

V&V Reference Report

L2 ASCDS Version : 7.6.9

Observation 1928 - L2 Version 001
Chandra X-Ray Center

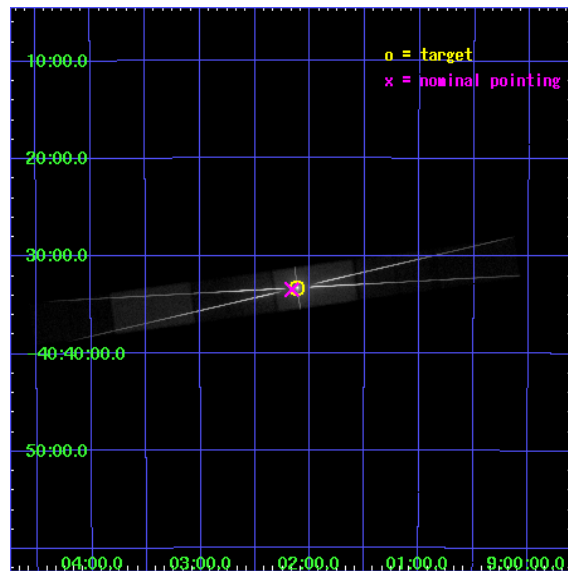
L2 Processing Date : Dec 8 2006

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1 Front

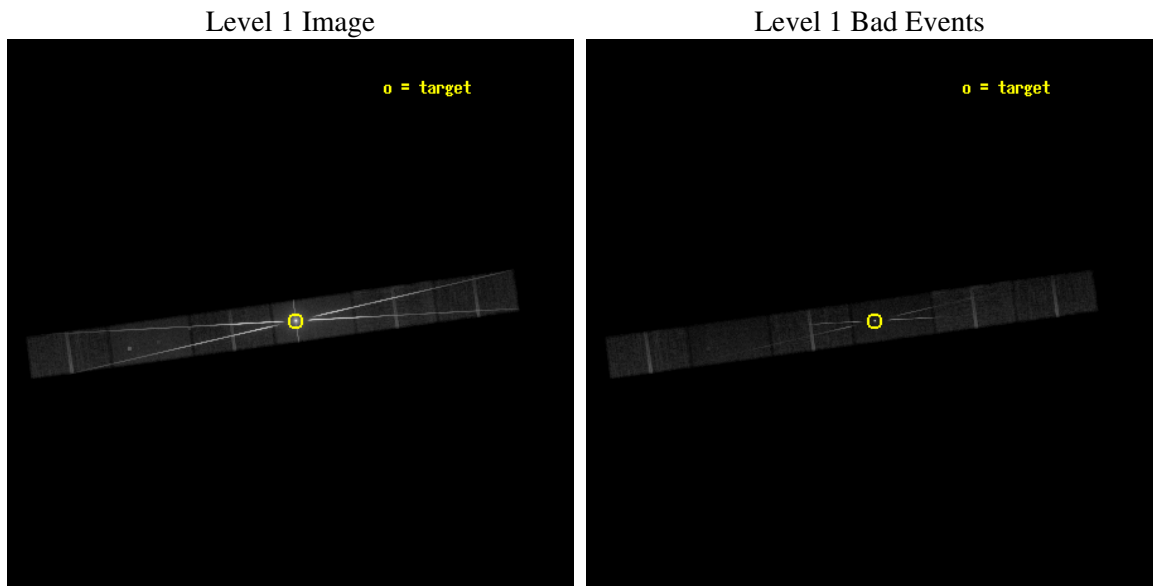
seq_num	400141
obs_id	1928
title	DYNAMICS OF THE IONIZED STELLAR WIND IN VELA X-1
observer	PROF. STEVEN KAHN
object	VELA X-1
dtcycle	0
cycle	P
ra_targ	135.52875
dec_targ	-40.554694
ra_nom	135.54100521106
dec_nom	-40.557743204543
roll_nom	352.16467932461
revision	3
ontime	30280.400053084
livetime	29566.626895558
ontime4	30278.659042984
ontime5	30278.659042984
ontime6	30280.400053084
ontime7	30280.400053084
ontime8	30278.659042984
ontime9	30280.400053084
l2events	1232292



2 OBI

2.1 OBI

2.1.1 Images

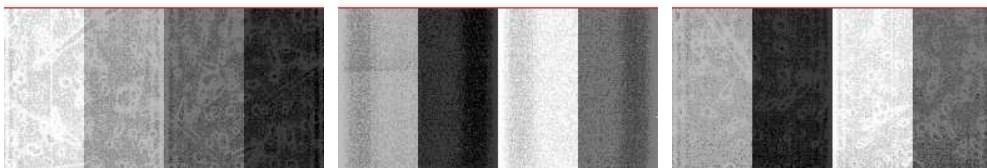


2.1.2 Bias

Chip 4

Chip 5

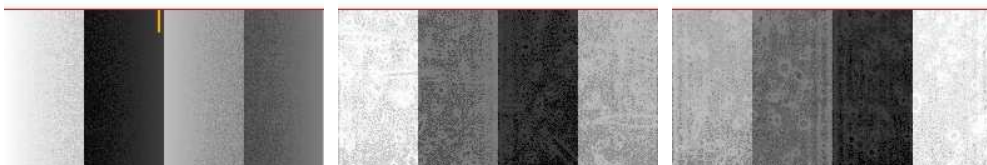
Chip 6



Chip 7

Chip 8

Chip 9



2.1.3 Parameters

obi_num	0
ascdsver	7.6.9
caldsver	3.2.3
date	2006-11-06T15:11:57
revision	3

sched_exp_time	30156.243000
ontime	30991.85524404
ontime4	30903.062233925
ontime5	30990.114233941
ontime6	30913.508444026
ontime7	30991.85524404
ontime8	30927.436793923
ontime9	30930.918844029
l1events	1893566

2.1.4 Events

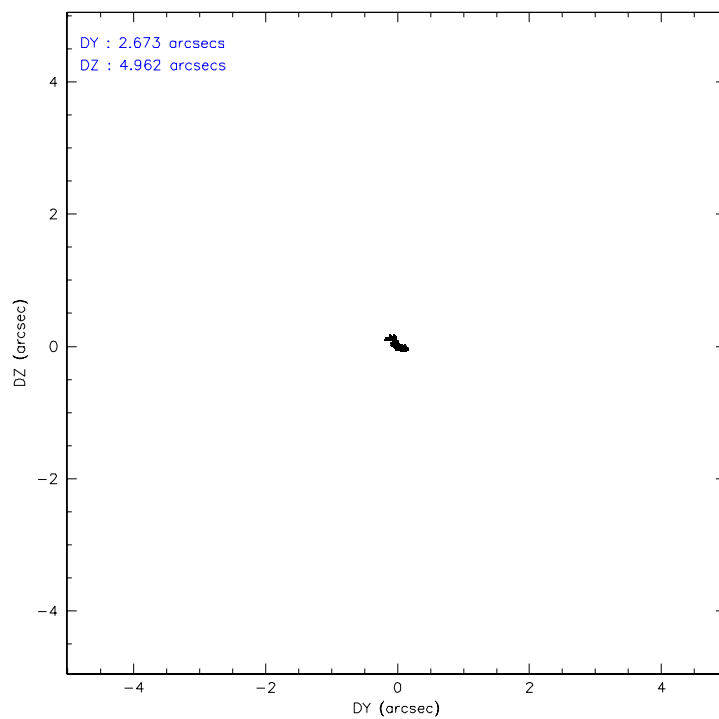
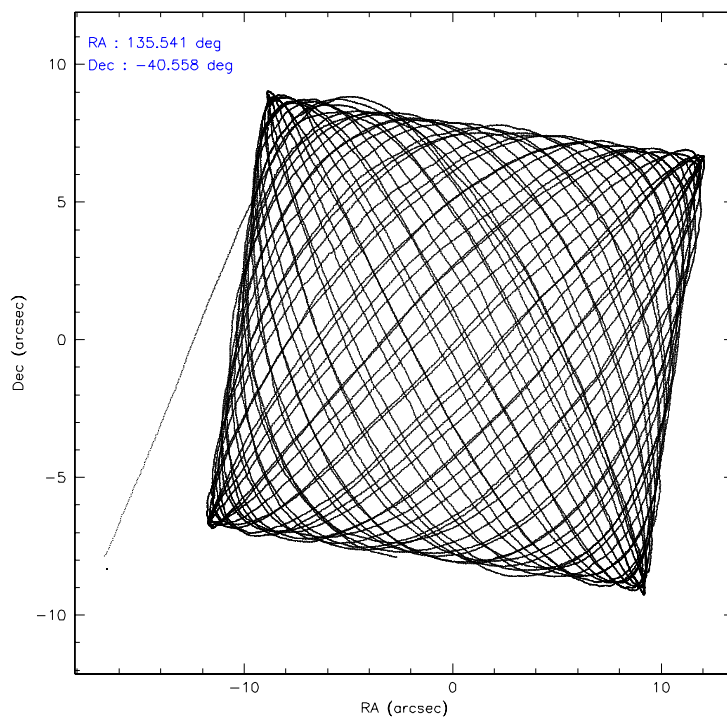
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	126028	185555	486849	706626	265409	123099
rejected events	105804	77853	105520	110409	108357	88719
rejected %	83%	41%	21%	15%	40%	72%

