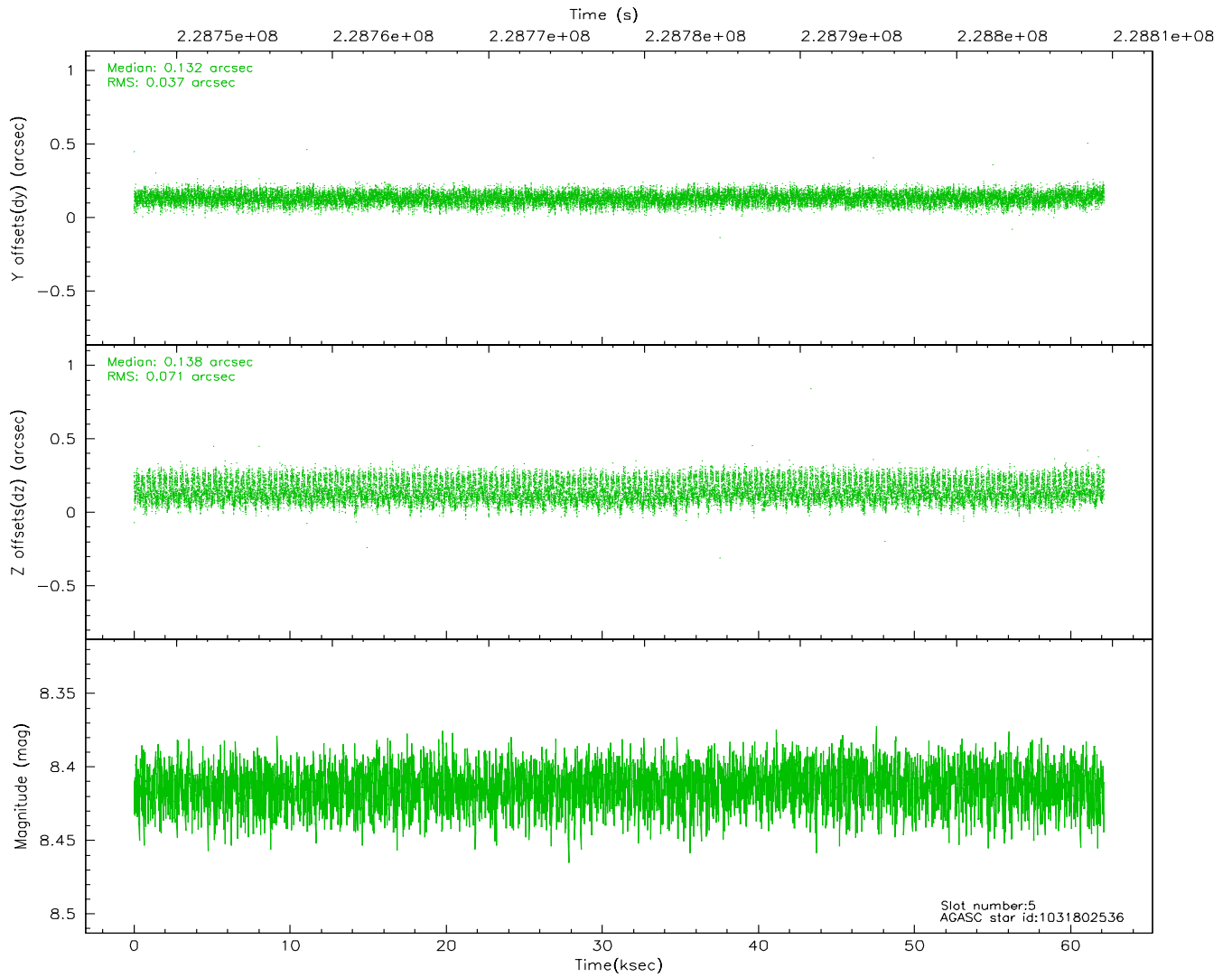
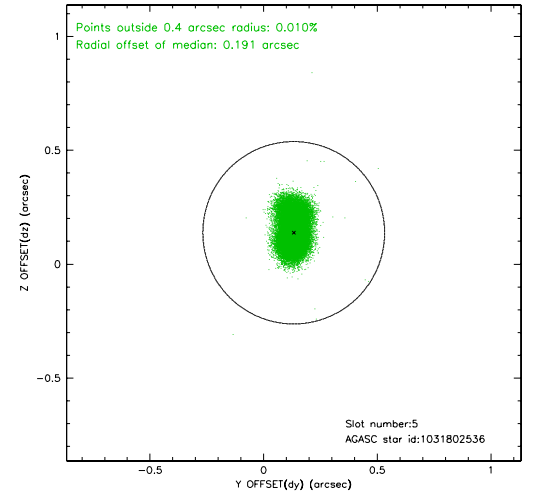
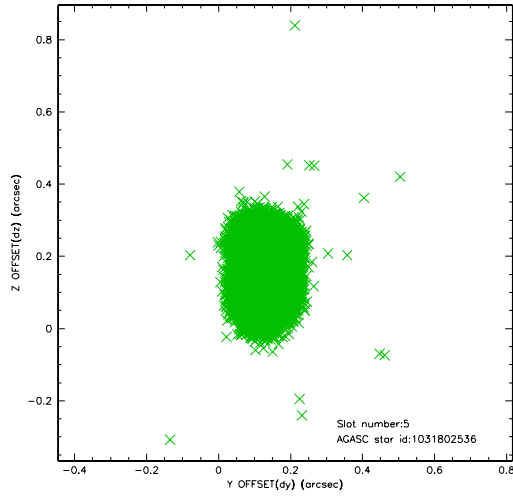
### 2.4.1 Slot 3