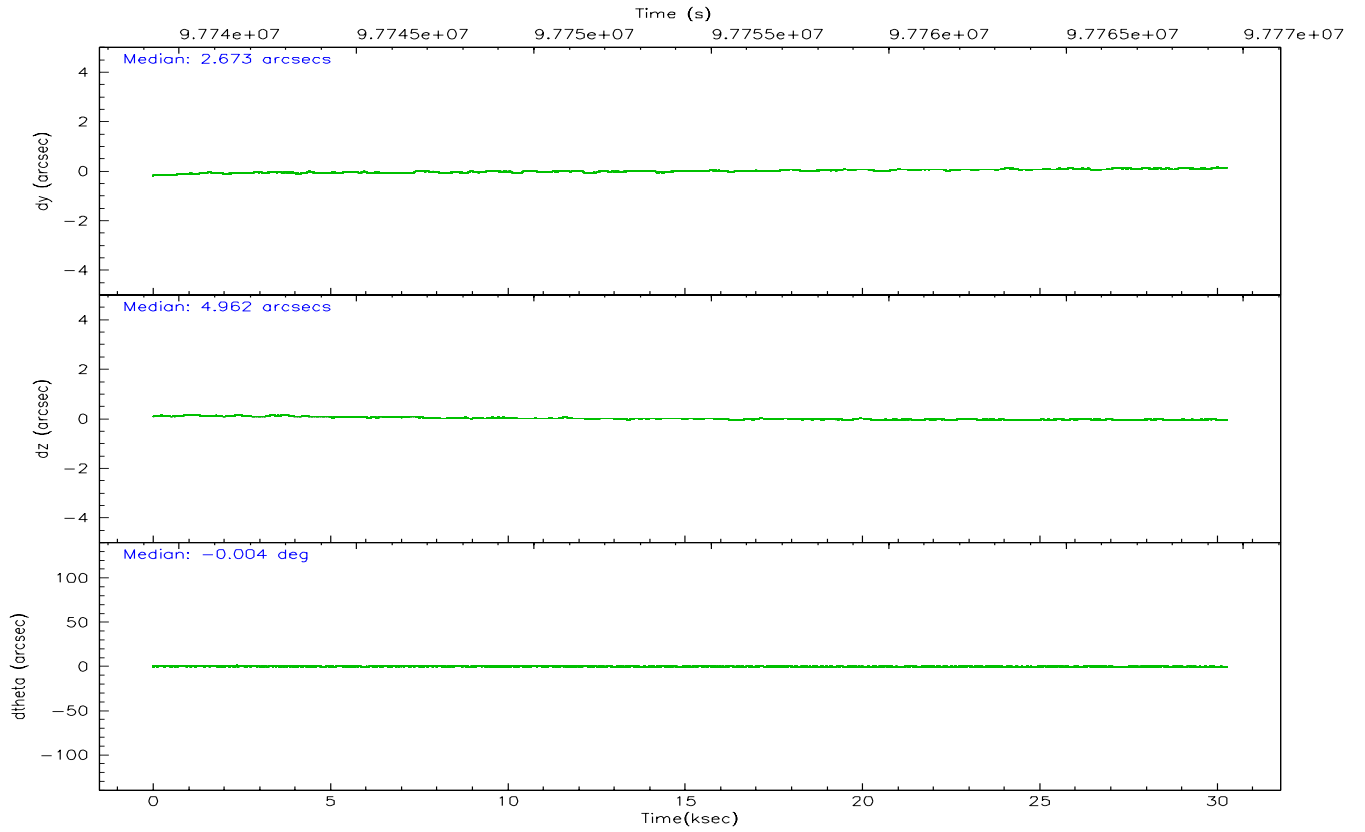
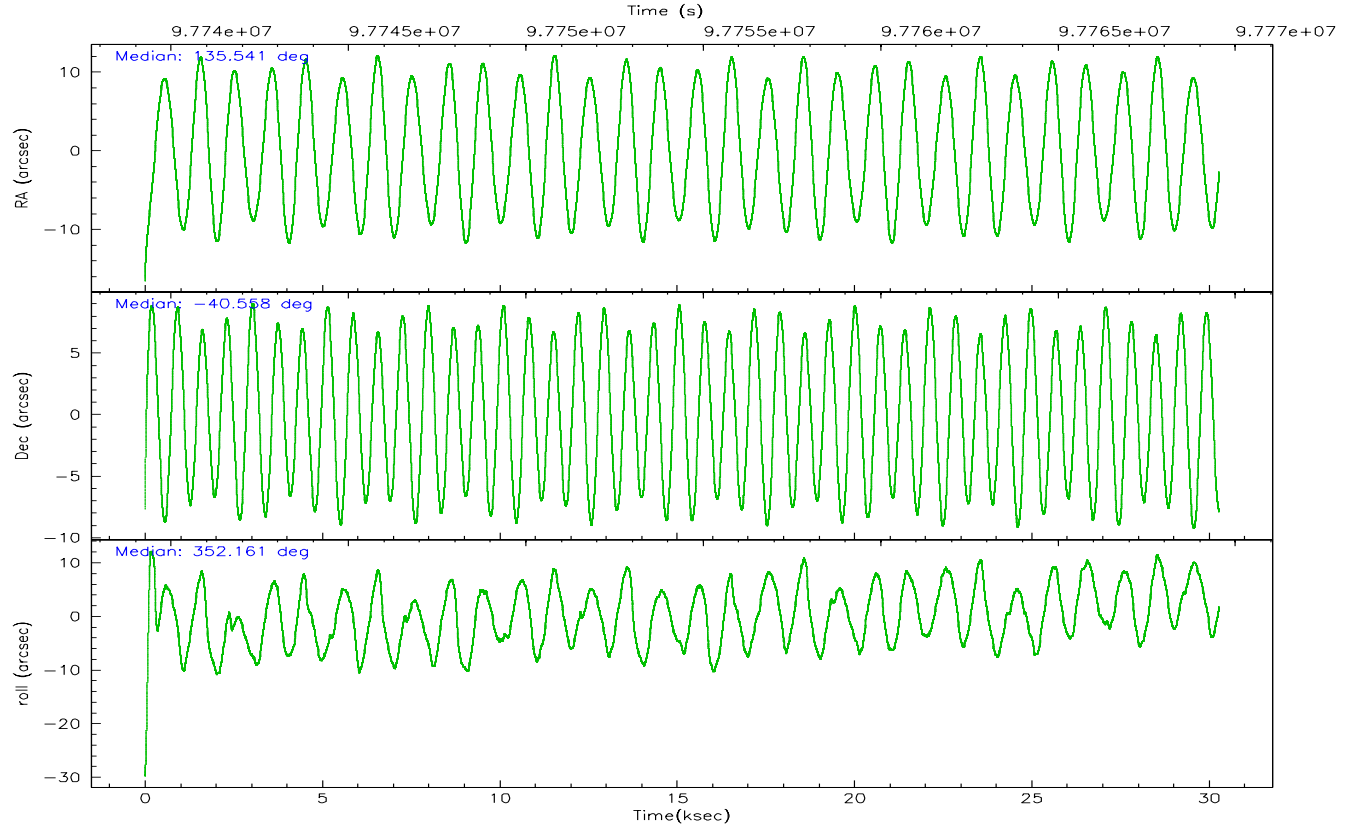
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	11241	18196	274284	104668	112274	22389
	8%	9%	56%	14%	42%	18%
grade 1 events	66	232	3806	2046	696	74
	0%	0%	0%	0%	0%	0%
grade 2 events	3656	36022	50845	155049	20042	4934
	2%	19%	10%	21%	7%	4%
grade 3 events	1710	6318	18166	57320	7791	2286
	1%	3%	3%	8%	2%	1%
grade 4 events	1700	6050	18053	56630	7545	2239
	1%	3%	3%	8%	2%	1%
grade 5 events	3378	7906	6788	19900	5370	3945
	2%	4%	1%	2%	2%	3%
grade 6 events	2236	43526	23598	229850	10752	2911
	1%	23%	4%	32%	4%	2%
grade 7 events	102041	67305	91309	81163	100939	84321
	80%	36%	18%	11%	38%	68%

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	135.507851	135.5410052110636	Subarray requested	CUSTOM	1/2
Pointing Dec	-40.568285	-40.55774320454254	Subarray start row	1	1
Pointing Roll	351.986511	352.1646793246093	Subarray row count	512	512
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
SIM defocus (mm)	0	0.001444936568705701	Primary exposure time	0.000000	1.7
SIM translation stage pos (mm)	-184.032523	-184.0277655517795			
SIM translation stage offset (mm)	-6.1	-6.104757031228274			
Phase constraints	Y	Y			
Phase period	8.964416	8.964416			
Phase epoch	50132.313800	50132.313800			
Phase start	0.230000	0.230000			
Phase end	0.270000	0.270000			
Phase start error	0.010000	0.010000			
Phase end error	0.010000	0.010000			
Observation start time	97739388.184000	97738195.230729			
Observation start date	2001-02-05T05:48:44	2001-02-05T05:29:55			
Observation end time	97769544.184000	97769859.019449			
Observation end date	2001-02-05T14:11:20	2001-02-05T14:17:39			
Read mode	TIMED	TIMED			