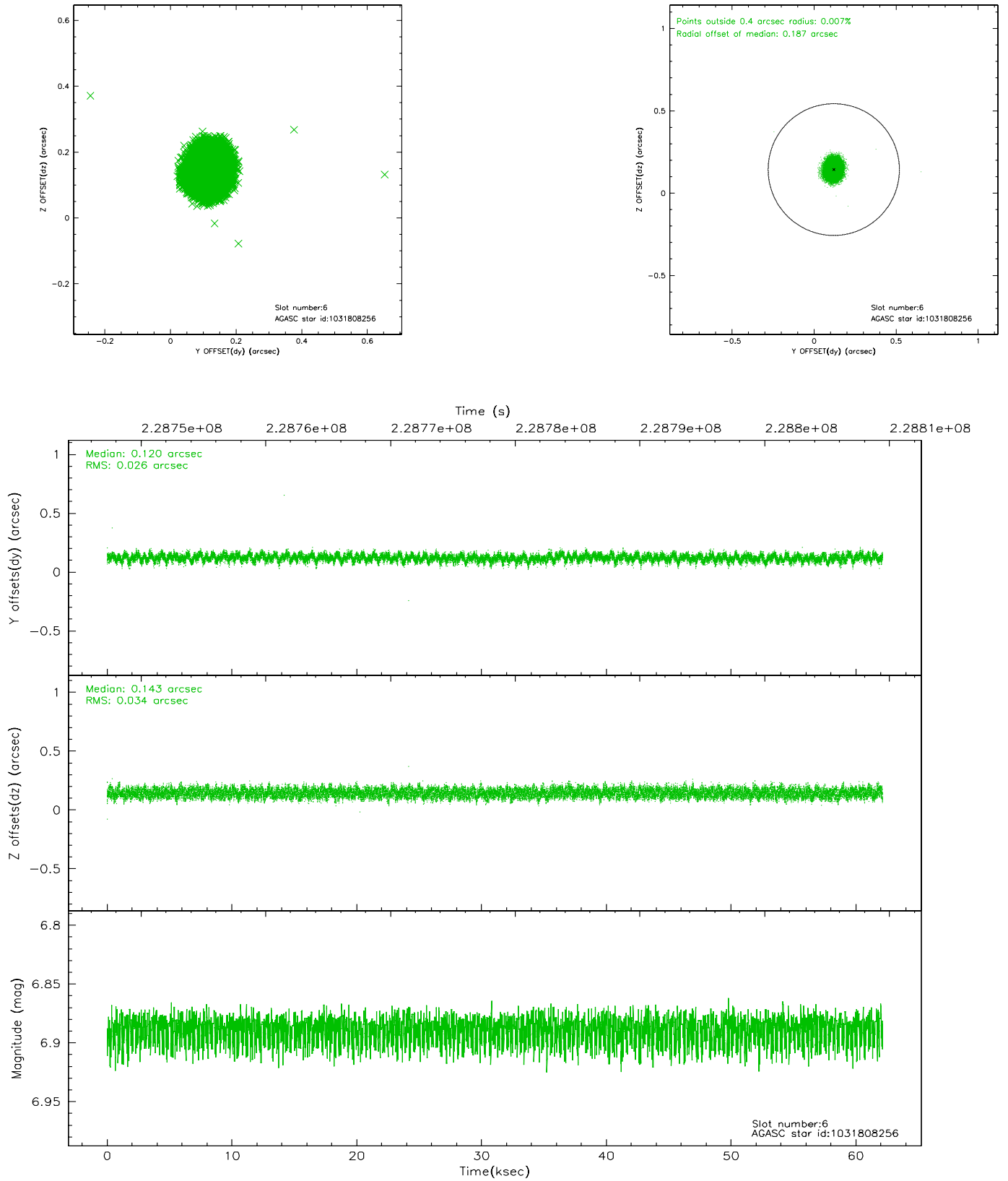
## 2.4.2 Slot 4



### 2.4.3 Slot 5

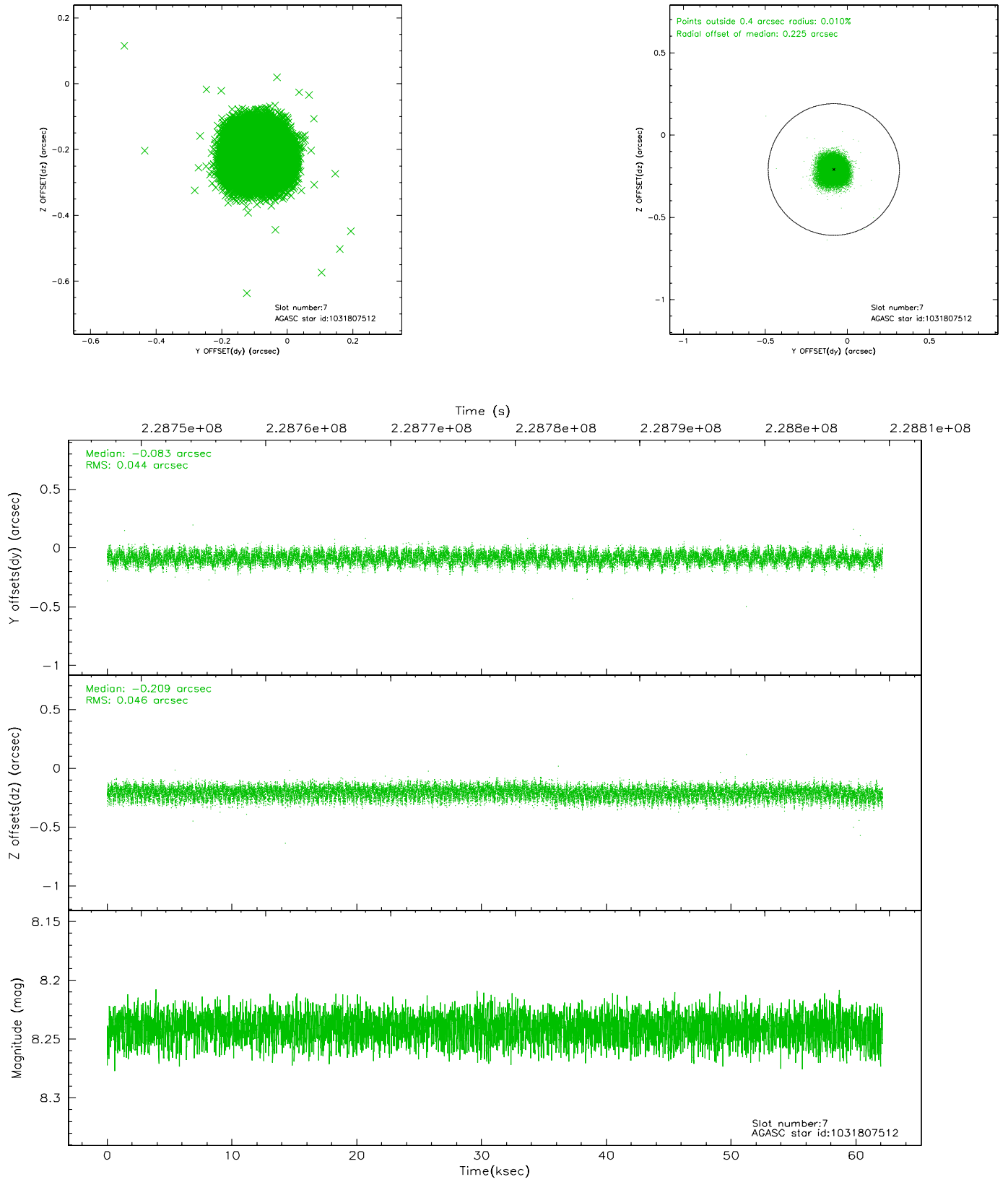


## 2.4.4 Slot 6



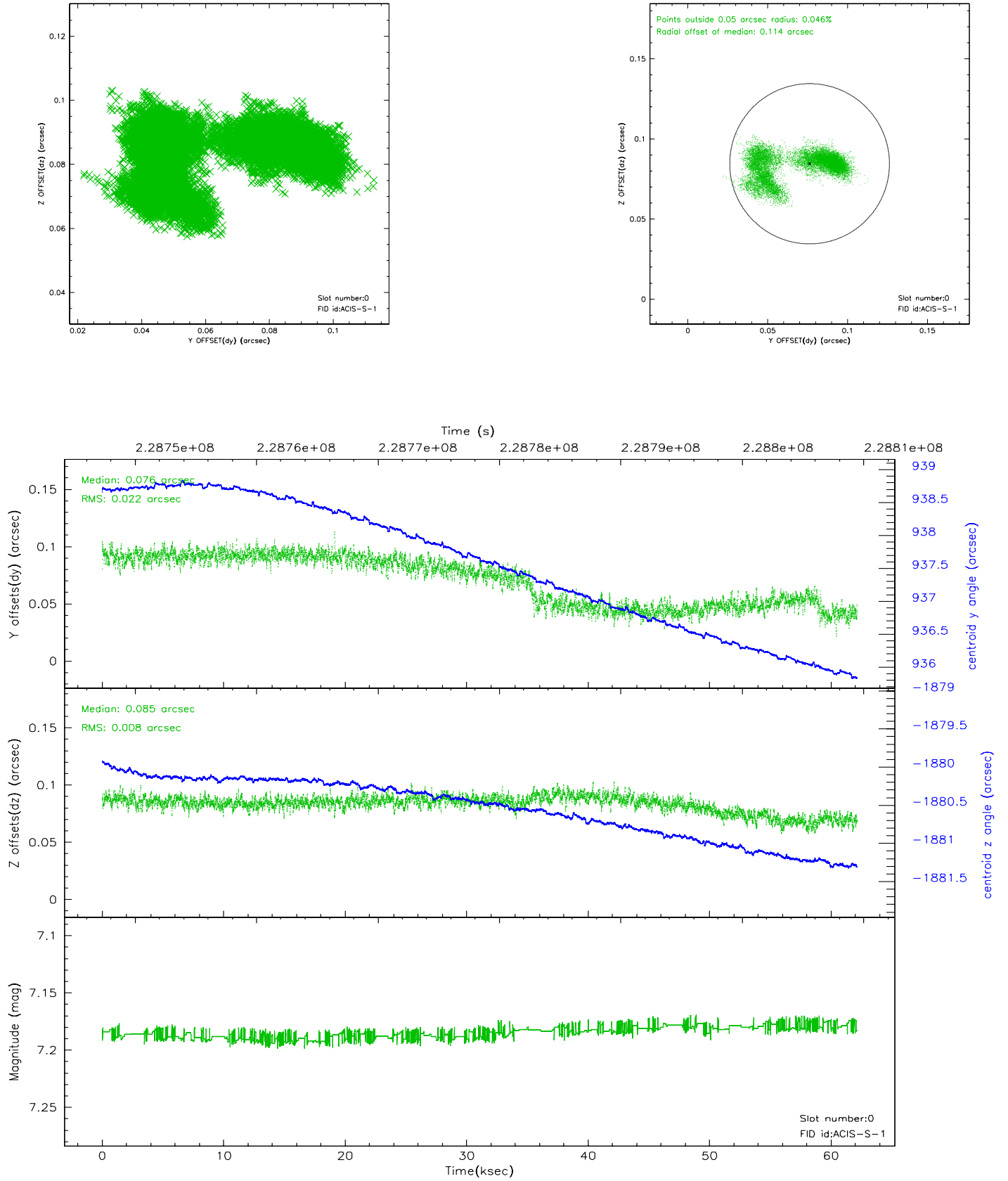


## 2.4.5 Slot 7

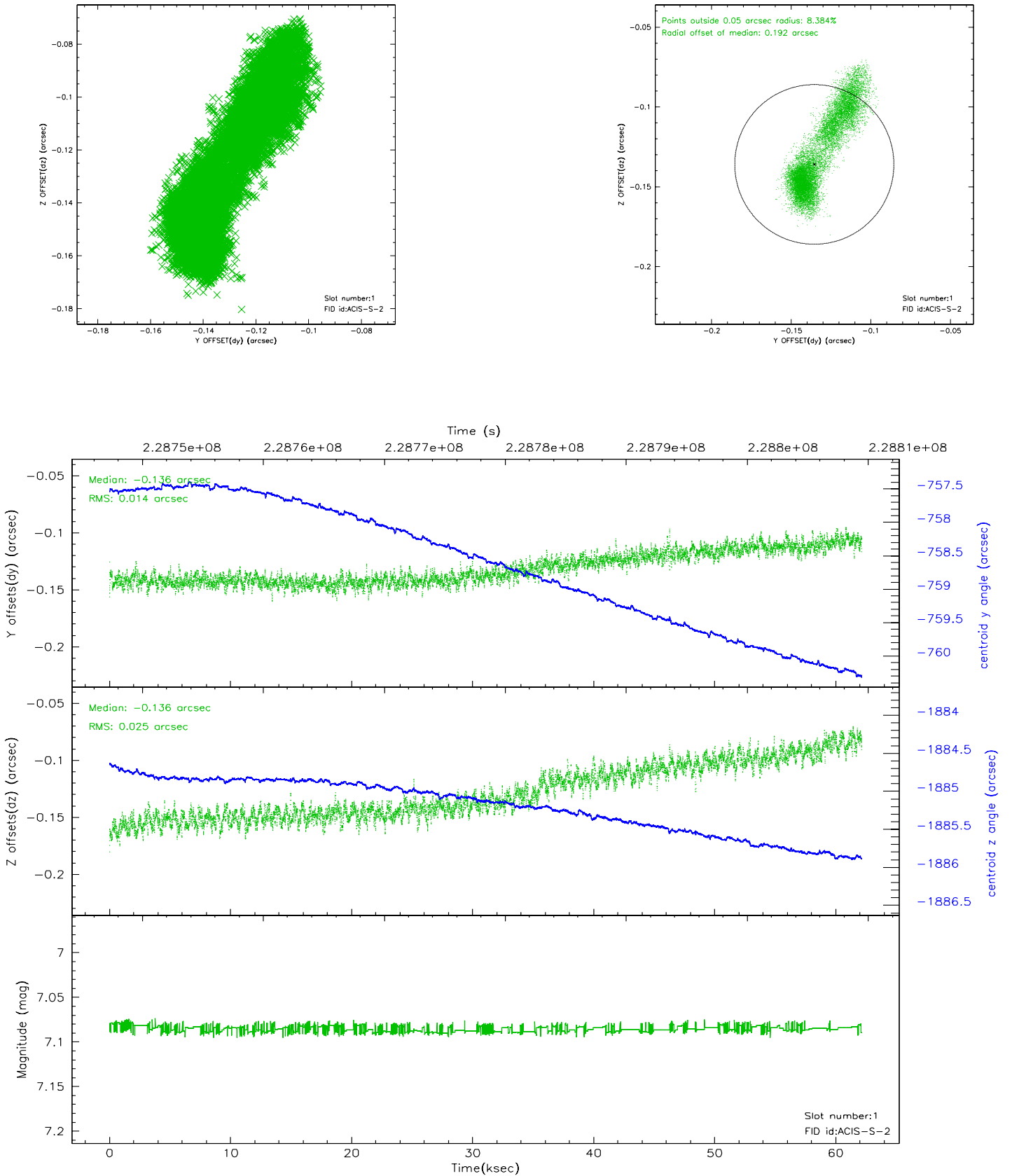


## 2.5 FID Slots