2.3 Aspect



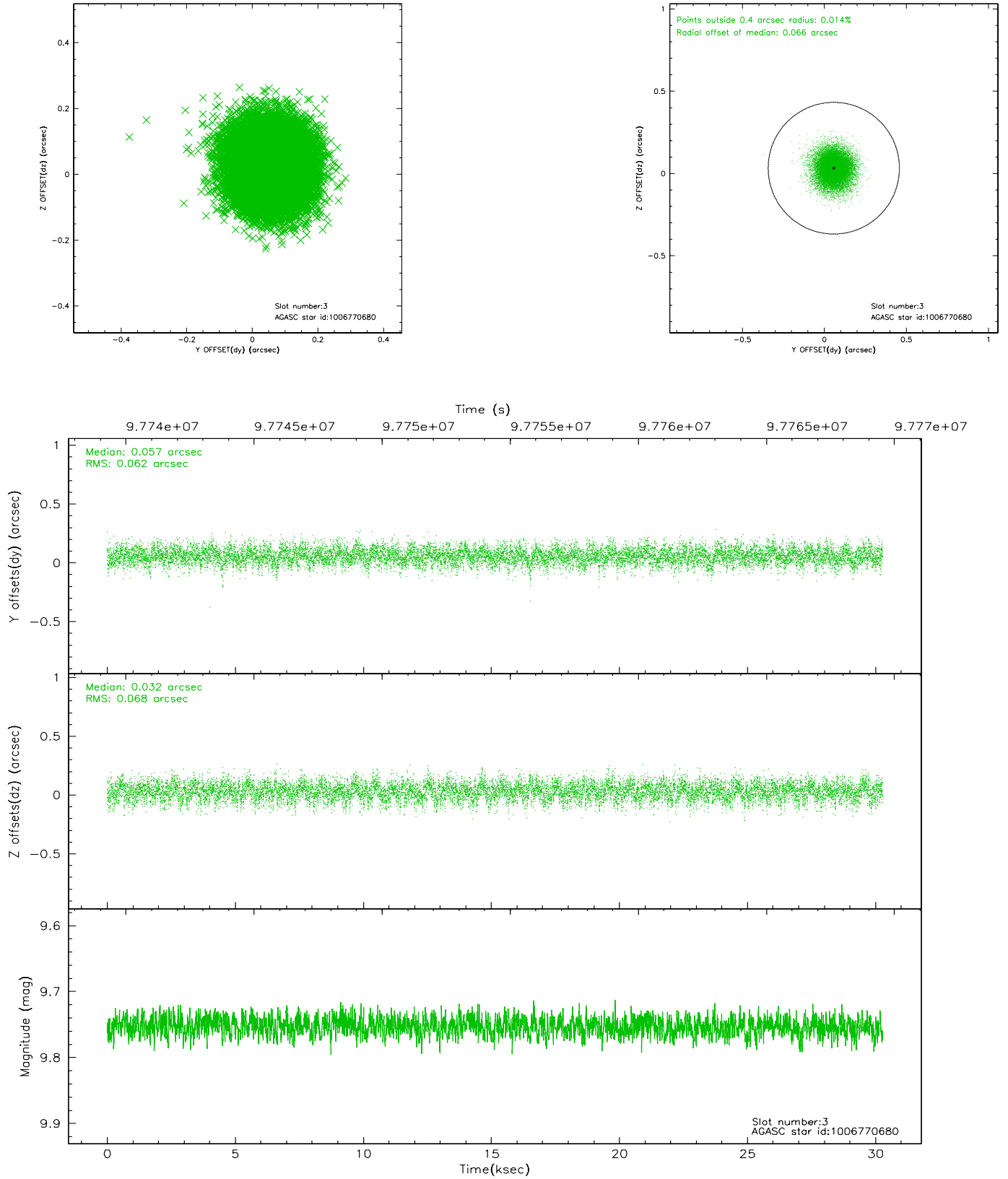


Slot Statistics

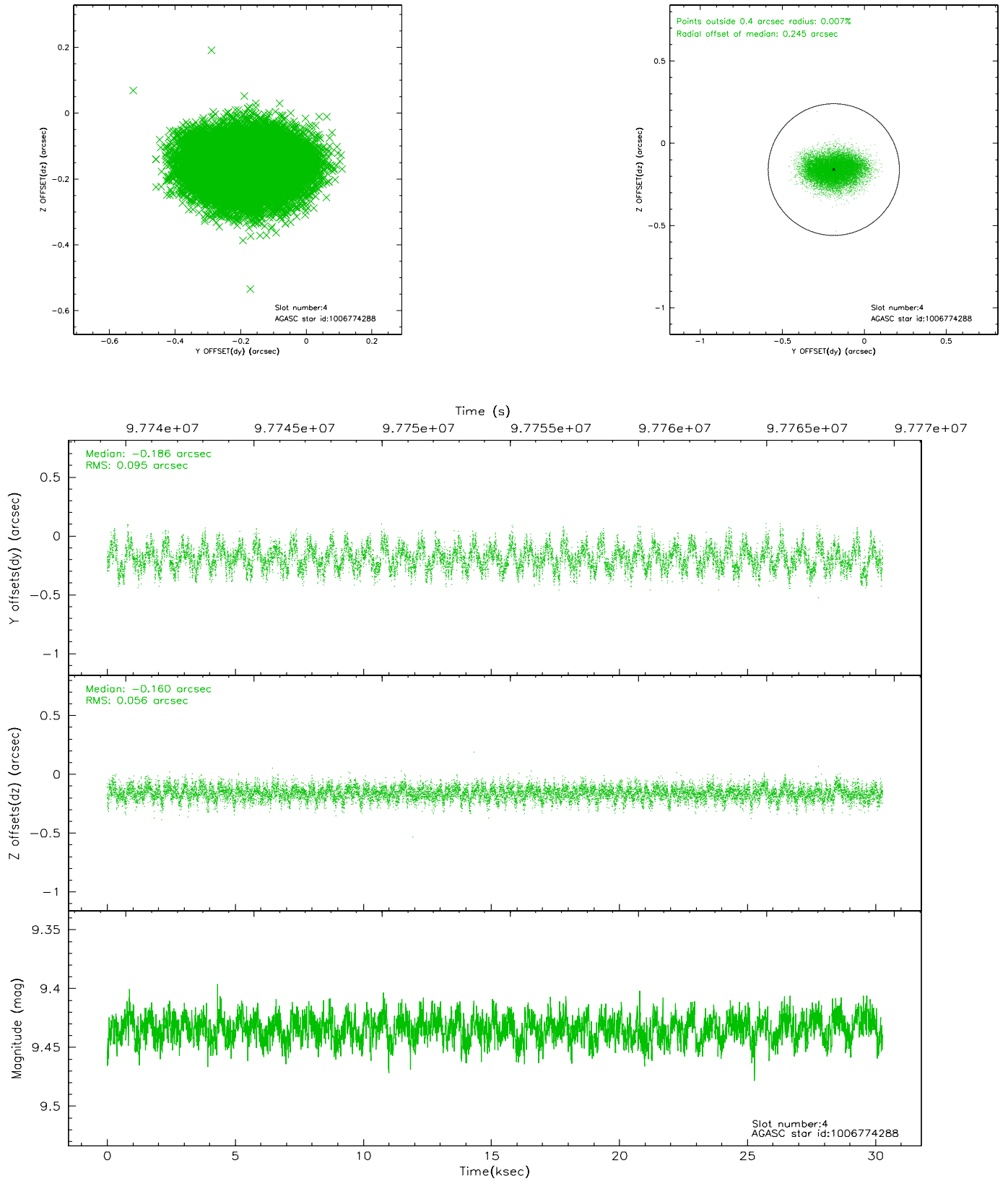
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	7387	-0.042	-0.025	0.007	0.011	0.000000	0.000000	-754.93	-1851.94
1	FID	ACIS-S-4	7.19	7387	-0.066	0.027	0.005	0.010	0.000000	0.000000	2158.30	56.48
2	FID	ACIS-S-5	7.23	7387	0.077	0.007	0.006	0.010	0.000000	0.000000	-1807.55	50.23
3	GUIDE	1006770680	9.75	14623	0.057	0.032	0.098	0.158	136.066277	-40.835914	1641.06	-746.69
4	GUIDE	1006774288	9.43	14760	-0.186	-0.160	0.119	0.188	136.151715	-40.161117	1550.36	1691.89
5	GUIDE	1006784024	9.65	14760	0.067	-0.098	0.101	0.165	135.140125	-40.518811	-1021.07	33.87
6	GUIDE	1006646160	10.41	14621	0.061	0.167	0.135	0.222	134.960399	-40.683654	-1421.47	-624.29
7	GUIDE	1006767392	9.85	14762	0.004	0.069	0.116	0.187	135.128758	-40.847245	-882.17	-1140.69

2.4 Star Slots

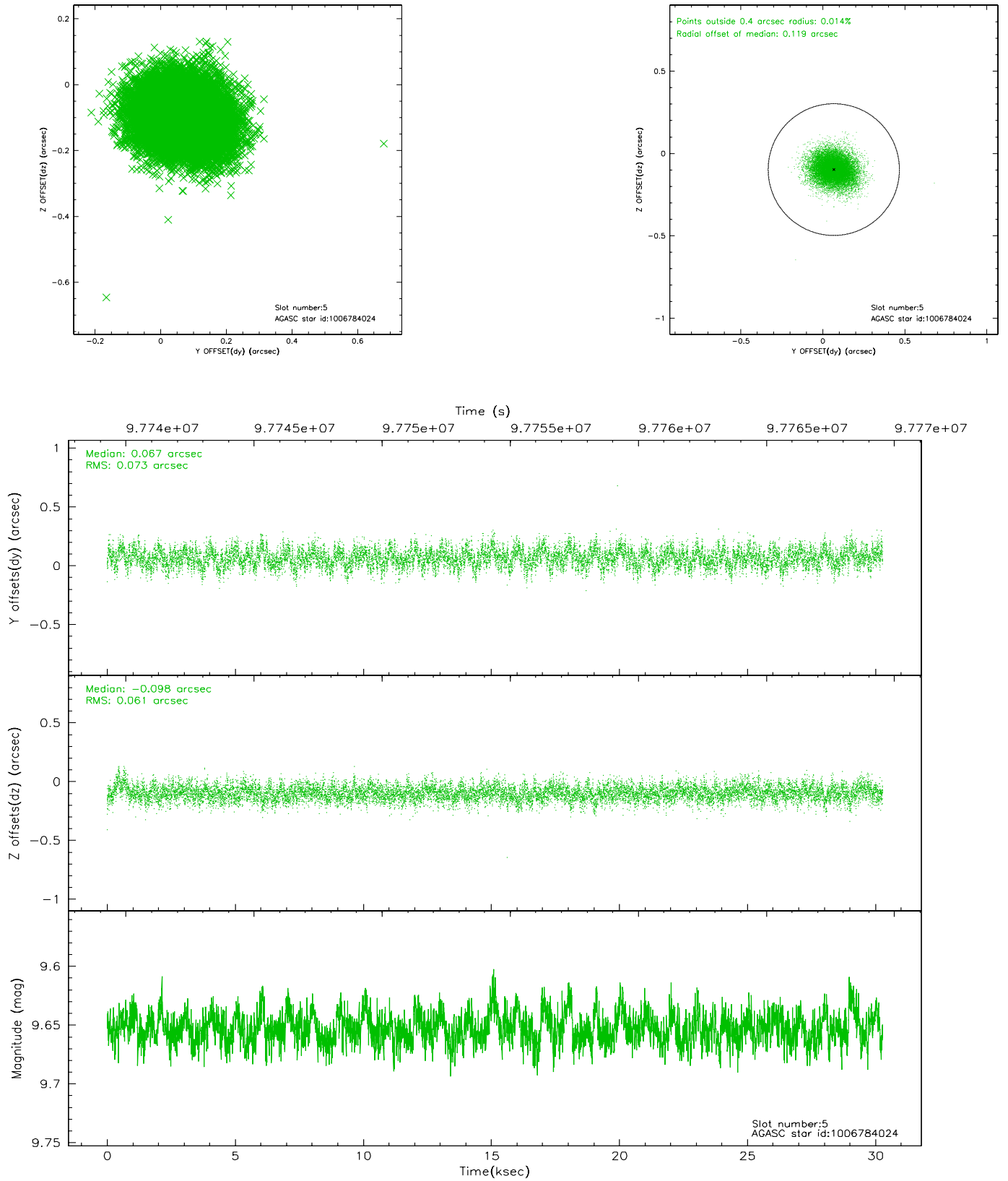
2.4.1 Slot 3



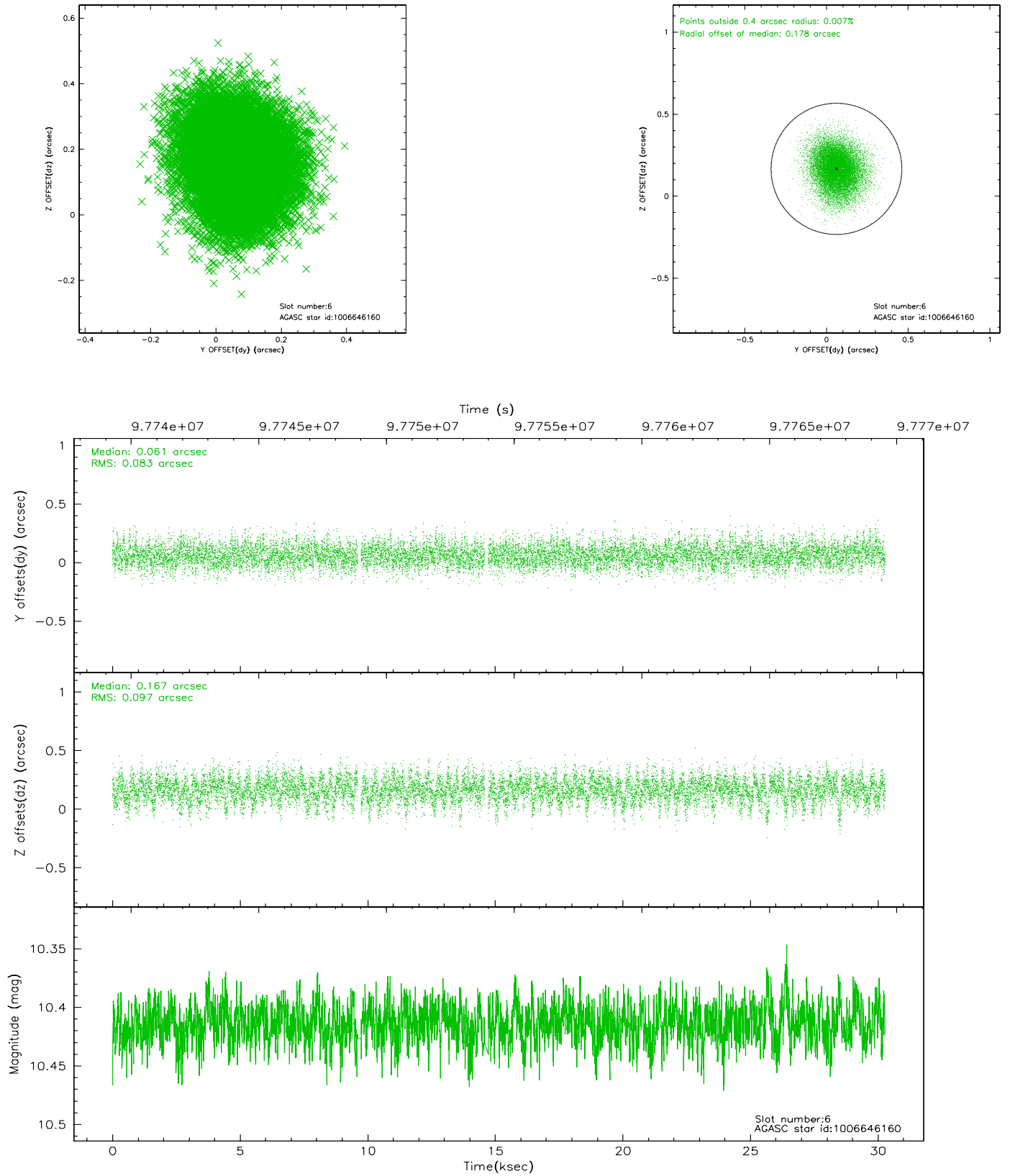
2.4.2 Slot 4



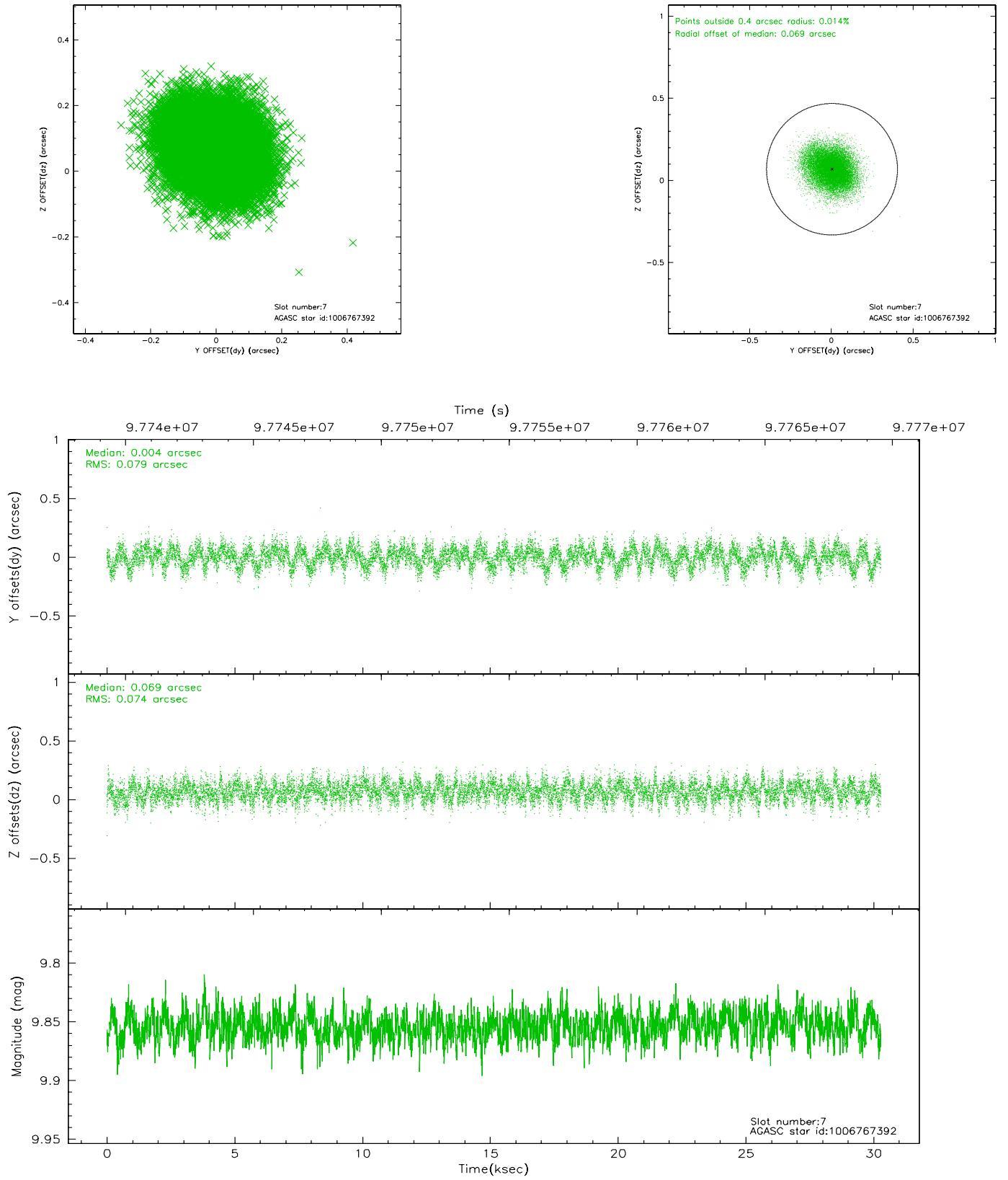
2.4.3 Slot 5



2.4.4 Slot 6

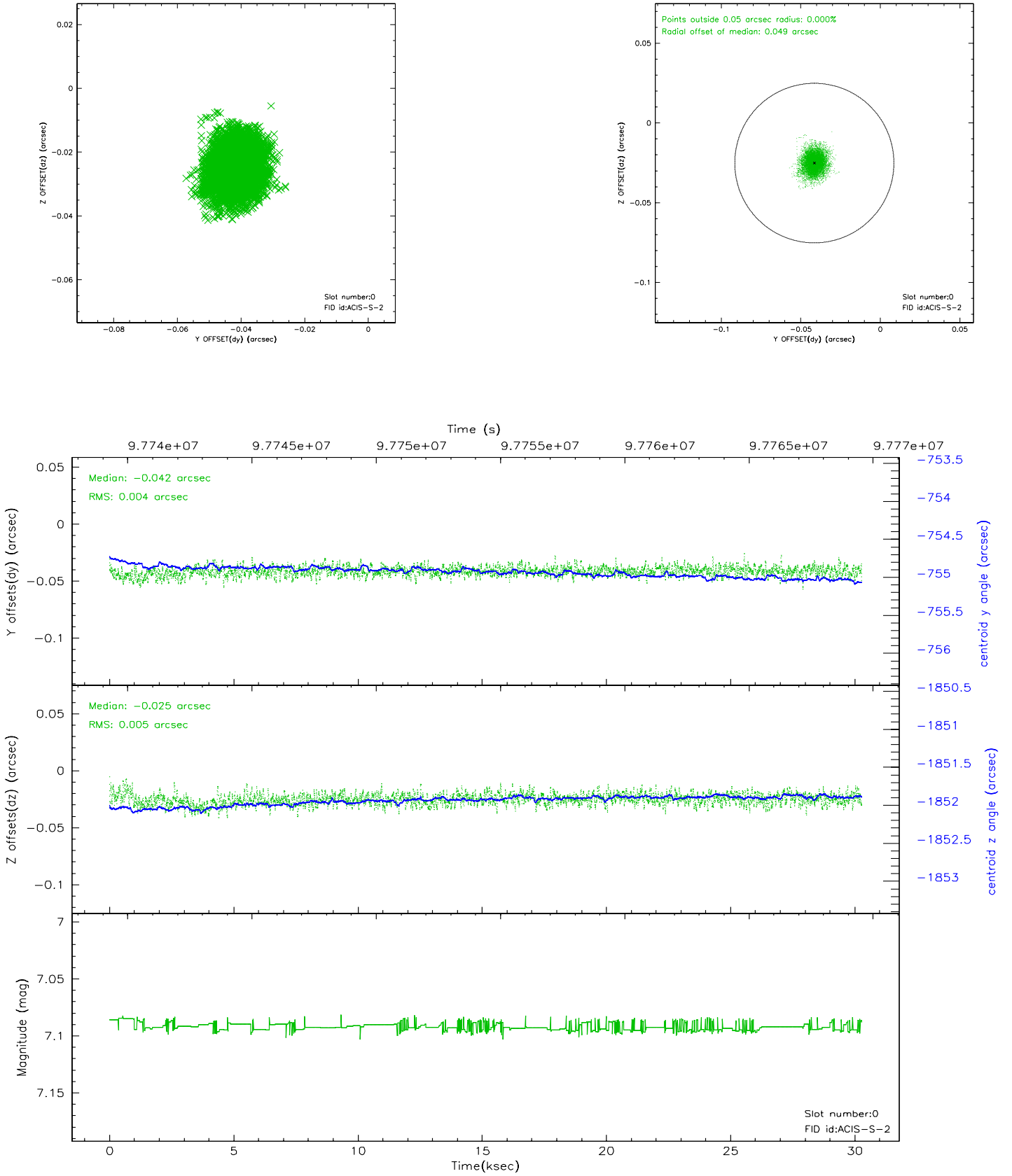