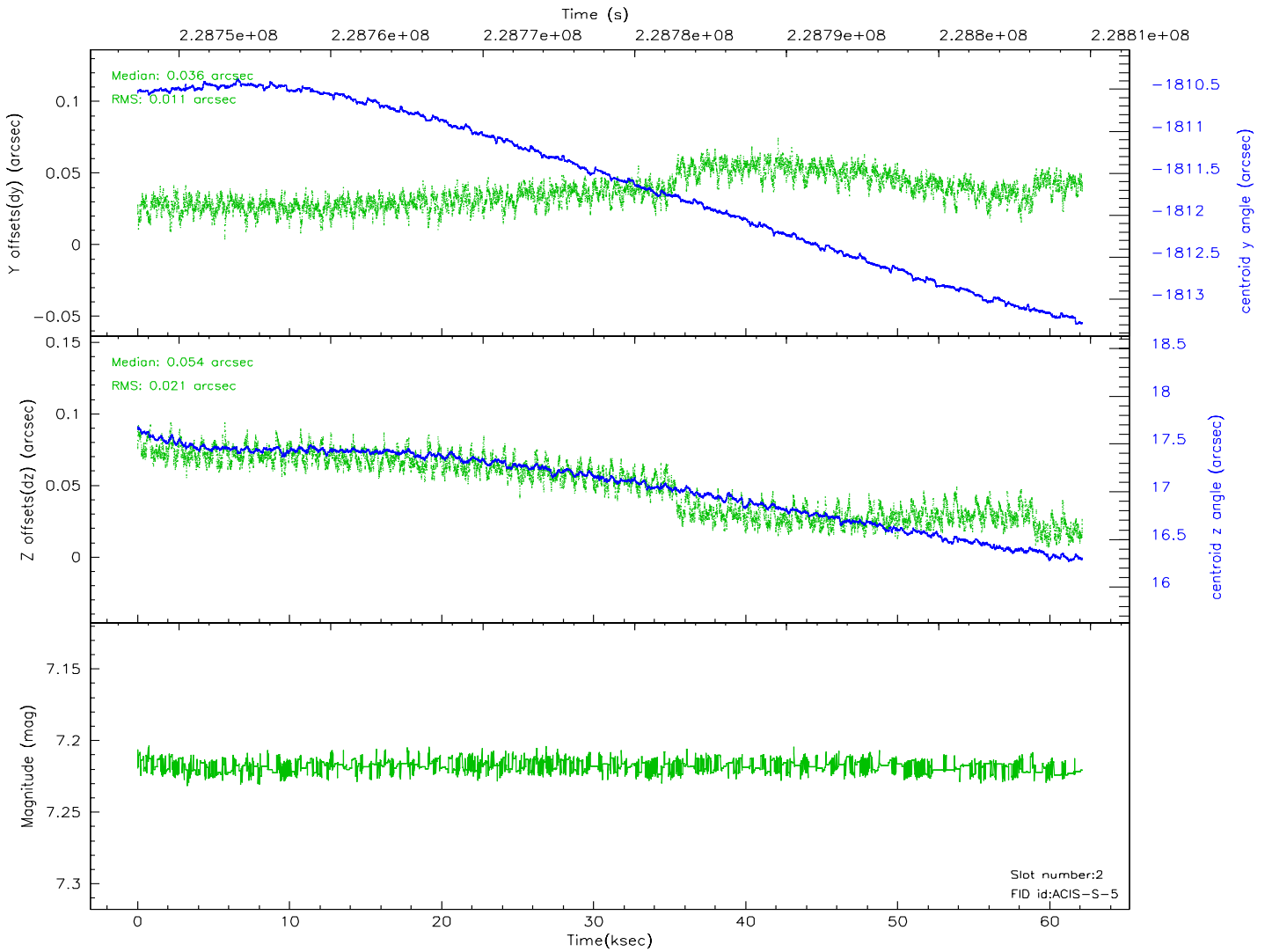
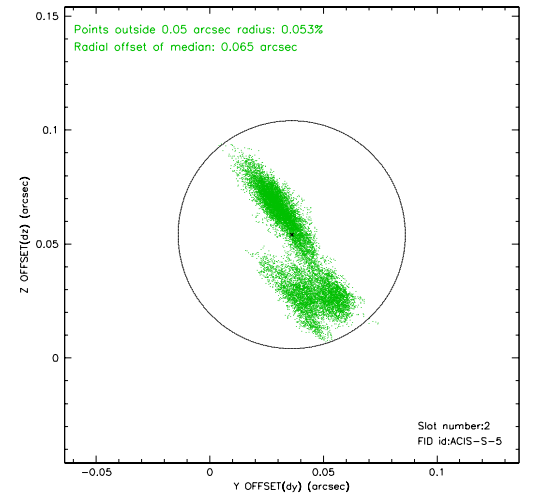
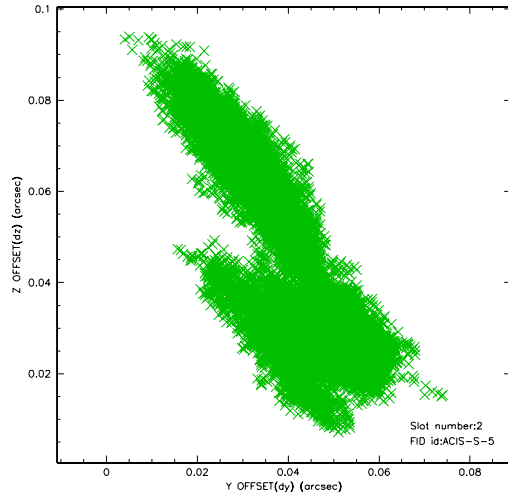
### 2.5.1 Slot 0