2.4.5 Slot 7

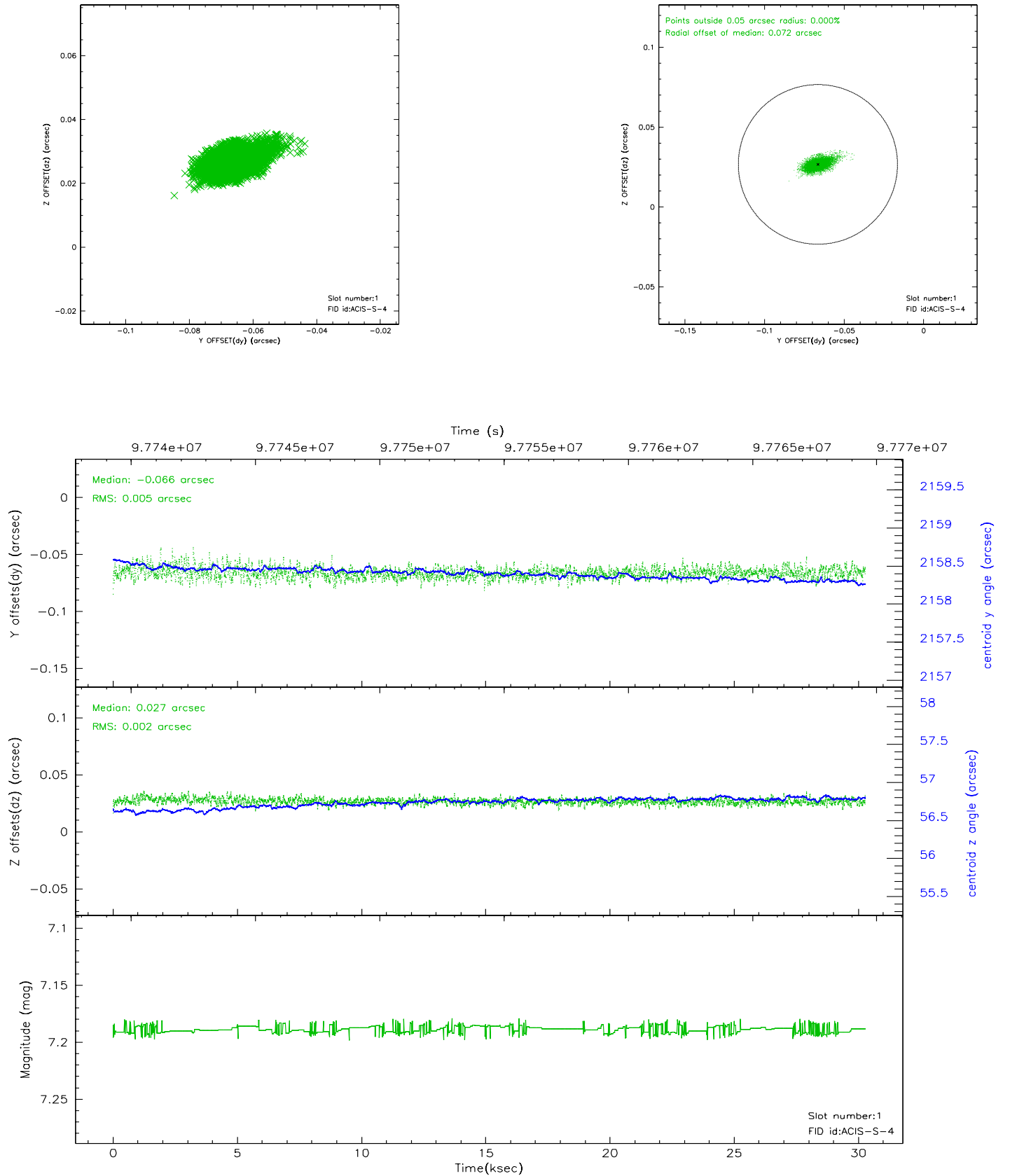


2.5 FID Slots

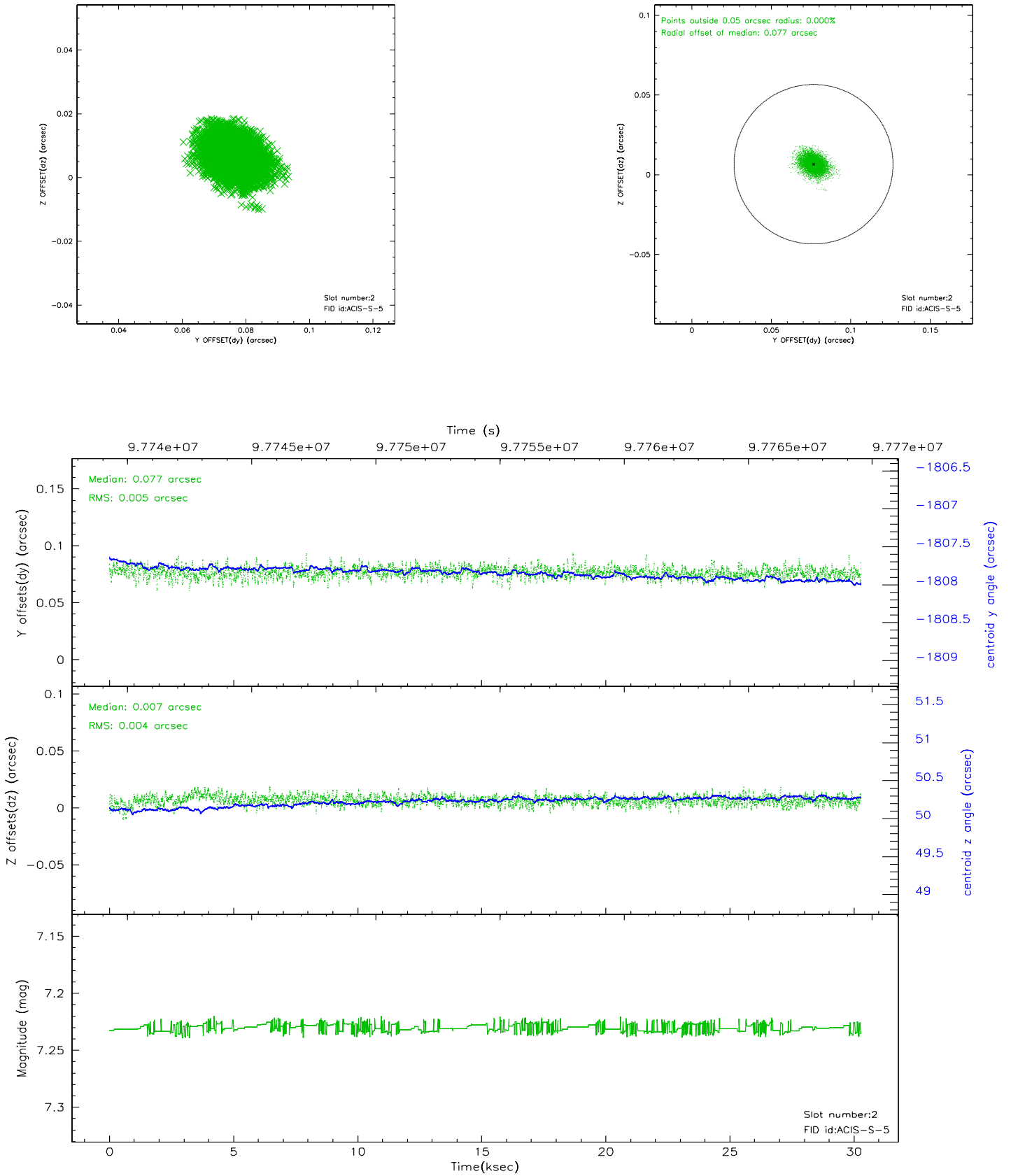
2.5.1 Slot 0



2.5.2 Slot 1

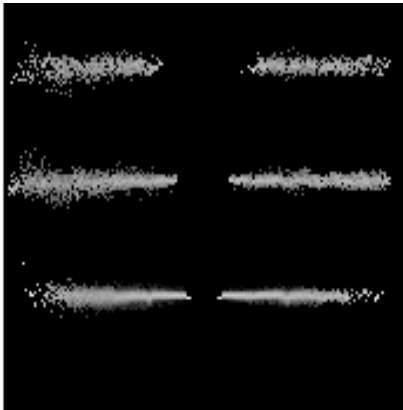


2.5.3 Slot 2

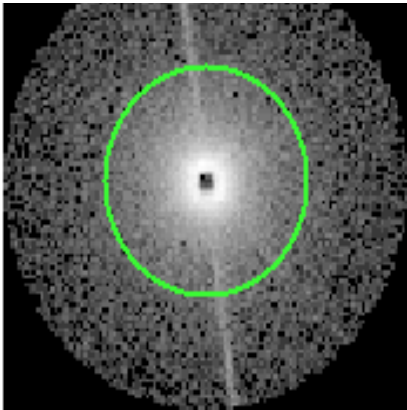


3 Gratings

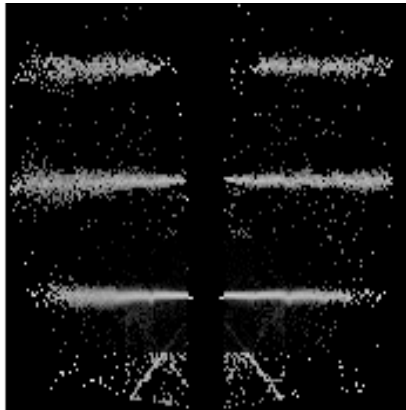
3.1 HEG Arm



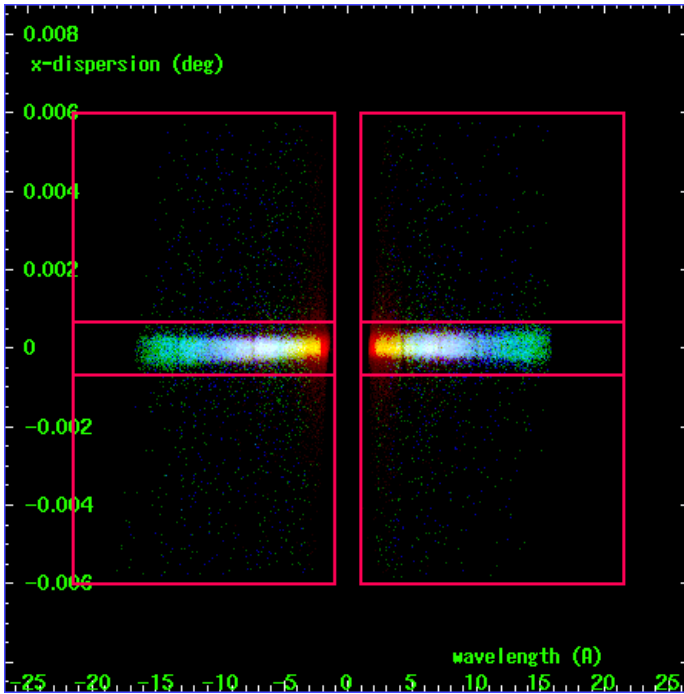
HEG Order Sort 123



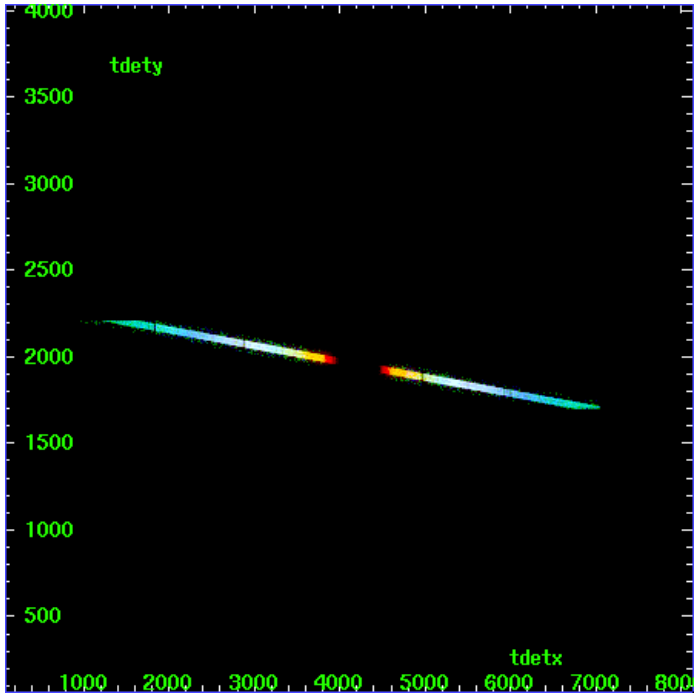
HEG Zero Order



HEG Order Sort ALL