## 2.5.2 Slot 1

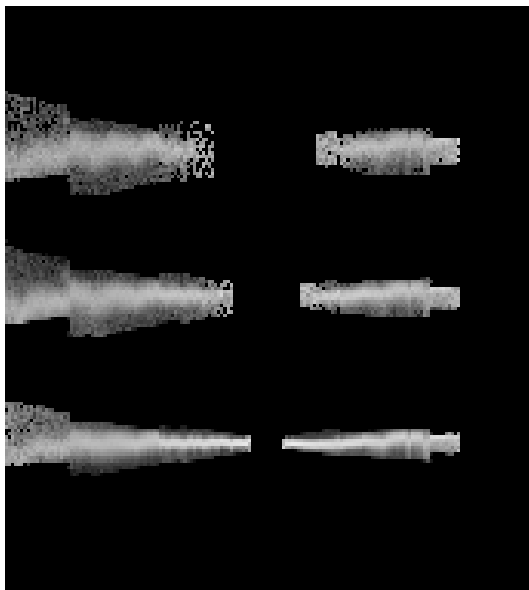


### 2.5.3 Slot 2

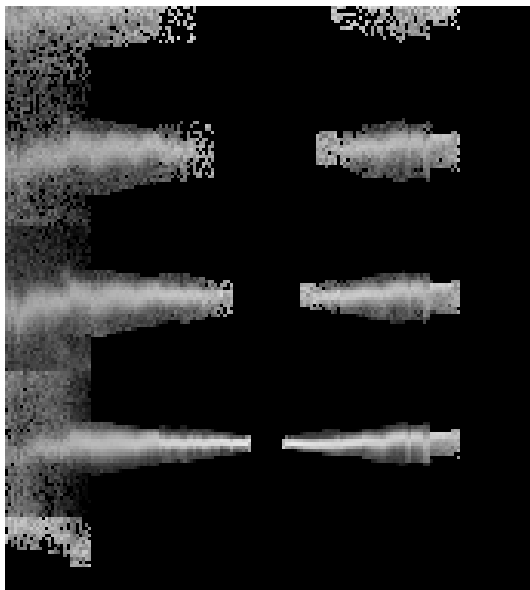


# 3 Gratings

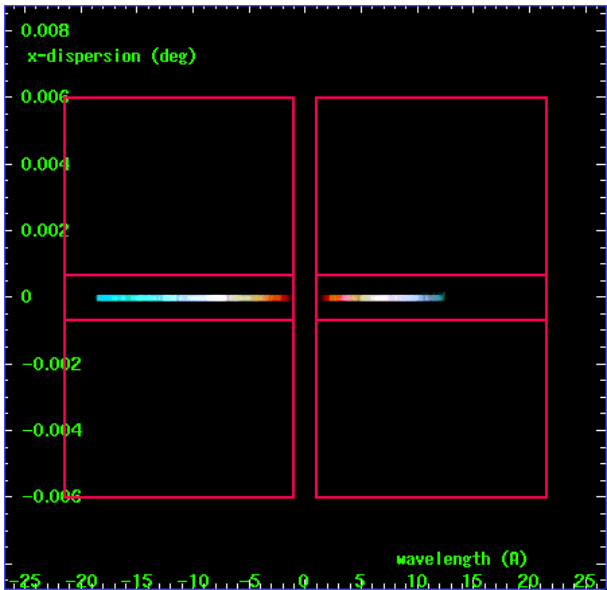
## 3.1 HEG Arm



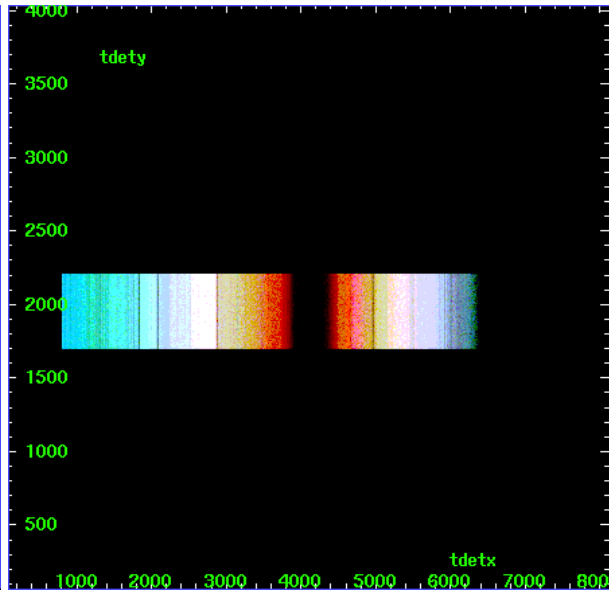
HEG Order Sort 123



HEG Order Sort ALL