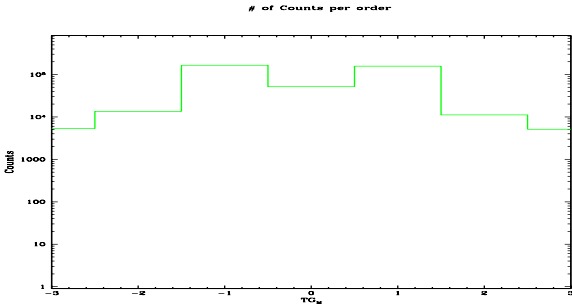


Spot Image HEG

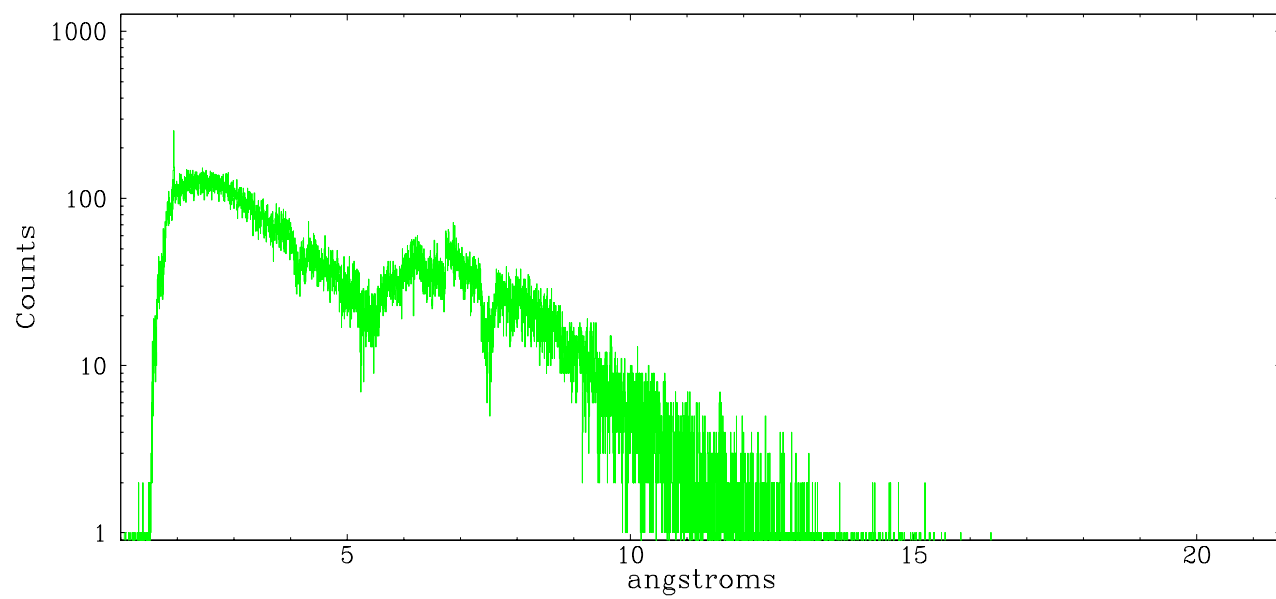


Full Detector HEG

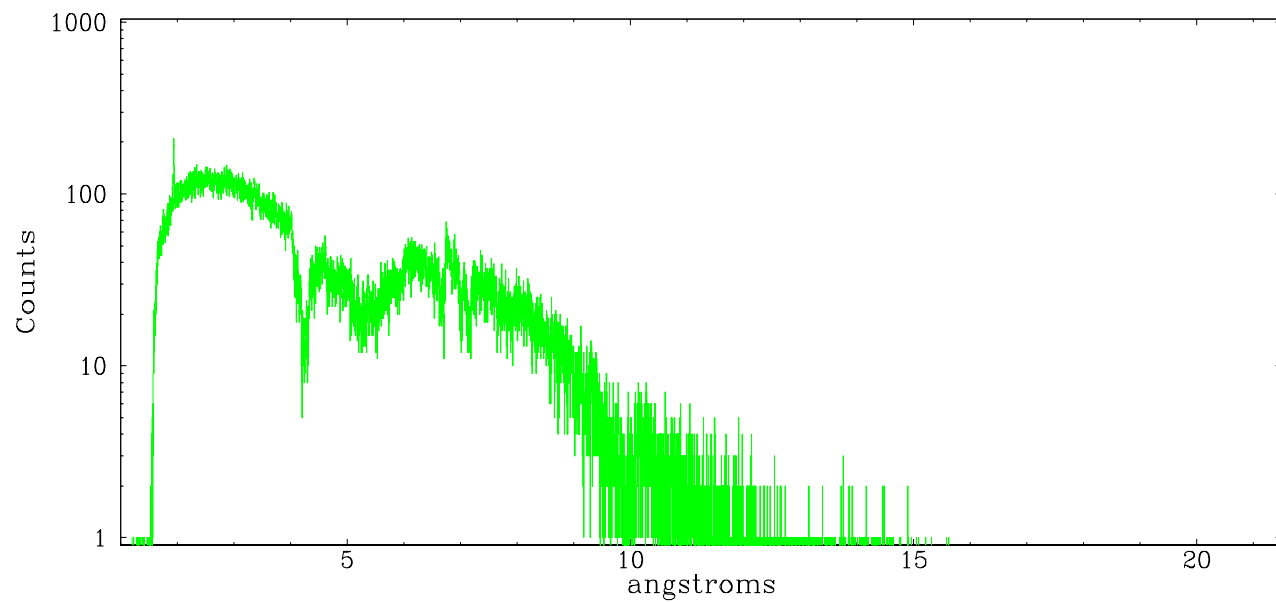
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5352	13575	164433	51680	157086	11123	5113