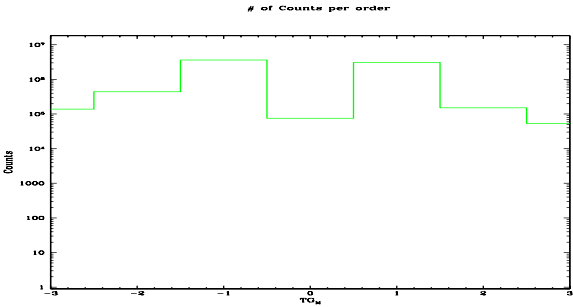


Spot Image HEG

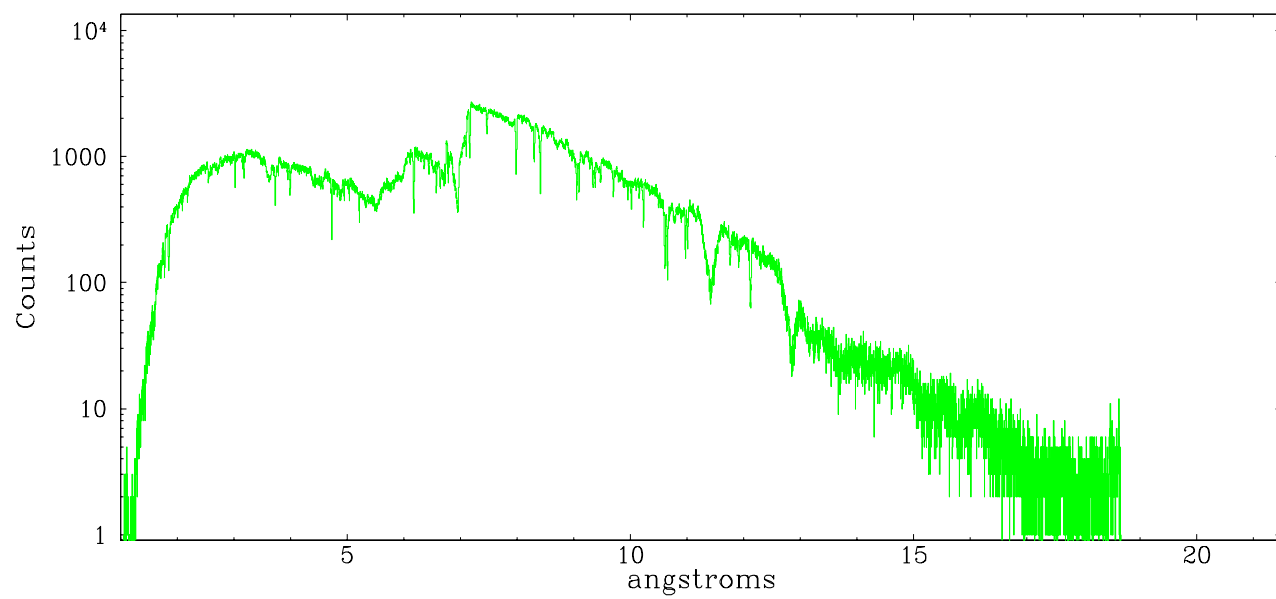


Full Detector HEG

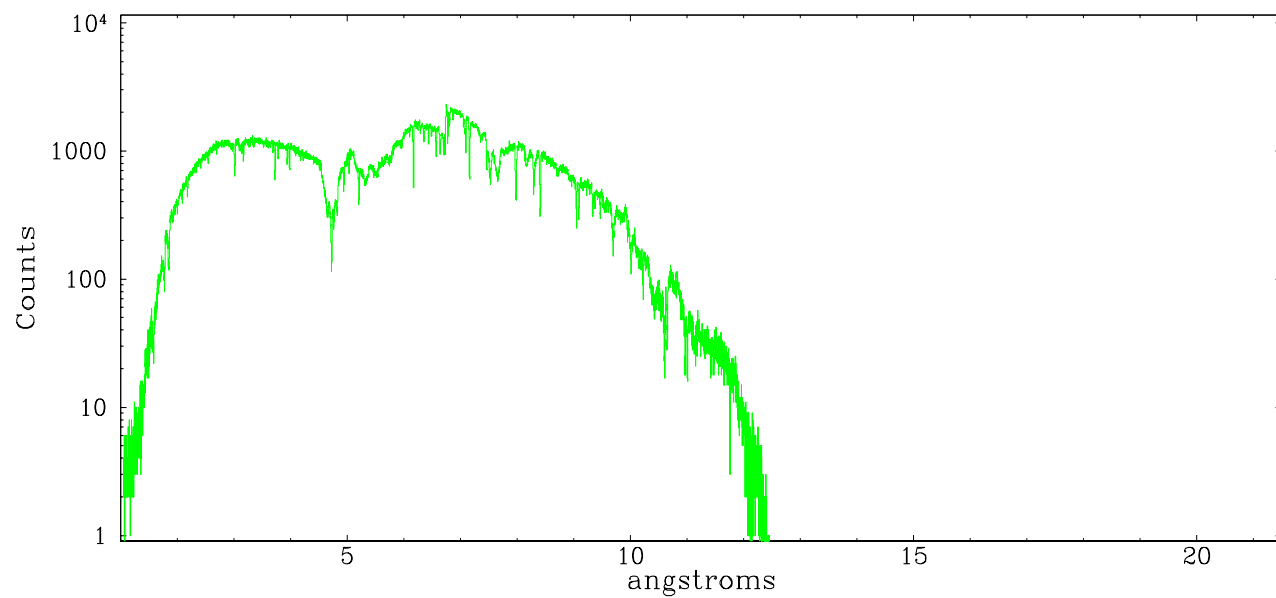
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	139232	441978	3619891	75252	3089786	150600	53428