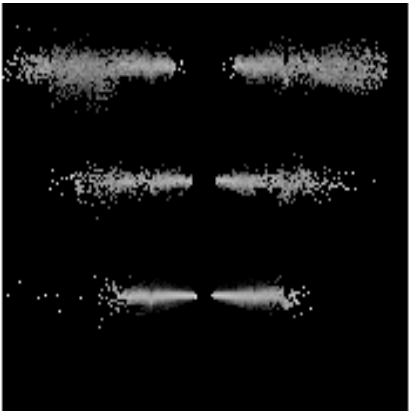
heg order -1



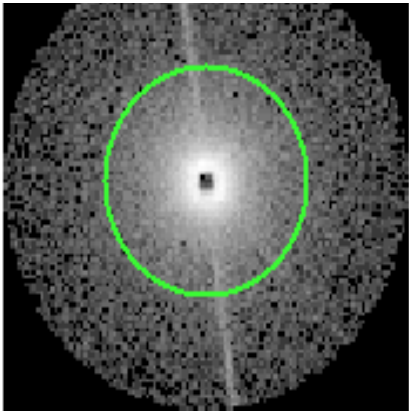
heg order +1



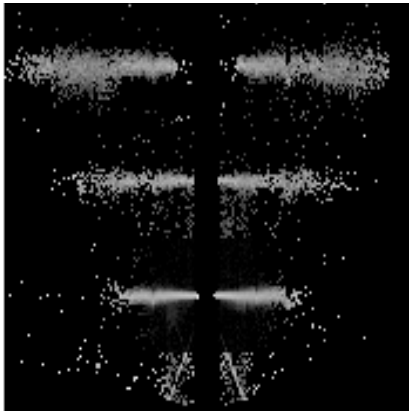
3.2 MEG Arm



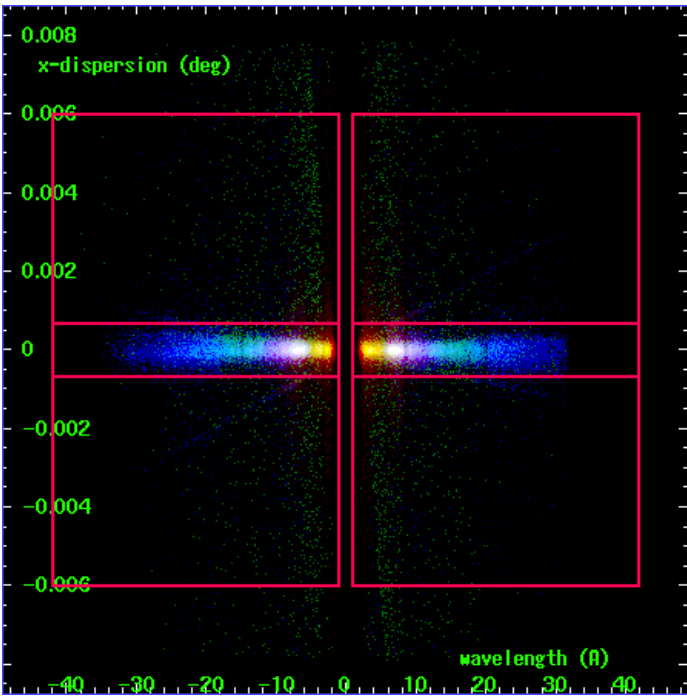
MEG Order Sort 123



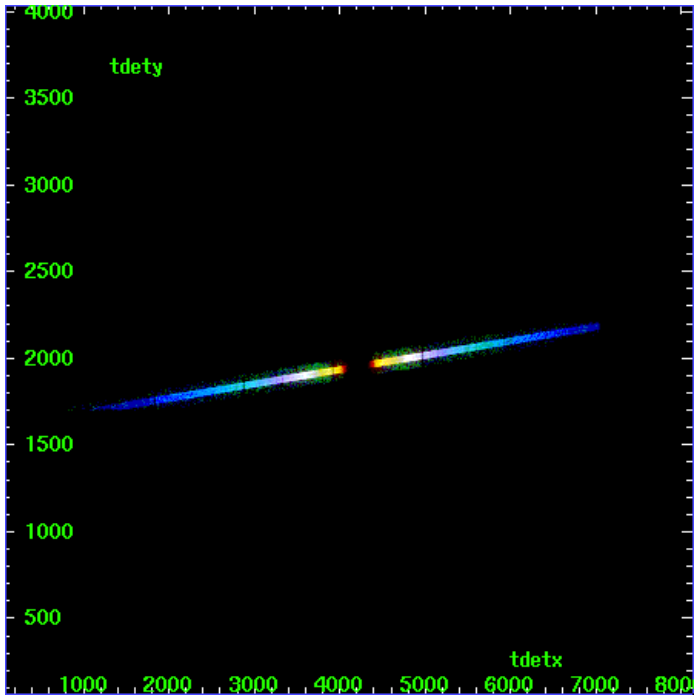
MEG Zero Order



MEG Order Sort ALL

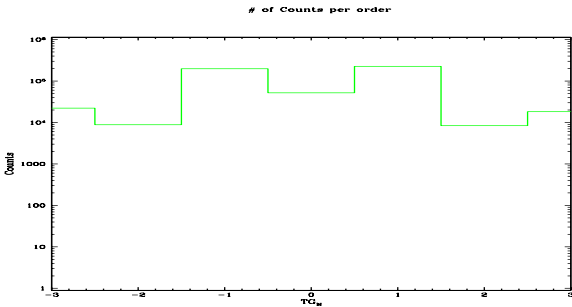


Spot Image MEG

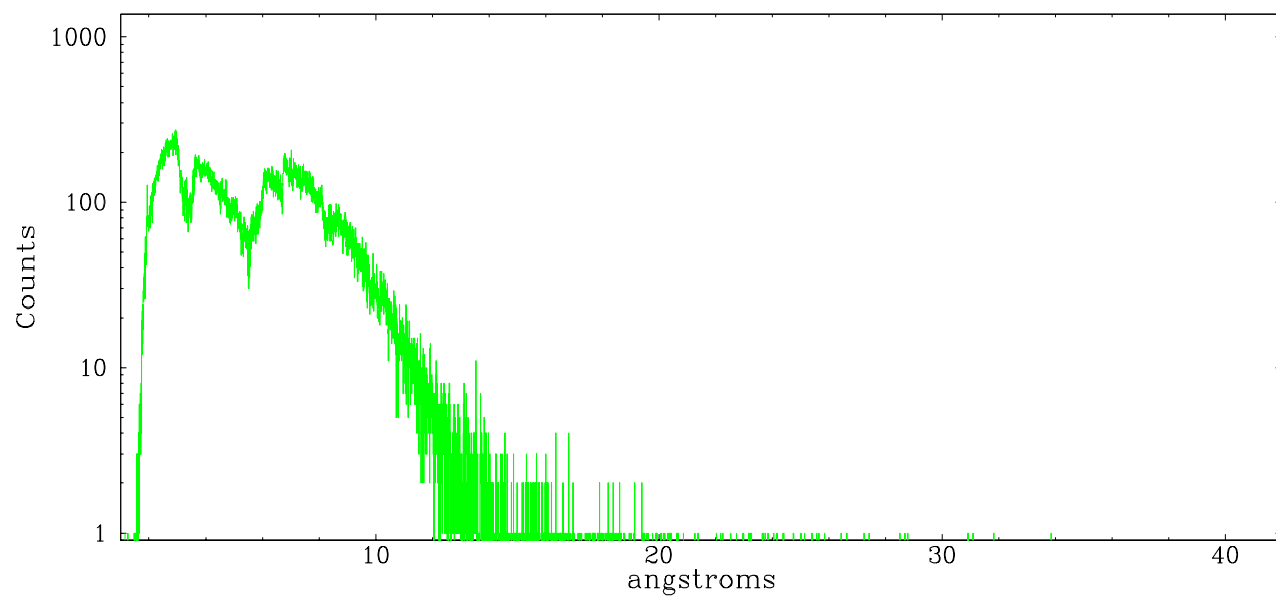


Full Detector MEG

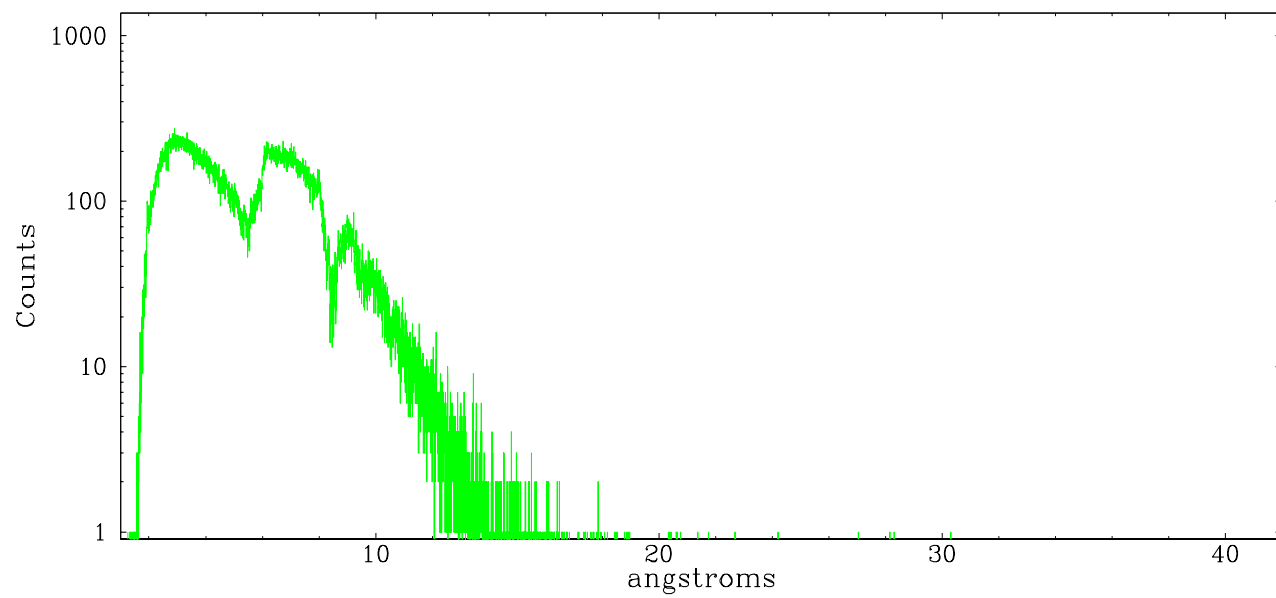
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	22258	8838	198320	51680	226407	8389	18274



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2006.12.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.28

A.2 Comments

Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates into the `*src1a.fits` file. These corrected coordinates were determined using the software tool `finndzero.sl` in ISIS, a CXC software package for data analysis. The tool calculates the intersection point 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 the extraction of the spectrum because it found a zeroth order position on the wings of the PSF due to the piled up profile. The `*pha2.fits` file has the extracted spectral data based on the corrected zeroth order position. Note that these corrected coordinates of the zeroth order cannot be reproduced by running `tgdetect` with the default parameters on the data.