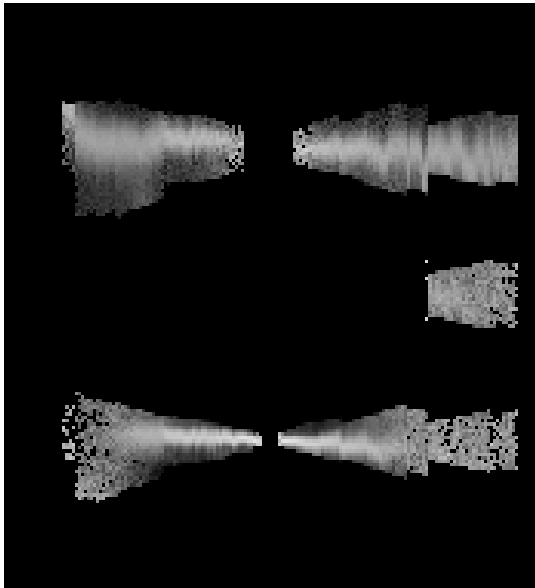
heg order -1



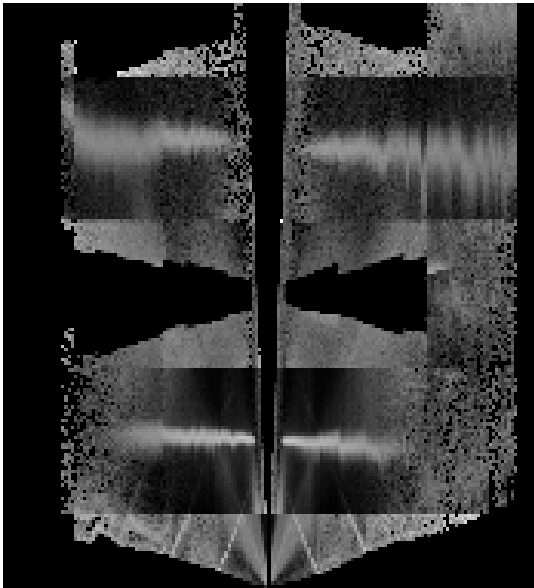
heg order +1



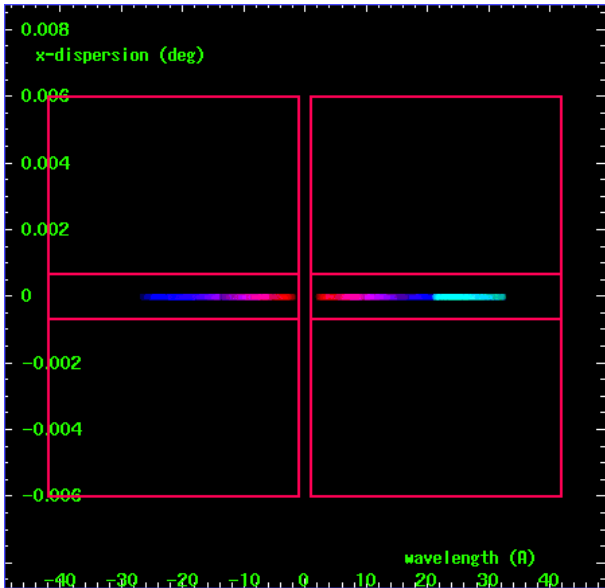
3.2 MEG Arm



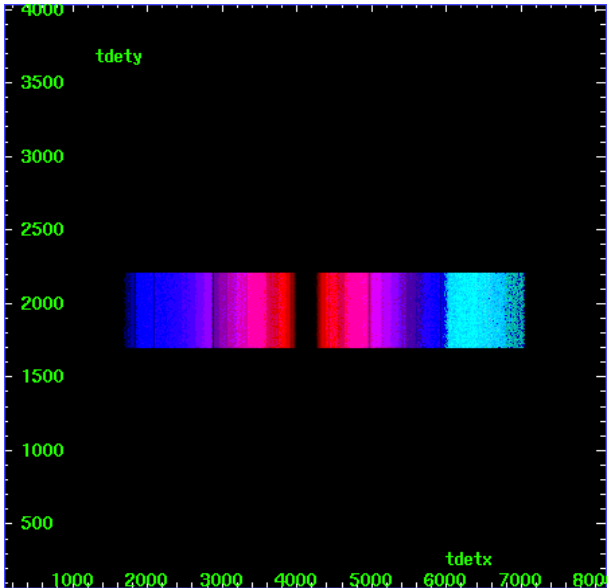
MEG Order Sort 123



MEG Order Sort ALL

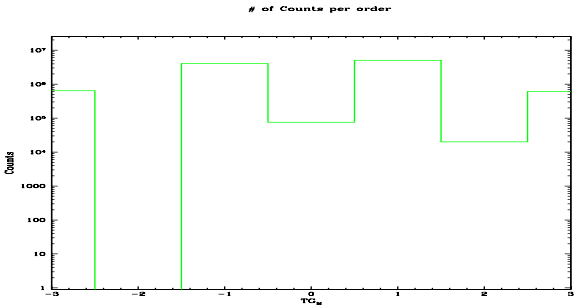


Spot Image MEG

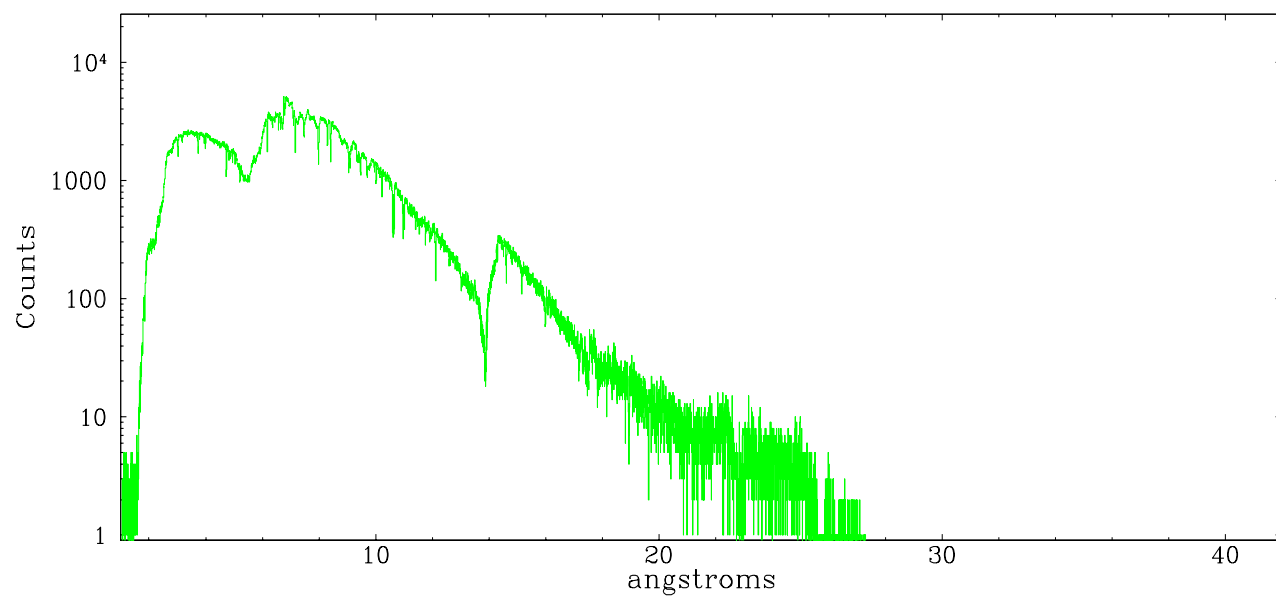


Full Detector MEG

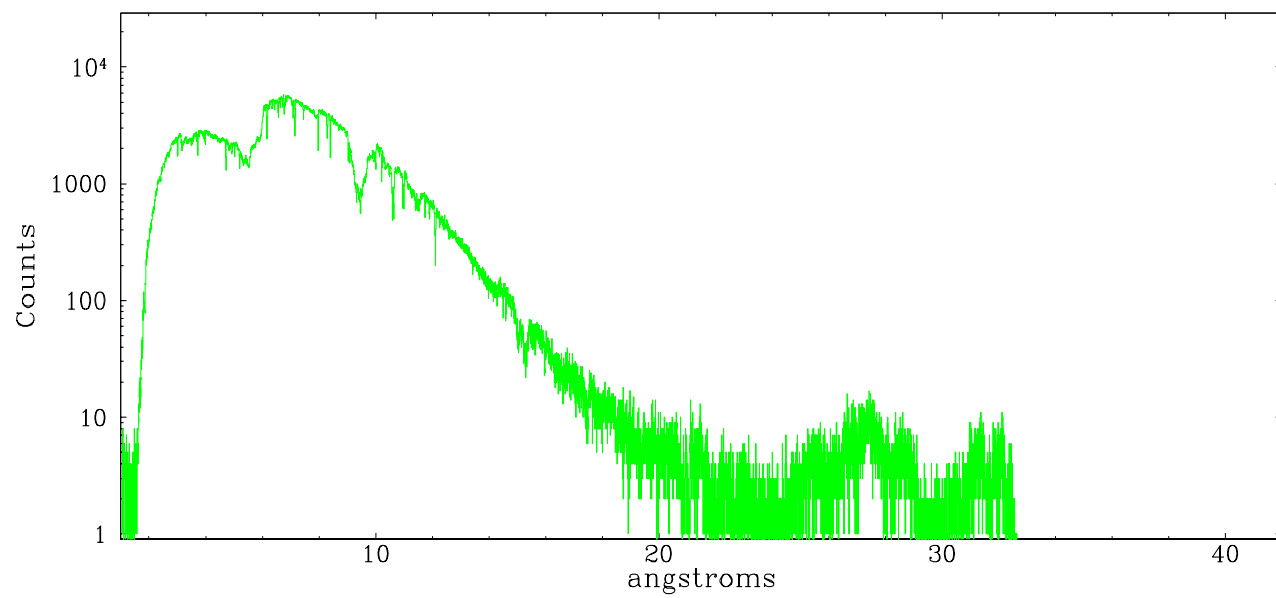
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	642863	0	4079551	75252	5080071	19909	611829



meg order -1



meg order +1





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2008.04.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	62.152

## A.2 Comments

On-time varies w/ CCD chip due to telemetry saturation. The greatest time is for chip 5, and is used for the charge time.

=====

A gray filtering area 100 columns wide around the zeroth order was used,

allowing 1 in 20 zeroth order photons in this window

to be telemetered.=====

Gain and CTI correction are not well calibrated in CC-mode.

Default order sorting can clip some regions, particularly in high orders. User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=None`, `osort_lo`, `osort_hi` ~0.3) though this can allow more zeroth order background at short wavelengths.=====

For ACIS/CC-mode w/ HETG, there are no MEG even order counts. MEG even orders overlap with HEG orders in energy, but MEG even order efficiencies are very low. Since HEG and MEG cannot be spatially separated, events are preferentially assigned to HEG. (MEG odd orders can be resolved.)